

February 19, 2025

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
PO Box 3265
Harrisburg, PA 17105-3265

Re: PUC No. A-2021-3029576

Dear Secretary Chiavetta:

In accordance with ordering paragraph number 3 of the PUC Secretarial Letter/Order at Docket No. A-2021-3029576 dated May 18, 2022, please find attached for your approval for eFile: one hard copy of the signed title sheet and a copy of the final plans for Construction of Railroad Street and Sunnyside Boulevard in Bellefonte Borough, Centre County, consisting of sheets, 1 through 5 and 8 through 9 of 9; and one copy of half-size final signed Structure Plans for Railroad Street and Sunnyside Boulevard (L-434D) consisting of sheets 1 through 15 of 15; and one copy of half sized final Temporary Shoring Plans for Railroad Street and Sunnyside Boulevard (L-434D TESPS) consisting of sheets 1 through 6 of 6.

The Department of Transportation hereby avers that a set of the aforesaid final Drawings for Construction plans, a set of Structure Plans (L-434D), and a set of Temporary Shoring Plans (L-434D TESPS) are being sent to the parties of record in accordance with the attached Certificate of Service.

We respectfully request the approval of these plans and the subsequent issuance of a PUC Order or a Secretarial Letter. Should you have any questions or concerns, please feel free to contact Kristen Jones at (814) 496 - 6108.

Sincerely,

David Wachob

District Grade Crossing Engineer
Engineering District 2-0
Department of Transportation

Attachments

cc: Parties of Record
Mark Chappel, P.E., Chief, Right-of-Way and Utilities and Grade Crossing Section, 7th Floor, CKB
Karen Cummings, Office of Chief Counsel, 9th Floor, CKB
William Sinick, P.E., Supervisor, Rail Safety Engineering Section, PUC, 3rd Floor, CKB

DISTRICT	COUNTY	TOWNSHIP	BOROUGH	ROUTE	SECTION	TOTAL SHEETS
2-0	CENTRE	----	BELLEFONTE	RAILROAD STREET	---	9
				SUNNYSIDE BOULEVARD	---	

ALSO INCLUDED:

TRAFFIC CONTROL PLAN	9 SHEETS
EROSION AND SEDIMENT POLLUTION CONTROL PLAN	7 SHEETS
STRUCTURE PLAN L-434D	10 SHEETS
CROSS SECTIONS	4 SHEETS
SIGNING AND PAVEMENT MARKING PLAN	3 SHEETS

CENTRE COUNTY

DRAWINGS FOR CONSTRUCTION

OF

RAILROAD STREET

IN

BELLEFONTE BOROUGH

FROM STA 13+00.00 TO STA 16+16.00 LENGTH 234.00 FT 0.044 MI

AND

SUNNYSIDE BOULEVARD

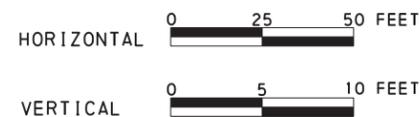
IN

BELLEFONTE BOROUGH

FROM STA 30+00.00 TO STA 32+50.00 LENGTH 185.46 FT 0.035 MI

TOTAL LENGTH 419.46 FT 0.079 MI

SCALE



DESIGN DESIGNATION

RAILROAD STREET TRAFFIC DATA

CURRENT ADT - 336 (2023)

DESIGN YEAR ADT - 388 (2043)

DHV - 44 (11%)

D - 55%

T - 5%

HIGHWAY CLASSIFICATION - URBAN LOCAL ROAD

DESIGN SPEED - 25 MPH

PAVEMENT WIDTH - 16 FT

SHOULDER WIDTH - NONE

SUNNYSIDE BOULEVARD TRAFFIC DATA

CURRENT ADT - 336 (2023)

DESIGN YEAR ADT - 388 (2043)

DHV - 44 (11%)

D - 55%

T - 5%

HIGHWAY CLASSIFICATION - URBAN LOCAL ROAD

DESIGN SPEED - 25 MPH

PAVEMENT WIDTH - 15 FT

SHOULDER WIDTH - NONE

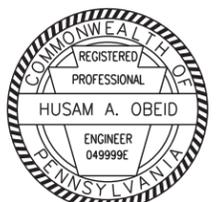
RELEASED FOR CONSTRUCTION

DESIGN REVIEWED BY: David J. Johnson 2/12/2025

LARSON DESIGN GROUP
1000 COMMERCE PARK DRIVE, SUITE 201
WILLIAMSPORT, PA 17701

THE DESIGN REVIEW IS FOR GENERAL CONFORMANCE WITH THE DEPARTMENT'S DESIGN AND CONSTRUCTION CRITERIA AND STANDARDS AND IS NOT INTENDED TO RELIEVE THE DESIGNER OF FULL RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF THE PLANS.

PREPARED BY
ATCS PLC
700 PARK AVENUE, SUITE 1
ALTOONA, PA 16602



Husam A. Obeid
REG PROF ENGINEER

02/12/2025

DATE

TABULATION OF OVERALL LENGTH

RAILROAD STREET			
STA 13+00.00 TO STA 16+16.00	316.00 FEET	0.060 MILES	
SUNNYSIDE BOULEVARD			
STA 30+00.00 TO STA 32+50.00	250.00 FEET	0.047 MILES	

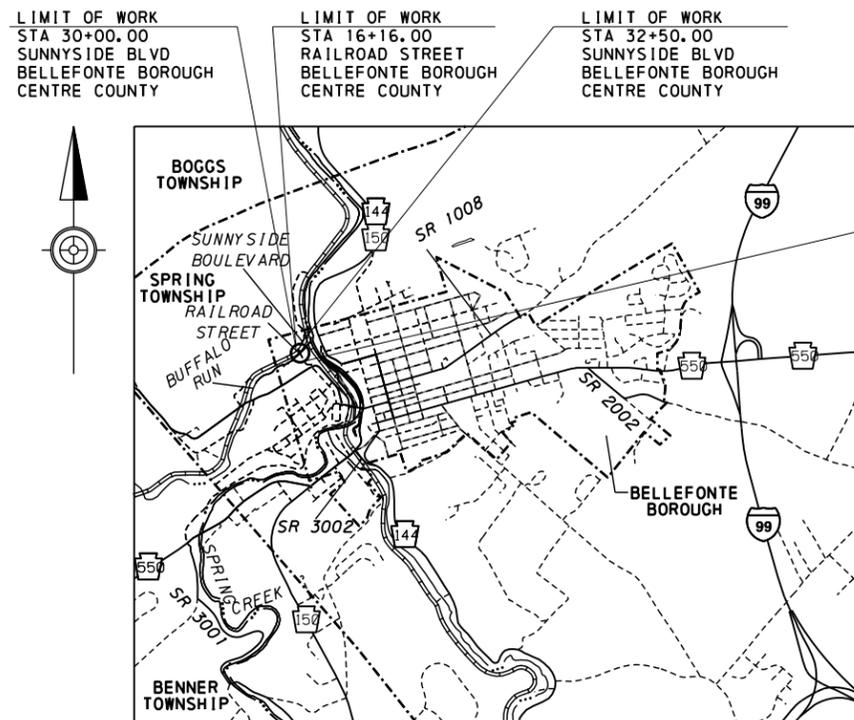
TABULATION OF CONSTRUCTION LENGTH

RAILROAD STREET			
STA 13+72.00 TO STA 16+06.00	234.00 FEET	0.044 MILES	
SUNNYSIDE BOULEVARD			
STA 30+14.54 TO STA 32+00.00	185.46 FEET	0.035 MILES	

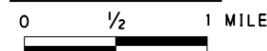
LIST OF STATIONING EQUALITIES

POT STA 15+82.61 SURVEY & CONSTR @ RAILROAD STREET =
 POC STA 30+86.24 SURVEY & CONSTR @ SUNNYSIDE BLVD

SHEET INDEX BLOCK	
DESCRIPTION	SHEET
TITLE SHEET	1
LOCATION MAP & GENERAL NOTES	2
TYPICAL SECTION	3
DETAILS SHEETS	4 TO 5
SUMMARY SHEET	6
TABULATION SHEET	7
PLAN SHEET	8
PROFILE SHEET	9



LOCATION MAP



MAP LEGEND

	PROJECT
	MUNICIPAL BOUNDARY
	STATE HIGHWAY
	LOCAL ROAD
	RAILROAD
	STREAM

SUMMARY OF PROJECT COORDINATES

BASED ON THE PENNSYLVANIA STATE PLANE (NORTH ZONE) COORDINATE SYSTEM
 AVERAGE COMBINED FACTOR = 0.999965109

RTE.	STATION	POINT	COORDINATES		BEARING
			NORTH	EAST	
SURVEY & CONSTR @ RAILROAD STREET	10+00.00	BEGIN STA	272648.0785	1958557.7362	
	10+73.15	PC	272640.8744	1958484.9371	S84°20'55"W
	11+46.63	PI	272633.6386	1958411.8171	
	12+02.71	PT	272698.4139	1958377.1319	N28°10'04"W
	16+16.00	END STA	273062.7542	1958182.0390	
SURVEY & CONSTR @ SUNNYSIDE BLVD	30+00.00	BEGIN STA	272972.7092	1958136.4830	
	30+27.12	PC	272991.2798	1958156.2477	N46°47'03"E
	30+62.51	PI	273015.5102	1958182.0362	
	30+97.85	PT	273041.9230	1958205.5846	N41°43'07"E
	31+37.29	PC	273071.3631	1958231.8320	
	31+79.84	PI	273103.1231	1958260.1479	
	32+22.31	PT	273137.7076	1958284.9350	N35°37'47"E
	32+48.10	PC	273158.6724	1958299.9608	
	32+98.27	PI	273199.4484	1958329.1855	
33+48.10	PT/END STA	273245.2176	1958349.7266	N24°10'14"E	

FOUR (4) PLACE COORDINATES ARE FOR COMPUTATIONAL PURPOSES ONLY AND DO NOT IMPLY A PRECISION BEYOND TWO (2) DECIMAL PLACES.

GENERAL NOTES CONT'D

THREE TO TEN WORKING DAYS PRIOR TO EXCAVATION BASED ON THE COMPLEXITY OF THE PROJECT, THE CONTRACTOR MUST CONTACT THE PA ONE-CALL SYSTEM, INC., PHONE 1-800-242-1776, SERIAL NO. _____ FOR BELLEFONTE BOROUGH. ADDITIONAL INFORMATION AVAILABLE AT <https://www.pa1call.org/PA811/Public/>.

THE CONTRACTOR IS REQUIRED TO NOTIFY THE DEPARTMENT AND SUBMIT AN ALLEGED VIOLATION REPORT (AVR) TO THE PA PUBLIC UTILITY COMMISSION THROUGH THE PA ONE CALL SYSTEM, WWW.PA1CALL.ORG, WITHIN TEN (10) BUSINESS DAYS AFTER A UTILITY LINE IS STRUCK, DAMAGED, OR PREVIOUS DAMAGE IS DISCOVERED AS REQUIRED BY PENNSYLVANIA'S UNDERGROUND UTILITY LINE PROTECTION LAW ACT 50 (P.L.852, NO. 287 AMENDED OCT. 30, 2017).

TEMPORARY CONSTRUCTION EASEMENT. AN EASEMENT TO USE THE LAND AS NECESSARY DURING CONSTRUCTION OF THE PROJECT. THE EASEMENT IS REQUIRED ONLY UNTIL THE CONSTRUCTION OR WORK INDICATED BY THE PLAN IS COMPLETED, UNLESS SOONER RELINQUISHED IN WRITING BY THE COUNTY.

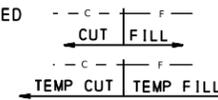
HORIZONTAL CONTROL IS BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (NORTH ZONE) NORTH AMERICAN DATUM (NAD83/2011 CORRECTION) ESTABLISHED BY GPS STATIC (OPUS). AVERAGE COMBINED FACTOR = 0.999965109.

VERTICAL CONTROL IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988) (GEOID 18) (GPS STATIC).

ALL CURVE DATA IS BASED ON THE ARC DEFINITION UNLESS OTHERWISE INDICATED.

THERE ARE NO NAVIGABLE STREAMS ON THE PROJECT.

THE FOLLOWING SYMBOLS ARE USED TO DEPICT THE SLOPE LIMITS:



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
2-0	CENTRE	RAILROAD STREET	---	2 OF 9
		SUNNYSIDE BOULEVARD	---	
BELLEFONTE BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	APPROVED

GENERAL NOTES

THE LEGAL RIGHT-OF-WAY ON RAILROAD STREET FROM STA 13+00.00 TO STA 13+85.00 IS 20 FEET, BASED ON BELLEFONTE BOROUGH ORDINANCE #790, ENACTED BY THE BOROUGH COUNCIL AND APPROVED BY THE MAYOR ON AUGUST 15, 1977.

THE LEGAL RIGHT-OF-WAY ON RAILROAD STREET FROM STA 13+85.00 TO STA 15+88.35 VARIES FROM 20 FEET TO 60 FEET, BASED ON THE RIGHT-OF-WAY PLAN FOR RAILROAD STREET, SECTION MTF R/W, APPROVED BY THE CENTRE COUNTY COMMISSIONERS ON JUNE 20, 2023 AND RECORDED IN CENTRE COUNTY RECORDER OF DEEDS OFFICE ON JULY 6, 2023 IN INSTRUMENT NO. H 02023-0002.

THE LEGAL RIGHT-OF-WAY FOR BOROUGH ALLEY FROM STA 15+88.00 TO STA 16+16.00 IS VARIABLE BASED ON THE ACTUAL WIDTH OCCUPIED BY THE PAVEMENT AND SHOULDERS AS MEASURED IN THE FIELD. THERE IS NO PUBLIC RECORD OF OTHER WIDTH.

THE LEGAL RIGHT-OF-WAY ON SUNNYSIDE BOULEVARD FROM STA 30+86.24 TO STA 31+57.00 VARIES IN WIDTH, BASED ON THE RIGHT-OF-WAY PLAN FOR SUNNYSIDE BOULEVARD, SECTION MTF R/W, APPROVED BY THE CENTRE COUNTY COMMISSIONERS ON JUNE 20, 2023 AND RECORDED IN CENTRE COUNTY RECORDER OF DEEDS OFFICE ON JULY 6, 2023 IN INSTRUMENT NO. H 02023-0002.

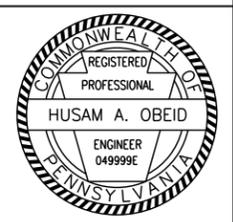
THE LEGAL RIGHT-OF-WAY ON SUNNYSIDE BOULEVARD FROM STA 31+57.00 TO STA 32+50.00 IS 20 FEET, BASED ON BELLEFONTE BOROUGH ORDINANCE #790, ENACTED BY THE BOROUGH COUNCIL AND APPROVED BY THE MAYOR ON AUGUST 15, 1977.

DETAILS, OTHER THAN THOSE INDICATED, ARE ON THE FOLLOWING STANDARD DRAWINGS:

- RC-10M JUNE 1, 2010
- RC-11M JUNE 1, 2010
- RC-12M NOVEMBER 1, 2022
- RC-13M JUNE 1, 2010
- RC-25M FEBRUARY 27, 2023
- RC-30M FEBRUARY 27, 2023
- RC-40M FEBRUARY 8, 2019
- RC-51M FEBRUARY 27, 2023
- RC-54M FEBRUARY 27, 2023
- RC-57M NOVEMBER 30, 2021
- RC-67M FEBRUARY 19, 2021
- RC-70M FEBRUARY 8, 2019
- RC-73M FEBRUARY 8, 2019
- RC-75M JUNE 1, 2010
- RC-77M DECEMBER 17, 2019
- BC-706M JANUARY 31, 2019
- BC-734M FEBRUARY 19, 2021
- BC-735M SEPTEMBER 30, 2016
- BC-736M NOVEMBER 23, 2022
- BC-751M JANUARY 31, 2019
- BC-788M NOVEMBER 23, 2022
- BC-798M FEBRUARY 14, 2023
- TC-8600 JUNE 13, 2013
- TC-8604 AUGUST 17, 2021
- TC-8702B JUNE 13, 2013

DO NOT INTERFERE WITH THE OPERATION OF ANY FIRE HYDRANT, FIRE CALL BOX OR POLICE CALL BOX.

EXISTING UTILITIES HAVE BEEN SHOWN ACCORDING TO INFORMATION AVAILABLE AND EVIDENCE ON THE GROUND. LOCATIONS ARE FOR GENERAL INFORMATION ONLY AND ARE APPROXIMATE. CONTRACTOR WILL BE LIABLE FOR DAMAGE TO ANY UTILITY ABOVE OR BELOW GROUND WHEN THE CONTRACTOR FAILS TO EXERCISE THE APPLICABLE STANDARD OF CARE TO PREVENT DAMAGE. CONTRACTOR SHALL NOTIFY ALL UTILITIES THAT HAVE LINES IN THE PROJECT AREA TO VERIFY LOCATIONS AND DEPTHS PRIOR TO BEGINNING WORK. CONTRACTOR SHALL COMPLY FULLY WITH THE PROVISIONS OF ACT 50.



SURVEY BOOK NO. 581, 588 & 595

PUBLIC UTILITIES

PENNSYLVANIA ONE CALL SYSTEM 1-800-242-1776
 SERIAL NO. 20211372115 (BELLEFONTE BOROUGH)

WEST PENN POWER
 2800 EAST COLLEGE AVENUE
 STATE COLLEGE, PA 16801
 (814) 231-5339
 ATTN: ROBERT RHODES
 EMAIL: rwrhodes@firstenergycorp.com

VERIZON PENNSYLVANIA LLC
 250 SOUTH ALLEN STREET
 STATE COLLEGE, PA 16801
 (814) 231-6565
 ATTN: JOSEPH SCHOCH
 EMAIL: joseph.f.schoch.jr@verizon.com

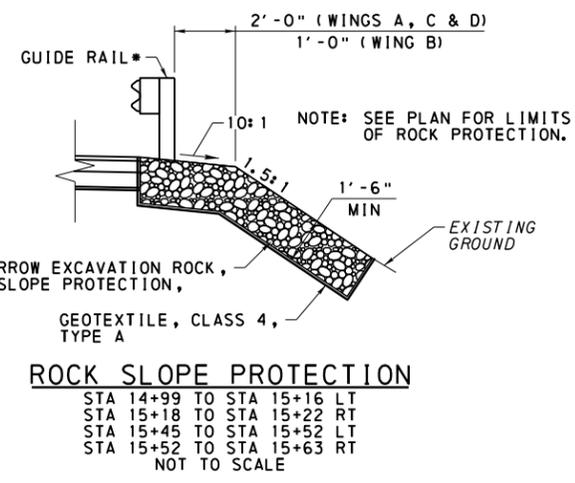
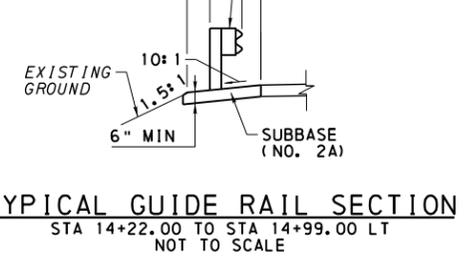
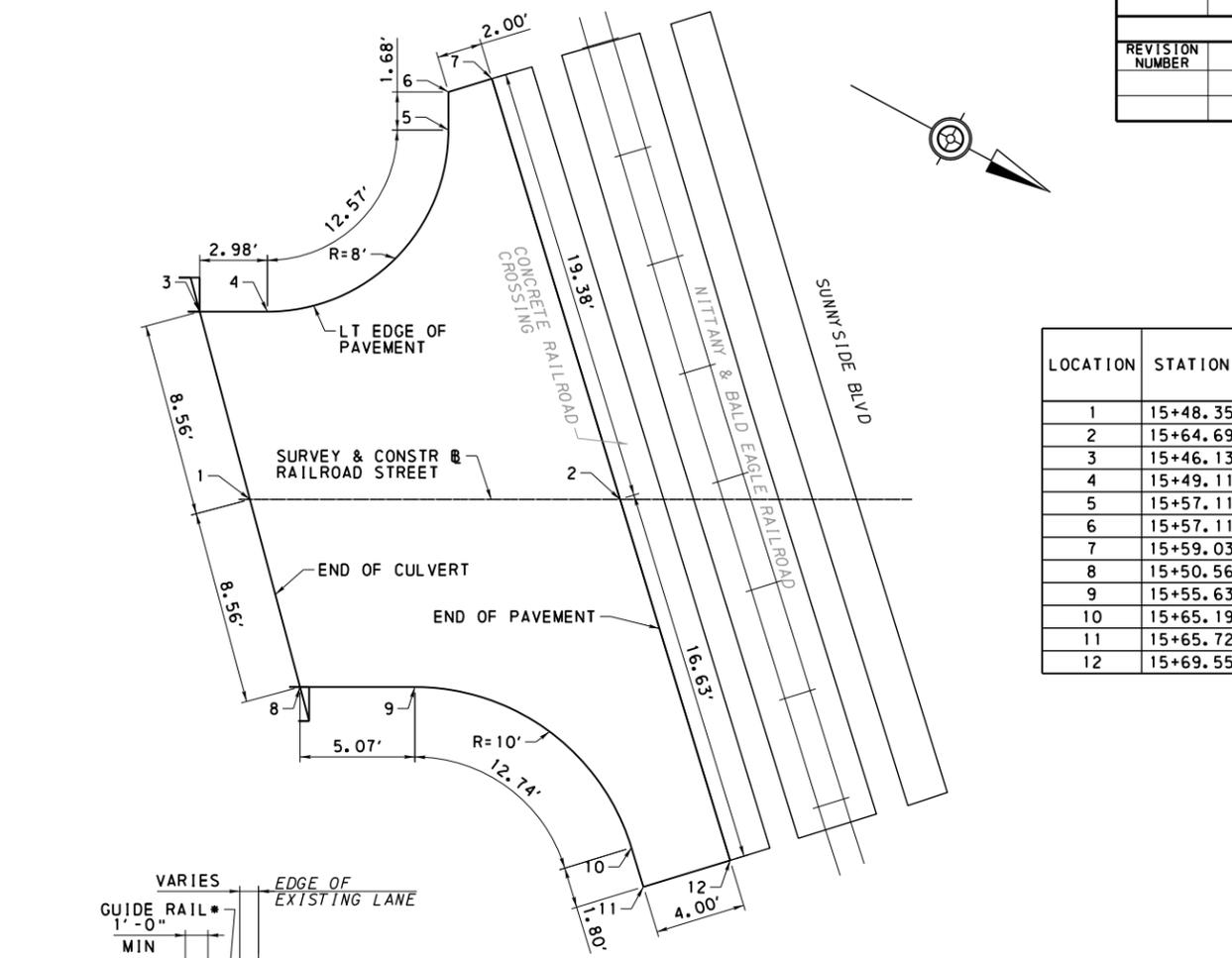
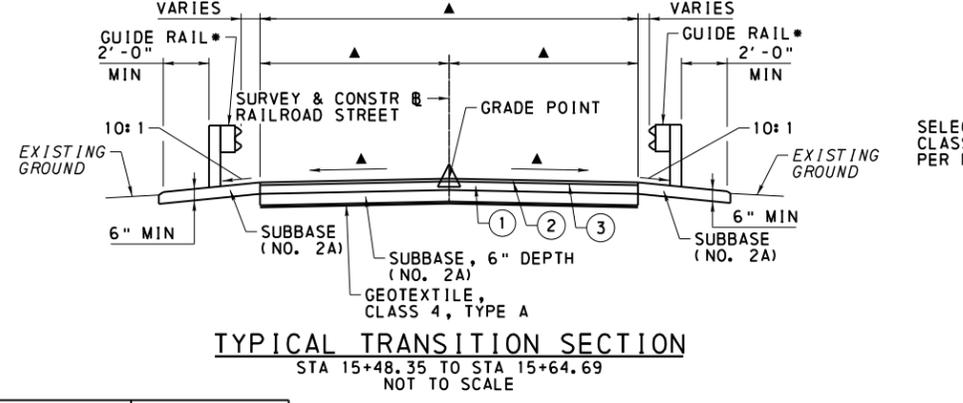
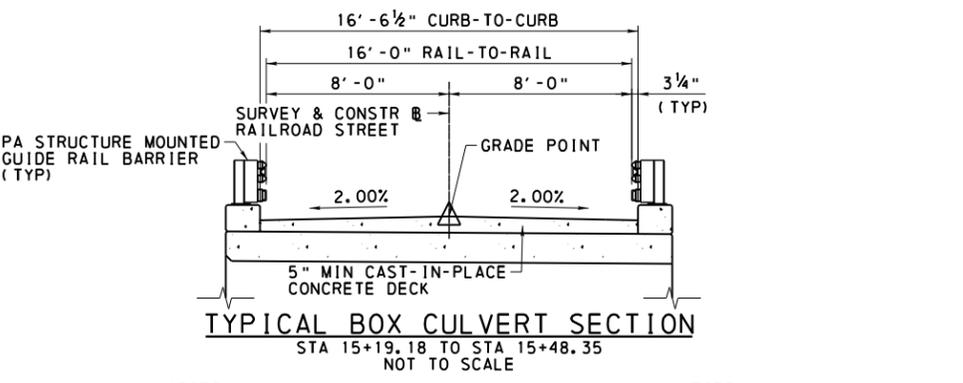
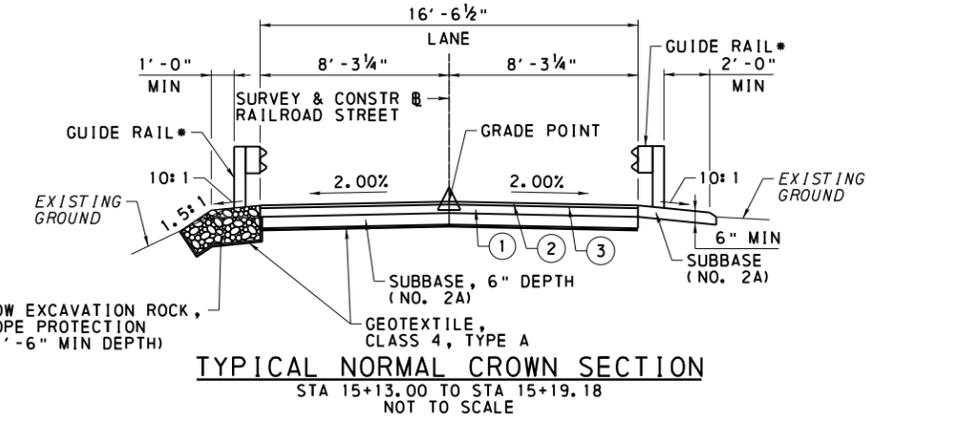
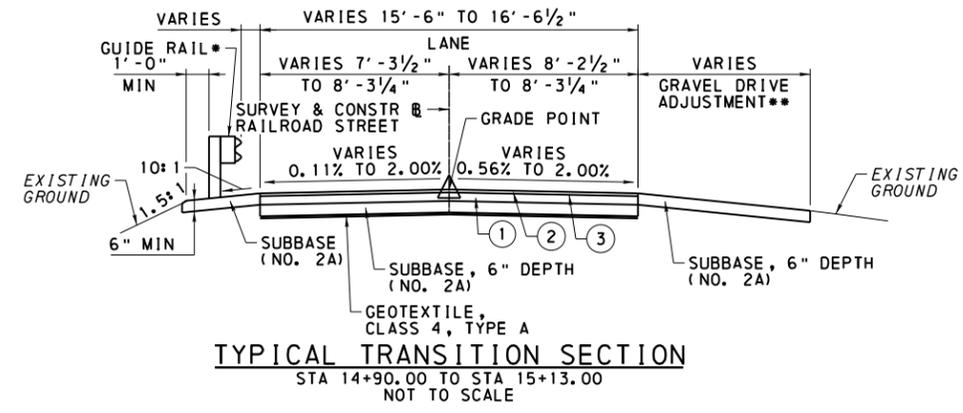
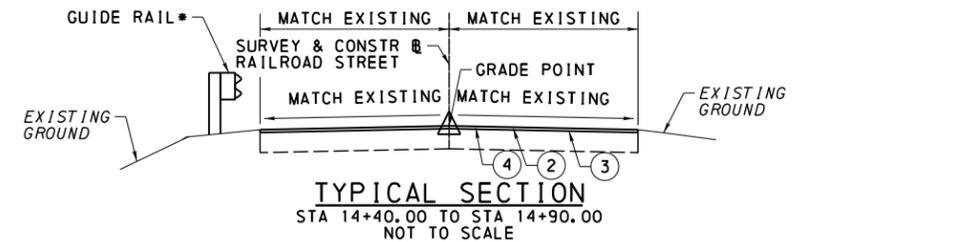
COMCAST
 250 REESE ROAD
 STATE COLLEGE, PA 16801
 PHONE: (814) 769-9397
 ATTN: ROBERT LINGAFELT
 EMAIL: Robert.Lingafeltiii@comcast.com

