COST SHARING AND RESTORATION WORK AGREEMENT

This Cost Sharing and Restoration Work Agreement (the "Agreement") is made on this 3rd day of August, 2022 (the "Effective Date") by and between The Pittsburgh Water and Sewer Authority ("PWSA"), having a business address of 1200 Penn Avenue, Penn Liberty Plaza I, Pittsburgh, Pennsylvania 15222, and Peoples Natural Gas Company LLC ("Peoples"), having a business address of 375 North Shore Drive, Pittsburgh, Pennsylvania 15212, and Duquesne Light Company ("Duquesne Light"), having a business address of 411 Seventh Avenue, Pittsburgh, Pennsylvania 15219 (individually the "Party" and collectively the "Parties");

WHEREAS, the Port Authority of Allegheny County is implementing a Bus Rapid Transportation Project (the "Project") to connect Downtown Pittsburgh with Uptown, Oakland and other East End neighborhoods;

WHEREAS the Project requires significant infrastructure improvements along the Project corridor and such improvements facilitate the relocation of existing underground utility facilities;

WHEREAS, as part of the relocation of existing underground facilities for the Project, the Parties have agreed undertake certain Restoration Work, as defined herein, within the locations as set forth in Exhibit A hereto (the "Streets");

WHEREAS, the Parties agree that the PWSA will retain a contractor to undertake such Restoration Work and a construction manager/inspector to monitor the contractor's performance of the Restoration Work on the Streets;

WHEREAS, the Parties agree that Peoples and Duquesne Light will participate in the Restoration Work and are willing to reimburse the PWSA for certain costs associated with the

contractor's performance of Restoration Work and the construction manager/inspector's monitoring of the contractor's performance of the Restoration Work on the Streets;

WHEREAS, the City of Pittsburgh Department of Mobility and Infrastructure ("DOMI") issued an internal memo on September 1, 2021 discussing the area six feet (6') or less between the trenches ("Trench Gap") and requesting that the Parties also backfill and restore the Trench Gap;

WHEREAS, the PWSA has agreed to satisfy the City's Trench Gap request in a separate agreement with the City of Pittsburgh and/or DOMI and will not incorporate such costs into the cost sharing structure set forth in this Agreement; and

NOW THEREFORE, in exchange of sufficient and mutual consideration, the receipt of which is hereby acknowledged by the Parties, and with the intent of being legally bound hereby, the Parties hereby agree as follows:

1. Incorporation. The above-recital clauses are incorporated herein by reference and any attached exhibits are fully incorporated as part of this Agreement.

2. Underground Facilities Work. The Parties agree that each Party will be performing, or has already performed, work, including but not limited to trenching and pipeline and facility replacement (the "Underground Facilities Work"), beneath or on the Streets. Each Party shall be responsible for and solely bear its own respective cost for such Underground Facilities Work.

3. Restoration Work. The Parties agree that, subsequent to the Underground Facilities Work, the Parties are required to place concrete paving base and asphalt (binder-to-grade) in the trench lines located within the Streets ("Restoration Work"). The Restoration Work will be done in accordance with the City of Pittsburgh requirements, standards and specifications, including but

not limited to the City's 2017 Right-of-Way Procedure Policy, a copy of which is attached hereto as Exhibit B.

Upon the completion of a Party's Underground Facilities Work, that Party shall place temporary restoration asphalt and/or concrete over their specific excavation sites and notify the PWSA and A. Folino of the competition of the temporary restoration at the specific excavation site. Thereafter, A. Folino shall be responsible to inspect the temporary restoration, ensure the temporary restoration is maintained in a safe and appropriate manner until the Restoration Work is complete and make any necessary repairs or corrections to the temporary restoration. The cost of which shall be shared amongst the Parties as identified in the Cost Sharing provisions herein.

The PWSA shall retain, and hold a contract with, A. Folino Construction, Inc. ("A. Folino") to perform such Restoration Work. A. Folino will assume all safety precautions associated with the Restoration Work, including flaggers and traffic control, if necessary. A. Folino shall perform the Restoration Work on unit bid pricing as set forth in the Contract between the PWSA and A. Folino for the PWSA Bus Rapid Transit Water Distribution Improvement Project, PWSA Project Number 2020-325-102-0, a complete copy of which is attached hereto as Exhibit C. A. Folino shall perform the Restoration Work in a good and workmanlike manner and in full compliance with all federal, state, and local laws, statutes, ordinances, resolutions, and administrative regulations, which are applicable to this Agreement, including but not limited to the City's 2017 Right-of-Way Procedures Policy.

4. Construction Manager/Construction Inspector. A. Folino's performance of the Restoration Work will be monitored by Hatch Associates Consultants, Inc. ("Hatch"), the on-site construction manager/inspector, and Hatch will provide monthly status updates to the Parties. The PWSA and Hatch shall enter into a Third Amendment to Agreement Between Owner and Engineer

for Professional Services and Task Order No. HT-CM-34 (the "Third Amendment"), a copy of which is attached hereto and incorporated herein as Exhibit D. Hatch's obligations, including but not limited to insurance and indemnification obligations, to Peoples and Duquesne Light are set forth in the Third Amendment. The PWSA agrees that it will not enter into another amendment with Hatch that limits Hatch's obligations set forth in the Third Amendment. When A. Folino has completed performance of the Restoration Work, a representative from the City of Pittsburgh, the PWSA, Peoples and Duquesne Light shall walk the area of the Streets to make sure the Restoration Work has been completed to the City of Pittsburgh's satisfaction.

5. Cost Sharing. The Parties agree that they shall bear the costs for A. Folino's performance of the Restoration Work and Hatch's on-site construction management and inspection services on a pro rata basis, based upon the footage of Restoration Work completed for each specific Party. Upon receipt of A. Folino's and Hatch's invoice(s), the PWSA shall provide said invoice(s) to Duquesne Light and Peoples for reimbursement to the PWSA. Duquesne Light and Peoples shall issue payment to the PWSA, for their respective share of the invoice (as set forth above), within thirty (30) days of receipt of each invoice from the PWSA. The PWSA shall ensure that A. Folino's and Hatch's invoices shall be substantially similar to the invoice(s) provided to Peoples and Duquesne Light as an example.

6. Term of the Agreement. The term of this Agreement shall commence on the Effective Date and continue until the full payment of all invoices associated with the completion of the Restoration Work.

7. Insurance. The PWSA shall require A. Folino to maintain insurance that will name the PWSA, Peoples and Duquesne Light as additional insureds throughout the term of this Agreement for all policies required. The insurance policy or policies will be non-cancelable,

except upon thirty (30) days prior written notice to the PWSA. All premiums will be at the expense of contractor which will at minimum be required by PWSA to maintain the following insurance:

	Individual Occurrence	Aggregate
General Liability Including (but not limited to) bodily injury, death, and complicated operations on an occurrence form policy, which shall include, but not be limited to, specific coverage for (1) contractual liability encompassing the Indemnity Article of this Agreement, (2) personal injury and property damage liability, (3) products/completed operations liability, and (4) where applicable, explosion, structure and ground collapse, and underground hazards coverage	$1,000,000.00	$2,000,000.00
Property damage	$1,000,000.00	$2,000,000.00
Workers' Compensation	*Statutory Minimum*	*Statutory Minimum*
Employer's Liability	with a total limit of at least $2,000,000 each accident for bodily injury by accident and $2,000,000 each employee for bodily injury by disease	
Automotive Liability, which will cover liability arising out of any auto (including owned, hired and non-owned autos)	$1,000,000.00	$2,000,000.00
Professional Liability (as applicable)	$1,000,000.00	$2,000,000.00
Umbrella or Excess Liability, covering all Employer's Liability, Automobile Liability, and Commercial Liability insurance	$5,000,000.00	

8. Folino Indemnification. Folino agrees to indemnify and hold the Parties and each of their respective partners, officers, directors, members, managers, employees, contractors, counsel, accountants, agents, successors and assigns harmless from any and all claims, damages, demands, liabilities, losses, costs or expenses (including, without limitation, reasonable counsel fees and expenses) suffered or paid, directly or indirectly, as a result of or arising out of the negligence, gross negligence, or willful misconduct of Folino, or its employees or agents, whether at law, in equity, or administrative in nature.

9. Warranties. Folino represents and warrants that the Restoration Work will: (i) be performed in a good and workmanlike manner in accordance with professional industry standards (with the level of skill, knowledge and judgment required or reasonably expected of providers of comparable services); (ii) meet the terms of this Agreement; (iii) comply with the City of Pittsburgh standards and specifications, including but not limited to the City's 2017 Right-of-Way Procedures Policy; and (iii) be free from defects for a period of at least two (2) years from completion. Upon receipt of written notice of a warranty claim, Folino shall, if required by the City, Peoples, or Duquesne Light, at Folino's sole expense, promptly reperform all portions of the work that fail to conform to these warranties.

If the PWSA receives from A. Folino or any other subcontractor or supplier representations or warranties of broader or greater scope than those above, then the PWSA shall provide the same to the City, Peoples and Duquesne Light. The PWSA shall include provisions in its contracts with A. Folino that pass through all such representations and warranties to the City, Peoples, and Duquesne Light and obligate each directly to the City, Peoples, and Duquesne Light under the subcontract.

10. Mutual Indemnification. Each Party (the "Indemnifying Party") agrees to

indemnify and hold the other Parties and each of their respective partners, officers, directors, members, managers, employees, contractors, counsel, accountants, agents, successors and assigns (collectively, an "Indemnified Parties") harmless from any and all claims, damages, demands, liabilities, losses, costs or expenses (including, without limitation, reasonable counsel fees and expenses) suffered or paid, directly or indirectly, as a result of or arising out of the negligence, gross negligence, or willful misconduct of the Indemnifying Party, or its employees, whether at law, in equity, or administrative in nature.

11. Termination. Any Party may individually terminate this Agreement with thirty (30) days' advance written notice of the intention to terminate to the other Parties. In the event of termination, the terminating Party will fully pay any amounts for Restoration Work performed through the date of termination.

12. Assignment. This Agreement may not be assigned except by the written consent of the Parties.

13. Governing Law and Choice of Forum. This Agreement is subject to and governed by the laws of the Commonwealth of Pennsylvania. The Parties agree that any dispute arising under this contract shall first be subject to non-binding mediation. In the event that mediation does not resolve the dispute, venue for any action is in the Court of Common Pleas of Allegheny County, Pennsylvania.

14. Entire Agreement. The Parties further declare and represent that this Agreement contains the entire agreement between the Parties concerning the matters set forth herein and that all of the terms of this Agreement are binding and enforceable.

15. Counterpart Signatures. Signatures in counterparts for this Agreement shall be legally binding.

16. Modification. This Agreement may only be modified by a written instrument signed by authorized representatives of the Parties. No other agreement, oral or otherwise, regarding the subject matter of this Agreement, will bind the Parties. This Agreement may not be changed, modified, discharged or extended except by written amendment, executed by the Parties.

17. Public Utility Commission. Each Party may file a copy of this Agreement with the Pennsylvania Public Utility Commission ("PA PUC"), as required by Title 66, Section 507 of the Pennsylvania Public Utility Code. Once a Party elects to file a copy with the PA PUC, the Party will notify the other Parties of the same and provide the other Parties with the PA PUC docket number so that such Party can satisfy its concurrent duty to place with agreement on file with the PA PUC by referencing the other parties filing with the PA PUC. This Agreement shall become effective in accordance with the applicable provisions of the PA PUC Code.

18. Authorization by PWSA Board of Directors. This Agreement is entered into by PWSA pursuant to Agenda Item No. 113, approved on July 22, 2022.

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WHEREUPON, the Parties have executed this Agreement intending to be legally bound hereby on the date and year first written above.

WITNESS:

Debra Gibson

THE PITTSBURGH WATER AND SEWER AUTHORITY

By: William J. Pickering
William Pickering
Chief Executive Officer
Date: 8/3/2022

Approved as to form:

Monica Walaan
Authority Legal Counsel

Edward Barca
Edward Barca
Director of Finance
Date: 8/3/2022

WITNESS:

Douglas Minnigh

PEOPLES NATURAL GAS COMPANY LLC

By: Paul Becker
Paul Becker
Vice President, Construction and Engineering
Date: 7/25/2022

Approved by Legal: Jennifer Petrisek

WITNESS:

Martin Erdley

DUQUESNE LIGHT COMPANY

By: Scott R Ward
Name: Scott Ward
Title: Director, Operations Work Management and Perf.
Date: 7/24/2022

CMT

Commercial Counsel

DocuSign Envelope ID: 0659F970-C2F1-45EA-923D-B0F124FC37D1

A. Folino Construction, Inc. ("A. Folino") by signing in the space provided below, specifically acknowledges this Agreement and further acknowledges and accepts that the Restoration Work and other work outlined in this Agreement, shall be for the benefit of the PWSA, the City, Peoples and Duquesne Light. A. Folino agrees to be bound by Paragraphs 3 (Restoration Work), 7 (Insurance), 8 (Indemnification) and 9 (Warranties) of this Agreement. A. Folino agree that the City, Peoples and Duquesne Light are third-party beneficiaries under the contract(s) between A. Folino with the PWSA related to the Project and the matters contemplated under this Agreement.

A. Folino Construction, Inc.

By: Dino Folino

Name: Dino Folino

Title: Vice President

Date: 7/22/2022

EXHIBIT A
MAPS OF RESTORATION WORK LOCATIONS

No. OVERVIEW – 1

PROPOSED DLC RESTORATION

PROPOSED WATER RESTORATION

PROPOSED GAS RESTORATION

TOTAL RESTORATION LIMITS


STAGE 1A
STAGE 1B
STAGE 2
STAGE 3
STAGE 4A–C
STAGE 5
STAGE 6
STAGE 7
STAGE 8
STAGE 9A
STAGE 9B
STAGE 10A–C
STAGE 11 & 12
STAGE 13
STAGE 14A
STAGE 14B
STAGE 15
STAGE 16A
STAGE 16B
STAGE 17
STAGE 18
STAGE 19
STAGE 20
STAGE 21
STAGE 22
FIFTH AVE
FORBES AVE
DIAMOND ST
WOOD ST
SMITHFIELD ST
GRANT ST
STANWIX ST
CHATHAM SQUARE
COURT PL
CROSS ST
PENN AVE
MARKET SQUARE
MARKET ST
WILLIAM PENN PL
STEVENSON PL
FERRY ST
WABASH TUNNEL
WABASH TUNNEL
WABASH TUNNEL

No. OVERVIEW – 2

STAGE 1A

STAGE 1B

STAGE 2

STAGE 3

ROSS ST

SIXTH AVE

FIFTH AVE

DIAMOND ST

WATSON ST

FORBES AVE

BOYD ST

STAGE 11 & 12

STAGE 13

PROPOSED DLC RESTORATION

PROPOSED WATER RESTORATION

PROPOSED GAS RESTORATION

TOTAL RESTORATION LIMITS

CONTINUED ON OVERVIEW – 3

HORIZ. SCALE: 1" = 50'

50' 0' 50'

REVISIONS

BURNS McDONNELL
200 W. ADAMS STREET, SUITE 2700
CHICAGO, IL 60606

DUQUESNE LIGHT CO.

SCALE	DRAFT BY	DATE	ENGR. CHK'D	DATE
1"=50'	DRAFT CHK'D	DATE	FINAL APP.	DATE

BUS RAPID TRANSIT UNDERGROUND DISTRIBUTION
1ST & 4TH WARDS PITTSBURGH, PA

	FPN. NO.	DWG. NO.	REV. NO.
A	18-0022	OVERVIEW – 2	0

No. OVERVIEW – 3

CONTINUED ON OVERVIEW – 2

CONTINUED ON OVERVIEW – 4

WASHINGTON PL

STAGE 4A–C

STAGE 5

LOGAN ST

FIFTH AVE

FIFTH AVE

CHATHAM SQUARE

MAGEE ST

STEVENSON ST

FORBES AVE

STAGE 14A

STAGE 14B

STAGE 15

STAGE 16

PROPOSED DLC RESTORATION

PROPOSED WATER RESTORATION

PROPOSED GAS RESTORATION

TOTAL RESTORATION LIMITS

HORIZ. SCALE: 1" = 50'

50' 0' 50'

REVISIONS

BURNS McDONNELL
200 W. ADAMS STREET, SUITE 2700
CHICAGO, IL 60606

DUQUESNE LIGHT CO.

BUS RAPID TRANSIT UNDERGROUND DISTRIBUTION
1ST & 4TH WARDS PITTSBURGH, PA

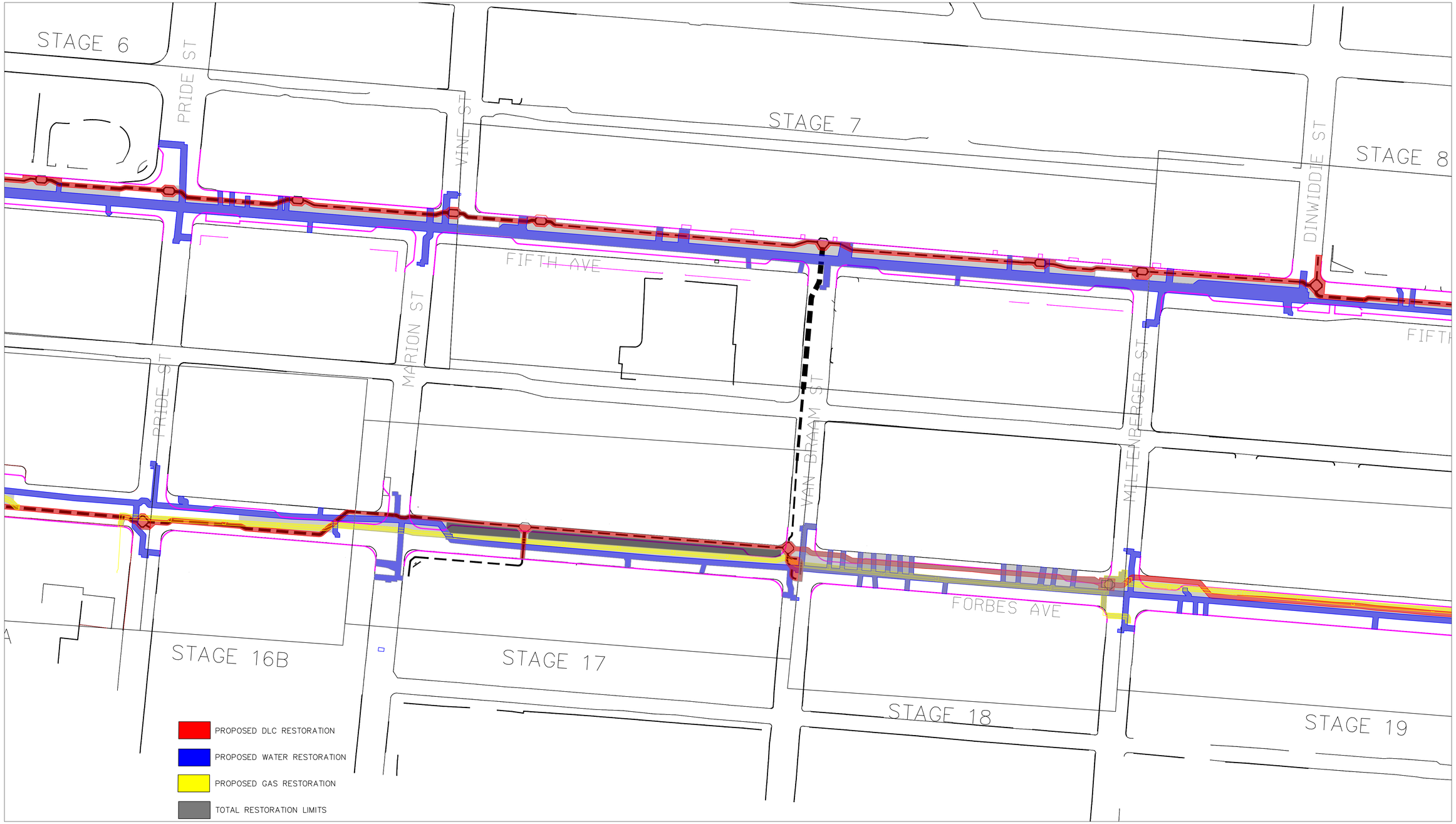
SCALE	DRAFT BY	DATE	ENGR. CHK'D	DATE
1"=50'	DRAFT CHK'D	DATE	FINAL APP.	DATE

	FPN. NO.	DWG. NO.	REV. NO.
A	18–0022	OVERVIEW – 3	0

No. OVERVIEW – 4

CONTINUED ON OVERVIEW – 3

CONTINUED ON OVERVIEW – 5



HORIZ. SCALE: 1" = 50'

50' 0' 50' 100'

REVISIONS

BURNS McDONNELL
200 W. ADAMS STREET, SUITE 2700
CHICAGO, IL 60606

DLC DUQUESNE LIGHT CO.

SCALE	DRAFT BY	DATE	ENGR. CHK'D	DATE
1"=50'	DRAFT CHK'D	DATE	FINAL APP.	DATE

BUS RAPID TRANSIT UNDERGROUND DISTRIBUTION
1ST & 4TH WARDS PITTSBURGH, PA

	FPN. NO.	DWG. NO.	REV. NO.
A	18-0022	OVERVIEW – 4	0

No. OVERVIEW – 5

STAGE 9A

STAGE 9B

STAGE 10A–C

FIFTH AVE

WYANDOTTE ST

FIFTH AVE

AVE

CONTINUED ON OVERVIEW – 4

CONTINUED ON OVERVIEW – 6

GIST ST

JUMONVILLE ST

SENECA ST

FORBES AVE

STAGE 20

STAGE 21

STAGE 22

PROPOSED DLC RESTORATION

PROPOSED WATER RESTORATION

PROPOSED GAS RESTORATION

TOTAL RESTORATION LIMITS

HORIZ. SCALE: 1" = 50'

50' 0' 50' 100'

REVISIONS

BURNS McDONNELL
200 W. ADAMS STREET, SUITE 2700
CHICAGO, IL 60606

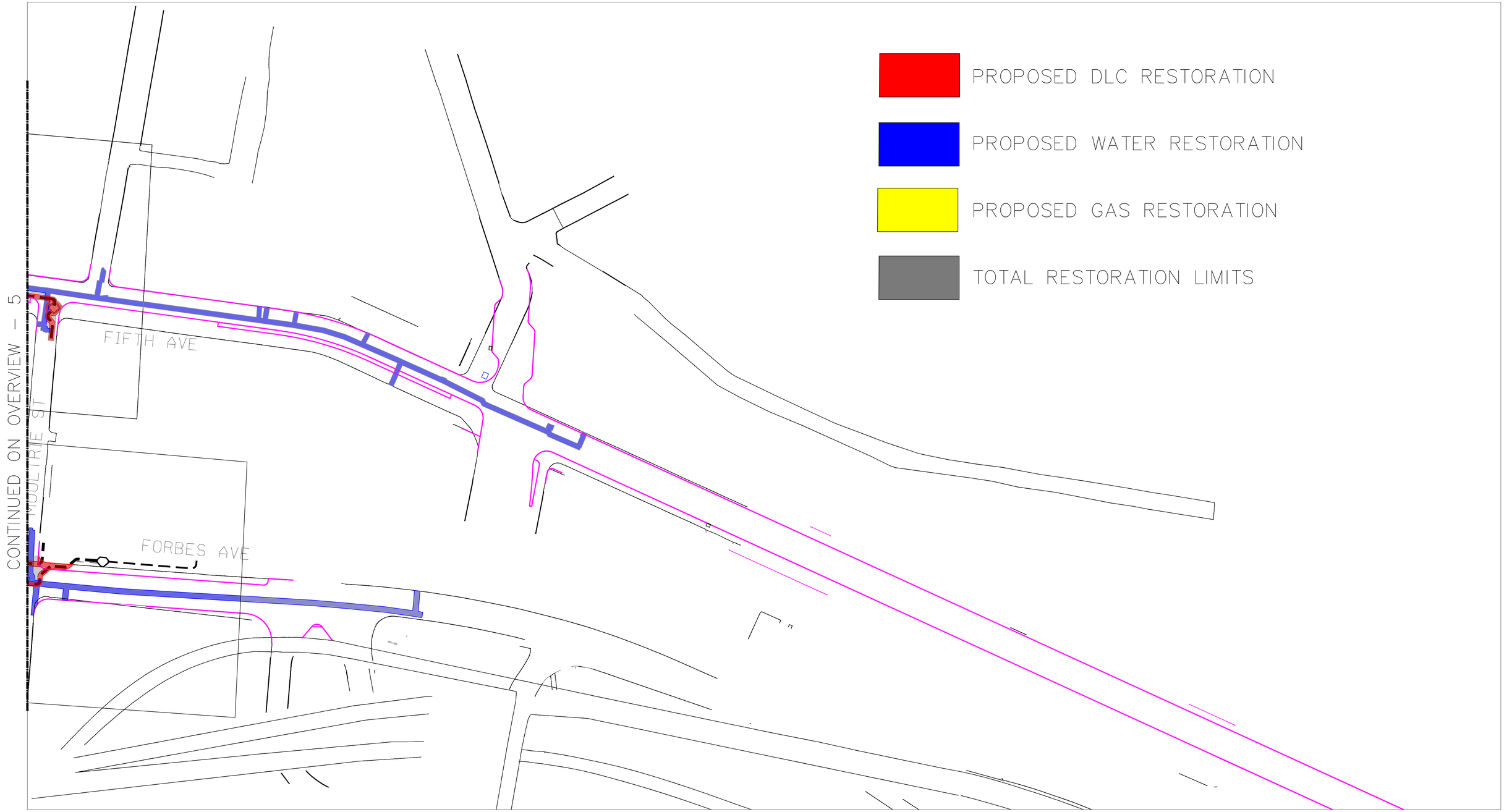
DUQUESNE LIGHT CO.

BUS RAPID TRANSIT UNDERGROUND DISTRIBUTION
1ST & 4TH WARDS PITTSBURGH, PA

SCALE	DRAFT BY	DATE	ENGR. CHK'D	DATE
1"=50'	DRAFT CHK'D	DATE	FINAL APP.	DATE

A	FPN. NO. 18-0022	DWG. NO. OVERVIEW – 5	REV. NO. 0

No. OVERVIEW – 6



REVISIONS

BURNS McDONNELL
200 W. ADAMS STREET, SUITE 2700
CHICAGO, IL 60606

DUQUESNE LIGHT CO.

SCALE	DRAFT BY	DATE	ENGR. CHK'D	DATE
1"=50'	DRAFT CHK'D	DATE	FINAL APP.	DATE

BUS RAPID TRANSIT UNDERGROUND DISTRIBUTION
1ST & 4TH WARDS PITTSBURGH, PA

	FPN. NO.	DWG. NO.	REV. NO.
A	18-0022	OVERVIEW – 6	0

		Total Restoration Area (Grey)			Restoration Area (Square Footage)					
Stage	Cost Transfer Code #	Square Feet	Square Yards	Cubic Yards	DLC (Red)	PWSA (Blue)	Gas (Yellow)	Domi Additional (Grey)	Total Cost	Total Cost With Factor of Safety
1A	6	-	-	-	-	-	-	-	$21,079.51	$22,133.49
1B	6	-	-	-	-	-	-	-	$21,826.80	$22,918.14
2	5	9,256.39	1,028.49	285.69	2,940.24	2,443.59	2,777.05	1,095.50	$167,863.50	$176,256.68
3	5	9,381.42	1,042.38	289.55	2,813.98	2,845.50	2,760.69	961.24	$146,889.67	$154,234.15
4A-C	1	9,977.07	1,108.56	307.93	4,981.20	4,951.00	-	44.88	$166,789.59	$175,129.07
5	3	11,063.82	1,229.31	341.48	2,638.83	5,930.58	-	2,494.40	$172,438.49	$181,060.41
6	3	15,347.66	1,705.30	473.69	3,904.36	9,416.02	-	2,027.28	$232,834.96	$244,476.71
7	3	15,726.49	1,747.39	485.39	4,125.22	8,644.39	-	2,956.88	$214,451.28	$225,173.84
8W	3	10,011.59	1,112.40	309.00	3,142.18	5,504.77	-	1,364.65	$138,526.00	$145,452.30
9A	1	7,697.93	855.33	237.59	2,438.34	3,958.17	-	1,301.42	$102,434.15	$107,555.86
9B	3	4,264.96	473.88	131.63	1,238.68	2,533.24	-	493.04	$51,967.70	$54,566.08
10A-C	3	9,915.68	1,101.74	306.04	3,613.26	5,825.92	-	476.50	$149,907.74	$157,403.13
11 & 12	1	4,080.50	453.39	125.94	-	1,251.05	-	2,829.45	$70,182.60	$73,691.73
13	4	8,391.75	932.42	259.00	3,379.48	4,007.95	80.49	923.83	$145,915.07	$153,210.82
14A	5	4,501.34	500.15	138.93	1,754.29	2,402.84	428.00	-	$78,141.50	$82,048.58
14B	5	5,404.01	600.45	166.79	2,171.53	2,440.70	471.95	319.84	$92,611.04	$97,241.59
15	5	8,655.52	961.72	267.15	2,683.25	2,790.96	2,873.02	308.29	$169,390.26	$177,859.77
16A	5	6,268.49	696.50	193.47	2,320.77	2,414.46	1,614.32	-	$122,651.16	$128,783.72
16B	5	4,290.86	476.76	132.43	1,135.23	1,747.20	1,184.82	223.61	$74,389.96	$78,109.46
17	5	10,229.31	1,136.59	315.72	997.78	4,158.05	2,611.51	2,461.98	$165,079.03	$173,332.98
18	5	7,308.57	812.06	225.57	1,879.73	3,702.26	2,185.34	-	$124,559.92	$130,787.92
19	4	10,575.50	1,175.06	326.40	2,850.66	4,316.20	3,243.90	164.74	$168,617.10	$177,047.95
20	5	10,379.56	1,153.28	320.36	2,309.78	4,106.19	2,869.34	1,094.24	$181,112.48	$190,168.11
21	5	13,216.26	1,468.47	407.91	2,440.08	5,560.32	2,805.49	2,410.37	$182,983.19	$192,132.34
22	5	13,407.90	1,489.77	413.82	3,059.48	5,637.44	2,412.32	2,298.66	$211,418.16	$221,989.07
East of Moultrie	5	4,563.16	507.02	140.84	-	4,563.16	-	-	$71,723.47	$75,309.64
N-S Chatham Square	5	1,500.65	166.74	46.32	-	-	1,500.65	-	$16,035.57	$16,837.35
8E	1							-		
	Total	215,416.39	23,935.15	6,648.65	58,818.35	101,151.98	29,818.87	26,250.80	3,461,819.90	3,634,910.89
				SY	6,535.37	11,239.11	3,313.21	2,916.76		

PWSA Completed Pavement Correction = 651.15

Cost transfer Description	Code
Domi Transfers Cost to Folino	1
DLC Transfers Cost to Folino	2
DLC and Domi Transfers Cost to Folino	3
DLC, Domi and Gas Company Transfers Cost to Folino	4
Domi and Gas Transfer Cost to Folino	5
No Cost transfer to Folino	6

Total Unit Cost of Restoration (SY) Including Asphalt	
Provider	Cost
DLC	$115.44
Peoples Gas	$115.44
Folino	$115.44

Folino Unit Price (cy) =	$326.88
Thickness (ft)=	0.83
Sf per SY =	9
Cf per Cy =	27
Cubic Feet per Sy of Pavement =	7.47
Cubic Yards per Sy of Pavement =	0.276666667
Folino Cost per SY =	$90.44
DLC Cost Per Sy for Concrete Paving =	$90.44
Gas Company Cost for Concrete Paving =	$90.44
Estimated Cost of Asphalt per SY (Foloino) =	$25.00
Estimated Cost of Asphalt per SY (DLC) =	$25.00
Estimated Cost of Asphalt per SY (Gas) =	$25.00
Total Cost of Restoration =	$115.44

Asphalt Cost Per Sy Price Check

Asphalt Cost per Ton =	$120.00
Density of Asphalt per Ton (lb/cu ft) =	152
Overlay Thickness =	0.33
Cubic Feet per Sy of Pavement Patching =	2.97
Tons of Asphalt per SY of Pavement Patching =	0.22572
Cost per Sy of Pavement Patching =	$27.09

Cost Transfer to PWSA (INCLUDING DOMI/PWSA SIDE AGREEMENT)			
Contractor	SY	%	Cost
DLC	2,765.85	30.75%	$ 319,281.15
Peoples Gas	3,313.21	36.83%	$ 382,466.09
DOMI	2,916.76	32.42%	$ 336,700.86
Total Cost Transfer to PWSA	8,995.82		1,038,448.11

Total PWSA Paving Responsibility	20,234.92	$ 2,335,854.83

Paving Responsibility Before Agreement			
Contractor	SY	%	Cost
DLC	6,535.37	30.99%	$ 754,422.50
Peoples Gas	3,313.21	15.71%	$ 382,466.09
PWSA	11,239.11	53.30%	$ 1,297,406.72
DOMI	-	0.00%	$ -
Total Pavement Restoration	21,087.69		$ 2,434,295.32

Cost Transfer to PWSA (EXCLUDING DOMI/PWSA SIDE AGREEMENT)			
Contractor	SY	%	Cost
DLC	2,765.85	45.50%	$ 319,281.15
Peoples Gas	3,313.21	54.50%	$ 382,466.09
Total Cost Transfer to PWSA	6,079.06		701,747.24

As-Built Total Value of Utility Cost Share Ageement			
DLC	2,765.85	16.6%	$ 319,281.15
Gas Company	3,313.21	19.9%	$ 382,466.09
PWSA	10,587.96	63.5%	$ 1,222,239.88
Totals	16,667.02		$ 1,923,987.12

Domi Quantity Outside Agreement	2,916.76		$ 336,700.86

DLC Paving Breakdown

Original Paving Quantity	6,535.37		
Amount of Paving in Cost Share Agreement	2,765.85	42%	
Amount of Paving Completed	1,133.88	17%	$ 130,890.91
Amount of Pavement DLC will complete after Folino completes paving	2,635.65	40%	$ 304,250.45

Utility Breakdown Summay

PWSA Line Item Number	R-1	R-12	R-21	U-12	U-13	CMCI Estimated Cost From Hatch
Description	Concrete Base Repair (CY)	Binder-Primary Street (SY)	Crushed Subbase (CY)	Flag Person (HR)	Off Duty Uniformed	$360,000.00
Folino Original BRT Pricing	$326.88	$17.77	$39.91	$77.33	$60.76	
Folino Pricing as of 6/24/22 Estimate	$410.28	$21.83	$60.41	$79.33	$60.76	
% Increase	20%	19%	34%	3%	0%	
Assumed Hrs.				3000	2700	

Utility	SY	CY	Percentage	Base Repair Costs	Binder Cost	*Aggregate Cost	Flag Person Hrs. Costs	Off Duty Uniformed Costs	CMCI Estimated Cost From Hatch
DLC	2,765.85	765.22	14.1%	$313,954.46	$60,378.51	$4,622.69	$33,611.73	$23,169.34	$50,843.40
Peoples	3,313.21	840.38	16.9%	$344,791.11	$72,327.37	$5,076.74	$40,263.47	$27,754.54	$60,905.28
DOMI	2,916.76	806.97	14.9%	$331,083.65	$63,672.87	$48,749.06	$35,445.64	$24,433.50	$53,617.51
PWSA	10,587.96	2929.33	54.1%	$1,201,845.51	$231,135.17	$17,696.08	$128,669.16	$88,694.62	$194,633.80
TOTALS	19,583.78	5,341.90	100.0%	$2,191,674.73	$427,513.92	$76,144.57	$237,990.00	$164,052.00	$360,000.00

Summary					
Utility	Folino Pricing as of 6/24/22 Estimate	DLC Estimate	Difference	Percent increase from original costs	Percentage Check
DLC	$486,580.13	$319,281.15	$167,298.98	34.4%	14.073686%
Peoples	$551,118.50	$382,466.09	$168,652.41	30.6%	15.940373%
DOMI	$557,002.24	$336,700.00	$220,302.24	39.6%	16.110552%
PWSA	$1,862,674.35	$1,222,239.88	$640,434.47	34.4%	53.875389%
TOTALS	$3,457,375.22	$2,260,687.12	$1,196,688.10	34.6%	100.000000%

*Aggregate Cost	
DLC	10% of CY
Peoples	10% of CY
DOMI	100% of CY
PWSA	10% of CY

EXHIBIT B
PWSA and A. Folino for the
PWSA Bus Rapid Transit Water Distribution Improvement Project,
PWSA Project Number 2020-325-102-0

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THE PITTSBURGH WATER AND SEWER AUTHORITY
BRT WATER DISTRIBUTION IMPROVEMENTS
PWSA Project No. 2020-325-102-0

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

AGREEMENT
BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

Prepared by

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ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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(202) 347-7474
www.acec.org

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1801 Alexander Bell Drive, Reston, VA 20191-4400
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AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between The Pittsburgh Water and Sewer Authority ("Owner") and A Folino Construction, Inc. ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Work of the Contract includes the construction of water distribution improvements in the public rights-of-way of Fifth and Forbes Avenues in the Uptown neighborhood of the City of Pittsburgh. The project area extends from between Sixth Avenue and the Birmingham Bridge and the new water mains to be installed range in size from 6-inch to 24-inch diameter.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Bus Rapid Transit Water Distribution Improvements; PWSA Project No. 2020-325-102-0

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by GAI Consultants ("Engineer")

3.02 The Owner has retained Hatch Associates Consultants, Inc. ("Construction Manager") to act as Owner's Representative as defined in the General Conditions.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 270 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment no later than 365 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the

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delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. The parties acknowledge and agree that the liquidated damages assessed herein are not a penalty, but rather represent a reasonable estimate of Owner's damages, as a result of the actions of Contractor. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner $ 1000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete. Owner may, if it so elects, deduct Liquid Damages from the Contractor's Progress Payments.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment in accordance with the General Conditions, Contractor shall pay Owner $ 1000 for each day that expires after such time until the Work is completed and ready for final payment. Owner may, if it so elects, deduct Liquid Damages from the Contractor's Final Payment.

3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4. Milestones: Contractor shall pay Owner $ 1,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of any Milestone established under the Contract, until such Milestone is achieved. Owner may, if it so elects, deduct Liquid Damages from a Contractor's Progress Payment.

4.04 *Special Damages*

A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) fines that may be imposed because of the contractors' negligence, and (3) for the costs reasonably incurred by Owner for additional engineering, construction management services, observation, inspection, and administrative services required after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

A. For all Unit Price Work, the Contract Price will be determined upon approval of each invoice and will be the sum of all owner approved invoices for the Work. Invoice amounts will be determined by multiplying the approved quantity for each Unit of Work as verified in the field by the Unit Price in the Bid form. Unit prices are in accordance with the Contractors' Bid and total amount not-to-exceed $11,899,999.00.

B. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

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ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Construction Manager, Engineer, and Owner as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Progress payments become due forty-five (45) days after presentation of the Application for Payment to Owner with Construction Manager's and Engineer's recommendation for payment, as provided in Paragraph 6.02.A.1 below and Article 15 of the General Conditions, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion and until fifty (50%) percent of the Work is completed and approved as determined by Construction Manager, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

   a. Ninety [90%] percent of Work completed (with the balance being retainage).; and

   b. Ninety [90%] percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. At the time in which the Construction Manager determines that fifty (50%) percent of the Work is completed, fifty (50%) percent of the withheld retainage shall be paid to the Contractor.

3. Prior to Substantial Completion and after fifty (50%) percent of the Work is completed and approved as determined by Construction Manager, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

   a. Ninety-five [95%] percent of Work completed (with the balance being retainage).; and

   b. Ninety- five [95%] percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to one hundred [100%] percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less [150%] percent of Construction Manager's and Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

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6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Construction Manager and Engineer as provided in said Paragraph 15.06. Prior to requesting final payment, the Contractor shall have provided all close out documentation and the required maintenance bond. With the final payment request the Contractor will provide a final release of liens relieving the Owner, from any debts and disputes the contractor may have with vendors, manufacturers, suppliers, consultants, and/or subcontractors

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of six (6%) percent per annum (not compounded).

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

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G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Construction Manager and Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 8, inclusive).
2. Performance Bond.
3. Payment Bond.
4. Other Bonds.
5. General Conditions (pages 1 to 92, inclusive).
6. Supplementary Conditions (pages 1 to 10, inclusive).
7. Specifications as listed in the table of contents of the Project Manual.
8. Drawings (not attached but incorporated by reference) consisting of 166 sheets with each sheet bearing the following general title: Bus Rapid Transit Water Distribution Improvements.
9. Addenda (numbers 1 to 3, inclusive).
10. Special Provisions.
11. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid Form (pages 1 to 5, inclusive).
    b. Supplier Diversity Program and Commitment Form.
12. The following which may be delivered or issued on or after the Notice of Award of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Approved schedules as required in the "General" and "Supplemental Conditions"
    c. Performance Bond
    d. Other Bonds
    e. Construction Change Authorization.

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f. Change Orders.

g. Field Instruction Directions.

B. There are no Contract Documents other than those listed above in this Article 9.

C. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

9.02 *Priority:* Wherever possible, the Contract Documents are to be read as cumulative and complementary. However, to the extent that any provisions of any of the Contract Documents are or may be inconsistent, the more stringent requirement shall apply, as determined by Owner.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

A. Contractor is not permitted to assign any rights under or interests in the Contract, without the written consent of Owner; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge Contractor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of

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Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on 3/31/2021 (which is the Effective Date of the Contract).

OWNER:	CONTRACTOR:
William J. Pickering	A. Folino Construction, Inc.
By: William J. Pickering	By:
Title: Chief Executive Officer	Title: Dino Folino, Vice President
By: Edward Barca	
Title: Director of Finance	*(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*
Attest: Debra Gibson	Attest: Connie Folino
Title: Executive Admin	Title: Connie Folino, Secretary
Address for giving notices: 1200 Penn Avenue	Address for giving notices: 109 Dark Hollow RD,
Pittsburgh, PA 15222	Oakmont, PA 15139
	License No.: 641674 *(where applicable)*

Attest: Shannon F. Barkley

Title: Corporate Counsel/Administration

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THE PITTSBURGH WATER AND SEWER AUTHORITY
BRT WATER DISTRIBUTION IMPROVEMENTS
PWSA Project No. 2020-325-102-0

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

BID FORM
FOR CONSTRUCTION CONTRACTS

Prepared by

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

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BID FORM

BUS RAPID TRANSIT WATER DISTRIBUTION IMPROVEMENTS

PWSA Project No. 2020-325-102-0

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

The Pittsburgh Water and Sewer Authority
Attention: Procurement Department
1200 Penn Avenue
Pittsburgh, PA 15222

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted by Owner, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for ninety (90) days after the Bid opening or for such longer period of time that Bidder may agree to, in writing, upon the request of Owner. If an extension of the acceptance phase is necessary and agreed to, the Owner will issue a written agreement to the Bidder.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda and certifies that all clarifications or revisions made by addenda have been incorporated into the bid pricing for this project. Failure to acknowledge addenda may result in the bidders' proposal being non responsive and rejected in its entirety:

Addendum No.	Addendum, Date
1	2/8/21
2	2/15/21
3	2/17/21

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and has become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all building codes, permit requirements, jurisdictional restrictions and limitations, and Laws and Regulations that may affect cost,

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progress, and performance of the Work and all such costs have been included in the bid submitted to Owner.

D. Bidder has carefully studied any and all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings. Failure on the Bidder's part to become familiar with specific work area conditions and restrictions that are evident and/or made known to the contractor will not be accepted as a reason for a claimed change in condition affecting the contract cost.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents. Bidder is aware of the restrictions and coordination requirements with the Owner's Operations to make work areas available and confirms these restrictions will not impact the project duration

H. Bidder has given Owner and Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by the Engineer I has satisfactorily resolved all written notices issued by the Bidder(s) to the Owner for response(s) to the Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

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ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the e execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the Unit price(s) in the Bonfire pricing bid table.

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit and any other associated costs for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents. The Owner reserves the right to increase or decrease the unit price item quantities as needed for the benefit of the project or changes that may become necessary for the operation of the Owners business. The owner reserves the right to reallocate unit price costs and distribute unused amounts to other bid budgeted items, and Owner shall not be bound by or required to purchase or compensate Bidder for such approximate amounts.

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ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Provisions for liquidated damages for failure to timely attain milestone, substantial completing of the work for final payment, one set forth in the agreement.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. List of Proposed Subcontractors;

C. List of Proposed Suppliers; (this item may not be applicable)

D. List of Project References;

E. Evidence of authority to do business in the location of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;

F. Contractor's License No.: 641074 or Evidence of Bidder's ability to obtain a Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;

G. Required Bidder Qualification Statement with supporting data; and

H. Supplier Diversity Program and Commitment Form;

I. Include all attachments required by the "C-451 Qualification Statement" referenced in the Bid Solicitation.

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters and as defined in the bid documents have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

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ARTICLE 9 – BID SUBMITTAL

BIDDER:

A Folino Construction, Inc.

By:
[Signature]

[Printed name] Dino Folino, VP

Attest:
[Signature]

[Printed name] Connie Folino

Title: Secretary

Submittal Date: 2-16-21

Address for giving notice: 109 Dark Hollow Rd.
Oakmont PA 15139

Telephone Number: (412) 820-2800

Fax Number: (412) 820-2808

Contact Name and e-mail address: Dino Folino, VP / Contracts@afolino.com

Bidder's License No.: 041674

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Schedule of Prices - 2020-325-102-0 Bus Rapid Transit Water Distribution Improvements - A Folino Construction, Inc.

#	PWSA Item No.	Description	UOM	Estimated Quantity	Unit Price	Extended Cost
#0-1	U-1	Mobilization / Demobilization, Permits, Bonds and Insurance, Maintenance and Protection of Traffic	LS	1	$ 528,043.09	$ 528,043.09
#0-2	U-4	Rock & Obstruction Excavation, All Depths	CY	10	$ 61.46	$ 614.60
#0-3	U-5	Exploratory Excavation and Backfill	CY	200	$ 97.74	$ 19,548.00
#0-4	U-7	Additional Bedding Material, As Directed	CY	100	$ 44.74	$ 4,474.00
#0-5	U-8	Concrete Encasement	CY	120	$ 214.20	$ 25,704.00
#0-6	U-9	Concrete Anchors and Thrust Blocks	CY	380	$ 243.91	$ 92,685.80
#0-7	U-10	Flowable Fill	CY	1130	$ 205.31	$ 232,000.30
#0-8	U-11	Bypass/Dewatering Pumping as Directed	MHR	80	$ 40.32	$ 3,225.60
#0-9	U-12	Flag Person	MHR	900	$ 77.33	$ 69,597.00
#0-10	U-13	Off Duty Uniformed Officer	MHR	250	$ 60.76	$ 15,190.00
#0-11	U-14	Miscellaneous Work Time for a Full Crew	CHR	304	$ 632.25	$ 192,204.00
#0-12	U-15	Miscellaneous Premium Work for Full Time Crew	CHR	320	$ 365.84	$ 117,068.80
#0-13	U-501	Erosion and Sedimentation Control	LS	1	$ 11,266.57	$ 11,266.57
#0-14	W-1	4" Ductile Iron Pipe, Class 52, Zinc Coated	LF	270	$ 137.35	$ 37,084.50
#0-15	W-2	6" Ductile Iron Pipe, Class 52, Zinc Coated	LF	1710	$ 110.77	$ 189,416.70
#0-16	W-3	8" Ductile Iron Pipe, Class 52, Zinc Coated	LF	2030	$ 143.43	$ 291,162.90
#0-17	W-5	12" Ductile Iron Pipe, Class 52, Zinc Coated	LF	360	$ 166.83	$ 60,058.80
#0-18	W-6	16" Ductile Iron Pipe, Class 52, Zinc Coated	LF	8710	$ 180.60	$ 1,573,026.00
#0-19	W-8	20" Ductile Iron Pipe, Class 52, Zinc Coated	LF	5430	$ 201.99	$ 1,096,805.70
#0-20	W-9	24" Ductile Iron Pipe, Class 52, Zinc Coated	LF	450	$ 260.62	$ 117,279.00
#0-21	W-15	Public Water Service Line - PEXa - All Sizes	LF	2652	$ 63.96	$ 169,621.92
#0-22	W-19	Extra Waterline Trench Excavation and Backfill (Greater than 8 feet deep)	CY	550	$ 104.08	$ 57,244.00
#0-23	W-20	Service Line Connection - Wet or Dry Tap (1")	EA	169	$ 747.27	$ 126,288.63
#0-24	W-21	Mechanical Joint Ductile Iron Fittings	LB	112250	$ 7.20	$ 808,200.00
#0-25	W-23	Medium Extension Gate Box - Cast Iron, Round Lid	EA	260	$ 551.52	$ 143,395.20
#0-26	W-24	Remove and Salvage Existing Deep Frame and Cover, Risers and/or M.E.G. Box Outside of Trench	EA	12	$ 117.60	$ 1,411.20
#0-27	W-26	Precast Valve Manhole (8 Feet Depth)	EA	81	$ 6,150.79	$ 498,213.99
#0-28	W-28	Reset Existing Fire Hydrant to New Water Line	EA	12	$ 2,418.38	$ 29,020.56
#0-29	W-29	Install New Fire Hydrant	EA	40	$ 5,069.04	$ 202,761.60
#0-30	W-32	4" to 12" Sewer Lateral Encountered in Water Line Trench	LF	87	$ 167.10	$ 14,537.70
#0-31	W-33	15" to 18" Sewer Encountered in Water Line Trench	LF	220	$ 226.33	$ 49,792.60
#0-32	W-35	Gate Valve Installed as Part of New Water Line - 6"	EA	121	$ 1,218.38	$ 147,423.98
#0-33	W-36	Gate Valve Installed as Part of New Water Line - 8"	EA	52	$ 1,567.22	$ 81,495.44
#0-34	W-38	Gate Valve Installed as Part of New Water Line - 12"	EA	6	$ 2,814.75	$ 16,888.50
#0-35	W-39	Gate Valve Installed as Part of New Water Line - 16"	EA	56	$ 10,151.65	$ 568,492.40
#0-36	W-41	Gate Valve Installed as Part of New Water Line - 20"	EA	24	$ 18,397.13	$ 441,531.12
#0-37	W-42	Gate Valve Installed as Part of New Water Line - 24"	EA	2	$ 24,428.56	$ 48,857.12
#0-38	W-59	Waterline - Line Stop (Single) - 6" through 18"	IN	468	$ 795.86	$ 372,462.48
#0-39	W-61	Waterline - Line Stop (Single) - 20" through 24"	IN	44	$ 781.20	$ 34,372.80
#0-40	W-72	Water Service Line Termination	EA	66	$ 2,313.43	$ 152,686.38
#0-41	W-86	Service Line Material Verification	EA	241	$ 856.01	$ 206,298.41
#0-42	W-87	Private Water Service Line Replacement, 2" Diameter and Less – 0 to 20 LF in Total Length	EA	134	$ 3,261.84	$ 437,086.56

#0-43	W-88	Private Water Service Line Replacement, 2" Diameter and Less – Greater Than 20 LF in Total Length	LF	1052	$ 44.06	$ 46,351.12
#0-44	W-90	Installation of Service Line Through Concrete Floor	EA	4	$ 1,606.42	$ 6,425.68
#0-45	W-95	Remove and salvage existing Fire Hydrant	EA	40	$ 452.74	$ 18,109.60
#0-46	W-96	Washout Manhole Removal	EA	8	$ 1,095.96	$ 8,767.68
#0-47	S-63	Catch Basin - Type 13 Modified	EA	2	$ 5,342.92	$ 10,685.84
#0-48	S-65	Catch Basin - Type 13	EA	2	$ 5,342.92	$ 10,685.84
#0-49	S-69	Catch Basin/Inlet Tie-in	EA	4	$ 444.01	$ 1,776.04
#0-50	R-1	Concrete Paving Base (All Classes)	CY	3962	$ 326.88	$ 1,295,098.56
#0-51	R-2	Reinforced Concrete Street and Driveways	CY	60	$ 407.54	$ 24,452.40
#0-52	R-3	Concrete Sidewalk and ADA Handicapped Ramp	SY	1360	$ 106.32	$ 144,595.20
#0-53	R-4	Concrete Deep Curb and Deep Radius Curb	LF	2016	$ 65.70	$ 132,451.20
#0-54	R-5	Concrete Deck Curb and Deck Radius Curb (All Finishes)	LF	224	$ 65.70	$ 14,716.80
#0-55	R-7	Cold Patch Bituminous Pavement Replacement	TON	1171	$ 104.95	$ 122,896.45
#0-56	R-11	Bituminous Pavement Replacement - Wearing Course	SY	14195	$ 12.16	$ 172,611.20
#0-57	R-12	Bituminous Pavement Replacement - Binder Course - Primary Street	SY	12780	$ 17.77	$ 227,100.60
#0-58	R-13	Bituminous Pavement Replacement - Binder Course - Secondary Street	SY	1415	$ 20.70	$ 29,290.50
#0-59	R-15	Brick Street Repaving	SY	65	$ 60.74	$ 3,948.10
#0-60	R-17	Salvage and Deliver Blockstone and Brick	SY	9269	$ 3.22	$ 29,846.18
#0-61	R-19	Landscape Restoration	SY	170	$ 16.83	$ 2,861.10
#0-62	R-21	Crushed Stone Sub-Base	CY	3510	$ 39.91	$ 140,084.10
#0-63	R-22	4" Underdrain	LF	2240	$ 12.54	$ 28,089.60
#0-64	R-25	4" Traffic Markings	LF	20255	$ 0.55	$ 11,140.25
#0-65	R-25A	12" Traffic Markings	LF	2819	$ 4.97	$ 14,010.43
#0-66	R-25B	24" Traffic Markings	LF	344	$ 9.39	$ 3,230.16
#0-67	R-27	Traffic Loop Detector (Loop - 10' x 20')	EA	3	$ 1,988.55	$ 5,965.65
#0-68	R-38	Dry Stone / Block Wall Replacement	SY	42	$ 53.81	$ 2,260.02
#0-69	R-39	Concrete Steps or Concrete Retaining Wall Replacement	CY	30	$ 418.65	$ 12,559.50
#0-70	R-45	Concrete Cap with Bond Breaker	CY	133	$ 418.65	$ 55,680.45
#0-71	R-45A	Temporary Winter Concrete Base and Cap	CY	95	$ 418.64	$ 39,770.80
					Total	**$ 11,899,999.00**

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Bond No. 30126102

THE PITTSBURGH WATER AND SEWER AUTHORITY

Project Name: Bus Rapid Transit Water Distribution Improvements

Project No.: 2020-325-102-0

Project Description:

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, The Pittsburgh Water and Sewer Authority (the "Authority" or the "Obligee") has awarded to A. Folino Construction, Inc., 109 Dark Hollow Road, Oakmont, PA 15139, as Principal, a contract dated the 3/31/2021 day of _____, 20___ (the "Contract"), which Contract is by this reference made a part hereof, for the above-referenced Project;

AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof.

NOW, THEREFORE, we, the undersigned Principal and Western Surety Company, 151 N. Franklin Street, Chicago, Il 60606, as Surety, are held and firmly bound unto the Authority in the sum of Eleven Million Eight Hundred Ninety-Nine Thousand Nine Hundred Ninety-Nine and 00/100 Dollars ($11,899,999.00), to be paid to the Authority or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

1. THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal or its heirs, executors, administrators, successors, or assigns approved by the Authority shall promptly and faithfully perform the convenants, terms, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by the Authority, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions and agreements of any alteration of the Contract made as therein provided on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless the Authority as stipulated in the Contract, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.
2. No extension of time, change, alteration, modification or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.
3. Whenever Principal shall be and declared by the Authority to be in default under the Contract, Surety shall promptly remedy the default, and shall:
   - 3.1 Undertake through its agents or independent contractors, reasonably acceptable to the Authority, to complete the Contract in accordance with its terms and conditions and pay and perform all obligations of the Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages or, at Surety's election or if required by the Authority,
   - 3.2 Obtain a bid or bids for completing the Contract in accordance with its terms and conditions and, upon determination by the Authority of the lowest responsible bidder, arrange for a contract between such bidder and the Authority and make available as the work progresses (even though

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there should be a default or a series of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages. The term "balance of the Contract Sum," as used herein, shall mean the total amount payable by the Authority to the Principal under the Contract and any amendments thereto, less the amount paid by the Authority to the Principal.

4. Notwithstanding the provisions of section 3 above, should the Obligee reasonably determine that the progress of the Project will be unreasonably delayed, that delay damages will be assessed, or that an emergency threatening injury to persons or property will exist unless immediate action is taken to cure the Principal's default, the Obligee may upon three days written notice to the Surety re-let or complete the Contract. The reasonable cost of such re-letting or completion shall be considered as part of the cost of completion.

5. The Surety is obligated without duplication for:

   5.1 all costs associated with performing responsibilities of the Principal for furnishing materials and completion of the Contract.

   5.2 additional legal, design professional, and delay costs associated with the Principal's default; and

   5.3 consequential and liquidated damages, or if no liquidated damage provision exists under the Contract, actual damages caused by delayed performance or non-performance of the Principal.

6. In any event, Surety's total obligations under this bond shall not exceed the penal amount set forth above.

7. No right of action shall accrue on this bond to or for the use of any other person, corporation or other entity other than the Authority or its successors or assigns.

8. Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this 3/31/2021 day of _____, 20____.

PRINCIPAL:

A. Folino Construction, Inc.

By: _____

Print name: Dino Folino

Title: Vice President

SURETY:

Western Surety Company

By: _____

Print name: Christine M. Scott

Title: Attorney-in-Fact

A. Folino Construction, Inc.
109 Dark Hollow Road
Oakmont, PA 15139

Address for notices:

Western Surety Company
151 N. Franklin Street
Chicago, IL 60606

NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached.

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Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Douglas M Free, Thomas J Philbin, Robert J Hippert, Sarah Eberhardt, Christine M Scott, Individually

of Pittsburgh, PA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 15th day of March, 2021.

WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota
County of Minnehaha } ss

On this 15th day of March, 2021, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
March 2, 2026

M. BENT
NOTARY PUBLIC
SOUTH DAKOTA

M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this day of , .

WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Form F4280-7-2012

Go to www.cnasurety.com > Owner / Obligee Services > Validate Bond Coverage, if you want to verify bond authenticity.

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Labor and Materials Bond

Bond No. 30126102

KNOW ALL MEN BY THESE PRESENTS,

THAT A. Folino Construction, Inc., 109 Dark Hollow Road, Oakmont, PA 15139

as principal, and Western Surety Company, 151 N. Franklin Street, Chicago, IL 60606

as surety, are held and firmly bound unto the PWSA in the sum of Eleven Million Eight Hundred Ninety-Nine Thousand Nine Hundred Ninety-Nine and ----------00/100 Dollars

to be paid to the PWSA aforesaid, its chosen attorneys, successors or assigns, to which payment, will and truly be made, we do bind ourselves, our heirs, executors, administrators, successors and assigns, and every one of them, jointly and severity, firmly by these presents:

WITNESS our hands and seals the 3/31/2021 day of _____, in the year of our Lord, two thousand and _____.

WHEREAS, the above bounden principal obligor, in and by a certain contract with the PWSA, dated the _____ day of _____, 20_____ agreed to Project No. 2020-325-102-0 Bus Rapid Transit Water Distribution Improvements

to be done under and in pursuance of the Acts of Assembly and Resolutions of the Authority relating thereto;

Now, therefore, the conditions of this obligation is such that; if the above bounden principal shall and will promptly pay or cause to be paid all sums of money which may be due any person, co-partnership, association or corporation, for all material furnished and labor supplied or performed on the prosecution of the work, whether or not said material or labor enter into and become component parts of the work or improvement contemplated, then this obligation to be void, otherwise to remain in full force, and effect.

The principal and surety further jointly and severally agree with the oblige herein that every person, co-partnership, association or corporation who, whether as sub-contractor or otherwise, furnished material or supplied or performed labor in the prosecution of the work as above provided and who has not been paid therefor, may sue in assumpsit on this bond in the name of PWSA, for his, their or its use, prosecute the same to final judgment for such or sums as may be justly due him, them or it, and have execution issued thereon, provided, however, that the PWSA shall not be liable for the payment of any costs or expense of any such suit.

Recovery of any person, co-partnership, association, or corporation hereunder shall be subject to the provisions of the Municipality Authorities Act of 1945, P.L. 382, as amended (533 P.S. SUPP.) Section 312A, to the same extent as if said provisions were fully incorporated in this bond; and to all applicable laws including but not limited to the Public Works Contractor's Bond Law of 1967, §P.S. Sec. 191, et seq., provided that no suit shall be entered upon this bond after one year from the date of the final settlement under the aforesaid contract by the Pittsburgh Water and Sewer Authority with the contractors.

It is further agreed that any alterations which may be made in the terms of the contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it, or the giving by the PWSA of any extensions of time for the performance of the contract or any other forbearance on the part of either the PWSA or the principal to the other, shall not in any way release the principal and the surety or either or any of them, their heirs, executors, administrators, successors or assigns, from their liability hereunder notice to the surety or sureties of any such alteration, extension or forbearance being hereby waived.

Attest:

Connie Folino
FOR BIDDER

Connie Folino, Secretary
SECRETARY-TREASURER

A. Folino Construction, Inc. (Seal)
COMPANY NAME

(Seal)
PRESIDENT – VICE PRESIDENT
Dino Folino, Vice President

Sealed and Delivered in Presence of

For Surety Company
Edward L. Scott

Edward L. Scott, Witness

Western Surety Company (Seal)
BONDING COMPANY

Christine M. Scott (Seal)
ATTORNEY-IN-FACT
Christine M. Scott, Attorney-in-Fact

PWSA refers to The Pittsburgh Water and Sewer Authority

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 11/30/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Marthinsen & Salvitti Insurance Group, Inc
140 Park Avenue
Washington PA 15301

CONTACT NAME: Milana M Redlinger
PHONE (A/C, No, Ext): (724)222-8400 FAX (A/C, No): (724)222-8141
E-MAIL ADDRESS: mredlinger@msipa.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Acadia	31325
INSURER B : Berkley National Insurance Company	38911
INSURER C : Evanston Insurance Company	35378
INSURER D : Union Insurance Company	25844
INSURER E :	
INSURER F :	

INSURED
A Folino Construction Inc
109 Dark Hollow Rd.
Oakmont PA 15139

COVERAGES CERTIFICATE NUMBER: 21-22 Al REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
D	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE / X OCCUR X Primary Non Contributory X Blanket Waiver of Subrog GEN'L AGGREGATE LIMIT APPLIES PER: POLICY / X PRO-JECT / LOC OTHER:			CPA 4460328-44 Blanket additional insured incl ongoing & completed ops with written contract Pollution Sublimit $100,000 Contributory & Waiver of Sub	12/11/2021	12/11/2022	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Employee Benefits	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 1,000,000
D	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS / SCHEDULED AUTOS X HIRED AUTOS / X NON-OWNED AUTOS X Comp $5000 ded / X Coll $5000 ded			CAA 4460329-43 CA9948 Pollution Included Blanket Addl.Insured & Waiver of Sub incl with written contract - Blanket 30 Days	12/11/2021	12/11/2022	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
D	X UMBRELLA LIAB / X OCCUR EXCESS LIAB / CLAIMS-MADE DED / X RETENTION $ 0			CPA 4460328-44 Follow Form Umbrella incl Addl days - Primary Non Cont	12/11/2021	12/11/2022	EACH OCCURRENCE AGGREGATE	$ 10,000,000 $ 10,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N: Y / N/A If yes, describe under DESCRIPTION OF OPERATIONS below			WCA 4473440-43 Blanket 30 Days Notice - WV	12/11/2021	12/11/2022	X PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
B	Leased/rented/borrow 750,000			MIM 1032214-52	12/11/2021	12/11/2022	Cont Equip - $5000 Ded	$2mm instal
C	Pollution 5mm 5mm $10,000Ded			CPLMOL111965	7/17/2022	7/17/2023	Equip Lmt 24,154,203	floater

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

REVISED 8-9-22 - Job 21-18006 PWSA #2020-325-102-0. Bus Rapid Transit Water Distribution Improvements. See forms attached. The Pittsburgh Water and Sewer Authority, Hatch Associates Consultants, Inc., AECOM & GAI Consultants, City of Pittsburgh, Duquesne Light & Peoples Gas are included as an Additional Insured with respect to the General Liability as required by written contract. Waiver of Subrogation applies in favor of the Pittsburgh Water and Sewer Authority.

CERTIFICATE HOLDER

Pittsburgh Water and Sewer Authority
1200 Penn Avenue
Pittsburgh, PA 15222

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Milana Redlinger/MMR

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WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

Blanket Coverage - Any person or organization for whom the Named Insured has agreed by written contract to furnish this waiver.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective
12/11/2021

Policy No.
WCA 4473440 42

Endorsement No.

Premium

Insured
A Folino Construction Inc

Insurance Company:
Acadia Insurance Company

Countersigned by _____

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CHANGE IN NOTIFICATION

If "we" cancel this policy, other than for non-payment of premium, "we" will provide advance written notice of such cancellation to the person(s) or organization(s) listed below. The notification will be at least the number of days shown in the schedule before the effective date of cancellation.

1. **Number of Days Notice:** 30

2. **Name and Mailing Address/ Email Address:**

   Blanket all jobs requiring a written contract

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CHANGE IN NOTIFICATION

If "we" cancel this policy, other than for non-payment of premium, "we" will provide advance written notice of such cancellation to the person(s) or organization(s) listed below. The notification will be at least the number of days shown in the schedule before the effective date of cancellation.

1. **Number of Days Notice:** 30

2. **Name and Mailing Address/ Email Address:**

   Blanket all jobs requiring a written contract

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CHANGE IN NOTIFICATION

If "we" cancel this policy, other than for non-payment of premium, "we" will provide advance written notice of such cancellation to the person(s) or organization(s) listed below. The notification will be at least the number of days shown in the schedule before the effective date of cancellation.

1. **Number of Days Notice:** 30

2. **Name and Mailing Address/ Email Address:**

   Blanket all jobs requring a written contract

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - OWNERS, LESSEES, OR CONTRACTORS - COMPLETED OPERATIONS COVERAGE - AUTOMATIC STATUS WHEN REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. **Section II - Who Is An Insured** is amended to include as an additional insured any person or organization, but only when:

1. You have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy except for a contractor/project manager or owner of a construction project in which you are involved that is included in a "consolidated (wrap-up) insurance program"; and
2. Such written contract or written agreement has been executed prior to the "bodily injury" or "property damage".

B. The insurance provided to the additional insured by this endorsement is further limited as follows:

1. That person or organization is an additional insured only for liability for "bodily injury" or "property damage":
   a. Due to your negligence and specifically caused by "your work" for the additional insured which is the subject of the written contract or agreement; and
   b. Included within the "products-completed operations hazard".
2. The Limits of Insurance applicable to the additional insured are those specified in the written contract or written agreement, or in the Declarations of this policy, whichever is less. These Limits of Insurance are inclusive of, and not in addition to, the Limits of Insurance shown in the Declarations.
3. The insurance provided to the additional insured by this endorsement and by paragraph f. of the definition of "insured contract" under **DEFINITIONS (Section V)**, as amended by this endorsement, does not apply to "bodily injury" or "property damage" beyond:
   a. The effective date of any deletion of, any removal of, or any non-continuance of, this additional insured endorsement from this policy, or
   b. The period of time required by the written contract or written agreement.
4. The insurance provided to the additional insured does not apply to "bodily injury" or "property damage" arising out of an architect's, engineer's or surveyor's having rendered or having failed to render any professional services, including, but not limited to:
   a. The preparation, approval or the failure to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
   b. Supervisory, inspection, architectural or engineering activities.

   This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of, or the failure to render, any professional architectural, engineering or surveying services.

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C. With respect to the coverage provided under this endorsement, **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS**, is amended as follows:

1. The following is added to the Duties In The Event of Occurrence, Offense, Claim or Suit Condition:

   As a condition precedent to coverage and/or defense, an additional insured under this endorsement must give us as soon as practicable notice of an "occurrence" which may result in a claim or "suit" under this insurance.

D. With respect to the coverage provided under this endorsement, **SECTION V - DEFINITIONS:** is changed as follows:

1. The definition of "insured contract" is changed by replacing paragraph **f.** of that definition with the following:

   "Insured contract" means:

   f. That part of any other contract or agreement pertaining to your business (including an indemnification of a municipality in connection with work performed for a municipality) under which you assume the tort liability of another party to pay for "bodily injury" or "property damage" to a third person or organization, provided the "bodily injury" or "property damage" is specifically caused by "your work" and included in the "products-completed operations hazard". Tort liability means a liability that would be imposed by law in the absence of any contract or agreement.

   Paragraph **f.** does not include that part of any contract or agreement:

   (1) That indemnifies a railroad for "bodily injury" or "property damage" arising out of construction or demolition operations, within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, roadbeds, tunnel, underpass or crossing;

   (2) That indemnifies an architect, engineer or surveyor for injury or damage arising out of:

   (a) Preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

   (b) Giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage; or

   (3) Under which the insured, if an architect, engineer or surveyor, assumes liability for an injury or damage arising out of the insured's rendering or failure to render professional services, including those listed in **(2)** above and supervisory, inspection, architectural or engineering activities.

2. **The following definition is added :**

   "Consolidated (wrap-up) insurance program" means a construction, erection or demolition project for which the prime contractor/project manager or owner of the construction project has secured general liability insurance covering some or all of the contractors or subcontractors involved in the project, otherwise referred to as an Owner Controlled Insurance Program (O.C.I.P.) or Contractor Controlled Insurance Program (C.C.I.P.)

E. This endorsement does not provide coverage for liability resulting from the sole negligence of the additional insured.

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COMMERCIAL GENERAL LIABILITY
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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – AUTOMATIC STATUS WHEN REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. Section II – Who Is An Insured is amended to include as an additional insured any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

In the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured:

1. Only applies to the extent permitted by law; and
2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:
   a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
   b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

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2. "Bodily injury" or "property damage" occurring after:
   a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
   b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

   The most we will pay on behalf of the additional insured is the amount of insurance:

   1. Required by the contract or agreement you have entered into with the additional insured; or
   2. Available under the applicable Limits of Insurance shown in the Declarations;

   whichever is less.

   This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

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COMMERCIAL GENERAL LIABILITY
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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – AUTOMATIC STATUS FOR OTHER PARTIES WHEN REQUIRED IN WRITTEN CONSTRUCTION AGREEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. Section II – Who Is An Insured is amended to include as an additional insured:

1. Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy; and
2. Any other person or organization you are required to add as an additional insured under the contract or agreement described in Paragraph **1.** above.

Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

a. Your acts or omissions; or

b. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured described above:

a. Only applies to the extent permitted by law; and

b. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for the person or organization described in Paragraph **1.** above are completed.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

   a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

   b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of, or the failure to render, any professional architectural, engineering or surveying services.

2. "Bodily injury" or "property damage" occurring after:

   a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

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b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

The most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement described in Paragraph **A.1.**; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

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PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION (ADDITIONAL INSURED)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

Paragraph **(v)** is added to Paragraph **(1)(a)** of Paragraph **b. Excess Insurance** under Paragraph **4. Other Insurance** of **Section IV – Commercial General Liability Conditions**, as follows:

(1) This insurance is excess over:

(a) Any of the other insurance, whether primary, excess, contingent or on any other basis:

(v) That is available to any person or organization who has been added as an additional insured to this policy by endorsement.

However, with respect to an additional insured added by endorsement for liability caused, in whole or in part:

1. By your acts or omissions, or the acts or omissions of those acting on your behalf:

(a) In the performance of your ongoing operations; or

(b) In connection with your premises;

2. By your maintenance, operation or use of equipment leased to you by such person or organization; or

3. By "your work" performed for that additional insured and included in the "products-completed operations hazard";

this insurance shall be primary to and will not seek contribution from the additional insured's own insurance if you and such additional insured have agreed prior to loss in a written contract or written agreement, in effect during this policy period, that this insurance be primary and noncontributory as respects liability described in Subparagraph **(1)(a)(v)1.**, **(1)(a)(v)2.** or **(1)(a)(v)3.** above. However, this insurance, in all cases, is excess over any other liability insurance available to the additional insured to which such person or organization has been added as an additional insured.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

GENERAL LIABILITY ULTRA PLUS ENDORSEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SUMMARY OF COVERAGE EXTENSIONS

Provision	Name Of Coverage Extension	Included or Limit of Insurance
A.	Miscellaneous Additional Insureds	Included
B.	Expected Or Intended Injury Or Damage	Included
C.	Knowledge Of Occurrence	Included
D.	Legal Liability – Damage To Premises Rented To You (Fire, Lightning, Explosion, Smoke, Or Leakage From Automatic Fire Protective Systems)	$300,000
E.	Medical Payments	See Declarations
F.	Mobile Equipment Redefined	Included
G.	Newly Formed Or Acquired Organization, Partnership Or Limited Liability Company And Extended Period Of Coverage	Included
H.	Who Is An Insured – Amendment	Included
I.	Non-Owned Watercraft (Increased to maximum length of less than 51 feet)	Included
J.	Supplementary Payments – Increased Limits 1. Bail Bonds 2. Loss Of Earnings	 $ 3,000 $ 1,000
K.	Unintentional Omission Or Unintentional Error In Disclosure	Included
L.	Waiver Of Transfer Of Rights Of Recovery Against Others	Included
M.	Liberalization Clause	Included
N.	Incidental Medical Malpractice	Included

The above is a summary only. Please consult the specific provisions that follow for complete information on the extensions provided.

The provisions of the Commercial General Liability Coverage Part apply except as otherwise provided in this endorsement. This endorsement applies only if such Coverage Part is included in this policy.

A. MISCELLANEOUS ADDITIONAL INSUREDS

1. **Section II – Who Is An Insured** is amended to include as an insured any person or organization (referred to as an additional insured below) described in Paragraphs **A.1.c.(1)** through **A.1.c.(9)** below when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy, provided that:

   a. The written contract or written agreement is:

      (1) Currently in effect or becoming effective during the term of this policy; and

      (2) Fully executed by you and the additional insured prior to the "bodily

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injury", "property damage" or "personal and advertising injury".

b. The insurance afforded by this provision does not apply to any person or organization included as an additional insured by a separate endorsement issued by us and made a part of this policy or coverage part.

c. Only the following persons or organizations are additional insureds under this provision, with coverage for such additional insureds limited as provided herein:

(1) Persons or Organizations For Whom Operations Are Performed

(a) Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured to your policy; and

(b) Any other person or organization you are required to add as an additional insured under the contract or agreement described in paragraph **(a)** above.

(c) Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

(i) Your acts or omissions; or

(ii) The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

(d) With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

(i) "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

(1.1) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

(1.2) Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of, or the failure to render, any professional architectural, engineering or surveying services.

(ii) "Bodily injury" or "property damage" occurring after:

(1.1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

(1.2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

(2) Managers Or Lessors Of Premises

A manager or lessor of premises but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to

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you and subject to the following additional exclusions:

This insurance does not apply to:

(a) Any "occurrence" which takes place after you cease to be a tenant in that premises.

(b) Structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

(3) Mortgagee, Assignee Or Receiver

A mortgagee, assignee, or receiver but only with respect to their liability as mortgagee, assignee, or receiver and arising out of the ownership, maintenance, or use of a covered premises by you.

This insurance does not apply to structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

(4) Owners Or Other Interests From Whom Land Has Been Leased

An owner or other interest from whom land has been leased to you but only with respect to liability arising out of the ownership, maintenance or use of that part of the land leased to you and subject to the following additional exclusions:

This insurance does not apply to:

(a) Any "occurrence" which takes place after you cease to lease that land.

(b) Structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

(5) Lessor Of Leased Equipment

Any person(s) or organization(s) from whom you lease equipment but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your maintenance, operation or use of equipment leased to you by such person(s) or organization(s).

A person's or organization's status as an additional insured under this endorsement ends when their written contract or written agreement with you for such leased equipment ends.

This insurance does not apply to any "occurrence" which takes place after the equipment lease expires.

(6) State, Municipality, Governmental Agency Or Subdivision Or Other Political Subdivision – Permits Or Authorizations Relating To Premises

Any state, municipality, governmental agency or subdivision or other political subdivision subject to the following additional provisions:

(a) This insurance applies only with respect to:

(i) The following hazards for which the state, municipality, governmental agency or subdivision or other political subdivision has issued a permit or authorization in connection with premises you own, rent or control and to which this insurance applies:

(1.1) The existence, maintenance, repair, construction, erection or removal of advertising signs, awnings, canopies, cellar entrances, coal holes, driveways, manholes, marquees, hoist away openings, sidewalk vaults, street banners or decorations and similar exposures; or

(1.2) The construction, erection or removal of elevators; or

(1.3) The ownership, maintenance or use of any elevators covered by this insurance.

(ii) Operations performed by you or on your behalf for which the state, municipality, governmental agency or subdivision or other political subdivision has issued a permit or authorization.

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(b) This insurance does not apply to "bodily injury", "property damage" or "personal and advertising injury" arising out of operations performed for the state, municipality, governmental agency or subdivision or other political subdivision.

(7) Controlling Interest

Any person(s) or organization(s) with a controlling interest in the Named Insured but only with respect to their liability arising out of:

(a) Their financial control of you; or

(b) Premises they own, maintain or control while you lease or occupy these premises.

This insurance does not apply to structural alterations, new construction or demolition operations performed by or for such person(s) or organization(s).

(8) Co-Owner Of Insured Premises

A co-owner of a premises co-owned by you and covered under this insurance but only with respect to the co-owner's liability as co-owner of such premises.

(9) Vendors

(a) Any person(s) or organization(s) (referred to as vendor), but only with respect to "bodily injury" or "property damage" arising out of "your products" which are distributed or sold in the regular course of the vendor's business.

The insurance afforded the vendor does not apply to:

(i) "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a written contract or written agreement. This exclusion does not apply to liability for damages that the vendor would have in the absence of the written contract or written agreement;

(ii) Any express warranty unauthorized by you;

(iii) Any physical or chemical change in the product made intentionally by the vendor;

(iv) Repackaging, except when unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container;

(v) Any failure to make such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products;

(vi) Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product;

(vii) Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor; or

(viii) "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its own acts or omissions or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:

(1.1) The exceptions contained in Sub-paragraphs **(iv)** or **(vi)**; or

(1.2) Such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make

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in the usual course of business, in connection with the distribution or sale of the products.

(b) This insurance does not apply to any insured person or organization, from whom you have acquired products, or any ingredient, part or container, entering into, accompanying or containing such products.

2. With respect to coverage provided by this Provision **A. Miscellaneous Additional Insureds**, the following additional provisions apply:

   a. Any insurance provided to an additional insured designated under Paragraphs **A.1.c.(1)** through **A.1.c.(8)** above does not apply:

      (1) To "bodily injury" or "property damage" included within the "products-completed operations hazard"; or

      (2) To "bodily injury", "property damage" or "personal and advertising injury" arising out of the sole negligence of such additional insured.

   b. The insurance afforded to such additional insured only applies to the extent permitted by law.

   c. The insurance afforded to such additional insured will not be broader than that which you are required to provide by the written contract or written agreement.

3. With respect to the insurance afforded to the additional insureds within this Provision **A. Miscellaneous Additional Insureds**, the following is added to **Section III – Limits Of Insurance:**

   The most we will pay on behalf of the additional insured is the amount of insurance:

   a. Required by the written contract or written agreement; or

   b. Available under the applicable Limits Of Insurance shown in the Declarations;

   whichever is less.

   This endorsement shall not increase the applicable Limits Of Insurance shown in the Declarations.

B. EXPECTED OR INTENDED INJURY OR DAMAGE

Exclusion **2.a. Expected Or Intended Injury** of **Section I – Coverage A – Bodily Injury And Property Damage Liability** is deleted and replaced by the following:

a. Expected Or Intended Injury Or Damage

"Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force to protect persons or property.

C. KNOWLEDGE OF OCCURRENCE

Paragraph **2.a. Duties In The Event Of Occurrence, Offense, Claim Or Suit** of **Section IV – Commercial General Liability Conditions** is deleted and replaced by the following:

a. You must see to it that we are notified as soon as practicable of an "occurrence" or an offense which may result in a claim only when the "occurrence" or offense is known to:

   (1) You, if you are an individual;

   (2) A partner, if you are a partnership;

   (3) A manager, if you are a limited liability company; or

   (4) An "executive officer" or the "employee" designated by you to give such notice, if you are an organization other than a partnership or a limited liability company.

   To the extent possible, notice should include:

   (i) How, when and where the "occurrence" or offense took place;

   (ii) The names and addresses of any injured persons and witnesses; and

   (iii) The nature and location of any injury or damage arising out of the "occurrence" or offense.

D. LEGAL LIABILITY – DAMAGE TO PREMISES RENTED TO YOU (Fire, Lightning, Explosion, Smoke, Or Leakage From Automatic Fire Protective Systems)

If damage to premises rented to you is not otherwise excluded from this policy or coverage part, then the following provisions apply:

1. Under **Section I – Coverage A – Bodily Injury And Property Damage Liability**, the last paragraph (after the exclusions) is deleted and replaced by the following:

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Exclusions **c.** through **n.** do not apply to damage by fire, lightning, explosion, "smoke", or leakage from automatic fire protective systems to premises while rented to you or temporarily occupied by you with the permission of the owner. A separate limit of insurance applies to this coverage as described in **Section III – Limits Of Insurance.**

2. The paragraph immediately after Subparagraph **j.(6)** of Paragraph **2. Exclusions** of **Section I – Coverage A – Bodily Injury And Property Damage Liability** is deleted and replaced by the following:

   Paragraphs **(1)**, **(3)** and **(4)** of this exclusion do not apply to "property damage" (other than damage by fire, lightning, explosion, "smoke", or leakage from automatic fire protective systems) to premises, including the contents of such premises, rented to you for a period of seven or fewer consecutive days. A separate limit of insurance applies to Damage To Premises Rented To You as described in **Section III – Limits Of Insurance.**

3. Paragraph **6.** of **Section III – Limits Of Insurance** is deleted and replaced by the following:

   6. Subject to Paragraph **5.** above, the greater of:

   a. $300,000; or

   b. The Damage To Premises Rented To You Limit shown in the Declarations,

   is the most we will pay under **Coverage A** for damages because of "property damage" to premises while rented to you, or in the case of damage by fire, lightning, explosion, "smoke", or leakage from automatic fire protective systems, while rented to you or temporarily occupied by you with permission of the owner.

   This limit will apply to all damage proximately caused by the same event, whether such damage results from fire, lightning, explosion, "smoke", leakage from automatic fire protective systems, or other covered causes of loss or any combination thereof.

4. Subparagraph **b.(1)(a)(ii)** of Paragraph **4. Other Insurance** of **Section IV – Commercial General Liability Conditions** is deleted and replaced by the following:

   (ii) That is fire, lightning, explosion, "smoke" or leakage from automatic fire protective systems insurance for premises rented to you or temporarily occupied by you with permission of the owner;

5. Subparagraph **a.** of Definition **9.** "Insured contract" of **Section V – Definitions** is deleted and replaced by the following:

   a. A contract for a lease of premises. However, that portion of the contract for a lease of premises that indemnifies any person or organization for damage by fire, lightning, explosion, "smoke" or leakage from automatic fire protective systems to premises while rented to you or temporarily occupied by you with permission of the owner is not an "insured contract".

6. As used in this Provision **D. Legal Liability – Damage To Premises Rented To You:**

   "Smoke" does not include smoke from agricultural smudging, industrial operations or "hostile fire".

E. MEDICAL PAYMENTS

The Medical Expense Limit is changed, subject to the terms of **Section III – Limits Of Insurance**, to the Medical Expense Limit shown in the Declarations.

F. MOBILE EQUIPMENT REDEFINED

Subparagraph **f.(1)** of Definition **12.** "Mobile equipment" of **Section V – Definitions** is deleted and replaced by the following:

(1) Equipment with a gross vehicle weight of 1,000 pounds or more and designed primarily for:

(a) Snow removal;

(b) Road maintenance, but not construction or resurfacing; or

(c) Street cleaning;

G. NEWLY FORMED OR ACQUIRED ORGANIZATION, PARTNERSHIP OR LIMITED LIABILITY COMPANY AND EXTENDED PERIOD OF COVERAGE

Paragraph **3.** of **Section II – Who Is An Insured** is deleted and replaced by the following:

3. Any organization you newly acquire or form, other than a joint venture, and over which you maintain ownership or:

   a. Majority interest of more than 50% if you are a corporation;

   b. Majority interest of more than 50% as a general partner of a newly acquired or formed partnership; and/or

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c. Majority interest of more than 50% as an owner of a newly acquired or formed limited liability company;

will qualify as a Named Insured if there is no other similar insurance available to that organization. However, for these organizations:

(i) Coverage under this provision is afforded only until the next anniversary date of this policy's effective date after you acquire or form the organization, partnership or limited liability company, or the end of the policy period, whichever is earlier;

(ii) **Section I – Coverage A – Bodily Injury And Property Damage Liability** does not apply to "bodily injury" or "property damage" that occurred before you acquired or formed the organization, partnership or limited liability company;

(iii) **Section I – Coverage B – Personal And Advertising Injury Liability** does not apply to "personal and advertising injury" arising out of an offense committed before you acquired or formed the organization, partnership or limited liability company;

(iv) Coverage applies only when operations of the newly acquired organization, partnership or limited liability company are the same or similar to the operations of insureds already covered under this insurance;

(v) Coverage only applies for those limited liability companies who have established a date of formation as recorded within the filed state articles of organization, certificates of formation or certificates of organization; and

(vi) Coverage only applies for those partnerships who have established a date of formation as recorded within a written partnership agreement or partnership certificate.

H. WHO IS AN INSURED – AMENDMENT

The last paragraph of **Section II – Who Is An Insured** is deleted and replaced by the following:

No person or organization is an insured with respect to the conduct of any:

a. Current partnership or limited liability company, unless otherwise provided for under Paragraph **3.** of **Section II – Who Is An Insured;**

b. Current joint venture; or

c. Past partnership, joint venture or limited liability company;

that is not shown as a Named Insured in the Declarations.

I. NON-OWNED WATERCRAFT

Subparagraph **(2)** of **Exclusion 2.g. Aircraft, Auto Or Watercraft** of **Section I – Coverage A – Bodily Injury And Property Damage Liability** is deleted and replaced by the following:

(2) A watercraft you do not own that is:

(a) Less than 51 feet long; and

(b) Not being used to carry persons or property for a charge.

J. SUPPLEMENTARY PAYMENTS – INCREASED LIMITS

Section I – Supplementary Payments – Coverages A And B is changed as follows:

1. The limit shown in Paragraph **1.b.** for the cost of bail bonds is changed from $250 to $3,000; and

2. The limit shown in Paragraph **1.d.** for loss of earnings because of time off from work is changed from $250 a day to $1,000 a day.

K. UNINTENTIONAL OMISSION OR UNINTENTIONAL ERROR IN DISCLOSURE

The following provision is added to Paragraph **6. Representations** of **Section IV – Commercial General Liability Conditions:**

However, the unintentional omission of, or unintentional error in, any information given or provided by you shall not prejudice your rights under this insurance.

This provision does not affect our right to collect additional premium or to exercise our right of cancellation or non-renewal.

L. WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV – Commercial General Liability Conditions:**

We waive any right of recovery we may have against any person or organization because of payments we make for injury or damage arising out of your ongoing operations or "your work" and included in the "products-completed operations hazard" when you have agreed in a written contract or written agreement that any right of recovery is waived for such person or organization. This waiver applies only to the

person(s) or organization(s) agreed to in the written contract or written agreement and is subject to those provisions.

This waiver does not apply unless the written contract or written agreement has been executed prior to the "bodily injury" or "property damage".

However, if any person or organization is separately scheduled on a separate waiver of transfer of rights of recovery which is attached to this policy, then this waiver does not apply.

M. LIBERALIZATION CLAUSE

The following is added to **Section IV – Commercial General Liability Conditions:**

If we adopt a mandatory attachment form change which broadens coverage under this edition of the Commercial General Liability CG0001 for no additional charge, and those changes are intended to apply to all insureds under this edition of CG0001, that change will automatically apply to your insurance as of the date we implement the change in your state. This liberalization clause does not apply to changes implemented through introduction of a subsequent edition of the Commercial General Liability form CG0001.

N. INCIDENTAL MEDICAL MALPRACTICE

1. Paragraph **2.a.(1)(d)** of **Section II – Who Is An Insured** does not apply to a physician, nurse practitioner, physician assistant, nurse, emergency medical technician or paramedic employed by you if you are not in the business or occupation of providing medical, paramedical, surgical, dental, x-ray or nursing services.
2. This provision is excess over any other valid and collectible insurance whether such insurance is primary, excess, contingent or on any other basis. Any payments by us will follow Paragraph **4.b.** of **Section IV – Commercial General Liability Conditions**.

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CONTRACTORS GENERAL LIABILITY ENDORSEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by endorsement.

SUMMARY OF COVERAGE EXTENSIONS

Provision No.	Name of Extension	Limit or Included
A.	Extended Property Damage- Occurrence/Aggregate ($250 Per Claim Deductible)	$5,000/$15,000
B.	Property Damage To Borrowed Equipment ($250 Per Claim Deductible)	$15,000
C.	Deductible	$250
D.	Limited Contractors Professional Liability	Included

The above Schedule is a summary only. Please consult the specific provisions that follow for complete information on the extensions provided. If there is a conflict between this summary and the endorsement provisions that follow, the endorsement provisions shall prevail.

A. EXTENDED PROPERTY DAMAGE

The following is added to **SECTION I- COVERAGES, COVERAGE A - BODILY INJURY AND PROPERTY DAMAGE LIABILITY:**

1. We will pay those sums that the insured becomes legally obligated to pay as damages because of "property damage" to:
   a. personal property of others while in the care, custody and control of the insured; or
   b. that particular part of real property on which you or any contractors or subcontractor working directly or indirectly on your behalf are performing operations, if the "property damage" arises out of those operations.

   For the purposes of this coverage section only, Exclusions **j. (4)** and **(5)** are deleted in their entirety.

2. The amount we will pay for damages under this coverage section is limited to $5,000 per occurrence, $15,000 policy aggregate.

3. The insurance provided by this coverage section does not apply to "property damage" included within the "products-completed operations hazard" or within the "explosion hazard", the "collapse hazard" or the "underground property damage hazard".

4. A deductible of $250 per claim is applicable to this coverage section. The deductible does not reduce the limit of insurance.

For purposes of the coverage provided by this endorsement the following definitions are added to **SECTION V - DEFINITIONS:**

a. "Collapse hazard" includes structural property damage and any resulting "property damage" to any property at any time.

b. "Explosion hazard" includes "property damage" arising out of blasting or explosion. The "explosion hazard" does not include "property damage" arising out of the explosion of air or steam vessels, piping under pressure, prime movers, machinery or power transmitting equipment.

c. "Underground property damage hazard" includes "underground property damage" and any resulting "property damage" to any other property at any time.

d. "Underground property damage" means "property damage" to wires, conduits, pipes, mains, sewers, tanks, tunnels, any similar

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property, and any apparatus used with them beneath the surface of the ground or water, caused by and occurring during the use of mechanical equipment for the purpose of grading land, paving, excavating, drilling, borrowing, filling, back-filling or pile driving.

B. PROPERTY DAMAGE TO BORROWED EQUIPMENT

1. Paragraph **2.j.** of **SECTION I - COVERAGES, COVERAGE A - BODILY INJURY AND PROPERTY DAMAGE LIABILITY** is amended as follows:

   Paragraphs **(3)** and **(4)** of this exclusion do not apply to tools or equipment loaned to you, provided they are not being used to perform operations at the time of loss.

2. **SECTION III – LIMITS OF INSURANCE** is amended by adding the following:

   The most we will pay in any one "occurrence" for "property damage" to borrowed equipment is $15,000. This limit of insurance is the most we will pay regardless of the number of:

   a. Insureds;
   b. Claims made or "suits" brought; or
   c. Persons or organizations making claims or bringing "suits".

C. DEDUCTIBLE

For the purposes of the coverage provided by this endorsement:

a. Our obligation to pay damages on behalf of the insured applies only to the amount of damages in excess of $250 as applicable to "property damage" as the result of any one "occurrence", regardless of the number of persons or organizations who sustain damages because of that "occurrence".

b. The terms of this insurance, including those with respect to our right and duty to defend the insured against any "suits" seeking those damages; and your duties in the event of an "occurrence", claim, or "suit" apply irrespective of the application of the deductible amount.

c. We may pay any part or all of the deductible amount to effect settlement of any claim or suit and, upon notification of the action taken; you shall promptly reimburse us for such part of the deductible amount as we have paid.

D. LIMITED CONTRACTORS PROFESSIONAL LIABILITY

The following exclusion is added to Paragraph **2.** Exclusions of **SECTION I – COVERAGES, COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY** and Paragraph **2.** Exclusions of **SECTION I - COVERAGE B – PERSONAL AND ADVERTISING INJURY LIABILITY:**

1. This insurance does not apply to "bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of or failure to render any professional services by you or on your behalf, but only with respect to either or both of the following operations:

   a. Providing engineering, architectural or surveying services to others in your capacity as an engineer, architect or surveyor; and

   b. Providing, or hiring independent professionals to provide engineering, architectural or surveying services in connection with construction work you perform.

2. Subject to Paragraph **3.** below, professional services include:

   a. Preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders, or drawings and specifications; and

   b. Supervisory or inspection activities performed as part of any related architectural or engineering activities.

3. Professional services do not include services within construction means, methods, techniques, sequences and procedures employed by you in connection with your operations in your capacity as a construction contractor.

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DESIGNATED CONSTRUCTION PROJECT(S) GENERAL AGGREGATE LIMIT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Designated Construction Project(s):
Designated Construction Project(s): Applies separately to each of your construction projects away from premises owned by or rented to the insured Total Aggregate Limit: $10,000,000 The Total Aggregate Limit shown in the Schedule of this endorsement is the most we will pay regardless of the number of construction projects.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage **A**, and for all medical expenses caused by accidents under Section I - Coverage **C**, which can be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. A separate Designated Construction Project General Aggregate Limit applies to each designated construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
2. The Designated Construction Project General Aggregate Limit is the most we will pay for the sum of all damages under Coverage **A**, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage **C** regardless of the number of:
   a. Insureds;
   b. Claims made or "suits" brought; or
   c. Persons or organizations making claims or bringing "suits".
3. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the Designated Construction Project General Aggregate Limit for that designated construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Construction Project General Aggregate Limit for any other designated construction project shown in the Schedule above.
4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Construction Project General Aggregate Limit.

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B. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage **A**, and for all medical expenses caused by accidents under Section I - Coverage **C**, which cannot be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
2. Such payments shall not reduce any Designated Construction Project General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Construction Project General Aggregate Limit.

D. If the applicable designated construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or timetables, the project will still be deemed to be the same construction project.

E. The provisions of Section III - Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

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DESIGNATED LOCATION(S) GENERAL AGGREGATE LIMIT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Designated Location(s):
Designated Location(s): Applies separately to each of your “locations” owned by or rented to you. Total Aggregate Limit: $10,000,000 The Total Aggregate Limit shown in the Schedule of this endorsement is the most we will pay regardless of the number of designated locations
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage **A**, and for all medical expenses caused by accidents under Section I - Coverage **C**, which can be attributed only to operations at a single designated "location" shown in the Schedule above:

1. A separate Designated Location General Aggregate Limit applies to each designated "location", and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
2. The Designated Location General Aggregate Limit is the most we will pay for the sum of all damages under Coverage **A**, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage **C** regardless of the number of:
   a. Insureds;
   b. Claims made or "suits" brought; or
   c. Persons or organizations making claims or bringing "suits".
3. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the Designated Location General Aggregate Limit for that designated "location". Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Location General Aggregate Limit for any other designated "location" shown in the Schedule above.
4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Location General Aggregate Limit.

B. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage **A**, and for all medical expenses caused by accidents under Section I - Coverage **C**, which cannot be attributed only to operations at a single designated "location" shown in the Schedule above:

1. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
2. Such payments shall not reduce any Designated Location General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will

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reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Location General Aggregate Limit.

D. For the purposes of this endorsement, the **Definitions** Section is amended by the addition of the following definition:

"Location" means premises involving the same or connecting lots, or premises whose connection is interrupted only by a street, roadway, waterway or right-of-way of a railroad.

E. The provisions of Section **III** - Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

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COMMERCIAL AUTOMOBILE EXPANSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by endorsement.

SUMMARY OF COVERAGE EXTENSIONS

Provision No.	Name of Extension	Limit or Included
A.	Broadened Named Insured	Included
B.	Additional Insured by Contract or Agreement	Included
C.	Additional Insured- Employees	Included
D.	Extended Coverage- Bail Bonds	$5,000
E.	Extended Coverage- Loss of Earnings (Per Day)	$1,000
F.	Fellow Employee Coverage	Included
G.	Transportation Expense Due to Theft of a Covered Auto (Per Day/Maximum)	$75/ $2,500
H.	Extended Coverage - Air Bags	Included
I.	Physical Damage Coverage- Leased or Financed Autos	Included
J.	Glass Deductible	Included
K.	Extended Coverage- Electronic Equipment	Included
L.	Extended Coverage- Personal Effects	$500
M.	Towing (Gross Vehicle Weight of 20,000 lbs. or less)	$100
N.	Physical Damage Coverage - Hired "Autos" 1. Loss of use (Per Day/Maximum)	$65,000 $500/ $3,500
O.	Rental Reimbursement Coverage	$2,500
P.	Drive Other Car Coverage	Included
Q.	Knowledge of Occurrence	Included
R.	Waiver of Subrogation By Contract or Agreement	Included
S.	Unintentional Omissions	Included
T.	Bodily Injury Re-defined	Included
U.	Employee Hired Auto	Included

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A. **BROADENED NAMED INSURED**

The Named Insured shown in the Declarations is amended to include:

Any organization, other than a joint venture, over which you maintain ownership or majority interest of more than 50%, unless that organization is an "insured" under any other automobile policy or would be an "insured" under such a policy but for the exhaustion of its Limit of Insurance, however;

1. Coverage under this provision is afforded only until the next anniversary date of this policy's effective date after you acquire or form the organization or the end of the policy period, whichever is earlier.

2. Coverage does not apply to "bodily injury" or "property damage" that occurred before you acquired or formed the organization.

B. **ADDITIONAL INSURED BY CONTRACT OR AGREEMENT**

The following is added to **Section II – Covered Autos Liability Coverage**, Paragraph A.1.:

d. Any person or organization for whom you are performing operations if you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy.

(1) Such person or organization is an additional insured only with respect to liability for "bodily injury" or "property damage":
a. Caused by an "accident", and
b. Resulting from the ownership, maintenance or use of a covered "auto".

(2) A person's or organization's status as an additional insured exists only while you are performing operations for that additional insured.

(3) Section II, Paragraph C. Limits of Insurance for person or organization added as additional insured are those specified in the written contract or agreement, or in this coverage form, whichever is less. These limits of insurance are inclusive of and are not in addition to the Limits of Insurance shown in the Declarations.

(4) This insurance applies on a primary and non-contributory basis if that is required by the written contract or agreement.

(5) This insurance does not apply unless the written contract or agreement has been executed prior to the "bodily injury" or "property damage".

C. **ADDITIONAL INSURED - EMPLOYEES**

Section II- Covered Autos Liability Coverage, Paragraph **A.1.b.(2)** is deleted and replaced by the following:

(2) Your employee or agent if the covered "auto" is owned by that employee or a member of his or her household, but this exclusion does not apply if the covered "auto" is being used in your business or your personal affairs.

D. **EXTENDED COVERAGE - BAIL BONDS**

Section II – Covered Autos Liability Coverage, Paragraph **A.2.a.(2)** is deleted and replaced by the following:

(2) Up to $5,000 for cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.

E. **EXTENDED COVERAGE - LOSS OF EARNINGS**

Section II – Covered Autos Liability Coverage, Paragraph **A.2.a.(4)** is deleted and replaced by the following:

(4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to $1,000 a day because of time off from work.

F. **FELLOW EMPLOYEE COVERAGE**

Section II – Covered Autos Liability Coverage, Paragraph **B.5.** does not apply.

G. **COVERAGE EXTENSION AS A CONSEQUENCE OF THEFT OF AN "AUTO"**

1. Transportation Expense

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Section III – Physical Damage Coverage, Paragraph **A.4.a.** is deleted and replaced by the following:

a. We will also pay up to $75 per day to a maximum of $2,500 for temporary transportation expense incurred by you because of the total theft of a covered "auto" that has a Gross Vehicle Weight of 20,000 lbs. or less. We will pay only for those covered "autos" for which you carry either Comprehensive or Specified Causes of Loss Coverage. We will pay for temporary transportation expenses incurred during the period beginning 48 hours after the theft and ending, regardless of the policy's expiration, when the covered "auto" is returned to use or we pay for its "loss".

We will also pay reasonable and necessary expenses to facilitate the return of the stolen "auto" to you.

H. EXTENDED COVERAGE - AIRBAGS

Section III – Physical Damage Coverage, Paragraph **B.3.a.** does not apply to the unintended discharge of an airbag. Coverage is excess over any other collectible insurance or warranty specifically designed to provide coverage.

I. PHYSICAL DAMAGE COVERAGE - LEASED OR FINANCED "AUTOS"

The following is added to **Section III – Physical Damage Coverage,** Paragraph **C.:**

4. In the event of a total "loss" to a covered "auto", we will pay any unpaid amount due on the lease or loan for a covered "auto", less:

   a. The amount under the Physical Damage coverage section of the policy; and

   b. Any:

      (1) Overdue lease/loan payments at the time of the "loss",
      (2) Financial penalties imposed under a lease for excessive use, abnormal wear and tear or high mileage;
      (3) Security deposits not returned by the lessor;
      (4) Costs for extended warranties, Credit Life Insurance, Health, Accident or Disability Insurance;
      (5) Carry-over balances from previous loans or leases.

J. GLASS DEDUCTIBLE

Section III – Physical Damage Coverage, Paragraph **D.** is deleted and replaced by the following:

D. DEDUCTIBLE

For each covered "auto" our obligation to pay for, repair, return or replace damaged or stolen property will be reduced by the applicable deductible shown in the Declarations. Any Comprehensive Coverage deductible shown in the Declarations does not apply to:

1. "Loss" caused by fire or lightning; or
2. "Loss" when you elect to patch or repair glass rather than replace.

K. EXTENDED COVERAGE - ELECTRONIC EQUIPMENT

The following is added to **Section III - Physical Damage Coverage,** Paragraph **A.4.:**

c. Physical Damage coverage on a covered "auto" also applies to "loss" to any electronic equipment that receives or transmits audio, visual or data signals and that is not designed solely for the reproduction of sound. This coverage applies only if the equipment is permanently installed in the covered "auto" at the time of "loss" or the equipment is removable from a housing unit which is permanently installed in the covered "auto" at the time of the "loss", and such equipment is designed to be solely operated by use of the power from the "auto's" electrical system, in or upon the covered "auto".

We will pay with respects to a covered "auto" for "loss" to antennas and other accessories necessary for use of the electronic equipment. However, this does not include tapes, records or discs.

L. EXTENDED COVERAGE - PERSONAL EFFECTS

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The following is added to **Section III – Physical Damage Coverage**, Paragraph **A.4.**:

d. Physical Damage Coverage on a covered "auto" may be extended to "loss" to your personal property or, if you are an individual, the personal property of a family member, that is in the covered "auto" at the time of "loss".

The most we will pay for any one "loss" under this coverage extension is $500.

M. TOWING

Section III – Physical Damage Coverage, Paragraph **A.2.** is deleted and is replaced by the following:

If an "auto" with a Gross Vehicle Weight of 20,000 lbs. or less is provided both Comprehensive and Collision Coverage, we will pay up to $100 for towing and labor costs incurred each time such covered "auto" is disabled.

However, the labor must be performed at the place of disablement.

N. PHYSICAL DAMAGE COVERAGE - HIRED "AUTOS"

You may extend the Comprehensive, Specified Causes of Loss and Collision coverages provided on your owned "autos" to any "auto" you lease, rent, hire or borrow from someone other than your employees or partners or members of their households. Any "auto" you lease, hire, rent or borrow is deemed to be a covered "auto" you own. However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

Coverage provided here is subject to the following:

1. This extension is only available for "autos" you lease, hire, rent or borrow for less than 30 consecutive days.

2. The most we will pay in any one "loss" is the least of $65,000, the actual cash value of the "auto" or the cost to repair or replace the "auto", except that such amount will be reduced by a deductible to be determined as follows:

   a. The deductible shall be equal to the amount of the highest deductible shown for any owned "auto" of the same classification for that coverage. In the event there is no owned "auto" of the same classification, the highest deductible for any owned "auto" will apply for that coverage.
   b. No deductible will apply to "loss" caused by fire or lightning.

3. Coverage provided under this extension will:

   a. Be excess over any other collectible insurance you have;

   b. Pay, in addition to the limit set forth in **N.2.** above, up to $500 per day, not to exceed $3,500 per "loss" for:

      (1) Any costs or fees associated with the "loss" to a hired "auto"; and
      (2) Loss of use, provided it is the consequence of an "accident" for which you are legally liable, and as a result of which a monetary loss is sustained by the leasing or rental concern.

O. RENTAL REIMBURSEMENT COVERAGE

1. We will pay for rental reimbursement expenses incurred by you for the rental of an "auto" because of "loss" to a covered "auto". Payment applies in addition to the otherwise applicable amount of each coverage you have on a covered "auto". No deductibles apply to this coverage. This coverage is only available to those covered "autos" involved in a "loss" and Physical Damage is provided to the covered "auto".

2. We will pay only for those expenses incurred during the policy period beginning 24 hours after the "loss" and ending, regardless of the policy's expiration, with the lesser of the following:

   a. The number of days reasonably required to repair or replace the covered "auto". If "loss" is caused by theft, this number of days is added to the number of days it takes to locate the covered "auto" and return it to you, or

   b. When the total amount paid under this coverage extension reaches $2,500.

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3. Our payment is limited to the lesser of the following amounts:

   a. Necessary and actual expenses incurred.
   b. Not more than $75 per day.

4. We will pay up to an additional $300 for the reasonable and necessary expenses you incur to remove your materials and equipment from the covered "auto" and replace such materials and equipment on the rental "auto".

5. This coverage does not apply while there are spare or reserve "autos" available to you for your operations.

6. If "loss" results from the total theft of a covered "auto" of the "private passenger type", we will pay under this coverage only that amount of your rental reimbursement expenses which is not already provided for under the Physical Damage Coverage Extension.

P. DRIVE OTHER CAR COVERAGE

1. Your Covered Autos Liability Coverage, Auto Medical Payments, Uninsured and Underinsured Motorists Coverage, and Physical Damage Coverage is extended to any private passenger type "auto" you hire, borrow or do not own while being used by or in the care, custody or control of the following persons:

   a. You, if you are designated in the Declarations as an individual.
   b. Your partners or members, if you are designated in the Declarations as a partnership or joint venture;
   c. Your members or managers, if you are designated in the Declarations as a limited liability company;
   d. Your executive officers, if you are designated in the Declarations as an organization other than an individual, partnership, joint venture or limited liability company;
   e. The spouse of any person named in **P.1.a.** through **P.1.d.** while a resident of the same household.

2. The following "autos" are not covered:

   a. Any "auto" owned by a person named in **P.1.a.** through **P.1.d.** or by any member of his or her household.
   b. Any "auto" used by a person named in **P.1.a.** through **P.1.d.** while working in the business of selling, servicing, repairing or parking "autos".

3. The most we will pay for the total of all damages under Covered Autos Liability Coverage, Auto Medical Payments, Uninsured and Underinsured Motorists Coverage is the LIMIT OF INSURANCE for each Coverage shown in the Declarations as applicable to owned "autos".

4. Our obligation to pay for, repair, return or replace damaged or stolen property under Physical Damage Coverage, will be reduced by a deductible equal to the amount of the largest deductible shown for any owned private passenger type "auto" applicable to that coverage. If there are no owned private passenger type "autos", the deductible shall be $100 for Comprehensive Coverage and $250 for Collision Coverage. No deductible will apply to "loss" caused by fire or lightning.

Q. KNOWLEDGE OF OCCURRENCE

The following is added to **Section IV - Business Auto Conditions**, Paragraph **A.2.**:

d. Notice of an "accident" or "loss" will be considered knowledge of yours only if reported to you, if you are an individual, a partner, an executive officer or an employee designated by you to give us such notice.

e. Notice of an "accident" or "loss" to your Workers Compensation insurer, for an event which later develops into a claim for which there is coverage under this policy, shall be considered notice to us, but only if we are notified as soon as you know that the claim should be addressed by this policy, rather than your Workers Compensation policy.

f. Your rights under this policy shall not be prejudiced if you fail to give us notice of an "accident" or "loss", solely due to your reasonable and documented belief that the event is not covered by this policy.

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The following is added to **Section IV- Business Auto Conditions**, Paragraph **A.2.b.**:

(6) Knowledge of the receipt of documents concerning a claim or "suit" will be considered knowledge of yours only if receipt of such documents is known to you, if you are an individual, a partner, an executive officer, or an employee designated by you to forward such documents to us.

R. WAIVER OF SUBROGATION BY CONTRACT OR AGREEMENT

The following is added to **Section IV-Business Auto Conditions**, Paragraph **A.5.**:

We waive any right of recovery we may have against any "insured" provided coverage under this endorsement under **B. ADDITIONAL INSURED BY CONTRACT OR AGREEMENT**, but only as respects "loss" arising out of the operation, maintenance or use of a covered "auto" pursuant to the provisions or conditions of the written contract or agreement.

S. UNINTENTIONAL OMISSIONS

The following is added to **Section IV- Business Auto Conditions**, Paragraph **B.2.**:

We will not deny coverage under this policy if you fail to disclose all hazards existing as of the inception date of the policy, provided such failure is not intentional.

T. BODILY INJURY REDEFINED

Section V- Definitions, Paragraph **C.** is deleted and replaced by the following:

C. "Bodily injury" means bodily injury, disability, sickness, or disease sustained by a person, including death resulting from any of these at any time. "Bodily injury" includes mental anguish or other mental injury resulting from "bodily injury".

U. EMPLOYEE HIRED AUTO

1. **Changes In Liability Coverage**

   The following is added to the **Who Is An Insured** Provision:

   An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in an "employee's" name, with your permission, while performing duties related to the conduct of your business.

2. **Changes In General Conditions**

   Paragraph **5.b.** of the **Other Insurance** Condition in the Business Auto is replaced by the following:

   For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

   1. Any covered "auto" you lease, hire, rent or borrow; and
   2. Any covered "auto" hired or rented by your "employee" under a contract in that individual "employee's" name, with your permission, while performing duties related to the conduct of your business.

   However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

POLICY CHANGES

CHANGE NUMBER: 4

POLICY NUMBER: CPLMOL107157	POLICY CHANGES EFFECTIVE: 06/20/2022	COMPANY: EVANSTON INSURANCE COMPANY
NAMED INSURED: A. Folino Construction Inc. Verona Development Group LLC	AUTHORIZED REPRESENTATIVE 06670 Conway E&S, Inc. 100 Allegheny Drive, Suite 100 Warrendale PA 15086	
COVERAGE PART(S) AFFECTED: Contractor's Pollution Liability		

The following item(s):

☐	Insured's Name/Additional Named Insureds	☐	Insured's Mailing Address	☐	Policy Number
☐	Effective/Expiration Date/Policy Period	☐	Company	☐	Locations/Location Description
☐	Insured's Legal Status/Business Description	☐	Minimum Earned Premium	☐	Rates
☒	Coverage Forms and Endorsements	☐	Policy Cancel/Reinstatement	☐	Limits/Exposures/Premium Basis
☐	Additional Insureds, Loss Payees, Mortgagees	☐	Buildings/Personal Property	☐	Deductibles
☐	Aggregate Cap	☐	Classification/Class Codes	☐	Underlying Insurance Information
☐	Per Vehicle Limit	☐	Vehicle	☐	Drivers
☐	Vehicle Description (Type/Year/Make/Model/ Vehicle Identification Number/Cost New/Value)	☐	Equipment	☐	Other (describe below)

is (are) ☒ changed ☐ added ☐ deleted as shown below:

Form MEEI 2589 08 19 is removed from the policy

Form MEEI 2906 11 19 is added to the policy as per attached

The above amendments result in a change in the premium as follows:

☒	**NO CHANGES**	☐	**TO BE ADJUSTED AT AUDIT**	☐	**ADDITIONAL PREMIUM** $	☐	**RETURN PREMIUM** $
☐	**NO RETURN PREMIUM – CLAIM STILL IN PROCESS**	☐	**NO RETURN PREMIUM – TOTAL LOSS TO INSURED ITEM**	☐	**NO RETURN PREMIUM – FULLY EARNED PROVISION APPLIES**	☐	**OTHER (DESCRIBE):**

All other terms and conditions remain unchanged.

AUTHORIZED REPRESENTATIVE

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EVANSTON INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES, OR CONTRACTORS – AUTOMATIC STATUS FOR OTHER PARTIES WHEN REQUIRED IN WRITTEN CONTRACT OR AGREEMENT

This endorsement modifies insurance provided under the following:

CONTRACTOR'S POLLUTION LIABILITY COVERAGE FORM

A. Section **III –** Who Is An Insured is amended to include as an additional insured:

1. Any person or organization for whom you perform or performed "your work" and with whom you have agreed to provide additional insured status in a written contract or agreement, provided the written contract or agreement was executed prior to the:

a. Commencement of "your work"; and

b. Date the "pollution condition" first commenced.

2. Any other person or organization you are required to add as an additional insured under the written contract or agreement described in Paragraph **1.** above.

Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage", or "cleanup costs" resulting from a "pollution condition" caused, in whole or in part, by "your work".

However, the insurance afforded to such additional insured described above:

a. Only applies to the extent permitted by law; and

b. Will not be broader than that which you are required by the written contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to Section **IV –** Limits Of Insurance And Self-Insured Retention Or Deductible:

The most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the written contract or agreement described in Paragraph **A.1.**; or

2. Available under the applicable limits of insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable limits of insurance shown in the Declarations.

All other terms and conditions remain unchanged.

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Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Douglas M Free, Thomas J Philbin, Robert J Hippert, Sarah Eberhardt, Christine M Scott, Individually

of Pittsburgh, PA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 15th day of March, 2021.

WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota
County of Minnehaha } ss

On this 15th day of March, 2021, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
March 2, 2026

M. BENT
NOTARY PUBLIC
SOUTH DAKOTA

M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this day of , .

WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Form F4280-7-2012

Go to www.cnasurety.com > Owner / Obligee Services > Validate Bond Coverage, if you want to verify bond authenticity.

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CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 3/30/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Milana M Redlinger
Marthinsen & Salvitti Insurance Group, Inc 140 Park Avenue Washington PA 15301	PHONE (A/C, No, Ext): (724)222-8400 FAX (A/C, No): (724)222-8141 E-MAIL ADDRESS: mredlinger@msipa.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Acadia	31325
INSURER B : Berkley National Insurance Company	38911
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
A Folino Construction Inc
& TDF Services, Inc.
109 Dark Hollow Rd.
Oakmont PA 15139

COVERAGES **CERTIFICATE NUMBER:** 20-21 All **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR X Primary Non Contributory X Blanket Waiver of Subrog GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC [ ] OTHER:			CPA 4460328-41 Blanket additional insured incl ongoing & completed ops with written contract Pollution Sublimit $100,000 Contributory & Waiver of Sub	12/11/2020	12/11/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Employee Benefits	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 1,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS X Comp X Coll			CAA 4460329-41 CA9948 Pollution Included Blanket Addl.Insured & Waiver of Sub incl with written contract - Blanket 30 Days	12/11/2020	12/11/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	X UMBRELLA LIAB X OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED X RETENTION $ 0			CPA 4460328-41 Follow Form Umbrella incl Addl days - Primary Non Cont	12/11/2020	12/11/2021	EACH OCCURRENCE AGGREGATE	$ 10,000,000 $ 10,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: Y N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			WCA 4473440-41 Blanket 30 Days Notice - WV	12/11/2020	12/11/2021	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
B	Leased/rented/borrowed $750,000 Limit			MIM 1032214-51 Deductible $5,000	12/11/2020	12/11/2021	Blanket Equip $16,507,821 $5000 Ded - Blanket Waiver of Sub	$2mm instal floater

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Job 21-18006 PWSA #2020-325-102-0. Bus Rapid Transit Water Distribution Improvements. See forms attached
The Pittsburgh Water and Sewer Authority & Hatch Associates Consultants, Inc are included as an Additional Insured with respect to the General Liability as required by written contract. Waiver of Subrogation applies in favor of the Pittsburgh Water and Sewer Authority.

CERTIFICATE HOLDER

Pittsburgh Water and Sewer Authority
1200 Penn Avenue
Pittsburgh, PA 15222

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Milana Redlinger/MMR

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Additional Named Insureds

Other Named Insureds	
Anthony D Folino Construction Inc.	Insured Multiple Names
Card Transport, LLC	Insured Multiple Names
FJIC, LLC	Insured Multiple Names
T C Services	Insured Multiple Names

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED - OWNERS, LESSEES, OR CONTRACTORS - COMPLETED OPERATIONS COVERAGE - AUTOMATIC STATUS WHEN REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. Section II - Who Is An Insured is amended to include as an additional insured any person or organization, but only when:

1. You have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy except for a contractor/project manager or owner of a construction project in which you are involved that is included in a "consolidated (wrap-up) insurance program"; and
2. Such written contract or written agreement has been executed prior to the "bodily injury" or "property damage".

B. The insurance provided to the additional insured by this endorsement is further limited as follows:

1. That person or organization is an additional insured only for liability for "bodily injury" or "property damage":
   a. Due to your negligence and specifically caused by "your work" for the additional insured which is the subject of the written contract or agreement; and
   b. Included within the "products-completed operations hazard".
2. The Limits of Insurance applicable to the additional insured are those specified in the written contract or written agreement, or in the Declarations of this policy, whichever is less. These Limits of Insurance are inclusive of, and not in addition to, the Limits of Insurance shown in the Declarations.
3. The insurance provided to the additional insured by this endorsement and by paragraph f. of the definition of "insured contract" under DEFINITIONS (Section V), as amended by this endorsement, does not apply to "bodily injury" or "property damage" beyond:
   a. The effective date of any deletion of, any removal of, or any non-continuance of, this additional insured endorsement from this policy, or
   b. The period of time required by the written contract or written agreement.
4. The insurance provided to the additional insured does not apply to "bodily injury" or "property damage" arising out of an architect's, engineer's or surveyor's having rendered or having failed to render any professional services, including, but not limited to:
   a. The preparation, approval or the failure to prepare or approve maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
   b. Supervisory, inspection, architectural or engineering activities.

   This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of, or the failure to render, any professional architectural, engineering or surveying services.

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C. With respect to the coverage provided under this endorsement, **SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS**, is amended as follows:

1. The following is added to the Duties In The Event of Occurrence, Offense, Claim or Suit Condition:

   As a condition precedent to coverage and/or defense, an additional insured under this endorsement must give us as soon as practicable notice of an "occurrence" which may result in a claim or "suit" under this insurance.

D. With respect to the coverage provided under this endorsement, **SECTION V - DEFINITIONS:** is changed as follows:

1. The definition of "insured contract" is changed by replacing paragraph **f.** of that definition with the following:

   "Insured contract" means:

   f. That part of any other contract or agreement pertaining to your business (including an indemnification of a municipality in connection with work performed for a municipality) under which you assume the tort liability of another party to pay for "bodily injury" or "property damage" to a third person or organization, provided the "bodily injury" or "property damage" is specifically caused by "your work" and included in the "products-completed operations hazard". Tort liability means a liability that would be imposed by law in the absence of any contract or agreement.

   Paragraph **f.** does not include that part of any contract or agreement:

   (1) That indemnifies a railroad for "bodily injury" or "property damage" arising out of construction or demolition operations, within 50 feet of any railroad property and affecting any railroad bridge or trestle, tracks, roadbeds, tunnel, underpass or crossing;

   (2) That indemnifies an architect, engineer or surveyor for injury or damage arising out of:

   (a) Preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

   (b) Giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage; or

   (3) Under which the insured, if an architect, engineer or surveyor, assumes liability for an injury or damage arising out of the insured's rendering or failure to render professional services, including those listed in **(2)** above and supervisory, inspection, architectural or engineering activities.

2. The following definition is added :

"Consolidated (wrap-up) insurance program" means a construction, erection or demolition project for which the prime contractor/project manager or owner of the construction project has secured general liability insurance covering some or all of the contractors or subcontractors involved in the project, otherwise referred to as an Owner Controlled Insurance Program (O.C.I.P.) or Contractor Controlled Insurance Program (C.C.I.P.)

E. This endorsement does not provide coverage for liability resulting from the sole negligence of the additional insured.

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Policy# CPA 4406238-41

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – AUTOMATIC STATUS FOR OTHER PARTIES WHEN REQUIRED IN WRITTEN CONSTRUCTION AGREEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. Section II – Who Is An Insured is amended to include as an additional insured:

1. Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy; and
2. Any other person or organization you are required to add as an additional insured under the contract or agreement described in Paragraph **1.** above.

Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

a. Your acts or omissions; or

b. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured described above:

a. Only applies to the extent permitted by law; and

b. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for the person or organization described in Paragraph **1.** above are completed.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

   a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

   b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of, or the failure to render, any professional architectural, engineering or surveying services.

2. "Bodily injury" or "property damage" occurring after:

   a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

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b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

The most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement described in Paragraph **A.1.**; or

2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

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COMMERCIAL GENERAL LIABILITY
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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – AUTOMATIC STATUS WHEN REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

A. Section II – Who Is An Insured is amended to include as an additional insured any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured:

1. Only applies to the extent permitted by law; and
2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:
   a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
   b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION (ADDITIONAL INSURED)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

Paragraph **(v)** is added to Paragraph **(1)(a)** of Paragraph **b. Excess Insurance** under Paragraph **4. Other Insurance** of **Section IV – Commercial General Liability Conditions**, as follows:

(1) This insurance is excess over:

(a) Any of the other insurance, whether primary, excess, contingent or on any other basis:

(v) That is available to any person or organization who has been added as an additional insured to this policy by endorsement.

However, with respect to an additional insured added by endorsement for liability caused, in whole or in part:

1. By your acts or omissions, or the acts or omissions of those acting on your behalf:

   (a) In the performance of your ongoing operations; or

   (b) In connection with your premises;

2. By your maintenance, operation or use of equipment leased to you by such person or organization; or

3. By "your work" performed for that additional insured and included in the "products-completed operations hazard";

this insurance shall be primary to and will not seek contribution from the additional insured's own insurance if you and such additional insured have agreed prior to loss in a written contract or written agreement, in effect during this policy period, that this insurance be primary and noncontributory as respects liability described in Subparagraph **(1)(a)(v)1.**, **(1)(a)(v)2.** or **(1)(a)(v)3.** above. However, this insurance, in all cases, is excess over any other liability insurance available to the additional insured to which such person or organization has been added as an additional insured.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

GENERAL LIABILITY ULTRA PLUS ENDORSEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SUMMARY OF COVERAGE EXTENSIONS

Provision	Name Of Coverage Extension	Included or Limit of Insurance
A.	Miscellaneous Additional Insureds	Included
B.	Expected Or Intended Injury Or Damage	Included
C.	Knowledge Of Occurrence	Included
D.	Legal Liability – Damage To Premises Rented To You (Fire, Lightning, Explosion, Smoke, Or Leakage From Automatic Fire Protective Systems)	$300,000
E.	Medical Payments	See Declarations
F.	Mobile Equipment Redefined	Included
G.	Newly Formed Or Acquired Organization, Partnership Or Limited Liability Company And Extended Period Of Coverage	Included
H.	Who Is An Insured – Amendment	Included
I.	Non-Owned Watercraft (Increased to maximum length of less than 51 feet)	Included
J.	Supplementary Payments – Increased Limits 1. Bail Bonds 2. Loss Of Earnings	 $ 3,000 $ 1,000
K.	Unintentional Omission Or Unintentional Error In Disclosure	Included
L.	Waiver Of Transfer Of Rights Of Recovery Against Others	Included
M.	Liberalization Clause	Included
N.	Incidental Medical Malpractice	Included

The above is a summary only. Please consult the specific provisions that follow for complete information on the extensions provided.

The provisions of the Commercial General Liability Coverage Part apply except as otherwise provided in this endorsement. This endorsement applies only if such Coverage Part is included in this policy.

A. MISCELLANEOUS ADDITIONAL INSUREDS

1. **Section II – Who Is An Insured** is amended to include as an insured any person or organization (referred to as an additional insured below) described in Paragraphs **A.1.c.(1)** through **A.1.c.(9)** below when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy, provided that:

   a. The written contract or written agreement is:

      (1) Currently in effect or becoming effective during the term of this policy; and

      (2) Fully executed by you and the additional insured prior to the "bodily

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injury", "property damage" or "personal and advertising injury".

b. The insurance afforded by this provision does not apply to any person or organization included as an additional insured by a separate endorsement issued by us and made a part of this policy or coverage part.

c. Only the following persons or organizations are additional insureds under this provision, with coverage for such additional insureds limited as provided herein:

(1) Persons or Organizations For Whom Operations Are Performed

(a) Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured to your policy; and

(b) Any other person or organization you are required to add as an additional insured under the contract or agreement described in paragraph **(a)** above.

(c) Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

(i) Your acts or omissions; or

(ii) The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

(d) With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

(i) "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

(1.1) The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

(1.2) Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of, or the failure to render, any professional architectural, engineering or surveying services.

(ii) "Bodily injury" or "property damage" occurring after:

(1.1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

(1.2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

(2) Managers Or Lessors Of Premises

A manager or lessor of premises but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to

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you and subject to the following additional exclusions:

This insurance does not apply to:

(a) Any "occurrence" which takes place after you cease to be a tenant in that premises.

(b) Structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

(3) Mortgagee, Assignee Or Receiver

A mortgagee, assignee, or receiver but only with respect to their liability as mortgagee, assignee, or receiver and arising out of the ownership, maintenance, or use of a covered premises by you.

This insurance does not apply to structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

(4) Owners Or Other Interests From Whom Land Has Been Leased

An owner or other interest from whom land has been leased to you but only with respect to liability arising out of the ownership, maintenance or use of that part of the land leased to you and subject to the following additional exclusions:

This insurance does not apply to:

(a) Any "occurrence" which takes place after you cease to lease that land.

(b) Structural alterations, new construction or demolition operations performed by or on behalf of such additional insured.

(5) Lessor Of Leased Equipment

Any person(s) or organization(s) from whom you lease equipment but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your maintenance, operation or use of equipment leased to you by such person(s) or organization(s).

A person's or organization's status as an additional insured under this endorsement ends when their written contract or written agreement with you for such leased equipment ends.

This insurance does not apply to any "occurrence" which takes place after the equipment lease expires.

(6) State, Municipality, Governmental Agency Or Subdivision Or Other Political Subdivision – Permits Or Authorizations Relating To Premises

Any state, municipality, governmental agency or subdivision or other political subdivision subject to the following additional provisions:

(a) This insurance applies only with respect to:

(i) The following hazards for which the state, municipality, governmental agency or subdivision or other political subdivision has issued a permit or authorization in connection with premises you own, rent or control and to which this insurance applies:

(1.1) The existence, maintenance, repair, construction, erection or removal of advertising signs, awnings, canopies, cellar entrances, coal holes, driveways, manholes, marquees, hoist away openings, sidewalk vaults, street banners or decorations and similar exposures; or

(1.2) The construction, erection or removal of elevators; or

(1.3) The ownership, maintenance or use of any elevators covered by this insurance.

(ii) Operations performed by you or on your behalf for which the state, municipality, governmental agency or subdivision or other political subdivision has issued a permit or authorization.

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(b) This insurance does not apply to "bodily injury", "property damage" or "personal and advertising injury" arising out of operations performed for the state, municipality, governmental agency or subdivision or other political subdivision.

(7) Controlling Interest

Any person(s) or organization(s) with a controlling interest in the Named Insured but only with respect to their liability arising out of:

(a) Their financial control of you; or

(b) Premises they own, maintain or control while you lease or occupy these premises.

This insurance does not apply to structural alterations, new construction or demolition operations performed by or for such person(s) or organization(s).

(8) Co-Owner Of Insured Premises

A co-owner of a premises co-owned by you and covered under this insurance but only with respect to the co-owner's liability as co-owner of such premises.

(9) Vendors

(a) Any person(s) or organization(s) (referred to as vendor), but only with respect to "bodily injury" or "property damage" arising out of "your products" which are distributed or sold in the regular course of the vendor's business.

The insurance afforded the vendor does not apply to:

(i) "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a written contract or written agreement. This exclusion does not apply to liability for damages that the vendor would have in the absence of the written contract or written agreement;

(ii) Any express warranty unauthorized by you;

(iii) Any physical or chemical change in the product made intentionally by the vendor;

(iv) Repackaging, except when unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container;

(v) Any failure to make such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products;

(vi) Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product;

(vii) Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor; or

(viii) "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its own acts or omissions or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:

(1.1) The exceptions contained in Sub-paragraphs **(iv)** or **(vi)**; or

(1.2) Such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make

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in the usual course of business, in connection with the distribution or sale of the products.

(b) This insurance does not apply to any insured person or organization, from whom you have acquired products, or any ingredient, part or container, entering into, accompanying or containing such products.

2. With respect to coverage provided by this Provision **A. Miscellaneous Additional Insureds**, the following additional provisions apply:

   a. Any insurance provided to an additional insured designated under Paragraphs **A.1.c.(1)** through **A.1.c.(8)** above does not apply:

      (1) To "bodily injury" or "property damage" included within the "products-completed operations hazard"; or

      (2) To "bodily injury", "property damage" or "personal and advertising injury" arising out of the sole negligence of such additional insured.

   b. The insurance afforded to such additional insured only applies to the extent permitted by law.

   c. The insurance afforded to such additional insured will not be broader than that which you are required to provide by the written contract or written agreement.

3. With respect to the insurance afforded to the additional insureds within this Provision **A. Miscellaneous Additional Insureds**, the following is added to **Section III – Limits Of Insurance:**

   The most we will pay on behalf of the additional insured is the amount of insurance:

   a. Required by the written contract or written agreement; or

   b. Available under the applicable Limits Of Insurance shown in the Declarations;

   whichever is less.

   This endorsement shall not increase the applicable Limits Of Insurance shown in the Declarations.

B. EXPECTED OR INTENDED INJURY OR DAMAGE

Exclusion **2.a. Expected Or Intended Injury** of **Section I – Coverage A – Bodily Injury And Property Damage Liability** is deleted and replaced by the following:

a. Expected Or Intended Injury Or Damage

"Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force to protect persons or property.

C. KNOWLEDGE OF OCCURRENCE

Paragraph **2.a. Duties In The Event Of Occurrence, Offense, Claim Or Suit** of **Section IV – Commercial General Liability Conditions** is deleted and replaced by the following:

a. You must see to it that we are notified as soon as practicable of an "occurrence" or an offense which may result in a claim only when the "occurrence" or offense is known to:

   (1) You, if you are an individual;

   (2) A partner, if you are a partnership;

   (3) A manager, if you are a limited liability company; or

   (4) An "executive officer" or the "employee" designated by you to give such notice, if you are an organization other than a partnership or a limited liability company.

   To the extent possible, notice should include:

   (i) How, when and where the "occurrence" or offense took place;

   (ii) The names and addresses of any injured persons and witnesses; and

   (iii) The nature and location of any injury or damage arising out of the "occurrence" or offense.

D. LEGAL LIABILITY – DAMAGE TO PREMISES RENTED TO YOU (Fire, Lightning, Explosion, Smoke, Or Leakage From Automatic Fire Protective Systems)

If damage to premises rented to you is not otherwise excluded from this policy or coverage part, then the following provisions apply:

1. Under **Section I – Coverage A – Bodily Injury And Property Damage Liability**, the last paragraph (after the exclusions) is deleted and replaced by the following:

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Exclusions **c.** through **n.** do not apply to damage by fire, lightning, explosion, "smoke", or leakage from automatic fire protective systems to premises while rented to you or temporarily occupied by you with the permission of the owner. A separate limit of insurance applies to this coverage as described in **Section III – Limits Of Insurance.**

2. The paragraph immediately after Subparagraph **j.(6)** of Paragraph **2. Exclusions** of **Section I – Coverage A – Bodily Injury And Property Damage Liability** is deleted and replaced by the following:

   Paragraphs **(1)**, **(3)** and **(4)** of this exclusion do not apply to "property damage" (other than damage by fire, lightning, explosion, "smoke", or leakage from automatic fire protective systems) to premises, including the contents of such premises, rented to you for a period of seven or fewer consecutive days. A separate limit of insurance applies to Damage To Premises Rented To You as described in **Section III – Limits Of Insurance.**

3. Paragraph **6.** of **Section III – Limits Of Insurance** is deleted and replaced by the following:

   6. Subject to Paragraph **5.** above, the greater of:

   a. $300,000; or

   b. The Damage To Premises Rented To You Limit shown in the Declarations,

   is the most we will pay under **Coverage A** for damages because of "property damage" to premises while rented to you, or in the case of damage by fire, lightning, explosion, "smoke", or leakage from automatic fire protective systems, while rented to you or temporarily occupied by you with permission of the owner.

   This limit will apply to all damage proximately caused by the same event, whether such damage results from fire, lightning, explosion, "smoke", leakage from automatic fire protective systems, or other covered causes of loss or any combination thereof.

4. Subparagraph **b.(1)(a)(ii)** of Paragraph **4. Other Insurance** of **Section IV – Commercial General Liability Conditions** is deleted and replaced by the following:

   (ii) That is fire, lightning, explosion, "smoke" or leakage from automatic fire protective systems insurance for premises rented to you or temporarily occupied by you with permission of the owner;

5. Subparagraph **a.** of Definition **9.** "Insured contract" of **Section V – Definitions** is deleted and replaced by the following:

   a. A contract for a lease of premises. However, that portion of the contract for a lease of premises that indemnifies any person or organization for damage by fire, lightning, explosion, "smoke" or leakage from automatic fire protective systems to premises while rented to you or temporarily occupied by you with permission of the owner is not an "insured contract".

6. As used in this Provision **D. Legal Liability – Damage To Premises Rented To You:**

   "Smoke" does not include smoke from agricultural smudging, industrial operations or "hostile fire".

E. MEDICAL PAYMENTS

The Medical Expense Limit is changed, subject to the terms of **Section III – Limits Of Insurance**, to the Medical Expense Limit shown in the Declarations.

F. MOBILE EQUIPMENT REDEFINED

Subparagraph **f.(1)** of Definition **12.** "Mobile equipment" of **Section V – Definitions** is deleted and replaced by the following:

(1) Equipment with a gross vehicle weight of 1,000 pounds or more and designed primarily for:

(a) Snow removal;

(b) Road maintenance, but not construction or resurfacing; or

(c) Street cleaning;

G. NEWLY FORMED OR ACQUIRED ORGANIZATION, PARTNERSHIP OR LIMITED LIABILITY COMPANY AND EXTENDED PERIOD OF COVERAGE

Paragraph **3.** of **Section II – Who Is An Insured** is deleted and replaced by the following:

3. Any organization you newly acquire or form, other than a joint venture, and over which you maintain ownership or:

   a. Majority interest of more than 50% if you are a corporation;

   b. Majority interest of more than 50% as a general partner of a newly acquired or formed partnership; and/or

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c. Majority interest of more than 50% as an owner of a newly acquired or formed limited liability company;

will qualify as a Named Insured if there is no other similar insurance available to that organization. However, for these organizations:

(i) Coverage under this provision is afforded only until the next anniversary date of this policy's effective date after you acquire or form the organization, partnership or limited liability company, or the end of the policy period, whichever is earlier;

(ii) **Section I – Coverage A – Bodily Injury And Property Damage Liability** does not apply to "bodily injury" or "property damage" that occurred before you acquired or formed the organization, partnership or limited liability company;

(iii) **Section I – Coverage B – Personal And Advertising Injury Liability** does not apply to "personal and advertising injury" arising out of an offense committed before you acquired or formed the organization, partnership or limited liability company;

(iv) Coverage applies only when operations of the newly acquired organization, partnership or limited liability company are the same or similar to the operations of insureds already covered under this insurance;

(v) Coverage only applies for those limited liability companies who have established a date of formation as recorded within the filed state articles of organization, certificates of formation or certificates of organization; and

(vi) Coverage only applies for those partnerships who have established a date of formation as recorded within a written partnership agreement or partnership certificate.

H. WHO IS AN INSURED – AMENDMENT

The last paragraph of **Section II – Who Is An Insured** is deleted and replaced by the following:

No person or organization is an insured with respect to the conduct of any:

a. Current partnership or limited liability company, unless otherwise provided for under Paragraph **3.** of **Section II – Who Is An Insured;**

b. Current joint venture; or

c. Past partnership, joint venture or limited liability company;

that is not shown as a Named Insured in the Declarations.

I. NON-OWNED WATERCRAFT

Subparagraph **(2)** of **Exclusion 2.g. Aircraft, Auto Or Watercraft** of **Section I – Coverage A – Bodily Injury And Property Damage Liability** is deleted and replaced by the following:

(2) A watercraft you do not own that is:

(a) Less than 51 feet long; and

(b) Not being used to carry persons or property for a charge.

J. SUPPLEMENTARY PAYMENTS – INCREASED LIMITS

Section I – Supplementary Payments – Coverages A And B is changed as follows:

1. The limit shown in Paragraph **1.b.** for the cost of bail bonds is changed from $250 to $3,000; and

2. The limit shown in Paragraph **1.d.** for loss of earnings because of time off from work is changed from $250 a day to $1,000 a day.

K. UNINTENTIONAL OMISSION OR UNINTENTIONAL ERROR IN DISCLOSURE

The following provision is added to Paragraph **6. Representations** of **Section IV – Commercial General Liability Conditions:**

However, the unintentional omission of, or unintentional error in, any information given or provided by you shall not prejudice your rights under this insurance.

This provision does not affect our right to collect additional premium or to exercise our right of cancellation or non-renewal.

L. WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV – Commercial General Liability Conditions:**

We waive any right of recovery we may have against any person or organization because of payments we make for injury or damage arising out of your ongoing operations or "your work" and included in the "products-completed operations hazard" when you have agreed in a written contract or written agreement that any right of recovery is waived for such person or organization. This waiver applies only to the

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person(s) or organization(s) agreed to in the written contract or written agreement and is subject to those provisions.

This waiver does not apply unless the written contract or written agreement has been executed prior to the "bodily injury" or "property damage".

However, if any person or organization is separately scheduled on a separate waiver of transfer of rights of recovery which is attached to this policy, then this waiver does not apply.

M. LIBERALIZATION CLAUSE

The following is added to **Section IV – Commercial General Liability Conditions:**

If we adopt a mandatory attachment form change which broadens coverage under this edition of the Commercial General Liability CG0001 for no additional charge, and those changes are intended to apply to all insureds under this edition of CG0001, that change will automatically apply to your insurance as of the date we implement the change in your state. This liberalization clause does not apply to changes implemented through introduction of a subsequent edition of the Commercial General Liability form CG0001.

N. INCIDENTAL MEDICAL MALPRACTICE

1. Paragraph **2.a.(1)(d)** of **Section II – Who Is An Insured** does not apply to a physician, nurse practitioner, physician assistant, nurse, emergency medical technician or paramedic employed by you if you are not in the business or occupation of providing medical, paramedical, surgical, dental, x-ray or nursing services.
2. This provision is excess over any other valid and collectible insurance whether such insurance is primary, excess, contingent or on any other basis. Any payments by us will follow Paragraph **4.b.** of **Section IV – Commercial General Liability Conditions.**

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CONTRACTORS GENERAL LIABILITY ENDORSEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by endorsement.

SUMMARY OF COVERAGE EXTENSIONS

Provision No.	Name of Extension	Limit or Included
A.	Extended Property Damage- Occurrence/Aggregate ($250 Per Claim Deductible)	$5,000/$15,000
B.	Property Damage To Borrowed Equipment ($250 Per Claim Deductible)	$15,000
C.	Deductible	$250
D.	Limited Contractors Professional Liability	Included

The above Schedule is a summary only. Please consult the specific provisions that follow for complete information on the extensions provided. If there is a conflict between this summary and the endorsement provisions that follow, the endorsement provisions shall prevail.

A. EXTENDED PROPERTY DAMAGE

The following is added to **SECTION I- COVERAGES, COVERAGE A - BODILY INJURY AND PROPERTY DAMAGE LIABILITY:**

1. We will pay those sums that the insured becomes legally obligated to pay as damages because of "property damage" to:
   a. personal property of others while in the care, custody and control of the insured; or
   b. that particular part of real property on which you or any contractors or subcontractor working directly or indirectly on your behalf are performing operations, if the "property damage" arises out of those operations.

   For the purposes of this coverage section only, Exclusions **j.** (4) and (5) are deleted in their entirety.

2. The amount we will pay for damages under this coverage section is limited to $5,000 per occurrence, $15,000 policy aggregate.

3. The insurance provided by this coverage section does not apply to "property damage" included within the "products-completed operations hazard" or within the "explosion hazard", the "collapse hazard" or the "underground property damage hazard".

4. A deductible of $250 per claim is applicable to this coverage section. The deductible does not reduce the limit of insurance.

For purposes of the coverage provided by this endorsement the following definitions are added to **SECTION V - DEFINITIONS:**

a. "Collapse hazard" includes structural property damage and any resulting "property damage" to any property at any time.

b. "Explosion hazard" includes "property damage" arising out of blasting or explosion. The "explosion hazard" does not include "property damage" arising out of the explosion of air or steam vessels, piping under pressure, prime movers, machinery or power transmitting equipment.

c. "Underground property damage hazard" includes "underground property damage" and any resulting "property damage" to any other property at any time.

d. "Underground property damage" means "property damage" to wires, conduits, pipes, mains, sewers, tanks, tunnels, any similar

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property, and any apparatus used with them beneath the surface of the ground or water, caused by and occurring during the use of mechanical equipment for the purpose of grading land, paving, excavating, drilling, borrowing, filling, back-filling or pile driving.

B. PROPERTY DAMAGE TO BORROWED EQUIPMENT

1. Paragraph **2.j.** of **SECTION I - COVERAGES, COVERAGE A - BODILY INJURY AND PROPERTY DAMAGE LIABILITY** is amended as follows:

   Paragraphs **(3)** and **(4)** of this exclusion do not apply to tools or equipment loaned to you, provided they are not being used to perform operations at the time of loss.

2. **SECTION III – LIMITS OF INSURANCE** is amended by adding the following:

   The most we will pay in any one "occurrence" for "property damage" to borrowed equipment is $15,000. This limit of insurance is the most we will pay regardless of the number of:

   a. Insureds;
   b. Claims made or "suits" brought; or
   c. Persons or organizations making claims or bringing "suits".

C. DEDUCTIBLE

For the purposes of the coverage provided by this endorsement:

a. Our obligation to pay damages on behalf of the insured applies only to the amount of damages in excess of $250 as applicable to "property damage" as the result of any one "occurrence", regardless of the number of persons or organizations who sustain damages because of that "occurrence".

b. The terms of this insurance, including those with respect to our right and duty to defend the insured against any "suits" seeking those damages; and your duties in the event of an "occurrence", claim, or "suit" apply irrespective of the application of the deductible amount.

c. We may pay any part or all of the deductible amount to effect settlement of any claim or suit and, upon notification of the action taken; you shall promptly reimburse us for such part of the deductible amount as we have paid.

D. LIMITED CONTRACTORS PROFESSIONAL LIABILITY

The following exclusion is added to Paragraph **2.** Exclusions of **SECTION I – COVERAGES, COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY** and Paragraph **2.** Exclusions of **SECTION I - COVERAGE B – PERSONAL AND ADVERTISING INJURY LIABILITY:**

1. This insurance does not apply to "bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of or failure to render any professional services by you or on your behalf, but only with respect to either or both of the following operations:

   a. Providing engineering, architectural or surveying services to others in your capacity as an engineer, architect or surveyor; and

   b. Providing, or hiring independent professionals to provide engineering, architectural or surveying services in connection with construction work you perform.

2. Subject to Paragraph **3.** below, professional services include:

   a. Preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders, or drawings and specifications; and

   b. Supervisory or inspection activities performed as part of any related architectural or engineering activities.

3. Professional services do not include services within construction means, methods, techniques, sequences and procedures employed by you in connection with your operations in your capacity as a construction contractor.

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Policy# CPA 4460328-41

COMMERCIAL GENERAL LIABILITY
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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED CONSTRUCTION PROJECT(S) GENERAL AGGREGATE LIMIT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Designated Construction Project(s):
Designated Construction Project(s): Applies separately to each of your construction projects away from premises owned by or rented to the insured Total Aggregate Limit: $10,000,000 The Total Aggregate Limit shown in the Schedule of this endorsement is the most we will pay regardless of the number of construction projects.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage A, and for all medical expenses caused by accidents under Section I - Coverage C, which can be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. A separate Designated Construction Project General Aggregate Limit applies to each designated construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
2. The Designated Construction Project General Aggregate Limit is the most we will pay for the sum of all damages under Coverage A, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage C regardless of the number of:
   a. Insureds;
   b. Claims made or "suits" brought; or
   c. Persons or organizations making claims or bringing "suits".
3. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the Designated Construction Project General Aggregate Limit for that designated construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Construction Project General Aggregate Limit for any other designated construction project shown in the Schedule above.
4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Construction Project General Aggregate Limit.

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B. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage **A**, and for all medical expenses caused by accidents under Section I - Coverage **C**, which cannot be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
2. Such payments shall not reduce any Designated Construction Project General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Construction Project General Aggregate Limit.

D. If the applicable designated construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or timetables, the project will still be deemed to be the same construction project.

E. The provisions of Section **III** - Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED LOCATION(S) GENERAL AGGREGATE LIMIT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Designated Location(s):
Designated Location(s): Applies separately to each of your “locations” owned by or rented to you. Total Aggregate Limit: $10,000,000 The Total Aggregate Limit shown in the Schedule of this endorsement is the most we will pay regardless of the number of designated locations
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage A, and for all medical expenses caused by accidents under Section I - Coverage C, which can be attributed only to operations at a single designated "location" shown in the Schedule above:

1. A separate Designated Location General Aggregate Limit applies to each designated "location", and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
2. The Designated Location General Aggregate Limit is the most we will pay for the sum of all damages under Coverage A, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage C regardless of the number of:
   a. Insureds;
   b. Claims made or "suits" brought; or
   c. Persons or organizations making claims or bringing "suits".
3. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the Designated Location General Aggregate Limit for that designated "location". Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Location General Aggregate Limit for any other designated "location" shown in the Schedule above.
4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Location General Aggregate Limit.

B. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I - Coverage A, and for all medical expenses caused by accidents under Section I - Coverage C, which cannot be attributed only to operations at a single designated "location" shown in the Schedule above:

1. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and
2. Such payments shall not reduce any Designated Location General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will

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reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Location General Aggregate Limit.

D. For the purposes of this endorsement, the **Definitions** Section is amended by the addition of the following definition:

"Location" means premises involving the same or connecting lots, or premises whose connection is interrupted only by a street, roadway, waterway or right-of-way of a railroad.

E. The provisions of Section **III** - Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

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Policy # CPA 4460328-41

CLIL0014 0311

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CHANGE IN NOTIFICATION

If "we" cancel this policy, other than for non-payment of premium, "we" will provide advance written notice of such cancellation to the person(s) or organization(s) listed below. The notification will be at least the number of days shown in the schedule before the effective date of cancellation.

1. **Number of Days Notice:** 30

2. **Name and Mailing Address/ Email Address:**

   Blanket 30 Day Notice for All

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Policy# CAA 4460329-41

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

COMMERCIAL AUTOMOBILE EXPANSION ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by endorsement.

SUMMARY OF COVERAGE EXTENSIONS

Provision No.	Name of Extension	Limit or Included
A.	Broadened Named Insured	Included
B.	Additional Insured by Contract or Agreement	Included
C.	Additional Insured- Employees	Included
D.	Extended Coverage- Bail Bonds	$5,000
E.	Extended Coverage- Loss of Earnings (Per Day)	$1,000
F.	Fellow Employee Coverage	Included
G.	Transportation Expense Due to Theft of a Covered Auto (Per Day/Maximum)	$75/ $2,500
H.	Extended Coverage - Air Bags	Included
I.	Physical Damage Coverage- Leased or Financed Autos	Included
J.	Glass Deductible	Included
K.	Extended Coverage- Electronic Equipment	Included
L.	Extended Coverage- Personal Effects	$500
M.	Towing (Gross Vehicle Weight of 20,000 lbs. or less)	$100
N.	Physical Damage Coverage - Hired "Autos" 1. Loss of use (Per Day/Maximum)	$65,000 $500/ $3,500
O.	Rental Reimbursement Coverage	$2,500
P.	Drive Other Car Coverage	Included
Q.	Knowledge of Occurrence	Included
R.	Waiver of Subrogation By Contract or Agreement	Included
S.	Unintentional Omissions	Included
T.	Bodily Injury Re-defined	Included
U.	Employee Hired Auto	Included

The above is a summary only. Please consult the specific provisions that follow for complete information on the extensions provided. If there is a conflict between this summary and the endorsement provisions that follow, the endorsement provisions shall prevail.

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A. BROADENED NAMED INSURED

The Named Insured shown in the Declarations is amended to include:

Any organization, other than a joint venture, over which you maintain ownership or majority interest of more than 50%, unless that organization is an "insured" under any other automobile policy or would be an "insured" under such a policy but for the exhaustion of its Limit of Insurance, however;

1. Coverage under this provision is afforded only until the next anniversary date of this policy's effective date after you acquire or form the organization or the end of the policy period, whichever is earlier.

2. Coverage does not apply to "bodily injury" or "property damage" that occurred before you acquired or formed the organization.

B. ADDITIONAL INSURED BY CONTRACT OR AGREEMENT

The following is added to **Section II – Covered Autos Liability Coverage**, Paragraph **A.1.**:

d. Any person or organization for whom you are performing operations if you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy.

(1) Such person or organization is an additional insured only with respect to liability for "bodily injury" or "property damage":
- **a.** Caused by an "accident", and
- **b.** Resulting from the ownership, maintenance or use of a covered "auto".

(2) A person's or organization's status as an additional insured exists only while you are performing operations for that additional insured.

(3) Section II, Paragraph C. Limits of Insurance for person or organization added as additional insured are those specified in the written contract or agreement, or in this coverage form, whichever is less. These limits of insurance are inclusive of and are not in addition to the Limits of Insurance shown in the Declarations.

(4) This insurance applies on a primary and non-contributory basis if that is required by the written contract or agreement.

(5) This insurance does not apply unless the written contract or agreement has been executed prior to the "bodily injury" or "property damage".

C. ADDITIONAL INSURED - EMPLOYEES

Section II- Covered Autos Liability Coverage, Paragraph **A.1.b.(2)** is deleted and replaced by the following:

(2) Your employee or agent if the covered "auto" is owned by that employee or a member of his or her household, but this exclusion does not apply if the covered "auto" is being used in your business or your personal affairs.

D. EXTENDED COVERAGE - BAIL BONDS

Section II – Covered Autos Liability Coverage, Paragraph **A.2.a.(2)** is deleted and replaced by the following:

(2) Up to $5,000 for cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.

E. EXTENDED COVERAGE - LOSS OF EARNINGS

Section II – Covered Autos Liability Coverage, Paragraph **A.2.a.(4)** is deleted and replaced by the following:

(4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to $1,000 a day because of time off from work.

F. FELLOW EMPLOYEE COVERAGE

Section II – Covered Autos Liability Coverage, Paragraph **B.5.** does not apply.

G. COVERAGE EXTENSION AS A CONSEQUENCE OF THEFT OF AN "AUTO"

1. Transportation Expense

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Section III – Physical Damage Coverage, Paragraph **A.4.a.** is deleted and replaced by the following:

a. We will also pay up to $75 per day to a maximum of $2,500 for temporary transportation expense incurred by you because of the total theft of a covered "auto" that has a Gross Vehicle Weight of 20,000 lbs. or less. We will pay only for those covered "autos" for which you carry either Comprehensive or Specified Causes of Loss Coverage. We will pay for temporary transportation expenses incurred during the period beginning 48 hours after the theft and ending, regardless of the policy's expiration, when the covered "auto" is returned to use or we pay for its "loss".

We will also pay reasonable and necessary expenses to facilitate the return of the stolen "auto" to you.

H. EXTENDED COVERAGE - AIRBAGS

Section III – Physical Damage Coverage, Paragraph **B.3.a.** does not apply to the unintended discharge of an airbag. Coverage is excess over any other collectible insurance or warranty specifically designed to provide coverage.

I. PHYSICAL DAMAGE COVERAGE - LEASED OR FINANCED "AUTOS"

The following is added to **Section III – Physical Damage Coverage,** Paragraph **C.:**

4. In the event of a total "loss" to a covered "auto", we will pay any unpaid amount due on the lease or loan for a covered "auto", less:

   a. The amount under the Physical Damage coverage section of the policy; and

   b. Any:

      (1) Overdue lease/loan payments at the time of the "loss",
      (2) Financial penalties imposed under a lease for excessive use, abnormal wear and tear or high mileage;
      (3) Security deposits not returned by the lessor;
      (4) Costs for extended warranties, Credit Life Insurance, Health, Accident or Disability Insurance;
      (5) Carry-over balances from previous loans or leases.

J. GLASS DEDUCTIBLE

Section III – Physical Damage Coverage, Paragraph **D.** is deleted and replaced by the following:

D. DEDUCTIBLE

For each covered "auto" our obligation to pay for, repair, return or replace damaged or stolen property will be reduced by the applicable deductible shown in the Declarations. Any Comprehensive Coverage deductible shown in the Declarations does not apply to:

1. "Loss" caused by fire or lightning; or
2. "Loss" when you elect to patch or repair glass rather than replace.

K. EXTENDED COVERAGE - ELECTRONIC EQUIPMENT

The following is added to **Section III - Physical Damage Coverage,** Paragraph **A.4.:**

c. Physical Damage coverage on a covered "auto" also applies to "loss" to any electronic equipment that receives or transmits audio, visual or data signals and that is not designed solely for the reproduction of sound. This coverage applies only if the equipment is permanently installed in the covered "auto" at the time of "loss" or the equipment is removable from a housing unit which is permanently installed in the covered "auto" at the time of the "loss", and such equipment is designed to be solely operated by use of the power from the "auto's" electrical system, in or upon the covered "auto".

We will pay with respects to a covered "auto" for "loss" to antennas and other accessories necessary for use of the electronic equipment. However, this does not include tapes, records or discs.

L. EXTENDED COVERAGE - PERSONAL EFFECTS

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The following is added to **Section III – Physical Damage Coverage**, Paragraph **A.4.**:

d. Physical Damage Coverage on a covered "auto" may be extended to "loss" to your personal property or, if you are an individual, the personal property of a family member, that is in the covered "auto" at the time of "loss".

The most we will pay for any one "loss" under this coverage extension is $500.

M. TOWING

Section III – Physical Damage Coverage, Paragraph **A.2.** is deleted and is replaced by the following:

If an "auto" with a Gross Vehicle Weight of 20,000 lbs. or less is provided both Comprehensive and Collision Coverage, we will pay up to $100 for towing and labor costs incurred each time such covered "auto" is disabled.

However, the labor must be performed at the place of disablement.

N. PHYSICAL DAMAGE COVERAGE - HIRED "AUTOS"

You may extend the Comprehensive, Specified Causes of Loss and Collision coverages provided on your owned "autos" to any "auto" you lease, rent, hire or borrow from someone other than your employees or partners or members of their households. Any "auto" you lease, hire, rent or borrow is deemed to be a covered "auto" you own. However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

Coverage provided here is subject to the following:

1. This extension is only available for "autos" you lease, hire, rent or borrow for less than 30 consecutive days.

2. The most we will pay in any one "loss" is the least of $65,000, the actual cash value of the "auto" or the cost to repair or replace the "auto", except that such amount will be reduced by a deductible to be determined as follows:

   a. The deductible shall be equal to the amount of the highest deductible shown for any owned "auto" of the same classification for that coverage. In the event there is no owned "auto" of the same classification, the highest deductible for any owned "auto" will apply for that coverage.
   b. No deductible will apply to "loss" caused by fire or lightning.

3. Coverage provided under this extension will:

   a. Be excess over any other collectible insurance you have;

   b. Pay, in addition to the limit set forth in **N.2.** above, up to $500 per day, not to exceed $3,500 per "loss" for:

      (1) Any costs or fees associated with the "loss" to a hired "auto"; and
      (2) Loss of use, provided it is the consequence of an "accident" for which you are legally liable, and as a result of which a monetary loss is sustained by the leasing or rental concern.

O. RENTAL REIMBURSEMENT COVERAGE

1. We will pay for rental reimbursement expenses incurred by you for the rental of an "auto" because of "loss" to a covered "auto". Payment applies in addition to the otherwise applicable amount of each coverage you have on a covered "auto". No deductibles apply to this coverage. This coverage is only available to those covered "autos" involved in a "loss" and Physical Damage is provided to the covered "auto".

2. We will pay only for those expenses incurred during the policy period beginning 24 hours after the "loss" and ending, regardless of the policy's expiration, with the lesser of the following:

   a. The number of days reasonably required to repair or replace the covered "auto". If "loss" is caused by theft, this number of days is added to the number of days it takes to locate the covered "auto" and return it to you, or

   b. When the total amount paid under this coverage extension reaches $2,500.

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3. Our payment is limited to the lesser of the following amounts:

   a. Necessary and actual expenses incurred.
   b. Not more than $75 per day.

4. We will pay up to an additional $300 for the reasonable and necessary expenses you incur to remove your materials and equipment from the covered "auto" and replace such materials and equipment on the rental "auto".

5. This coverage does not apply while there are spare or reserve "autos" available to you for your operations.

6. If "loss" results from the total theft of a covered "auto" of the "private passenger type", we will pay under this coverage only that amount of your rental reimbursement expenses which is not already provided for under the Physical Damage Coverage Extension.

P. DRIVE OTHER CAR COVERAGE

1. Your Covered Autos Liability Coverage, Auto Medical Payments, Uninsured and Underinsured Motorists Coverage, and Physical Damage Coverage is extended to any private passenger type "auto" you hire, borrow or do not own while being used by or in the care, custody or control of the following persons:

   a. You, if you are designated in the Declarations as an individual.
   b. Your partners or members, if you are designated in the Declarations as a partnership or joint venture;
   c. Your members or managers, if you are designated in the Declarations as a limited liability company;
   d. Your executive officers, if you are designated in the Declarations as an organization other than an individual, partnership, joint venture or limited liability company;
   e. The spouse of any person named in **P.1.a.** through **P.1.d.** while a resident of the same household.

2. The following "autos" are not covered:

   a. Any "auto" owned by a person named in **P.1.a.** through **P.1.d.** or by any member of his or her household.
   b. Any "auto" used by a person named in **P.1.a.** through **P.1.d.** while working in the business of selling, servicing, repairing or parking "autos".

3. The most we will pay for the total of all damages under Covered Autos Liability Coverage, Auto Medical Payments, Uninsured and Underinsured Motorists Coverage is the LIMIT OF INSURANCE for each Coverage shown in the Declarations as applicable to owned "autos".

4. Our obligation to pay for, repair, return or replace damaged or stolen property under Physical Damage Coverage, will be reduced by a deductible equal to the amount of the largest deductible shown for any owned private passenger type "auto" applicable to that coverage. If there are no owned private passenger type "autos", the deductible shall be $100 for Comprehensive Coverage and $250 for Collision Coverage. No deductible will apply to "loss" caused by fire or lightning.

Q. KNOWLEDGE OF OCCURRENCE

The following is added to **Section IV - Business Auto Conditions**, Paragraph **A.2.**:

d. Notice of an "accident" or "loss" will be considered knowledge of yours only if reported to you, if you are an individual, a partner, an executive officer or an employee designated by you to give us such notice.

e. Notice of an "accident" or "loss" to your Workers Compensation insurer, for an event which later develops into a claim for which there is coverage under this policy, shall be considered notice to us, but only if we are notified as soon as you know that the claim should be addressed by this policy, rather than your Workers Compensation policy.

f. Your rights under this policy shall not be prejudiced if you fail to give us notice of an "accident" or "loss", solely due to your reasonable and documented belief that the event is not covered by this policy.

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The following is added to **Section IV- Business Auto Conditions**, Paragraph **A.2.b.**:

(6) Knowledge of the receipt of documents concerning a claim or "suit" will be considered knowledge of yours only if receipt of such documents is known to you, if you are an individual, a partner, an executive officer, or an employee designated by you to forward such documents to us.

R. WAIVER OF SUBROGATION BY CONTRACT OR AGREEMENT

The following is added to **Section IV-Business Auto Conditions**, Paragraph **A.5.**:

We waive any right of recovery we may have against any "insured" provided coverage under this endorsement under **B. ADDITIONAL INSURED BY CONTRACT OR AGREEMENT**, but only as respects "loss" arising out of the operation, maintenance or use of a covered "auto" pursuant to the provisions or conditions of the written contract or agreement.

S. UNINTENTIONAL OMISSIONS

The following is added to **Section IV- Business Auto Conditions**, Paragraph **B.2.**:

We will not deny coverage under this policy if you fail to disclose all hazards existing as of the inception date of the policy, provided such failure is not intentional.

T. BODILY INJURY REDEFINED

Section V- Definitions, Paragraph **C.** is deleted and replaced by the following:

C. "Bodily injury" means bodily injury, disability, sickness, or disease sustained by a person, including death resulting from any of these at any time. "Bodily injury" includes mental anguish or other mental injury resulting from "bodily injury".

U. EMPLOYEE HIRED AUTO

1. **Changes In Liability Coverage**

   The following is added to the **Who Is An Insured** Provision:

   An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in an "employee's" name, with your permission, while performing duties related to the conduct of your business.

2. **Changes In General Conditions**

   Paragraph **5.b.** of the **Other Insurance** Condition in the Business Auto is replaced by the following:

   For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

   1. Any covered "auto" you lease, hire, rent or borrow; and
   2. Any covered "auto" hired or rented by your "employee" under a contract in that individual "employee's" name, with your permission, while performing duties related to the conduct of your business.

   However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

CHANGE IN NOTIFICATION

If "we" cancel this policy, other than for non-payment of premium, "we" will provide advance written notice of such cancellation to the person(s) or organization(s) listed below. The notification will be at least the number of days shown in the schedule before the effective date of cancellation.

1. **Number of Days Notice:** 30

2. **Name and Mailing Address/ Email Address:**

   Blanket 30 Day Notice for All

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WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This Agreement applies only to the extent that you perform under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

Blanket Coverage – Any person or organization for whom the Named Insured has agreed by written contract to furnish this waiver.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.
(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective
12-11-2020

Policy No.
WCA 4473440- -41

Endorsement No.

Insured:
A Folino Construction Inc.

Premium

Insurance Company:
Acadia Insurance Company

Countersigned by _____

WC 00 03 13
(Ed. 4-84)

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Policy # WCA 4373440-41

CLIL0014 0311

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

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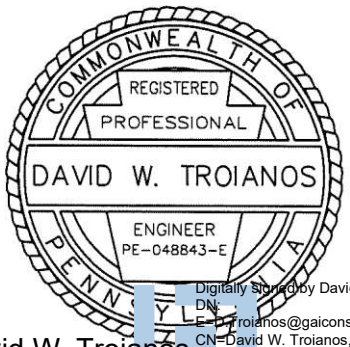
THE PITTSBURGH WATER AND SEWER AUTHORITY

INVITATION FOR BIDS FOR

BUS RAPID TRANSIT
WATER DISTRIBUTION IMPROVEMENTS PROJECT

PWSA PROJECT NO. 2020-325-102-0

JANUARY 2021



David W. Troianos

Digitally signed by David W. Troianos
DN: ...
E=DTroianos@gaiconsultants.com,
CN=David W. Troianos, OU=CRAN,
OU=GAI Accounts, OU=GAI
Consultants, DC=GAIConsultants,
DC=local
Date: 2021.01.08 10:25:06-05'00'

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DOCUMENT 00010

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END OF SECTION

DIVISION 0 – BIDDING REQUIREMENTS, CONTRACT FORMS, AND CONDITIONS OF THE CONTRACT

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The Pittsburgh Water and Sewer Authority

Advertisement

Invitation for Bids (IFB)
Bus Rapid Transit Water Distribution Improvements
PWSA Project No. 2020-325-102-0

Mandatory Pre-Bid Meeting Date: February 3, 2021 at 11:00 a.m. This mandatory pre-bid meeting will be held remotely via Microsoft Teams. Meeting link and phone number will be made available in Bonfire.

Vendor Questions Due Date: February 5, 2021 by 4:00 p.m.

Bid Due Date: February 16, 2021 at 2:00 p.m.

PWSA is requesting bids for the construction of water distribution improvements in the public rights-of-way of Fifth and Forbes Avenues in the Uptown neighborhood of the City of Pittsburgh. The project area extends from between Sixth Avenue and the Birmingham Bridge and will require close coordination with other utility construction. The scope of work includes the installation of new water mains ranging in size from 6-inch to 24-inch diameter.

Further information regarding this IFB can be viewed and downloaded at:
https://pgh2o.bonfirehub.com/opportunities/37144

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This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACTS

Prepared by

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
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JANUARY 2021
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1420 King Street, Alexandria, VA 22314-2794

(703) 684-2882

www.nspe.org

American Council of Engineering Companies

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(202) 347-7474

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Procurement Office* – The office from which the Bidding Documents are to be issued.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Procurement Office in the number and format stated in the advertisement or invitation to bid.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within ten (10) days of Owner's request, Bidder shall submit written evidence establishing its qualifications as follows:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

D. Other required information regarding qualifications:

1. Listings of equipment owned and equipment to be rented by Bidder that would be used in performing the Contract;

2. Identification of Bidder's facility or facilities that would be used in performing the Contract;

3. Five examples of Bidder's experience in performing contracts similar in type, scope, and value over the last five (5) years;

4. Five (5) references from sources knowledgeable about Bidder's performance on similar contracts;

5. A recent audited financial statement;

6. A complete list of ongoing projects including present commitments of proposed management and on-site supervision;

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7. Bidder's Experience Modification Rating calculated by the Pennsylvania Compensation Rating Bureau;

8. A resume for the individuals who would serve as Bidder's Project Manager and resident superintendent, if the Contract were awarded to Bidder; and

9. Bidder's Dun & Bradstreet D-U-N-S® Number.

E. Other documentation supporting Bidder's qualifications, not exceeding five (5) pages.

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications. However, Owner may rely on the completeness of the Bidder's submission, and is not required to conduct an investigation into the Bidder's qualifications or responsibility.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

3.05 *Supplier Diversity Program (SDP)- MBE/WBE/DBE/SBE/VBE/SDVBE Solicitation and Commitment*

A. *Supplier Diversity Participation* - The Authority's current goal for Minority Business Enterprise ("MBE"), Women Business Enterprise ("WBE"), Disadvantaged Small Business Enterprise ("DBE"), Small Business Enterprises ("SBE"), Veteran Business Enterprise ("VBE")/Service Disabled-Veteran Business Enterprises ("SDVBE") participation is between ten percent (10%) to twenty-five percent (25%) of the total dollar value of the Authority's contracts. All Bids for such contracts must be accompanied by Exhibit II-MBE/WBE/DBE/SBE/VBE/SDVBE Solicitation and Commitment Statement, demonstrating a good faith effort to meet said goals, or a detailing of why the MBE/WBE/DBE/SBE/VBE/SDVBE participation goals could not be met. In addition, all required letters of commitment and copies of current certifications shall be submitted with the Bid

B *MBE/WBE/DBE/SBE/VBE/SDVBE Utilization Report:* In entering into a Contract with Owner, the Contractor agrees to submit detailed MBE/WBE/DBE/SBE/VBE/SDVBE Utilization Reports no later than ten (10) days following each progress payment and final payment. The report shall include but not be limited to: Project number; Project title; Contractor's name; Contract Price; Contract Times; Contractor Pay Application (CPA) number and period; current CPA amount, total amount of Contract Price paid to date; MBE/WBE/DBE/SBE/VBE/SDVBE company name and status as MBE, WBE, DBE, SBE and/ or VBE/SDVBE; role of MBE/WBE/DBE/SBE/VBE/SDVBE as Subcontractor, Supplier, or other; and amount paid to date to the MBE,WBE, DBE, SBE and/or VBE/SDVBE.

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ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

A. The Site (or respective sites) is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, utilities, rights of way, are to be obtained and paid for by Contractor as a part of the cost of the work.

4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify:

a. Those reports known to Owner, if any, of explorations and tests of subsurface conditions at or adjacent to the Site.

b. Those drawings known to Owner, if any, of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

c. Reports and drawings known to Owner, if any, relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.

d. Technical Data contained in any such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request electronically at no cost. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion that the Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

4. Geotechnical Baseline Report: The Bidding Documents may contain a Geotechnical Baseline Report (GBR). The GBR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations ("Baseline Conditions"). The GBR is a Contract Document. Excavation is unclassified and the contractor owns, as a part of the cost of the work, excavation to the elevations shown on the Contract Documents. Any additional excavation requested by the Owner or Engineer will be paid for by either unit price if established in the bid form or through a formal change order.

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The Baseline Conditions in the GBR are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the GBR, all other Contract Documents, Technical Data, other available information, site visits by Bidders and observable surface conditions. Not all potential subsurface conditions are baselined.

Nothing in the GBR is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.

B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities.

C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.

B. Bidder is not required to but may at its expense if approved in advance by the Owner conduct subsurface testing, or investigations of Site conditions.

C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.

D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to

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schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

4.06 Scope of Work:

A. Bidders should understand that contracts for necessary repair, maintenance, and minor extension to Owner's existing facilities cannot be accurately estimated or planned in advance, and may be of an emergency nature. The Owner shall determine the repair, maintenance, replacement, or minor extension Work to be carried out under the Contract, and shall direct same, and a Bidder agrees to accept such decisions as final and binding.

4.07 *Location of Work:*

A. Where the Project is for maintenance and repair or other Work on non-site specific, existing facilities of Owner, Bidders should understand that the amount or the location of the Work cannot be accurately predicted or described. Bidders must assume that Work may be required anywhere in Owner's service area, and should bid accordingly.

4.08 *Quantities*:

A. Any quantities shown as "Estimated Annual Quantities" are merely projections based on available historic data. Owner does not represent or warrant that the quantities purchased will correspond with those estimated, but reserves the right to purchase its requirements, which may be amounts either lesser or greater than the Estimated Annual Quantities. Unless otherwise explicitly stated in the Bidding Documents, there are no maximum or minimum limits placed upon the services or goods that the Successful Bidder is to provide, and any estimated annual quantities shall not be binding upon Owner.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

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A. Examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

B. Where applicable to the scope of Work, visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. Become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;

D. Carefully study any and all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

E. As applicable to the scope of Work, consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;

F. Agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

G. Become aware of the general nature of any work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. Promptly give Construction Manager and Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;

I. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work;

J. Agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents;

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K. Agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that it is not currently debarred by Owner, the City of Pittsburgh, the Commonwealth of Pennsylvania, the federal government, or any local government or governmental agency or authority.

ARTICLE 6 – PRE-BID CONFERENCE

6.01 A pre-Bid conference will be held only if specifically required by the Bidding Documents. The conference will the held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. The Procurement Office will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective. If the invitation or advertisement states that the pre-bid meeting is mandatory, then the failure to attend or to sign the attendance register at such a mandatory conference shall disqualify the Bidder on the Contract without any further notice from Owner or Engineer.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer the Procurement Office in writing. Interpretations or clarifications considered necessary by the Procurement Office in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven (7) days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding and become part of the bidding documents and contract. Oral and other interpretations or clarifications will be without legal effect and are not a binding part of the bidding documents or contract.

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of ten (10%) percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within fifteen (15) days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

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8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner for 90 days after the Bid opening or until Notice to Proceed is issued to the successful Bidder, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven (7) days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

9.01 The number of days within which, or the dates by which milestones are achieved and the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, for failure to timely attain a specified Contract Milestone, Substantial Completion, or final completion of the Work in accordance with the Progress Schedule or Contract Times, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Owner or Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder to the Procurement Office at least fifteen (15) days prior to the date for receipt of Bids. Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Bidder is responsible to clearly and specifically demonstrate that the product being offered is an acceptable equal or substitute and to provide sufficient descriptive literature, catalog cuts, and technical data to enable Engineer and Owner to determine if the product offered meets the requirements of the Bidding Documents. Engineer's and Owner's decision of approval or disapproval of a proposed item will be final. If Owner approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

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12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the Work. If requested by Owner or Construction Manager, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner, Construction Manager or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute.

12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

C. Failure to use the Bid Form, failure to complete the Bid Form as required, or unauthorized modifications or additions to the Bid Form may be cause for rejection of the Bid as non-responsive. Owner may, in its sole discretion, reject any or all Bids with these deficiencies.

13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.

13.02.1 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.

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13.03 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

13.04 A Bid by an individual shall show the Bidder's name and official address.

13.05 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

13.06 All names shall be printed in ink below the signatures.

13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be provided by the bidder.

13.09 The Bid shall contain evidence of Bidder's authority and qualification to do business where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's contractor license number, if any, shall also be shown on the Bid Form.

13.10 Bidders operating a business under a fictitious name are required to submit the Bid and execute the Agreement in the name of the entity trading and doing business as the fictitious name. A Successful Bidder operating under a fictitious name is required to present Owner with evidence of registration of such name in accordance with Laws and Regulations prior to execution of the Agreement.

13.11 No Bidder shall offer more than one (1) Bid for each Contract or price for each item. If a Bidder submits more than one (1) Bid for each Contract or price for any item, none of the Bidder's Bids will be considered for award.

ARTICLE 14 – BASIS OF BID

14.01 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

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14.02 *Allowances*

A. For allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

14.03 Pricing:

A. Unless an economic price adjustment is specifically stated in and/or permitted by the Bidding Documents, the Contract is for fixed prices, and Owner will not allow for the escalation of prices during the Contract term. Such statements as "interest charges applied on accounts thirty (30) days or older" or "prices subject to revision" are considered escalation clauses. Except where specifically permitted, Bids shall not contain any information implying that the Bidder's prices are not firm through the duration of the Contract, and any reference in documents submitted with the Bid that indicates that the prices are not firm may be cause for rejection of the Bid in its entirety.

B. Prices should be stated in units of quantity as specified in the Solicitation. Bid prices shall be for complete installation or delivery ready for the Authority's use, and shall include all applicable shipping, freight, and installation charges.

C. Bidders shall supply with their Bid copies of catalogue cut sheets and price lists as required by the Bidding Documents. When price lists are required with a Bid, price lists are submitted for the sole purpose of providing an audit reference for the various items on the price list and the manufacturer's price for each item. Unless otherwise specifically stated in the Bidding Documents, prices shall remain firm for the duration of the Contract, regardless of any pricing changes by the manufacturer. Any reference to any terms and conditions that may appear on any price list, such as F.O.B. shipping point or prices subject to change, will not be part of any Contract with successful Bidder(s) and will be disregarded by Owner.

ARTICLE 15 – SUBMITTAL OF BID

15.01 A Bid shall be received no later than the date and time prescribed in Bonfire and shall be accompanied by bid security and other required documents. Bids will be received electronically via the Bonfire Procurement Portal.

Bids shall not be accepted in person, by U.S. Mail, by private courier service, via oral or e-mail communication, telephone or fax transmission.

Bids must be submitted in the format described in this IFB. To be considered, the bid must respond to all requirements in the IFB. The contents of this IFB shall become part of any contract(s) entered into as a result of this IFB.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the

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date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.

16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

16.04 A Bidder that is permitted to withdraw a Bid may not supply any material or labor to, or perform any subcontract or other work for, the Successful Bidder; nor may the withdrawing Bidder otherwise benefit, directly or indirectly, from the performance of the Project for which the withdrawn Bid was submitted. Reasonable grounds for supposing that any Bidder is interested in more than one Bid for the same item or Contract will be considered sufficient cause for rejection of all Bids in which the Bidder is interested. Persons colluding in the submission of Bids in violation of this Paragraph shall be barred from any and all Owner contracts until formally reinstated by Owner.

ARTICLE 17 – OPENING OF BIDS

17.01 Bids will be opened at the time and place so indicated in the advertisement or in the invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 Owner reserves the right to reject any Bid and/or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

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19.02 If Owner awards the contract for the Work to one or multiple Bidders, such award shall be to the responsible Bidder or Bidders submitting the lowest responsive Bid or Bids (as applicable).

19.03 Evaluation of Bids

A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers

19.06 Owner will not award the Contract to a Bidder that is in arrears to Owner or to the City of Pittsburgh for any reason.

19.07 In the case of a tie Bid, award shall be made by a drawing by lot limited to such Bidders. A witness shall be present to verify the drawing and his/her name shall be recorded on a memorandum to file.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within seven (7) days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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ARTICLE 22 – SALES AND USE TAXES

22.01 Owner is exempt from federal excise and Pennsylvania sales and use tax on tangible personal property and certain services. Said taxes shall not be included in the Bid. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information. A Pennsylvania Sales and Use Tax Exemption Certificate is available, upon written request, from Owner's Procurement Office.

ARTICLE 23 – PROTEST OF AWARD

23.01 Any Bidder that desires to protest Owner's award shall submit such protest in writing to Owner c/o Procurement Office, 1200 Penn Ave, Pittsburgh PA 15222 no later than ten (10) business days after public notice of the award. The written protest shall include the basis for the protest and the relief sought. Owner shall issue a decision in writing within ten (10) business days of receipt of a timely filed, written protest stating the reason for the action taken. Owner's decision shall be final unless the Bidder appeals within ten (10) days of the written decision by instituting legal action. Any and all appeals shall be filed in the Court of Common Pleas of Allegheny County, Pennsylvania. Nothing in this Section shall be construed to permit a Bidder to challenge the validity of the terms or conditions of the Bidding Documents.

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QUALIFICATIONS STATEMENT

Prepared by

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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(703) 684-2882
www.nspe.org

American Council of Engineering Companies
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(202) 347-7474
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QUALIFICATIONS STATEMENT

THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS

1. SUBMITTED BY:

Official Name of Firm: _____

Address: _____

_____

_____

2. SUBMITTED TO: _____

3. SUBMITTED FOR: _____

Owner: _____

Project Name: _____

_____

_____

_____

TYPE OF WORK: _____

_____

_____

4. CONTRACTOR'S CONTACT INFORMATION

Contact Person: _____

Title: _____

Phone: _____

Email: _____

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5. AFFILIATED COMPANIES:

Name: _____

Address: _____

_____

_____

6. TYPE OF ORGANIZATION:

☐ SOLE PROPRIETORSHIP

Name of Owner: _____

Doing Business As: _____

Date of Organization: _____

☐ PARTNERSHIP

Date of Organization: _____

Type of Partnership: Name _____

of General Partner(s): _____

_____

_____

☐ CORPORATION

State of Organization: _____

Date of Organization: _____

Executive Officers:

- President: _____
- Vice President(s): _____

_____

_____

- Treasurer: _____
- Secretary: _____

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☐ LIMITED LIABILITY COMPANY

State of Organization: _____

Date of Organization: _____

Members: _____

_____

_____

_____

☐ JOINT VENTURE

Sate of Organization: _____

Date of Organization: _____

Form of Organization: _____

Joint Venture Managing Partner

- Name: _____
- Address: _____

_____

_____

Joint Venture Managing Partner

- Name: _____
- Address: _____

_____

Joint Venture Managing Partner

- Name: _____
- Address: _____

_____

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7. LICENSING

Jurisdiction: _____

Type of License: _____

License Number: _____

Jurisdiction: _____

Type of License: _____

License Number: _____

8. CERTIFICATIONS CERTIFIED BY:

Disadvantage Business Enterprise: _____

Minority Business Enterprise: _____

Woman Owned Enterprise: _____

Small Business Enterprise: _____

Other (_____): _____

9. BONDING INFORMATION

Bonding Company: _____

Address: _____

_____

Bonding Agent: _____

Address: _____

_____

_____

Contact Name: _____

Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity as of date of this submittal: _____

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10. FINANCIAL INFORMATION

Financial Institution: _____

Address: _____

_____

Account Manager: _____

Phone: _____

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE LAST 3 YEARS

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

☐ YES ☐ NO

If YES, attach as an Attachment details including Project Owner's contact information.

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12. SAFETY PROGRAM:

Name of Contractor's Safety Officer:_____

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

Total Recordable Frequency Rate (TRFR) for the last 5 ye ars:

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

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Total number of man-hours worked for the last 5 Years:

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

13. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

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I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HEREWITH, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS_____DAY OF_____, 20___

NOTARY PUBLIC - STATE OF _____

MY COMMISSION EXPIRES:_____

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Additional items as pertinent.

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SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

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PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

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PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

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SCHEDULE C - LIST OF MAJOR EQUIPMENT AVAILABLE

ITEM	PURCHASE DATE	CONDITION	ACQUIRED VALUE

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BID FORM
FOR CONSTRUCTION CONTRACTS

Prepared by

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ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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BID FORM

BUS RAPID TRANSIT WATER DISTRIBUTION IMPROVEMENTS

PWSA Project No. 2020-325-102-0

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

The Pittsburgh Water and Sewer Authority
Attention: Procurement Department
1200 Penn Avenue
Pittsburgh, PA 15222

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted by Owner, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for ninety (90) days after the Bid opening or for such longer period of time that Bidder may agree to, in writing, upon the request of Owner. If an extension of the acceptance phase is necessary and agreed to, the Owner will issue a written agreement to the Bidder.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda and certifies that all clarifications or revisions made by addenda have been incorporated into the bid pricing for this project. Failure to acknowledge addenda may result in the bidders' proposal being non responsive and rejected in its entirety:

Addendum No.	**Addendum, Date**
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and has become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all building codes, permit requirements, jurisdictional restrictions and limitations, and Laws and Regulations that may affect cost,

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progress, and performance of the Work and all such costs have been included in the bid submitted to Owner.

D. Bidder has carefully studied any and all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings. Failure on the Bidder's part to become familiar with specific work area conditions and restrictions that are evident and/or made known to the contractor will not be accepted as a reason for a claimed change in condition affecting the contract cost.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents. Bidder is aware of the restrictions and coordination requirements with the Owner's Operations to make work areas available and confirms these restrictions will not impact the project duration

H. Bidder has given Owner and Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by the Engineer I has satisfactorily resolved all written notices issued by the Bidder(s) to the Owner for response(s) to the Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

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ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the e execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the Unit price(s) in the Bonfire pricing bid table.

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit and any other associated costs for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents. The Owner reserves the right to increase or decrease the unit price item quantities as needed for the benefit of the project or changes that may become necessary for the operation of the Owners business. The owner reserves the right to reallocate unit price costs and distribute unused amounts to other bid budgeted items, and Owner shall not be bound by or required to purchase or compensate Bidder for such approximate amounts.

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ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Provisions for liquidated damages for failure to timely attain milestone, substantial completing of the work for final payment, one set forth in the agreement.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. List of Proposed Subcontractors;

C. List of Proposed Suppliers; (this item may not be applicable)

D. List of Project References;

E. Evidence of authority to do business in the location of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;

F. Contractor's License No.: _____ or Evidence of Bidder's ability to obtain a Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;

G. Required Bidder Qualification Statement with supporting data; and

H. Supplier Diversity Program and Commitment Form;

I. Include all attachments required by the "C-451 Qualification Statement" referenced in the Bid Solicitation.

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters and as defined in the bid documents have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

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ARTICLE 9 – BID SUBMITTAL

BIDDER:

_____

By:
[Signature] _____

[Printed name] _____

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving
notice: _____

_____ _____

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____

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AGREEMENT
BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

Prepared by

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

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1420 King Street, Alexandria, VA 22314-2794

(703) 684-2882

www.nspe.org

American Council of Engineering Companies

1015 15th Street N.W., Washington, DC 20005

(202) 347-7474

www.acec.org

American Society of Civil Engineers

1801 Alexander Bell Drive, Reston, VA 20191-4400

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AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between The Pittsburgh Water and Sewer Authority ("Owner") and _____ ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Work of the Contract includes the construction of water distribution improvements in the public rights-of-way of Fifth and Forbes Avenues in the Uptown neighborhood of the City of Pittsburgh. The project area extends from between Sixth Avenue and the Birmingham Bridge and the new water mains to be installed range in size from 6-inch to 24-inch diameter.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Bus Rapid Transit Water Distribution Improvements; PWSA Project No. 2020-325-102-0

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by GAI Consultants ("Engineer")

3.02 The Owner has retained TBD ("Construction Manager") to act as Owner's Representative as defined in the General Conditions.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 270 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment no later than 365 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the

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delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. The parties acknowledge and agree that the liquidated damages assessed herein are not a penalty, but rather represent a reasonable estimate of Owner's damages, as a result of the actions of Contractor. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner $ 1000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete. Owner may, if it so elects, deduct Liquid Damages from the Contractor's Progress Payments.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment in accordance with the General Conditions, Contractor shall pay Owner $ 1000 for each day that expires after such time until the Work is completed and ready for final payment. Owner may, if it so elects, deduct Liquid Damages from the Contractor's Final Payment.

3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4. Milestones: Contractor shall pay Owner $ 1,000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of any Milestone established under the Contract, until such Milestone is achieved. Owner may, if it so elects, deduct Liquid Damages from a Contractor's Progress Payment.

4.04 *Special Damages*

A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) fines that may be imposed because of the contractors' negligence, and (3) for the costs reasonably incurred by Owner for additional engineering, construction management services, observation, inspection, and administrative services required after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

A. For all Unit Price Work, the Contract Price will be determined upon approval of each invoice and will be the sum of all owner approved invoices for the Work. Invoice amounts will be determined by multiplying the approved quantity for each Unit of Work as verified in the field by the Unit Price in the Bid form. Unit prices are in accordance with the Contractors' Bid (Attached hereto and incorporated herein as Exhibit ____).

B. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

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ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Construction Manager, Engineer, and Owner as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Progress payments become due forty-five (45) days after presentation of the Application for Payment to Owner with Construction Manager's and Engineer's recommendation for payment, as provided in Paragraph 6.02.A.1 below and Article 15 of the General Conditions, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion and until fifty (50%) percent of the Work is completed and approved as determined by Construction Manager, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

    a. Ninety [90%] percent of Work completed (with the balance being retainage).; and

    b. Ninety [90%] percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. At the time in which the Construction Manager determines that fifty (50%) percent of the Work is completed, fifty (50%) percent of the withheld retainage shall be paid to the Contractor.

3. Prior to Substantial Completion and after fifty (50%) percent of the Work is completed and approved as determined by Construction Manager, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

    a. Ninety-five [95%] percent of Work completed (with the balance being retainage).; and

    b. Ninety- five [95%] percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to one hundred [100%] percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less [150%] percent of Construction Manager's and Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

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6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Construction Manager and Engineer as provided in said Paragraph 15.06. Prior to requesting final payment, the Contractor shall have provided all close out documentation and the required maintenance bond. With the final payment request the Contractor will provide a final release of liens relieving the Owner, from any debts and disputes the contractor may have with vendors, manufacturers, suppliers, consultants, and/or subcontractors

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of six (6%) percent per annum (not compounded).

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

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G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Construction Manager and Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 8, inclusive).
2. Performance Bond.
3. Payment Bond.
4. Other Bonds.
5. General Conditions (pages 1 to 92, inclusive).
6. Supplementary Conditions (pages 1 to 10, inclusive).
7. Specifications as listed in the table of contents of the Project Manual.
8. Drawings (not attached but incorporated by reference) consisting of 166 sheets with each sheet bearing the following general title: Bus Rapid Transit Water Distribution Improvements.
9. Addenda (numbers 1 to ___, inclusive).
10. Special Provisions.
11. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid Form (pages 1 to __, inclusive).
    b. Supplier Diversity Program and Commitment Form.
12. The following which may be delivered or issued on or after the Notice of Award of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Approved schedules as required in the "General" and "Supplemental Conditions"
    c. Performance Bond
    d. Other Bonds
    e. Construction Change Authorization.

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f. Change Orders.

g. Field Instruction Directions.

B. There are no Contract Documents other than those listed above in this Article 9.

C. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

9.02 *Priority:* Wherever possible, the Contract Documents are to be read as cumulative and complementary. However, to the extent that any provisions of any of the Contract Documents are or may be inconsistent, the more stringent requirement shall apply, as determined by Owner.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

A. Contractor is not permitted to assign any rights under or interests in the Contract, without the written consent of Owner; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge Contractor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of

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Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:	CONTRACTOR:
_____	_____
By: _____	By: _____
Title: Executive Director	Title: _____
By: _____	
Title: _Director of Finance_____	*(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*
Attest: _____	Attest: _____
Title: _____	Title: _____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____
	License No.: _____ *(where applicable)*

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

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ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

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AMERICAN COUNCIL OF ENGINEERING COMPANIES

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To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties, ~~and~~ the Engineer, and the Construction Manager, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The form acceptable to ~~Engineer~~ Owner which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation including but not limited to release of liens, stored material affidavits with insurance confirmation, certified payroll records, and updated schedules as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form in response to Owner's advertisement or Instructions to Bidders setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, the Qualification Statement, the MBE/WBE/VBE/SDVBE Solicitation and Commitment Statement, as applicable and any attachments.

8. *Change Order*—A document which is ~~signed~~ executed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Owner, Construction Manager or Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

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10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; ~~contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal;~~ seeking resolution of a contractual issue that Owner, Construction Manager or Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Construction Manager's, Engineer's or Owner's decision regarding a Change Proposal or Potential Change Order; or seeking resolution of a contractual issue that Owner, Construction Manager or Engineer has declined to address. A demand for money or services by a third party or any lower level tier subcontractor is not a Claim to the Owner. Owner has no contractual obligation to any third party or lower level tier subcontractor and only the Contractor may submit a claim to the Owner.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Construction Change Authorization*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work. A work change directive may have no impact on cost or schedule or it may include a change in the contract price, time, or both. If there is disagreement on the impact of cost or time the Work Change Directive requires the Contractor to proceed with the work and maintain an account of all costs associated with the Change. Failure to maintain adequate records may result in rejection of a portion or all of the Contractors claimed costs.

~~12~~ 13. *Construction Manager* – The Owner's representative during the construction period. Refer to Article 9, Part 9.13, for the duties and responsibilities of the Construction Manager.

14. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work, formed with the execution of the Agreement and reflected in the Contract Documents.

~~13~~ 15. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

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~~14~~ 16. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

~~15~~ 17. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

~~16~~ 18. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

~~17~~ 19. *Cost of the Work*—See Paragraph 13.01 for definition.

~~18~~ 20. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

~~19~~ 21. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

~~20~~ 22. *Engineer*—The individual or entity named as such in the Agreement.

23. *Engineer's Project Representative*—If required, the authorized representative of Engineer assigned to assist Engineer in performing its duties. As used herein, the term Engineer's Project Representative or "EPR" includes any assistants or field staff of *Engineer's Project Representative.*

24. *Expedited Contractor Change Order – A written change authorization to be issued by the Owner or Construction Manager when a change must be processed on an expedited basis.*

~~21~~ 25. *Field ~~Order~~ Instruction and Direction (FID)* —A written order issued by Owner Project Manager, Engineer or Construction Manager which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

26. *Final As-Built Documents* – A final set of revised documents produced by the Construction Manager from the As-Built Documents received from the contractor(s). The Final As-built Documents shall reflect all changes made in the specifications and working drawings by the Contractors during the construction process, and show the actual dimensions, geometry, and location of all elements of the work as reported by the Contractor. The Construction Manager is responsible for the transfer of the data for the Owner's use and the Contractor is responsible for the accuracy of the data

27. *Geotechnical Baseline Report (GBR)* — The interpretive report prepared by or for Owner regarding subsurface conditions at the Site, and containing specific baseline geotechnical conditions that may be anticipated or relied upon for bidding and contract administration purposes, subject to the controlling provisions of the Contract, including the GBR's own terms. The GBR is a Contract Document.

28. *Geotechnical Data Report (GDR)* — The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner in support of the Geotechnical Baseline Report. The GDR's content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. The GDR does not include an interpretation of the data. If opinions, or interpretive or

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speculative non-factual comments or statements appear in a document that is labeled a GDR, such opinions, comments, or statements are not operative parts of the GDR and do not have contractual standing. Subject to that exception, the GDR is a Contract Document

~~22~~ 29. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

~~23~~ 30. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

~~24~~ 31. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

~~25~~ 32. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

~~26~~ 33. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

~~27~~ 34. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

35. *On Site As-Built Documents* - A revised set of documents maintained daily on-site by the Contractor and made available to the Owner and Construction Manager upon request. As-Built documents shall be turned in to the Construction Manager and Owner upon completion of the project; shall reflect all changes made in the specifications and working drawings during the construction process; and show the actual dimensions, geometry, and location of all elements of the work completed under the contract.

~~28~~ 36. *Owner*—Unless indicated otherwise in the Agreement, The Pittsburgh Water and Sewer Authority.

37. *Potential Change Order (PCO)*—A form or electronic form prepared by Construction Manager or Owner project manager in advance of a possible Change Order. Contractor shall evaluate potential changes to the scope of Work and any cost or schedule impacts and provide a formal proposal in accordance with this agreement. Potential change orders may include but not be limited to an increase or decrease in contract cost or time.

~~29~~ 38. *Progress Schedule*—A schedule, prepared and maintained by Contractor and approved by Construction Manager, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

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~~30~~ 39. *Project*—The total undertaking to be accomplished for Owner by engineers, construction managers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

~~31~~ 40. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

~~32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.~~

41. *Record Documents* – A printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations, clarifications, and approved Shop Drawings kept in good order by the Contractor and annotated on a daily basis to show changes made by the engineer during construction. These record documents, together with all approved Samples, will be available to Construction Manager, Engineer and Owner for reference.

~~33~~ 42. *Samples*—Physical examples of materials, mockups of assemblies, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

~~34~~ 43. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals. The submittal schedule shall include at minimum, the dates Contractor will provide submittal and the date approval is required by engineer, and the time requirements for Engineer's review of the submittals and the performance of related construction activities.

~~35~~ 44. *Schedule of Values*—A schedule, prepared and maintained by Contractor and approved by Construction Manager, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

~~36~~ 45. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

~~37~~ 46. *Site*—Lands or areas ~~indicated in the Contract Documents as being furnished by Owner~~ upon which the Work is to be performed, including rights-of-way and easements, and ~~such~~ any ~~other~~ lands furnished by Owner which are designated for the use of Contractor.

~~38~~ 47. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

~~39~~ 48. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

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~~40~~ 49. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ~~Engineer~~ Owner, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof. The Owner's use of a portion of the Work does not constitute acceptance of the Work as substantially complete or relieve the Contractor of ownership for maintenance, repairs, or warranty work unless agreed to by the Owner in writing.

~~41~~ 50. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

~~42~~ 51. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

~~43~~ 52. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor. Agreements entered into between the Contractor and Supplier does not constitute an agreement between the Owner and Supplier.

~~44~~ 53. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

~~45~~ 54. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. Safety regulations and/or the Owner may designate certain underground facilities as confined spaces requiring special permission to enter. Underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities leased or owned by Owner and used for the supply of water or the conveyance of wastewater or storm water, are not considered Underground Facilities under this Agreement.

~~46~~ 55. *Unit Price Work*—Work to be paid for on the basis of unit prices.

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~~47~~ 56. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

57. *Work Order* — an order or directive identifying the Contract and the scope, location, and schedule of Work to be performed under the Contract Documents.

~~48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.~~

1.02 *Terminology*

A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*:

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer or Owner. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer or Owner as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer or Owner any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*:

1. Calendar Day: Except as otherwise expressly provided in the Contract Documents, the word "day" means a calendar day of twenty-four (24) hours measured from midnight to the next midnight.

2. Work Day: Project specific work days in which the Contractor is permitted by the contract documents to perform its work. These may or may not be limited to regular daylight work hours, off hour shifts, holidays, and weekends. Permission to work on days or hours not included in the contract documents must be requested and approved in writing.

D. *Defective*:

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents; or

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b. does not meet the requirements of any applicable inspection, reference standard, test, industry standard, manufacturers or suppliers' requirements, or approval referred to in the Contract Documents; or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. *Furnish, Install, Perform, Provide*:

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition. "Furnish", when directed to an assembly or item not specifically identified to be turned over to the Owner for their use or storage shall mean 'furnish and install' complete and ready for use.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

G. When the Contract Documents require that notice be given or action be taken in writing, the notice may be given or action taken electronically. Documents such as Potential Change Orders and Change Orders may exist only in approved electronic records, and their processing may be by approved electronic means.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. *Bonds*: ~~When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.~~ Contractor shall deliver required performance and payment bonds to Owner within seven (7) days of the Notice of Award.

B. *Evidence of Contractor's Insurance*: ~~When Contractor delivers the executed counterparts~~ Within seven (7) days of the ~~Agreement to Owner~~ Notice of Award, Contractor shall ~~also~~ deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and ~~other~~

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~~evidence of insurance~~ policies or endorsements required to be provided by Contractor in accordance with Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision. Contractor shall also provide the same evidence of insurance for any lower tier contractor working within or on the Owners property

~~C.~~

~~*Evidence of Owner's Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.~~

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor ~~four printed copies of the Contract (including one fully executed counterpart of~~ the Agreement~~), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction~~. Contractor shall sign and return the Agreement to Owner within seven (7) days of the Notice of Award. Owner shall then execute the Agreement and return one signed copy to the Contractor. Delays in the execution of the Agreement shall not release the Contractor from the Contract Time.

B. Owner shall maintain and safeguard ~~at least one original printed record version of~~ the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. ~~Owner shall make such original printed record version of the Contract available to Contractor for review.~~ Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within ten (10) days after the ~~Effective Date~~ issuance of the ~~Contract (or as otherwise specifically required by the Contract Documents)~~ Notice of Award, Contractor shall submit to ~~Engineer~~ Construction Manager and Owner for ~~timely~~ review and approval the following items:

1. a ~~preliminary Progress~~ Critical Path Method (CPM) Schedule indicating the times (numbers ~~of~~ days ~~or~~ and dates) for starting and completing the various stages of the Work, including work and durations and any Milestones specified in the Contract;

2. a ~~preliminary~~ Schedule of Submittals; and

3. a ~~preliminary~~ Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

B. *Easements, Permits and Plans:* Following receipt of the Notice of Award and execution of the Agreement and before Owner issues a Notice to Proceed, Contractor shall submit to Construction Manager and Owner:

1. copies of all required temporary easements or licenses;

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2. copies of all required permits (see Paragraph 7.08.A);

3. all required traffic control plans;

4. where applicable to the Work, water shut-off request and plan for temporary service (see Paragraph SC-5.02.A); and

5. where applicable to the Work, material disposal plan or plans.

6. all other documents required by the Qualifications Statement and Contractor Agreement.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a preconstruction conference attended by Owner, Contractor, ~~Engineer~~ Construction Manager, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss and approve the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this preconstruction conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, ~~render~~ make project related decisions relative to the Contract, and otherwise act on behalf of each respective party.

~~2.05 *Initial Acceptance of Schedules*~~

~~A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.~~

C. Contractor shall not proceed on-site until the Preconstruction conference has been held and all schedules have been approved by the Construction Manager and Owner, unless otherwise approved by Owner and Construction Manager.

1. The Progress Schedule will be acceptable to ~~Engineer~~ Construction Manager and Owner if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on ~~Engineer~~ Construction Manager or Owner responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor. Construction schedules will be prepared and presented using a recognized CPM scheduling program, Primavera P6 or equal (the scheduling program selected by the Contractor shall have the ability to be converted into a Primavera P6 format). The schedule will be logically driven and each activity shall have at least one predecessor (except for the first activity) The schedule will be broken down into phases and all activities will be coded by area, responsibility, and phase. The accepted baseline schedule shall have a data starting date no later than the date of the Notice to Proceed.

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The schedule will include tasks for substantial completion and punch list work. The schedule shall clearly identify project float, and the float is not owned by the Contractor or the Owner. Float will be used for the benefit of the project and any changes in float or logic must be approved in advance by the Construction Manager. The initial schedule and all updates shall be provided in PDF and electronic format. Schedule updates will be issued at a minimum of once a month in conjunction with the application for payment

2. Contractor's Schedule of Submittals ~~will~~ shall be in a format acceptable to Construction Manager, Owner, and Engineer ~~if it provides a workable arrangement for reviewing and processing~~ Submittals catalog numbering requirements and documentation shall meet the ~~required~~ Owner's requirements and all submittals shall be issued electronically for review through the Owner's project management database.

3. Contractor's Schedule of Values will be acceptable to ~~Engineer~~ Construction Manager and Owner as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work. Unit price items in the schedule of values will be further broken down if determined required by the Owner, Engineer, or Construction Manager. Schedule of values is required to indicate a value acceptable for completion of the O&M, as built, warranties and other close out documentation. Change order amendments to the schedule of values may also be further broken down if required by the Owner, Engineer, or Construction Manager.

~~2.06~~ 2.05 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Construction Manager, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in ~~electronic media or digital format, either directly, or through access to a secure Project website~~ approved electronic media or digital format, either directly, or through access to a secure Project website utilizing the Owner's project management system. Physical samples will be hand delivered by the Contractor in person or by a nationally recognized delivery service with a traceable delivery trail. Each submittal must contain the Contractor's stamp indicating the submittal has been reviewed and conforms to the Contract requirements. Electronic submittal stamps shall be submitted for Physical samples through the Owner's secure project website. Submittal stamps must include the reviewers name, date, Owner's required submittal number, specification section, specification paragraph or drawing number for which the submission has been issued. Submittals that cover more than one specification section or paragraph shall be itemized on the submittals stamp for the reviewer's verification. All product data submittals that contain multiple products shall be clearly marked with arrows or a circle that clearly identifies the specific item the Contractor is requesting to be reviewed.

B. If the Contract does not establish protocols for approved electronic or digital transmittals, then Owner, Construction Manager, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in approved electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items,

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or from those established in applicable transmittal protocols. All digital and electronic submittals shall be scanned by the submitter or converted to a PDF format and confirmed virus free prior to transmission. Transmitted documents shall not be password protected and shall be open to the reviewer for comments which shall be returned to the Contractor for action.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all. The Contractor is not relieved from the requirements of submission of shop drawings and product data if an item is shown on the drawings but not specifically listed in the specifications. The same is true for the opposite condition. There may be items listed in the specifications that will not be required for this project. The Contractor will bring these items to the attention of the engineer and request verification the specified item is not required.

B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. The Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. When Unit Quantities are provided by the Engineer, those quantities are estimates of the amounts required for performance of the Work. By submitting a bid Contractor agrees it is satisfied with these estimates as the basis for determining the prices at which it agrees to perform the Work. Except as provided in the Supplementary Conditions, payment made at Contractor's applicable unit price shall be full compensation for the estimated items of Work, whether within or beyond the estimated amounts. Contractor disclaims and waives any right to dispute the adequacy of the estimates reflected in the Contract Documents.

G. Contractor understands that the extent and the location of the Work indicated on the Drawings and Specifications is approximate only, and agrees to perform the Work in conformity with orders given by Owner, Construction Manager, or Engineer regardless of changes in scope or location. Contractor further understands that unless otherwise stated in the Agreement nothing in the Contract binds Owner to carry out all work of the same nature under the Contract. Contractor disclaims and waives any right to dispute the adequacy of the information on scope or location of Work reflected in the Contract Documents.

H. The contractor shall not use the Owners documents as submittals.

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3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Construction Manager, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the ~~part of the~~ Contract Documents. ~~prepared by or for Engineer.~~

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*:

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents~~,~~ and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing in the required RFI format to the Construction Manager, Engineer and Owner any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer or Owner, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01. If the Contractor proceeds with the work without making the discrepancy known to the Owner and Engineer, , the Owner will not be responsible for any costs associated with the work. The Owner will only be responsible for costs incurred from the point at which notification was issued, and only to the extent agreed to.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to the Construction Manager, Engineer and Owner in ~~writing~~ the Owner's approved RFI format. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer or Owner, or by an amendment or supplement to the Contract Documents issued pursuant

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to Paragraph 11.01. If the Contractor proceeds with the work without making the discrepancy known to the Owner and Engineer, the Owner will not be responsible for any costs associated with the work. The Owner will only be responsible for costs incurred from the point at which notification was issued, and only to the extent agreed to by Owner.

3. Contractor shall not be liable to Owner, Construction Manager, or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor ~~had actual knowledge~~ knew or reasonably should have known thereof.

B. *Resolving Discrepancies*:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless ~~it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.~~ the Contractor appeals the response and claims additional costs by submitting a Change Proposal. The Construction Manager and Owner will evaluate the Contractors Change Proposal to determine if there is a change in condition warranting a Change Order. The Contractor shall immediately notify the Construction Manager and Owner before proceeding with the work of any response issued by the Engineer for which the Contractor believes there is a change in cost to the Contract Sum (a net increase or decrease). Contractor's rights for compensation may be forfeited if the Contractor proceeds with the claimed change condition work that increases the contract cost without notification to and approval of Owner.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3)

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other engineering or technical matters, then Engineer will promptly give written notice to Owner, Construction Manager, and Contractor that Engineer is unable to provide a decision or interpretation or Contractor shall submit the matter initially to Owner with a copy to Engineer. If Owner, Construction Manager, and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on ~~the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on~~ the day indicated in the Notice to Proceed. ~~A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.~~

4.02 *Starting the Work*

A. Except as expressly stated in the Contract Documents or authorized by Owner in writing, Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by

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~~professionally qualified personnel~~ a Commonwealth of Pennsylvania registered engineer or surveyor.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.~~05~~04 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to ~~Engineer~~ Construction Manager and Owner for review and acceptance ~~(to the extent indicated in Paragraph 2.05)~~ any proposed adjustments in the Progress Schedule that will not result in changing the Contract Times or construction sequence. The Contractor will not alter any logic or constraints established in the baseline schedule or prior approved schedule without approval of the Construction Manager and Owner.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Construction Manager or Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If ~~Owner, Engineer, or anyone~~ the Contractor is delayed for ~~whom Owner is responsible, delays, disrupts, or interferes~~ reasons not caused by the actions or negligence with the ~~performance or progress of the Work, then~~ Contractor and the Contractor makes the request within forty-eight (48) hours of first having knowledge of the delay, the Owner will review the delay claim for consideration. If the Owner agrees with the Contractor's delay claim the Contractor shall be entitled to an equitable adjustment in the Contract Times and/or Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. *Contractor shall cooperate with Construction Manager and Owner ~~and Engineer~~ in determining and implementing the most cost-effective means of minimizing any delays in the performance and completion of the Work. Contractor's failure to give timely notice will be an irrevocable waiver of Contractor's right to seek an equitable adjustment in the Contract Time and/or Contract Price.*

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of ~~a~~ any Subcontractor or Supplier at any level shall be deemed to be within the control of Contractor. Contractor shall take such steps as may be deemed necessary by Construction Manager and Owner, including but not limited to the employment of additional workmen and/or the scheduling of overtime, to bring its performance into compliance with the Contract Times, and shall comply with reasonable directions from Construction Manager or Owner to that end, all without compensation over and above the Contract Price. Owner's refusal to permit Work to be performed outside of normal working hours shall neither affect the provisions of the Contract requiring all Work to be completed at specified times nor release Contractor from liability to

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Owner for the delay. Contractor shall be obligated to reimburse Owner for those additional inspection and other costs occasioned by the delay.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of ~~and beyond the control of Owner,~~ Contractor, and those for which they are responsible, then provided the Contractor makes the request within forty-eight (48) hours of the commencement of the delay, the Owner will review the Contractors delay claim for consideration. If the Owner agrees with Contractor's delay claim the Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. abnormal weather conditions;
3. ~~acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and~~
4. ~~4.~~ 3. acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

G. Contractor must submit any Change Order seeking an adjustment in Contract Price or Contract Times under this paragraph within thirty (30) days of the ~~commencement~~ first knowledge of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands, Non-Public Site*

A. When the Work is to be performed not within a public right-of-way or dedicated easement, but on property owned or leased by Owner, Owner shall ~~furnish~~ provide access to the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application

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but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which ~~permanent~~ improvements are to be made and Owner's interest therein ~~as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations~~.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. Contractor shall secure and pay all costs associated with securing any temporary construction easements or licenses necessary to the performance of the Work on private property. Contractor shall deliver copies of any such easements or licenses to Owner and Engineer prior to any mobilization to or construction on the property.

5.02 *Work Performed in Public Right-of-Way*

A. In performing Work within streets or other public right-of-way, Contractor shall comply with the requirements of the City of Pittsburgh Department of Mobility and Infrastructure (DOMI) Right of Way Procedures Manual and the requirements of all government agencies, other agencies, local residences and/or businesses/institutions having jurisdiction at the time the Work is performed.

~~5.02~~ 5.03 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas~~; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.~~.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, defend, indemnify and hold harmless Owner, Construction Manager and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of

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Construction Manager, engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Construction Manager, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

1. All excavated and demolished material from a construction site that is not to be reused must be properly removed and disposed of or stockpiled. If the material is to be disposed of in the City of Pittsburgh, Contractor must obtain a permit from the City and provide a copy of the permit to Construction Manager and Owner. If it is to be disposed of outside the City, Contractor shall provide Owner and Construction Manager with documentation acceptable to Owner that Contractor has the land owners or disposal facilities permission for transfer of the debris and complied with all Laws and Regulations applicable to the disposal of the materials.

2. Owner may not issue a Notice to Proceed until Contractor has submitted the appropriate material disposal plan or plans to Owner. If Contractor intends to use more than one site for material disposal or stockpiling, Contractor must complete and submit a material disposal plan for each disposal site.

3. Where materials are recycled, contractor shall provide to the Owner with the weights and measures of all disposed materials.

4. Legal disposal of any hazardous materials removed under this contract must be documented and handled in accordance with all applicable laws and regulations. The contractor will provide proof of disposal and chain of custody records to the Owner for the project record.

5. All debris is the property of the contractor; however, the Owner reserves the right to salvage any equipment or appurtenances prior to disposal.

C. *Cleaning*:

1. Contractor shall keep the Site clean at all times during the performance of the Work. The Contractor shall not permit debris to accumulate and at a minimum shall conduct a full site cleanup once a week. Debris will not be allowed to accumulate anywhere on site. Should Owner or Construction Manager direct Contractor to clean an area, Contractor shall do so to the Owner's or Construction Manager's reasonable satisfaction within twenty-four (24) hours or Owner may perform such cleaning or have it performed and charge the cost thereof to Contractor.

2. Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by the general public or, for those Sites that are not

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dedicated to public use, by Owner, lessee, or other persons who may be occupying or traversing the Site.

3. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials; ~~and~~ shall restore to original condition all property not designated for alteration by the Contract Documents; and shall thoroughly clean all pavements, sewers, catch basins, manholes, culverts, and connections constructed under the Contract.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them. All damage caused by the Contractor from overloading will be repaired at the Contractor's expense.

E. *Restoration:* The Contractor shall restore or replace any existing facilities, structures, surfaces, fixtures, property and landscaping damaged during construction to the original or new condition, as determined by Owner. Without limiting the foregoing, except where otherwise expressly directed by Owner, all damaged surfaces shall be rehabilitated and refinished; damaged concrete drives, pads, walkways, and curbs shall be replaced in kind; structures and facilities shall be reconstructed to their pre-existing condition; and minor landscaping, grass and small plants, shall be replanted and restored to the original condition, as detailed in the Surface Restoration Specifications.

~~5.03~~ 5.04 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: Any reports or drawings which impact the project and are known to Owner addressing subsurface conditions or structures at the Site, or the Technical Data contained therein, ~~are~~ will be identified in the Supplementary Conditions~~. identify:~~ or transmitted separately.

~~1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;~~

~~2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and~~

~~3. Technical Data contained in such reports and drawings.~~

B. *Reliance by Contractor on Technical Data Authorized*: Unless Contractor has information and/or knowledge to the contrary, Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions or transmitted separately with respect to such reports and drawings, but such reports and drawings are not Contract Documents unless they are included as such. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner, Construction Manager or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

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1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

~~5.04~~ 5.05 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.0~~3~~4 is materially inaccurate; or
2. is of such a nature as to require a change in the Drawings or Specifications; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner, the Construction Manager and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement from Owner or Construction Manager permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.0~~4~~5.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to the Construction Manager and Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise the Construction Manager and Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, the Construction Manager or Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or

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Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must fall within any one or more of the categories described in Paragraph 5.04<u>5</u>.A;

b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew <u>or should have known</u> of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or

b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice as required by Paragraph 5.04<u>5</u>.A.

3. If <u>Construction Manager</u>, Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change ~~Proposal~~ <u>Order Request (COR)</u> regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than <u>thirty (30)</u> days after <u>the Construction Manager or</u> Owner's issuance of the <u>Construction Manager or</u> Owner's written statement to Contractor regarding the subsurface or physical condition in question.

~~5.05~~ <u>5.06</u> *Underground Facilities*

A. *Contractor's Responsibilities*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities~~, including Owner,~~ or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

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1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data ~~provided by others~~; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

   a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

   b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;

   c. coordination of the Work with the owners ~~(including Owner)~~ of such Underground Facilities, during construction; and

   d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work; and

   e. coordination and notification to other utilities for protection and inspection of their utility lines which may need to be rerouted or temporarily supported during the construction operations

   f. temporary connections or bypass connections necessary to complete the work as identified on the contract documents

   g. protection of open excavations from accumulating water, debris, or caving in

   h. Protection of open excavations to prevent workers or the general public from falling in

   i. Immediately notify the Owner should one of the Owner's or other utility companies service lines becomes damaged during the progress of the work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents or was not disclosed in response to Contractor's One Call, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Construction Manager, Owner and Engineer.

C. *Engineer's Review*: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents or disclosed in response to Contractor's One Call, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Construction Manager and Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

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D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Construction Manager and Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part. The Contractor will identify any deviations or discrepancies for underground facilities on the As-Built record documents.

E. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents or disclosed in response to Contractor's One Call, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

   a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual or approximate location of the Underground Facility in question;

   b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

   c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and

   d. Contractor gave the notice required in Paragraph 5.0~~5~~6.B.

2. If Construction Manager, Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than thirty (30) days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

F. Contractor is required to comply with the Underground Utility Line Protection Law, Act 287 of 1974, as amended, 73 Pa. Stat. §§ 176 – 186 ("One Call Act").

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~~5.06~~ 5.07 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. ~~Those~~ Any reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

2. Technical Data contained in any such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents~~.~~ unless they were issued as part of the bidding documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Construction Manager, Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice

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required by Paragraph 5.0~~6~~7.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Construction Manager, Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within thirty (30) days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, ~~Owner~~ Contractor shall indemnify and hold harmless ~~Contractor, Subcontractors~~ Owner, Construction Manager, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to ~~a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~

~~J.~~ ~~To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to~~ the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.0~~6~~7.J shall obligate

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Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. ~~K.~~ The provisions of Paragraphs 5.0~~3~~4, 5.0~~4~~5, and 5.0~~5~~6 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract. The Contractor shall provide a maintenance bond starting on the agreed to date of substantial completion for the period specified in the agreement.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Construction Manager and Owner and ~~Engineer and~~ shall, within twenty (20) days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

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6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract and stating the policy numbers and the inception and expiration dates of each policy. ~~Upon request by Owner or any other insured,~~ Contractor shall also furnish ~~other evidence of such required insurance, including but not limited to copies of policies and~~ additional insured, waiver of subrogation, and non-contributory endorsements, and documentation of applicable self-insured retentions and deductibles. Upon the request of Owner or any additional insured, Contractor shall produce copies of any or all required policies. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision. These provisions for verification of insurance also apply to all of the subcontractors or vendors the Contractor may employ for completing physical work at the project site or on any of the Owner's properties.

~~D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.~~

~~E.~~ D. Failure of Owner ~~or Contractor~~ to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

~~F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.~~

~~G.~~ E. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.

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~~H.~~ F. Without prejudice to any other right or remedy, if ~~a party~~ Contractor has failed to obtain required insurance, the ~~other party~~ Owner may elect to obtain equivalent insurance to protect such other party's interests at the expense of the ~~party~~ Contractor who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

~~I.~~ G. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.

~~J.~~ H. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.

2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).

3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).

B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.

2. claims for damages insured by reasonably available personal injury liability coverage.

3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a ~~1996~~2014 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:

a. Such insurance shall be maintained for three years after final payment.

b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.

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3. Broad form property damage coverage.
4. Severability of interest.
5. Underground, explosion, and collapse coverage.
6. Personal injury coverage.
7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

E. *Umbrella or excess liability*: When required by the Supplementary Conditions, Contractor shall purchase and maintain umbrella and/or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. *Contractor's pollution liability insurance*: When required by the Supplementary Conditions, Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, and, where required, umbrella or excess, and pollution liability policies, shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not

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by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:

1. include at least the specific coverages provided in this Article.

2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least ten (10) days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

4. remain in effect or be renewed or replaced with comparable coverage and limits at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.

5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.

J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

A. *Builder's Risk*: ~~Unless otherwise provided in~~ When required by the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the Owner, Construction Manager, and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds.

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For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).

6. extend to cover damage or loss to insured property while in transit.

7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

8. allow for the waiver of the insurer's subrogation rights, as set forth below.

9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.

10. not include a co-insurance clause.

11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.

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12. include performance/hot testing and start-up.

13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

14. include for the benefit of Owner loss of profits and soft cost coverage including, without limitation, fixed expenses and debt service for a minimum of twelve (12) months with a maximum deductible of thirty (30) days, plus attorney's fees, Construction Manager and engineering or other consultants' fees, if not otherwise covered.

B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least ten (10) days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.

F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Construction Manager, Engineer or ~~its~~ their consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils

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or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Construction Manager, Engineer, ~~its~~ their consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, Construction Manager, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. ~~loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and~~

~~2.~~ loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, Construction Manager or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Construction Manager, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Construction Manager, Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within fifteen (15) days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as

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fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor will provide a full time dedicated superintendent and project manager with experience on similar projects who are able to make business decisions on behalf of the Contractor. The Owner reserves the right to request resumes for review and approval. Once the superintendent and project manager have been accepted by the Owner they may not be replaced (excluding acts of the employee outside of the Contractor's control) without written authorization from the Owner, and the Contractor must provide a replacement with the same level of experience and authority within the company.

B. At all times during the progress of the Work for Contractor's self-performed work and work performed by the any lower tier subcontractors or vendors retained by the Contractor, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and ~~Engineer~~ Construction Manager except under extraordinary circumstances. Contractor's assignment of a resident superintendent is subject to Owner's prior approval, which shall not be unreasonably withheld. Further, Owner reserves the right to require Contractor to remove from the Project a resident superintendent who, in Owner's sole judgment, is incompetent or unfit for performance in that role. The Contractor will not permit or schedule the work of any subcontractor or vendor without having a competent superintendent who can make decisions on behalf of the Contractor on site.

7.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday from 7:00 am to 6:00 pm. ~~Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably~~

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~~withheld.~~ Contractor will perform the Work on such other days and times as Construction Manager or Owner may direct~~.~~ or approve.as required to minimize interruptions in services for the Owners operations, utilities and/or reduce interference with areas outside of the general project site. The Contractor shall coordinate all off hours work activities in advance with the Construction Manager and Owner.

C. *Prevailing Wage:* Contractor will comply with the Prevailing Wage Act, with the regulations adopted thereunder, and with the Prevailing Minimum Wage Predetermination for this Project as determined by the Pennsylvania Secretary of Labor and incorporated in the Contract Documents. Contractor's duty to comply with the Prevailing Wage Act is not in any way contingent upon Owner's having attached the prevailing wage rates to the Contract Documents.

7.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Construction Manager, Engineer or Owner, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents. Damage caused to any materials or equipment stored will be repaired or replaced at no expense to the Owner. Contractor shall maintain and provide proof of insurance coverage for all materials and equipment whether it is stored on the site or elsewhere. Materials stored off site will be subject to additional insurance coverage and documentation requirements.

D. *Owner's Equipment*: Under no circumstances shall Contractor, any of its Subcontractors, or anyone other than authorized personnel of Owner operate any of Owner's equipment without express written permission from the Owner.

E. *Steel Products*: Only steel products made in the United States may be used on the Project. Permissible steel products are those rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or similarly processed, or processed by a combination of two or more of such operations, from steel made in the United States. Exceptions are permitted if Contractor can establish that the required steel products are not produced in the United States in sufficient quantities to meet Contract's requirements; however, in such event, Contractor may not use steel products from countries that have been found to discriminate under the Public Works Procurement Equalizing Trade Practices Law, 71 Pa. Stat. §§ 773.101 – 773.113.

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7.04 *"Or Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required~~.~~ for the basis of design. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its ~~sole~~ discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall recommend to Owner that it be deemed ~~it~~ an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) it has a proven record of performance and availability of responsive service; and

4) it is not objectionable to Owner.

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense, and at no expense to Owner.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. ~~Engineer will be the sole judge of acceptability.~~ No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete; ~~and~~ Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication and Owner approves the "or equal" request in writing. Engineer will advise Contractor in writing of any negative determination.

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D. *Effect of Engineer's and Owner's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's and/or Owner's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer approve and recommend to Owner the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

   a. shall certify that the proposed substitute item will:

      1) perform adequately the functions and achieve the results called for by the general design,

      2) be similar in substance to that specified, and

      3) be suited to the same use as that specified.

   b. will state:

      1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

      2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

      3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

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c. will identify:

1) all variations of the proposed substitute item from that specified and provide submittals for the specified item for comparison, and

2) available engineering, sales, maintenance, repair, and replacement services.

d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. ~~*Engineer's*~~ *Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. ~~Engineer will be the sole judge of acceptability.~~ No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete; ~~and~~ Engineer determines that the proposed item is an acceptable substitute; and Owner approves the substitution request. ~~Engineer's~~ Owner's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute. Warranties for all substitutions must be equal to or greater than the warranty requirements listed in the contract documents.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense, and at no expense to Owner.

F. *Effect of* ~~*Engineer's*~~ *Determination*: If ~~Engineer~~ Owner approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's or Owner's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change ~~Proposal~~Order Request (COR).

7.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

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B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order and any work on-site, Contractor shall submit to Construction Manager and Owner the identity of the proposed Subcontractor or Supplier ~~(unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.~~ including the company's full name, address, and project managers name for Owners review and approval.

E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it ~~(either in writing or by failing to make written objection thereto)~~, then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation or personal observation by a representative of Construction Manager or Owner. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, for reasons not outlined in 7.06 E, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change ~~Proposal~~ Order Request (COR) for such adjustment within thirty (30) days of Owner's requirement of replacement. Provided, however, that Contractor shall not be entitled to an adjustment is Contract Times or Contract Price if (1) Contractor knew or should have known of Owner's objection to the Subcontractor, Supplier, or other individual or entity before Contractor retained or hired it, him, or her; or (2) Contractor is not delayed and incurs no additional cost as a direct result of the required replacement. If the Owner agrees the Contractor is entitled to an adjustment in Contract Price or Contract Time, the Contractor will provide documentation from the bid phase of the contract in the form of the intended subcontractor's or suppliers proposal and/or copies of their purchase order and the desired subcontractor's or suppliers proposal and or purchase order for review.

G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to ~~Engineer~~ Construction Manager a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

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I. Contractor shall be fully responsible to Owner and ~~Engineer~~ Construction Manager for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work. The Construction Manager shall not be relied upon to assist the Contractor with coordination or scheduling the Subcontractors and Suppliers work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from ~~communicating with Engineer~~ coordinating the work with Construction Manager or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner ~~and Engineer.~~, Construction Manager, and Engineer. An agreement between the Contractor and Subcontractor and/or Supplier does not bind or obligate the Owner to the Subcontractor or Supplier.

N. Owner or Construction Manager may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner, Construction Manager, or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor

2. shall create any obligation on the part of Owner, Construction Manager, or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

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B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Construction Manager and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of Construction Manager, engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.09 *Taxes*

A. Owner is exempt from federal excise and Pennsylvania sales and use tax on equipment and materials incorporated into the Work. A Pennsylvania Sales and Use Tax Exemption Certificate is available upon request. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased or leased by Contractor, or to supplies or materials not incorporated into the Work. ~~Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.~~

7.10 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner, Construction Manager, nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses,

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and shall defend, indemnify and hold harmless Owner, Construction Manager, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within thirty (30) days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Maintenance of ~~Record~~ Documents*

A. **Record Documents** - Contractor shall maintain in a safe place at the Site, or other approved location, one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them on a daily basis to show changes made during construction. These record documents, together with all approved Samples, will be available to Construction Manager, Engineer and Owner for reference. The Construction Manager will review the record documents in conjunction with the review of the Contractor's payment requests and failure of the Contractor to keep the record documents current may result in withholding of additional retainage. Upon completion of the Work, Contractor shall deliver these record documents to Construction Manager for conveyance to the Owner and Engineer.

B. **On Site As-Built Documents** – Contractor shall maintain on-site a revised set of documents to reflect all changes made in the specifications and working drawings during the construction process. Documents shall be made available to the Owner, Construction Manager and Engineer upon request. On Site As-Built documents shall be turned over to the Construction Manager and Owner upon completion of the project and shall show the actual dimensions, geometry, and location of all elements of the work completed under the contract.

7.12 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall have a written safety plan and named competent individual that is not the superintendent who is in charge of the Contractor's safety program. Contractor will conduct

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weekly safety meetings with the work staff and the competent safety individual will conduct regular site inspections to verify all required safety precautions are being adhered to, and issue safety review inspection reports of those site inspections to the Owner for the project record. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress. Contractor shall provide Construction Manager with all communications and notifications to others.

C. Contractor shall comply with the ~~applicable~~ requirements of Owner's safety programs~~, if any~~. The Supplementary Conditions identify ~~any~~ the Owner's safety programs. The following Owner safety requirements are applicable to the Work~~.~~:

~~Contractor shall inform~~ Contractor shall comply with all OSHA regulations, all City of Pittsburgh requirements, and all requirement of any Authorities Having Jurisdiction (AHJ's) applicable to the Work.

D. Contractor shall notify Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by or retained by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and ~~Engineer~~ Construction Manager has issued a notice to

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Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion) and Contractor has demobilized from the Site.

G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets (MSDS) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations. A copy of the Contractors MSDS sheets and hazard communications information shall be at the project worksite at all times.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Construction Manager, Engineer and Owner prompt written notice ~~if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof~~. If Construction Manager, Engineer and Owner ~~determines~~ determine that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be ~~issued~~ processed. Contractor will provide 24 hour per day emergency contact information to the Owner for all responsible parties assigned to the project.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements*:

1. Before submitting a Shop Drawing or Sample, Contractor shall have:

a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

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d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal. All submittals must contain the Contractors cover stamp indicating the submittal has been reviewed and conforms to the contract requirements. Electronic submittal stamps shall be submitted for Physical samples per instructions in Paragraph 2.05.A. of these General Conditions.

3. With each submittal, Contractor shall give Construction Manager and Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as the Owner, Construction Manager, or Engineer may require.

1. *Shop Drawings*:

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples and Mockups*:

a. Contractor shall submit the number of Samples or mockups required in the Specifications.

b. Contractor shall clearly identify each Sample or mockup as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Other Submittals*: Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications. Other submittals can include but not be limited to: Equipment or product catalog cut sheets, test reports, mockups, inspection reports, warranty or guarantee,

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samples, certificates of proper installation, startup reports, operators training guides, close out documents, etc…

D. *Engineer's Review*:

1. Engineer will provide timely review of Shop Drawings and Samples (typically within 14 days unless additional time is identified elsewhere in the specifications) in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of Shop Drawing or Sample that differs from the requirements of the Contract Documents shall not constitute approval of such deviation, change or substitution. If the Contractor intends to deviate from, substitute or change from the Contract Documents, the Contractor must strictly adhere to the procedures set forth in the Contract Documents.

~~4.~~ 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

~~5.~~ 6. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

~~6.~~ 7. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

~~7.~~ 8. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

~~8.~~ 9. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.45.

E. *Resubmittal Procedures*:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for

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review and approval~~.~~ within fourteen (14) days of the Contractor receiving the resubmittal response. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than ~~three~~ two submittals. Engineer will record Engineer's time for reviewing a ~~fourth~~ third or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Construction Manager and Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Construction Manager and Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Construction Manager, Engineer or Owner;

2. recommendation by ~~Engineer~~ Construction Manager or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Construction Manager or Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal;

6. the issuance of a notice of acceptability by Construction Manager or Engineer;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by Owner.

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D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify, defend and hold harmless Owner ~~and~~, Construction Manager, Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to this contract and/or the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Construction Manager, Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

D. To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless Owner, Construction Manager, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against any and all claims, demands, causes of action, damages, liabilities, judgments, costs and expenses, including attorneys' fees and other costs of defense arising out of or resulting from:

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1. the violation by Contractor, its Subcontractors, their employees, agents or other persons acting under Laws and Regulations or, where applicable, of Owner's safety rules and other standards, or of Contractor's safety plan; and

2. any fines, penalties and corrective measures that result from acts of commission or omission by Contractor, its Subcontractors, agents or employees in failing to comply with any Laws and Regulations

7.19 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

7.20 *Non-Discrimination; Affirmative Action:*

A. *Non-Discrimination:* Contractor will not discriminate against any employee or applicant for employment because of race, age, sex, sexual preference, color, religion, ancestry, national origin, or place of birth. Contractor will comply with the applicable sections of the Pittsburgh Code Title VI – Conduct, Article V – Discrimination, and any amendments thereto. Contractor will take affirmative action in accordance with the terms outlined in its proposal to Owner and all other applicable provisions of the Contract Documents. Each subcontract entered into by Contractor for the performance of any portion of the Work shall incorporate a requirement that each Subcontractor must strictly comply with the provisions of this paragraph.

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B. Solicitation for Employment: Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, age, sex, sexual preference, color, religion, ancestry, national origin, or place of birth.

C. Affirmative Action: Contractor shall take affirmative action to promote diversity, which shall include, but not be limited to, recruitment or recruitment advertising, selection for training, including apprenticeship, employment, upgrading, demotion, transfer, layoff, termination, and rates of pay or other forms of compensation.

7.21 *Collusion.*

A. The Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract Documents. For purposes of the Contract Documents, the following definitions shall apply:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official or Owner employee in the bidding/proposal process or in the Contract Documents execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding/proposal process or the execution of the Contract Documents to the detriment of the Owner, (b) to establish the Contract Documents prices at artificial non-competitive levels, or (c) to deprive the Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more companies, with or without the knowledge of the Owner, a purpose of which is to establish Contract Documents prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding/proposal process or affect the execution of the Contract Documents.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the

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introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Construction Manager, Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to ~~Engineer~~ the Construction Manager in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. an itemization of the specific matters to be covered by such authority and responsibility; and

3. the extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination of the third party work. Contractor with the Owner shall coordinate their work with the work of the other contracts to avoid disruptions in services and delays in the work.

8.03 *Legal Relationships*

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees~~, any other contractor working for Owner, or any utility owner~~ causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor ~~shall~~ may be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within thirty (30) days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. ~~When applicable, any such equitable adjustment in Contract Price shall be~~

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~~conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.~~

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any adjacent property or business, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, or any business adjacent to the site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, Construction Manager or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) defend, indemnify and hold harmless Owner, Construction Manager and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

8.04 *Coordination with Adjacent Property Owners: Contractor shall be responsible for:*

A. Notifying affected residents ten (10) days prior to the start of construction and at least twenty-four (24) hours in advance of the interruption of utility service or the interruption of access, or the installation of bituminous material;

B. Planning and providing all weather access to all businesses and or residences at all times, unless approved otherwise by Owner and notice is given to the affected businesses and residences;

C. Where the Contract requires Work on easements on private property, coordinating Work with the property owner so that Work will minimize inconvenience to the owner;

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D. Providing suitable access to adjoining private property where the Work interferes with existing entrances; building and maintaining temporary entrances in a substantial and safe condition, subject to Owner's approval;

E. Otherwise coordinating the Work with local property owners and occupants, residential, commercial, or industrial, as applicable, to minimize inconvenience to them and avoid delays in construction; and

F. Insuring access by emergency vehicles at all times.

8.05 *Coordination with Public Agencies and Utilities:*

A. Prior to commencing construction, Contractor shall:

1. Notify the police precinct and fire station for the area where the Work is to be performed;

2. Coordinate the Work Schedule with Port Authority Transit, Operations Division;

3. Prepare and submit a Maintenance and Protection of Traffic Plan and obtain a Traffic Obstruction Permit from the City Bureau of Transportation and Engineering, or similar permit from any township or borough where the Work is to be performed, at least forty-eight (48) hours prior to the start of construction;

B. The public utilities known to have facilities within or immediately adjacent to the Worksite may be shown on the Drawings, however, Owner does not represent or guarantee that that the Drawings include all facilities within the right-of-way that may interfere with or otherwise affect Contractor's operations.

C. All utility lines and appurtenances within the limits of the Work that must be relocated or adjusted shall be moved by the affected utility company, unless otherwise agreed in writing by the affected utility company.

D. Should utility lines or facilities completely obstruct water or sewer lines locations reflected in the Drawings, Owner will issue a Change Directive or execute a Change Order allowing relocation and compensating Contractor for additional quantities of excavation, pipe, or pavement replacement that the change may require. If Contractor requests and Owner authorizes relocation of water or sewer facilities for the convenience of Contractor, and not because of any obstruction or inaccessibility of the water or sewer facilities, Owner will not compensate Contractor for the change.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through ~~Engineer~~ the Construction Manager.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer~~, provided Contractor makes no reasonable objection to the replacement engineer~~. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

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9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.0~~6~~7.

~~*9.11 Evidence of Financial Arrangements*~~

~~A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).~~

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~~9.12~~ 9.11 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable safety requirements of ~~Contractor's safety programs of which~~the Owner ~~has been informed~~, OSHA, the City of Pittsburgh and all Authorities Having Jurisdiction (AHJ's).

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

9.12 Owner shall designate a Construction Management firm and primary contact prior to the start of work.

9.13 The Construction Managers responsibilities are as follows:

A. Owner's Representative: The Construction Manager will be the Owner's Representative during the construction period. The duties and responsibilities and the limitations of authority of the Construction Manager as Owner's Representative are set forth in this section.

B. *Schedule Monitoring:* The Construction Manager will monitor schedules for all construction activities including milestones, phasing/sequencing, submittals, efficient and balanced workflow, and inspection requirements. The CM will review the Contractor's baseline and progress schedules and provide recommendations to Owner for acceptance, acceptance as noted, rejection, or potential corrective action. Schedule reviews will include:

1. Identification of milestones. Review milestones and scheduled inspections for conformance to the contract documents.

2. Activity durations. Check the reasonableness of activity durations with regard to the quantities of work involved.

3. Schedule logic. Check activities for proper sequencing. Examine the validity of the task relationships in terms of industry standard construction practices.

4. Critical path. Identify whether the critical activities, durations, and the associated logic is reasonable.

5. Coordinated activities. Examine activities involving Owner for adequate time allotment.

C. *Record Keeping:* The CM will maintain appropriate project records using applicable Owner forms, electronic tools, and standard procedures. Project records include contracts; correspondence issued and received; construction documents, change orders; inspections, and claims. Project records that cannot be electronically recorded or filed, such as material samples shall be maintained at the project site or other Owner-approved location.

D. *Submittals:* The Construction Manager will monitor the submittal process to support timely submissions and approvals of shop drawings and will notify Owner of any delays.

E. *Defects and Omissions:* The Construction Manager will report any observed defects or omissions in the work to the Contractor and Owner and where possible provide recommendations to Owner and the Engineer relative to potential corrective actions. Owner and Engineer will make the final determination of the acceptability of any recommendations made by the Construction Manager.

F. *Request for Information (RFI):* The Construction Manager will monitor the RFI Process and facilitate timely responses by the Engineer and Owner. Construction Manager may return

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RFI's to the Contractor if any RFI is not valid because the information is within the contract documents or they are illegible or do not contain adequate information for the Engineer to provide a response. Construction Manager will return all RFI's that are issued for approval of a shop drawing or submittal.

G. *Claims and Disputes:* The Construction Manager will assist Owner in researching and managing potential claims and provide documentation, correspondence and recommendations to Owner. If a potential claim becomes an actual claim the Construction Manager may be retained as an additional service.

H. *Progress Meetings:* The Construction Manager will attend and participate in progress meeting to review the status of the project and assist in resolving issues.

I. *Monthly Reports:* On projects where the construction duration is 6 months or longer, unless otherwise specified by the Owner, the Construction Manager will provide a monthly report acceptable to the Owner describing the status of the project. On projects shorter than six (6) months, the daily reports in eBuilder will be used to update the project team.

J. *Construction Contractor's Payment Requests:* The Construction Manager shall verify that the Contractor's payment requests are based upon the project's itemized schedule of values and contract terms and will participate in a monthly pay application meeting to reach a mutual agreement of requisition amounts before receiving formal requests for payments. The Construction Manager shall confirm the formal request for payment is based on the amounts agreed to at the monthly pay application meeting.

K. *Contract Modification and Change Order Management:* The Construction Manager shall coordinate, evaluate and process Change Order requests by the Contractor for review and approval by Owner. Where necessary the Construction Manager, on behalf of the Owner shall analyze and negotiate cost, scope and schedule change requests. The Construction Manager's review includes but is not limited to, the following:

1. Scope, schedule and costs are reasonable
2. Unit costs are reasonable
3. Quantities are accurate
4. The level of detail is appropriate

L. *Project Safety:* The Construction Manager shall comply with the site safety program and Owner Rules and Regulations as they apply to the Construction Manager.

M. *Limits to the Construction Manager's Responsibility and Liability:* Neither the activities of Construction Manager, nor the presence of Construction Manager's employees or sub-consultants at the construction/project site, shall relieve the Contractor, subcontractors, suppliers and any other entity of their obligations, duties, and responsibilities including, but not limited to, construction means, methods, sequence, techniques or procedures necessary for performing, superintending, or coordinating the work in accordance with the Contract Documents, Owner regulations, and any health or safety precautions required by any regulatory agency having jurisdiction. The Construction Manager and its sub consultants shall be named as additional insureds in general liability insurance coverage provided by the Contractor, and the Construction Manager and its sub consultants shall be named as

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indemnitees under the obligation of the Contractor to defend and indemnify Owner, to the same extent as the obligation pertains to Owner.

N. *Inspection Services:* The Contractor shall advise the Construction Manager and the Construction Manager shall advise Owner of scheduled inspections, tests, and system start-ups and where required shall verify tests and equipment start-ups are conducted in the presence of the Owner's designated personnel. The Construction Manager's inspection services shall include the following:

1. Check adherence to contract documents
2. Review of equipment, materials, and workmanship for compliance to contract documents
3. Report on problems encountered in the performance of the work to Owner
4. Maintain daily logs of required corrections, and post status reports
5. Document any differences between contract documents and actual work in place
6. Maintain a photographic record of the project on a daily basis

O. *As-Built Drawings:* The Construction Manager shall verify the Contractor is maintaining a marked-up, red lined set of as-built construction documents and will reconcile any observed differences. Upon construction completion the Construction Manager shall verify the Contractor has delivered its red lined as-built documents to the Engineer and Owner.

P. *Substantial and Final Completion Process:* The Construction Manager shall assist the Owner and Engineer in the preliminary and final inspections of the project to verify substantial and final completion including the following:

1. Conduct a pre-final inspection with Owner to assist in determining the level of completion
2. Prepare and distribute the punch-list and follow-up to verify all items have been completed
3. Review Operation and Maintenance (O&M) manuals, if required, for conformance to contract documents
4. Review submitted warranties, guarantees, and certificates for conformance to the contract documents
5. Assist Owner in determining when the Contractor has reached final completion of Work

Q. *Closeout:* Coordinate completion of all construction-related contract requirements including final lien waivers, guarantees, warranties, and final payment application as required by the contract documents. The Construction Manager shall transmit to verify rhe Contractor has transmitted all documents to Owner.

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ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 ~~*Owner's*~~ *Engineer's Representative*

A. Engineer will be ~~Owner's representative~~ available as necessary during the construction period. The duties and responsibilities and the limitations of authority of Engineer ~~as Owner's~~ Representative during construction are set forth in the Contract.

B. The Engineer's Project Representative (EPR) will be Engineer's authorized agent and representative at the Site, will act as directed by and under the supervision of the Engineer, and will confer with Engineer regarding EPR's actions. Statements herein pertaining to the EPR's communications with his or her employer, such as EPR's "report to Engineer," "furnish to Engineer," or "recommend to Engineer," are intended to detail the EPR's activities, and not to limit the EPR's authority.

1. General: EPR's dealings in matters pertaining to the Work in general shall be with Owner, Engineer and Construction Manager. EPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of the Construction Manager. EPR shall generally communicate with Owner or Owners consultants only with the knowledge of and under the direction of the Owner and Engineer.

2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.

3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings and prepare and circulate copies of minutes thereof.

4. Liaison:

   a. Serve as Engineer's liaison with Construction Manager and Contractor. Working principally through the Construction Manager, assist in providing information regarding the provisions and intent of the Contract Documents.

   b. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

5. Interpretation of Contract Documents: Report to Construction Manager and Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Construction Manager and Contractor clarifications and interpretations as issued by Engineer.

6. Shop Drawings and Samples:

   a. Record date of receipt of Samples and Contractor-approved Shop Drawings.

   b. Receive Samples which are furnished at the Site by Contractor, and notify Construction Manager and Engineer of availability of Samples for examination.

   c. Advise Construction Manager, Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which EPR believes that the submittal has not been approved by Engineer.

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7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with EPR's recommendations, if any, to Engineer. Transmit to Construction Manager and Contractor in writing, decisions as issued by Engineer.

8. Review of Work and Rejection of Defective Work:

    a. Conduct periodic on-Site observations of Contractor's work in progress to assist Construction Manager and Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

    b. Report to Construction Manager and Engineer whenever EPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that EPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. Reports:

    a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.

    b. Review and recommend to Engineer and Construction Manager proposed Change Orders, Work Change Directives, and Field Orders. Request and obtain backup material when necessary.

    c. Immediately notify Construction Manager and Engineer and Owner of the occurrence or observation of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

10. Payment Requests: Review applications for payment with Construction Manager and Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

11. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Construction Manager and Engineer for review and forwarding to Owner prior to payment for that part of the Work.

12. Completion:

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a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.

b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.

c. Observe whether all items on the final list have been completed or corrected and make recommendations to Construction Manager and Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The EPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Construction Manager, Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.

5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner, Construction Manager, or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

8. Authorize Owner to occupy the Project in whole or in part.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. ~~Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents.~~ Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will ~~keep Owner informed of the progress of the Work and will~~ endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.0~~8~~6. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means,

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methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

~~*10.03 Evidence of Financial Arrangements*~~

~~A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.~~

~~10.04~~ 10.03 *Rejecting Defective Work*

A. Engineer has the authority to reject Work in accordance with Article 14.

~~10.05~~ 10.04 *Shop Drawings, Change Orders and Payments*

A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.

C. Engineer's authority as to Change Orders is set forth in Article 11.

D. Engineer's authority as to Applications for Payment is set forth in Article 15.

~~*10.06 Determinations for Unit Price Work*~~

~~Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.~~

~~10.07~~ 10.05 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals and Potential Change Orders, and acceptance of the Work. In rendering such decisions and judgments~~, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith~~.

~~10.06~~

~~10.08~~ 10.06 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

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B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

~~E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.~~

~~10.09~~ 10.07 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) and OSHA regulations of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

1. *Change Orders*:

a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.

b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

c. Change Orders must be initiated by the preparation of a Potential Change Order ~~or~~ PCO ~~-~~by the ~~Engineer -~~Construction Manager or Owner.

2. ~~*Work*~~*Construction Change ~~Directives:~~Authorization (CCA)*: A ~~Work~~ Construction Change ~~Directive -~~Authorization will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work

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Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the ~~Work~~ Construction Change ~~Directive's~~ Authorization's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than thirty (30) days after the completion of the Work set out in the ~~Work~~ Construction Change ~~Directive. Owner~~ Authorization. Contractors change proposal requests must include all daily work tickets indicating all labor and materials for each given day for Construction Managers verification. Cost backup for the change Request must include but not be limited to hourly wage rate itemization for each craft involved, invoices from suppliers and manufacturers for materials and equipment, rental invoices for non-contractor owned items, and lower tier contractors documentation with backup in the same format. Contractor must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than sixty (60) days after issuance of the Work Change Directive. Owner reserves the right to continue negotiations for settling the claimed additional cost and/or time with the Contractor while the work is underway. If so ordered by the Owner the Contractor must proceed with a work change directive once it is issued.

3. ~~*Field Orders:*~~*Field Instruction and Direction (FID)*: Construction Manager, Engineer or Owner may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and Direction form ID and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a ~~Field Order~~ FID justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time, or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, made in the processing of the Potential Change Order, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner, Construction Manager and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a ~~Work~~ Construction Change ~~Directive.~~ Authorization. Upon receipt of ~~any such document~~ a Construction Change ~~Directive~~ Authorization or approved Change Order, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

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11.03 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05. Contractor will not be compensated for any unauthorized changes in the work or the costs associated with corrections that may be required to bring the unauthorized work in compliance with the contract requirements.

11.04 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. ~~for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent~~ for equipment rented, tools furnished, sub consultants, subcontractors/vendors/or suppliers proposals the Contractor's overhead and profit shall be 5 percent;

b. ~~for costs incurred under Paragraph 13.01.B.3 of~~ for materials furnished, the Contractor's fee shall be ~~five~~ ten (10%) percent;

~~c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount~~

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~~(fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;~~

c. for Contractor's self-performed labor the Contractor's overhead and profit shall be fifteen (15%) percent;

~~d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;~~

~~e.~~ d. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to ~~five percent of such net decrease~~ fee using the same percentages for added cost as described above; and

~~f.~~ e. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals and Potential Change Orders*

A. Contractor ~~shall~~ may submit a Change Proposal to ~~Engineer~~ the Construction Manager and Owner to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Construction Manager or Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures*: Contractor shall submit each Change Proposal to ~~Engineer~~ Construction Manager and Owner promptly (but in no event later than thirty (30) days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the ~~Engineer~~ Construction Manager and Owner within fifteen (15) days after the submittal of the Change Proposal or promptly following Construction Manager's request for such data in support of a Potential Change Order. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete along with a CPM schedule impact analysis if the Contractor claims the change has impacted the project, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. ~~Engineer~~

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Construction Manager will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. The Contractor's proposal shall include sufficient breakdown and backup material to allow a thorough review of the proposed costs and time extension. Backup is to include but not be limited to; labor hour breakdown for each item of work, material costs breakdown with vendor/supplier proposals as backup, subcontractors proposal backup (subcontractors proposal breakdowns are to be provided in the same format as the prime contractor's proposals), wage rate breakdowns itemizing base labor costs with all fringe benefits and taxes for each specific craft, and itemization of all allowed markups.

2. ~~*Engineer's*~~ *Construction Manager's Action*: ~~Engineer~~ Construction Manager will review each Change Proposal and, within ~~30~~ fifteen (15) days after receipt of the Contractor's supporting data will either recommend to Owner the rejection of the Change Proposal or prepare a Potential Change Order. Engineer will provide a copy of the Potential Change Order to Contractor, explaining any discrepancy between the change sought by the Potential Change Order and the Contractor's Change Proposal. In submitting the Change Proposal or Potential Change Order to Owner, Engineer will make a written recommendation to Owner to ~~either~~ deny the Change Proposal, or to approve the Potential Change Order in whole~~, approve it in whole, or deny it in part and approve it~~ or in part. Within fifteen (15) days of receipt of Construction Manager's recommendation, Owner will deny the Change Proposal in whole, approve the Potential Change Order in whole or in part, or deny the Potential Change Order. Such actions by Owner shall be in writing, with a copy provided to ~~Owner~~ Engineer, Construction Manager, and Contractor. If Engineer does not take action on the Change Proposal within ~~30~~ fifteen (15) days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of ~~Engineer's~~ Construction Manager's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12. If Owner does not take action on the Change Proposal or Potential Change Order within fifteen (15) days of Owner's receipt of Engineer's recommendation, then Contractor may at any time thereafter submit a letter to Owner indicating that as a result of inaction the Potential Change Order is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. *Binding Decision*: ~~Engineer's~~ Owner's decision will be final and binding upon ~~Owner and~~ Contractor, unless ~~Owner or~~ Contractor appeals the decision by filing a Claim under Article 12.

~~B. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.~~

B. *Processing of Potential Change Orders:* Once a Potential Change Order has been approved, the Owner will have a Change Order prepared. The Change Order may include only a single approved Potential Change Order, or it may bundle multiple approved Potential Change Orders, depending upon the circumstances.

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11.07 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

B. If ~~Owner or~~ Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

C. Prior to Owner's execution of the Change Order, the Change Order must be approved by Owner's Executive Director or, if the amount of the Change Order exceeds the Executive Director's authority, by Owner's Board of Directors.

11.08 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by ~~Owner or~~ Contractor of ~~Engineer's~~ Owner's decisions regarding Change Proposals or Potential Change Orders or change orders;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents~~.; and~~ that could include but not be limited to the quality of the work, change order disputes, schedule disputes, warranty issues, etc.

~~3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.~~

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B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than thirty (30) days) after becoming aware of the situation leading to the claim or the start of the event giving rise thereto; which is earliest in the case of appeals regarding Change Proposals within thirty (30) days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the ~~Engineer~~ Construction Manager, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled. Claim supporting data shall include a detailed record of all claimed work on additional work tickets. The Contractor is to provide copies of the additional work tickets to the Construction Manager as the work is being performed and the Construction Manager will acknowledge receipt of the work tickets for the record on the copy received. The Construction Managers acknowledgement is not an approval or acceptance of the Contractors claim. Work tickets provided without the Construction Managers acknowledgement will not be considered a valid part of the Contractors claim. Contractors claim shall include a complete set of backup documents which conform to the change order requirements in the agreement.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after (sixty (60) days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process by written notice to the other party, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs regardless of the outcome. Neither party will seek compensation for their costs related to the mediator's review.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within thirty (30) days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any

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time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Potential Change Order, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time ~~on the Work.~~ or part time on the Work as approved and verified by the Construction Manager or Owner. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized ~~by Owner~~ and approved by Construction Manager or Owner. Payroll costs shall include a full breakdown of all wages and benefits with backup to substantiate the proposed rate. This clause also applies to documentation requirements for all lower tier contractors and suppliers.

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2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained. Documentation of material costs in the form of invoices and supplier/vendor proposals is to be provided as backup for validation of the claimed cost. This clause also applies to documentation requirements for all lower tier contractors and suppliers.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of the Construction Manager and Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

    c. Construction Equipment and Machinery:

        1) Rentals of all construction equipment and machinery, and the parts thereof, ~~whether rented from Contractor or others~~ in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

        2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the Agreement or at a rate established and confirmed from local rental companies. Rental rates shall not apply to hand tools such as drills, hammers, saws, extension cords, small task lights, brooms, garbage cans, picks, shovels and other similar hand tools. Small tools are considered part of overhead and will not be billed for separately.

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d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

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D. *Contractor's Fee*: When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and ~~Engineer~~ Construction Manager.

B. ~~*Cash*~~ *Allowances*: Contractor agrees that:

1. ~~the cash~~ All allowances include only the cost ~~to Contractor~~ of the material or equipment (less any applicable trade discounts) ~~of materials and equipment~~ required by the allowances to be delivered at the Site, and all applicable taxes; and

2. ~~Contractor's~~ All costs for unloading and handling ~~on the Site~~, including, labor, installation, overhead, profit, and other expenses ~~contemplated for the cash allowances have been~~ incurred in purchasing and delivering the material and equipment are included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer and approved by Owner to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. ~~Engineer~~ The Construction Manager will ~~determine~~ verify the actual quantities and classifications of Unit Price Work performed by Contractor. ~~Engineer~~ Construction Manager will review with Contractor the ~~Engineer's~~ Construction Manager's preliminary

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determinations on such matters before rendering a written ~~decision~~ recommendation thereon (by recommendation of an Application for Payment or otherwise). ~~Engineer's~~ Construction Manager's recommendation must be in writing and provided to Owner and Contractor. ~~Engineer~~ Owner's written decision thereon will be final and binding (except as modified by Owner to reflect changed factual conditions or more accurate data) upon ~~Owner and~~ Contractor, subject to the provisions of the following paragraph.

E. Within thirty (30) days of ~~Engineer~~ Owner's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:

~~1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;~~

~~2. there is no corresponding adjustment with respect to any other item of Work; and~~

1. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease. The Contractor will provide to the Owner and Construction Manager documentation reconciling the difference between the approved and claimed additional unit price item increase amount for review.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Construction Manager, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give ~~Engineer~~ Construction Manager timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05. The Contractor will retain an independent testing agency for the tests and inspections expressly required to be completed by the Contractor in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging

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and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ~~Engineer~~ Construction Manager the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's, Construction Manager's and or Engineer's acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, automated control processes, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Construction Manager, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals. The Contractor shall make arrangements with the Owner, Construction Manager, and Engineer for inspections for any off site fabrication of assemblies and off site performance tests.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Construction Manager or Owner, Contractor shall, if requested by ~~Engineer~~ Construction Manager, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given ~~Engineer~~ Construction Manager timely notice of Contractor's intention to cover the same and ~~Engineer had~~ Construction Manager was not ~~acted with reasonable promptness in response to such notice~~ available for inspection.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Construction Manager, Engineer and Owner have ~~has~~ the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt notice of all defective Work of which Owner, Construction Manager or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Construction Manager or Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective. Correction of defective work shall not be a reason or excuse for delay claim. The Contractor shall make all corrections within the contract time at no additional expense to the Owner.

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E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (Engineer having provided Owner with Engineer's opinion as to reasonableness of such costs ~~to be approved by Engineer as to reasonableness~~), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Construction Manager, Engineer and Owner have ~~has~~ the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Construction Manager, Engineer or Owner, then Contractor shall, if requested by Construction Manager, Engineer or Owner, uncover such Work for Construction Manager's, Engineer's or Owner's observation, and then replace the covering, all at Contractor's expense.

C. If Construction Manager, Engineer, or Owner considers it necessary or advisable that covered Work be observed by Construction Manager, Engineer, or Owner or inspected or tested by others, then Contractor, at Construction Manager's, Engineer's, or Owner's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Construction Manager, Engineer, or Owner may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure,

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observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within thirty (30) days of the determination that the Work is not defective.

14.06 *Owner or Engineer May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

B. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Construction Manager, with Owner's consent may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Construction Manager to stop the Work shall not give rise to any duty on the part of Construction Manager to make exhaustive or continuous on-site inspections, or to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from ~~Engineer~~ Construction Manager or Owner to correct defective Work, or to remove and replace rejected Work as required by ~~Engineer~~ Construction Manager or Owner, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees~~,~~; Owner's other contractors, Construction Manager, and Engineer and ~~Engineer's consultants~~their consultant's access to the Site to enable Owner to exercise the rights and

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remedies under this paragraph and to remove the material store elsewhere for transport to a location designated by the Owner.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Owner and Construction Manager ~~Engineer~~. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor and verified by the Construction Manager during the pay period.

B. *Applications for Payments*:

1. At least ~~20~~ thirty (30) days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to ~~Engineer~~ Construction Manager for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, proof of insurance coverage naming the Owner as the loss payee, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance~~, a~~ warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner. Contractor shall coordinate the location and suitability of storage locations and allow Construction Manager reasonable time to verify its conformance with the contract documents.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment. The Contractor warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall be free and

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clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

3. With each pay application the Contractor shall provide written evidence that the Contractor has properly paid Subcontractors and material and equipment suppliers the amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. The Owner, Construction Manager and Engineer shall have NO obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

~~3.~~ 4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*:

1. ~~Engineer~~ Construction Manager will, within ten (10) days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing ~~Engineer's~~ Construction Manager's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. ~~Engineer's~~ Construction Manager's recommendation of any payment requested in an Application for Payment will constitute a representation by ~~Engineer~~ Construction Manager to Owner, based on ~~Engineer's~~ Construction Manager's observations of the executed Work ~~as an experienced and qualified design professional, and on Engineer's~~, and review of the Application for Payment and the accompanying data and schedules, that to the best of ~~Engineer's~~ Construction Manager's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is ~~Engineer's~~ Construction Manager's responsibility to observe the Work.

3. By recommending any such payment ~~Engineer~~ Construction Manager will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract~~; or~~.

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~~b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.~~

4. Neither ~~Engineer's~~ Construction Manager's review of Contractor's Work for the purposes of recommending payments nor ~~Engineer's~~ Construction Manager's recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or

   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

   c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

   d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or

   e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. ~~Engineer~~ Construction Manager may refuse to recommend the whole or any part of any payment if, in ~~Engineer's~~ Construction Manager's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. ~~Engineer~~ Construction Manager will recommend reductions in payment (set-offs) necessary in ~~Engineer's~~ Construction Manager's opinion to protect Owner from loss because:

   a. the Work is defective, requiring correction or replacement;

   b. the Contract Price has been reduced by Change Orders;

   c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

   e. ~~Engineer~~ The Contractor is in delay as a result of the Contractor's failure to perform.

   f. Construction Manager has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*:

1. ~~Ten~~ Forty-five (45) days after presentation of the Application for Payment to Owner with ~~Engineer's~~Construction Manager's recommendation and accompanying documentation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

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E. *Reductions in Payment by Owner*:

1. In addition to any reductions in payment (set-offs) recommended by ~~Engineer~~ Construction Manager, Owner is entitled to impose a set-off against payment based on any of the following:

   a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

   b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

   c. Contractor has failed to provide and maintain required bonds or insurance;

   d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

   e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

   f. the Work is defective, requiring correction or replacement;

   g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

   h. the Contract Price has been reduced by Change Orders;

   i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;

   j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

   k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

   l. Joint check(s) issued to Contractor and to any Subcontractor or material or equipment suppliers;

   m. there are other items entitling Owner to a set off against the amount recommended.

2. The Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Construction Manager and the Construction Manager will reflect such payment on the next Certificate for Payment.

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3. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of ~~Engineer~~ Construction Manager, Owner will give Contractor immediate written notice (with a copy to ~~Engineer~~ Construction Manager) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

4. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and ~~Engineer~~ Construction Manager in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner, Construction Manager and Engineer ~~an~~ the initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Construction Manager, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Construction Manager or Engineer does not consider the Work substantially complete, ~~Engineer~~ Construction Manager will notify Contractor in writing giving the reasons therefor.

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Construction Manager or Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

C. If Construction Manager and Engineer considers the Work substantially complete, Engineer will deliver to Owner and Construction Manager a preliminary certificate of Substantial Completion which shall tentatively fix the date of Substantial Completion. Engineer shall attach to the certificate ~~a~~ the punch list of items to be completed or corrected before final payment. Owner shall have ~~seven~~ fourteen (14) days after receipt of the preliminary certificate during which to ~~make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete~~ agree or object to Construction Manager and Engineer's recommendations. ~~Engineer~~ Construction Manager will, within ~~14~~ twenty-one (21) days after submission of the preliminary certificate

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to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, ~~or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete,~~ then Engineer will, within said ~~14~~ twenty-one (21) days, execute and deliver to Owner, Construction Manager and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner, Construction Manager and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy, if any, with respect to the end of the builder's risk coverage, and, if applicable, confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Builders risk coverage shall be maintained until the Contractor has completely demobilized from the site and the Owner and Construction Manager agree the Contractor does not need to return to complete any unfinished punch list or contract items. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Construction Manager, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.

2. At any time Contractor may notify Owner and ~~Engineer~~ Construction Manager in writing that Contractor considers any such part of the Work substantially complete and request Engineer and Owner to issue a certificate of Substantial Completion for that part of the Work.

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3. Within a reasonable time after either such request, Owner, Construction Manager, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Construction Manager or Engineer does not consider that part of the Work to be substantially complete, ~~Engineer~~Construction Manager will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Construction Manager and Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*:

1. After Contractor has, in the opinion of Engineer and Owner, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents;

b. consent of the surety, if any, to final payment;

c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

d. a list of all disputes that Contractor believes are unsettled.~~; and~~

e. complete and legally effective final releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

~~3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment~~

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~~bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.~~

f. Submit final maintenance bonds starting on the agreed to date of substantial completion for the term specified in the agreement.

B. *Construction Managers and Engineer's Review of Application and Acceptance*:

1. If, on the basis of Construction Manager's and Engineer's observation of the Work during construction and final inspection, and Construction Manager's and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Construction Manager and Engineer ~~is~~ are satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, ~~Engineer~~ Construction Manager will, within ten days after receipt of the final Application for Payment, indicate in writing ~~Engineer's~~ Construction Manager's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in ~~Engineer's~~ Construction Manager's opinion to protect Owner and Construction Manager from loss for the reasons stated above with respect to progress payments. At the same time ~~Engineer~~ Construction Manager will ~~also~~ give written notice to Owner ~~and Contractor~~ that Engineer believes that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Owner's acceptance of the ~~Engineer's~~ Construction Manager's written recommendation of final payment.

D. *Payment Becomes Due*: ~~Thirty days~~ Forty-five days after ~~the presentation to~~ Owner's acceptance of the final Application for Payment and accompanying documentation, the amount recommended by ~~Engineer~~ Construction Manager (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

E. The Owner may, at its sole option, issue joint checks to the Contractor and to any subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered.

F. Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less

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amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

G. Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of any and all claims by Contractor except those previously made in writing and identified by that Co as unsettled at the time of final Application for Payment.

15.07 *Waiver of Claims*

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.

~~B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.~~

15.08 *Correction Period*

A. If within ~~one~~ two ~~year~~ years after the date of Substantial Completion (~~such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents~~), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;
2. correct such defective Work;
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.

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5. Replacement of equipment found to be defective.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date agreed to by the Owner if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

15.09 *Audit*

A. With the sole exception of Work performed for an agreed upon lump sum, Owner shall have the right to audit Contractor's and its Subcontractors' records related to the Contract at any time during the performance of the Work and for three (3) years following final payment. Contractor shall maintain records of labor, materials, and equipment provided to or incorporated in the Work, and shall keep such full and detailed accounts as may be necessary to reasonable financial management. Owner and its representatives shall have reasonable access to Contractor's records, books, correspondence, instructions, drawings, estimate sheets, bids, purchase orders, back charges, receipts, vouchers, cancelled checks, memoranda, and similar data and documents related to the Contract. This provision shall have full force and effect regardless of any disputes that may arise at any time during the performance of the Contract.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof ~~for a period of not more than 90 consecutive days~~ by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than thirty (30) days after the date fixed for resumption of Work.

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16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner, Construction Manager or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform ~~and~~, proceeds diligently to cure such failure, and provides a formal corrective action plan.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. ~~Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order.~~ When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under

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any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

H. If a court of competent jurisdiction or arbitrator shall determine that Owner's termination of Contractor for default was wrongful or in breach of the Contract, Contractor agrees that said termination shall convert to and be deemed a termination for convenience under Paragraph 16.03.

16.03 *Owner May Terminate ~~For~~for Convenience*

A. Upon seven ~~days~~days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) ~~Engineer~~ Construction Manager fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for ~~30~~ forty-five (45) days to pay Contractor any sum finally determined to be due, then Contractor may, upon ~~seven~~ fourteen (14) days written notice to Owner and ~~Engineer~~Construction Manager, and provided Owner or ~~Engineer~~ Construction Manager do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ~~Engineer~~Construction Manager has failed to act on an Application for Payment within thirty (30) days after it is submitted, or Owner has failed for ~~30~~forty-five (45) days to pay Contractor any sum finally determined to be due, Contractor may, ~~seven~~fourteen (14) days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price

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or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and

2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this Article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or

2. agree with the other party to submit the dispute to another dispute resolution process~~;~~ ~~or~~.

~~3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.~~

17.02 *Dispute Resolution*

A. *Mediation:* Owner and Contractor agree that they may first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement, including any Task Order, or the breach thereof ("Disputes") to mediation by the American Arbitration Association or private mediator, which venue shall be selected at the sole option of Owner. Owner and Engineer agree to participate in the mediation process in good faith. The process shall be conducted on a confidential basis, and shall be completed within 120 days.

B. *Arbitration*: If such mediation is unsuccessful in resolving a Dispute, then any Dispute shall be resolved through arbitration before the Owner's Executive Director, or his delegated representative (the "Arbitrator"), whose decision shall be final and conclusive as to all matters of the Dispute, without exception or appeal, and all rights or right of action or law in equity or otherwise under and by virtue of this Agreement are expressly waived. Such arbitration shall be arbitrated in accordance with the American Arbitration Association Construction Rules effective at the Effective Date of the Agreement, subject to the conditions stated below.

1. Notice of the demand for arbitration must be filed in writing with the other party to the Agreement and with the Owner's Executive Director. The demand must be made within a reasonable time after the Dispute has arisen. In no event

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may the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such Dispute would be barred by the applicable statute of limitations.

2. All demands for arbitration and all answering statements thereto which include any monetary claims must contain a statement of the total sum or value in controversy as alleged by the party making such demand or answering statement.

3. The rules of any arbitration shall be supplemented to include the following: The award rendered by the Arbitrator shall be in writing, and shall include (a) a precise breakdown of the award; and (b) if requested by Owner, a written explanation of the award specifically citing the Agreement and Task Order provisions deemed applicable and relied on in making the award.

4. The award rendered by the Arbitrator will be consistent with the terms of this Agreement and final, and judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to appeal or modification.

5. If a Dispute in question between Owner and Contractor involves the work of a Contractor, Subcontractor, or consultants to the Owner or Engineer (each a "Joinable Party"), and such Joinable Party has agreed contractually or otherwise to participate in a consolidated arbitration concerning the Specific Project, then either Owner or Contractor may join such Joinable Party as a party to the arbitration between Owner and Contractor hereunder. Nothing in this Paragraph 17.02.B.5 nor in the provision of such contract consenting to joinder shall create any claim, right, or cause of action in favor of the Joinable Party and against Owner or Engineer that does not otherwise exist.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in

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any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Potential Change Orders, Claims, disputes subject to final resolution, and other matters at issue, neither Owner, Construction Manager nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the ~~state in which the Project is located~~ Commonwealth of Pennsylvania.

18.08 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

SUPPLEMENTARY CONDITIONS

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EJCDC®
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SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

SC-1.01 Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

Disadvantaged Business Enterprise or DBE — a sole proprietorship, partnership, or corporation operated and controlled by socially and economically disadvantaged individuals who have at least fifty-one percent (51%) ownership. The socially and economically disadvantaged individuals must have operational and managerial control, interest in capital, and earnings with their percentage of ownership. Furthermore, to qualify as a Disadvantaged Business Enterprise, the business must be certified as a DBE by a governmental entity or other nationally recognized agency whose certification is acceptable to Owner. Socially and economically disadvantaged groups are identified as:

a. *African Americans* — persons having origins in any of the Black racial groups of Africa;

b. *Hispanic Americans* — persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;

c. *Native Americans* — persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;

d. *Asian-Pacific Americans* — persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kirbati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong; and

e. *Subcontinent Asian Americans* — persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal, or Sri Lanka.

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Good Faith Effort — a reasonable attempt, taking into consideration the resources available, to include Minority-owned Business Enterprises, Woman-owned Business Enterprises, Disadvantaged Business Enterprises, Small Business Enterprises and/or Veteran Business Enterprise/Service Disabled-Veteran Business Enterprises (together, "MBE/WBE/DBE/SBE/VBE/SDVBE's") on a particular Owner contract. Good faith efforts include:

f. Attending pre-bid meeting(s) to inform MBE/WBE/DBE/SBE/VBE/SDVBE's of subcontracting opportunities;

g. Advertising in general, trade, veteran and minority-focused media;

h. Providing timely written notice to a reasonable number of MBE/WBE/DBE/SBE/VBE/SDVBE's;

i. Following up the initial solicitation by contacting MBE/WBE/DBE/SBE/VBE/SDVBE's to determine interest;

j. Selecting or reducing the size of specific contract parts to facilitate MBE/WBE/DBE/SBE/VBE/SDVBE's participation;

k. Providing interested MBE/WBE/DBE/SBE/VBE/SDVBE's with plans, specifications, and contract requirements;

l. Negotiating in good faith with interested MBE/WBE/DBE/SBE/VBE/SDVBE's (with no arbitrary rejections);

m. Making efforts to provide bonding, line of credit, or insurance assistance to interested MBE/WBE/DBE/SBE/VBE/SDVBE's;

n. Utilizing the services of available minority, women, and veteran community organizations and other organizations that provide assistance in the recruitment and placement of MBE/WBE/DBE/SBE/VBE/SDVBE's; and

o. Utilizing the services of affiliated MBE/WBE/DBE/SBE/VBE/SDVBE organizations and entities to provide assistance in the recruitment and placement of MBE/WBE/DBE/SBE/VBE/SDVBE's.

Minority-owned Business Enterprise or MBE— a sole proprietorship, partnership, or corporation operated by minority group members who have at least fifty-one percent (51%) ownership. The minority group member must have operational and managerial control, interest in capital, and earnings with their percentage of ownership. Furthermore, to qualify as a minority business enterprise, the business must be certified as an Minority-owned Business Enterprise by a governmental entity or other nationally recognized agency whose certification is acceptable to the Owner. Minority groups are identified as:

p. *African Americans* — persons having origins in any of the Black racial groups of Africa;

q. *Hispanic Americans* — persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;

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r. *Native Americans* — persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;

s. *Asian-Pacific Americans* — persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kirbati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong; and

t. *Subcontinent Asian Americans* — persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal, or Sri Lanka.

Waiver — a waiver sought by the contracted vendor after a Good Faith Effort has been made and no MBE/WBE/DBE/SBE/VBE/SDVBEs were ready, willing, and able to provide services or products as specified in the contract with Owner.

MBE/WBE/DBE/SBE/VBE/SDVBE Solicitation and Commitment Statement — a specific plan outlining the Good Faith Effort used to include certified *MBE/WBE/DBE/SBE/VBE/SDVBE*'s on a specific contract as outlined in the plan. The MBE/WBE/DBE/SBE/VBE/SDVBE Solicitation and Commitment Statement includes solicitation forms and responses/ quotes from MBE/WBE/DBE/SBE/VBE/SDVBE firms, and the agreed to final contract amounts committed to the MBE/WBE/DBE/SBE/VBE/SDVBE firm(s) selected. The MBE/WBE/DBE/SBE/VBE/SDVBE Solicitation and Commitment Statement also includes the committed percentage of MBE/WBE/DBE/SBE/VBE/SDVBE participation, or, in the instance where MBE/WBE/DBE/SBE/VBE/SDVBE utilization is below the Supplier Diversity Program goals, an explanation as to barriers encountered in soliciting MBE/WBE/DBE/SBE/VBE/SDVBE firms and achieving the Supplier Diversity Program participation goals.

Service-Disabled Veteran Business Enterprise or SDVBE— A sole proprietorship, partnership, or corporation operated and controlled by a Service-Disabled Veteran who has fifty-one percent 51% ownership. The Service-Disabled Veteran must have operations and managerial control, interest in capital, and earnings with the percentage of ownership. Furthermore, to qualify as a Service-Disabled Veteran Business Enterprise, the business must be certified as a Service-Disabled Veteran Business Enterprise by a governmental entity whose certification is acceptable to Owner. Service Disabled Veterans are identified as:

a. Persons who are Veterans (as defined in Section 1.01(A)(58)) and either (1) are "disabled veterans" as defined in 5 USC 2108(2) (i.e. "individuals who have served on active duty in the armed forces, have been separated therefrom under honorable conditions, and have established the present existence of a service-connected disability or are receiving compensation, disability retirement benefits, or pension because of a public statute administered by the Department of Veterans Affairs or military department") or (2) have a disability as defined in the Social Security regulations, 42 USC 423 (i.e. "an inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death, or which has lasted, or can

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be expected to last for a continuous period of not less than 12 months") and have a present determination of a disability by the Social Security Administration or Veterans Administration.

Small Business Enterprise or SBE — a sole proprietorship, partnership, or corporation operated and controlled as certified as a Small Business Enterprise by a governmental entity or other nationally recognized agency whose certification is acceptable to Owner.

Veteran Business Enterprise or VBE — A sole proprietorship, partnership, or corporation operated and controlled by a Veteran who has fifty-one percent 51% ownership. The Veteran must have operations and managerial control, interest in capital, and earnings with the percentage of ownership. Furthermore, to qualify as a Veteran Business Enterprise, the business must be certified as a Veteran Business Enterprise by a governmental entity whose certification is acceptable to Owner. A Veteran can be identified as:

a. Persons who served on active duty with the U.S. Army, Air Force, Navy, Marine Corps or Coast Guard, for any length of time and at any place and who was discharged or released under conditions other than dishonorable.

Women-owned Business Enterprise or WBE — a sole proprietorship, partnership, or corporation operated and controlled by women who have at least fifty-one percent (51%) ownership. The women must have operational and managerial control, interest in capital, and earnings with their percentage of ownership. Furthermore, to qualify as a Woman-owned Business Enterprise, the business must be certified as a Women-owned Business Enterprise by a governmental entity or other nationally recognized agency whose certification is acceptable to Owner.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.04 Preconstruction Conference; Designation of Authorized Representatives

SC 2.04 Add the following new paragraph immediately after Paragraph 2.04.B:

C. The preconstruction conference must be attended by the Contractor's primary Foreman for the Work, as well as the person who will function as the Contractor's Project Manager for the duration of the Work.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

SC-3.03 Reporting and Resolving Discrepancies

SC 3.03.B Add the following new paragraph immediately after Paragraph 3.03.B.1:

2. In the case that there is a discrepancy concerning testing requirements between the Owner's specifications, and the requirements of the right-of-way owner, the Contractor shall follow the most stringent testing requirement.

3. In the case that there is a discrepancy concerning material usage and installation requirements between the Owner's specifications, and the requirements of the right-of-way owner, the Contractor shall follow the requirements of the right-of-way owner.

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ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.01: Availability of Lands, Non-Public Site

SC 5.01.D Add the following paragraph immediately following paragraph 5.01.C

D. Where available, and as determined by Owner as being available, the Owner will provide the Contractor access to connections for power and water for temporary use during construction. The Contractor will provide all necessary wiring and piping and the Owner will assist the Contractor with the final terminations for installation and removal of temporary services. When not available all power and water will be provided by the Contractor as part of the cost of the work for the project. The Contractor will provide adequate temporary sanitary facilities for the duration of the project as a part of the cost of the contract. In the case where a contract has multiple primes, the General Contractor will be responsible for providing temporary sanitary facilities for all of the primes. Each individual prime contractor will be responsible for its own temporary wiring and piping for power and water. The electrical contractor will provide temporary power stations and temporary lighting for all primes to use during construction and each prime contractor will be responsible for their own temporary heat.

SC-5.02: Work Performed in Public Right-of-Way

SC 5.02.B Add the following paragraph immediately following paragraph 5.02.A

A. Excavation work within streets or public right-of-way will require street opening permits from DOMI. Street Opening permits may not be available for work from November 1 through April 1. The limited availability of permits shall not relieve Contractor of Time of Completion requirements set forth in Contract Documents.

5.03 Use of Site and Other Areas

B. *Limitations on Use of Site and Other Areas*

SC-5.03.A Add the following new paragraphs immediately following paragraph 5.03.A.2:

3. Contractor shall be aware there may be other contractors working on the same site or within the same area simultaneously. Contractor with the Owner shall coordinate their work with the work of the other contractors to avoid disruptions in services and delays in the work.

4. Contractor shall be aware the Owner may from time to time conduct maintenance or work within the same site or work area simultaneously. Contractor shall coordinate their work with the work of the Owner to avoid disruptions in services and delays in the work.

5. When the work to be completed is within an operating facility or on an operating system, the Contractor shall be responsible for coordination to prevent unnecessary/unplanned outages or loss of service. All outages must be coordinated with the Owner in advance.

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6. The Work may include modifications or additions to an existing water, sewer, or stormwater system or connection to such systems. In performing the Work, Contractor shall not disrupt the operation of the existing water, sewer, or stormwater systems in any manner or at any time without the prior approval of Owner. Where Owner has permitted such disruptions, Contractor shall notify The Construction Manager and Owner's Department of Engineering and Construction forty-eight (48) hours in advance of the disruption and shall comply with the Department's instructions with respect to the disruption and the related Work.

7. If required, Contractor shall improve or construct an access route to the Site and shall secure all necessary permits and approvals thereof, at its own cost. Except as may be otherwise agreed in writing by all affected parties at the conclusion of the Project or Contract, Contractor shall restore all access routes to their pre-construction condition, also at Contractor's cost.

8. Contractor shall maintain the service of, shore up, lay support, and protect as directed all water pipes, gas pipes, services pipes, sewers, and sewer connections, conduits, manholes, drains, vaults, tracks, or other structures and substructures of public utility companies, all service lines and structures including substructures of private abutting owners that are located within the Site, whether or not shown on the Drawings or other Contract Documents. When necessary, Contractor shall include provisions for temporary utility relocations and temporary pumping or diversion structures until the permanent facilities are installed, tested, and ready for operation.

9. Contractor must not obstruct streets, the light rail system, railroads, pedestrian traffic, vehicular traffic or river traffic without the consent of PWSA and the proper authorities. Contractor will place and at all times keep proper guards, fences, barricades, watchpersons, lighting and other protections in place for the protection of the public and the Site.

10. Contractor agrees that if active Work is suspended on the improvement in any street, avenue, or other public roadway for any reason, Contractor, at its own cost and expense and in a manner satisfactory to Owner, must maintain said roadways during such periods in a safe and passable condition for vehicle, bicycle, and foot traffic. Contractor shall ensure that streets are not unnecessarily obstructed and Contractor shall take such measures as may be necessary to keep the road open and safe for traffic.

SC-5.04 Add the following new paragraphs immediately after Paragraph 5.04.B:

C. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:

1. Test Hole Data Sheets prepared by the Lexis Group LLC, dated 8/12/2020

SC-5.07 Hazardous Environmental Conditions at Site

SC-5.07 Delete Paragraphs 5.07.A and 5.07.B in their entirety and insert the following:

A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.

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B. Not Used.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.03 Contractor's Liability Insurance

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	Statutory
Employer's Liability:	
Bodily injury, each accident	$ 1,000,000.00
Bodily injury by disease, each employee	$ 1,000,000.00
Bodily injury/disease aggregate	$ 1,000,000.00

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions**:**

General Aggregate	$ 2,000,000.00
Products - Completed Operations Aggregate	$ 2,000,000.00
Personal and Advertising Injury	$ 1,000,000.00
Each Occurrence (Bodily Injury and Property Damage)	$ 1,000,000.00

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:	
Each person	$ 1,000,000.00
Each accident	$ 1,000,000.00
Property Damage:	
Each accident	$ 1,000,000.00

[or]

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Combined Single Limit of $ 1,000.000.00

4. Excess and Umbrella Liability:

Per Occurrence	$ 1,000,000.00
General Aggregate	$ 2,000,000.00

5. Contractor's Pollution Liability:

Each Occurrence	$ 1,000,000.00
General Aggregate	$ 2,000,000.00

☐ If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner, Construction Manager, and Engineer, include as additional insureds the following:

City of Pittsburgh

7. Contractor's Professional Liability:

Each Claim	**$ N/A**
Annual Aggregate	**$ N/A**

SC-6.05 Property Insurance

SC-6.05.A.1 Add the following new subparagraph after subparagraph 6.05.A.1:

a. In addition to Owner, Contractor, and all Subcontractors, include as insureds the following:

City of Pittsburgh

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ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.02 Labor; Working Hours

SC-7.02.A Add the following new paragraph immediately following Paragraph 7.02.A:

1. CONTRACTOR shall conduct a background check on each of its employees prior to the employee performing any site activity under this Agreement. The background check conducted by CONTRACTOR shall consist of a check of at least the following: Previous employers and dates of employment; Education; Driving record; Criminal history (apply for and provide to OWNER Pennsylvania Access To Criminal History (PATCH) background check information as administered by the Pennsylvania State Police); References; Credit history. Prior to commencing any work under this Agreement, CONTRACTOR shall provide proof to the OWNER that the requirements of this Paragraph have been met along with the PATCH background check information on all site employees. CONTRACTOR shall make available to the OWNER, upon request, the documentation and results of the other background check information with respect to any employee of CONTRACTOR performing any function under this Agreement. The OWNER reserves the right to deny the use of specific individuals for the work depending on the results of the PATCH background check.

7.22 Supplier Diversity Solicitation and Commitment

SC-7.22 Add the following new paragraphs immediately following Paragraph 7.21

A. *Supplier Diversity Program (SDP) MBE/WBE/DBE/SBE/VBE/SDVBE:* The Owner's current EOP goals for all contracts is between ten percent (10%) and twenty-five percent (25%). All Bids for such contracts must be accompanied by Exhibit II-MBE/WBE/DBE/SBE/VBE/SDVBE Solicitation and Commitment Statement, demonstrating a good faith effort to meet said goals, or a detailing of why the MBE/WBE/DBE/SBE/VBE/SDVBE participation goals could not be met. In addition, all required letters of commitment and copies of current certifications shall be submitted with the Bid.

B. Bidders are strongly encouraged to meet or exceed said goals and to contact PWSA prior to bid submission for assistance with locating MBE, WBE, DBE, SBE and/or VBE/SDVBE firms and ensuring sufficient documentation of good faith efforts.

C. *MBE/WBE/DBE/SBE/VBE/SDVBE Utilization Report:* In entering into a Contract with Owner, the Successful Bidder is agreeing to submit detailed MBE/WBE/DBE/SBE/VBE/SDVBE Utilization Reports no later than ten (10) days following each progress payment and following final payment. The report shall include but not be limited to: Project number; Project title; Contractor's name; Contract Price; Contract Times; pay application number and period; current payment application amount, amount of Contract Price paid to date; MBE/WBE/DBE/SBE/VBE/SDVBE company name and status as MBE, WBE, and/or VBE/SDVBE; role of MBE/WBE/DBE/SBE/VBE/SDVBE as Subcontractor, Supplier, or other; and amount paid to date to the MBE, WBE and/or VBE/SDVBE.

D. *Penalties:* In the event of Contractor's failure to comply with Owner's MBE/WBE/DBE/SBE/VBE/SDVBE program, or with Contractor's

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MBE/WBE/DBE/SBE/VBE/SDVBE Solicitation and Commitment Statement, Owner, at its option, may do any or all of the following:

1. cancel, terminate or suspend the Contract in whole or in part;
2. declare Contractor ineligible for future contracts; and/or
3. such other sanctions or remedies as may be provided by law.

ARTICLE 8 – OTHER WORK AT THE SITE

SC-8.03 Legal Relationships

SC-8.03.B Add the following new paragraph immediately following Paragraph 8.03.B:

1. CONTRACTOR is advised that concurrent utility work will be under construction during the completion of this project. This shall include, but is not limited to, work to be performed by Peoples Gas Company, Duquesne Light Company and Verizon.
2. During the preparation of these contract documents, OWNER has coordinated with other utility owners in the project area and obtained best available information on their proposed work . OWNER will continue to coordinate with other utilities throughout the duration of this project and will provide updated information that is relevant to the CONTRACTOR for this project.
3. CONTRACTOR is required to coordinate with these other utilities so as not to impede the progress of their construction or restrict their access through CONTRACTOR's construction zone.
4. If disputes arise as to who will occupy certain areas of the project and have priority to complete construction, the OWNER will make the final decision and CONTRACTOR shall comply with said decision.

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This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

CONSTRUCTION CHANGE AUTHORIZATION

Prepared By

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

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AMERICAN COUNCIL OF ENGINEERING COMPANIES

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AMERICAN SOCIETY OF CIVIL ENGINEERS

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National Society of Professional Engineers

1420 King Street, Alexandria, VA 22314-2794

(703) 684-2882

www.nspe.org

American Council of Engineering Companies

1015 15th Street N.W., Washington, DC 20005

(202) 347-7474

www.acec.org

American Society of Civil Engineers

1801 Alexander Bell Drive, Reston, VA 20191-4400

(800) 548-2723

www.asce.org

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GUIDELINES FOR USE OF EJCDC® C-940
CONSTRUCTION CHANGE AUTHORIZATION

1.0 PURPOSE AND INTENDED USE OF THE DOCUMENT

The Construction Change Authorization is used by Owner to order additions, deletions, or revisions in the Work, or assess liquidated damages, to proceed without waiting until Owner and Contractor have agreed upon the impact, if any, of these changes on Contract Price, Contract Times, or both.

The document is unilateral in nature and does not require Contractor's signature. Owner or Engineer should maintain documentation of the transmittal of a Construction Change Authorization to Contractor.

Because, by definition, Construction Change Authorizations involve changes to the Work or the assessment of liquidated damages, EJCDC presumes that all Construction Change Authorizations must be supported by Engineer's recommendation.

Although the General Conditions do not require any estimates of the impact of the ordered change on the schedule or Contract Price, such estimates are considered good practice and are commonly provided. The estimates may serve as a starting point for determination of schedule and cost impacts.

For additional information regarding C-940, see EJCDC® C-001, Commentary on the 2018 EJCDC Construction Documents (2018).

2.0 EDITING THIS DOCUMENT

2.1 It is intended that this document be edited for each Contract. Guidelines for editing include:

A. Remove the cover pages which consist of the title pages, and these Guidelines for Use.

B. Type in required information as indicated by brackets (**[ ]**). Bracketed text will usually provide instructions for what is to be inserted in place of the brackets. Delete brackets and change formatting to match existing text after project specific text has been added, e.g. change "**[Project Name]**" to "Peach Street Renovation" (without brackets or bold, or quotation marks).

C. Fill in blanks, if any. It will be more common for information to be inserted by user to be indicated by a prompt in brackets, as described in Paragraph B above, rather than by an underline-style blank.

D. Most Notes to User are presented before the text to which they apply; some Notes to Users are interspersed in the text, usually within brackets. Delete all "Notes to User" after reviewing each note and taking appropriate action. Delete all associated numbering and brackets.

E. Modify check-boxes as required by clicking in the box.

3.0 LICENSE AGREEMENT

This document is subject to the terms and conditions of the **License Agreement, 2018 EJCDC® Construction Series Documents**. A copy of the License Agreement was furnished at the time of purchase of this document, and is available for review at www.ejcdc.org and the websites of EJCDC's sponsoring organizations.

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CONSTRUCTION CHANGE AUTHORITZATION NO.: [Number of Construction Change Authorization]

Owner:	Owner's Project No.:
Engineer:	Engineer's Project No.:
Contractor:	Contractor's Project No.:
Project:	
Contract Name:	
Date Issued:	Effective Date of Construction Change Authorization:

Contractor is directed to proceed promptly with the following change(s):

Description:

[Description of the change to the Work]

Attachments:

[List documents related to the change to the Work]

Purpose for the Construction Change Authorization:

[Describe the purpose for the change to the Work]

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

Notes to User—Check one or both of the following

☐ Non-agreement on pricing of proposed change. ☐ Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: $ _____ **[increase] [decrease] [not yet estimated]**.

Contract Time: _____ days **[increase] [decrease] [not yet estimated]**.

Basis of estimated change in Contract Price:

☐ Lump Sum ☐ Unit Price ☐ Cost of the Work ☐ Other

	Recommended by Engineer	Authorized by Owner
By:	_____	_____
Title:	_____	_____
Date:	_____	_____

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222648935

THE PITTSBURGH WATER AND SEWER AUTHORITY

MATERIAL DISPOSAL PLAN

(For submittal when removing material from a
Pittsburgh Water and Sewer Authority construction Project)

All excavated and demolished material from a construction site that is not to be reused must be properly removed and disposed (or stockpiled). If the material is to be disposed of in the City of Pittsburgh, a permit must be obtained from the City. If it is to be disposed of outside the City limits, documentation must be provided that the Contractor has complied with all the rules and regulations of the local community and that the property owner has given their approval to accept the material. One copy of this form must be completed for each disposal/stockpile site if the Contractor plans to use more than one site. A copy of this plan must be on file with the Authority before initialing construction.

- **General Project Information and Certification**

Date Submitted: _____ PWSA Project Number: _____

Contractor: _____

Project Name: _____

Contractor Certification: In submitting this Material Disposal Plan (MDP), the above named contractor expressly certifies that all material to be removed from the construction site will be hauled in accordance with all applicable federal, state, and local highway rules and regulations and traffic laws, and that the Material Disposal Plan meets all federal, state, and local rules and regulations with regard to the disposal and placement of this material.

Contractor's Signature: _____ Title: _____ Date: _____

- **Disposal of Material Within the City of Pittsburgh**

Is the material to be disposed of within the City of Pittsburgh? ☐ Yes ☐ No
If the above answer is "Yes" attach a copy of the permit.

- **Disposal of Material Outside of the City of Pittsburgh**

If material is to be removed from the site and disposed outside the City of Pittsburgh, please provide the following information.

Is the material to be disposed of outside the City of Pittsburgh? ☐ Yes ☐ No
If yes, complete the following:

Disposal Site Address:

Municipality:

Is a permit for the above municipality required? (If yes, attach a copy) ☐ Yes ☐ No

General Directions to Site: _____
(attach a map) _____

_____

Name of Property Owner: _____

Owner Phone Number: _____

- **Property Owner Acknowledgement**

Acknowledgement: I hereby acknowledge that I have agreed to accept material from _____ to be disposed of on my property as described above and that it is my understanding that the above named contractor will meet all federal, state, and local rules and regulations with regard to the placement of this material.

Property Owners Signature: _____ Date: _____

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SUPPLIER DIVERSITY PROGRAM

PURPOSE:
The Pittsburgh Water and Sewer Authority (PWSA) has established a Supplier Diversity Program (SDP) to ensure non-discriminatory practices and a more inclusive use of Minority Business Enterprise (MBE), Women Business Enterprise (WBE), Disadvantaged Business Enterprise (DBE), Small Business Enterprise (SBE) and Veteran Business Enterprise (VBE), and Service-Disabled Veteran Business Enterprise (SDVBE) to increase accessibility of contracting opportunities.

BACKGROUND:
The PWSA is committed to ensuring that qualified MBE, WBE, DBE, SBE, VBE, and SDVBE firms have the opportunity to receive and participate in the PWSA contracts. The PWSA would like to identify and attract capable firms that can effectively provide quality services and facilitate the development of local disadvantaged firms.

POLICY:
It is the goal of the PWSA to award contracts to disadvantaged businesses and to provide guidance on how to conduct business with the PWSA. The PWSA encourages every contractual firm to meet or exceed participation levels of ten percent (10%) to twenty-five percent (25%) of all contracts, regardless of the dollar value. Services may include professional services, purchased supplies and materials, hired labor, equipment, and or general management services. The goals may be adjusted from year to year and shall be communicated to all contractors through bid documents and pre-solicitation meetings. The disadvantaged business participation levels are goals and not a quota. The Supplier Diversity Program is consistent with federal and state statutory and regulatory provisions, the Mayor of Pittsburgh's Executive Order of November 30, 1990, and other contractual requirements relating to equal opportunity with supplier diversity. The PWSA will not discriminate against any business due to the owner's race, national origin, or sex in accordance with City, State, and Federal laws.

QUALIFICATIONS:
Disadvantaged businesses will be defined as the MBE, WBE, DBE, SBE, VBE, and SDVBE firms that are certified by an appropriate certification agency such as the Pennsylvania Unified Certification Program, Allegheny County, Port Authority of Allegheny County, Pennsylvania Department of Transportation, and/or the National Minority Supplier Diversity Council. The PWSA is not a certification agency; however, the PWSA accepts all governing agencies' certification, including out-of-state certifications. The certification must be current at the time the bid or proposal is submitted to the PWSA and shall remain in good standing through the contract period. All contractual parties must submit their bid with appropriate certification on the SDP Commitment Form designated by the Authority. Companies that submit bids without the appropriate certification shall be notified of the deficiency and given a reasonable opportunity to provide the evidence of the certification. If the company is unable to do so, the bid shall be considered on its own merit. Third-party resources and certification counseling services shall be

provided to firms that are unable to meet certification requirements and shall be further defined on our website.

PROCESS:
All bids and proposals submitted to the PWSA must include the SDP Commitment Form which shall be attached to the bid and proposal demonstrating commitment to hire disadvantaged businesses as direct subcontractors consistent with the PWSA expectations. Bids may be disqualified at the discretion of the PWSA for failure to submit the appropriate form, failure to express a commitment to hire disadvantaged businesses or past failure to satisfy its expressed commitment to hire disadvantaged businesses. A representative from the PWSA shall review such documentation or validity and make a recommendation to the Executive Director for awards.

If a firm cannot meet the ten percent (10%) minimum supplier diversity goals, then a Good Faith Effort Waiver Request Form must be completed and attached to the bid and/or proposal. A representative from the PWSA shall investigate whether the firm made a good faith effort by reviewing their written documentation and determining if the bid/proposal is valid or non-responsive. If a bid/proposal is determined to be non-responsive or incomplete, the firm shall be given a final opportunity to submit the required relevant information. The PWSA will make the final determination whether a bid is responsive.

In the evaluation process of any bid/proposal, the PWSA shall take into consideration the effort made by firms to achieve the goals of the Supplier Diversity Program. For Request for Proposals (RFP), a portion of the overall evaluation score will be based on the firm's plan to employ MBE, WBE, DBE, SBE, VBE, and SDVBE firms in the proposed contract with the PWSA.

GOOD FAITH EFFORT WAIVER REQUEST:
A firm bidding on or responding to a PWSA solicitation that is unable to meet the minimum Supplier Diversity Program goals must demonstrate to the PWSA that it has made a good faith effort to solicit MBE, WBE, DBE, SBE, VBE, and SDVBE firms where applicable. A good faith effort shall include one or more of the following:

1. Documentation that effectively demonstrates outreach to MBE, WBE, DBE, SBE, VBE, and SDVBE firms
2. Advertisements to disadvantaged firms through focused media
3. Solicitations of community organizations that provide assistance to disadvantaged businesses
4. Written feedback to any firm that was solicited but whose bid was rejected
5. Provide assistance to MBE, WBE, DBE, SBE, VBE, and SDVBE firms to obtain any items necessary to satisfactorily complete the contract such as insurance, bonds, materials, equipment or other project-related components
6. A narrative explanation as to why the contract does not have subcontracting opportunities

MONITORING PERFORMANCE:
During any contract, the firm shall submit to the PWSA their commitment to the PWSA's goals as part of their regular invoice process. Every invoice must document which portion of that invoice was allotted to the disadvantaged businesses. The contractor must report the dollar amount and percentages of the total contract paid to the disadvantaged businesses and be able to provide evidence that said payments were made.

A representative from the PWSA may contact the disadvantaged business to determine their satisfaction with the payments for work performed or goods provided. The PWSA may inquire for any suggestions or improvements regarding the Authority's contracting procedures or policy. After final payment, a representative of the PWSA shall determine whether a good faith effort was made to utilize disadvantaged businesses. If the representative determines that a firm has failed to make a good faith effort, the PWSA shall retain such documentation for consideration of a firm's status for future awards.

In extreme cases, where a firm has demonstrated an unwillingness to honor commitments of a PWSA contract, the firm may be excluded from bidding/proposing on future projects for no less than one year. A representative of the PWSA will keep records of all Authority contracts with respect to disadvantaged business participation, the dollar amount and percentages of each contract, and any complaints received against specific firms with respect to disadvantaged business participation.

PUBLIC OUTREACH:
In order to enhance disadvantaged business participation in contracts, the PWSA shall engage in outreach efforts through new and established channels of MBE, WBE, DBE, SBE, VBE, and SDVBE communications. The PWSA shall maintain a presence at industry events, forums, employment fairs, workforce development programs, governmental committees, and other opportunities that provide resources for information sharing. The PWSA shall use these networks to ensure all firms have the opportunity to participate in contracts.

As a supplement to the overall Supplier Diversity Program, the PWSA shall build a database of MBE, WBE, DBE, SBE, VBE, and SDVBE businesses based on relevance, industry, and other criteria and send periodic emails to those businesses regarding contracting opportunities. The PWSA will also host at least one educational event per calendar year designed to educate disadvantaged businesses regarding contracting opportunities.

BOARD REPORTS:
A representative of the PWSA shall be responsible for monitoring participation, good faith effort waiver requests, and outreach efforts. A monthly report will be provided to the Board of Directors for review and comment. This report shall include, but not be limited to the following information:

1. Identification of MBE, WBE, DBE, SBE, VBE, and SDVBE businesses included in the contracts that were sent out for bid during the prior period
2. The reason those MBE, WBE, DBE, SBE, VBE, and SDVBE businesses were rejected, if applicable
3. Status of reported MBE, WBE, DBE, SBE, VBE, and SDVBE goals from contracted firms

POLICY DOCUMENTS:
SDP Commitment Form
Good Faith Effort Waiver Request Form
SDP Commitment Invoice Form

Last Updated Date/Board Approval: (MO/DD/YYYY)	**Editor:**	**Location of change(s), what was changed, and why:**
12/15/2017		Original
09/27/2019	Alex Scuilli /Nicole Dickun	1. The updated policy will encompass all contracts and will not be restricted to contracts over $250,000. 2. Disadvantaged and Small Business Enterprises are added as eligible categories. 3. Percentages have been changed from 18% (M), 7% (W), 5% (V/SD) to a range of 10-25% of any of the eligible categories. 4. Clarification of out-of-state certification eligibility 5. Suppliers and brokers will be credited on a 1:1 ratio instead of the previous 60% and 10%, respectively. 6. Addition of Good Faith Effort Waiver Request and Standards. 7. Enhanced monitoring of contracts. 8. Strengthen commitment to outreach efforts. 9. Strengthen commitment to providing Board reports.

SDP COMMITMENT FORM

PWSA Project Name:		**Name of Bidder:**	
PWSA Project Number:		**Contact Name:**	
Total Bid Amount:		**Telephone Number:**	
Total Overall Commitment (%):		**Email Address:**	
Total Overall Commitment ($):			

Disadvantaged Business Firm Name	Certification Number	Material/Service provided	% MBE	% WBE	% DBE	% SBE	% VBE	% SDVBE	Total Commitment Price

- The firm is committing to the following diverse supplier participation on this bid/proposal.
- Complete the table indicating the suppliers that will be utilized as direct subcontractors/subconsultants to meet the participation levels indicated in the Supplier Diversity Program.
- A firm bidding on or responding to a PWSA solicitation that is unable to meet the 10% minimum Supplier Diversity Program goals must also complete the Good Faith Effort Waiver Request Form.
- If your company will not have a disadvantaged business participation, please indicate that as zero participation on the SDP Commitment Form and also complete the Good Faith Waiver Request Form.
- For subcontractors/subconsultant that are not selected, indicate in the Good Faith Waiver Effort Waiver Request Form.
- All bids/proposals must be accompanied with the completed SDP Form and supporting documentation that includes email correspondence, bids/proposals received, and a copy of the certification certificate and/or letter from certifying agency.
- Percentages are calculated by dividing total commitment price by total bid amount.

