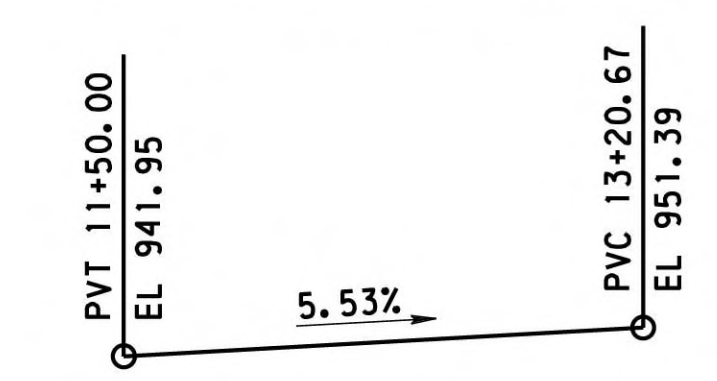


TYPICAL SECTION  
0 15 10 FEET

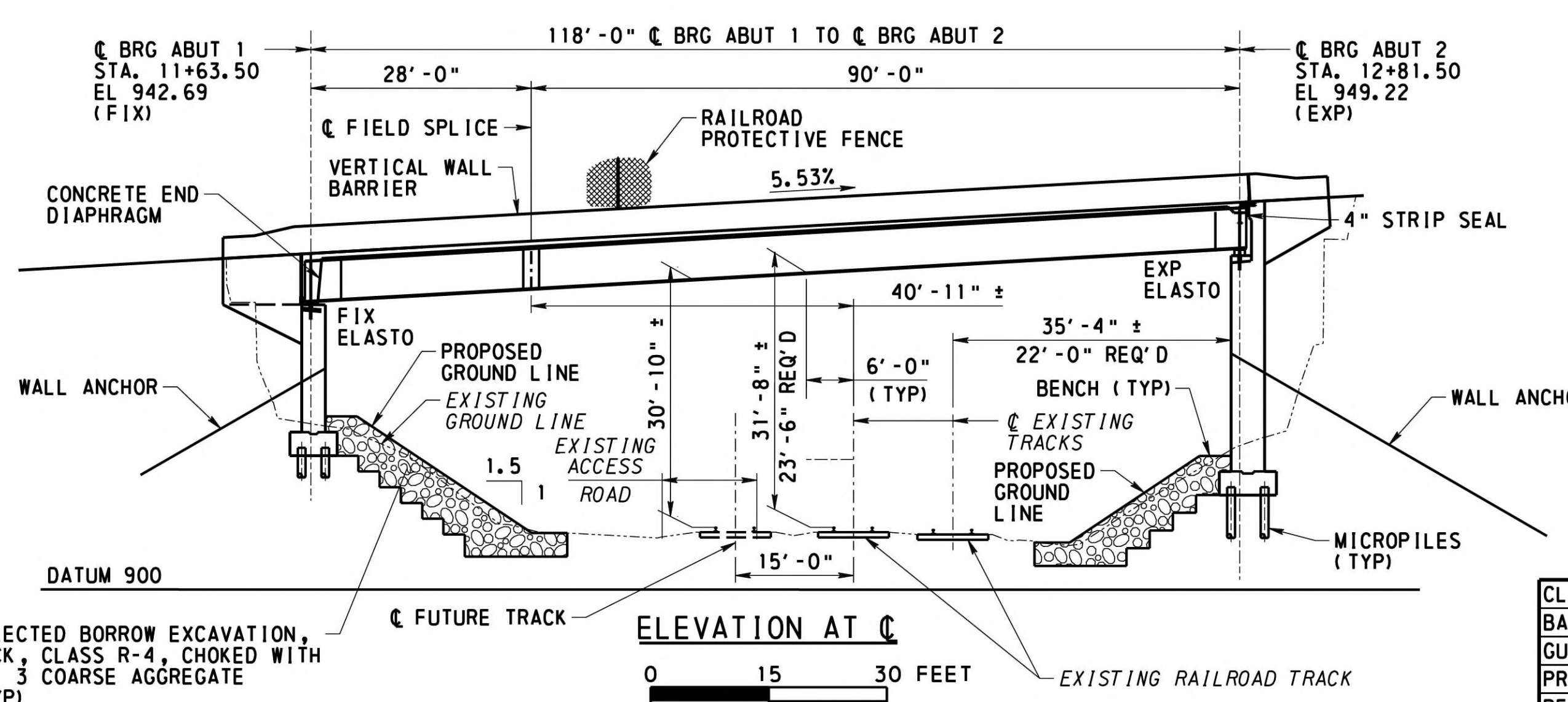
VERTICAL CURVE DATA



HORIZONTAL CURVE DATA

PI STA 11+25.20	PI STA 13+30.72
Δ = 51°20'41" LT	Δ = 39°00'07" LT
D = 95°29'35"	D = 104°10'27"
T = 28.84'	T = 19.48'
L = 53.77'	L = 37.44'
R = 60.00'	R = 55.00'
E = 6.57'	E = 3.35'
PC STA = 10+96.36	PC STA = 13+11.24
PT STA = 11+50.12	PT STA = 13+48.68
SE = 2.0%	SE = VARIES

- LEGEND**
- W — EXISTING WATER LINE
  - G — EXISTING GAS LINE
  - S — EXISTING SEWER LINE
  - E,T,CTV — EXISTING ELECTRIC, TELEPHONE, CABLE TV
  - W — PROPOSED WATER LINE
  - E,CTV — PROPOSED ELECTRIC, CABLE TV
  - EXISTING MINOR CONTOUR
  - EXISTING MAJOR CONTOUR
  - PROPOSED MINOR CONTOUR
  - PROPOSED MAJOR CONTOUR
  - ⊙ EXISTING / PROPOSED CORE BORING
  - ➔ DIRECTION OF TRAVEL
  - ⊙ EXISTING UTILITY POLE
  - ⊙ PROPOSED UTILITY POLE
  - ELASTO = ELASTOMERIC BEARING PAD



AS-DRILLED BORING LOCATIONS

BORING NO.	STATION	OFFSET
SB-1	11+59.1	0.5' RT
SB-2	12+87.6	3.5' LT
SB-3	10+94.7	31.5' LT
SB-4	11+39.1	13.2' RT
SB-5	13+61.8	27.8' LT
SB-6	13+11.8	23.8' RT
SB-7	13+17.9	39.0' RT

REVISIONS

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

DESCRIPTION	DWG. NO.	APP. DATE
CLASSIFICATION OF EARTHWORK FOR STRUCTURES	RC-11M	6/1/10
BACKFILL AT STRUCTURES	RC-12M	11/1/22
GUIDE RAIL TO BRIDGE BARRIER TRANSITIONS	RC-50M	12/18/24
PROTECTIVE FENCE	BC-701M	11/23/22
PERMANENT METAL DECK FORMS	BC-732M	11/23/22
WALL CONSTRUCTION AND EXPANSION JOINT DETAILS	BC-735M	9/30/16
REINFORCEMENT BAR FABRICATION DETAILS	BC-736M	11/23/22
CONCRETE DECK SLAB DETAILS	BC-752M	11/23/22
BEARINGS	BC-755M	1/31/19
NEOPRENE STRIP SEAL DAM FOR PRESTRESSED CONCRETE & STEEL I-BEAM BRIDGES	BC-767M	11/23/22
PRESTRESSED CONCRETE BEAM BRACING	BC-772M	11/23/22
MISCELLANEOUS PRESTRESS DETAILS	BC-775M	11/23/22
REINFORCED CONCRETE REPAIR	BC-783M	1/31/19
TYPICAL WATERPROOFING AND EXPANSION DETAILS	BC-788M	11/23/22
MECHANICAL CONNECTION DETAILS	BC-798M	2/14/23

**WESTMORELAND COUNTY**  
DEPARTMENT OF PUBLIC WORKS

**WESTMORELAND COUNTY**  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
**GENERAL PLAN AND ELEVATION**

RECOMMENDED *February 12<sup>th</sup>, 2026*

DISTRICT BRIDGE ENGINEER

SHEET 1 OF 50  
SUPPLEMENTAL DRAWINGS  
L - 645

NOTE:  
MAINTAIN A MINIMUM HORIZONTAL CONSTRUCTION CLEARANCE OF 14'-0" FROM C OF EXISTING TRACKS.  
MAINTAIN A MINIMUM VERTICAL CONSTRUCTION CLEARANCE OF 22'-0" ABOVE THE EXISTING TOP OF RAILS.

**CERTIFIED CORRECT PLANS**

Professional Engineer  
Approved by Bureau of Technical Utility Services  
**PA PUBLIC UTILITY COMMISSION**

ATTEST *Matthew L. Hender* 04/24/2026  
Secretary Docket: A-2024-3052077

PREPARED BY:  
SAI CONSULTING ENGINEERS, INC.  
1350 PENN AVENUE, SUITE 300  
PITTSBURGH, PA 15222-4211

*Keith A. Michael*  
REG. PROF. ENGR. PENNA.  
DATE: 02-09-2026

DESIGNED BY	KAM
DRAWN BY	TMK
CHECKED BY	KAM

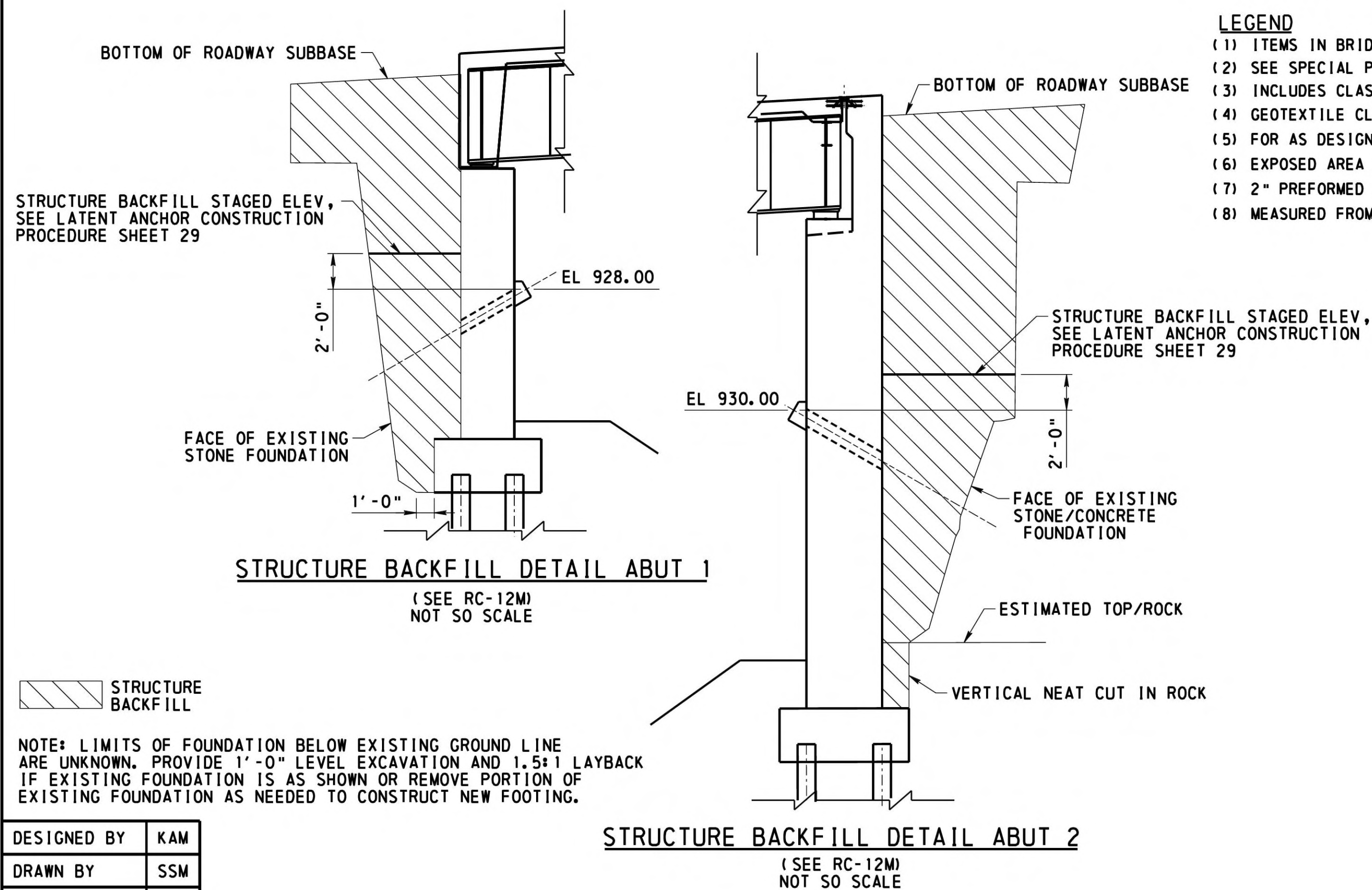
INDEX OF DRAWINGS		INDEX OF DRAWINGS	
NO.	DESCRIPTION	NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION	26	WINGWALL D2 ELEVATION
2	QUANTITIES AND INDEX OF DRAWINGS	27	WINGWALL D SECTIONS
3	GENERAL NOTES	28	MICROPILE DETAILS
4	GENERAL NOTES & RATING TABLE	29	LATENT ANCHOR DETAILS
5	STAKE OUT PLAN	30	FRAMING PLAN AND GIRDER ELEVATION
6	ABUTMENT 1 FOOTING PLAN	31	GIRDER FIELD SPLICE MISC DETAILS
7	ABUTMENT 1 PLAN	32	DIAPHRAGM DETAILS
8	ABUTMENT 1 ELEVATION	33	CAMBER AND REACTION TABLES
9	ABUTMENT 1 DETAILS 1	34	NEOPRENE BEARING DETAILS
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12	WINGWALL A ELEVATION	37	TYPICAL DECK SECTION
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14	WINGWALL A AND B SECTIONS	39	MISC DECK DETAILS
15	ABUTMENT 2 FOOTING PLAN 1	40	ABUTMENT 1 REINF BAR SCHEDULE
16	ABUTMENT 2 FOOTING PLAN 2	41	ABUTMENT 2 REINF BAR SCHEDULE 1
17	ABUTMENT 2 PLAN	42	ABUTMENT 2 REINF BAR SCHEDULE 2
18	ABUTMENT 2 ELEVATION	43	ABUTMENT 2 REINF BAR SCHEDULE 3
19	ABUTMENT 2 DETAILS 1	44	SUPERSTRUCTURE REINF BAR SCHEDULE
20	ABUTMENT 2 DETAILS 2	45	STRUCTURE BORINGS
21	ABUTMENT 2 DETAILS 3	46	STRUCTURE BORINGS
22	WINGWALL C1 ELEVATION	47	STRUCTURE BORINGS
23	WINGWALL C2 ELEVATION	48	STRUCTURE BORINGS
24	WINGWALL C SECTIONS	49	STRUCTURE BORINGS
25	WINGWALL D1 ELEVATION	50	STRUCTURE BORINGS

ALTERNATE STRUCTURE ITEMS					
ITEM NO.	ITEM	UNIT	LEGEND	TOTAL	
8120-0001	BRIDGE STRUCTURE, AS DESIGNED, L-645	LUMP SUM	(2)	LUMP SUM	
8000-0001	PRESTRESSED CONCRETE BRIDGE STRUCTURE	LUMP SUM	(2)	LUMP SUM	
8100-0001	STEEL BRIDGE STRUCTURE	LUMP SUM	(2)	LUMP SUM	