COLUMBIA GAS OF PENNSYLVANIA, INC.
 1600 COLONY ROAD
 YORK, PA 17408
 (717) 515-1106
 ATTN: LOGAN HARPER
 EMAIL: lharper@nisource.com

BELLEFONTE BOROUGH
 236 WEST LAMB STREET
 BELLEFONTE, PA 16823
 (814) 355-1501
 ATTN: MATT AUMAN
 EMAIL: mauman@bellefonte.gov

SPRING BENNER WALKER JOINT AUTHORITY
 170 IRISH HOLLOW ROAD
 BELLEFONTE, PA 16823
 (814) 355-4778
 ATTN: WARREN MILLER
 EMAIL: wmiller@sbwjva.com

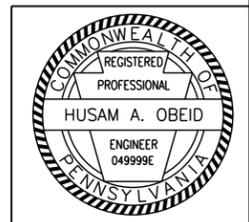
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
2-0	CENTRE	RAILROAD STREET SUNNYSIDE BOULEVARD	---	3 OF 9
BELLEFONTE BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	APPROVED



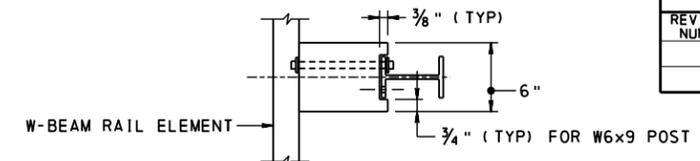
LOCATION	STATION	OFFSET	SIDE	FINISHED GRADE ELEVATION
1	15+48.35	0.00'	RT	731.80
2	15+64.69	0.00'	RT	731.52
3	15+46.13	8.27'	LT	731.66
4	15+49.11	8.27'	LT	731.63
5	15+57.11	16.27'	LT	731.45
6	15+57.11	17.95'	LT	731.42
7	15+59.03	18.54'	LT	731.61
8	15+50.56	8.27'	RT	731.61
9	15+55.63	8.27'	RT	731.58
10	15+65.19	15.53'	RT	731.45
11	15+65.72	17.08'	RT	731.47
12	15+69.55	15.91'	RT	731.43

LEGEND

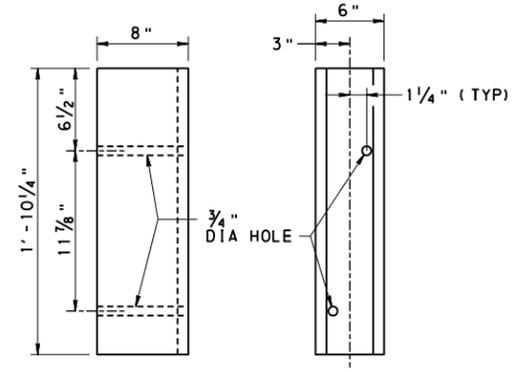
- ① - SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 4 1/2" DEPTH
- ② - SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, < 0.3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-L
- ③ - ASPHALT TACK COAT
- ④ - MILLING OF ASPHALT PAVEMENT SURFACE 1 1/2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR.
- * - SEE PLAN FOR LIMITS OF GUIDE RAIL
- ** - SEE PLAN FOR LIMITS OF GRAVEL DRIVE ADJUSTMENT
- ▲ - SEE FAR APPROACH ASPHALT PAVING LAYOUT, THIS SHEET.



DISTRICT	COUNTY	ROUTE	SECTION	SHEET
2-0	CENTRE	RAILROAD STREET	---	4 OF 9
		SUNNYSIDE BOULEVARD	---	
BELLEFONTE BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	APPROVED



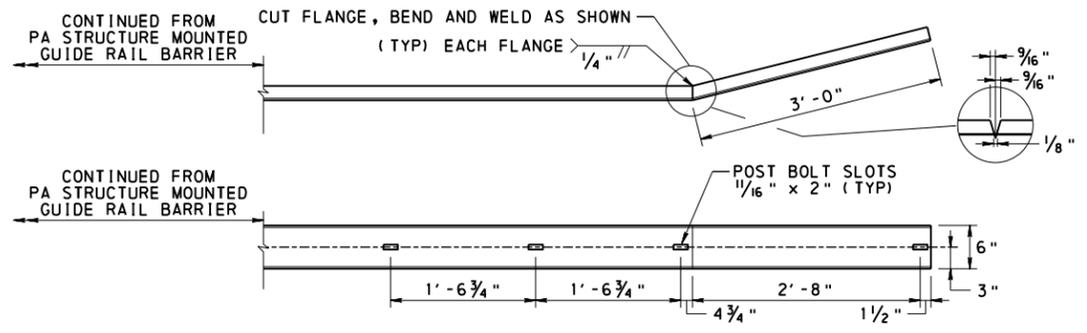
PLAN



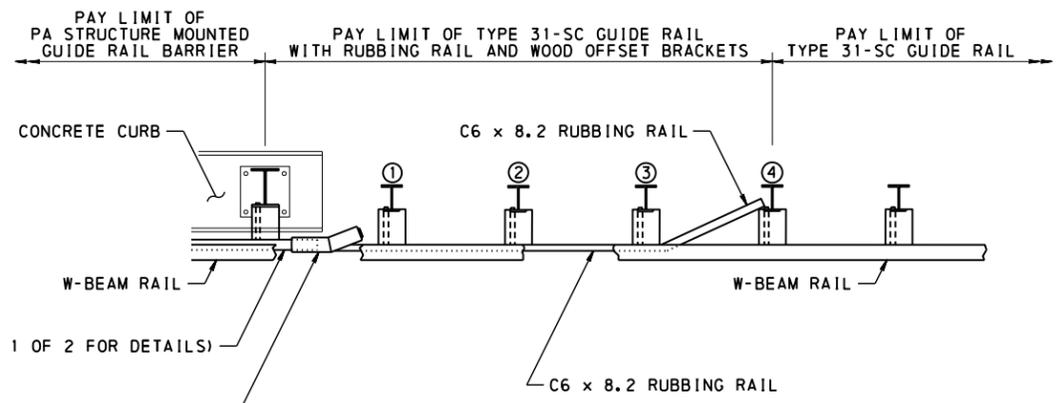
SIDE

FRONT

ROUTED OFFSET BRACKET

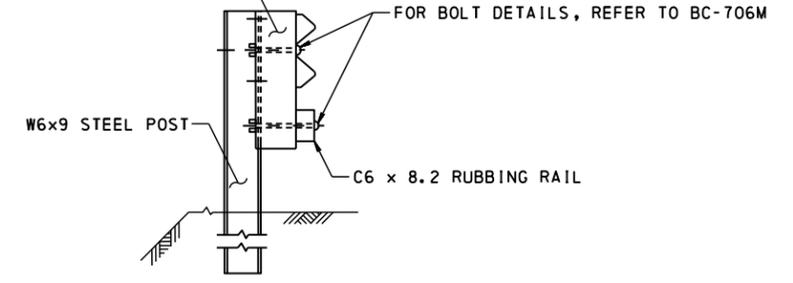


C6 x 8.2 RUBBING RAIL



PLAN VIEW

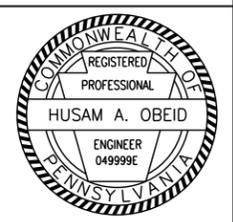
POSTS ①, ②, AND ③ WILL USE 6" x 8" x 22 1/4" ROUTED OFFSET BRACKET



SECTION VIEW

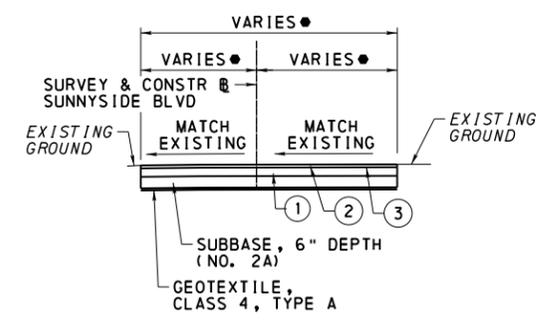
NOTE: POST ④ WILL USE STANDARD 6" x 8" x 14" ROUTED OFFSET BRACKET (REFER TO RC-51M, SHEET 2 OF 18 FOR DETAILS)

**TYPE 31-SC GUIDE RAIL
WITH RUBBING RAIL AND WOOD OFFSET BRACKETS**
NOT TO SCALE

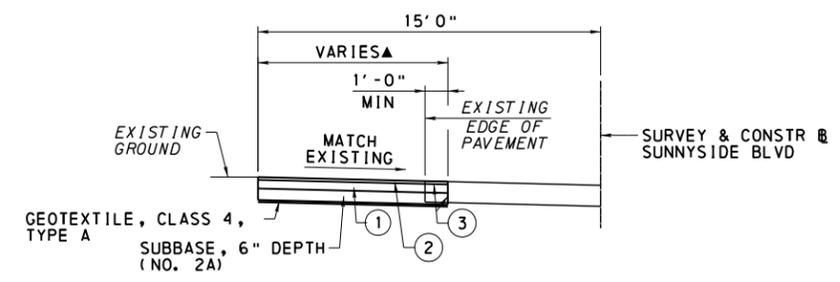


DISTRICT	COUNTY	ROUTE	SECTION	SHEET
2-0	CENTRE	RAILROAD STREET	---	5 OF 9
		SUNNYSIDE BOULEVARD	---	
BELLEFONTE BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	APPROVED

GUIDE RAIL LAYOUT DATA				
	TERMINAL TREATMENT	GUIDE RAIL	BARRIER TRANSITION	REMARKS
NEAR APPROACH RT	TERMINAL SECTION, SINGLE	N/A	12.5 LF TYPE 31-SC GUIDE RAIL WITH RUBBING RAIL AND WOOD OFFSET BRACKETS	SHOP FORM FIRST 3/4 PANEL OF TYPE 31-SC PANEL @ 8.5' R.
NEAR APPROACH LT	TERMINAL SECTION, SINGLE	75 LF TYPE 31-S	12.5 LF TYPE 31-SC GUIDE RAIL WITH RUBBING RAIL AND WOOD OFFSET BRACKETS 12.5 LF TYPE 31-SC	USE 7' EXTRA LENGTH GUIDE RAIL POSTS. SHOP FORM 1 PANEL OF TYPE 31-S GUIDE RAIL @ 8.5' R. PROVIDE TYPE 31-STRONG POST IN-LINE ANCHOR PER RC-51M AND RC-54M
FAR APPROACH RT	TERMINAL SECTION, SINGLE	N/A	12.5 LF TYPE 31-SC GUIDE RAIL WITH RUBBING RAIL AND WOOD OFFSET BRACKETS	SHOP FORM FIRST 3/4 PANEL OF TYPE 31-SC PANEL @ 8.5' R.
FAR APPROACH LT	TERMINAL SECTION, SINGLE	N/A	12.5 LF TYPE 31-SC GUIDE RAIL WITH RUBBING RAIL AND WOOD OFFSET BRACKETS	SHOP FORM FIRST 3/4 PANEL OF TYPE 31-SC PANEL @ 5' R.



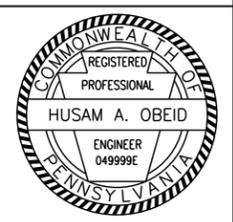
TYPICAL ASPHALT DRIVE RECONSTRUCTION SECTION
 STA 30+14.54 TO STA 30+61.55
 NOT TO SCALE



TYPICAL SUNNYSIDE BLVD WIDENING
 STA 30+81.00 TO STA 31+57.00
 NOT TO SCALE

LEGEND

- ① - SUPERPAVE ASPHALT MIXTURE DESIGN, BASE COURSE, PG 64S-22, < 0.3 MILLION ESALS, 25.0 MM MIX, 4 1/2" DEPTH
- ② - SUPERPAVE ASPHALT MIXTURE DESIGN, WEARING COURSE, PG 64S-22, < 0.3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-L
- ③ - ASPHALT TACK COAT
- - MATCH EDGE OF EXISTING ASPHALT DRIVEWAY
- ▲ - TAPER TO 1'-0" FROM STA 31+37.29 TO STA 31+57.00

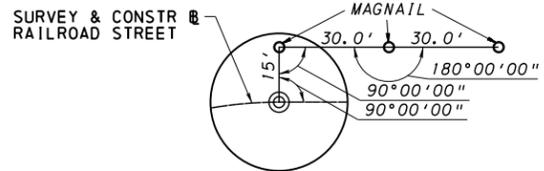


DISTRICT	COUNTY	ROUTE	SECTION	SHEET
2-0	CENTRE	RAILROAD STREET	---	8 OF 9
		SUNNYSIDE BOULEVARD	---	

BELLEFONTE BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	APPROVED

BM 1 ELEV 733.56
16.30' RT, STA 13+34.47
CHISELED X ON WEST BOLT
OF FIRE HYDRANT

BM 2 ELEV 730.63
77.26' RT, STA 15+81.42
6" SPIKE IN 20" PINE

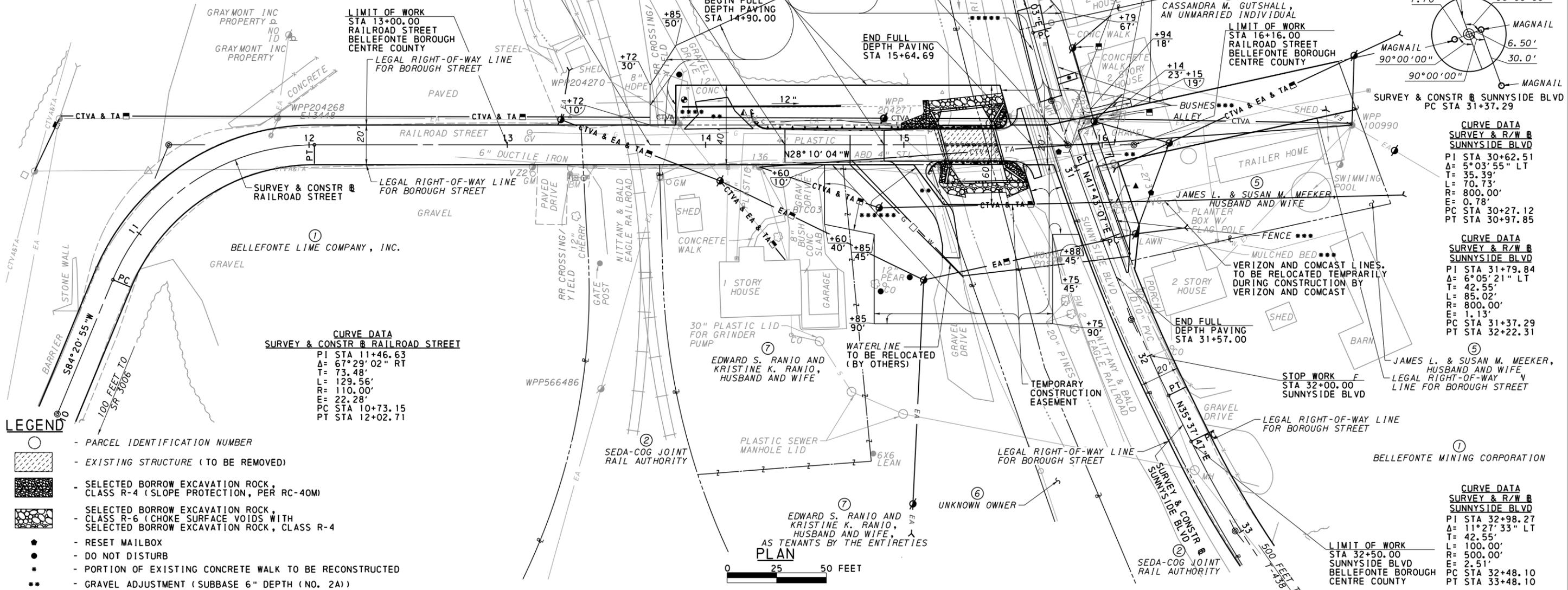


HYDRAULIC DATA SURVEY & CONSTR @ RAILROAD STREET
PT STA 12+02.71

DRAINAGE AREA = 27.2 SQ MI
DESIGN FLOOD
FREQUENCY = 10 YEARS
MAGNITUDE = 1880 CFS
VELOCITY = 4.51 FPS
PERT WS ELEV = 731.81

DEP DESIGN FLOOD
FREQUENCY = 50 YEARS
MAGNITUDE = 3350 CFS
VELOCITY = 4.99 FPS
PERT WS ELEV = 732.64

100 YEAR FLOOD RISK ASSESSMENT
MAGNITUDE = 4110 CFS
VELOCITY = 5.25 FPS
PERT ES ELEV = 732.96
FLOOD OF RECORD: UNKNOWN



CURVE DATA
SURVEY & CONSTR @ RAILROAD STREET

PI STA 11+46.63
Δ = 67°29'02" RT
T = 73.48'
L = 129.56'
R = 110.00'
E = 22.28'
PC STA 10+73.15
PT STA 12+02.71

CURVE DATA
SURVEY & R/W @
SUNNYSIDE BLVD

PI STA 30+62.51
Δ = 5°03'55" LT
T = 35.39'
L = 70.73'
R = 800.00'
E = 0.78'
PC STA 30+27.12
PT STA 30+97.85

CURVE DATA
SURVEY & R/W @
SUNNYSIDE BLVD

PI STA 31+79.84
Δ = 6°05'21" LT
T = 42.55'
L = 85.02'
R = 800.00'
E = 1.13'
PC STA 31+37.29
PT STA 32+22.31

CURVE DATA
SURVEY & R/W @
SUNNYSIDE BLVD

PI STA 32+98.27
Δ = 11°27'33" LT
T = 42.55'
L = 100.00'
R = 500.00'
E = 2.51'
PC STA 32+48.10
PT STA 33+48.10

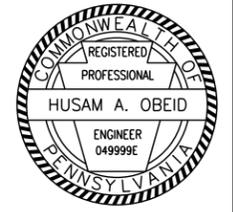
- LEGEND**
- - PARCEL IDENTIFICATION NUMBER
 - ▨ - EXISTING STRUCTURE (TO BE REMOVED)
 - ▩ - SELECTED BORROW EXCAVATION ROCK, CLASS R-4 (SLOPE PROTECTION, PER RC-40M)
 - ▩ - SELECTED BORROW EXCAVATION ROCK, CLASS R-6 (CHOKO SURFACE VOIDS WITH SELECTED BORROW EXCAVATION ROCK, CLASS R-4)
 - - RESET MAILBOX
 - - DO NOT DISTURB
 - - PORTION OF EXISTING CONCRETE WALK TO BE RECONSTRUCTED
 - ** - GRAVEL ADJUSTMENT (SUBBASE 6" DEPTH (NO. 2A))
 - *** - TO BE REMOVED
 - **** - PIPE TO BE REPLACED
 - ***** - ASPHALT DRIVE ADJUSTMENT (SEE TYPICAL SECTION ON SHEET 5)
 - ***** - TEMPORARY POLE BY VERIZON DURNING CONSTRUCTION.
 - ⊕ - RESET PORTION OF EXISTING METAL CHAINLINK FENCE AS REQUIRED TO INSTALL PIPE REPLACEMENT
 - ▲ - SANITARY SEWER CLEANOUT (TO BE RELOCATED, BY OTHERS)
 - - PERMANENT RELOCATION (BY OTHERS)
 - - TEMPORARY RELOCATION (BY OTHERS)