GOOD FAITH EFFORT WAIVER REQUEST FORM

PWSA Project Name:		**Name of Bidder:**	
PWSA Project Number:		**Contact Name:**	
Total Bid Amount:		**Telephone Number:**	
		Email Address:	

Disadvantaged Business Firm Name Contacted	Contact Name	Contact Telephone Number	Contact Email Address	Reason for Rejection

Narrative explanation as to why the contract does not have subcontracting opportunities

- A firm bidding on or responding to a PWSA solicitation that is unable to meet the 10% minimum Supplier Diversity Program goals must demonstrate to the PWSA that it has made a good faith effort to solicit MBE, WBE, DBE, SBE, VBE, and SDVBE firms where applicable.
- For bid/proposals of disadvantaged businesses that are not selected, indicate the reason for rejection.
- If your company will not have a disadvantaged business participation, please indicate that as zero participation on the SDP Commitment Form and also complete the Good Faith Waiver Request Form.
- Include a description of any barriers or impediments encountered or reasoning for not meeting the minimum diversity participation goals in the narrative explanation section.
- All bids/proposals must be accompanied with the completed SDP Commitment Form and supporting documentation that includes email correspondence and bid/proposals received

SDP COMMITMENT INVOICE FORM

PWSA Project Name:		
PWSA Project Number:		
Prime Contractor:		
Total Contract Amount (including change orders):		
Invoice Amount:		
Remaining Contract Amount (including change orders):		
Contract Term:	From:	To:
Invoice Pay Period:	From:	To:

Disadvantaged Business Firm Name (Subcontractor/Subconsultant)	Disadvantaged Business Category (MBE, WBE, DBE, SBE, VBE, and SDVBE)	Commitment in %	Commitment in $	Amount Paid this invoice pay period

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BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project Name:	Bus Rapid Transit Water Distribution Improvements
Awarding Agency:	Pittsburgh Water and Sewer Authority
Contract Award Date:	3/26/2021
Serial Number:	21-00168
Project Classification:	Heavy/Highway
Determination Date:	1/8/2021
Assigned Field Office:	Pittsburgh
Field Office Phone Number:	(412)565-5300
Toll Free Phone Number:	(877)504-8354
Project County:	Allegheny County

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	8/1/2017		$36.66	$24.25	$60.91
Asbestos & Insulation Workers	8/1/2018		$37.11	$24.80	$61.91
Asbestos & Insulation Workers	8/1/2019		$38.16	$25.75	$63.91
Asbestos & Insulation Workers	8/1/2020		$38.93	$26.98	$65.91
Boilermakers	6/1/2016		$40.90	$27.61	$68.51
Bricklayer	12/1/2017		$31.69	$22.15	$53.84
Bricklayer	12/1/2018		$32.35	$22.49	$54.84
Bricklayer	6/1/2019		$32.75	$22.79	$55.54
Bricklayer	12/1/2019		$33.25	$22.99	$56.24
Bricklayer	6/1/2020		$34.05	$23.09	$57.14
Bricklayer	12/1/2020		$34.50	$23.59	$58.09
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2017		$33.01	$16.63	$49.64
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2018	5/31/2019	$33.75	$17.34	$51.09
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2019	5/31/2020	$34.72	$17.82	$52.54
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2020	5/31/2021	$35.48	$18.56	$54.04
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2021		$36.23	$19.31	$55.54
Cement Mason/Concrete Finisher	6/1/2017	5/31/2018	$29.52	$18.39	$47.91
Cement Mason/Concrete Finisher	6/1/2018	5/31/2019	$30.27	$18.99	$49.26
Cement Mason/Concrete Finisher	6/1/2019		$31.27	$19.39	$50.66
Cement Masons	6/1/2020		$31.52	$20.64	$52.16
Drywall Finisher	6/1/2017		$27.80	$19.14	$46.94
Drywall Finisher	6/1/2018		$28.10	$19.99	$48.09
Drywall Finisher	6/1/2019	5/31/2020	$29.10	$20.49	$49.59
Drywall Finisher	6/1/2020	5/31/2021	$30.10	$20.89	$50.99
Drywall Finisher	6/1/2021	5/31/2022	$31.00	$21.39	$52.39
Drywall Finisher	6/1/2022		$32.00	$21.89	$53.89
Electricians & Telecommunications Installation Technician	12/23/2017		$39.76	$26.44	$66.20
Electricians & Telecommunications Installation Technician	12/22/2018		$41.74	$26.44	$68.18
Electricians & Telecommunications Installation Technician	12/22/2019		$44.46	$26.44	$70.90
Electricians	12/26/2020		$43.61	$29.29	$72.90
Electricians	12/26/2021		$45.86	$29.29	$75.15
Electricians	12/26/2022		$48.31	$29.29	$77.60
Elevator Constructor	1/1/2018		$47.22	$33.00	$80.22
Glazier	9/1/2017		$28.00	$22.60	$50.60
Glazier	9/1/2018		$28.62	$23.23	$51.85
Glazier	9/1/2019		$30.50	$24.40	$54.90
Glazier	9/1/2020		$31.00	$26.05	$57.05
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2017		$33.54	$30.24	$63.78

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Iron Workers	6/1/2018		$34.49	$31.17	$65.66
Iron Workers	6/1/2019		$35.49	$32.30	$67.79
Iron Workers	6/1/2020		$37.29	$32.87	$70.16
Laborers (Class 01 - See notes)	1/1/2018		$22.32	$16.67	$38.99
Laborers (Class 01 - See notes)	1/1/2019		$22.37	$17.67	$40.04
Laborers (Class 01 - See notes)	1/1/2020		$26.42	$14.67	$41.09
Laborers (Class 01 - See notes)	1/1/2021		$22.82	$19.32	$42.14
Laborers (Class 02 - See notes)	1/1/2018		$22.47	$16.67	$39.14
Laborers (Class 02 - See notes)	1/1/2019		$22.52	$17.67	$40.19
Laborers (Class 02 - See notes)	1/1/2020		$26.57	$14.67	$41.24
Laborers (Class 02 - See notes)	1/1/2021		$22.97	$19.32	$42.29
Laborers (Class 03 - See notes)	1/1/2018		$22.60	$16.67	$39.27
Laborers (Class 03 - See notes)	1/1/2019		$22.65	$17.67	$40.32
Laborers (Class 03 - See notes)	1/1/2020		$26.70	$14.67	$41.37
Laborers (Class 03 - See notes)	1/1/2021		$23.10	$19.32	$42.42
Laborers (Class 04 - See notes)	1/1/2018		$23.07	$16.67	$39.74
Laborers (Class 04 - See notes)	1/1/2019		$23.12	$17.67	$40.79
Laborers (Class 04 - See notes)	1/1/2020		$27.17	$14.67	$41.84
Laborers (Class 04 - See notes)	1/1/2021		$23.57	$19.32	$42.89
Landscape Laborer (Skilled)	1/1/2018		$21.01	$15.31	$36.32
Landscape Laborer (Skilled)	1/1/2019		$21.44	$16.08	$37.52
Landscape Laborer (Skilled)	1/1/2020		$21.64	$16.98	$38.62
Landscape Laborer (Tractor Operator)	1/1/2018		$21.31	$15.31	$36.62
Landscape Laborer (Tractor Operator)	1/1/2019		$21.74	$16.08	$37.82
Landscape Laborer (Tractor Operator)	1/1/2020		$21.94	$16.98	$38.92
Landscape Laborer	1/1/2018		$20.59	$15.31	$35.90
Landscape Laborer	1/1/2019		$21.02	$16.08	$37.10
Landscape Laborer	1/1/2020		$21.22	$16.98	$38.20
Millwright	6/1/2017		$39.83	$18.57	$58.40
Millwright	6/1/2020		$41.68	$20.32	$62.00
Operators (Class 01 - see notes)	6/12/2017		$34.49	$20.15	$54.64
Operators (Class 01 - see notes)	6/1/2018		$35.09	$20.95	$56.04
Operators (Class 01 - see notes)	6/1/2019		$35.69	$21.75	$57.44
Operators (Class 01 - see notes)	6/1/2020		$36.39	$22.55	$58.94
Operators (Class 01 - see notes)	6/1/2021		$37.09	$23.35	$60.44
Operators (Class 02 -see notes)	6/12/2017		$29.58	$20.15	$49.73
Operators (Class 02 -see notes)	6/1/2018		$29.90	$20.95	$50.85
Operators (Class 02 -see notes)	6/1/2019		$30.22	$21.75	$51.97
Operators (Class 02 -see notes)	6/1/2020		$30.62	$22.55	$53.17
Operators (Class 02 -see notes)	6/1/2021		$31.02	$23.35	$54.37
Operators (Class 03 - See notes)	6/12/2017		$28.25	$20.15	$48.40
Operators (Class 03 - See notes)	6/1/2018		$28.46	$20.95	$49.41
Operators (Class 03 - See notes)	6/1/2019		$28.67	$21.75	$50.42
Operators (Class 03 - See notes)	6/1/2020		$28.95	$22.55	$51.50

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Class 03 - See notes)	6/1/2021		$29.23	$23.35	$52.58
Painters Class 6 (see notes)	6/1/2017		$27.50	$18.66	$46.16
Painters Class 6 (see notes)	6/1/2018		$28.00	$19.36	$47.36
Painters Class 6 (see notes)	6/1/2019		$28.50	$20.06	$48.56
Painters Class 6 (see notes)	6/1/2020		$28.80	$20.99	$49.79
Painters Class 6 (see notes)	6/1/2021		$29.15	$21.89	$51.04
Painters Class 6 (see notes)	6/1/2022		$29.50	$22.82	$52.32
Pile Driver Divers (Building, Heavy, Highway)	1/1/2018		$50.33	$18.55	$68.88
Pile Driver Divers (Building, Heavy, Highway)	1/1/2019		$51.45	$19.30	$70.75
Pile Driver Divers (Building, Heavy, Highway)	1/1/2020		$53.10	$19.70	$72.80
Pile Driver Divers (Building, Heavy, Highway)	1/1/2021		$54.75	$20.10	$74.85
Pile Driver Divers (Building, Heavy, Highway)	1/1/2022		$56.40	$20.50	$76.90
Piledrivers	1/1/2018		$33.55	$18.55	$52.10
Piledrivers	1/1/2019		$34.30	$19.30	$53.60
Piledrivers	1/1/2020		$35.40	$19.70	$55.10
Piledrivers	1/1/2021		$36.50	$20.10	$56.60
Piledrivers	1/1/2022		$37.60	$20.50	$58.10
Plasterers	6/1/2017		$28.79	$15.79	$44.58
Plasterers	6/1/2017		$28.79	$15.79	$44.58
Plasterers	6/1/2018		$28.74	$16.84	$45.58
Plasterers	6/1/2019		$29.78	$17.20	$46.98
Plasterers	6/1/2020		$29.78	$18.60	$48.38
plumber	6/1/2018		$40.85	$21.77	$62.62
plumber	6/1/2019		$43.00	$21.77	$64.77
plumber	6/1/2020		$45.15	$21.77	$66.92
plumber	6/1/2021		$47.25	$21.77	$69.02
plumber	6/1/2022		$49.35	$21.77	$71.12
Plumbers	6/1/2017		$39.20	$21.27	$60.47
Pointers, Caulkers, Cleaners	12/1/2017		$29.88	$18.73	$48.61
Pointers, Caulkers, Cleaners	6/1/2019		$31.38	$19.44	$50.82
Pointers, Caulkers, Cleaners	12/1/2019		$31.93	$19.64	$51.57
Pointers, Caulkers, Cleaners	6/1/2020		$32.63	$19.72	$52.35
Pointers, Caulkers, Cleaners	12/1/2020		$33.15	$19.97	$53.12
Roofers	6/1/2017		$31.00	$15.17	$46.17
Roofers	6/1/2018		$31.00	$16.42	$47.42
Roofers	6/1/2019		$34.83	$13.84	$48.67
Roofers	6/1/2020		$36.08	$13.84	$49.92
Sheet Metal Workers	7/1/2017		$33.70	$27.74	$61.44
Sheet Metal Workers	7/1/2018		$34.47	$28.08	$62.55
Sheet Metal Workers	7/1/2019		$36.21	$28.36	$64.57
Sheet Metal Workers	7/1/2020		$37.96	$28.63	$66.59
Sprinklerfitters	1/1/2017		$35.42	$20.52	$55.94
Sprinklerfitters	7/1/2017		$36.42	$20.52	$56.94
Sprinklerfitters	7/1/2020		$38.91	$23.23	$62.14

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Steamfitters	6/1/2017		$41.71	$19.01	$60.72
Steamfitters	6/1/2018		$40.55	$22.67	$63.22
Steamfitters	6/1/2020		$42.25	$25.22	$67.47
Stone Masons	12/1/2017		$32.66	$21.41	$54.07
Stone Masons	6/1/2019		$33.72	$22.05	$55.77
Stone Masons	12/1/2019		$34.22	$22.25	$56.47
Stone Masons	6/1/2020		$35.02	$22.35	$57.37
Stone Masons	12/1/2020		$35.72	$22.60	$58.32
Terrazzo Finisher	12/1/2017		$31.08	$15.85	$46.93
Terrazzo Finisher	6/1/2019		$32.01	$16.52	$48.53
Terrazzo Finisher	12/1/2019		$32.37	$16.74	$49.11
Terrazzo Finisher	6/1/2020		$32.96	$16.90	$49.86
Terrazzo Finisher	12/1/2020		$33.46	$17.15	$50.61
Terrazzo Mechanics	12/1/2017		$30.57	$17.91	$48.48
Terrazzo Mechanics	6/1/2019		$31.31	$18.67	$49.98
Terrazzo Mechanics	12/1/2019		$31.79	$18.92	$50.71
Terrazzo Mechanics	6/1/2020		$32.32	$19.09	$51.41
Terrazzo Mechanics	12/1/2020		$32.82	$19.34	$52.16
Tile Finisher	12/1/2017		$25.16	$14.90	$40.06
Tile Finisher	6/1/2019		$25.69	$15.65	$41.34
Tile Finisher	12/1/2019		$26.00	$15.86	$41.86
Tile Finisher	6/1/2020		$26.47	$16.07	$42.54
Tile Finisher	12/1/2020		$26.86	$16.36	$43.22
Tile Setter	12/1/2017		$30.75	$19.05	$49.80
Tile Setter	6/1/2019		$31.47	$20.03	$51.50
Tile Setter	12/1/2019		$31.91	$20.24	$52.15
Tile Setter	6/1/2020		$32.58	$20.42	$53.00
Tile Setter	12/1/2020		$33.12	$20.73	$53.85
Truckdriver class 1(see notes)	1/1/2016		$27.62	$16.60	$44.22
Truckdriver class 1(see notes)	1/1/2020		$29.93	$20.21	$50.14
Truckdriver class 1(see notes)	1/1/2021		$30.68	$20.96	$51.64
Truckdriver class 1(see notes)	1/1/2022		$31.43	$21.71	$53.14
Truckdriver class 2 (see notes)	1/1/2016		$27.75	$16.69	$44.44
Truckdriver class 2 (see notes)	1/1/2020		$30.39	$20.52	$50.91
Truckdriver class 2 (see notes)	1/1/2021		$31.14	$21.27	$52.41
Truckdriver class 2 (see notes)	1/1/2022		$31.89	$22.02	$53.91
Truckdriver class 2 (see notes)	1/1/2022		$31.14	$21.27	$52.41
Truckdriver class 3 (see notes)	1/1/2016		$28.23	$16.98	$45.21
Window Film / Tint Installer	10/1/2019		$25.00	$2.63	$27.63

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter	1/1/2018	12/31/2018	$33.17	$17.77	$50.94
Carpenter	1/1/2019		$34.02	$18.42	$52.44
Carpenter	1/1/2020		$35.02	$18.92	$53.94
Carpenter	1/1/2021		$36.12	$19.32	$55.44
Carpenter	1/1/2022		$37.10	$19.84	$56.94
Carpenter Welder	1/1/2018	12/31/2018	$34.12	$17.77	$51.89
Carpenter Welder	1/1/2019		$34.97	$18.42	$53.39
Carpenter Welder	1/1/2020		$35.97	$18.92	$54.89
Carpenter Welder	1/1/2021		$37.07	$19.32	$56.39
Carpenter Welder	1/1/2022		$38.05	$19.84	$57.89
Cement Finishers	1/1/2018		$31.04	$19.90	$50.94
Cement Finishers	1/1/2019		$31.94	$20.50	$52.44
Cement Finishers	1/1/2021		$32.84	$22.60	$55.44
Cement Finishers	1/1/2022		$33.14	$23.80	$56.94
Cement Masons	1/1/2020		$32.84	$21.10	$53.94
Electric Lineman	5/29/2017		$45.24	$24.23	$69.47
Electric Lineman	5/28/2018		$46.29	$25.26	$71.55
Electric Lineman	5/27/2019		$47.38	$26.30	$73.68
Electric Lineman	6/1/2020		$48.51	$27.38	$75.89
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2017		$33.54	$30.24	$63.78
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2020		$37.29	$32.87	$70.16
Laborers (Class 01 - See notes)	1/1/2018		$24.85	$22.35	$47.20
Laborers (Class 01 - See notes)	1/1/2019		$24.85	$23.85	$48.70
Laborers (Class 01 - See notes)	1/6/2020		$26.10	$24.10	$50.20
Laborers (Class 01 - See notes)	1/6/2021		$26.90	$24.80	$51.70
Laborers (Class 01 - See notes)	1/6/2022		$27.70	$25.50	$53.20
Laborers (Class 02 - See notes)	1/1/2018		$25.01	$22.35	$47.36
Laborers (Class 02 - See notes)	1/1/2019		$25.01	$23.85	$48.86
Laborers (Class 02 - See notes)	1/6/2020		$26.26	$24.10	$50.36
Laborers (Class 02 - See notes)	1/6/2021		$27.06	$24.80	$51.86
Laborers (Class 02 - See notes)	1/6/2022		$27.86	$25.50	$53.36
Laborers (Class 03 - See notes)	1/1/2018		$25.40	$22.35	$47.75
Laborers (Class 03 - See notes)	1/1/2019		$25.40	$23.85	$49.25
Laborers (Class 03 - See notes)	1/6/2020		$26.65	$24.10	$50.75
Laborers (Class 03 - See notes)	1/6/2021		$27.45	$24.80	$52.25
Laborers (Class 03 - See notes)	1/6/2022		$28.25	$25.50	$53.75
Laborers (Class 04 - See notes)	1/1/2018		$25.85	$22.35	$48.20
Laborers (Class 04 - See notes)	1/1/2019		$25.85	$23.85	$49.70
Laborers (Class 04 - See notes)	1/6/2020		$27.10	$24.10	$51.20
Laborers (Class 04 - See notes)	1/6/2021		$27.90	$24.80	$52.70
Laborers (Class 04 - See notes)	1/6/2022		$28.70	$25.50	$54.20
Laborers (Class 05 - See notes)	1/1/2018		$26.26	$22.35	$48.61
Laborers (Class 05 - See notes)	1/1/2019		$26.26	$23.85	$50.11

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 05 - See notes)	1/6/2020		$27.51	$24.10	$51.61
Laborers (Class 05 - See notes)	1/6/2021		$28.31	$24.80	$53.11
Laborers (Class 05 - See notes)	1/6/2022		$29.11	$25.50	$54.61
Laborers (Class 06 - See notes)	1/1/2018		$23.10	$22.35	$45.45
Laborers (Class 06 - See notes)	1/1/2019		$23.10	$23.85	$46.95
Laborers (Class 06 - See notes)	1/6/2020		$24.35	$24.10	$48.45
Laborers (Class 06 - See notes)	1/6/2021		$25.15	$24.80	$49.95
Laborers (Class 06 - See notes)	1/6/2022		$25.95	$25.50	$51.45
Laborers (Class 07 - See notes)	1/1/2018		$25.85	$22.35	$48.20
Laborers (Class 07 - See notes)	1/1/2019		$25.85	$23.85	$49.70
Laborers (Class 07 - See notes)	1/6/2020		$27.10	$24.10	$51.20
Laborers (Class 07 - See notes)	1/6/2021		$27.90	$24.80	$52.70
Laborers (Class 07 - See notes)	1/6/2022		$28.70	$25.50	$54.20
Laborers (Class 08 - See notes)	1/1/2018		$27.35	$22.35	$49.70
Laborers (Class 08 - See notes)	1/1/2019		$27.35	$23.85	$51.20
Laborers (Class 08 - See notes)	1/6/2020		$28.60	$24.10	$52.70
Laborers (Class 08 - See notes)	1/6/2021		$29.40	$24.80	$54.20
Laborers (Class 08 - See notes)	1/6/2022		$30.20	$25.50	$55.70
Millwright	6/1/2020		$41.68	$20.32	$62.00
Operators (Class 01 - see notes)	1/1/2018		$31.29	$20.78	$52.07
Operators (Class 01 - see notes)	1/1/2019		$31.89	$21.68	$53.57
Operators (Class 01 - see notes)	1/1/2020		$32.89	$22.23	$55.12
Operators (Class 01 - see notes)	1/1/2021		$33.89	$22.73	$56.62
Operators (Class 01 - see notes)	1/1/2022		$34.79	$23.33	$58.12
Operators (Class 02 -see notes)	1/1/2018		$31.03	$20.78	$51.81
Operators (Class 02 -see notes)	1/1/2019		$31.63	$21.68	$53.31
Operators (Class 02 -see notes)	1/1/2020		$32.63	$22.23	$54.86
Operators (Class 02 -see notes)	1/1/2021		$33.63	$22.73	$56.36
Operators (Class 02 -see notes)	1/1/2022		$34.53	$23.33	$57.86
Operators (Class 03 - See notes)	1/1/2018		$27.38	$20.78	$48.16
Operators (Class 03 - See notes)	1/1/2019		$27.98	$21.68	$49.66
Operators (Class 03 - see notes)	1/1/2020		$28.98	$22.23	$51.21
Operators (Class 03 - see notes)	1/1/2021		$29.98	$22.73	$52.71
Operators (Class 03 - See notes)	1/1/2022		$30.88	$23.33	$54.21
Operators (Class 04 - See notes)	1/1/2018		$26.92	$20.78	$47.70
Operators (Class 04 - See notes)	1/1/2019		$27.52	$21.68	$49.20
Operators (Class 04 - See notes)	1/1/2020		$28.52	$22.23	$50.75
Operators (Class 04 - See notes)	1/1/2021		$29.52	$22.73	$52.25
Operators (Class 04 - See notes)	1/1/2022		$30.42	$23.33	$53.75
Operators (Class 05 - See notes)	1/1/2018		$26.67	$20.78	$47.45
Operators (Class 05 - See notes)	1/1/2019		$27.27	$21.68	$48.95
Operators (Class 05 - See notes)	1/1/2020		$28.27	$22.23	$50.50
Operators (Class 05 - See notes)	1/1/2021		$29.27	$22.73	$52.00
Operators (Class 05 - See notes)	1/1/2022		$30.17	$23.33	$53.50

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 1-A	1/1/2020		$35.89	$22.23	$58.12
Operators Class 1-A	1/1/2021		$36.89	$22.73	$59.62
Operators Class 1-A	1/1/2022		$37.79	$23.33	$61.12
Operators Class 1-B	1/1/2020		$34.89	$22.23	$57.12
Operators Class 1-B	1/1/2021		$35.89	$22.73	$58.62
Operators Class 1-B	1/1/2022		$36.79	$23.33	$60.12
Painters Class 1 (see notes)	6/1/2017		$31.98	$18.43	$50.41
Painters Class 1 (see notes)	6/1/2017		$31.85	$18.66	$50.51
Painters Class 1 (see notes)	6/1/2018		$32.50	$19.36	$51.86
Painters Class 1 (see notes)	6/1/2019		$33.15	$20.06	$53.21
Painters Class 1 (see notes)	6/1/2020		$33.55	$20.99	$54.54
Painters Class 1 (see notes)	6/1/2021		$34.00	$21.89	$55.89
Painters Class 1 (see notes)	6/1/2022		$34.45	$22.82	$57.27
Painters Class 2 (see notes)	6/1/2017		$33.95	$18.66	$52.61
Painters Class 2 (see notes)	6/1/2018		$34.60	$19.36	$53.96
Painters Class 2 (see notes)	6/1/2019		$35.25	$20.06	$55.31
Painters Class 3 (see notes)	6/1/2017		$33.95	$18.66	$52.61
Painters Class 3 (see notes)	6/1/2017		$27.58	$18.48	$46.06
Painters Class 3 (see notes)	6/1/2018		$34.60	$19.36	$53.96
Painters Class 3 (see notes)	6/1/2019		$35.25	$20.06	$55.31
Painters Class 3 (see notes)	6/1/2020		$35.72	$20.99	$56.71
Painters Class 3 (see notes)	6/1/2021		$36.25	$21.89	$58.14
Painters Class 3 (see notes)	6/1/2022		$36.77	$22.82	$59.59
Painters Class 4 (see notes)	6/1/2017		$27.16	$18.66	$45.82
Painters Class 4 (see notes)	6/1/2018		$27.68	$19.36	$47.04
Painters Class 4 (see notes)	6/1/2019		$28.20	$20.06	$48.26
Painters Class 5 (see notes)	6/1/2017		$22.07	$18.66	$40.73
Painters Class 5 (see notes)	6/1/2018		$22.49	$19.36	$41.85
Painters Class 5 (see notes)	6/1/2019		$22.91	$20.06	$42.97
Pile Driver Divers (Building, Heavy, Highway)	1/1/2018		$50.33	$18.55	$68.88
Pile Driver Divers (Building, Heavy, Highway)	1/1/2019		$51.45	$19.30	$70.75
Pile Driver Divers (Building, Heavy, Highway)	1/1/2020		$53.10	$19.70	$72.80
Pile Driver Divers (Building, Heavy, Highway)	1/1/2021		$54.75	$20.10	$74.85
Pile Driver Divers (Building, Heavy, Highway)	1/1/2022		$56.40	$20.50	$76.90
Piledrivers	1/1/2018		$33.55	$18.55	$52.10
Piledrivers	1/1/2019		$34.30	$19.30	$53.60
Piledrivers	1/1/2020		$35.40	$19.70	$55.10
Piledrivers	1/1/2021		$36.54	$20.06	$56.60
Piledrivers	1/1/2022		$37.63	$20.47	$58.10
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2017		$40.98	$32.53	$73.51
Truckdriver class 1(see notes)	1/1/2018		$28.52	$18.40	$46.92
Truckdriver class 1(see notes)	1/1/2019		$28.99	$19.43	$48.42
Truckdriver class 1(see notes)	1/1/2020		$29.93	$20.21	$50.14
Truckdriver class 1(see notes)	1/1/2021		$30.68	$20.96	$51.64

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 21-00168 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Truckdriver class 1(see notes)	1/1/2022		$31.43	$21.71	$53.14
Truckdriver class 2 (see notes)	1/1/2018		$28.66	$18.48	$47.14
Truckdriver class 2 (see notes)	1/1/2019		$29.13	$19.51	$48.64
Truckdriver class 2 (see notes)	1/1/2020		$30.39	$20.52	$50.91
Truckdriver class 2 (see notes)	1/1/2021		$31.14	$21.27	$52.41
Truckdriver class 2 (see notes)	1/1/2022		$31.89	$22.02	$53.91
Truckdriver class 3 (see notes)	1/1/2018		$29.13	$18.78	$47.91
Truckdriver class 3 (see notes)	1/1/2019		$29.59	$19.82	$49.41

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THE PITTSBURGH WATER AND SEWER AUTHORITY

Project Name: _____

Project No.: _____

Project Description:

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, The Pittsburgh Water and Sewer Authority (the "Authority" or the "Obligee") has awarded to _____, as Principal, a contract dated the _____ day of _____, 20___ (the "Contract"), which Contract is by this reference made a part hereof, for the above-referenced Project;

AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof.

NOW, THEREFORE, we, the undersigned Principal and _____, as Surety, are held and firmly bound unto the Authority in the sum of _____ (_____), to be paid to the Authority or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

1. THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal or its heirs, executors, administrators, successors, or assigns approved by the Authority shall promptly and faithfully perform the convenants, terms, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by the Authority, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions and agreements of any alteration of the Contract made as therein provided on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless the Authority as stipulated in the Contract, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.
2. No extension of time, change, alteration, modification or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.
3. Whenever Principal shall be and declared by the Authority to be in default under the Contract, Surety shall promptly remedy the default, and shall:
    3.1 Undertake through its agents or independent contractors, reasonably acceptable to the Authority, to complete the Contract in accordance with its terms and conditions and pay and perform all obligations of the Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages or, at Surety's election or if required by the Authority,
    3.2 Obtain a bid or bids for completing the Contract in accordance with its terms and conditions and, upon determination by the Authority of the lowest responsible bidder, arrange for a contract between such bidder and the Authority and make available as the work progresses (even though

there should be a default or a series of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages. The term "balance of the Contract Sum," as used herein, shall mean the total amount payable by the Authority to the Principal under the Contract and any amendments thereto, less the amount paid by the Authority to the Principal.

4. Notwithstanding the provisions of section 3 above, should the Obligee reasonably determine that the progress of the Project will be unreasonably delayed, that delay damages will be assessed, or that an emergency threatening injury to persons or property will exist unless immediate action is taken to cure the Principal's default, the Obligee may upon three days written notice to the Surety re-let or complete the Contract. The reasonable cost of such re-letting or completion shall be considered as part of the cost of completion.

5. The Surety is obligated without duplication for:

   5.1 all costs associated with performing responsibilities of the Principal for furnishing materials and completion of the Contract.

   5.2 additional legal, design professional, and delay costs associated with the Principal's default; and

   5.3 consequential and liquidated damages, or if no liquidated damage provision exists under the Contract, actual damages caused by delayed performance or non-performance of the Principal.

6. In any event, Surety's total obligations under this bond shall not exceed the penal amount set forth above.

7. No right of action shall accrue on this bond to or for the use of any other person, corporation or other entity other than the Authority or its successors or assigns.

8. Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this _____ day of _____, 20____.

PRINCIPAL:

_____

By:_____

Print name:_____

Title:_____

SURETY:

_____

By:_____

Print name:_____

Title:_____

Address for notices:

_____

_____

_____

NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached.

THE PITTSBURGH WATER AND SEWER AUTHORITY

Project Name: _____

Project No.: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS: that _____, as Principal, and _____, as Surety, are hereby held and firmly bound unto THE PITTSBURGH WATER AND SEWER AUTHORITY, the Obligee, in the sum of _____ dollars (_____), representing ten (10%) percent of the bid amount, for payment of which in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Principal has submitted to Obligee a bid to enter into a written contract for the above referenced Project in accordance with bidding documents for the Project.

THE CONDITION OF THIS OBLIGATION is that if Principal, upon acceptance by the Obligee of its bid within the period of time specified for acceptance, shall comply with all post-award requirements as specified by the Information to Bidders and Bid and General Contract Conditions within the time specified after the date of the Notice of Award, or in the event of failure to comply with all post-award requirements, if Principal shall pay Obligee for all costs of procuring the work that exceeds the amount of its bid, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Surety hereby agrees that its obligation shall not be impaired by any extensions of time for Obligee's acceptance or for compliance with post-award requirements. Surety hereby waives notice of such extensions.

Signed and sealed this _____ day of _____, 20__.

ATTEST:

_____
Corporate Secretary (Corporations only)

_____
PRINCIPAL

By:_____

Print name:_____

Title:_____

_____
SURETY

By:_____

Print name:_____

Title:_____

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NOTE: Notary Acknowledgment for Surety and Surety's Power of Attorney must be attached.

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KNOW ALL MEN BY THESE PRESENTS,

THAT _____
_____
as principal, and _____
_____as surety,
are held and firmly bound unto the PWSA in the sum of _____
_____ Dollars
_____
to be paid to the PWSA aforesaid, its chosen attorneys, successors or assigns, to which payment, will and truly be made, we do bind ourselves, our heirs, executors, administrators, successors and assigns, and every one of them, jointly and severity, firmly by these presents:

WITNESS our hands and seals the _____day of _____, in the year of our Lord, two thousand and _____.

WHEREAS, the above bounden principal obligor, in and by a certain contract with the PWSA, dated the _____ _____ day of _____, 20_____ agreed to _____
_____
_____
to be done under and in pursuance of the Acts of Assembly and Resolutions of the Authority relating thereto;

Now, therefore, the conditions of this obligation is such that; if the above bounden principal shall and will promptly pay or cause to be paid all sums of money which may be due any person, co-partnership, association or corporation, for all material furnished and labor supplied or performed on the prosecution of the work, whether or not said material or labor enter into and become component parts of the work or improvement contemplated, then this obligation to be void, otherwise to remain in full force, and effect.

The principal and surety further jointly and severally agree with the oblige herein that every person, co-partnership, association or corporation who, whether as sub-contractor or otherwise, furnished material or supplied or performed labor in the prosecution of the work as above provided and who has not been paid therefor, may sue in assumpsit on this bond in the name of PWSA, for his, their or its use, prosecute the same to final judgment for such or sums as may be justly due him, them or it, and have execution issued thereon, provided, however, that the PWSA shall not be liable for the payment of any costs or expense of any such suit.

Recovery of any person, co-partnership, association, or corporation hereunder shall be subject to the provisions of the Municipality Authorities Act of 1945, P.L. 382, as amended (533 P.S. SUPP.) Section 312A, to the same extent as if said provisions were fully incorporated in this bond; and to all applicable laws including but not limited to the Public Works Contractor's Bond Law of 1967, §P.S. Sec. 191, et seq., provided that no suit shall be entered upon this bond after one year from the date of the final settlement under the aforesaid contract by the Pittsburgh Water and Sewer Authority with the contractors.

It is further agreed that any alterations which may be made in the terms of the contract or in the work to be done or materials to be furnished or labor to be supplied or performed under it, or the giving by the PWSA of any extensions of time for the performance of the contract or any other forbearance on the part of either the PWSA or the principal to the other, shall not in any way release the principal and the surety or either or any of them, their heirs, executors, administrators, successors or assigns, from their liability hereunder notice to the surety or sureties of any such alteration, extension or forbearance being hereby waived.

Attest:

_____	_____(Seal)
FOR BIDDER	**COMPANY NAME**
_____	_____(Seal)
SECRETARY-TREASURER	**PRESIDENT – VICE PRESIDENT**

Sealed and Delivered in Presence of

_____	_____(Seal)
For Surety Company	**BONDING COMPANY**
_____	_____(Seal)
	ATTORNEY-IN-FACT

PWSA refers to The Pittsburgh Water and Sewer Authority

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DIVISION 1 – GENERAL REQUIREMENTS

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SECTION 01100

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract description.

B. CONTRACTOR's use of site.

C. Work sequence.

D. OWNER occupancy.

E. Specification Conventions.

F. Completion of Restoration

1.2 CONTRACT DESCRIPTION

A. Work of the Contract includes the replacement of the Pittsburgh Water and Sewer Authority (PWSA) public water system including water distribution mains (6", 8", 12", 16", 20", and 24"watermains), valves, hydrants, and water service laterals (WSLs) in the City of Pittsburgh's Uptown neighborhood, as required or directed. The work area extends from Sixth Avenue, below I-579, to the Birmingham Bridge, on both Fifth Avenue and Forbes Avenue corridors. The work area encompasses approximately 6,000 linear feet (LF) on each of Fifth Avenue and Forbes Avenue. Work includes the replacements of primarily 8" and 16" watermains along 5th Avenue, and 6", 8'. 20", and 24" in Forbes Avenue.

B. To administer this Contract, the OWNER will issue the signed Contract, including drawings, estimated Unit quantities and Unit Prices Bid, obtained from the contract documents. Locations will be throughout the Uptown neighborhood, of the City of Pittsburgh along Forbes Avenue and Fifth Avenue. More than one construction crew may be necessary to complete work at various locations. Contractor shall not mobilize to, or start work at any construction site without approval of the Owner's Construction Manager.

C. The OWNER does not guarantee CONTRACTOR that a backlog of work will be maintained.

D. The OWNER reserves the right to dictate CONTRACTOR's schedule as necessary.

E. Perform Work of Contract under Unit Price contract with OWNER in accordance with Conditions of Contract. Quantities on the proposal are estimates. It shall be understood that all quantities as shown on the proposal may be increased or decreased without limitations as ordered by the OWNER. The provisions of Paragraph 13.03 of the General Contract Conditions as they relate to unit items shall not apply to this work.

F. The CONTRACTOR shall furnish all labor, materials, equipment, machinery, apparatus, and tools, and perform all operations necessary to complete the work as ordered by the OWNER during the contract period. Any labor, materials, equipment, or apparatus not specifically mentioned herein that may be necessary for the proper completion of the entire work or of the individual items thereof within the intent of these specifications and details shall be furnished by the CONTRACTOR without additional compensation.

G. CONTRACTOR shall comply with the requirements of the Pittsburgh Department of Mobility and Infrastructure (DOMI) Right-Of-Way (ROW) manual for traffic control requirements. The use of Off-Duty Uniformed Police Officers shall be approved by the OWNER.

H. Unless, otherwise noted, Contractor will comply with the provisions detailed in PennDOT Publication 408 (Current Edition), or PWSA Standards, whichever is more applicably stringent and/or as directed by OWNER to complete the scope of work as outline in these specifications.

I. Continuous water and sewer service shall be maintained throughout the job. The CONTRACTOR shall furnish and install temporary cuts and plugs of existing pipes as necessary to maintain said service. Any required temporary water service plans for individual properties and businesses shall be developed by the CONTRACTOR and approved by the OWNER.

J. The CONTRACTOR shall dewater, bulkhead, and bury all existing lines that are abandoned in place at no additional payment. Abandoned line(s) larger than 8" in diameter must be filled with approved flowable fill.

K. It is the intent of these documents to describe the complete type of work required to perform any reconstruction of existing waterlines or construction of new waterlines, waterline gate valves, and water service lines and incidental repairs as directed during the contract period.

L. The CONTRACTOR is responsible for dechlorinating all potable water that is dewatered from existing waterlines and trenches at no additional payment.

M. CONTRACTOR's REPRESENTATIVE is directly responsible for properly informing the CONSTRUCTION MANAGER, or their designee, giving timely notice of their intended work and their daily work locations. Failure to follow this requirement will make the respective work subject to non-payment.

N. The OWNER has no responsibility to honor any requirements that CONTRACTOR has under labor agreements or other to pay for a minimum number hours/day.

O. The CONTRACTOR shall complete mandated work within 365 calendar days of issuance of Notice-to Proceed.

P. CONTRACTOR shall be responsible for addressing customer complaints as received by the OWNER. At a minimum, the CONTRACTOR will be required to reach out to the customer to arrange to meet to assess the nature of the complaint and possible remedies. This contact will be made within 24 hours of receiving the complaint from the OWNER. The CONTRACTOR will

be required to address the complaint within 72 hours of receiving the complaint from the OWNER. Emergency situations such as no water service or a surcharging sewer will need to be addressed immediately when assigned to the CONTRACTOR by the OWNER.

1.3 CONTRACTOR'S USE OF SITE

A. Construction Operations: Limited to areas noted on Drawings or as determined by CONSTRUCTION MANAGER.

B. Time Restrictions for Performing Work:
   1. The City of Pittsburgh Department of Mobility and Infrastructure has preliminarily determined the hours of work limitations:
      1. Preferred working hours: 9:00am to 3:00pm - Monday through Friday
      2. All work West of Washington Place and Chatham Square on both fifth Avenue and Forbes Avenue, as well as the side streets, is required to be completed during nighttime hours (Between the hours of 7:00 PM Monday through Friday evening and 5:00 AM the following morning).
      3. All work on Washington Place and Chatham Square and to the East on both Fifth Avenue and Forbes Avenue, as well as the side streets, is required to be completed during Day-time Hours (Between the Hours of 7:00 Am and 5:00 PM Monday through Friday)
      4. Work on "No- Outlet" Streets (Wyandotte Street and Moultrie Street North of Fifth Avenue) is required to be completed during Weekend hours (Between the hours of 6:00 AM and 8:00 PM on Saturday and Sunday).
   2. PWSA reserves the right to specify other working hours outside the normal times, or specify when work at a site is to be performed.
   3. There shall be no additional payment for materials, equipment, or work completed at night, weekends, or during other non-working hours. No additional payment shall be made for crew downtime associated with work zone restrictions.
   4. There shall be no premium time paid except through Bid Item: U-15: MISCELLANEOUS PREMIUM WORK FOR A FULL TIME CREW.

C. Utility Outages and Shutdown: coordinate with OWNER.

D. Access and Coordination: The Contractor's attention is directed to the fact that during the course of this construction, access to and through the project area will be required by other parties authorized by DOMI. The Contractor is required to coordinate with these parties so as not to restrict their access through the construction zone. The locations and nature of this access will be established through coordination with and approval of DOMI and the Owner.

1.4 WORK SEQUENCE

A. Construct Work in to accommodate Owner's occupancy requirements during construction period, coordinate construction schedule and operations with OWNER.

B. If any aspects of normal OWNER's operations need to be interrupted for completion of the work, notify the OWNER in writing. Submit notice with an alternate plan to cover contingency problems. In the alternate plan, allow for provision of temporary utilities or other essential services that must be interrupted for any period in performance of the contract work. Shutdown of utilities must be accomplished during approved hours at no additional cost to OWNER. If work requires shutdown in excess of the approved hours, separate shutdown periods shall be required. Do not proceed with any proposed shutdown without prior written approval.

1.5 OWNER OCCUPANCY

A. OWNER may occupy the site premises during the entire period of construction for the conduct of normal operations.

B. Cooperate with OWNER and City of Pittsburgh to minimize conflict, and to facilitate OWNER's operations.

C. Schedule the Work to accommodate OWNER occupancy.

1.6 COORDINATION WITH OTHER CONTRACTORS

A. The Owner has the right to employ other contractors at the site of the Project. During the progress of the Work, other contractors may be engaged in other Work on the Project or on other projects at the site. In such event, the Contractor shall coordinate the Work to be done hereunder with the work of the other contractors.

1.7 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the CONTRACTOR, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

1.8 COMPLETION OF RESTORATION

A. The restoration work shall not be considered complete until the CONTRACTOR has installed the appropriate Utility Identification Tag on the asphalt patch, in accordance with DOMI Right of Way Procedures Manual.

B. The OWNER shall not issue additional work until the CONTRACTOR has completed final restoration on all sites in violation of the City requirement stated above.
   1. Exception will be made for all sites in which the installation was performed prior to March 17 (45 days before April 30, which the City considers to be the end of wintertime restoration).

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

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SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Applications for payment.

B. Change procedures.

C. Defect assessment.

D. Unit prices.

E. Alternates.

1.2 APPLICATIONS FOR PAYMENT

A. Submit notarized copy of each application on PWSA's electronic media driven form.

B. Content and Format: Utilize Bid Sheet for listing items in Application for Payment.

C. Payment Period: Submit at intervals stipulated in the Agreement.

D. Submit with transmittal letter as specified for Submittals in Section 01330 - Submittal Procedures.

E. Submit waivers.

F. Substantiating Data: When OWNER requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
   1. Current construction photographs specified in Section 01330 Submittal Procedures.
   2. Partial release of liens from major subcontractors and vendors.
   3. Affidavits attesting to off-site stored products.

1.3 CHANGE PROCEDURES

A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The OWNER/OWNER'S REPRESENTATIVE will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on PWSA's Field Instruction Form.

C. The OWNER may issue a Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within seven days.

D. Contractor may propose changes by submitting a request for change or Potential Change Order (PCO) to OWNER, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors.

E. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under Change Order Request. Changes in Contract Sum/Price or Contract Time will be computed as specified for Force Account Change Order.

F. Change Order Request: OWNER may issue directive, on PWSA's form, signed by OWNER, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

G. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.

H. Change Order Forms: PWSA's form.

I. Execution of Change Orders: OWNER will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

J. Correlation Of Contractor Submittals:
   1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
   2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
   3. Promptly enter changes in Project Record Documents.

1.4 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. Authority of OWNER to assess defects and identify payment adjustments, is final.

C. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
   1. Products wasted or disposed of in a manner that is not acceptable.
   2. Products determined as unacceptable before or after placement.
   3. Products not completely unloaded from transporting vehicle.
   4. Products placed beyond lines and levels of required Work.
   5. Products remaining on hand after completion of the Work.

6. Loading, hauling, and disposing of rejected products.

1.5 UNIT PRICES

A. OWNER'S REPRESENTATIVE will take measurements and compute quantities accordingly. Provide assistance in taking of measurements.

B. Unit Quantities: Quantities and measurements indicated in Bid Form are for contract purposes only. Quantities and measurements placed in the Work shall determine payment.
   1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at unit sum/prices contracted.

C. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.

D. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by OWNER multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

E. Measurement Of Quantities:
   1. Weigh Scales: Inspected, tested and certified by applicable Pennsylvania Weights and Measures department within past year.
   2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
   3. Metering Devices: Inspected, tested and certified by applicable Pennsylvania department within past year.
   4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
   5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
   6. Measurement by Area: Measured by square dimension using mean length and width or radius.
   7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
   8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

F. Units
   1. Lump Sum (LS). Not measured. Indicates complete construction of the Work, or portions thereof, as shown on the Bid Form
   2. Each (EA). Measured by the number of individual items of work completed.
   3. Linear Foot (LF). Measured parallel to the longitudinal base or foundation upon which items are placed, or along the longitudinal surface of the item to the nearest 0.1 foot.
   4. Vertical Foot (VF). Measured vertically to the nearest 0.1 foot.
   5. Square Foot (SF). Measured by a two-dimensional area method on the surface of the item to the nearest 0.1 shrift.
   6. Square Yard (SY). Measured by a two-dimensional area method on the surface of the item to the nearest 0.1 sq.
   7. Acre. Measured by a two-dimensional area method on the surface to the nearest 0.1 acre.

8. Cubic Yard (CY). Measured by a three-dimensional volume method to the nearest 0.1 cubed.
9. Cubic Foot (CF). Measured by a three-dimensional volume method to the nearest 0.1 cubed.
10. Pound (LB). Measured by the actual item net weight to the nearest pound (avoirdupois), except for Ductile Iron Fittings, where the weight of a given fitting is specified by the contract.
11. Ton (TON). Measured by actual item net weight in short tons consisting of 2,000 pounds to the nearest 0.1 ton (avoirdupois).
12. Gallon. Measured by actual item liquid volume (except for pump capacity, which is calculated from the rated capacity of the pump times hours of operation) to the nearest quarter gallon.
13. K. Gallon. 1,000 gallons, to the nearest 0.1 K. gallon.
14. Board Foot Measure. Measurement by a three-dimension method of the actual item lumber board foot to the nearest 0.1 board foot.
15. K. Board Foot Measure. 1,000 board feet, to the nearest 0.01 K. board foot.
16. Bags. Measured as an item unit bag.
17. Crew-hour, Hour (Crew Hr). Measured to the nearest 15 minutes.
18. Hour, Hour (HR). Measured to the nearest 15 minutes.
19. Day. Measured to the nearest quarter day.

G. Unit Price Schedule:

U-1 Mobilization / Demobilization, Permits, Bonds and Insurance, Maintenance and Protection of Traffic

Payment shall be LUMP SUM prorated according to the percentage of work completed.

Basis of Payment: mobilization; demobilization; permits and associated fees; bonds; insurance; project protection; temporary facilities including temporary fencing and the Contractor's field office; weekly progress meetings; coordination with the OWNER and CONSTRUCTION MANAGER, Subcontractors, Subconsultants, and manufacturer's reprentatives; all pre-construction, construction and post-construction record photographs, and all other incidental work. It includes furnishing and installing all labor, equipment, and materials necessary to properly and satisfactorily maintain vehicular and pedestrian traffic in the work zone area, in accordance with PennDOT Publication 203, PennDOT Publication 213, Allegheny County Department of Public Works Policy and Procedure for Work within County Road Right-Of-Way, and the Pittsburgh DPW Right-of-Way Manual. This includes, but is not limited to furnishing, installing and maintaining protective pedestrian safety fencing, traffic and pedestrian control signs, barrels w/ flashers, flashing arrowboard devices, control barricades w/ flashers, plating of excavations and all excavations not in an active work area, providing temporary access, and/ all other requirements in accordance with the specifications which are not specifically covered by the various traffic control payment items and/or as directed.

No additional payment will be made if the CONTRACTOR, for whatever reason, mobilizes/demobilizes more than once at a given location or for mobilization and demobilization from multiple consturction sites.

CONTRACTOR may request payment of up to 50% of this Bid Item on the first pay application; 20%, invoiced equally over the remaining pay applications, excluding the final invoice; and 30% on the final pay application.

Obtaining the ACHD permit for private line replacement is included in Bid Item W-87.

The LUMP SUM amount for this item is capped at a maximum 5% of the total bid, excluding Bid Item U-1.

U-4 **Rock & Obstruction Excavation, All Depths**

Payment shall be per CUBIC YARD. Measurement shall be based on the field dimensions of excavated rock zone areas.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary, over and above those required for unclassified excavation, to excavate and dispose of rock, concrete encasement, and old foundations.

U-5 **Exploratory Excavation and Backfill**

Payment shall be per CUBIC YARD. Measurement shall be based on the field dimensions of excavated areas.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to perform exploratory excavation and backfill required at any other locations directed in the field by the OWNER and not covered in any other Pay Item. This shall include work associated with exploratory excavations but not be limited to: all saw cutting of pavement; installation and removal of sheeting, bracing and shoring; unclassified excavation and disposing of unsuitable excavated material; removing shoring, etc.; providing, placing and compacting approved backfill material; dewatering of trench; repairing damaged existing facilities. Exploratory excavations shall be limited to a 10’x10’ footprint unless approved by OWNER.

Surface Restoration is not included in this Item. Item U-14 (Misc. Crew Time) shall not be paid as an addition to this item.

U-7 **Additional Bedding Material, As Directed**

Payment shall be made at the unit price bid per CUBIC YARD. Measurement shall be based on the field dimensions from the width of the trench and from the bottom of the trench to the proposed pipe bedding elevation. The depth required to reach competent ground shall be as determined by the Engineer.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to excavate and dispose of unsuitable materials and place AASHTO #1 stone aggregate or approved equal material imported to stabilize the utility trench at depths greater than the

proposed standard bedding zone provided under the various payment items. Over-excavation and backfill shall only be at the direction of the Construction Manager.

U-8 Concrete Encasement

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on the interior dimensions of the concrete forms.

Basis of Payment: Includes furnishing concrete encasement where shown on the Contract Documents including applicable drawings or as directed. Work shall include all unclassified excavation, sheeting, bracing, and shoring, backfill, formwork, concrete reinforcing, bedding, and all other requirements for a complete installation as indicated on the plans and Standard Details and in accordance with the contract documents.

U-9 Concrete Anchors and Thrust Blocks

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on the interior dimensions of the concrete forms.

Basis of Payment: Includes furnishing concrete anchors and thrust blocks and collars as shown on the Contract Documents including applicable drawings. Work shall include all unclassified excavation, sheeting, bracing, and shoring, backfill, embankment, formwork, concrete reinforcing, bedding, and all other requirements for a complete installation as indicated on the plans and in accordance with the contract documents.

U-10 Flowable Fill

Payment will be made by the unit price bid per CUBIC YARD complete in place. Measurement shall be based on the volume of fill used.

Basis of Payment: Includes formulating, furnishing, and placing flowable fill material into locations indicated on Contract Documents including applicable drawings, or as directed in the field. Work under this item shall include, but not be limited to, all equipment, labor, materials formulation cost, cement, fly-ash, fine aggregate, additives, plugs, temporary bulkheads, excavation, water fees, testing, location mapping, and proper disposal of all unsuitable and surplus materials.

U-11 Bypass/Dewatering Pumping as Directed

Payment will be per MAN-HOUR, by the hours of operation completed. Pump size will vary as directed**.**

Basis of Payment: The Contractor shall be responsible for any and all pumping required for continuous bypass pumping, as directed, at selected work locations, no matter what the source of the water. Sources include but are not limited to: accumulated precipitation, encountered ground water, and sewage back-up. Work under this item shall include furnishing and connecting all piping, pumps, and appurtenances for the purpose of bypass pumping. Work also includes recessing the line and furnishing and placing bituminous

material to permit traffic to drive over the line at intersections and driveways. This item also includes maintaining pumps and lines continuously, while in service. The length of suction and discharge hose included in this item is 100 feet. Manhours based upon start and stopping duration of continuous pumping operations.

This Item shall only apply for the bypassing of flows in excess of 5 MGD which has received prior approval from the OWNER.

U-12 **Flag Person**

Payment shall be made by the unit price bid per MANHOUR. Measurement for payment shall be based on the actual number of hours provided.

Basis of Payment: Includes providing a properly certified uniformed flagperson in accordance with contract specifications and/or as directed by the PROJECT REPRESENTATIVE.

U-13 **Off Duty Uniformed Officer**

Payment shall be per MAN-HOUR. Measurement for payment shall be based on: 1) the actual number of man-hours provided when the occurrence is greater than four hours; 2) a value of four hours when the hours of service are four hours or less per occurrence.

Basis of Payment: Includes providing off duty uniformed Police to direct and control traffic during construction as required by the approved Maintenance and Protection of Traffic Plan, obstruction permit, or as required by the OWNER in the field.

U-14 **Miscellaneous Work Time for a Full Crew**

Payment shall be made by the unit price bid per HOUR for a full crew(s); labor and equipment. A full crew shall be defined to consist of (2) laborers, (2) operators, (1) truck driver and (1) foreman. Should the actual crew be comprised of less workers than the "full" crew as defined below, then payment for this item shall be prorated based on the actual number of workers in the crew for the duration specified.

Basis of Payment: This item shall be used to provide full compensation for all expenses involved with having a crew of workers and equipment at a site performing Work and/or time spent on-site which is not defined by any other contract unit prices.

If this item is used for downtime spent waiting by a crew as a result of actions by the AUTHORITY at the discretion of the OWNER, the item shall cover all expenses involved in having a crew of workers and equipment at a site prepared to work, but unable to work due to circumstances outside of their control, up to the end of that eight (8) hour work day. No payment shall be made for additional days.

Delays which are a usual and customary part of pipe installation are considered incidental to the work of installing the pipe and WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays caused by the CONTRACTOR WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays due to Acts of God WILL NOT BE PAID FOR UNDER THIS ITEM.

Crew downtime associated with work zone restrictions WILL NOT BE PAID FOR UNDER THIS ITEM.

U-15 **Miscellaneous Premium Work for Full Time Crew**

Payment shall be made by the unit price bid per HOUR for a full crew(s); labor and equipment. A full crew shall be defined to consist of (2) laborers, (2) operators, (1) truck driver and (1) foreman. Should the actual crew be comprised of less workers than the "full" crew as defined below, then payment for this item shall be prorated based on the actual number of workers in the crew for the duration specified**.**

Basis of Payment: This item is to be paid in addition to U-14 or other pay items when applicable to provide full compensation for all expenses involved with having a crew of workers at a site performing Work outside normal working hours. Normal working hours are defined as 7:00am to 6:00 pm Monday through Friday. This item will not be utilized for shift work pre-scheduled with the CONTRACTOR where normal working hours will not be permitted. This item does not cover additional costs for materials or equipment.

If this item is used for downtime spent waiting by a crew as a result of actions by the AUTHORITY at the discretion of the OWNER, the item shall cover all expenses involved in having a crew of workers and equipment at a site prepared to work, but unable to work due to circumstances outside of their control up to the end of that eight (8) hour work day. No payment shall be made for additional days.

Delays which are a usual and customary part of construction are considered incidental to the work of installing the pipe and WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays caused by the CONTRACTOR WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays due to Acts of God WILL NOT BE PAID FOR UNDER THIS ITEM.

U-501 **Erosion and Sedimentation Control**

Payment shall be made by the unit price bid per LUMP SUM for all Erosion and Sediment Control work for the entire project area.

Basis of Payment: Work under this item shall include, but not be limited to, all run-on and run-off controls, dewatering, dust control, silt fence and/or hay bales, temporary protection of any open trench and inlet structure including measures to restrict flow through curb cuts until plantings have become fully established, and all other specified measures. The lump sum price shall include all materials, labor, and equipment as required by the Contract Drawings and all applicable regulatory authorities. This item shall also include maintenance and replacement of erosion and sediment controls facilities throughout the Contract life and removal and disposal of these controls upon Contract completion.

W-1 - W-9 **Ductile Iron Pipe, Class 52, Zinc Coated - All Sizes**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement shall be based on the actual length of pipe installed from center of fitting to center of fitting, minus the total footage associated with installed pipe fittings and valves, which are paid separately.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install Ductile Iron Pipe. This work includes, but is not limited to: all saw cutting; trench excavation up to 8-foot deep; installation and removal of sheeting, shoring, and bracing; furnishing and installing cement-lined ductile iron pipe as specified, including all gaskets; disposing of excavated material; removing and disposing of foreign obstructions; trench dewatering; installing and removing temporary plug/capping; furnishing and installing Polyethylene Pipe Wrap; pressure testing and disinfecting the line; providing, placing and compacting approved aggregate pipe zone and aggregate backfill material to pavement subbase.

Stone Subbase, Concrete Paving Base, and Surface Restoration are not included in this item.

W-15 **Water Service Line - PEXa - All Sizes**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement shall be based on the actual length of pipe installed not including valves, complete in place, by any installation method. Distance shall be measured from the connection point at the corporation stop to the reconnection point with the existing private water service line or the curb stop, if the existing private water service line is also being replaced.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install PEXa water service pipe conforming to Section 02515. This work includes, but is not limited to: all saw cutting; trench excavation; installation and removal of sheeting, shoring, and bracing as necessary; pushing, pulling, and/or boring of service line; furnishing and installing piping, tracer wire, fittings, valves, castings, and adapters; disposing of excavated material; removing and disposing of foreign obstructions; furnishing and installing Polyethylene Pipe Wrap (as necessary) and HDPE sleeving; pressure testing and disinfecting the line; providing, placing and compacting approved aggregate pipe zone and aggregate backfill material. Excavation of one hole per service line for locating the water service line is included in this item. If additional holes are required, they are to be done and payment made under the Exploratory Excavation and Backfill item.

Surface restoration is not included in this item.

W-19 **Extra Waterline Trench Excavation and Backfill (Greater than 8 feet deep)**

Payment shall be made by the unit price bid per CUBIC YARD. Measurement shall be based on the volume of the extra excavation, derived from the laying length of the pipe, the vertical depth of excavation minus 8 feet, and the allowable width of the trench based on the pipe outside diameter plus two feet. Length of pipe shall include all bends, fittings, and valves.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to excavate a water trench to a depth greater than eight (8) feet with the exception of work performed under the exploratory excavation and backfill pay item. This shall include but not be limited to: all additional unclassified excavation; installation and removal of extra sheeting, bracing and shoring not covered in the water installation pay item; removal of unsuitable material; removing shoring, etc.; providing, placing and compacting approved backfill material as required.

W-20 **Service Line Connection - Wet or Dry Tap (1")**

Payment will be made by the unit price bid per EACH service line incorporating these items in service connections to new mains, complete in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install all corporation stops/cocks, curb stops/cocks and curb boxes. Work under this item includes but is not limited to: sawcutting pavement; necessary excavation and disposal of unsuitable material; removal of existing curb box ;tapping the main; providing and installing all fittings and connections; and providing, placing and compacting approved backfill material to subbase.

The CONTRACTOR has the option to perform the work either with the new main dry or wet.

This item does not include surface restoration.

W-21 **Mechanical Joint Ductile Iron Fittings**

Payment shall be made by the unit price bid per POUND installed. Measurement for payment shall be the actual fittings completely installed in place as depicted on the Contract drawing or as directed by the PROJECT REPRESENTATIVE. The weight of the fitting shall be as presented in Table F1, Table F2 and Table F3 included at the end of this section. Mechanical Joint Restraints are included in this item. Fittings included in and paid for under other items WILL NOT be paid for under this item.

Basis of Payment: Includes furnishing, installing, and polyethylene wrapping all fittings necessary for the proper completion of the work covered under this Contract in accordance with the Contract Plans, working drawings, the Specifications, and all other requirements of this contract. Polyethylene wrap, bolts, nuts, gaskets, mechanical joint retainer glands and all other appurtenances shall be included as incidental to the appropriate items as needed. Sawcutting; excavation; installing and removing sheeting, bracing, and shorting; and backfill shall be included under separate items.

This item does not include thrust blocks or Surface Restoration.

W-23 **Medium Extension Gate Box - Cast Iron, Round Lid**

Payment shall be made by the unit price bid per EACH medium extension gate (MEG) box installed. Measurement for payment shall be for each MEG box installed complete in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install medium extension gate boxes as shown on the Standard Details. Excavation, disposal of excavated material, backfill and other related operations are not part of this item and are paid for in waterline and valve items.

This item does not include surface restoration.

W-24 **Remove and Salvage Existing Deep Frame and Cover, Risers and/or M.E.G. Box Outside of Trench Area**

Payment will be made by the unit price bid per EACH unit removed. Measurement for payment shall be for complete removal of deep frames and covers and/or M.E.G. boxes.

Basis of Payment: Includes furnishing all labor, materials, and equipment required for the removal and salvage of all existing deep frames and covers, risers, curb boxes, and/or M.E.G. boxes which are connected to abandoned waterlines located outside the trench areas. All salvaged items are to be transported and delivered to the AUTHORITY's Brilliant Yard facility. Work includes, but is not limited to any necessary sawcutting, excavation or backfilling; removal and transportation of the abandoned equipment.

Surface restoration is not included in this item.

W-26 **Precast Valve Manhole (10 Feet Depth)**

Payment will be made by the unit price bid per EACH unit installed complete in place. The payment for any additional manhole depth over eight feet shall be made under a separate bid item.

Basis of Payment: Includes forty-eight inch (48") reinforced concrete valve manhole including excavation; installation and removal of sheeting, shoring, and bracing; concrete base with drain; pipe penetration linkseals; water stops; precast concrete riser sections including transition sections, steps, frame and lid castings; and all necessary sealant materials or other waterstops. Excavation and backfill for an eight-foot by eight-foot (8' x 8') footprint for 48" diameter manhole is included in the unit price bid for this item. Additional volume will be considered under the appropriate items.

This item does not include surface restoration.

W-28 **Reset Existing Fire Hydrant to New Water Line**

Payment will be made by the unit price bid per EACH fire hydrant reset. Measurement for payment shall be for each complete reinstallation of existing fire hydrants.

Basis of Payment: Includes furnishing all labor, materials, and equipment required for the complete reinstallation or reconnection of existing hydrants in compliance with the Standard Details. Work in this item includes but is not limited to: removal and resetting of existing

fire hydrant, sawcutting of pipe or pavement; removing and disposing of foreign obstructions; excavating and disposing of unsuitable material; providing base fittings, transition couplings, harnessing, gravel drain, polyethylene wrap and inserts; installing hydrant and appurtenances; providing, placing and compacting approved backfill material; and painting of hydrant.

Surface restoration is not included in this item nor is any required valve, pipe, M.E.G. or valve manhole.

W-29 **Install New Fire Hydrant**

Payment will be made by the unit price bid per EACH fire hydrant installed. Measurement for payment shall be for each complete installation of new fire hydrants**.**

Basis of Payment: Includes furnishing all labor, materials, and equipment required for the installation of new hydrants in compliance with the Standard Details. Work in this item includes but is not limited to: sawcutting of pipe or pavement; removing and disposing of street car tracks; excavating and disposing of unsuitable material; trench dewatering; providing hydrant, base fittings, transition couplings, harnessing, gravel drain, polyethylene wrap and inserts; installing hydrant and appurtenances; providing, placing and compacting approved backfill material; and painting of hydrant.

Surface restoration is not included in this item nor is any required valve, pipe, M.E.G. or valve manhole.

W-32 **4" to 10" Sewer Lateral Encountered in Water Line Trench**

Payment shall be made by the unit price bid per LINEAR FOOT installed. Measurement for payment shall be along the centerline of the pipe**.**

Basis of Payment: Includes furnishing all labor, materials, and equipment required to replace all unmarked 4" to 10" sewer laterals and fittings encountered and damaged in waterline trench, as directed by the OWNER. Work under this item includes but is not limited to: cutting of existing lateral; required excavation; disposal of damaged materials and unsuitable excavated materials;installing and compacting bedding and backfill in accord with PWSA construction standards to the street base bottom elevation; furnishing and installing couplings, marking tape; re-connection to existing lateral, sewer, manhole or catch basin with PVC SDR-26 sewer pipe, Fernco couplings or approved equal, required sealers, and any approved method of plugging, blocking, pumping and by-passing, etc., that is necessary and will minimize the curtailment of sewage service during reconnection.

W-33 **15" Sewer Encountered in Water Line Trench**

Payment shall be made by the unit price bid per LINEAR FOOT installed. Measurement for payment shall be along the centerline of the pipe.

Includes furnishing all labor, materials, and equipment required to replace all 15" sewer laterals with 15" PVC, SDR-26 sewer laterals and fittings encountered and damaged in

waterline trench, as directed by the OWNER. Work under this item includes but is not limited to: cutting of existing lateral; required excavation; disposal of damaged materials and unsuitable excavated materials; installing and compacting bedding and backfill in accord with PWSA construction standards to the street base bottom elevation; furnishing and installing couplings, marking tape; re-connection to existing lateral, sewer, manhole or catch basin with PVC SDR-26 sewer pipe, Fernco couplings or approved equal, required sealers, and any approved method of plugging, blocking, pumping and by-passing, etc., that is necessary and will minimize the curtailment of sewage service during reconnection.

W-35 – W-42 **Gate Valve Installed as Part of New Water Line - All Sizes**

Payment shall be made by the unit price bid per EACH valve installed. Measurement for payment shall be for each valve installed complete in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install new gate valves with polyethylene wrap as shown on the Standard Details. In addition to providing and installing the valve, work under this item includes but is not limited to: all saw cutting; trench excavation up to 8-foot deep; installation and removal of sheeting, shoring, and bracing; excavation and disposal of unsuitable material (including removal and disposal of street car tracks); trench dewatering; and providing, placing and compacting approved aggregate pipe zone and aggregate backfill material. All required gaskets, bolts, nuts, and mechanical joint retainer glands shall be considered incidental to this item of work.

This item does not include Surface Restoration, MEGs or Valve Manholes.

W-59, W-61 **Waterline - Line Stop (Single) -All Sizes**

Payment shall be made by the unit price bid per INCH OF DIAMETER of waterline stopped (i.e., if a Waterline Stop is performed on a 12" Waterline, the CONTRACTOR shall be paid the unit price bid multiplied by 12 (inches)).

Basis of Payment: Includes all labor and materials related to furnishing and installing complete waterline stop on an existing system. This work includes, but is not limited to: all excavation (8 feet deep or less); disposing of excavated material; removing and disposing of street car tracks; furnishing and installing sheeting, shoring and bracing (including any such materials made necessary by valves or fittings); installing and removing temporary plug/capping, pipes; furnishing and installing Polyethylene Pipe Wrap; testing the line and disinfecting materials; removing shoring, etc.; and providing, placing and compacting approved backfill material.

Work shall also include removing and disposing of all existing thrust blocking, and appurtenances required to allow installation of new equipment, pipe, and pipe fittings in accordance with specifications.

Surface Restoration is not included in this item.

W-72 **Water Service Line Termination**

Payment shall be made by the unit price bid per EACH water service terminated. Measurement shall be for each water service terminated.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to terminate a water service connection associated piping, conforming to Section 02515. For water service and fire protection service line terminaitons. This work includes, but is not limited to: shutting of corporation stops/cocks; disconnecting the existing service piping; removal of existing service piping and existing curb stop/cock/valve; installation of brick "dog house" around shut corporation stop/cock conforming to PWSA Detail; all saw cutting; trench excavation; installation and removal of sheeting, shoring, and bracing as necessary; disposing of excavated material; removing and disposing of foreign obstructions; disinfecting the line if required; providing, placing and compacting approved aggregate pipe zone and aggregate backfill material. Excavation of one hole per service line for locating the water service line is included in this item. Excavations shall be limited to a 6'x6' footprint unless approved by OWNER. If additional holes are required, they are to be done and payment made under the Exploratory Excavation and Backfill item.

This item is to be paid only where termination of exisitng service lines are indicated per the drawings or as directed by PWSA.

Surface restoration is not included in this item.

W-86 **Service Line Material Verification**

Payment shall be made by the unit price bid per EACH service line located and verified. Measurement shall be based on each full service line (both public and private) requiring excavation to locate and/or verify the material composition.

Basis of Payment: Includes furnishing all labor, materials, and equipment necessary to perform the excavation and backfill required to locate the service line and identify the pipe material on both sides of the curb stop. This shall include work associated with exploratory excavations but not be limited to: all saw cutting of pavement; installation and removal of sheeting, bracing and shoring; unclassified excavation and disposing of unsuitable excavated material; dewatering of trench; removing shoring, etc.; providing, placing and compacting approved backfill material; setting and replacing/repairing damaged existing facilities (including curb stop and curb box); plating or covering the open excavation including any required safety barricades for a period of up to ten (10) calendar days. The unit price bid shall also include mobilization and demobilization costs. Excavation shall be limited to a 5-ft long x 4-ft wide x 5-ft deep footprint, unless approved by the CONSTRUCTION MANAGER. Excavation is not considered completed unless the service line is exposed to 24-inches on either side of the curb stop.

Surface Restoration is not included in this Item.

W-87 **Private Water Service Line Replacement, 2" Diameter and Less – 0 to 20 LF in Total Length**

Payment shall be made by the unit price bid per EACH. Measurement shall be for each private service line installed by any installation method. CONTRACTOR shall be compensated under item W-88 for any private service line installed greater than 20 LF in total length.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install 20 LF of Type "K" Copper water service pipe (2" in diameter and less) via trenchless or trenched installation, connect to the new curb stop, or existing water service line if the public water service line is not being replaced, and reconnect to the existing water service line at the water service meter. This work includes, but is not limited to: obtaining a permit, including required fees, from ACHD prior to any work on the private side of the curb stop being started, all saw cutting; trench excavation; excavation of all trenches and boring/receiving pits necessary to install the private water service line by any approved installation method; installation and removal of sheeting, shoring, and bracing as necessary; core drilling through the external foundation wall; installation of wall sleeves; installing a waterproof sealant on the external foundation wall where the service line penetrates the foundation; pushing, pulling, and/or boring of service line; providing a minimum of one pipe plug between curb stop excavation and foundation if directed by the CONSTRUCTION MANAGER; This work also includes furnishing all labor, materials, and equipment required to connect the private service line to the existing plumbing including; installation of meter shutoff valve, and any other piping and valving that may be required to complete the reconnection of the new service piping to the exising plumbing system.

This work includes but is not limited to: cutting and removal of existing plumbing; providing, placing, and connecting dual check backflow prevention device, thermal expansion tank, a pressure relief valve, up to 10 LF of associated copper piping, adapters, fittings, and transition couplings; furnishing and installing all valves, couplings, and bushings required to connect a new, or reconnect an existing water meter to the piping on both sides of the meter; installing copper grounding wire and clamps around the existing service line.

Resetting of the water meter is incidental to this item.

Restoration of concrete curb and/or sidewalk is not included in this item.

This item will only be paid if the entire private water service line is replaced from the curb stop to connection at the internal water service meter.

No additional payment shall be made for additional mobilizations required to complete all specified water service line replacement work.

W-88 **Private Water Service Line Replacement, 2" Diameter and Less – Greater Than 20 LF in Total Length**

Payment shall be made by the unit price bid per Linear Foot. Measurement shall be per linear foot for the private service line installed over 20-ft in total length, installed by any installation method. Distance shall be measured from the connection point at the curb box to the reconnection point with the existing water service line at the water service meter, minus 20 LF. No deduction will be made for the curb stop.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install Type "K" Copper water service pipe (2" in diameter and less), greater than 20 LF in total length, via trenchless or trenched installation, and reconnection to the existing water service line. This work includes, but is not limited to: excavation of additional trenches and pits necessary to install the private water service line by any approved installation method; installation and removal of sheeting, shoring, and bracing as necessary; pushing, pulling, and/or boring of service line; furnishing and installing piping, fittings, adapters, and transition couplings; disposing of excavated material; removing and disposing of foreign obstructions; disposal of excess backfill material; providing, placing and compacting approved aggregate pipe zone, and in-situ earthen backfill material.

Improvements made to the internal plumbing shall be paid under separate unit item.

This item shall be paid in addition to W-87 for any private water service line installed over 20-ft in total length.

Restoration of concrete curb and/or sidewalk is not included in this item.

W-90 **Installation of Service Line Through Concrete Floor**

Payment shall be made by the unit price bid per EACH water service installed through the concrete floor of a structure and out to a reconnection point beyond the outermost external wall of the structure. Measurement shall be for each service requiring concrete floor penetration and significant excavation below finished basement grade, installed complete and in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install the water service line through a concrete floor, under existing structures and infrastructure, to a point beyond the outermost external wall of the structure. This work includes but is not limited to: all saw cutting; core drilling; jack-hammering; excavation; wheelbarrowing; hand-digging; installation of bracing as necessary; disposing of material; pushing, boring, directional drilling (or other trenchless installation method) of service line; providing, placing, and compacting of all backfill, including three inches (3") of aggregate sub-base. Also included in this item is restoration of the concrete floor by providing, placing, and finishing of four inches (4") of unreinforced concrete.

Excavation and backfill of a five foot by five foot (5'x5') by five foot deep (5') trench per service line to perform the trenchless installation (directional drilling, boring, pushing, etc.) of the water service line is included in the unit price bid for this item.

The linear footage of service line installed, tracer wire, fitting, adapters, transition couplings and reconnection to the existing plumbing and fixtures shall be paid under unit item W-87.

W-95 **Remove and Salvage Existing Fire Hydrant**

Payment shall be made by the unit price bid per EACH. Measurement shall be for each existing fire hydrant removed and salvaged.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to remove and salvage Waterline Material as follows: The Pittsburgh Water and Sewer Authority (PWSA) wishes to salvage existing hydrants. Store and deliver any and all such materials to a storage location within the City, as specified by the CONSTRUCTION MANAGER or the PWSA.

W-96 **Washout Manhole Removal**

Payment shall be made by the unit price bid per EACH. Measurement shall be for each existing Washout Manhole removal as indicated.

Basis of Payment: Includes furnishing all labor, materials, tools, and equipment required to remove existing washout manhole structure, fill manhole base with flowable fill, removal of washout valves and casting, and plugging existing sewer pipe in accordance with these specifications, the contract drawings, the City of Pittsburgh, and the Pittsburgh Water and Sewer Authority details.

Each of the existing Washout Manholes noted on drawings is unique for removal. Washout discharge manhole structure on existing active sewers can remain, but the inlet drain from waterline valve washout connection will be removed/plugged. Washout drain manholes that flow to an existing sewer shall be plugged on inlet and outlet, top manhole structure with casting removed, and flowable filled as per standard detail. Washout drain manholes/dry manholes with no sewer discharge connections shall be similarly abandoned with top manhole structure with casting removed and flowable filled as per standard detail. Water line drain valves and castings shall be removed in all cases as per standard detail.

This item includes, but is not limited to: saw-cutting, removal and disposal of pavement, sidewalks or curbs to the required limits; unclassified excavation to the limits of the trench zone; protection of active utility lines or removal of abandoned utility lines and obstructions in the trench zone; normal rock excavation; removal, hauling and disposal of all excavated materials; sheeting, shoring, bracing and trench boxes; temporary plating and trench protection; dewatering and pumped water control; coal-tar pitch, removing and disposing of existing casting(s); pipe zone bedding; aggregate trench backfill; compaction; temporary blocking, supports, caps and plugs; flowable fill; and cleanup and disposal of all debris and surplus materials.

S-63 **Catch Basin - Cast-In-Place - Type 1 Modified**

Payment shall be made by the unit price bid per EACH. Measurement shall be per each particular size and type of catch basin / storm inlet installed complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to to construct PWSA Type 1 Modified catch basins and inlets as required, at locations depicted on the contract drawings, or as directed in the field. This item shall include excavation; installation and removal of sheeting, shoring, and bracing; backfill; concrete and brick masonry; castings (including hood and trap); fittings; flexible water stops; flexible boots; setting of castings (including hood and trap); and all other work necessary for the completion of the structure.

Excavation and backfill for a twelve foot by eight-foot (12' x 8') footprint to the depth required around the catch basin/storm inlet shall be included in the unit price. Visual inspection with a push/pole camera or lateral launcher camera of the complete catch basin lateral in order to determine the condition of the lateral before and after construction, is considered incidental to this item.

S-65 **Catch Basin - Cast-In-Place - Type 13**

Payment shall be made by the unit price bid per EACH. Measurement shall be per each particular size and type of catch basin / storm inlet installed complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to to construct PWSA Type 13 catch basins and inlets as required, at locations depicted on the contract drawings, or as directed in the field. This item shall include excavation; installation and removal of sheeting, shoring, and bracing; backfill; concrete and brick masonry; castings (including hood and trap); fittings; flexible water stops; flexible boots; setting of castings (including hood and trap); and all other work necessary for the completion of the structure.

Excavation and backfill for a twelve foot by eight-foot (12' x 8') footprint to the depth required around the catch basin/storm inlet shall be included in the unit price. Visual inspection with a push/pole camera or lateral launcher camera of the complete catch basin lateral in order to determine the condition of the lateral before and after construction, is considered incidental to this item.

S-69 **Catch Basin/Inlet Tie-in**

Payment will be made by the unit price bid per EACH. Measurement shall be for each tie-in installed, complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to connect fifteen (15) inch diameter piping into an existing catch basin or inlet structure as per the Pittsburgh Water & Sewer Authority Construction Standards. This item shall include all saw-cutting, drilling and/or coring of new or existing structures, with approved connections including water stop(s) or flexible boots, and all associated costs for piping entering a catch basin or inlet structure. Visual inspection with a push/pole camera or lateral launcher camera of the catch basin and lateral tie-in in order to determine the condition of the lateral before and after construction, is considered incidental to this item

R-1 **Concrete Paving Base (All Classes)**

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on field measurements but shall respect any maximum pay limits noted in the Contract Documents and Standard Details. No payment will be made for concrete in excess of the existing street slab dimensions unless ordered to be placed by the PROJECT REPRESENTATIVE in the field.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of concrete base course including steel reinforcing (unless directed otherwise), joints, deformed bars, load transfer bars, expansion joint material, etc. in accordance with City of Pittsburgh Standards. This work shall also include the removal and disposal of existing material(s).

R-2 **Reinforced Concrete Street and Driveways**

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on field measurements but shall respect any maximum pay limits noted in the Contract Documents and Standard Details. No payment will be made for concrete in excess of the existing street slab dimensions unless ordered to be placed by the CONSTRUCTION MANAGER in the field.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of all concrete streets and driveways disturbed during construction, installed as noted in the Contract Documents including applicable drawings, and in accordance with City of Pittsburgh Standards of Construction. This item includes, but is not limited: saw or other cutting as needed; removing and disposing of existing concrete pavement; placing reinforced concrete pavement including reinforcing, joints, deformed bar, load transfer bars, expansion joint material, etc. in accordance with City of Pittsburgh Standards and the Standard Details.

R-3 **Concrete Sidewalk and ADA Handicapped Ramp**

Measurement used for payment of this item shall be the length and width of sidewalk replacement in SQUARE YARD including expansion joint material complete in place.

Basis of Payment: Includes the replacement and installation of all concrete sidewalks and handicapped sidewalk ramps as shown on the Contract Documents including applicable drawings, and in accordance with the City of Pittsburgh Standard Details detailed in these Contract Documents. This item shall include, but not be limited to: saw cutting; demolition and disposal of spoil, placement of subbase aggregate; a slab of Class AAA concrete four (4) inches in depth; planks and walks for accommodation of the public for access to private properties; placement of steel reinforcing; disposal of surplus excavation; furnishing and installing expansion joint material; and all other requirements for a complete installation matching or exceeding existing pavement, as indicated in the Contract Documents, including applicable drawings.

R-4 **Concrete Deep Curb and Deep Radius Curb**

Payment will be made for the unit price per LINEAR FOOT. Measurement for payment of this item shall be the total length measured along the face of the curb..

Work under this item shall include the replacement of deep concrete curb and deep radius curb in accordance with details shown in the Contract Documents, including applicable drawings, and/or current City of Pittsburgh Construction Standards.

Basis of Payment: Includes but not be limited: removing existing sandstone curb stones (as directed) and transporting them to a designated DPW storage area: saw or other cutting as needed; performing any required demolition, excavation and disposal of any unsuitable material; providing and installing all concrete in place, all steel reinforcement in place, dowel bars, mortar paste, expansion joints, broken stone drains; restoring all sidewalks disturbed or damaged during construction of curb complete.

R-5 **Concrete Deck Curb and Deck Radius Curb (All Finishes)**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement shall be the total length measured along the face of the curb.

Work under this item shall include the replacement of deck concrete curb and deck radius curb in accordance with details shown in the Contract Documents, including applicable drawings, and/or current City of Pittsburgh Construction Standards.

Basis of Payment: Includes but not be limited: removing existing sandstone curb stones (as directed) and transporting them to a designated DPW storage area: saw or other cutting as needed; performing any required demolition, excavation and disposal of any unsuitable material; providing and installing all concrete in place, all steel reinforcement in place, dowel bars, mortar paste, expansion joints, broken stone drains; restoring all sidewalks disturbed or damaged during construction of curb complete.

R-7 **Cold Patch Bituminous Pavement Replacement**

Payment shall be made by the unit price bid TON. Measurement for payment of this item shall be calculated based on the volume of cold patch placed, using an assumed density for cold patch of 110 pcf (pounds per cubic foot).

Basis of Payment: Installation, removal, and disposal of existing and/or temporary cold patch bituminous material, as directed. Work includes, but is not limited to: transporting cold patch bituminous material from a City of Pittsburgh approved asphalt plant; installing the cold patch material to match existing grade; furnishing and installing tack coat and sealing materials; and raising or resetting castings to grade (0-12").

This item does not include the replacement of the concrete base course where necessary.

The cost of maintenance of the cold patch for the duration of the patch is incidental to this item.

R-11 **Bituminous Pavement Replacement - Wearing Course**

Payment shall be made by the unit price bid per SQUARE YARD installed complete in place. Measurement shall be based on the field dimensions of the paved area

Basis of Payment: Includes, but is not limited to: providing materials for and installing Asphaltic Bituminous Wearing Course (up to 1.5 inches) as required, including all tack coat, sealing materials and expansion joints as required; providing all tools, equipment, labor, and other facilities necessary to provide complete-in-place. The work shall raise/reset castings to grade (0-18"). Replacing and surfacing shall be in accordance with City of Pittsburgh Specifications and the Contract Documents. The Contractor shall furnish his own equipment and labor to haul and place all materials. The Contractor shall use a mechanical paver to complete all paving operations unless otherwise specified by the DIRECTOR. Duplicate load slips of bituminous material must be provided for each truckload and submitted to the project inspector. This item does not include the replacement of the concrete base course where necessary.

R-12 **Bituminous Pavement Replacement - Binder Course - Primary Street**

Payment shall be made by the unit price bid per SQUARE YARD installed complete in place. Measurement shall be based on the field dimensions of the paved area.

Basis of Payment: Includes, but is not limited to: providing materials for and installing Asphaltic Bituminous Binder Course (up to 2.5 inches) as required, including all tack coat, sealing materials and expansion joints as required; providing all tools, equipment, labor, and other facilities necessary to provide complete-in-place. The work shall raise/reset castings to grade (0-18"). Replacing and surfacing shall be in accordance with City of Pittsburgh Specifications and the Contract Documents. The Contractor shall furnish his own equipment and labor to haul and place all materials. The Contractor shall use a mechanical paver to complete all paving operations unless otherwise specified by the Director. Duplicate load slips of bituminous material must be provided for each truckload and submitted to the project inspector. This item does not include the replacement of the concrete base course where necessary.

R-13 **Bituminous Pavement Replacement - Binder Course - Secondary Street**

Payment shall be made by the unit price bid per SQUARE YARD of milled area.

Basis of Payment: Includes, but is not limited to: providing materials for and installing Asphaltic Bituminous Binder Course (up to 2 inches) as required, including all tack coat, sealing materials and expansion joints as required; providing all tools, equipment, labor, and other facilities necessary to provide complete-in-place Replacing and surfacing shall be in accordance with City of Pittsburgh Specifications and the Contract Documents. The Contractor shall furnish his own equipment and labor to haul and place all materials. The Contractor shall use a mechanical paver to complete all paving operations unless otherwise specified by the Director. Duplicate load slips of bituminous material must be provided for each truckload and submitted to the project inspector. This item does not include the replacement of the concrete base course where necessary.

R-15 **Brick Street Repaving**

Payment shall be made by the unit price bid per SQUARE YARD installed complete in place. Measurement shall be based on the field dimensions of the repaved area.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of new brick or reclipped brick and/or remove, clean, and reset the existing brick street surface including the removal and disposal of materials not to be reused, furnishing and/or transporting brick from Department of Public Works storage yards, and placement of new brick or reclipped brick.

R-17 **Salvage and Deliver Blockstone and Brick**

Payment shall be made by the unit price bid per SQUARE YARD of salvaged material delivered. Measurement shall be based on the field dimensions of removed material.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the salvage (including cleaning of brick and blocks), delivery, and unloading of bricks or blocks removed during construction activities to the facility.

R-19 **Landscape Restoration**

Payment shall be at the unit price bid per SQUARE YARD of restoration complete in place. Measurement shall be based on the field dimensions of the restored area.

Basis of Payment: Includes furnishing all labor, materials, and equipment to finish grade, apply six inches of topsoil, seed, and mulch landscapes and vegetated areas.

R-21 **Crushed Stone Sub-Base**

Payment shall be made by the unit price bid per CUBIC YARD install. Measurement shall be based on final compacted thickness, the length, and the width of base installed.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of crushed aggregate sub-base course for flexible street and rigid street pavements including required testing. Work under this item shall include the removal and disposal of existing material, subgrade preparation, compaction, testing, and placement of approved crushed sub-base course for street pavements.

R-22 **4" Underdrain**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement for payment shall be in linear feet along the total length of underdrain pipe installed complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to construct a four-inch underdrain in accordance with details shown, and installed as directed in the field. This item shall include all excavation to the limits specified in the Standard Details, disposal of excavated material, perforated piping, approved granular backfill material, geotextile material, and connection to structure, or existing pipe.

R-25 – R25B **Traffic Markings**

Payment shall be made by the unit price bid per LINEAR FOOT installed.

Basis of Payment: Includes all labor and materials to furnish and install traffic lines and markings of the type indicated in accordance with any Contract Documents including applicable drawings; and replacement of defective work. Markings shall be in accordance with the City of Pittsburgh Public Works Construction Standards.

R-27 **Traffic Loop Detector (Loop - 10' x 20')**

Payment shall be made for each additional loop for increments of twenty feet in overall size of the loop. Measurement shall be based on the nominal size of the installed loop. Loop detectors greater than 6’ x 10’ up to 6’ x 30’ will be paid for as one increment. Those greater than 6’ x 30’ up to 6’ x 50’ will be paid for as two increments.

Basis of Payment: This item shall include the loop length, and all additional materials and labor required to furnish and install a new loop system into the existing Loop Detector for a complete detector loop system. Unit of payment is EACH completed and properly operational installation.

R-38 **Dry Stone / Block Wall Replacement**

Payment shall be made by the unit price bid for SQUARE YARDS. Measurement for payment shall be made on front face only of the wall.

Basis of Payment: Includes furnishing all labor, equipment, and material necessary to reconstruct existing dry stone walls, as directed. Work in this item includes, but is not limited to: all wall removal; unclassified excavation; removal of excavated material; providing and installing approved backfill; providing, installing and removing sheeting, shoring and bracing; installing existing wall stones and/or providing and installing new wall stones; embankment reconstruction; and all other requirements necessary to complete the work.

R-39 **Concrete Steps or Concrete Retaining Wall Replacement**

Payment shall be per CUBIC YARD installed in place.

Basis of Payment: Includes the replacement and restoration to preconstruction condition of all concrete steps and small concrete retaining walls disturbed by construction. This item shall include: saw cutting; sheeting; demolition and disposal of spoil, as required; a four (4”) inch minimum base of approved aggregate; providing and placing cement concrete; planks and walks for accommodation of the public for access to private properties; disposal of surplus excavation; furnishing and installing expansion joint material; reinforcing; concrete curing and sealing and all other requirements for a complete installation matching or exceeding existing conditions, as indicated on the plans, as in the specifications, or as directed in the field.

1.6 PREVAILING MINIMUM WAGE RATE REQUIREMENTS

A. The CONTRACTOR shall comply with the attached Prevailing Minimum Wage Predetermination for all wages paid as a part of this project.

PART 2 PRODUCTS

MECHANICAL JOINT FITTINGS WEIGHTS

Table F1 – Mechanical Joint Fitting Weights (Full-Bodied)

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

	Pipe Diameter											
Fitting	**4"**	**6"**	**8"**	**10"**	**12"**	**16"**	**20"**	**24"**	**30"**	**36"**	**42"**	**48"**
1/4 Bend	75	117	175	250	335	540	850	1235	2020	2945	4210	5545
1/8 Bend	70	107	160	215	295	450	700	965	1710	2565	3755	5030
1/16 Bend	70	107	160	220	300	455	705	975	1730	2605	3820	5120
1/32 Bend	70	107	160	220	300	455	710	980	1740	2615	3835	5140
Cap, flat	30	46	70	90	120	210	325	450				
Cap, dished	30	46	70	90	120	205	285	405	755	2085	1580	2070
Plug, flat												
in fitting	14	25	31	43	53	102	155	247				
in pipe	20	35	50	65	85	145	225	335				
Plug, dished												
in fitting									455	637	832	1119
in pipe									575	815	1110	1455
Tee												
4" Outlet	110	157	225	305	405							
6" Outlet		173	241	326	421	666	911	1211	2076			
8" Outlet			260	345	445	685	930	1235	2100	3015		
10" Outlet				400	500	710	955	1260	2120	3035		
12" Outlet					530	740	985	1280	2150	3060	4395	5860
16" Outlet						815	1170	1340	2205	3110	4450	5910
20" Outlet							1275	1745	2290	3190	4525	5985
24" Outlet								1850	2835	3265	4595	6050
30" Outlet									3090	4180	5615	6255
36" Outlet (150 lb)											5915	
36" Outlet (250 lb)										4450	7110	7465
42" Outlet (150 lb)											6285	7860
42" Outlet (250 lb)											7520	9480
48" Outlet (150 lb)												8190
48" Outlet (250 lb)												9845
Cross												
4" Outlet	145	192	255	340	440							

Table F1 – Mechanical Joint Fitting Weights (Full-Bodied)

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

Fitting	Pipe Diameter											
	4"	**6"**	**8"**	**10"**	**12"**	**16"**	**20"**	**24"**	**30"**	**36"**	**42"**	**48"**
6" Outlet		224	287	377	472	717	962	1267	2132			
8" Outlet			335	420	515	765	1010	1305	2175	3085		
10" Outlet				500	600	815	1050	1355	2220	3130		
12" Outlet					655	875	1110	1400	2275	3180	4520	5985
16" Outlet						1010	1365	1520	2390	3285	4625	6085
20" Outlet							1570	2055	2560	3445	4780	6235
24" Outlet								2255	3215	3590	4920	6370
30" Outlet									3735	4765	6170	6775
36" Outlet (150 lb)											6695	
36" Outlet (250 lb)										5310	7925	8210
42" Outlet (150 lb)											7440	8900
42" Outlet (250 lb)											8745	10565
48" Outlet (150 lb)												9555
48" Outlet (250 lb)												11280
Reducer												
4" Outlet		86	115	145	185							
6" Outlet			136	161	206	301						
8" Outlet				190	230	330						
10" Outlet					260	365	490					
12" Outlet						400	530	695				
16" Outlet							610	775				
20" Outlet								895	1300	1770	2400	
24" Outlet									1435	1920	2565	
30" Outlet										2255	2935	3645
36" Outlet											3330	4080
42" Outlet												4625
S Bend												
6" Offset	95	142	210	280	400	570						
12" Offset	105	167	250	340	500	710						
18" Offset	125	197	295	400	600	820						
24" Offset	130	212	305	415	635							

Table F2 - Misc. Fitting Weights

Listed weight is expressed in lbs and includes fitting and noted hardware.

Fitting	Note	Pipe Diameter											
		4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
Transition Coupling	1	24	31.25	41.5	62	85	109.5	139.5	161.5	222	334	396	442.5
Mechanical Joint Restraint	2	7.1	12.9	15.8	24.9	32.2	57.4	73.3	134.1	195.6	235.0	537.0	701.2

Note 1: Includes all hardware.

Note 2: Includes Stainless Steel Bolts

Table F3 – Compact Mechanical Joint Fitting Weights

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

Fitting	Pipe Diameter											
	4"	6"	8"	10"	12"	16"	20"	24"				
1/4 Bend	26	48	68	136	141	264	505	695				
1/8 Bend	22	40	59	86	109	202	368	481				
1/16 Bend	21	37	51	67	90	179	364	481				
1/32 Bend	20	33	48	61	79	159	346	457				
Cap	10	18	26	32	46	94	149	210				
Plug	9	18	25	36	47	98	158	223				
Tee												
4" Outlet	36	52	72	82	108							
6" Outlet		66	79	99	119	222	335	465				
8" Outlet			90	116	126	245	390	475				
10" Outlet				132	159	265	417	516				
12" Outlet					171	277	460	549				
16" Outlet						337	530	625				
20" Outlet							605	740				
24" Outlet								844				
30" Outlet												

Table F3 – Compact Mechanical Joint Fitting Weights

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

	Pipe Diameter											
Fitting	**4"**	**6"**	**8"**	**10"**	**12"**	**16"**	**20"**	**24"**				
Cross												
4" Outlet	45	62	84	98	119							
6" Outlet		79	98	121	138	250						
8" Outlet			112	135	149	264						
10" Outlet				156	187	286						
12" Outlet					202	312						
16" Outlet						457						
Reducer												
4" Outlet		28	36	53	67							
6" Outlet			39	59	64	132						
8" Outlet				54	57	136						
10" Outlet					63	128	225					
12" Outlet						120	214	320				
16" Outlet							225	325				
20" Outlet								315				

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01250

HEALTH AND SAFETY

PART 1 GENERAL

1.1 SCOPE

A. The CONTRACTOR shall develop and implement a CONTRACTOR Safety Plan (CSP) that addresses the health and safety of all CONTRACTOR personnel involved with the construction work for the Pittsburgh Water & Sewer Authority (OWNER). The CONTRACTOR shall also provide a description of how safety will be controlled with regard to non- CONTRACTOR personnel (e.g., regulatory personnel, visitors, pedestrians etc.). The CSP shall be submitted to the OWNER for review and comment prior to the start of the work as described in this Section.
   1. The CSP, at a minimum, shall be compliant with the requirements set forth in this Section.

1.2 REFERENCES

A. Work performed shall be consistent with the guidelines and references and in compliance with all applicable regulations and standards including, but not limited to, those listed below. In the case that these requirements are conflicting, the one which offers the greatest protection shall be followed.
   1. Occupational Safety and Health Administration (OSHA) Publications:
      a. 29 CFR § 1926 Safety and Health Regulations for Construction
      b. 29 CFR § 1910.1200 Hazard Communication
      c. CPL-02-00-124 Multi-Employer Worksite Citation Policy
   2. Department of Transportation (DOT) – Federal Highway Administration
      a. National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways (2009 version with revisions 1 and 2 incorporated)
   3. American National Standards Institute (ANSI):
      a. ANSI Z88.2-1992 Practices for Respiratory Protection
      b. ANSI Z78.1-2012 Occupational and Educational Eye and Face Protection Devices
      c. ANSI Z89.1-2009 Safety Requirements for Industrial Head Protection
      d. ANSI Z41.1-1999 Personal Protection-Protective Footwear
      e. ANSI/ISEA 107 High Visibility Safety Apparel and Accessories
   4. Pennsylvania Department of Transportation
      a. Pub 445 (1-18) Safety Policy Handbook

1.3 SUBMITTALS

A. The CONTRACTOR shall prepare and submit the CSP to OWNER for review and comment no later than 15 days following Notice to Award. The CSP shall address the items outlined in this Section.

1.4 CONTRACTOR HEALTH AND SAFETY PLAN (CSP)

A. General
   1. The CSP shall establish, in detail, the protocols necessary for the recognition, evaluation, and control of all hazards associated with each task performed by the CONTRACTOR and all Subcontractors. The CSP shall address site-, project-, and COVID-19-specific safety and health requirements and procedures based upon site-, project-, and COVID-19-specific conditions. The level of detail provided in the CSP shall be tailored to the type of work, complexity of operations to be accomplished, and anticipated hazards, including COVID19.
   2. OWNER will review the CSP and will transmit comments to the CONTRACTOR. It will be the responsibility of the CONTRACTOR to address the comments and provide updates to the CSP to OWNER.
   3. The CONTRACTOR will not be permitted to initiate Site work until all comments from OWNER on the CSP have been addressed and resolved. Acceptance of the CSP indicates only that the CSP complies with the requirements of this Section and does not imply that all procedures are suitable for the required work. Suitability of the CSP for the construction work is the sole responsibility of the CONTRACTOR.

B. CSP Modification
   1. Should any unforeseen hazard become evident during the performance of the work, the CONTRACTOR's Safety Officer (SO) shall bring such hazards to the attention of OWNER, both verbally and in writing, for resolution as soon as possible. In the interim, the CONTRACTOR shall take all necessary actions to re-establish and maintain safe working conditions in order to safeguard on-site personnel, visitors, the public, and the environment.
   2. Should the CONTRACTOR seek modification of any portion or provision of the CSP, such modification shall be requested by the CONTRACTOR in writing to OWNER and if accepted, be authorized in writing.
   3. Any disregard for the provisions of this Section and the approved CSP shall be deemed just and sufficient cause for ordering all work to cease until the matter has been rectified to the satisfaction of OWNER.

C. CSP Requirements – The CSP shall include the following elements at a minimum.
   1. Activity Hazard/Risk Analysis:
   2. Description of on-site tasks to be performed;
   3. Duration of planned Site activities;
   4. Chemical, physical, biological, and safety hazards of concern for each Site task and/or operation to be performed (Activity Hazard/Risk Analysis). Pathways for hazardous substance dispersion and human exposure.

D. Staff Organization, Qualification, and Responsibilities:
   1. The CONTRACTOR shall develop an organizational structure that sets forth lines of authority, responsibility, and communication. The CSP shall include a description of this organization, qualifications, and responsibilities of each of the following individuals.
   2. Safety Officer (SO):
      a. Qualifications. The CONTRACTOR shall designate an individual to be the Health and Safety Officer (SO). A resume of the proposed SO shall be submitted with the CSP. The SO shall be experienced in developing and implementing health and safety programs for construction projects.
      b. Responsibilities. The SO shall ensure that the procedures and requirements set forth in the CSP are implemented by CONTRACTOR personnel, conduct the CONTRACTOR Site safety meetings, conduct safety audits / inspections as required by the CONTRACTOR's CSP and as otherwise needed, coordinate and oversee the CONTRACTOR's employee safety training, and maintain a current recordkeeping system for CONTRACTOR employees.
   3. Foreman.
      a. Qualifications. The CONTRACTOR shall designate an individual for each site to be the foreman. The foreman shall have a full understanding of the CSP, OSHA regulations, and have the authority to oversee employees and Subcontractors.
      b. Responsibilities. The Foreman shall ensure that the day-to-day work activities are being completed per the schedule and in compliance with this CSP, conduct weekly toolbox talks, and communicate with their SO and OWNER when there are accidents, injuries, regulatory inspections, and any other issues that arise.

E. Personal Protective Equipment (PPE):
   1. The CSP shall address the PPE required for CONTRACTOR personnel for COVID19 and the types of work activities and their health and safety concerns and shall meet or exceed the minimum PPE requirements set forth in the CSP.

F. Standard Operation Safety Procedures, Engineering Controls, Work Practices:
   1. The CSP shall address the engineering controls and safe work practices to be implemented. Specific procedures must be developed and documented for the following:
      a. Excavation and trenching including use of one call, utility hazards, specific cave-in protection devices, egress, and competent persons.
      b. Barricades and covers to protect and warn employees, pedestrians, and tenants of the excavation openings. At a minimum, each excavation opening shall be covered with material capable of withstanding two times the intended load as well as be barricaded with appropriate warning signage.
      c. Specific PPE requirements for the various jobs and associated hazards.
      d. Traffic control procedures that follow the MUTCD and PennDOT requirements including properly trained flaggers, use of traffic control devices, and proper PPE.
      e. Protocols for the operation of heavy construction equipment.
      f. Electrical safety requirements including use of extension cords, grounding of equipment, and GFCI protection.
      g. COVID-19 Safety.
   2. Additional requirements in the CSP shall include the following:

a. Site rules and prohibitions (buddy system, eating /drinking /smoking restrictions, etc.);
b. Descriptions of safety inspection and preventative maintenance requirements for the operation of machinery or mechanized equipment, including written inspection reports;
c. Chemical use including proper chemical labels and availability of safety data sheets (SDS)
d. Utility clearances;
e. Housekeeping requirements;
f. Sanitation;
g. Communication including regulatory inspections;
h. Reporting of accidents and injuries

3. Emergency Equipment and First Aid:
   a. The CSP shall describe the emergency and first aid equipment to be utilized. It shall include a description of procedures to be followed in the event of a medical or other emergency at the work location, including a communication tree of who will be notified (after emergency action has been taken). This shall include contacting OWNER.
4. Spill Control:
   a. The CSP shall include procedures for handling spills and leaks (oil and gasoline) from vehicles and heavy equipment.
   b. The CSP shall include procedures for handling accidental line breaks of sanitary or storm sewers.

1.5 TRAINING

A. All workers involved with OWNER construction activities shall have successfully completed the OSHA Construction 10-hour training course. Proof of completion shall be provided to OWNER in accordance with Section 01330 and available at the jobsite.

B. Each job will include a competent person as defined by the OSHA excavation standard in 29 CFR 1926 Subpart P. The competent person shall have training that meets the OSHA requirements. Proof of completion shall be provided to OWNER in accordance with Section 01330 and available at the jobsite.

C. All flaggers shall be trained in accordance with the MUTCD and PennDOT requirements. Proof of completion shall be provided to OWNER in accordance with Section 01330 and available at the jobsite.

D. All heavy equipment operators shall be trained on the equipment being operated. Proof of completion shall be provided to OWNER in accordance with Section 01330 – Submittal Procedures and available at the jobsite.

E. Weekly toolbox talks will be completed and documented. The content of the toolbox talks will be specific to the OWNER work including but not limited to:
   1. Review of non-compliance issues noted during inspections
   2. Review of corrective actions from accidents, injuries, and near misses

3. Weekly Tool Box meeting attendance and minutes shall be supplied to OWNER on a monthly basis.

1.6 MEDICAL, FIRST AID, & MONITORING EQUIPMENT

A. The CONTRACTOR shall provide all medical and first aid equipment to be used at the Site.

1.7 PERSONAL PROTECTIVE EQUIPMENT

A. The CONTRACTOR shall supply all PPE necessary to be in compliance with the CSP for all CONTRACTOR's site personnel.

1.8 LOGS, REPORTS, AND RECORDKEEPING

A. The CONTRACTOR shall maintain CSP logs covering the implementation of the CSP and other requirements of this section. The formats shall be developed by the CONTRACTOR and submitted as part of the CSP.

1.9 SUBCONTRACTOR USE

A. It is the policy of OWNER that all that all CONTRACTORs that subcontract work only hire companies who have a high priority and emphasis on Health, Safety and Environment (HSE) protection. It is a contractual requirement that CONTRACTOR and Subcontractors comply with all applicable OWNER, Federal, State and local health, safety, and environmental regulations. Each Subcontractor shall provide safe and healthy employment to their employees while working on OWNER projects. Accordingly, the CONTRACTOR is responsible for providing each Subcontractor with warnings of hazards and information about the programs for abating occupational hazards and the Subcontractor will be informed of all safety, health, and environmental requirements at job sites.

B. The CONTRACTOR shall incorporate the requirements of OSHA's Multi-Employer Worksite Citation Policy into the CSP. The requirements at a minimum will include:
   1. Prequalification of Subcontractors to ensure they have a history of safe performance
   2. Requiring a CSP developed by each Subcontractor that meets the requirements of the OWNER construction specifications
   3. Verification that the Subcontractors meet the training requirements of the OWNER construction specifications
   4. Reviewing and monitoring the Subcontractor's adherence to its CSP and all applicable environmental, health, and safety requirements through planned safety audits
   5. Verification of correction and abatement of the identified hazards during safety audits
   6. Implementation of a progressively administered system to correct safety issues

PART 2 PRODUCS – Not Used

PART 3 EXECUTION

3.1 IMPLEMENTATION OF THE CSP

A. It shall be the sole responsibility of the CONTRACTOR to ensure that all health and safety requirements are implemented in accordance with the CONTRACTOR's CSP and applicable regulations.

B. If the CONTRACTOR's SO is not providing adequate safety controls, the CONTRACTOR shall provide alternate personnel subject to the approval and/or acceptance of OWNER to serve as SO. OWNER has the right to stop work at any time for any safety related concerns.

C. The CONTRACTOR shall report, on a monthly basis with the submittal of the Contractor Pay Application, a report detailing the number of man-hours worked on this project during the month along with the numbers of man-hours worked on this project since the last lost-time incident (and the date of that incident).

D. The CONTRACTOR shall make an immediate report (within one hour or when it is safe to do so) to the CONSTRUCTION MANAGER and OWNER of any incident that results in an injury to any worker on the project or bystander and/or any serious near-miss (that could have resulted in a serious injury or death to a worker or bystander). CONTRACTOR shall submit all safety incident reports (accidents, near-miss, injury, etc.) on a monthly basis with the submittal of the Contractor Pay Application for the same month covered by the Contractor Pay Application.

E. The CONTRACTOR shall report, on a monthly basis with the submittal of the Contractor Pay Application, the agenda for all tool box talks held during the prior month and the attendance sign in list of everyone in attendance.

END OF SECTION

SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.

B. Field engineering.

C. Preconstruction meeting.

D. Progress meetings.

E. PA One-Call

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Contract Documents to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Notify OWNER in writing if any aspects of OWNER’s or City of Pittsburgh operations need to be interrupted for completion of the Work.
   1. Submit notice with an alternate plan to cover contingency problems. Plan shall allow for provision of temporary utilities or other essential services that must be interrupted for any period in performance of the contract work.
   2. Shutdown of utilities must be accomplished during approved hours at no additional cost to OWNER. If work requires shutdown in excess of the approved hours, additional shutdown periods may be required.
   3. Do not proceed with any proposed shutdown without OWNER’S prior written approval.

D. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for OWNER's occupancy.

E. After demobilization, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of OWNER's activities.

1.3 FIELD ENGINEERING

A. CONTRACTOR shall employ a Land Surveyor registered in the Commonwealth of Pennsylvania and acceptable to the OWNER.

B. CONTRACTOR shall submit name, address, registration number, and telephone number of Surveyor before starting survey work

C. CONTRACTOR shall submit Construction Stakeout Record in accordance with the City of Pittsburgh and PWSA Standards of Construction, and documentation to verify accuracy of survey work.

D. CONTRACTOR shall locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.

E. Control datum for survey is City of Pittsburgh Datum

F. Verify set-backs and easements; confirm drawing dimensions and elevations.

G. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
   1. Pavement subgrades and finish grades.
   2. Site Improvements
   3. Batter boards for structures
   4. Retaining wall locations and elevations
   5. Curb and gutter alignment and grade
   6. Utility Rim and Invert elevations

H. Record the stakeout of invert elevations. Layout and set marker stakes for manholes, valves, boxes, wells, and vents. Periodically verify layouts.

I. Maintain complete and accurate log of control and survey work as Work progresses.

J. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

K. Promptly report to OWNER loss or destruction or relocation of reference point required because of changes in grades or other reasons.

L. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to OWNER.

M. Maintain a detailed record of actual construction of all facilities included in this Contract. Records shall be updated weekly. Records shall be submitted to the OWNER before final payment application on a site by site basis.

N. The CONTRACTOR shall notify the City of Pittsburgh, Department of Mobility and Infrastructure (Permits Office at 412-255-2370) seventy-two (72) hours in advance of construction at any location where monuments are to be set or reset. Construct monuments in accordance with City of Pittsburgh Standards of Construction. City of Pittsburgh, Department of Engineering and Construction, Field Surveys Division will furnish monuments. Contact Bureau of Construction Services prior to installation for field verification of proposed location. Contact Bureau of Construction Services after installation. Surveys Division will record vertical elevation, and horizontal alignment, and apply center punch.

1.4 PRECONSTRUCTION MEETING

A. The OWNER will schedule meeting per Section C-700, Paragraph 2.04.

B. The OWNER's Representative shall record minutes and distribute copies to all attendees within two days after meeting to participants.

1.5 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work as deemed necessary by OWNER and/or CONSTRUCTION MANAGER.

B. Held on-site or alternate location provided by the CONTRACTOR as approved by the OWNER

C. CONSTRUCTION MANAGER will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

D. Attendance Required: OWNER and/or CONSTRUCTION MANAGER, CONTRACTOR's site superintendent, major subcontractors and suppliers, as appropriate to agenda topics for each meeting.

E. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

F. CONSTRUCTION MANAGER will prepare meeting summary and distribute copies to participants within two days following meeting.

1.6 PA One-Call

A. Upon receipt of the Notification and mapping identifying a new Work site, CONTRACTOR and OWNER's REPRESENATIVE shall jointly field locate and mark the extent of the Work area in accordance with PA One Call procedures. CONTRACTOR is responsible for making the required PA One Call request prior to any excavation. No less than 24 hours prior to the planned mobilization to the site, CONTRACTOR must verify that the anticipated utilities have been marked and then jointly meet at the Site with OWNER's REPRESENTATIVE to confirm that the proposed Work can be performed as planned.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list.

D. Product data.

E. Shop drawings.

F. Samples.

G. Excavation Protection Plan

H. Design data.

I. Test reports.

J. Certificates.

K. Manufacturer's instructions.

L. Construction photographs.

1.2 SUBMITTAL PROCEDURES

A. All submittals shall be made electronically through OWNER’s Construction Management software, e-Builder.

B. Submit all shop drawings within 30 days of Notification of Award.

C. Transmit each submittal with OWNER accepted transmittal form.

D. Sequentially number transmittal forms.

E. Mark revised submittals with original number and sequential alphabetic suffix and identify changes made since previous submission.

F. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.

G. Apply CONTRACTOR's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

H. For each submittal for review, allow 15 days.

I. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.

J. Allow space on submittal for OWNER review stamp.

K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

L. Submittals not requested will not be recognized or processed.

1.3 CONSTRUCTION PROGRESS SCHEDULES

A. The OWNER may request the CONTRACTOR to provide a construction progress schedule for any particular location(s) as needed.

B. All submittals shall be made electronically through OWNER’s Construction Management software, e-Builder.

C. Schedule shall be a computer-generated horizontal bar chart with separate line for each major portion of Work or operation section of Work, identifying first work day of each week.

1.4 PROPOSED PRODUCTS LIST

A. Within 15 days after date of issuance of a new work order, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PROPOSED SUBCONTRACTORS

A. Within 15 days after date of bid opening date, apparent low bidder shall submit list of proposed subcontractors, with name of subcontractor, address, and work of each subcontractor.

1.6 PRODUCT DATA

A. Product Data: Submit to OWNER for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit electronically through OWNER’s Construction Management software, e-Builder.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 01700 - Execution Requirements.

1.7 SHOP DRAWINGS

A. Shop Drawings: Submit to OWNER for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents and work orders.

B. Indicate special utility characteristics and utility connection requirements.

C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
   1. Include signed and sealed calculations to support design.
   2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
   3. Make revisions and provide additional information when required by authorities having jurisdiction.

1.8 SAMPLES

A. Samples: Submit to OWNER for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Samples For Selection as Specified in Product Sections:
   1. Submit to OWNER for aesthetic, color, or finish selection.
   2. Submit samples of finishes from full range of manufacturers' standard colors, in custom colors selected, textures, and patterns for OWNER selection.

C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

D. Include identification on each sample, with full Project information.

E. Submit number of samples specified in individual specification sections; OWNER will retain one sample.

F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

G. Samples will not be used for testing purposes unless specifically stated in specification section.

H. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 01700 - Execution Requirements.

1.9 EXCAVATION PROTECTION PLAN

A. Submit Excavation Protection Plan electronically through the OWNER's Construction Management software, e-Builder.

B. Submit Excavation Protection Plan within 30 days of Notice of Award.

1.10 DESIGN DATA

A. Submit for OWNER knowledge as contract administrator or for OWNER.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.11 TEST REPORTS

A. Submit for OWNER'S knowledge as contract administrator or for OWNER.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.12 CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or CONTRACTOR to OWNER, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to OWNER.

1.13 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to OWNER for delivery to OWNER in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.14 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer, acceptable to OWNER.

B. Photographs shall include time and date stamp.

C. If requested, submit digital photograph records with Application for Payment.

D. Deliver complete digital CONTRACT records to OWNER with project record documents. Catalog and index photographs in chronological sequence.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

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SECTION 01400

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality control and control of installation.

B. Tolerances.

C. References.

D. Labeling.

E. Testing and inspection services.

F. Examination.

G. Preparation.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. The CONTRACTOR shall include costs for tests and certifications specified in Specifications or by governing authorities in the bid price(s) on the Bid Form.

B. The OWNER reserves the right to order additional testing at CONTRACTOR's expense if the materials and/or Work provided appear to be sub-standard.

C. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

D. Comply with manufacturers' instructions, including each step in sequence.

E. When manufacturers' instructions conflict with Contract Documents, request clarification from OWNER before proceeding.

F. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

G. Perform Work by persons qualified to produce required and specified quality.

H. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

I. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from OWNER before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date of Contract Documents except where specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from OWNER before proceeding.

E. Neither contractual relationships, duties, nor responsibilities of parties in Contract nor those of OWNER shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 LABELING

A. Attach label from agency approved by authority having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
   1. Model number.
   2. Serial number.
   3. Performance characteristics.

1.6 TESTING AND INSPECTION SERVICES

A. The CONTRACTOR shall employ and pay for services of an independent testing agency or laboratory acceptable to the OWNER to perform concrete, compaction, leak testing, and any other specialized (non-bacteriological) testing specified by the contract documents or as required by the OWNER.

B. The independent firm shall perform tests, inspections and other services specified in individual specification sections and as required by OWNER and/or Authority having jurisdiction.
   1. Laboratory: Authorized to operate in State of Pennsylvania.

2. Laboratory Staff: Maintain full time specialist on staff to review services.
3. Testing Equipment: Calibrated at reasonable intervals with devices accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

C. Testing, inspections and source quality control may occur on or off project site. Perform off-site testing as required by OWNER and/or Authority having jurisdiction.

D. Reports shall be submitted by independent firm to OWNER, CONTRACTOR, and authority having jurisdiction, in duplicate indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
1. Submit final report indicating correction of Work previously reported as non-compliant.

E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
1. Notify OWNER and independent firm 24 hours prior to expected time for operations requiring services.
2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

F. Testing and employment of testing agency or laboratory shall not relieve CONTRACTOR of obligation to perform Work in accordance with requirements of Contract Documents.

G. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by OWNER. Payment for re-testing or re-inspection shall be charged to CONTRACTOR by deducting testing charges from Contract Sum/Price.

H. Agency Responsibilities:
1. Test samples of mixes submitted by CONTRACTOR.
2. Provide qualified personnel at site. Cooperate with OWNER and CONTRACTOR in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify OWNER and CONTRACTOR of observed irregularities or non-conformance of Work or products.
6. Perform additional tests required by OWNER.
7. Attend preconstruction meetings and progress meetings.

I. Agency Reports: After each test, promptly submit two copies of report to OWNER, CONTRACTOR, and authority having jurisdiction. When requested by OWNER, provide interpretation of test results. Include the following:
1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.
7. Type of inspection or test.
8. Date of test.

9. Results of tests.
10. Conformance with Contract Documents.

J. Limits On Testing Authority:
   1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency or laboratory may not approve or accept any portion of the Work.
   3. Agency or laboratory may not assume duties of CONTRACTOR.
   4. Agency or laboratory has no authority to stop the Work.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities:
   1. Temporary electricity.
   2. Temporary ventilation.
   3. Temporary lighting for construction purposes.
   4. Temporary water service.
   5. Temporary sanitary facilities.

B. Construction Facilities:
   1. Vehicular access.
   2. Parking.
   3. Progress cleaning and waste removal.
   4. Project identification.
   5. Traffic regulation.

C. Temporary Controls:
   1. Barriers.
   2. Enclosures and fencing.
   3. Security.
   4. Water control.
   5. Dust control.
   6. Erosion and sediment control.
   7. Pollution control.

D. Temporary Restoration.

E. Removal of utilities, facilities, and controls.

1.1 RELATED SECTIONS

A. Section 02374 – Erosion Control Devices

B. Section 02324 – Trenching, Backfilling and Compaction

C. Section 02740 – Asphalt Pavement

D. Section 02750 – Concrete Pavement

1.2 TEMPORARY ELECTRICITY

A. The CONTRACTOR shall provide and pay for temporary power service required as needed for construction operations.

1.3 TEMPORARY VENTILATION

A. The CONTRACTOR shall provide and pay for temporary ventilation service required as needed in enclosed areas to assist curing of materials, dissipate humidity, and prevent accumulation of dust, fumes, vapors, or gases.

1.4 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. CONTRACTOR shall provide and maintain lighting for construction operations in compliance with ruling authority (City of Pittsburgh, Alleghany County, PennDOT, PWSA, OSHA, etc.) requirements.

1.5 TEMPORARY WATER SERVICE

A. Provide, maintain and pay for all temporary connections, materials and equipment necessary to convey the water from adjacent fire hydrants or from an interconnection with other pipe lines.

B. The OWNER shall approve all such connections prior to their being made.

C. The OWNER shall check each fire hydrant used by the CONTRACTOR for temporary water service before and after the work has been completed.

D. Notify the City of Pittsburgh Department of Public Safety; Fire Alarm Division, directly prior to using any fire hydrant.

E. Water used for cleaning, flushing, sterilization and for mixing cement/mortar will be furnished free to the CONTRACTOR who shall exercise measures to conserve water.

F. In the event the CONTRACTOR is working in an area where OWNER is not the Water Service Provider, the CONTRACTOR shall transport water from a designated source in OWNER's service area to the construction site.

G. In the case of water needed for testing, the OWNER will provide the water required for the initial test; charging of the section of line and additional water needed for pressurization. If the initial test fails, necessitating a retest after repairs, etc., the cost of any additional water will be borne by the CONTRACTOR.

H. In the case of water needed for the cleaning and rehabilitation of sewers, The CONTRACTOR shall be granted access to OWNER's Water Supply at no additional cost to the CONTRACTOR.
   1. CONTRACTOR will be required to obtain all necessary fire hydrant permits for water consumed in relining process in compliance with current OWNER Regulations. There will be no charge to the CONTRACTOR for permits and water consumed, but CONTRACTOR must furnish all necessary hardware and/or connections for this equipment to attach to OWNER's hydrants. Use of an approved double check backflow assembly shall be required.

OWNER will not furnish this material or service. For additional information contact The Pittsburgh Water and Sewer Authority, 1200 Penn Avenue, Pittsburgh, Pennsylvania 15222, ATTENTION: Wendy Dean (412) 255-2443.

2. CONTRACTOR will not be provided water from Pennsylvania American water supply.

1.6 TEMPORARY SANITARY FACILITIES

A. Provide and maintain facilities and enclosures. Number, size and type of facilities shall be appropriate for the number of workers using the facilities.

1.7 VEHICULAR ACCESS

A. Construct temporary all-weather access roads from public thoroughfares to serve construction area, of width and load bearing capacity to accommodate unimpeded traffic for construction purposes.

B. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.

C. Extend and relocate vehicular access as Work progress requires, provide detours as necessary for unimpeded traffic flow.

D. Provide unimpeded access for emergency vehicles.

E. Provide and maintain access to fire hydrants and control valves free of obstructions.

F. Provide means of removing mud from vehicle wheels before entering streets.

G. Use designated existing on-site roads for construction traffic.

1.8 PARKING

A. Arrange for surface parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

B. Do not interfere with resident parking without approval of the OWNER.

C. Provide additional off-site parking when site space is not adequate.

1.9 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

B. Remove debris and rubbish from excavations prior to backfilling.

C. Collect and remove waste materials, debris, and rubbish from site weekly or as directed and dispose off-site.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.10 TRAFFIC REGULATION

A. Provide vehicular and pedestrian traffic control in accordance with the City of Pittsburgh Department of Public Works Right of Way Procedures Manual (most current version), and PennDOT Publication 213 (as applicable).

B. Post “No Parking” signs in appropriate areas in accordance with City of Pittsburgh Traffic Obstruction Permit.

C. Removal:
   1. Remove equipment and devices when no longer required.
   2. Repair damage caused by installation.

D. Off-Duty Police shall only be paid when approved by the OWNER’S PROJECT REPRESENTATIVE.

1.11 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to allow for OWNER's use of site, and to protect existing facilities and adjacent properties from damage from construction operations.

B. Provide barricades and covered walkways required by entities having jurisdiction for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.12 STORAGE OF CONSTRUCTION MATERIAL AND EQUIPMENT

A. CONTRACTOR is required to establish a License Agreement with the responsible party (URA and/or the City Finance Department, Bureau of Real Estate) prior to utilizing City owned property (including streets) for storage.

B. CONTRACTOR must fulfill all restoration requirements set forth in the Agreement, prior to request for final payment of the Contract.

C. Construction: CONTRACTOR option or as defined by Agreement.

1.13 SECURITY

A. Security Program:
   1. Protect Work existing premises and OWNER's operations from theft, vandalism, and unauthorized entry.

2. Initiate program in coordination with Owner's existing security system at project mobilization.
3. Maintain program throughout construction period until directed by OWNER.

1.14 WATER CONTROL

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. Protect site and private property from puddling or running water. Provide water barriers as required to protect site and private property from soil erosion.

1.15 DUST CONTROL

A. Execute Work by methods to minimize raising dust from construction operations.

B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.16 EROSION AND SEDIMENT CONTROL

A. CONTRACTOR shall comply with requirements of Section 02374 – Erosion Control Devices.

B. Provide methods, means, and facilities to minimize noise produced by construction operations.

1.17 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced and/or released by construction operations.

B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.18 TRENCH - TEMPORARY RESTORATION IN ROADWAYS

A. Method of trench restoration is dependent upon location of the work and time of year. Method shall be determined by the OWNER'S PROJECT REPRESENTATIVE for each site.

B. Trench restoration shall be defined as the area the depth above the concrete paving base, where required or the area above compacted trench aggregate fill where no paving base is required.

C. Temporary Restoration
1. Compacted Aggregate: conforming to Section 02060 – Aggregates for Earthwork.
2. Bituminous Cold Patch: conforming to Section 02740 – Asphalt Pavement.
3. Asphalt Binder: conforming to Section 02740 – Asphalt Pavement.
4. Concrete Pavement: conforming to Section 02750 – Concrete Pavement.

1.19 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Final Application for Payment inspection.

B. Remove underground installations to minimum depth of 2 feet and grade site as indicated on Drawings.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01520

TEMPORARY WATER SERVICE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Temporary water service

B. Related Sections:
   1. Section 01500 – Temporary Facilities and Controls

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures

1.3 SCOPE OF WORK

A. Under this item the Contractor is required to furnish all labor, materials, equipment and incidentals required and install and remove 3/4-inch, 2-inch, 4-inch, or 6-inch temporary by-pass pipe, temporary service pipe, temporary hydrant connections, and temporary service connections of the sizes required to provide adequate service to all water consumers whose service will be interrupted by new water main installation and to fulfill fire service requirements.

B. The design, installation and operation of the temporary system shall be the Contractor's responsibility. The temporary water service system shall meet the requirements of all codes and regulatory agencies having jurisdiction.

1.4 REFERENCES

A. ASTM International:
   1. ASTM D2774—Standard Practice for Underground Installation of Thermoplastic Pressure Piping.
   2. ASTM D2837—Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products
   3. ASTM F876 - Standard Specification for Crosslinked Polyethylene (PEX) Tubing
   4. ASTM F2023 – Standard Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Tubing and Systems to Chlorinated Hot Water
   5. ASTM F2080—Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Cross-linked Polyethylene (PEX) pipe.
   6. ASTM F2657 - Standard Test Method for Outdoor Weathering Exposure of Crosslinked Polyethylene (PEX) Tubing

B. American Water Works Association:
   1. AWWA C651—Disinfection of Water Mains.

2. AWWA C904 Cross-Linked Polyethylene (PEX) Pressure Pipe, ½ inch (12 mm) Through 3 inch (76 mm), for Water Service.

C. Nationals Science Foundation:
   1. NSF/ANSI Standard 14 – Plastics Piping System Components and Related Materials (for both potable water and radiant floor heating applications).
   2. NSF/ANSI Standard 61 - Drinking Water System Components - Health Effects (for potable water applications only).

1.5 SUBMITTALS

A. The Contractor shall submit to the DIRECTOR detailed plans and descriptions outlining all provisions and precautions to be taken by the Contractor regarding providing temporary water service.
   1. The plan shall include but not be limited to details of the following:
      a. Schedule
      b. Site Plan showing temporary piping, fittings, hydrants, connections, and service connections – A plan sketched on the Contract Drawings is adequate.
      c. Pipe size
      d. Pipe Material
      e. Connection Points
      f. Disinfection methods
      g. Pedestrian and motor traffic control
   2. Plan shall follow phasing of construction.

PART 2 PRODUCTS

2.1 TEMPORARY SERVICE PIPE

A. All materials in contact with potable water shall comply with the Safe Drinking Water Act and NSF 61.

B. Pipe Material, 250 psig minimum working pressure
   1. 2-inch and less:
      a. Copper, meet the requirements of Section 02515
      b. PEX, PEX 1006 or 1008, SDR 9 meeting requirements of AWWA C904
   2. 4-inch and greater
      a. High Density Polyethylene (HDPE), minimum series 100, certified PE3408, conforming to CSA B137.1 and certified for potable water service under NSF61.
         1) Fittings
            a) PVC, hose shank insert ends, approved for potable water service. Join to pipe using stainless steel band clamps or other method approved by the Engineer.
            b) Aluminum or stainless steel body, hose shank end, over-centre, twin lever insert type KAMLOK or as approved. Join to pipe using stainless steel band clamps or other method approved by the Engineer.
      b. Certa-Lok Yelomine Pipe, SDR-21 (minimum) certified for potable water service under NSF61.

1) Fittings
   a) Certa-Lok brand with appurtenances.

C. Service Connections
   1. Service connections shall meet the requirements of Section 02515.

2.2 PORTABLE TANKS

A. Portable tanks employed for the purpose of storing potable water must be constructed of materials suitable for direct contact with potable water. Tanks to be used must not have previously been used to transport petroleum, chemical or waste products of any description.

PART 3 EXECUTION

3.1 INSTALLATION

A. Notify Direction 48-hours in advance of installation of required tap or disruption of a customer's service.

B. All shut-offs to customer's service lines and all connections from the temporary bypass line to the customer's service line shall be made by the Contractor.

C. After the main waterline has been placed back in service, or after the new waterline has been place in service the Contractor shall disconnect the temporary service and clear the service line by backflushing with water. The Contractor shall cut, plug and block all taps made on the main waterline. The Contractor shall repair the existing tapped service line with a nipple and two (2) couplings.

D. Temporary service pipe shall not be installed without the prior approval of the Engineer.

E. Lay temporary service pipe in gutters, where available.

F. Lay temporary service pipe behind buildings in business areas.

G. Provide cold patch bituminous paving or other ramp at driveway crossings.

H. At road crossings, provide ramp over pipe or saw-cut straight line into existing paving and lay temporary service pipe in a shallow trench covered with cold patch bituminous paving. Sawcut paving only with approval from DIRECTOR.

I. Ensure that installation is watertight.

J. Avoid any possible pollution of mains, house services, or the temporary service pipe.

K. The interior of temporary service pipe, temporary hoses and any other connection pipe to convey water for potable use shall be chlorinated prior to its use in accordance with AWWA C651.

L. All temporary pipe shall be suitably valved and meet the approval of the Engineer. All temporary pipe shall be suitably sized to meet the approval of the DIRECTOR. A valve shall be provided at each hydrant connection and each tap hole connection. Valves shall be located no further than 500-ft apart.

M. Whether it is being installed, in service, or being removed, the amount of temporary service pipe kept on the job shall be the minimum that will allow the work to continue at a reasonable rate.

END OF SECTION

SECTION 01569

MAINTENANCE AND PROTECTION OF TRAFFIC

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Maintenance and Protection of Traffic

B. Related Sections:
   1. Section 01500 – Temporary Facilities and Controls
   2. The Bid and General Provisions of the Contract Documents, General Specifications and requirements of all Division 1 Sections of the Specifications apply to all work of this section

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures

1.3 GENERAL

A. The CONTRACTOR shall, at all times, provide for maintenance and protection of vehicular and pedestrian traffic on each project street and adjacent walkways. The furnishing, placement, erection, maintenance and removal of all traffic control devices shall be in accordance with the provisions set forth in PennDOT Publication 212, Official Traffic Control Devices; Publication 213, Work Zone Traffic Control; and Publication 408, Specifications, Current Edition. Signs, devices, and equipment not in compliance with the above are not acceptable.

B. The CONTRACTOR shall prepare and submit the proposed maintenance and protection of traffic plan for each location to the DIRECTOR for review and approval fourteen (14) calendar days prior to the start of construction. These plans shall show the schedule/sequence of construction, signing, control devices, staging areas, traffic patterns, and detour routes (if any). Construction activity may not start until the maintenance and protection of traffic plan is approved and implemented.

C. CONTRACTOR personnel assigned flagging duties shall be properly attired, equipped, and trained. Flag persons will not be used for any construction-related work.

D. Barriers, minimum four (4’) feet high, will be used to protect all pedestrians from excavated areas. Steel posts will be spaced at a maximum of five-foot intervals.

E. Whenever normal pedestrian pathways, street crossings, etc., are disrupted, the CONTRACTOR shall establish alternate pathways/crossings, protecting them with appropriate signs, markings, and other devices.

F. During non-working hours, all excavations in vehicle traffic areas will be covered with sound, unwarped steel plates capable of supporting truck/vehicle loads. The plates will be properly bedded, recessed, and anchored to prevent shifting, banging, etc.

G. The following general requirements pertain to this project, elements of which are included in the Maintenance and Protection of Traffic drawings/plans:

1. The CONTRACTOR shall coordinate this work with the City of Pittsburgh Department of Public Works / DOMI, local property owners, businesses and corporations, as applicable, to minimize inconvenience to them and to avoid delays in construction.

2. Coordinate with PennDOT for work within and along the State roadways.

3. The CONTRACTOR is responsible for obtaining City Obstruction Permits.

4. Maintain traffic patterns as directed. Flag persons will be used per PennDOT Publication 213, if alternating flow traffic is required.

5. Maintain access by emergency vehicles at all times.

6. Backfill daily to traffic-worthy conditions all excavations on roadways during non-working hours.

7. Cover or remove regulatory and warning signs which are not needed during non-working hours.

8. Install pedestrian barricades adjacent to open excavations.

9. Materials and equipment stored on-site will be located so as not to interfere with the normal movement of traffic and will be secured and protected per Publication 213.

10. Temporary public parking restrictions shall be coordinated by the CONTRACTOR with the City Department of Public Works / DOMI, and/or Public Safety Department (Chief of Police), as required.

1.4 SITE-SPECIFIC REQUIREMENTS

A. It is the CONTRACTOR's responsibility to adjust work hours and cooperate with the City departments, PennDOT, local residents and business owners for the public access through construction areas for recreational use of the park facilities.

1.5 COMPLETION OF WORK

A. The CONTRACTOR shall remove all temporary traffic control signs and devices from the site after completion of his/her work. All material used for this work shall become property of the CONTRACTOR.

END OF SECTION

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SECTION 01600

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

F. Equipment electrical characteristics and components.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Substitutions may be considered when a product becomes unavailable through no fault of CONTRACTOR.

B. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

C. A request constitutes a representation that the CONTRACTOR:
   1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
   2. Will provide same warranty for Substitution as for specified product.
   3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to OWNER.
   4. Waives claims for additional costs or time extension which may subsequently become apparent.
   5. Will reimburse OWNER for review or redesign services associated with re-approval by authorities having jurisdiction.

D. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.

E. Substitution Submittal Procedure:
   1. Submit three (3) copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
   2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
   3. OWNER will notify CONTRACTOR in writing of decision to accept or reject request.

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

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SECTION 01700

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Demonstration and instructions.

D. Protecting installed construction.

E. Project record documents.

F. Spare parts and maintenance products.

G. Product warranties and product bonds.

H. Complaint Resolution.

1.2 CLOSEOUT PROCEDURES

A. Notify OWNER when Work is considered ready for Pre-final Inspection.

B. Comply with OWNER's instructions for Work to be corrected or completed generated from the pre-final inspection.

C. Notify OWNER when Work is considered finally complete. Comply with OWNER's instructions for completion of items of Work determined to be required prior to the OWNER's final inspection.

D. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for OWNER's review.

E. Provide submittals required by authorities having jurisdiction to OWNER.

F. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

G. OWNER will utilize and maintain system as specified in Section 01100 - Summary.

1.3 FINAL CLEANING

A. Execute final cleaning prior to final project inspection.

B. Clean site; sweep paved areas, rake clean landscaped surfaces.

C. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 DEMONSTRATION AND INSTRUCTIONS

A. Reports will be submitted by independent firm to OWNER indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

1.5 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Prohibit traffic from landscaped areas.

1.6 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed Shop Drawings, Product Data, and Samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by OWNER.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.
   1. Approval of periodic payment requests will be contingent upon the Record Drawings being up-to-date.
   2. The OWNER reserves the right to deny a periodic payment request or increase the amount of retainage until the Record Drawings are brought up-to-date.
   3. Record Drawings shall be subject to inspection by the OWNER prior to the submission of any periodic payment request.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.

3. Changes made by Addenda and modifications.

F. Submit documents to OWNER with claim for final Application for Payment.

1.7 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to location directed by OWNER; obtain receipt prior to final payment.

1.8 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of Work.

B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.

C. Verify documents are in proper form, contain full information, and are notarized.

D. Co-execute submittals when required.

E. Include Table of Contents and assemble in three D side ring binder with durable plastic cover.

F. Submit prior to final Application for Payment.

G. Time of Submittals:
1. For equipment or component parts of equipment put into service during construction with OWNER'S permission, submit documents within ten days after acceptance.
2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.9 COMPLAINT RESOLUTION

A. Following receipt of a complaint due to the contractor's work from a local customer or residents, CONTRACTOR is to investigate the cause of the complaint. Within 48 hours, CONTRACTOR should either resolve the complaint, provide an action plan to the OWNER for how the complaint will be addressed, or provide an explanation to the OWNER demonstrating why it is not the CONTRACTOR's responsibility to address the complaint.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

DIVISION 2 – SITE CONSTRUCTION

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SECTION 02060

AGGREGATES FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Coarse aggregate materials.
   2. Fine aggregate materials.

B. Related Sections:
   1. Section 02082 - Public Manholes And Structures.
   2. Section 02085 - Water Utility Distribution Valves.
   3. Section 02086 - Water Utility Fire Hydrants.
   4. Section 02324 - Trenching, Backfilling and Compaction.
   5. Section 02513 - Public Water Distribution Systems.
   6. Section 02515 - Water Service Connections.
   7. Section 02539 - Public Sanitary and Storm Sewer Piping.
   8. Section 02721 - Aggregate Base Course.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO M147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses.

B. ASTM International:
   1. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

C. Pennsylvania Department of Transportation (PennDOT).
   1. PennDOT Publication 408 Construction Specifications, latest copy (PennDOT specifications).

1.4 SUBMITTALS

A. Section 01330 – Submittal Procedures: Requirements for Submittals.

B. Materials Source: Submit name of imported materials suppliers.

C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Furnish each aggregate material from single source throughout the Work.

PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

A. Coarse Aggregate Type A1 (Pipe Bedding and Initial Backfill): AASHTO #67: (formerly PennDOT No. 2), crushed stone or gravel aggregate, Table C, Section 703.2, PennDOT Publication 408 Specifications.
   1. Materials not acceptable as bedding include: sharp edged aggregate, earth, and slag (any kind).

B. Mix of Coarse and Fine Aggregate Type A2 (Suitable Backfill): Crushed stone or gravel aggregate conforming to Select Granular Material (2RC)/ 2A Modified, Section 703.2, PennDOT Publication 408 Specifications.
   1. Materials not acceptable: slag (any kind).

C. Type A3: AASHTO#57: Crushed stone or gravel aggregate, Table C, Section 703.2, PennDOT Publication 408 Specifications.
   1. Materials not acceptable: slag (any kind).

2.2 SOURCE QUALITY CONTROL

A. Section 01400 - Quality Requirements.

B. Aggregate Material - Testing and Analysis: Perform in accordance with ASTM C136 or appropriate Pennsylvania Test Method as approved under PennDOT Publication 408. Testing documentation on material to be supplied shall have been conducted within 1 year of submittal.

C. When tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.1 STOCKPILING

A. Stockpile materials on site at locations designated by OWNER.

B. Stockpile in sufficient quantities to meet Project schedule and requirements.

C. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.

D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

E. Stockpile unsuitable materials on impervious material and cover to prevent erosion and leaching, until disposed of.

3.2 STOCKPILE CLEANUP

A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water. CONTRACTOR shall be responsible for the repair of any damage to sidewalks, curbs, and pavement at no additional expense to the OWNER.

END OF SECTION

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SECTION 02082

PUBLIC MANHOLES AND STRUCTURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Modular precast concrete manholes and structures with tongue-and-groove joints with or without masonry transition to cover frame, covers, anchorage, and accessories.
2. Masonry manhole and structure sections with masonry transition to cover frame, covers, anchorage, and accessories.
3. Bedding and cover materials.

B. Related Sections:
1. Section 02060 - Aggregates for Earthwork
2. Section 02281 - Manhole and Catch Basin Grade Adjustment
3. Section 02324 – Trenching, Backfilling and Compaction.
4. Section 02539 - Public Sanitary and Storm Sewer Piping.
5. Section 03300 - Cast-In-Place Concrete.
6. Section 03600 – Grout.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures.

1.3 REFERENCES

A. American Association of State Highway Transportation Officials:
1. AASHTO M288 - Geotextiles.
2. AASHTO M306 - Drainage Structure Castings.
3. AASHTO M91 - Sewer and Manhole Brick (Made from Clay or Shale).

B. American Concrete Institute:
1. ACI 530/530.1 - Building Code Requirements for Masonry Structures and Specifications for Masonry Structures.

C. ASTM International:
1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
4. ASTM C32 - Standard Specification for Sewer and Manhole Brick (Made from Clay or Shale).
5. ASTM C55 - Standard Specification for Concrete Brick.
6. ASTM C361 - Standard Specification for Reinforced Concrete Low-Head Pressure Pipe.

7. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
8. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
9. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures.
10. ASTM C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals.
11. ASTM D1227 - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.
12. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Shop Drawings: Indicate structure locations

C. Product Data: Submit manhole covers, component construction, features, configuration, dimensions.

D. Qualifications listed in paragraph 1.7.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and OWNER.

B. Shop Inspection:
1. All materials furnished by the CONTRACTOR shall be certified by the supplier for compliance with the pertinent specifications. Shop inspections and testing may be required. The cost of shop testing shall be borne by the supplier or the CONTRACTOR.

C. Field Inspection:
1. All materials furnished shall be tested for defects in material and/or workmanship in the manner specified and in the presence of and as approved by the OWNER.

D. Source Quality Control:
1. Maintain uniform quality of products and component compatibility by using the products of one manufacturer in the case of precast reinforced concrete manholes.
2. Obtain certificate of construction compliance with ASTM C478 from the precast reinforced concrete manhole manufacturer.
3. Obtain sworn certification from manufacturer that manholes were constructed using Type II Portland cement. No payment for manholes will be approved until such certificate has been submitted.
4. Obtain certificate of material compliance with ASTM A48, Class 30 tensile strength from the manhole frame and cover manufacturer. Furnish certification that tensile test bars were from same pour as castings.
5. Obtain certification from manufacturer that manhole frame and cover meets or exceeds AASHTO HS-20 highway loading requirements.

6. Sections shall be steam cured and shall not be shipped until at least five days after having been cast.
7. Mark inside of each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.7 DELIVERY, STORAGE AND HANDLING

A. Comply with Section 01600 - Product Requirements: Product storage and handling requirements.

B. Comply with precast concrete manufacturer's instructions and ASTM C913 for unloading, storing and moving precast manholes and drainage structures.

C. Store precast concrete manholes and drainage structures to prevent damage to OWNER's property or other public or private property. Repair property damaged at CONTACTOR expense.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements.

B. Cold Weather Requirements: ACI 530/530.1.

C. In no instance set or construct manhole bases on subgrade containing frost.

D. To improve workability of Preformed Plastic Sealing Compound during cold weather, store such at temperature above 70 degrees F or artificially warm compound in a manner satisfactory to the OWNER.

PART 2 PRODUCTS

2.1 GENERAL

A. Manholes shall consist of precast reinforced concrete riser, top and bases, complete with cast iron frames and covers

B. Flat slab tops are not to be used unless required and approved by the OWNER.

C. Flat slab tops, if required/approved, shall have a minimum thickness of six (6") inches and shall be reinforced with steel in accordance with the design requirements specified in ASTM C478.

2.2 MANHOLES AND STRUCTURES

A. Manhole and Structure Sections:

1. Reinforced precast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C923.
2. Joints for Precast Manholes and Structures: In accordance with ASTM C913.
   a. Joint Sealant: ASTM C990
3. Lift holes may not pass from the inside wall completely through to the outside wall. No more than two lift holes may be cast in each section.
4. Top sections shall have a top width of such design and dimensions as to properly support the required manhole frame and cover.
5. The barrel sections shall have tongue and groove ends and a minimum wall thickness of five (5) inches or shall be one-twelfth (1/12) of the internal diameter of the riser or largest cone section.
6. The exterior surface of all sanitary and combination sewer precast manhole sections shall be coated at the precast manufacturer's factory with an approved asphalt emulsion coating complying with the requirements of ASTM D1227 for sanitary and combination sewers applied as recommended by the coating manufacturer.

B. Cast in Place Manhole Bases
1. Concrete shall have a minimum compressive strength of 4,000-psi at 28-days. Reinforcement shall be in accordance with ASTM A615
2. Base shall be poured from PennDOT Class A or Class AA Concrete, as directed by OWNER.
3. Reinforcing steel shall conform to the requirements of American Association of State Highway and Township Officials (AASHTO) Specification M31 (billet steel) or AASHTO M55 (Welded Steel Wire Fabric).
4. Bases shall be poured on solid ground.
5. Waterstops shall be used at the horizontal joint of poured-in-place manholes per paragraph 2.6.

C. Precast Manhole and Bases
1. Bases shall be cast in accordance with ASTM C478 (latest revision).
2. Base walls shall be cast integral to the base.
3. Bases shall be suitably shaped by means of accurate bell-ring forms to receive the barrel sections.
4. A manufacturer installed Z-lok connector or approved equal shall be provided prior to the precast manhole base being delivered to the Site

D. Clay Brick Units: Comply with ASTM C32 Sewer and Manhole Brick.

E. Mortar and Grout: per Section 03600 - Grout.

2.3 MANHOLE FRAMES AND COVERS

A. Provide COVERS per Standard Detail: WMHCOV/SMHCOV

B. Provide FRAMES per Standard Details: MFC23; MFC26; MFC65.

C. Product Description:
1. Castings shall not be coated.
2. H-20 live load rating.

3. Provide sealing gasket.
4. Castings shall be of good quality, strong, tough, even-grained cast iron, smooth, free from scale, lumps, blisters, sandholes, and defects of every nature which would render them unfit for the service for which they are intended.
    a. Bolts: Stainless steel ASTM F593.
5. Contact surfaces of covers and frame seats shall be machined at the foundry, to prevent rocking of covers in any orientation. All castings shall be thoroughly cleaned and subject to a careful hammer inspection.
6. Unless otherwise specified, frames shall be the following City of Pittsburgh size and pattern number
    a. Sidewalks and Grass Areas: Depth 6", Pattern 65
    b. Concrete and Asphalt Pavement(s): Depth 9", Pattern 26
    c. Brick and Blockstone 13" Pattern 23

2.4 ADJUSTMENT RINGS AND RISERS

A. Conform to Section 02281 – Manhole and Catch Basin Grade Adjustment.

2.5 COMPONENTS

A. Provide per Standard Detail: WS-10, WS-10A, WS-10C, SA-2, SA-2A, SA-10, SA-10A, SA-10C.

B. Manhole and Structure Steps:
1. Manhole steps shall be installed by the precast manufacturer and shall be aligned vertically and spaced so as to be on equal centers in the assembled manhole at a maximum uniform distance apart of twelve (12) inches.
2. Manhole steps in existing manholes shall be installed by drilling into the masonry and securing with grout.
3. Manhole steps shall be:
    a. Composite Steps (ASTM A615 Type II CR. 491408) with a steel core Grade 60 deformed steel bar (comply with ASTM A-615), 3/8" diameter.
        1) In severe service areas, the OWNER may require ½" diameter bars and a Co-polymer Polypropylene cover.

C. Mechanical Sleeve Seals

1. Manufacturers:
    a. Thunderline Link-Seal, Inc.
2. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve or core-drilled hole, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

2.6 WATERSTOPS

A. Waterstop gaskets shall be composed of virgin Polyvinyl Chloride (PVC) sized for the respective pipe and secured by approved stainless steel clamp.

2.7 INVERT CHANNELS

A. Comply with Standard Detail SA-2A.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting Work.

B. Verify items provided by other sections of Work are properly sized and located.

C. Verify built-in items are in proper location, and ready for roughing into Work.

D. Verify correct size of manhole and structure excavation.

3.2 PREPARATION

A. A waterstop gasket and approved clamp assembly shall be installed around the pipe when entering and leaving a manhole wall.

B. Do not install manholes and structures where site conditions induce loads exceeding structural capacity of manholes or structures.

C. Inspect precast concrete manholes and structures immediately prior to placement in excavation to verify manholes and structures are internally clean and free from damage. Remove and replace damaged units.

D. The excavation shall be properly dewatered while placing bedding material and pouring the concrete.

3.3 INSTALLATION - GENERAL

A. Excavation and Backfill:
   1. Excavate for manholes and structures in accordance with Section 02324 - Trenching, Backfilling and Compaction. Provide clearance around sidewalls of manhole or structure for construction operations, granular backfill and when in the presence of saturated soils, geotextile filter fabric.
   2. When groundwater is encountered, prevent accumulation of water in excavations. Place manholes or structures in dry trench. CONTRACTOR shall dewater all excavations in accordance with Section 02241 –Dewatering.

B. Place foundation slab, trowel top surface level.

C. Form or place sections plumb and level, trim to correct elevations, anchor to foundation slab as applicable.

D. Install manholes and structures, bearing firmly and fully on 12-inches of Type A1 crushed stone bedding at proper grade and alignment, consolidated in accordance with provisions of Section 02324 - Trenching, Backfilling and Compaction.

E. Backfill excavations for manholes and structures in accordance with Section 02324 - Trenching, Backfilling and Compaction.

F. Set cover frames and covers level without tipping, to correct elevations.

3.4 MASONRY MANHOLE AND STRUCTURE INSTALLATION

A. Mortar shall be composed of Portland cement, hydrated lime, and sand in the preparation of one part cement to 1/2 part lime, to 4-112 parts sand (by volume) or as approved by the OWNER.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Lay masonry units in running bond. Course one unit and one mortar joint to equal 8-inches.

D. Joints shall be painted with mortar and joints thoroughly tooled so as to be slightly concave with a hard polished surface free from drying cracks.

E. Lay masonry units in full bed of mortar, with full head joints, uniformly jointed with other Work.

F. Install joint reinforcement 16-inches on center.

G. Place joint reinforcement in first and second horizontal joints above base pad and below cover frame opening.

H. Install fabricated metal items as Work progresses.

I. Cut and fit for pipe, conduit, sleeves, etc.

J. Paint exterior with 2 coats of bituminous interior coating at rate of 120 square feet per gallon for each coat.

K. Set cover frames and covers level without tipping, to correct elevations.

L. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour to form continuous drainage channel.

3.5 PRECAST CONCRETE MANHOLE AND STRUCTURE INSTALLATION

A. Lift precast manholes and structures at lifting points designated by manufacturer.

B. When lowering manholes and structures into excavations and joining pipe to units, take precautions to ensure interior of pipeline and manhole or structure remains clean.

C. Set precast manholes bases and structures bearing firmly and fully on 12-inches of Type A1 crushed stone bedding, consolidated in accordance with provisions of Section 02324 - Trenching, Backfilling and Compaction.

D. Assemble multi-section manholes and structures by lowering each section into excavation. Install joint gaskets between precast sections in accordance with manufacturer's recommendations and Standard Detail per paragraph 2.5. Set level, and firmly position base section before placing additional sections.

E. Remove foreign materials from joint surfaces and verify sealing materials are placed properly. Maintain alignment between sections by using guide devices affixed to lower section.

F. Verify manholes and structures installed satisfy required alignment and grade.

G. Remove knockouts without creating openings larger than required to receive pipe. Fill annular space per Section 03600 - Grout.

H. Cut pipe to finish flush with interior of manhole or structure.

I. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour to form continuous drainage channel

3.6 CAST-IN-PLACE CONCRETE MANHOLE AND STRUCTURE INSTALLATION

A. Prepare crushed stone bedding or other support system shown on Drawings, to receive foundation slab as specified for precast manholes and structures.

B. Erect and brace forms against movement in accordance with Section 03300 – Cast-In-Place Concrete.

C. Install reinforcing steel as indicated on Drawings and in accordance with Section 03300 – Cast-In-Place Concrete.

D. Place and cure concrete in accordance with Section 03300 – Cast-In-Place Concrete.

3.7 CASTINGS INSTALLATION

A. Frames and covers shall be set into 2, ½" bead rings of elastomeric sealant and secured with a minimum of two 3/4" stainless steel anchor bolts.

B. Where required, final adjustment of frame to elevation shall conform to Section 02281 – Manhole and Catch Basin Grade Adjustment.

C. Where grade rings are used, anchor bolts shall extend from the top of the frame through the grade rings and into the top precast section of the manhole.

D. Any casting set more than 3/16 of an inch above or below the finished surface of the adjoining concrete, brick, block, stone or bituminous surface, as determined by a ten foot (10') straight edge, shall be reset by the CONTRACTOR at his own expense.

E. Set frame and cover 2-inches above finished grade for manholes and other structures with covers located within unpaved areas to allow area to be graded away from cover beginning 1-inch below top surface of frame.

3.8 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements.

B. Section 01700 - Execution Requirements.

C. Test cast-in-place concrete in accordance with Section 03300 – Cast In-Place Concrete.

D. Test concrete manhole and structure sections via infiltration test in accordance with Section 02952 – Sewer and Manhole Testing.

END OF SECTION

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SECTION 02085

WATER UTILITY DISTRIBUTION VALVES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Valves.
2. Valve boxes.

B. Related Sections:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02086 - Water Utility Fire Hydrants.
3. Section 02324 - Trenching, Backfilling and Compaction.
4. Section 02513 - Public Water Distribution Systems
5. Section 02515 - Water Service Connections.
6. Section 02516 - Disinfection of Water Distribution Systems.
7. Section 03300 - Cast-In-Place Concrete.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 - Price and Payment Procedures.

1.3 REFERENCES

A. American Society of Testing and Materials:
1. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes.
2. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 PSI Tensile Strength.
3. ASTM B584 - Standard Specification for Copper Alloy Sand Castings for General Applications.
4. ASTM B763 – Copper Alloy Sand Castings for Valve Applications
5. ASTM F593 – Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.

B. American Water Works Association:
1. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
2. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service.
3. AWWA C509 - Resilient-Seated Gate Valves for Water-Supply Service.
4. AWWA C515 - Reduced-Wall, Resilient Seated Gate Valves for Water Supply Service
5. AWWA C550 - Protecting Epoxy Interior Coating for Valves and Hydrants.
6. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.

C. National Sanitation Foundation:
1. NSF 61 - Drinking Water System Components - Health Effects

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Shop Drawing:
   1. Installation Plan: Submit description of proposed installation.

C. Design Data: Submit manufacturer's latest published literature including illustrations, installation instructions, maintenance instructions and parts lists.

D. Manufacturer’s Certificates: Submit Statement of Compliance, supporting data, from material suppliers attesting that valves and accessories provided meet or exceed AWWA Standards and specification requirements.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of valves.

C. Provide Operation and Maintenance Data for valves.

1.6 QUALITY ASSURANCE

A. Perform work in accordance with referenced standards and PWSA standards.

1.7 QUALIFICATIONS

A. Manufacturer: company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum three years documented experience.

1.8 DELIVERY, STORAGE AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing and protecting products.

B. Prepare valves and accessories for shipment according to AWWA Standards and seal valve and ends to prevent entry of foreign matter into product body.

C. Store products in areas protected from weather, moisture, or possible damage; do not store products directly on ground; handle products to prevent damage to interior or exterior surfaces.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.

B. Conduct operations not to interfere with, interrupt, damage, destroy, or endanger integrity of surface or subsurface structures or utilities, and landscape in immediate or adjacent areas.

1.10 COORDINATION

A. Section 01300 - Administrative Requirements: Requirements for coordination.

B. Coordinate work with PWSA and Pittsburgh DPW. Coordinate with PennDOT as necessary when working on state roads.

1.11 MAINTENANCE MATERIALS

A. Section 01700 - Execution Requirements: Requirements for maintenance materials.

PART 2 PRODUCTS

2.1 GATE VALVES LARGER THAN 12-INCH DIAMETER

A. Resilient Wedge Gate Valves: AWWA C509 or AWWA C515; iron body, bronze or ductile iron; including the manufacturer's name, pressure rating, and year of fabrication cast into valve body.
   1. Resilient seats.
   2. Stem
      a. Non-rising stem
      b. Minimum tensile strength: 60,000 psi
      c. Manganese bronze per ASTM B584/ASTM B763 or Type 304 or 316 stains steel per ASTM A276
   3. Seals: O-ring stem seals.
   4. Operator:
      a. Direct Bury: Operating Nut: 2-inch Square; open clockwise unless in treatment plant or pump station.
      b. Valve Vault or above grade: Handwheel: Open clockwise unless in treatment plant or pump station.
   5. Ends:
      a. Direct Bury: Restrained Joints
         1) MEGALUG Series 1100 (w/ Grade 304 Stainless Steel Bolts/Nuts and Fusion Bonded Epoxy Coating).
         2) Flex-Ring Joint by American or boltless positive joint restraint equal to the Flex-Ring Joint by American.
         3) Or Approved Equal.
      b. Valve Vault or above grade: Flanged with Type 306 stainless steel nuts and bolts.
   6. Coating: AWWA C550; interior/exterior epoxy.
   7. Sizes 12-inch diameter and smaller: 200 psig.

8. Sizes 16-inch diameter and larger: 150 psig.
    a. Valves 16-inch diameter and greater shall be installed horizontally with bevel gearing or vertically without gearing.
9. Bolts, Hex Cap Screws, and Studs: Stainless Steel per ASTM F593

B. Manufacturers:
1. Mueller Company
2. Clow Eddy - Iowa
3. American Flow Control
4. Approved Equal

2.2 GATE VALVES 3-INCH THROUGH 12-INCH DIAMETER

A. Resilient Wedge Gate Valves: AWWA C509 or AWWA C515; iron body, bronze or ductile iron; including the manufacturer's name, pressure rating, and year of fabrication cast into valve body.
1. Resilient seats.
2. Stem
    a. Non-rising stem
    b. Minimum tensile strength: 60,000 psi
    c. Manganese bronze per ASTM B584/ASTM B763 or Type 304 or 316 stains steel per ASTM A276
3. Seals: O-ring stem seals.
4. Operator:
    a. Direct Bury: Operating Nut: 2-inch Square; open clockwise unless in treatment plant or pump station.
    b. Valve Vault or above grade: Handwheel: Open clockwise unless in treatment plant or pump station.
5. Ends:
    a. Direct Bury – Mechanical Joint with gaskets per AWWA C111 and low alloy steel bolts per ASTM A307.
    b. Valve Vault or above grade: Flanged with Type 306 stainless steel nuts and bolts.
6. Coating: AWWA C550; interior/exterior epoxy.
7. Sizes 12-inch diameter and smaller: 200 psig.
8. Bolts, Hex Cap Screws, and Studs: Stainless Steel per ASTM F593

B. Manufacturers:
1. Mueller Company
2. Clow Eddy - Iowa
3. American Flow Control
4. Approved Equal

2.3 MEDIUM EXTENSION GATE VALVE BOXES

A. Underground valves installed at a depth of 6 feet or less to the operating nut shall be equipped with an MEG. MEGs shall be made of cast iron and have an internal diameter of 7 inches. The base, top and lid shall be round, and shall have "WATER" cast on the lid.

B. 12-inch diameter Valves and Smaller: Domestic cast iron, three-piece, screw type; round base. Internal Diameter of 7-inches, with Cast iron lid marked "Water

2.4 MANHOLES

A. Per Section 02082

B. Valves 16-inches in diameter and greater shall be installed horizontally with bevel gearing. Operating mechanism shall be centered in manhole per standard detail drawings, unless otherwise noted.

C. If field conditions do not allow the installation of the horizontal valve with manhole, based on underground utility conflicts at the valve location, valve shall be installed vertically without gearing. Operating mechanism shall be centered in manhole per standard detail drawings.

D. If field conditions do not allow the installation of the manhole on a horizontal nor vertical valve, based on underground utility conflicts at the valve location, Owner shall determine if an MEG can be placed upon the valve at the particular location in lieu of the manhole structure.

2.5 ACCESSORIES

A. Concrete for Thrust Restraints: Concrete type specified in Section 03050.

B. Valve Box Aligner: High-strength, plastic device designed to automatically center valve box base and prevent valve box base from shifting off center during backfilling.

C. Polyethylene wrap specified in Section 02513.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Determine exact location and size of valves from Drawings; obtain clarification and directions from OWNER prior to execution of work.

C. Verify invert elevations of existing work prior to excavation and installation of valves.

3.2 PREPARATION

A. Identify required lines, levels, contours and datum locations.

B. Locate, identify, and protect utilities to remain from damage.

C. Do not interrupt existing utilities without permission and without making arrangements to provide temporary utility services.
   1. OWNER not less than 3 days in advance of proposed utility interruption.
   2. Do not proceed without written permission from the OWNER.

D. Perform trench excavation, backfilling and compaction in accordance with Section 02324.

3.3 INSTALLATION

A. All valves 16-inches and larger shall be installed in a precast manhole per Standard Details.

B. Install valves in conjunction with pipe laying; set valves plumb.

C. Provide buried valves with valve boxes installed flush with finished grade.

D. Wrap valves with polyethylene wrap per Section 02513.

3.4 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Flush and disinfect system in accordance with Section 02516.

3.5 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Pressure test system in accordance with AWWA C600 and the following:
   1. Test Pressure: Not less than 200 psi or 50 psi in excess of maximum static pressure, whichever is greater.
   2. Conduct hydrostatic test for at least two-hour duration.
   3. Fill section to be tested with water slowly, expel air from piping at high points. Install corporation cocks at high points. Close air vents and corporation cocks after air is expelled. Raise pressure to specified test pressure.
   4. Observe joints, fittings and valves under test. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage. Retest.
   5. Correct visible deficiencies and continue testing at same test pressure for additional 2 hours to determine leakage rate. Maintain pressure within plus or minus 5.0 psig of test pressure. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of test.
   6. Compute maximum allowable leakage by the following formula:

$L = (SDP^{0.5})/C$
L = testing allowance, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of pipe, in inches
P = average test pressure during hydrostatic test, in psig
C = 148,000
When pipe under test contains sections of various diameters, calculate allowable leakage from sum of computed leakage for each size.

7. When test of pipe indicates leakage greater than allowed, locate source of leakage, make corrections and retest until leakage is within allowable limits. Correct visible leaks regardless of quantity of leakage.

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SECTION 02086

WATER UTILITY DISTRIBUTION FIRE HYDRANTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Fire hydrants.

B. Related Sections:
   1. Section 02085 - Water Utility Distribution Valves.
   2. Section 02513 - Public Water Distribution Piping.
   3. Section 02515 - Water Service Connections.
   4. Section 02516 - Disinfection of Water Distribution Systems.
   5. Section 03300 - Cast-In-Place Concrete.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 - Price and Payment Procedures

1.3 REFERENCES

A. American Water Works Association:
   1. AWWA C502 - Dry-Barrel Fire Hydrants.
   2. AWWA C550 - Protecting Epoxy Interior Coating for Valves and Hydrants.
   3. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.

B. National Sanitation Foundation:
   1. NSF 61 - Drinking Water System Components - Health Effects

C. National Fire Protection Association:
   1. NFPA 281 - Recommended Practice for Fire Flow Testing and Marking of Hydrants

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Shop Drawing:
   1. Installation Plan: Submit description of proposed installation.

C. Design Data: Submit manufacturer's latest published literature; include illustrations, installation instructions, maintenance instructions and parts lists.

D. Manufacturer’s Certificates: Submit Statement of Compliance, supporting data, from material suppliers attesting that hydrants and accessories provided meet or exceed AWWA Standards and specification requirements.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of fire hydrants.

C. Provide Operation and Maintenance Data for fire hydrants.

1.6 QUALITY ASSURANCE

A. Provide uniform color scheme for fire hydrants in accordance with this section.

B. Perform work in accordance with Pittsburgh DPW and PWSA standards.

1.7 QUALIFICATIONS

A. Manufacturer: company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum three years documented experience.

1.8 DELIVERY, STORAGE AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing and protecting products.

B. Prepare hydrants and accessories for shipment according to AWWA Standards and seal hydrant and ends to prevent entry of foreign matter into product body.

C. Store products in areas protected from weather, moisture, or possible damage; do not store products directly on ground; handle products to prevent damage to interior or exterior surfaces.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.

B. Conduct operations not to interfere with, interrupt, damage, destroy, or endanger integrity of surface or subsurface structures or utilities, and landscape in immediate or adjacent areas.

1.10 COORDINATION

A. Section 01300 - Administrative Requirements: Requirements for coordination.

PART 2 PRODUCTS

2.1 FIRE HYDRANTS

A. Manufacturers:

1. Kennedy Valve – Guardian Type K81.
2. American Flow Control – American Darling Type B-84-B-5.
3. Mueller Co. – Super Centurion - 250 Type A-423.
4. No substitutions.

B. Dry-barrel Break-away Type: AWWA C502; cast-iron body, compression type valve.
1. Bury Depth: Minimum 4-feet.
2. Inlet Connection: 6 inches.
3. Valve Opening: 5-1/4 inches diameter.
4. Ends: Mechanical Joint.
5. Bolts and Nuts: Galvanized steel Stainless steel Bronze.
6. Coating: AWWA C550; interior.
7. Direction of Opening: Clockwise unless otherwise indicated.
8. Operating Stem Nut: 1 ½" pentagonal.

C. One steamer (pumper), two hose nozzles.
1. Hose: 2 ½" with thread design per Standard Detail WS-8.
2. Steamer (Pumper): 4 ½" threaded to meet NFPA No. 194.
3. Attach nozzle caps by separate chains.

D. Finish
1. Below Grade: Two (2) coats approved asphaltum paint
2. Above Grade: Primer and two coats of enamel
3. Color
   a. Dome and Caps – Safety White No. 97-612
   b. Barrel – According to size of main to which fire hydrant is connected
      1) 8" diameter main and under – Safety Red No. 97-601
      2) 10" to 20" diameter main – Safety Yellow No. 97-602
      3) 24" diameter main and greater – Safety Green No. 97-604

2.2 ACCESSORIES

A. Concrete for Thrust Restraints: Concrete type specified in Section 03300.

B. Aggregate: Type A3 for hydrant drainage as specified in Section 02060.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Determine exact location and size of hydrants from Drawings; obtain clarification and directions from OWNER prior to execution of work.

C. Verify invert elevations of existing work prior to excavation and installation of fire hydrants.

3.2 PREPARATION

A. Identify required lines, levels, contours and datum locations.

B. Locate, identify, and protect utilities to remain from damage.

C. Do not interrupt existing utilities without permission and without making arrangements to provide temporary utility services.
   1. Notify OWNER not less than 3 days in advance of proposed utility interruption.
   2. Do not proceed without written permission from the OWNER.

D. Perform trench excavation, backfilling and compaction in accordance with Section 02324.

3.3 INSTALLATION

A. Refer to Standard Detail WS-4

B. Install fire hydrants; provide support blocking and drainage gravel; do not block drain hole.

C. Set hydrants plumb with pumper nozzle facing roadway; set hydrants with centerline of pumper nozzle 18 inches above finished grade and safety flange not more than 6 inches nor less than 2 inches above grade.

D. After hydrostatic testing, flush hydrants and check for proper drainage.

3.4 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

A. Flush and disinfect system in accordance with Section 02516.

3.5 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements 01700 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.

B. Pressure test system in accordance with AWWA C600 and the following:
   1. Test Pressure: Not less than 200 psi or 50 psi in excess of maximum static pressure, whichever is greater.
   2. Conduct hydrostatic test for at least two-hour duration.
   3. Fill section to be tested with water slowly, expel air from piping at high points. Install corporation cocks at high points. Close air vents and corporation cocks after air is expelled. Raise pressure to specified test pressure.
   4. Observe joints, fittings and valves under test. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage. Retest.
   5. Correct visible deficiencies and continue testing at same test pressure for additional 2 hours to determine leakage rate. Maintain pressure within plus or minus 5.0 psig of test pressure. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of test.
   6. Compute maximum allowable leakage by the following formula:

$L = (SDP^{0.5})/C$
L = testing allowance, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of pipe, in inches
P = average test pressure during hydrostatic test, in psig
C = 148,000
When pipe under test contains sections of various diameters, calculate allowable leakage from sum of computed leakage for each size.

7. When test of pipe indicates leakage greater than allowed, locate source of leakage, make corrections and retest until leakage is within allowable limits. Correct visible leaks regardless of quantity of leakage.

END OF SECTION

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SECTION 02230

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Removing surface debris.
   2. Removing designated trees, shrubs, and other plant life.
   3. Removing abandoned utilities.
   4. Removing old, abandoned structures or obstructions.
   5. Sawcutting.
   6. Excavating topsoil.

B. Related Sections:
   1. Section 01300 - Administrative Requirements.
   2. Section 01330 - Submittal Procedures.
   3. Section 02316 - Rock Removal.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 - Price and Payment Procedures

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Indicate compliance with applicable codes for environmental protection.

C. Written Agreement between owner of property on which the disposal of surplus material is to be placed and the CONTRACTOR. Agreement must state that the property owner gives permission for the CONTRACTOR to enter and deposit surplus material at no expense or involvement of the OWNER.

1.4 QUALITY ASSURANCE

A. Conform to applicable code for environmental requirements, disposal of debris, burning debris on site with valid permit with jurisdiction over open burning, and use of herbicides.

B. Perform Work in accordance with City of Pittsburgh, Department of Public Works, municipality in which the work is being performed, and the Allegheny County Conservation District standards.

PART 2 PRODUCTS – Not used

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting Work.

B. Verify existing plant life designated to remain is tagged or identified.

C. Identify waste area and/or salvage area for placing removed (surplus) materials and provide written agreement between CONTRACTOR and the property on which the disposal is proposed.

D. Complete all exploratory excavation along planned utility relay prior to saw cutting entire area to be excavated.

3.2 PREPARATION

A. Call Local Utility Line Information service at 1-800-242-1776 not less than three (3) and not more than ten (10) working days before performing Work.
   1. Request underground utilities to be located and marked within and surrounding construction areas.

3.3 PROTECTION

A. Locate, identify, and protect utilities indicated to remain, from damage.

B. Protect all live trees, plant growth, and features designated to remain unless permitted or ordered by the OWNER. Do not nail or staples any signs to trees designated to remain.

C. Protect bench marks, survey control points, and existing structures from damage or displacement.

D. Protect exposed bare earth by mulch, or other appropriate measures if clearing and grubbing operations are completed two (2) days prior to pipeline installation.

E. Repair all injuries to bark, trunk, limbs, and roots of remaining plants by properly dressing, cutting, tracing and painting, using approved arboricultural practices and materials.

F. The CONTRACTOR shall take all reasonable steps to not injure any tree planted in or near the limits of Work. The CONTRACTOR shall be responsible for ensuring all Work is compliant with City of Pittsburgh Code of Ordinances in the Home Rule Charter, Title Four, Article 13, Chapters 483 & 485 pertaining to protection of trees. The CONTRACTOR shall repair or replace, to the satisfaction of the OWNER, damaged trees at no additional payment.

G. Remove protective fences, enclosures and guards upon the completion of the Work.

H. Shrubs removed and saved for replanting should be replanted in original location within a few days. If this is not possible, shrubs shall be replanted at another location acceptable to the property owner.

3.4 CLEARING

A. Clear areas required for access to site and execution of Work.

B. Remove trees and shrubs within marked areas. Remove stumps, and large roots. Refill the depression with suitable compacted earth fill where necessary to bring the grade back to its original elevation or final grade.

C. Clear undergrowth and deadwood, without disturbing subsoil.

3.5 REMOVAL

A. All material collected in the course of the clearing and grubbing, and not to remain, shall become the property of the CONTRACTOR and shall be disposed of in a manner satisfactory to the OWNER. Remove debris, rock, and extracted plant life from site.

B. If pavement and curbs are to be removed, neatly saw cut edges at right angle to surface.

C. Remove abandoned utilities unless noted on Drawings to abandon in place with flowable fill. Indicated removal termination point for underground utilities on Record Documents.

D. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.

E. Do not burn or bury materials on site. Leave site in clean condition.

3.6 SAWCUTTING

A. The CONTRACTOR shall sawcut all rigid pavement to a depth which will allow removal of the material without causing damage to the adjacent pavement.

B. Sidewalks are to be sawcut at the nearest joint.

C. If pavement and curbs are to be removed, neatly saw cut edges at right angle to surface.

D. Rough, jagged or cracked edges will not be acceptable.

E. Any damage caused by the CONTRACTOR to any portion of a structure not intended for repair shall be repaired by the CONTRACTOR, at the CONTRACTOR’S expense, to the satisfaction of the OWNER.

3.7 TOPSOIL EXCAVATION

A. Excavate topsoil from areas to be further excavated, filled, relandscaped, or regraded, without mixing with foreign materials for use in finish grading. Do not excavate wet topsoil.

B. Stockpile topsoil at a location approved by the OWNER for use in finish grading. Protect from erosion.

C. Excess topsoil shall become the property of the OWNER and not used as backfill or removed from the site.

END OF SECTION

SECTION 02241

DEWATERING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Dewatering system.
2. Surface water control system.
3. System operation and maintenance.
4. Water disposal.

B. Related Sections:
1. Section 02082 - Public Manholes And Structures.
2. Section 02085 - Water Utility Distribution Valves.
3. Section 02086 - Water Utility Fire Hydrants.
4. Section 02324 – Trenching, Backfilling and Compaction.
5. Section 02374 - Erosion Control Devices.
6. Section 02513 - Public Water Distribution Piping.
7. Section 02515 - Water Service Connections.
8. Section 02539 - Public Sanitary and Storm Sewer Piping.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures.

1.3 DEFINITIONS

A. Dewatering includes the following:
1. Lowering of ground water table and intercepting horizontal water seepage to prevent ground water from entering excavations and trenches.
2. Disposing of removed water.

B. Surface Water Control: Removal of surface water within open excavations.

1.4 SYSTEM DESCRIPTION

A. Provide dewatering and surface water control systems to permit Work to be completed on dry and stable subgrade.

B. Furnish standby equipment stored at Project site and ready for immediate use upon failure of dewatering equipment. Provide the following standby equipment, but not less than one of each type:
1. Dewatering Pumps
2. Portable Electric Generators

1.5 PERFORMANCE REQUIREMENTS

A. Design dewatering systems to:
   1. Lower water table within areas of excavation to permit Work to be completed on dry and stable subgrade.
   2. Prevent damage to adjacent properties, buildings, structures, utilities, and facilities from construction operations.
   3. Prevent loss of fines, quick condition, or softening of foundation subgrade.

B. Design surface water control systems to:
   1. Collect and remove surface water and seepage entering excavation.

1.6 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data for each of the following:
   1. Dewatering Pumps: Indicate sizes and capacities.
   2. Pumping equipment for control of surface water within excavation.

1.7 QUALITY ASSURANCE

A. Comply with authorities having jurisdiction for the following:
   1. Water discharge and disposal from pumping operations.

1.8 SEQUENCING

A. Sequence work to install dewatering and surface water control systems before starting excavation and/or trenching.

1.9 COORDINATION

A. Coordinate work to permit the following construction operations to be completed on dry stable substrate.
   1. Trenching for utilities specified in Section 02324 - Trenching, Backfill, and Compaction.

PART 2 PRODUCTS

2.1 DEWATERING EQUIPMENT

A. Select dewatering equipment to meet specified performance requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

3.2 PREPARATION

A. Protect existing adjacent buildings, structures, and improvements from damage caused by dewatering operations.

3.3 DEWATERING SYSTEM

A. Locate system components to allow continuous dewatering operations without interfering with installation of permanent Work and existing public rights-of-way, sidewalks, and adjacent buildings, structures, and improvements.

3.4 SURFACE WATER CONTROL SYSTEM

A. Divert surface water and seepage water within excavation areas into sumps and pump water into Discharge water into water filter bag located in a vegetated or hard surface area.

B. Control and remove unanticipated water seepage into excavation.

3.5 SYSTEM OPERATION AND MAINTENANCE

A. Operate dewatering system continuously until backfill is minimum 2 feet above normal ground water table elevation.

B. When dewatering system cannot control water within excavation, stop excavation work.
   1. Supplement or modify dewatering system and provide other remedial measures to control water within excavation.
   2. Demonstrate dewatering system operation complies with performance requirements before resuming excavation operations.

C. Modify dewatering and surface water control systems when operation causes or threatens to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells.

3.6 WATER DISPOSAL

A. Discharge water into water filter bag located in a vegetated or hard surface area.

3.7 SYSTEM REMOVAL

A. Remove dewatering and surface water control systems after dewatering operations are discontinued.

B. Repair damage caused by dewatering and surface water control systems or resulting from failure of systems to protect property.

3.8 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements and 01700 - Execution Requirements.
   1. Maintain records of hours of operation for each pump used in dewatering activities.

END OF SECTION

SECTION 02281

MANHOLE AND CATCH BASIN GRADE ADJUSTMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Raising manhole frames and covers.
2. Replacing manhole frames and covers.

B. Related Sections:
1. Section 02082 – Public Manholes and Structures.
2. Section 02539 – Public Sanitary and Storm Sewer Piping.
3. Section 02740 - Asphalt Pavement.
4. Section 02750 - Concrete Pavement
5. Section 03300 - Cast-In-Place Concrete

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 - Price and Payment Procedures

1.3 REFERENCES

A. ASTM International:
1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
2. ASTM C32 - Standard Specification for Sewer and Manhole Brick (Made from Clay or Shale).
3. ASTM C478 – Standard Specification for Circular Precast Reinforced Concrete Manhole Sections.
4. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
5. ASTM C642 - Standard Test Method for Density, Absorption, and Voids in Hardened Concrete.
6. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
7. ASTM D395 - Standard Test Method for Rubber Property - Compression Set.
8. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
9. ASTM D573 - Standard Test Method for Rubber-Deterioration in an Air Oven.
10. ASTM D575 - Standard Test Methods for Rubber Properties in Compression.
11. ASTM D2240 - Standard Test Method for Rubber Property-Durometer Hardness.
12. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
13. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manhole covers and riser rings construction, features, configuration, and dimensions.

C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

D. Qualifications listed in paragraph 1.7.

1.5 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual grade adjustment elevation of manhole.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with OWNER and City of Pittsburgh Department of Public Works Construction Standards.

1.7 QUALIFICATIONS

A. Installer: Company specializing in performing work of this section with minimum 3 years documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Accept materials on site in undamaged, unopened container, bearing manufacturer’s original labels. Inspect for damage.

B. Protect materials from damage by storage in secure location.

1.9 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS

2.1 MANHOLE FRAMES AND COVERS

A. Conform to Section 02082 – Public Manholes and Structures.

2.2 GRADE ADJUSTMENT RINGS

A. Rubber Adjustment Riser (Adjustment of 3” total thickness and less):
   1. Flat or tapered.
   2. Manufacturer and Product List
      a. East Jordan – Infra Riser
      b. Approved Equal

B. Reinforced Concrete Grade Adjustment Ring (Adjustment from 3” to 12” total thickness):
   1. Non-tapered ring only.
   2. Design meets the requirements of ASTM C478.
   3. Minimum concrete compressive strength: 4000 psi at 28 days.
   4. Free from cracks, voids, and other defects.
   5. Width to accommodate manhole frame and allow frame to fastened to the grade ring with a minimum of two bolts.
   6. Provide bolt holes to accommodate frame anchor bolts. No field drilling of holes will be permitted.
   7. Inside diameter: to match manhole frame and cover.
   8. To minimize the number of joints, grade adjustment shall be made using the minimum number of grade adjustment rings possible.

C. Adjustment by brick and mortar is prohibited.

D. Accessories:
   1. Joint Sealant: Polyurethane Joint Sealant/Adhesive conforming to ASTM C990.
   2. Bolts:
      a. Stainless steel, ASTM F593.
      b. ¾” Diameter
      c. Embedded Depth: 2” Minimum

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify and locate manholes requiring grade adjustment.

3.2 EXISTING WORK

A. Saw cut existing paving.

B. Excavate.

C. Clean manholes.

D. Remove existing manhole frames and covers.

E. Repair waterproofing.

3.3 RAISING MANHOLE FRAMES AND COVERS

A. Locate and raise manholes to grade as indicated on Drawings.
   1. Adjustment 12” or Less:
      a. Use materials listed in paragraph 2.2.
   2. Adjustment Greater Than 12”:
      a. For Pre-Cast Concrete Manholes:
         1) Remove top Cone Section of manhole.

2) Install new pre-cast concrete manhole barrel section of appropriate length, conforming to Section 02082 - Public Manholes and Structures.
3) Reinstall or replace top cone section.
4) Perform final (small) adjustment as necessary.

b. For Brick Manholes:
1) See Standard Detail MHT.
2) Adjustments greater than four (4) foot in depth shall be approved by the OWNER and conform to Standard Detail MHT.

B. Use flat or tapered rubber manhole rings to achieve elevation indicated for frame and cover.

C. Do not adjust elevation more than 3 inches with rubber manhole rings.

D. Apply 2 ½" continuous beads of sealant between manhole, grade rings, and frame.

E. Reinstall removed manhole frame and cover.

3.4 REPLACING MANHOLE FRAMES AND COVERS

A. Remove existing manhole frames and covers to enable reuse.

B. Deliver removed manhole frames and covers to OWNER as maintenance materials.

C. Install new frames and covers for manholes as indicated on Drawings. Adjust to match finished grade as indicated on Drawings. Seal joints between manholes and manhole frames. Apply 2, ½" continuous beads of sealant between manhole, grade rings, and frame.

3.5 PAVING RESTORATION

A. Restore paving areas in accordance Sections 02740 – Asphalt Pavement and 02750 – Concrete Pavement and applicable Standard Details.

END OF SECTION

SECTION 02316

ROCK REMOVAL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Removing rock during excavation.

B. Related Sections:
   1. Section 02082 - Public Manholes And Structures.
   2. Section 02085 - Water Utility Distribution Valves.
   3. Section 02086 - Water Utility Fire Hydrants.
   4. Section 02324 - Trenching, Backfilling and Compaction.
   5. Section 02374 - Erosion Control Devices.
   6. Section 02513 - Public Water Distribution Piping.
   7. Section 02515 - Water Service Connections.
   8. Section 02539 - Public Sanitary and Storm Sewer Piping.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 Price and Payment Procedures

1.3 DEFINITIONS

A. Trench Rock: hard igneous, sedimentary and/or metamorphic rock which cannot be excavated without blasting or by means of a track mounted power excavator and all boulders or detached stones having a volume of 0.5 cubic yard or more

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify site conditions and note subsurface irregularities affecting Work of this section.

3.2 PREPARATION

A. Identify required lines, levels, contours, and datum.

3.3 ROCK REMOVAL BY MECHANICAL METHOD

A. Excavate and remove rock by mechanical method at least twenty-five feet in advance of pipe laying.

B. Additional required rock excavation.
   1. Excavate in accordance with the directions and to the lines prescribed by the OWNER.
   2. In no cases will allowance be made for excavation outside of specified measurements for work required by the Contract or for additional work

C. In utility trenches, excavate to 6-inches below invert elevation of pipe and 24 inches wider than pipe diameter unless otherwise directed.

D. Cut away rock at bottom of excavation to form level bearing.

E. Where manholes are excavated in rock, they shall be excavated six (6) inches outside the exterior walls of the precast concrete and to a depth of the outside bottom with no additional payment being made for this rock excavation.

F. Immediately removed excavated material which is unfit for refilling from the work area and disposed of at a site mutually agreeable to the OWNER and CONTRACTOR. Site shall be out of the influence of streams and flood plains. Disposal sites shall be in compliance with all applicable Federal, State and local municipal codes

G. Correct unauthorized rock removal in accordance with backfilling and compacting requirements of Section 02324 - Trenching, Backfilling, and Compaction when required by OWNER.

3.4 FIELD QUALITY CONTROL

A. Section 01700 - Execution Requirements

END OF SECTION

SECTION 02322

SERVICE LINE VERIFICATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Utility Quality Levels
   2. Acceptable Minimally Intrusive Excavation Methods

B. Related Sections:
   1. Section 02060 - Aggregates for Earthwork.
   2. Section 02241 - Dewatering.
   3. Section 02324 - Trenching, Backfilling and Compaction.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures.

1.3 REFERENCES

A. American Society of Civil Engineers, CI/ASCE 38-02, “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data.”

B. American Public Works Association, Uniform Color Code.

1.4 DEFINITIONS

A. Utility: Any buried pipe, duct, conduit, or cable.

B. Minimally Intrusive Excavation Method (Soft Excavation): A method of excavation that minimizes the potential for damage to the structure being uncovered. Factors such as utility material and condition may influence specific techniques. Typical techniques for utility exposures include air-entrainment/vacuum-extraction, water-jet/vacuum-extraction, and careful hand tool usage.

1.5 SUBMITTALS

A. Section 01330 – Submittal Procedures.

B. Submit the minimally intrusive excavation method to be used on this contract.

C. Submit the proposed Lead Swab Kit to be used.

D. Submit a list of all equipment to be used for excavation, backfill and compaction conforming to Section 02324 – Trenching, Backfilling and Compaction.

1.6 MINIMALLY INTRUSIVE EXCAVATION METHODS

A. Hand Digging
   1. The CONTRACTOR shall use small (non-mechanically operated) hand held equipment such as a shovel. As with any excavation, extreme caution should be practiced if digging near hazardous utilities such as electric cable or gas distribution piping.

B. Vacuum Excavation
   1. Preferred method for non-destructive exposure of buried utilities. The CONTRACTOR shall use an approved vacuum device to collect the spoil generated by either of the two soil loosening methods detailed below. Of the two methods, air vacuum excavation is generally preferred, though specific site and environmental characteristics may lead to a decision to use water vacuum excavation.
      a. Air. Air vacuum excavators utilize the kinetic energy in a high velocity air stream to penetrate, expand and break-up soil. The loosened parcels of soil and rock are then removed from the excavation through the use of a powerful vacuum.
         1) Spoils from this method are permitted to be utilized to backfill the test pit, unless it is within a street or sidewalk area.
      b. Water. Water vacuum excavation systems dig the excavation using high-pressure water to reduce and loosen the soil. The wet soil and mud slurry are removed to a spoil tank using a powerful vacuum.
         1) Spoils from this method are NOT permitted to be utilized to backfill the excavation.
         2) Spoils from this method shall be removed and disposed of at an approved facility at no additional cost to the OWNER.

PART 2 PRODUCTS

2.1 LEAD SWAB KIT

A. Recognized by EPA for conforming to the Lead Renovation, Repair and Painting (RRP) rule: 40 CFR 745.88.

PART 3 EXECUTION

3.1 PREPARATION

A. PA ONE CALL: Requirements for making the required PA One Call request prior to any excavation. Call Local Utility Line Information service at 1-800-242-1776
   1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Locate each curb box for each water service that a test pit will be dug for. Make use of line locators, metal detectors and other equipment if the curb box is not at the ground surface.

C. Identify required lines, levels, contours, and datum locations.

D.

E. Protect plant life, lawns, and other features remaining as portion of final landscaping.

F. Protect bench marks, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

G. Maintain and protect above and below grade utilities indicated to remain.

H. Provide for the maintenance and protection of vehicular and pedestrian traffic on each Project Street and adjacent walkways when trenching is performed in public right-of-way.

3.2 LOCATING SERVICE LINE VERIFICATIONS

A. Service Line Verifications should never be performed outside of the right-of-way unless approved by the OWNER in writing.

B. Service Line Verifications are to be conducted at the curb stop unless the curb stop is unable to be located. If this occurs, the location of the Service Line Verification will be as directed by the CONSTRUCTION MANAGER.

3.3 EXCAVATION

A. Setup equipment as necessary.

B. Sawcut existing pavement or concrete sidewalk. Remove and dispose construction debris.

C. Perform excavation to the dimensions necessary, and as specified, to determine the public and/or private service line material.

D. When the CONTRACTOR's excavation is within the pipe-zone (12-inches above) of the service line (as determined by measuring down at the curb box), CONTRACTOR must utilize soft excavation methods to expose the curb stop and service lines. The service lines must be exposed and cleaned so that they can be identified with a photograph.
   1. If excavation is made at the curb stop, at least 24-inches of the service lines on either side of the curb stop must be exposed.
   2. If excavation is made at the tap on the water main, at least 24-inches of the public service line beyond the corporation stop must be exposed.

E. Dewater excavations in accordance with Section 02241 to maintain dry conditions and preserve final grades at bottom of excavation.

F. CONTRACTOR shall cooperate with and leave the excavation exposed for CONSTRUCTION INSPECTOR to take a photograph which will allow proper identification of the service line materials.

G. Backfill the excavation with approved backfill material in accordance with Section 02324 – Trenching, Backfilling and Compaction.

H. Compact with approved compaction equipment to achieve compaction requirements in accordance with Section 02324 – Trenching, Backfilling and Compaction.

END OF SECTION

SECTION 02324

TRENCHING, BACKFILLING AND COMPACTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Excavating trenches for utilities.
2. Backfilling for pipe bedding and pipe initial backfill.
3. Compacted fill from top of utility bedding to subgrade elevations.
4. Backfilling and compaction.
5. Sheeting, bracing, and shoring.

B. Related Sections:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02082 - Public Manholes and Structures.
3. Section 02230 - Site Clearing.
4. Section 02316 - Rock Removal.
5. Section 02241 - Dewatering.
6. Section 02513 - Public Water Distribution Piping.
7. Section 02515 - Water Service Connections.
8. Section 02539 - Public Sanitary and Storm Sewer Piping.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:
1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.4 DEFINITIONS

A. Utility: Any buried pipe, duct, conduit, or cable.

1.5 SUBMITTALS

A. Section 01330 – Submittal Procedures.

B. Excavation Protection Plan signed and sealed by a Professional Engineer licensed in the Commonwealth of Pennsylvania: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.

C. Submit certified compaction testing results from the Independent Soils Testing Laboratory.

D. Submit list of all equipment to be used for compacting including manufacturer's lift thickness limitations.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

B. Comply with OSHA 29 CFR 1926 Subpart P, Excavations.

C. Maintain one copy of each document on site.

1.7 QUALIFICATIONS

A. Prepare excavation protection plan under direct supervision of Professional Engineer experienced in design of this Work and licensed in the Commonwealth of Pennsylvania.

1.8 FIELD MEASUREMENTS

A. Verify that intended elevations for the Work are as shown on Drawings.

B. Verify field measurements prior to fabrication.

1.9 COORDINATION

A. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 PRODUCTS

2.1 FILL MATERIALS

A. Pipe Bedding and Initial Backfill: Type A1 as specified in Section 02060 – Aggregates for Earthwork.

B. Aggregate Trench Backfill: Type A2 as specified in Section 02060 – Aggregates for Earthwork.

PART 3 EXECUTION

3.1 LINES AND GRADES

A. Lay pipes to lines and grades indicated on Drawings and Standard Details.

B. The CONTRACTOR shall furnish all labor, material, and surveying instruments and tools to establish and maintain all lines and grades from the drawings furnished by the OWNER. Use laser-beam instrument with qualified operator to establish lines and grades. Maintaining grade and alignment of the pipe by methods other than use of laser beam will only be permitted when approved by the OWNER.

C. All water main shall be placed a minimum 48-inches below grade measured from the top of the pipe.

3.2 PREPARATION

A. PA ONE CALL: Requirements for making the required PA One Call request prior to any excavation.

B. Identify required lines, levels, contours, and datum locations.

C. Protect plant life, lawns, and other features remaining as portion of final landscaping.

D. Protect bench marks, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

E. Maintain and protect above and below grade utilities indicated to remain.

F. Provide for the maintenance and protection of vehicular and pedestrian traffic on each Project Street and adjacent walkways when trenching is performed in public right-of-way.

3.3 TRENCHING

A. Excavate subsoil required for installation.

B. Remove excavated material from site.

C. Dewater excavations in accordance with Section 02241 - Dewatering to maintain dry conditions and preserve final grades at bottom of excavation.

D. Perform excavation within 24 inches of existing utility service in accordance with utility’s requirements.

E. Do not advance open trench more than 50 feet ahead of installed pipe.

F. Cut trenches to width indicated on applicable Standard Details. Remove water or materials that interfere with Work.

G. Excavate bottom of trenches maximum two (2) feet wider than outside diameter of pipe.

H. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and pipe.

I. Do not interfere with 45 degree bearing splay of foundations.

J. Comply with OSHA 29 CFR 1926 Subpart P, Excavations.

K. Provide sheeting and shoring to protect excavation as specified in this section.

L. When subsurface materials at bottom of trench are loose or soft, excavate to greater depth as instructed by the OWNER until suitable material is encountered. Backfill is Aggregate Type A1 as specified in Section 02060 – Aggregates for Earthwork. When instructed by the OWNER, cut out soft areas of subgrade not capable of compaction in place. Backfill with Fill Type A1 and compact to density equal to or greater than requirements for subsequent backfill material.

M. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.

N. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as instructed by the OWNER. No payment will be granted for over-excavation not approved by the OWNER.

O. Remove excess subsoil from site.

3.4 SHEETING, BRACING, AND SHORING

A. All work performed and materials used shall be in conformity with the requirements of the State Department of Labor and Industry and other State and Local laws and requirements as well as OHSA 29CFR 1926, Subpart P, Excavations.

B. Material for sheet piling, sheeting, bracing and shoring shall be furnished and driven or set in place by the CONTRACTOR in accordance with the current regulations of the Pennsylvania Department of Labor and Industry for excavations and construction.

C. Wherever in the opinion of the OWNER the materials being used or the method being followed do not comply with the Specifications or Drawings or are not in conformance with generally accepted practices for that type of work, the OWNER may stop that phase of the work. Any such interruption shall not be the basis for any claim for damages against the OWNER.

D. All sheeting, sheet piling, braces or shores shall be installed place by workers skilled in such work and shall be so arranged that they may be withdrawn as the trenches are backfilled, without injury to the water and/or sewer lines and appurtenance and without injury to or settlement of adjacent structures and/or pavements.

E. All planks used for sheeting and sheet piling and all timber used for braces, shores and stringers or waling-strips shall be sound, straight-grained yellow pine, Douglas fir or other material of equal or greater strength.

F. All plank and timber shall be free from cracks, shakes and large or loose knots.

G. Planks shall be tongued and grooved or grooved and splinted if so required. Steel sheeting, if used, shall be the standard and generally accepted product of a recognized manufacturer.

H. Sheeting, sheet piling, bracing and shoring shall be withdrawn and removed as the trenches are being backfilled, except where and to such an extent as the OWNER shall require in writing that the same be left in place or where he shall permit the CONTRACTOR to leave the same in place at the CONTRACTOR's own request and cost.

I. In withdrawing sheeting and sheet piling, all voids or holes left by the plank as they are withdrawn shall be filled with satisfactory material and thoroughly rammed with thin rammers provided especially for that purpose at no additional cost to OWNER.

3.5 EXCAVATION

A. Excavate subsoil required for structures.

B. Comply with OSHA 29 CFR 1926 Subpart P, Excavations.

C. Remove excavated material from site.

D. Perform excavation within 24 inches of existing utility service in accordance with utility’s requirements.

E. Cut excavation sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.

F. Excavate bottom of excavation maximum 2 feet wider than outside perimeter of vault or valve box.

G. Excavate to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and vault.

H. Do not interfere with 45 degree bearing splay of foundations.

I. Provide sheeting and shoring to protect excavation as specified in this Section.

J. When subsurface materials at bottom of excavation are loose or soft, excavate to greater depth as instructed by the OWNER until suitable material is encountered.

K. When instructed by the OWNER, cut out soft areas of subgrade not capable of compaction in place. Backfill with Fill Type A1 and compact to density equal to or greater than requirements for subsequent backfill material.

L. Trim excavation. Remove loose matter.

M. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as instructed by the OWNER. No payment will be made for over-excavation not approved by the OWNER.

N. Remove excess subsoil from site.

3.6 PIPE INSTALLATION

A. Install pipe in accordance with Sections 02513 – Public Water Distribution Systems and 02539 – Public Sanitary and Storm Sewer Piping.

3.7 BACKFILLING

A. Backfill trenches and excavations to contours and elevations with unfrozen fill materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

C. Place fill material in continuous layers and compact in accordance with schedule at end of this section.

D. Fill with Type A1 compacted granular material from the bottom of the excavation to the top of the pipe. Mechanical placement of backfill material not permitted.

E. Backfill with Type A1 granular material from the top of the pipe to the top of the pipe zone area. Pipe bedding shall be a depth of 6-inches below the pipe and 12-inches on either side of the pipe. Initial backfill shall be 12-inches above the pipe. Mechanical placement of backfill material not permitted.

F. Backfill with Type A2 granular material from 12-inches above pipe to street base bottom elevation. Start twelve inches above the crown of the pipe to the street sub-grade elevation and the field trench width dimensions. First 12 inches above pipe zone area to be backfilled and compacted by hand.

G. Employ placement method that does not disturb or damage utilities in trench.

H. Maintain optimum moisture content of fill materials to attain required compaction density.

I. Backfill pipe at the end of each day. Open trench is allowable only with approval of the OWNER and City of Pittsburgh. Steel plates over trench or excavation shall comply with the requirements of the DPW Right of Way Manual.

3.8 COMPACTION SCHEDULE

A. Pipe Zone
   1. Fill Type A1: Compact uniformly to minimum 95 percent of dry maximum density (98 percent of maximum dry density within railroad right-of-way).

B. Structural backfill under pavement or concrete
   1. Fill Type: A2
   2. Compact uniformly to minimum 95 percent of maximum dry density (98 percent of maximum dry density within railroad right-of-way).

3.9 TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Top Surface of Backfilling: Plus or minus 1 inch from required elevations.

3.10 FIELD QUALITY CONTROL

A. Perform laboratory material tests in accordance with ASTM D1557, ASTM D698, AASHTO T180.

B. Perform in place compaction tests in accordance with the following:
   1. Density Tests: PTM 106, Method B or PTM 402, ASTM D698, or ASTM D2922.
   2. Moisture Tests: ASTM D3017.

C. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

D. Frequency of Tests: As required by the OWNER, but not more than 3 tests every 1,000 ft.

3.11 PROTECTION OF FINISHED WORK

A. Reshape and re-compact fills subjected to vehicular traffic during construction.

END OF SECTION

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SECTION 02374

EROSION CONTROL DEVICES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Furnishing, installing, maintaining and removal/proper disposal of erosion and sedimentation controls for storm inlet protection.
2. Erosion control mats.
3. Compost filter sock.

B. Related Sections:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02230 - Site Clearing.
3. Section 02316 - Rock Removal.
4. Section 02324 - Trenching, Backfilling and Compaction
5. Section 02924 - Landscape Restoration.
6. Section 03300 - Cast-In-Place Concrete.

1.2 REFERENCES

A. American Association of State Highway and Transportation Officials:
1. AASHTO T88 - Standard Specification for Particle Size Analysis of Soils.
2. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

B. ASTM International:
1. ASTM C127 - Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate.
2. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
4. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
5. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

C. PennDOT form 408, Sections 860 (Storm Inlet Protection), Section 861 (Cleaning Sedimentation Structures), and Sections (806-Rolled Erosion Control Products) and 867-(Compost Filter Sock).

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

1.4 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny county, PennDOT, and the OWNER.

1.6 MEETINGS

A. Section 01300 - Administrative Requirements: Pre-Construction Meeting.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.

PART 2 PRODUCTS

2.1 INLET FILTER BAG

A. Provide PWSA approved filter bag from woven polypropylene material with the properties listed below:

Property	**Test Method**	**Units**	**Value***
Grab Tensile Strength	ASTM D4632	lbs	300
Grab Tensile Elongation	ASTM D4632	%	15-50
Seam Strength	ASTM D4632	%	90
Puncture Resistance	ASTM D4833	lbs	120
Mullen Burst Strength	ASTM D3786	psi	800
Trapezoidal Tear Strength	ASTM D4533	lbs	120
U.V. Resistance	ASTM D4355	%@150 hrs	80
Apparent Opening Size	ASTM D4751	Sieve No.	40
Flow Rate	ASTM D4491	gal/min/sf	40
Permitivity	ASTM D4491	Sec-1	0.55

*The numerical values indicate minimum average roll value (MARV)

B. Submit manufacture’s inlet filter bag specifications, including product specification sheets and drawings, for approval by the OWNER.

2.2 CONCRETE BLOCK/GRAVEL INLET PROTECTION FOR PENNDOT TYPE M, S, OR C INLETS AND ALL OWNER STORM INLETS/CATCH BASINS

A. Aggregate: AASHTO No. 57 (PENNDOT §703).

B. Precast Concrete Block: Hollow Cores (PENNDOT §713).

C. Mesh:

1. Wire Mesh, Galvanized No. 11 gage, 0.25-inch maximum opening.
2. Plastic Mesh, 0.25 inch maximum spacing.

D. Wood Stud: Spruce/Pine/Fur, 2-inch x 4-inch nominal sizing, construction grade (or As Directed).

2.3 PIPE/GRAVEL INLET PROTECTION FOR PENNDOT TYPE M, S, OR C INLETS AND ALL OWNER STORM INLETS/CATCH BASINS

A. Aggregate: AASHTO No. 57 (PennDOT §703).

B. Precast Concrete Block: Hollow Cores (PennDOT §713).

C. Mesh:
1. Wire Mesh, Galvanized, No. 11 gage, 0.25-inch maximum opening.
2. Plastic Mesh, 0.25-inch maximum opening.

D. Pipe: Polyvinyl Chloride, 15-inch diameter, ASTM D 3034 (or Approved Equal).

2.4 GRAVEL CURB INLET PROTECTION FOR CURB OPENING (OPEN THROAT) DROP INLETS

A. Aggregate: AASHTO No. 57 (PennDOT §703).

B. Approved Filter Cloth: Class 3, Type A Geotextile (PennDOT §735.1).

C. Mesh:
1. Wire Mesh, Galvanized, No. 11 gage, 0.25-inch maximum opening.
2. Plastic Mesh, 0.25 inch maximum opening.

D. Wood Stud (for Weir): Spruce/Pine/Fur, 2-inch x 4-inch nominal sizing, construction grade (or As Indicated).

2.5 PLANTING MATERIALS

A. Seeding and Soil Supplements: As specified in Section 02924-Landscape Restoration.

B. Mulch: As specified in Section 02924- Landscape Restoration.

2.6 ACCESSORIES

A. Erosion Control Mat: Furnish in accordance with PennDOT Form 408, Section 806.

B. Compost Filter Sock: Furnish in accordance with PennDOT Form 408, Section 867.

2.7 SOURCE QUALITY CONTROL (AND TESTS)

A. Section 01400-Quality Requirements: Testing, inspection and analysis requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify existing conditions, (subgrade, inlet grates, etc.) are acceptable and ready to support devices and imposed loads.

C. Verify installation of erosion control devices will not cause pedestrian/vehicular obstruction. Protect erosion control devices that infringe on the existing cart/pathway with appropriate safety devices (i.e.; cones, construction fencing, etc.).

3.2 CONSTRUCTION

A. Inlet Filter Bag
   1. Install bag in accordance with manufacturer's recommendation. Construct downstream earthen or sandbag berm (as indicated and directed). Inspect bag after each runoff event to ensure that the filter bag continues to function properly. Replace or remove and clean bag when sediment has accumulated to 1/3 full of when flow capacity has been reduced so as to cause flooding or bypassing of the inlet. Upon completion of the work and demobilization from the site, remove bag, downstream earthen or sandbag berm, and dispose of bag and sediment in a manner satisfactory to the OWNER.

B. Concrete Block/Gravel Inlet Protection
   1. Install as indicated. Construct downstream earthen or sandbag berm (as indicated and directed). Inspect inlet protection after each runoff event to ensure it continues to function properly. Replace or remove aggregate when it is contaminated with sediment, washed out, or as directed. Upon completion of the work and demobilization from the site, remove Inlet protection, downstream earthen or sandbag berm, and dispose of materials and sediment in a manner satisfactory to the OWNER.

C. Pipe/Gravel Inlet Protection
   1. Install as indicated. Construct downstream earthen or sandbag berm (as indicated and directed). Inspect inlet protection after each runoff event to ensure it continues to function properly. Replace or remove aggregate when it is contaminated with sediment, washed out, or as directed.

D. Gravel Curb Inlet Protection
   1. Install as indicated. Construct downstream earthen or sandbag berm (as indicated and directed). Inspect inlet protection after each runoff event to ensure it continues to function properly. Replace or remove aggregate when it is contaminated with sediment, washed out, or as directed. Upon completion of the work and demobilization from the site, remove Inlet protection, downstream earthen or sandbag berm, and dispose of materials and sediment in a manner satisfactory to the OWNER.

E. Erosion Control Mat: Install in accordance with PennDOT Form 408, Section 806.

1. General. Place erosion control materials after final grading and dressing slope, swale, or channel to define flow area and after applying designated soil supplements, seed, and mulch, as indicated. Install erosion control materials to conform to shape of soil surface.
   a. Unroll, place, and anchor mat evenly and smoothly, without stretching, to maintain contact with mulch surface at all points.
   b. Use appropriate anchoring devices and follow installation directions of the mat manufacturer.
   c. If staples are used, drive staple flush with the top of the mat or the mulch blanket surface so that the staple does not extend above the mat.

F. Compost Filter Sock: Furnish in accordance with PennDOT Form 408, Section 867.
   1. Fill filter sock with compost at the designated erosion control area or fill and transport to the project site.
   2. Fill filter sock with compost using pneumatic (blower) equipment or similar filter sock filling equipment to the length required.
   3. Place compost filter sock downslope of the earth disturbance on level contour as indicated. Extend both ends of the compost filter sock at least 8 feet upslope at 45 degrees to the main compost filter sock alignment. For lengths greater than 200 feet, use multiple compost filter sock sections and overlap ends at least 12 inches.
   4. Anchor compost filter socks placed on earthen slopes with stakes driven through the center of the compost filter sock or immediately downslope of the compost filter sock at 10 foot intervals consistent with PennDOT Form 408, Section 867.
   5. Use concrete blocks immediately downslope of the compost filter sock (at the same intervals recommended for the stakes) where compost filter socks are placed on paved surfaces.
   6. Do not place the compost filter sock where it will concentrate drainage runoff or channel water to another location.

3.3 SITE STABILIZATION

A. Incorporate erosion control devices at the earliest practicable time.

B. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

C. Stockpile and waste pile heights shall not exceed 35 feet. Slope stockpile sides at 2: 1 or flatter.

D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.
   1. During non-germinating periods, apply mulch at recommended rates.
   2. Stabilize disturbed areas which are not at finished grade and which will be disturbed within one year in accordance with Section 02924 at 70 percent of permanent application rate with no topsoil.

E. Stabilize stockpiles immediately.

3.4 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs immediately and within 24-hours of inspection where repairs are considered necessary to ensure erosion and sediment controls are in good working order.

3.5 CLEANING AND SEDIMENTATION STRUCTURES

A. This work is the removal and disposal of sediment deposited in the inlet/catch basin protection structure as well as the cleaning of sediment deposited in the protected inlet/catch basin as a result of the Work performed by the CONTRACTOR.

B. Due care shall be taken to ensure sediment does not fall into the inlet/catch basin and impede the function of the device. Any debris material falling into the inlet shall be removed.

C. Upon completion of the work, all inlet/catch basin protections are to be removed and the inlets and catch basins are to be inspected for residual sediment and debris material. Any sediment or debris material remaining in the structure is to be removed at no additional cost to the OWNER. Caution shall be taken so as to not damage the structure and related facilities during cleaning.

3.6 REPAIRS AND CLEANUP

A. CONTRACTOR shall repair to the satisfaction of the OWNER and with no additional compensation any damage to inlets and catch basins and related facilities caused by the Work.

B. CONTRACTOR shall remove and dispose of all debris and sediment materials from the structures with no additional compensation.

3.7 PROTECTION

A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.

B. Immediately after placement, protect erosion controls from damage.

END OF SECTION

SECTION 02513

PUBLIC WATER DISTRIBUTION PIPING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Pipe and fittings for public line including potable water line.
2. Tapping Sleeves and Valves.
3. Valves and Fire Hydrants.
4. Positive displacement meters.
5. Line Stops
6. Underground pipe markers.
7. Precast concrete vault.
8. Pipe Support Systems.
9. Bedding and cover materials.

B. Related Requirements:
1. Section 02060 - Aggregates for Earthwork
2. Section 02085 - Water Utility Distribution Valves.
3. Section 02241 - Dewatering.
4. Section 02324 – Trenching, Backfilling and Compaction.
5. Section 02515 - Water Service Connections.
6. Section 02516 - Disinfection of Water Distribution Systems.
7. Section 03300 - Cast-in-Place Concrete.

1.2 PRICE AND PAYMENT PROCEDURES

A. See Section 01200 – Price and Payment Procedures

1.3 REFERENCE STANDARDS

A. American Society of Mechanical Engineers:
1. ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings.

B. ASTM International:
1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM A240 – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
4. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes
5. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
6. ASTM B584 - Standard Specification for Copper Alloy Sand Castings for General Applications

7. ASTM F593 – Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs

C. American Water Works Association:
1. AWWA C104 - ANSI Standard for Cement Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. AWWA C105 - ANSI Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. AWWA C110 - ANSI Standard for Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In. (76 mm Through 1,219 mm), for Water.
4. AWWA C111 - ANSI Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. AWWA C115 - ANSI Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
6. AWWA C151 - ANSI Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids.
7. AWWA C153 - ANSI Standard for Ductile-Iron Compact Fittings for Water Service.
8. AWWA C213 - Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines.
9. AWWA C223 – Fabricated Steel and Stainless Steel Tapping Sleeves
10. AWWA C228 – Stainless-Steel Pipe Flanges for Water Service – Sizes 2 In. through 72 In.
11. AWWA C500 - Gate Valves for Water and Sewage Systems.
12. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
13. AWWA C655 - Field Dechlorination

D. Manufacturer’s Standardization Society of the Valve and Fittings Industry:
1. MSS SP-60 - Connecting Flange Joint between Tapping Sleeves and Tapping Valves.

E. National Fire Protection Agency:
1. NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances.

F. National Sanitation Foundation:
1. NSF 61 - Drinking Water System Components - Health Effects.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data on pipe materials, pipe fittings, valves and accessories.

C. Shop Drawings: Indicate piping layout for relay projects, including piping specialties.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

E. Pre-Construction Photographs:
1. Submit colored photographs of work areas and material storage areas.

F. For relay projects, submit plan for pressure testing.

G. Submit procedures for polyethylene encasement installation including procedures for service line tapping.

H. Submit vendor cut sheets, procedures, and detailed plan for all line stops.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

A. Valves: Mark valve body with manufacturer's name and pressure rating.

B. Perform Work in accordance with Pittsburgh DPW and OWNER standards.

C. Temporary line stops shall only be installed by vendor personnel or contractor personnel trained and certified for stop by the vendor.

-DELIVERY, STORAGE, AND HANDLING

D. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

E. Deliver and store valves in shipping containers with labeling in place.

F. Block individual and stockpiled pipe lengths to prevent moving.

G. Do not place pipe or pipe materials on private property or in areas obstructing pedestrian or vehicle traffic.

H. Store polyethylene materials out of sunlight.

1.7 EXISTING CONDITIONS

A. Verify field measurements prior to fabrication. Indicate field measurements on shop drawings.

PART 2 PRODUCTS

2.1 DUCTILE IRON PIPE

A. Zinc Coated Ductile Iron Pipe: AWWA C151.

B. Bituminous outside coating: AWWA C151.

C. Cement Mortar Lining: AWWA C104.

D. Polyethylene Encasement: AWWA C105.
   1. The polyethylene encasement shall consist of three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness with an eight (8) mil minimum thickness.
   2. The inside surface of the polyethylene encasement to be in contact with the pipe shall be infused with a blend of antimicrobial compound and a volatile corrosion inhibitor.
   3. Polywrap flat tube: Meet appropriate minimum width for size of pipe installed following AWWA C105, Method A, secured with polyethylene compatible adhesive tape.
   4. Flat sheet polywrap: Used for wrapping odd shaped appurtenances following AWWA C105, secured with polyethylene compatible adhesive tape.
   5. Manufacturer and Product List:
      a. V-Bio® Enhanced Polyethylene Encasement
      b. Approved equal
   6. Accessories
      a. Polyethylene compatible adhesive tape

E. Class: AWWA C151, Class 52 minimum

F. Zinc Coated DIP:
   1. External Coating for Ductile Iron Pipe: Zinc Coating conforming to AWWA C150 and C151 with the following minimum properties or approved equal.
      a. Coating system shall conform to ISO 8179
      b. Coated with a layer of arc-sprayed zinc.
         1) 200 g of zinc shall be applied per m2 of pipe surface area.
      c. Asphaltic top-coat shall be applied. The mean dry film thickness shall be greater than or equal to 3 mils. The local allowable minimum thickness is 2 mils.
      d. Interior surface shall be cleaned and lined at the pipe casting facility with a standard thickness cement-mortar lining applied in conformity with AWWA C104. An asphalt seal coat may be applied to the surface of the cement-mortar lining if part of manufacturer's standard practice.
      e. Pipe bell shall be painted with white or gray paint to signify the pipe is zinc coated.
         1) Alternatively, the manufacturer's name can be marked in the approximate middle of the barrel followed by the word "Zinc" with an optional 2-inch wide circumferential band of silver/gray-toned coating applied approximately 2-inches on both sides of that marking.
      f. Piping and flanges located within a vault shall follow all specifications for Zinc Coated DIP specified above except pipe and flanges are permitted to be painted by the manufacturer with paint that has a minimum of 85% zinc in the dry film. Arc-spray technique for zinc coating application is not required but is permitted for pipe and flanges within vaults and if used shall follow specifications provided above.
      g. Approved Manufacturers of zinc paint
         1) Tnemec Series 90-98
         2) Rustoleum Cold Galvanizing paint
         3) Or approved equal
   2. Handling, Transportation and Storage: per AWWA C600.

3. Lengths:
   a. 18 or 20 feet.

G. Pipe Joints:
   1. Buried Pipe, Unrestrained Joints:
      a. Push-On Joints: AWWA C111.
   2. Buried Pipe, Restrained Joints. All buried pipe joints within 10 feet of catch basins shall be restrained:
      a. Mechanical Joint Restraining Glands:
         1) MEGALUG Series 1100 (w/ Grade 304 Stainless Steel Bolts/Nuts and Fusion Bonded Epoxy Coating).
         2) Or Approved Equal.
      b. Manufacturer Proprietary Restrained Joint:
         1) Flex-Ring Restrained Joint Pipe by American.
         2) TR FLEX Restrained Joint Pipe by US Pipe.
         3) HP LOK Restrained Joint Pipe by US Pipe.
         4) Or Approved Equal.
      c. Push-On Joints (AWWA C111) with Restraining Gaskets:
         1) FastGrip Restraining Gaskets by American.
         2) FIELD LOK Restraining Gaskets by US Pipe.
         3) Or Approved Equal.
   3. Exposed Pipe: Flanged Joints: AWWA C115.

H. Fittings: Ductile iron, AWWA C110. Compact fittings AWWA C153.
   1. Coating and Lining:
      a. Fusion Bonded Epoxy Coating: AWWA C116.
      b. Cement Mortar Lining: AWWA C104.
   2. Joints:
      a. Buried: Mechanical Joints: AWWA C111.
      b. Exposed: Flanged Joints: AWWA C115.
   3. Jackets: AWWA C105 polyethylene jacket with Double layer, half lapped, 10 mil polyethylene tape.

I. Restrained Joints for Fittings
   1. Ductile Iron Mechanical Joints
   2. Coating:
      a. Fusion Bonded Epoxy
   3. Bolts and Nuts:
      a. Grade 304 Stainless Steel
   4. Manufacturer and Product List:
      a. MEGALUG Series 1100 (w/ Stainless Steel Bolts/Nuts)
      b. Approved equal

J. Insulated Transition Couplings.
   1. Ductile iron transition couplings and repair couplings shall be equal to or exceed the following:
      a. Center Ring: Ductile iron meeting or exceeding the latest revision of ASTM A-536, , fusion bonded epoxy coated. Follow AWWA C110 and AWWA C116.
      b. Gaskets: SBR per ASTM D 2000 MBA 710 compounded for potable water service.

c. End Rings: Ductile iron meeting or exceeding the latest revision of ASTM A-536, Grade 65-42-12.
d. Bolts and Nuts: 304 stainless steel track head, natural course roll thread with heavy hex nuts.
e. Insulating Boot: Ethylene Propylene Diene methylene (EPDM) compounded for water service and insulating properties.

2. Steel couplings.
   a. Manufacturer and Product List:
      1) Romac Style 400 with shop coat.
      2) Approved equal.

K. Rubber Gaskets, Lubricants, Glands, Bolts and Nuts: AWWA C111.

2.2 TAPPING SLEEVES AND VALVES

A. Tapping Sleeves: Full sleeve to permit use of full-sized cutters. Saddles are not acceptable.

B. Carbon Steel
1. Tapping sleeve shall meet AWWA C223 and certified to NSF/ANSI 61-G.
2. Body: Carbon Steel, ASTM A283C.
3. Neck: Carbon Steel, ASTM A53.
4. MJ Outlet: Carbon Steel, ASTM A36 and A53.
   a. MJ Outlet in accordance with AWWA C111.
5. Gasket: NSF-61 approved, Nitrile (Buna N/NBR) with temperature rating from -20ºF to +180ºF, per ASTM D2000.
6. Nuts and Bolts: ¾" (5/8" in 4" and 6" nominal) high strength low alloy steel per ASTM A307. Nuts shall be semi-finished hex head. Bolts shall be replaceable.
7. Coating: Fusion bonded epoxy per AWWA C213, coated to an average of 12-mil thickness.
8. Test Outlet and Plug: ¾" test outlet and plug with ¾" carbon steel plug with square head and fusion bonded epoxy coating.
9. Manufacturer and Product List:
   a. Smith Blair Type 622 MJ.
   b. Smith Blair Type 622 (Flanged outlet for non-direct bury applications).
   c. Section 01600 - Product Requirements: Requirements for substitutions for other manufacturers and products.

C. Stainless Steel
1. Tapping sleeve shall meet ASTM A240, AWWA C223 and certified to NSF/ANSI 61-G.
2. Body: Stainless Steel, Type 304L (top half), Type 304 (back half).
3. Neck: Stainless Steel, Type 304L.
4. Outlet: MJ Style.
   a. Stainless Steel, Type 304.
   b. In accordance with AWWA C111.
5. Gasket: NSF-61 approved, Nitrile (Buna N/NBR) with temperature rating from -20ºF to +180ºF, per ASTM D2000.
6. MJ Nuts and Bolts: ¾" T-Bolt, heavy hex nuts, high strength low alloy steel.

7. Body Nuts and Bolts: 5/8" UNC thread track head, Type 304 Stainless Steel, per ASTM A193. Nuts shall be heavy hex, Type 304 Stainless Steel, per ASTM A194. Nuts coated to prevent galling.
8. Test Outlet and Plug: ¾" test outlet and plug with ¾" bronze plug with square head
9. Manufacturer and Product List:
    a. Romac SSTIII-MJ.
    b. Romac SSTIII (Flanged outlet for non-direct bury applications).
    c. Section 01600 - Product Requirements: Requirements for substitutions for other manufacturers and products.

D. Tapping Valves:
1. Conform to Section 02085.
2. Inlet flanges shall conform to ANSI B16.1, Class 125 and MSS SP-60 (non-direct bury only). Mechanical joint outlets shall conform to AWWA C111 with low alloy steel bolts per ASTM A307.

2.3 VALVES AND FIRE HYDRANTS

A. Valves: Conform to Section 02085.

B. Fire Hydrants: Conform to Section 02086.

2.4 LINE STOPS

A. Line stops are to be used where specified to temporarily stop water line water flow without depressurizing the entire line. The line stop parts and installation equipment are to be rated at a minimum of 150 psig working pressure unless otherwise specified.

B. Materials and Construction
1. Tapping saddles shall have 360º clamping on the main.
2. Main sizes 4-inch - 8-inch to be fabricated of 304 Stainless Steel;
3. Main sizes 10-inch and greater to be fabricated Carbon Steel with 2556.11 5/99 epoxy coating.
4. All bolts and fasteners are to be 304 Stainless Steel, and the saddle shall be installed with Buna-N or neoprene rubber full facing gasket.
5. The stopping device attaching nozzle to be vendor's standard with connecting threads or flange face, and the nozzle I.D. to be machine with a shelf to provide a position stop for the closure plug.
6. The closure plug is to be fabricated carbon steel, ductile iron, or malleable iron with at least one Buna-N or neoprene O-Ring seal on the outside diameter.
7. Corrosion Resistant Coatings
    a. Non-stainless steel permanently installed parts to have manufacturer's standard red or black water base epoxy coating.
8. Connection Tapping saddle shall be fabricated with dimensions to fit on concrete, steel, CA, PVC, CI, DI main as specified.
9. Manufacturers
    a. Hydra-Stop, Inc.
    b. International Piping Services Co. (IPSCO)
    c. JCM 440

d. Approved by OWNER

2.5 UNDERGROUND PIPE MARKERS

A. Description: Plastic Ribbon Tape: Bright colored (blue), continuously printed, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

2.6 PRECAST CONCRETE VALVE MANHOLES

A. Conform to Section 02082.

2.7 PIPE SUPPORTS AND ANCHORING

A. Metal for pipe support brackets: Per Standard Details.

B. Metal tie rods and clamps or lugs: Epoxy Coated Rebar per Standard Details.

2.8 CONCRETE ENCASEMENT AND CRADLES

A. Concrete: Conforming to Section 03300, 4000 psi 28-day reinforced concrete, rough troweled finish.

B. Concrete Reinforcement: Conform to Section 03300 and applicable Standard Detail Drawings.

2.9 BEDDING AND BACKFILL MATERIALS

A. Bedding and Backfill materials shall conform to Section 02324.

2.10 PIPE REPAIR CLAMPS/WRAPS

A. Fully Circumferential Wrap w/ 304 Stainless Steel
   1. Panel, Plate, and Lugs - Conforming to ASTM A240.
   2. Bolts and Nuts - Conforming to ASTM A193 and A194.

B. Gaskets
   1. Virgin SBR Rubber – Conforming to ASTM D2000

C. Manufacturer and Product List
   1. PowerSeal – Model 3121AS
   2. Romac – Model SS1
   3. Approved Equal

2.11 FIELD DECHLORINATION MATERIALS

A. All Materials shall conform to AWWA C655

B. Dechlorination Equipment
   1. High Discharge Velocity
      a. Tablet Diffuser

1) Flow Rate from 31 to 1250 GPM
   a) Pollard LPD-250 or LPD-250A
      (1) For flows between 31 and 200 GPM use low flow insert.
   b) Approved Equal
2) Flow rate up to 120 GPM
   a) Approved Fabricated Hydrant/Hose Adapter Attached to Fire Hydrant/Hose
      (1) 16-in X 8-in nylon bag held by 4-in circular strainer

2. Low Discharge Velocity
   a. Dechlorination Mat
      1) Flow Rate up to 30 GPM (or Pumping from Open Trench)
         a) Nylon and Polyester Mat
            (1) Pollard Water Dechlorination Mat: PDECHLORMAT
            (2) Pollard Water High Visibility Dechlorination Tablet Bag: PDECHLORMATHV
            (3) Approved Equal

C. Dechlorination Tablets
   1. High Discharge Velocity (Diffuser or Fire Hydrant)
      a. LPD-CHLOR
         1) Primary Dechlorination Chemical: Sodium Sulfite
         2) Do not use tablets that have been stored for more than 1-year if unopened, or 2-months if opened.
      b. Approved Equal
   2. Low Discharge Velocity (Dechlorination Mat)
      a. VITA-D-CHLOR
         1) Primary Dechlorination Chemical: Ascorbic Acid
         2) Do not use tablets that have been stored for more than 3-years.
         Approved Equal

D. Discharge Testing Materials
   1. Test Strips
      a. Capable of measuring free and total chlorine to a level of 0.005 mg/L.
   2. Field Colorimetric Test Kit
      a. Capable of measuring free and/or combined chlorine down to 0.01 mg/L.

2.12 ACCESSORIES

A. Concrete for Thrust Restraints: Conform to Section 03300.

B. Manhole and Cover: Conform to Section 02082.

C. Steel rods, bolt, lugs and brackets: ASTM A36/A36M or ASTM A307 Grade A carbon steel.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Requirements for installation examination.

B. Verify existing utility water main size, location, and inverts are as indicated on Drawings.

3.2 PREPARATION

A. Section 01700 - Execution Requirements: Requirements for installation preparation.

B. Pre-Construction Site Photos:
   1. Take photographs along centerline of proposed pipe trench; minimum one photograph for each 50 feet of pipe trench.
   2. Show mail boxes, curbing, lawns, driveways, signs, culverts, and other existing site features.
   3. Include project description, date taken and sequential number on back of each photograph.

C. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs. Use only equipment specifically designed for pipe cutting. The use of chisels or hand saws will not be permitted. Grind edges smooth with beveled end for push-on connections.

D. Remove scale and dirt on inside and outside before assembly.

E. Prepare pipe connections to equipment with flanges or unions.

3.3 BEDDING

A. Excavate pipe trench in accordance with Section 02324 for Work of this Section. Hand trim excavation for accurate placement of pipe to elevations indicated on Drawings.

B. Dewater excavations in accordance with Section 02241 to maintain dry conditions and preserve final grades at bottom of excavation.

C. Provide sheeting and shoring in accordance with Section 02324.

D. Hand place bedding material at trench bottom, level fill materials in one continuous layer not exceeding 4 inches compacted depth; compact to 95 percent per Section 02324.

3.4 INSTALLATION - PIPE

A. Install pipe in accordance with AWWA C600.

B. Handle and assemble pipe in accordance with manufacturer’s instructions and as indicated on Drawings.

C. Steel Rods, Bolt, Lugs, and Brackets: Coat buried steel with one coat of coal tar coating before backfilling.

D. Maintain 10 ft horizontal separation of water main from sewer piping in accordance with PA DEP code and Standard Details.

E. Install pipe to indicated elevation to within tolerance of 5/8 inches.

F. Install ductile iron piping and fittings to AWWA C600.

G. Flanged Joints: Not to be used in underground installations except within structures.

H. Route pipe in straight line. Relay pipe that is out of alignment or grade.

I. Install pipe with no high points. If unforeseen field conditions arise which necessitate high points, install air release valves as directed by OWNER.

J. Install pipe to have bearing along entire length of pipe. Excavate bell holes to permit proper joint installation. Do not lay pipe in wet or frozen trench.

K. Prevent foreign material from entering pipe during placement.

L. Install pipe to allow for expansion and contraction without stressing pipe or joints.

M. Close pipe openings with watertight plugs during work stoppages.

N. Install access fittings to permit disinfection of water system performed under Section 02516.

O. Establish elevations of buried piping with not less than 4 ft. of cover. Measure depth of cover from final surface grade to top of pipe barrel.

P. Install plastic ribbon tape continuous over top of pipe buried 6 inches below finish grade, above pipe line; coordinate with Section 02324.

3.5 INSTALLATION - VALVES AND HYDRANTS

A. Install valves in accordance with Section 02085.

B. Install hydrants in accordance with Section 02086.

3.6 INSTALLATION - TAPPING SLEEVES AND VALVES

A. The contractor shall perform taps on pressurized lines for the installation of pipes other than service lines of 2-inch and smaller PE tubing in accordance with these requirements: Materials All materials used for taps on pressurized lines shall meet the requirements of these specifications.

B. The contractor shall notify the OWNER three working days in advance of work. The contractor shall in the presence of a CONSTRUCTION INSPECTOR:
   1. Expose the existing pipe at the location shown on the plans, and clean the section of the pipe to receive the tapping sleeve.
      a. Direct service taps may also be made through polyethylene encasement.
         1) Apply two or three wraps of polyethylene compatible adhesive tape completely around the encased pipe to cover the area where the tapping machine and chain will be mounted.
         2) After the tapping machine is mounted, the corporation stop is installed directly though the tape and polyethylene.
         3) After the direct tap is completed, the entire circumferential area shall be closely inspected for damage and repaired if needed.

2. Check the tapping sleeve and valve for defects and make sure the gate fully retracts in the valve to allow the shell cutter free passage.
3. Assemble the tapping sleeve on the pipe, then install the tapping valve.
4. Hydrostatically pressure test the tapping sleeve and valve after it has been assembled on the water main using the test plug on the sleeve. The test shall be 150 psi minimum. The duration of the test shall be 15 minutes.
5. Pour a thrust block behind the tapping sleeve sufficient to withstand the pressure of the new line. Also, provide a concrete pad sufficient to support the weight of the sleeve, valve, and tapping machine. Concrete shall be in place a minimum of 24 hours prior to testing the main installation.
6. Assemble an approved tapping machine and proceed to make the necessary cut in accordance with the recommendation of the tapping machine manufacturer.
7. Approved tapping machines shall be:
    a. In good working condition.
    b. Designed for and have a cutting bit for the pipe material to be cut.
    c. Equipped with a depth of cut gauge.
    d. Designed to capture the coupon.
    e. Equipped with the manufacture's recommended diameter shell cutter for the tap to be made.
    f. Tapping machine power head to be hydraulic or pneumatic drive; use of electric motor drives expressly prohibited.
    g. Tapping machine shall be disinfected prior to each use for potable water taps.
    h. Tap coupon shall be given to the CONSTRUCTION INSPECTOR. If the coupon is lost in the main, contractor shall, at his expense, dismantle main to retrieve the coupon. Main will be reassembled, pressure tested, and bacteriological tests retaken as required at contractor's expense.
    i. Install tapping sleeves and valves in accordance with Standard Details and in accordance with manufacturer's instructions.

3.7 INSTALLATION LINE STOPS

A. Temporary line stops shall only be installed by vendor personnel or contractor personnel trained and certified for stop by the vendor.

3.8 PIPE REPAIR

A. Broken/corroded pipe shall be repaired by removing the portion of pipe to the limits specified by the CONSTRUCTION MANAGER and installation of new pipe or spool piece. Repair clamps shall only be used at the direction of the CONSTRUCTION MANAGER.

3.9 POLYETHYLENE ENCASEMENT

A. Encase piping in polyethylene to prevent contact with surrounding backfill material.

B. Install in accordance with AWWA C105- Method A.
    1. Cut polywrap flat tube to a length approximately 2 ft longer than the pipe section. Slip the tube around the pipe, centering it to provide a 12-in overlap on each adjacent pipe section. A shallow bell hole must be made at the joints to facilitate installation of the polyethylene tube.

2. Seal polywrap with minimum two layers of tape on the pipe and overlap polyethylene at joint to provide double layer of polyethylene, secure end with minimum two layers if tape.
3. Along pipe barrel, take up slack in polywrap tube, making snug but not tight fit. Fold over on top of pipe and secure in place every three feet along the barrel of pipe with minimum 6-inch length of tape. In wet trench area, secure in place every two feet along barrel of pipe with minimum one layer of tape around the pipe.
4. For odd-shaped appurtenances, use flat sheet polywrap: AWWA C105, Section 4.4.4, secure ends with minimum two layers of tape.
5. Repairs cuts, tears, punctures, or damage to polyethylene with adhesive tape or with a short length of polyethylene sheet, or with a tube cut open, wrapped around the pipe to cover damaged area, secured in place.

C. Terminate encasement 3 to 6 inches above ground where pipe is exposed.

3.10 THRUST RESTRAINT

A. Provide valves, tees, bends, caps, and plugs with concrete thrust blocks. Pour concrete thrust blocks against undisturbed earth. Locate thrust blocks at each elbow or change of pipe direction to resist resultant force and so pipe and fitting joints will be accessible for repair. Wrap fitting with polyethylene wrap prior to placing concrete. See Standard Details.

B. Install tie rods, clamps, set screw retainer glands, or restrained joints. Protect metal restrained joint components against corrosion by applying a bituminous coating, or by concrete mortar encasement of metal area. Do not encase pipe and fitting joints to flanges.

C. Install thrust blocks, tie rods, and joint restraint at dead ends of water main.

3.11 SERVICE CONNECTIONS

A. Install service connections in accordance with Section 02515.

3.12 BACKFILLING

A. Backfill around sides and to top of pipe in accordance with Section 02324.

3.13 DISINFECTION OF POTABLE WATER PIPING SYSTEM

A. Flush and disinfect system in accordance with Section 02516.

3.14 DISCHARGE OF CHLORINATED POTABLE WATER

A. Methods.
   1. Discharge into existing sanitary sewer manholes.
      a. Maintain minimum 1-foot vertical air gap between end of discharge pipe and manhole frame.
      b. Do not cause surcharge or disrupt sewer service.
      c. Flow rate into the sanitary sewer may not exceed 0.25 mgd.
   2. When sanitary sewer is not available, dechlorinate and discharge as specified herein.

B. High Discharge Velocity – Tablet Diffuser
   1. Flow Rate from 31 to 1250 GPM
      a. Carefully stack tablets in column chamber of diffuser unit.
      b. Attach approved aluminum diffuser directly to 2.5-inch side of hydrant or attach 2.5-inch hose to hydrant and diffuser; or attach approved steel diffuser to 1 end of 2.5-inch fire hose and attach other end of hose to fire hydrant.
      c. Direct flow so discharge does not cause erosion or disrupt traffic.
      d. Replace tablets as necessary.
   2. Flow rate up to 120 GPM
      a. Place 8 tablets in top opening of nylon bag, with 4 tablets on each side of bag and fold bag over tablets. Ensure bag is secured shut.
      b. Place bag inside fabricated diffuser.
      c. Attach fabricated diffuser directly to either 2.5-inch side or 4-inch side of fire hydrant using appropriate adapters or attach 2.5-inch hose to 2.5-inch side of hydrant and other end of hose to the fabricated diffuser using appropriate adapter.
      d. Direct flow so discharge does not cause erosion or disrupt traffic.
      e. Replace tablets as necessary.

C. Low Discharge Velocity
   1. Flow Rate up to 30 GPM (or Pumping from Open Trench)
      a. Place tablets into all open pockets of the approved dichlorination mat or bag.
      b. Place mat or bag over top of catch basin grate or directly into flow line of water being pumped from open trench to the surface, and secure as necessary.

D. Verification
   1. Use approved testing method to verify that treated water has been sufficiently dechlorinated to meet limits set by the Pennsylvania Department of Environmental Protection.
   2. The number of tablets used during a given discharge is dependent on factors such as flow rate and water temperature.

3.15 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Requirements for inspecting, testing.

B. Pressure test system in accordance with AWWA C600 and the following:
   1. Test Pressure: Not less than 200 psi or 50 psi in excess of maximum static pressure, whichever is greater.
   2. Conduct hydrostatic test for at least two-hour duration.
   3. Fill section to be tested with water slowly, expel air from piping at high points. Install corporation cocks at high points. Close air vents and corporation cocks after air is expelled. Raise pressure to specified test pressure.
   4. Observe joints, fittings and valves under test. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage. Retest.
   5. Correct visible deficiencies and continue testing at same test pressure for additional 2 hours to determine leakage rate. Maintain pressure within plus or minus 5.0 psig of test pressure. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of test.
   6. Compute maximum allowable leakage by the following formula:

$L = (SDP^{0.5})/C$
L = testing allowance, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of pipe, in inches
P = average test pressure during hydrostatic test, in psig
C = 148,000
When pipe under test contains sections of various diameters, calculate allowable leakage from sum of computed leakage for each size.

7. When test of pipe indicates leakage greater than allowed, locate source of leakage, make corrections and retest until leakage is within allowable limits. Correct visible leaks regardless of quantity of leakage.

C. Compaction Testing for Bedding: In accordance with Section 02324.

D. Frequency of Compaction Tests: In accordance with Section 02324.

END OF SECTION

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SECTION 02515

WATER SERVICE CONNECTIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Pipe and fittings for public and private water service connections to buildings.
2. Corporation and Curb stop assembly.
3. Work on Private Property.
4. Permit Requirements.
5. Property Owner Notifications.
6. Installation Requirements and Construction Sequence.
7. Disposal Requirements.

B. Related Requirements:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02324 – Trenching, Backfilling and Compaction.

1.2 PRICE AND PAYMENT PROCEDURES

A. See Section 01200 Price and Payment Procedures.

1.3 REFERENCE STANDARDS

A. American Society of Mechanical Engineers:
1. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
2. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

B. American Water Works Association:

C. ASTM International:
1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
2. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings.
3. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
4. ASTM B584 – Copper Alloy Sand Castings for General Applications.
5. ASTM B763 – Copper Alloy Sand Castings for Valve Applications.
6. ASTM D 6394 - Specification for Sulfone Plastics (SP).
7. ASTM D2774 – Standard Practice for Underground Installation of Thermoplastic Pressure Piping.
8. ASTM D2837 – Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products.
9. ASTM F876 – Standard Specification for Cross-linked Polyethylene (PEX) tubing.
10. ASTM F1807 – Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-Linked Polyethylene (PEX) Tubing.

11. ASTM F1960 – Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-Linked Polyethylene (PEX) Tubing.
12. ASTM F2023 – Standard Method for Evaluating the Oxidative Resistance of Cross-Linked Polyethylene (PEX) Tubing and System to Hot Chlorinated Water.
13. ASTM F2080 – Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Cross-linked Polyethylene (PEX) pipe.

D. American Welding Society:
   1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.

E. American Water Works Association:
   1. AWWA C105 - ANSI Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems.
   2. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
   3. AWWA C800 - Underground Service Line Valves and Fittings.
   4. AWWA C904 - Cross-Linked Polyethylene (PEX) Pressure Pipe, ½ In. Through 3 In, for Water Service.
   5. ANSI/AWWA C810-17 – Replacement and Flushing of Lead Service Lines.

F. National Science Foundation
   1. NSF/ANSI 14 – Plastics Piping System Components and Related Materials
   2. NSF/ANSI 61 – Drinking Water System Components – Health Effects
   3. NSF/ANSI 372 - Drinking Water System Components - Lead Content

G. Allegheny County Plumbing Code – Article XV.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data on pipe materials, pipe fittings, corporation stop assemblies, curb stop assemblies, service saddles, and accessories.

C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of piping mains, curb stops, connections, thrust restraints, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with AWWA, PWSA, PADEP, City of Pittsburgh and ACHD Standards.

1. All work done for the replacement of lead service lines shall conform to AWWA C810-17.

B. All products shall comply with NSF/ANSI 372 and NSF/ANSI 61 Annex G, and conform with lead content requirements for "lead-free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act in effect as of January 4, 2014.

C. Installer Qualifications: Installer shall have demonstrated experience on projects of similar size and complexity with documentation proving successful completion of plumbing system installation and/or training by the PEX tubing manufacturer.

D. All work on the private service line and internal plumbing shall be completed by, or under the direct supervision of a licensed Plumber.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. During loading, transporting, and unloading of materials and products, exercise care to prevent any damage.

C. Store products and materials off ground and under protective coverings and custody, away from walls and in manner to keep these clean and in good condition until used.

D. Exercise care in handling precast concrete products to avoid chipping, cracking, and breakage.

E. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
   1. Store service line tubing in cartons or under cover to avoid dirt or foreign material from entering the tubing.
   2. Do not expose PEX tubing to direct sunlight for more than 30 days. If construction delays are encountered, cover the tubing to prevent exposure to direct sunlight.

1.8 WORK ON PRIVATE PROPERTY

A. OWNER shall obtain an Agreement with the Property Owner for lead service line replacement on private property prior to CONTRACTOR work on private property. No work is to be completed on the private property until the agreement documentation is verified and approved by OWNER. A coordination meeting between the property owner, OWNER and the Contractor must also be conducted before work on private property can commence.

B. The CONTRACTOR shall perform all work using appropriate methods to minimize the disturbance on Private Property including the existing interior wall finish and exterior foundation wall. The existing pipe penetration should be removed and the opening sealed watertight. The CONTRACTOR shall restore the existing exterior foundation wall when damaged by the Contractor at no additional cost to the OWNER.

C. Where a Property Owner has not submitted authorization for the CONTRACTOR to perform work on private property, either by submitting a Declined Agreement or not submitting a fully executed Agreement, the CONTRACTOR shall replace only the public water service line from the main to the reconnection point as defined herein and as directed by the CONSTRUCTION MANAGER.

1.9 PERMIT REQUIREMENTS

A. The CONTRACTOR shall obtain all necessary licenses, certificates and permits including but not limited to all Traffic Obstruction and Plumbing Plans/Permits.

B. The CONTRACTOR shall secure all Allegheny County Health Department Plumbing Permits in advance of the proposed work.

C. All costs associated with obtaining the above shall be included in the appropriate unit prices bid.

1.10 PROPERTY OWNER NOTIFICATION

A. CONTRACTOR shall notify residents at least 48-hours in advance of any scheduled water service shut-off associated with service line replacement work, and the intent to work in their front yards and/or in Public Space. This notification shall be given in the form of an approved door hanger, prior to performing any water service line material verification and/or replacement work.

B. Before the CONTRACTOR can complete a partial service line replacement, the CONTRACTOR shall notify all affected residents a minimum of 72 hours (and no more than 5-days) in advance. Notification shall be made via approved door hanger. If the 5-day time period has been exceeded, then the notification must start again with the 72-hour minimum.

C. No part of a service line shall be replaced without the property owner being properly notified per PADEP requirements.

D. At all times during construction, the CONTRACTOR shall identify one person on-site whose responsibility it is to perform all property owner notifications and maintain accurate record of those notifications.

E. The CONTRACTOR is responsible for verifying that the following Door Hangers were hung:

Hanger	Title
A	48-Hour Notice
B	Important Health Notice: Water Service Line Inspection Results
C	Important Health Notice: Work to Occur on Your Water Service Line
D	Notice: Missed Appointment
E	Important Health Notice: Partial Replacement of Lead Service Line Planned Within 3 to 5 Days
F	Important Health Notice: Water Service Line Replacement Work Completed

F. The schedule of all required Door Hangers for water main relays is as follows:

Service Line Verification?	Private Material	Action	Hangers					
Yes	Non-Lead	Public Replacement Only	C (1)	A	B (2)	F		
Yes	Lead	Coordinated Full Replacement	C (1)	A	B (2)	F		
Yes	Lead	Failed Coordination Partial Replacement	C (1)	A	B (2)	D	E (3)	F
Yes	Lead	Planned Partial Replacement	C (1)	A	B (2)	E (3)	F	

(1) If agreement status is "Declined" do not use Hanger C, hang Hanger A
(2) Hanger B required if replacement doesn't take place on same day as verification.
(3) Minimum of three (3) days but not more than five (5) days before work begins.

1.11 REQUIRED MATERIALS ON-HAND

A. In order to minimize the amount of time a customer is without water service; the CONTRACTOR shall be required to have on-hand at all times the materials necessary to complete all work associated with the required internal plumbing improvements and water service reconnection. The materials include, but are not limited to:
   1. 50 LF minimum of Type L Copper
      a. 1", 3/4", 1/2"
   2. #6 AWG Copper Wire or #4 AWG Aluminum Wire and Grounding Clamps
   3. No-Contact Transition Couplings
      a. Capable of connecting up to 1.5" service line
   4. Thermal Expansion Tanks
      a. 2.1 Gallon, 4.5 Gallon
   5. Pressure Reducing Valve
      a. 1", 3/4", 1/2"
   6. Backflow Preventors
      a. 1"
   7. Service Valve
      a. 1" Flare x 1" Female IPS
   8. Meter Valve
      a. 1", 3/4", 1/2" IPS
   9. Dual Check Valve
      a. 1", 3/4", 1/2"
   10. Meter Bushings
      a. 1" x 3/4", 1" x 5/8", 1" x 1/2"
   11. Meter Couplings with Leather Washers
      a. 1", 3/4", 5/8", 1/2", 1.5"
   12. Various Copper Fittings (Solder & Pro-Press)
      a. 90° elbows, 45° elbows
         1", 3/4", 5/8", 1/2", 1.5"
      b. Male & Female Adapters

1”, 3/4”, 5/8”, 1/2”, 1.5”
c. Couplings
13. Various Plastic Meter Fittings
14. Brass Nipples (Various Lengths)
a. 1”, 3/4”, 5/8”, 1/2”
15. Various Support Straps

PART 2 PRODUCTS

2.1 COPPER TUBING

A. USE:
1. Public Water Service Line.
a. Single Family Residential shall be 1-inch diameter only. Copper tubing shall only be used on the public side at the direction of the CONSTRUCTION MANAGER.
b. Commercial and Multi-Unit Residential shall be replaced in-kind but will not be smaller than 1-inch diameter.
2. Private Water Service Line.
a. Single Family Residential shall be 1-inch diameter only.
b. Commercial and Multi-Unit Residential shall be replaced in-kind but will not be smaller than 1-inch diameter.

B. COPPER WATER PIPING AND FITTINGS
1. Copper Tubing: ASTM B88, Type K, annealed, 200 psi:
a. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
i. Non-Contact Couplings, for lead pipe connections.
b. Joints: Compression connection or AWS A5.8, BCuP silver braze.
c. Mark pipe to continuously identify Manufacturer’s name and code, nominal size, date of manufacture, pressure rating, ASTM or AWWA designation number.

2.2 CORPORATION STOP ASSEMBLY

A. For all 1-inch service lines.

B. Manufacturer List:
1. Mueller Company, Model B25000N.
2. Approved equal.

C. Corporation Stops:
1. Brass or red brass alloy body conforming to ASTM B62, no lead alloy.
2. Body conforming to AWWA C800, cast copper conforming to ASME B16.8, or wrought copper conforming to ASME B16.22.
3. Ball valve with minimum pressure rating of 300 psi.
4. Inlet end threaded for tapping according to AWWA C800.
5. Outlet end pack joint for PE pipe with quick connect, or flared copper service threaded outlet, as appropriate (1-inch).

2.3 CURB STOP ASSEMBLY

A. Manufacturer and Product List:
   1. Mueller Company, Model B25204N.
   2. Approved equal.

B. Curb Stops:
   1. Brass or red brass alloy body conforming to ASTM B62, no-lead alloy.
   2. Body conforming to AWWA C800, cast copper conforming to ASME B16.8, or wrought copper conforming to ASME B16.22.
   3. Ball valve with minimum pressure rating of 300 psi.
   4. Inlet and outlet ends: pack joint for PE pipe with quick connect or flared copper service threaded outlet, as appropriate.

2.4 FITTINGS

A. Direct Bury Fittings
   1. Manufacturer
      a. Philmac – Universal Transition Coupling
      b. Approved equal

2.5 CROSS-LINKED POLYETHYLENE (PEX) TUBING, 1-Inch to 2-Inch Nominal Pipe Size

A. USE :
   1. Public Water Service Line.
      a. Single Family Residential shall be 1-inch diameter only.
      b. Commercial and Multi-Unit Residential service lines 2-inch and smaller. Commercial and Multi-Unit Residential service lines larger than 2-inch shall be replaced in-kind.
   2. Private Water Service Line.
      a. PEX tubing is not permissible for use on private water service line replacements.

B. PEX WATER PIPING AND FITTINGS
   1. Crosslinked polyethylene pipe using the high-pressure peroxide method of crosslinking (PEXa). Pipe shall confirm and be third-party certified to AWWA C904, ASTM F876, CSA B137.5, NSF/ANSI 14 and NSF/ANSI 61.
   2. SDR 9 pipe size.
   3. Pipe shall have ability for kink repair using a heat gun. No need to cut out kink.
   4. Pipe shall be approved by manufacturer for use with squeeze-off tool.
   5. Pipe shall be rated for continuous operation of 100 psi gauge pressure at 180°F temperature (690 kPa @ 82.2°C), and 200 psi gauge pressure at 73.4°F temperature (1380 kPa @ 23°C) as defined in AWWA C904.
   6. Pipe to be tested for resistance to hot chlorinated water in accordance with ASTM F2023. Pipe to have a minimum Class 3 chlorine resistance rating when evaluated to F876 and tested in accordance to F2023.

7. Pipe to have a co-extruded UV Shield made from UV-resistant polyethylene. Pipe to have minimum recommended UV exposure time of 12 months when tested in accordance with ASTM F2657 and evaluated in accordance with ASTM F876.
8. Pipe shall be manufactured in a facility whose quality management system is certified according to ISO 9001.
9. Bend Radius: The minimum bend radius for cold bending of PEXa pipe shall be not more than five (5) times the outside diameter.
10. Manufacturer and Product List:
    a. REHAU, Municipex
    b. Approved Equal

C. FITTINGS
1. All fittings shall be lead free per NSF/ANSI 61 and 372.
2. Compression-type fittings using crimp ring per ASTM 1807 will not be permitted.
3. Insert Stiffeners
    a. Stainless Steel complying with the material and performance requirements of ANSI/AWWA C800 and the manufacturer's requirements for dimensions and tolerances.
4. Interior Fittings
    a. Interior fittings shall not be used for direct bury applications.
    b. ASTM F1960 PEX-a Fittings: elbows, adapters, couplings, plugs, tees and multi-port tees (1/2 inch through 3 inch nominal pipe size): ASTM F1960 cold-expansion fitting manufactured from the following material types:
        i. NSF/ANSI 61 Annex G and NSF/ANSI 372 Lead-free (LF) Brass.
        ii. 20% glass-filled polysulfone as specified in ASTM D 6394.
        iii. Unreinforced polysulfone (group 01, class 1, grade 2) as specified in ASTM D 6394.
        iv. Polyphenylsulfone (group 03, class 1, grade 2) as specified in ASTM D 6394.
        v. Blend of polyphenylsulfone (55-80%) and unreinforced polysulfone (rem.) as specified in ASTM D 6394.
    c. Cold-expansion compression-sleeve fittings meeting requirements of ASTM F2080, metal or engineered polymer (EP) cold expansion fittings with PEX reinforcing rings.
    d. Manufacturer and Product List:
        i. REHAU, Municipex
        ii. Sioux Chief, PowerPEX
        iii. Approved Equal
5. Direct Bury Fittings
    a. Manufacturer
        i. Philmac – Universal Transition Coupling
        ii. Approved equal

D. TRACER WIRE
1. 12 AWG, extra-high strength copper clad steel conductor (EH-CCS) with a minimum 1,150 pounds break load. Insulation shall be 45 mil, high–density, high molecular weight polyethylene (HDPE) and rated for direct burial, 30 volts.
2. Manufacturer and Product List:
    a. Copperhead Industries, LLC
    b. Approved Equal

E. PIPE SLEEVE:
   1. PEXa pipe installed by open trench in roadways shall be protected n backfill by installation in a slit corrugated sleeve. CONTRACTOR shall supply and install 1.5-inch diameter sleeve as casing surrounding both PEXa pipe and tracer wire.
   2. Manufacturer and Product List:
      a. Hellermann Tyton - convoluted tubing, slit, 1.5-inches nominal diameter
         i. Part Number: CTPUV1120
      b. Approved Equal

2.6 CURB BOXES AND COVERS

A. Cast iron body, Buffalo Type.

B. 3-inch shaft.

C. Regular base for 1" service lines and enlarged based for service lines up to 2 ½".

D. Lid with inscription "WATER", with Pentagon Plug.

2.7 CURB BOX LOCK

A. For 1-inch diameter service lines.

B. Manufacturer and Product List:
   1. The Vadle Curb Box Lock
   2. Approved Equal

2.8 UNDERGROUND PIPE MARKERS

A. Plastic Ribbon Tape: Bright colored (blue), continuously printed, minimum 6-inches wide, 4-mil thick, manufactured for direct burial service.

2.9 POLYETHYLENE ENCASEMENT

A. All direct-bury metallic pieces shall be wrapped with polyethylene encasement.

B. Polyethylene Encasement: Virgin 8 mil per AWWA C105.

2.10 BEDDING AND COVER MATERIALS

A. Bedding and Backfill materials shall conform to Section 02324, except as noted.
   1. Pipe zone bedding of PEXa pipe is not required as described in Section 02324 when the corrugated sleeve described in Part 2.5.E of this Section is used. Type A2 granular material shall be used instead.

2.11 ACCESSORIES

A. Pipe Sleeve (Through Wall/Foundation): Minimum of one pipe size larger than service line pipe.
   1. PVC or HDPE; or
   2. As approved by Allegheny County Health Department

B. Pipe Penetration (Through Wall/Foundation) Sealant.
   1. SikaFIX HH; or
   2. As approved by Allegheny County Health Department

2.12 INTERNAL PLUMBING MATERIALS

A. Copper Tubing: ASTM B88, Type L, annealed, 200 psi:
   1. Mark pipe to continuously identify Manufacturer's name and code, nominal size, date of manufacture, pressure rating, ASTM or AWWA designation number.
   2. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
      a) Non-Contact Couplings, for lead pipe connections.
   3. Joints: Compression connection or AWS A5.8, BCuP silver braze.
   4. PEX tubing is not permissible for use on private water service line replacements.

B. Thermal Expansion Tank
   1. Approved by Allegheny County Health Department

C. Backflow Prevention Device
   1. Dual Check Type
   2. Approved by Allegheny County Health Department

D. Pressure Relief Valve
   1. Approved by Allegheny County Health Department

E. Service Valves
   1. Full Port Type

F. Fittings, Meter Valves & Service Valves
   1. Valve shall ensure continuous metallic contact between the meter and internal plumbing.
   2. Brass and Brass Components conform to AWWA C800.
      a. ASTMB62 & B584, UNS C89833 & 83600.
   3. Certified as NSF/ANSI 61 & 372.
   4. Manufacturer and Product List:
      a. Service Valves
         1" Flare x 1" Female IPS Full Port Angle Valve
         Ford Meter Box Company, Inc.
            a) BA21-444W-NL
      b. Meter Valves
         IPS Full Port Ball Valve
         Ford Meter Box Company, Inc.
            a) 1" Inlet / 5/8" Meter Thread: BA23-341W-NL
            b) 1" Inlet / 5/8"x 3/4" Meter Thread: BA23-342W-NL

c) 1” Inlet / 1” Meter Thread: BA23-444W-NL

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Requirements for installation examination.

B. Verify building service connection and municipal utility water main size, location, and invert are as indicated on Drawings.

3.2 PREPARATION

A. Section 01700 - Execution Requirements: Requirements for installation preparation.

B. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
   1. Pipe Cutters and/or Shears Only, conforming to AWWA C810-17.
   2. Sawing of lead service line is prohibited.

C. Remove scale and dirt on inside and outside before assembly.

D. Prepare pipe connections to equipment with flanges or unions.

E. Existing water services shall, in general, be kept in service until transfer connections are made.

3.3 GENERAL CONSTRUCTION GUIDANCE FOR PUBLIC AND PRIVATE WATER SERVICE LINES DURING LEAD SERVICE LINE REPLACEMENT

A. All work done for the replacement of lead service lines shall conform to AWWA C810-17.

B. A summary of the sequence of construction is as follows:
   1. CONTRACTOR shall perform service line material verification as indicated on the work order to determine the material type of the public and/or private water service lines.
      a. CONTRACTOR shall open the existing curb box cover and determine the depth of the existing service line prior to excavation.
         i. If the CONTRACTOR is uncertain of the existing water main depth (depths can vary but are typically between 4 ft. and 8 ft. for water mains and 3 ft. and 6 ft. for water service lines), or suspects a change in depth from previous excavations, the CONTRACTOR should measure the depth of the watermain at the nearest accessible valve box.
      b. The extent of potential water service line replacements is as follows (Public Water Service Line Material/Private Water Service Line Material):
         i. Public Lead/Private Non-Lead: Public Water Service Line Replacement Only.
         ii. Public Lead/ Private Lead or Galvanized Iron (If the OWNER has received authorization for the Contractor to replace the private water service line): Public AND Private Water Service Line Replacement.

iii. Public Lead/ Private Lead or Galvanized Iron (If the OWNER has NOT received authorization for the Contractor to replace the private water service line): Public Service Line Replacement Only, following proper notification and as directed by the CONSTRUCTION MANAGER.
iv. Public Non-Lead/ Private Lead or Galvanized Iron: None.
v. Public Non-Lead/ Private Non-Lead: None.

2. If the CONTRACTOR determines that either the public water service line, or the public and private water service lines can be replaced, the CONTRACTOR shall immediately notify the home owner of the planned water service line replacement, via approved door hanger.
3. For Private Water Service Line Replacement: Prior to mobilizing to perform the replacement work, the CONTRACTOR shall meet with the property owner and OWNER representative (at an appointment to be scheduled by OWNER) to inspect the area inside the structure where reconnection to the existing private service line will take place. CONTRACTOR shall verify that adequate access to the private water service line and internal plumbing in order to perform all necessary work, has been provided. Property owner shall be responsible for providing access to the work area. CONTRACTOR shall also determine if additional improvements must be made to the internal plumbing, such as backflow prevention and thermal expansion tank or relocation of the existing water meter.
4. CONTRACTOR shall file all appropriate permits with ACHD and City of Pittsburgh based on the extent of work required.
5. CONTRACTOR shall perform all specified water service line replacement work in coordination with ACHD and City of Pittsburgh inspection requirements. There shall be no additional compensation for delays that result from coordinated inspections with ACHD and City of Pittsburgh.
6. Restore as specified.

C. CONTRACTOR shall not accept or undertake any extraneous work not identified under this Contract.

3.4 GENERAL CONSTRUCTION GUIDANCE FOR PUBLIC AND PRIVATE WATER SERVICE LINE REPLACEMENTS DURING WATERLINE RELAYS

A. All work done for the replacement of lead service lines shall conform to AWWA C810-17.

B. A summary of the sequence of construction is as follows:
1. Service line material verification must take place before any water main in constructed. The service line verification is used to not only confirm service line material but also the diameter of the service line.
   a. In the event the CONTRACTOR cannot complete a verification at the curb stop, the public-side verification will be at a location in the sidewalk or in the street. In this situation, the OWNER may allow the private-side service line verification to be completed visually inside the property. All work should be coordinated with the CONSTRUCTION MANAGER. It will be the contractor's responsibility to confirm the service line material and size before starting any water main work.
   b. Service lines larger than 1-in in diameter require a tee-valve configuration at the water main. No payment will be made for the contractor having to install this configuration after the water main has been installed if the service line was not verified prior to the construction of the water main.

2. CONTRACTOR shall perform service line material verification as indicated on the work order to determine the material type of the public and/or private water service lines.
    a. CONTRACTOR shall open the existing curb box cover and determine the depth of the existing service line prior to excavation.
        i. If the CONTRACTOR is uncertain of the existing water main depth (depths can vary but are typically between 4 ft. and 8 ft. for water mains and 3 ft. and 6 ft. for water service lines), or suspects a change in depth from previous excavations, the CONTRACTOR should measure the depth of the watermain at the nearest accessible valve box.
    b. The extent of potential water service line replacement is as follows based on the private service line material (note that all public service lines and curb stops will be replaced during waterline relays):
        i. Private Non-Lead: Public Water Service Line Replacement Only.
        ii. Private Lead or Galvanized Iron (If the OWNER has received authorization for the Contractor to replace the private water service line): Public AND Private Water Service Line Replacement.
        iii. Private Lead or Galvanized Iron (If the OWNER has NOT received authorization for the Contractor to replace the private water service line): Public Service Line Replacement Only, following proper notification and as directed by the CONSTRUCTION MANAGER.
3. If the CONTRACTOR determines that either the public water service line, or the public and private water service lines can be replaced, the CONTRACTOR shall immediately notify the home owner of the planned water service line replacement, via approved door hanger.
4. For Private Water Service Line Replacement: Prior to mobilizing to perform the replacement work, the CONTRACTOR shall meet with the property owner and OWNER representative (Field Liaison), at an appointment to be scheduled by OWNER, to inspect the area inside the structure where reconnection to the existing private service line will take place. CONTRACTOR shall verify that adequate access to the private water service line and internal plumbing in order to perform all necessary work, has been provided. Property owner shall be responsible for providing access to the work area. CONTRACTOR shall also determine if additional improvements must be made to the internal plumbing, such as backflow prevention and thermal expansion tank or relocation of the existing water meter.
    a. The CONTRACTOR shall be responsible for conveying this information to the property owner. The Field Liaison is only to act as an OWNER representative at the meeting.
    b. The CONTRACTOR must provide the property owner with the extents of and a specific timeline for rectifying any issues that would not permit the CONTRACTOR from completing the private-side service line work.
5. CONTRACTOR shall file all appropriate permits with ACHD and City of Pittsburgh based on the extent of work required.
6. CONTRACTOR shall perform all specified water service line replacement work in coordination with ACHD and City of Pittsburgh inspection requirements. There shall be no additional compensation for delays that result from coordinated inspections with ACHD and City of Pittsburgh.
7. Restore as specified.

C. CONTRACTOR shall not accept or undertake any extraneous work not identified under this Contract.

3.5 INSTALLATION – INTERNAL PLUMBING IMPROVEMENTS

A. Prior to any service line replacement work, the CONTRACTOR and their designated plumber shall visually inspect the internal plumbing of the residence. CONTRACTOR shall install required backflow prevention and/or thermal expansion tank. These improvements are required to gain plumbing inspection approval. Pressure relief valves shall be installed as directed by the OWNER.

3.6 INSTALLATION – WATER SERVICE TAPS

A. The CONTRACTOR will perform all water service line taps.

B. Contractors are permitted to perform "wet taps" 1-inch for service lines. The contractor is required to have immediate access to a tapping machine for completing taps up to 2-inches in diameter.

C. Taps must be more than 18-inches horizontally away from any existing or new tap or pipe joint.

D. When tapping adjacent to an existing tap, the new tap shall be staggered by a minimum of 30 degrees off the horizontal centerline of the existing tap. The position of the new tap must also be greater than (>) 0° and less than (<) 90° on the water main.

3.7 INSTALLATION - CORPORATION STOP ASSEMBLY

A. Make connection for each different kind of water main using suitable materials, equipment and methods approved by the OWNER.

B. Screw corporation stops directly into tapped and threaded water main at the location of the new tap.

C. Use proper seals or other devices so no leaks are left in water mains at points of tapping; do not backfill and cover service connection until approved by the CONSTRUCTION MANAGER.

3.8 BEDDING

A. Excavate pipe trench in accordance with Section 02324 for Work of this Section.

B. Place fill material in accordance with Section 02324.

3.9 INSTALLATION - PIPE AND FITTINGS

A. Trenchless installation is the preferred installation method provided that it is done so no settlement above the pipeline or voids around and below the pipeline occur. There must also be no joints in the service line within the length that is to be installed via particular trenchless method.
   1. The contractor must receive approval from the CONSTRUCTION MANAGER prior to performing open trench installation.

2. If the trenchless method has the potential to create a void space around the new pipe material, CONTRACTOR may be required to install a bentonite plug in one or more locations along the pipe replacement to prevent the creation of a preferential ground water flow pathway towards any building foundations.
3. Public utilities that cross a service line installation must be exposed if the trenchless installation method has the potential to damage the utility, and as directed by the CONSTRUCTION MANAGER. No additional payment will be made for exposing existing utilities in order to allow a trenchless installation method.

B. The CONTRACTOR shall make every attempt to not disturb or remove retaining walls to complete water service line replacement.
   1. Retaining walls may only be removed if tunneling under, or avoiding the wall entirely is not feasible.

C. Install only as approved by CONSTRUCTION MANAGER, and in accordance with manufacturer's published installation manual and/or published guidelines.

D. At connections and fittings, use a pipe cutter approved by Manufacturer to ensure square (90°) and clean cuts, and join pipes immediately or cap ends of pipe to seal from contaminants.

E. Maintain separation of water main from sewer piping in accordance with code.

F. Group piping with other site piping work whenever practical.

G. Private Water Service Lines shall be replaced with Type “K” Copper Pipe only. PEX tubing is not permissible for use on private water service line replacements.

H. Install pipe to indicated elevation to within tolerance of 5/8 inches.

I. Install pipe to allow for expansion and contraction without stressing pipe or joints.

J. Establish elevations of buried piping with not less than 4 ft of cover.

K. For metallic pipe, install plastic ribbon tape continuous buried 6 inches below finish grade, above pipe line; coordinate with Section 02324.

L. For metallic pipe and fittings: Shall be wrapped with polyethylene encasement.

M. Install tracer wire on pipe with nylon straps or zip-ties. Connect to termination points on curb stop and run to ground level on curb box. No type of tape is allowable for securing the tracer wire to the pipe or connecting it to the termination points.
   1. Install corrugated sleeve as required.

N. Backfill trench in accordance with Section 02324.

O. For PEX tubing, install with no joints. Install per manufacturer’s recommendations.
   1. PEX tubing is not permitted to be installed for the private water service line.

2. CONTRACTOR to confirm system pressure with CONSTRUCTION MANAGER if not clearly indicated.

3.10 INSTALLATION - CURB STOP ASSEMBLY

A. Secure curb stops in curb box lock (for 1" dia.) or set larger curb stops on masonry support per details in Attachment A.

B. Center and plumb curb box over curb stop and curb box lock (if applicable). Set box cover flush with finished grade. Misaligned curb boxes that do not permit or otherwise detract from the operation of the curb stop will be realigned at no additional cost to the OWNER. CONTRACTOR shall include sidewalk restoration, if the sidewalk has already been installed, at no cost to the OWNER.

C. For water mains located in the abutting sidewalk, curb stops shall be installed in the right-of-way, 12-inches from the property line.

D. Curb stops shall be installed in the right-of-way, 12-inches behind the back (house side) of curb. Where there's landscaping between the curb and sidewalk, the curb stop should be located 12-inches from the street-side edge of sidewalk. Any deviation from this requires approval by the OWNER.

3.11 INSTALLATION – TRACER WIRE

A. Install tracer wire alongside of the service line pipe from the corporation stop to the curb box. The tracer wire shall be stripped of insulating material and connected to both the corporation stop and curb stop. Tracer wire shall be fastened to pipe with zip ties a minimum of every 5 feet. Tape shall not be used.

B. Enough tracer wire shall be installed so that the tracer wire extends to finished grade of the curb box. An additional 2 ft. of continuous tracer wire shall be provided.

3.12 PUBLIC WATER SERVICE LINE CONSTRUCTION SEQUENCE ON EXISTING WATER MAIN

A. Locate existing water main and curb box.

B. Run a trace on the existing water service line from the curb stop to the existing water main to determine the alignment of the existing water service line and the location of the corporation stop for the existing service to be replaced.

C. Sawcut and excavate at located or assumed location of existing corporation stop. Where alignment cannot be determined, assume the existing water service line runs perpendicular from the water main to the curb stop. All saw cuts shall be wet and made to comply with current OSHA regulations relating to Respirable Crystalline Silica.

D. Excavate and expose the water main and the existing corporation stop. To avoid damage to existing utilities, hand dig around all utilities and within the pipe zone as needed.

E. Use a wet tapping machine to install a new tap.

F. Connect new corporation stop.

G. Construct new water service line as shown on details in Attachment A and per the Specifications.

H. Install new curb stop and curb box and connect new water service line per details in Attachment A.

I. Shut the existing service corporation stop. Detach existing service from the corporation stop, crimp ends of existing pipe, and construct brick "doghouse" around the existing corporation stop per OWNER standard detail WS-STS included in Attachment A
   1. If existing corporation stop is leaking and cannot be successfully shut, contact OWNER to perform a shut on the existing water main and remove the existing corporation stop (by OWNER).

J. Remove existing curb stop and casting.
   1. If the existing curb stop will be located between the new curb stop and the residence, the existing curb stop shall be abandoned in the open position and backfilled with approved fill. Surface casting will then be removed and brought to final grade by topsoil (in landscape areas) or concrete (in hardscape areas).

K. Connect new curb stop to existing water service that is to remain (private side) with approved adapter per OWNER/ACHD standards. If the private water service is scheduled to be replaced, do not reconnect the new public water service line until the new private water service line is installed (i.e. do not connect back into lead on the private side). Construct additional water service line as needed in order to make connection.
   1. Water service piping installed to reconnect the curb stop to the existing private service line shall be paid under the appropriate public water service line unit item.

L. Turn on new service by opening the corporation stop on the water main. Backfill all trenches with approved backfill material in accordance with Section 02324.

M. Backfill and bring to grade as follows:
   1. Grass/Landscaped Areas: Backfill and bring to grade with in-situ material or stock-piled dirt.
   2. Sidewalk/Driveway Areas: Backfill and bring to grade with approved aggregate.
   3. Roadway: Binder to grade. Winter topping to be HES concrete w/ temporary bond breaker to grade.
      a. Cold Patch placed to temporarily bring a trench to grade in lieu of Asphalt Binder or HES Concrete shall be considered incidental to the Work.

3.13 PRIVATE WATER SERVICE LINE CONSTRUCTION SEQUENCE

A. Verify the property owner has provided adequate access to the existing water meter and related water service piping (and internal plumbing), and has completed any work CONTRACTOR identified as necessary for the installation during the meeting. Do not disconnect existing water service until access to the private property is obtained on the day of the work.

B. Perform all excavation necessary to install private water service piping through the specified installation method.

C. Complete all finished surface penetrations in the existing building foundation that are required to install the new piping.

D. Install new piping.

E. Backfill and compact all excavations in accordance with Section 02324.

F. Shut-off water service at the existing stop (if service is still active).

G. Perform service line reconnections. DO NOT reconnect to existing lead piping unless lead piping is behind the water meter and will not be disturbed by the work. If public service line is lead, do not reconnect until public service line is replaced.

H. Install internal plumbing improvements (thermal expansion tank, backflow prevention, etc.) as required.

I. Turn on water service at the shut stop and flush new service line in accordance with AWWA 810-17. Flushed water should be discharged as to not damage private property (floor drain, utility sink, bucket, etc.).

J. Reset existing meter if meter composition is composite.
    1. If meter composition is metal, coordinate with OWNER for replacement.

K. Fill annular space of any wall penetration with waterproof material and restore any removed concrete from the floor.

L. Backfill and bring to grade as follows:
    1. Grass/Landscaped Areas: Backfill and bring to grade with in-situ material or stock-piled dirt.
    2. Sidewalk/Driveway Areas: Backfill and bring to grade with approved aggregate.
    3. Roadway: Binder to grade. Winter topping to be HES concrete w/ temporary bond breaker to grade.

3.14 FLUSHING REQUIREMENT

A. Following service line installation, the CONTRACTOR shall flush the entire length of new service line from the corporation stop on the new main prior to reconnection with existing private service line, conforming to AWWA C810-17. Following reconnection, the service shall be gradually turned back on from both the curb and the corporation stop.

3.15 DISPOSAL OF LEAD PIPE

A. Disposal of lead pipes shall be at a site approved by the U.S. Environmental Protection Agency (and the State) to accept lead waste. Handle, label, store, transport, and dispose of lead or lead-contaminated waste in accordance with the following Code of Federal Regulations: 40 CFR 261,

40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.

B. Submit written evidence that the receiving lead waste treatment, storage, or disposal facility is approved to accept lead waste by the federal and district or local regulatory agencies. Submit, within 10 days, one copy of the complete manifest(s), signed and dated by the transporter in accordance with 40 CFR 262.

C. No lead pipe shall be disposed as part of excavated material.

D. Lead pipe abandoned in place shall have the ends sealed before backfilling.

E. Lead piping shall be cut using manual shears. No mechanical means or methods that would disturb the lead pipe shall be used to cut the pipe.

3.16 POLYETHYLENE ENCASEMENT

A. Encase metallic piping, fittings, and valves in polyethylene to prevent contact with surrounding backfill material.

B. Install in accordance with AWWA C105.

C. Terminate encasement 3 to 6 inches above ground where pipe is exposed.

3.17 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Requirements for inspecting, testing.

B. CONTRACTOR shall place new water service line back into service prior to backfilling excavation to determine if leaks are present. Fill section to be tested with water and observe joints, fittings and valves for 10 minutes.
   1. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage, regardless of quantity of leakage. Retest.

C. Compaction Testing for Bedding: In accordance with Section 02324.

D. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

E. Frequency of Compaction Tests: In accordance with Section 02324.

END OF SECTION

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SECTION 02516

DISINFECTION OF WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes disinfection of potable water distribution and transmission system; and testing and reporting results.

B. All disinfection work shall be performed in strict accordance with AWWA C-651

C. Related Sections:
1. Section 02085 - Water Utility Distribution Valves.
2. Section 02086 - Water Utility Fire Hydrants.
3. Section 02513 - Public Water Distribution Piping.
4. Section 02515 - Water Service Connections.

1.2 REFERENCES

A. American Water Works Association:
1. AWWA B300 - Hypochlorites.
2. AWWA B301 - Liquid Chlorine.
3. AWWA B303 - Sodium Chlorite.
4. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
5. AWWA C651 - Disinfecting Water Mains.
6. AWWA C655 - Neutralizing Chemicals

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Submit a detailed disinfection plan covering at a minimum the following items:
1. Disinfectant(s), i.e., sodium hypochlorite solution and calcium hypochlorite granules or tablets.
2. Method of introducing disinfectant into main piping system.
3. Method of disinfecting system appurtenances, such as corporation and curb stops.
4. Proposed testing agency.
5. Product cut sheets and instructions.

C. Test Reports: Indicate results comparative to specified requirements.

D. Certificate: Certify cleanliness of water distribution system meets or exceeds specified requirements.

1.4 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Disinfection Report:
1. Type and form of disinfectant used.
2. Date and time of disinfectant injection start and time of completion.
3. Test locations.
4. Name of person collecting samples.
5. Initial and 24-hour disinfectant residuals in treated water in ppm for each outlet tested.
6. Date and time of flushing start and completion.
7. Disinfectant residual after flushing in ppm for each outlet tested.

C. Bacteriological Report:
1. Date issued, project name, and testing laboratory name, address, and telephone number.
2. Time and date of water sample collection.
3. Name of person collecting samples.
4. Test locations.
5. Initial and 24-hour disinfectant residuals in ppm for each outlet tested.
6. Coliform bacteria test results for each outlet tested.
7. Certify water conforms, or fails to conform, to bacterial standards of PWSA and Pennsylvania Department of Environment.

D. Water Quality Certificate: Certify water conforms to quality standards of PWSA, suitable for human consumption.

1.5 QUALITY ASSURANCE

A. Perform Work in strict accordance with AWWA C651.

B. Maintain one copy of document on site.

1.6 QUALIFICATIONS

A. Testing Firm: Company specializing in testing potable water systems, certified by State of Pennsylvania.

B. Submit bacteriologist's signature and authority associated with testing.

PART 2 PRODUCTS

2.1 DISINFECTION CHEMICALS

A. Chemicals: sodium hypochlorite solution and calcium hypochlorite granules or tablets conforming to ANSI/AWWA B300
1. Do not use calcium hypochlorite intended for swimming pool disinfection, as this material has been sequestered and is extremely difficult to eliminate from the pipe after the desired contact time has been achieved.

2. Tablets dissolve in approximately 7 hr. and must be given adequate contact time.

PART 3 EXECUTION

3.1 INSTALLATION

A. Follow approved disinfection plan.

B. Maintain disinfectant in system for 24 hours.

C. Replace permanent system devices removed during disinfection activities.

3.2 Final Flushing for New Mains

A. Clearing the main of heavily chlorinated water.
   1. After the applicable retention period, heavily chlorinated water should not remain in prolonged contact with pipe. In order to prevent damage to the pipe lining or to prevent corrosion damage to the pipe itself, the heavily chlorinated water shall be flushed from the main fittings, valves, and branches until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the distribution system or that is acceptable for domestic use.

B. Disposing of heavily chlorinated water.
   1. The environment to which the chlorinated water is to be discharged shall be inspected. If there is any possibility that the chlorinated discharge will cause damage to the environment, a neutralizing chemical shall be applied to the water to be wasted to thoroughly neutralize the residual chlorine (see ANSI/AWWA C655 for neutralizing chemicals). Where necessary, federal, state, local, or provincial regulatory agencies should be contacted to determine special provisions for the disposal of heavily chlorinated water.

3.3 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements and 01700 - Execution Requirements
   1. Disinfect pipeline installation in strict accordance with AWWA C651.
   2. Ensure zero leakage of chlorinated water into existing water system.
   3. Employ an approved independent testing laboratory to sample, test and certify water quality suitable for human consumption.

END OF SECTION

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SECTION 02539

PUBLIC SANITARY AND STORM SEWER PIPING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Sewer pipe and fittings.
2. Underground pipe markers.
3. Connection to existing manholes.
4. Manholes, Catch Basins and Inlets.
5. Wye branches and tees.
6. Sanitary Laterals.
7. Bedding and cover materials.

B. Related Sections:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02082 - Public Manholes and Structures.
3. Section 02324 - Trenching, Backfilling and Compaction.
4. Section 02952 - Sewer and Manhole Testing.
5. Section 03300 - Cast-In-Place Concrete.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 Price and Payment Procedures.

1.3 REFERENCES

A. ASTM International:
1. ASTM C14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
2. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
3. ASTM C443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
4. ASTM D1785 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
5. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
6. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
7. ASTM D3034 – Standard Specification for Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings.
8. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
9. ASTM F679 – Standard Specification for Polyvinyl Chloride (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.

B. American Water Works Association:
   1. AWWA C105 - American National Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems.
   2. AWWA C110 - American National Standard for Ductile-Iron and Grey-Iron Fittings, 3 in. through 48 in. (75 mm through 1200 mm), for Water and Other Liquids.
   3. AWWA C111 - American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
   4. AWWA C150 - ANSI Standard for the Thickness Design of Ductile Iron Pipe.
   5. AWWA C151 - American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.
   6. AWWA C153 - American National Standard for Ductile-Iron Compact Fittings for Water Service.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Permits: Submit two copies of roadway opening and soil erosion permit.

C. Product Data: Submit catalog cuts and other pertinent data indicating proposed materials, accessories, details, and construction information.

D. Submit reports indicating field tests made and results obtained.

E. Manufacturer's Installation Instructions:
   1. Indicate special procedures required to install Products specified.
   2. Submit detailed description of procedures for connecting new sewer to existing sewer line.

F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Project Record Documents: Record location of pipe runs, connections, manholes, cleanouts, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

A. Pipe Markings All pipe shall be marked immediately after manufacture as follows:
   1. Diameter, Pipe Class and Wall.
   2. Date of Manufacture.
   3. Name of Trademark of Manufacturer.
   4. Test Method prior to shipment (Air, Water or Vacuum).

B. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

1.8 PRE-INSTALLATION MEETINGS

A. Review the OWNER's Sewer Inspection Reports (TV), if they exist, to verify the location of existing sewer wyes.

B. Section 01300 - Administrative Requirements: Pre-installation meeting.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Deliver and store valves in shipping containers with labeling in place.

C. Block individual and stockpiled pipe lengths to prevent moving.

D. Materials shall not be placed on private property without the written permission of the property owner. Pipe may be strung along the pipe alignment route where approved by the OWNER.

E. Pipe and fittings shall not be dropped.

F. Take necessary measures to prevent damage to the exterior surface or internal lining of the pipe.

G. Do not stack pipe higher than recommended by the pipe manufacturer.

H. Gaskets for mechanical and push-on joints shall be stored in a cool, dry location out of direct sunlight and not in contact with petroleum products.

1.10 FIELD MEASUREMENTS

A. Verify field measurements and elevations are as indicated.

1.11 COORDINATION

A. Section 01300 - Administrative Requirements: Requirements for coordination.

B. Comply with PA One Call Requirements.

PART 2 PRODUCTS

2.1 SANITARY SEWER PIPE AND FITTINGS

A. Ductile Iron Pipe: AWWA C150 or AWWA C151, minimum pressure class 52, bell and spigot ends. Thickness Class greater than Class 52 shall be used as per the OWNER or Contract Drawings.
   1. Manufacturers:
      a. U.S. Pipe - Tyton Joint Pipe.
      b. Substitutions: Section 01600 - Product Requirements.
   2. Outside Coating (Pipe/Fittings): AWWA C151, asphaltic coating, 1 mil uniform thickness.
   3. Internal lining (Pipe/Fittings): Novolac Epoxy Coating:
      a. Protecto 401 Ceramic Epoxy Coating (or Approved Equal)
   4. Manufacturer's facility must perform all lining application.
   5. The Epoxy Coating shall have a light resistance value of at least 40% to aid in the in-situ inspection of the pipe with video equipment.
   6. Polyethylene encasement: AWWA C105.
   7. Fittings: AWWA C153 or AWWA C110, ductile iron, Class 52 or above.
   8. Coat pipe and fittings per manufacturer’s instructions.
   9. Mechanical Joints: AWWA C111, rubber gasket joint devices.
   10. When transitioning to different pipe material, appropriate flexible coupling will be used to maintain a water tight seal.

B. Reinforced Concrete Pipe: ASTM C76, Class IV with Wall Type B reinforcement, bell and spigot ends.
   1. Fittings: Reinforced concrete.
   2. Joints: ASTM C443, rubber compression gasket positioned on a single off-set profile groove, or confined in preformed rectangular groove.
      a. Profile Gasket
      b. O-Ring Gasket
   3. Absorption: 5.5% Maximum.
   4. Density not less than 155 pounds per cubic foot using limestone aggregate and Type II cement.
   5. Limestone aggregate is required for sanitary and combination sewer installations.
   6. Reinforced with cages of circumferential and longitudinal steel.
   7. Pipe shall be furnished in minimum 8-foot lengths.
   8. Joint assemblies shall be so formed and accurately manufactured that when the pipes are drawn together the pipe shall form a continuous watertight conduit with a smooth and uniform interior surface.
   9. The rubber gasket shall be the sole element of the joint depended upon to provide a watertight seal conforming to ASTM Designation C443. Pipe shall be subject to rejection because of failure to conform to any of the specification requirements.
   10. When transitioning to different pipe material, appropriate flexible coupling will be used to maintain a water tight seal.

C. Plastic Pipe: ASTM D3034, SDR 26, Poly (Vinyl Chloride) (PVC) material; 4-inch through 15-inch diameter; bell and spigot style rubber ring sealed gasket joint.
   1. Joints: ASTM F477, and shall meet ASTM D3212 "Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seal".

2. The pipe stiffness shall be in accordance with ASTM designation D2412 Specification for External Loading Properties of Plastic Pipe by Parallel Plate Loading.
3. Fittings: PVC.
4. The CONTRACTOR shall use elastomeric waterstops or gaskets to couple all PVC Pipes to concrete structures.
5. Installation of couplings shall conform to the applicable sections of ASTM C-923.
6. When transitioning to different pipe material, appropriate flexible coupling will be used to maintain a water tight seal.

D. Plastic Pipe: ASTM F679, PS 115, PVC material; 18-inch through 36-inch diameter; bell and spigot style rubber ring sealed gasket joint.
1. Joints: ASTM F477, and shall meet ASTM D3212 "Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seal".
2. Fittings: PVC.
3. The CONTRACTOR shall use elastomeric waterstops or gaskets to couple all PVC Pipes to concrete structures.
4. Installation of couplings shall conform to the applicable sections of ASTM C-923.
5. When transitioning to different pipe material, appropriate flexible coupling will be used to maintain a water tight seal.

E. Vitrified Clay Pipe: ASTM C700, Extra Strength with Compression Joints, bell and spigot conforming to ASTM C425.
1. Fittings: Vitrified Clay, Extra Strength.
2. Joints: O-Ring conforming to ASTM C12.

2.2 FLEXIBLE COUPLINGS

A. Manufacturers:
1. Fernco Model.
a. 1001 Series - Vitrified Clay to Vitrified Clay
b. 1002 Series - Vitrified Clay to PVC
c. 1003 Series - Vitrified Clay to Ductile Iron
d. 1004 Series - Reinforced Concrete to Reinforced Concrete
e. 1006 Series - Reinforced Concrete to PVC
f. 1051 Series - Ductile Iron to PVC
g. 1055 Series - Ductile Iron to Ductile Iron
h. 1056 Series - PVC to PVC
2. Substitutions: Section 01600 - Product Requirements.

2.3 SHIELDED COUPLINGS

A. Stainless Steel Shear Rings

B. Manufacturers:
1. Fernco Models.
2. Substitutions: Section 01600 - Product Requirements.

2.4 CONCRETE ENCASEMENT AND CRADLES

A. Concrete: Conforming to Section 03300 - Cast-In-Place Concrete, 4000 psi, 28-day concrete.

B. Concrete Reinforcement: Conform to Section 03300 - Cast-In-Place Concrete and Standard Details.

2.5 UNDERGROUND PIPE MARKERS

A. Electronically locatable brightly colored plastic ribbon tape, displaying the continuously printed "SEWER" notation, minimum 6 inches wide, 4 mil thick, manufactured for direct burial service.

B. Tape shall be laid between backfilling lifts over the pipe not less than two feet above the pipe and not less than four feet below the finished ground surface.

2.6 INSERTABLE LATERAL CONNECTIONS

A. Wye or Tee Connections
   1. Rubber Sleeve and Gasketed PVC Hub, conforming to ASTM F477.
   2. Manufacturer List:
      a. Inserta-Tee or Inserta-Wye
      b. Substitutions: Section 01600 - Product Requirements.

2.7 MANHOLES

A. Conform to Section 02082 - Public Manholes and Structures.

2.8 BEDDING AND BACKFILL MATERIALS

A. Bedding and Backfill materials shall conform to Section 02324 – Trenching, Backfilling, and Compaction.

2.9 ACCESSORIES

A. Grout: Conform to Section 03600 - Grout.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify trench cut is ready to receive work.

3.2 PREPARATION

A. Continuous water and sewer service shall be maintained throughout the job. The CONTRACTOR shall furnish and install temporary cuts and plugs of existing pipes as necessary to maintain said service.

B. Correct over excavation in accordance with Section 02324 – Trenching, Backfilling, and Compaction.

C. Remove large stones or other hard matter capable of damaging pipe or impeding consistent backfilling or compaction.

D. Protect and support existing sewer lines, utilities, and appurtenances.

E. Maintain profiles of utilities. Coordinate with other utilities to eliminate interference. Notify OWNER where crossing conflicts occur.

3.3 BEDDING

A. Excavate pipe trench in accordance with Section 02324 – Trenching, Backfilling, and Compaction.

B. Excavate to lines and grades shown on Drawings or required to accommodate installation of encasement.

C. Dewater excavations to maintain dry conditions and preserve final grades at bottom of excavation.

D. Provide sheeting and shoring in accordance with Section 02324 – Trenching, Backfilling, and Compaction.

E. Place bedding material in accordance with Section 02324 – Trenching, Backfilling, and Compaction.

3.4 INSTALLATION – PIPE

A. Unless otherwise approved by the OWNER in writing, pipe laying shall be performed only in the presence of the OWNER, and the CONTRACTOR shall give 24-hour notice of scheduled pipe laying operations to the OWNER.

B. All sewer pipe shall be installed to the lines and grades shown on the Drawings, Work Orders or as directed by the OWNER. The CONTRACTOR shall furnish labor, material, and surveying instruments and tools to establish and maintain all lines and grades from the control points furnished by the OWNER.

C. Grade and alignment of the pipe shall be maintained by the use of laser beams or other methods acceptable to the OWNER.

D. Blocking will not be permitted except where the pipe is to be encased in concrete.

E. The grade shown on the profile is that of the invert of the pipe. Work not in compliance with these grades will be rejected and shall be corrected by the CONTRACTOR at CONTRACTOR expense in a manner acceptable to the OWNER.

F. The pipe shall not be driven down to grade by striking it with a shovel handle, timber, rammer, or other unyielding object.

G. Pipe laying shall proceed upgrade with hubs up-grade and spigot ends fully entered into hubs. Each section of pipe shall rest upon the pipe bed for the full length of its barrel with recesses excavated to accommodate bells and joints to form a continuous and uniform line without projections, indentations, offsets or irregularities of any kind.

H. Backfill material shall be placed and compacted between the pipe and the sides of the trench to hold the pipe in correct alignment. Backfill shall be placed to avoid damage to the pipe. Any pipe that has its grades or joints disturbed after laying shall be removed and re-laid.

I. Walking or working on the completed pipe line, except as may be necessary in backfilling or tamping, shall not be permitted until the trench has been backfilled to a height of at least two feet over the top of the pipes.

J. Any defective pipe or fitting found in the line shall be removed and replaced without cost to the OWNER.

K. The interior and ends of all pipe shall be thoroughly cleaned during laying operations by means of plugs or other approved methods.

L. Under no circumstances shall pipe be laid in water and no pipe shall be laid when trench conditions or the weather is unsuitable for such work except by permission of the OWNER.

M. If deemed necessary by the OWNER, sanitary sewer lines will be tested for leakage between manholes as the work progresses.

N. All pipes shall be joined in strict conformance with the manufacturer's written specifications.

O. Each section of pipe shall be cleaned and inspected before joining. Assembly shall provide tight, flexible joints that permit movement caused by expansion, contraction, and ground movement.

P. If unusual joining resistance is encountered or if the pipe cannot be fully inserted into the bell, the CONTRACTOR shall disassemble the joint, inspect it for damage, re-clean or replace the joint components, and reassemble the joint.

Q. At all times when sanitary sewer and surface drain piping installation is not actually in progress, the open ends in place of piping shall be closed by temporary plugs or by other approved means.

R. If water is in the trench when work is resumed, the plug shall not be removed until all danger of earth or other materials from entering the pipe has passed.

S. The connection to the existing sewers shall be protected in such a manner to prevent water, dirt or debris from entering the existing system at any time during construction.

T. Take all necessary precautions to prevent flotation of the pipe from trench flooding.

U. Where indicated on the Drawings or Work Orders or required by the OWNER, piping shall be placed on a concrete cradle, or concrete shall be placed around pipes for anchors, bedding and encasement.

V. Concrete anchors or cradles shall consist of structures composed of concrete built-in trenches to support pipes and to the dimensions shown on the Drawings, Work Orders or Standard Detail, or as furnished by the OWNER. In all cases, water shall be kept out of the trench until the concrete encasement or cradle, where used, has hardened or until the pipe sidefills have been placed.

W. Concrete bedding and encasement shall be composed of concrete placed in trenches without forms as pipe bedding, or encased around pipes, to the dimensions and in the locations designated by the OWNER or indicated on the Drawings or Work Orders.

3.5 INSTALLATION - CONNECTION TO EXISTING MANHOLE

A. Core drill existing manhole/structure to clean opening. Using pneumatic hammers, chipping guns, sledgehammers, etc. is not permitted.

B. Install watertight neoprene gasket and seal with non-shrink concrete grout.

C. Prevent construction debris from entering existing sewer line when making connection.

3.6 INSTALLATION – MANHOLES

A. Install in accordance with Section 02082 - Public Manholes and Structures.

3.7 INSTALLATION - WYE BRANCHES AND TEES

A. Wye branches shall be installed at the locations indicated by the OWNER.

B. Maintain minimum 5 feet separation distance between wye connection and manhole.

C. Supply the appropriate size wyes for all lateral connections/reconnections and/or core each lateral to correct size. Unless otherwise directed connections to main sanitary sewers will be made with commercially manufactured wye branches and one-eighth bends.

D. When tapping into an existing pipeline, provide approved saddle wye or tee with stainless steel clamps or core drill the pipe and install watertight resilient boot "Inserta Tee" type or approve equal. Mount saddles shall then be mounted with solvent cement or gasket and then secured with metal bands.

E. Holes shall be laid out with a template and then cut with a mechanical hole cutter.

F. Use standard fittings of the same material and joint type as the pipeline into which they are installed.

G. Cutting of pipe will not be permitted except in special cases approved by the OWNER.

H. Unless otherwise directed, wye branches will be installed as shown in the Standard Details with the branch turned approximately 45° from the horizontal.

3.8 INSTALLATION - SANITARY LATERALS

A. Service connections shall be laid and joined in every respect in the same manner specified for installation of pipe and fittings. All sewer service connections shall have a hub-end and be closed with pipe caps as specified.

B. Termination elevation of all service connections will be determined by the elevation of the service sewer to be connected unless approved by the OWNER.

C. If a transition in sewer lateral pipe must be made during the reconnection of service connections, an approved flexible type coupling or donut, and sealers must be used as manufactured by Fernco, Inc., or an approved equal. Costs for furnishing and installing the couplings and sealers shall be included in the sewer lateral unit price bid.

D. The ends of all service connection trenches shall not be backfilled until the elevation and location of the service connection has been inspected and approved by the OWNER.

E. Remove by drilling and wedging or some other approved method other than blasting any rock encountered in service connection trenches within 25 ft of any building. Rock shall be removed to a point not less than five feet beyond the end of the lateral installation.

F. Where the depth of the main pipeline warrants, riser type laterals shall be constructed from the wye branch.

G. Maintain minimum 5 feet separation distance between laterals.

H. Install watertight plug, braced to withstand pipeline test pressure thrust, at termination of lateral. Install a two-inch by two-inch temporary marker stake extending from end of lateral to 12-inches above finished grade. Paint top 6-inches of stake with fluorescent green paint.

3.9 BACKFILLING

A. Backfill around sides and to top of pipe in accordance with Section 02324 – Trenching, Backfilling, and Compaction.

B. Maintain optimum moisture content of bedding material to attain required compaction density per Section 02324 – Trenching, Backfilling, and Compaction.

3.10 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements and 01700 - Execution Requirements.

B. Pressure Test: Test in accordance with Section 02952 – Sewer and Manhole Testing.

C. Infiltration Test: Test in accordance with Section 02952 – Sewer and Manhole Testing.

D. Deflection Test: Test in accordance with Section 02952 – Sewer and Manhole Testing.

E. Request inspection prior to [and immediately after] placing bedding.

F. Compaction Testing: in accordance with Section 02324 – Trenching, Backfilling, and Compaction.

G. When tests indicate Work does not meet specified requirements, remove work, replace and retest.

H. Frequency of Compaction Tests: in accordance with Section 02324 – Trenching, Backfilling, and Compaction.

3.11 PROTECTION OF FINISHED WORK

A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION

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SECTION 02630

STORM DRAINAGE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Cleanouts
   2. Inlets
   3. Catch Basins

B. Related Sections:
   1. Section 02060 - Aggregates for Earthwork.
   2. Section 02324 – Trenching, Backfilling and Compaction.
   3. Section 02539 - Public Sanitary and Storm Sewer Piping.
   4. Section 02952 - Sewer and Manhole Testing.
   5. Section 03300 - Cast-In-Place Concrete.
   6. Section 03600 – Grout.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures.

1.3 REFERENCES

A. American Association of State Highway Transportation Officials:
   1. AASHTO M306 - Drainage Structure Castings.

B. ASTM International:
   1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
   2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   3. ASTM C76 – Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
   4. ASTM C361 - Standard Specification for Reinforced Concrete Low-Head Pressure Pipe.
   5. ASTM C443 – Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
   6. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
   7. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
   8. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures.
   9. ASTM C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Shop Drawings: Indicate structure locations

C. Product Data: Submit frames and grates, component construction, features, configuration, dimensions.

D. Qualifications listed in paragraph 1.6.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

B. Shop Inspection:
1. All materials furnished by the CONTRACTOR shall be certified by the supplier for compliance with the pertinent specifications. Shop inspections and testing may be required. The cost of shop testing shall be borne by the supplier or the CONTRACTOR.

C. Field Inspection:
1. All materials furnished shall be tested for defects in material and/or workmanship in the manner specified and in the presence of and as approved by the OWNER.

D. Source Quality Control:
1. Maintain uniform quality of products and component compatibility by using the products of one manufacturer in the case of precast reinforced concrete catch basins and inlets.
2. Obtain certificate of construction compliance with ASTM C478 from the precast reinforced concrete catch basin and inlet manufacturer.
3. Obtain sworn certification from manufacturer that structures were constructed using Type II Portland cement. No payment for catch basins or inlets will be approved until such certificate has been submitted.
4. Obtain certificate of material compliance with ASTM A48, Class 30 tensile strength from the frame, grate and casting manufacturer. Furnish certification that tensile test bars were from same pour as castings.
5. Obtain certification from manufacturer that all components meet or exceed AASHTO HS-20 highway loading requirements.
6. Sections shall be steam cured and shall not be shipped until at least five days after having been cast.
7. Mark inside of each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.7 DELIVERY, STORAGE AND HANDLING

A. Comply with Section 01600 - Product Requirements: Product storage and handling requirements.

B. Comply with precast concrete manufacturer's instructions and ASTM C913 for unloading, storing and moving precast structures.

C. Store precast concrete catch basins and inlets to prevent damage to OWNER's property or other public or private property. Repair property damaged at CONTACTOR's expense.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements.

B. Cold Weather Requirements: ACI 530/530.1.

C. In no instance set or construct catch basin or inlet bases on subgrade containing frost.

D. To improve workability of Preformed Plastic Sealing Compound during cold weather, store such at temperature above 70 degrees F or artificially warm compound in a manner satisfactory to the OWNER.

PART 2 PRODUCTS

2.1 GENERAL

A. Catch Basins and inlets shall consist either of precast or poured in-place concrete box, cast iron frame and bicycle safe grate, all necessary risers, and cast iron curb inlet casting (Type 1 Modified only).

2.2 MANHOLES AND STRUCTURES

A. Conform to Section 02082 – Public Manholes and Structures.

2.3 MANHOLE FRAMES AND COVERS

A. Conform to Section 02082 – Public Manholes and Structures.

2.4 STORMWATER INLET AND CATCH BASIN STRUCTURES

A. All drainage structures shall be installed at every low point and/or intersection (before each crosswalk is preferred) and at intervals determined by using PennDOT Design Manual 2 but shall not exceed 300 ft.

B. Catch Basin and Inlet Structure Sections:
   1. Concrete shall be minimum 4,000 psi at 28-days, Class P or approved equal
   2. H-20 Live Load Rating

3. Reinforced precast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C923
4. Wall Thickness: 8” (Reinforced Concrete), 12” (Plain Concrete)
   a. Vertical Rebar - #6 Rebar, 6” C.C.
   b. Horizontal Rebar - #4 Rebar, 12” C.C.
5. Base Thickness: 8” (Reinforced Concrete), 12” (Plain Concrete)
   a. Rebar - #4 Rebar, 12” C.C.
6. Aggregate Base: Compacted, 12” Thick (for Precast Base only)
7. Dimensions per Standard Details CB13, CB11N12, CB1M, CB9N10, SI11N12, SI5, SI9N10.
8. Invert: 20” above the bottom of the structure (Catch Basin only)

C. Hook and Trap (Catch Basin Only):
   1. Hook: East Jordan EJIW 5954 (or Approved Equal)
   2. Trap: East Jordan EJIW 5944 (or Approved Equal)
   3. Bottom of Hook and Trap to be 16” above the bottom of the structure

2.5 CATCH BASIN FRAME AND GRATE

A. Cast Iron, conforming to ASTM A-48.
   1. Class 30 Minimum Strength
   2. Cast Iron or Gray Iron

B. Manufacturer and Product List:
   1. Frame
      a. East Jordan Iron Works
         1) #EJIW 5357 (3-Flange) – Type 13 & Type 1 Modified
         2) #EJIW 5357 (4-Flange) – Type 9
      b. Neenah Foundry
         1) #NF - 35720002 (3-Flange) – Type 13 & Type 1 Modified
         2) #NF - 35720001 (4-Flange) – Type 9
   2. Grate
      a. East Jordan
         1) #EJIW 5355M8 - All Catch Basins
      b. Neenah Foundry
         1) #NF – 35743000
   3. Approved Equal
      a. Section 01600 - Product Requirements: Requirements for substitutions for other manufacturers and products.

2.6 CATCH BASIN CASTING – TYPE 1 MODIFIED

A. #EJIW 7248

2.7 BEDDING AND BACKFILL MATERIALS

A. Bedding and Backfill Materials shall conform to Section 02324 - Trenching, Backfilling and Compaction.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify items provided by other sections of Work are properly sized and located.

C. Verify built-in items are in proper location, and ready for roughing into Work.

D. Verify correct size of excavation.

3.2 PREPARATION

A. Perform Bypass Pumping in accordance with Section 01510 – Bypass Pumping.

B. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.

C. A waterstop gasket and approved clamp assembly shall be installed around the pipe when entering and leaving a catch basin or inlet wall.

D. Do not install catch basins and inlets where site conditions induce loads exceeding structural capacity of structures.

E. Inspect precast concrete manholes and structures immediately prior to placement in excavation to verify manholes and structures are internally clean and free from damage. Remove and replace damaged units.

F. The excavation shall be properly dewatered while placing bedding material and pouring the concrete.

3.3 INSTALLATION - GENERAL

A. Excavation and Backfill:
   1. Excavate for catch basins and inlets in accordance with Section 02324 - Trenching, Backfilling and Compaction. Provide clearance around sidewalls of catch basin and inlet for construction operations, granular backfill and if required placement of geotextile filter fabric.
   2. When groundwater is encountered, prevent accumulation of water in excavations. Place structure in dry trench.

B. Set catch basins and inlets in the proper location at the invert elevations indicated on the Contract Drawings with rim at the proper elevation. Set structure plumb and true on aggregate base (compacted aggregate for pre-cast structures only). Under no condition remove a portion of the structure for adjustment purposes.

C. Install catch basins and inlets in a manner to ensure watertight construction.

D. Install catch basins and inlets so as to preclude sediment from any tributary areas from entering the structure until such areas have been stabilized.

E. Place sections plumb and level, trim to correct elevations, anchor to foundation slab as applicable.

F. Backfill excavations for structures in accordance with Section 02324 - Trenching, Backfilling and Compaction.

3.4 CONCRETE MANHOLE INSTALLATION

A. Conform to Section 02082 – Public Manholes and Structures.

3.5 PRECAST CONCRETE INLET AND CATCH BASIN INSTALLATION

A. Lift precast inlet or catch basin at lifting points designated by manufacturer.

B. When lowering inlet or catch basin into excavations and joining pipe to units, take precautions to ensure interior of pipeline and structure remains clean.

C. Set precast inlet or catch basin firmly and fully on 12-inches of compacted Type A1 crushed stone bedding, consolidated in accordance with provisions of Section 02324 - Trenching, Backfilling and Compaction.

D. Remove foreign materials from joint surfaces and verify sealing materials are placed properly.

E. Verify inlet or catch basin structures installed satisfy required alignment and grade.

F. Remove knockouts without creating openings larger than required to receive pipe. Fill annular space per Section 03600 - Grout.

G. Cut pipe to finish flush with interior wall.

H. Damaged curb shall be sawcut in accordance with Section 02230 - Site Clearing.

I. Form and replace damaged curb in accordance with Section 02750 - Concrete Pavement.

3.6 CAST-IN-PLACE CONCRETE INLET AND CATCH BASIN INSTALLATION

A. Prepare crushed stone bedding or other support system shown on Standard Details, to receive foundation slab as specified for precast manholes and structures.

B. Erect and brace forms against movement in accordance with Section 03300 - Cast-In-Place Concrete.

C. Install reinforcing steel as indicated on Standard Details and in accordance with Section 03300 - Cast-In-Place Concrete.

D. Place and cure concrete in accordance with Section 03300 - Cast-In-Place Concrete.

E. Damaged curb shall be sawcut in accordance with Section 02230 - Site Clearing.

F. Form and replace damaged curb in accordance with Section 02750 - Concrete Pavement.

3.7 CAST-IN-PLACE CONCRETE INLET AND CATCH BASIN WITH PRECAST CONCRETE BASE INSTALLATION

A. Set precast base firmly and fully on 12-inches of compacted Type A1 crushed stone bedding, consolidated in accordance with provisions of Section 02324 – Trenching, Backfilling and Compaction.

B. Erect and brace forms against movement in accordance with Section 03300 - Cast-In-Place Concrete.

C. Install reinforcing steel as indicated on Standard Detail and in accordance with Section 03300 - Cast-In-Place Concrete.

D. Install joint gaskets between precast base and cast-in-place sections in accordance with manufacturer's recommendations and appropriate Standard Detail. Lower, set level, and firmly position base section before placing or casting additional sections.

E. Place and cure concrete in accordance with Section 03300 - Cast-In-Place Concrete.

F. Damaged curb shall be sawcut in accordance with Section 02230 - Site Clearing.

G. Form and replace damaged curb in accordance with Section 02750 - Concrete Pavement.

3.8 FRAME, GRATE AND CASTING INSTALLATION

A. Frames shall be set into 2 rings of elastomeric sealant and secured with a minimum of two 3/4" stainless steel anchor bolts.

B. Any casting set more than 3/16 of an inch above or below the finished surface of the adjoining concrete, brick, block, stone or bituminous surface, as determined by a ten foot (10') straight edge, shall be reset by the CONTRACTOR at his own expense.

C. Provide for adjustment of frames using solid rubber composite (or approved equal) adjustable risers with a cement mortar or non-shrink grout to close the opening between the frame and structure.

D. Set top of frame flush with the ordained (original) street grade. Provide for adjustment of grates to finished street grade using precast steel leveling rings.

3.9 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements.

B. Section 01700 - Execution Requirements.

C. Test cast-in-place concrete in accordance with Section 03300 – Cast In-Place Concrete.

D. Test concrete manhole and structure sections in accordance with Section 02952 – Sewer and Manhole Testing.

E. At the beginning of the construction and periodically during construction at the OWNER's discretion, catch basins may be subjected to an infiltration test.

END OF SECTION

SECTION 02721

AGGREGATE BASE COURSE

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Aggregate subbase.
   2. Aggregate base course.

B. Related Sections:
   1. Section 02060 - Aggregates for Earthwork.
   2. Section 02082 - Public Manholes And Structures.
   3. Section 02324 - Trenching, Backfilling and Compaction.
   4. Section 02740 - Asphalt Pavement.
   5. Section 02750 - Concrete Pavement.
   6. Section 02780 - Brick Pavers.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures.

1.3 REFERENCES

A. American Association of State Highway and Transportation Officials:
   1. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.

B. ASTM International:
   1. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
   2. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
   3. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
   4. ASTM D2940 - Standard Specification for Graded Aggregate Material For Bases or Subbases for Highways or Airports.
   5. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

C. Pennsylvania Department of Transportation (PennDOT)
   1. PennDOT Specifications Publication 408, current edition.

D. City of Pittsburgh
   1. Department of Public Works, Work within the Public Right-Of-Way, (current publication).

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Materials Source: Submit name of approved aggregate materials suppliers.

C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Furnish each aggregate material from single source throughout the Work.

B. Perform Work in accordance with City of Pittsburgh Standards of Construction.

PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

A. PennDOT No. 2A crushed stone compacted base course, Table C, Section 703.2, PennDOT Publication 408 Specifications (current edition).
   1. Materials not acceptable: slag (any kind).

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify conditions before starting Work.

C. After subgrade has been shaped and compacted in a satisfactory manner, verify compacted substrate is dry and ready to support paving and imposed loads. Subbase materials shall not be spread on wet subgrade.

D. The subbase materials shall be uniformly spread over subbase area. All segregated areas shall be removed and replaced with well-graded material.
   1. Proof roll or tamp substrate in minimum two perpendicular passes to identify soft spots.
   2. Remove soft substrate and replace with compacted fill as specified in Section 02324 - Trenching, Backfilling, and Compaction, only upon approval of the OWNER.

E. Verify substrate has been inspected, gradients and elevations are correct.

3.2 PREPARATION

A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.

B. Do not place fill on soft, wet, muddy, or frozen surfaces.

C. Protect area from exposure to precipitation.

3.3 AGGREGATE PLACEMENT

A. Place aggregate equal thickness layers to total compacted thickness of 8-inches.
   1. Mechanically compact in two 4-inch layers.

B. Roller compact aggregate to 98 percent of the ultimate dry density.

C. Rolling shall be parallel to centerline of roadway uniformly lapping each track and continuing until material does not creep or wave ahead of roller. Level and contour surfaces to elevations, profiles, and gradients indicated.

D. Add small quantities of fine aggregate to coarse aggregate when required to assist compaction.

E. Maintain optimum moisture content of fill materials to attain specified compaction density.

F. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

G. Use of frozen material is prohibited.

3.4 TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. A straight edge shall be used to detect irregularities in the surface. Areas +/-1/2 inch of the finished subbase surface shall be remedied by removing and adding subbase material and recompacting the area, including surrounding surface, until a well compacted and uniform surface is achieved.

3.5 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements 01700 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.

B. Compaction testing will be performed in accordance with ASTM D2922 or as required by City of Pittsburgh.

C. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

D. Protect finished work. Allow only necessary local traffic and essential construction equipment on subbase. Repair and replace damaged subbase. If the subbase is subjected to hauling or exposed to weather more than 30 calendar days, CONTRACTOR shall retest for surface irregularities and depth and correct deficiencies as specified above.

E. CONTRACTOR to keep construction equipment and traffic off compacted aggregates unless specifically authorized by the OWNER.

3.6 COMPACTION

A. Compact materials to 98 percent of maximum density as determined from test strip, in accordance with ASTM D2940.

3.7 SCHEDULES

A. Asphalt Paving Subbase: 8-inches thick placed in two 4-inch layers.

B. Concrete Paving Subbase: 8-inches thick placed in two 4-inch layers.

C. Finished depth of base for unimproved streets shall be 8-inches minimum.

END OF SECTION

SECTION 02740

ASPHALT PAVEMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Asphalt materials.
2. Aggregate materials.
3. Asphalt mixes: base course, binder course, and wearing course.
4. Asphalt paving overlay for existing paving.
5. Bituminous cold patch.

B. Related Sections:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02082 – Public Manholes and Structures.
3. Section 02281 – Manhole and Catch Basin Grade Adjustment.
4. Section 02721 - Aggregate Base Course.
5. Section 02750 – Concrete Pavement.
6. Section 02763 – Painted Pavement Markings.
7. Section 02780 - Brick Paving.
8. Section 02960 - Milling Existing Pavement.

1.2 PRICE AND PAYMENT PROCEDURES

A. See Section 01200 - Price and Payment Procedures

1.3 REFERENCES

A. City of Pittsburgh – Department of Public Works:
1. Right of Way Procedures Manual, January 2017, or current version.

B. Pennsylvania Department of Transportation (PennDOT):
1. PennDOT Specifications Publication 408/2020, or current Edition.

C. Pennsylvania Asphalt Pavement Association (PAPA):
1. Hot-Mix Asphalt Pavement Design Guide.

1.4 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials (AASHTO):
1. AASHTO M17 - Standard Specification for Mineral Filler for Bituminous Paving Mixtures.
2. AASHTO M29 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
3. AASHTO M140 - Standard Specification for Emulsified Asphalt.

4. AASHTO M288 - Standard Specification for Geotextile Specification for Highway Applications.
5. AASHTO M320 - Standard Specification for Performance-Graded Asphalt Binder.
6. AASHTO M324 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

B. Asphalt Institute (AI):
1. AI MS-2 - Mix Design Methods for Asphalt Concrete and Other Hot- Mix Types.
2. AI MS-19 - Basic Asphalt Emulsion Manual.
3. AI SP-2 - Superpave Mix Design.

C. ASTM International:
1. ASTM C1371-2004a - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
2. ASTM C1549-2004 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
3. ASTM D242 - Standard Specification for Mineral Filler For Bituminous Paving Mixtures.
4. ASTM D692 - Standard Specification for Coarse Aggregate for Bituminous Paving Mixtures.
5. ASTM D946 - Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction.
6. ASTM D977 - Standard Specification for Emulsified Asphalt.
7. ASTM D1073 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
8. ASTM D1188 - Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples
9. ASTM D2027 - Standard Specification for Cutback Asphalt (Medium-Curing Type).
10. ASTM D2397 - Standard Specification for Cationic Emulsified Asphalt.
11. ASTM D2726 - Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures.
12. ASTM D2950 - Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods.
13. ASTM D3381 - Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction.
14. ASTM D3515 - Standard Specification for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
15. ASTM D3549 - Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens.
16. ASTM D3910 - Standard Practices for Design, Testing, and Construction of Slurry Seal.
17. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
18. ASTM E408-1971(1996)e1 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
19. ASTM E903-1996 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
20. ASTM E1918-1997 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
21. ASTM E1980-2001 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

1.5 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data:
   1. Submit product information for asphalt and aggregate materials.
   2. Mix design submittal:
      a. Submit mix designs for approval to the City of Pittsburgh via email to John Barbati (john.barbati@pittsburghpa.gov) and copy John Klinger (john.klinger@pittsburghpa.gov) The email should include laboratory test results supporting design. Email shall clearly identify the following: the Pittsburgh Water and Sewer Authority as the utility company name, the CONTRACTOR's company name, and the name and phone number of the CONTRACTOR's designated contact person.
      b. Submit mix design with laboratory test results supporting design and proof of City of Pittsburgh approval of mix design to OWNER.

C. Manufacturer's Certificate:
   1. Certify that all bituminous (asphalt) for City of Pittsburgh streets are produced by a Commonwealth of Pennsylvania approved supplier that is actively listed in the current PennDOT Bulletin 41, Producers of Bituminous Mixtures.
   2. Certify that each bituminous (asphalt) mix design to be used meets or exceed PennDOT Specifications Publication 408 (current edition).

D. Within 15 days after bid opening dated, apparent low responsive bidder (CONTRACTOR) and all subcontractors intended to be used for the proposed Work shall submit a current Commonwealth of Pennsylvania, PennDOT Prequalification Certificate in accordance with 67 PA Code, Chapter 457.

1.6 QUALITY ASSURANCE

A. Mixing Plant: Conform to PennDOT Specifications Publication 408 (current edition), and actively listed in the current PennDOT Bulletin 41.

B. Obtain materials from same source throughout.

C. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

D. CONTRACTOR shall guarantee pavement restoration work for a period for two (2) years from the date of final restoration. Any failure of the pavement during the guarantee period must be corrected by the CONTRACTOR within 45 days of being notified by the OWNER or City of Pittsburgh representative.

1.7 QUALIFICATIONS

A. Installer: Company utilizing an adequate number of skilled workers experienced in the use of equipment required to perform work of this section and complying with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

B. Mixing Plant: Producer listed in the current PennDOT Bulletin 41.

1.8 AMBIENT CONDITIONS

A. Do not place asphalt mixture when ambient air or base surface temperature is less than 40 degrees F and rising or surface is wet or frozen unless approved by the OWNER. Placement of asphalt mixture shall be at the discretion of the CONTRACTOR.

B. Place asphalt mixture when temperature is not more than 15 degrees F less than initial mixing temperature.

PART 2 PRODUCTS

2.1 ASPHALT PAVING

A. Performance / Design Criteria:
   1. Paving: Superpave design based on 3 to 30 million equivalent single axle loads (ESAL) for 20 year paving design life.

B. Asphalt Materials:
   1. Asphalt Binder Cement: In accordance with PennDOT Publication 408 (current edition) and City of Pittsburgh Department of Public Works standards.
   2. Primer: In accordance with PennDOT Publication 408 (current edition) and City of Pittsburgh Department of Public Works standards.
   3. Tack Coat: AASHTO Grade RSI Emulsified Asphalt in accordance with PennDOT Publication 408 (current edition) and City of Pittsburgh Department of Public Works standards.

C. Aggregate Materials:
   1. Coarse Aggregate: In accordance with PennDOT Publication 408 (current edition) and City of Pittsburgh Department of Public Works standards.
   2. Fine Aggregate: In accordance with PennDOT Publication 408 (current edition) and City of Pittsburgh Department of Public Works standards.

D. Aggregate Subbase: Specified in Section 02721 – Aggregate Base Courses.

2.2 MIXES

A. When using material furnished by the City of Pittsburgh's Asphalt Plant at Washington Boulevard, the CONTRACTOR shall furnish his own equipment and labor to haul and place all materials. The CONTRACTOR, in coordination with the Inspector, shall give a forty-eight (48) hour notice to the City of Pittsburgh's Asphalt Plant Superintendent, when ordering materials.

B. Asphalt Paving Mixtures: Superpave type; designed and tested in accordance with the standards of the governing agency that owns and maintains the cart-way, i.e., City of Pittsburgh Department of Public Works, Allegheny County Department of Public Works, or PennDOT.
   1. Binder Course: Conforming to PennDOT Publication 408, Superpave Asphalt Mixture Design, HMA Binder Course, PG (Performance-Graded) 76-22**, 3 to 30 million ESAL's

(Equivalent Single Axle Loads), 19 mm mix, 2-1/2" Depth. **PG 76-22 required for City Bus Routes.

2. Wearing Course: Conforming to PennDOT Publication 408, Superpave Asphalt Mixture Design, HMA Wearing Course, PG 76-22*, 3 to 30 million ESAL's (Equivalent Single Axle Loads), 9.5 mm mix, 1-1/2" Depth, SRL (Skid Resistance Level) equal to or better than E. *PG 76-22 required for City Bus Routes.

2.3 BITUMINOUS COLD PATCH

A. All cold patch material shall comply with the current standards of the governing agency that owns and maintains the cartway, (i.e.; City of Pittsburgh Department of Public Works, Allegheny County Department of Public Works, or PennDOT).

2.4 ACCESSORIES

A. Sealant: In accordance with PennDOT Publication 408 (current edition) and City of Pittsburgh Department of Public Works standards.

2.5 SOURCE QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing, inspection and analysis requirements.

B. Submit proposed mix design of each class of mix for review prior to beginning of Work.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Requirements for installation examination.

B. Verify utilities indicated under paving are installed with excavations and trenches backfilled and compacted.

C. Verify compacted subgrade granular stabilized soil subbase is dry and ready to support paving and imposed loads.
   1. Proof roll subbase with in minimum two perpendicular passes to identify soft spots.
   2. Remove soft subbase and replace with compacted fill as specified in Section 02721.

D. Verify gradients and elevations of base are correct.

E. Verify gutter drainage grilles and frames manhole frames and are installed in correct position and elevation.

3.2 PREPARATION

A. Demolition
   1. Saw cut and notch existing paving per Standard Detail Drawings.

2. Clean existing paving to remove foreign material, excess joint sealant and crack filler from paving surface.
3. Repair surface defects in existing paving to provide uniform surface to receive new paving.

B. Prepare subbase in accordance with City of Pittsburgh Department of Public Works and PennDOT standards.

3.3 TRANSPORTATION OF MIX

A. Transport mix to the job site in clean vehicles devoid of all foreign material. The vehicle shall be covered with an approved waterproof cover of sufficient size to protect the entire load.

B. Schedule the dispatching of the vehicles so that material delivered may be placed in daylight, unless the OWNER approves artificial light placement. Deliver material to the paver at a uniform rate and in an amount well within the capacity of the paving and compacting equipment.

C. Duplicate load slips of bituminous material must be provided for each truckload, and submitted to the Project Inspector concurrent with material placement. Each slip must be stamped with the tonnage, mix design number, temperature, and time the truck was loaded at the plant site.

3.4 INSTALLATION

A. All material shall be thoroughly loosened and uniformly distributed. Material that has formed lumps and does not break down readily shall be rejected.

B. Subbase:
1. Aggregate Subbase: Install as specified in Section 02721 – Aggregate Base Courses and in accordance with City of Pittsburgh Department of Public Works and PennDOT standards.

C. Primer:
1. Apply primer in accordance with PennDOT and City of Pittsburgh Department of Public Works standards.
2. Apply primer on subbase at uniform rate per applicable standard.
3. Use clean sand to blot excess primer.

D. Tack Coat:
1. Apply tack coat in accordance with PennDOT and City of Pittsburgh Department of Public Works standards.

E. Double Course Asphalt Paving:
1. Place asphalt binder course within 24 hours of applying primer or tack coat.
2. Place binder course to match existing conditions.
3. Place wearing course within 24 hours of placing and compacting binder course. When binder course is placed more than 24 hours before placing wearing course, clean surface and apply tack coat before placing wearing course.
4. Place wearing course to compacted thickness indicated.
5. Compact each course by rolling to specified density. Do not displace or extrude paving from position. Compaction shall be done by mechanical rollers and shall be done in a manner that

thoroughly compacts the material and provides a smooth riding surface. Hand compact in areas inaccessible to rolling equipment.

6. Following placing and before rolling, the surface shall be checked with templates and straight edges and all irregularities corrected.
7. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

F. Cold Patch:
   1. Place in accordance with PennDOT and City of Pittsburgh Department of Public Works standards.
   2. Cold Patch is intended for short term use only, and must be removed within 7-days from the date of placement.

G. Sealant
   1. Each individual street must be sealed at the conclusion of each paving job. The City requires the street to be sealed at the conclusion of paving, including all wearing course seams, all curbs, utility castings, and any cold transverse joints with AC-120.

H. Completion:
   1. Asphalt paving shall not be considered complete until the CONTRACTOR has installed the appropriate Utility Identification Tag on the asphalt patch, in accordance with the City of Pittsburgh's Department of Public Works Right of Way Procedures Manual.

3.5 TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Pavement tolerances, including flatness, thickness, and variation for indicated elevation shall be within maximum variations as defined by PennDOT and the City of Pittsburgh standards.