APPROXIMATE QUANTITIES - BRIDGE STRUCTURE, AS DESIGNED, L-645							
ITEM NO.	ITEM	UNIT	LEGEND	ABUT. 1	ABUT. 2	SUPER.	TOTAL
8120-0001	BRIDGE STRUCTURE, AS DESIGNED, L-645	LUMP SUM	(2)				
	CLASS 3 EXCAVATION	CY	(1)	333	746	---	1079
	SELECTED BORROW EXCAVATION, COARSE AGGREGATE, NO. 57	CY	(1) (4)	4	7	---	11
	STRUCTURE BACKFILL	CY	(1) (4)	458	933	---	1391
	MEMBRANE WATERPROOFING SYSTEM INSTALLED ON OTHER SURFACES	SY	(1) (7)	42	78	31	151
	CLASS AAAP CEMENT CONCRETE	CY	(1) (3)	---	---	140	140
	CLASS AA CEMENT CONCRETE	CY	(1) (2)	19	56	---	75
	MECHANICAL TEXTURING WITH TRANSVERSE SAWED GROOVES	SY	(1)	---	---	400	400
	CLASS AA CEMENT CONCRETE, EXCEPT USE NO. 8 COARSE AGGREGATE	CY	(1)	3	3	32	38
	CLASS A CEMENT CONCRETE	CY	(1) (2)	253	610	---	863
	RAILROAD PROTECTIVE FENCE, CURVED TOP, VINYL COATED STEEL	LF	---	---	---	241	241
	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, REINFORCED CONCRETE SUBSTRUCTURE SURFACES)	SY	(1)	145	390	---	535
	PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALERS, BRIDGE SUPERSTRUCTURE)	SY	(1)	---	---	635	635
	NEOPRENE STRIP SEAL DAM, (4" MOVEMENT)	LF	(1)	---	---	41	41
	FABRICATED STRUCTURAL STEEL, UNPAINTED	POUND	(1)	---	---	196500	196500
	LAMINATED NEOPRENE BEARING PAD	EACH	(1)	4	4	---	8
	SHEAR CONNECTORS	EACH	(1)	---	---	732	732
AND							
1002-0052	REINFORCEMENT BARS, EPOXY COATED	POUND	(5)	27421	71286	34035	132742
AND							
5007-0465	MICROPILES 11 3/4" DIAMETER, GALVANIZED, 11 7/8" DIAMETER X 0.582"	LF	(2) (8)	1164	2376	---	3540
AND							
9000-0001	LATENT ROCK ANCHORS	EACH	(2)	9	13	---	22
AND							
9000-0002	CONSOLIDATION GROUTING	CF	(2)	180	260	---	440
AND							
9000-0003	REDRILLING OF CONSOLIDATION GROUTED ANCHOR HOLES	LF	(2)	270	390	---	660
0205-0263	SELECTED BORROW EXCAVATION ROCK, CLASS R-3	CY	(4)	93	78	---	171
0205-0264	SELECTED BORROW EXCAVATION ROCK, CLASS R-4	CY	(4)	216	182	---	398
1007-0200	MICROPILES VERIFICATION LOAD TEST	EA	---	1	1	---	2
1018-0048	REMOVAL OF PORTION OF EXISTING BRIDGE	LUMP SUM	(2)	---	---	---	LS
9203-0101	TEMPORARY EXCAVATION SUPPORT AND PROTECTION SYSTEM, ABUTMENT 1	LUMP SUM	(2) (6)	---	---	---	LS
9203-0102	TEMPORARY EXCAVATION SUPPORT AND PROTECTION SYSTEM, ABUTMENT 2	LUMP SUM	(2) (6)	---	---	---	LS

**LEGEND**

- (1) ITEMS IN BRIDGE STRUCTURE LUMP SUM ITEM 8120-0001 GIVEN FOR INFORMATION ONLY.
- (2) SEE SPECIAL PROVISIONS.
- (3) INCLUDES CLASS AAAP CONCRETE IN DECK SLAB, CONCRETE END DIAPHRAGMS, AND APPROXIMATELY 8 CY OF CONCRETE IN THE VALLEYS OF THE STAY-IN-PLACE FORMS.
- (4) GEOTEXTILE CLASS 4, TYPE A IS INCIDENTAL TO THIS ITEM.
- (5) FOR AS DESIGNED STRUCTURE, INCLUDED IN BRIDGE BID ITEMS. FOR ALTERNATE DESIGNS, INCLUDED IN BRIDGE STRUCTURE LUMP SUM BID ITEMS.
- (6) EXPOSED AREA OF TEMPORARY EXCAVATION SUPPORT AND PROTECTION SYSTEM INCLUDES 560 SF FOR ABUTMENT 1 AND 840 SF FOR ABUTMENT 2; FOR REFERENCE ONLY
- (7) 2" PREFORMED CELLULAR POLYSTYRENE IS INCIDENTAL TO THIS ITEM.
- (8) MEASURED FROM MICROPILE TIP ELEVATION TO FINAL CUT OFF ELEVATION. ANY DRILLING FROM EXISTING GROUND TO FINAL CUT OFF ELEVATION IS CONSIDERED INCIDENTAL TO THIS PAY ITEM.



MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

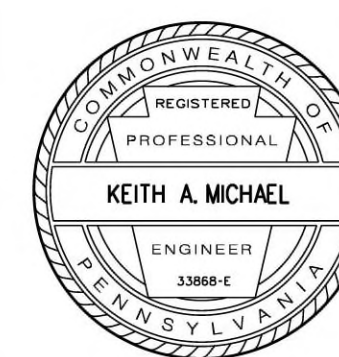
WEST BROADWAY AVENUE STA. 12+22.50  
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SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
QUANTITIES AND INDEX OF DRAWINGS

RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 2 OF 50

L - 645



DESIGNED BY	KAM
DRAWN BY	SSM
CHECKED BY	KAM

**DESIGN SPECIFICATIONS**

- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 8TH EDITION 2017, AND AS SUPPLEMENTED BY DESIGN MANUAL, PART 4, STRUCTURES (DECEMBER 2019 EDITION INCLUDING REVISIONS).
- LIVE LOAD DISTRIBUTION TO GIRDERS IS BASED UPON DESIGN MANUAL PART 4 DISTRIBUTION FACTOR METHOD.
- DESIGN IS IN ACCORDANCE WITH THE LRFD METHOD.

**DESIGN LIVE LOADS**

- PHL-93, P-82, AND P2016-13
- FATIGUE DESIGN IS BASED ON THE FOLLOWING: STEEL STRUCTURES: ADTT 50 (DESIGN YEAR 2045, ONE-DIRECTIONAL)

**DEAD LOADS**

- INCLUDES A SURFACE AREA DENSITY OF 0.030 KSF FOR FUTURE WEARING SURFACE ON THE DECK SLAB.
- INCLUDES A SURFACE AREA DENSITY OF 0.015 KSF FOR PERMANENT METAL DECK FORMS WHICH TAKES INTO ACCOUNT THE WEIGHT OF THE FORM, PLUS THE WEIGHT OF THE CONCRETE IN THE VALLEYS OF THE FORMS.

**GENERAL**

- PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH SPECIFICATIONS, PUBLICATION 408/2020, INCLUDING CURRENT CHANGES, AASHTO/AWS D1.5M/D1.5-2015 BRIDGE WELDING CODE, AND CONTRACT SPECIAL PROVISIONS. USE AASHTO/AWS D1.1M/D1.1M-2015 FOR WELDING NOT COVERED IN AASHTO/AWS D1.5M/D1.5-2015.
- SITE CLASS IS NOT CLASS E.
- ALL DIMENSIONS SHOWN ARE HORIZONTAL, EXCEPT AS NOTED.
- SUPERSTRUCTURE DIMENSIONS SHOWN ARE FOR A NORMAL TEMPERATURE OF 68 DEGREES F.
- STATIONS AND ELEVATIONS ARE GIVEN IN FEET UNLESS OTHERWISE NOTED.

**CONCRETE**

- PROVIDE 2" CONCRETE COVER ON REINFORCEMENT BARS, EXCEPT AS NOTED.
- USE CLASS AAAP CEMENT CONCRETE IN DECK SLAB, AND CONCRETE END DIAPHRAGMS.
- USE CLASS AA CEMENT CONCRETE IN PEDESTALS ABOVE THE BRIDGE SEAT, BACKWALLS, AND CHEEKWALLS. USE CLASS AA CEMENT CONCRETE, EXCEPT USE NO. 8 COARSE AGGREGATE IN BARRIERS.
- USE CLASS A CEMENT CONCRETE IN ABUTMENTS, AND WINGWALLS.
- USE CORROSION RESISTANT TYPE II PORTLAND CEMENT CONCRETE WITH A MAXIMUM WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT, AND CONTAINING NO CHLORIDE ADDITIVES IN ALL SUBSTRUCTURE CONCRETE.
- A HIGHER CLASS CONCRETE MAY BE SUBSTITUTED FOR A LOWER CLASS CONCRETE AT NO ADDITIONAL COST TO THE DEPARTMENT, IF APPROVED BY THE DISTRICT BRIDGE ENGINEER.
- ABUTMENT 2 BACKWALL MAY BE PLACED UP TO A CONSTRUCTION JOINT BELOW THE LEVEL OF THE DECK SLAB PRIOR TO CONSTRUCTION OF THE DECK.
- RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS, EXCEPT AS INDICATED.
- DO NOT USE ADHESIVE ANCHORS IN A TENSION APPLICATION FOR PERMANENT INSTALLATIONS.
- CHAMFER EXPOSED CONCRETE EDGES 3/4" BY 3/4", EXCEPT AS NOTED.
- USE EITHER PERMANENT METAL FORMS OR REMOVABLE FORMS TO CONSTRUCT THE DECK SLAB.
- DECK SLAB THICKNESS INCLUDES A 1/2" INTEGRAL WEARING SURFACE.
- CONSTRUCT DECK SLAB TRANSVERSE CONSTRUCTION JOINTS PARALLEL TO BRIDGE CENTERLINE OF BEARINGS.
- ALTERNATE DECK PLACEMENT SEQUENCES ARE NOT PERMITTED.
- PRECAST BARRIERS AND SLIP FORMED BARRIERS ARE PROHIBITED.
- ALONG THE CUTTERLINES, DO NOT ATTACH BARRIER FORMS TO THE NEWLY PLACED CONCRETE DECK WITHIN THE WATERTABLE AREA.
- PREPARE BEARING AREAS AS SPECIFIED IN PUBLICATION 408, SECTION 1001.3(k)9.
- APPLY A MEMBRANE WATERPROOFING OVER ALL CONSTRUCTION AND EXPANSION JOINTS IN ABUTMENTS AND WINGWALL STEMS.
- PROVIDE EPOXY BONDING COMPOUND IN ACCORDANCE WITH PUBLICATION 408 SECTIONS 706 AND 1001.3(m).
- APPLY PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALER, BRIDGE SUPERSTRUCTURE) IN ACCORDANCE WITH SECTION 1019, TO THE BARRIERS ON DECK (FRONT FACE, TOP, REAR FACE, AND UNDERSIDE OF DECK TO THE FLANGE TIP).
- APPLY PROTECTIVE COATING FOR REINFORCED CONCRETE SURFACES (PENETRATING SEALER, REINFORCED CONCRETE SUBSTRUCTURE SURFACES) IN ACCORDANCE WITH SECTION 1019, TO ALL EXPOSED CONCRETE SURFACES INCLUDING BRIDGE SEAT AND BACKWALL.
- PROVIDE 10-FOOT MAXIMUM SPACING OF MODIFIED DEFLECTION JOINTS IN BRIDGE BARRIERS.
- SEAL DOWN THE REAR FACE OF THE BARRIER IN ADDITION TO THE FRONT FACE AND TOP OF BARRIER. SEE BC-752M FOR ADDITIONAL NOTES AND DETAILS.
- PROVIDE EPOXY JOINT SEALING ALONG TRANSVERSE AND LONGITUDINAL DECK CONSTRUCTION JOINTS; SEE STANDARD DRAWING BC-752M FOR ADDITIONAL NOTES AND DETAILS.
- DO NOT PLACE DECK CONCRETE WHEN WIND SPEEDS EXCEEDING 30 MPH ARE POSSIBLE IN A PERIOD OF 24 HOURS FROM COMPLETION OF DECK POUR.

- PLACE CHEEKWALL, AND BACKWALL CONCRETE AFTER GIRDERS ARE SET IN POSITION.

DESIGNED BY	KAM
DRAWN BY	TMK
CHECKED BY	KAM

**STEEL NOTES**

- PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M 270 GRADES 50W (ASTM A 709 GRADES 50W) DESIGNATION, FOR ALL STEEL.
- PROVIDE A CLASS B SURFACE CONDITION FOR FAYING SURFACE.
- IF GIRDERS CANNOT BE SHIPPED IN THE LENGTHS SHOWN ON THE PLANS, FIELD SPLICES WILL BE PERMITTED AT THE REQUEST OF THE CONTRACTOR, BUT NO COMPENSATION WILL BE ALLOWED FOR THE SPLICES.
- IF GIRDERS CAN BE FABRICATED IN LENGTHS LONGER THAN THE SECTIONS SHOWN ON THE PLANS BY ELIMINATING FIELD SPLICES, FIELD SPLICES MAY BE OMITTED AT THE REQUEST OF THE CONTRACTOR. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR SECURING A HAULING PERMIT. APPROVAL FOR ELIMINATION OF A FIELD SPlice AT THE SHOP DRAWING STAGE DOES NOT OBLIGATE THE DEPARTMENT TO ISSUE A HAULING PERMIT.
- ERECT THE GIRDERS FOR THE STEEL DEAD LOAD FIT (SDLF) CONDITION.
- DO NOT USE FORM SUPPORT SYSTEMS THAT WILL CAUSE UNACCEPTABLE OVERSTRESS OR DEFORMATION TO PERMANENT BRIDGE MEMBERS.
- EXCLUDE BOLT THREADS FROM SHEAR PLANES UNLESS OTHERWISE NOTED. WHERE FEASIBLE PLACE BOLTS SO THAT THE THREADED ENDS ARE PROTECTED FROM THE WEATHER.
- ALL FASTENERS ARE 3/8" DIAMETER H.S. BOLTS, EXCEPT AS NOTED. PROVIDE ASTM A325 H.S. BOLTS TYPE 3 UNLESS OTHERWISE NOTED FOR UNPAINTED WEATHERING STEEL. USE ASTM A325, TYPE 1 MECHANICALLY GALVANIZED BOLTS IN ALL PAINTED AREAS. AFTER INSTALLATION CLEAN LUBRICANT FROM THE GALVANIZED BOLTS BY A METHOD APPROVED BY THE REPRESENTATIVE.
- USE STANDARD SIZE HOLES UNLESS OTHERWISE NOTED.
- BOLTS, NUTS AND WASHERS ARE INCIDENTAL TO FABRICATED STRUCTURAL STEEL.
- USE TURN-OF-THE-NUT METHOD FOR BOLTED CONNECTIONS. AFTER OBTAINING SNUG FIT CONDITION, MARK WITH A STRAIGHT LINE ALL BOLTS, NUTS, AND PLATES TO MONITOR ALL ROTATION OF BOLTS AND NUTS RELATIVE TO PLATES.
- REAM SUBDRILLED OR SUBPUNCHED HOLES FOR FIELD SPLICES IN THE FABRICATION SHOP.
- PROVIDE WELDED STUD SHEAR CONNECTORS MANUFACTURED FROM STEEL CONFORMING TO ASTM A 108. INSTALL SHEAR CONNECTORS IN THE FIELD AFTER INSTALLING THE DECK FORMS.
- PRIOR TO INSTALLING THE SHEAR CONNECTORS, REMOVE PAINT FROM THE SHEAR CONNECTOR WELD AREAS. REMOVE PAINT BY GRINDING OR OTHER SUITABLE MEANS. DO NOT DAMAGE THE TOP FLANGE.
- CLEAN DAMAGED PAINT AREAS AROUND THE INSTALLED SHEAR CONNECTORS AND APPLY PRIMER TO THOSE CLEANED AREAS AND TO ANY BARE STEEL ADJACENT TO THE SHEAR CONNECTORS.
- SET ANCHOR BOLTS IN PREFORMED HOLES. DO NOT DRILL UNLESS SPECIFICALLY INDICATED ON PLANS. FILL THE PREFORMED HOLES WITH NON-SHRINK GROUT. FILL THE CLEARANCE BETWEEN ANCHOR BOLTS AND HOLES IN MASONRY PLATES WITH APPROVED NON HARDENING CAULKING COMPOUND CONFORMING TO PUBLICATION 408, SECTION 705.8. FILL THE PREFORMED HOLES DURING THE WINTER IF HOLES ARE NOT GROUTED. SUBMIT METHOD OF FILLING HOLES DURING WINTER FOR REVIEW AND APPROVAL.
- PROVIDE SWEDGE ANCHOR BOLTS CONFORMING TO ASTM 1554, GRADE 55. PROVIDE SWEDGES THAT ARE PRESSED (STAMPED) OR ROLLED. HOT DIP GALVANIZE BOLTS, NUTS, AND WASHERS. CUT SWEDGES AND ALL-THREAD BOLTS ARE NOT PERMITTED.
- PERFORM CHARPY V-NOTCH TESTS AS SPECIFIED IN SECTION 1105.02(d)5.
- PAINT ENDS OF GIRDERS WITHIN INDICATED LIMITS IN ACCORDANCE WITH SECTION 1060. PAINT ONLY PRIMER ON PORTIONS OF STEEL THAT WILL BE EMBEDDED IN CONCRETE OR IN CONTACT WITH THE ELASTOMERIC BEARINGS.
- APPLY PRIMER, INTERMEDIATE AND FINISH COATS IN THE SHOP WITH DAMAGED AREAS TOUCHED UP IN FIELD. SUBMIT A METHOD OF REPAIR TO THE REPRESENTATIVE FOR REVIEW AND APPROVAL. USE AN ORGANIC ZINC RICH PRIMER.
- PROVIDE PAINT CHIPS TO THE DISTRICT BRIDGE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO APPLICATION.
- FIELD PAINT DAMAGED SURFACES AS DIRECTED BY THE REPRESENTATIVE AT NO ADDITIONAL COST TO THE DEPARTMENT.
- BLAST CLEAN THE FAYING SURFACES OF SPLICES AND CONNECTIONS OF ALL STRUCTURAL ELEMENTS IN ACCORDANCE WITH PUBLICATION 408 SECTION 1060.3(b)3. REBLAST UNPAINTED ELEMENTS THAT REMAIN UNASSEMBLED FOR A PERIOD OF 12 MONTHS OR MORE FOLLOWING THE INITIAL CLEANING.
- IF THE CONTRACTOR MODIFIES THE OVERHANG BRACKET FROM THAT DESCRIBED IN THE OVERHANG FORMING NOTES, THE CONTRACTOR MUST SUBMIT CALCULATIONS THAT INCLUDE, IN ADDITION TO THE REQUIREMENTS LISTED IN THE OVERHANG FORMING NOTES, A DESIGN THAT LIMITS OVERHANG DEFLECTION CAUSED BY THE GIRDER ROTATION TO MAXIMUM OF 1\*4".
- MAINTAIN STABILITY OF PARTIAL GIRDERS AND COMPLETE GIRDERS DURING ERECTION, UNTIL ALL GIRDERS AND DIAPHRAGMS ARE IN-PLACE AND ALL BOLTS ARE PROPERLY INSTALLED. EVALUATE ERECTION LOADS INCLUDING SELF WEIGHT OF THE STEEL MEMBERS, WIND LOADING AND CONSTRUCTION LIVE LOAD EFFECTS FOR STABILITY, STRESSES, AND DEFLECTIONS ON THE STEEL MEMBERS DURING ANY STAGE OF ERECTION.
- SUBMIT DESIGNS FOR TEMPORARY BENTS, GUY WIRES AND ALL OTHER SUPPORT SYSTEMS REQUIRED FOR ERECTION TO THE REPRESENTATIVE FOR REVIEW AND APPROVAL.
- PROVIDE ADDITIONAL TEMPORARY BRACING FOR THE FASCIA GIRDER IF THE CALCULATED LATERAL DISPLACEMENT OF THE FLANGES EXCEEDS 1/4" OR THE MAXIMUM DEFLECTION OF THE WEB EXCEEDS D/360 DURING THE DECK POUR. CALCULATE DISPLACEMENTS DUE TO LOADING OF OVERHANG BRACKET, CONCRETE DECK FINISHING MACHINE AND WORKERS.
- THE COST OF FALSEWORK, TEMPORARY BENTS, WIND BRACING, FASCIA GIRDER BRACING AND ALL OTHER TEMPORARY SUPPORT SYSTEMS REQUIRED DURING ANY STAGE OF CONSTRUCTION IS INCIDENTAL TO THE FABRICATED STRUCTURAL STEEL ITEM.
- WHEN ERECTING GIRDERS OVER THE RAILROAD TRACKS, THEY MUST BE SECURED AND ADEQUATELY BRACED TO THE NEW ABUTMENT(S) AND/OR TEMPORARY TOWER(S) PRIOR TO THE TRACKS BEING REOPENED TO RAIL TRAFFIC. THE CONTRACTOR MAY ELECT TO INSTALL EACH GIRDER FIELD SECTION AND SECURE IT TO A TEMPORARY TOWER(S) THEN COMPLETE ERECTION OF THE REMAINING FIELD SECTIONS AND COMPLETE THE FIELD SPlice AT THE TEMPORARY TOWER(S) OR THE FIELD SECTIONS MAY BE BOLTED TOGETHER ON THE GROUND PRIOR TO LIFTING, THEN THE ENTIRE GIRDER LIFTED INTO PLACE AND ADEQUATELY BRACED TO THE ABUTMENTS AND OR TEMPORARY TOWER(S) PRIOR TO REOPENING THE TRACKS TO RAIL TRAFFIC. AT NO TIME WILL RAIL TRAFFIC BE ALLOWED TO PASS WHEN THE GIRDER IS SUPPORTED ONLY BY A CRANE. ALL CRANES, LIFTING DEVICES AND ASSOCIATED HARDWARE AND RIGGING MUST BE ADEQUATE TO SUPPORT 150% OF THE LIFTED WEIGHT.