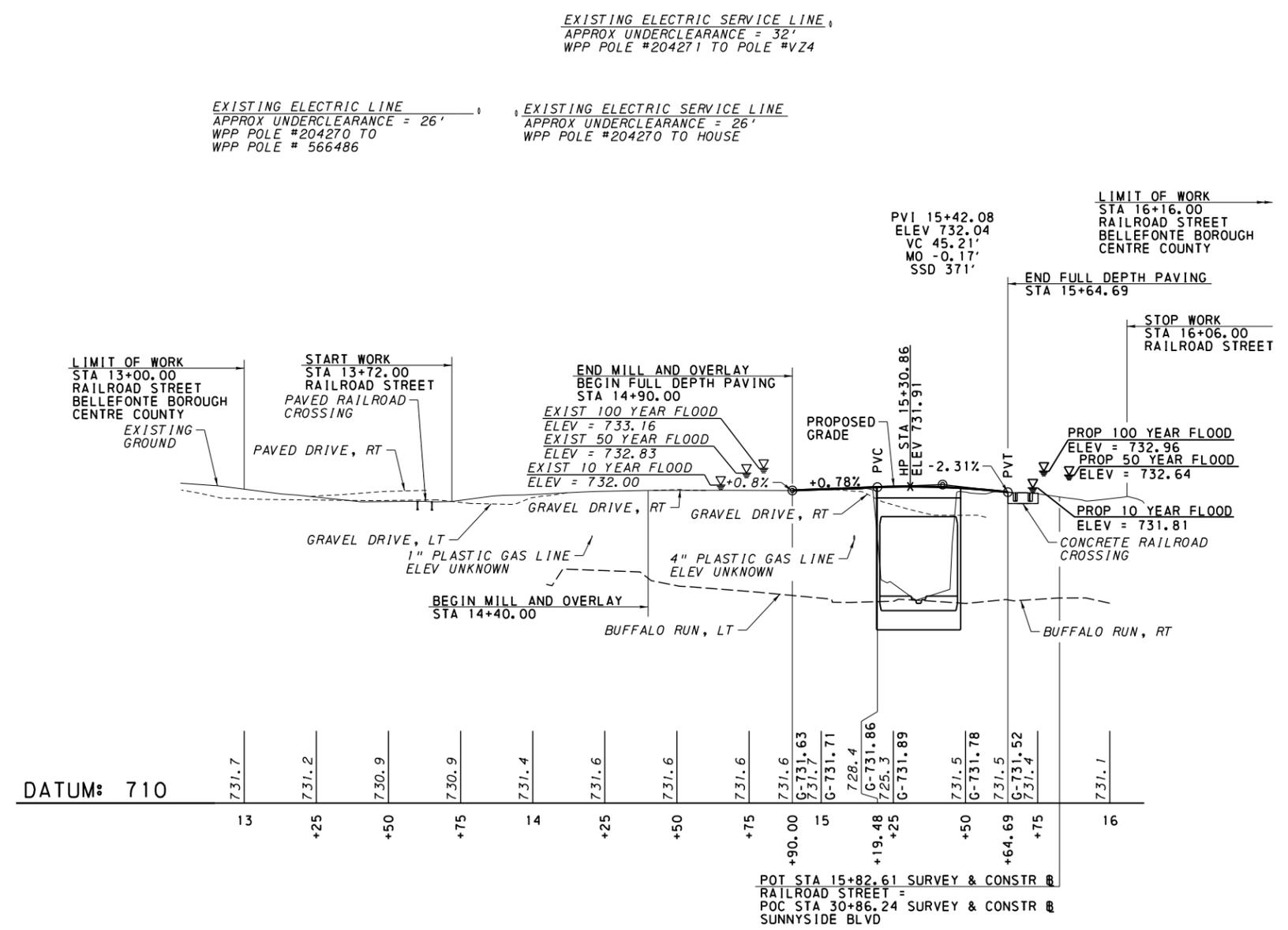
EXISTING STRUCTURE DATA PROPOSED STRUCTURE DATA

STA 15+32.67
SINGLE SPAN CONCRETE ENCASED STEEL
1-BEAM SLAB BRIDGE WITH STONE MASONRY
ABUTMENTS & WINGWALLS
NORMAL CLEAR SPAN = 23.2'±
UNDERCLEAR = 4.5'
CLEAR ROADWAY WIDTH = 15.2'±
SKEW = 70° RT

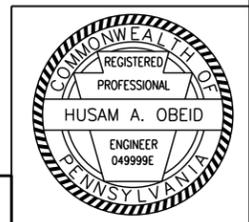
STA 15+33.76
26'-0" X 6'-6" PRECAST RC BOX CULVERT
NORMAL CLEAR SPAN = 26'-0"
UNDERCLEAR = 5'-6"
RAIL-TO-RAIL = 16'-0"
SKEW = 75°00'00" RT



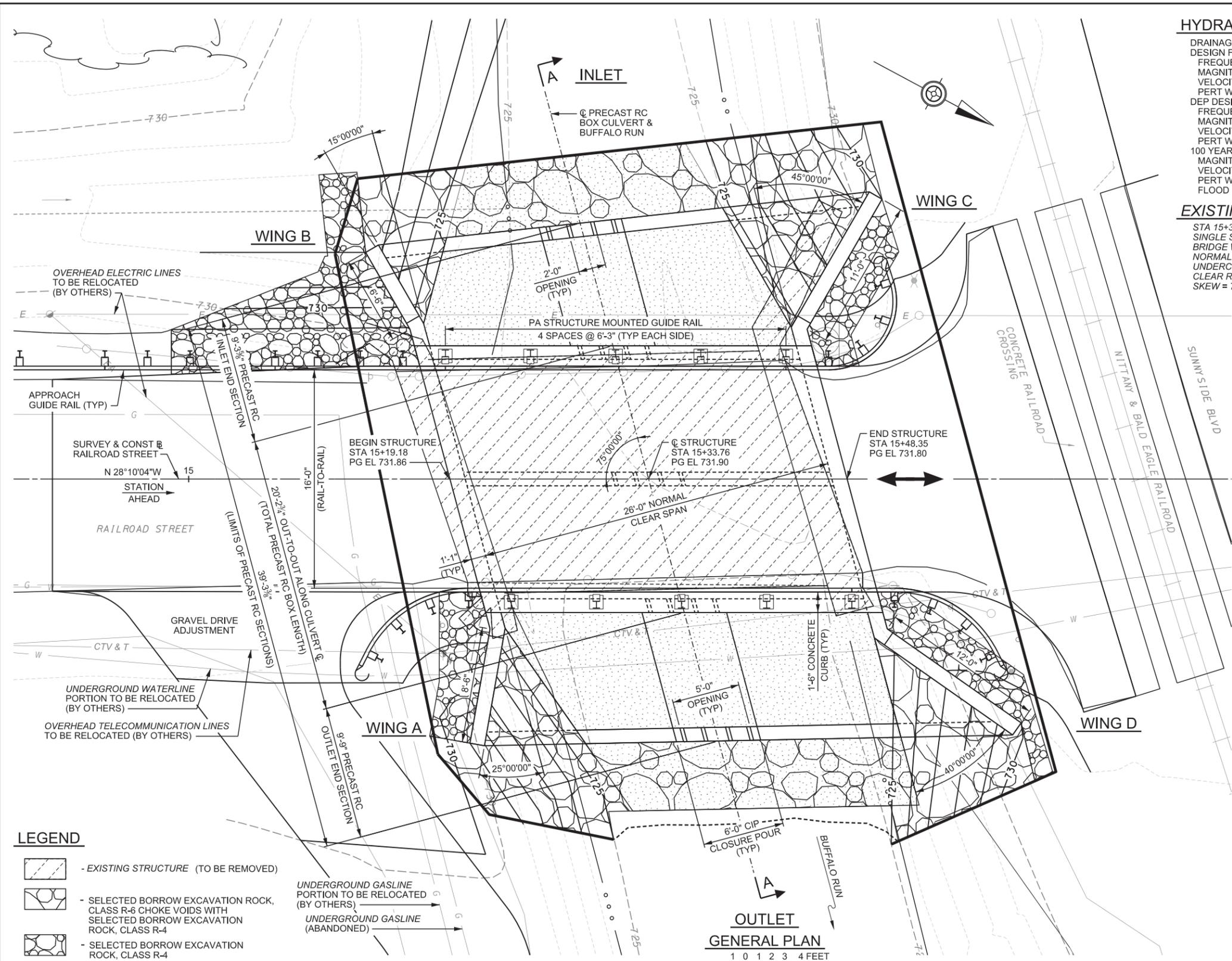
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
2-0	CENTRE	RAILROAD STREET	---	9 OF 9
		SUNNYSIDE BOULEVARD	---	
BELLEFONTE BOROUGH				
REVISION NUMBER	REVISIONS	DATE	BY	APPROVED



RAILROAD STREET PROFILE



PLOTTED: 24-JAN-2025 13:20



HYDRAULIC DATA

DRAINAGE AREA = 27.2 SQ MI
 DESIGN FLOOD FREQUENCY = 10 YEARS
 MAGNITUDE = 1880 CFS
 VELOCITY = 4.51 FPS
 PERT WS ELEV = 731.81
 DEP DESIGN FLOOD FREQUENCY = 50 YEARS
 MAGNITUDE = 3350 CFS
 VELOCITY = 4.99 FPS
 PERT WS ELEV = 732.64
 100 YEAR FLOOD RISK ASSESSMENT
 MAGNITUDE = 4110 CFS
 VELOCITY = 5.25 FPS
 PERT WS ELEV = 732.96
 FLOOD OF RECORD: UNKNOWN

HORIZONTAL CURVE DATA

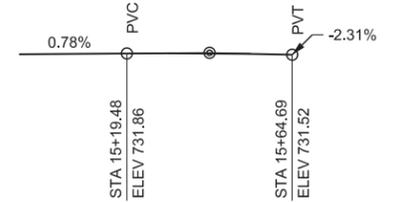
SURVEY & CONST R RAILROAD STREET
 NONE

VERTICAL CURVE DATA

SURVEY & CONST R RAILROAD STREET
 PVI 15+42.08
 ELEV 732.04
 VC 45.21'
 MO -0.17'
 SSD 371'

EXISTING STRUCTURE DATA

STA 15+32.67
 SINGLE SPAN CONCRETE ENCASED STEEL I-BEAM SLAB
 BRIDGE WITH STONE MASONRY ABUTMENTS & WINGWALLS
 NORMAL CLEAR SPAN = 23.2' ±
 UNDERCLEAR = 4.5'
 CLEAR ROADWAY WIDTH = 15.2' ±
 SKEW = 70° RT



NOTES:

1. FOR SECTION A-A, SEE SHEET 2.
2. FOR INDEX OF DRAWINGS, SEE SHEET 2.

RELEASED FOR CONSTRUCTION

DESIGN REVIEWED BY:

LARSON DESIGN GROUP
 1000 COMMERCE PARK DRIVE, SUITE 201
 WILLIAMSPORT, PA 17701

David J. Mann 2/6/2025
 REVIEW CONSULTANT'S SIGNATURE & DATE

THE DESIGN REVIEW IS FOR GENERAL CONFORMANCE WITH THE DEPARTMENT'S DESIGN AND CONSTRUCTION CRITERIA AND STANDARDS AND IS NOT INTENDED TO RELIEVE THE DESIGNER OF FULL RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS OF THE PLAN.

**PENNDOT ENGINEERING DISTRICT 2-0
 FOR STRUCTURAL ADEQUACY ONLY**

2/06/2025
 DATE

George M. Hill
 DISTRICT BRIDGE ENGINEER

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

**COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION**

**CENTRE COUNTY
 BELLEFONTE BOROUGH**

RAILROAD STREET STA 15+33.76

OVER BUFFALO RUN

**26'-0" X 6'-6" PRECAST RC BOX CULVERT
 GENERAL PLAN**

SHEET 1 OF 15
 + SUPPLEMENTAL
 DRAWINGS

L-434D

LEGEND

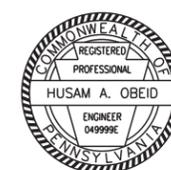
- EXISTING STRUCTURE (TO BE REMOVED)
- SELECTED BORROW EXCAVATION ROCK, CLASS R-6 CHOKE VOIDS WITH SELECTED BORROW EXCAVATION ROCK, CLASS R-4
- SELECTED BORROW EXCAVATION ROCK, CLASS R-4
- NATIVE STREAMBED MATERIAL
- EXISTING WATER EDGE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- TEMPORARY EXCAVATION SUPPORT AND PROTECTION SYSTEM (APPROXIMATE LOCATION)
- PG - PROFILE GRADE
- DIRECTION OF TRAFFIC
- EXCAVATION LIMITS (APPROXIMATE LOCATION)

**OUTLET
 GENERAL PLAN**

1 0 1 2 3 4 FEET

CLASSIFICATION OF EARTHWORK FOR STRUCTURES		
BACKFILL AT STRUCTURES	RC-11M	06-01-10
BACKFILL AT STRUCTURES	RC-12M	11-01-22
TYPE 31 STRONG POST GUIDE RAIL	RC-51M	09-01-23
PA STRUCTURE MOUNTED GUIDE RAIL BARRIER	BC-706M	01-31-19
ANCHOR SYSTEMS	BC-734M	02-19-21
REINFORCEMENT BAR FABRICATION DETAILS	BC-736M	11-23-22
BRIDGE DRAINAGE	BC-751M	01-31-19
TYPICAL WATERPROOFING AND EXPANSION DETAILS	BC-788M	11-23-22
MECHANICAL CONNECTION DETAILS	BC-798M	02-14-23
DESCRIPTION	DWG. NO.	REC. DATE

SUPPLEMENTAL DRAWINGS



Husam A. Obeid 1/24/2025
 SIGNATURE & DATE

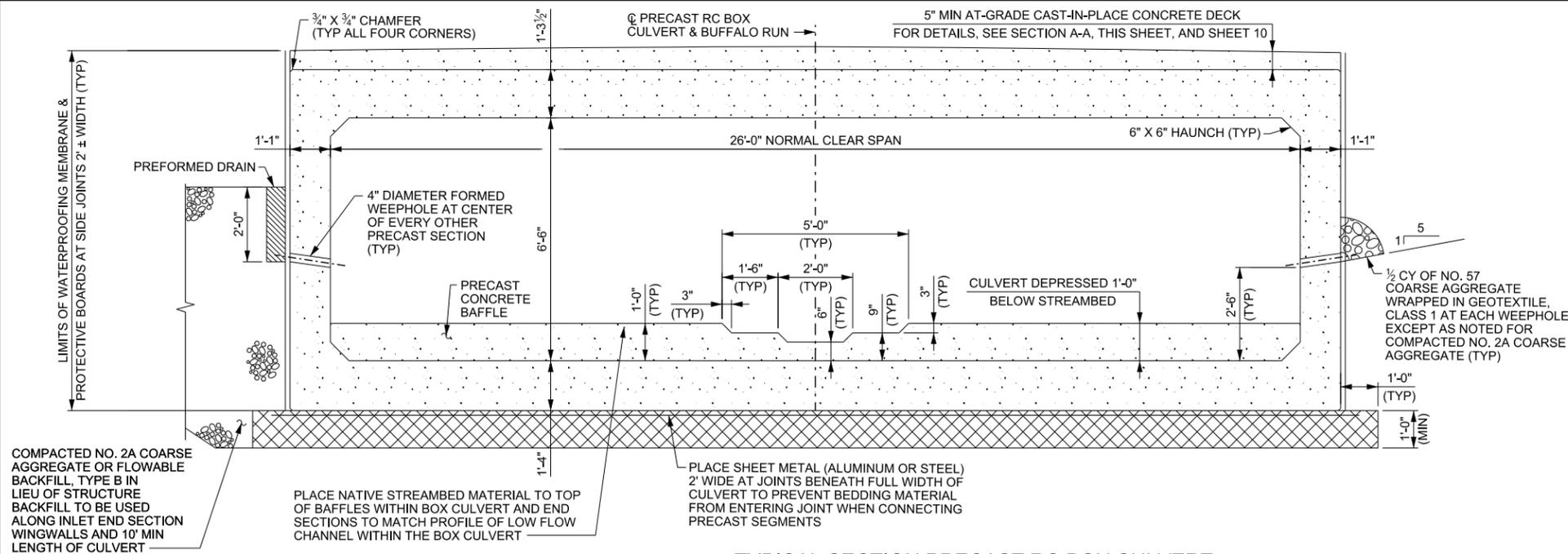
PREPARED BY:

ATCS

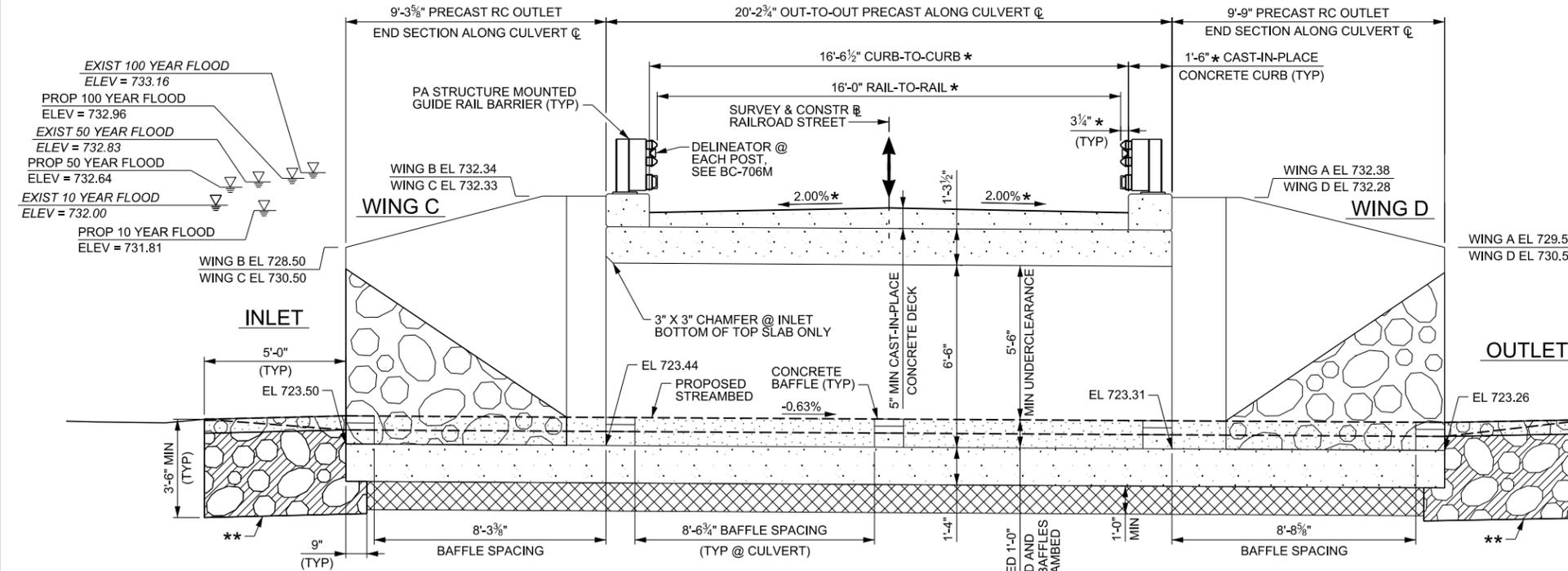
700 PARK AVENUE, SUITE 1
 ALTOONA, PA 16602

DES: HAO CKD: GRB DWN: MTM CKD: GRB

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TYPICAL SECTION PRECAST RC BOX CULVERT



SECTION A-A



LEGEND

- SELECTED BORROW EXCAVATION ROCK, CLASS R-6 CHOKE VOIDS WITH SELECTED BORROW EXCAVATION ROCK, CLASS R-4
- ALTERNATIVE CUTOFF WALL WITH GROUTED ROCK, CLASS R-6 (TYP) FILL VOIDS IN ROCK WITH VIBRATED CLASS A CEMENT CONCRETE 6" BELOW TOP OF ROCK TO BOTTOM OF ROCK. CHOKE TOP 6" OF ROCK WITH NATIVE STREAMBED MATERIAL.
- INDICATES ADDITIONAL EXCAVATION FOR BEDDING MATERIAL BELOW THE BOTTOM OF PRECAST RC BOX CULVERT WITH LIMITS AS SHOWN. BACKFILL THE SPACE WITH NO. 8 COARSE AGGREGATE WRAPPED IN GEOTEXTILE, CLASS 4, TYPE A.
- NATIVE STREAMBED MATERIAL. IF A PREVALENT AMOUNT OF COARSE MATERIAL (6" TO 12" DIA) IS NOT PRESENT WITHIN SALVAGED STREAMBED MATERIAL, SUPPLEMENT THE STREAMBED MATERIAL USED TO BACKFILL THE CULVERT WITH A COARSE MATERIAL EQUIVALENT TO R-3 OR R-4 ROCK.
- * - NORMAL TO CONSTR
- ** - FOR ALL CONCRETE WORK IN THE STREAM CHANNEL, ALLOW CONCRETE TO HARDEN. AFTER THE CONCRETE HAS HARDENED, FLUSH THE CONCRETE WITH STREAM WATER AND PUMP TO AN UPLAND AREA TO DISCHARGE IN A MANNER THAT PREVENTS EROSION AND RE-ENTRY OF THE WATER INTO THE STREAM. USE A PROPERLY CALIBRATED PH METER TO MONITOR THE DISCHARGE UNTIL THE PH FALLS BELOW 9.0 BEFORE ALLOWING THE STREAM TO DIRECTLY CONTACT THE NEW CONCRETE.

INDEX OF DRAWINGS	
SHEET NUMBER	TITLE
1	GENERAL PLAN
2	ELEVATION, TYPICAL SECTION & LOAD RATINGS
3	GENERAL NOTES & QUANTITIES
4	STAKE-OUT PLAN
5	INLET PLAN & ELEVATION
6	OUTLET PLAN & ELEVATION
7	INLET & OUTLET SECTIONS
8	TYPICAL SECTIONS
9	MISCELLANEOUS DETAILS
10	DISTRIBUTION SLAB DETAILS
11	HEADWALL DETAILS
12	STRUCTURE BORINGS - 1
13	STRUCTURE BORINGS - 2
14	STRUCTURE BORINGS - 3
15	STRUCTURE BORINGS - 4

BRIDGE LOAD RATINGS WITH FWS								
INVENTORY RATING (IR)	MEMBER	H20	HS20	ML-80	TK527	PHL-93	P-82	P2016-13
	TOP SLAB	13.46	25.36	1.56	1.56	1.56	---	---
	BOT SLAB	25.36	1.56	1.56	1.56	1.56	---	---
	LIMIT STATE	STR-I	STR-I	STR-I	STR-I	STR-I	---	---
	RATING FACTOR	1.85 F	1.32 V	1.11 V	1.17 V	1.02 V	---	---
RATING TONS	37.10	47.58	40.73	46.87	---	---	---	
OPERATING RATING (OR)	MEMBER	H20	HS20	ML-80	TK527	PHL-93	P-82	P2016-13
	TOP SLAB	13.46	25.36	1.56	1.56	1.56	25.36	1.56
	BOT SLAB	25.36	1.56	1.56	1.56	1.56	---	---
	LIMIT STATE	STR-II	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	2.40 F	1.71 V	1.44 V	1.52 V	1.32 V	1.14 V	1.02 V
RATING TONS	48.09	61.88	52.80	60.76	---	116.74	167.55	

BRIDGE LOAD RATINGS WITHOUT FWS								
INVENTORY RATING (IR)	MEMBER	H20	HS20	ML-80	TK527	PHL-93	P-82	P2016-13
	TOP SLAB	13.46	25.36	1.56	1.56	1.56	---	---
	BOT SLAB	25.36	1.56	1.56	1.56	1.56	---	---
	LIMIT STATE	STR-I	STR-I	STR-I	STR-I	STR-I	---	---
	RATING FACTOR	1.92 F	1.38 V	1.16 V	1.22 V	1.06 V	---	---
RATING TONS	38.35	49.52	42.41	48.79	---	---	---	
OPERATING RATING (OR)	MEMBER	H20	HS20	ML-80	TK527	PHL-93	P-82	P2016-13
	TOP SLAB	13.46	25.36	1.56	1.56	1.56	25.36	1.56
	BOT SLAB	25.36	1.56	1.56	1.56	1.56	---	---
	LIMIT STATE	STR-II	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	2.49 F	1.78 V	1.50 V	1.58 V	1.38 V	1.19 V	1.06 V
RATING TONS	49.71	64.22	54.97	63.25	---	121.53	174.43	

RATING NOTES:

- ADT 336 (2023), ADT 388 (2043), ADTT 17 (2023), & ADTT 20 (2043)
- RATINGS SHOWN WERE OBTAINED FROM PENNDOT'S LRFD BOX CULVERT DESIGN AND RATING PROGRAM, BXLRFD VERSION 2.10.0.0
- (V) DENOTES SHEAR
- (F) DENOTES FLEXURE
- FUTURE WEARING SURFACE (FWS) = 30 LB PER SQ FT

NOTES:

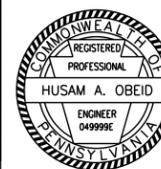
- 1. FOR LOCATION OF SECTION A-A, SEE SHEET 1.