3.6 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Requirements for inspecting, testing.

B. Take samples and perform tests including mat density tests in accordance with PennDOT and City of Pittsburgh Department of Public Works standards.

C. Asphalt Paving Mix Temperature: Measure temperature at time of placement.

D. Asphalt Paving Density: Assure asphalt paving, in place density, is in accordance with current PennDOT Publication 408 and City of Pittsburgh Department of Public Works standards.

3.7 PROTECTION

A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.

B. Do not haul heavy loads over the surface course; satisfactorily repair any damage, due to contractor's operations, at contractor's expense.

C. After final rolling, permit no vehicular traffic of any kind on the pavement until it has attained sufficient hardness and in no case in less than sixteen (16) hours after placement unless you receive specific approval of the OWNER.

END OF SECTION

SECTION 02750

CONCRETE PAVEMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Aggregate subbase base course.
   2. Concrete paving for:
      a. Concrete sidewalks.
      b. Concrete curbs and integral curbs and gutters.
      c. Concrete roads/cartways.
      d. Traffic Signal Loop Detectors

B. Related Sections:
   1. Section 02060 - Aggregates for Earthwork.
   2. Section 02082 - Public Manholes And Structures
   3. Section 02281 - Manhole and Catch Basin Grade Adjustment.
   4. Section 02721 - Aggregate Base Course.
   5. Section 02740 - Asphalt Pavement.
   6. Section 02763 - Painted Pavement Markings.
   7. Section 02780 - Brick Paving.
   8. Section 03300 - Cast-In-Place Concrete.

1.2 PRICE AND PAYMENT PROCEDURES

A. See Section 01200 - Price and Payment Procedures.

1.3 REFERENCES

A. City of Pittsburgh – Department of Public Works:
   1. Right of Way Procedures Manual January 2017, or current version.

B. Pennsylvania Department of Transportation (PennDOT):
   1. PennDOT Specifications Publication 408/2020, or current edition.

1.4 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:
   1. AASHTO M324 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

B. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.

C. ASTM International:
1. ASTM A184 - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
2. ASTM A185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
3. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
4. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
5. ASTM A706 - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
6. ASTM A767 - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
7. ASTM A775 - S Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
8. ASTM A884 - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement.
9. ASTM A934 - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
10. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
11. ASTM C33 - Standard Specification for Concrete Aggregates.
12. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
13. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
14. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
15. ASTM C150 - Standard Specification for Portland Cement.
16. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
17. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
18. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
19. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
20. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
21. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
22. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
23. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
24. ASTM C979 - Standard Specification for Pigments for Integrally Colored Concrete.
25. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
26. ASTM C1017 - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
27. ASTM C1064 - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
28. ASTM C1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
29. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.

30. ASTM C1371-2004a - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
31. ASTM C1549-2004 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
32. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
33. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
34. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
35. ASTM E408-1971(1996)e1 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
36. ASTM E903-1996 - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
37. ASTM E1918-1997 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
38. ASTM E1980-2001 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

1.5 PRE-INSTALLATION MEETINGS

A. Section 01300 - Administrative Requirements: Pre-installation meeting.

B. CONTRACTOR shall convene with the OWNER and the CONSTRUCTION MANAGER a minimum of one week prior to commencing work of this section.

C. CONTRACTOR must obtain all necessary permits before commencing work within the public right-of-way owned by the City of Pittsburgh, Allegheny County, or other public agency.

D. The CONTRACTOR shall notify The City of Pittsburgh Department of Public Works before final restoration, and 24-hours in advance of each concrete pour.

1.6 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals including all material delivery tickets.

B. Duplicate invoice slips must be provided to OWNER concurrent with materials placement. Each slip must be stamped with the, mix design and time the truck was loaded at the plant site.

C. Product Data:
   1. Submit data on concrete materials, joint filler, admixtures, and curing compounds.

D. Design Data:
   1. Submit concrete mix design for the strength of each. Submit separate mix designs when admixtures are required for the following:
   2. Hot and cold weather concrete work.
   3. Identify mix ingredients and proportions, including admixtures.
   4. Identify chloride content of admixtures that were added to the mixture during manufacture.

5. CONTRACTOR shall not change an accepted design unless reviewed and accepted by the OWNER.
6. Plants shall be qualified by listing in PennDOT Bulletin 42 or as approved by the OWNER.

E. Submit proposed forming methods to the OWNER for approval before the start of work.

F. Source Quality Control Submittals: Indicate results of factory tests and inspections.

1.7 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301 - Specifications for Structural Concrete.

B. Obtain materials from same source throughout.

C. Perform work in accordance with PennDOT and City of Pittsburgh Department of Public Works standards.

D. Inspections of the backfilling, compaction, repaving and hazard protection will be inspected by the City of Pittsburgh Department of Public Works.

1.8 QUALIFICATIONS

A. Manufacturer: Company qualified by PennDOT Bulletin 42, or approved by the OWNER.

B. Installer: Company utilizing an adequate number of skilled workers experienced in the use of equipment required to perform work of this section.

1.9 AMBIENT CONDITIONS

A. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen, unless approved by the OWNER.

B. Discontinue concreting operations when the descending air temperature, away from artificial heat, falls below 40 degrees F, unless approved by the OWNER. Do not resume operations until the air temperature, away from artificial heat, rises to 40 degrees F and is ascending.

C. Place concrete when the concrete temperature is between 50 degrees F and 90 degrees F. Heat the materials in a manner that does not cause overheated areas. Do not use materials containing frost, lumps, or crusts of hardened materials.

PART 2 PRODUCTS

2.1 AGGREGATE SUBBASE BASE COURSE

A. Aggregate Subbase Base Course: As specified in Section 02721 – Aggregate Base Courses.

2.2 CONCRETE PAVING

A. Performance / Design Criteria: Paving for residential streets and main street arteries in accordance with current City of Pittsburgh Department of Public Works standards.

B. Concrete Streets and Concrete Streets with Asphalt Overlay: Per City of Pittsburgh Department of Public Works Right of Way Procedures Manual, latest edition, concrete slabs or base slabs that are disturbed by a utility cut or cuts will require full slab or base slab replacement. At the discretion of the OWNER or CONSTRUCTION MANAGER, the CONTRACTOR may be allowed to replace only half the disturbed slab or base slab

C. Cement Concrete Curb: This work is construction of concrete deep curb, as shown on the Drawings, as described herein, as directed in the field and in accordance with the current City of Pittsburgh and the Pittsburgh Water & Sewer Authority Standards for Construction. Construct curbs in accordance with City of Pittsburgh Standard Details of Construction for Concrete Deep Curb (7" Reveal).

D. Cement Concrete Sidewalks, Monolithic Curbs and Handicap Ramps: This work is construction of concrete sidewalk, handicap ramps and monolithic deck curb, as shown on the drawings, as described herein, as directed in the field and in accordance with the current City of Pittsburgh and the Pittsburgh Water & Sewer Authority Standards for Construction. Replacement of concrete sidewalks disturbed by construction and the installation of handicapped sidewalk ramps as required in accordance with PennDOT 408 and the City of Pittsburgh Standard Details. Handicap Ramps shall be constructed according to the City of Pittsburgh Construction Standard Details.

E. Form Materials:
   1. Form Materials: In accordance with the City of Pittsburgh Department of Public Works standards.
   2. Joint Filler: Premolded expansion joint filler not less than ½-inch in total thickness, for full depth of pavement and around the outer sides of structures within the paved areas. Where pavements adjoin other rigid structures, bridges, or culverts, CONTRACTOR shall place pre-molded expansion-joint filler not less than ¾-inch thick, adjacent to the structures.

F. Reinforcement:
   1. Reinforcing Steel and/or Welded Wire Fabric: Type specified per City of Pittsburgh Department of Public Works standards and as shown on applicable Standard Details.
      a. 6 x 12 – W7 x W4
      b. Reinforcement shall be placed to match the existing reinforcement in the street.

G. Concrete Materials: As specified in Section 03300 – Cast-In-Place Concrete. Provide in accordance with City of Pittsburgh Department of Public Works standards.

2.3 TRAFFIC SIGNAL LOOP DETECTORS

A. Contractor shall furnish and install traffic loop detectors to replace those destroyed during construction. Construct in accordance with the City of Pittsburgh Standards of Construction and these specifications.

2.4 FABRICATION

A. Fabricate reinforcing in accordance with City of Pittsburgh Department of Public Works standards.

2.5 ACCESSORIES

A. Curing Compound: Comply with the more stringent requirements of the City of Pittsburgh, Allegheny County, and PennDOT, and the OWNER.

B. Joint Filler and Sealer Materials: As specified in Section 03300 – Cast-In-Place Concrete.

2.6 BOND BREAKER

A. Permanent Bond Breaker
   1. Non-woven type which will provide positive bond prevention between concrete layers.
      a. Manufacturers:
         1) Mirafi 1450BB by Tencate
         2) Geotex 1241NH by Propex
         3) Approved Equal

B. Temporary Bond Breaker
   1. Performance Criteria: Any non-woven, poly-film, or liquid material placed between final concrete base and temporary rigid surface which will prevent bonding between the two surfaces.

2.7 SOURCE QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing and Inspection Services: Provide mix design.

B. CONTRACTOR shall not use concrete that has developed initial hardening.

C. Submit proposed mix design of each class of concrete to OWNER for approval prior to start of Work.

D. Cost of concrete testing shall be borne by CONTRACTOR. The OWNER or OWNER's Representative may require additional tests if needed to address irregularities.

E. Field Quality Control per Section 03300 – Cast-In-Place Concrete, Paragraph 3.6.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Requirements for installation examination.

B. Verify compacted subbase is dry and ready to support paving and imposed loads.
   1. Proof roll subbase to identify soft spots.

2. Remove soft subbase and replace with compacted fill as specified in Section 02721 – Aggregate Base Courses.

C. Verify gradients and elevations of base are correct.

D. Verify drainage grilles and frames, manhole frames and other utility boxes/valves are installed in correct position and elevation.

3.2 PREPARATION

A. Prepare subbase in accordance with the more stringent of the City of Pittsburgh Department of Public Works and PennDOT standards.

B. Moisten substrate to minimize absorption of water from fresh concrete.

C. Notify OWNER and City of Pittsburgh minimum 24 hours prior to commencement of concreting operations.

3.3 INSTALLATION

A. Subbase Base Course:
1. Aggregate Subbase Base Course: Install as specified in Section 02721 – Aggregate Base Courses.

B. Forms:
1. Place and secure forms and screeds to correct location, dimension, profile, and gradient.
2. Assemble formwork to permit easy stripping and dismantling without damaging concrete.

C. Reinforcement:
1. Place reinforcing as indicated on applicable Standard Details and in accordance with City of Pittsburgh standards.
2. Metal reinforcement shall be placed in accordance with the latest revision of ANSI/ACI 318 except as otherwise noted.
3. Secure reinforcement against displacement by using annealed iron wire ties or approved clips at intersections.
4. Support reinforcement with concrete or metal supports, spacers, or metal hangers.
5. Repair damaged coating to match shop finish.

D. Bond Breaker:
1. Lay down bond breaker between separate concrete layers as required in the Drawings and Contract Documents.
2. Allow previously poured concrete paving base to cure for at least 2 hours prior to placement of Bond Breaker and temporary rigid pavement.

E. Placing Concrete:
1. Place concrete in accordance with ACI 301 and as specified in Section 03300.

F. Cement Concrete Curb:

1. Excavate to the required depth, then compact the material upon which the curb is to be constructed to a firm, even surface. Use approved metal forms, except on sharp curves and short tangent sections, where wood forms may be used. Use forms that will not discolor the concrete.
2. Place the concrete in the forms in layers not exceeding 5 inches in depth when spading, or layers not exceeding 15 inches in depth when using a vibrator to eliminate voids. Provide drainage opening through the curb, at the elevation and of the size required, where indicated or directed. Smoothly and evenly finish the top surface of the curb, using a wood float. While the concrete is still plastic, round the edges of the face and back of the curb. Place depressed curbs for drives or curb cut ramps, where indicated or directed.
3. Concrete curb may be placed with an approved, self-propelled machine. Uniformly feed the concrete to the machine so the concrete maintains the shape of the section, without slumping after extrusion. Voids or honeycomb on the surface of the finished curb will not be allowed. Immediately after extrusion, perform any additional surface finishing required.
4. Form or saw contraction joints 3/16-inch-wide and 2 inches deep. Saw as soon as possible after the concrete has set sufficiently to preclude raveling during the sawing and before any shrinkage cracking occurs in the concrete. The depth of saw cut may be decreased at the edge adjacent to the pavement to obtain a maximum depth without pavement damage. Tool the edges of construction joints to a 1/4-inch radius. Place 3/4 inch premolded expansion joint material, cut to the cross-sectional area of the curb, at structures, and at the end of the workday. Seal joints, as directed.
5. Do not remove forms until such time it will not be detrimental to the concrete. Correct irregular surfaces by rubbing with a carborundum stone. Brush finishing or plastering will not be permitted. Fill minor defects with mortar. As soon as possible after the removal of forms, backfill the voids in front and back of the curb, using approved materials. Complete embankments in back of raised curbs, as indicated. Carefully compact the embankment by means of mechanical tampers, or rollers, if permitted, not exceeding 8 tons. Dispose of unsuitable and surplus material.
6. When sandstone curb must be removed, it shall be removed joint to joint and replaced with concrete deep curb.
7. Deck curb is only to be used to replace existing deck curb or as directed.
8. The underdrain for the curb shall be constructed from 6" diameter perforated PVC pipe, Type 3 crushed aggregate and 2 ply tarpaper.

G. Cement Concrete Sidewalks, Monolithic Curbs and Handicap Ramps:

1. Excavate, as required, and form the foundation at a depth 10 inches below and parallel with the finished surface of the sidewalk. When directed, remove unsuitable material as directed. Thoroughly compact the foundation, then finish to a firm, even surface; moisten if required. Spread aggregate on the prepared foundation to form a thoroughly compacted bed 6 inches deep.
2. Use acceptable wood or metal forms extending the full depth of concrete. Place City of Pittsburgh Class P or PP concrete 4 inches deep. Strike off, finish, and test. Finish with a light broom finish. Form outside edges and joints with a 1/4-inch radius-edging tool. Form transverse dummy joints at 5-foot intervals, approximately 1/8-inch-wide and at least 1 inch deep. Place 1/2 inch premolded, approved, expansion joint material for the full depth of the sidewalk, opposite expansion joints

in adjacent curb, between the sidewalk and curb, and between the sidewalk and rigid structures.

3. Do not remove side forms until at least 12 hours after placing concrete. After removal of forms, fill minor honeycombed areas with mortar. As directed, remove and replace defective major honeycombed areas. After the concrete has cured for at least 72 hours, backfill spaces adjacent to the sidewalk, using approved material.
4. Handicap Ramps shall be constructed according to the City of Pittsburgh Construction Standard Details.

H. Traffic Signal Loop Detectors:

1. Construct in accordance with the City of Pittsburgh Standards of Construction and these specifications.
2. Saw-cut slots in the pavement for the replacement sensor, as directed. Drill a conduit hole at the curb, if required. Clean slot and hole and install the conduit. Install the number of sensor turns to obtain the required inductance, without splices, kinks, or curls, and without straining or stretching around the corners of the slot. Use a blunt nonmetallic tool to seat the sensor in the slot. Correct any excessive slack, raised portions, or tightness. Insert the two leads from the loop, twisted together a minimum of 3 turns/foot, in the conduit leading to the junction box. Seal the conduit with duct seal. Seal the hole and slots with sealant, in accordance with the manufacturer's instructions. Do not apply the sealant when the air temperature is below 45(F, or during precipitation. Fill the slot to within 1/8-inch of the pavement surface and ensure that there are no voids. Do not allow traffic on the slot until the sealant is cured. Remove excess sealant from adjacent road surfaces, but do not use solvents. If the loop area is to be resurfaced, install the sensor in the existing pavement structure. Do not install the top course of pavement before the sealant is cured. Splice the sensor wires to the lead-in cable as shown on the City of Pittsburgh Standards of Construction. Connect the sensor to each lead-in pair. Extend the lead-in cable to the terminal strip in the controller cabinet, without splices. Connect to the loop detector amplifier. Adjust the amplifier, according to the manufacturer's instructions, to obtain the required sensitivity.
3. Testing Loop Detector: Test leakage resistance, series resistance, and inductance before sealing the sawcut slot. Leakage resistance greater than 10 megohms is required when tested at 375 VDC minimum. Series resistance is not to exceed 2.6 ohms per 1,000 feet. Inductance is to be between 50 and 700 microhenries. Measure inductance of loop and lead-in. Inductance is to be between 50 and 700 microhenries. Place a record of the inductance readings in the controller cabinet.

3.4 TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Pavement tolerances shall be within maximum variations as defined by PennDOT and the City of Pittsburgh standards.

3.5 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Requirements for inspecting, testing.

B. Perform field inspection and testing in accordance PennDOT and City of Pittsburgh Department of Public Works standards.

C. Inspect reinforcing placement for size, spacing, location, support.

D. Testing firm will take cylinders and perform slump tests in accordance with ACI 301.

E. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.6 PROTECTION

A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.

B. Immediately after placement, protect paving from premature drying, excessive hot or cold temperatures, and mechanical injury.

C. All classes of traffic and hauling equipment shall be excluded from the pavement for a period of seven (7) days (or three (3) days in cases where HES concrete is approved for use by the City) and until the pavement has developed the minimum compressive strength of 3,000 psi and/or minimum flexural strength of 500 psi.

END OF SECTION

SECTION 02763

PAINTED PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Traffic lines and markings.
2. Crosswalks and Stop Bars.
3. Legends.
4. Paint.
5. Glass beads.

B. Related Sections:
1. Section 02740 - Asphalt Pavement.
2. Section 02750 - Concrete Pavement.
3. Section 02780 - Brick Paving.

1.2 PRICE AND PAYMENT PROCEDURES

A. See Section 01200 - Price and Payment Procedures.

1.3 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:
1. AASHTO M247 - Standard Specification for Glass Beads Used in Traffic Paint.

B. ASTM International:
1. ASTM D34 - Standard Guide for Chemical Analysis of White Pigments.
2. ASTM D126 - Standard Test Methods for Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate and Chromium Oxide Green.
3. ASTM D711 - Standard Test Method for No-Pick-Up Time of Traffic Paint.
4. ASTM D713 - Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials.
5. ASTM D969 - Standard Test Method for Laboratory Determination of Degree of Bleeding of Traffic Paint.
6. ASTM D1301 - Standard Test Methods for Chemical Analysis of White Lead Pigments.
7. ASTM D1394 - Standard Test Methods for Chemical Analysis of White Titanium Pigments.
8. ASTM D1475 - Standard test Method for Density of Liquid Coatings, Inks, and Related Products.
9. ASTM D1640 - Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature.
10. ASTM D2202 - Standard Test Method for Slump of Sealants.
11. ASTM D2371 - Standard Test Method for Pigment Content of Solvent-Reducible Paints.

12. ASTM D2621 - Standard Test Method for Infrared Identification of Vehicle Solids From Solvent-Reducible Paints.
13. ASTM D2743 - Standard Practices for Uniformity of Traffic Paint Vehicle Solids by Spectroscopy and Gas Chromatography.

C. Pennsylvania Department of Transportation (PennDOT):
1. PennDOT Specifications Publication 408/2020, or current edition.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Manufacturer's Certificate: CONTRACTOR shall submit Certification from paint producer attesting that the paint conforms to PennDOT, Publication 408 Specifications for the product being used.

C. Manufacturer's Instructions: Submit instructions for application temperatures, eradication requirements, application rate, line thickness, type of glass beads, bead embedment and bead application rate, and any other data on proper installation.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with City of Pittsburgh, Department of Public Works, Work within the Public Right-Of-Way, (current publication); or PennDOT Publication 408 (current edition).

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this Section.

B. Application: Company specializing in performing work of this section with documented experience to perform Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Follow Manufacturer’s requirements for transporting, handling, storing, and protecting products.

C. Invert containers several days prior to use when paint has been stored more than 2 months. Minimize exposure to air when transferring paint. Seal drums and tanks when not in use.

D. Glass Beads. Store glass beads in cool, dry place. Protect from contamination by foreign substances.

1.8 AMBIENT CONDITIONS

A. Section 01500 - Temporary Facilities and Controls: Ambient conditions control facilities for product storage and installation.

B. Apply paint when the air temperature is greater than 40 degrees Fahrenheit.

C. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product Manufacturer.

D. Do not apply exterior coatings during rain or snow when relative humidity is outside humidity ranges, or moisture content of surfaces exceed those required by paint product Manufacturer.

E. Volatile Organic Content (VOC). Do not exceed State or Environmental Protection Agency maximum VOC on traffic paint.

1.9 WARRANTY

A. Section 01700 - Execution Requirements: Requirements for warranties.

B. Furnish three year manufacturer's warranty for traffic paints.

PART 2 PRODUCTS

2.1 PAINTED PAVEMENT MARKINGS

A. Yellow and white paint used for centerlines and channelizing lines shall be hot thermoplastic pavement markings, 60mm thick, per PennDOT Publication 408, Section 960.

B. White paint used for crosswalks and stop bars shall have a high reflective quality with glass beads.

C. All glass beads shall conform to the PennDOT specification, Publication 408, Section 1103.14 (a).

2.2 EQUIPMENT

A. Continuous Longitudinal Line Application Machine: Use application equipment with following capabilities.
   1. Dual nozzle paint gun to simultaneously apply parallel lines of indicated width in solid or broken patterns or various combinations of those patterns.
   2. Pressurized bead-gun to automatically dispense glass beads onto painted surface, at required application rate.
   3. Measuring device to automatically and continuously measure length of each line placed, to nearest foot.
   4. Device to heat paint sufficiently for fast dry applications.

B. Machine Calibration:
   1. Paint Line Measuring Device: Calibrate automatic line length gauges to maintain tolerance within PennDOT and City of Pittsburgh standards.
   2. Cycle Length/Paint Line Length Timer: Calibrate cycle length to maintain PennDOT and City of Pittsburgh standard tolerance.
   3. Paint Guns: Calibrate to simultaneously apply paint binder at uniform rates as specified with an allowable tolerance of plus or minus 1 mil.
   4. Bead Guns: Calibrate to dispense glass beads simultaneously at specified rate. Check guns by dispensing glass beads into gallon container for predetermined fixed period of time. Verify weight of glass beads.

C. Other Equipment:
   1. For application of crosswalks, intersections, stop lines and other miscellaneous items by walk behind stripers, hand spray or stencil trucks, apply with equipment meeting requirements of this section. Do not use hand brushes or rollers. Optionally apply glass beads by hand.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Requirements for installation examination.

B. Do not apply paint to concrete surfaces until concrete has cured for 28 days.

C. CONTRACTOR shall satisfactorily clean and dry the roadway surfaces.

3.2 PREPARATION

A. Section 01700 - Execution Requirements: Requirements for installation preparation.

B. Maintenance and Protection of Traffic:
   1. CONTRACTOR shall provide short term traffic control that allows for satisfactory drying times and traffic safety.
   2. Prevent interference with marking operations and to prevent traffic on newly applied markings before markings dry.
   3. Place cone barriers at crosswalks for at least 30 minutes or until paint is dry and tack free for vehicular traffic.
   4. For painting activities, maintain travel lanes between 7:00 AM to 9:00 AM, and between 4:00 PM and 6:00 PM.
   5. Maintain access to existing homes, businesses, and other properties requiring access.

C. Surface Preparation.
   1. Clean and dry paved surface prior to painting.
   2. Blow or sweep surface free of dirt, debris, oil, grease or gasoline.
   3. Spot location of final pavement markings by applying pavement spots 25 feet on center.

4. Notify OWNER after placing pavement spots and minimum 2 days prior to applying traffic lines.

3.3 DEMOLITION

A. Remove existing markings in an acceptable manner. Do not remove existing pavement markings by painting over with blank paint. Remove by methods that will cause least damage to pavement structure or pavement surface. Satisfactorily repair any pavement or surface damage caused by removal methods.

B. Clean and repair existing or reinstalled lines and legends.

3.4 APPLICATION

A. Pavement markings shall be applied in accordance with the Drawings and 67 Pennsylvania Code, 211, Subchapter K (Publication 68).

B. Line application shall be done by a machine capable of applying two (2) 4-inch parallel lines in a solid pattern.

C. Agitate paint for 1-15 minutes prior to application to ensure even distribution of paint pigment.

D. Apply glass beads at rate of 6 pounds per gallon of paint.

E. Apply markings to match existing dimensions at existing and indicated locations.

F. Prevent splattering and over spray when applying markings.

G. Unless material is track free at end of paint application convoy, protect markings from traffic until track free. When vehicle crosses a marking and tracks it or when splattering or over spray occurs, eradicate affected marking and resultant tracking and apply new markings.

H. Collect and legally dispose of residues from painting operations.

3.5 TOLERANCES

A. Section 01400 - Quality Requirements: Tolerances.

B. Paint shall be applied in a wet-film thickness of 15 mils, +/- 1 mil.

3.6 FIELD QUALITY CONTROL

A. Repair lines and markings, which after application and curing do not meet following criteria:
   1. Incorrect Location: Remove and replace incorrectly placed patterns.
   2. Insufficient Thickness, Line Width, Paint Coverage, Glass Bead Coverage or Retention: Prepare defective material by acceptably grinding or blast cleaning to remove substantial amount of beads and to roughen marking surface. Remove loose particles and debris. Apply new markings on cleaned surface in accordance with this Section.

B. Inspect for incorrect location, insufficient thickness, line width, coverage, retention, uncured or discolored material, and insufficient bonding.

C. Uncured or Discolored Material, Insufficient Bonding: Remove defective markings in accordance with this Section and clean pavement surface one foot beyond affected area. Apply new markings on cleaned surface in accordance with this Section.

D. Replace failed or defective markings in entire section of defective markings within 30 days after notification when any of the following exists:
   1. Average retroreflectivity is less than 1225 mcd/m2/1x for white pavement markings and 100 mcd/m2/1x for yellow pavement markings.
   2. Marking is discolored or exhibits pigment loss, and is determined to be unacceptable by three member team based on visual comparison with beaded color plates.
   3. More than 15 percent of area of continuous line, or more than 15 percent of combined area of skip lines is missing.

E. When eradication of existing paint lines is necessary, eradicate by shot blast or water blast method. Do not gouge or groove pavement more than 1/16 inch during removal. Limit area of removal to area of marking plus 1 inch on all sides. Prevent damage to transverse and longitudinal joint sealers, and repair any damage according to requirements in Section 02750 – Concrete Pavement or Section 02740 – Asphalt Pavement.

F. Maintain daily log showing work completed, results of above inspections or tests, pavement and air temperatures, relative humidity, presence of any moisture on pavement, and any material or equipment problems. Make legible entries in log in ink, sign and submit by end of each work day. Enter environmental data into log prior to starting work each day and at two additional times during day.

3.7 PROTECTION

A. Section 01700 - Execution Requirements: Requirements for protecting finished Work.

B. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track free. Follow manufacturer's recommendations or use minimum of 30 minutes. Consider barrier cones as satisfactory protection for materials requiring more than 2 minutes dry time.

3.8 MAINTENANCE

A. Section 01700 - Execution Requirements: Requirements for maintenance service.

B. Furnish, service and maintenance of traffic paints for three years from Date of Substantial Completion.

3.9 ATTACHMENTS

A. Pavement Markings:

Item	Location
4 inch Double Yellow	Center
6 inch White	Lane
24 inch White Fast Dry	Stop Line
18 inch White Fast Dry	Stop Line/Bar
24 inch or 12 inch White	Cross Walks

END OF SECTION

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SECTION 02780

BRICK PAVING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Brick/Blockstone pavers.
2. Sand setting bed.
3. Cementitious setting bed.
4. Sand and Mortar joints.
5. Accessories.

B. REFERENCED SECTIONS
1. Section 01600 – Product Requirements
2. Section 01700 - Execution Requirements

C. RELATED SECTIONS
1. Section 02060 - Aggregates for Earthwork.
2. Section 02082 - Public Manholes And Structures.
3. Section 02281 - Manhole and Catch Basin Grade Adjustment.
4. Section 02721 - Aggregate Base Course.
5. Section 02740 - Asphalt Pavement.
6. Section 02750 - Concrete Pavement
7. Section 02763 - Painted Pavement Markings.
8. Section 03300 - Cast-In-Place Concrete.

1.2 REFERENCES

A. American Society for Testing and Materials
1. ASTM C 33, Standard Specification for Concrete Aggregates.
2. ASTM C 136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
3. ASTM C 144, Standard Specification for Aggregate for Masonry Mortar.
4. ASTM C 902, Standard Specification for Pedestrian and Light Traffic Paving Brick.
5. ASTM C 1272, Standard Specification for Heavy Vehicular Paving Brick.
6. ASTM D 698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).
7. ASTM D 1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
8. ASTM D 2940, Standard Specification for Graded Aggregate Material For Bases or Subbases for Highways or Airports.

1.3 QUALITY ASSURANCE

A. City Standards: Comply with COP standards of concrete streets with COP inspector’s final approval.

B. Brick Work:
   1. Efforts must be taken to match the color of the brick and the pattern in which it is laid.
   2. The CONTRACTOR, as part of their cutting, should save all bricks and store them securely so that they can be reused.
   3. If buried bricks are discovered when excavating within a City street the CONTRACTOR shall notify the City Public Works so that the City may come and recover these bricks for use in future restoration jobs. For full street restoration, if brick or blockstone are to be removed, they shall be delivered to a city determined location.

C. Brick Streets and brick crosswalks within the Central Business District (CBD): shall be repaired in accordance with construction requirements of the Department of Public Works, Bureau of Transportation & Engineering (BTE), (412)-255-2733 and will be reviewed by inspectors from that department.

D. All emergency openings are to be restored from curb to curb, starting at the utility cut and ending no sooner than 5’ from the end of the trench and no further than the nearest intersection. This section must be restored according to the City standards.

E. Mock-Ups:
   1. The first 100 square feet of actual construction will serve as a field sample which will stand as the standard by which appearance, workmanship, substrate preparation and material application will be judged.

F. Pre-Installation Meeting(s):
   1. Conduct pre-installation meeting one week prior to commencing work of this Section to verify project requirements, substrate condition, coordination with other trades, installation instructions and warranty requirements.
   2. Coordinate with Section 01310.

1.4 SYSTEM DESCRIPTION

A. Paving and Setting Bed: Support gross vehicular loads per COP standards of construction

1.5 SUBMITTALS

A. Shop Drawings: Indicate layout of control joints, expansion joints, elevations, and affected adjacent construction.

B. Product Data: Submit data on characteristics of paver unit, mortar, and setting materials.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Do not install mortar when surrounding air or substrate surface temperature is below 50 degrees F prior to, during, and 48 hours after completion of Work.

B. Do not install mortar when surrounding air or substrate surface temperature is above 90 degrees F during and 48 hours after completion of the Work.

C. Do not install mortar when wind velocity exceeds 15 mph.

D. Maintain cementitious bed materials and substrate surface above 50 degrees F prior to, during, and 48 hours after completion of Work.

E. At end of working day, or during rainy weather, cover work exposed to weather with waterproof coverings, securely anchored.

PART 2 PRODUCTS

2.1 BRICK/BLOCKSTONE:

A. Work shall include setting removal, cleaning, and resetting of existing brick/blockstone street surface and salvaged Brick/Blockstone from COP Department of Public Works storage yards.

2.2 JOINTING AND BEDDING SAND

A. Provide jointing sand and bedding sand as follows:
1. Clean, well graded, sand free from soluble salts and other deleterious or foreign matter. Sand shall be natural silica sand or sand manufactured from crushed rock.
2. Do not use screenings or stone dust for jointing sand or bedding sand.

B. Joint Sand Material Requirements: Comply with ASTM C 33.

Table 1

ASTM C 33 Grading Requirements	
Sieve Size	**Percent Passing**
3/8 in.	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	50 to 85
No. 30	25 to60
No. 50	5 to 30
No. 100	0 to 10
No. 200	0 to 3

C. Bedding Sand Material Requirements (for pavements NOT subject to heavy channelized traffic):
1. Comply with ASTM C 33 requirements for fine aggregate.
2. Do not use mason's sand, or sand conforming to ASTM C 144 for bedding sand.

D. Bedding Sand Material Requirements (Pavements Subject To Heavy Channelized Traffic):
1. Use only naturally occurring, washed silica sand with no silt content.
2. Conform to grading requirements of Table 3 below:

Table 3	
Grading Requirements for Bedding Sand Subject to Channelized Traffic	
Sieve size	**Percent Passing**

Table 3	
Grading Requirements for Bedding Sand Subject to Channelized Traffic	
3/8 in.	100
No. 4	95 to 100
No. 8	75 to 100
No. 16	55 to 90
No. 30	35 to 70
No. 50	0 to 35
No. 100	0 to 5
No. 200	Less than 0.3

2.3 JOINTING AND BED MORTAR

A. Spaces, between brick pavers in 'Rigid' Paving Systems shall be constructed with mortars conforming to ASTM C 270 for at or below grade for exterior applications and also latex-modified mortars.

2.4 SUBSTITUTIONS

A. Under provisions of Section 01600. Provide the following:
   1. Test results as evidence that substitution meets relevant ASTM standards.
   2. Evidence that substitution characteristics meet system design requirements.

PART 3 EXECUTION

3.1 INSPECTION

A. Prior to the installation of the brick paving system, the paving contractor shall check and verify that the base material has been properly prepared and that the specified elevation, grade and slope for drainage comply with the project specifications.

3.2 INSTALLATION OF FLEXIBLE BRICK PAVING SYSTEM

A. Spread concrete sand over base and screed to 1" thickness ¼" +/-. The screed sand should not be disturbed.

B. Edge restraints shall be installed to the proper elevation for the 'Flexible Brick Paving System' specified. Edge restraints are to be installed in a manner to eliminate any possible lateral (horizontal) movement of the 'Flexible Brick Paving System.'

C. Lay pavers in the pattern(s) matching existing patterns.

D. Fill out area with cut pavers along edge restraints or interruptions.

E. Vibrate the brick pavers into the sand using a plate vibrator capable of 3000 to 5000 lbs. centrifugal force. The plate vibrator must have a rubber plate or roller feet to avoid chipping the pavers.

F. After the first pass of the plate vibrator, sweep mortar sand into the joints and vibrate again. Repeat the process until the joints are full. Do not vibrate within two feet of all unrestrained edges.

G. Sweep excess sand off of pavement.

3.3 INSTALLATION OF RIGID BRICK PAVING

A. For exterior applications, use ASTM C270 Type M mortar Alternatively, mortar conforming to ANSI A118.1, A118.4 or A118.6 may be used with OWNERS approval
   1. For vehicular applications or extreme environments, use a latex-modified mortar

B. Mix mortar according to ASTM C-270 or to latex-modified mortar manufacturer's recommendations.

C. Place wet mortar setting existing bed to thickness but no greater than 1.5-inches.

D. Install brick pavers before mortar setting bed has set: Lay setting bed no more than 2 ft ahead of laying of pavers

E. When used, fill in all mortar joints and tool to concave appearance when thumbprint hard.

F. Space expansion joints no more than 16 ft. Extend movement joint through entire pavement thickness from base up through pavers.

3.4 CLEANING RIGID BRICK PAVING

A. Do not clean pavers until mortar is cured.

B. Clean soiled surfaces with cleaning solution approved by OWNER.

C. Protect adjacent construction and landscaping from cleaning agents.

D. Rinse all surfaces with potable water. Pressure not to exceed 120 lbs. per square inch.

3.5 TOLERANCES

A. The final surface elevation shall be flush with adjacent construction.

B. Maximum variation in level shall be within 3/8" $^{+}/_{-}$ in 10 feet.

END OF SECTION

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SECTION 02924

LANDSCAPE RESTORATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Topsoil.
2. Fertilizing.
3. Seeding.
4. Hydroseeding.
5. Lime.
6. Mulching.

B. Related Sections:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02230 – Site Clearing.
3. Section 02324 – Trenching, Backfilling, and Compaction.
4. Section 02374 – Erosion Control Devices.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 – Price and Payment Procedures.

1.3 REFERENCES

A. ASTM International:
1. ASTM C602 - Standard Specification for Agricultural Liming Materials.

B. PennDOT Form 408, Section 802 (Topsoil Furnished and Placed), Section 804 (Seeding and Soil Supplements), and Section 805 (Mulching).

1.4 DEFINITIONS

A. Weeds: Vegetative species other than specified species to be established in given area.

1.5 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data for seed mix, hydroseed, fertilizer, mulch, and other accessories.

1.6 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

1.7 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.

B. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

C. All restoration work shall be guaranteed by the CONTRACTOR for a period of one (1) year from the date of final completion and acceptance.

D. In the even any improvement or correction of such restoration work is as deemed necessary by the OWNER is not complied with by the CONTRACTOR within a reasonable period of time stipulated by the OWNER, the OWNER may have such work done by others with costs of said work to be charged to the CONTRACTOR and deducted from any monies due or to become due to CONTRACTOR under the Contract.

1.8 QUALIFICATIONS

A. Seed Supplier: Company specializing in manufacturing PennDOT approved products specified in this section.

B. Installer: Company specializing in performing work of this section with minimum two (2) years documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Product storage and handling requirements.

B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.

C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2 PRODUCTS

2.1 TOPSOIL

A. Topsoil removed from the work area shall be stockpiled at a location for reuse.

B. If the CONTRACTOR does not choose to stockpile existing topsoil for reuse, the CONTRACTOR must supply approved replacement topsoil meeting the requirements of Section 802 of PennDOT Form 408 at no additional charge.

2.2 SEED MIXTURE

A. Seed landscapes and vegetative areas with PennDOT Formula B or C type seed as specified in Table A of PennDOT Form 408, Section 804.

B. Hydroseed: As approved by OWNER.

2.3 ACCESSORIES

A. Mulching materials shall conform to PennDOT Form 408, Section 805 and are subject to approval by the OWNER.

B. Fertilizer
   1. Basic Dry formulation Fertilizer: Analysis 10-20-20 and as defined by the Pennsylvania Soil Conditioner and Plant Growth Substance Law.
   2. Starter Fertilizer: Analysis 10-5-5 or 12-6-6 and as defined by the Pennsylvania Soil Conditioner and Plant Growth Substance Law.
   3. Alternate means of fertilization in combination with seeding/hydroseeding will be permitted in inaccessible areas and upon approval prior to use.

C. Lime:
   1. Raw, ground limestone conforming to PennDOT Form 408, Section 804.2(a).

D. Water: Clean, fresh and free of substances or matter capable of inhibiting vigorous growth of grass.

2.4 SOURCE QUALITY CONTROL

A. Section 01400 - Quality Requirements: Testing, inspection and analysis requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify prepared soil base is ready to receive the Work of this section.

3.2 SUBBASE AND TOPSOIL PREPARATION

A. CONTRACTOR shall correct surface irregularities. Remove and properly dispose of objectionable material prior to seeding.

B. CONTRACTOR shall replace and spread topsoil over the prepared subgrade to obtain the required depth and finished grade elevations. Final compacted thickness of topsoil shall be not less than six (6) inches.

C. CONTRACTOR shall apply lime, starter fertilizer and slow release, nitrogen fertilizer.

D. Grading and topsoil placement are forbidden when the subgrade or topsoil are frozen or muddy.

3.3 FERTILIZING

A. Apply lime at application rate of 800 pounds per 1,000 square yards. Work lime into top 2 inches of soil.

B. Apply fertilizer at application rate per PennDOT Form 408, Section 804.3(c).

C. Apply after smooth raking of topsoil.

D. Mix fertilizer thoroughly into upper 2 inches of topsoil.

E. Lightly water soil to aid dissipation of fertilizer. Irrigate top level of soil uniformly.

3.4 SEEDING

A. Seeding shall be performed as specified in PennDOT Form 408, Section 804.3.

B. Apply seed at rate of 21 pounds per 1,000 square yards evenly in two intersecting directions. Rake in lightly.

C. CONTRACTOR shall uniformly sow the specified seed mix by use of approved hydraulic seeder, power-drawn drill, power-operated seeder, of hand-operated seeder or by hand.

D. Areas at slopes greater than 3:1 (horizontal to vertical), inaccessible areas, all unimproved areas, and disturbed areas deemed appropriate by the OWNER, may be hydroseeded with an approved mix design.

E. Do not seed areas in excess of that which can be mulched on same day.

F. Do not sow immediately following rain, when ground is too dry, or when winds are over 15 mph.

G. Apply mulch within 48 hours of seeding. Maintain clear of shrubs and trees.

H. Apply water with fine spray immediately after each area has been mulched.

3.5 HYDROSEEDING

A. Apply fertilizer, mulch and seeded slurry with hydraulic seeder evenly in one pass upon approval of the OWNER.

B. After application, apply water with fine spray immediately after each area has been hydroseeded. Saturate soil and maintain moisture levels two to four inches.

3.6 SEED PROTECTION

A. Cover seeded slopes where grade is 4 inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.

B. Lay fabric smoothly on surface, bury top end of each section in 6 inch deep excavated topsoil trench. Overlap edges and ends of adjacent rolls minimum 12 inches. Backfill trench and rake smooth, level with adjacent soil.

C. Secure outside edges and overlaps at 36 inch intervals with stakes.

D. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.

E. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches.

3.7 MAINTENANCE

A. Water to prevent grass and soil from drying out.

B. Control growth of weeds. CONTRACTOR shall cleanup and maintain vegetated areas to assure accurate edging and repair of depressions.

C. Immediately reseed areas showing bare spots. Repair washouts or gullies.

D. Areas which do not show a prompt catch of grass within 14 days of seeding or sodding shall be reseeded until complete grass catch occurs.

3.8 SCHEDULE

A. Time Limits: Seeding may be completed from March 1 to June 1 or August 1 to October 1. Extended seeding dates outside of those noted above must be approved by the OWNER.

END OF SECTION

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SECTION 02960

MILLING EXISTING PAVEMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Cold milling of existing asphalt pavement.

B. Related Sections:
   1. Section 02740 - Asphalt Pavement.
   2. Section 02763 – Painted Pavement Markings.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 - Price and Payment Procedures.

1.3 REFERENCES

A. City of Pittsburgh – Department of Public Works:
   1. Right of Way Procedures Manual January 2015, or current version – Chapter 20 – Appendix A, Utility Paving Specifications.

B. Pennsylvania Department of Transportation (PennDOT):
   1. PennDOT Specifications Publication 408/2020, or current edition – Section 491, Milling of Bituminous Pavement Surface.

C. Pennsylvania Asphalt Pavement Association (PAPA):
   1. Hot-Mix Asphalt Pavement Design Guide.

1.4 SUBMITTALS

A. See Section 01330 - Submittal Procedures: Requirements for submittals.

B. Equipment: Submit list of equipment intended for use on the Work.

C. Procedures: Submit schedule of intended milling, removal, and cleaning procedures.

D. Qualifications listed in paragraph 1.6.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

1.6 QUALIFICATIONS

A. Company specializing in performing the Work of this Section with minimum three years documented experience.

1.7 PRE-INSTALLATION MEETINGS

A. Section 01300 - Administrative Requirements: Pre-installation meeting.
   1. OWNER may convene a pre-installation meeting at the work site prior to commencing the Work of this Section. All parties directly affecting, or affected by, this Work shall attend.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Milling machine operations must meet current State of Pennsylvania Air Quality requirements.

B. Do not perform Work when weather conditions will not permit successful completion of the Work.

C. When ambient air temperature is below 50 degrees F, obtain OWNER's approval prior to proceeding with the Work.

PART 2 PRODUCTS

2.1 EQUIPMENT

A. Milling Unit: Type for intended purpose as follows:
   1. Designed and built for this type of Work.
   2. Unless otherwise directed, the milling machine must be 10 ton or larger.
   3. Capable of loosening pavement material to 4 inch depth, unless specified or ordered otherwise.
   4. Provide a finished surface free from gouges, grooves, and ridges. The milling unit must not tear, gouge, shove, break, oil coat, or otherwise damaged the pavement.

PART 3 EXECUTION

3.1 PREPARATION

A. Mechanically sweep pavement surfaces immediately prior to commencement of Work to clean existing pavement surfaces of loose foreign matter and deleterious material.

B. Protect existing improvements, adjacent surfaces, and overhanging trees by individual shielding.

C. Remove and store manhole covers and frames and catch basin covers, grates and frames.

D. Sawcut asphalt.

3.2 REMOVAL

A. Do not disfigure adjacent Work. Repair or replace any damage to curbing, castings, covers, grates, frames, boxes, other construction, etc. in the work area; with NO ADDITIONAL PAYMENT.

B. Execute existing asphalt pavement removal to grades and cross sections indicated across full width of surface to be milled, at a depth not less than:
   1. 4 inches for Primary Streets.
   2. 3-1/2 inches for Secondary Streets.
   3. Or as otherwise specified or directed in the field.

C. Mill asphalt to a uniform finished surface without detrimental aggregate degradation. Excavate and trim unbound-aggregate base course, if encountered. Control rate of milling to prevent tearing of remaining asphalt course. Mill to a uniform finished surface free of gouges, grooves, and ridges.

D. Mill asphaltic paved areas to limits indicated, or as directed. Mill pavement adjacent to trench so that the entire lane or street half is ready to accept uniform paving continuous to the existing curb. Entire intersections must be paved if the trench extends through the intersection.

E. Remove and dispose of all milled material. All remaining pavements shall be cleaned and swept with a vacuum type sweeper truck at the completion of milling.

3.3 SCHEDULES

A. If CONTRACTOR chooses to postpone milling operations upon completion of a block, CONTRACTOR must temporarily pave the trench to grade, with NO ADDITIONAL PAYMENT.

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DIVISION 3 – CONCRETE

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SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete for the following:
   1. Manholes.
   2. Cart-ways.
   3. Sidewalks.
   4. Curbs.
   5. Encasement.
   6. Trust Blocking.
   7. Cradles.

B. Related Sections:
   1. Section 02086 - Water Utility Fire Hydrants.
   2. Section 02513 - Public Water Distribution Piping.
   3. Section 02515 - Water Service Connections.
   4. Section 02750 - Concrete Paving.
   5. Section 02082 - Public Manholes and Structures:

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 Price and Payment Procedures.

1.3 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 305 - Hot Weather Concreting.
   3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
   4. ACI 308.1 - Standard Specification for Curing Concrete.
   5. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:
   1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   2. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
   3. ASTM C33 - Standard Specification for Concrete Aggregates.
   4. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
   5. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
   6. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

7. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
8. ASTM C150 - Standard Specification for Portland Cement.
9. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
10. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
11. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
12. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
13. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
14. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
15. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
16. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
17. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
18. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
19. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
20. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
21. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
22. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
23. ASTM C1218/C1218M - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
24. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
25. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
26. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
27. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
28. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on joint devices, attachment accessories , admixtures.

C. Design Data:
1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:

a. Hot and cold weather concrete work.
b. Air entrained concrete work.
2. Identify mix ingredients and proportions, including admixtures.

D. Manufacturer's Installation Instructions: Submit installation procedures and interface required with adjacent Work.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Closeout procedures.

B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.6 QUALITY ASSURANCE

A. All concrete to be used in this work shall be ready-mix concrete conforming to the requirements of the latest revision of ANSI/ ASTM C-94.

B. Plants shall be qualified by Bulletin 42 or approved by the OWNER.

C. Perform Work in accordance with ACI 301.

D. Conform to ACI 305 when concreting during hot weather.

E. Conform to ACI 306.1 when concreting during cold weather.

F. Acquire cement and aggregate from one source for Work.

G. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

H. Duplicate Delivery slips must be provided for the use of the OWNER. Slips must be stamped with an approved mix design number and the time the truck was loaded at the plant site.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.

B. Maintain concrete temperature after installation at minimum 50 degrees F for minimum 7 days (3 days if HES is approved by the City).

1.8 COORDINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. Cement : Type II or I/II: conform to the latest revision of ANSI/ ASTM C-150.

B. Water: Conform to ACI 318; potable, without deleterious amounts of chloride ions.

2.2 ADMIXTURES

A. All admixtures shall be approved by the OWNER and shall be added to the concrete in strict accordance with the recommendation of the manufacturer.

B. Type B or Type D, ANSI/ASTM C-494 (latest revision), shall be added to all concrete unless otherwise approved by the OWNER.

C. Air Entrainment: ASTM C260.
   1. Added to produce 5% air content. Air content shall not vary more than 1 % from the specified amount
   2. Added to all concrete for structures subjected to freeze-thaw conditions, such as sidewalks, outside liquid containing or liquid conveying vessels, concrete walls and roofs exposed to weather, etc.
   3. Admixture shall contain no calcium chloride or triethanolamine.

D. Chemical: ASTM C494/C494M.
   1. Type B - Retarding.
   2. Type D - Water Reducing and Retarding.

E. Fly Ash ASTM C618 Class C.

F. Plasticizing: ASTM C1017/C1017M Type I, plasticizing.

2.3 RETARDING ADMIXTURE

A. Retarders may only be used with written permission from the OWNER.

B. May be specified in the proposal, or may be directed to be used when any of the following conditions are anticipated:
   1. Rapid drying of the concrete, as a result of low humidity;
   2. High winds;
   3. High air temperatures; or combinations of these adverse conditions.

C. Adjust the proportions of the design as required, but retarder shall not replace any portion of the specified volume of cement.

D. Use a retarder in sufficient quantities to provide the required degree of retardation under the prevailing weather conditions at the time of concrete placement.

2.4 ACCESSORIES

A. Bonding Agent: Polyvinyl Acetate.

B. Epoxy Adhesive: ASTM C881, Two component modified epoxy resin.

C. Non-Shrink Grout: Comply with Section 03600 – Grout

2.5 JOINT DEVICES AND FILLER MATERIALS

A. PREMOLDED EXPANSION JOINT FILLER: Bituminous Fiber complying with AASHTO - M213.

B. JOINT SEALING MATERIAL: Polyurethane polymer designed for bonding to concrete which is continuously submerged in water (Sikaflex 2C-NS/SL or approved equal) and as follows:
   1. Flow, Sag or Stump: NIL
   2. Durometer Hardness, ASTM- D2240: 20-45 Shore "A"
   3. Time to reach 20 Shore "A" Hardness at 770 F, 200 gr quantity: 24 hours, max.
   4. Tensile Strength, psi, ASTM- D412: minimum 200
   5. Elongation,%, ASTM- D412: minimum 400
   6. Tear Resistance (Die C ASTM D 624): 75 lbs per inch of thickness, minimum
   7. Color: Light Grey

C. PREFORMED CLOSED CELL POLYETHYLENE JOINT FILLER: complying with ASTM - D3204, Type I and as follows:
   1. Compressibility:
   a. Load required to compress test specimen by 25%: Min. 5 psi
   b. Load required to compress test specimen by 85%: Max. 30 psi

D. WATERSTOP:
   1. Factory scrap or reclaimed polyvinyl chloride shall not be used.
   2. Shipments shall be labeled with style or code number, lot or batch number, plant, place, and manufacture date.
   3. Waterstop shall be labeled with the manufacturer's name and style or code number, at intervals not exceeding 3 feet.
   4. Virgin polyvinyl chloride resin with the addition of only those plasticizers, stabilizers, and other materials required to insure aging stability and in-place durability and with the following physical properties:
   a. Brittleness Temperature, ASTM - D746: -20°F Max.
   b. Modulus of Flexure, ASTM- D747, lb./sq. in.: 400 Min.
   c. Tensile Strength, ASTM- D412 Die.
      1) Original, lb./sq. in.: 1,000 Min.
      2) Across Job Splice, lb./sq. in.: 1150 Min.
   d. Elongation.
      1) Original, Percent: 280 Min.
      2) Across Job Splice, Percent: 200 Min.
   e. Tear Strength, ASTM- D624, Die B.
      1) Original, lb./in.: 260 Min.
   f. Oven Aging, ASTM- D673,70 hours at 212°F.

1) Change in Tensile Strength, Percent Change: 20 Max.
2) Change in Elongation, Percent Change: 20 Max.

g. 14-Day Extraction, 140/150°F.
1) Change in Tensile Strength, Percent Change: 40 Max.
2) Change in Elongation, Percent Change: 40 Max.

2.6 CONCRETE MIX

A. All mixes shall be Class AA.
1. Concrete Paving Base must be Class AA. Use of HES Concrete must be approved by City of Pittsburgh in writing prior to installation.

B. Mixtures from volumetric mixing plants are not permitted, unless approved by the OWNER in writing.

C. The concrete mix shall be proportioned in accordance with the latest revision of ANSI/ACI 304 and ANSI/ACI C94, Paragraph 5, Alternate No.2.

D. Provide concrete to the following criteria:
1. Maximum allowable slump: Four inches.
2. Coarse aggregate: PennDOT Type A #57 or #67.
3. Fine aggregate: PennDOT Type A Highway Sand.
4. High Early Strength Concrete (with prior approval from the City of Pittsburgh ONLY):

a. Minimum compressive strength shall be 600 psi in 4 hours, 3000 psi in 24 hours, and 5000 psi in 28 days.
b. Conform to additional use of Type II or Type I/II cement in accordance with the latest revision of ASTM C 150 plus approved accelerating admixture in accordance with the latest revision of ASTM C494.
c. Conform to use of Type II cement in accordance with the latest revision of ASTM C 150, or
d. 25% additional Type II cement in accordance with the latest revision of ASTM C 150, or
e. Type II cement plus approved accelerating admixture in accordance with the latest revision of ASTM C494.

E. Admixtures: Include admixture types and quantities indicated in concrete mix designs only when approved by OWNER.
1. Use accelerating admixtures in cold weather. Use of admixtures will not relax cold weather placement requirements.
2. Do not use calcium chloride or admixtures containing calcium chloride.
3. Add air entrainment admixture to concrete mix for work exposed to freezing and thawing and/or deicing chemicals.
4. For concrete exposed to deicing chemicals, limit fly ash, pozzolans, silica fume, and slag content as required by applicable code.
5. Use set retarding admixtures during hot weather.

F. Average Compressive Strength Reduction: Permitted in accordance with ACI 318.

G. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M.

PART 3 -EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify requirements for concrete cover over reinforcement.

C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.

B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

C. Remove debris and ice from formwork, reinforcement, and concrete substrates.

D. Remove water from areas receiving concrete before concrete is placed.

3.3 PLACING CONCRETE

A. Place concrete in accordance with ACI 301, 304, 305R and 306R. No concrete will be accepted which fails to meet the environmental requirements above.

B. Notify testing laboratory and OWNER minimum 24 hours prior to commencement of operations.

C. Approval of formwork and reinforcement by the OWNER shall be obtained before concrete is placed

D. No concrete shall be poured in spaces where debris, oil, or water are present.

E. Deposit concrete at final position. Prevent segregation of mix.

F. Place concrete in continuous operation for each panel or section determined by predetermined joints.

G. Place concrete continuously between predetermined expansion, control, and construction joints.

H. Consolidate concrete.

I. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

J. Do not interrupt successive placement; do not permit cold joints to occur.

3.4 CONCRETE FINISHING

A. Provide formed concrete surfaces as Scheduled in related Sections.

3.5 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury for at minimum of ninety-six (96) hours.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Moist curing, waterproof paper, or white polyethylene sheeting may be used.

D. Protective concrete cover shall be as required in the latest revision of ANSI/ACI 318.

E. All classes of traffic and hauling equipment shall be excluded from the pavement for a period of seven (7) days (or three (3) days in cases where HES concrete is approved for use by the City) and until the pavement has developed the minimum compressive strength of 3,000 psi and/or minimum flexural strength of 500 psi.

3.6 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements and 01700 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.

B. Perform field testing in accordance with ACI 318.

C. Provide free access to Work and cooperate with appointed firm.

D. Submit proposed mix design of each class of concrete to and testing firm for review prior to commencement of Work.

E. Concrete Inspections:
   1. Continuous Placement Inspection: Inspect for proper installation procedures.
   2. Periodic Curing Inspection: Inspect for specified curing temperature and procedures.

F. Strength Test Samples: Cost to be borne by CONTRACTOR.
   1. Sampling Procedures: ASTM C172.
   2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, standard cured.
   3. In each phase of the work sample concrete and make one set of six (six inch by twelve inch) cylinders for each 50 cubic yards placed.
   4. Make one additional cylinder during cold weather concreting, and field cure.
   5. Furnish all cylinders for making concrete compressive tests.
   6. Prepare the test cylinders in the presence of and under the supervision of the OWNER.
   7. Transported cylinders to a testing laboratory approved by the OWNER.

G. Field Testing:
1. Slump Test Method: ASTM C143/C143M.
a. Perform test of each 25 cubic yard or fraction thereof of concrete placed.
b. Perform test in the presence of and under the supervision of the OWNER. CONTRACTOR shall provide slump cone and rod.
2. Air Content Test Method: ASTM C173/C173M or ASTM C231.
a. Perform test each 25 cubic yard or fraction thereof, of exposed concrete subjected to freeze-thaw conditions.
b. Perform test in the presence of and under the supervision of OWNER. CONTRACTOR shall provide the air test meter.
3. Temperature Test Method: ASTM C1064/C1064M.
4. Measure slump and temperature for each compressive strength concrete sample.
5. Measure air content in air entrained concrete for each compressive strength concrete sample.

H. Cylinder Compressive Strength Testing:
1. Test Method: ASTM C39/C39M.
2. Test Acceptance: In accordance with ACI 318.
3. Test Schedule
a. Class A.
1) Test 2 cylinders at 7 days.
2) Test two cylinders at 28 days.
3) Retain two cylinders in reserve.
b. Class AA.
1) Test 2 cylinders at 7 days.
2) Test two cylinders at 28 days.
3) Retain two cylinders in reserve.
c. High Early Strength (with approval by City only).
1) Test 2 cylinders at 4 hours.
2) Test two cylinders at 3 days.
3) Test two cylinders at 28 days.
4) Retain two cylinders in reserve.
4. Dispose remaining cylinders when testing is not required.

I. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.7 PATCHING

A. Allow OWNER to inspect concrete surfaces immediately upon removal of forms.

B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify OWNER upon discovery.

C. Patch imperfections in accordance with ACI 301 to the satisfaction of OWNER.

3.8 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by OWNER.

C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express approval of OWNER for each individual area.

3.9 SCHEDULE - CONCRETE TYPES AND FINISHES

A. All concrete shall adhere to the project specifications, PENNDOT PUBLICATION 408 specifications, City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, and PWSA requirements unless an alternate is approved by OWNER and the City of Pittsburgh Department of Mobility and Infrastructure.

1. Base Course: Per the City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, 2017, or last Revised.
2. Concrete Pavements: Per the City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, 2017, or last Revised. Finish per standard details.
3. Exposed Including Sidewalks and Curbs: per the City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, 2017, or last Revised. Finish per standard details.
4. Manhole Bases: 4,000 PSI 28-DAY Compressive Strength. Finish per standard details.
5. Concrete Cradles, encasement, and thrust Blocks: 4,000 PSI 28-DAY Compressive Strength.

B. High Early Strength Concrete shall only be used where approved by the City of Pittsburgh Department of Department of Mobility and Infrastructure only. In this event, payment will be for CLASS AA.

END OF SECTION

SECTION 03310

FLOWABLE FILL

PART 1 GENERAL

1.1 SUMMARY

A. Description of work: The Contractor will furnish all labor, equipment and materials necessary for the satisfactory placement of flowable fill as shown on the Contract Drawings or as may be directed in the field by the Owner's Representative

B. Related Sections:
1. Section 02513 - Public Water Distribution Piping.
2. Section 02539 - Public Sanitary and Storm Sewer Piping.

1.2 REFERENCES

A. American Concrete Institute (ACI) (latest editions).
1. 211.01 Standard Practice Proportions for Normal, Heavyweight and Mass Concrete.
2. 301 Structural Concrete for Buildings, Spec
3. 304 Measuring, Mixing, Transporting, and Placing Concrete.
4. 305R Hot Weather Concreting.
5. 306R Cold Weather Concreting.
6. 318 Building Code Requirements for Reinforced Concrete.
7. SP-15 Field Reference Manual.
8. SP-66 ACI Detailing Manual.

B. American Society of Testing and Materials (ASTM) Specifications (latest edition):
1. C-31 Making and Curing Concrete Test Specimens in the Field.
2. C-33 Concrete Aggregates.
3. C-39 Compressive Strength of Cylindrical Concrete Specimens.
4. C-94 Ready-Mixed Concrete, Spec.
5. C-138 Unit Weight, Yield and Air Content (Gravimetric) of Concrete, Standard Test Method.
6. C-143 Slump of Portland Cement Concrete, Test Method.
7. C-150 Portland Cement, Spec.
8. C-172 Freshly Mixed Concrete, Method of Sampling.
9. C-192 Method of Making and Curing Concrete Test Specimens in the Laboratory.
10. C-231 Air Content of Freshly Mixed Concrete by Pressure Method, Test Method.
11. C-260 Air-Entraining Admixtures for Concrete, Spec.
12. C-494 Chemical Admixtures for Concrete, Spec.

C. National Ready-Mixed Concrete Association (NRMCA):
1. Checklist for Certification of Ready-Mixed Concrete Production Facilities.

D. PennDOT Publication 408, Specifications, latest edition.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit product data on grout. The Contractor will formulate a design mix and propose a method of installation, materials and equipment capable of moving the flowable fill through several hundred feet of pipe, around pipe fittings, through pipe reducers and other pipe apparatuses.

C. Manufacturer's Installation Instructions: Submit manufacturer’s instructions for mixing, handling, surface preparation and placing epoxy type and non-shrink type grouts.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements. Provide materials certificates in lieu of material laboratory test reports when permitted by the Owner. Material certificates shall be signed by the manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

1.4 QUALITY ASSURANCE

A. Perform work in accordance with Section 01400 and Section 01700.

B. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny county, PennDOT, and the Pittsburgh Water and Sewer Authority.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Deliver material in manufacturer's unopened containers with proper labels intact. Transport concrete in accordance with ASTM C94. Supplier may add water at site if delivered mix is below specified slump and the total amount of water does not exceed the design quantity. Concrete mixes which exceed the specified slump or maximum water quantity shall be rejected

C. Store material in a dry shelter, protect from moisture.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.

B. Do not perform flowable fill if temperatures exceed manufacturers written instructions.

C. Maintain minimum temperature per manufacturers written instructions before, during, and after operations, until material has set.

PART 2 PRODUCTS

2.1 MATERIALS

A. Portland Cement: ASTM C150, Type II.

B. Water:
1. Potable; containing no impurities, suspended particles, algae or dissolved natural salts in quantities capable of causing:
   a. Corrosion of steel.
   b. Volume change increasing shrinkage cracking.
   c. Efflorescence.
   d. Excess air entraining.

C. Fly ash will meet requirements of ASTM C 618, Class C, and will come from a source approved by the Engineer.

D. Fine aggregate for flowable fill will be natural sand consisting of mineral aggregate particles. The graduation of this material will conform to the approved mix design. Sand will be in suspension in the flowable fill to the extent required for proper flow:

E. Filler material (fly ash and fine aggregate) will be free of deleterious material which would be detrimental to the flowable fill operation.

F. Additives, super plasticizers, water reducers, shrinkage reducers and fluidifiers are permitted.

PART 3 EXECUTION

3.1 EXAMINATION

A. The Contractor will place flowable fill in abandoned sewer lines where shown on the Contract Drawings and/or as directed by the Owner's Representative in the field.

B. Any bulkheads, forms, fill and vent piping required to install the flowable fill will be considered incidental to the work.

C. Sufficient mixing capacity of the mixers will be provided to permit the intended pour to be placed without interruption. Flowable fill batching, mixing, and placing may be started, if weather conditions are favorable. At the time of placement, flowable fill must have a temperature of at least 40 degrees Fahrenheit.

D. The design mix will be submitted as quantities of dry materials which when mixed with the appropriate quantity of water will yield approximately 1 cubic yard of flowable fill of the proper consistency. The design mix will also indicate the equivalent yield in cubic yards from a bag of cement for estimating quantities. When a concrete mobile mixer is used, it will be calibrated at the start of the work as required to check the bags of cement used.

E. The finished in-place flowable fill mixture will form a hard insoluble mass and cylinders molded from the slurry will have an average compressive strength in seven (7) days of not less than 680 psi and a 28-day compressive strength of 1,000 psi.

F. Prior to the start of the filling operation, the existing pipes will be made relatively clear of water. Then the operation will consist of filling the pipes with flowable fill until the material appears at the opposite access end or at locations along the pipe. After the existing pipes are filled and the flowable fill has set, additional material will be pumped to fill any residual voids in the pipes.

G. Each 50 cubic yards of fraction of flowable fill will be tested for compressive strength. An approved independent testing laboratory will be retained by the Contractor to test cylinders.

H. Concrete will be sampled in accordance with ASTM C172. A total to two test cylinders will be prepared and cured in accordance with ASTM C31. Cylinders will be tested in accordance with ASTM C39.

I. If test cylinders fail to meet strength requirements, the Owner may require additional core tests in accordance with ASTM C42 at the expense of the Contractor.

END OF SECTION

SECTION 03600

GROUT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Portland cement grout.
2. Rapid curing epoxy grout.
3. Non-shrink cementitious grout.

B. Related Sections:
1. Section 03300 - Cast-in-Place Concrete.
2. Section 02082 - Public Manholes and Structures.
3. Section 02539 - Public Sanitary and Storm Sewer Piping.
4. Section 02513 - Public Water Distribution Systems.

1.2 REFERENCES

A. American Concrete Institute: ACI 308, Recommended Practice for Curing Concrete.

B. American Society of Testing and Materials:
1. ASTM C33 - Standard Specification for Concrete Aggregates.
2. ASTM C40 - Test Method for Organic Impurities in Fine Aggregates for Concrete.
3. ASTM C150 - Standard Specification for Portland Cement.
4. ASTM C191 - Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
5. ASTM C307 - Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings.
6. ASTM C531 - Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
7. ASTM C579 - Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, monolithic Surfacings and Polymer Concretes.

C. U. S. Army Corps of Engineers Concrete Research Division (CRD):
1. CRD C621 - Non-Shrink Grout.

1.3 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit product data on grout.

C. Manufacturer's Installation Instructions: Submit manufacturer’s instructions for mixing, handling, surface preparation and placing epoxy type and non-shrink type grouts.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

A. Perform work in accordance with Section 01400 - Quality Requirements and 01700 - Execution Requirements.

B. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Deliver grout in manufacturer's unopened containers with proper labels intact.

C. Store grout in a dry shelter, protect from moisture.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.

B. Do not perform grouting if temperatures exceed manufacturers written instructions.

C. Maintain minimum temperature per manufacturers written instructions before, during, and after grouting, until grout has set.

PART 2 PRODUCTS

2.1 PORTLAND CEMENT GROUT MATERIALS

A. Portland Cement: ASTM C150, Type II.

B. Water:
   1. Potable; containing no impurities, suspended particles, algae or dissolved natural salts in quantities capable of causing:
      a. Corrosion of steel.
      b. Volume change increasing shrinkage cracking.
      c. Efflorescence.
      d. Excess air entraining.

C. Fine Aggregate:
   1. Washed natural sand.
   2. Gradation in accordance with ASTM C33 and represented by smooth granulometric curve within required limits.
   3. Free from injurious amounts of organic impurities as determined by ASTM C40.

D. Mix:

1. Portland cement, sand and water. Do not use ferrous aggregate or staining ingredients in grout mixes.

2.2 RAPID CURING EPOXY GROUT

A. Rapid Curing Epoxy Grout: High strength, three component epoxy grout formulated with thermosetting resins and inert fillers. Rapid-curing, high adhesion, and resistant to ordinary chemicals, acids and alkalies.

2.3 NON-SHRINK CEMENTITIOUS GROUT

A. Non-shrink Cementitious Grout: Pre-mixed ready for use formulation requiring only addition of water; non-shrink, non-corrosive, non-metallic, non-gas forming, no chlorides.

B. Properties: Certified to maintain initial placement volume or expand after set and meet the following minimum properties when tested in accordance with CRD-C621, for Type D non-shrink grout:

Property	Test	Time	Result
Setting Time	ASTM C191	Initial	2 hours (Approx)
		Final	3 hours (Approx)
Expansion			0.10% - 0.4% Maximum
Compressive Strength	CRD-C621	1 day	4,000 psi
		7 days	7,000 psi
		28 days	10,000 psi to 10,800 psi

2.4 FORMWORK

A. Refer to Section 03300 for formwork requirements.

2.5 CURING

A. Prevent rapid loss of water from grout during first 48 hours by use of approved membrane curing compound or with use of wet burlap method.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify areas to receive grout.

3.2 PREPARATION

A. Remove defective concrete, laitance, dirt, oil, grease and other foreign material from concrete surfaces by brushing, hammering, chipping or other similar means until sound, clean concrete surface is achieved.

B. Rough concrete lightly, but not enough to interfere with placement of grout.

C. Remove foreign materials from metal surfaces in contact with grout.

D. Align, level and maintain final positioning of components to be grouted.

E. Saturate concrete surfaces with clean water; remove excess water, leave none standing.

3.3 MIXING

A. Portland Cement Grout:
   1. Use proportions of 2 parts sand and 1 part cement, measured by volume.
   2. Prepare grout with water to obtain consistency to permit placing and packing.
   3. Mix water and grout in two steps; pre-mix using approximately 2/3 of water; after partial mixing, add remaining water to bring mix to desired placement consistency and continue mixing 2 to 3 minutes.
   4. Mix only quantities of grout capable of being placed within 30 minutes after mixing.
   5. Do not add additional water after grout has been mixed.

B. Mix and prepare rapid curing epoxy grout in accordance with manufacturer's instructions.

C. Mix and prepare non-shrink cementitious grout in accordance with manufacturer's instructions.

D. Mix grout components in proximity to work area and transport mixture quickly and in manner not permitting segregation of materials.

3.4 PLACING GROUT

A. Place grout material quickly and continuously.

B. Do not use pneumatic-pressure or dry-packing methods.

C. Apply grout from one side only to avoid entrapping air.

D. Do not vibrate placed grout mixture, or permit placement when area is being vibrated by nearby equipment.

E. Thoroughly compact final installation and eliminate air pockets.

F. Do not remove leveling shims for at least 48 hours after grout has been placed.

3.5 CURING

A. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. After grout has attained its initial set, keep damp for minimum of 3 days.

3.6 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements and 01700 - Execution Requirements.

B. Field inspection and testing will be performed in accordance with ACI 301 and under provisions of Section 01400 - Quality Requirements.

C. Submit proposed mix design of each class of grout to OWNER for review prior to commencement of Work.

D. Tests of grout components may be performed to ensure conformance with specified requirements.

END OF SECTION

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ATTACHMENT A

CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS
RIGHT OF WAY PROCEDURES MANUAL

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City Of Pittsburgh

Department of Public Works



Right-of-Way Procedures Policy

Revised: June 1, 2017

Previous Version: January 2015

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APPENDIX A PAVING SPECIFICATIONS

APPENDIX B CONSTRUCTION DETAILS

1. Purpose

This policy is established to describe the requirements, procedures, standards, and methods by which utility companies, private contractors and other entities will be permitted to gain access to and work within the public right-of-way of the City of Pittsburgh (City) as administered and enforced by the Department of Public Works (DPW). It is unlawful for any person to obstruct or perform any construction activities, within public right-of-way without first obtaining the necessary permit(s) from the DPW, including but not limited to:

- demolition;
- erection;
- excavation;
- removal, relocation, repair, or maintenance of any surface, overhead or underground facilities;
- staging of dumpsters, machinery, equipment, and/or other materials;
- special events.

For purposes of this document, right-of-way refers to infrastructure owned, operated, and/or maintained by the City for the use or benefit of the public, including but not limited to:

- improved and unimproved streets (regardless of classification);
- sidewalks;
- bridges or culverts;
- retaining walls;
- sewers;
- trees;
- steps;
- trails; and
- parks, greenways, and other property.

The DPW is responsible for promulgating standards for all obstructions and construction activities within the public right-of-way and easements. DPW's major objectives are to ensure public safety, minimize inconvenience to the general public and assure that all construction activities are restored in accordance with City approved specifications provided at issuance of applicable permit(s). The City will conduct periodic reviews of this policy and invites constructive input in order to make this document a more effective guidance tool. This document supersedes and replaces all previous versions of this policy.

Parties seeking access to the public right-of-way are expected to know and understand all applicable standards as promulgated by the DPW and to employ competent subcontractors to comply with these standards related to obstructions and construction activities in the public right-of-way.

1.1 Requests for Reconsideration of Policy Requirements

Certain requirements may be reconsidered in limited instances, based on in-field conditions. Changes to requirements may only be granted in writing by the Director of Public Works. Requests for reconsideration of the requirements should be made well in advance of the proposed construction activities and directed to the appropriate Division Inspector or:

Public Sector Utility Work
City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, PA 15219
Attn: Right of Way Manager
412.255.2434

Private Sector Construction Activities
City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Streets Division, Project Manager
412.255.2472

The appropriate DPW Manager will schedule a meeting at the project site with the permit applicant and City representatives to review the field conditions. The applicant will prepare meeting minutes and submit them to the DPW Manager for review and comment. Once the meeting minutes are finalized, the DPW Manager will submit recommendations to the Director of Public Works. The recommendations may include supplemental information collected by DPW after the project site meeting. The Director of Public Works will base the decision to reconsider the requirements based on the recommendations of DPW staff, the meeting minutes agreed to by both the DPW and the applicant, and any supplemental information collected by DPW staff. The Director of Public Works will communicate the decision to the applicant in writing.

When the requirements for work in the right-of-way vary from standard procedures and practices it may be necessary for the City and the applicant to enter into Memoranda Of Understanding (MOUs) or cooperative, reimbursement, release and waiver, license, and/or maintenance agreements which are supplemental to the applicable permit approvals. MOUs and agreements require legislative action and therefore can take several months to finalize.

A reconsideration of requirements is not intended to be a waiver or reduction in scope of improvements or restoration, but a mutually beneficial alternative based on field conditions and constraints.

The Director of Public Works reserves the right to designate a duly qualified representative to respond to the request for reconsideration of requirements.

2. Policy Overview

The City recognizes that work within the public right-of-way by utility companies, private contractors and other entities may be necessary in order to provide City residents with essential services and state-of-the-art technologies. Accordingly, an efficient and responsive public right-of-way permitting process has been established to minimize delays in allowing entities to maintain or enhance services to their customers. By establishing uniform standards for utility companies, private contractors, and other entities obstructing or performing construction activities in the public right-of-way, conflicts between parties may be minimized, benefiting all users.

All obstructions and construction activities within the public right-of-way shall be under the supervision of the Director of Public Works who is charged with the administration and enforcement of this policy.

It is recognized that there is a need to accommodate utility companies, private contractors and other entities in their provision of public services. However, the primary purpose of the public rights-of-way is to accommodate the safe and efficient passage of vehicular, pedestrian, and cyclist traffic and the DPW is to ensure that the safe passage is maintained to the greatest extent possible through the enforcement of the policies and procedures established within this policy.

3. Policy Objective

This policy supplements the City of Pittsburgh Code of Ordinances (City Code), Article I Public Right-of-Way. In the event that the language of this policy conflicts with City Code, City Code is the governing document. The primary objectives of this policy are:

- ensure public safety for all users of public right-of-way;
- minimize inconvenience to the residents and business owners of the City by establishing standards and time constraints for obstructions and construction activities that impact the public right-of-way;
- protect the City's infrastructure investment by establishing construction standards and specifications; and
- describe the DPW permit structure, requirements, procedures, standards, and methods and outline permittee responsibilities.

4. Permit Structure

Before work within public right-of-way can begin, the appropriate permit(s) shall be obtained from the applicable DPW permit office and/or from the DPW Bureau of Transportation & Engineering.

4.1 A **Street or Sidewalk Opening Permit** is required prior to any construction activities occurring within a City street or sidewalk. A street or sidewalk opening permit, if required for construction activities, is a prerequisite to obtaining an obstruction permit. Street and sidewalk opening permits may be issued over the counter if all of the required application information is evident and accurate.

Permit Fees for Openings and Excavations are based on square yardage and listed in Section 415.02 of the City Code.

Opening Permits may be issued over the counter if all of the required application information is evident and accurate. Contractors typically coordinate opening permits. A list of the required application information can be found on the City's website, "Street Opening Permits / Utility Cuts." The street and sidewalk opening permit contact is:

City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, Pa 15219
Attn: Right of Way Manager
412.255.2434

4.2 A **Traffic Obstruction Permit** is required to safely and efficiently maintain traffic flow on major arteries, at intersections, in business districts or when vehicular, pedestrian, or cyclist infrastructure will be temporarily blocked, such as during construction activities. As part of the traffic obstruction permit, a Maintenance and Protection of Traffic Plan (MPT Plan) must be submitted and reviewed by the DPW. The criteria for MPT plans are presented in Sections 6 through 8 of this policy.

Permit Fees for Construction Related Obstructions are based on type of obstruction and listed in Section 416.09 of the City Code.

If public parking will be impacted by obstructions or construction activities, the applicant must first coordinate with Pittsburgh Parking Authority (PPA) (412.560.7275) to reserve and make payment for the affected metered spaces. Documentation of PPA coordination is a prerequisite for an obstruction permit.

Traffic Obstruction Permits may be issued over the counter if all of the required application information is evident and accurate. Contractors typically coordinate obstruction permits. A list of the required application information can be found on the City's website, "Traffic Obstruction Permit." The traffic obstruction permit contact is:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Traffic Division, Engineering Technician or Inspector
412.255.2597

4.3 A **Machinery in the Right-of-Way Permit** is needed if machinery or equipment will be placed in the right-of-way regardless of whether or not the use of the machinery or equipment results in the need to improve or restore the right-of-way (i.e. pavement or earth disturbance). Contractors typically coordinate machinery in the right-of-way permits. The machinery in the right-of-way permit contact is:

City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, Pa 15219
Attn: Right of Way Manager
412.255.2434

4.4 An **Encroachment Permit** is required for any private above, at, or below ground facilities or structures that will be permanently placed within the public right-of-way, including but not limited to utilities, foundations, retaining walls, ADA access, bike racks, and awnings. Encroachment permits require legislative action and therefore can take several months to obtain. Encroachment permits should be obtained prior to applying for obstruction and opening permits. Owners typically coordinate encroachment permits. Utilities that are regulated by the Pennsylvania Public Utility Commission do not require encroachment permits for their facilities. The process for obtaining an encroachment permit can be found on the City's website, "Encroachment Permit." The encroachment permit contact is:

City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, Pa 15219
Attn: Utility/Survey Specialist
412.255.2765

4.5 **Vacation of Public Right-of-Way** is the process through which public interest in a right-of-way is terminated and the easement for public access for vehicles, pedestrians, and cyclists is permanently extinguished. Vacations will not be approved by the City unless all affected utility companies are in support of the vacation and the associated easements have been granted. Vacation requires legislative action and therefore can take several months to complete. Vacations should be obtained prior to applying for obstruction and opening permits. Vacations and encroachments can be applied for concurrently. Owners typically coordinate vacations. The process for vacating public right-of-way can be found on the City's website, "Vacation." The vacation contact is:

City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, Pa 15219
Attn: Utility/Survey Specialist
412.255.2765

4.6 **Dedication** is the process through which newly constructed infrastructure (i.e. streets, sidewalks, public parking, lighting, tree pits, trails, etc.) designed and built in accordance with the City's standards, is gifted to the City for public use. Once the infrastructure is dedicated, the City owns and maintains the improvements. Dedication of a new street requires the approval of construction plans for Improvements within the Public Right of Way (refer to 4.7 below), acceptance of final as-built plans, and legislative action. Dedication takes several months to complete. Legislation occurs after construction. The City must inspect the construction of the improvements to verity that the improvements were constructed to City standards. **The City reserves the right to deny a dedication of any and all improvements that are not constructed to City standards.** Owners typically coordinate dedications. The process for dedicating improvements can be found on the City's website, "Design of a New City Street." The contact is:

City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, Pa 15219
Attn: Utility/Survey Specialist
412.255.2765

4.7 A **Curb Cut Permit** is required for vehicular access from a public street to private property. (Curb cut permits are **NOT** intended as multiple parking spaces immediately off of a public street or alley.) Curb cut permits should be obtained prior to applying for obstruction and opening permits. Signed plans for Improvements in the Public Right-of-Way (refer to Section 4.7) may be a prerequisite for a curb cut permit(s) depending on the extent of construction activities within the public right-of-way. The curb cut permit can take several weeks to finalize. Owners or consultants typically coordinate curb cuts. The process for obtaining a curb cut permit can be found on the City's website, "Curb Cut Permit." The curb cut contact is:

City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, Pa 15219
Attn: Utility/Survey Specialist
412.255.0840

4.8 **Improvements within the Public Right-of-Way** which alter the existing geometry, composition, or operation of the right(s)-of-way (i.e. Topographical changes, curb line modification, intersection upgrades, new public infrastructure, etc.) require full plan review by DPW. The applicant must submit construction plans, signed and sealed by an engineer licensed in the state of Pennsylvania, for the proposed construction activities in the public right-of-way. Review by DPW of construction plans is extensive. One review can take several weeks to complete. DPW will begin review of design documents at the conceptual or 30% design level, however only final construction plans can be approved for the necessary City signatures. Certain plan approvals will be contingent upon the project owner entering into license, easement, and/or maintenance agreement(s) with the City for the approved improvements within the public right-of-way. Owners or consultants typically coordinate this review process. The process for submitting plans for Improvements within the Public Right-of-Way can be found on the City's website, "Drawing Submittal Requirements." The contact for plan review is:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Streets Division, Staff Engineer
412.255.8850

4.9 A **Tree Planting or Tree Removal Permit** is required for planting new trees or removing existing trees. Owners (developers or residents), consultants, or community groups typically coordinate tree planting or tree removal permits. The process for obtaining a tree planting or removal permit can be found on the City's website, "Planting a Tree." The tree planting or tree removal cut contact is:

City of Pittsburgh
Department of Public Works
6520 Stanton Avenue
Pittsburgh, Pa 15206
Attn: City Forester
412.665.3625

4.10 For construction activities that impact City owned bridges, contact:

Public Sector Utility Work
City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, PA 15219
Attn: Right of Way Manager
412.255.2434

Private Sector Construction Activities
City of Pittsburgh
Department of Public Works
414 Grant Street, Room 301
Pittsburgh, Pa 15219
Attn: Structures Division, Project Manager
412.255.2034

4.11 For construction activities that impact trails and steps, contact:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Streets Division, Project Manager
412.255.2472

4.12 For construction activities that impact parks, contact:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, 4th Floor
Pittsburgh, PA 15219
Attn: Architectural Division, Project Manager
412.255.2649

4.13 Information pertaining to special events can be found on the City's website, "Office of Special Events." Further questions can be directed to specialevents@pittsburghpa.gov or by calling 412.255.2641.

4.14 Standard details and specifications applicable to work being performed will be provided upon request. Requests for details and specifications should be made to the Streets Division Staff Engineer at 412.255.8994.

4.15 Calls received through the Pennsylvania "One-Call" System (POCS) will not be recognized as a valid request for permits. The Pittsburgh Water and Sewer Authority (PWSA) (412.255.2429) will be responsible for monitoring all POCS requests and shall mark water and sewer locations within 48 hours of the request.

4.16 Every permit application must include a contact person, mailing address, telephone number, e-mail address, and address or location of obstruction or construction activities, as well as certification and signature of the applicant. An alternative 24/7 emergency contact number must also be provided. If there is a failure by both the principal or emergency contact to respond and the City is required to take emergency maintenance action, the permittee shall be invoiced and possibly fined for failure to keep the permitted area safe.

4.17 If work on an existing permit has not commenced by the expiration date of the permit, the permit will then expire and a new permit must be obtained before work can be initiated.

4.18 Failure by any utility, private contractor or other entity to obtain all applicable permits for obstruction or construction activities performed in public right-of-way shall result in a written citation, and a fine in accordance with the applicable section of the City Code.

4.19 No obstructions or construction activities will be permitted (except for emergencies) on certain streets during special City events, such as the "Pittsburgh Marathon," "Great Race" or other special events so designated by the Director of Public Works in conjunction with other City officials.

4.20 DPW requires that a Pennsylvania One-Call System telephone call or Web Ticket Entry be made, in compliance with the Underground Utility Line Protection Act, 73 P.S. sec. 176 et seq. and City Code section 415.17(g), before any construction activities in public right-of-way begins. This includes core drills, soft digs, and digs using vactor trucks for soil extraction.

5. Procedures for Street/Sidewalk Opening Permits

5.1 All utility companies, private contractors, and other entities must obtain all necessary permits before commencing work within the public right-of-way.

5.2 A bond must be active before any opening permit may be issued.

5.3 A DPW opening permit does not waive any POCS requirement.

5.4 The DPW must be notified of critical restoration milestones, such as forming, pouring, and setting of concrete. All restoration activities must be completed within 45 days of the start date listed on the permit application. After 45 days, the permittee can be granted an extension, but only after a $100 fee is invoiced and paid. During wintertime shutdown, the permit will stay on file until the spring for final restoration. Temporary restoration may be completed with cold patch, hot asphalt, or concrete to grade. Cold patch and concrete are deemed only a temporary surface for wintertime restoration and must be maintained by the permittee at all times (November 1 to April 30); concrete base and trench shoulders must be in place during this period.

5.5 The only acceptable City specification for backfill is #57 or #67 limestone or 2A or OGS sand and gravel. Anyone who restores a street or sidewalk improperly will be responsible for the restoration indefinitely until a DPW inspector provides a written sign-off on the final restoration.

5.6 Until restoration is deemed "final" by a DPW inspector, any and all DPW permits will be classified as "open" which will require the permittee to renew the permit for another 45-day period and pay the appropriate permit fee.

5.7 All opening permits need a final sign-off by the DPW before they can be deemed "final" or complete.

5.8 If the construction activities associated with the opening permit will impact ADA ramps, details for the ramp restoration must be submitted to DPW Streets Division, Staff Engineer (412.255.8994).

5.9 Private developments that require a street/sidewalk opening permit, except for utility openings that return infrastructure to its existing geometry, must contact DPW Streets Division, Staff Engineer (412.255.8994) to determine the magnitude of construction documents required for approval.

6. Maintenance and Protection of Traffic

MPT plans must follow the criteria outlined below:

6.1 Lane closures may not occur during the morning and afternoon rush hours. For purposes of this policy, rush hours are defined as the hours of 7:00AM - 9:00AM and 3:00PM - 6:00PM. Additional work hour restrictions may be required dependent upon the specific street, surrounding area, or previously scheduled public events.

6.2 The permittee must coordinate with adjacent activities and with City permitted special events, including sporting events. As needed, the permittee may be required to shift or suspend work activities or temporarily restore public right-of-way for public use.

6.3 In the event of a lane closure, the permittee must notify adjacent property owners, business owners, and residents at least 48 hours in advance. In the event of a street closure, a minimum 2 week notice is required. For emergency work, the permittee should provide notification as soon as possible to impacted property owners, business, owners, and residents.

6.4 Face-to-face notification is preferred, but at a minimum impacted parties must be notified using a door hang-tag that outlines important information related to the closure, including the area impacted, the expected start and end dates for the closure, and a contact number for the responsible contractor.

6.5 Any posted detours and emergency closures within business districts require a press release. The permittee is responsible to issue their press release.

6.6 The permittee must, at all times, keep the site accessible for emergency vehicles.

6.7 The MPT plan must conform to PennDOT Publication 213. In high volume areas, for long term closures, or in areas of complicated traffic patterns, as determined by the Municipal Traffic Engineer, a standard Pennsylvania Typical Application (PATA) will not be accepted and a site specific MPT plan must be prepared by a Registered Engineer and submitted for approval prior to receiving a permit. The site specific MPT plan must be to scale, properly dimensioned, show site specific detail, and provide accommodations for vehicles, pedestrians, and bicyclists.

6.8 Additional requirements for MPT plans that impact pedestrian and bicycle infrastructure are detailed in Sections 7 and 8, respectively.

6.9 The DPW contact for site specific MPT plans is:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Traffic Division, Municipal Engineer
412.255.8846

7. Pedestrian Work Zones Traffic Control

7.1 The public passage on the existing sidewalk or pedestrian pathway should be safe, protected, and ADA accessible.

7.1.1 An unobstructed pathway with a minimum horizontal clearance of 5 FT must be maintained through the construction site. The pathway should be separated from construction activities by using construction fencing or barrier depending on the construction activity.

7.1.2 Scaffolding may be required to maintain safe sidewalk passage, specifically if overhead hazards are anticipated. Scaffolding must have a minimum horizontal clearance of 5 FT. Lighting must be provided.

7.2 If public passage on the existing sidewalk or pedestrian pathway is not possible, a pedestrian reroute into an adjacent cart way around the work area is required. This pedestrian reroute must be a clearly delineated and ADA accessible.

7.2.1 When rerouting pedestrians into the cart way, traffic barriers must be used to separate the pedestrian pathway from the travel lanes. Barriers should be concrete or water-filled plastic jersey barrier. Fencing or barriers should be used to separate pedestrians from the work zone.

7.2.2 Pedestrian pathways rerouted due to obstructions and construction activities, will require pedestrian traffic controls to clearly direct pedestrians through and around the work zone. Pedestrian traffic controls include items such as signs, channelization devices, barrier, fencing, flagmen, etc.

7.3 If 7.1 or 7.2 is not viable, the City may authorize closure of the existing sidewalk or pedestrian pathway with a detour across the street from the work zone.

7.3.1 Pedestrian detour signage will be required that is mounted in a manner that is clearly visible to the pedestrians being affected. Pedestrians should be detoured with advance signing that encourages them to cross to the opposite side of the roadway at intersections. Signs should be placed at intersections so that pedestrians are not confronted with mid-block crossings and detours.

7.4 When existing pedestrian pathways are rerouted or detoured, the reroute or detour should include ADA accessibility features consistent with the existing pedestrian facility such as detectable warning surfaces. In addition, temporary ramps should be the full width of the passage way, made of suitable non-slip material, and firmly anchored into the ground. Railings are required when the rise is greater than 6 IN and the length of the temporary ramp is greater than 72 IN. Details of the temporary ramps should be included with the MPT plan for review and approval by DPW.

7.5 A pedestrian passage should not be severed and/or moved for non-construction activities such as parking.

7.6 Pedestrian passages must be maintained to/from all adjacent buildings and coordinated with the adjacent property owners.

7.7 Permittee shall inspect barriers and other protective devices every 24 hours.

8. Cyclist Work Zones Traffic Control

8.1 When cycling infrastructure is impacted by construction activities, it must be rerouted, detoured, or accommodated in a manner consistent with the facility being impacted.

8.2 For construction activities that are long term or mobile operations, protected bike lanes may require a rerouting or detour that is not mixed with traffic. For short term or mobile operations, advance signage and flaggers can be used to maintain the protected bike lane traffic through the project site.

8.2.1 During construction, temporary protected bike lanes may be delineated by cones but at no time shall the clear width of a bike lane be less than 4 FT. Any protected bike lane that is effectively narrowed below 4 FT is considered a bike lane closure and requires a reroute, detour, or other accommodation.

8.3 Specific signage for merging of the bike lane to shared road condition is required.

8.4 Permittee shall inspect barriers and other protective devices every 24 hours.

8.5 Trail closures will require an off-street reroute or detour. Legal agreements (easements) may also be required for trail closures. Trail closures will only be granted when no other options exist. All trail closures require a press release.

9. Off Duty Uniformed Police Officers

Off duty uniformed police officers may be required to aid in traffic control in some circumstances. The DPW in conjunction with the Bureau of Police will determine the requirements for each permitted location and communicate this information to the permittee. Requests for police support should be directed to Cover Your Assets at 412- 200-5220. Guidelines used by DPW and the Bureau of Police for the use of off duty uniformed police officers for traffic control are as follows:

9.1 Off duty uniformed police officers may be required when short term or mobile operations occur within 100 FT of a signalized intersection or within a business district.

9.2 Long term operations are expected to include long term traffic control in place with little variation in traffic patterns from day to day. In that case, off duty uniformed police officer use is minimal, but police control may be required for up to two weeks at nearby intersections to establish a new traffic pattern

9.3 Off duty uniformed police officers may be required to operate traffic signals to reduce congestion during construction activities. This applies to mobile, short term or long term construction.

9.4 When off duty uniformed police officers are required by the traffic obstruction permit and police support has been requested through Cover Your Assets, but the shifts are not filled, the permittee may proceed with work if the permittee can provide an adequate number of flagmen in lieu of off duty uniformed police officers.

9.5 Off duty uniformed police officers must be hired to operate a traffic signal or for short term power outages at traffic signals. Flagmen cannot be used in these instances.

10. Emergency Work

Except for emergencies, no party accessing the public right-of-way shall erect barricades or scaffolds, cover or uncover walk ways, erect or relocate utility poles on sidewalks or roadways or temporary bridges or make any curb cuts or lay or repair a sidewalk without first obtaining all applicable permits from the DPW.

10.1 Emergency work shall be defined as such on the PA One-Call System and as outlined in TITLE IV of the City Code.

10.2 Emergency work can begin provided the Bureau of Police is notified by contacting (412) 200-5220.

10.3 Unless otherwise agreed, emergency work requires that all applicable permit(s) be obtained no later than 24 hours after the onset of work.

10.4 All emergency work must be called into 412-255-2434 within six hours of work commencing.

11. Permittee Responsibilities

11.1 The permittee is held responsible for the work performed. DPW inspectors may contact the permittee for required adjustments or corrections, regardless of whether the permittee performed the work itself, or subcontracted the work. The permittee is the responsible party for any person or entity hired by the permittee.

11.2 The permittee must maintain a copy of the permit on the project site at all times, unless it is within the first 24 hours of emergency work.

11.3 Should the condition of the street or sidewalk opening become such that additional material is in jeopardy of failure, then the permittee shall be held responsible for repair of the area larger than what was applied for on the permit.

11.4 If the construction activities will disturb any surface survey monuments or hubs, it is the permittee's responsibility to have a professional surveyor licensed in the state of Pennsylvania under contract at the time of permit issuance, Survey monuments and hubs shall be restored and replaced to their original position and elevation by the permittee with the assistance of their contracted surveyor.

11.5 The permittee is responsible to document pre and post conditions of the project site and adjacent properties with a comprehensive series of photographs or videos in the event that damage claims are submitted to or by the City.

11.6 The permittee shall repair within 24 hours of notification by the DPW any temporary restoration that, in the opinion of the DPW inspector, is inadequate for safe use of the public right-of-way and materially interferes with the public's use or with the City's maintenance of the right-of-way. If, after 24 hours, the failed restoration has not been repaired in a workmanlike manner, a citation will be issued to the permittee. DPW will then perform the repair. A charge for material and labor plus a 30% fee for the City's costs of administration, supervision and inspection caused by the permittee's failed restoration work will additionally be invoiced to the permittee.

11.7 No utility companies, private contractors, or other entity shall install, improve, or repair streets, sidewalks, curbs, or gutters at a crosswalk without installing an approved ramp(s), so as to make the transition from street to sidewalk easily negotiable by disabled persons. This is a regulation of the U.S. Department of Transportation Federal Highway Administration (USFHA). As this regulation pertains to any alteration of a street, in some instances it may be required to install ramps at multiple locations in a project site. Construction details for accessible ramps shall be submitted to the DPW for review and approval. Where such an installation would not be feasible due to location or physical constraints at the project site, a statement of technical infeasibility must be submitted to the DPW. The contact to submit ramp details or to obtain the technical infeasibility form is:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Streets Division, Staff Engineer
412.255.8994

11.8 All installations within the public right-of-way must have a stamped approved construction drawing on site at all times together with all applicable permits.

11.9 The permittee is responsible to relocate, repair, and replace any public amenities that are adversely impacted or damaged as a result of obstructions or construction activities including but not limited to street trees, bike share facilities, and street furnishings. Neighborhood context and existing conditions should be considered when relocating, repairing, and replacing public amenities. Appropriate contacts are:

City of Pittsburgh
Department of Public Works
6520 Stanton Avenue
Pittsburgh, Pa 15206
Attn: City Forester
412.665.3625

Pittsburgh Bike Share
3328 Penn Ave.
Pittsburgh, PA 15201
412.621.0464

Street furnishings shall be black and manufactured by Victor Stanley.

- Trash Receptacle with Relay™: S-42
- Recycling Receptacle with Relay™: SD-242
- Lids: Rain Bonnet
- Bench (with center arm rest): RB-28 or backless RB-12

Bollards shall be Hampton "A" (3 IN, Schedule 40 Steel Pipe) with black finish manufactured by Architectural Iron Company.

Railings shall be Montage Commercial, steel with a black finish, manufactured by Ameristar Fence.

Commercial bike racks shall be the Heavy Duty Hoop Rack, galvanized with a black PVC dip finish, manufactured by Dero.

11.10 Non-standard street furniture may be in the right-of-way as part of an existing and active license and maintenance agreement between the City and a developer or community group. When non-standard street furniture is impacted, it must be replaced in kind.

11.11 Obstructions and construction activities shall not block fire hydrants.

11.12 All efforts must be made to maintain sight distance at intersections. Ideally obstruction and construction activities will be offset 30 FT from intersections. Where site distance cannot be maintained, off duty uniformed police officers may be required to safely control traffic at the intersection.

11.13 All material excavated from trenches must be removed from the project site. Excavated material shall not be used for backfill. It shall be the permittee's responsibility to secure the necessary permission and make all necessary arrangements for all required storage and disposal sites.

11.14 Work materials may be staged or placed in the street after an obstruction permit for staging has been obtained from the DPW, provided such staging or placement does not reduce the usable width of the roadway and provided that such material is not other than that to be used in actual roadway construction. In any event, the placing of material shall not seriously interrupt the normal and customary flow of traffic.

11.15 Construction markings shall be large enough and spaced enough so as to be easily visible, but not so large as to become a blemish on the pavements. Curb and sidewalk markings of valve boxes and service locations shall be made neatly and be less than 4 IN square. The over-large paint marks left after work has been completed are a safety concern to the DPW. Marks made on curbs as well as remaining pavement markings must be removed as part of the final site restoration. Markings not removed as part of final restoration which must be removed by the City shall henceforth be charged to the permittee as detailed in Section 11.6 of this policy. The entity that placed the PA One Call will be responsible for removal of the markings.

11.16 All streets and private properties affected by obstructions and openings, shall be thoroughly cleaned of all rubbish, excess earth, rock and other debris resulting from such construction activities. All clean-up operations shall be completed at the sole expense of the permittee and to the satisfaction of the DPW.

11.17 It is the permittee's responsibility to coordinate with the City's Department of Planning (DCP) including the Zoning and Development Review Division to obtain other City permits that may not be addressed in this policy. This includes but is not limited to site plan, stormwater management, construction management, and flood plain permits.

11.18 It is the permittee's responsibility to coordinate with the City's Department of Permits, Licenses, and Inspections (PLI) to obtain other City permits that may not be addressed in this policy.

11.19 It is the permittee's responsibility to coordinate with the Port Authority of Allegheny County (PAAC) if construction activities impact PAAC transit facilities.

11.20 It is the permittee's responsibility to obtain all applicable permits from, including but not limited to:

- Pittsburgh Water and Sewer Authority (PWSA);
- Allegheny County Health Department (ACHD);
- Allegheny County Conservation District (ACCD);
- Pennsylvania Department of Environmental Protection (PADEP); and
- Pennsylvania Department of Transportation (PennDOT).

12. Street lighting, Traffic and Utility Poles, Electrical and Communication Enclosures

12.1 No one may move, adjust and/or relocate a City streetlight or traffic signal without contacting the DPW Street Lighting Division at 412-255-2435 or the Traffic Division at 412-255-2873.

12.2 Utility companies, private contractors, and other entities must obtain permission before installing any type of enclosures. All enclosures, poles, and guy wire installation and/or removal must have an approved drawing signed off by DPW before obtaining a permit.

12.3 The DPW contact for Street Lighting is:

City of Pittsburgh
Department of Public Works
611 Second Avenue
Pittsburgh, Pa 15219
Attn: Operations Manager
412.255.2435

13. Electrical and Communication Wires, Fiber Optics, and Conduits

13.1 Any installation of electrical or communication wires, fiber optic cables, or conduits must be installed to National Electrical Safety Code (NESC) specifications or the permittee will be responsible for all corrective measures and fines. Anyone installing over 200 FT of new overhead plant will need a DPW approved drawing before installation.

13.2 All conduits placed within the right-of-way must be Schedule 40 or better. All conduits must be installed at a minimum depth of 30 IN to finish grade in the right-of-way. All conduits must have a drawing approved by the DPW before obtaining a permit.

13.3 All conduits placed in the right-of-way under pavement must be inspected for 30 IN minimum depth BEFORE backfilling begins. The permittee must schedule a DPW inspector BEFORE permanent restoration is started. If an inspector is not available, the opening must either be plated with I.D. and reflective tape around edges as specified in this policy, or cold patched. No barricades or plywood will be acceptable. Any conduit buried without the permission of a DPW inspector will be subject to re-opening, inspection, and citations.

14. Procedures for Steel Plate Installation

14.1 Signs conforming to MUTCD W8-24 ("Steel Plate Ahead") shall be placed to warn road users of steel plate installation.

14.2 A steel plate having a 3/4 IN thickness shall be placed over the trench with a minimum of 1 FT shoulder on all sides and properly secured.

14.3 Vehicular crossings shall be constructed of adequate size to accommodate regular vehicular traffic in a satisfactory manner. The placement and affixing of the steel plates shall be properly maintained.

14.4 All steel plates must be identified on both sides by welding the permittee's name and a 24-hour phone number.

14.5 All steel plates should be edged with reflective tape or paint.

14.6 Additional Requirements on Asphalt Streets

14.6.1 The asphalt shall be scored to the outside dimensions of the steel plate.

14.6.2 The plate shall be installed so that the elevation of the top of the steel plate is the same as the asphalt surface.

14.7 Additional Requirements on Concrete, Brick or Blockstone Streets

14.7.1 The entire perimeter of the steel plate shall be transitioned with asphalt. After the steel plate's removal, all asphalt must be removed.

15. Construction Restoration

15.1 All obstructions and construction activities within the public right-of-way shall be in conformity with plans and specifications approved by the DPW and are subject to inspection.

15.2 No party shall construct, reconstruct, repair, saw cut, open, alter or grade any sidewalk, curb, or driveway in the public right-of-way without first obtaining all necessary permits from the DPW. This item also pertains to residential property owners seeking to install or modify a driveway on their property that is also within the public right-of-way.

15.3 All sidewalk and curb construction, reconstruction, repair, saw cutting, opening, alteration or grading shall be done in accordance with City specifications. This item also pertains to residential property owners seeking to repair, replace, or maintain sidewalk on their property that is also within the public right-of-way.

15.4 It is unlawful for any party to construct or maintain public right-of-way that is not in accordance with the DPW standards and specifications.

15.5 All pavements must be saw cut before opening. The permittee is responsible for any damages due to saw cutting. No opening or excavation in any street shall extend beyond the center line of the street before being backfilled and the surface of the street temporarily restored.

15.6 All openings in the public right-of-way shall be permanently repaired as soon as weather permits. When an opening is not permanently repaired and an unsafe condition exists (e.g., steel plate has moved, temporary restoration has settled), the permittee must repair the condition immediately. If the permittee fails to do so, the DPW shall have the authority to cause such necessary labor and materials to be furnished by the City and all costs thereof shall be charged against the permittee as outlined in Section 11.6 of this policy.

15.7 All damage done to the right-of-way as a result of obstructions or construction activities shall be repaired by the permittee to the satisfaction of the DPW. If upon being ordered to do so the permittee fails to furnish the necessary labor and materials for such repairs, the DPW shall have the authority to cause such necessary labor and materials to be furnished by the City and all costs shall be charged to the permittee as detailed in Section 11.6 of this policy.

15.8 The permittee shall backfill and restore the surface of all pavements, broken into or damaged as a result of the construction activities, to their original condition or better in accordance with the specifications of the DPW.

15.9 From November 1 to April 30, temporary restoration may be necessary due to weather conditions. Temporary restoration work may be completed with cold patch, hot asphalt, or concrete to grade. Cold patch and concrete are deemed only a temporary surface for wintertime restoration and must be maintained at all times. Concrete base and trench shoulders must be in place during this period.

15.10 Permanent restoration of the street shall be made by the permittee in strict accordance with the specifications to restore the street to its original and proper condition. The DPW will require full lane replacement of wearing surface outside trench. If the street has a transverse joint, the permittee must replace the full pad concrete paving base.

15.11 Acceptance or approval of any opening/ restoration work by the City shall not prevent the City from asserting a claim against the permittee and/or the representative surety under the surety bond required hereunder for incomplete or defective work, if discovered within 24 months from the completion of the restoration work or the length of any warranty, whichever is longer. Verbal/non-written discussion with City personnel shall not relieve the permittee of any responsibilities under City ordinance or this policy.

15.12 The permittee shall expeditiously complete with diligence all openings, in accordance with the opening permit, and shall promptly complete such work and restore the pavement to its original condition or better, as soon as practicable. In any event, said work shall be completed no later than the date specified in the opening permit.

15.13 Lane striping or other painted and affixed delineators removed by parties accessing the public right-of-way shall be replaced by such parties before restoration will be considered complete. The parties shall take direction from DPW inspectors as to approved product and applications. Refer to the City's lane striping specifications in Appendix A.

15.14 Disturbed areas shall be limited to 200 LF of open trench before temporary restoration is required. All trench work more than 30 LF must submit a true and correct drawing to the DPW Inspector prior to work.

15.15 In some instances, the City can perform the restoration in whole or in part and invoice the permittee for the work. This arrangement must be agreed to by both the City and the permittee prior to any permits being issued.

16. Utility Tag Identification Requirements

16.1 Permittees working within the public right-of-way are required to install utility repair tags on all asphalt restoration. Utility repair tags are not intended to identify underground utility infrastructure. The utility repair tag requirement is only intended to identify the permittee who is responsible for maintaining the compliance of roadway restoration during the 48 month guarantee period.

16.2 Utility repair tags must be used on any temporary or permanent restoration which will be in place for more than 30 days. Utility tag design standards and requirements are established by the DPW but permittees are responsible for purchasing and installing utility tags in accordance with the following guidelines:

16.2.1 The tags must be pressed into the asphalt before compaction of the final lift commences. All utility tags must be embedded at zero grade tolerance.

16.2.2 The use of nails to secure tags is prohibited.

16.2.3 Utility repair tags should not be placed within 12 IN of any casting unless space does not allow otherwise. Tags should be placed away from direct wheel traffic when possible.

16.2.4 The permittee is responsible for replacing damaged or faded identification utility repair tags throughout the 48 month guarantee period of the restoration.

16.2.5 Placement of utility tags is dependent upon opening length as noted below:

Opening Length (L)	**Tag Placement**	
L < 50 FT	1 tag placed in the center of the restoration.	All laterals extending from the main restoration must have their own tag in the center of the lateral.
50 FT ≤ L ≤ 100 FT	1 tag placed at each end of the restoration approximately 12 IN from the edge.	
100 FT < L ≤ 400 FT	1 tag placed in the beginning, center, and end of the restoration, with the beginning and end tags approximately 12 IN from the edge. An additional tag must be placed at every intersecting street.	
L > 400 FT	1 tag placed at the beginning and end of the restoration approximately 12 IN from the edge, and at 200 LF intervals. An additional tag must be placed at every intersecting street.	

17. Core Boring

The procedure for any core borings within public right-of-way is as follows:

17.1 Any concrete street or concrete base slab street with a bituminous or brick wearing course built within 5 years will have full slab replacement.

17.2 All streets older than 5 years may have two 2 IN core borings per slab, centered and 2 FT from any edge or expansion joint. If this is not possible, full slab replacement is required. Full slab replacement is also required for any core larger than 2 FT.

17.3 Any core borings in sidewalks will require full slab replacement regardless of the size of the existing sidewalk slabs.

17.4 All holes must be filled with a workable non-porous slurry mix topped with 12 IN class "AAAP" concrete.

17.5 On brick streets, carefully remove existing brick, replace the base and reuse the original brick. Brick fragments less than ½ brick size cannot be reused.

17.6 Asphalt streets will be restored as in Item 17.4 with 4 IN of asphalt top.

17.7 Core borings cannot be collected until obstruction and opening permits have been obtained.

18 Directional Boring

Directional boring will be reviewed on a case by case basis.

19 Material-Specific Restoration Requirements

In general, restoration shall be in-kind in relation to surface material. Neighborhood context should also be considered. All courses shall be furnished and installed in accordance City standards.

19.1 Asphalt Streets

Openings should be kept to a minimum and be reflective of the area which requires work. Openings shall be clean, edges straight and corners squared off (full lane replacement). Openings within 40 FT of another must be tied together. All openings will be properly sealed. Excavation shall be consistent with City requirements or work standards provided below. Material shall be disposed of properly, and new material shall meet City quality requirements and be compacted in lifts according to City specifications.

19.1.1 If a road is crowned, the permittee who is opening the street shall repair the crown in order to maintain good drainage on the street.

19.1.2 City specifications require that 1 FT on each side of the opening be repaired so as to preserve the integrity of the street by shouldering. All openings are full lane replacement. This shall apply to all street classifications.

19.1.3 For super elevated streets, the extent of the replacement shall be determined by such conditions as drainage, traffic movement and existing conditions. The DPW shall make the determination regarding slab/lane replacement requirements. Contact the appropriate DPW Manager as indicated in Section 1 for Public Sector or Private Sector work to request a meeting at the project site.

19.1.4 Separate street openings, on opposite side of the streets sporadically placed, will require total street surface replacement. This will apply if the street openings are within 40 FT of one another.

19.1.5 In order to avoid a "checker-board" effect, when a street opened is within 40 FT of another street opening, the openings shall be tied together, pavement material removed, and a rectangular full lane restoration provided. **THIS TIE-IN IS REQUIRED REGARDLESS OF WHEN OR BY WHOM THE PREVIOUS OPENING WAS MADE.**

19.1.6 All perimeters of asphalt restoration shall be sealed with a 6 IN wide sealing strip of fiber reinforced sealer.

19.1.7 Longitudinal openings within 40 FT of one another shall be repaired continuously, beginning at the first opening and ending with the last longitudinal opening consistent with full lane requirements.

19.1.8 All openings shall be rectangular and a transverse opening shall be at a 90-degree angle to the curb. Restoration work will be organized as to lane configurations and consideration will be given to crown or other drainage considerations as to the placement of the opening and the restoration work.

19.1.9 All openings require edge of lane to edge of lane roadway replacements. Curb to Curb restoration will be required when the opening is made to that street within the first 48 months after paving was completed.

19.1.10 Restoration work will be guaranteed for a period of 48 months from the date of final restoration. Any failure of the restoration during the guarantee period must be corrected by the permittee within 45 days of being notified by a City representative.

19.2 Concrete Slabs and Concrete Streets with Asphalt Overlay

19.2.1 If a concrete slab (i.e. sidewalk) or base slab (i.e. street) is disturbed by an opening, then full slab or base slab replacement is required.

19.2.2 The permittee may be allowed to replace only half the slab or base slab, at the discretion of the DPW and in accordance with the procedure outlined in Section 1.1. Other right-of-way improvements may be requested by the DPW, in exchange for reconsidering the requirement of full slab replacement.

19.2.3 If as a result of the opening, the drainage system is disturbed, then restoration will be required so that the existing drainage system is repaired and functioning. The drainage system includes but is not limited to existing grades, curbs, inlets, conveyance pipes, and green infrastructure.

19.2.4 Sidewalk, deep curbs and slabs must be placed separately. New construction curb reveal must be at a minimum of 7 IN from ordained grade with curb depth of 24 IN. All joints must be cleaned and sealed with appropriate joint seal material (see City standards).

19.2.5 All concrete surfaces shall be sealed after they have been cured for 28 days. The permittee shall be responsible for sealing slabs according to City specifications.

19.2.6 The bituminous overlay portion of this section is to be removed 1 FT from all adjacent slabs and replaced. All transverse and longitudinal joints are to be re-sawed, cleaned, and sealed.

19.2.7 No street or sidewalk openings for planned work will be approved on concrete streets and sidewalks or concrete streets with asphalt overlay paved within the last 60 months. All emergency street openings are to be restored from curb to curb, ending no sooner than 1 FT from the end of the trench and no further than the nearest intersection. This section must be restored according to the City standards.

19.2.8 Restoration work will be guaranteed for a period of 48 months from the date of final restoration. Any failure of the restoration during the guarantee period must be corrected by the permittee within 45 days of being notified by a City representative.

19.3 Brick and Blockstone Streets

19.3.1 Brick and blockstone streets are to be preserved. Overlay will not be permitted on brick and blockstone streets unless approved through the process described in Section 1.1.

19.3.2 Efforts must be taken to match the color of the brick and the pattern in which it is laid. The permittee, as part of their opening, should save all bricks and store them securely so that they can be reused. If the situation exists where a permittee opens a public right-of-way and discovers bricks that are buried, the permittee should notify DPW of this so that the DPW may recover the bricks for use in future restoration projects. For full street restoration, if brick or blockstone are to be removed, they shall be delivered to a DPW determined location.

19.3.3 Brick Streets and brick crosswalks within the Central Business District (CBD): will be repaired in accordance with construction requirements of the DPW, Bureau of Transportation & Engineering (BTE), and will be reviewed by inspectors from that department. The contact is:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Construction Supervisor
412.255.2733

19.3.4 No street openings for planned work will be approved on brick and blockstone streets reconstructed within the last 60 months. All emergency openings are to be restored from curb to curb, ending no sooner than 1 FT from the end of the opening and no further than the nearest intersection. This section must be restored according to the City standards.

19.3.5 Restoration work will be guaranteed for a period of 48 months from the date of final restoration. Any failure of the restoration during the guarantee period must be corrected by the permittee within 45 days of being notified by a City representative.

19.4 **Pervious Pavement or Green Infrastructure**

Requests for pervious pavement or green infrastructure within the public right-of-way will be evaluated on a case by case basis and in accordance with national standard practices as outlined by the National Association of City Transportation Officials (NACTO) and the procedures outlined in Section 1.1 of this policy. It is the permit applicant's responsibility to collect all pertinent information for the DPW to evaluate the appropriateness of pervious pavement or green infrastructure in the right-of-way. The applicant will need to qualify the viability of permeable pavement or green infrastructure in terms of volume and/or rate reduction. It is expected that the applicant will submit items including but not limited to the following:

(a) complete set of construction plans signed and sealed by an engineer licensed in the state of Pennsylvania;
(b) geotechnical evaluation signed and sealed by an engineer licensed in the state of Pennsylvania, that provides subsoil infiltration rates;
(c) data that demonstrates the project's alignment with the goals of PWSA's Green First Plan;
(d) volume and rate reduction monitoring plan; and
(e) maintenance plan.

If the DPW requests a traffic study from the applicant, it must include the numbers and classifications of vehicles. Candidates for pervious pavement and green infrastructure are limited to low traffic, local neighborhood streets with acceptable structural setbacks.

When pervious pavement or green infrastructure is approved in the right-of-way, the permittee will be required to enter into a license and maintenance agreement with the City.

The applicant will need to submit the project drawings to PWSA for review and approval prior to the DPW signing final construction plans.

19.5 **Curbs**

19.5.1 In the event the existing curb reveal at the project site is less than 4 IN, the DPW should be contacted immediately. Pre and post construction photographs documenting the curb reveal should be submitted to the DPW. The contact is:

City of Pittsburgh
Department of Public Works
City-County Building
414 Grant Street, Room 301
Pittsburgh, PA 15219
Attn: Construction Supervisor
412.255.2733

19.5.2 The request for curbless streets or curb extensions (i.e. bump outs, bulb outs) will be evaluated on a case by case basis in accordance with national standard practices as outlined by the National Association of City Transportation Officials (NACTO) and the procedures outlined in Section 1.1. It is the permit applicant's responsibility to collect all pertinent information for the DPW to evaluate the appropriateness of curbless streets. It is expected that the applicant will submit a traffic study (i.e. ADT) and parking study. The traffic study must include the numbers and classifications of vehicles. Candidates for curbless streets are limited to low speed, low traffic, local neighborhood streets with low parking demand.

19.5.3 When construction activities result in the modification or creation of curb lines, the permittee will be responsible to ensure that restored or new curb lines are consistent through intersections such that street grids are maintained or created to the extent practical.

20. Restoration based on Total Disturbance Percentages

Restoration based on total disturbance percentages that is enacted via this revised policy will go into effect for all projects being constructed beginning January 1, 2018.

20.1 Utilities, Full Depth Restoration

20.1.1 If construction activities in the street for one project disturbs 50% of the roadway block, the permittee shall provide a full depth restoration for the entire length of the roadway block.

20.1.2 The Director may, at his/her sole discretion, consider other factors in requiring full depth restoration, such as the locations of the excavations, the extent of lateral trenching for utility service, evidence of existing subsidence and relevant engineering studies.

20.1.3 If the project is designed and approved at less than 50% disturbance, and the constructed project exceeds the previously approved design disturbance and 50% or more of the roadway block is disturbed, then full depth restoration is required.

20.1.4 If more than one utility or agency is involved in construction activities in the street and openings for the project, and the cumulative disturbance of the construction activities, as constructed, is 50% or more of the roadway block, the lead utility or agency shall be responsible for a full depth restoration. The lead utility or agency must coordinate with other parties participating in the project and for seeking reimbursement for its costs from those other agencies or utilities.

20.1.5 Full depth restoration includes all line-striping required by the City's specification for that street. If the line-striping is not completed, and the City places the line-striping on the restored street, the lead utility or agency will be responsible for and invoiced for the City's cost.

20.2 Utilities, Milling and Paving

20.2.1 If construction activities in the street for one project disturbs less than 50% of the roadway block, but involves replacement of two or more facilities, the roadway block must be milled and paved from curb to curb.

20.2.2 If work in the street disturbs less than 50% of the roadway block, it does not meet the criteria in subsection 20.2.1 above, the street openings and excavations must meet the requirements of Section 19 Material Specific Restoration Requirements.

20.2.3 The Director may, at his/her sole discretion, consider other factors in requiring the roadway block to be milled and paved from curb to curb, such as the locations of the excavations, the extent of lateral trenching for utility service, evidence of existing subsidence and relevant engineering studies.

20.3 Private Developers, Milling and Paving

20.3.1 Except as noted in Subsections 20.3.3 and 20.3.4 below, private development projects of the following types which disturb in excess of 40% of the roadway within the adjacent roadway area as defined in Subsection 20.3.2, or install an average of three or more utility connections per lot or property involved in the development, shall be required to mill and pave the full adjacent roadway area:

(a) New construction or substantial improvement of 6 or more residential lots or properties fronting on the same roadway block.

(b) Any project involving new construction or substantial improvement of at least 100 LF of frontage on a roadway block.

(c) Any private development project fronting on a roadway in a City designated Historic District.

20.3.2 Adjacent roadway area shall remain:

(a) For streets with a legal roadway width of 16 FT or less, the area of roadway adjacent to the private development project bounded by the two outer property lines of the project, extended to the opposing curb face so as to intersect it at, or near, right angles;

(b) For streets with a legal roadway width greater than 16 FT, and where disturbance to the existing pavement extends beyond the centerline of the roadway, the area of roadway adjacent to the private development project bounded by the two outer property lines of the project, extended to the opposing curb face so as to intersect it at, or near, right angles;

(c) For streets with a legal roadway width greater than 16 FT, and where disturbance to the existing pavement does not extend beyond the centerline of the roadway, the area of roadway adjacent to the private development project bounded by the outer property lines of the project, extended to the roadway centerline so as to intersect it at, or near, right angles;

(d) Where disturbance to the existing pavement does not extend fully to the outer property lines of the project, the area of roadway adjacent to the private development project bounded by the limit of disturbance of the project extended to the roadway centerline (or opposing curb face, as appropriate) so as to intersect it at, or near, right angles. Such limits of disturbance, when determined by the City, shall not be less than the lesser of 100 LF of street frontage or 6 residential lots; or

(e) Where new construction or substantial improvement is at a street corner, the adjacent roadway area shall be either areas adjacent to the private development project bounded by the property lines of the project, extended to the opposing curb face so as to intersect them at, or near, right angles.

20.3.3 Where a private development project overlaps with, or includes utility extensions or replacements, the requirements of Section 20.1 or 20.2 supersedes the requirements of this Section.

20.3.4 Where a private development project meeting the criteria of Section 20.3.1 either fronts on a roadway within a City designated Historic District and disturbs in excess of 40% of the Adjacent Roadway Area in that Historic Street, or the project requires installing an average of three or more utility connections per lot or property involved in the development, a full depth restoration of the adjacent roadway area is required.

20.3.5 Where milling and repaving is triggered by disturbances in two or more adjacent roadway areas abutting an intersection, the full roadway of the intersection between the 4 house lines of intersection must be milled and repaved.

20.3.6 The Director will appoint all agents responsible for determining the adjacent roadway area, the percentage of the adjacent roadway area disturbed, and any milling and paving requirements; or shall require a licensed professional engineer to prepare calculations for this purpose. Appeals related to any such determinations or requirements must be submitted, in writing, to the Director for consideration.

20.3.7 Areas disturbed for reasons other than utility installation or curb reconstruction, including areas disturbed by heavy machinery incidental to construction, may also be included in the disturbed area calculation.

20.3.8 If more than one contractor, utility or agency is involved in construction activities in the street openings for the project and the cumulative disturbance from all those involved is at least 40% as constructed, the Developer must do the milling and repaving.

20.3.9 Required milling and repaving shall include all line-striping required by the City's specification for that street. If the line-striping is not completed, and the City places the line striping on the restored street, the Developer will be invoiced for the City's costs.

20.4 All work must be completed in a timely matter, and in accordance with the approved plans, as determined prior to the start of construction. Failure to comply any work in a timely manner will serve as justification for a revocation of permits, holds on any Certificates of Occupancy, or the issuance of a Stop Work Order.

21. Moratorium

The 48 month moratorium that is enacted via this revised policy will go into effect for all projects being constructed beginning January 1, 2018.

21.1 Permission to open newly constructed or renovated streets and sidewalks will not be granted for 48 months after completion of street and sidewalk construction or renovation for asphalt streets and 60 months for concrete or concrete base streets with an asphalt or brick wearing course. Upon request made by the permittee, after being reviewed by the DPW in accordance with the process outlined in Section 1.1 of this policy, permission to open moratorium streets and sidewalks may be granted by the Director of Public Works when one of the following conditions is met:

(a) An emergency that endangers life or property;
(b) Interruption of essential utility service;
(c) Service for buildings where no other reasonable means of providing service exists; or
(d) Work that is mandated by City, State or Federal regulations.

Emergency work can proceed in accordance with Section 10.

21.2 In circumstances where permission to open is granted, openings made in moratorium streets and sidewalks shall be permanently restored according to the current City specifications to include but not limited to full slab and curb-to-curb restoration. Only the Director has the authority to grant exceptions, in accordance with the process outlined in Section 1.1.

22. Inspections

The DPW, through a uniform and responsive inspection process, can assure that construction activities in the right-of-way are completed in accordance with current City standards and national codes for reconstruction and site restoration. The objective of the DPW's inspection effort is to ensure that the City infrastructure is preserved, public safety is maintained and that restoration related issues are minimized.

22.1 Quality Control Inspection

22.1.1 DPW inspectors may serve as liaison among entities that access the public right-of-way to communicate construction standards, to coordinate activities among permit holders, and to provide direction for restoration.

22.1.2 Inspection will be provided by the DPW inspectors, and assisted by other City officials as necessary and appropriate.

22.1.3 DPW inspectors shall inspect the restoration of the right-of-way, and shall monitor backfilling, compaction, repaving, and hazard protection.

22.1.4 DPW inspectors will inspect to ensure that all restoration shall result in a condition equal to or better than that which existed prior to construction.

22.2 Method of Inspection

Some inspections will be on-going throughout the course of construction activities whereas other inspections may be made only after completing certain phases. The following considerations will apply.

22.2.1 All parties accessing the public right-of-way will notify the City inspector of their work schedule(s) prior to the start of those activities.

22.2.2 Inspectors will establish with the permittee a schedule of inspection before the opening is made and before restoration is complete.

22.2.3 Inspectors shall monitor all construction activities in the City's right-of-way to ensure proper permitting is on site.

22.2.4 Inspectors may require materials testing should conditions warrant.

23. Failure to Comply

Where any utility companies, private contractors or other entities obstructing or conducting construction activities in the right-of-way fails to comply with the City Code, and/or with the procedures set forth herein, and/or with the terms or conditions of any permit issued by the City, the City, without waiving any right or remedies it may have in law or equity, may invoke against such person the sanctions, remedies, penalties and extra fees set forth in the City Code, Title Four, Article I, Chapter 415, Sections 415.13, 415.14, 415.15, and 416.23.

APPENDIX A PAVING SPECIFICATIONS

PAVERLAID HOT-MIX PAVING
SPECIFICATIONS FOR RESTORATION
REVISED: FEBRUARY 2017

All bituminous asphalt for City streets must be produced by a PennDOT approved vendor.

The list of vendors can be found in PennDOT Contract 5610-36. DPW requires paving material to be HMA 9.5mm for wearing course and 19mm for the binder course pursuant to PennDOT Publication 408 (current edition) Section 409 Table A (metric) Table B.

DPW requires an ESAL level of no less than 3 to 30 million ESAL. All mix designs should be faxed to 412-622-6944 for approval. Include a cover sheet with the permittee's name, the contractor's name, the contact person and phone number.

PennDOT Publication 408 will be used for lay down and compaction procedures.

DPW reserves the right to test the paving material at the Asphalt Testing Laboratory located at 4501 Centre Avenue. The City's inspection team will check the compaction, milling, and material depth.

Permittees will be required to install wedge curbs on unimproved streets per direction from the DPW.

Permittees will be required to saw cut and seal over expansion joints of streets that were originally installed as concrete.

Permittees must seal all curbs, utility castings, and any cold transverse joints shall with AC-20 immediately after the wearing course is placed.

DPW requires the permittee to provide a copy of all material delivery tickets.

Milling Operation for Primary Streets

All milling is to be completed to a depth of 4 IN

Paverlaid hot-mix paving

The 19mm **3-30 b**inder course will be applied in a 2.5 IN compacted layer.

The 9.5 mm **3-30** Wearing course will be applied in a 1.5 IN compacted layer.

DPW requires Class PG 76-22 for primary streets.

Milling Operation for Secondary Streets

All milling is to be completed to a depth of 3.5 IN

Paverlaid hot-mix paving

The 19mm binder course will be applied in a 2 IN compacted layer.

The 9.5 mm wearing course will be applied in a 1.5 IN compacted layer.

DPW may allow Class PG 64-22 on secondary streets if the street is not a truck or bus route.

Pavement Makings

The contractor is responsible for the placement of all pavement markings required by the City of Pittsburgh.

Contractor is to use hot thermoplastic pavement markings meeting the requirements of PennDOT Publication 408 Section 960 (current edition), at a minimum thickness of 90 mils ± 3 mils. The following are the sizes and types to be used:

1. 4 IN double yellow for center lines
2. 6 IN white for lane lines
3. 24 IN or 12 IN white for cross walks (as determined by existing conditions)
4. 18 IN white for stop bars

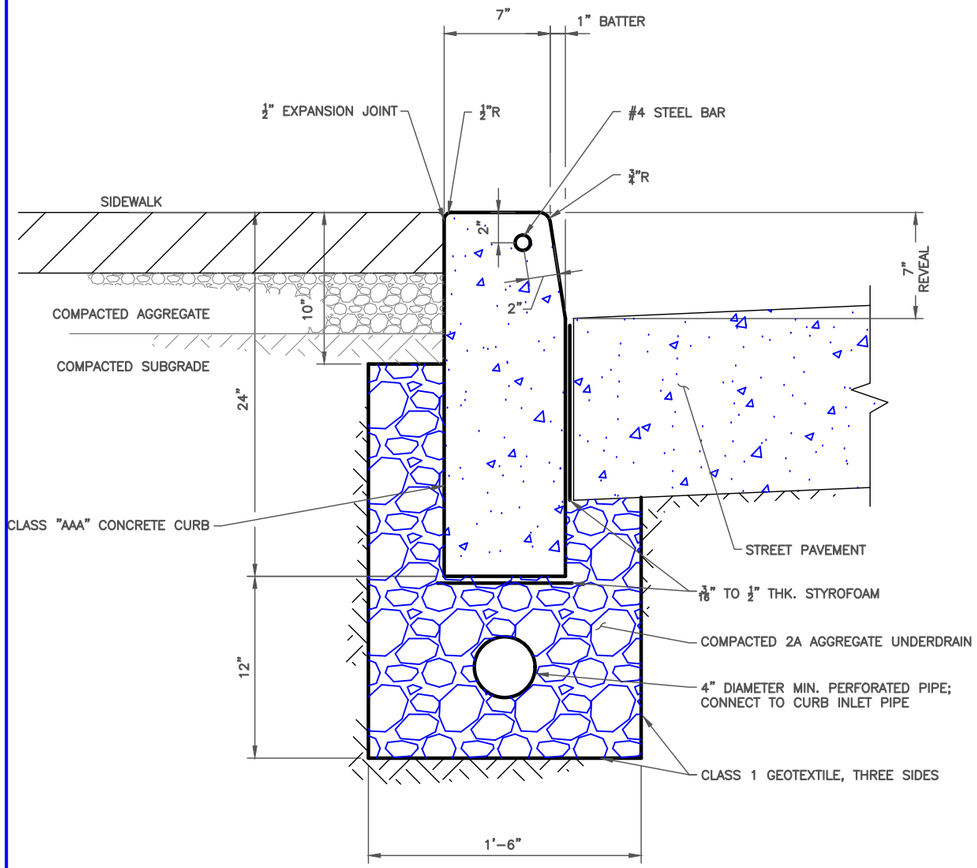
Stencils will need to be replaced in kind and in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

The Contractor is to follow manufacturer's application procedure when placing the markings.

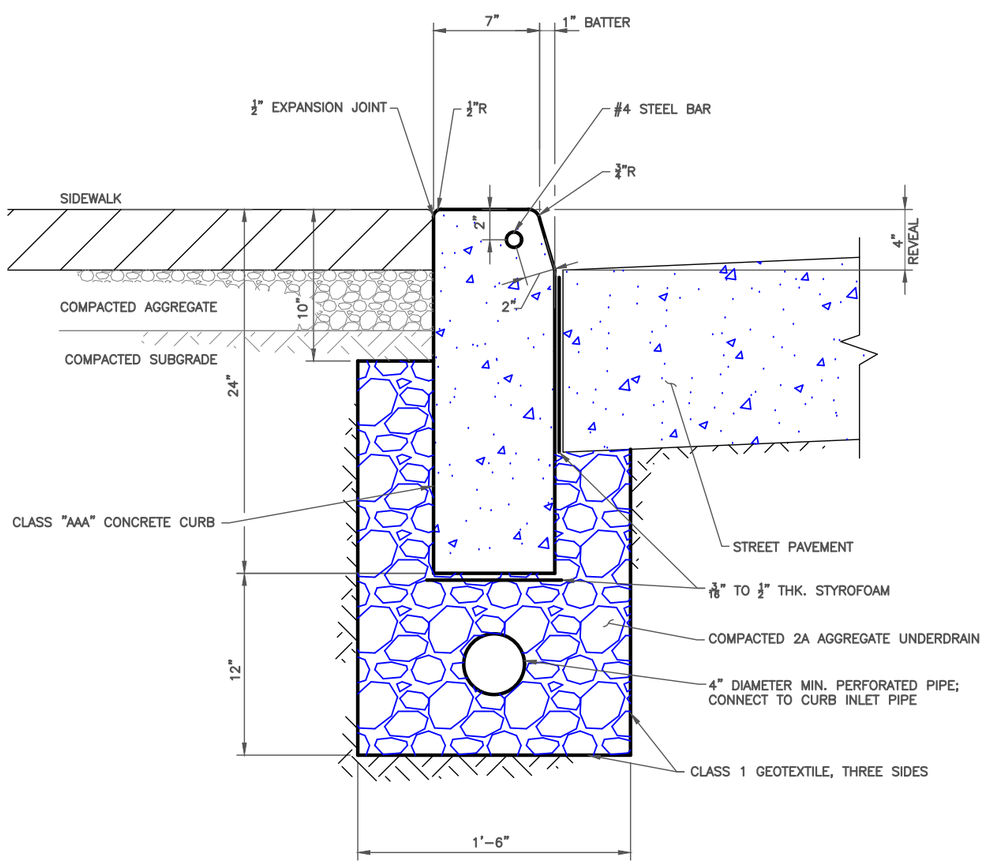
The final disposition of the marking will be decided by the City of Pittsburgh/Department of Public Works Traffic Supervisor or his/her designee.

APPENDIX B CONSTRUCTION DETAILS

SC-100	CONCRETE DEEP CURB
SC-500	REINFORCED CONCRETE SIDEWALK
SC-501a	BITUMINOUS PAVEMENT FOR PRIMARY AND SECONDARY STREETS
SC-501b	GRANITE CURB
SC-502a	TYPE 1 CURB RAMP, 6’ SIDEWALK
SC-502b	TYPE 1 CURB RAMP, 5’ SIDEWALK
SC-502c	TYPE 2 CURB RAMP, 4’ LANDING
SC-502d	TYPE 2 CURB RAMP, 3’ LANDING
SC-502e	TYPE 3 CURB RAMP, 4’ LANDING
SC-502f	TYPE 3 CURB RAMP, 3’ LANDING
SC-502g	TYPE 4 CURB RAMP
SC-502h	TYPE 100 CURB RAMP, 4’ LANDING
SC-502i	TYPE 100 CURB RAMP, 3’ LANDING
PL-200	STREET TREE ROOT ZONE REQUIREMENTS



7" REVEAL



4" REVEAL

NOTES:

1. 4" REVEAL PERMITTED WHEN FIELD CONDITIONS DO NOT ALLOW STANDARD 7" REVEAL; USE OF 4" OR OTHER REVEAL HEIGHT TO BE APPROVED BY DPW PRIOR TO OBTAINING STREET OR SIDEWALK OPENING PERMITS.
2. CURB CONSTRUCTION JOINTS SHALL BE SPACED AT A MAXIMUM OF 10'-0", AND SHALL COINCIDE WITH TRANSVERSE JOINTS IN PAVEMENT AND/OR BASE.
3. EXTEND ALL PAVEMENT JOINTS THROUGH CURB.
4. ALL CONCRETE CURB SHALL BE CURED BY THE SAME METHOD AS CONCRETE PAVEMENT OR BASE COURSE.
5. PERFORATED PIPE MAY BE OMITTED FROM UNDERDRAIN AS DIRECTED BY THE DPW.

CONCRETE DEEP CURB

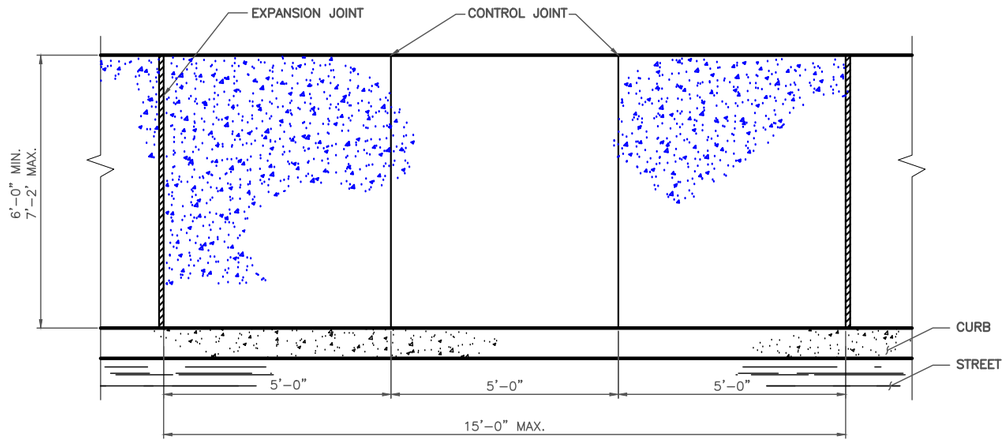
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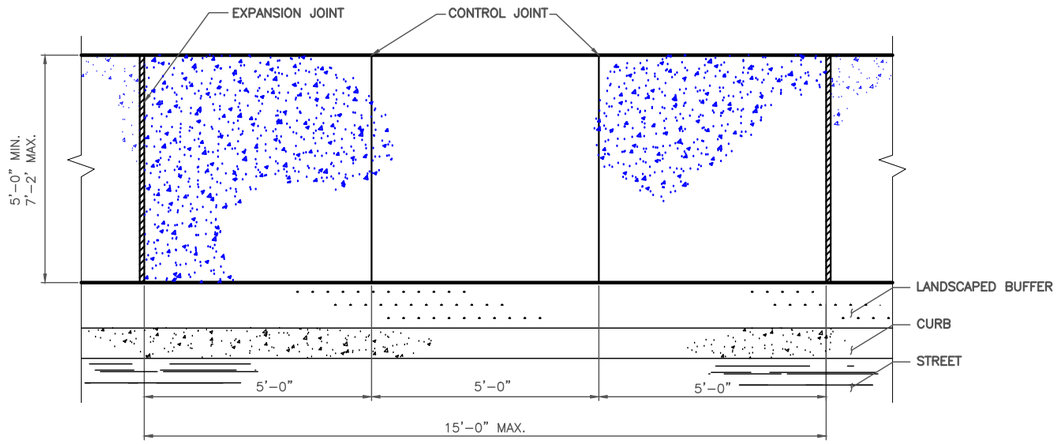
DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

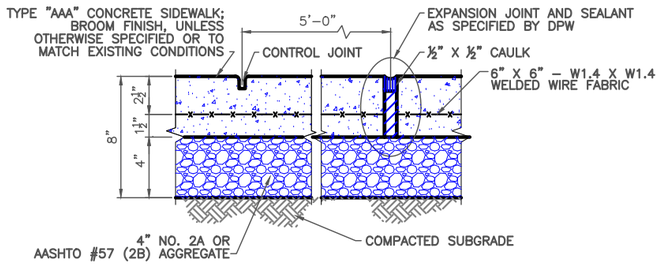
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TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

SC-100

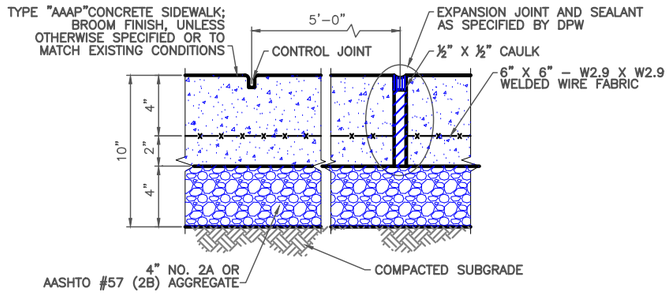




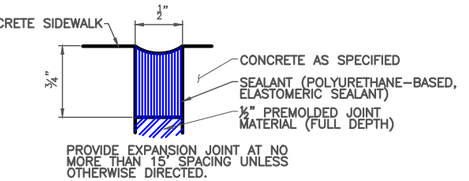
PLAN



4" SECTION
SCALE: 1" = 10'

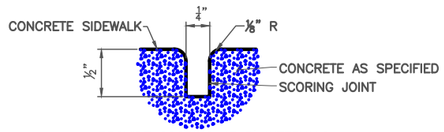


6" SECTION
SCALE: 1" = 10'



PROVIDE EXPANSION JOINT AT NO MORE THAN 15' SPACING UNLESS OTHERWISE DIRECTED.

EXPANSION JOINT
NOT TO SCALE



PROVIDE SCORING AT 5' INTERVALS BETWEEN EXPANSION JOINTS UNLESS OTHERWISE DIRECTED BY DPW.

CONTROL JOINT
NOT TO SCALE

NOTES:

1. 4" REINFORCED SIDEWALK REQUIRED IN AREAS OF PERSONAL VEHICLE LOADING AND/OR TRAFFIC, OR WHERE SUCH USE ARE EXPECTED, OR WHERE MANDATED BY THE DPW.
2. PADOT CLASS "AAA" SHALL HAVE COMPRESSIVE CAPACITY OF 4,000 PSI AT 28 DAYS.
3. ALL PAVEMENT JOINTS SHALL BE EXTENDED THROUGH CURB WHEN COINCIDENTAL WITH CURB JOINT.
4. EACH PAD SHALL NOT EXCEED 36.0 SF.

REINFORCED CONCRETE SIDEWALK

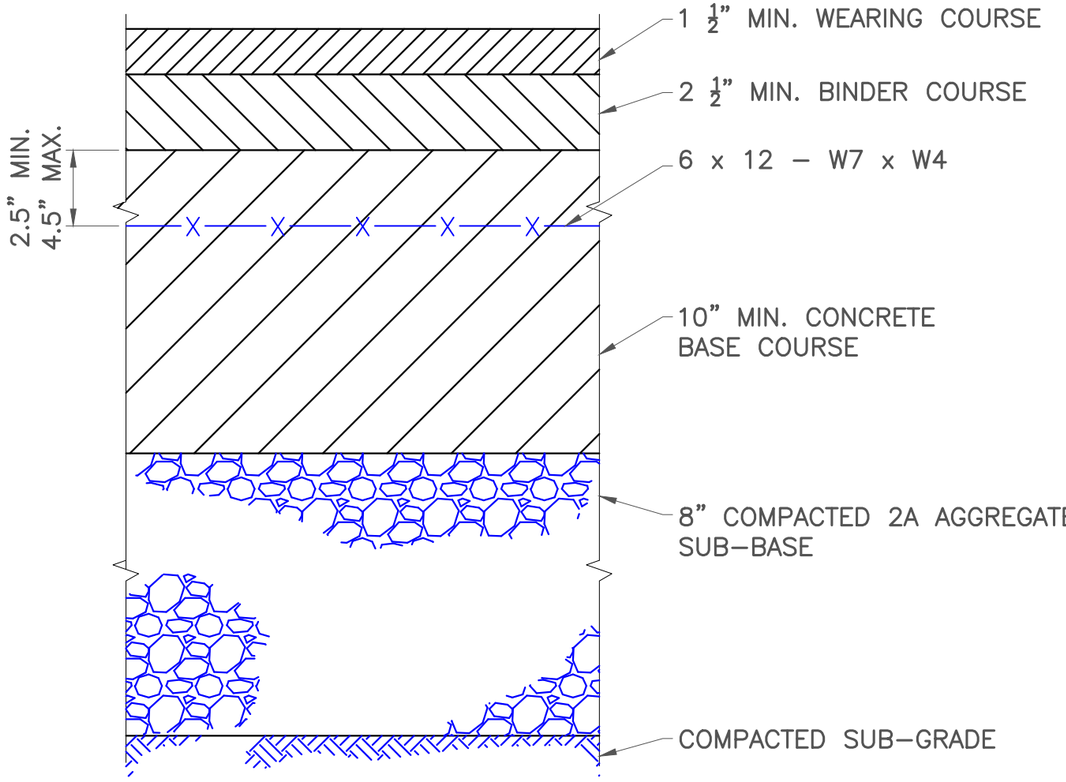
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DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

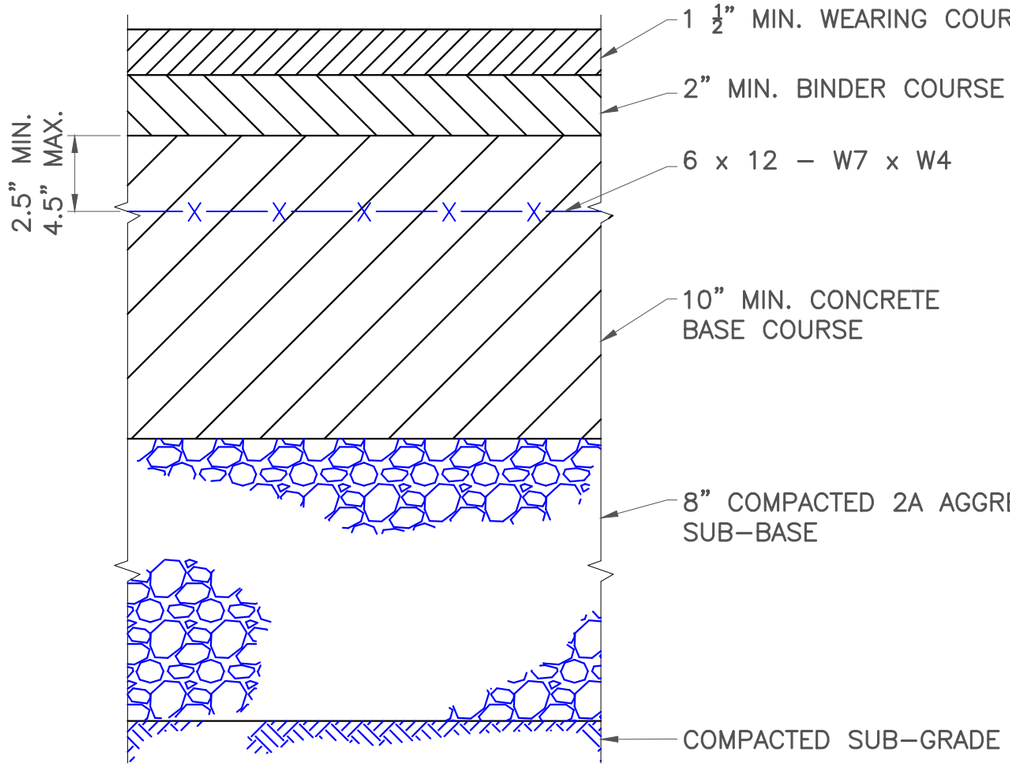
CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

SC-500



PRIMARY STREETS



SECONDARY STREETS

NOTES:

1. HOT MIX BITUMINOUS ONLY, PER CURRENT EDITION OF PENNDOT PUBLICATION 408.
2. WEARING COURSE: COMPACTED, 9.5MM, PG 76–22.
3. BINDER COURSE: COMPACTED, 19MM, PG 76–22.
4. DPW MAY ALLOW PG 64–22 ON SECONDARY STREETS IF STREET IS NOT A TRUCK OR BUS ROUTE.
5. RIGID BASE COURSE: PENNDOT TYPE "AA" CONCRETE, OR ALTERNATE MATERIAL TO MATCH EXISTING AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS.
6. AGGREGATE SUB–BASE: COMPACTED TO STANDARDS OF CURRENT EDITION OF PENNDOT PUBLICATION 408, SECTION 400.
7. ESAL DESIGN RANGE: 3 TO 30 MILLION.
8. DESIGN TO BE BASED ON CURRENT EDITION OF PENNDOT PUBLICATION 242.

BITUMINOUS PAVEMENT FOR PRIMARY (ARTERIAL AND COLLECTOR) AND SECONDARY (LOCAL) STREETS

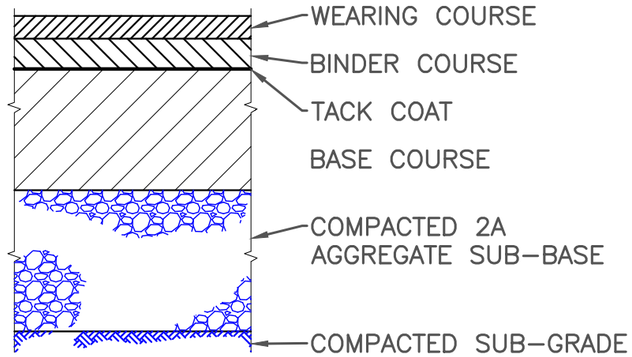
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CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
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DIRECTOR OF DPW	DATE

SC-501a

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

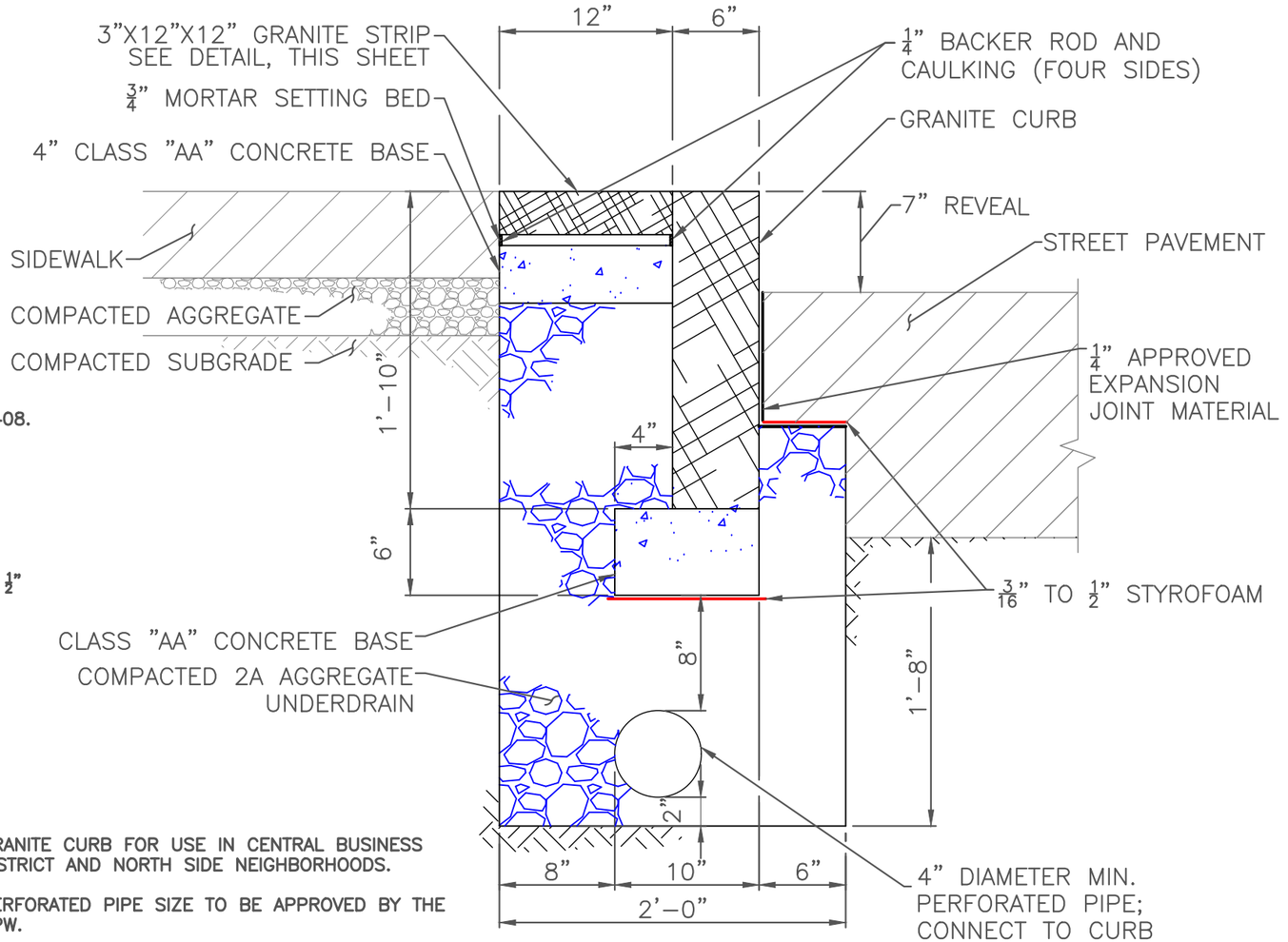


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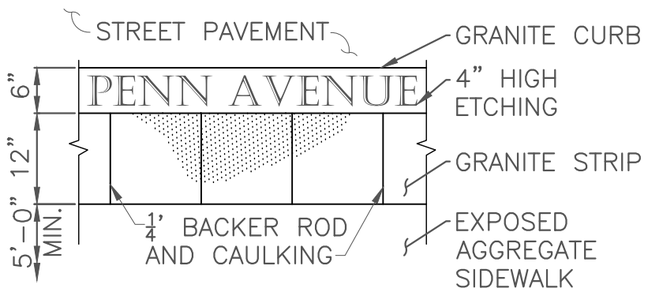
1. HOT MIX BITUMINOUS ONLY, PER CURRENT EDITION OF PENNDOT PUBLICATION 408.
2. WEARING COURSE: COMPACTED, 9.5MM, PG 76–22, MIN. 1.5–IN, MAX. 2–IN.
3. BINDER COURSE: COMPACTED, 19MM, PG 76–22, MIN. 2.5–IN, MAX 4.5–IN.
4. ESAL DESIGN RANGE: 3 TO 30 MILLION.
5. MILLING OPERATION TO BE AT A MINIMUM OF 4" FOR PRIMARY STREETS AND 3 $\frac{1}{2}$" FOR SECONDARY STREETS.
6. SUBMIT CORE SAMPLES TO THE DPW FOR GUIDANCE.

MILL AND BITUMINOUS OVERLAY FOR ALL STREETS

SCALE: 1" = 5'



GRANITE CURB SECTION



GRANITE STRIP DETAIL

NOTES:

1. GRANITE CURB FOR USE IN CENTRAL BUSINESS DISTRICT AND NORTH SIDE NEIGHBORHOODS.
2. PERFORATED PIPE SIZE TO BE APPROVED BY THE DPW.
3. EXTEND ALL PAVEMENT JOINTS THROUGH CURB.
4. PERFORATED PIPE MAY BE OMITTED FROM UNDERDRAIN AS DIRECTED BY THE DPW.
5. STREET NAME SECTION TO BE ON LINEAR SEGMENTS ONLY, AT FULL REVEAL.
6. STREET NAME SECTIONS TO BE INSTALLED CLOSE TO STREET INTERSECTIONS.

GRANITE CURB

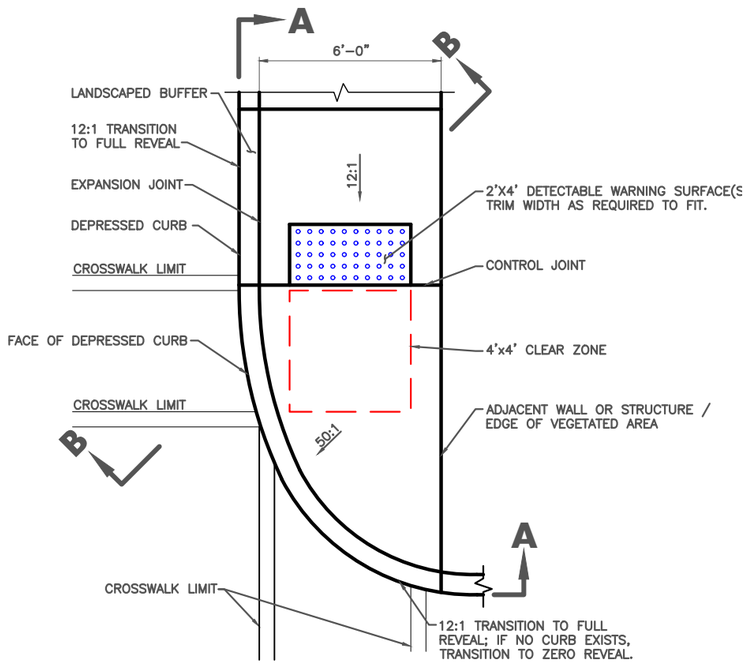
SCALE: 1" = 10'

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
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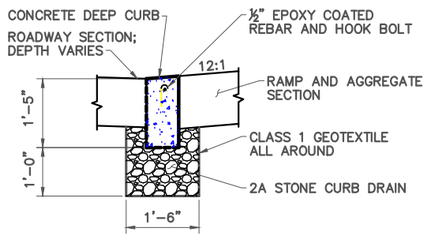
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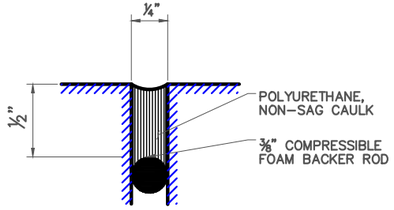
PLAN

NOTES:

1. CITY MONUMENTS ARE TO BE REPAIRED OR REPLACED BY P.L.S. LICENSED IN COMMONWEALTH OF PENNSYLVANIA IF DAMAGED DURING CONSTRUCTION.
2. DETECTABLE WARNING SURFACE (DWS) TO BE CAST-IN-PLACE, REPLACEABLE, WET-SET; COLOR: FEDERAL YELLOW (33538) FOR ALL ZONES, PER ADA SOLUTIONS, INC. PART NO. 2436IDPAV2 OR EQUAL.
3. USE ONLY A CONCRETE COATING AND SEALER THAT IS CLEAR WHEN CURED.
4. CONCRETE TO BE PENNDOT CLASS "AAA" AT BOTH CURB RAMP AND DWS PAD.
5. INSTALL CURBS SEPARATELY FROM HANDICAP CURB RAMPS. MONOLITHIC POURS WILL NOT BE ACCEPTED.
6. SLOPES GIVEN ARE THE MAXIMUM. RAMPS WILL NOT BE ACCEPTED IF THE MAXIMUM SLOPES ARE EXCEEDED.
7. CLEAR ZONE MUST BE ENTIRELY WITHIN CROSSWALK LINES AND OUT OF TRAVEL LANES FOR RAMP TO BE COMPLIANT.
8. THIS HANDICAP RAMP DETAIL IS A STANDARD FOR IDEAL SITE CONDITIONS. IF EXISTING SITE CONDITIONS DO NOT OTHERWISE ALLOW THE RAMP TO BE CONSTRUCTED AS DEPICTED IN THIS DRAWING, AN ALTERED VERSION CAN BE CONSTRUCTED, CONTINGENT UPON REVIEW AND APPROVAL OF TECHNICAL INFEASIBILITY FORM.

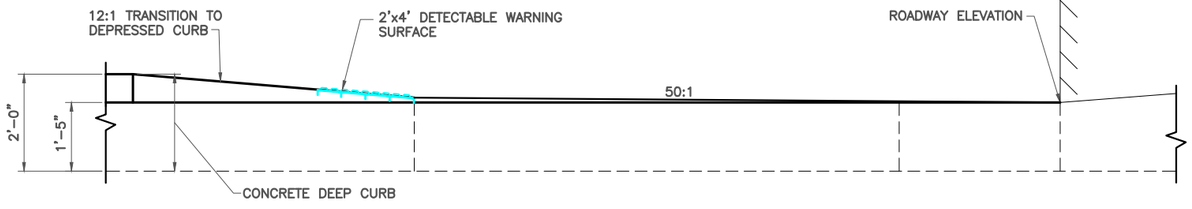


DEPRESSED CURB
NOT TO SCALE

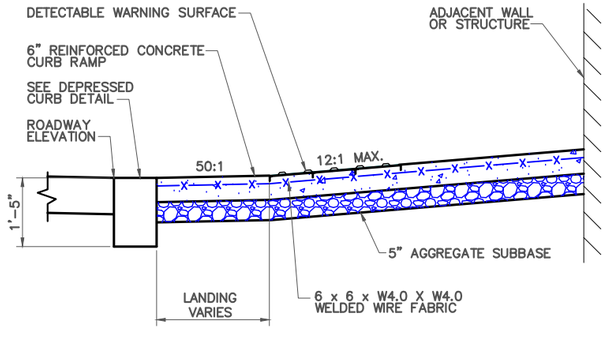


INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

TYPE 1 CURB RAMP, 6' SIDEWALK

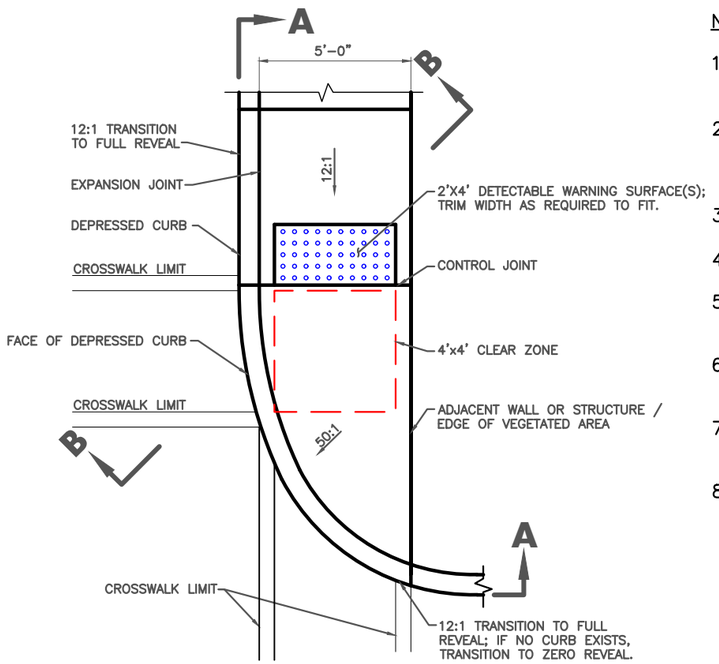
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CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

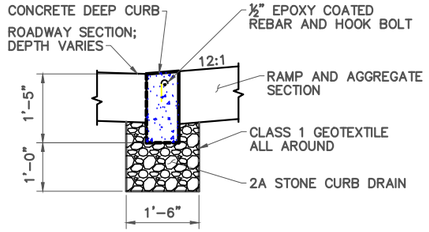
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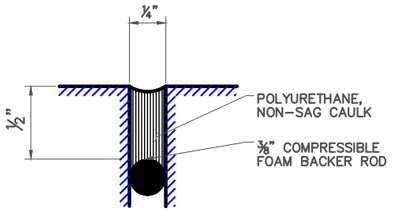
PLAN

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2. DETECTABLE WARNING SURFACE (DWS) TO BE CAST–IN–PLACE, REPLACEABLE, WET–SET; COLOR: FEDERAL YELLOW (33538) FOR ALL ZONES, PER ADA SOLUTIONS, INC. PART NO. 2436IDPAV2 OR EQUAL.
3. USE ONLY A CONCRETE COATING AND SEALER THAT IS CLEAR WHEN CURED.
4. CONCRETE TO BE PENNDOT CLASS "AAA" AT BOTH CURB RAMP AND DWS PAD.
5. INSTALL CURBS SEPARATELY FROM HANDICAP CURB RAMPS. MONOLITHIC POURS WILL NOT BE ACCEPTED.
6. SLOPES GIVEN ARE THE MAXIMUM. RAMPS WILL NOT BE ACCEPTED IF THE MAXIMUM SLOPES ARE EXCEEDED.
7. CLEAR ZONE MUST BE ENTIRELY WITHIN CROSSWALK LINES AND OUT OF TRAVEL LANES FOR RAMP TO BE COMPLIANT.
8. THIS HANDICAP RAMP DETAIL IS A STANDARD FOR IDEAL SITE CONDITIONS. IF EXISTING SITE CONDITIONS DO NOT OTHERWISE ALLOW THE RAMP TO BE CONSTRUCTED AS DEPICTED IN THIS DRAWING, AN ALTERED VERSION CAN BE CONSTRUCTED, CONTINGENT UPON REVIEW AND APPROVAL OF TECHNICAL INFEASIBILITY FORM.

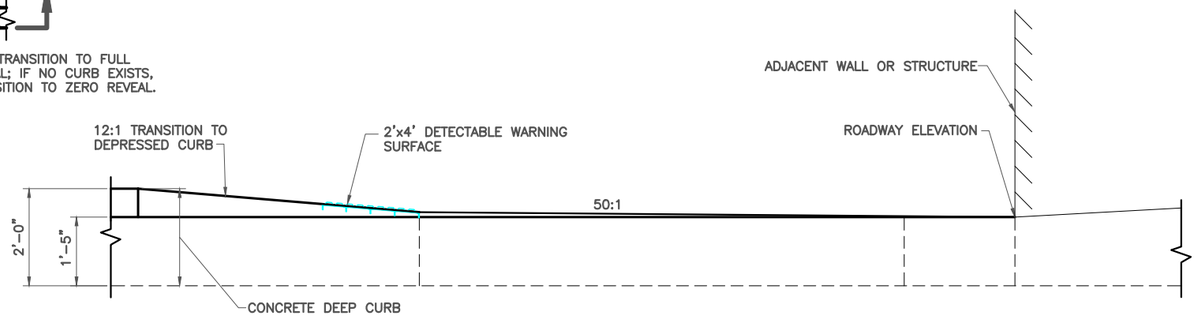


DEPRESSED CURB
NOT TO SCALE

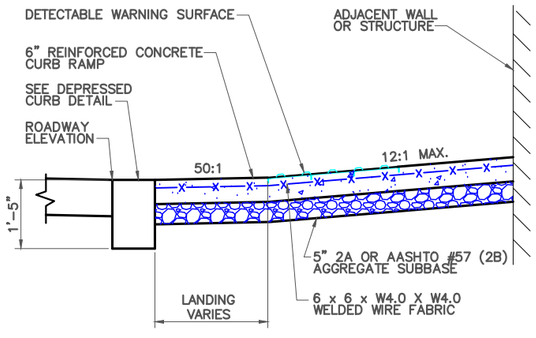


INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE



SECTION A–A
NOT TO SCALE



SECTION B–B
NOT TO SCALE

TYPE 1 CURB RAMP, 5' SIDEWALK

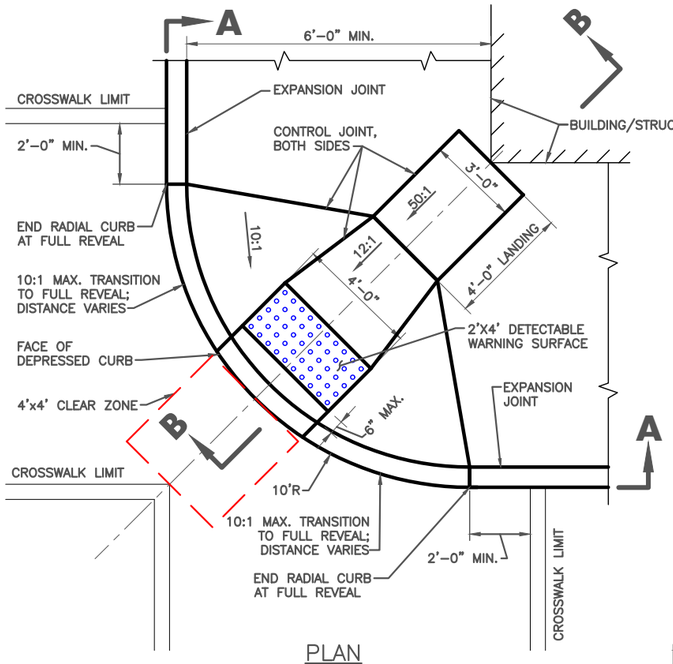
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CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

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TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

SC-502b

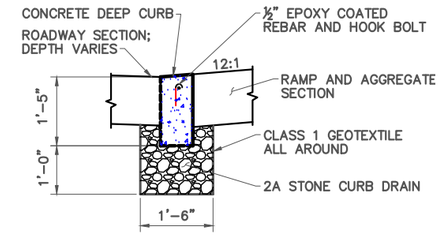
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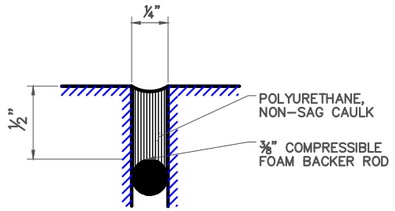
PLAN

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3. USE ONLY A CONCRETE COATING AND SEALER THAT IS CLEAR WHEN CURED.
4. CONCRETE TO BE PENNDOT CLASS "AAA" AT BOTH CURB RAMP AND DWS PAD.
5. INSTALL CURBS SEPARATELY FROM HANDICAP CURB RAMPS. MONOLITHIC POURS WILL NOT BE ACCEPTED.
6. SLOPES GIVEN ARE THE MAXIMUM. RAMPS WILL NOT BE ACCEPTED IF THE MAXIMUM SLOPES ARE EXCEEDED.
7. CLEAR ZONE MUST BE ENTIRELY WITHIN CROSSWALK LINES AND OUT OF TRAVEL LANES FOR RAMP TO BE COMPLIANT.
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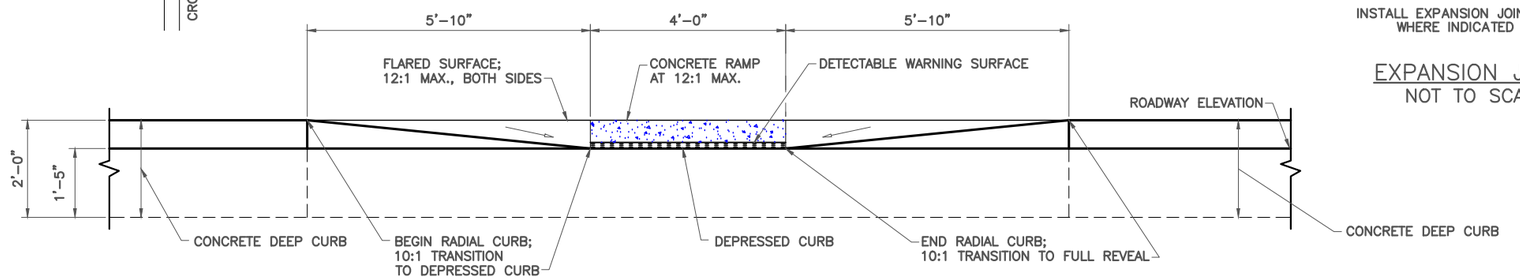


DEPRESSED CURB
NOT TO SCALE

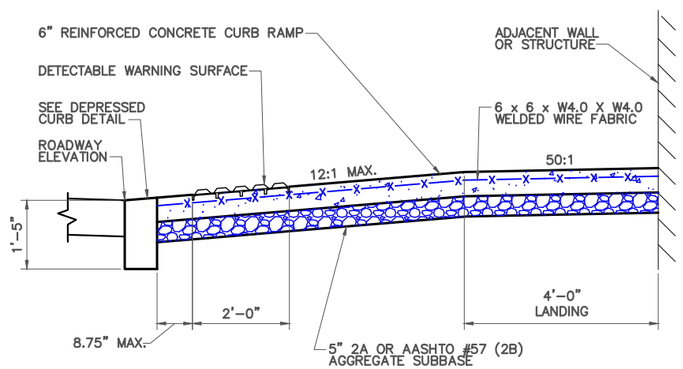


INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE



SECTION A–A
NOT TO SCALE



SECTION B–B
NOT TO SCALE

TYPE 2 CURB RAMP, 4' LANDING

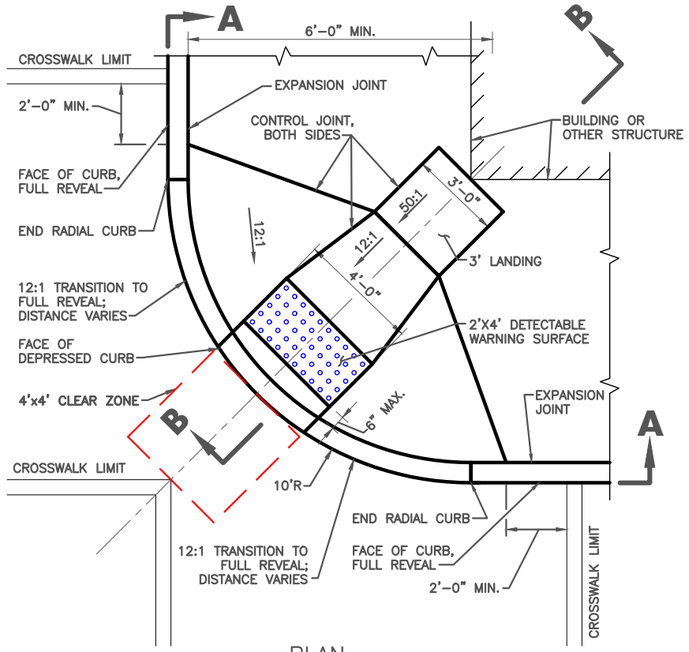
SCALE: 1" = 5' U.O.N.

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

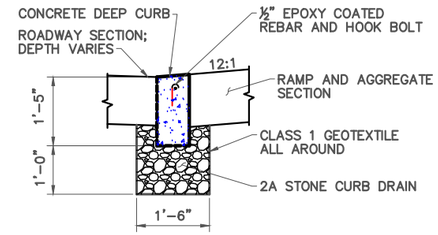
SC-502c



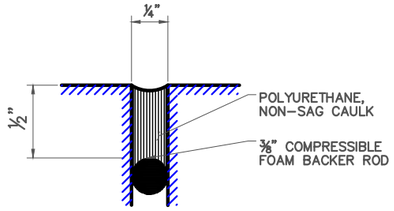
PLAN

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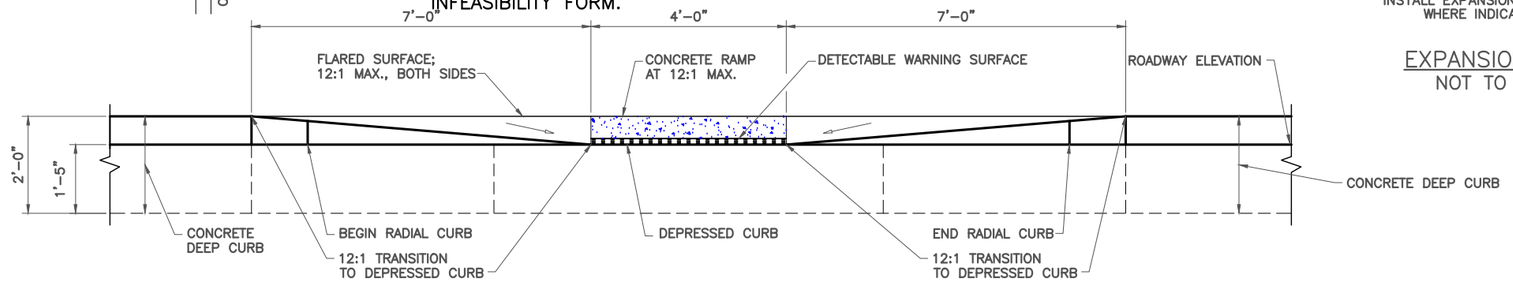


DEPRESSED CURB
NOT TO SCALE

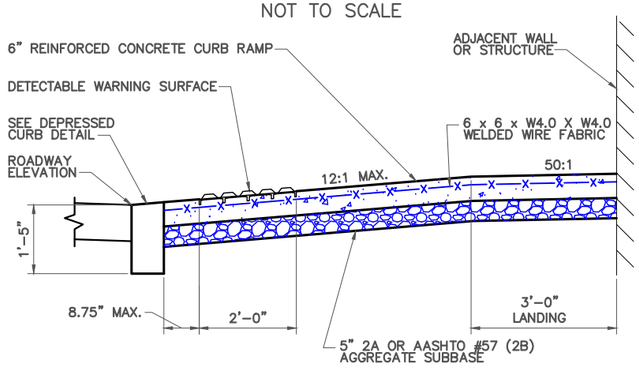


INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE



SECTION A–A
NOT TO SCALE



SECTION B–B
NOT TO SCALE

TYPE 2 CURB RAMP, 3' LANDING

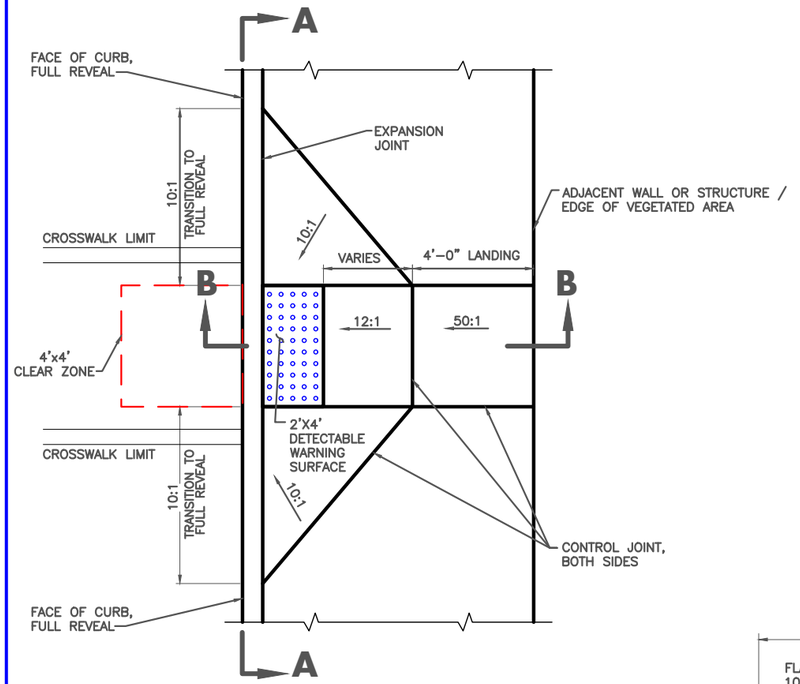
SCALE: 1" = 5' U.O.N.

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

SC-502d

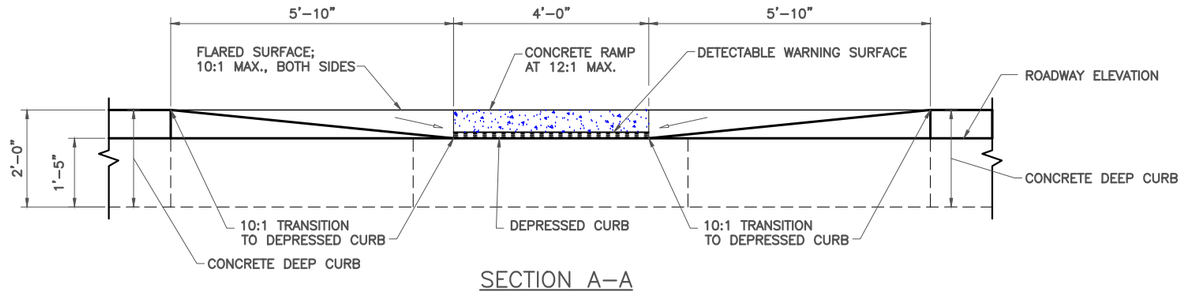
DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION



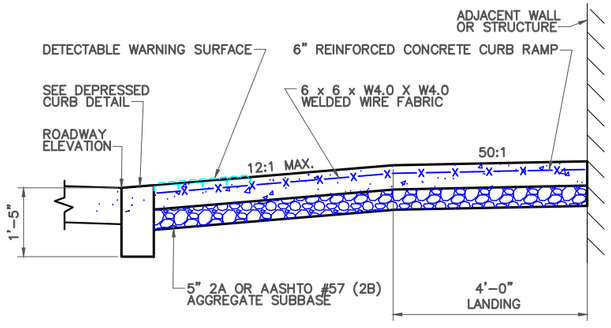
PLAN

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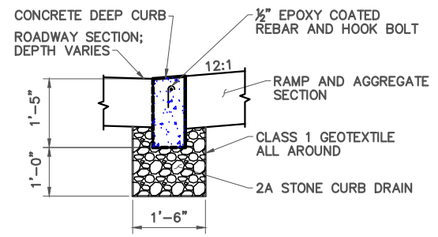
SECTION A–A
NOT TO SCALE



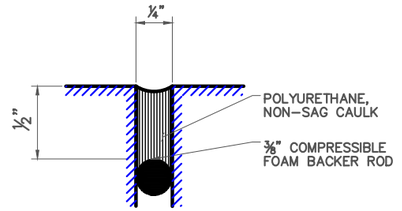
SECTION B–B
NOT TO SCALE

TYPE 3 CURB RAMP, 4' LANDING

SCALE: 1" = 5' U.O.N.



DEPRESSED CURB
NOT TO SCALE



INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

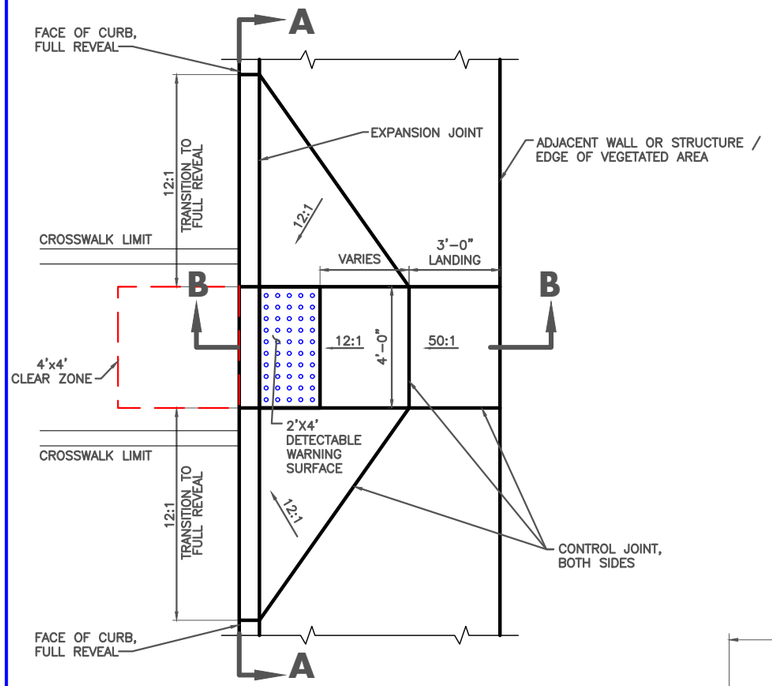
EXPANSION JOINT
NOT TO SCALE

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

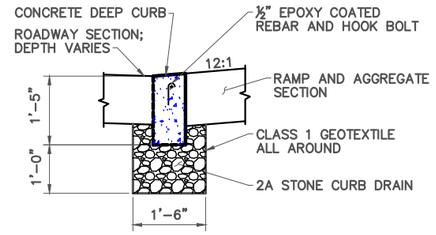
SC-502e



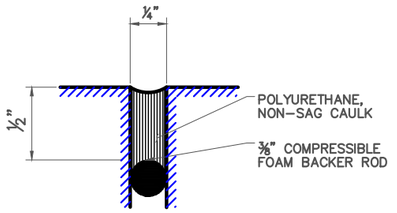
PLAN

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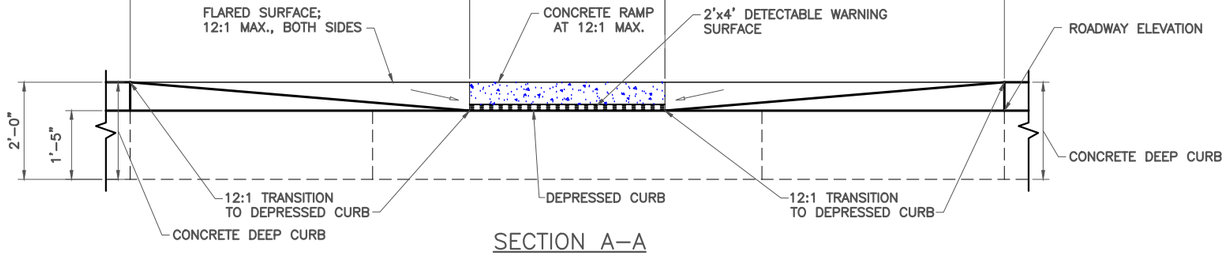


DEPRESSED CURB
NOT TO SCALE

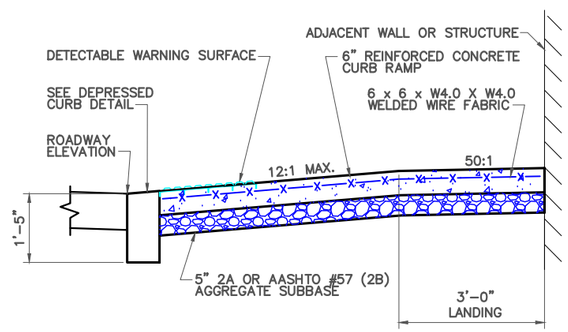


INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE



SECTION A–A
NOT TO SCALE



SECTION B–B
NOT TO SCALE

TYPE 3 CURB RAMP, 3' LANDING

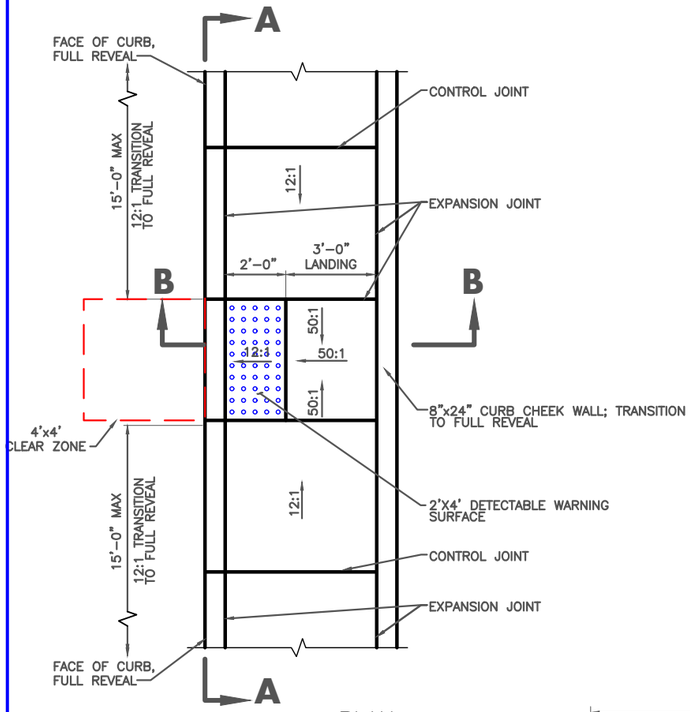
SCALE: 1" = 5' U.O.N.

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

SC-502f

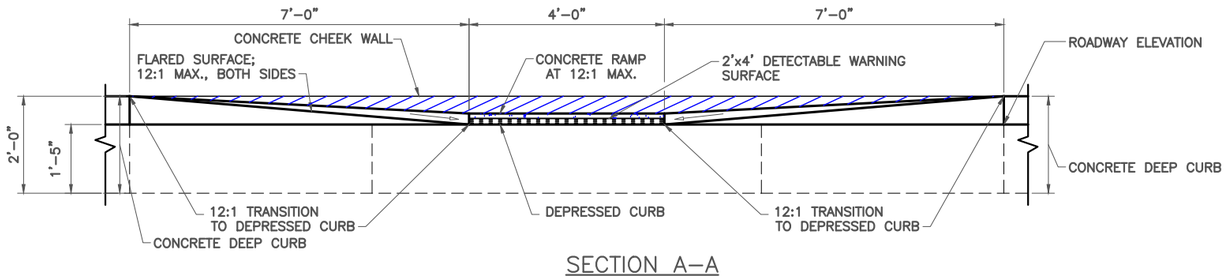
DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION



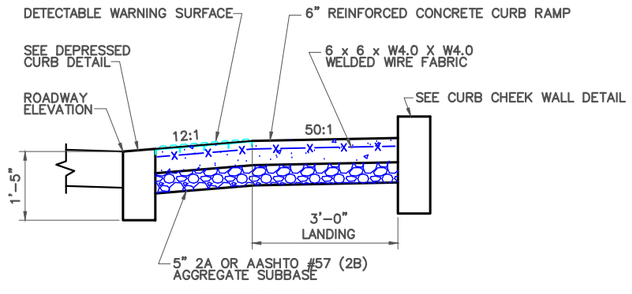
PLAN

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SECTION A-A
NOT TO SCALE

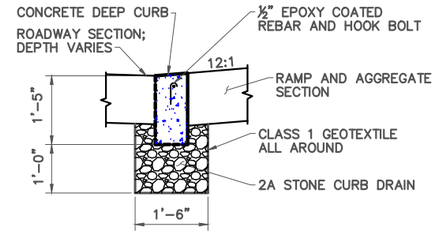


SECTION B-B
NOT TO SCALE

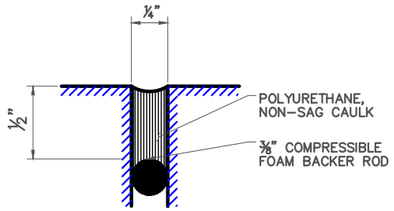
TYPE 4 CURB RAMP

SCALE: 1" = 5' U.O.N.

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

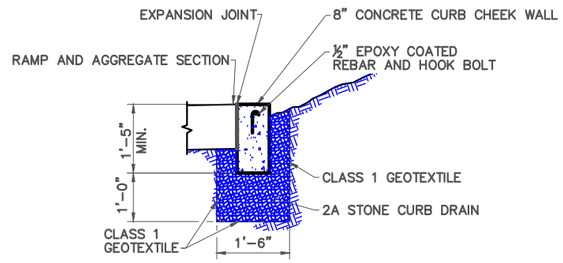


DEPRESSED CURB
NOT TO SCALE



INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE

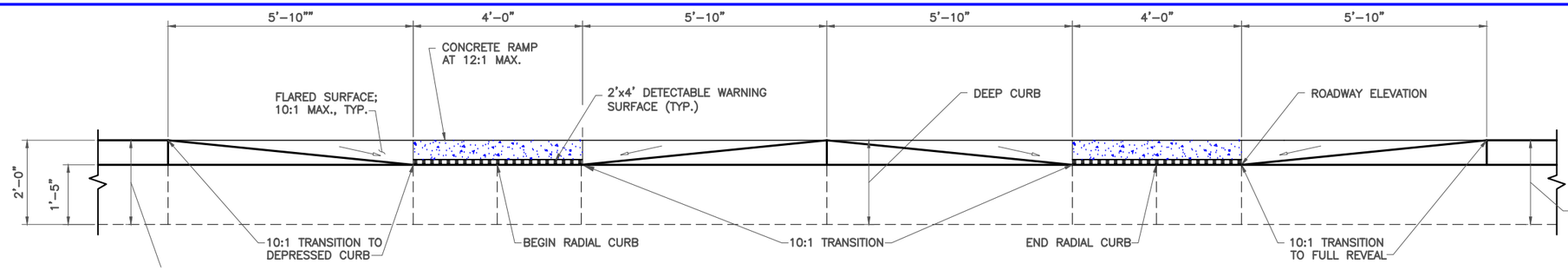


CURB CHEEK WALL
NOT TO SCALE

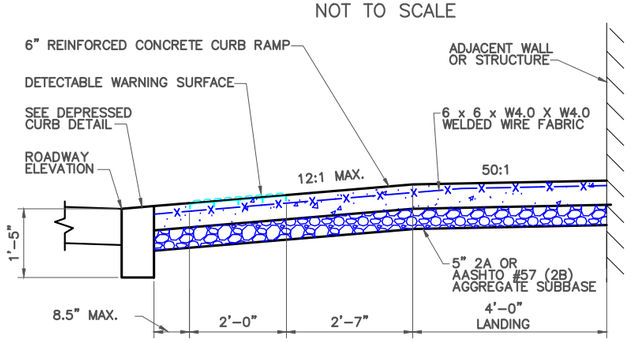
CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

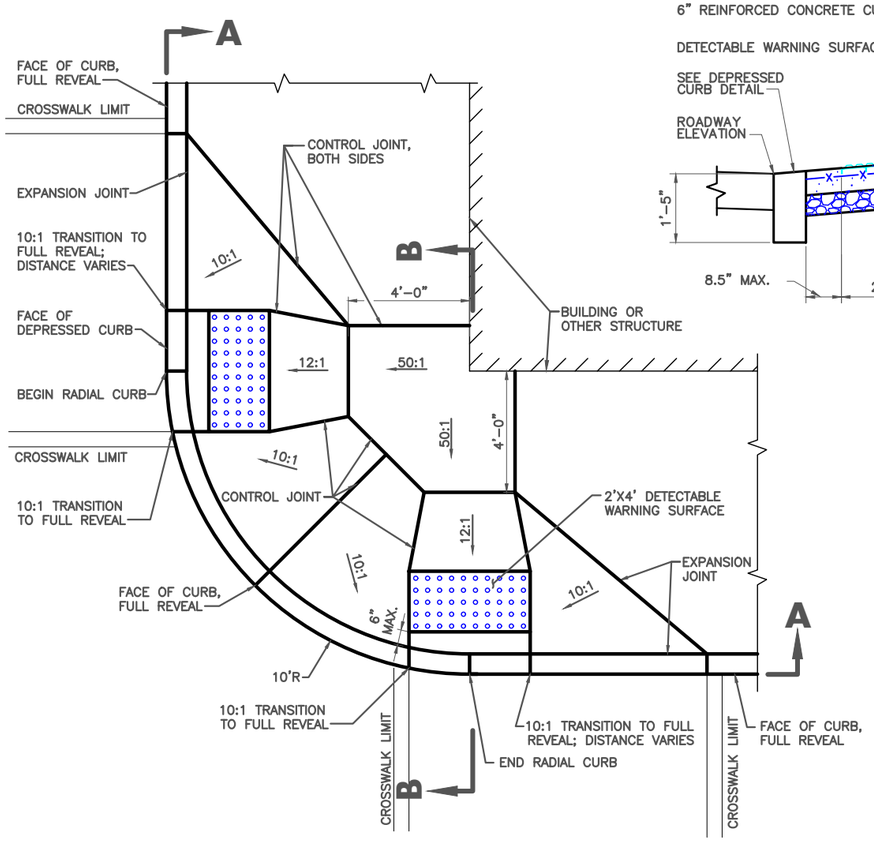
SC-502g



SECTION A–A
NOT TO SCALE



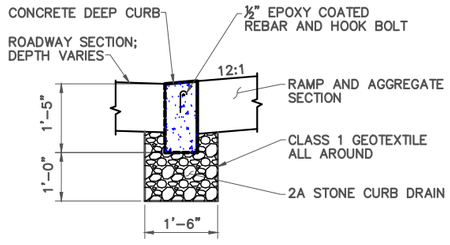
SECTION B–B
NOT TO SCALE



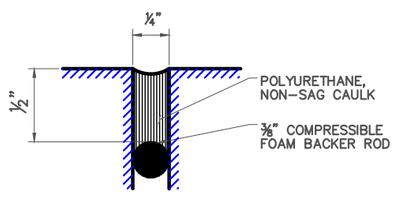
PLAN

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DEPRESSED CURB
NOT TO SCALE



INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

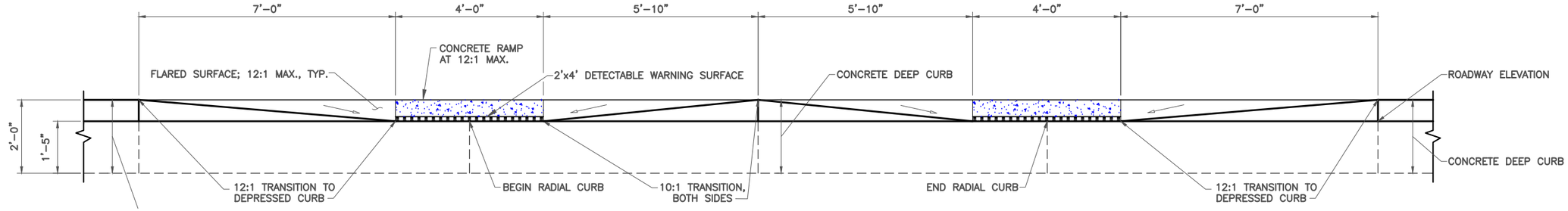
STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

SC-502h

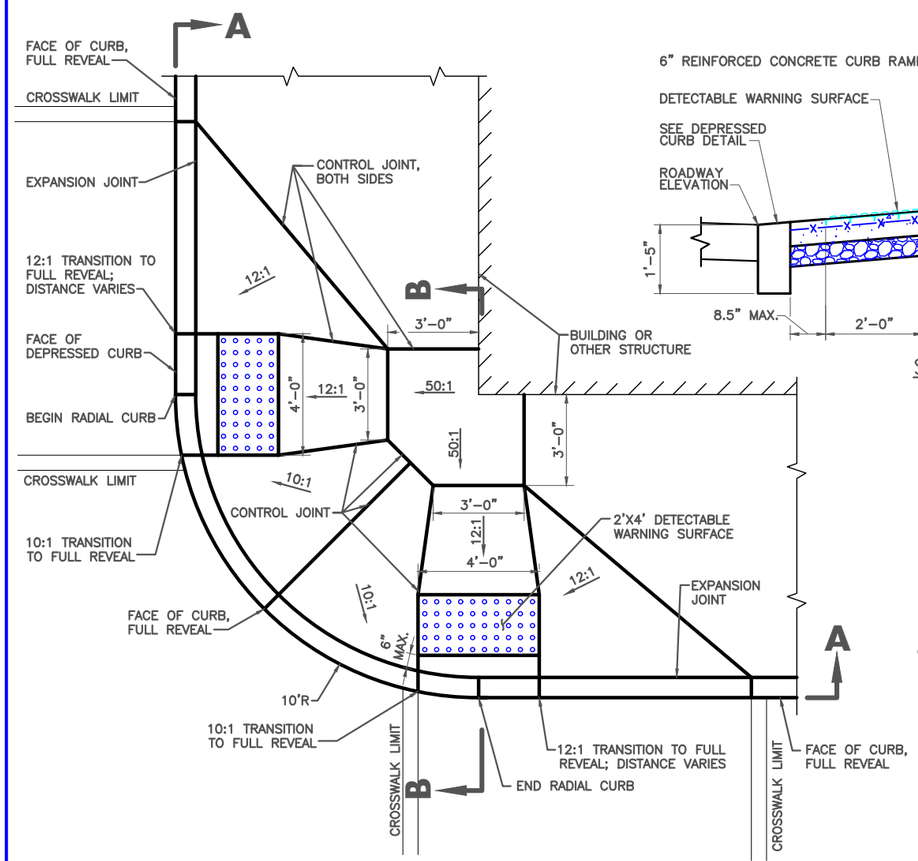
TYPE 100 CURB RAMP, 4' LANDING

SCALE: 1" = 5' U.O.N.

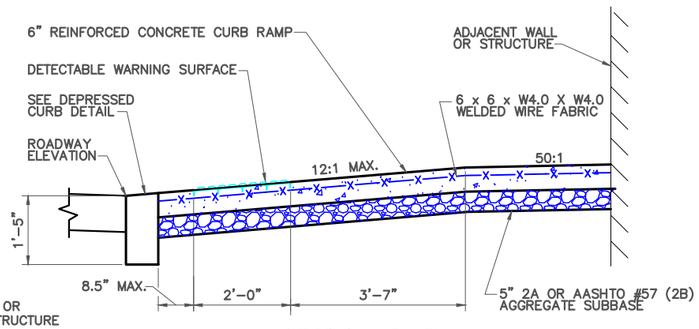
DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION



SECTION A–A
NOT TO SCALE



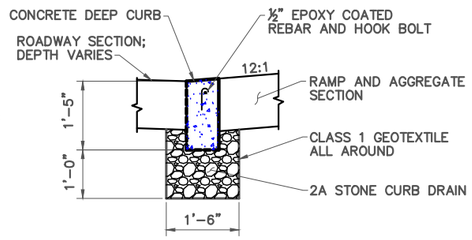
PLAN



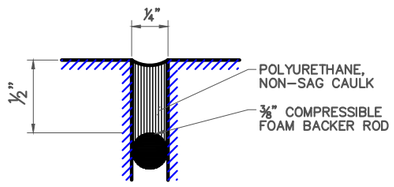
SECTION B–B
NOT TO SCALE

NOTES:

1. CITY MONUMENTS ARE TO BE REPAIRED OR REPLACED BY P.L.S. LICENSED IN COMMONWEALTH OF PENNSYLVANIA IF DAMAGED DURING CONSTRUCTION.
2. DETECTABLE WARNING SURFACE (DWS) TO BE CAST–IN–PLACE, REPLACEABLE, WET–SET; COLOR: FEDERAL YELLOW (33538) FOR ALL ZONES, PER ADA SOLUTIONS, INC. PART NO. 2436IDPAV2 OR EQUAL.
3. USE ONLY A CONCRETE COATING AND SEALER THAT IS CLEAR WHEN CURED.
4. CONCRETE TO BE PENNDOT CLASS "AAA" AT BOTH CURB RAMP AND DWS PAD.
5. INSTALL CURBS SEPARATELY FROM HANDICAP CURB RAMPS. MONOLITHIC POURS WILL NOT BE ACCEPTED.
6. SLOPES GIVEN ARE THE MAXIMUM. RAMPS WILL NOT BE ACCEPTED IF THE MAXIMUM SLOPES ARE EXCEEDED.
7. CLEAR ZONE MUST BE ENTIRELY WITHIN CROSSWALK LINES AND OUT OF TRAVEL LANES FOR RAMP TO BE COMPLIANT.
8. WHEN 4' LANDING CANNOT BE INSTALLED, SIDE TRANSITIONS MUST NOT EXCEED A 12:1 SLOPE.
9. THIS HANDICAP RAMP DETAIL IS A STANDARD FOR IDEAL SITE CONDITIONS. IF EXISTING SITE CONDITIONS DO NOT OTHERWISE ALLOW THE RAMP TO BE CONSTRUCTED AS DEPICTED IN THIS DRAWING, AN ALTERED VERSION CAN BE CONSTRUCTED, CONTINGENT UPON REVIEW AND APPROVAL OF TECHNICAL INFEASIBILITY FORM.



DEPRESSED CURB
NOT TO SCALE



INSTALL EXPANSION JOINT ALL AROUND WHERE INDICATED ON PLAN.

EXPANSION JOINT
NOT TO SCALE

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

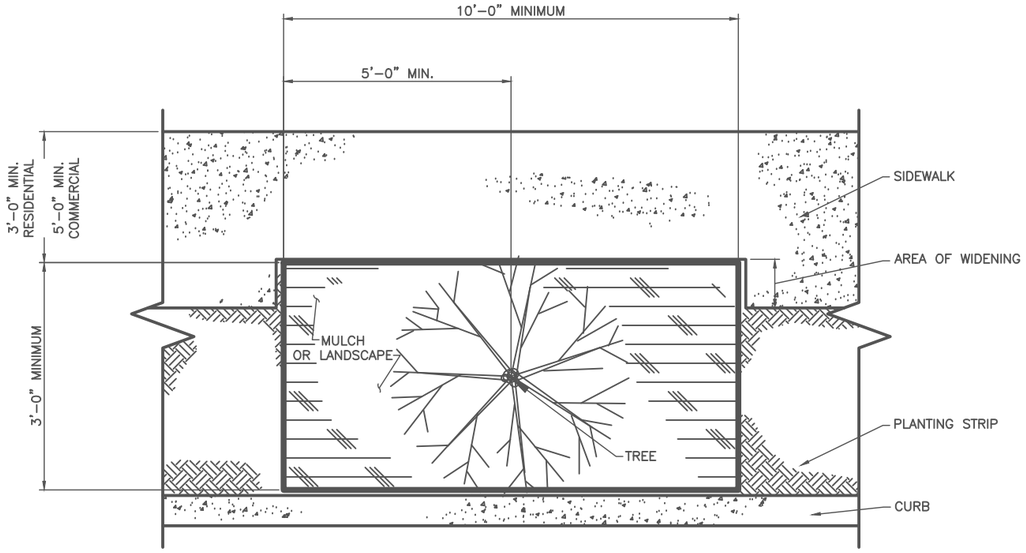
STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

SC-502i

TYPE 100 CURB RAMP, 3' LANDING

SCALE: 1" = 5' U.O.N.

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

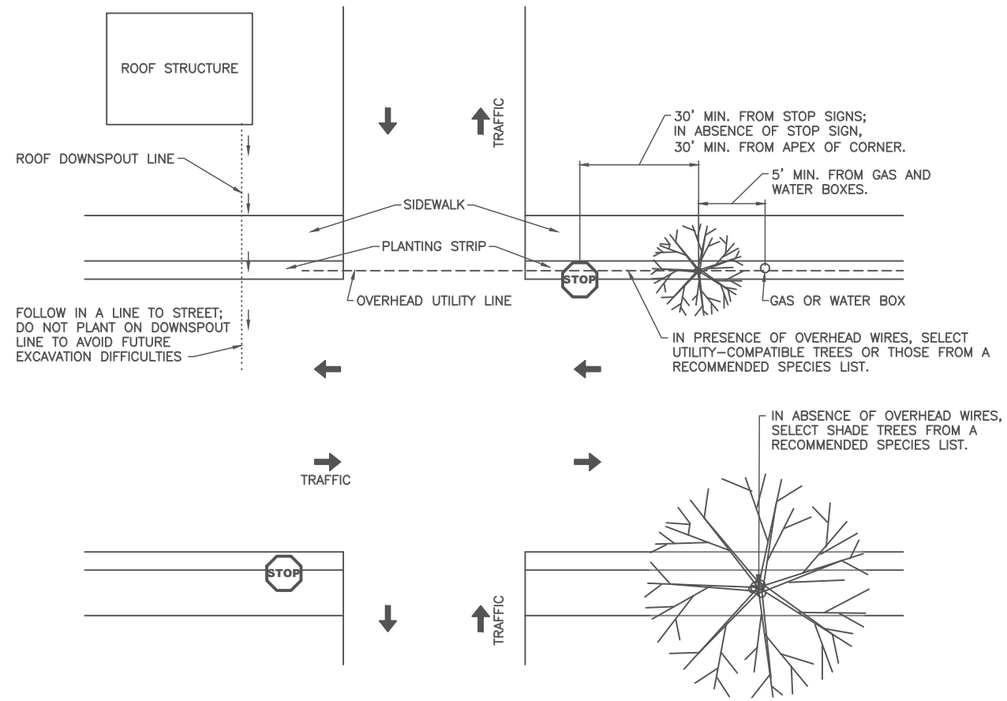


NOTES:

1. PLANTING AREA IS MINIMUM 30 SF.
2. SPACING OF LARGE SHADE TREES: 30' O/C
   SPACING OF UTILITY COMPATIBLE TREES: 25' O/C
3. PLANTING STRIP MAY BE WIDENED AND SIDEWALK CUT OUT TO ACCOMMODATE THE MINIMUM REQUIRED AREA FOR PLANTING SPACE.
4. ADJACENT PROPERTY OWNER MAY ELECT TO PLANT A SINGLE, LOW–GROWING SHRUB ON BOTH SIDES OF THE TREE, OR NON–INVASIVE GROUNDCOVER TO HELP AVOID COMPACTION OF ROOT ZONE FROM PEDESTRIAN TRAFFIC.
5. MAINTAIN A 3'–0" MINIMUM CLEARANCE FOR PEDESTRIAN MOVEMENTS BETWEEN THE PLANTING AREA AND FAR EDGE OF SIDEWALK. ADA ACCESS IS NOT BE OBSTRUCTED.
6. PERFORM A PENNSYLVANIA ONE CALL PRIOR TO PLANTING OPERATIONS.

TREE PLANTING AREA

SCALE: 1" = 40'



PLANTING CONSIDERATIONS FOR TREES WITHIN RIGHT–OF–WAY

SCALE: NTS

STREET TREE ROOT ZONE REQUIREMENTS

SCALE: AS NOTED

DATE OF REVISION	MADE BY	CHECKED BY	DESCRIPTION

CITY OF PITTSBURGH
STANDARDS OF CONSTRUCTION

STREETS DIVISION, MANAGER	DATE
TRAFFIC DIVISION, MANAGER	DATE
ASSISTANT DIRECTOR OF DPW	DATE
DIRECTOR OF DPW	DATE

PL-200

ATTACHMENT B

CITY OF PITTSBURGH DEPARTMENT OF MOBILITY & INFRASTRUCTURE
WINTER MORATORIUM PERIOD - 10/27/2020 MEMORANDUM

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WILLIAM PEDUTO
MAYOR

KARINA RICKS
DIRECTOR

MEMORANDUM

To: Permit Holders

From: Karina Ricks, Director

CC: Eric Setzler, Chief Engineer

Brain Ralston, Utility Supervisory

Angie Martinez, Senior ROW Manager

Date: October 27, 2020

Re: Excavation Permits for Utility Work - Winter Moratorium Period

---

Earlier this year, The Department of Mobility and Infrastructure (DOMI) released our *Rules and Regulations Guiding Permits, Licenses, and Plan Reviews*. The document was the result of a lengthy process to modernize and standardize permit practices in anticipation of moving our right-of-way permits to the City's new OneStopPGH permit system. We hope that you have found the OneStopPGH platform and the guidance developed around it an improvement to our business practices.

This memos is intended to provide additional clarification on the *Rules & Regulations Section V.2.Restoration Standards for Winter Permits* and construction standards outlined in the *ROW Procedures Manual* as we enter the Winter Moratorium Period from November 1, 2020 to March 31, 2021. All issued permits must remain in compliance with the Right-of-Way Procedures manual, the Pittsburgh City Code, Title IV, and The Rules and Regulations, as applicable.

If you have any questions, please contact Utility Supervisor, Brian Ralston at Brian.Ralston@pittsburghpa.gov or 412.389.4505

1. **CURRENT PERMITS**

All excavation permits must pass a final inspection in order to deem the permit closed and the final restoration complete. DOMI will supply utility companies a list of all issued excavation permits that have either not scheduled a final inspection or have not passed the final inspection. Companies are asked to return the spreadsheet with an updated status for all permits and to take the actionable step associated with each status. Statuses are defined as:

- Complete - Utility must request a final inspection to close the permit.
- Ongoing - Active construction sites must have valid permit work dates, standard permit fees apply. If the restoration is not complete before the start of the moratorium period, the company must request an inspection for the temporary patch when the work is complete, please see the following provision for more details.
- Temporary Patch in Place - Utilities must request an inspection of the temporary patch. Permits that pass inspection will be extended and moved to the utility's 2021 Spring Restoration List and a $100

extension fee for each permit will apply. Please see the provisions outlined in the *Spring 2021 Restoration List* section below for more details.

- Hold - Work not started. Provider must cancel or withdraw the permit in the system. The utility provider will need to reapply for a permit.

2. PERMITS ISSUED AFTER NOVEMBER 1ST

Unless the Director deems otherwise, a moratorium shall be placed on final pavement restoration from November 1 to March 31st. During this time, permits will only be issued for emergency work with an appropriate PA One-Call or for requests related to remaining in or achieving PUC compliance, such as lead service line replacement or corrosion control. Roadway and sidewalk opening permits will be subject to an additional $50 application fee to cover the administrative cost of associated with managing winter openings.

Permits should be applied for with work dates selected based on the time it will take to backfill/patch the excavation site. Permit holders must request an inspection of the temporary patch through OneStopPGH. Once the inspector deems the temporary restoration complete, the permit will be moved to the spring restoration list. Please see provisions outlines in the Spring 2021 Restoration List section below for more details.

3. SPRING 2021 RESTORATION LIST

No less than 30 days before the moratorium is lifted, permittees will be provided a list of temporary patches that they are responsible for restoring. Utility providers will respond with a schedule to restore all winter openings no more than six (6) months after the moratorium is lifted. Temporary patches that pass final inspection will be closed and no additional fees will apply.

The restoration schedule should be updated throughout the spring/summer period and, whenever possible and reasonable, be coordinated with the City's paving schedule and restoration work by other entities

4. STEEL PLATES

When permissible, plates must be installed in accordance with the Right of Way Procedures Policy:

- Plates that need to be installed are to be installed temporarily
- Signs conforming to MUTCD WS – 24 must be posted
- Notify DOMI as plates are installed and removed during winter months

5. WINTER MORATORIUM RESTORATION REQUIREMENTS

Concrete placement for restoration work that is done in accordance with Section 501 of PennDOT Publication 408 is allowable in all cases.

For concrete placed for trench restoration in locations where the restoration consists of a concrete base topped with asphalt or a brick/block stone street surface, Standard, HES, or Accelerated concrete is allowable when the ambient temperature is 35°F and rising, and will remain above 35°F during the entire curing period. Do not place concrete on frozen base, subbase, or subgrade. If the base, subbase, subgrade, or trench walls are frozen, they must be thawed artificially to a depth of at least six inches before concrete placement may be allowed. All existing requirements for placing the asphalt overlay or brick/block stone still apply.

For concrete placed for trench restoration in locations where the restoration consists of a concrete base topped with asphalt or a brick/block stone street surface, Standard, HES, or Accelerated concrete is allowable when the ambient temperature is expected to fall below 35°F during the curing period only if artificial heating methods

are used to maintain a curing temperature above 35°F. During curing, a high-low thermometer must be placed on the concrete surface and monitored. If at any time during the curing period the thermometer registers a temperature below 35°F, the concrete will be considered defective and must be replaced at no cost to the City. Note that the initial placement of concrete must still be performed while ambient temperature is above 35°F and may not be done if the base, subbase, subgrade, or trench walls are frozen, as described in the previous paragraph. All existing requirements for placing the asphalt overlay or brick/block stone still apply.

For sidewalk and curb reconstruction, cold-weather curing (November 1 to April 30) must be done in accordance with Sections 501.3(b)(1) and 501.3(l)(2) of PennDOT Publication 408. Restoration of concrete streets without an overlay when the ambient temperature is below 40°F requires approval of the proposed means and methods in writing from DOMI, regardless of the type of concrete used. The request for approval must include the proposed concrete mix to be used and must clearly indicate how the base, subbase, subgrade, and trench walls will be kept at a temperature above 40°F for the duration of the curing period.

Note that this memo only pertains to which situations HES or Accelerated concrete is allowable to use for restoration work and when restoration work is allowable during the winter shutdown. All City Standard details and specifications still apply, and are not superseded by this memo's references to PennDOT Publication 408. Requirements for the extents of restoration for all streets is still governed by the most recent Right-of-Way Procedures Policy.

For restorations performed under the above-described conditions to be considered permanent, the requirements of this memo must be met and satisfactory documentation that the requirements have been met must be provided to the Department. If these requirements are not met, the restoration will be considered temporary and will require permanent restoration.

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ATTACHMENT C
TEST HOLE DATA

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Lexis Project # 20.1013
8/12/2020

Test Hole Data Sheets Summary
PWSA - BRT Water Distribution
City of Pittsburgh, Allegheny County

*Pipe sizes shown are Nominal / Measured width & height dimensions are Approximate

TEST HOLE #	SIZE & TYPE	NORTHING	EASTING	GROUND ELEVATION	DEPTH TOP UTILITY	TOP UTILITY ELEVATION	COMMENTS
1	12" Metallic Water	410691.749	1344215.960	765.73'	4.91'	760.82'	Cut pipe visible in test hole at 2.71 ft deep.
2	16" Metallic Water	410677.957	1344219.125	765.81'	2.58'	763.23'	Pipe appeared heavily corroded.
3	Stone / Terracotta - Looking for 8" Metallic Water	410667.041	1344221.815	765.94'	3.33'	762.61'	Terracotta/Brick structure found in test hole. Appears to have loose stone built around terracotta/brick. Surface locates and PA one call marks lead to test hole location. Consistent with TH #14.
4	16" Metallic Water	410579.179	1345431.348	788.20'	3.98'	784.22'	Rebar in concrete. Pipe appears to be wrapped. Hard, compact fill to within inches of the pipe.
5	16" Metallic Water	410560.730	1345430.848	788.21'	3.64'	784.57'	Pipe appears heavily corroded.
6	8" Metallic Pipe - Looking for 15" Water	410520.534	1346189.528	807.76'	4.60'	803.16'	2" pipe found at 3.67 ft deep, running perpendicular to Fifth Ave.
7	16" Metallic Water	410493.824	1346200.806	808.08'	5.76'	802.32'	
8	15" Metallic Water	410437.304	1347167.687	831.88'	3.52'	828.36'	Two (2) unknown pipes crossing perpendicular and above 16" water at a depth of 3.13'. Pipes are laid 8" wide.
9	16" Metallic Water	410414.434	1347171.154	831.88'	6.03'	825.85'	
10	16" Water - Not Found	410220.884	1349572.712	809.77'	N/A	N/A	Excavated to +/-6 ft deep at one call mark location, no utility found.
11	15" Metallic Water	410211.200	1349598.206	809.76'	3.41'	806.35'	5" Asphalt, 6" Concrete Block, 2" Soil, +/-9" Slag/Bituminous Material.
12	20" Metallic Water	410361.037	1344229.172	784.38'	4.29'	780.09'	Water pipe appeared to be coated in asphalt/tar, only small portion of pipe was exposed due to coating and hard, rocky compacted soils nears pipe. Magnet stuck to pipe.
13	20" Metallic Water	410333.674	1344299.079	786.56'	3.36'	783.20'	
14	Stone / Terracotta - Looking for 8" Metallic Water	410193.444	1346111.196	800.33'	3.39'	796.94'	Terracotta/Brick structure found in test hole. Appears to have loose stone built around terracotta/brick. Surface locates and PA one call marks lead to test hole location. Consistent with TH #3
15	20" Metallic Water	410181.725	1346110.218	800.29'	4.77'	795.52'	
16	6" Metallic Water	410081.130	1347635.268	833.15'	4.54'	828.61'	Two 10" pipes found in test hole at +/-3.88 ft deep, to the south side of water line. Pipes run parallel with Forbes Ave.
17	20" Metallic Water	410054.184	1347631.318	833.20'	4.55'	828.65'	10" pipe also located at 3.83 feet deep, almost 2 ft north of 20" water. 20" gas noted in field by PA One Call markings. No other 20" pipe located in test hole. Difficult to determine if located pipe is gas or water.
18	6" Metallic Water	409957.197	1349136.718	798.20'	4.43'	793.77'	
19	20" Metallic Water	409930.192	1349133.303	798.37'	4.63'	793.74'	
20	12" Metallic Pipe - Looking for 6" Water	409922.896	1349546.293	777.32'	3.08'	774.24'	Looking for 6" water pipe. Uncovered heavilty corroded pipe measuring approximately 12". Very heavy groundwater flow into test hole along with hard, compacted soil limited exploration. Electromagnetic signal appeared to lead to water valve at the intersection of Forbes and Moultrie.
21	6" Metallic Pipe - Looking for 24" Water	409908.494	1349551.913	777.26'	3.67'	773.59'	Uncovered 6" metallic pipe. Large asphalt structure and groundwater flow on north side of test hole limited exploration. Electromagnetic signal did not lead to surface-related water feature (i.e. valve, hydrant)
R1	Streetcar Rail - Looking for 16" Water						Manual depth +/- 0.50'
R2	Streetcar Rail - Looking for 16" Water						Manual depth +/- 0.50'
R3	Streetcar Rail - Looking for 8" Water						Manual depth +/- 0.50'

The Lexis Group LLC

TEST HOLE DATA FORM

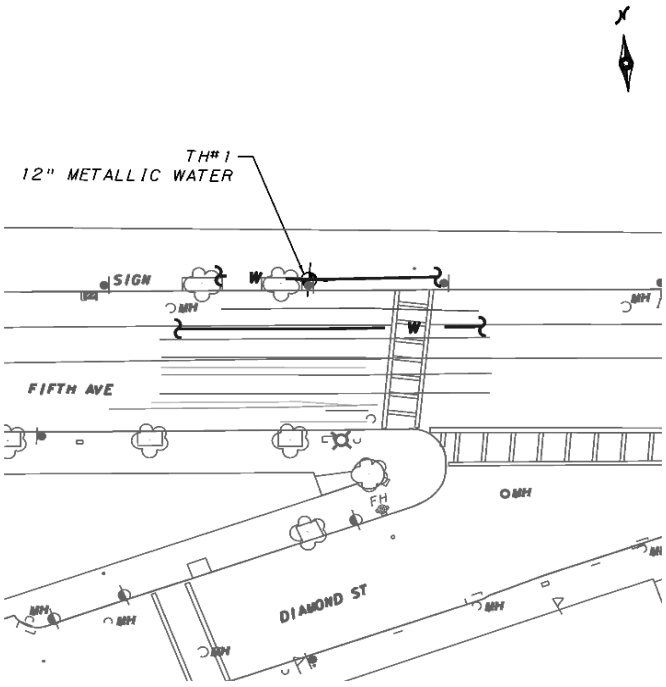
Project No # 20.1013
Test Hole # 1
Date 7/7/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. West of Diamond St.
Utility Description: 12" Metallic Water

Reference Point Information

Reference Set:	Cut X	Elevation of Surface	765.73'	Type / Thickness of Surface Covering	
Northing:	410691.7490	Depth to Utility	4.91'	Asphalt:	Soil: X
Easting:	1344215.9600	Elevation top Utility	760.82'	Concrete:	

PLAN VIEW

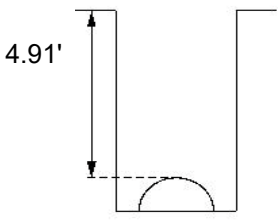


UTILITY VIEW



Comments:
Cut pipe visible in test hole at 2.71 ft deep.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

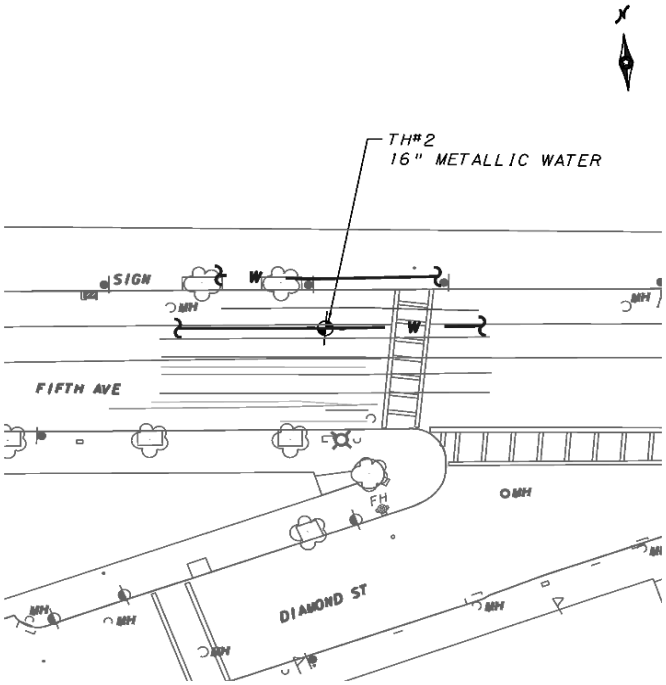
Project No # 20.1013
Test Hole # 2
Date 7/7/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. West of Diamond St.
Utility Description: 16" Metallic Water

Reference Point Information

Reference Set:	Cut X	Elevation of Surface	765.81'	Type / Thickness of Surface Covering	
Northing:	410677.9570	Depth to Utility	2.58'	Asphalt: 5"	Stone 0
Easting:	1344219.1250	Elevation top Utility	763.23'	Concrete: 10"	

PLAN VIEW

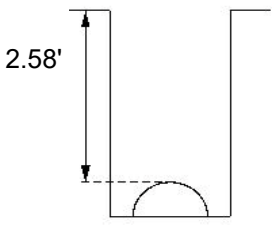


UTILITY VIEW



Comments:
Pipe appeared heavily corroded.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

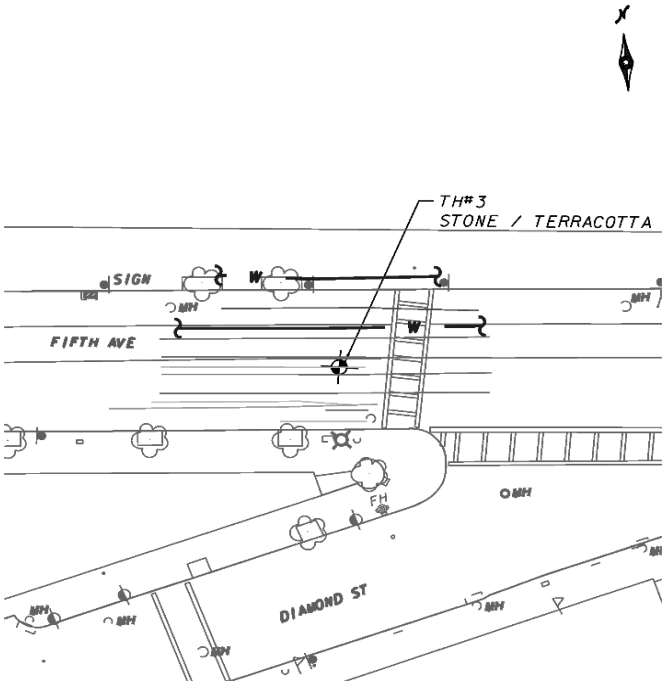
Project No # 20.1013
Test Hole # 3
Date 7/7/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. West of Diamond St.
Utility Description: Stone / Terracotta - Looking for 8" Metallic Water

Reference Point Information

Reference Set:	Cut X	Elevation of Surface	765.94'	Type / Thickness of Surface Covering	
Northing:	410667.0410	Depth to Utility	3.33'	Asphalt: 4"	Stone 6"
Easting:	1344221.8150	Elevation top Utility	762.61'	Concrete: 8"	

PLAN VIEW

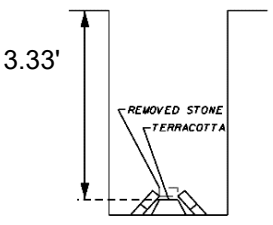


UTILITY VIEW



Comments:
Terracotta/Brick structure found in test hole. Appears to have loose stone built around terracotta/brick. Surface locates and PA one call marks lead to test hole location. Consistent with TH #14.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

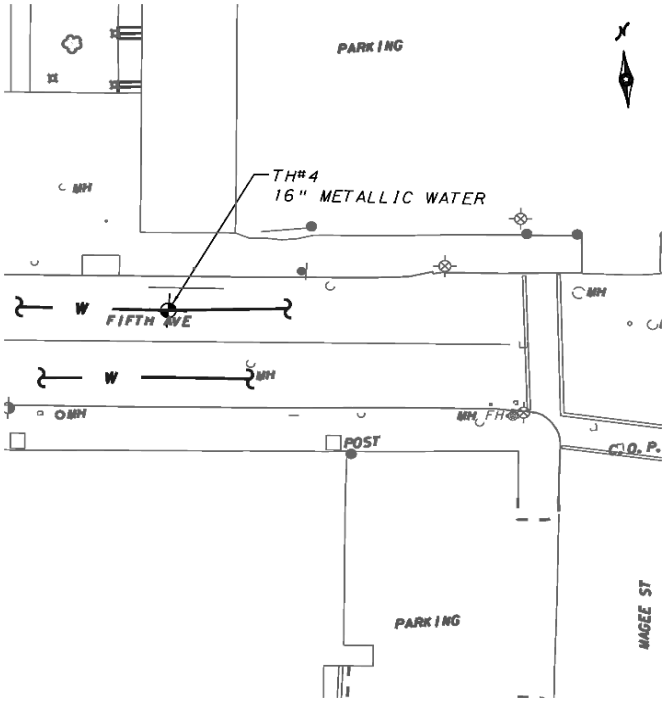
Project No # 20.1013
Test Hole # 4
Date 7/2/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. West of Magee St.
Utility Description: 16" Metallic Water

Reference Point Information

Reference Set:	Cut X	Elevation of Surface	788.20'	Type / Thickness of Surface Covering	
Northing:	410579.1790	Depth to Utility	3.98'	Asphalt: 4"	Stone 0
Easting:	1345431.3480	Elevation top Utility	784.22'	Concrete: 8"	

PLAN VIEW

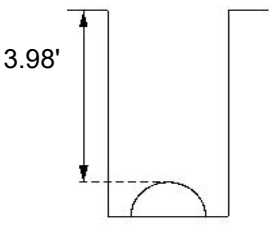


UTILITY VIEW



Comments:
Rebar in concrete. Pipe appears to be wrapped.
Hard, compact fill to within inches of the pipe.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

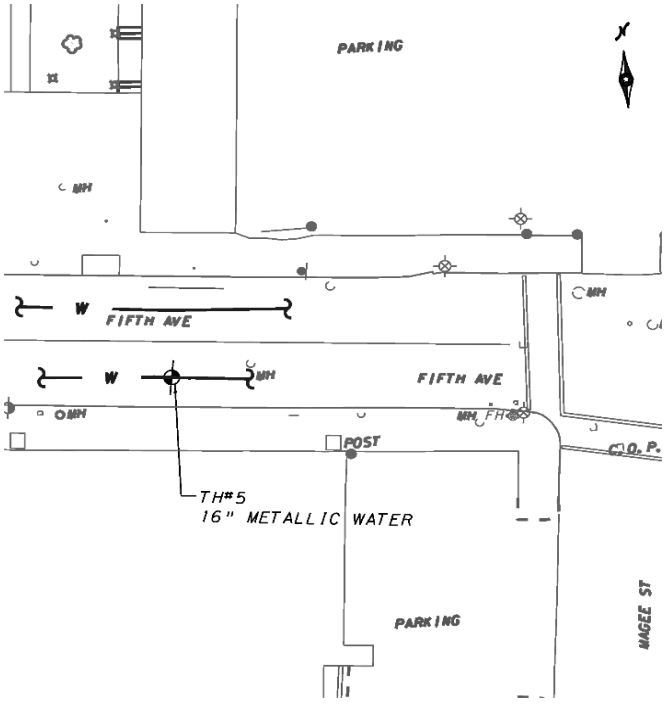
Project No # 20.1013
Test Hole # 5
Date 7/2/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. West of Magee St.
Utility Description: 16" Metallic Water

Reference Point Information

Reference Set:	Cut X	Elevation of Surface	788.21'	Type / Thickness of Surface Covering	
Northing:	410560.7300	Depth to Utility	3.64'	Asphalt: 4"	Stone 0
Easting:	1345430.8480	Elevation top Utility	784.57'	Concrete: 14"	

PLAN VIEW

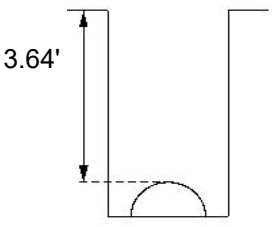


UTILITY VIEW



Comments:
Pipe appears heavily corroded.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 6
Date 7/1/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. East of Stevenson St.
Utility Description: 8" Metallic Pipe - Looking for 15" Water

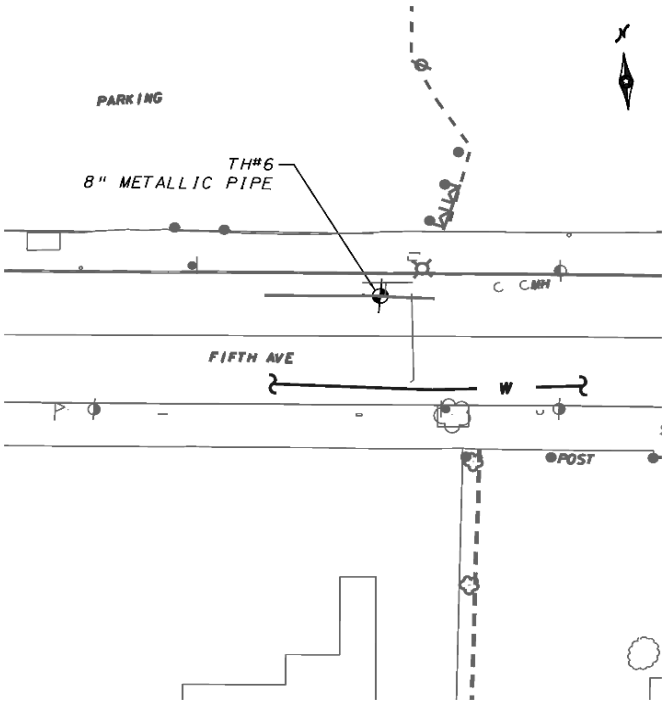
Reference Point Information

Reference Set: Cut X
Northing: 410520.5340
Easting: 1346189.5280

Elevation of Surface 807.76'
Depth to Utility 4.60'
Elevation top Utility 803.16'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 0
Concrete: 8"

PLAN VIEW

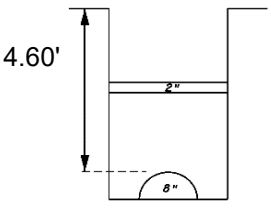


UTILITY VIEW



Comments:
2" pipe found at 3.67 ft deep, running perpendicular to Fifth Ave.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

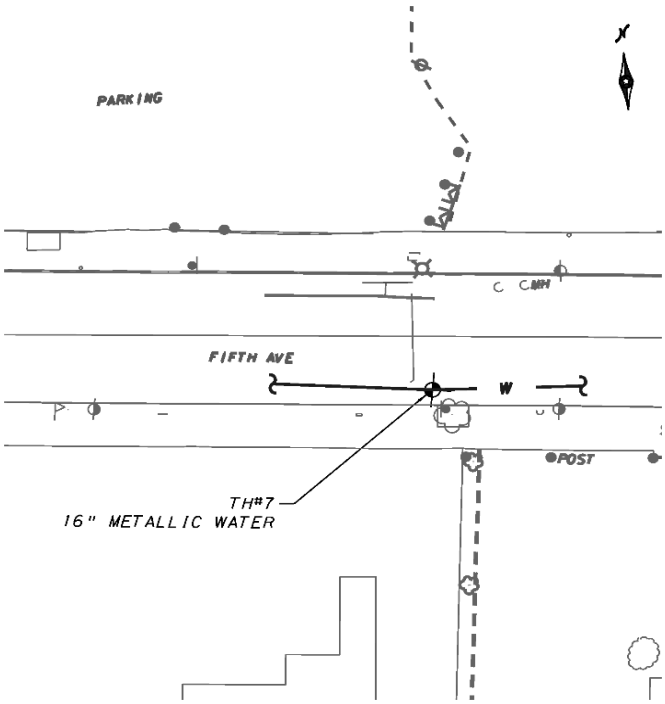
Project No # 20.1013
Test Hole # 7
Date 7/1/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. East of Stevenson St.
Utility Description: 16" Metallic Water

Reference Point Information

Reference Set:	Cut X	Elevation of Surface	808.08'	Type / Thickness of Surface Covering	
Northing:	410493.8240	Depth to Utility	5.76'	Asphalt: 4"	Stone 0
Easting:	1346200.8060	Elevation top Utility	802.32'	Concrete: 13"	

PLAN VIEW

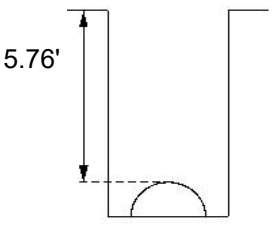


UTILITY VIEW



Comments:

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 8
Date 6/29/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. East of Van Braam St.
Utility Description: 15" Metallic Water

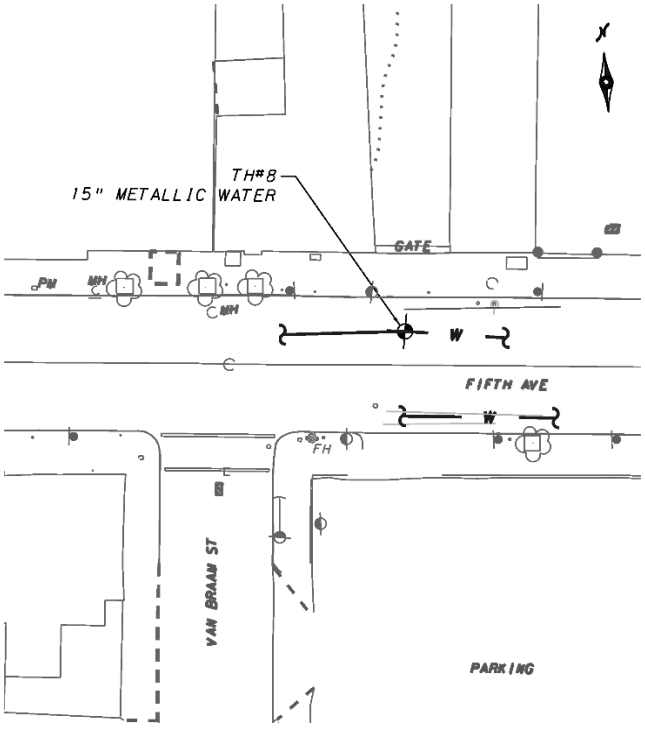
Reference Point Information

Reference Set: Cut X
Northing: 410437.3040
Easting: 1347167.6870

Elevation of Surface 831.88'
Depth to Utility 3.52'
Elevation top Utility 828.36'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 6"
Concrete: 10"

PLAN VIEW

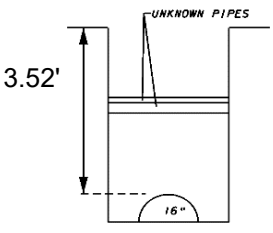


UTILITY VIEW



Comments:
Two (2) unknown pipes crossing perpendicular and above 16" water at a depth of 3.13'. Pipes are laid 8" wide.

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 9
Date 6/29/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. East of Van Braam St.
Utility Description: 16" Metallic Water

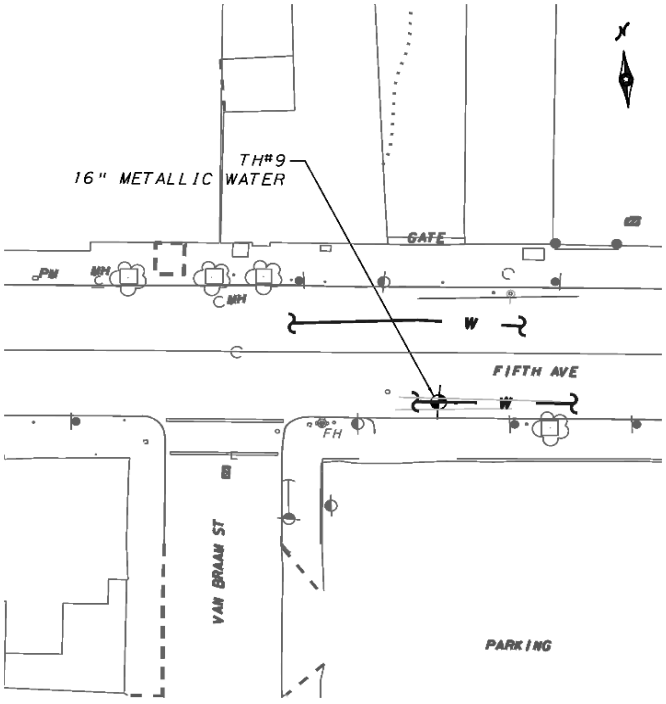
Reference Point Information

Reference Set: Cut X
Northing: 410414.4340
Easting: 1347171.1540

Elevation of Surface 831.88'
Depth to Utility 6.03'
Elevation top Utility 825.85'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 0
Concrete: 16"

PLAN VIEW

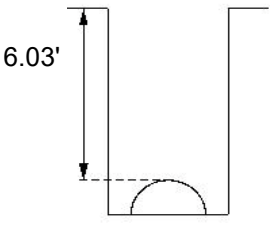


UTILITY VIEW

PHOTO NOT AVAILABLE

Comments:

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

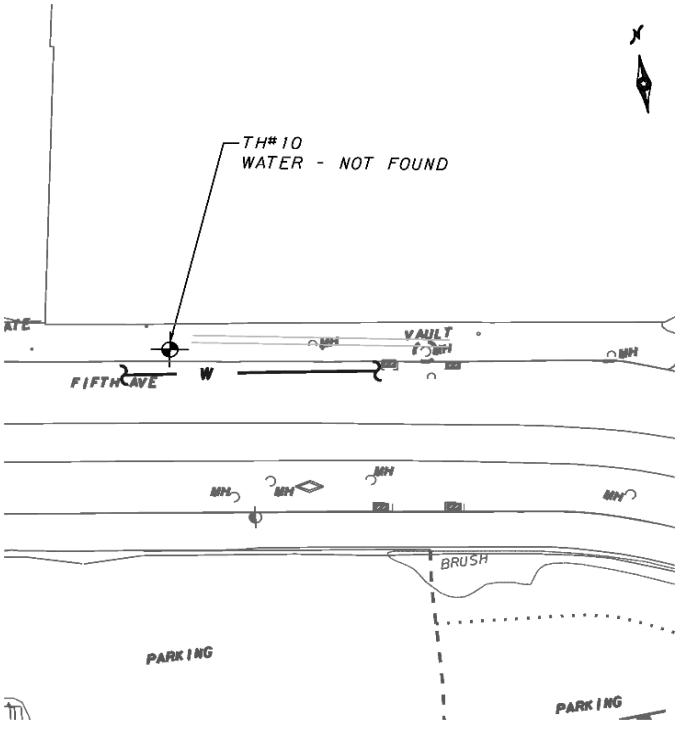
Project No # 20.1013
Test Hole # 10
Date 6/30/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. East of Moultrie St.
Utility Description: 16" Water - Not Found

Reference Point Information

Reference Set:	Cut X	Elevation of Surface	809.77'	Type / Thickness of Surface Covering	
Northing:	410220.8840	Depth to Utility	N/A	Asphalt: 0	Stone 0
Easting:	1349572.7120	Elevation top Utility	N/A	Concrete: 5"	

PLAN VIEW

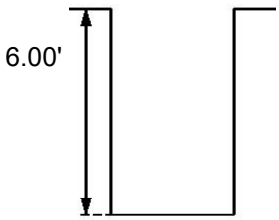


TEST HOLE VIEW



Comments:
Excavated to +/-6 ft deep at one call mark location, no utility found.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 11
Date 6/26/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Fifth Ave. East of Moultrie St.
Utility Description: 15" Metallic Water

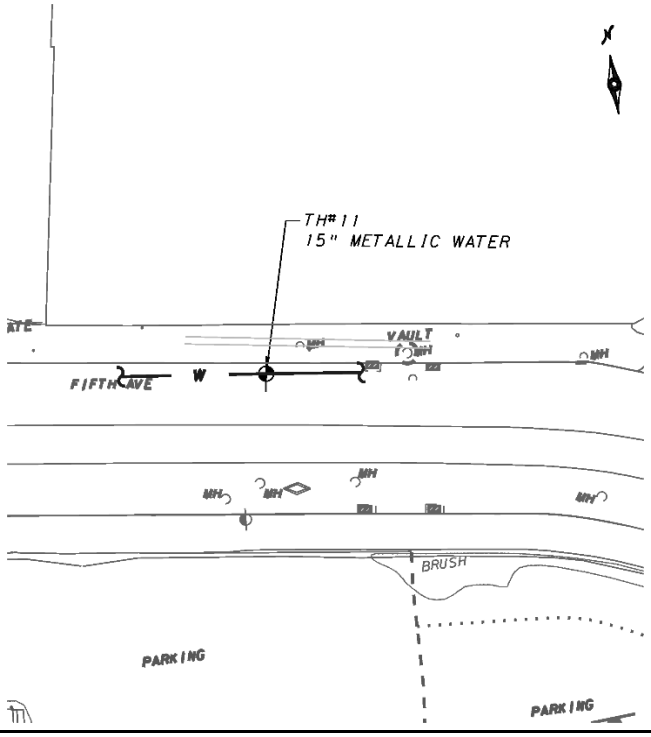
Reference Point Information

Reference Set: Cut X
Northing: 410211.2000
Easting: 1349598.2060

Elevation of Surface 809.76'
Depth to Utility 3.41'
Elevation top Utility 806.35'

Type / Thickness of Surface Covering
Asphalt: 5" Stone 2"
Concrete: 6"

PLAN VIEW

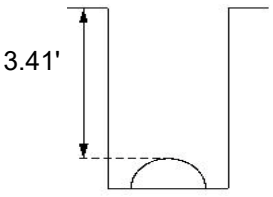


UTILITY VIEW



Comments:
5" Asphalt, 6" Concrete Block, 2" Soil, +/-9" Slag/Bituminous Material.

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 12
Date 7/13/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Boyd St.
Utility Description: 20" Metallic Water

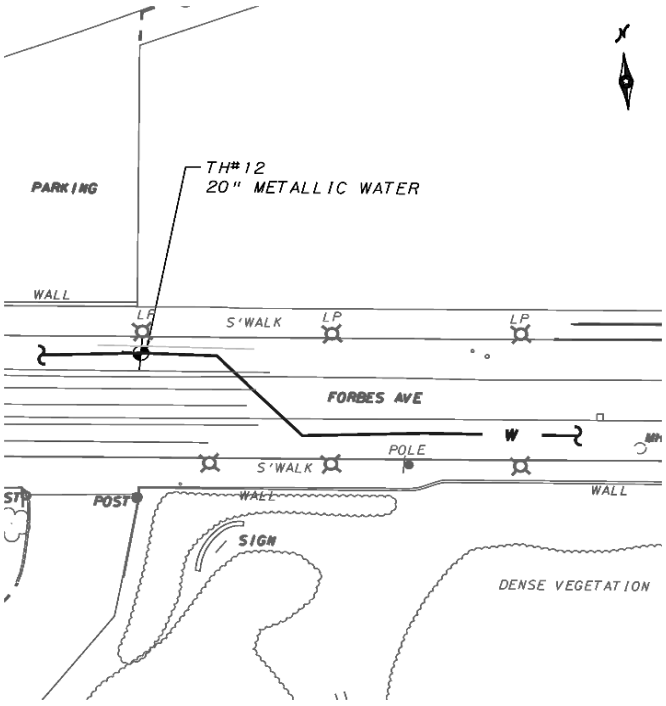
Reference Point Information

Reference Set: Cut X
Northing: 410361.0370
Easting: 1344229.1720

Elevation of Surface 784.38'
Depth to Utility 4.29'
Elevation top Utility 780.09'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 5"
Concrete: 10"

PLAN VIEW

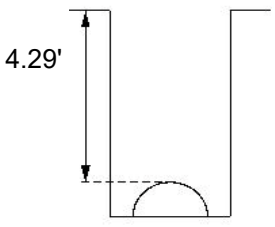


UTILITY VIEW



Comments:
Water pipe appeared to be coated in asphalt/tar, only small portion of pipe was exposed due to coating and hard, rocky compacted soils nears pipe. Magnet stuck to pipe.

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 13
Date 7/13/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Boyd St.
Utility Description: 20" Metallic Water

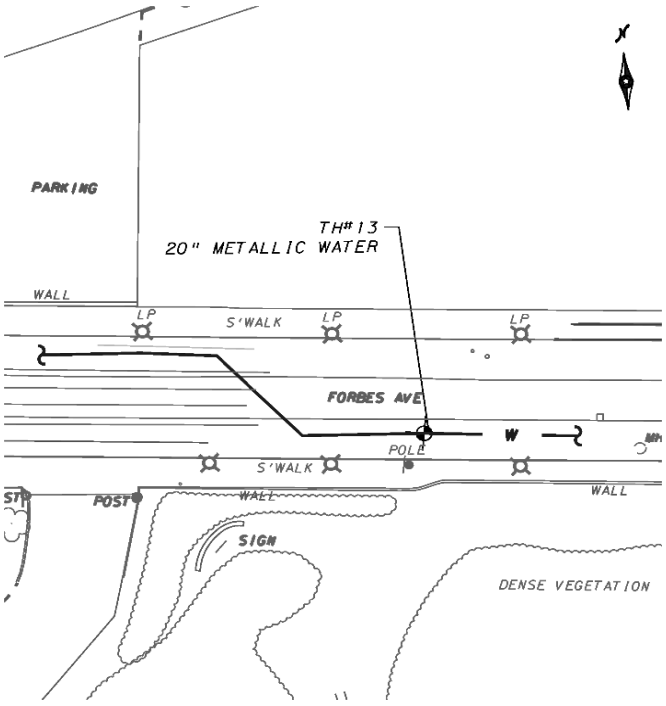
Reference Point Information

Reference Set: Cut X
Northing: 410333.6740
Easting: 1344299.0790

Elevation of Surface 786.56'
Depth to Utility 3.36'
Elevation top Utility 783.20'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 6"
Concrete: 13"

PLAN VIEW

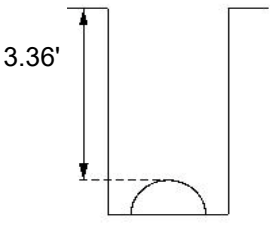


UTILITY VIEW



Comments:

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 14
Date 7/15/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Stevenson St.
Utility Description: Stone / Terracotta - Looking for 8" Metallic Water

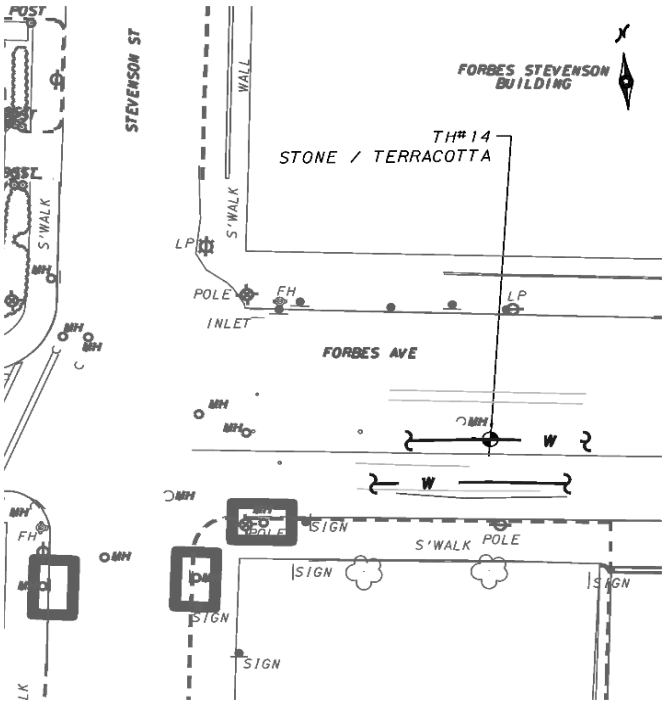
Reference Point Information

Reference Set: Cut X
Northing: 410193.4440
Easting: 1346111.1960

Elevation of Surface 800.33'
Depth to Utility 3.39'
Elevation top Utility 796.94'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 5"
Concrete: 11"

PLAN VIEW

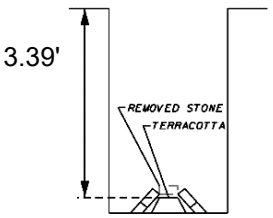


UTILITY VIEW



Comments:
Terracotta/Brick structure found in test hole. Appears to have loose stone built around terracotta/brick. Surface locates and PA one call marks lead to test hole location. Consistent with TH #3

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 15
Date 7/15/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Stevenson St.
Utility Description: 20" Metallic Water

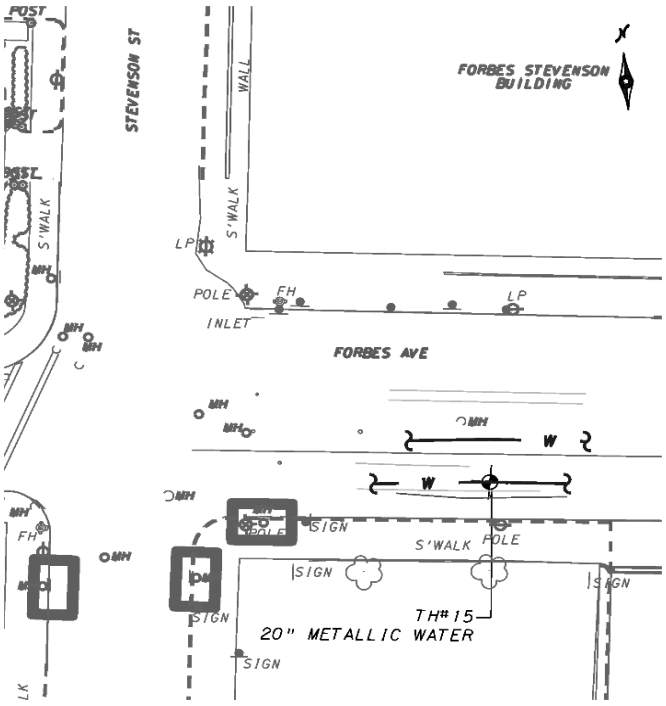
Reference Point Information

Reference Set: Cut X
Northing: 410181.7250
Easting: 1346110.2180

Elevation of Surface 800.29'
Depth to Utility 4.77'
Elevation top Utility 795.52'

Type / Thickness of Surface Covering
Asphalt: 5" Stone 5"
Concrete: 12"

PLAN VIEW

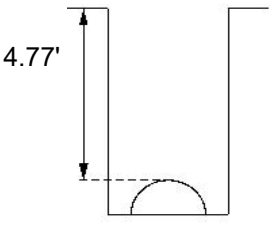


UTILITY VIEW



Comments:

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 16
Date 7/9/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Miltenberger St.
Utility Description: 6" Metallic Water

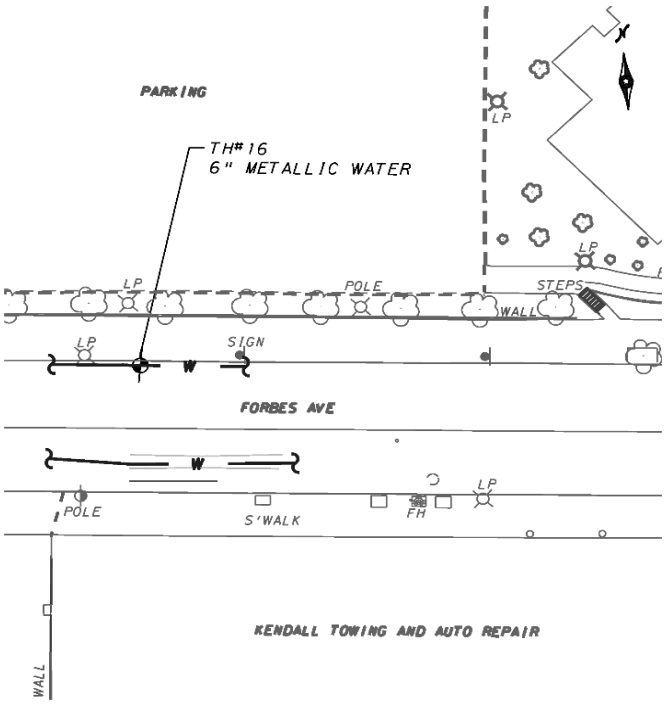
Reference Point Information

Reference Set: Cut X
Northing: 410081.1300
Easting: 1347635.2680

Elevation of Surface 833.15'
Depth to Utility 4.54'
Elevation top Utility 828.61'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 5"
Concrete: 12"

PLAN VIEW

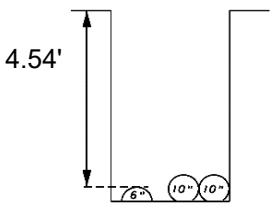


UTILITY VIEW



Comments:
Two 10" pipes found in test hole at +/-3.88 ft deep, to the south side of water line. Pipes run parallel with Forbes Ave.

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 17
Date 7/9/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Miltenberger St.
Utility Description: 20" Metallic Water

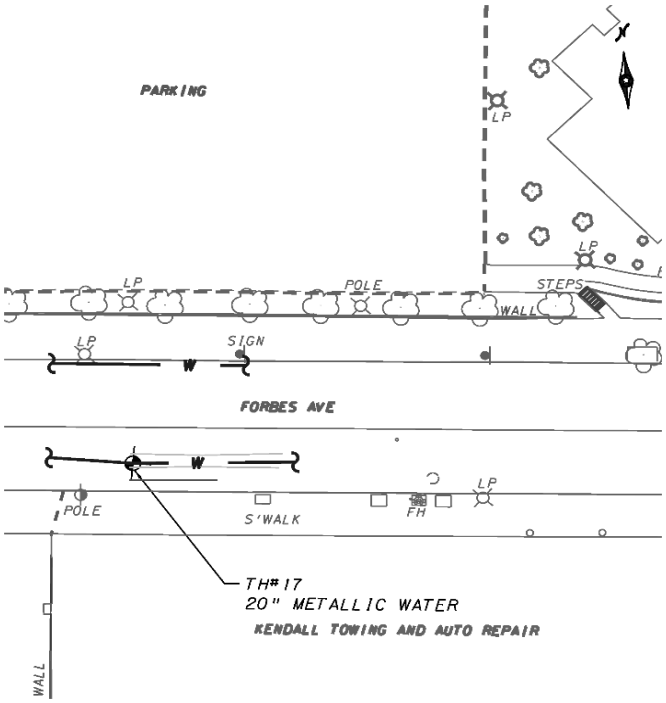
Reference Point Information

Reference Set: Cut X
Northing: 410054.1840
Easting: 1347631.3180

Elevation of Surface 833.20'
Depth to Utility 4.55'
Elevation top Utility 828.65'

Type / Thickness of Surface Covering
Asphalt: 3" Stone 5"
Concrete: 12"

PLAN VIEW

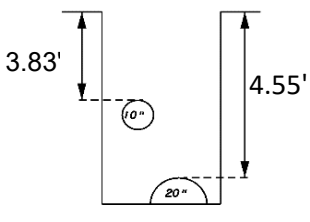


UTILITY VIEW

PHOTO NOT AVAILABLE

Comments:
10" pipe also located at 3.83 feet deep, almost 2 ft north of 20" water. 20" gas noted in field by PA One Call markings. No other 20" pipe located in test hole. Difficult to determine if located pipe is gas or water.

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 18
Date 7/14/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Seneca St.
Utility Description: 6" Metallic Water

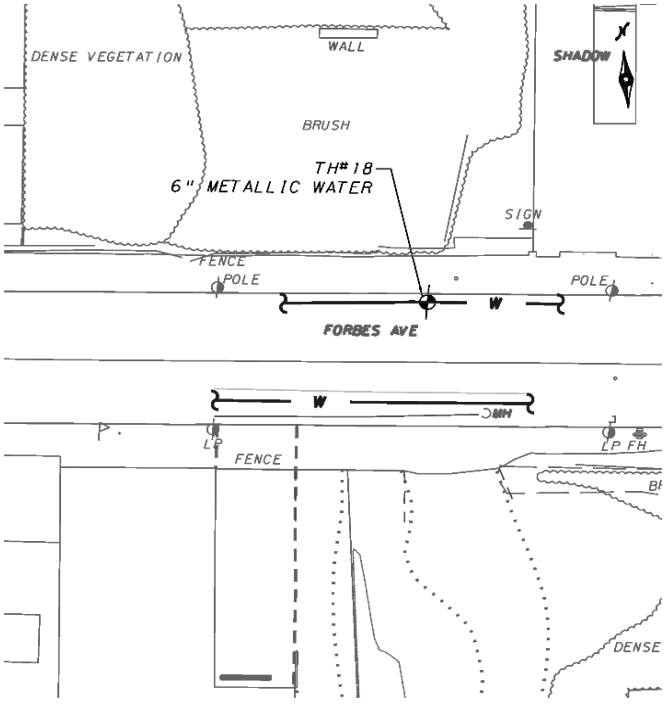
Reference Point Information

Reference Set: Cut X
Northing: 409957.1970
Easting: 1349136.7180

Elevation of Surface 798.20'
Depth to Utility 4.43'
Elevation top Utility 793.77'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 5"
Concrete: 5"

PLAN VIEW

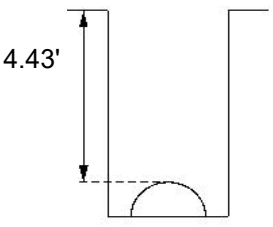


UTILITY VIEW



Comments:

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

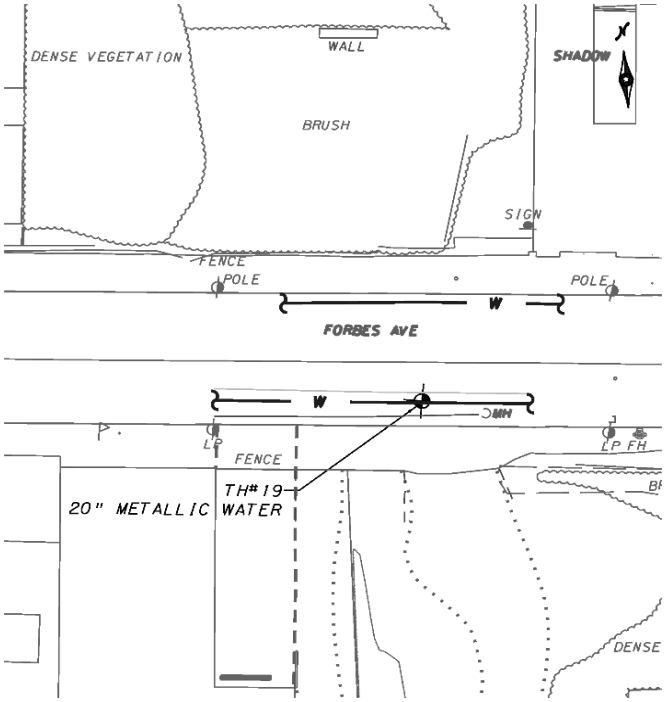
Project No # 20.1013
Test Hole # 19
Date 7/14/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Seneca St.
Utility Description: 20" Metallic Water

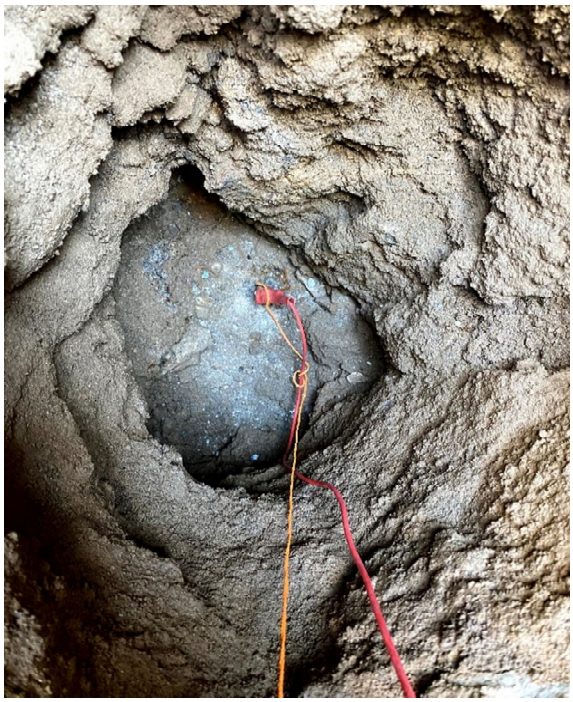
Reference Point Information

Reference Set:	Cut X	Elevation of Surface	798.37'	Type / Thickness of Surface Covering	
Northing:	409930.1920	Depth to Utility	4.63'	Asphalt: 4"	Stone 0
Easting:	1349133.3030	Elevation top Utility	793.74'	Concrete: 13"	

PLAN VIEW

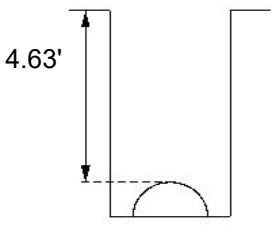


UTILITY VIEW



Comments:

SECTION VIEW NTS



Facing: East



PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 20
Date 7/16/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Moultrie St.
Utility Description: 12" Metallic Pipe - Looking for 6" Water

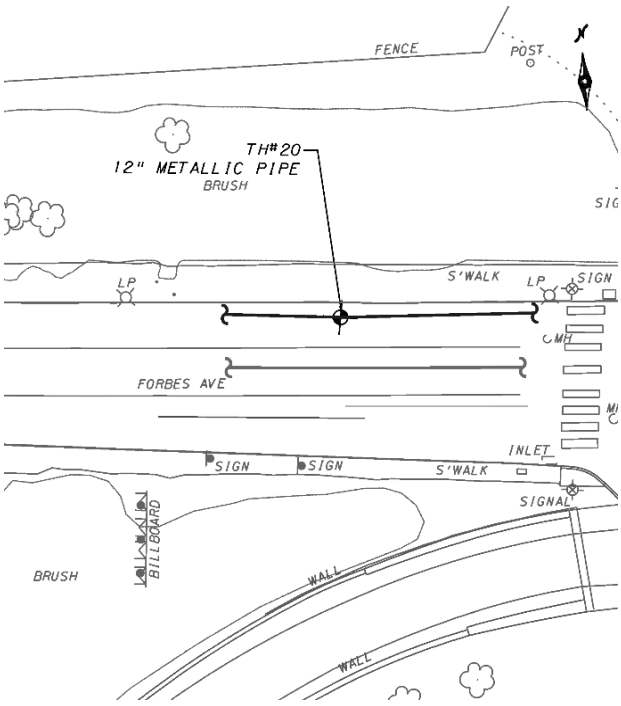
Reference Point Information

Reference Set: Cut X
Northing: 409922.8960
Easting: 1349546.2930

Elevation of Surface 777.32'
Depth to Utility 3.08'
Elevation top Utility 774.24'

Type / Thickness of Surface Covering
Asphalt: 4" Stone 0
Concrete: 12"

PLAN VIEW

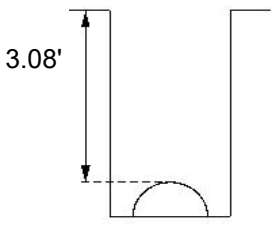


UTILITY VIEW



Comments:
Looking for 6" water pipe. Uncovered heavilty corroded pipe measuring approximately 12". Very heavy groundwater flow into test hole along with hard, compacted soil limited exploration. Electromagnetic signal appeared to lead to water valve at the intersection of Forbes and Moultrie.

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

The Lexis Group LLC

TEST HOLE DATA FORM

Project No # 20.1013
Test Hole # 21
Date 7/16/2020
Crew ZS/BT

City/County: City of Pittsburgh, Allegheny County
State Road : N/A
Location : Forbes Ave. East of Moultrie St.
Utility Description: 6" Metallic Pipe - Looking for 24" Water

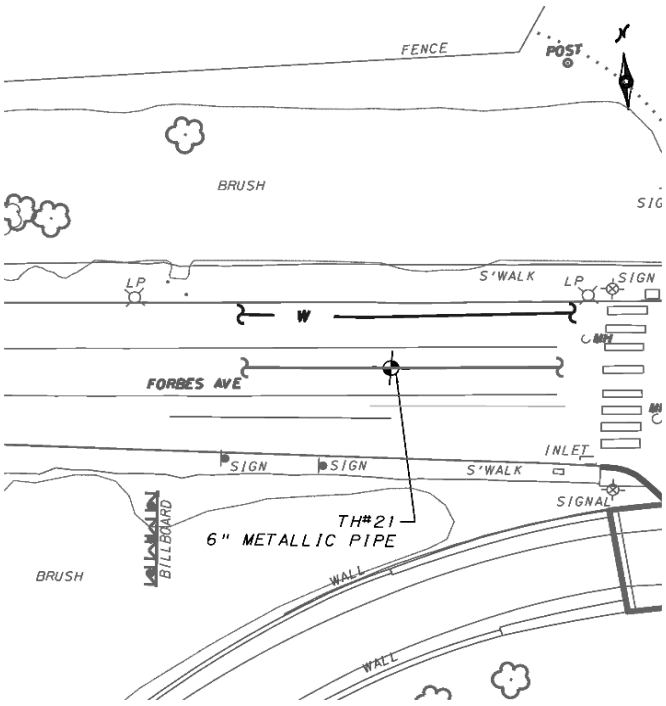
Reference Point Information

Reference Set: Cut X
Northing: 409908.4940
Easting: 1349551.9130

Elevation of Surface 777.26'
Depth to Utility 3.67'
Elevation top Utility 773.59'

Type / Thickness of Surface Covering
Asphalt: 5" Stone 0
Concrete: 12"

PLAN VIEW

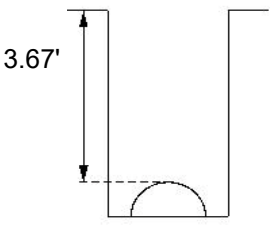


UTILITY VIEW



Comments:
Uncovered 6" metallic pipe. Large asphalt structure and groundwater flow on north side of test hole limited exploration. Electromagnetic signal did not lead to surface-related water feature (i.e. valve, hydrant)

SECTION VIEW NTS



Facing: East

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ENGINEER NO. 054901-E

PREPARED BY ZFS DATE 8/12/2020
CHECKED BY AAI DATE 8/12/2020

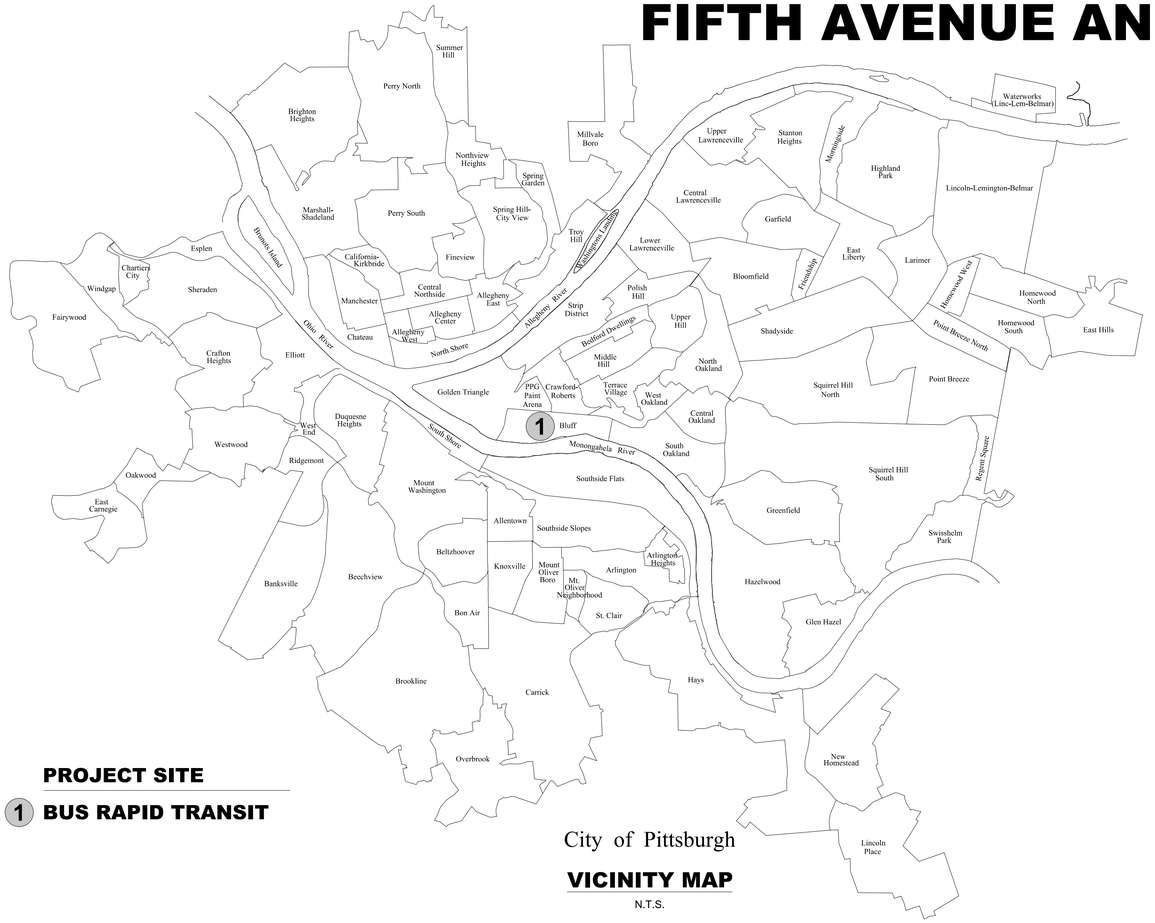
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THE PITTSBURGH WATER AND SEWER AUTHORITY

PWSA PROJECT NO. 2020-325-102-0

BUS RAPID TRANSIT
WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE



PROJECT SITE

1 BUS RAPID TRANSIT

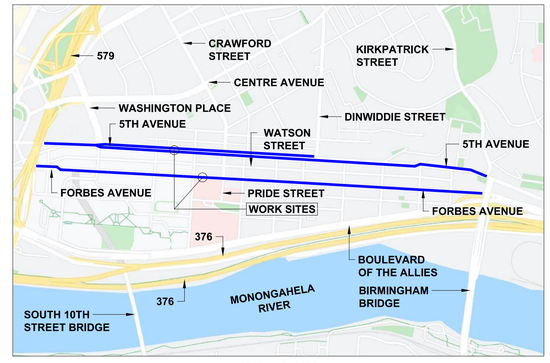
City of Pittsburgh

VICINITY MAP

N.T.S.

DRAWING LIST

SHEET 1	TITLE SHEET	SHEETS 74–75	WATER SERVICE LINE TABLES
SHEET 2	GENERAL NOTES	SHEETS 76–83	CONSTRUCTION DETAILS
SHEET 3	PA ONE CALL INFORMATION & DRAWING LEGEND	SHEETS 84–113	EROSION & SEDIMENT CONTROL PLAN
SHEET 4	LOCATION MAP & SHEET INDEX	SHEETS 114–140	RESTORATION PLAN
SHEETS 5–7	PHASING PLAN & SEQUENCE OF CONSTRUCTION	SHEETS 141–156	EXISTING CONDITIONS PLAN
SHEETS 8–56	WATER MAIN REPLACEMENT PLAN & PROFILE	SHEETS 157–166	TRAFFIC CONTROL PLAN TABULATION SHEETS
SHEETS 57–73	ENLARGED WATER MAIN CONNECTION PLAN		



UPTOWN

LOCATION MAP

N.T.S.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TITLE SHEET

SCALE: AS NOTED

DATE: DECEMBER, 2020

SHEET NO. 1 OF 166

ACCESSION NO. _____

CASE NO. _____

APPROVAL	DATE
Jim Turner	1/8/2021
PROJ. COORD./PROJ. MGMT. ENG. P.W.S.A.	
Barry King	1/8/2021
DIRECTOR ENG. & CONST., P.W.S.A.	

REVIEWED FOR CONSTRUCTABILTY		
CONSTRUCTION MGMT SPVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

CALL BEFORE YOU DIG!

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE.
STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC.

PENNSYLVANIA ACT 287 OF 1974, AS AMENDED BY PA ACT 50 OF 2017 73P.S. § 176 ET. SEQ. REQUIRES NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH, CALL PENNSYLVANIA ONE CALL SYSTEM, INC. AT 8-1-1 OR 1-800-242-1776 BEFORE ANY DISTURBANCE. PENNSYLVANIA ONE CALL SERIAL NUMBERS FOR INFORMATION SHOWN ON THE PLANS ARE LISTED BY PROJECT AREA ON SHEET NUMBER 3.

811 Know what's below. Call before you dig.

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of underground utilities and facilities, and either assumes any responsibility for conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

12/22/2020 9:34:24 AM

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GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL REQUIRED DEWATERING OF WORK LOCATIONS, NO MATTER WHAT THE SOURCE OF THE WATER. SOURCES INCLUDE BUT ARE NOT LIMITED TO ACCUMULATED PRECIPITATION, ENCOUNTERED GROUND WATER AND VALVE LEAKAGE. REQUIRED PUMPING FALLS INTO TWO CATEGORIES. THE FIRST 160,000 GALLONS PER 8–HOUR SHIFT (BASED ON PUMP CAPACITY TIMES HOURS OF OPERATION) ARE TO BE INCLUDED IN THE BASE BID FOR EACH PROJECT SITE AND NO ADDITIONAL COMPENSATION WILL BE GIVEN ADDITIONAL REQUIRED AND APPROVED PUMPING WILL BE PAID FOR UNDER THE APPROPRIATE PAY ITEM. THE CONTRACTOR IS ADVISED THAT PUMPING MAY BE NEEDED AND IS TO BE COVERED BY THE APPLICABLE PAY ITEMS. NO PAYMENT BEYOND THE PAY ITEMS WILL BE CONSIDERED.

2. ANY PORTION OF ANY WORK IN THIS CONTRACT THAT COMES INTO CONTACT WITH POTABLE WATER MUST BE IN FULL COMPLIANCE WITH 25 PENNSYLVANIA CODE 109.606 AND BE NSF APPROVED.

3. ALL ELEVATIONS AND DIMENSIONS SHOWN ARE APPROXIMATE AND MAY NOT REFLECT EXACT FIELD CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ANY AND ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS.

4. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY FEDERAL, STATE, AND LOCAL AGENCIES FOR THE PERFORMANCE OF THE WORK OF THIS CONTRACT AND FOR DISPOSAL OF ANY SPOIL MATERIAL, DEBRIS, ETC. ALL WASTE MATERIAL, INCLUDING BROKEN CONCRETE OR OTHER DEMOLITION PRODUCTS OR CONSTRUCTION BY–PRODUCTS SHALL BE TESTED FOR HAZARDOUS MATERIAL AND REMOVED FROM THE WORK SITES AND CONVEYED BY THE CONTRACTOR TO FINAL DISPOSAL.

5. THE AUTHORITY RESERVES THE RIGHT TO SALVAGE ANY MATERIALS REMOVED FROM A CONSTRUCTION SITE. ANY MATERIALS NOT SELECTED FOR SALVAGE BY THE AUTHORITY BECOME THE PROPERTY OF THE CONTRACTOR AND MUST BE REMOVED FROM THE SITE AS EXPEDITIOUSLY AS POSSIBLE. IN ALL CASES WHEN AN ITEM IS TO BE DISPOSED OF, THE OWNER WILL DETERMINE IF THE CONTRACTOR IS TO TRANSPORT THE OBJECT TO A STORAGE FACILITY (OWNED BY EITHER THE CITY OF PITTSBURGH OR THE PWSA) OR IS TO DISPOSE OF THE ITEM IN A LEGAL FASHION. NO ADDITIONAL COMPENSATION WILL BE GIVEN IN EITHER CASE.

6. THE CONTRACTOR SHALL NOTE THE PRESENCE OF OVERHEAD POWER LINES AND UNDERGROUND COMMUNICATION AND POWER LINES, GAS MAINS, WATERLINES AND SEWERS THROUGHOUT THE WORK AREA. ANY TEMPORARY RELOCATION NECESSARY TO COMPLETE THE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE, EXCEPT WHERE NOTED. DAMAGE CAUSED BY THE CONTRACTOR TO ANY PUBLICLY OR PRIVATELY–OWNED STRUCTURE SHALL BE REPAIRED,IN KIND, AT THE CONTRACTOR'S EXPENSE.

7. THE CONTRACTOR SHALL NOT, UNDER ANY CONDITIONS, OPERATE ANY PWSA VALVES.

8. THE CONTRACTOR SHALL VERIFY DIMENSIONS CONTROLLED BY OR RELATED TO EQUIPMENT FITTINGS WITH THE MANUFACTURER PRIOR TO CONSTRUCTION. BOLT SIZES, TYPES, AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO ENSURE ACCURACY OF PLACEMENT.

9. IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED BY THE OWNER.

10. NECESSARY SHEETING, SHORING AND BRACING AT ALL WORK LOCATIONS IS INCIDENTAL TO THIS PROJECT AND NO ADDITIONAL PAYMENT WILL BE MADE FOR IT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE NEED FOR TEMPORARY SHORING OR BRACING AND FOR PLACING SAME. COSTS FOR SHORING OR BRACING ARE TO BE INCLUDED IN THE UNIT PRICES FOR EXCAVATION, ETC. AND NO ADDITIONAL PAYMENT WILL BE MADE. THE CONTRACTOR SHALL HAVE THE COMPLETE AND SOLE RESPONSIBILITY FOR THE JOB SITE INCLUDING THE SAFETY OF PERSONS AND PROPERTY. JOB SITE INSPECTIONS BY THE OWNER ARE TO DETERMINE COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, NOT TO REVIEW THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES. BARRIERS, TEMPORARY FENCING OR OTHER MEASURES MUST BE PLACED TO ELIMINATE ACCESS TO THE WORK SITE BY THE PUBLIC. NO ADDITIONAL PAYMENT WILL BE MADE FOR THESE MEASURES.

11. CONTINUOUS WATER AND SEWER SERVICE SHALL BE MAINTAINED THROUGHOUT THE JOB. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY CUTS AND PLUGS OF EXISTING PIPES AS NECESSARY TO MAINTAIN SAID SERVICE.

12. THE CONTRACTOR SHALL DEWATER, BULKHEAD AND BURY ALL EXISTING LINES THAT ARE ABANDONED IN PLACE AT NO ADDITIONAL PAYMENT, UNLESS OTHERWISE NOTED. FOR LINES LARGER THAN 8" IN DIAMETER, THE LINE MUST BE FILLED WITH APPROVED FLOWABLE FILL.

13. WHEN TIE–INS AND RECONNECTIONS TO THE WATER DISTRIBUTION SYSTEM ARE MADE A CONTINUOUS WORK OPERATION MUST BE MAINTAINED UNTIL ALL WATER IS RESTORED.

14. ALL WORK LOCATIONS SHALL BE LEFT IN A CONDITION AT THE CONCLUSION OF THE WORK SIMILAR TO THAT BEFORE THE COMMENCEMENT OF WORK, EXCEPT FOR THE WORK PERFORMED UNDER THIS CONTRACT. DAMAGE DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE HIS RESPONSIBILITY TO REPAIR TO THE SATISFACTION OF THE OWNER. REPAIRS SHALL BE MADE WITH NO ADDITIONAL PAYMENT.

15. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ACCORDING TO THE REGULATIONS OF THE RIGHT–OF–WAY OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING ANY NECESSARY APPLICATIONS AND SEEKING PERMITS FROM LOCAL OR STATE AUTHORITIES.

16. INTERNAL PLUMBING FOR WATER SERVICE PARTY–LINE SEPARATIONS WILL BE HANDLED ON A TIME AND MATERIALS BASIS.

17. INSPECTIONS. THIS PROJECT IS SUBJECT TO INSPECTIONS BY THE PITTSBURGH WATER AND SEWER AUTHORITY (OWNER), THE ENGINEER, THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, ALLEGHENY COUNTY ENGINEERS, AND OTHERS THE OWNER MAY DESIGNATE. THE CONTRACTOR WILL COOPERATE IN ACCOMMODATING THESE INSPECTIONS BY PERMITTING ACCESS TO THE WORK SITE AND ACCESS TO PROJECT RECORDS AND FILES.

18. CONSTRUCTION LIMITS. THE CONTRACTOR SHALL CONFINE MATERIALS, EQUIPMENT, AND WORK ACTIVITIES TO WITHIN DESIGNATED CONSTRUCTION LIMITS AND PUBLIC RIGHTS–OF–WAY. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL WORK AND DAMAGE OCCURRING OUTSIDE OF THE CONSTRUCTION LIMITS AND RIGHTS–OF–WAY AND SHALL REPAIR THE SAME TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL COMPLETE SITE CLEANUP TO THE SATISFACTION OF THE OWNER.

19. PROPERTY AND RIGHTS–OF–WAY LINES. THE RIGHTS–OF–WAY, EASEMENTS, AND PROPERTY LINES AS SHOWN ON THE CONTRACT DRAWINGS ARE BASED UPON AVAILABLE TAX MAP INFORMATION ONLY. THE LINES SHOWN ARE APPROXIMATE ONLY. DETERMINATION OF ACTUAL RIGHTS–OF–WAY LOCATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

20. ESTIMATED QUANTITIES. THE ESTIMATED PLAN QUANTITIES ARE SHOWN FOR BIDDING PURPOSES ONLY AND ARE NOT NECESSARILY THE FINAL PAY QUANTITIES. FIELD MEASUREMENTS, MATERIAL DELIVERY SLIPS, CALCULATIONS, AND OTHER DOCUMENTATION SHALL DETERMINE THE FINAL QUANTITY TO BE PAID UNLESS OTHERWISE SPECIFIED.

21. UNDERGROUND FACILITIES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED BY GAI CONSULTANTS FROM A COMBINATION OF OBSERVED EVIDENCE, FIELD SURVEYS AND AVAILABLE RECORD PLANS. LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED, THEREFORE, THEIR LOCATIONS AND SIZES MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHER UNDERGROUND FACILITIES WHOSE EXISTENCE IS PRESENTLY UNKNOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO THOROUGHLY REVIEW THE CONTRACT DRAWINGS AND VERIFY ELEVATIONS AND DIMENSIONS IN THE FIELD PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES. THE OWNER AND ENGINEER SHALL IMMEDIATELY BE NOTIFIED OF ANY VARIATIONS FOUND WHICH MAY RESULT IN CHANGES OR ADJUSTMENTS TO THE DESIGN AS PRESENTED IN THE ORIGINAL CONTRACT DRAWINGS AND/OR SPECIFICATION. THE CONTRACTOR SHALL SUBMIT, FOR THE OWNER AND ENGINEER'S APPROVAL, A DETAILED PLAN OF ANY ADJUSTMENTS WHICH MAY BE REQUIRED.

22. ROAD CONSTRUCTION. WHERE PROPOSED ROAD CONSTRUCTION MEETS EXISTING PAVEMENTS, THE LINE AND GRADE OF THE PROPOSED ROAD CONSTRUCTION SHALL BE ADJUSTED AS REQUIRED TO PROVIDE A SMOOTH TRANSITION HORIZONTALLY AND VERTICALLY TO MEET THE EXISTING ROAD SECTION OR AS DIRECTED BY THE OWNER.

CONTRACTOR SHALL RESTORE ANY DISTURBED ASPHALT ROADWAY, CONCRETE ROADWAY, CURB, CONCRETE SIDEWALK, OR LANDSCAPED SURFACES IN KIND WITH THE PRE–CONSTRUCTION GROUND COVER AND IN ACCORDANCE WITH THE RESTORATION DETAILS.

UTILITY INSTALLATIONS BY DUQUESNE LIGHT AND PEOPLES GAS ARE EXPECTED TO BE COMPLETED IN THIS AREA SEPARATELY FROM THIS PROJECT PRIOR TO THE FUTURE PORT AUTHORITY OF ALLEGHENY COUNTY ROADWAY RECONSTRUCTION PROJECT. CURB TO CURB MILL AND OVERLAY WILL DONE AS PART OF THE FUTURE PORT AUTHORITY OF ALLEGHENY COUNTY ROADWAY RECONSTRUCTION PROJECT.

23. MAINTAINING ACCESS. THE CONTRACTOR IS REQUIRED TO MAINTAIN FREE ACCESS TO EXISTING BUSINESSES AT ALL TIMES. AT THE END OF THE WORK DAY, ALL ACCESS POINTS USED BY THE CONTRACTOR SHALL BE SECURED AND LOCKED.

24. SOIL EROSION & SEDIMENT CONTROL. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL SOIL EROSION & SEDIMENT CONTROL (SESC) DEVICES AS REQUIRED BY THE CONTRACT DOCUMENTS. ALL (SESC) DEVICES WILL BE CHECKED BY THE CONTRACTOR AFTER EACH RAINFALL EVENT TO ASSURE PROPER PERFORMANCE. NO (SESC) DEVICES WILL BE REMOVED WITHOUT PRIOR WRITTEN APPROVAL OF THE GOVERNING AGENCY AND THE OWNER.

25. PROPERTY PROTECTION. THE CONTRACTOR IS REQUIRED TO PROTECT EXISTING SITE FEATURES, TREES, STRUCTURES, UTILITIES AND OTHER FACILITIES FROM DAMAGE. THE CONTRACTOR SHALL PROVIDE SHEETING, SHORING AND UNDERPINNING AS NECESSARY TO PROTECT EXISTING FACILITIES.

26. PERMITS. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL PERMITS FOR: STREET OPENINGS, UTILITY RELOCATION, TEMPORARY UTILITIES, SANITARY FACILITIES, HAZARDOUS AND NON–HAZADOUS WASTE DISPOSAL, STREET USE, OVERSIZE LOADS, WATER USAGE, AND ANY OTHER PERMITS NECESSARY FOR THE WORK DESCRIBED HEREIN. CONTRACTOR SHALL APPLY TO CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE FOR STREET OPENING PERMIT (INCLUDES TRAFFIC OBSTRUCTION REVIEW) AND MACHINERY PERMIT. PERMITS MUST BE APPROVED PRIOR TO START OF CONSTRUCTION.

27. WORKING HOURS. CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE PREFERRED WORK HOURS ARE 9:00 AM TO 3:00 PM MONDAY THROUGH FRIDAY.

ALL WORK WEST OF WASHINGTON PLACE AND CHATHAM SQUARE ON BOTH FIFTH AVENUE AND FORBES AVENUE, AS WELL AS THE SIDE STREETS, IS REQUIRED TO BE COMPLETED DURING NIGHT–TIME HOURS (BETWEEN THE HOURS OF 7:00 PM MONDAY THROUGH FRIDAY EVENING AND 5:00 AM THE FOLLOWING MORNING).

ALL WORK ON WASHINGTON PLACE AND CHATHAM SQUARE AND TO THE EAST ON BOTH FIFTH AVENUE AND FORBES AVENUE, AS WELL AS THE SIDE STREETS, IS REQUIRED TO BE COMPLETED DURING DAY–TIME HOURS (BETWEEN THE HOURS OF 7:00 AM AND 5:00 PM MONDAY THROUGH FRIDAY).

WORK ON "NO OUTLET" STREETS (WYANDOTTE STREET AND MOULTRIE STREET NORTH OF FIFTH AVENUE) IS REQUIRED TO BE COMPLETED DURING WEEKEND HOURS (BETWEEN THE HOURS OF 6:00 AM TO 8:00 PM ON SATURDAY AND SUNDAY).

PWSA RESERVES THE RIGHT TO SPECIFY OTHER WORKING HOURS OUTSIDE OF NORMAL TIMES. WORKING HOURS WILL BE FOLLOWED AS REQUIRED, NO ADDITIONAL PAYMENT SHALL BE MADE FOR WORK HOUR RESTRICTIONS.

28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ALL WATER BOXES, CATCH BASINS, STORM INLETS, AND MANHOLES AFTER CONSTRUCTION AND/OR PAVING IS COMPLETED INCLUDING CASTING SURFACES.

29. ADDITIONAL EXCAVATION BEYOND THE REQUIRED NEAT LINES OF THE TRENCH RESULTING FROM CAVING IN OF THE GROUND, SLIPPING, DUE TO NEGLIGENCE OF THE CONTRACTOR OR CONTRACTOR'S METHODS OF EXECUTING THE WORK, SHALL NOT BE CONSIDERED AS EXTRA COMPENSATION. ALL SUCH ADDITIONAL EXCAVATION SHALL BE REFILLED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE WITH MATERIALS AND COMPACTION TECHNIQUES PER THE CONTRACT DOCUMENTS.

30. STAGING AND STORAGE AREAS – CONTRACTOR IS RESPONSIBLE FOR PROVIDING STAGING AND STORAGE AREAS.

NOTIFICATION

THE PWSA MUST BE NOTIFIED A MINIMUM OF 72 HOURS IN AVANCE OF THE TIME WHEN THE CONTRACTOR PROPOSES TO CONNECT THE NEW WATER LINES TO THE EXISTING WATER MAINS SO THAT THE OPERATIONS DIVISION MAY ARRANGE FOR THE OPERATION OF NECESSARY VALVES.

PRESSURE TESTING

THE INSTALLED WATERLINE SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE LATEST EDITION OF AWWA STANDARD C–600 BY THE WATER RELAY CONTRACTOR. ANY NECESSARY REPAIRS SHALL BE MADE AND THE LINE RETESTED AT NO ADDITIONAL COST TO PWSA UNTIL THE WATERLINE PASSES TESTING.

FLUSHING, BACTERIOLOGICAL TESTING, AND STERILIZATION

ONCE THE WATERLINE HAS PASSED PRESSURE AND LEAKAGE TESTING, THE WATER RELAY CONTRACTOR SHALL DISINFECT THE WATERLINE IN ACCORDANCE WITH AWWA?S STANDARD C–651. AT LEAST ONE ?PASSING? BACTERIOLOGICAL SAMPLE MUST BE TAKEN AND ANALYZED BEFORE THE WATERLINE CAN BE PUT INTO SERVICE. DISINFECTION AND RETESTING SHALL BE REPEATED AT NO ADDITIONAL COST TO PWSA UNTIL A MINIMUM OF ONE PASSING SAMPLE IS OBTAINED.

SERVICE LINE REPLACEMENT NOTES

1. THE CONTRACTOR SHALL PERFORM SERVICE LINE VERIFICATION EXCAVATION TO THE DEPTH NECESSARY TO VERIFY THE SERVICE LINE MATERIAL AND DIAMETER ON BOTH SIDES OF THE CURB STOP/VALVE. A MINIMUM LENGTH OF 24 INCHES ON EACH SIDE OF CURB STOP/VALVE SHALL BE EXPOSED FOR VERIFICATION PURPOSES. THESE VERIFICATION EXCAVATION TEST PITS SHALL NOT EXCEED THE SPECIFIED SIZE OR QUANTITY, UNLESS DIRECTED BY THE CONSTRUCTION INSPECTOR AND SHALL BE CONDUCTED AS SPECIFIED, OR AS DIRECTED BY THE CONSTRUCTION INSPECTOR.

2. ALL PUBLIC SERVICE LINE MATERIALS AND CURB BOXES ARE TO BE REPLACED, BACKFILLED, AND THE SURFACE RESTORED TO THE EXISTING CONDITION.

3. FOR WATER SERVICE LINE CONNECTIONS (1–INCH), IF THE PRIVATE SERVICE LINE IS NOT TO BE REPLACED BY THE CONTRACTOR, THE CONTRACTOR SHALL REPLACE THE PUBLIC SERVICE LINE AND CURB STOP PER DETAIL AND SHALL RECONNECT TO THE PRIVATE SERVICE LINE.

4. FOR WATER SERVICE LINE CONNECTIONS (GREATER THAN 1–INCH), IF THE PRIVATE SERVICE LINE IS NOT TO BE REPLACED BY CONTRACTOR, CONTRACTOR SHALL INSTALL NEW TEE AND NEW VALVE AT NEW MAIN AND RECONNECT TO EXISTING PRIVATE WATER SERVICE LINE.

5. UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER, THE CONTRACTOR SHALL ONLY REPLACE PRIVATE LEAD SERVICE LINES OR PRIVATE GALVANIZED IRON SERVICE LINES.

6. CONTRACTOR SHALL VERIFY THAT THE HOMEOWNER/PROPERTY OWNER HAS SIGNED AND RETURNED THE AGREEMENT TO PWSA PRIOR TO PERFORMING ANY WORK ON THE SERVICE LINE, INCLUDING MATERIAL VERIFICATION.

7. CONTRACTOR SHALL OBTAIN THE ACHD PLUMBING PERMIT PRIOR TO REPLACEMENT OF THE PRIVATE SERVICE LINE. ADDITIONALLY, ACHD PLUMBING INSPECTION SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF ANY PLANNED PRIVATE SERVICE LINE REPLACEMENT, SO THAT THE INSPECTION CAN BE COMPLETED THE DAY OF REPLACEMENT.

8. WHEN THE CONTRACTOR IS EXCAVATING WITHIN THE PIPE ZONE (12" ABOVE) OF THE SERVICE LINE, CONTRACTOR SHALL HAND DIG TO EXPOSE THE CURB STOP AND THE SERVICE LINES. IN THE EVENT A SERVICE LINE IS DAMAGED, REQUIRING AN IMMEDIATE PARTIAL SERVICE LINE REPLACEMENT, PWSA SHALL BE NOTIFIED IMMEDIATELY.

9. IN MANY CASES THE CONSTRUCTION INSPECTOR HAS BEEN PROVIDED WITH RECORDS SHOWING THE APPROXIMATE LOCATION OF THE SERVICE LINES THAT WERE NOT ABLE TO BE LOCATED. REFER TO THESE DOCUMENTS PRIOR TO EXCAVATION.

10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL REQUIRED NOTIFICATION MATERIALS REQUIRED BY SPECIFICATION SECTION 02515 "WATER SERVICE CONNECTIONS" HAVE BEEN PROVIDED TO ALL IMPACTED RESIDENTS PRIOR TO, AND IMMEDIATELY FOLLOWING ANY SERVICE LINE REPLACEMENT WORK.

11. THE CONTRACTOR SHALL NOT PERFORM ANY PARTIAL SERVICE LINE REPLACEMENTS (OTHER THAN ON AN URGENT BASIS) UNLESS A MINIMUM OF 72–HRS. AND A MAXIMUM OF 5–DAYS HAS ELAPSED SINCE THE APPROPRIATE NOTIFICATION WAS PROVIDED TO ALL RESIDENTS EFFECTED BY THE PARTIAL SERVICE LINE REPLACEMENT.

WATER UTILITY GENERAL NOTES:

1. WATER MAIN SHALL BE CLASS 52 MINIMUM, ZINC COATED, CEMENT LINED DUCTILE IRON PIPE.

2. ALL DUCTILE IRON FITTINGS, INCLUDING TEES, BENDS, CAPS, AND PLUGS, SHALL BE MECHANICAL JOINTS WITH RETAINER GLAND AND LOCKING GASKET. THRUST BLOCKS SHALL BE PROVIDED AS INDICATED ON THE CONTRACT DRAWINGS AND SPECIFICATIONS.

3. ALL VALVES SHALL BE RESTRAINED TO THE NEAREST TEE/FITTING WHERE APPLICABLE. AN EXCEPTION WOULD BE MADE FOR VALVES WITH A FLEX RING JOINT RESTRAINT.

4. WATER, SEWER, AND GAS SERVICE LINE LOCATIONS AND DEPTHS ARE APPROXIMATE. CONTRACTOR TO CONFIRM EXACT LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION.

5. WATER SERVICE LINE INFORMATION IS PROVIDED ON WATER SERVICE LINE TABLES ON SHEETS 74–75.

6. CONTINUOUS WATER SERVICE SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY LINES, CUT AND PLUG EXISTING PIPES AS NECESSARY TO MAINTAIN SAID SERVICE AT NO ADDITIONAL PAYMENT.

7. CONTRACTOR SHALL CUT, BACKFILL, AND CAP ALL EXISTING WATER MAINS TO BE ABANDONED. REFER TO PLAN VIEWS.

8. FOR ALL VALVE ABANDONMENTS, CONTRACTOR SHALL REMOVE EXISTING CASTING AND BACKFILL VALVE BOX.

9. THE CONTRACTOR SHALL DEWATER, BULKHEAD, AND BURY ALL EXISTING LINES THAT ARE ABANDONED IN PLACE AT NO ADDITIONAL PAYMENT, UNLESS OTHERWISE NOTED. LINES LARGER THAN 8" IN DIAMETER MUST BE FILLED WITH APPROVED FLOWABLE FILL.

10. ALL JOINTS SHALL BE RESTRAINED WITHIN 10 FEET OF CATCH BASINS.

11. TIE–INS TO MAINS ON STREETS THAT RUN BETWEEN FIFTH AND FORBES HAVE BEEN DESIGNED TO LINE UP AS MUCH AS PRACTICAL TO FACILITATE FUTURE WATER MAIN RELAY ON THOSE STREETS.

12. SOLID SLEEVES ARE TO BE USED AS INDICATED ON THE DRAWINGS WHERE NEW DUCTILE IRON PIPE TIES INTO EXISTING DUCTILE IRON PIPE. CONTRACTOR SHALL SUBSTITUTE TRANSITION COUPLINGS FOR SOLID SLEEVES IN ANY LOCATIONS WHERE EXISTING PIPE TO BE TIED INTO IS FOUND TO BE MADE OF CAST IRON.

13. 16, 20, AND 24–INCH GATE VALVES SHALL BE CONFIGURED HORIZONTALLY WITH GEARING PER THE "HORIZONTAL VALVE – 16" OR GREATER WITH MANHOLE" DETAIL ON SHEET 80, UNLESS OTHERWISE NOTED OR FIELD CONDITIONS PREVENT THIS CONFIGURATION. IF FIELD CONDITIONS DO NOT ALLOW THE INSTALLATION OF THE HORIZONTAL VALVE, THE PIPE SHALL BE SET AT AN ADEQUATE DEPTH TO ACCOMMODATE THE "VERTICAL LARGE DIAMETER VALVE IN CONCRETE MANHOLE (PRECAST BASE)" DETAIL AND VALVE SHALL BE INSTALLED VERTICALLY WITH NO GEARING, UNLESS OTHERWISE NOTED OR FIELD CONDITIONS PREVENT THIS CONFIGURATION. IF FIELD CONDITIONS DO NOT ALLOW THE INSTALLATION OF THE MANHOLE ON THE VERTICAL VALVE, AN MEG MAY BE USED ON THE VERTICAL VALVE.

14. ALL WATER SERVICE LINE CURB BOXES SET IN THE EXISTING STREET TO COINCIDE WITH THE FUTURE CURB LOCATION SHALL HAVE TRUCK RATED CASTINGS ADEQUATE TO WITHSTAND H–20 LOADING.

15. CONTRACTOR SHALL TEST PIT AT ALL EXISTING MAINS TO CONFIRM NEW WATER SERVICE LINES CAN ADEQUATELY CLEAR THE EXISTING PIPES.

16. PRIOR TO FLOWABLE FILLING ANY ABANDONED WATER MAINS, CONTRACTOR SHALL CONFIRM THAT LOCATION IS NOT PLANNED FOR A FUTURE ELECTRIC DUCT BANK. ANY WATER MAIN AREAS PLANNED FOR A FUTURE ELECTRIC DUCT BANK SHALL BE CAPPED BY CONTRACTOR, SUCH THAT NO FLOWABLE FILL IS PLACED IN THOSE MAINS THAT WOULD BE REMOVED BY POWER COMPANY TO ACCOMMODATE THEIR NEW DUCT BANK.

CONCRETE

ALL CONCRETE SHALL ADHERE TO THE PROJECT SPECIFICATIONS, PENNDOT PUBLICATION 408 SPECIFICATIONS, CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, AND PWSA REQUIREMENTS UNLESS AN ALTERNATE IS APPROVED BY OWNER AND THE CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE.

A. BASE COURSE: PER THE CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, 2017, OR AS LAST REVISED.

B. CONCRETE PAVEMENTS: PER THE CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, 2017, OR AS LAST REVISED. FINISH PER STANDARD DETAIL.

C. EXPOSED INCLUDING SIDEWALKS AND CURBS: PER THE CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, 2017, OR AS LAST REVISED. FINISH PER STANDARD DETAIL.

D. MANHOLE BASES: 4,000 PSI 28–DAY COMPRESSIVE STRENGTH. FINISH PER STANDARD DETAIL.

E. CONCRETE CRADLES, ENCASEMENTS, AND THRUST BLOCKS: 4,000 PSI 28–DAY COMPRESSIVE STRENGTH.

F. HIGH EARLY STRENGTH CONCRETE SHALL ONLY BE USED WHERE APPROVED BY THE CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE ONLY. IN THIS EVENT, PAYMENT WILL BE FOR CLASS AA.

ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH A.C.I. STANDARD 318, LATEST EDITION. ALL EXPOSED EDGES SHALL BE CHAMFERED 0.75". ALL JOINTS BETWEEN SEPARATE POURS SHALL BE KEYED TOGETHER. MINIMUM KEY SIZE SHALL BE 1.5" DEEP X 3.5" WIDE, UNLESS OTHERWISE NOTED. ALL REINFORCING BARS SHALL BE ASTM A615, GRADE 60. ALL REINFORCING BARS SHALL BE LAPPED AS PER CRSI LATEST EDITION (TENSION SPLICE CLASS "B").

WHEN NOT OTHERWISE STATED IN THE DRAWINGS OR SPECIFICATIONS, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT FOR CAST–IN–PLACE CONCRETE:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH – 3"

CONCRETE EXPOSED TO EARTH AND WEATHER:
#6 THROUGH #18 BARS – 2"
#5 BAR, W31 OR D31 WIRE AND SMALLER – 1.5"

CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
#14 AND #18 BARS – 1.5"
#11 BAR AND SMALLER – 0.75"

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

GENERAL NOTES

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 2 OF 166
ACCESSION NO. _____
CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

UTILITIES

COORDINATE, LOCATE, AND CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTIONS 105 (CONTROL OF WORK), 106 (CONTROL OF MATERIALS), AND 107.12 (CARE OF PUBLIC AND PRIVATE PROPERTY).

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

PGH2O

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PA ONE CALL

THE EXISTENCE OF AND LOCATION OF ALL UTILITIES AS SHOWN ARE APPROXIMATE AND ARE BASED ON INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES RESPONDING TO A DESIGN NOTIFICATION WHICH HAS BEEN MADE AS REQUIRED BY THE PENNSYLVANIA UNDERGROUND UTILITY LINE PROTECTION LAW.

CALL BEFORE YOU DIG!

PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS IN DESIGN STAGE. STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC.

PENNSYLVANIA ACT 287 OF 1974, AS AMENDED BY PA ACT 50 OF 2017 73P.S. § 176 ET. SEQ. REQUIRES NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE COMMONWEALTH, CALL PENNSYLVANIA ONE CALL SYSTEM, INC. AT 8–1–1 OR 1–800–242–1776 BEFORE ANY DISTURBANCE.

811 Know what's **below.** **Call** before you dig.

PA ONE CALL SERIAL NUMBERS BY PROJECT AREA:

UPTOWN

20200372526 – WARD 03

20200372527 – WARD 02

20200372528 – WARD 01

20200372529 – WARD 04

PUBLIC UTILITIES:

THE FOLLOWING PUBLIC UTILITIES MAY HAVE LINES IN THE VICINITY OF THIS PROJECT:

PEOPLES GAS COMPANY
375 NORTH SHORE DRIVE
PITTSBURGH,PA 15212
CONTACT: MICHAEL DENNY
EMAIL: MICHAEL.DENNY@PEOPLES-GAS.COM

PITTSBURGH WATER AND SEWER AUTHORITY
1200 PENN AVENUE, 2ND FLOOR
PITTSBURGH, PA 15222
CONTACT: RICK OBERMEIER
EMAIL: ROBERMEIER@PGH2O.COM

PITTSBURGH CITY DEPT OF PUBLIC WORKS
611 SECOND AVENUE
PITTSBURGH, PA 15219
CONTACT: OFFICE PERSONNEL

VERIZON PENNYSLVANIA, LLC
1026 HAY ST
PITTSBURGH, PA 15221
CONTACT: DEBORAH BARUM
EMAIL: DEBORAH.D.DELIA@VERIZON.COM

DUQUESNE LIGHT COMPANY
2645 NEW BEAVER AVENUE
PITTSBURGH, PA 15233
CONTACT: KYLIE PARISON
EMAIL: KPARISON@DUQLIGHT.COM

DQE COMMUNICATIONS LLC
424 SOUTH 27TH STREET, SUITE 220
PITTSBURGH, PA 15203
CONTACT: SHAWN BLANNER
EMAIL: SBLANNER@DQE.COM

COMCAST
1530 CHARTIERS AVENUE
PITTSBURGH,PA 15204
CONTACT: CHARLES DETILER
EMAIL: CHARLES_DETWILER@CABLE.COMCAST.COM

AT&T
7555 E PLEASANT VALLEY ROAD
SUITE 140
INDEPENDENCE, OH 44131
CONTACT: MIKE DIEDERICH
EMAIL: MD4145@ATT.COM

ALLEGHENY CITY ELECTRIC INC
3080 BABCOCK BLVD
PITTSBURGH, PA 15237
CONTACT: TOM UJZZI
EMAIL: TMU@ALLEGHENYCITYELECTRIC.COM

ENERGY CENTER PITTSBURGH, LLC
111 S COMMONS AVE
PITTSBURGH, PA 15212
CONTACT: BRYAN SARTI
EMAIL: BRYANSARTI@CLEARWAYENERGY.COM

CONSOLIDATED COMMUNICCATIONS
4008 GIBSONIA ROAD
GIBSONIA, PA 15044
CONTACT: TONY KOURAKOS
EMAIL: TONY.KOURAKOS@CONSOLIDATED.COM

CROWN CASTLE
1500 CORPORATE DR
CANONSBURG, PA 15317
CONTACT: TYLER STEIN
EMAIL: TYLER.STEIN@CROWNCASTLE.COM

VERIZON BUSINESS (FORMERLY MCI)
400 INTERNATIONAL PARKWAY
RICHARDSON, TX 75081
CONTACT: DEAN BOYERS
EMAIL: INVESTIGATIONS@VERIZON.COM

PACT STANWIX PLANT
120 CECIL WAY
PITTSBURGH, PA 15222
CONTACT: JEROME GRIGER
EMAIL: JEROME.GRIGER@PACTHERMAL.COM

EXTENET SYSTEMS, INC.
3030 WARRENVILLE RD
SUITE 340
LISLE, IL 60532
CONTACT: EXTENET NOC PERSONNEL
EMAIL: NOC@EXTENETSYSTEMS.COM

UPMC MERCY HEALTH SYSTEM
1400 LOCUST STREET
PITTSBURGH, PA 15219
CONTACT: DENZIL ROGERS
EMAIL: ROGERSD@UPMC.EDU

CENTURY LINK
1025 ELDORADO BLVD.
BROOMFIELD, CO 80021
CONTACT: CENTURY LINK OPERATOR PERSONNEL
EMAIL: NATIONALRELO@CENTURYLINK.COM

PORT AUTHORITY OF ALLEGHENY COUNTY
345 6TH AVENUE, 3RD FLOOR
PITTSBURGH, PA 15222
CONTACT: JOHN MURPHY
EMAIL: JMURPHY@PORTAUTHORITY.ORG

SURVEY NOTES

1. THE EXISTENCE OF AND LOCATION OF ALL UTILITIES AS SHOWN ARE APPROXIMATE AND ARE BASED ON INFORMATION PROVIDED BY THE VARIOUS UTILITY COMPANIES RESPONDING TO A DESIGN NOTIFICATION WHICH HAS BEEN MADE AS REQUIRED BY THE PENNSYLVANIA UNDERGROUND UTILITY LINE PROTECTION LAW, ACT 287 OF 1974, AS AMENDED. THE CONTRACTOR IS REQUIRED BY THIS ACT TO MAKE HIS OWN LOCATION REQUEST PRIOR TO ANY EXCAVATION WORK.
2. HORIZONTAL DATUM: HORIZONTAL CONTROL IS BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (SPCS 83) GEOID 128.
3. VERTICAL DATUM: VERTICAL CONTROL IS BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
4. EXISTING TOPOGRAPHY DEVELOPED FROM LIDAR FIELD SURVEY PERFORMED BY MICHAEL BAKER JR., INC. ADDITIONAL FIELD SURVEY WAS PERFORMED BY AWK CONSULTING ENGINEERS, INC.
5. RIGHT–OF–WAY HAS BEEN ESTABLISHED BASED ON FIELD SURVEY BY AWK CONSULTING ENGINEERS OF LOCATIONS OF CITY MONUMENTS, CURB LINE, AND ALSO WITH THE USE OF CITY MAPS FROM THE DEPARTMENT OF PUBLIC WORKS.
6. ADDITIONAL FIELD SURVEY OF THE UPTOWN AREA WAS PERFORMED BY MONALOH BASIN ENGINEERS, INC., $^{3}/_{2020}$ THROUGH 7/2020.
7. THE PROJECT BASE MAPPING HAS BEEN UPDATED TO ACCOUNT FOR ONGOING MODIFICATIONS TO THE SITE, TO THE EXTENT PRACTICABLE. THE BASE MAPPING MAY NOT ACCURATELY DEPICT THE PROJECT SITE.