**REINFORCING STEEL**

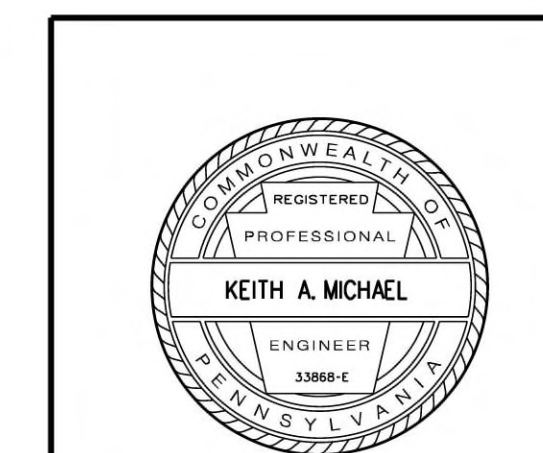
- PROVIDE GRADE 60 REINFORCING STEEL BARS THAT MEET THE REQUIREMENTS OF ASTM A 615, A 996, OR A 706. DO NOT WELD GRADE 60 REINFORCING STEEL BARS UNLESS SPECIFIED. GRADE 40 REINFORCING STEEL BARS MAY BE SUBSTITUTED WITH A PROPORTIONAL INCREASE IN CROSS-SECTIONAL AREA, IF APPROVED BY THE CHIEF BRIDGE ENGINEER. DO NOT USE RAIL STEEL A 966 REINFORCEMENT BARS IN BRIDGE PIERS, ABUTMENTS, SHEAR BLOCKS, BEAMS, FOOTINGS, PILES, BARRIERS OR WHERE BENDING OR WELDING OF THE REINFORCEMENT BARS IS INDICATED.
- EPOXY COAT ALL REINFORCEMENT BARS.
- GALVANIZED REINFORCING STEEL BARS MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCING STEEL BARS AT NO ADDITIONAL COST TO THE DEPARTMENT.
- WELDING OF REINFORCEMENT BARS DURING FABRICATION OR CONSTRUCTION IS NOT PERMITTED UNLESS SPECIFIED.
- PROVIDE MINIMUM EMBEDMENT AND SPLICE LENGTHS IN ACCORDANCE WITH STANDARD DRAWING BC-736M, UNLESS OTHERWISE INDICATED.

**WELDING**

- WELDING SPECIFICATIONS: AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE (2015) CONSISTENT WITH PUBLICATION 408 SECTION 1105.03(m) OF PUB. 408 AND THE SPECIAL CONTRACT PROVISIONS. USE QUALIFIED WELDERS IN ACCORDANCE WITH AWS D1.5 SECTION 5 PART B.
- FIELD WELDING OF STEEL: USE THE SHIELDED METAL ARC PROCESS AND LOW HYDROGEN ELECTRODES WHICH ARE COMPATIBLE WITH THE BASE METAL AS SPECIFIED, AND IN ACCORDANCE WITH AN APPROVED WELD PROCEDURE SPECIFICATION.
- MAKE TACK WELDS WITH THE SAME TYPE ELECTRODE AND INCORPORATE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED.
- DO NOT MAKE WELDS BY MANUAL SHIELDED METAL ARC PROCESS FOR PRIMARY GIRDER WELDS, SUCH AS FLANGE TO WEB WELDS OR FOR SHOP SPLICES OF WEBS AND FLANGES.
- DO NOT WELD WHEN SURFACES TO BE WELDED ARE MOIST OR EXPOSED TO RAIN, SNOW OR WIND, OR WHEN WELDERS ARE EXPOSED TO INCLEMENT CONDITIONS THAT WILL ADVERSELY AFFECT THE QUALITY OF THE WORK.
- DO NOT WELD OR BURN WHEN THE TEMPERATURE IS BELOW 0-DEGREES F. PREHEAT AND MAINTAIN THE TEMPERATURE OF THE METAL TO AT LEAST 70-DEGREES F WHEN THE TEMPERATURE OF THE METAL IS BETWEEN 0-DEGREES F AND 32-DEGREES F DURING WELDING OR BURNING.
- PREHEAT THE STEEL TO THE SPECIFIED MINIMUM TEMPERATURE FOR A DISTANCE EQUAL TO THE THICKNESS OF THE PART BEING WELDED, BUT NOT LESS THAN 3 INCHES IN ALL DIRECTIONS FROM THE POINT OF THE WELDING.
- REMOVE ANY MOISTURE PRESENT AT POINT OF WELD BY APPLICATION OF HEAT. PROVIDE WINDBREAKS FOR PROTECTION FROM DIRECT WIND.
- THOROUGHLY CLEAN ALL PORTIONS OF NEW SURFACES TO RECEIVE WELDS OF ALL FOREIGN MATTER FOR A DISTANCE OF 2" FROM EACH SIDE OF THE OUTSIDE LINES OF WELD PRIOR TO PLACING THE WELD.
- DO NOT WELD PERMANENT METAL DECK FORMS OR OTHER ATTACHMENTS TO GIRDER TOP FLANGES IN TENSION AREAS. (TENSION AREAS OF THE FLANGES ARE DESIGNATED ON THE PLANS). THREADED STUDS FOR THE SUPPORT OF THE OVERHANG DECK FORMING BRACKET IS PERMITTED PROVIDED THE THREADED STUD IS ATTACHED WITH THE SAME WELDING PROCESS AS THE SHEAR STUDS. WELDING OF SHEAR CONNECTORS TO THE TOP FLANGE IN THE TENSION REGIONS IS ACCEPTABLE.
- FIELD WELDING, EXCEPT FOR SHEAR CONNECTORS IS NOT PERMITTED UNLESS APPROVED BY THE REPRESENTATIVE.
- TEST COMPLETED WELDS USING VISUAL AND NONDESTRUCTIVE METHODS IN ACCORDANCE WITH AASHTO/AWS D1.5M/D1.5 BRIDGE WELDING CODE CHAPTER 6.

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793



**WESTMORELAND COUNTY**  
DEPARTMENT OF PUBLIC WORKS

**WESTMORELAND COUNTY**  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

**SINGLE SPAN STEEL MULTI-GIRDER BRIDGE**  
**GENERAL NOTES**

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 3 OF 50

L - 645

**BRIDGE LOAD RATING (LRFD)**

ADTT = 50 (2025) SEE NOTES

ADTT = 50 (2045) SEE NOTES

WELDED STEEL PLATE GIRDERS

		WITHOUT FUTURE WEARING SURFACE							WITH FUTURE WEARING SURFACE						
		H20	HS20	ML80	TK-527	PHL-93	P-82	P2016-13	H20	HS20	ML80	TK-527	PHL-93	P-82	P2016-13
INVENTORY RATING (IR)	DISTRIBUTION FACTOR	0.923	0.923	0.923	0.923	0.923	----	----	0.923	0.923	0.923	0.923	0.923	----	----
	GIRDER	EXT	EXT	EXT	EXT	EXT	----	----	EXT	EXT	EXT	EXT	EXT	----	----
	LOCATION	0.00	30.25	30.25	30.25	30.25	----	----	0.00	30.25	30.25	30.25	30.25	----	----
	RESISTANCE	537 KIPS	47.8 KSI	47.8 KSI	47.8 KSI	47.8 KSI	----	----	537 KIPS	47.8 KSI	47.8 KSI	47.8 KSI	47.8 KSI	----	----
	LIMIT STATE	STR-I	STR-I	STR-I	STR-I	STR-I	----	----	STR-I	STR-I	STR-I	STR-I	STR-I	----	----
	RATING FACTOR	2.88 (S)	2.55 (M)	2.35 (M)	2.25 (M)	1.77 (M)	----	----	2.72 (S)	2.39 (M)	2.20 (M)	2.10 (M)	1.66 (M)	----	----
OPERATING RATING (OR)	DISTRIBUTION FACTOR	0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923	0.923
	GIRDER	EXT	EXT	EXT	EXT	EXT	EXT	EXT	EXT	EXT	EXT	EXT	EXT	EXT	EXT
	LOCATION	0.00	30.25	30.25	30.25	30.25	30.25	0.00	0.00	30.25	30.25	30.25	30.25	30.25	30.25
	RESISTANCE	537 KIPS	47.8 KSI	47.8 KSI	47.8 KSI	47.8 KSI	47.8 KSI	537 KIPS	537 KIPS	47.8 KSI	47.8 KSI	47.8 KSI	47.8 KSI	47.8 KSI	47.8 KSI
	LIMIT STATE	STR-II	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II	STR-II	STR-II	STR-II	STR-II	STR-IA	STR-II	STR-II
	RATING FACTOR	3.73 (S)	3.31 (M)	3.05 (M)	2.91 (M)	2.30 (M)	1.53 (M)	1.28 (S)	3.53 (S)	3.10 (M)	2.85 (M)	2.73 (M)	2.15 (M)	1.43 (M)	1.21 (M)

CRITICAL MEMBER FOR GOVERNING RATING	
MAXIMUM FACTORED FLEXURAL RESISTANCE	15097.97 K-FT
LOCATION	0.00 - 118.00
MAXIMUM FACTORED SHEAR RESISTANCE	537.26
LOCATION	0.00

**NOTES:**

- LOW VOLUME ROAD: ADT ASSUMED = 500, ADTT ASSUMED = 50
- INCLUDES FUTURE WEARING SURFACE OF 30 PSF WHERE APPLICABLE
- P-82 RATINGS ARE BASED ON MULTI-LANE DISTRIBUTION FACTORS
- P2016-13 RATINGS ARE BASED ON MULTI-LANE DISTRIBUTION FACTORS

**LEGEND:**

- M - FLEXURE GOVERNS
- S - SHEAR GOVERNS
- EXT - EXTERIOR GIRDER

**FOUNDATION NOTES**

- THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES. DIRECT SURFACE RUNOFF AWAY FROM THE EXCAVATION. PERFORM ALL EXCAVATIONS IN ACCORDANCE WITH OSHA REQUIREMENTS. SEE SPECIAL PROVISION ENTITLED "TEMPORARY EXCAVATION SUPPORT AND PROTECTION SYSTEM"
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT DEWATERING SO THAT THE EXCAVATIONS ARE FREE OF DELETERIOUS MATERIAL AND DRY ENOUGH TO BE INSPECTED BY THE DISTRICT GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE
- TEMPORARY SHORING SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SPECIAL PROVISION, TEMPORARY EXCAVATION SUPPORT AND PROTECTION SYSTEM.
- BLASTING IS NOT PERMITTED FOR FOUNDATION EXCAVATION.
- SEISMIC SITE CLASS IS NOT CLASS E.
- CLASS 3 EXCAVATION IS NOT SUITABLE FOR EMBANKMENT MATERIAL.
- FOUNDATION EXCAVATIONS ARE TO BE INSPECTED AND APPROVED BY THE DISTRICT GEOTECHNICAL ENGINEER. PROVIDE A MINIMUM 48-HOURS OF NOTICE TO THE DISTRICT GEOTECHNICAL ENGINEER.
- THE DEPTH OF FROST PENETRATION IS 3'-3" (39"). ENSURE PILE CAPS OR NON-FROST SUSCEPTIBLE AGGREGATE IS PLACED TO FROST DEPTH AT A MINIMUM.
- MICROPILES - SEE MICROPILE DETAIL SHEET NO. 28

**UTILITY NOTES**

- COORDINATE, LOCATE, AND CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH PUBLICATION 408, SECTIONS 105.06 AND 107.12.
- PRIOR TO ANY EXCAVATION OR DEMOLITION WORK, CONTACT THE PA ONE CALL SYSTEM INC. AT 1-800-242-1776 AND COMPLY WITH THE PROVISIONS OF ACT 287 OF 1994 AS AMENDED BY ACT 187 OF 1996. IDENTIFY ALL LINES OVER AND UNDER THE STRUCTURE. NOTIFY AND COMPLY WITH THE APPLICABLE UTILITIES COMPANY'S CLEARANCE REQUIREMENTS. DESIGNER'S SERIAL NUMBERS IS: 20182121684 (NORTH IRWIN BOROUGH)
- COORDINATE THE REQUIREMENTS FOR PROTECTION AND/OR RELOCATION OF UTILITIES WITH THE UTILITY OWNER PRIOR TO STARTING WORK. VERIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO STARTING WORK. CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATION OF ANY UTILITY.