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN
26'-0" X 6'-6" PRECAST RC BOX CULVERT
ELEVATION, TYPICAL SECTION & LOAD RATINGS



RECOMMENDED 2/06/2025

SHEET 2 OF 15

L-434D

GENERAL NOTES

DESIGN SPECIFICATIONS:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 2020, AND AS SUPPLEMENTED BY DESIGN MANUAL, PART 4, DECEMBER 2019 EDITION.

DESIGN IS IN ACCORDANCE WITH THE LRFD METHOD.

DESIGN LOADS:

LIVE LOADS: PHL-93, P-82 OR P2016-13 (204 KIP PERMIT LOAD).

DEAD LOADS INCLUDE SURFACE AREA DENSITY OF 0.03 KSF FOR FUTURE WEARING SURFACE ON THE DECK SLAB.

GENERAL:

PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH SPECIFICATIONS, PUBLICATION 408/2020/AASHTO/AWS D1.5M/D1.5 (USE AASHTO/AWS D1.1/D1.1M:2008 FOR WELDING NOT COVERED IN AASHTO/AWS D1.5M/D1.5:2008) BRIDGE WELDING CODE, AND CONTRACT SPECIAL PROVISIONS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL, EXCEPT AS NOTED.

NOTIFY THE REGIONAL HEADQUARTERS OF THE FISH COMMISSION PRIOR TO CONSTRUCTION AND COOPERATE WITH FISH COMMISSION DURING CONSTRUCTION.
ADDRESS: 595 EAST ROLLING RIDGE DR, BELLEFONTE, PA 16823
TELEPHONE: 814-359-5250

USE CLASS A CONCRETE IN CUTOFF WALLS.

USE CLASS AA CONCRETE IN CURBS AND APRON CLOSURE POURS.

USE CLASS AAAP CONCRETE IN CAST-IN-PLACE DISTRIBUTION SLAB.

PROVIDE 2" CONCRETE COVER ON REINFORCEMENT BARS, EXCEPT AS NOTED.

CHAMFER EXPOSED CONCRETE EDGES 3/4" X 3/4", EXCEPT AS NOTED.

RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS, EXCEPT AS INDICATED.

USE EPOXY BONDING COMPOUND WHEREVER CAST-IN-PLACE CEMENT CONCRETE COMES IN CONTACT WITH PRECAST CEMENT CONCRETE. THE EPOXY BONDING COMPOUND IS TYPE 5, GRADE 2, AS DESCRIBED IN ASTM-C881-02.

PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM A 615/A 615M, A 996/A 996M OR A 706/A 706M. DO NOT WELD GRADE 60 REINFORCING STEEL BARS UNLESS SPECIFIED. GRADE 40 REINFORCING STEEL BARS MAY BE SUBSTITUTED WITH A PROPORTIONAL INCREASE IN CROSS-SECTIONAL AREA, IF APPROVED BY THE CHIEF BRIDGE ENGINEER. DO NOT USE RAIL STEEL A 996/A 996M REINFORCEMENT BARS IN FOOTING OR WHERE BENDING OR WELDING OF THE REINFORCEMENT BARS IS INDICATED.

PROVIDE A MINIMUM LAP AND EMBEDMENT LENGTHS OF 30 BAR DIAMETERS, OR IN ACCORDANCE WITH AASHTO AS MODIFIED BY THE DM-4, OR STANDARD DRAWING BC-736M, WHICHEVER IS GREATER.

EPOXY COAT ALL REINFORCING STEEL INCLUDING DEFORMED WELDED WIRE FABRIC AND REINFORCING BARS.

THE PRECAST BOX CULVERT & PRECAST WINGWALLS MAY REQUIRE SPECIAL FABRICATION AND REINFORCEMENT DETAILS. THE FABRICATOR IS TO PROVIDE DETAILS FOR REINFORCEMENT ON SHOP DRAWINGS FOR APPROVAL. MINIMUM SEGMENT LENGTH IS 4'-0".

PROVIDE ONE (1) WEEP HOLE IN EACH WALL OF EVERY OTHER BOX SEGMENT (OR 12'-0" MAX.) AND IN WINGWALLS, AS INDICATED.

FABRICATOR TO INCORPORATE GALVANIZED THREADED INSERTS IN THE PRECAST BOX SEGMENTS FOR THE HEADWALL, FISH BAFFLES AND CAST-IN-PLACE DECK. THE GALVANIZED THREADED INSERTS, BOLTS, HOOK BARS, AND WASHERS ARE INCIDENTAL TO THE BOX SEGMENTS.

APPLY PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL) TO HEADWALLS, WINGWALLS AND AT-GRADE CAST-IN-PLACE DECK.

CONSTRUCT CUTOFF WALLS AFTER PLACEMENT OF END SECTIONS AND WINGWALLS.

BLASTING IS NOT PERMITTED.

A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT.

WELDING OF REINFORCEMENT BARS DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.

ALL REINFORCEMENT BARS SPACING'S ARE MAXIMUM.

EXCAVATION FOR THE FOUNDATION IS TO BE INSPECTED BY THE INSPECTOR-IN-CHARGE PRIOR TO PLACEMENT OF BEDDING MATERIAL OR CONCRETE. ANY UNSUITABLE MATERIAL ENCOUNTERED BELOW THE BEDDING MATERIAL SHALL BE REMOVED AND REPLACED WITH AASHTO NO. 8 COARSE AGGREGATE OR APPROVED EQUIVALENT.

SEISMIC SITE CLASS IS NOT CLASS E.

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES. THE CONTRACTOR SHALL DIRECT ALL SURFACE RUNOFF AWAY FROM EXCAVATION AND PERFORM ALL EXCAVATIONS IN ACCORDANCE WITH OSHA REQUIREMENTS.

THE CONTRACTOR IS TO PROVIDE SUFFICIENT DEWATERING SO THE EXCAVATIONS ARE DRY ENOUGH TO BE INSPECTED BY THE INSPECTOR IN CHARGE PRIOR TO PLACEMENT OF BEDDING MATERIAL.

PROVIDE LIFTING PINS IN THE BOTTOM CHAMFERS AT THE CENTER OF THE SEGMENTS TO ALLOW FOR PULLING SEGMENTS TOGETHER DURING PLACEMENT.

FABRICATOR MAY NEED TO PROVIDE ADDITIONAL REINFORCEMENT WITHIN THE PRECAST BOX SEGMENTS & PRECAST WINGWALLS TO ALLOW FOR LIFTING AND PLACEMENT OF THE SEGMENTS.

WHEN WELDED WIRE FABRIC IS USED IN LIEU OF REINFORCING BARS IN PRECAST BOX SECTIONS, USE WELDED WIRE FABRIC MEETING THE REQUIREMENTS OF AASHTO M55 ASTM (A185), AND DEFORMED WELDED WIRE FABRIC MEETING THE REQUIREMENTS OF AASHTO M221M-ASTM(A497), WITH THE FOLLOWING ADDITIONAL PROPERTIES:

- MINIMUM YIELD STRENGTH OF 65,000 PSI
- MINIMUM SPACING OF CIRCUMFERENTIAL WIRE IS 2 INCHES CENTER TO CENTER.
- MAXIMUM SPACING OF CIRCUMFERENTIAL WIRE IS 4 INCHES CENTER TO CENTER.
- MAXIMUM SPACING OF LONGITUDINAL WIRE IS 8 INCHES CENTER TO CENTER.
- PROVIDE 1 1/2" MINIMUM COVER FOR WELDED WIRE FABRIC, EXCEPT 2" FOR TOP WIRES FOR THE TOP SLAB.
- PROVIDE 1/2" MINIMUM ADDITIONAL COVER FOR THE TOP WIRES OF THE BOTTOM SLAB.

DO NOT EXCEED A TWO (2) FOOT DIFFERENCE IN FILL ELEVATION ON THE SIDES DURING PLACEMENT OF THE BACKFILL. DO NOT ALLOW THE WHEELS OF THE ROLLERS TO COME CLOSER THAN ONE FOOT TO THE FACE OF THE STRUCTURE DURING COMPACTION OF THE BACKFILL.

POST-TENSION IN ACCORDANCE WITH PUBLICATION 408/2020, SECTION 1108 AND STANDARD DRAWINGS BC-798M.

POST-TENSION AND GROUT BEFORE BACKFILLING AND PLACING TRAFFIC OVER THE BOX CULVERT. ALLOW GROUT TO ACHIEVE MINIMUM STRENGTH BEFORE BACKFILLING.

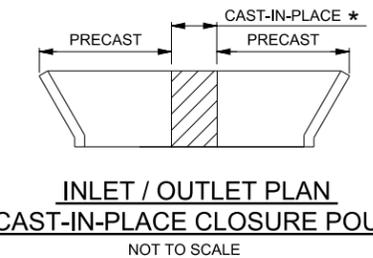
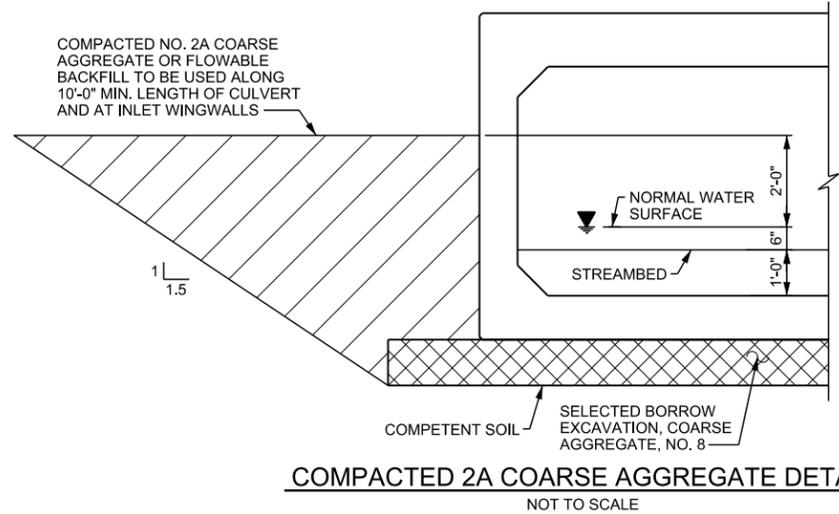
EXISTING BRIDGE IS NOT WEIGHT RESTRICTED. SEE PUBLICATION 408 SECTION 105.17 FOR CONSTRUCTION LOADING LIMITS.

UTILITIES:

COORDINATE, LOCATE AND CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH PUBLICATION 408/2020, SECTIONS 105.06 AND 107.12.

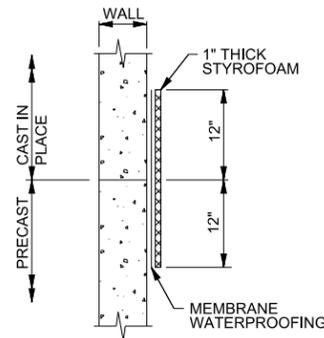
VERIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO STARTING WORK, AND CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION.

THE CONTRACTOR IS REQUIRED TO NOTIFY THE DEPARTMENT AND SUBMIT AN ALLEGED VIOLATION REPORT (AVR) TO THE PA PUBLIC UTILITY COMMISSION THROUGH THE PA ONE CALL SYSTEM, WWW.PA1CALL.COM, WITHIN TEN (10) BUSINESS DAYS AFTER UTILITY LINE IS STRUCK, DAMAGED, OR PREVIOUS DAMAGE IS DISCOVERED AS REQUIRED BY PENNSYLVANIA'S UNDERGROUND UTILITY LINE PROTECTION LAW ACT 50 (P.L.852,NO.287 AMENDED OCT. 30 2017)



* FOR ALL CONCRETE WORK IN THE STREAM CHANNEL, ALLOW CONCRETE TO HARDEN. AFTER THE CONCRETE HAS HARDENED, FLUSH THE CONCRETE WITH STREAM WATER AND PUMP TO AN UPLAND AREA TO DISCHARGE IN A MANNER THAT PREVENTS EROSION AND RE-ENTRY OF THE WATER INTO THE STREAM. USE A PROPERLY CALIBRATED PH METER TO MONITOR THE DISCHARGE UNTIL THE PH FALLS BELOW 9.0 BEFORE ALLOWING THE STREAM TO DIRECTLY CONTACT THE NEW CONCRETE.

PROVIDE CAST-IN-PLACE CLOSURE POUR IF PRECAST INLET/OUTLET SECTION IS TOO LARGE FOR SHIPPING. ALL REINFORCEMENT STEEL IN THE CAST-IN-PLACE PORTION SHALL BE EPOXY COATED. ALL REINFORCEMENT CONNECTIONS ARE TO BE MADE WITH MECHANICAL SPLICE SYSTEMS.



APPROXIMATE QUANTITIES - BRIDGE STRUCTURE, AS DESIGNED			
ITEM NO.	ITEM	UNIT	TOTAL
8250-0014	CONSTRUCTION OF PRECAST REINFORCED CONCRETE BOX CULVERT, L-434D	L.S.	L.S.
(1)	CLASS 3 EXCAVATION	CY	332
(1)	CLASS AAAP CEMENT CONCRETE	CY	11
(1)	CLASS AA CEMENT CONCRETE	CY	4
(1)	CLASS A CEMENT CONCRETE	CY	7
(1)	MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	SY	18
(1)	SELECTED BORROW EXCAVATION, STRUCTURE BACKFILL	CY	22
(1)	SELECTED BORROW EXCAVATION, COARSE AGGREGATE, NO. 8	CY	51
(1)	SELECTED BORROW EXCAVATION, COARSE AGGREGATE, NO. 2A OR FLOWABLE BACKFILL, TYPE B	CY	53
(1)	SELECTED BORROW EXCAVATION, COARSE AGGREGATE, NO. 57	CY	4
(1)	26'-0" x 6'-6" PRECAST REINFORCED CONCRETE BOX CULVERT	(2) LF	20
(1)	PRECAST REINFORCED CONCRETE BOX CULVERT END SECTION, UPSTREAM	(2)(4) EA	1
(1)	PRECAST REINFORCED CONCRETE BOX CULVERT END SECTION, DOWNSTREAM	(2)(4) EA	1
(1)	PA STRUCTURE MOUNTED GUIDE RAIL	LF	58
(1)	STEEL REINFORCEMENT BARS, EPOXY COATED	LB	1,680
(1)	PREFORMED DRAINAGE (AT FLOWABLE FILL)	EA	4
(1)	SELECTED BORROW EXCAVATION ROCK, CLASS R-6	(3)(5) TON	77
(1)	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (BOILED LINSEED OIL)	SY	129

- (1) ITEMS IN PRECAST CONCRETE BOX CULVERT LUMP SUM GIVEN FOR INFORMATION ONLY.
- (2) INCLUDES THREADED INSERTS, GALVANIZED STRAPS AND BOLTS, POST TENSIONING, AND REINFORCEMENT IN THE CIP CLOSURE POURS.
- (3) BASED ON 1.5 TONS/CY
- (4) CLASS AA CONCRETE AND EPOXY COATED REINFORCEMENT BARS REQUIRED FOR CAST-IN-PLACE CLOSURE POUR IS INCIDENTAL TO THE PRECAST END SECTION. APPROXIMATELY 3 CY OF CONCRETE IS REQUIRED FOR EACH CLOSURE POUR.
- (5) CHOKO WITH R-4 OR STREAMBED MATERIAL FOR THE TOP 6" AND GROUT WITH CLASS A CONCRETE AS INDICATED ON SHEET 1 AND 2. CHOKING OR GROUTING IS INCIDENTAL TO THIS ITEM.

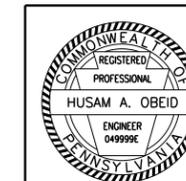
Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN

26'-0" X 6'-6" PRECAST RC BOX CULVERT
GENERAL NOTES & QUANTITIES



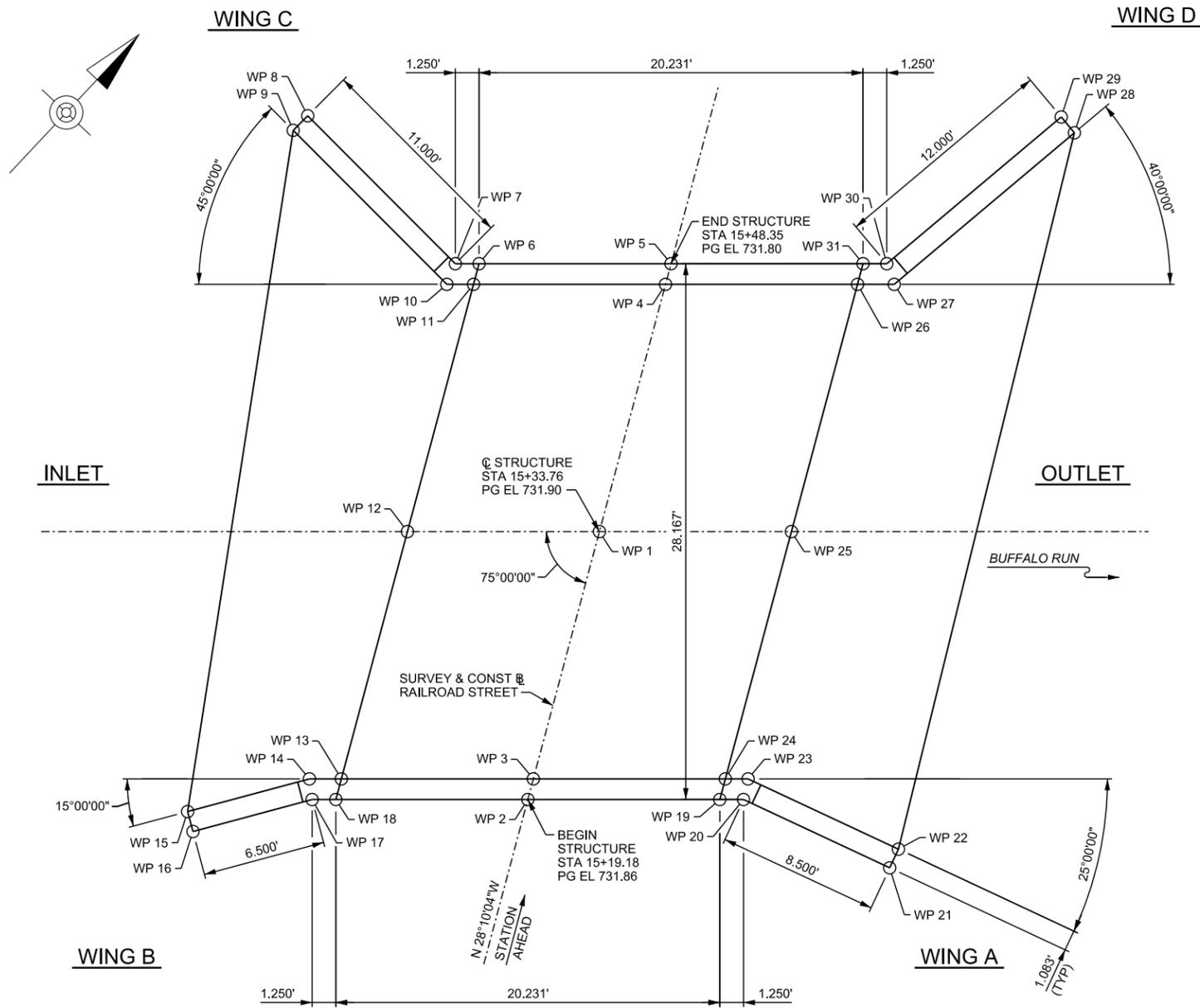
RECOMMENDED 2/06/2025

SHEET 3 OF 15

L-434D

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PLOTTED: 24-JAN-2025 13:20



STAKE-OUT PLAN



WORK POINT COORDINATES				
WP	STATION	OFFSET	COORDINATES	
			NORTH	EAST
1	15+33.76	0	272990.2582	1958220.8583
2	15+19.18	0	272977.4048	1958227.7410
3	15+20.31	0	272978.3935	1958227.2115
4	15+47.22	0	273002.1229	1958214.5052
5	15+48.35	0	273003.1116	1958213.9757
6	15+45.73	9.77' LT	272996.1913	1958206.5979
7	15+45.40	10.98' LT	272995.3361	1958205.6863
8	15+50.90	20.50' LT	272995.6878	1958194.6919
9	15+49.97	21.05' LT	272994.6051	1958194.6572
10	15+44.24	11.13' LT	272994.2390	1958206.1001
11	15+44.61	9.77' LT	272995.2025	1958207.1274
12	15+31.15	9.77' LT	272983.3379	1958213.4805
13	15+17.69	9.77' LT	272971.4732	1958219.8337
14	15+17.25	11.40' LT	272970.3218	1958218.6063
15	15+13.93	17.15' LT	272964.6783	1958215.1027
16	15+12.99	16.61' LT	272964.1069	1958216.0231
17	15+16.24	10.98' LT	272969.6293	1958219.4515
18	15+16.57	9.77' LT	272970.4844	1958220.3632
19	15+21.80	9.77' RT	272984.3252	1958235.1187
20	15+22.13	10.98' RT	272985.1804	1958236.0304
21	15+20.65	19.35' RT	272987.8307	1958244.1067
22	15+21.72	19.54' RT	272988.8600	1958243.7689
23	15+23.24	10.92' RT	272986.1348	1958235.4645
24	15+22.92	9.77' RT	272985.3139	1958234.5893
25	15+36.38	9.77' RT	272997.1786	1958228.2361
26	15+49.84	9.77' RT	273009.0433	1958221.8830
27	15+50.34	11.64' RT	273010.3668	1958223.2940
28	15+60.50	18.75' RT	273022.6731	1958224.7684
29	15+61.12	17.86' RT	273022.8020	1958223.6928
30	15+51.29	10.98' RT	273010.8872	1958222.2652
31	15+50.96	9.77' RT	273010.0320	1958221.3535

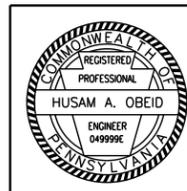
NOTE:
 WORK POINT COORDINATE PRECISION BEYOND THOUSANDTHS OF A FOOT IS NOT IMPLIED. DATA IS BASED ON STATE PLANE COORDINATE SYSTEM.