MISCELLANEOUS EXISTING PLAN FEATURE LEGEND:

EXISTING RETAINING WALLS
EXISTING FENCE LINE
EXISTING TREES
EXISTING PROPERTY OR LEGAL RIGHT–OF–WAY LINE
EXISTING DWELLING OR BUSINESS & STREET ADDRESS (805)
EXISTING EDGE OF PAVEMENT AND CURB LINE
EXISTING CURB RAMPS
EXISTING STEPS
EXISTING ROAD SIGN

EXISTING UTILITY LEGEND:

EXISTING OVERHEAD TELEPHONE AND ELECTRIC (E & T)
EXISTING OVERHEAD TELEPHONE WIRE (T)
EXISTING GAS LINE (G)
EXISTING GAS VALVE
EXISTING UNDERGROUND ELECTRIC (EU)
EXISTING OVERHEAD ELECTRIC (E)
EXISTING VERIZON UNDERGROUND FIBER OPTIC CABLE (FOU1)
EXISTING UNDERGROUND CASTLE FIBER OPTIC CABLE (FOU2)
EXISTING FIBER OPTIC CABLE (FO)
EXISTING COMBINATION SEWER
EXISTING MANHOLE (MH, PWSA)
EXISTING ELECTRIC MANHOLE (E, BMH)
EXISTING WATER MAIN (W)
EXISTING WATER MAIN TO BE ABANDONED (W)
EXISTING WATER SERVICE LINE AND CURB BOX (W)
EXISTING WATER VALVES
EXISTING FIRE HYDRANT
EXISTING UTILITY POLE

EXISTING STORM DRAINAGE FEATURES LEGEND:

EXISTING INLET OR CATCH BASIN
EXISTING CURB INLET
EXISTING STORM SEWER PIPE

PROPOSED WATER LEGEND:

PROPOSED WATER MAIN (W)
PROPOSED WATER VALVE
PROPOSED WATER SERVICE LINE (W)
PROPOSED CURB STOP
PROPOSED FIRE HYDRANT
PROPOSED TEE
PROPOSED 11.25° BEND
PROPOSED 17° BEND
PROPOSED 22.5° BEND
PROPOSED 45° BEND
PROPOSED 90° BEND
PROPOSED SOLID SLEEVE
PROPOSED END CAP
PROPOSED REDUCER
WATER SERVICE NUMBER LABEL (HP62)

FUTURE ROADWAY RESTORATION WORK LEGEND:

FUTURE TYPE 13 CATCH BASIN WITH SEWER CONNECTION (BY OTHERS)
FUTURE MODIFIED CATCH BASIN (BY OTHERS)
FUTURE MODIFIED CATCH BASIN (BY OTHERS)
FUTURE ELECTRIC VAULT (BY OTHERS)
FUTURE UNDERGROUND ELECTRIC (BY OTHERS) (EU)
FUTURE GAS (BY OTHERS) (G)
FUTURE EDGE OF PAVEMENT AND CURB (BY OTHERS)
FUTURE DETECTABLE WARNING SURFACE (BY OTHERS)

PIPE AND FITTINGS

NOMINAL PIPE SIZES ARE PROVIDED FOR REFERENCE ONLY. THE CONTRACTOR IS TO FIELD CONFIRM THE ACTUAL DIAMETER AND OTHER DIMENSIONS. PROVIDE CORRECT FITTINGS AND CONNECTION MATERIALS BASED ON FIELD CONFIRMED DIMENSIONS. THE CONTRACTOR IS RESPONSIBLE TO CHECK FOR PROPER FIT OF ALL FABRICATIONS AND ORDERED PIECES. ALL MODIFICATIONS TO ENSURE PROPER FIT ARE THE RESPONSIBILITY OF THE CONTRACTOR.

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

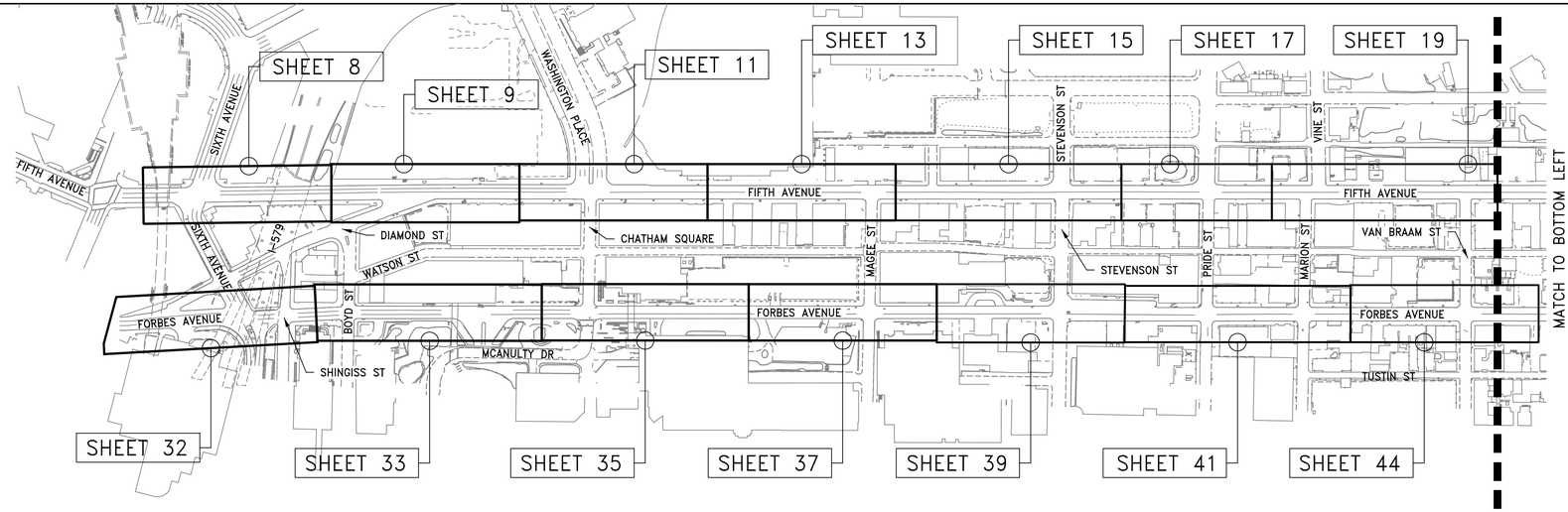
FIFTH AVENUE AND FORBES AVENUE

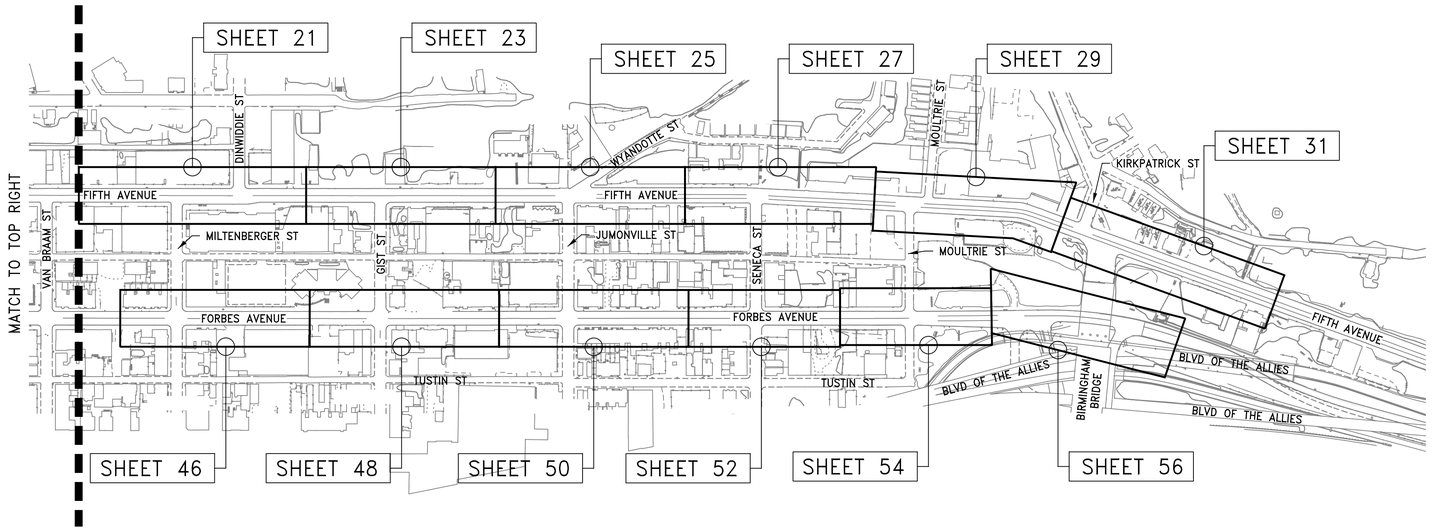
PA ONE CALL INFORMATION & DRAWING LEGEND

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 3 OF 166
ACCESSION NO. _____
CASE NO. _____

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CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
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CALC. BOOK		PG.	

SCALE: 1" = 200'

200' 0 200' 400'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

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FIFTH AVENUE AND FORBES AVENUE

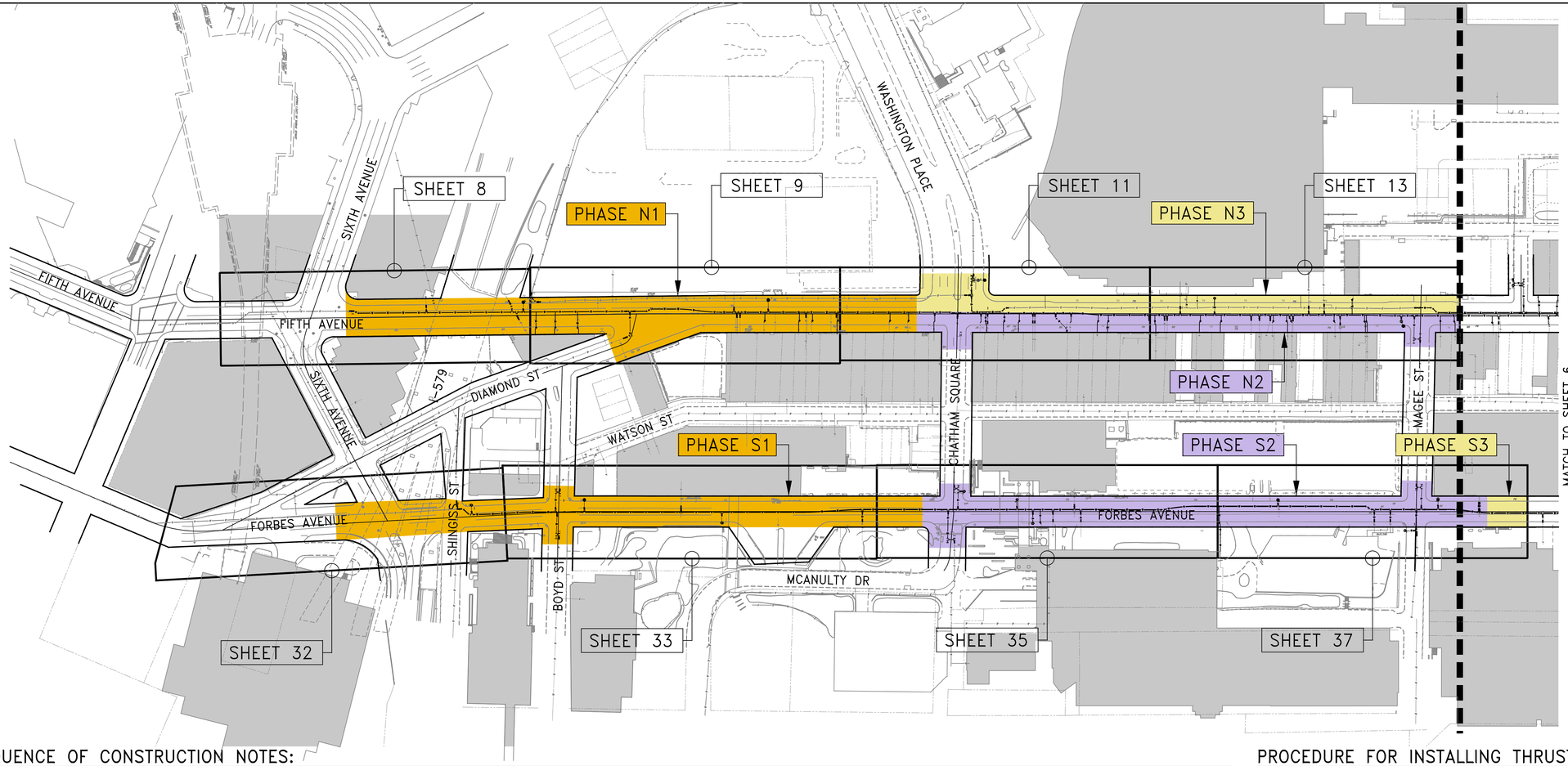
LOCATION MAP & SHEET INDEX

SCALE: AS NOTED SHEET NO. 4 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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PRESSURE DISTRICT NOTE (APPLIES TO PHASES N2 AND N3 ON FIFTH AVENUE):

THE BEDFORD PRESSURE DISTRICT IS LOCATED NORTH OF FIFTH AVENUE.

IN THE EXISTING CONDITION, FIFTH AVENUE AND SOUTH ARE IN THE HIGHLAND 1 PRESSURE DISTRICT.

IN THE PROPOSED CONDITION, THE MAIN ON THE NORTH SIDE OF FIFTH AVENUE FROM WASHINGTON PLACE TO DINWIDDIE STREET WILL BE PART OF THE BEDFORD PRESSURE DISTRICT.

WATER SERVICE LINES FOR PROPERTIES ON THE NORTH SIDE OF FIFTH AVENUE IN THIS AREA ARE TO BE MOVED TO SOUTHERN MAIN AS SHOWN ON THE PLANS PRIOR TO SOUTHERN MAIN BEING PUT INTO SERVICE. THIS IS IN ORDER TO PROVIDE THEM CONSISTENT PRESSURE.

SEQUENCE OF CONSTRUCTION NOTES:

1. AS EACH PHASE IS CONSTRUCTED, PERFORM PRESSURE TESTING AND DISINFECTION.
2. COMPLETE CONNECTIONS IN EACH PHASE AND TRANSFER WATER SERVICE TO NEW MAIN.
3. WORK ON FIFTH AVENUE AND FORBES AVENUE MAY BE DONE CONCURRENTLY. CONTRACTOR SHALL STAGGER WORK LOCATIONS SUCH THAT NO SIDE STREET IS CLOSED AT ITS INTERSECTIONS WITH BOTH FIFTH AND FORBES AT THE SAME TIME.
4. THE CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 01500.
5. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE SEQUENCE OF CONSTRUCTION. THE ENGINEER IS NOT LIABLE OR RESPONSIBLE FOR ANY DAMAGES THAT MAY BE INCURRED BY THE SEQUENCE LISTED.
6. PROPOSED CHANGES TO THE SEQUENCE OF CONSTRUCTION ARE TO BE COORDINATED WITH THE PWSA CONSTRUCTION MANAGER FOR REVIEW AND APPROVAL.
7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE PWSA CONSTRUCTION MANAGER TO ENSURE THAT CLOSING ALL NECESSARY VALVES TO DEPRESSURIZE LINES FOR THE WORK, HAS BEEN COMPLETED PRIOR TO COMMENCING WORK.
8. COORDINATE WITH ALL ONGOING CONSTRUCTION IN THE PROJECT AREA (IF ANY) TO RESOLVE ANY ISSUES THAT WOULD BE IN CONFLICT WITH OTHER PROJECTS AND TRAFFIC CONTROLS.
9. PEDESTRIAN ACCESS SHALL BE SAFELY MAINTAINED AT ALL TIMES OR DETOURED.
10. RESTRICT STREET PARKING IF NECESSARY DURING HOURS OF WORK.
11. VERIFY LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTING WATER MAINS.
12. IMPLEMENT MAINTENANCE AND PROTECTION OF TRAFFIC PLAN.
13. INSTALL EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO EXCAVATING TRENCH.
14. TEST PIT CONNECTION LOCATIONS OF EXISTING WATER MAINS AND EXISTING UTILITY CROSSINGS AS NEEDED.
15. INSTALL TEMPORARY CAPS/PLUGS AND THRUST BLOCKING ON BOTH THE REPLACEMENT AND EXISTING WATER MAINS AS REQUIRED. LOCATIONS ARE SHOWN IN MINIMUM REQUIREMENTS.
16. SHUT DOWNS SHALL BE LIMITED TO 8 HOURS UNLESS TEMPORARY WATER SERVICE IS PROVIDED OR OTHERWISE DIRECTED BY PWSA.
17. TEST AND DISINFECT WATER LINE PRIOR TO CONNECTING TO EXISTING MAINS AND PLACING IN SERVICE.
18. REPLACE/RECONNECT WATER SERVICE LINES AS INDICATED.
19. ABANDON MAINS, VALVES, MANHOLES, AND HYDRANTS PER THE DETAILS. INSTALL PERMANENT CAPS ON ABANDONED MAINS.
20. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER SURFACE RESTORATION OF DISTURBED AREA BEFORE END OF CONSTRUCTION.
21. THE WORK HOUR LIMITATIONS ARE IN THE GENERAL NOTES.

PROCEDURE FOR INSTALLING THRUST BLOCK / COLLAR:

1. CLOSE APPROPRIATE VALVES.
2. REMOVE/REPLACE A SECTION OF EX. WATER MAIN.
3. INSTALL NEW PIPE (AS SHOWN ON PLAN), NEW VALVE (IN OPEN POSITION) AND FITTINGS (AS REQUIRED) AND CONNECT TO EX. MAIN.
4. OPEN ALL VALVES, INSTALL THRUST BLOCK AND STRAP VALVE TO BLOCK.
5. ALL CONCRETE SHALL REACH 28 DAY STRENGTH AS SHOWN BY CYLINDERS BEFORE UTILIZING AS THRUST RESTRAINT OR CLOSING NEW VALVE.
6. CLOSE VALVE.
7. COMPLETE REPAIR/INSTALLATION, RESTORE AREA, OPEN NEW VALVE, AND GO TO THE NEXT SECTION.

PHASING LEGEND:

- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- PHASE 5
- PHASE 6

- EXISTING WATER — W — W —
- PROPOSED WATER — W — W —
- EXISTING R.O.W. — — — —
- EXISTING PROPERTY LINE

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 100'
100' 0 100' 200'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

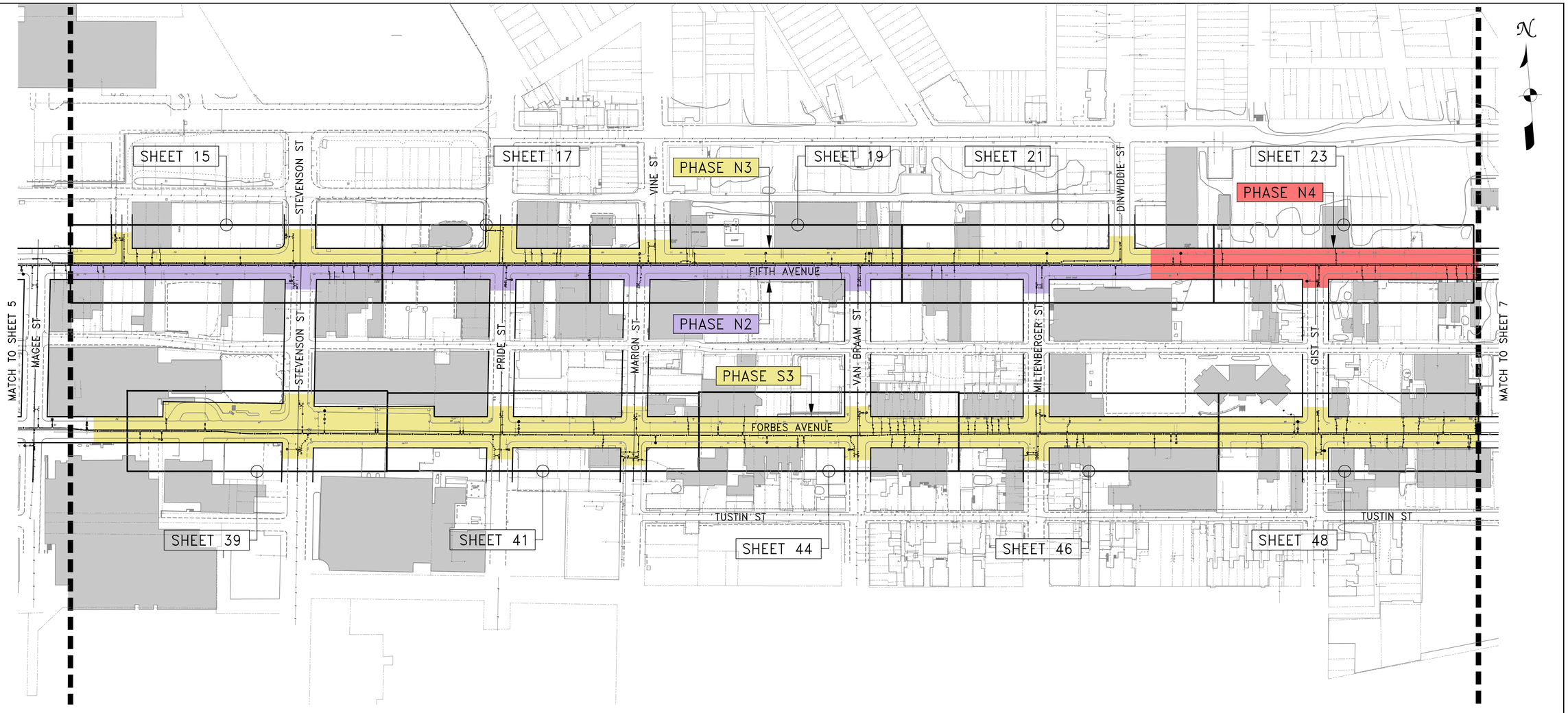
PHASING PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 5 OF 166
ACCESSION NO. _____
CASE NO. _____

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PHASING LEGEND:

PHASE 1	EXISTING WATER — W — W —
PHASE 2	PROPOSED WATER — W — W —
PHASE 3	EXISTING R.O.W.
PHASE 4	EXISTING PROPERTY LINE
PHASE 5	
PHASE 6	

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT. SRVS/SB — DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

SCALE: 1" = 100'
100' 0 100' 200'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — DAVID W. TROIANOS — ENGINEER PE-048643-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PHASING PLAN

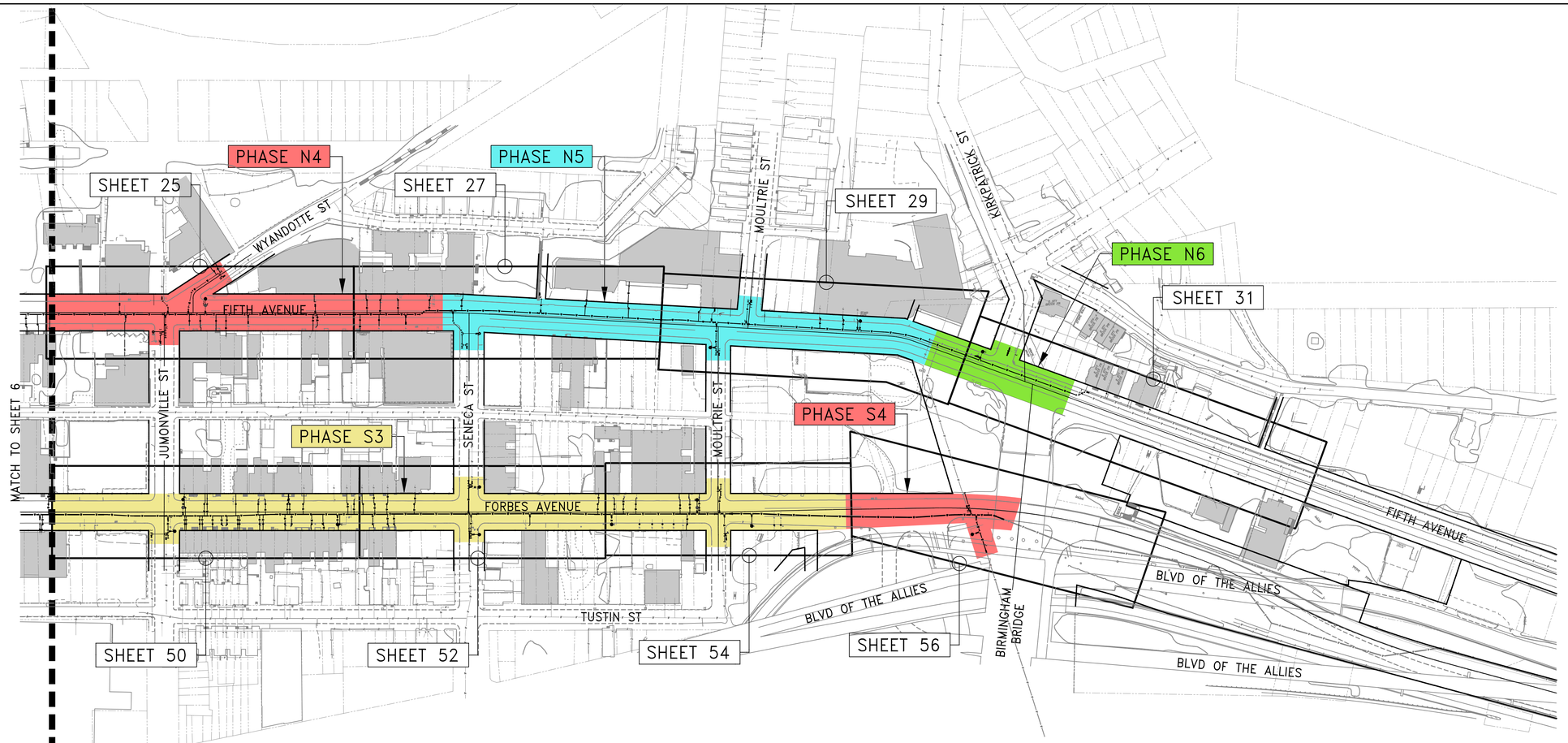
SCALE: AS NOTED — SHEET NO. 6 OF 166 — ACCESSION NO. _____

DATE: JANUARY, 2021 — CASE NO. _____

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PHASING LEGEND:

PHASE 1	EXISTING WATER — W — W —
PHASE 2	PROPOSED WATER — W — W —
PHASE 3	EXISTING R.O.W.
PHASE 4	EXISTING PROPERTY LINE
PHASE 5	
PHASE 6	

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR ____ DATE ____

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

SCALE: 1" = 100'
100' 0 100' 200'

REVISIONS

CHARACTER	DATE

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — DAVID W. TROIANOS — ENGINEER — RE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

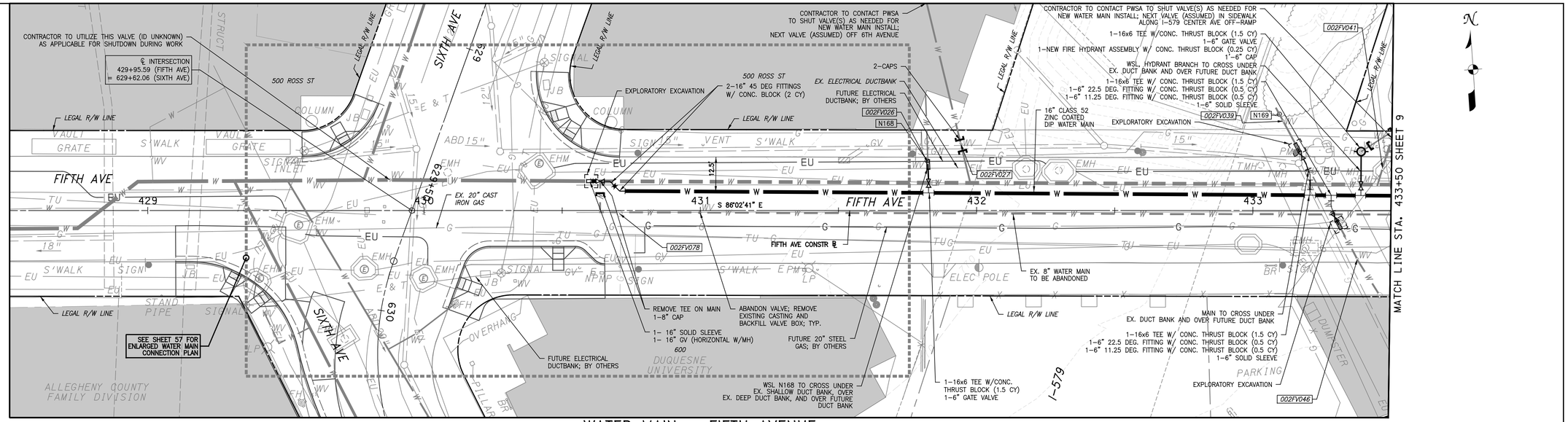
PHASING PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 7 OF 166
ACCESSION NO. ____
CASE NO. ____

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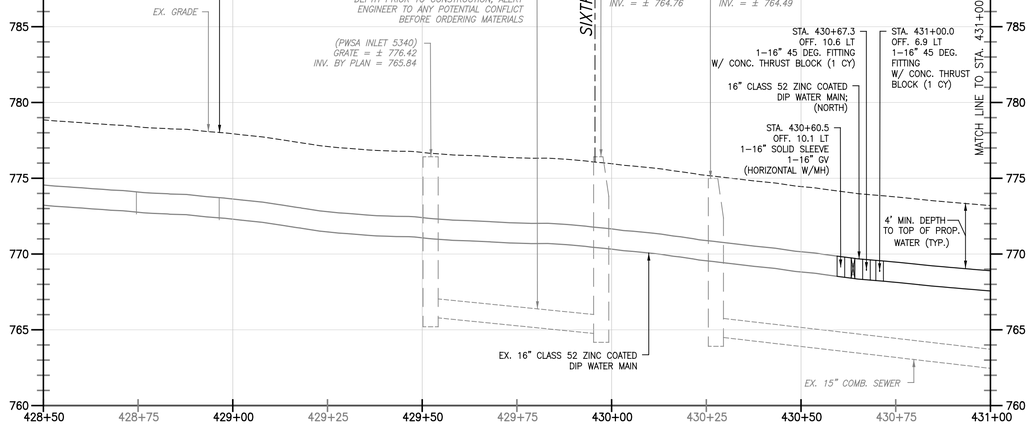
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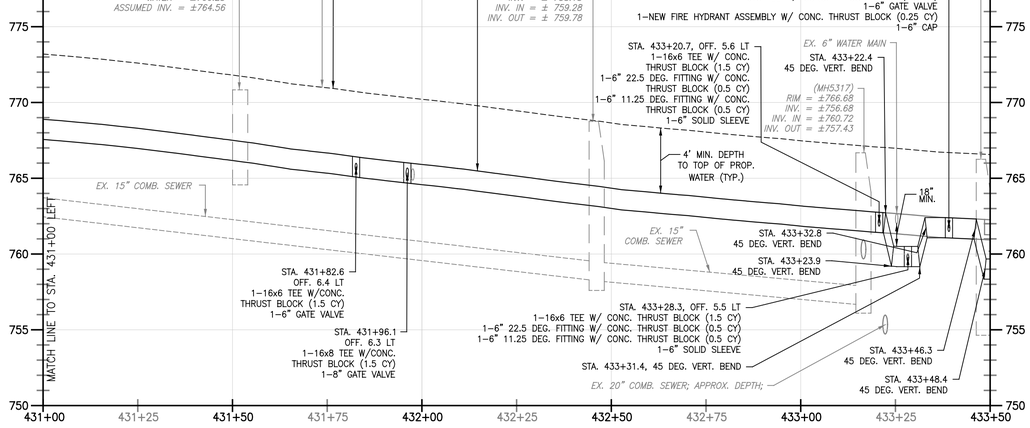
WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 428+50 TO 431+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 431+00 TO 433+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVS/SR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

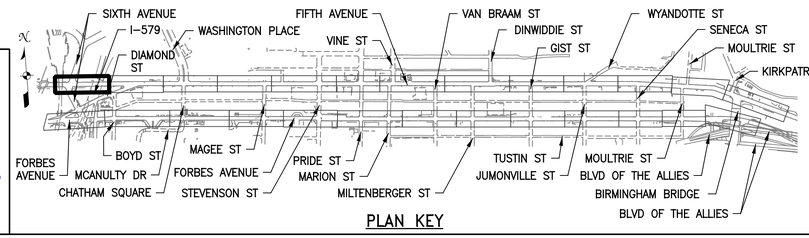
CALC. BOOK PG.

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FIFTH AVENUE

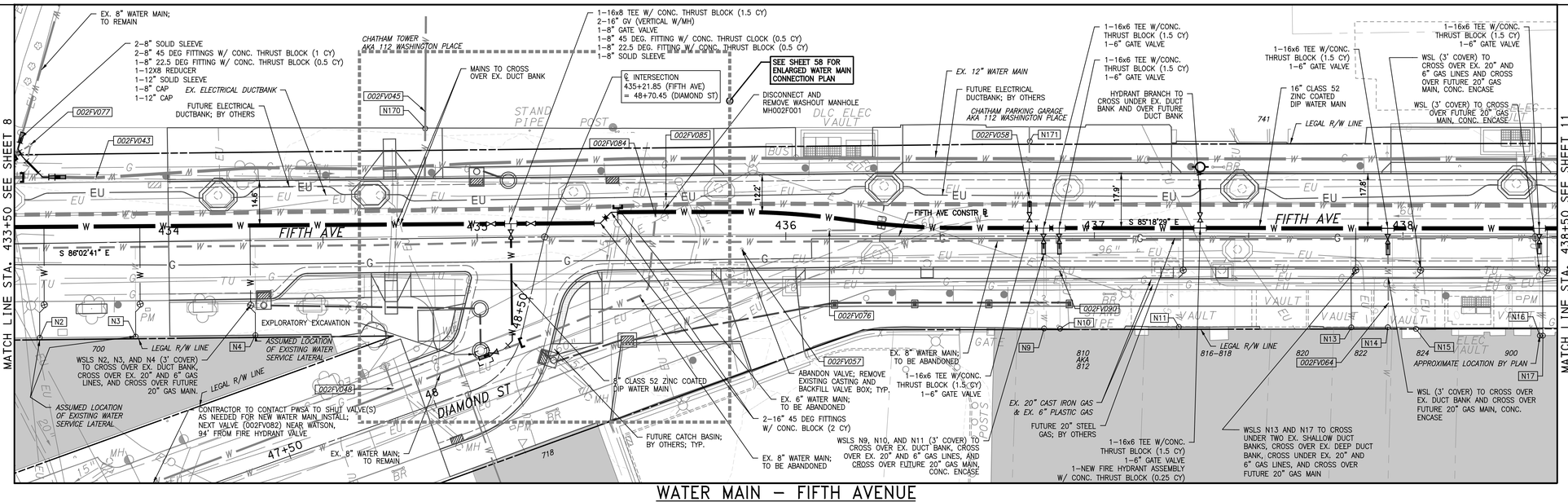
SCALE: AS NOTED SHEET NO. 8 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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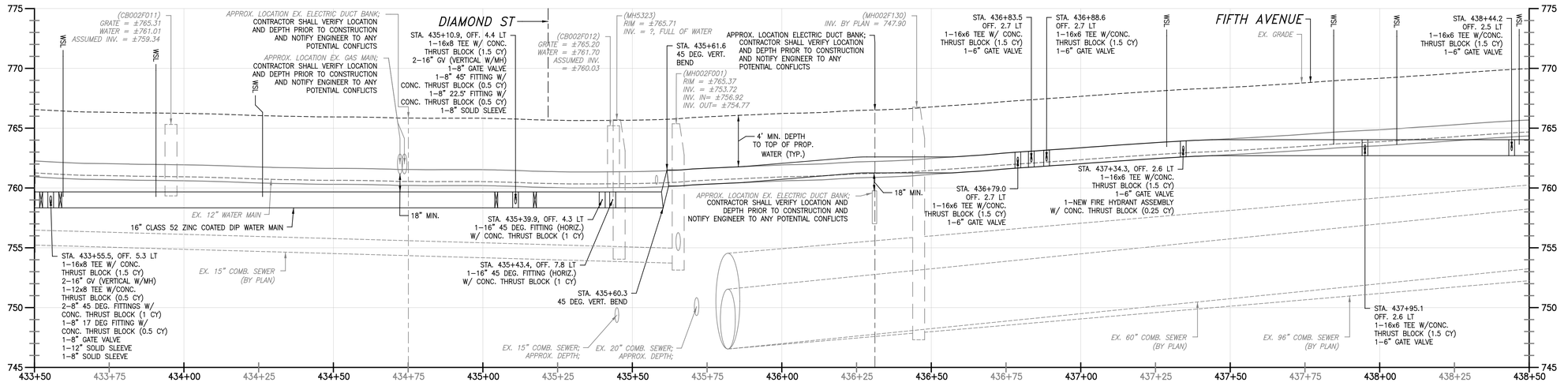
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WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 433+50 TO 438+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

PROFILE HORIZ. SCALE: 1" = 20'

PROFILE VERT. SCALE: 1" = 5'

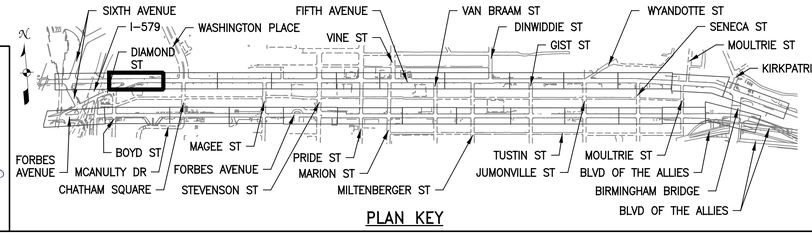
REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

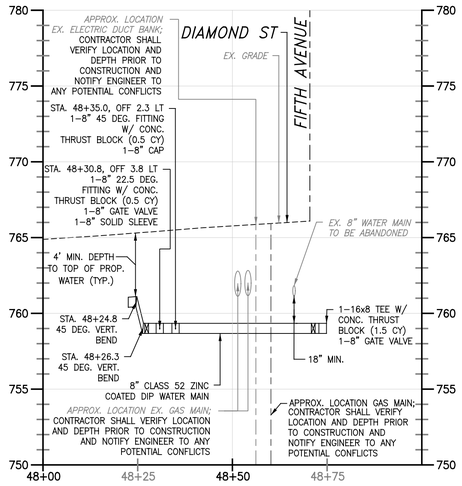
SCALE: AS NOTED SHEET NO. 9 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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WATER MAIN PROFILE – DIAMOND STREET 48+00 TO 48+70.45

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of lines and facilities, or assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

6:38:05 PM
1/12/2021

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

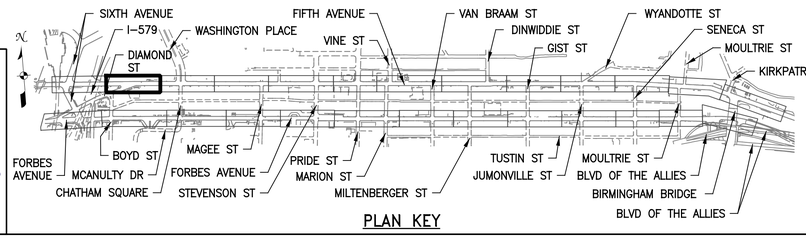
PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

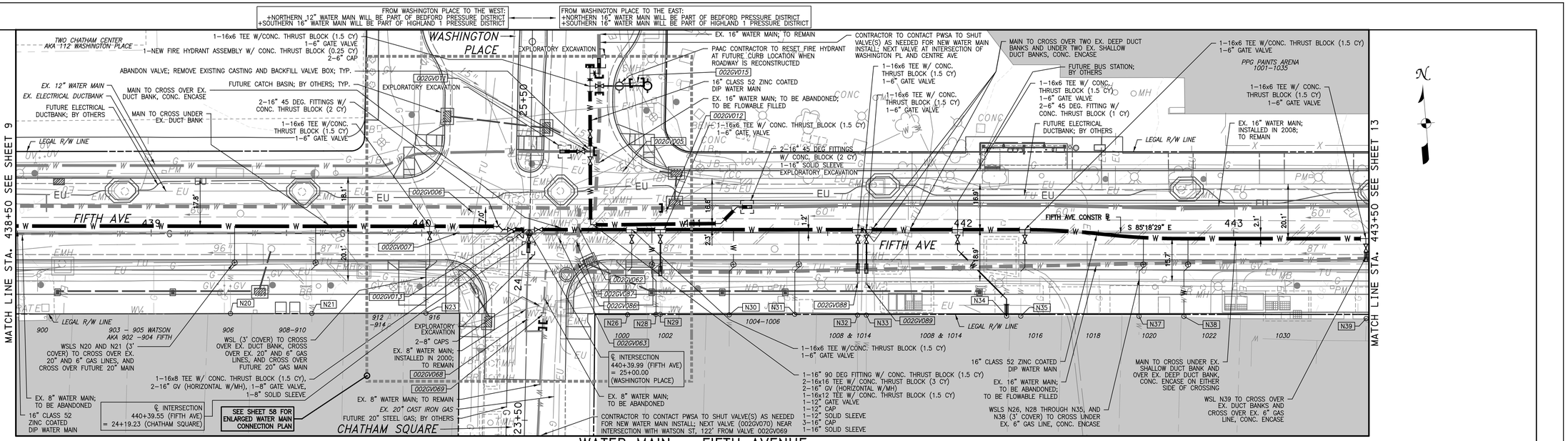
WATER DISTRIBUTION IMPROVEMENTS

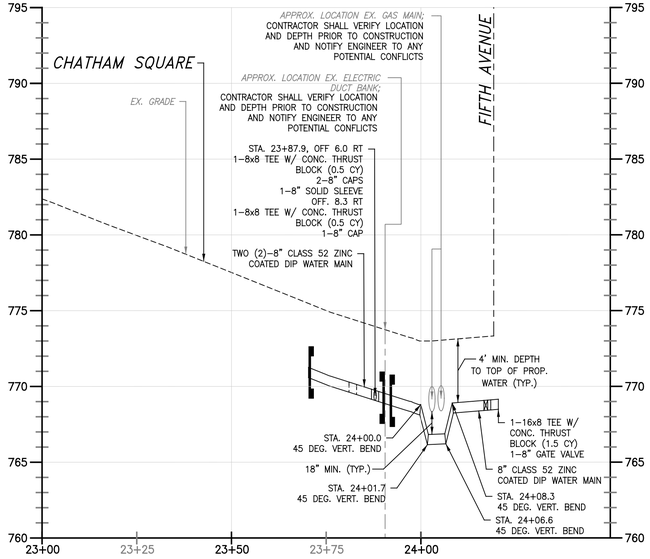
FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

SCALE: AS NOTED SHEET NO. 10 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

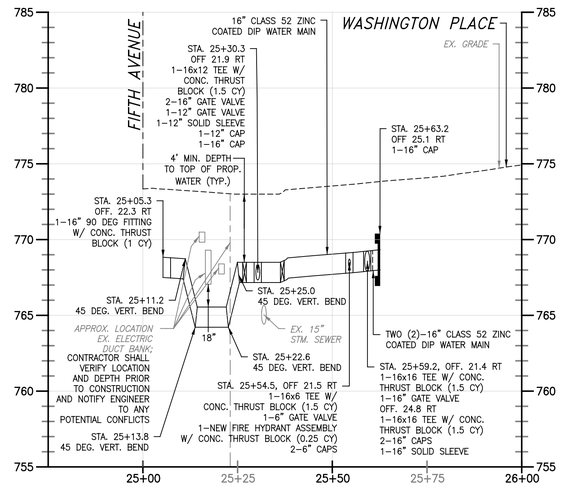
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FROM WASHINGTON PLACE TO THE WEST:
+NORTHERN 12" WATER MAIN WILL BE PART OF BEDFORD PRESSURE DISTRICT
+SOUTHERN 16" WATER MAIN WILL BE PART OF HIGHLAND 1 PRESSURE DISTRICT
FROM WASHINGTON PLACE TO THE EAST:
+NORTHERN 16" WATER MAIN WILL BE PART OF BEDFORD PRESSURE DISTRICT
+SOUTHERN 16" WATER MAIN WILL BE PART OF HIGHLAND 1 PRESSURE DISTRICT
MATCH LINE STA. 438+50 SEE SHEET 9
MATCH LINE STA. 443+50 SEE SHEET 13
WASHINGTON PLACE
FIFTH AVE
CHATHAM SQUARE
TWO CHATHAM CENTER AKA 112 WASHINGTON PLACE
1-16x6 TEE W/CONC. THRUST BLOCK (1.5 CY)
1-6" GATE VALVE
1-NEW FIRE HYDRANT ASSEMBLY W/ CONC. THRUST BLOCK (0.25 CY)
2-6" CAP
ABANDON VALVE; REMOVE EXISTING CASTING AND BACKFILL VALVE BOX; TYP.
EX. 12" WATER MAIN
EX. ELECTRICAL DUCTBANK
FUTURE ELECTRICAL DUCTBANK; BY OTHERS
FUTURE CATCH BASIN; BY OTHERS; TYP.
MAIN TO CROSS OVER EX. DUCT BANK, CONC. ENCASE
MAIN TO CROSS UNDER EX. DUCT BANK
2-16" 45 DEG. FITTINGS W/ CONC. THRUST BLOCK (2 CY)
1-16x6 TEE W/CONC. THRUST BLOCK (1.5 CY)
1-6" GATE VALVE
LEGAL R/W LINE
EXPLORATORY EXCAVATION
EX. 16" WATER MAIN; TO REMAIN
PAAC CONTRACTOR TO RESET FIRE HYDRANT AT FUTURE CURB LOCATION WHEN ROADWAY IS RECONSTRUCTED
16" CLASS 52 ZINC COATED DIP WATER MAIN
EX. 16" WATER MAIN; TO BE ABANDONED; TO BE FLOWABLE FILLED
2-16" 45 DEG FITTINGS W/ CONC. BLOCK (2 CY)
1-16" SOLID SLEEVE
CONTRACTOR TO CONTACT PWSA TO SHUT VALVE(S) AS NEEDED FOR NEW WATER MAIN INSTALL; NEXT VALVE AT INTERSECTION OF WASHINGTON PL AND CENTRE AVE
MAIN TO CROSS OVER TWO EX. DEEP DUCT BANKS AND UNDER TWO EX. SHALLOW DUCT BANKS, CONC. ENCASE
FUTURE BUS STATION; BY OTHERS
PPG PAINTS ARENA 1001-1035
EX. 16" WATER MAIN; INSTALLED IN 2008; TO REMAIN
FIFTH AVE CONSTR ℄
S 85°18'29" E
℄ INTERSECTION 440+39.99 (FIFTH AVE) = 25+00.00 (WASHINGTON PLACE)
℄ INTERSECTION 440+39.55 (FIFTH AVE) = 24+19.23 (CHATHAM SQUARE)
SEE SHEET 58 FOR ENLARGED WATER MAIN CONNECTION PLAN
WSLS N20 AND N21 (3' COVER) TO CROSS OVER EX. 20" AND 6" GAS LINES, AND CROSS OVER FUTURE 20" MAIN
WSL (3' COVER) TO CROSS OVER EX. DUCT BANK, CROSS OVER EX. 20" AND 6" GAS LINES, AND CROSS OVER FUTURE 20" GAS MAIN
1-16x8 TEE W/ CONC. THRUST BLOCK (1.5 CY), 2-16" GV (HORIZONTAL W/MH), 1-8" GATE VALVE, 1-8" SOLID SLEEVE
EX. 8" WATER MAIN; TO BE ABANDONED
16" CLASS 52 ZINC COATED DIP WATER MAIN
EXPLORATORY EXCAVATION 2-8" CAPS
EX. 8" WATER MAIN; INSTALLED IN 2000; TO REMAIN
EX. 8" WATER MAIN; TO REMAIN
EX. 20" CAST IRON GAS
FUTURE 20" STEEL GAS; BY OTHERS
EX. 8" WATER MAIN; TO BE ABANDONED
CONTRACTOR TO CONTACT PWSA TO SHUT VALVE(S) AS NEEDED FOR NEW WATER MAIN INSTALL; NEXT VALVE (002GV070) NEAR INTERSECTION WITH WATSON ST, 122' FROM VALVE 002GV069
1-16x6 TEE W/CONC. THRUST BLOCK (1.5 CY)
1-6" GATE VALVE
1-16" 90 DEG FITTING W/ CONC. THRUST BLOCK (3 CY)
2-16x16 TEE W/ CONC. THRUST BLOCK (3 CY)
2-16" GV (HORIZONTAL W/MH)
1-16x12 TEE W/ CONC. THRUST BLOCK (1.5 CY)
1-12" GATE VALVE
1-12" CAP
1-12" SOLID SLEEVE
3-16" CAP
1-16" SOLID SLEEVE
16" CLASS 52 ZINC COATED DIP WATER MAIN
EX. 16" WATER MAIN; TO BE FLOWABLE FILLED
WSLS N26, N28 THROUGH N35, AND N38 (3' COVER) TO CROSS UNDER EX. 6" GAS LINE, CONC. ENCASE
MAIN TO CROSS UNDER EX. SHALLOW DUCT BANK AND OVER EX. DEEP DUCT BANK, CONC. ENCASE ON EITHER SIDE OF CROSSING
WSL N39 TO CROSS OVER EX. DUCT BANKS AND CROSS OVER EX. 6" GAS LINE, CONC. ENCASE
FUTURE ELECTRICAL DUCTBANK; BY OTHERS
EX. 87" COMB. SEWER
EX. 60" COMB. SEWER
EX. 36" COMB. SEWER
EX. 15" STM. SEWER
EX. 96" COMB. SEWER (BY PLAN)
EX. 60" COMB. SEWER (BY PLAN)
EX. 87" COMB. SEWER (BY PLAN)
EX. 60" COMB. SEWER (BY PLAN)
EX. 12" WATER MAIN
EX. 8" WATER MAIN
EX. 16" WATER MAIN; TO BE ABANDONED
TWO (2)-16" CLASS 52 ZINC COATED DIP WATER MAIN
APPROX. LOCATION EX. GAS MAIN; CONTRACTOR SHALL VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER TO ANY POTENTIAL CONFLICTS
APPROX. LOCATION EX. ELECTRIC DUCT BANK; CONTRACTOR SHALL VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER TO ANY POTENTIAL CONFLICTS
STA. 440+02.9 OFF. 2.4 LT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
STA. 440+28.6, OFF. 2.4 LT 1-16" 45 DEG FITTING (HORIZ.) W/ CONC. THRUST BLOCK (1.5 CY)
STA. 440+29.7, OFF. 1.3 LT 1-16" 45 DEG FITTING (HORIZ.) W/ CONC. THRUST BLOCK (1.5 CY)
STA 440+62.3, OFF. 5.0 LT 1-16" 90 DEG FITTING W/ CONC. THRUST BLOCK (1.5 CY) 2- 16" GV (HORIZONTAL W/MH)
STA. 440+64.4 45 DEG. VERT. BEND
STA. 440+68.8 45 DEG. VERT. BEND
STA. 440+77.6 OFF. 1.2 LT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
STA. 440+88.2 OFF. 1.2 LT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
STA 441+10.6 OFF. 3.5 LT 1-16" 45 DEG FITTING (HORIZ.) W/ CONC. THRUST BLOCK (1 CY)
STA 441+16.5 OFF. 9.5 LT 1-16" 45 DEG FITTING (HORIZ.) W/ CONC. THRUST BLOCK (1 CY)
STA 441+20.3 OFF 9.6 LT 1-16" SOLID SLEEVE END 16" CLASS 52 ZINC COATED DIP WATER MAIN (NORTH)
STA. 441+61.2, OFF. 1.2 LT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
STA. 441+64.3, OFF. 1.2 LT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
STA. 442+16.1 OFF. 1.2 LT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
STA. 442+22.9, OFF. 1.2 LT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
4' MIN. DEPTH TO TOP OF PROP. WATER (TYP.)
16" CLASS 52 ZINC COATED DIP WATER MAIN
STA. 443+48.9 OFF. 2.1 RT 1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
APPROX. LOCATION EX. ELECTRIC DUCT BANK; CONTRACTOR SHALL VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER TO ANY POTENTIAL CONFLICTS
1-16x6 TEE W/CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE
2-16" 45 DEG. FITTING W/ CONC. THRUST BLOCK (1 CY)
1-16x6 TEE W/ CONC. THRUST BLOCK (1.5 CY) 1-6" GATE VALVE



WATER MAIN PROFILE – CHATHAM SQUARE 23+00 TO 24+19.23 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – WASHINGTON PLACE 25+00 TO 26+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

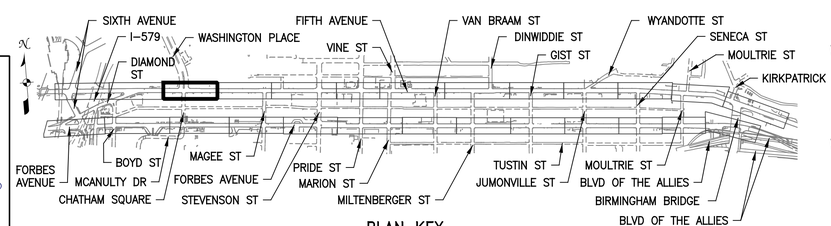
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REVIEWED FOR CONSTRUCTABILITY				
CONSTRUCTION MGMNT SPRVSR			DATE	
FIELD DATA	DRAWN	SUPERVSD.	CHARACTER	DATE
BY	F.PENDEL	J.FELLO		
VOL.				
CHECKED	INSPECT'D	CKD.-CONST.		
CALC. BOOK		PG.		

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

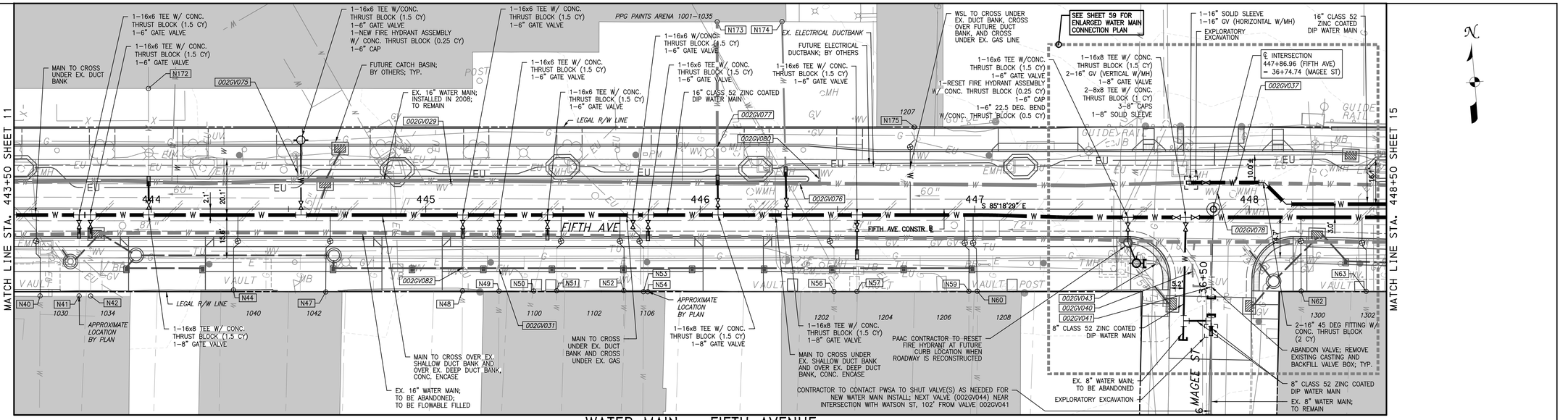
SCALE: AS NOTED SHEET NO. 12 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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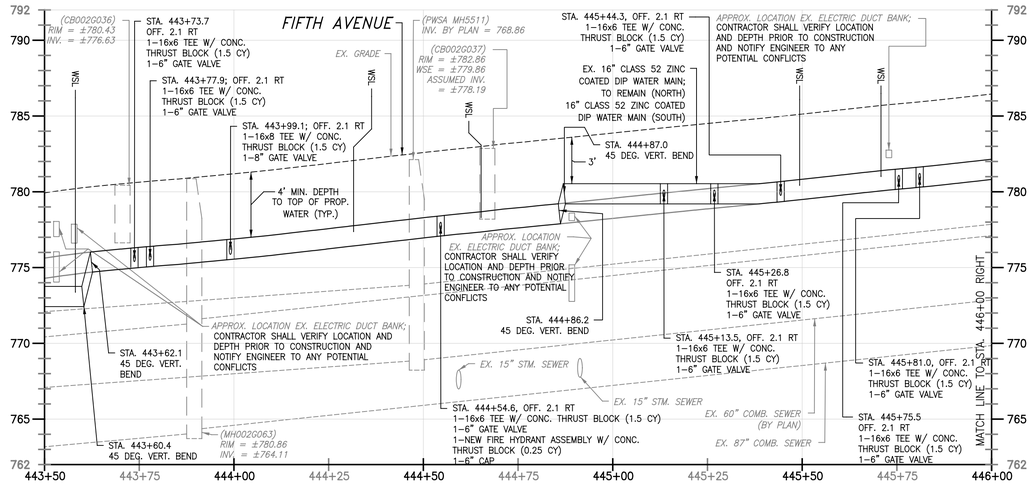
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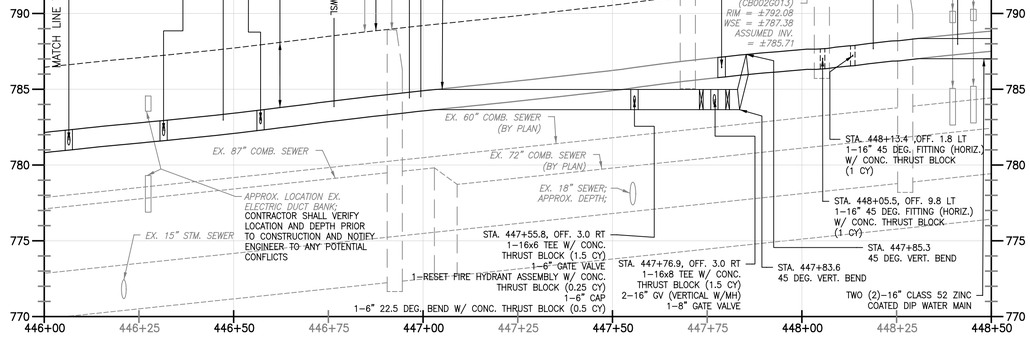
WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 443+50 TO 446+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 446+00 TO 448+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

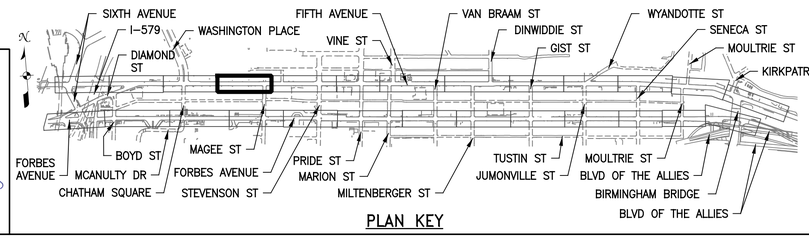
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CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-084843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

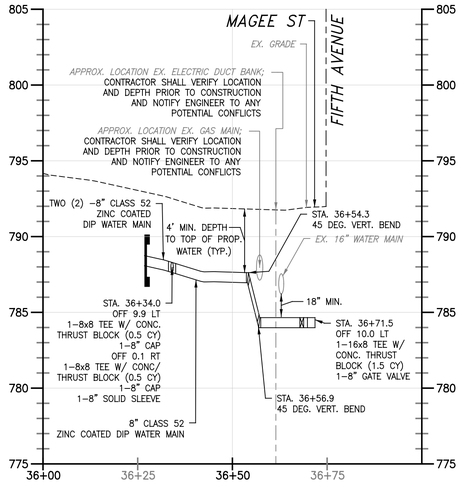
SCALE: AS NOTED SHEET NO. 13 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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WATER MAIN PROFILE – MAGEE STREET 36+00 TO 36+74.74

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

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PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

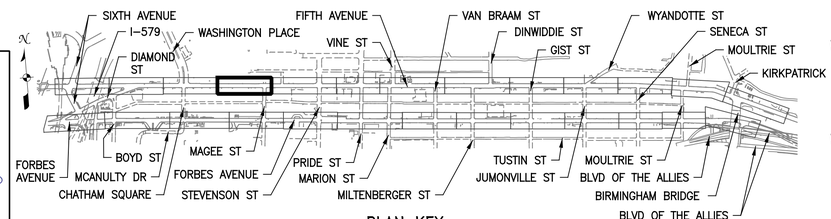
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

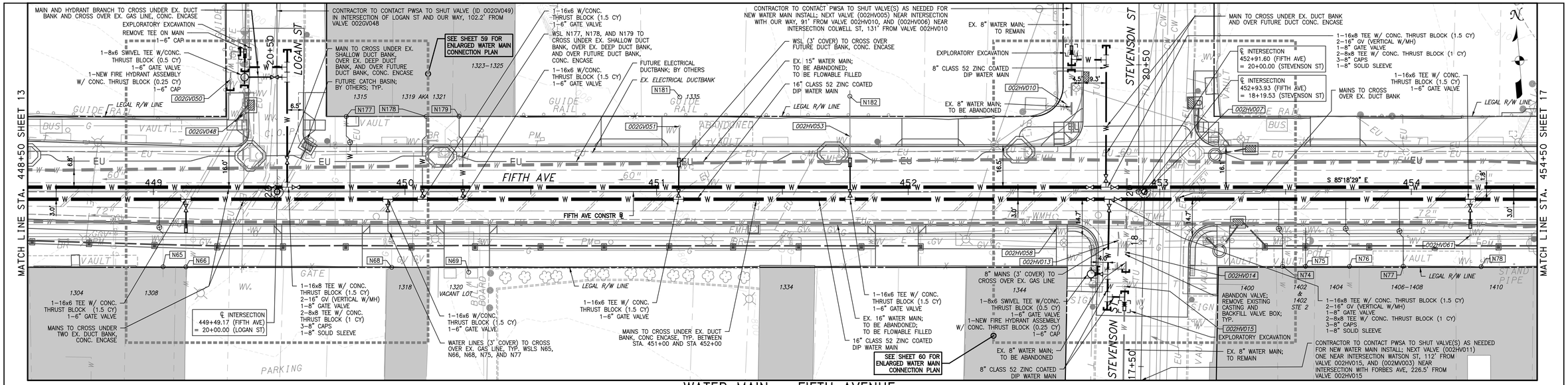
FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS

PLAN & PROFILE

SCALE: AS NOTED SHEET NO. 14 OF 166 ACCESSION NO. _____

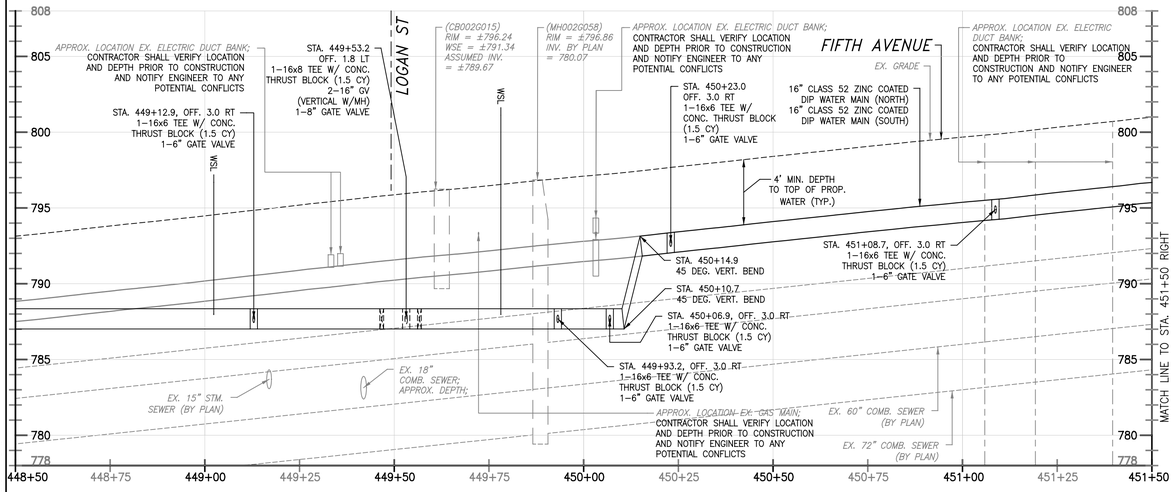
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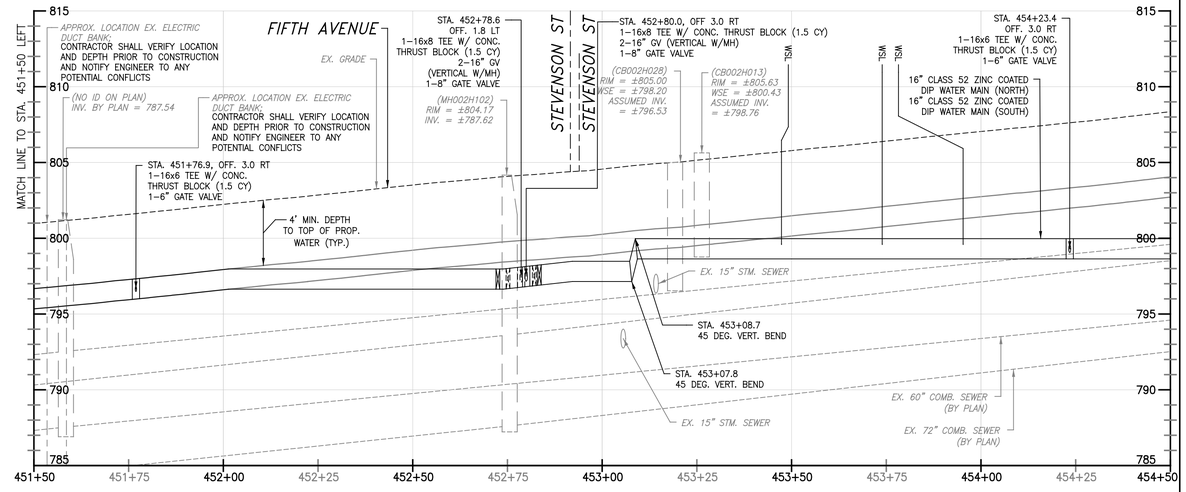
WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 448+50 TO 451+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 451+50 TO 454+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVS/SR — DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
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CHECKED	INSPECT'D	CKD.-CONST.

CALC. BOOK PG.

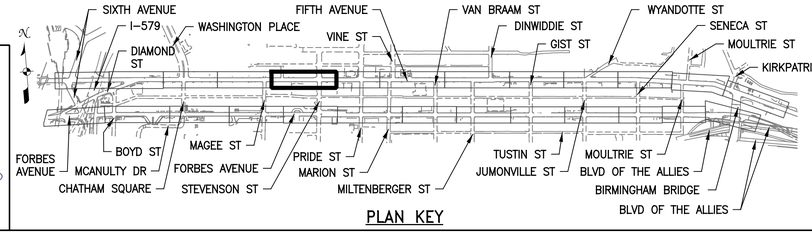
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FIFTH AVENUE

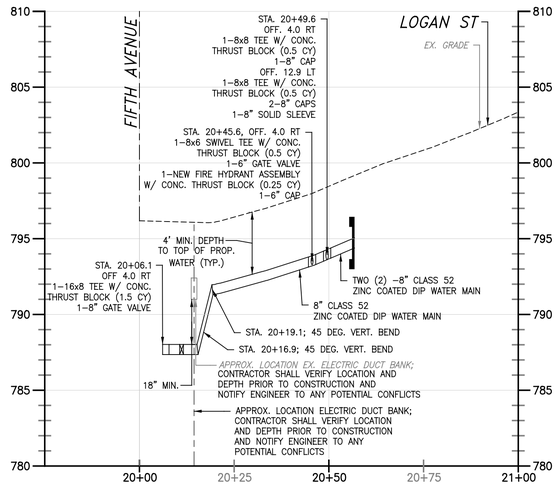
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DATE: JANUARY, 2021 CASE NO. _____

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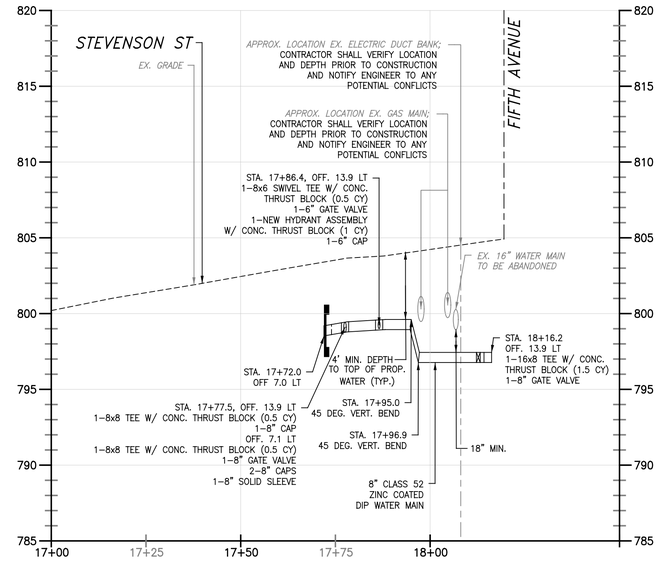
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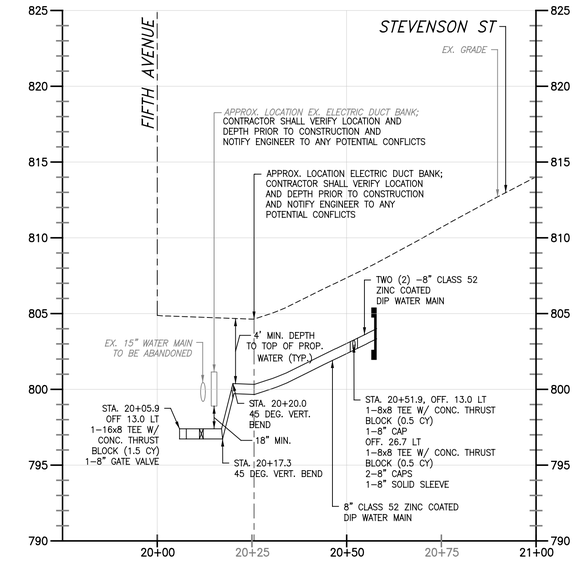
WATER MAIN PROFILE – LOGAN STREET 20+00 TO 21+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – STEVENSON STREET 17+00 TO 18+19.53 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – STEVENSON STREET 20+00 TO 21+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

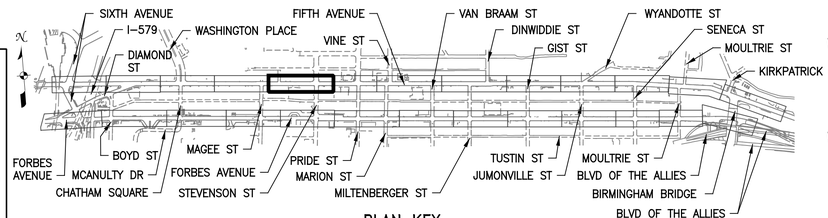
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FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-044843-E
1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

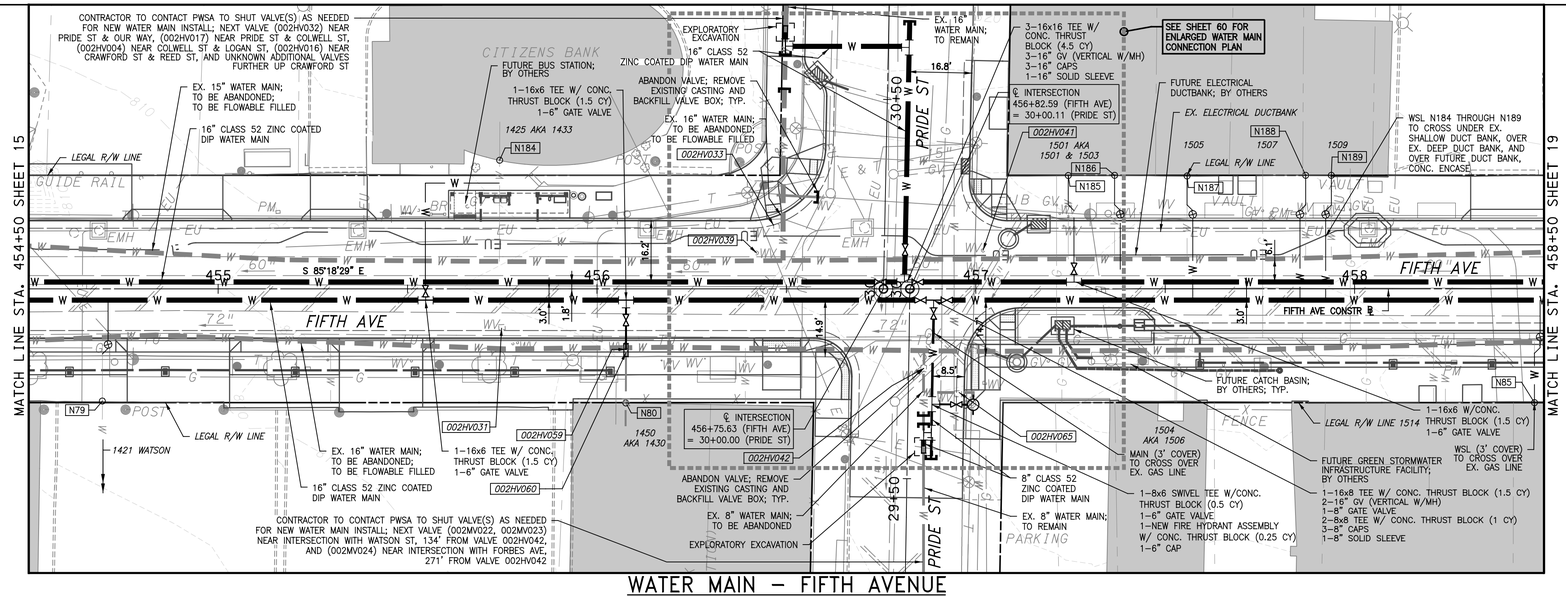
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DATE: JANUARY, 2021 16 OF 166 CASE NO. _____

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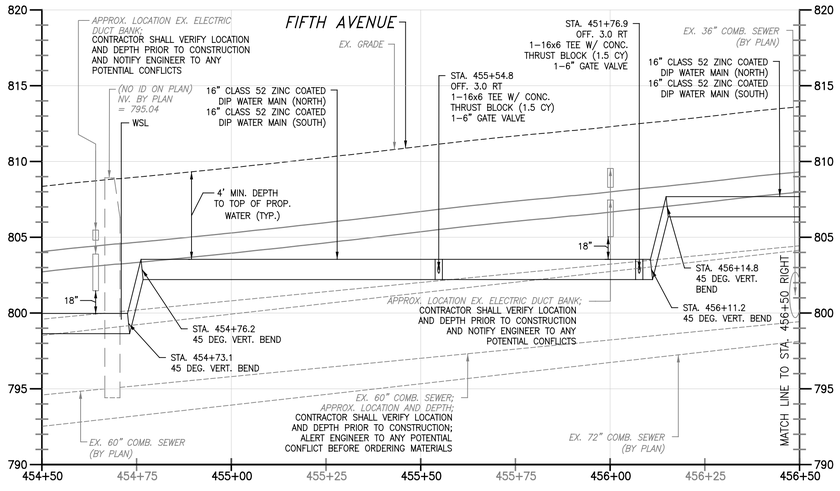
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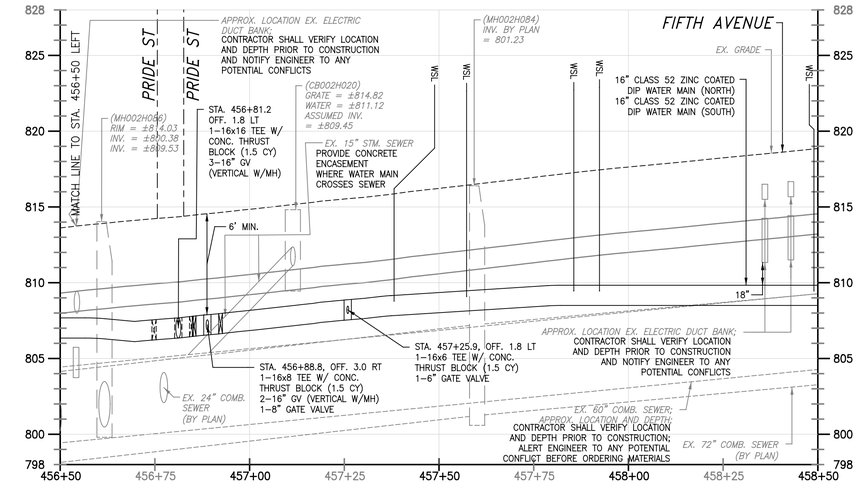
WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 454+50 TO 456+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 456+50 TO 458+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

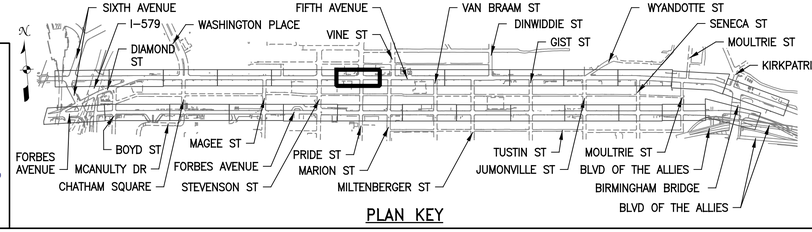
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CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

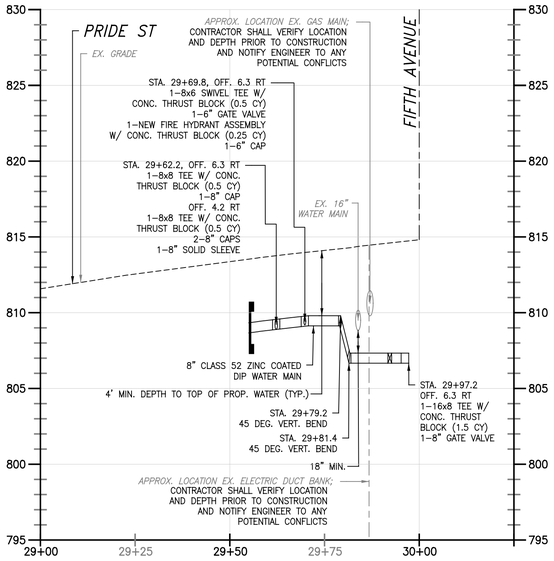
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DATE: JANUARY, 2021 CASE NO. _____

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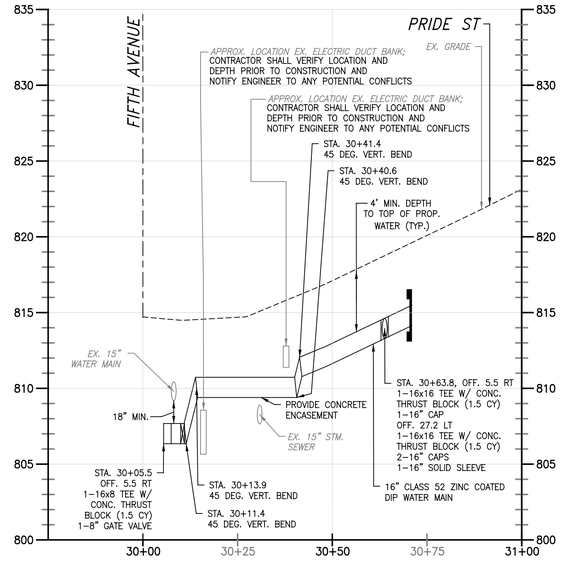
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WATER MAIN PROFILE – PRIDE STREET 29+00 TO 30+00.11 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – PRIDE STREET 30+00 TO 31+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
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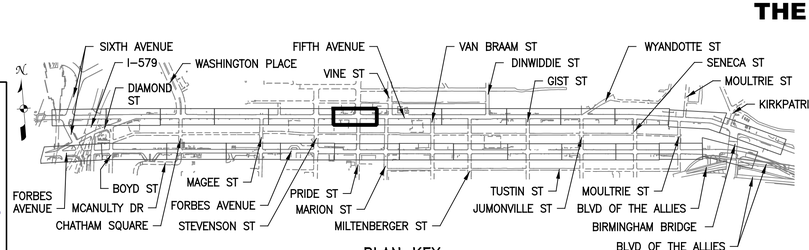
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

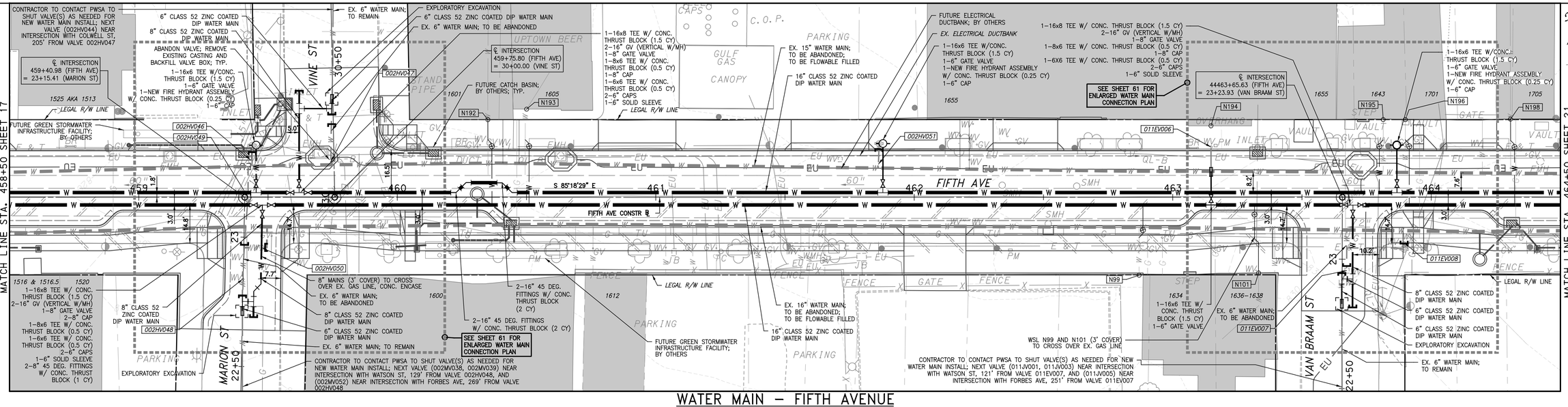
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DATE: JANUARY, 2021 CASE NO. _____

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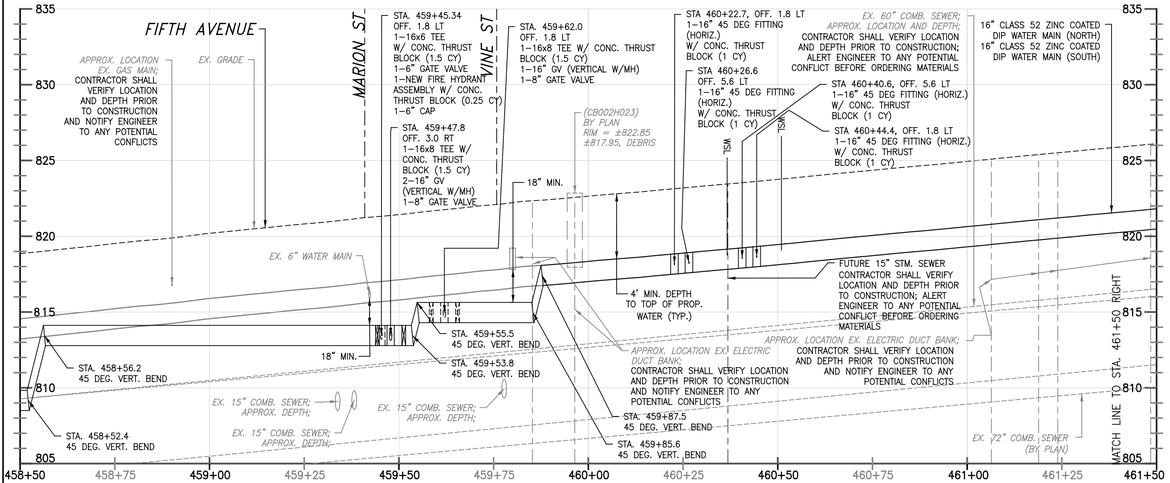
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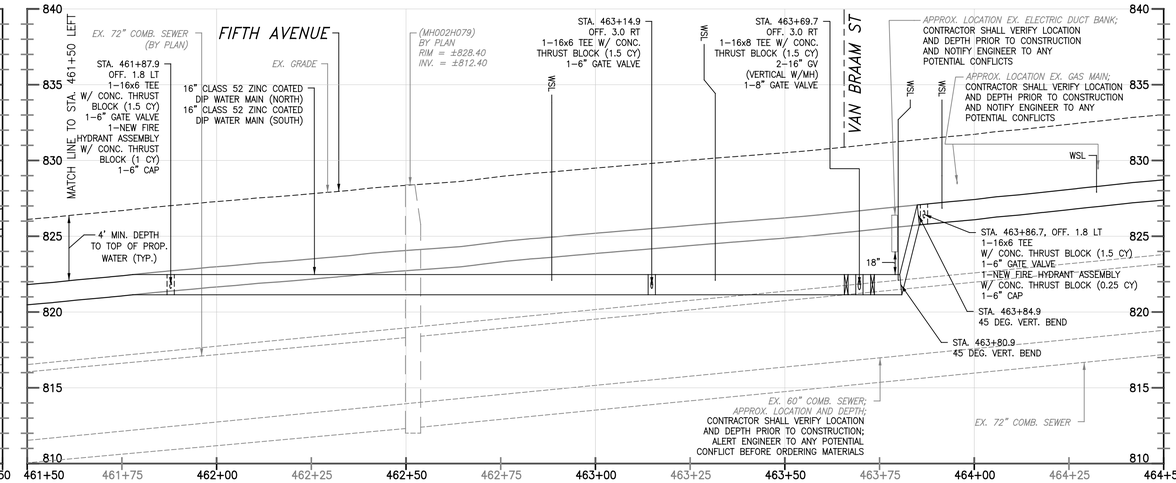
WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 458+50 TO 461+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 461+50 TO 464+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
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CALC. BOOK		PG.	

REVISIONS

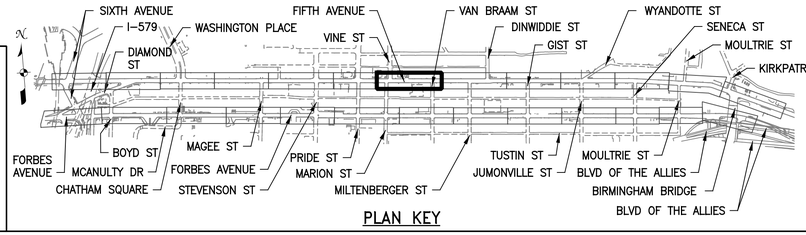
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

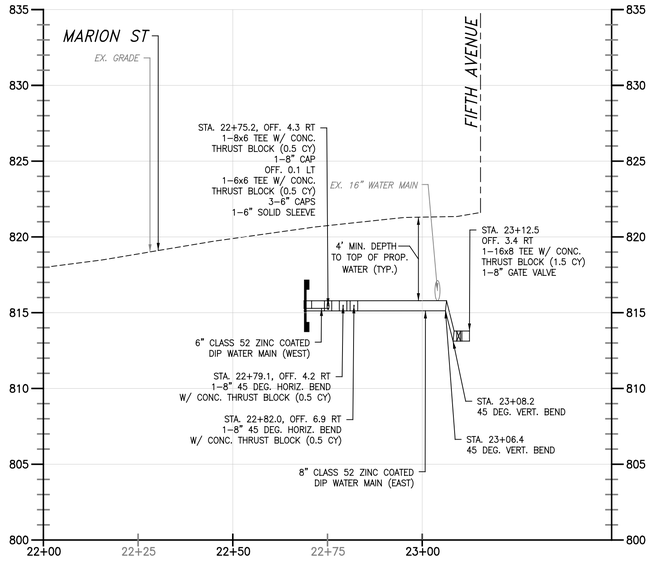
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DATE: JANUARY, 2021 CASE NO. _____

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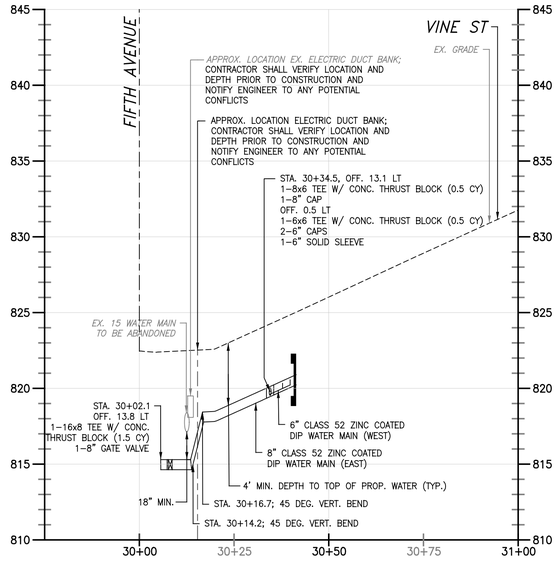
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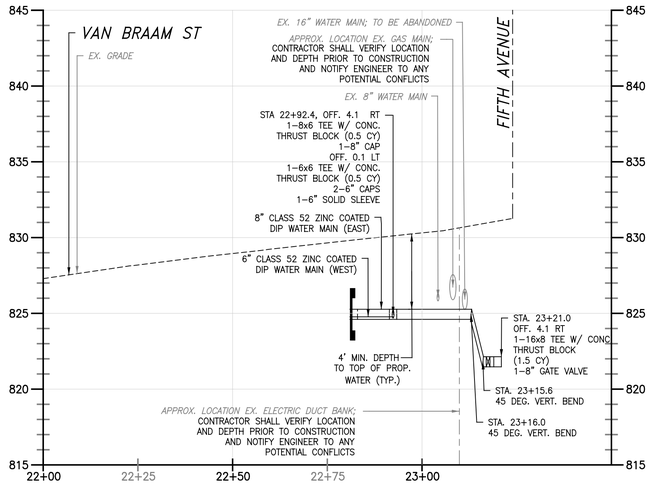
WATER MAIN PROFILE – MARION STREET 22+00 TO 23+15.41

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – VINE STREET 30+00 TO 31+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – VAN BRAAM STREET 22+00 TO 23+23.93

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

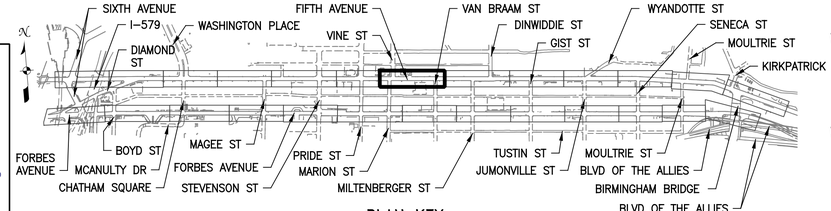
REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROJANOS
ENGINEER
PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS

PLAN & PROFILE

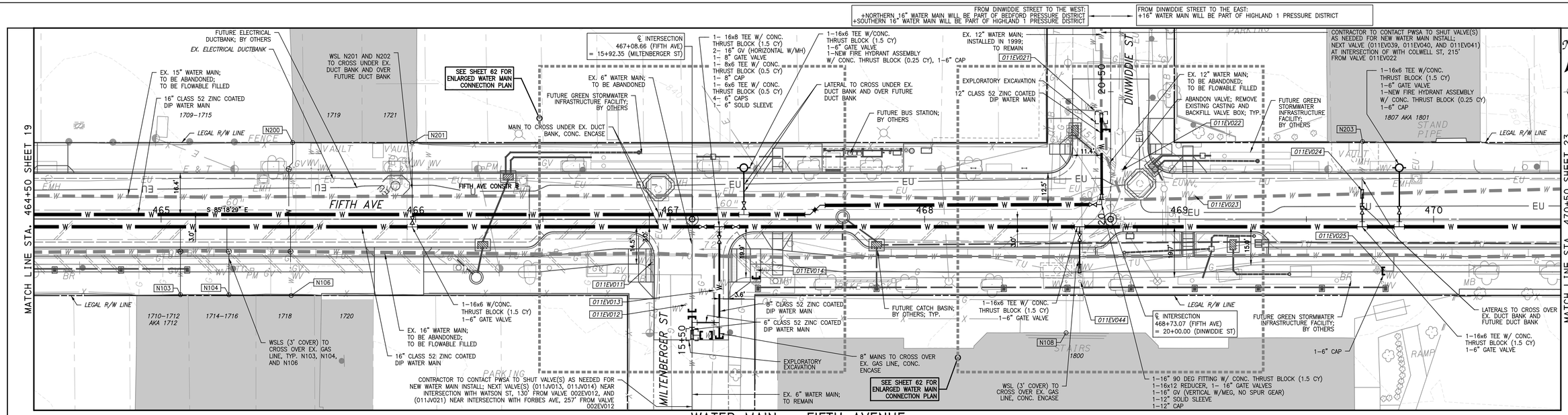
SCALE: AS NOTED SHEET NO. 20 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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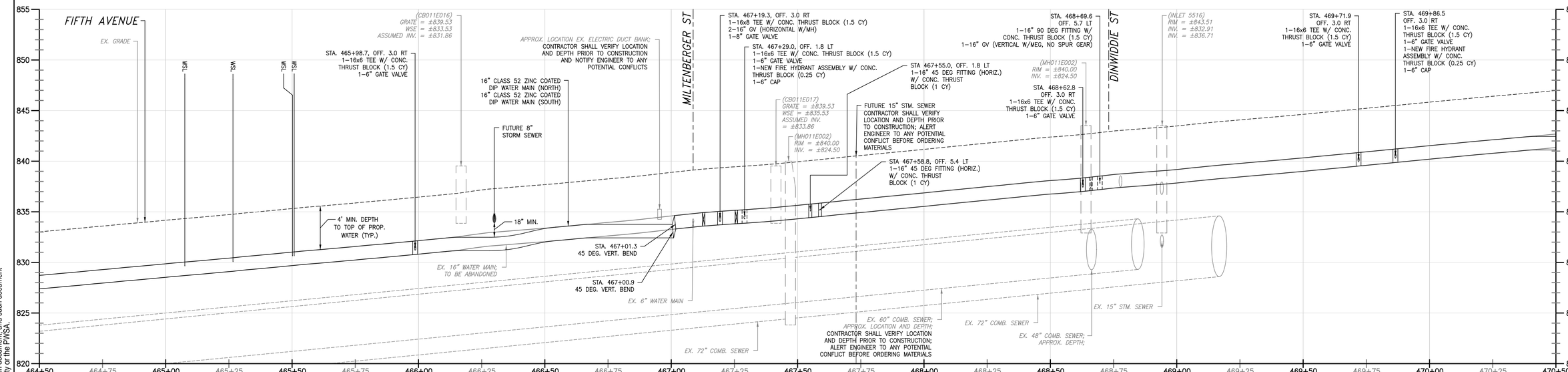
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WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 464+50 TO 470+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

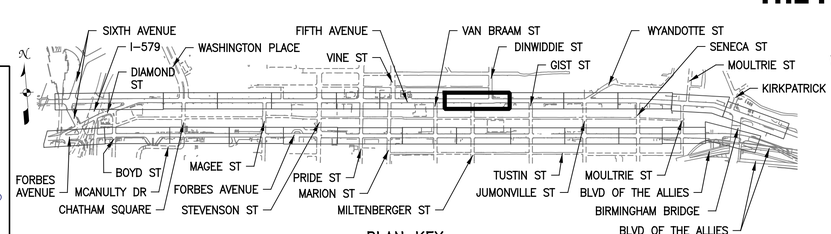
PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS			
REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	CHARACTER	DATE
BY	F.PENDEL	J.FELLO		
VOL.				
CHECKED	INSPECT'D	CKD.-CONST.		
CALC. BOOK		PG.		

DESIGNED BY:
gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E
1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

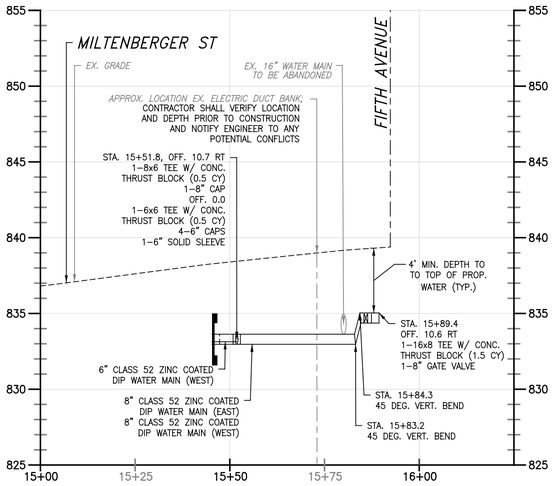
SCALE: AS NOTED SHEET NO. 21 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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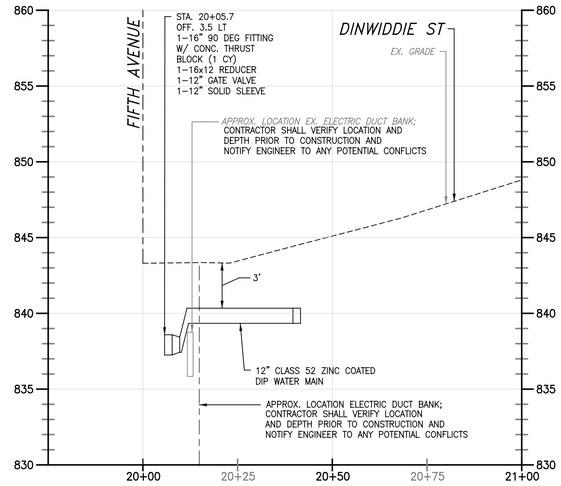
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WATER MAIN PROFILE – MILTENBERGER STREET 15+00 TO 15+92.35

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – DINWIDDIE STREET 20+00 TO 21+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

CHARACTER	DATE

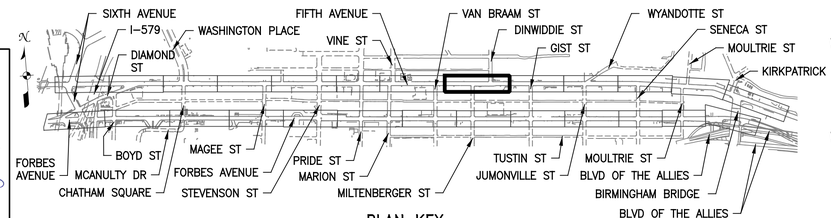
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

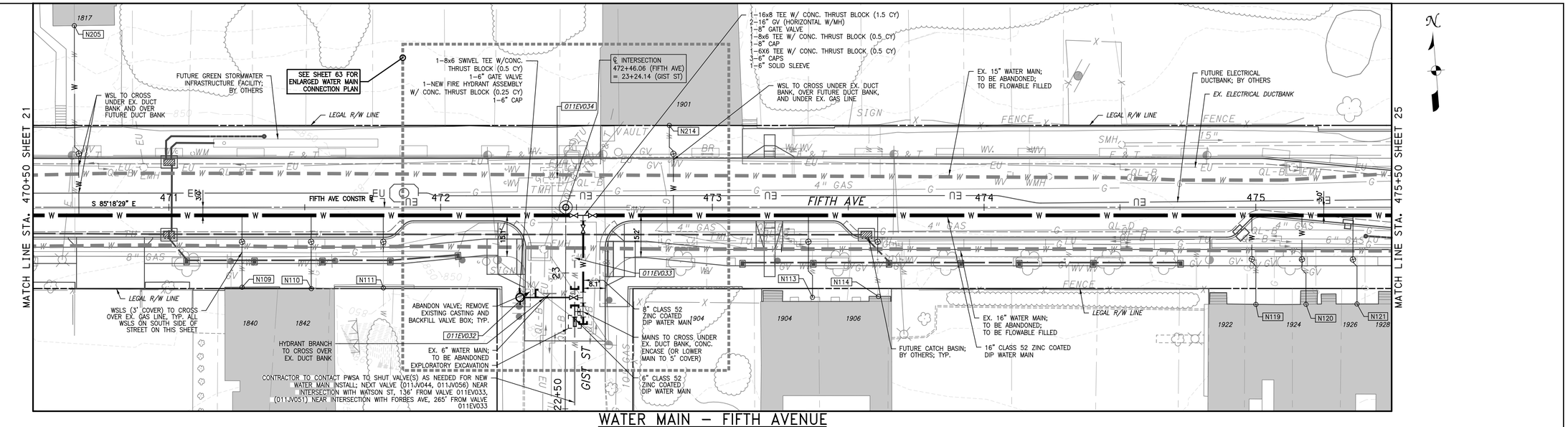
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DATE: JANUARY, 2021 CASE NO. _____

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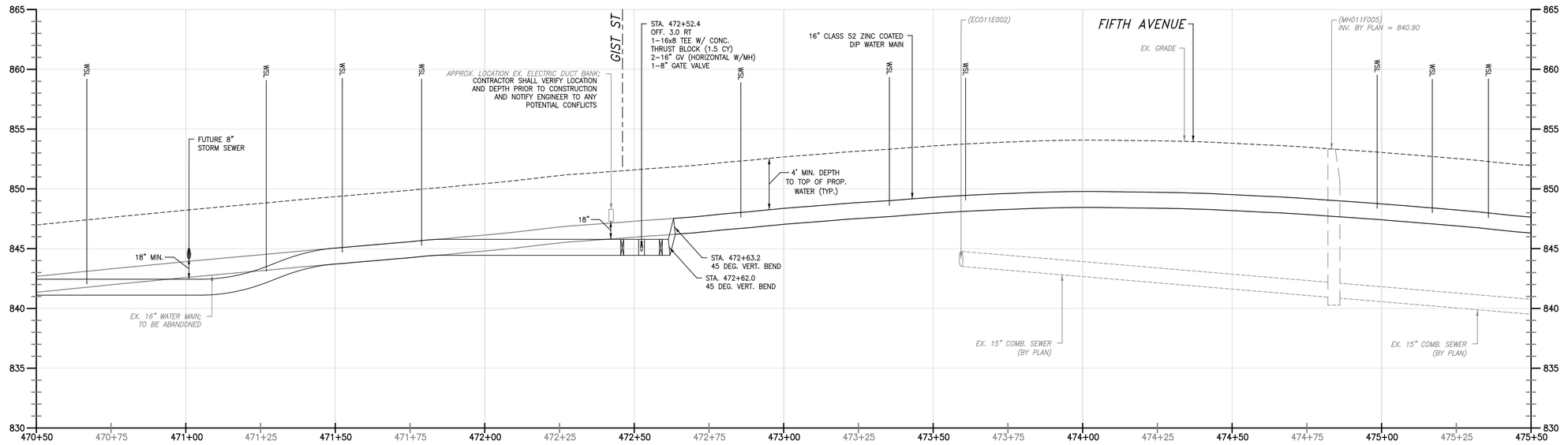
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WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 470+50 TO 475+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

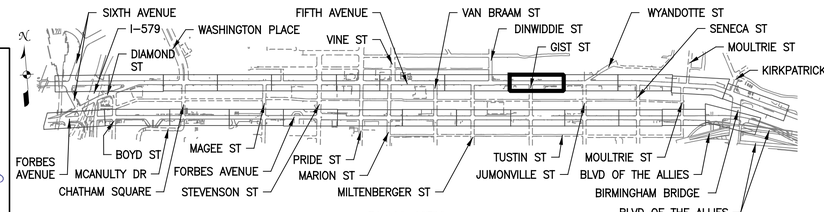
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FIFTH AVENUE

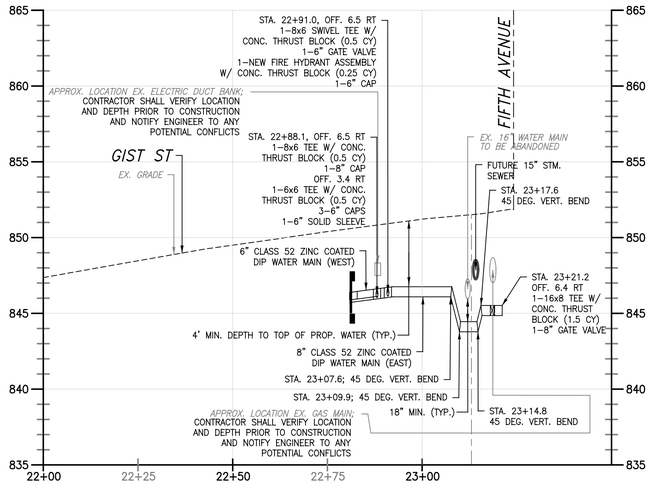
SCALE: AS NOTED SHEET NO. 23 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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WATER MAIN PROFILE – GIST STREET 22+00 TO 23+24.14

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

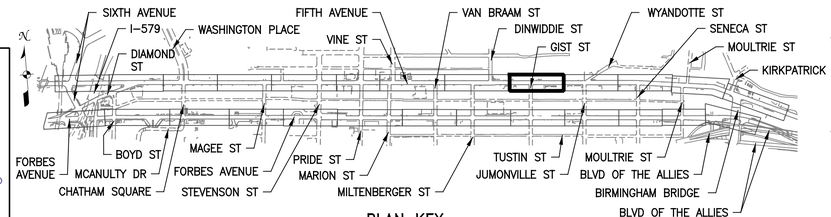
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BY	F.PENDEL	J.FELLO
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CALC. BOOK	PG.	

DESIGNED BY:

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

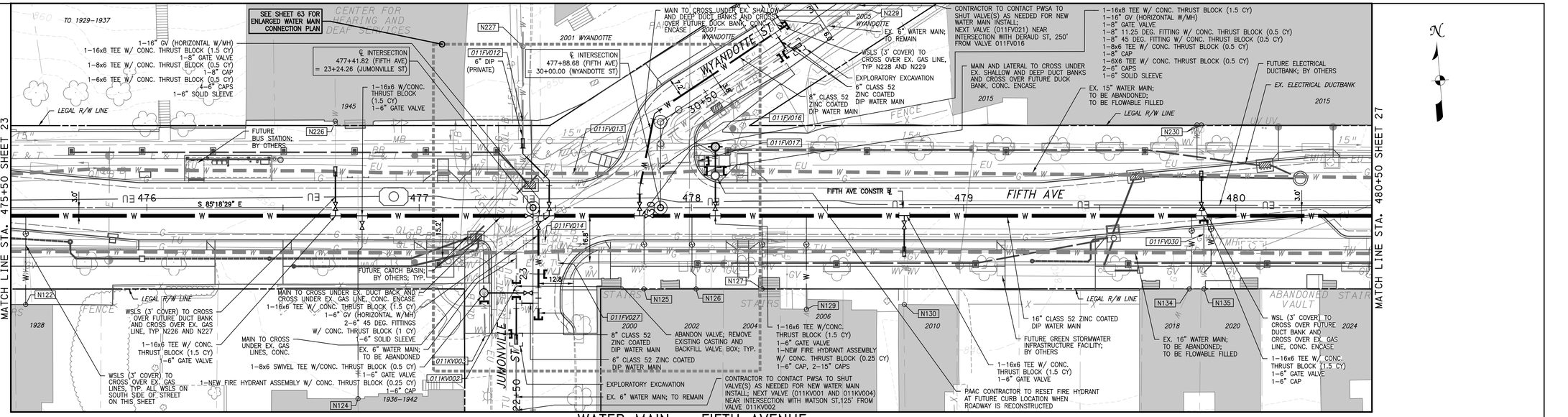
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DATE: JANUARY, 2021 CASE NO. _____

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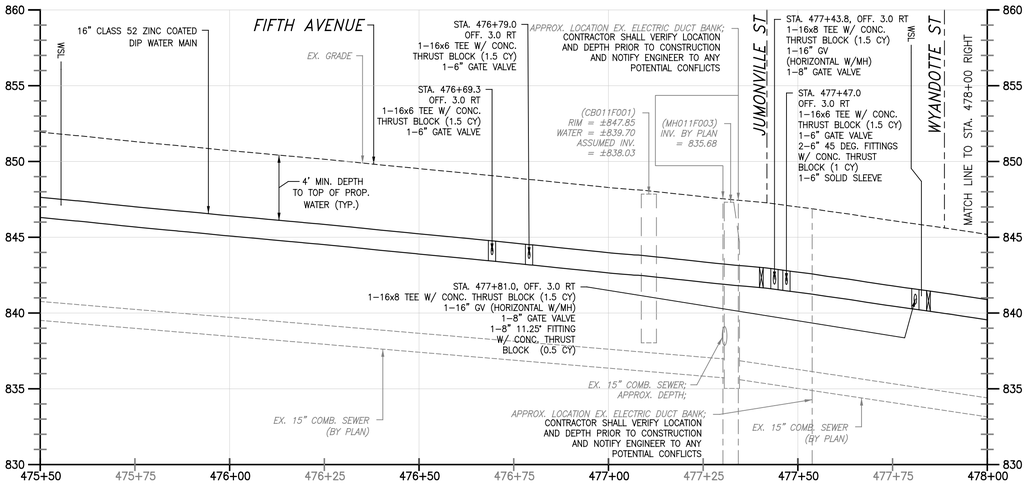
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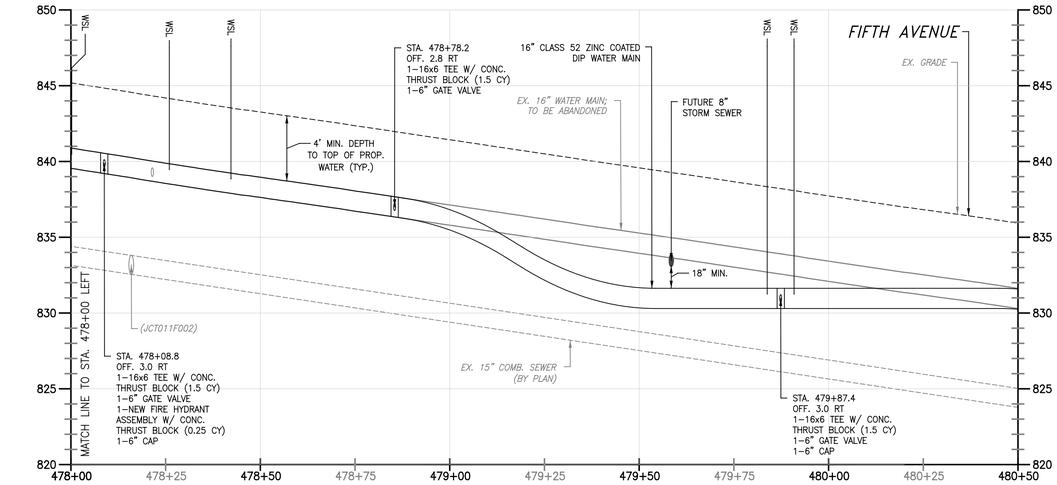
WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 475+50 TO 478+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 478+00 TO 480+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

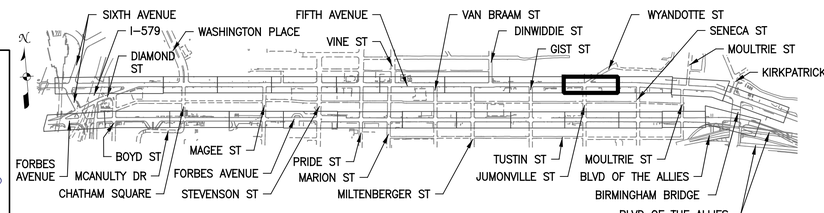
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CONSTRUCTION MGMNT SPRVSR		DATE
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

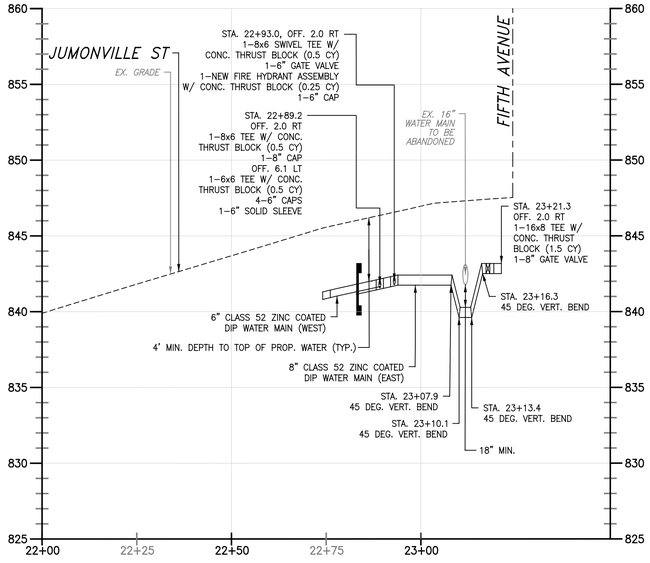
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DATE: JANUARY, 2021 CASE NO. _____

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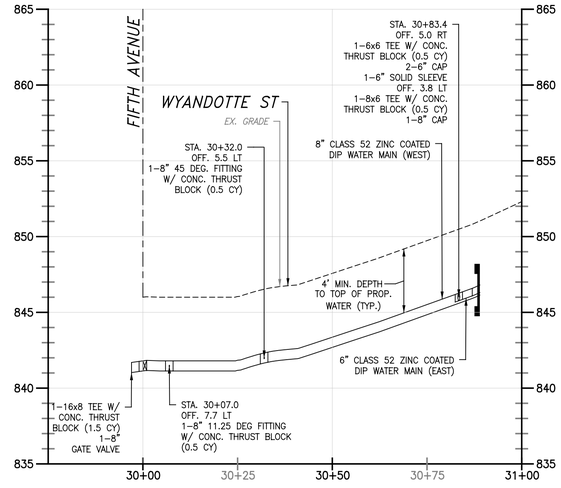
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WATER MAIN PROFILE – JUMONVILLE STREET 22+00 TO 23+24.26

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – WYANDOTTE STREET 30+00 TO 31+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
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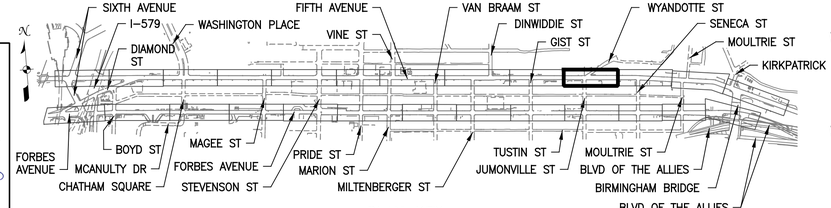
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS

PLAN & PROFILE

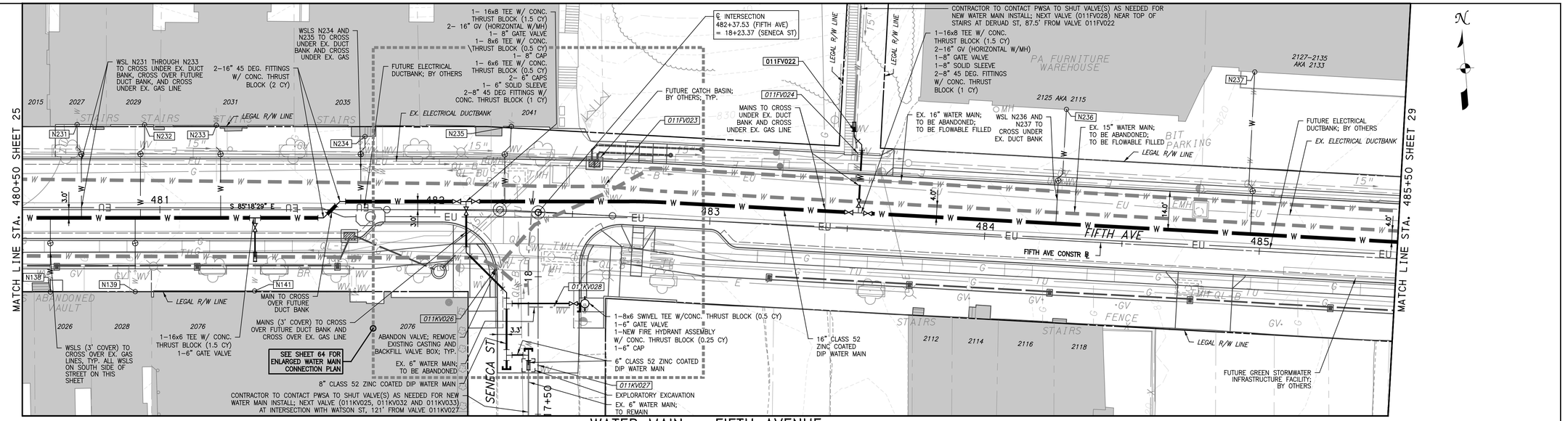
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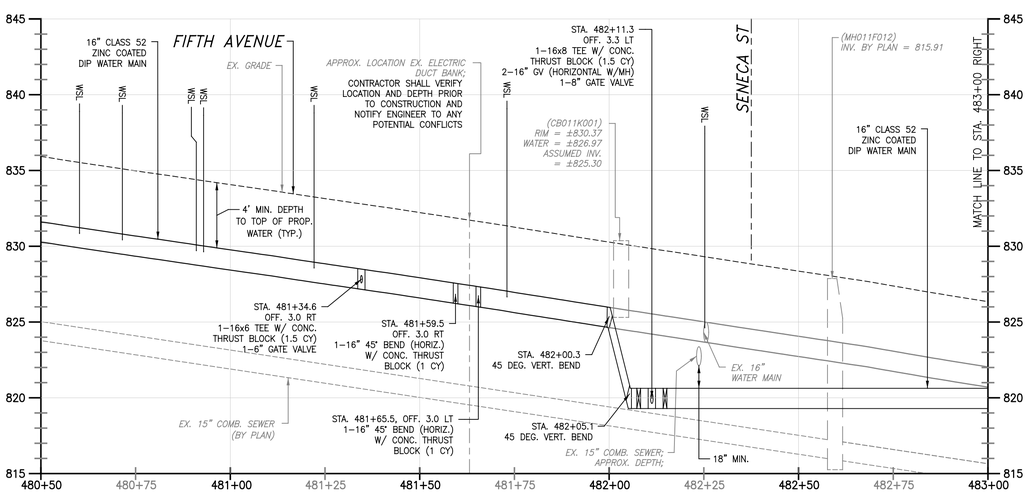
DATE: JANUARY, 2021 CASE NO. _____

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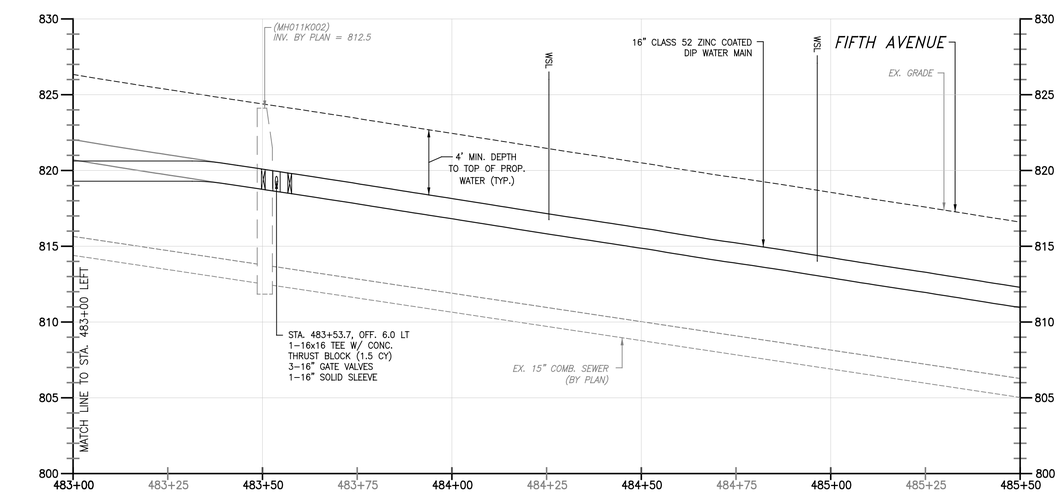
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WATER MAIN PROFILE – FIFTH AVENUE 480+50 TO 483+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 483+00 TO 485+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

PROFILE HORIZ. SCALE: 1" = 20'

PROFILE VERT. SCALE: 1" = 5'

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT.SRR/SR		DATE
FIELD DATA	DRAWN	SUPERVSD.
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CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

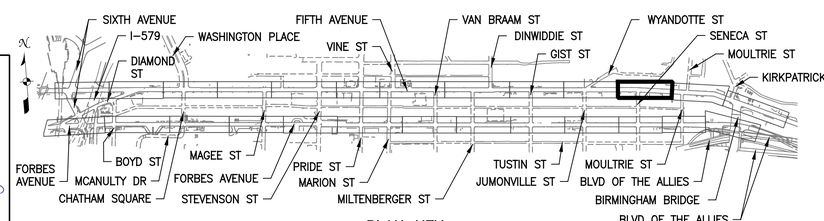
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

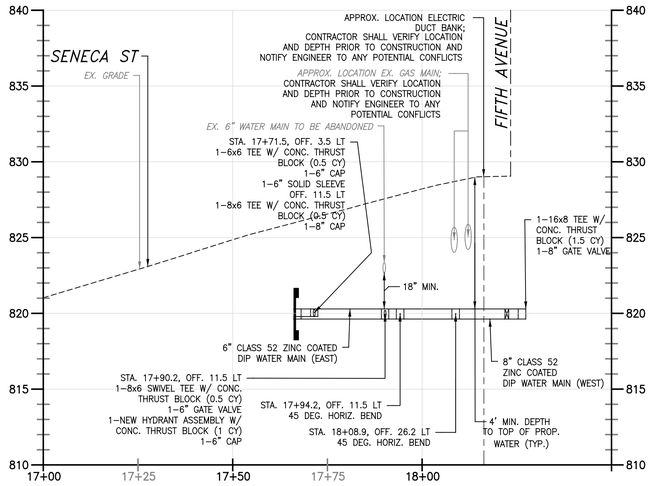
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DATE: JANUARY, 2021 CASE NO. _____

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WATER MAIN PROFILE – SENECA STREET 17+00 TO 18+23.37

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

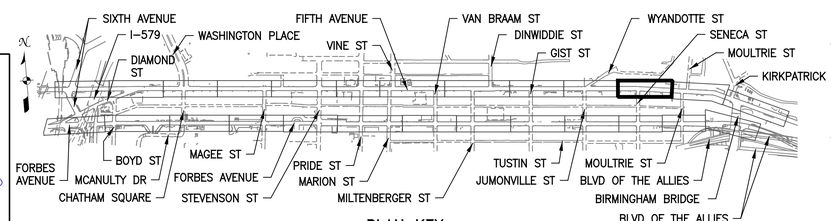
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

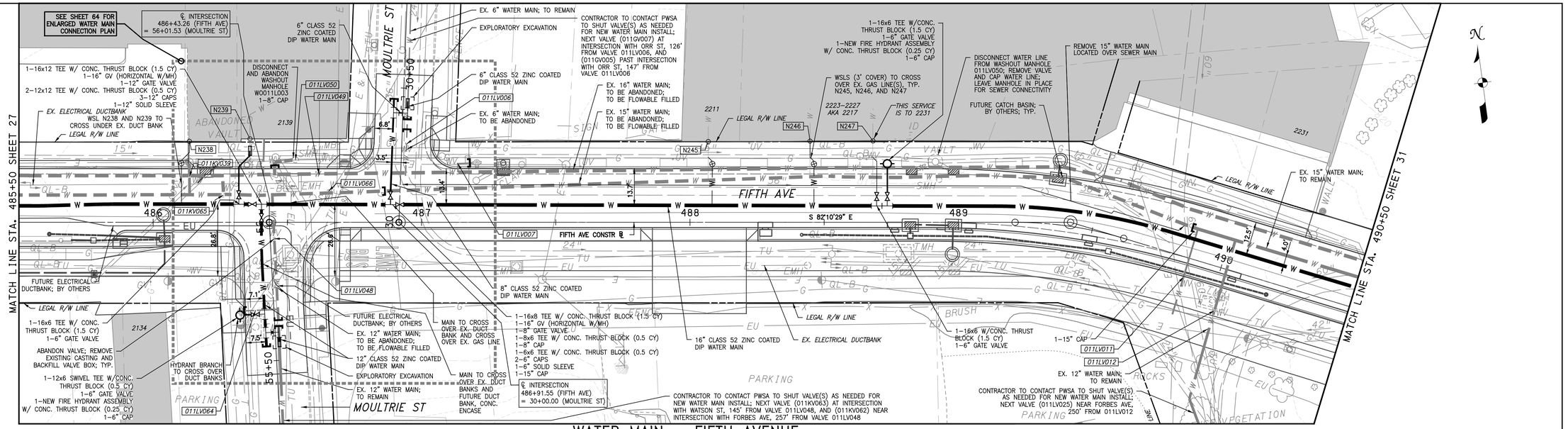
SCALE: AS NOTED SHEET NO. 28 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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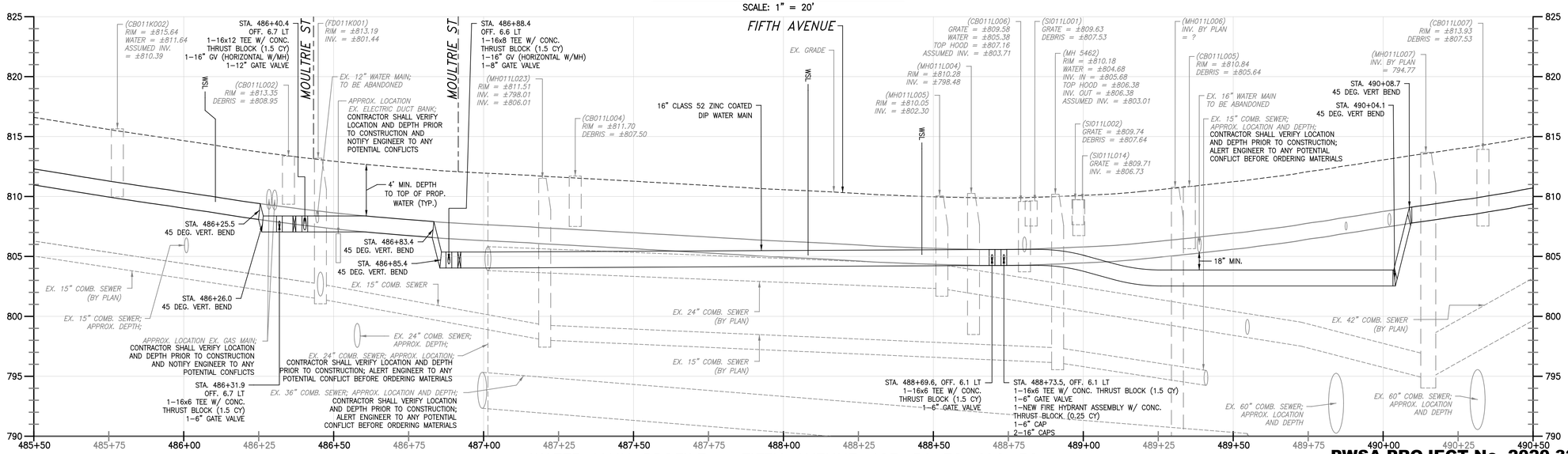
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WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 485+50 TO 490+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SERVICES DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

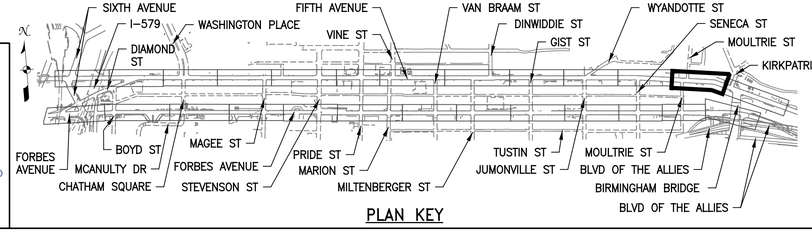
CALC. BOOK PG.

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

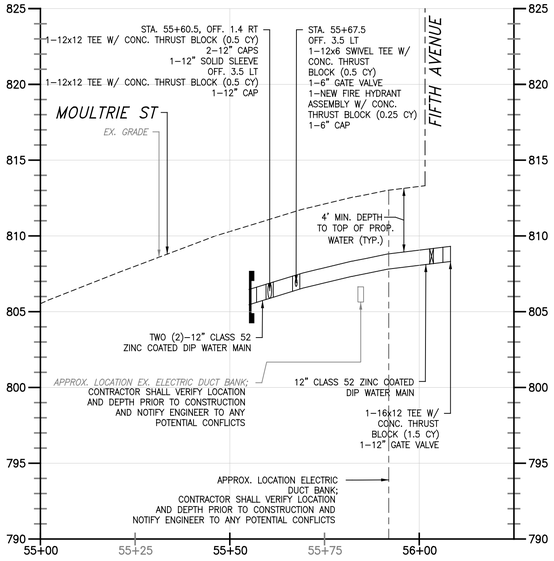
SCALE: AS NOTED SHEET NO. 29 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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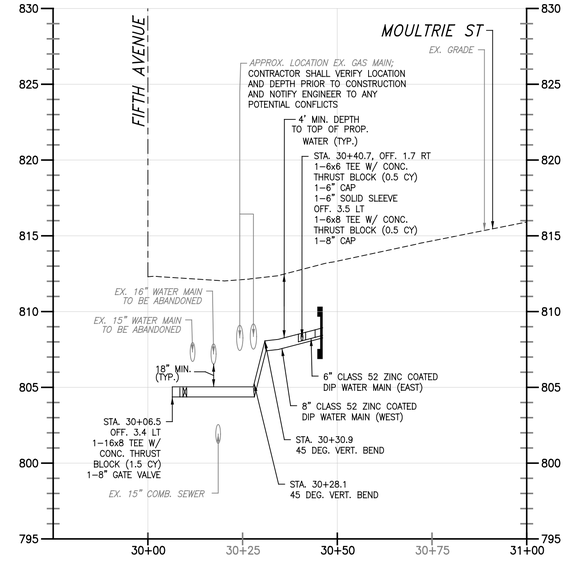
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WATER MAIN PROFILE – MOULTRIE STREET 55+00 TO 56+01.53 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – MOULTRIE STREET 30+00 TO 31+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

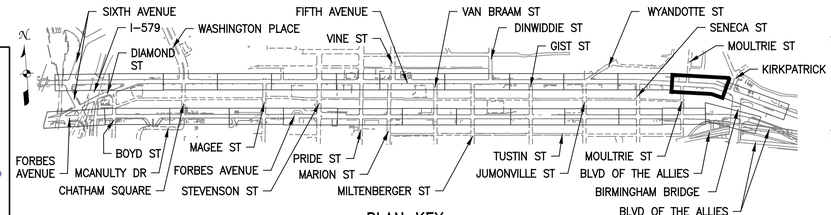
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CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS

PLAN & PROFILE

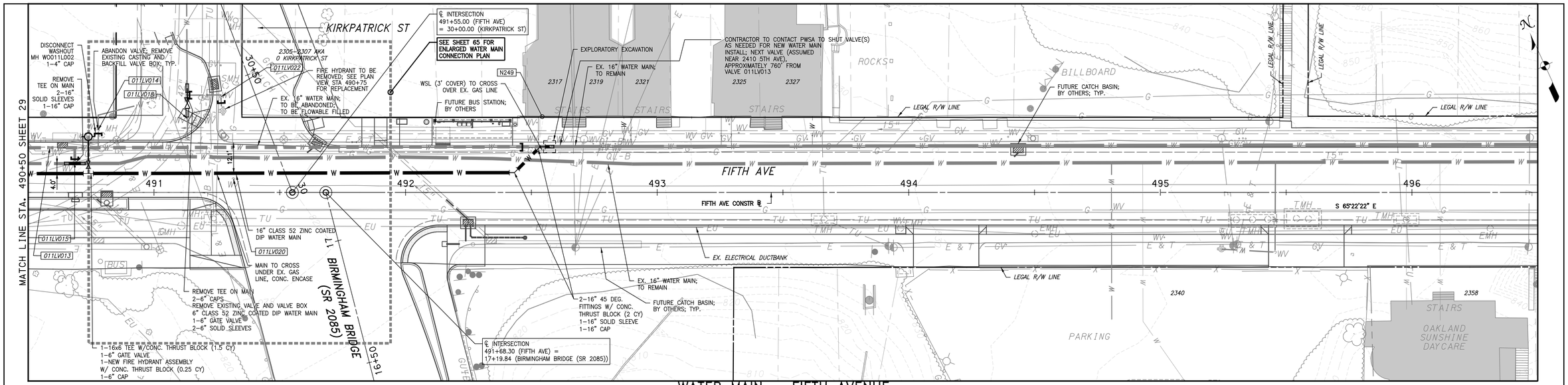
SCALE: AS NOTED SHEET NO. 30 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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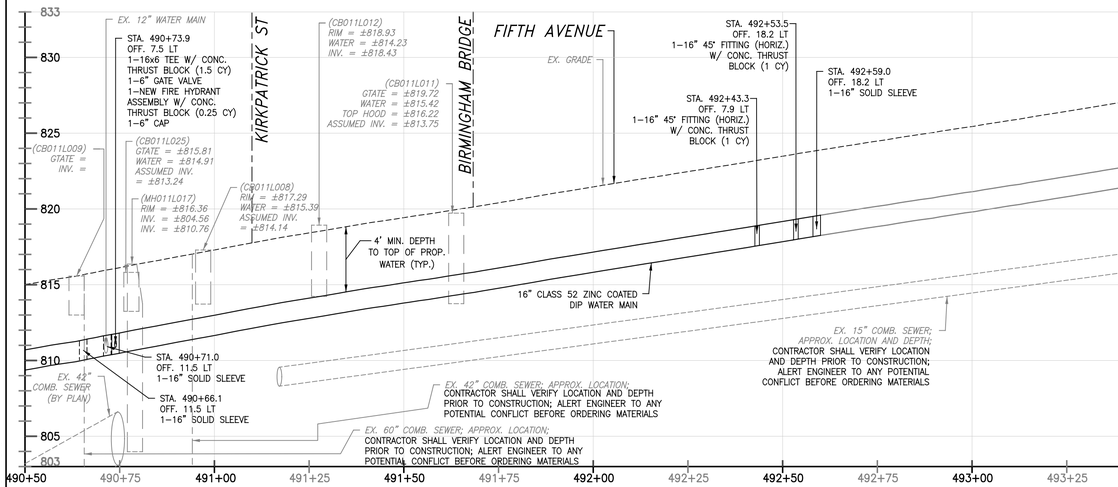
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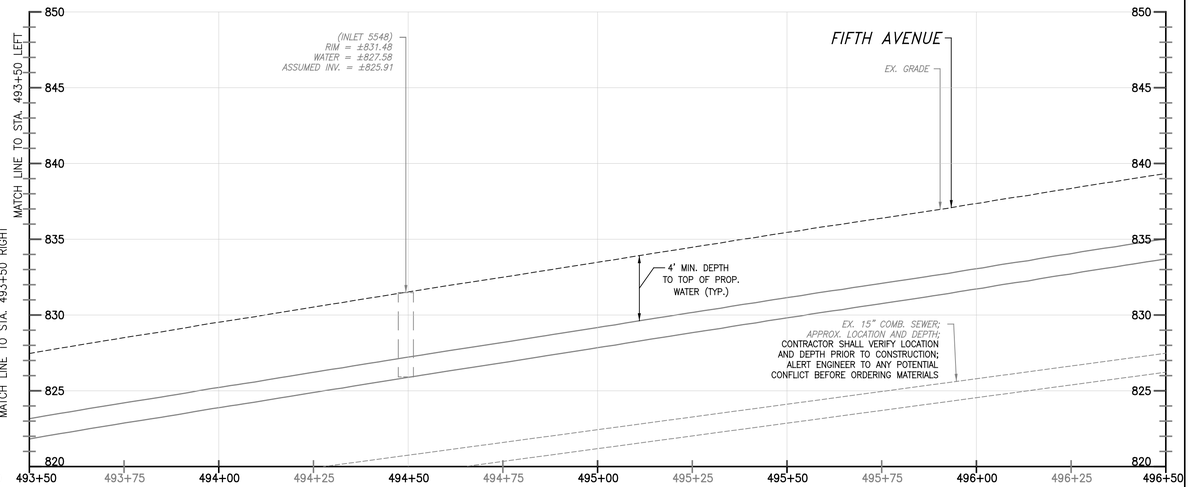
WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 490+50 TO 493+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FIFTH AVENUE 493+50 TO 496+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

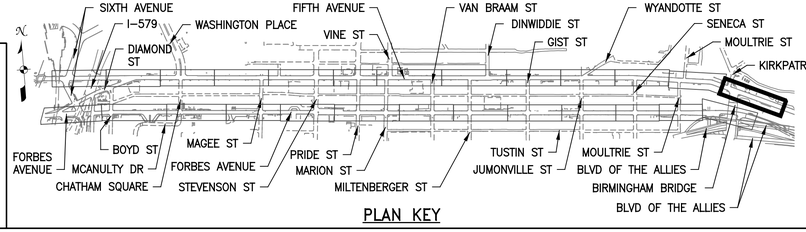
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

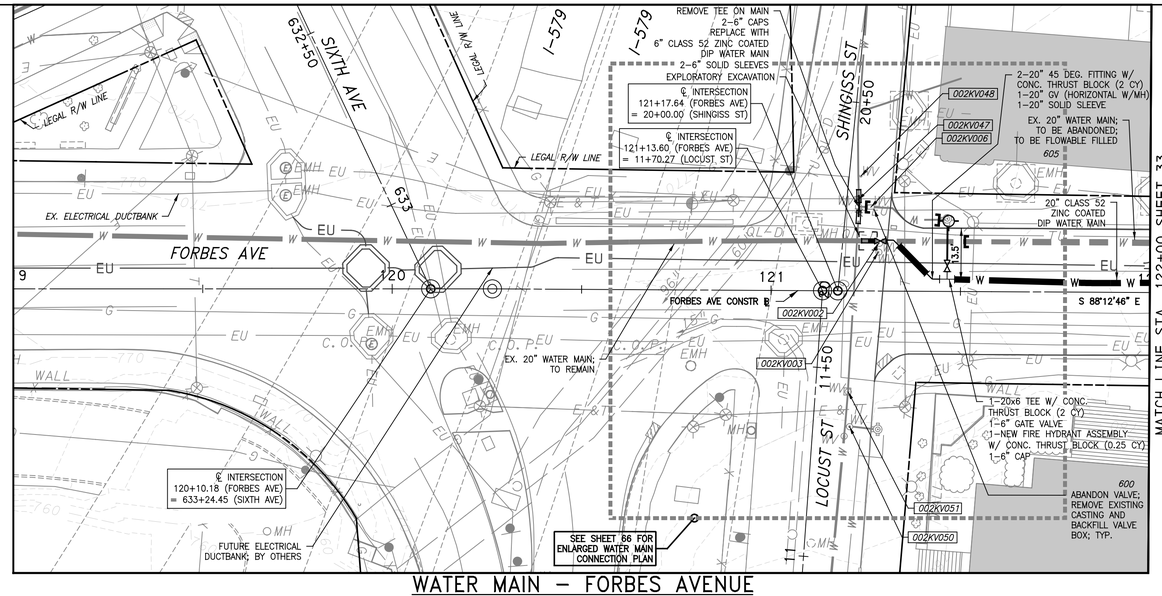
SCALE: AS NOTED SHEET NO. 31 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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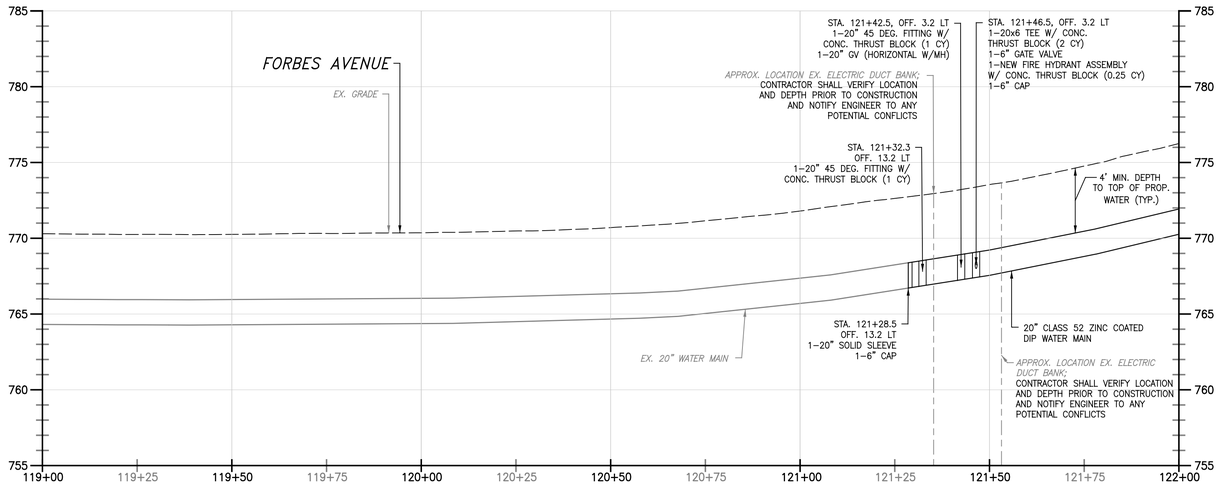
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WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 116+50 TO 122+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

PROFILE HORIZ. SCALE: 1" = 20'

PROFILE VERT. SCALE: 1" = 5'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVSR DATE

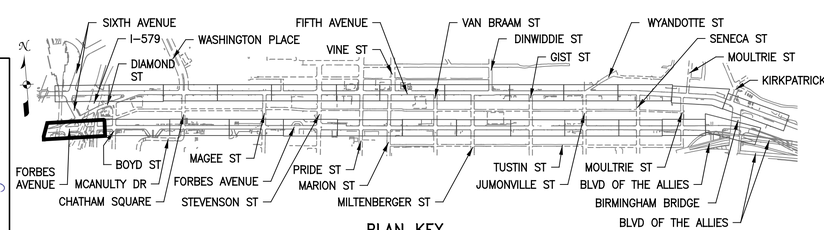
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

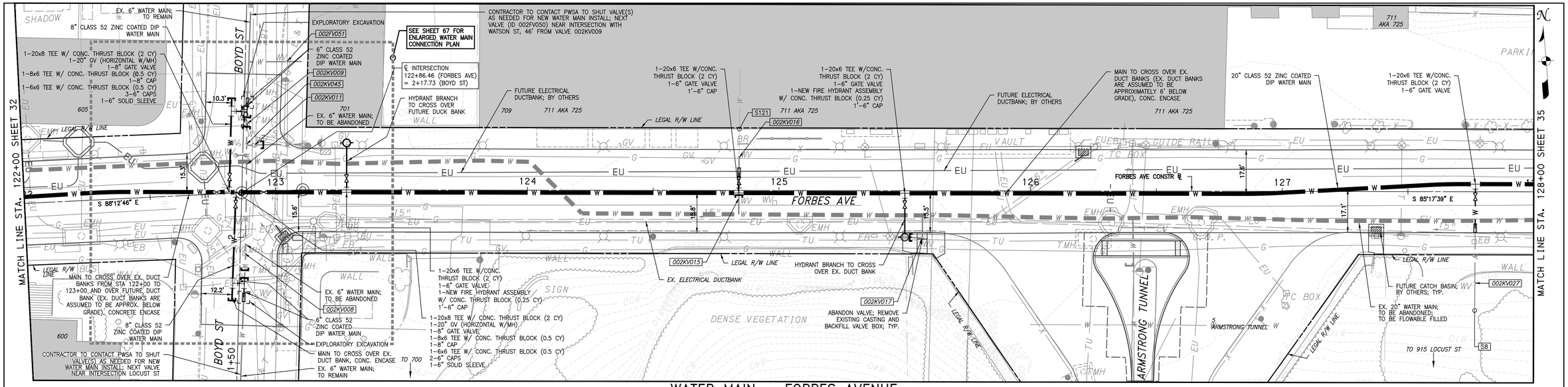
SCALE: AS NOTED SHEET NO. 32 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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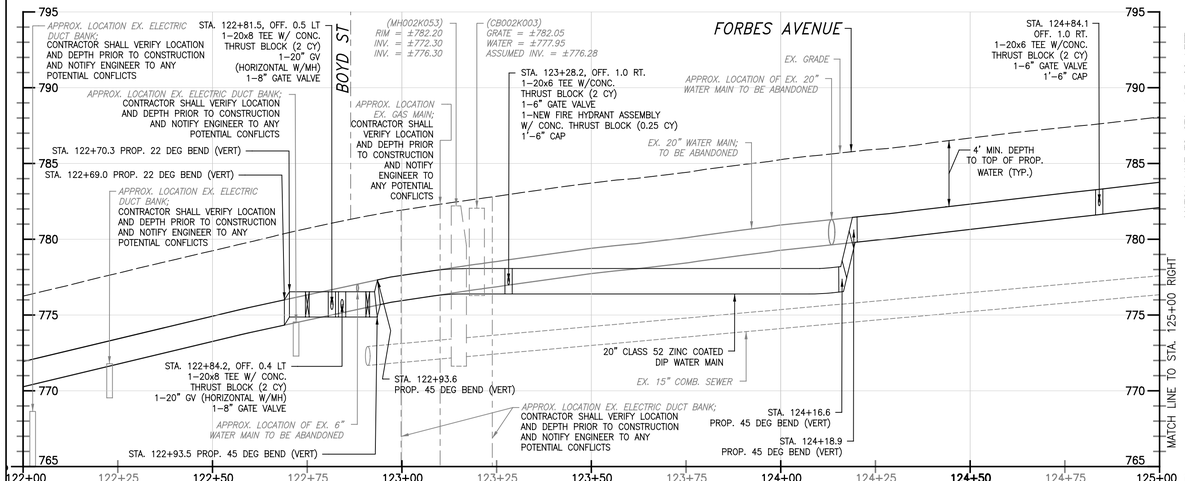
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WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 122+00 TO 125+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

WATER MAIN PROFILE – FORBES AVENUE 125+00 TO 128+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

PROFILE HORIZ. SCALE: 1" = 20'

PROFILE VERT. SCALE: 1" = 5'

REVISIONS		
CHARACTER	DATE	

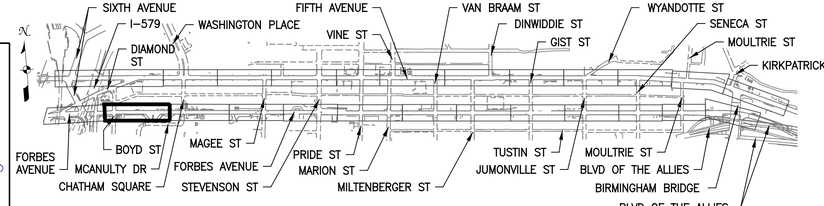
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

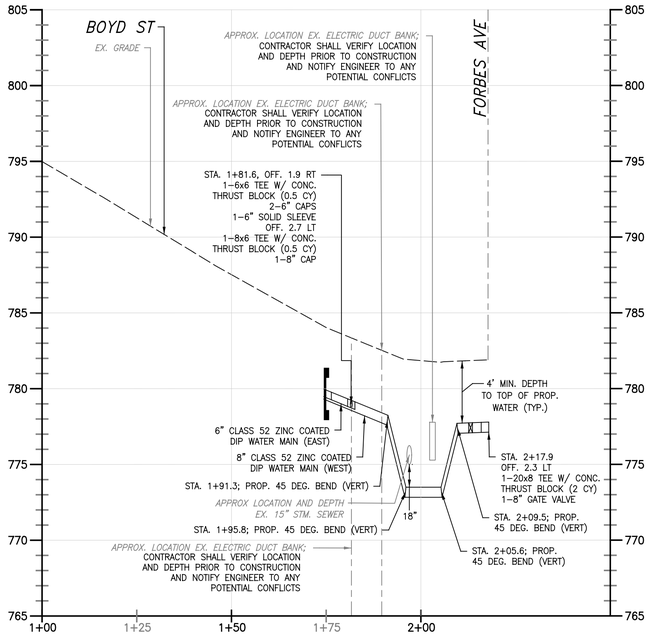
SCALE: AS NOTED SHEET NO. 33 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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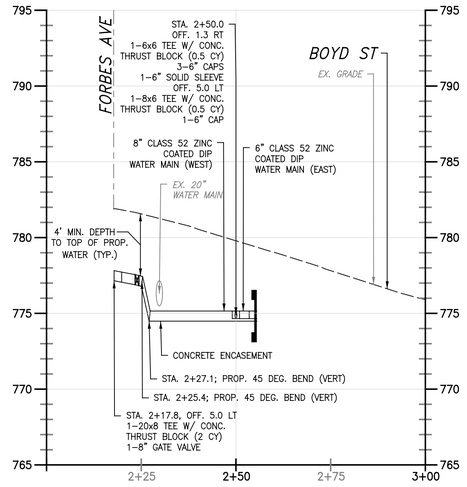
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WATER MAIN PROFILE – BOYD STREET 1+00 TO 2+17.73 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – BOYD STREET 2+17.73 TO 3+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SRVS/SR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
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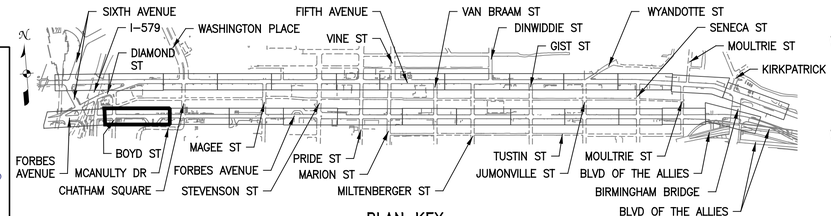
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

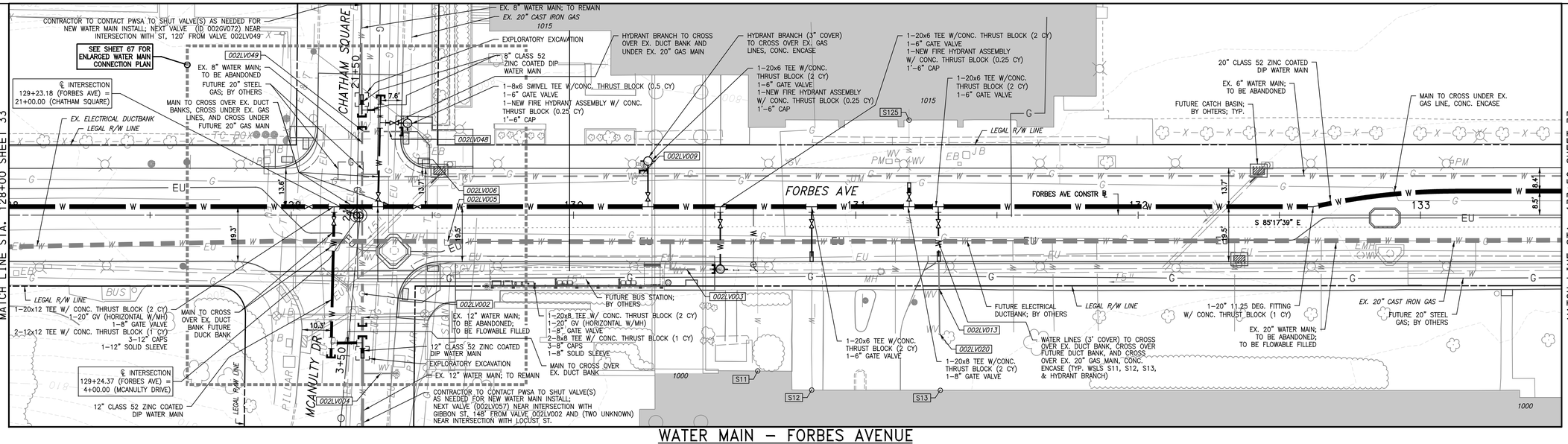
SCALE: AS NOTED SHEET NO. ACCESSION NO. _____

DATE: JANUARY, 2021 34 OF 166 CASE NO. _____

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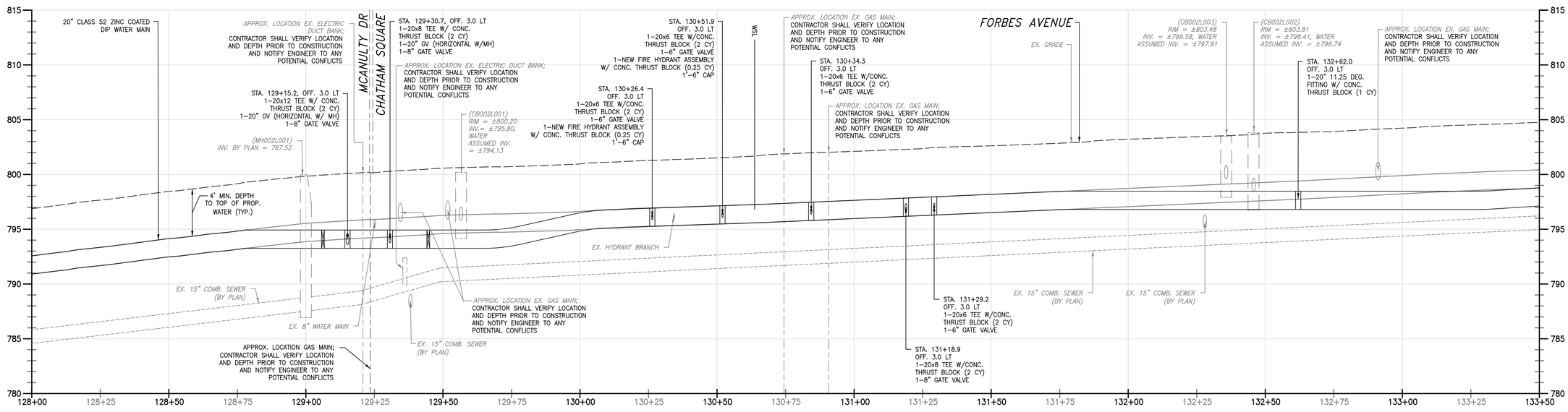
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WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 128+00 TO 133+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

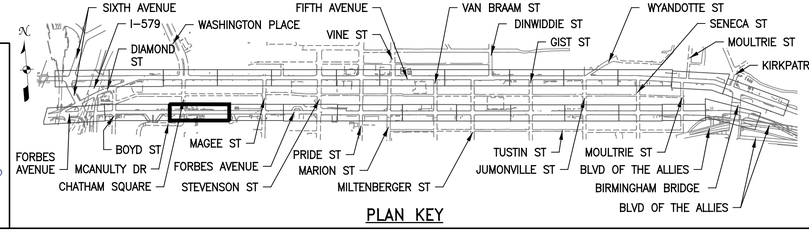
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-044842-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FORBES AVENUE

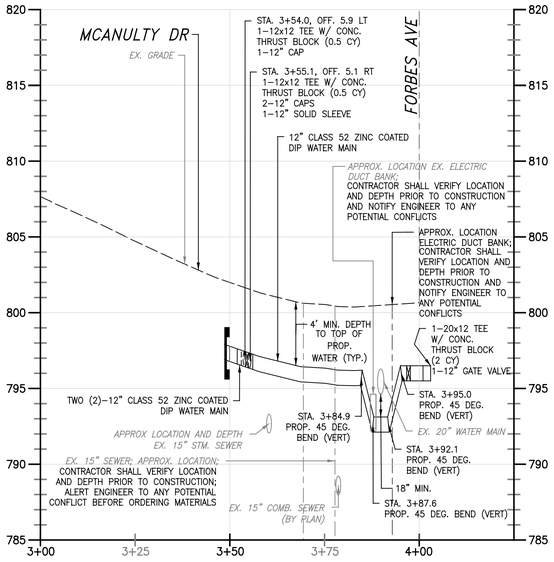
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DATE: JANUARY, 2021 CASE NO. _____

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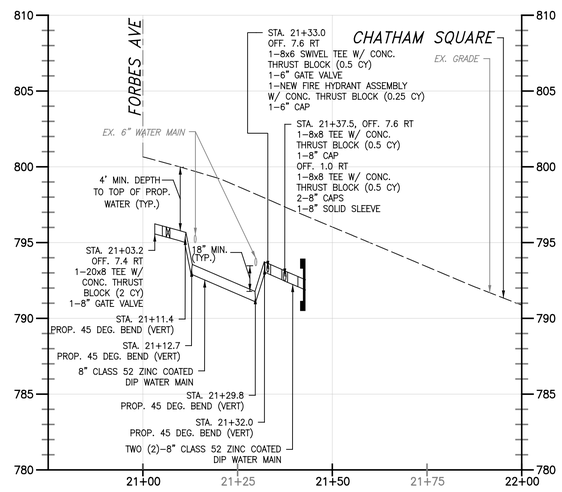
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WATER MAIN PROFILE – MCANULTY DRIVE 3+00 TO 4+00 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – CHATHAM SQUARE 21+00 TO 22+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

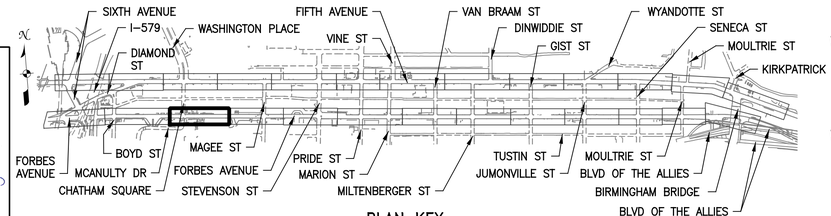
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CONSTRUCTION MGMNT SRVS/SR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

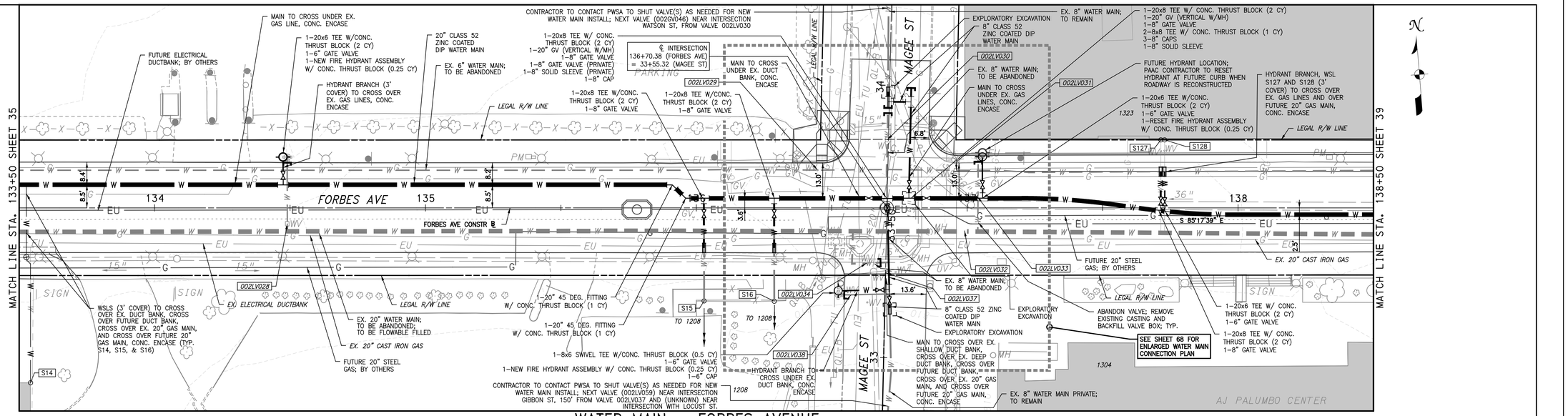
SCALE: AS NOTED SHEET NO. ACCESSION NO. _____

DATE: JANUARY, 2021 36 OF 166 CASE NO. _____

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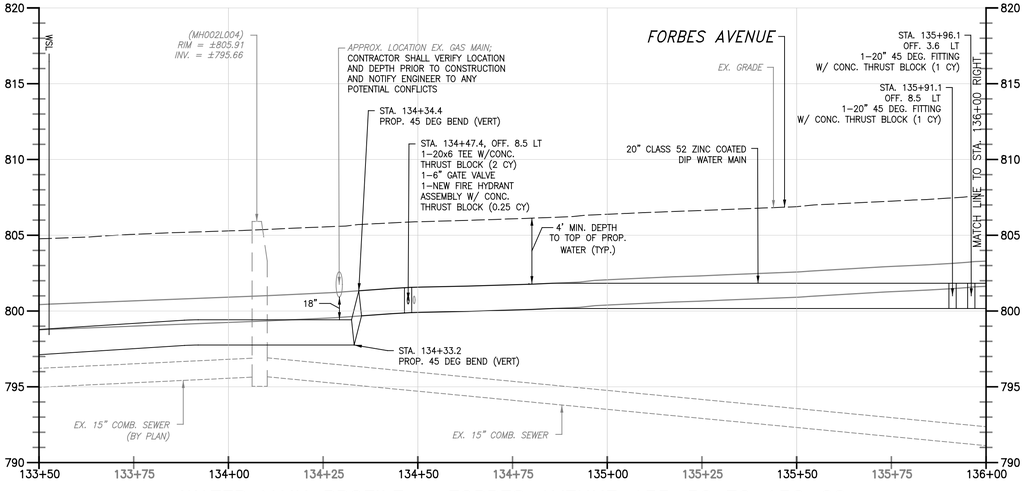
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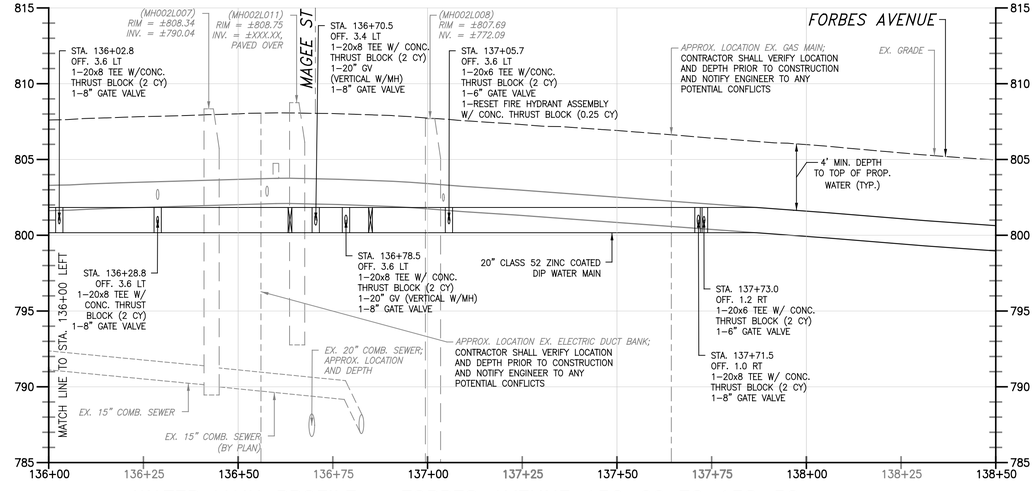
WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 133+50 TO 136+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FORBES AVENUE 136+00 TO 138+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

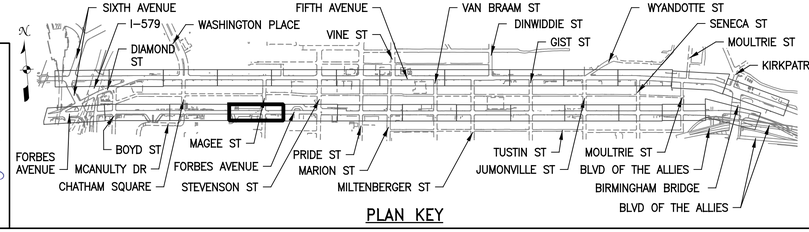
CALC. BOOK PG.

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED A PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FORBES AVENUE

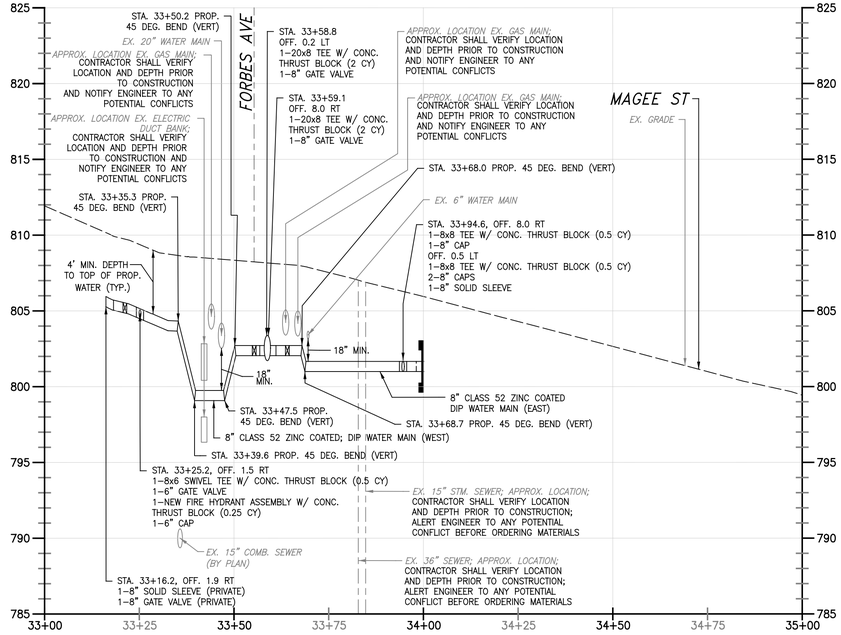
SCALE: AS NOTED SHEET NO. 37 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location, and condition of water, sewer and other utilities or structures. Users are cautioned to exercise independent skill and judgment in using this information and any decisions made or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

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WATER MAIN PROFILE – MAGEE STREET 33+00 TO 35+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

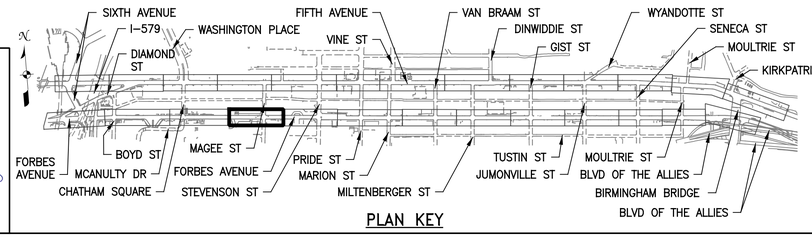
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

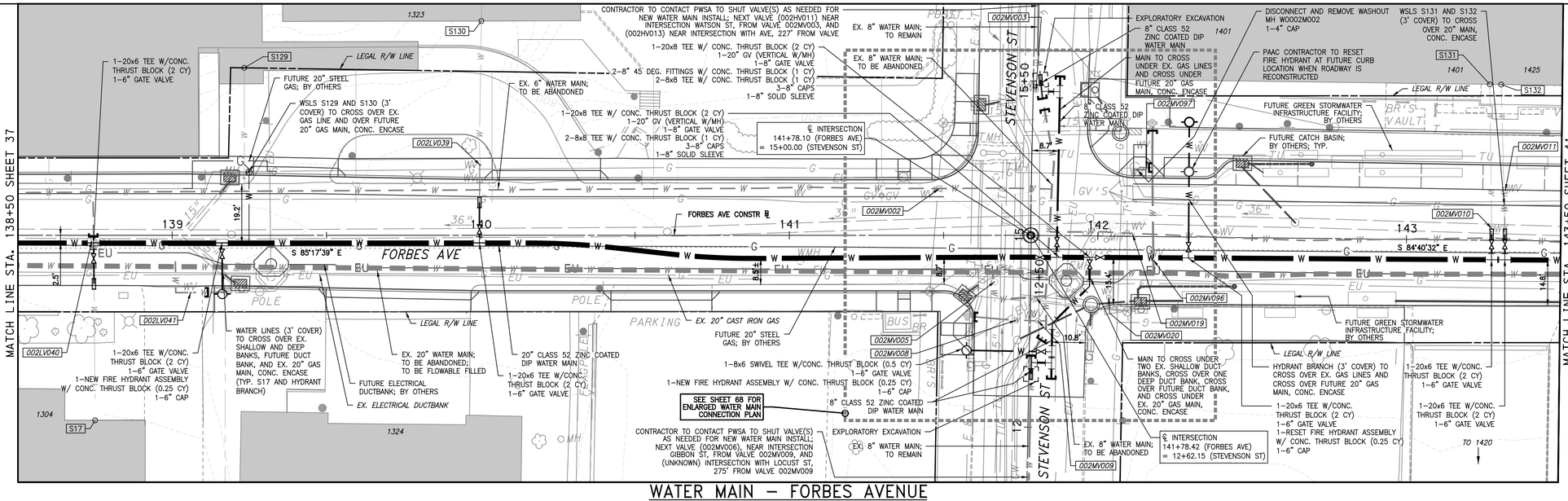
SCALE: AS NOTED SHEET NO. 38 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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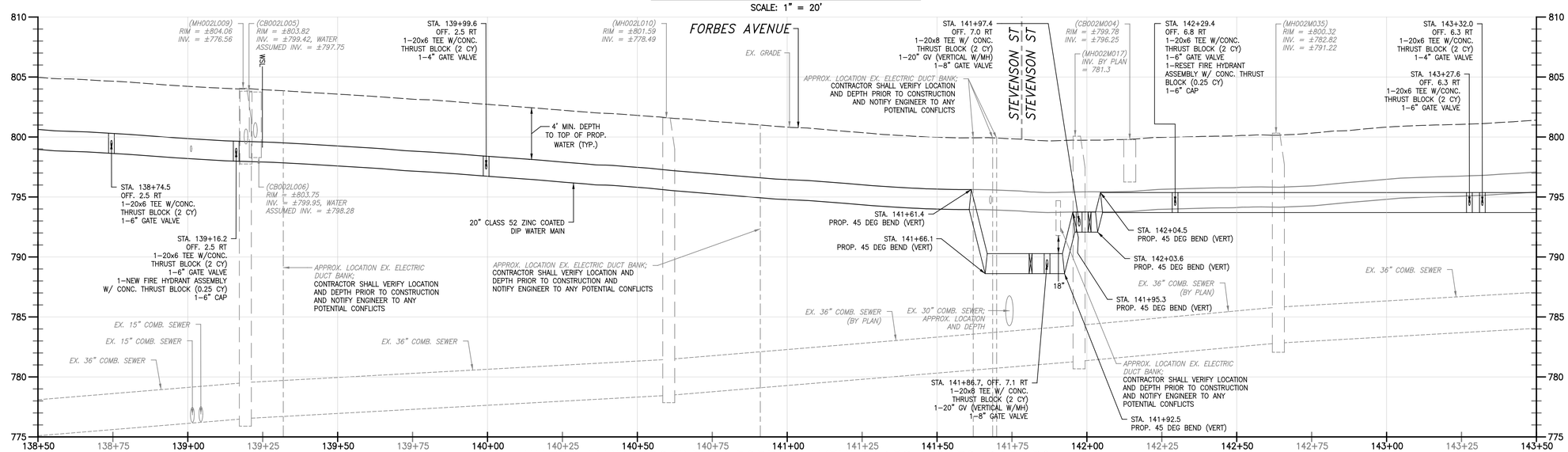
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WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 138+50 TO 143+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

PROFILE HORIZ. SCALE: 1" = 20'

PROFILE VERT. SCALE: 1" = 5'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY

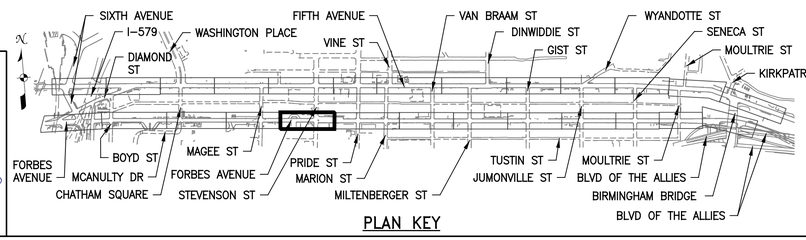
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FORBES AVENUE

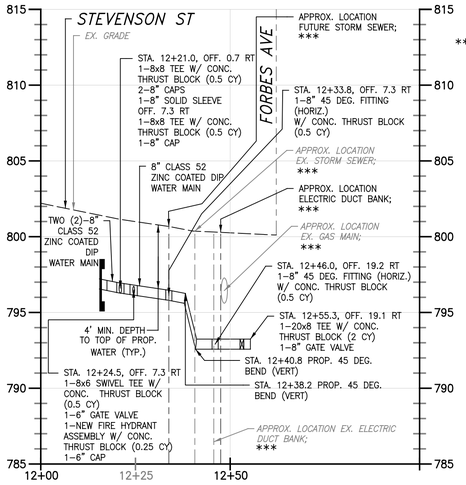
SCALE: AS NOTED SHEET NO. 39 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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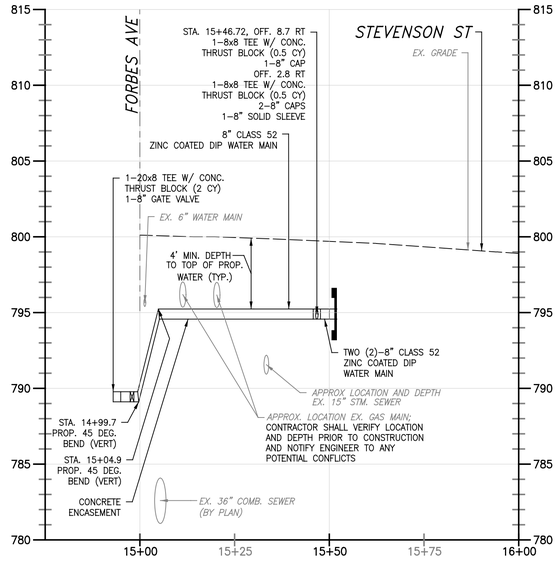
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***CONTRACTOR SHALL VERIFY LOCATION AND DEPTH PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER TO ANY POTENTIAL CONFLICTS

WATER MAIN PROFILE – STEVENSON STREET 12+00 TO 12+62.15 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – STEVENSON STREET 15+00 TO 16+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

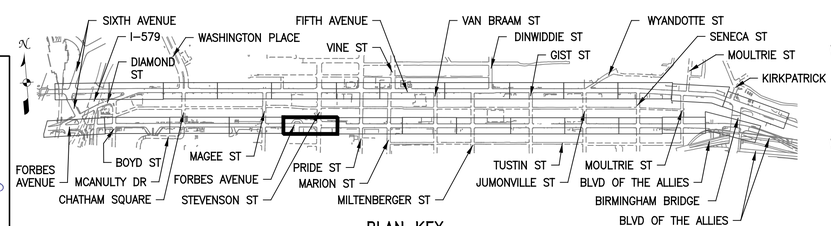
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CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			CHARACTER / DATE
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

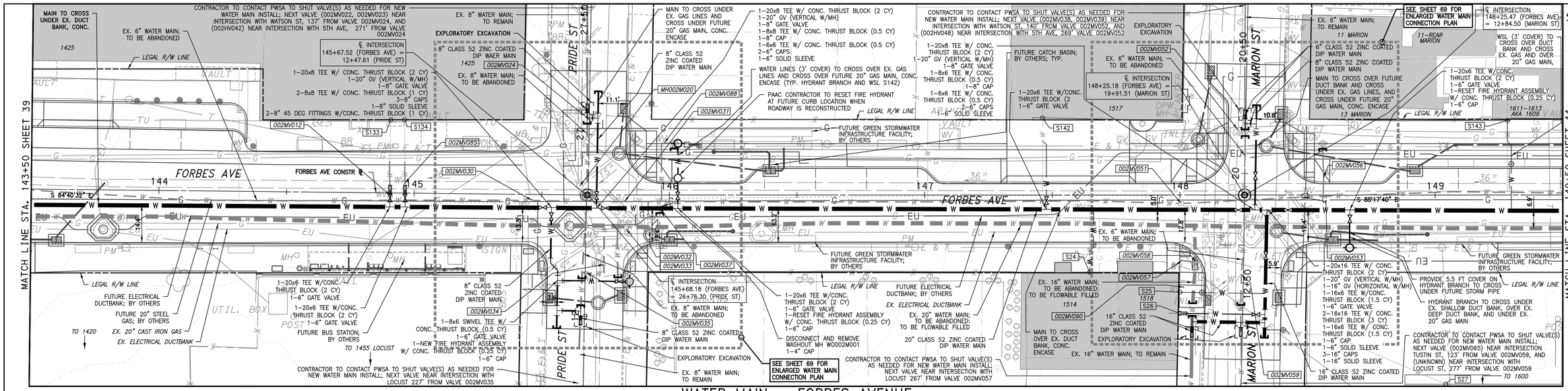
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DATE: JANUARY, 2021 CASE NO. _____

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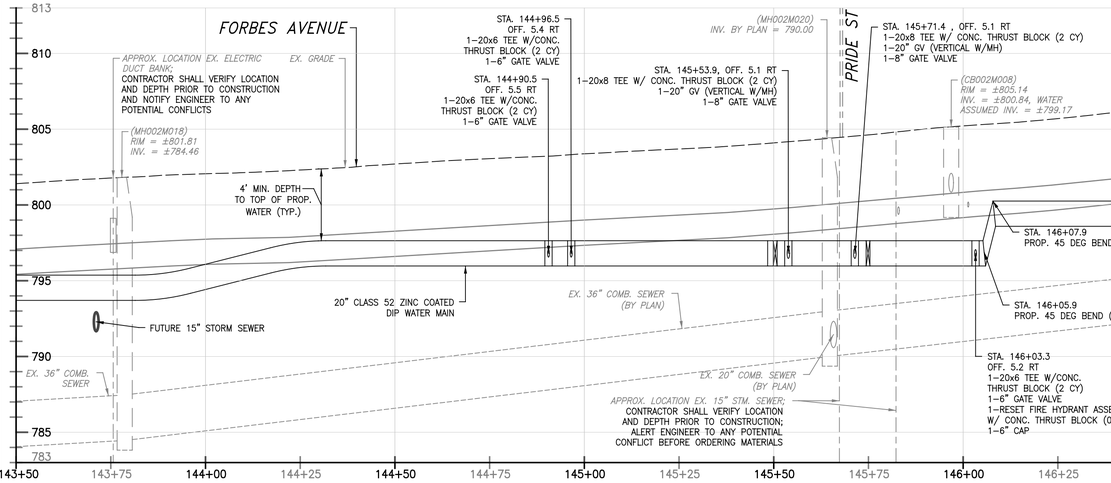
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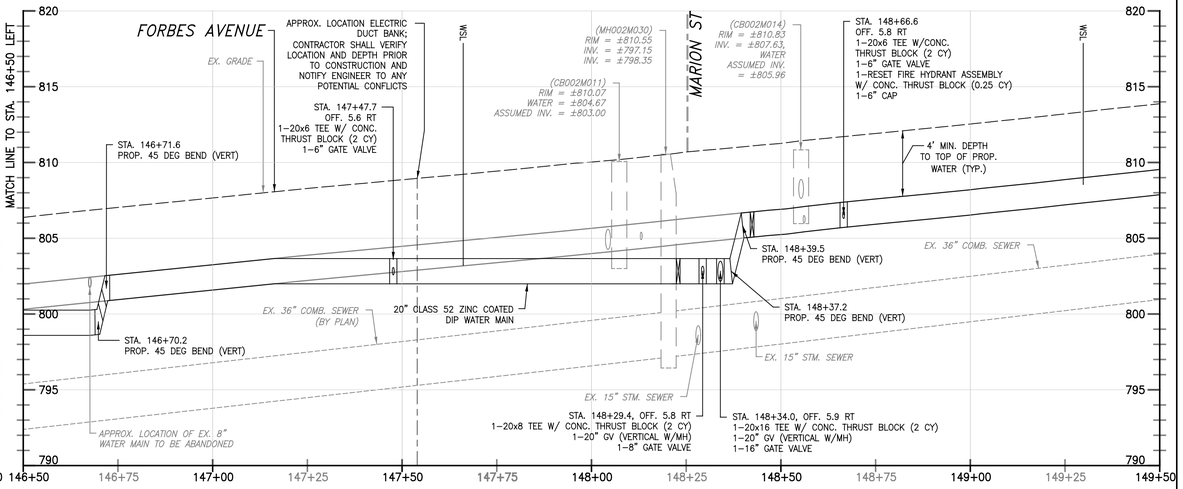
WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 143+50 TO 146+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FORBES AVENUE 146+50 TO 149+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

PROFILE HORIZ. SCALE: 1" = 20'

PROFILE VERT. SCALE: 1" = 5'

REVISIONS

CONSTRUCTION MGMT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
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CALC. BOOK		PG.	

REVIEWED FOR CONSTRUCTABILITY

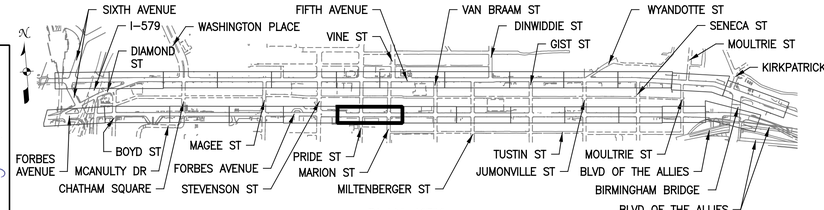
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

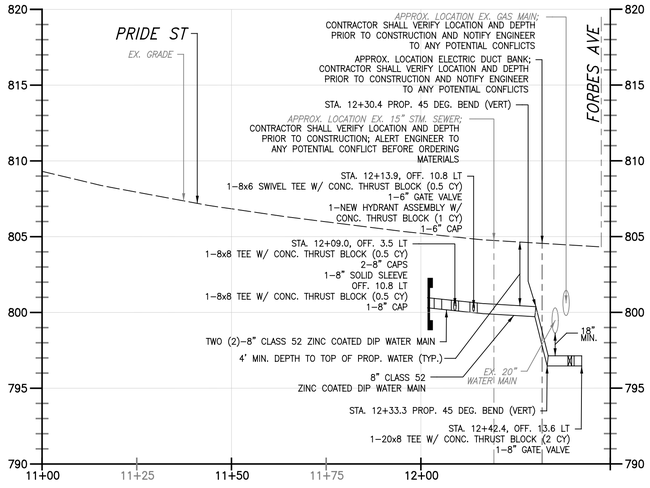
SCALE: AS NOTED SHEET NO. 41 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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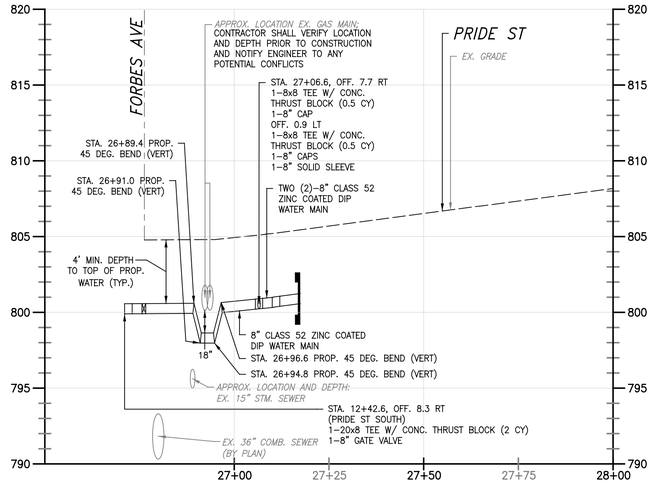
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WATER MAIN PROFILE – PRIDE STREET 11+00 TO 12+17.61 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – PRIDE STREET 26+76.30 TO 28+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

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PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY

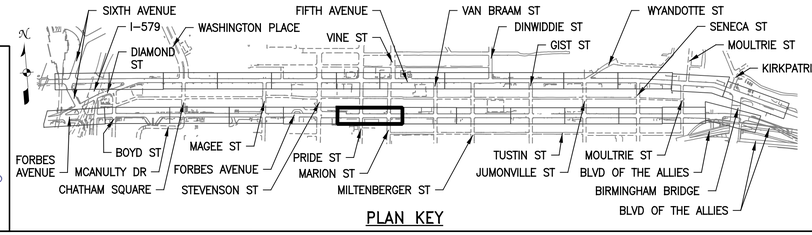
CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PGH2O

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

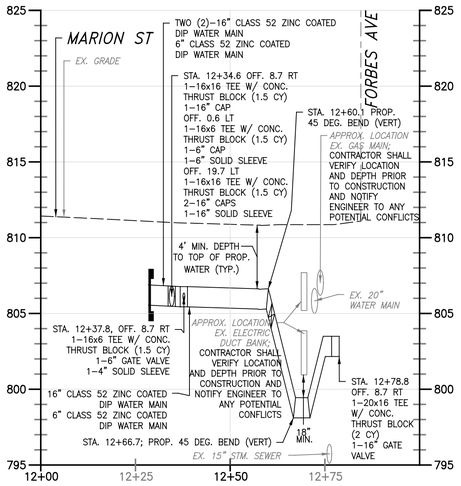
WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

SCALE: AS NOTED SHEET NO. 42 OF 166 ACCESSION NO. _____

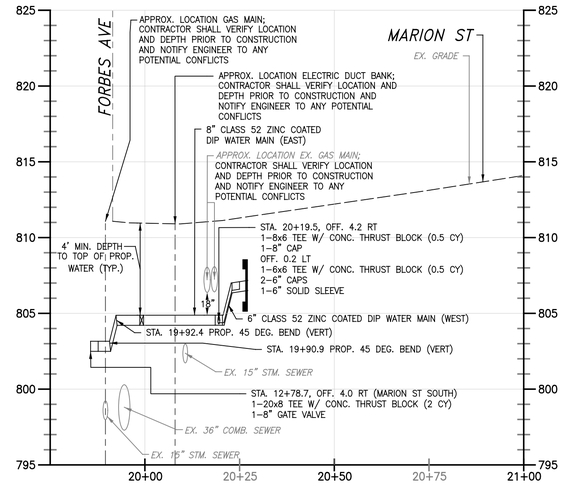
DATE: JANUARY, 2021 CASE NO. _____

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WATER MAIN PROFILE – MARION STREET 12+00 TO 12+84.50 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – MARION STREET 19+91.51 TO 21+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

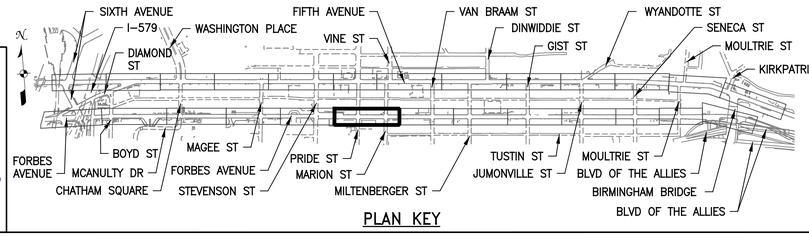
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

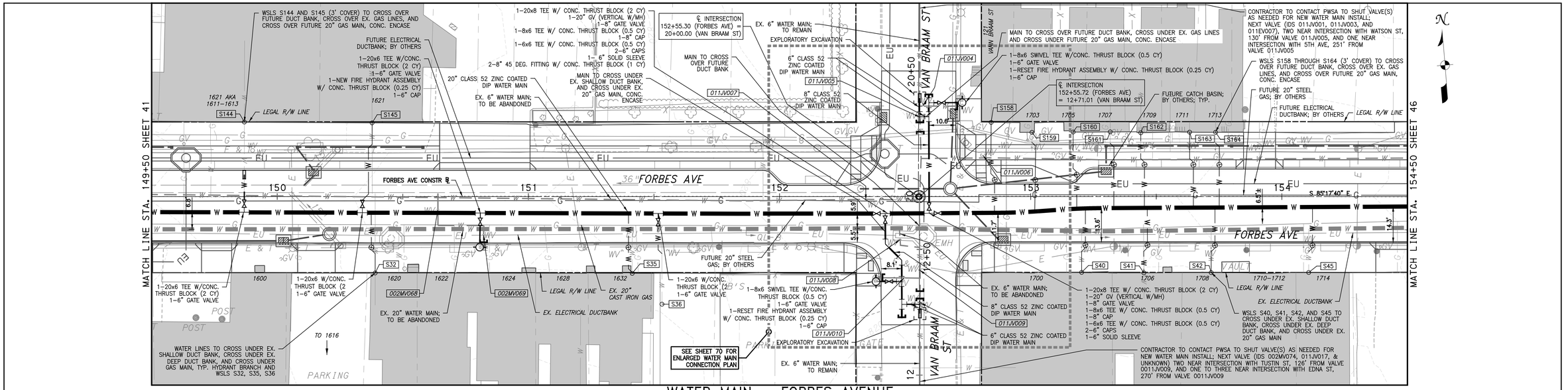
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DATE: JANUARY, 2021 CASE NO. _____

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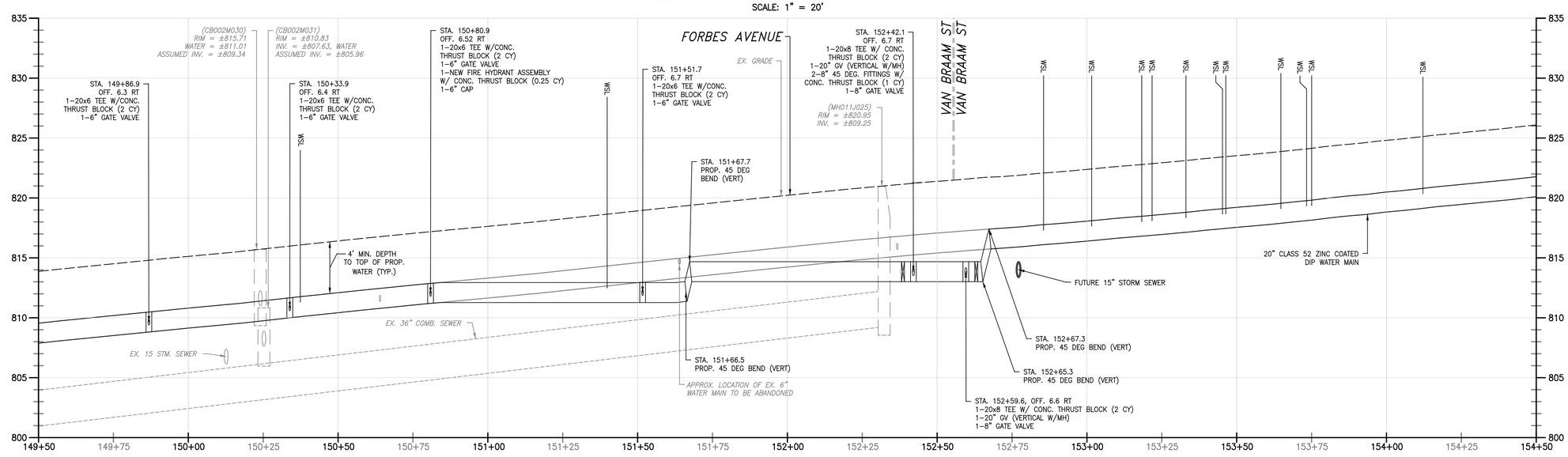
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WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 149+50 TO 154+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

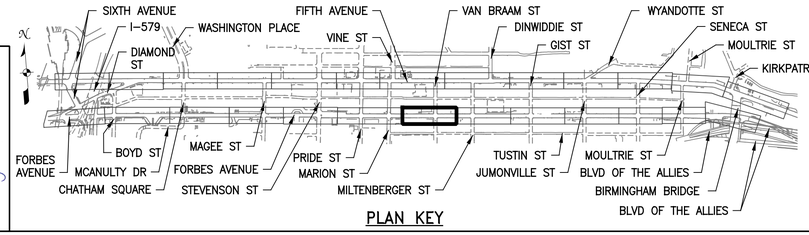
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CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:
gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E
1-7-2021

PLAN KEY



PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FORBES AVENUE

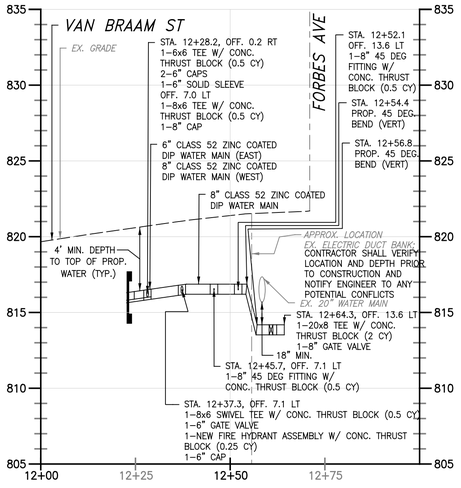
SCALE: AS NOTED SHEET NO. 44 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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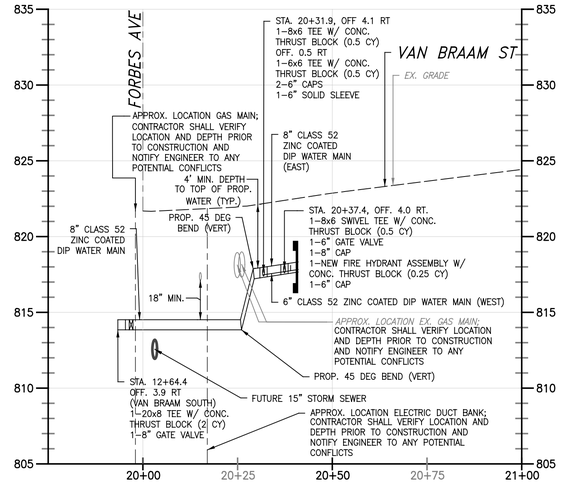
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WATER MAIN PROFILE – VAN BRAAM STREET 12+00 TO 12+71.01 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – VAN BRAMM STREET 20+00 TO 21+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
CHARACTER		DATE

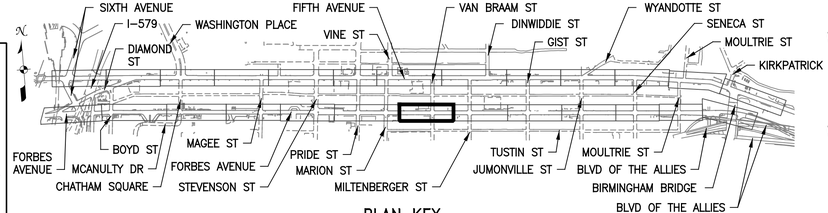
REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
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BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

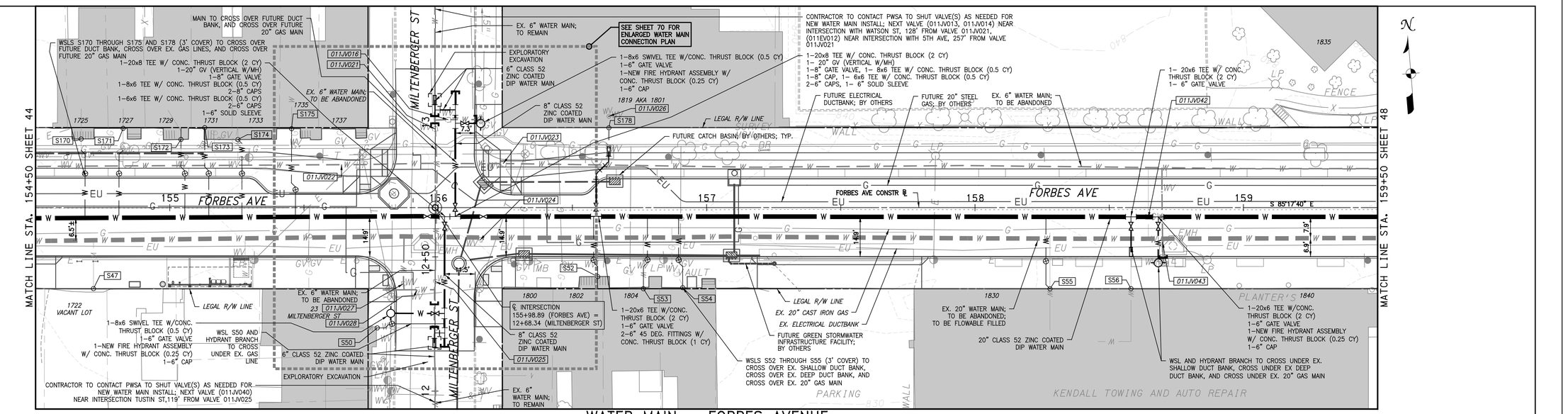
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DATE: JANUARY, 2021 CASE NO. _____

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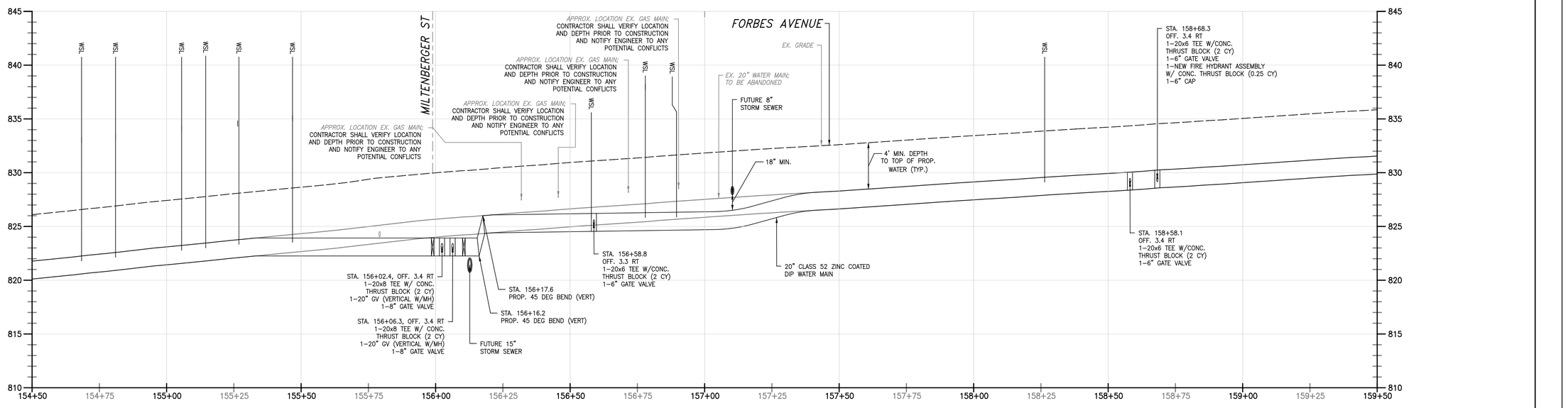
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WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 154+50 TO 159+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY

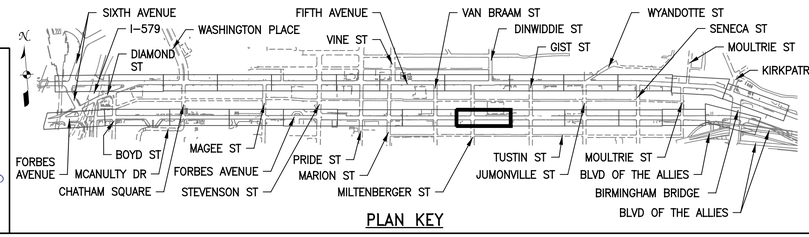
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-084842-E
1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

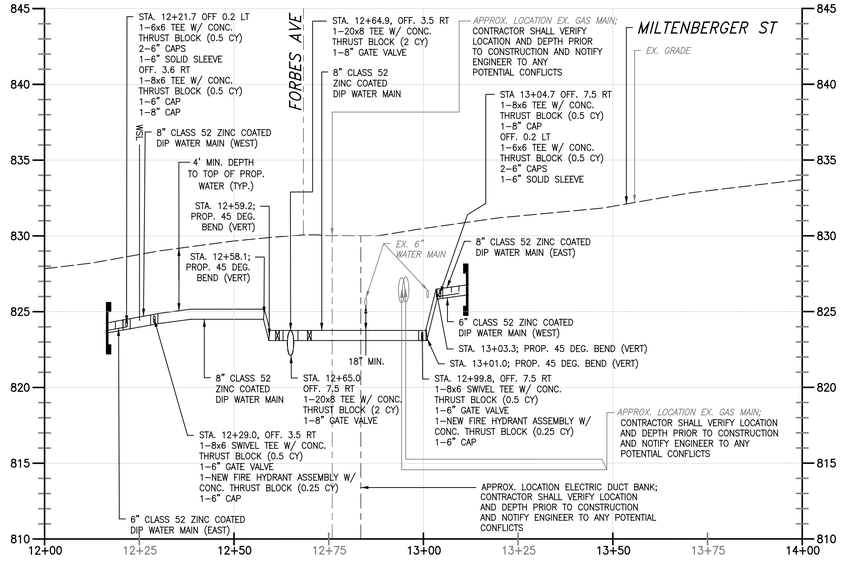
SCALE: AS NOTED SHEET NO. 46 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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WATER MAIN PROFILE – MILTENBERGER STREET 12+00 TO 14+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
	CHARACTER	DATE

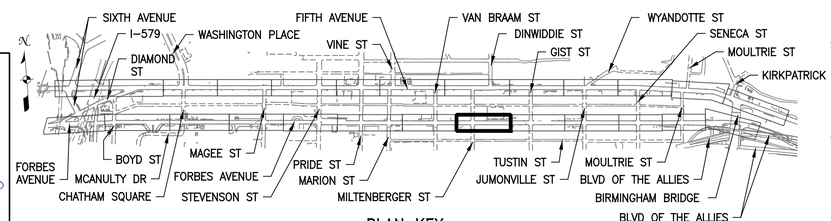
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CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS

PLAN & PROFILE

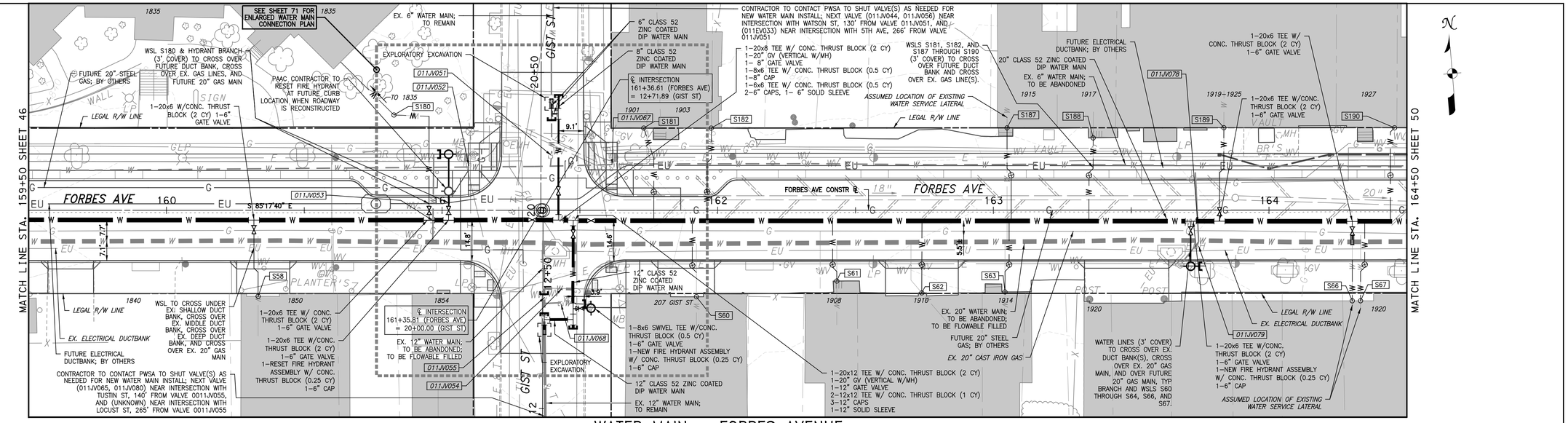
SCALE: AS NOTED SHEET NO. 47 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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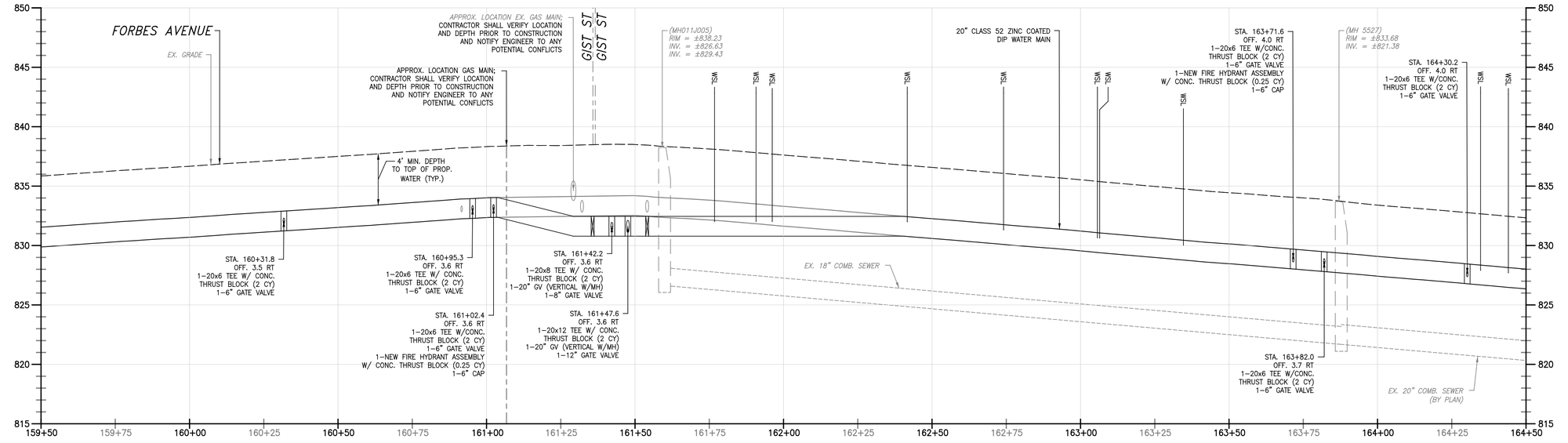
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WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 159+50 TO 164+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

PROFILE HORIZ. SCALE: 1" = 20'

PROFILE VERT. SCALE: 1" = 5'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

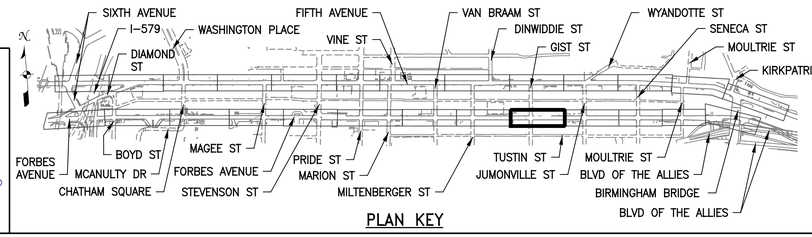
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FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-084841 1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

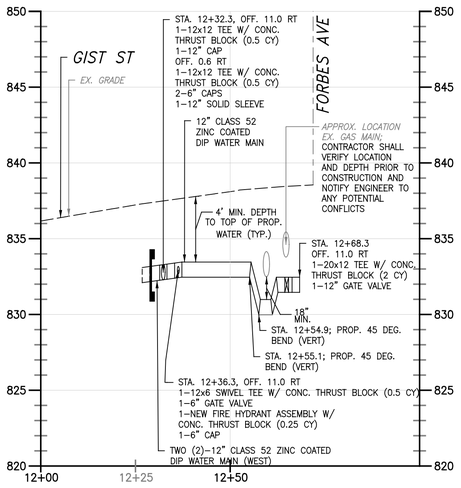
SCALE: AS NOTED SHEET NO. 48 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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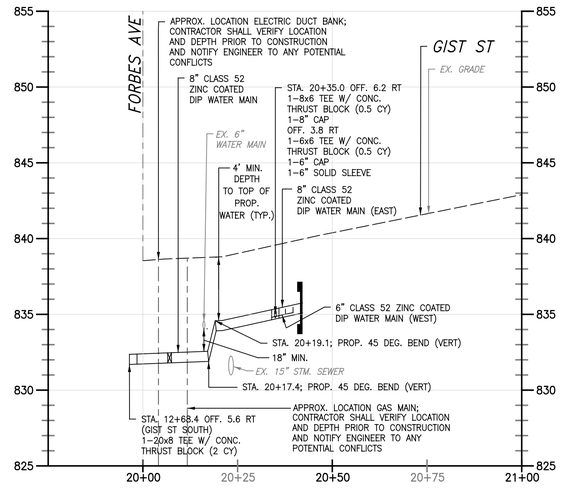
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WATER MAIN PROFILE – GIST STREET 12+00 TO 12+71.89 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – GIST STREET 20+00 TO 21+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

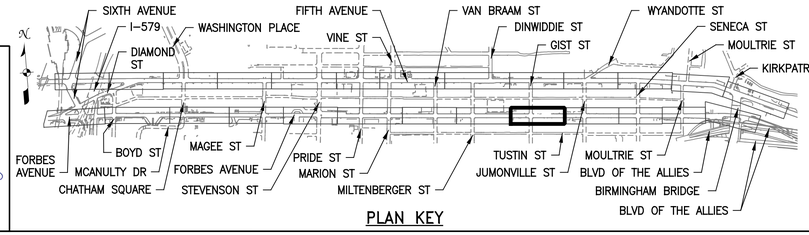
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

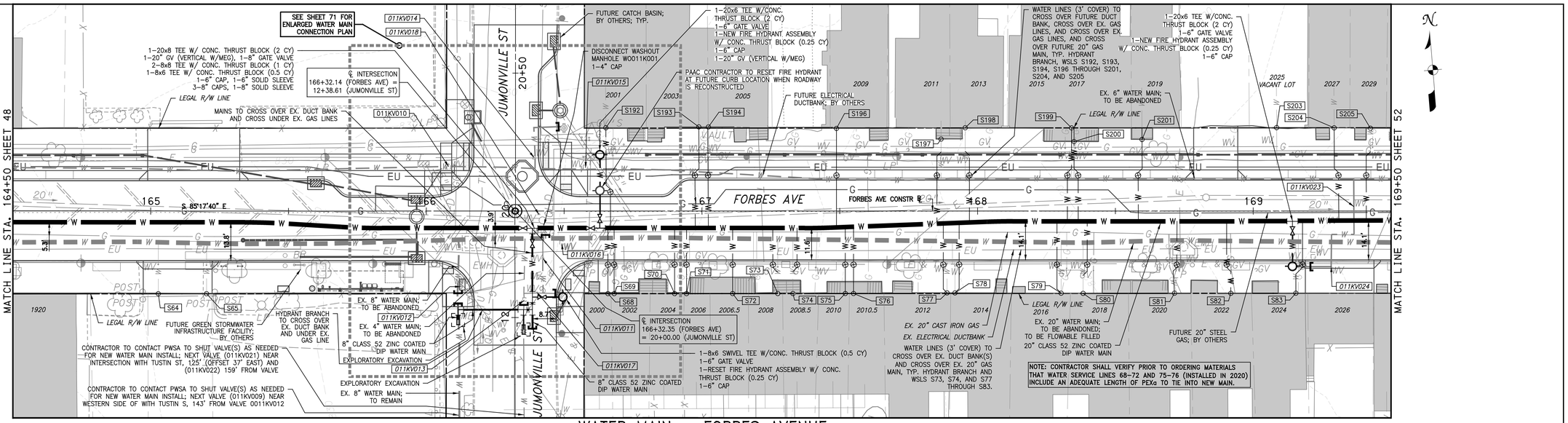
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DATE: JANUARY, 2021 CASE NO. _____

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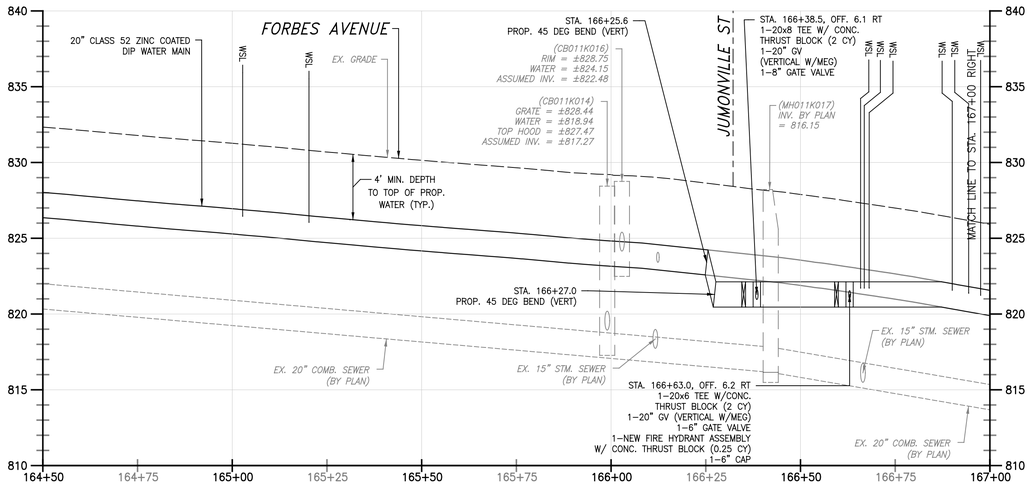
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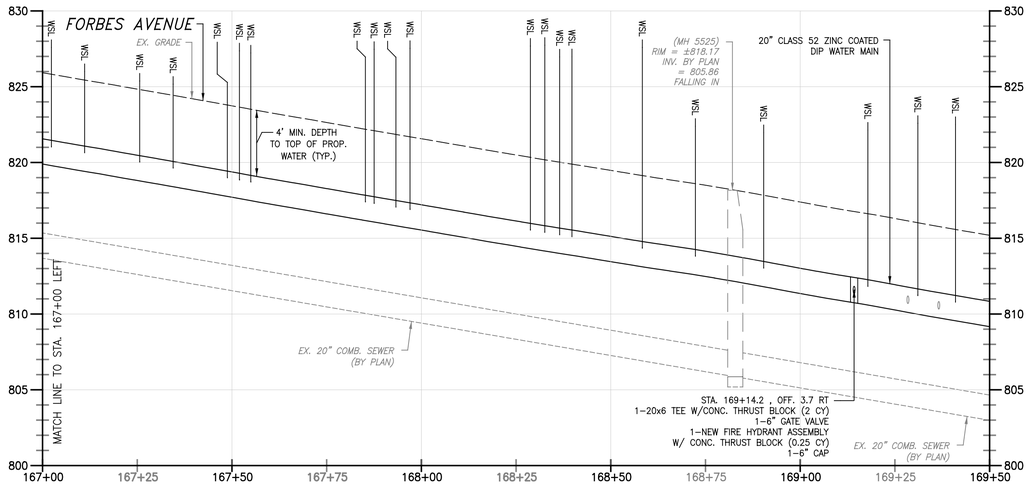
WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 164+50 TO 167+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FORBES AVENUE 167+00 TO 169+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

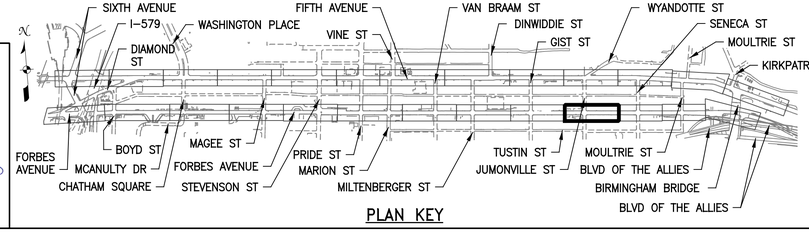
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-084241-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

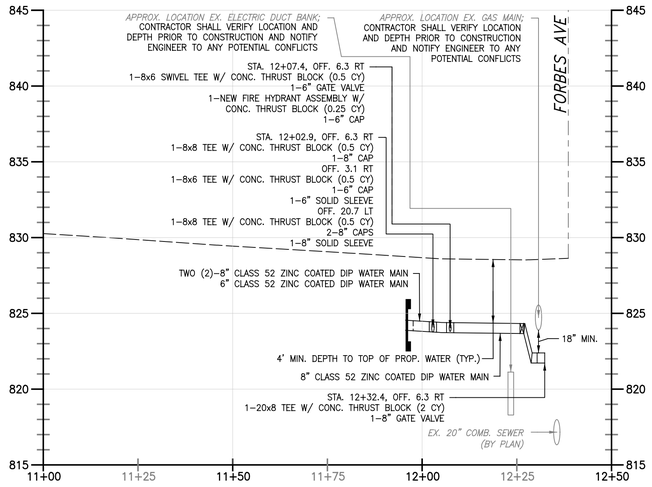
SCALE: AS NOTED SHEET NO. 50 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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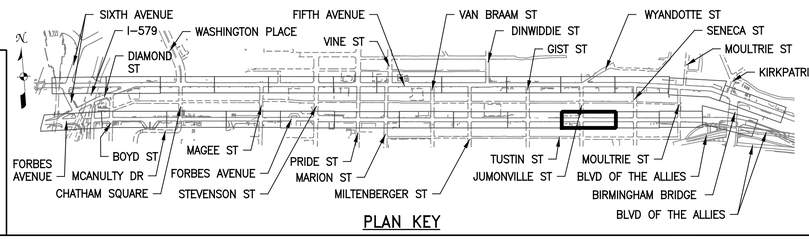
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WATER MAIN PROFILE – JUMONVILLE STREET 11+50 TO 12+38.61 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



PLAN KEY

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

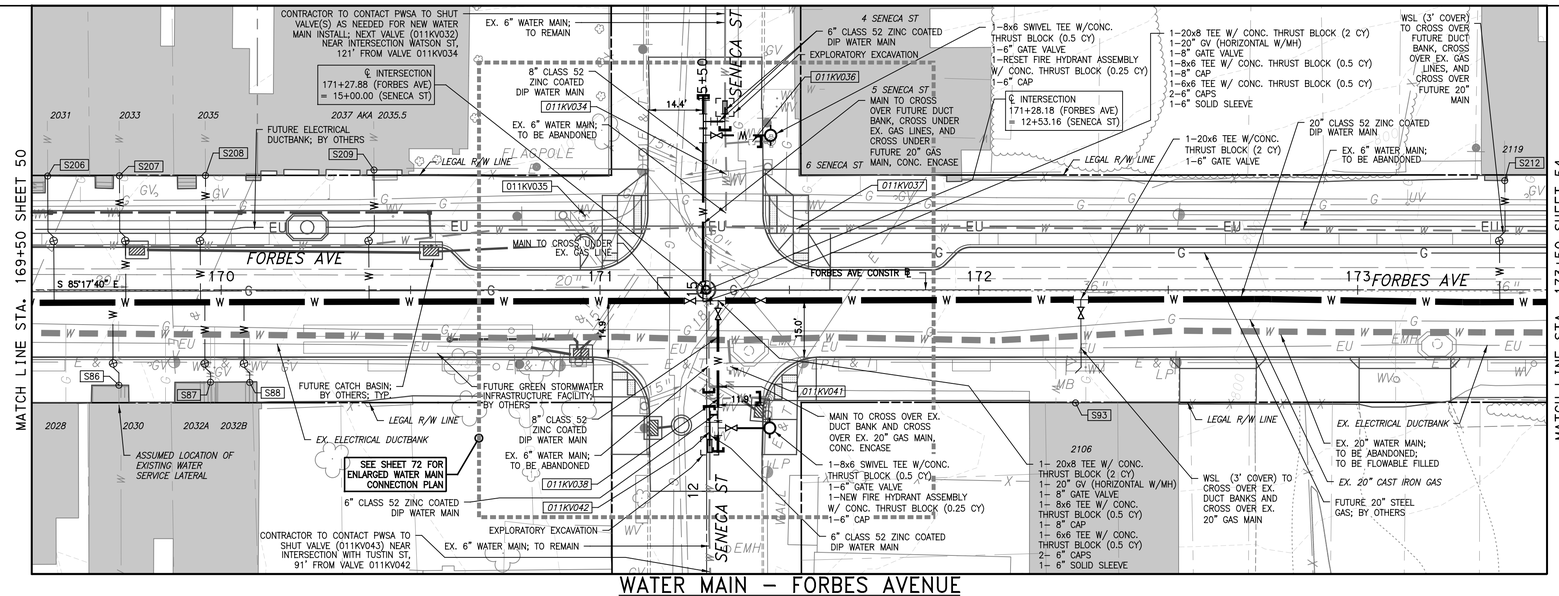
SCALE: AS NOTED SHEET NO. 51 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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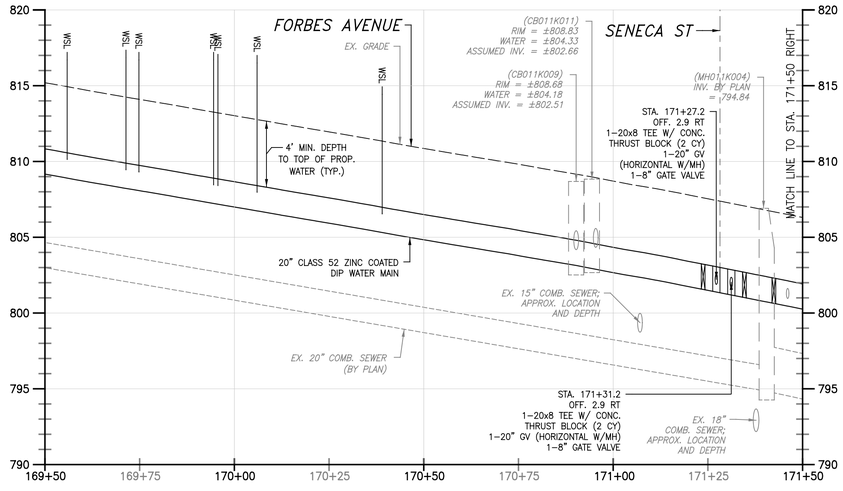
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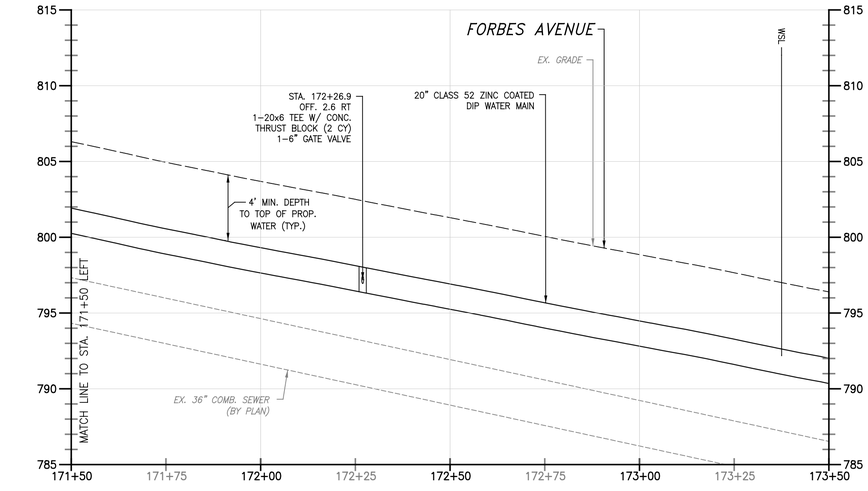
WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 169+50 TO 171+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FORBES AVENUE 171+50 TO 173+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
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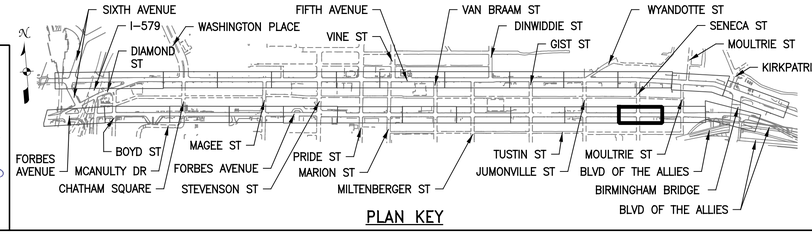
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

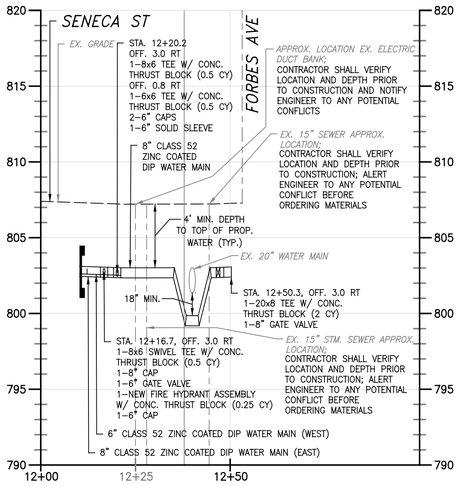
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DATE: JANUARY, 2021 CASE NO. _____

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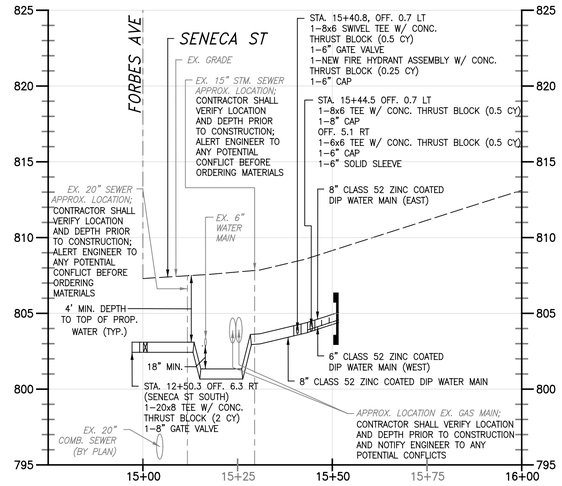
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WATER MAIN PROFILE – SENECA STREET 12+00 TO 12+53.16 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – SENECA STREET 15+00 TO 16+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

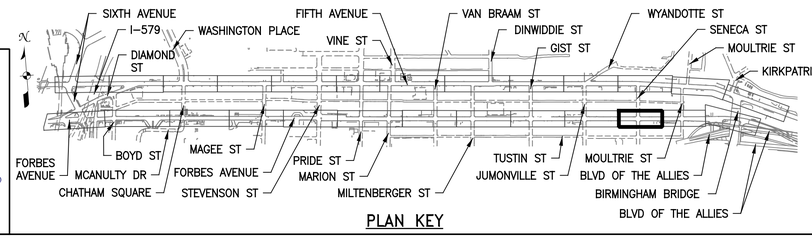
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

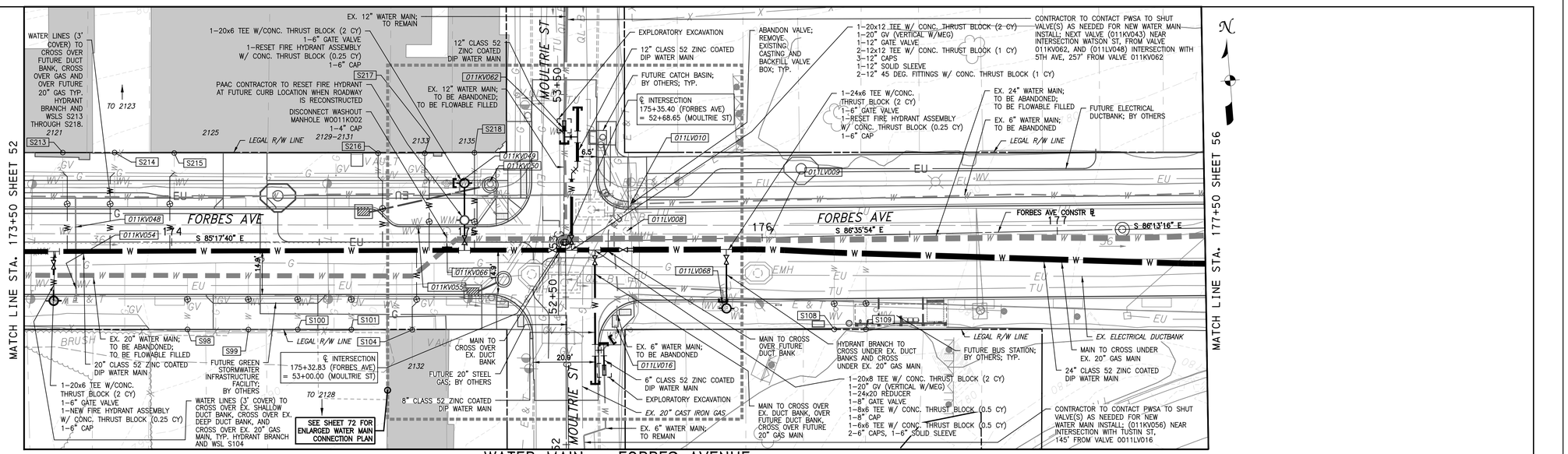
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DATE: JANUARY, 2021 CASE NO. _____

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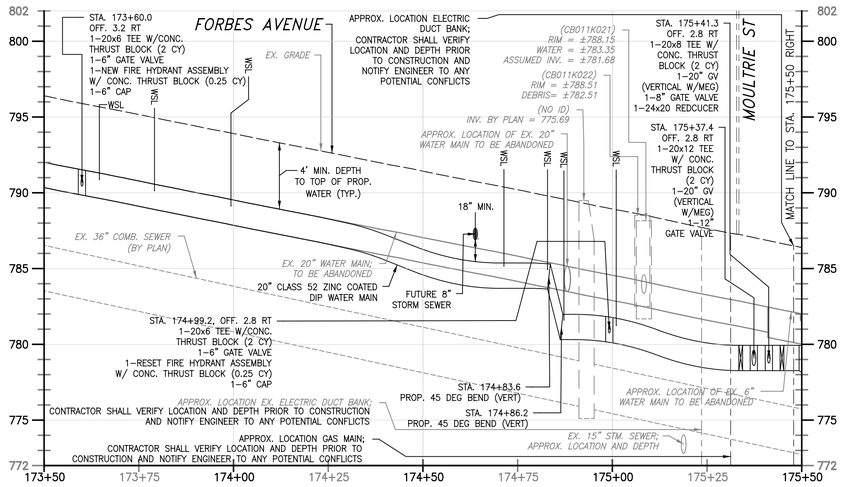
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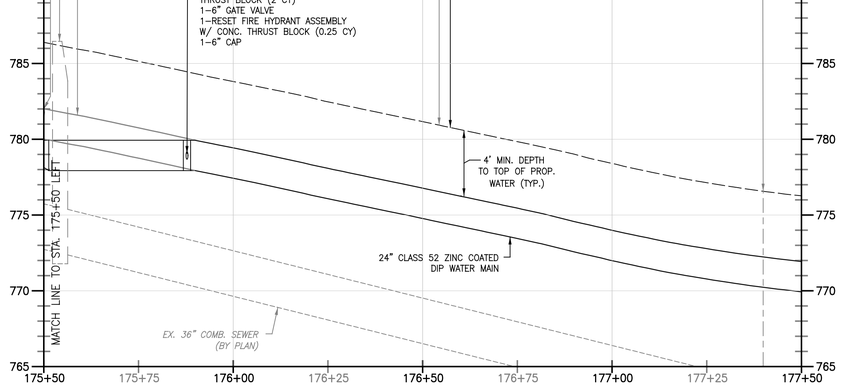
WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 173+50 TO 175+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FORBES AVENUE 175+50 TO 177+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
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CALC. BOOK		PG.	

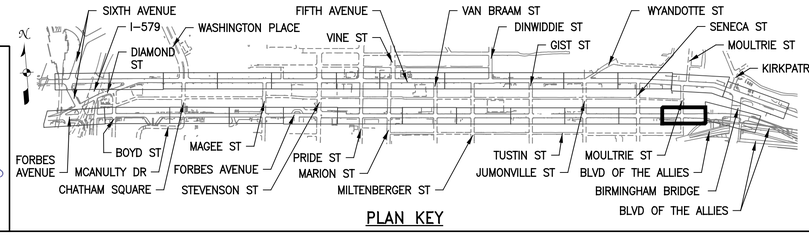
REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

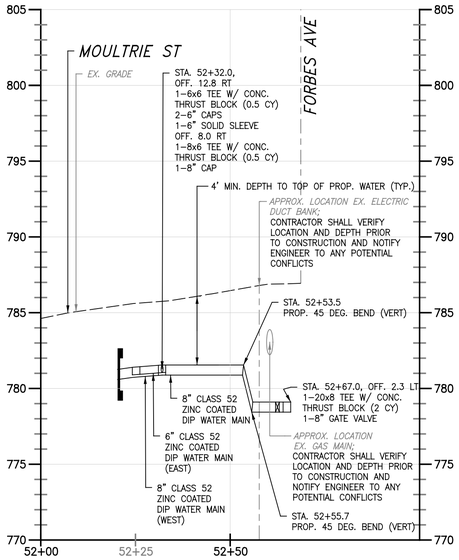
PLAN & PROFILE - FORBES AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 54 OF 166
ACCESSION NO. _____
CASE NO. _____

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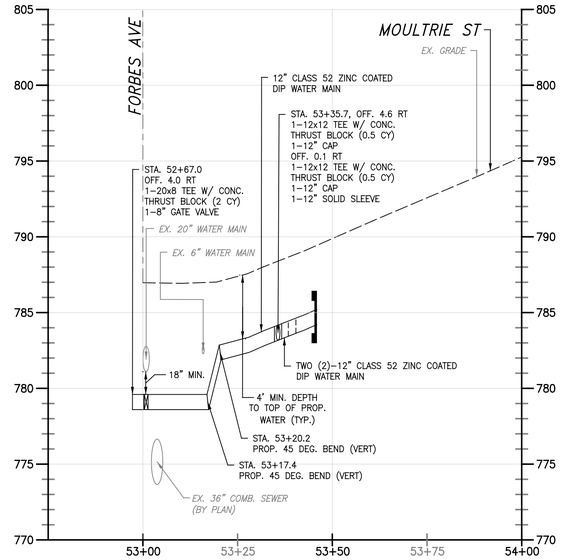
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WATER MAIN PROFILE – MOULTRIE STREET 52+00 TO 52+68.65 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – MOULTRIE STREET 53+00 TO 54+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

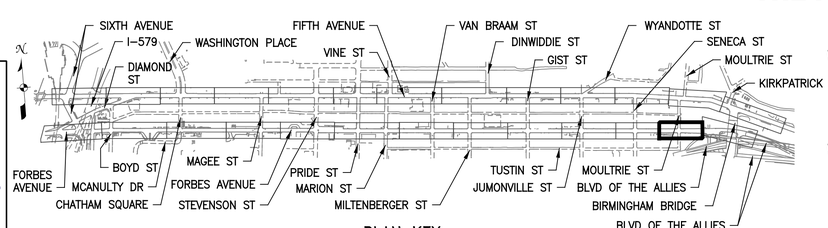
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

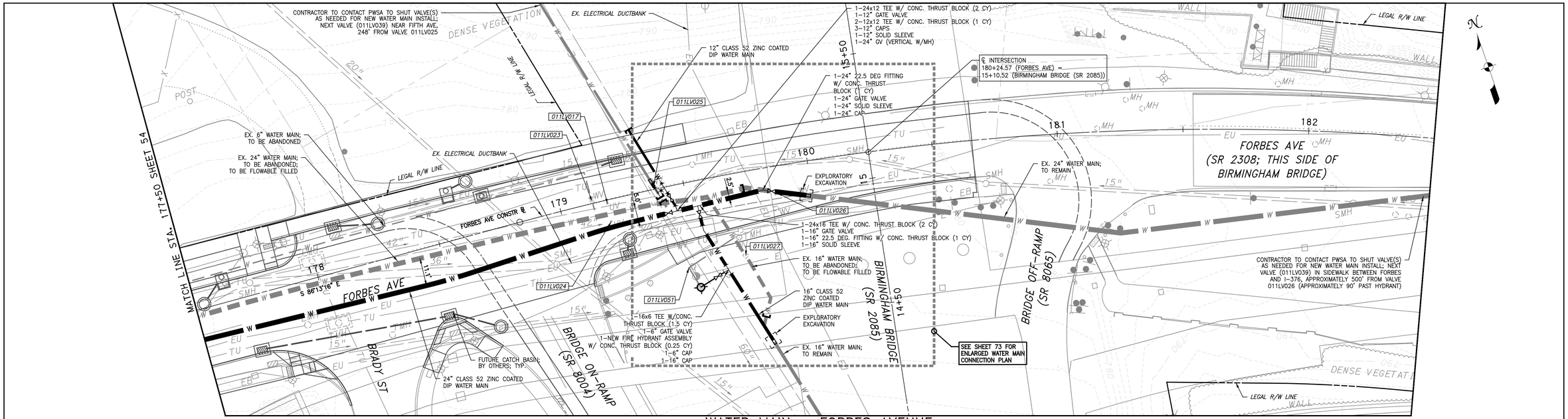
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DATE: JANUARY, 2021 CASE NO. _____

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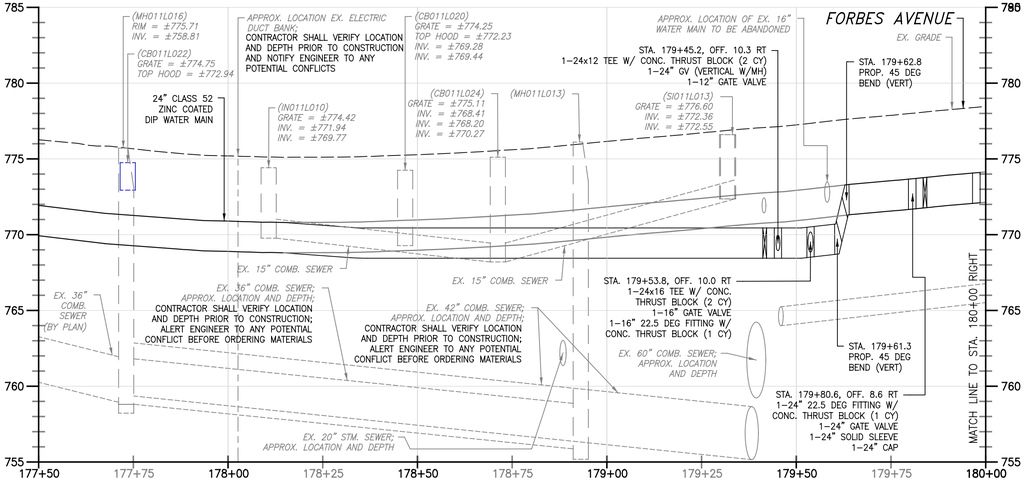
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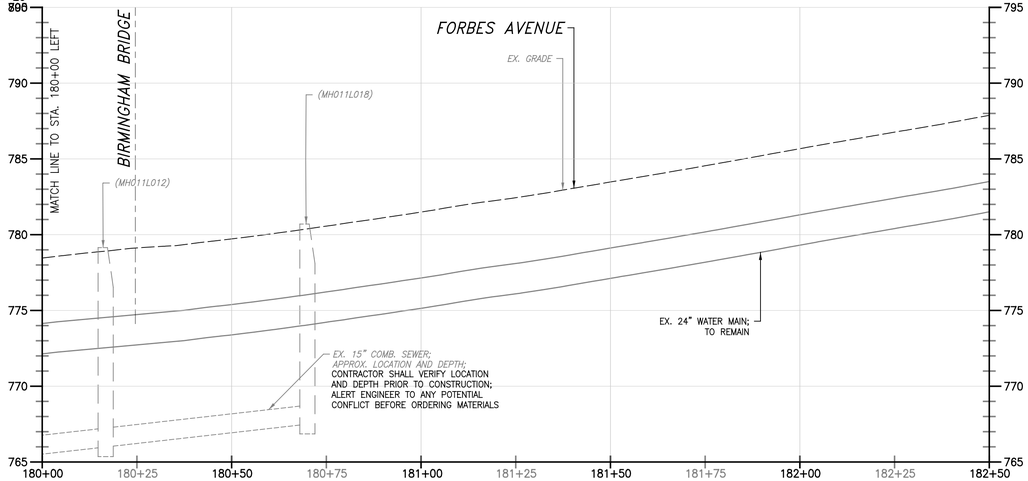
WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 177+50 TO 180+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FORBES AVENUE 180+00 TO 182+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR ____ DATE ____

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

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DESIGNED BY:

gai consultants

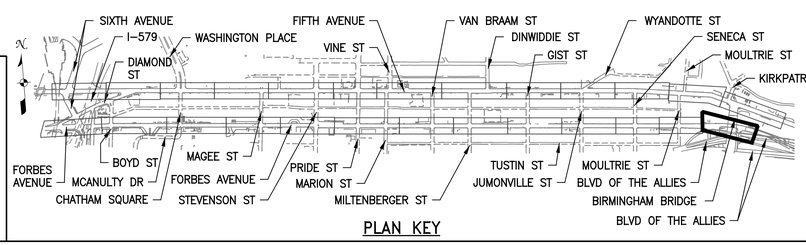
COMMONWEALTH OF REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-C

1-7-2021

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PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

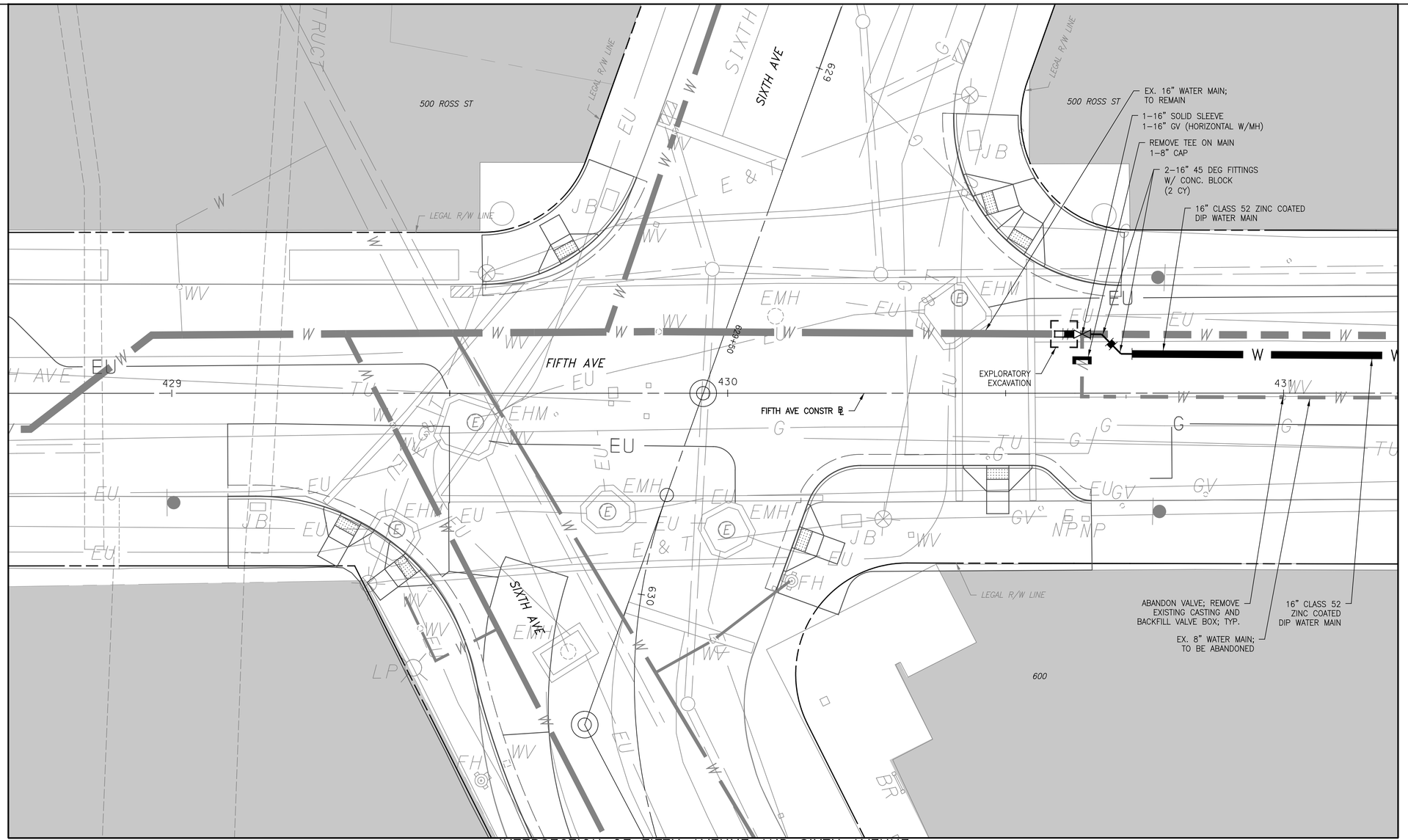
WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FORBES AVENUE

SCALE: AS NOTED SHEET NO. 56 OF 166 ACCESSION NO. _____

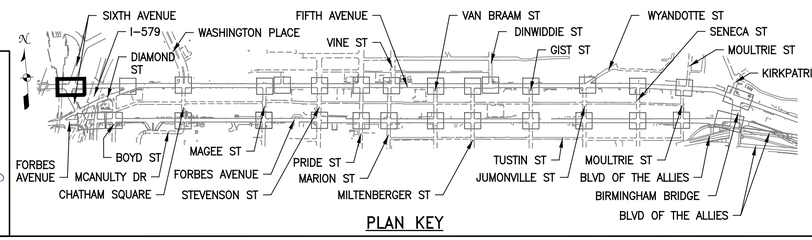
DATE: JANUARY, 2021 CASE NO. _____



INTERSECTION OF FIFTH AVENUE AND SIXTH AVENUE

SCALE: 1" = 10'

NOTE; SEE SHEET 8 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRR/SS			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS		
	CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-248843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

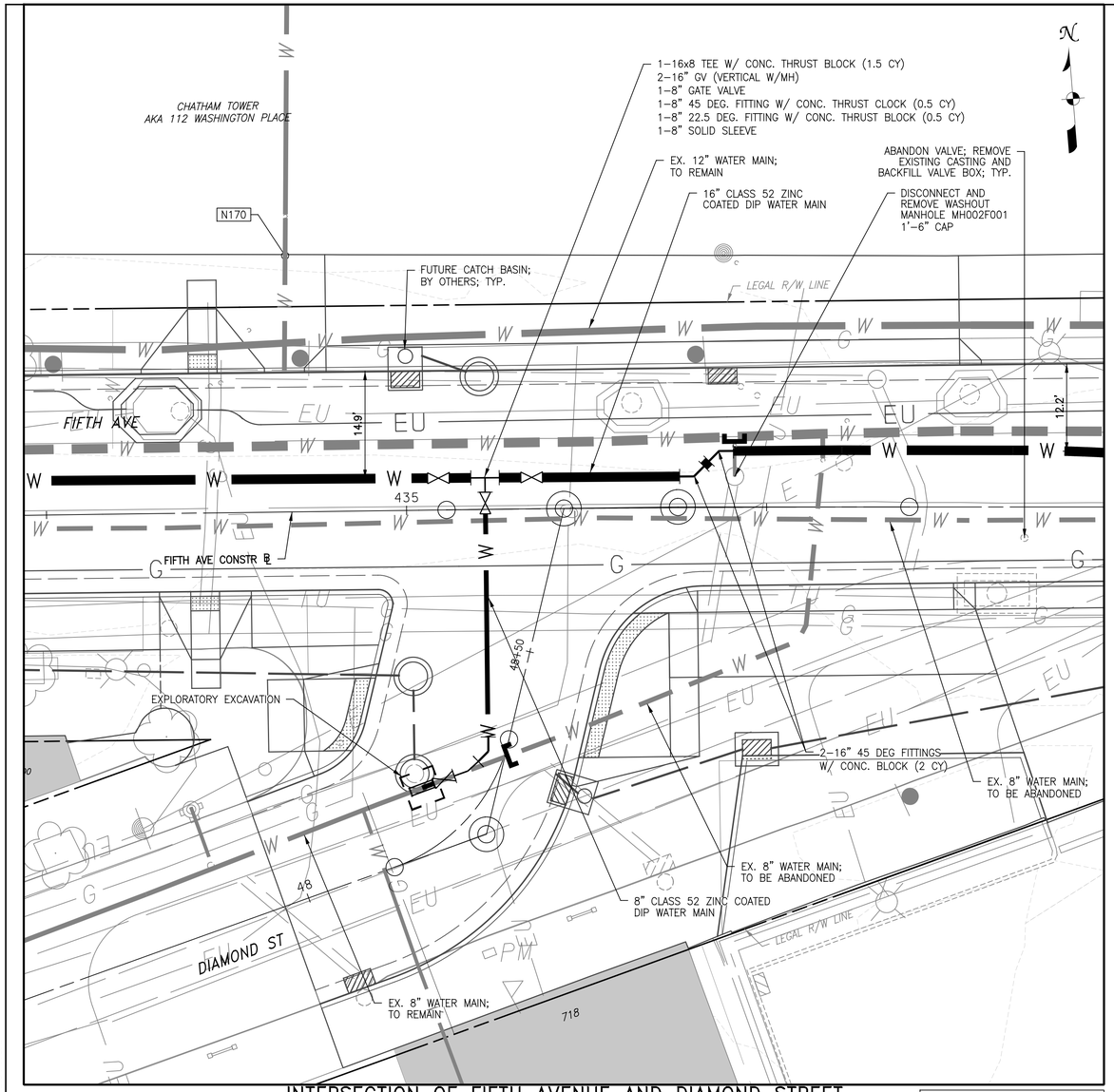
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DATE: JANUARY, 2021 CASE NO. _____

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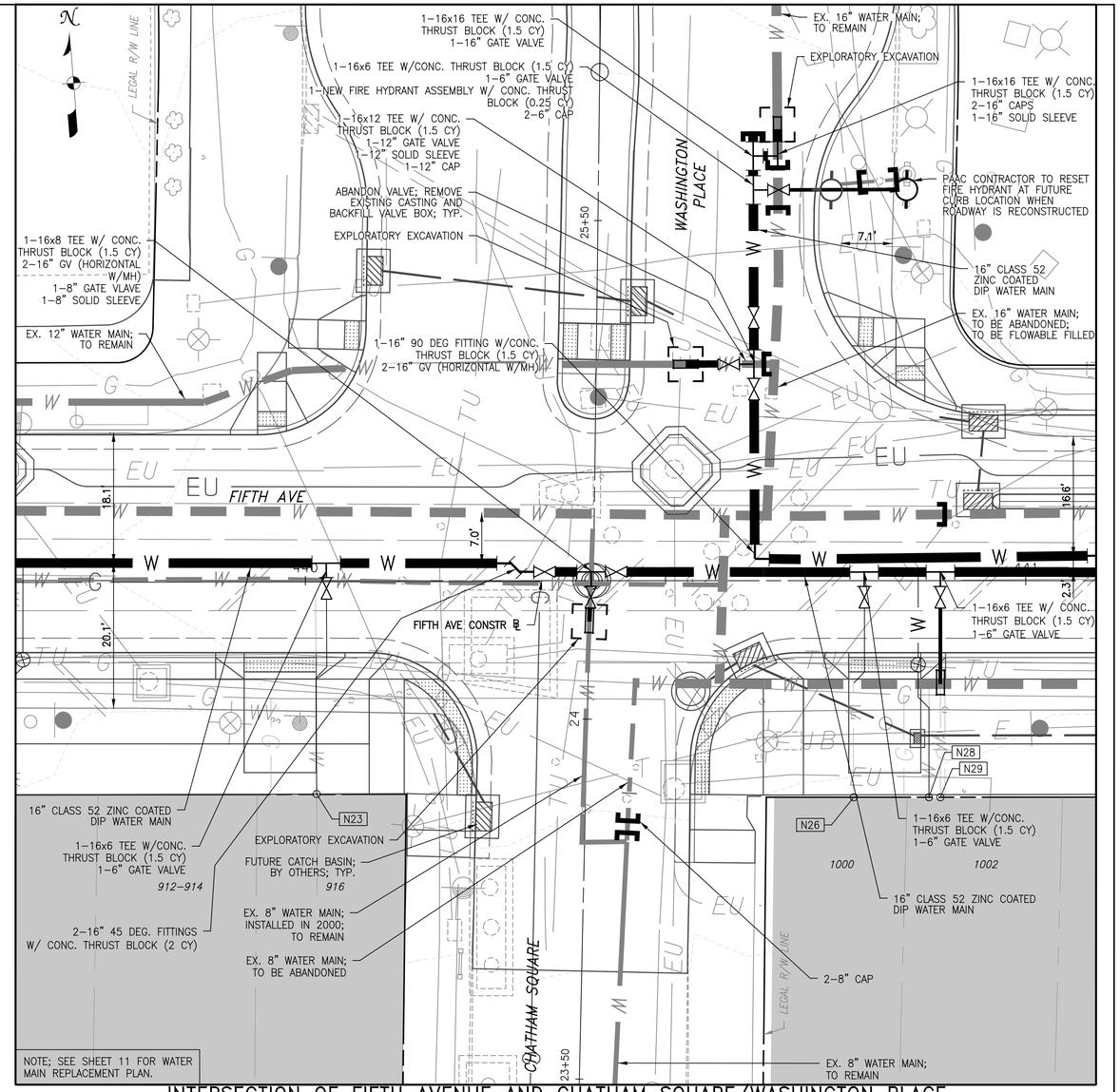
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INTERSECTION OF FIFTH AVENUE AND DIAMOND STREET

SCALE: 1" = 10'

NOTE; SEE SHEET 9 FOR WATER MAIN REPLACEMENT PLAN.



NOTE; SEE SHEET 11 FOR WATER MAIN REPLACEMENT PLAN.

INTERSECTION OF FIFTH AVENUE AND CHATHAM SQUARE/WASHINGTON PLACE

SCALE: 1" = 10'

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

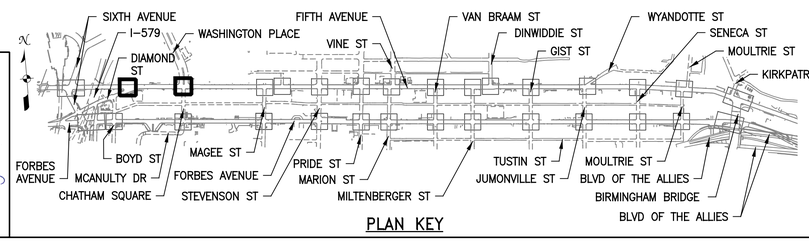
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DATE: JANUARY, 2021

SHEET NO. 58 OF 166

ACCESSION NO. _____

CASE NO. _____



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
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BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

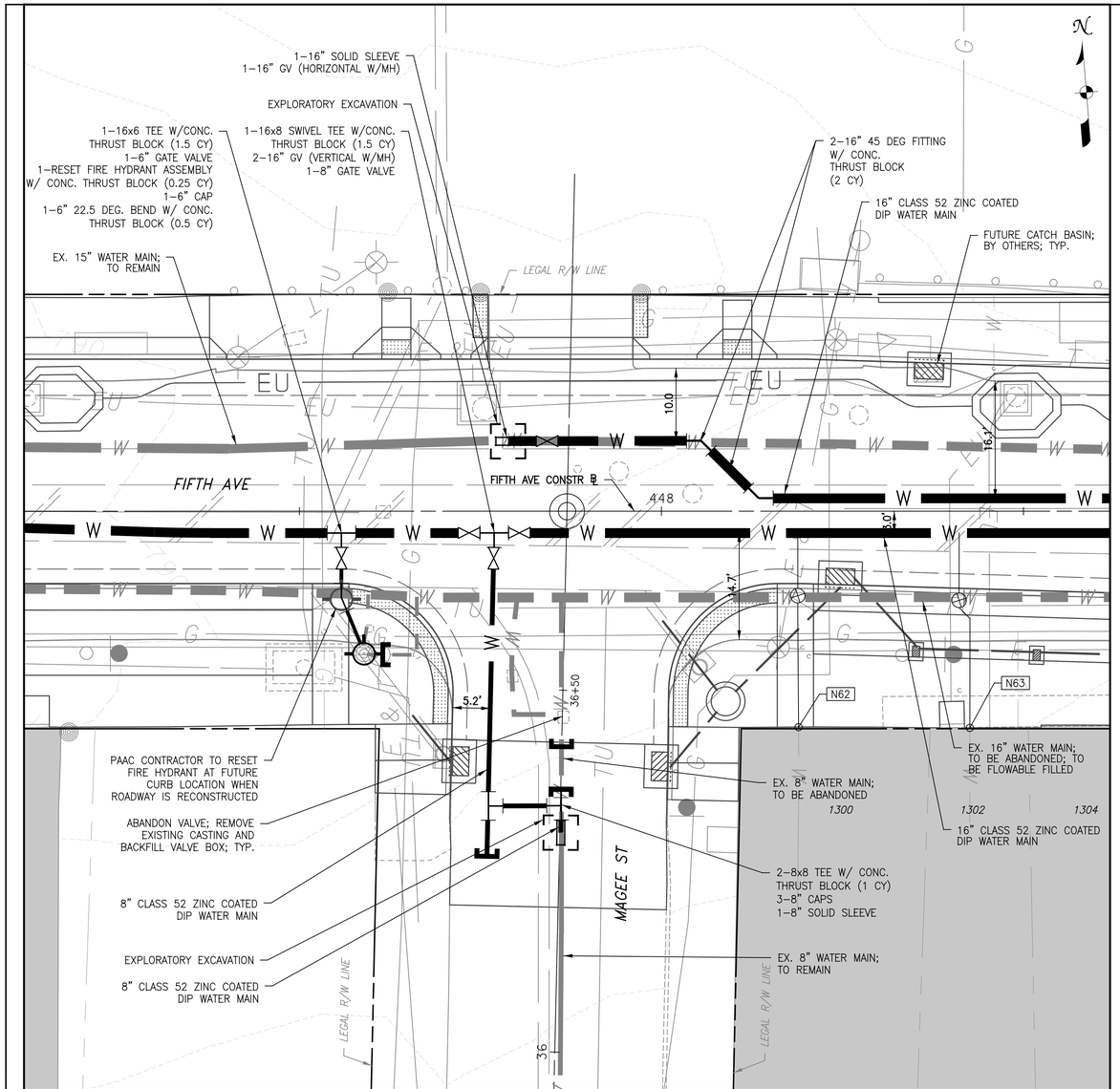
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

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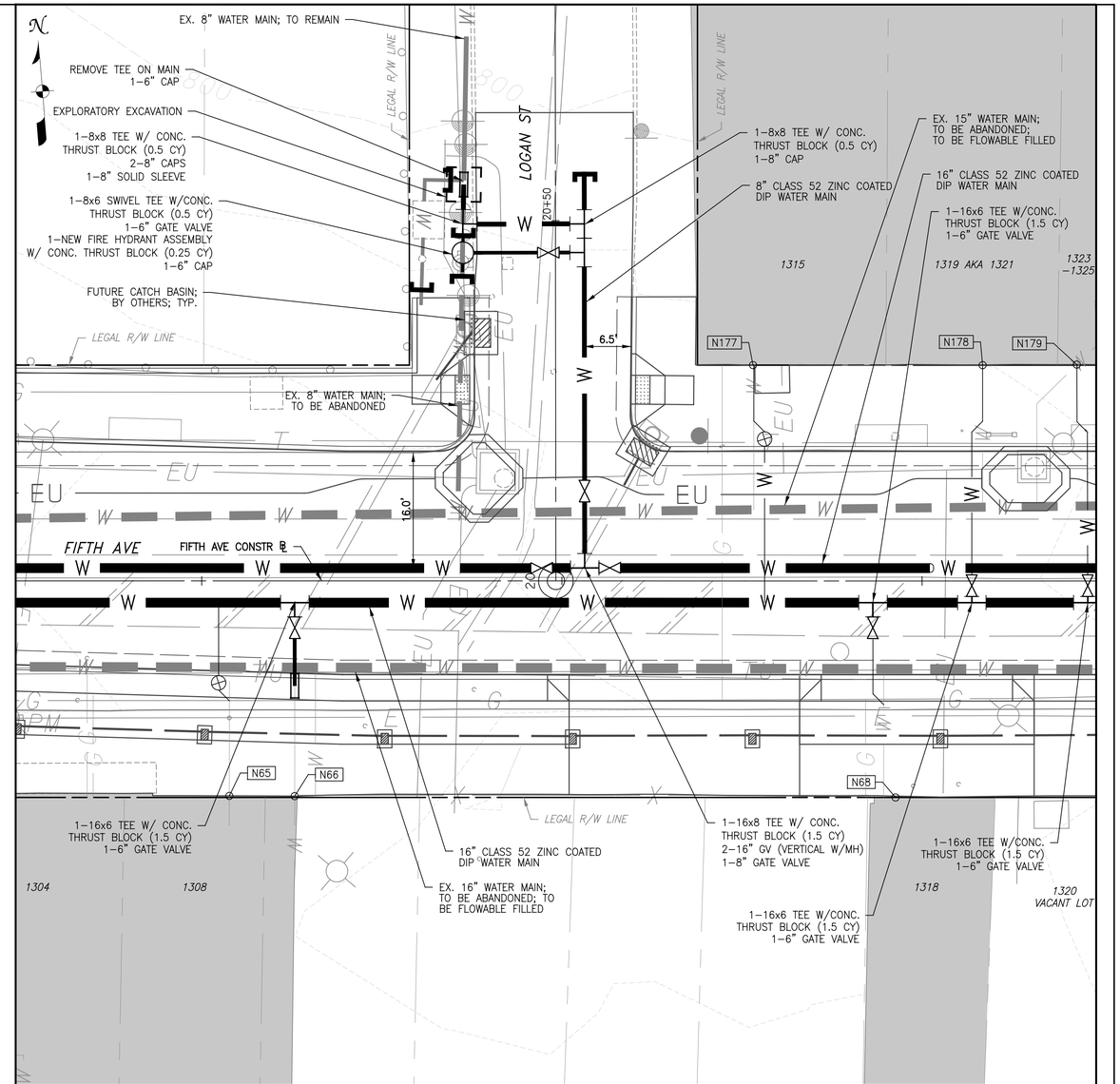
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INTERSECTION OF FIFTH AVENUE AND MAGEE STREET

SCALE: 1" = 10'

NOTE; SEE SHEET 13 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FIFTH AVENUE AND LOGAN STREET

SCALE: 1" = 10'

NOTE; SEE SHEET 15 FOR WATER MAIN REPLACEMENT PLAN.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED SHEET NO. 59 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

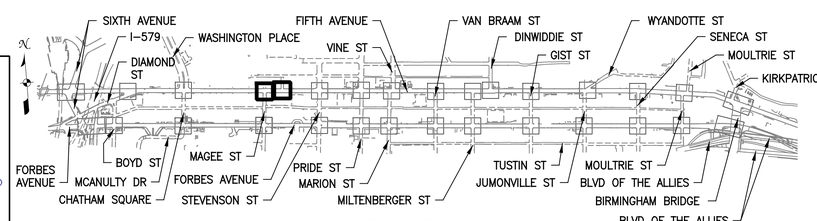
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048843-E

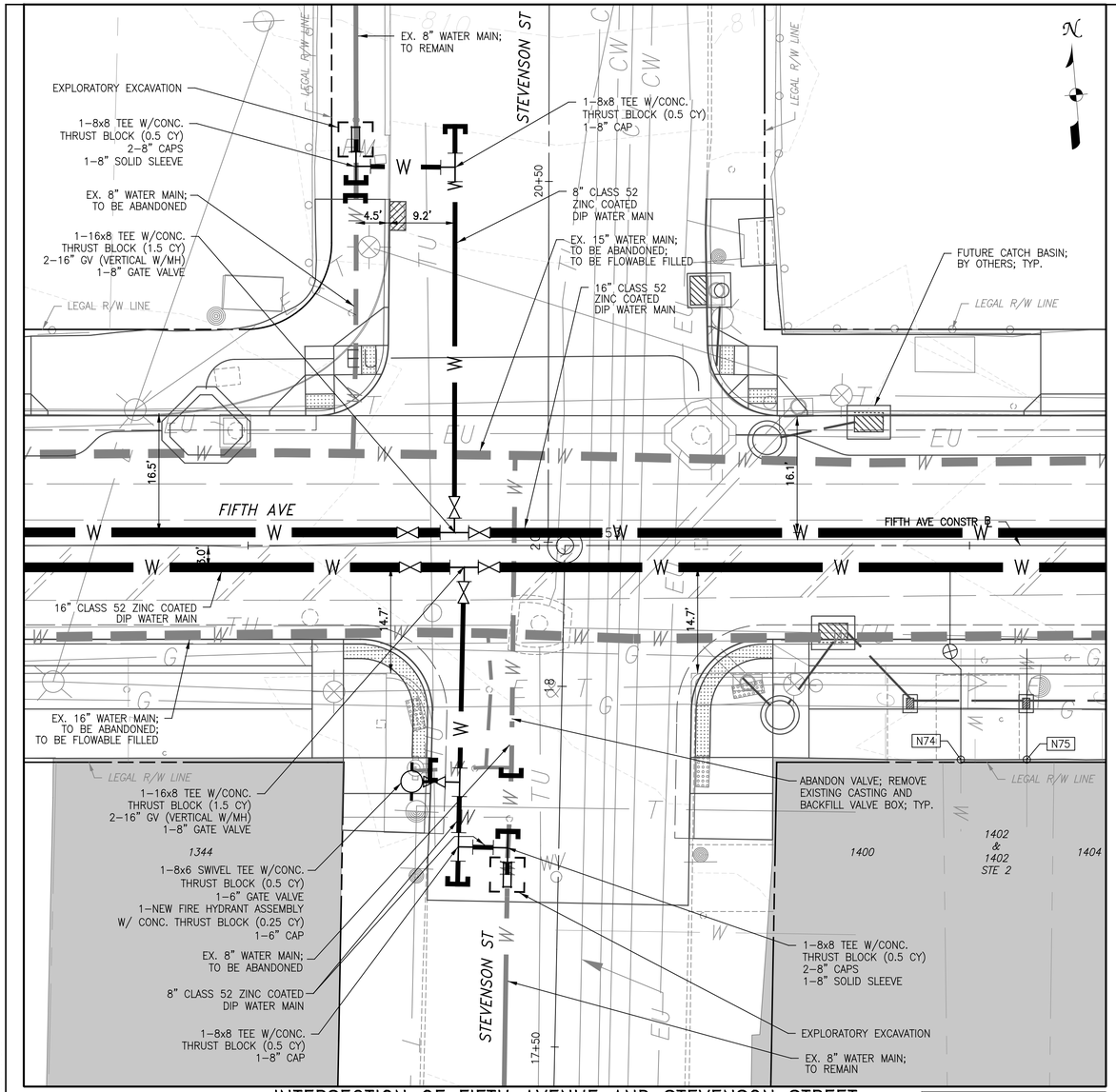
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PLAN KEY

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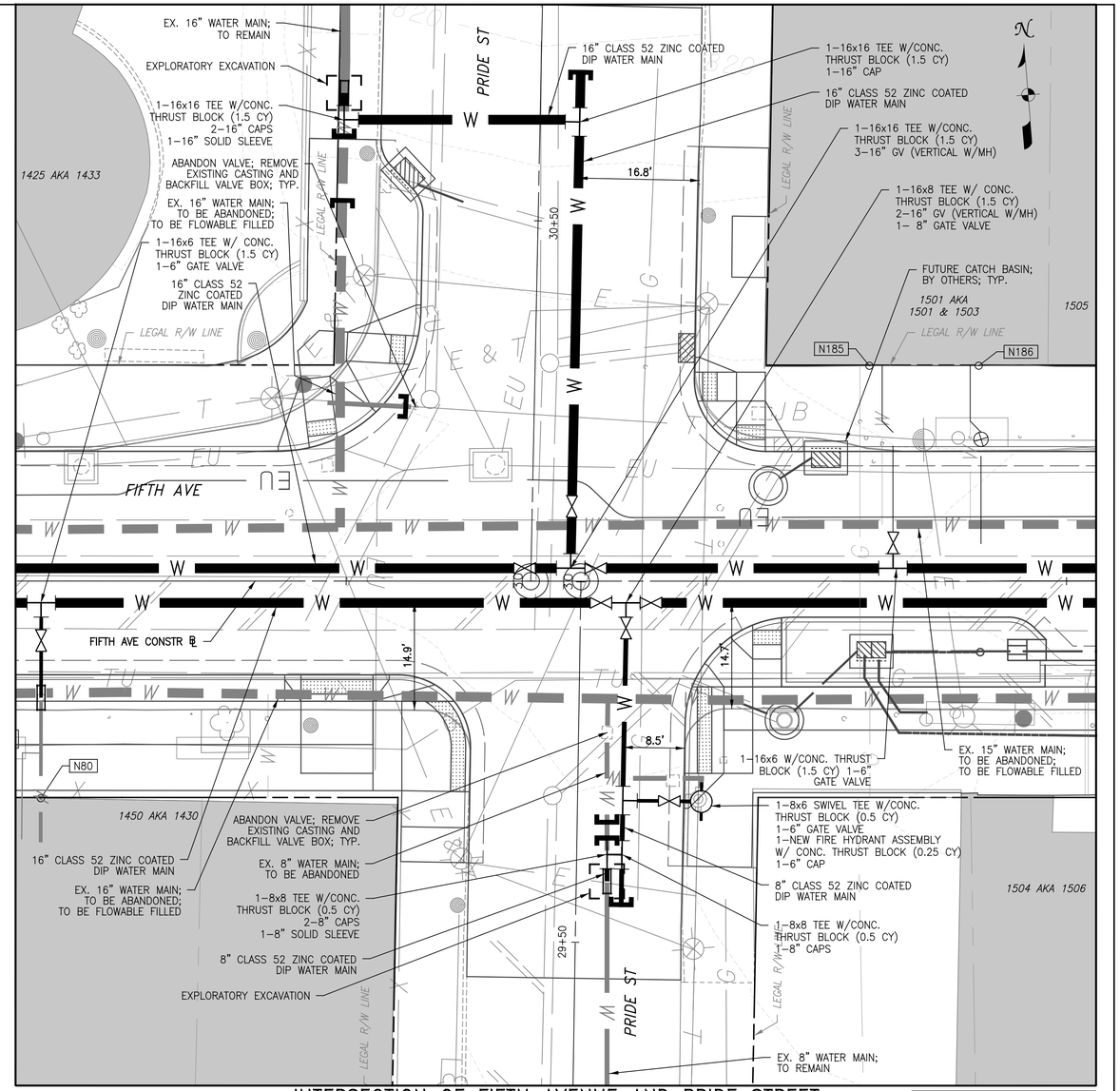
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INTERSECTION OF FIFTH AVENUE AND STEVENSON STREET

SCALE: 1" = 10'

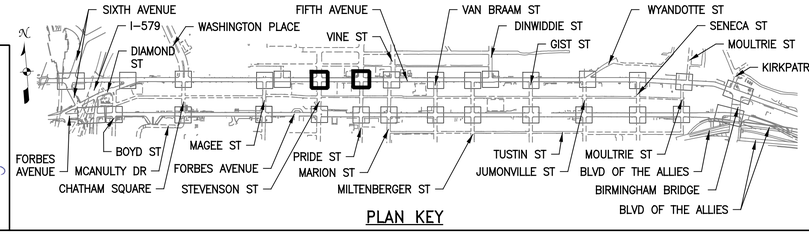
NOTE; SEE SHEET 15 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FIFTH AVENUE AND PRIDE STREET

SCALE: 1" = 10'

NOTE; SEE SHEET 17 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 60 OF 166

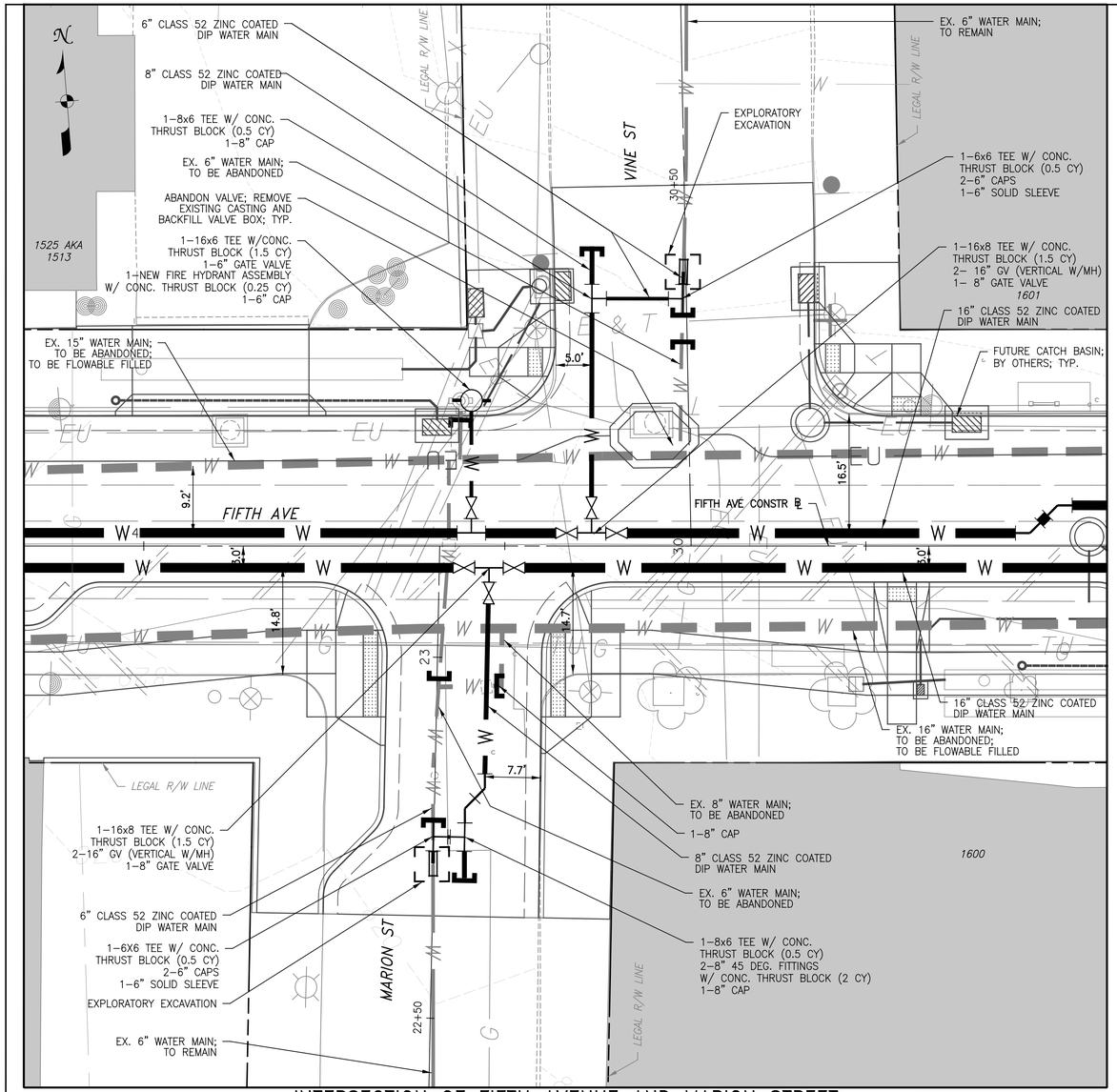
ACCESSION NO. _____

CASE NO. _____

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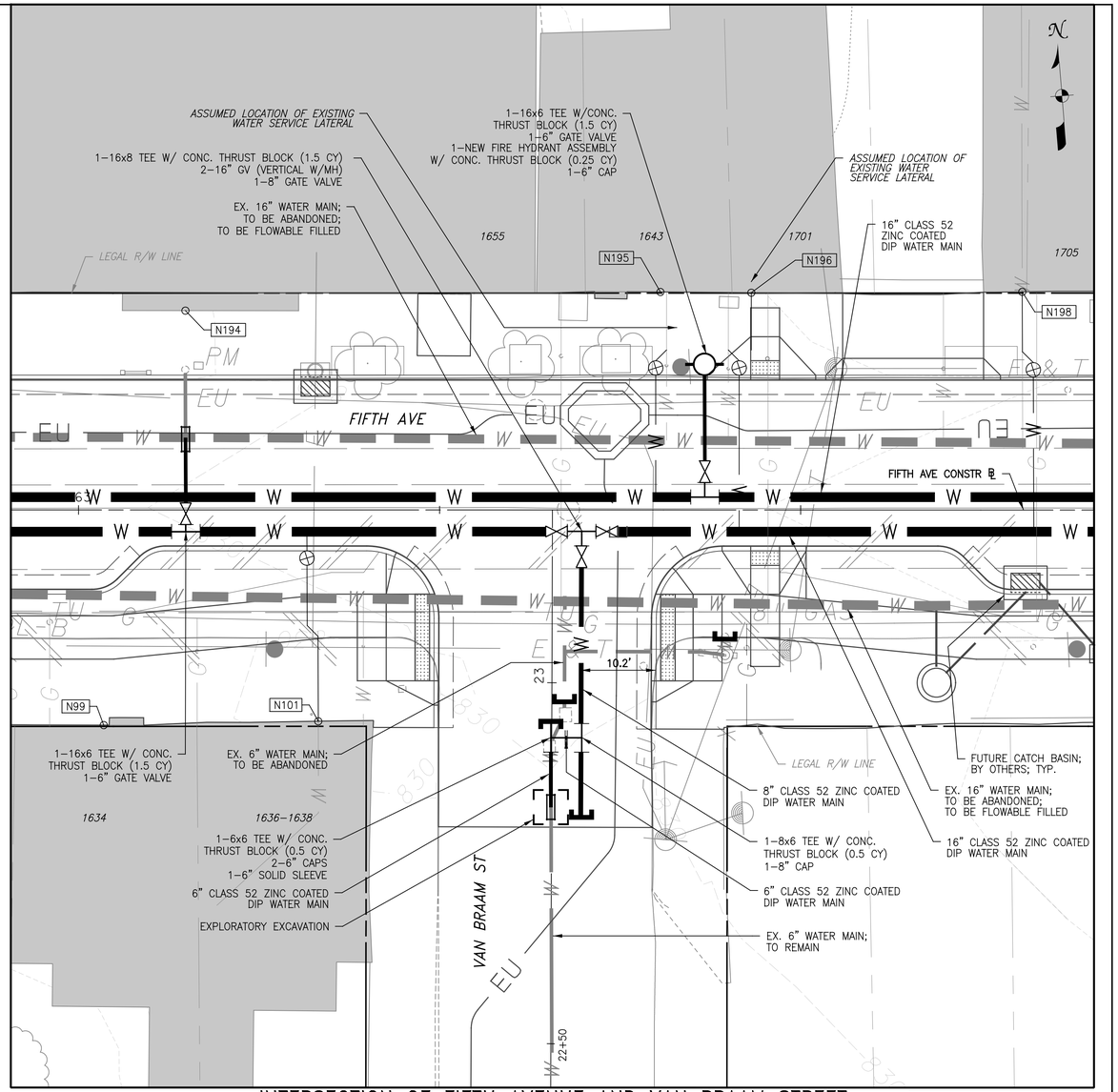
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INTERSECTION OF FIFTH AVENUE AND MARION STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 19 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FIFTH AVENUE AND VAN BRAAM STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 19 FOR WATER MAIN REPLACEMENT PLAN.

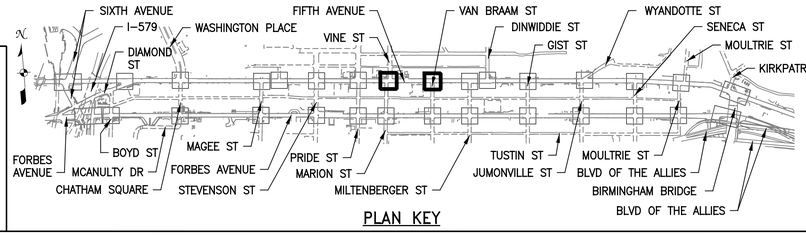
PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN



PLAN KEY

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 61 OF 166

ACCESSION NO. _____

CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

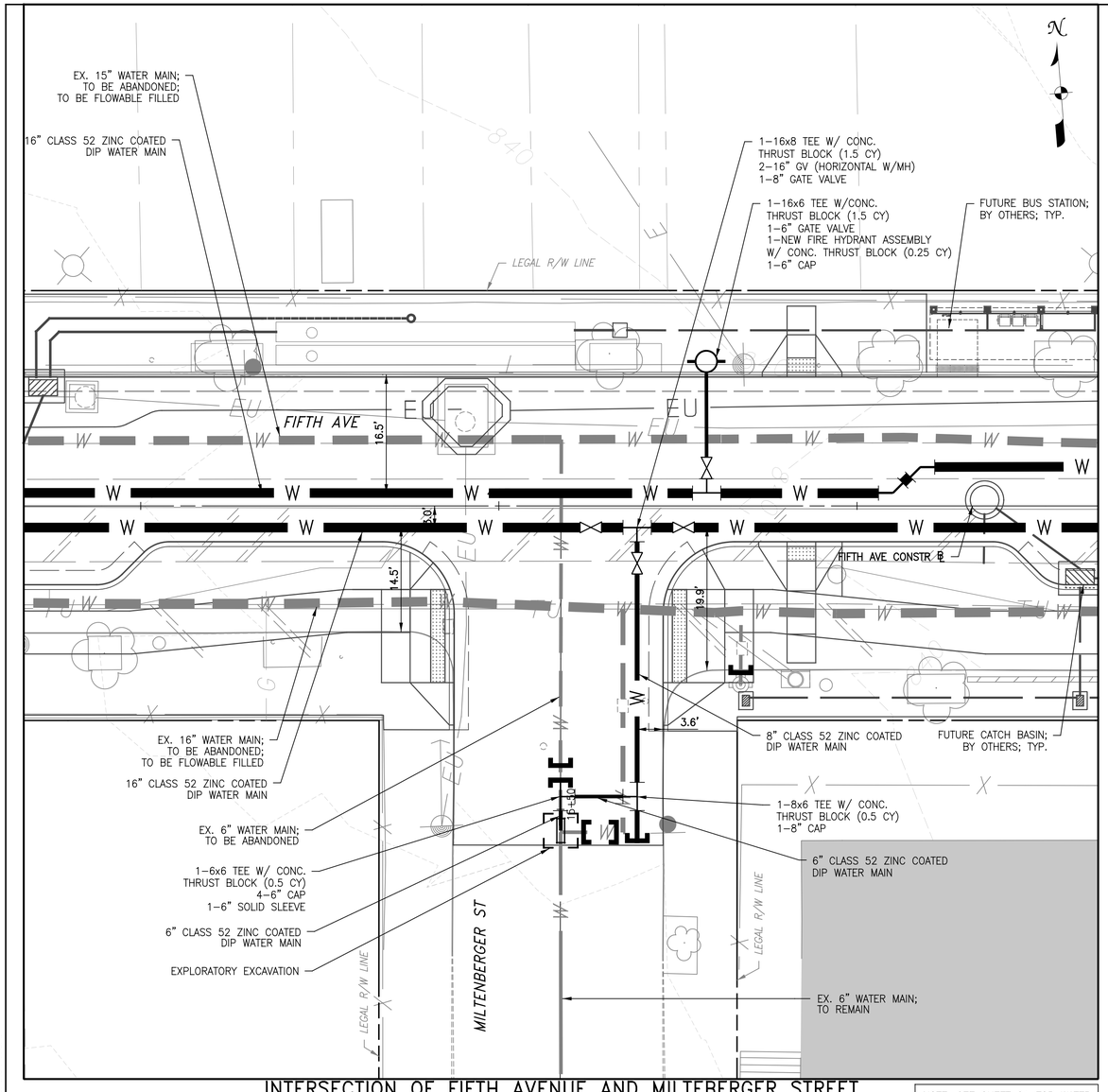
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

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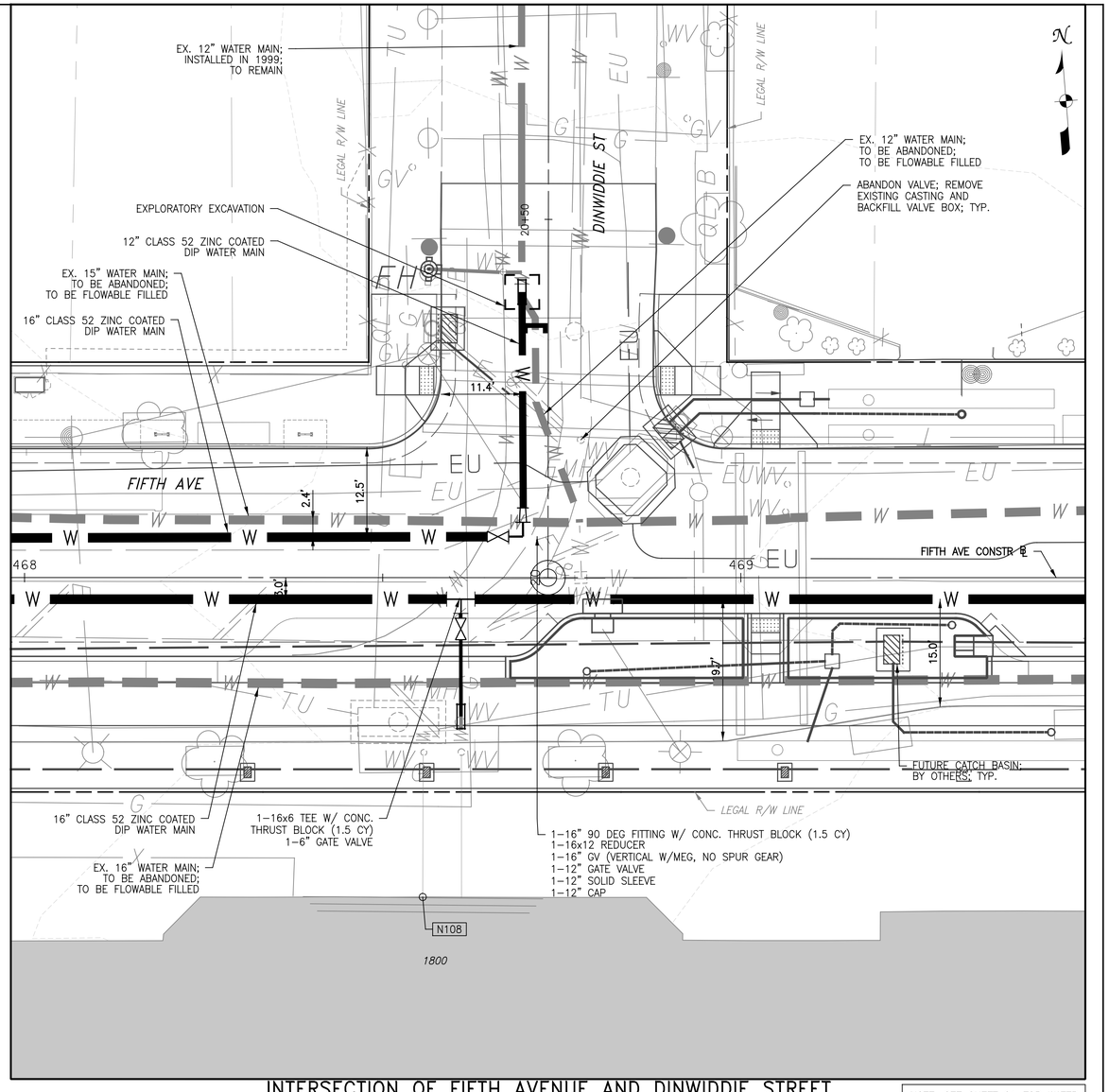
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INTERSECTION OF FIFTH AVENUE AND MILTEBERGER STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 21 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FIFTH AVENUE AND DINWIDDIE STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 21 FOR WATER MAIN REPLACEMENT PLAN.

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS		
	CHARACTER	DATE

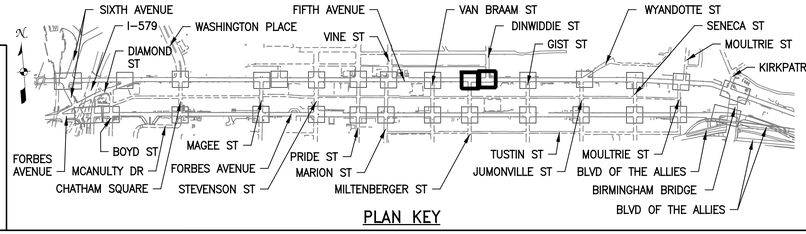
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-084843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

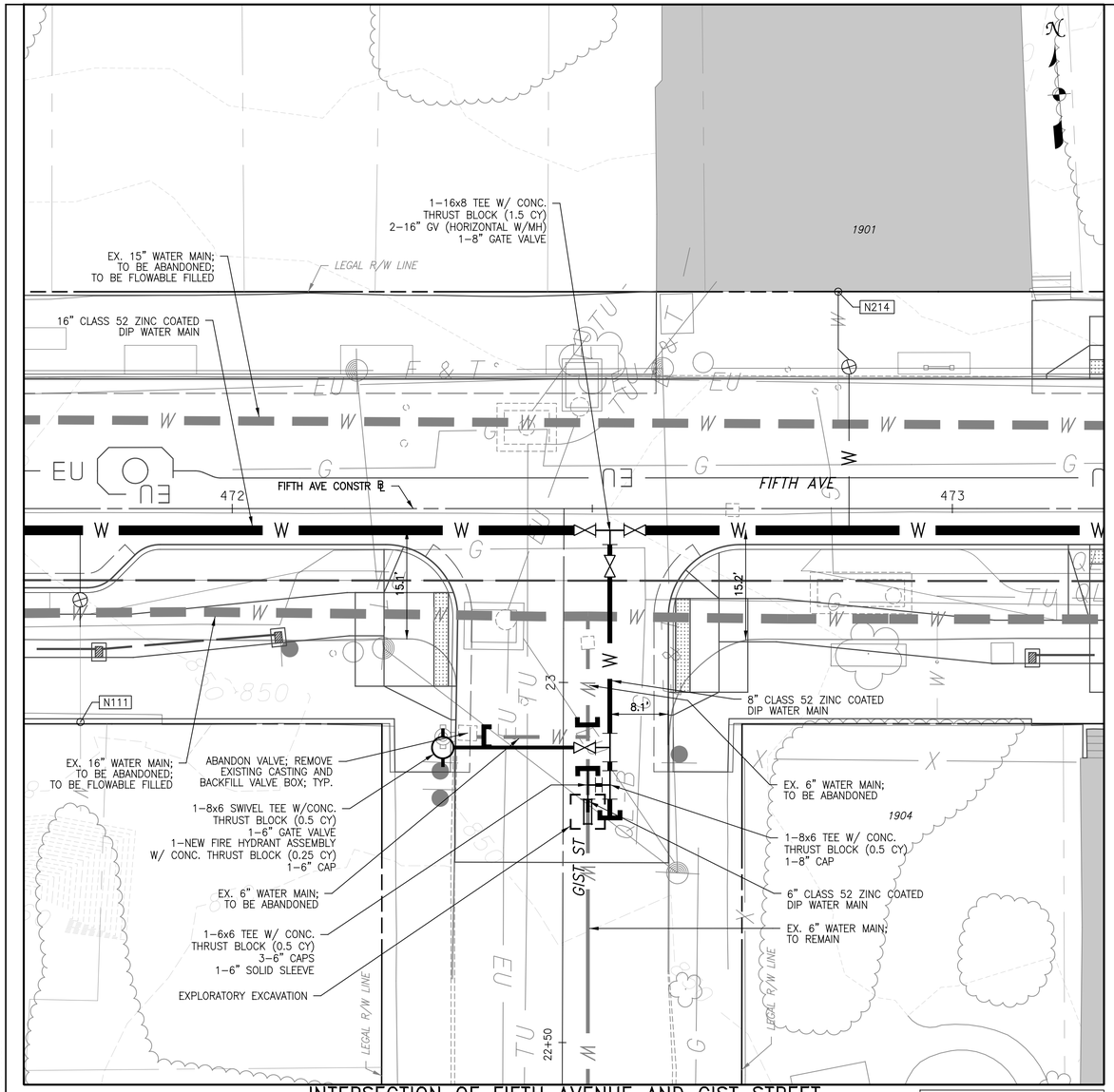
FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED SHEET NO. 62 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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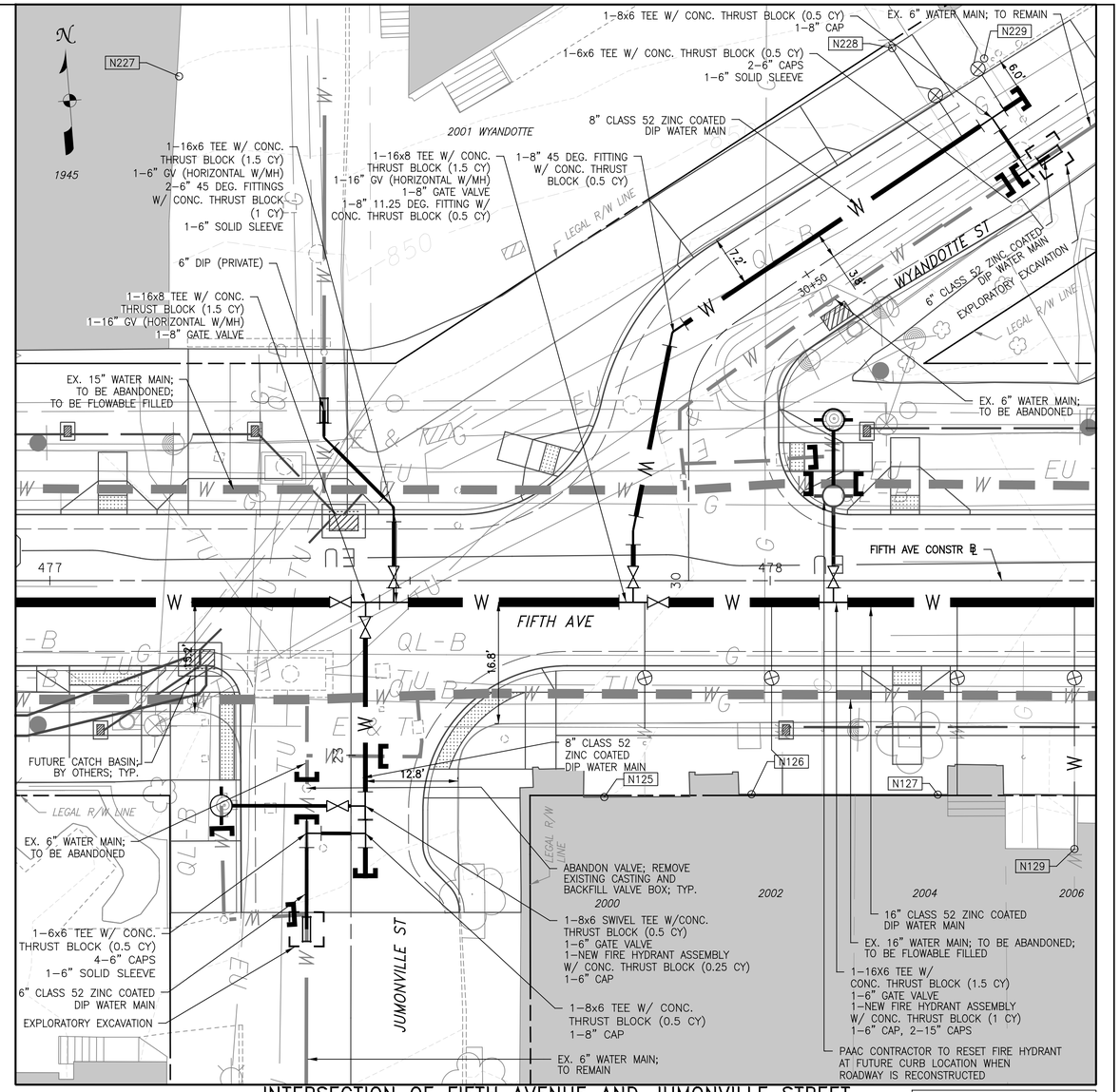
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INTERSECTION OF FIFTH AVENUE AND GIST STREET

SCALE: 1" = 10'

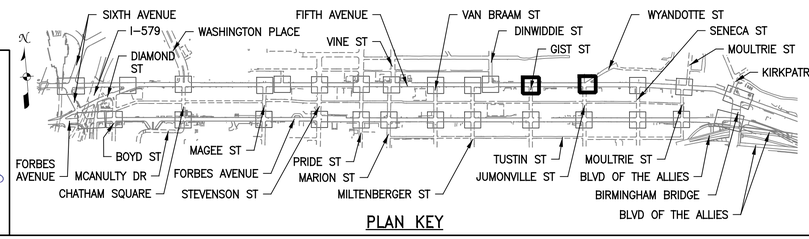
NOTE: SEE SHEET 23 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FIFTH AVENUE AND JUMONVILLE STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 25 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD./CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

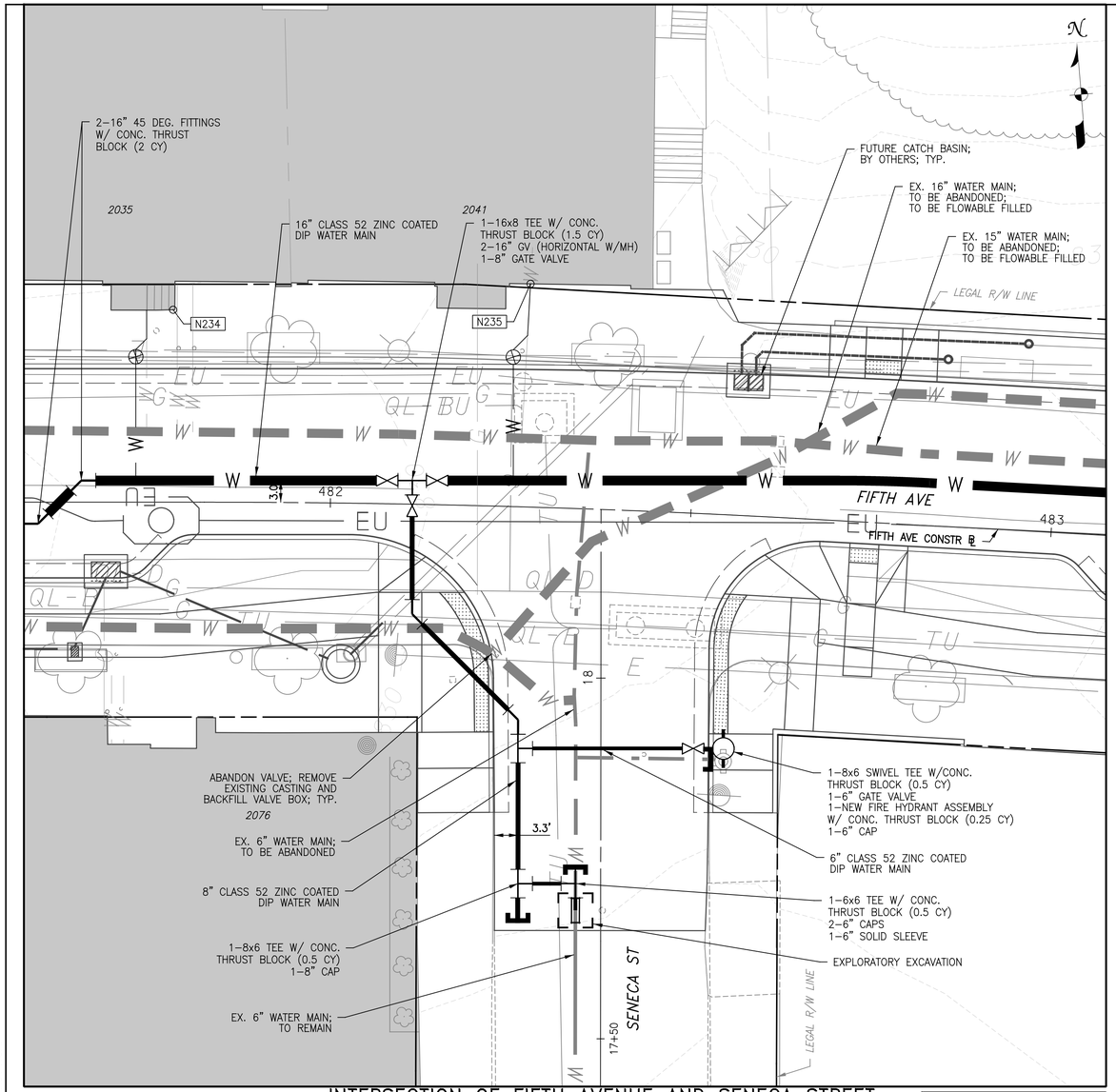
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DATE: JANUARY, 2021

SHEET NO. 63 OF 166

ACCESSION NO. _____

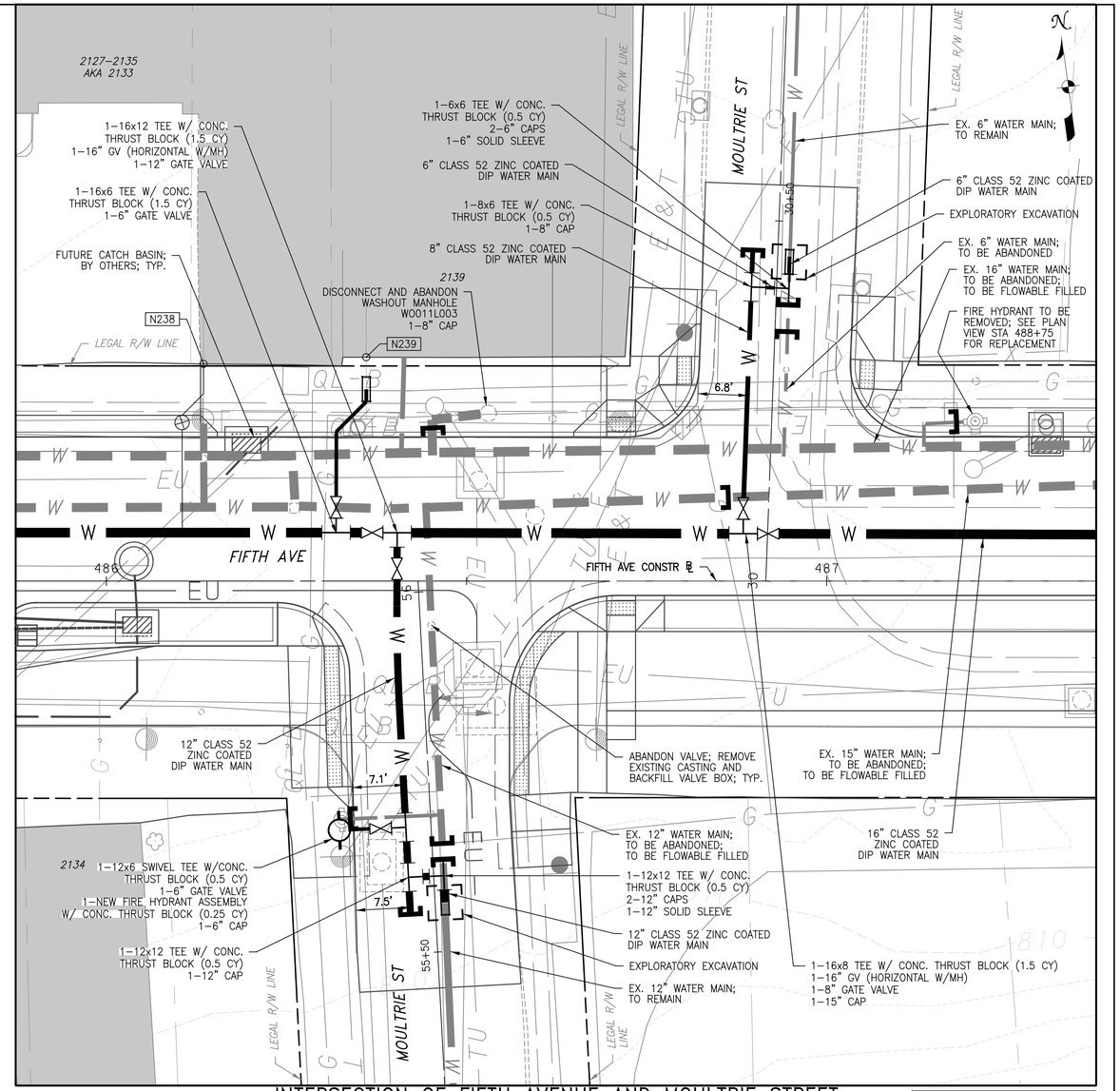
CASE NO. _____



INTERSECTION OF FIFTH AVENUE AND SENECA STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 27 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FIFTH AVENUE AND MOULTRIE STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 29 FOR WATER MAIN REPLACEMENT PLAN.