**EXISTING STRUCTURE**

- PLANS OF THE EXISTING BRIDGE ARE NOT AVAILABLE.
- VERIFY ALL DIMENSIONS AND GEOMETRY OF THE EXISTING STRUCTURE IN THE FIELD AS NECESSARY FOR PROPER FIT OF THE PROPOSED CONSTRUCTION.
- AFTER EXCAVATING FOR PROPOSED FOUNDATIONS, NOTIFY THE REPRESENTATIVE IF ANY PORTION OF THE EXISTING FOUNDATIONS INTERFERE WITH THE PROPOSED FOUNDATIONS.

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

**WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS**

**WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH**

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

**SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
GENERAL NOTES & RATING TABLE**

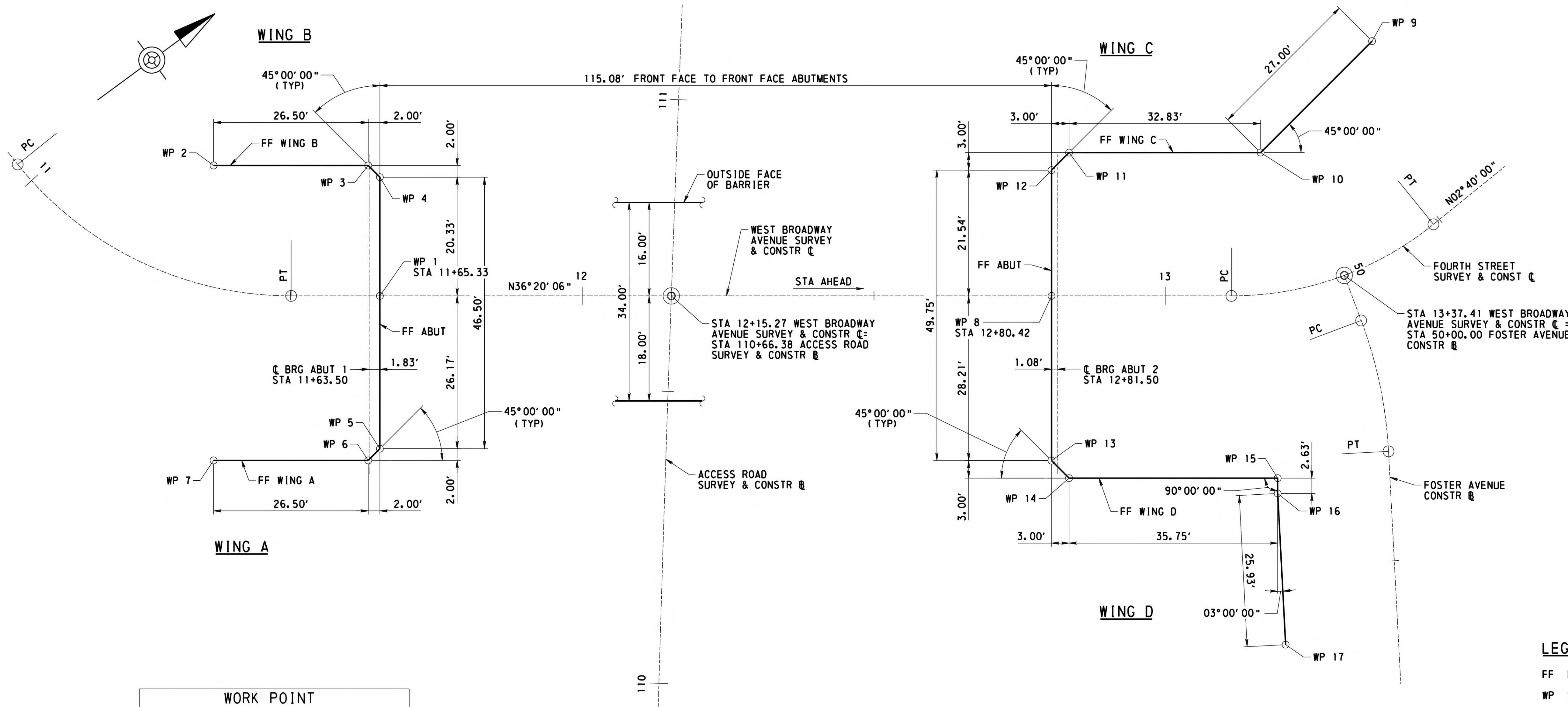
RECOMMENDED February 12<sup>th</sup>, 2026

SHEET 4 OF 50

L - 645



DESIGNED BY	KAM
DRAWN BY	TMK
CHECKED BY	KAM



**STAKE-OUT PLAN**  
NOT TO SCALE

WORK POINT COORDINATE TABLE		
WORK POINT	NORTH	EAST
1	N 371,798.9854	E 1,421,012.1113
2	N 371,789.2594	E 1,420,977.2339
3	N 371,810.6069	E 1,420,992.9353
4	N 371,811.0330	E 1,420,995.7315
5	N 371,783.4814	E 1,421,033.1903
6	N 371,780.6853	E 1,421,033.6164
7	N 371,759.3378	E 1,421,017.9149
8	N 371,891.6952	E 1,421,080.3009
9	N 371,961.7889	E 1,421,077.6908
10	N 371,935.1033	E 1,421,081.7576
11	N 371,908.6503	E 1,421,062.3065
12	N 371,904.4561	E 1,421,062.9457
13	N 371,874.9789	E 1,421,103.0226
14	N 371,875.6181	E 1,421,107.2168
15	N 371,904.4197	E 1,421,128.4009
16	N 371,902.8617	E 1,421,130.5135
17	N 371,888.6160	E 1,421,152.1777

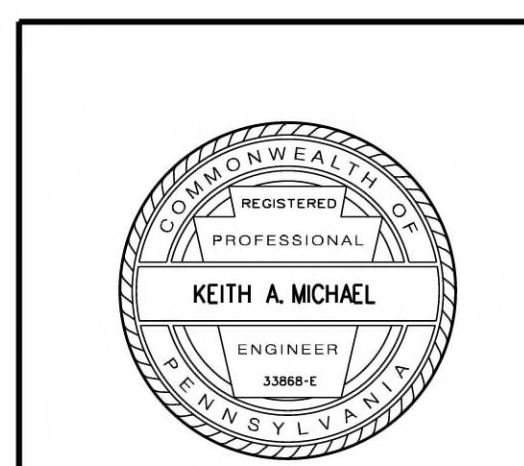
- NOTES**
- FOUR (4) PLACE COORDINATES ARE FOR COMPUTATION PURPOSES ONLY AND DO NOT IMPLY A PRECISION BEYOND TWO (2) PLACES
  - COORDINATES ARE BASED ON THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM (NAD83 SOUTH ZONE #3702). THE COMBINED SCALE FACTOR IS 0.99992127

DESIGNED BY	KAM
DRAWN BY	SJW
CHECKED BY	KAM

**LEGEND**  
FF FRONT FACE  
WP WORK POINT

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS:31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793



**WESTMORELAND COUNTY**  
DEPARTMENT OF PUBLIC WORKS

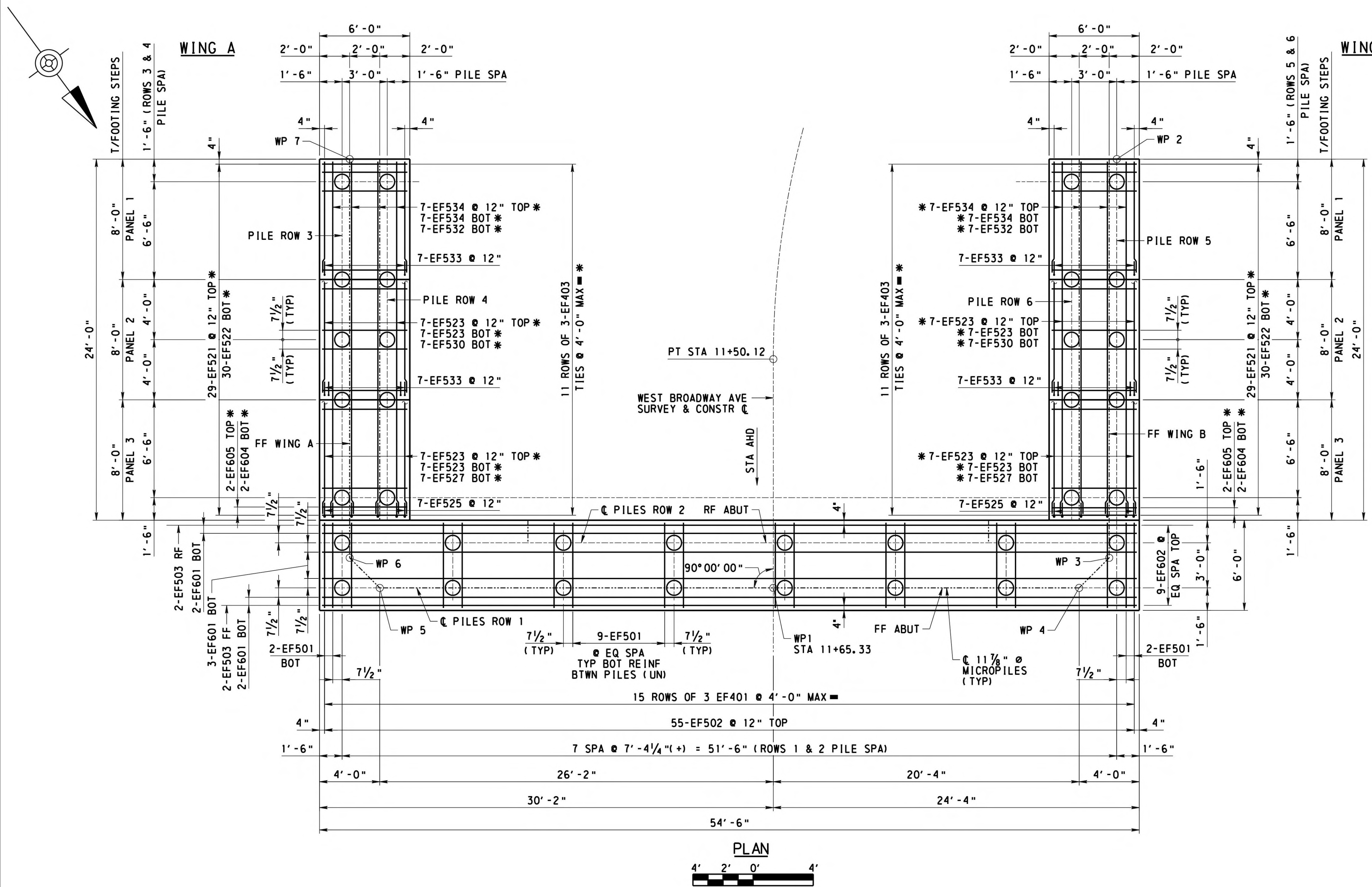
**WESTMORELAND COUNTY**  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

**SINGLE SPAN STEEL MULTI-GIRDER BRIDGE**  
**STAKE OUT PLAN**

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 5 OF 50

L - 645



**NOTES**

- FOR STAKE OUT PLAN SEE SHEET 5
- FOR ABUTMENT 1 PLAN, SEE SHEET 7
- FOR ABUTMENT 1 ELEVATION, SEE SHEET 8
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR REINFORCEMENT BAR SCHEDULE SEE SHEET 40
- SEE ABUTMENT AND WINGWALL SECTIONS FOR REINFORCEMENT SPACING

**LEGEND**

- WP WORK POINT
- FF FRONT FACE
- RF REAR FACE
- EF EACH FACE
- UN UNLESS NOTED
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.
- 1 1/8" DIA MICROPILE
- \* SEE WINGWALL ELEVATIONS AND SECTIONS FOR SPACING

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

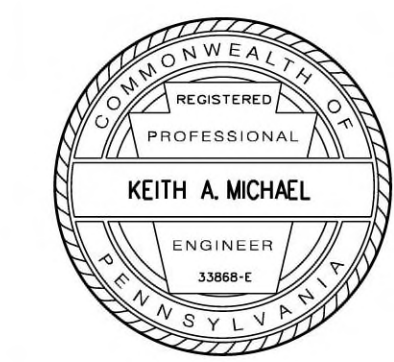
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

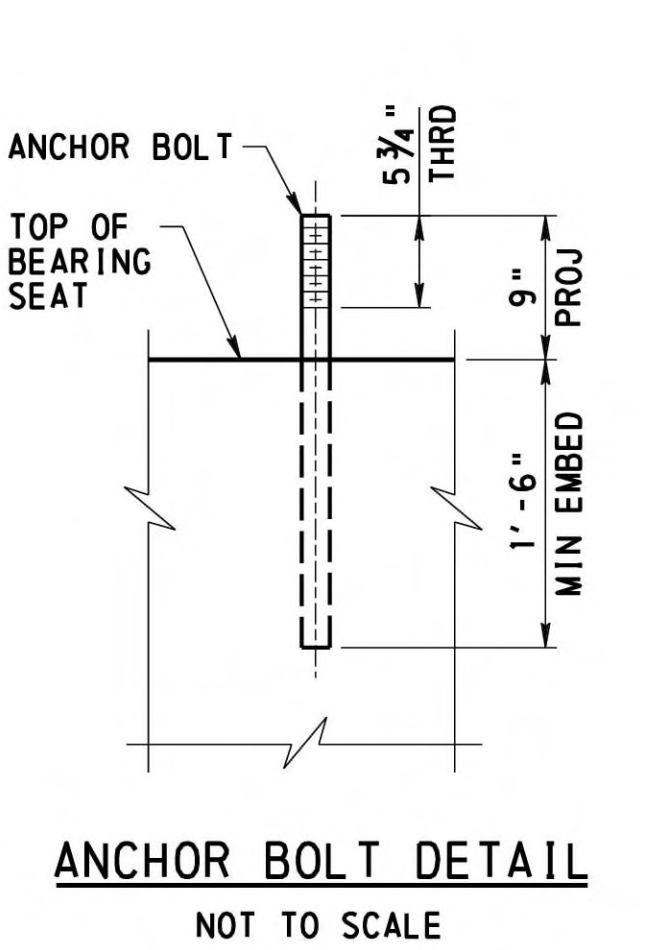
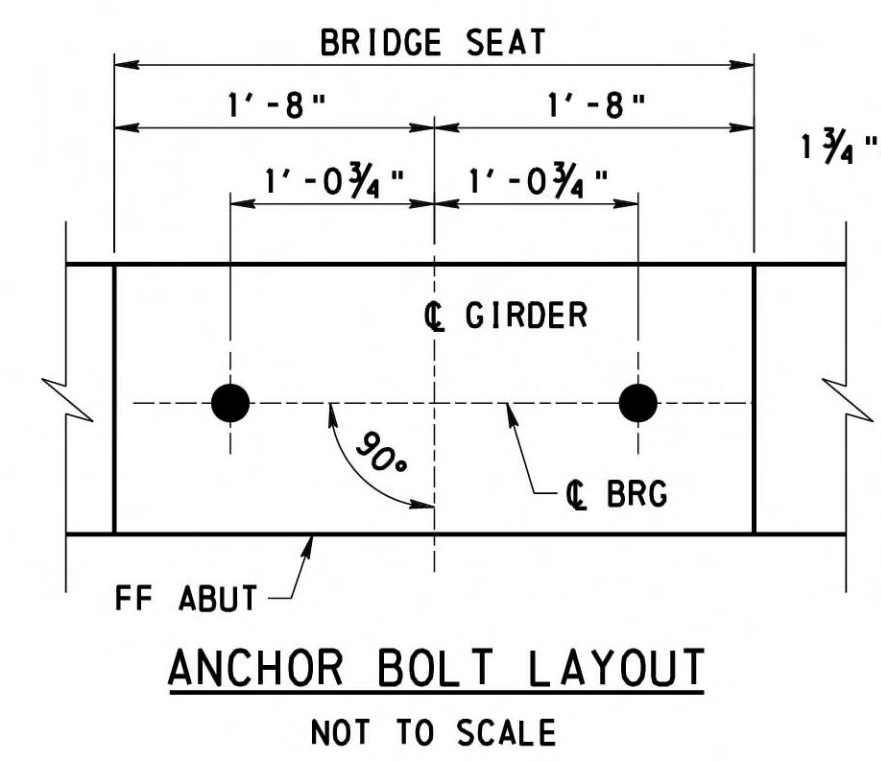
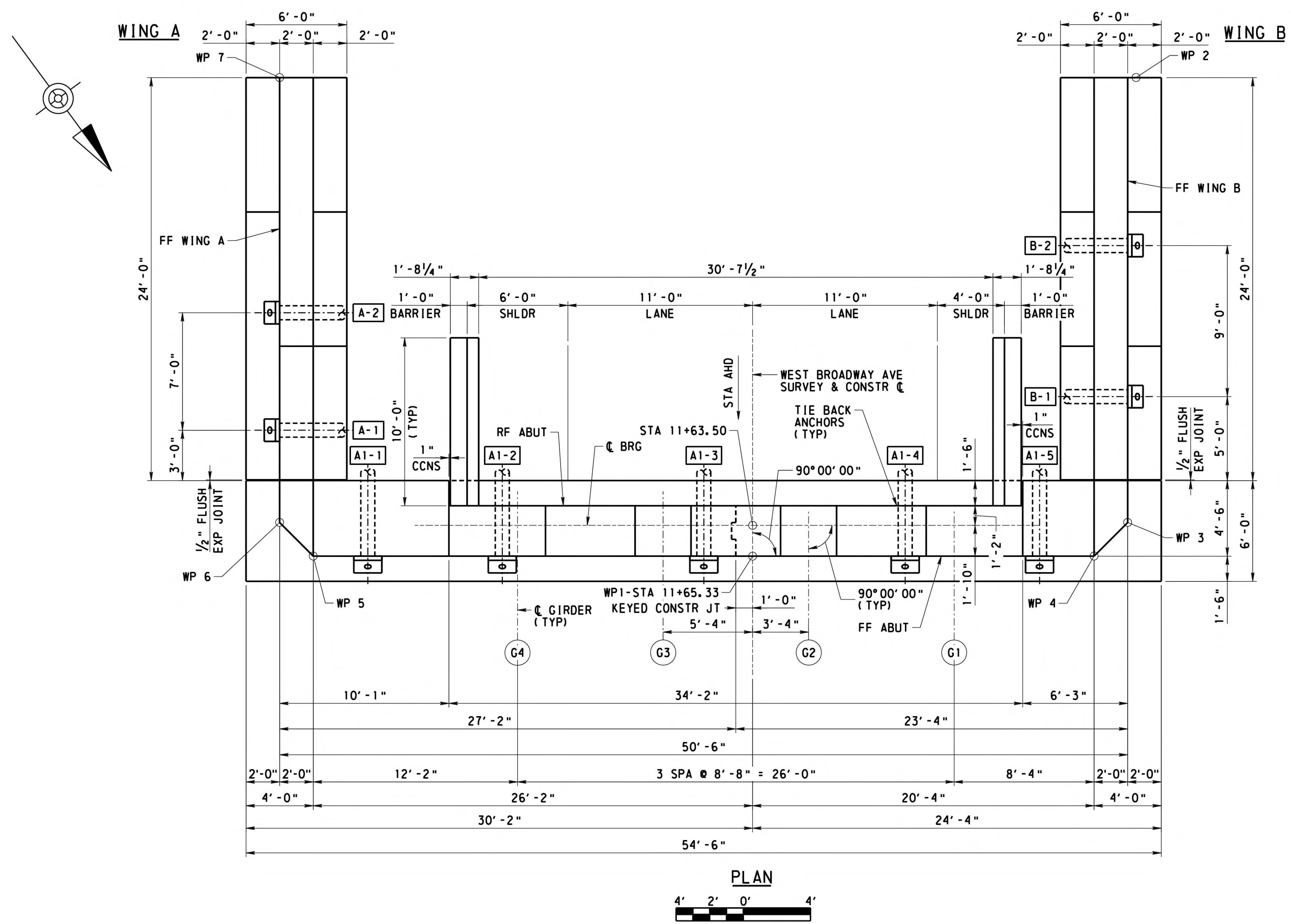
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 1 FOOTING PLAN