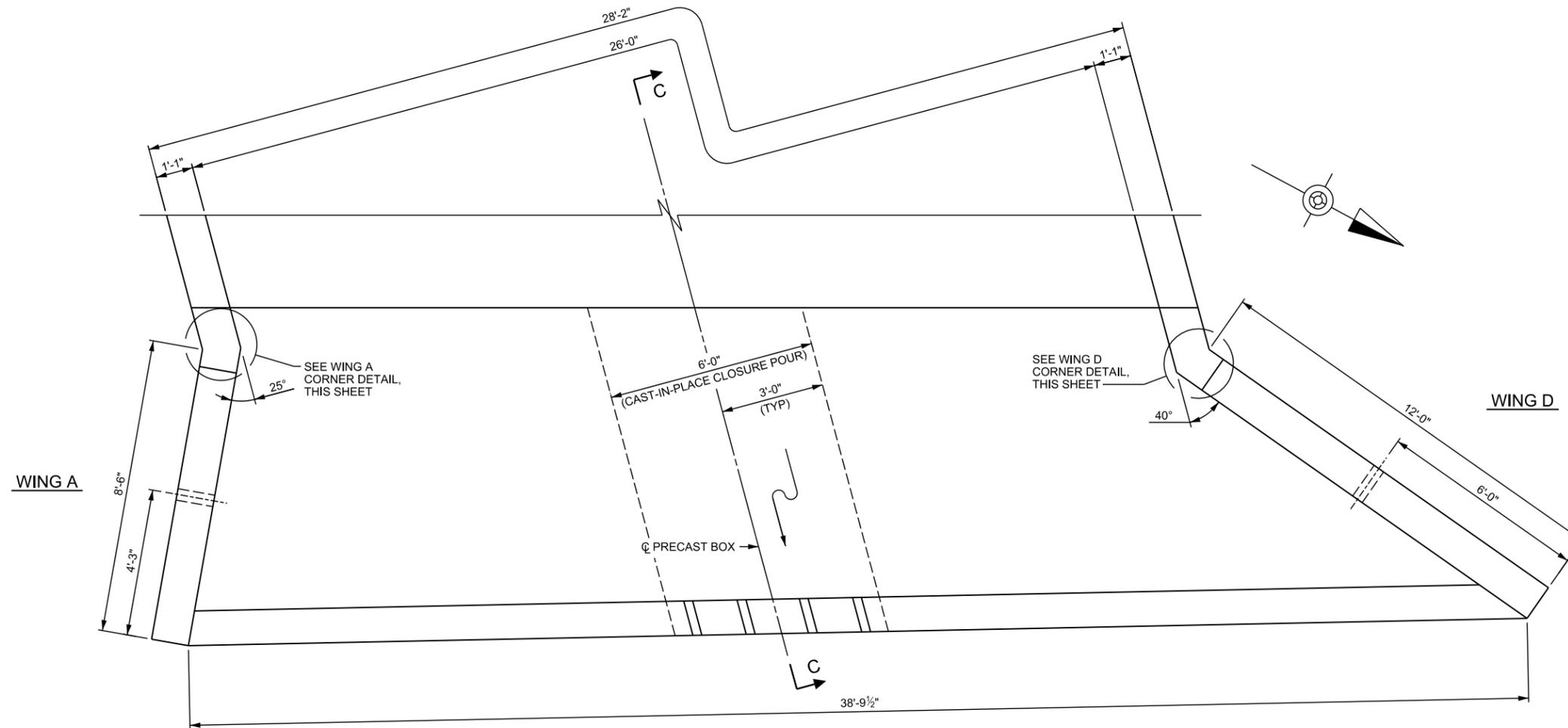
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REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

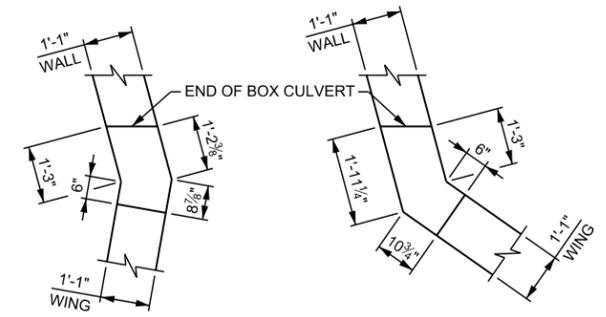
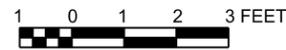
COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
 RAILROAD STREET STA 15+33.76
 OVER BUFFALO RUN
26'-0" X 6'-6" PRECAST RC BOX CULVERT
STAKE-OUT PLAN





PRECAST OUTLET SECTION PLAN



WING A

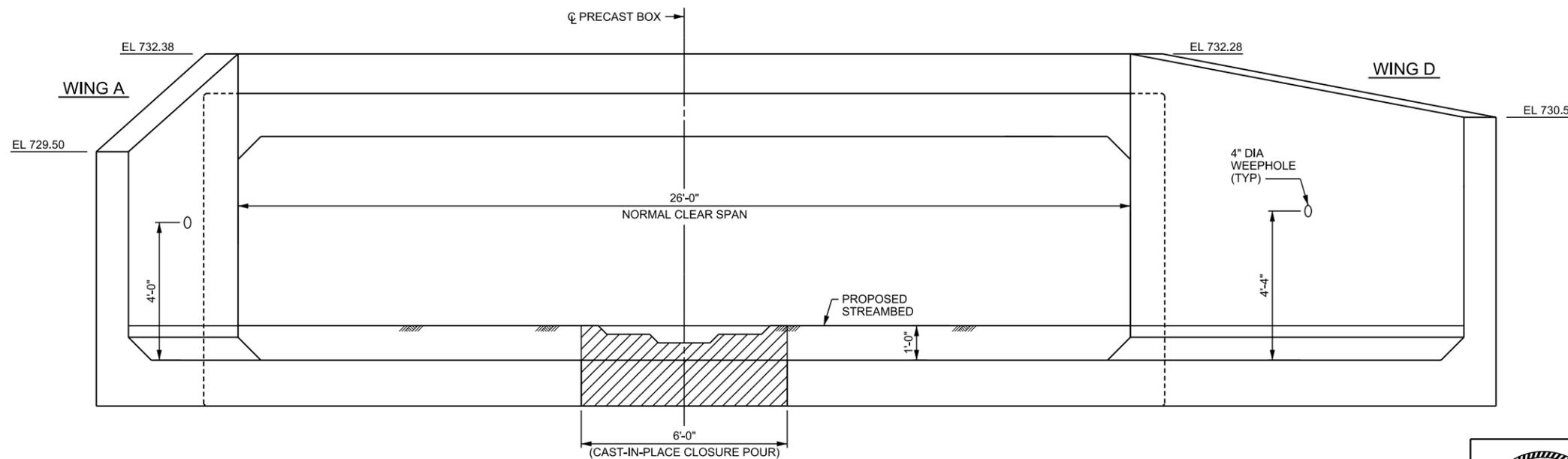
WING D

OUTLET WING CORNER DETAILS

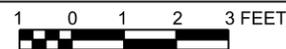


NOTES

1. FOR GENERAL NOTES, SEE SHEET 2
2. FOR SECTION C-C, SEE SHEET 7
3. FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 11



PRECAST OUTLET ELEVATION



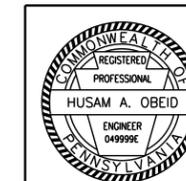
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REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN

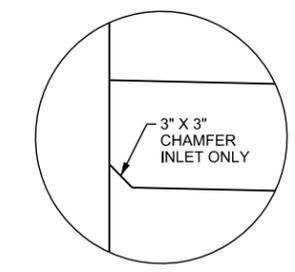
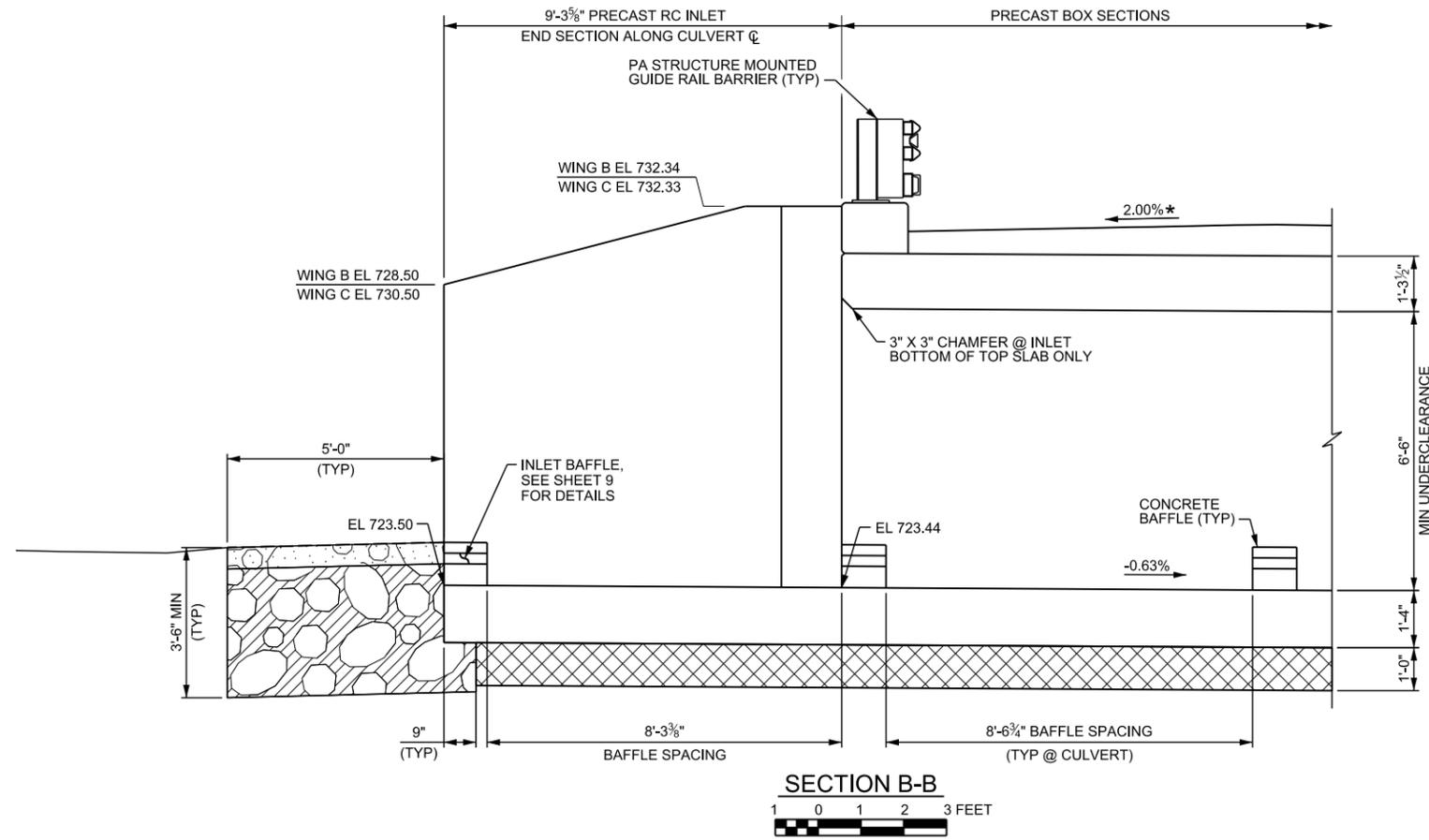
26'-0" X 6'-6" PRECAST RC BOX CULVERT
OUTLET PLAN & ELEVATION



RECOMMENDED 2/06/2025

SHEET 6 OF 15

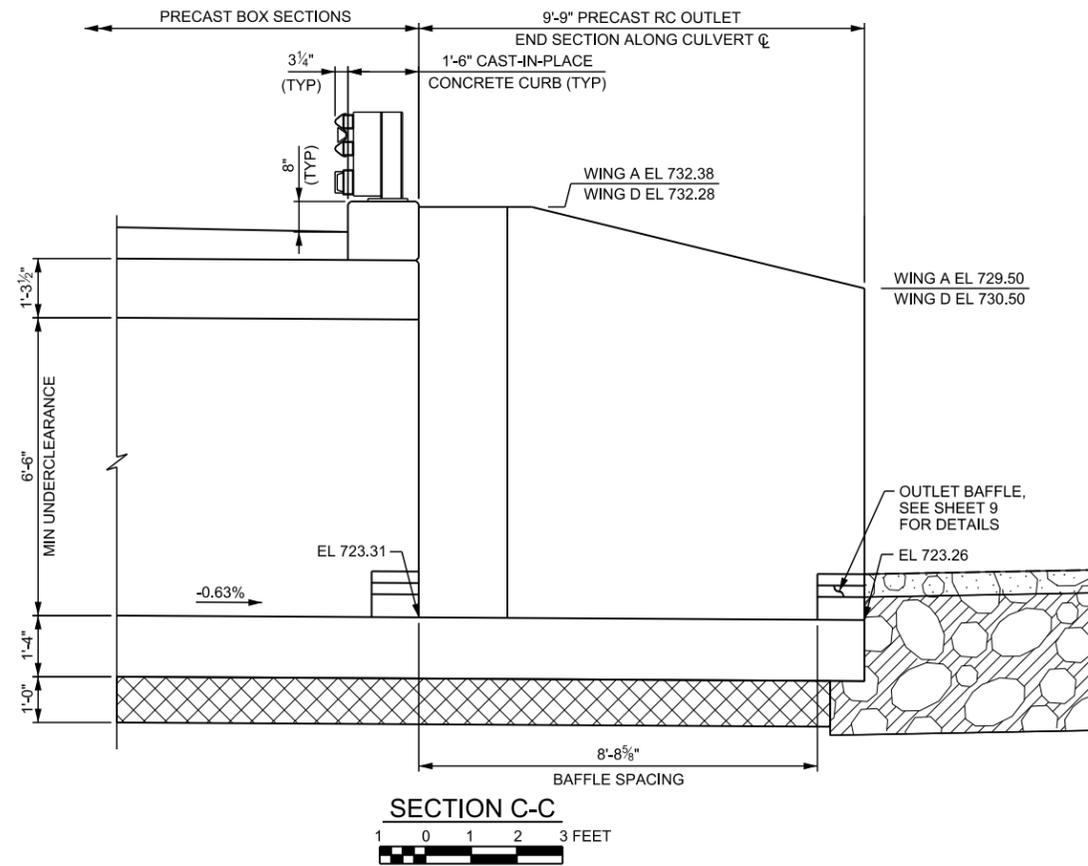
L-434D



INLET CHAMFER DETAIL
NOT TO SCALE

NOTES

1. FOR GENERAL NOTES, SEE SHEET 2
2. FOR SECTION B-B LOCATION, SEE SHEET 5.
3. FOR SECTION C-C LOCATION, SEE SHEET 6.
4. FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 11

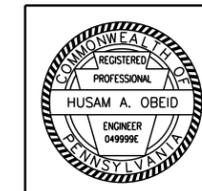


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BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN
26'-0" X 6'-6" PRECAST RC BOX CULVERT
INLET & OUTLET SECTIONS



PLOTTED: 24-JAN-2025 13:20

PRECAST BOX CULVERT NOTES

DESIGN, FABRICATE, INSTALL, AND POST-TENSION THE PRECAST BOX CULVERT AND END SEGMENTS IN ACCORDANCE WITH THE NOTES, DIMENSIONS, LENGTH, AND DETAILS SHOWN IN PLANS AND THE SPECIAL PROVISIONS.

PROVIDE DETAILS FOR THE BOX CULVERT AND END SEGMENTS IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD DRAWINGS.

PROVIDE REINFORCEMENT IN BOX SECTIONS THAT MEET SERVICEABILITY REQUIREMENTS TO CONTROL FLEXURE CRACKING IN ACCORDANCE WITH DM-4 5.7.3.4. STEEL AREAS PROVIDED TO MEET SERVICEABILITY REQUIREMENTS MAY EXCEED THOSE REQUIRED BY ANALYSIS AS INDICATED ON DRAWINGS.

PROVIDE TEMPERATURE AND SHRINKAGE REINFORCEMENT OF 0.20 SQ IN/FT IN EACH FACE OF THE WALLS AND SLABS IN THE LONGITUDINAL DIRECTION OF THE CULVERT FOR PRECAST SECTIONS.

PROVIDE SHEAR REINFORCEMENT AS REQUIRED TO MAINTAIN TOP SLAB THICKNESS OF 1'-3 1/2".

PROVIDE 2 1/2" CONCRETE COVER FOR THE TOP BARS OF THE TOP SLAB, 2" FOR THE TOP BARS OF THE BOTTOM SLAB, AND 1 1/2" FOR ALL OTHER BARS.

IN ACCORDANCE WITH PUB 408, SECTION 105.02 (d), SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE PRECAST BOX CULVERT AND PRECAST END SECTIONS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

DETAIL REINFORCEMENT AND POST-TENSIONING FOR PRECAST BOX SECTIONS ON SHOP DRAWINGS.

DESIGN BOX CULVERT AND PRECAST END SEGMENTS USING PENNSYLVANIA DEPARTMENT OF TRANSPORTATION COMPUTER PROGRAM "LFRD BOX CULVERT DESIGN AND RATING" VERSION 2.10.0.0. USE A MAXIMUM BAR DIAMETER OF 1.128 INCHES.

CONSTRUCT ALL BOX CULVERT SEGMENTS WITH A SKEW OF 75° 00'00".

USE THREADED MECHANICAL COUPLERS CAPABLE OF DEVELOPING 125% OF THE YIELD STRENGTH OF THE REINFORCEMENT BAR. FOR LOCATION OF INSERTS FOR HEADWALLS, BAFFLES, AND TOP SLABS SEE SHEETS 9-11. DETAIL THESE LOCATIONS ON THE SHOP DRAWINGS.

ITEMS INCLUDING INSERTS, POST-TENSIONING DUCTS AND STRANDS, CHUCKS, JOINT SEALING MATERIAL, NEOPRENE SPONGE DONUTS, AND NEOPRENE SPONGE GASKETS, FORMED WEEPHOLES, PREFORMED DRAINS, AND THREADED BOLTS/STUDS ARE CONSIDERED INCIDENTAL TO THE PRECAST BOX CULVERT ITEM.

POST-TENSION AND GROUT BEFORE PLACING STRUCTURE BACKFILL.

SHIP PRECAST BOX SECTIONS AND PRECAST END SECTIONS FROM FABRICATOR AFTER ATTAINING THE REQUIRED 28 DAY COMPRESSIVE STRENGTH.

DETAIL ON SHOP DRAWINGS THE BOX SECTION AND PRECAST END SECTION LENGTHS THAT MEET ALL THE HAULING GUIDELINES AND RESTRICTIONS. HAULING PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SHOW METHOD OF BRACING AND MOVING SECTIONS TO AVOID CRACKING DURING TRANSPORTATION AND ERECTION.

IN ACCORDANCE WITH PUB 408, SECTION 1050.3(c) 2.D, SUBMIT ERECTION DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO SETTING BOX SECTIONS AND PRECAST END SECTIONS.

ADJUST WALL REINFORCEMENT TO ACCOMMODATE WEEPHOLES IF NECESSARY. DO NOT CUT REINFORCEMENT.

CONNECTION/POST-TENSIONING NOTES

PROVIDE MECHANICAL CONNECTION OF END SEGMENT AND POST-TENSIONING IN ACCORDANCE WITH BC-798M. TYPE, SIZE, AND STRENGTH OF POST TENSIONING STRANDS TO BE PROVIDED BY FABRICATOR.

EXTEND BOTTOM ROW OF POST-TENSIONING STRANDS THROUGH THE BOTTOM SLAB OF PRECAST CONCRETE END (INLET & OUTLET) SECTIONS.

SUBMIT A PLAN FOR POST-TENSIONING TO THE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO SETTING ANY SEGMENTS.

POST-TENSION BOX SECTIONS FIRST, THEN PROVIDE MECHANICAL SPLICERS ON BOTTOM STRANDS TO CONNECT WITH THE END SECTIONS AND POST-TENSION BOTTOM STRANDS THROUGH END SECTIONS. DO NOT USE GALVANIZED STRAP CONNECTIONS TO CONNECT BOX SEGMENTS.

SHOW STAGING, SPACING, AND POST-TENSION FORCE ON SHOP DRAWINGS.

PRECAST END SECTION NOTES

DETAIL REINFORCEMENT & CONNECTION METHOD ON SHOP DRAWINGS.

CAST-IN-PLACE CONCRETE IS PERMITTED IN ANY PORTION OF THE PRECAST END SECTIONS, ONLY IF HEIGHT OR WIDTH OF END SECTIONS ARE RESTRICTED DUE TO SHIPPING RESTRAINTS.

THE FABRICATOR SHALL DETAIL ANY CAST-IN-PLACE AREAS ON THE SHOP DRAWINGS AND PROVIDE ALL REQUIRED REINFORCEMENT FOR ANY CAST-IN-PLACE SECTIONS TO THE CONTRACTOR. PROVIDE EPOXY COATED REINFORCING STEEL IN THE CAST-IN-PLACE PORTION OF THE INLET AND OUTLET END SECTION AS DETAILED.

DO NOT PROVIDE A TRANSVERSE TO CULVERT CENTERLINE, KEYED CONSTRUCTION JOINT IN THE BOTTOM SLAB OF THE PRECAST END SECTION.

PROVIDE CLASS AA CEMENT CONCRETE FOR ALL CAST-IN-PLACE CONCRETE. ALL WORK & MATERIAL INCLUDING REINFORCEMENT BARS, CONCRETE, & MEMBRANE WATERPROOFING ARE INCIDENTAL TO THE PRECAST END SECTION ITEM.

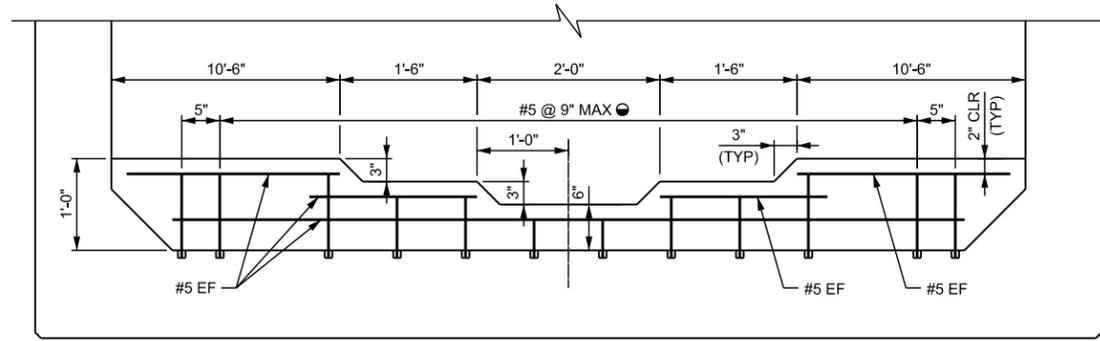
PROVIDE TEMPERATURE & SHRINKAGE REINFORCEMENT OF 0.20 SQ IN PER FT MINIMUM IN THE LONGITUDINAL DIRECTION FOR END SECTION.

USE MECHANICAL SPLICES ON BOTTOM STRANDS OF BOX CULVERT TO CONNECT END SECTION TO BOX CULVERT SECTIONS, IF NECESSARY.

CAST PRECAST END SECTION IN SECTIONS TO FACILITATE TRANSPORTATION AND ERECTION, IF NECESSARY.

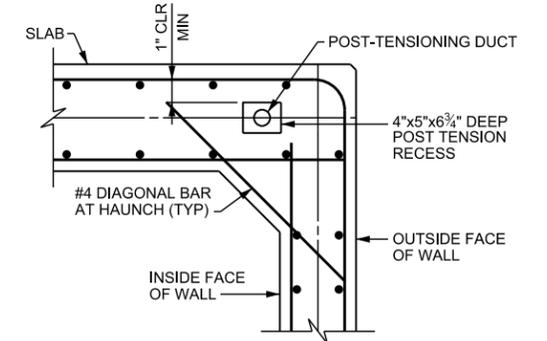
DESIGN THE PRECAST CONCRETE END SECTION FOR A VEHICULAR LIVE LOAD SURCHARGE TAKEN AS A 3'-0" EQUIVALENT HEIGHT OF SOIL IN ACCORDANCE WITH AASHTO & DM-4 D3.11.6.2.

REFER TO BC-798M FOR GALVANIZED STEEL STRAP CONNECTION TO CONNECT PRECAST END SECTION & PRECAST BOX CULVERT.