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REVIEWED FOR CONSTRUCTABILTY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

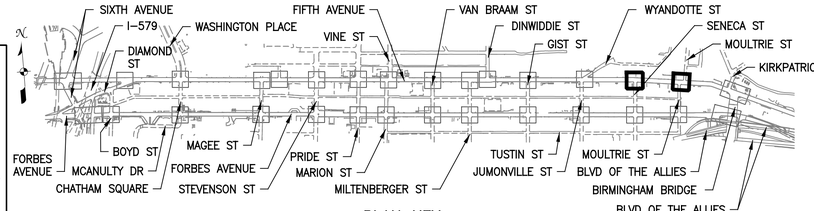
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DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED

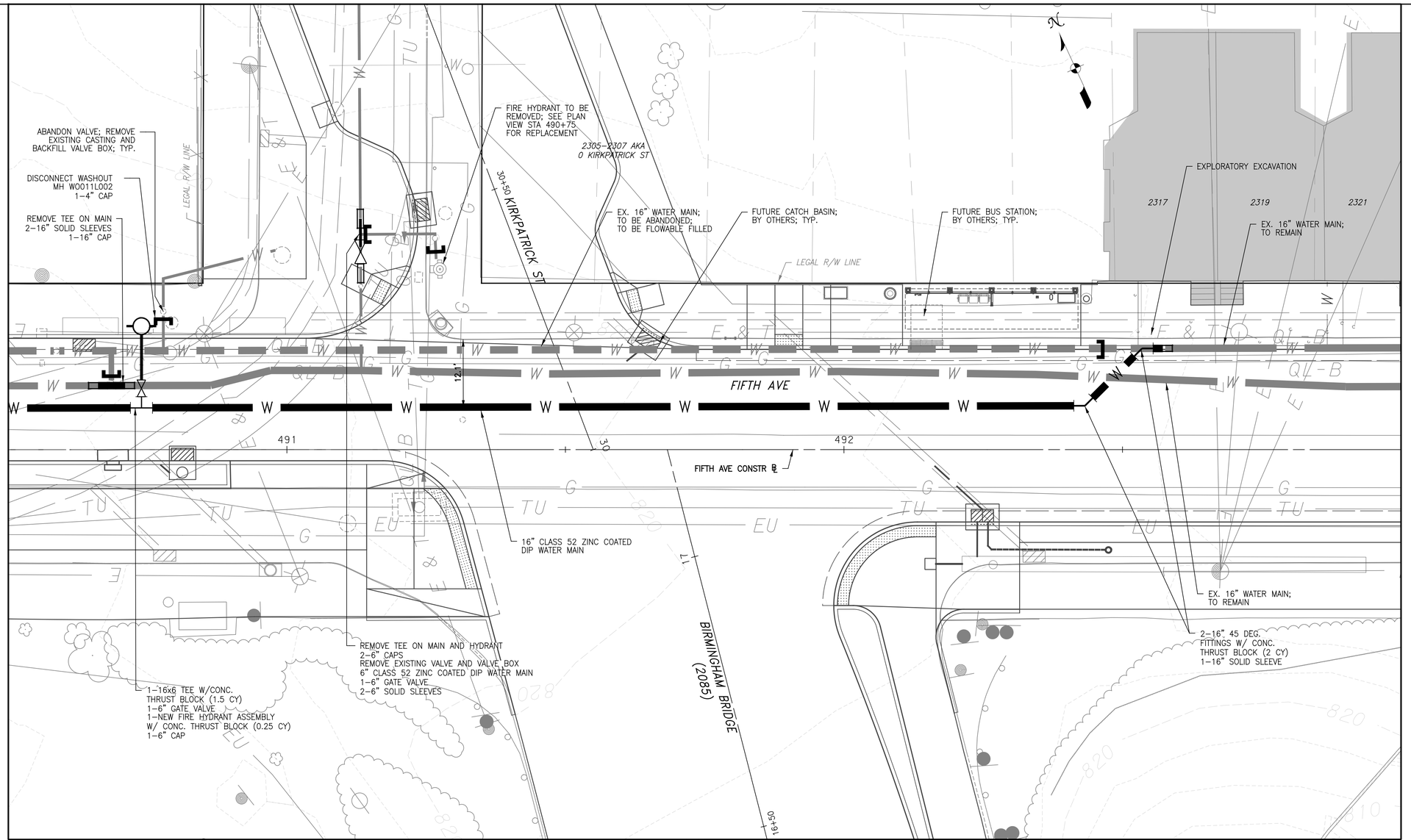
DATE: JANUARY, 2021

SHEET NO. 64 OF 166

ACCESSION NO. _____

CASE NO. _____

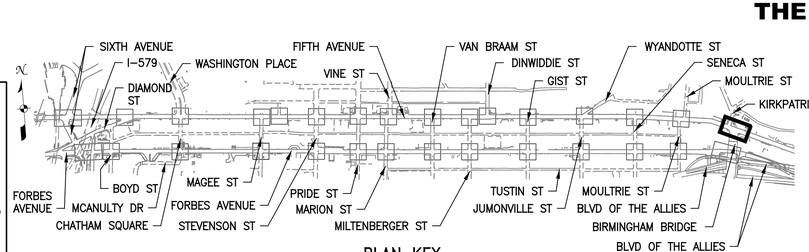
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INTERSECTION OF FIFTH AVENUE AND KIRKPATRICK STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 31 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

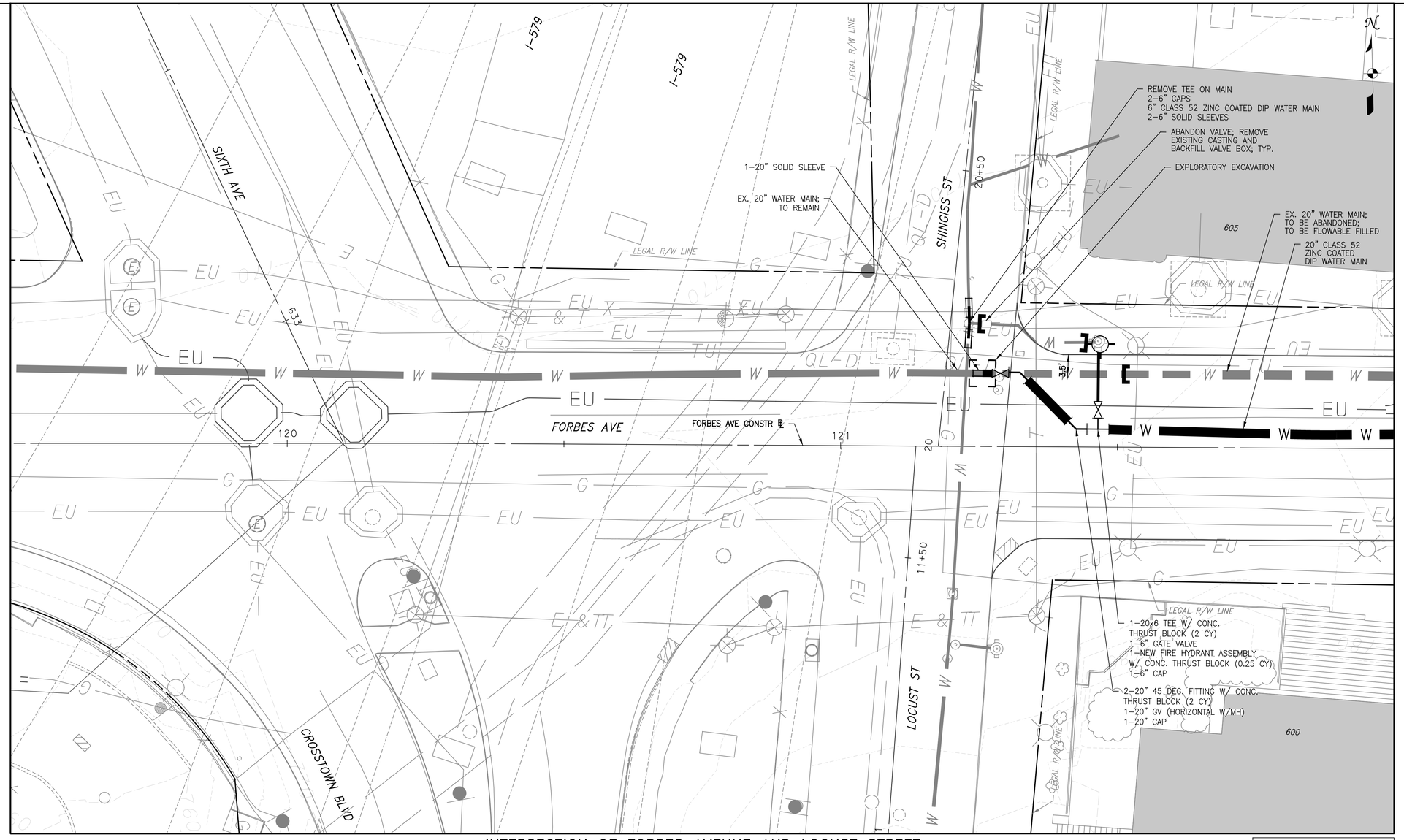
BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED SHEET NO. 65 OF 166 ACCESSION NO. _____

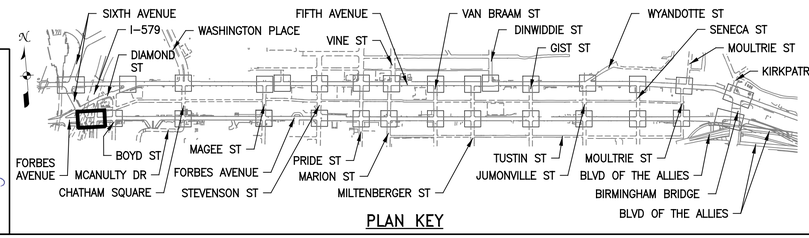
DATE: JANUARY, 2021 CASE NO. _____



INTERSECTION OF FORBES AVENUE AND LOCUST STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 32 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

SCALE: 1" = 10'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 66 OF 166

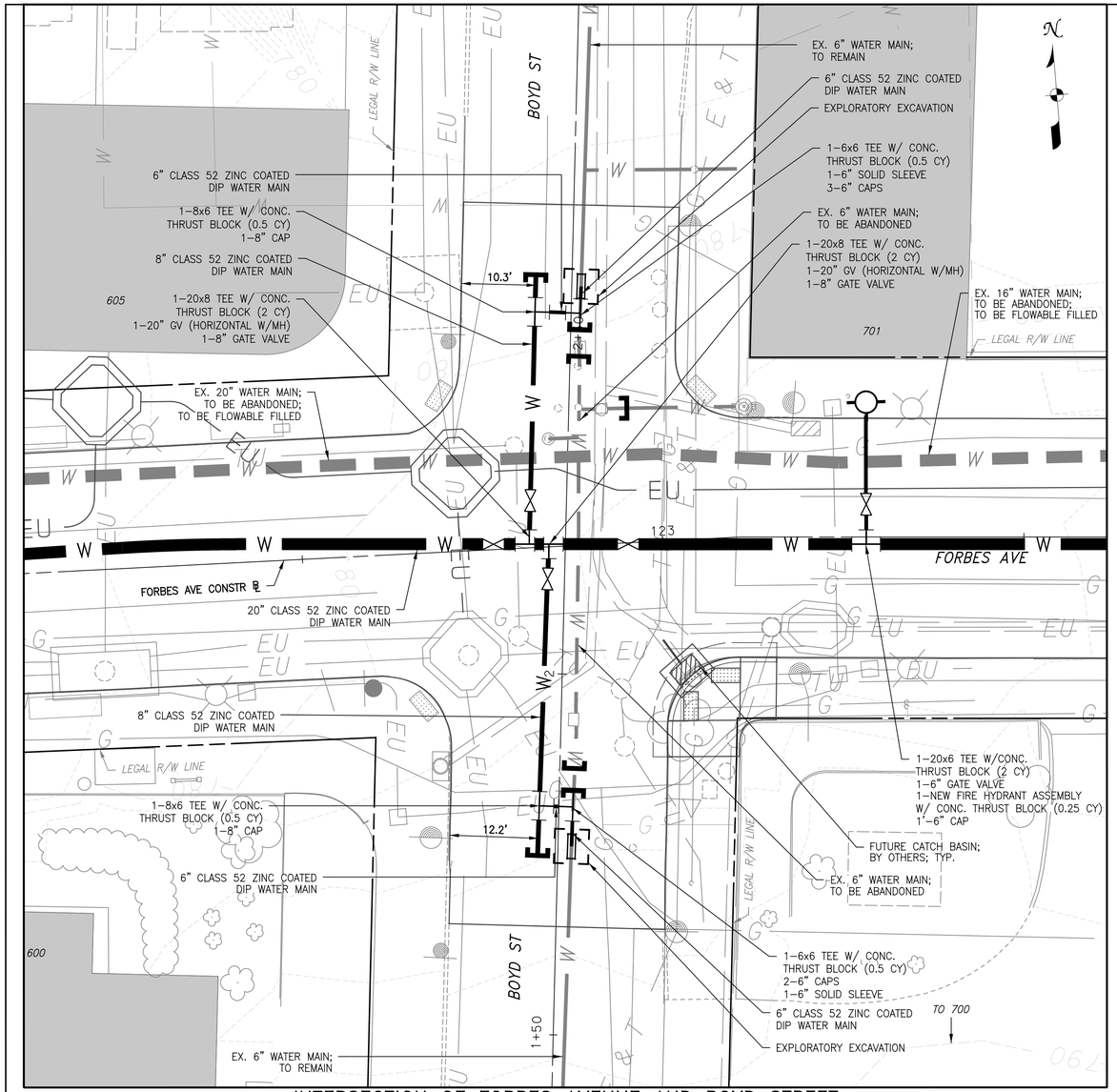
ACCESSION NO. _____

CASE NO. _____

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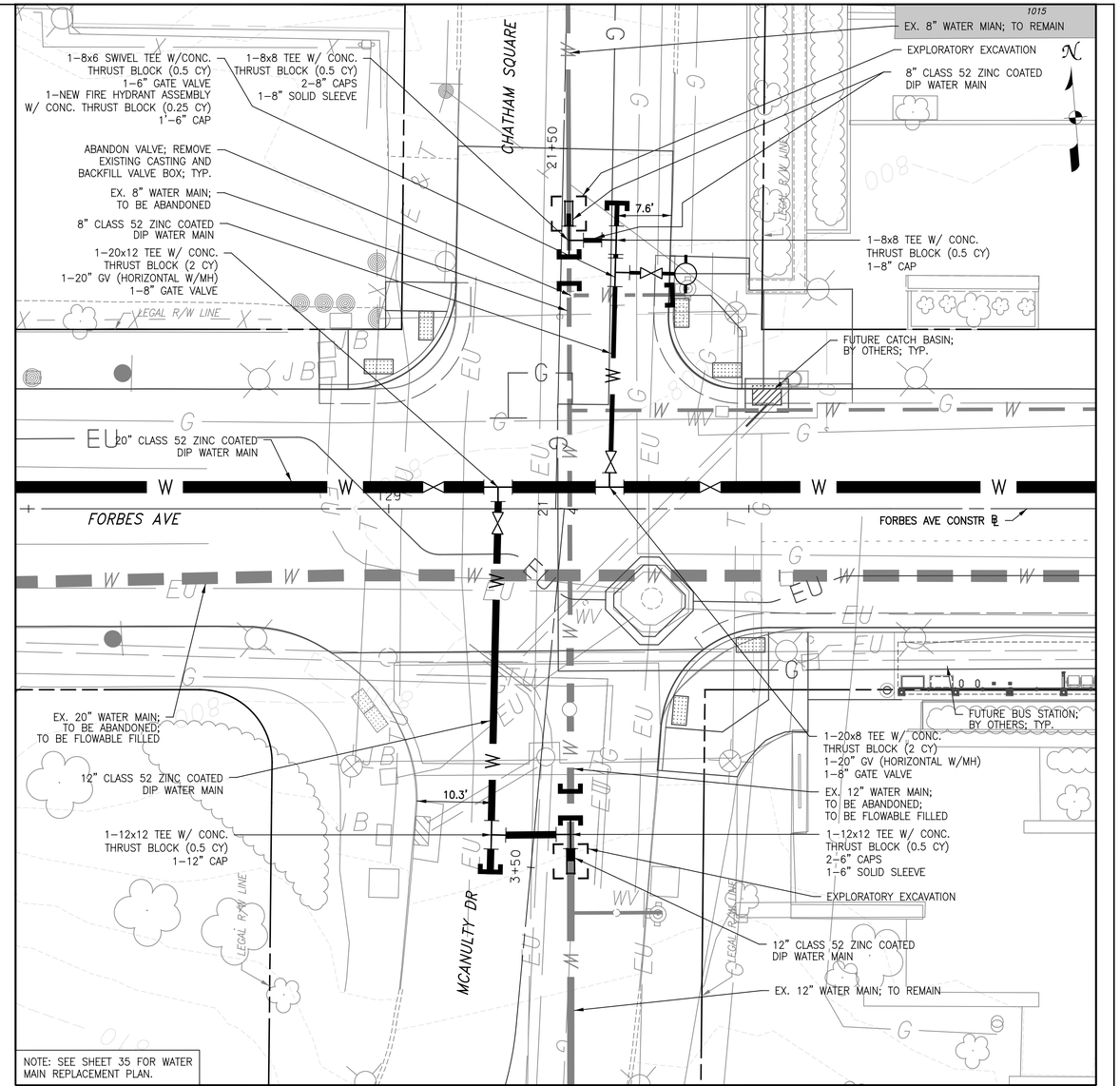
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INTERSECTION OF FORBES AVENUE AND BOYD STREET

SCALE: 1" = 10'

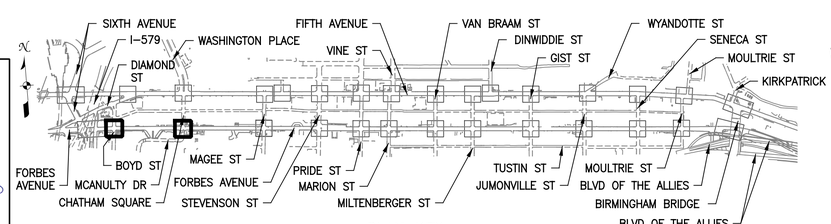
NOTE: SEE SHEET 33 FOR WATER MAIN REPLACEMENT PLAN.



NOTE: SEE SHEET 35 FOR WATER MAIN REPLACEMENT PLAN.

INTERSECTION OF FORBES AVENUE AND MCANULTY DRIVE/CHATHAM SQUARE

SCALE: 1" = 10'



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS		
	CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER RE-048643-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 67 OF 166

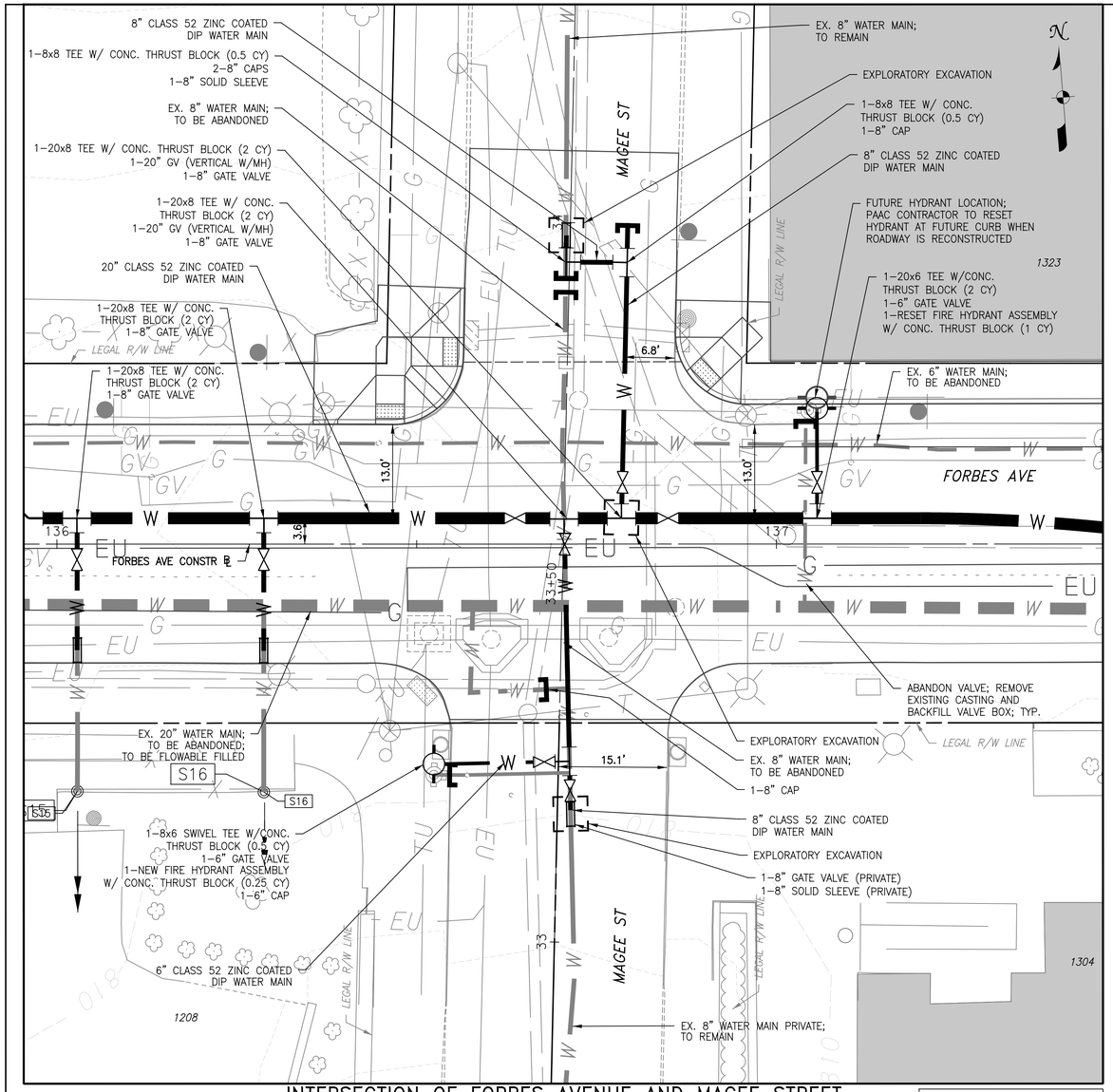
ACCESSION NO. _____

CASE NO. _____

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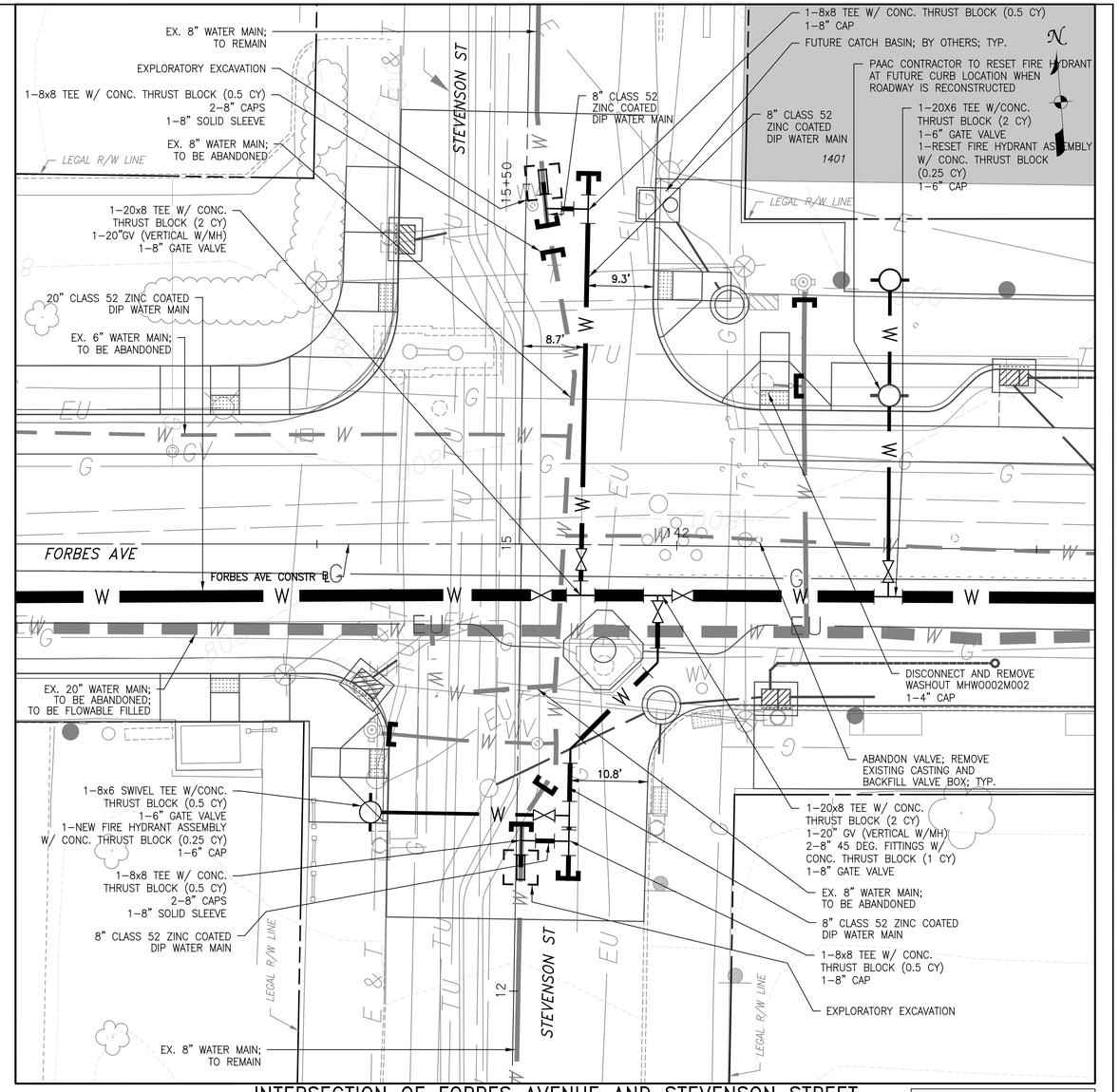
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INTERSECTION OF FORBES AVENUE AND MAGEE STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 37 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FORBES AVENUE AND STEVENSON STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 39 FOR WATER MAIN REPLACEMENT PLAN.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

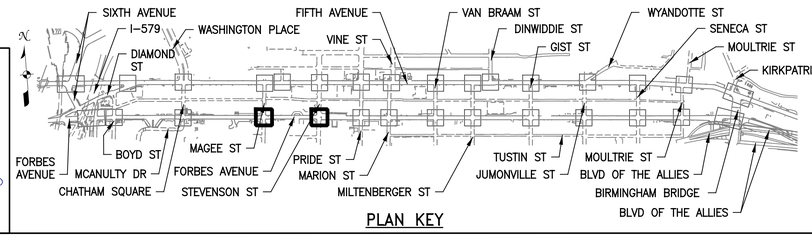
BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED | SHEET NO. 68 OF 166 | ACCESSION NO. _____

DATE: JANUARY, 2021 | CASE NO. _____



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT. SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

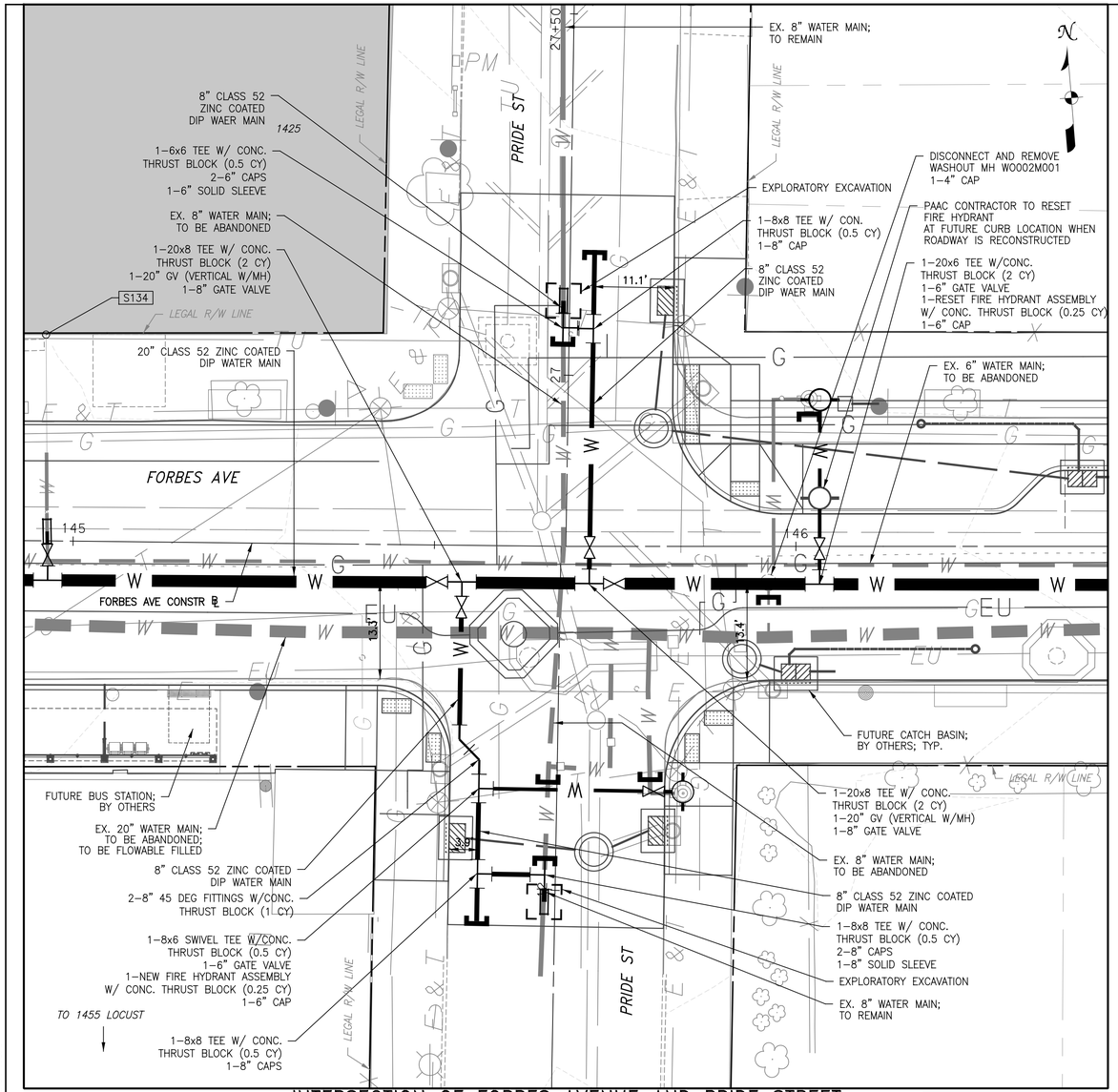
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

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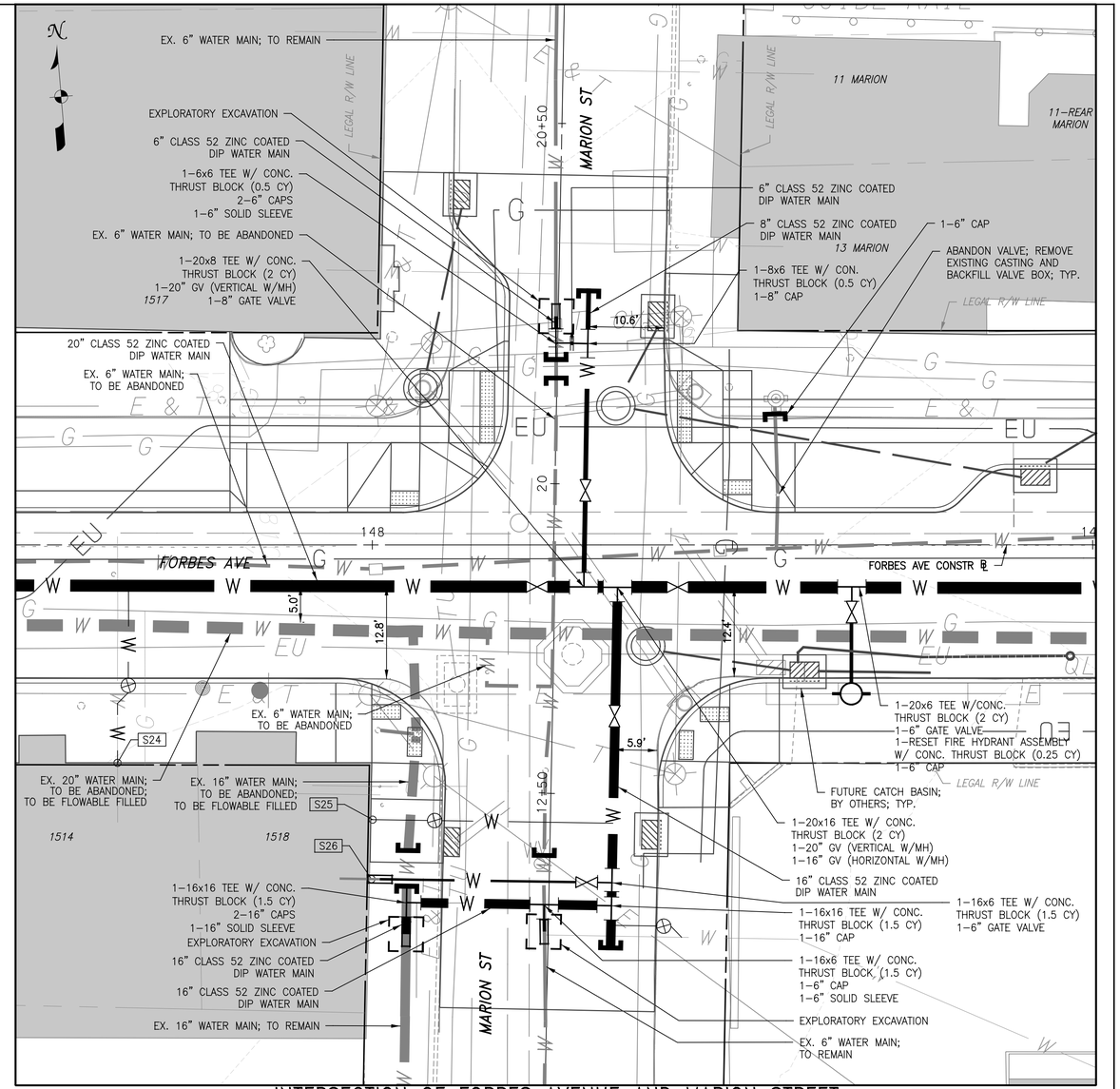
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INTERSECTION OF FORBES AVENUE AND PRIDE STREET

SCALE: 1" = 10'

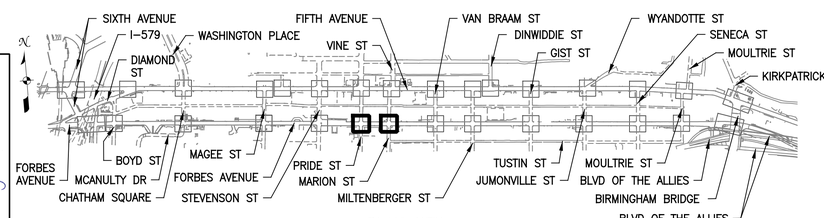
NOTE: SEE SHEET 41 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FORBES AVENUE AND MARION STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 41 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK	PG.		

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

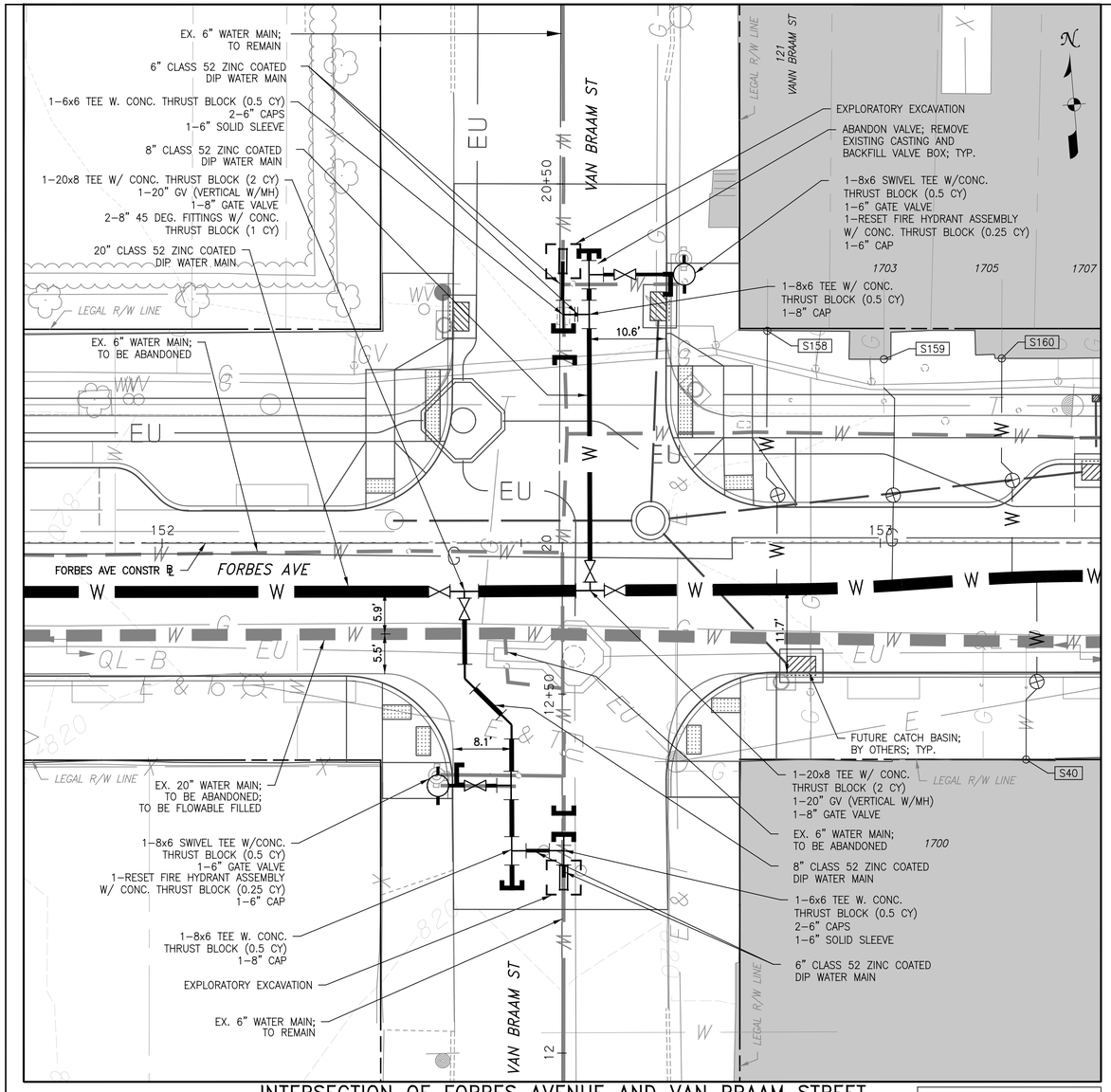
SCALE: AS NOTED SHEET NO. 69 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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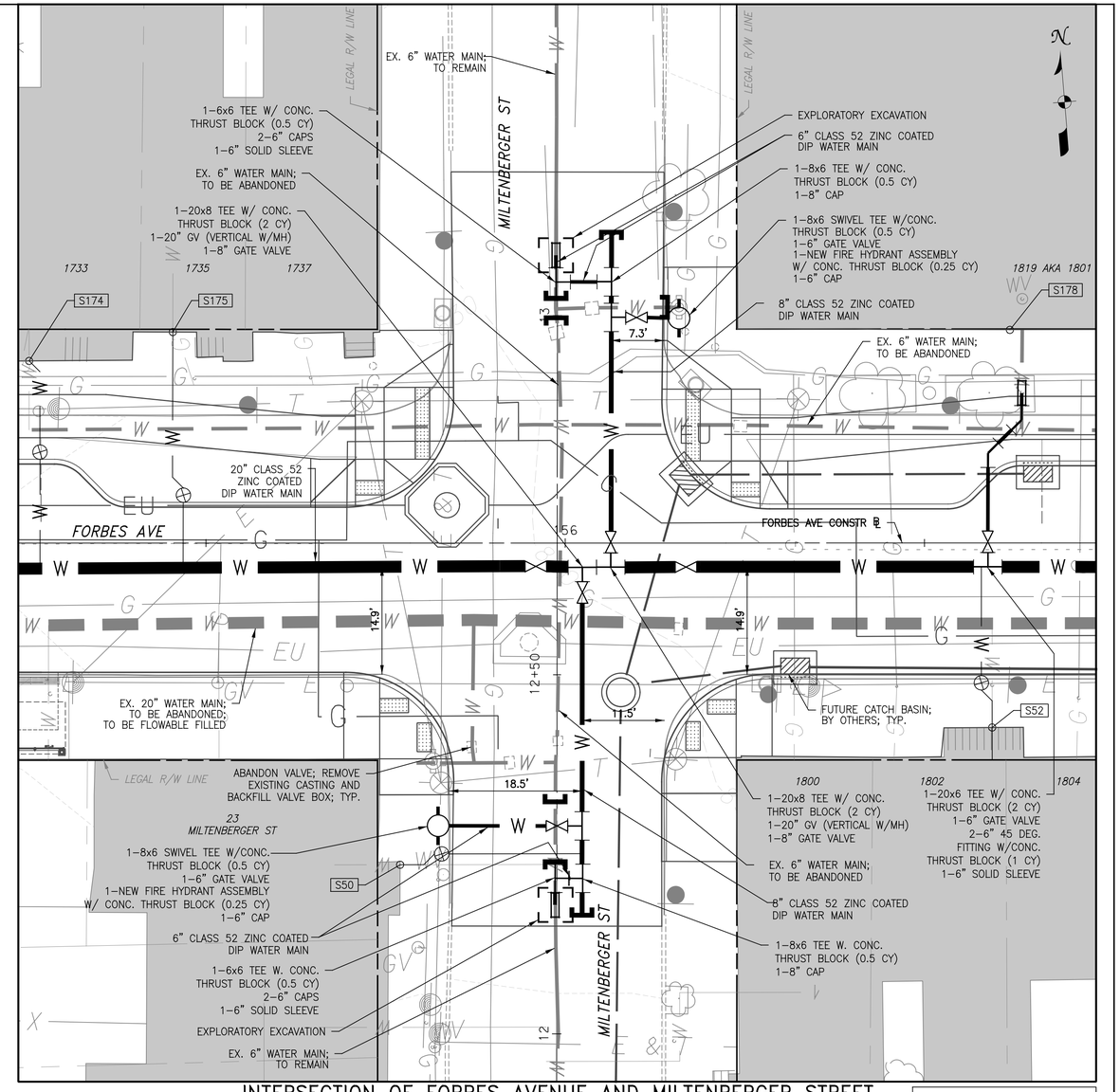
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INTERSECTION OF FORBES AVENUE AND VAN BRAAM STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 44 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FORBES AVENUE AND MILTENBERGER STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 46 FOR WATER MAIN REPLACEMENT PLAN.

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS	
CHARACTER	DATE

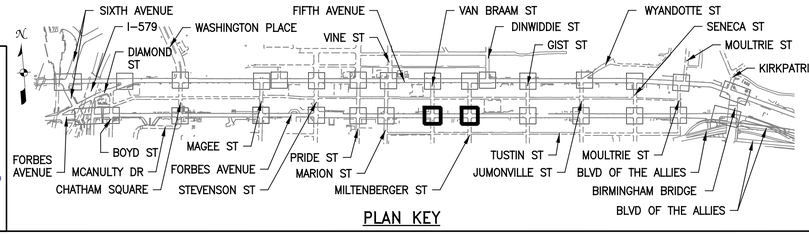
PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

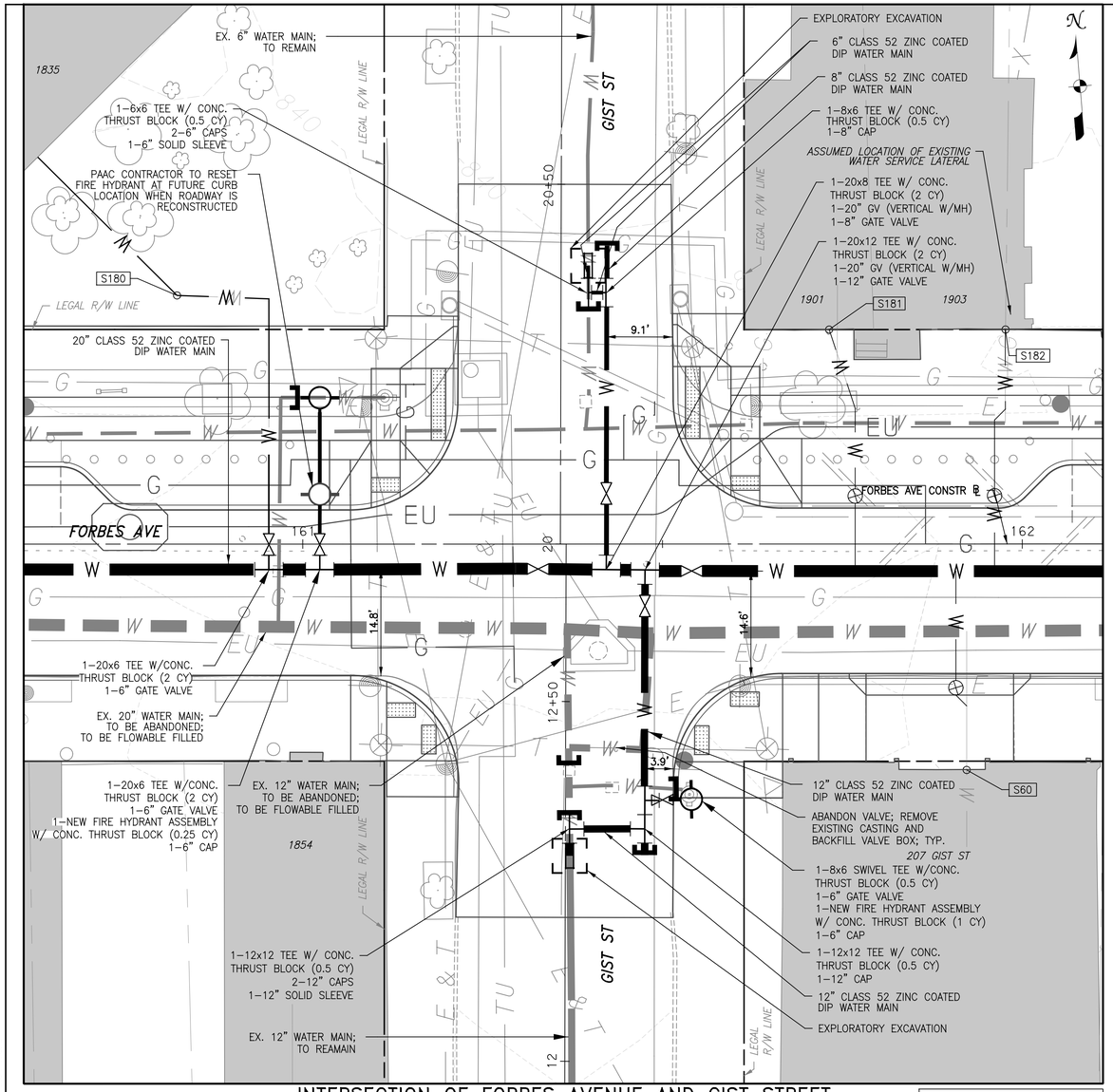
SHEET NO. 70 OF 166

ACCESSION NO. _____

CASE NO. _____

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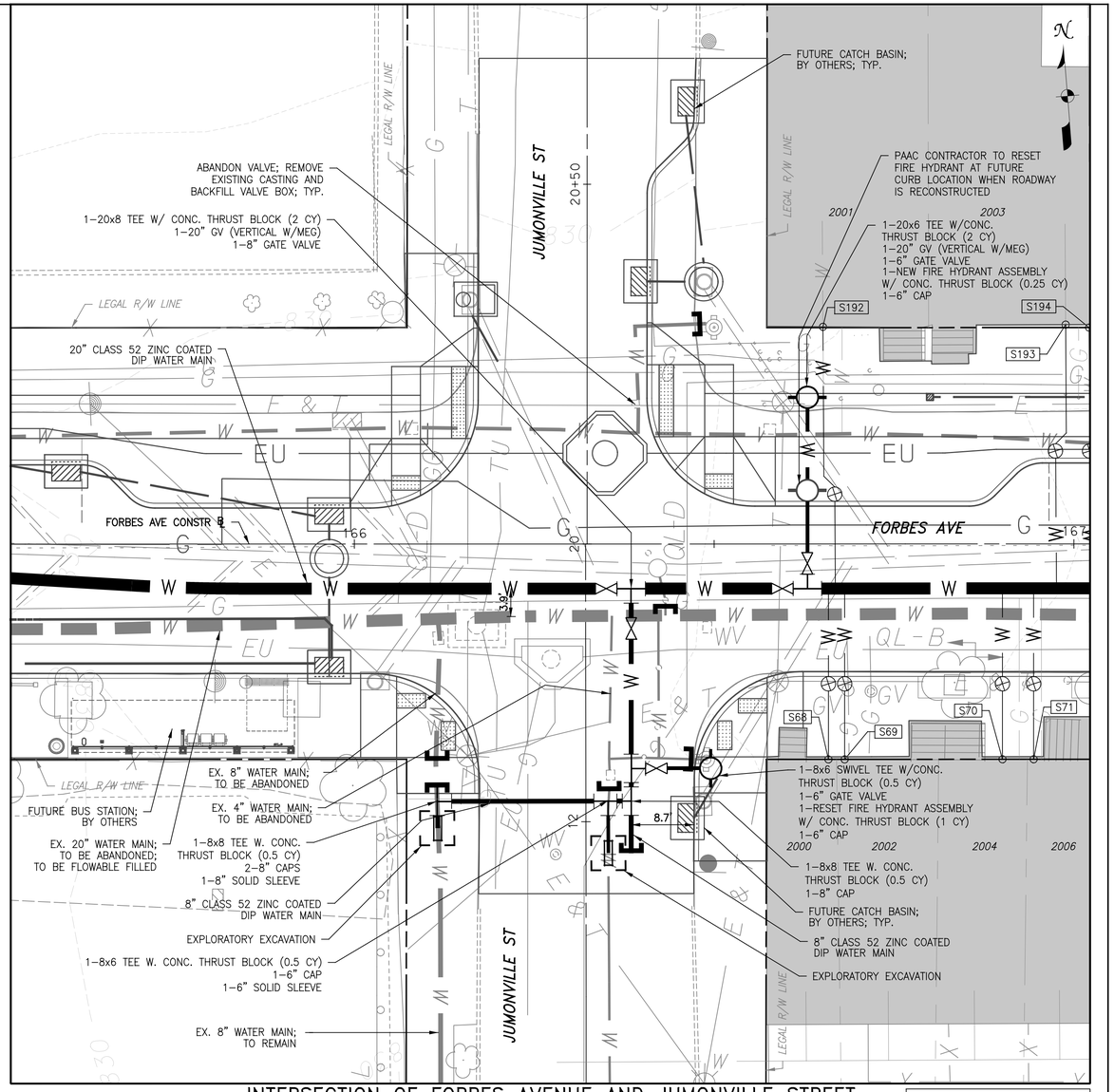
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INTERSECTION OF FORBES AVENUE AND GIST STREET

SCALE: 1" = 10'

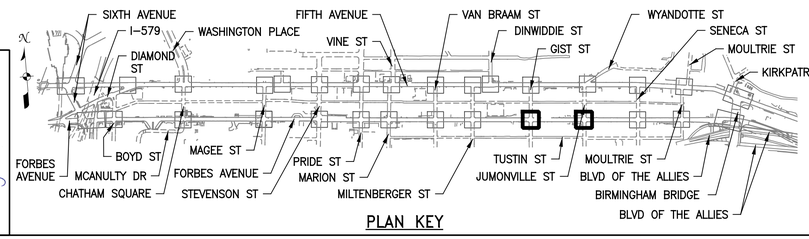
NOTE: SEE SHEET 48 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FORBES AVENUE AND JUMONVILLE STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 50 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVS/SB			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

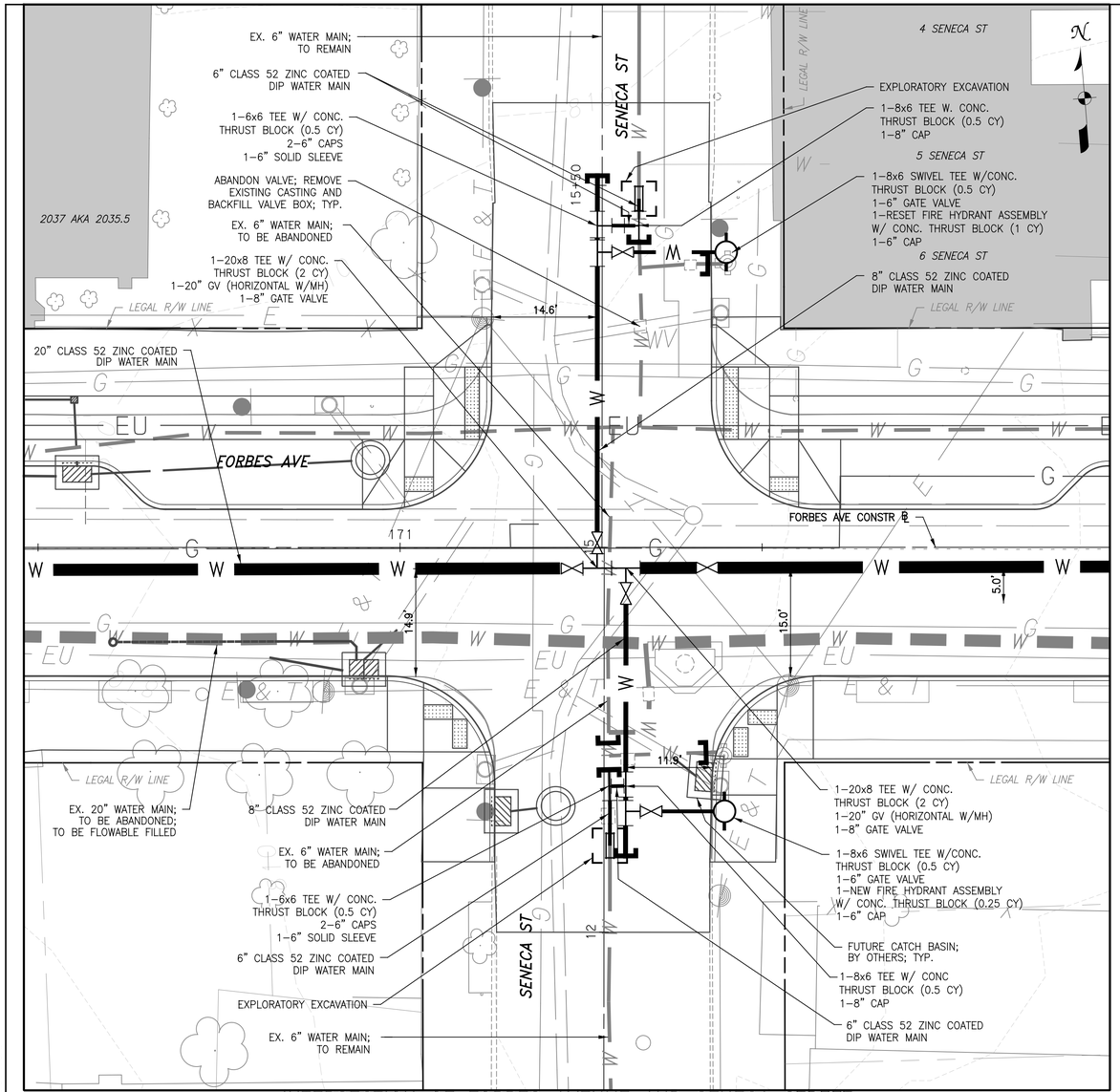
SCALE: AS NOTED SHEET NO. 71 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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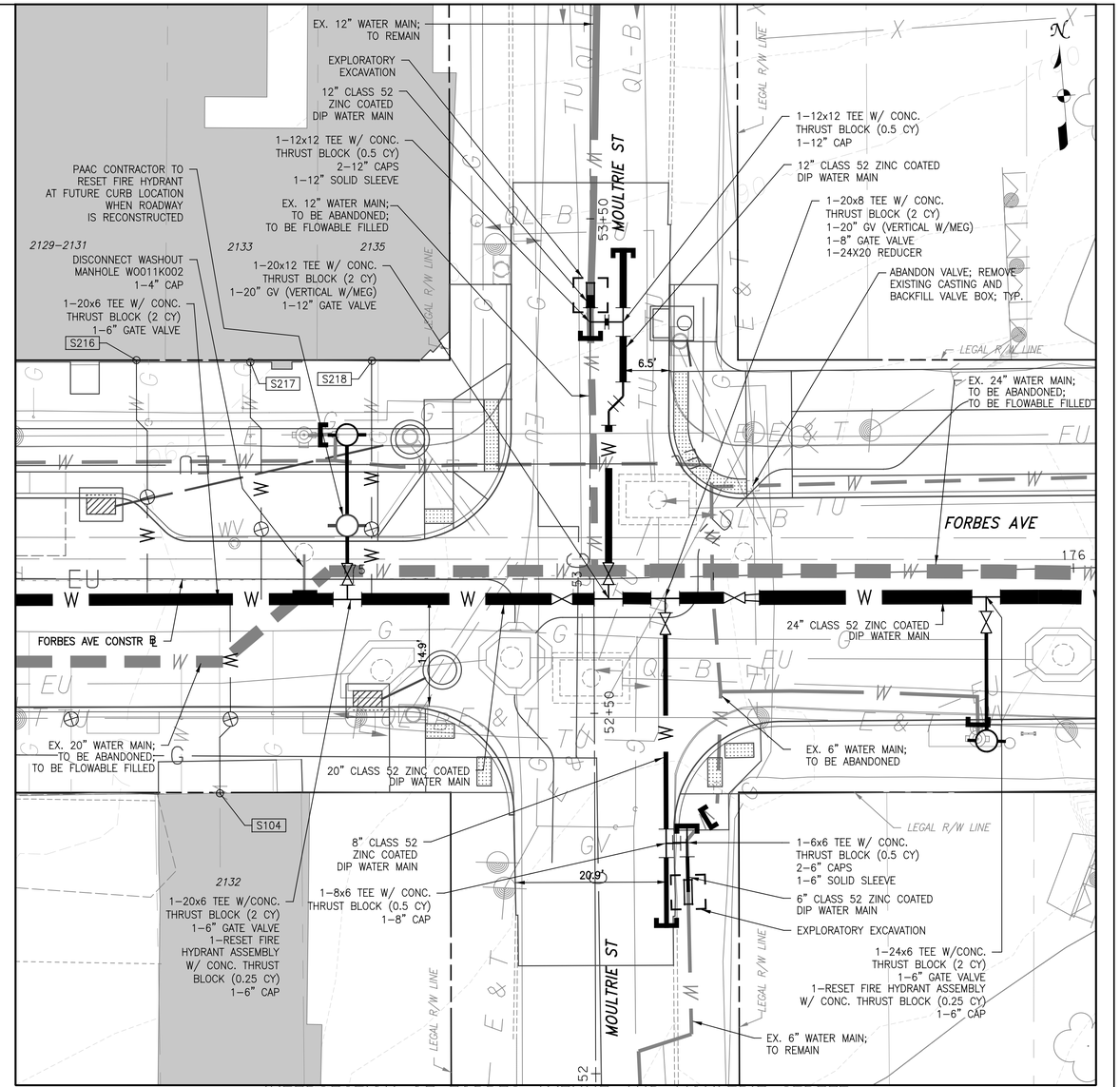
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INTERSECTION OF FORBES AVENUE AND SENECA STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 52 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FORBES AVENUE AND MOULTRIE STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 54 FOR WATER MAIN REPLACEMENT PLAN.

PWSA PROJECT No. 2020-325-102-0

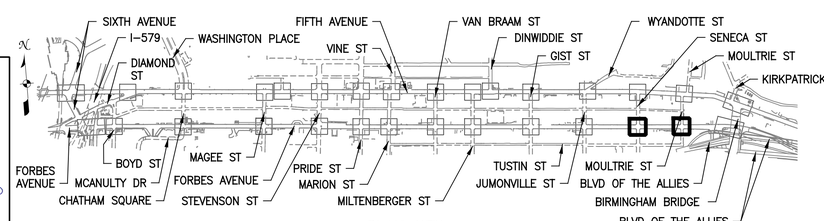
THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 72 OF 166
ACCESSION NO. _____
CASE NO. _____



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'
10' 0 10' 20'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

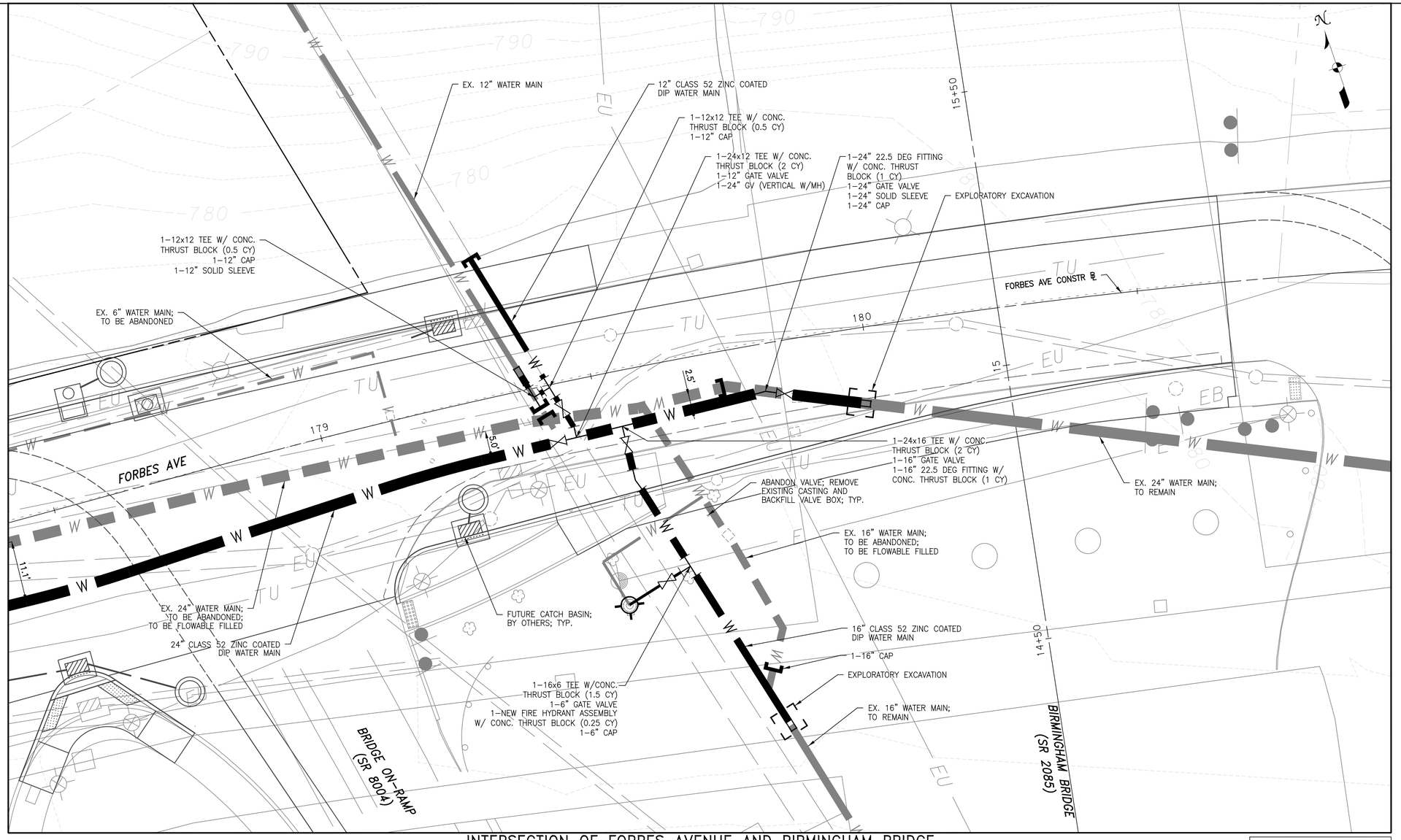
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-044842-E

1-7-2021

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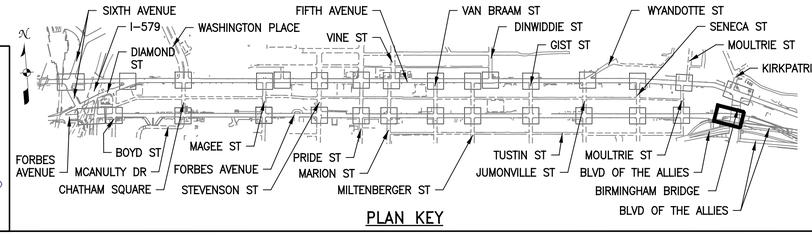
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INTERSECTION OF FORBES AVENUE AND BIRMINGHAM BRIDGE

SCALE: 1" = 10'

NOTE: SEE SHEET 56 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS		
CHARACTER	DATE	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED SHEET NO. 73 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC & RECONNECT MAT'L	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
N2	5000254	700	5TH	UNKNOWN	1" TAP	1	PEXa	22	UNKNOWN	UNKNOWN	COPPER	16	RETAIL & OFFICES	REPLACE TO BUILDING AND RECONNECT
N3	5001074	700	5TH	UNKNOWN	1" TAP	1	PEXa	22	UNKNOWN	UNKNOWN	COPPER	16	RETAIL & OFFICES	REPLACE TO BUILDING AND RECONNECT
N4	5001075	700	5TH	UNKNOWN	1" TAP	1	PEXa	23	UNKNOWN	UNKNOWN	COPPER	16	RETAIL & OFFICES	REPLACE TO BUILDING AND RECONNECT
N9	5000257	810 AKA 812	5TH	TWO (2) 1" vs 2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	DIP	N/A	18	SYNAGOGUE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N10	UNKNOWN	810	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	DIP	N/A	18	SYNAGOGUE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N11	5000258 5000259	816 & 818	5TH	8	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4 (F) & 1 (D)	UNKNOWN, ASSUMED NON-LEAD & LEAD	N/A (F) & COPPER (D)	18	RETAIL & OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N13	UNKNOWN	822	5TH	UNKNOWN	1" TAP	1	PEXa	15	UNKNOWN	UNKNOWN	COPPER	24	OFFICES	REPLACE TO BUILDING AND RECONNECT
N14	5000261	822	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN	UNKNOWN, ASSUMED CAST IRON	N/A	18	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N15	5000262	824	5TH	UNKNOWN	1" TAP	1	PEXa	18	0.75	COPPER	N/A	N/A	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N16	5000263	900	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	18	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N17	UNKNOWN	900	5TH	1	1" TAP	1	PEXa	17	1	LEAD VS NON-LEAD	COPPER	26.5	OFFICES	REPLACE TO BUILDING AND RECONNECT
N20	5000264	906	5TH	UNKNOWN	1" TAP	1	PEXa	18	1	COPPER	N/A	N/A	RETAIL	REPLACE TO CURB BOX AND RECONNECT
N21	5000265	908 & 910	5TH	1	1" TAP	1	PEXa	18	1	COPPER	N/A	N/A	RETAIL	REPLACE TO CURB BOX AND RECONNECT
N23	5000277	916 (FRONT)	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	12	0.625	LEAD VS NON-LEAD	COPPER	24	RETAIL & INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N26	5000278	1000	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	15	1.5	COPPER	N/A	N/A	INSTITUTIONAL	REPLACE TO CURB BOX AND RECONNECT
N28	5119946	1002	5TH	UNKNOWN	1" TAP	1	PEXa	13.5	0.75	LEAD	COPPER	24	OFFICES	REPLACE TO BUILDING AND RECONNECT
N29	5119947	1002	5TH	4 VS 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	18	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N30	5000279	1004 & 1006	5TH	0.75	1" TAP	1	PEXa	13	0.75	COPPER & GALV IRON	COPPER	24	RETAIL & INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N31	5000280	1004 & 1006	5TH	UNKNOWN	1" TAP	1	PEXa	13	0.625	LEAD & GALV IRON VS. LIKELY NON-LEAD	COPPER	24	RETAIL & INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N32	5000281	1008 & 1014	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	DIP	N/A	18	COMMERCIAL/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N33	5132896	1008 & 1014	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6	DIP	N/A	18	COMMERCIAL/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N34	5130009	1008 & 1014	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6	DIP	N/A	18	COMMERCIAL/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N35	5000283	1016	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	16	UNKNOWN	NON-LEAD	N/A	N/A	RETAIL/COMMERCIAL OVER	REPLACE TO CURB BOX AND RECONNECT
N37	5000285	1020	5TH	UNKNOWN	1" TAP	1	PEXa	9		LEAD & GALV IRON VS LIKELY NON-LEAD	COPPER	24.5	RETAIL/COMMERCIAL OVER	REPLACE TO BUILDING AND RECONNECT
N38	5000286	1022	5TH	0.75	1" TAP	1	PEXa	9	0.5	GALVANIZED IRON	COPPER	24.5	RETAIL/COMMERCIAL OVER	REPLACE TO BUILDING AND RECONNECT
N39	5132567 5132568	1030	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	LIKELY NON-LEAD	N/A	14	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N40	5000287	1030	5TH	UNKNOWN	1" TAP	1	PEXa	9	UNKNOWN	UNKNOWN	COPPER	25.5	APARTMENTS	REPLACE TO BUILDING AND RECONNECT
N41	5000288	1034	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	14	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N42	UNKNOWN	1034	5TH	2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	COPPER VS GALV IRON	COPPER	43	OFFICES	REPLACE TO BUILDING AND RECONNECT
N44	5000289	1040	5TH	0.75	1" TAP	1	PEXa	9	0.75	GALVANIZED IRON	COPPER	23.5	OFFICES	REPLACE TO BUILDING AND RECONNECT
N47	5000290	1042	5TH	UNKNOWN	1" TAP	1	PEXa	9	0.75	LEAD	COPPER	24	OFFICES	REPLACE TO BUILDING AND RECONNECT
N48	UNKNOWN	1048	5TH	6 TO 2	16X6 TEE WITH 6" VALVE	6	DIP	N/A	2	UNKNOWN, ASSUMED NON-LEAD	N/A	15	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N49	UNKNOWN	1048	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6	UNKNOWN, ASSUMED NON-LEAD	N/A	15	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N50	UNKNOWN	1100	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	15	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N51	5000291	1100	5TH	0.75	1" TAP	1	PEXa	12	0.75	COPPER	N/A	N/A	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N52	5000292	1102	5TH	0.75	1" TAP	1	PEXa	10	0.75	LEAD	COPPER	N/A	OFFICES	REPLACE TO BUILDING AND RECONNECT
N53	5000293	1106	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	12	1.5	LIKELY NON-LEAD	N/A	23	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N54	UNKNOWN	1106	5TH	UNKNOWN, LIKELY 4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	16	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N56	5000294	1202	5TH	UNKNOWN	1" TAP	1	PEXa	12	0.5	COPPER	N/A	N/A	RETAIL/APARTMENTS OVER	REPLACE TO CURB BOX AND RECONNECT
N57	5123699	1204	5TH	UNKNOWN, LIKELY 4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	16	INSTITUTIONAL	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N59	5000296	1206	5TH	UNKNOWN	1" TAP	1	PEXa	9.5	0.5	GALVANIZED IRON	COPPER	23	INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N60	5000297	1208	5TH	UNKNOWN	1" TAP	1	PEXa	9.5	0.75	LEAD & GALV IRON VS LIKELY NON-LEAD	COPPER	23	COMMERCIAL	REPLACE TO BUILDING AND RECONNECT
N62	5000299	1300	5TH	UNKNOWN	1" TAP	1	PEXa	9	0.75	LEAD VS LIKELY NON-LEAD	COPPER	23.5	OFFICES	REPLACE TO BUILDING AND RECONNECT
N63	5000300	1302	5TH	1	1" TAP	1	PEXa	9.5	0.625	LEAD VS LIKELY NON-LEAD	COPPER	23	COMMERCIAL	REPLACE TO BUILDING AND RECONNECT
N65	5000302	1308	5TH	UNKNOWN	1" TAP	1	PEXa	14.5	0.75	COPPER	N/A	N/A	INSTITUTIONAL	REPLACE TO CURB BOX AND RECONNECT
N66	UNKNOWN	1308	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	LIKELY NON-LEAD	N/A	16	INSTITUTIONAL	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N68	5000303	1318	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	15	1.25	COPPER	N/A	N/A	COMMERCIAL	REPLACE TO CURB BOX AND RECONNECT
N74	5000308	1402	5TH	UNKNOWN	1" TAP	1	PEXa	12	2	LEAD & IRON VS LIKELY NON-LEAD	COPPER	21	GOVERNMENT/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N76	5000309	1404	5TH	UNKNOWN	1" TAP	1	PEXa	15	0.75	COPPER	N/A	N/A	COMMERCIAL/APTS OVER	REPLACE TO CURB BOX AND RECONNECT
N77	5000310	1406	5TH	UNKNOWN	1" TAP	1	PEXa	13	1.25	LEAD & GALV IRON VS LEAD	COPPER	19.5	OFFICES/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N78	5018647 5000311	1408 & 1410	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & UNKNOWN,	UNKNOWN, ASSUMED NON-LEAD	N/A (F & D)	17	RETAIL/COMMERCIAL OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N79	5000312	1421 AKA 1439	WATSON	UNKNOWN	1" TAP	1	PEXa	15	UNKNOWN	NON-LEAD	N/A	N/A	OFFICE/WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
N80	UNKNOWN	1450 AKA 1430	5TH	6	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	6	DIP	N/A	4 (F) & 2 (D)	DIP & COPPER	N/A (F & D)	17	RTL & COMM/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N85	5000322	1516 & 1516.5	5TH	UNKNOWN	1" TAP	1	PEXa	10	UNKNOWN	UNKNOWN	COPPER	22	RETAIL/COMMERCIAL OVER	REPLACE TO BUILDING AND RECONNECT
N99	5000334	1634	5TH	0.75	1" TAP	1	PEXa	16.5	0.75	COPPER	N/A	N/A	MULTIFAMILTY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT
N101	5000499	1636 - 1638	5TH	0.75	1" TAP	1	PEXa	4	0.75	COPPER & GALV IRON	COPPER	28	COMMERCIAL/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N103	5000500	1712	5TH	0.625	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	22	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N104	5000501	1714 & 1716	5TH	UNKNOWN	1" TAP	1	PEXa	10	0.75	LEAD	COPPER	22	COMMERCIAL/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N108	5000503	1800	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & 4 (D)	DIP	N/A (F & D)	19	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N109	5000505	1840	5TH	UNKNOWN	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	22.5	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N110	5000506	1842	5TH	UNKNOWN	1" TAP	1	PEXa	10	1	LEAD	COPPER	22.5	MULTIFAMILTY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N113	5000510	1904	5TH	1	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	22	HOUSE	REPLACE TO BUILDING AND RECONNECT
N114	5000511	1906	5TH	0.75	1" TAP	1	PEXa	14	0.75	COPPER	N/A	N/A	HOUSE	REPLACE TO CURB BOX AND RECONNECT
N119	5000695	1922	5TH	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N120	5000696	1924	5TH	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N121	5000697	1926	5TH	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N122	5000698	1928	5TH	UNKNOWN	1" TAP	1	PEXa	6.5	0.625	LEAD	COPPER	30	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N124	5000699	1936 - 1942	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	10.5	0.625	LEAD	COPPER	62	OFFICES	REPLACE TO BUILDING AND RECONNECT
N125	5007000	2000	5TH	UNKNOWN	1" TAP	1	PEXa	17.5	2	COPPER	N/A	N/A	HOUSING	REPLACE TO CURB BOX AND RECONNECT
N126	5000701	2002	5TH	UNKNOWN	1" TAP	1	PEXa	10.5	0.625	LEAD	COPPER	21	HOUSING	REPLACE TO BUILDING AND RECONNECT

SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC & RECONNECT MAT'L	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
N127	5000703	2004	5TH	UNKNOWN	1" TAP	1	PEXa	10.5	0.625	LEAD	COPPER	21.5	HOUSING	REPLACE TO BUILDING AND RECONNECT
N129	50007057	2006	5TH	0.625	1" TAP	1	PEXa	10.5	0.625	LEAD	COPPER	29	COMMUNITY AUXILIARY BLDG	REPLACE TO BUILDING AND RECONNECT
N130	5000706	2010	5TH	4 TO 2	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	2 (F) & 1.5 (D)	COPPER	N/A (F & D)	18	CONDOMINIUM	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N134	5000709	2018	5TH	UNKNOWN	1" TAP	1	PEXa	5.5	0.75	LEAD & COPPER	COPPER	26.5	MULTIFAMILTY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N135	5000710	2020	5TH	UNKNOWN	1" TAP	1	PEXa	18	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
N138	5000712	2026	5TH	UNKNOWN	1" TAP	1	PEXa	9	0.75	LEAD	COPPER	23	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N139	5000713	2028	5TH	UNKNOWN	1" TAP	1	PEXa	20	0.625	NON-LEAD	N/A	N/A	RETAIL/APARTMENTS OVER	REPLACE TO CURB BOX AND RECONNECT
N141	5131174 5132310	2076	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & 2 (D)	NON-LEAD	N/A (F & D)	27	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N168	UNKNOWN	500	ROSS	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	13	ASSUMED OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N169	UNKNOWN	0	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	13	UNKNOWN	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N171	5130030	112	WASHINGTON	8	16X8 TEE WITH 8" VALVE	8	DIP	N/A	8	STEEL	N/A	5	OFFICES/RETAIL/HOTEL/CONDOS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N172	5123304	1001 - 1035	5TH	UNKNOWN, ASSUMED 8	16X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	LIKELY NON-LEAD	N/A	5	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N173	5123305	1001 - 1035	5TH	12 TO 8	16X8 TEE WITH 8" VALVE	12 TO 8	DIP	N/A	8	DIP	N/A	17	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N174	5123306 5123307	1001 - 1035	5TH	12 TO 8	16X8 TEE WITH 8" VALVE	12 TO 8	DIP	N/A	8	DIP	N/A	17	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N175	5001595	1207	5TH	1	1" TAP	1	PEXa	29	1	COPPER	N/A	N/A	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N177	5001594	1315	5TH	0.625	1" TAP	1	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	25	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N178	5001593	1319 AKA 1321	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	22	1.25	GALVANIZED IRON	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N179	5001592	1323 & 1325	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	22	1.25	GALVANIZED IRON	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N181	UNKNOWN	1335	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	19	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N182	UNKNOWN	1335	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	UNKNOWN, ASSUMED NON-LEAD	N/A	19	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N184	5001620	1425 AKA 1433	5TH	2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	COPPER	N/A	49	POSSIBLY VACANT BANK	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N185	5001621	1501	5TH	TWO (2) 1"	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N186	5001622	1503	5TH	UNKNOWN	1" TAP	1	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N187	5001623	1505	5TH	0.75	1" TAP	1	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N188	5001624	1507	5TH	1	1" TAP	1	PEXa	22	0.75	LEAD	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N189	5001625	1509	5TH	UNKNOWN	1" TAP	1	PEXa	22	0.625	LEAD	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N192	UNKNOWN	1603 / 1601	5TH	UNKNOWN	1" TAP	1	PEXa	23	0.625	LEAD	COPPER	16	OFFICES	REPLACE TO BUILDING AND RECONNECT
N193	5001629	1605	5TH	1	1" TAP	1	PEXa	26	1	COPPER	N/A	N/A	RETAIL & GAS STATION	REPLACE TO CURB BOX AND RECONNECT
N194	5131683 5134749	1655	5TH	4 VS 6	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4 OR 6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	18	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N195	5002058	1643	5TH	0.75	1" TAP	1	PEXa	26	0.75	COPPER	N/A	N/A	RETAIL	REPLACE TO CURB BOX AND RECONNECT
N196	5002057	1701	5TH	1	1" TAP	1	PEXa	23	0.625	LEAD	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N198	5002056	1705	5TH	1	1" TAP	1	PEXa	22	0.75	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N200	5002055	1719	5TH	1	1" TAP	1	PEXa	23	0.75	LEAD	COPPER	11	RETAIL/APARTMENTS OVER - POSSIBLY PARTIALLY VACANT	REPLACE TO BUILDING AND RECONNECT
N201	5002054	1721	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	31.5	1.25	COPPER	N/A	N/A	RETAIL/APARTMENTS OVER - POSSIBLY PARTIALLY VACANT	REPLACE TO CURB BOX AND RECONNECT
N203	5002070	1807 AKA 1801	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	CAST IRON	N/A	18	GOVERNMENT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N205	5002072	1817	5TH	UNKNOWN	1" TAP	1	PEXa	23	0.75	LEAD	COPPER	53	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
N214	5002077	1901	5TH	UNKNOWN	1" TAP	1	PEXa	23	2	IRON VS GALVANIZED IRON	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N226	5002151	1945	5TH	2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	COPPER	N/A	20	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N227	5002152	1945	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	20	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N228	UNKNOWN	2001	WYANDOTTE	UNKNOWN	1" TAP	1	PEXa	7	UNKNOWN	UNKNOWN	COPPER	44	DAYCARE	REPLACE TO BUILDING AND RECONNECT
N229	5006574	2005	WYANDOTTE	1	1" TAP	1	PEXa	7	0.75	GALVANIZED IRON	COPPER	14	CHARITY	REPLACE TO BUILDING AND RECONNECT
N230	5131072 5131175	2015	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & 2 (D)	DIP	N/A (F & D)	21	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N231	5002225	2027	5TH	UNKNOWN	1" TAP	1	PEXa	23	0.625	LEAD	COPPER	16	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N232	5002227	2029	5TH	UNKNOWN	1" TAP	1	PEXa	26	0.625	LEAD	COPPER	N/A	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N233	5002229	2031	5TH	UNKNOWN	1" TAP	1	PEXa	23	UNKNOWN	NON-LEAD	N/A	16	MULTIFAMILY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT
N234	5002230 5002234	2035	5TH	UNKNOWN	1" TAP	1	PEXa	17	1.25	LEAD	COPPER	12	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N235	5002233	2041 AKA 2039-2041	5TH	0.75	1" TAP	1	PEXa	17	1.5	LEAD	COPPER	16	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N236	5002235	2125 AKA 2115	5TH	0.75	1" TAP	1	PEXa	13.5	0.75	LEAD VS LIKELY NON-LEAD	COPPER	33	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
N237	5002236	2127 - 2135 AKA 2133	5TH	UNKNOWN	1" TAP	1	PEXa	14	UNKNOWN	UNKNOWN	COPPER	49	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
N238	UNKNOWN	2139	5TH	UNKNOWN	1" TAP	1	PEXa	15.5	UNKNOWN	UNKNOWN	COPPER	14	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
N239	5002237	2139	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	LIKELY NON-LEAD	N/A	25	WAREHOUSE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N245	5002295	2211	5TH	0.75	1" TAP	1	PEXa	19	0.75	COPPER	N/A	N/A	OFFICES/WAREHOUSE - POSSIBLY VACANT	REPLACE TO CURB BOX AND RECONNECT
N246	5002296	2223-2227 AKA 2217	5TH	UNKNOWN	1" TAP	1	PEXa	15.5	0.625	LEAD	COPPER	14	OFFICES/WAREHOUSE - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N247	5002417	2231	5TH

SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC & RECONNECT MAT'L	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
S8	UNKNOWN	915 AKA 925	LOCUST	4	20X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	22	UNKNOWN	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S11	5000818	1000	FORBES	UNKNOWN	1" TAP	1	PEXa	29	UNKNOWN	UNKNOWN, ASSUMED NON-LEAD	N/A	N/A	PARKING GARAGE	REPLACE TO CURB BOX AND RECONNECT
S12	UNKNOWN	1000	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	23	PARKING GARAGE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S13	UNKNOWN	1000	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	6	DIP	N/A	23	PARKING GARAGE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S14	UNKNOWN	1000	FORBES	UNKNOWN	1" TAP	1	PEXa	35	UNKNOWN	UNKNOWN, ASSUMED NON-LEAD	N/A	N/A	PARKING GARAGE	REPLACE TO CURB BOX AND RECONNECT
S15	UNKNOWN	1208	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	UNKNOWN, ASSUMED NON-LEAD	N/A	23	CONSTRUCTION FIELD TRAILER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S16	UNKNOWN	1208	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	UNKNOWN, ASSUMED NON-LEAD	N/A	23	CONSTRUCTION FIELD TRAILER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S17	5000477 5000478	1304	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	16	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S24	5000436	1514	FORBES	UNKNOWN	1" TAP	1	PEXa	14	0.5	LEAD	COPPER	16	MEDICAL OFFICES	REPLACE TO BUILDING AND RECONNECT
S25	5000434	1518	FORBES	1	1" TAP	1	PEXa	25	1	COPPER	N/A	17	MEDICAL OFFICES	REPLACE TO CURB BOX AND RECONNECT
S26	5000435	1518	FORBES	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	35	MEDICAL OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S27	5000459	1600	FORBES	UNKNOWN	1" TAP	1	PEXa	15	UNKNOWN	NON-LEAD	N/A	N/A	COMMERICAL GARAGE	REPLACE TO CURB BOX AND RECONNECT
S32	5000456	1620	FORBES	UNKNOWN	1" TAP	1	PEXa	14	0.625	LEAD	COPPER	15	HOUSE	REPLACE TO BUILDING AND RECONNECT
S35	5000453	1628	FORBES	0.75	1" TAP	1	PEXa	13	0.625	IRON VS. GALV IRON	COPPER	16	COMMERCIAL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S36	5000452	1632	FORBES	1.25	20X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	22	0.75	COPPER	N/A	N/A	COMMERCIAL/OFFICES	REPLACE TO CURB BOX AND RECONNECT
S40	5000556	1700 AKA 1704	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	RETAIL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S41	5000558	1706	FORBES	0.75	1" TAP	1	PEXa	15	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	16	RETAIL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S42	5000560	1708	FORBES	0.625	1" TAP	1	PEXa	15	0.75	LEAD	COPPER	16	COMMERCIAL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S45	5000561	1714	FORBES	1	1" TAP	1	PEXa	23	1	COPPER	N/A	N/A	RETAIL	REPLACE TO CURB BOX AND RECONNECT
S50	5000567	23	MILTENBERGER	0.5	1" TAP	1	PEXa	10	0.5	LEAD VS. LIKELY NON-LEAD	COPPER	17	RETAIL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S52	5000580	1802	FORBES	0.75	1" TAP	1	PEXa	16	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	12	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S53	5000581	1804	FORBES	0.75	1" TAP	1	PEXa	16	0.75	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S54	5000582	1806	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S55	5123655	1830	FORBES	1	1" TAP	1	PEXa	17	1	LEAD VS. LIKELY NON-LEAD	COPPER	16	OFFICE/WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
S56	5000584	1830	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	NON-LEAD	N/A	11	OFFICE/WAREHOUSE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S58	5000585	1850	FORBES	1.25	20X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	17	1.25	LEAD	COPPER	17	COMMERICAL GARAGE	REPLACE TO BUILDING AND RECONNECT
S60	5000588	207	GIST	0.75	1" TAP	1	PEXa	24	0.75	COPPER	N/A	N/A	WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
S61	UNKNOWN	1908	FORBES	0.5	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	12	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S62	5000591	1910	FORBES	0.5	1" TAP	1	PEXa	16	0.625	IRON VS. GALV IRON	COPPER	15	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
S63	5000592	1914	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S64	UNKNOWN	1920	FORBES	1	N/A	N/A	N/A	N/A	1	LEAD	N/A	N/A	PARKING LOT	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S65	UNKNOWN	1920	FORBES	1.25	N/A	N/A	N/A	N/A	1.25	GALVANIZED IRON	N/A	N/A	PARKING LOT	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S66	5120192	1920	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	11	COMMERICAL GARAGE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S67	5120193	1920	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	19	COMMERICAL GARAGE	REPLACE TO BUILDING AND RECONNECT
S68	5000745	2000	FORBES	0.75	1" TAP	1	PEXa	20	0.625	LEAD	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S69	5000753	2002	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S70	5000754	2004	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S71	5000744	2006	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S72	5000746	2006.5	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S73	5000747	2008	FORBES	0.75	1" TAP	1	PEXa	22	UNKNOWN, ASSUMED 0.75	NON-LEAD	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S74	5000748	2008.5	FORBES	0.75	1" TAP	1	PEXa	22	UNKNOWN, ASSUMED 0.75	NON-LEAD	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S75	5000759	2010	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S76	5000758	2010.5	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S77	5000763	2012	FORBES	UNKNOWN	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S78	5000764	2014	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S79	5000766	2016	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S80	5000768	2018	FORBES	1	1" TAP	1	PEXa	25	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S81	5000769	2020	FORBES	0.75	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	11	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S82	5000770	2022	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	11	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S83	5000771	2024	FORBES	0.5	1" TAP	1	PEXa	16	0.5	LEAD	COPPER	12	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S86	UNKNOWN	2030	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	10	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S87	5000775	2032A	FORBES	UNKNOWN	1" TAP	1	PEXa	16	0.5	LEAD VS. LIKELY NON-LEAD	COPPER	10	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S88	5000774	2032B	FORBES	0.75	1" TAP	1	PEXa	16	0.5	LEAD VS. LIKELY NON-LEAD	COPPER	10	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S93	5002395	2106	FORBES	TWO (2) 1"	20X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	25	2	COPPER	N/A	N/A	COMMERCIAL	REPLACE TO CURB BOX AND RECONNECT
S98	UNKNOWN	2120	FORBES	0.75	N/A	N/A	N/A	N/A	0.75	COPPER	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S99	UNKNOWN	2124	FORBES	0.5	N/A	N/A	N/A	N/A	0.5	LEAD	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S100	UNKNOWN	2126	FORBES	0.75	N/A	N/A	N/A	N/A	0.75	COPPER	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S101	UNKNOWN	2128	FORBES	UNKNOWN	N/A	N/A	N/A	N/A	UNKNOWN	UNKNOWN	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL

SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC & RECONNECT MAT'L	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
S104	5002399	2132	FORBES	0.75	1" TAP	1	PEXa	18	0.75	GALVANIZED IRON	COPPER	16	COMMERCIAL	REPLACE TO BUILDING AND RECONNECT
S108	UNKNOWN	2206	FORBES	0.5	N/A	N/A	N/A	N/A	0.625	LEAD	N/A	N/A	VACANT LOT	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S109	UNKNOWN	0	FORBES	0.5	N/A	N/A	N/A	N/A	0.5	LEAD	N/A	N/A	VACANT LOT	
S121	UNKNOWN	725 AKA 711	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	6	CAST IRON	N/A	5	INSTITUTIONAL	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S125	5120593 5120594	1015	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	8 (F) & 4 (D)	UNKNOWN, ASSUMED NON-LEAD	N/A (F & D)	5	RETAIL/GYMNASIUM OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S127	5000418	1323	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	UNKNOWN, ASSUMED NON-LEAD	N/A	5	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S128	5000419	1323	FORBES	4	20X8 TEE WITH 8" VALVE AND 8X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	5	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S129	UNKNOWN	1323	FORBES	UNKNOWN	1" TAP	1	PEXa	23	UNKNOWN	UNKNOWN	COPPER	11	OFFICES	REPLACE TO BUILDING AND RECONNECT
S130	UNKNOWN	1323	FORBES	4	20X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	16	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S131	5000423	1401	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S132	UNKNOWN	1401	FORBES	4	20X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	CAST IRON	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S133	5000424	1425	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	4	STEEL	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S134	5132501	1425	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S142	UNKNOWN	1517	FORBES	2	20X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	COPPER	N/A	33	MEDICAL OFFICES	REPLACE TO CURB BOX AND RECONNECT
S143	5000445	1611 & 1613 AKA 1609	FORBES	UNKNOWN	1" TAP	1	PEXa	18	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	23	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S144	5000446	1621 AKA 1613	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	33	OFFICE/WAREHOUSE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S145	UNKNOWN	1621 AKA 1613	FORBES	1.25	20X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	18	1.25	COPPER	N/A	24	OFFICE/WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
S158	5000548	121	VAN BRAAM	0.625	1" TAP	1	PEXa	13	0.625	LEAD	COPPER	29	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S159	5000550	1703	FORBES	0.75	1" TAP	1	PEXa	33	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S160	5000551	1705	FORBES	0.75	1" TAP	1	PEXa	14	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S161	5000552	1707	FORBES	0.75	1" TAP	1	PEXa	31	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S162	5000545	1709	FORBES	0.75	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S163	5123852	1711	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S164	5000543	1713	FORBES	0.75	1" TAP	1	PEXa	31	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S170	5000537	1725	FORBES	0.75	1" TAP	1	PEXa	31	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S171	5000534	1727	FORBES	0.75	1" TAP	1	PEXa	31	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S172	5000535	1729	FORBES	1	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S173	5000536	1731	FORBES	0.75	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	23	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S174	5000529	1733	FORBES	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S175	5000526	1735	FORBES	0.75	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	28	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S178	5123700	1819 AKA 1801	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	6	CAST IRON	N/A	26	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S180	5000521	1835	FORBES	2	20X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	0.5	LEAD	COPPER	82	OFFICES	REPLACE TO BUILDING AND RECONNECT
S181	5000519	1901	FORBES	0.625	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	29	HOUSE	REPLACE TO BUILDING AND RECONNECT
S182	5000518	1903	FORBES	0.625	1" TAP	1	PEXa	10	0.625	LEAD & IRON VS. LIKELY NON-LEAD	COPPER	29	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S187	5000516	1915	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	19	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S188	5000517	1917	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	19	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S189	5000737	1919 - 1925	FORBES	1.5	20X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	17	0.5	LEAD	COPPER	23	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
S190	5000738	1927	FORBES	UNKNOWN	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	23	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S192	5000735	2001	FORBES	1	1" TAP	1	PEXa	13	0.75	GALVANIZED IRON	COPPER	29	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S193	5000734	2003	FORBES	0.625	1" TAP	1	PEXa	19	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	23	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S194	5000733	2005	FORBES	UNKNOWN	1" TAP	1	PEXa	19	0.75	COPPER	N/A	22	RETAIL/APARTMENTS OVER	REPLACE TO CURB BOX AND RECONNECT
S196	5000731	2009	FORBES	0.75	1" TAP	1	PEXa	19	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	22	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S197	5000729	2011	FORBES	0.75	1" TAP	1	PEXa	32	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S198	5000728	2013	FORBES	0.75	1" TAP	1	PEXa	32	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S199	5000726	2015	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	22	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S200	5000727	2017	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	18	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S201	5000725	2019	FORBES	0.5	1" TAP	1	PEXa	17	UNKNOWN	UNKNOWN	COPPER	19	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S204	UNKNOWN	2027	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S205	5000722	2029	FORBES	0.75	1" TAP	1	PEXa	31	0.625	NON-LEAD	N/A	N/A	POSSIBLY VACANT HOUSE	REPLACE TO CURB BOX AND RECONNECT
S206	5000723	2031	FORBES	0.75	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	22	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S207	5000720	2033	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	23	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S208	5000719	2035	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	23	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S209	5000718	2037 / 2035.5	FORBES	0.625	1" TAP	1	PEXa	16	0.5	LEAD	COPPER	24	CHURCH	REPLACE TO BUILDING AND RECONNECT
S212	5002377	2119	FORBES	0.75	1" TAP	1	PEXa	15	0.5	GALVANIZED IRON	COPPER	21	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S213	5002378	2121	FORBES	0.625	1" TAP	1	PEXa	32	1	COPPER	N/A	N/A	MULTIFAMILY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT
S214	5114361	2123	FORBES	0.75	1" TAP	1	PEXa	15	0.5	GALVANIZED IRON	COPPER	120	UNKNOWN	REPLACE TO BUILDING AND RECONNECT
S215	5002373	2125	FORBES	0.625	1" TAP	1	PEXa	31	0.5	COPPER	N/A	N/A	WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
S216	5002372	2129 & 2131	FORBES	1	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	22	CHURCH	REPLACE TO BUILDING AND RECONNECT
S217	5002370	2133	FORBES	0.625	1" TAP	1	PEXa	N/A	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	21	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S218	5002368	2135	FORBES	0.75	1" TAP	1	PEXa	17	0.75	COPPER	N/A	N/A	MULTIFAMILY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of subsurface utilities, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048847-E

1-7-2021

NOTE:

1. NUMBERS ARE NOT SEQUENTIAL BECAUSE PLACEHOLDER NUMBERS WERE USED FOR VACANT PROPERTIES WHERE NO WATER SERVICE LINE IS APPLICABLE.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

WATER SERVICE LINE TABLES - FORBES AVE

SCALE: AS NOTED

DATE: JANUARY, 2021

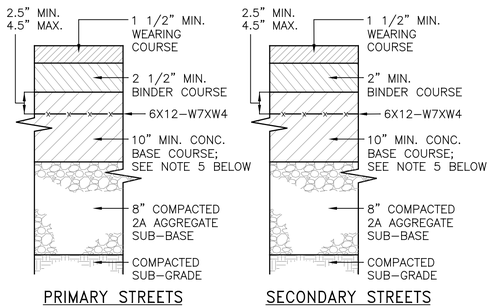
SHEET NO. 75 OF 166

ACCESSION NO. _____

CASE NO. _____

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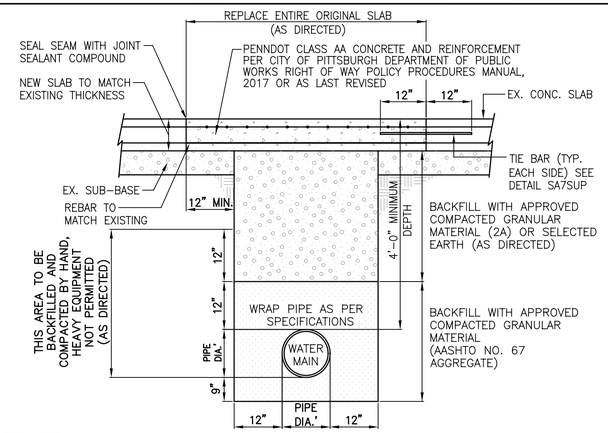
PRIMARY STREETS SECONDARY STREETS

NOTES:

1. WARM MIX BITUMINOUS ONLY, PER CURRENT EDITION OF PENNDOT PUBLICATION 408.
2. WEARING COURSE: COMPACTED, 9.5MM, PG 64E–22.
3. BINDER COURSE: COMPACTED, 19MM, PG 64E–22.
4. DPW MAY ALLOW PG 64–22 ON SECONDARY STREETS IF STREET IS NOT A TRUCK OR BUS ROUTE.
5. RIGID BASE COURSE: PENNDOT TYPE "AA" CONCRETE, OR ALTERNATIVE MATERIAL TO MATCH EXISTING AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS.
6. AGGREGATE SUB–BASE: COMPACTED TO STANDARDS OF CURRENT EDITION OF PENNDOT PUBLICATION 408, SECTION 400.
7. ESAL DESIGN RANGE: 3 TO 30 MILLION.
8. DESIGN TO BE BASED ON CURRENT EDITION OF PENNDOT PUBLICATION 242.
9. DETAIL OBTAINED FROM CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT OF WAY PROCEDURES POLICY MANUAL, REVISED JUNE 1, 2017.

BITUMINOUS PAVEMENT FOR PRIMARY (ARTERIAL & COLLECTOR) & SECONDARY (LOCAL) STREETS

N.T.S.

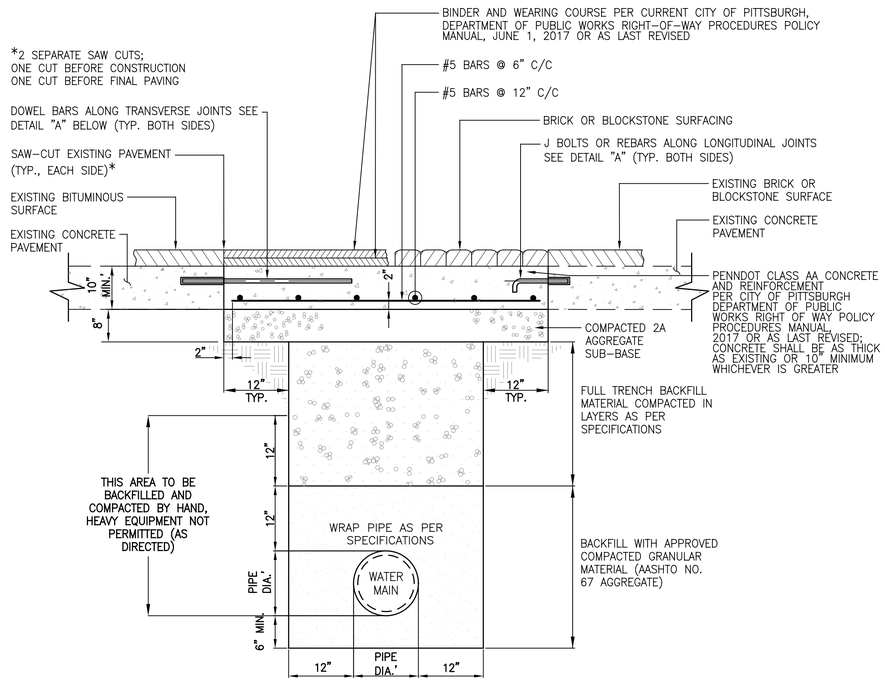


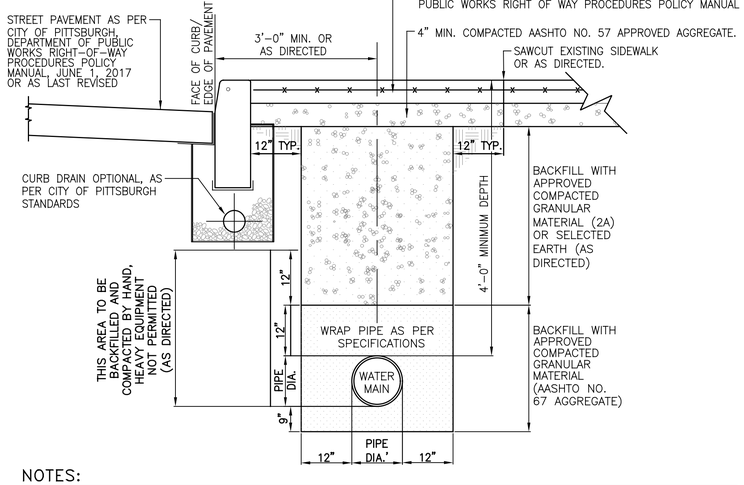
NOTES:

1. ALL TRENCH BACKFILL MATERIAL TO BE PLACED AND MECHANICALLY COMPACTED IN 6" COMPACTED LAYERS.
2. TRENCH BEDDING MAY NEED TO BE MODIFIED IN POOR COMPACTION AREAS.
3. CERTAIN PIPE MATERIALS AND/OR RELATED TRENCH MATERIALS MAY NEED TO BE SUBSTITUTED IF CONTAMINATED SOILS ARE ENCOUNTERED.
4. REINFORCEMENT SHALL BE CONSIDERED INCIDENTAL TO CONCRETE PAVING BASE.
5. PAVING MATERIAL TO MATCH EXISTING STREET SURFACE AND SHALL CONFORM WITH REQUIREMENTS OF OWNER.
6. CONCRETE SAW–CUT TO BE VERTICAL AND NEAT. CLEAN AND WET WHEN NEW CONCRETE IS POURED.

CONCRETE STREET TRENCH REPAVING (WS–1A)

N.T.S.





NOTES:

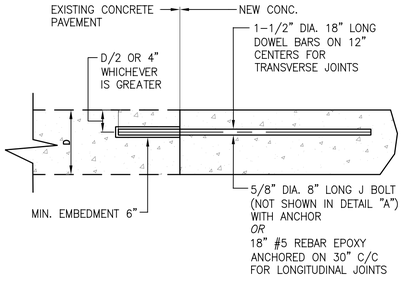
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2. TRENCH BEDDING MAY NEED TO BE MODIFIED IN POOR COMPACTION AREAS.
3. CERTAIN PIPE MATERIALS AND/OR RELATED TRENCH MATERIALS MAY NEED TO BE SUBSTITUTED IF CONTAMINATED SOILS ARE ENCOUNTERED.

WATER LINE TRENCH IN SIDEWALK AREA (WS–7)

N.T.S.

NOTES:

1. ALL TRENCH BACKFILL MATERIAL TO BE PLACED AND MECHANICALLY COMPACTED IN 6" COMPACTED LAYERS.
2. TRENCH BEDDING MAY NEED TO BE MODIFIED IN POOR COMPACTION AREAS.
3. CERTAIN PIPE MATERIALS AND/OR RELATED TRENCH MATERIALS MAY NEED TO BE SUBSTITUTED IF CONTAMINATED SOILS ARE ENCOUNTERED.
4. REINFORCEMENT SHALL BE CONSIDERED INCIDENTAL TO CONCRETE PAVING BASE.
5. PAVING MATERIAL TO MATCH EXISTING STREET SURFACE AND SHALL CONFORM WITH REQUIREMENTS OF OWNER.
6. CONCRETE SAW–CUT TO BE VERTICAL AND NEAT. CLEAN AND WET WHEN NEW CONCRETE IS POURED.



DETAIL "A"

WATER LINE TRENCH AND CONCRETE BASE REPAVING DETAIL (ASPHALT OR BLOCK SURFACE)

N.T.S.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

CONSTRUCTION DETAILS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 76 OF 166
ACCESSION NO. _____
CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVS/SB			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS		
CHARACTER	DATE	

DESIGNED BY:

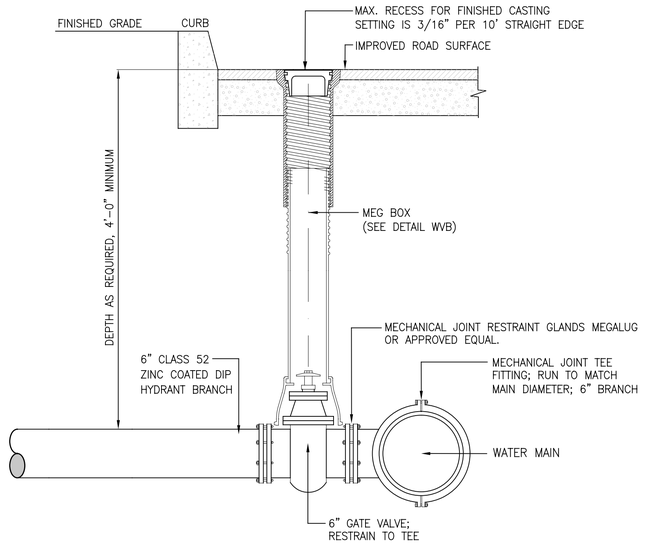
gai consultants

COMMONWEALTH OF REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-044843-E PENNSYLVANIA
1-7-2021

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of underground utilities, and neither assumes responsibility for conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

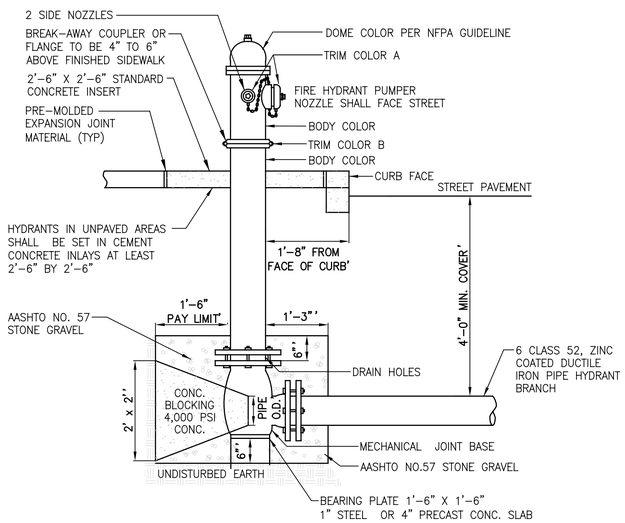
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OPTION TO RESTRAIN VALVE TO TEE

N.T.S.



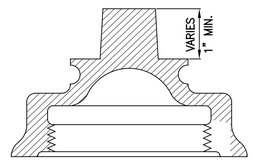
GENERAL NOTES:

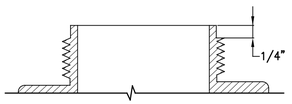
1. FOR HYDRANT PAINTING REQUIREMENTS, REFER TO STANDARD DETAIL WS-HYD.
2. THE PENTAGONAL NUTS SHALL BE PAINTED THE SAME COLOR AS THE DOME COLOR.

TYPICAL FIRE HYDRANT INSTALLATION

(PITTSBURGH WATER AND SEWER AUTHORITY SUPPLEMENTAL DETAIL DRAWING: WS-4)

N.T.S.

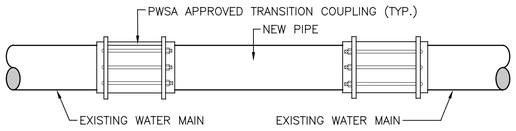




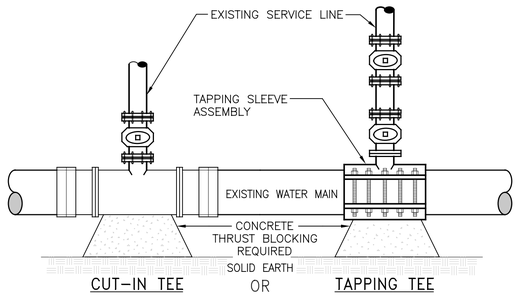
NO. OF THREADS: 6 STYLE: 60 DEGREE V

THREAD DESIGN FOR HYDRANT HOSE NOZZLE (WS-8)

N.T.S.



AFTER TERMINATION



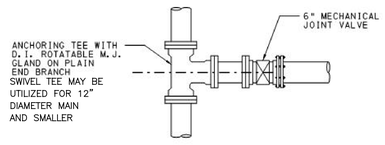
EXISTING

NOTES:

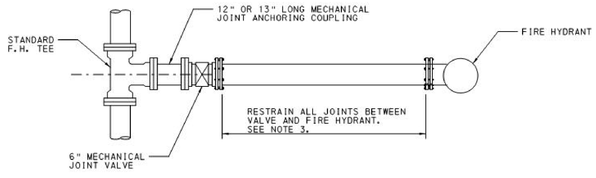
1. CUT AND REMOVE EXISTING TEE; INSTALL SIZE ON SIZE SPOOL PIECE CONNECTING TO EXISTING MAIN AT EACH END WTIH TRANSITION SLEEVES, AS DIRECTED.
2. MAIN LINE SHUT REQUIRED AND MUST BE COORDINATED AT THE PWSA PERMITS COUNTER.

TYPICAL WATER TERMINATION FOR 4" AND LARGER CONNECTION (WS-STL)

N.T.S.



OPTION FOR USE OF ANCHORING COUPLING



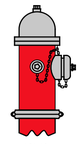
PLAN

NOTES:

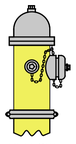
1. DO NOT BLOCK FIRE HYDRANT TEE OR FIRE HYDRANT.
2. RESTRAIN ALL JOINTS BETWEEN FIRE HYDRANT TEE AND VALVE, USING ANCHORING TEE OR ANCHORING COUPLING.
3. RESTRAIN ALL JOINTS FROM VALVE TO FIRE HYDRANT USING WEDGE ACTION RESTRAINING GLANDS OR RESTRAINED JOINT GASKETS, SEE SPECIFICATIONS.
4. PLACE RESTRAINED JOINT PIPE TAPE ON TOP OF PIPE FROM FIRE HYDRANT TEE TO FIRE HYDRANT, SEE SPECIFICATIONS.

ANCHOR COUPLING DETAIL

N.T.S.



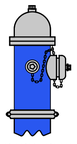
RED
MAINS 8" & SMALLER



YELLOW
MAINS 10" THRU 20"

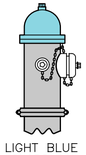


GREEN
MAINS 24" & LARGER



DARK BLUE
HYDRANT NOT FOR FIRE USE

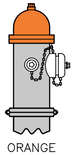
BODY COLOR CODE BY MAIN SIZE



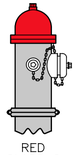
LIGHT BLUE
CLASS AA
1500 GPM OR MORE



GREEN
CLASS A
1000-1499 GPM

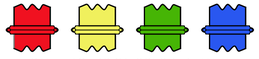


ORANGE
CLASS B
500-999 GPM



RED
CLASS C
499 GPM OR LESS

DOME COLOR WITH NFPA CODING - POTABLE WATER



SAME AS BODY COLOR 1 MAIN



COLOR WHITE 2 OR MORE MAINS

BREAKAWAY RING COLOR CODE BY No. OF MAINS CONNECTED TO THE HYDRANT

STANDARD HYDRANT COLOR CODES (WS-HYD)

N.T.S.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

CONSTRUCTION DETAILS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 77 OF 166

ACCESSION NO. _____

CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

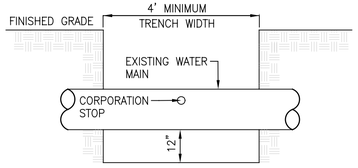
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021

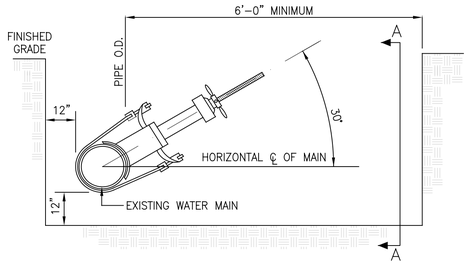
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SECTION A–A

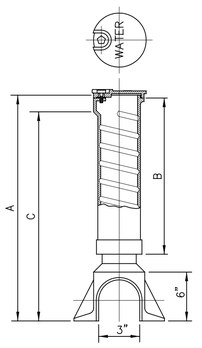


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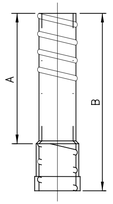
1. PWSA WILL MAKE THE ACTUAL TAP.
2. EXCAVATION AND SHORING REQUIRED AS PER CURRENT OSHA STANDARDS.

TRENCH REQUIREMENTS FOR 1" WATER SERVICE TAP (WS–C)

N.T.S.



TOP SECTION, BOTTOM SECTION & COVER



SERVICE BOX EXTENSION

SIZE NO.	INCREASES LENGTH–A	OVERALL LENGTH–B	WEIGHT
155	20	22.75	13.1
156	24	26.75	17.7

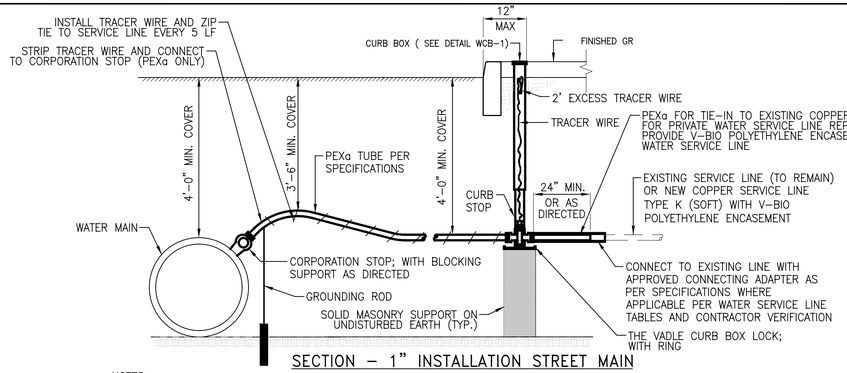
SIZE NO.	EXTENSION RANGE – A	TOP SECTION & COVER			BOTTOM SECTION			TOTAL WEIGHT
		NO.	WEIGHT	DIM. B	NO.	WEIGHT	DIM. C	
2	24" – 39"	9	19.6	18	2	14.1	23.0	32.7

NOTES:

1. SERVICE BOX SHALL BE BINGHAM & TAYLOR BUFFALO STYLE (3" OLD STYLE), No. 4930 OR APPROVED EQUAL.
2. DIMENSIONS IN INCHES; WEIGHT IN POUNDS.
3. CONTRACTOR SHALL PROVIDE TRUCK RATED CASTING ON CURB BOXES TO BE SET AT FUTURE CURB LOCATIONS THAT ARE IN EXISTING ROADWAY AREAS.
4. CURB BOX SHALL BE LABELED "PRIV WATER."

3" CURB SERVICE BOX (WCB–1) (FOR 1" SERVICE)

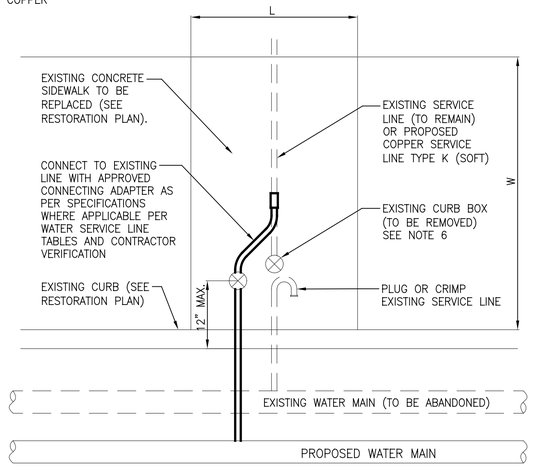
N.T.S.



SECTION – 1" INSTALLATION STREET MAIN

NOTES:

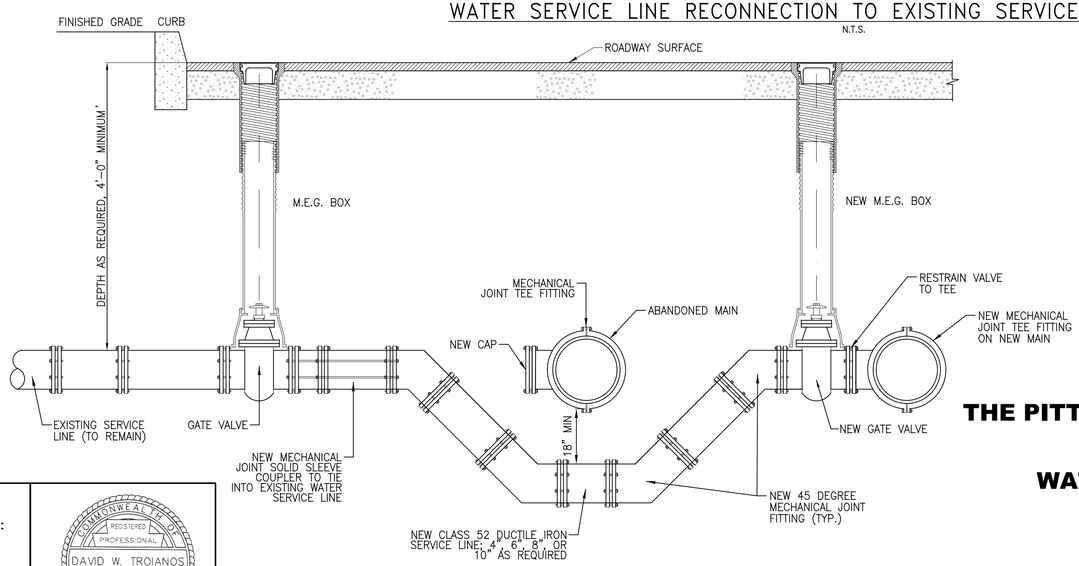
1. ONLY ONE PWSA METER WILL BE INSTALLED PER EACH SERVICE TAP.
2. DOMESTIC SERVICE IS 1" MINIMUM. FINAL SIZING FOR EACH SERVICE LINE IS TO BE BASED ON CONTRACTOR VERIFICATION PRIOR TO CONSTRUCTION. IF EXISTING WATER SERVICE LINE IS LARGER THAN 1", MATCH EXISTING DIAMETER. SEE "WATER SERVICE LINE 2" DOMESTIC / FIRE NEW INSTALLATION – WS–5NT2" DETAIL AND "SERVICE CONNECTION 4" THROUGH 10" – WS–A (MODIFIED)" DETAIL FOR WATER SERVICE LINES LARGER THAN 1.5 INCH DIAMETER.
3. PLAN VIEW IS SCHEMATIC AND NOT MEANT TO SHOW THE EXISTING SERVICE LINE VALVE LOCATION AND ORIENTATION AS IT RELATES TO THE NEW INSTALLATION.
4. THE SERVICE NUMBERS PROVIDED ON THE PLAN AND PROFILE SHEETS CORRESPOND TO THE SERVICE NUMBERS SHOWN ON THE WATER SERVICE LINE TABLES WITHIN THESE DRAWINGS. THESE TABLES PROVIDE ADDITIONAL DETAIL ON THE SIZE, LENGTH, AND MATERIAL OF EACH SERVICE LINE.
5. IN THE EVENT THAT THE SIDEWALK HAS BEEN RECENTLY REPLACED PER PEOPLE'S NATURAL GAS LINE INSTALLATIONS, COORDINATE WITH PWSA TO ASSESS CONDITION OF THE EXISTING VALVE BOXES IN THE FIELD. IF IN GOOD WORKING ORDER, PWSA MAY ELECT NOT TO REPLACE THE CURB BOX AND VALVE. CURB BOXES AND VALVES MAY ONLY REMAIN WITH THE OWNER'S APPROVAL.
6. EXISTING CURB BOX IS TO BE REMOVED. THE EXISTING SERVICE LATERAL FROM THE MAIN TO THE EXISTING CURB BOX IS TO BE CUT AND ABANDONED IN ACCORDANCE WITH PWSA STANDARD DETAILS AND SPECIFICATIONS.
7. FOR PEXa PIPE INSTALLATION, CORPORATION AND CURB STOPS SHALL BE COMPRESSION TYPE FITTINGS AND SHALL HAVE A TRACER WIRE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
8. POLYWRAP ALL METALLIC PIPE, FITTINGS AND VALVES.
9. PAVING MATERIAL TO MATCH EXISTING STREET SURFACE AND SHALL CONFORM WITH REQUIREMENTS OF OWNER.
10. CONCRETE SAW–CUT TO BE VERTICAL AND NEAT. CLEAN AND WET WHEN NEW CONCRETE IS POURED.
11. FOR TEMPORARY TRENCH REPAVING, SEE DETAIL WS–1ALT.
12. PROVIDE A MINIMUM 18–INCH HORIZONTAL CLEARANCE BETWEEN TAPS ON THE WATER MAIN.
13. TRACER WIRE SHALL BE MINIMUM NO. 14 AWG (HS–CCS). INSULATION SHALL BE 30 MIL THICK HDPE, RATED FOR 30 VOLTS, COLORED BLUE.



PLAN VIEW – 1" INSTALLATION STREET MAIN

WATER SERVICE LINE RECONNECTION TO EXISTING SERVICE (WS–5 MODIFIED) (FOR 1" SERVICE)

N.T.S.



WATER SERVICE LINE RECONNECTION TO EXISTING SERVICE (FOR 4" DIAMETER SERVICE AND LARGER)

N.T.S.

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — DAVID W. TROIANOS — ENGINEER — PE–048643–E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

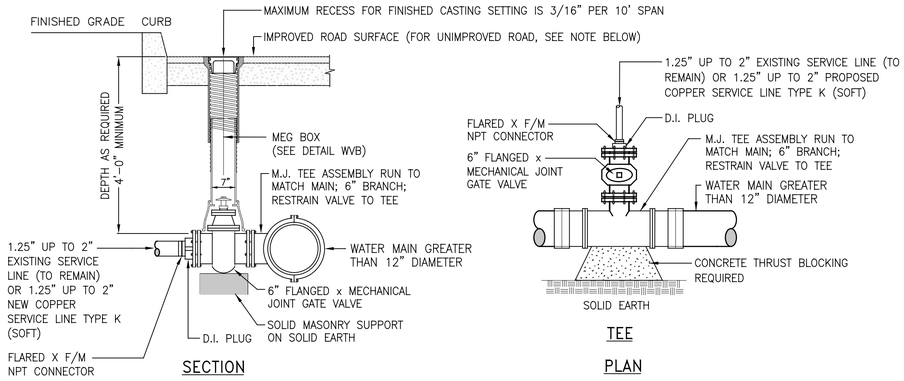
CONSTRUCTION DETAILS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 78 OF 166
ACCESSION NO. _____
CASE NO. _____

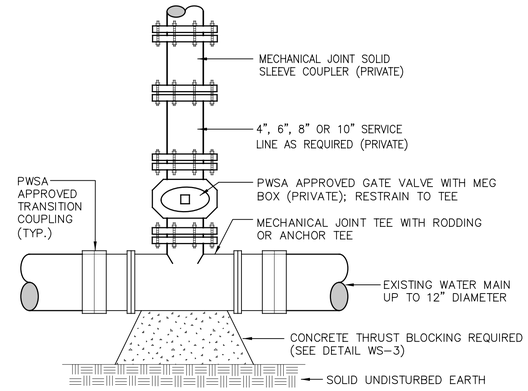
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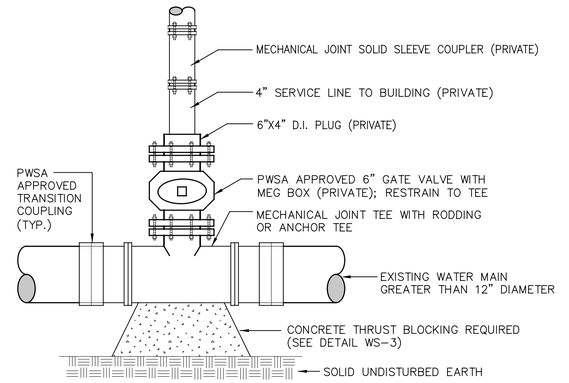
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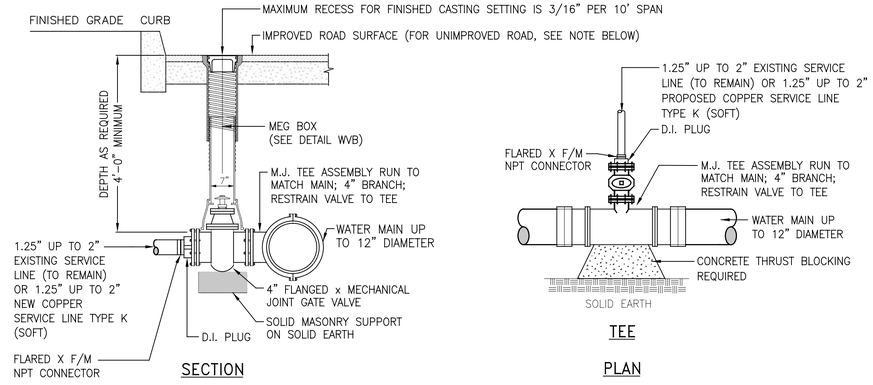
FOR MAINS GREATER THAN 12" DIAMETER



FOR MAINS UP TO 12" DIAMETER



FOR MAINS GREATER THAN 12" DIAMETER



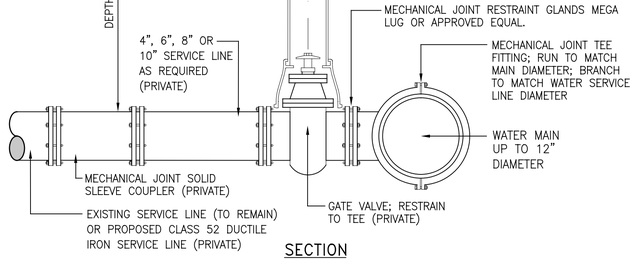
FOR MAINS UP TO 12" DIAMETER

WATER SERVICE LINE 1.25" UP TO 2" DOMESTIC / FIRE NEW INSTALLATION NOTES:

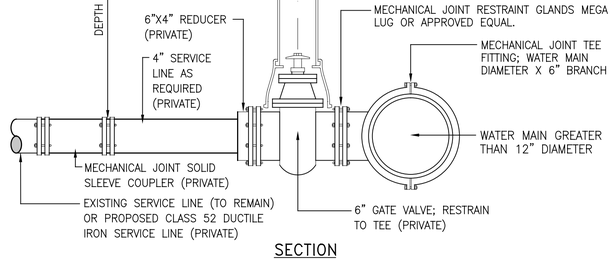
1. ALL FITTINGS SHALL HAVE THRUST BLOCKS (SEE DETAIL WS-3).
2. STANDARD GATE BOX LID: TWO NOTCH OPENINGS REQUIRED. DIAMETER TO MATCH BOX.
3. GATE BOX EXTENSION: GATE BOX EXTENSION RINGS ARE NOT TO BE USED IN NEW WORK.
4. MEG BOX MATERIAL SHALL BE CAST IRON.
5. IF MEG BOX IS LOCATED IN AN UNIMPROVED AREA, THEN A 30"X30"X 8"D CONCRETE PAD APRON CENTERED AROUND THE MEG BOX IS REQUIRED.
6. ALL VALVES MUST BE "RIGHT TURN TO OPEN".
7. PRIVATE SERVICE LINE MATERIAL AND EQUIPMENT SHALL CONFORM TO ALLEGHENY COUNTY PLUMBING CODE, ARTICLE XV.
8. ONLY ONE PWSA METER WILL BE INSTALLED PER EACH SERVICE TAP.
9. MAIN LINE SHUT REQUIRED AND MUST BE COORDINATED AT THE PWSA PERMITS COUNTER.
10. CONNECT TO EXISTING LINE WITH APPROVED CONNECTING ADAPTER AS PER SPECIFICATIONS WHERE APPLICABLE PER WATER SERVICE LINE TABLES AND CONTRACTOR VERIFICATION.
11. VALVE BOX SHALL BE LABELED "PRIV WATER."

WATER SERVICE LINE
1.25" UP TO 2" DOMESTIC / FIRE NEW INSTALLATION (WS-5NT2 MODIFIED)

N.T.S.



4" THROUGH 10" FOR MAINS UP TO 12" DIAMETER;
6" THROUGH 10" FOR MAINS GREATER THAN 12" DIAMETER



4" TAP FOR MAINS
GREATER THAN 12" DIAMETER

SERVICE CONNECTION 4" THROUGH 10" (WS-A MODIFIED)

N.T.S.

SERVICE CONNECTION 4" THROUGH 10" NOTES:

1. ALL PIPING TO BE RESTRAINED WITH RODDING AND/OR RETAINER GLANDS.
2. ALL FITTINGS SHALL HAVE THRUST BLOCKS. SEE CONCRETE BLOCKING FOR PRESSURE PIPE DETAIL (WS-3).
3. STANDARD GATE BOX LID: TWO NOTCH OPENINGS REQUIRED. DIAMETER TO MATCH BOX.
4. GATE BOX EXTENSION: GATE BOX EXTENSION RINGS ARE NOT TO BE USED IN NEW WORK.
5. A MAXIMUM OF THREE EXTENSION RINGS CAN BE USED PER EXISTING GATE BOX.
6. M.E.G. BOX MATERIAL SHALL BE CAST IRON.
7. IF M.E.G. BOX IS LOCATED IN AN UNIMPROVED AREA, THEN A 30"x 30"x 8"D CONCRETE PAD APRON CENTERED AROUND THE M.E.G. BOX IS REQUIRED.
8. ALL VALVES MUST BE "RIGHT TURN TO OPEN".
9. PRIVATE SERVICE LINE MATERIAL AND EQUIPMENT SHALL CONFORM TO ALLEGHENY COUNTY PLUMBING CODE, ARTICLE XV.
10. CONNECT TO EXISTING LINE WITH APPROVED CONNECTING ADAPTER AS PER SPECIFICATIONS WHERE APPLICABLE PER WATER SERVICE LINE TABLES AND CONTRACTOR VERIFICATION.
11. VALVE BOX SHALL BE LABELED "PRIV WATER."

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

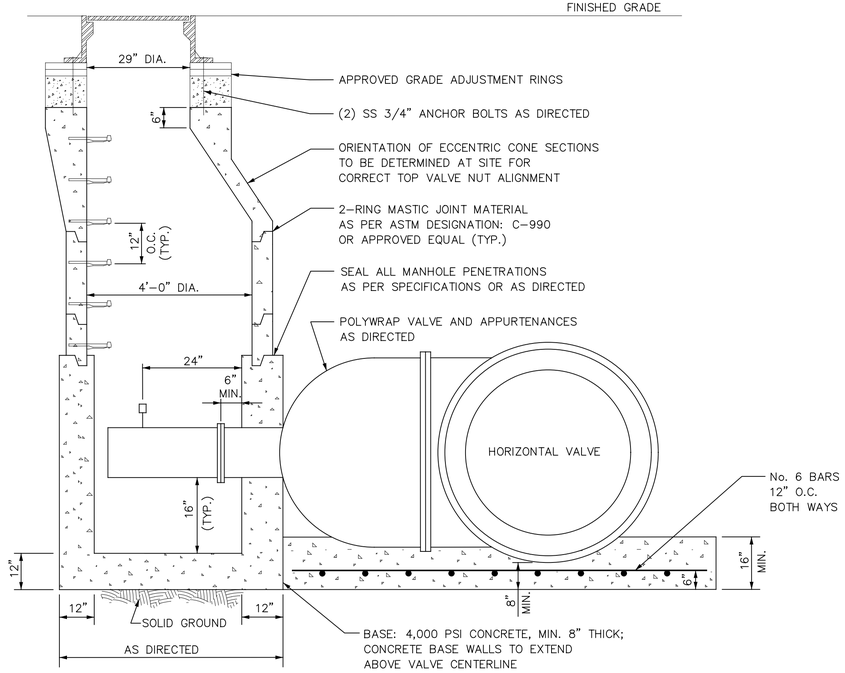
CONSTRUCTION DETAILS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 79 OF 166
ACCESSION NO. _____
CASE NO. _____

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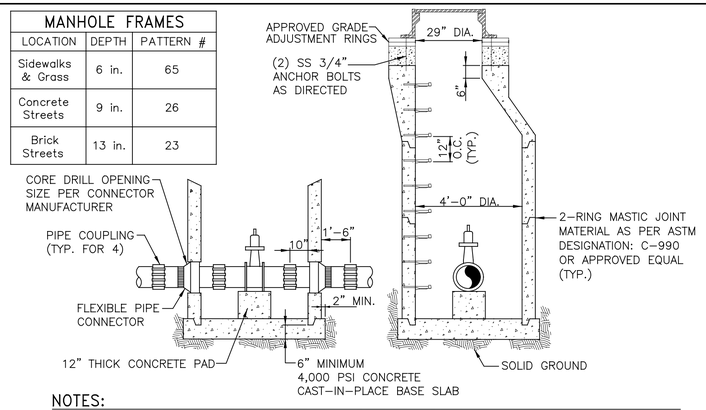
NOTES:

1. PRECAST MANHOLE SECTIONS SHALL BE AS PER ASTM C478. LENGTHS MAY BE VARIED TO OBTAIN DESIRED DEPTH.
2. MANHOLE STEPS: No. 4 BAR GRADE 60 DEFORMED STEEL BAR, ASTM A615; COATED WITH POLYPROPYLENE PLASTIC, ASTM D4101.
3. MANHOLE FRAMES PER SECTION 02082. FINAL GRADE ADJUSTMENT RINGS PER SECTION 02281.
4. MANHOLES MUST BE WATERPROOFED ON THE EXTERIOR WITH AN APPROVED ASPHALT EMULSION FOUNDATION COATING. MATERIALS AND APPLICATION SHALL BE IN ACCORDANCE WITH ASTM D1227.

HORIZONTAL VALVE – 16" OR GREATER WITH MANHOLE (WS-10C MODIFIED)

N.T.S.

MANHOLE FRAMES		
LOCATION	DEPTH	PATTERN #
Sidewalks & Grass	6 in.	65
Concrete Streets	9 in.	26
Brick Streets	13 in.	23



NOTES:

1. PRECAST MANHOLE SECTIONS SHALL BE AS PER ASTM C478. LENGTHS MAY BE VARIED TO OBTAIN DESIRED DEPTH.
2. MANHOLE STEPS: No. 4 BAR GRADE 60 DEFORMED STEEL BAR, ASTM A615; COATED WITH POLYPROPYLENE PLASTIC, ASTM D4101.
3. MANHOLE FRAMES PER SECTION 02082. FINAL GRADE ADJUSTMENT RINGS PER SECTION 02281
4. MANHOLES MUST BE WATERPROOFED ON THE EXTERIOR WITH AN APPROVED ASPHALT EMULSION FOUNDATION COATING. MATERIALS AND APPLICATION SHALL BE IN ACCORDANCE WITH ASTM D1227.
5. CONTRACTOR SHALL CONFIRM MAIN AND VALVE WITH GEARING HAVE ADEQUATE COVER PRIOR TO INSTALLATION.

VERTICAL LARGE DIAMETER VALVE IN CONCRETE MANHOLE (PRECAST BASE) (16" OR GREATER; WS-10)

N.T.S.

SIZE NO.	EXTENSION RANGE – A	TOP SECTION & COVER NO.	TOP SECTION & COVER DIM. B	TOP SECTION & COVER WEIGHT	BOTTOM SECTION NO.	BOTTOM SECTION DIM. C	BOTTOM SECTION WEIGHT	No. 6 BASE WT.	TOTAL WEIGHT
I I	21" – 27"	74	9.00	58.5	80	8.00	14.0	45.0	117.50
I	27" – 39"	75	15.25	81.5	81	14.00	24.5	45.0	151.00
J	33" – 45"	75	15.25	81.5	82	20.00	30.0	45.0	156.50
K	39" – 51"	75	15.25	81.5	83	26.25	41.0	45.0	167.50
L	39" – 60"	76	26.00	111.0	83	26.25	41.0	45.0	197.00

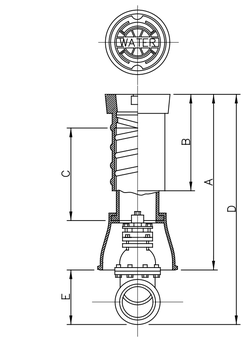
TABLE FOR DETERMINING LENGTH OF BOX NEEDED

SIZE OF VALVE	BOTTOM BASE TO BOTTOM TRENCH (DIM. E)	No. BASE USED	DEPTH OF TRENCH (DIM. D) 36"	42"	48"	54"	60"	66"	72"	78"	84"
3	8"	4	I I	I	J	K	L	L	L*	L*	O*
4	13-1/2"	4	I I	I	J	J	K	L	L	L*	L*
6	15"	6	I I	I I	J	J	J	K	L	L*	L*
8	19"	6		I I	J	J	J	K	L	L	L*
10	24"	6			I I	I	I	K	K	L	L
12	31"	160				I I	I	J	K	K	L
14	36-1/2"	160					I I	I	J	J	K
16	41-1/4"	160						I I	I	I	J

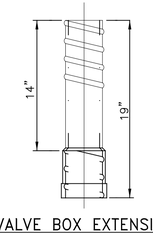
* LONGER BOXES MADE BY ADDING EXTENSIONS TO SIZE L. FOR VALVE CLOSER TO SURFACE, USE NO. 140 ROUND BASE AND REDUCE LENGTH SHOWN ABOVE BY 6 INCHES.

NOTES:

1. MEDIUM EXTENSION GATE VALVE BOX SHALL BE BINGHAM & TAYLOR No. 5001, OR APPROVED EQUAL.
2. MADE OF CAST IRON, SCREW TYPE, 3-PIECE BOX w/ LID AND #6 BASE, 7" DIAMETER SHAFT.
3. AUTHORITY VALVE COVERS SHALL BE LABELED "WATER". PRIVATE VALVE BOX COVER SHALL BE LABELED "PRIV WATER".



TOP SECTION, BOTTOM SECTION AND COVER

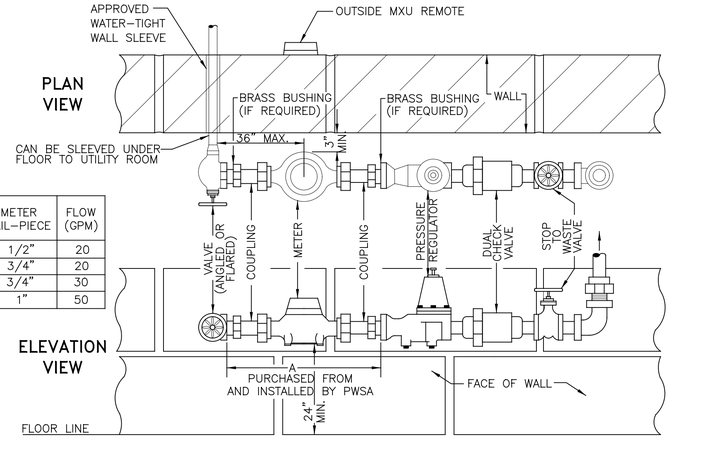


VALVE BOX EXTENSION

MEDIUM EXTENSION GATE BOX DETAIL

N.T.S.

SIZE	COUPLING SPACE A	METER TAIL-PIECE	FLOW (GPM)
5/8"	12.5"	1/2"	20
5/8x3/4"	12.5"	3/4"	20
3/4"	14.25"	3/4"	30
1"	16.5"	1"	50



PEAK DOMESTIC DEMAND = _____ GPM

NOTES:

1. METER TO BE INSTALLED IN A WARM, NON-FREEZING, ACCESSIBLE AREA WITHIN DWELLING, A MINIMUM OF 2' FROM FLOOR AND A MAXIMUM OF 3' FROM POINT OF ENTRY AND/OR FROM INSIDE WALL.
2. SEE ACHD PLUMBING CODE FOR ADDITIONAL PIPING AND PRESSURE REGULATOR REQUIREMENTS.
3. PROPER METER ACCESS REQUIRED. METER SETTING CAN NOT BE IN A RESTRICTED AREA (e.g. UNDER STEPS, BEHIND FURNACE OR HOT WATER TANK), OR IN OTHER OBSTRUCTED AREAS IN ANY WAY.
4. METER SETTING VALUES:
5. THE METER AND MXU SHALL BE PURCHASED FROM AND INSTALLED BY PWSA.
6. METER ASSEMBLY SETTINGS MUST BE INSTALLED BY THE CUSTOMER BEFORE THE METER WILL BE SET, INCLUDING METER SIGNAL WIRING.
7. CUSTOMER SHALL PROVIDE PROPER DRAIN AT METER SETTING LOCATION.
8. METER MUST BE INSTALLED IN A HORIZONTAL POSITION ONLY.
9. CUSTOMER TO PROVIDE DATA FOR PROPER PWSA SIZING AND PEAK DOMESTIC DEMAND.
10. APPROVED BACKFLOW PREVENTER REQUIRED, PER ASSE No. 1024.

DOMESTIC METER SETTING SPECIFICATIONS INDOOR RESIDENTIAL 5/8" – 1" METER

N.T.S.

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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS		
CHARACTER	DATE	

PGH2O

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E 1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

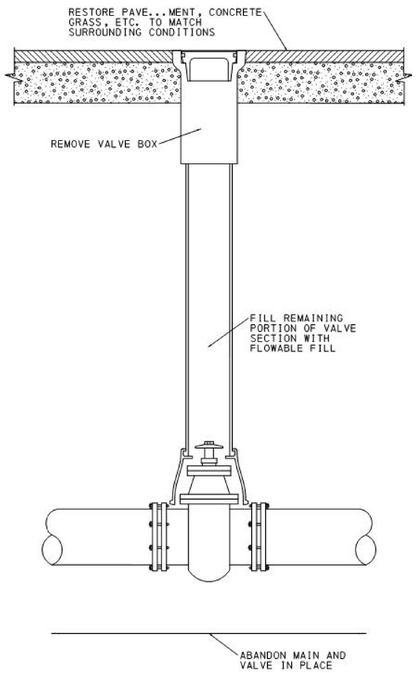
FIFTH AVENUE AND FORBES AVENUE

CONSTRUCTION DETAILS

SCALE: AS NOTED SHEET NO. 80 OF 166 ACCESSION NO. _____

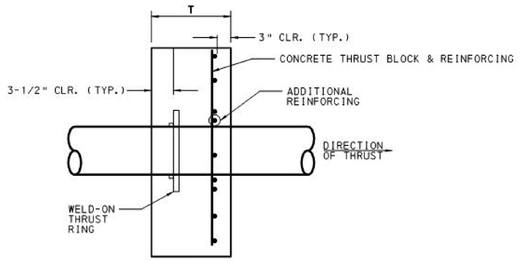
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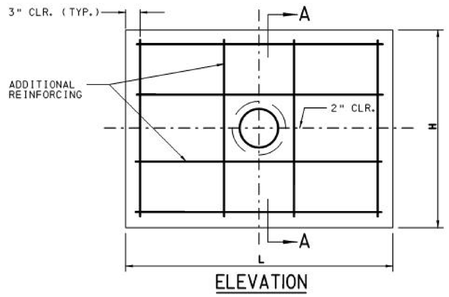


VALVE ABANDONMENT DETAIL

N.T.S.

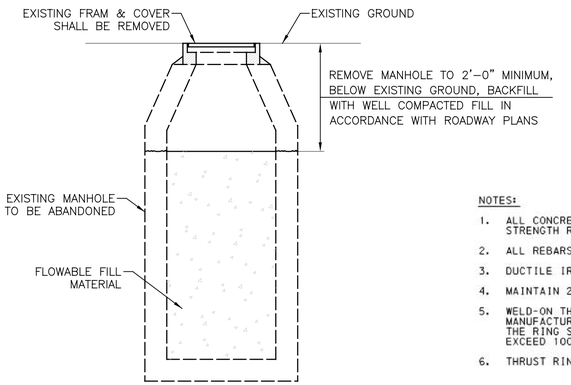


SECTION A-A



ELEVATION

PIPE DIAMETER INCH	THRUST BLOCK DIMENSIONS			THRUST BLOCK REINFORCING
	T	H	L	
4 AND 6	1'-2"	2'-6"	3'-6"	#5 @12" c/c E.W. + 4 #5 ADDITIONAL REINFORCING
8	1'-2"	3'-0"	4'-0"	#5 @12" c/c E.W. + 4 #5 ADDITIONAL REINFORCING
10	1'-4"	4'-0"	4'-0"	#5 @12" c/c E.W. + 4 #5 ADDITIONAL REINFORCING
12	1'-4"	5'-0"	5'-0"	#5 @12" c/c E.W. + 4 #5 ADDITIONAL REINFORCING
14	1'-4"	6'-0"	6'-0"	#5 @10" c/c E.W. + 4 #5 ADDITIONAL REINFORCING
16	1'-6"	6'-0"	8'-0"	#5 @8" c/c E.W. + 4 #5 ADDITIONAL REINFORCING
18	1'-6"	6'-0"	11'-0"	#5 @6" c/c E.W. + 4 #5 ADDITIONAL REINFORCING



MANHOLE ABANDONMENT DETAIL

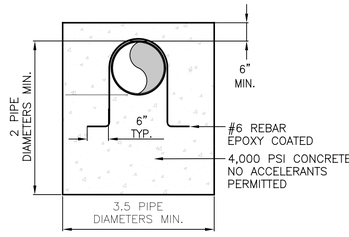
N.T.S.

NOTES:

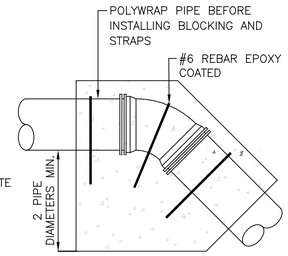
1. ALL CONCRETE SHALL BE 1"c=4000 PSI @ 28 DAYS. PIPELINE SHALL NOT BE PRESSURIZED UNTIL CONCRETE STRENGTH REACHES 4000 PSI AND TRENCH HAS BEEN BACKFILLED.
2. ALL REBARS SHALL BE ASTM A615 GRADE 60.
3. DUCTILE IRON PIPE ONLY.
4. MAINTAIN 2" CLEARANCE BETWEEN ALL REBARS AND PIPE.
5. WELD-ON THRUST RINGS AND PIPE TO WHICH THEY ARE ATTACHED SHALL BE DESIGNED BY THE PIPE MANUFACTURER FOR THRUST EQUIVALENT TO THE WATER MAIN PRESURE OF 250 PSI MI. THE AREA OF THE RING SHALL BE PROPORTIONED SUCH THAT THE BEARING STRESS ON THE CONCRETE DOES NOT EXCEED 1000 PSI.
6. THRUST RING SHALL BE LOCATED 2'-6" MINIMUM FROM END OF PIPE.

THRUST COLLAR DETAIL

N.T.S.



SECTION



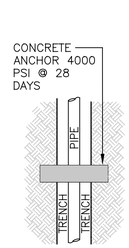
LONGITUDINAL SECTION

NOTES:

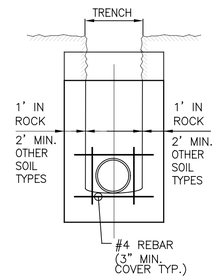
1. THE DETAIL REPRESENTS THE APPROXIMATE BLOCKING CONFIGURATION & ASSUMES SOLID SOIL & PROPER BURIAL.
2. EXACT SHAPE & SIZE TO BE DETERMINED IN THE FIELD.
3. POOR SOIL CONDITIONS WILL GREATLY INCREASE THE SIZE OF THE CONCRETE BLOCK.

VERTICAL THRUST BLOCK FOR SMALL PIPE (WS-VB)

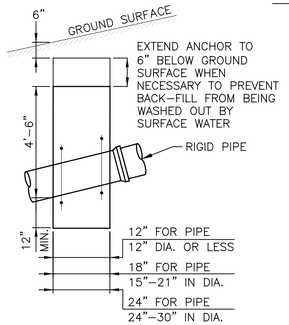
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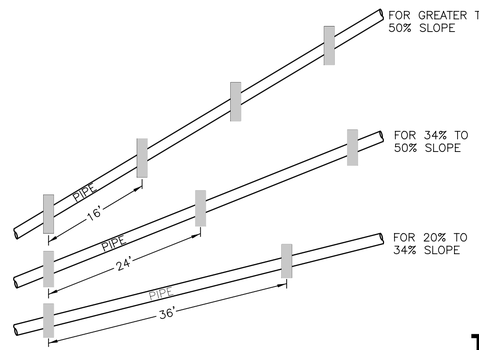
CONCRETE ANCHOR PLAN



CONCRETE ANCHOR SECTION



CONCRETE ANCHOR PROFILE

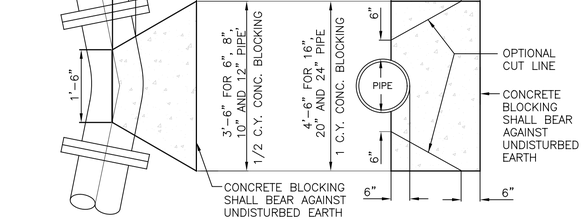


CONCRETE ANCHORS FOR RIGID PIPE ON STEEP GRADES:

1. PROVIDE NO ANCHORS ON GRADES LESS THAN 24%
2. PROVIDE ANCHORS 36' C. TO C. ON GRADES BETWEEN 24% AND 34%
3. PROVIDE ANCHORS 24' C. TO C. ON GRADES BETWEEN 34% AND 50%
4. PROVIDE ANCHORS 16' C. TO C. ON GRADES BETWEEN 50% AND 70%
5. FOR CONDITIONS OTHER THAN SHOWN HERE; ANCHORS SHALL BE PROVIDED AS REQUIRED BY THE CONTRACT PLANS OR AS ORDERED IN THE FIELD BY THE DIRECTOR.
6. PLACE CONCRETE ANCHOR AGAINST DOWNGRADE SIDE OF BELL.

CONCRETE ANCHORS (WS-CA)

N.T.S.



NOTES:

1. CONCRETE THRUST BLOCKING SHALL BE PROVIDED AT ALL TEES, BENDS, CAPS, AND PLUGS. IN ADDITION, ALL PIPE BENDS SHALL BE HARNESSED WITH MECHANICAL JOINT RETAINER GLANDS, USING EITHER SET SCREW OR LUG TYPE RETAINING SYSTEM, AS DIRECTED.
2. CONCRETE THRUST BLOCKS SHALL BE MINIMUM 4000 PSI CEMENT CONCRETE.
3. SEE DETAIL WS-VB AND WS-VBL FOR VERTICAL BENDS REQUIREMENTS.

CONCRETE BLOCKING FOR PRESSURE PIPE (WS-3)

N.T.S.

SIZE	VERTICAL AND HORIZONTAL 11.25, 22.5, 45 DEGREE BENDS	VERTICAL AND HORIZONTAL TEES AND 90 DEGREE BENDS
4	0.5 CY	0.5 CY
6	0.5 CY	0.5 CY
8	0.5 CY	0.5 CY
10	0.5 CY	0.5 CY
12	0.5 CY	0.5 CY
16	1.0 CY	1.5 CY
20	1.0 CY	2.0 CY
24	1.0 CY	2.0 CY

MINIMUM VOLUMES OF CONCRETE FOR VERTICAL AND HORIZONTAL THRUST BLOCKING

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CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

CONSTRUCTION DETAILS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 81 OF 166

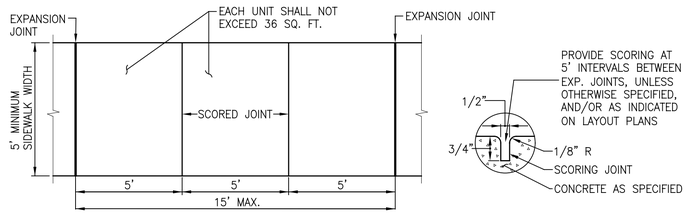
ACCESSION NO. _____

CASE NO. _____

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of underground utilities and structures. Anyone using this information for construction or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

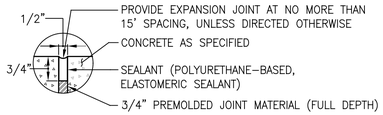
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PLAN VIEW

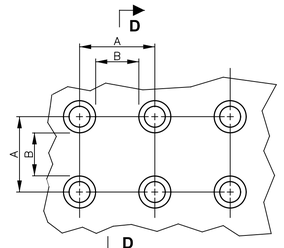
SCORING JOINT DETAIL



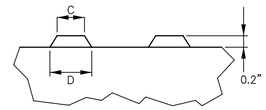
EXPANSION JOINT DETAIL

REINFORCED CONCRETE SIDEWALK (SW–PAV1)

N.T.S.



PLAN



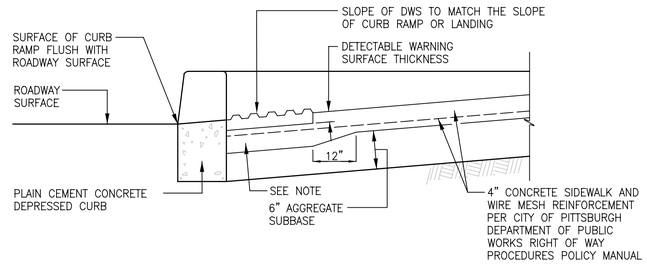
SECTION D–D

TRUNCATED DOME DIMENSIONS		
DIM	MIN inch	MAX inch
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* NOTE: THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

DETECTABLE WARNING SURFACE (DWS) TRUNCATED DOME DETAIL

N.T.S.

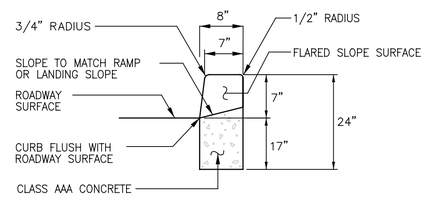


NOTE:

CONSTRUCT NOTCH AS SHOWN TO PROVIDE FULL THICKNESS SIDEWALK UNDER DETECTABLE WARNING SURFACE.

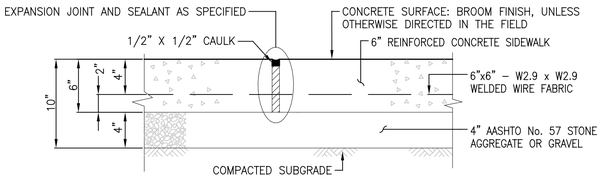
DETECTABLE WARNING SURFACE EMBEDDING DETAIL

N.T.S.

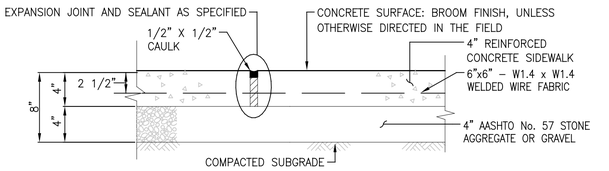


DEPRESSED CURB FOR CURB RAMPS DETAIL

N.T.S.



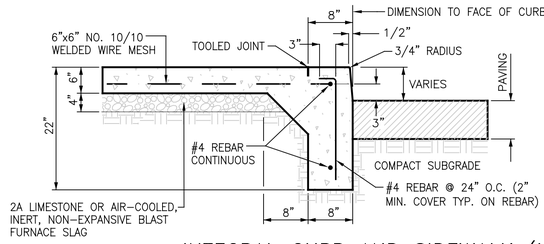
SECTION – REINFORCED CONCRETE SIDEWALK (6" THICK)



SECTION – REINFORCED CONCRETE SIDEWALK (4" THICK)

REINFORCED CONCRETE SIDEWALK (SW–PAV2)

N.T.S.

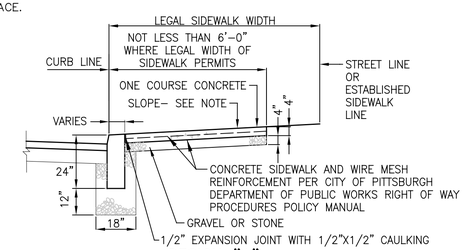


NOTES:

1. ALL CURBS AND WALKS SHALL BE MONOLITHIC POURS, SCORE JOINTS IN VERTICAL. CURB SURFACE TO ALIGN WITH WALKWAY JOINTS.
2. CONCRETE CURBS AND SIDEWALK WIDTHS AS PER SITE PLAN.
3. APPLY TWO COATS OF LINSEED OIL AFTER CONCRETE HAS CURED.

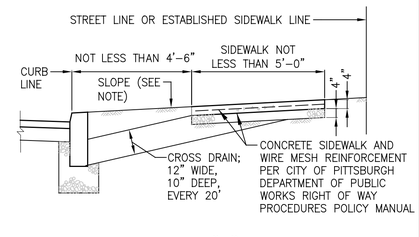
INTEGRAL CURB AND SIDEWALK (ICS)

N.T.S.



DESIGN "A"

THIS DESIGN TO BE USED IN RESIDENTIAL DISTRICTS WHERE SIDEWALKS ARE NARROW AND DISTRICTS WHERE THE ENTIRE SIDEWALK WIDTH IS PAVED.



DESIGN "B"

THIS DESIGN TO BE USED IN RESIDENTIAL DISTRICTS WHERE THE LEGAL WIDTH OF SIDEWALK PERMITS AND IN PARKS AND PLAYGROUNDS.

SLOPE OF SIDEWALKS:

ON GRADES UP TO 2 PERCENT: 1.5%
ON GRADES ABOVE 2 TO 7 PERCENT: 1.5%
ON GRADES ABOVE 7 PERCENT: 1.5%

NOTES:

1. THE ABOVE DESIGNS SHALL BE USED WHERE PRACTICAL AND WITH DUE CONSIDERATION TO EXISTING CONSTRUCTION AND CHARACTER OF IMPROVEMENTS IN THE COMMUNITY AFFECTED.
2. AROUND ALL POLES, FIRE HYDRANTS, OR OTHER STRUCTURES, PROVIDE A FULL DEPTH CONSTRUCTION JOINT IN THE SIDEWALK, 6" CLEAR OF THE POLE OR STRUCTURE.

REINFORCED CONCRETE SIDEWALK (SW–PAV3)

N.T.S.

CURB RAMP AND SIDEWALK NOTES:

1. ALL CONSTRUCTION OF CURB RAMPS AND SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA) 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN.
2. CONTRACTOR SHALL GRADE SIDEWALK AREAS SO THAT WATER DRAINS TOWARDS PAVEMENT, AWAY FROM STRUCTURES, AND NO PONDING OCCURS.
3. SHORING, BRACING, AND PROTECTION OF EXISTING AND ADJACENT STRUCTURES DURING CONSTRUCTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PROTECT AND MAINTAIN THE INTEGRITY OF ADJACENT STRUCTURES, BUILDINGS, AND STREETS.
4. NEW SIDEWALK SHALL BE CHECKED FOR 2.00% MAXIMUM CROSS–SLOPE PRIOR TO CONCRETE POUR AND FINISHING. BACK OF SIDEWALK ELEVATIONS SHALL BE ADJSUTED ACCORDINGLY.
5. ALL CURB RAMP AND SIDEWALK REPLACEMENTS SHALL BE IN ACCORDANCE WITH CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY PROCEDURES POLICY MANUAL, JUNE 1, 2017 OR AS LAST REVISED.
6. REFER TO CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY PROCEDURES POLICY MANUAL FOR THE FOLLOWING DETAILS:
   - REINFORCED CONCRETE SIDEWALK
   - CONCRETE DEEP CURB
   - TYPE 1 CURB RAMP, 6' SIDEWALK
   - TYPE 1 CURB RAMP, 5' SIDEWALK
   - TYPE 2 CURB RAMP, 4' LANDING
   - TYPE 2 CURB RAMP, 3' LANDING
   - TYPE 3 CURB RAMP, 3' LANDING
   - TYPE 4 CURB RAMP
   - TYPE 100 CURB RAMP, 4' LANDING
   - TYPE 100 CURB RAMP, 3' LANDING

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REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SRVCS'R		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS PE-048842-E

1-7-2021

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THE PITTSBURGH WATER AND SEWER AUTHORITY

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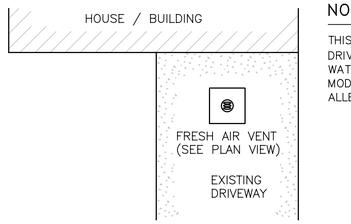
WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

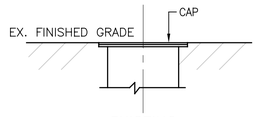
CONSTRUCTION DETAILS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 82 OF 166
ACCESSION NO. _____
CASE NO. _____

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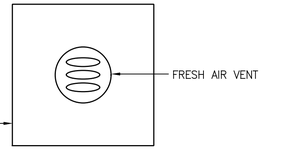
OVERALL PLAN VIEW



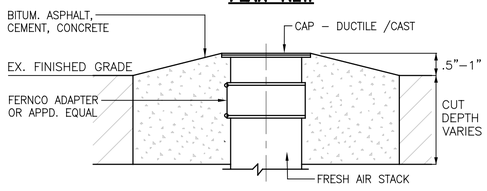
EXISTING

NOTE:

THIS DETAIL IS AN EXAMPLE OF A REPAIR TO THE FRESH AIR VENT/ DRIVEWAY DRAIN IN ORDER TO BE COMPLIANT WITH THE CITY'S STORM WATER ORDINANCE AND PA STATE REGULATION. PLUMBING MODIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH ALLEGHENY COUNTY HEALTH DEPARTMENT PLUMBING CODE.



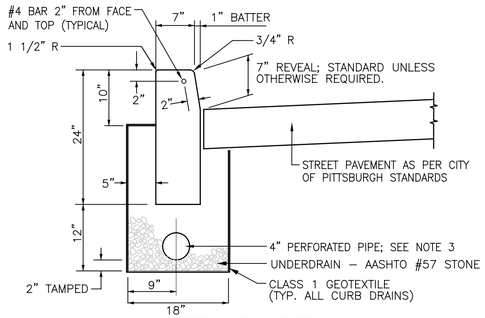
PLAN VIEW



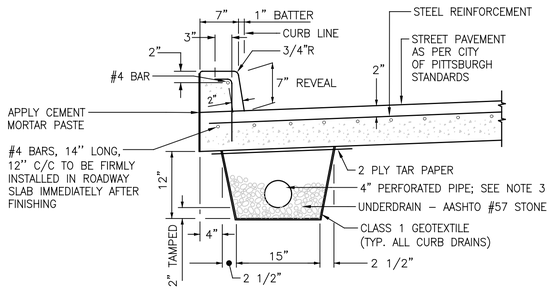
PROPOSED

FRESH AIR VENT REPAIR (FAV–1)

N.T.S.



DEEP CURB SECTION



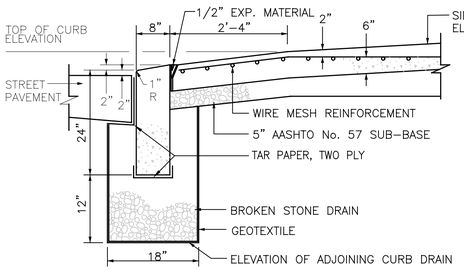
DECK CURB SECTION

NOTES:

1. EXTEND ALL PAVEMENT JOINTS THROUGH CURB. CURB CONSTRUCTION JOINTS SHALL COINCIDE WITH TRANSVERSE JOINTS IN PAVEMENT OR BASE, MAXIMUM LENGTH 10'–0"
2. ALL CONCRETE CURB SHALL BE CLASS AAA MIX AND SHALL BE CURED BY THE SAME METHOD AS CONCRETE PAVEMENT OR BASE COURSE.
3. PERFORATED PIPE MAY BE OMITTED FROM CURBING UNDERDRAIN AS DIRECTED.

CONCRETE CURB WITH 7" REVEAL (CONCRB)

N.T.S.

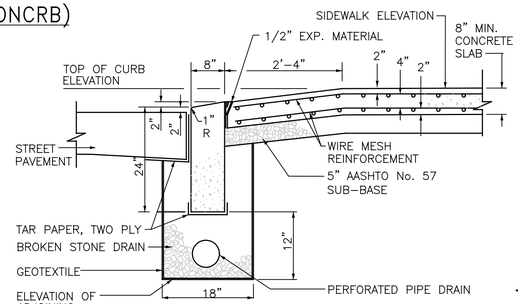


SECTION – CONCRETE DEEP CURB
RESIDENTIAL GRADE DRIVEWAYS

NOTES:

1. WHERE REVEAL IS GREATER THAN 8" THE SIDEWALK ADJACENT TO DRIVEWAY SHALL BE DEPRESSED TO AN ELEVATION 8" ABOVE GUTTER ELEVATION.
2. MATCH JOINTS IN CONCRETE DEPRESSED CURBS WITH EXISTING OR PROPOSED PAVEMENT JOINTS AS DIRECTED.

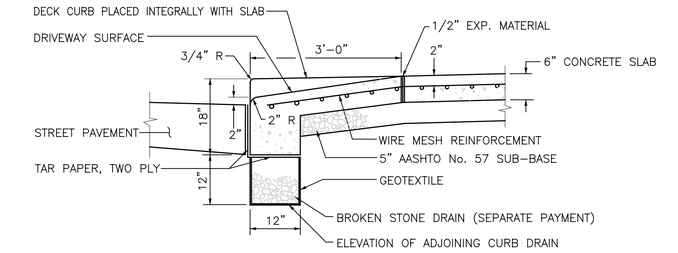
FORMER STANDARD DRAWING
No. M–161



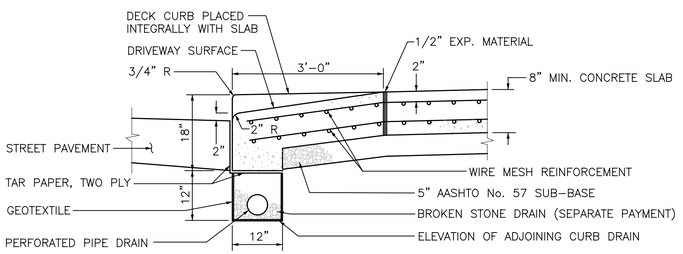
SECTION – CONCRETE DEEP CURB
COMMERCIAL GRADE DRIVEWAYS

DRIVEWAY – DEPRESSED CONCRETE DEEP CURB (DRIVE3)

N.T.S.



SECTION FOR CONCRETE DECK CURB – RESIDENTIAL GRADE DRIVEWAYS



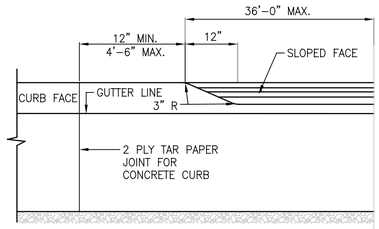
SECTION FOR CONCRETE DECK CURB – COMMERCIAL GRADE DRIVEWAYS

NOTE:

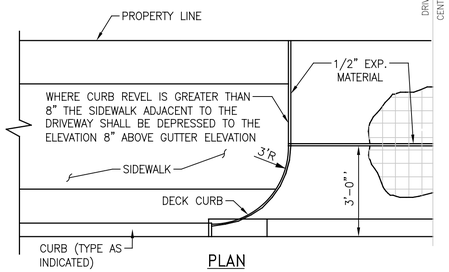
MATCH JOINTS IN CONCRETE DEPRESSED CURBS WITH EXISTING OR PROPOSED PAVEMENT JOINTS AS DIRECTED. FORMER STANDARD DRAWING No. M–161.

DRIVEWAY DEPRESSED DECK CURB DETAIL (DRIVE2)

N.T.S.



ELEVATION



PLAN

RESIDENTIAL GRADE DRIVEWAYS:

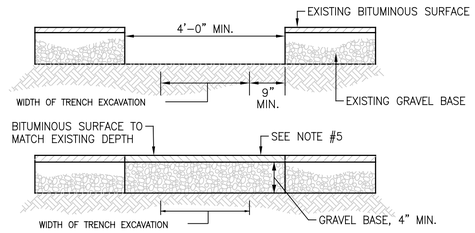
CONCRETE SIDEWALK 6" THICK REINFORCED WITH No.4 GA. STEEL WIRE MESH – 6"x6" SPACING AND 5" SUBBASE.

COMMERCIAL GRADE DRIVEWAYS:

CONCRETE SIDEWALK 8" THICK DOUBLE REINFORCED WITH No.4 GA. STEEL WIRE MESH – 6"x6" SPACING AND 5" SUBBASE.

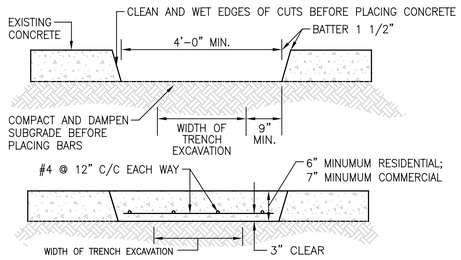
DRIVEWAY DETAIL (DRIVE1)

N.T.S.



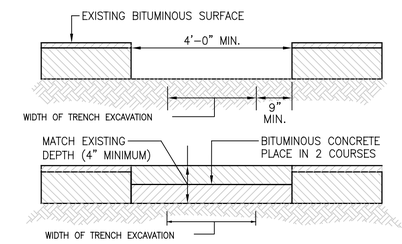
BITUMINOUS DRIVEWAY OVER GRAVEL

N.T.S.



CONCRETE DRIVEWAY

N.T.S.



BITUMINOUS DRIVEWAY – FULL DEPTH

N.T.S.

GENERAL NOTES:

1. ALL CONCRETE SHALL BE CLASS AA OR CLASS AAA AS DIRECTED.
2. BITUMINOUS CONCRETE SHALL BE IN ACCORDANCE w/CITY OF PITTSBURGH SPECIFICATIONS.
3. PRIOR TO PLACING BITUMINOUS SURFACING, ALL UTILITY STRUCTURES SHALL BE BROUGHT TO GRADE. BACKFILL AROUND UTILITY STRUCTURES WITH CLASS AA OR AAA CONCRETE AS DIRECTED.
4. REMOVE EXISTING CONCRETE DRIVEWAY TO NEAREST JOINT, WHEN DIRECTED.
5. ALL EXPOSED EDGES OF EXISTING BITUMINOUS SURFACE COURSE AND SURFACE OF CONCRETE BASE SHALL BE PRIMED BEFORE THE BITUMINOUS MIXTURE IS PLACED.

METHOD OF CUTTING AND REPAIRING DRIVEWAYS

N.T.S.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

CONSTRUCTION DETAILS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 83 OF 166
ACCESSION NO. _____
CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

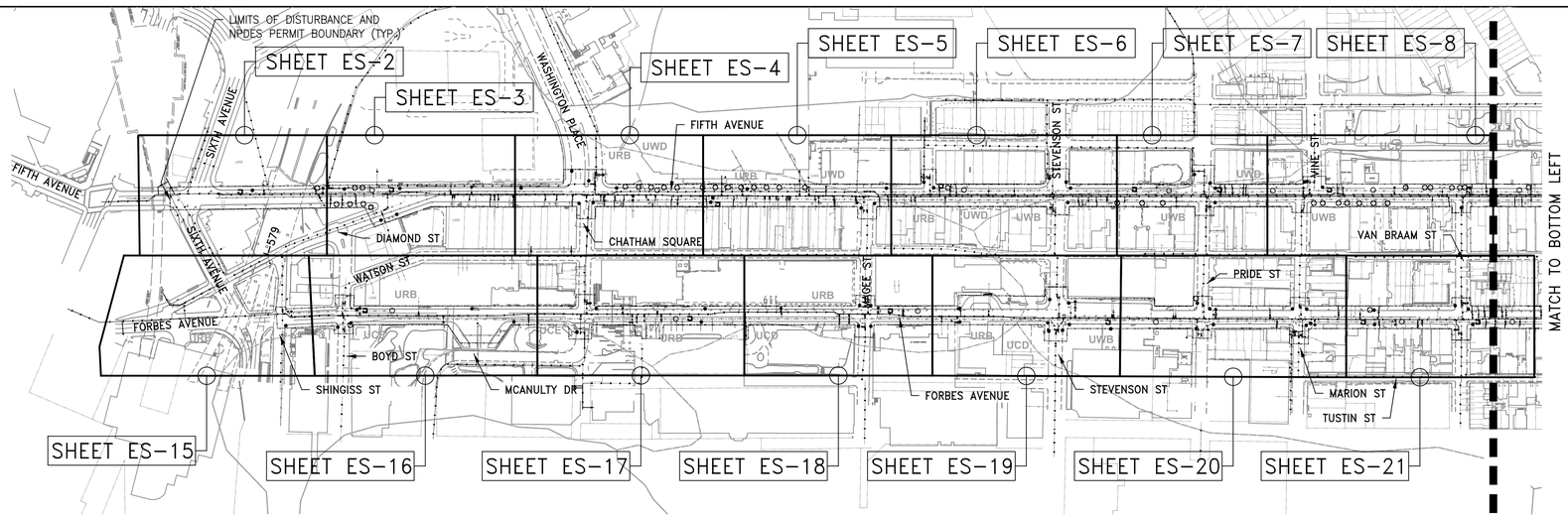
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
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PE-048643-E

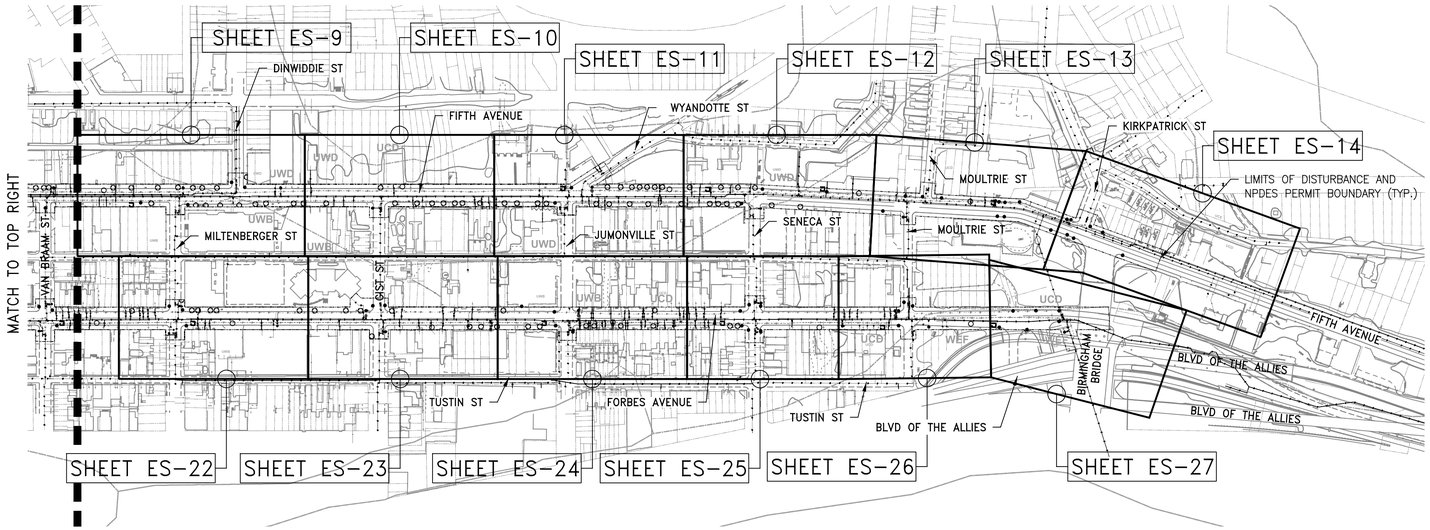
1-7-2021

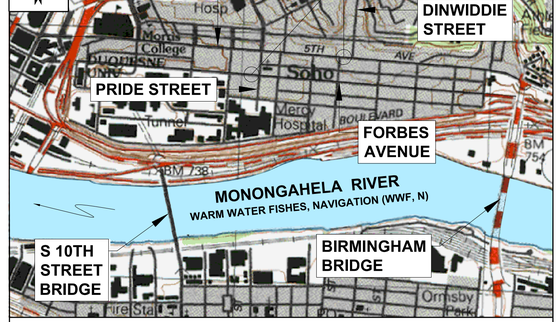
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GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411209\BRT_12_PWSA_Constr_Details_01.dgn







MAP REFERENCE:
PITTSBURGH EAST QUADRANGLE
ALLEGHENY COUNTY, PA
U.S.G.S. 7.5 MINUTE SERIES

USGS SITE LOCATION MAP
SCALE: 1" = 1000'

PENNSYLVANIA
QUADRANGLE LOCATION

EROSION AND SEDIMENT CONTROL LEGEND:

- PROP. LIMIT OF DISTURBANCE AND NPDES PERMIT BOUNDARY
- EX. SOIL LIMIT & SOIL TYPE (Us)
- TEMPORARY TREE PROTECTION
- TEMPORARY INLET PROTECTION
- TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT
- TEMPORARY PUMPED WATER FILTER BAG

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

SCALE: 1" = 200'
200' 0 200' 400'
REVISIONS

CHARACTER	DATE

DESIGNED BY:
gai consultants

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1-7-2021

DESIGN ENGINEER:
GAI CONSULTANTS
385 E. WATERFRONT DRIVE
HOMESTEAD, PA 15120
CONTACT: JOE FELLO
412-399-5514
J.FELLO@GAICONSULTANTS.COM

DEVELOPER/PROJECT OWNER/WATER MAIN UTILITY OWNER:
PITTSBURGH WATER AND SEWER AUTHORITY
1200 PENN AVENUE
PITTSBURGH, PA 15222
CONTACT: JIM TURNER
412-255-8800, EXT 5997
JTURNER@PGH20.COM

RIGHT-OF-WAY OWNER/PROPERTY OWNER:
CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE
611 SECOND AVENUE
PITTSBURGH, PA 15219
CONTACT: BRIAN RALSTON
412-389-4505
BRIAN.RALSTON@PITTSBURGHPA.GOV

LIMIT OF DISTURBANCE = 18.70 ACRES
NPDES PERMIT BOUNDARY = 18.70 ACRES

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY
BUS RAPID TRANSIT
WATER DISTRIBUTION IMPROVEMENTS
FIFTH AVENUE AND FORBES AVENUE
EROSION AND SEDIMENT CONTROL PLAN
LOCATION MAP & SHEET INDEX

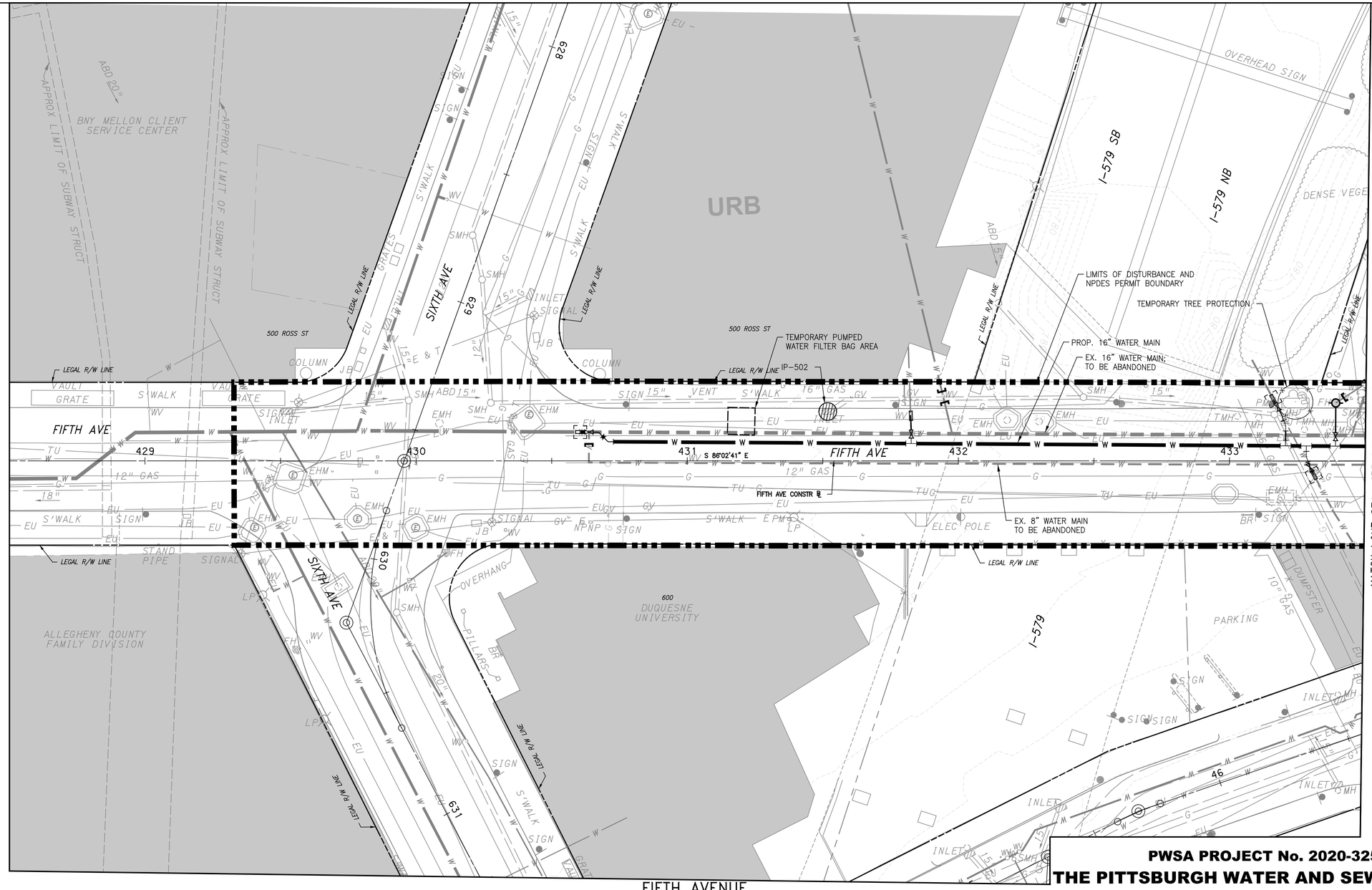
SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 84 OF 166
ACCESSION NO. _____
CASE NO. _____

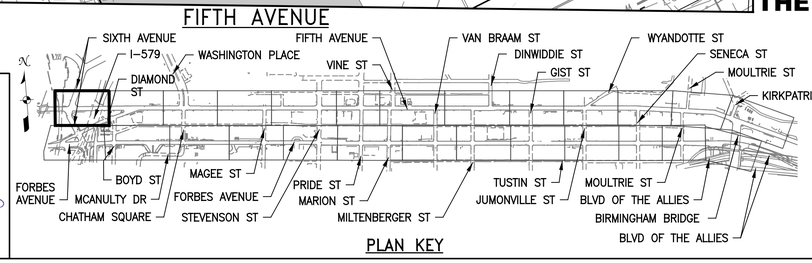
ES-1

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1/12/2021 6:56:16 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411208\BRT_12_PWSA_LOC_01.dgn





PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVCS/R			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS PE-248843-E

1-7-2021

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION AND SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 85 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-2

Symbol	Description	Hydric	Prime Farmland	Amount of Project Activity	Limitations	BMP to Address Limitation
UCD	Urban land-Culleoka complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UCE	Urban land-Culleoka complex, steep, 25 to 25 Percent Slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
URB	Urban land-Rainsboro complex, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Easily Erodible, Depth to Saturated Zone/ Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWB	Urban land-Wharton complex, gently sloping, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWD	Urban land-Wharton complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
WEF	Weikert-Rock outcrop complex, 25 to 80 percent slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete and Steel, Droughty, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing

MATCH LINE STA. 433+50 SEE SHEET ES-2

MATCH LINE STA. 438+50 SEE SHEET ES-4

TEMPORARY TREE PROTECTION (TYP.)

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

TEMPORARY PUMPED WATER FILTER BAG AREA

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 12" WATER MAIN

PROP. 16" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

IP-503

IP-504

IP-559

IP-560

CHATHAM TOWER AKA 112 WASHINGTON PLACE

CHATHAM PARKING GARAGE AKA 112 WASHINGTON PLACE

FIFTH AVE CONSTR E

FIFTH AVENUE

DIAMOND ST

LEGAL R/W LINE

S 86°02'41" E

S 85°18'29" E

PARKING

URB

FIFTH AVENUE

PLAN KEY

SIXTH AVENUE
I-579
WASHINGTON PLACE
FIFTH AVENUE
VINE ST
VAN BRAAM ST
DINWIDDIE ST
GIST ST
WYANDOTTE ST
SENECA ST
MOULTRIE ST
KIRKPATRICK ST
DIAMOND ST
FORBES AVENUE
MCANULTY DR
CHATHAM SQUARE
BOYD ST
FORBES AVENUE
STEVENSON ST
MAGEE ST
PRIDE ST
MARION ST
MILTENBERGER ST
TUSTIN ST
JUMONVILLE ST
MOULTRIE ST
BLVD OF THE ALLIES
BIRMINGHAM BRIDGE
BLVD OF THE ALLIES

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION AND SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 86 OF 166
ACCESSION NO.
CASE NO.

ES-3

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

CHARACTER	DATE

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'
REVISIONS

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1-7-2021

PGH2O

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1/12/2021 6:56:56 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT02.dgn

MATCH LINE STA. 438+50 SEE SHEET ES-3

MATCH LINE STA. 443+50 SEE SHEET ES-5

URB

UWD

PPG PAINTS ARENA

PPG PAINTS ARENA 1001-1035

TWO CHATHAM CENTER AKA 112 WASHINGTON PLACE

WASHINGTON PLACE

FIFTH AVE

FIFTH AVE

23 CHATHAM SQUARE

LEGAL R/W LINE

EX. 12" WATER MAIN

PROP. 16" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

EX. 16" WATER MAIN; TO REMAIN

EX. 16" WATER MAIN; TO BE ABANDONED

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 16" WATER MAIN; INSTALLED IN 2008; TO REMAIN

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

TEMPORARY TREE PROTECTION (TYP.)

FIFTH AVE CONSTR ℄

S 85°18'29" E

IP-506

IP-508

IP-510

IP-509

IP-507

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; INSTALLED IN 2000; TO REMAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

EX. 16" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

900 | 903 – 905 WATSON AKA 902 –904 FIFTH | 906 | 908–910 | 912 –914 | 916 | 1000 | 1002 | 1004–1006 | 1008 & 1014 | 1008 & 1014 | 1016 | 1018 | 1020 | 1022 | 1030

438 | 439 | 440 | 441 | 442 | 443

FIFTH AVENUE

SIXTH AVENUE | I-579 | WASHINGTON PLACE | FIFTH AVENUE | VAN BRAAM ST | WYANDOTTE ST | DIAMOND ST | VINE ST | DINWIDDIE ST | SENECA ST | GIST ST | MOULTRIE ST | KIRKPATRICK ST | FORBES AVENUE | MCANULTY DR | CHATHAM SQUARE | BOYD ST | FORBES AVENUE | STEVENSON ST | MAGEE ST | PRIDE ST | MARION ST | MILTENBERGER ST | TUSTIN ST | JUMONVILLE ST | MOULTRIE ST | BLVD OF THE ALLIES | BIRMINGHAM BRIDGE | BLVD OF THE ALLIES

PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SRVS/SB		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048943-E

1-7-2021

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1/12/2021 6:57:08 PM

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

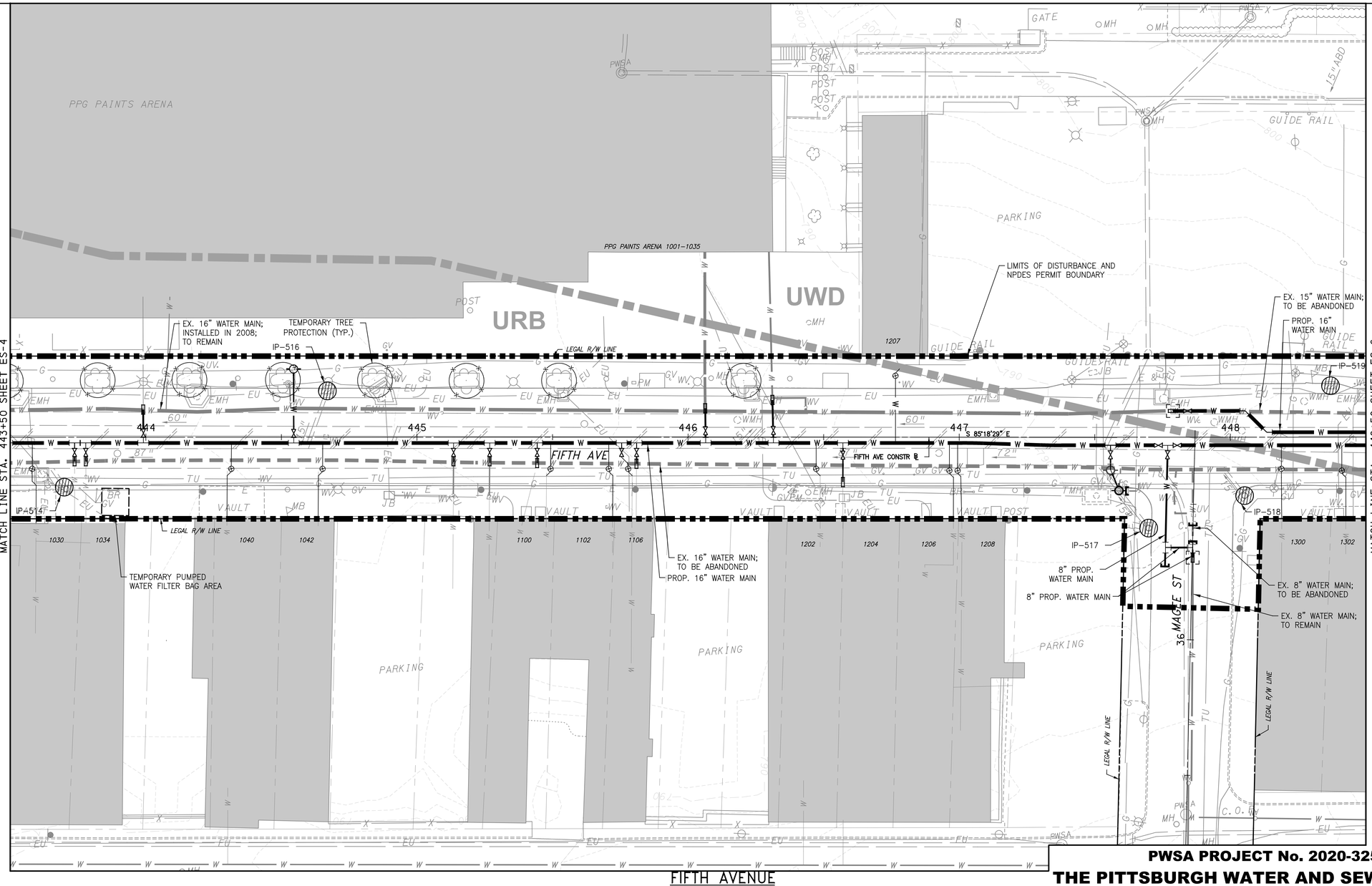
DATE: JANUARY, 2021

SHEET NO. 87 OF 166

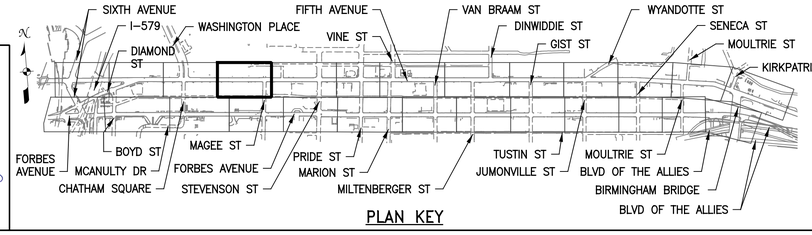
ACCESSION NO. _____

CASE NO. _____

ES-4



FIFTH AVENUE



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 88 OF 166
ACCESSION NO. _____
CASE NO. _____

ES-5

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1/12/2021 6:57:19 PM

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MATCH LINE STA. 448+50 SHEET ES-5

MATCH LINE STA. 454+50 SHEET ES-7

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY TREE PROTECTION (TYP.)

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

PROP. 16" WATER MAIN

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 15" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 16" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

IP-520 IP-521 IP-522 IP-523 IP-524 IP-525

LOGAN ST

FIFTH AVE

FIFTH AVE CONSTR ℄

STEVENSON ST

S 85°16'29" E

LEGAL R/W LINE

GUIDE RAIL

URB

UWD

UWB

PARKING

C.O.P.

VACANT LOT

ABANDONED VAULT

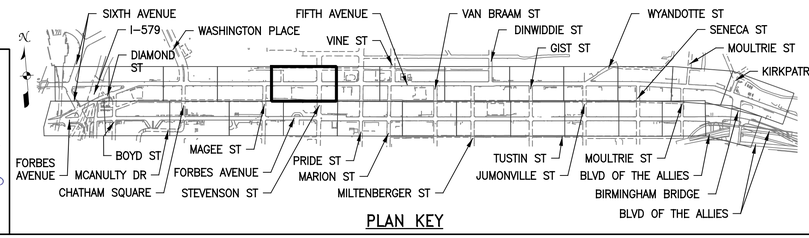
BUS SHELTER

STAND PIPE

449 450 451 452 453 454

1304 1308 1318 1320 1334 1344 1400 1402 & 1402 STE 2 1404 1406-1408 1410

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVS/SB DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048947-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED SHEET NO. 89 OF 166 ACCESSION NO. _____

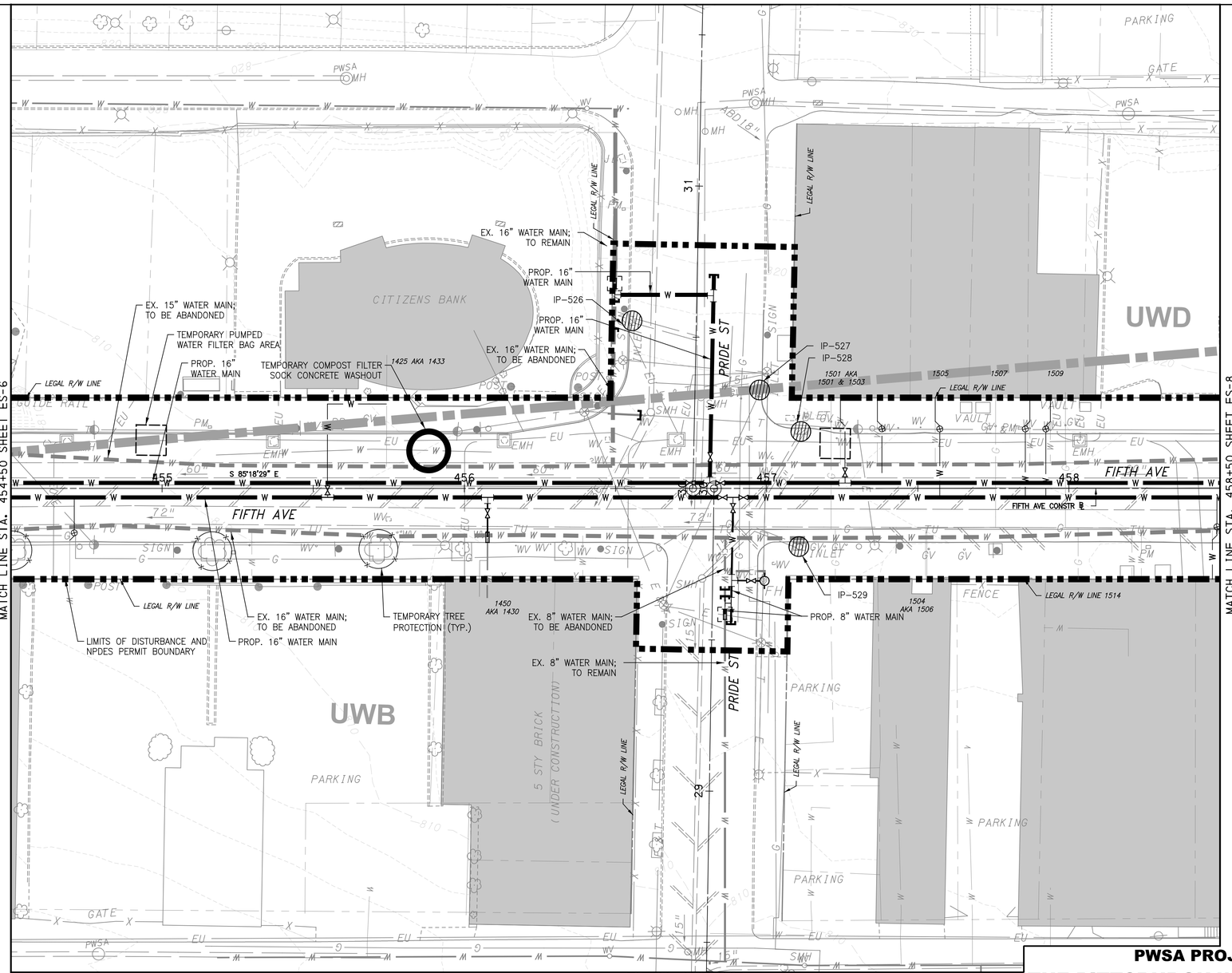
DATE: JANUARY, 2021 CASE NO. _____

ES-6

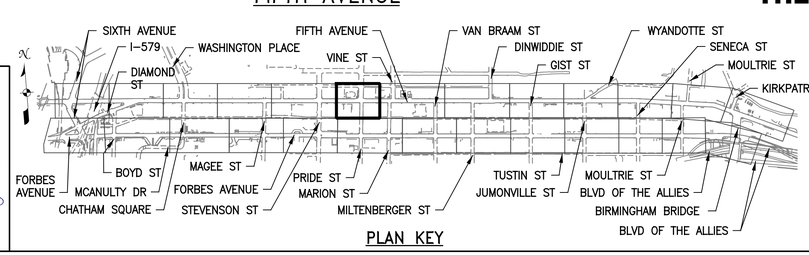
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FIFTH AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 90 OF 166
ACCESSION NO. _____
CASE NO. _____

ES-7

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

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1/12/2021 6:57:41 PM

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MATCH LINE STA. 458+50 SHEET ES-7

MATCH LINE STA. 464+50 SHEET ES-9

UWD

UCD

UWB

PARKING

DENSE WOODS

UPTOWN BEER

FILLER CAPS

C.O.P.

GULF GAS

CANOPY

FLATS ON 5TH

STAND PIPE

SIGN

STEP

GATE

FENCE

VAULT

INLET

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

IP-531

IP-530

IP-532

WIN ST

EX. 6" WATER MAIN; TO BE ABANDONED

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

EX. 15" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

LEGAL R/W LINE

1525 AKA 1513

1601

1605

1655

1643

1701

1705

459

460

461

462

463

464

FIFTH AVE

S 85°18'29" E

FIFTH AVE CONSTR ℄

1516 & 1516.5

1520

1600

1612

1634

1636-1638

EX. 16" WATER MAIN; TO BE ABANDONED

TEMPORARY TREE PROTECTION (TYP.)

MARION ST

VAN BRAAM ST

IP-533

PROP. 8" WATER MAIN

PROP. 6" WATER MAIN

8" GAS

4" GAS

60"

72"

42"

23

22

N

FIFTH AVENUE

PLAN KEY

SIXTH AVENUE, I-579, WASHINGTON PLACE, FIFTH AVENUE, VAN BRAAM ST, WYANDOTTE ST, DIAMOND ST, VINE ST, DINWIDDIE ST, GIST ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, FORBES AVENUE, MAGEE ST, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 91 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-8

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT.SRR/SR — DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

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1/12/2021 6:57:52 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT07.dgn

MATCH LINE STA. 464+50 SHEET ES-8

MATCH LINE STA. 470+50 SHEET ES-10

UCD

UWD

UWB

PARKING

DENSE WOODS

FIFTH AVE

DINWIDDIE ST

MILTENBERGER ST

FIFTH AVE CONSTR 2

S 85°18'29" E

LEGAL R/W LINE

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

1709–1715

1719

1721

1807 AKA 1801

STAND PIPE

EX. 15" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 12" WATER MAIN; INSTALLED IN 1999; TO REMAIN

PROP. 12" WATER MAIN

IP–536

IP–537

EX. 12" WATER MAIN; TO BE ABANDONED

1710–1712 AKA 1712

1714–1716

1718 TEMPORARY PUMPED WATER FILTER BAG AREA

1720

PROP. 16" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

IP–534

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 6" WATER MAIN

IP–535

TEMPORARY TREE PROTECTION (TYP.)

PROP. 8" WATER MAIN

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

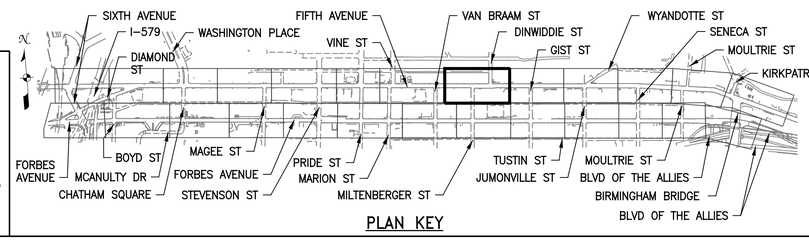
STAIRS 1800

RAMP

FIFTH AVE SCHOOL LOFTS

465 466 467 468 469 470

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

PGH2O

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 92 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-9

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of utilities, and assumes no liability for any errors, omissions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 6:58:03 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT08.dgn

MATCH LINE STA. 470+50 SHEET ES-9

MATCH LINE STA. 475+50 SHEET ES-11

UWD

UCD

UWB

DENSE WOODS

BRUSH

1817

1840

1842

1901

1904

1906

1922

1924

1926

1928

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 15" WATER MAIN; TO BE ABANDONED

LEGAL R/W LINE

FIFTH AVE CONSTR ℄

S 85°18'29" E

471

472

473

474

475

FIFTH AVE

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 6" WATER MAIN

PROP. 8" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

TEMPORARY TREE PROTECTION (TYP.)

GIST ST

SHADOW

PARKING

STAIRS

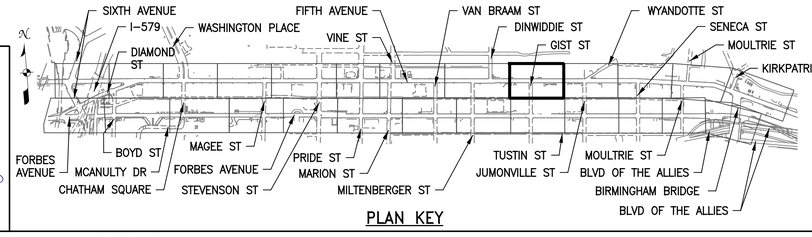
FENCE

SIGN

22

23

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048841-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 93 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-10

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the locations or conditions of water, sewer or storm water facilities, and neither assumes any responsibility for conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

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MATCH LINE STA. 475+50 SHEET ES-10

MATCH LINE STA. 480+50 SHEET ES-12

N

LEGAL R/W LINE

EX. 6" WATER MAIN; TO REMAIN

PROP. 6" WATER MAIN

TEMPORARY PUMPED WATER FILTER BAG AREA

IP-539

2001 WYANDOTTE PROP. 8" WATER MAIN

WYANDOTTE ST

2001 WYANDOTTE

2005 WYANDOTTE

EX. 6" WATER MAIN; TO REMAIN

PROP. 6" WATER MAIN

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 15" WATER MAIN; TO BE ABANDONED

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

FIFTH AVE CONSTR R

FIFTH AVE

TEMPORARY TREE PROTECTION (TYP.)

IP-538

EX. 6" WATER MAIN; TO BE ABANDONED

JUMONVILLE ST

2000 PROP. 8" WATER MAIN

2002 PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

2006 PROP. 16" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

CENTER FOR HEARING AND DEAF SERVICES

J. HEINZ CHILD DEVELOPMENT CENTER

JUBILEE KITCHEN

1929–1937

1936–1942

1945

1928

2015

2018

2020

2024

ABANDONED VAULT

PARKING

DENSE VEGETATION

UWD

GUIDE RAIL

POST

FENCE

STAIRS

GATE

CONC.

6" GAS

4" GAS

E & T

EMH

SMH

MH

476 477 478 479 480

S 85°18'29" E

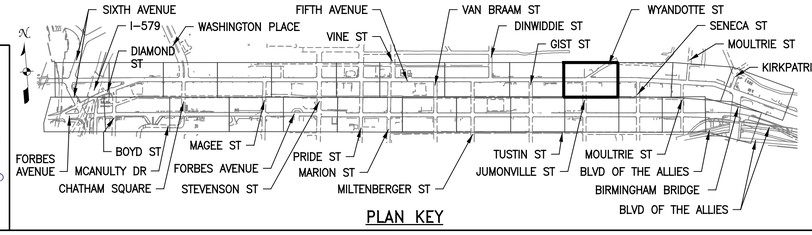
32

31

23

22

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048943-E

1-7-2021

PGH2O

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 94 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-11

MATCH LINE STA. 480+50 SHEET ES-11

MATCH LINE STA. 485+50 SHEET ES-13

TEMPORARY PUMPED WATER FILTER BAG AREA

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 16" WATER MAIN; TO BE ABANDONED

EX. 15" WATER MAIN; TO BE ABANDONED

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

TEMPORARY TREE PROTECTION (TYP.)

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

PROP. 16" WATER MAIN

IP-540

IP-541

IP-542

UWD

UCD

DENSE VEGETATION

PARKING

FENCE

GUIDE RAIL

LEGAL R/W LINE

FIFTH AVE

FIFTH AVE CONSTR ℄

SENECA ST

PA FURNITURE WAREHOUSE

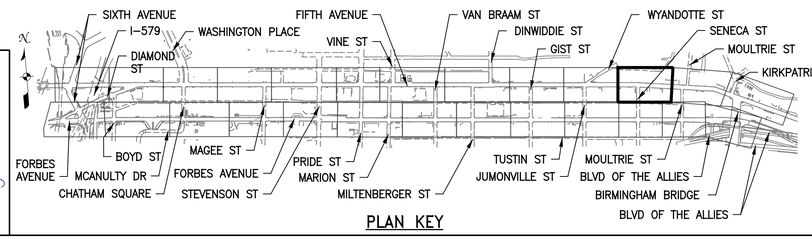
2127-2135 AKA 2133

2125 AKA 2115

481 482 483 484 485

S 85°18'29" E

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 95 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-12

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MATCH LINE STA. 485+50 SHEET ES-12

MATCH LINE STA. 490+50 SHEET ES-14

PA FURNITURE WAREHOUSE

BIT PARKING

UCD

PARKING

DENSE VEGETATION

MOULTRIE ST

FIFTH AVE

FIFTH AVE CONSTR ℄

S 87°10'29" E

LEGAL R/W LINE

EX. 6" WATER MAIN; TO REMAIN

PROP. 6" WATER MAIN

PROP. 8" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 16" WATER MAIN; TO BE ABANDONED

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

TEMPORARY PUMPED WATER FILTER BAG AREA

THIS SERVICE IS TO 2231

2223–2227 AKA 2217

2211

2231

2139

2134

IP–543

IP–544

IP–545

IP–546

IP–547

IP–548

IP–549

IP–550

IP–551

IP–552

EX. 15" WATER MAIN; TO REMAIN

EX. 12" WATER MAIN; TO BE ABANDONED

PROP. 12" WATER MAIN

EX. 12" WATER MAIN; TO REMAIN

EX. 15" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

EX. 12" WATER MAIN; TO REMAIN

486 487 488 489 490

55 54 31 30

FIFTH AVENUE

SIXTH AVENUE, I–579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, MAGEE ST, FORBES AVENUE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 96 OF 166

ACCESSION NO. _____

CASE NO. _____

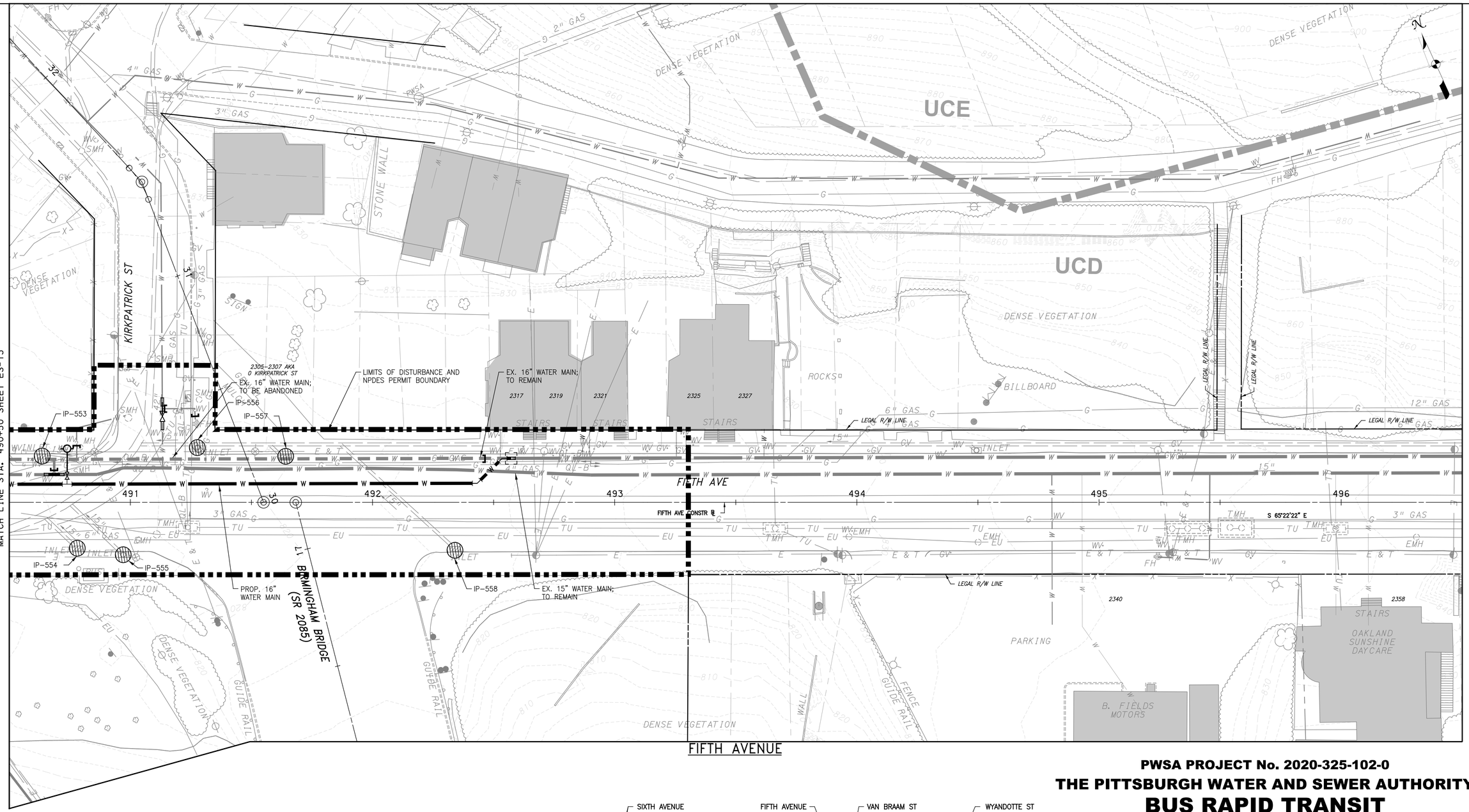
ES-13

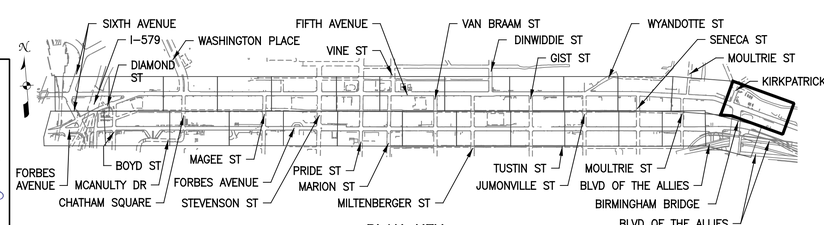
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MATCH LINE STA. 490+50 SHEET ES-13





PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 97 OF 166

ACCESSION NO. _____

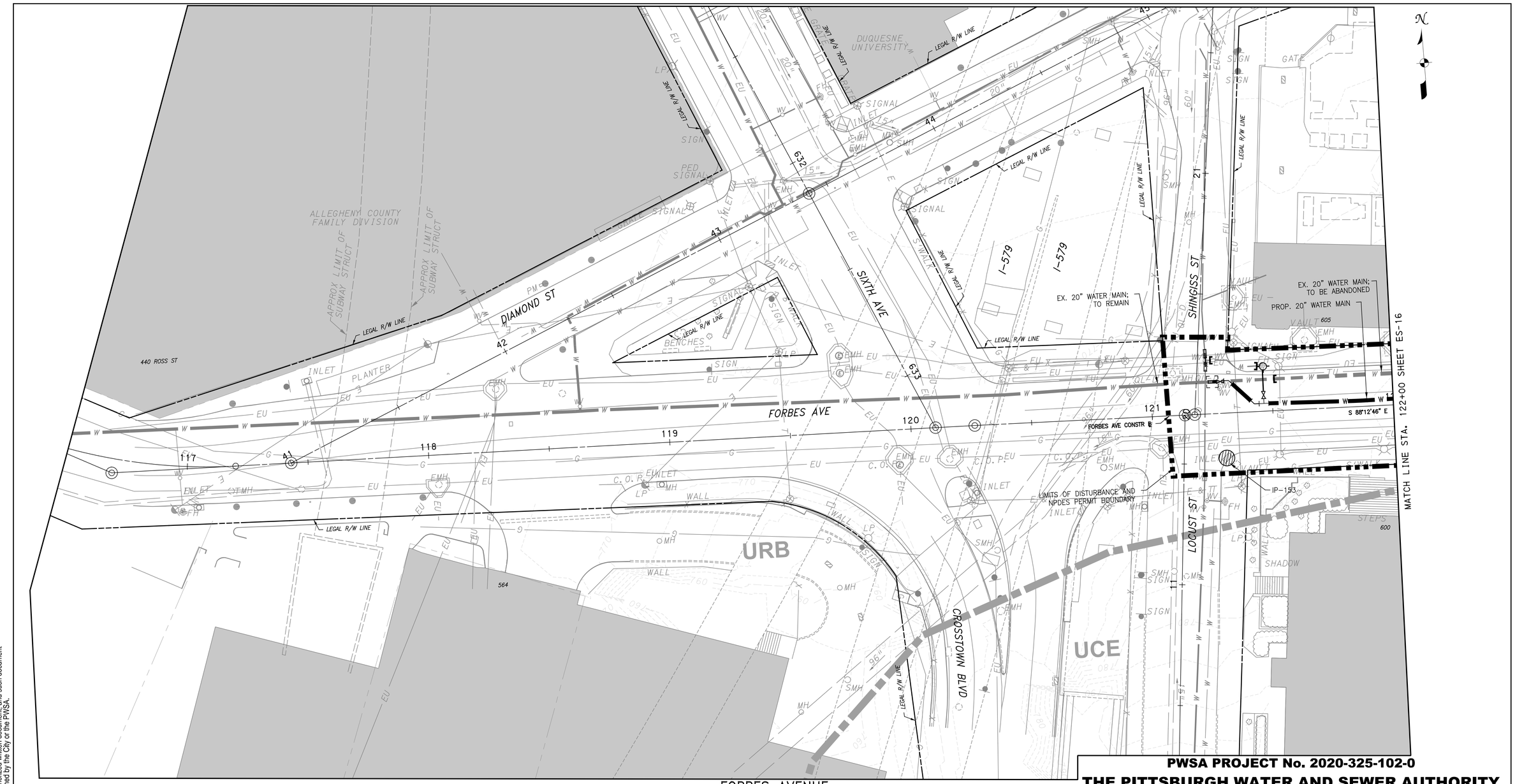
CASE NO. _____

ES-14

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REVIEWED FOR CONSTRUCTABILTY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
CHARACTER	DATE	

PGH2O

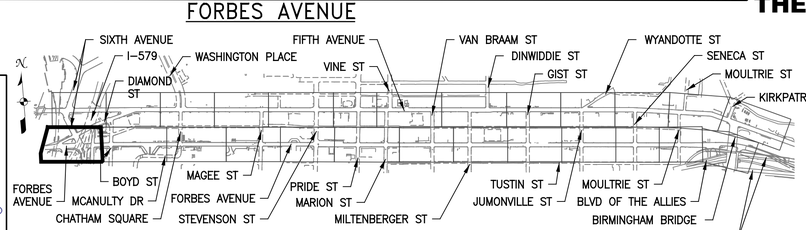
DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

FORBES AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 98 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-15

1/12/2021 6:59:10 PM

GAI CAD FILE PATH: c:\pwworking\decom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT14.dgn

MATCH LINE STA. 122+00 SHEET ES-15

MATCH LINE STA. 128+00 SHEET ES-17

WATSON ST

BOYD ST

FORBES AVE

FORBES AVE CONSTR ℄

DUQUESNE UNIVERSITY

URB

UCE

PROP. 8" WATER MAIN

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

EX. 6" WATER MAIN; TO BE ABANDONED

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

PROP. 20" WATER MAIN

EX. 20" WATER MAIN; TO BE ABANDONED

TEMPORARY TREE PROTECTION

IP-101

IP-102

IP-103

IP-104

IP-152

123 124 125 126 127

S 88°12'46" E

S 85°17'39" E

ARMSTRONG TUNNEL

MCANULTY DR

TO 700

TO 915 LOCUST ST

DENSE VEGETATION

PARKING

LEGAL R/W LINE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMT SRVCS DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS	CHARACTER	DATE

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

DESIGNED BY:

gai consultants

COMMONWEALTH OF REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

FORBES AVENUE

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, BOYD ST, MAGEE ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, MCANULTY DR, CHATHAM SQUARE, FORBES AVENUE, STEVENSON ST

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 99 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-16

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1/12/2021 6:59:21 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT15.dgn

MATCH LINE STA. 128+00 SHEET ES-16

MATCH LINE STA. 133+50 SHEET ES-18

DUQUESNE UNIVERSITY

CHATHAM SQUARE

FORBES AVE

FORBES AVE CONSTR ℄

MCANULTY DR

EX. 8" WATER MIAN; TO REMAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

IP-105

IP-106

IP-107

IP-154

PROP. 12" WATER MAIN

EX. 12" WATER MAIN; TO BE ABANDONED

PROP. 12" WATER MAIN

EX. 12" WATER MAIN; TO REMAIN

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

EX. 20" WATER MAIN; TO BE ABANDONED

S 85°17'39" E

UCE

URB

UCD

FORBES AVENUE

PLAN KEY

SIXTH AVENUE, I-579, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, DIAMOND ST, BOYD ST, MAGEE ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, STEVENSON ST, FORBES AVENUE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR ____ DATE ____

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-248843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 100 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-17

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of utilities which may be shown, and assumes no responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 6:59:31 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT16.dgn

MATCH LINE STA. 133+50 SHEET ES-17

MATCH LINE STA. 138+50 SHEET ES-19

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

IP-155

IP-156

IP-108

IP-109

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

FORBES AVE CONSTR ℄

FORBES AVE

MAGEE ST

LEGAL R/W LINE

URB

UCD

LIFE'S WORK OF WESTERN PA

AJ PALUMBO CENTER

PARKING

DENSE WOODS

WALL

FENCE

GUIDE RAIL

SIGN

POST

S'WALK

RAILING

TO 1208

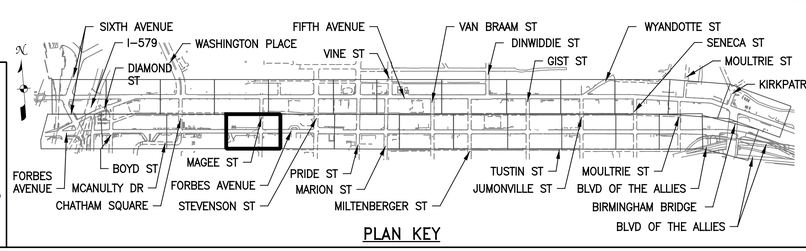
1208

1304

1323

S 85°17'39" E

FORBES AVENUE



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS PE-048842-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 101 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-18

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of water lines, and neither assumes any responsibility for any conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 6:59:41 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT17.dgn

MATCH LINE STA. 138+50 SHEET ES-18

MATCH LINE STA. 143+50 SHEET ES-20

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

LIMIT OF DISTURBANCE NPDES BOUNDARY

LEGAL R/W LINE

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

EX. 8" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

EX. 20" WATER MAIN; TO BE ABANDONED

PROP. 6" WATER MAIN

TEMPORARY PUMPED WATER FILTER BAG AREA

IP-110 IP-111 IP-112 IP-113 IP-114 IP-157 IP-158 IP-159 IP-160

FORBES AVE CONSTR ℄

FORBES AVE

STEVENSON ST

S 85°17'39" E

S 84°40'32" E

URB UCD UWB

FORBES STEVENSON BUILDING

PARKING GARAGE

TO 1420

FORBES AVENUE

PLAN KEY

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, MAGEE ST, FORBES AVENUE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

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1/12/2021 6:59:52 PM

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 102 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-19

MATCH LINE STA. 143+50 SHEET ES-19

MATCH LINE STA. 149+50 SHEET ES-21

FORBES MED TECH CENTER

UWB

PARKING GARAGE

FORBES AVE

FORBES AVE CONSTR ℄

PRIDE ST

MARION ST

TEMPORARY TREE PROTECTION

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

TO 1455 LOCUST

TO 1600

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

EX. 6" WATER MAIN; TO REMAIN

EX. 20" WATER MAIN; TO BE ABANDONED

EX. 12" WATER MAIN; TO BE ABANDONED

EX. 12" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

PROP. 20" WATER MAIN

PROP. 12" WATER MAIN

PROP. 6" WATER MAIN

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

IP-115 IP-116 IP-117 IP-118 IP-119 IP-120 IP-121 IP-161 IP-162

11 MARION

11-BEAR MARION

13 MARION

1611-1613 AKA 1609

RYAN'S AUTO GLASS

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVS/SR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

CALC. BOOK PG.

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048823-E

1-7-2021

FORBES AVENUE

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, MAGEE ST, FORBES AVENUE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 103 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-20

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of subsurface utilities, and assumes no responsibility for inaccuracies, omissions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 7:00:02 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT19.dgn

MATCH LINE STA. 149+50 SHEET ES-20

MATCH LINE STA. 154+50 SHEET ES-22

N

UWB

PARKING

DENSE WOODS

FENCE

INLET

SIGN

POLE

LEGAL R/W LINE

VAN BRAAM ST

121 VAN BRAAM ST

EX. 6" WATER MAIN; TO REMAIN

PROP. 6" WATER MAIN

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

TEMPORARY TREE PROTECTION

1621 AKA 1611–1613

IP–123

IP–124

IP–125

IP–122

IP–126

FORBES AVE CONSTR ℄

FORBES AVE

36"

150

151

152

153

154

1703 1705 1707 1709 1711 1713

1600 1620 1622 1624 1628 1632

1700 1706 1708 1710–1712 1714

S 85°17'40" E

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

TEMPORARY PUMPED WATER FILTER BAG AREA

EX. 20" WATER MAIN; TO BE ABANDONED

TO 1616

POST

RYAN'S AUTO GLASS

WALL

MB'S

PRIVATE

VAULT

LP

EMH

12+50

20+00

21

12

20

FORBES AVENUE

PLAN KEY

SIXTH AVENUE
I–579
DIAMOND ST
WASHINGTON PLACE
FIFTH AVENUE
VINE ST
VAN BRAAM ST
DINWIDDIE ST
GIST ST
WYANDOTTE ST
SENECA ST
MOULTRIE ST
KIRKPATRICK ST
FORBES AVENUE
MCANULTY DR
CHATHAM SQUARE
BOYD ST
STEVENSON ST
MAGEE ST
FORBES AVENUE
PRIDE ST
MARION ST
MILTENBERGER ST
TUSTIN ST
JUMONVILLE ST
MOULTRIE ST
BLVD OF THE ALLIES
BIRMINGHAM BRIDGE
BLVD OF THE ALLIES

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVS/SR DATE

FIELD DATA	DRAWN	SUPERV/SD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 104 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-21

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1/12/2021 7:00:13 PM

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MATCH LINE STA. 154+50 SHEET ES-21

MATCH LINE STA. 159+50 SHEET ES-23

EX. 6" WATER MAIN; TO REMAIN

PROP. 6" WATER MAIN

PROP. 8" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

IP-127

IP-128

TEMPORARY TREE PROTECTION (TYP.)

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

MILTENBERGER ST

FORBES AVE

FORBES AVE CONSTR ℄

S 85°17'40" E

LEGAL R/W LINE

PARKING

FENCE

SIGN

POST

POLE

WALL

1722 VACANT LOT

23 MILTENBERGER ST

PROP. 8" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

IP-129

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

EX. 20" WATER MAIN; TO BE ABANDONED

KENDALL TOWING AND AUTO REPAIR

UWB

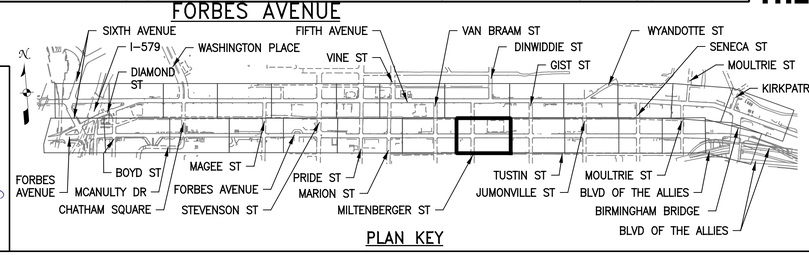
DENSE WOODS

PLANTER'S

1835

1819 AKA 1801

FORBES AVENUE



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVS/SR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
	CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS ENGINEER PE-248843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 105 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-22

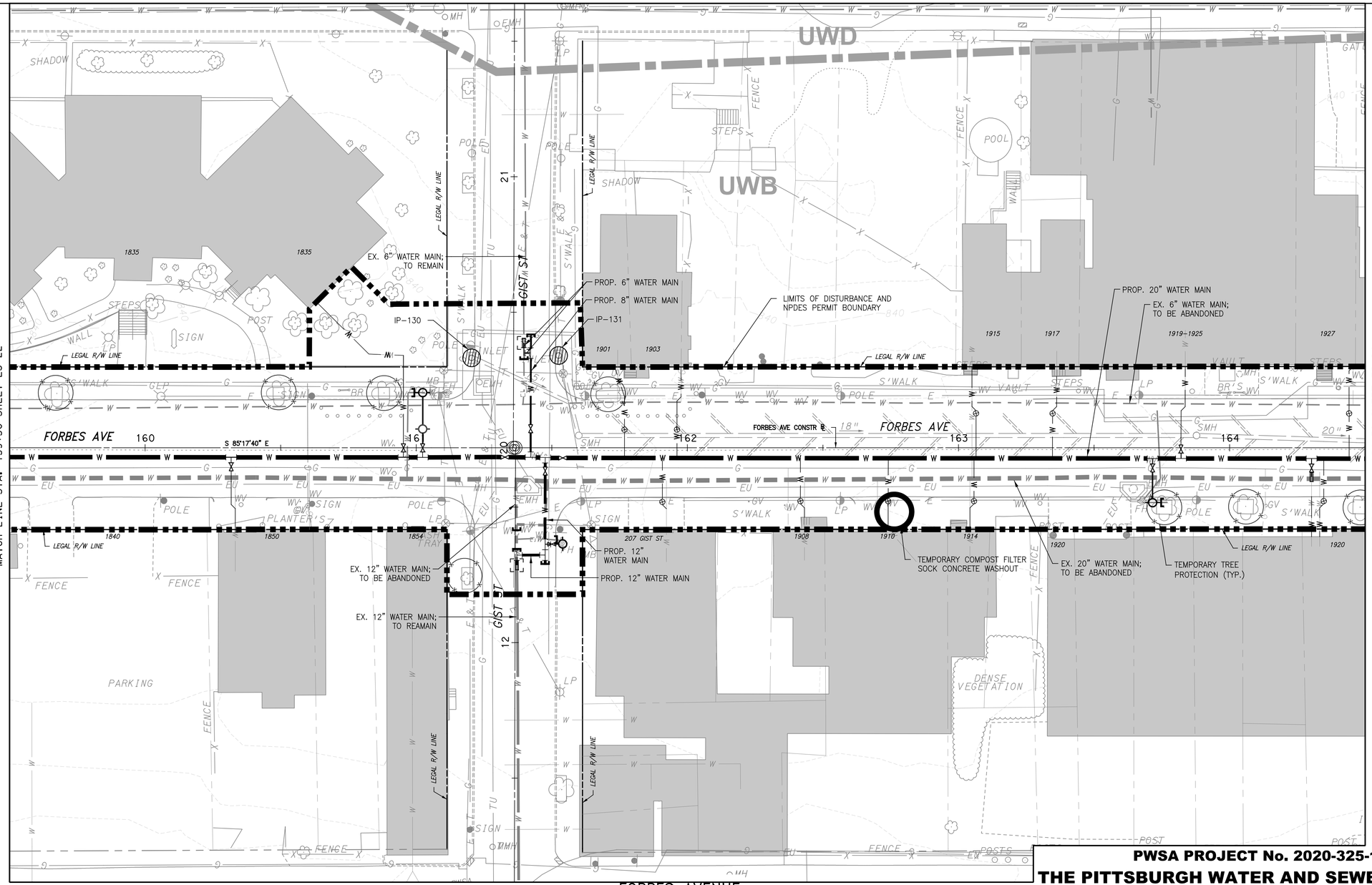
DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information herein made available, including but not limited to information concerning the location and condition of utilities, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 7:00:24 PM

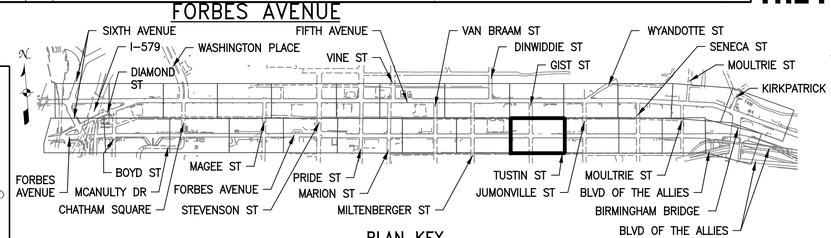
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MATCH LINE STA. 159+50 SHEET ES-22

MATCH LINE STA. 164+50 SHEET ES-24



FORBES AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 106 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-23

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of any utilities, and neither assumes any responsibility for any conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 7:00:34 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT22.dgn

MATCH LINE STA. 164+50 SHEET ES-23

MATCH LINE STA. 169+50 SHEET ES-25

UWB

UCD

UCB

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

TEMPORARY TREE PROTECTION (TYP.)

TEMPORARY PUMPED WATER FILTER BAG AREA

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 4" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

EX. 20" WATER MAIN; TO BE ABANDONED

JUMONVILLE ST

FORBES AVE

FORBES AVE CONSTR ℄

LEGAL R/W LINE

IP-132

IP-133

IP-134

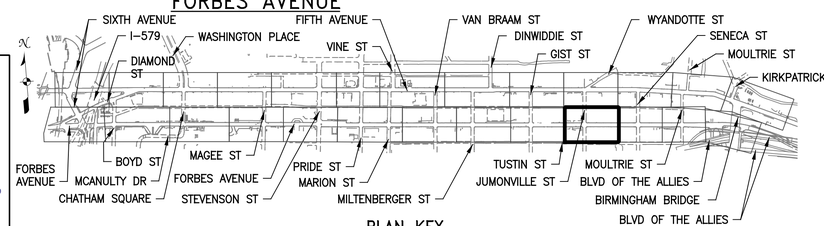
IP-137

S 85°17'40" E

DENSE VEGETATION

VACANT LOT

FORBES AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 107 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-24

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SERVICES			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

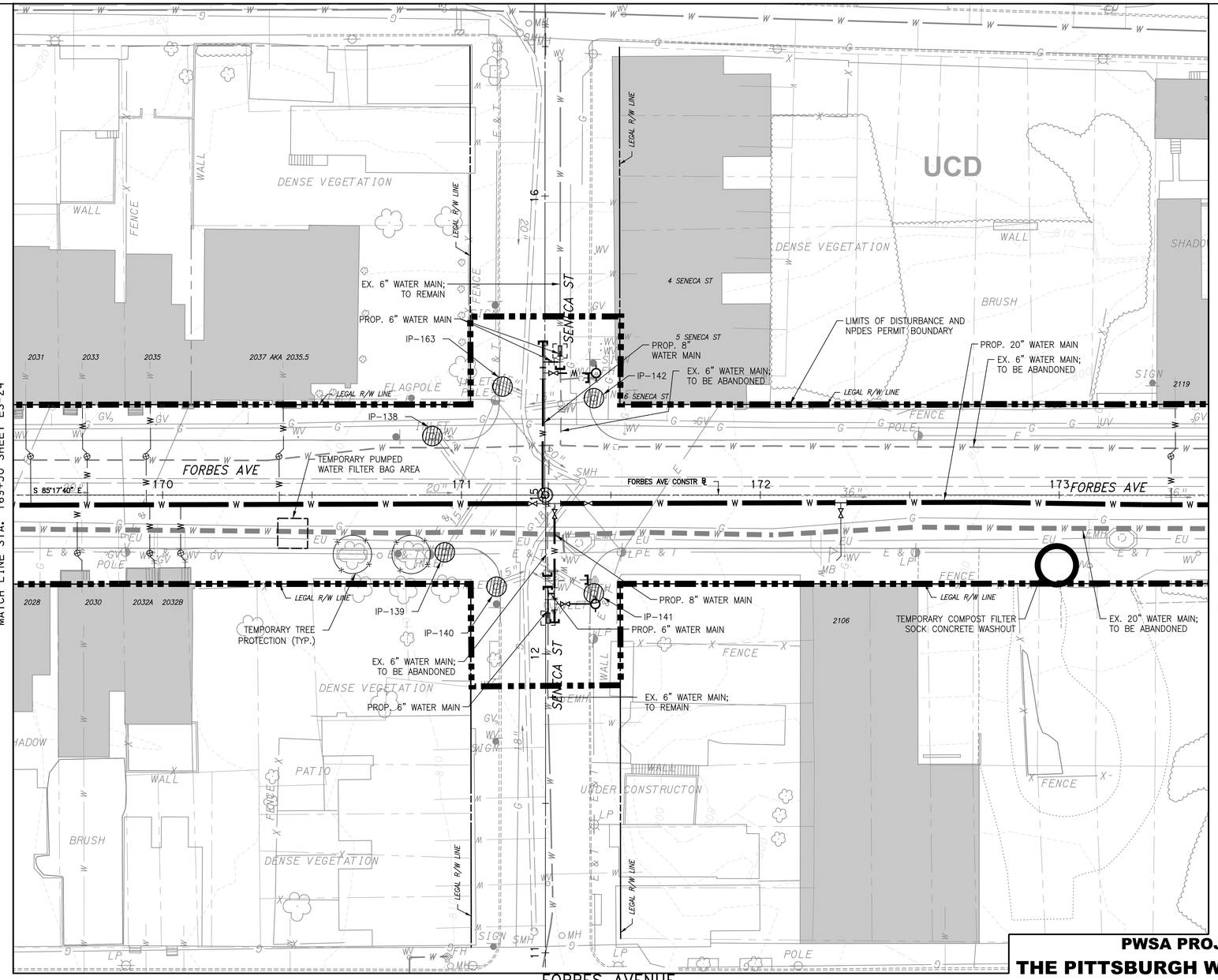
DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information herein made available, including but not limited to information concerning the location and condition of underground utilities, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

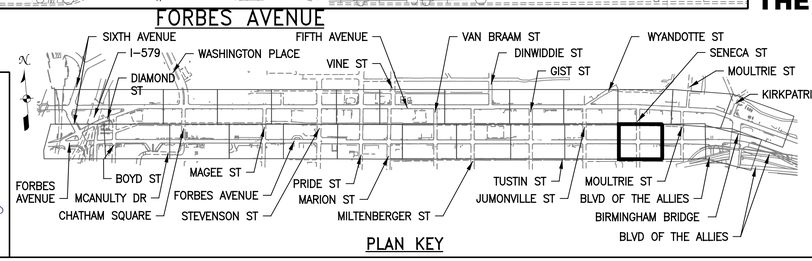
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MATCH LINE STA. 169+50 SHEET ES-24

MATCH LINE STA. 173+50 SHEET ES-26





PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT COTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 108 OF 166
ACCESSION NO. _____
CASE NO. _____

ES-25

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048941-E

1-7-2021

PGH2O

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of utilities or other improvements, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 7:00:55 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT24.dgn

MATCH LINE STA. 173+50 SHEET ES-25

MATCH LINE STA. 177+50 SHEET ES-27

EX. 12" WATER MAIN; TO REMAIN

PROP. 12" WATER MAIN

IP-164

EX. 12" WATER MAIN; TO BE ABANDONED

IP-145

PROP. 12" WATER MAIN

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 24" WATER MAIN; TO BE ABANDONED

EX. 6" WATER MAIN; TO BE ABANDONED

IP-143

IP-144

EX. 20" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

TEMPORARY PUMPED WATER FILTER BAG AREA

PROP. 8" WATER MAIN

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 6" WATER MAIN; TO REMAIN

PROP. 24" WATER MAIN

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

MOULTRIE ST

FORBES AVE

FORBES AVE CONSTR E

S 85°17'40" E

S 86°35'54" E

S 86°13'16" E

CONSTRUCTON SITE

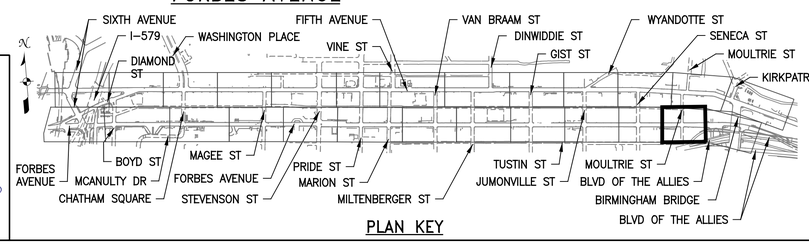
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WEF

PARKING

DENSE VEGETATION

FORBES AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILTY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 109 OF 166

ACCESSION NO. _____

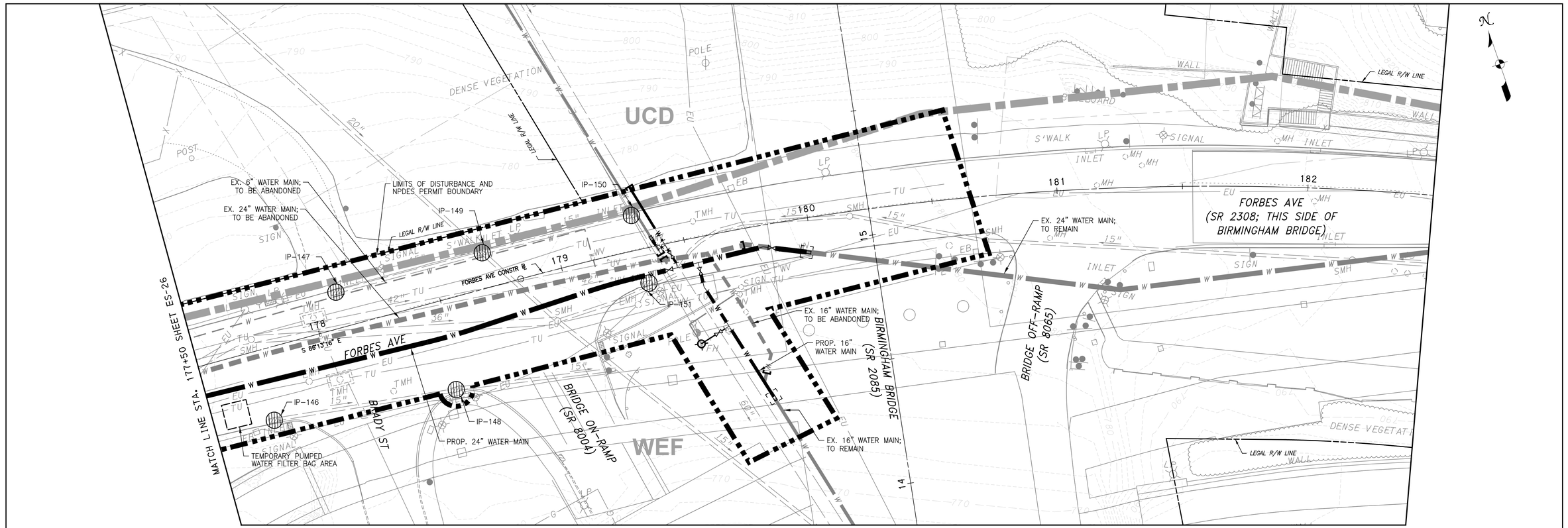
CASE NO. _____

ES-26

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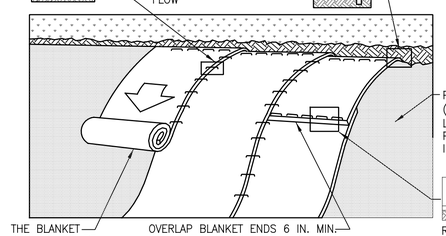


FORBES AVENUE

BLANKET EDGES STAPLED AND OVERLAPPED (4 IN. MIN.)

STARTING AT TOP OF SLOPE, ROLL BLANKETS IN DIRECTION OF WATER FLOW

INSTALL BEGINNING OF ROLL IN 6 IN. x 6 IN. ANCHOR TRENCH, STAPLE, BACKFILL AND COMPACT SOIL



PREPARE SEED BED (INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED) PRIOR TO BLANKET INSTALLATION

THE BLANKET SHOULD NOT BE STRETCHED; IT MUST MAINTAIN GOOD SOIL CONTACT

OVERLAP BLANKET ENDS 6 IN. MIN. WITH THE UPSLOPE BLANKED OVERLYING THE DOWNSLOPE BLANKET (SHINGLE STYLE). STAPLE SECURELY.

REFER TO MANUF. RECOMMENDED STAPLING PATTERN FOR STEEPNESS AND LENGTH OF SLOPE BEING BLANKETED

NOTES:

SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.

PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

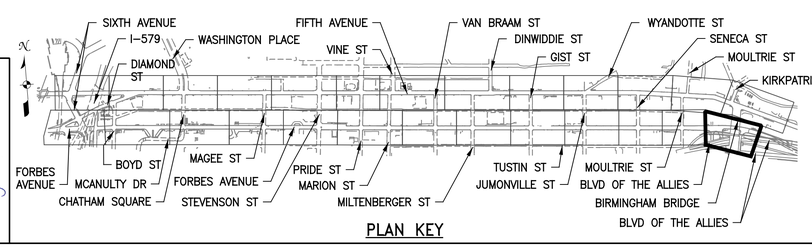
BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT GREATER THAN 0.25 INCHES IN 24 HOURS UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

STANDARD CONSTRUCTION DETAIL #11-1
EROSION CONTROL BLANKET INSTALLATION

NOT TO SCALE



PLAN KEY

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CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 110 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-27

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EROSION AND SEDIMENT CONTROL GENERAL NOTES

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.
2. At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing as well as cuts and fills, the owner and/or operator shall invite all contractors, the land owner, appropriate municipal officials, the E&S plan preparer, and a representative from the local conservation district to an on–site pre–construction meeting.
3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1–800–242–1776 for the location of existing underground utilities.
4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from that sequence must be approved in writing from the local conservation district or by the Department prior to implementation.
5. Areas to be filled are to be cleared, grubbed, and stripped of top soil to remove trees, vegetation, roots and other objectionable material.
6. Earth disturbance shall be limited to those areas described in each stage of the construction sequence. Earth disturbances, including site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in this E&S plan.
7. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before operations begin.
8. Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan maps(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner shown on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter. Topsoil stockpiles must be stabilized immediately.
9. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.
10. All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
11. All off–site waste and borrow areas must have an E&S plan approved by the local conservation district or the Department fully implemented prior to being activated.
12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP–001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.
13. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed impervious areas.
14. Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event and on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, and regrading must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
15. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to regulatory agency officials at the time of inspection.
16. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.
17. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
18. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches – 6 to 12 inches on compacted soils – prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil.
19. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.
20. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
21. Backfill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials.
22. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
23. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas.
24. Permanent stabilization is defined as permanent non–vegetative cover with a density sufficient to resist accelerated erosion.
25. E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district or the Department.
26. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district for an inspection prior to removal/conversion of the E&S BMPs.
27. After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed Areas disturbed during removal of the BMPs shall be stabilized immediately.
28. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district to schedule a final inspection.
29. Failure to correctly install E&S BMPs, failure to prevent sediment–laden runoff from leaving the construction site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to $10,000 per day in civil penalties, up to $10,000 in summary criminal penalties, and up to $25,000 in misdemeanor criminal penalties for each violation.
30. Concrete wash water shall be handled in the manner described on the plan drawings. In no case shall it be allowed to enter any surface waters or groundwater system.
31. Contractor must notify the Allegheny County Conservation District of pending construction at least three days before earthwork begins. The contractor should become thoroughly familiar with the provisions of Appendix 64, Erosion Control Rules and Regulations, Title 25, Part 1, Department of Environmental Resources, Subpart C, Protection of Natural Resources, Article III, Water Resources, Chapter 102, Erosion Control.
32. The site is subject to inspection and observation by agents of the Allegheny County Conservation District. A copy of the approved Erosion and Sediment Control Plan and Narrative must be kept on–site at all times during construction, in accordance with Pennsylvania State Law.

UTILITY INSTALLATION NOTES:

1. The total length of excavated trench open at any one time should not be greater than the total length of utility line that can be placed in the trench and back–filled in one working day. No more than 50 lineal feet of open trench should exist when utility line installation ceases at the end of the workday.
2. All site entrance and exit points shall be inspected daily prior to shut down at end of workday for evidence of potential to track mud off–site. It is the Contractor's responsibility to clean streets of stone, mud and dust. Contractor shall clean streets as needed and take whatever steps are necessary to keep the streets in a clean and dust–free condition.

STABILIZATION NOTES

(a) Permanent stabilization. Upon final completion of an earth disturbance activity or any stage or phase of an activity, the site shall be permanently stabilized and protected from accelerated erosion and sedimentation.

(1) E&S BMPs shall be implemented and maintained until the permanent stabilization is completed. Once permanent stabilization has been established, the temporary E&S BMPs shall be removed. Any areas disturbed in the act of removing temporary E&S BMPs shall be permanently stabilized upon completion of the temporary E&S BMP removal activity.

(2) For an earth disturbance activity or any stage or phase of an activity to be considered permanently stabilized, the disturbed areas shall be covered with an acceptable BMP which permanently minimizes accelerated erosion and sedimentation.

(b) Temporary stabilization.

(1) Upon temporary cessation of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities will exceed 4 days, the site shall be protected from accelerated erosion and sedimentation pending future earth disturbance activities.

(2) For an earth disturbance activity or any stage or phase of an activity to be considered temporarily stabilized, the disturbed areas shall be covered with an acceptable BMP which temporarily minimizes accelerated erosion and sedimentation.

I. DESCRIPTION OF EROSION AND SEDIMENT CONTROLS

The control measures shown on the drawings are the minimum controls necessary to protect off–site areas from sediment–laden runoff generated on the project site. Additional controls may be required depending on the progress of construction and varying conditions encountered. The use of the term "Engineer" in this report shall also include any owner's representative or authorized inspector. The Erosion/Sediment Control measures incorporated into the report and drawings are in accordance with the procedures set forth in Sections PA Chapter 102 and the "Erosion and Sediment Pollution Control Program Manual" (ESPCPM), March 2012.

A. TEMPORARY STRUCTURAL PRACTICES

Compost Sock Concrete Washout – A suitable washout facility shall be provided for the cleaning of chutes, mixers, and hoppers of the delivery vehicles unless such a facility will be used at the source of the concrete. Under no circumstances may wash water from these vehicles be allowed to enter any surface waters.

Inlet Protection – Filter Bags will be placed inside existing inlets with grate openings to capture sediment before it is discharged into storm sewer lines where it would be difficult and costly to remove. Compost filter socks, sand bags, or filter logs will be placed in front of the curb openings of applicable existing inlets to filter sediment laden runoff prior to entering sewer.

Pumped Water Filter Bag – Sediment laden water that collects during excavation shall be pumped into a sediment filter bag. The means and methods of construction by the contractor shall dictate the location and placement of this control, but the contractor must conform to the manufacturer's recommendations for use of this control.

Temporary Seeding – Place temporary seeding and mulch on disturbed areas that shall not be reworked within 20 days.

Dust Control – During construction activities, dust control shall be enforced to limit air borne dust particles within the site. Dust shall be controlled using water, or if necessary, chemical dust suppressants as per the contract specifications. The proposed dust control application rate and resulting dust shall be monitored and the application rate shall be adjusted, as required, to meet all regulations bound by this project.

B. PERMANENT STRUCTURAL PRACTICES

Permanent Seeding – Place permanent seeding on all final graded areas that are not to receive pavement, other impervious treatment, or landscaping.

Permanent Restoration – All surfaces will be restored to their pre–project condition. No new impervious surfaces will be created.

C. TEMPORARY AND PERMANENT VEGETATIVE PRACTICES

1. Materials
   - Soil Supplements. Soil supplements shall be applied to the permanent seeding areas as per the PENNDOT 408 Specifications, Section 804. A soil test shall be conducted by the contractor prior to soil supplement application to determine if the soil supplement application rates proposed with this plan should be adjusted. Apply a minimum 6 ton/ac liming if no soil report is done.
   - Mulch. Mulch shall be applied to permanent seeded areas with slopes less than 3:1. Mulch shall be as per the PENNDOT 408 Specifications, Section 805. Hay or straw mulch must be applied at rates of at least 3.0 tons per acre.
   - Erosion Control Mulch Blankets. Erosion control mulch blankets shall be as per the PENNDOT 408 Specifications, Section 806 and applied to permanent seeded areas with slopes 3:1 or greater by the end of the work day in which seeding is applied. Install blankets at regular vertical increments (15 feet max) to promote early stabilization of the slope.
   - Seed Mixture. Use seed mixture bearing a guaranteed statement of analysis and composed of the stated varieties.

   Seeding. Sow permanent seeding by hydroseeder, drill, or broadcast and cultipacked methods which provide for uniform distribution of seed and as described in the PENNDOT 408 specifications section 804. Apply seed at the rate specified below by the end of the work day in which final grade is achieved.

   Reseeding, Refertilization, and Remulching. Reseed, refertilize, and remulch any area that fails to establish a stand due to weather conditions or adverse soil conditions, as directed by the Engineer.

   Preparation of Seeding. Grade as necessary to bring subgrade to a true, smooth slope, parallel to and 6 inches below finished grade. Place topsoil (in required areas) over specified areas to a depth sufficiently greater than 6 inches so that, after settlement and light rolling, the completed work conforms to lines, grades, and elevations shown on the plans.

C. TEMPORARY and PERMANENT VEGETATIVE PRACTICES (CONTINUED)

2. Permanent Seeding
   - Stabilize all areas which have been disturbed by construction by permanent seeding after achieving final grade at the end of each work day. Hay or straw mulch must be applied at rates of at least 3.0 tons per acre. Refer to Table 11.2 for Soil Amendment Requirements for Permanent Seeding. Use the following seed mixes:

SPECIES:	PENNDOT Type B
% PURE LIVE SEED:	98%
APPLICATION RATE	102 lb/ac
FERTILIZER TYPE:	10–20–20
FERTILIZER APPL. RATE:	677 lb/ac
LIMING RATE:	2 ton/ac
MULCH TYPE:	Straw
MULCHING RATE:	3 ton/ac
ANCHOR MATERIAL:	wood fiber
ANCHORING METHOD:	slurry
RATE OF ANCHOR MATERIAL APPL.:	1550 lb/ac
SEEDING SEASON DATES:	Mar. 15 – June 1, Aug. 1 – Oct. 15

SPECIES:	PENNDOT Type L (Steep Slopes)
% PURE LIVE SEED:	98%
APPLICATION RATE:	116 lb/ac
FERTILIZER TYPE:	10–20–20
FERTILIZER APPL. RATE:	678 lb/ac
LIMING RATE:	2 ton/ac
MULCH TYPE:	Straw
MULCHING RATE:	3 ton/ac
ANCHOR MATERIAL:	wood fiber
ANCHORING METHOD:	slurry
RATE OF ANCHOR MATERIAL APPL.:	1550 lb/ac
SEEDING SEASON DATES:	Mar. 15 – June 1, Aug. 1 – Oct. 15

TABLE 11.1

CU. YDS. TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS

Depth (in)	Per 1,000 Square Feet	Per Acre
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

3. Temporary Seeding
   - Immediately apply temporary seeding to denuded areas which shall remain dormant for an excess of 20 days. Hay or straw mulch must be applied at rates of at least 3.0 tons per acre. Refer to Table 11.2 for Soil Amendment Requirements for Temporary Seeding. Use the following temporary seed mix:

SPECIES:	PENNDOT Formula E
% PURE LIVE SEED:	98%
APPLICATION RATE:	48.5 lb/ac
FERTILIZER TYPE:	10–20–20
FERTILIZER APPL. RATE:	677.5 lb/ac
LIMING RATE:	6 ton/ac
MULCH TYPE:	Hay or Straw
MULCHING RATE:	3 ton/ac

TABLE 11.2

SOIL AMENDMENT RATE EQUIVALENTS

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre	Per 1,000 sf	Per 1,000 sy	
Agricultural Lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in architectural fields
10–10–20 Fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in architectural fields
Temporary Seeding Application Rate				
Agricultural Lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10–10–10 Fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland"
NOTE: A compost blanket which meets the standards of this chapter may be substituted for the soil amendments shown in Table 11.2.

D. SUMMARY OF BEST MANAGEMENT PRACTICES (BMPs)

As much as possible, the construction should be done during periods of dry weather. During the work for the site development, the measures described in this report shall be used as a minimum to control accelerated erosion.

- Inlet filter bags shall be installed within the inlet boxes designated on the erosion control plan prior to disturbance in their tributary area to prevent sediment–laden run–off from entering the sewer system.
- Any stormwater that is collected within excavated areas shall be pumped to sediment filter bags for removal of sediment. The contractor will determine the location and number of pumps required.
- Installation of the site BMPs shall be as specified in the Sequence of Construction. The contractor shall maintain, improve and/or replace E&S Controls as necessary to meet the requirements of this plan. The Contractor shall provide sediment barriers around stockpiles and provide temporary seed cover for those disturbed areas that are not immediately final graded and permanently seeded.
- Remove temporary E&S control measures only when disturbed areas have been stabilized, as defined by a minimum uniform 70%, perennial vegetative cover or other permanent non–vegetative cover with a density sufficient to resist accelerated erosion. Restore areas around removed controls.
- No earthmoving activities shall fall outside of the construction limits or limit of disturbance.
- The Contractor must retain records of maintenance logs and inspection reports for the E&S control measures at the site. The Contractor shall comply with the maintenance schedule shown on plans, and shall rectify any non–compliance issues cited by inspection report(s) the same day in which issues are cited. Contractor shall use PADEP Chapter 102 Visual Site Inspection Report, Form 3800–FM–BCW0271d, dated 12/2019 or as last revised and kept on–site at all times.

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CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE–048441–E 1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EROSION AND SEDIMENT CONTROL NOTES

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 111 OF 166
ACCESSION NO. _____
CASE NO. _____

ES-28

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III. OPERATION AND MAINTENANCE PROGRAM:

- Maintain all temporary erosion and sediment control measures throughout the entire project period.
- Erosion and sediment control BMPs must be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMPs.
- After final site stabilization has been achieved, temporary erosion and sediment control BMPs must be removed. Areas disturbed during removal of the BMPs must be stabilized within the respective BMP's maintenance time frame.
- Until the site is stabilized, all erosion and sediment control BMPs must be maintained properly. If erosion and sediment control BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
- Erosion and sediment controls shall be inspected by the site superintendent or his/her representative a minimum of once weekly, unless otherwise noted, and after each measureable (≥ 0.25 inch) runoff event. Any inadequacies, failures, or maintenance issues noted during the inspection must be addressed by the end of day in which the inspection occurs.
- All site entrance and exit points shall be inspected for evidence of off–site tracking of mud. It is the Contractor's responsibility to clean streets of stone, mud and/or dust and take whatever steps are necessary to keep the streets in a clean and dust–free condition.
- All concrete washout facilities shall be inspected daily. Damaged or leaking washouts shall be deactivated and repaired or replaced immediately. Accumulated materials should be removed when they reach 75% capacity. Plastic liners shall be replaced with each cleaning.
- Compost filter socks shall be checked to insure functionality at all times. If the compost filter socks become damaged, it should be repaired or replaced as necessary. Sediment shall be removed from the base of the upslope side of the compost filter sock when accumulation has reached ½ of the effective height of the compost filter socks. The compost filter sock media can removed from the netting/sleeve and be spread on–site once the site is stabilized 70% above the control. The netting/sleeve material shall be removed from the site. Required maintenance shall be performed by the end of the work day.
- Inlet filter bags shall have sediment removed when the bag depth has been reduced by ½ or in accordance with the manufacturer's recommended maintenance requirement, whichever occurs first. Inlets with filter bags shall be checked for excessive ponding and cleaned accordingly to insure proper functionality.
- All slopes shall be checked for signs of erosion and/or sediment and repaired immediately, if necessary.
- All discharge locations shall be inspected to ascertain the effectiveness of the controls. Additional control measures shall be implemented as directed.
- The pumping rate to temporary pumped water filter bags shall be 750 gpm or ½ the maximum pumping rate recommended by the manufacturer, whichever is less. Pump intakes shall be floating and screened. A suitable means of accessing the bag with machinery required for disposal purposes must be provided. The bags shall be replaced when they become ½ full. Spare bags shall be kept available for replacement of those that have failed or are filled. Once the bag is ½ full of sediment, cut the bag open, dry trapped sediment within bag, and spread on site. Dispose of filter bag in dumpster. The pump discharge hose shall be inserted into the bags in the manner specified by the manufacturer and securely clamped. Filter bags shall be inspected daily. If any problem is detected, pumping shall cease immediately and not resume until the problem is corrected. All required maintenance shall be performed by the end of the work day.
- Sediment cleaned from the erosion control devices shall be disposed of by utilizing for site restoration activities, or hauled to an approved disposal site.
- All topsoil stripped on this project shall be temporarily stockpiled and reused as part of the final grading requirements. Excess cut excavation shall be utilized on site when feasible or deposed of at a DEP approved off–site location as determined by the Contractor.
- Seeded and vegetated areas shall be checked regularly to insure a good stand is maintained. Areas shall be fertilized, reseeded, and watered as needed. If erosion gullies have formed in vegetated areas, measures such as diverting up–slope water will be taken to achieve and maintain a good stand.
- Erosion control mulch blankets shall be checked to insure they are intact with the ground surface. Seams shall be checked and pins/anchors shall be replaced or reinstalled if any part of the seam is loose, unconnected, or not securely driven into the ground.
- All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed by the end of the work day.
- The contractor shall maintain seeded/vegetated areas for a period of one year from substantial completion of the project in accordance with the project specifications.
- Remove temporary E&S control measures only when disturbed areas have been stabilized, defined by a minimum uniform 70%, perennial vegetative cover. Restore areas around removed controls.
- Burning of site debris is not permitted. All other construction debris not to be reused shall be properly disposed of via dumpster and as per all federal, state and local regulations.
- The contractor shall maintain records of all inspections and associated maintenance/repair activities. Contractor shall use PADEP Chapter 102 Visual Site Inspection Report, Form 3800–FM–BCW0271d, dated 12/2019 or as last revised and kept on–site at all times.

CLEAN FILL NOTE – OWNER'S RESPONSIBILITY OF FILL OR EXCESS MATERIALS

If the site will need to import or export material from the site, the responsibility for performing environmental due diligence and determination of clean fill will rest with the Contractor.

Clean Fill is defined as: Uncontaminated, non–water soluble, non–decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and is recognizable as such. The term does not include materials placed in or on the waters of the Commonwealth unless otherwise authorized. (The term "used asphalt" does not include milled asphalt or asphalt that has been processed for re–use).
Clean Fill affected by a spill or release of a regulated substance: Fill materials affected by a spill or release of a regulated substance still qualifies as clean fill provided the testing reveals that the fill material contains concentrations of regulated substances that are below the residential limits in Tables FP–1a and FP–1b found in the Pennsylvania Department of Environmental Protection policy "Management of Fill".
Any person placing clean fill that has been affected by a spill or release of a regulated substance must use form FP–001 to certify the origin of the fill material and the results of the analytical testing to qualify the material as clean fill. Form FP–001 must be retained by the owner of the property receiving the fill.
Environmental due diligence: The applicant must perform environmental due diligence to determine if the fill materials associated with the project qualify as clean fill. Environmental due diligence is defined as: Investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionnaires, transaction screens, analytical testing, environmental assessments or audits. Analytical testing is not a required part of due diligence unless visual inspection and/or review of the past land use of the property indicates that the fill may have been subjected to a spill or release of regulated substance. If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill.
Testing should be performed in accordance with Appendix A of the Department's policy "Management of Fill".
Fill material that does not qualify as clean fill is regulated fill. Regulated fill is waste and must be managed in accordance with the Pennsylvania Department of Environmental Protection municipal or residual waste regulations based on 25 Pa. Code Chapters 287 Residual Waste Management or 271 Municipal Waste Management, whichever is applicable. These regulations are available on–line at www.pacode.com

II. SEQUENCE OF CONSTRUCTION

A. GENERAL

This construction sequence is intended to provide a general course of action during project construction to conform to applicable regulatory agency requirements for temporary and permanent soil erosion and sediment control. It shall be the responsibility of the contractor to comply with the Department of Environmental Protection and all local, state, and federal regulations; including but not limited to, the manner, direction, location, and condition of the waste disposal site chosen by the contractor. All necessary parts for proper and complete execution of work pertaining to this plan, whether specifically mentioned or not, are to be performed by the contractor. It is not intended that the drawings and this report show every detailed material, installation, maintenance activity or piece of equipment. The contractor shall comply with all requirements listed in this section. The contractor may be required to alter controls based on effectiveness of controls or differing site conditions encountered.
The contractor shall be responsible for obtaining any additional state, local, or federal approval for any activities that may or may not be required for off–site work involving the proposed site. This includes, but is not limited to, the preparation of a separate Erosion and Sediment Control Plan for other said activities and the payment of any additional application fees associated with the work. The contractor shall be required to obtain an approved erosion and sediment control plan for any borrow or disposal site prior to beginning the proposed work.

B. SEQUENCE OF CONSTRUCTION

E&S Controls are to be installed in accordance with this narrative and as shown on the E&S Control Plan Drawings accompanying this report. Any additions, substitutions, or exceptions to the E&S Control Plan shall be approved by the Engineer.

1. At least 7 days before starting any earth disturbance activities the owner and/or operator shall invite all contractors involved in those activities, the land owner, appropriate municipal officials, the erosion and sediment control plan preparer, and a representative of the Allegheny County Conservation District to schedule an on–site pre–construction meeting.
2. At least 3 days before starting any earth disturbance activities, or expanding into an area previously unmarked, all contractors involved in those activities shall notify the Pennsylvania One Call System Inc. at 1–800–242–1776 for the location of existing underground utilities.
3. All earth disturbance activities shall proceed in accordance with the following sequence. Deviation from the sequence must be approved by the Allegheny County Conservation District prior to implementation. Each step of the sequence shall be completed before proceeding to the next step, except where noted.
4. Before disposing of soil or receiving borrow for the site, the operator must assure that each spoil or borrow area has an erosion and sediment control plan approved by the Allegheny County Conservation District, and which is being implemented and maintained according to Chapter 102 regulations. The operator shall also notify the Allegheny County Conservation District in writing of all receiving spoil and borrow areas when they have been identified.
5. Immediate stabilization is required upon any temporary cessation of work (four (4) days or more) or as soon as any graded area reaches final grade.
6. Field–mark limits of disturbance.
7. Install Inlet Protection in existing inlets, tree protection, and Compost Filter Sock Concrete Washout Facility at the locations shown on the plans and in accordance with the standard construction details.
8. Sawcut of existing pavement and installation of new water main and service laterals may begin. Place trench spoils on upslope side of trench. The total length of excavated trench open at any one time should not be greater than the total length of utility line that can be placed in the trench and back–filled in one working day. No more than 50 lineal feet of open trench should exist when utility line installation ceases at the end of the workday.
All site entrance and exit points shall be inspected daily prior to shut down at end of workday for evidence of potential to track mud off site. It is the Contractor's responsibility to clean streets of stone, mud and dust. Contractor shall clean streets as needed and take whatever steps are necessary to keep the streets in a clean and dust–free condition.
9. Street, driveway, curb, and sidewalk restoration may begin.
10. Permanent stabilization is defined as a minimum uniform 70% perennial vegetative cover or other permanent non–vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
After permanent stabilization of all exposed areas, notify the Allegheny County Conservation District for permission to remove all remaining temporary erosion and sediment control measures used during the construction of this project. Permanently stabilize any remaining exposed areas. After permission is granted, remove all temporary erosion and sediment control measures and permanently stabilize disturbed areas associated with the removal of the temporary BMPs. Remove all temporary BMP materials and debris from the site and properly dispose of to an approved disposal site.
Restore areas disturbed by construction related activities to final grades and install permanent non–vegetative cover. Remove inlet protection. Flush accumulated sediment from the storm sewer system. Remove and properly dispose of sediment.

RECYCLING AND DISPOSAL OF BUILDING MATERIALS AND WASTES:

- It shall be the responsibility of the contractor to comply with PADEP and applicable local, state, and federal regulations; including but not limited to, the manner, direction, location, and condition of the waste disposal site chosen by the contractor.
- All miscellaneous construction wastes (excess soil material, broken castings, pieces of pipe, pallets, forms, packaging, etc.); unsuitable material; and garbage shall be hauled off the site and disposed of at an approved location in compliance with all local, state, and federal regulations.
- All offsite waste/borrow areas shall be approved by Allegheny County Conservation District.
- Concrete wash out areas shall be limited to areas that are upstream of a BMP. Leftover concrete debris shall be removed from the site to an approved location.
- Existing demolished concrete/pavement shall be broken into sizes acceptable to fill specifications and used as necessary or hauled away to an approved location.
- All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1, and 287.1 et seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

SEQUENCE OF CONSTRUCTION FOR RESTORATION BMP:

1. Backfill pipe trench excavations in accordance with restoration details. Temporarily restore surface as needed if not immediately installing permanent surface restoration.
2. Remove any temporary surface restoration and restore surface areas in kind with pre–project conditions.

A. Pour concrete base course and place bituminous binder course and wearing course in asphalt street areas.
B. Pour concrete in concrete street, curb, and sidewalk areas.
C. Seed and mulch vegetated areas.

LONG TERM OPERATION AND MAINTENANCE FOR RESTORATION BMP:

Longterm operation and maintenance are responsibilities of the property owner.

The area should be inspected at least once per year. Any areas where restoration has failed and have become disturbed should be immediately stabilized.

NPDES PERMIT GENERAL NOTES

1. Upon reduction, loss or failure of the BMP, the permittee and co–permittee shall take immediate action to restore the BMPs or provide an alternative method of treatment.
2. Where E&S BMPs are found to be inoperative or ineffective during an inspection, or any other time, the permittee and co–permittee shall immediately contact the County Conservation District, by phone or personal contact, followed by the submission of a written report within 5 days of the initial contact.
3. Permittees requesting a renewal of coverage under general permit must submit to the County Conservation District an administratively complete and acceptable NOI, at least 90 days prior to the expiration date of the coverage.
4. Notice of Termination. Where all Stormwater discharges associated with construction activity that are authorized by this permit are eliminated, and BMPs identified in the Post Restoration Plan have been installed, the permittee or co–permittee of the facility must submit a Notice of Termination (NOT) form that is signed in accordance with Part B.1.c (Signatory Requirements) of this permit to the County Conservation District.
5. The NPDES Boundary is equal to the outer perimeter boundary of the site, and any off–site areas within the limits of disturbance that are the responsibility of the developer to install, including off–site facilities such as utilities and roadway improvements.
6. The Erosion and Sediment Control Plans required under the NPDES General Permit are considered reports that shall be available to the public under Section 607 of the Clean Streams Law, and 25 Pa. Code, Chapter 92 of the Department of Environmental Protection guidance. The owner or operator of a facility with storm water discharges covered by the NPDES General Permit shall make plans available to the public upon request by the public.
7. The owner (Permittee) and contractor/excavator (Co–Permittee) shall contact the County Conservation District at least seven days prior to start of construction to determine if a pre–construction conference is required. The permittee, co–permittee and others undertaking earth disturbance activity must attend a pre–construction conference if requested by the County Conservation District.

SITE INSPECTIONS AND MONITORING REPORT REQUIREMENTS

8. The owner (Permittee) and contractor/excavator (Co–Permittee) shall comply with all of the monitoring and reporting requirements, as outlined in Part A.2 of the NPDES Permit. The Permittee and Co–Permittee(s) shall ensure that site inspections are conducted at least weekly and after each measurable precipitation event by qualified personnel, trained and experienced in erosion and sediment control, to ascertain that the BMPs are operational and effective in preventing pollution to the waters of the Commonwealth. The PADEP Chapter 102 Visual Site Inspection Report, Form 3800–FM–BCW0271d, dated 12/2019 or as last revised shall be completed for each inspection and should be available on–site for inspection by DEP or County Conservation District Personnel.
9. Where BMPs are found to be inoperative or ineffective during an inspection, or at any time, the permittee and the co–permittee shall immediately contact the County Conservation District, by phone or personal contact, followed by submission of a written report within 5 days of the initial contact. Non–compliance reports shall include the following information: (1) any condition on the project site which may endanger public health, safety, or the environment, or involve incidents which would threaten pollution; (2) the period of noncompliance, including the exact dates and times and/or anticipated time when the activity will return to compliance; (3) steps being taken to reduce, eliminate and prevent recurrence of the noncompliance; and (4) the date or schedule of dates, and identifying remedies for correcting noncompliance conditions.

NOTIFICATION

10. Contractor must notify the County Conservation District of pending construction at least three days before earthwork begins. The contractor should become thoroughly familiar with the provisions of Appendix 64, Erosion Control Rules and Regulations, Title 25, Part 1, Department of Environmental Resources, Subpart C, Protection of Natural Resources, Article III, Water Resources, Chapter 102, Erosion Control.
11. The site is subject to inspection and observation by agents of the County Conservation District. A copy of the approved Erosion and Sediment Pollution Control Plan and Narrative must be kept on–site at all times during construction, in accordance with Pennsylvania State Law.

RECORD KEEPING

12. The permittee and co–permittee shall retain records of all monitoring information including copies of monitoring and inspection reports required by this permit, and the records of data used to complete the Notice of Intent for this permit, for a period of three years from the date of the termination of coverage under the NPDES Permit. Monitoring results shall be submitted to the County Conservation District upon request.

COMPLIANCE RESPONSIBILITIES

13. The owner (Permittee) and contractor/excavator (Co–Permittee) must comply with all terms and conditions of the NPDES Permit. Any permit noncompliance constitutes a violation of the Pennsylvania Clean Stream Law and federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit or permit renewal.
14. The Permittee and Co–Permittee may be subject to criminal and/or civil penalties for violations of the conditions of the NPDES Permit under Section 602 and 605 of the Clean Streams Law, 35 P.S. Sections 691.602 and 691.605, and under the Clean Water Act as specified in 40 C. F. R. Sections 122.41(a)(2) and (3), which are incorporated by reference.

PREPAREDNESS, PREVENTION AND CONTINGENCY PLANS

15. If the potential exists for causing accidental pollution of air, land, or water or for causing endangerment of public health and safety through accidental release of toxic, hazardous, or other polluting materials, the permittee or co–permittee must develop a Preparedness, Prevention, and Contingency (PPC) Plan. The PPC Plan shall be developed according to Department of Environmental Protection regulations. The PPC Plan shall identify areas which may include, but are not limited to, waste management areas, raw materials storage areas, temporary and permanent spoils storage areas, maintenance areas, and any other areas which may have the potential to cause noncompliance with the terms and conditions of the NPDES Permit due to storage, handling, or disposal of any toxic or hazardous substances such as oil, gasoline, pesticides, herbicides, solvents, etc. BMPs shall be developed and implemented for each identified area. The PPC Plan shall be maintained on the site at all times and shall be made available at the Department of Environmental Protection's or County Conservation District's request.

REVIEWED FOR CONSTRUCTABILTY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EROSION AND SEDIMENT CONTROL NOTES

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 112 OF 166
ACCESSION NO. _____
CASE NO. _____

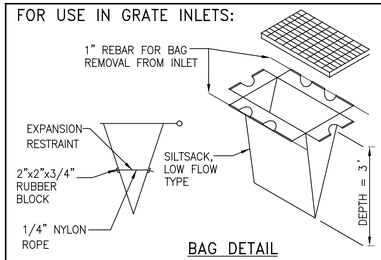
ES-29

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of water mains and other utilities. Anyone using this information assumes all responsibility for interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

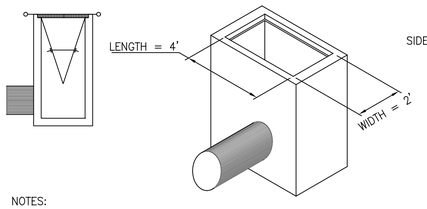
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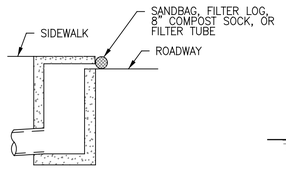
FOR USE IN GRATE INLETS:



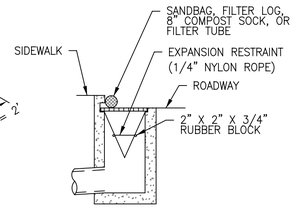
BAG DETAIL



FOR USE IN CURB INLETS:



FOR USE IN INLETS WITH BOTH CURB OPENING AND GRATE OPENING:

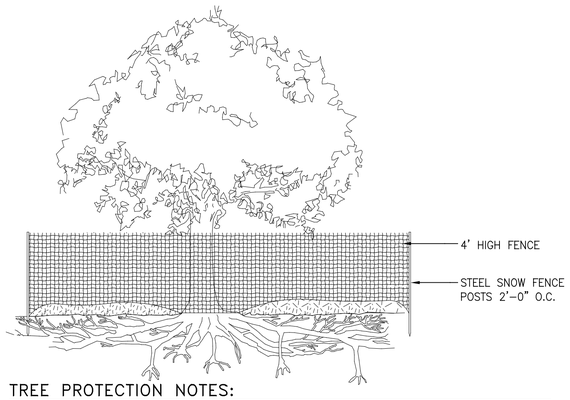


NOTES:

1. FILTER BAGS SHALL BE LOW FLOW TYPE.
2. THE FILTER BAG SHALL BE CLEANED WHEN THE BAG IS HALF FULL. MATERIAL FROM THE CLEANING PROCESS SHALL BE PROPERLY DISPOSED OF.
3. AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
4. INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIARELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
5. DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

INLET PROTECTION

N.T.S.

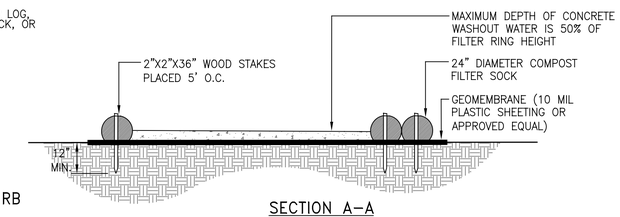


TREE PROTECTION NOTES:

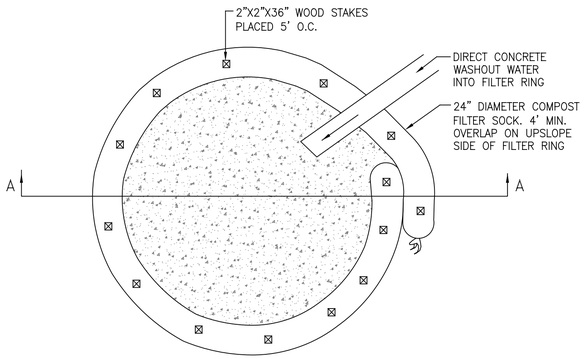
1. TREE PROTECTION SHALL BE PROVIDED FOR ANY AND ALL TREES TO BE PRESERVED DURING AND AFTER CONSTRUCTION.
2. BOARDS, FENCING ETC. SHALL NOT BE NAILED TO ANY TREES OR SHRUBS.
3. ROOTS SHALL NOT BE CUT IN AN AREA INSIDE THE DRIP LINE OF THE TREE BRANCHES.
4. IF TREE LIMBS NEED TO BE REMOVED, IT SHALL BE PERFORMED UNDER THE IMMEDIATE SUPERVISION OF A CERTIFIED ARBORIST.

TREE PROTECTION DETAIL

N.T.S.



SECTION A–A



NOTES:

1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFOMANCE.
2. 18" DIAMETER FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
3. A SUITABLE GEOMEMBRANE (10 MIL PLASTIC SHEETING OR APPROVED EQUAL) SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE SOCKS.

*ADAPTED FROM FILTREXX

TYPICAL COMPOST FILTER SOCK CONCRETE WASHOUT FACILITY

N.T.S.

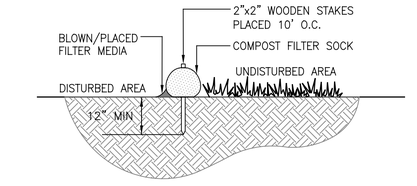
TABLE 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting	HDPE biaxial net				
	Continuously wound				
	Fusion-welded junctures				
	3/4" X 3/4" Max. aperture size				
Outer Filtration Mesh	Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch)				
	3/16" Max. aperture size				
Sock fabrics composed of burlap may be used on projects lasting 6 months or less.					

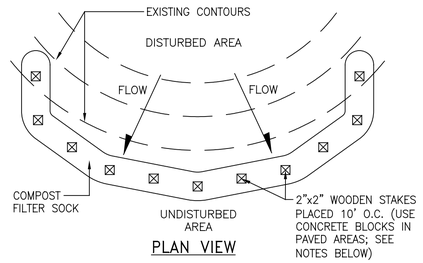
Filtrexx & JMD

COMPOST FILTER SOCK FABRIC MIN SPECIFICATIONS

N.T.S.



ELEVATION VIEW



PLAN VIEW

NOTES:

1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.
2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ½ THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
4. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
5. BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
6. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.
7. PER PAGE 62 OF THE PA DEP EROSION AND SEDIMENT POLLUTION CONTROL MANUAL (2012): WHERE SOCKS ARE PLACED ON PAVED SURFACES, CONCRETE BLOCKS SHOULD BE USED IMMEDIATELY DOWNSLOPE OF THE SOCKS (AT THE SAME INTERVALS RECOMMENDED FOR THE STAKES) TO HELP HOLD THE SOCK IN PLACE.

COMPOST FILTER SOCK

N.T.S.

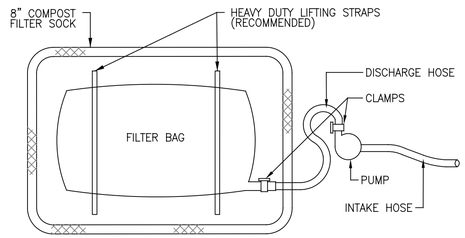
TABLE 4.2	
COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25%–100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5–8.5
MOISTURE CONTENT	35% – 60%
PARTICAL SIZE	30%–50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

COMPOST STANDARD NOTES:

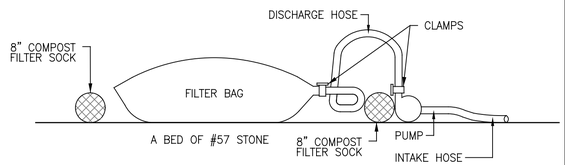
1. COMPOST SHOULD BE A WELL DECOMPOSED, WEED–FREE ORGANIC MATTER DERIVED FROM AGRICULTURE, FOOD, STUMP GRINDINGS, AND YARD OR WOOD/BARK ORGANIC MATTER SOURCES. THE COMPOST SHOULD BE AEROBICALLY COMPOSTED. THE COMPOST SHOULD POSSESS NO OBJECTIONABLE ODORS AND SHOULD BE REASONABLY FREE (<1% BY DRY WEIGHT) OF MAN–MADE FOREIGN MATTER. THE COMPOST PRODUCT SHOULD NOT RESEMBLE THE RAW MATERIAL FROM WHICH IT WAS DERIVED. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS OF REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.
2. THE PHYSICAL PARAMETERS OF THE COMPOST SHOULD COMPLY WITH THE STANDARDS IN TABLE 4.2. THE STANDARDS CONTAINED IN THE PENNDOT PUBLICATION 408 ARE AN ACCEPTABLE ALTERATIVE.

COMPOST STANDARDS

N.T.S.



PLAN VIEW



ELEVATION VIEW

NOTES:

1. LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVERAGE WIDE WIDTH STRENGTH	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70 %
AOS % RETAINED	ASTM D–4751	80 SIEVE

2. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
3. BAGS SHALL BE LOCATED ON #57 STONE, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
4. NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED OVER #57 STONE WHERE GRASSY AREA IS NOT AVAILABLE.
5. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC IS RECOMMENDED FOR THIS PURPOSE.
6. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHOULD BE FLOATING AND SCREENED.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD PUMPED WATER FILTER BAG

N.T.S.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EROSION AND SEDIMENT CONTROL DETAILS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 113 OF 166
ACCESSION NO. _____
CASE NO. _____

ES-30

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

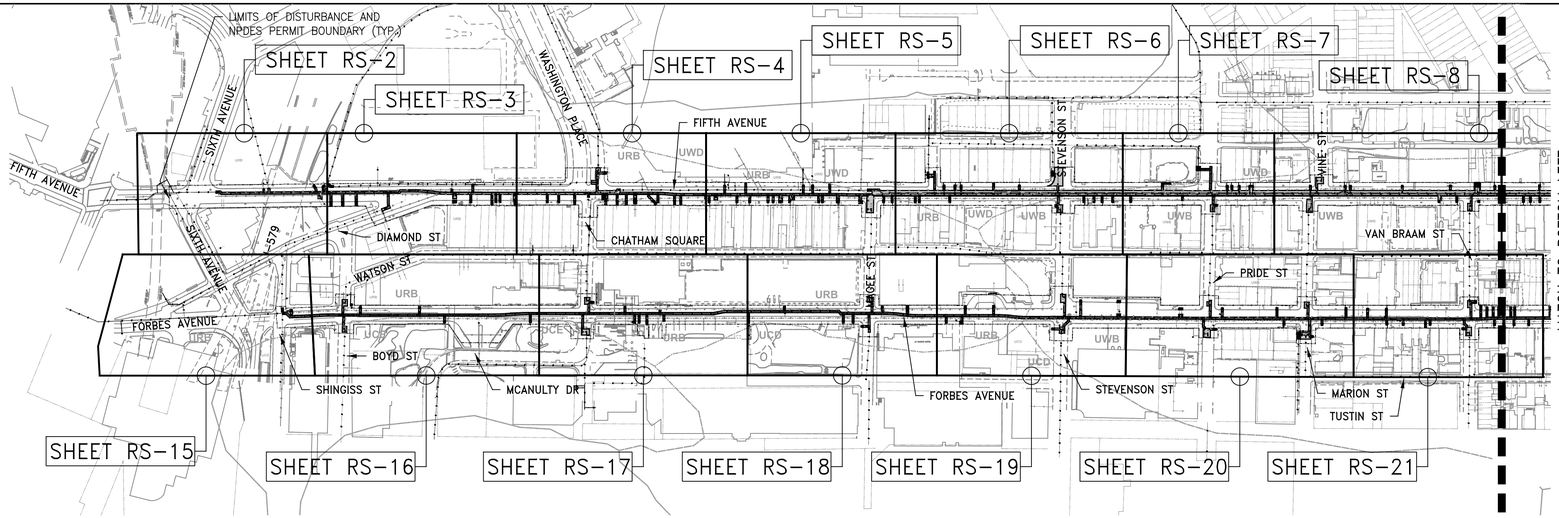
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048643-E

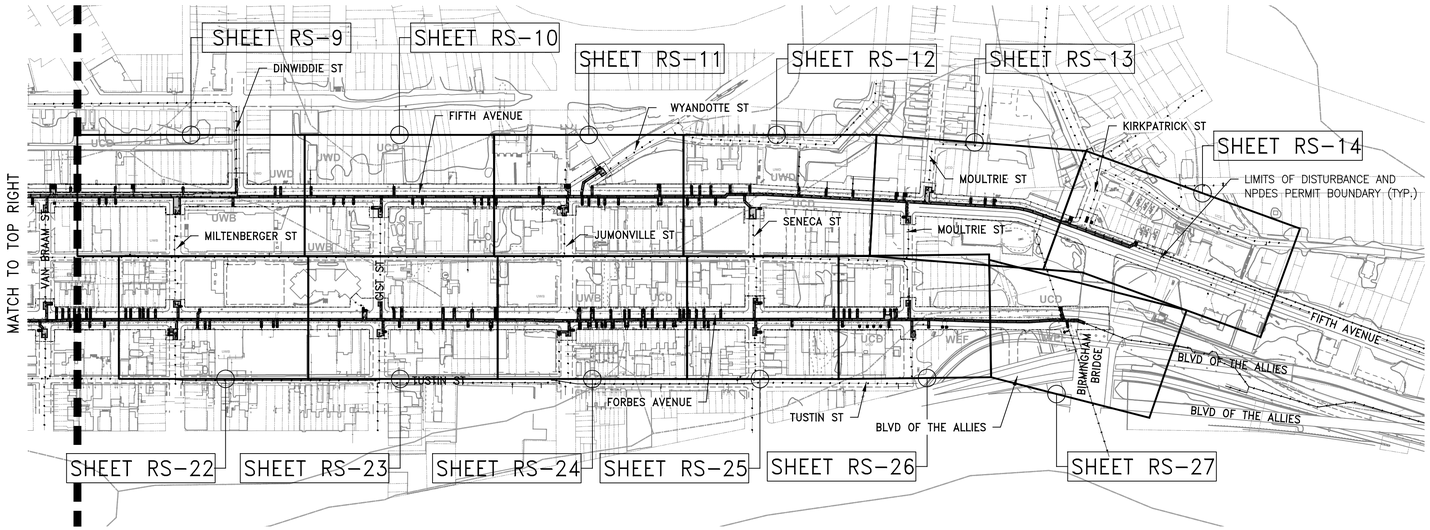
1-7-2021

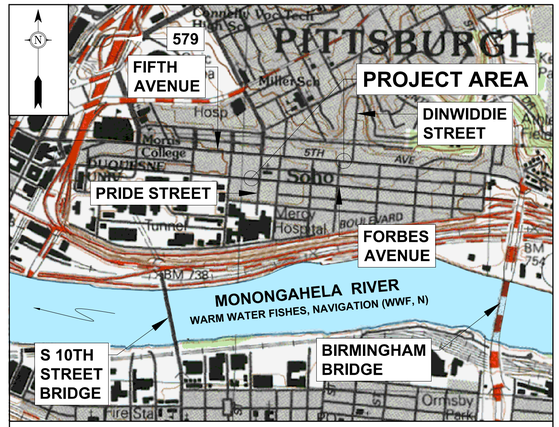
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MAP REFERENCE:
PITTSBURGH EAST QUADRANGLE
ALLEGHENY COUNTY, PA
U.S.G.S. 7.5 MINUTE SERIES

USGS SITE LOCATION MAP
SCALE: 1" = 1000'

PENNSYLVANIA
QUADRANGLE LOCATION

RECYCLING AND DISPOSAL OF BUILDING MATERIALS AND WASTES:

- It shall be the responsibility of the contractor to comply with PADEP and applicable local, state, and federal regulations; including but not limited to, the manner, direction, location, and condition of the waste disposal site chosen by the contractor.
- All miscellaneous construction wastes (excess soil material, broken castings, pieces of pipe, pallets, forms, packaging, etc.); unsuitable material; and garbage shall be hauled off the site and disposed of at an approved location in compliance with all local, state, and federal regulations.
- All offsite waste/borrow areas shall be approved by Allegheny County Conservation District.
- Concrete wash out areas shall be limited to areas that are upstream of a BMP. Leftover concrete debris shall be removed from the site to an approved location.
- Existing demolished concrete/pavement shall be broken into sizes acceptable to fill specifications and used as necessary or hauled away to an approved location.
- All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with Department's Solid Waste Management Regulations at 25 Pa. Code 260.1 et seq., 271.1, and 287.1 et seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

LONG TERM OPERATION AND MAINTENANCE FOR RESTORATION BMP:

Longterm operation and maintenance are responsibilities of the property owner.

The area should be inspected at least once per year. Any areas where restoration has failed and have become disturbed should be immediately stabilized.

RESTORATION LEGEND:

PROP. PAVEMENT RESTORATION

PROP. SIDEWALK RESTORATION

PROP. CURB RESTORATION

SCALE: 1" = 200'
200' 0 200' 400'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS	
CHARACTER	DATE

DESIGNED BY:
gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048643-E
1-7-2021

DESIGN ENGINEER:
GAI CONSULTANTS
385 E. WATERFRONT DRIVE
HOMESTEAD, PA 15120
CONTACT: JOE FELLO
412-399-5514
J.FELLO@GAICONSULTANTS.COM

DEVELOPER/PROJECT OWNER/WATER MAIN UTILITY OWNER:
PITTSBURGH WATER AND SEWER AUTHORITY
1200 PENN AVENUE
PITTSBURGH, PA 15222
CONTACT: JIM TURNER
412-255-8800, EXT 5997
JTURNER@PGH20.COM

RIGHT-OF-WAY OWNER/PROPERTY OWNER:
CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE
611 SECOND AVENUE
PITTSBURGH, PA 15219
CONTACT: BRIAN RALSTON
412-389-4505
BRIAN.RALSTON@PITTSBURGHPA.GOV

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN LOCATION MAP & SHEET INDEX

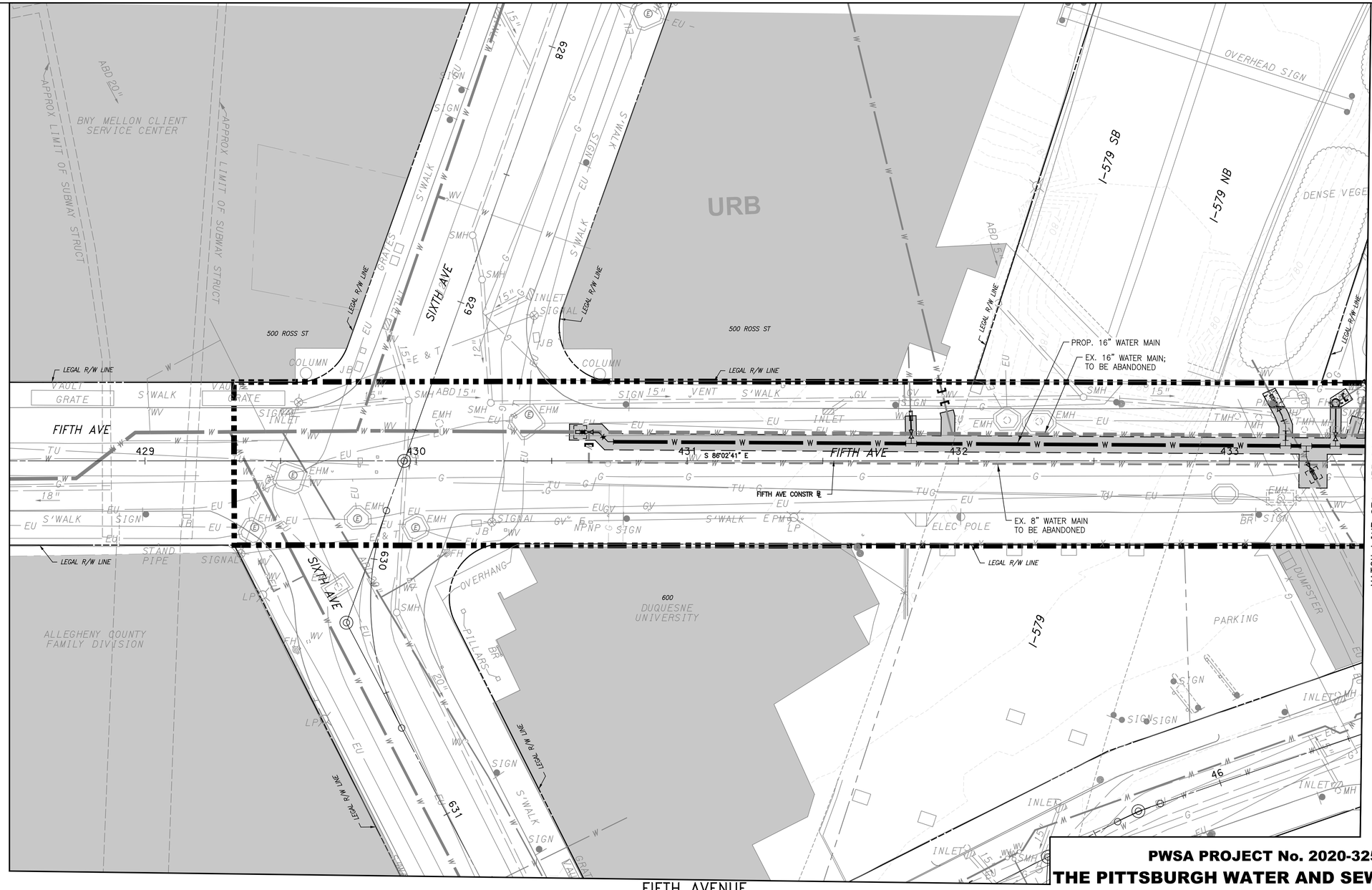
SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 114 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-1

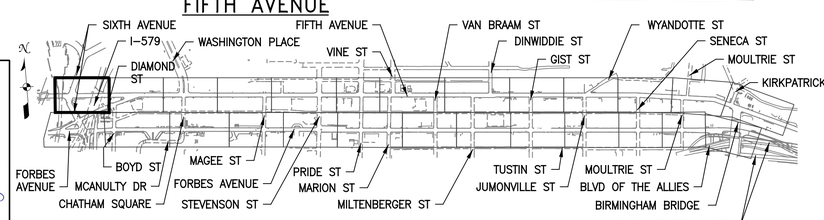
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FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERV'SD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048643-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 115 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-2

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Symbol	Description	Hydric	Prime Farmland	Amount of Project Activity	Limitations	BMP to Address Limitation
UCD	Urban land-Culleoka complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UCE	Urban land-Culleoka complex, steep, 25 to 25 Percent Slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
URB	Urban land-Rainsboro complex, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Easily Erodible, Depth to Saturated Zone/ Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWB	Urban land-Wharton complex, gently sloping, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWD	Urban land-Wharton complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
WEF	Weikert-Rock outcrop complex, 25 to 80 percent slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete and Steel, Droughty, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing

MATCH LINE STA. 433+50 SEE SHEET RS-2

MATCH LINE STA. 438+50 SEE SHEET RS-4

CHATHAM TOWER
AKA 112 WASHINGTON PLACE

CHATHAM PARKING GARAGE
AKA 112 WASHINGTON PLACE

EX. 12" WATER MAIN

PROP. 16" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

FIFTH AVE CONSTR JT

S 86°02'41" E

S 85°18'20" E

FIFTH AVE

DIAMOND ST

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

EX. 8" WATER MAIN; TO BE ABANDONED

LEGAL R/W LINE

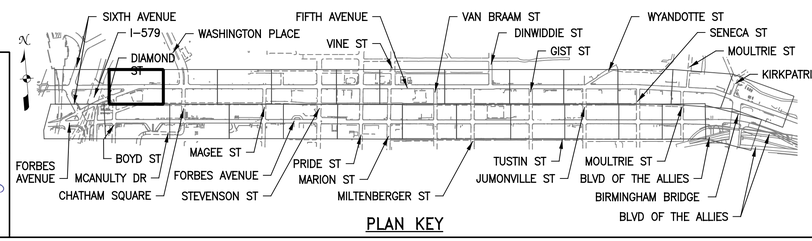
WALL FENCE

GATE

PARKING

URB

FIFTH AVENUE



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 116 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-3

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MATCH LINE STA. 438+50 SEE SHEET RS-3

MATCH LINE STA. 443+50 SEE SHEET RS-5

URB

UWD

PPG PAINTS ARENA

PPG PAINTS ARENA
1001–1035

TWO CHATHAM CENTER
AKA 112 WASHINGTON PLACE

WASHINGTON PLACE

23 CHATHAM SQUARE

FIFTH AVE

FIFTH AVE CONSTR ℄

S 85°18'29" E

LEGAL R/W LINE

EX. 12" WATER MAIN

PROP. 16" WATER MAIN

EX. 16" WATER MAIN;
TO BE ABANDONED

EX. 16" WATER MAIN;
TO REMAIN

EX. 16" WATER MAIN;
INSTALLED IN 2008;
TO REMAIN

EX. 8" WATER MAIN;
TO BE ABANDONED

PROP. 8" WATER MAIN

EX. 8" WATER MAIN;
INSTALLED IN 2000;
TO REMAIN

EX. 8" WATER MAIN;
TO REMAIN

PROP. 16" WATER MAIN

900 | 903 – 905 WATSON AKA 902 –904 FIFTH | 906 | 908–910 | 912 –914 | 916 | 1000 | 1002 | 1004–1006 | 1008 & 1014 | 1008 & 1014 | 1016 | 1018 | 1020 | 1022 | 1030

440 | 441 | 442 | 443

FIFTH AVENUE

PLAN KEY

SIXTH AVENUE, I-579, WASHINGTON PLACE, FIFTH AVENUE, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, VINE ST, DIAMOND ST, BOYD ST, MAGEE ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVS/SB			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

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gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROJANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 117 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-4

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MATCH LINE STA. 443+50 SHEET RS-4

MATCH LINE STA. 448+50 SHEET RS-6

PPG PAINTS ARENA

PPG PAINTS ARENA 1001-1035

URB

UWD

EX. 16" WATER MAIN; INSTALLED IN 2008; TO REMAIN

EX. 15" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

LEGAL R/W LINE

FIFTH AVE

FIFTH AVE CONSTR B

444 445 446 447 448

S 85°18'29" E

EX. 16" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

8" PROP. WATER MAIN

8" PROP. WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

36" MAGEE ST

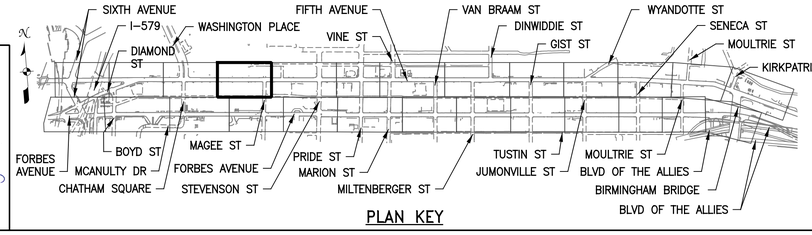
PARKING

GUIDE RAIL

1030 1034 1040 1042 1100 1102 1106 1202 1204 1206 1208 1300 1302

1207

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

PGH2O

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 118 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-5

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MATCH LINE STA. 448+50 SHEET RS-5

MATCH LINE STA. 454+50 SHEET RS-7

LOGAN ST

STEVENSON

FIFTH AVE

FIFTH AVE CONSTR ℄

PROP. 16" WATER MAIN

EX. 15" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

LEGAL R/W LINE

URB

UWD

UWB

PARKING

GUIDE RAIL

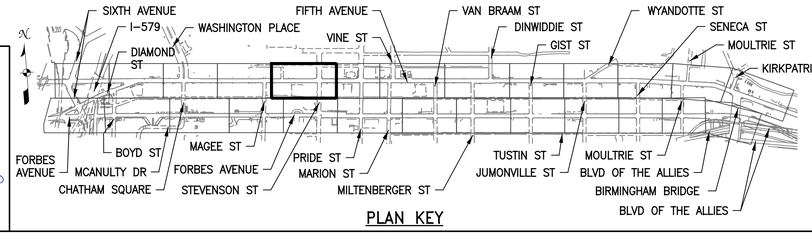
449 450 451 452 453 454

S 85°18'29" E

1304 1308 1315 1318 1319 AKA 1321 1320 VACANT LOT 1323–1325 1334 1335 1344 1400 1402 & 1402 STE 2 1404 1406–1408 1410

PROP. 8" WATER MAIN

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT. SPR/ISB			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED

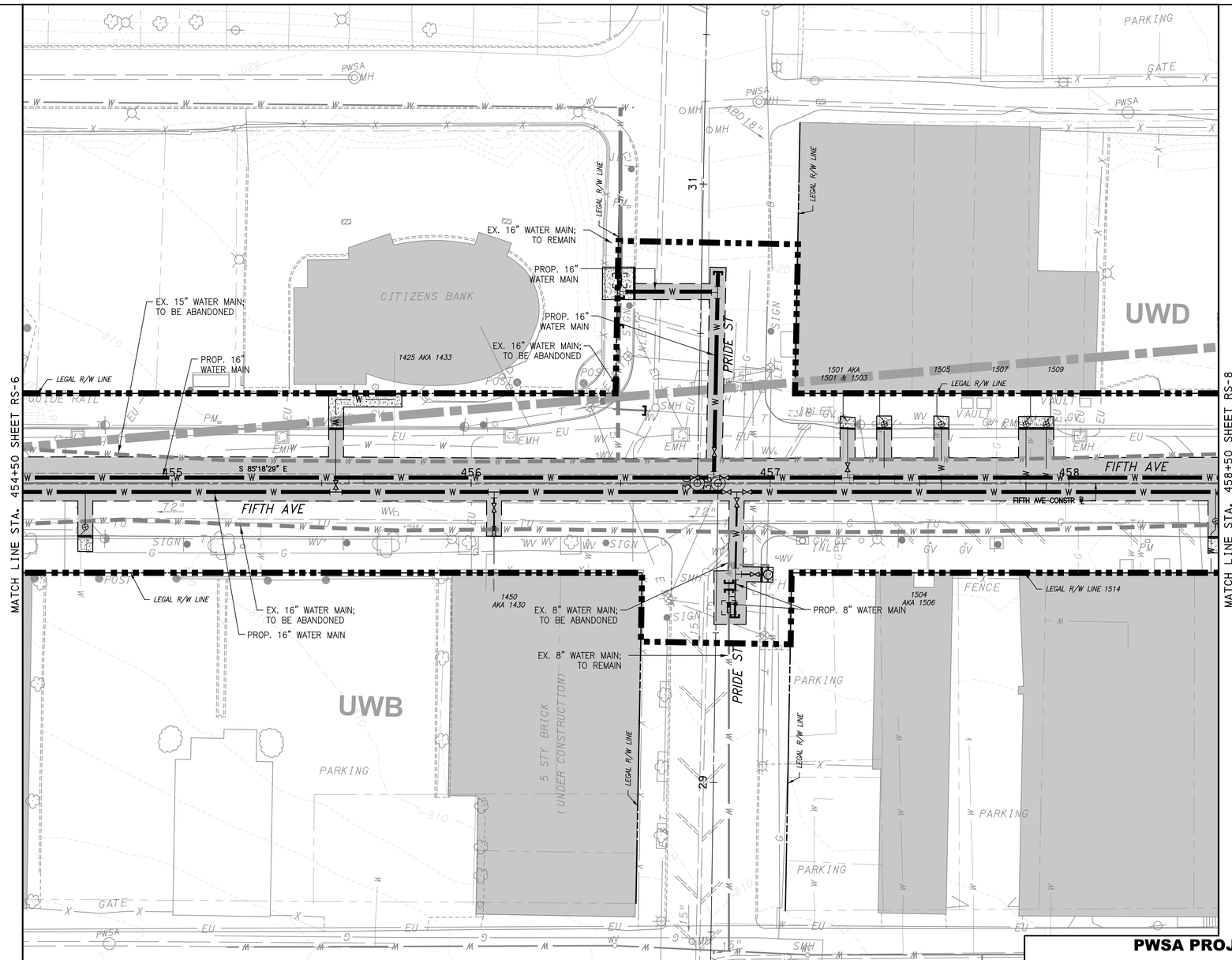
DATE: JANUARY, 2021

SHEET NO. 119 OF 166

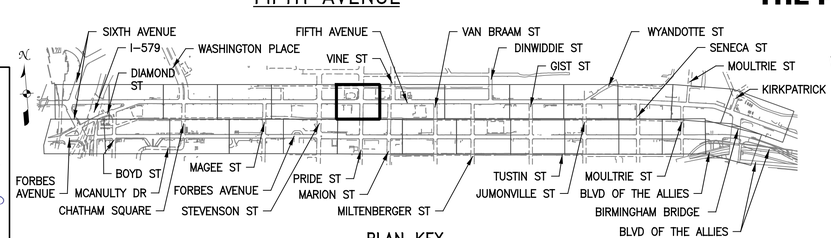
ACCESSION NO. _____

CASE NO. _____

RS-6



FIFTH AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 120 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-7

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1-7-2021

PGH2O

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1/12/2021 7:06:18 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT06.dgn

MATCH LINE STA. 458+50 SHEET RS-7

MATCH LINE STA. 464+50 SHEET RS-9

UWD

UCD

UWB

PARKING

DENSE WOODS

UPTOWN BEER

FILLER CAPS

C.O.P.