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 6 OF 50

L - 645

DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM





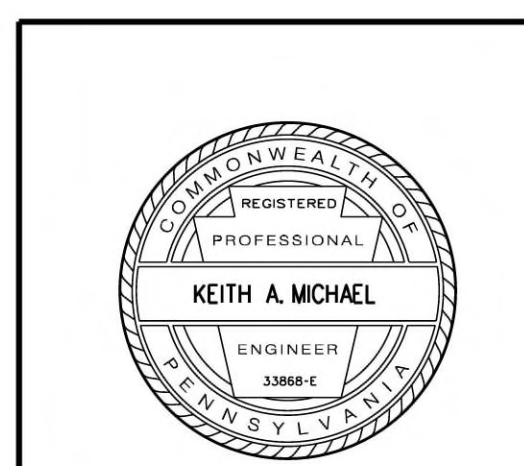
- NOTES**
- FOR STAKE OUT PLAN SEE SHEET 5
  - FOR FOOTING PLAN, SEE SHEET 6
  - FOR ABUTMENT 1 ELEVATION, SEE SHEET 8
  - FOR WINGWALL A DETAILS, SEE SHEET 12
  - FOR WINGWALL B DETAILS, SEE SHEET 13
  - FOR ANCHOR AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29
  - FOR BEARING DETAILS, SEE SHEET 34
  - FOR CONCRETE END DIAPHRAGM DETAILS, SEE SHEET 35
  - FOR REINFORCEMENT BAR SCHEDULE SEE SHEET 40
  - FOR KEYED CONSTRUCTION JOINT DETAILS SEE STANDARD DRAWING BC-735M.

- LEGEND**
- WP WORK POINT
  - FF FRONT FACE
  - RF REAR FACE
  - EF EACH FACE
  - UN UNLESS NOTED
  - CCNS CLOSED CELL NEOPRENE SPONGE
  - G1 GIRDER NUMBER
  - A1-1 LATENT ANCHOR NUMBER

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

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CHECKED BY	KAM



WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

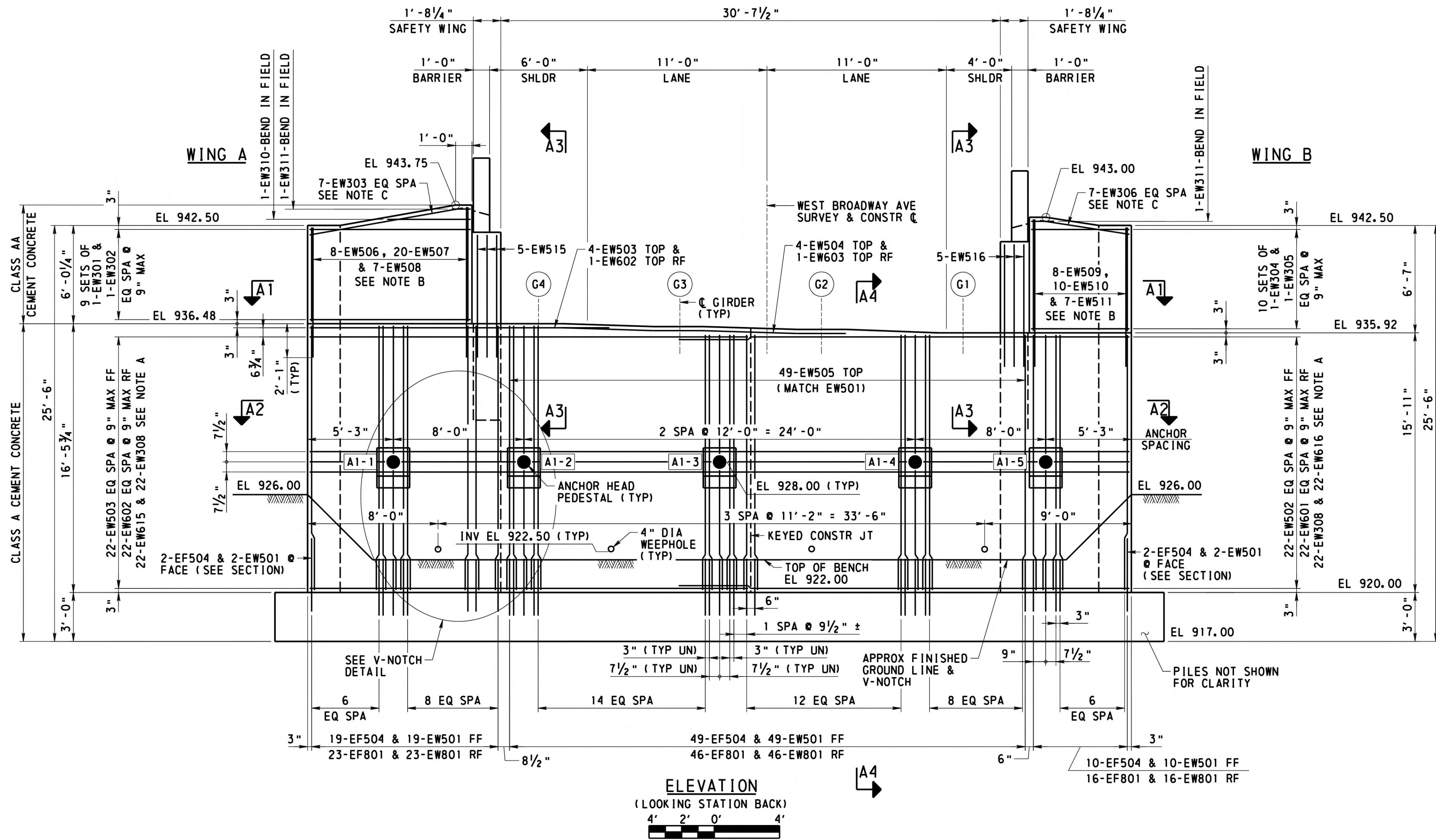
WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 1 PLAN

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 7 OF 50

L - 645

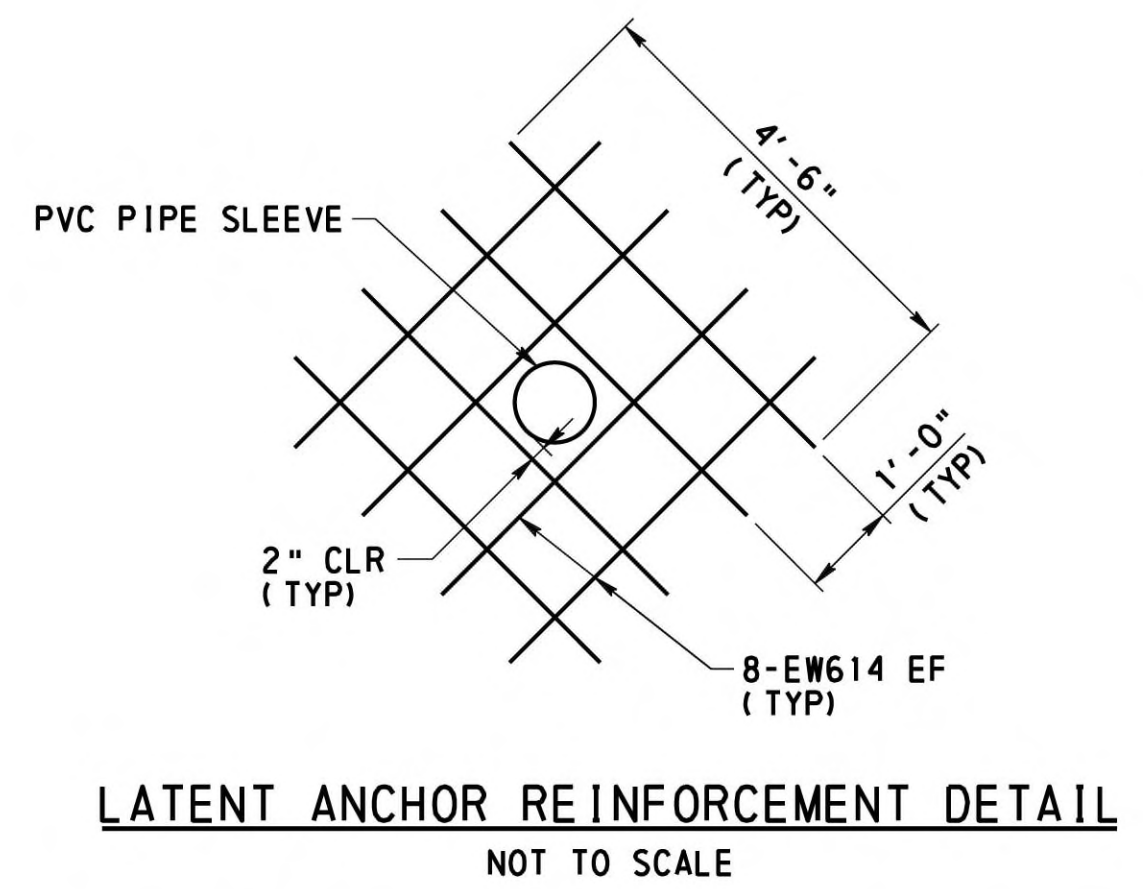
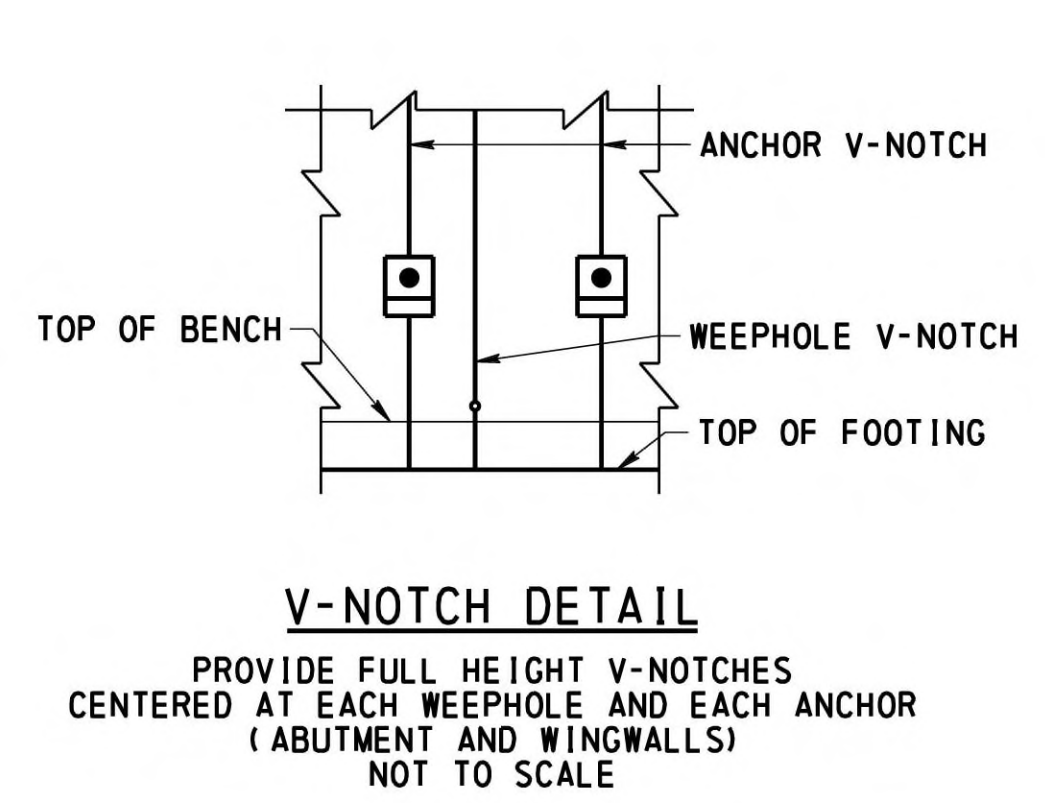


- NOTES**
- FOR STAKE OUT PLAN SEE SHEET 5
  - FOR FOOTING PLAN, SEE SHEET 6
  - FOR ABUTMENT 1 PLAN, SEE SHEET 7
  - FOR SECTIONS A1-A1 & A2-A2, SEE SHEET 9
  - FOR SECTIONS A3-A3 & A4-A4, SEE SHEET 10
  - FOR WEEPHOLE DETAILS, SEE SHEET 12
  - FOR ANCHOR AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29
  - FOR BEARING DETAILS, SEE SHEET 34
  - FOR CONCRETE END DIAPHRAGM DETAILS, SEE SHEET 35
  - FOR REINFORCEMENT BAR SCHEDULE SEE SHEET 40
  - FOR ADDITIONAL STRUCTURE FOUNDATION DRAINAGE DETAILS, SEE STANDARD DRAWING BC-751M.
  - FOR V-NOTCH AND CHAMFER DETAILS, SEE STANDARD DRAWING BC-752M.
  - FOR KEYED CONSTRUCTION JOINT DETAILS SEE STANDARD DRAWING BC-735M.