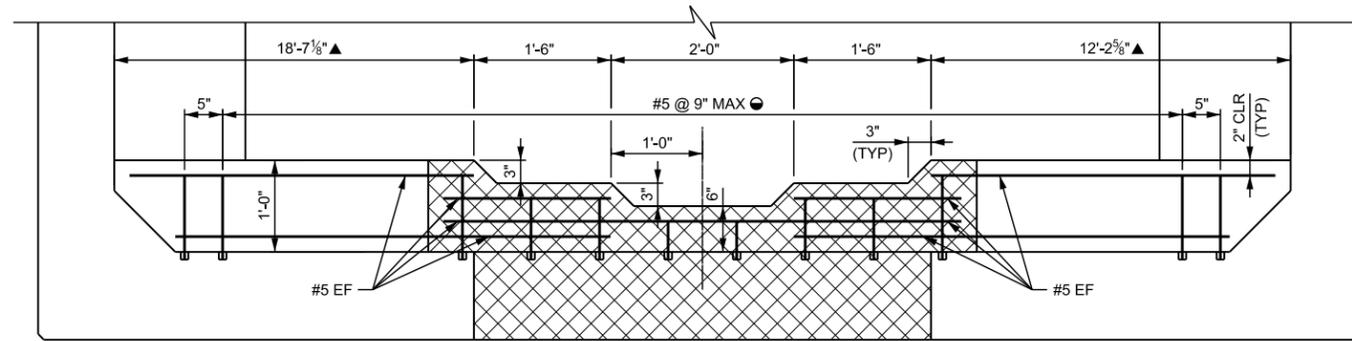
**TYPICAL PRECAST BAFFLE
ELEVATION @ BOX SECTIONS**

NOT TO SCALE



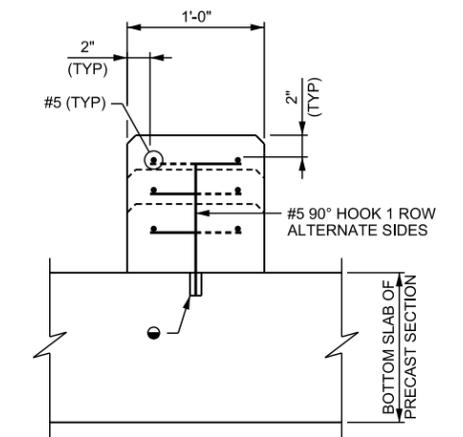
CORNER DETAIL

NOT TO SCALE



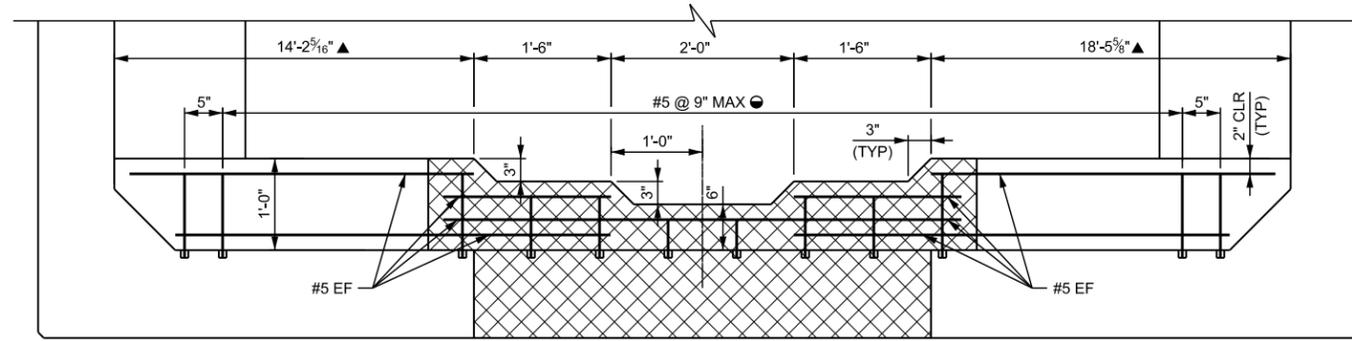
**TYPICAL PRECAST BAFFLE
ELEVATION @ INLET SECTIONS**

NOT TO SCALE



TYPICAL BAFFLE SECTION

NOT TO SCALE



**TYPICAL PRECAST BAFFLE
ELEVATION @ OUTLET SECTIONS**

NOT TO SCALE

LEGEND

- ▲ DENOTES BAFFLE MEASUREMENTS TAKEN ALONG FRONT FACE OF BAFFLES.
- THREADED INSERTS TO BE INCORPORATED IN PRECAST BOX BY THE FABRICATOR OR PROVIDED BY THE FABRICATOR.
- ⊠ CAST-IN-PLACE CLOSURE POUR

NOTES

1. FOR GENERAL NOTES, SEE SHEET 3.
2. BAFFLES TO BE CAST BY THE FABRICATOR PRIOR TO DELIVERY OF THE PRECAST BOX CULVERT AND PRECAST END SECTION.
3. REINFORCEMENT FOR BAFFLES IN THE CAST-IN-PLACE CLOSURE POUR AREAS TO BE PROVIDED BY THE FABRICATOR.

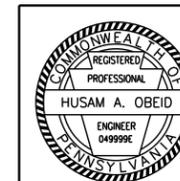
Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION**

**CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN**

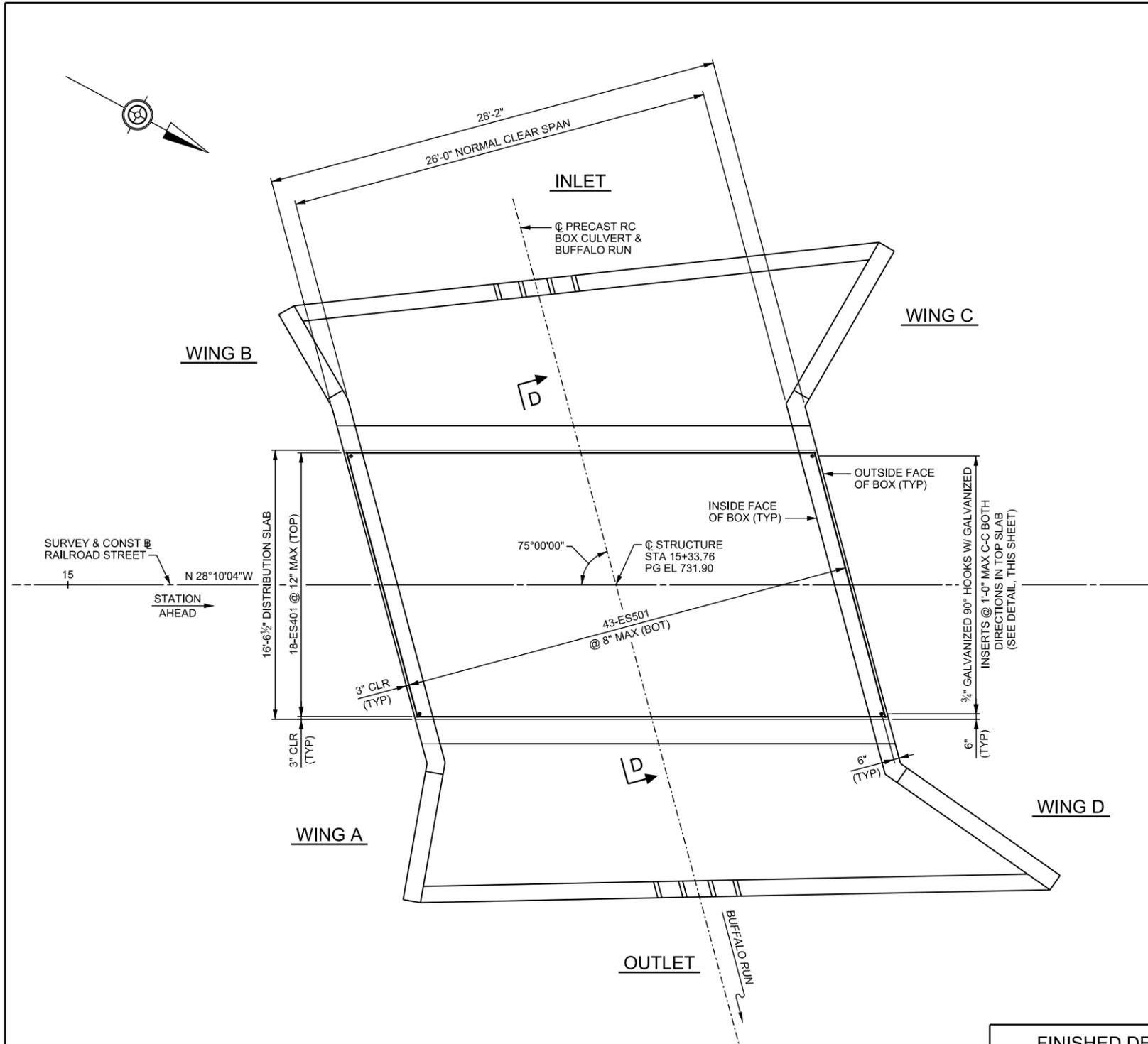
**26'-0" X 6'-6" PRECAST RC BOX CULVERT
MISCELLANEOUS DETAILS**



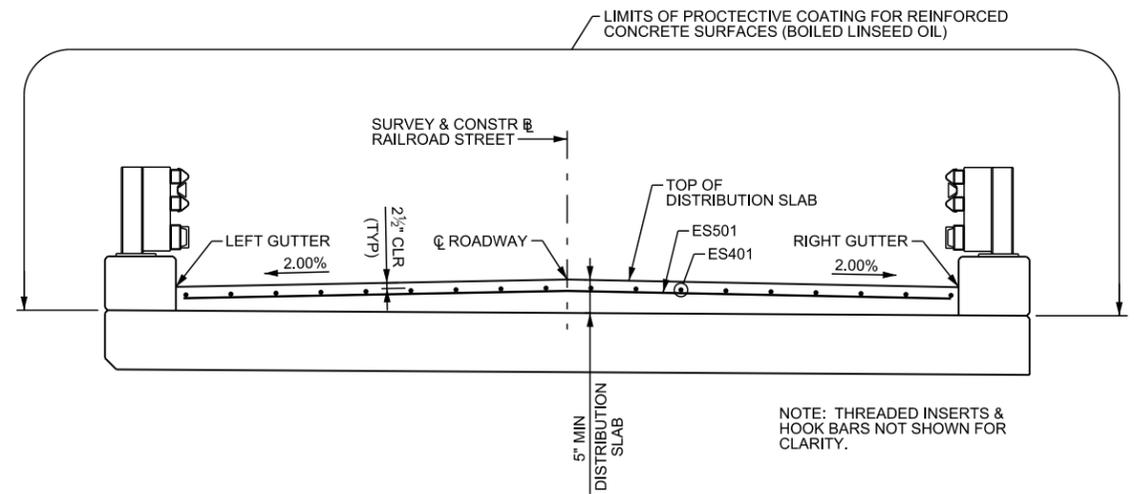
RECOMMENDED 2/06/2025

SHEET 9 OF 15

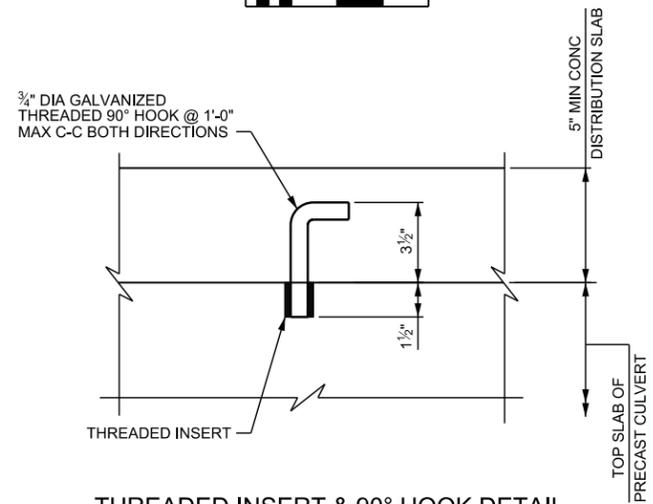
L-434D



DISTRIBUTION SLAB PLAN
1 0 1 2 3 4 FEET



SECTION D-D
1 0 1 2 3 FEET



THREADED INSERT & 90° HOOK DETAIL
NOT TO SCALE

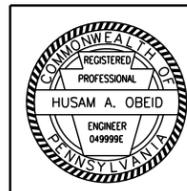
NOTES:
 INSERTS & HOOKS TO BE DETAILED BY THE FABRICATOR ON THE SHOP DRAWINGS.
 INSERTS & HOOKS ARE INCIDENTAL TO PRECAST BOX CULVERT ITEM.
 PROVIDE 6" EDGE COVER TO CENTERLINE INSERT.

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELFONTE BOROUGH
 RAILROAD STREET STA 15+33.76
 OVER BUFFALO RUN
26'-0" X 6'-6" PRECAST RC BOX CULVERT
DISTRIBUTION SLAB DETAILS



RECOMMENDED 2/06/2025

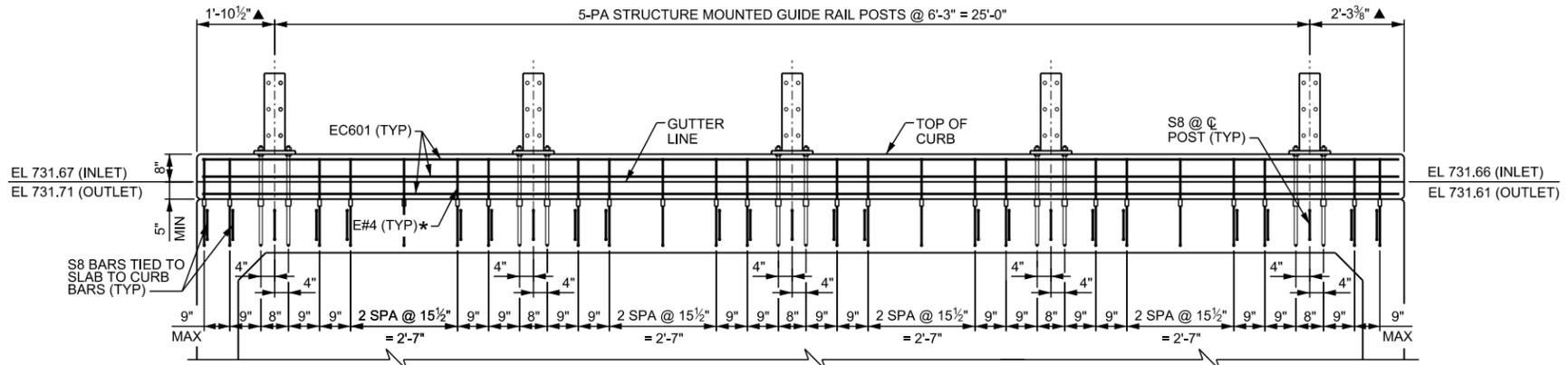
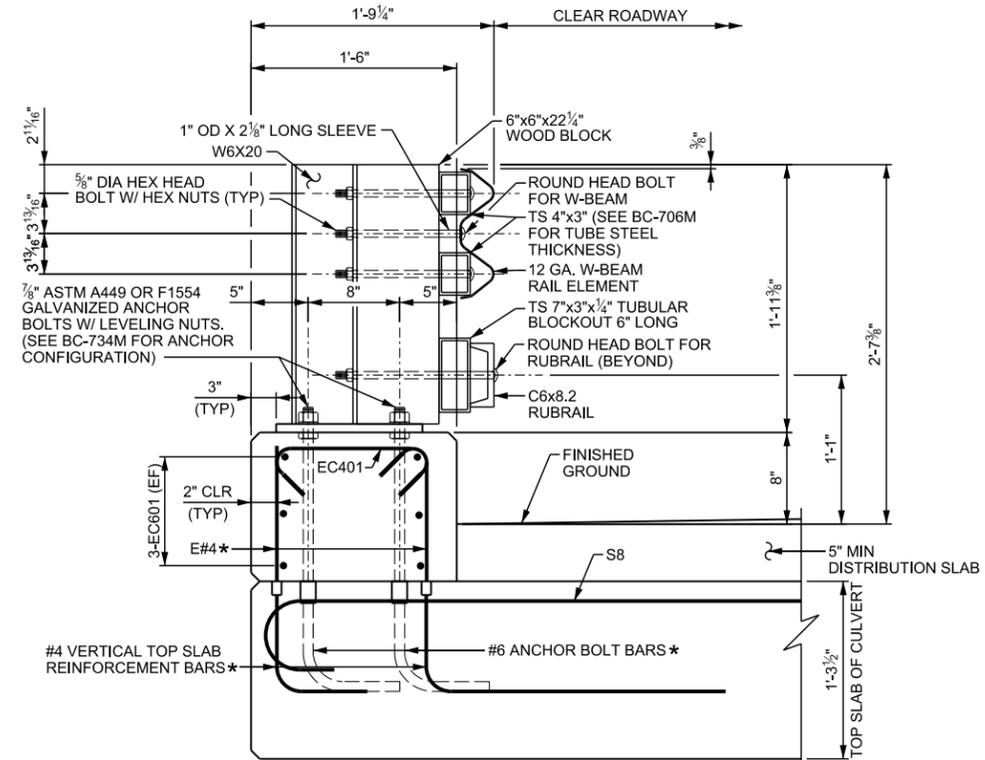
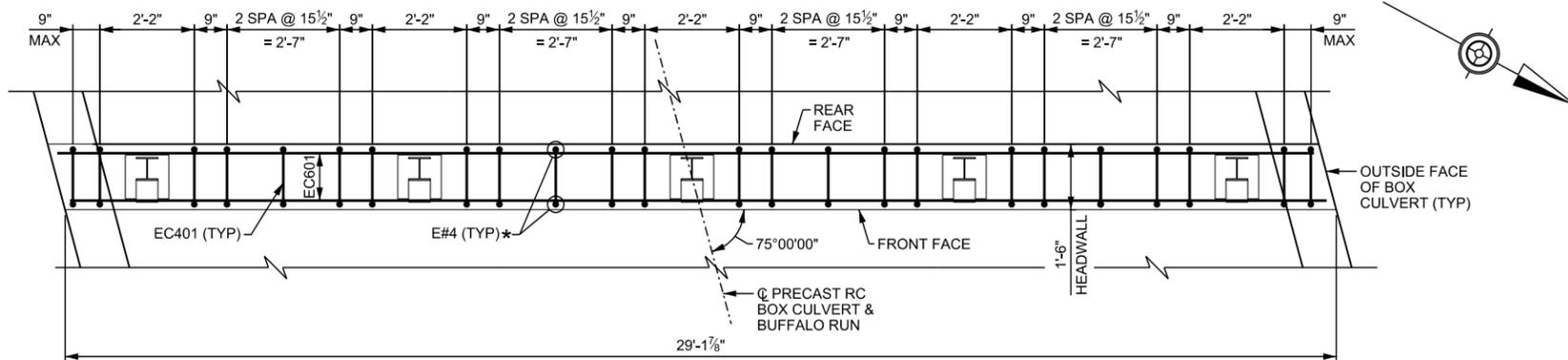
SHEET 10 OF 15

L-434D

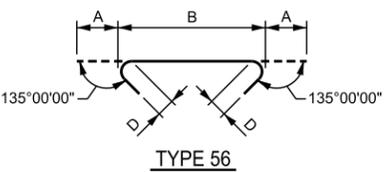
STATION	LOCATION		
	LEFT GUTTER	Q ROADWAY	RIGHT GUTTER
15+16.96	731.67	-	-
15+19.18	731.69	731.86	-
15+20.00	731.69	731.86	731.69
15+21.39	731.71	731.87	731.71
15+25.00	731.73	731.89	731.73
15+30.00	731.74	731.91	731.74
15+35.00	731.74	731.91	731.74
15+40.00	731.71	731.88	731.71
15+45.00	731.67	731.84	731.67
15+46.13	731.66	731.83	731.66
15+48.35	-	731.80	731.64
15+50.00	-	-	731.61
15+50.57	-	-	731.61

NOTES:
 ELEVATIONS GIVEN FOR THE FIRST AND LAST STATION FOR EACH POINT ARE LOCATED AT THE END OF THE CONCRETE SLAB.

PLOTTED: 24-JAN-2025 13:20



REINFORCEMENT BAR SCHEDULE										
MARK	NUMBER	SIZE	LENGTH	TYPE	A	B	C	D	E	REMARKS
DISTRIBUTION SLAB										
ES401	18	4	28'-10"	STR						
ES501	43	5	16'-9"	STR						
HEADWALLS										
EC401	48	4	1'-11"	56	4 1/2"	1'-2"		2"		
EC601	12	6	28'-10"	STR						



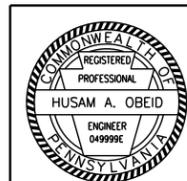
- LEGEND:**
- * SUPPLIED BY FABRICATOR
 - ▲ DISTANCE MEASURED ALONG FRONT FACE OF HEADWALL
- NOTES:**
- FOR GENERAL NOTES, SEE SHEET 3.
 - FOR REINFORCEMENT BAR FABRICATION DETAILS, SEE BC-736M.
 - EPOXY COATED BARS ARE DENOTED BY THE PREFIX "E".
 - ALL DIMENSIONS ARE OUT-TO-OUT OF BAR EXCEPT "A" ON STANDARD 135° HOOKS, AND "R", WHICH IS SHOWN TO THE INSIDE OF THE BAR.

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN
26'-0" X 6'-6" PRECAST RC BOX CULVERT
HEADWALL DETAILS

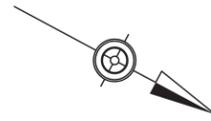


RECOMMENDED 2/06/2025

SHEET 11 OF 15

L-434D

PLOTTED: 14-JAN-2025 14:16



GENERAL NOTES

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE OWNER. REFER TO PUBLICATION 408 SECTION 102.05 FOR FURTHER INFORMATION.

FOR ADDITIONAL SOIL AND ROCK DESCRIPTIONS, SEE PUBLICATION 222.

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SUBSURFACE CONDITIONS MAY DIFFER FROM THE CONDITIONS REPORTED AT THE SPECIFIC LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE OF CONDITIONS AT THE BORING LOCATIONS.

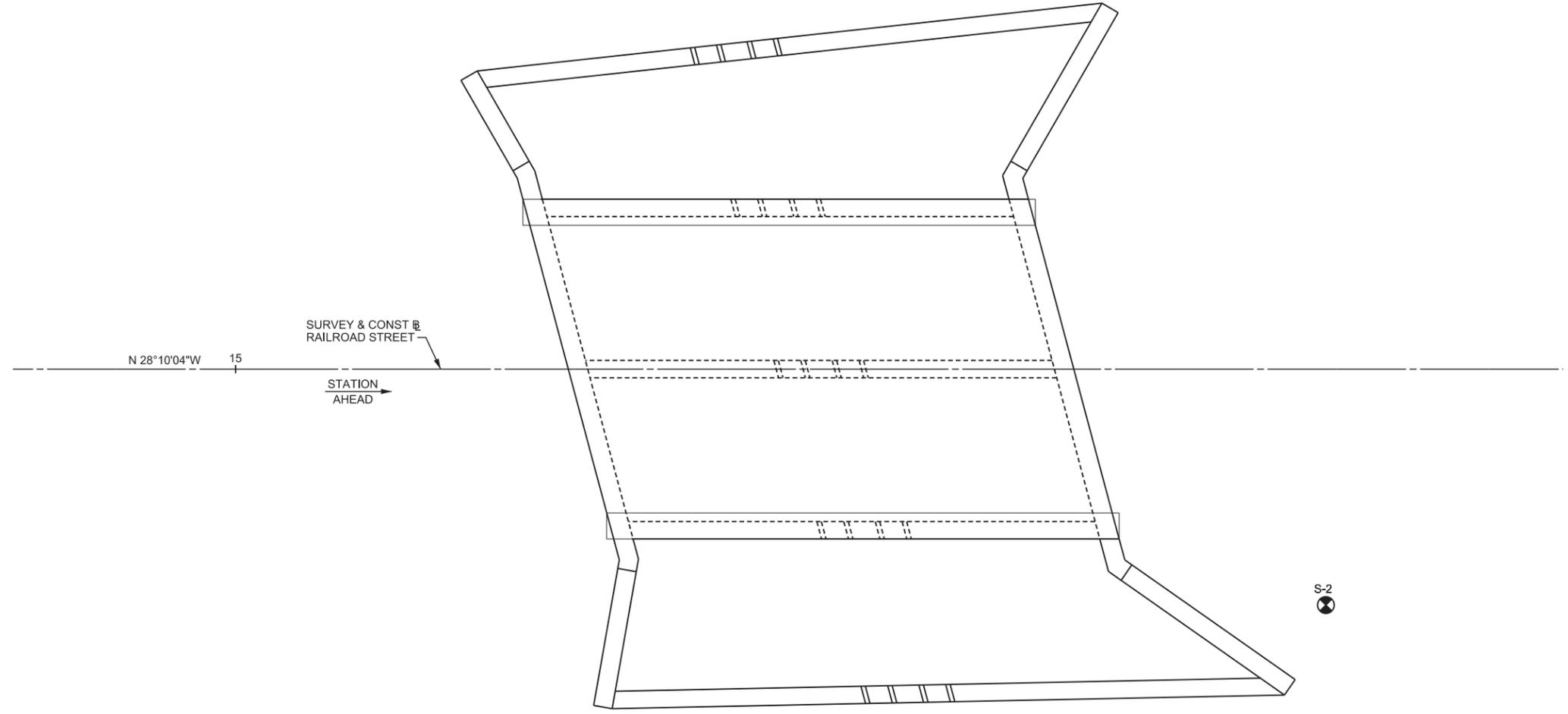
LEGEND

AS-DRILLED BORING LOCATION

THE DESCRIPTION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.
GRB

THE SUBSURFACE EXPLORATION DATA THAT ARE PRESENTED ON THESE DRAWINGS (INCLUDING BORING LOGS, EARTH SAMPLES, ROCK CORES, CLASSIFICATION OF MATERIALS AND DEPTH OF BORINGS) ACCURATELY REPRESENT THE CONDITIONS ENCOUNTERED BY THE TEST BORING PROGRAM AT EACH BORING LOCATION.