GULF GAS CANOPY

FLATS ON 5TH

STAND PIPE

1525 AKA 1513

1601

1605

1655

1643

1701

1705

1516 & 1516.5

1520

1600

1612

1634

1636-1638

MARION ST

VAN BRAAM ST

FIFTH AVE

FIFTH AVE CONSTR ℄

S 85°18'29" E

459

460

461

462

463

464

LEGAL R/W LINE

PROP. 6" WATER MAIN

PROP. 8" WATER MAIN

PROP. 16" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 15" WATER MAIN; TO BE ABANDONED

EX. 16" WATER MAIN; TO BE ABANDONED

FENCE

GATE

STEP

VAULT

INLET

SIGN

8" GAS

4" GAS

N

FIFTH AVENUE

SIXTH AVENUE, I-579, WASHINGTON PLACE, DIAMOND ST, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, FORBES AVENUE, STEVENSON ST, MAGEE ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 121 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-8

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR _____ DATE _____

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

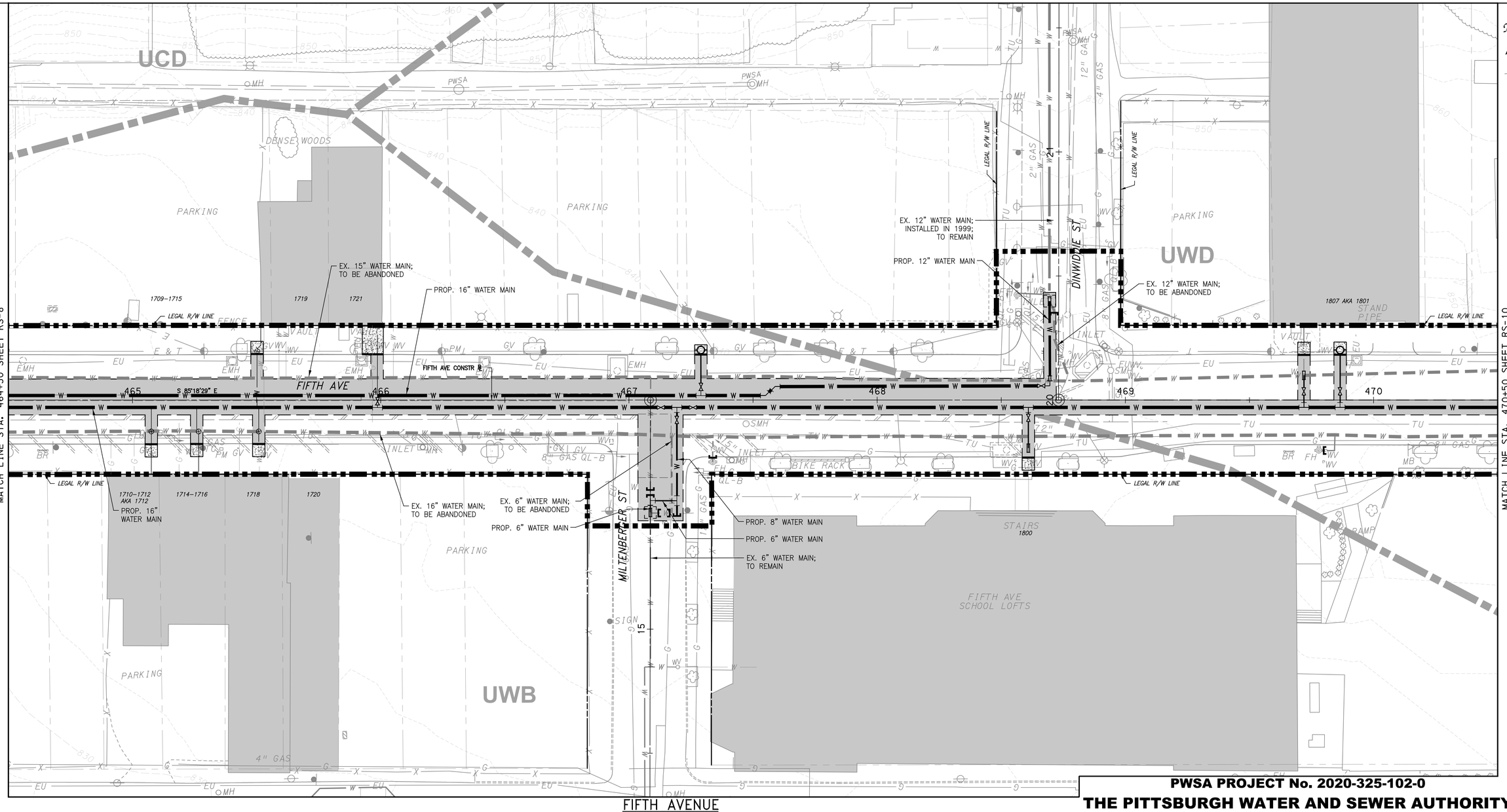
1-7-2021

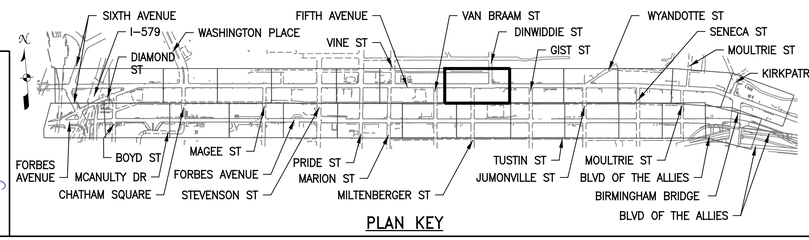
PGH2O

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1/12/2021 7:06:29 PM

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 122 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-9

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

CHARACTER	DATE

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

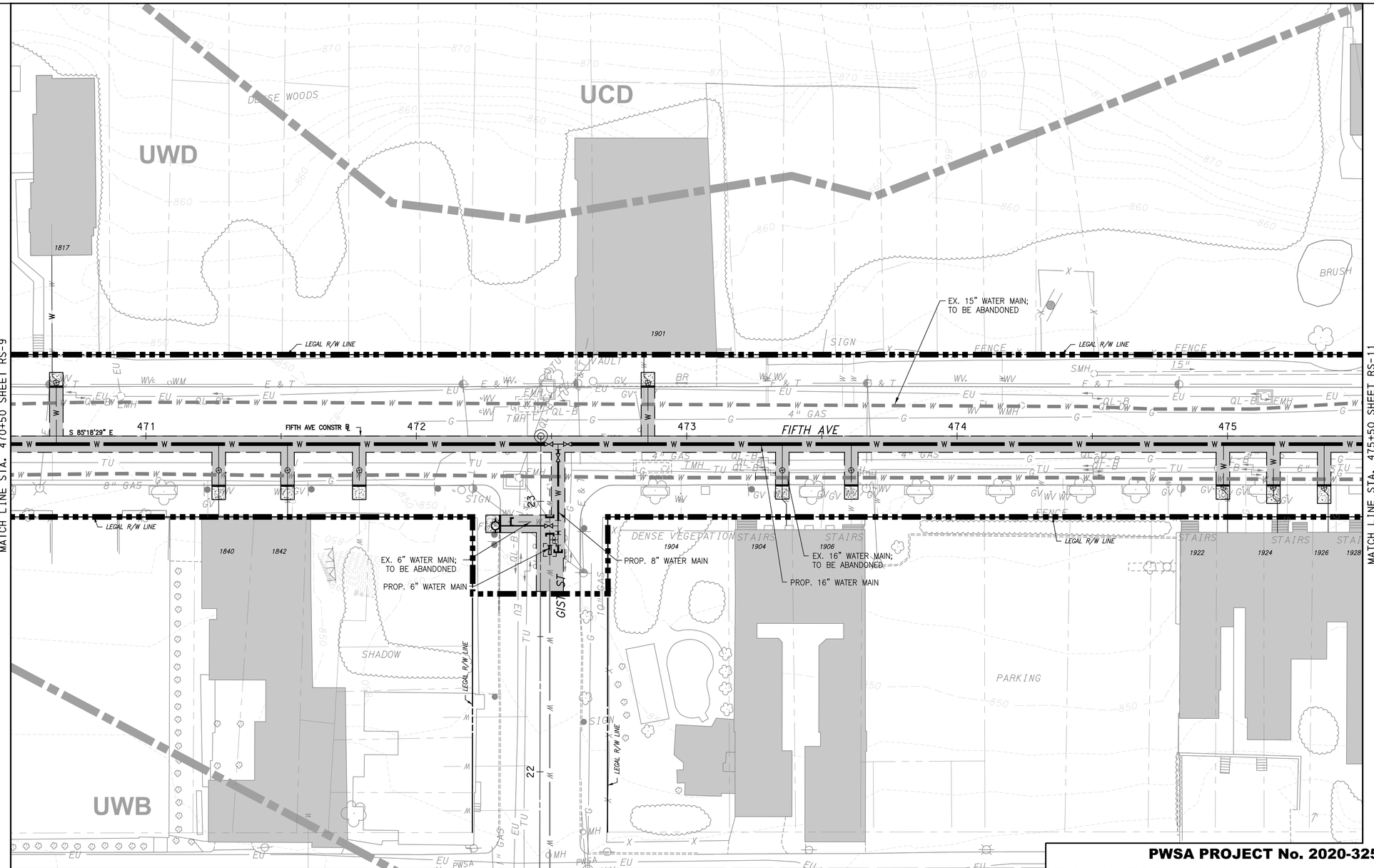
1-7-2021

PGH2O

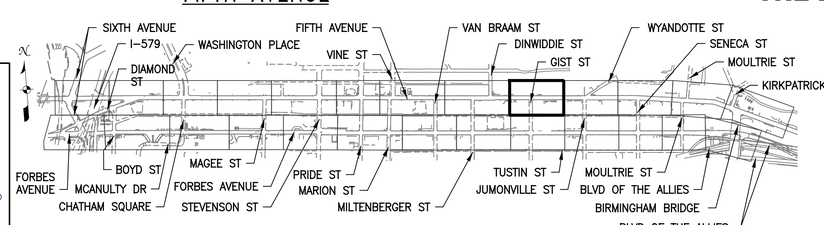
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GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT08.dgn



FIFTH AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 123 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-10

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1-7-2021

PGH2O

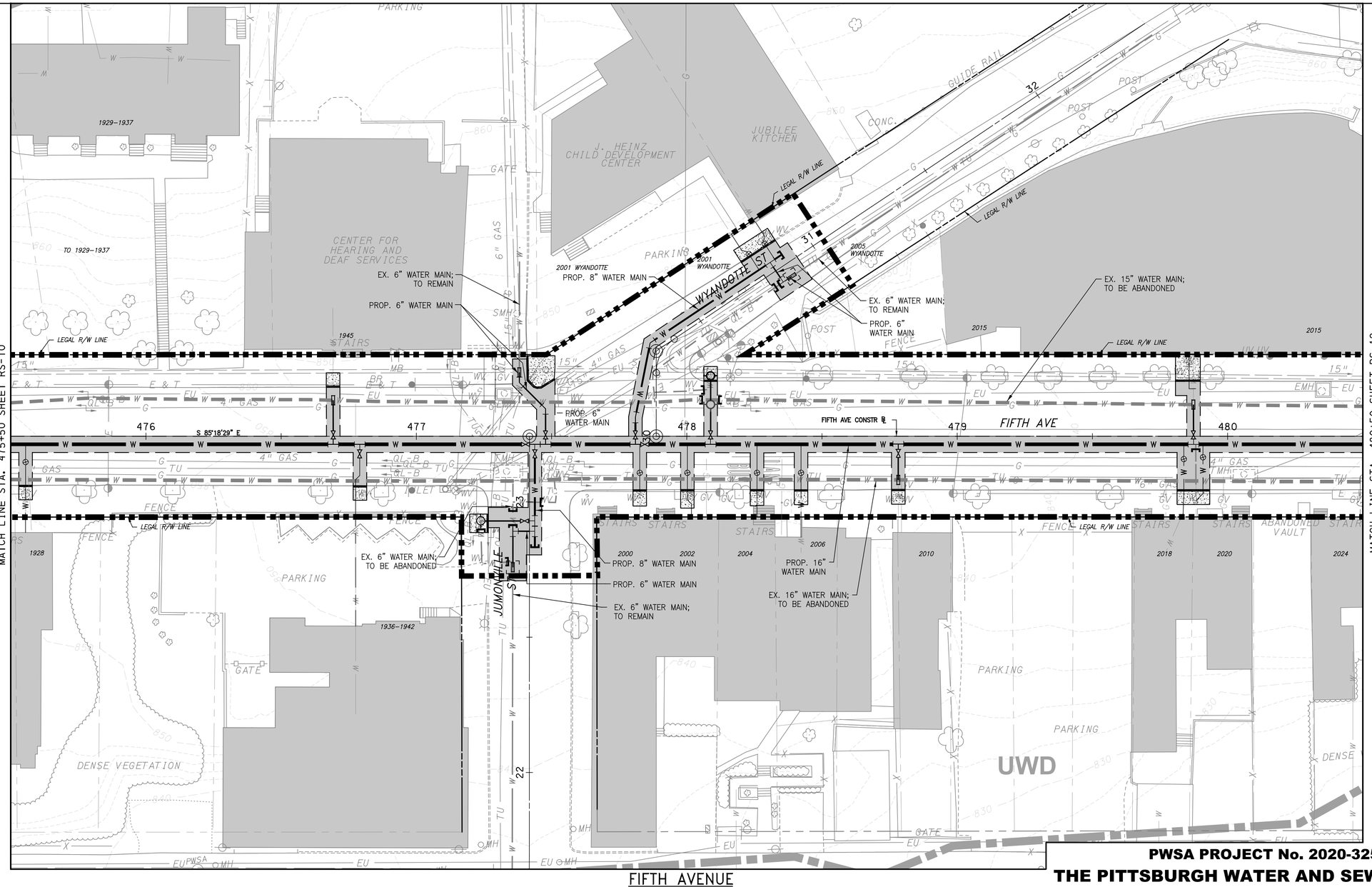
DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of utilities, and neither assumes any responsibility for any conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

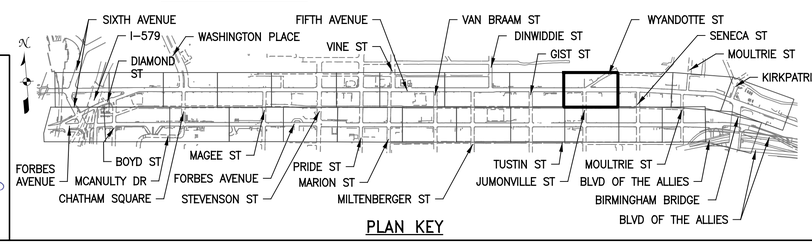
1/12/2021 7:06:51 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT09.dgn

MATCH LINE STA. 475+50 SHEET RS-10

MATCH LINE STA. 480+50 SHEET RS-12





PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 124 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-11

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1/12/2021 7:07:02 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT10.dgn

MATCH LINE STA. 480+50 SHEET RS-11

MATCH LINE STA. 485+50 SHEET RS-13

EX. 16" WATER MAIN; TO BE ABANDONED

EX. 15" WATER MAIN; TO BE ABANDONED

PROP. 16" WATER MAIN

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 6" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

SENECA ST

FIFTH AVE

FIFTH AVE CONSTR ℄

LEGAL R/W LINE

UWD

UCD

DENSE VEGETATION

PARKING

STAIRS

FENCE

GUIDE RAIL

ABANDONED VAULT

PA FURNITURE WAREHOUSE

2127-2135 AKA 2133

2125 AKA 2115

481 482 483 484 485

S 85°18'29" E

2015 2027 2029 2031 2035 2041 2026 2028 2076 2112 2114 2116 2118

FIFTH AVENUE

PLAN KEY

SIXTH AVENUE, I-579, WASHINGTON PLACE, DIAMOND ST, VINE ST, FIFTH AVENUE, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, BOYD ST, MAGEE ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 125 OF 166

ACCESSION NO. _____

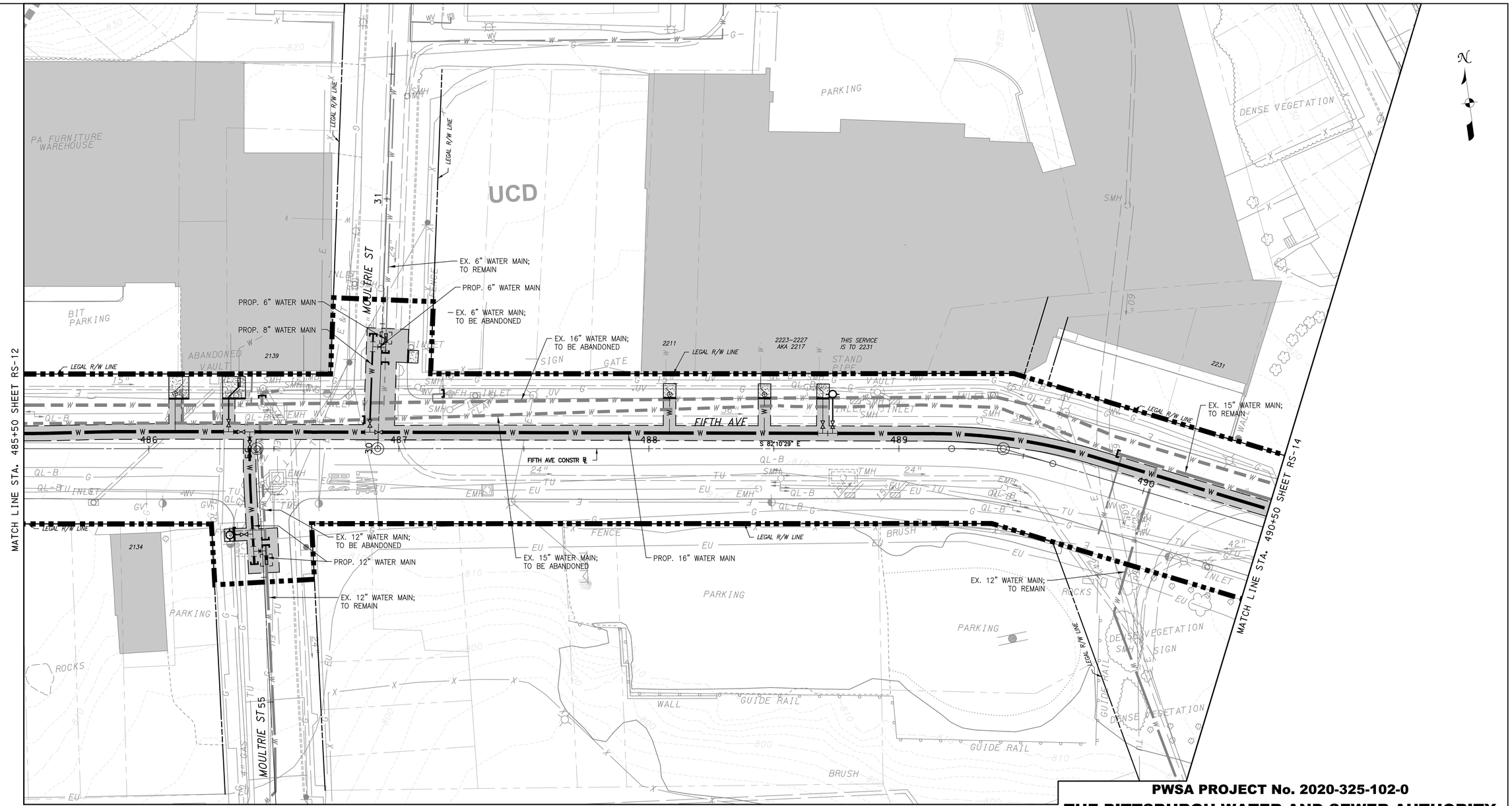
CASE NO. _____

RS-12

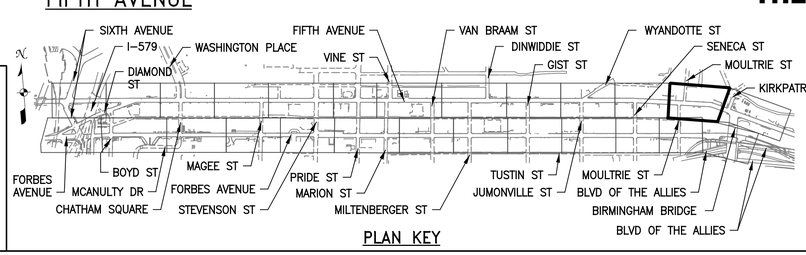
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1/12/2021 7:07:13 PM

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FIFTH AVENUE



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 126 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-13

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1/13/2021 9:37:39 AM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT12.dgn

MATCH LINE STA. 490+50 SHEET RS-13

UCE

UCD

DENSE VEGETATION

KIRKPATRICK ST

STONE WALL

2305-2307 AKA
0 KIRKPATRICK ST

EX. 16" WATER MAIN;
TO BE ABANDONED

EX. 16" WATER MAIN;
TO REMAIN

2317 2319 2321 2325 2327

STAIRS STAIRS STAIRS

ROCKS

BILLBOARD

LEGAL R/W LINE

FIFTH AVE

FIFTH AVE CONSTR ℄

491 492 493 494 495 496

S 65°22'22" E

PROP. 16"
WATER MAIN

EX. 15" WATER MAIN;
TO REMAIN

17 BIRMINGHAM BRIDGE
(SR 2085)

GUIDE RAIL

2340

2358

STAIRS
OAKLAND
SUNSHINE
DAYCARE

PARKING

B. FIELDS
MOTORS

FENCE

WALL

FIFTH AVENUE

PLAN KEY

SIXTH AVENUE
I-579
WASHINGTON PLACE
DIAMOND ST
FORBES AVENUE
MCANULTY DR
CHATHAM SQUARE
BOYD ST
MAGEE ST
FORBES AVENUE
STEVENSON ST
FIFTH AVENUE
VINE ST
PRIDE ST
MARION ST
MILTENBERGER ST
VAN BRAAM ST
DINWIDDIE ST
GIST ST
TUSTIN ST
JUMONVILLE ST
WYANDOTTE ST
SENECA ST
MOULTRIE ST
KIRKPATRICK ST
MOULTRIE ST
BLVD OF THE ALLIES
BIRMINGHAM BRIDGE
BLVD OF THE ALLIES

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048843-E

1-7-2021

PGH2O

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 127 OF 166

ACCESSION NO. _____

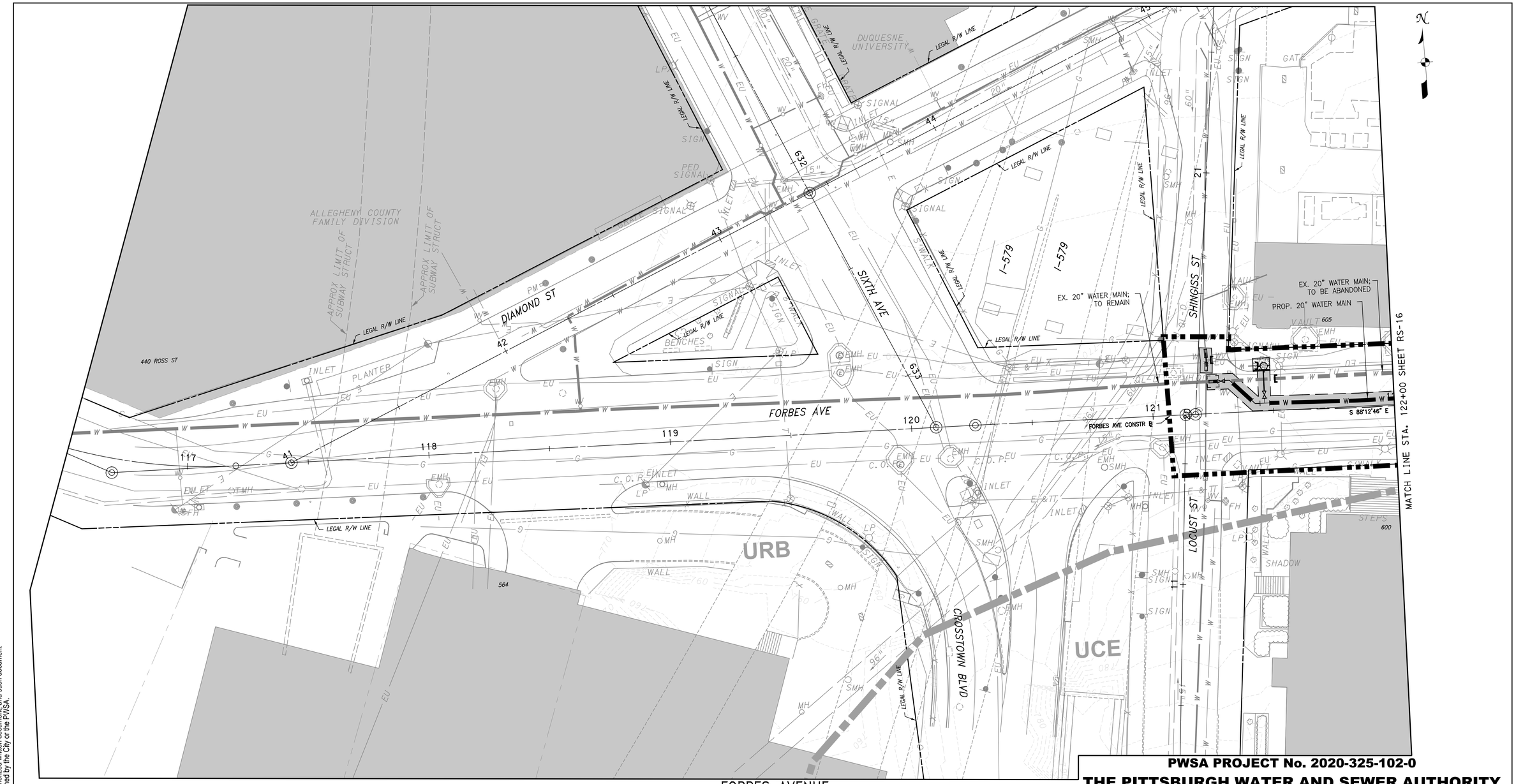
CASE NO. _____

RS-14

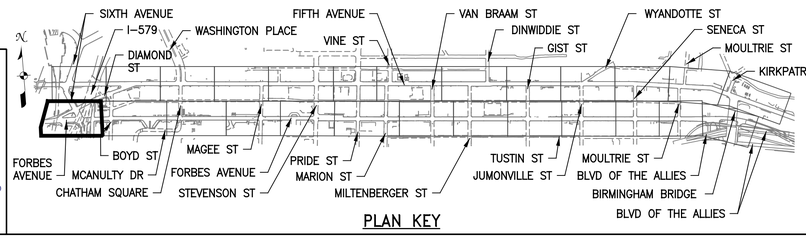
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1/12/2021 7:07:33 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT13.dgn



FORBES AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. **128** OF **166**

ACCESSION NO. _____

CASE NO. _____

RS-15

REVIEWED FOR CONSTRUCTABILTY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

CHARACTER	DATE

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

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1/12/2021 7:07:43 PM

GAI CAD FILE PATH: c:\pwworking\decom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT14.dgn

MATCH LINE STA. 122+00 SHEET RS-15

MATCH LINE STA. 128+00 SHEET RS-17

WATSON ST

BOYD ST

FORBES AVE

MCANULTY DR

ARMSTRONG TUNNEL

DUQUESNE UNIVERSITY

URB

UCE

PROP. 8" WATER MAIN

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

EX. 20" WATER MAIN; TO BE ABANDONED

LEGAL R/W LINE

FORBES AVE CONSTR ℄

S 88°12'46" E

S 85°17'39" E

TO 700

TO 915 LOCUST ST

FORBES AVENUE

PLAN KEY

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, BOYD ST, MCANULTY DR, CHATHAM SQUARE, FORBES AVENUE, MAGEE ST, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVCS DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

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1/12/2021 7:07:53 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT15.dgn

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 129 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-16

MATCH LINE STA. 128+00 SHEET RS-16

MATCH LINE STA. 133+50 SHEET RS-18

DUQUESNE UNIVERSITY

CHATHAM SQUARE

MCANULTY DR

FORBES AVE

FORBES AVE CONSTR 8

EX. 8" WATER MIAN; TO REMAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

PROP. 12" WATER MAIN

EX. 12" WATER MAIN; TO BE ABANDONED

EX. 12" WATER MAIN; TO REMAIN

LEGAL R/W LINE

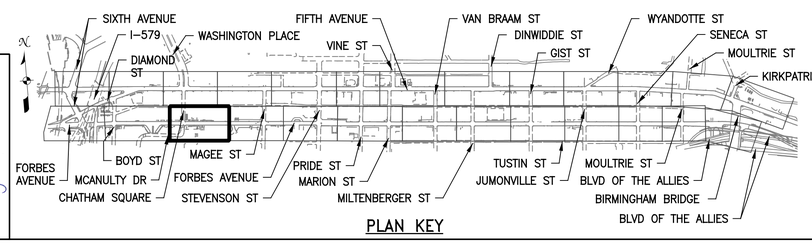
S 85°17'39" E

UCE

URB

UCD

FORBES AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 130 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-17

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of any utilities and assumes no responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 7:08:03 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT16.dgn

MATCH LINE STA. 133+50 SHEET RS-17

MATCH LINE STA. 138+50 SHEET RS-19

N

URB

UCD

FORBES AVE

FORBES AVE CONSTR ℄

MAGEE ST

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

LEGAL R/W LINE

LIFE'S WORK OF WESTERN PA

AJ PALUMBO CENTER

PARKING

DENSE WOODS

GUIDE RAIL

FENCE

WALL

S'WALK

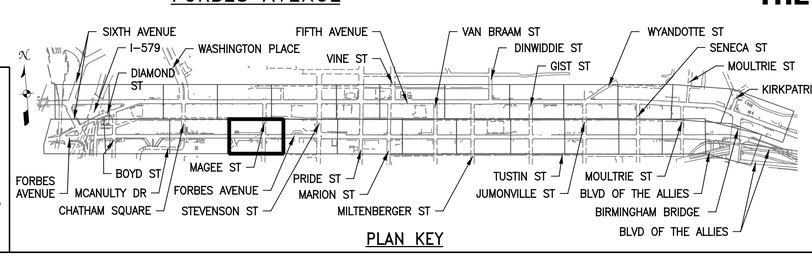
STEPS

RAILING

TO 1208

S 85°17'39" E

FORBES AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048434-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 131 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-18

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of utilities which may be encountered, and assumes no responsibility for any conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

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GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT17.dgn

MATCH LINE STA. 138+50 SHEET RS-18

MATCH LINE STA. 143+50 SHEET RS-20

N

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

EX. 8" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

PROP. 8" WATER MAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

LEGAL R/W LINE

FORBES AVE CONSTR ℄

FORBES AVE

STEVENSON ST

FORBES STEVENSON BUILDING

PARKING GARAGE

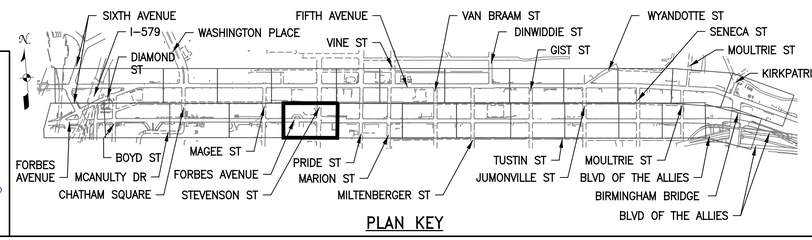
URB

UCD

UWB

TO 1420

FORBES AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 132 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-19

MATCH LINE STA. 143+50 SHEET RS-19

MATCH LINE STA. 149+50 SHEET RS-21

FORBES MED TECH CENTER

UWB

PARKING GARAGE

RYAN'S AUTO GLASS

FORBES AVE

FORBES AVE CONSTR ℄

PRIDE ST

MARION ST

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

EX. 6" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

PROP. 20" WATER MAIN

PROP. 6" WATER MAIN

EX. 20" WATER MAIN; TO BE ABANDONED

EX. 12" WATER MAIN; TO BE ABANDONED

EX. 12" WATER MAIN; TO REMAIN

PROP. 12" WATER MAIN

TO 1455 LOCUST

TO 1600

LEGAL R/W LINE

1425

1420

1517

1514

1518

11 MARION

11-BEAR MARION

13 MARION

1611-1613 AKA 1609

S 84°40'32" E

S 85°17'40" E

144

145

146

147

148

149

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

FORBES AVENUE

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, STEVENSON ST, MAGEE ST, FORBES AVENUE, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 133 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-20

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information herein made available, including but not limited to information concerning the location and condition of utilities, and assumes neither responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 7:08:33 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT19.dgn

MATCH LINE STA. 149+50 SHEET RS-20

MATCH LINE STA. 154+50 SHEET RS-22

UWB

PARKING

DENSE WOODS

FENCE

INLET

POLE

SIGN

LEGAL R/W LINE

VAN BRAAM ST

121 VAIN BRAAM ST

EX. 6" WATER MAIN; TO REMAIN

PROP. 6" WATER MAIN

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

1621 AKA 1611–1613

1621

1703 1705 1707 1709 1711 1713

FORBES AVE CONSTR ℄

FORBES AVE

150 151 152 153 154

S 85°17'40" E

1600 1620 1622 1624 1628 1632

EX. 20" WATER MAIN; TO BE ABANDONED

1700 1706 1708 1710–1712 1714

PROP. 8" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 6" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

TO 1616

RYAN'S AUTO GLASS

WALL

MB'S

VAULT

PRIVATE SIGN

LP

EMH

MH

FH

FORBES AVENUE

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, MAGEE ST, FORBES AVENUE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PGH2O

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 134 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-21

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MATCH LINE STA. 154+50 SHEET RS-21

MATCH LINE STA. 159+50 SHEET RS-23

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 6" WATER MAIN

PROP. 8" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

LEGAL R/W LINE

MILTENBERGER ST

FORBES AVE

FORBES AVE CONSTR ℄

S 85°17'40" E

PARKING

KENDALL TOWING AND AUTO REPAIR

UWB

1722 VACANT LOT

23 MILTENBERGER ST

1819 AKA 1801

1835

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

CALC. BOOK PG.

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

FORBES AVENUE

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST

FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, FORBES AVENUE, STEVENSON ST, MAGEE ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 135 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-22

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1/12/2021 7:08:54 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT21.dgn

MATCH LINE STA. 159+50 SHEET RS-22

MATCH LINE STA. 164+50 SHEET RS-24

UWD

UWB

FORBES AVE

S 85°17'40" E

FORBES AVE CONSTR E

EX. 6" WATER MAIN; TO REMAIN

PROP. 6" WATER MAIN

PROP. 8" WATER MAIN

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

PROP. 12" WATER MAIN

EX. 12" WATER MAIN; TO BE ABANDONED

EX. 12" WATER MAIN; TO REAMAIN

GIST ST

207 GIST ST

LEGAL R/W LINE

1835 1840 1850 1854 1901 1903 1908 1910 1914 1915 1917 1919–1925 1920 1927

160 161 162 163 164

20 21 12

SHADOW STEPS WALL SIGN POST POLE INLET MH SMH VAULT FENCE POOL GATE PLANTER'S Z PARKING DENSE VEGETATION S'WALK

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

FORBES AVENUE

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST

FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, FORBES AVENUE, STEVENSON ST, MAGEE ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 136 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-23

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GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT22.dgn

MATCH LINE STA. 164+50 SHEET RS-23

MATCH LINE STA. 169+50 SHEET RS-25

N

UWB

UCD

UCB

JUMONVILLE ST

FORBES AVE

FORBES AVE CONSTR E

LEGAL R/W LINE

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 4" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

DENSE VEGETATION

WALL

FENCE

SIGN

INLET

POLE

POST

BRUSH

SHADOW

PARKING

GUIDE RAIL

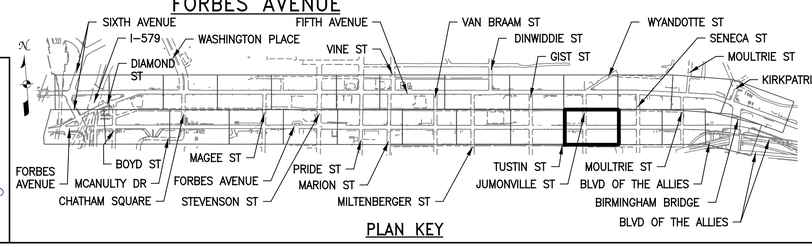
VACANT LOT

S 85°17'40" E

1920 2000 2001 2002 2003 2004 2005 2006 2006.5 2008 2008.5 2009 2010 2010.5 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2029

165 166 167 168 169

FORBES AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 137 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-24

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS PE-048941-E

1-7-2021

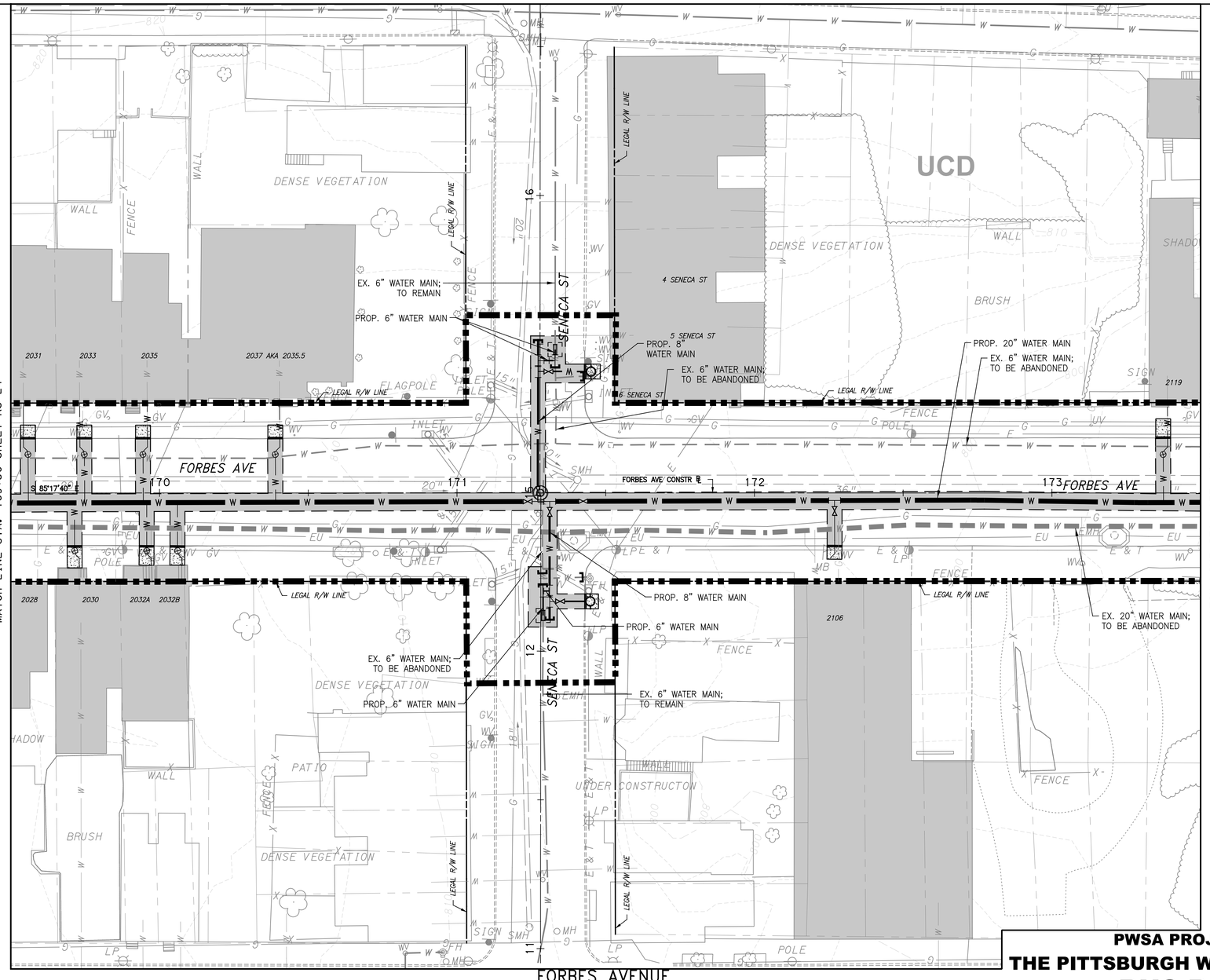
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1/12/2021 7:09:15 PM

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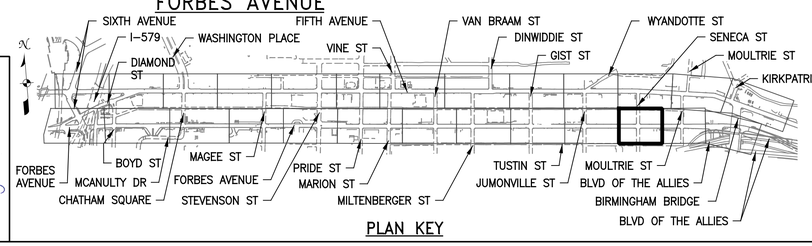
MATCH LINE STA. 169+50 SHEET RS-24

MATCH LINE STA. 173+50 SHEET RS-26



N

FORBES AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED | SHEET NO. 138 OF 166 | ACCESSION NO. _____

DATE: JANUARY, 2021 | CASE NO. _____

RS-25

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT. SRVS/SR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048443-E

1-7-2021

PGH2O

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1/12/2021 7:09:25 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT24.dgn

MATCH LINE STA. 173+50 SHEET RS-25

MATCH LINE STA. 177+50 SHEET RS-27

N

CONSTRUCTON SITE

2123

WALL

LEGAL R/W LINE

EX. 12" WATER MAIN; TO REMAIN

PROP. 12" WATER MAIN

EX. 12" WATER MAIN; TO BE ABANDONED

MOULTRIE ST

54

TO 2123

2121

2125

2129-2131

2133

2135

FENCE

S'WALK

VAULT

FORBES AVE

S 85°17'40" E

174

175

176

177

S 86°35'54" E

FORBES AVE CONSTR ℄

S 86°13'16" E

PROP. 12" WATER MAIN

EX. 24" WATER MAIN; TO BE ABANDONED

EX. 6" WATER MAIN; TO BE ABANDONED

BRUSH

BILLBOARD

EX. 20" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

2132

PROP. 8" WATER MAIN

PROP. 6" WATER MAIN

2128

PARKING

UCD

DENSE VEGETATION

POST POST

52

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 24" WATER MAIN

EX. 6" WATER MAIN; TO REMAIN

WEF

SIGN

POLE

FORBES AVENUE

PLAN KEY

SIXTH AVENUE
I-579
DIAMOND ST
WASHINGTON PLACE
FIFTH AVENUE
VINE ST
VAN BRAAM ST
DINWIDDIE ST
GIST ST
WYANDOTTE ST
SENECA ST
MOULTRIE ST
KIRKPATRICK ST
FORBES AVENUE
MCANULTY DR
CHATHAM SQUARE
BOYD ST
MAGEE ST
FORBES AVENUE
STEVENSON ST
PRIDE ST
MARION ST
MILTENBERGER ST
TUSTIN ST
JUMONVILLE ST
MOULTRIE ST
BLVD OF THE ALLIES
BIRMINGHAM BRIDGE
BLVD OF THE ALLIES

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 139 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-26

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

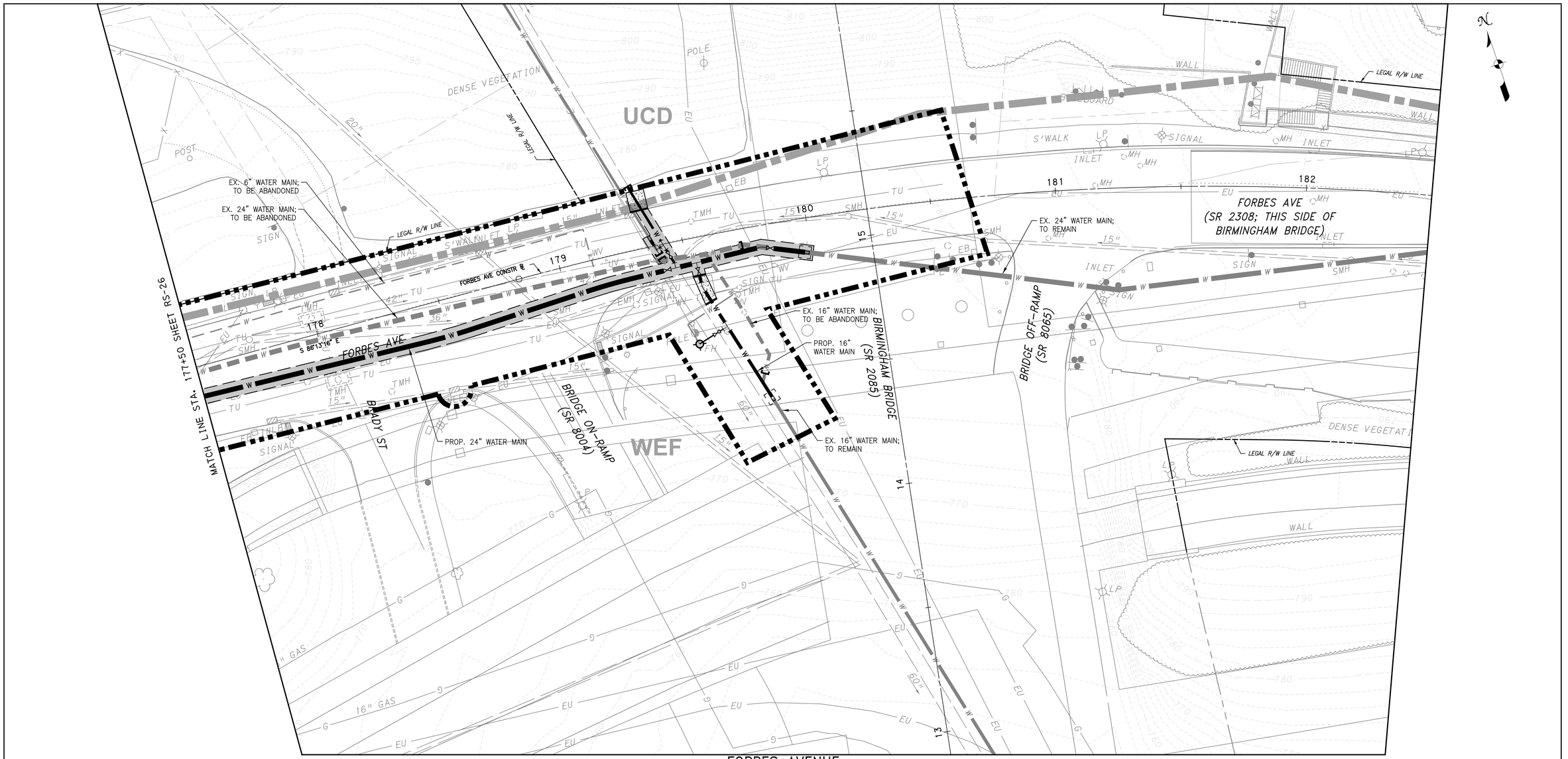
1-7-2021

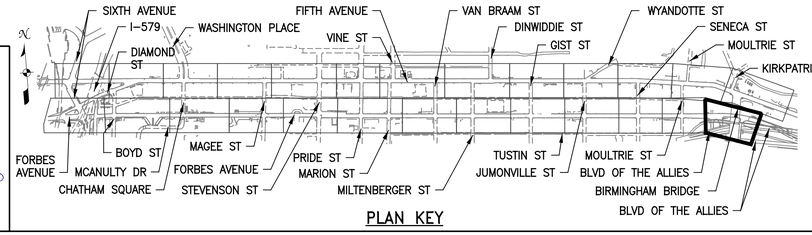
DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of utilities and structures, and neither assumes responsibility for conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

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1/12/2021

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT25.dgn





PLAN KEY

REVIEWED FOR CONSTRUCTABILTY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
CHARACTER	DATE	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS PE-048043-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 140 OF 166

ACCESSION NO. _____

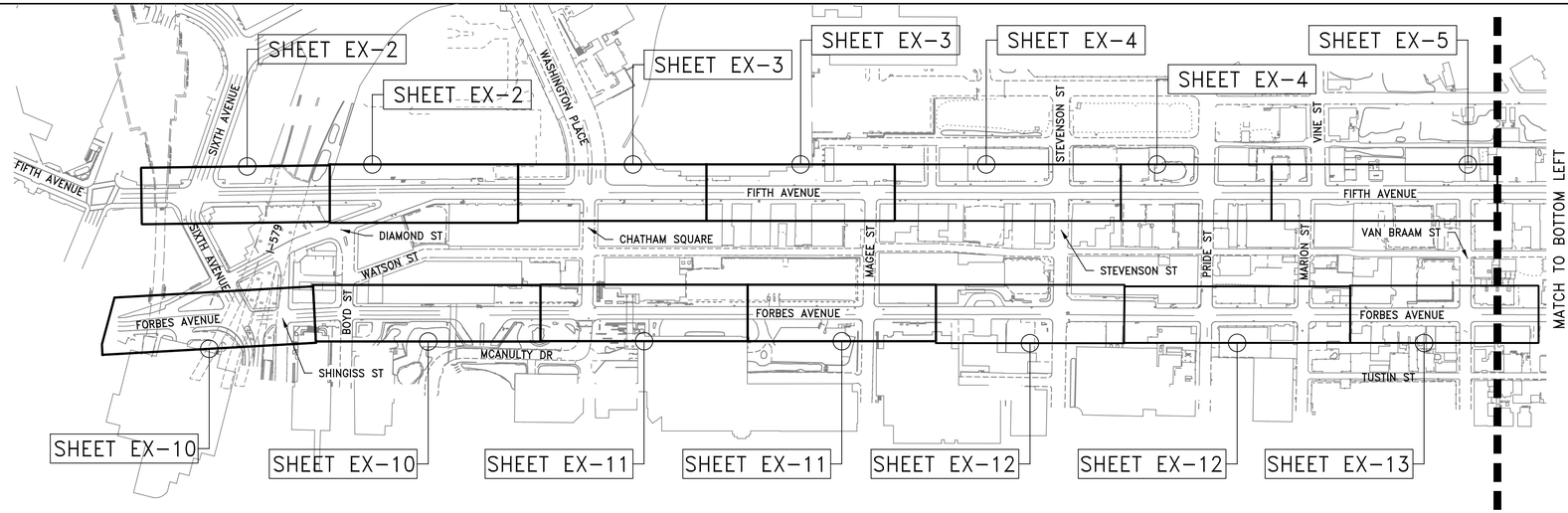
CASE NO. _____

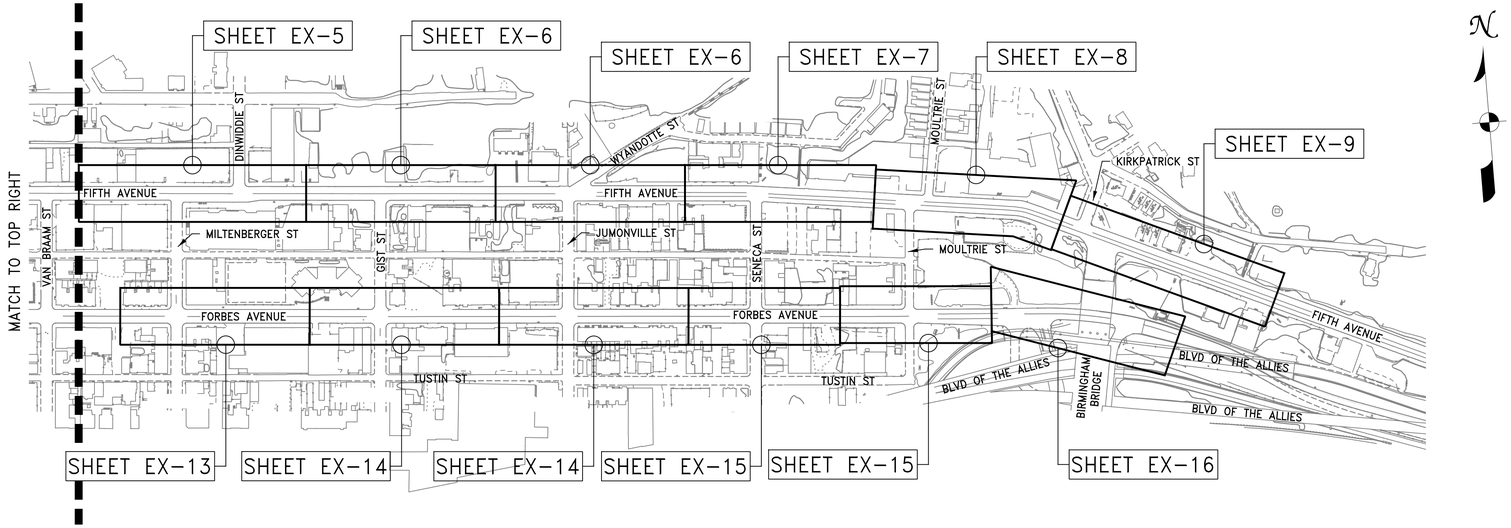
RS-27

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 200'

200' 0 200' 400'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048943-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EXISTING CONDITIONS PLAN LOCATION MAP & SHEET INDEX

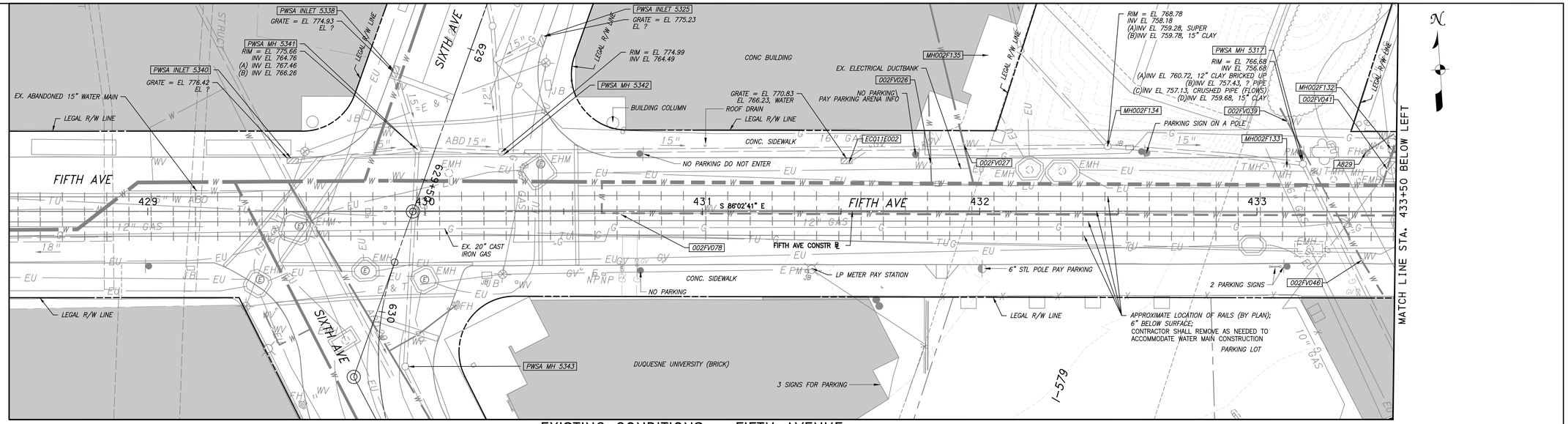
SCALE: AS NOTED SHEET NO. ACCESSION NO. _____

DATE: JANUARY, 2021 **141** OF **166** CASE NO. _____

EX-1

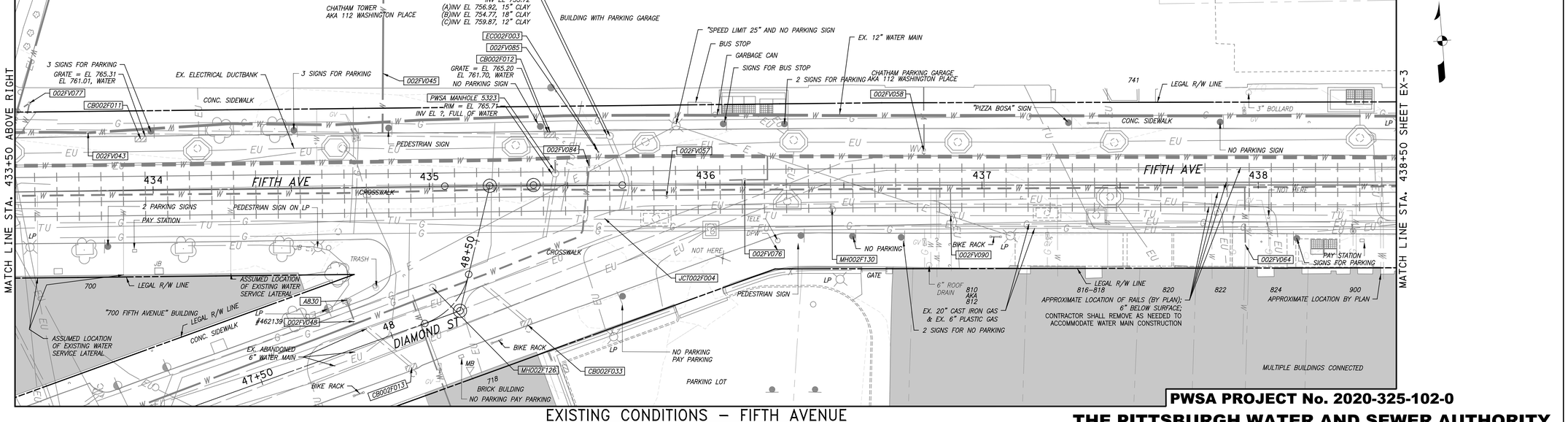
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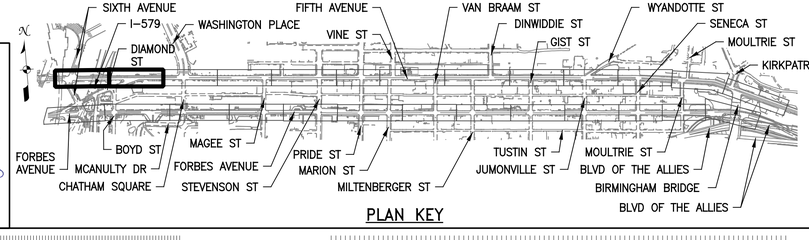
EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 142 OF 166
ACCESSION NO. _____
CASE NO. _____

EX-2

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

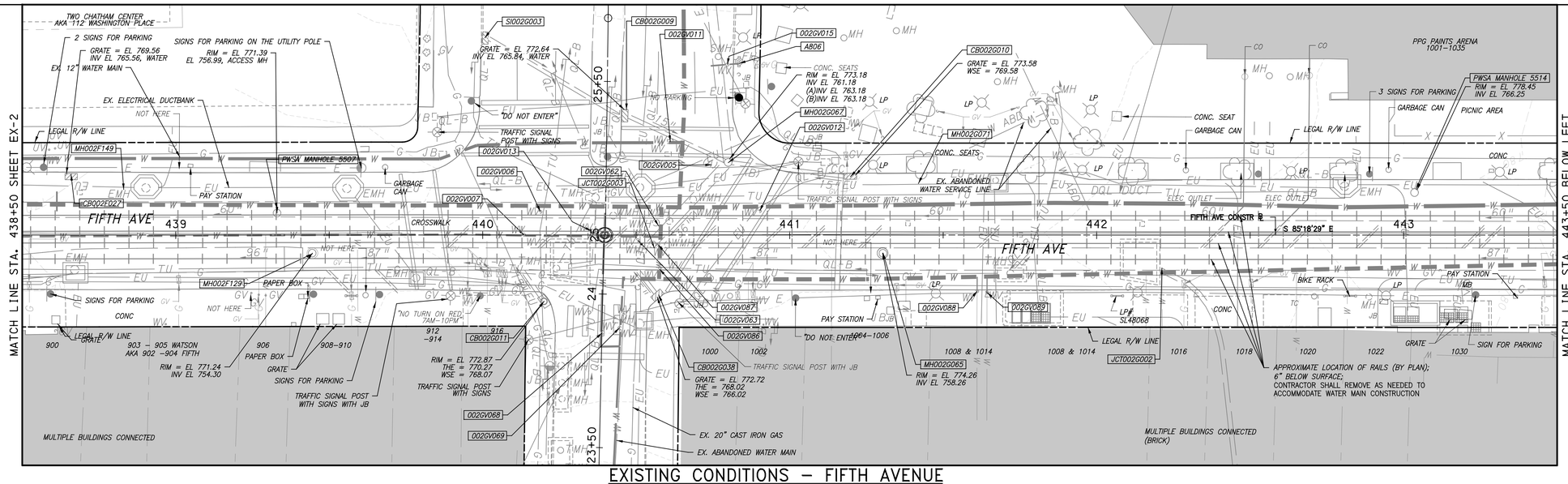
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROJANOS
ENGINEER
1-7-2021

PGH2O

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of water and other pipelines and utilities, and neither assumes any responsibility for any interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

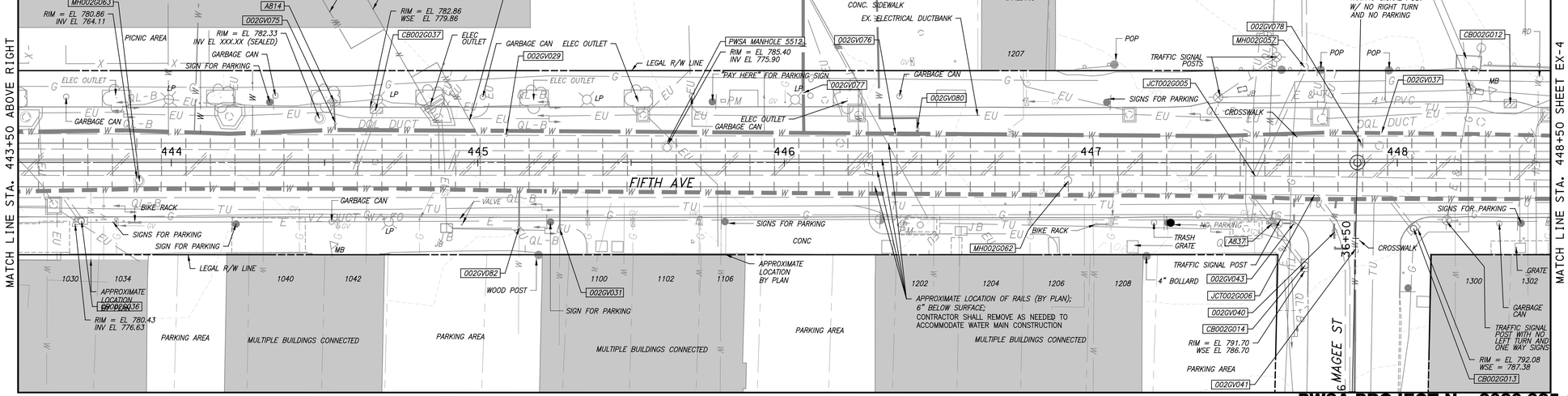
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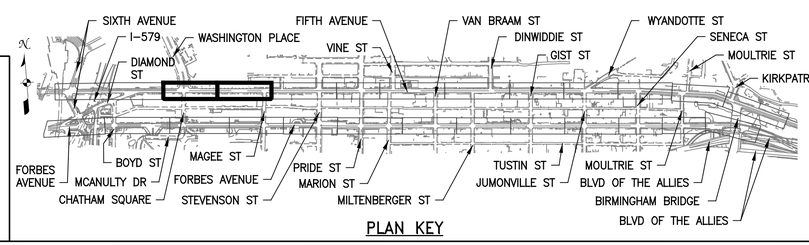
EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 143 OF 166

ACCESSION NO. _____

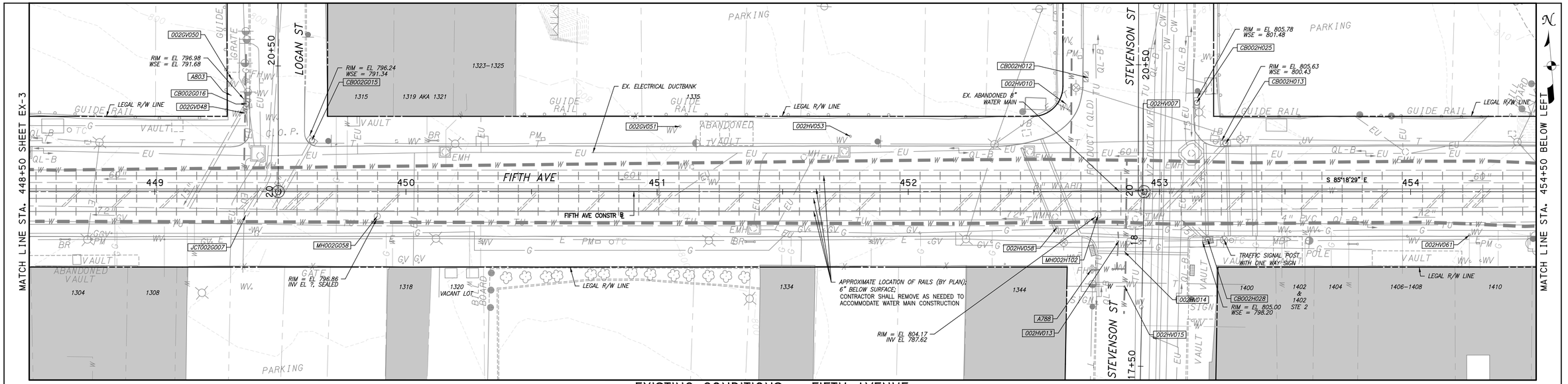
CASE NO. _____

EX-3

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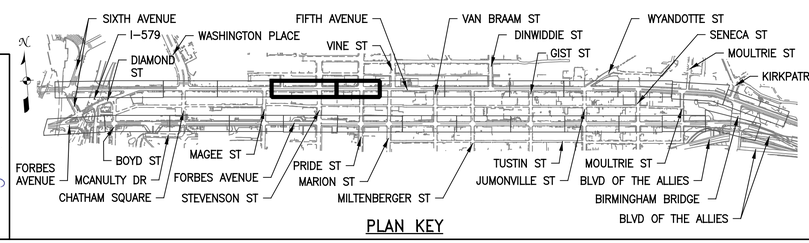


EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'

EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
	CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 144 OF 166

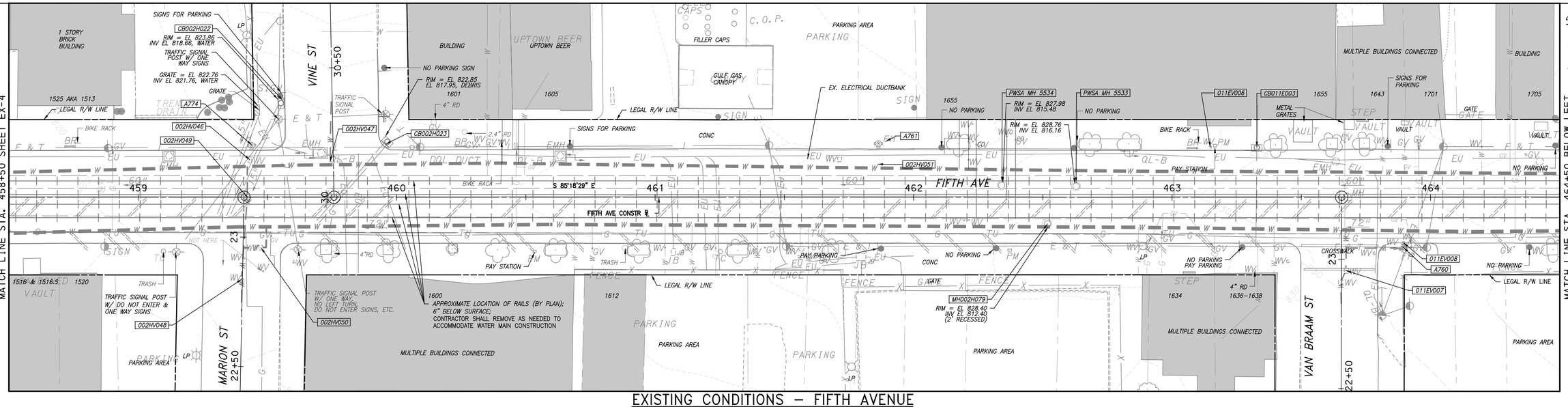
ACCESSION NO. _____

CASE NO. _____

EX-4

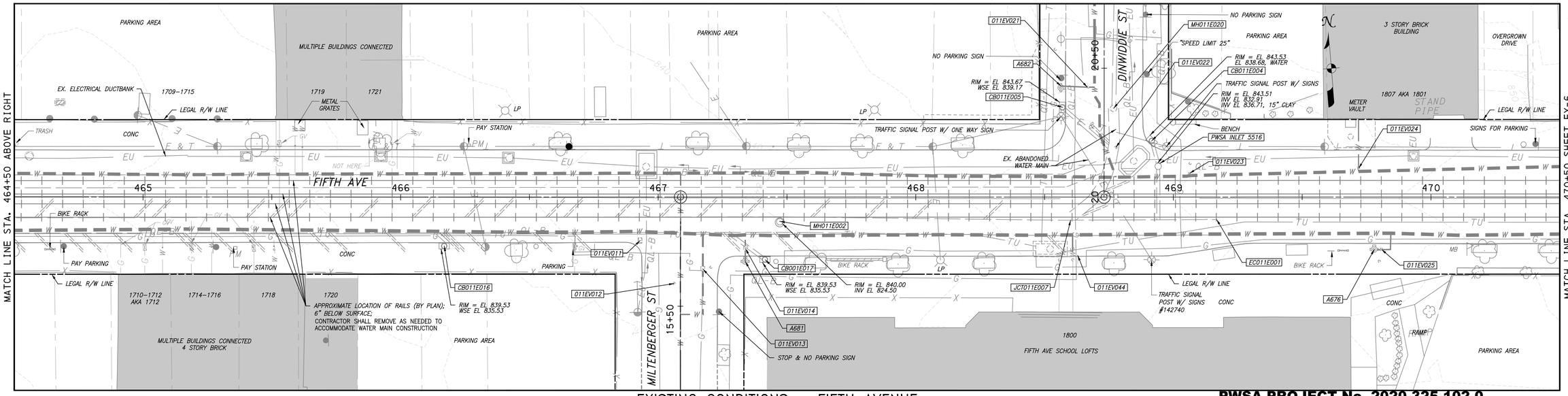
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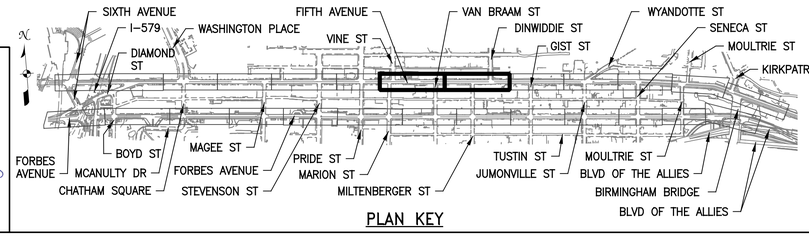
EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of other utilities and improvements, and neither assumes any responsibility for any interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT.SRVS/GS		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD./CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 145 OF 166

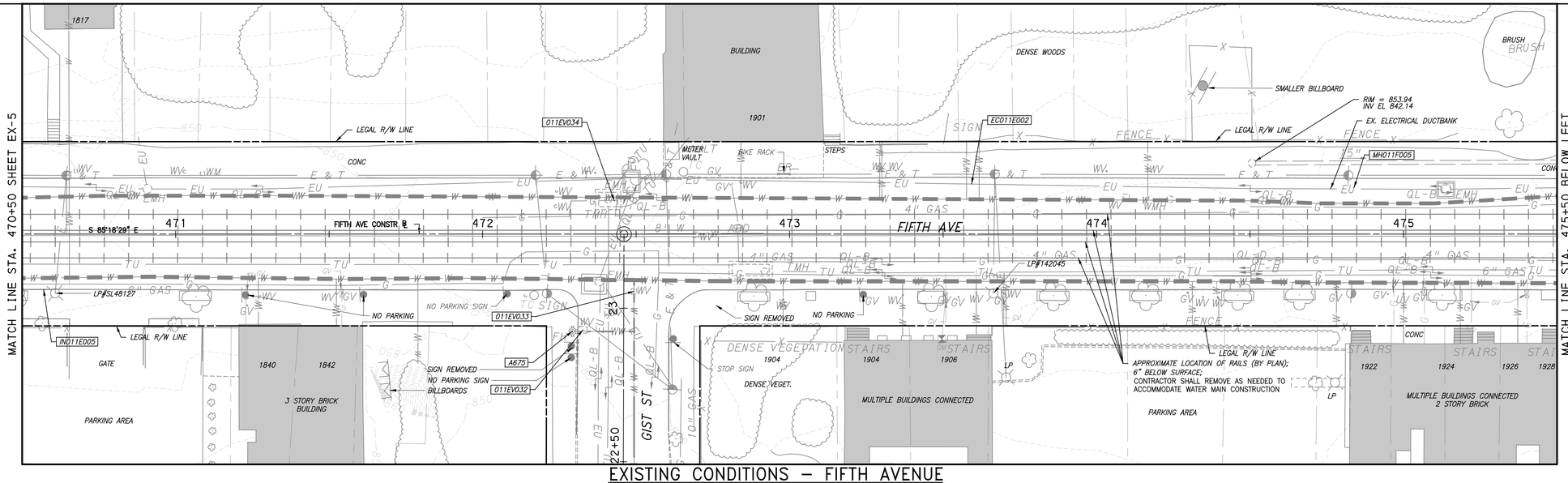
ACCESSION NO. _____

CASE NO. _____

EX-5

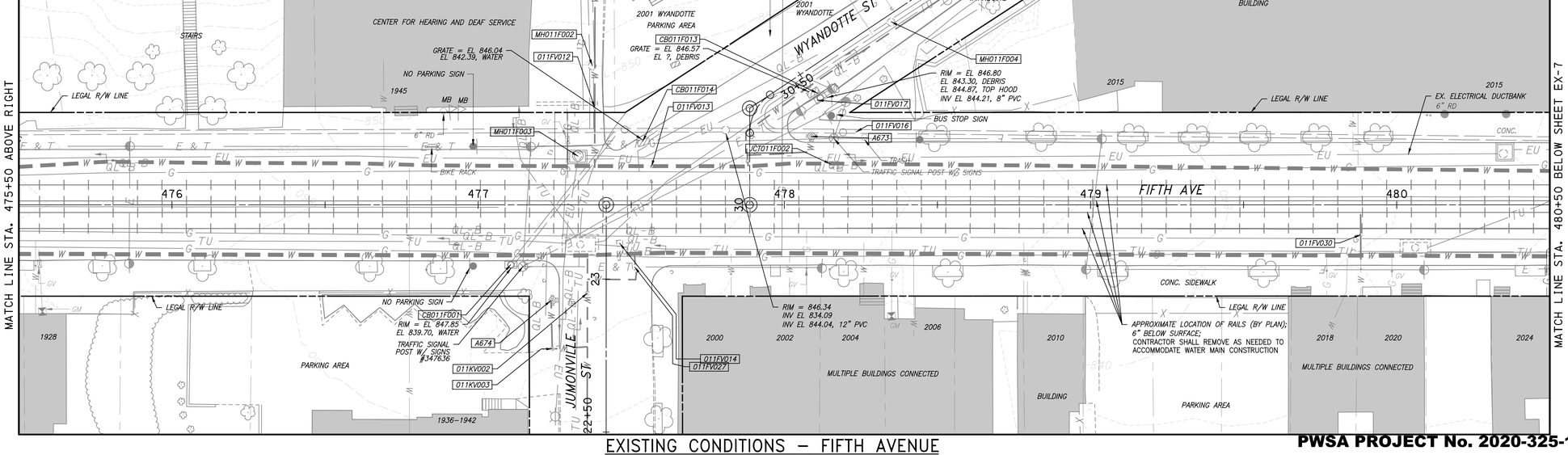
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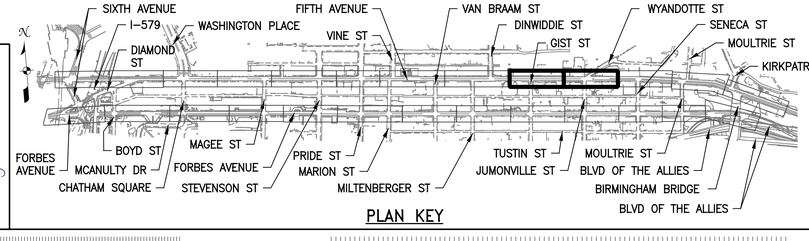
EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 146 OF 166
ACCESSION NO. _____
CASE NO. _____

EX-6

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'
REVISIONS

CHARACTER	DATE

PGH2O

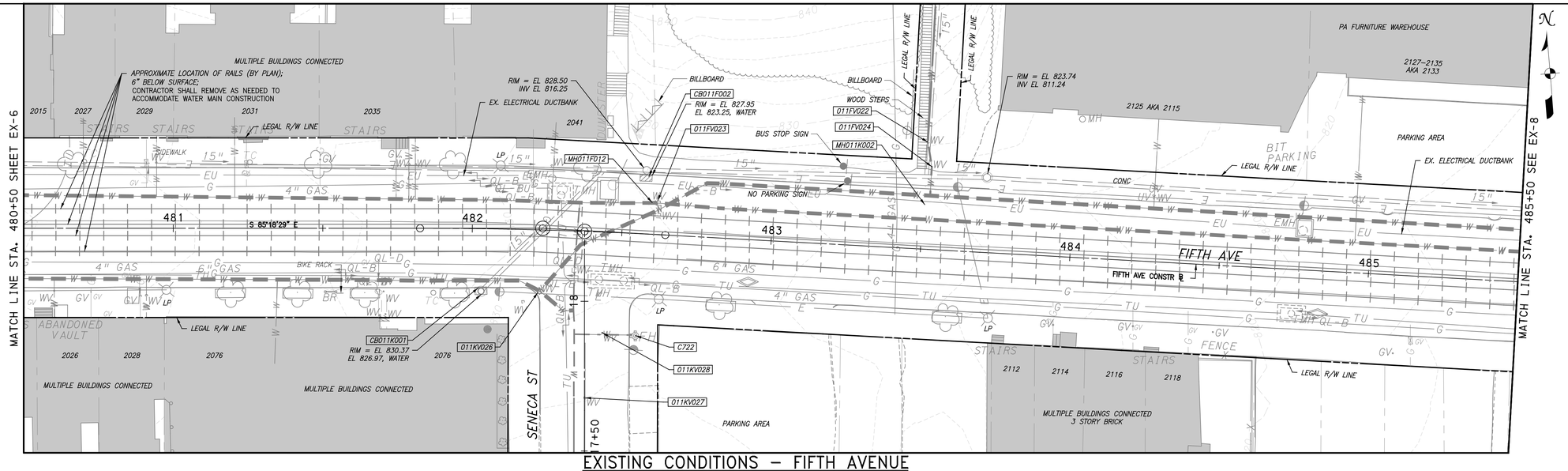
DESIGNED BY:
gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048443-E
1-7-2021

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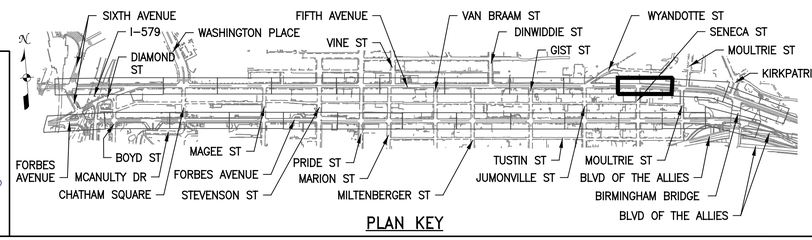
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GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT33.dgn



EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 147 OF 166
ACCESSION NO. _____
CASE NO. _____

EX-7

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR / DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-084843-E

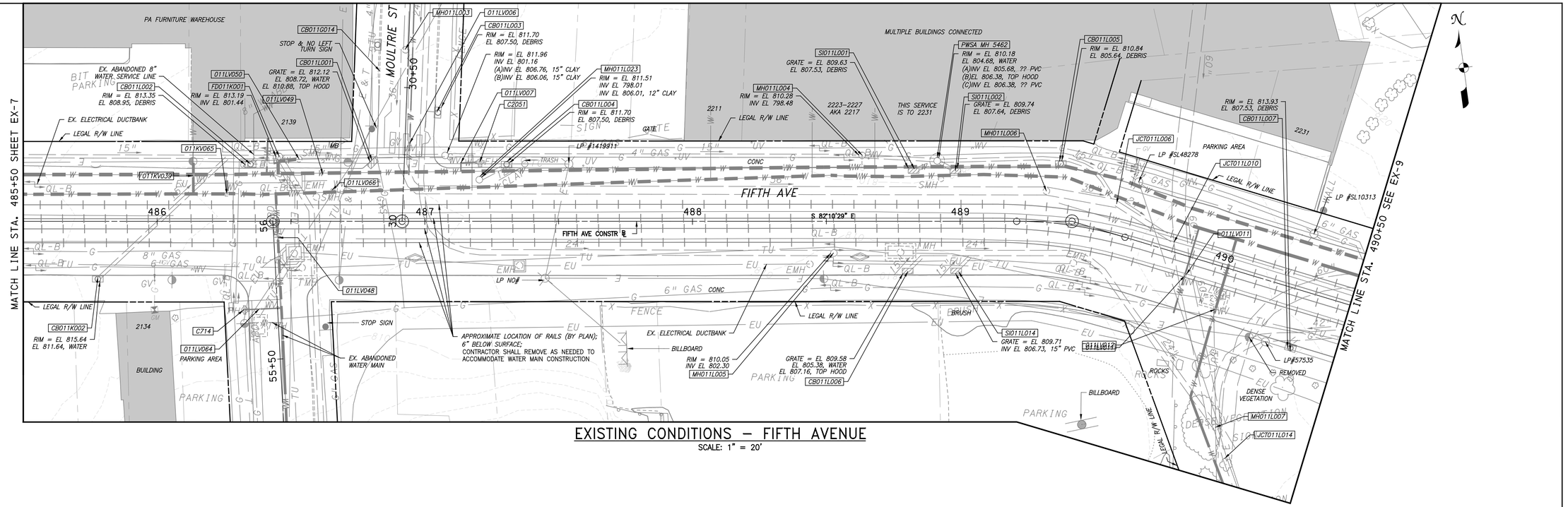
1-7-2021

PGH2O

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and/or existence of utilities and other man-made features and conditions, and neither assumes responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

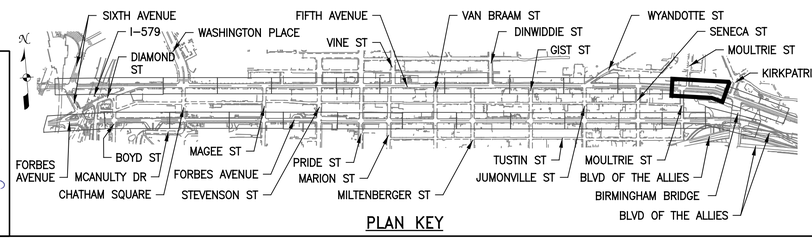
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EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
CHARACTER	DATE	

REVIEWED FOR CONSTRUCTABILTY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED SHEET NO. 148 OF 166 ACCESSION NO. _____

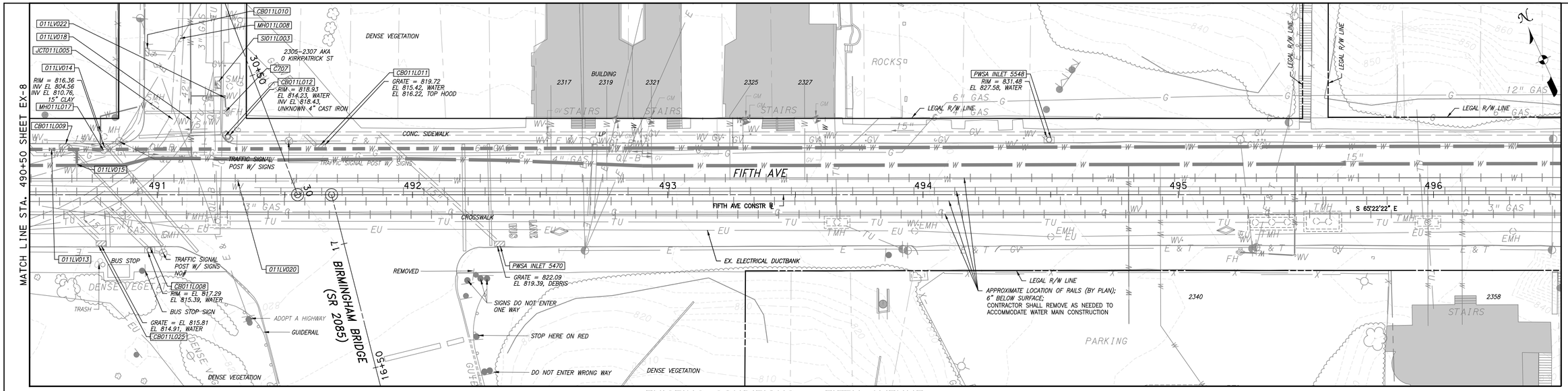
DATE: JANUARY, 2021 CASE NO. _____

EX-8

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of water, sewer, and storm lines, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

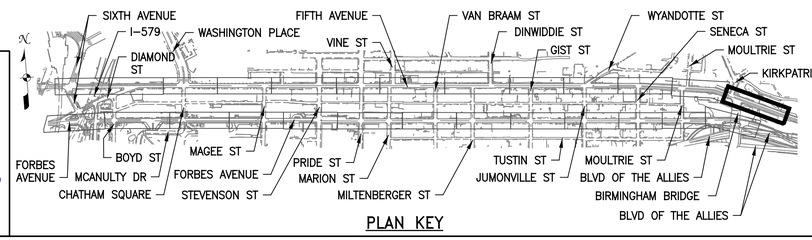
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EXISTING CONDITIONS – FIFTH AVENUE

SCALE: 1" = 20'



PLAN KEY

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of any utility, and neither the City of Pittsburgh nor the PWSA assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK		PG.

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
CHARACTER	DATE	

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048437-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 149 OF 166

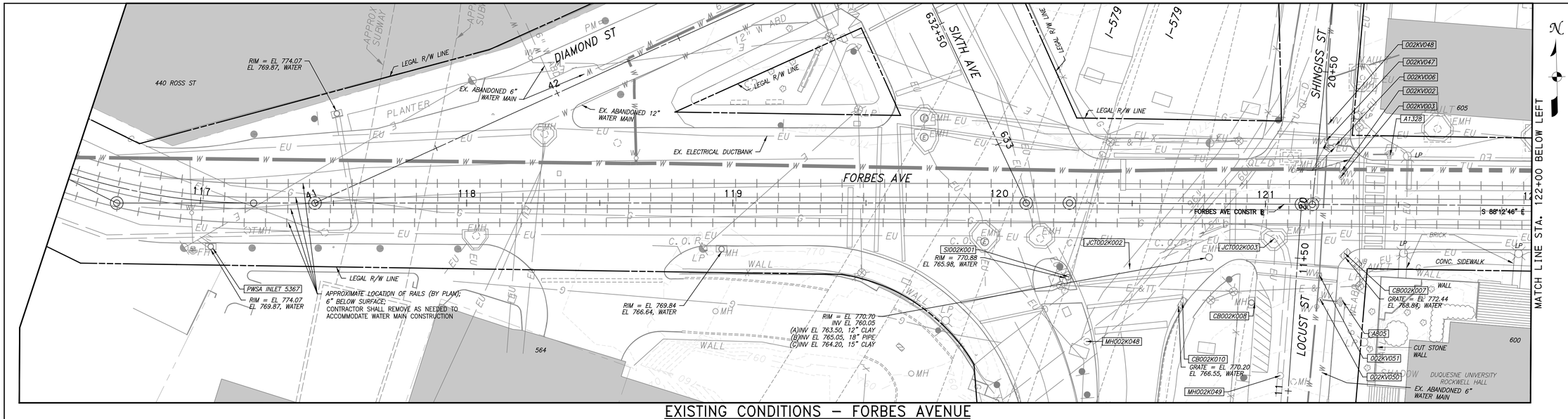
ACCESSION NO. _____

CASE NO. _____

EX-9

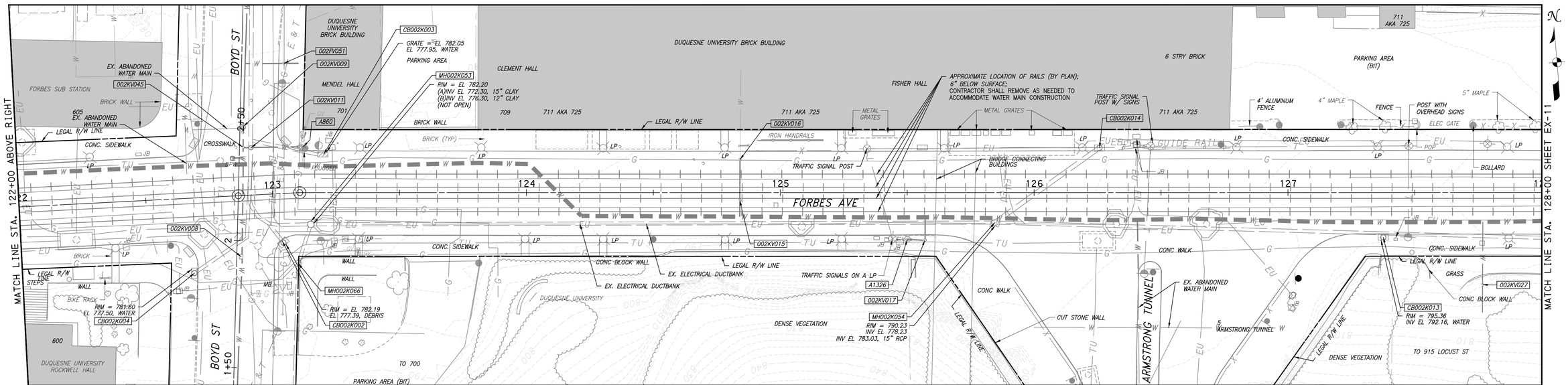
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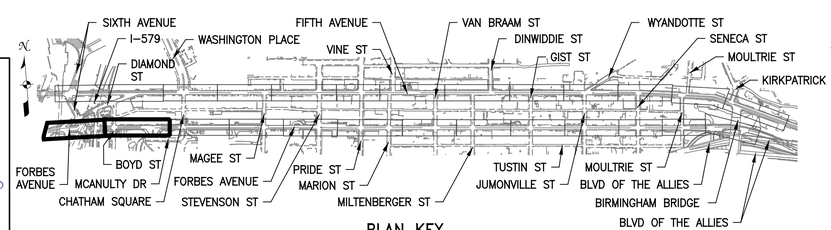
EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
	CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 150 OF 166

ACCESSION NO. _____

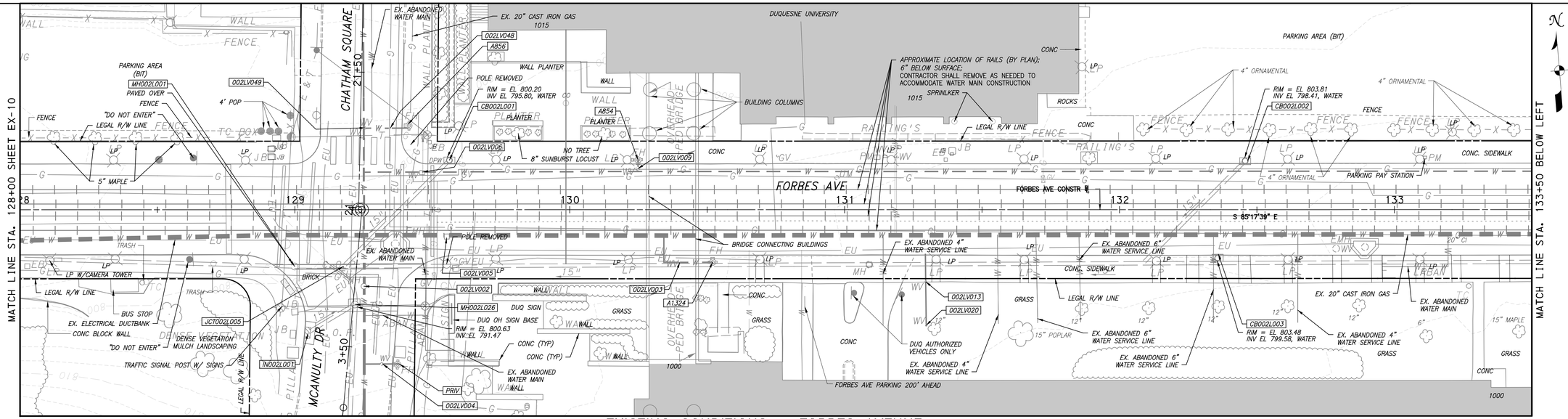
CASE NO. _____

EX-10

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of underground utilities, and assumes no responsibility for the completeness or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

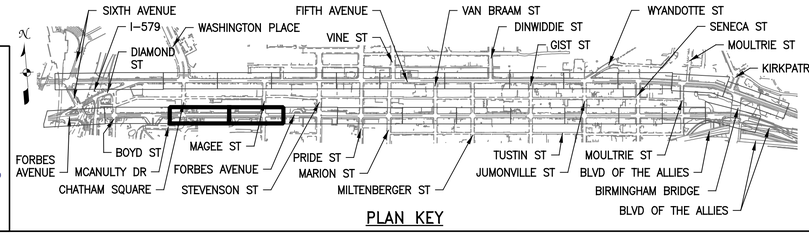
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EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
	CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 151 OF 166

ACCESSION NO. _____

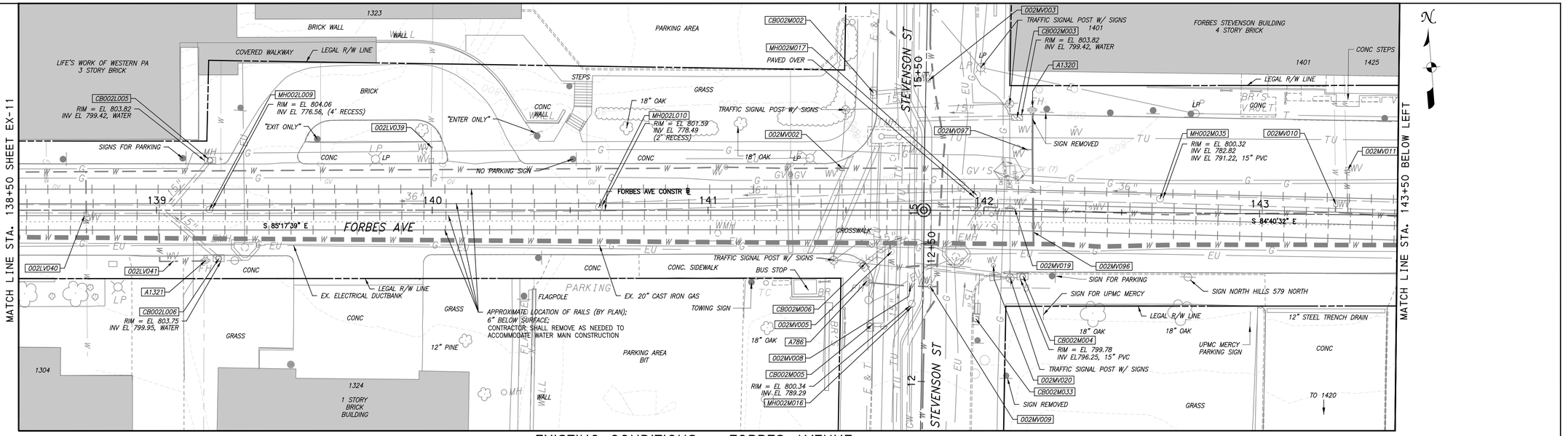
CASE NO. _____

EX-11

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of utilities or other improvements. Any person using this information assumes all responsibility for any interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

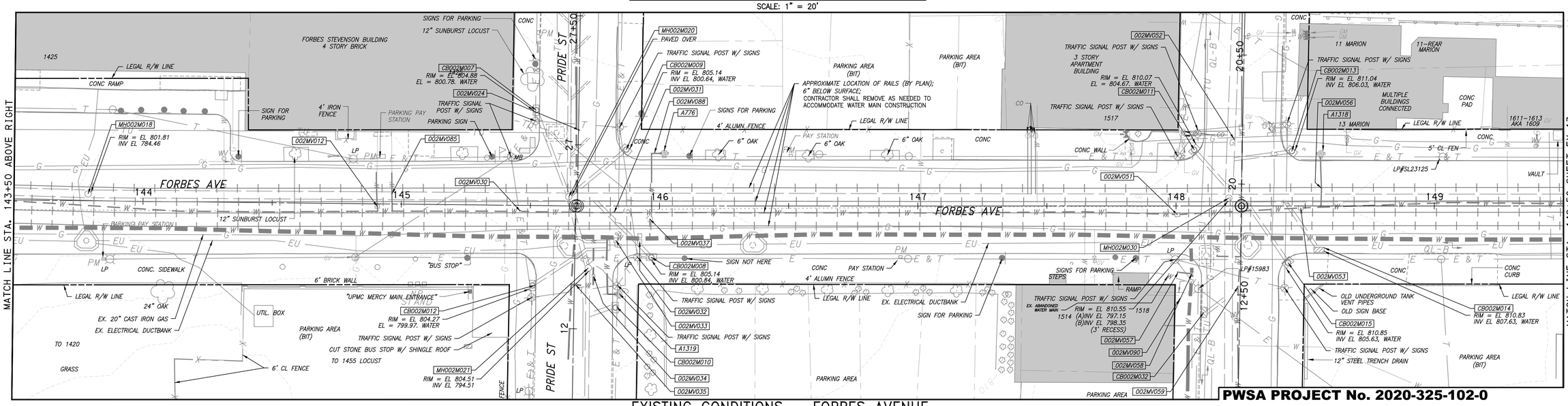
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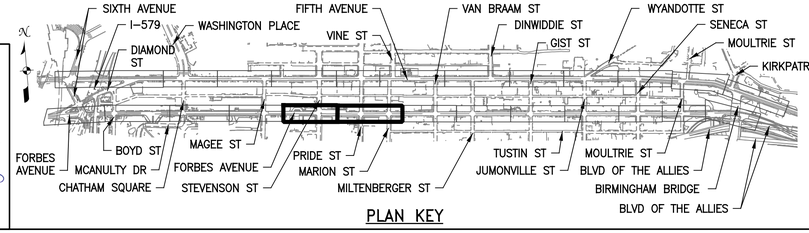
EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 152 OF 166
ACCESSION NO. _____
CASE NO. _____

EX-12

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1-7-2021

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

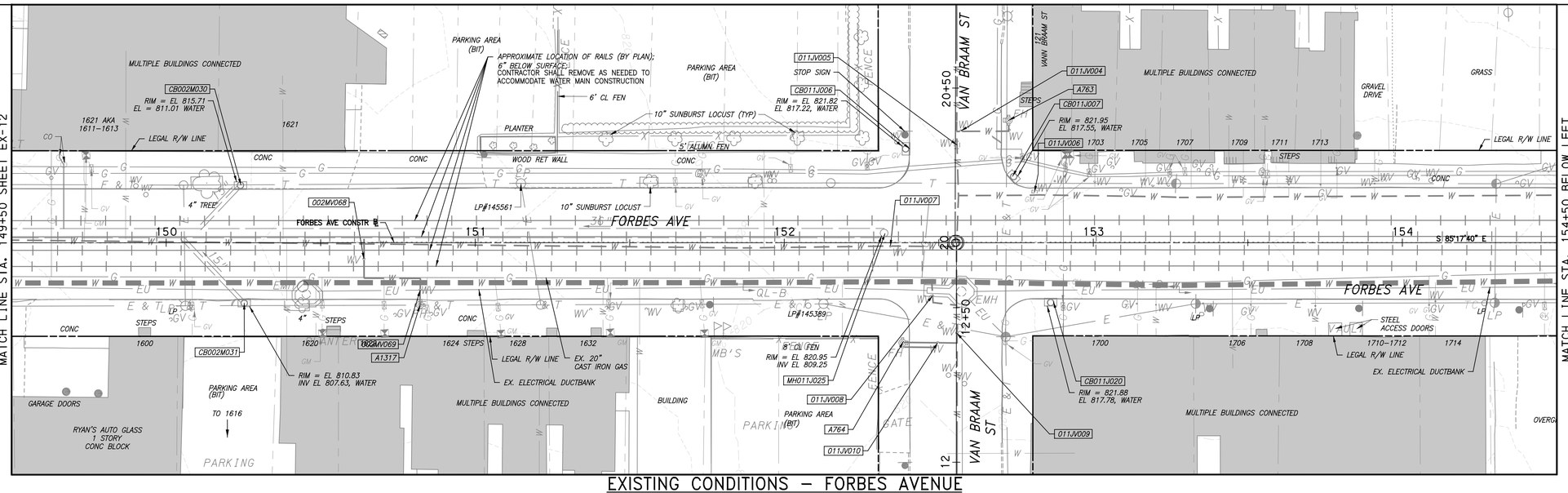
REVISIONS		
CHARACTER	DATE	

PGH2O

1/12/2021 7:14:39 PM

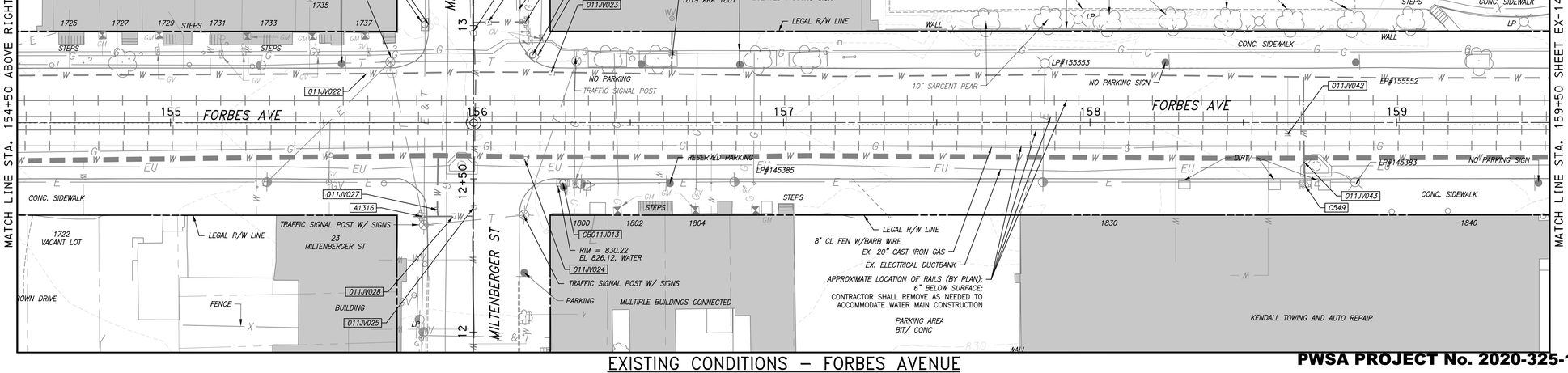
DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the locations or characteristics of water lines, sewer lines, and other utilities, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

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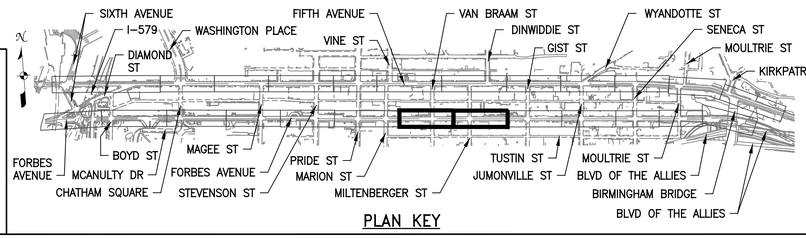
EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS		
	CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1-7-2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 153 OF 166

ACCESSION NO. _____

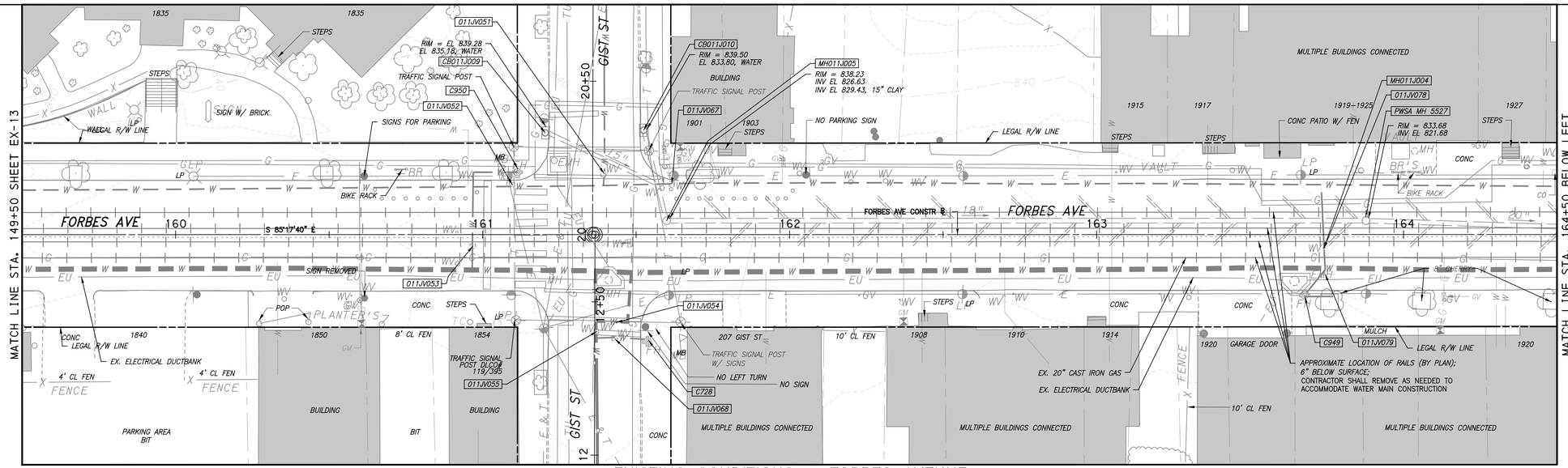
CASE NO. _____

EX-13

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of subsurface structures, and neither assumes responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

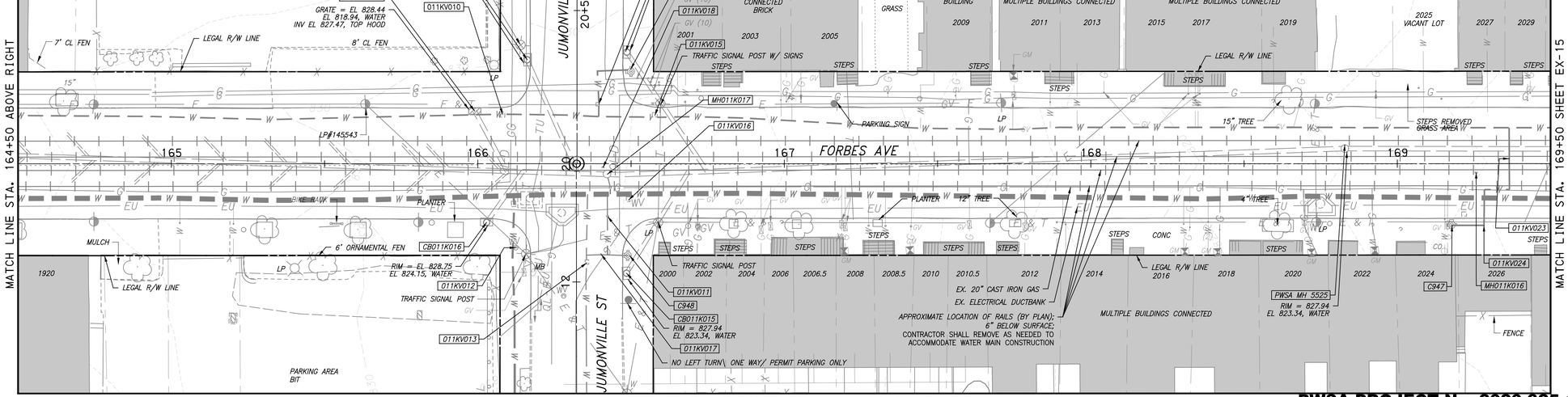
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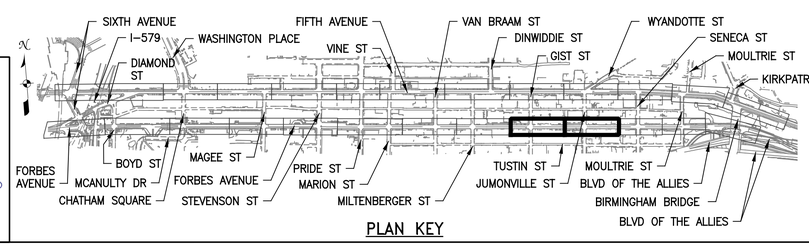
EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 154 OF 166
ACCESSION NO. _____
CASE NO. _____

EX-14

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

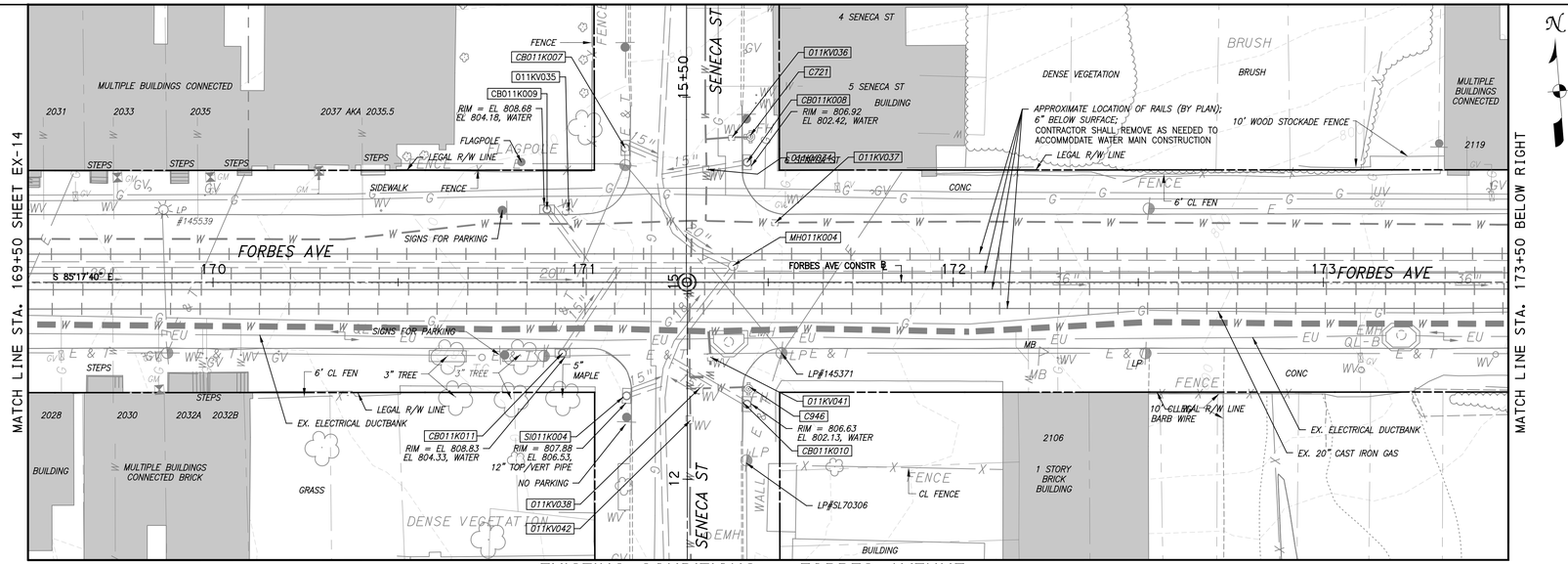
1-7-2021

PGH2O

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of utilities or other improvements, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

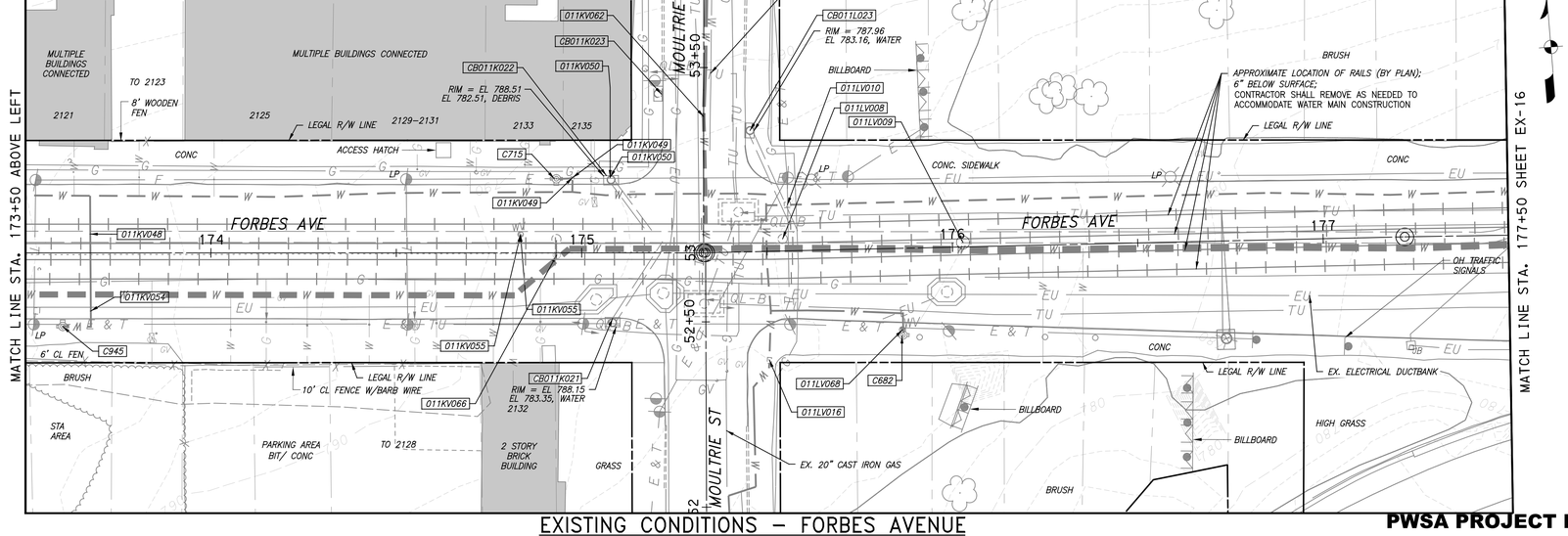
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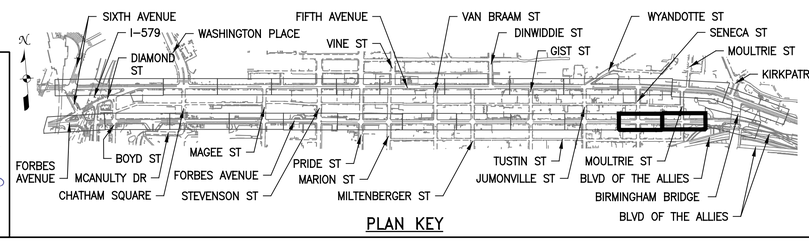
EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 155 OF 166
ACCESSION NO. _____
CASE NO. _____

EX-15

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

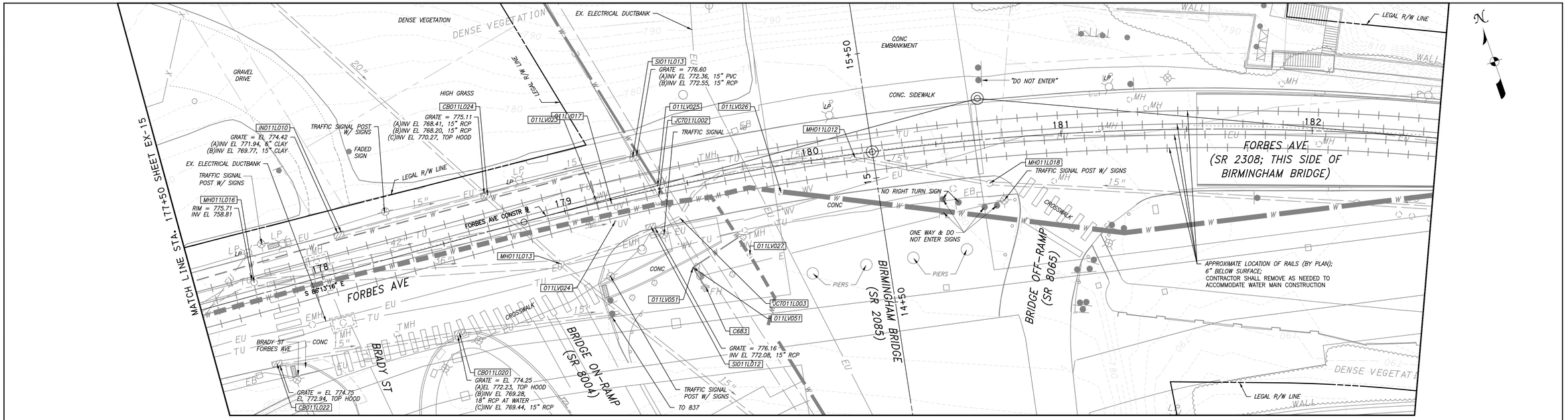
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048843-E

1-7-2021

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of underground utilities, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

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GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT35.dgn



EXISTING CONDITIONS – FORBES AVENUE

SCALE: 1" = 20'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS		
	CHARACTER	DATE

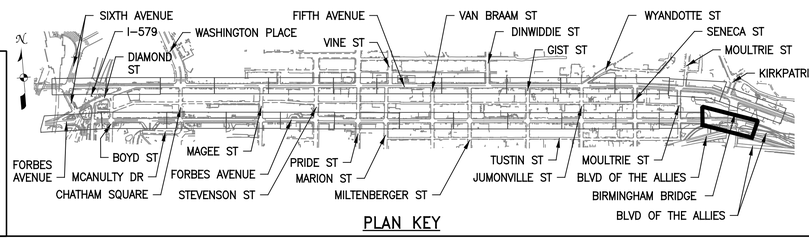
DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048842-E

1-7-2021

PLAN KEY



PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

EXISTING CONDITIONS PLANS

SCALE: AS NOTED

DATE: JANUARY, 2021

SHEET NO. 156 OF 166

ACCESSION NO. _____

CASE NO. _____

EX-16

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of water, sewer, and storm lines and structures, and neither assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

1/12/2021 7:15:28 PM

GAI CAD FILE PATH: c:\pwworking\aecom_ds16_na\pen20334\d0411210\BRT_12_PWSA_SHT35.dgn

TABULATION OF TRAFFIC CONTROL DEVICES
(INCLUDED IN LUMP SUM ITEM **U-1)**
FOR INFORMATION ONLY

TRAFFIC CONTROL DEVICE	DEVICE SIZE OR UNIT	DESCRIPTION	CONSTRUCTION PHASE	TOTAL OR MAX NUMBER OF DEVICES
M4-8A	24"X18"	END DETOUR	I	4
M4-9SL	30"X24"	LEFT ADVANCE DETOUR	I	8
M4-9SR	30"X24"	RIGHT ADVANCE DETOUR	I	8
M4-9L	30"X24"	DETOUR, LEFT	I	8
M4-9R	30"X24"	DETOUR, RIGHT	I	8
M4-10L	48"X18"	DETOUR ARROW, LEFT	I	4
M4-10R	48"X18"	DETOUR ARROW, RIGHT	I	4
R3-1	24"X24"	NO RIGHT TURN	I	2
R3-2	24"X24"	NO LEFT TURN	I	2
R3-7-1L	30"X30"	ALL TRAFFIC MUST TURN LEFT	I	2
R3-8A	30"X30"	LANE USE CONTROL (L-R)	I	2
R5-1	30"X30"	DO NOT ENTER	I	2
R9-9	24"X12"	SIDEWALK CLOSED	I	4
R9-10	24"X12"	SIDEWALK CLOSED USE OTHER SIDE	I	4
R9-11A	24"X12"	SIDEWALK CLOSED CROSS HERE	I	4
R11-2	48"X30"	ROAD CLOSED	I	4
R11-4	60"X30"	ROAD CLOSED TO THRU TRAFFIC	I	4
R11-3A	60"X30"	ROAD CLOSED - LOCAL TRAFFIC ONLY	I	4
W4-2L	36"X36"	PAVEMENT WIDTH TRANSITION - LEFT LANE ENDS	I	8
W4-2R	36"X36"	PAVEMENT WIDTH TRANSITION - RIGHT LANE ENDS	I	8
W8-1	30"X30"	BUMP	I	4
W8-8	30"X30"	ROUGH ROAD	I	4
W11-2	30"X30"	PEDESTRIAN	I	8
W20-1	36"X36"	ROAD WORK	I	7
W20-2	36"X36"	ADVANCE DETOUR	I	4
W20-3	36"X36"	ROAD CLOSED	I	4
W20-4	36"X36"	ONE LANE ROAD	I	4
W20-5L	36"X36"	LEFT LANE CLOSED	I	4
W20-5R	36"X36"	RIGHT LANE CLOSED	I	4
W20-7	36"X36"	FLAGGER SYMBOL	I	4
W20-5AL	36"X36"	LEFT TWO LANES CLOSED	I	4
W20-5AR	36"X36"	RIGHT TWO LANES CLOSED	I	4
W23-101	96"X48"	THIS ROAD TO BE CLOSED FOR MAINTENANCE	I	4
W30-1-6	20"X6"	DISTANCE (AHEAD) (PANEL)	I	12
---	SF	ADDITIONAL TRAFFIC CONTROL SIGNS	I	200
---	DAY	ADDITIONAL WARNING LIGHTS, TYPE B	I	50
---	DAY	ADDITIONAL WARNING LIGHTS, TYPE C	I	100
---	DAY	CHANNELIZING DEVICES	I	12
---	DAY	FLOOD LIGHTS	I	56
---	EACH	ARROW PANEL	I	12
---	DAY	SHADOW VEHICLE	I	520
---	EACH	TEMPORARY SIGN POST	I	52
---	DAY	TYPE B WARNING LIGHT	I	220
---	DAY	TYPE C WARNING LIGHT	I	800
---	EACH	TYPE III BARRICADE	I	20

CONSTRUCTION SEQUENCING

WORK DESCRIPTION

PHASE I - VEHICULAR TRAFFIC CONTROL

IMPLEMENT SHORT-TERM, OFF-PEAK DAYTIME AND NIGHTTIME TRAVEL AND PARKING LANE CLOSURES FOR PROJECT WORK SECTIONS ALONG BOTH FIFTH AVENUE AND FORBES AVENUE WITHIN THE CITY OF PITTSBURGH TO INSTALL WATER MAINS, LATERALS, AND SERVICE LINE SECTIONS. REFER TO THE SPECIAL PROVISION ENTITLED "SECTION 901" FOR THE RESTRICTION TIMES. PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES, NUTCD TYPICAL APPLICATIONS AND TRAFFIC CONTROL PLANS FOR TEMPORARY TRAFFIC CONTROL. UTILIZE THE APPROPRIATE PATA FIGURE, MUTCD TYPICAL APPLICATION, TRAFFIC CONTROL PLAN OR A COMBINATION THEREOF TO MAINTAIN TRAFFIC AT EACH SPECIFIED LOCATION OF WORK. CONTRACTOR TO COORDINATE SEQUENCING OF WORK SECTIONS WITH CITY OF PITTSBURGH, DEPARTMENT OF MOBILITY AND INFRASTRUCTURE. OPEN CITY STREETS TO ALL PARKING, TRAFFIC AND SIGNAL OPERATION AT THE END OF EACH WORKDAY.

UPON COMPLETION OF THE WATER MAINS, LATERALS, AND SERVICE LINE INSTALLATION WORK, RESTORE CITY STREETS DURING THE ALLOWABLE WORKING HOURS INDICATED WITHIN THE SPECIAL PROVISION ENTITLED "SECTION 901" IN ACCORDANCE WITH THE CONTRACT ROADWAY RESTORATION DETAILS. RESTORE TRAFFIC SIGNAL LOOP DETECTORS DAMAGED BY WATERLINE INSTALLATION. RESTORE PAVEMENT MARKINGS. CONTACT CITY OF PITTSBURGH, DEPARTMENT OF MOBILITY AND INFRASTRUCTURE, FOR TYPES AND LOCATIONS OF PAVEMENT MARKINGS, TO BE REPLACED IN KIND. PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES FOR TEMPORARY TRAFFIC CONTROL. UTILIZE THE APPROPRIATE PATA FIGURE OR A COMBINATION THEREOF TO MAINTAIN TRAFFIC AT EACH SPECIFIED LOCATION OF WORK. OPEN CITY STREETS TO ALL PARKING, TRAFFIC AND SIGNAL OPERATION AT THE END OF EACH WORKDAY.

PHASE I - PEDESTRIAN TRAFFIC CONTROL

PEDESTRIANS WILL REQUIRE ACCOMMODATION THROUGHOUT CONSTRUCTION. COMPLIANCE TO THE AMERICANS WITH DISABILITIES ACT (ADA) IS REQUIRED. DURING INSTALLATION OF THE WATER MAINS, LATERALS, AND SERVICE LINES WHERE THE WORK AREAS WILL ENCROACH UPON SIDEWALKS, PROVIDE TEMPORARY CONSTRUCTION FENCING AS REQUIRED TO SEPARATE PEDESTRIANS FROM WORK AREAS. MATCH EXISTING WIDTH WHERE LESS THAN 60 INCHES, OR MAINTAIN A MINIMUM WIDTH OF 60 INCHES THROUGHOUT THE ENTIRE LENGTH OF THE PEDESTRIAN PATHWAY. AT LOCATIONS WHERE THESE WIDTHS CANNOT BE MAINTAINED, PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES FOR TEMPORARY TRAFFIC CONTROL. WHERE REQUIRED FOR ADA COMPLIANCE, TEMPORARY WHEELCHAIR RAMPS SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR. MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES.

GENERAL NOTES

THIS WORK CONSISTS OF THE MAINTENANCE OF TRAFFIC AND THE PROTECTION OF THE TRAVELING PUBLIC APPROACHING THE CONSTRUCTION AREA AND WITHIN THE LIMITS OF CONSTRUCTION.

FURNISH, ERECT, PLACE AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES AND MAINTAIN TRAFFIC DURING HOURS OF CONSTRUCTION AND AT ALL OTHER TIMES IN ACCORDANCE WITH THE METHODS INDICATED ON THESE DRAWINGS AND,

1. THE SPECIAL PROVISIONS OF THE CONTRACT.
2. PA CODE, TITLE 67, CHAPTER 212, OFFICIAL TRAFFIC CONTROL DEVICES, (MARCH 2006).
3. PDT PUBLICATION 213, TEMPORARY TRAFFIC CONTROL GUIDELINES, (JUNE 2014).
4. PDT PUBLICATION 35, APPROVED CONSTRUCTION MATERIALS (BULLETIN 15), (AUGUST 2020).
5. PDT PUBLICATION 408, SPECIFICATIONS, DATED 2020.
6. PDT PUBLICATION 236, HANDBOOK OF APPROVED SIGNS, (NOVEMBER 2013).
7. PDT PUBLICATION 111, TRAFFIC CONTROL-PAVEMENT MARKINGS AND SIGNING STANDARDS, TC-8600 AND TC-8700 SERIES.
8. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), (2009 EDITION).

IMMEDIATELY UPON COMPLETION OF THE WORK, REMOVE SIGNS AND DEVICES. FOR TYPE "B" AND TYPE "C" MOUNTED SIGNS, REMOVE POSTS COMPLETELY. THE PWSA WILL REMOVE ANY TRAFFIC CONTROL DEVICES ERECTED BY PWSA FORCES.

THE TRAFFIC CONTROL PLAN DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY AS SPECIFIED IN SECTION 901.3(a) OF PENNDOT PUBLICATION 408.

SIGN LOCATIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.

ALL SIGNS AND DEVICES SHALL BE NEW AT THE BEGINNING OF THE PROJECT, AND MAINTAINED IN NEW CONDITION AND TO THE CITY OF PITTSBURGH'S SATISFACTION THROUGHOUT THE DURATION OF THE PROJECT.

THESE PLANS HAVE BEEN REVIEWED AND ARE IN COMPLIANCE WITH STANDARDS PRESCRIBED IN CHAPTER 212 OF THE 67 PA. CODE AS CURRENTLY AMENDED.

NOTE THAT THIS APPROVAL DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR THE PROTECTION OF THE PUBLIC AND THE CONSTRUCTION PERSONNEL. THE STANDARDS PRESCRIBED ARE MINIMUM AND ADDITIONAL PROTECTION MAY BE NECESSARY IF PROBLEMS ARE ENCOUNTERED DURING THE TERM OF THE CONTRACT. CONSTANTLY REVIEW THIS PLAN FOR ADEQUACY AND RECOMMEND CHANGES FOR CITY OF PITTSBURGH APPROVAL WHEN INADEQUACIES ARE DISCOVERED.

THE CONTRACTOR HAS THE OPTION TO SUBMIT ALTERNATE TRAFFIC CONTROL PLANS FOR CONSIDERATION. THESE PLANS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF PENNSYLVANIA, AND SHALL BE CONSISTENT WITH STANDARD DESIGN PRACTICES. THE CITY OF PITTSBURGH WILL ALLOW NO CONSTRUCTION ACTIVITY UNTIL THE CONTRACTOR'S ALTERNATE PLANS ARE APPROVED IN WRITING BY THE CITY TRAFFIC ENGINEER. MODIFICATIONS TO THE APPROVED MPT PLAN SHALL BE APPROVED BY THE CITY TRAFFIC ENGINEER OR AUTHORIZED REPRESENTATIVE.

THE CONTRACTOR SHALL HAVE A SUFFICIENT AMOUNT OF THE FOLLOWING SIGNS AVAILABLE IN CASE THEIR USE BECOMES NECESSARY: W3-4 "BE PREPARED TO STOP" AND W20-7 "FLAGGER SYMBOL." THESE SIGNS ARE NOT INTENDED TO BE PART OF THE REQUIRED NORMAL TRAFFIC CONTROL OR A SUPPLEMENT THERETO.

REPORT ALL TRAFFIC INCIDENTS WITHIN THE PROJECT LIMITS TO THE CITY TRAFFIC ENGINEER BY COPY OF THE TRAFFIC ACCIDENT REPORT FROM THE CITY OF PITTSBURGH POLICE.

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PA ONE-CALL SYSTEM, INC. AT 1-800-242-1776 AT LEAST THREE (3) WORKING DAYS PRIOR TO DIGGING. PA ONE-CALL SHOULD BE CONTACTED BEFORE ANY SIGN POST ANCHOR IS DRIVEN INTO THE GROUND FOR ANY TEMPORARY AND/OR PERMANENT SIGNING.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED CITY OF PITTSBURGH PERMITS: INCLUDING, BUT NOT LIMITED TO: TRAFFIC OBSTRUCTION PERMIT, TEMPORARY BUS STOP RELOCATION PERMIT, AND SIDEWALK OR STREET OPENING PERMIT.

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PORT AUTHORITY OF ALLEGHENY COUNTY AT LEAST TWO (2) WEEKS PRIOR TO BEGINNING CONSTRUCTION WHICH CLOSES OR RESTRICTS TRAVEL ON ANY STREET WHICH THE AUTHORITY HAS A BUS ROUTE ON.

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CALC. BOOK	PG.	

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CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624

Richard A. Krajcovic Jr.

01/07/2021

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL TABLE

GENERAL NOTES & QUANTITIES

SCALE: AS NOTED SHEET NO. 157 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES, MUTCD TYPICAL APPLICATIONS AND TRAFFIC CONTROL PLANS FOR TEMPORARY TRAFFIC CONTROL

	LOCATION	107 WORK IN ONE LANE; TWO FLAGGERS	116 ROAD CLOSURE WITH DETOUR	126 WORK SPACE IN LEFT OR RIGHT LANE	127 WORK SPACE IN TWO ADJACENT LANES	130 SIDEWALK AND CROSSWALK CLOSURE; PEDESTRIAN DETOUR	
FIFTH AVENUE CORRIDOR	FIFTH AVENUE			x	x	x	
	DIAMOND STREET			x		x	
	WASHINGTON PLACE				x	x	
	CHATHAM SQUARE		x			x	
	MAGEE STREET		x			x	
	LOGAN STREET		x			x	
	STEVENSON STREET(N)		x			x	
	STEVENSON STREET(S)		x			x	
	PRIDE STREET(N)		x			x	
	PRIDE STREET(S)		x			x	
	MARIAN STREET		x			x	
	VINE STREET		x			x	
	VAN BRAAM STREET		x			x	
	MILTENBURGER STREET		x			x	
	DINWIDDIE STREET		x			x	
	GIST STREET		x			x	
	JUMONVILLE STREET		x ③			x	
	WYANDOTTE STREET ①	x ②				x	
	SENECA STREET		x			x	
	MOULTRIE STREET(N) ①	x				x	
	MOULTRIE STREET(S)		x			x	
	KIRKPATRICK STREET	x					
	BIRMINGHAM BRIDGE			x ④			

(N)-SIDE STREET APPROACH LOCATED NORTH OF FIFTH AVENUE.
(S)-SIDE STREET APPROACH LOCATED SOUTH OF FIFTH AVENUE.

① WYANDOTTE STREET AND MOULTRIE STREET CONNECTING TO FIFTH AVENUE ON THE NORTHERN SIDE OF FIFTH AVENUE ARE "NO OUTLET" STREETS.

② DUE TO THE NARROW 14'-6" ROADWAY WIDTH OF WYANDOTTE STREET, THE ROAD WILL NEED TO BE CLOSED TO ALL TRAFFIC EXCEPT FOR EMERGENCY VEHICLES. COORDINATION WILL BE REQUIRED BETWEEN THE CONTRACTOR AND BUSINESSES/RESIDENCES IN ORDER TO DETERMINE THE OPTIMIUM TIME PERIOD THAT WORK CAN TAKE PLACE.

③ JUMONVILLE STREET (NORTHBOUND) BETWEEN FORBES AVENUE AND FIFTH AVENUE OPERATES AS A PORT AUTHORITY BUS ROUTE (ROUTES 71A, 71B, 71C AND 71D). COORDINATE CLOSURE WITH PORT AUTHORITY.

④ CLOSURE LIMITED TO LEFT LANE OF NORTHBOUND BIRMINGHAM BRIDGE TO FIFTH AVENUE INBOUND IN ORDER TO MAINTAIN RIGHT TURNS ONTO BUS LANE FOR PORT AUTHORITY BUSES.

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DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624
01/07/2021

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL TABLE

FIFTH AVENUE

SCALE: AS NOTED
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TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES, MUTCD TYPICAL APPLICATIONS AND TRAFFIC CONTROL PLANS FOR TEMPORARY TRAFFIC CONTROL

	LOCATION	107 WORK IN ONE LANE; TWO FLAGGERS	116 ROAD CLOSURE WITH DETOUR	126 WORK SPACE IN LEFT OR RIGHT LANE	127 WORK SPACE IN TWO ADJACENT LANES	130 SIDEWALK AND CROSSWALK CLOSURE; PEDESTRIAN DETOUR	MUTCD TA-19 DETOUR FOR ONE TRAVEL DIRECTION	TRAFFIC CONTROL PLAN SIXTH AVE TO BOYD ST	TRAFFIC CONTROL PLAN BOYD ST TO ARMSTRONG TUNNEL	TRAFFIC CONTROL PLAN ARMSTRONG TUNNEL TO CHATHAM SQ		
FORBES AVENUE CORRIDOR	FORBES AVENUE			x	x	x		x	x	x		
	BOYD STREET(N)		x			x		x	x			
	BOYD STREET(S)			x ⑤		x		x	x			
	ARMSTRONG TUNNEL							x	x			
	CHATHAM SQUARE		x			x				x		
	McANULTY DRIVE		x			x				x		
	MAGEE STREET(N)		x			x				x		
	MAGEE STREET(S)		x			x						
	STEVENSON STREET(N)		x			x						
	STEVENSON STREET(S)		x			x						
	PRIDE STREET(N)		x			x						
	PRIDE STREET(S)		x			x						
	MARION STREET(N)		x			x						
	MARION STREET(S)		x			x						
	VAN BRAAM STREET(N)		x			x						
	VAN BRAAM STREET(S)		x			x						
	MILTENBURGER STREET(N)		x			x						
	MILTENBURGER STREET(S)		x			x						
	GIST STREET(N)		x			x						
	GIST STREET(S)		x			x						
	JUMONVILLE STREET					x	x ⑦					
	SENECA STREET(N)		x			x						
	SENECA STREET(S)		x			x						
	MOULTRIE STREET(N)		x			x						
	MOULTRIE STREET(S)		x									
	BRADY STREET/ BIRMINGHAM BR ON-RAMP	x ⑥										

(N)-SIDE STREET APPROACH LOCATED NORTH OF FORBES AVENUE.
(S)-SIDE STREET APPROACH LOCATED SOUTH OF FORBES AVENUE.

⑤ BOYD STREET SOUTH OF FIFTH AVENUE IS ONE-WAY NORTHBOUND APPROACHING THE INTERSECTION WITH ON-STREET PARKING ON BOTH SIDES OF THE ROAD. TRAFFIC IS LIMITED TO RIGHT TURNS ONLY ONTO FIFTH AVENUE OUTBOUND. DUE TO THE ONE-WAY ROAD AND ON-STREET PARKING, TRAFFIC MUST BE MAINTAINED AT ALL TIMES.

⑥ PLACE ADVANCE SIGNING ON BRADY STREET APPROACH TO FORBES AVENUE IN ACCORDANCE WITH PATA 107. UTILIZE FLAGGERS AT BOTH THE BRADY STREET INTERSECTION AND BIRMINGHAM BRIDGE ON-RAMP TO DIRECT TRAFFIC THROUGH THE WORK AREA.

⑦ MAINTAIN NORTHBOUND TRAFFIC AND DETOUR SOUTHBOUND TRAFFIC. NO VIABLE DETOUR IS AVAILABLE FOR NORTHBOUND TRAFFIC UTILIZING CITY STREETS.

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DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — RICHARD A KRAJCOVIC JR — ENGINEER — PE073624
Richard A. Krajcovic Jr.
01/07/2021

PLAN KEY

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TRAFFIC CONTROL TABLE

FORBES AVENUE

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ROAD CLOSURE - DETOUR ROUTES

	LOCATION	NB DIRECTION	SB DIRECTION	INBOUND DIRECTION
FORBES AVENUE CORRIDOR	FORBES AVE (INBOUND) AT BOYD STREET	-	-	BOYD STREET TO DIAMOND STREET TO SIXTH AVENUE TO FORBES AVENUE
	FORBES AVE (INBOUND) AT ARMSTRONG TUNNEL	-	-	CHATHAM SQUARE TO FIFTH AVENUE TO DIAMOND STREET TO SIXTH AVENUE TO FORBES AVENUE
	BOYD STREET(N)	FORBES AVENUE TO CHATHAM SQUARE TO FIFTH AVENUE TO DIAMOND STREET TO BOYD STREET	DIAMOND STREET TO SIXTH AVE TO FIFTH AVENUE TO BOYD STREET(N)	
	CHATHAM SQUARE	FORBES AVENUE TO MAGEE STREET TO FIFTH AVENUE TO CHATHAM SQUARE	FIFTH AVENUE TO DIAMOND STREET TO BOYD STREET TO FORBES AVENUE TO CHATHAM SQUARE	
	McANULTY DRIVE	LOCUST STREET TO BOYD STREET TO FORBES AVENUE TO McANULTY DRIVE	FORBES AVENUE TO MAGEE STREET TO LOCUST STREET TO McANULTY DRIVE	
	MAGEE STREET(N)	FORBES AVENUE TO STEVENSON STREET TO FIFTH AVENUE TO MAGEE STREET(N)	FIFTH AVENUE TO CHATHAM SQUARE TO FORBES AVENUE TO MAGEE STREET(N)	
	MAGEE STREET(S)	LOCUST STREET TO McANULTY DRIVE TO FORBES AVENUE TO MAGEE STREET(S)	FORBES AVENUE TO STEVENSON STREET TO SELTZ STREET TO LOCUST STREET TO MAGEE STREET(S)	
	STEVENSON STREET(N)	FORBES AVENUE TO PRIDE STREET TO FIFTH AVENUE TO STEVENSON STREET(N)	FIFTH AVENUE TO MAGEE STREET TO FORBES AVENUE TO STEVENSON STREET(N)	
	STEVENSON STREET(S)	LOCUST STREET TO PRIDE STREET TO FIFTH AVENUE TO STEVENSON STREET(S)	FORBES AVENUE TO PRIDE STREET TO LOCUST STREET TO STEVENSON STREET(S)	
	PRIDE STREET(N)	FORBES AVENUE TO MARION STREET TO FIFTH AVENUE TO PRIDE STREET(N)	FIFTH AVENUE TO MARION STREET TO FORBES AVENUE TO PRIDE STREET(N)	
	PRIDE STREET(S)	LOCUST STREET TO STEVENSON STREET TO FORBES AVENUE TO PRIDE STREET(S)	FORBES AVENUE TO MARION STREET TO LOCUST STREET TO PRIDE STREET(S)	
	MARION STREET(N)	FORBES AVENUE TO VAN BRAAM STREET TO FIFTH AVENUE TO MARION STREET(N)	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO MARION STREET(N)	
	MARION STREET(S)	LOCUST STREET TO PRIDE STREET TO FORBES AVENUE TO MARION STREET(S)	FORBES AVENUE TO VAN BRAAM STREET TO LOCUST STREET TO MARION STREET(S)	
	VAN BRAAM STREET(N)	FORBES AVENUE TO MILTENBURGER STREET TO FIFTH AVENUE TO VAN BRAAM STREET(N)	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO VAN BRAAM STREET(N)	
	VAN BRAAM STREET(S)	LOCUST STREET TO MARION STREET TO FORBES AVENUE TO VAN BRAAM STREET(S)	FORBES AVENUE TO MILTENBURGER STREET TO LOCUST STREET TO VAN BRAAM STREET(S)	
	MILTENBURGER STREET(N)	FORBES AVENUE TO GIST STREET TO FIFTH AVENUE TO MILTENBURGER STREET(N)	FIFTH AVENUE TO VAN BRAAM STREET TO FORBES AVENUE TO MILTENBURGER STREET(N)	
	MILTENBURGER STREET(S)	LOCUST STREET TO VAN BRAAM STREET TO FORBES AVENUE TO MILTENBURGER STREET(S)	FORBES AVENUE TO GIST STREET TO LOCUST STREET TO MILTENBURGER STREET(S)	
	GIST STREET(N)	FORBES AVENUE TO JUMONVILLE STREET TO FIFTH AVENUE TO GIST STREET(N)	FIFTH AVENUE TO MILTENBURGER STREET TO FORBES AVENUE TO GIST STREET(N)	
	GIST STREET(S)	LOCUST STREET TO MILTENBURGER STREET TO FORBES AVENUE TO GIST STREET(S)	MILTENBURGER STREET TO LOCUST STREET TO GIST STREET(S)	
	JUMONVILLE STREET(S)	-	FORBES AVENUE TO SENECA STREET TO TUSTIN STREET TO JUMONVILLE STREET(S)	
	SENECA STREET(N)	FORBES AVENUE TO MOULTRIE STREET TO FIFTH AVENUE TO SENECA STREET(N)	FIFTH AVENUE TO GIST STREET TO FORBES AVENUE TO SENECA STREET(N)	
	SENECA STREET(S)	TUSTIN STREET TO JUMONVILLE STREET TO FORBES AVENUE TO SENECA STREET(S)	FORBES AVENUE TO MOULTRIE STREET TO TUSTIN STREET TO SENECA STREET(S)	
	MOULTRIE STREET(N)	SENECA STREET TO WATSON STREET TO MOULTRIE STREET(N)	FIFTH AVENUE TO SENECA STREET TO FORBES AVENUE TO MOULTRIE STREET(N)	
	MOULTRIE STREET(S)	TUSTIN STREET TO SENECA STREET TO FORBES AVENUE TO MOULTRIE STREET(S)	SENECA STREET TO TUSTIN STREET TO MOULTRIE STREET(S)	

(N)-SIDE STREET APPROACH LOCATED NORTH OF FIFTH AVENUE OR FORBES AVENUE.
(S)-SIDE STREET APPROACH LOCATED SOUTH OF FIFTH AVENUE OR FORBES AVENUE.

	LOCATION	NB DIRECTION	SB DIRECTION
FIFTH AVENUE CORRIDOR	CHATHAM SQUARE	FORBES AVENUE TO MAGEE STREET TO FIFTH AVENUE TO CHATHAM SQUARE	FIFTH AVENUE TO DIAMOND STREET TO BOYD STREET TO FORBES AVENUE TO CHATHAM SQUARE
	MAGEE STREET	FORBES AVENUE TO STEVENSON STREET TO FIFTH AVENUE TO MAGEE STREET	FIFTH AVENUE TO CHATHAM SQUARE TO FORBES AVENUE TO MAGEE STREET
	LOGAN STREET	STEVENSON STREET TO OUR WAY TO LOGAN STREET	OUR WAY TO STEVENSON STREET TO LOGAN STREET
	STEVENSON STREET(N)	PRIDE STREET TO COLWELL STREET TO STEVENSON STREET(N)	COLWELL STREET TO PRIDE STREET TO STEVENSON STREET(N)
	STEVENSON STREET(S)	FORBES AVENUE TO PRIDE STREET TO FIFTH AVENUE TO STEVENSON STREET(S)	FIFTH AVENUE TO MAGEE STREET TO FORBES AVENUE TO STEVENSON STREET(S)
	PRIDE STREET(N)	STEVENSON STREET TO COLWELL STREET TO PRIDE STREET(N)	REED STREET TO VINE STREET TO FIFTH AVENUE TO PRIDE STREET(N)
	PRIDE STREET(S)	FORBES AVENUE TO PRIDE STREET TO FIFTH AVENUE TO PRIDE STREET(S)	FIFTH AVENUE TO STEVENSON STREET TO FORBES AVENUE TO PRIDE STREET(S)
	MARIAN STREET	FORBES AVENUE TO VAN BRAAM STREET TO FIFTH AVENUE TO MARION STREET	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO MARION STREET
	VINE STREET	FORBES AVENUE TO PRIDE STREET TO REED STREET TO VINE STREET	COLWELL STREET TO DINWIDDIE STREET TO FIFTH AVENUE TO VINE STREET
	VAN BRAAM STREET	FORBES AVENUE TO MILTENBURGER STREET TO FIFTH AVENUE TO VAN BRAAM STREET	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO VAN BRAAM STREET
	MILTENBURGER STREET	FORBES AVENUE TO GIST STREET TO FIFTH AVENUE TO MILTENBURGER STREET	FIFTH AVENUE TO VAN BRAAM STREET TO FORBES AVENUE TO MILTENBURGER STREET
	DINWIDDIE STREET	VINE STREET TO COLWELL STREET TO DINWIDDIE STREET	COLWELL STREET TO VINE STREET TO DINWIDDIE STREET
	GIST STREET	FORBES AVENUE TO JUMONVILLE STREET TO FIFTH AVENUE TO GIST STREET	FIFTH AVENUE TO MILTENBURGER STREET TO FORBES AVENUE TO GIST STREET
	JUMONVILLE STREET	FORBES AVENUE TO SENECA STREET TO FIFTH AVENUE TO JUMONVILLE STREET	FIFTH AVENUE TO GIST STREET TO FORBES AVENUE TO JUMONVILLE STREET
	SENECA STREET	FORBES AVENUE TO MOULTRIE STREET TO FIFTH AVENUE TO SENECA STREET	FIFTH AVENUE TO GIST STREET TO FORBES AVENUE TO SENECA STREET
	MOULTRIE STREET	FORBES AVENUE TO SENECA STREET TO FIFTH AVENUE TO MOULTRIE ST	FIFTH AVENUE TO SENECA STREET TO FORBES AVENUE TO MOULTRIE STREET

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REVIEWED FOR CONSTRUCTABILTY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	S.WALKER	M.GAVULA	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624
01/07/2021

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

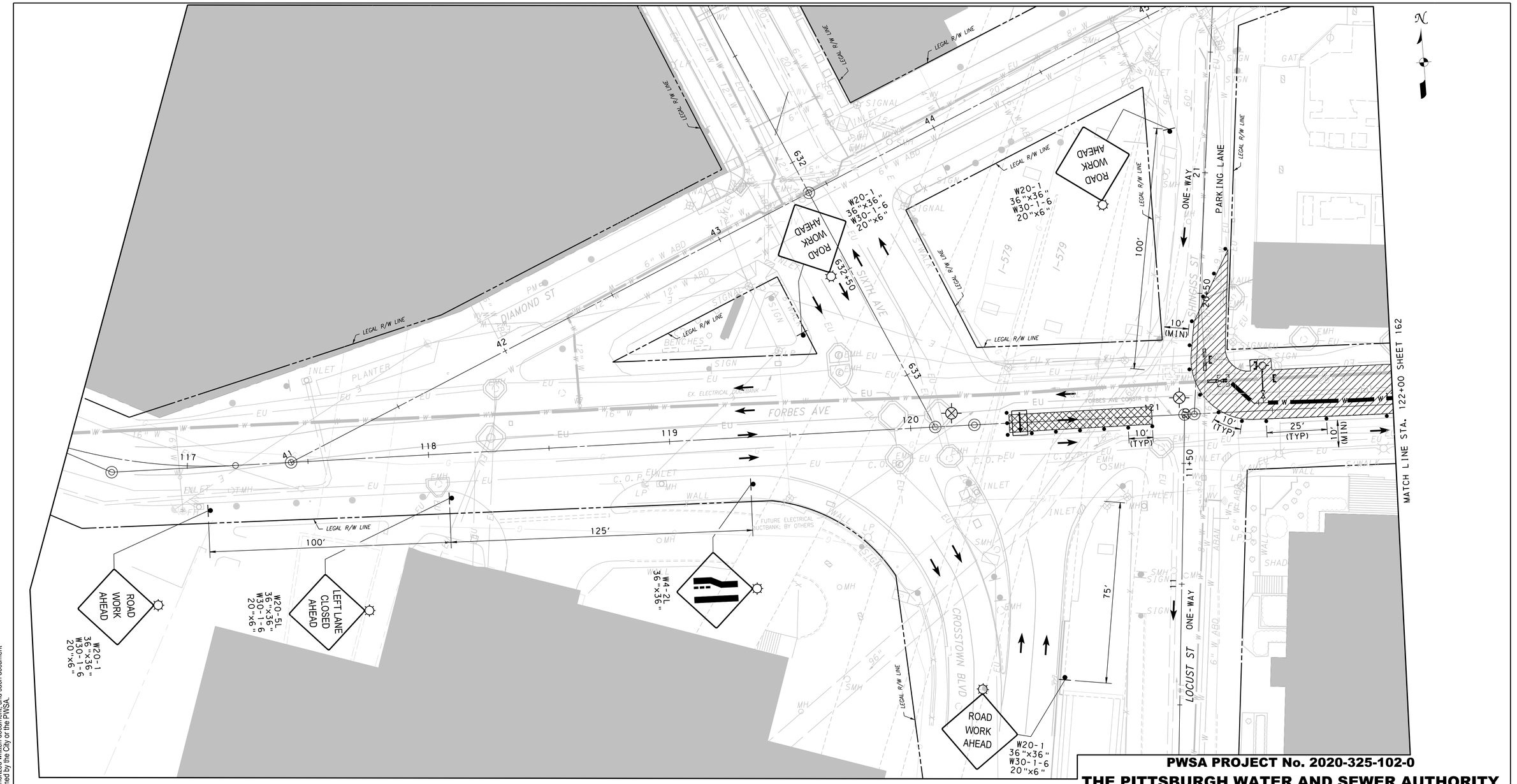
TRAFFIC CONTROL TABLE

ROAD CLOSURE - DETOUR ROUTES

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 160 OF 166
ACCESSION NO. _____
CASE NO. _____

11/30/2020 2:39:42 PM

GAI CAD FILE PATH: Z:\Infra\2019\C190577.01 - PWSA BRT Water Dist\CAD\Traffic\Plans\C190577.01MPTKEY04_Detour Routes.dgn



REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR _____ DATE _____

FIELD DATA	DRAWN	SUPERVSD.
BY	S.WALKER	M.GAVULA
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624
01/07/2021

LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
- TYPE B FLASHING LIGHT
- WORK AREA
- LANE CLOSED TO TRAFFIC
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL PLAN

SIXTH AVE TO BOYD STREET (1 OF 2)

SCALE: AS NOTED SHEET NO. 161 OF 166 ACCESSION NO. _____

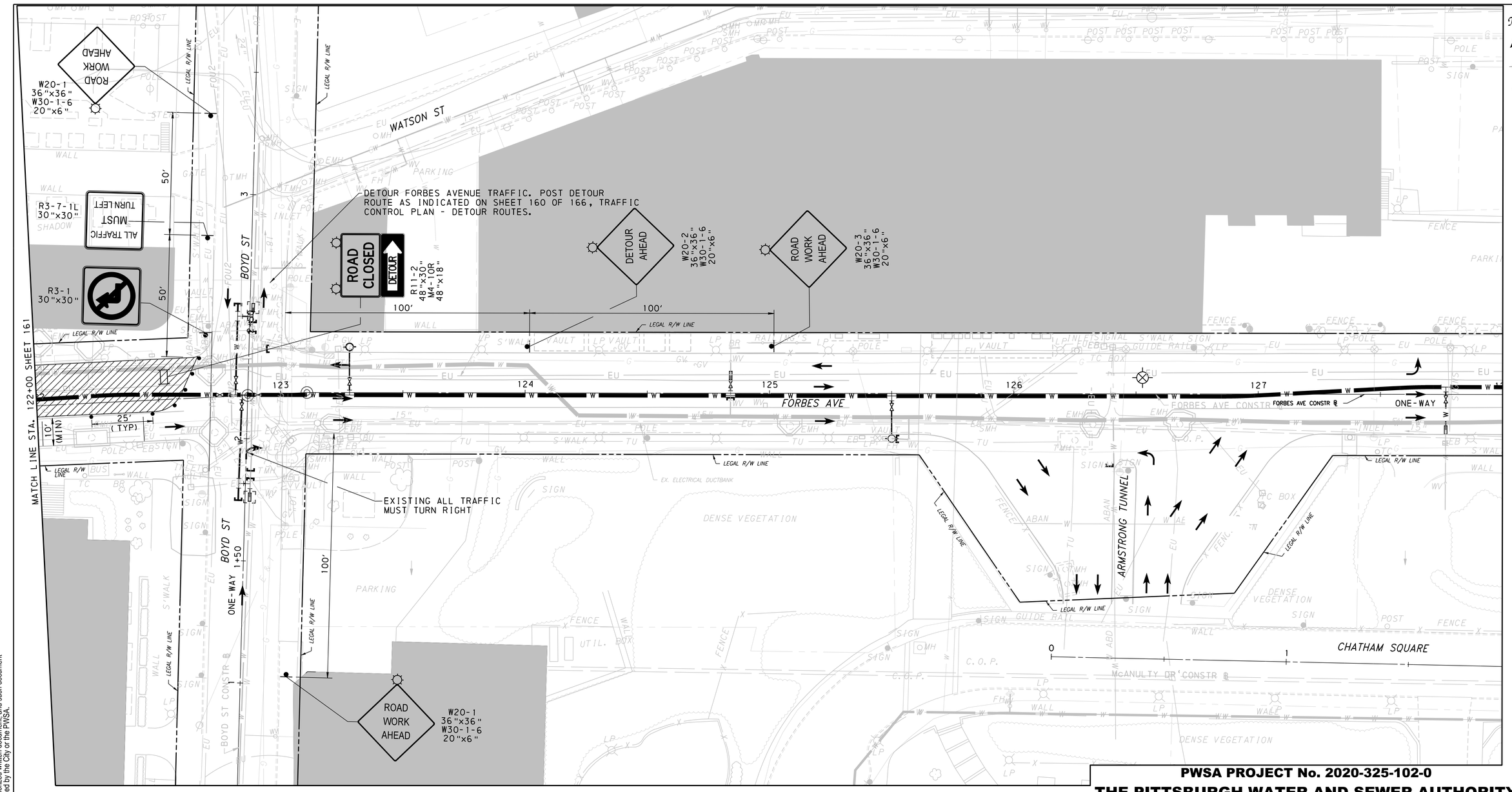
DATE: JANUARY, 2021 CASE NO. _____

RS-15

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11/30/2020 3:56:17 PM

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	S.WALKER	M.GAVULA	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS		
	CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624
01/07/2021

LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
- TYPE B FLASHING LIGHT
- WORK AREA
- LANE CLOSED TO TRAFFIC
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

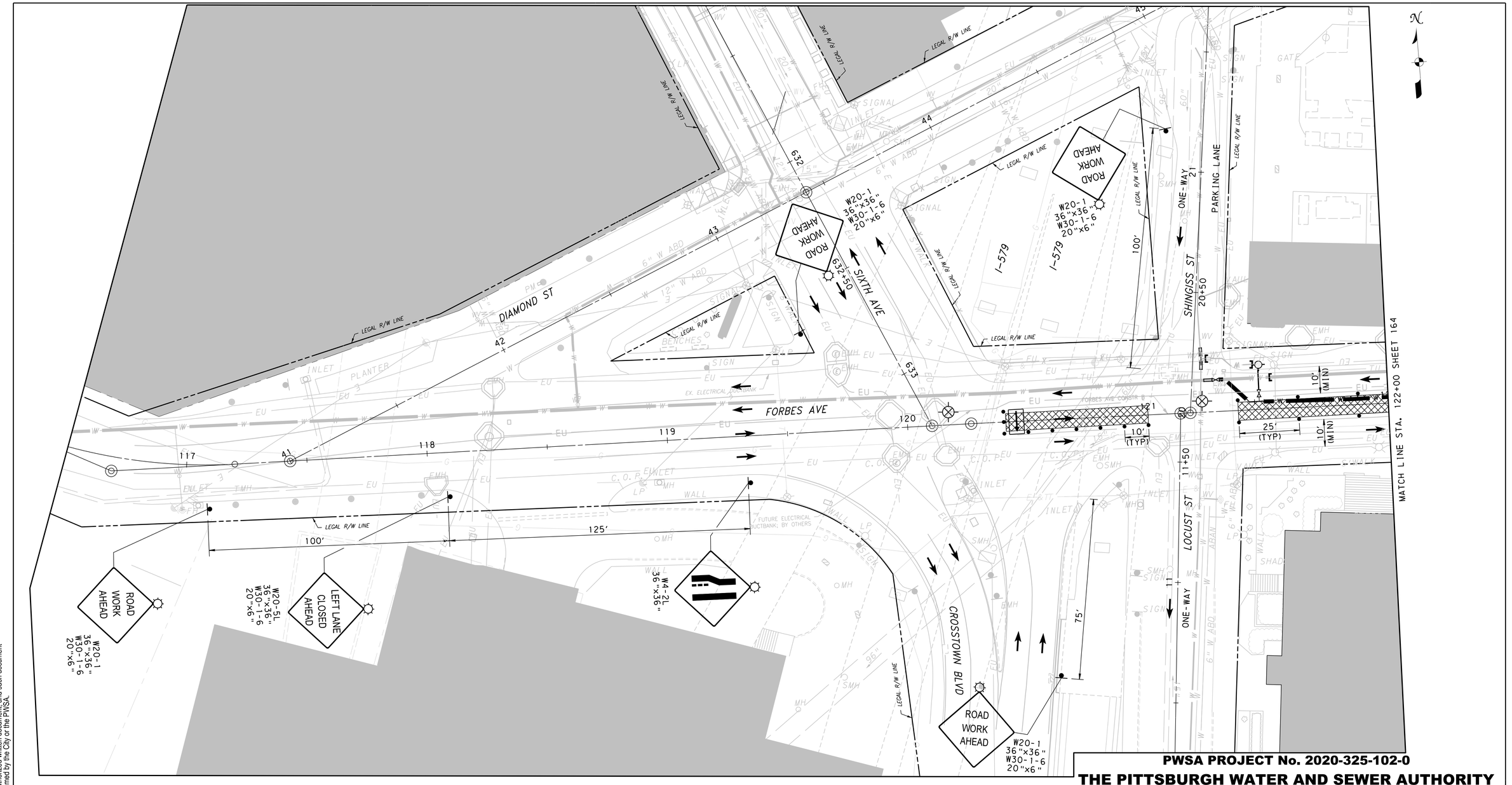
TRAFFIC CONTROL PLAN

SIXTH AVE TO BOYD STREET (2 OF 2)

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 162 OF 166
ACCESSION NO. _____
CASE NO. _____

11/30/2020 2:55:40 PM

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT.SPR/SR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	S.WALKER	M.GAVULA	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

PGH2O

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — RICHARD A KRAJCOVIC JR — ENGINEER — PE073624
01/07/2021

LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
- TYPE B FLASHING LIGHT
- WORK AREA
- LANE CLOSED TO TRAFFIC
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL PLAN

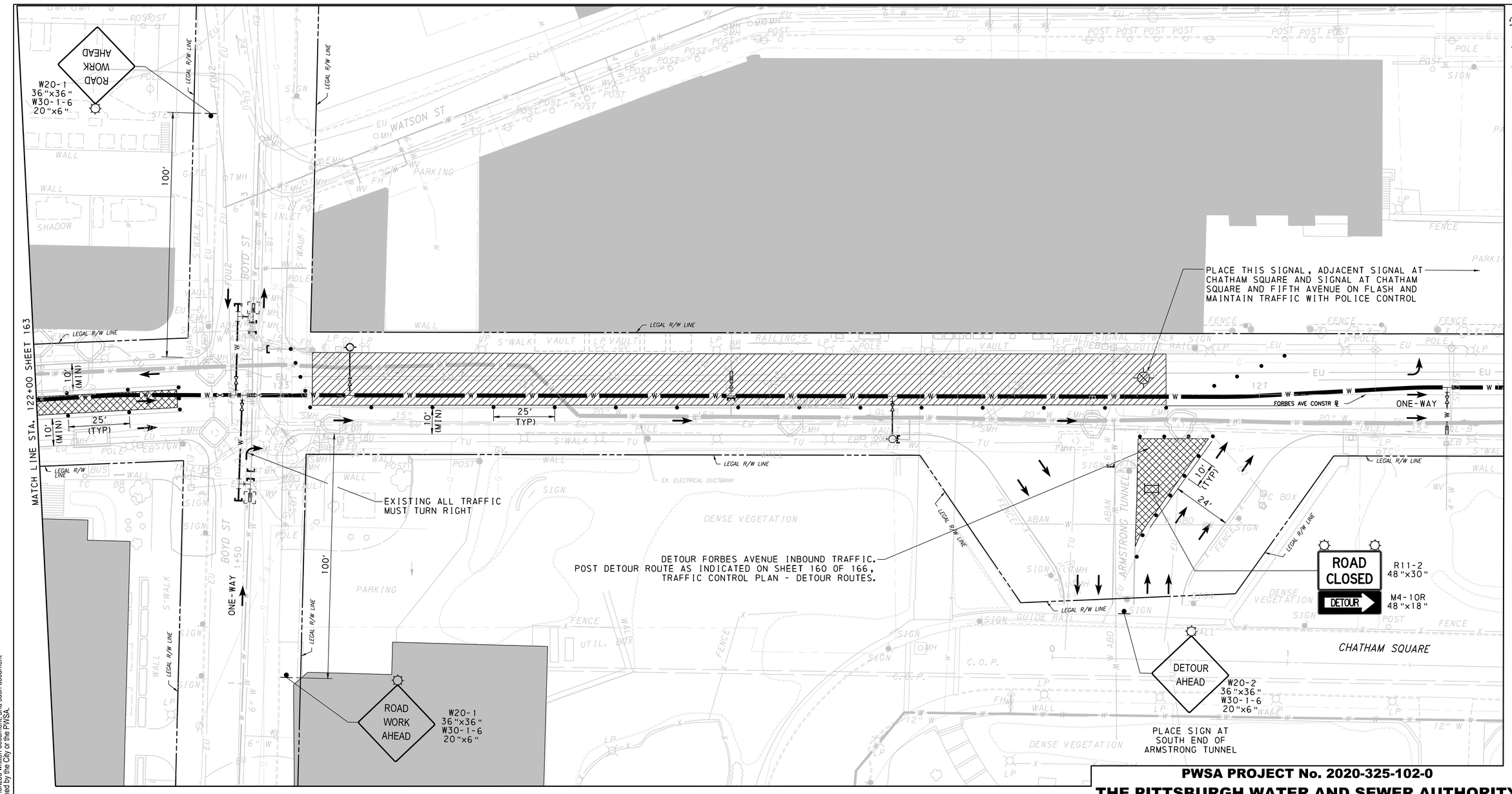
BOYD STREET TO ARMSTRONG TUNNEL (1 OF 2)

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 163 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-15

11/30/2020 3:52:31 PM

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL PLAN

BOYD STREET TO ARMSTRONG TUNNEL (2 OF 2)

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 164 OF 166
ACCESSION NO. _____
CASE NO. _____

LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
- TYPE B FLASHING LIGHT
- WORK AREA
- LANE CLOSED TO TRAFFIC
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
RICHARD A KRAJCOVIC JR
PE073624
01/07/2021

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

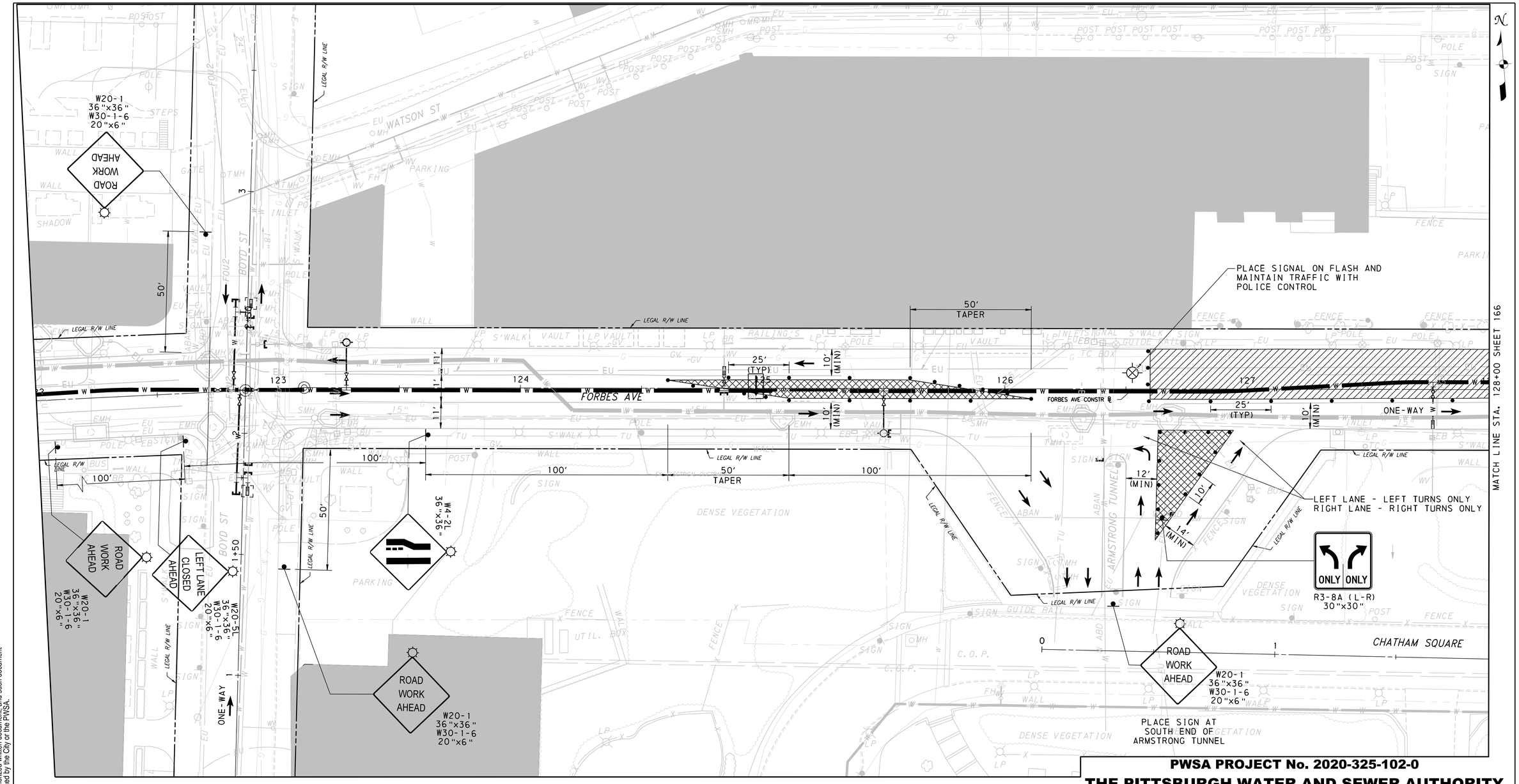
CONSTRUCTION MGMNT SRVS/SR _____ DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	S.WALKER	M.GAVULA
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL PLAN

ARMSTRONG TUNNEL TO CHATHAM SQUARE (1 OF 2)

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 165 OF 166
ACCESSION NO. _____
CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT.SPR/ISR — DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	S.WALKER	M.GAVULA
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624

01/07/2021

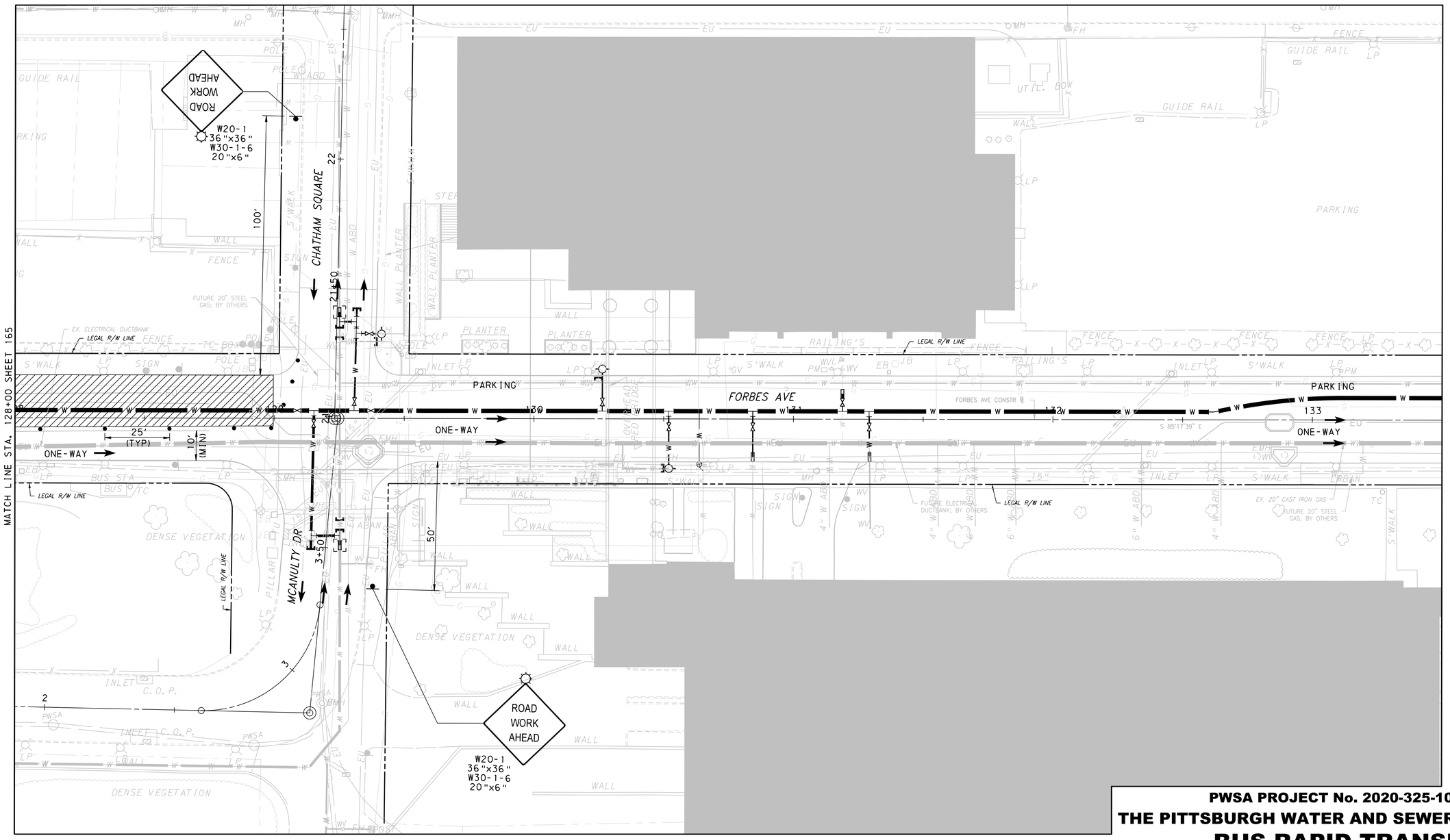
LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
- TYPE B FLASHING LIGHT
- WORK AREA
- LANE CLOSED TO TRAFFIC
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL PLAN

ARMSTRONG TUNNEL TO CHATHAM SQUARE (2 OF 2)

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 166 OF 166
ACCESSION NO. _____
CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	S.WALKER	M.GAVULA	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
RICHARD A KRAJCOVIC JR
PE073624
01/07/2021

LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
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- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

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GAI CAD FILE PATH: Z:\Infra\2019\C190577.01 - PWSA BRT Water Dist\CAD\Traffic\Plans\C190577.01MPTPLN06.dgn

THE PITTSBURGH WATER AND SEWER AUTHORITY

Project Name: Bus Rapid Transit Water Distribution Improvements

Project No.: 2020-325-102-0

BID BOND

KNOW ALL MEN BY THESE PRESENTS: that A. Folino Construction, Inc. 109 Dark Hollow Road, Oakmont. PA 15139, as Principal, and Western Surety Company, 151 N. Franklin Street, Chicago, IL 60606, as Surety, are hereby held and firmly bound unto THE PITTSBURGH WATER AND SEWER AUTHORITY, the Obligee, in the sum of Ten Percent (10%) of Bid dollars (_____), representing ten (10%) percent of the bid amount, for payment of which in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Principal has submitted to Obligee a bid to enter into a written contract for the above referenced Project in accordance with bidding documents for the Project.

THE CONDITION OF THIS OBLIGATION is that if Principal, upon acceptance by the Obligee of its bid within the period of time specified for acceptance, shall comply with all post-award requirements as specified by the Information to Bidders and Bid and General Contract Conditions within the time specified after the date of the Notice of Award, or in the event of failure to comply with all post-award requirements, if Principal shall pay Obligee for all costs of procuring the work that exceeds the amount of its bid, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Surety hereby agrees that its obligation shall not be impaired by any extensions of time for Obligee's acceptance or for compliance with post-award requirements. Surety hereby waives notice of such extensions.

Signed and sealed this 23rd day of February, 2021.

ATTEST:

Connie Folino

Corporate Secretary (Corporations only)

Connie Folino

A. Folino Construction, Inc.

PRINCIPAL

By: Dino Folino

Print name: Dino Folino

Title: Vice President

Western Surety Company

SURETY

By: Douglas M. Free

Print name: Douglas M. Free

Title: Attorney-in-Fact

NOTE: Notary Acknowledgment for Surety and Surety's Power of Attorney must be attached.

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Douglas M Free, Samuel S Free, Individually

of Monroeville, PA, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 19th day of January, 2018.

WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota
County of Minnehaha } ss

On this 19th day of January, 2018, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires
June 23, 2021

J. MOHR
NOTARY PUBLIC
SOUTH DAKOTA

J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 23rd day of February, 2021.

WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary

Form F4280-7-2012

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

Folino
CONSTRUCTION

A. Folino Construction, Inc.

..... faster • smoother • better

February 16, 2021

Pittsburgh Water & Sewer Authority
1200 Penn Avenue
Pittsburgh, PA 15222

RE: PWSA - Bus Rapid Transit Water Distribution Improvements 2020-325-102-0

List of Subcontractors:

Crews Control, LLC
DAG Supply Company, LLC
R&R Trucking, LLC

List of Suppliers:

Lindy Paving
Amerikohl
Castle Builders Supply
Hanson Aggregates
LB Water
Pipelines, Inc.
CCI
East Jordan Ironworks

Thank you,

Dino Folino
Vice President

109 Dark Hollow Road • Oakmont, PA 15139 • Phone 412.820.2800 • Fax 412.820.2808 • www.afolino.com

PGH2O Pittsburgh Water & Sewer Authority

SDP COMMITMENT FORM

PWSA Project Name:	Bus Rapid Transit Water	**Name of Bidder:**	2 Folino Construction, Inc.
PWSA Project Number:	2020-325-102-0	**Contact Name:**	Dino Fiolino, VP
Total Bid Amount:	11,899,999.00	**Telephone Number:**	(412)820-2800
Total Overall Commitment (%):	10%	**Email Address:**	contracts@2folino.com
Total Overall Commitment ($):	1,190,000.00		

Disadvantaged Business Firm Name	Certification Number	Material/Service provided	% MBE	% WBE	% DBE	% SBE	% VBE	% SDVBE	Total Commitment Price
D2G Supply Company	13372	Trucking		9.42					1,120,000
Crews Control, LLC	8123	Flagging		.58					70,000

- The firm is committing to the following diverse supplier participation on this bid/proposal.
- Complete the table indicating the suppliers that will be utilized as direct subcontractors/subconsultants to meet the participation levels indicated in the Supplier Diversity Program.
- A firm bidding on or responding to a PWSA solicitation that is unable to meet the 10% minimum Supplier Diversity Program goals must also complete the Good Faith Effort Waiver Request Form.
- If your company will not have a disadvantaged business participation, please indicate that as zero participation on the SDP Commitment Form and also complete the Good Faith Waiver Request Form.
- For subcontractors/subconsultant that are not selected, indicate in the Good Faith Waiver Effort Waiver Request Form.
- All bids/proposals must be accompanied with the completed SDP Form and supporting documentation that includes email correspondence, bids/proposals received, and a copy of the certification certificate and/or letter from certifying agency.
- Percentages are calculated by dividing total commitment price by total bid amount.

Unified Certification Program
Pennsylvania
www.paucp.com
Moving Pennsylvania forward and creating economic opportunities for all.

Allegheny County
Department of Minority, Women &
Disadvantaged Business Enterprise
204 County Office Building
542 Forbes Avenue
Pittsburgh, PA 15219
Phone: (412) 350-4309 Fax: (412) 350-4915
E-mail: mwdbe@alleghenycounty.us

May 12, 2010

Daniela Folino, President
DAG Supply Company, LLC
170 Millview Drive
Pittsburgh, PA 15238

RE: Pennsylvania Unified Certification Program
Daniela Folino, President
Certification I.D. #13372

Dear Ms. Folino:

Congratulations! Upon careful review of the information contained in the Certification Application submitted by your firm, the Allegheny County Department of M/W/DBE has determined that your firm complies with the local requirements to be certified as a Woman/Disadvantaged Business Enterprise. The certification entitles your firm to participate in the program as a Construction Contractor. Your certification anniversary date is May 4, 2011 and your reassessment date is May 31, 2013.

Your firm is certified to perform the following type of work:

Supply and trucking.

NAICS Code(s): 423320, 484220

As a condition of continued certification, you must notify the Allegheny County M/W/DBE Department of any change in circumstances affecting your ability to meet size, status, ownership, or control requirements of 49 CFR Part 26. Any material change in the information provided in your application must also be submitted within 30 days of the change. This notice must be in the form of a notarized affidavit and you must attach supporting documentation describing in detail the nature of such change. If you fail to make timely notification, you will be deemed to have failed to cooperate under 49 CFR Part 26.109(c).

Also, on the anniversary date of your certification, you must submit an affidavit to the M/W/DBE Department affirming that there have been no changes in the firm's circumstances. The affidavit must affirm that the firm continues to meet SBA business size criteria and the overall gross receipt cap, as outlined in 49 CFR Part 26, and you must document this affirmation.

Respectfully,

Ruth Byrd-Smith
Director

RBS/smb

PA UCP
Pennsylvania Unified Certification Program

Allegheny County
Department of Minority, Women &
Disadvantaged Business Enterprise
204 County Office Building
542 Forbes Avenue
Pittsburgh, PA 15219
Phone:(412) 350-4309 Fax:(412) 350-4915
E-mail: mwdbe@alleghenycounty.us

February 28, 2017

Lauren DiGiammarino, President
Crews Control, LLC
4024 Park Place
Glenshaw, PA 15116

RE: Pennsylvania Unified Certification Program
DBE Certification Approval Letter
for **Crews Control, LLC**

DBE Certification# **8123**
Anniversary Date - Annually, on: **February 28**

Attention: Lauren DiGiammarino

The Allegheny County Department of M/W/DBE, a certifying participant in the Pennsylvania Unified Certification Program (PA UCP), has reviewed you request for certification as a Disadvantaged Business Enterprise (DBE) and is pleased to inform you that your firm appears to meet the requirements established by the United States Department of Transportation in Title 49, Part 26 of the Code of Federal Regulations. Consequently, your firm is now certified as a DBE to participate in the program in the following classification(s) only:

Flagging and traffic control services.

NAICS Code(s): 561990

DBE certification continues from the date of this letter, but is contingent upon the firm renewing its eligibility annually with our office. You will be notified in advance of your obligation to provide to our office a copy of your renewal documents. These documents are also available online at www.paucp.com. However, the responsibility to assure continued certification is yours. Failure to continue your eligibility will result in immediate action to decertify the firm.

THE PITTSBURGH WATER AND SEWER AUTHORITY
BRT WATER DISTRIBUTION IMPROVEMENTS
PWSA Project No. 2020-325-102-0

QUALIFICATIONS STATEMENT

Prepared by

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

ACEC
AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

National Society of Professional Engineers®

JANUARY 2021

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QUALIFICATIONS STATEMENT

THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT PERMITTED BY LAWS AND REGULATIONS

1. **SUBMITTED BY:**

   Official Name of Firm: A Folino Construction, Inc.

   Address: 109 Dark Hollow Rd.
   Oakmont PA 15139

2. **SUBMITTED TO:** PWSA

3. **SUBMITTED FOR:** BRT Water Distribution Improvements

   Owner: PWSA

   Project Name: BRT Water Distribution Impr
   Project No. 2020-325-102-0

   TYPE OF WORK: Asphalt, Site, Concrete, Drainage

4. **CONTRACTOR'S CONTACT INFORMATION**

   Contact Person: Dino Folino

   Title: Vice President

   Phone: (412) 820-2800

   Email: Contracts@afolino.com

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5. AFFILIATED COMPANIES:

Name: _____

Address: _____

_____

_____

6. TYPE OF ORGANIZATION:

☐ SOLE PROPRIETORSHIP

Name of Owner: _____

Doing Business As: _____

Date of Organization: _____

☐ PARTNERSHIP

Date of Organization: _____

Type of Partnership: Name

of General Partner(s): _____

_____

_____

☑ CORPORATION

State of Organization: Pennsylvania

Date of Organization: 7/29/77

Executive Officers:

- President: Anthony D Folino
- Vice President(s): Frank Folino
  Dino Folino
- Treasurer: Connie Folino
- Secretary: Connie Folino

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☐ LIMITED LIABILITY COMPANY

State of Organization: _____

Date of Organization: _____

Members: _____

_____

_____

_____

_____

☐ JOINT VENTURE

Sate of Organization: _____

Date of Organization: _____

Form of Organization: _____

Joint Venture Managing Partner

- Name: _____
- Address: _____

_____

_____

Joint Venture Managing Partner

- Name: _____
- Address: _____

_____

Joint Venture Managing Partner

- Name: _____
- Address: _____

_____

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7. LICENSING

Jurisdiction: Pennsylvania

Type of License: Contractor

License Number: 641674

Jurisdiction: West Virginia / Ohio

Type of License: Contractor

License Number: WV050106 / 2011540037Z

8. CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise: _____

Minority Business Enterprise: _____

Woman Owned Enterprise: _____

Small Business Enterprise: _____

Other (_____): _____

9. BONDING INFORMATION

Bonding Company: Western Surety Company

Address: One PPG Place, Suite 2920
Pittsburgh PA 15222

Bonding Agent: Foedisch & Free, Inc.

Address: 4099 William Penn Highway
Monroeville PA 15146

Contact Name: Douglas M Free

Phone: (412) 281-7280

Aggregate Bonding Capacity: 50 million

Available Bonding Capacity as of date of this submittal: 36 million

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10. FINANCIAL INFORMATION

Financial Institution: First National Bank

Address: 12 Federal St.
Pittsburgh PA 15212

Account Manager: Tracie Elzat

Phone: (412) 359-2664

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE LAST 3 YEARS

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

☐ YES ☑ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

☐ YES ☑ NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

☐ YES ☑ NO

If YES, attach as an Attachment details including Project Owner's contact information.

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12. SAFETY PROGRAM:

Name of Contractor's Safety Officer: Brendon Stamm

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	2019	EMR	0.640
YEAR	2018	EMR	0.647
YEAR	2017	EMR	0.712
YEAR	2016	EMR	0.760
YEAR	2015	EMR	0.912

Total Recordable Frequency Rate (TRFR) for the last 5 ye ars:

YEAR	2019	TRFR	.74
YEAR	2018	TRFR	1.35
YEAR	2017	TRFR	0.51
YEAR	2016	TRFR	1.94
YEAR	2015	TRFR	2.78

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Total number of man-hours worked for the last 5 Years:

YEAR	2019	TOTAL NUMBER OF MAN-HOURS	541,733
YEAR	2018	TOTAL NUMBER OF MAN-HOURS	443,968
YEAR	2017	TOTAL NUMBER OF MAN-HOURS	389,479
YEAR	2016	TOTAL NUMBER OF MAN-HOURS	309,652
YEAR	2015	TOTAL NUMBER OF MAN-HOURS	287,514

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

YEAR	2019	DART	.74
YEAR	2018	DART	.90
YEAR	2017	DART	0.00
YEAR	2016	DART	0.65
YEAR	2015	DART	1.39

13. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

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I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HEREWITH, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: J Foline Construction, Inc.

BY: _____

TITLE: Dino Foline, VP

DATED: 2-16-21

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS 16th DAY OF February, 2021

_____

NOTARY PUBLIC - STATE OF Pennsylvania

MY COMMISSION EXPIRES: November 21, 2024

Commonwealth of Pennsylvania – Notary Seal
DANIELLE S CINIELLO – Notary Public
Allegheny County
My Commission Expires Nov 21, 2021
Commission Number 1280455

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Additional items as pertinent.

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SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

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SCHEDULE B

THE PITTSBURGH WATER AND SEWER AUTHORITY
BRT WATER DISTRIBUTION IMPROVEMENTS
PWSA Project No. 2020-325-102-0

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

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SCHEDULE B

THE PITTSBURGH WATER AND SEWER AUTHORITY
BRT WATER DISTRIBUTION IMPROVEMENTS
PWSA Project No. 2020-325-102-0

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

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SCHEDULE C - LIST OF MAJOR EQUIPMENT AVAILABLE

ITEM	PURCHASE DATE	CONDITION	ACQUIRED VALUE

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Bidder Qualification Packet

Folino
CONSTRUCTION

A. Folino Construction, Inc.
109 Dark Hollow Road
Oakmont, PA 15139

Corporate Resolution

I, Anthony D. Folino, President of A. Folino Construction, Inc. organized and existing under the laws of the State of Pennsylvania, and having its principal place of business at 109 Dark Hollow Road, Oakmont, PA 15139, do hereby certify that the following is a true copy of a resolution adopted by the Board of Directors of the Corporation at a meeting convened and held on November 20, 2010 at which a quorum was present and voting throughout and that such a resolution is now in full force and effect and is in accordance with the provisions of the charter and by-laws of the Corporation.

RESOLVED: That the Corporation's Vice-President, Dino Folino, is duly authorized to sign any contracts or forms on behalf of A. Folino Construction, Inc.

I further certify that this Corporation is duly organized and existing, and has the power to take the action called for by the forgoing resolution.

Anthony D. Folino

Anthony D. Folino

11-20-10
Date

Witness my hand seal of this Corporation on this 20th day of November, 2010

Prequalification Certificate

General

Business Partner Id: 000995
Status: Qualified
Federal ID Number: 25-1367237
Line Of Credit: $12,000,000.00
Line Of Credit Expiration: 05/31/2021

Maximum Capacity: $128,945,800.00
Performance Factor: 8
Issued: 12/15/2020
Effective: 12/15/2020
Expiration: 06/30/2022

In accordance with the Department regulations you are hereby notified of the performance factor, maximum capacity rating, and work classifications assigned to you. You are eligible to perform as a Prime Contractor.

Contractor

Name	Address	City	State	Zip	Zip + 4
A. Folino Construction Inc.	P.O. Box 111	Oakmont	PA	15139	0111

Subsidiaries

Name	FID
No records found.	

Work Class Codes

Code	Group	Description	Type
C1	Earthwork	Other Excavation and Grading (Roadway Patches, Drainage, Structure Related, etc.)	R
C3	Incidental Construction	Geotextiles	R
E	Base Course	Flexible Base Course	R
F	Pavement	Bituminous Pavement	R
F1	Pavement	Bituminous Pavement Patching and Repair	R
F2	Pavement	Bituminous Joint and Crack Sealing	R
F3	Pavement	Milling, Rumble Strips, Scarification Bituminous or Concrete	R
F4	Pavement	Bituminous Surface Treatments, Seal Coats	R
G1	Pavement	Rigid Pavement Patching and Repair	R
G2	Pavement	Diamond, Carbide Grinding Concrete or Bituminous	R
G3	Pavement	Spall Repair	R
G4	Pavement	Joint Rehabilitation, Sawing and Sealing Concrete or Bituminous	R
H	Incidental Construction	Drainage, Water Main, Storm Sewer	R
H1	Incidental Construction	Pipe and Culvert Cleaning	R
H2	Incidental Construction	Pavement Base Drains	R
K	Incidental Construction	Curbs, Sidewalks, Inlets, Manholes	R
K1	Incidental Construction	Masonry Work	R
K2	Incidental Construction	Concrete and Masonry Coatings	R
M	Roadside	Landscaping	R
M1	Roadside	Selective Tree Removal, Trimming	R
M2	Roadside	Silt Barrier Fence, Gabions, Erosion Control	R
M3	Roadside	Seeding and Soil Supplements	R
Q	Traffic Accommodations & Control	Maintenance and Protection of Traffic	R

Signature

VALIDATE AND ISSUED BY: David T. DeMarkis /s/

PREQUALIFICATION OFFICER

Comments

One or more Lines-of-Credit became effective

Audit Information

Created By	Created On	Modified By	Modified On
LaToya Lewis/PennDOT	12/15/2020 08:03:52 AM	LaToya Lewis/PennDOT	12/15/2020 08:03:52 AM

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PennDOT Privacy Policy

A. Folino Construction, Inc.

Job List - Revised: 1/22/2021

Job #	Description	Engineer / Manager	Owner	Type	Last Worked
20-01001	ECMS#100970 South Park Rd Widn	Lauren Wilkins	PA Dept. Of Transportation	PennDOT	11/24/2020
20-01004	ECMS#106559 PA21 Fayette Corr	Jeff Tedesco	PA Dept. Of Transportation	PennDOT	11/24/2020
20-01005	ECMS#107994 SR4012 Bradys #2	Caleb Schultz	PA Dept. Of Transportation	PennDOT	01/15/2021
20-01006	ECMS#109530 SR3005 Chapel Rd	Caleb Schultz	PA Dept. Of Transportation	PennDOT	10/09/2020
20-01015	ECMS#88829 SR18 Signal Upgrade	Jeff Tedesco	Plum Contracting	PennDOT	11/13/2020
20-01018	ECMS#105248 Allegh Co Grp 3	Brad Craig	PA Dept. Of Transportation	PennDOT	11/19/2020
20-01024	ECMS#104228 SR885 Almono TIIF	To Be Determined	Allison Park Contractors Inc.	PennDOT	
20-01026	ECMS#76393 Dookers Hollow Brdg	Lauren Wilkins	Allison Park Contractors Inc.	PennDOT	
20-01029	ECMS#105245 Allegh Co Group 1	Jason Durst	PA Dept. Of Transportation	PennDOT	12/09/2020
20-01046	ECMS#28180 CBD Signals Phase 3	Caleb Schultz	A. Merante Contracting Inc.	PennDOT	09/24/2020
20-01048	ECMS#109965 D12 High Friction	Jeff Tedesco	DeAngelo Brothers, LLC	PennDOT	09/10/2020
20-02033	PWSA 2020 Surf Rest - OPS	Ryan Summers	Pittsburgh Water & Sewer Auth	Municipal	01/15/2021
20-02034	PWSA 2020 Surf Rest - CAPITAL	Ryan Summers	Pittsburgh Water & Sewer Auth	Municipal	01/11/2021
20-02042	N Allegh SD Drive Modification	John Schweinberg	North Allegheny School Distric	Municipal	01/15/2021
20-02086	City of Pgh 2020 Speed Humps	Nick Schropp	City Of Pittsburgh	Municipal	11/20/2020
20-02107	Mt Oliver 2020 Pavement Maint.	John Schweinberg	Borough Of Mount Oliver	Municipal	01/06/2021
20-02175	Shaler HS Parking Lot Paving	Carl Gazzo	Shaler Area School District	Municipal	08/21/2020
20-02176	Edgeworth - Oliver Rd Improve	Leah Munsky	Borough of Edgeworth	Municipal	12/30/2020
20-02227	RACW Canonsburg Street & Sewer	John Schweinberg	Costabile Construction, Inc.	Municipal	01/14/2021
20-02235	RACB Kaufman Dr Reconstruction	John Schweinberg	Redevelopment Authority - Butl	Municipal	01/15/2021
20-02253	City of Pgh Smallman St Cont#2	Ryan Summers	A. Merante Contracting Inc.	Municipal	12/09/2020
20-02324	Elizabeth 2020 Street Paving	John Schweinberg	Elizabeth Boro Municipal Auth	Municipal	12/16/2020
20-02336	Long Ridge Energy	Jeff Tedesco	Kiewit Power Constructors Co.	Municipal	10/25/2020
20-02339	Amwell & Morris Street Improve	John Schweinberg	Redv. Auth. Of Washington Cnty	Municipal	12/08/2020
20-02354	PAAW Elizabeth	John Schweinberg	Carl P. Fekula Inc.	Municipal	12/02/2020
20-02355	Mansfield Ave Sidewalk Install	John Schweinberg	Borough Of Greentree	Municipal	12/28/2020
20-02358	Aspinwall 2020 Road Paving	John Schweinberg	Borough of Aspinwall	Municipal	12/18/2020
20-02383	Brinton Avenue Reconstruction	John Schweinberg	Borough Of Pitcairn	Municipal	
20-02399	ACAA 7G1-20 Prkg Lot Improve	Jeff Tedesco	Allegheny County Airport Auth.	Municipal	01/06/2021
20-03019	The Vision on 15th	Mark Dunkin	Burns & Scalo Development LLC	Concrete	01/04/2021
20-03042	WVU Women & Childrens Hospital	Mark Dunkin	Mosites Construction	Concrete	
20-03045	South Hills Subaru - Slabs	Mark Dunkin	UHL Construction Company	Concrete	10/29/2020
20-03086	USPS P&DC Loading Dock	Roberto Fratangelo	Pullman SST, Inc	Concrete	01/13/2021
20-03124	USPS Tunnel Surface Pavement	Lawrence Martin	Unites States Postal Service	Concrete	01/05/2021
20-03137	South Hills Subaru	Mark Dunkin	UHL Construction Company	Concrete	11/18/2020
20-03143	Lot 10 Parking Garage	Mark Dunkin	Carl Walker Construction Inc	Concrete	01/15/2021
20-04006	Bakery Refresh	Roberto Fratangelo	P.J. Dick Corporation	Site Development	11/04/2020
20-04011	MSA Building G	Roberto Fratangelo	Turner Construction Company	Site Development	10/07/2020
20-04043	The Vision on 15th - Garage	Mark Dunkin	Carl Walker Construction Inc	Site Development	12/16/2020
20-04078	Angel's Distributing	Roberto Fratangelo	Steelsmith, Inc.	Site Development	01/15/2021
20-05001	FNB Wexford	Frank Prines	First National Bank	Combo Projects	11/23/2020

A. Folino Construction, Inc.

Job List - Revised: 1/22/2021

Job #	Description	Engineer / Manager	Owner	Type	Last Worked
20-05002	St Clair Ambulatory Care Ctr	Roberto Fratangelo	P.J. Dick Corporation	Combo Projects	01/15/2021
20-05003	FNB West View	Frank Prines	First National Bank	Combo Projects	01/07/2021
20-05007	The Watson Institute Expansion	Mark Dunkin	P.J. Dick Corporation	Combo Projects	01/14/2021
20-05009	Bank of America Bridgeville	Roberto Fratangelo	Landau Building Company	Combo Projects	01/15/2021
20-05010	The Heights at Thorn Hill	Kelby Kendall	Al. Neyer LLC	Combo Projects	
20-06015	Gunton Pella Expansion	Kelby Kendall	Al. Neyer LLC	Commercial Asphalt	10/31/2020
20-06022	Elliott Testing Facility	Sam Roda	Walbridge Industrial Process L	Commercial Asphalt	10/25/2020
20-06025	Hempfield Commerce Center	Kelby Kendall	Al. Neyer LLC	Commercial Asphalt	
20-06055	Krystal Biotech	Kelby Kendall	Al. Neyer LLC	Commercial Asphalt	11/20/2020
20-06079	South Hills Subaru	Sam Roda	UHL Construction Company	Commercial Asphalt	12/24/2020
20-06108	Seneca Valley Elementary	Kelby Kendall	Rycon Construction	Commercial Asphalt	11/27/2020
20-06110	Baierl Carwash	Sam Roda	UHL Construction Company	Commercial Asphalt	10/08/2020
20-06120	AJ Palumbo Center	Kelby Kendall	P.J. Dick Corporation	Commercial Asphalt	12/22/2020
20-06140	Heritage Valley Beaver	Kelby Kendall	Valley Medical Facilities, Inc	Commercial Asphalt	10/23/2020
20-08001	PWSA 2020 Small Diameter (A)	Alex Bengel	Pittsburgh Water & Sewer Auth	Pipe	01/15/2021
20-08010	PWSA 2020 Urgent Sewer Repair	Alex Bengel	Pittsburgh Water & Sewer Auth	Pipe	01/16/2021
20-08011	PWSA 2020 Urgent Water Repair	Alex Bengel	Pittsburgh Water & Sewer Auth	Pipe	01/16/2021
20-08020	EQT REDD Waterline	Dino Folino	EQT	Pipe	12/31/2020
20-08023	Sewickley 2020 Storm Sewer Imp	Leah Munsky	Borough of Sewickley	Pipe	12/31/2020
20-08026	PWSA 2020 Catch Basin & Inlets	Alex Bengel	Pittsburgh Water & Sewer Auth	Pipe	01/15/2021
20-09018	New Rec Ctr Enabling Project	Frank Prines	Clista Electric	Special Projects	01/15/2021
20-09032	SYSCO Pgh 2020 Lot Improvement	Frank Prines	SYSCO	Special Projects	03/12/2020
20-09078	Northwest Bank PA-228	Frank Prines	Northwest Bank	Special Projects	
20-09098	Buzzy's Tire & Auto Service	Frank Prines	Buzzy's Tire & Auto Service	Special Projects	12/23/2020
20-09117	Vietnam Pavilion Valve Replace	Frank Prines	McElwain Solutions LLC	Special Projects	
20-09165	N Hills Toyota - McKnight Road	Frank Prines	North Hills Toyota	Special Projects	
20-09186	Greco Gas Trench Repair	Frank Prines	Greco Gas	Special Projects	
20-09190	TD Qwik Car Wash	Frank Prines	TD Qwik Car Wash	Special Projects	
20-91053	ECMS#58561 SR7301 Wenzell Brdg	Lauren Wilkins	Allison Park Contractors Inc.	PennDOT	10/10/2020
20-92363	Allegheny Co Milling Spec#8272	Dino Folino	Allegheny County Public Works	Municipal	12/11/2020
20-96173	Beesontown Shoppes - Uniontown	Kelby Kendall	FranJo Construction	Commercial Asphalt	01/15/2021
20-96195	Pitt-WPU-Bigelow Blvd	Sam Roda	Mascaro Construction Co LP	Commercial Asphalt	12/02/2020
20-999	CLOSED JOBS WARRANTY REPAIRS	To Be Determined		Combo Projects	01/14/2021
21-03131	USPS Customer Parking	Lawrence Martin	Unites States Postal Service	Concrete	01/15/2021
71130	ECMS#102874 SR4022 I-279-Arndt	To Be Determined	Frank J. Zottola Const. Inc.	PennDOT	05/20/2020
81009	ECMS#105234 Grp 111-18-7135-2	To Be Determined	PA Dept. Of Transportation	PennDOT	08/07/2020
81080	ECMS#78227 Hite/ButlerLogan	Carl Gazzo	Swank Associated Companies	PennDOT	08/31/2020
81102	PA Turnpike SR576-Morganza Rd	Jason Durst	Independence Excavating Inc.	PennDOT	10/27/2020
81139	PA Turnpike Bridge WB-454 Sbg	Jason Durst	Mosites Construction	PennDOT	08/19/2020
81151	SR4009 Babcock Blvd Sinkhole E	Former Employees	Joseph B. Fay Co	PennDOT	07/29/2020
82269	Washington Co Airport Access R	To Be Determined	Redv. Auth. Of Washington Cnty	Municipal	

A. Folino Construction, Inc.

Job List - Revised: 1/22/2021

Job #	Description	Engineer / Manager	Owner	Type	Last Worked
83046	Atria's McCandless	Roberto Fratangelo	A. Martini & Company Inc.	Concrete	01/20/2020
84038	Wagner Road Extension-Site	Roberto Fratangelo	Sentinel Construction LLC	Site Development	04/03/2020
86020	Atrias At McCandless 17-137	Sam Roda	A. Martini & Company Inc.	Commercial Asphalt	06/24/2020
88089	PWSA 2018 Individual Lead Svc	Leah Munsky	Pittsburgh Water & Sewer Auth	Pipe	01/12/2021
91009	ECMS#109374 SR51 Saw Mill Run	Caleb Schultz	PA Dept. Of Transportation	PennDOT	11/19/2020
91026	ECMS#81856 SR19 Washington Rd	Jason Durst	PA Dept. Of Transportation	PennDOT	11/16/2020
91048	ECMS#97846 CityofPgh I-579 Cap	Lauren Wilkins	Joseph B. Fay Co	PennDOT	06/16/2020
91072	ECMS#93784 SR48 ovrBoston Hlw	Lauren Wilkins	C. H. & D. Enterprises Inc.	PennDOT	11/20/2020
91076	ECMS#112112 Brandt School Rd	Jason Durst	PA Dept. Of Transportation	PennDOT	12/30/2020
92134	City of Pittsburgh Milling #FI	Nick Schropp	City Of Pittsburgh	Municipal	11/23/2020
92135	City of Pgh Paving #FIFB190001	Nick Schropp	City Of Pittsburgh	Municipal	11/25/2020
92240	City of Pgh Speed Humps	Dino Folino	City Of Pittsburgh	Municipal	09/01/2020
92266	Hilltop Energy Center - Paving	Dino Folino	Kiewit Power Constructors Co.	Municipal	11/05/2020
93060	93060 - Waters of Peters Twp	Roberto Fratangelo	Continental Building Systems	Concrete	12/11/2020
93106	PGH Botanic Welcome Ctr-Concre	Roberto Fratangelo	P.J. Dick Corporation	Concrete	12/09/2020
94025	Waters of Peters - Site	Roberto Fratangelo	Continental Building Systems	Site Development	01/14/2021
94031	The Crossings at Harts Run	Roberto Fratangelo	March-Westin Company Inc.	Site Development	12/15/2020
94032	1600 Smallman Street-Site/Util	Roberto Fratangelo	P.J. Dick Corporation	Site Development	12/31/2020
94039	Pgh Botanic Garden-Welcome Ctr	Roberto Fratangelo	P.J. Dick Corporation	Site Development	12/29/2020
94057	Argo Test Track Expansion	Sean Gulbin	P.J. Dick Corporation	Site Development	09/25/2020
96066	Kerr Elementary	Sam Roda	Hudson Construction Inc.	Commercial Asphalt	08/28/2020
96073	The Waters of Peters - Asphalt	Sam Roda	Continental Building Systems	Commercial Asphalt	11/14/2020
96112	Pgh Botanic Garden-Welcome Ctr	Sam Roda	P.J. Dick Corporation	Commercial Asphalt	12/29/2020
96146	Argo Test Track Exp-Asphalt	Sam Roda	P.J. Dick Corporation	Commercial Asphalt	08/03/2020
96167	Crossings at Harts Run	Sam Roda	March-Westin Company Inc.	Commercial Asphalt	12/12/2020
96184	Pittsburgh Produce Terminal	Sam Roda	P.J. Dick Corporation	Commercial Asphalt	09/01/2020
98065	PWSA-2019 Volunteers GIS Impro	Leah Munsky	Pittsburgh Water & Sewer Auth	Pipe	11/16/2020
98068	PWSA 2019 Catch Basin & Inlet	Alex Bengel	Pittsburgh Water & Sewer Auth	Pipe	11/12/2020
98069	PWSA Pressure Monitor Line	Leah Munsky	Pittsburgh Water & Sewer Auth	Pipe	11/19/2020

A. Folino Construction, Inc.

Job List - Revised: 1/6/2020

Job #	Description	Engineer / Manager	Owner	Type	Bid Date
55800	Facility - Industrial Park	F Folino	A. Folino Construction, Inc.	Facility	01/01/15
55830	Facility - Storage Yard (New)	F Folino	TDF SERVICES, INC.	Facility	12/20/10
55860	July 2019 Flood Clean-Up	F Folino	A. Folino Construction, Inc.	Facility	07/22/19
58100	Inhouse - A. Folino Construction, Inc.	F Folino	A. Folino Construction, Inc.	In-House	12/29/10
62223	Newbury HOP Revised (Washington Pike/I-79 Exit Ram	Roos	Newbury Development Associates	Municipal	10/07/16
74053	Terrace Place @ Vincentian - Site/Utility	Foster	P.J. Dick Corporation	Site Development	10/31/17
81039	JV-567 SR1023 Linden Creek Rd	Mahoney	A. Merante Contracting, Inc.	Penndot	06/01/17
81080	ECMS# 78227 SR1014 & SR1019 Bridges	Schroeffel	Swank Associated Companies	Penndot	06/07/18
81098	ECMS# 110005 Washington Co. Bridges	Mahoney	Thornbury Inc.	Penndot	06/21/18
81102	PA Turnpike SR576 - Morganza Rd Improvement	Durst	Independence Excavating Inc.	Penndot	07/25/18
81130	ECMS# 89097 SR1027 Pleasantville Rd Bridge	Schroeffel	C. H. & D. Enterprises Inc.	Penndot	10/04/18
81137	ECMS# 88073 SR981 Unity Run Bridge	Schroeffel	C. H. & D. Enterprises Inc.	Penndot	10/18/18
81139	PA Turnpike Bridge WB-454 Saltsburg Rd	Durst	Mosites Construction	Penndot	11/13/18
81150	ECMS# 109855 - Dist 12 Bridge Maintenance (FA)	Mahoney	Allison Park Contractors, Inc.	Penndot	10/30/18
82124	Green Tree Boro 2018 Paving	Schweinberg	BOROUGH OF GREEN TREE	Municipal	04/24/18
82320	Charleroi/Roscoe Mill/Overlay w/California	Schweinberg	Cole Contracting, Inc.	Municipal	10/15/18
83046	Atria's @ McCandless	Fratangelo	A. Martini & Company Inc.	Concrete	12/20/17
83070	The Riviera @ PTC	Fratangelo	Burns & Scalo Development, LLC	Concrete	03/16/18
83086	WCCC - Founders Hall	Dunkin	Hudson Group	Municipal	04/10/18
83216	Woodland Hills - Dickson	Dunkin	Nello Construction Company	Concrete	08/08/18
83228	Wagner Road Extension	Dunkin	Sentinel Construction, LLC	Concrete	08/08/18
83269	Luann Drive - Kennedy Twp	McFarland	A. Folino Construction, Inc.	Concrete	09/18/18
83288	Somerset Outpatient Care Center	Fratangelo	MBM Contracting Inc.	Concrete	10/19/18
83292	Waterfront Place Townhomes	Dunkin	Riverplace Developer, LLC	Concrete	05/01/18
83300	AHN Jefferson Hospital - Site	Fratangelo	MBM Contracting Inc.	Concrete	06/06/18
83307	AHN McCandless Neighborhood Hospital	Fratangelo	RYCON Construction	Concrete	10/14/18
84032	Atria's @ McCandless	Fratangelo	A. Martini & Company Inc.	Site Development	12/19/17
84034	Waterfront Place Townhomes	Foster	Riverplace Developer, LLC	Site Development	05/01/18
84038	Wagner Rd Extension - Site/Utilities	Foster	Sentinel Construction, LLC	Site Development	04/07/18
86020	Atria's @ McCandless	Kendall/Roda	A. Martini & Company Inc.	Commercial Asphalt	12/20/17
86109	St Clair Hospital - Central Utility Bldg	Kendall/Roda	Mascaro Construction Co, LP	Commercial Asphalt	02/01/18
88078	California Borough - Various Projects	Munsky	California Borough	Piping	07/12/18
88089	PWSA 2018 Individual Lead Service Line Replacemen	Munsky	Pittsburgh Water & Sewer Auth	Piping	10/11/18
91008	ECMS# 107982 SR1024 Mountain View Rd	Mahoney	PA DEPT. OF TRANSPORTATION	Penndot	01/31/19
91009	ECMS# 109374 SR51 Saw Mill Run	Mahoney	PA DEPT. OF TRANSPORTATION	Penndot	01/31/19
91013	ECMS# 29301 SR288 Wampum Ave Bridge	Mahoney	Brayman Construction Corp.	Penndot	06/07/18
91015	ECMS# 27462 McFarren Street Bridge	Schroeffel	Gulisek Construction	Penndot	12/06/18
91016	ECMS# 81650 SR8042 Route 40 Bridge	Schroeffel	Gulisek Construction	Penndot	11/01/18
91019	ECMS# 106881 SR119/SR2065/SR4001	Schroeffel	C. H. & D. Enterprises Inc.	Penndot	02/14/19

A. Folino Construction, Inc.

Job List - Revised: 1/6/2020

Job #	Description	Engineer / Manager	Owner	Type	Bid Date
91026	ECMS# 81856 SR19 Washington Rd	Mahoney	PA DEPT. OF TRANSPORTATION	Penndot	02/28/19
91028	ECMS# 81837 - US119 over Zellers Run	TBD	Charles J. Merlo, Inc.	Penndot	02/28/19
91032	ECMS# 28806 CB#24 Brickyard Bridge	TBD	C. H. & D. Enterprises Inc.	Penndot	03/14/19
91033	ECMS# 28831 CB#52 McHenry Bridge #1	Schroeffel	C. H. & D. Enterprises Inc.	Penndot	03/14/19
91036	ECMS# 105243 Beaver Co. Group 1	Durst	PA DEPT. OF TRANSPORTATION	Penndot	03/14/19
91041	ECMS# 107346 SR381 Ohiopyle MultiModal Gateway	Tedesco	Plum Contracting	Penndot	03/15/19
91048	ECMS# 97846 City of Pittsburgh I-579 Cap Project	TBD	JOSEPH B. FAY C0.	Penndot	03/28/19
91061	ECMS# 105240 Allegheny Co. Group 2	Colbaugh/Roos	PA DEPT. OF TRANSPORTATION	Penndot	04/25/19
91070	ECMS# 110090 SR88 Slide Repairs	Mahoney	Carmen Paliotta Contracting	Penndot	06/20/19
91072	ECMS# 93784 SR48 over Boston Hollow Run	TBD	C. H. & D. Enterprises Inc.	Penndot	06/20/19
91089	ECMS# 74330 SR3048 Noblestown Rd Bridge	TBD	Pugliano Construction Co., Inc	Penndot	07/25/19
91091	ECMS# 78358 SR7405 Maple ovr McClures Run	TBD	C. H. & D. Enterprises Inc.	Penndot	09/30/19
91112	ECMS# 112654 Dist 12 Bridge Maint (FA)	Schultz/Mahoney	Allison Park Contractors, Inc.	Penndot	11/07/19
92004	PWSA 2019 Surface Restoration	Summers	Pittsburgh Water & Sewer Auth	Municipal	01/23/19
92019	Brentwood 2019 Road Paving Program	O'Connor	BOROUGH OF BRENTWOOD	Municipal	02/13/19
92081	Allegheny Co 2018B Capital Bridge Repair	Gazzo	Pugliano Construction Co., Inc	Municipal	03/13/19
92129	Arin IU28 Curb, Walk & Pavement Replacement	Fratangelo	Arin Intermediate Unit 28	Municipal	04/09/19
92134	City of Pittsburgh Milling	Schropp/Greco	City of Pittsburgh	Municipal	04/05/19
92135	City of Pittsburgh Paving & Restoration	Schropp/Greco	City of Pittsburgh	Municipal	04/05/19
92153	RIDC Westmoreland 2019 Paving Program	Schweinberg/O'Connor	Regional Industrial Develop Corp	Municipal	04/17/19
92199	Roscoe/California/Centerville Pvmt Rest	Schweinberg	Cole Contracting, Inc.	Municipal	04/30/19
92240	City of Pittsburgh - Speed Humps	D. Folino	City of Pittsburgh	Municipal	06/20/19
92276	Verona Boro - Centre Ave Reconstruction	O'Connor/Schweinberg	ALLEGHENY VALLEY NORTH COG	Municipal	08/09/19
92287	Independence Twp - Campground Road	O'Connor/Schweinberg	Independence Township	Municipal	08/19/19
92290	O'Hara Twp Little Pine Creek Restoration	O'Connor/Schweinberg	Chivers Construction Company, Inc.	Municipal	08/16/19
92300	Rankin Boro - Hawkins Ave Reconstruction	O'Connor/Schweinberg	TURTLE CREEK VALLEY C.O.G.	Municipal	09/03/19
92314	Crafton Borough ADA Ramp Project	O'Connor/Schweinberg	CHAR-WEST COG	Municipal	08/29/19
92316	Beaver Borough - Water Street Paving	Gazzo	Beaver Borough	Municipal	09/05/19
92327	Shaler Twp - Perlick Street Paving	O'Connor/Schweinberg	NORTH HILLS COUNCIL OF GOVT'S.	Municipal	09/13/19
92345	PA American Water - Washington Mill/Pave	O'Connor/Schweinberg	D&M Contracting	Municipal	09/12/19
92354	PA American Water - Carrick Restoration	O'Connor/Schweinberg	Casper Colosimo Construction	Municipal	09/18/19
92384	Fay Utility Patch - 26th&Smallman (CO#2)	TBD	JOSEPH B. FAY C0.	Municipal	11/07/19
92387	Fay Utility Patch - Penn & 8th (CO#3)	TBD	JOSEPH B. FAY C0.	Municipal	11/07/19
92390	American Natural Sheraton Dr HOP Paving	Prines	Bolger Brothers, Inc.	Special Project Group	11/25/19
93032	Penn Health Grow Facility	Dunkin	Allegheny Construction Group	Concrete	02/13/19
93048	Westgate Flex - Site Concrete	Dunkin	UHL Construction Company	Concrete	02/25/19
93060	The Waters @ Peters - Concrete	Fratangelo	Continental Building Systems	Concrete	03/01/19
93061	D15 Core & Shell	Dunkin	RDC Design-Build, Inc.	Concrete	02/25/19
93077	Garden of the Five Senses - Concrete	Fratangelo	P.J. Dick Corporation	Concrete	05/08/19

A. Folino Construction, Inc.

Job List - Revised: 1/6/2020

Job #	Description	Engineer / Manager	Owner	Type	Bid Date
93106	PGH Botanic Gardens - Welcome Center	Fratangelo	P.J. Dick Corporation	Concrete	05/08/19
93201	Carnegie Library - Mt. Washington	Fratangelo	Volpatt Construction	Concrete	09/05/19
93205	Franklin Square Curbs	Dunkin	RDC Design-Build, Inc.	Concrete	08/23/19
93206	Baierl Acura - Concrete	Dunkin	UHL Construction Company	Concrete	09/11/19
93216	Pgh Produce Terminal - Concrete Curbs	Dunkin	P.J. Dick Corporation	Concrete	09/19/19
94025	The Waters @ Peters	Foster	Continental Building Systems	Site Development	03/14/19
94031	The Crossing @ Harts Run - Site/Utility	Foster	March-Westin Company, Inc.	Site Development	04/01/19
94032	1600 Smallman Street - Site/Utilities	Foster	P.J. Dick Corporation	Site Development	12/14/18
94034	Garden of the Five Senses - Site	Foster	P.J. Dick Corporation	Site Development	05/08/19
94039	Pgh Botanic Garden Welcome Center - SITE	Foster	P.J. Dick Corporation	Site Development	06/27/19
94045	Carnegie Library - Mt. Washington	Fratangelo	Volpatt Construction	Site Development	09/05/19
94057	Argo Test Track Expansion	Gulbin	P.J. Dick Corporation	Site Development	08/19/19
94078	Pgh Botanic Garden Lotus Pond	Foster	Pittsburgh Botanic Garden	Site Development	11/16/19
96008	Westgate Flex	Kendall/Roda	UHL Construction Company	Commercial Asphalt	02/25/19
96037	Gill Hall Elementary	Kendall/Roda	DiMarco Construction Co., Inc.	Commercial Asphalt	02/25/19
96040	Ellwood City Public Works Building	Kendall/Roda	Fleeher Contracting LLC	Commercial Asphalt	10/03/18
96062	Innovation Ridge Office Building	Kendall/Roda	Al. Neyer, LLC	Commercial Asphalt	03/13/19
96065	Operating Engineers Local 66 Dispatch - Asphalt	Kendall/Roda	Mascaro Construction Co, LP	Commercial Asphalt	03/05/19
96066	Kerr Elementary	Kendall/Roda	Hudson Construction Inc.	Commercial Asphalt	04/30/19
96073	The Waters of Peters	Kendall/Roda	Continental Building Systems	Commercial Asphalt	03/14/19
96079	Community Life - Rostraver	Prines	EG Construction, LLC	Commercial Asphalt	03/13/19
96090	Jackson Township Industrial Building	Kendall/Roda	Al. Neyer, LLC	Commercial Asphalt	03/13/19
96108	Bell Drive, Jackson Township	Kendall/Roda	Al. Neyer, LLC	Commercial Asphalt	03/13/19
96111	AHN McCandless - Asphalt	Kendall/Roda	RYCON Construction	Commercial Asphalt	05/07/19
96115	Rico's Parking Lot	Kendall/Roda	Rico's Restaurant	Commercial Asphalt	04/18/19
96150	Penn Health Growth Facility	Dunkin	Allegheny Construction Group	Commercial Asphalt	06/15/19
96151	12703 Perry Highway	Kendall/Roda	Pam Rezzetano	Commercial Asphalt	07/19/19
96167	The Crossings @ Harts Run	Kendall/Roda	March-Westin Company, Inc.	Commercial Asphalt	04/01/19
96184	Pittsburgh Produce Terminal	Roda	P.J. Dick Corporation	Commercial Asphalt	12/19/18
96198	UPMC Generator Tap Patch	Prines	MBM Contracting Inc.	Commercial Asphalt	09/13/19
96203	Westgate Business Park - Phase I	Kendall	Al. Neyer, LLC	Commercial Asphalt	10/02/19
96221	Baierl Acura - Asphalt	Dunkin	UHL Construction Company	Commercial Asphalt	09/11/19
96333	Friendship Village - Patch	Roda	Arrow Electric, Inc.	Commercial Asphalt	12/03/19
98007	Smithfield - Forbes Water Line Exploration		Ruthrauff Sauer	Piping	03/11/19
98041	PWSA 2019 Urgent Water Repair	Bengel	Pittsburgh Water & Sewer Auth	Piping	04/04/19
98042	PWSA 2019 Urgent Sewer Repair	Bengel	Pittsburgh Water & Sewer Auth	Piping	04/04/19
98065	PWSA Volunteers Field GSI Improvements	Foster	Pittsburgh Water & Sewer Auth	Piping	07/15/19
98068	PWSA 2019 Catch Basin & Inlet Replacement	Bengel	Pittsburgh Water & Sewer Auth	Piping	06/27/19
99046	PA American Water - Greentree Operations Ctr Pavin	F. Folino	PA American Water	Special Project Group	05/06/19

A. Folino Construction, Inc.

Job List - Revised: 1/6/2020

Job #	Description	Engineer / Manager	Owner	Type	Bid Date
99079	Cleaveland/Price Rte 993 HOP Paving	Prines	Cleaveland/Price Inc.	Special Project Group	07/05/19
99149	Draxhall Mgmt - Pittsburgh Lots	Prines	Draxhall Management	Special Project Group	09/30/19
99165	Woods of Brandywine	Prines	KGD Contracting	Special Project Group	10/02/19
99177	Barber Springs	Prines	Barber Spring Company	Special Project Group	10/24/19
99181	Imperial Ridge - Phase I	Prines	Aarcon Enterprises	Special Project Group	11/05/19
99189	McKamish Emergency Waterline Repair (T&M)	Prines	McKamish	Special Project Group	12/02/19

2016-2018 Projects / References

Below is a selection of notable 2016-2018 projects for your review and reference.
Feel free to contact our office or any of the references below to discuss the project(s) in greater detail.

CONCRETE

Thomas Jefferson High School – Jefferson Hills, PA
Owner: Nello Construction
Contact: David Leasure (724) 746-1900
Cost: $4,590,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of the new 95 million dollar Thomas Jefferson High School

Arsenal Terminal Phase I – Pittsburgh, PA
Owner: Franjo Construction
Contact: Jason Bates (412) 660-8464
Cost: $2,112,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of the new Arsenal Terminal apartment's project

Siemens - Project Penn Hall – Mt. Pleasant, PA
Owner: Gray Construction, Inc.
Contact: Chris Schumacher (859) 244-9843
Cost: $2,576,273.75
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the new 70 million dollar Siemens production facility

Forbes Avenue Apartments – Pittsburgh, PA
Owner: Rycon Construction, Inc.
Contact: Dan Stephens (412) 392-2525
Cost: $1,490,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of the new multi-use Bridge on Forbes Complex

North Shore Building 14 – Pittsburgh, PA

Owner: Continental Building Company
Contact: Mark Gardner (412) 464-8933
Cost: $1,773,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of the new multi-million dollar mixed-use building on the Northside of Pittsburgh.

District 15 Office Building – Pittsburgh, PA

Owner: RDC Design Build, Inc.
Contact: Rich Harkins (412) 257-3235
Cost: $922,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of the Facebook – Pittsburgh Regional Division Office Building

Atria's @ McCandless – Pittsburgh, PA

Owner: A. Martini & Co.
Contact: George Germany (412) 828-5500
Cost: $1,187,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of an ultra-modern senior-living care center

The Riviera at PTC – Pittsburgh, PA

Owner: Burns & Scalo Development, LLC.
Contact: Chris Pogue-Geile (412) 250-3000
Cost: $1,482,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of a new multi-use office building in South Oakland

Allegheny Health Network Neighborhood Hospital - McCandless – Pittsburgh, PA

Owner: Rycon Construction, Inc.
Contact: Joel Schubert (412) 287-1102
Cost: $773,000.00
Job Description: Complete concrete construction on project – foundations, slab on grade, slabs on deck, and all site concrete for the construction of the new micro-hospital in the heart of the North Hills

COMMERCIAL

UBER Test Track – Pittsburgh, PA Owner:
Franjo Construction
Contact: Jason Bates (412) 462-4371
Cost: $2,374,605.00
Job Description: Asphalt Paving, Aggregate Berm, Walking Trail, and Line Painting

Clinton Commerce Buildings #1 & #2 – Clinton, PA
Owner: Al. Neyer, LLC
Contact: Tim Holliday (513) 300-5044
Cost: $563,693.00
Job Description: Asphalt Paving, Wedge Curb, Line Painting, Wheel Stops, and Signage

Butler VA Hospital – Butler, PA
Owner: Mascaro Construction
Contact: Joe Manganello (412) 321-4901
Cost: $2,147,233.00
Job Description: Asphalt Paving, Wedge Curb, Base Repair, Sealing, Line Painting, and Signage

U Pull and Pay – Pittsburgh, PA
Owner: Guardian Construction Management Services, Inc.
Contact: Dennis O'Hara (724) 331-1521
Cost: $1,611,710.96
Job Description: Milling, Asphalt Paving, Sealing, and Line Painting

Venango Trails – Mars, PA
Owner: EQA Landmark Communities
Contact: Eric Newhouse (412) 221-7084
Cost: $582,866.61
Job Description: Asphalt Paving, Wedge Curb, Underdrain, Sealing, and Line Painting

The Waters Senior Living – Warrendale, PA
Owner: Continental Building, Co.
Contact: John Vitosky (412) 464-8933
Cost: $257,264.00
Job Description: Asphalt Paving, Sealing, and Line Painting

Bethel Park Public Works Facility – Bethel Park, PA
Owner: Hudson Construction
Contact: Bryan Saeler (724) 962-1980
Cost: $2,147,233.00
Job Description: Asphalt Paving, Wedge Curb, Sealing, and Line Painting

MUNICIPAL/PENNDOT

Swissvale Borough Paving Project – Swissvale, PA
Owner: Borough of Swissvale
Contact: Glenn Engineering & Associates (412) 824-5672
Cost: $503,953.00
Job Description: Milling, Paving, Base Repair, Drainage and Concrete Sidewalk

2018 Emergency Paving Repair – Allegheny, Beaver & Butler Counties, PA
Owner: West View Water Authority
Contact: George Koleck (412) 931-3292
Cost: $392,583.50
Job Description: Repair Damaged Roadways caused by Water Line Breaks

PennDOT Project – SR 8 (Sec 0) – Butler, PA
Owner: Pennsylvania Department of Transportation
Contact: Greg Schnur (724) 822-3838
Cost: $734,427.73
Job Description: Milling and Paving of Main Street

PennDOT Project – Thompson Run Road Betterment – Ross Township, PA
Owner: Pennsylvania Department of Transportation / Allegheny County Dept. of Public Works
Contact: District 11 - (412) 429-5000
Cost: $2,214,221.42
Job Description: Milling, Paving, Base Repair, Drainage, Guide Rail, Signals, and Signing (2.07 Miles)

PennDOT Project – SR 128 Freeport Borough Resurfacing – Freeport Borough, PA
Owner: Pennsylvania Department of Transportation
Contact: (724) 295-2251
Cost: $741,779.68
Job Description: Milling, Paving, Drainage, and ADA Ramps

PennDOT Project – Group 111-17-7135-3 (SR 48 A35) – Allegheny County, PA
Owner: Pennsylvania Department of Transportation
Contact: District 11 - (412) 429-5000
Cost: $5,353,535.35
Job Description: Milling, Resurfacing, Base Repair, Drainage, and Shoulder Repair (10.77 Miles)

PennDOT Project – Group 111-17-7135-1 (SR 4063 A08) – Allegheny County, PA
Owner: Pennsylvania Department of Transportation
Contact: District 11 - (412) 429-5000
Cost: $3,617,361.73
Job Description: Milling, Paving, Shoulder Repair, Base Repair, and Drainage (9.16 Miles)

UPMC Mercy – SR 885 Blvd of the Allies HOP – Pittsburgh, PA
Owner: Mascaro Construction Company
Contact: Joe Gula (412) 812-3134
Cost: $ 47,544.35
Job Description: Milling and paving of roadway in front of UPMC Mercy Hospital

PennDOT Project – Group 111-18-7135-2 – Allegheny County, PA
Owner: Pennsylvania Department of Transportation
Contact: District 11 - (412) 429-5000
Cost: $ 4,354,746.37
Job Description: Milling, Resurfacing, Base Repair, Drainage, and Shoulder Repair (13.56 Miles)

PennDOT Project – Group 114-18-7135-1 (SR 388) – Lawrence County, PA
Owner: Pennsylvania Department of Transportation
Contact: District 11 - (412) 429-5000
Cost: $1,931,805.26
Job Description: Milling, Paving, Shoulder Repair, Base Repair, and Drainage (5.52 Miles)

PennDOT Project – SR 3089 Flaugherty Run Road Bridge – Allegheny County, PA
Owner: Pennsylvania Department of Transportation
Contact: District 11 - (412) 429-5000
Cost: $ 349,550.88
Job Description: Milling, Paving, Shoulder Repair, Base Repair, and Drainage (0.199 Miles)

PennDOT Project – Group SIP 12-18-512-1 – Greene County, PA
Owner: Pennsylvania Department of Transportation
Contact: District 12 - (724) 439-7153
Cost: $ 4,576,623.69
Job Description: Milling, Resurfacing, Base Repair, Drainage, and Shoulder Repair (13.44 Miles)

Greentree Borough 2018 Paving Program – Allegheny County, PA
Owner: Casper Colosimo & Son
Contact: Lou Casadei – (412) 787-1266
Cost: $ 25,328.4
Job Description: Milling, and Paving of Municipal road in Greentree Borough (7 Miles)

Churchill Borough 2018 Road Program – Allegheny County, PA
Owner: Pennsylvania Department of Transportation
Contact: Dennis J. Flynn – (412) 921-4030
Cost: $ 483,110.11
Job Description: Milling, Paving, Shoulder Repair, and Base Repair

Hilltop Energy Kiewit Hilltop - Thomas Road Widening – Carmichaels, PA
Owner: Charles J. Merlo, Inc.
Contact: Joseph Onufro – (814) 322-1545
Cost: $ 148,628.26
Job Description: Paving, Widening and Base Repair (0.43 Miles)

SITE DEVELOPMENT

Newbury Market – Pittsburgh, PA
Owner: EQA Landmark Communities
Contact: Eric Newhouse - (412) 221-7084
Cost: $335,352.30
Job Description: Erosion and Sediment Control, Earthwork, Storm Drainage, Site Utilities, Asphalt Paving, Concrete Curb

Indiana State Police Barracks – Indiana, PA
Owner: Hudson Advisors Indiana, LP
Contact: Brian Wires - (724) 981-1204
Cost: $463,500.00
Job Description: Erosion and Sediment Control, Earthwork, Storm Drainage, Site Utilities

Atria's @ McCandless – Pittsburgh, PA
Owner: A. Martini & Company
Contact: Renee Batronis – (412) 828 - 5500
Cost: $502,000.00
Job Description: Erosion and Sediment Control, Earthwork, Storm Drainage, Site Utilities

Waterfront Place Townhomes – Pittsburgh, PA
Owner: Riverplace Developer, LLC
Contact: Riverplace Developer – (412) 853 - 7317
Cost: $306,397.50
Job Description: Earthwork, Erosion and Sediment Control, Grading, Concrete Curb, Retaining Wall, Block Piers

Wagner Road Extension – Monaca, PA
Owner: Sentinel Construction, LLC
Contact: Mike Weniger - (412) 475-5073
Cost: $548,327.74
Job Description: Erosion and Sediment Control, Site Demolition, Earthwork, Storm Sewer, Cement Concrete, Asphalt Pavement, Waterline System

Allegheny County Vehicle Wash Station – Bridgeville, PA
Owner: Penn State Construction J&D LLC
Contact: Mathias Miller – (717) 953 - 9200
Cost: $161,500.00
Job Description: Earthwork, Sanitary Sewer, Waterline, Gas Line

3500 Technology Drive – Building Addition & East Parking Lot – Monroeville, PA
Owner: Burchick Construction
Contact: Dave Meuschke – (412) 369 - 9700
Cost: $559,842.53
Job Description: Earthwork and Storm Sewer

Wildwood Storm Sewer – Allison Park, PA

Owner:	A. Martini & Company
Contact:	Zachary Roberts – (412) 828 - 5500
Cost:	$721,836.94
Job Description:	Storm Sewer and Grading

PIPE WORK

2018 Urgent Water Repair Contract – Pittsburgh, PA

PWSA Project No. 2018-OPS-100-0

Owner: Pittsburgh Water and Sewer Authority

Contact: Don Gawne – (412) 255-8800

Cost: $1,120,528.68

Job Description: Urgent repair or rehabilitation of the Pittsburgh Water and Sewer Authority public water system including water mains, valves, service connections, and hydrants. Mobilization within 4 hours of notification required.

2018 Urgent Sewer Repair Contract – Pittsburgh, PA

PWSA Project No. 2018-OPS-102-0

Owner: Pittsburgh Water and Sewer Authority

Contact: Don Gawne – (412) 255-8800

Cost: $1,077,565.00

Job Description: Urgent repair or rehabilitation of the Pittsburgh Water and Sewer Authority public sewer system including storm, sewer, and combination sewer facilities. Mobilization within 4 hours of notification required.

2018 Catch Basin and Inlet Replacement Contract – Pittsburgh, PA

PWSA Project No. 2018-325-100-0

Owner: Pittsburgh Water and Sewer Authority

Contact: Mark Sassaman – (412) 255-8800

Cost: $4,139,095.50

Job Description: Replacement and rehabilitation of the Pittsburgh Water and Sewer Authority catch basins and inlets and/or storm and combination facilities within the public sewer system.

KEY PERSONNEL AND EXPERIENCE
COMMERCIAL

Anthony D. Folino, President
49 years experience in all aspects of commercial road improvement and construction.

Dino Folino, Vice President
26 years experience in the construction industry specializing in, milling and asphalt paving.

Frank Folino, Vice President
25 years experience in the construction industry specializing in, milling and asphalt paving.

Lawrence E. Martin III, Senior Project Manager/Estimator
19 years experience in the construction industry, including heavy-highway, bridge, site development, and commercial construction.

Roberto Fratangelo, Senior Manager
15 years experience in general construction and concrete industry, with a heavy focus on project management and engineering.

Michael McFarland, General Superintendent
32 years experience in the fields of concrete, drainage, and excavation.

Randy Milliron, Estimator/Project Manager
35 years experience in the construction industry specializing in all aspects of general contracting and construction.

Sam Roda, Estimator/Project Manager
32 years experience in the construction industry specializing in all aspects of asphalt paving and maintenance.

Ted Foster, Estimator/Project Manager
40 years experience in the construction industry specializing in all aspects of site development, including, but not limited to, excavation, grading, utilities, storm sewer and sanitary sewers.

Shane McKee, Senior Project Manager/Estimator
18 years experience in the construction industry, specializing in all aspects of civil development

Jonathan Walker, Corporate Safety Director
12 years safety experience in the construction industry.

KEY PERSONNEL AND EXPERIENCE
NON-COMMERCIAL

Anthony D. Folino, President
49 years experience in all aspects of commercial road improvement and construction.

Dino Folino, Vice President
26 years experience in the construction industry specializing in, milling and asphalt paving.

Frank Folino, Vice President
25 years experience in the construction industry specializing in, milling and asphalt paving.

D. Scott Gross, Chief Estimator
38 years experience in all aspects of the asphalt industry.

Michael McFarland, General Superintendent
32 years experience in the fields of concrete, drainage, and excavation.

Nick Schropp, Asphalt Superintendent
35 years experience in the construction industry specializing in all aspects of asphalt pavement maintenance.

Don Mahoney, Operations Manager
30 years experience in the construction industry specializing in all field operations and logistics.

Ted Foster, Estimator/Site Division
40 years experience in the construction industry specializing in all aspects of site development, including, but not limited to, excavation, grading, utilities, storm sewer and sanitary sewers.

Lawrence E. Martin III, Senior Project Manager/Estimator
19 years experience in the construction industry, including heavy-highway, bridge, site development, and commercial construction.

Roberto Fratangelo, Senior Manager
15 years experience in general construction and concrete industry, with a heavy focus on project management and engineering.

Jonathan Walker, Corporate Safety Director
12 years safety experience in the construction industry.

CREDIT REFERENCE SHEET

BANK:

First National Bank
12 Federal Street
Pittsburgh, PA 15212
Attention: Tracie Elzat
Phone: 412-359-2653
Fax: 412-359-2664

REFERENCES:

Lindy Paving
P.O. Box 98100
Pittsburgh, PA 15227
Phone: 412-821-4389
Fax: 412-462-6121

Groff Tractor & Equipment
Attention: Clint Llauget
6779 Carlisle Pike
Mechanicsburg, PA 17050
Phone: 717-766-7671
Fax: 717-766-1580

Cleveland Brothers Equipment
P.O. Box 784531
Philadelphia, PA 19178-4531
Phone: 724-327-1300
Fax: 724-325-9299

FRINGE BENEFITS 2019- BUILDING TRADE

All fringe benefits will be paid into the following Benefits(s) Plans:

Fund	Combined Funds		
Operators – Cl 1	Operators Engineers Local #660 Combined Funds Inc PO Box 17230 Pittsburgh, PA 15235	Wage: Medical: Pension: Appr.: Benefit: Annuity: Ind Adv: Retire Cont	$ 35.69 $ 9.44 $ 7.05 $ .61 $ .05 $ 4.30 $ .14 $ .30
Operators – Cl 2	Operators Engineers Local #660 Combined Funds Inc PO Box 17230 Pittsburgh, PA 15235	Wage: Medical: Pension: Appr.: Benefit: Annuity: Ind.Adv Retire Cont	$ 30.22 $ 9.44 $ 7.05 $ .61 $ .05 $ 4.30 $ .14 $ .30
Operators – FORM	Operators Engineers Local #660 Combined Funds Inc PO Box 17230 Pittsburgh, PA 15235	Wage: Medical: Pension: Appr.: Benefit: Annuity: Ind Adv: Retire Cont	$ 36.19 $ 9.44 $ 7.05 $ .61 $ .05 $ 4.30 $ .14 $ .30

For wages paid at time and one half for overtime work, fringes will be paid as straight time

Laborers- Cl I	Laborer's Union 373 Laborers Combined Funds PO Box 360137 Pittsburgh, PA 15251	Wage: Medical: Pension: Training: LIUNA	$ 22.37 $ 10.11 $ 7.10 $ .39 $ .07
Laborers- Cl II	Laborer's Union 373 Laborers Combined Funds PO Box 360137	Wage: Medical: Pension:	$ 22.52 $ 10.11 $ 7.10

	Pittsburgh, PA 15251	Training:	$ .39
		LIUNA:	$ .07
Laborers- FORM	Laborer's Union 373	Wage:	$ 23.47
	Laborers Combined Funds	Medical:	$ 10.11
	PO Box 360137	Pension:	$ 7.10
	Pittsburgh, PA 15251	Training:	$ .39
		LIUNA	$ .07

For wages paid at time and one half for overtime work, fringes will be paid at straight time.

Cement Masons-C1	Cement Mason Union 526	Wage:	$ 31.27
	Combined Funds	H & W:	$ 9.35
	2606 California Ave.	Pension:	$ 8.30
	Pittsburgh, PA 15212	Suppl:	$ 1.20
		Ind. Adv.	$ .54
C.M. Foreman-	Cement Mason Union 526	Wage:	$ 32.77
	Combined Funds	H & W:	$ 9.35
	2606 California Ave.	Pension:	$ 8.30
	Pittsburgh, PA 15212	Suppl:	$ 1.20
		Ind. Adv.	$ .54

For wages paid at time and one half for overtime work, fringes will be paid at straight time.

Carpenters C1	Carpenters Union 9000	Wage:	$ 34.72
	Combined Funds	H & W:	$ 6.60-19%
	650 Ridge Road	Pension:	$ 6.60-19%
		Appr GR	$ .51-1.47%
		Savings:	$ 3.82-11%
		Appr HR	$ .10
		Indus Adv	$ .20
Carpenter- FM	Carpenters Union 9000	Wage:	$ 36.80
	Combined Funds	H & W:	$ 6.99-19%
	650 Ridge Road	Pension:	$ 6.99-19%
		Appr GR	$ .54-1.47%
		Savings:	$ 4.05-11%
		Appr HR	$ .10
		Indus Adv	$ .20

For wages paid at time and one half for overtime work, fringes will be paid at straight time.

A. FOLINO CONSTRUCTION
ANTHONY D. FOLINO, PRESIDENT

FRINGE BENEFITS 2020- HEAVY HIGHWAY

Standard Agreement & Addendum #1

All fringe benefits will be paid into the following Benefits(s) Plans:

Fund	Combined Funds		
Operators – Cl 1	Operators Engineers Local #66 Combined Funds Inc PO Box 17230 Pittsburgh, PA 15235	Wage: Medical: Pension: Appr.: Benefit: Annuity: Misc Employ: Int. Train:	$ 32.89 $ 9.75 $ 7.48 $ .66 $ .04 $ 4.25 $ .98 $ .05
Operators – Cl 2	Operators Engineers Local #66 Combined Funds Inc PO Box 17230 Pittsburgh, PA 15235	Wage: Medical: Pension: Appr.: Benefit: Annuity: Misc. Employ: Int. Train:	$ 31.63 $ 9.75 $ 7.48 $ .66 $ .04 $ 4.25 $ .98 $ .05

For wages paid at time and one half for overtime work, fringes will be paid at straight time.

Laborers- Cl I	Laborer's Union 1058 Laborers Combined Funds PO Box 360137 Pittsburgh, PA 15251	Wage: Medical: Pension: Training: H&S: Industry Advance:	$ 26.10 $ 12.99 $ 10.79 $ .25 $ .07 $ .13
Laborers- Cl II	Laborer's Union 1058 Laborers Combined Funds PO Box 360137 Pittsburgh, PA 15251	Wage: Medical: Pension: Training: H&S: Industry Advance:	$ 26.26 $ 12.99 $ 10.79 $ .25 $ .07 $ .13

Laborers- Cl III	Laborer's Union 1058	Wage:	$ 26.65
	Laborers Combined Funds	Medical:	$ 12.99
	PO Box 360137	Pension:	$ 10.79
	Pittsburgh, PA 15251	Training:	$ .25
		H&S:	$ .07
		Industry Advance:	$ .13

Laborers- Cl VI	Laborer's Union 1058	Wage:	$ 24.35
	Laborers Combined Funds	Medical:	$ 12.99
	PO Box 360137	Pension:	$ 10.79
	Pittsburgh, PA 15251	Training:	$ .25
		H&S:	$ .07
		Industry Advance:	$ .12

For wages paid at time and one half for overtime work, fringes will be paid at straight time.

Cement Masons-C1	Cement Mason Union 5260	Wage:	$ 32.84
	Combined Funds	H & W:	$ 9.60
	2606 California Ave.	Pension:	$ 9.63
	Pittsburgh, PA 15212	Appr.:	$ .58
		Suppl:	$ 1.29
		Ind. Adv.	$ .16

C.M. Foreman-	Cement Mason Union 5260	Wage:	$ 33.84
	Combined Funds	H & W:	$ 9.60
	2606 California Ave.	Pension:	$ 9.63
	Pittsburgh, PA 15212	Appr.:	$ .58
		Suppl:	$ 1.29
		Ind. Adv.	$ .16

For wages paid at time and one half for overtime work, fringes will be paid at straight time.

Carpenters C1	Carpenters Union 2274	Wage:	$ 35.02
	Combined Funds	H & W:	$ 6.83
	650 Ridge Road	Pension:	$ 7.38
		Training	$ .31
		Savings:	$ 4.20
		MBA Fund:	$ .20
		Ind. Adv.	$ .17

Carpenter- FM	Carpenters Union 2274	Wage:	$ 35.97
	Combined Funds	H & W:	$ 6.83
	650 Ridge Road	Pension:	$ 7.38
		Training:	$ .31
		Savings:	$ 4.20
		MBA Fund:	$ .20
		Ind. Adv.	$ .17

For wages paid at time and one half for overtime work, fringes will be paid at straight time.

A. FOLINO CONSTRUCTION
ANTHONY D. FOLINO, PRESIDENT

AFC

General

		Owner	Serial Number	License Plate	
General - Light Plant					
11-101	1997 IR Light Plant 1	AFC	275387		Available
11-104	1997 IR Light Plant 4	AFC	277792		Available
11-105	1997 IR Light Plant 5	AFC	2800150		Available
11-106	1997 IR Light Plant 6	AFC	280822		Available
11-107	1997 IR Light Plant 7	AFC	280823		Available
11-110	2008 Light Plant Allmand Pro	AFC	3045PRO08		Available
11-111	2008 Light Plant Allmand Pro	AFC	3043PRO08		Available
11-112	2008 Light Plant Allmand Pro	AFC	2991PRO08		Available
11-113	2008 Light Plant Allmand Pro	AFC	3057PRO08		Available
11-114	2008 Light Plant Allmand Pro	AFC	2986PRO08		Available
11-115	2008 Light Plant Allmand Pro	AFC	2988PRO08		Available
11-116	2008 Light Plant Allmand Pro	AFC	2994PRO08		Available
11-117	2010 Magnum MLT3060M	AFC	1006102		Available
11-118	14 Wacker Neuson LTN6L	AFC	20250908		Available
11-119	2013 Wacker Neuson LTN6L	AFC	20215098		Available
11-120	2014 Wacker Neuson LTN6L	AFC	20234041		Available
11-121	2013 Wacker Neuson LTN6L	AFC	20208656		Available
11-122	2008 Allmand Bros NghtLite Pro	AFC	1659PRO08		Available
11-123	2007 Terex 4000RL2-4MH	AFC	RL407000243		Available
11-124	AMIDA RL4060D-4 LIGHT TOWER	AFC	RL408-1842		Available
11-125	AMIDA RL4060D-4 LIGHT TOWER	AFC	RL408-1836		Available
11-126	TEREX RL4060D-4 LIGHT TOWEF	AFC	RL408-3033		Available
11-127	Wacker Neuson LTN6L	AFC	20039334		Available
11-128	Wacker Neuson LTN6L	AFC	20008275		Available
11-129	Wacker Neuson LTN6L	AFC	20011977		Available
11-130	Wacker Neuson LTN6L	AFC	20039342		Available
11-131	Wacker Neuson LTN6L	AFC	20011979		Available
11-132	Wacker Neuson LTN6L	AFC	20044212		Available
General - Msg/Arw Board					
12-100	2002 Message Board	AFC	1A9BS333522228266		Available
12-101	2002 Message Board	AFC	1A9BS333722228267		Available
12-102	2011 Arrow Board	AFC	07107395		Available
12-103	Wanco Arrow Board	AFC	5F11S1016E1003675		Available
General - Air Compressor					
13-103	Atlas-Copco 185CFM Compressor	AFC	A1A1263068		Available
General - Misc					
14-102	Nikon Total Station, Model DTM	AFC			Available
14-103	Hyster Forklift	AFC	C098D01547S		Available
14-104	Extech Screen	AFC			Available
14-107	2007 GME Trench Box	AFC	M0701141		Available
14-110	ARS Asphalt Heater 4x4 Unit	AFC	11051874646DDI558Y201		Available
14-114	2008 Trimble Grade Control Sys	AFC	R910		Available
14-115	2007 IR Air Compressor P185	AFC	390710UHR820		Available
14-116	2008 Kubota RTV-900	AFC	79613		Available
14-124	CAT RIDING FLOOR SCRUBBER	AFC	67441		Available
14-156	08 Rammer MD2400-2800 Wacker	AFC	5790371	n/a	Available
14-157	08 Rammer MD2400-2800	AFC	5821299	n/a	Available
14-160	06 Extra Drums18-30"Set Wacke	AFC	60388	n/a	Available
14-161	2011 Kawasaki-ATV-Mule 4010	AFC	JK1AFDF10BB503488	427Y0	Available
14-163	2007 Kawasaki 600 Mule Utility	AFC	JK1AFEB1478507417		Available
14-164	2011 Club Car XRT 4x4 Cart	AFC	RT1133215125		Available
15-103	2012 ATLAS COPCO BREAKER	AFC	4334		Available
15-104	2012 72" WHEEL LOADER FORKS	AFC	L-13449		Available
15-105	2012 AUGER DRIVE	AFC	267836		Available

AFC

General (Continued)

		Owner	Serial Number	License Plate	
General - Buckets/Attachments					
15-100	2011 Atlas Copco MB1700 Brkr	AFC	2980		Available
15-101	2011 Bradco 80" Smooth Bucket	AFC	255927		Available
15-102	2011 Bradco 80" Smooth Bucket	AFC	263261		Available
15-106	2013 Caterpillar 48" DC Bucke	AFC	SCMHDC000443		Available
15-107	2013 Caterpillar H90C Hammer	AFC	06TZ05538		Available
15-109	Plate Compactor Atlas Copco	AFC			Available
15-110	Hydraulic Hammer Kent 7500	AFC	F45-2414		Available
15-111	1 Yard Concrete Bucket	AFC			Available
15-112	Skid Steer Boom	AFC			Available
15-113	Saw Cut Wheel	AFC			Available
15-114	Hammer	AFC			Available
15-115	54" Digging Bucket	AFC			Available
15-116	30" Digging Bucket	AFC			Available
15-117	48" Digging Bucket	AFC			Available
15-118	24" Digging Bucket	AFC			Available
15-119	36" Digging Bucket	AFC			Available
15-120	24" Digging Bucket	AFC			Available
15-121	12" Digging Bucket	AFC			Available
15-122	48" Digging Bucket	AFC			Available
15-123	30" Digging Bucket	AFC			Available
15-124	24" Digging Bucket	AFC			Available
15-125	60" Cleanup	AFC			Available
15-126	24" Digging	AFC			Available
15-127	48" Digging Bucket	AFC			Available
15-128	24" Digging Bucket	AFC			Available
15-129	Hammer	AFC			Available
15-130	36" Digging Bucket	AFC			Available
15-131	24" Digging Bucket	AFC			Available
15-132	12" Digging Bucket	AFC			Available
15-133	60" Smooth Lip	AFC			Available
15-134	48" Smooth Lip	AFC			Available
15-135	30" Digging Bucket	AFC			Available
15-136	48" Digging Bucket	AFC			Available
15-137	24" Digging Bucket	AFC			Available
15-138	IT Forks	AFC			Available
15-139	Forks	AFC			Available
15-140	Forks	AFC			Available
15-141	Forks	AFC			Available
15-142	Tooth Bucket	AFC			Available
15-143	Rear Blade	AFC			Available
15-144	Rear Blade	AFC			Available
15-145	Rear Blade	AFC			Available
15-146	36" Buckett	AFC			Available
15-147	60" Buckett	AFC	RH106837		Available
15-148	Stone Box 5'x12' Model SM7	AFC	116772		Available
15-149	Stone Box 5'x10'	AFC			Available
15-150	Stone Box 5'6"x14'	AFC			Available
15-151	Stone Box 5'x15'	AFC			Available
15-152	2013 Grapple Bucket 84" Bradc	AFC	325946		Available
15-153	13" Cat.GP Bucket	AFC			Available
15-154	24" Cat.GP Bucket	AFC			Available
15-155	36" Cat.GP Bucket	AFC			Available
15-156	2013 Skid Steer Loader Forks	AFC	312854		Available
15-157	2013 Skid Steer Loader Forks	AFC	312855		Available
15-158	2013 Skid Steer Loader Forks	AFC	312849		Available
15-159	2013 Gar-Bro Concrete Bucket	AFC	9948-A		Available

AFC

General (Continued)

		Owner	Serial Number	License Plate	
General - Buckets/Attachments					
15-160	2013 Concrete Bucket	AFC			Available
15-161	2013 Concrete Bucket	AFC			Available
15-162	2013 Concrete Bucket	AFC			Available
15-163	2013 Concrete Bucket	AFC			Available
15-164	2013 Concrete Bucket	AFC			Available
15-165	2013 72" JD Bucket	AFC	325946		Available
15-166	Hammer - Case Skid Steer	AFC			Available
15-167	1' Bucket TB180-Exc Takeuchi	AFC			Available
15-168	2' Bucket TB180-Exc Takeuchi	AFC			Available
15-169	3' Bucket TB180-Exc. Takeuchi	AFC			Available
15-170	8" Ditch Bucket	AFC			Available
15-171	Cleanup Bucket TB180-Exc.Takeu	AFC			Available
15-172	60" Cleanup Bucket	AFC	Z2505	N/A	Available
15-173	KL9000 6"-12" Barrier Lift	AFC	SF185072315V4		Available
15-174	STAR 120 BUCKET FOR SKIDSTE	AFC	120		Available
15-175	BRADCO SPH48 CARRIAGE	AFC	454766		Available
15-176	BRADCO SPH48 CARRIAGE	AFC	454767		Available
15-177	BRADCO SPH48 CARRIAGE	AFC	454754		Available
15-178	BRADCO SPH48 CARRIAGE	AFC	454755		Available
15-179	BRADCO SPH48 CARRIAGE	AFC	454759		Available
15-180	BRADCO SPH48 CARRIAGE	AFC	454765		Available
15-181	Star 120 Concrete Spout Bucket	AFC			Available
15-182	IHC 75 Vibratory Plate Compactor	AFC	Fits Komatsu PC88		Available
15-183	IHC 75 Vibratory Plate Compactor	AFC	Fits Komatsu PC88		Available
15-184	Sweepster 72" Skid Steer Sweeper	AFC	1448041		Available
15-185	2018 Skid Steer Loader Forks	AFC			Available
15-186	CAT PC306B Mill Head attachment	AFC	PCT01624		Available
15-187	CAT PC306B Mill Head attachment	AFC	PCT00739		Available
15-188	CAT H95E S Hydraulic Breaker	AFC			Available
15-189	2012 CAT BU118 Pickup Broom	AFC	LXB01252		Available
15-190	CAT PC205B Mill Head	AFC	PCS00305		Available
15-191	Rockland W124-3 for Komatsu PC2	AFC	120292		Available
15-192	Rockland ETF for Komatsu PC130/	AFC	120444		Available
15-193	CAT Mill Head for a Skid Loader	AFC	PCT01757		Available
15-194	CAT Mill Head PC306B for Skid Loa	AFC	PCT01688		Available
15-196	CAT Broom Head BU118	AFC	CB054269		Available

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Concrete (Continued)

		Owner	Serial Number	License Plate	
Concrete - Equipment					
15-108	2012 Box Grader-Level	AFC	2058	n/a	Available
18-001	Transmitter Ttimblr Mdl GL5225	AFC	11469247		Available
18-100	2008 Laser Screed Somero XD3.0	AFC	21164-0808		Available
18-101	2012 Laser Screed Model S840	AFC	47028-0212		Available
18-102	2012 Screed, Power Unit	AFC	1182675	n/a	Available
18-103	2013 Concrete Screed	AFC	1210688		Available
18-104	Magic Screed, Vibratory Screed	AFC	101613A		Available
18-200	2005 Mack Putzmeister Pump	AFC	1M2K189C05M027826	SME706W	Available
18-300	2012 8' Ride on Trowel	AFC	5911719	n/a	Available
18-301	2012 6' Ride on Trowel	AFC	5903301	n/a	Available
18-302	2012 MBW Power Trowel	AFC	4630108	n/a	Available
18-303	2012 MBW Power Trowel	AFC	4630109	n/a	Available
18-304	2013 46" Trowel GX390	AFC	MR12042		Available
18-305	2013 Wirtgen Slipform Paver	AFC	12SP.0049		Available
18-306	2013 6' Ride on Trowel Wacke	AFC	20205922	n/a	Available
18-307	2013 -6' Ride On Trowel	AFC	20124195		Available
18-309	2012 6' Power Trowel	AFC	4630107		Available
18-310	2016 2' Power Trowel	AFC	RG019049		Available
18-311	36" Walk Behind Floor Trowel	AFC	800701256/CT36ADT		Available
18-312	36" Walk Behind Floor Trowel	AFC	759501038/CT36AGP		Available
18-313	36" Walk Behind Floor Trowel	AFC	ED0111159/JA45H		Available
18-400	2009 Concrete Buggie MB16	AFC	M9672		Available
18-401	2009 Concrete Buggie MB16	AFC	M9673		Available
18-402	2009 Concrete BuggY MB16	AFC	M9674		Available
18-403	2015 Concrete Track Buggy	AFC	7301704		Available
18-450	32013 Stone Mortor Mixer	AFC	312012323		Available
18-451	Stone 65CM Concrete Mixer	AFC	302012285		Available
18-452	Essex Multiquip EM70SH8	AFC	B1853081		Available
18-500	2012 8" Soft Cut Saw	AFC	0012174360001		Available
18-501	2013 14" Soft Cut Saw	AFC	001313328002		Available
18-502	2014 6" Soft Cut Saw	AFC	2900057		Available
18-503	8" Soft Cut Saw GX1500	AFC	1303		Available
18-504	DP C6566 FLOOR SAW	AFC	147009		Available
18-505	Husqvarna Soff-Cut X2000E 10"	AFC	001367124001		Available
18-600	2013 - 8" Scarfier	AFC	130710249		Available

Trucks

		Owner	Serial Number	License Plate	
Trucks - Other					
20-205	2006 International Mixer	AFC	1HTXHAHT16J218319	ZFS0919	Available
20-207	06 Sterling/Zimmerman Mob Mix	AFC	2FZHAWDJ26AW12805	ZHC 1387	Available
20-208	2016 Freightliner 114SD Mixer	AFC	1FVHG3DV9GHHH2159	AG55190	Available
20-209	2016 Freightliner 114SD Mixer	AFC	1FVHG3DV5GHHH2160	AG55189	Available

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Trucks (Continued)

		Owner	Serial Number	License Plate	
Trucks - Office					
21-109	2007 Chevy Uplander APV	AFC	1GBDV13147D159334	HFR-9335	Available
21-117	2012 Chevrolet Equinox	AFC	2GNFLCEKXC6201713	KRC8150	Available
21-118	2010 Infiniti	AFC	JN1CV6FE1AM355129	ALORA	Available
21-119	2013 Ford Trans Connect	AFC	NMOLS7DN4DT141497	ZDF2849	Available
21-120	2013 Ford Trans Connect	AFC	NMOLS7BN1DT156994	ZDF2848	Available
21-122	2015 Chevy Equinox	AFC	1GNFLEEK3FZ101232	JPK1832	Available
21-123	2015 Chevy Equinox	AFC	1GNFLEEK3FZ113204	JMD7375	Available
21-124	2015 Chevy Equinox	AFC	1GNFLEEK2FZ113372	JMD7373	Available
21-125	2015 Chevy Equinox	AFC	1GNFLEEK0FZ113421	JMD7374	Available
21-126	2015 Chevy Equinox	AFC	1GNFLEEK6FZ113570	JMD7372	Available
21-128	2016 Chevrolet Equinox AWD LS	AFC	2GNFLEEK1G6254740	JZW8022	Available
21-129	2016 Chevrolet Equinox AWD LS	AFC	2GNFLEEKXG6297876	KBA0915	Available
21-130	2016 GMC Yukon Den SW	AFC	1GKS2CKJ1GR436604	HNW 9164	Available
21-131	2009 GMC Van	AFC	1GTHG39K291182367	KBX1986	Available
21-132	2007 Chevrolet Van	AFC	1GAHG39U871164566	KBX1987	Available
21-133	2017 Mercedes Benz GLE350W4	AFC	4JGDA5HB3HA842043		Available
21-134	2017 Nissan Armada - FL	AFC	JN8AY2NF5H9301204	KHP7415	Available
21-135	2018 Chevrolet Equinox AWD LS	AFC	2GNAXREV3J6130475	KJE4657	Available
21-136	2018 Chevy Equinox	AFC	2GNAXREV8J6207857	KRK6200	Available
21-138	2019 Nissan Van	AFC	3N6CM0KN8KK6999932	ZNE9927	Available
21-139	2019 Nissan NV200	AFC	3N6CM0KN3KK703255	ZNK1373	Available
21-140	2019 Nissan NV200	AFC	3N6CM0KN8KK707186	ZNK1374	Available
21-141	2019 Nissan NV200	AFC	3N6CM0KN2KK699411	ZNK1375	Available
21-142	2019 GMC Terrain	AFC	3GKALTEV0KL400491	LDF4159	Available
21-143	2019 GMC Acadia	AFC	1GKKNSLS5KZ293772	LFB6313	Available
21-144	2019 GMC Acadia	AFC	1GKKNSLS1KZ294126	LFB6314	Available
21-145	2019 GMC Acadia	AFC	1GKKNSLS6KZ263986	LFB6315	Available

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Trucks (Continued)

		Owner	Serial Number	License Plate	
Trucks - Pickup					
22-102	1998 Ford F-150 - White	AFC	1FTZF172XWNB23433	YKW-3559	Available
22-109	2005 Ford F-250	AFC	1FTNF21505EB88149	YSJ-4674	Available
22-111	2007 Chevy Silverado 2500 HD	AFC	1GCHK29U47E175136	YTR-1871	Available
22-112	2007 Ford F250	AFC	1FTSX21557EA24155	YXX7460	Available
22-114	2005 GMC 3500	AFC	1GDJC34415E125721	ZDP1810	Available
22-116	08 GMC Sierra 1500	AFC	2GTEK19CX81244841	YWD-5450	Available
22-117	09 GMC Sierra 2500	AFC	1GTHC49K29E113809	YXB-3991	Available
22-120	2006 Ford F250	AFC	1FTSX21536EA01827	YYK4551	Available
22-121	2010 GMC Sierra 1500	AFC	1GTSKVE39AZ185259	YYA-1276	Available
22-123	2011 GMC Sierra	AFC	1GTR2VE37BZ241179	YZE-6274	Available
22-124	2011 GMC Sierra 250	AFC	1GT220CG7BZ289095	YZL-7454	Available
22-126	2006 Chevy 2500	AFC	1GCHC24U76E183783	ZBN4892	Available
22-127	2001 Chevy 2500	AFC	1GCGC24U91Z280867	ZBN4893	Available
22-128	2005 Chevy 2500 HD	AFC	1GCHC24U85E246436	ZBN4894	Available
22-129	2006 Chevy 2500 HD	AFC	1GCHC24U86E243473	ZBN4895	Available
22-131	2012ChevroletTrk Silverado1500	AFC	1GCRKPE08CZ140574	ZBX0046	Available
22-132	2006 Chevrolet	AFC	1GCHC24UX6E245001	ZCE6040	Available
22-134	2012 Ford F250 Crew Cab	AFC	1FT7W2B62CEC08821	ZCJ1839	Available
22-135	2012 RAM TRUCK Model 1500	AFC	1C6RD7KT7CS340547	ZCR0138	Available
22-136	2013 Dodge Ram 1500	AFC	1C6RR7FT2DS569201	ZDE6774	Available
22-137	2008 Chevrolet 2500HD Truck	AFC	1GCHK24KX8E104658	ZDK0645	Available
22-138	2008 Ford F250 Truck	AFC	1FTNX205X8EA16780	ZDS5884	Available
22-139	2014 Chevrolet Silverado 1500	AFC	1GCVKPEH4EZ126050	ZDS7306	Available
22-140	2014 Chevrolet Silverado 1500	AFC	1GCVKPEH0EZ128653	ZDS7307	Available
22-142	2014 Chevrolet2500HD Truck	AFC	1GCOCVCG9EF1612131	ZFF6113	Available
22-143	2014 Chevrolet Silverado2500HD	AFC	1GC0CVCG2EF161418	ZFF6127	Available
22-144	2014 Chevrolet Silverado2500HD	AFC	1GC0CVCG6EF117602	ZFF6126	Available
22-146	2015 Chevy Silverado 2500HD	AFC	1GC0CUEGXFZ517136	ZFL8372	Available
22-147	2015 Dodge Ram 1500 4X4	AFC	1C6RR7FG7FS596609	ZGM4458	Available
22-148	2015 GMC Sierra 2500 HD	AFC	1GT01XEG2FZ501021	ZGW8303	Available
22-149	2016 GMC Sierra 2500HD 4WD	AFC	1GT22REG7GZ128321	ZJB-1031	Available
22-150	2016 GMC Sierra 2500HD 4WD	AFC	1GT12SE87GF153538	ZJB-1030	Available
22-151	2016 GMC Sierra 1500 4WD	AFC	3GTU2LEC2GG158636	ZJB1047	Available
22-152	2015 GMC Sierra 1500 4WD	AFC	3GTU2TEC3FG393349	ZJB1069	Available
22-153	2016 GMC Sierra 2500HD	AFC	1GT22REG3GZ290494	ZJN0274	Available
22-154	2017 CHEVROLET SILVERADO 4\	AFC	1GC2KUEG8HZ179038	ZJD3787	Available
22-155	2017 Chevy Silverado 2500 2WD	AFC	1GC0CUEG7HZ196823	ZKD2199	Available
22-156	2017 Chevy Silverado 2500 2WD	AFC	1GC0CUEG2HZ193084	ZKD2200	Available
22-157	2017 Chevy Silverado 2500 2WD	AFC	1GC0CUEGXHZ257937	ZKD2201	Available
22-158	2017 Chevy Silverado 2500 2WD	AFC	1GC0CUEG2HZ297705	ZKK2628	Available
22-159	2011 Dodge Pickup	AFC	1D7RV1GT2BS569069	ZKN6964	Available
22-160	2015 GMC Truck	AFC	3GTU2VEC1FG491985	ZLD8982	Available
22-161	2010 Chevy 1500 Ext Cab 4x4	AFC	1GC4KVBG8AF144476	ZLP2924	Available
22-162	2011 Chevy 1500 Ext Cab 4x4	AFC	1GCRKPE02BZ153867	ZLP2925	Available
22-163	2011 Chevy 1500 Ext Cab 4x4	AFC	1GCRKPEA0BZ332157	ZLP2926	Available
22-164	2006 Dodge Ram 2500 Crew Cab	AFC	3D7KR28D16G243733		Available
22-165	2015 Chevy Silverado K2500HD	AFC	1GC2KUEG3FZ541578	ZLP3014	Available
22-166	2018 GMC	AFC	1GT22REG4JZ266583	ZLR9691	Available
22-167	2018 GMC	AFC	1GT22REG0JZ292761	ZLR9690	Available
22-168	2018 GMC Sierra	AFC	1GTV2MEC1JZ233652	ZLN4452	Available
22-169	2018 GMC Sierra	AFC	2GTV2MEC2J1105753	ZLN4453	Available
22-170	2018 GMC 3500	AFC	1GT42VCG6JF172159	ZLN4456	Available
22-171	2018 GMC 3500	AFC	1GT42VCG3JF217218	ZLN4457	Available
22-172	2018 GMC 2500HD	AFC	1GT22REG0JZ181398	ZLN-4449	Available
22-173	2018 GMC 3500HD	AFC	1GT02VEG2JZ216104	ZMA-3827	Available
22-174	2019 GMC Sierra 3500	AFC	1GT42WEY0KF104064	ZFS7572	Available

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Trucks (Continued)

		Owner	Serial Number	License Plate	
Trucks - Pickup					
22-175	2012 Chevy Colorado Ext Cab	AFC	1GCESBFEXC8165235	ZMW8638	Available
22-176	2012 Chevy Colorado Ext Cab	AFC	1GCESBFE8C8165413	ZMW8637	Available
22-177	2019 Chevy 2500 Silverado	AFC	1GC1KREG4KF269112	ZNL5360	Available
22-178	2019 Chevy 2500 Silverado	AFC	1GC1KREG9KF273415	ZNC5658	Available
22-179	2019 GMC Sierra 1500	AFC	1GTR9BED6KZ213246	ZNZ5887	Available
22-180	2019 GMC Sierra 1500	AFC	1GTR9BED3KZ225483	ZNZ5892	Available
22-181	2019 GMC Sierra 1500	AFC	1GTR9BED5KZ276516	ZNZ5888	Available
Trucks - Service					
23-104	1995 Int'l Svc Truck - Orange	AFC	1HTSLABKXSH609303	YKL-7845	Available
23-109	2003 Ford F-550 Service Truck	AFC	1FDAF56P43ED24415	YNF-5829	Available
23-110	2005 Ford F-350	AFC	1FDWF36515EC08875	YPZ-0590	Available
23-111	2006 Ford F350 Service Truck	AFC	1FDSF30586ED55445	YTZ-0515	Available
23-113	2000 Ford F250	AFC	1FDNF21L2YED06152	YVP-9212	Available
23-115	2001 International 4700	AFC	1HTSCABM71H362080	YYX5984	Available
23-116	2003 International 4300	AFC	1HTMMAAL73H600754	YYX5986	Available
23-117	2006 International 4300	AFC	1HTMMAAL96H205883	YYX5985	Available
23-118	2007 International 4300	AFC	1HTMMAAL37H377067	YYX5987	Available
23-119	2008 Ford F750	AFC	3FRWX75F88V058617	YYX5988	Available
23-121	2007 Chevrolet Service Truck	AFC	1GBJK34K37E558485	ZFL4832	Available
23-123	2015 Chevy Silverado 3500 HD	AFC	1GB3CYCG5FF568007	ZGK2415	Available
23-124	2015 Chevy Silverado 3500 HD	AFC	1GB3CYCG4FF559007	ZGK2414	Available
23-125	2008 Ford F450	AFC	1FDXF46Y98EA35972	ZGZ4062	Available
23-129	2016 Ford F350 SRW 4x4	AFC	1FDRF3B67GEA74873	ZKJ7615	Available
23-130	2009 Ford F350	AFC	1FTWF31559EB30506		Available
23-132	2008 Ford F550	AFC	1FDAF56Y38EE12355	ZKW9611	Available
23-133	2011 Ford F550	AFC	1FDUF5HY4BEB54168	ZKW9610	Available
23-134	2015 Ford F250XL Super Duty	AFC	1FT7X2A69FEA32675	ZLP2907	Available
23-135	2017 Chevy HD3500	AFC	1GB4CYCYPHF217312		Available
23-136	2018 Ford F350 Van	AFC	1FDWE3FS7JDC19422	ZLW7351	Available
23-137	2018 Ford F350 Van	AFC	1FDWE3FS0JDC19424	ZLW7350	Available
23-138	2017 Ford F450	AFC	1FDUF4GY4HDA07309	ZMC3644	Available
23-139	2012 Ford F550	AFC	1FDUF5HY5CEB97287	ZMW6208	Available
23-140	2009 Ford F550	AFC	1FDAF56Y79EA87906	ZMW6209	Available
23-142	2019 GMC Sierra 2500	AFC	2GD22NEG6K1201247	ZNK1329	Available
23-143	2019 GMC Sierra 2500	AFC	2GD22NEG1K1203729	ZNK1393	Available
23-144	2011 Ford F450 Super Duty	AFC	1FDTF4GY2BEA31878		Available
23-145	2011 Ford F550 Super Duty	AFC	1FDUF5GY4BEA31892		Available
Trucks - Dump					
24-117	1999 Ford F550 Dump	AFC	1FDAF56FXXEA82016	YZA-5738	Available
24-118	2006 Ford F650 Dump	AFC	3FRWF65G26V243801	ZBM8708	Available
24-119	2004 Freightliner Tandum Dump	AFC	1FVHCYCS24HN21142	ZFJ0175	Available
24-120	2007 Sterling Tri-Axle Dump Tr	AFC	2FZHAZCV67AX64965	ZFJ0174	Available
24-121	2006 Peterbilt 335 T/A Dump	AFC	2NPLL0X16M662079	ZGL9290	Available
24-123	2002 Freightliner Dump	AFC	1FVHBXAK32HJ87488	ZLJ-3783	Available
24-124	2005 Sterling LT9500	AFC	2FZHAZCV15AU12339	ZLP3045	Available
24-125	2004 International 7500 Dump	AFC	1HTWPADT94J083964	ZME8976	Available
24-126	2006 Freightliner M2	AFC	1FVACXDC26HW24437	ZMT1586	Available
24-127	2012 Ford F650	AFC	3FRWF6FJ3CV297761	ZMS5184	Available
24-128	2011 Ford F650	AFC	3FRWF6FJ5BV591788	ZMS5185	Available

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Trucks (Continued)

		Owner	Serial Number	License Plate	
Trucks - Distributor					
25-109	2014 International Distributor	AFC	1HTZZAAN6EH784080	ZGD0214	Available
25-110	2019 Peterbilt 337 Distributor	AFC	2NP2HNL7S0KM276429	ZLV0140	Available
25-111	2019 Kenworth Distributor Truck	AFC	2NKHHM7X7KM243508	ZLP3013	Available
25-112	2019 Kenworth Distributor Truck	AFC	2NKHHM7X9KM243509	ZLP3015	Available
25-114	2019 Peterbilt 337 Distributor	AFC	2NP2HM7XPKM276428	ZLV0139	Available
25-115	2019 Kenworth Entyre Dist Tank Ce	AFC	2NKHHM6X4KM258601	ZMW8640	Available
Trucks - Water					
26-102	1995 International Water Truck	AFC	1HTSDAAN95H635402	YVK2595	Available
26-103	1995 International Water Truck	AFC	1HTSDAAN4SH607605	YXN2866	Available
26-105	04 Ford F750 Water Truck	AFC	3FRXF75G04V660762	YFF1157	Available
26-106	1999 Mack Flatbed Truck	AFC	1M2K185C3XM007336	ZKX-9264	Available
26-600	2018 Vactor Paradigm HXX	AFC	1FVACWFC8JHJV0283		Available
Trucks - Stake					
23-127	2012 Kenworth T370	AFC	2NKHHM6X8CM335181	ZJF4643	Available
23-128	2012 Kenworth T270	AFC	2NKHHM6X5CM335168	ZJF4644	Available
28-107	2004 GMC W4500 Stake	AFC	J8DC4B14847004887	YXX7457	Available
28-108	2004 Ford F650SD Stake	AFC	3FRNW65G74V655818	YXX7458	Available
28-109	2003 GMC W4500	AFC	1GDE4E1113F505735	YZV-0441	Available
28-110	2006 Ford F350 Stake	AFC	1FDWX37PX6EA96270	YZV0329	Available
28-111	2006 ISUZU BOX VAN - NPR	AFC	JALB4B16967025733	ZMJ0990	Available
28-112	2010 Chevrolet 3500 Truck	AFC	1GB6CZBK7AF136939	ZDD6319	Available
28-113	2010 Chevrolet 3500 Truck	AFC	1GB6CZBK2AF131535	ZDD6318	Available
28-114	2014 Chevrolet Silverado3500HD	AFC	1GB3CZCG9EF143359	ZDN7407	Available
28-115	2014 Chevrolet Silverado3500HD	AFC	1GB3CZCG6EF143027	ZDN7408	Available
28-116	2014 Chevrolet Silverado3500HD	AFC	1GB3CZCG7EF143750	ZDZ0343	Available
28-117	2015 Chevy Silverado 3500HD	AFC	1GB3CYCG5FF145332	2GA6507	Available
28-118	2005 CHEVY C3500	AFC	1GBJC34285E226150	ZGD8581	Available
28-119	2008 FORD F-550 XL SUPER DUT	AFC	1FDAF56R78EA18270	ZGL9289	Available
28-120	2006 FORD F-550 XL SUPER DUT	AFC	1FDAF56PX6ED91590	ZGL-9286	Available
28-121	2006 FORD LCF550 CARGO TK	AFC	3FRML55Z76V409659	ZGL-9287	Available
28-122	2006 FORD LCF550 CARGO TK	AFC	3FRML55Z66V374791	ZGL-9285	Available
28-123	2006 FORD LCF550 CARGO TK	AFC	3FRML55Z26V243938	ZGL-9288	Available
28-125	2016 Ford F350	AFC	1FDRF3G66GED45916	ZJP2504	Available
28-126	2016 Ford F-350	AFC	1FDRF3G68GED45917	ZJP2503	Available
28-127	2013 Int'l 7500 T/A Rollback	AFC	1HTWNAZT3DJ161315	AG58403	Available
28-128	2004 GMC C4500 Flatbed	AFC	1GDE4C1184F507021	ZJY7276	Available
28-129	2000 Isuzu 16' Stake Body	AFC	4KLB4B1R4YJ801638	ZKM8257	Available
28-130	2005 Isuzu 16' Stake Body	AFC	4KLB4B1UX5J801711	ZKK0074	Available
28-131	2004 Chevrolet C4500 Cab	AFC	1GBE4C1214F513518	ZKK2126	Available
28-132	2017 Ford F350 4x2	AFC	1FDRF3G68HEC33085	ZKJ7583	Available
28-133	2017 Ford F350	AFC	1FDRF3H66HEC91677	ZKN0633	Available
28-134	2009 Chevy 3500HD Crew Cab	AFC	1GBJC73K59F100613	ZLP2929	Available
28-135	2009 Chevy 3500HD Crew Cab	AFC	1GBJC73K99F109931	ZLP2928	Available
28-136	2009 Chevy 3500HD Crew Cab	AFC	1GBJC73K99F107421	ZLP2927	Available
28-137	2012 Inter'l Terrastar S/A Flatbed	AFC	1HTJSSKHXCJ381631	ZMW8636	Available
28-138	2012 Ford F350 Flatbed	AFC	1FDRF3G65CED20354	ZMW8639	Available
28-139	2013 Inter'l Terrastar SFA	AFC	1HTJSSKK6DH202683	ZJA8061	Available
28-140	2019 GMC Sierra 350	AFC	1GD31TCG0KF129470	ZNE-9912	Available
28-141	2013 Ford F550	AFC	1FDUF5GY6DEA66419	ZNE0778	Available
Trucks - Tractor					
29-107	2016 Freightliner Tractor	AFC	3AKJGND19GDGZ2739	AG39535	Available
29-108	2014 Western Star Tractor	AFC	5KJJAED61EPFS2654	AG73337	Available
29-109	2019 Peterbilt 567 Day Cab Tractor	AFC	1XPCD40X7KD261478	AG76426	Available
29-110	2013 Freightliner Cascada Day Cal	AFC	1FUJGB0V7DSF09332		Available

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Trailers

		Owner	Serial Number	License Plate	
Trailers - Equipment					
31-107	2016 Landoll 440A-48 Trailer	AFC	1LH440UH6G1A23195	PT182B2	Available
31-108	2016 Landoll 440A-50	AFC	1LH440VH3G1A23394	PT 182B9	Available
31-109	2016 Etnyre Paver Trailer	AFC	1E9318139GE111189	PT194B4	Available
31-110	2017 Entyre Lowboy Trailer	AFC	1E9322796HE111173	PT032D0	Available
31-111	2017 Entyre Lowboy Trailer	AFC	1E9322808HE111174	PT031D9	Available
31-112	2018 Etnyre RTN55ETD3 Trailer	AFC	1E9324246JE111090		Available
31-113	2018 Rolls Rite Trailer	AFC	1R9FD4529JM356291	PT427F3	Available
Trailers - Utility					
32-100	1994 Tennessee Small Eq. Trlr	AFC	000944-48010620102A	XB-45871	Available
32-102	1997 Eager Bever AP10 Trailer	AFC	112AAH206VL048978	PT9129J	Available
32-103	1997 JJN Wood Tilt Trailer	AFC	4DSUA0811US000556	XCZ2608	Available
32-105	1993 Eager Beaver S/A Tag	AFC	112TAF144PL039779	XFE0535	Available
32-107	2001 VIKING 2.5 TRAILER MD300	AFC	1V91S0814Y1038008	XFE2010	Available
32-108	2012 MUSTANG UTILITY TRAILEF	AFC	1M9UA1214CG568335	XGT6345	Available
32-109	2012 Mustang Trailer618UA7000G	AFC	1M9UA1822CG568415	XTG6379	Available
32-110	2012 Mustang Trailer510MA2990G	AFC	1M9MA1015CG568380	XTG6380	Available
32-111	2012 Mustang Trailer510MA2990G	AFC	1M9MA1017CG568381	XGT6381	Available
32-112	2011 VIKING SPIRIT TRAILER	AFC	1V91S1218B1038762	XHT3727	Available
32-113	2006 Towmaster T20 Trailer	AFC	4KNFT19266L162693	PT7025X	Available
32-114	2017 Mustang Trailer	AFC	1M9UAZ182HG568068	XKR-8771	Available
32-115	2017 Mustang Trailer	AFC	1M9DB1823HG568069	XKP-7865	Available
32-116	2017 Mustang Trailer	AFC	1M9DB182XHG568070	XKP-7866	Available
32-117	2008 Interstate Equip Trailer	AFC	1JKPBS1658M009596	ZKK2165	Available
32-118	2002 Interstate trailer	AFC	1JK00S1022M003412	PT541E3	Available
32-119	2005 Interstate Trailer	AFC	1JKRBS1225M006382	PT541E2	Available
32-120	2018 Winston Trailer	AFC	1W9AP2303JH160127	PT547E3	Available
32-121	2019 Winston Trailer	AFC	1W9AP2300KH160118	PT427F2	Available
Trailers - Cargo					
35-100	2002 Cargo Trailer	AFC	1C9B1101028776697	XW-53467	Available
35-101	2012 Cargo Trailer	AFC	4U01C2023AA041357	XGV1249	Available
35-102	2013 Cargo Trailer MdlSFC716T2	AFC	1UK500G25D1078945	XHH3809	Available
35-103	2014 Victory Trailer VT716TA/B	AFC	564BE162XER003601	XHT3702	Available
35-104	2014 Victory Trailer VT716TA/B	AFC	564BE1621ER003602	XHT3703	Available
35-105	2014 Victory Trailer VT716TA/B	AFC	564BE1625ER003604	XHT3700	Available
35-106	2014 Victory Trailer VT716TA/B	AFC	564BE1623ER003603	XHT3701	Available
35-107	2010 CARMATE TRAILER	AFC	5A3C610S4AL000447	XHT3726	Available
35-108	2020 Pacer Enclosed Trailer	AFC	53BPTEA23LA053911	XLT6507	Available
35-109	2020 Pacer Enclosed Trailer	AFC	53BPTEA28LA053919	XLT6508	Available
35-110	2020 Pacer Enclosed Trailer	AFC	53BPTEA21LA053597	XLT6509	Available
35-111	2020 Pacer Enclosed Trailer	AFC	53BPTEA27LA057234	XMC5709	Available
35-112	2020 Pacer Enclosed Trailer	AFC	53BPTEA2LA055872		Available
35-113	2020 Pacer Enclosed Trailer	AFC	53BPTEA24LA053951		Available
Trailers - Compressor					
36-100	2005 Air Compressor Trailer	AFC	20052314206F	XFE0509	Available
36-101	2009 Compressor Airman 185 cfm	AFC	M9776		Available
36-102	2009 Compressor Airman 185 cfm	AFC	M9777		Available
36-103	1985 Ingersoll Rand Compressor	AFC	145786		Available
36-104	1985 Ingersoll Rand Compressor	AFC	150419		Available
36-105	Atlas-Copco 185 Compressor	AFC	A1A1263068		Available

AFC

Trailers (Continued)

		Owner	Serial Number	License Plate	
Trailers - Specialty					
37-101	2008 Wacker G70 Generator	AFC	5690760		Available
37-102	2006Lee Boy Tack Wagon Distrib	AFC	1B9DS091X6D309068	XDZ-0491	Available
37-103	Hydro Seeder	AFC	SO-1557	XDH2353	Available
37-104	2007 Magnum 400G Tank Trailer	AFC	5AJWS16147B000267	XFE0534	Available
37-105	Silow-206 H1 Honda Auger	AFC	SLW-206-H1-H-GAS		Available
37-106	2008 Leeboy Melter/Applicator	AFC	1B9AA142281309517		Available
37-107	Falcon Hot Box	AFC	1F9P41724HM339044		Available
Trailers - Tar Buggys					
38-100	2010 Crack Pro TR200DA	AFC	1S9P21525A0420032	XFY0212	Available
38-101	2006 Reeves Tarbuggy [B10695]	AFC	B10695		Available
38-102	2006 Reeves Tarbuggy [B13100]	AFC	B13100		Available
38-103	2006 Reeves Tarbuggy [B1607]	AFC	B1607		Available
38-104	2006 Reeves Tarbuggy [B9999]	AFC	B9999		Available
38-105	2014 CrackPro TR260D Heated	AFC	1S9P31729E0420079	XJH 5951	Available
38-106	2012 Sealmaster Crackpro 260	AFC	1S9P31728C0420037	XKA2258	Available

Brooms

		Owner	Serial Number	License Plate	
Brooms - Broce					
41-100	1997 Broce Broom - Original	AFC	88223		Available
41-101	1997 Broce Broom	AFC			Available
41-102	2006 Rosco Broom Sweepro	AFC	46204		Available
41-103	2008 Broce Broom RJ-350	AFC	406164		Available
41-104	2016 Superior Broom DT80CT	AFC	8105038		Available
41-105	LAYMOR 3 WHEEL SM300	AFC	34501		Available
41-106	Superior Broom Truck DT74-J	AFC	818957		Available
41-107	Laymor SM300	AFC	35662		Available

Pavers

		Owner	Serial Number	License Plate	
Pavers - Production					
51-109	2010 Vogele Super 600 Paver	AFC	07900051		Available
51-110	2011 Vogele Paver Model 5100-2	AFC	1382.0075		Available
51-112	2012 Vogele Paver Model 5100-2	AFC	1382.0091		Available
51-113	2013 Vogele Paver 5100-2	AFC	1382.0093		Available
51-114	2014 Vogele Paver 5200-2	AFC	0974-0059		Available
51-115	2015 Vogele 5200-2 Paver	AFC	0974.0067		Available
51-116	Mauldin Model 1550	AFC	018-H-50TJH8Y2-02018		Available
51-117	2016Vogele Vision 5100-2 Paver	AFC	1382.0204		Available
51-118	Vogele 5103-2 Vision Paver	AFC	0983.0039		Available
51-119	2017 Vogele 1283 Paver	AFC	1283.0027		Available
51-120	2017 Vogele Model 5200-2I Pave	AFC	0974.0095		Available
51-121	2012 Vogele 5100-2 Asph Paver	AFC	13820082		Available
51-122	Vogele 5200-2 Paver	AFC	0774 0089		Available
51-123	Vogele 1700-3I Paver	AFC	1982.0154		Available
Pavers - Widener					
52-102	Blawknox 195 Widener	AFC	19519-02		Available
52-103	1987 Blawknox RW-100 Widener	AFC	1000713		Available
52-104	2014 Weiler W530 Road Widener	AFC	W530-1181		Available
Pavers - Shuttle Buggy					
53-101	2008 TEREX MTV Model CR662RI	AFC	60545		Available
53-102	2018 Weiler E1650 Shuttle Buggy	AFC	1W9E1650LJ0001009		Available

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Pavers (Continued)

		Owner	Serial Number	License Plate	
Pavers - Curb Machine					
54-100	1999 Miller Curb Machine	AFC	J12461		Available

Rollers

		Owner	Serial Number	License Plate	
Rollers - 3-5 Ton					
61-105	IR DD28 HF Roller	AFC			Available
61-106	IR DD24 Durapak(#96)Vib Roller	AFC	192096		Available
61-107	IR DD24 Durapak(#97)Vib Roller	AFC	192097		Available
61-108	2007 Bomag BW900-2	AFC	851800021274		Available
61-110	2006 Wacker RD11A	AFC	5677545		Available
61-111	2013 Dynapac Vibratory Roller	AFC	10000332P0A008337		Available
61-112	2014 Hamm HD12VV Roller	AFC	2004128	n/a	Available
61-113	2014 Hamm HD12VV Roller	AFC	2004132	n/a	Available
61-114	2015 Hamm HD10C Roller	AFC	1991970	n/a	Available
61-115	2015 CAT CB34	AFC	34500737		Available
61-116	2016 Hamm Tandem Roller	AFC	H2300882		Available
61-117	2016 Hamm Tandem Roller	AFC	H2300891		Available
61-118	2018 Hamm HD12VV Roller	AFC	WGHOH23OVHAA01396		Available
61-119	2018 Hamm HD12VV Tandem Roll	AFC	WGH0H230CHAA01437		Available
Rollers - 7 Ton					
62-102	2006 Hamm Roller HD070V	AFC	1730312		Available
62-103	2010 Hamm Roller HD70V	AFC	H1730646		Available
62-104	2012 Hamm Roller Model HD70HV	AFC	1870855		Available
62-105	2009 7 Ton Hamm Roller HD70	AFC	1730789	n/a	Available
62-106	2014 Hamm HD+70i VV Roller	AFC	H1860092		Available
62-107	2016 Hamm HD+70i VV Roller	AFC	H1860219		Available
62-108	Hamm HD+70i VV Roller	AFC	1860521		Available
Rollers - 10 Ton					
63-103	IR DD90 HF Roller	AFC	156857		Available
63-104	IR DD90 HF (#261) Vib. Roller	AFC	192261		Available
63-105	IR DD90 HF (#385) Vib. Roller	AFC	192385		Available
63-107	2015 HAMM HD110VVHF	AFC	1850118		Available
63-108	2015 HAMM HDiVVHF ROLLER	AFC	2090049		Available
63-109	2015 HAMM HD+110VO ROLLER	AFC	1850353		Available
63-110	2015 HAMM RD+ 110i ROLLER	AFC	H2090221		Available
Rollers - Pneumatic					
65-100	1999 Hypac Pneumatic Roller	AFC	109A2201660		Available
Rollers - Dirt					
66-101	2007 Hamm 3410	AFC	1691029		Available
66-102	2011 HammDirt Roller3410 Model	AFC	1791352		Available
66-104	2012 Sakai SV400 Dirt Roller	AFC			Available
Rollers - Walk Behind					
67-100	IR DX700E Walk Behind	AFC	RC-0023		Available
67-101	07 Roller Walkbehind Multiquip	AFC	P4528	n/a	Available
67-102	07 Roller Walkbehind Multiquip	AFC	P4344	n/a	Available
67-103	09 Roller Walkbehind Multiquip	AFC	S5535	n/a	Available
Rollers - Trench Walk Behind					
68-100	2007RollerTrenchWalkbehind	AFC	5659278	n/a	Available
68-101	2007RollerTrenchWalkbehind	AFC	5712218	n/a	Available
68-102	2007RollerTrenchWalkbehind	AFC	5695986	n/a	Available

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Vibrator Plate (Continued)

		Owner	Serial Number	License Plate	
Vibrator Plate					
69-100	2008 Vib Plate LG5600 Wacker	AFC	6628710	n/a	Available
69-101	2009Vib Plate LG5600 lb Wacker	AFC	6639068	n/a	Available

Mills

		Owner	Serial Number	License Plate	
Mills - Production					
71-105	2014 Wirtgen Mill MachineW210Y	AFC	15200116	N/A	Available
71-106	2014 Wirtgen Mill MachineW150i	AFC	0613.0027	N/A	Available
71-108	2015 WIRTGEN MILL W120Fi	AFC	1310.0410		Available
71-109	2017 WIRTGEN MILL W210I	AFC	1520.1126		Available
71-110	2016 Wirtgen W150CFI Mill	AFC	08130041		Available
71-111	Wirtgen W220I Mill	AFC	0722 0055		Available
71-112	2018 Wirtgen W150CFi	AFC	0813.0133		Available
Mills - Mini					
72-102	Bartmill 90 Mini Mill	AFC			Available
72-103	Bart Mill 150B	AFC	150695126		Available
72-104	Bartmill BM160	AFC	160399151		Available

Loaders

		Owner	Serial Number	License Plate	
Loaders - Hilift					
81-100	Caterpillar 943 HiLift	AFC			Available
Loaders - Rubber Tired					
82-102	Case Tractor II w/Blade	AFC	JJG0260738		Available
82-103	05 Kubota Tractor	AFC	Kubota:65775, Arm:60943		Available
82-104	2007 Case 721E	AFC	N6F200396		Available
82-105	2006 Case 570MXT Loader	AFC	JJG0303371		Available
82-106	1996 Kawasaki 65Z IV Loader	AFC	65J2-0427		Available
82-107	2017 Case Tractor 570N Loader	AFC	NHC739058		Available
82-108	Komatsu WA 270	AFC	83700		Available
82-109	Caterpillar 924G	AFC	DDA01439		Available
82-902	Paving Fabric Laydown Machine	AFC	FU-500-502		Available

AFC

Loaders (Continued)

		Owner	Serial Number	License Plate	
Loaders - Skid Steer					
83-100	1998 JCB Skid Steer	AFC	746506		Available
83-105	2009 Case 430 Skid Steer	AFC	N8M488607		Available
83-109	2011 Takeuchi TL250-C	AFC	225001147		Available
83-113	12 TAKEUCHI TL240 TRACK LOAI	AFC	224001502		Available
83-120	2014 Cat Skid Steer 299DXHP	AFC	OJST00581		Available
83-123	2014 Caterpillar 272D	AFC	B5W00746		Available
83-124	2015 Caterpillar 272D	AFC	CAT0272DPB5W01058		Available
83-125	2015 Caterpillar 272D	AFC	CAT0272DTB5W01060		Available
83-127	2016 259D Cat Skid Steer	AFC	FTL06272		Available
83-133	2016 Cat 299D Track Loader	AFC	0FD201181		Available
83-134	2016 Case TV380 Skidsteer	AFC	JAFTV380PGM426064		Available
83-135	2016 Case TV380 Skidsteer	AFC	JAFTV380VGM426071		Available
83-136	2017 Caterpillar Skidsteer	AFC	MD200601		Available
83-137	2017 CAT 272D2XHP Skidsteer	AFC	CAT0272DTND200598		Available
83-138	2017 CAT 236D Skidsteer	AFC	CAT026DCBGZ03406		Available
83-139	2017 CAT 236D Skidsteer	AFC	CAT0236DKBGZ03443		Available
83-140	2017 CAT 236D Skidsteer	AFC	CAT0236DJBGZ03122		Available
83-141	2017 CAT 236D Skidsteer	AFC	CAT0236DKBGZ03801		Available
83-142	Case TV380 Skidsteer	AFC	NHM437022		Available
83-143	Case TV380 Skidsteer	AFC	NHM437028		Available
83-144	Case TV380 Skidsteer	AFC	NHM437224		Available
83-145	Case TV380 Skidsteer	AFC	NHM437229		Available
83-146	Case 236 Skidsteer	AFC	BGZ03946		Available
83-147	Case 236 Skidsteer	AFC	BGZ04137		Available
83-148	Case 236 Skidsteer	AFC	BGZ04173		Available
83-149	Case 272D2 Skidsteer	AFC	CAT0272DLBL200985		Available
83-150	Case 272D2 Skidsteer	AFC	CAT0272DTBL200992		Available
83-151	CAT 272D2 Skid Steer	AFC	CAT0272DPBL201030		Available
83-152	2018 Case TV380 Skidsteer	AFC	NHM437027		Available
83-153	2018 Case TV380 Skidsteer	AFC	NHM437231		Available
83-154	2018 Case TV380 Skidsteer	AFC	NHM437230		Available
83-155	2018 Caterpillar 246D Loader	AFC	BYF04518		Available
83-156	2018 Caterpillar 236D Loader	AFC	BGZ04278		Available
83-157	2018 Caterpillar 236D Loader	AFC	BGZ04713		Available
83-158	2018 Caterpillar 236D Loader	AFC	BGZ04280		Available
83-159	2019 Case Track Loader TV380	AFC	JAFTV380AHM437011		Available
83-160	2019 Case Track Loader TV380	AFC	JAFTV380PJM445057		Available
83-161	2019 Caterpillar 272D2 Loader	AFC	CAT0272DPBL201478		Available
83-162	Caterpillar Skidsteer	AFC	D4900953		Available
Telehandler					
84-100	2003 Telehandler Model 544D-10	AFC	0160001474	n/a	Available
84-101	2005 Telehandler Model G9-43A	AFC	0160009118	n/a	Available
84-102	GEHL RS5-19 FORKLIFT	AFC	RS519DY0550228		Available

Excavation

		Owner	Serial Number	License Plate	
Excavation - Backhoe					
91-105	2005 Cat Backhoe 420D	AFC	FDP23405		Available
91-110	2017 Case Backhoe 580SN WT	AFC	JJGN58WTVGC735110		Available
91-111	2017 Case Backhoe 580SN WT	AFC	JJGN58WTEGC735114		Available
91-112	CASE 580SN Backhoe	AFC	KJC752743		Available
91-113	CAT 420E Backhoe	AFC	HLS03738		Available

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Excavation (Continued)

		Owner	Serial Number	License Plate	
Excavation - Excavator					
92-100	1998 Kobelco Excavator	AFC			Available
92-101	2002 Volvo Rubber Tired Excav	AFC	EW170C03397		Available
92-102	2005 Case CX50B Mini Excavator	AFC	N5TN81382		Available
92-103	2007 Case CX135	AFC	DAC151519		Available
92-104	2005 Gradall XL 3300	AFC	0210017646		Available
92-106	2011 Cat.Excavator Mdl 308DCR	AFC	FYC01736		Available
92-108	2012 Volvo Excavator EC340	AFC	EC340DT00210014		Available
92-111	2012 CaterpillarExcavator 319D	AFC	OKFM00258		Available
92-112	2014 Takeuchi Mini-Excavator	AFC	178400990		Available
92-113	2017 CAT 308E2 CR Excavator	AFC	CAT0308EPFJX08385		Available
92-114	Komatsu PC88MR-10 Excavator	AFC	KMTPC249LHA008068		Available
92-115	Komatsu PC88MR-10 Excavator	AFC	KMTPC249LHA008069		Available
92-116	Komatsu PC210LCI-10 Excavator	AFC	KMTPC249LHA0452920		Available
92-117	2015 Komatsu PC138 Track Excav	AFC	41439		Available
92-118	2015 Komatsu PC138USLC-10	AFC	41818		Available
92-119	Komatsu PC238	AFC	KMTPC276CHC005108		Available
92-120	Komatsu PC170LC-11 Excavator	AFC	KMTPC269KHC035279		Available
92-121	Komatsu PC138LC-11 Excavator	AFC	KMTPC261EHA051207		Available
92-122	2018 Komatsu PC55MR-5	AFC	KMTPC259AHE020678		Available
92-123	2018 Komatsu PC55MR-5	AFC	KMTPC259CHE020838		Available
92-124	2018 CAT 308E2CRSB Hyd Exc	AFC	FJX10432		Available
92-125	Komatsu PC88MR-10 Excavator	AFC	8391		Available
92-126	Komatsu PC360LCI-11 Excavator	AFC	A38301		Available
92-127	Volvo Excavator EW180E	AFC	EW180EA00320301		Available
92-128	Komatsu PC88MR-10 Excavator	AFC	8844		Available
92-130	Komatsu PC360LC-11 Excavator	AFC	KMTPC256PHWA35905		Available
Excavation - Grader					
93-101	2006 Noram 65E Motor Grader	AFC	9266		Available
Excavation - Dozer					
94-100	2006 Caterpillar D5G LGP Dozer	AFC	ORKGO2891		Available
94-101	2007 Caterpillar D6N XL Dozer	AFC	0DJA00497		Available
94-104	2013 Komatsu Dozer D51PX22	AFC	B13124		Available
94-105	2011 CAT D6T XL Dozer	AFC	CAT00D6TEWFH00547		Available
94-106	Komatsu D51PXI 24	AFC	B20539		Available
94-107	Komatsu D65PXI-18 Dozer	AFC	KMT0D127PFA090416		Available
Excavation - Truck - Off Road					
95-100	1999 Volvo Dump Trk Mdl A25C	AFC	V61060		Available
95-101	2008 Articulated Dump Truck	AFC	9509		Available
95-106	CAT 730C Articulated Rock Tk	AFC	CAT0730CCTFF00383		Available
95-107	CAT 730C Articulated Rock Tk	AFC	CAT0730VB1M03904		Available
95-108	2017 CAT 730C Articulated Truck	AFC	TFF00853		Available
95-109	2017 CAT 730C Articulated Truck	AFC	TFF00903		Available
95-110	2011 Hydrema 912DS Art. Truck	AFC	10343		Available
Compactor					
96-101	CAT815B Soil Compactor	AFC	17Z01103		Available
Stone Sling Machine					
97-100	2013 CAS AT7 Mobile Slinger	AFC	BF06BF2CT0219013023[illegible]		Available
97-101	Rubble Master Crusher	AFC	RM 90GO!-00.041		Available

Folino CONSTRUCTION

"Safer, faster, smoother, better…."

CARD Transport LLC

TDF SERVICES INC.

SAFETY POLICY

Safety is no accident; Think safety and the job will be safer.

It is the policy of A. Folino Construction that accident prevention shall be considered of primary importance in all phases of operation and administration. The prevention of accidents is an objective affecting all levels of our company and its operations. It is, therefore, a basic requirement that each supervisor make the safety of all employees an integral part of his or her regular management function. It is equally the duty of each employee to accept and follow established safety regulations and procedures.

A. Folino Construction strives to maintain a ***Health & Safety Program*** conforming to the best practices of our field. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It requires the cooperation in all safety and health matters, not only of the employer and employee, but between the employee and all co-workers. Only through such a cooperative effort can a safety program in the best interest of all be established and preserved.

Employees are expected to assist management in accident prevention activities. Unsafe conditions must be reported immediately. Fellow employees that need help should be assisted. Everyone is responsible for the housekeeping duties that pertain to their jobs.

To the greatest degree possible, management will provide all mechanical and physical protection required for personal safety and health, but our employees must bear responsibility for working safely. A little common sense and caution can prevent most accidents from occurring.

The objective of A. Folino Construction is a Health & Safety Program that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing the best experience of similar operations by others. Our goal is zero accidents and injuries.

Tony Folino

Anthony D. Folino
President

Folino
CONSTRUCTION

..... faster • smoother • better

A. Folino Construction, Inc.
109 Dark Hollow Road
Oakmont, PA 15139
P: 412.820.2800
F: 412.280.2808

EEO Policy Statement

It is the policy of this company to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age, disability, sexual orientation or union membership. This policy applies to employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship, pre-apprenticeship and/or on-the-job training.

If there are any questions concerning this policy, please contact the company EEO Officer.

Name of Company EEO Officer: Amy Faas
Address: 109 Dark Hollow Rd
Oakmont, PA 15139

Telephone Number: 412.820.2800 Ext. 215

Signature: _____
Amy Faas

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Company EEO Policy Statement

It is the policy of A. Folino Construction, Inc. to assure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, sexual orientation, gender identity, age, national origin, genetic information, disability, veteran status or on any other basis prohibited by Federal, State, and local laws. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training.

Prohibited Sexual Harassment

Unwelcome sexual advances, requests for sexual favors, and other verbal, nonverbal or physical conduct of a sexual nature constitutes unlawful sexual harassment. Sexual harassment also includes behavior which unreasonably interferes with an individual's job performance or creates an intimidating, hostile or offensive working environment. No manager, supervisor or other employee shall engage in such conduct. Any person in doubt as to whether specific conduct constitutes prohibited harassment should contact the EEO Officer, **Amy Faas,** or any supervisor or management official.

Notice identifying the Company EEO Officer by name and contact information

The Equal Employment Opportunity Officer for A. Folino Construction, Inc. is **Amy Faas.** She may be contacted by writing A. Folino Construction Inc., 109 Dark Hollow Road. Oakmont, PA 15139 or calling the office at 412-820-2800.

Certification of Non-segregated Facilities

A. Folino Construction, Inc. certifies that all facilities and Company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy of the sexes.

Avenues of Appeal / Complaint Procedures

Any complaint of alleged discrimination by A. Folino Construction, Inc., its supervisors, or employees, or any person or organization acting on behalf of A. Folino Construction, Inc., should immediately be called to the attention of the A. Folino Construction Inc.'s EEO Officer, **Amy Faas.**

Notice encouraging employees to refer minority and female applicants for employment

We encourage the help of all employees in referring minority and female applicants for employment. If you know a minority and/or female who is seeking employment, please refer them to **Amy Faas** at 412-820-2800.

Notice informing employees of available training program and entrance requirements

We are participating in an On-the-Job Training Program for the Heavy-Highway Construction Industry. If you are interested in developing a skill in a craft, please contact **Amy Faas** at 412-820-2800 for an explanation of the program. A requirement is that you have the desire and ability to develop a skill in the craft in which you are interested.

Notice to unions disseminating EEO commitments and responsibilities and requesting their cooperation

A. Folino Construction, Inc. will continue to make the Company's EEO policy known to the employment entities with whom we deal and in our employment opportunity announcements that employees and applicants for employment will be hired; upgraded, promoted or advanced; demoted; transferred; recruited; laid-off or terminated; compensated; and trained without regard to their race, religion, color, sex, sexual orientation, gender identity, age, national origin, genetic information, disability, veteran status or on any other basis prohibited by Federal, State, and local laws. We will request the cooperation of the entities with whom we deal to assist A. Folino Construction, Inc. in meeting its EEO obligations. It is also the policy of this company to provide reasonable accommodations for qualified disabled individuals.

Work Environment Statement

It is the policy of A. Folino Construction, Inc. to ensure and maintain a working environment free of harassment, sexual harassment, intimidation, and coercion at all sites, and in all facilities at which our employees are assigned to work. This policy will be rigidly adhered to at all times. Any violation of this policy should be reported immediately to your supervisor or A. Folino Construction Inc.'s EEO Officer, **Amy Faas.**

Additional information regarding the aforementioned policies may be obtained from A. Folino Construction, Inc.'s EEO Officer.

Anthony D. Folino, President

Amy Faas, EEO Officer
(412) 820-2800 Ext. 215

Equal Employment Opportunity is

THE LAW

Private Employers, State and Local Governments, Educational Institutions, Employment Agencies and Labor Organizations

Applicants to and employees of most private employers, state and local governments, educational institutions, employment agencies and labor organizations are protected under Federal law from discrimination on the following bases:

RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN

Title VII of the Civil Rights Act of 1964, as amended, protects applicants and employees from discrimination in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment, on the basis of race, color, religion, sex (including pregnancy), or national origin. Religious discrimination includes failing to reasonably accommodate an employee's religious practices where the accommodation does not impose undue hardship.

DISABILITY

Title I and Title V of the Americans with Disabilities Act of 1990, as amended, protect qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship.

AGE

The Age Discrimination in Employment Act of 1967, as amended, protects applicants and employees 40 years of age or older from discrimination based on age in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment.

SEX (WAGES)

In addition to sex discrimination prohibited by Title VII of the Civil Rights Act, as amended, the Equal Pay Act of 1963, as amended, prohibits sex discrimination in the payment of wages to women and men performing substantially equal work, in jobs that require equal skill, effort, and responsibility, under similar working conditions, in the same establishment.

GENETICS

Title II of the Genetic Information Nondiscrimination Act of 2008 protects applicants and employees from discrimination based on genetic information in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. GINA also restricts employers' acquisition of genetic information and strictly limits disclosure of genetic information. Genetic information includes information about genetic tests of applicants, employees, or their family members; the manifestation of diseases or disorders in family members (family medical history); and requests for or receipt of genetic services by applicants, employees, or their family members.

RETALIATION

All of these Federal laws prohibit covered entities from retaliating against a person who files a charge of discrimination, participates in a discrimination proceeding, or otherwise opposes an unlawful employment practice.

WHAT TO DO IF YOU BELIEVE DISCRIMINATION HAS OCCURRED

There are strict time limits for filing charges of employment discrimination. To preserve the ability of EEOC to act on your behalf and to protect your right to file a private lawsuit, should you ultimately need to, you should contact EEOC promptly when discrimination is suspected:

The U.S. Equal Employment Opportunity Commission (EEOC), 1-800-669-4000 (toll-free) or 1-800-669-6820 (toll-free TTY number for individuals with hearing impairments). EEOC field office information is available at www.eeoc.gov or in most telephone directories in the U.S. Government or Federal Government section. Additional information about EEOC, including information about charge filing, is available at www.eeoc.gov.

Employers Holding Federal Contracts or Subcontracts

Applicants to and employees of companies with a Federal government contract or subcontract are protected under Federal law from discrimination on the following bases:

RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN

Executive Order 11246, as amended, prohibits job discrimination on the basis of race, color, religion, sex or national origin, and requires affirmative action to ensure equality of opportunity in all aspects of employment.

INDIVIDUALS WITH DISABILITIES

Section 503 of the Rehabilitation Act of 1973, as amended, protects qualified individuals from discrimination on the basis of disability in hiring, promotion, discharge, pay, fringe benefits, job training, classification, referral, and other aspects of employment. Disability discrimination includes not making reasonable accommodation to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, barring undue hardship. Section 503 also requires that Federal contractors take affirmative action to employ and advance in employment qualified individuals with disabilities at all levels of employment, including the executive level.

DISABLED, RECENTLY SEPARATED, OTHER PROTECTED, AND ARMED FORCES SERVICE MEDAL VETERANS

The Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212, prohibits job discrimination and requires affirmative action to employ and advance in employment disabled veterans, recently separated veterans (within three years of discharge or release from active duty), other protected veterans (veterans who served during a war or in a campaign or expedition for which a campaign badge has been authorized), and Armed Forces service medal veterans (veterans who, while on active duty, participated in a U.S. military operation for which an Armed Forces service medal was awarded).

RETALIATION

Retaliation is prohibited against a person who files a complaint of discrimination, participates in an OFCCP proceeding, or otherwise opposes discrimination under these Federal laws.

Any person who believes a contractor has violated its nondiscrimination or affirmative action obligations under the authorities above should contact immediately:

The Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, 200 Constitution Avenue, N.W., Washington, D.C. 20210, 1-800-397-6251 (toll-free) or (202) 693-1337 (TTY). OFCCP may also be contacted by e-mail at OFCCP-Public@dol.gov, or by calling an OFCCP regional or district office, listed in most telephone directories under U.S. Government, Department of Labor.

Programs or Activities Receiving Federal Financial Assistance

RACE, COLOR, NATIONAL ORIGIN, SEX

In addition to the protections of Title VII of the Civil Rights Act of 1964, as amended, Title VI of the Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color or national origin in programs or activities receiving Federal financial assistance. Employment discrimination is covered by Title VI if the primary objective of the financial assistance is provision of employment, or where employment discrimination causes or may cause discrimination in providing services under such programs. Title IX of the Education Amendments of 1972 prohibits employment discrimination on the basis of sex in educational programs or activities which receive Federal financial assistance.

INDIVIDUALS WITH DISABILITIES

Section 504 of the Rehabilitation Act of 1973, as amended, prohibits employment discrimination on the basis of disability in any program or activity which receives Federal financial assistance. Discrimination is prohibited in all aspects of employment against persons with disabilities who, with or without reasonable accommodation, can perform the essential functions of the job.

If you believe you have been discriminated against in a program of any institution which receives Federal financial assistance, you should immediately contact the Federal agency providing such assistance.

COMMONWEALTH OF PENNSYLVANIA
HUMAN RELATIONS COMMISSION

EMPLOYMENT PROVISIONS OF THE PENNSYLVANIA HUMAN RELATIONS ACT

(Act of October 27, 1955, P.L. 744, as Amended)

PURPOSE OF PROVISIONS

The purpose of the employment provisions of the Pennsylvania Human Relations Act is to prevent and eliminate unlawful discriminatory practices in employment because of race, color, religion, ancestry, age (40 and above), sex, national origin, non-job related disability, known association with a disabled individual, possession of a diploma based on passing a general education development test, or willingness or refusal to participate in abortion or sterilization.

UNLAWFUL DISCRIMINATORY PRACTICES

It is unlawful — on the basis of the facts listed above — for an employer, labor union or employment agency to:
1. Deny any person an equal opportunity to obtain employment, to be promoted and to be accorded all other rights to compensation, tenure and other terms, conditions and privileges of employment.
2. Deny membership rights and privileges in any labor organization.
3. Deny any person equal opportunity to be referred for employment.
4. Refuse to contract or otherwise discriminate in contracting with any independent contractor who is licensed by the Bureau of Professional and Occupational Affairs.

It is also unlawful for any person, employer, labor union or employment agency to retaliate against an individual because the individual has filed a complaint with the Commission, or has otherwise participated in any Commission proceeding, or for any person to aid or abet any unlawful discriminatory practice under the Human Relations Act.

PARTIES SUBJECT TO THE ACT

The employment provisions of the Pennsylvania Human Relations Act apply to: (1) Employers of 4 or more persons, including units of state and local government, (2) Labor organizations, and (3) Employment agencies.

WHO MAY FILE A COMPLAINT

Complaints may be filed within 180 days of the alleged act of discrimination by any of the following: (1) Any person who believes he or she has been discriminated against, (2) The Pennsylvania Human Relations Commission, (3) The Attorney General of Pennsylvania, or (4) An employer whose employees hinder compliance with the provisions of the Act.

PARTIES EXEMPT FROM THE ACT

The employment provisions of the Pennsylvania Human Relations Act do not apply to: (1) Any individual employed in agriculture or domestic service, (2) any individual who, as part of his or her employment, resides in the personal residence of the employer, (3) Any individual employed by his or her parents, spouse or child.

WHO MUST POST THIS NOTICE

Every employer, labor organization and employment agencysubject to the employment provisions of this Act is required by law to post this notice in a conspicuous, easily accessible and well-lighted location customarily frequented by applicants, employees or members.

WARNING: Removing, defacing, covering up or destroying this notice is a violation of the Pennsylvania Crimes Code and may subject you to fine or imprisonment.