**LEGEND**

- WP WORK POINT
- FF FRONT FACE
- RF REAR FACE
- EF EACH FACE
- UN UNLESS NOTED
- G1 GIRDER NUMBER
- A1-1 INDICATES ANCHOR NUMBER

BEAM SEAT ELEVATIONS	
GIRDER	ELEVATION
G1	935.92
G2	936.13
G3	936.30
G4	936.48



- NOTE A: ADJUST SPACING OF HORIZONTAL BARS AT ANCHORS AS SHOWN. CUT HORIZONTAL EW502, EW503, EW601, EW602 BARS AND VERTICAL EW510 AND EW801 BARS LOCATED AT CENTER OF ANCHOR CASING. SEE SECTION A3-A3 AND A4-A4 FOR ADDITIONAL DETAILS.
- NOTE B: MATCH EW501 STEM BARS EXCEPT AS NOTED IN SECTION A1-A1.
- NOTE C: CUT SLOPING LEG OF EW303 AND EW306 IN THE FIELD AS REQUIRED AT CHEEKWALL CHAMFER.

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

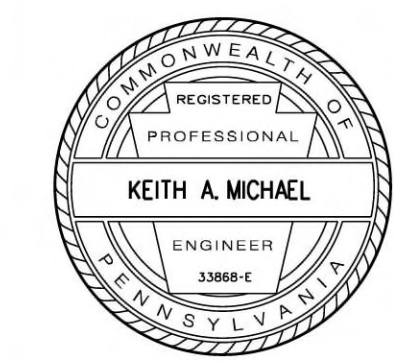
WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

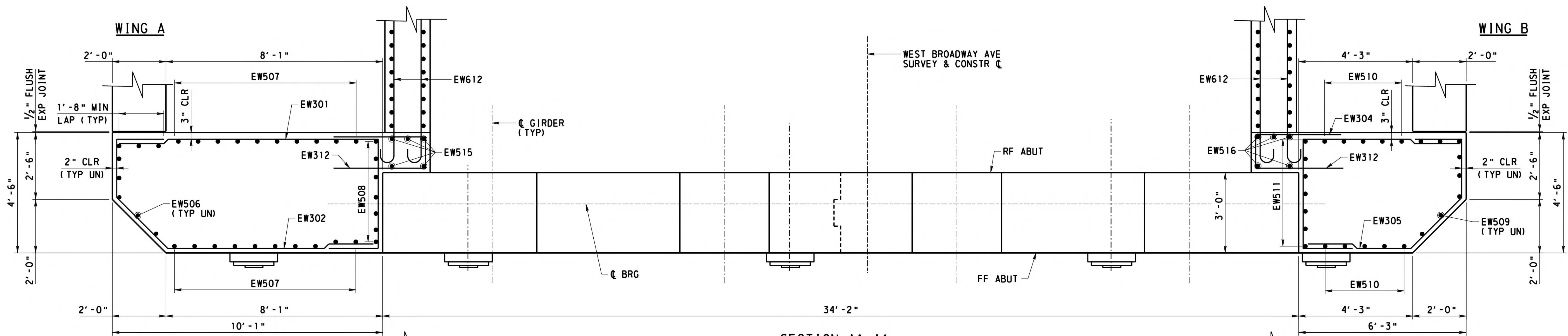
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 1 ELEVATION

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 8 OF 50

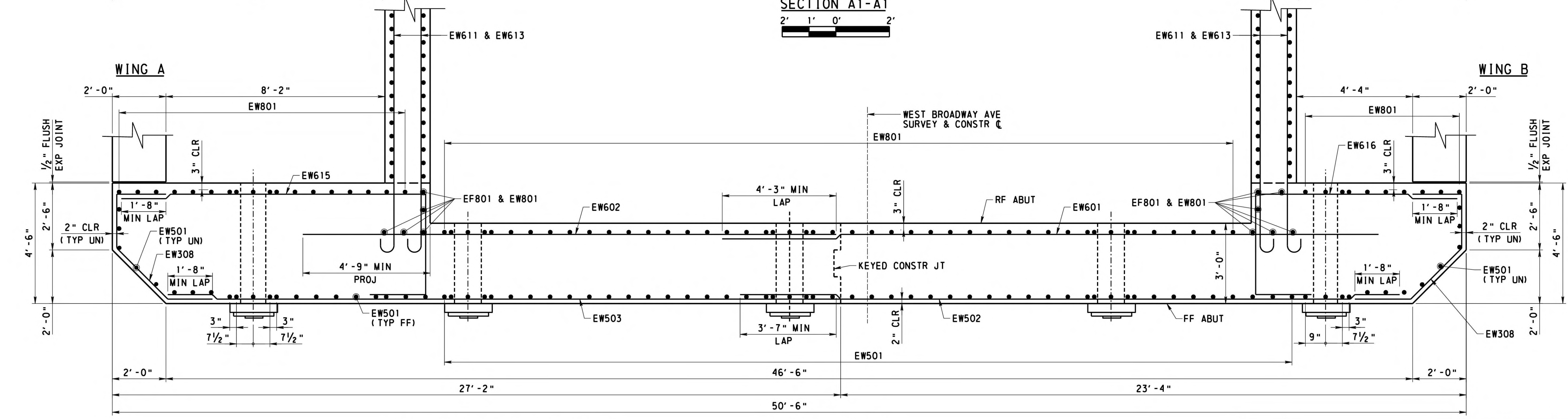
L - 645

DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM





SECTION A1-A1  
2' 1' 0' 2'



SECTION A2-A2  
2' 1' 0' 2'

NOTE: MICROPILES OMITTED FOR CLARITY IN SECTIONS A1-A1 AND A2-A2

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

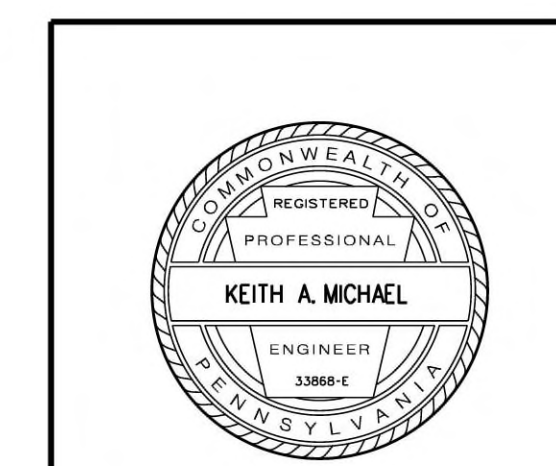
MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

**NOTES**

- FOR ABUTMENT PLAN SEE SHEET 7
- FOR ABUTMENT ELEVATION SEE SHEET 8
- WORK THIS SHEET WITH SHEET 10
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 40

**LEGEND**

- WP WORK POINT
- FF FRONT FACE
- RF REAR FACE
- EF EACH FACE
- UN UNLESS NOTED



WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

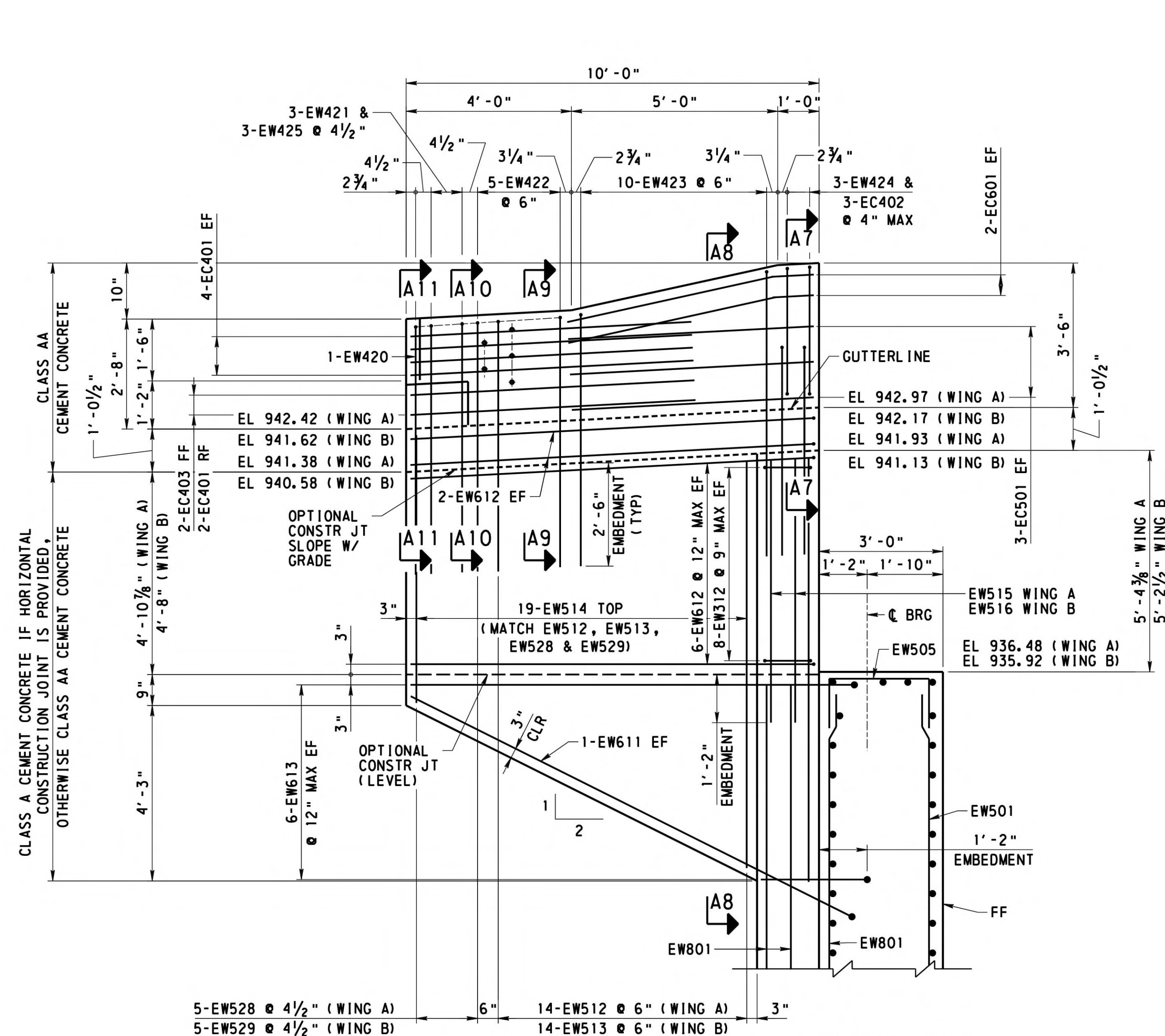
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 1 DETAILS 1

RECOMMENDED *February 12<sup>th</sup>, 2026*

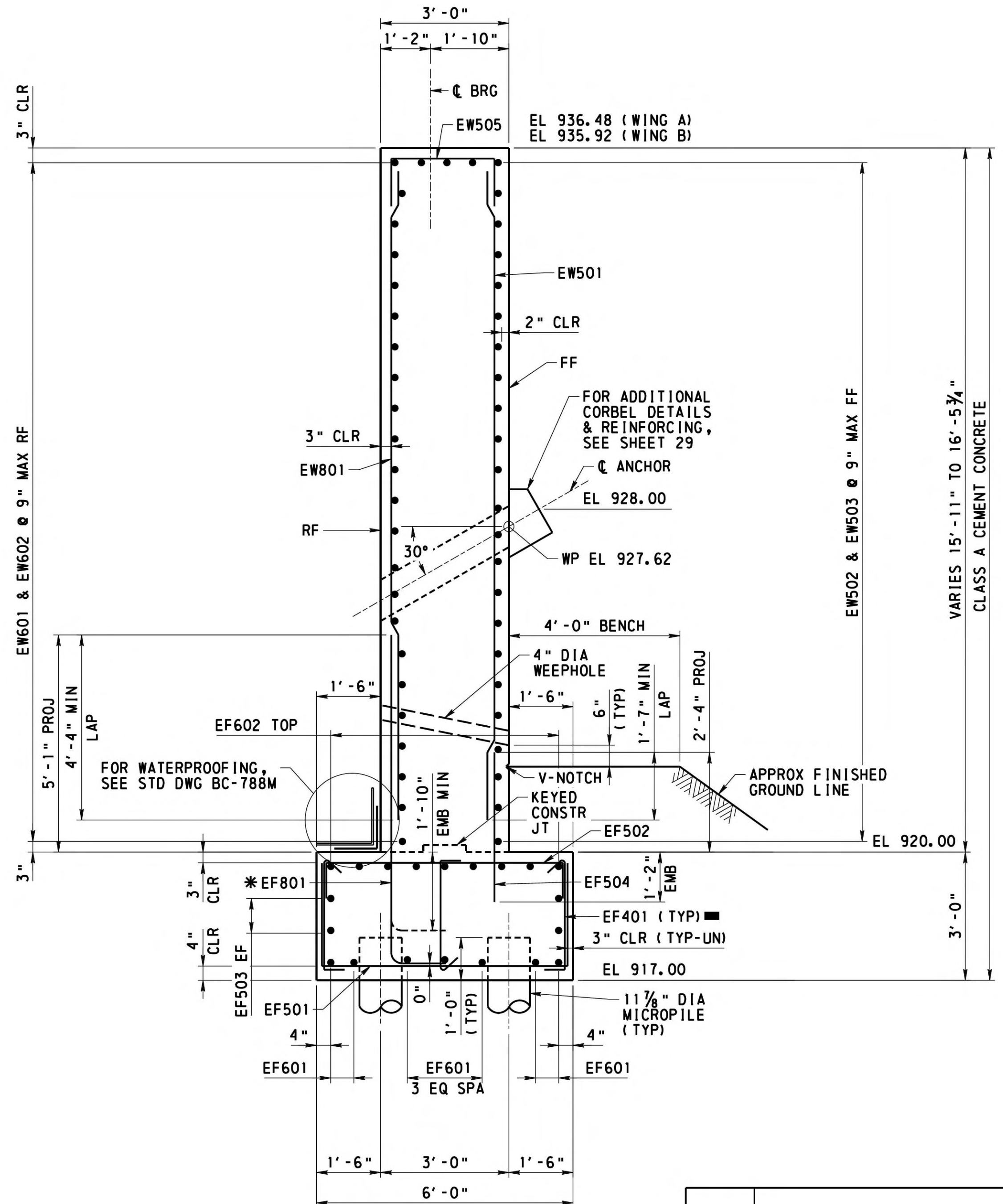
SHEET 9 OF 50

L - 645

DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM



**SECTION A3-A3**  
(WING B SIDE - AS SHOWN)  
(WING A SIDE - OPPOSITE HAND)  
2' 1' 0' 2'



**SECTION A4-A4**  
2' 1' 0' 2'

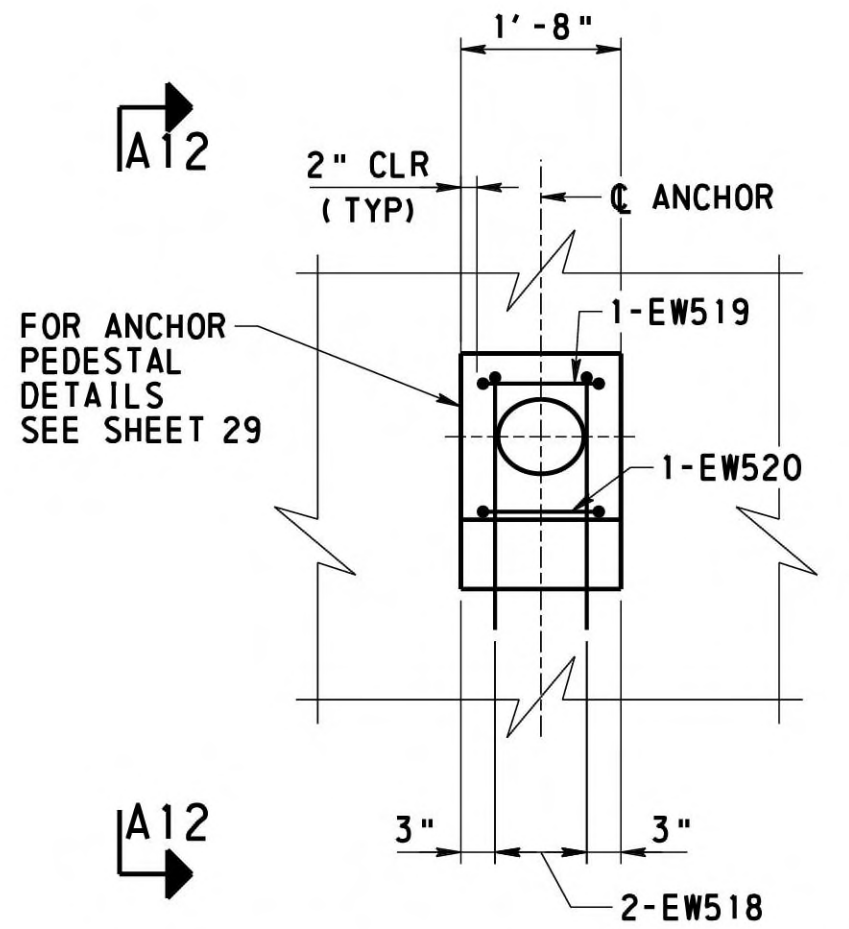
**NOTES**

- WORK THIS SHEET WITH SHEETS 6 THRU 9
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 40

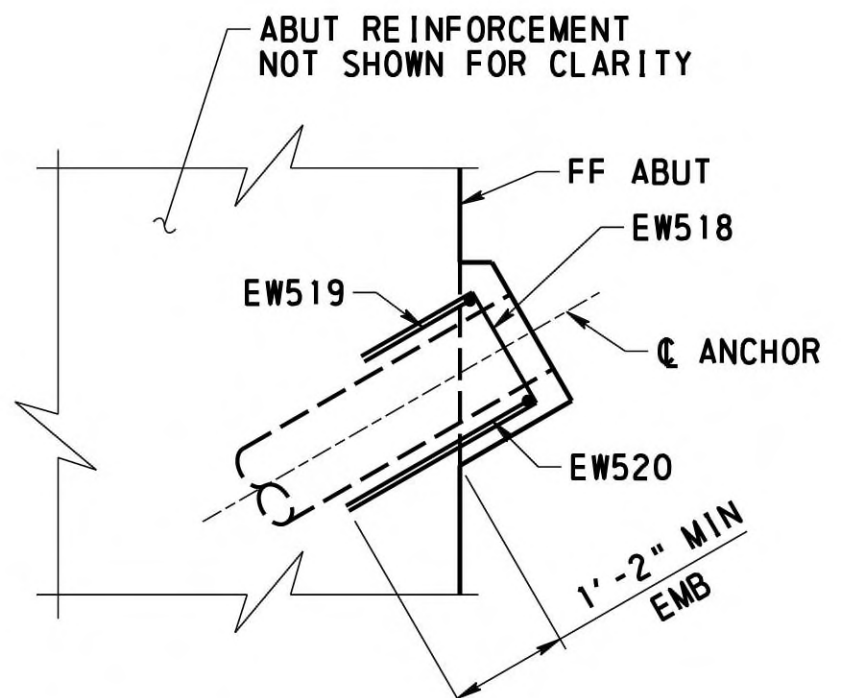
**LEGEND**

- WP WORK POINT
- FF FRONT FACE
- RF REAR FACE
- EF EACH FACE
- UN UNLESS NOTED
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.