Gina R Blake
 GEOTECHNICAL ENGINEER/ENGINEERING GEOLOGIST
 DATE: 01/15/2025



S-1

S-2

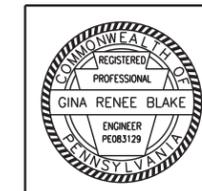
BORING LOCATION PLAN
 1 0 1 2 3 4 FEET

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEVILLE BOROUGH
 RAILROAD STREET STA 15+33.76
 OVER BUFFALO RUN
 26'-0" X 6'-6" PRECAST RC BOX CULVERT
STRUCTURE BORINGS - 1

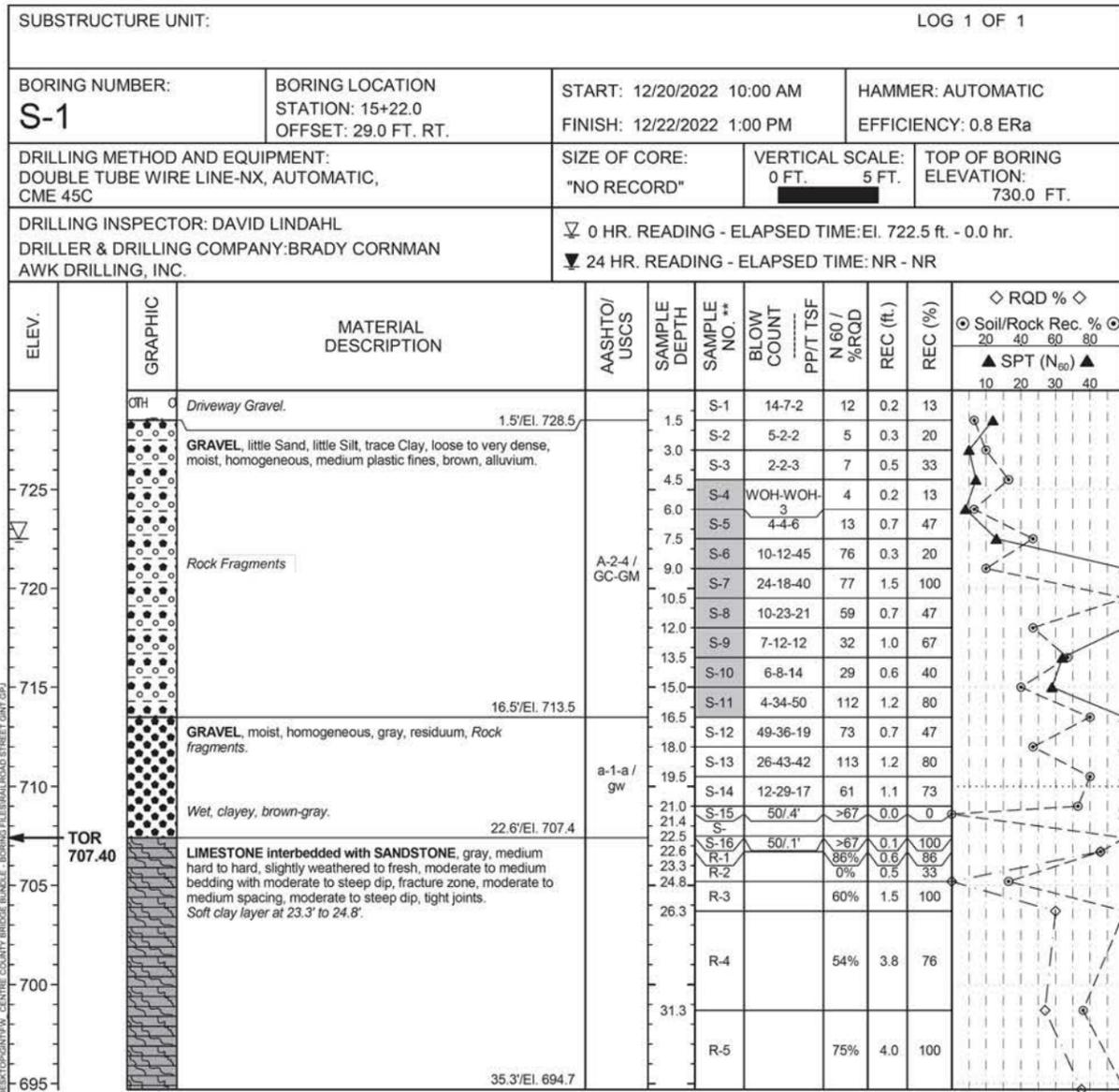


RECOMMENDED 2/06/2025

SHEET 12 OF 15

L-434D

PLOTTED: 14-JAN-2025 14:16



**SAMPLE NO. shading indicates lab testing performed.

GENERAL NOTES

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE OWNER. REFER TO PUBLICATION 408 SECTION 102.05 FOR FURTHER INFORMATION.

FOR ADDITIONAL SOIL AND ROCK DESCRIPTIONS, SEE PUBLICATION 222.

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SUBSURFACE CONDITIONS MAY DIFFER FROM THE CONDITIONS REPORTED AT THE SPECIFIC LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE OF CONDITIONS AT THE BORING LOCATIONS.

LEGEND

TOR TOP OF ROCK ELEVATION

THE DESCRIPTION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

GRB

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN

26'-0" X 6'-6" PRECAST RC BOX CULVERT
STRUCTURE BORINGS - 2

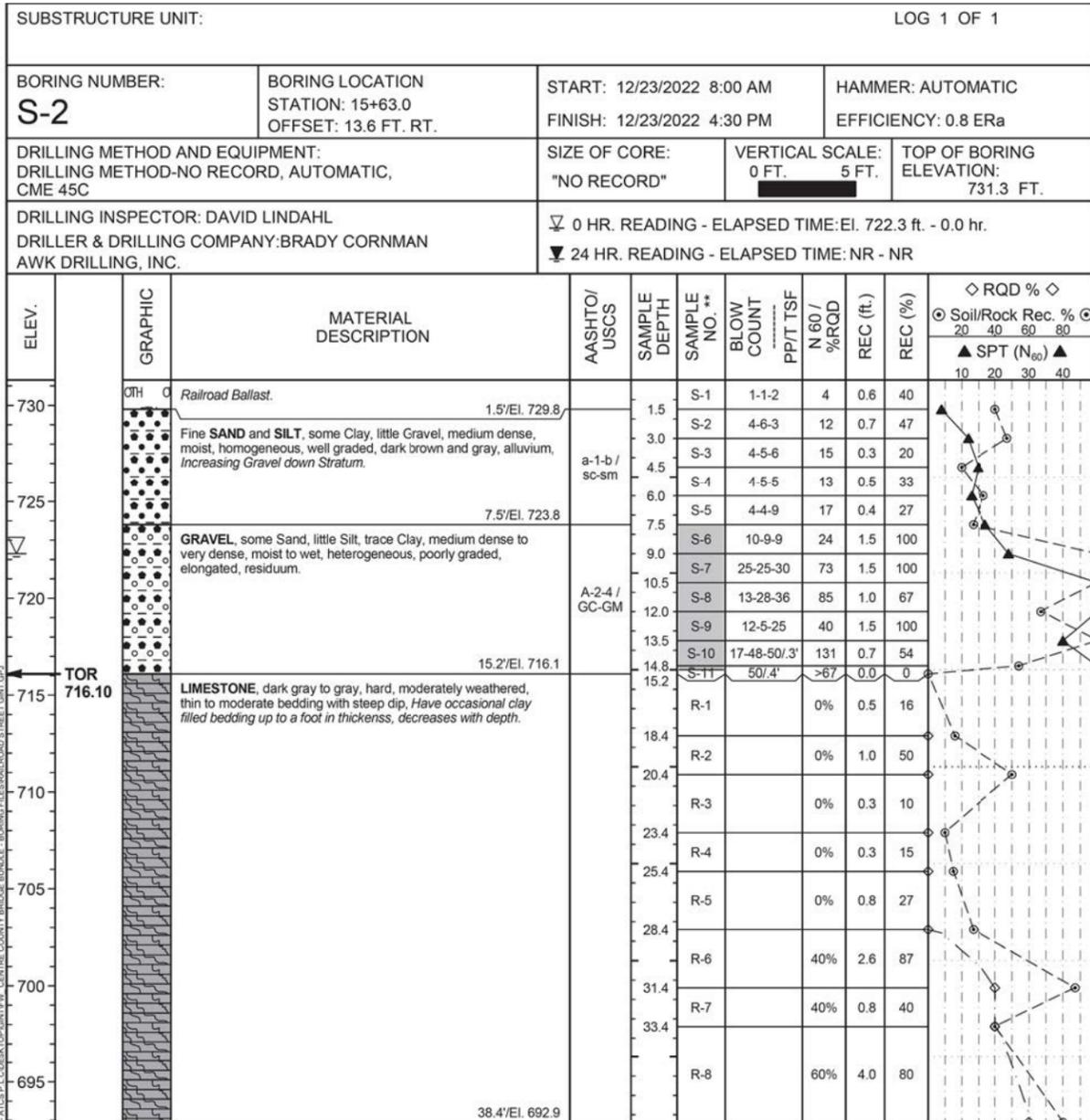


RECOMMENDED 2/06/2025

SHEET 13 OF 15

L-434D

PLOTTED: 14-JAN-2025 14:17



**SAMPLE NO. shading indicates lab testing performed.

GENERAL NOTES

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE OWNER. REFER TO PUBLICATION 408 SECTION 102.05 FOR FURTHER INFORMATION.

FOR ADDITIONAL SOIL AND ROCK DESCRIPTIONS, SEE PUBLICATION 222.

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SUBSURFACE CONDITIONS MAY DIFFER FROM THE CONDITIONS REPORTED AT THE SPECIFIC LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE OF CONDITIONS AT THE BORING LOCATIONS.

LEGEND

TOR TOP OF ROCK ELEVATION

THE DESCRIPTION OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

GRB

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN
26'-0" X 6'-6" PRECAST RC BOX CULVERT
STRUCTURE BORINGS - 3



RECOMMENDED 2/06/2025

SHEET 14 OF 15

L-434D

PLOTTED: 14-JAN-2025 14:17

LABORATORY TEST SUMMARY - SOILS																						
BORING NUMB.	STATION & OFFSET	SAMP. #	TEST DEPTH (FT.)	NAT. MOIST. %	% GRAIN SIZE DISTRIBUTION (AASHTO)							CLASSIFICATION		PLASTICITY PARAMETERS			SHEAR STRENGTH					
					GRAV. %	SAND %	COARSE SAND %	FINE SAND %	FINES %	SILT %	CLAY %	AASHTO	USCS	S.G.	LIQUID LIMIT	PLASTIC LIMIT	P. I.	C (TSF)	φ (DEG.)	C' (TSF)	φ' (DEG.)	TEST METHOD
S-1	15+22.0 29 ft. RT.	S-7 to 11	9.0 to 16.5	11.9	53.8	18.0	9.4	8.6	28.3	19.8	8.5	A-2-4	GC-GM		24	18	6			0.000	30.2	DIR. SHR.-CD
S-2	15+63.0 13.6 ft. RT.	S-6 to 10	7.5 to 15.0	9.9	53.9	26.0	13.1	12.9	20.1	13.5	6.6	A-2-4	GC-GM		23	16	7					

GENERAL NOTES

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE OWNER. REFER TO PUBLICATION 408 SECTION 102.05 FOR FURTHER INFORMATION.

FOR ADDITIONAL SOIL AND ROCK DESCRIPTIONS, SEE PUBLICATION 222.

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SUBSURFACE CONDITIONS MAY DIFFER FROM THE CONDITIONS REPORTED AT THE SPECIFIC LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE OF CONDITIONS AT THE BORING LOCATIONS.

LABORATORY TEST SUMMARY - ROCK CORE											
BORING NUMBER	STATION & OFFSET	SAMPLE #	TEST DEPTH (FT.)	TEST	STRENGTH	JAR SLAKE TEST PERFORMED?	SLAKE DURABILITY INDEX / TYPE	ROCK RECOVERY %	RQD %	BEDROCK LITHOLOGY	STRATIGRAPHIC UNIT
S-1	15+22.0 29 ft. RT.	R-3	24.8 to 26.3	Unconfined Compressive Test	20444.0 PSI / 1,472.0 TSF	No		100	60	LIMESTONE	Benner Formation through Loysburg Formation
S-2	15+63.0 13.6 ft. RT.	R-6	28.4 to 31.4	Unconfined Compressive Test	9462.5 PSI / 681.3 TSF	No		87	40	LIMESTONE	Benner Formation through Loysburg Formation

LABORATORY TEST SUMMARY - ELECTROCHEMICAL											
BORING NUMBER	STATION & OFFSET	SAMPLE #	TEST DEPTH (FT.)	SAMPLE SOURCE	pH	MINIMUM RESISTIVITY (ohm-cm)	CHLORIDE CONTENT (ppm)	SULFATE CONTENT (ppm)	HIGH ORGANIC CONTENT?	CORROSIVE FOR CONCRETE?	CORROSIVE FOR STEEL?
S-1	15+22.0 29 ft. RT.	S-4 to 6	4.5 to 9.0	SOIL	7.0	6,210	10	0	No	No	No
S-2	15+63.0 13.6 ft. RT.	S-6 to 10	7.5 to 15.0	SOIL	7.1	4,669	20	0	No	No	No
STREAM			0.0 to 1.0	STREAM	7.7	74	34	12	No	No	No

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

BMS STR ID: 14-7401-1820-0005 MPMS/ECMS PROJ: 114728 BRKEY: 70571

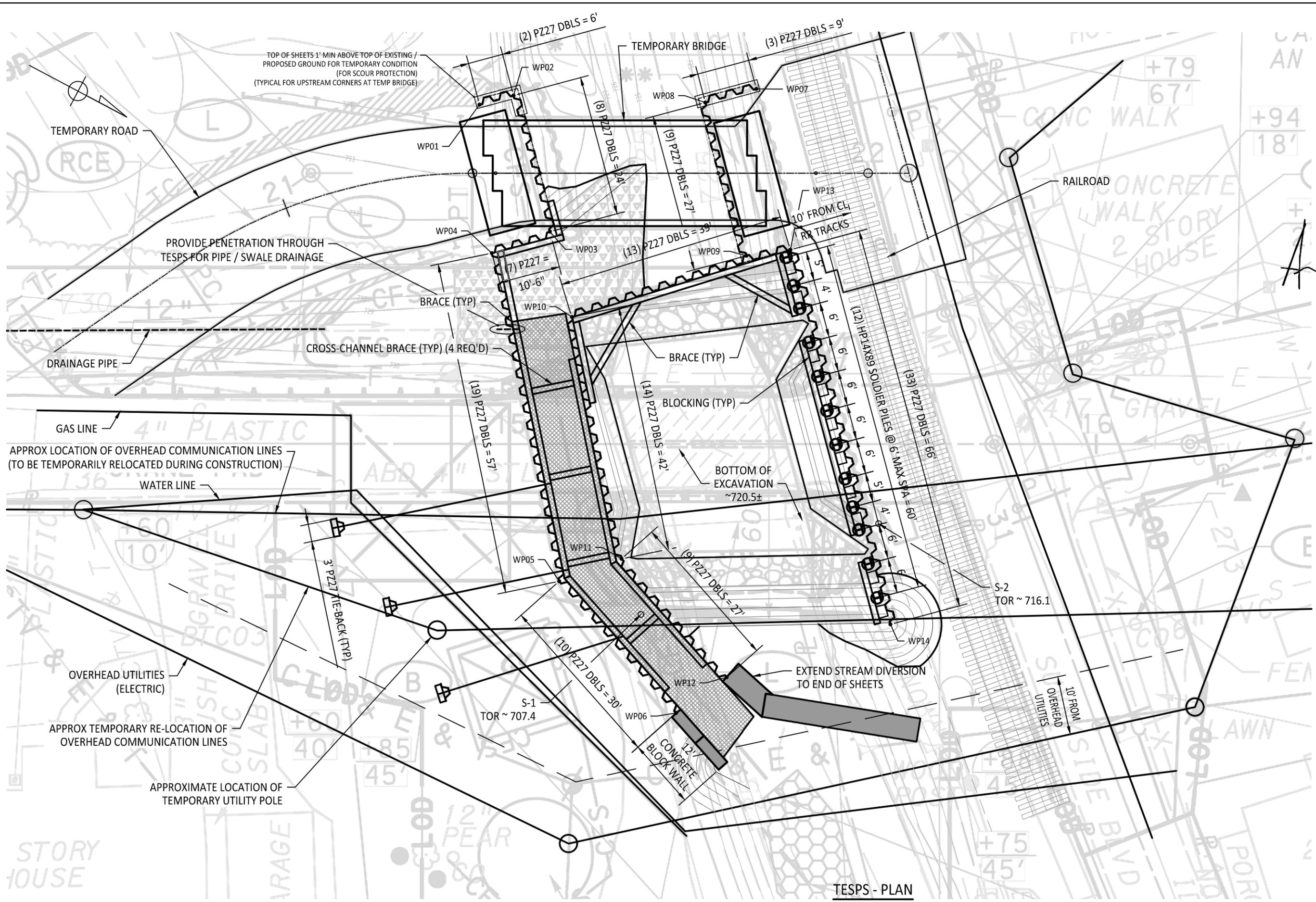
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

CENTRE COUNTY
BELLEFONTE BOROUGH
RAILROAD STREET STA 15+33.76
OVER BUFFALO RUN

26'-0" X 6'-6" PRECAST RC BOX CULVERT
STRUCTURE BORINGS - 4



DATE: 8/23/2024 7:39 AM USER: Aaron Craig FILE: S:\Projects\050023_GOH Master Agreement\03_Task Orders\00004_CMMM Bridges\05_RR Street\Structures\Temp Bridge\CAD\CMM2 RR ST - TESPS-DETAILS



TESPS - PLAN
NOT TO SCALE

BY: AMC	DATE:
CHK: grb	DATE:
REV: CHK	DATE:
CHK:	DATE:

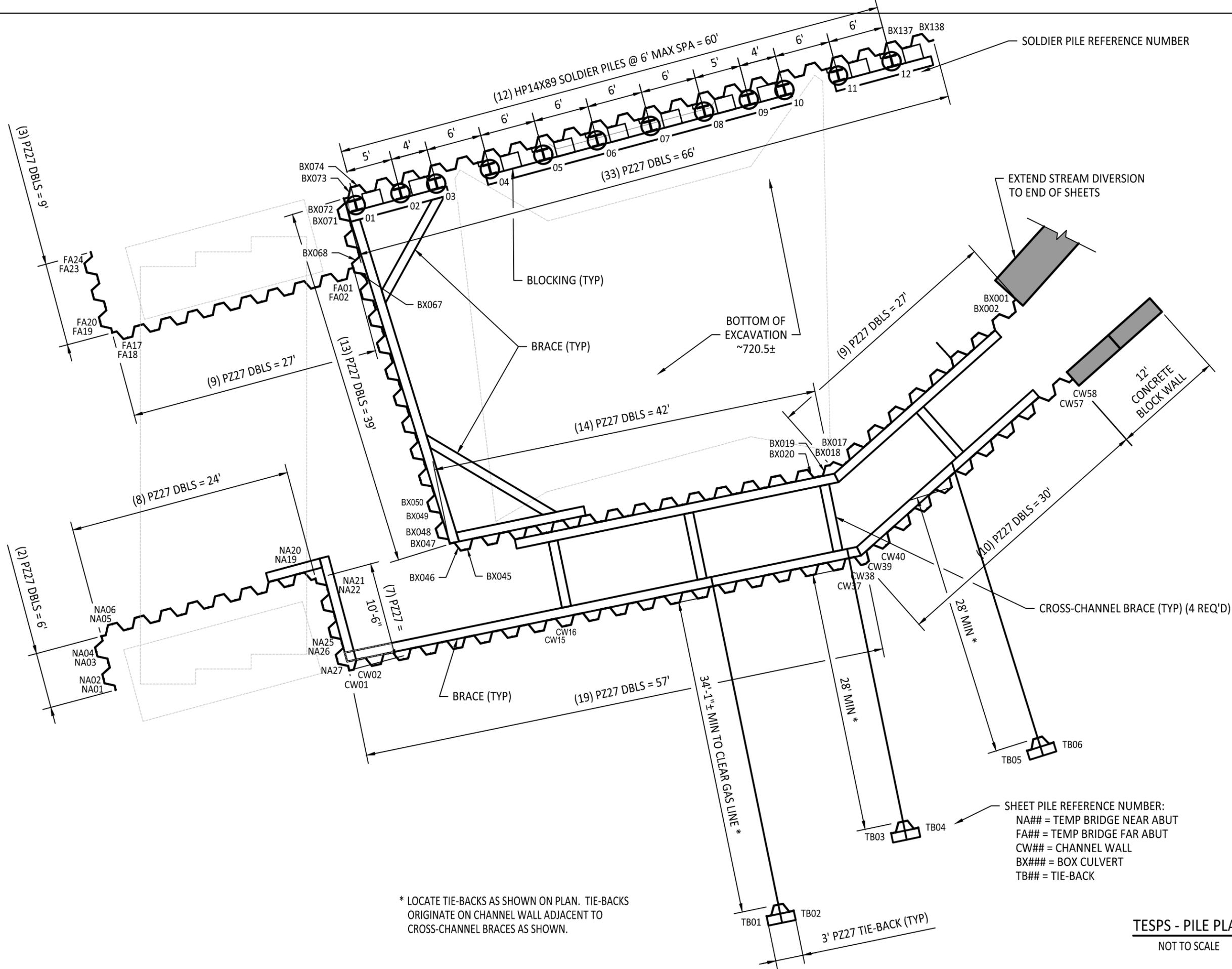
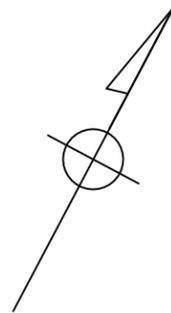


PROJECT: CENTRE COUNTY MULTI-MODAL BRIDGE REPLACEMENTS
SUBJECT: RAILROAD STREET OVER BUFFALO RUN
L-434D TESPS

ATCS #: 050023.00004.15

ATCS

DATE: 8/23/2024 7:39 AM USER: Aaron Craig FILE: S:\Projects\050023_GOH Master Agreement\03_Task Orders\00004_CCMR Bridges\05_RR Street\Structures\Temp Bridge\CAD\CCMM2 RR ST - TESP5-DETAILS



SHEET PILE REFERENCE NUMBER:
 NA## = TEMP BRIDGE NEAR ABUT
 FA## = TEMP BRIDGE FAR ABUT
 CW## = CHANNEL WALL
 BX### = BOX CULVERT
 TB## = TIE-BACK

TESPS - PILE PLAN
 NOT TO SCALE



PROJECT: CENTRE COUNTY MULTI-MODAL BRIDGE REPLACEMENTS
 SUBJECT: RAILROAD STREET OVER BUFFALO RUN
 L-434D TESPS
 ATCS #: 050023.00004.15

ATCS

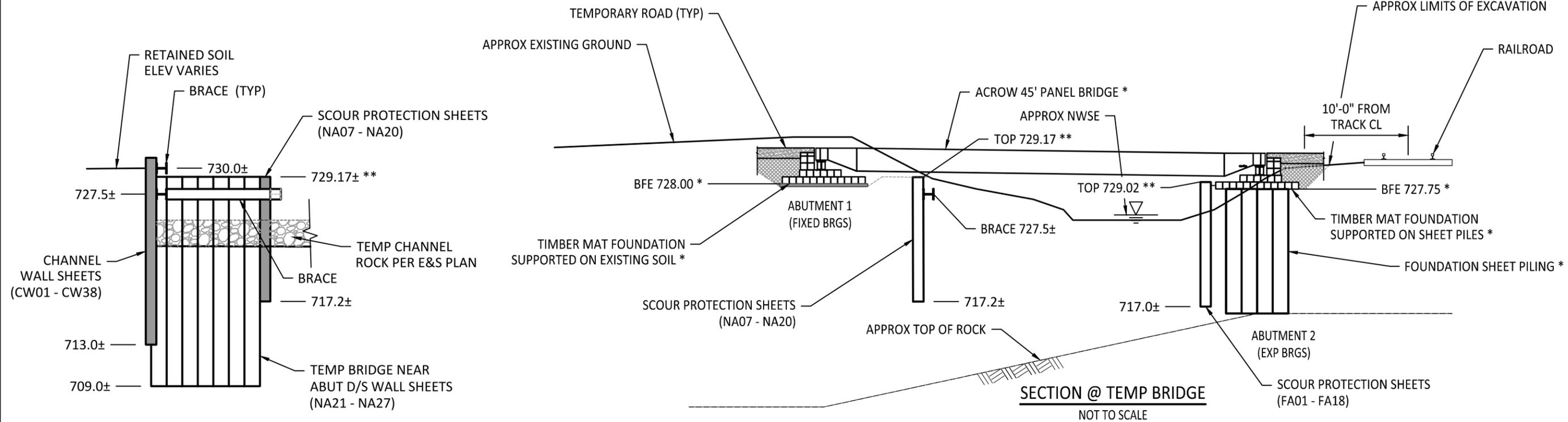
BY: AMC
 CHK: grb
 REV:
 CHK:
 DATE:
 DATE:
 DATE:
 DATE:
 SHEET 2 OF 6