For further information, write, phone or visit the Pennsylvania Human Relations Commission:
Executive Offices: 333 Market Street, 8th Floor · Harrisburg, PA 17126
(717) 787-4410 · (717) 787- 7279 (TTY) or visit us at www .phrc.state.pa.us

To file a complaint, contact the Regional Office nearest you:

Pittsburgh
301 5th Ave., Suite 390
Piatt Place
Pittsburgh, PA 15222
(412) 565-5395
(412) 565-5711 (TTY)

Harrisburg
333 Market Street,8th Floor
Harrisburg, PA 17104
(717) 787-9780
(717) 787-7279 (TTY)

Philadelphia
110 N. 8th St., Suite 501
Philadelphia, PA 19107
(215) 560-2496
(215) 560-3599 (TTY)

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A. A. Folino Construction, Inc.
109 Dark Hollow Road
Oakmont, PA 15139
P: 412.820.2800
F: 412.280.2808

NON-DISCRIMINATION NOTICE

TO ALL EMPLOYEES:

A. Folino Construction is committed to nondiscrimination in employment. Any person who applies for a job with this company will not be discriminated against because of race, color, religion, sex, age, national origin, physical impairment, sexual orientation or veteran status.

All qualified applicants are welcome to apply for jobs with A. Folino Construction. In particular, present minority and female employees are encouraged to refer qualified minorities and females to the company for application.

A. Folino Construction Inc.

Amy Faas
EEO Officer

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NOTICE IDENTIFYING EEO OFFICER

May 19, 2016

Amy Faas
A. Folino Construction, Inc.
109 Dark Hollow Road
Oakmont, PA 15139

Dear Ms. Faas:

In accordance with our Equal Employment Opportunity practices, you have been appointed to serve as the Equal Employment Opportunity Officer for the Company.

As the EEO Officer, you are authorized to:

1. Develop EEO Policy statements, Affirmative Action Programs, internal and external communication techniques and monitoring systems.
2. Identify problem areas.
3. Assist management in arriving at solutions to problems.
4. Design and implement documentation systems.
5. Determine whether the contractor's goals and objectives have been obtained.
6. Serve as a liaison between the company and enforcement agencies.
7. Serve as a liaison between the company and private and public employment services for recruiting of minorities and women, as well as minority organizations, women's organizations and community action groups concerning the employment opportunity of minorities and women.
8. Conduct annual discussions with supervisors and employees to ensure implementation of the program.
9. Ensure that all company locations and job-sites are in compliance, including:
   - Posters properly displayed
   - Company activities and facilities are non-segregated
10. Evaluate supervisors annually on the basis of their equal employment opportunity efforts and ensure that they are aware of their responsibility to prevent harassment.

Sincerely,

Anthony D. Folino
President

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A. Folino Construction, Inc.
109 Dark Hollow Road
Oakmont, PA 15139
P: 412.820.2800
F: 412.280.2808

SEXUAL HARASSMENT POLICY

It is the policy of A. Folino Construction, Inc. to maintain a workplace that is free from the intimidation, coercion, or harassment, including sexual harassment, of any employee. Incidents of harassment by employees, managers, contractors, vendors, or customers will not be tolerated and should be promptly reported as outlined in this policy.

A. Folino Construction, Inc. employees are expected to conduct themselves in a business-like manner at all times. Any behavior that is coercive, intimidating, harassing, or sexual in nature is inappropriate and prohibited. Any verbal, physical, or visual conduct that belittles or demeans an individual because of his or her race, religion, national origin, gender, age disability, or similar characteristics or circumstances is prohibited.

Incidents of harassment may be subjective in nature. To assist employees and managers in understanding what harassment is, particularly sexual harassment, A. Folino Construction, Inc. is including the federal government's definition of this policy:

> Sexual Harassment is: unwelcome sexual advances, request for sexual favors, and other physical, verbal, or visual conduct based on gender when: **(1)** submission to the conduct is an explicit or implicit term or condition of employment, **(2)** submission to or rejection of the conduct is used as the basis for an employment decision, or **(3)** the conduct has the purpose of effect of unreasonably interfering with an individual's work performance or the creating an intimidating, hostile, or offensive working environment.

Sexual harassment can include any of the following kinds of behavior:

- Explicit sexual propositions;
- Sexual innuendo;
- Sexually suggestive comments;
- Sexually oriented teasing or kidding;
- Sexually oriented jokes;
- Obscene gesture or language:
- Obscene or sexually suggestive pictures or drawings;
- Physical contact, such as patting, pinching, or touching.

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Oakmont, PA 15139
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Supervisors and managers are responsible for maintaining a workplace that is free of harassment, but all employees are responsible for helping to assure that harassment does not occur by conducting themselves in an appropriate manner and by reporting harassment they observe. If any individual has a complaint or allegation of harassment, he or she should report the incident to the supervisor or manager, the allegation should be promptly taken to the Company's EEO Officer: Amy Faas, EEO Officer – (412) 820-2800, 109 Dark Hollow Road, Oakmont, PA 15139.

The complaint will be investigated promptly and the matter will be kept as confidential as possible. A. Folino Construction, Inc. absolutely forbids retaliation of any kind against any employee who complains about alleged harassment and will take disciplinary action against anyone who attempts to retaliate.

If, after a through investigation of the matter, the company determines that harassment has occurred, appropriate disciplinary action will be taken. Discipline may include counseling, written warning, transfer, demotion, discharge, or any other action deemed appropriate. In the event the complaining employee is not satisfied with the results of the action taken or of the investigation, he or she may request a review of the matter by the Company's President.

A. FOLINO CONSTRUCTION, INC.

Amy Faas, EEO Officer

EMPLOYEE RIGHTS

FOR WORKERS WITH DISABILITIES PAID AT SPECIAL MINIMUM WAGES

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

This establishment has a certificate authorizing the payment of special minimum wages to workers who are disabled for the work they are performing. Authority to pay special minimum wages to workers with disabilities applies to work covered by the ***Fair Labor Standards Act (FLSA), McNamara-O'Hara Service Contract Act (SCA), and/or Walsh-Healey Public Contracts Act (PCA)****. Such special minimum wages are referred to as "****commensurate wage rates****" and are less than the basic hourly rates stated in an SCA wage determination and less than the FLSA minimum wage of* ***$7.25 per hour beginning July 24, 2009****. A "commensurate wage rate" is based on the worker's individual productivity, no matter how limited, in proportion to the wage and productivity of experienced workers who do not have disabilities that impact their productivity when performing essentially the same type, quality, and quantity of work in the geographic area from which the labor force of the community is drawn.*

WORKERS WITH DISABILITIES

For purposes of payment of commensurate wage rates under a certificate, a worker with a disability is defined as:

- An individual whose earnings or productive capacity is impaired by a physical or mental disability, including those related to age or injury, for the work to be performed.
- Disabilities which may affect productive capacity include blindness, mental illness, mental retardation, cerebral palsy, alcoholism, and drug addiction. The following do not ordinarily affect productive capacity for purposes of paying commensurate wage rates: educational disabilities; chronic unemployment; receipt of welfare benefits; nonattendance at school; juvenile delinquency; and correctional parole or probation.

KEY ELEMENTS OF COMMENSURATE WAGE RATES

- **Nondisabled worker standard**—The objective gauge (usually a time study of the production of workers who do not have disabilities that impair their productivity for the job) against which the productivity of a worker with a disability is measured.
- **Prevailing wage rate**—The wage paid to experienced workers who do not have disabilities that impair their productivity for the same or similar work and who are performing such work in the area. Most SCA contracts include a wage determination specifying the prevailing wage rates to be paid for SCA-covered work.
- **Evaluation of the productivity of the worker with a disability**—Documented measurement of the production of the worker with a disability (in terms of quantity and quality).

The wages of all workers paid commensurate wages must be reviewed, and adjusted if appropriate, at periodic intervals. At a minimum, the productivity of hourly-paid workers must be reevaluated at least every six months and a new prevailing wage survey must be conducted at least once every twelve months. In addition, prevailing wages must be reviewed, and adjusted as appropriate, whenever the applicable state or federal minimum wage is increased.

OVERTIME

Generally, if you are performing work subject to the FLSA, SCA, and/or PCA, you must be paid at least 1½ times your regular rate of pay for all hours worked over 40 in a workweek.

CHILD LABOR

Minors younger than **18 years of age** must be employed in accordance with the child labor provisions of FLSA. No persons under 16 may be employed in manufacturing or on a PCA contract.

FRINGE BENEFITS

Neither the FLSA nor the PCA have provisions requiring vacation, holiday, or sick pay nor other fringe benefits such as health insurance or pension plans. SCA wage determinations may require such fringe benefit payments (or a cash equivalent). **Workers paid under a certificate authorizing commensurate wage rates must receive the full fringe benefits listed on the wage determination.**

WORKER NOTIFICATION

Each worker with a disability and, where appropriate, the parent or guardian of such worker, shall be informed orally and in writing by the employer of the terms of the certificate under which such worker is employed.

PETITION PROCESS

Workers with disabilities paid at special minimum wages may petition the Administrator of the Wage and Hour Division of the Department of Labor for a review of their wage rates by an Administrative Law Judge. No particular form of petition is required, except that it must be signed by the worker with a disability or his or her parent or guardian and should contain the name and address of the employer. Petitions should be mailed to: Administrator, Wage and Hour Division, U.S. Department of Labor, Room S-3502, 200 Constitution Avenue, N.W., Washington, D.C. 20210.

Employers shall display this poster where employees and the parents and guardians of workers with disabilities can readily see it.

For additional information:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627

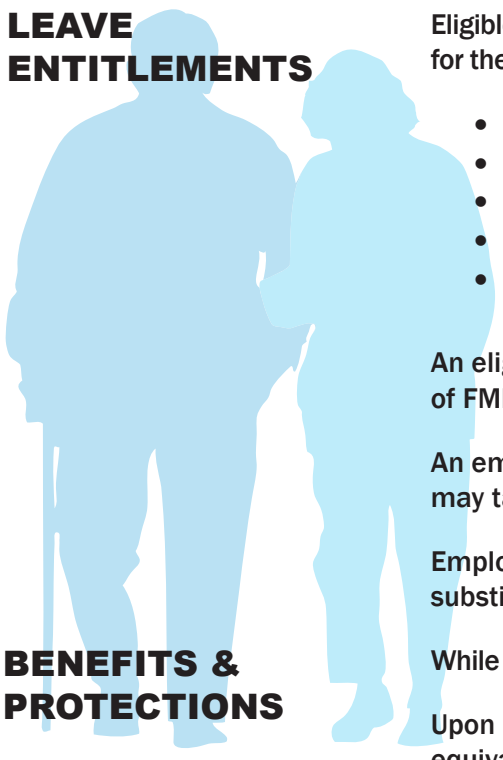
WWW.WAGEHOUR.DOL.GOV

U.S. Department of Labor | Wage and Hour Division

WH 1284
Revised July 2009

EMPLOYEE RIGHTS
UNDER THE FAMILY AND MEDICAL LEAVE ACT

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION



LEAVE ENTITLEMENTS

Eligible employees who work for a covered employer can take up to 12 weeks of unpaid, job-protected leave in a 12-month period for the following reasons:

- The birth of a child or placement of a child for adoption or foster care;
- To bond with a child (leave must be taken within 1 year of the child's birth or placement);
- To care for the employee's spouse, child, or parent who has a qualifying serious health condition;
- For the employee's own qualifying serious health condition that makes the employee unable to perform the employee's job;
- For qualifying exigencies related to the foreign deployment of a military member who is the employee's spouse, child, or parent.

An eligible employee who is a covered servicemember's spouse, child, parent, or next of kin may also take up to 26 weeks of FMLA leave in a single 12-month period to care for the servicemember with a serious injury or illness.

An employee does not need to use leave in one block. When it is medically necessary or otherwise permitted, employees may take leave intermittently or on a reduced schedule.

Employees may choose, or an employer may require, use of accrued paid leave while taking FMLA leave. If an employee substitutes accrued paid leave for FMLA leave, the employee must comply with the employer's normal paid leave policies.

BENEFITS & PROTECTIONS

While employees are on FMLA leave, employers must continue health insurance coverage as if the employees were not on leave.

Upon return from FMLA leave, most employees must be restored to the same job or one nearly identical to it with equivalent pay, benefits, and other employment terms and conditions.

An employer may not interfere with an individual's FMLA rights or retaliate against someone for using or trying to use FMLA leave, opposing any practice made unlawful by the FMLA, or being involved in any proceeding under or related to the FMLA.

ELIGIBILITY REQUIREMENTS

An employee who works for a covered employer must meet three criteria in order to be eligible for FMLA leave. The employee must:

- Have worked for the employer for at least 12 months;
- Have at least 1,250 hours of service in the 12 months before taking leave;* and
- Work at a location where the employer has at least 50 employees within 75 miles of the employee's worksite.

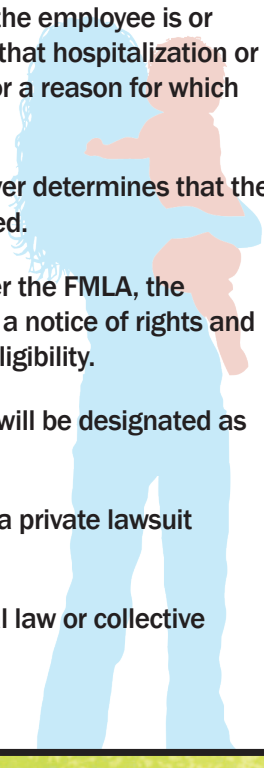
*Special "hours of service" requirements apply to airline flight crew employees.

REQUESTING LEAVE

Generally, employees must give 30-days' advance notice of the need for FMLA leave. If it is not possible to give 30-days' notice, an employee must notify the employer as soon as possible and, generally, follow the employer's usual procedures.

Employees do not have to share a medical diagnosis, but must provide enough information to the employer so it can determine if the leave qualifies for FMLA protection. Sufficient information could include informing an employer that the employee is or will be unable to perform his or her job functions, that a family member cannot perform daily activities, or that hospitalization or continuing medical treatment is necessary. Employees must inform the employer if the need for leave is for a reason for which FMLA leave was previously taken or certified.

Employers can require a certification or periodic recertification supporting the need for leave. If the employer determines that the certification is incomplete, it must provide a written notice indicating what additional information is required.



EMPLOYER RESPONSIBILITIES

Once an employer becomes aware that an employee's need for leave is for a reason that may qualify under the FMLA, the employer must notify the employee if he or she is eligible for FMLA leave and, if eligible, must also provide a notice of rights and responsibilities under the FMLA. If the employee is not eligible, the employer must provide a reason for ineligibility.

Employers must notify its employees if leave will be designated as FMLA leave, and if so, how much leave will be designated as FMLA leave.

ENFORCEMENT

Employees may file a complaint with the U.S. Department of Labor, Wage and Hour Division, or may bring a private lawsuit against an employer.

The FMLA does not affect any federal or state law prohibiting discrimination or supersede any state or local law or collective bargaining agreement that provides greater family or medical leave rights.

For additional information or to file a complaint:

1-866-4-USWAGE

(1-866-487-9243) TTY: 1-877-889-5627

www.dol.gov/whd

U.S. Department of Labor | Wage and Hour Division

WH1420 REV 04/16

Folino CONSTRUCTION

EMPLOYEE HEALTH AND SAFETY HANDBOOK

2020

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COMPANY SAFETY POLICY

Safety is no accident; Think safety and the job will be safer.

It is the policy of A. Folino Construction that accident prevention shall be considered of primary importance in all phases of operation and administration. The prevention of accidents is an objective affecting all levels of our company and its operations. It is, therefore, a basic requirement that each supervisor make the safety of all employees an integral part of his or her regular management function. It is equally the duty of each employee to accept and follow established safety regulations and procedures.

A. Folino Construction strives to maintain a ***Health & Safety Program*** conforming to the best practices of our field. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It requires the cooperation in all safety and health matters, not only of the employer and employee, but between the employee and all co-workers. Only through such a cooperative effort can a safety program in the best interest of all be established and preserved.

Employees are expected to assist management in accident prevention activities. Unsafe conditions must be reported immediately. Fellow employees that need help should be assisted. Everyone is responsible for the housekeeping duties that pertain to their jobs.

To the greatest degree possible, management will provide all mechanical and physical protection required for personal safety and health, but our employees must bear responsibility for working safely. A little common sense and caution can prevent most accidents from occurring.

The objective of A. Folino Construction is a Health & Safety Program that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing the best experience of similar operations by others. Our goal is zero accidents and injuries.

Tony Folino
Anthony D. Folino
President

DRUG/ALCOHOL FREE POLICY

PURPOSE: It is the policy of our company that the employees are free of substance and alcohol abuse. Consequently, the use of illegal drugs by all employees is prohibited. Further, employees shall not use alcohol or engage in "prohibited conduct" as defined herein. The overall goal of this policy is to ensure a drug-free and alcohol-free environment and to reduce accidents, injuries and fatalities.

The Company has implemented five circumstances for Drug and Alcohol testing:

1. Pre-Employment Testing
2. Random Testing
3. Post-Accident/Post-Injury Testing
4. Reasonable Suspicion Testing
5. Return to Duty/Follow-up Testing

SAFETY VIOLATIONS DISCIPLINARY POLICY

PURPOSE: To provide a uniform policy for holding personnel accountable for safety violations.

There are three types of disciplinary actions that may be taken: verbal warning (documented as such), written warning with suspension, and termination.

- **First violation** – ***Documented Verbal Warning:*** A verbal warning from the Supervisor, accompanied by a written description of the warning on a Safety Rule Violation form (sample attached). The Supervisor is to meet with the Employee and clearly explain the infraction and steps to prevent recurrence.
- **Second violation** – ***Written Warning plus Suspension:*** If the unacceptable behavior or performance continues, the next step should be a written warning from the Supervisor, utilizing the Safety Rule Violation form,

accompanied by unpaid suspension. Employee will be sent home for the remainder of the day, plus one additional day, unpaid. The written warning will define the problem, describe how it may be corrected, and may specify a reasonable time frame for correction, and will indicate that termination may result if improvement is not observed. The employee will be given an opportunity to read the warning, discuss it with the supervisor, and sign the warning. If the employee declines to sign the warning, the supervisor will note as such.

- **Third violation** – ***Termination:*** An employee will be terminated for serious misconduct, or for performance deficiencies that are not corrected. A Safety Rule Violation form will be completed documenting the reason for termination. The employee will be given an opportunity to read the notice, discuss it with the Supervisor, and sign the warning. If the employee declines to sign the warning, the Supervisor will note as such.

DRIVER RULES FOR OPERATION OF A COMPANY VEHICLE

PURPOSE: To establish minimum standards for operating a company owned vehicle. While you are using the vehicle, you are representing the company and at the same time the company is liable for your actions while in this vehicle. It is critically important to know that with this convenience there is a tremendous amount of responsibility. If you have been issued a company vehicle you must receive and review a copy of the complete policy addressing Driver Rules for Operation of a Company Vehicle. The Supervisor or HR Department will provide you a copy of the policy.

Foreman Weekly Job-Site Inspections

This policy helps us to identify unsafe acts and conditions before an accident takes place. All employees should continuously inspect their own work areas and correct hazards as they occur. Each employee is responsible for everything that happens in their own work area—including the positions and actions of people, the physical conditions of their vehicles, equipment and work areas, and the effective implementation and enforcement of rules, policies and procedures.

In order to keep the Company in compliance with OSHA Regulations and maintain a safe workplace as defined in the Company's Health and Safety Policies and Procedures, it has been determined by the Safety Committee that Foreman shall conduct weekly inspections, as follows:

1. Foreman shall complete a "Job-Site Safety Inspection Report" on a weekly basis.

2. Foreman shall return the completed report to the program administrator, no later than Wednesday of each week.

3. The inspections are completed via the HCSS Safety Manager Application.

Daily Job Hazard Analysis (JHA)

Job Hazard Analysis (JHA) is an important accident prevention tool that works by finding hazards and eliminating or minimizing them before the job is performed, and before they have a chance to become accidents.

1. Before work begins in any location and before any changes are made in work procedures or activities, a JHA should be reviewed and signed by all employees involved with the work activity.

2. The JHA is typically completed by the Foreman.

3. The JHA's are completed via the HCSS Safety Manager Application.

Weekly Toolbox Talks

Toolbox Talk safety meetings are brief employee safety training sessions designed to aid in the instruction of employees in the recognition and avoidance of unsafe conditions in the workplace.

1. A topic should be chosen that applies to the site conditions and reviewed with all employees.

2. A sign-off sheet documenting attendance is to be completed and submitted to the Safety Director. The Toolbox Talks are to be conducted weekly by the Foreman.

3. The Toolbox Talks are completed via the HCSS Safety Manager Application.

No Accident Certification (NAC)

To encourage timely reporting and management of incidents foremen are required to complete a No Accident Certification on the last day of the work week.

1. A weekly No Accident Certification sign-off sheet documenting employees who were not involved in an incident is to be completed and submitted to the Safety Director.

2. The No Accident Certification is to be conducted weekly by the Foreman.

3. An employee who falsely reports incident free status and/or fails to immediately report a workplace incident may risk denial of their claim.

4. The No Accident Certification is completed via the HCSS Safety Manager Application.

SAFETY INCENTIVE PROGRAM

A Safety Incentive Program is in place which rewards employees and supervisors. Ask your supervisor for more details.

PERSONNEL TRAINING POLICY

PURPOSE: The purpose of this policy is to ensure the appropriate training is provided to personnel commensurate with their job responsibilities. The major objectives of this policy are to:

- Comply with OSHA regulatory requirements.
- Apprise personnel of health and safety considerations relative to their job assignments.

We are committed to the on-going development of employees at all levels in the organization. An in-house training program provides a wide range of skills training and professional development programs year round. Courses are designed to ensure that employees have the best training available to improve safety, increase performance, enhance job satisfaction and maximize teamwork. By participating employees gain the knowledge and skills they need to be safe, productive and to make sound decisions.

Employees participate in instructor-led classes in the following areas:

- Safety
- Technical / Construction
- Business skills
- Leadership / Human Relations
- Project Management

In addition to programs developed internally, the Safety Director works closely with external training, educational, and professional organizations to provide specialized learning opportunities for our employees. As an alternative to traditional classroom instruction, many courses are available to employees on line through an E-Learning provider.

TRAINING REQUIREMENTS (MINIMUM):

New Hire Orientation: When a new employee is hired, the employee is to be provided New Hire Orientation Training by the site supervisor or his/her designee. During the orientation the Supervisor is to ensure that all applicable training and company safety requirements are covered with the employee.

OSHA 10 Hour Training: All foremen must have the OSHA 10 certification. If upon hire the foreman doesn't have the OSHA 10 certification, arrangements must be made so that the foreman obtains the certification within 90 days of hire.

OSHA 30 Hour Training: All Superintendents and Project Managers must have the OSHA 30 certification. If upon hire the Superintendent doesn't have the OSHA 30 certification, arrangements must be made so that the Superintendent or Project Manager obtains the certification within 90 days of hire.

First Aid/CPR Training: All Superintendents and Foremen must be certified in Adult First Aid/CPR. If upon hire the Superintendent or Foreman doesn't have the certification, arrangements must be made for the employee to obtain the certification within 90 days of hire.

Operator Training: All equipment operators must be trained as per the applicable OSHA requirements for the piece of equipment he/she will be operating.

INCIDENT REPORTING/INVESTIGATION POLICY

PURPOSE: The purpose of this Policy is to ensure uniformity in complying with OSHA recordkeeping and incident reporting requirements/procedures.

FIRST PRIORITY: The first priority in the event of an incident is to aid the injured, or stop an unsafe condition that may have contributed to the incident.

REPORTING REQUIREMENTS: All incidents regardless of severity are to be reported to the Site Supervisor immediately. This includes injuries, automobile and any property damage incidents. The Site Supervisor is to report the incident to the Safety Director upon gaining knowledge of the incident. An incident report is to be completed and submitted to the office within 24 hours of the incident occurring. **Incident reports can be completed via Forms in the HCSS Safety Manager Application.**

INVESTIGATION REQUIREMENTS: An investigation led by the Safety Director will take place to gather information that can be used in developing solutions to prevent the incident from reoccurring. Employees may be asked to provide information if they were a witness. The incident investigation is fact-finding, not fault finding.

NEAR MISS REPORTING: A Near Miss is an incident that under slightly different circumstances could have resulted in injury to personnel or damage to property. A Near Miss that had the potential for serious injuries or property damage will be investigated. Valuable lessons can be learned from a near miss incident, please don't hesitate to report a Near Miss. **Near Misses can be reported to the Safety Director via the HCSS Safety Manager Application**.

PERSONAL PROTECTIVE EQUIPMENT POLICY

PURPOSE: This policy specifies the minimum requirements for the evaluation, selection, training and use of personal protective equipment (PPE) on job sites and anywhere where the company conducts its operations. Exceptions may exist for certain company maintenance facilities as determined by facility management and the Safety Director. The use of personal protective equipment as specified by this policy is designed to supplement effective engineering and administrative hazard controls.

Minimum PPE Requirements

- Hard hat, safety glasses, high visibility vest, safety-toed footwear
- Side shields must be installed on corrective lenses that have been ANSI impact rated.
- OTG safety glasses must be worn over corrective lenses that are not ANSI impact rated.

Additional PPE Requirements

- **Full face shields** are to be worn over safety glasses when cutting, grinding or chipping.
- **Welding hoods and gloves** are to be worn during all welding tasks.

- **Chemical protective clothing, including work gloves**, shall be worn by employees handling corrosive or toxic chemicals. Chemical protective clothing shall be designed to prevent exposure to the skin or employee's work clothes.
- **Hearing protection** is to be worn during the following designated activities:
    - During the operation of jackhammers on company jobsites.
    - During the operation of any cutting or grinding operations.
    - During the use of hydraulic hammer operations.
    - During the operation of designated heavy equipment.
- **Respiratory protection** is required in areas where health hazards exist due to the presence of hazardous substances (see Respiratory Protection Program for more information).

Additional PPE requirements will be dictated by pertinent OSHA standards, Safety Data Sheets, accepted safe work practices and manufacturer's recommendations. The Safety Director is responsible for assisting site supervision with determining PPE needs and for conducting site inspections to assist site supervision in enforcement of this policy.

HAZARD COMMUNICATION POLICY

PURPOSE: To ensure that the hazards of all chemicals are evaluated and that information concerning their hazards is communicated to affected employees and subcontractors. This program establishes guidelines for informing employees about the hazardous substances in their workplace through Safety Data Sheets (SDSs), container labeling, and training.

HAZARD COMMUNICATION & CHEMICAL SAFETY:

Chemicals can be any of the following:

- Corrosive
- Reactive
- Flammable
- Explosive
- Oxidizing
- Inert

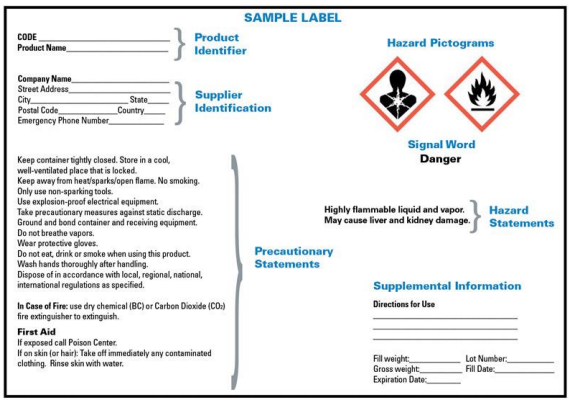
ROUTES OF OCCUPATIONAL EXPOSURE:

- Inhalation – nearly all materials that are airborne can be inhaled
- Skin Absorption – skin contact with a substance can result in a possible reaction
- Ingestion – most workers do not deliberately swallow materials they handle
- Injection – normally associated with blood borne pathogens
- Ocular – absorbed through the eye

CONTAINER LABELING & SAFETY DATA SHEETS (SDS):
The label provides information to the workers on the specific hazardous chemical. While labels provide important information for anyone who handles, uses, stores, and transports hazardous chemicals, they are limited by design in the amount of information they can provide. Safety Data Sheets (SDSs), which must accompany hazardous chemicals, are the more complete resource for details regarding hazardous chemicals.

LABELS MUST CONTAIN:

- Name, Address & Telephone Number of Manufacturer
- Product Identifier
- Signal Word (Danger & Warning)
- Hazard Statements
- Precautionary Statements
- Pictogram(s)


SAMPLE LABEL
CODE
Product Name
Product Identifier
Hazard Pictograms
Company Name
Street Address
City State
Postal Code Country
Emergency Phone Number
Supplier Identification
Signal Word
Danger
Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.
In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO2) fire extinguisher to extinguish.
First Aid
If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.
Precautionary Statements
Highly flammable liquid and vapor.
May cause liver and kidney damage.
Hazard Statements
Supplemental Information
Directions for Use
Fill weight: Lot Number:
Gross weight: Fill Date:
Expiration Date:


GHS PICTOGRAMS
FLAMMABLE
CORROSIVE
EXPLOSIVE
COMPRESSED GAS
OXIDIZING
TOXIC
HEALTH HAZARD
HARMFUL/ IRRITANT
DANGER FOR THE ENVIRONMENT

SAFETY DATA SHEETS (SDS):

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

- **Section 1, Identification** includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.
- **Section 2, Hazard(s) identification** includes all hazards regarding the chemical; required label elements.
- **Section 3, Composition/information on ingredients** includes information on chemical ingredients; trade secret claims.
- **Section 4, First-aid measures** includes important symptoms/effects, acute, delayed; required treatment.
- **Section 5, Fire-fighting measures** lists suitable extinguishing techniques, equipment; chemical hazards from fire.
- **Section 6, Accidental release measures** lists emergency procedures; protective equipment; proper methods of containment and cleanup.
- **Section 7, Handling and storage** lists precautions for safe handling and storage, including incompatibilities.
- **Section 8, Exposure controls/personal protection** lists OSHA's Permissible Exposure Limits (PELs); ACGIH Threshold Limit Values (TLVs); and any other exposure limit used or recommended by the chemical manufacturer,

importer, or employer preparing the SDS where available as well as appropriate engineering controls; personal protective equipment (PPE).

- **Section 9, Physical and chemical properties** lists the chemical's characteristics.
- **Section 10, Stability and reactivity** lists chemical stability and possibility of hazardous reactions.
- **Section 11, Toxicological information** includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
- Section 12, Ecological information*
- Section 13, Disposal considerations*
- Section 14, Transport information*
- Section 15, Regulatory information*
- **Section 16, Other information**, includes the date of preparation or last revision.

An SDS file of all hazardous chemicals used on jobsites is maintained to ensure that SDSs are readily accessible to employees.

TRAINING:

- All employers with hazardous chemicals in their workplaces must have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately.
- Employers are required to train workers by December 1, 2013 on the new labels elements and Safety Data Sheets format to facilitate recognition and understanding.

CONCRETE SAFETY POLICY

PURPOSE: To ensure the safety of the team when placing concrete and while working around the equipment used for placing and finishing concrete.

The following considerations and requirements apply:

Form Strength

- Ability to support both the dead weight of the concrete plus the live loads of deposited concrete and crew members up on form supporting staging.
- Consult a qualified engineer to assist in formwork design.

Access to the Pour

- Ladders, gangplanks or stairways must be provided to get crews to and from the pour areas.
- For below grade pours, ramp ways for "slip-free" access can be built or excavated. Stairs can also be built.
- Ensure that there is adequate room to exit at the end of the bridge decks or elevated slabs when the finishing machine approaches.

Pour Stagings and Walkways

- Sufficient travel ways must be provided for crews to access all areas being poured. This will eliminate injuries due to climbing around, losing grip, slipping, falling, etc.

Trip Hazards

- Must be eliminated at the pour level. This includes cords, tools, rebar projections, imbeds, form components and any other material.

Fall Protection

- Try to eliminate this hazard with staging, handrails etc. If possible, try to eliminate the need for 100% tie off especially when pouring with crane or bucket.

Projections from Within the Form

- Protruding rebar, form ties or even ledge conditions can present serious hazards.
- Rebar caps shall be utilized where necessary and plywood shields shall be installed to guard against stabbing or impalement.

Personal Protection

- Provide a "Motor Person"
- This person can carry the motor for the crew member performing the actual concrete vibrating.
- Outfit the motor person with a shoulder strap to help support the motor and to give more freedom to his/her arms and hands.

Rotate Jobs

- Have a "motor person" and the vibrator person switch jobs periodically. By taking turns at the different tasks, repetitive motions that lead to injury will be minimized.
- Rotate when raking, wheeling or shoveling concrete.

Electric Power

- Route cords away from travel ways and access ways. Be sure of the power source and use GFCI's.
- Inspect all power cords for defects and tape plus connections to keep connections dry on wet days.
- As always you need to lock out tag out when cleaning or working on the carriage of the machine so that pinch and crush points are eliminated.

Correct Tool Selection

- Choose the correct vibrator shaft length for the job. If the shaft and head assembly is far longer than required to reach, the work is much greater and the chance of injury and fatigue are more likely.

Protect Those Eyes

- Concrete in the eye is a nasty situation and is very painful.
- Double eye protection is required when vibrating concrete unless it is determined that no face/eye hazards exists and supervisory approval is received.

Guard Against Concrete Burns to the Skin

- Wear gloves to protect hands and fingers.
- Wear high top rubber boots during slab pours to protect from concrete affecting ankles and lower leg areas. You need to keep your boots taped or closed at the top so that concrete does not go into boots and cause a rash from friction or burns on your legs. This will also protect leather boots

which are adversely affected by the chemicals in concrete.
- Wear face shield over safety glasses when change of splatter exists.
- Use barrier cream on exposed skin and always wash off concrete from skin as soon as possible.

POURING WITH BUCKETS:

Bucket Condition

- Inspect the bucket thoroughly for cracks, breaks or defects that would adversely affect its performance prior to every pour. Pay special attention to the "Bail", the part where the hoisting equipment attaches to the bucket. As you land the bucket, the bail will come down and you need to keep fingers, hand and other body parts clear so they will not get pinched.
- Never weld, drill or work on the bail in any way without the manufacture's approval.
- Keep the bucket very clean inside and out so proper visual inspection can be made.

Bucket Rigging

- Inspect wire slings and shackles used in lifting the bucket prior to every pour.
- Make sure these components are sized properly for the weight of the bucket plus its contents.
- Wire the screw pin to the shackle body to keep it from "backing out".

Pinch Points

- Every moving bail should have "bail stops" to keep the bail from slamming down on top of the bucket if suddenly released.

- Evaluate your bucket and take additional measures to prevent injury from the bail if necessary (i.e. screens, guards, etc.)
- Be careful of the bucket jaws. Keep hands and feet back from the pinch points.
- Have only one bucket person operating the handle to avoid confusion.

Overfilling

- Train the bucket tender and ready mix drivers to avoid overfilling the bucket causing spillage onto the bucket itself.
- Once in the air, this spillage can fall off and injure crew members or damage equipment.

Bucket Handling

- Double check with crane operator regarding crane capacity and reach.
- Train all bucket handlers in landing the bucket and working with the crane operators.
- Maintain eye contact with the operator and never get behind the bucket or out of site.
- Install handles on the bucket for tenders to guide it.
- Keep hands away from bail and other pinch points.
- Have only one crane signal person to avoid confusion.

Watch Overhead

- Plan the crane swing route. Inform all crew members and have the crane operator sound the horn to notify crews that the bucket is being flown.
- Stay out from beneath the bucket until it is down close, the approach to handle it.

- Have an escape path planned and clear of obstructions and tripping hazards. The crew must be able to get clear of the bucket at all times.
- Maintain eye contact with the crane operator.

MANDATORY: **Personal Protective clothing on any and all concrete job-sites:**

In addition to the above specific duties, all employees working within the concrete pour or in proximity to overspray or splashing during placement of concrete are required to adhere to the following:

- Protective boots with top opening covered by pants and/or taped (duck-tape recommended and will be provided) to avoid entry of concrete.
- Protective gloves must be worn at all times.
- Eye protection (wrap around safety glasses) to be worn at all times including placing and finishing concrete.
    - A secondary form of eye protection (full face guard and or safety goggles) is required for any employee when placing utilizing the hose.
- Ear Protection is required for any person(s) operating and in proximity to vibrators including a secondary form of eye protection.

USING OTHER EQUIPMENT:

When "Wheeling" Concrete

- Inflate tires to proper pressure.
- Don't overfill – avoid back strains, remember to lift with your legs.
- Provide ample travel ways with good footing, clutter free.

When Using Conveyors

- Barricade off around the machine to block thruways beneath belt area
- Guard pinch points and moving parts
- Use a "spotter' when moving the conveyor
- Keep people away from the "drop chute" end.

When Working with Hoppers

- Never handle hoppers and tremie tubes alone, get help.
- Always be sure of the "hold" that is on a hopper and tremie before flying it overhead.
- Securely fasten hopper and tubes together before flying overhead.

When Using Concrete Pumps

- Inspect pump hoses and slick lines for condition. Look for weak spots that may "blow-out".
- Stay clear of the discharge end of the pump hose (especially during a plug).
- Wear gloves to handle hoses.
- Use hose "whip check" lanyards in case of a "blow apart".
- Get help in lifting pump hoses and slick lines. Avoid back strains. If possible, use equipment to lift the hoses.
- A rope attached to the pump hose will make positioning easier.
- Never kink, fold or pinch a pump hose.

Bidwell of Deck Machines

- When working on deck pours in front of the machine, keep hands and feet away from the carriage with the augers and rollers.

- If you have to adjust the augers or works on the carriage, when the operator stops the carriage disengage the hydraulics so augers or barrels can't turn.
- Make sure that you keep hands, feet, tools, electric cords and water hose off of the machine rail because the operator cannot see all areas around the machine and make sure that all guards are in place.
- Operators must be aware of fall protection because of where the operator's seat is located.

REINFORCING STEEL/REBAR POLICY

Rebar is a steel bar or rod used to reinforce concrete structures. Working around rebar is extremely dangerous, and because of this, the Occupational Safety and Health Administration (OSHA), takes certain measures to protect construction workers from injuries and even death that can result from falling or tripping over any rebar on a construction site.

Steel Reinforced Rebar Caps

To protect employees against a deadly fall on rebar, steel reinforced rebar caps must be installed on the protruding end of the rebar.

CEMENT BURNS – FIRST AID

Direct contact with wet cement might cause chemical burns to your skin or your eyes. Various construction materials, including concrete, plaster, grout and mortar, often contain Portland cement, a caustic alkaline binding compound that can induce a severe skin reaction with limited exposure. Because pain is not immediate, the worker might not realize the extent of the cement burn until later when the symptoms, including blisters, skin discoloration and dead skin appear.

Initial Care

Remove any clothing or boots if they contain wet concrete or other wet cement mixtures. The longer the wet cement is in contact with your skin, the greater the risk for suffering a cement burn. Brush away dry specks of cement and rinse the skin with lukewarm water for 20 minutes to remove any cement residue.

Neutralize

Because the cement is highly alkaline, add a neutralizing agent such as white vinegar to the rinse water. Apply citrus juice, a neutralizing agent with mild acidic properties, if vinegar is not available. If you regularly work with wet cement, keep pH-neutral cleansers on hand.

Eyes

Cement burns to the eyes might result from not wearing safety eyewear when working with wet cement. Immediate rinsing of the eyes with clear water is necessary for at least 20 minutes Contact an ophthalmologist for advice, even if the worker does not experience pain or vision disturbance.

Monitor

What appears to be reddened skin the day after contact with wet cement might become a severe, caustic burn in a few days. Initial symptoms might include a rash, followed by inflammation and itching, swelling and then blistering. Monitor the skin, and contact a health professional if symptoms worsen after a few days.

Avoid

Because the high calcium level in Portland cement leaches moisture from the skin, workers might think applying a lotion or skin-softening agent, such as lanolin, will protect and nourish the skin. But these

products can trap the caustic solution on the skin's surface, where it can cause more damage.

Medical Treatments

If a cement burn is severe, it might require medical attention that could include antibiotic treatment, daily soaks of antiseptic, such as iodine or povidone, or hospitalization for debridement of the dead and damaged tissue.

ASPHALT BURNS – FIRST AID

IN THE EVENT OF A MOLTEN ASPHALT BURN COOL THE AFFECTED AREA IMMEDIATELY:

Methods of cooling (in order of preference):

- Completely submerge affected area in ice water.
- Completely submerge affected area in tap water.
- Place affected area under running water.

DO NOT DELAY! Use any available water, cooler than body temperature, while arranging for better cooling.

CAUTION: DO NOT APPLY ICE directly to affected area.

LEAVE COOLED ASPHALT ON AFFECTED AREA - DO NOT ATTEMPT TO REMOVE with products containing solvents or ammonia. Natural separation will occur in about 48-72 hours. If necessary, for early removal, soak bandage in mineral oil and place over affected area for 2 to 3 hours.

MINOR ASPHALT BURNS:
*** At first opportunity get victim to physician.**

Includes: Injury to small areas of fairly insensitive flesh involving a small quantity of asphalt.

SERIOUS ASPHALT BURNS:
*** As soon as possible get victim to Hospital, Clinic or Physician's Office.**

Includes: Injury to the head, face or extremities; Injury when large amounts of asphalt are involved; Evidence of nausea or faintness

TREATMENT FOR SHOCK:

- Keep victim lying down and quiet.
- Keep victim covered with a blanket or something similar to keep body temperature at normal, 98°F (37°C).
- Keep victim's head lower than feet to promote blood supply to head and chest.

CRYSTALLINE SILICA POLICY

PURPOSE: To identify tasks that involve possible Crystalline Silica exposure and methods used to protect workers, including procedures to restrict access to work areas where high exposures may occur.

POTENTIAL EXPOSURES:

- Milling/scratching asphalt
- Saw cutting asphalt/concrete
- Jackhammering asphalt/concrete/rock (handheld)
- Hoe-ramming asphalt/concrete/rock (excavator mounted)
- Rubbing/grinding concrete

- Mixing mortar (breakings bags of Portland cement)
- Concrete drilling
- Heavy equipment grading and excavating
- Loading and operation of Zim-Mixer
- Loading and operation of Stone-Slinger

CONTROL METHODS:

- **Table 1** engineering controls, work practices and respiratory protection as per OSHA.
- For tasks not listed in Table 1, or when the Table 1 engineering controls, work practices and respiratory protection are not fully implemented, an **Exposure Assessment** is to be completed when an employee may reasonably be expected to be exposed to respirable crystalline silica at or above the action level of 25 $\mu g/m^3$, calculated as an 8 hour TWA. If necessary, engineering controls, work practice controls and/or respiratory protection are to be used to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL of 50 $\mu g/m^3$, calculated as an 8 hour TWA.

MEDICAL SURVEILLANCE:

- Medical surveillance shall be made available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this section to use a respirator for 30 or more days per year.
- All medical examinations and procedures required by this section are to be performed by a Physician or other licensed health care professional (PLHCP).

TRAINING: Each employee covered by this section shall at a minimum be able to demonstrate knowledge and understanding of the following:

1) The health hazards associated with exposure to respirable crystalline silica;
2) Specific tasks in the workplace that could result in exposure to respirable crystalline silica;
3) Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
4) The contents of this section;
5) The identity of the competent person designated by the employer (Safety Director)
6) The purpose and a description of the medical surveillance program

CONFINED SPACE POLICY

PURPOSE: The purpose of the Confined Space Program is to set forth minimum requirements and guidelines to ensure the safety of personnel working in and around confined spaces.

DEFINITION: An enclosure that is large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy.

EVALUATION: An evaluation of the Confined Space is to occur prior to entry in order to determine whether the space is a Permit-Required or Non-Permit-Required Confined Space. **Use the Confined Space Hazard Evaluation Checklist to make this determination.**

Permit-Required Confined Space:

An enclosure that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Engulfment hazard such as water.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

If a confined space is determined to be Permit-Required the Confined Space Entry Permit must be completed. In addition, the Corporate Safety Director must be notified prior to entering a Permit space.

Non-Permit-Required Confined Space:

An enclosure that does not contain, and has no potential to contain any hazard capable of causing death or serious physical harm.

POTENTIAL CONFINED SPACE HAZARDS:

- A hazardous atmosphere (oxygen deficiency, flammable gases, carbon monoxide, etc.)
- Hot work inside the confined space (welding, cutting, other sources of ignition)
- Discharge of steam, high pressure air, water or oil into the confined space.
- Machinery, mixers, agitators, or other equipment containing moving parts that is in the space.
- Tools or other objects dropping from overhead.

- Tripping hazards caused by hoses, tools, pipes or other equipment.
- Noise in excess of acceptable levels.
- Temperature extremes which may require shorter work periods or other measures.

PERMIT-REQUIRED CONFINED SPACE PRECAUTIONS:

- Confined space training for employees
- Fall protection when entrance covers are removed
- Initial & continuous monitoring of the atmosphere
- Ventilation system
- Energy isolation (LO/TO)
- Attendant
- Authorized entrants
- Communications
- Winch and tripod for vertical access greater than 5 feet (must wear full body harness)
- Notify emergency rescue services prior to entry in case of failed non-entry rescue

EXCAVATION & TRENCHING SAFETY POLICY

PURPOSE: The purpose of the Excavation and Trenching Policy is to set forth systematic procedures and corrective measures to prevent accidents when working with trenches and excavations.

1. Prior to digging, all underground utilities located must be removed or supported to protect employees.
2. Access and egress must be provided at depths of 4 feet or greater and every 25 feet in lateral travel.
3. If water is present, water removal equipment must be used to remove the water from the trench or excavation. Water removal equipment must also be monitored by the competent person.

4. Soil piles and equipment must be located at least 2 feet from the excavation edge at all times.
5. Prior to placing employees into an excavation a soil classification must be made by the competent person. Soil should be classified as Type A, B, or C.
6. ALL Trenches 5 feet or greater in depth require a protective system. If less than 5 feet deep, a competent person may determine that a protective system is not required.
7. Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional engineer in accordance with 1926.652(b) and (c).
8. Trench boxes and shielding, if in place, must be located within 2 feet of the bottom of the excavation or trench.

Maximum allowable slopes for excavations less than 20 ft. based on soil type and angle to the horizontal are as follows:

Soil type	Height/Depth ratio	Slope angle
Stable Rock	Vertical	90°
Type A	¾:1	53°
Type B	1:1	45°
Type C	1½:1	34°

LOCKOUT/TAGOUT/TRYOUT POLICY

PURPOSE: The purpose of this policy is to ensure uniformity throughout our operations for precautions necessary to protect personnel from hazards due to the unexpected release of energy or start-up of equipment or machinery.

DEFINITIONS:

- Affected employee – An employee whose job is affected by lockout/tagout procedures.
- Authorized employee – A person who locks out or tags out machines or equipment in order to perform servicing or maintenance.

COMPLETING A LOCKOUT/TAGOUT:

- All energy isolating devices must be located prior to performing a lockout/tagout.
- Before an authorized employee turns off a piece of equipment, the authorized employee must have knowledge of the type and magnitude of the energy to be controlled and the methods or means to control the energy source.
- Before lockout/tagout controls are applied, all affected employees will be notified and given the reasons for the lockout/tagout.
- If a machine or equipment is operating, it will be shut down by normal stopping procedures by either the affected or authorized employee. All potentially hazardous stored or residual energy sources (i.e. batteries, capacitors, springs, hydraulic systems, etc.) will be relieved, disconnected, restrained or otherwise rendered safe.
- Locks or tags shall be affixed to each energy isolating device only by the "authorized" employee.
- Locks and tags will be singularly identified and will not be used for any other purpose. Locks and tags will be in a position that will be immediately obvious to anyone attempting to operate the device.
- Locks shall be affixed in manner that will hold the energy isolating device in a "safe" or "off" position. Locks will be durable and capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

- Tags shall be non-reusable, attached by hand, self-locking and non-releasable with a minimum unlocking strength of no less than 50 pounds.
- Protective materials and hardware shall be provided of isolating, securing or blocking of machines or equipment from energy sources. These protective materials and hardware include, but are not limited to, locks, tag chains, wedges, key blocks, adapter pins and self-locking fasteners.
- Locks and tags will indicate the identity of the authorized employee applying the device.
- A tag may be used without a lock if it can be demonstrated that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock.

VERIFICATION OF ISOLATION:

- Prior to starting work on the machine or equipment that has been locked out and after ensuring that no personnel are exposed to the release of hazardous energy, the authorized employee will operate the normal operating controls to verify that the machine or equipment has been de-energized and that it will not operate.
- After verifying isolation, the operating controls must be returned to the "neutral" or "off" position.

RELEASE FROM LOCKOUT/TAGOUT: Before the lockout/tagout devices are removed and energy is restored to the machine or equipment, the following procedures will be implemented:

- The work area will be inspected to ensure that nonessential items have been removed and to ensure that the machine or equipment components are operationally intact.

- The work area will be checked to ensure that all employees have been safely positioned or removed.
- Only the authorized employee who applied the lockout/tagout device is permitted to remove the lockout/tagout device. If the authorized employee who applied the lockout/tagout device is not available to remove it, the device can be removed by a competent person adhering to the following procedures:
- Verification by the competent person that the authorized employee who applied the lockout/tagout device is not within the facility.
- All reasonable efforts will be made to contact the authorized employee to inform the authorized employee that their lockout/tagout device has been removed.
- The authorized employee must be informed the device was removed before resuming work.

TRAINING: All authorized personnel must be trained prior to performing a lockout/tagout/tryout. Training will cover procedures outlined in this section.

MAINTENANCE & PROTECTION OF TRAFFIC (MPT)

PURPOSE: The purpose of the Maintenance and Protection of Traffic (MPT) Policy is to set forth company standards to protect the public, company employees and project representatives traveling/working within or around roadway construction work zones.

SCOPE: The provisions of this policy apply to all projects which interrupt the normal flow of traffic due to construction activities. This may include projects for PennDOT, local municipalities, private, commercial and site projects.

REQUIREMENTS: Traffic Control Plans shall be in accordance with, as applicable, the following publications:

1. Pub 408 Section 901 (including contract special provisions)
2. Pub 212
3. Pub 213
4. Manual on Uniform Traffic Control Devices (MUTCD)

Work being performed on job-sites open to vehicle or pedestrian traffic will meet the following "minimum" guidelines:

5. Adequate "advance notice" signage will be provided in the proper location to alert motorist and pedestrians of the up-coming work zone. This will include "Work Area" ahead and "Flagger Ahead" (where applicable).
6. Delineators such as cones and/or barricades will be used to direct the flow of traffic through the work zone and provide a visual barrier.
7. When possible, work should be performed behind delineators.

FLAGGER COMPANY POLICY

It is our policy that all Flagger personnel be certified in the following training:

- Flagger Training Course, in accordance with PennDOT Pub 408 Section 901.

In addition to all Flagger personnel completing the required training, flaggers must also comply with the following company requirements while flagging traffic:

- The use of earphones and cell phones is prohibited while flagging traffic, unless specifically used for job related signal communications between other flagger personnel.
- If a flagger must use their cell phone or leave their station for any reason, another trained flagger must stand in for them.

MATERIAL HANDLING PROGRAM

PURPOSE: The purpose of the Material Handling Program is to apply ergonomic principles and sound decision-making to the workplace in an effort to reduce the number of manual lifts thus decreasing workplace injuries and, where possible, increasing productivity, quality and efficiency.

RESPONSIBILITIES:

Management: The management is committed to the safe handling of all materials. Management supports the efforts of the Manual Material Handling Program Administrator by pledging financial and leadership support for the identification and control of material handling risk factors.

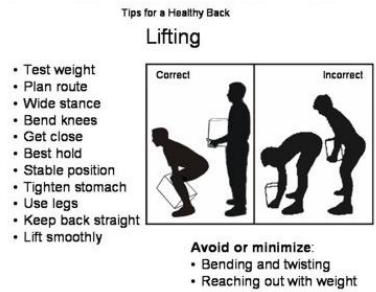
Project Managers & Supervisors:

- Remain accountable for the health and safety of all employees within their departments through the active support of this program
- Attend material handling training on the recognition and control of work-related material handling risk factors
- Ensure that employees in their areas have received the appropriate training
- Ensure that safe material handling practices and principles are considered daily and when conducting worksite evaluations

- Ensure that recommended controls are implemented and/or used appropriately through active follow-up
- Provide employees with and ensure the proper use of appropriate tools, equipment, parts and materials
- Maintain clear communication with managers and employees
- Make assistance available to employees who manually handle or lift items weighing 50 pounds or greater

Employees: Every employee is responsible for conducting himself/herself in accordance with this policy and program. All employees will:

- Use two-wheeled trucks, four-wheeled carts, roller conveyors, pallet jacks, or any other material handling equipment in the manner established by managers and supervisors
- Ensure that equipment is properly maintained in good condition and when not, report it immediately
- Provide feedback to managers and supervisors regarding the effectiveness of design changes, new tools or equipment
- Attend training as required and apply the knowledge and skills acquired during training to their jobs, tasks, processes, and work activities
- Use proper lifting and material handling techniques as outlined in this policy
- Limit manual lifting or handling tasks to objects less than 50 pounds
- Get assistance whenever manually handling or lifting materials that are 50 pounds or greater
- Report injuries immediately



RESPIRATORY PROTECTION PROGRAM

PURPOSE: The purpose of this program is to outline the procedures to provide respiratory protection to those employees who are engaged in activities that produce or may produce hazardous atmospheres. The type of respirators and the hazards encountered may differ from location to location; therefore, it is up to the supervisor to contact the Safety Director to assure that the proper protection is provided.

RESPIRATOR USE: Our primary exposure and need for respirators is due to dust created from asphalt or concrete cutting, grinding or other methods of disturbing silica particles. For this reason we will utilize water and/or dust collection systems to reduce the silica particles to the point that respirators are not necessary. If water is unavailable or an alternative is not feasible and respirators will be required, the following steps and corresponding descriptions will need to be followed for proper respirator use.

Medical Evaluation

- Every employee who is designated to wear a respirator based on the type of work they will be performing will be provided with a medical evaluation before they are allowed to use the respirator.

- Employees are required to fill out a medical questionnaire in private. Completed questionnaires are confidential and will be sent directly to medical provider without review by management.
- If the medical questionnaire indicates to our medical provider that a further medical exam is required, this will be provided at no cost to our employees by Concentra or Mobile Medical. We will get a recommendation from this medical provider on whether or not the employee is medically able to wear a respirator.

Additional medical evaluations will be done in the following situations:

- Our medical provider recommends it;
- An employee shows signs of breathing difficulty;
- Changes in work conditions that increase employee physical stress (such as high temperatures or greater physical exertion).

Respirator Fit Test

- All employees who wear negative or positive pressure tight-fitting respirators will be fit-tested before using their respirator or given a new one.
- Fit-testing will be repeated annually.
- Fit-testing will also be done when a different respirator face-piece is chosen, when there is a physical change in an employee's face that would affect fit, or when our employees' or medical provider notifies us that the fit is unacceptable.

Voluntary Use of Respirator: Contact the Safety Director for more information if you choose to voluntarily use a respirator.

Training: Training is done by a qualified individual before employees wear their respirators and annually thereafter as long as they wear respirators. Training will cover the following topics:

- Why the respirator is necessary,
- The respirator's capabilities and limitations,
- How improper fit, use or maintenance can make the respirator ineffective,
- How to properly inspect, put on, seal check, use, and remove the respirator,
- How to clean, repair and store the respirator or get it done by someone else,
- Medical symptoms that may limit or prevent respirator use,
- Our obligations under the Respirators Rule.

OFFICE SAFETY

PURPOSE: The purpose of this policy is to highlight common hazards and unsafe behaviors that could be encountered in an office environment. In addition the corresponding safety measures to counteract each hazardous condition are described.

1) At your desk:

- Use good posture. Sit up straight, feet on the floor; if you're using a keyboard, keep your wrists straight.
- Keep files, drawers, and cabinets clean, organized, and closed to prevent spilled material and tripping.
- Store heavy supplies on lower drawers or at ground level, and secure items in cabinets that close securely.
- Secure sharp objects (cutting knives, scissors, paper cutter blades) when not in use; never leave these misplaced and unattended.

2) Moving around:

- Walk, don't run.
- Look where you're going; you'll have time to read later.
- Watch for spills on the floor or other obstacles, and take the initiative to clean them or ensure that they're cleaned.
- Ensure that exits are clear and easily accessible.
- Opt for the elevator when carrying heavy loads.
- Use the handrail on the stairs.

3) Fix or report torn carpeting, loose floorboards or tiles, or otherwise unstable surfaces.

4) Fix or report broken furniture, burnt-out light-bulbs or other appliances, and other defective equipment.

5) Report frayed, torn, or otherwise damaged electrical cords, cables, etc.

- Keep floors and walkways clear of cords; coil excess cables or use cable ties to keep them out of the way.

6) Remove obstructions in walkways and exits.

- Safety signs and exit signs should be clearly marked and easily seen.

7) Fix or report fire hazards

8) Know the specific evacuation plans and guidelines for the facility.

9) Be familiar with all emergency exits and how to access them.

10) Know the location of emergency equipment such as first aid kits, AED's and fire extinguishers.

CRISIS MANAGEMENT PLAN & EMERGENCY EQUIPMENT

PURPOSE: The purpose of a Crisis Management Plan is to provide a systematic approach to managing a crisis in an organized fashion, without causing a major disruption to normal activities. A plan should be developed for each work location or facility with the following guidelines being taken into consideration

EMERGENCY EQUIPMENT:
The following emergency equipment shall be readily available at all work locations:

- Appropriate number of Class A, B & C Fire Extinguishers based on construction site and construction activities.
- First-Aid kit
- Eye Wash

In addition, supervisory personnel shall all be trained and certified in First Aid/CPR

CRISIS TEAM MEMBERS:

- Superintendent/Foreman
- General Superintendent
- Corporate Safety Director
- Project Manager (Team Leader)
- President (Company Spokesperson)
- Vice President (Company Spokesperson)
- Receptionist

RESPONSIBILITIES BEFORE AN EMERGENCY OR CRISIS OCCURS:

- Discuss the written Crisis Management Plan at the start of each new project and during Site Safety Meetings led by Foreman or Superintendent;

- Ensure that General Contractor and/or Subcontractors have provided emergency contacts;
- Foreman to have a designated meeting place for their employees. The Foreman must provide the location to all employees in advance. Also, advise all employees never to speak to the media without company consent;
- A designated Company Spokesperson will make a statement to the media if necessary. Nobody else other than a Company Spokesperson is to make a statement to the media.

RESPONSIBILITIES WHEN AN EMERGENCY OR CRISIS OCCURS: See full Crisis Management Plan on IPad or in Corporate Health & Safety Policies & Procedures Manual.

EMERGENCY MEDICAL TREATMENT:
Emergency medical treatment is needed when there is a life-threatening injury (such as severe bleeding, loss of consciousness, breathing or heart has stopped). When in doubt, if an injury is life threatening or not, treat it as needing emergency medical treatment.

- CALL 911 or other appropriate emergency response authorities;
- The Supervisor will assume lead during a medical emergency until the ambulance arrives or until the injured person is admitted to the emergency room;
- Prevent further injury; perform decontamination (if applicable);
- Initiate First Aid/CPR as necessary;
- Make certain that the injured person is accompanied to the emergency room;
- Notify and submit reports to the Safety Director, as defined in the Incident Reporting Policy.

- The Supervisor will account for all personnel in the onsite assembly area.
- A Designated person will account for personnel at alternate assembly area(s).
- The Supervisor will follow the Incident Reporting procedures as defined in the company policy.

TRAINING:

- The Supervisor must review the Crisis Management Plan with each employee covered by the plan

GENERAL SAFETY RULES

FLAMMABLE & COMBUSTIBLE MATERIALS:

- Combustible scrap, debris and waste materials (oily rags, etc.) must be stored in covered metal receptacles and removed from the worksite promptly.
- All flammable liquids must be kept in closed containers when not in use. (e.g. cleaning tanks must be closed when not it use).
- Storage rooms for flammable and combustible liquids must have mechanical or gravity ventilation.
- Liquefied petroleum storage tanks must be guarded to prevent damage from vehicles
- All solvent wastes, and flammable liquids must be kept in fire resistant, covered containers until they are removed from the site.
- Fire extinguishers should be mounted within 75 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials.
- Fire extinguishers should be free from obstructions or blockage.

- All fire extinguishers should be serviced, maintained and tagged at intervals not to exceed one year.
- All fire extinguishers should be fully charged and in their designated places.
- "NO SMOKING" signs should be posted where appropriate in areas where flammable or combustible materials are used or stored.
- Metal safety cans should be used for dispensing flammable or combustible liquids at a point of use. Plastic containers are prohibited.
- All spills of flammable or combustible liquids should be cleaned up promptly.
- Storage tanks should be adequately vented to prevent the development of excessive vacuum or pressure as a result of filling, emptying, or atmosphere temperature changes.
- Storage tanks should be equipped with emergency venting that will relieve excessive internal pressure caused by fire exposure.

STAIR AND STAIRWAYS:

- Standard stair rails or handrails shall be on all stairways having four or more risers.
- Steps on stairs and stairways shall be designed or provided with a surface that renders them slip resistant.

ELEVATED SURFACES:

- In situations where an employee must walk or work on a surface 6 feet or greater above another surface, that employee must be protected from a fall by either a standard guardrail, or a personal fall arrest system.
- Signs should be posted, when appropriate, showing the elevated surface load capacity.

- Surfaces elevated more than 30 inches above the floor or ground should be provided with standard guardrails.
- Elevated surfaces (beneath which people or machinery could be exposed to falling objects) shall be provided with standard 4-inch toeboards.
- A permanent means of access and egress should be provided to elevated storage and work surfaces.
- Required headroom shall be provided when necessary.
- Material on elevated surfaces shall be piled, stacked, or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading.
- On all jobsites, each exposed rebar must be capped in accordance with OSHA regulations to prevent serious injury to employees who may be exposed to such a hazard.

EXITING OR EGRESS:

- All exits must be marked with an exit sign and illuminated by a reliable light source.
- Directions to exits, when not immediately apparent, must be marked with visible signs.
- All exits must be kept free of obstructions.
- Each pit should have two means of egress where the absence of a second exit would increase the risk of injury from hot, poisonous, corrosive, suffocating, flammable, or explosive substances.

PORTABLE LADDERS:

- All ladders must be maintained in good condition, joints between steps and side rails tight, all hardware and fittings securely

attached and moveable parts operating freely without binding or undue play.

- Non-slip safety feet must be provided on each ladder.
- Ladder rungs and steps must be free of grease and oil.
- Employees must be instructed to face the ladder when ascending or descending.
- Employees must be prohibited from using ladders that are broken, missing steps, rungs, or cleats, broken side rails or other faulty equipment.
- When extension ladders are used to gain access to elevated platforms, roofs, etc., the ladder must always extend at least three feet above the elevated surface.
- Extension ladders are to be placed so that the horizontal distance between the feet and the top support is 1/4 the working length of the ladder.
- When extension ladders are used, the base must be so placed that slipping will not occur, otherwise it should be lashed or held in place.
- Stepladders must only be used in the fully opened position.
- Employees must be instructed to never stand above the second step from the top of a stepladder.
- Portable metal ladders must be marked legibly with signs reading, "CAUTION" – Do Not Use Around Electrical Equipment" or equivalent wording.

HAND TOOLS & EQUIPMENT:

- Hand tools must be inspected before each use.
- All tools and equipment (both company and employee-owned) used by employees at

their workplace must be maintained in good condition.

- Hand tools such as chisels, punches, etc. which develops mushroomed heads during use must be reconditioned or replaced as necessary.
- Broken or fractured handles on hammers, axes and similar equipment must be replaced promptly.
- Worn or bent wrenches must be replaced regularly.
- Appropriate handles must be used on files and similar tools.
- Employees must be made aware of the hazards caused by faulty or improperly used hand tools.
- Appropriate safety glasses, face shields, etc. must be used while using hand tools or equipment which might produce flying materials or be subject to breakage.
- Jacks must be checked periodically to assure they are in good operating condition.
- Tool handles must be wedged tightly in the head of all tools.
- Tool cutting edges must be kept sharp so the tool will move smoothly without binding or skipping.
- Tools must be stored in a dry, secure location where they won't be tampered with.
- Eye and face protection must be used when driving hardened or tempered spuds or nails.

ABRASIVE WHEEL EQUIPMENT—GRINDERS:

- The work rest must be used and kept adjusted to within 1/8 inch of the wheel.
- The adjustable tongue on the top of the grinder must be used and kept adjusted to within ¼ inch of the wheel.

- The side guards must cover the spindle, nut, and flange and 75 percent of the wheel diameter.
- Bench and pedestal grinders must be permanently mounted.
- Safety glasses and face shields must always be worn when grinding
- The maximum RPM rating of each abrasive must be compatible with the RPM rating of the grinder motor.
- Fixed or permanently mounted grinders must be connected to their electrical supply system with metallic conduit or other permanent wiring method.
- Each grinder must have an individual on and off control switch.
- Each electrically operated grinder must be effectively grounded.
- Before new abrasive wheels are mounted they must be visually inspected and ring tested.
- Dust collectors and powered exhausts provided on grinders must be used in operations that produce large amounts of dust.
- Splashguards must be mounted on grinders that use coolant to prevent the coolant from reaching employees.
- Cleanliness must be maintained around grinders.

PORTABLE (POWER OPERATED) TOOLS & EQUIPMENT:

- Power tools must be inspected before each use.
- Adequate personal protective equipment must be worn while using power tools.
- Grinders, saws and similar equipment must be provided with appropriate safety guards.

- Power tools must be used with the correct shield, guard, or attachment, recommended by the manufacturer.
- Portable circular saws equipped with guards above and below the base shoe.
- Circular saw guards must be checked to assure they are not wedged up, thus leaving the lower portion or the blade unguarded.
- Rotating or moving parts of equipment must be guarded to prevent physical contact.
- All cord-connected, electrically operated tools and equipment must be effectively grounded or of the approved double insulated type.
- Effective guards must be in place over belts, pulleys, chains, sprockets, on equipment such as concrete mixers, air compressors, etc.
- Portable fans must be provided with full guards or screens having openings ½ inch or less.
- Hoisting equipment must be available and used for lifting heavy objects, and are hoist rating and characteristics appropriate for the task.
- Ground-fault circuit interrupters must be provided on all temporary electrical 15 and 20-ampere circuits, used during periods of construction.
- Pneumatic and hydraulic hoses on power-operated tools must be checked regularly for deterioration or damage.

MACHINE GUARDING:

- Employees must be instructed on safe methods of machine operation.
- There must be adequate supervision to ensure that employees are following safe machine operating procedures.

- There must be a regular program of safety inspection of machinery and equipment.
- All machinery and equipment must be kept clean and properly maintained.
- Sufficient clearance must be provided around and between machines to allow for safe operations, set up and servicing, material handling and waste removal.
- Equipment and machinery must be securely placed and anchored when necessary to prevent tipping or other movement that could result in personal injury.
- There must be a power shut-off switch within reach of the operator's position at each machine.
- Electric power to each machine must be locked out for maintenance, repair, or security.
- Non-current-carrying metal parts of electrically operated machines must be bonded and grounded.
- Foot-operated-switches must be guarded or arranged to prevent accidental actuation by personnel or falling objects.
- Manually operated valves and switches controlling the operation of equipment and machines must be clearly identified and readily accessible.
- All emergency stop buttons must be colored red.
- All pulleys and belts that are within 7 feet of the floor working level must be properly guarded.
- All moving chains and gears must be properly guarded.
- Methods must be provided to protect the operator and other employees in the machine area from hazards created at the point of operation, ingoing nip points, rotating parts, flying chips, and sparks.

- Machinery guards must be secure and so arranged that they do not offer hazard in their use.
- Special hand tools used for placing and removing material must protect the operator's hands.
- Revolving drums, barrels, and containers required to be guarded by an enclosure that is interlocked with the drive mechanism, so that revolution cannot occur unless the guard enclosures is in place, must be so guarded.
- Arbors and mandrels must have firm and secure bearings and they must be free from play.
- Provisions must be made to prevent machines from automatically starting when power is restored after a power failure or shutdown.
- Machines must be constructed so as to be free from excessive vibration when the largest size tool is mounted and it is run at full speed.
- Air pressure must be controlled and personal protective equipment or other safeguards must be utilized to protect operators and other workers from eye and body injury when machinery is cleaned with compressed air.
- Machinery should not be operated without the guard in place.
- Radial arm saws must be arranged so that the cutting head will gently return to the back of the table when released.

WELDING, CUTTING & BRAZING:

- Only authorized and trained personnel are permitted to use welding, cutting or brazing equipment.
- Compressed gas cylinders must be regularly examined for obvious signs of defects, deep rusting, or leakage.

- Care must be used in handling and storage of cylinders, safety valves, relief valves, etc., to prevent damage.
- Precautions must be taken to prevent the mixture of air or oxygen with flammable gases, except at a burner or in a standard torch.
- Only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) can be used.
- Cylinders must be kept away from sources of heat.
- Cylinders must be kept away from elevators, stairs, or gangways.
- It is prohibited to use cylinders as rollers or supports.
- Empty cylinders must be appropriately marked and their valves closed.
- Signs reading: DANGER—NO SMOKING, MATCHES, OR OPEN LIGHTS, or the equivalent, must be posted.
- Cylinders, cylinder valves, couplings, regulators, hoses, and apparatus must be kept free of oily or greasy substances.
- Care must be taken not to drop or strike cylinders.
- Unless secured on special trucks, regulators must be removed and valve-protection caps put in place before moving cylinders.
- Liquefied gases must be stored and shipped valve-end up with valve covers in place.
- Provisions must be made to never crack a fuel-gas cylinder valve near sources of ignition.
- Before a regulator is removed, the valve must be closed and the gas released from the regulator.
- Gas nozzle must have flash back preventer in place.

- Red must be used to identify the acetylene (and other fuel-gas) hose, green for oxygen hose, and black for inert gas and air hose.
- Pressure-reducing regulators must be used only for the gas and pressures for which they are intended.
- Open circuit (No Load) voltage of arc welding and cutting machines must be as low as possible and not in excess of the recommended limits.
- Under wet conditions, automatic controls made for reducing no load voltage must be used.
- Grounding of the machine frame and safety ground connections of portable machines must be checked periodically.
- Electrodes must be removed from the holders when not in use.
- Electric power to the welder must be shut off when no one is in attendance.
- Suitable fire extinguishing equipment must be available for immediate use.
- The welder is forbidden to coil or loop welding electrode cable around his body.
- Wet machines must be thoroughly dried and tested before being used.
- Work and electrode lead cables must be frequently inspected for wear and damage, and replaced when needed.
- Means for connecting cable lengths must have adequate insulation.
- When welding is done on metal walls, precautions must be taken to protect combustibles on the other side.
- Before hot work is begun, used drums, barrels, tanks, and other containers must be thoroughly cleaned so that no substances remain that could explode, ignite, or produce toxic vapors.

- It is required that eye protection helmets, hand shields and goggles meet appropriate standards.
- Employees exposed to the hazards created by welding, cutting, or brazing operations must be protected with personal protective equipment and clothing.
- A check must be made for adequate ventilation in and where welding or cutting is performed.

COMPRESSORS/AIR RECEIVERS:

- Every receiver must be equipped with a pressure gauge and with one or more automatic spring-loaded safety valve.
- The total relieving capacity of the safety valve must be capable of preventing pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.
- Every air receiver must be provided with a drainpipe and valve at the lowest point for the removal of accumulated oil and water.
- Compressed air receivers must be periodically drained of moisture and oil.
- All safety valves must be tested frequently and at regular intervals to determine whether they are in good operating condition.
- The inlet of air receivers and piping systems must be kept free of accumulated oil and carbonaceous materials.

COMPRESSOR & COMPRESSED AIR:

- Compressors must be equipped with pressure relief valves, and pressure gauges.
- Compressor air intakes must be installed and equipped so as to ensure that only clean uncontaminated air enters the compressor.

- Compressors must be operated and lubricated in accordance with the manufacturer's recommendations.
- Safety devices on compressed air systems must be checked frequently.
- Before any repair work is done on the pressure system of a compressor, the pressure must be bled off and the system locked-out.
- Signs must be posted to warn of the automatic starting feature of the compressors.
- The belt drive system must be totally enclosed to provide protection for the front, back, top, and sides.
- It is strictly prohibited to direct compressed air towards a person.
- Employees are prohibited from using highly compressed air (above 30 psi) for cleaning purposes.
- If compressed air is used for cleaning off clothing, the pressure must be reduced to less than 10 psi.
- When using compressed air for cleaning, employees must wear protective chip guarding and personal protective equipment.
- Safety chains or other suitable locking devices must be used at couplings of high pressure hose lines where a connection failure would create a hazard.
- Before compressed air is used to empty containers of liquid, the safe working pressure of the container must be checked.
- When compressed air is used to inflate auto tires, a clip-on chuck and an inline regulator must be present to 40 psi required.
- It is prohibited to use compressed air to clean up or move combustible dust if such action could cause the dust to be suspended in the air and cause a fire or explosion hazard.

COMPRESSED GAS CYLINDERS:

- Cylinders with a water weight capacity over 30 pounds must be equipped with means for connecting a valve protector device, or with a collar or recess to protect the valve.
- Cylinders must be legibly marked to clearly identify the gas container.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials, a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.
- Compressed gas cylinders must be stored in areas that are protected from external heat sources such as flame impingement, intense radiant heat, electric arcs, or high temperature lines.
- Cylinders must be located or stored in areas where they will not be damaged by passing or falling objects or subjects to tampering by unauthorized persons.
- Cylinders must be stored or transported in a manner to prevent them creating a hazard by tipping, falling or rolling.
- A cylinder containing liquefied fuel gas must be stored transported in a position so that the safety relief device is always is direct contact with the vapor space in the cylinder.
- Valve protectors must always be placed on cylinders when the cylinders are not in use or connected for use.
- All valves must be closed off before a cylinder is moved, when the cylinder is empty, and at the completion of each job.
- Low pressure fuel-gas cylinders must be checked periodically for corrosion, general distortion, cracks, or any other defect that might indicate a weakness or render it unfit for service.

- The periodic check of low-pressure fuel-gas cylinders must include a close inspection of the cylinders' bottom.

ELECTRICAL:

- All employees must be required to report as soon as practicable any obvious hazard to life or property observed in connection with electrical equipment or lines.
- All power tools will be equipped with GFCI protection & where applicable, an Assured Equipment Grounding Conductor Program will be developed and adhered to.
- Electrical equipment or lines are to be serviced, maintained or adjusted, necessary switches must be opened, locked out and tagged whenever possible.
- Portable electrical tools and equipment must be grounded or of the double insulated type.
- Electrical appliances such as vacuum cleaners, polishers, vending machines, etc., grounded.
- Extension cords being used must have a grounding conductor.
- Multiple plug adaptors must be prohibited.
- All temporary circuits must be protected by suitable disconnecting switches or plug connectors at the junction with permanent wiring.
- Exposed wiring and cords with frayed or deteriorated insulation must be repaired or replaced promptly.
- Flexible cords and cables must be free of splices or taps.
- Clamps or other securing means must be provided on flexible cords or cables at plugs, receptacles, tools, equipment, etc., and the cord jacket must be securely held in place.
- All cord, cable and raceway connections must be intact and secure.

- Wet or damp locations, electrical tools and equipment must be appropriate for the use or location or otherwise protected.
- The use of metal ladders is prohibited in areas where the ladder or the person using the ladder could come in contact with energized parts of equipment, fixtures or circuit conductors.
- All disconnecting switches and circuit breakers must be labeled to indicate their use or equipment served.
- Disconnecting means must always be opened before fuses are replaced.
- All electrical raceways and enclosures must be securely fastened in place.
- All energized parts of electrical circuits and equipment must be guarded against accidental contact by approved cabinets or enclosures.
- Sufficient access and working space must be provided and maintained about all electrical equipment to permit ready and safe operations and maintenance.
- All unused opening (including conduit knockouts) in electrical enclosures and fittings must be closed with appropriate covers, plugs or plates.
- Electrical enclosures such as switches, receptacles, junction boxes, etc., must be provided with tight-fitting covers or plates.
- Disconnecting switches for electrical motors in excess of two horsepower must be capable of opening the circuit when the motor is in a stalled condition, without exploding. (Switches must be horsepower rated equal to or in excess of the motor hp rating)
- Each motor disconnecting switch or circuit breaker must be located within sight of the motor control device.

FUELING:

- When spillage occurs during fueling operations, the spilled fuel must be washed away completely, evaporated, or other measures taken to control vapors before restarting the engine.
- Fuel tank caps must be replaced and secured before starting the engine.
- In fueling operations, there must always be metal contact between the container and the fuel tank.
- Fueling hoses must be of a type designed to handle the specific type of fuel.
- It is prohibited to handle or transfer gasoline in open containers.
- Open lights, open flames, sparking, or arcing equipment is prohibited near fueling or transfer of fuel operations.
- Smoking is prohibited in the vicinity of fueling operations.
- Fueling operators are prohibited in buildings or other enclosed areas that are not specifically ventilated for this purpose.
- Where fueling or transfer of fuel is done through a gravity flow system, the nozzles must be of the self-closing type.

IDENTIFICATION OF PIPING:

- When non-potable water is piped through a facility, outlets or taps must be posted to alert employees that the water is unsafe and not to be used for drinking, washing or other personal use.
- When hazardous substances are transported through above ground piping, each pipeline must be identified at points where confusion could introduce hazards to employees.

- When pipelines are identified by color painting, all visible parts of the line must be so identified.
- When pipelines are identified by color painted bands or tapes, the bands or tapes must be located at reasonable intervals and at each outlet, valve or connection.
- When pipelines are identified by color, the color code must be posted at all locations where confusion could introduce hazards to employees.
- When the contents of pipelines are identified by name or name abbreviation, the information must be readily visible on the pipe near each valve or outlet.
- When pipelines carrying hazardous substances are identified by tags, the tags must be constructed of durable materials, the message must be carried clearly and permanently distinguishable and tags must be installed at each valve or outlet.
- When pipelines are heated by electricity, steam or other external source, suitable warning signs or tags must be placed at unions, valves, or other serviceable parts of the system.

ENVIRONMENTAL CONTROLS:

- All work areas must be properly illuminated.
- Hazardous substances must be identified which may cause harm by inhalation, ingestion, skin absorption or contact.
- The work area's ventilation system must be appropriate for the work being performed.
- Employee exposure to welding fumes must be controlled by ventilation, use of respirators, exposure time or other means.
- Welders and other workers nearby must be provided with flash shields during welding operations.

- If forklifts and other vehicles are used in buildings or other enclosed areas, the carbon monoxide levels must be kept below maximum acceptable concentration.
- All local exhaust ventilation systems must be designed and operating properly. The airflow and volume necessary must be present for the application, ducts must not be plugged and belts should not slip.
- Restrooms and washrooms must be kept clean and sanitary.
- All water provided for drinking, washing and cooking must be potable.
- All outlets for water not suitable for drinking must be clearly identified.

CONTROL OF HARMFUL SUBSTANCES BY VENTILATION:

- The volume and velocity of air in each exhaust system must be sufficient to gather the dusts, fumes, mists, vapors or gases to be controlled, and to convey them to a suitable point of disposal.
- Where two or more different types of operations are being controlled through the same exhaust system, the combination of substances being controlled must not constitute a fire, explosion or chemical reaction hazard in the duct.
- Adequate makeup of air must be provided to areas where exhaust systems are operating.
- The source point for makeup air must be located so that only clean, fresh air, which is free of contaminates, will enter the work environment.
- Where two or more ventilation systems are serving a work area, their operation must be such that one will not offset the functions of the other.

HEAT STRESS MANAGEMENT:

- Begin drinking fluids early in the day—waiting until the hottest portion of the day to replenish fluids is too late.
- Avoid caffeine and alcohol the night before and during the day.
- Dress for conditions. Lightweight, loose clothing is best.
- Avoid layering clothing underneath coveralls.
- Eat a well balanced diet. Heavy, fatty foods do not support the body well in high heat conditions. Fruits, vegtables, proteins and starches work best.
- Drink electrolyte solutions to help maintain energy levels.
- Avoid taking salt tablets unless directed to do so by your physician.
- Use sunscreen and cover your face and neck from the sun.
- Provide shaded areas for mini-breaks and water stations as much as possible when there are no existing shaded structures.
- Provide more than enough water and electrolyte solution to make frequent short water breaks easily accessible.
- Strongly encourage SHORT (1-2 minute) water breaks every 20-30 minutes during high heat conditions.
- Provide specially marked water barrels containing ice and water for soaking neck towels, arms, sleeves, bandanas, and similar items.

FORKLIFT OPERATION:

- Only trained and authorized personnel shall operate forklifts. Authorized forklift operators must have successfully completed forklift safety training on the equipment they are to operate.

- Forklift operators are required to receive refresher training and evaluation when new equipment is introduced, existing equipment is modified, operating conditions change, or after operating performance is unsatisfactory. **All forklift operators must be re-tested and have their performance evaluated at least every three (3) years.**
- Survey each operation and identify and evaluate potential hazards.
- Perform proper pre-shift inspections.
- Display safe and proper load handling techniques.
- Display safe and proper traveling techniques, with and without loads.
- Display proper parking and shutdown procedures.
- Shutdown and remove from service any forklift that displays any unsafe condition or problem and notify their supervisor.
- Obey all rules, regulations or practices specified by the employer or customer at the location where the forklift will be used.
- Operator must always wear seatbelt.
- A functional horn and backup alarm is required on all forklifts.
- The rated capacity of the forklift shall not be exceeded.
- Only the operator is allowed to ride on a forklift
- No personnel shall be lifted with a forklift without the proper personnel lifting attachment and procedure.
- Forklifts shall observe the proper clearances on all overhead power lines, pipe racks and other overhead obstructions.
- Operators shall not lift or place any load above personnel.
- Indoor operation of forklifts shall be limited to buildings that are well ventilated.

- All controls shall be operated only from the operator's station.
- Extreme caution shall be used when operating a forklift on uneven surfaces, close to any hole or excavation, or close to drain gratings, hole covers, or other surfaces that are not designed to support the weight of a forklift.
- When operating a forklift in tight or congested areas, a flag person should be used.
- The operator shall secure an unattended forklift by lowering the forks to the ground, turning off the ignition, and setting the parking brake.
- All guards and overhead protective devices shall be left in place.
- Any concern or question about the safety of any forklift operation condition shall be discussed with the operator's supervisor.

VEHICLE SECUREMENT:

- Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them.
- Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use.
- All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise.
- Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set.

HEAVY EQUIPMENT OPERATION:

- Only qualified "competent operators" are to operate heavy equipment. The site supervisor is to verify that the operator is competent to operate the equipment the operator is assigned to.
- Seat belts must be provided and worn in all equipment having rollover protective structures (ROPS).
- Heavy equipment will be inspected by the operator prior to the beginning of each work shift.
- Parking brakes shall be engaged when not in use.
- Blades, buckets, dump bodies and other hydraulic systems must be fully lowered or blocked when equipment is not in use.
- Rated load capacity charts, recommended operating speeds, special hazard warnings and other essential information will be conspicuously posted in all heavy equipment. At no time will lifts be made that exceed rated load capacities.
- Operators must take signals from only one person. In an emergency, however, a stop signal can be given by anyone.
- Routine maintenance, fueling or repairs shall not be performed while heavy equipment is in use or running.
- Employees are prohibited from riding the hook or on a load.
- Loads shall be guided and prevented from swing by attaching a tag line to the load.
- Loads shall not be suspended on an unattended piece of equipment.

- The swing radius of all cranes must be barricaded to prevent employees from being struck by the counterweight.
- Always stay in view of equipment operators. Never stand on the blind side of a piece of equipment or approach a machine without making eye contact with the operator.
- Only essential personnel should be permitted in any area where work is being performed by heavy equipment.
- Cabs will only have essential items; all loose items should be secured.
- Equipment operators will not leave running machines unattended.
- Personnel operating aerial lifts will wear a full body harness attached by a retractable lanyard to the basket.
- Equipment will be properly guarded.
- A minimum clearance of 20 ft. (radius) is required between heavy equipment and overhead power lines up to 350 kV. Exceptions to this rule may occur; however, any deviations/variances from the 20 ft. clearance requirement must be approved by the Safety Director and Manager.
- The use of earphones and cell phones is prohibited while operating heavy equipment, unless specifically used for job related signal communications.
- All equipment will be operated in accordance with manufactures specifications.

RIGGING:

- Know the rated capacities of rigging and select the proper size.

- Ensure that loads are rigged to minimize the potential for dropped loads.
- Do not exceed the load chart capacity while making lifts.
- Determine a safe location to stand to avoid being struck by the load if rigging fails, or the load shifts while making lifts.
- Slings shall be padded or protected from the sharp edges of their loads.
- All hooks certified for overhead lifting must be equipped with latches.
- Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.
- Shock loading is prohibited.
- Rigging equipment when not in use shall be removed from the immediate work area so as not to present a hazard to employees.
- Prior to use, the sling and all fastenings and attachments shall be inspected for damage or defects. Damage or defects include, but are not limited to, deformation, strain, binding, kinking, corrosion, fraying, tears, and burns.
- Damaged rigging shall be permanently removed from service.

FALL PROTECTION:

- Each employee on a walking/working surface with an unprotected side or edge 6 feet or more above a lower level will be protected from falling by the use of guardrail systems or personnel fall arrest systems (100% tie off).

RECEIPT OF EMPLOYEE HEALTH & SAFETY HANDBOOK

I, _____, an employee of

A. Folino Construction, Inc.,

have received a copy of the Employee Health and Safety Handbook. I will read and abide by all the health and safety requirements in this handbook.

I also understand that any violation of the established health and safety rules can result in disciplinary action.

Signature _____ Date _____

Folino CONSTRUCTION

EMPLOYEE HEALTH AND SAFETY HANDBOOK

2020

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COMPANY SAFETY POLICY

Safety is no accident; Think safety and the job will be safer.

It is the policy of A. Folino Construction that accident prevention shall be considered of primary importance in all phases of operation and administration. The prevention of accidents is an objective affecting all levels of our company and its operations. It is, therefore, a basic requirement that each supervisor make the safety of all employees an integral part of his or her regular management function. It is equally the duty of each employee to accept and follow established safety regulations and procedures.

A. Folino Construction strives to maintain a ***Health & Safety Program*** conforming to the best practices of our field. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It requires the cooperation in all safety and health matters, not only of the employer and employee, but between the employee and all co-workers. Only through such a cooperative effort can a safety program in the best interest of all be established and preserved.

Employees are expected to assist management in accident prevention activities. Unsafe conditions must be reported immediately. Fellow employees that need help should be assisted. Everyone is responsible for the housekeeping duties that pertain to their jobs.

To the greatest degree possible, management will provide all mechanical and physical protection required for personal safety and health, but our employees must bear responsibility for working safely. A little common sense and caution can prevent most accidents from occurring.

The objective of A. Folino Construction is a Health & Safety Program that will reduce the number of injuries and illnesses to an absolute minimum, not merely in keeping with, but surpassing the best experience of similar operations by others. Our goal is zero accidents and injuries.

Tony Folino
Anthony D. Folino
President

DRUG/ALCOHOL FREE POLICY

PURPOSE: It is the policy of our company that the employees are free of substance and alcohol abuse. Consequently, the use of illegal drugs by all employees is prohibited. Further, employees shall not use alcohol or engage in "prohibited conduct" as defined herein. The overall goal of this policy is to ensure a drug-free and alcohol-free environment and to reduce accidents, injuries and fatalities.

The Company has implemented five circumstances for Drug and Alcohol testing:

1. Pre-Employment Testing
2. Random Testing
3. Post-Accident/Post-Injury Testing
4. Reasonable Suspicion Testing
5. Return to Duty/Follow-up Testing

SAFETY VIOLATIONS DISCIPLINARY POLICY

PURPOSE: To provide a uniform policy for holding personnel accountable for safety violations.

There are three types of disciplinary actions that may be taken: verbal warning (documented as such), written warning with suspension, and termination.

- **First violation** – ***Documented Verbal Warning:*** A verbal warning from the Supervisor, accompanied by a written description of the warning on a Safety Rule Violation form (sample attached). The Supervisor is to meet with the Employee and clearly explain the infraction and steps to prevent recurrence.
- **Second violation** – ***Written Warning plus Suspension:*** If the unacceptable behavior or performance continues, the next step should be a written warning from the Supervisor, utilizing the Safety Rule Violation form,

accompanied by unpaid suspension. Employee will be sent home for the remainder of the day, plus one additional day, unpaid. The written warning will define the problem, describe how it may be corrected, and may specify a reasonable time frame for correction, and will indicate that termination may result if improvement is not observed. The employee will be given an opportunity to read the warning, discuss it with the supervisor, and sign the warning. If the employee declines to sign the warning, the supervisor will note as such.

- **Third violation** – ***Termination:*** An employee will be terminated for serious misconduct, or for performance deficiencies that are not corrected. A Safety Rule Violation form will be completed documenting the reason for termination. The employee will be given an opportunity to read the notice, discuss it with the Supervisor, and sign the warning. If the employee declines to sign the warning, the Supervisor will note as such.

DRIVER RULES FOR OPERATION OF A COMPANY VEHICLE

PURPOSE: To establish minimum standards for operating a company owned vehicle. While you are using the vehicle, you are representing the company and at the same time the company is liable for your actions while in this vehicle. It is critically important to know that with this convenience there is a tremendous amount of responsibility. If you have been issued a company vehicle you must receive and review a copy of the complete policy addressing Driver Rules for Operation of a Company Vehicle. The Supervisor or HR Department will provide you a copy of the policy.

Foreman Weekly Job-Site Inspections

This policy helps us to identify unsafe acts and conditions before an accident takes place. All employees should continuously inspect their own work areas and correct hazards as they occur. Each employee is responsible for everything that happens in their own work area—including the positions and actions of people, the physical conditions of their vehicles, equipment and work areas, and the effective implementation and enforcement of rules, policies and procedures.

In order to keep the Company in compliance with OSHA Regulations and maintain a safe workplace as defined in the Company's Health and Safety Policies and Procedures, it has been determined by the Safety Committee that Foreman shall conduct weekly inspections, as follows:

1. Foreman shall complete a "Job-Site Safety Inspection Report" on a weekly basis.

2. Foreman shall return the completed report to the program administrator, no later than Wednesday of each week.

3. The inspections are completed via the HCSS Safety Manager Application.

Daily Job Hazard Analysis (JHA)

Job Hazard Analysis (JHA) is an important accident prevention tool that works by finding hazards and eliminating or minimizing them before the job is performed, and before they have a chance to become accidents.

1. Before work begins in any location and before any changes are made in work procedures or activities, a JHA should be reviewed and signed by all employees involved with the work activity.

2. The JHA is typically completed by the Foreman.

3. The JHA's are completed via the HCSS Safety Manager Application.

Weekly Toolbox Talks

Toolbox Talk safety meetings are brief employee safety training sessions designed to aid in the instruction of employees in the recognition and avoidance of unsafe conditions in the workplace.

1. A topic should be chosen that applies to the site conditions and reviewed with all employees.

2. A sign-off sheet documenting attendance is to be completed and submitted to the Safety Director. The Toolbox Talks are to be conducted weekly by the Foreman.

3. The Toolbox Talks are completed via the HCSS Safety Manager Application.

No Accident Certification (NAC)

To encourage timely reporting and management of incidents foremen are required to complete a No Accident Certification on the last day of the work week.

1. A weekly No Accident Certification sign-off sheet documenting employees who were not involved in an incident is to be completed and submitted to the Safety Director.

2. The No Accident Certification is to be conducted weekly by the Foreman.

3. An employee who falsely reports incident free status and/or fails to immediately report a workplace incident may risk denial of their claim.

4. The No Accident Certification is completed via the HCSS Safety Manager Application.

SAFETY INCENTIVE PROGRAM

A Safety Incentive Program is in place which rewards employees and supervisors. Ask your supervisor for more details.

PERSONNEL TRAINING POLICY

PURPOSE: The purpose of this policy is to ensure the appropriate training is provided to personnel commensurate with their job responsibilities. The major objectives of this policy are to:

- Comply with OSHA regulatory requirements.
- Apprise personnel of health and safety considerations relative to their job assignments.

We are committed to the on-going development of employees at all levels in the organization. An in-house training program provides a wide range of skills training and professional development programs year round. Courses are designed to ensure that employees have the best training available to improve safety, increase performance, enhance job satisfaction and maximize teamwork. By participating employees gain the knowledge and skills they need to be safe, productive and to make sound decisions.

Employees participate in instructor-led classes in the following areas:

- Safety
- Technical / Construction
- Business skills
- Leadership / Human Relations
- Project Management

In addition to programs developed internally, the Safety Director works closely with external training, educational, and professional organizations to provide specialized learning opportunities for our employees. As an alternative to traditional classroom instruction, many courses are available to employees on line through an E-Learning provider.

TRAINING REQUIREMENTS (MINIMUM):

New Hire Orientation: When a new employee is hired, the employee is to be provided New Hire Orientation Training by the site supervisor or his/her designee. During the orientation the Supervisor is to ensure that all applicable training and company safety requirements are covered with the employee.

OSHA 10 Hour Training: All foremen must have the OSHA 10 certification. If upon hire the foreman doesn't have the OSHA 10 certification, arrangements must be made so that the foreman obtains the certification within 90 days of hire.

OSHA 30 Hour Training: All Superintendents and Project Managers must have the OSHA 30 certification. If upon hire the Superintendent doesn't have the OSHA 30 certification, arrangements must be made so that the Superintendent or Project Manager obtains the certification within 90 days of hire.

First Aid/CPR Training: All Superintendents and Foremen must be certified in Adult First Aid/CPR. If upon hire the Superintendent or Foreman doesn't have the certification, arrangements must be made for the employee to obtain the certification within 90 days of hire.

Operator Training: All equipment operators must be trained as per the applicable OSHA requirements for the piece of equipment he/she will be operating.

INCIDENT REPORTING/INVESTIGATION POLICY

PURPOSE: The purpose of this Policy is to ensure uniformity in complying with OSHA recordkeeping and incident reporting requirements/procedures.

FIRST PRIORITY: The first priority in the event of an incident is to aid the injured, or stop an unsafe condition that may have contributed to the incident.

REPORTING REQUIREMENTS: All incidents regardless of severity are to be reported to the Site Supervisor immediately. This includes injuries, automobile and any property damage incidents. The Site Supervisor is to report the incident to the Safety Director upon gaining knowledge of the incident. An incident report is to be completed and submitted to the office within 24 hours of the incident occurring. **Incident reports can be completed via Forms in the HCSS Safety Manager Application.**

INVESTIGATION REQUIREMENTS: An investigation led by the Safety Director will take place to gather information that can be used in developing solutions to prevent the incident from reoccurring. Employees may be asked to provide information if they were a witness. The incident investigation is fact-finding, not fault finding.

NEAR MISS REPORTING: A Near Miss is an incident that under slightly different circumstances could have resulted in injury to personnel or damage to property. A Near Miss that had the potential for serious injuries or property damage will be investigated. Valuable lessons can be learned from a near miss incident, please don't hesitate to report a Near Miss. **Near Misses can be reported to the Safety Director via the HCSS Safety Manager Application**.

PERSONAL PROTECTIVE EQUIPMENT POLICY

PURPOSE: This policy specifies the minimum requirements for the evaluation, selection, training and use of personal protective equipment (PPE) on job sites and anywhere where the company conducts its operations. Exceptions may exist for certain company maintenance facilities as determined by facility management and the Safety Director. The use of personal protective equipment as specified by this policy is designed to supplement effective engineering and administrative hazard controls.

Minimum PPE Requirements

- Hard hat, safety glasses, high visibility vest, safety-toed footwear
- Side shields must be installed on corrective lenses that have been ANSI impact rated.
- OTG safety glasses must be worn over corrective lenses that are not ANSI impact rated.

Additional PPE Requirements

- **Full face shields** are to be worn over safety glasses when cutting, grinding or chipping.
- **Welding hoods and gloves** are to be worn during all welding tasks.

- **Chemical protective clothing, including work gloves**, shall be worn by employees handling corrosive or toxic chemicals. Chemical protective clothing shall be designed to prevent exposure to the skin or employee's work clothes.
- **Hearing protection** is to be worn during the following designated activities:
    - During the operation of jackhammers on company jobsites.
    - During the operation of any cutting or grinding operations.
    - During the use of hydraulic hammer operations.
    - During the operation of designated heavy equipment.
- **Respiratory protection** is required in areas where health hazards exist due to the presence of hazardous substances (see Respiratory Protection Program for more information).

Additional PPE requirements will be dictated by pertinent OSHA standards, Safety Data Sheets, accepted safe work practices and manufacturer's recommendations. The Safety Director is responsible for assisting site supervision with determining PPE needs and for conducting site inspections to assist site supervision in enforcement of this policy.

HAZARD COMMUNICATION POLICY

PURPOSE: To ensure that the hazards of all chemicals are evaluated and that information concerning their hazards is communicated to affected employees and subcontractors. This program establishes guidelines for informing employees about the hazardous substances in their workplace through Safety Data Sheets (SDSs), container labeling, and training.

HAZARD COMMUNICATION & CHEMICAL SAFETY:

Chemicals can be any of the following:

- Corrosive
- Reactive
- Flammable
- Explosive
- Oxidizing
- Inert

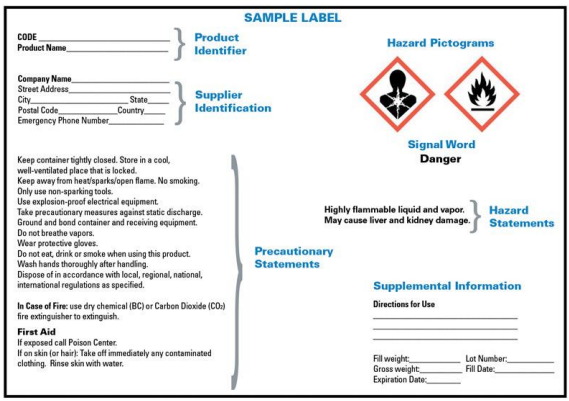
ROUTES OF OCCUPATIONAL EXPOSURE:

- Inhalation – nearly all materials that are airborne can be inhaled
- Skin Absorption – skin contact with a substance can result in a possible reaction
- Ingestion – most workers do not deliberately swallow materials they handle
- Injection – normally associated with blood borne pathogens
- Ocular – absorbed through the eye

CONTAINER LABELING & SAFETY DATA SHEETS (SDS):
The label provides information to the workers on the specific hazardous chemical. While labels provide important information for anyone who handles, uses, stores, and transports hazardous chemicals, they are limited by design in the amount of information they can provide. Safety Data Sheets (SDSs), which must accompany hazardous chemicals, are the more complete resource for details regarding hazardous chemicals.

LABELS MUST CONTAIN:

- Name, Address & Telephone Number of Manufacturer
- Product Identifier
- Signal Word (Danger & Warning)
- Hazard Statements
- Precautionary Statements
- Pictogram(s)


SAMPLE LABEL
CODE
Product Name
Product Identifier
Hazard Pictograms
Company Name
Street Address
City State
Postal Code Country
Emergency Phone Number
Supplier Identification
Signal Word
Danger
Keep container tightly closed. Store in a cool, well-ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measures against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispose of in accordance with local, regional, national, international regulations as specified.
In Case of Fire: use dry chemical (BC) or Carbon Dioxide (CO2) fire extinguisher to extinguish.
First Aid
If exposed call Poison Center.
If on skin (or hair): Take off immediately any contaminated clothing. Rinse skin with water.
Precautionary Statements
Highly flammable liquid and vapor.
May cause liver and kidney damage.
Hazard Statements
Supplemental Information
Directions for Use
Fill weight: Lot Number:
Gross weight: Fill Date:
Expiration Date:


GHS PICTOGRAMS
FLAMMABLE
CORROSIVE
EXPLOSIVE
COMPRESSED GAS
OXIDIZING
TOXIC
HEALTH HAZARD
HARMFUL/ IRRITANT
DANGER FOR THE ENVIRONMENT

SAFETY DATA SHEETS (SDS):

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

- **Section 1, Identification** includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.
- **Section 2, Hazard(s) identification** includes all hazards regarding the chemical; required label elements.
- **Section 3, Composition/information on ingredients** includes information on chemical ingredients; trade secret claims.
- **Section 4, First-aid measures** includes important symptoms/effects, acute, delayed; required treatment.
- **Section 5, Fire-fighting measures** lists suitable extinguishing techniques, equipment; chemical hazards from fire.
- **Section 6, Accidental release measures** lists emergency procedures; protective equipment; proper methods of containment and cleanup.
- **Section 7, Handling and storage** lists precautions for safe handling and storage, including incompatibilities.
- **Section 8, Exposure controls/personal protection** lists OSHA's Permissible Exposure Limits (PELs); ACGIH Threshold Limit Values (TLVs); and any other exposure limit used or recommended by the chemical manufacturer,

importer, or employer preparing the SDS where available as well as appropriate engineering controls; personal protective equipment (PPE).

- **Section 9, Physical and chemical properties** lists the chemical's characteristics.
- **Section 10, Stability and reactivity** lists chemical stability and possibility of hazardous reactions.
- **Section 11, Toxicological information** includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
- Section 12, Ecological information*
- Section 13, Disposal considerations*
- Section 14, Transport information*
- Section 15, Regulatory information*
- **Section 16, Other information**, includes the date of preparation or last revision.

An SDS file of all hazardous chemicals used on jobsites is maintained to ensure that SDSs are readily accessible to employees.

TRAINING:

- All employers with hazardous chemicals in their workplaces must have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately.
- Employers are required to train workers by December 1, 2013 on the new labels elements and Safety Data Sheets format to facilitate recognition and understanding.

CONCRETE SAFETY POLICY

PURPOSE: To ensure the safety of the team when placing concrete and while working around the equipment used for placing and finishing concrete.

The following considerations and requirements apply:

Form Strength

- Ability to support both the dead weight of the concrete plus the live loads of deposited concrete and crew members up on form supporting staging.
- Consult a qualified engineer to assist in formwork design.

Access to the Pour

- Ladders, gangplanks or stairways must be provided to get crews to and from the pour areas.
- For below grade pours, ramp ways for "slip-free" access can be built or excavated. Stairs can also be built.
- Ensure that there is adequate room to exit at the end of the bridge decks or elevated slabs when the finishing machine approaches.

Pour Stagings and Walkways

- Sufficient travel ways must be provided for crews to access all areas being poured. This will eliminate injuries due to climbing around, losing grip, slipping, falling, etc.

Trip Hazards

- Must be eliminated at the pour level. This includes cords, tools, rebar projections, imbeds, form components and any other material.

Fall Protection

- Try to eliminate this hazard with staging, handrails etc. If possible, try to eliminate the need for 100% tie off especially when pouring with crane or bucket.

Projections from Within the Form

- Protruding rebar, form ties or even ledge conditions can present serious hazards.
- Rebar caps shall be utilized where necessary and plywood shields shall be installed to guard against stabbing or impalement.

Personal Protection

- Provide a "Motor Person"
- This person can carry the motor for the crew member performing the actual concrete vibrating.
- Outfit the motor person with a shoulder strap to help support the motor and to give more freedom to his/her arms and hands.

Rotate Jobs

- Have a "motor person" and the vibrator person switch jobs periodically. By taking turns at the different tasks, repetitive motions that lead to injury will be minimized.
- Rotate when raking, wheeling or shoveling concrete.

Electric Power

- Route cords away from travel ways and access ways. Be sure of the power source and use GFCI's.
- Inspect all power cords for defects and tape plus connections to keep connections dry on wet days.
- As always you need to lock out tag out when cleaning or working on the carriage of the machine so that pinch and crush points are eliminated.

Correct Tool Selection

- Choose the correct vibrator shaft length for the job. If the shaft and head assembly is far longer than required to reach, the work is much greater and the chance of injury and fatigue are more likely.

Protect Those Eyes

- Concrete in the eye is a nasty situation and is very painful.
- Double eye protection is required when vibrating concrete unless it is determined that no face/eye hazards exists and supervisory approval is received.

Guard Against Concrete Burns to the Skin

- Wear gloves to protect hands and fingers.
- Wear high top rubber boots during slab pours to protect from concrete affecting ankles and lower leg areas. You need to keep your boots taped or closed at the top so that concrete does not go into boots and cause a rash from friction or burns on your legs. This will also protect leather boots

which are adversely affected by the chemicals in concrete.
- Wear face shield over safety glasses when change of splatter exists.
- Use barrier cream on exposed skin and always wash off concrete from skin as soon as possible.

POURING WITH BUCKETS:

Bucket Condition

- Inspect the bucket thoroughly for cracks, breaks or defects that would adversely affect its performance prior to every pour. Pay special attention to the "Bail", the part where the hoisting equipment attaches to the bucket. As you land the bucket, the bail will come down and you need to keep fingers, hand and other body parts clear so they will not get pinched.
- Never weld, drill or work on the bail in any way without the manufacture's approval.
- Keep the bucket very clean inside and out so proper visual inspection can be made.

Bucket Rigging

- Inspect wire slings and shackles used in lifting the bucket prior to every pour.
- Make sure these components are sized properly for the weight of the bucket plus its contents.
- Wire the screw pin to the shackle body to keep it from "backing out".

Pinch Points

- Every moving bail should have "bail stops" to keep the bail from slamming down on top of the bucket if suddenly released.

- Evaluate your bucket and take additional measures to prevent injury from the bail if necessary (i.e. screens, guards, etc.)
- Be careful of the bucket jaws. Keep hands and feet back from the pinch points.
- Have only one bucket person operating the handle to avoid confusion.

Overfilling

- Train the bucket tender and ready mix drivers to avoid overfilling the bucket causing spillage onto the bucket itself.
- Once in the air, this spillage can fall off and injure crew members or damage equipment.

Bucket Handling

- Double check with crane operator regarding crane capacity and reach.
- Train all bucket handlers in landing the bucket and working with the crane operators.
- Maintain eye contact with the operator and never get behind the bucket or out of site.
- Install handles on the bucket for tenders to guide it.
- Keep hands away from bail and other pinch points.
- Have only one crane signal person to avoid confusion.

Watch Overhead

- Plan the crane swing route. Inform all crew members and have the crane operator sound the horn to notify crews that the bucket is being flown.
- Stay out from beneath the bucket until it is down close, the approach to handle it.

- Have an escape path planned and clear of obstructions and tripping hazards. The crew must be able to get clear of the bucket at all times.
- Maintain eye contact with the crane operator.

MANDATORY: **Personal Protective clothing on any and all concrete job-sites:**

In addition to the above specific duties, all employees working within the concrete pour or in proximity to overspray or splashing during placement of concrete are required to adhere to the following:

- Protective boots with top opening covered by pants and/or taped (duck-tape recommended and will be provided) to avoid entry of concrete.
- Protective gloves must be worn at all times.
- Eye protection (wrap around safety glasses) to be worn at all times including placing and finishing concrete.
    - A secondary form of eye protection (full face guard and or safety goggles) is required for any employee when placing utilizing the hose.
- Ear Protection is required for any person(s) operating and in proximity to vibrators including a secondary form of eye protection.

USING OTHER EQUIPMENT:

When "Wheeling" Concrete

- Inflate tires to proper pressure.
- Don't overfill – avoid back strains, remember to lift with your legs.
- Provide ample travel ways with good footing, clutter free.

When Using Conveyors

- Barricade off around the machine to block thruways beneath belt area
- Guard pinch points and moving parts
- Use a "spotter' when moving the conveyor
- Keep people away from the "drop chute" end.

When Working with Hoppers

- Never handle hoppers and tremie tubes alone, get help.
- Always be sure of the "hold" that is on a hopper and tremie before flying it overhead.
- Securely fasten hopper and tubes together before flying overhead.

When Using Concrete Pumps

- Inspect pump hoses and slick lines for condition. Look for weak spots that may "blow-out".
- Stay clear of the discharge end of the pump hose (especially during a plug).
- Wear gloves to handle hoses.
- Use hose "whip check" lanyards in case of a "blow apart".
- Get help in lifting pump hoses and slick lines. Avoid back strains. If possible, use equipment to lift the hoses.
- A rope attached to the pump hose will make positioning easier.
- Never kink, fold or pinch a pump hose.

Bidwell of Deck Machines

- When working on deck pours in front of the machine, keep hands and feet away from the carriage with the augers and rollers.

- If you have to adjust the augers or works on the carriage, when the operator stops the carriage disengage the hydraulics so augers or barrels can't turn.
- Make sure that you keep hands, feet, tools, electric cords and water hose off of the machine rail because the operator cannot see all areas around the machine and make sure that all guards are in place.
- Operators must be aware of fall protection because of where the operator's seat is located.

REINFORCING STEEL/REBAR POLICY

Rebar is a steel bar or rod used to reinforce concrete structures. Working around rebar is extremely dangerous, and because of this, the Occupational Safety and Health Administration (OSHA), takes certain measures to protect construction workers from injuries and even death that can result from falling or tripping over any rebar on a construction site.

Steel Reinforced Rebar Caps

To protect employees against a deadly fall on rebar, steel reinforced rebar caps must be installed on the protruding end of the rebar.

CEMENT BURNS – FIRST AID

Direct contact with wet cement might cause chemical burns to your skin or your eyes. Various construction materials, including concrete, plaster, grout and mortar, often contain Portland cement, a caustic alkaline binding compound that can induce a severe skin reaction with limited exposure. Because pain is not immediate, the worker might not realize the extent of the cement burn until later when the symptoms, including blisters, skin discoloration and dead skin appear.

Initial Care

Remove any clothing or boots if they contain wet concrete or other wet cement mixtures. The longer the wet cement is in contact with your skin, the greater the risk for suffering a cement burn. Brush away dry specks of cement and rinse the skin with lukewarm water for 20 minutes to remove any cement residue.

Neutralize

Because the cement is highly alkaline, add a neutralizing agent such as white vinegar to the rinse water. Apply citrus juice, a neutralizing agent with mild acidic properties, if vinegar is not available. If you regularly work with wet cement, keep pH-neutral cleansers on hand.

Eyes

Cement burns to the eyes might result from not wearing safety eyewear when working with wet cement. Immediate rinsing of the eyes with clear water is necessary for at least 20 minutes Contact an ophthalmologist for advice, even if the worker does not experience pain or vision disturbance.

Monitor

What appears to be reddened skin the day after contact with wet cement might become a severe, caustic burn in a few days. Initial symptoms might include a rash, followed by inflammation and itching, swelling and then blistering. Monitor the skin, and contact a health professional if symptoms worsen after a few days.

Avoid

Because the high calcium level in Portland cement leaches moisture from the skin, workers might think applying a lotion or skin-softening agent, such as lanolin, will protect and nourish the skin. But these

products can trap the caustic solution on the skin's surface, where it can cause more damage.

Medical Treatments

If a cement burn is severe, it might require medical attention that could include antibiotic treatment, daily soaks of antiseptic, such as iodine or povidone, or hospitalization for debridement of the dead and damaged tissue.

ASPHALT BURNS – FIRST AID

IN THE EVENT OF A MOLTEN ASPHALT BURN COOL THE AFFECTED AREA IMMEDIATELY:

Methods of cooling (in order of preference):

- Completely submerge affected area in ice water.
- Completely submerge affected area in tap water.
- Place affected area under running water.

DO NOT DELAY! Use any available water, cooler than body temperature, while arranging for better cooling.

CAUTION: DO NOT APPLY ICE directly to affected area.

LEAVE COOLED ASPHALT ON AFFECTED AREA - DO NOT ATTEMPT TO REMOVE with products containing solvents or ammonia. Natural separation will occur in about 48-72 hours. If necessary, for early removal, soak bandage in mineral oil and place over affected area for 2 to 3 hours.

MINOR ASPHALT BURNS:
*** At first opportunity get victim to physician.**

Includes: Injury to small areas of fairly insensitive flesh involving a small quantity of asphalt.

SERIOUS ASPHALT BURNS:
*** As soon as possible get victim to Hospital, Clinic or Physician's Office.**

Includes: Injury to the head, face or extremities; Injury when large amounts of asphalt are involved; Evidence of nausea or faintness

TREATMENT FOR SHOCK:

- Keep victim lying down and quiet.
- Keep victim covered with a blanket or something similar to keep body temperature at normal, 98°F (37°C).
- Keep victim's head lower than feet to promote blood supply to head and chest.

CRYSTALLINE SILICA POLICY

PURPOSE: To identify tasks that involve possible Crystalline Silica exposure and methods used to protect workers, including procedures to restrict access to work areas where high exposures may occur.

POTENTIAL EXPOSURES:

- Milling/scratching asphalt
- Saw cutting asphalt/concrete
- Jackhammering asphalt/concrete/rock (handheld)
- Hoe-ramming asphalt/concrete/rock (excavator mounted)
- Rubbing/grinding concrete

- Mixing mortar (breakings bags of Portland cement)
- Concrete drilling
- Heavy equipment grading and excavating
- Loading and operation of Zim-Mixer
- Loading and operation of Stone-Slinger

CONTROL METHODS:

- **Table 1** engineering controls, work practices and respiratory protection as per OSHA.
- For tasks not listed in Table 1, or when the Table 1 engineering controls, work practices and respiratory protection are not fully implemented, an **Exposure Assessment** is to be completed when an employee may reasonably be expected to be exposed to respirable crystalline silica at or above the action level of 25 $\mu g/m^3$, calculated as an 8 hour TWA. If necessary, engineering controls, work practice controls and/or respiratory protection are to be used to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL of 50 $\mu g/m^3$, calculated as an 8 hour TWA.

MEDICAL SURVEILLANCE:

- Medical surveillance shall be made available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this section to use a respirator for 30 or more days per year.
- All medical examinations and procedures required by this section are to be performed by a Physician or other licensed health care professional (PLHCP).

TRAINING: Each employee covered by this section shall at a minimum be able to demonstrate knowledge and understanding of the following:

1) The health hazards associated with exposure to respirable crystalline silica;
2) Specific tasks in the workplace that could result in exposure to respirable crystalline silica;
3) Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
4) The contents of this section;
5) The identity of the competent person designated by the employer (Safety Director)
6) The purpose and a description of the medical surveillance program

CONFINED SPACE POLICY

PURPOSE: The purpose of the Confined Space Program is to set forth minimum requirements and guidelines to ensure the safety of personnel working in and around confined spaces.

DEFINITION: An enclosure that is large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy.

EVALUATION: An evaluation of the Confined Space is to occur prior to entry in order to determine whether the space is a Permit-Required or Non-Permit-Required Confined Space. **Use the Confined Space Hazard Evaluation Checklist to make this determination.**

Permit-Required Confined Space:

An enclosure that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Engulfment hazard such as water.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

If a confined space is determined to be Permit-Required the Confined Space Entry Permit must be completed. In addition, the Corporate Safety Director must be notified prior to entering a Permit space.

Non-Permit-Required Confined Space:

An enclosure that does not contain, and has no potential to contain any hazard capable of causing death or serious physical harm.

POTENTIAL CONFINED SPACE HAZARDS:

- A hazardous atmosphere (oxygen deficiency, flammable gases, carbon monoxide, etc.)
- Hot work inside the confined space (welding, cutting, other sources of ignition)
- Discharge of steam, high pressure air, water or oil into the confined space.
- Machinery, mixers, agitators, or other equipment containing moving parts that is in the space.
- Tools or other objects dropping from overhead.

- Tripping hazards caused by hoses, tools, pipes or other equipment.
- Noise in excess of acceptable levels.
- Temperature extremes which may require shorter work periods or other measures.

PERMIT-REQUIRED CONFINED SPACE PRECAUTIONS:

- Confined space training for employees
- Fall protection when entrance covers are removed
- Initial & continuous monitoring of the atmosphere
- Ventilation system
- Energy isolation (LO/TO)
- Attendant
- Authorized entrants
- Communications
- Winch and tripod for vertical access greater than 5 feet (must wear full body harness)
- Notify emergency rescue services prior to entry in case of failed non-entry rescue

EXCAVATION & TRENCHING SAFETY POLICY

PURPOSE: The purpose of the Excavation and Trenching Policy is to set forth systematic procedures and corrective measures to prevent accidents when working with trenches and excavations.

1. Prior to digging, all underground utilities located must be removed or supported to protect employees.
2. Access and egress must be provided at depths of 4 feet or greater and every 25 feet in lateral travel.
3. If water is present, water removal equipment must be used to remove the water from the trench or excavation. Water removal equipment must also be monitored by the competent person.

4. Soil piles and equipment must be located at least 2 feet from the excavation edge at all times.
5. Prior to placing employees into an excavation a soil classification must be made by the competent person. Soil should be classified as Type A, B, or C.
6. ALL Trenches 5 feet or greater in depth require a protective system. If less than 5 feet deep, a competent person may determine that a protective system is not required.
7. Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional engineer in accordance with 1926.652(b) and (c).
8. Trench boxes and shielding, if in place, must be located within 2 feet of the bottom of the excavation or trench.

Maximum allowable slopes for excavations less than 20 ft. based on soil type and angle to the horizontal are as follows:

Soil type	Height/Depth ratio	Slope angle
Stable Rock	Vertical	90°
Type A	¾:1	53°
Type B	1:1	45°
Type C	1½:1	34°

LOCKOUT/TAGOUT/TRYOUT POLICY

PURPOSE: The purpose of this policy is to ensure uniformity throughout our operations for precautions necessary to protect personnel from hazards due to the unexpected release of energy or start-up of equipment or machinery.

DEFINITIONS:

- Affected employee – An employee whose job is affected by lockout/tagout procedures.
- Authorized employee – A person who locks out or tags out machines or equipment in order to perform servicing or maintenance.

COMPLETING A LOCKOUT/TAGOUT:

- All energy isolating devices must be located prior to performing a lockout/tagout.
- Before an authorized employee turns off a piece of equipment, the authorized employee must have knowledge of the type and magnitude of the energy to be controlled and the methods or means to control the energy source.
- Before lockout/tagout controls are applied, all affected employees will be notified and given the reasons for the lockout/tagout.
- If a machine or equipment is operating, it will be shut down by normal stopping procedures by either the affected or authorized employee. All potentially hazardous stored or residual energy sources (i.e. batteries, capacitors, springs, hydraulic systems, etc.) will be relieved, disconnected, restrained or otherwise rendered safe.
- Locks or tags shall be affixed to each energy isolating device only by the "authorized" employee.
- Locks and tags will be singularly identified and will not be used for any other purpose. Locks and tags will be in a position that will be immediately obvious to anyone attempting to operate the device.
- Locks shall be affixed in manner that will hold the energy isolating device in a "safe" or "off" position. Locks will be durable and capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

- Tags shall be non-reusable, attached by hand, self-locking and non-releasable with a minimum unlocking strength of no less than 50 pounds.
- Protective materials and hardware shall be provided of isolating, securing or blocking of machines or equipment from energy sources. These protective materials and hardware include, but are not limited to, locks, tag chains, wedges, key blocks, adapter pins and self-locking fasteners.
- Locks and tags will indicate the identity of the authorized employee applying the device.
- A tag may be used without a lock if it can be demonstrated that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock.

VERIFICATION OF ISOLATION:

- Prior to starting work on the machine or equipment that has been locked out and after ensuring that no personnel are exposed to the release of hazardous energy, the authorized employee will operate the normal operating controls to verify that the machine or equipment has been de-energized and that it will not operate.
- After verifying isolation, the operating controls must be returned to the "neutral" or "off" position.

RELEASE FROM LOCKOUT/TAGOUT: Before the lockout/tagout devices are removed and energy is restored to the machine or equipment, the following procedures will be implemented:

- The work area will be inspected to ensure that nonessential items have been removed and to ensure that the machine or equipment components are operationally intact.

- The work area will be checked to ensure that all employees have been safely positioned or removed.
- Only the authorized employee who applied the lockout/tagout device is permitted to remove the lockout/tagout device. If the authorized employee who applied the lockout/tagout device is not available to remove it, the device can be removed by a competent person adhering to the following procedures:
- Verification by the competent person that the authorized employee who applied the lockout/tagout device is not within the facility.
- All reasonable efforts will be made to contact the authorized employee to inform the authorized employee that their lockout/tagout device has been removed.
- The authorized employee must be informed the device was removed before resuming work.

TRAINING: All authorized personnel must be trained prior to performing a lockout/tagout/tryout. Training will cover procedures outlined in this section.

MAINTENANCE & PROTECTION OF TRAFFIC (MPT)

PURPOSE: The purpose of the Maintenance and Protection of Traffic (MPT) Policy is to set forth company standards to protect the public, company employees and project representatives traveling/working within or around roadway construction work zones.

SCOPE: The provisions of this policy apply to all projects which interrupt the normal flow of traffic due to construction activities. This may include projects for PennDOT, local municipalities, private, commercial and site projects.

REQUIREMENTS: Traffic Control Plans shall be in accordance with, as applicable, the following publications:

1. Pub 408 Section 901 (including contract special provisions)
2. Pub 212
3. Pub 213
4. Manual on Uniform Traffic Control Devices (MUTCD)

Work being performed on job-sites open to vehicle or pedestrian traffic will meet the following "minimum" guidelines:

5. Adequate "advance notice" signage will be provided in the proper location to alert motorist and pedestrians of the up-coming work zone. This will include "Work Area" ahead and "Flagger Ahead" (where applicable).
6. Delineators such as cones and/or barricades will be used to direct the flow of traffic through the work zone and provide a visual barrier.
7. When possible, work should be performed behind delineators.

FLAGGER COMPANY POLICY

It is our policy that all Flagger personnel be certified in the following training:

- Flagger Training Course, in accordance with PennDOT Pub 408 Section 901.

In addition to all Flagger personnel completing the required training, flaggers must also comply with the following company requirements while flagging traffic:

- The use of earphones and cell phones is prohibited while flagging traffic, unless specifically used for job related signal communications between other flagger personnel.
- If a flagger must use their cell phone or leave their station for any reason, another trained flagger must stand in for them.

MATERIAL HANDLING PROGRAM

PURPOSE: The purpose of the Material Handling Program is to apply ergonomic principles and sound decision-making to the workplace in an effort to reduce the number of manual lifts thus decreasing workplace injuries and, where possible, increasing productivity, quality and efficiency.

RESPONSIBILITIES:

Management: The management is committed to the safe handling of all materials. Management supports the efforts of the Manual Material Handling Program Administrator by pledging financial and leadership support for the identification and control of material handling risk factors.

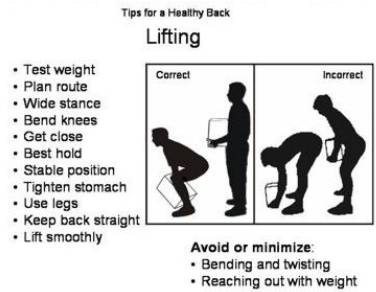
Project Managers & Supervisors:

- Remain accountable for the health and safety of all employees within their departments through the active support of this program
- Attend material handling training on the recognition and control of work-related material handling risk factors
- Ensure that employees in their areas have received the appropriate training
- Ensure that safe material handling practices and principles are considered daily and when conducting worksite evaluations

- Ensure that recommended controls are implemented and/or used appropriately through active follow-up
- Provide employees with and ensure the proper use of appropriate tools, equipment, parts and materials
- Maintain clear communication with managers and employees
- Make assistance available to employees who manually handle or lift items weighing 50 pounds or greater

Employees: Every employee is responsible for conducting himself/herself in accordance with this policy and program. All employees will:

- Use two-wheeled trucks, four-wheeled carts, roller conveyors, pallet jacks, or any other material handling equipment in the manner established by managers and supervisors
- Ensure that equipment is properly maintained in good condition and when not, report it immediately
- Provide feedback to managers and supervisors regarding the effectiveness of design changes, new tools or equipment
- Attend training as required and apply the knowledge and skills acquired during training to their jobs, tasks, processes, and work activities
- Use proper lifting and material handling techniques as outlined in this policy
- Limit manual lifting or handling tasks to objects less than 50 pounds
- Get assistance whenever manually handling or lifting materials that are 50 pounds or greater
- Report injuries immediately



RESPIRATORY PROTECTION PROGRAM

PURPOSE: The purpose of this program is to outline the procedures to provide respiratory protection to those employees who are engaged in activities that produce or may produce hazardous atmospheres. The type of respirators and the hazards encountered may differ from location to location; therefore, it is up to the supervisor to contact the Safety Director to assure that the proper protection is provided.

RESPIRATOR USE: Our primary exposure and need for respirators is due to dust created from asphalt or concrete cutting, grinding or other methods of disturbing silica particles. For this reason we will utilize water and/or dust collection systems to reduce the silica particles to the point that respirators are not necessary. If water is unavailable or an alternative is not feasible and respirators will be required, the following steps and corresponding descriptions will need to be followed for proper respirator use.

Medical Evaluation

- Every employee who is designated to wear a respirator based on the type of work they will be performing will be provided with a medical evaluation before they are allowed to use the respirator.

- Employees are required to fill out a medical questionnaire in private. Completed questionnaires are confidential and will be sent directly to medical provider without review by management.
- If the medical questionnaire indicates to our medical provider that a further medical exam is required, this will be provided at no cost to our employees by Concentra or Mobile Medical. We will get a recommendation from this medical provider on whether or not the employee is medically able to wear a respirator.

Additional medical evaluations will be done in the following situations:

- Our medical provider recommends it;
- An employee shows signs of breathing difficulty;
- Changes in work conditions that increase employee physical stress (such as high temperatures or greater physical exertion).

Respirator Fit Test

- All employees who wear negative or positive pressure tight-fitting respirators will be fit-tested before using their respirator or given a new one.
- Fit-testing will be repeated annually.
- Fit-testing will also be done when a different respirator face-piece is chosen, when there is a physical change in an employee's face that would affect fit, or when our employees' or medical provider notifies us that the fit is unacceptable.

Voluntary Use of Respirator: Contact the Safety Director for more information if you choose to voluntarily use a respirator.

Training: Training is done by a qualified individual before employees wear their respirators and annually thereafter as long as they wear respirators. Training will cover the following topics:

- Why the respirator is necessary,
- The respirator's capabilities and limitations,
- How improper fit, use or maintenance can make the respirator ineffective,
- How to properly inspect, put on, seal check, use, and remove the respirator,
- How to clean, repair and store the respirator or get it done by someone else,
- Medical symptoms that may limit or prevent respirator use,
- Our obligations under the Respirators Rule.

OFFICE SAFETY

PURPOSE: The purpose of this policy is to highlight common hazards and unsafe behaviors that could be encountered in an office environment. In addition the corresponding safety measures to counteract each hazardous condition are described.

1) At your desk:

- Use good posture. Sit up straight, feet on the floor; if you're using a keyboard, keep your wrists straight.
- Keep files, drawers, and cabinets clean, organized, and closed to prevent spilled material and tripping.
- Store heavy supplies on lower drawers or at ground level, and secure items in cabinets that close securely.
- Secure sharp objects (cutting knives, scissors, paper cutter blades) when not in use; never leave these misplaced and unattended.

2) Moving around:

- Walk, don't run.
- Look where you're going; you'll have time to read later.
- Watch for spills on the floor or other obstacles, and take the initiative to clean them or ensure that they're cleaned.
- Ensure that exits are clear and easily accessible.
- Opt for the elevator when carrying heavy loads.
- Use the handrail on the stairs.

3) Fix or report torn carpeting, loose floorboards or tiles, or otherwise unstable surfaces.

4) Fix or report broken furniture, burnt-out light-bulbs or other appliances, and other defective equipment.

5) Report frayed, torn, or otherwise damaged electrical cords, cables, etc.

- Keep floors and walkways clear of cords; coil excess cables or use cable ties to keep them out of the way.

6) Remove obstructions in walkways and exits.

- Safety signs and exit signs should be clearly marked and easily seen.

7) Fix or report fire hazards

8) Know the specific evacuation plans and guidelines for the facility.

9) Be familiar with all emergency exits and how to access them.

10) Know the location of emergency equipment such as first aid kits, AED's and fire extinguishers.

CRISIS MANAGEMENT PLAN & EMERGENCY EQUIPMENT

PURPOSE: The purpose of a Crisis Management Plan is to provide a systematic approach to managing a crisis in an organized fashion, without causing a major disruption to normal activities. A plan should be developed for each work location or facility with the following guidelines being taken into consideration

EMERGENCY EQUIPMENT:
The following emergency equipment shall be readily available at all work locations:

- Appropriate number of Class A, B & C Fire Extinguishers based on construction site and construction activities.
- First-Aid kit
- Eye Wash

In addition, supervisory personnel shall all be trained and certified in First Aid/CPR

CRISIS TEAM MEMBERS:

- Superintendent/Foreman
- General Superintendent
- Corporate Safety Director
- Project Manager (Team Leader)
- President (Company Spokesperson)
- Vice President (Company Spokesperson)
- Receptionist

RESPONSIBILITIES BEFORE AN EMERGENCY OR CRISIS OCCURS:

- Discuss the written Crisis Management Plan at the start of each new project and during Site Safety Meetings led by Foreman or Superintendent;

- Ensure that General Contractor and/or Subcontractors have provided emergency contacts;
- Foreman to have a designated meeting place for their employees. The Foreman must provide the location to all employees in advance. Also, advise all employees never to speak to the media without company consent;
- A designated Company Spokesperson will make a statement to the media if necessary. Nobody else other than a Company Spokesperson is to make a statement to the media.

RESPONSIBILITIES WHEN AN EMERGENCY OR CRISIS OCCURS: See full Crisis Management Plan on IPad or in Corporate Health & Safety Policies & Procedures Manual.

EMERGENCY MEDICAL TREATMENT:
Emergency medical treatment is needed when there is a life-threatening injury (such as severe bleeding, loss of consciousness, breathing or heart has stopped). When in doubt, if an injury is life threatening or not, treat it as needing emergency medical treatment.

- CALL 911 or other appropriate emergency response authorities;
- The Supervisor will assume lead during a medical emergency until the ambulance arrives or until the injured person is admitted to the emergency room;
- Prevent further injury; perform decontamination (if applicable);
- Initiate First Aid/CPR as necessary;
- Make certain that the injured person is accompanied to the emergency room;
- Notify and submit reports to the Safety Director, as defined in the Incident Reporting Policy.

- The Supervisor will account for all personnel in the onsite assembly area.
- A Designated person will account for personnel at alternate assembly area(s).
- The Supervisor will follow the Incident Reporting procedures as defined in the company policy.

TRAINING:

- The Supervisor must review the Crisis Management Plan with each employee covered by the plan

GENERAL SAFETY RULES

FLAMMABLE & COMBUSTIBLE MATERIALS:

- Combustible scrap, debris and waste materials (oily rags, etc.) must be stored in covered metal receptacles and removed from the worksite promptly.
- All flammable liquids must be kept in closed containers when not in use. (e.g. cleaning tanks must be closed when not it use).
- Storage rooms for flammable and combustible liquids must have mechanical or gravity ventilation.
- Liquefied petroleum storage tanks must be guarded to prevent damage from vehicles
- All solvent wastes, and flammable liquids must be kept in fire resistant, covered containers until they are removed from the site.
- Fire extinguishers should be mounted within 75 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials.
- Fire extinguishers should be free from obstructions or blockage.

- All fire extinguishers should be serviced, maintained and tagged at intervals not to exceed one year.
- All fire extinguishers should be fully charged and in their designated places.
- "NO SMOKING" signs should be posted where appropriate in areas where flammable or combustible materials are used or stored.
- Metal safety cans should be used for dispensing flammable or combustible liquids at a point of use. Plastic containers are prohibited.
- All spills of flammable or combustible liquids should be cleaned up promptly.
- Storage tanks should be adequately vented to prevent the development of excessive vacuum or pressure as a result of filling, emptying, or atmosphere temperature changes.
- Storage tanks should be equipped with emergency venting that will relieve excessive internal pressure caused by fire exposure.

STAIR AND STAIRWAYS:

- Standard stair rails or handrails shall be on all stairways having four or more risers.
- Steps on stairs and stairways shall be designed or provided with a surface that renders them slip resistant.

ELEVATED SURFACES:

- In situations where an employee must walk or work on a surface 6 feet or greater above another surface, that employee must be protected from a fall by either a standard guardrail, or a personal fall arrest system.
- Signs should be posted, when appropriate, showing the elevated surface load capacity.

- Surfaces elevated more than 30 inches above the floor or ground should be provided with standard guardrails.
- Elevated surfaces (beneath which people or machinery could be exposed to falling objects) shall be provided with standard 4-inch toeboards.
- A permanent means of access and egress should be provided to elevated storage and work surfaces.
- Required headroom shall be provided when necessary.
- Material on elevated surfaces shall be piled, stacked, or racked in a manner to prevent it from tipping, falling, collapsing, rolling or spreading.
- On all jobsites, each exposed rebar must be capped in accordance with OSHA regulations to prevent serious injury to employees who may be exposed to such a hazard.

EXITING OR EGRESS:

- All exits must be marked with an exit sign and illuminated by a reliable light source.
- Directions to exits, when not immediately apparent, must be marked with visible signs.
- All exits must be kept free of obstructions.
- Each pit should have two means of egress where the absence of a second exit would increase the risk of injury from hot, poisonous, corrosive, suffocating, flammable, or explosive substances.

PORTABLE LADDERS:

- All ladders must be maintained in good condition, joints between steps and side rails tight, all hardware and fittings securely

attached and moveable parts operating freely without binding or undue play.

- Non-slip safety feet must be provided on each ladder.
- Ladder rungs and steps must be free of grease and oil.
- Employees must be instructed to face the ladder when ascending or descending.
- Employees must be prohibited from using ladders that are broken, missing steps, rungs, or cleats, broken side rails or other faulty equipment.
- When extension ladders are used to gain access to elevated platforms, roofs, etc., the ladder must always extend at least three feet above the elevated surface.
- Extension ladders are to be placed so that the horizontal distance between the feet and the top support is 1/4 the working length of the ladder.
- When extension ladders are used, the base must be so placed that slipping will not occur, otherwise it should be lashed or held in place.
- Stepladders must only be used in the fully opened position.
- Employees must be instructed to never stand above the second step from the top of a stepladder.
- Portable metal ladders must be marked legibly with signs reading, "CAUTION" – Do Not Use Around Electrical Equipment" or equivalent wording.

HAND TOOLS & EQUIPMENT:

- Hand tools must be inspected before each use.
- All tools and equipment (both company and employee-owned) used by employees at

their workplace must be maintained in good condition.

- Hand tools such as chisels, punches, etc. which develops mushroomed heads during use must be reconditioned or replaced as necessary.
- Broken or fractured handles on hammers, axes and similar equipment must be replaced promptly.
- Worn or bent wrenches must be replaced regularly.
- Appropriate handles must be used on files and similar tools.
- Employees must be made aware of the hazards caused by faulty or improperly used hand tools.
- Appropriate safety glasses, face shields, etc. must be used while using hand tools or equipment which might produce flying materials or be subject to breakage.
- Jacks must be checked periodically to assure they are in good operating condition.
- Tool handles must be wedged tightly in the head of all tools.
- Tool cutting edges must be kept sharp so the tool will move smoothly without binding or skipping.
- Tools must be stored in a dry, secure location where they won't be tampered with.
- Eye and face protection must be used when driving hardened or tempered spuds or nails.

ABRASIVE WHEEL EQUIPMENT—GRINDERS:

- The work rest must be used and kept adjusted to within 1/8 inch of the wheel.
- The adjustable tongue on the top of the grinder must be used and kept adjusted to within ¼ inch of the wheel.

- The side guards must cover the spindle, nut, and flange and 75 percent of the wheel diameter.
- Bench and pedestal grinders must be permanently mounted.
- Safety glasses and face shields must always be worn when grinding
- The maximum RPM rating of each abrasive must be compatible with the RPM rating of the grinder motor.
- Fixed or permanently mounted grinders must be connected to their electrical supply system with metallic conduit or other permanent wiring method.
- Each grinder must have an individual on and off control switch.
- Each electrically operated grinder must be effectively grounded.
- Before new abrasive wheels are mounted they must be visually inspected and ring tested.
- Dust collectors and powered exhausts provided on grinders must be used in operations that produce large amounts of dust.
- Splashguards must be mounted on grinders that use coolant to prevent the coolant from reaching employees.
- Cleanliness must be maintained around grinders.

PORTABLE (POWER OPERATED) TOOLS & EQUIPMENT:

- Power tools must be inspected before each use.
- Adequate personal protective equipment must be worn while using power tools.
- Grinders, saws and similar equipment must be provided with appropriate safety guards.

- Power tools must be used with the correct shield, guard, or attachment, recommended by the manufacturer.
- Portable circular saws equipped with guards above and below the base shoe.
- Circular saw guards must be checked to assure they are not wedged up, thus leaving the lower portion or the blade unguarded.
- Rotating or moving parts of equipment must be guarded to prevent physical contact.
- All cord-connected, electrically operated tools and equipment must be effectively grounded or of the approved double insulated type.
- Effective guards must be in place over belts, pulleys, chains, sprockets, on equipment such as concrete mixers, air compressors, etc.
- Portable fans must be provided with full guards or screens having openings ½ inch or less.
- Hoisting equipment must be available and used for lifting heavy objects, and are hoist rating and characteristics appropriate for the task.
- Ground-fault circuit interrupters must be provided on all temporary electrical 15 and 20-ampere circuits, used during periods of construction.
- Pneumatic and hydraulic hoses on power-operated tools must be checked regularly for deterioration or damage.

MACHINE GUARDING:

- Employees must be instructed on safe methods of machine operation.
- There must be adequate supervision to ensure that employees are following safe machine operating procedures.

- There must be a regular program of safety inspection of machinery and equipment.
- All machinery and equipment must be kept clean and properly maintained.
- Sufficient clearance must be provided around and between machines to allow for safe operations, set up and servicing, material handling and waste removal.
- Equipment and machinery must be securely placed and anchored when necessary to prevent tipping or other movement that could result in personal injury.
- There must be a power shut-off switch within reach of the operator's position at each machine.
- Electric power to each machine must be locked out for maintenance, repair, or security.
- Non-current-carrying metal parts of electrically operated machines must be bonded and grounded.
- Foot-operated-switches must be guarded or arranged to prevent accidental actuation by personnel or falling objects.
- Manually operated valves and switches controlling the operation of equipment and machines must be clearly identified and readily accessible.
- All emergency stop buttons must be colored red.
- All pulleys and belts that are within 7 feet of the floor working level must be properly guarded.
- All moving chains and gears must be properly guarded.
- Methods must be provided to protect the operator and other employees in the machine area from hazards created at the point of operation, ingoing nip points, rotating parts, flying chips, and sparks.

- Machinery guards must be secure and so arranged that they do not offer hazard in their use.
- Special hand tools used for placing and removing material must protect the operator's hands.
- Revolving drums, barrels, and containers required to be guarded by an enclosure that is interlocked with the drive mechanism, so that revolution cannot occur unless the guard enclosures is in place, must be so guarded.
- Arbors and mandrels must have firm and secure bearings and they must be free from play.
- Provisions must be made to prevent machines from automatically starting when power is restored after a power failure or shutdown.
- Machines must be constructed so as to be free from excessive vibration when the largest size tool is mounted and it is run at full speed.
- Air pressure must be controlled and personal protective equipment or other safeguards must be utilized to protect operators and other workers from eye and body injury when machinery is cleaned with compressed air.
- Machinery should not be operated without the guard in place.
- Radial arm saws must be arranged so that the cutting head will gently return to the back of the table when released.

WELDING, CUTTING & BRAZING:

- Only authorized and trained personnel are permitted to use welding, cutting or brazing equipment.
- Compressed gas cylinders must be regularly examined for obvious signs of defects, deep rusting, or leakage.

- Care must be used in handling and storage of cylinders, safety valves, relief valves, etc., to prevent damage.
- Precautions must be taken to prevent the mixture of air or oxygen with flammable gases, except at a burner or in a standard torch.
- Only approved apparatus (torches, regulators, pressure-reducing valves, acetylene generators, manifolds) can be used.
- Cylinders must be kept away from sources of heat.
- Cylinders must be kept away from elevators, stairs, or gangways.
- It is prohibited to use cylinders as rollers or supports.
- Empty cylinders must be appropriately marked and their valves closed.
- Signs reading: DANGER—NO SMOKING, MATCHES, OR OPEN LIGHTS, or the equivalent, must be posted.
- Cylinders, cylinder valves, couplings, regulators, hoses, and apparatus must be kept free of oily or greasy substances.
- Care must be taken not to drop or strike cylinders.
- Unless secured on special trucks, regulators must be removed and valve-protection caps put in place before moving cylinders.
- Liquefied gases must be stored and shipped valve-end up with valve covers in place.
- Provisions must be made to never crack a fuel-gas cylinder valve near sources of ignition.
- Before a regulator is removed, the valve must be closed and the gas released from the regulator.
- Gas nozzle must have flash back preventer in place.

- Red must be used to identify the acetylene (and other fuel-gas) hose, green for oxygen hose, and black for inert gas and air hose.
- Pressure-reducing regulators must be used only for the gas and pressures for which they are intended.
- Open circuit (No Load) voltage of arc welding and cutting machines must be as low as possible and not in excess of the recommended limits.
- Under wet conditions, automatic controls made for reducing no load voltage must be used.
- Grounding of the machine frame and safety ground connections of portable machines must be checked periodically.
- Electrodes must be removed from the holders when not in use.
- Electric power to the welder must be shut off when no one is in attendance.
- Suitable fire extinguishing equipment must be available for immediate use.
- The welder is forbidden to coil or loop welding electrode cable around his body.
- Wet machines must be thoroughly dried and tested before being used.
- Work and electrode lead cables must be frequently inspected for wear and damage, and replaced when needed.
- Means for connecting cable lengths must have adequate insulation.
- When welding is done on metal walls, precautions must be taken to protect combustibles on the other side.
- Before hot work is begun, used drums, barrels, tanks, and other containers must be thoroughly cleaned so that no substances remain that could explode, ignite, or produce toxic vapors.

- It is required that eye protection helmets, hand shields and goggles meet appropriate standards.
- Employees exposed to the hazards created by welding, cutting, or brazing operations must be protected with personal protective equipment and clothing.
- A check must be made for adequate ventilation in and where welding or cutting is performed.

COMPRESSORS/AIR RECEIVERS:

- Every receiver must be equipped with a pressure gauge and with one or more automatic spring-loaded safety valve.
- The total relieving capacity of the safety valve must be capable of preventing pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.
- Every air receiver must be provided with a drainpipe and valve at the lowest point for the removal of accumulated oil and water.
- Compressed air receivers must be periodically drained of moisture and oil.
- All safety valves must be tested frequently and at regular intervals to determine whether they are in good operating condition.
- The inlet of air receivers and piping systems must be kept free of accumulated oil and carbonaceous materials.

COMPRESSOR & COMPRESSED AIR:

- Compressors must be equipped with pressure relief valves, and pressure gauges.
- Compressor air intakes must be installed and equipped so as to ensure that only clean uncontaminated air enters the compressor.

- Compressors must be operated and lubricated in accordance with the manufacturer's recommendations.
- Safety devices on compressed air systems must be checked frequently.
- Before any repair work is done on the pressure system of a compressor, the pressure must be bled off and the system locked-out.
- Signs must be posted to warn of the automatic starting feature of the compressors.
- The belt drive system must be totally enclosed to provide protection for the front, back, top, and sides.
- It is strictly prohibited to direct compressed air towards a person.
- Employees are prohibited from using highly compressed air (above 30 psi) for cleaning purposes.
- If compressed air is used for cleaning off clothing, the pressure must be reduced to less than 10 psi.
- When using compressed air for cleaning, employees must wear protective chip guarding and personal protective equipment.
- Safety chains or other suitable locking devices must be used at couplings of high pressure hose lines where a connection failure would create a hazard.
- Before compressed air is used to empty containers of liquid, the safe working pressure of the container must be checked.
- When compressed air is used to inflate auto tires, a clip-on chuck and an inline regulator must be present to 40 psi required.
- It is prohibited to use compressed air to clean up or move combustible dust if such action could cause the dust to be suspended in the air and cause a fire or explosion hazard.

COMPRESSED GAS CYLINDERS:

- Cylinders with a water weight capacity over 30 pounds must be equipped with means for connecting a valve protector device, or with a collar or recess to protect the valve.
- Cylinders must be legibly marked to clearly identify the gas container.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials, a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.
- Compressed gas cylinders must be stored in areas that are protected from external heat sources such as flame impingement, intense radiant heat, electric arcs, or high temperature lines.
- Cylinders must be located or stored in areas where they will not be damaged by passing or falling objects or subjects to tampering by unauthorized persons.
- Cylinders must be stored or transported in a manner to prevent them creating a hazard by tipping, falling or rolling.
- A cylinder containing liquefied fuel gas must be stored transported in a position so that the safety relief device is always is direct contact with the vapor space in the cylinder.
- Valve protectors must always be placed on cylinders when the cylinders are not in use or connected for use.
- All valves must be closed off before a cylinder is moved, when the cylinder is empty, and at the completion of each job.
- Low pressure fuel-gas cylinders must be checked periodically for corrosion, general distortion, cracks, or any other defect that might indicate a weakness or render it unfit for service.

- The periodic check of low-pressure fuel-gas cylinders must include a close inspection of the cylinders' bottom.

ELECTRICAL:

- All employees must be required to report as soon as practicable any obvious hazard to life or property observed in connection with electrical equipment or lines.
- All power tools will be equipped with GFCI protection & where applicable, an Assured Equipment Grounding Conductor Program will be developed and adhered to.
- Electrical equipment or lines are to be serviced, maintained or adjusted, necessary switches must be opened, locked out and tagged whenever possible.
- Portable electrical tools and equipment must be grounded or of the double insulated type.
- Electrical appliances such as vacuum cleaners, polishers, vending machines, etc., grounded.
- Extension cords being used must have a grounding conductor.
- Multiple plug adaptors must be prohibited.
- All temporary circuits must be protected by suitable disconnecting switches or plug connectors at the junction with permanent wiring.
- Exposed wiring and cords with frayed or deteriorated insulation must be repaired or replaced promptly.
- Flexible cords and cables must be free of splices or taps.
- Clamps or other securing means must be provided on flexible cords or cables at plugs, receptacles, tools, equipment, etc., and the cord jacket must be securely held in place.
- All cord, cable and raceway connections must be intact and secure.

- Wet or damp locations, electrical tools and equipment must be appropriate for the use or location or otherwise protected.
- The use of metal ladders is prohibited in areas where the ladder or the person using the ladder could come in contact with energized parts of equipment, fixtures or circuit conductors.
- All disconnecting switches and circuit breakers must be labeled to indicate their use or equipment served.
- Disconnecting means must always be opened before fuses are replaced.
- All electrical raceways and enclosures must be securely fastened in place.
- All energized parts of electrical circuits and equipment must be guarded against accidental contact by approved cabinets or enclosures.
- Sufficient access and working space must be provided and maintained about all electrical equipment to permit ready and safe operations and maintenance.
- All unused opening (including conduit knockouts) in electrical enclosures and fittings must be closed with appropriate covers, plugs or plates.
- Electrical enclosures such as switches, receptacles, junction boxes, etc., must be provided with tight-fitting covers or plates.
- Disconnecting switches for electrical motors in excess of two horsepower must be capable of opening the circuit when the motor is in a stalled condition, without exploding. (Switches must be horsepower rated equal to or in excess of the motor hp rating)
- Each motor disconnecting switch or circuit breaker must be located within sight of the motor control device.

FUELING:

- When spillage occurs during fueling operations, the spilled fuel must be washed away completely, evaporated, or other measures taken to control vapors before restarting the engine.
- Fuel tank caps must be replaced and secured before starting the engine.
- In fueling operations, there must always be metal contact between the container and the fuel tank.
- Fueling hoses must be of a type designed to handle the specific type of fuel.
- It is prohibited to handle or transfer gasoline in open containers.
- Open lights, open flames, sparking, or arcing equipment is prohibited near fueling or transfer of fuel operations.
- Smoking is prohibited in the vicinity of fueling operations.
- Fueling operators are prohibited in buildings or other enclosed areas that are not specifically ventilated for this purpose.
- Where fueling or transfer of fuel is done through a gravity flow system, the nozzles must be of the self-closing type.

IDENTIFICATION OF PIPING:

- When non-potable water is piped through a facility, outlets or taps must be posted to alert employees that the water is unsafe and not to be used for drinking, washing or other personal use.
- When hazardous substances are transported through above ground piping, each pipeline must be identified at points where confusion could introduce hazards to employees.

- When pipelines are identified by color painting, all visible parts of the line must be so identified.
- When pipelines are identified by color painted bands or tapes, the bands or tapes must be located at reasonable intervals and at each outlet, valve or connection.
- When pipelines are identified by color, the color code must be posted at all locations where confusion could introduce hazards to employees.
- When the contents of pipelines are identified by name or name abbreviation, the information must be readily visible on the pipe near each valve or outlet.
- When pipelines carrying hazardous substances are identified by tags, the tags must be constructed of durable materials, the message must be carried clearly and permanently distinguishable and tags must be installed at each valve or outlet.
- When pipelines are heated by electricity, steam or other external source, suitable warning signs or tags must be placed at unions, valves, or other serviceable parts of the system.

ENVIRONMENTAL CONTROLS:

- All work areas must be properly illuminated.
- Hazardous substances must be identified which may cause harm by inhalation, ingestion, skin absorption or contact.
- The work area's ventilation system must be appropriate for the work being performed.
- Employee exposure to welding fumes must be controlled by ventilation, use of respirators, exposure time or other means.
- Welders and other workers nearby must be provided with flash shields during welding operations.

- If forklifts and other vehicles are used in buildings or other enclosed areas, the carbon monoxide levels must be kept below maximum acceptable concentration.
- All local exhaust ventilation systems must be designed and operating properly. The airflow and volume necessary must be present for the application, ducts must not be plugged and belts should not slip.
- Restrooms and washrooms must be kept clean and sanitary.
- All water provided for drinking, washing and cooking must be potable.
- All outlets for water not suitable for drinking must be clearly identified.

CONTROL OF HARMFUL SUBSTANCES BY VENTILATION:

- The volume and velocity of air in each exhaust system must be sufficient to gather the dusts, fumes, mists, vapors or gases to be controlled, and to convey them to a suitable point of disposal.
- Where two or more different types of operations are being controlled through the same exhaust system, the combination of substances being controlled must not constitute a fire, explosion or chemical reaction hazard in the duct.
- Adequate makeup of air must be provided to areas where exhaust systems are operating.
- The source point for makeup air must be located so that only clean, fresh air, which is free of contaminates, will enter the work environment.
- Where two or more ventilation systems are serving a work area, their operation must be such that one will not offset the functions of the other.

HEAT STRESS MANAGEMENT:

- Begin drinking fluids early in the day—waiting until the hottest portion of the day to replenish fluids is too late.
- Avoid caffeine and alcohol the night before and during the day.
- Dress for conditions. Lightweight, loose clothing is best.
- Avoid layering clothing underneath coveralls.
- Eat a well balanced diet. Heavy, fatty foods do not support the body well in high heat conditions. Fruits, vegtables, proteins and starches work best.
- Drink electrolyte solutions to help maintain energy levels.
- Avoid taking salt tablets unless directed to do so by your physician.
- Use sunscreen and cover your face and neck from the sun.
- Provide shaded areas for mini-breaks and water stations as much as possible when there are no existing shaded structures.
- Provide more than enough water and electrolyte solution to make frequent short water breaks easily accessible.
- Strongly encourage SHORT (1-2 minute) water breaks every 20-30 minutes during high heat conditions.
- Provide specially marked water barrels containing ice and water for soaking neck towels, arms, sleeves, bandanas, and similar items.

FORKLIFT OPERATION:

- Only trained and authorized personnel shall operate forklifts. Authorized forklift operators must have successfully completed forklift safety training on the equipment they are to operate.

- Forklift operators are required to receive refresher training and evaluation when new equipment is introduced, existing equipment is modified, operating conditions change, or after operating performance is unsatisfactory. **All forklift operators must be re-tested and have their performance evaluated at least every three (3) years.**
- Survey each operation and identify and evaluate potential hazards.
- Perform proper pre-shift inspections.
- Display safe and proper load handling techniques.
- Display safe and proper traveling techniques, with and without loads.
- Display proper parking and shutdown procedures.
- Shutdown and remove from service any forklift that displays any unsafe condition or problem and notify their supervisor.
- Obey all rules, regulations or practices specified by the employer or customer at the location where the forklift will be used.
- Operator must always wear seatbelt.
- A functional horn and backup alarm is required on all forklifts.
- The rated capacity of the forklift shall not be exceeded.
- Only the operator is allowed to ride on a forklift
- No personnel shall be lifted with a forklift without the proper personnel lifting attachment and procedure.
- Forklifts shall observe the proper clearances on all overhead power lines, pipe racks and other overhead obstructions.
- Operators shall not lift or place any load above personnel.
- Indoor operation of forklifts shall be limited to buildings that are well ventilated.

- All controls shall be operated only from the operator's station.
- Extreme caution shall be used when operating a forklift on uneven surfaces, close to any hole or excavation, or close to drain gratings, hole covers, or other surfaces that are not designed to support the weight of a forklift.
- When operating a forklift in tight or congested areas, a flag person should be used.
- The operator shall secure an unattended forklift by lowering the forks to the ground, turning off the ignition, and setting the parking brake.
- All guards and overhead protective devices shall be left in place.
- Any concern or question about the safety of any forklift operation condition shall be discussed with the operator's supervisor.

VEHICLE SECUREMENT:

- Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them.
- Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use.
- All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise.
- Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set.

HEAVY EQUIPMENT OPERATION:

- Only qualified "competent operators" are to operate heavy equipment. The site supervisor is to verify that the operator is competent to operate the equipment the operator is assigned to.
- Seat belts must be provided and worn in all equipment having rollover protective structures (ROPS).
- Heavy equipment will be inspected by the operator prior to the beginning of each work shift.
- Parking brakes shall be engaged when not in use.
- Blades, buckets, dump bodies and other hydraulic systems must be fully lowered or blocked when equipment is not in use.
- Rated load capacity charts, recommended operating speeds, special hazard warnings and other essential information will be conspicuously posted in all heavy equipment. At no time will lifts be made that exceed rated load capacities.
- Operators must take signals from only one person. In an emergency, however, a stop signal can be given by anyone.
- Routine maintenance, fueling or repairs shall not be performed while heavy equipment is in use or running.
- Employees are prohibited from riding the hook or on a load.
- Loads shall be guided and prevented from swing by attaching a tag line to the load.
- Loads shall not be suspended on an unattended piece of equipment.

- The swing radius of all cranes must be barricaded to prevent employees from being struck by the counterweight.
- Always stay in view of equipment operators. Never stand on the blind side of a piece of equipment or approach a machine without making eye contact with the operator.
- Only essential personnel should be permitted in any area where work is being performed by heavy equipment.
- Cabs will only have essential items; all loose items should be secured.
- Equipment operators will not leave running machines unattended.
- Personnel operating aerial lifts will wear a full body harness attached by a retractable lanyard to the basket.
- Equipment will be properly guarded.
- A minimum clearance of 20 ft. (radius) is required between heavy equipment and overhead power lines up to 350 kV. Exceptions to this rule may occur; however, any deviations/variances from the 20 ft. clearance requirement must be approved by the Safety Director and Manager.
- The use of earphones and cell phones is prohibited while operating heavy equipment, unless specifically used for job related signal communications.
- All equipment will be operated in accordance with manufactures specifications.

RIGGING:

- Know the rated capacities of rigging and select the proper size.

- Ensure that loads are rigged to minimize the potential for dropped loads.
- Do not exceed the load chart capacity while making lifts.
- Determine a safe location to stand to avoid being struck by the load if rigging fails, or the load shifts while making lifts.
- Slings shall be padded or protected from the sharp edges of their loads.
- All hooks certified for overhead lifting must be equipped with latches.
- Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.
- Shock loading is prohibited.
- Rigging equipment when not in use shall be removed from the immediate work area so as not to present a hazard to employees.
- Prior to use, the sling and all fastenings and attachments shall be inspected for damage or defects. Damage or defects include, but are not limited to, deformation, strain, binding, kinking, corrosion, fraying, tears, and burns.
- Damaged rigging shall be permanently removed from service.

FALL PROTECTION:

- Each employee on a walking/working surface with an unprotected side or edge 6 feet or more above a lower level will be protected from falling by the use of guardrail systems or personnel fall arrest systems (100% tie off).

RECEIPT OF EMPLOYEE HEALTH & SAFETY HANDBOOK

I, _____, an employee of

A. Folino Construction, Inc.,

have received a copy of the Employee Health and Safety Handbook. I will read and abide by all the health and safety requirements in this handbook.

I also understand that any violation of the established health and safety rules can result in disciplinary action.

Signature _____ Date _____

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it. Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader. In addition, the forms are programmed to auto-calculate as appropriate.

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 20 15

U.S. Department of Labor
Occupational Safety and Health Administration

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name A. Folino Construction Inc.

City Oakmont State PA

Identify the person			Describe the case			Classify the case (SELECT ONLY ONE box for each case based on the most serious outcome for that case:)				Enter the number of days the injured or ill worker was:		Select the "Injury" column or choose one type of illness: (M)					
								Remained at Work									
(A) Case no.	(B) Employee's name	(C) Job title (e.g., Welder)	(D) Date of injury or onset of illness (e.g., 2/10)	(E) Where the event occurred (e.g., Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g., Second degree burns on right forearm from acetylene torch)	Death (G)	Days away from work (H)	Job transfer or restriction (I)	Other record-able cases (J)	Away from work (K)	On job transfer or restriction (L)	Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)
Reset 1		Payroll Administrator	2 / 2 month / day	Employee Parking Lot	Slip & Fall on right knee, right wrist, buttocks				●	___ days	___ days	●					
Reset 2		Laborer	6 / 16 month / day	Jobsite	Chemical burns on both lower legs while pouring concrete		●			1 days	0 days	●					
Reset 3		Concrete Mixer Driver	9 / 8 month / day	Parkway West Outbound	Multiple contusions, thoracic strain & concussion from hitting guardrail while driving		●			1 days	2 days	●					
Reset 4		Laborer	9 / 18 month / day	Jobsite	Lower back strain while throwing piece of concrete				●	___ days	___ days	●					
Reset			/ month / day							___ days	___ days						
Reset			/ month / day							___ days	___ days						
Reset			/ month / day							___ days	___ days						
Reset			/ month / day							___ days	___ days						
Reset			/ month / day							___ days	___ days						
Reset			/ month / day							___ days	___ days						
					Page totals ▶	0	2	0	2	2	2	4	0	0	0	0	0
												Injury (1)	Skin disorder (2)	Respiratory condition (3)	Poisoning (4)	Hearing loss (5)	All other illnesses (6)

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Save Input | Add a Form Page

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Note: You can type input into this form and save it.
Because the forms in this recordkeeping package are "fillable/writable" PDF documents, you can type into the input form fields and then save your inputs using the free Adobe PDF Reader.

Year 20 15

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log. If you had no cases, write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR Part 1904.35, in OSHA's recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	2	0	X2
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
2	2
(K)	(L)

Injury and Illness Types

	Total number of (M)		
(1) Injuries	4	(4) Poisonings	0
(2) Skin disorders	0	(5) Hearing loss	0
(3) Respiratory conditions	0	(6) All other illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistical Analysis, Room N-3644, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name: A. Folino Construction Inc.

Street: 109 Dark Hollow Road

City: Oakmont State: PA Zip: 15139

Industry description (*e.g., Manufacture of motor truck trailers*)
Construction-Site-Asphalt-Concrete

Standard Industrial Classification (SIC), if known (*e.g., 3715*)

OR

North American Industrial Classification (NAICS), if known (e.g., 336212)
237310

Employment information *(If you don't have these figures, see the Worksheet on the next page to estimate.)*

Annual average number of employees: 150

Total hours worked by all employees last year: 287514

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive Title VP

Phone 412 - 820 - 2800 Date 1 / 08 / 16

Save Input

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2016

U.S. Department of Labor
Occupational Safety and Health Administration

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name: A. Folino Construction, Inc.

City: Oakmont State: PA

Identify the person				Describe the case		Classify the case											
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
1		Laborer	7/27/16	Stanton Ave, Pittsburgh	Pinched finger while operating jackhammer				X			X					
2		Driver	8/23/16	Duncan Ave, Allison Park	Burned when opening tack wagon lid		X			22		X					
3		Foreman	8/25/16	Industrial Scientific, Robinson	Fell getting out of skid steer and broke tooth				X			X					
					Page totals	***0***	***1***	***0***	***2***	***22***	***0***	***3***	***0***	***0***	***0***	***0***	***0***

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
(1)	(2)	(3)	(4)	(5)	(6)

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2016

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	1	0	2
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
22	0
(K)	(L)

Injury and Illness Types

Total number of… (M)			
(1) Injury	3	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name: A. Folino Construction, Inc.

Street: 109 Dark Hollow Rd.

City: Oakmont State: PA Zip: 15139

Industry description (e.g., Manufacture of motor truck trailers)

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

2 3 7 3 1 0

Employment information

Annual average number of employees: 156

Total hours worked by all employees last year: 309,652

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

Vice President
Title

(412) 820-2800
Phone

1/11/2017
Date

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2017

U.S. Department of Labor
Occupational Safety and Health Administration

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name: A. Folino Construction, Inc.

City: Oakmont State: PA

Identify the person				Describe the case		Classify the case											
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
1		Laborer	10/23/17	Fox Chapel Rd	Finger laceration				X			X					
					Page totals	*0*	*0*	*0*	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

	Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
	(1)	(2)	(3)	(4)	(5)	(6)

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2017

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	0	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	0
(K)	(L)

Injury and Illness Types

Total number of…	(M)		
(1) Injury	1	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Establishment information

Your establishment name A. Folino Construction, Inc.

Street 109 Dark Hollow Rd.

City Oakmont State PA Zip 15139

Industry description (e.g., Manufacture of motor truck trailers)

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

2 3 7 3 1 0

Employment information

Annual average number of employees 325

Total hours worked by all employees last year 389,479

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

Vice President
Title

(412) 820-2800
Phone

01-31-18
Date

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2018

U.S. Department of Labor
Occupational Safety and Health Administration

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name: A. Folino Construction, Inc.

City: Oakmont State: PA

Identify the person				Describe the case		Classify the case											
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
1		Technician	4/10/18	SR48 Monroeville	Pinched finger				X			X					
2		Laborer	7/31/18	Atria's at McCandless	Fractured hand when picking up soff cut saw			X			37	X					
3		Laborer	8/2/18	Rosemoor St.	Fell exiting skid loader and broke elbow			X			39	X					
					Page totals	*0*	*0*	*2*	*1*	*0*	*76*	*3*	*0*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

	Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
	(1)	(2)	(3)	(4)	(5)	(6)

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2018

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	0	2	1
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
0	76
(K)	(L)

Injury and Illness Types

Total number of… (M)			
(1) Injury	3	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Establishment information

Your establishment name A. Folino Construction, Inc.

Street 109 Dark Hollow Rd.

City Oakmont State PA Zip 15139

Industry description (e.g., Manufacture of motor truck trailers)

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

2 3 7 3 1 0

Employment information

Annual average number of employees 450

Total hours worked by all employees last year 480,499

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

Vice President
Title

(412) 820-2800
Phone

1/28/2019
Date

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 58 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave. NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name

City Oakmont

Identify the person				Describe the case		Classify the case				
						CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the nu days the inju worker was:
								Remained at work		
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Death	Days away from work	Job transfer or restriction	Other record-able cases	Away From Work (days)
						(G)	(H)	(I)	(J)	(K)
1		Laborer	5/21/19	Herminie Storm Sewer	Hand caught between two objects			X		
2		Laborer	5/23/19	Garret St. & Mill Run Rd.	Felt pop in knee while making long step		X			98
					Page totals	***0***	***1***	***1***	***0***	***98***

Be sure to transfer these totals to the Summary page (Form 300A) before you post i

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Year 2019

U.S. Department of Labor

Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

A. Folino Construction, Inc.

State PA

mber of red or ill	Check the "injury" column or choose one type of illness:					
	(M)					
On job transfer or restriction (days)	Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
(L)	(1)	(2)	(3)	(4)	(5)	(6)
10	X					
	X					
10	***2***	***0***	***0***	***0***	***0***	***0***

t.	Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
	(1)	(2)	(3)	(4)	(5)	(6)

A. Folino Construction, Inc.

Financial Statements
As of and for the Years Ended December 31, 2019 and 2018

AN INDEPENDENT MEMBER OF BDO ALLIANCE USA

URISH POPECK & CO., LLC

Accountants and Consultants

A. Folino Construction, Inc.

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Independent Auditors' Report

To the Stockholders
A. Folino Construction, Inc.
Oakmont, Pennsylvania

We have audited the accompanying financial statements of A. Folino Construction, Inc. (a Pennsylvania S Corporation, the Company), which comprise the balance sheets as of December 31, 2019 and 2018, and the related statements of operations and retained earnings, and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Urish Popeck & Co., LLC

June 26, 2020
Pittsburgh, Pennsylvania

December 31,	**2019**	2018
Assets		
Current assets		
Cash	**$ 2,049,620**	$ 1,903,239
Accounts receivable, less allowance for doubtful accounts of $300,000 at December 31, 2019 and 2018	**15,018,130**	17,959,239
Accounts receivable - related parties	**410,454**	484,314
Prepaid expenses	**1,050,513**	940,695
Other receivable	**93,748**	-
Contract assets	**8,176,487**	7,818,913
Total current assets	**26,798,952**	29,106,400
Property and equipment, less accumulated depreciation of $17,486,502 and $14,241,605	**9,884,643**	10,283,784
Notes receivable and advances - related parties	**1,251,199**	1,251,296
Total assets	**$ 37,934,794**	$ 40,641,480

A. Folino Construction, Inc.

Balance Sheets

December 31,	**2019**	2018
Liabilities and Stockholders' Equity		
Current liabilities		
Line of credit	**$ 7,100,000**	$ 3,100,000
Accounts payable	**7,276,082**	15,536,917
Accounts payable - related parties	**3,578,216**	3,263,598
Accrued expenses	**212,894**	344,224
Notes payable - related parties	**336,440**	332,652
Notes payable - current portion	**2,189,964**	1,698,332
Obligations under capital lease - current portion	**369,385**	367,009
Contract liabilities	**534,896**	225,507
Total current liabilities	**21,597,877**	24,868,239
Long-term liabilities		
Notes payable	**5,164,811**	5,036,631
Notes payable - related parties	**2,168,535**	2,401,883
Obligations under capital leases	**262,332**	630,955
Total long-term liabilities	**7,595,678**	8,069,469
Total liabilities	**29,193,555**	32,937,708
Stockholders' equity		
Common stock - par value $1 per share;		
500 shares authorized, issued and outstanding	**500**	500
Retained earnings	**8,740,739**	7,703,272
Total stockholders' equity	**8,741,239**	7,703,772
Total liabilities and stockholders' equity	**$ 37,934,794**	$ 40,641,480

The accompanying notes are an integral part of these financial statements.

A. Folino Construction, Inc.

Statements of Operations and Retained Earnings

Years Ended December 31,	**2019**	2018
Revenues	**$ 99,581,536**	$ 85,329,447
Cost of revenues		
Direct contract costs	**78,368,852**	69,046,180
Field overhead expenses	**15,167,550**	13,356,496
Total cost of revenues	**93,536,402**	82,402,676
Gross profit	**6,045,134**	2,926,771
General and administrative expenses	**4,517,060**	4,550,728
Operating income (loss)	**1,528,074**	(1,623,957)
Other income (expense)		
Gain on disposal of equipment	**77,536**	8,191
Other income	**117,528**	233,667
Interest income	**61,302**	24,562
Interest expense	**(631,973)**	(362,038)
Total other expense, net	**(375,607)**	(95,618)
Net income (loss)	**1,152,467**	(1,719,575)
Distributions to stockholders	**(115,000)**	(115,250)
Retained earnings, beginning of year	**7,703,272**	9,538,097
Retained earnings, end of year	**$ 8,740,739**	$ 7,703,272

The accompanying notes are an integral part of these financial statements.

A. Folino Construction, Inc.

Statements of Cash Flows

Years Ended December 31,	**2019**	2018
Cash flows from operating activities:		
Net income (loss)	**$ 1,152,467**	$ (1,719,575)
Adjustments to reconcile net income (loss) to net cash (used in) provided by operating activities:		
Depreciation	**3,259,390**	2,836,316
Gain on disposal of equipment	**(77,536)**	(8,191)
Cash provided by (used in) operating assets and liabilities:		
Accounts receivable	**2,941,109**	(6,310,423)
Accounts receivable - related parties	**73,859**	89,878
Prepaid expenses	**(109,818)**	(68,153)
Contract assets	**(357,574)**	(3,657,469)
Other assets	**(93,748)**	-
Accounts payable	**(8,260,837)**	6,658,228
Accounts payable - related parties	**314,618**	1,886,067
Accrued expenses	**(131,330)**	171,352
Contract liabilities	**309,389**	(709,818)
Notes receivable and advances - related parties, net	**97**	(256)
Net cash used in operating activities	**(979,914)**	(832,044)
Cash flows from investing activities:		
Purchases of property and equipment	**(200,705)**	(1,378,979)
Proceeds from sale of equipment	**150,000**	-
Net cash used in investing activities	**(50,705)**	(1,378,979)
Cash flows from financing activities:		
Borrowings on line of credit	**4,000,000**	2,000,000
Payments on notes payable	**(2,010,342)**	(1,240,529)
Payments on obligations under capital lease	**(430,750)**	(416,993)
Payments on related party notes payable	**(266,908)**	(334,253)
Borrowings from related party notes payable	**-**	2,000,000
Distributions to stockholders	**(115,000)**	(115,250)
Net cash provided by financing activities	**1,177,000**	1,892,975
Net increase (decrease) in cash and cash equivalents	**146,381**	(318,048)
Cash, beginning of year	**1,903,239**	2,221,287
Cash, end of year	**$ 2,049,620**	$ 1,903,239
Supplemental disclosures of cash flow information:		
Cash paid during the year for:		
Interest	**$ 631,973**	$ 362,038
Noncash investing and financing activities		
New loans and capital leases for acquisition of equipment, less trade-ins	**$ 2,732,008**	$ 5,289,588

The accompanying notes are an integral part of these financial statements.

1. Organization, Business and Summary of Significant Accounting Policies

The organization, business and summary of significant accounting policies of A. Folino Construction, Inc. (the Company) are presented to assist in understanding the accompanying financial statements. The financial statements and notes are those of the Company and its management is responsible for their integrity and objectivity. The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America which, in the opinion of management, have been consistently applied.

Business

The Company, headquartered in Oakmont, Pennsylvania, is a general contractor and subcontractor in the asphalt paving, concrete, excavation and construction industry, and operates principally in the Southwestern Pennsylvania area.

The Company is related through common ownership to several other companies. Three of these entities actively participate in the Company's operations providing hauling services, repair and maintenance for the Company's automobiles, trucks and equipment and captive insurance coverage (see Note 9). The Company actively provides subcontracting services to one of the companies (see Note 9).

Significant transactions and balances with these companies are not consolidated or eliminated in these financial statements (see Note 9).

Revenue Recognition

On January 1, 2019, the Company adopted FASB ASU No. 2014-09, Revenue from Contracts with Customers (ASC Topic 606) using the modified retrospective method applied to those contracts that were not completed as of January 1, 2019. Results for reporting periods beginning after January 1, 2019 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with the Company's historic accounting under ASC 605, Revenue Recognition. ASC Topic 606 outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. The guidance outlines a five-step process for revenue recognition that focuses on transfer of control, as opposed to transfer of risk and rewards, and also requires enhanced disclosures regarding the nature, amount, timing and uncertainty of revenues and cash flows from contracts with customers. Major provisions include determining which goods and services are distinct and represent separate performance obligations, how variable consideration (which may include change orders and claims) is recognized, whether revenue should be recognized at a point in time or over time and ensuring the time value of money is considered in the transaction price.

The Company accounts for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. Revenues are derived primarily through construction-type contracts on a fixed fee basis.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Throughout the execution of the Company's construction-type contracts, the Company recognizes revenue with the continuous transfer of control to the customer. The customer typically controls the asset under construction by either contractual termination clauses or by the Company's rights to payment for work already performed on the asset under construction that does not have an alternative use for the Company.

Because control transfers over time, revenue is recognized to the extent of progress towards completion of the performance obligations. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the products or services provided. The Company generally uses the cost-to-cost method for its contracts, which measures progress towards completion for each performance obligation based on the ratio of costs incurred to date to the total estimated costs at completion for the respective performance obligation. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Revenue, including estimated profits, is recorded proportionately as costs are incurred. Cost of operations includes labor, materials, subcontractor costs, and other direct and indirect costs, including depreciation and amortization. Certain construction-type contracts include retention provisions to provide assurance to our customers that we will perform in accordance with the contract terms and are not considered a financing benefit. The balances billed but not paid by customers pursuant to these provisions generally become due upon completion and acceptance of the project work by the customer. The Company has determined there are no significant financing components in our contracts during the year ended December 31, 2019.

Changes in job performance, job conditions and estimated profitability may result in revisions to revenue and costs. The effect of these revisions are recognized in the period in which they occur and provisions for estimated losses on uncompleted contracts are made as soon as such losses are known.

The Company recognizes revenue for variable consideration when it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur. The Company estimates the amount of revenue to be recognized on variable consideration using the expected value (i.e., the sum of a probability-weighted amount) or the most likely amount method, whichever is expected to better predict the amount. During the years ended December 31, 2019 and December 31, 2018, there was no variable consideration.

Contract Balances

The timing of revenue recognition, billings and cash collections results in trade accounts receivable, contract assets and contract liabilities on the balance sheets. Trade accounts receivable include billed and unbilled amounts currently due from customers and represent unconditional rights to receive consideration. The amounts due are stated at their net estimated realizable value. Contract assets include amounts due under contractual retainage provisions that were previously included in accounts receivable as well as costs and estimated earnings in excess of billings on uncompleted contracts that were previously separately presented. Contract liabilities include billings in excess of costs and estimated earnings on uncompleted contracts that were previously separately presented and provisions for losses.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Retainage provisions represents amounts invoiced to customers where payments have been partially withheld, typically 10%-15%, pending the completion of certain milestones, satisfaction of other contractual conditions or the completion of the project.

Contract Costs

The Company recognizes the incremental costs of obtaining contracts as selling, general and administrative expenses when incurred if the amortization period of the asset that otherwise would have been recognized is one year or less. In December 31, 2019 and 2018, there was no significant cost to obtain contracts.

Certain contracts generally include an assurance type warranty clause to guarantee that the services comply with agreed specifications and free from defects. The warranty period typically is 12 months or less from the date of service. Warranty expenses were not material for the twelve months ended December 31, 2019 and 2018.

The adoption of the standard did not impact the Company's opening retained earnings or accounting of construction-type contracts. At December 31, 2018, the Company reclassified $2,764,795 from accounts receivable to contract assets due to retainage provisions.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts and disclosures. Significant estimates relate to the revenue and related expenses recognized under the percentage-of-completion method and the allowance for doubtful accounts. Actual amounts could materially differ from those estimates.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Cash and Concentrations of Credit Risk

The statements of cash flows classify changes in cash according to operating, investing or financing activities. Financial instruments, which potentially expose the Company to concentrations of credit risk, consist principally of cash and accounts receivable.

The Company maintains its cash in non-interest bearing accounts that are insured by the Federal Deposit Insurance Company up to $250,000. The Company's deposits may, from time to time, exceed the $250,000 limit; however, management believes that there is no unusual risk present, as the Company places its cash with financial institutions which management considers being of high quality.

Concentrations of credit risk with respect to accounts receivable result from a significant portion of revenues being derived from the Commonwealth of Pennsylvania, various boroughs, municipalities and school systems. This risk is reduced due to the customer base being dispersed throughout these groups and the Company closely monitoring extensions of credit.

Property and Equipment

Property and equipment are stated at cost. Maintenance and repairs that are not considered to extend the useful life of assets are charged to operations as incurred. The cost of assets sold or retired and the related accumulated depreciation are removed from the accounts with any resulting gain or loss reflected in operations. Depreciation for financial statement purposes is provided in accordance with the straight-line method over the estimated useful lives as follows:

Office equipment	5 years
Computer software	3-5 years
Leasehold improvements	5-39 years
Buildings	39 years
Furniture and fixtures	7 years
Transportation equipment	5 years
Machinery and equipment	5 years

Accounts Receivable

Based on management's review of outstanding trade receivables at year-end, all known losses at December 31, 2019 and 2018 have been reflected in the financial statements. The Company generally extends credit to customers without requiring collateral and monitors these extensions of credit. The Company does not have any off-balance-sheet credit exposure related to its customers.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Impairment of Long-lived Assets

In accordance with FASB ASC 360, *Long-Lived Assets*, such property and equipment, are reviewed for impairment, whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset.

Income Taxes

The Company has elected to be treated as an S-Corporation for both Federal and Pennsylvania income tax purposes. The effect of this election is the elimination of income taxes at the corporate level and the inclusion of the Company's income or loss in the individual tax returns of the stockholders. Therefore, no provision for Federal or state income taxes is included in the accompanying financial statements. For income tax purposes, the Company uses the accrual basis of accounting and recognizes contract revenue on the percentage-of-completion method of accounting.

ASC 740-10, *Accounting for Uncertainty in Income Taxes* clarifies the accounting for uncertainty in income taxes recognized in an entity's financial statements. This Interpretation prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. In addition, ASC 740-10 provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. For the Company, tax positions taken include the Company's status as an S-Corporation and the approval and qualification for this status. Management has reviewed the current status of the Company's election as an S-Corporation and has concluded that the Company has no liability or required disclosure relating to this tax position. Corporate tax years ended December 31, 2016 and prior are no longer subject to tax authority audit.

Comprehensive Income

Net income is the Company's only component of comprehensive income for the years ended December 31, 2019 and 2018.

Advertising

Advertising costs are charged to operations as incurred.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Reclassifications

Certain reclassifications have been made to prior year financial statements to conform with current year presentation.

Recently Issued Accounting Pronouncements

During February 2016, the FASB issued ASU No. 2016-02, *Leases* (Topic 842). ASU 2016-02 requires lessees to recognize the assets and liabilities that arise from leases on the statement of financial position. A lessee should recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. ASU 2016-02 is effective for annual periods beginning after December 15, 2021. Early adoption is permitted. The Company is currently assessing the effect that ASU 2016-02 will have on its results of operations, financial position and cash flows.

2. Accounts Receivable

Accounts receivable consist of the following:

December 31,	**2019**	2018
Billed		
Completed jobs	**$ 3,599,033**	$ 5,767,353
Jobs in progress	**11,719,097**	12,491,886
	15,318,130	18,259,239
Less: allowance for doubtful accounts	**(300,000)**	(300,000)
Accounts receivable	**$ 15,018,130**	$ 17,959,239

The Company provides an allowance for doubtful accounts based on management's analysis of the accounts receivable balances at year-end. Collections on accounts previously written-off are included in income as received.

3. Contracts in Progress

The status of costs incurred, estimated earnings and billings on uncompleted contracts is as follows:

December 31,		**2019**		2018
Costs incurred on uncompleted contracts	**$**	**80,736,514**	$	95,913,151
Estimated earnings		**12,939,409**		17,129,867
		93,675,923		113,043,018
Less billings to date		**(90,072,130)**		(108,214,407)
Total	**$**	**3,603,793**	$	4,828,611

The net overbilling (underbilling) position for contracts in process consisted of the following

December 31,		**2019**		2018
Costs and estimated earnings in excess of billings on uncompleted contracts	**$**	**4,138,689**	$	5,054,118
Billings in excess of costs and estimated earnings on uncompleted contracts		**(534,896)**		(225,507)
Total	**$**	**3,603,793**	$	4,828,611

Contract assets include amounts due under retainage provisions and costs and estimated earnings in excess of billings. The components of the contract asset balances as of the respective dates were as follows:

December 31,		**2019**		2018
Costs and estimated earnings in excess of billings on uncompleted contracts	**$**	**4,138,689**	$	5,054,118
Retainage receivable		**4,037,798**		2,764,795
Total	**$**	**8,176,487**	$	7,818,913

Contract liabilities include billings in excess of contract costs and provisions for losses. The components of the contract liability balances as of the respective dates were as follows:

December 31,		**2019**		2018
Billings in excess of costs and estimated earnings on uncompleted contracts	**$**	**(534,896)**	$	(225,507)
Provision for loss contracts		**-**		-
Total	**$**	**(534,896)**	$	(225,507)

4. Property and Equipment

Property and equipment consists of the following:

December 31,	**2019**	2018
Office equipment	**$ 201,535**	$ 201,535
Computer software	**298,998**	298,998
Furniture and fixtures	**96,262**	96,262
Transportation equipment	**2,642,762**	1,940,791
Buildings	**12,697**	12,697
Transportation equipment under capital lease	**1,137,233**	1,137,233
Machinery and equipment	**22,137,493**	19,993,708
Machinery and equipment under capital lease	**844,165**	844,165
	27,371,145	24,525,389
Less accumulated depreciation	**(17,486,502)**	(14,241,605)
Total property and equipment	**$ 9,884,643**	$ 10,283,784

5. Notes Payable

Notes payable consist of the following:

December 31,	**2019**	2018
Various notes payable to a financial institution with monthly payments aggregating $98,166 and $112,614 at December 31, 2019 and 2018, plus interest ranging from 1.31% to 5.40%; due through January 2024; collateralized by the certain machinery and equipment.	**$ 3,030,309**	$ 4,188,214
Various notes payable to various financial lenders with monthly payments aggregating $108,305 and $36,937 at December 31, 2019 and 2018, plus interest ranging from 0.00% to 6.99%; due through August 2024; collateralized by certain transportation equipment, machinery and equipment.	**$ 4,324,466**	2,546,749
	7,354,775	6,734,963
Less current portion	**(2,189,964)**	(1,698,332)
Notes payable	**$ 5,164,811**	$ 5,036,631

At December 31, 2019, the aggregate principal maturities of long-term debt for each of the next five years is as follows:

December 31,	Amount
2020	**2,189,964**
2021	**2,054,605**
2022	**1,784,600**
2023	**1,067,560**
2024	**258,046**
Thereafter	**-**
Total	**7,354,775**

6. Obligations Under Capital Lease

The Company leases equipment under capital leases, wherein interest is computed at rates ranging from zero to 4.50%. The assets are depreciated over their estimated economic lives. Depreciation expense amounted to $289,752 in 2019 and $351,925 in 2018.

The following is a schedule of property held under capital lease:

	2019	2018
Machinery and equipment	**$ 844,165**	$ 844,165
Transportation equipment	**1,137,233**	1,137,233
Total equipment under capital lease	**1,981,398**	1,981,398
Less accumulated depreciation	**(1,447,796)**	(1,158,044)
Machinery and equipment	**533,602**	$ 823,354

At December 31, future minimum lease payments under the capital lease agreements are as follows:

Years	Amount
2020	**$ 378,667**
2021	**175,301**
2022	**101,911**
Total minimum lease payments	**655,879**
Less amount representing interest	**(24,162)**
Present value of net minimum lease payments	**631,717**
Less current portion	**(369,385)**
Long-term obligations under capital lease	**$ 262,332**

7. Retirement Plans

The Company makes contributions to various union-sponsored multiemployer pension plans that cover union employees. These plans call for monthly contributions based upon total gross monthly wages payable to the covered employees. The risks of participating in a multiemployer plan are different from single-employer plans in the following aspects:

a. Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.

b. If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.

c. If the Company chooses to stop participating in the multiemployer plan, the Company may be required to pay those plans an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

7. Retirement Plans (cont.)

The Company's participation in the multiemployer plan for the years ended December 31, 2019 and 2018 is outlined in the table below. The "EIN" column provides the Employer Identification Number (EIN). Unless otherwise noted, the most recent Pension Protection Act (PPA) zone status available in 2019 and 2018 is for the plan's year-end and is provided in the "Financial Health" column. The zone status is based on information that the Company received from the plan and is certified by the plan's actuary. Among other factors, plans in the green zone are at least 80 percent funded, plans in the yellow zone are between 65 percent and 80 percent funded, and plans in the red zone are less than 65 percent funded. The "Contract Expiration Date" column lists the expiration date of the collective-bargaining agreement to which the plan is subject. The last column lists other information with regards to their respective pension plan.

Name of Plan	EIN	2019 Contributions to Plan	2018 Contributions to Plan	2019 Financial Health	2018 Financial Health	Contract Expiration Date	Other
Operating Engineers Construction Industry and Miscellaneous Pension Fund Local #66	25-6135579	$ 800,023	$ 678,887	Green (Neither Endangered nor Critical)	Green (Neither Endangered nor Critical)	December 31, 2022	N/A
Laborers' District Council of Western Pennsylvania Pension Plan 1058	25-6135576	$ 1,890,138	$ 1,525,231	Yellow (Endangered)	Yellow (Endangered)	December 31, 2022	Funding improvement plan in place.
Greater Pennsylvania Carpenters' Pension Fund #9000	25-6135570	$ 88,819	$ 126,475	Yellow (Endangered)	Yellow (Endangered)	December 31, 2022	Funding improvement plan implemented in January 2013
Cement Masons Local 526 Combined Funds, Inc.	25-6103481	$ 303,227	$ 231,625	Yellow (Endangered)	Yellow (Endangered)	December 31, 2022	Funding improvement plan implemented in March 2012
All other plans (3 as of December 31, 2019 and 2018)		$ 94,693	$ 158,889				

None of the above plans require a minimum contribution. Total pension expense related to the above plans amounted to $3,176,900 and $2,721,107 for the years ended December 31, 2019 and 2018, respectively. These amounts are reflected in field overhead expenses in the accompanying statements of operations and retained earnings.

7. Retirement Plans (cont.)

The Company has a retirement savings plan for all eligible salaried employees as defined by the Plan. The employees may contribute up to 15% of their salary. The Company is not required to match the employees' contributions, and may make a discretionary contribution each year. The Company's matching contribution for the retirement savings plan for the years ended December 31, 2019 and 2018 was $55,468 and $46,624, respectively. For the years ended December 31, 2019 and 2018, the Company did not make discretionary contributions.

8. Major Customers and Vendors

The Company had two customers representing 44% of total revenues for the year ended December 31, 2019. The accounts receivable from these customers amounted to $4,498,225 at December 31, 2019. The Company had two customers representing 36% of total revenues for the year ended December 31, 2018. The accounts receivable from these customers amounted to $2,527,688 at December 31, 2018.

Purchases of materials from one supplier accounted for approximately 18% of the Company's material purchases during the year ended December 31, 2019. The accounts payable to this supplier was $1,333,603 at December 31, 2019. Purchases of materials from one supplier accounted for approximately 16% of the Company's material purchases during the year ended December 31, 2018. The accounts payable to this supplier was $5,882,847 at December 31, 2018.

9. Related Party Transactions

The Company leases office facilities, warehouse facilities and a storage yard under informal lease agreements with the Company's majority stockholder, TDF Services, Inc. (TDF) and FJIC, LLC (FJIC), affiliates in which the Company's majority stockholder has an ownership interest. The leases may be terminated by either party upon ninety days written notification. The Company is responsible for the payment of all utilities and services. Rent expense charged to operations for each of the years ended December 31, 2019 and 2018 was $242,295.

The Company secures insurance coverage and finances machinery and equipment purchases through captive insurance companies, the Viking Assurance Company, Ltd. ("Viking") and Creekside Reinsurance Company, Ltd. ("Creekside") which are related parties. No insurance premiums were paid directly to these entities for the years ended December 31, 2019 and 2018. In May of 2020, the Company received approximately $882,000 in insurance reimbursements from Viking.

9. Related Party Transactions (cont.)

Notes payable to related parties consist of the following:

December 31,	**2019**	2018
Various notes payable to related captive insurance companies with monthly payments aggregating $28,467 and $35,297 at December 31, 2019 and 2018 plus interest of 6.00%; due through December 2022; collateralized by certain of the Company's machinery and equipment	**$ 504,975**	$ 734,535
In July 2018, the Company entered into a promissory note with Viking for an aggregate principal balance of $2,000,000 which bears interest at 2.83%. The Company is required to make interest only payments through its maturity in 2023.	**2,000,000**	2,000,000
	2,504,975	2,734,535
Less current portion	**(336,440)**	(332,652)
Notes payable – related parties	**$ 2,168,535**	$ 2,401,883

At December 31, 2019, the aggregate future principal maturities of long-term debt due to related parties is as follows:

December 31,	Amount
2020	**$ 336,440**
2021	**117,011**
2022	**48,386**
2023	**2,003,138**
Total	**$ 2,504,975**

9. Related Party Transactions (cont.)

The Company receives hauling, repair services, and on-site job services from related parties and other affiliated companies, which are owned by the majority stockholder or an immediate family member of management. The activity detailed below is reflected in field overhead expenses and accounts payable – related parties in the accompanying financial statements.

	Total
Balance at December 31, 2018	**$ 3,263,598**
Cost of revenues	**12,649,601**
Cash payments	**(12,334,983)**
Balance at December 31, 2019	**$ 3,578,216**

The Company performs fueling services to related parties and other affiliated companies, which are owned by the majority stockholder or an immediate family member of management. Further, the Company performs subcontracting services to Total Construction Service, Inc. which is wholly owned by the majority stockholder. The activity detailed below is reflected in accounts receivable – related parties.

	Total
Balance at December 31, 2018	**$ 484,314**
Contract revenues	**1,105,534**
Cash payments	**(1,179,394)**
Balance at December 31, 2019	**$ 410,454**

The Company has made advances to certain affiliates and stockholders which are unsecured and non-interest bearing with no repayment terms specified.

A summary of the activity with the affiliates and stockholders for the year ended December 31, 2019 is presented below.

	Affiliates	Stockholders	Total
Balance at December 31, 2018	$ 1,290,408	$ (39,112)	$ 1,251,296
Cash advances	200,153	-	200,153
Cash repayments received	(200,250)	-	(200,250)
Balance at December 31, 2019	**$ 1,290,311**	**$ (39,112)**	**$ 1,251,199**

The Company does not intend to demand payment of the advances during the year ended December 31, 2020, therefore, the advances to the stockholders are classified as long-term in the accompanying financial statements.

10. Line of Credit

On June 12, 2014, the Company entered into an agreement with a bank for a revolving line of credit with an initial maximum principal amount of $7,000,000, maturing on August 31, 2019. The line of credit bears interest at the bank's prime lending rate (4.75% and 5.5% at December 31, 2019 and 2018) and at December 31, 2019 and 2018 there was an outstanding balance of $7,1000,000 and $3,100,000, respectively. The line is collateralized by all company assets and is personally guaranteed by two stockholders. In August 2019, the Company entered into an agreement to increase the revolving line of credit available borrowings to $12,000,000, maturing on August 31, 2020.

11. Operating Leases

The Company leases various equipment and motor vehicles under non-cancellable operating leases. The leases expire at various dates through 2023. Rental expense under these agreements and short-term project leases was $1,248,738 and $1,284,133 in 2019 and 2018, respectively.

The following is a summary of future minimum payments under operating leases that have initial or remaining non-cancelable lease terms in excess of one year at December 31, 2019:

	Amount
2020	**$ 335,335**
2021	**211,823**
2022	**131,470**
2023	**69,300**
Total minimum lease payments	**$ 747,928**

12. Commitments and Contingencies

In March 2020, the Company settled its two sales and use tax audits by the Commonwealth of Pennsylvania. As of December 31, 2019, the Company has an additional liability of $215,098 for this matter. The amount is reflected in accounts payable the accompanying financial statements as of December 31, 2019.

13. Subsequent Events

Subsequent events have been evaluated through the date of the independent auditors' report which is the date the financial statements were available to be issued. As a result of the spread of the novel coronavirus (COVID-19), economic uncertainties have arisen which could negatively impact operations. Currently, there is significant uncertainty around the breadth and duration of business disruptions related to the COVID-19 coronavirus. The Company has experienced delays on certain projects, but is optimistic that these will be completed on-time as delays and stop-work orders are lifted. At this time, the Company is unable to determine the impact of the COVID-19 coronavirus on its operations.

In April 2020, the Company entered into a loan agreement with a financial institution, as lender, pursuant to which the financial institution is to provide a loan in the aggregate amount of $6,034,500 on the terms and conditions contained in the loan agreements, including such terms and conditions related to the forgiveness of the loans and the guaranty by the U.S. Small Business Administration ("SBA"), an agency of the Government of the United States, under the Paycheck Protection Program. Interest on the loans is charged at 1% and principal and interest payments are to begin seven months from the date of the loan. The indebtedness evidenced by these notes may be forgiven, pursuant to and subject to, the terms of the Paycheck Protection Program (15 U.S.C. § 636(a)(36)), and the guidance issued in relation thereto by SBA and/or the U.S. Department of Treasury.

Supplementary Information

Independent Auditors' Report on Supplementary Information

Our audits of the financial statements included in the preceding section of this report were conducted for the purpose of forming an opinion on those statements as a whole. The supplementary information presented in the following section of this report is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audits of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

Urish Popeck & Co., LLC

June 26, 2020
Pittsburgh, Pennsylvania

A. Folino Construction, Inc.

Non-U.S. GAAP Financial Measure (EBITDA)
(Unaudited)

Years Ended December 31, 2019 and 2018

The Company uses earnings before income taxes, depreciation and amortization "EBITDA," a non-U.S. GAAP financial measure, for internal management reporting, when evaluating period-to-period changes and, in some cases, providing guidance on possible future results. This measure is not a measure of financial performance under U.S. GAAP and should be considered in addition to, not as a substitute for, net income (loss) or cash flows from operations, investing or financing activities, and should not be viewed as liquidity measures or indicator of cash flows reported in accordance with U.S. GAAP. We strongly encourage readers of the financial statements to review our financial statements in their entirety and not rely on any single financial measure. See *Reconciliation of Non-U.S. GAAP Financial Measure* to the most comparable U.S. GAAP measure below:

Years Ended December 31,	**2019**	2018
Net income (loss)	**$ 1,152,467**	$ (1,719,575)
Depreciation	**3,259,390**	2,836,316
Interest income	**(61,302)**	(24,562)
Interest expense	**631,973**	362,038
Total EBITDA	**$ 4,982,528**	$ 1,454,217

A. Folino Construction, Inc.

Financial Statements

As of and for the Years Ended December 31, 2018 and 2017

AN INDEPENDENT MEMBER OF BDO ALLIANCE USA

URISH POPECK & CO., LLC

Accountants and Consultants

A. Folino Construction, Inc.

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Independent Auditors' Report

To the Board of Directors
A. Folino Construction, Inc.
Oakmont, Pennsylvania

We have audited the accompanying financial statements of A. Folino Construction, Inc. (a Pennsylvania S Corporation, the Company), which comprise the balance sheets as of December 31, 2018 and 2017, and the related statements of operations and retained earnings, and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Urish Popeck & Co., LLC

July 17, 2019
Pittsburgh, Pennsylvania

December 31,	**2018**	2017
Assets		
Current assets		
Cash	**$ 1,903,239**	$ 2,221,287
Accounts receivable, less allowance for doubtful accounts of $300,000 at December 31, 2018 and 2017	**20,724,034**	14,325,616
Accounts receivable - related parties	**484,314**	534,191
Prepaid expenses	**940,695**	872,542
Costs and estimated earnings in excess of billings on uncompleted contracts	**5,054,118**	1,524,644
Total current assets	**29,106,400**	19,478,280
Property and equipment, less accumulated depreciation of $14,241,605 and $11,864,902	**10,283,784**	6,443,342
Notes receivable and advances - related parties	**1,251,296**	1,251,040
Total assets	**$ 40,641,480**	$ 27,172,662

A. Folino Construction, Inc.

Balance Sheets

December 31,	**2018**	2017
Liabilities and Stockholders' Equity		
Current liabilities		
Line of credit	**$ 3,100,000**	$ 1,100,000
Accounts payable	**15,536,917**	8,878,691
Accounts payable - related parties	**3,263,598**	1,377,531
Accrued expenses	**344,224**	172,872
Notes payable - related parties	**332,652**	328,184
Notes payable - current portion	**1,698,332**	877,718
Obligations under capital lease - current portion	**367,009**	432,434
Billings in excess of costs and estimated earnings on uncompleted contracts	**225,507**	935,325
Total current liabilities	**24,868,239**	14,102,755
Long-term liabilities		
Notes payable	**5,036,631**	2,135,916
Notes payable - related parties	**2,401,883**	517,100
Obligations under capital leases	**630,955**	878,294
Total long-term liabilities	**8,069,469**	3,531,310
Total liabilities	**32,937,708**	17,634,065
Stockholders' equity		
Common stock - par value $1 per share; 500 shares authorized, issued and outstanding	**500**	500
Retained earnings	**7,703,272**	9,538,097
Total stockholders' equity	**7,703,772**	9,538,597
Total liabilities and stockholders' equity	**$ 40,641,480**	$ 27,172,662

The accompanying notes are an integral part of these financial statements.

A. Folino Construction, Inc.

Statements of Operations and Retained Earnings

Years Ended December 31,	**2018**	2017
Revenues		
Contract revenue	**$ 85,329,447**	$ 68,952,304
Total revenues	**85,329,447**	68,952,304
Cost of revenues		
Direct contract costs	**48,645,238**	37,797,598
Field overhead expenses	**30,273,384**	23,430,169
Total cost of revenues	**78,918,622**	61,227,767
Gross profit	**6,410,825**	7,724,537
General and administrative expenses	**8,034,782**	6,966,129
Operating (loss) income	**(1,623,957)**	758,408
Other income (expense)		
Gain (loss) on disposal of equipment	**8,191**	(71,039)
Other income	**233,667**	141,972
Interest income	**24,562**	-
Interest expense	**(362,038)**	(178,456)
Total other expense, net	**(95,618)**	(107,523)
Net (loss) income	**(1,719,575)**	650,885
Distributions to stockholders	**(115,250)**	-
Retained earnings, beginning of year	**9,538,097**	8,887,212
Retained earnings, end of year	**$ 7,703,272**	$ 9,538,097

The accompanying notes are an integral part of these financial statements.

A. Folino Construction, Inc.

Statements of Cash Flows

Years Ended December 31,	**2018**	2017
Cash flows from operating activities:		
Net (loss) income	**$ (1,719,575)**	$ 650,885
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:		
Depreciation	**2,836,316**	2,205,851
(Gain) loss on disposal of equipment	**(8,191)**	71,039
Cash provided by (used in) operating assets and liabilities:		
Accounts receivable	**(6,438,419)**	(2,971,129)
Accounts receivable - related parties	**89,878**	(111,780)
Prepaid expenses	**(68,153)**	29,917
Costs and estimated earnings in excess of billings on uncompleted contracts	**(3,529,473)**	(684,648)
Other assets	**-**	8,281
Accounts payable	**6,658,228**	2,502,241
Accounts payable - related parties	**1,886,067**	830,705
Accrued expenses	**171,352**	172,872
Billings in excess of costs and estimated earnings on uncompleted contracts	**(709,818)**	(493,675)
Notes receivable and advances - related parties, net	**(256)**	-
Net cash (used in) provided by operating activities	**(832,044)**	2,210,559
Cash flows from investing activities:		
Purchases of property and equipment	**(1,378,979)**	(526,118)
Proceeds from sale of equipment	**-**	7,367
Net cash used in investing activities	**(1,378,979)**	(518,751)
Cash flows from financing activities:		
Borrowings (payments) on line of credit	**2,000,000**	(227,544)
Payments on notes payable	**(1,240,529)**	(1,107,449)
Payments on obligations under capital lease	**(416,993)**	(565,062)
Payments on related party notes payable	**(334,253)**	(349,033)
Borrowings from related party notes payable	**2,000,000**	499,502
Distributions to stockholders	**(115,250)**	-
Net cash provided by (used in) financing activities	**1,892,975**	(1,749,586)
Net decrease in cash and cash equivalents	**(318,048)**	(57,778)
Cash, beginning of year	**2,221,287**	2,279,065
Cash, end of year	**$ 1,903,239**	$ 2,221,287
Supplemental disclosures of cash flow information:		
Cash paid during the year for:		
Interest	**$ 362,038**	$ 178,456
Noncash investing and financing activities		
New loans and capital leases for acquisition of equipment, less trade-ins	**$ 5,289,588**	$ 2,804,280

The accompanying notes are an integral part of these financial statements.

1. Organization, Business and Summary of Significant Accounting Policies

The organization, business and summary of significant accounting policies of A. Folino Construction, Inc. (the Company) are presented to assist in understanding the accompanying financial statements. The financial statements and notes are those of the Company and its management is responsible for their integrity and objectivity. The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America which, in the opinion of management, have been consistently applied.

Business

The Company, headquartered in Oakmont, Pennsylvania, is a general contractor and subcontractor in the asphalt paving, concrete, excavation and construction industry, and operates principally in the Southwestern Pennsylvania area.

The Company is related through common ownership to several other companies. Three of these entities actively participate in the Company's operations providing hauling services, repair and maintenance for the Company's automobiles, trucks and equipment and captive insurance coverage (see Note 9). The Company actively provides subcontracting services to one of the companies (see Note 9).

Significant transactions and balances with these companies are not consolidated or eliminated in these financial statements (see Note 9).

Revenue Recognition

The Company recognizes revenue in accordance with the percentage-of-completion method of accounting for contracts that extend for periods in excess of one year. Accordingly, income is recognized in the ratio that costs incurred bears to estimated total costs. The aggregate of costs incurred and estimated earnings on uncompleted contracts in excess of related billings is shown as a current asset, and the aggregate of billings on uncompleted contracts in excess of related costs incurred and estimated earnings is shown as a current liability.

The length of the Company's contracts vary, but typically exceed a period of one year.

Changes in job performance, job conditions and estimated profitability may result in revisions to revenue and costs. The effect of these revisions are recognized in the period in which they occur and provisions for estimated losses on uncompleted contracts are made as soon as such losses are known.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts and disclosures. Significant estimates relate to the revenue and related expenses recognized under the percentage-of-completion method and the allowance for doubtful accounts. Actual amounts could materially differ from those estimates.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Cash and Concentrations of Credit Risk

The statements of cash flows classify changes in cash according to operating, investing or financing activities. Financial instruments, which potentially expose the Company to concentrations of credit risk, consist principally of cash and accounts receivable.

The Company maintains its cash in non-interest bearing accounts that are insured by the Federal Deposit Insurance Company up to $250,000. The Company's deposits may, from time to time, exceed the $250,000 limit; however, management believes that there is no unusual risk present, as the Company places its cash with financial institutions which management considers being of high quality.

Concentrations of credit risk with respect to accounts receivable result from a significant portion of revenues being derived from the Commonwealth of Pennsylvania, various boroughs, municipalities and school systems. This risk is reduced due to the customer base being dispersed throughout these groups and the Company closely monitoring extensions of credit.

Property and Equipment

Property and equipment are stated at cost. Maintenance and repairs that are not considered to extend the useful life of assets are charged to operations as incurred. The cost of assets sold or retired and the related accumulated depreciation are removed from the accounts with any resulting gain or loss reflected in operations. Depreciation for financial statement purposes is provided in accordance with the straight-line method over the estimated useful lives as follows:

Office equipment	5 years
Computer software	3-5 years
Leasehold improvements	5-39 years
Buildings	39 years
Furniture and fixtures	7 years
Transportation equipment	5 years
Machinery and equipment	5 years

Accounts Receivable

Based on management's review of outstanding trade receivables at year-end, all known losses at December 31, 2018 and 2017 have been reflected in the financial statements. The Company generally extends credit to customers without requiring collateral and monitors these extensions of credit. The Company does not have any off-balance-sheet credit exposure related to its customers.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Impairment of Long-lived Assets

In accordance with FASB ASC 360, *Long-Lived Assets*, such property and equipment, are reviewed for impairment, whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset.

Income Taxes

The Company has elected to be treated as an S-Corporation for both Federal and Pennsylvania income tax purposes. The effect of this election is the elimination of income taxes at the corporate level and the inclusion of the Company's income or loss in the individual tax returns of the stockholders. Therefore, no provision for Federal or state income taxes is included in the accompanying financial statements. For income tax purposes, the Company uses the accrual basis of accounting and recognizes contract revenue on the percentage-of-completion method of accounting.

ASC 740-10, *Accounting for Uncertainty in Income Taxes* clarifies the accounting for uncertainty in income taxes recognized in an entity's financial statements. This Interpretation prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. In addition, ASC 740-10 provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. For the Company, tax positions taken include the Company's status as an S-Corporation and the approval and qualification for this status. Management has reviewed the current status of the Company's election as an S-Corporation and has concluded that the Company has no liability or required disclosure relating to this tax position. Corporate tax years ended December 31, 2014 and prior are no longer subject to tax authority audit.

Comprehensive Income

Net income is the Company's only component of comprehensive income for the years ended December 31, 2018 and 2017.

Advertising

Advertising costs are charged to operations as incurred.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Reclassifications

Certain reclassifications have been made to prior year financial statements to conform with current year presentation.

Recently Issued Accounting Pronouncements

During May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, *Revenue from Contracts with Customers* (Topic 606). ASU 2014-09 establishes principles for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services. ASU 2014-09 is effective for fiscal years beginning after December 15, 2018. The Company is currently assessing the effect that ASU 2014-09 will have on its results of operations, financial position and cash flows.

During February 2016, the FASB issued ASU No. 2016-02, *Leases* (Topic 842). ASU 2016-02 requires lessees to recognize the assets and liabilities that arise from leases on the statement of financial position. A lessee should recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. ASU 2016-02 is effective for annual periods beginning after December 15, 2019. Early adoption is permitted. The Company is currently assessing the effect that ASU 2016-02 will have on its results of operations, financial position and cash flows.

2. Accounts Receivable

Accounts receivable consist of the following:

December 31,	**2018**	2017
Billed		
Completed jobs	**$ 5,767,353**	$ 3,981,495
Jobs in progress	**12,491,886**	8,172,609
Retainage	**2,764,795**	2,471,512
	21,024,034	14,625,616
Less: allowance for doubtful accounts	**(300,000)**	(300,000)
Accounts receivable	**$ 20,724,034**	$ 14,325,616

The Company expects retainage amounts to be collected within the next twelve months and have been classified as current in the accompanying financial statements.

The Company provides an allowance for doubtful accounts based on management's analysis of the accounts receivable balances at year-end. Collections on accounts previously written-off are included in income as received.

3. Contracts in Progress

The status of costs incurred, estimated earnings and billings on uncompleted contracts is as follows:

December 31,	**2018**	2017
Costs incurred on uncompleted contracts	**$ 95,913,151**	$ 45,465,261
Estimated earnings	**17,129,867**	9,557,857
	113,043,018	55,023,118
Less billings to date	**(108,214,407)**	(54,433,799)
Total	**$ 4,828,611**	$ 589,319

Included in the balance sheet under the following captions:

December 31,	**2018**	2017
Costs and estimated earnings in excess of billings on uncompleted contracts	**$ 5,054,118**	$ 1,524,644
Billings in excess of costs and estimated earnings on uncompleted contracts	**(225,507)**	(935,325)
Total	**$ 4,828,611**	$ 589,319

4. Property and Equipment

Property and equipment consists of the following:

December 31,	**2018**	2017
Office equipment	**$ 201,535**	$ 201,535
Computer software	**298,998**	289,041
Furniture and fixtures	**96,262**	76,304
Transportation equipment	**1,940,791**	1,451,404
Buildings	**12,697**	12,697
Transportation equipment under capital lease	**1,137,233**	968,501
Machinery and equipment	**19,993,708**	14,432,790
Machinery and equipment under capital lease	**844,165**	875,972
	24,525,389	18,308,244
Less accumulated depreciation	**(14,241,605)**	(11,864,902)
Total property and equipment	**$ 10,283,784**	$ 6,443,342

5. Notes Payable

Notes payable consist of the following:

December 31,	**2018**	2017
Various notes payable to a financial institution with monthly payments aggregating $112,614 and 78,842 at December 31, 2018 and 2017, plus interest ranging from 1.31% to 5.40%; due through January 2024; collateralized by the certain machinery and equipment.	**$ 4,188,214**	$ 2,399,065
Various notes payable to various financial lenders with monthly payments aggregating $36,937 and $15,968 at December 31, 2018 and 2017, plus interest ranging from1.95% to 6.99%; due through August 2024; collateralized by certain transportation equipment, machinery and equipment.	**2,546,749**	614,569
	6,734,963	3,013,634
Less current portion	**(1,698,332)**	(877,718)
Notes payable	**$ 5,036,631**	$ 2,135,916

At December 31, 2018, the aggregate principal maturities of long-term debt for each of the next five years is as follows:

December 31,	Amount
2019	**$ 1,698,332**
2020	**1,639,072**
2021	**1,554,705**
2022	**1,267,097**
2023	**556,489**
Thereafter	**19,268**
Total	**$ 6,734,963**

6. Obligations Under Capital Lease

The Company leases equipment under capital leases, wherein interest is computed at rates ranging from zero to 4.50%. The assets are depreciated over their estimated economic lives. Depreciation expense amounted to $351,925 in 2018 and $257,939 in 2017.

The following is a schedule of property held under capital lease:

	2018	2017
Machinery and equipment	**$ 844,165**	$ 875,972
Transportation equipment	**1,137,233**	968,501
Total equipment under capital lease	**1,981,398**	1,844,473
Less accumulated depreciation	**(1,158,044)**	(837,926)
Machinery and equipment	**$ 823,354**	$ 1,006,547

At December 31, future minimum lease payments under the capital lease agreements are as follows:

Years	Amount
2019	**$ 379,787**
2020	**378,667**
2021	**175,301**
2022	**101,911**
Total minimum lease payments	**1,035,666**
Less amount representing interest	**(37,702)**
Present value of net minimum lease payments	**997,964**
Less current portion	**367,009**
Long-term obligations under capital lease	**$ 630,955**

7. Retirement Plans

The Company makes contributions to various union-sponsored multiemployer pension plans that cover union employees. These plans call for monthly contributions based upon total gross monthly wages payable to the covered employees. The risks of participating in a multiemployer plan are different from single-employer plans in the following aspects:

a. Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.

b. If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.

c. If the Company chooses to stop participating in the multiemployer plan, the Company may be required to pay those plans an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

7. Retirement Plans (cont.)

The Company's participation in the multiemployer plan for the years ended December 31, 2018 and 2017 is outlined in the table below. The "EIN" column provides the Employer Identification Number (EIN). Unless otherwise noted, the most recent Pension Protection Act (PPA) zone status available in 2018 and 2017 is for the plan's year-end and is provided in the "Financial Health" column. The zone status is based on information that the Company received from the plan and is certified by the plan's actuary. Among other factors, plans in the green zone are at least 80 percent funded, plans in the yellow zone are between 65 percent and 80 percent funded, and plans in the red zone are less than 65 percent funded. The "Contract Expiration Date" column lists the expiration date of the collective-bargaining agreement to which the plan is subject. The last column lists other information with regards to their respective pension plan.

Name of Plan	EIN	2018 Contributions to Plan	2017 Contributions to Plan	2018 Financial Health	2017 Financial Health	Contract Expiration Date	Other
Operating Engineers Construction Industry and Miscellaneous Pension Fund Local #66	25-6135579	$ 678,887	$ 433,368	Green (Neither Endangered nor Critical)	Green (Neither Endangered nor Critical)	December 31, 2019	N/A
Laborers' District Council of Western Pennsylvania Pension Plan 1058	25-6135576	$ 1,663,171	$ 1,249,153	Yellow (Endangered)	Red (Critical)	December 31, 2019	Funding improvement plan in place.
Greater Pennsylvania Carpenters' Pension Fund #9000	25-6135570	$ 126,475	$ 117,538	Yellow (Endangered)	Yellow (Endangered)	December 31, 2019	Funding improvement plan implemented in January 2013
Cement Masons Local 526 Combined Funds, Inc.	25-6103481	$ 252,574	$ 231,306	Yellow (Endangered)	Yellow (Endangered)	December 31, 2019	Funding improvement plan implemented in March 2012

None of the above plans require a minimum contribution. Total pension expense related to the above plans amounted to $2,721,107 and $2,031,365 for the years ended December 31, 2018 and 2017, respectively. These amounts are reflected in field overhead expenses in the accompanying statements of operations and retained earnings.

7. Retirement Plans (cont.)

The Company has a retirement savings plan for all eligible salaried employees as defined by the Plan. The employees may contribute up to 15% of their salary. The Company is not required to match the employees' contributions, and may make a discretionary contribution each year. The Company's matching contribution for the retirement savings plan for the years ended December 31, 2018 and 2017 was $46,624 and $42,963, respectively. For the years ended December 31, 2018 and 2017, the Company did not make discretionary contributions.

8. Major Customers and Vendors

The Company had two customers representing 36% of total revenues for the year ended December 31, 2018. The accounts receivable from these customers amounted to $2,527,688 at December 31, 2018. The Company had two customers representing 35% of total sales for the year ended December 31, 2017. The accounts receivable from these customers amounted to $2,175,270 at December 31, 2017.

Purchases of materials from one supplier accounted for approximately 16% of the Company's material purchases during the year ended December 31, 2018. The accounts payable to this supplier was $5,882,847 at December 31, 2018. Purchases of materials from one supplier accounted for approximately 21% of the Company's material purchases during the year ended December 31, 2017. The accounts payable to this supplier was $3,287,145 at December 31, 2017.

9. Related Party Transactions

The Company leases office facilities, warehouse facilities and a storage yard under informal lease agreements with the Company's majority stockholder, TDF Services, Inc. (TDF) and FJIC, LLC (FJIC), affiliates in which the Company's majority stockholder has an ownership interest. The leases may be terminated by either party upon ninety days written notification. The Company is responsible for the payment of all utilities and services. Rent expense charged to operations for each of the years ended December 31, 2018 and 2017 was $242,295.

The Company secures insurance coverage and finances machinery and equipment purchases through captive insurance companies, the Viking Assurance Company, Ltd. ("Viking") and Creekside Reinsurance Company, Ltd. ("Creekside") which are a related parties. No insurance premiums were paid directly to these entities for the years ended December 31, 2018 and 2017.

9. Related Party Transactions (cont.)

Notes payable to related parties consist of the following:

December 31,	**2018**	2017
Various notes payable to related captive insurance companies with monthly payments aggregating $35,297 and $33,981 at December 31, 2018 and 2017 plus interest of 6.00%; due through December 2022; collateralized by certain of the Company's machinery and equipment	**$ 734,535**	$ 845,284
In July 2018, the Company entered into a promissory note with Viking for an aggregate principal balance of $2,000,000 which bears interest at 2.83%. The Company is required to make interest only payments through its maturity in 2023.	**2,000,000**	-
	2,734,535	845,284
Less current portion	**(332,652)**	(328,184)
Notes payable – related parties	**$ 2,401,883**	$ 517,100

At December 31, 2018, the aggregate principal maturities of long-term debt due to related parties for each of the next five years is as follows:

December 31,	Amount
2019	**$ 332,652**
2020	**259,968**
2021	**105,621**
2022	**36,294**
2023	**2,000,000**
Total	**$ 2,734,535**

9. Related Party Transactions (cont.)

The Company receives hauling, repair services, and on-site job services from TDF and other affiliated companies, which are owned by the majority stockholder or an immediate family member of management. The activity detailed below is reflected in field overhead expenses and accounts payable – related parties in the accompanying financial statements.

	Total
Balance at December 31, 2017	**$ 1,377,531**
Cost of revenues	**7,331,834**
Cash payments	**(5,445,767)**
Balance at December 31, 2018	**$ 3,263,598**

The Company performs fueling services to TDF and other affiliated companies, which are owned by the majority stockholder or an immediate family member of management. Further, the Company performs subcontracting services to Total Construction Service, Inc. which is wholly owned by the majority stockholder. The activity detailed below is reflected in accounts receivable – related parties.

	Total
Balance at December 31, 2017	**$ 534,191**
Contract revenues	**1,398,530**
Cash payments	**(1,448,407)**
Balance at December 31, 2018	**$ 484,314**

The Company has made advances to certain affiliates and stockholders which are unsecured and non-interest bearing with no repayment terms specified.

A summary of the activity with the affiliates and stockholders for the year ended December 31, 2018 is presented below.

	Affiliates	Stockholders	Total
Balance at December 31, 2017	$ 1,290,152	$ (39,112)	$ 1,251,040
Cash advances	4,583	-	4,583
Cash repayments received	(4,327)	-	(4,327)
Balance at December 31, 2018	**$ 1,290,408**	**$ (39,112)**	**$ 1,251,296**

The Company does not intend to demand payment of the advances during the year ended December 31, 2019, therefore, the advances to the stockholders are classified as long-term in the accompanying financial statements.

10. Line of Credit

On June 12, 2014, the Company entered into an agreement with a bank for a revolving line of credit with an initial maximum principal amount of $7,000,000, maturing on August 31, 2019. The line of credit bears interest at the bank's prime lending rate (5.5% and 4.50% at December 31, 2018 and 2017) and at December 31, 2018 there was an outstanding balance of $3,100,000. The line is collateralized by all company assets and is personally guaranteed by two stockholders.

11. Operating Leases

The Company leases various equipment and motor vehicles under non-cancellable operating leases. The leases expire at various dates through 2022. Rental expense under these agreements was $1,284,133 and $627,223 in 2018 and 2017, respectively.

The following is a summary of future minimum payments under operating leases that have initial or remaining non-cancelable lease terms in excess of one year at December 31, 2018:

	Amount
2019	**$ 307,675**
2020	**210,242**
2021	**86,730**
2022	**12,502**
Total minimum lease payments	**$ 617,149**

12. Commitments and Contingencies

The Company is currently subject to two sales and use tax audit by the Commonwealth of Pennsylvania. If liable, the Company will have to remit payment for taxes, interest and penalties due. In 2015, the Company remitted $95,233 to the Commonwealth of Pennsylvania. As of December 31, 2018 and 2017, the Company has an additional potential liability of $407,534 and $307,534 for this matter, respectively, which is Management's best estimate of the settlement amount. Consequently, $402,767 and $100,000 was charged to operations in 2015 and 2018, respectively. This estimate is reflected in accounts payable and accrued expenses in the accompanying financial statements as of December 31, 2018 and 2017.

13. Subsequent Events

Subsequent events have been evaluated through the date of the independent auditors' report which is the date the financial statements were available to be issued. No other events requiring disclosure or recording in the financial statements have been identified for the year ended December 31, 2018.

Supplementary Information

Independent Auditors' Report on Supplementary Information

Our audits of the financial statements included in the preceding section of this report were conducted for the purpose of forming an opinion on those statements as a whole. The supplementary information presented in the following section of this report is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audits of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

Urish Popeck & Co., LLC

July 17, 2019

A. Folino Construction, Inc.

Non-U.S. GAAP Financial Measure (EBITDA)
(Unaudited)

Years Ended December 31, 2018 and 2017

The Company uses earnings before income taxes, depreciation and amortization "EBITDA," a non-U.S. GAAP financial measure, for internal management reporting, when evaluating period-to-period changes and, in some cases, providing guidance on possible future results. This measure is not a measure of financial performance under U.S. GAAP and should be considered in addition to, not as a substitute for, net income (loss) or cash flows from operations, investing or financing activities, and should not be viewed as liquidity measures or indicator of cash flows reported in accordance with U.S. GAAP. We strongly encourage readers of the financial statements to review our financial statements in their entirety and not rely on any single financial measure. See *Reconciliation of Non-U.S. GAAP Financial Measure* to the most comparable U.S. GAAP measure below:

Years Ended December 31,	**2018**	2017
Net (loss) income	**$ (1,719,575)**	$ 650,885
Depreciation	**2,836,316**	2,205,851
Interest expense	**362,038**	178,456
Total EBITDA	**$ 1,478,779**	$ 3,035,192

A. Folino Construction, Inc.

Financial Statements

As of and for the Years Ended December 31, 2017 and 2016

AN INDEPENDENT MEMBER OF BDO ALLIANCE USA

URISH POPECK & CO., LLC

Accountants and Consultants

A. Folino Construction, Inc.

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Independent Auditors' Report

To the Board of Directors
A. Folino Construction, Inc.
Oakmont, Pennsylvania

We have audited the accompanying financial statements of A. Folino Construction, Inc. (a Pennsylvania S Corporation, the Company), which comprise the balance sheets as of December 31, 2017 and 2016, and the related statements of income and retained earnings, and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Urish Popeck & Co., LLC

April 3, 2018
Pittsburgh, Pennsylvania

December 31,	**2017**	2016
Assets		
Current assets		
Cash	**$ 2,221,287**	$ 2,279,065
Accounts receivable, less allowance for doubtful accounts of $300,000 at December 31, 2017 and 2016	**14,325,616**	11,354,487
Accounts receivable - related parties	**534,191**	422,411
Prepaid expenses	**872,542**	902,459
Costs and estimated earnings in excess of billings on uncompleted contracts	**1,524,644**	839,996
Other assets	**-**	8,281
Total current assets	**19,478,280**	15,806,699
Property and equipment, less accumulated depreciation of $11,864,902 and $10,430,386	**6,443,342**	5,397,201
Notes receivable and advances - related parties	**1,251,040**	1,251,040
Total assets	**$ 27,172,662**	$ 22,454,940

A. Folino Construction, Inc.

Balance Sheets

December 31,	**2017**	2016
Liabilities and Stockholders' Equity		
Current liabilities		
Line of credit	**$ 1,100,000**	$ 1,327,544
Accounts payable	**8,878,691**	6,376,450
Accounts payable - related parties	**1,377,531**	546,826
Accrued expenses	**172,872**	-
Notes payable - related parties	**328,184**	270,313
Notes payable - current portion	**877,718**	868,075
Obligations under capital lease - current portion	**432,434**	599,059
Billings in excess of costs and estimated earnings on uncompleted contracts	**935,325**	1,429,000
Total current liabilities	**14,102,755**	11,417,267
Long-term liabilities		
Notes payable	**2,135,916**	1,060,874
Notes payable - related parties	**517,100**	424,502
Obligations under capital leases	**878,294**	664,585
Total long-term liabilities	**3,531,310**	2,149,961
Total liabilities	**17,634,065**	13,567,228
Stockholders' equity		
Common stock - par value $1 per share; 500 shares authorized, issued and outstanding	**500**	500
Retained earnings	**9,538,097**	8,887,212
Total stockholders' equity	**9,538,597**	8,887,712
Total liabilities and stockholders' equity	**$ 27,172,662**	$ 22,454,940

The accompanying notes are an integral part of these financial statements.

A. Folino Construction, Inc.

Statements of Income and Retained Earnings

Years Ended December 31,	**2017**	2016
Revenues		
Contract revenue	**$ 68,952,304**	$ 57,215,488
Rental revenue	**574**	27,979
Total revenues	**68,952,878**	57,243,467
Cost of revenues		
Direct contract costs	**37,797,598**	32,297,052
Field overhead expenses	**21,151,439**	16,373,415
Total cost of revenues	**58,949,037**	48,670,467
Gross profit	**10,003,841**	8,573,000
General and administrative expenses	**9,244,859**	8,011,138
Operating income	**758,982**	561,862
Other income (expense)		
Loss on disposal of equipment	**(71,039)**	(5,296)
Other income	**141,398**	38,707
Interest expense	**(178,456)**	(158,495)
Total other income (expense), net	**(108,097)**	(125,084)
Net income	**650,885**	436,778
Distributions to stockholder	**-**	(115,000)
Retained earnings, beginning of year	**8,887,212**	8,565,434
Retained earnings, end of year	**$ 9,538,097**	$ 8,887,212

The accompanying notes are an integral part of these financial statements.

A. Folino Construction, Inc.

Statements of Cash Flows

Years Ended December 31,	**2017**	2016
Cash flows from operating activities:		
Net income	**$ 650,885**	$ 436,778
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	**2,205,851**	2,139,160
Loss on disposal of equipment	**71,039**	5,296
Cash provided by (used in) operating assets and liabilities:		
Accounts receivable	**(2,971,129)**	1,817,829
Accounts receivable - related parties	**(111,780)**	276,250
Prepaid expenses	**29,917**	(252,972)
Costs and estimated earnings in excess of billings on uncompleted contracts	**(684,648)**	(787,306)
Other assets	**8,281**	8,089
Accounts payable	**2,502,241**	(502,008)
Accounts payable - related parties	**830,705**	(70,461)
Accrued expenses	**172,872**	-
Billings in excess of costs and estimated earnings on uncompleted contracts	**(493,675)**	(36,000)
Notes receivable and advances - related parties	**-**	298,486
Net cash provided by operating activities	**2,210,559**	3,333,141
Cash flows from investing activities:		
Purchases of property and equipment	**(526,118)**	(1,420,300)
Proceeds from sale of equipment	**7,367**	-
Net cash used in investing activities	**(518,751)**	(1,420,300)
Cash flows from financing activities:		
Payments on line of credit, net	**(227,544)**	(1,002,456)
Payments on notes payable, net	**(1,107,449)**	(918,474)
Payments on obligations under capital lease	**(565,062)**	(11,564)
Payments on related party notes payable	**(349,033)**	(306,544)
Proceeds from related party notes payable	**499,502**	489,708
Distributions to stockholder	**-**	(115,000)
Net cash used in financing activities	**(1,749,586)**	(1,864,330)
Net (decrease) increase in cash and cash equivalents	**(57,778)**	48,511
Cash, beginning of year	**2,279,065**	2,230,554
Cash, end of year	**$ 2,221,287**	$ 2,279,065
Supplemental disclosures of cash flow information:		
Cash paid during the year for:		
Interest	**$ 178,456**	$ 158,495
Noncash investing and financing activities		
New loans and capital leases for acquisition of equipment, less trade-ins	**$ 2,804,280**	$ 831,840

The accompanying notes are an integral part of these financial statements.

1. Organization, Business and Summary of Significant Accounting Policies

The organization, business and summary of significant accounting policies of A. Folino Construction, Inc. (the Company) are presented to assist in understanding the accompanying financial statements. The financial statements and notes are those of the Company and its management is responsible for their integrity and objectivity. The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America which, in the opinion of management, have been consistently applied.

Business

The Company, headquartered in Oakmont, Pennsylvania, is a general contractor and subcontractor in the asphalt paving, concrete, excavation and construction industry, and operates principally in the Southwestern Pennsylvania area.

The Company is related through common ownership to seven companies, wherein three of these entities actively participate in the Company's operations providing hauling services, repair and maintenance for the Company's automobiles, trucks and equipment and captive insurance coverage (see Note 9). The Company actively provides subcontracting services to one of the companies (see Note 9).

Significant transactions and balances with these companies are not consolidated or eliminated in these financial statements (see Note 9).

Revenue Recognition

The Company recognizes revenue in accordance with the percentage-of-completion method of accounting for contracts that extend for periods in excess of one year. Accordingly, income is recognized in the ratio that costs incurred bears to estimated total costs. The aggregate of costs incurred and estimated earnings on uncompleted contracts in excess of related billings is shown as a current asset, and the aggregate of billings on uncompleted contracts in excess of related costs incurred and estimated earnings is shown as a current liability.

The length of the Company's contracts vary, but typically exceed a period of one year.

Changes in job performance, job conditions and estimated profitability may result in revisions to revenue and costs. The effect of these revisions are recognized in the period in which they occur and provisions for estimated losses on uncompleted contracts are made as soon as such losses are known.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts and disclosures. Significant estimates relate to the revenue and related expenses recognized under the percentage-of-completion method and the allowance for doubtful accounts. Actual amounts could materially differ from those estimates.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Cash and Concentrations of Credit Risk

The statements of cash flows classify changes in cash according to operating, investing or financing activities. Financial instruments, which potentially expose the Company to concentrations of credit risk, consist principally of cash and accounts receivable.

The Company maintains its cash in non-interest bearing accounts that are insured by the Federal Deposit Insurance Company up to $250,000. The Company's deposits may, from time to time, exceed the $250,000 limit; however, management believes that there is no unusual risk present, as the Company places its cash with financial institutions which management considers being of high quality.

Concentrations of credit risk with respect to accounts receivable result from a significant portion of revenues being derived from the Commonwealth of Pennsylvania, various boroughs, municipalities and school systems. This risk is reduced due to the customer base being dispersed throughout these groups and the Company closely monitoring extensions of credit.

Property and Equipment

Property and equipment are stated at cost. Maintenance and repairs that are not considered to extend the useful life of assets are charged to operations as incurred. The cost of assets sold or retired and the related accumulated depreciation are removed from the accounts with any resulting gain or loss reflected in operations. Depreciation for financial statement purposes is provided in accordance with the straight-line method over the estimated useful lives as follows:

Office equipment	5 years
Computer software	3-5 years
Leasehold improvements	5-39 years
Buildings	39 years
Furniture and fixtures	7 years
Transportation equipment	5 years
Machinery and equipment	5 years

Accounts Receivable

Based on management's review of outstanding trade receivables at year-end, all known losses at December 31, 2017 and 2016 have been reflected in the financial statements. The Company generally extends credit to customers without requiring collateral and monitors these extensions of credit. The Company does not have any off-balance-sheet credit exposure related to its customers.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Impairment of Long-lived Assets

In accordance with FASB ASC 360, *Long-Lived Assets*, such as property and equipment, are reviewed for impairment, at least annually, or whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset.

Income Taxes

The Company has elected to be treated as an S-Corporation for both Federal and Pennsylvania income tax purposes. The effect of this election is the elimination of income taxes at the corporate level and the inclusion of the Company's income or loss in the individual tax returns of the stockholders. Therefore, no provision for Federal or state income taxes is included in the accompanying financial statements. For income tax purposes, the Company uses the accrual basis of accounting and recognizes contract revenue on the percentage-of-completion method of accounting.

ASC 740-10, *Accounting for Uncertainty in Income Taxes* clarifies the accounting for uncertainty in income taxes recognized in an entity's financial statements. This Interpretation prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. In addition, ASC 740-10 provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. For the Company, tax positions taken include the Company's status as an S-Corporation and the approval and qualification for this status. Management has reviewed the current status of the Company's election as an S-Corporation and has concluded that the Company has no liability or required disclosure relating to this tax position. Corporate tax years ended December 31, 2012 and prior are no longer subject to tax authority audit.

Comprehensive Income

Net income is the Company's only component of comprehensive income for the years ended December 31, 2017 and 2016.

Advertising

Advertising costs are charged to operations as incurred.

1. Organization, Business and Summary of Significant Accounting Policies (cont.)

Reclassifications

Certain reclassifications have been made to prior year financial statements to conform with current year presentation.

Recently Issued Accounting Pronouncements

During May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, *Revenue from Contracts with Customers* (Topic 606). ASU 2014-09 establishes principles for recognizing revenue upon the transfer of promised goods or services to customers, in an amount that reflects the expected consideration received in exchange for those goods or services. ASU 2014-09 is effective for fiscal years beginning after December 15, 2018. The Company is currently assessing the effect that ASU 2014-09 will have on its results of operations, financial position and cash flows.

During February 2016, the FASB issued ASU No. 2016-02, *Leases* (Topic 842). ASU 2016-02 requires lessees to recognize the assets and liabilities that arise from leases on the statement of financial position. A lessee should recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. ASU 2016-02 is effective for annual periods beginning after December 15, 2019. Early adoption is permitted. The Company is currently assessing the effect that ASU 2016-02 will have on its results of operations, financial position and cash flows.

Recently Adopted Accounting Pronouncements

During August 2014, the FASB issued ASU 2014-15, Presentation of Financial Statements – Going Concern, which requires management to assess an entity's ability to continue as a going concern by incorporating and expanding upon certain principles that are currently in U.S. auditing standards. Specifically, the ASU (1) provides a definition of the term substantial doubt, (2) requires an evaluation every reporting period including interim periods, (3) provides principles for considering the mitigating effect of management's plans, (4) requires certain disclosures when substantial doubt is alleviated as a result of consideration of management's plans, (5) requires an express statement and other disclosures when substantial doubt is not alleviated, and (6) requires an assessment for a period of one year after the date that the financial statements are issued (or available to be issued). The adoption of this guidance did not have a material impact on the Company's financial statements.

2. Accounts Receivable

Accounts receivable consist of the following:

December 31,	**2017**	2016
Billed		
Completed jobs	**$ 3,981,495**	$ 4,633,074
Jobs in progress	**8,172,609**	5,490,695
Retainage	**2,471,512**	1,530,718
	14,625,616	11,654,487
Less: allowance for doubtful accounts	(300,000)	(300,000)
Accounts receivable	**$ 14,325,616**	$ 11,354,487

The Company expects retainage amounts to be collected within the next twelve months and have been classified as current in the accompanying financial statements.

The Company provides an allowance for doubtful accounts based on management's analysis of the accounts receivable balances at year-end. Collections on accounts previously written-off are included in income as received.

3. Contracts in Progress

The status of costs incurred, estimated earnings and billings on uncompleted contracts is as follows:

December 31,	**2017**	2016
Costs incurred on uncompleted contracts	**$ 45,465,261**	$ 34,721,278
Estimated earnings	**9,557,857**	8,419,142
	55,023,118	43,140,420
Less billings to date	**(54,433,799)**	(43,729,424)
Total	**$ 589,319**	$ (589,004)

Included in the balance sheet under the following captions:

December 31,	**2017**	2016
Costs and estimated earnings in excess of billings on uncompleted contracts	**$ 1,524,644**	$ 839,996
Billings in excess of costs and estimated earnings on uncompleted contracts	**(935,325)**	(1,429,000)
Total	**$ 589,319**	$ (589,004)

4. Property and Equipment

Property and equipment consists of the following:

December 31,	**2017**	2016
Office equipment	**$ 201,535**	$ 201,535
Computer software	**289,041**	289,041
Furniture and fixtures	**76,304**	76,304
Transportation equipment	**1,451,404**	1,403,618
Buildings	**12,697**	12,696
Transportation equipment under capital lease	**968,501**	753,571
Machinery and equipment	**14,432,790**	12,423,115
Machinery and equipment under capital lease	**875,972**	667,707
	18,308,244	15,827,587
Less accumulated depreciation	**(11,864,902)**	(10,430,386)
Total property and equipment	**$ 6,443,342**	$ 5,397,201

5. Notes Payable

Notes payable consist of the following:

December 31,	**2017**	2016
Various notes payable to a financial institution with monthly payments aggregating $78,842 and $80,705 at December 31, 2017 and 2016, plus interest ranging from zero to 4.55%; due through August 2022; collateralized by the Company's machinery and equipment.	**$ 2,399,065**	$ 1,754,420
Various notes payable to various financial institutions with monthly payments aggregating $15,968 and $8,394 at December 31, 2017 and 2016, plus interest ranging from zero to 3.99%; due through August 2022; collateralized by the Company's transportation equipment, machinery and equipment.	**614,569**	174,529
	3,013,634	1,928,949
Less current portion	**(877,718)**	(868,075)
Notes payable	**$ 2,135,916**	$ 1,060,874

5. Notes Payable (cont.)

At December 31, 2017, the aggregate principal maturities of long-term debt for each of the next five years is as follows:

December 31,	Amount
2018	**$ 877,718**
2019	**726,266**
2020	**603,955**
2021	**542,659**
2022	**263,036**
Total	**$ 3,013,634**

6. Obligations Under Capital Lease

The Company leases equipment under capital leases, wherein interest is computed at rates ranging from zero to 4.50%. The assets are depreciated over their estimated economic lives. Depreciation expense amounted to $257,939 in 2017 and $249,843 in 2016.

The following is a schedule of property held under capital lease:

	2017	2016
Machinery and equipment	**$ 875,972**	$ 667,707
Transportation equipment	**968,501**	753,571
Total equipment under capital lease	**1,844,473**	1,421,278
Less accumulated depreciation	**(837,926)**	(700,205)
Machinery and equipment	**$ 1,006,547**	$ 721,073

6. Obligations Under Capital Lease (cont.)

At December 31, future minimum lease payments under the capital lease agreements are as follows:

Years	Amount
2018	**$ 448,821**
2019	**341,927**
2020	**340,806**
2021	**137,446**
2022	**88,826**
Total minimum lease payments	**1,357,826**
Less amount representing interest	**(47,098)**
Present value of net minimum lease payments	**1,310,728**
Less current portion	**432,434**
Long-term obligations under capital lease	**$ 878,294**

7. Retirement Plans

The Company makes contributions to various union-sponsored multiemployer pension plans that cover union employees. These plans call for monthly contributions based upon total gross monthly wages payable to the covered employees. The risks of participating in a multiemployer plan are different from single-employer plans in the following aspects:

a. Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.

b. If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.

c. If the Company chooses to stop participating in the multiemployer plan, the Company may be required to pay those plans an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

7. Retirement Plans (cont.)

The Company's participation in the multiemployer plan for the years ended December 31, 2017 and 2016 is outlined in the table below. The "EIN" column provides the Employer Identification Number (EIN). Unless otherwise noted, the most recent Pension Protection Act (PPA) zone status available in 2017 and 2016 is for the plan's year-end and is provided in the "Financial Health" column. The zone status is based on information that the Company received from the plan and is certified by the plan's actuary. Among other factors, plans in the green zone are at least 80 percent funded, plans in the yellow zone are between 65 percent and 80 percent funded, and plans in the red zone are less than 65 percent funded. The "Contract Expiration Date" column lists the expiration date of the collective-bargaining agreement to which the plan is subject. The last column lists other information with regards to their respective pension plan.

Name of Plan	EIN	2017 Contributions to Plan	2016 Contributions to Plan	2017 Financial Health	2016 Financial Health	Contract Expiration Date	Other
Operating Engineers Construction Industry and Miscellaneous Pension Fund Local #66	25-6135579	$ 433,368	$ 322,052	Green (Neither Endangered nor Critical)	Green (Neither Endangered nor Critical)	December 31, 2019	N/A
Laborers' District Council of Western Pennsylvania Pension Plan 1058	25-6135576	$ 1,249,153	$ 1,045,817	Red (Critical)	Red (Critical)	December 31, 2019	Funding improvement plan in place.
Greater Pennsylvania Carpenters' Pension Fund #9000	25-6135570	$ 117,538	$ 43,885	Yellow (Endangered)	Yellow (Endangered)	December 31, 2019	Funding improvement plan implemented in January 2013
Cement Masons Local 526 Combined Funds, Inc.	25-6103481	$ 231,306	$ 183,067	Yellow (Endangered)	Yellow (Endangered)	December 31, 2019	Funding improvement plan implemented in March 2012

None of the above plans require a minimum contribution. Total pension expense related to the above plans amounted to $2,031,365 and $1,594,821 for the years ended December 31, 2017 and 2016, respectively. These amounts are reflected in field overhead expenses in the accompanying statements of income and retained earnings.

7. Retirement Plans (cont.)

The Company has a retirement savings plan for all eligible salaried employees as defined by the Plan. The employees may contribute up to 15% of their salary. The Company is not required to match the employees' contributions, and may make a discretionary contribution each year. The Company's matching contribution for the retirement savings plan for the years ended December 31, 2017 and 2016 was $36,300 and $24,924, respectively. For the years ended December 31, 2017and 2016, the Company did not make discretionary contributions.

8. Major Customers and Vendors

The Company had two customers representing 35% of total sales for the year ended December 31, 2017. The accounts receivable from these customers amounted to $2,175,270 at December 31, 2017. The Company had two customers representing 32% of total sales for the year ended December 31, 2016. The accounts receivable from these customers amounted to $1,259,709 at December 31, 2016.

Purchases of materials from one supplier accounted for approximately 21% of the Company's material purchases during the year ended December 31, 2017. The accounts payable to this supplier was $3,287,145 at December 31, 2017. Purchases of materials from one supplier accounted for approximately 23% of the Company's material purchases during the year ended December 31, 2016. The accounts payable to this supplier was $972,101 at December 31, 2016.

9. Related Party Transactions

The Company leases office facilities, warehouse facilities and a storage yard under informal lease agreements with the Company's majority stockholder, TDF Services, Inc. (TDF) and FJIC, LLC (FJIC), affiliates in which the Company's majority stockholder has an ownership interest. The leases may be terminated by either party upon ninety days written notification. The Company is responsible for the payment of all utilities and services. The minimum rent expense charged to operations for the years ended December 31, 2017 and 2016 was $242,295 and $186,795, respectively. Additionally, Card Transport, LLC (Card), an affiliate which the Company's majority stockholder has an ownership interest, pays rent through an informal lease with TDF.

The Company secures insurance coverage and finances machinery and equipment purchases through a captive insurance company, the Viking Assurance Company, Ltd. ("Viking") which is a related party. No insurance premiums were paid to this entity for the year ended December 31, 2017 and 2016.

9. Related Party Transactions (cont.)

Notes payable to related parties consist of the following:

December 31,	**2017**	2016
Various notes payable to a related captive insurance company with monthly payments aggregating $33,981 and $37,352 at December 31, 2017 and 2016 plus interest of 6.00%; due through June 2021; collateralized by the Company's machinery and equipment	**$ 845,284**	$ 694,815
Less current portion	**(328,184)**	(270,313)
Notes payable – related parties	**$ 517,100**	$ 424,502

At December 31, 2017, the aggregate principal maturities of long-term debt due to related parties for each of the next five years is as follows:

December 31,	Amount
2018	**$ 328,184**
2019	**275,847**
2020	**199,659**
2021	**41,594**
2022	**-**
Total	**$ 845,284**

9. Related Party Transactions (cont.)

The Company receives hauling, repair services, and on-site job services from TDF and other affiliated companies, which are owned by the majority stockholder or an immediate family member of management. The activity detailed below is reflected in field overhead expenses and accounts payable – related parties in the accompanying financial statements.

	Total
Balance at December 31, 2016	**$ 546,826**
Cost of revenues	**7,815,694**
Cash payments	**(6,984,989)**
Balance at December 31, 2017	**$ 1,377,531**

The Company performs fueling services to TDF and other affiliated companies, which are owned by the majority stockholder or an immediate family member of management. Further, the Company performs subcontracting services to Total Construction Service, Inc. which is wholly owned by the majority stockholder. The activity detailed below is reflected in accounts receivable – related parties.

	Total
Balance at December 31, 2016	**$ 422,411**
Contract revenues	**812,019**
Cash payments	**(700,239)**
Balance at December 31, 2017	**$ 534,191**

The Company has made advances to certain affiliates and stockholders which are unsecured and non-interest bearing with no repayment terms specified.

A summary of the activity with the affiliates and stockholders for the year ended December 31, 2017 is presented below.

	Affiliates	Stockholders	Total
Balance at December 31, 2016	$ 1,290,152	$ (39,112)	$ 1,251,040
Cash advances	-	-	-
Cash repayments received	-	-	-
Balance at December 31, 2017	**$ 1,290,152**	**$ (39,112)**	**$ 1,251,040**

The Company does not intend to demand payment of the advances during the year ended December 31, 2018, therefore, the advances to the stockholders are classified as long-term in the accompanying financial statements.

10. Line of Credit

On June 12, 2014, the Company entered into an agreement with a bank for a revolving line of credit with an initial maximum principal amount of $7,000,000, maturing on August 31, 2018. The line of credit bears interest at the bank's prime lending rate (4.50% and 3.75% at December 31, 2017 and 2016) and at December 31, 2017 there was an outstanding balance of $1,100,000. The line is collateralized by all company assets and is personally guaranteed by two stockholders.

11. Operating Leases

The Company leases various equipment and motor vehicles under non-cancellable operating leases. The leases expire at various dates through 2021. Rental expense under these agreements was $627,223 and $364,374 in 2017 and 2016, respectively.

The following is a summary of future minimum payments under operating leases that have initial or remaining non-cancelable lease terms in excess of one year at December 31, 2017:

	Amount
2018	**$ 241,592**
2019	**134,860**
2020	**46,778**
2021	**8,126**
Total minimum lease payments	**$ 431,356**

12. Commitments and Contingencies

The Company is currently subject to a sales and use tax audit by the Commonwealth of Pennsylvania. If liable, the Company will have to remit payment for taxes, interest and penalties due. In 2015, the Company remitted $95,233 to the Commonwealth of Pennsylvania. As of December 31, 2017 and 2016, the Company has an additional liability of $307,534 for this matter, which is the remaining amount the Commonwealth of Pennsylvania is seeking. Consequently, this amount was charged to operations in 2015 and is reflected in accounts payable in the accompanying financial statements as of December 31, 2017 and 2016.

13. Subsequent Events

Subsequent events have been evaluated through April 3, 2018, which is the date the financial statements were available to be issued. No other events requiring disclosure or recording in the financial statements have been identified for the year ended December 31, 2017.

Supplementary Information

Independent Auditors' Report on Supplementary Information

Our audits of the financial statements included in the preceding section of this report were conducted for the purpose of forming an opinion on those statements as a whole. The supplementary information presented in the following section of this report is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audits of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

Urish Popeck & Co., LLC

April 3, 2018

A. Folino Construction, Inc.

Non-U.S. GAAP Financial Measure (EBITDA)
(Unaudited)

Years Ended December 31, 2017 and 2016

The Company uses earnings before income taxes, depreciation and amortization "EBITDA," a non-U.S. GAAP financial measure, for internal management reporting, when evaluating period-to-period changes and, in some cases, providing guidance on possible future results. This measure is not a measure of financial performance under U.S. GAAP and should be considered in addition to, not as a substitute for, net income (loss) or cash flows from operations, investing or financing activities, and should not be viewed as liquidity measures or indicator of cash flows reported in accordance with U.S. GAAP. We strongly encourage readers of the financial statements to review our financial statements in their entirety and not rely on any single financial measure. See *Reconciliation of Non-U.S. GAAP Financial Measure* to the most comparable U.S. GAAP measure below:

Years Ended December 31,	**2017**	2016
Net Income	**$ 650,885**	$ 436,778
Depreciation	**2,205,851**	2,139,160
Interest Expense	**178,456**	158,495
Total EBITDA	**$ 3,035,192**	$ 2,734,433

Prequalification Certificate

General

Business Partner Id: 000995
Status: Qualified
Federal ID Number: 25-1367237
Line Of Credit: $12,000,000.00
Line Of Credit Expiration: 05/31/2021

Maximum Capacity: $128,945,800.00
Performance Factor: 8
Issued: 12/15/2020
Effective: 12/15/2020
Expiration: 06/30/2022

In accordance with the Department regulations you are hereby notified of the performance factor, maximum capacity rating, and work classifications assigned to you. You are eligible to perform as a Prime Contractor.

Contractor

Name	Address	City	State	Zip	Zip + 4
A. Folino Construction Inc.	P.O. Box 111	Oakmont	PA	15139	0111

Subsidiaries

Name	FID
No records found.	

Work Class Codes

Code	Group	Description	Type
C1	Earthwork	Other Excavation and Grading (Roadway Patches, Drainage, Structure Related, etc.)	R
C3	Incidental Construction	Geotextiles	R
E	Base Course	Flexible Base Course	R
F	Pavement	Bituminous Pavement	R
F1	Pavement	Bituminous Pavement Patching and Repair	R
F2	Pavement	Bituminous Joint and Crack Sealing	R
F3	Pavement	Milling, Rumble Strips, Scarification Bituminous or Concrete	R
F4	Pavement	Bituminous Surface Treatments, Seal Coats	R
G1	Pavement	Rigid Pavement Patching and Repair	R
G2	Pavement	Diamond, Carbide Grinding Concrete or Bituminous	R
G3	Pavement	Spall Repair	R
G4	Pavement	Joint Rehabilitation, Sawing and Sealing Concrete or Bituminous	R
H	Incidental Construction	Drainage, Water Main, Storm Sewer	R
H1	Incidental Construction	Pipe and Culvert Cleaning	R
H2	Incidental Construction	Pavement Base Drains	R
K	Incidental Construction	Curbs, Sidewalks, Inlets, Manholes	R
K1	Incidental Construction	Masonry Work	R
K2	Incidental Construction	Concrete and Masonry Coatings	R
M	Roadside	Landscaping	R
M1	Roadside	Selective Tree Removal, Trimming	R
M2	Roadside	Silt Barrier Fence, Gabions, Erosion Control	R
M3	Roadside	Seeding and Soil Supplements	R
Q	Traffic Accommodations & Control	Maintenance and Protection of Traffic	R

Signature

VALIDATE AND ISSUED BY: David T. DeMarkis /s/

PREQUALIFICATION OFFICER

Comments

One or more Lines-of-Credit became effective

Audit Information

Created By	Created On	Modified By	Modified On
LaToya Lewis/PennDOT	12/15/2020 08:03:52 AM	LaToya Lewis/PennDOT	12/15/2020 08:03:52 AM

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THE PITTSBURGH WATER AND SEWER AUTHORITY

MATERIAL DISPOSAL PLAN

(For submittal when removing material from a Pittsburgh Water and Sewer Authority construction Project)

All excavated and demolished material from a construction site that is not to be reused must be properly removed and disposed (or stockpiled). If the material is to be disposed of in the City of Pittsburgh, a permit must be obtained from the City. If it is to be disposed of outside the City limits, documentation must be provided that the Contractor has complied with all the rules and regulations of the local community and that the property owner has given their approval to accept the material. One copy of this form must be completed for each disposal/stockpile site if the Contractor plans to use more than one site. A copy of this plan must be on file with the Authority before initialing construction.

- **General Project Information and Certification**

Date Submitted: 2-16-2021 PWSA Project Number: 2020-325-102-0

Contractor: A. Folino Construction, Inc.

Project Name: Bus Rapid Transit Water Distribution Improvements

Contractor Certification: In submitting this Material Disposal Plan (MDP), the above named contractor expressly certifies that all material to be removed from the construction site will be hauled in accordance with all applicable federal, state, and local highway rules and regulations and traffic laws, and that the Material Disposal Plan meets all federal, state, and local rules and regulations with regard to the disposal and placement of this material.

Contractor's Signature: Dino Folino Title: Vice President Date: 2-16-2021

- **Disposal of Material Within the City of Pittsburgh**

Is the material to be disposed of within the City of Pittsburgh? ☐ Yes ☒ No
If the above answer is "Yes" attach a copy of the permit.

- **Disposal of Material Outside of the City of Pittsburgh**

If material is to be removed from the site and disposed outside the City of Pittsburgh, please provide the following information.

Is the material to be disposed of outside the City of Pittsburgh? ☒ Yes ☐ No
If yes, complete the following:

Disposal Site Address: 4335 Homestead-Duquesne Road
Municipality: Munhall, PA 15120

Is a permit for the above municipality required? (If yes, attach a copy) ☒ Yes ☐ No

General Directions to Site: (attach a map) Please see the attached map for site location.

Name of Property Owner: Jim Quinn

Owner Phone Number: 412-292-1088

- **Property Owner Acknowledgement**

Acknowledgement: I hereby acknowledge that I have agreed to accept material from Bus Rapid Transit Water Distribution Improvements to be disposed of on my property as described above and that it is my understanding that the above named contractor will meet all federal, state, and local rules and regulations with regard to the placement of this material.

Property Owners Signature: Date: 2-15-2021

Allegheny County Conservation District

May 6, 2016

James M. Quinn Construction Company
Attention: Mr. James M. Quinn
4075 Homestead Duquesne Road
West Mifflin, PA 15122

Re: Permit Authorization Cover Letter for General NPDES Permit for Stormwater Discharges Associated with Construction Activities
Quinn Munhall
ACCD Reference **ESP-01245**
DEP Reference **PAG-02000216041**
Munhall Borough
Allegheny County

Dear Mr. James M. Quinn:

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. §§ 691.1 et seq., the Allegheny County Conservation District (District) hereby authorizes the notice of intent for the NPDES permit for Stormwater Discharges Associated with Construction Activities (NPDES Permit) **from Quinn Munhall – 4335 Homestead Duquesne Road – Munhall, PA 15668 to Moon Run (WWF).**

PAG-02000216041, is effective on May 6, 2016, and will expire on May 6, 2021.

All dischargers are required by Sections 402 and 611 of The Clean Streams Law, 35 P.S. §§691.402 and 691.611 to comply with the terms and conditions of their permit.

River Walk Corporate Centre • 33 Terminal Way, Suite 325b
Pittsburgh, PA 15219 • **Phone:** 412-241-7645 • **Fax:** 412-242-6165
E-mail: conservation@accdpa.org • **Web:** www.accdpa.org

Your Conservation Solution Center

GRADING PERMIT

ISSUED TO: Quinn Construction

FROM: David Cannon *MUNHALL BOROUGH*

DATE: 5/16/16

FOR PROPERTY IDENTIFIED AS FOLLOWS:

ADDRESS: 4335 Homestead Duquesne Rd

LOT/BLOCK: 182-K-100

CONTRACTOR:
James M Quinn
4075 Homestead Duquesne Rd
W. Mifflin, PA 15122

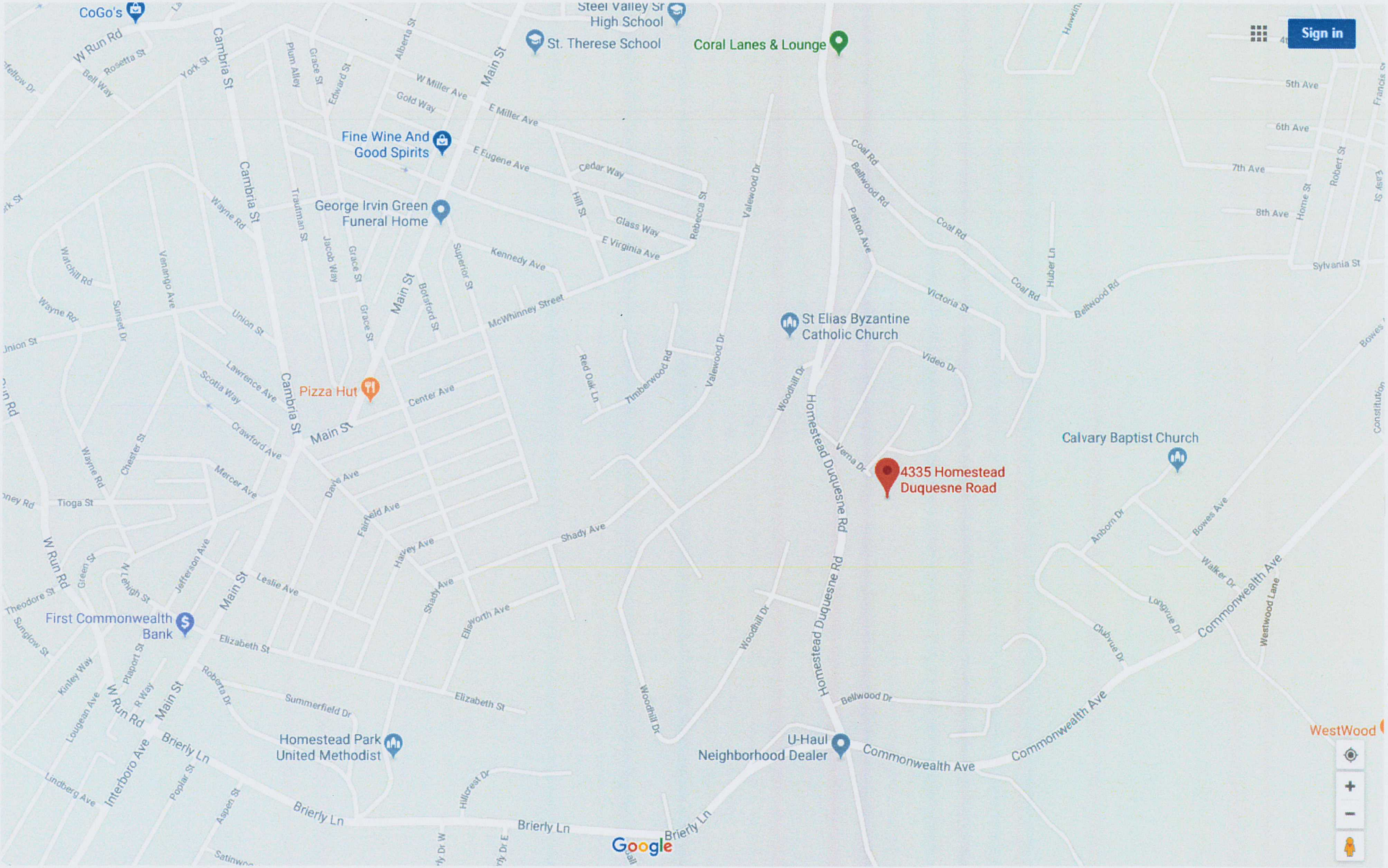
This document evidences that a Grading permit was applied for, reviewed and authorized in accordance with Munhall Borough Ordinance #1224 enacted by the Munhall Borough Council April 18th 1974.

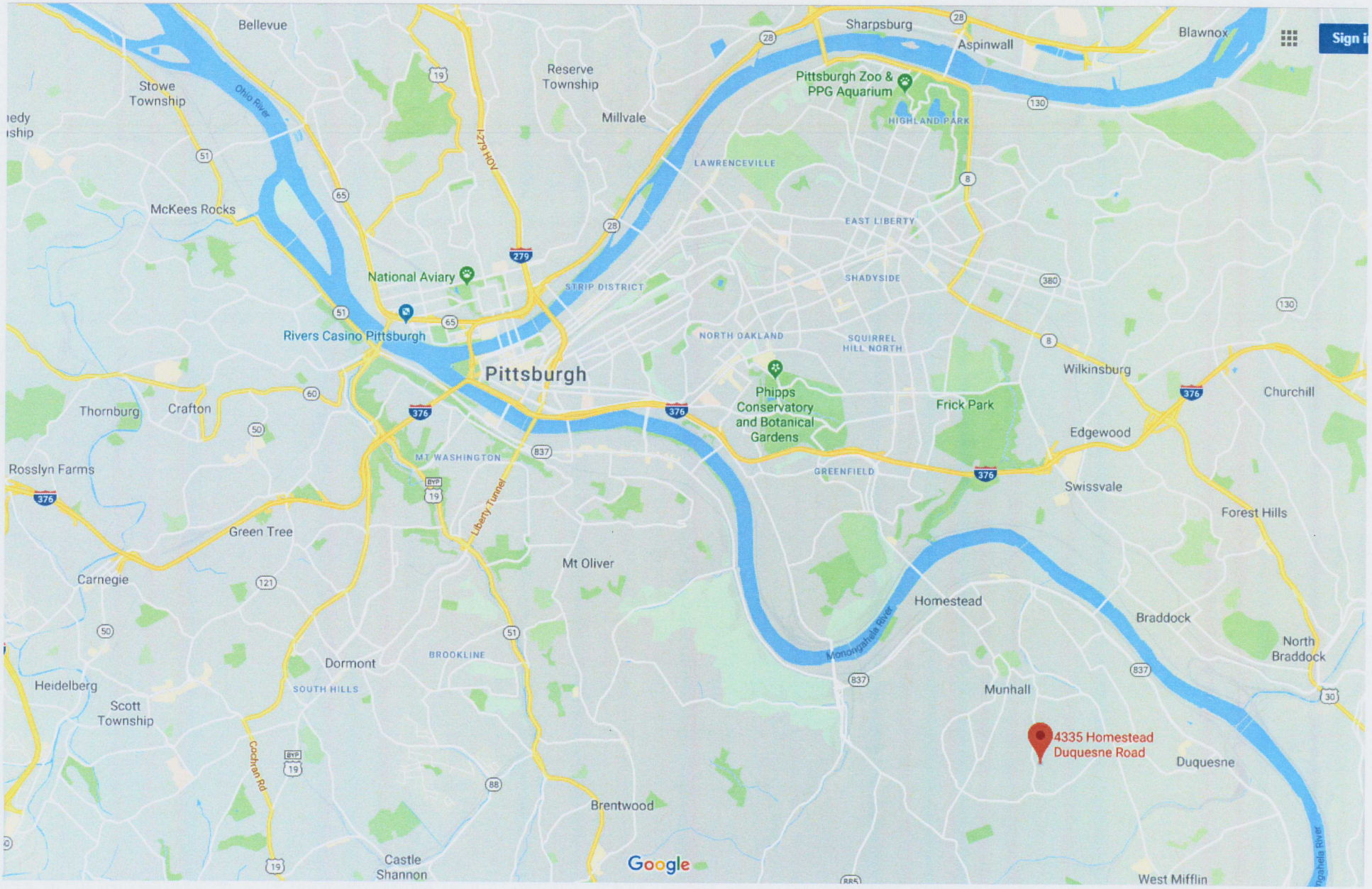
This Grading Permit is subject to the following condition:

The engineer that prepared and submitted the grading plan is required to inspect the grading operation and provide certification to the Borough at the completion of the project that the work performed in accordance with the approval plan and the Borough's grading Ordinance.

Joseph Varhola
Borough Manager

David Cannon
Dave Cannon
Code Enforcement Official


CoGo's
W Run Rd
Rosetta St
Bell Way
York St
Cambria St
Plum Alley
Grace St
Edward St
Alberta St
Steel Valley Sr High School
St. Therese School
Main St
W Miller Ave
Gold Way
E Miller Ave
Coral Lanes & Lounge
Sign in
5th Ave
6th Ave
7th Ave
8th Ave
Fine Wine And Good Spirits
E Eugene Ave
Cedar Way
Hill St
Rebecca St
Valewood Dr
Coal Rd
Bellwood Rd
Patton Ave
Horne St
Robert St
George Irvin Green Funeral Home
Glass Way
E Virginia Ave
Kennedy Ave
Superior St
Botsford St
Grace St
Jacob Way
Trautman St
Wayne Rd
Watchill Rd
Venango Ave
Sunset Dr
Union St
McWhinney Street
Huber Ln
Victoria St
Sylvania St
St Elias Byzantine Catholic Church
Video Dr
Red Oak Ln
Timberwood Rd
Lawrence Ave
Scotia Way
Crawford Ave
Center Ave
Pizza Hut
Chester St
Mercer Ave
Davis Ave
Fairfield Ave
Harvey Ave
Shady Ave
Ellsworth Ave
Woodhill Dr
Homestead Duquesne Rd
Verna Dr
4335 Homestead Duquesne Road
Calvary Baptist Church
Bowes Ave
Amborn Dr
Walker Dr
Longrue Dr
Clubrue Dr
Commonwealth Ave
Westwood Lane
Tioga St
Theodore St
Sunglow St
Green St
Lehigh St
Jefferson Ave
Leslie Ave
First Commonwealth Bank
Elizabeth St
Kinley Way
Lougean Ave
Playport St
R Way
Roberta Dr
Summerfield Dr
Bellwood Dr
Homestead Park United Methodist
U-Haul Neighborhood Dealer
WestWood
Interboro Ave
Brierly Ln
Lindberg Ave
Poplar St
Aspen St
Hillcrest Dr
Google


Bellevue
Stowe Township
Ohio River
McKees Rocks
Reserve Township
Millvale
279 HOV
National Aviary
Rivers Casino Pittsburgh
Pittsburgh
STRIP DISTRICT
LAWRENCEVILLE
Sharpsburg
Aspinwall
Blawnox
Pittsburgh Zoo & PPG Aquarium
HIGHLAND PARK
EAST LIBERTY
SHADYSIDE
NORTH OAKLAND
SQUIRREL HILL NORTH
Phipps Conservatory and Botanical Gardens
Frick Park
Wilkinsburg
Churchill
Edgewood
Swissvale
Forest Hills
Thornburg
Crafton
Rosslyn Farms
MT. WASHINGTON
Liberty Tunnel
GREENFIELD
Green Tree
Carnegie
Mt Oliver
Homestead
Braddock
North Braddock
Monongahela River
Dormont
BROOKLINE
SOUTH HILLS
Heidelberg
Scott Township
Cochran Rd
Munhall
4335 Homestead Duquesne Road
Duquesne
Brentwood
Castle Shannon
West Mifflin
Google

Pittsburgh Water & Sewer Authority

February 8, 2021

ADDENDUM NO. #1

FOR

INVITATION FOR BIDS
BUS RAPID TRANIST WATER DISTRIBUTION IMPROVIEMENTS

PWSA PROJECT NO. 2020-325-102-0

The following changes/additions/clarifications/replacements are applicable to the above-referenced solicitation:

ADDITION: Mandatory Pre-Bid Sign in sheet

ADDITION: Mandatory Pre-Bid Presentation

QUESTIONS:

Q1: Can Restrain Joint Pipe Lengths be utilized in lieu of Concrete Thrust Blocking at Fittings and Valves?

A1: No - the project Drawings and Specifications do not allow for restrained joint pipe in lieu of concrete thrust blocking.

Q2: Is there an engineer's estimate for this project?

A2: PWSA is not releasing an engineer's estimate for this project.

Q3: How will contaminated soils be handled for the project? And who will determine is soil is contaminated?

A3: Addressing contaminated soils, if encountered, is covered in Items 5.05 (Differing Subsurface or Physical Conditions) and 5.07 (Hazardous Environmental Conditions at Site) of Specification C-700 (General Conditions) and Item SC-5.07 (Hazardous Environmental Conditions at Site) of Specification C-800 (Supplementary Conditions).

Penn Liberty Plaza I
1200 Penn Avenue
Pittsburgh PA 15222

info@pgh2o.com
T 412.255.2423
F 412.255.2475

www.pgh2o.com
@pgh2o

Customer Service /
Emergencies:
412.255.2423

Pittsburgh Water & Sewer Authority

Q4: Is poly wrap still needed since the newly installed pipe will be zinc coated?

A4: Yes - per specification 02513 (Public Distribution Water Piping), polyethylene encasement is required for this project.

Q5: When is the start date for this project?

A5: The current project schedule is based presenting a recommendation for construction contract award to the PWSA Board at their March 26, 2021 meeting. Issuance of a notice to proceed (NTP) for this project, which is contingent on PWSA's receipt of bonds, insurance certificate and an executed Agreement from the awarded contractor, is anticipated for late April 2021.

ALL OTHER TERMS & CONDITIONS OF THIS SOLICITATION SHALL REMAIN THE SAME.

Pittsburgh Water & Sewer Authority

February 11, 2021

ADDENDUM NO. #2

FOR

INVITATION FOR BIDS
BUS RAPID TRANIST WATER DISTRIBUTION IMPROVIEMENTS

PWSA PROJECT NO. 2020-325-102-0

The following changes/replacements/additions are applicable to the above-referenced solicitation:

CHANGE: The bid deadline has been extended to February 23, 2021 at 2:00 p.m.

CHANGE:

Working hours have been revised; these revisions are reflected in Replacement Specification Section 01100 and Replacement Drawing Sheet 2.

Customer complaint procedures have been revised; these revisions are reflected in Replacement Specification Section 01100.

The description for item W-86 (Service Line Material Verification) has been revised to remove the text allowing plating / covering of open excavations for up to 10 days; this revision is reflected in Replacement Specification Section 01200.

Specification 02515 (Water Service Connections) has been revised; these revisions are reflected in Replacement Specification 02515.

Specification 03300 (Cast-in-Place Concrete) has been revised to include a reference to use of AAA concrete (Items 2.6.A and 3.6.H.3.b) and testing requirements for high early strength concrete (Item 3.7.A). These revisions are reflected in Replacement Specification 03300.

On the bid form, the estimated quantity of Pay Item W-15 (Water Service Line – PEXa – All Sizes) was decreased to 2,652 LF.

On the bid form, the estimated quantity of Pay Item W-88 (Private Water Service Line Replacement, 2" Diameter and Less – Greater Than 20 LF in Total Length) was increased to 1,052 LF.

Penn Liberty Plaza I
1200 Penn Avenue
Pittsburgh PA 15222

info@pgh2o.com
T 412.255.2423
F 412.255.2475

www.pgh2o.com
@pgh2o

Customer Service /
Emergencies:
412.255.2423

Pittsburgh Water & Sewer Authority

REPLACEMENT:

Section 00010 (Table of Contents) of the Project Specifications has been replaced with an updated version that includes Attachment D (see ADDITIONS).

Section 01100 (Summary) of the Project Specifications has been replaced with an updated version that reflects revised customer complaint procedures (Item 1.2.P) and work hours (Item 1.3.B).

Section 01200 (Price and Payment Procedures) of the Project Specifications has been replaced with an updated version that reflects two (2) new pay items (R-45, Concrete Cap with Bond Breaker and R-45A, Temporary Winter Concrete Base and Cap) and revised text for pay item W-86, Service Line Material Verification.

Specification 02515 (Water Service Connections) has been replaced with an updated version. Changes to this specification (deletions and additions) are noted in red.

Specification 03300 (Cast-in-Place Concrete) has been replaced with an updated version that reflects revisions to Items 2.6.A (class AAA mix), 3.6.H.3.b (class AAA mix) and 3.7.A (HES testing). Changes to this specification are noted in bold text.

Drawing Sheet 2 has been replaced with an updated version reflecting revisions to General Note 26 (Permits) and General Note 27 (Working Hours).

Drawing Sheets 9, 11, 12, 37, 39, 58, 68, 86, 87, 101, 102, 116, 117, 131 and 132 have been updated to reflect an adjusted water main design (approx 450 LF on Fifth Ave, approx. 350 LF on Forbes Ave) to mitigate a conflict with recently constructed and proposed gas main.

Drawing Sheets 74 and 75 have been updated to reflect revisions to proposed service line material for reconnections.

Drawing Sheet 78 has been revised to reflect an update to the Water Service Line Reconnection to Existing Service detail (WS-5 Modified) (For 1" Service).

Drawing Sheets 157, 160, 161 and 163 have been updated to reflect maintenance and protection of traffic (MPT) revisions as requested by DOMI.

ADDITIONS:

The Project Specifications have been updated to include a new Attachment D, 901 Traffic Control Specifications (City of Pittsburgh).

Penn Liberty Plaza I
1200 Penn Avenue
Pittsburgh PA 15222

info@pgh2o.com
T 412.255.2423
F 412.255.2475

www.pgh2o.com
@pgh2o

Customer Service /
Emergencies:
412.255.2423

Pittsburgh Water & Sewer Authority

Pay Item R-45 (Concrete Cap with Bond Breaker) was added to the bid form at an estimated quantity of 133 CY to allow the Contractor to schedule work during cold weather when other restoration materials cannot be used.

Pay Item R-45A (Temporary Winter Concrete Base and Cap) was added to the bid form at an estimated quantity of 95 CY to allow the Contractor to schedule work during cold weather when other restoration materials cannot be used.

QUESTIONS:

Q1: Has Subsurface Utility Engineering (SUE) been performed for the entire length of the project from Shingiss Street to the Birmingham Bridge? Some of the SUE was already performed for the BRT, but only along selected areas requested by the Engineer. Should a prime contractor include a qualified SUE firm on their team for SUE and/or utility coordination as T2 is familiar with the Duquesne Light, Verizon and Peoples Gas in these areas?

A1: The results of SUE work completed for this project are presented in Attachment C to the Specifications. There are no specific requirements in the project Specifications or Drawings regarding additional SUE work that must be performed by the Contractor. General Note 21 of Drawing Sheet 2 (Underground Facilities) describes the basis of Underground Facilities, Structures and Utilities depicted on the Drawings and the Contractor's responsibility to verify elevations and dimensions in the field.

Q2: Based on previous experience, if / when we encounter railroad tracks under road surface, will we be compensated for the extra restoration?

A2: Removal of tracks, if encountered during excavation, is incidental to the project and no additional payment will be made. The Contractor will be paid for restoration in accordance with the various restoration pay items and corresponding details of the project Drawings.

Q3: Is grouting of the old waterline required? If so, is it incidental to the project?

A3: As noted in the Specifications and Drawings, abandoned water mains must be filled with approved flowable fill. The Contractor will be paid for flowable fill under bid item U-10 (Flowable Fill). Per Water Utility General Note 16 of Drawing Sheet 2, the Contractor must also confirm that a location of abandoned main is not planned for future electric duct bank construction prior to placement of flowable fill.

Q4: If we identify a property that has a lead service, do we need to backfill it immediately or can we leave the verification hole open and barricaded?

A4: Excavations for service line material verification work must be backfilled immediately; the text of the measurement and payment item for W-86 (Service Line Material Verification) has been revised to delete the allowance for a 10-day period of plating / covering at service line excavations.

Q5: Why are we required to install a wearing course of asphalt for restoration if the entire road will be restored in the future?

A5: The pavement restoration details of this project were developed to meet requirements established by the City's Department of Mobility and Infrastructure (DOMI).

Q6: If we obtain written permission from the city to use high early strength concrete, how many concrete cylinders are required per test and in what time increments are required? Are we required to test every truck or can we test in multiple increments as well?

A6: Contractors shall assume that high early strength (HES) concrete testing will be required for every truckload of HES material. Contractor shall also assume that four cylinders will be required for each test batch and field cured for 24 hours. Cylinder breaks shall be performed by a City-approved testing facility and copies of testing results shall be provided to the DOMI inspector. As noted in specification 03300, the Contractor's use of HES will require prior approval by the City.

Q7: Will PWSA be extending the bid due date for this solicitation?

A7: Yes – the bid due date has been revised to February 23, 2021 at 2:00 p.m.

ALL OTHER TERMS & CONDITIONS OF THIS SOLICITATION SHALL REMAIN THE SAME.

Section 901.1 DESCRIPTION – Revise the first sentence to read:

This work is the furnishing, installing, maintaining and protection of traffic adjacent to and within the Work Zone including the Active Work Zone, and relocating of traffic control devices.

Section 901.2 MATERIAL - Revise by adding the following sentence:

For all barricades, provide barricade rails constructed of non-metallic materials.

Section 901.3 CONSTRUCTION:

ADVANCE REQUIREMENTS

Pittsburgh Public Schools (412-622-3500)

City of Pittsburgh Police (412-323-7800),

Provide two weeks advance notice to affected municipalities, respective Emergency Services, City of Pittsburgh Department of Mobility and Infrastructure (412-255-8850), ~~local school districts~~, the Allegheny County Port Authority (412-566-5500) and Chuck Rompala at (412-566-5321), ~~or Beaver County Transit Authority (724-728-4255) or New Castle Transit Authority (724-654-3130), the Pennsylvania State Police (___-___-____), PENNDOT Allegheny County Maintenance Manager (412-781-3260), Beaver County Maintenance Manager (724-774-6610), and Lawrence County Maintenance Manager (724-656-3104)~~ and the appropriate State Representative or Senator, prior to beginning any work or imposing any traffic restrictions. Additionally, provide notification to all affected businesses and property owners four days prior to the erection of the Advance Construction Advisory signs. ~~(District Construction Unit will provide typical form at pre-job conference.)~~ Notify the affected parties listed above of changes to the planned work shift schedule, how and when their property access will be affected, and keep them informed at all times of changes to traffic restrictions as they occur.

a traffic

Obtain ~~an~~ obstruction permit , street opening permit, ~~from the City of Pittsburgh Department of Mobility and Infrastructure~~ and sidewalk permits as needed from the City of Pittsburgh Department of Mobility and Infrastructure, Permits Division. Submit with these permits any required Temporary Bus Stop Relocation/Removal Request Form(s).

Notify property owners ten days in advance of driveway restrictions affecting their properties.

~~Notify the District Tunnel Maintenance Manager (412-381-1775) when work is within 1000 feet of any tunnel at least three working days before work is scheduled to begin.~~

Make a survey along with the Inspector-In-Charge or his authorized representative by videotaping and voice recording onto a DVD format the location of all existing pavement markings, existing signs, road conditions and all potential driveway and/or private problems within the project limits prior to beginning construction. Use this information in placing all pavement markings and signs. Provide an additional copy of the DVD to the Inspector-In-Charge or his authorized representative before construction begins. Properly label the DVD with the Contract #, ~~SPN, SR #(s),~~ date video was taken and by whom. Contact the ~~District~~ Traffic Engineer before making any changes to the existing pavement marking patterns, or signs or other devices.

City

If public parking will be impacted by obstructions or construction activities, the Contractor must first coordinate with Pittsburgh Parking Authority (PPA) (412.560.7275) to restrict parking on the affected. Documentation of PPA coordination is a prerequisite for an obstruction permit.

During use of Magee Street as an overnight detour route when closure of Chatham Square occurs, restrict parking as required along Magee Street to allow for unobstructed left turn truck movement from Forbes Avenue to Magee Street. Restrict parking between Forbes Ave and Watson Street as required.

~~Contact the District Traffic Management Center at 412-429-6030 for any Traffic and/or Construction restrictions on any state route covered by this contract three days prior to any scheduled work.~~

~~Notify the District Traffic Engineer's authorized representative in the Operations Section at 412-429-4973 two weeks prior to opening any portion of a closed roadway to traffic that has had any changes to the permanent traffic control devices, and has been determined by the Inspector-In-Charge to be opened.~~

Coordinate working schedule with any adjacent ~~Department~~ State, County, and/or local projects.

~~Roadwork Notification and Approvals are required for all interstate or divided highways with ingress and egress at interchanges. Press Releases are required for all work within Department highway right-of-way. An initial Press Release for construction projects is required to be submitted ten (10) workdays prior to the start of any project. All other press releases are required to be submitted three (3) workdays in advance of the restriction. At least three (3) workdays prior to any work or any change in traffic patterns for ongoing work on state roadways, obtain a Roadwork Notification and Approval from the District Traffic Engineer, and notify the following: the Pennsylvania State Police (___-___-____); District Press Officer (412-429-5010) and the District Traffic Management Center (412-429-6030) of any Traffic and/or Construction restrictions. The Roadwork Notification and Approval (RNA) Form is found on the Department website through the following link: http://www.dot.state.pa.us/public/Districts/District11/internet/Traffic/workapproval.pdf. The contractor is responsible for completing all Press Releases and forwarding them to the Inspector-In-Charge. The contractor is responsible for completing all Roadwork Notification and Approval Forms for the Inspector-In-Charge's signature and date. The Inspector-In-Charge processes the Roadwork Notification and Approval form in accordance with established procedures.~~

A workday is defined as any day from Monday through Friday except Holidays during normal ~~PennDOT District 11-0~~ City of Pittsburgh, Department of Mobility and Infrastructure office hours. ~~The RNA form should be submitted to the appropriate Department Unit(s) by 12 P.M. noon on the first day~~. The following ~~official Department~~ holidays will not be included as workdays:

- New Year's Day
- Dr. Martin Luther King, Jr. Day
- President's Day
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Veteran's Day
- Thanksgiving Day
- Day after Thanksgiving Day
- Christmas Day

<u>Section 901.3(a) General. – Revise the seventh paragraph to read:</u>

Construct and erect all devices in an efficient manner. Maintain, clean, and properly operate the devices during the entire time the are in use. Traffic control devices must meet the acceptable or marginal standards of the Pennsylvania Quality

City

Guidelines for Temporary Traffic Control Devices after the devices have been installed. Only place devices a maximum of two weeks prior to implementing restrictions. Remove all devices when no longer required or not used for a period of two weeks unless authorized, in writing, by the ~~District~~ Traffic Engineer or authorized representative. Where operations are performed in stages, keep only the necessary devices that apply to the present stage of construction.

~~Section 901.3(k) WORK AREA PAVEMENT MARKINGS - Revise the third paragraph by adding the following:~~

~~When installing painted standard pavement markings on roadways where traffic is to be maintained, install "WET PAINT DO NOT CROSS LINE" (R16-102) sign as directed.~~

~~During inclement weather, where it is not possible to install pavement markings, install "NO PAVEMENT MARKINGS" (W21-16) signs with Type B light attached at intervals of 1/4 mile and/or as directed by the Project Manager. In addition, as a minimum, place channelizing devices at one times the posted speed limit along the centerline of the travel lanes. Arrange with local police to restrict parking on streets within the work area. Maintain the minimum number of lanes specified.~~

~~Section 901.3(m) LATERAL LANE RESTRICTIONS - Revise the third paragraph to read:~~

~~Notify the Inspector-In-Charge by completing and submitting an RNA form at least twelve (12) workdays before implementing or changing any lateral lane restriction which provides less than 16 feet of pavement and shoulder in each direction for oversized vehicles. Notify the Inspector-In-Charge by completing and submitting an RNA form at least seven (7) workdays before removing the restriction. The RNA form is found on the Department website through the following link:http://www.dot.state.pa.us/public/Districts/District11/internet/Traffic/workapproval.pdf.~~

~~Complete RNA form and forward it to the Inspector-In-Charge. The Inspector-In-Charge processes the Roadwork Notification and Approval form in accordance with established procedures.~~

Ten days prior to construction, erect the Advance Construction Advisory signs on Type III barricades as depicted below.

for each City Street (specific name of City Street being worked on)

(Fill in Name) ROAD WORK	Use 6” Series C black letters on a reflective orange background with a 1/2" black border and 6" corner radius.
Begins (Date)	
~~DELAYS LIKELY~~	~~Cover the above “Begins (Date)” with “DELAYS LIKELY” when construction begins.~~

~~Ten days prior to construction, place Changeable Message Signs using message as depicted below.~~

(Fill in Name) ROAD WORK	-
Begins (Date)	-
- DELAYS LIKELY	Replace “Begins (Date)” with “DELAYS LIKELY” when construction begins.

Erect signs at each limit of work and at the following locations:

Remove the signs when construction begins.

One week prior to a road closure, erect the Advance Advisory signs on Type III barricades as depicted below. Place signs in advance of the proposed road closure in both directions.

- (Fill in Name) CLOSED NEXT WEEK (DATE)	Use 6" Series C black letters on a reflective orange background with a 1/2" black border and 6" corner radius.
- TOMORROW	Cover the above “NEXT WEEK” with the “TOMORROW” sign the day before closing the road.
- FOLLOW DETOUR	Cover the above “TOMORROW” with the “FOLLOW DETOUR” sign the day of closing the road.

One week prior to a road closure, place Changeable Message Signs using message as depicted below.

(Fill in Name) CLOSED NEXT WEEK (DATE)	-
- TOMORROW	Replace “NEXT WEEK” with “TOMORROW” the day before closing the road.
- FOLLOW DETOUR	Replace “TOMORROW” with “FOLLOW DETOUR” the day of closing the road.

After the pre-job conference and before the closure, meet with the Inspector-In-Charge and the District Traffic Engineer's representative to locate detour signing and identify conflicting signs which must be covered or removed.

Notify the District Traffic Engineer and authorized representative prior to implementing phase change.

TRAFFIC CONTROL/DEVICES REQUIREMENTS

The signs and traffic control devices listed or indicated on the Traffic Control Plan or Publication 213 represent the minimum requirements for this item and as such, are for information only. The number and types of traffic control signs and devices for this project

will be predicated on the number and location of work sites, the extent of repairs and the planned sequence of operations.

~~All vinyl roll up material used to overlay overhead and all type (A, B, C, D, E, and F) signs shall be reflectorized including the letters and shields.~~

Provide new traffic control signs and devices at the start of the project. Do not use reflective sheeting that is scratched, scarred, and dirty or shows evidence of loss of reflectivity. Do not use signs or devices that are cracked, bent, dented or broken. Replace reflective sheeting should it become damaged where retroreflectivity becomes defective or falls below the minimum retroreflectivity levels as per Chapter 2 of the Publication 46. Immediately repair or replace damaged, defaced or dirty signs, devices or barrier. Replace traffic control devices as necessary as per Appendix C in the Publication 213.

~~For long-term temporary traffic control set-ups, place an identification marker on the back of the sign listing the ECMS number so that the sign can be distinguished from other projects' signs.~~

Mount all construction warning signs (W series), R11-2, R11-2-1, R11-3A, R11-4, and G20-1 for long-term operations on Type III barricades. Include one Type B light on each W series and R11-3A signs and two Type B lights on R11-2, R11-2-1, and R11-4 signs. If it is not possible to mount construction warning or other signing as indicated or specified, submit an alternate method for approval by the ~~District~~ City Traffic Engineer or authorized representative.

Do not position construction warning signs on sidewalks unless the signs can be positioned to meet the minimum requirements stated in Publication 213. If construction warning signs cannot be positioned to meet the minimum requirements, then signs should either be field-adjusted per the Inspector-in-Charge's approval or installed on "H" Bases per the TC-8717 Standards.

Provide additional channelizing devices and barricades at intersections and ~~, major~~ driveways ~~and ramps~~ to prevent vehicles from turning onto any lane closed for construction. Space channelizing devices at 5-foot intervals or as directed by the ~~District~~ City Traffic Engineer or authorized representative or the Inspector-In-Charge PWSA's.

Use channelizing devices with Type C steady burn lights for all nighttime lane restrictions. Mount a light on each device used in transition areas and on every third device used in tangent sections.

For short term night time operations, place a Type B light on all W-series and R11-3A signs and two Type B lights on R11-2, R11-2-1, and R11-4 signs used in the traffic restrictions.

The contractor shall have a sufficient amount of the following signs available in case their use becomes necessary: W3-4 "BE PREPARED TO STOP" and W20-7 "FLAGGER SYMBOL". These signs are not intended to be part of the required normal traffic control or a supplement thereto.

When flaggers are used, they must be properly attired. This includes, but is not limited to, vest, leggings, and hard hat.

City

Space channelizing devices in the tangent sections at one times the normal posted speed limit unless otherwise noted on the Traffic Control Plan or as directed by the ~~District~~ Traffic Engineer's authorized representative or the Inspector-In-Charge. Channelizers used in the PATA Drawings from Publication 213 shall be spaced at one times the normal posted speed limit in tangent sections.

PWSA's

For overnight operations, if located within 500 feet of any residence or business use arrow panels that are electrically, solar or battery operated.

~~When working on entrance and exit ramp gore areas, the same Traffic Restrictions for main road SR's must be adhered to for ramp SR's.~~

Erect "ROAD WORK AHEAD" (W20-1, W30-1-6) signs with Type B lights attached on each intersecting road and ~~major~~ drive, for the appropriate situation or as shown on the traffic control plan.

~~Post Act 229 signs in accordance with the requirements specified in Publication 213 – PATA 003, 'Act 229 Guidelines'.~~

Provide a Traffic Control Supervisor or Supervisors and phone numbers where they can be reached on a 24 hour - 7 days a week basis for the duration of the project. The Traffic Control Supervisor must be knowledgeable of work zone traffic control including incident management. The Traffic Control Supervisor must have a thorough understanding of the Manual on Uniform Traffic Control Devices (MUTCD) and Publications 212 and 213. The Traffic Control Supervisor shall attend the pre-job meeting. The Supervisor's responsibilities are as follows:

Notify ~~District Public Relations Office,~~ affected municipalities and property owners of all traffic restrictions~~. Prepare News Releases and submit to the Inspector-In-Charge for his concurrence prior to the final submission to the District Office~~.

Implement and maintain traffic control schemes. Place and maintain all traffic control signs and devices used on the project.

and

Conduct daily reviews and document the performance of traffic control signs, devices, off-duty uniformed police ~~and temporary pavement markings~~ during the day and night, adverse weather conditions and active and inactive construction operations, as directed. The Traffic Control Supervisor will present all MPT problems and discrepancies in writing to the ~~Department's~~ Inspector-In-Charge by noon of each day.

PWSA's

Prepare and submit the proposed corrective action to the ~~Department's~~ Inspector-In-Charge. Correct any deficiencies or damage discovered during the daily review immediately.

~~Notify the Traffic Management Center (TMC) (412) 429-6030 fifteen (15) minutes prior to imposing any lane restrictions, prior to removing any lane restrictions and for notification of any highway incidents within the limits of the work zone.~~

~~Designate a representative to serve on Incident Management Committee. (Interstate and Expressway only)~~

Maintain a daily written record of any crashes, work zone incidents, and maximum queue lengths for each traffic pattern for the life of the project. All feedback received from the public through phone calls, in person, or in writing shall also be captured. This information shall be submitted daily to ~~PENNDOT's~~ Inspector-In-Charge and will be logged and forwarded to the ~~District Traffic Unit~~ when requested.

City of Pittsburgh, Department of Mobility and Infrastructure

PWSA's

Maintain ongoing communication with the Inspector-In-Charge regarding operations that will impact transportation operations in the project area. The Contractor shall develop and maintain lists of phone, fax numbers and e-mail addresses for the affected stakeholders within the project area, including but not limited to:

City of Pittsburgh

~~Townships~~, school districts, emergency services, major businesses, transit companies, nearby trucking firms, and other prominent traffic generators in the project vicinity. The Contractor is responsible for notifying these groups of changes in the traffic control phasing at least 48 hours in advance of the phase change or as directed by the Inspector-In-Charge in writing when this notification occurs.

PWSA's

When the work area encroaches on a crosswalk, sidewalk or other pedestrian walkway, provide a smooth surface, without drop-offs, for pedestrian access at all times. If access cannot be maintained, submit a detailed plan, including the durations ~~and detour lengths~~, for satisfactorily closing the walkway to pedestrian traffic to the Inspector-In-Charge. Include the number and type of devices to be used in accordance with the appropriate figure from Publication 213. Do not close any crosswalk, sidewalk, or other pedestrian walkway without prior approval of the plan and at all times adheres to the submitted plan unless otherwise directed.

PWSA's

~~Use a "NO GUIDE RAIL" (W21-9A) sign with a Type B light attached when existing guide rail is removed. Erect the first sign at a distance upstream from the removed guide rail section of 2 times the speed limit, in feet. Erect additional signs at intervals not greater than 1/2 mile. Remove guiderail when necessary and replace within an appropriate time frame.~~

During nighttime operations, all workers must wear hard hat, Class 3 vest and leggings unless operation is behind positive protection (barrier).

A minimum of one ingress and egress point for each property must be maintained ~~for both travel directions provided they are not separated by a barrier or grass median~~.

Do not change any part of the Traffic Control Plan and/or Section 901 without written approval of the ~~District~~ Traffic Engineer or authorized representative. This includes but is not limited to:

City

- Traffic Control Phasing
- Location and hours of operation for all off-duty uniformed police officers.
- Times and/or dates when traffic may not be restricted.
- Any short-term ~~or long-term~~ detours.

Limit any lane closure to the length necessary to safely perform the required work.

Provide off-duty uniformed police control as a minimum at the following signalized intersections:

- Forbes Avenue and Armstrong Tunnel.
- Forbes Avenue and Chatham Square/McAnulty Drive.
- Forbes Avenue and Brady Street
- Fifth Avenue and Chatham Square/Washington Place.
- Fifth Avenue and Kirkpatrick Street/Birmingham Bridge.

When working at or within close proximity to a signalized intersection, provide off duty uniformed police officers to control and direct traffic at the intersection. Provide police officers to manually operate traffic signals or have the police officers place the signals in a flashing mode and direct traffic at the intersection. Give the ~~municipality~~ one week advance notice prior to working within a signalized intersection. Prior to removing the police officer at the end of the workday, return the traffic signals to normal operation.

City of Pittsburgh, Department of Mobility and Infrastructure

~~Open the specified roadway and/or ramps by the specified times, dates, and/or calendar day durations, or be assessed Road Users Liquidated Damages as specified in the Special Provisions entitled "Road Users Liquidated Damages."~~

five

TRAFFIC/CONSTRUCTION RESTRICTIONS

Monday through Friday

Do not cause intermittent traffic stoppages for longer than ~~XX~~ minutes. When traffic stoppages are necessary, utilize the appropriate PATA in Publication 213. Do not stop traffic between 6:00 A.M. to 9:00 A.M. or 3:00 P.M. to 5:00 P.M. After any one ~~XX~~ minute stoppage, all Queued Traffic shall be cleared and any succeeding ~~XX~~ minute stoppage shall not occur until traffic has returned to "normal" pre-stoppage flow.

Do not cause intermittent pedestrian traffic stoppages on City sidewalks for longer than two minutes. After any single two-minute stoppage, all queued pedestrian traffic shall be cleared.

~~(Note to Designers – Insert all necessary time restrictions into this section that apply on a project specific basis.)~~

- SHORT-TERM TIME RESTRICTIONS

Short-term operation allowable work hours are as follows:

- Monday thru Friday: 7:00 A.M. to 5:00 P.M. - Fifth Avenue and it's side streets (excluding "No Outlet" Wyandotte Street and Moultrie Street).
- Saturday & Sunday: 6:00 A.M. to 8:00 P.M. - "No Outlet" streets Wyandotte Street and Moultrie Street.
- Monday thru Friday: 6:00 A.M. to 4:00 P.M. - Forbes Avenue and it's side streets east of Chatham Sq.
- Monday thru Friday: 8:00 P.M. to 6:00 A.M. - Forbes Avenue and it's side streets west of Chatham Sq.

~~Project Manager to obtain these narratives. (PASTE COPIED TRAFFIC/CONSTRUCTION NARRATIVE HERE AND DELETE ABOVE NOTE TO DESIGNERS)~~

Fifth Avenue, Forbes Avenue and all side streets

For short term operations, do not restrict traffic flow on ~~SR~~ _____ from 5:00 P.M. to 7:00 A.M. and from 6:00 P.M. to 8:00 P.M. Monday through Friday and ~~during non-working hours.~~ except at the following locations indicated below under Saturdays and Sundays restrictions.

(Forbes Ave east of Chatham Square)

~~For short term operations, on S.R. _____, maintain all turning lanes from _____ A.M. to _____ A.M. and from _____ P.M. to _____ P.M. Monday through Friday and during non-working hours.~~

(Fifth Avenue), 4:00 P.M. to 6:00 A.M. (Forbes Avenue west of Chatham Square)

Saturdays and Sundays –

~~(Note to Designers – Select the appropriate short term weekend time restrictions below.)~~

on "No Outlet" Wyandotte Street and Moultrie Street

For short-term operations, do not restrict traffic flow on ~~SR~~ _____ from 8:00 P.M. to 6:00 A.M. ~~and from _____ P.M. to _____ P.M.~~ and during non-working hours.

City Streets is

parking lane, or sidewalk

No work on ~~SR~~ _____ permitted affecting any travel lane, ~~shoulder, associated ramp, or gore area~~ on Saturdays and/or Sundays. except when working on Wyandotte Street and Moultrie Street, both "No Outlet Streets" and Fifth Avenue adjacent to each intersection.

- ADDITIONAL RESTRICTIONS

City Streets

Long-term lane restrictions ~~are/~~are not permitted on ~~SR~~ _____ ~~in accordance with the Publication 213 and/or the project specific Traffic Control Plan~~.
~~(Note to Designers: This is to emphasize if long-term restrictions are permitted on a roadway.)~~

City Streets (specific name of City Street being worked on)

, except where indicated in the traffic control tables and/or on the traffic control plans.

Closure and detour of ~~SR~~ ____ is not permitted. ~~(Note to Designers: This is to emphasize if a closure and detour is permitted on a roadway.)~~

When detouring traffic for a road closure, the detoured traffic cannot go through an adjacent BRT work area on Fifth Avenue, Forbes Avenue or a side street.

~~On interstates, expressways, and project specific, perform all major traffic switches and/or phase implementations on weekends during allowable work hours.~~

Only one side street can be closed to traffic at any one time on approaches to either Fifth Avenue or Forbes Avenue to allow for adjacent side streets to be utilized as detour routes.

When ADA curb ramp closures are required, close only one ADA curb ramp corner (per intersection) at a time. Do not work on adjacent intersections concurrently.
~~Failure to adequately maintain driveway access will be subject to work zone liquidated damages. Driveway tie-ins shall be installed to the satisfaction of the Department and driveway owners.~~

~~No traffic restrictions are permitted during the planned hiatus from (date) to (date).~~

~~**During the installation of the wearing course between Sta. ___ to Sta. ____ utilizing dual pavers, implement the appropriate Pub 213 figure to accommodate paving activities. Crossovers are not permitted to be implemented between _____ to ____ Monday through Friday, _____ Saturday and _____ Sunday. (Delete paragraph if project does not utilize a crossover to run dual pavers)**~~

- HOLIDAY RESTRICTIONS

No short-term lane restrictions are permitted on the day before, on, or after a holiday unless otherwise noted:

- Memorial Day Weekend (including the Friday before)
- Independence Day Holiday ~~(designer to add the weekend if it falls close to a weekend)~~
- Labor Day Weekend (including the Friday before)
- Thanksgiving Holiday (including the following Saturday and Sunday)
- Christmas Holiday ~~(designer to add the weekend if it falls close to a weekend)~~
- New Year's Day

Friday,

~~(Note to Designers - The following three bullets are only to be used in the event there is a corresponding RULD associated.)~~

- ~~CALENDAR DAY RESTRICTIONS~~

~~Open S.R. ____ to unrestricted traffic within ____ consecutive calendar days.~~
~~Open S.R. ____ to unrestricted traffic within the successful bidder's number of specified consecutive calendar days. (A+Bx Projects)~~

- ~~INTERIM MILESTONE DATE RESTRICTIONS~~

  ~~Open S.R. _____ to unrestricted traffic by (start date of planned hiatus).~~
  ~~Open S.R. _____ to unrestricted traffic by (date).~~

- ~~WEEKEND-LONG RESTRICTIONS~~

  ~~On S.R. _____ (number) weekend lane restrictions are permitted from _____ P.M. Friday to _____ A.M. Monday.~~

  ~~On S.R. _____ (number) weekend long closures with detour are permitted from _____ P.M. Friday to _____ A.M. Monday.~~

- LANE WIDTH RESTRICTIONS

  City Streets (specific name of City Street being worked on)
  On ~~SR~~___, during permitted work times maintain a minimum of one 10 foot wide lane of unobstructed traffic in each direction during working hours in accordance with the appropriate Publication 213 figures and/or as directed by the ~~District~~ Traffic Engineer's authorized representative. Do not locate a transition within a signalized intersection.
  City
  or on one-way streets

  City Streets (specific name of City Street being worked on)
  On SR ___, during permitted work times maintain a minimum of one 10 foot wide lane for alternating traffic flow around the work area using flaggers in accordance with the appropriate Publication 213 figures and/or as directed by the District Traffic Engineer's authorized representative.

sufficient quantity of steel plates
Maintain a ~~minimum of one 10 foot wide lane~~ adjacent to the work area for emergency vehicles (Closed Road).
during waterline installation on "No Outlet" Wyandotte Street and Moultrie Street due to narrow roadway widths.
Open the roadway to all traffic at the end of each workday for short-term restrictions.

~~Clean the shoulders and open the bridge to all traffic at the end of each workday for short-term restrictions.~~

~~When using the shoulder area on a bridge for a temporary traffic lane, verify that traffic can be maintained on the water table (shoulder) due to inlets and scuppers prior to shifting traffic onto shoulder.~~

or parking
Place steel plates over ~~inlet~~ excavations in open travel lanes during non-working hours.

~~Do not use steel plates to bridge any pavement construction.~~

When using plates in open travel lanes provide a metal plate of sufficient thickness and recess the plate so that the top of plate is flush with the roadway surface or provide a temporary bituminous wedge of 6-inches in horizontal length for every 1-inch of vertical depth around the exposed metal plate. Ensure the metal plate is anchored down to non-movement for either situation

~~When working above a traveled roadway, provide false work, netting or other means to prevent construction debris, including water, from falling to the roadway below.~~

When excavating for accelerated concrete replacement, excavate only that amount that can be replaced and the roadway opened to unrestricted traffic by the time allotted.

(Note to Designers – Select from the following five sections as they apply, delete the sections that do not apply to the project.)

FREEWAYS AND EXPRESSWAYS: When milling and paving within the same operation, use the following paragraphs:

- No vertical grade deviations along the roadway are permitted at the end of the workday. In the areas of longitudinal grade deviations install a temporary wedge with a rate of 6-inches horizontal length for every 1-inch of vertical depth by either installing a temporary bituminous wedge or milling a wedge into the adjacent existing bituminous material. For transverse joint tie-ins install wedges with a rate of 3-feet horizontal length for each 1-inch of vertical depth. Place “BUMP” (W8-1) and “ROUGH ROAD” (W8-8) signs with Type B Lights. Remove all wedges prior to the placement of the bituminous surface course.
- During the installation of the finished wearing course:
- Remove all wedges prior to the placement of the bituminous surface course.
- Place “BUMP” (W8-1) and “ROUGH ROAD” (W8-8) signs with Type B Lights.
- No vertical longitudinal grade deviations along the roadway are permitted. This does not apply to the Longitudinal Notched Wedge Joint.

FREEWAYS AND EXPRESSWAYS: During overlay operations, use the following paragraph:

- No vertical grade deviations along the roadway are permitted at the end of the workday. For transverse joint tie-ins install wedges with a rate of 3-feet horizontal length for each 1-inch of vertical depth. Place “BUMP” (W8-1) and “ROUGH ROAD” (W8-8) signs with Type B Lights. Remove all wedges prior to the placement of the bituminous surface course. This does not apply to the Longitudinal Notched Wedge Joint.

CONVENTIONAL HIGHWAYS: When milling and paving within the same operation, use the following paragraphs:

- During nightly milling and resurfacing operations:
- Place “BUMP” (W8-1) and “ROUGH ROAD” (W8-8) signs with Type B Lights.
- No vertical longitudinal grade deviations greater than 1.5-inches along the roadway are permitted at the end of the work day. In the areas within the intersections install a temporary wedge with a rate of 6-inches horizontal length for every 1-inch of vertical depth by either installing a temporary bituminous wedge or milling a wedge into the adjacent existing bituminous material.
- Install temporary bituminous material around all manholes, inlets, valve boxes, and between different roadway elevations including transverse joint tie-ins, side roads, driveways, and ADA curb ramps to provide a smooth transition. For manholes, inlets, valve boxes, and transverse joint tie-ins install wedges with a rate of 3-feet horizontal length for each 1-inch of vertical depth. For driveways and side roads,

install wedges with a rate of 6-inches horizontal length for every 1-inch vertical depth.
- During the installation of the finished wearing course:
- Remove all wedges prior to the placement of the bituminous surface course.
- Place “BUMP” (W8-1) and “ROUGH ROAD” (W8-8) signs with Type B Lights.
- No vertical longitudinal grade deviations along the roadway are permitted. This does not apply to the Longitudinal Notched Wedge Joint.

CONVENTIONAL HIGHWAYS: When milling and paving during separate operations, use the following paragraphs:

- During milling operations:
- Place "BUMP" (W8-1) and "ROUGH ROAD" (W8-8) signs with Type B Lights.
- No longitudinal grade deviations along the roadway are permitted at the end of the work day.
- Install temporary bituminous material around all manholes, inlets, valve boxes, and between different roadway elevations including transverse joint tie-ins, side roads, driveways, and ADA curb ramps to provide a smooth transition. For manholes, inlets, valve boxes, and transverse joint tie-ins install wedges with a rate of 3-feet horizontal length for each 1-inch of vertical depth. For driveways and side roads, install wedges with a rate of 6-inches horizontal length for every 1-inch vertical depth.
- During the installation of the finished wearing course:
- Remove all wedges prior to the placement of the bituminous surface course.
- Place "BUMP" (W8-1) and "ROUGH ROAD" (W8-8) signs with Type B Lights.
- No vertical longitudinal grade deviations along the roadway are permitted. This does not apply to the Longitudinal Notched Wedge Joint.

~~CONVENTIONAL HIGHWAYS: During overlay operations, use the following paragraph:~~

- ~~Place "BUMP" (W8-1) and "ROUGH ROAD" (W8-8) signs with Type B Lights.~~
- ~~No vertical grade deviations along the roadway are permitted at the end of the work day. This does not apply to the Longitudinal Notched Wedge Joint.~~
- ~~Install temporary bituminous material around all manholes, inlets, valve boxes, and between different roadway elevations including transverse joint tie-ins, side roads, driveways, and ADA curb ramps to provide a smooth transition. For manholes, inlets, valve boxes, and transverse joint tie-ins install wedges with a rate of 3-feet horizontal length for each 1-inch of vertical depth. For driveways and side roads, install wedges with a rate of 6-inches horizontal length for every 1-inch vertical depth.~~

Backfill with Superpave Base Course any excavation that extends into the travel lane due to pavement forming procedures.

~~When setting or resetting temporary barrier, work in the direction of adjacent traffic flow so that no blunt ends are exposed to oncoming traffic during non-working hours. Also, when removing temporary barrier, work in the direction opposite to adjacent traffic flow so that no blunt ends are exposed to oncoming traffic during non-working hours. If a blunt end must be exposed to oncoming traffic during non-working hours, protect it using a temporary impact attenuator designed for 10 MPH above normal posted speed limit. When gaps in~~

barrier are maintained for Contractor access, provide enough devices to prevent access at the end of each workday. When barrier is being used in conjunction with temporary markings, place all temporary pavement markings prior to beginning barrier placement.

Protect blunt ends of existing barrier, bridge parapets, or any other blunt ends that are exposed at any time during the project with a Shadow Vehicle equipped with a truck mounted attenuator. An alternate method of protection can be utilized upon approval of the District Traffic Engineer or authorized representative.

On roadways with speed limits of 35 MPH or greater, reduce the work zone speed limit to 10 MPH less than the normal posted speed limit for all long-term lane restrictions utilizing Pub. 213 PATA setups and in accordance with the approved traffic control plan. For short-term restrictions on roadways with speed limits of 35 MPH or greater, temporarily reduce the work zone speed limit to 10 MPH less than the normal posted speed limit during allowable working times. Cover/Remove speed limit signs at the end of the shift for short-term operations. Erect R2-1 (SPEED LIMIT) and G20-5AP (WORK ZONE PLAQUE) signs at the beginning of each work zone and at 0.5 mile intervals throughout the work zone. Utilize Speed Advisory Plaques (W13-1P) on each approach to the work zone as specified in Publication 213, PATA 013, 'Advisory Speed Posting Guide'.

When performing short-term operations on one lane ramps, provide traffic control in accordance with the following:

A. When operations can be performed without encroaching upon the travel lane, provide traffic control in accordance with Publication 213, PATA 101 (for conventional highways) or 401 (freeways and expressways).

B. When operations encroach upon a portion of the travel lane, maintain a minimum 10-foot wide unobstructed travel lane. Erect traffic control signs and devices in accordance with Publication 213 PATA 406, 'Work Space on a Ramp'.

C. In addition to A and B above, place a "ROAD WORK AHEAD" (W20-1, W30-1-6) signs on the left side of the ramp unless physically impossible.

D. If it is not possible to place the "ROAD WORK AHEAD" signs at the required distance ahead of the work area, place them on the ramp as far from the work area as possible. Then place a "RAMP WORK AHEAD" (W21-101) sign on the mainline roadway at a distance from the ramp work area equal to the required distance for the "ROAD WORK AHEAD" sign.

Remove or deactivate any warning lights during periods when signs are covered or folded.

When closing a lane on a freeway, expressway or multi-lane highway, erect a G70-1 (USE BOTH LANES TO MERGE POINT) ½ mile in advance of the lane closure. Erect a G70-2 (MERGE HERE TAKE YOUR TURN) sign 500 feet in advance of the lane closure.

For inspection purposes (such as the final inspection) provide a shadow vehicle(s) with truck mounted attenuator which are properly rated for the normal posted speed limit.

Dropoff conditions are in accordance with Section 901.3J except as follows:

General Conditions (Bullet Point 3) revise to read:

An approved Type C steady burn light shall be placed on each channelizing device throughout the drop-off condition.

General Conditions (Bullet Point 5) add the following:

A Type B light shall be installed on each W-series sign.

General Conditions revise by adding the following:

6. When the drop-off condition is less than 25 feet in length, place a channelizing device at each end of the drop-off condition.

Condition (1) Between Active Travel Lane & Non-Active Travel Lane or Shoulder Treatment revise to read:

Place channelizing devices throughout drop-off condition. Space all channelizing devices at a maximum distance of 25-foot spacing throughout a continuous or intermittent drop-off condition, unless otherwise directed.

Condition (1) Between Two Active Travel Lanes Treatment revise to read:

- Install Longitudinal Notched Wedge Joint during paving operations in accordance with RC-28M and during milling operations mill a 12:1 wedge. For Temporary Overlay Transitions during paving and milling operations follow RC-28M except for the paving notch, feather transition edge as much as mix will allow. Place channelizing devices throughout drop-off condition. Space all channelizing devices at a maximum distance of 25-foot spacing throughout a continuous or intermittent drop-off condition, unless otherwise directed.

OR

- End all lanes at the same grade longitudinally, install Temporary Overlay Transitions during paving and milling operations in accordance with RC-28M except for the paving notch, and feather transition edge as much as mix will allow. Space all channelizing devices at a maximum distance of 25-foot spacing throughout a continuous or intermittent drop-off condition, unless otherwise directed.

Condition (2) Footnote (D) revise the second sentence to read:

Space all channelizing devices at a maximum distance in feet, equal to the posted speed limit in miles per hour throughout a continuous or intermittent drop-off condition, unless otherwise directed.

~~Item 0901-0240~~ Additional Traffic Control Signs. All locations and messages must be approved by the ~~District~~ City Traffic Engineer or authorized representative.

Section 901.4(a) Maintenance and Protection of Traffic During Construction. Revise by adding the following:

additional warning lights, additional traffic control signs, flashing arrow panel,

Includes floodlights, shadow vehicles, truck mounted attenuators, and associated maintenance, fuel, relocations, and operating costs for the duration of the project.

Section 901.4(b) Separate Pay Items. Revise by deleting the 6th bullet and 26th bullet.

, 23rd bullet, 24th bullet,

DOCUMENT 00010

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END OF SECTION

SECTION 01100

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract description.

B. CONTRACTOR's use of site.

C. Work sequence.

D. OWNER occupancy.

E. Specification Conventions.

F. Completion of Restoration

1.2 CONTRACT DESCRIPTION

A. Work of the Contract includes the replacement of the Pittsburgh Water and Sewer Authority (PWSA) public water system including water distribution mains (6", 8", 12", 16", 20", and 24"watermains), valves, hydrants, and water service laterals (WSLs) in the City of Pittsburgh's Uptown neighborhood, as required or directed. The work area extends from Sixth Avenue, below I-579, to the Birmingham Bridge, on both Fifth Avenue and Forbes Avenue corridors. The work area encompasses approximately 6,000 linear feet (LF) on each of Fifth Avenue and Forbes Avenue. Work includes the replacements of primarily 8" and 16" watermains along 5th Avenue, and 6", 8'. 20", and 24" in Forbes Avenue.