\* TIE HORIZONTAL LEG OF EF801 TO BOTTOM MATT OF FOOTING REBAR, WHERE EF801 INTERFERERS WITH MICROPILE, RAISE HOOK ABOVE MICROPILE AS SHOWN WITH 1'-10" EMBEDMENT IN THE FOOTING.



**ABUTMENT ANCHOR PEDESTAL REINFORCEMENT DETAIL**  
(TYP A1-1 THRU A1-5)  
NOT TO SCALE



**SECTION A12-A12**  
NOT TO SCALE

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 1 DETAILS 2

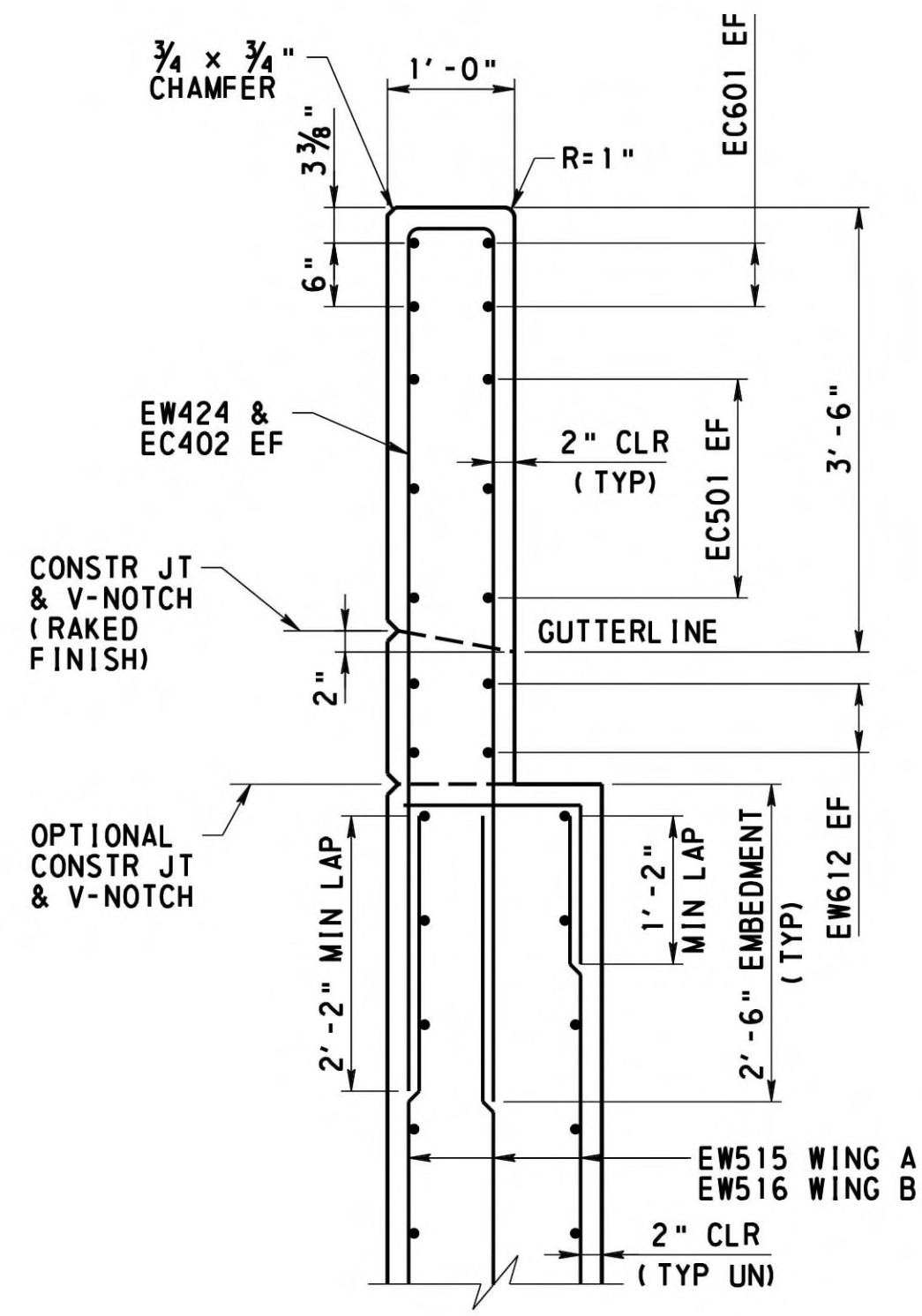
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 10 OF 50

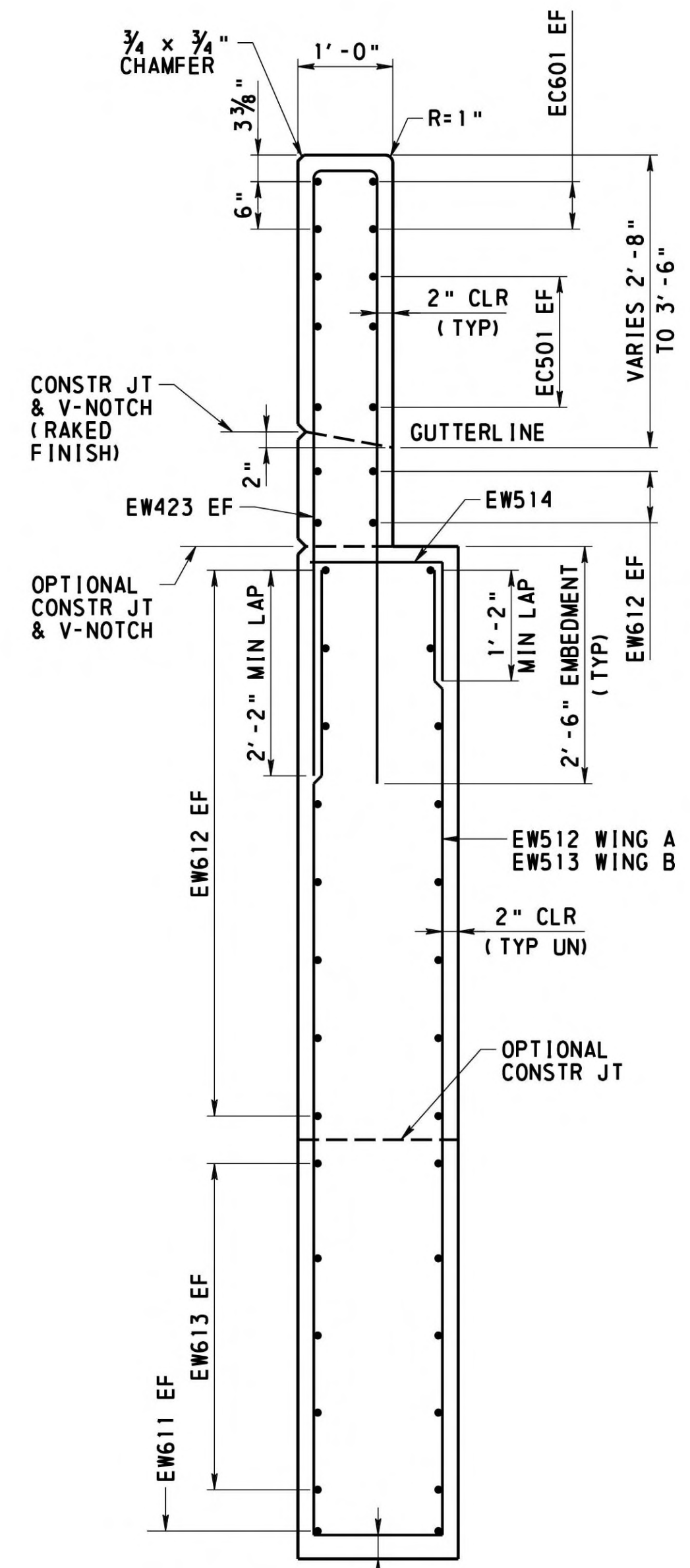
L - 645



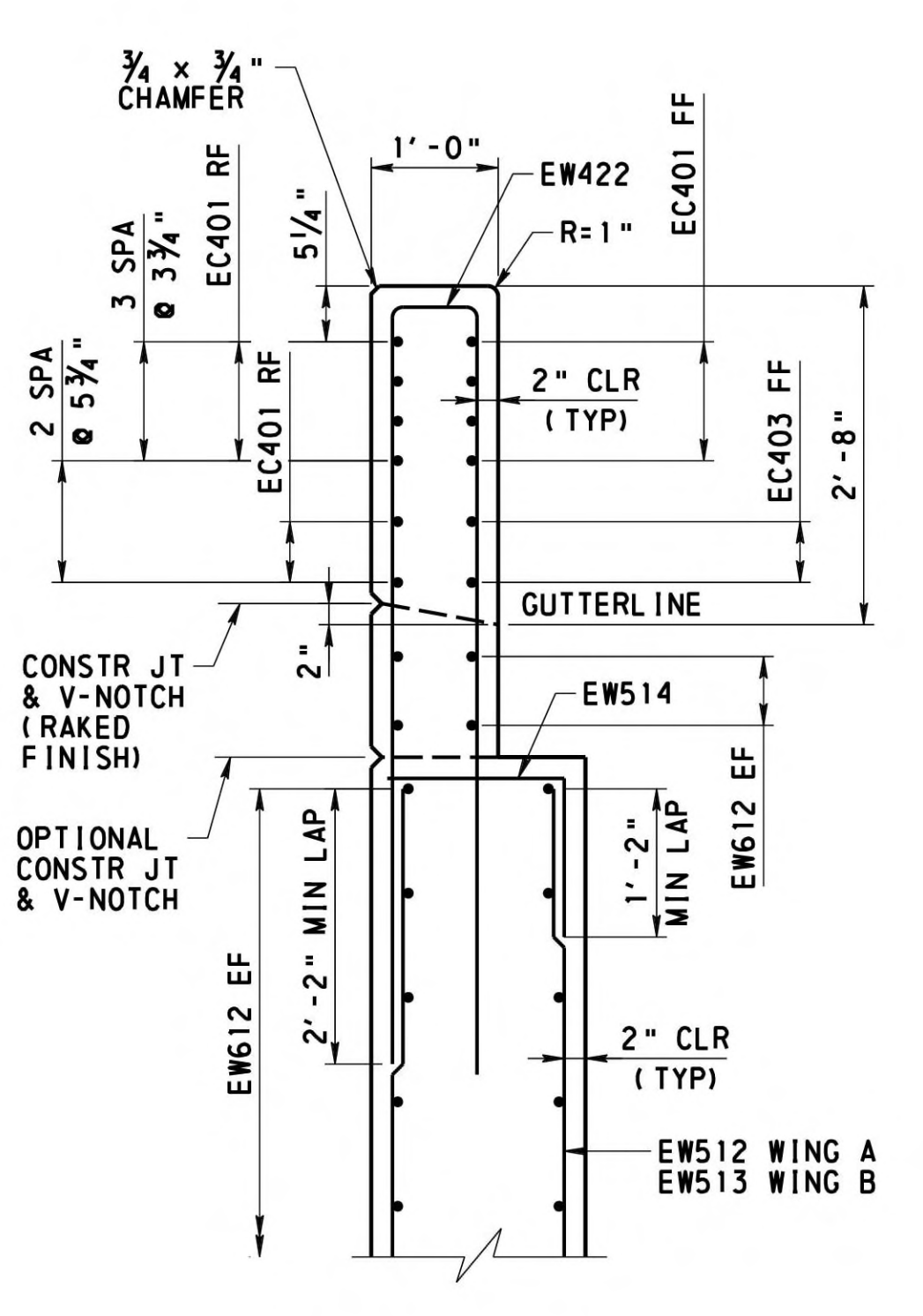
DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM



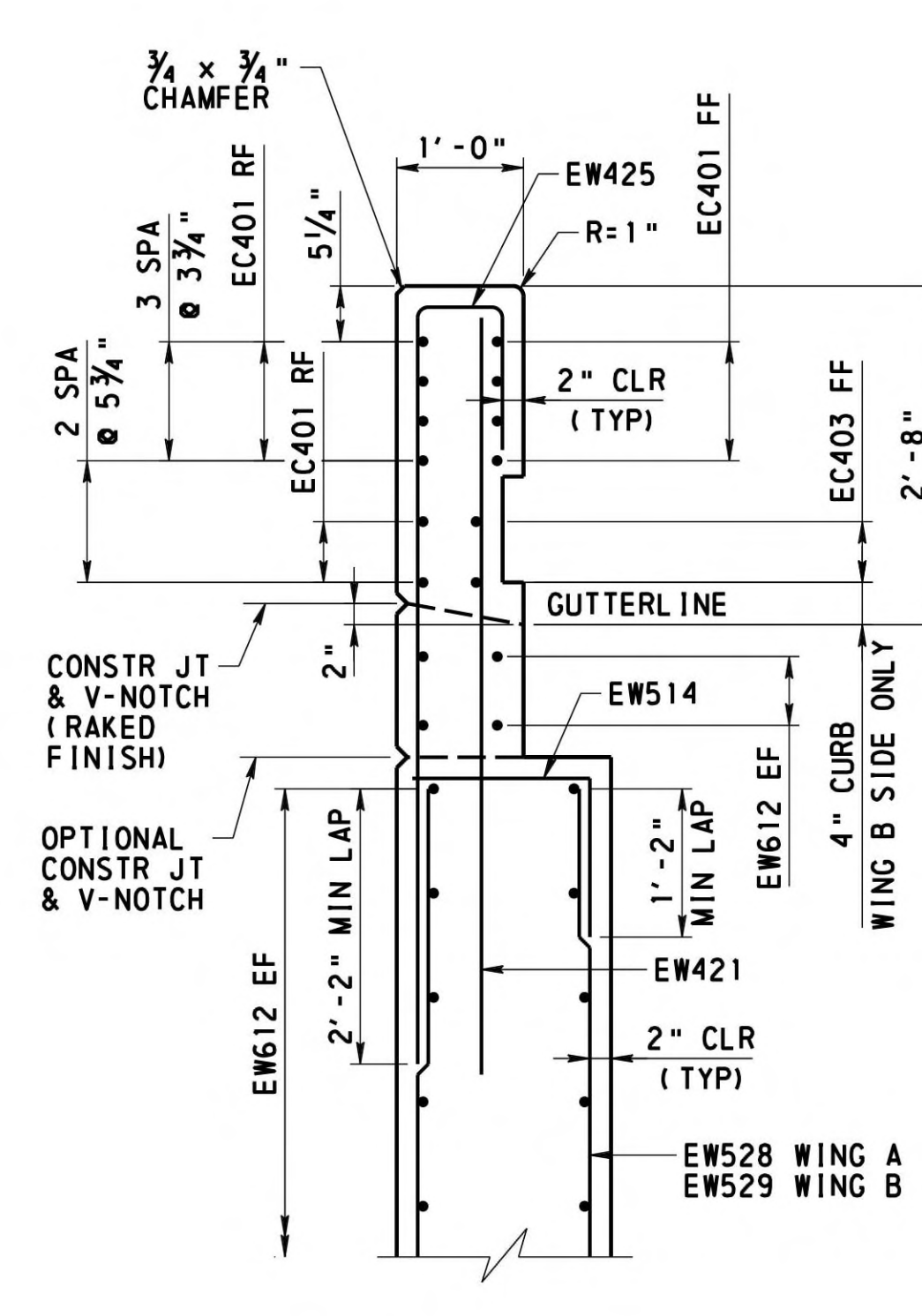
SECTION A7-A7  
2' 1' 0' 2'