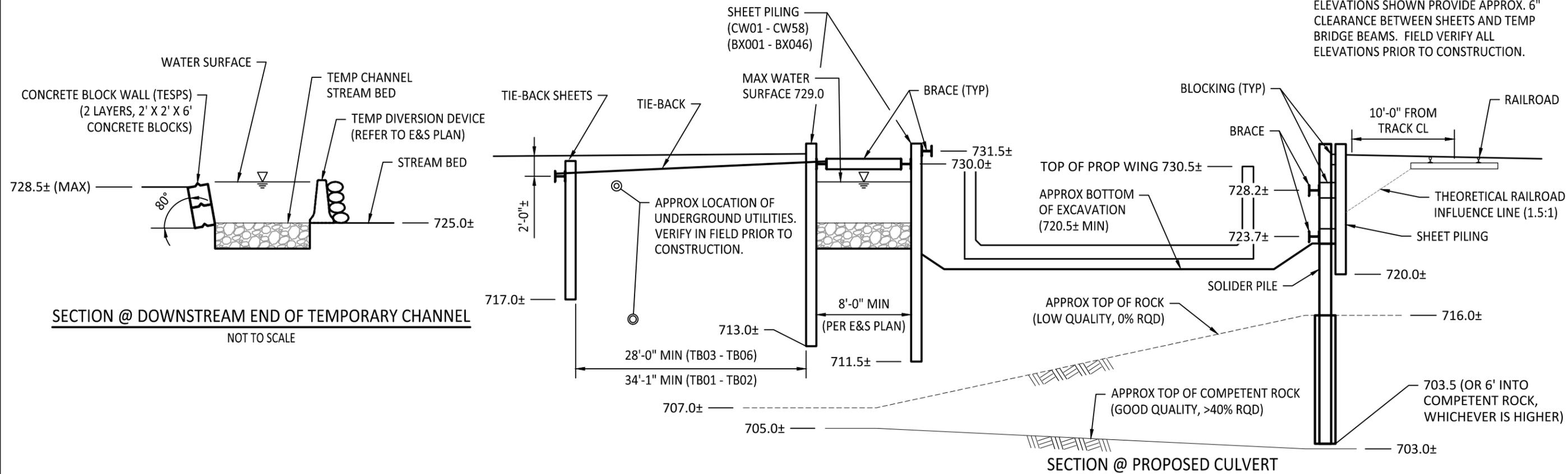
PROJECT: CENTRE COUNTY MULTI-MODAL BRIDGE REPLACEMENTS
 SUBJECT: RAILROAD STREET OVER BUFFALO RUN
 L-434D TESPS
 ATCS #: 050023.00004.15

ATCS

FILE: S:\Projects\050023_GOH Master Agreement\03_Task Orders\00004_CCM Bridge\CAD\CMM2 RR ST - TESPS-DETAILS
 USER: Aaron Craig
 DATE: 8/23/2024 7:39 AM



ELEVATION @ TEMP BRIDGE NEAR D/S WALL
 NOT TO SCALE



SECTION @ DOWNSTREAM END OF TEMPORARY CHANNEL
 NOT TO SCALE

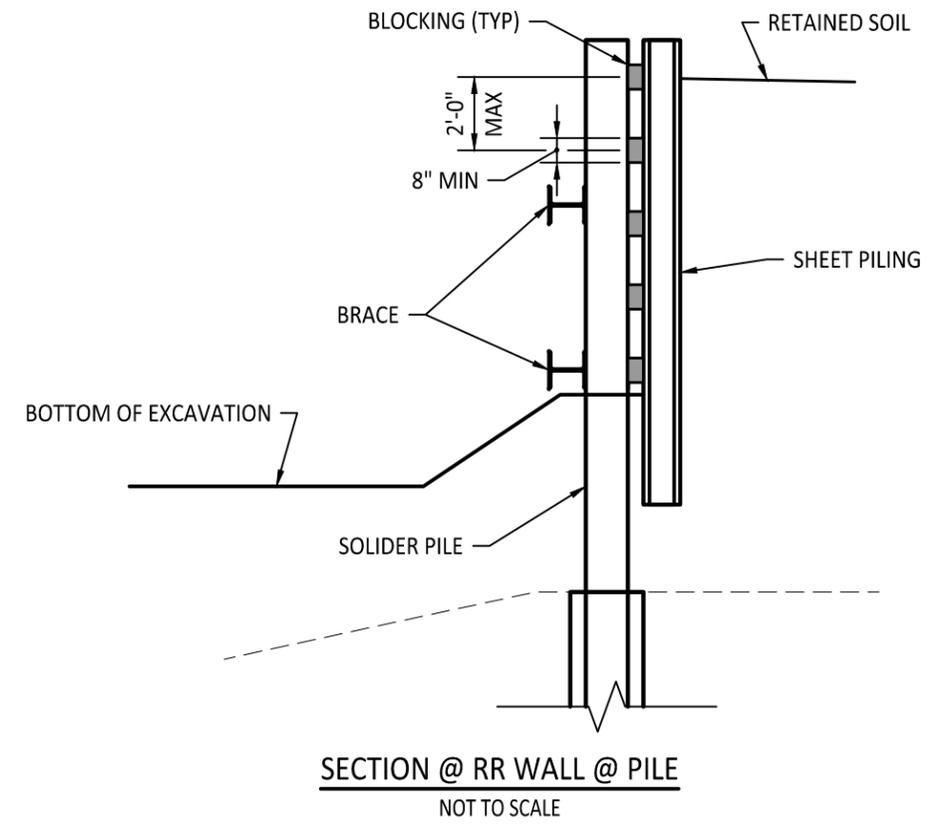
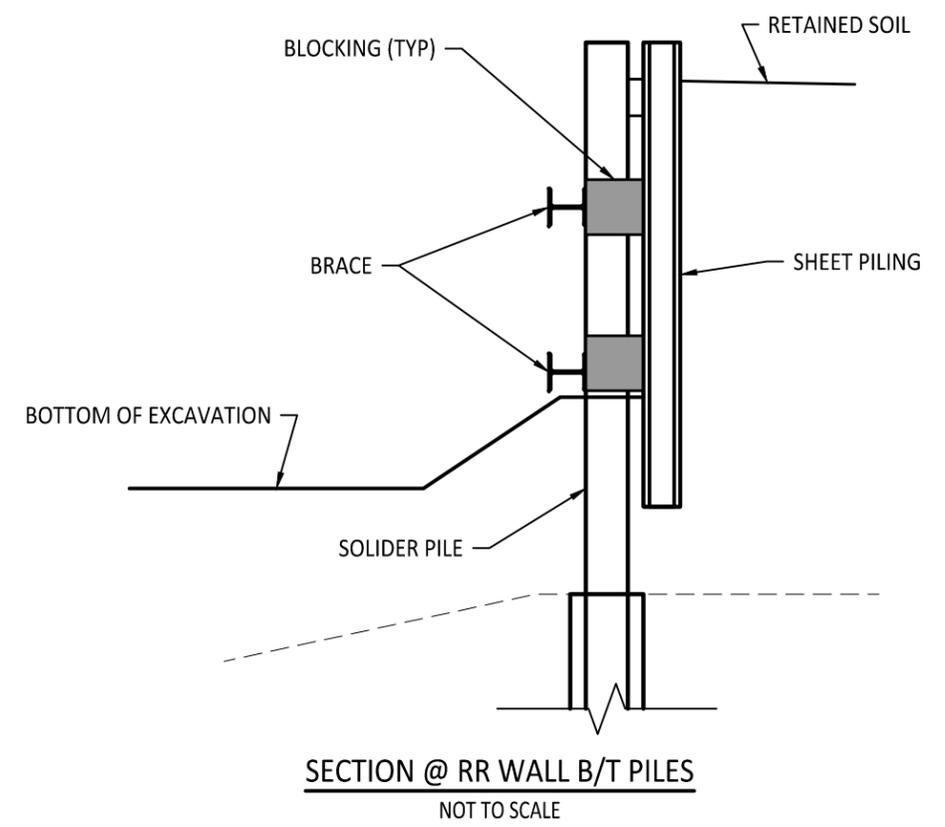
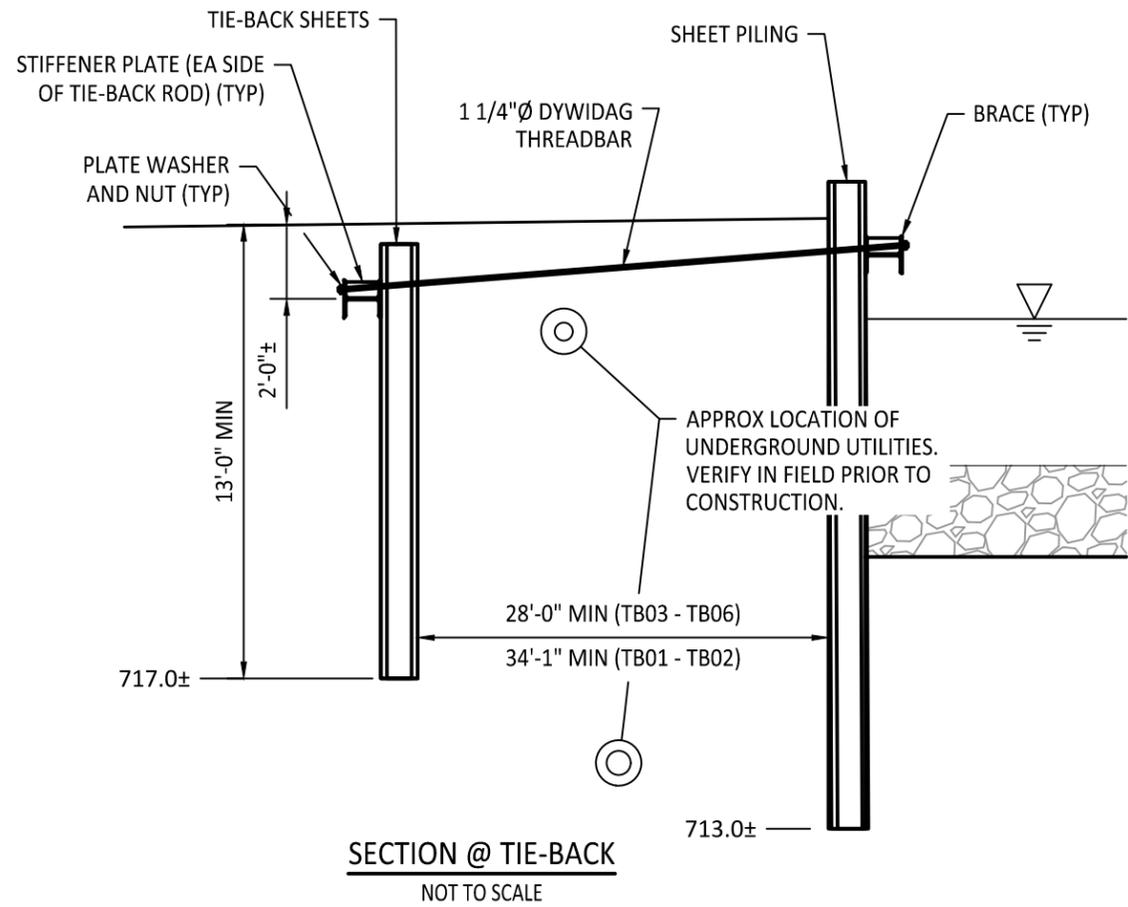
SECTION @ PROPOSED CULVERT
 NOT TO SCALE

* FOR TEMP BRIDGE FOUNDATION DETAILS, REFER TO TEMP BRIDGE FOUNDATION DESIGN REPORT (SEPARATE SUBMITTAL)
 ** REFER TO TEMP BRIDGE FOUNDATION DESIGN REPORT (SEPARATE SUBMITTAL). ELEVATIONS SHOWN PROVIDE APPROX. 6" CLEARANCE BETWEEN SHEETS AND TEMP BRIDGE BEAMS. FIELD VERIFY ALL ELEVATIONS PRIOR TO CONSTRUCTION.

NOTE!! FLOOD EXCAVATION IF WATER SURFACE EXCEEDS 729.0.

REMOVE ALL SHEET PILING, SOLDIER PILES, ETC. AFTER CONSTRUCTION UNLESS LOCATED WITHIN 10' OF TRACK CL.

DATE: 8/23/2024 7:39 AM USER: Aaron Craig FILE: S:\Projects\050023_GOH Master Agreement\03_Task Orders\00004_CCM Bridge\05 RR Street\Structures\Temp Bridge\CAD\CCMM2 RR ST - TESPS-DETAILS

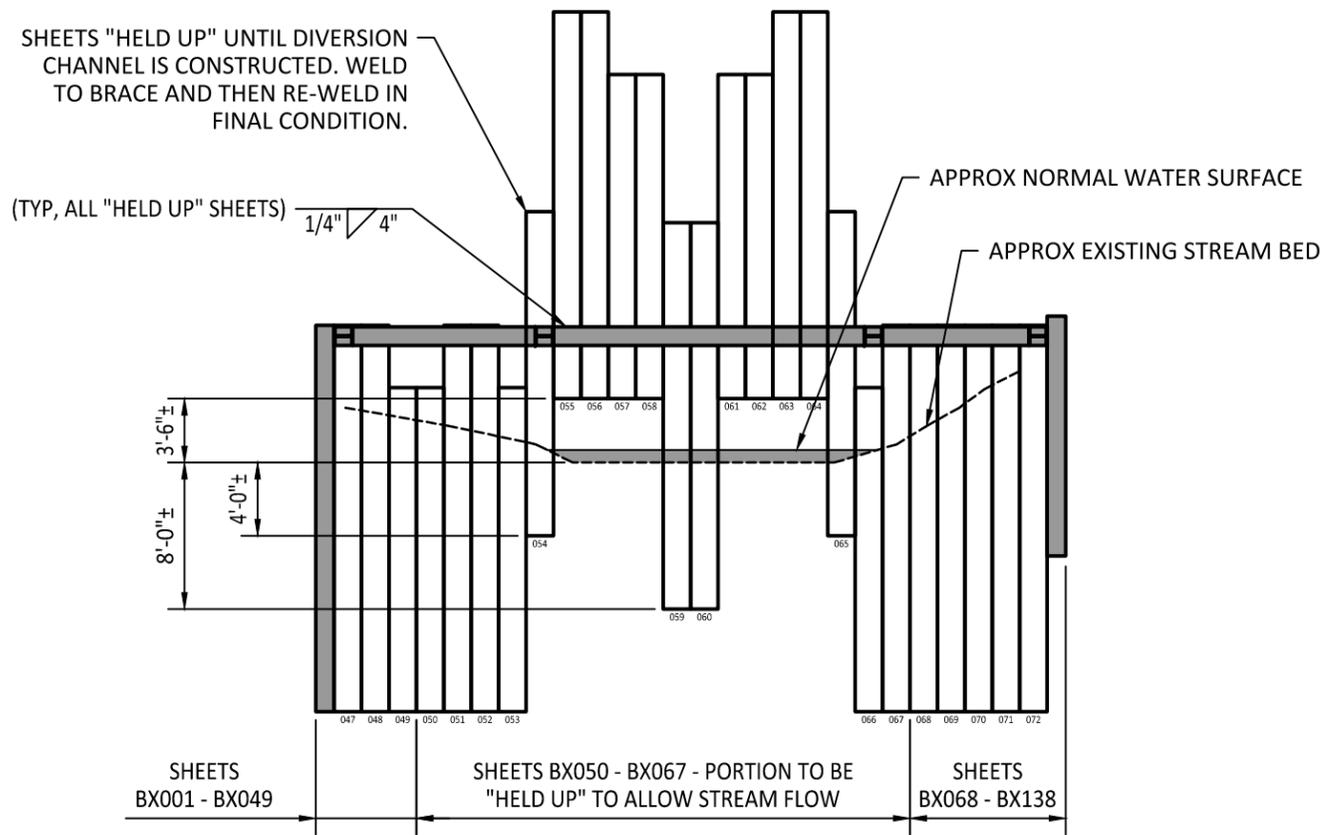


PROJECT: CENTRE COUNTY MULTI-MODAL BRIDGE REPLACEMENTS
SUBJECT: RAILROAD STREET OVER BUFFALO RUN L-434D TESPS
ATCS #: 050023.00004.15

ATCS

BY: AMC
CHK: grb
REV: CHK:
DATE: DATE: DATE: DATE:
SHEET 5 OF 6

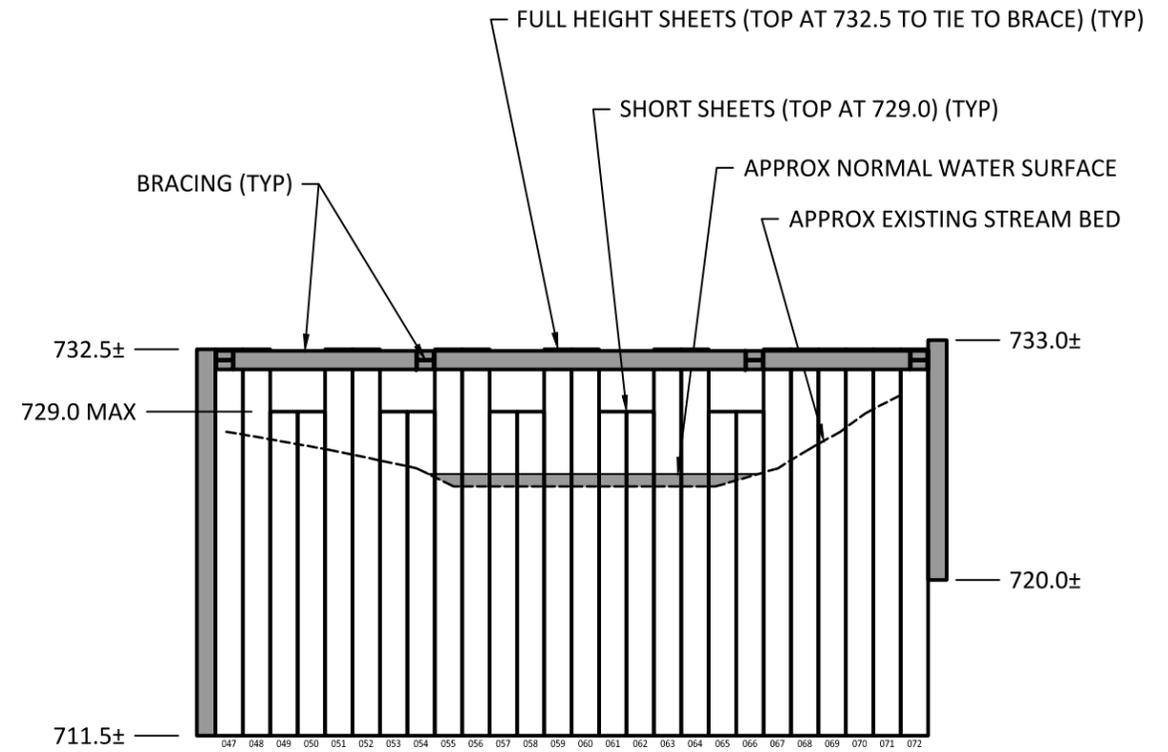
DATE: 8/23/2024 7:39 AM USER: Aaron Craig FILE: S:\Projects\050023_GOH Master Agreement\03_Task Order\00004_CMMM Bridges\05_RR Street\Structures\Temp Bridge\CAD\CMM2 RR ST - TESPIS-DETAILS



SECTION @ UPSTREAM END OF BOX - TEMPORARY CONDITION UNTIL DIVERSION CHANNEL IS COMPLETE

NOT TO SCALE

(NOTE: OPENING PROVIDED BY "HELD UP" SHEETS > (2) 60" DIAM PIPES)



SECTION @ UPSTREAM END OF BOX - FINAL CONDITION

NOT TO SCALE

ATCS

PROJECT: CENTRE COUNTY MULTI-MODAL BRIDGE REPLACEMENTS
 SUBJECT: RAILROAD STREET OVER BUFFALO RUN
 L-434D TESPIS
 ATCS #: 050023.00004.15

CENTRE COUNTY MULTI-MODAL BRIDGE REPLACEMENTS
 RAILROAD STREET OVER BUFFALO RUN
 L-434D TESPIS

BY: AMC
 CHK: grb
 REV: CHK:
 DATE: DATE: DATE: DATE:
 SHEET 6 OF 6

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of the Department of Transportation of the Commonwealth of Pennsylvania for approval to alter the public crossing (DOT 843 019 V) by replacement of the existing structure with a concrete box culvert where Railroad Street crosses, at grade, a track of SEDA-COG Joint Rail Authority, operated on by the Nittany and Bald Eagle Railroad, in Bellefonte Borough, Centre County, and the allocation of costs incident thereto.

Application
Docket No. A-2021-3029576

Electronically Filed

VERIFICATION

I, David J. Wachob, District Grade Crossing Engineer, hereby state that the facts above set forth are true and correct to the best of my knowledge, information, and belief and that I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. §4904 (relating to unsworn falsification to authorities).

Date: 02/19/2025

David Wachob

David J. Wachob
District Grade Crossing Engineer
District 2-0

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of the Department of Transportation of the Commonwealth of Pennsylvania for approval to alter the public at grade crossing where Railroad Street crosses the track(s) of SEDACOG Joint Rail Authority, DOT Number 843 019 V in Bellefonte Borough, Centre County, and the allocation of costs incident thereto.

Application
Docket No. A-2021-3029576

Electronically Filed

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a true copy of the foregoing document upon the participants listed below, in accordance with the requirements of 52 Pa. Code § 1.54, by

Electronic Mail:

SEDA-COG Joint Rail Authority
Kyle Postupack, Property Manager
201 Furnace Road
Lewisburg PA 17837
Phone: 570-524-4491
kpostupack@seda-cog.org

Nittany & Bald Eagle Railroad
C/O North Shore Railroad
Jeb Stotter, President
356 Priestley Avenue
Northumberland, PA 17857
Phone: 570-473-7949
jstotter@nshr.com

Centre County Commissioners
John Franek, Jr., Chief Clerk Administrator
Room 151, Willowbank Office Building
420 Holmes Street
Bellefonte, PA 16823
Phone No.: 814-355-6700
Email: mngray@centrecountypa.gov

Bellefonte Borough
Ralph W Stewart
236 West Lamb Street Bellefonte,
PA 16823
Phone No.: 814-355-1501
Email: rstewart@bellefontepa.gov

Milesburg Borough Authority (Water)
Paula Hall
Po Box 282
Milesburg, PA 16853
Phone No.: 814-355-3583
Email: milesburgwateroffice@gmail.com

Spring-Benner-Walker Joint Authority (Sewer)
N Warren Miller
170 Irish Hollow Road
Bellefonte, PA 16823
Phone No.: 814-355-4778
Email: wmiller@sbwja.com

Columbia Gas of Pennsylvania
Logan Harper
1600 Colony Road
York, PA 17408
Phone No. 717-849-0137 Email:
LHarper@nisource.com

Comcast Cable Communications
Robert Lingafelt III
250 Reese Road
State College, PA 16801
Phone No.: 814-769-9397
Email: Robert.LingafeltIii@cable.comcast.com

West Penn Power
Rob Rhodes
2800 East College Avenue State
College, PA 16801
Phone No.: 814-231-5339
Email: rwrhodes@firstenergycorp.com

Verizon Pennsylvania
Gerald Downing
250 South Allen Street
State College, PA 16801
Phone No.: 814-330-6458
Email: gerald.downing@verizon.com

Dated this 19th Day of February 2025

David Wachob

David J. Wachob
70 PennDOT Drive
Clearfield PA, 16830
Phone: 814-496-6096
Email: dwachob@pa.gov