B. To administer this Contract, the OWNER will issue the signed Contract, including drawings, estimated Unit quantities and Unit Prices Bid, obtained from the contract documents. Locations will be throughout the Uptown neighborhood, of the City of Pittsburgh along Forbes Avenue and Fifth Avenue. More than one construction crew may be necessary to complete work at various locations. Contractor shall not mobilize to, or start work at any construction site without approval of the Owner's Construction Manager.

C. The OWNER does not guarantee CONTRACTOR that a backlog of work will be maintained.

D. The OWNER reserves the right to dictate CONTRACTOR's schedule as necessary.

E. Perform Work of Contract under Unit Price contract with OWNER in accordance with Conditions of Contract. Quantities on the proposal are estimates. It shall be understood that all quantities as shown on the proposal may be increased or decreased without limitations as ordered by the OWNER. The provisions of Paragraph 13.03 of the General Contract Conditions as they relate to unit items shall not apply to this work.

F. The CONTRACTOR shall furnish all labor, materials, equipment, machinery, apparatus, and tools, and perform all operations necessary to complete the work as ordered by the OWNER during the contract period. Any labor, materials, equipment, or apparatus not specifically mentioned herein that may be necessary for the proper completion of the entire work or of the individual items thereof within the intent of these specifications and details shall be furnished by the CONTRACTOR without additional compensation.

G. CONTRACTOR shall comply with the requirements of the Pittsburgh Department of Mobility and Infrastructure (DOMI) Right-Of-Way (ROW) manual for traffic control requirements. The use of Off-Duty Uniformed Police Officers shall be approved by the OWNER.

H. Unless, otherwise noted, Contractor will comply with the provisions detailed in PennDOT Publication 408 (Current Edition), or PWSA Standards, whichever is more applicably stringent and/or as directed by OWNER to complete the scope of work as outline in these specifications.

I. Continuous water and sewer service shall be maintained throughout the job. The CONTRACTOR shall furnish and install temporary cuts and plugs of existing pipes as necessary to maintain said service. Any required temporary water service plans for individual properties and businesses shall be developed by the CONTRACTOR and approved by the OWNER.

J. The CONTRACTOR shall dewater, bulkhead, and bury all existing lines that are abandoned in place at no additional payment. Abandoned line(s) larger than 8" in diameter must be filled with approved flowable fill.

K. It is the intent of these documents to describe the complete type of work required to perform any reconstruction of existing waterlines or construction of new waterlines, waterline gate valves, and water service lines and incidental repairs as directed during the contract period.

L. The CONTRACTOR is responsible for dechlorinating all potable water that is dewatered from existing waterlines and trenches at no additional payment.

M. CONTRACTOR's REPRESENTATIVE is directly responsible for properly informing the CONSTRUCTION MANAGER, or their designee, giving timely notice of their intended work and their daily work locations. Failure to follow this requirement will make the respective work subject to non-payment.

N. The OWNER has no responsibility to honor any requirements that CONTRACTOR has under labor agreements or other to pay for a minimum number hours/day.

O. The CONTRACTOR shall complete mandated work within 365 calendar days of issuance of Notice-to Proceed.

~~P. CONTRACTOR shall be responsible for addressing customer complaints as received by the OWNER. At a minimum, the CONTRACTOR will be required to reach out to the customer to arrange to meet to assess the nature of the complaint and possible remedies. This contact will be made within 24 hours of receiving the complaint from the OWNER. The CONTRACTOR will~~

~~be required to address the complaint within 72 hours of receiving the complaint from the OWNER. Emergency situations such as no water service or a surcharging sewer will need to be addressed immediately when assigned to the CONTRACTOR by the OWNER.~~

P. CONTRACTOR shall be responsible for addressing customer complaints as received by the OWNER.
   1. The CONTRACTOR will be required to investigate water and sewer related complaints regardless of the type or extent of the service line replacement or water main construction work competed at or in the general vicinity of the property. These complaints can be related to, but not limited to leakage at the wall or floor penetration, leaks on the service line up to and including the water meter, inadequate support and bracing of installed work, property damage complaints, low or high water pressure (which may require the removal of aerators in fixtures), running toilets, and sewer backups.
   2. The CONTRACTOR will be required to contact to the customer to schedule a time to assess the nature of the complaint and identify possible causes and remedies. Contact with the customer should be made within 24 hours of being notified of the complaint by the OWNER.
   3. The CONTRACTOR will be required to investigate and should address the complaint within 72 hours of being notified of the complaint by the OWNER.
      a. The CONTRACTOR may be required to remove, clean and reinstall fittings, aerators, fixtures, and the water meter within the property to address the complaint.
      b. The CONTRACTOR may be required to excavate to investigate complaints related to leaking service lines, fittings, and valves.
      c. The CONTACTOR may be required to insert a push-camera into the sewer lateral from within the home or through an external cleanout or fresh-air vent in order to investigate a sewer-related complaint. The CONTRACTOR must make provisions to clear a clogged sewer lateral in order to complete the inspection of the sewer lateral. The lateral should be inspected from the sewer main using a side-launch lateral camera in the event the sewer lateral cannot be inspected from within the property or through an existing cleanout or fresh-air vent.
         i. CONTRACTOR must record the CCTV inspection of the sewer lateral. A copy of the CCTV inspection video will be provided to the OWNER within 24 hours of completing the sewer inspection.
         ii. The sewer lateral should be free of solid and liquid material to allow for a clear view of the entire sewer lateral as the inspection is completed.
         iii. The lateral camera must be provided with a means to identify the distance the camera has been inserted into the sewer lateral. The distance travelled by the camera shall be visible on the inspection video. The CONTRACTOR should document the distance, along the length of the sewer lateral, from the inspection access point to the exterior face of the wall when completing an inspection from an access point inside the property. The CONTRACTOR should document the distance, along the length of the sewer lateral, from the face of the exterior wall to the inspection access point when completing an inspection from an access point outside the building. These dimensions will allow the CONTRACTOR and CONSTRUCTON MANAGER to determine the specific location of the camera within the sewer lateral in relation to the building.

d. The CONTRACTOR shall be responsible for cleaning up the work area after investigating and addressing the complaint.

4. Emergency situations such as significant leaks or flooding, no water service, or a surcharging sewer must be addressed within 4 hours of being notified of the complaint by the OWNER. The OWNER will determine what constitutes an emergency situation.
5. No additional compensation will be made for the investigation of complaints that do not require excavation or sewer inspection.
    a. No compensation will be made for excavation or sewer inspection required to investigate a complaint if it is determined that the CONTRACTOR's work was the cause of the complaint. If it is determined that the complaint was not the result of any actions or work completed by the CONTRACTOR, the CONTRACTOR will be compensated using the exploratory excavation bid item for investigations requiring excavation and pro-rated crew time for investigations requiring sewer inspection. The CONTRACTOR will be paid according to the corresponding Bid Item in the event a specific item is included in the Bid for either type of work.
6. CONTRACTOR will notify the CONSTRUCTION MANAGER at least 4 hours prior to mobilizing to the site to address the complaint. The CONTRACTOR will, within 8 hours or at the start of the next day, notify the CONSTRUCTION MANAGER that the complaint is believed to have been resolved or that the CONTRACTOR believes that the complaint is not the result of their work. The CONSTRUCTION MANAGER will convey this information to the OWNER. The OWNER will then contact the property owner to confirm that the complaint has been adequately addressed or to inform the owner that the complaint is not the result of the work completed by the CONTRACTOR.
    a. OWNER will close the complaint in the event that the complaint has been adequately addressed.
    b. The CONTACTOR will return to the property to further investigate the complaint in the event the property owner does not believe that the complaint has been adequately addressed. No addition compensation will be provided for follow-up investigations or required work, including excavation or sewer inspection.

1.3 CONTRACTOR'S USE OF SITE

A. Construction Operations: Limited to areas noted on Drawings or as determined by CONSTRUCTION MANAGER.

B. Time Restrictions for Performing Work:
    1. The City of Pittsburgh Department of Mobility and Infrastructure has preliminarily determined the hours of work limitations:

        1. Fifth Avenue (Inbound to City):

            All work on Fifth Avenue and its side Streets, except for no outlet streets, is required to be completed during the hours of 9:00 AM to 7:00 PM Monday through Friday (Day-time Hours).

        2. Forbes Avenue (Outbound from City):

All work on Forbes Avenue, and its side streets West of Chatham Square is required to be completed during Night-time Hours (Between the Hours of 8:00 PM Monday through Friday evening and 6:00AM the following morning (Night-time hours).

All work on Forbes Avenue and its side streets East of Chatham Square is required to be completed during the hours of 6:00 AM to 4:00 PM Monday through Friday (Day-time Hours).

4. All Work on "No- Outlet" Streets (Wyandotte Street and Moultrie Street North of Fifth Avenue) is required to be completed during Weekend hours (Between the hours of 6:00 AM and 8:00 PM on Saturday and Sunday).

2. PWSA reserves the right to specify other working hours outside the normal times, or specify when work at a site is to be performed.
3. There shall be no additional payment for materials, equipment, or work completed at night, weekends, or during other non-working hours. No additional payment shall be made for crew downtime associated with work zone restrictions.
4. There shall be no premium time paid except through Bid Item: U-15: MISCELLANEOUS PREMIUM WORK FOR A FULL TIME CREW.

C. Utility Outages and Shutdown: coordinate with OWNER.

D. Access and Coordination: The Contractor's attention is directed to the fact that during the course of this construction, access to and through the project area will be required by other parties authorized by DOMI. The Contractor is required to coordinate with these parties so as not to restrict their access through the construction zone. The locations and nature of this access will be established through coordination with and approval of DOMI and the Owner.

1.4 WORK SEQUENCE

A. Construct Work in to accommodate Owner's occupancy requirements during construction period, coordinate construction schedule and operations with OWNER.

B. If any aspects of normal OWNER's operations need to be interrupted for completion of the work, notify the OWNER in writing. Submit notice with an alternate plan to cover contingency problems. In the alternate plan, allow for provision of temporary utilities or other essential services that must be interrupted for any period in performance of the contract work. Shutdown of utilities must be accomplished during approved hours at no additional cost to OWNER. If work requires shutdown in excess of the approved hours, separate shutdown periods shall be required. Do not proceed with any proposed shutdown without prior written approval.

1.5 OWNER OCCUPANCY

A. OWNER may occupy the site premises during the entire period of construction for the conduct of normal operations.

B. Cooperate with OWNER and City of Pittsburgh to minimize conflict, and to facilitate OWNER's operations.

C. Schedule the Work to accommodate OWNER occupancy.

1.6 COORDINATION WITH OTHER CONTRACTORS

A. The Owner has the right to employ other contractors at the site of the Project. During the progress of the Work, other contractors may be engaged in other Work on the Project or on other projects at the site. In such event, the Contractor shall coordinate the Work to be done hereunder with the work of the other contractors.

1.7 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the CONTRACTOR, unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

1.8 COMPLETION OF RESTORATION

A. The restoration work shall not be considered complete until the CONTRACTOR has installed the appropriate Utility Identification Tag on the asphalt patch, in accordance with DOMI Right of Way Procedures Manual.

B. The OWNER shall not issue additional work until the CONTRACTOR has completed final restoration on all sites in violation of the City requirement stated above.
   1. Exception will be made for all sites in which the installation was performed prior to March 17 (45 days before April 30, which the City considers to be the end of wintertime restoration).

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01200

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Applications for payment.

B. Change procedures.

C. Defect assessment.

D. Unit prices.

E. Alternates.

1.2 APPLICATIONS FOR PAYMENT

A. Submit notarized copy of each application on PWSA's electronic media driven form.

B. Content and Format: Utilize Bid Sheet for listing items in Application for Payment.

C. Payment Period: Submit at intervals stipulated in the Agreement.

D. Submit with transmittal letter as specified for Submittals in Section 01330 - Submittal Procedures.

E. Submit waivers.

F. Substantiating Data: When OWNER requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
   1. Current construction photographs specified in Section 01330 Submittal Procedures.
   2. Partial release of liens from major subcontractors and vendors.
   3. Affidavits attesting to off-site stored products.

1.3 CHANGE PROCEDURES

A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The OWNER/OWNER'S REPRESENTATIVE will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on PWSA's Field Instruction Form.

C. The OWNER may issue a Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within seven days.

D. Contractor may propose changes by submitting a request for change or Potential Change Order (PCO) to OWNER, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors.

E. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under Change Order Request. Changes in Contract Sum/Price or Contract Time will be computed as specified for Force Account Change Order.

F. Change Order Request: OWNER may issue directive, on PWSA's form, signed by OWNER, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

G. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.

H. Change Order Forms: PWSA's form.

I. Execution of Change Orders: OWNER will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

J. Correlation Of Contractor Submittals:
   1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
   2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
   3. Promptly enter changes in Project Record Documents.

1.4 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. Authority of OWNER to assess defects and identify payment adjustments, is final.

C. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
   1. Products wasted or disposed of in a manner that is not acceptable.
   2. Products determined as unacceptable before or after placement.
   3. Products not completely unloaded from transporting vehicle.
   4. Products placed beyond lines and levels of required Work.
   5. Products remaining on hand after completion of the Work.

6. Loading, hauling, and disposing of rejected products.

1.5 UNIT PRICES

A. OWNER'S REPRESENTATIVE will take measurements and compute quantities accordingly. Provide assistance in taking of measurements.

B. Unit Quantities: Quantities and measurements indicated in Bid Form are for contract purposes only. Quantities and measurements placed in the Work shall determine payment.
   1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at unit sum/prices contracted.

C. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of item of the Work; overhead and profit.

D. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by OWNER multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

E. Measurement Of Quantities:
   1. Weigh Scales: Inspected, tested and certified by applicable Pennsylvania Weights and Measures department within past year.
   2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
   3. Metering Devices: Inspected, tested and certified by applicable Pennsylvania department within past year.
   4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
   5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
   6. Measurement by Area: Measured by square dimension using mean length and width or radius.
   7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
   8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

F. Units
   1. Lump Sum (LS). Not measured. Indicates complete construction of the Work, or portions thereof, as shown on the Bid Form
   2. Each (EA). Measured by the number of individual items of work completed.
   3. Linear Foot (LF). Measured parallel to the longitudinal base or foundation upon which items are placed, or along the longitudinal surface of the item to the nearest 0.1 foot.
   4. Vertical Foot (VF). Measured vertically to the nearest 0.1 foot.
   5. Square Foot (SF). Measured by a two-dimensional area method on the surface of the item to the nearest 0.1 shrift.
   6. Square Yard (SY). Measured by a two-dimensional area method on the surface of the item to the nearest 0.1 sq.
   7. Acre. Measured by a two-dimensional area method on the surface to the nearest 0.1 acre.

8. Cubic Yard (CY). Measured by a three-dimensional volume method to the nearest 0.1 cubed.
9. Cubic Foot (CF). Measured by a three-dimensional volume method to the nearest 0.1 cubed.
10. Pound (LB). Measured by the actual item net weight to the nearest pound (avoirdupois), except for Ductile Iron Fittings, where the weight of a given fitting is specified by the contract.
11. Ton (TON). Measured by actual item net weight in short tons consisting of 2,000 pounds to the nearest 0.1 ton (avoirdupois).
12. Gallon. Measured by actual item liquid volume (except for pump capacity, which is calculated from the rated capacity of the pump times hours of operation) to the nearest quarter gallon.
13. K. Gallon. 1,000 gallons, to the nearest 0.1 K. gallon.
14. Board Foot Measure. Measurement by a three-dimension method of the actual item lumber board foot to the nearest 0.1 board foot.
15. K. Board Foot Measure. 1,000 board feet, to the nearest 0.01 K. board foot.
16. Bags. Measured as an item unit bag.
17. Crew-hour, Hour (Crew Hr). Measured to the nearest 15 minutes.
18. Hour, Hour (HR). Measured to the nearest 15 minutes.
19. Day. Measured to the nearest quarter day.

G. Unit Price Schedule:

U-1 Mobilization / Demobilization, Permits, Bonds and Insurance, Maintenance and Protection of Traffic

Payment shall be LUMP SUM prorated according to the percentage of work completed.

Basis of Payment: mobilization; demobilization; permits and associated fees; bonds; insurance; project protection; temporary facilities including temporary fencing and the Contractor's field office; weekly progress meetings; coordination with the OWNER and CONSTRUCTION MANAGER, Subcontractors, Subconsultants, and manufacturer's reprentatives; all pre-construction, construction and post-construction record photographs, and all other incidental work. It includes furnishing and installing all labor, equipment, and materials necessary to properly and satisfactorily maintain vehicular and pedestrian traffic in the work zone area, in accordance with PennDOT Publication 203, PennDOT Publication 213, Allegheny County Department of Public Works Policy and Procedure for Work within County Road Right-Of-Way, and the Pittsburgh DPW Right-of-Way Manual. This includes, but is not limited to furnishing, installing and maintaining protective pedestrian safety fencing, traffic and pedestrian control signs, barrels w/ flashers, flashing arrowboard devices, control barricades w/ flashers, plating of excavations and all excavations not in an active work area, providing temporary access, and/ all other requirements in accordance with the specifications which are not specifically covered by the various traffic control payment items and/or as directed.

No additional payment will be made if the CONTRACTOR, for whatever reason, mobilizes/demobilizes more than once at a given location or for mobilization and demobilization from multiple consturction sites.

CONTRACTOR may request payment of up to 50% of this Bid Item on the first pay application; 20%, invoiced equally over the remaining pay applications, excluding the final invoice; and 30% on the final pay application.

Obtaining the ACHD permit for private line replacement is included in Bid Item W-87.

The LUMP SUM amount for this item is capped at a maximum 5% of the total bid, excluding Bid Item U-1.

U-4 **Rock & Obstruction Excavation, All Depths**

Payment shall be per CUBIC YARD. Measurement shall be based on the field dimensions of excavated rock zone areas.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary, over and above those required for unclassified excavation, to excavate and dispose of rock, concrete encasement, and old foundations.

U-5 **Exploratory Excavation and Backfill**

Payment shall be per CUBIC YARD. Measurement shall be based on the field dimensions of excavated areas.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to perform exploratory excavation and backfill required at any other locations directed in the field by the OWNER and not covered in any other Pay Item. This shall include work associated with exploratory excavations but not be limited to: all saw cutting of pavement; installation and removal of sheeting, bracing and shoring; unclassified excavation and disposing of unsuitable excavated material; removing shoring, etc.; providing, placing and compacting approved backfill material; dewatering of trench; repairing damaged existing facilities. Exploratory excavations shall be limited to a 10’x10’ footprint unless approved by OWNER.

Surface Restoration is not included in this Item. Item U-14 (Misc. Crew Time) shall not be paid as an addition to this item.

U-7 **Additional Bedding Material, As Directed**

Payment shall be made at the unit price bid per CUBIC YARD. Measurement shall be based on the field dimensions from the width of the trench and from the bottom of the trench to the proposed pipe bedding elevation. The depth required to reach competent ground shall be as determined by the Engineer.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to excavate and dispose of unsuitable materials and place AASHTO #1 stone aggregate or approved equal material imported to stabilize the utility trench at depths greater than the

proposed standard bedding zone provided under the various payment items. Over-excavation and backfill shall only be at the direction of the Construction Manager.

U-8 **Concrete Encasement**

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on the interior dimensions of the concrete forms.

Basis of Payment: Includes furnishing concrete encasement where shown on the Contract Documents including applicable drawings or as directed. Work shall include all unclassified excavation, sheeting, bracing, and shoring, backfill, formwork, concrete reinforcing, bedding, and all other requirements for a complete installation as indicated on the plans and Standard Details and in accordance with the contract documents.

U-9 **Concrete Anchors and Thrust Blocks**

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on the interior dimensions of the concrete forms.

Basis of Payment: Includes furnishing concrete anchors and thrust blocks and collars as shown on the Contract Documents including applicable drawings. Work shall include all unclassified excavation, sheeting, bracing, and shoring, backfill, embankment, formwork, concrete reinforcing, bedding, and all other requirements for a complete installation as indicated on the plans and in accordance with the contract documents.

U-10 **Flowable Fill**

Payment will be made by the unit price bid per CUBIC YARD complete in place. Measurement shall be based on the volume of fill used.

Basis of Payment: Includes formulating, furnishing, and placing flowable fill material into locations indicated on Contract Documents including applicable drawings, or as directed in the field. Work under this item shall include, but not be limited to, all equipment, labor, materials formulation cost, cement, fly-ash, fine aggregate, additives, plugs, temporary bulkheads, excavation, water fees, testing, location mapping, and proper disposal of all unsuitable and surplus materials.

U-11 **Bypass/Dewatering Pumping as Directed**

Payment will be per MAN-HOUR, by the hours of operation completed. Pump size will vary as directed**.**

Basis of Payment: The Contractor shall be responsible for any and all pumping required for continuous bypass pumping, as directed, at selected work locations, no matter what the source of the water. Sources include but are not limited to: accumulated precipitation, encountered ground water, and sewage back-up. Work under this item shall include furnishing and connecting all piping, pumps, and appurtenances for the purpose of bypass pumping. Work also includes recessing the line and furnishing and placing bituminous

material to permit traffic to drive over the line at intersections and driveways. This item also includes maintaining pumps and lines continuously, while in service. The length of suction and discharge hose included in this item is 100 feet. Manhours based upon start and stopping duration of continuous pumping operations.

This Item shall only apply for the bypassing of flows in excess of 5 MGD which has received prior approval from the OWNER.

U-12 **Flag Person**

Payment shall be made by the unit price bid per MANHOUR. Measurement for payment shall be based on the actual number of hours provided.

Basis of Payment: Includes providing a properly certified uniformed flagperson in accordance with contract specifications and/or as directed by the PROJECT REPRESENTATIVE.

U-13 **Off Duty Uniformed Officer**

Payment shall be per MAN-HOUR. Measurement for payment shall be based on: 1) the actual number of man-hours provided when the occurrence is greater than four hours; 2) a value of four hours when the hours of service are four hours or less per occurrence.

Basis of Payment: Includes providing off duty uniformed Police to direct and control traffic during construction as required by the approved Maintenance and Protection of Traffic Plan, obstruction permit, or as required by the OWNER in the field.

U-14 **Miscellaneous Work Time for a Full Crew**

Payment shall be made by the unit price bid per HOUR for a full crew(s); labor and equipment. A full crew shall be defined to consist of (2) laborers, (2) operators, (1) truck driver and (1) foreman. Should the actual crew be comprised of less workers than the "full" crew as defined below, then payment for this item shall be prorated based on the actual number of workers in the crew for the duration specified.

Basis of Payment: This item shall be used to provide full compensation for all expenses involved with having a crew of workers and equipment at a site performing Work and/or time spent on-site which is not defined by any other contract unit prices.

If this item is used for downtime spent waiting by a crew as a result of actions by the AUTHORITY at the discretion of the OWNER, the item shall cover all expenses involved in having a crew of workers and equipment at a site prepared to work, but unable to work due to circumstances outside of their control, up to the end of that eight (8) hour work day. No payment shall be made for additional days.

Delays which are a usual and customary part of pipe installation are considered incidental to the work of installing the pipe and WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays caused by the CONTRACTOR WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays due to Acts of God WILL NOT BE PAID FOR UNDER THIS ITEM.

Crew downtime associated with work zone restrictions WILL NOT BE PAID FOR UNDER THIS ITEM.

U-15 **Miscellaneous Premium Work for Full Time Crew**

Payment shall be made by the unit price bid per HOUR for a full crew(s); labor and equipment. A full crew shall be defined to consist of (2) laborers, (2) operators, (1) truck driver and (1) foreman. Should the actual crew be comprised of less workers than the "full" crew as defined below, then payment for this item shall be prorated based on the actual number of workers in the crew for the duration specified**.**

Basis of Payment: This item is to be paid in addition to U-14 or other pay items when applicable to provide full compensation for all expenses involved with having a crew of workers at a site performing Work outside normal working hours. Normal working hours are defined as 7:00am to 6:00 pm Monday through Friday. This item will not be utilized for shift work pre-scheduled with the CONTRACTOR where normal working hours will not be permitted. This item does not cover additional costs for materials or equipment.

If this item is used for downtime spent waiting by a crew as a result of actions by the AUTHORITY at the discretion of the OWNER, the item shall cover all expenses involved in having a crew of workers and equipment at a site prepared to work, but unable to work due to circumstances outside of their control up to the end of that eight (8) hour work day. No payment shall be made for additional days.

Delays which are a usual and customary part of construction are considered incidental to the work of installing the pipe and WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays caused by the CONTRACTOR WILL NOT BE PAID FOR UNDER THIS ITEM.

Delays due to Acts of God WILL NOT BE PAID FOR UNDER THIS ITEM.

U-501 **Erosion and Sedimentation Control**

Payment shall be made by the unit price bid per LUMP SUM for all Erosion and Sediment Control work for the entire project area.

Basis of Payment: Work under this item shall include, but not be limited to, all run-on and run-off controls, dewatering, dust control, silt fence and/or hay bales, temporary protection of any open trench and inlet structure including measures to restrict flow through curb cuts until plantings have become fully established, and all other specified measures. The lump sum price shall include all materials, labor, and equipment as required by the Contract Drawings and all applicable regulatory authorities. This item shall also include maintenance and replacement of erosion and sediment controls facilities throughout the Contract life and removal and disposal of these controls upon Contract completion.

W-1 - W-9 **Ductile Iron Pipe, Class 52, Zinc Coated - All Sizes**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement shall be based on the actual length of pipe installed from center of fitting to center of fitting, minus the total footage associated with installed pipe fittings and valves, which are paid separately.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install Ductile Iron Pipe. This work includes, but is not limited to: all saw cutting; trench excavation up to 8-foot deep; installation and removal of sheeting, shoring, and bracing; furnishing and installing cement-lined ductile iron pipe as specified, including all gaskets; disposing of excavated material; removing and disposing of foreign obstructions; trench dewatering; installing and removing temporary plug/capping; furnishing and installing Polyethylene Pipe Wrap; pressure testing and disinfecting the line; providing, placing and compacting approved aggregate pipe zone and aggregate backfill material to pavement subbase.

Stone Subbase, Concrete Paving Base, and Surface Restoration are not included in this item.

W-15 **Water Service Line - PEXa - All Sizes**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement shall be based on the actual length of pipe installed not including valves, complete in place, by any installation method. Distance shall be measured from the connection point at the corporation stop to the reconnection point with the existing private water service line or the curb stop, if the existing private water service line is also being replaced.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install PEXa water service pipe conforming to Section 02515. This work includes, but is not limited to: all saw cutting; trench excavation; installation and removal of sheeting, shoring, and bracing as necessary; pushing, pulling, and/or boring of service line; furnishing and installing piping, tracer wire, fittings, valves, castings, and adapters; disposing of excavated material; removing and disposing of foreign obstructions; furnishing and installing Polyethylene Pipe Wrap (as necessary) and HDPE sleeving; pressure testing and disinfecting the line; providing, placing and compacting approved aggregate pipe zone and aggregate backfill material. Excavation of one hole per service line for locating the water service line is included in this item. If additional holes are required, they are to be done and payment made under the Exploratory Excavation and Backfill item.

Surface restoration is not included in this item.

W-19 **Extra Waterline Trench Excavation and Backfill (Greater than 8 feet deep)**

Payment shall be made by the unit price bid per CUBIC YARD. Measurement shall be based on the volume of the extra excavation, derived from the laying length of the pipe, the vertical depth of excavation minus 8 feet, and the allowable width of the trench based on the pipe outside diameter plus two feet. Length of pipe shall include all bends, fittings, and valves.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to excavate a water trench to a depth greater than eight (8) feet with the exception of work performed under the exploratory excavation and backfill pay item. This shall include but not be limited to: all additional unclassified excavation; installation and removal of extra sheeting, bracing and shoring not covered in the water installation pay item; removal of unsuitable material; removing shoring, etc.; providing, placing and compacting approved backfill material as required.

W-20 **Service Line Connection - Wet or Dry Tap (1")**

Payment will be made by the unit price bid per EACH service line incorporating these items in service connections to new mains, complete in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install all corporation stops/cocks, curb stops/cocks and curb boxes. Work under this item includes but is not limited to: sawcutting pavement; necessary excavation and disposal of unsuitable material; removal of existing curb box ;tapping the main; providing and installing all fittings and connections; and providing, placing and compacting approved backfill material to subbase.

The CONTRACTOR has the option to perform the work either with the new main dry or wet.

This item does not include surface restoration.

W-21 **Mechanical Joint Ductile Iron Fittings**

Payment shall be made by the unit price bid per POUND installed. Measurement for payment shall be the actual fittings completely installed in place as depicted on the Contract drawing or as directed by the PROJECT REPRESENTATIVE. The weight of the fitting shall be as presented in Table F1, Table F2 and Table F3 included at the end of this section. Mechanical Joint Restraints are included in this item. Fittings included in and paid for under other items WILL NOT be paid for under this item.

Basis of Payment: Includes furnishing, installing, and polyethylene wrapping all fittings necessary for the proper completion of the work covered under this Contract in accordance with the Contract Plans, working drawings, the Specifications, and all other requirements of this contract. Polyethylene wrap, bolts, nuts, gaskets, mechanical joint retainer glands and all other appurtenances shall be included as incidental to the appropriate items as needed. Sawcutting; excavation; installing and removing sheeting, bracing, and shorting; and backfill shall be included under separate items.

This item does not include thrust blocks or Surface Restoration.

W-23 **Medium Extension Gate Box - Cast Iron, Round Lid**

Payment shall be made by the unit price bid per EACH medium extension gate (MEG) box installed. Measurement for payment shall be for each MEG box installed complete in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install medium extension gate boxes as shown on the Standard Details. Excavation, disposal of excavated material, backfill and other related operations are not part of this item and are paid for in waterline and valve items.

This item does not include surface restoration.

W-24 **Remove and Salvage Existing Deep Frame and Cover, Risers and/or M.E.G. Box Outside of Trench Area**

Payment will be made by the unit price bid per EACH unit removed. Measurement for payment shall be for complete removal of deep frames and covers and/or M.E.G. boxes.

Basis of Payment: Includes furnishing all labor, materials, and equipment required for the removal and salvage of all existing deep frames and covers, risers, curb boxes, and/or M.E.G. boxes which are connected to abandoned waterlines located outside the trench areas. All salvaged items are to be transported and delivered to the AUTHORITY's Brilliant Yard facility. Work includes, but is not limited to any necessary sawcutting, excavation or backfilling; removal and transportation of the abandoned equipment.

Surface restoration is not included in this item.

W-26 **Precast Valve Manhole (10 Feet Depth)**

Payment will be made by the unit price bid per EACH unit installed complete in place. The payment for any additional manhole depth over eight feet shall be made under a separate bid item.

Basis of Payment: Includes forty-eight inch (48") reinforced concrete valve manhole including excavation; installation and removal of sheeting, shoring, and bracing; concrete base with drain; pipe penetration linkseals; water stops; precast concrete riser sections including transition sections, steps, frame and lid castings; and all necessary sealant materials or other waterstops. Excavation and backfill for an eight-foot by eight-foot (8' x 8') footprint for 48" diameter manhole is included in the unit price bid for this item. Additional volume will be considered under the appropriate items.

This item does not include surface restoration.

W-28 **Reset Existing Fire Hydrant to New Water Line**

Payment will be made by the unit price bid per EACH fire hydrant reset. Measurement for payment shall be for each complete reinstallation of existing fire hydrants.

Basis of Payment: Includes furnishing all labor, materials, and equipment required for the complete reinstallation or reconnection of existing hydrants in compliance with the Standard Details. Work in this item includes but is not limited to: removal and resetting of existing

fire hydrant, sawcutting of pipe or pavement; removing and disposing of foreign obstructions; excavating and disposing of unsuitable material; providing base fittings, transition couplings, harnessing, gravel drain, polyethylene wrap and inserts; installing hydrant and appurtenances; providing, placing and compacting approved backfill material; and painting of hydrant.

Surface restoration is not included in this item nor is any required valve, pipe, M.E.G. or valve manhole.

W-29 **Install New Fire Hydrant**

Payment will be made by the unit price bid per EACH fire hydrant installed. Measurement for payment shall be for each complete installation of new fire hydrants**.**

Basis of Payment: Includes furnishing all labor, materials, and equipment required for the installation of new hydrants in compliance with the Standard Details. Work in this item includes but is not limited to: sawcutting of pipe or pavement; removing and disposing of street car tracks; excavating and disposing of unsuitable material; trench dewatering; providing hydrant, base fittings, transition couplings, harnessing, gravel drain, polyethylene wrap and inserts; installing hydrant and appurtenances; providing, placing and compacting approved backfill material; and painting of hydrant.

Surface restoration is not included in this item nor is any required valve, pipe, M.E.G. or valve manhole.

W-32 **4" to 10" Sewer Lateral Encountered in Water Line Trench**

Payment shall be made by the unit price bid per LINEAR FOOT installed. Measurement for payment shall be along the centerline of the pipe**.**

Basis of Payment: Includes furnishing all labor, materials, and equipment required to replace all unmarked 4" to 10" sewer laterals and fittings encountered and damaged in waterline trench, as directed by the OWNER. Work under this item includes but is not limited to: cutting of existing lateral; required excavation; disposal of damaged materials and unsuitable excavated materials;installing and compacting bedding and backfill in accord with PWSA construction standards to the street base bottom elevation; furnishing and installing couplings, marking tape; re-connection to existing lateral, sewer, manhole or catch basin with PVC SDR-26 sewer pipe, Fernco couplings or approved equal, required sealers, and any approved method of plugging, blocking, pumping and by-passing, etc., that is necessary and will minimize the curtailment of sewage service during reconnection.

W-33 **15" Sewer Encountered in Water Line Trench**

Payment shall be made by the unit price bid per LINEAR FOOT installed. Measurement for payment shall be along the centerline of the pipe.

Includes furnishing all labor, materials, and equipment required to replace all 15" sewer laterals with 15" PVC, SDR-26 sewer laterals and fittings encountered and damaged in

waterline trench, as directed by the OWNER. Work under this item includes but is not limited to: cutting of existing lateral; required excavation; disposal of damaged materials and unsuitable excavated materials; installing and compacting bedding and backfill in accord with PWSA construction standards to the street base bottom elevation; furnishing and installing couplings, marking tape; re-connection to existing lateral, sewer, manhole or catch basin with PVC SDR-26 sewer pipe, Fernco couplings or approved equal, required sealers, and any approved method of plugging, blocking, pumping and by-passing, etc., that is necessary and will minimize the curtailment of sewage service during reconnection.

W-35 – W-42 **Gate Valve Installed as Part of New Water Line - All Sizes**

Payment shall be made by the unit price bid per EACH valve installed. Measurement for payment shall be for each valve installed complete in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install new gate valves with polyethylene wrap as shown on the Standard Details. In addition to providing and installing the valve, work under this item includes but is not limited to: all saw cutting; trench excavation up to 8-foot deep; installation and removal of sheeting, shoring, and bracing; excavation and disposal of unsuitable material (including removal and disposal of street car tracks); trench dewatering; and providing, placing and compacting approved aggregate pipe zone and aggregate backfill material. All required gaskets, bolts, nuts, and mechanical joint retainer glands shall be considered incidental to this item of work.

This item does not include Surface Restoration, MEGs or Valve Manholes.

W-59, W-61 **Waterline - Line Stop (Single) -All Sizes**

Payment shall be made by the unit price bid per INCH OF DIAMETER of waterline stopped (i.e., if a Waterline Stop is performed on a 12" Waterline, the CONTRACTOR shall be paid the unit price bid multiplied by 12 (inches)).

Basis of Payment: Includes all labor and materials related to furnishing and installing complete waterline stop on an existing system. This work includes, but is not limited to: all excavation (8 feet deep or less); disposing of excavated material; removing and disposing of street car tracks; furnishing and installing sheeting, shoring and bracing (including any such materials made necessary by valves or fittings); installing and removing temporary plug/capping, pipes; furnishing and installing Polyethylene Pipe Wrap; testing the line and disinfecting materials; removing shoring, etc.; and providing, placing and compacting approved backfill material.

Work shall also include removing and disposing of all existing thrust blocking, and appurtenances required to allow installation of new equipment, pipe, and pipe fittings in accordance with specifications.

Surface Restoration is not included in this item.

W-72 **Water Service Line Termination**

Payment shall be made by the unit price bid per EACH water service terminated. Measurement shall be for each water service terminated.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to terminate a water service connection associated piping, conforming to Section 02515. For water service and fire protection service line terminaitons. This work includes, but is not limited to: shutting of corporation stops/cocks; disconnecting the existing service piping; removal of existing service piping and existing curb stop/cock/valve; installation of brick "dog house" around shut corporation stop/cock conforming to PWSA Detail; all saw cutting; trench excavation; installation and removal of sheeting, shoring, and bracing as necessary; disposing of excavated material; removing and disposing of foreign obstructions; disinfecting the line if required; providing, placing and compacting approved aggregate pipe zone and aggregate backfill material. Excavation of one hole per service line for locating the water service line is included in this item. Excavations shall be limited to a 6'x6' footprint unless approved by OWNER. If additional holes are required, they are to be done and payment made under the Exploratory Excavation and Backfill item.

This item is to be paid only where termination of exisitng service lines are indicated per the drawings or as directed by PWSA.

Surface restoration is not included in this item.

W-86 **Service Line Material Verification**

Payment shall be made by the unit price bid per EACH service line located and verified. Measurement shall be based on each full service line (both public and private) requiring excavation to locate and/or verify the material composition.

Basis of Payment: Includes furnishing all labor, materials, and equipment necessary to perform the excavation and backfill required to locate the service line and identify the pipe material on both sides of the curb stop. This shall include work associated with exploratory excavations but not be limited to: all saw cutting of pavement; installation and removal of sheeting, bracing and shoring; unclassified excavation and disposing of unsuitable excavated material; dewatering of trench; removing shoring, etc.; providing, placing and compacting approved backfill material; setting and replacing/repairing damaged existing facilities (including curb stop and curb box). The unit price bid shall also include mobilization and demobilization costs. Excavation shall be limited to a 5-ft long x 4-ft wide x 5-ft deep footprint, unless approved by the CONSTRUCTION MANAGER. Excavation is not considered completed unless the service line is exposed to 24-inches on either side of the curb stop.

Surface Restoration is not included in this Item.

W-87 **Private Water Service Line Replacement, 2" Diameter and Less – 0 to 20 LF in Total Length**

Payment shall be made by the unit price bid per EACH. Measurement shall be for each private service line installed by any installation method. CONTRACTOR shall be compensated under item W-88 for any private service line installed greater than 20 LF in total length.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install 20 LF of Type "K" Copper water service pipe (2" in diameter and less) via trenchless or trenched installation, connect to the new curb stop, or existing water service line if the public water service line is not being replaced, and reconnect to the existing water service line at the water service meter. This work includes, but is not limited to: obtaining a permit, including required fees, from ACHD prior to any work on the private side of the curb stop being started, all saw cutting; trench excavation; excavation of all trenches and boring/receiving pits necessary to install the private water service line by any approved installation method; installation and removal of sheeting, shoring, and bracing as necessary; core drilling through the external foundation wall; installation of wall sleeves; installing a waterproof sealant on the external foundation wall where the service line penetrates the foundation; pushing, pulling, and/or boring of service line; providing a minimum of one pipe plug between curb stop excavation and foundation if directed by the CONSTRUCTION MANAGER; This work also includes furnishing all labor, materials, and equipment required to connect the private service line to the existing plumbing including; installation of meter shutoff valve, and any other piping and valving that may be required to complete the reconnection of the new service piping to the exising plumbing system.

This work includes but is not limited to: cutting and removal of existing plumbing; providing, placing, and connecting dual check backflow prevention device, thermal expansion tank, a pressure relief valve, up to 10 LF of associated copper piping, adapters, fittings, and transition couplings; furnishing and installing all valves, couplings, and bushings required to connect a new, or reconnect an existing water meter to the piping on both sides of the meter; installing copper grounding wire and clamps around the existing service line.

Resetting of the water meter is incidental to this item.

Restoration of concrete curb and/or sidewalk is not included in this item.

This item will only be paid if the entire private water service line is replaced from the curb stop to connection at the internal water service meter.

No additional payment shall be made for additional mobilizations required to complete all specified water service line replacement work.

W-88 **Private Water Service Line Replacement, 2" Diameter and Less – Greater Than 20 LF in Total Length**

Payment shall be made by the unit price bid per Linear Foot. Measurement shall be per linear foot for the private service line installed over 20-ft in total length, installed by any installation method. Distance shall be measured from the connection point at the curb box to the reconnection point with the existing water service line at the water service meter, minus 20 LF. No deduction will be made for the curb stop.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install Type "K" Copper water service pipe (2" in diameter and less), greater than 20 LF in total length, via trenchless or trenched installation, and reconnection to the existing water service line. This work includes, but is not limited to: excavation of additional trenches and pits necessary to install the private water service line by any approved installation method; installation and removal of sheeting, shoring, and bracing as necessary; pushing, pulling, and/or boring of service line; furnishing and installing piping, fittings, adapters, and transition couplings; disposing of excavated material; removing and disposing of foreign obstructions; disposal of excess backfill material; providing, placing and compacting approved aggregate pipe zone, and in-situ earthen backfill material.

Improvements made to the internal plumbing shall be paid under separate unit item.

This item shall be paid in addition to W-87 for any private water service line installed over 20-ft in total length.

Restoration of concrete curb and/or sidewalk is not included in this item.

W-90 **Installation of Service Line Through Concrete Floor**

Payment shall be made by the unit price bid per EACH water service installed through the concrete floor of a structure and out to a reconnection point beyond the outermost external wall of the structure. Measurement shall be for each service requiring concrete floor penetration and significant excavation below finished basement grade, installed complete and in place.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to install the water service line through a concrete floor, under existing structures and infrastructure, to a point beyond the outermost external wall of the structure. This work includes but is not limited to: all saw cutting; core drilling; jack-hammering; excavation; wheelbarrowing; hand-digging; installation of bracing as necessary; disposing of material; pushing, boring, directional drilling (or other trenchless installation method) of service line; providing, placing, and compacting of all backfill, including three inches (3") of aggregate sub-base. Also included in this item is restoration of the concrete floor by providing, placing, and finishing of four inches (4") of unreinforced concrete.

Excavation and backfill of a five foot by five foot (5'x5') by five foot deep (5') trench per service line to perform the trenchless installation (directional drilling, boring, pushing, etc.) of the water service line is included in the unit price bid for this item.

The linear footage of service line installed, tracer wire, fitting, adapters, transition couplings and reconnection to the existing plumbing and fixtures shall be paid under unit item W-87.

W-95 **Remove and Salvage Existing Fire Hydrant**

Payment shall be made by the unit price bid per EACH. Measurement shall be for each existing fire hydrant removed and salvaged.

Basis of Payment: Includes furnishing all labor, materials, and equipment required to remove and salvage Waterline Material as follows: The Pittsburgh Water and Sewer Authority (PWSA) wishes to salvage existing hydrants. Store and deliver any and all such materials to a storage location within the City, as specified by the CONSTRUCTION MANAGER or the PWSA.

W-96 **Washout Manhole Removal**

Payment shall be made by the unit price bid per EACH. Measurement shall be for each existing Washout Manhole removal as indicated.

Basis of Payment: Includes furnishing all labor, materials, tools, and equipment required to remove existing washout manhole structure, fill manhole base with flowable fill, removal of washout valves and casting, and plugging existing sewer pipe in accordance with these specifications, the contract drawings, the City of Pittsburgh, and the Pittsburgh Water and Sewer Authority details.

Each of the exisitng Washout Manholes noted on drawings is unique for removal. Washout discharge manhole structure on exisitng active sewers can remain, but the inlet drain from waterline valve washout connection will be removed/plugged. Washout drain manholes that flow to an existing sewer shall be plugged on inlet and outlet and top mahole structure removed as per standard detail. Washout drain manholes/dry manholes with no sewer discharge connections shall be removed. Water line drain valves and castings shall be removed as per standard detail.

This item includes, but is not limited to: saw-cutting, removal and disposal of pavement, sidewalks or curbs to the required limits; unclassified excavation to the limits of the trench zone; protection of active utility lines or removal of abandoned utility lines and obstructions in the trench zone; normal rock excavation; removal, hauling and disposal of all excavated materials; sheeting, shoring, bracing and trench boxes; temporary plating and trench protection; dewatering and pumped water control; coal-tar pitch, removing and disposing of existing casting(s); pipe zone bedding; aggregate trench backfill; compaction; temporary blocking, supports, caps and plugs; and cleanup and disposal of all debris and surplus materials.

S-63 **Catch Basin - Cast-In-Place - Type 1 Modified**

Payment shall be made by the unit price bid per EACH. Measurement shall be per each particular size and type of catch basin / storm inlet installed complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to to construct PWSA Type 1 Modified catch basins and inlets as required, at locations depicted on the contract drawings, or as directed in the field. This item shall include excavation; installation and removal of sheeting, shoring, and bracing; backfill; concrete and brick masonry; castings (including hood and trap); fittings; flexible water stops; flexible boots; setting of castings (including hood and trap); and all other work necessary for the completion of the structure.

Excavation and backfill for a twelve foot by eight-foot (12' x 8') footprint to the depth required around the catch basin/storm inlet shall be included in the unit price. Visual inspection with a push/pole camera or lateral launcher camera of the complete catch basin lateral in order to determine the condition of the lateral before and after construction, is considered incidental to this item.

S-65 **Catch Basin - Cast-In-Place - Type 13**

Payment shall be made by the unit price bid per EACH. Measurement shall be per each particular size and type of catch basin / storm inlet installed complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to to construct PWSA Type 13 catch basins and inlets as required, at locations depicted on the contract drawings, or as directed in the field. This item shall include excavation; installation and removal of sheeting, shoring, and bracing; backfill; concrete and brick masonry; castings (including hood and trap); fittings; flexible water stops; flexible boots; setting of castings (including hood and trap); and all other work necessary for the completion of the structure.

Excavation and backfill for a twelve foot by eight-foot (12' x 8') footprint to the depth required around the catch basin/storm inlet shall be included in the unit price. Visual inspection with a push/pole camera or lateral launcher camera of the complete catch basin lateral in order to determine the condition of the lateral before and after construction, is considered incidental to this item.

S-69 **Catch Basin/Inlet Tie-in**

Payment will be made by the unit price bid per EACH. Measurement shall be for each tie-in installed, complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to connect fifteen (15) inch diameter piping into an existing catch basin or inlet structure as per the Pittsburgh Water & Sewer Authority Construction Standards. This item shall include all saw-cutting, drilling and/or coring of new or existing structures, with approved connections including water stop(s) or flexible boots, and all associated costs for piping entering a catch basin or inlet structure. Visual inspection with a push/pole camera or lateral launcher camera of the catch basin and lateral tie-in in order to determine the condition of the lateral before and after construction, is considered incidental to this item

R-1 **Concrete Paving Base (All Classes)**

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on field measurements but shall respect any maximum pay limits noted in the Contract Documents and Standard Details. No payment will be made for concrete in excess of the existing street slab dimensions unless ordered to be placed by the PROJECT REPRESENTATIVE in the field.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of concrete base course including steel reinforcing (unless directed otherwise), joints, deformed bars, load transfer bars, expansion joint material, etc. in accordance with City of Pittsburgh Standards. This work shall also include the removal and disposal of existing material(s).

R-2 **Reinforced Concrete Street and Driveways**

Payment shall be made by the unit price bid per CUBIC YARD installed complete in place. Measurement shall be based on field measurements but shall respect any maximum pay limits noted in the Contract Documents and Standard Details. No payment will be made for concrete in excess of the existing street slab dimensions unless ordered to be placed by the CONSTRUCTION MANAGER in the field.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of all concrete streets and driveways disturbed during construction, installed as noted in the Contract Documents including applicable drawings, and in accordance with City of Pittsburgh Standards of Construction. This item includes, but is not limited: saw or other cutting as needed; removing and disposing of existing concrete pavement; placing reinforced concrete pavement including reinforcing, joints, deformed bar, load transfer bars, expansion joint material, etc. in accordance with City of Pittsburgh Standards and the Standard Details.

R-3 **Concrete Sidewalk and ADA Handicapped Ramp**

Measurement used for payment of this item shall be the length and width of sidewalk replacement in SQUARE YARD including expansion joint material complete in place.

Basis of Payment: Includes the replacement and installation of all concrete sidewalks and handicapped sidewalk ramps as shown on the Contract Documents including applicable drawings, and in accordance with the City of Pittsburgh Standard Details detailed in these Contract Documents. This item shall include, but not be limited to: saw cutting; demolition and disposal of spoil, placement of subbase aggregate; a slab of Class AAA concrete four (4) inches in depth; planks and walks for accommodation of the public for access to private properties; placement of steel reinforcing; disposal of surplus excavation; furnishing and installing expansion joint material; and all other requirements for a complete installation matching or exceeding existing pavement, as indicated in the Contract Documents, including applicable drawings.

R-4 **Concrete Deep Curb and Deep Radius Curb**

Payment will be made for the unit price per LINEAR FOOT. Measurement for payment of this item shall be the total length measured along the face of the curb..

Work under this item shall include the replacement of deep concrete curb and deep radius curb in accordance with details shown in the Contract Documents, including applicable drawings, and/or current City of Pittsburgh Construction Standards.

Basis of Payment: Includes but not be limited: removing existing sandstone curb stones (as directed) and transporting them to a designated DPW storage area: saw or other cutting as needed; performing any required demolition, excavation and disposal of any unsuitable material; providing and installing all concrete in place, all steel reinforcement in place, dowel bars, mortar paste, expansion joints, broken stone drains; restoring all sidewalks disturbed or damaged during construction of curb complete.

R-5 **Concrete Deck Curb and Deck Radius Curb (All Finishes)**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement shall be the total length measured along the face of the curb.

Work under this item shall include the replacement of deck concrete curb and deck radius curb in accordance with details shown in the Contract Documents, including applicable drawings, and/or current City of Pittsburgh Construction Standards.

Basis of Payment: Includes but not be limited: removing existing sandstone curb stones (as directed) and transporting them to a designated DPW storage area: saw or other cutting as needed; performing any required demolition, excavation and disposal of any unsuitable material; providing and installing all concrete in place, all steel reinforcement in place, dowel bars, mortar paste, expansion joints, broken stone drains; restoring all sidewalks disturbed or damaged during construction of curb complete.

R-7 **Cold Patch Bituminous Pavement Replacement**

Payment shall be made by the unit price bid TON. Measurement for payment of this item shall be calculated based on the volume of cold patch placed, using an assumed density for cold patch of 110 pcf (pounds per cubic foot).

Basis of Payment: Installation, removal, and disposal of existing and/or temporary cold patch bituminous material, as directed. Work includes, but is not limited to: transporting cold patch bituminous material from a City of Pittsburgh approved asphalt plant; installing the cold patch material to match existing grade; furnishing and installing tack coat and sealing materials; and raising or resetting castings to grade (0-12").

This item does not include the replacement of the concrete base course where necessary.

The cost of maintenance of the cold patch for the duration of the patch is incidental to this item.

R-11 **Bituminous Pavement Replacement - Wearing Course**

Payment shall be made by the unit price bid per SQUARE YARD installed complete in place. Measurement shall be based on the field dimensions of the paved area

Basis of Payment: Includes, but is not limited to: providing materials for and installing Asphaltic Bituminous Wearing Course (up to 1.5 inches) as required, including all tack coat, sealing materials and expansion joints as required; providing all tools, equipment, labor, and other facilities necessary to provide complete-in-place. The work shall raise/reset castings to grade (0-18"). Replacing and surfacing shall be in accordance with City of Pittsburgh Specifications and the Contract Documents. The Contractor shall furnish his own equipment and labor to haul and place all materials. The Contractor shall use a mechanical paver to complete all paving operations unless otherwise specified by the DIRECTOR. Duplicate load slips of bituminous material must be provided for each truckload and submitted to the project inspector. This item does not include the replacement of the concrete base course where necessary.

R-12 **Bituminous Pavement Replacement - Binder Course - Primary Street**

Payment shall be made by the unit price bid per SQUARE YARD installed complete in place. Measurement shall be based on the field dimensions of the paved area.

Basis of Payment: Includes, but is not limited to: providing materials for and installing Asphaltic Bituminous Binder Course (up to 2.5 inches) as required, including all tack coat, sealing materials and expansion joints as required; providing all tools, equipment, labor, and other facilities necessary to provide complete-in-place. The work shall raise/reset castings to grade (0-18"). Replacing and surfacing shall be in accordance with City of Pittsburgh Specifications and the Contract Documents. The Contractor shall furnish his own equipment and labor to haul and place all materials. The Contractor shall use a mechanical paver to complete all paving operations unless otherwise specified by the Director. Duplicate load slips of bituminous material must be provided for each truckload and submitted to the project inspector. This item does not include the replacement of the concrete base course where necessary.

R-13 **Bituminous Pavement Replacement - Binder Course - Secondary Street**

Payment shall be made by the unit price bid per SQUARE YARD of milled area.

Basis of Payment: Includes, but is not limited to: providing materials for and installing Asphaltic Bituminous Binder Course (up to 2 inches) as required, including all tack coat, sealing materials and expansion joints as required; providing all tools, equipment, labor, and other facilities necessary to provide complete-in-place Replacing and surfacing shall be in accordance with City of Pittsburgh Specifications and the Contract Documents. The Contractor shall furnish his own equipment and labor to haul and place all materials. The Contractor shall use a mechanical paver to complete all paving operations unless otherwise specified by the Director. Duplicate load slips of bituminous material must be provided for each truckload and submitted to the project inspector. This item does not include the replacement of the concrete base course where necessary.

R-15 **Brick Street Repaving**

Payment shall be made by the unit price bid per SQUARE YARD installed complete in place. Measurement shall be based on the field dimensions of the repaved area.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of new brick or reclipped brick and/or remove, clean, and reset the existing brick street surface including the removal and disposal of materials not to be reused, furnishing and/or transporting brick from Department of Public Works storage yards, and placement of new brick or reclipped brick.

R-17 **Salvage and Deliver Blockstone and Brick**

Payment shall be made by the unit price bid per SQUARE YARD of salvaged material delivered. Measurement shall be based on the field dimensions of removed material.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the salvage (including cleaning of brick and blocks), delivery, and unloading of bricks or blocks removed during construction activities to the facility.

R-19 **Landscape Restoration**

Payment shall be at the unit price bid per SQUARE YARD of restoration complete in place. Measurement shall be based on the field dimensions of the restored area.

Basis of Payment: Includes furnishing all labor, materials, and equipment to finish grade, apply six inches of topsoil, seed, and mulch landscapes and vegetated areas.

R-21 **Crushed Stone Sub-Base**

Payment shall be made by the unit price bid per CUBIC YARD install. Measurement shall be based on final compacted thickness, the length, and the width of base installed.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of crushed aggregate sub-base course for flexible street and rigid street pavements including required testing. Work under this item shall include the removal and disposal of existing material, subgrade preparation, compaction, testing, and placement of approved crushed sub-base course for street pavements.

R-22 **4" Underdrain**

Payment shall be made by the unit price bid per LINEAR FOOT. Measurement for payment shall be in linear feet along the total length of underdrain pipe installed complete in place.

Basis of Payment: Includes furnishing all labor, materials and equipment necessary to construct a four-inch underdrain in accordance with details shown, and installed as directed in the field. This item shall include all excavation to the limits specified in the Standard Details, disposal of excavated material, perforated piping, approved granular backfill material, geotextile material, and connection to structure, or existing pipe.

R-25 – R25B **Traffic Markings**

Payment shall be made by the unit price bid per LINEAR FOOT installed.

Basis of Payment: Includes all labor and materials to furnish and install traffic lines and markings of the type indicated in accordance with any Contract Documents including applicable drawings; and replacement of defective work. Markings shall be in accordance with the City of Pittsburgh Public Works Construction Standards.

R-27 **Traffic Loop Detector (Loop - 10' x 20')**

Payment shall be made for each additional loop for increments of twenty feet in overall size of the loop. Measurement shall be based on the nominal size of the installed loop. Loop detectors greater than 6’ x 10’ up to 6’ x 30’ will be paid for as one increment. Those greater than 6’ x 30’ up to 6’ x 50’ will be paid for as two increments.

Basis of Payment: This item shall include the loop length, and all additional materials and labor required to furnish and install a new loop system into the existing Loop Detector for a complete detector loop system. Unit of payment is EACH completed and properly operational installation.

R-38 **Dry Stone / Block Wall Replacement**

Payment shall be made by the unit price bid for SQUARE YARDS. Measurement for payment shall be made on front face only of the wall.

Basis of Payment: Includes furnishing all labor, equipment, and material necessary to reconstruct existing dry stone walls, as directed. Work in this item includes, but is not limited to: all wall removal; unclassified excavation; removal of excavated material; providing and installing approved backfill; providing, installing and removing sheeting, shoring and bracing; installing existing wall stones and/or providing and installing new wall stones; embankment reconstruction; and all other requirements necessary to complete the work.

R-39 **Concrete Steps or Concrete Retaining Wall Replacement**

Payment shall be per CUBIC YARD installed in place.

Basis of Payment: Includes the replacement and restoration to preconstruction condition of all concrete steps and small concrete retaining walls disturbed by construction. This item shall include: saw cutting; sheeting; demolition and disposal of spoil, as required; a four (4”) inch minimum base of approved aggregate; providing and placing cement concrete; planks and walks for accommodation of the public for access to private properties; disposal of surplus excavation; furnishing and installing expansion joint material; reinforcing; concrete curing and sealing and all other requirements for a complete installation matching or exceeding existing conditions, as indicated on the plans, as in the specifications, or as directed in the field.

R-45 **Concrete Cap with Bond Breaker**

Payment shall be made by the unit price bid per CUBIC YARD of temporary concrete restoration installed complete in place. Measurement shall be based on field measurements but shall respect any maximum pay limits noted in the Contract Documents and Standard Details. No payment will be made for concrete in excess of the sawcut dimensions unless ordered to be placed by the CONSTRUCTION MANAGER in the field.

Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of concrete cap from the rigid paving base to finished grade, including bond breaker.

R-45A **Temporary Winter Concrete Base and Cap**

Payment shall be made by the unit price bid per CUBIC YARD of temporary concrete restoration installed complete in place. Measurement shall be based on field measurements but shall respect any maximum pay limits noted in the Contract Documents and Standard Details.

No payment will be made for concrete in excess of the sawcut dimensions unless ordered to be placed by the CONSTRUCTION MANAGER in the field. Basis of Payment: Includes furnishing all materials, equipment, tools, and labor necessary for the complete installation of concrete cap from subgrade (2A stone) to finished grade. This item shall only be applicable if DOMI does not allow installation of a standard 10" concrete base (or 8" asphalt base) due to temperature limitations. No bond breaker is required since the full depth of concrete will be removed. Since temporary, no reinforcement (rebar or mesh) is required. Typical depth is 8". Surface shall be tine finished.

1.6 PREVAILING MINIMUM WAGE RATE REQUIREMENTS

A. The CONTRACTOR shall comply with the attached Prevailing Minimum Wage Predetermination for all wages paid as a part of this project.

PART 2 PRODUCTS

MECHANICAL JOINT FITTINGS WEIGHTS

Table F1 – Mechanical Joint Fitting Weights (Full-Bodied)

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

	Pipe Diameter											
Fitting	**4"**	**6"**	**8"**	**10"**	**12"**	**16"**	**20"**	**24"**	**30"**	**36"**	**42"**	**48"**
1/4 Bend	75	117	175	250	335	540	850	1235	2020	2945	4210	5545
1/8 Bend	70	107	160	215	295	450	700	965	1710	2565	3755	5030
1/16 Bend	70	107	160	220	300	455	705	975	1730	2605	3820	5120
1/32 Bend	70	107	160	220	300	455	710	980	1740	2615	3835	5140
Cap, flat	30	46	70	90	120	210	325	450				
Cap, dished	30	46	70	90	120	205	285	405	755	2085	1580	2070
Plug, flat												
in fitting	14	25	31	43	53	102	155	247				
in pipe	20	35	50	65	85	145	225	335				
Plug, dished												
in fitting									455	637	832	1119
in pipe									575	815	1110	1455
Tee												
4" Outlet	110	157	225	305	405							
6" Outlet		173	241	326	421	666	911	1211	2076			
8" Outlet			260	345	445	685	930	1235	2100	3015		
10" Outlet				400	500	710	955	1260	2120	3035		
12" Outlet					530	740	985	1280	2150	3060	4395	5860
16" Outlet						815	1170	1340	2205	3110	4450	5910
20" Outlet							1275	1745	2290	3190	4525	5985
24" Outlet								1850	2835	3265	4595	6050
30" Outlet									3090	4180	5615	6255
36" Outlet (150 lb)											5915	
36" Outlet (250 lb)										4450	7110	7465
42" Outlet (150 lb)											6285	7860
42" Outlet (250 lb)											7520	9480
48" Outlet (150 lb)												8190
48" Outlet (250 lb)												9845
Cross												
4" Outlet	145	192	255	340	440							

Table F1 – Mechanical Joint Fitting Weights (Full-Bodied)

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

	Pipe Diameter											
Fitting	**4"**	**6"**	**8"**	**10"**	**12"**	**16"**	**20"**	**24"**	**30"**	**36"**	**42"**	**48"**
6" Outlet		224	287	377	472	717	962	1267	2132			
8" Outlet			335	420	515	765	1010	1305	2175	3085		
10" Outlet				500	600	815	1050	1355	2220	3130		
12" Outlet					655	875	1110	1400	2275	3180	4520	5985
16" Outlet						1010	1365	1520	2390	3285	4625	6085
20" Outlet							1570	2055	2560	3445	4780	6235
24" Outlet								2255	3215	3590	4920	6370
30" Outlet									3735	4765	6170	6775
36" Outlet (150 lb)											6695	
36" Outlet (250 lb)										5310	7925	8210
42" Outlet (150 lb)											7440	8900
42" Outlet (250 lb)											8745	10565
48" Outlet (150 lb)												9555
48" Outlet (250 lb)												11280
Reducer												
4" Outlet		86	115	145	185							
6" Outlet			136	161	206	301						
8" Outlet				190	230	330						
10" Outlet					260	365	490					
12" Outlet						400	530	695				
16" Outlet							610	775				
20" Outlet								895	1300	1770	2400	
24" Outlet									1435	1920	2565	
30" Outlet										2255	2935	3645
36" Outlet											3330	4080
42" Outlet												4625
S Bend												
6" Offset	95	142	210	280	400	570						
12" Offset	105	167	250	340	500	710						
18" Offset	125	197	295	400	600	820						
24" Offset	130	212	305	415	635							

Table F2 - Misc. Fitting Weights

Listed weight is expressed in lbs and includes fitting and noted hardware.

Fitting	Note	Pipe Diameter											
		4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
Transition Coupling	1	24	31.25	41.5	62	85	109.5	139.5	161.5	222	334	396	442.5
Mechanical Joint Restraint	2	7.1	12.9	15.8	24.9	32.2	57.4	73.3	134.1	195.6	235.0	537.0	701.2

Note 1: Includes all hardware.

Note 2: Includes Stainless Steel Bolts

Table F3 – Compact Mechanical Joint Fitting Weights

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

Fitting	Pipe Diameter											
	4"	6"	8"	10"	12"	16"	20"	24"				
1/4 Bend	26	48	68	136	141	264	505	695				
1/8 Bend	22	40	59	86	109	202	368	481				
1/16 Bend	21	37	51	67	90	179	364	481				
1/32 Bend	20	33	48	61	79	159	346	457				
Cap	10	18	26	32	46	94	149	210				
Plug	9	18	25	36	47	98	158	223				
Tee												
4" Outlet	36	52	72	82	108							
6" Outlet		66	79	99	119	222	335	465				
8" Outlet			90	116	126	245	390	475				
10" Outlet				132	159	265	417	516				
12" Outlet					171	277	460	549				
16" Outlet						337	530	625				
20" Outlet							605	740				
24" Outlet								844				
30" Outlet												

Table F3 – Compact Mechanical Joint Fitting Weights

Listed weight is expressed in lbs and includes Fitting, Glands, Bolts and Gaskets.

	Pipe Diameter											
Fitting	**4"**	**6"**	**8"**	**10"**	**12"**	**16"**	**20"**	**24"**				
Cross												
4" Outlet	45	62	84	98	119							
6" Outlet		79	98	121	138	250						
8" Outlet			112	135	149	264						
10" Outlet				156	187	286						
12" Outlet					202	312						
16" Outlet						457						
Reducer												
4" Outlet		28	36	53	67							
6" Outlet			39	59	64	132						
8" Outlet				54	57	136						
10" Outlet					63	128	225					
12" Outlet						120	214	320				
16" Outlet							225	325				
20" Outlet								315				

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 02515

WATER SERVICE CONNECTIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Pipe and fittings for public and private water service connections to buildings.
2. Corporation and Curb stop assembly.
3. Work on Private Property.
4. Permit Requirements.
5. Property Owner Notifications.
6. Installation Requirements and Construction Sequence.
7. Disposal Requirements.

B. Related Requirements:
1. Section 02060 - Aggregates for Earthwork.
2. Section 02324 – Trenching, Backfilling and Compaction.

1.2 PRICE AND PAYMENT PROCEDURES

A. See Section 01200 Price and Payment Procedures.

1.3 REFERENCE STANDARDS

A. American Society of Mechanical Engineers:
1. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
2. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

B. American Water Works Association:

C. ASTM International:
1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
2. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings.
3. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
4. ASTM B584 – Copper Alloy Sand Castings for General Applications.
5. ASTM B763 – Copper Alloy Sand Castings for Valve Applications.
6. ASTM D 6394 - Specification for Sulfone Plastics (SP).
7. ASTM D2774 – Standard Practice for Underground Installation of Thermoplastic Pressure Piping.
8. ASTM D2837 – Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products.
9. ASTM F876 – Standard Specification for Cross-linked Polyethylene (PEX) tubing.
10. ASTM F1807 – Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-Linked Polyethylene (PEX) Tubing.

11. ASTM F1960 – Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-Linked Polyethylene (PEX) Tubing.
12. ASTM F2023 – Standard Method for Evaluating the Oxidative Resistance of Cross-Linked Polyethylene (PEX) Tubing and System to Hot Chlorinated Water.
13. ASTM F2080 – Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Cross-linked Polyethylene (PEX) pipe.

D. American Welding Society:
   1. AWS A5.8 - Specification for Filler Metals for Brazing and Braze Welding.

E. American Water Works Association:
   1. AWWA C105 - ANSI Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems.
   2. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
   3. AWWA C800 - Underground Service Line Valves and Fittings.
   4. AWWA C904 - Cross-Linked Polyethylene (PEX) Pressure Pipe, ½ In. Through 3 In, for Water Service.
   5. ANSI/AWWA C810-17 – Replacement and Flushing of Lead Service Lines.

F. National Science Foundation
   1. NSF/ANSI 14 – Plastics Piping System Components and Related Materials
   2. NSF/ANSI 61 – Drinking Water System Components – Health Effects
   3. NSF/ANSI 372 - Drinking Water System Components - Lead Content

G. Allegheny County Plumbing Code – Article XV.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data on pipe materials, pipe fittings, corporation stop assemblies, curb stop assemblies, service saddles, and accessories.

C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of piping mains, curb stops, connections, thrust restraints, and invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with AWWA, PWSA, PADEP, City of Pittsburgh and ACHD Standards.

1. All work done for the replacement of lead service lines shall conform to AWWA C810-17.

B. All products shall comply with NSF/ANSI 372 and NSF/ANSI 61 Annex G, and conform with lead content requirements for "lead-free" plumbing as defined by California, Vermont, Maryland, and Louisiana state laws and the U.S. Safe Drinking Water Act in effect as of January 4, 2014.

C. Installer Qualifications: Installer shall have demonstrated experience on projects of similar size and complexity with documentation proving successful completion of plumbing system installation and/or training by the PEX tubing manufacturer.

D. All work on the private service line and internal plumbing shall be completed by, or under the direct supervision of a licensed Plumber.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01600 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. During loading, transporting, and unloading of materials and products, exercise care to prevent any damage.

C. Store products and materials off ground and under protective coverings and custody, away from walls and in manner to keep these clean and in good condition until used.

D. Exercise care in handling precast concrete products to avoid chipping, cracking, and breakage.

E. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
1. Store service line tubing in cartons or under cover to avoid dirt or foreign material from entering the tubing.
2. Do not expose PEX tubing to direct sunlight for more than 30 days. If construction delays are encountered, cover the tubing to prevent exposure to direct sunlight.

1.8 RESIDENTIAL AND NON-RESIDENTIAL PROPERTIES

A. Residential Property
1. Single family dwelling or property with up to 4 associated individual dwelling units.
2. Service line is typically 1-inch or smaller. CONTRACTOR should notify CONSTRUCTION MANAGER when a service line larger than 1-inch is verified at a residential property. CONSTRUCTION MANAGER will coordinate with OWNER regarding the extent of service line replacement.
3. Service Line consists of a "Public" side which typically extends from the water main to the curb stop and a "Private" side which extends from the curb stop to the interior of the building served.

B. Non-Residential Property
1. Commercial business or a property with more than 4 associated individual dwelling units.

2. Properties with a service line larger than 1-inch are by definition considered non-residential.
3. Non-residential service line are "Private" from the main to the interior of the building served. There is no "Public" side.
4. Where lead or galvanized material is identified on the portion of a non-residential service line from the curb to the interior of the building served, the CONTRACTOR will be required to provide a cost estimate to the Non-Residential Property Owner to replace this portion of the service line. The CONTRACTOR shall establish the price, scope, payment terms, and schedule to complete the work. The agreement to complete this work will be between the Non-Residential Property Owner and the CONTRACTOR and the OWNER will not be a party to this agreement if the Non-Residential Property Owner agrees to have the CONTRACTOR complete the work. The Non-Residential Property Owner reserves the right to have the work completed by their own contractor. The CONTRACTOR should notify the CONSTRUCTION MANAGER and OWNER in the event the Non-Residential Property Owner declines to accept the CONTRACTOR'S proposal to complete the replacement of the service line between the curb and interior of the building served.

1.9 WORK ON PRIVATE PROPERTY

A. OWNER shall obtain an Agreement with the Property Owner for lead service line replacement on residential private property prior to CONTRACTOR work on residential private property. No work is to be completed on the residential private property until the agreement documentation is verified and approved by OWNER. A coordination meeting between the Property Owner, OWNER and the Contractor must also be conducted before work on residential private property can commence.
   1. During the Coordination meeting, CONTRACTOR should identify any safety, sanitary, or access issues that would impede, delay or preclude the CONTRACTOR from completing the service line work. The CONTRACTOR will notify the OWNER and the Property Owner of the issues to be rectified in order for the CONTRACTOR to complete the service line replacement work. A reasonable deadline for addressing issues should be provided to the Property Owner. The OWNER will confirm with the Property Owner on the deadline date to confirm that the issues have been addressed. The CONTRACTOR will not be required to complete the private-side service line replacement work if the Property Owner does not sufficiently address identified issues by the deadline established by the CONTRACTOR and conveyed to the Property Owner.

B. The CONTRACTOR shall perform all work using appropriate methods to minimize the disturbance on private property including the existing interior wall finish and exterior foundation wall. The existing pipe penetration should be removed and the opening sealed watertight. The CONTRACTOR shall restore the existing exterior foundation wall when damaged by the Contractor at no additional cost to the OWNER.
   1. During the coordination meeting, the CONTRACTOR shall identify any improved areas such as drywall, paneling, carpeting, tile, etc. that will need to be removed in order to complete the service line replacement work. The Property Owner will be responsible for the removal of these materials prior to the completion of the service line replacement work. The Property Owner will also be responsible for the restoration of areas disturbed during the work. The CONTRACTOR will be responsible for the removal and restoration of these areas, at no additional cost, in the event this information is not clearly conveyed to the Property Owner and documented by the OWNER during the coordination meeting.

C. Where a Property Owner has not submitted authorization for the CONTRACTOR to perform work on private property, either by submitting a Declined Agreement or not submitting a fully executed Agreement, the CONTRACTOR may be required to ~~shall~~ replace only the public water service line from the main to the ~~reconnection point~~ curb stop as defined herein and as directed by the CONSTRUCTION MANAGER. The residential water service will be terminated unless otherwise directed by the OWNER.

1.10 PERMIT REQUIREMENTS

A. The CONTRACTOR shall obtain all necessary licenses, certificates and permits including but not limited to all Traffic Obstruction and Plumbing Plans/Permits.

B. The CONTRACTOR shall secure all Allegheny County Health Department Plumbing Permits in advance of the proposed work.

C. All costs associated with obtaining the above shall be included in the appropriate unit prices bid.

1.11 PROPERTY OWNER NOTIFICATION

A. CONTRACTOR shall notify residents at least 48-hours in advance of any scheduled water service shut-off associated with service line replacement work, and the intent to work in their front yards and/or in Public Space. This notification shall be given in the form of an approved door hanger, prior to performing any water service line material verification and/or replacement work.

B. Before the CONTRACTOR can complete a partial service line replacement, when a partial service line replacement is directed by PWSA, the CONTRACTOR shall notify all affected residents a minimum of 72 hours (and no more than 5-days) in advance. Notification shall be made via approved door hanger. If the 5-day time period has been exceeded, then the notification must start again with the 72-hour minimum.

C. No part of a service line shall be replaced without the Property Owner being properly notified per PADEP requirements.

D. At all times during construction, the CONTRACTOR shall identify one person on-site whose responsibility it is to perform all Property Owner notifications and maintain accurate record of those notifications.

E. The CONTRACTOR is responsible for verifying that the following Door Hangers were hung:

Hanger	Title
A	48-Hour Notice
B	Important Health Notice: Water Service Line Inspection Results
C	Important Health Notice: Work to Occur on Your Water Service Line
D	Notice: Missed Appointment
E	Important Health Notice: Partial Replacement of Lead Service Line Planned Within 3 to 5 Days

F	Important Health Notice: Water Service Line Replacement Work Completed
T	Termination Notice: Water service to the property to be terminated.

F. The schedule of all required Door Hangers for water main relays is as follows:

Service Line Verification?	**Private Material**	**Action**	**Hangers**					
Yes	Non-Lead	Public Replacement Only	C (1)	A	B (2)	F		
Yes	Lead	Coordinated Full Replacement	C (1)	A	B (2)	F		
Yes	Lead	Failed Coordination Service Termination	C (1)	A	B (2)	D	T	F
Yes	Lead	Planned Service Termination	C (1)	A	B (2)	T	F	
Yes	Lead	Failed Coordination Partial Replacement	C (1)	A	B (2)	D	E (3)	F
Yes	Lead	Planned Partial Replacement	C (1)	A	B (2)	E (3)	F	

(1) If agreement status is "Declined" do not use Hanger C, use hang Hanger A
(2) Hanger B required if replacement doesn't take place on same day as verification.
(3) Minimum of three (3) days but not more than five (5) days before work begins.

G. Service Line Terminations

1. Unless otherwise directed, PWSA will terminate service lines to both residential and non-residential properties under the following conditions.
   a. Residential Property Owner returned a declined agreement.
   b. Residential Property Owner is non-responsive regarding the return of a signed agreement.
   c. Residential Property Owner is non-responsive regarding the scheduling or attendance at a coordination meeting.
   d. Residential Property Owner is non-responsive regarding the provision of access to complete the service line replacement work.
   e. Non-Residential Property Owner declines to have the portion of the service line replaced, either by the CONTRACTOR or by the Property Owner's contractor, from the curb to the meter.
   f. Non-Residential Property Owner is non-responsive regarding the provision of access to complete the service line replacement work.
2. Notifications and Actions – The following notifications and actions are typically required to be made by the OWNER, unless otherwise noted below, to the Property Owner before termination of water service can be completed. The OWNER will be responsible for making these notifications to the Property Owner unless otherwise described herein.
   a. Termination notices cannot be made more than 60 days prior to the actual termination.

b. 37-day notice – Initial notification to the Property Owner that their service could be terminated in the event they do not agree to have their private-side service line replaced.
c. 30-day notice - Only required when the property is tenant-occupied. OWNER Field Liaison will post the required doorhanger at the property.
d. 10-day written notice
e. 3-day notice - In-person visit by OWNER Field Liaison.
f. Curb Stop Shut – CONTRACTOR will suspend service to the property by shutting the curb stop off. The service line will remain connected to an active water main at this time. OWNER Field Liaison will be present and attempt contact with the Property Owner at this time.
g. Termination of Service – CONTRACTOR can fully terminate service to the property by disconnecting it from the water main. This termination MUST occur no sooner than 5 days after the Curb Stop Shut.

3. The CONTRACTOR is responsible for maintaining an accurate schedule for completion of service line work. The updated schedule for service line work will be used to determine the schedule for distributing termination correspondence when required. The CONTRACTOR shall not be entitled to any additional payment or schedule extension in the event their work is delayed in order to satisfy the termination notification timeline.

1.12 REQUIRED MATERIALS ON-HAND

A. In order to minimize the amount of time a customer is without water service; the CONTRACTOR shall be required to have on-hand at all times the materials necessary to complete all work associated with the required internal plumbing improvements and water service reconnection. The materials include, but are not limited to:

1. 50 LF minimum of Type L Copper
   a. 1”, 3/4”, 1/2”
2. #6 AWG Copper Wire or #4 AWG Aluminum Wire and Grounding Clamps
3. No-Contact Transition Couplings
   a. Capable of connecting up to 1.5” service line
4. Thermal Expansion Tanks
   a. 2.1 Gallon, 4.5 Gallon
5. Pressure Reducing Valve
   a. 1”, 3/4”, 1/2”
6. Backflow Preventors
   a. 1”
7. Service Valve
   a. 1” Flare x 1” Female IPS
8. Meter Valve
   a. 1”, 3/4”, 1/2” IPS
9. Dual Check Valve
   a. 1”, 3/4”, 1/2”
10. Meter Bushings
    a. 1” x 3/4”, 1” x 5/8”, 1” x 1/2”
11. Meter Couplings with Leather Washers
    a. 1”, 3/4”, 5/8”, 1/2”, 1.5”
12. Various Copper Fittings (Solder & Pro-Press)
    a. 90° elbows, 45° elbows

1”, 3/4”, 5/8”, 1/2”, 1.5”
b. Male & Female Adapters
1”, 3/4”, 5/8”, 1/2”, 1.5”
c. Couplings
13. Various Plastic Meter Fittings
14. Brass Nipples (Various Lengths)
a. 1”, 3/4”, 5/8”, 1/2”
15. Various Support Straps

PART 2 PRODUCTS

2.1 COPPER TUBING

A. USE:
1. Public Water Service Line.
a. Single Family Residential shall be 1-inch diameter only. CONTRACTOR shall notify CONSTRUCTION MANGER if the existing service line to a residential property is larger than 1-inch in diameter. Copper tubing shall only be used on the public side at the direction of the CONSTRUCTION MANAGER.
b. Commercial and Multi-Unit Residential shall be replaced in-kind but will not be smaller than 1-inch diameter.
2. Private Water Service Line.
a. Single Family Residential shall be 1-inch diameter only. CONTRACTOR shall notify CONSTRUCTION MANGER if the existing service line to a residential property is larger than 1-inch in diameter.
b. Commercial and Multi-Unit Residential shall be replaced in-kind but will not be smaller than 1-inch diameter.

B. COPPER WATER PIPING AND FITTINGS
1. Copper Tubing: ASTM B88, Type K, annealed, 200 psi:
a. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
i. Non-Contact Couplings, for lead pipe connections.
b. Joints: Compression connection or AWS A5.8, BCuP silver braze.
c. Mark pipe to continuously identify Manufacturer’s name and code, nominal size, date of manufacture, pressure rating, ASTM or AWWA designation number.

2.2 CORPORATION STOP ASSEMBLY

A. For all 1-inch service lines.

B. Manufacturer List:
1. Mueller Company, Model B25000N.
2. Approved equal.

C. Corporation Stops:
1. Brass or red brass alloy body conforming to ASTM B62, no lead alloy.

2. Body conforming to AWWA C800, cast copper conforming to ASME B16.8, or wrought copper conforming to ASME B16.22.
3. Ball valve with minimum pressure rating of 300 psi.
4. Inlet end threaded for tapping according to AWWA C800.
5. Outlet end pack joint for PE pipe with quick connect, or flared copper service threaded outlet, as appropriate (1-inch).

2.3 CURB STOP ASSEMBLY

A. Manufacturer and Product List:
   1. Mueller Company, Model B25204N.
   2. Approved equal.

B. Curb Stops:
   1. Brass or red brass alloy body conforming to ASTM B62, no-lead alloy.
   2. Body conforming to AWWA C800, cast copper conforming to ASME B16.8, or wrought copper conforming to ASME B16.22.
   3. Ball valve with minimum pressure rating of 300 psi.
   4. Inlet and outlet ends: pack joint for PE pipe with quick connect or flared copper service threaded outlet, as appropriate.

2.4 FITTINGS

A. Direct Bury Fittings
   1. Manufacturer
      a. Philmac – Universal Transition Coupling
      b. Approved equal

2.5 CROSS-LINKED POLYETHYLENE (PEX) TUBING, 1-Inch to 2-Inch Nominal Pipe Size

A. USE :
   1. Public Water Service Line.
      a. Single Family Residential shall be 1-inch diameter only.
      b. Commercial and Multi-Unit Residential service lines 2-inch and smaller. Commercial and Multi-Unit Residential service lines larger than 2-inch shall be replaced in-kind.
   2. Private Water Service Line.
      a. PEX tubing is not permissible for use on private water service line replacements.

B. PEX WATER PIPING AND FITTINGS
   1. Crosslinked polyethylene pipe using the high-pressure peroxide method of crosslinking (PEXa). Pipe shall confirm and be third-party certified to AWWA C904, ASTM F876, CSA B137.5, NSF/ANSI 14 and NSF/ANSI 61.
   2. SDR 9 pipe size.
   3. Pipe shall have ability for kink repair using a heat gun. No need to cut out kink.
   4. Pipe shall be approved by manufacturer for use with squeeze-off tool.

5. Pipe shall be rated for continuous operation of 100 psi gauge pressure at 180°F temperature (690 kPa @ 82.2°C), and 200 psi gauge pressure at 73.4°F temperature (1380 kPa @ 23°C) as defined in AWWA C904.
6. Pipe to be tested for resistance to hot chlorinated water in accordance with ASTM F2023. Pipe to have a minimum Class 3 chlorine resistance rating when evaluated to F876 and tested in accordance to F2023.
7. Pipe to have a co-extruded UV Shield made from UV-resistant polyethylene. Pipe to have minimum recommended UV exposure time of 12 months when tested in accordance with ASTM F2657 and evaluated in accordance with ASTM F876.
8. Pipe shall be manufactured in a facility whose quality management system is certified according to ISO 9001.
9. Bend Radius: The minimum bend radius for cold bending of PEXa pipe shall be not more than five (5) times the outside diameter.
10. Manufacturer and Product List:
    a. REHAU, Municipex
    b. Approved Equal

C. FITTINGS
1. All fittings shall be lead free per NSF/ANSI 61 and 372.
2. Compression-type fittings using crimp ring per ASTM 1807 will not be permitted.
3. Insert Stiffeners
    a. Stainless Steel complying with the material and performance requirements of ANSI/AWWA C800 and the manufacturer's requirements for dimensions and tolerances.
4. Interior Fittings
    a. Interior fittings shall not be used for direct bury applications.
    b. ASTM F1960 PEX-a Fittings: elbows, adapters, couplings, plugs, tees and multi-port tees (1/2 inch through 3 inch nominal pipe size): ASTM F1960 cold-expansion fitting manufactured from the following material types:
        i. NSF/ANSI 61 Annex G and NSF/ANSI 372 Lead-free (LF) Brass.
        ii. 20% glass-filled polysulfone as specified in ASTM D 6394.
        iii. Unreinforced polysulfone (group 01, class 1, grade 2) as specified in ASTM D 6394.
        iv. Polyphenylsulfone (group 03, class 1, grade 2) as specified in ASTM D 6394.
        v. Blend of polyphenylsulfone (55-80%) and unreinforced polysulfone (rem.) as specified in ASTM D 6394.
    c. Cold-expansion compression-sleeve fittings meeting requirements of ASTM F2080, metal or engineered polymer (EP) cold expansion fittings with PEX reinforcing rings.
    d. Manufacturer and Product List:
        i. REHAU, Municipex
        ii. Sioux Chief, PowerPEX
        iii. Approved Equal
5. Direct Bury Fittings
    a. Manufacturer
        i. Philmac – Universal Transition Coupling
        ii. Approved equal

D. TRACER WIRE

1. 12 AWG, extra-high strength copper clad steel conductor (EH-CCS) with a minimum 1,150 pounds break load. Insulation shall be 45 mil, high–density, high molecular weight polyethylene (HDPE) and rated for direct burial, 30 volts.
2. Manufacturer and Product List:
   a. Copperhead Industries, LLC
   b. Approved Equal

E. PIPE SLEEVE:
1. PEXa pipe installed by open trench in roadways shall be protected n backfill by installation in a slit corrugated sleeve. CONTRACTOR shall supply and install 1.5-inch diameter sleeve as casing surrounding both PEXa pipe and tracer wire.
2. Manufacturer and Product List:
   a. Hellermann Tyton - convoluted tubing, slit, 1.5-inches nominal diameter
      i. Part Number: CTPUV1120
   b. Approved Equal

2.6 CURB BOXES AND COVERS

A. Cast iron body, Buffalo Type.

B. 3-inch shaft.

C. Regular base for 1” service lines and enlarged based for service lines up to 2 ½”.

D. Lid with inscription “WATER”, with Pentagon Plug.

2.7 CURB BOX LOCK

A. For 1-inch diameter service lines.

B. Manufacturer and Product List:
1. The Vadle Curb Box Lock
2. Approved Equal

2.8 UNDERGROUND PIPE MARKERS

A. Plastic Ribbon Tape: Bright colored (blue), continuously printed, minimum 6-inches wide, 4-mil thick, manufactured for direct burial service.

2.9 POLYETHYLENE ENCASEMENT

A. All direct-bury metallic pieces shall be wrapped with polyethylene encasement.

B. Polyethylene Encasement: Virgin 8 mil per AWWA C105.

2.10 BEDDING AND COVER MATERIALS

A. Bedding and Backfill materials shall conform to Section 02324, except as noted.
   1. Pipe zone bedding of PEXa pipe is not required as described in Section 02324 when the corrugated sleeve described in Part 2.5.E of this Section is used. Type A2 granular material shall be used instead.

2.11 ACCESSORIES

A. Pipe Sleeve (Through Wall/Foundation): Minimum of one pipe size larger than service line pipe.
   1. PVC or HDPE; or
   2. As approved by Allegheny County Health Department

B. Pipe Penetration (Through Wall/Foundation) Sealant.
   1. SikaFIX HH; or
   2. As approved by Allegheny County Health Department

2.12 INTERNAL PLUMBING MATERIALS

A. Copper Tubing: ASTM B88, Type L, annealed, 200 psi:
   1. Mark pipe to continuously identify Manufacturer's name and code, nominal size, date of manufacture, pressure rating, ASTM or AWWA designation number.
   2. Fittings: ASME B16.18, cast copper, or ASME B16.22, wrought copper.
      a) Non-Contact Couplings, for lead pipe connections.
   3. Joints: Compression connection or AWS A5.8, BCuP silver braze.
   4. PEX tubing is not permissible for use on private water service line replacements.

B. Thermal Expansion Tank
   1. Approved by Allegheny County Health Department

C. Backflow Prevention Device
   1. Dual Check Type
   2. Approved by Allegheny County Health Department

D. Pressure Relief Valve
   1. Approved by Allegheny County Health Department

E. Service Valves
   1. Full Port Type

F. Fittings, Meter Valves & Service Valves
   1. Valve shall ensure continuous metallic contact between the meter and internal plumbing.
   2. Brass and Brass Components conform to AWWA C800.
      a. ASTMB62 & B584, UNS C89833 & 83600.
   3. Certified as NSF/ANSI 61 & 372.
   4. Manufacturer and Product List:
      a. Service Valves
         1" Flare x 1" Female IPS Full Port Angle Valve

Ford Meter Box Company, Inc.
a) BA21-444W-NL

b. Meter Valves
IPS Full Port Ball Valve
Ford Meter Box Company, Inc.
a) 1” Inlet / 5/8” Meter Thread: BA23-341W-NL
b) 1” Inlet / 5/8”x 3/4” Meter Thread: BA23-342W-NL
c) 1” Inlet / 1” Meter Thread: BA23-444W-NL

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01700 - Execution Requirements: Requirements for installation examination.

B. Verify building service connection and municipal utility water main size, location, and invert are as indicated on Drawings.

3.2 PREPARATION

A. Section 01700 - Execution Requirements: Requirements for installation preparation.

B. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
1. Pipe Cutters and/or Shears Only, conforming to AWWA C810-17.
2. Sawing of lead service line is prohibited.

C. Remove scale and dirt on inside and outside before assembly.

D. Prepare pipe connections to equipment with flanges or unions.

E. Existing water services shall, in general, be kept in service until transfer connections are made.

~~3.3 GENERAL CONSTRUCTION GUIDANCE FOR PUBLIC AND PRIVATE WATER SERVICE LINES DURING LEAD SERVICE LINE REPLACEMENT~~

~~A. All work done for the replacement of lead service lines shall conform to AWWA C810-17.~~

~~B. A summary of the sequence of construction is as follows:~~
~~1. CONTRACTOR shall perform service line material verification as indicated on the work order to determine the material type of the public and/or private water service lines.~~
~~a. CONTRACTOR shall open the existing curb box cover and determine the depth of the existing service line prior to excavation.~~
~~i. If the CONTRACTOR is uncertain of the existing water main depth (depths can vary but are typically between 4 ft. and 8 ft. for water mains and 3 ft. and 6 ft. for water service lines), or suspects a change in depth from previous excavations, the CONTRACTOR should measure the depth of the watermain at the nearest accessible valve box.~~

~~b. The extent of potential water service line replacements is as follows (Public Water Service Line Material/Private Water Service Line Material):~~
~~i. Public Lead/Private Non-Lead: Public Water Service Line Replacement Only.~~
~~ii. Public Lead/ Private Lead or Galvanized Iron (If the OWNER has received authorization for the Contractor to replace the private water service line): Public AND Private Water Service Line Replacement.~~
~~iii. Public Lead/ Private Lead or Galvanized Iron (If the OWNER has NOT received authorization for the Contractor to replace the private water service line): Public Service Line Replacement Only, following proper notification and as directed by the CONSTRUCTION MANAGER.~~
~~iv. Public Non-Lead/ Private Lead or Galvanized Iron: None.~~
~~v. Public Non-Lead/ Private Non-Lead: None.~~

~~2. If the CONTRACTOR determines that either the public water service line, or the public and private water service lines can be replaced, the CONTRACTOR shall immediately notify the home owner of the planned water service line replacement, via approved door hanger.~~
~~3. For Private Water Service Line Replacement: Prior to mobilizing to perform the replacement work, the CONTRACTOR shall meet with the property owner and OWNER representative (at an appointment to be scheduled by OWNER) to inspect the area inside the structure where reconnection to the existing private service line will take place. CONTRACTOR shall verify that adequate access to the private water service line and internal plumbing in order to perform all necessary work, has been provided. Property owner shall be responsible for providing access to the work area. CONTRACTOR shall also determine if additional improvements must be made to the internal plumbing, such as backflow prevention and thermal expansion tank or relocation of the existing water meter.~~
~~4. CONTRACTOR shall file all appropriate permits with ACHD and City of Pittsburgh based on the extent of work required.~~
~~5. CONTRACTOR shall perform all specified water service line replacement work in coordination with ACHD and City of Pittsburgh inspection requirements. There shall be no additional compensation for delays that result from coordinated inspections with ACHD and City of Pittsburgh.~~
~~6. Restore as specified.~~

~~C. CONTRACTOR shall not accept or undertake any extraneous work not identified under this Contract.~~

3.4 GENERAL CONSTRUCTION GUIDANCE FOR PUBLIC AND PRIVATE WATER SERVICE LINE REPLACEMENTS DURING WATERLINE RELAYS

A. All work done for the replacement of lead service lines shall conform to AWWA C810-17.

B. A summary of the sequence of construction is as follows:
1. Service line material verification must take place before any water main in constructed. The service line verification is used to not only confirm service line material but also the diameter of the service line.
a. In the event the CONTRACTOR cannot complete a verification at the curb stop, the public-side verification will be at a location in the sidewalk or in the street. In this situation, the OWNER may allow the private-side service line verification to be completed visually inside the property. All work should be coordinated with the

CONSTRUCTION MANAGER. It will be the contractor's responsibility to confirm the service line material and size before starting any water main work.

b. Service lines larger than 1-in in diameter require a tee-valve configuration at the water main. No additional payment will be made for the contractor having to install this configuration after the water main has been installed if the service line was not verified prior to the construction of the water main.

2. CONTRACTOR shall perform service line material verification as indicated on the work order to determine the material type of the public and/or private water service lines.
   a. CONTRACTOR shall open the existing curb box cover and determine the depth of the existing service line prior to excavation.
      i. If the CONTRACTOR is uncertain of the existing water main depth (depths can vary but are typically between 4 ft. and 8 ft. for water mains and 3 ft. and 6 ft. for water service lines), or suspects a change in depth from previous excavations, the CONTRACTOR should measure the depth of the watermain at the nearest accessible valve box.
   b. The extent of potential water service line replacement is as follows based on the private service line material (note that all public service lines and curb stops will be replaced during waterline relays):
      i. Private Non-Lead: Public Water Service Line Replacement Only.
      ii. Private Lead or Galvanized Iron (If the OWNER has received authorization for the Contractor to replace the private water service line): Public AND Private Water Service Line Replacement.
      iii. Private Lead or Galvanized Iron (If the OWNER has NOT received authorization for the Contractor to replace the private water service line): Public Service Line Replacement Only, following proper notification and as directed by the CONSTRUCTION MANAGER.
3. If the CONTRACTOR determines that either the public water service line, or the public and private water service lines can be replaced, the CONTRACTOR shall immediately notify the home owner of the planned water service line replacement, via approved door hanger.
4. For Private Water Service Line Replacement: Prior to mobilizing to perform the replacement work, the CONTRACTOR shall meet with the Property Owner and OWNER representative (Field Liaison), at an appointment to be scheduled by OWNER, to inspect the area inside the structure where reconnection to the existing private service line will take place. CONTRACTOR shall verify that adequate access to the private water service line and internal plumbing in order to perform all necessary work, has been provided. Property owner shall be responsible for providing access to the work area. CONTRACTOR shall also determine if additional improvements must be made to the internal plumbing, such as backflow prevention and thermal expansion tank or relocation of the existing water meter.
   a. The CONTRACTOR shall be responsible for conveying this information to the Property Owner. The Field Liaison is only to act as an OWNER representative at the meeting.
   b. The CONTRACTOR must provide the Property Owner with the extents of and a specific timeline for rectifying any issues that would not permit the CONTRACTOR from completing the private-side service line work.
5. CONTRACTOR shall file all appropriate permits with ACHD and City of Pittsburgh based on the extent of work required.
6. CONTRACTOR shall perform all specified water service line replacement work in coordination with ACHD and City of Pittsburgh inspection requirements. There shall be no

additional compensation for delays that result from coordinated inspections with ACHD and City of Pittsburgh.

7. Restore as specified.

C. CONTRACTOR shall not accept or undertake any extraneous work not identified under this Contract.

3.5 SERVICE LINE TERMINATION

A. The CONTRACTOR will not terminate service to a property until all required notices have been provided to the Property Owner and five days have elapsed since the curb stop was shut.

B. The CONTRACTOR will disconnect the existing private-side service line from the existing curb stop. The existing curb stop and curb box will be removed per typical construction requirements for the installation of a new curb stop and curb box.

C. The CONTRACTOR will construct the new curb stop and curb box at the end of the public-side service line. A 12-inch copper tailpiece shall be connected to the private side of the new curb stop. The open end of the copper tail piece shall be capped before commencing backfill of the excavation.

D. The new curb stop shall be left in the off position.

3.6 INSTALLATION – INTERNAL PLUMBING IMPROVEMENTS

A. Prior to any service line replacement work, the CONTRACTOR and their designated plumber shall visually inspect the internal plumbing of the residence. CONTRACTOR shall install required backflow prevention and/or thermal expansion tank. These improvements are required to gain plumbing inspection approval. Pressure relief valves shall be installed as directed by the OWNER.

3.7 INSTALLATION – WATER SERVICE TAPS

A. The CONTRACTOR will perform all water service line taps.

B. Contractors are permitted to perform “wet taps” 1-inch for service lines. The contractor is required to have immediate access to a tapping machine for completing taps up to 2-inches in diameter.

C. Taps must be more than 18-inches horizontally away from any existing or new tap or pipe joint.

D. When tapping adjacent to an existing tap, the new tap shall be staggered by a minimum of 30 degrees off the horizontal centerline of the existing tap. The position of the new tap must also be greater than (>) 0° and less than (<) 90° on the water main.

3.8 INSTALLATION - CORPORATION STOP ASSEMBLY

A. Make connection for each different kind of water main using suitable materials, equipment and methods approved by the OWNER.

B. Screw corporation stops directly into tapped and threaded water main at the location of the new tap.

C. Use proper seals or other devices so no leaks are left in water mains at points of tapping; do not backfill and cover service connection until approved by the CONSTRUCTION MANAGER.

3.9 BEDDING

A. Excavate pipe trench in accordance with Section 02324 for Work of this Section.

B. Place fill material in accordance with Section 02324.

3.10 INSTALLATION - PIPE AND FITTINGS

A. Trenchless installation is the preferred installation method provided that it is done so no settlement above the pipeline or voids around and below the pipeline occur. There must also be no joints in the service line within the length that is to be installed via particular trenchless method.
   1. The contractor must receive approval from the CONSTRUCTION MANAGER prior to performing open trench installation.
   2. If the trenchless method has the potential to create a void space around the new pipe material, CONTRACTOR may be required to install a bentonite plug in one or more locations along the pipe replacement to prevent the creation of a preferential ground water flow pathway towards any building foundations.
   3. Public utilities that cross a service line installation must be exposed if the trenchless installation method has the potential to damage the utility, and as directed by the CONSTRUCTION MANAGER. No additional payment will be made for exposing existing utilities in order to allow a trenchless installation method.

B. The CONTRACTOR shall make every attempt to not disturb or remove retaining walls to complete water service line replacement.
   1. Retaining walls may only be removed if tunneling under, or avoiding the wall entirely is not feasible.

C. Install only as approved by CONSTRUCTION MANAGER, and in accordance with manufacturer's published installation manual and/or published guidelines.

D. At connections and fittings, use a pipe cutter approved by Manufacturer to ensure square (90°) and clean cuts, and join pipes immediately or cap ends of pipe to seal from contaminants.

E. Maintain separation of water main from sewer piping in accordance with code.

F. Group piping with other site piping work whenever practical.

G. Private Water Service Lines shall be replaced with Type "K" Copper Pipe only. PEX tubing is not permissible for use on private water service line replacements.

H. Install pipe to indicated elevation to within tolerance of 5/8 inches.

I. Install pipe to allow for expansion and contraction without stressing pipe or joints.

J. Establish elevations of buried piping with not less than 4 ft of cover.

K. For metallic pipe, install plastic ribbon tape continuous buried 6 inches below finish grade, above pipe line; coordinate with Section 02324.

L. For metallic pipe and fittings: Shall be wrapped with polyethylene encasement.

M. Install tracer wire on pipe with nylon straps or zip-ties. Connect to termination points on curb stop and run to ground level on curb box. No type of tape is allowable for securing the tracer wire to the pipe or connecting it to the termination points.
   1. Install corrugated sleeve as required.

N. Backfill trench in accordance with Section 02324.

O. For PEX tubing, install with no joints. Install per manufacturer's recommendations.
   1. PEX tubing is not permitted to be installed for the private water service line.
   2. CONTRACTOR to confirm system pressure with CONSTRUCTION MANAGER if not clearly indicated.

3.11 INSTALLATION - CURB STOP ASSEMBLY

A. Secure curb stops in curb box lock (for 1" dia.) or set larger curb stops on masonry support per details in Attachment A.

B. Center and plumb curb box over curb stop and curb box lock (if applicable). Set box cover flush with finished grade. Misaligned curb boxes that do not permit or otherwise detract from the operation of the curb stop will be realigned at no additional cost to the OWNER. CONTRACTOR shall include sidewalk restoration, if the sidewalk has already been installed, at no cost to the OWNER.

C. For water mains located in the abutting sidewalk, curb stops shall be installed in the right-of-way, 12-inches from the property line.

D. Curb stops shall be installed in the right-of-way, 12-inches behind the back (house side) of curb. Where there's landscaping between the curb and sidewalk, the curb stop should be located 12-inches from the street-side edge of sidewalk. Any deviation from this requires approval by the OWNER.

3.12 INSTALLATION – TRACER WIRE

A. Install tracer wire alongside of the service line pipe from the corporation stop to the curb box. The tracer wire shall be stripped of insulating material and connected to both the corporation stop and curb stop. Tracer wire shall be fastened to pipe with zip ties a minimum of every 5 feet. Tape shall not be used.

B. Enough tracer wire shall be installed so that the tracer wire extends to finished grade of the curb box. An additional 2 ft. of continuous tracer wire shall be provided.

~~3.13 PUBLIC WATER SERVICE LINE CONSTRUCTION SEQUENCE ON EXISTING WATER MAIN~~

~~A. Locate existing water main and curb box.~~

~~B. Run a trace on the existing water service line from the curb stop to the existing water main to determine the alignment of the existing water service line and the location of the corporation stop for the existing service to be replaced.~~

~~C. Sawcut and excavate at located or assumed location of existing corporation stop. Where alignment cannot be determined, assume the existing water service line runs perpendicular from the water main to the curb stop. All saw cuts shall be wet and made to comply with current OSHA regulations relating to Respirable Crystalline Silica.~~

~~D. Excavate and expose the water main and the existing corporation stop. To avoid damage to existing utilities, hand dig around all utilities and within the pipe zone as needed.~~

~~E. Use a wet tapping machine to install a new tap.~~

~~F. Connect new corporation stop.~~

~~G. Construct new water service line as shown on details in Attachment A and per the Specifications.~~

~~H. Install new curb stop and curb box and connect new water service line per details in Attachment A.~~

~~I. Shut the existing service corporation stop. Detach existing service from the corporation stop, crimp ends of existing pipe, and construct brick "doghouse" around the existing corporation stop per OWNER standard detail WS-STS included in Attachment A~~
~~1. If existing corporation stop is leaking and cannot be successfully shut, contact OWNER to perform a shut on the existing water main and remove the existing corporation stop (by OWNER).~~

~~J. Remove existing curb stop and casting.~~
~~1. If the existing curb stop will be located between the new curb stop and the residence, the existing curb stop shall be abandoned in the open position and backfilled with approved fill. Surface casting will then be removed and brought to final grade by topsoil (in landscape areas) or concrete (in hardscape areas).~~

~~K. Connect new curb stop to existing water service that is to remain (private side) with approved adapter per OWNER/ACHD standards. If the private water service is scheduled to be replaced, do not reconnect the new public water service line until the new private water service line is installed (i.e. do not connect back into lead on the private side). Construct additional water service line as needed in order to make connection.~~

~~1. Water service piping installed to reconnect the curb stop to the existing private service line shall be paid under the appropriate public water service line unit item.~~

~~L. Turn on new service by opening the corporation stop on the water main. Backfill all trenches with approved backfill material in accordance with Section 02324.~~

~~M. Backfill and bring to grade as follows:~~

~~1. Grass/Landscaped Areas: Backfill and bring to grade with in-situ material or stock-piled dirt.~~

~~2. Sidewalk/Driveway Areas: Backfill and bring to grade with approved aggregate.~~

~~3. Roadway: Binder to grade. Winter topping to be HES concrete w/ temporary bond breaker to grade.~~

~~a. Cold Patch placed to temporarily bring a trench to grade in lieu of Asphalt Binder or HES Concrete shall be considered incidental to the Work.~~

3.14 PRIVATE WATER SERVICE LINE CONSTRUCTION SEQUENCE

A. Verify the Property Owner has provided adequate access to the existing water meter and related water service piping (and internal plumbing), and has completed any work CONTRACTOR identified as necessary for the installation during the meeting. Do not disconnect existing water service until access to the private property is obtained on the day of the work.

B. Perform all excavation necessary to install private water service piping through the specified installation method.

C. Complete all finished surface penetrations in the existing building foundation that are required to install the new piping.

D. Install new piping.

E. Backfill and compact all excavations in accordance with Section 02324.

F. Shut-off water service at the existing stop (if service is still active).

G. Perform service line reconnections. DO NOT reconnect to existing lead piping unless lead piping is behind the water meter and will not be disturbed by the work. If public service line is lead, do not reconnect until public service line is replaced.

H. Install internal plumbing improvements (thermal expansion tank, backflow prevention, etc.) as required.

I. Turn on water service at the shut stop and flush new service line in accordance with AWWA 810-17. Flushed water should be discharged as to not damage private property (floor drain, utility sink, bucket, etc.).

J. Reset existing meter if meter composition is composite.
   1. If meter composition is metal, coordinate with OWNER for replacement.

K. Fill annular space of any wall penetration with waterproof material and restore any removed concrete from the floor.

L. Backfill and bring to grade as follows:
   1. Grass/Landscaped Areas: Backfill and bring to grade with in-situ material or stock-piled dirt.
   2. Sidewalk/Driveway Areas: Backfill and bring to grade with approved aggregate.
   3. Roadway: Binder to grade. Winter topping to be HES concrete w/ temporary bond breaker to grade.

3.15 FLUSHING REQUIREMENT

A. Following service line installation, the CONTRACTOR shall flush the entire length of new service line from the corporation stop on the new main prior to reconnection with existing private service line, conforming to AWWA C810-17. Following reconnection, the service shall be gradually turned back on from both the curb and the corporation stop.

3.16 DISPOSAL OF LEAD PIPE

A. Disposal of lead pipes shall be at a site approved by the U.S. Environmental Protection Agency (and the State) to accept lead waste. Handle, label, store, transport, and dispose of lead or lead-contaminated waste in accordance with the following Code of Federal Regulations: 40 CFR 261, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.

B. Submit written evidence that the receiving lead waste treatment, storage, or disposal facility is approved to accept lead waste by the federal and district or local regulatory agencies. Submit, within 10 days, one copy of the complete manifest(s), signed and dated by the transporter in accordance with 40 CFR 262.

C. No lead pipe shall be disposed as part of excavated material.

D. Lead pipe abandoned in place shall have the ends sealed before backfilling.

E. Lead piping shall be cut using manual shears. No mechanical means or methods that would disturb the lead pipe shall be used to cut the pipe.

3.17 POLYETHYLENE ENCASEMENT

A. Encase metallic piping, fittings, and valves in polyethylene to prevent contact with surrounding backfill material.

B. Install in accordance with AWWA C105.

C. Terminate encasement 3 to 6 inches above ground where pipe is exposed.

3.18 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Requirements for inspecting, testing.

B. CONTRACTOR shall place new water service line back into service prior to backfilling excavation to determine if leaks are present. Fill section to be tested with water and observe joints, fittings and valves for 10 minutes.
   1. Remove and renew cracked pipe, joints, fittings, and valves showing visible leakage, regardless of quantity of leakage. Retest.

C. Compaction Testing for Bedding: In accordance with Section 02324.

D. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.

E. Frequency of Compaction Tests: In accordance with Section 02324.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete for the following:
   1. Manholes.
   2. Cart-ways.
   3. Sidewalks.
   4. Curbs.
   5. Encasement.
   6. Trust Blocking.
   7. Cradles.

B. Related Sections:
   1. Section 02086 - Water Utility Fire Hydrants.
   2. Section 02513 - Public Water Distribution Piping.
   3. Section 02515 - Water Service Connections.
   4. Section 02750 - Concrete Paving.
   5. Section 02082 - Public Manholes and Structures:

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. See Section 01200 Price and Payment Procedures.

1.3 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 305 - Hot Weather Concreting.
   3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
   4. ACI 308.1 - Standard Specification for Curing Concrete.
   5. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:
   1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   2. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
   3. ASTM C33 - Standard Specification for Concrete Aggregates.
   4. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
   5. ASTM C42/C42M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
   6. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.

7. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic Cement Concrete.
8. ASTM C150 - Standard Specification for Portland Cement.
9. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
10. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
11. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
12. ASTM C330 - Standard Specification for Lightweight Aggregates for Structural Concrete.
13. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete.
14. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
15. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
16. ASTM C685/C685M - Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing.
17. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
18. ASTM C989 - Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars.
19. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
20. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
21. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
22. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
23. ASTM C1218/C1218M - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
24. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
25. ASTM D994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
26. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
27. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
28. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on joint devices, attachment accessories , admixtures.

C. Design Data:
1. Submit concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:

a. Hot and cold weather concrete work.
b. Air entrained concrete work.
2. Identify mix ingredients and proportions, including admixtures.

D. Manufacturer's Installation Instructions: Submit installation procedures and interface required with adjacent Work.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Closeout procedures.

B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.6 QUALITY ASSURANCE

A. All concrete to be used in this work shall be ready-mix concrete conforming to the requirements of the latest revision of ANSI/ ASTM C-94.

B. Plants shall be qualified by Bulletin 42 or approved by the OWNER.

C. Perform Work in accordance with ACI 301.

D. Conform to ACI 305 when concreting during hot weather.

E. Conform to ACI 306.1 when concreting during cold weather.

F. Acquire cement and aggregate from one source for Work.

G. Perform Work in accordance with the more stringent requirements of the City of Pittsburgh, Allegheny County, PennDOT, and the OWNER.

H. Duplicate Delivery slips must be provided for the use of the OWNER. Slips must be stamped with an approved mix design number and the time the truck was loaded at the plant site.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Product Requirements: Environmental conditions affecting products on site.

B. Maintain concrete temperature after installation at minimum 50 degrees F for minimum 7 days (3 days if HES is approved by the City).

1.8 COORDINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. Cement : Type II or I/II: conform to the latest revision of ANSI/ ASTM C-150.

B. Water: Conform to ACI 318; potable, without deleterious amounts of chloride ions.

2.2 ADMIXTURES

A. All admixtures shall be approved by the OWNER and shall be added to the concrete in strict accordance with the recommendation of the manufacturer.

B. Type B or Type D, ANSI/ASTM C-494 (latest revision), shall be added to all concrete unless otherwise approved by the OWNER.

C. Air Entrainment: ASTM C260.
   1. Added to produce 5% air content. Air content shall not vary more than 1 % from the specified amount
   2. Added to all concrete for structures subjected to freeze-thaw conditions, such as sidewalks, outside liquid containing or liquid conveying vessels, concrete walls and roofs exposed to weather, etc.
   3. Admixture shall contain no calcium chloride or triethanolamine.

D. Chemical: ASTM C494/C494M.
   1. Type B - Retarding.
   2. Type D - Water Reducing and Retarding.

E. Fly Ash ASTM C618 Class C.

F. Plasticizing: ASTM C1017/C1017M Type I, plasticizing.

2.3 RETARDING ADMIXTURE

A. Retarders may only be used with written permission from the OWNER.

B. May be specified in the proposal, or may be directed to be used when any of the following conditions are anticipated:
   1. Rapid drying of the concrete, as a result of low humidity;
   2. High winds;
   3. High air temperatures; or combinations of these adverse conditions.

C. Adjust the proportions of the design as required, but retarder shall not replace any portion of the specified volume of cement.

D. Use a retarder in sufficient quantities to provide the required degree of retardation under the prevailing weather conditions at the time of concrete placement.

2.4 ACCESSORIES

A. Bonding Agent: Polyvinyl Acetate.

B. Epoxy Adhesive: ASTM C881, Two component modified epoxy resin.

C. Non-Shrink Grout: Comply with Section 03600 – Grout

2.5 JOINT DEVICES AND FILLER MATERIALS

A. PREMOLDED EXPANSION JOINT FILLER: Bituminous Fiber complying with AASHTO - M213.

B. JOINT SEALING MATERIAL: Polyurethane polymer designed for bonding to concrete which is continuously submerged in water (Sikaflex 2C-NS/SL or approved equal) and as follows:
   1. Flow, Sag or Stump: NIL
   2. Durometer Hardness, ASTM- D2240: 20-45 Shore "A"
   3. Time to reach 20 Shore "A" Hardness at 770 F, 200 gr quantity: 24 hours, max.
   4. Tensile Strength, psi, ASTM- D412: minimum 200
   5. Elongation,%, ASTM- D412: minimum 400
   6. Tear Resistance (Die C ASTM D 624): 75 lbs per inch of thickness, minimum
   7. Color: Light Grey

C. PREFORMED CLOSED CELL POLYETHYLENE JOINT FILLER: complying with ASTM - D3204, Type I and as follows:
   1. Compressibility:
   a. Load required to compress test specimen by 25%: Min. 5 psi
   b. Load required to compress test specimen by 85%: Max. 30 psi

D. WATERSTOP:
   1. Factory scrap or reclaimed polyvinyl chloride shall not be used.
   2. Shipments shall be labeled with style or code number, lot or batch number, plant, place, and manufacture date.
   3. Waterstop shall be labeled with the manufacturer's name and style or code number, at intervals not exceeding 3 feet.
   4. Virgin polyvinyl chloride resin with the addition of only those plasticizers, stabilizers, and other materials required to insure aging stability and in-place durability and with the following physical properties:
   a. Brittleness Temperature, ASTM - D746: -20°F Max.
   b. Modulus of Flexure, ASTM- D747, lb./sq. in.: 400 Min.
   c. Tensile Strength, ASTM- D412 Die.
      1) Original, lb./sq. in.: 1,000 Min.
      2) Across Job Splice, lb./sq. in.: 1150 Min.
   d. Elongation.
      1) Original, Percent: 280 Min.
      2) Across Job Splice, Percent: 200 Min.
   e. Tear Strength, ASTM- D624, Die B.
      1) Original, lb./in.: 260 Min.
   f. Oven Aging, ASTM- D673,70 hours at 212°F.

1) Change in Tensile Strength, Percent Change: 20 Max.
2) Change in Elongation, Percent Change: 20 Max.

g. 14-Day Extraction, 140/150°F.
1) Change in Tensile Strength, Percent Change: 40 Max.
2) Change in Elongation, Percent Change: 40 Max.

2.6 CONCRETE MIX

A. All mixes shall be Class AA or **AAA.**
1. Concrete Paving Base must be Class AA. Use of HES Concrete must be approved by City of Pittsburgh in writing prior to installation.

B. Mixtures from volumetric mixing plants are not permitted, unless approved by the OWNER in writing.

C. The concrete mix shall be proportioned in accordance with the latest revision of ANSI/ACI 304 and ANSI/ACI C94, Paragraph 5, Alternate No.2.

D. Provide concrete to the following criteria:
1. Maximum allowable slump: Four inches.
2. Coarse aggregate: PennDOT Type A #57 or #67.
3. Fine aggregate: PennDOT Type A Highway Sand.
4. High Early Strength Concrete (with prior approval from the City of Pittsburgh ONLY):

a. Minimum compressive strength shall be 600 psi in 4 hours, 3000 psi in 24 hours, and 5000 psi in 28 days.
b. Conform to additional use of Type II or Type I/II cement in accordance with the latest revision of ASTM C 150 plus approved accelerating admixture in accordance with the latest revision of ASTM C494.
c. Conform to use of Type II cement in accordance with the latest revision of ASTM C 150, or
d. 25% additional Type II cement in accordance with the latest revision of ASTM C 150, or
e. Type II cement plus approved accelerating admixture in accordance with the latest revision of ASTM C494.

E. Admixtures: Include admixture types and quantities indicated in concrete mix designs only when approved by OWNER.
1. Use accelerating admixtures in cold weather. Use of admixtures will not relax cold weather placement requirements.
2. Do not use calcium chloride or admixtures containing calcium chloride.
3. Add air entrainment admixture to concrete mix for work exposed to freezing and thawing and/or deicing chemicals.
4. For concrete exposed to deicing chemicals, limit fly ash, pozzolans, silica fume, and slag content as required by applicable code.
5. Use set retarding admixtures during hot weather.

F. Average Compressive Strength Reduction: Permitted in accordance with ACI 318.

G. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M.

PART 3 -EXECUTION

3.1 EXAMINATION

A. Section 01300 - Administrative Requirements: Coordination and project conditions.

B. Verify requirements for concrete cover over reinforcement.

C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.

B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

C. Remove debris and ice from formwork, reinforcement, and concrete substrates.

D. Remove water from areas receiving concrete before concrete is placed.

3.3 PLACING CONCRETE

A. Place concrete in accordance with ACI 301, 304, 305R and 306R. No concrete will be accepted which fails to meet the environmental requirements above.

B. Notify testing laboratory and OWNER minimum 24 hours prior to commencement of operations.

C. Approval of formwork and reinforcement by the OWNER shall be obtained before concrete is placed

D. No concrete shall be poured in spaces where debris, oil, or water are present.

E. Deposit concrete at final position. Prevent segregation of mix.

F. Place concrete in continuous operation for each panel or section determined by predetermined joints.

G. Place concrete continuously between predetermined expansion, control, and construction joints.

H. Consolidate concrete.

I. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

J. Do not interrupt successive placement; do not permit cold joints to occur.

3.4 CONCRETE FINISHING

A. Provide formed concrete surfaces as Scheduled in related Sections.

3.5 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury for at minimum of ninety-six (96) hours.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Moist curing, waterproof paper, or white polyethylene sheeting may be used.

D. Protective concrete cover shall be as required in the latest revision of ANSI/ACI 318.

E. All classes of traffic and hauling equipment shall be excluded from the pavement for a period of seven (7) days (or three (3) days in cases where HES concrete is approved for use by the City) and until the pavement has developed the minimum compressive strength of 3,000 psi and/or minimum flexural strength of 500 psi.

3.6 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements and 01700 - Execution Requirements: Field inspecting, testing, adjusting, and balancing.

B. Perform field testing in accordance with ACI 318.

C. Provide free access to Work and cooperate with appointed firm.

D. Submit proposed mix design of each class of concrete to and testing firm for review prior to commencement of Work.

E. Concrete Inspections:
   1. Continuous Placement Inspection: Inspect for proper installation procedures.
   2. Periodic Curing Inspection: Inspect for specified curing temperature and procedures.

F. Strength Test Samples: Cost to be borne by CONTRACTOR.
   1. Sampling Procedures: ASTM C172.
   2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, standard cured.
   3. In each phase of the work sample concrete and make one set of six (six inch by twelve inch) cylinders for each 50 cubic yards placed.
   4. Make one additional cylinder during cold weather concreting, and field cure.
   5. Furnish all cylinders for making concrete compressive tests.
   6. Prepare the test cylinders in the presence of and under the supervision of the OWNER.
   7. Transported cylinders to a testing laboratory approved by the OWNER.

G. Field Testing:
1. Slump Test Method: ASTM C143/C143M.
a. Perform test of each 25 cubic yard or fraction thereof of concrete placed.
b. Perform test in the presence of and under the supervision of the OWNER. CONTRACTOR shall provide slump cone and rod.
2. Air Content Test Method: ASTM C173/C173M or ASTM C231.
a. Perform test each 25 cubic yard or fraction thereof, of exposed concrete subjected to freeze-thaw conditions.
b. Perform test in the presence of and under the supervision of OWNER. CONTRACTOR shall provide the air test meter.
3. Temperature Test Method: ASTM C1064/C1064M.
4. Measure slump and temperature for each compressive strength concrete sample.
5. Measure air content in air entrained concrete for each compressive strength concrete sample.

H. Cylinder Compressive Strength Testing:
1. Test Method: ASTM C39/C39M.
2. Test Acceptance: In accordance with ACI 318.
3. Test Schedule
a. Class A.
1) Test 2 cylinders at 7 days.
2) Test two cylinders at 28 days.
3) Retain two cylinders in reserve.
b. Class AA, **AAA.**
1) Test 2 cylinders at 7 days.
2) Test two cylinders at 28 days.
3) Retain two cylinders in reserve.
c. High Early Strength (with approval by City only).
1) Test 2 cylinders at 4 hours.
2) Test two cylinders at 3 days.
3) Test two cylinders at 28 days.
4) Retain two cylinders in reserve.
4. Dispose remaining cylinders when testing is not required.

I. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.7 SPECIAL HIGH EARLY STRENGTH (HES) TESTING REQUIREMENTS

A. If Contractor is using High Early Strength concrete, make cylinders from each truck that delivers concrete to be used on site. A certified technician employed directly by the Contractor may be allowed to make the cylinders. All other testing work must be completed by a third party.

3.8 PATCHING

A. Allow OWNER to inspect concrete surfaces immediately upon removal of forms.

B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify OWNER upon discovery.

C. Patch imperfections in accordance with ACI 301 to the satisfaction of OWNER.

3.9 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by OWNER.

C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express approval of OWNER for each individual area.

3.10 SCHEDULE - CONCRETE TYPES AND FINISHES

A. All concrete shall adhere to the project specifications, PENNDOT PUBLICATION 408 specifications, City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, and PWSA requirements unless an alternate is approved by OWNER and the City of Pittsburgh Department of Mobility and Infrastructure.

1. Base Course: Per the City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, 2017, or last Revised.
2. Concrete Pavements: Per the City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, 2017, or last Revised. Finish per standard details.
3. Exposed Including Sidewalks and Curbs: per the City of Pittsburgh Department of Public Works - RIGHT-OF-WAY POLICY PROCEDURES MANUAL, 2017, or last Revised. Finish per standard details.
4. Manhole Bases: 4,000 PSI 28-DAY Compressive Strength. Finish per standard details.
5. Concrete Cradles, encasement, and thrust Blocks: 4,000 PSI 28-DAY Compressive Strength.

B. High Early Strength Concrete shall only be used where approved by the City of Pittsburgh Department of Department of Mobility and Infrastructure only. In this event, payment will be for CLASS AA.

END OF SECTION

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL REQUIRED DEWATERING OF WORK LOCATIONS, NO MATTER WHAT THE SOURCE OF THE WATER. SOURCES INCLUDE BUT ARE NOT LIMITED TO ACCUMULATED PRECIPITATION, ENCOUNTERED GROUND WATER AND VALVE LEAKAGE. REQUIRED PUMPING FALLS INTO TWO CATEGORIES. THE FIRST 160,000 GALLONS PER 8–HOUR SHIFT (BASED ON PUMP CAPACITY TIMES HOURS OF OPERATION) ARE TO BE INCLUDED IN THE BASE BID FOR EACH PROJECT SITE AND NO ADDITIONAL COMPENSATION WILL BE GIVEN ADDITIONAL REQUIRED AND APPROVED PUMPING WILL BE PAID FOR UNDER THE APPROPRIATE PAY ITEM. THE CONTRACTOR IS ADVISED THAT PUMPING MAY BE NEEDED AND IS TO BE COVERED BY THE APPLICABLE PAY ITEMS. NO PAYMENT BEYOND THE PAY ITEMS WILL BE CONSIDERED.

2. ANY PORTION OF ANY WORK IN THIS CONTRACT THAT COMES INTO CONTACT WITH POTABLE WATER MUST BE IN FULL COMPLIANCE WITH 25 PENNSYLVANIA CODE 109.606 AND BE NSF APPROVED.

3. ALL ELEVATIONS AND DIMENSIONS SHOWN ARE APPROXIMATE AND MAY NOT REFLECT EXACT FIELD CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ANY AND ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS.

4. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY FEDERAL, STATE, AND LOCAL AGENCIES FOR THE PERFORMANCE OF THE WORK OF THIS CONTRACT AND FOR DISPOSAL OF ANY SPOIL MATERIAL, DEBRIS, ETC. ALL WASTE MATERIAL, INCLUDING BROKEN CONCRETE OR OTHER DEMOLITION PRODUCTS OR CONSTRUCTION BY–PRODUCTS SHALL BE TESTED FOR HAZARDOUS MATERIAL AND REMOVED FROM THE WORK SITES AND CONVEYED BY THE CONTRACTOR TO FINAL DISPOSAL.

5. THE AUTHORITY RESERVES THE RIGHT TO SALVAGE ANY MATERIALS REMOVED FROM A CONSTRUCTION SITE. ANY MATERIALS NOT SELECTED FOR SALVAGE BY THE AUTHORITY BECOME THE PROPERTY OF THE CONTRACTOR AND MUST BE REMOVED FROM THE SITE AS EXPEDITIOUSLY AS POSSIBLE. IN ALL CASES WHEN AN ITEM IS TO BE DISPOSED OF, THE OWNER WILL DETERMINE IF THE CONTRACTOR IS TO TRANSPORT THE OBJECT TO A STORAGE FACILITY (OWNED BY EITHER THE CITY OF PITTSBURGH OR THE PWSA) OR IS TO DISPOSE OF THE ITEM IN A LEGAL FASHION. NO ADDITIONAL COMPENSATION WILL BE GIVEN IN EITHER CASE.

6. THE CONTRACTOR SHALL NOTE THE PRESENCE OF OVERHEAD POWER LINES AND UNDERGROUND COMMUNICATION AND POWER LINES, GAS MAINS, WATERLINES AND SEWERS THROUGHOUT THE WORK AREA. ANY TEMPORARY RELOCATION NECESSARY TO COMPLETE THE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE, EXCEPT WHERE NOTED. DAMAGE CAUSED BY THE CONTRACTOR TO ANY PUBLICLY OR PRIVATELY–OWNED STRUCTURE SHALL BE REPAIRED,IN KIND, AT THE CONTRACTOR'S EXPENSE.

7. THE CONTRACTOR SHALL NOT, UNDER ANY CONDITIONS, OPERATE ANY PWSA VALVES.

8. THE CONTRACTOR SHALL VERIFY DIMENSIONS CONTROLLED BY OR RELATED TO EQUIPMENT FITTINGS WITH THE MANUFACTURER PRIOR TO CONSTRUCTION. BOLT SIZES, TYPES, AND PATTERNS SHALL BE VERIFIED WITH THE MANUFACTURER. ALL BOLT PATTERNS SHALL BE TEMPLATED TO ENSURE ACCURACY OF PLACEMENT.

9. IF A CONFLICT IS FOUND BETWEEN DIFFERENT PORTIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY. CONTINUED CONSTRUCTION OF THE AREA IN CONFLICT SHALL BE AT THE CONTRACTOR'S OWN RISK UNTIL THE CONFLICT IS RESOLVED BY THE OWNER.

10. NECESSARY SHEETING, SHORING AND BRACING AT ALL WORK LOCATIONS IS INCIDENTAL TO THIS PROJECT AND NO ADDITIONAL PAYMENT WILL BE MADE FOR IT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE NEED FOR TEMPORARY SHORING OR BRACING AND FOR PLACING SAME. COSTS FOR SHORING OR BRACING ARE TO BE INCLUDED IN THE UNIT PRICES FOR EXCAVATION, ETC. AND NO ADDITIONAL PAYMENT WILL BE MADE. THE CONTRACTOR SHALL HAVE THE COMPLETE AND SOLE RESPONSIBILITY FOR THE JOB SITE INCLUDING THE SAFETY OF PERSONS AND PROPERTY. JOB SITE INSPECTIONS BY THE OWNER ARE TO DETERMINE COMPLIANCE WITH THE PLANS AND SPECIFICATIONS, NOT TO REVIEW THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES. BARRIERS, TEMPORARY FENCING OR OTHER MEASURES MUST BE PLACED TO ELIMINATE ACCESS TO THE WORK SITE BY THE PUBLIC. NO ADDITIONAL PAYMENT WILL BE MADE FOR THESE MEASURES.

11. CONTINUOUS WATER AND SEWER SERVICE SHALL BE MAINTAINED THROUGHOUT THE JOB. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY CUTS AND PLUGS OF EXISTING PIPES AS NECESSARY TO MAINTAIN SAID SERVICE.

12. THE CONTRACTOR SHALL DEWATER, BULKHEAD AND BURY ALL EXISTING LINES THAT ARE ABANDONED IN PLACE AT NO ADDITIONAL PAYMENT, UNLESS OTHERWISE NOTED. FOR LINES LARGER THAN 8" IN DIAMETER, THE LINE MUST BE FILLED WITH APPROVED FLOWABLE FILL.

13. WHEN TIE–INS AND RECONNECTIONS TO THE WATER DISTRIBUTION SYSTEM ARE MADE A CONTINUOUS WORK OPERATION MUST BE MAINTAINED UNTIL ALL WATER IS RESTORED.

14. ALL WORK LOCATIONS SHALL BE LEFT IN A CONDITION AT THE CONCLUSION OF THE WORK SIMILAR TO THAT BEFORE THE COMMENCEMENT OF WORK, EXCEPT FOR THE WORK PERFORMED UNDER THIS CONTRACT. DAMAGE DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE HIS RESPONSIBILITY TO REPAIR TO THE SATISFACTION OF THE OWNER. REPAIRS SHALL BE MADE WITH NO ADDITIONAL PAYMENT.

15. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ACCORDING TO THE REGULATIONS OF THE RIGHT–OF–WAY OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING ANY NECESSARY APPLICATIONS AND SEEKING PERMITS FROM LOCAL OR STATE AUTHORITIES.

16. INTERNAL PLUMBING FOR WATER SERVICE PARTY–LINE SEPARATIONS WILL BE HANDLED ON A TIME AND MATERIALS BASIS.

17. INSPECTIONS. THIS PROJECT IS SUBJECT TO INSPECTIONS BY THE PITTSBURGH WATER AND SEWER AUTHORITY (OWNER), THE ENGINEER, THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, ALLEGHENY COUNTY ENGINEERS, AND OTHERS THE OWNER MAY DESIGNATE. THE CONTRACTOR WILL COOPERATE IN ACCOMMODATING THESE INSPECTIONS BY PERMITTING ACCESS TO THE WORK SITE AND ACCESS TO PROJECT RECORDS AND FILES.

18. CONSTRUCTION LIMITS. THE CONTRACTOR SHALL CONFINE MATERIALS, EQUIPMENT, AND WORK ACTIVITIES TO WITHIN DESIGNATED CONSTRUCTION LIMITS AND PUBLIC RIGHTS–OF–WAY. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ALL WORK AND DAMAGE OCCURRING OUTSIDE OF THE CONSTRUCTION LIMITS AND RIGHTS–OF–WAY AND SHALL REPAIR THE SAME TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL COMPLETE SITE CLEANUP TO THE SATISFACTION OF THE OWNER.

19. PROPERTY AND RIGHTS–OF–WAY LINES. THE RIGHTS–OF–WAY, EASEMENTS, AND PROPERTY LINES AS SHOWN ON THE CONTRACT DRAWINGS ARE BASED UPON AVAILABLE TAX MAP INFORMATION ONLY. THE LINES SHOWN ARE APPROXIMATE ONLY. DETERMINATION OF ACTUAL RIGHTS–OF–WAY LOCATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

20. ESTIMATED QUANTITIES. THE ESTIMATED PLAN QUANTITIES ARE SHOWN FOR BIDDING PURPOSES ONLY AND ARE NOT NECESSARILY THE FINAL PAY QUANTITIES. FIELD MEASUREMENTS, MATERIAL DELIVERY SLIPS, CALCULATIONS, AND OTHER DOCUMENTATION SHALL DETERMINE THE FINAL QUANTITY TO BE PAID UNLESS OTHERWISE SPECIFIED.

21. UNDERGROUND FACILITIES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED BY GAI CONSULTANTS FROM A COMBINATION OF OBSERVED EVIDENCE, FIELD SURVEYS AND AVAILABLE RECORD PLANS. LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED, THEREFORE, THEIR LOCATIONS AND SIZES MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHER UNDERGROUND FACILITIES WHOSE EXISTENCE IS PRESENTLY UNKNOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO THOROUGHLY REVIEW THE CONTRACT DRAWINGS AND VERIFY ELEVATIONS AND DIMENSIONS IN THE FIELD PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES. THE OWNER AND ENGINEER SHALL IMMEDIATELY BE NOTIFIED OF ANY VARIATIONS FOUND WHICH MAY RESULT IN CHANGES OR ADJUSTMENTS TO THE DESIGN AS PRESENTED IN THE ORIGINAL CONTRACT DRAWINGS AND/OR SPECIFICATION. THE CONTRACTOR SHALL SUBMIT, FOR THE OWNER AND ENGINEER'S APPROVAL, A DETAILED PLAN OF ANY ADJUSTMENTS WHICH MAY BE REQUIRED.

22. ROAD CONSTRUCTION. WHERE PROPOSED ROAD CONSTRUCTION MEETS EXISTING PAVEMENTS, THE LINE AND GRADE OF THE PROPOSED ROAD CONSTRUCTION SHALL BE ADJUSTED AS REQUIRED TO PROVIDE A SMOOTH TRANSITION HORIZONTALLY AND VERTICALLY TO MEET THE EXISTING ROAD SECTION OR AS DIRECTED BY THE OWNER.

CONTRACTOR SHALL RESTORE ANY DISTURBED ASPHALT ROADWAY, CONCRETE ROADWAY, CURB, CONCRETE SIDEWALK, OR LANDSCAPED SURFACES IN KIND WITH THE PRE–CONSTRUCTION GROUND COVER AND IN ACCORDANCE WITH THE RESTORATION DETAILS.

UTILITY INSTALLATIONS BY DUQUESNE LIGHT AND PEOPLES GAS ARE EXPECTED TO BE COMPLETED IN THIS AREA SEPARATELY FROM THIS PROJECT PRIOR TO THE FUTURE PORT AUTHORITY OF ALLEGHENY COUNTY ROADWAY RECONSTRUCTION PROJECT. CURB TO CURB MILL AND OVERLAY WILL DONE AS PART OF THE FUTURE PORT AUTHORITY OF ALLEGHENY COUNTY ROADWAY RECONSTRUCTION PROJECT.

23. MAINTAINING ACCESS. THE CONTRACTOR IS REQUIRED TO MAINTAIN FREE ACCESS TO EXISTING BUSINESSES AT ALL TIMES. AT THE END OF THE WORK DAY, ALL ACCESS POINTS USED BY THE CONTRACTOR SHALL BE SECURED AND LOCKED.

24. SOIL EROSION & SEDIMENT CONTROL. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL SOIL EROSION & SEDIMENT CONTROL (SESC) DEVICES AS REQUIRED BY THE CONTRACT DOCUMENTS. ALL (SESC) DEVICES WILL BE CHECKED BY THE CONTRACTOR AFTER EACH RAINFALL EVENT TO ASSURE PROPER PERFORMANCE. NO (SESC) DEVICES WILL BE REMOVED WITHOUT PRIOR WRITTEN APPROVAL OF THE GOVERNING AGENCY AND THE OWNER.

25. PROPERTY PROTECTION. THE CONTRACTOR IS REQUIRED TO PROTECT EXISTING SITE FEATURES, TREES, STRUCTURES, UTILITIES AND OTHER FACILITIES FROM DAMAGE. THE CONTRACTOR SHALL PROVIDE SHEETING, SHORING AND UNDERPINNING AS NECESSARY TO PROTECT EXISTING FACILITIES.

26. PERMITS. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL PERMITS FOR: STREET OPENINGS, UTILITY RELOCATION, TEMPORARY UTILITIES, SANITARY FACILITIES, HAZARDOUS AND NON–HAZADOUS WASTE DISPOSAL, STREET USE, OVERSIZE LOADS, WATER USAGE, AND ANY OTHER PERMITS NECESSARY FOR THE WORK DESCRIBED HEREIN. CONSTRUCTION MANAGER SHALL APPLY TO CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE FOR STREET OPENING PERMIT (INCLUDES TRAFFIC OBSTRUCTION REVIEW) AND MACHINERY PERMIT. PERMITS MUST BE APPROVED PRIOR TO START OF CONSTRUCTION.

2.10.2021
REVISED PER DOMI REQUIREMENTS

27. WORKING HOURS. WORK HOURS ARE AS FOLLOWS:

FIFTH AVENUE (INBOUND TO CITY):
ALL WORK ON FIFTH AVENUE AND ITS SIDE STREETS, EXCEPT FOR NO OUTLET STREETS, IS REQUIRED TO BE COMPLETED DURING THE HOURS OF 9:00 AM TO 7:00 PM MONDAY THROUGH FRIDAY (FIFTH AVENUE DAY–TIME HOURS).

ALL WORK ON "NO OUTLET" STREETS (WYANDOTTE STREET NORTH OF FIFTH AVENUE AND MOULTRIE STREET NORTH OF FIFTH AVENUE) IS REQUIRED TO BE COMPLETED DURING THE HOURS OF 6:00 AM TO 8:00 PM ON SATURDAY AND SUNDAY (WEEKEND HOURS).

FORBES AVENUE (OUTBOUND FROM CITY):
ALL WORK ON FORBES AVENUE AND ITS SIDE STREETS WEST OF CHATHAM SQUARE IS REQUIRED TO BE COMPLETED DURING THE HOURS OF 8:00 PM MONDAY THROUGH FRIDAY EVENING AND 6:00 AM THE FOLLOWING MORNING (NIGHT–TIME HOURS).

ALL WORK ON FORBES AVENUE AND ITS SIDE STREETS EAST OF CHATHAM SQUARE IS REQUIRED TO BE COMPLETED DURING THE HOURS OF 6:00 AM TO 4:00 PM MONDAY THROUGH FRIDAY (FORBES AVENUE DAY–TIME HOURS).

PWSA RESERVES THE RIGHT TO SPECIFY OTHER WORKING HOURS OUTSIDE OF NORMAL TIMES. WORKING HOURS WILL BE FOLLOWED AS REQUIRED, NO ADDITIONAL PAYMENT SHALL BE MADE FOR WORK HOUR RESTRICTIONS.

DURING NON–WORK HOURS, CONTRACTOR SHALL PLACE PLATES AND PINS ON TOP OF THE WORK ZONE.

28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ALL WATER BOXES, CATCH BASINS, STORM INLETS, AND MANHOLES AFTER CONSTRUCTION AND/OR PAVING IS COMPLETED INCLUDING CASTING SURFACES.

29. ADDITIONAL EXCAVATION BEYOND THE REQUIRED NEAT LINES OF THE TRENCH RESULTING FROM CAVING IN OF THE GROUND, SLIPPING, DUE TO NEGLIGENCE OF THE CONTRACTOR OR CONTRACTOR'S METHODS OF EXECUTING THE WORK, SHALL NOT BE CONSIDERED AS EXTRA COMPENSATION. ALL SUCH ADDITIONAL EXCAVATION SHALL BE REFILLED BY THE CONTRACTOR AT THE CONTRACTOR'S OWN EXPENSE WITH MATERIALS AND COMPACTION TECHNIQUES PER THE CONTRACT DOCUMENTS.

30. STAGING AND STORAGE AREAS – CONTRACTOR IS RESPONSIBLE FOR PROVIDING STAGING AND STORAGE AREAS.

NOTIFICATION

THE PWSA MUST BE NOTIFIED A MINIMUM OF 72 HOURS IN AVANCE OF THE TIME WHEN THE CONTRACTOR PROPOSES TO CONNECT THE NEW WATER LINES TO THE EXISTING WATER MAINS SO THAT THE OPERATIONS DIVISION MAY ARRANGE FOR THE OPERATION OF NECESSARY VALVES.

PRESSURE TESTING

THE INSTALLED WATERLINE SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE LATEST EDITION OF AWWA STANDARD C–600 BY THE WATER RELAY CONTRACTOR. ANY NECESSARY REPAIRS SHALL BE MADE AND THE LINE RETESTED AT NO ADDITIONAL COST TO PWSA UNTIL THE WATERLINE PASSES TESTING.

FLUSHING, BACTERIOLOGICAL TESTING, AND STERILIZATION

ONCE THE WATERLINE HAS PASSED PRESSURE AND LEAKAGE TESTING, THE WATER RELAY CONTRACTOR SHALL DISINFECT THE WATERLINE IN ACCORDANCE WITH AWWA?S STANDARD C–651. AT LEAST ONE ?PASSING? BACTERIOLOGICAL SAMPLE MUST BE TAKEN AND ANALYZED BEFORE THE WATERLINE CAN BE PUT INTO SERVICE. DISINFECTION AND RETESTING SHALL BE REPEATED AT NO ADDITIONAL COST TO PWSA UNTIL A MINIMUM OF ONE PASSING SAMPLE IS OBTAINED.

SERVICE LINE REPLACEMENT NOTES

1. THE CONTRACTOR SHALL PERFORM SERVICE LINE VERIFICATION EXCAVATION TO THE DEPTH NECESSARY TO VERIFY THE SERVICE LINE MATERIAL AND DIAMETER ON BOTH SIDES OF THE CURB STOP/VALVE. A MINIMUM LENGTH OF 24 INCHES ON EACH SIDE OF CURB STOP/VALVE SHALL BE EXPOSED FOR VERIFICATION PURPOSES. THESE VERIFICATION EXCAVATION TEST PITS SHALL NOT EXCEED THE SPECIFIED SIZE OR QUANTITY, UNLESS DIRECTED BY THE CONSTRUCTION INSPECTOR AND SHALL BE CONDUCTED AS SPECIFIED, OR AS DIRECTED BY THE CONSTRUCTION INSPECTOR.
2. ALL PUBLIC SERVICE LINE MATERIALS AND CURB BOXES ARE TO BE REPLACED, BACKFILLED, AND THE SURFACE RESTORED TO THE EXISTING CONDITION.
3. FOR WATER SERVICE LINE CONNECTIONS (1–INCH), IF THE PRIVATE SERVICE LINE IS NOT TO BE REPLACED BY THE CONTRACTOR, THE CONTRACTOR SHALL REPLACE THE PUBLIC SERVICE LINE AND CURB STOP PER DETAIL AND SHALL RECONNECT TO THE PRIVATE SERVICE LINE.
4. FOR WATER SERVICE LINE CONNECTIONS (GREATER THAN 1–INCH), IF THE PRIVATE SERVICE LINE IS NOT TO BE REPLACED BY CONTRACTOR, CONTRACTOR SHALL INSTALL NEW TEE AND NEW VALVE AT NEW MAIN AND RECONNECT TO EXISTING PRIVATE WATER SERVICE LINE.
5. UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER, THE CONTRACTOR SHALL ONLY REPLACE PRIVATE LEAD SERVICE LINES OR PRIVATE GALVANIZED IRON SERVICE LINES.
6. CONTRACTOR SHALL VERIFY THAT THE HOMEOWNER/PROPERTY OWNER HAS SIGNED AND RETURNED THE AGREEMENT TO PWSA PRIOR TO PERFORMING ANY WORK ON THE SERVICE LINE, INCLUDING MATERIAL VERIFICATION.
7. CONTRACTOR SHALL OBTAIN THE ACHD PLUMBING PERMIT PRIOR TO REPLACEMENT OF THE PRIVATE SERVICE LINE. ADDITIONALLY, ACHD PLUMBING INSPECTION SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF ANY PLANNED PRIVATE SERVICE LINE REPLACEMENT, SO THAT THE INSPECTION CAN BE COMPLETED THE DAY OF REPLACEMENT.
8. WHEN THE CONTRACTOR IS EXCAVATING WITHIN THE PIPE ZONE (12" ABOVE) OF THE SERVICE LINE, CONTRACTOR SHALL HAND DIG TO EXPOSE THE CURB STOP AND THE SERVICE LINES. IN THE EVENT A SERVICE LINE IS DAMAGED, REQUIRING AN IMMEDIATE PARTIAL SERVICE LINE REPLACEMENT, PWSA SHALL BE NOTIFIED IMMEDIATELY.
9. IN MANY CASES THE CONSTRUCTION INSPECTOR HAS BEEN PROVIDED WITH RECORDS SHOWING THE APPROXIMATE LOCATION OF THE SERVICE LINES THAT WERE NOT ABLE TO BE LOCATED. REFER TO THESE DOCUMENTS PRIOR TO EXCAVATION.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL REQUIRED NOTIFICATION MATERIALS REQUIRED BY SPECIFICATION SECTION 02515 "WATER SERVICE CONNECTIONS" HAVE BEEN PROVIDED TO ALL IMPACTED RESIDENTS PRIOR TO, AND IMMEDIATELY FOLLOWING ANY SERVICE LINE REPLACEMENT WORK.
11. THE CONTRACTOR SHALL NOT PERFORM ANY PARTIAL SERVICE LINE REPLACEMENTS (OTHER THAN ON AN URGENT BASIS) UNLESS A MINIMUM OF 72–HRS. AND A MAXIMUM OF 5–DAYS HAS ELAPSED SINCE THE APPROPRIATE NOTIFICATION WAS PROVIDED TO ALL RESIDENTS EFFECTED BY THE PARTIAL SERVICE LINE REPLACEMENT.

UTILITIES

COORDINATE, LOCATE, AND CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH PENNDOT PUBLICATION 408, SECTIONS 105 (CONTROL OF WORK), 106 (CONTROL OF MATERIALS), AND 107.12 (CARE OF PUBLIC AND PRIVATE PROPERTY).

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE–048643–E

2.10.2021

WATER UTILITY GENERAL NOTES:

1. WATER MAIN SHALL BE CLASS 52 MINIMUM, ZINC COATED, CEMENT LINED DUCTILE IRON PIPE.
2. ALL DUCTILE IRON FITTINGS, INCLUDING TEES, BENDS, CAPS, AND PLUGS, SHALL BE MECHANICAL JOINTS WITH RETAINER GLAND AND LOCKING GASKET. THRUST BLOCKS SHALL BE PROVIDED AS INDICATED ON THE CONTRACT DRAWINGS AND SPECIFICATIONS.
3. ALL VALVES SHALL BE RESTRAINED TO THE NEAREST TEE/FITTING WHERE APPLICABLE. AN EXCEPTION WOULD BE MADE FOR VALVES WITH A FLEX RING JOINT RESTRAINT.
4. WATER, SEWER, AND GAS SERVICE LINE LOCATIONS AND DEPTHS ARE APPROXIMATE. CONTRACTOR TO CONFIRM EXACT LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION.
5. WATER SERVICE LINE INFORMATION IS PROVIDED ON WATER SERVICE LINE TABLES ON SHEETS 74–75.
6. CONTINUOUS WATER SERVICE SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY LINES, CUT AND PLUG EXISTING PIPES AS NECESSARY TO MAINTAIN SAID SERVICE AT NO ADDITIONAL PAYMENT.
7. CONTRACTOR SHALL CUT, BACKFILL, AND CAP ALL EXISTING WATER MAINS TO BE ABANDONED. REFER TO PLAN VIEWS.
8. FOR ALL VALVE ABANDONMENTS, CONTRACTOR SHALL REMOVE EXISTING CASTING AND BACKFILL VALVE BOX.
9. THE CONTRACTOR SHALL DEWATER, BULKHEAD, AND BURY ALL EXISTING LINES THAT ARE ABANDONED IN PLACE AT NO ADDITIONAL PAYMENT, UNLESS OTHERWISE NOTED. LINES LARGER THAN 8" IN DIAMETER MUST BE FILLED WITH APPROVED FLOWABLE FILL.
10. ALL JOINTS SHALL BE RESTRAINED WITHIN 10 FEET OF CATCH BASINS.
11. TIE–INS TO MAINS ON STREETS THAT RUN BETWEEN FIFTH AND FORBES HAVE BEEN DESIGNED TO LINE UP AS MUCH AS PRACTICAL TO FACILITATE FUTURE WATER MAIN RELAY ON THOSE STREETS.
12. SOLID SLEEVES ARE TO BE USED AS INDICATED ON THE DRAWINGS WHERE NEW DUCTILE IRON PIPE TIES INTO EXISTING DUCTILE IRON PIPE. CONTRACTOR SHALL SUBSTITUTE TRANSITION COUPLINGS FOR SOLID SLEEVES IN ANY LOCATIONS WHERE EXISTING PIPE TO BE TIED INTO IS FOUND TO BE MADE OF CAST IRON.
13. 16, 20, AND 24–INCH GATE VALVES SHALL BE CONFIGURED HORIZONTALLY WITH GEARING PER THE "HORIZONTAL VALVE – 16" OR GREATER WITH MANHOLE" DETAIL ON SHEET 80, UNLESS OTHERWISE NOTED OR FIELD CONDITIONS PREVENT THIS CONFIGURATION. IF FIELD CONDITIONS DO NOT ALLOW THE INSTALLATION OF THE HORIZONTAL VALVE, THE PIPE SHALL BE SET AT AN ADEQUATE DEPTH TO ACCOMMODATE THE "VERTICAL LARGE DIAMETER VALVE IN CONCRETE MANHOLE (PRECAST BASE)" DETAIL AND VALVE SHALL BE INSTALLED VERTICALLY WITH NO GEARING, UNLESS OTHERWISE NOTED OR FIELD CONDITIONS PREVENT THIS CONFIGURATION. IF FIELD CONDITIONS DO NOT ALLOW THE INSTALLATION OF THE MANHOLE ON THE VERTICAL VALVE, AN MEG MAY BE USED ON THE VERTICAL VALVE.
14. ALL WATER SERVICE LINE CURB BOXES SET IN THE EXISTING STREET TO COINCIDE WITH THE FUTURE CURB LOCATION SHALL HAVE TRUCK RATED CASTINGS ADEQUATE TO WITHSTAND H–20 LOADING.
15. CONTRACTOR SHALL TEST PIT AT ALL EXISTING MAINS TO CONFIRM NEW WATER SERVICE LINES CAN ADEQUATELY CLEAR THE EXISTING PIPES.
16. PRIOR TO FLOWABLE FILLING ANY ABANDONED WATER MAINS, CONTRACTOR SHALL CONFIRM THAT LOCATION IS NOT PLANNED FOR A FUTURE ELECTRIC DUCT BANK. ANY WATER MAIN AREAS PLANNED FOR A FUTURE ELECTRIC DUCT BANK SHALL BE CAPPED BY CONTRACTOR, SUCH THAT NO FLOWABLE FILL IS PLACED IN THOSE MAINS THAT WOULD BE REMOVED BY POWER COMPANY TO ACCOMMODATE THEIR NEW DUCT BANK.

CONCRETE

ALL CONCRETE SHALL ADHERE TO THE PROJECT SPECIFICATIONS, PENNDOT PUBLICATION 408 SPECIFICATIONS, CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, AND PWSA REQUIREMENTS UNLESS AN ALTERNATE IS APPROVED BY OWNER AND THE CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE.

A. BASE COURSE: PER THE CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, 2017, OR AS LAST REVISED.

B. CONCRETE PAVEMENTS: PER THE CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, 2017, OR AS LAST REVISED. FINISH PER STANDARD DETAIL.

C. EXPOSED INCLUDING SIDEWALKS AND CURBS: PER THE CITY OF PITTSBURGH DEPARTMENT OF PUBLIC WORKS RIGHT–OF–WAY POLICY PROCEDURES MANUAL, 2017, OR AS LAST REVISED. FINISH PER STANDARD DETAIL.

D. MANHOLE BASES: 4,000 PSI 28–DAY COMPRESSIVE STRENGTH. FINISH PER STANDARD DETAIL.

E. CONCRETE CRADLES, ENCASEMENTS, AND THRUST BLOCKS: 4,000 PSI 28–DAY COMPRESSIVE STRENGTH.

F. HIGH EARLY STRENGTH CONCRETE SHALL ONLY BE USED WHERE APPROVED BY THE CITY OF PITTSBURGH DEPARTMENT OF MOBILITY AND INFRASTRUCTURE ONLY. IN THIS EVENT, PAYMENT WILL BE FOR CLASS AA.

ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH A.C.I. STANDARD 318, LATEST EDITION. ALL EXPOSED EDGES SHALL BE CHAMFERED 0.75". ALL JOINTS BETWEEN SEPARATE POURS SHALL BE KEYED TOGETHER. MINIMUM KEY SIZE SHALL BE 1.5" DEEP X 3.5" WIDE, UNLESS OTHERWISE NOTED. ALL REINFORCING BARS SHALL BE ASTM A615, GRADE 60. ALL REINFORCING BARS SHALL BE LAPPED AS PER CRSI LATEST EDITION (TENSION SPLICE CLASS "B").

WHEN NOT OTHERWISE STATED IN THE DRAWINGS OR SPECIFICATIONS, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT FOR CAST–IN–PLACE CONCRETE:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH – 3"

CONCRETE EXPOSED TO EARTH AND WEATHER:
#6 THROUGH #18 BARS – 2"
#5 BAR, W31 OR D31 WIRE AND SMALLER – 1.5"

CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
#14 AND #18 BARS – 1.5"
#11 BAR AND SMALLER – 0.75"

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

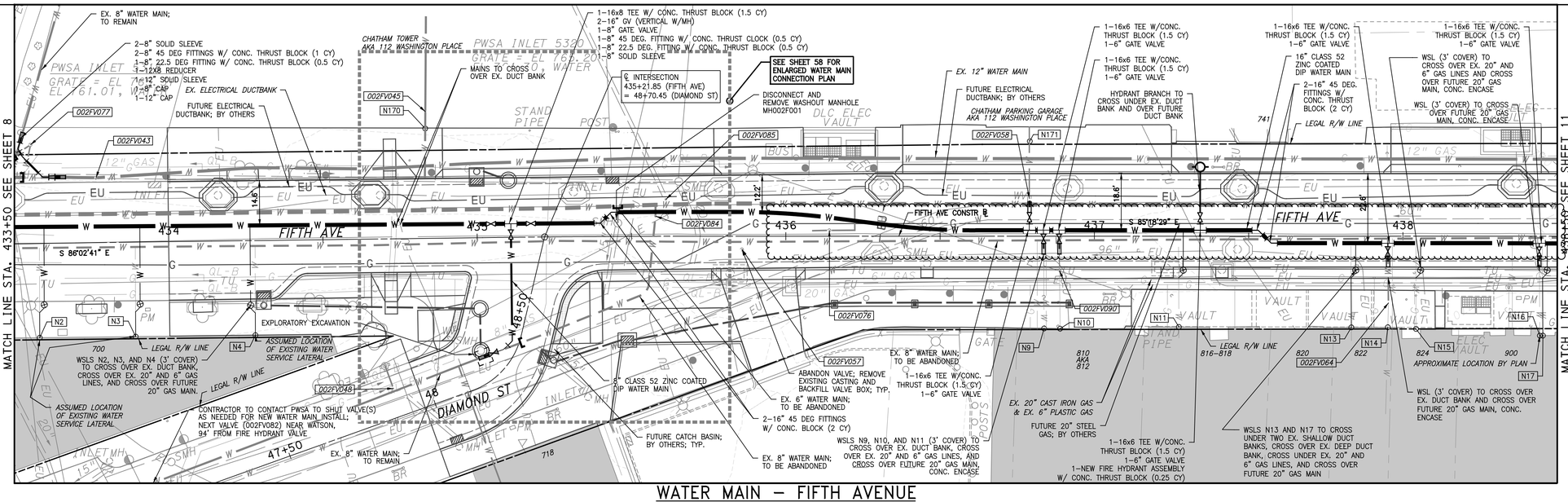
GENERAL NOTES

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 2 OF 166
ACCESSION NO. _____
CASE NO. _____

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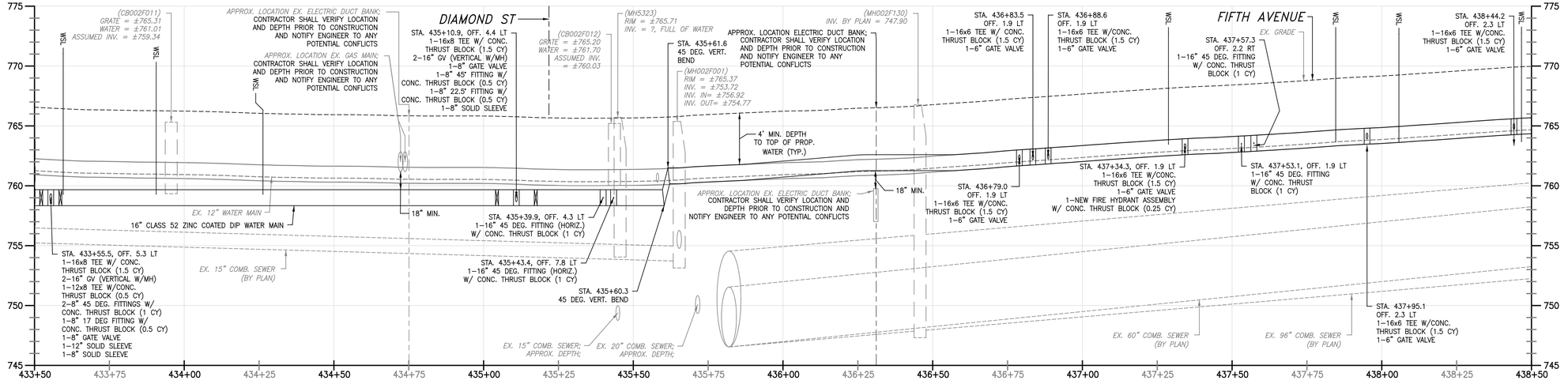
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WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 433+50 TO 438+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVSR DATE

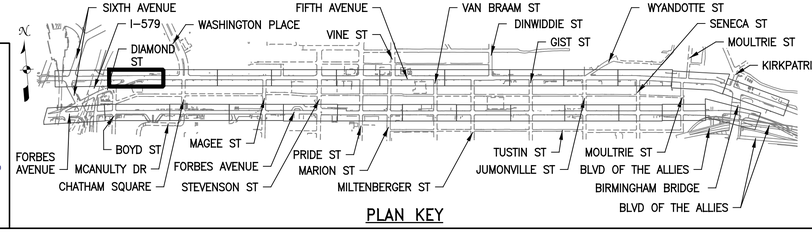
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048643-E

1.29.2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

PLAN & PROFILE - FIFTH AVENUE

SCALE: AS NOTED SHEET NO. 9 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

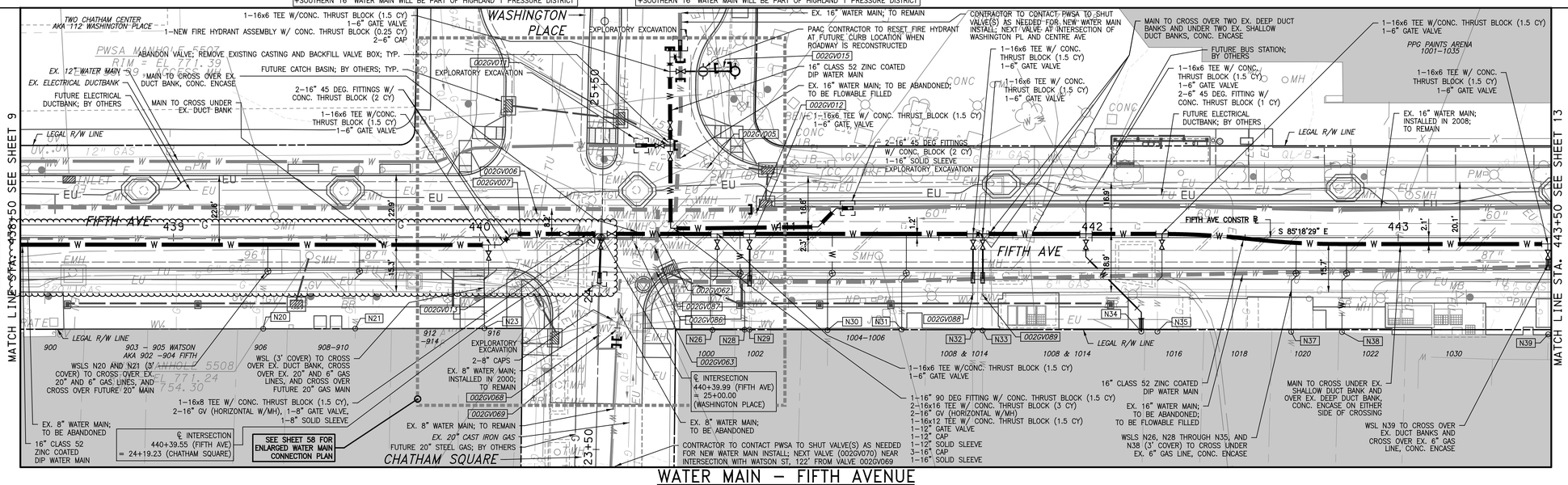
1.29.2021
REVISED WATER MAIN LOCATION

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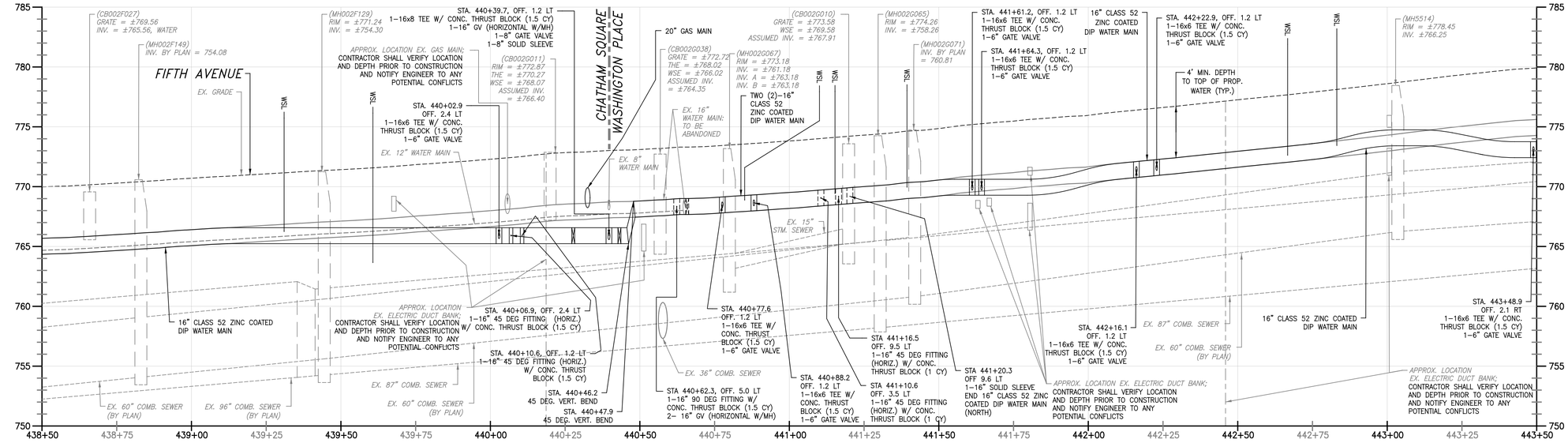
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1.29.2021
REVISED WATER MAIN LOCATION



WATER MAIN – FIFTH AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FIFTH AVENUE 438+50 TO 443+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

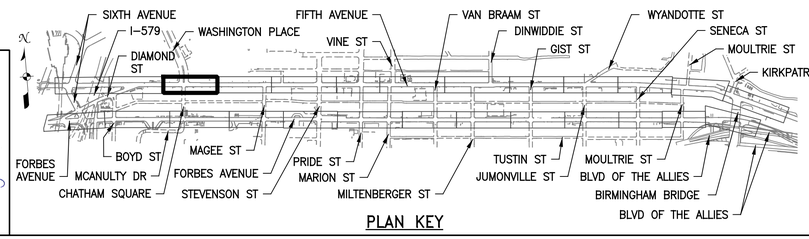
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BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1.29.2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

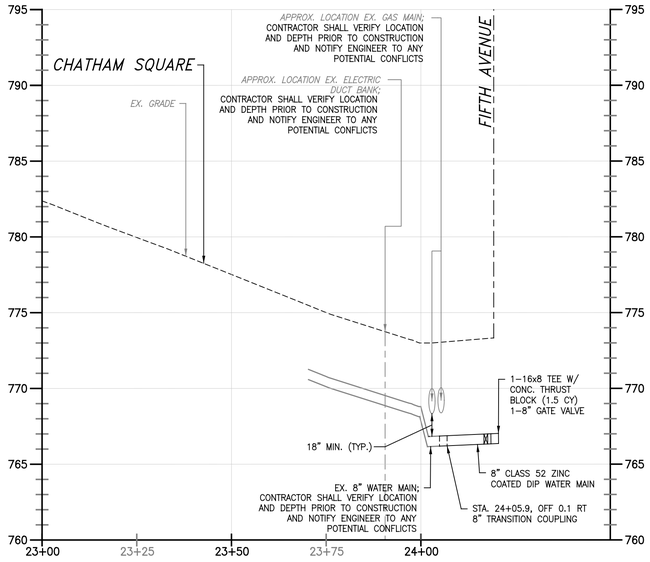
FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 11 OF 166
ACCESSION NO. _____
CASE NO. _____

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1/29/2021 3:19:00 PM

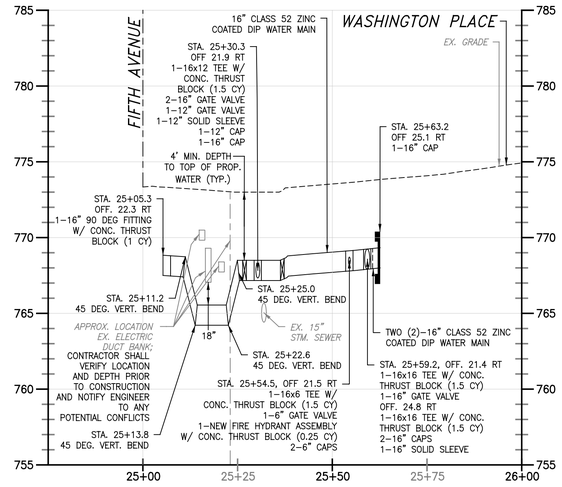
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WATER MAIN PROFILE – CHATHAM SQUARE 23+00 TO 24+19.23 (SOUTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

1.29.2021
REVISED TIE-IN



WATER MAIN PROFILE – WASHINGTON PLACE 25+00 TO 26+00 (NORTH)

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PROFILE HORIZ. SCALE: 1" = 20'

20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'

5' 0 5' 10'

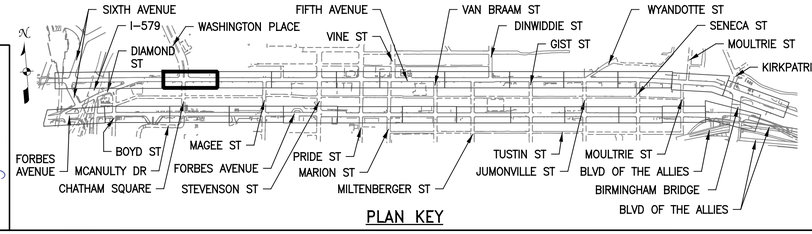
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REVIEWED FOR CONSTRUCTABILITY				
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CALC. BOOK		PG.		

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1.29.2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE WATER DISTRIBUTION IMPROVEMENTS PLAN & PROFILE

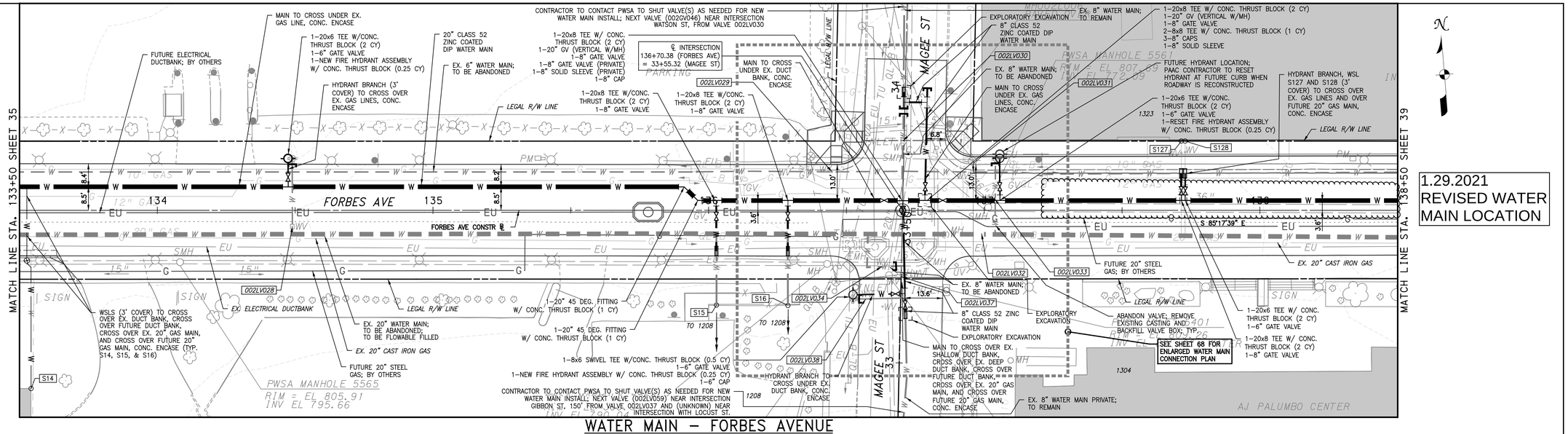
SCALE: AS NOTED SHEET NO. 12 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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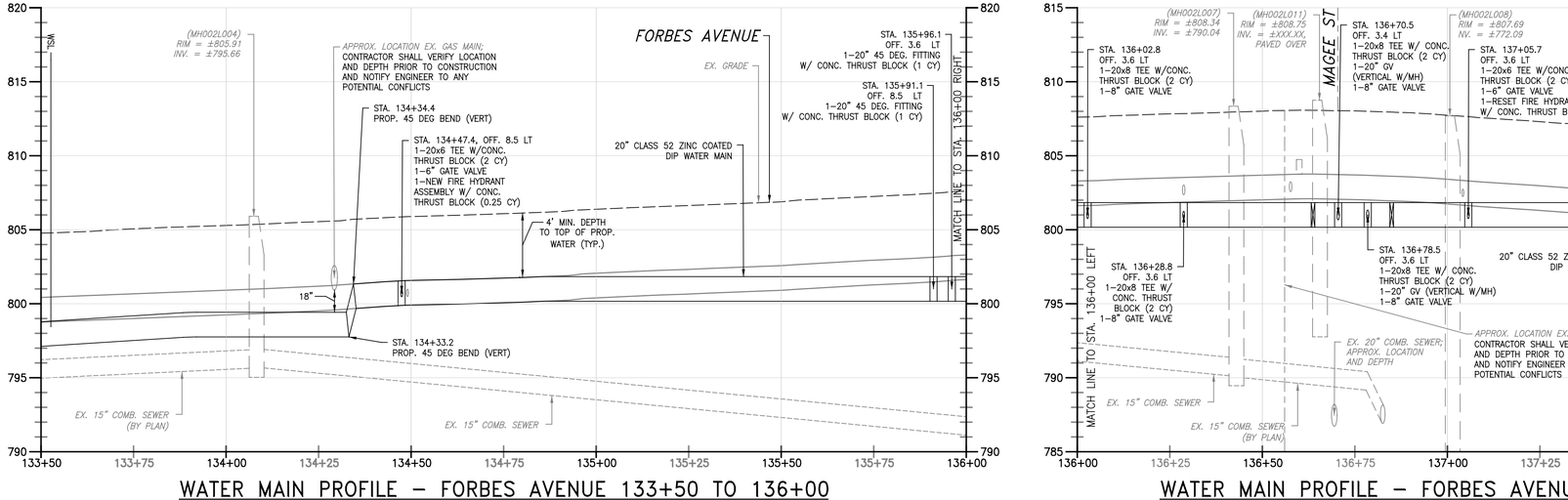
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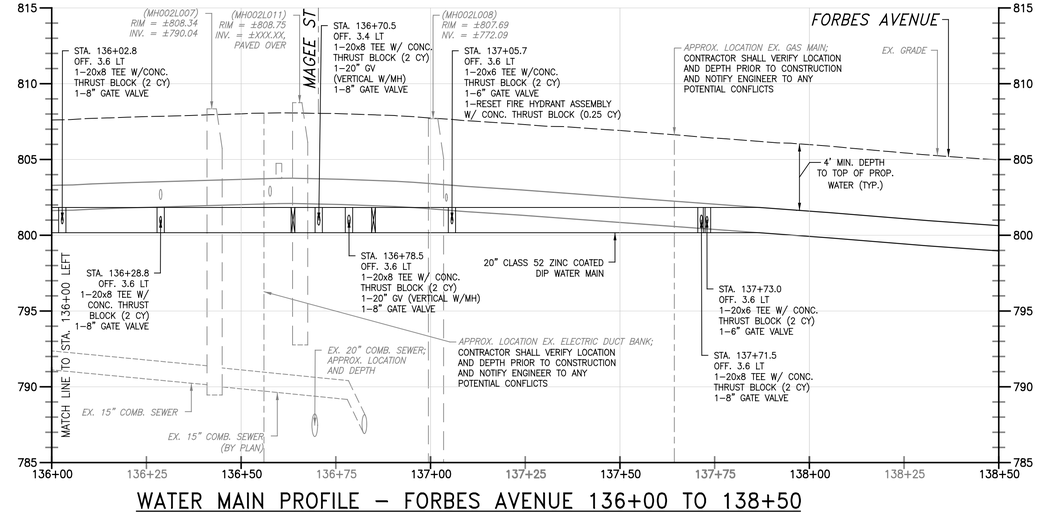
WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 133+50 TO 136+00

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'



WATER MAIN PROFILE – FORBES AVENUE 136+00 TO 138+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

1.29.2021
REVISED WATER MAIN LOCATION

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

REVISIONS	
CHARACTER	DATE

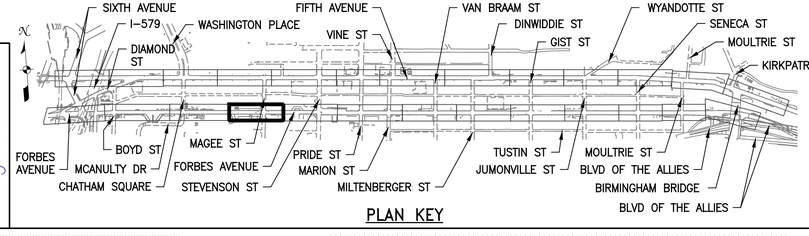
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CONSTRUCTION MGMNT SRVSR DATE

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BY	F.PENDEL	J.FELLO
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CALC. BOOK	PG.	

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048431-E
1.29.2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FORBES AVENUE

SCALE: AS NOTED SHEET NO. 37 OF 166 ACCESSION NO. _____

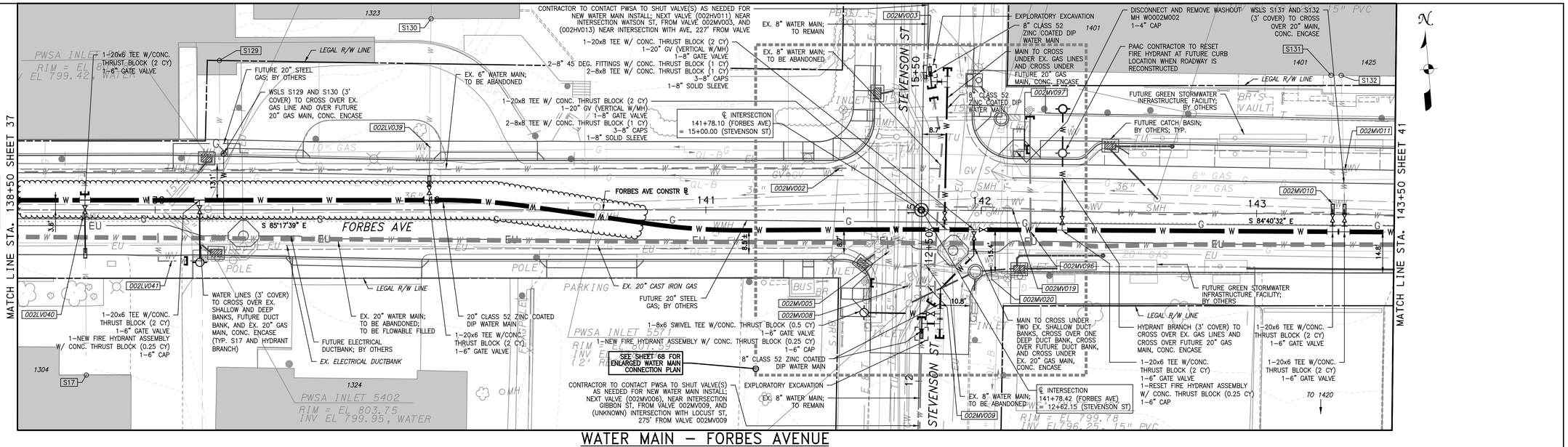
DATE: JANUARY, 2021 CASE NO. _____

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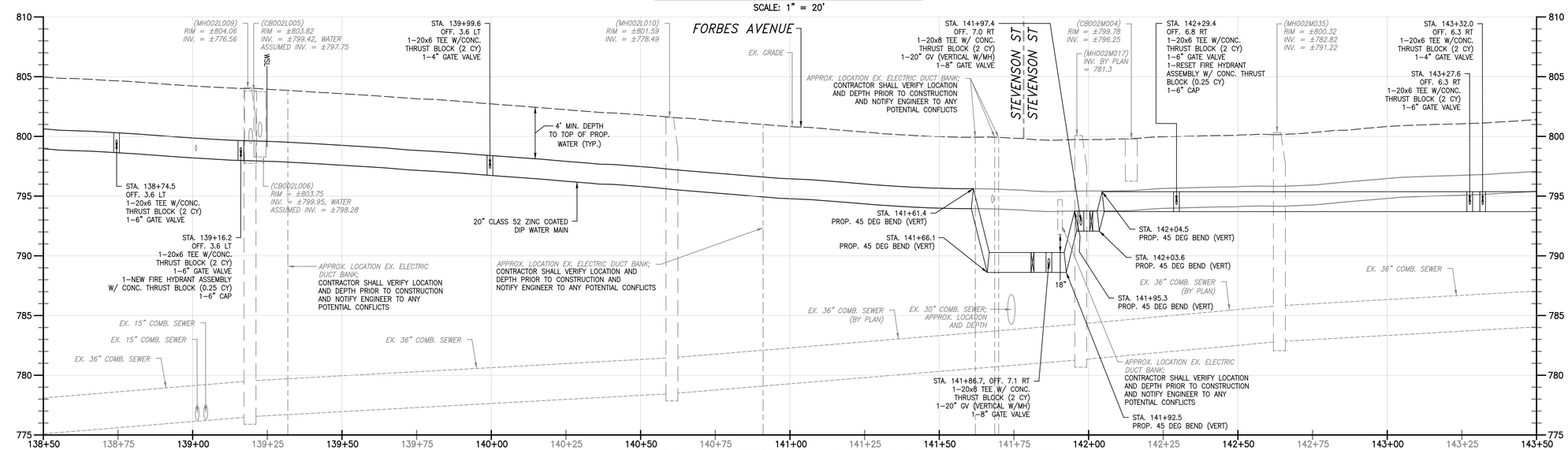
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1.29.2021
REVISED WATER
MAIN LOCATION



WATER MAIN – FORBES AVENUE

SCALE: 1" = 20'



WATER MAIN PROFILE – FORBES AVENUE 138+50 TO 143+50

HORIZONTAL SCALE: 1" = 20' VERTICAL SCALE: 1" = 5'

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

PROFILE HORIZ. SCALE: 1" = 20'
20' 0 20' 40'

PROFILE VERT. SCALE: 1" = 5'
5' 0 5' 10'

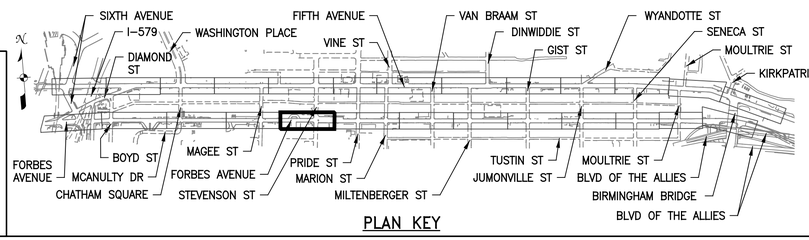
REVISIONS		
	CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

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gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048423-E
1.29.2021



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

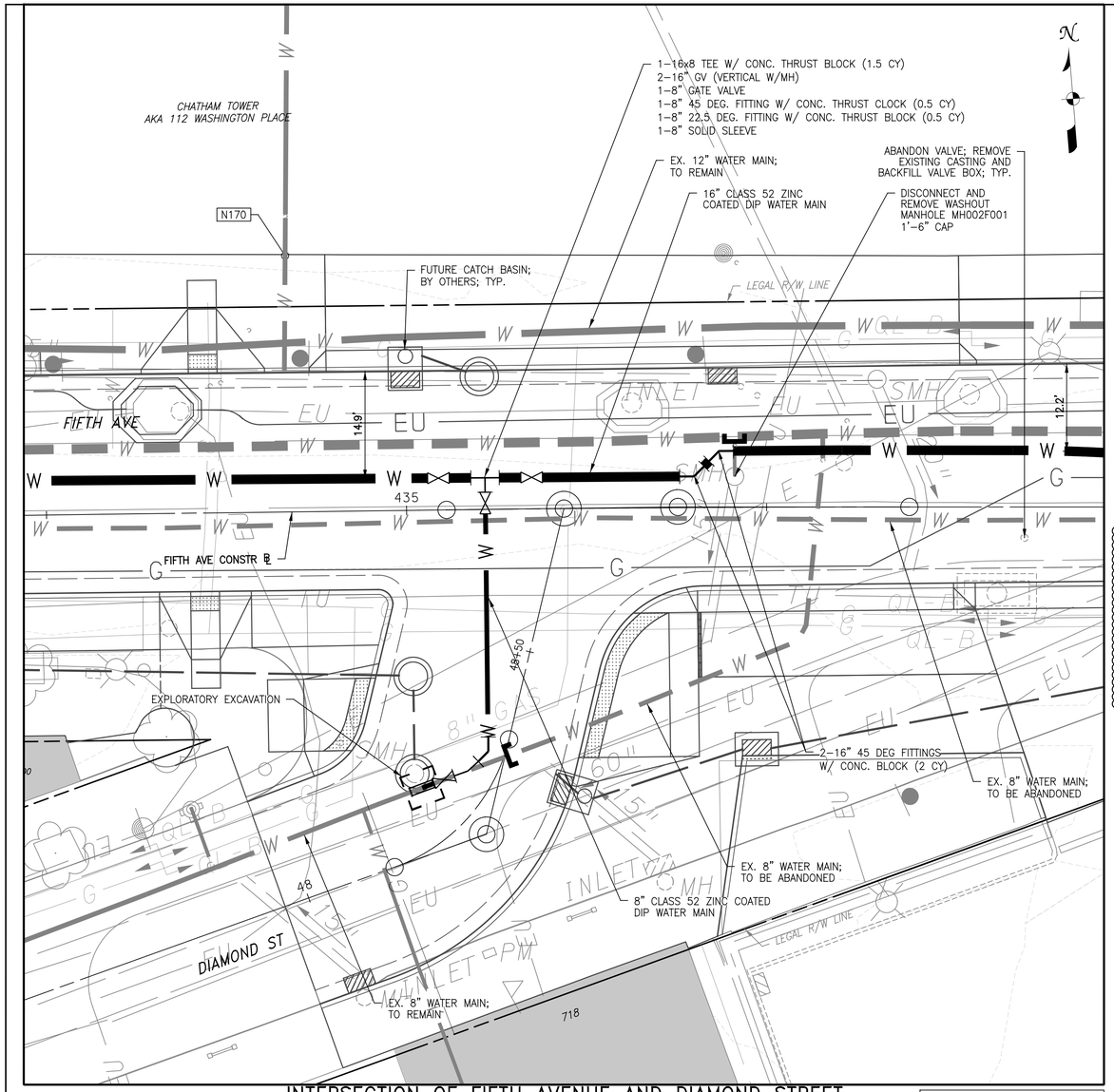
FIFTH AVENUE AND FORBES AVENUE PLAN & PROFILE - FORBES AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 39 OF 166
ACCESSION NO. _____
CASE NO. _____

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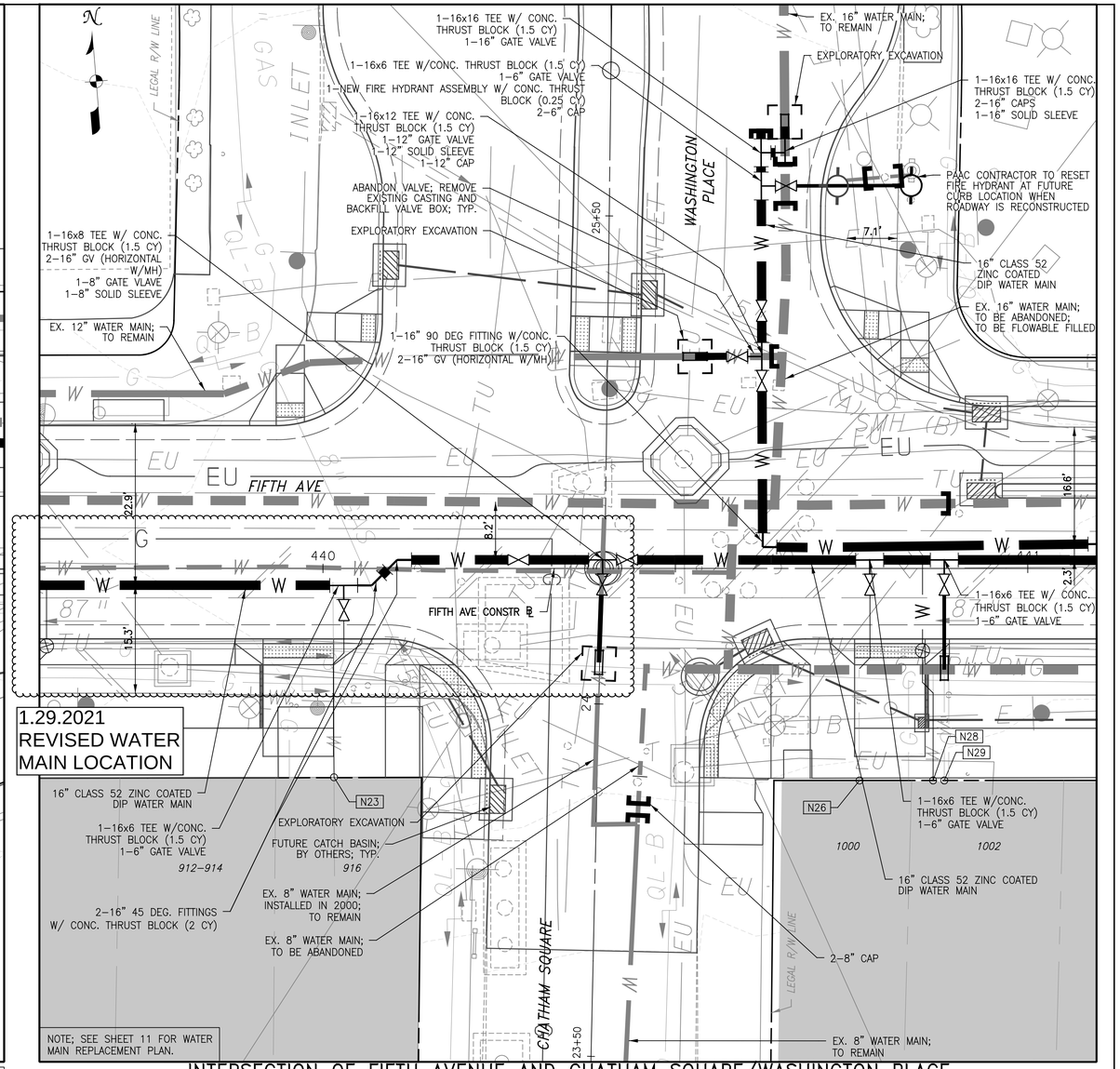
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INTERSECTION OF FIFTH AVENUE AND DIAMOND STREET

SCALE: 1" = 10'

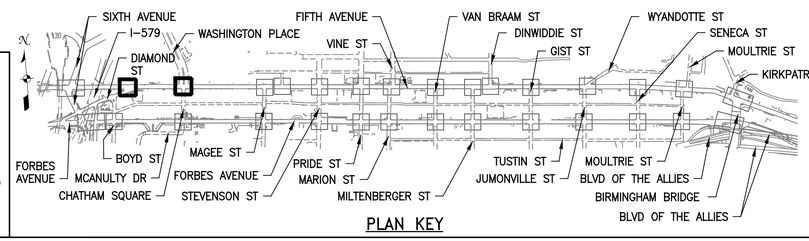
NOTE; SEE SHEET 9 FOR WATER MAIN REPLACEMENT PLAN.



NOTE; SEE SHEET 11 FOR WATER MAIN REPLACEMENT PLAN.

INTERSECTION OF FIFTH AVENUE AND CHATHAM SQUARE/WASHINGTON PLACE

SCALE: 1" = 10'



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT.SRR/SR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'
10' 0 10' 20'

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER DAVID W. TROIANOS PE-048643-E

1.29.2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 58 OF 166

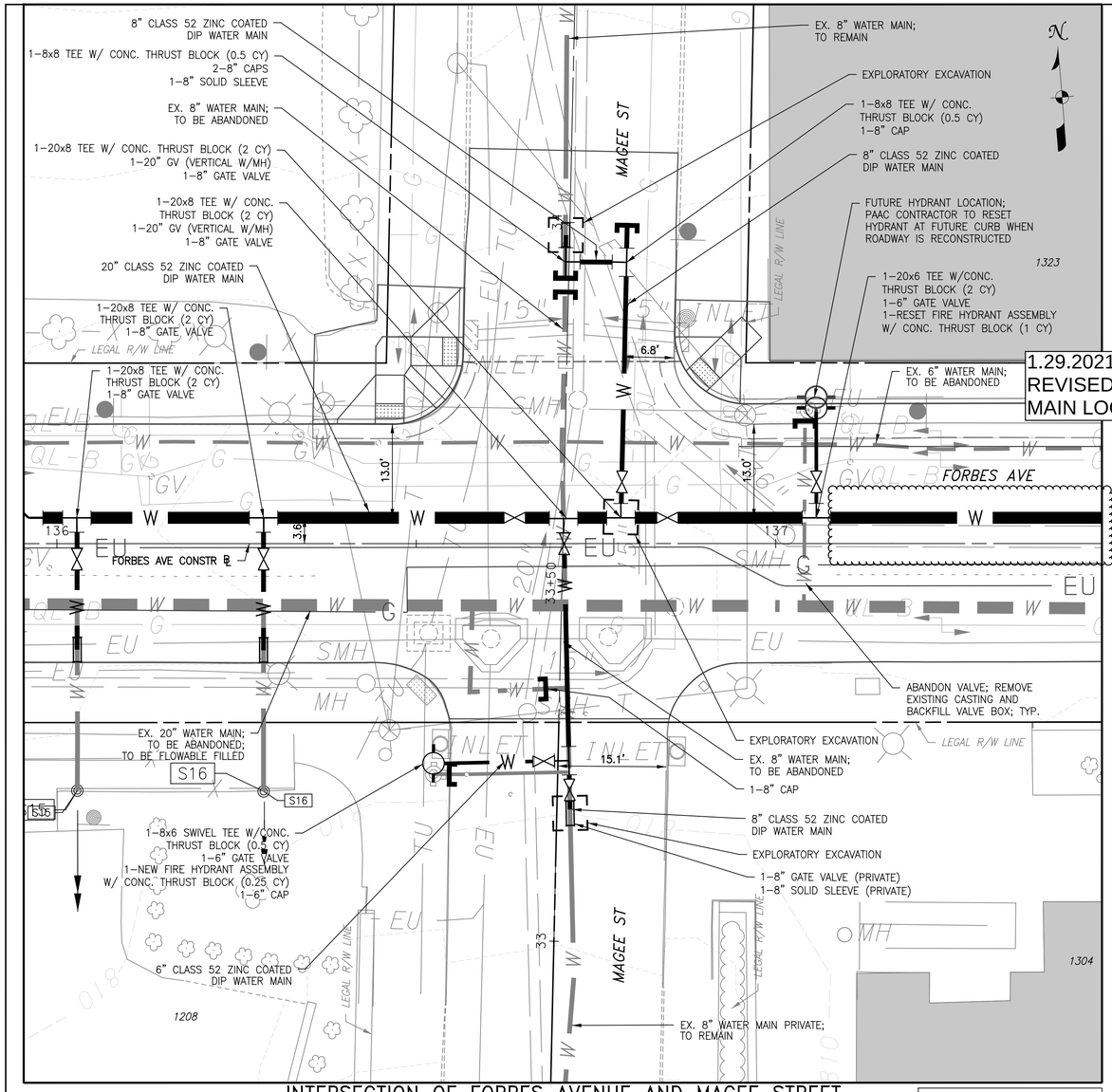
ACCESSION NO. _____

CASE NO. _____

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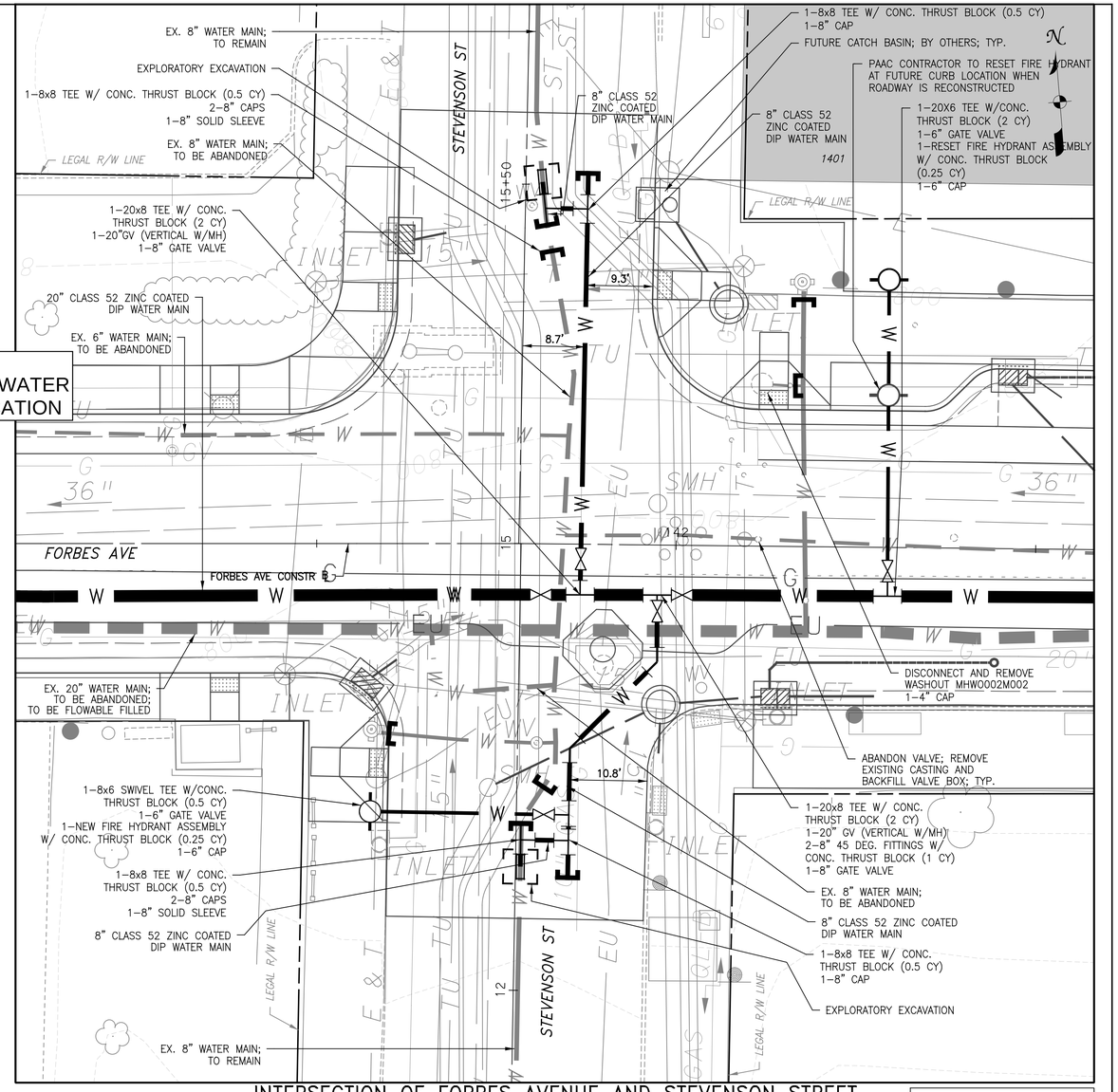
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INTERSECTION OF FORBES AVENUE AND MAGEE STREET

SCALE: 1" = 10'

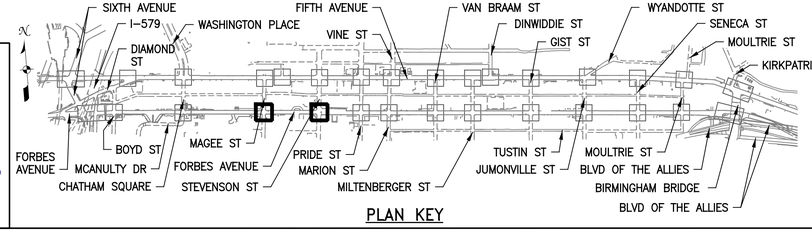
NOTE: SEE SHEET 37 FOR WATER MAIN REPLACEMENT PLAN.



INTERSECTION OF FORBES AVENUE AND STEVENSON STREET

SCALE: 1" = 10'

NOTE: SEE SHEET 39 FOR WATER MAIN REPLACEMENT PLAN.



PLAN KEY

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT. SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

SCALE: 1" = 10'

10' 0 10' 20'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE–048843–E

1.29.2021

PGH2O

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE ENLARGED WATER MAIN CONNECTION PLAN

SCALE: AS NOTED SHEET NO. 68 OF 166 ACCESSION NO. _____

DATE: JANUARY, 2021 CASE NO. _____

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SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC MATERIAL	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
N2	5000254	700	5TH	UNKNOWN	1" TAP	1	PEXa	22	UNKNOWN	UNKNOWN	COPPER	16	RETAIL & OFFICES	REPLACE TO BUILDING AND RECONNECT
N3	5001074	700	5TH	UNKNOWN	1" TAP	1	PEXa	22	UNKNOWN	UNKNOWN	COPPER	16	RETAIL & OFFICES	REPLACE TO BUILDING AND RECONNECT
N4	5001075	700	5TH	UNKNOWN	1" TAP	1	PEXa	23	UNKNOWN	UNKNOWN	COPPER	16	RETAIL & OFFICES	REPLACE TO BUILDING AND RECONNECT
N9	5000257	810 AKA 812	5TH	TWO (2) 1" vs 2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	DIP	N/A	18	SYNAGOGUE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N10	UNKNOWN	810	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	DIP	N/A	18	SYNAGOGUE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N11	5000258 5000259	816 & 818	5TH	8	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4 (F) & 1 (D)	UNKNOWN, ASSUMED NON-LEAD & LEAD	N/A (F) & COPPER (D)	18	RETAIL & OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N13	UNKNOWN	822	5TH	UNKNOWN	1" TAP	1	PEXa	15	UNKNOWN	UKNOWN	COPPER	24	OFFICES	REPLACE TO BUILDING AND RECONNECT
N14	5000261	822	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN	UNKNOWN, ASSUMED CAST IRON	N/A	18	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N15	5000262	824	5TH	UNKNOWN	1" TAP	1	PEXa	14	0.75	COPPER	COPPER	3	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N16	5000263	900	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	18	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N17	UNKNOWN	900	5TH	1	1" TAP	1	PEXa	17	1	LEAD VS NON-LEAD	COPPER	26.5	OFFICES	REPLACE TO BUILDING AND RECONNECT
N20	5000264	906	5TH	UNKNOWN	1" TAP	1	PEXa	14	1	COPPER	COPPER	3	RETAIL	REPLACE TO CURB BOX AND RECONNECT
N21	5000265	908 & 910	5TH	1	1" TAP	1	PEXa	14	1	COPPER	COPPER	3	RETAIL	REPLACE TO CURB BOX AND RECONNECT
N23	5000277	916 (FRONT)	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	12	0.625	LEAD VS NON-LEAD	COPPER	24	RETAIL & INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N26	5000278	1000	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	15	1.5	COPPER	COPPER	17	INSTITUTIONAL	REPLACE TO CURB BOX AND RECONNECT
N28	5119946	1002	5TH	UNKNOWN	1" TAP	1	PEXa	13.5	0.75	LEAD	COPPER	24	OFFICES	REPLACE TO BUILDING AND RECONNECT
N29	5119947	1002	5TH	4 VS 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	18	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N30	5000279	1004 & 1006	5TH	0.75	1" TAP	1	PEXa	13	0.75	COPPER & GALV IRON	COPPER	24	RETAIL & INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N31	5000280	1004 & 1006	5TH	UNKNOWN	1" TAP	1	PEXa	13	0.625	LEAD & GALV IRON VS. LIKELY NON-LEAD	COPPER	24	RETAIL & INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N32	5000281	1008 & 1014	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	DIP	N/A	18	COMMERCIAL/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N33	5132896	1008 & 1014	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6	DIP	N/A	18	COMMERCIAL/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N34	5130009	1008 & 1014	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6	DIP	N/A	18	COMMERCIAL/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N35	5000283	1016	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	14	UNKNOWN	NON-LEAD	COPPER	3	RETAIL/COMMERCIAL OVER	REPLACE TO CURB BOX AND RECONNECT
N37	5000285	1020	5TH	UNKNOWN	1" TAP	1	PEXa	9		LEAD & GALV IRON VS LIKELY NON-LEAD	COPPER	24.5	RETAIL/COMMERCIAL OVER	REPLACE TO BUILDING AND RECONNECT
N38	5000286	1022	5TH	0.75	1" TAP	1	PEXa	9	0.5	GALVANIZED IRON	COPPER	24.5	RETAIL/COMMERCIAL OVER	REPLACE TO BUILDING AND RECONNECT
N39	5132567 5132568	1030	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	LIKELY NON-LEAD	N/A	14	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N40	5000287	1030	5TH	UNKNOWN	1" TAP	1	PEXa	9	UNKNOWN	UNKNOWN	COPPER	25.5	APARTMENTS	REPLACE TO BUILDING AND RECONNECT
N41	5000288	1034	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	14	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N42	UNKNOWN	1034	5TH	2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	COPPER VS GALV IRON	COPPER	43	OFFICES	REPLACE TO BUILDING AND RECONNECT
N44	5000289	1040	5TH	0.75	1" TAP	1	PEXa	9	0.75	GALVANIZED IRON	COPPER	23.5	OFFICES	REPLACE TO BUILDING AND RECONNECT
N47	5000290	1042	5TH	UNKNOWN	1" TAP	1	PEXa	9	0.75	LEAD	COPPER	24	OFFICES	REPLACE TO BUILDING AND RECONNECT
N48	UNKNOWN	1048	5TH	6 TO 2	16X6 TEE WITH 6" VALVE	6	DIP	N/A	2	UNKNOWN, ASSUMED NON-LEAD	N/A	15	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N49	UNKNOWN	1048	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6	UNKNOWN, ASSUMED NON-LEAD	N/A	15	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N50	UNKNOWN	1100	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	15	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N51	5000291	1100	5TH	0.75	1" TAP	1	PEXa	10	0.75	COPPER	COPPER	3	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N52	5000292	1102	5TH	0.75	1" TAP	1	PEXa	10	0.75	LEAD	COPPER	N/A	OFFICES	REPLACE TO BUILDING AND RECONNECT
N53	5000293	1106	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	10	1.5	LIKELY NON-LEAD	COPPER	5	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N54	UNKNOWN	1106	5TH	UNKNOWN, LIKELY 4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	16	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N56	5000294	1202	5TH	UNKNOWN	1" TAP	1	PEXa	10	0.5	COPPER	COPPER	3	RETAIL/APARTMENTS OVER	REPLACE TO CURB BOX AND RECONNECT
N57	5123699	1204	5TH	UNKNOWN, LIKELY 4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	16	INSTITUTIONAL	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N59	5000296	1206	5TH	UNKNOWN	1" TAP	1	PEXa	9.5	0.5	GALVANIZED IRON	COPPER	23	INSTITUTIONAL	REPLACE TO BUILDING AND RECONNECT
N60	5000297	1208	5TH	UNKNOWN	1" TAP	1	PEXa	9.5	0.75	LEAD & GALV IRON VS LIKELY NON-LEAD	COPPER	23	COMMERCIAL	REPLACE TO BUILDING AND RECONNECT
N62	5000299	1300	5TH	UNKNOWN	1" TAP	1	PEXa	9	0.75	LEAD VS LIKELY NON-LEAD	COPPER	23.5	OFFICES	REPLACE TO BUILDING AND RECONNECT
N63	5000300	1302	5TH	1	1" TAP	1	PEXa	9.5	0.625	LEAD VS LIKELY NON-LEAD	COPPER	23	COMMERCIAL	REPLACE TO BUILDING AND RECONNECT
N65	5000302	1308	5TH	UNKNOWN	1" TAP	1	PEXa	12	0.75	COPPER	COPPER	3	INSTITUTIONAL	REPLACE TO CURB BOX AND RECONNECT
N66	UNKNOWN	1308	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	LIKELY NON-LEAD	N/A	16	INSTITUTIONAL	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N68	5000303	1318	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	12	1.25	COPPER	COPPER	3	COMMERCIAL	REPLACE TO CURB BOX AND RECONNECT
N74	5000308	1402	5TH	UNKNOWN	1" TAP	1	PEXa	12	2	LEAD & IRON VS LIKELY NON-LEAD	COPPER	21	GOVERNMENT/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N76	5000309	1404	5TH	UNKNOWN	1" TAP	1	PEXa	12	0.75	COPPER	COPPER	3	COMMERCIAL/APTS OVER	REPLACE TO CURB BOX AND RECONNECT
N77	5000310	1406	5TH	UNKNOWN	1" TAP	1	PEXa	13	1.25	LEAD & GALV IRON VS LEAD	COPPER	19.5	OFFICES/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N78	5018647 5000311	1408 & 1410	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & UNKNOWN,	UNKNOWN, ASSUMED NON-LEAD	N/A (F & D)	17	RETAIL/COMMERCIAL OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N79	5000312	1421 AKA 1439	WATSON	UNKNOWN	1" TAP	1	PEXa	12	UNKNOWN	NON-LEAD	COPPER	3	OFFICE/WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
N80	UNKNOWN	1450 AKA 1430	5TH	6	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	6	DIP	N/A	4 (F) & 2 (D)	DIP & COPPER	N/A (F & D)	17	RTL & COMM/APTS OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N85	5000322	1516 & 1516.5	5TH	UNKNOWN	1" TAP	1	PEXa	10	UNKNOWN	UNKNOWN	COPPER	22	RETAIL/COMMERCIAL OVER	REPLACE TO BUILDING AND RECONNECT
N99	5000334	1634	5TH	0.75	1" TAP	1	PEXa	10	0.75	COPPER	COPPER	10	MULTIFAMILTY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT
N101	5000499	1636 - 1638	5TH	0.75	1" TAP	1	PEXa	4	0.75	COPPER & GALV IRON	COPPER	28	COMMERCIAL/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N103	5000500	1712	5TH	0.625	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	22	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N104	5000501	1714 & 1716	5TH	UNKNOWN	1" TAP	1	PEXa	10	0.75	LEAD	COPPER	22	COMMERCIAL/APTS OVER	REPLACE TO BUILDING AND RECONNECT
N108	5000503	1800	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & 4 (D)	DIP	N/A (F & D)	19	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N109	5000505	1840	5TH	UNKNOWN	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	22.5	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N110	5000506	1842	5TH	UNKNOWN	1" TAP	1	PEXa	10	1	LEAD	COPPER	22.5	MULTIFAMILTY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N113	5000510	1904	5TH	1	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	22	HOUSE	REPLACE TO BUILDING AND RECONNECT
N114	5000511	1906	5TH	0.75	1" TAP	1	PEXa	10	0.75	COPPER	COPPER	10	HOUSE	REPLACE TO CURB BOX AND RECONNECT
N119	5000695	1922	5TH	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N120	5000696	1924	5TH	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N121	5000697	1926	5TH	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N122	5000698	1928	5TH	UNKNOWN	1" TAP	1	PEXa	6.5	0.625	LEAD	COPPER	30	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
N124	5000699	1936 - 1942	5TH	1.5	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	10.5	0.625	LEAD	COPPER	62	OFFICES	REPLACE TO BUILDING AND RECONNECT
N125	5007000	2000	5TH	UNKNOWN	1" TAP	1	PEXa	10	2	COPPER	COPPER	20	HOUSING	REPLACE TO CURB BOX AND RECONNECT
N126	5000701	2002	5TH	UNKNOWN	1" TAP	1	PEXa	10.5	0.625	LEAD	COPPER	21	HOUSING	REPLACE TO BUILDING AND RECONNECT

SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC MATERIAL	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
N127	5000703	2004	5TH	UNKNOWN	1" TAP	1	PEXa	10.5	0.625	LEAD	COPPER	21.5	HOUSING	REPLACE TO BUILDING AND RECONNECT
N129	50007057	2006	5TH	0.625	1" TAP	1	PEXa	10.5	0.625	LEAD	COPPER	29	COMMUNITY AUXILIARY BLDG	REPLACE TO BUILDING AND RECONNECT
N130	5000706	2010	5TH	4 TO 2	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	2 (F) & 1.5 (D)	COPPER	N/A (F & D)	18	CONDOMINIUM	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N134	5000709	2018	5TH	UNKNOWN	1" TAP	1	PEXa	5.5	0.75	LEAD & COPPER	COPPER	26.5	MULTIFAMILTY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N135	5000710	2020	5TH	UNKNOWN	1" TAP	1	PEXa	4	0.75	COPPER	COPPER	17	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
N138	5000712	2026	5TH	UNKNOWN	1" TAP	1	PEXa	9	0.75	LEAD	COPPER	23	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N139	5000713	2028	5TH	UNKNOWN	1" TAP	1	PEXa	10	0.625	NON-LEAD	COPPER	11	RETAIL/APARTMENTS OVER	REPLACE TO CURB BOX AND RECONNECT
N141	5131174 5132310	2076	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & 2 (D)	NON-LEAD	N/A (F & D)	27	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N168	UNKNOWN	500	ROSS	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	13	ASSUMED OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N169	UNKNOWN	0	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	13	UNKNOWN	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N171	5130030	112	WASHINGTON	8	16X8 TEE WITH 8" VALVE	8	DIP	N/A	8	STEEL	N/A	5	OFFICES/RETAIL/HOTEL/CONDOS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N172	5123304	1001 - 1035	5TH	UNKNOWN, ASSUMED 8	16X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	LIKELY NON-LEAD	N/A	5	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N173	5123305	1001 - 1035	5TH	12 TO 8	16X8 TEE WITH 8" VALVE	12 TO 8	DIP	N/A	8	DIP	N/A	17	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N174	5123306 5123307	1001 - 1035	5TH	12 TO 8	16X8 TEE WITH 8" VALVE	12 TO 8	DIP	N/A	8	DIP	N/A	17	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N175	5001595	1207	5TH	1	1" TAP	1	PEXa	25	1	COPPER	COPPER	3	OFFICES	REPLACE TO CURB BOX AND RECONNECT
N177	5001594	1315	5TH	0.625	1" TAP	1	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	25	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N178	5001593	1319 AKA 1321	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	22	1.25	GALVANIZED IRON	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N179	5001592	1323 & 1325	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	22	1.25	GALVANIZED IRON	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N181	UNKNOWN	1335	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	19	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N182	UNKNOWN	1335	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	UNKNOWN, ASSUMED NON-LEAD	N/A	19	PARKING LOT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N184	5001620	1425 AKA 1433	5TH	2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	COPPER	N/A	49	POSSIBLY VACANT BANK	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N185	5001621	1501	5TH	TWO (2) 1"	16X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N186	5001622	1503	5TH	UNKNOWN	1" TAP	1	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N187	5001623	1505	5TH	0.75	1" TAP	1	PEXa	22	0.625	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N188	5001624	1507	5TH	1	1" TAP	1	PEXa	22	0.75	LEAD	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N189	5001625	1509	5TH	UNKNOWN	1" TAP	1	PEXa	22	0.625	LEAD	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N192	UNKNOWN	1603 / 1601	5TH	UNKNOWN	1" TAP	1	PEXa	23	0.625	LEAD	COPPER	16	OFFICES	REPLACE TO BUILDING AND RECONNECT
N193	5001629	1605	5TH	1	1" TAP	1	PEXa	21	1	COPPER	COPPER	3	RETAIL & GAS STATION	REPLACE TO CURB BOX AND RECONNECT
N194	5131683 5134749	1655	5TH	4 VS 6	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4 OR 6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	18	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N195	5002058	1643	5TH	0.75	1" TAP	1	PEXa	18	0.75	COPPER	COPPER	3	RETAIL	REPLACE TO CURB BOX AND RECONNECT
N196	5002057	1701	5TH	1	1" TAP	1	PEXa	23	0.625	LEAD	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N198	5002056	1705	5TH	1	1" TAP	1	PEXa	22	0.75	LEAD VS LIKELY NON-LEAD	COPPER	16	RETAIL/APARTMENTS OVER - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N200	5002055	1719	5TH	1	1" TAP	1	PEXa	23	0.75	LEAD	COPPER	11	RETAIL/APARTMENTS OVER - POSSIBLY PARTIALLY VACANT	REPLACE TO BUILDING AND RECONNECT
N201	5002054	1721	5TH	1.25	16X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	22	1.25	COPPER	COPPER	3	RETAIL/APARTMENTS OVER - POSSIBLY PARTIALLY VACANT	REPLACE TO CURB BOX AND RECONNECT
N203	5002070	1807 AKA 1801	5TH	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	CAST IRON	N/A	18	GOVERNMENT	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N205	5002072	1817	5TH	UNKNOWN	1" TAP	1	PEXa	23	0.75	LEAD	COPPER	53	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
N214	5002077	1901	5TH	UNKNOWN	1" TAP	1	PEXa	23	2	IRON VS GALVANIZED IRON	COPPER	16	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
N226	5002151	1945	5TH	2	16X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	2	COPPER	N/A	20	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N227	5002152	1945	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	20	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N228	UNKNOWN	2001	WYANDOTTE	UNKNOWN	1" TAP	1	PEXa	7	UNKNOWN	UNKNOWN	COPPER	44	DAYCARE	REPLACE TO BUILDING AND RECONNECT
N229	5006574	2005	WYANDOTTE	1	1" TAP	1	PEXa	7	0.75	GALVANIZED IRON	COPPER	14	CHARITY	REPLACE TO BUILDING AND RECONNECT
N230	5131072 5131175	2015	5TH	6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	6 (F) & 2 (D)	DIP	N/A (F & D)	21	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N231	5002225	2027	5TH	UNKNOWN	1" TAP	1	PEXa	23	0.625	LEAD	COPPER	16	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N232	5002227	2029	5TH	UNKNOWN	1" TAP	1	PEXa	26	0.625	LEAD	COPPER	N/A	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N233	5002229	2031	5TH	UNKNOWN	1" TAP	1	PEXa	22	UNKNOWN	NON-LEAD	COPPER	3	MULTIFAMILY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT
N234	5002230 5002234	2035	5TH	UNKNOWN	1" TAP	1	PEXa	17	1.25	LEAD	COPPER	12	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N235	5002233	2041 AKA 2039-2041	5TH	0.75	1" TAP	1	PEXa	17	1.5	LEAD	COPPER	16	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
N236	5002235	2125 AKA 2115	5TH	0.75	1" TAP	1	PEXa	13.5	0.75	LEAD VS LIKELY NON-LEAD	COPPER	33	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
N237	5002236	2127 - 2135 AKA 2133	5TH	UNKNOWN	1" TAP	1	PEXa	14	UNKNOWN	UNKNOWN	COPPER	49	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
N238	UNKNOWN	2139	5TH	UNKNOWN	1" TAP	1	PEXa	15.5	UNKNOWN	UNKNOWN	COPPER	14	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
N239	5002237	2139	5TH	UNKNOWN, ASSUMED 6	16X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	LIKELY NON-LEAD	N/A	25	WAREHOUSE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
N245	5002295	2211	5TH	0.75	1" TAP	1	PEXa	15	0.75	COPPER	COPPER	3	OFFICES/WAREHOUSE - POSSIBLY VACANT	REPLACE TO CURB BOX AND RECONNECT
N246	5002296	2223-2227 AKA 2217	5TH	UNKNOWN	1" TAP	1	PEXa	15.5	0.625	LEAD	COPPER	14	OFFICES/WAREHOUSE - POSSIBLY VACANT	REPLACE TO BUILDING AND RECONNECT
N247	5002417	2231	5

SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC MATERIAL	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
S8	UNKNOWN	915 AKA 925	LOCUST	4	20X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	22	UNKNOWN	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S11	5000818	1000	FORBES	UNKNOWN	1" TAP	1	PEXa	21	UNKNOWN	UNKNOWN, ASSUMED NON-LEAD	COPPER	3	PARKING GARAGE	REPLACE TO CURB BOX AND RECONNECT
S12	UNKNOWN	1000	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	23	PARKING GARAGE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S13	UNKNOWN	1000	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	6	DIP	N/A	23	PARKING GARAGE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S14	UNKNOWN	1000	FORBES	UNKNOWN	1" TAP	1	PEXa	27	UNKNOWN	UNKNOWN, ASSUMED NON-LEAD	COPPER	47	PARKING GARAGE	REPLACE TO CURB BOX AND RECONNECT
S15	UNKNOWN	1208	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	UNKNOWN, ASSUMED NON-LEAD	N/A	23	CONSTRUCTION FIELD TRAILER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S16	UNKNOWN	1208	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	UNKNOWN, ASSUMED NON-LEAD	N/A	23	CONSTRUCTION FIELD TRAILER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S17	5000477 5000478	1304	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	16	ARENA	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S24	5000436	1514	FORBES	UNKNOWN	1" TAP	1	PEXa	14	0.5	LEAD	COPPER	16	MEDICAL OFFICES	REPLACE TO BUILDING AND RECONNECT
S25	5000434	1518	FORBES	1	1" TAP	1	PEXa	25	1	COPPER	COPPER	9	MEDICAL OFFICES	REPLACE TO CURB BOX AND RECONNECT
S26	5000435	1518	FORBES	4	16X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	35	MEDICAL OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S27	5000459	1600	FORBES	UNKNOWN	1" TAP	1	PEXa	15	UNKNOWN	NON-LEAD	N/A	N/A	COMMERICAL GARAGE	REPLACE TO CURB BOX AND RECONNECT
S32	5000456	1620	FORBES	UNKNOWN	1" TAP	1	PEXa	14	0.625	LEAD	COPPER	15	HOUSE	REPLACE TO BUILDING AND RECONNECT
S35	5000453	1628	FORBES	0.75	1" TAP	1	PEXa	13	0.625	IRON VS. GALV IRON	COPPER	16	COMMERCIAL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S36	5000452	1632	FORBES	1.25	20X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	15	0.75	COPPER	COPPER	3	COMMERCIAL/OFFICES	REPLACE TO CURB BOX AND RECONNECT
S40	5000556	1700 AKA 1704	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	RETAIL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S41	5000558	1706	FORBES	0.75	1" TAP	1	PEXa	15	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	16	RETAIL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S42	5000560	1708	FORBES	0.625	1" TAP	1	PEXa	15	0.75	LEAD	COPPER	16	COMMERCIAL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S45	5000561	1714	FORBES	1	1" TAP	1	PEXa	16	1	COPPER	COPPER	3	RETAIL	REPLACE TO CURB BOX AND RECONNECT
S50	5000567	23	MILTENBERGER	0.5	1" TAP	1	PEXa	10	0.5	LEAD VS. LIKELY NON-LEAD	COPPER	17	RETAIL/ APTS OVER	REPLACE TO BUILDING AND RECONNECT
S52	5000580	1802	FORBES	0.75	1" TAP	1	PEXa	16	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	12	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S53	5000581	1804	FORBES	0.75	1" TAP	1	PEXa	16	0.75	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S54	5000582	1806	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S55	5123655	1830	FORBES	1	1" TAP	1	PEXa	17	1	LEAD VS. LIKELY NON-LEAD	COPPER	16	OFFICE/WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
S56	5000584	1830	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	NON-LEAD	N/A	11	OFFICE/WAREHOUSE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S58	5000585	1850	FORBES	1.25	20X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	17	1.25	LEAD	COPPER	17	COMMERICAL GARAGE	REPLACE TO BUILDING AND RECONNECT
S60	5000588	207	GIST	0.75	1" TAP	1	PEXa	24	0.75	COPPER	N/A	N/A	WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
S61	UNKNOWN	1908	FORBES	0.5	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	12	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S62	5000591	1910	FORBES	0.5	1" TAP	1	PEXa	16	0.625	IRON VS. GALV IRON	COPPER	15	WAREHOUSE	REPLACE TO BUILDING AND RECONNECT
S63	5000592	1914	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S64	UNKNOWN	1920	FORBES	1	N/A	N/A	N/A	N/A	1	LEAD	N/A	N/A	PARKING LOT	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S65	UNKNOWN	1920	FORBES	1.25	N/A	N/A	N/A	N/A	1.25	GALVANIZED IRON	N/A	N/A	PARKING LOT	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S66	5120192	1920	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	11	COMMERICAL GARAGE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S67	5120193	1920	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	19	COMMERICAL GARAGE	REPLACE TO BUILDING AND RECONNECT
S68	5000745	2000	FORBES	0.75	1" TAP	1	PEXa	20	0.625	LEAD	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S69	5000753	2002	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S70	5000754	2004	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S71	5000744	2006	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S72	5000746	2006.5	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S73	5000747	2008	FORBES	0.75	1" TAP	1	PEXa	14	UNKNOWN, ASSUMED 0.75	NON-LEAD	COPPER	3	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S74	5000748	2008.5	FORBES	0.75	1" TAP	1	PEXa	14	UNKNOWN, ASSUMED 0.75	NON-LEAD	COPPER	3	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S75	5000759	2010	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S76	5000758	2010.5	FORBES	UNKNOWN	1" TAP	1	PEXa	20	UNKNOWN	UNKNOWN	COPPER	15	ROWHOUSE	DISCONNECT FROM EX. PARTY LINE. CONNECT TO RECENTLY INSTALLED PEXA
S77	5000763	2012	FORBES	UNKNOWN	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S78	5000764	2014	FORBES	0.625	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S79	5000766	2016	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	16	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S80	5000768	2018	FORBES	1	1" TAP	1	PEXa	16	0.75	COPPER	COPPER	3	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S81	5000769	2020	FORBES	0.75	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	11	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S82	5000770	2022	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	11	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S83	5000771	2024	FORBES	0.5	1" TAP	1	PEXa	16	0.5	LEAD	COPPER	12	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S86	UNKNOWN	2030	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	10	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S87	5000775	2032A	FORBES	UNKNOWN	1" TAP	1	PEXa	16	0.5	LEAD VS. LIKELY NON-LEAD	COPPER	10	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S88	5000774	2032B	FORBES	0.75	1" TAP	1	PEXa	16	0.5	LEAD VS. LIKELY NON-LEAD	COPPER	10	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S93	5002395	2106	FORBES	TWO (2) 1"	20X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	18	2	COPPER	COPPER	9	COMMERCIAL	REPLACE TO CURB BOX AND RECONNECT
S98	UNKNOWN	2120	FORBES	0.75	N/A	N/A	N/A	N/A	0.75	COPPER	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S99	UNKNOWN	2124	FORBES	0.5	N/A	N/A	N/A	N/A	0.5	LEAD	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S100	UNKNOWN	2126	FORBES	0.75	N/A	N/A	N/A	N/A	0.75	COPPER	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S101	UNKNOWN	2128	FORBES	UNKNOWN	N/A	N/A	N/A	N/A	UNKNOWN	UNKNOWN	N/A	N/A	STORAGE YARD	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL

SERVICE NUMBER	LOCATION ID	HOUSE #	STREET NAME	EX. PUBLIC WSL DIA. (IN)	CONNECTION AT WATER MAIN	PROP. WSL SIZE (IN)	PROP. PUBLIC MATERIAL	PROP. PUBLIC LENGTH (FT)	EX. PRIVATE WSL DIA. (IN)	EXISTING PRIVATE MATERIAL	PROP. PRIVATE MATERIAL	PROP. PRIVATE LENGTH (FT)	PROPERTY TYPE	REMARKS
S104	5002399	2132	FORBES	0.75	1" TAP	1	PEXa	18	0.75	GALVANIZED IRON	COPPER	16	COMMERCIAL	REPLACE TO BUILDING AND RECONNECT
S108	UNKNOWN	2206	FORBES	0.5	N/A	N/A	N/A	N/A	0.625	LEAD	N/A	N/A	VACANT LOT	CONFIRM EX WSL IS TERMINATED, REMOVE CASTING & BACKFILL WITH FLOWABLE FILL
S109	UNKNOWN	0	FORBES	0.5	N/A	N/A	N/A	N/A	0.5	LEAD	N/A	N/A	VACANT LOT	
S121	UNKNOWN	725 AKA 711	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	6	CAST IRON	N/A	5	INSTITUTIONAL	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S125	5120593 5120594	1015	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	8 (F) & 4 (D)	UNKNOWN, ASSUMED NON-LEAD	N/A (F & D)	5	RETAIL/GYMNASIUM OVER	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S127	5000418	1323	FORBES	8	20X8 TEE WITH 8" VALVE	8	DIP	N/A	UNKNOWN, ASSUMED 8	UNKNOWN, ASSUMED NON-LEAD	N/A	5	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S128	5000419	1323	FORBES	4	20X8 TEE WITH 8" VALVE AND 8X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	5	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S129	UNKNOWN	1323	FORBES	UNKNOWN	1" TAP	1	PEXa	23	UNKNOWN	UNKNOWN	COPPER	11	OFFICES	REPLACE TO BUILDING AND RECONNECT
S130	UNKNOWN	1323	FORBES	4	20X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	UNKNOWN, ASSUMED 4	UNKNOWN, ASSUMED NON-LEAD	N/A	16	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S131	5000423	1401	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S132	UNKNOWN	1401	FORBES	4	20X6 TEE WITH 6" VALVE AND 6X4 REDUCER	4	DIP	N/A	4	CAST IRON	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S133	5000424	1425	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	4	STEEL	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S134	5132501	1425	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	11	OFFICES	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S142	UNKNOWN	1517	FORBES	2	20X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	16	2	COPPER	COPPER	3	MEDICAL OFFICES	REPLACE TO CURB BOX AND RECONNECT
S143	5000445	1611 & 1613 AKA 1609	FORBES	UNKNOWN	1" TAP	1	PEXa	18	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	23	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S144	5000446	1621 AKA 1613	FORBES	UNKNOWN, ASSUMED 6"	20X6 TEE WITH 6" VALVE	6	DIP	N/A	UNKNOWN, ASSUMED 6	UNKNOWN, ASSUMED NON-LEAD	N/A	33	OFFICE/WAREHOUSE	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S145	UNKNOWN	1621 AKA 1613	FORBES	1.25	20X6 TEE WITH 6" VALVE AND 6X1.25 PLUG	1.25	PEXa	19	1.25	COPPER	COPPER	11	OFFICE/WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
S158	5000548	121	VAN BRAAM	0.625	1" TAP	1	PEXa	13	0.625	LEAD	COPPER	29	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S159	5000550	1703	FORBES	0.75	1" TAP	1	PEXa	13	0.75	COPPER	COPPER	14	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S160	5000551	1705	FORBES	0.75	1" TAP	1	PEXa	14	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S161	5000552	1707	FORBES	0.75	1" TAP	1	PEXa	18	0.75	COPPER	COPPER	10	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S162	5000545	1709	FORBES	0.75	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S163	5123852	1711	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S164	5000543	1713	FORBES	0.75	1" TAP	1	PEXa	17	0.75	COPPER	COPPER	11	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S170	5000537	1725	FORBES	0.75	1" TAP	1	PEXa	17	0.75	COPPER	COPPER	11	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S171	5000534	1727	FORBES	0.75	1" TAP	1	PEXa	17	0.75	COPPER	COPPER	11	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S172	5000535	1729	FORBES	1	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S173	5000536	1731	FORBES	0.75	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	23	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S174	5000529	1733	FORBES	UNKNOWN	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	18	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S175	5000526	1735	FORBES	0.75	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	28	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S178	5123700	1819 AKA 1801	FORBES	6	20X6 TEE WITH 6" VALVE	6	DIP	N/A	6	CAST IRON	N/A	26	APARTMENTS	REMOVE EXISTING VALVE AT TAP AND RECONNECT BEYOND VALVE AT TEE
S180	5000521	1835	FORBES	2	20X6 TEE WITH 6" VALVE AND 6X2 PLUG	2	COPPER	N/A	0.5	LEAD	COPPER	82	OFFICES	REPLACE TO BUILDING AND RECONNECT
S181	5000519	1901	FORBES	0.625	1" TAP	1	PEXa	10	0.625	LEAD	COPPER	29	HOUSE	REPLACE TO BUILDING AND RECONNECT
S182	5000518	1903	FORBES	0.625	1" TAP	1	PEXa	10	0.625	LEAD & IRON VS. LIKELY NON-LEAD	COPPER	29	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S187	5000516	1915	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	19	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S188	5000517	1917	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	19	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S189	5000737	1919 - 1925	FORBES	1.5	20X6 TEE WITH 6" VALVE AND 6X1.5 PLUG	1.5	PEXa	17	0.5	LEAD	COPPER	23	RETAIL/APARTMENTS OVER	REPLACE TO BUILDING AND RECONNECT
S190	5000738	1927	FORBES	UNKNOWN	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	23	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S192	5000735	2001	FORBES	1	1" TAP	1	PEXa	13	0.75	GALVANIZED IRON	COPPER	29	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S193	5000734	2003	FORBES	0.625	1" TAP	1	PEXa	19	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	23	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S194	5000733	2005	FORBES	UNKNOWN	1" TAP	1	PEXa	17	0.75	COPPER	COPPER	20	RETAIL/APARTMENTS OVER	REPLACE TO CURB BOX AND RECONNECT
S196	5000731	2009	FORBES	0.75	1" TAP	1	PEXa	19	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	22	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S197	5000729	2011	FORBES	0.75	1" TAP	1	PEXa	32	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S198	5000728	2013	FORBES	0.75	1" TAP	1	PEXa	32	0.75	COPPER	N/A	N/A	ROWHOUSE	REPLACE TO CURB BOX AND RECONNECT
S199	5000726	2015	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	22	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S200	5000727	2017	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	18	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S201	5000725	2019	FORBES	0.5	1" TAP	1	PEXa	17	UNKNOWN	UNKNOWN	COPPER	19	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S204	UNKNOWN	2027	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	22	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S205	5000722	2029	FORBES	0.75	1" TAP	1	PEXa	17	0.625	NON-LEAD	COPPER	11	POSSIBLY VACANT HOUSE	REPLACE TO CURB BOX AND RECONNECT
S206	5000723	2031	FORBES	0.75	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	22	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S207	5000720	2033	FORBES	0.625	1" TAP	1	PEXa	17	0.625	LEAD	COPPER	23	POSSIBLY VACANT HOUSE	REPLACE TO BUILDING AND RECONNECT
S208	5000719	2035	FORBES	0.625	1" TAP	1	PEXa	16	0.625	LEAD	COPPER	23	ROWHOUSE	REPLACE TO BUILDING AND RECONNECT
S209	5000718	2037 / 2035.5	FORBES	0.625	1" TAP	1	PEXa	16	0.5	LEAD	COPPER	24	CHURCH	REPLACE TO BUILDING AND RECONNECT
S212	5002377	2119	FORBES	0.75	1" TAP	1	PEXa	15	0.5	GALVANIZED IRON	COPPER	21	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S213	5002378	2121	FORBES	0.625	1" TAP	1	PEXa	17	1	COPPER	COPPER	11	MULTIFAMILY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT
S214	5114361	2123	FORBES	0.75	1" TAP	1	PEXa	15	0.5	GALVANIZED IRON	COPPER	120	UNKNOWN	REPLACE TO BUILDING AND RECONNECT
S215	5002373	2125	FORBES	0.625	1" TAP	1	PEXa	15	0.5	COPPER	COPPER	11	WAREHOUSE	REPLACE TO CURB BOX AND RECONNECT
S216	5002372	2129 & 2131	FORBES	1	1" TAP	1	PEXa	15	0.625	LEAD	COPPER	22	CHURCH	REPLACE TO BUILDING AND RECONNECT
S217	5002370	2133	FORBES	0.625	1" TAP	1	PEXa	N/A	0.625	LEAD VS. LIKELY NON-LEAD	COPPER	21	MULTIFAMILY RESIDENTIAL	REPLACE TO BUILDING AND RECONNECT
S218	5002368	2135	FORBES	0.75	1" TAP	1	PEXa	10	0.75	COPPER	COPPER	13	MULTIFAMILY RESIDENTIAL	REPLACE TO CURB BOX AND RECONNECT

2.10.2021
REVISED PER PWSA COPPER
SERVICE LINE TIE-IN REQUIREMENTS

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REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048841-E
2.10.2021

NOTE:

1. NUMBERS ARE NOT SEQUENTIAL BECAUSE PLACEHOLDER NUMBERS WERE USED FOR VACANT PROPERTIES WHERE NO WATER SERVICE LINE IS APPLICABLE.

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

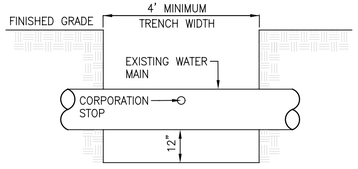
FIFTH AVENUE AND FORBES AVENUE

WATER SERVICE LINE TABLES - FORBES AVE

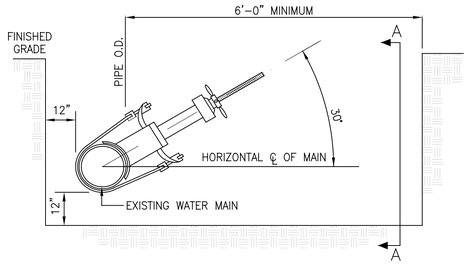
SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 75 OF 166
ACCESSION NO. _____
CASE NO. _____

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SECTION A–A

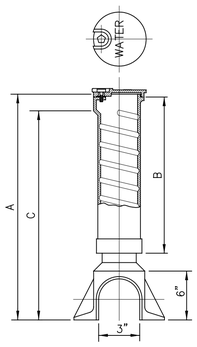


NOTES:

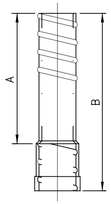
1. PWSA WILL MAKE THE ACTUAL TAP.
2. EXCAVATION AND SHORING REQUIRED AS PER CURRENT OSHA STANDARDS.

TRENCH REQUIREMENTS FOR 1" WATER SERVICE TAP (WS–C)

N.T.S.



TOP SECTION, BOTTOM SECTION & COVER



SERVICE BOX EXTENSION

SIZE NO.	INCREASES LENGTH–A	OVERALL LENGTH–B	WEIGHT
155	20	22.75	13.1
156	24	26.75	17.7

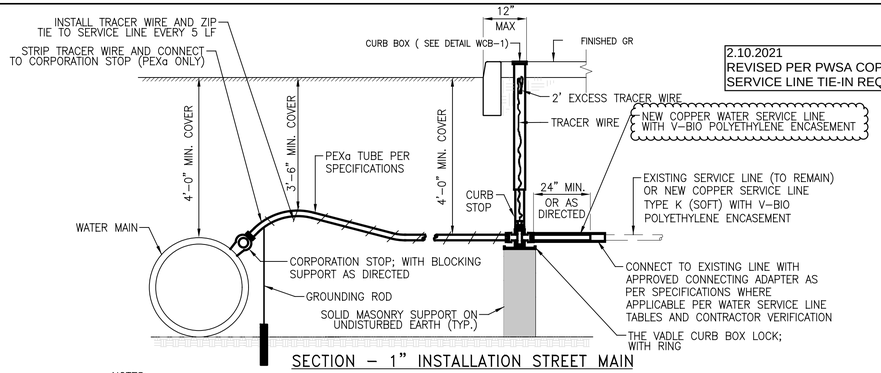
SIZE NO.	EXTENSION RANGE – A	TOP SECTION & COVER			BOTTOM SECTION			TOTAL WEIGHT
		NO.	WEIGHT	DIM. B	NO.	WEIGHT	DIM. C	
2	24" – 39"	9	19.6	18	2	14.1	23.0	32.7

NOTES:

1. SERVICE BOX SHALL BE BINGHAM & TAYLOR BUFFALO STYLE (3" OLD STYLE), No. 4930 OR APPROVED EQUAL.
2. DIMENSIONS IN INCHES; WEIGHT IN POUNDS.
3. CONTRACTOR SHALL PROVIDE TRUCK RATED CASTING ON CURB BOXES TO BE SET AT FUTURE CURB LOCATIONS THAT ARE IN EXISTING ROADWAY AREAS.
4. CURB BOX SHALL BE LABELED "PRIV WATER."

3" CURB SERVICE BOX (WCB–1) (FOR 1" SERVICE)

N.T.S.

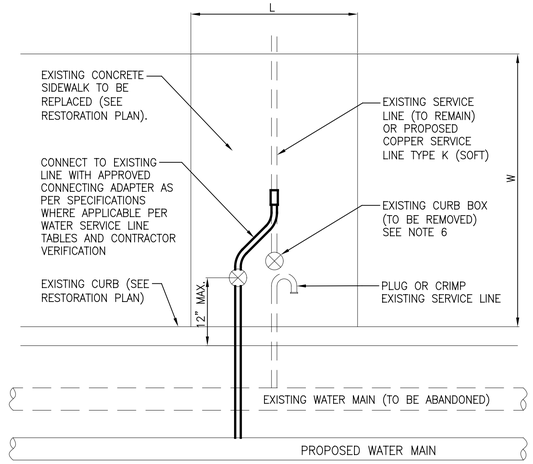


2.10.2021
REVISED PER PWSA COPPER SERVICE LINE TIE-IN REQUIREMENTS

SECTION – 1" INSTALLATION STREET MAIN

NOTES:

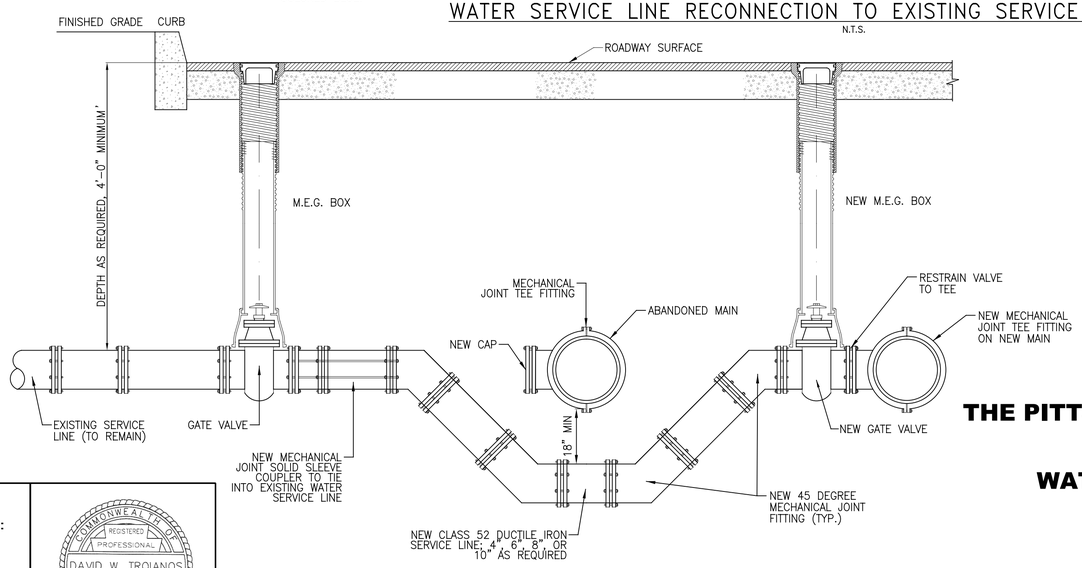
1. ONLY ONE PWSA METER WILL BE INSTALLED PER EACH SERVICE TAP.
2. DOMESTIC SERVICE IS 1" MINIMUM. FINAL SIZING FOR EACH SERVICE LINE IS TO BE BASED ON CONTRACTOR VERIFICATION PRIOR TO CONSTRUCTION. IF EXISTING WATER SERVICE LINE IS LARGER THAN 1", MATCH EXISTING DIAMETER. SEE "WATER SERVICE LINE 2" DOMESTIC / FIRE NEW INSTALLATION – WS–5NT2" DETAIL AND "SERVICE CONNECTION 4" THROUGH 10" – WS–A (MODIFIED)" DETAIL FOR WATER SERVICE LINES LARGER THAN 1.5 INCH DIAMETER.
3. PLAN VIEW IS SCHEMATIC AND NOT MEANT TO SHOW THE EXISTING SERVICE LINE VALVE LOCATION AND ORIENTATION AS IT RELATES TO THE NEW INSTALLATION.
4. THE SERVICE NUMBERS PROVIDED ON THE PLAN AND PROFILE SHEETS CORRESPOND TO THE SERVICE NUMBERS SHOWN ON THE WATER SERVICE LINE TABLES WITHIN THESE DRAWINGS. THESE TABLES PROVIDE ADDITIONAL DETAIL ON THE SIZE, LENGTH, AND MATERIAL OF EACH SERVICE LINE.
5. IN THE EVENT THAT THE SIDEWALK HAS BEEN RECENTLY REPLACED PER PEOPLE'S NATURAL GAS LINE INSTALLATIONS, COORDINATE WITH PWSA TO ASSESS CONDITION OF THE EXISTING VALVE BOXES IN THE FIELD. IF IN GOOD WORKING ORDER, PWSA MAY ELECT NOT TO REPLACE THE CURB BOX AND VALVE. CURB BOXES AND VALVES MAY ONLY REMAIN WITH THE OWNER'S APPROVAL.
6. EXISTING CURB BOX IS TO BE REMOVED. THE EXISTING SERVICE LATERAL FROM THE MAIN TO THE EXISTING CURB BOX IS TO BE CUT AND ABANDONED IN ACCORDANCE WITH PWSA STANDARD DETAILS AND SPECIFICATIONS.
7. FOR PEXα PIPE INSTALLATION, CORPORATION AND CURB STOPS SHALL BE COMPRESSION TYPE FITTINGS AND SHALL HAVE A TRACER WIRE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
8. POLYWRAP ALL METALLIC PIPE, FITTINGS AND VALVES.
9. PAVING MATERIAL TO MATCH EXISTING STREET SURFACE AND SHALL CONFORM WITH REQUIREMENTS OF OWNER.
10. CONCRETE SAW–CUT TO BE VERTICAL AND NEAT. CLEAN AND WET WHEN NEW CONCRETE IS POURED.
11. FOR TEMPORARY TRENCH REPAVING, SEE DETAIL WS–1ALT.
12. PROVIDE A MINIMUM 18–INCH HORIZONTAL CLEARANCE BETWEEN TAPS ON THE WATER MAIN.
13. TRACER WIRE SHALL BE MINIMUM NO. 14 AWG (HS–CCS). INSULATION SHALL BE 30 MIL THICK HDPE, RATED FOR 30 VOLTS, COLORED BLUE.



PLAN VIEW – 1" INSTALLATION STREET MAIN

WATER SERVICE LINE RECONNECTION TO EXISTING SERVICE (WS–5 MODIFIED) (FOR 1" SERVICE)

N.T.S.



WATER SERVICE LINE RECONNECTION TO EXISTING SERVICE (FOR 4" DIAMETER SERVICE AND LARGER)

N.T.S.

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE–048843–E

2.10.2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

CONSTRUCTION DETAILS

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 78 OF 166
ACCESSION NO. _____
CASE NO. _____

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Symbol	Description	Hydric	Prime Farmland	Amount of Project Activity	Limitations	BMP to Address Limitation
UCD	Urban land-Culleoka complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UCE	Urban land-Culleoka complex, steep, 25 to 25 Percent Slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
URB	Urban land-Rainsboro complex, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Easily Erodible, Depth to Saturated Zone/ Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWB	Urban land-Wharton complex, gently sloping, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWD	Urban land-Wharton complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
WEF	Weikert-Rock outcrop complex, 25 to 80 percent slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete and Steel, Droughty, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing

MATCH LINE STA. 433+50 SEE SHEET ES-2

MATCH LINE STA. 438+50 SEE SHEET ES-4

CHATHAM TOWER
AKA 112 WASHINGTON PLACE

TEMPORARY TREE PROTECTION (TYP.)

TEMPORARY COMPOST FILTER SOCK CONCRETE WASHOUT

TEMPORARY PUMPED WATER FILTER BAG AREA

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 12" WATER MAIN

CHATHAM PARKING GARAGE
AKA 112 WASHINGTON PLACE

PROP. 16" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

IP-503

IP-504

IP-559

IP-560

FIFTH AVE CONSTR 2

FIFTH AVE

DIAMOND ST

S 86°02'41" E

S 85°18'29" E

EX. 8" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

LEGAL R/W LINE

PARKING

URB

1.29.2021
REVISED WATER MAIN LOCATION

FIFTH AVENUE

SIXTH AVENUE
I-579
WASHINGTON PLACE
DIAMOND ST
VINE ST
FIFTH AVENUE
VAN BRAAM ST
DINWIDDIE ST
GIST ST
WYANDOTTE ST
SENECA ST
MOULTRIE ST
KIRKPATRICK ST
FORBES AVENUE
MCANULTY DR
CHATHAM SQUARE
BOYD ST
MAGEE ST
FORBES AVENUE
STEVENSON ST
PRIDE ST
MARION ST
MILTENBERGER ST
TUSTIN ST
JUMONVILLE ST
MOULTRIE ST
BLVD OF THE ALLIES
BIRMINGHAM BRIDGE
BLVD OF THE ALLIES

PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

REVISIONS

CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048843-E
1.29.2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION AND SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 86 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-3

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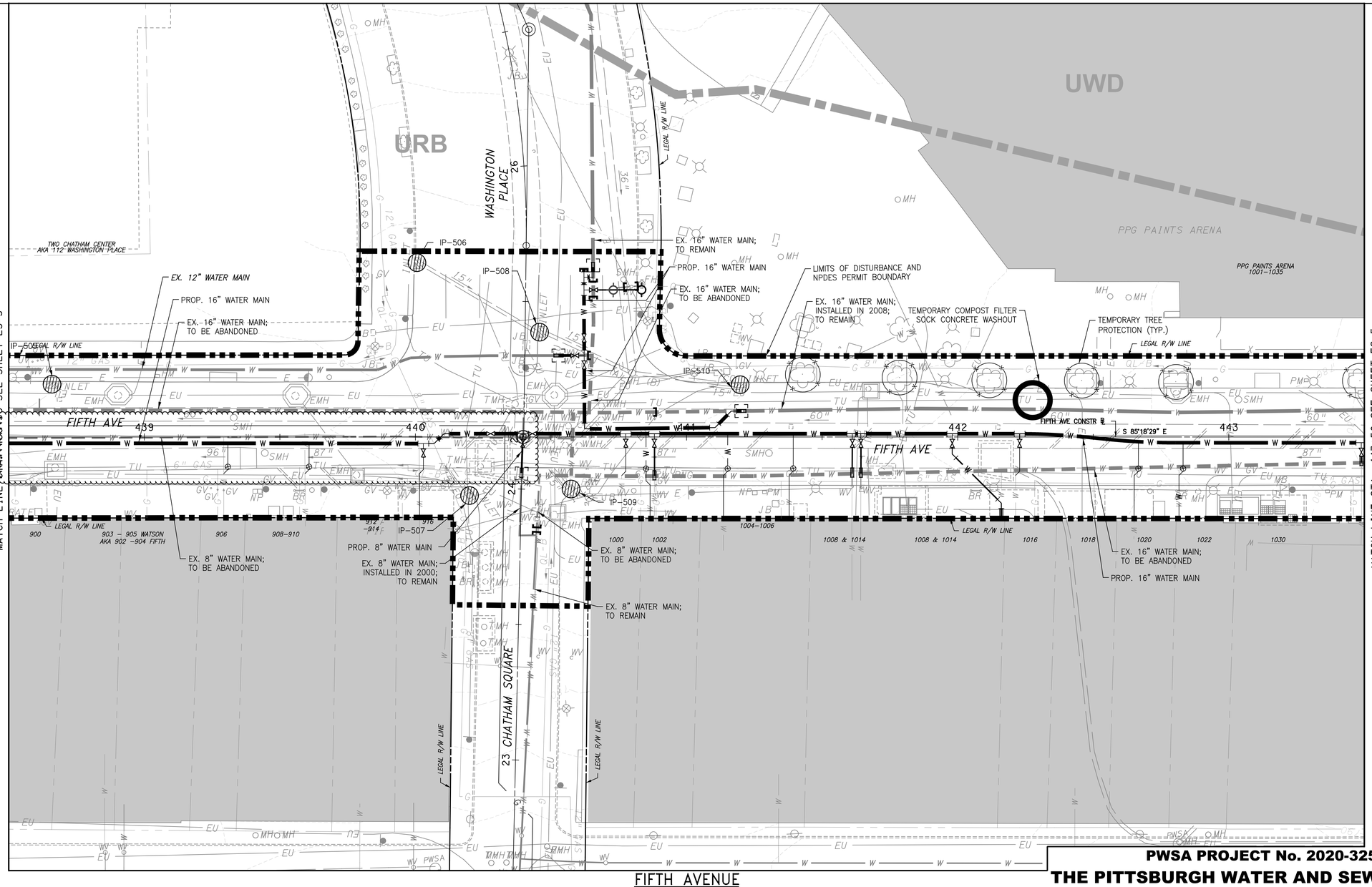
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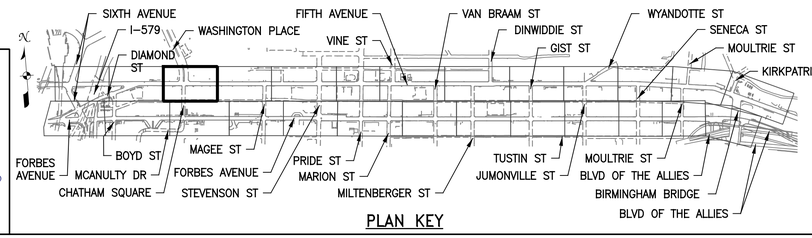
1.29.2021
REVISED WATER
MAIN LOCATION

MATCH LINE STA. 438+50 SEE SHEET ES-3

MATCH LINE STA. 443+50 SEE SHEET ES-5



FIFTH AVENUE



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 87 OF 166
ACCESSION NO. _____
CASE NO. _____

ES-4

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS		
CHARACTER		DATE

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SRVS/SB			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1.29.2021

PGH2O

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MATCH LINE STA. 133+50 SHEET ES-17

MATCH LINE STA. 138+50 SHEET ES-19

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

EX. 6" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO REMAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

TEMPORARY PUMPED WATER FILTER BAG AREA

TEMPORARY COMPOST FILTER SOCK, CONCRETE WASHOUT

URB

UCD

FORBES AVE

MAGEE ST

LEGAL R/W LINE

PWSA MANHOLE 5565
RIM = EL 805.91
INV EL 795.66

PWSA MANHOLE 5564
RIM = EL 808.34
INV EL 790.04

PWSA INLET 5400
RIM = EL 808.86
EL = 804.60. WATER

PWSA MANHOLE 5561
RIM = EL 807.69
INV EL 772.09

PWSA INLET 5401
RIM = EL 809.66, WATER

PWSA MANHOLE 5563
RIM = 76
INV EL X.X, PAVED

LIFE'S WORK OF WESTERN PA

AJ PALUMBO CENTER

IP-155 IP-156 IP-108 IP-109

1.29.2021
REVISED WATER MAIN LOCATION

N

FORBES AVENUE

SIXTH AVENUE, I-579, WASHINGTON PLACE, FIFTH AVENUE, VAN BRAAM ST, WYANDOTTE ST, DIAMOND ST, VINE ST, DINWIDDIE ST, SENECA ST, GIST ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, FORBES AVENUE, MAGEE ST, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 101 OF 166
ACCESSION NO. _____
CASE NO. _____

ES-18

REVIEWED FOR CONSTRUCTABILTY

CONSTRUCTION MGMNT SPRVSR — DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

CHARACTER	DATE

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'
REVISIONS

DESIGNED BY:
gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1.29.2021

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1.29.2021
REVISED WATER
MAIN LOCATION

MATCH LINE STA. 138+50 SHEET ES-18

MATCH LINE STA. 143+50 SHEET ES-20

PWSA MANHOLE 5566
RIM = EL 804.06
INV EL 776.56, (4' RECESS)

PWSA MANHOLE
MH002M017
PAVED OVER

FORBES STEVENSON
BUILDING

PWSA INLET 5403
RIM = EL 803.82
INV EL 799.42, WATER

PWSA MANHOLE 5575
RIM = EL 800.32
INV EL 782.82
INV EL 791.22, 15" PVC

LIMITS OF DISTURBANCE AND NPDES PERMIT BOUNDARY

LIMIT OF DISTURBANCE
NPDES BOUNDARY

LEGAL R/W LINE

PROP. 20" WATER MAIN

EX. 6" WATER MAIN;
TO BE ABANDONED

EX. 8" WATER MAIN;
TO REMAIN

EX. 8" WATER MAIN;
TO BE ABANDONED

PROP. 8" WATER MAIN

PROP. 8" WATER MAIN

IP-110

IP-111

IP-112

IP-113

IP-114

IP-157

IP-158

IP-159

IP-160

FORBES AVE CONSTR ℄

FORBES AVE

S 85°17'39" E

S 84°40'32" E

EX. 20" WATER MAIN;
TO BE ABANDONED

EX. 8" WATER MAIN;
TO BE ABANDONED

PROP. 6" WATER MAIN

EX. 8" WATER MAIN;
TO REMAIN

PROP. 8" WATER MAIN

TEMPORARY PUMPED
WATER FILTER BAG AREA

STEVENSON ST

URB

UCD

UWB

PWSA INLET 5571
RIM = EL 801.59
INV EL 778.49
(2' RECESS)

PWSA INLET 5402
RIM = EL 803.75
INV EL 799.25, WATER

PWSA MANHOLE
RIM = EL 800.34
INV EL 789.29

PWSA INLET 5407
RIM = EL 799.78
INV EL796.25, 15" PVC

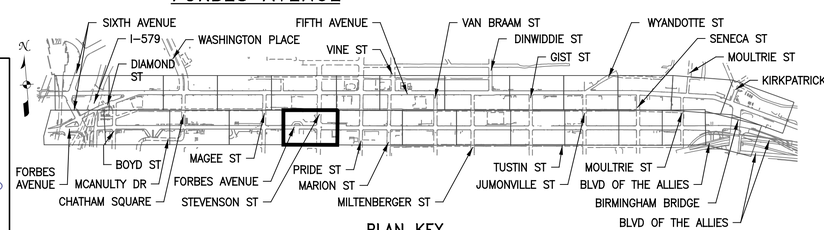
TO 1420

PARKING GARAGE

141 142 143

1323 1324 1304 1401 1425 1420

FORBES AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048842-E

1.29.2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE EROSION & SEDIMENT CONTROL PLAN

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 102 OF 166

ACCESSION NO. _____

CASE NO. _____

ES-19

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Symbol	Description	Hydric	Prime Farmland	Amount of Project Activity	Limitations	BMP to Address Limitation
UCD	Urban land-Culleoka complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UCE	Urban land-Culleoka complex, steep, 25 to 25 Percent Slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete, Easily Erodible, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
URB	Urban land-Rainsboro complex, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Easily Erodible, Depth to Saturated Zone/ Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWB	Urban land-Wharton complex, gently sloping, 0 to 8 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
UWD	Urban land-Wharton complex, moderately steep, 8 to 25 Percent Slopes	No	No	Some	Cutbanks Cave, Corrosive to Concrete and Steel, Easily Erodible, Depth to Saturated Zone/Seasonal High Water Table, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action, Shrink-Swell, Wetness	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing
WEF	Weikert-Rock outcrop complex, 25 to 80 percent slopes	No	No	Minimal	Cutbanks Cave, Corrosive to Concrete and Steel, Droughty, Low Strength/Landslide Prone, Slow Percolation, Piping, Poor Source of Topsoil, Frost Action	Pumped Water Filter Bag During Construction, Work is Proposed on Existing Hardscape Surfaces, Seed and Mulch Any Disturbed Vegetated Areas, Limited Work on Steep Slopes, Limited Work when Temperature is Below Freezing

MATCH LINE STA. 433+50 SEE SHEET RS-2

MATCH LINE STA. 438+50 SEE SHEET RS-4

CHATHAM TOWER
AKA 112 WASHINGTON PLACE

CHATHAM PARKING GARAGE
AKA 112 WASHINGTON PLACE

EX. 12" WATER MAIN

PROP. 16" WATER MAIN

EX. 16" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

EX. 8" WATER MAIN; TO BE ABANDONED

FIFTH AVE CONSTR 8

FIFTH AVENUE

DIAMOND ST

S 86°02'41" E

S 85°18'20" E

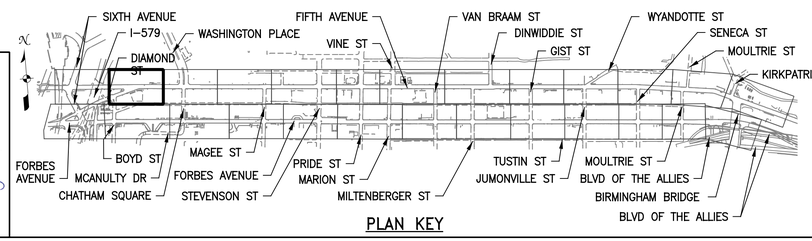
LEGAL R/W LINE

PARKING

URB

FIFTH AVENUE

1.29.2021
REVISED WATER MAIN LOCATION



PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 116 OF 166
ACCESSION NO. _____
CASE NO. _____

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1.29.2021

RS-3

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1.29.2021
REVISED WATER
MAIN LOCATION

MATCH LINE STA. 438+50 SEE SHEET RS-3

MATCH LINE STA. 443+50 SEE SHEET RS-5

N

URB

UWD

PPG PAINTS ARENA

PPG PAINTS ARENA
1001–1035

TWO CHATHAM CENTER
AKA 112 WASHINGTON PLACE

WASHINGTON PLACE

23 CHATHAM SQUARE

FIFTH AVE

FIFTH AVE CONSTR

S 85°18'29" E

LEGAL R/W LINE

EX. 12" WATER MAIN

PROP. 16" WATER MAIN

EX. 16" WATER MAIN;
TO BE ABANDONED

EX. 16" WATER MAIN;
TO REMAIN

EX. 16" WATER MAIN;
INSTALLED IN 2008;
TO REMAIN

EX. 8" WATER MAIN;
TO BE ABANDONED

PROP. 8" WATER MAIN

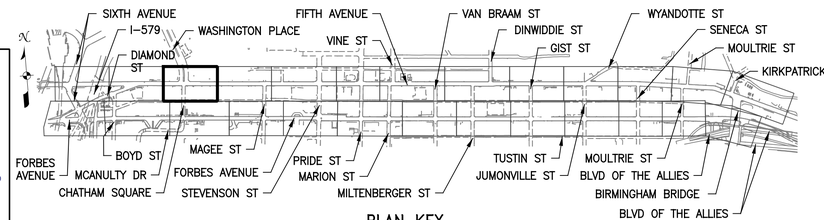
EX. 8" WATER MAIN;
INSTALLED IN 2000;
TO REMAIN

EX. 8" WATER MAIN;
TO REMAIN

439 440 441 442 443

900 903 – 905 WATSON
AKA 902 –904 FIFTH 906 908–910 912 –914 916 1000 1002 1004–1006 1008 & 1014 1008 & 1014 1016 1018 1020 1022 1030

FIFTH AVENUE



PLAN KEY

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION M&I/INT SPRV/SR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
DAVID W. TROIANOS
ENGINEER
PE-048843-E

1.29.2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FIFTH AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 117 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-4

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MATCH LINE STA. 133+50 SHEET RS-17

MATCH LINE STA. 138+50 SHEET RS-19

N

1.29.2021
REVISED WATER MAIN LOCATION

URB

UCD

FORBES AVE

MAGEE ST

EX. 6" WATER MAIN; TO BE ABANDONED

EX. 8" WATER MAIN; TO BE ABANDONED

EX. 20" WATER MAIN; TO BE ABANDONED

PROP. 20" WATER MAIN

PROP. 8" WATER MAIN

EX. 8" WATER MAIN; TO REMAIN

LEGAL R/W LINE

FORBES AVE CONSTR ℄

PWSA MANHOLE 5565
RIM = EL 805.91
INV EL 795.66

PWSA MANHOLE 5564
RIM = EL 808.34
INV EL 790.04

PWSA INLET 5400
RIM = EL 808.86
EL = 804.60. WATER

PWSA MANHOLE 5561
RIM = EL 807.69
INV EL 772.09

PWSA INLET 5401
RIM = EL 809.26
INV EL 805.66, WATER

PWSA MANHOLE 5563
RIM = EL X.X
INV EL X.X, PAVED

LIFE'S WORK OF WESTERN PA

AJ PALUMBO CENTER

PARKING

DENSE WOODS

GUIDE RAIL

FENCE

WALL

S'WALK

SIGN

POST

LP

MH

INLET

TO 1208

S 85°17'39" E

FORBES AVENUE

SIXTH AVENUE, I-579, DIAMOND ST, WASHINGTON PLACE, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, MAGEE ST, FORBES AVENUE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS

CHARACTER	DATE

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR — DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	F.PENDEL	J.FELLO
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E

1.29.2021

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 131 OF 166

ACCESSION NO. _____

CASE NO. _____

RS-18

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1/27/2021

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1.29.2021
REVISED WATER
MAIN LOCATION

MATCH LINE STA. 138+50 SHEET RS-18

MATCH LINE STA. 143+50 SHEET RS-20

PWSA MANHOLE 5566
RIM = EL 804.06
INV EL 776.56, (4' RECESS)

PWSA INLET 5403
RIM = EL 803.82
INV EL 799.42, WATER

PROP. 20" WATER MAIN

EX. 6" WATER MAIN; TO BE ABANDONED

LEGAL R/W LINE

FORBES AVE CONSTR ℄

S 85°17'39" E

FORBES AVE

EX. 20" WATER MAIN; TO BE ABANDONED

PWSA INLET 5571
RIM = EL 801.59
INV EL 778.49
(2' RECESS)

PWSA INLET 5402
RIM = EL 803.75
INV EL 790.25, WATER

PWSA MANHOLE
RIM = EL 800.34
INV EL 789.29

URB

UCD

EX. 8" WATER MAIN; TO REMAIN

EX. 8" WATER MAIN; TO BE ABANDONED

STEVENSON ST

PWSA MANHOLE
MH002M017
PAVED OVER

FORBES STEVENSON BUILDING

PWSA INLET 5403
RIM = EL 803.82
INV EL 799.42, WATER

PWSA MANHOLE 5575
RIM = EL 800.32
INV EL 782.82
INV EL 791.22, 15" PVC

PROP. 8" WATER MAIN

PROP. 8" WATER MAIN

PROP. 8" WATER MAIN

PWSA INLET 5407
RIM = EL 799.78
INV EL796.25', 15" PVC

UWB

TO 1420

1420

PARKING GARAGE

HANDICAP PARKING SIGNS

BR'S VAULT

BENCH

S 84°40'32" E

141 142 143

1323 1324 1304 1401 1425

N

FORBES AVENUE

SIXTH AVENUE, I-579, WASHINGTON PLACE, DIAMOND ST, FIFTH AVENUE, VINE ST, VAN BRAAM ST, DINWIDDIE ST, GIST ST, WYANDOTTE ST, SENECA ST, MOULTRIE ST, KIRKPATRICK ST, FORBES AVENUE, MCANULTY DR, CHATHAM SQUARE, BOYD ST, MAGEE ST, FORBES AVENUE, STEVENSON ST, PRIDE ST, MARION ST, MILTENBERGER ST, TUSTIN ST, JUMONVILLE ST, MOULTRIE ST, BLVD OF THE ALLIES, BIRMINGHAM BRIDGE, BLVD OF THE ALLIES

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE RESTORATION PLAN - FORBES AVENUE

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 132 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-19

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	F.PENDEL	J.FELLO	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:
gai consultants

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DAVID W. TROIANOS ENGINEER PE-048843-E
1.29.2021

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TABULATION OF TRAFFIC CONTROL DEVICES
(INCLUDED IN LUMP SUM ITEM U-1)
FOR INFORMATION ONLY

TRAFFIC CONTROL DEVICE	DEVICE SIZE OR UNIT	DESCRIPTION	CONSTRUCTION PHASE	TOTAL OR MAX NUMBER OF DEVICES
M4-4	24"X12"	TRUCK 2.10.2021 REVISED PER DOMI REQUIREMENTS	I	9
M4-8A	24"X18"	END DETOUR	I	4
M4-9SL	30"X24"	LEFT ADVANCE DETOUR	I	8
M4-9SR	30"X24"	RIGHT ADVANCE DETOUR	I	8
M4-9L	30"X24"	DETOUR, LEFT	I	8
M4-9R	30"X24"	DETOUR, RIGHT	I	8
M4-10L	48"X18"	DETOUR ARROW, LEFT	I	4
M4-10R	48"X18"	DETOUR ARROW, RIGHT	I	4
M4-9S	30"X24"	DETOUR, STRAIGHT	I	1
R3-1	24"X24"	NO RIGHT TURN	I	2
R3-2	24"X24"	NO LEFT TURN	I	2
R3-7-1L	30"X30"	ALL TRAFFIC MUST TURN LEFT	I	2
R3-8A	30"X30"	LANE USE CONTROL (L-R)	I	2
R5-1	30"X30"	DO NOT ENTER	I	2
R9-9	24"X12"	SIDEWALK CLOSED	I	4
R9-10	24"X12"	SIDEWALK CLOSED USE OTHER SIDE	I	4
R9-11A	24"X12"	SIDEWALK CLOSED CROSS HERE	I	4
R11-2	48"X30"	ROAD CLOSED	I	4
R11-4	60"X30"	ROAD CLOSED TO THRU TRAFFIC	I	4
R11-3A	60"X30"	ROAD CLOSED - LOCAL TRAFFIC ONLY	I	4
W4-2L	36"X36"	PAVEMENT WIDTH TRANSITION - LEFT LANE ENDS	I	8
W4-2R	36"X36"	PAVEMENT WIDTH TRANSITION - RIGHT LANE ENDS	I	8
W8-1	30"X30"	BUMP	I	4
W8-8	30"X30"	ROUGH ROAD	I	4
W11-2	30"X30"	PEDESTRIAN	I	8
W20-1	36"X36"	ROAD WORK	I	7
W20-2	36"X36"	ADVANCE DETOUR	I	4
W20-3	36"X36"	ROAD CLOSED	I	4
W20-4	36"X36"	ONE LANE ROAD	I	4
W20-5L	36"X36"	LEFT LANE CLOSED	I	4
W20-5R	36"X36"	RIGHT LANE CLOSED	I	4
W20-7	36"X36"	FLAGGER SYMBOL	I	4
W20-5AL	36"X36"	LEFT TWO LANES CLOSED	I	4
W20-5AR	36"X36"	RIGHT TWO LANES CLOSED	I	4
W23-101	96"X48"	THIS ROAD TO BE CLOSED FOR MAINTENANCE	I	4
W30-1-6	20"X6"	DISTANCE (AHEAD) (PANEL)	I	12
---	SF	ADDITIONAL TRAFFIC CONTROL SIGNS	I	200
---	DAY	ADDITIONAL WARNING LIGHTS, TYPE B	I	50
---	DAY	ADDITIONAL WARNING LIGHTS, TYPE C	I	100
---	DAY	CHANNELIZING DEVICES	I	12
---	HOUR	FLAGGING	I	12
---	DAY	FLOOD LIGHTS	I	56
---	EACH	ARROW PANEL	I	12
---	HOUR	OFF DUTY UNIFORMED POLICE OFFICER	I	250
---	DAY	SHADOW VEHICLE	I	520
---	EACH	TEMPORARY SIGN POST	I	52
---	DAY	TYPE B WARNING LIGHT	I	220
---	DAY	TYPE C WARNING LIGHT	I	800
---	EACH	TYPE III BARRICADE	I	20

2.10.2021 REVISED PER DOMI REQUIREMENTS

2.10.2021 REVISED PER DOMI REQUIREMENTS

CONSTRUCTION SEQUENCING

WORK DESCRIPTION

PHASE I - VEHICULAR TRAFFIC CONTROL

IMPLEMENT SHORT-TERM, OFF-PEAK DAYTIME AND NIGHTTIME TRAVEL AND PARKING LANE CLOSURES FOR PROJECT WORK SECTIONS ALONG BOTH FIFTH AVENUE AND FORBES AVENUE WITHIN THE CITY OF PITTSBURGH TO INSTALL WATER MAINS, LATERALS, AND SERVICE LINE SECTIONS. REFER TO THE SPECIAL PROVISION ENTITLED "SECTION 901" FOR THE RESTRICTION TIMES. PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES, NUTCD TYPICAL APPLICATIONS AND TRAFFIC CONTROL PLANS FOR TEMPORARY TRAFFIC CONTROL. UTILIZE THE APPROPRIATE PATA FIGURE, MUTCD TYPICAL APPLICATION, TRAFFIC CONTROL PLAN OR A COMBINATION THEREOF TO MAINTAIN TRAFFIC AT EACH SPECIFIED LOCATION OF WORK. CONTRACTOR TO COORDINATE SEQUENCING OF WORK SECTIONS WITH CITY OF PITTSBURGH, DEPARTMENT OF MOBILITY AND INFRASTRUCTURE. OPEN CITY STREETS TO ALL PARKING, TRAFFIC AND SIGNAL OPERATION AT THE END OF EACH WORKDAY.

UPON COMPLETION OF THE WATER MAINS, LATERALS, AND SERVICE LINE INSTALLATION WORK, RESTORE CITY STREETS DURING THE ALLOWABLE WORKING HOURS INDICATED WITHIN THE SPECIAL PROVISION ENTITLED "SECTION 901" IN ACCORDANCE WITH THE CONTRACT ROADWAY RESTORATION DETAILS. RESTORE TRAFFIC SIGNAL LOOP DETECTORS DAMAGED BY WATERLINE INSTALLATION. RESTORE PAVEMENT MARKINGS. CONTACT CITY OF PITTSBURGH, DEPARTMENT OF MOBILITY AND INFRASTRUCTURE, FOR TYPES AND LOCATIONS OF PAVEMENT MARKINGS, TO BE REPLACED IN KIND. PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES FOR TEMPORARY TRAFFIC CONTROL. UTILIZE THE APPROPRIATE PATA FIGURE OR A COMBINATION THEREOF TO MAINTAIN TRAFFIC AT EACH SPECIFIED LOCATION OF WORK. OPEN CITY STREETS TO ALL PARKING, TRAFFIC AND SIGNAL OPERATION AT THE END OF EACH WORKDAY.

PHASE I - PEDESTRIAN TRAFFIC CONTROL

PEDESTRIANS WILL REQUIRE ACCOMMODATION THROUGHOUT CONSTRUCTION. COMPLIANCE TO THE AMERICANS WITH DISABILITIES ACT (ADA) IS REQUIRED. DURING INSTALLATION OF THE WATER MAINS, LATERALS, AND SERVICE LINES WHERE THE WORK AREAS WILL ENCROACH UPON SIDEWALKS, PROVIDE TEMPORARY CONSTRUCTION FENCING AS REQUIRED TO SEPARATE PEDESTRIANS FROM WORK AREAS. MATCH EXISTING WIDTH WHERE LESS THAN 60 INCHES, OR MAINTAIN A MINIMUM WIDTH OF 60 INCHES THROUGHOUT THE ENTIRE LENGTH OF THE PEDESTRIAN PATHWAY. AT LOCATIONS WHERE THESE WIDTHS CANNOT BE MAINTAINED, PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE TABLE OF PENNDOT PUBLICATION 213 PENNSYLVANIA TYPICAL APPLICATION (PATA) FIGURES FOR TEMPORARY TRAFFIC CONTROL. WHERE REQUIRED FOR ADA COMPLIANCE, TEMPORARY WHEELCHAIR RAMPS SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR. MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES.

GENERAL NOTES

THIS WORK CONSISTS OF THE MAINTENANCE OF TRAFFIC AND THE PROTECTION OF THE TRAVELING PUBLIC APPROACHING THE CONSTRUCTION AREA AND WITHIN THE LIMITS OF CONSTRUCTION.

FURNISH, ERECT, PLACE AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES AND MAINTAIN TRAFFIC DURING HOURS OF CONSTRUCTION AND AT ALL OTHER TIMES IN ACCORDANCE WITH THE METHODS INDICATED ON THESE DRAWINGS AND,

1. THE SPECIAL PROVISIONS OF THE CONTRACT.
2. PA CODE, TITLE 67, CHAPTER 212, OFFICIAL TRAFFIC CONTROL DEVICES, (MARCH 2006).
3. PDT PUBLICATION 213, TEMPORARY TRAFFIC CONTROL GUIDELINES, (JUNE 2014).
4. PDT PUBLICATION 35, APPROVED CONSTRUCTION MATERIALS (BULLETIN 15), (AUGUST 2020).
5. PDT PUBLICATION 408, SPECIFICATIONS, DATED 2020.
6. PDT PUBLICATION 236, HANDBOOK OF APPROVED SIGNS, (NOVEMBER 2013).
7. PDT PUBLICATION 111, TRAFFIC CONTROL-PAVEMENT MARKINGS AND SIGNING STANDARDS, TC-8600 AND TC-8700 SERIES.
8. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), (2009 EDITION).

IMMEDIATELY UPON COMPLETION OF THE WORK, REMOVE SIGNS AND DEVICES. FOR TYPE "B" AND TYPE "C" MOUNTED SIGNS, REMOVE POSTS COMPLETELY. THE PWSA WILL REMOVE ANY TRAFFIC CONTROL DEVICES ERECTED BY PWSA FORCES.

THE TRAFFIC CONTROL PLAN DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY AS SPECIFIED IN SECTION 901.3(a) OF PENNDOT PUBLICATION 408.

SIGN LOCATIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.

ALL SIGNS AND DEVICES SHALL BE NEW AT THE BEGINNING OF THE PROJECT, AND MAINTAINED IN NEW CONDITION AND TO THE CITY OF PITTSBURGH'S SATISFACTION THROUGHOUT THE DURATION OF THE PROJECT.

THESE PLANS HAVE BEEN REVIEWED AND ARE IN COMPLIANCE WITH STANDARDS PRESCRIBED IN CHAPTER 212 OF THE 67 PA. CODE AS CURRENTLY AMENDED.

NOTE THAT THIS APPROVAL DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR THE PROTECTION OF THE PUBLIC AND THE CONSTRUCTION PERSONNEL. THE STANDARDS PRESCRIBED ARE MINIMUM AND ADDITIONAL PROTECTION MAY BE NECESSARY IF PROBLEMS ARE ENCOUNTERED DURING THE TERM OF THE CONTRACT. CONSTANTLY REVIEW THIS PLAN FOR ADEQUACY AND RECOMMEND CHANGES FOR CITY OF PITTSBURGH APPROVAL WHEN INADEQUACIES ARE DISCOVERED.

THE CONTRACTOR HAS THE OPTION TO SUBMIT ALTERNATE TRAFFIC CONTROL PLANS FOR CONSIDERATION. THESE PLANS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF PENNSYLVANIA, AND SHALL BE CONSISTENT WITH STANDARD DESIGN PRACTICES. THE CITY OF PITTSBURGH WILL ALLOW NO CONSTRUCTION ACTIVITY UNTIL THE CONTRACTOR'S ALTERNATE PLANS ARE APPROVED IN WRITING BY THE CITY TRAFFIC ENGINEER. MODIFICATIONS TO THE APPROVED MPT PLAN SHALL BE APPROVED BY THE CITY TRAFFIC ENGINEER OR AUTHORIZED REPRESENTATIVE.

THE CONTRACTOR SHALL HAVE A SUFFICIENT AMOUNT OF THE FOLLOWING SIGNS AVAILABLE IN CASE THEIR USE BECOMES NECESSARY: W3-4 "BE PREPARED TO STOP" AND W20-7 "FLAGGER SYMBOL." THESE SIGNS ARE NOT INTENDED TO BE PART OF THE REQUIRED NORMAL TRAFFIC CONTROL OR A SUPPLEMENT THERETO.

REPORT ALL TRAFFIC INCIDENTS WITHIN THE PROJECT LIMITS TO THE CITY TRAFFIC ENGINEER BY COPY OF THE TRAFFIC ACCIDENT REPORT FROM THE CITY OF PITTSBURGH POLICE.

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PA ONE-CALL SYSTEM, INC. AT 1-800-242-1776 AT LEAST THREE (3) WORKING DAYS PRIOR TO DIGGING. PA ONE-CALL SHOULD BE CONTACTED BEFORE ANY SIGN POST ANCHOR IS DRIVEN INTO THE GROUND FOR ANY TEMPORARY AND/OR PERMANENT SIGNING.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED CITY OF PITTSBURGH PERMITS; INCLUDING, BUT NOT LIMITED TO: TRAFFIC OBSTRUCTION PERMIT, TEMPORARY BUS STOP RELOCATION PERMIT, AND SIDEWALK OR STREET OPENING PERMIT.

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PORT AUTHORITY OF ALLEGHENY COUNTY AT LEAST TWO (2) WEEKS PRIOR TO BEGINNING CONSTRUCTION WHICH CLOSES OR RESTRICTS TRAVEL ON ANY STREET WHICH THE AUTHORITY HAS A BUS ROUTE ON.

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location of and/or existence of utilities and other structures, and neither the City nor the PWSA assumes any responsibility for any conclusions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

2/10/2021 10:57:35 AM

REVIEWED FOR CONSTRUCTABILTY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	S.WALKER	M.GAVULA
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — RICHARD A KRAJCOVIC JR — PE073624

2/10/2021

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL TABLE

GENERAL NOTES & QUANTITIES

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 157 OF 166
ACCESSION NO. _____
CASE NO. _____

GAI CAD FILE PATH: Z:\Infra\2019\C190577.01 - PWSA BRT Water Dist\CAD\Traffic\Plans\C190577.01MPTKEY01.dgn

ROAD CLOSURE - DETOUR ROUTES

	LOCATION	NB DIRECTION	SB DIRECTION	INBOUND DIRECTION
FORBES AVENUE CORRIDOR	FORBES AVE (INBOUND) AT BOYD STREET	-	-	BOYD STREET TO DIAMOND STREET TO SIXTH AVENUE TO FORBES AVENUE
	FORBES AVE (INBOUND) AT ARMSTRONG TUNNEL	-	-	CHATHAM SQUARE TO FIFTH AVENUE TO DIAMOND STREET TO SIXTH AVENUE TO FORBES AVENUE
	BOYD STREET(N)	FORBES AVENUE TO CHATHAM SQUARE TO FIFTH AVENUE TO DIAMOND STREET TO BOYD STREET	DIAMOND STREET TO SIXTH AVE TO FIFTH AVENUE TO BOYD STREET(N)	
	CHATHAM SQUARE	FORBES AVENUE TO MAGEE STREET TO FIFTH AVENUE TO CHATHAM SQUARE	FIFTH AVENUE TO DIAMOND STREET TO BOYD STREET TO FORBES AVENUE TO CHATHAM SQUARE	
	McANULTY DRIVE	LOCUST STREET TO BOYD STREET TO FORBES AVENUE TO McANULTY DRIVE	FORBES AVENUE TO MAGEE STREET TO LOCUST STREET TO McANULTY DRIVE	
	MAGEE STREET(N)	FORBES AVENUE TO STEVENSON STREET TO FIFTH AVENUE TO MAGEE STREET(N)	FIFTH AVENUE TO CHATHAM SQUARE TO FORBES AVENUE TO MAGEE STREET(N)	
	MAGEE STREET(S)	LOCUST STREET TO McANULTY DRIVE TO FORBES AVENUE TO MAGEE STREET(S)	FORBES AVENUE TO STEVENSON STREET TO SELTZ STREET TO LOCUST STREET TO MAGEE STREET(S)	
	STEVENSON STREET(N)	FORBES AVENUE TO PRIDE STREET TO FIFTH AVENUE TO STEVENSON STREET(N)	FIFTH AVENUE TO MAGEE STREET TO FORBES AVENUE TO STEVENSON STREET(N)	
	STEVENSON STREET(S)	LOCUST STREET TO PRIDE STREET TO FIFTH AVENUE TO STEVENSON STREET(S)	FORBES AVENUE TO PRIDE STREET TO LOCUST STREET TO STEVENSON STREET(S)	
	PRIDE STREET(N)	FORBES AVENUE TO MARION STREET TO FIFTH AVENUE TO PRIDE STREET(N)	FIFTH AVENUE TO MARION STREET TO FORBES AVENUE TO PRIDE STREET(N)	
	PRIDE STREET(S)	LOCUST STREET TO STEVENSON STREET TO FORBES AVENUE TO PRIDE STREET(S)	FORBES AVENUE TO MARION STREET TO LOCUST STREET TO PRIDE STREET(S)	
	MARION STREET(N)	FORBES AVENUE TO VAN BRAAM STREET TO FIFTH AVENUE TO MARION STREET(N)	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO MARION STREET(N)	
	MARION STREET(S)	LOCUST STREET TO PRIDE STREET TO FORBES AVENUE TO MARION STREET(S)	FORBES AVENUE TO VAN BRAAM STREET TO LOCUST STREET TO MARION STREET(S)	
	VAN BRAAM STREET(N)	FORBES AVENUE TO MILTENBURGER STREET TO FIFTH AVENUE TO VAN BRAAM STREET(N)	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO VAN BRAAM STREET(N)	
	VAN BRAAM STREET(S)	LOCUST STREET TO MARION STREET TO FORBES AVENUE TO VAN BRAAM STREET(S)	FORBES AVENUE TO MILTENBURGER STREET TO LOCUST STREET TO VAN BRAAM STREET(S)	
	MILTENBURGER STREET(N)	FORBES AVENUE TO GIST STREET TO FIFTH AVENUE TO MILTENBURGER STREET(N)	FIFTH AVENUE TO VAN BRAAM STREET TO FORBES AVENUE TO MILTENBURGER STREET(N)	
	MILTENBURGER STREET(S)	LOCUST STREET TO VAN BRAAM STREET TO FORBES AVENUE TO MILTENBURGER STREET(S)	FORBES AVENUE TO GIST STREET TO LOCUST STREET TO MILTENBURGER STREET(S)	
	GIST STREET(N)	FORBES AVENUE TO JUMONVILLE STREET TO FIFTH AVENUE TO GIST STREET(N)	FIFTH AVENUE TO MILTENBURGER STREET TO FORBES AVENUE TO GIST STREET(N)	
	GIST STREET(S)	LOCUST STREET TO MILTENBURGER STREET TO FORBES AVENUE TO GIST STREET(S)	MILTENBURGER STREET TO LOCUST STREET TO GIST STREET(S)	
	JUMONVILLE STREET(S)	-	FORBES AVENUE TO SENECA STREET TO TUSTIN STREET TO JUMONVILLE STREET(S)	
	SENECA STREET(N)	FORBES AVENUE TO MOULTRIE STREET TO FIFTH AVENUE TO SENECA STREET(N)	FIFTH AVENUE TO GIST STREET TO FORBES AVENUE TO SENECA STREET(N)	
	SENECA STREET(S)	TUSTIN STREET TO JUMONVILLE STREET TO FORBES AVENUE TO SENECA STREET(S)	FORBES AVENUE TO MOULTRIE STREET TO TUSTIN STREET TO SENECA STREET(S)	
	MOULTRIE STREET(N)	SENECA STREET TO WATSON STREET TO MOULTRIE STREET(N)	FIFTH AVENUE TO SENECA STREET TO FORBES AVENUE TO MOULTRIE STREET(N)	
	MOULTRIE STREET(S)	TUSTIN STREET TO SENECA STREET TO FORBES AVENUE TO MOULTRIE STREET(S)	SENECA STREET TO TUSTIN STREET TO MOULTRIE STREET(S)	

(N)-SIDE STREET APPROACH LOCATED NORTH OF FIFTH AVENUE OR FORBES AVENUE.
(S)-SIDE STREET APPROACH LOCATED SOUTH OF FIFTH AVENUE OR FORBES AVENUE.

	LOCATION	NB DIRECTION	SB DIRECTION
FIFTH AVENUE CORRIDOR	CHATHAM SQUARE	FORBES AVENUE TO MAGEE STREET TO FIFTH AVENUE TO CHATHAM SQUARE	FIFTH AVENUE TO DIAMOND STREET TO BOYD STREET TO FORBES AVENUE TO CHATHAM SQUARE
	MAGEE STREET	FORBES AVENUE TO STEVENSON STREET TO FIFTH AVENUE TO MAGEE STREET	FIFTH AVENUE TO CHATHAM SQUARE TO FORBES AVENUE TO MAGEE STREET
	LOGAN STREET	STEVENSON STREET TO OUR WAY TO LOGAN STREET	OUR WAY TO STEVENSON STREET TO LOGAN STREET
	STEVENSON STREET(N)	PRIDE STREET TO COLWELL STREET TO STEVENSON STREET(N)	COLWELL STREET TO PRIDE STREET TO STEVENSON STREET(N)
	STEVENSON STREET(S)	FORBES AVENUE TO PRIDE STREET TO FIFTH AVENUE TO STEVENSON STREET(S)	FIFTH AVENUE TO MAGEE STREET TO FORBES AVENUE TO STEVENSON STREET(S)
	PRIDE STREET(N)	STEVENSON STREET TO COLWELL STREET TO PRIDE STREET(N)	REED STREET TO VINE STREET TO FIFTH AVENUE TO PRIDE STREET(N)
	PRIDE STREET(S)	FORBES AVENUE TO PRIDE STREET TO FIFTH AVENUE TO PRIDE STREET(S)	FIFTH AVENUE TO STEVENSON STREET TO FORBES AVENUE TO PRIDE STREET(S)
	MARIAN STREET	FORBES AVENUE TO VAN BRAAM STREET TO FIFTH AVENUE TO MARION STREET	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO MARION STREET
	VINE STREET	FORBES AVENUE TO PRIDE STREET TO REED STREET TO VINE STREET	COLWELL STREET TO DINWIDDIE STREET TO FIFTH AVENUE TO VINE STREET
	VAN BRAAM STREET	FORBES AVENUE TO MILTENBURGER STREET TO FIFTH AVENUE TO VAN BRAAM STREET	FIFTH AVENUE TO PRIDE STREET TO FORBES AVENUE TO VAN BRAAM STREET
	MILTENBURGER STREET	FORBES AVENUE TO GIST STREET TO FIFTH AVENUE TO MILTENBURGER STREET	FIFTH AVENUE TO VAN BRAAM STREET TO FORBES AVENUE TO MILTENBURGER STREET
	DINWIDDIE STREET	VINE STREET TO COLWELL STREET TO DINWIDDIE STREET	COLWELL STREET TO VINE STREET TO DINWIDDIE STREET
	GIST STREET	FORBES AVENUE TO JUMONVILLE STREET TO FIFTH AVENUE TO GIST STREET	FIFTH AVENUE TO MILTENBURGER STREET TO FORBES AVENUE TO GIST STREET
	JUMONVILLE STREET	FORBES AVENUE TO SENECA STREET TO FIFTH AVENUE TO JUMONVILLE STREET	FIFTH AVENUE TO GIST STREET TO FORBES AVENUE TO JUMONVILLE STREET
	SENECA STREET	FORBES AVENUE TO MOULTRIE STREET TO FIFTH AVENUE TO SENECA STREET	FIFTH AVENUE TO GIST STREET TO FORBES AVENUE TO SENECA STREET
	MOULTRIE STREET	FORBES AVENUE TO SENECA STREET TO FIFTH AVENUE TO MOULTRIE ST	FIFTH AVENUE TO SENECA STREET TO FORBES AVENUE TO MOULTRIE STREET
	WASHINGTON PLACE (1)	FIFTH AVENUE TO SIXTH AVENUE TO CENTER AVENUE TO WASHINGTON PLACE	

(1) TRUCK DETOUR - NB DIRECTION ONLY

2.10.2021 REVISED PER DOMI REQUIREMENTS

REVIEWED FOR CONSTRUCTABILITY

CONSTRUCTION MGMNT SPRVSR DATE

FIELD DATA	DRAWN	SUPERVSD.
BY	S.WALKER	M.GAVULA
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

REVISIONS

CHARACTER	DATE

PGH2O

DESIGNED BY: gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624
2/10/2021

PLAN KEY

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL TABLE

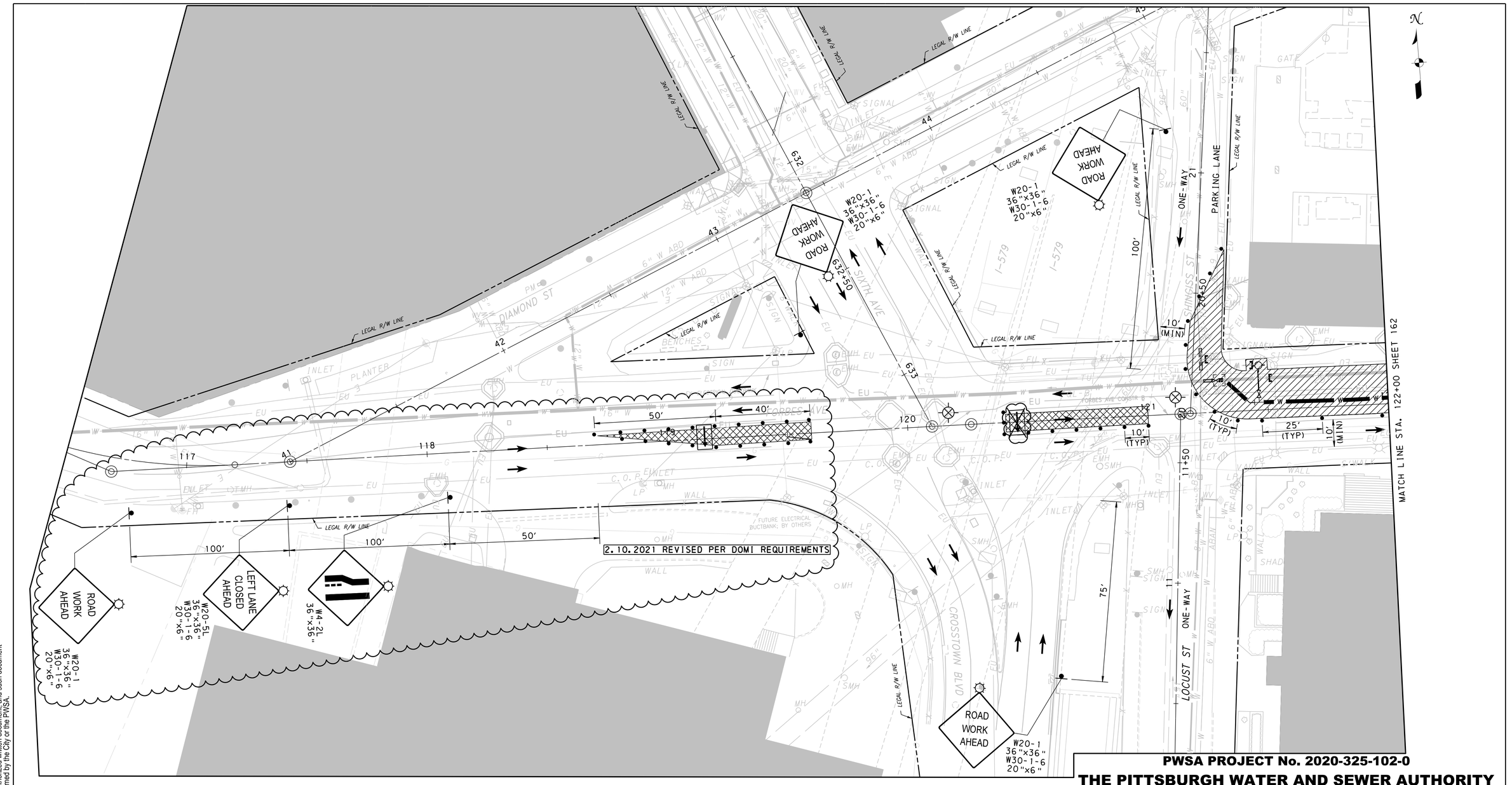
ROAD CLOSURE - DETOUR ROUTES

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 160 OF 166
ACCESSION NO. _____
CASE NO. _____

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REVIEWED FOR CONSTRUCTABILITY		
CONSTRUCTION MGMNT SPRVSR		DATE
FIELD DATA	DRAWN	SUPERVSD.
BY	S.WALKER	M.GAVULA
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.
CALC. BOOK	PG.	

PLAN VIEW SCALE: 1" = 20'

20' 0 20' 40'

REVISIONS	
CHARACTER	DATE

DESIGNED BY:

gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624

2/10/2021

LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
- TYPE B FLASHING LIGHT
- WORK AREA
- LANE CLOSED TO TRAFFIC
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL PLAN

SIXTH AVE TO BOYD STREET (1 OF 2)

SCALE: AS NOTED
DATE: JANUARY, 2021

SHEET NO. 161 OF 166

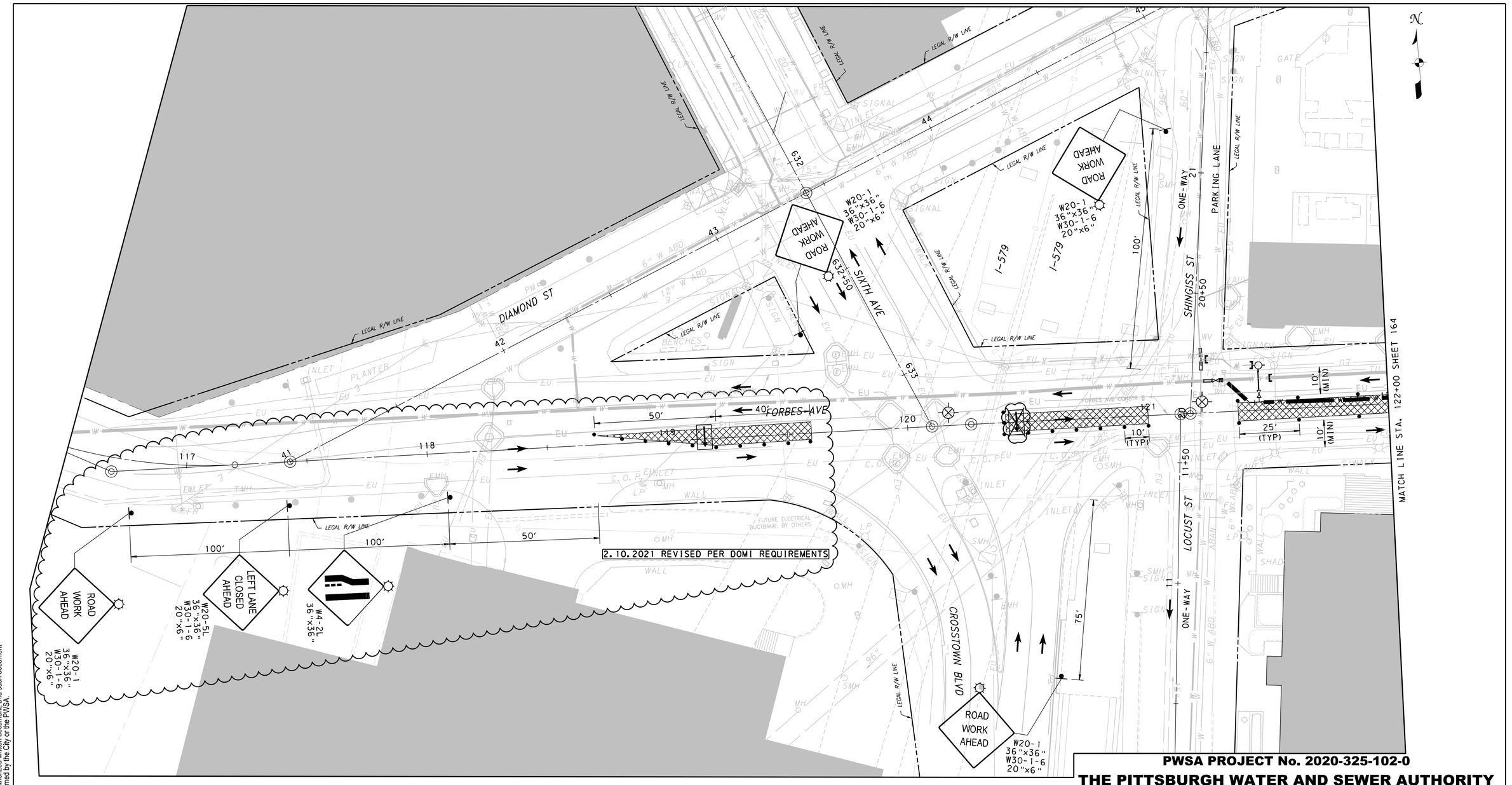
ACCESSION NO. _____

CASE NO. _____

RS-15

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PWSA PROJECT No. 2020-325-102-0

THE PITTSBURGH WATER AND SEWER AUTHORITY

BUS RAPID TRANSIT

WATER DISTRIBUTION IMPROVEMENTS

FIFTH AVENUE AND FORBES AVENUE

TRAFFIC CONTROL PLAN

BOYD STREET TO ARMSTRONG TUNNEL (1 OF 2)

SCALE: AS NOTED
DATE: JANUARY, 2021
SHEET NO. 163 OF 166
ACCESSION NO. _____
CASE NO. _____

RS-15

REVIEWED FOR CONSTRUCTABILITY			
CONSTRUCTION MGMNT SPRVSR			DATE
FIELD DATA	DRAWN	SUPERVSD.	
BY	S.WALKER	M.GAVULA	
VOL.			
CHECKED	INSPECT'D	CKD.-CONST.	
CALC. BOOK		PG.	

PLAN VIEW SCALE: 1" = 20'
20' 0 20' 40'

REVISIONS		
	CHARACTER	DATE

PGH2O

DESIGNED BY:
gai consultants

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
RICHARD A KRAJCOVIC JR
ENGINEER
PE073624
2/10/2021

LEGEND

- EXISTING TRAFFIC SIGNAL
- TYPE III BARRICADE
- PORTABLE SIGN POST
- CHANNELIZING DEVICE
- TYPE B FLASHING LIGHT
- WORK AREA
- LANE CLOSED TO TRAFFIC
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL

DISCLAIMER: Neither the City of Pittsburgh nor the PWSA guarantees the accuracy of any of the information hereby made available, including but not limited to information concerning the location and condition of water lines and other utilities and structures or the existence of other conditions or interpretations made on the basis of such information. The City and the PWSA assume no responsibility for any understanding or representations made by its agents or employees unless such understanding or representations are expressly set forth in a duly authorized written document, and such document expressly provides that responsibility therefor is assumed by the City or the PWSA.

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Pittsburgh Water & Sewer Authority

February 17, 2021

ADDENDUM NO. #3

FOR

INVITATION FOR BIDS
BUS RAPID TRANIST WATER DISTRIBUTION IMPROVIEMENTS

PWSA PROJECT NO. 2020-325-102-0

The following changes/additions/clarifications/replacements are applicable to the above-referenced solicitation:

QUESTIONS:

Q1: My first question is regarding the termination of service lines to abandoned buildings. Will we be required to verify the material of service, remove the curb box, and backfill hole for vacant buildings?

A1: For the purposes of PWSA water distribution projects, abandoned buildings are categorized as either "vacant" or "condemned". Vacant buildings with existing water services are to be treated by the Contractor as if they were an occupied structure. Specifically, the Contractor will be required to verify service line material. Property owner notification and any service line terminations, if necessary, will also be performed at vacant buildings in accordance with Specification 02515 (Water Service Connections), Item 1.11 (Property Owner Notification).

Condemned buildings (typically indicated through a blue notice posted at the property) will not require service line material verification or new service installations. If curb stops are present at a condemned building in a concrete area, the Contractor shall remove the curb box lid, fill the box with stone to within 6" of surface and fill the remainder of the box with concrete to grade. For curb stops present at a condemned building in a landscaped area, the Contractor shall remove the curb box and backfill the disturbed area to grade. Vacant lots in the project area where no buildings or other improvements are present shall be treated by the Contractor the same as a lot with a condemned building.

Penn Liberty Plaza I
1200 Penn Avenue
Pittsburgh PA 15222

info@pgh2o.com
T 412.255.2423
F 412.255.2475

www.pgh2o.com
@pgh2o

Customer Service /
Emergencies:
412.255.2423

Pittsburgh Water & Sewer Authority

Q2: My second question is regarding the depth of Water Mains. When installing the double Water Mains on Fifth Ave, at what depth will one Water Main be installed compared to the parallel Water Main if services are only to be tapped by one specific Water Main? Also, what dictates the depth of the Water Main for tie-ins on side streets? The depth is almost doubled when compared to Fifth and Forbes Aves.

A2: Depth of proposed water mains is related to 4 ft minimum cover and required depth shown for crossing other utilities. When crossing utilities, it is required to avoid creating a high spot in the water main. This often requires additional depth for a distance along the new water main. As indicated in General Note 21 (Underground Facilities) of Drawing Sheet 2, the Contractor is required to verify elevations and dimensions of subsurface utilities prior to construction.

ALL OTHER TERMS & CONDITIONS OF THIS SOLICITATION SHALL REMAIN THE SAME.

EXHBIT C
Third Amendment to Agreement Between Owner and Engineer for Professional Services and Task Order No. HT-CM-34

THIRD AMENDMENT TO AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES AND TASK ORDER NO. HT-CM-34

THIS THIRD AMENDMENT TO AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES AND TASK ORDER NO. HT-CM-34 ("Third Amendment") is made this _____ day of May 2022, by and between Owner, The Pittsburgh Water and Sewer Authority ("Owner") and Engineer, Hatch Associates ("Engineer"):

WHEREAS, on or about September 17, 2019, Owner and Engineer entered into the Agreement between Owner and Engineer for Professional Services (the "Agreement") relating to Engineer providing professional services for specific projects as defined under applicable Task Order(s); and

WHEREAS, the Port Authority of Allegheny County is implementing a Bus Rapid Transportation Project to connect Downtown Pittsburgh with Uptown, Oakland and other East End neighborhoods (the "Project"); and

WHEREAS, on or about April 7, 2021, Owner and Engineer entered into Task Order No. HT-CM-34 (the "Task Order") relating to Engineer providing Construction Management/Construction Inspection Services for the Bus Repaid Transit Water Distribution Improvements Project; and

WHEREAS, on or about March 29, 2022, Owner and Engineer entered into Task Order No. HT-CM-34 Amendment 1 (the "First Amendment") relating to Engineer providing Construction Management/Construction Inspection Services for the Bus Repaid Transit Water Distribution Improvements Project; and

WHEREAS, on or about April 29, 2022, Owner and Engineer entered into Task Order No. HT-CM-34 Amendment 2 (the "Second Amendment") relating to Engineer providing Construction Management/Construction Inspection Services for the Bus Repaid Transit Water Distribution Improvements Project; and

WHEREAS, Owner is party to a Cost Sharing and Restoration Work Agreement with Natural Gas Company LLC ("Peoples") and Duquesne Light Company ("Duquesne Light") for Peoples and Duquesne Light to reimburse the PWSA for certain costs associated with the contractor's performance and Engineer's monitoring of the contractor's performance on the Project; and

NOW THEREFORE, in exchange of sufficient and mutual consideration, the receipt of which is hereby acknowledged by Owner and Engineer, and with the intent of being legally bound hereby, Owner and Engineer hereby agree as follows:

1. The above-recital clauses are incorporated herein by reference and any attached exhibits are fully incorporated as part of this Third Amendment.

2. This Third Amendment is entered into and agreed upon solely for Engineer's performance of Construction Management/Construction Inspection Services on behalf of Owner, under the Task Order but solely related to the performance of Construction Management/Construction Inspection Services under the Cost Sharing and Restoration Work Agreement by and between Owner, Duquesne Light and Peoples. This Third Amendment shall not apply to any other Task Order entered into between Owner and Engineer under the Agreement.

3. Except as explicitly provided herein, all terms, conditions and provisions of the Agreement, the Task Order, First Amendment and Second Amendment shall continue in full force and effect and shall remain unchanged. Owner and Engineer expressly agree that all other provisions of the Agreement, the Task Order, First Amendment and Second Amendment shall govern and control this Third Amendment and the agreement between Owner and Engineer. In the event of a conflict between the terms of the Agreement, the Task Order, First Amendment and Second Amendment and this Third Amendment, this Third Amendment shall control.

4. Owner's receipt of reimbursement from Peoples and/or Duquesne Light on the Project is not a pre-requisite to Owner's obligations under the Agreement, Task Order, First Amendment and Second Amendment and the payment terms set forth in the Agreement control.

5. Engineer shall not, at any time, supervise, direct, control or have authority over Peoples and/or Duquesne Light, or their respective contractors, subcontractors, materialman or vendors, and shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by Peoples and/or Duquesne Light, or their respective contractors, subcontractors, materialman or vendors, or the safety precautions or programs incident thereto, or for the failure of Peoples and/or Duquesne Light, or their respective contractors, subcontractors, materialman or vendors, to comply with the Applicable Laws.

6. Owner and Engineer agree that Engineer shall add the City of Pittsburgh, Peoples and Duquesne Light to the Certificate of Insurance.

7. Owner and Engineer agree that Section 6.11, Indemnification and Mutual Waiver, of the Agreement shall be modified as follows:

> A. *Indemnification by Engineer:* To the fullest extent permitted by Laws and Regulations, Engineer shall defend, indemnify and hold harmless Owner, Duquesne Light Company, Peoples Natural Gas, the City of Pittsburgh and ~~Owner's~~ their respective officers, directors, members, partners, agents, consultants, and employees from losses, damages, and judgments (including reasonable consultants' and attorneys' fees and expenses) arising from and against any and all claims, damages, losses, expenses and/or actions relating to and/or arising from this ~~Agreement, any Task Order, or any~~ Specific Project, provided that any such claim, action, loss, damages, or judgment is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting

therefrom, but only to the extent caused by any negligent act or omission of Engineer or Engineer's officers, directors, members, partners, agents, employees, or Consultants.

B. To the fullest extent permitted by law, Engineer shall defend, indemnify and hold harmless Owner, Duquesne Light Company, Peoples Natural Gas, the City of Pittsburgh and their respective~~, its~~ officers, agents and employees, from and against claims and damages arising out of or resulting from the performance of the professional services ~~of Owner~~ under this ~~Agreement, any Task Order or any~~ Specific Project, but only to the extent caused in whole or in part by the negligent acts or omissions of Engineer, its employees, agents or persons for whose acts Engineer may be liable.

C. To the fullest extent permitted by law, Engineer shall defend, indemnify, save and hold harmless, and defend Owner, Duquesne Light Company, Peoples Natural Gas, the City of Pittsburgh and their respective~~,, its~~ officers, agents and employees from all liens, charges, claims, demands, losses, costs, judgments, liabilities and damages of every kind and nature whatsoever, including, but not limited to, court costs and attorney's fees arising from or based upon any violation by Engineer of any applicable laws, regulations, ordinances or codes.

D. The defense and indemnification obligations accepted by Engineer shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by Engineer, or by Engineer's subcontractors or permitted assigns, pursuant to any applicable workers' compensation statute or disability benefit statute or any other employee benefit law, rule or regulation.

E. *Mutual Waiver*: To the fullest extent permitted by law, Owner and Engineer waive against each other, and the other's employees, officers, directors, members, agents, insurers, partners, and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages arising out of, resulting from, or in any way related to this Agreement, any Task Order, or a Specific Project, from any cause or causes. Owner shall obtain similar waivers from Duquesne Light Company and Peoples Natural Gas.

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WHEREUPON, Owner and Engineer have executed this Third Amendment intending to be legally bound hereby on the date and year first written above.

WITNESS:

Debra Gibson

THE PITTSBURGH WATER AND SEWER AUTHORITY

By: William J. Pickering
William Pickering
Chief Executive Officer

Approved as to form:

Monica Walaan
Authority Legal Counsel

Edward Barca
Director of Finance

WITNESS:

HATCH ASSOCIATES CONSULTANTS

By: Mutombo, David
Digitally signed by Mutombo, David
DN: cn=Mutombo, David, email=david.mutombo@hatch.com
Date: 2022.05.11 10:11:56 -04'00'
Name: David Mutombo
Title: Managing Director- Water

Approved by Legal: _____