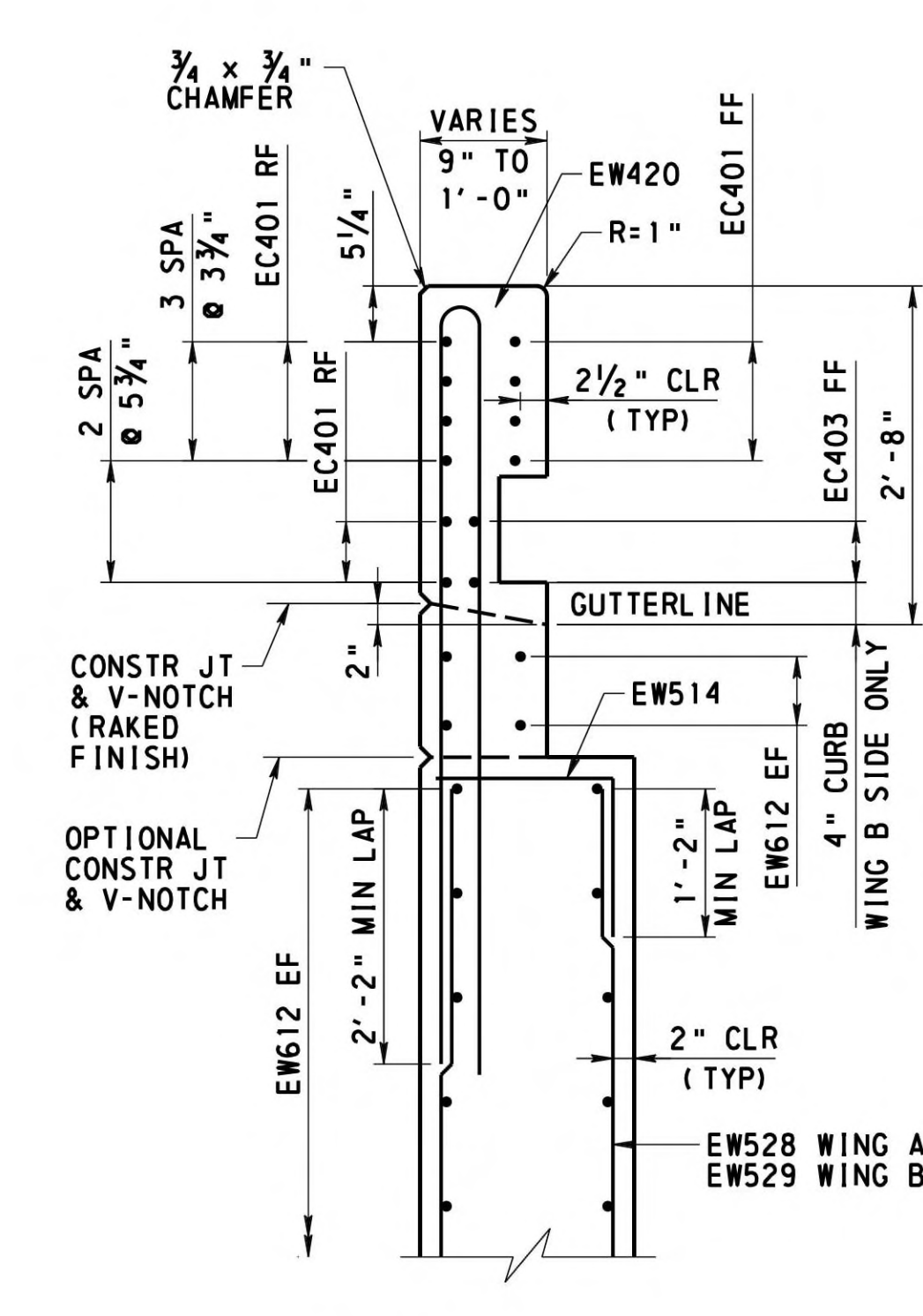
SECTION A8-A8  
2' 1' 0' 2'



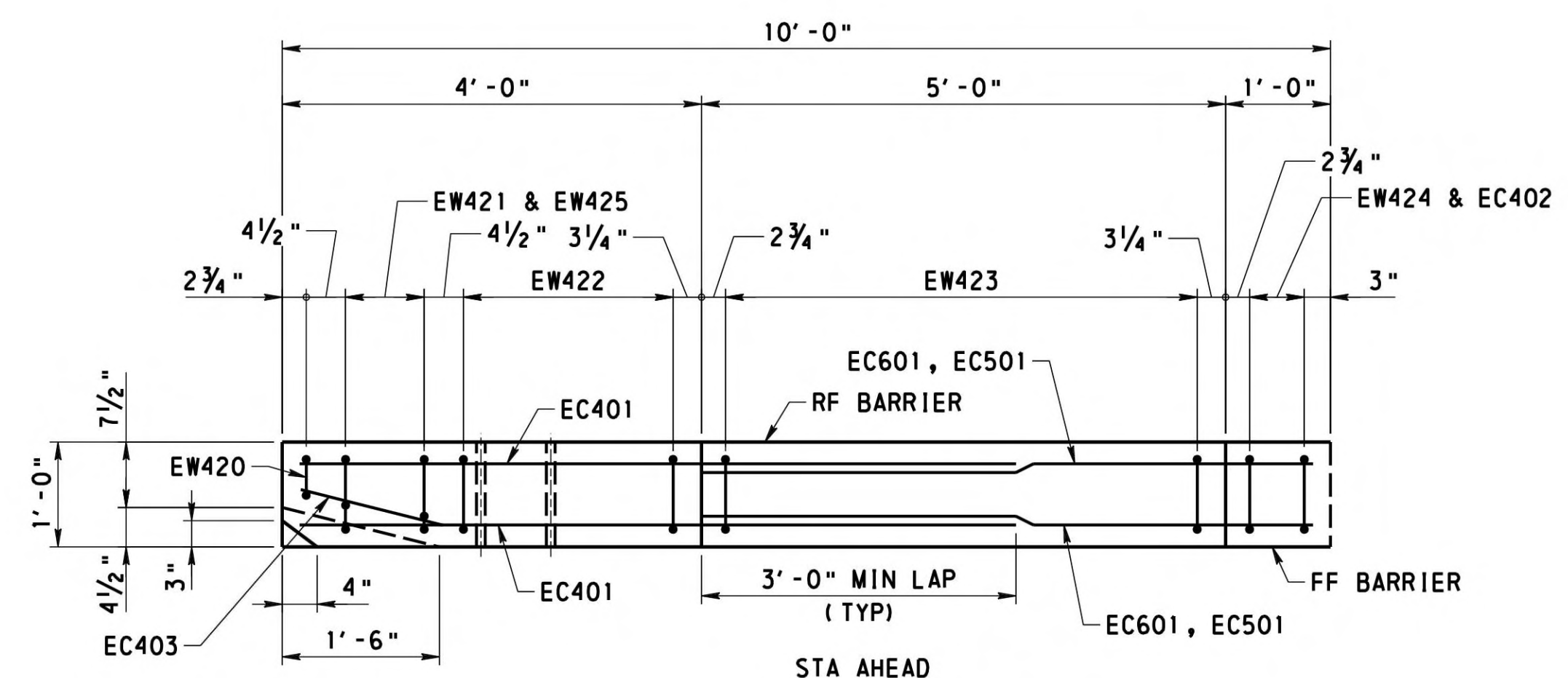
SECTION A9-A9  
2' 1' 0' 2'



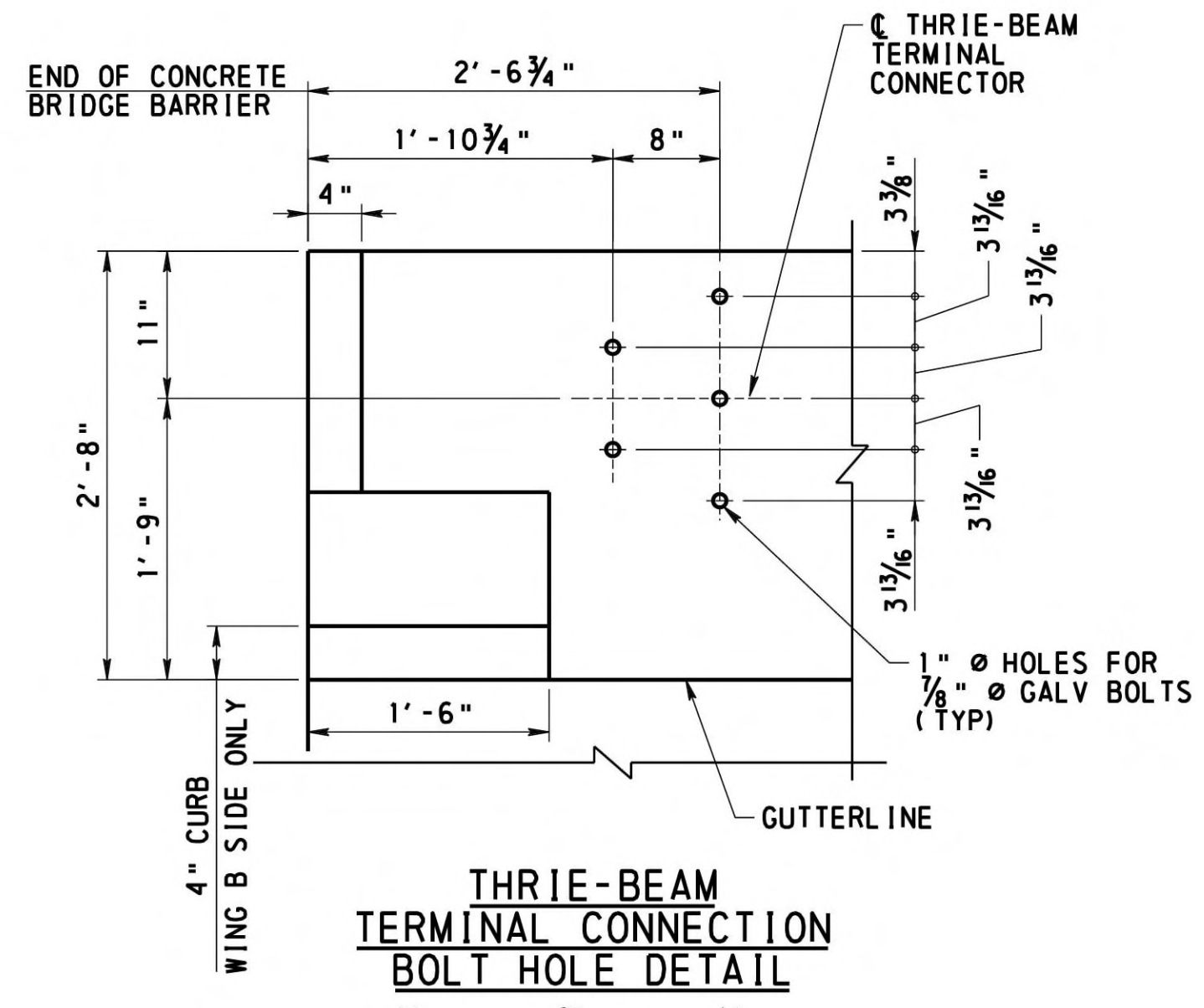
SECTION A10-A10  
2' 1' 0' 2'



SECTION A11-A11  
2' 1' 0' 2'



STA AHEAD  
WING B (AS SHOWN)  
WING A (OPPOSITE HAND)  
BARRIER PLAN  
2' 1' 0' 2'



THRIE-BEAM  
TERMINAL CONNECTION  
BOLT HOLE DETAIL  
1' 0' 1'

- NOTES**
- WORK THIS SHEET WITH SHEET 10
  - FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 40

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

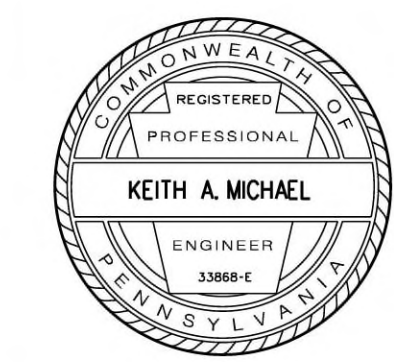
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 1 DETAILS 3

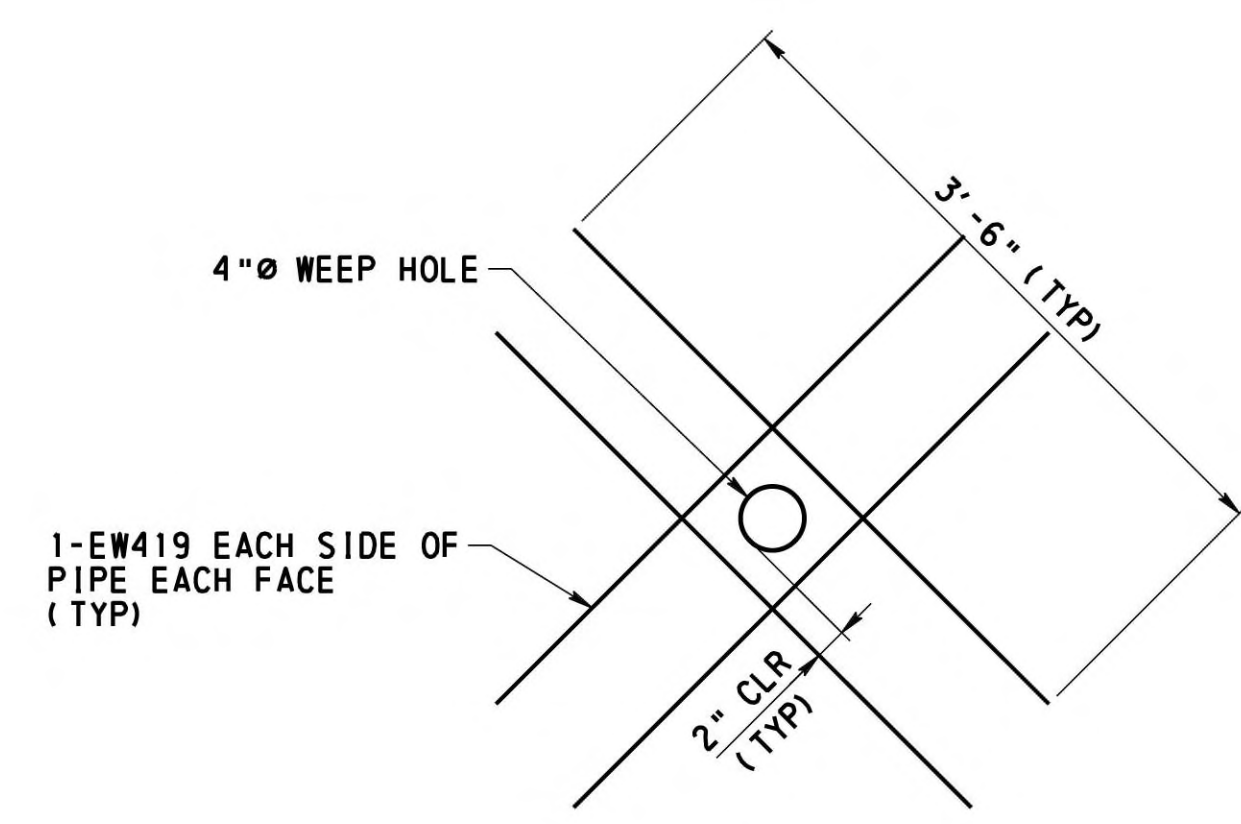
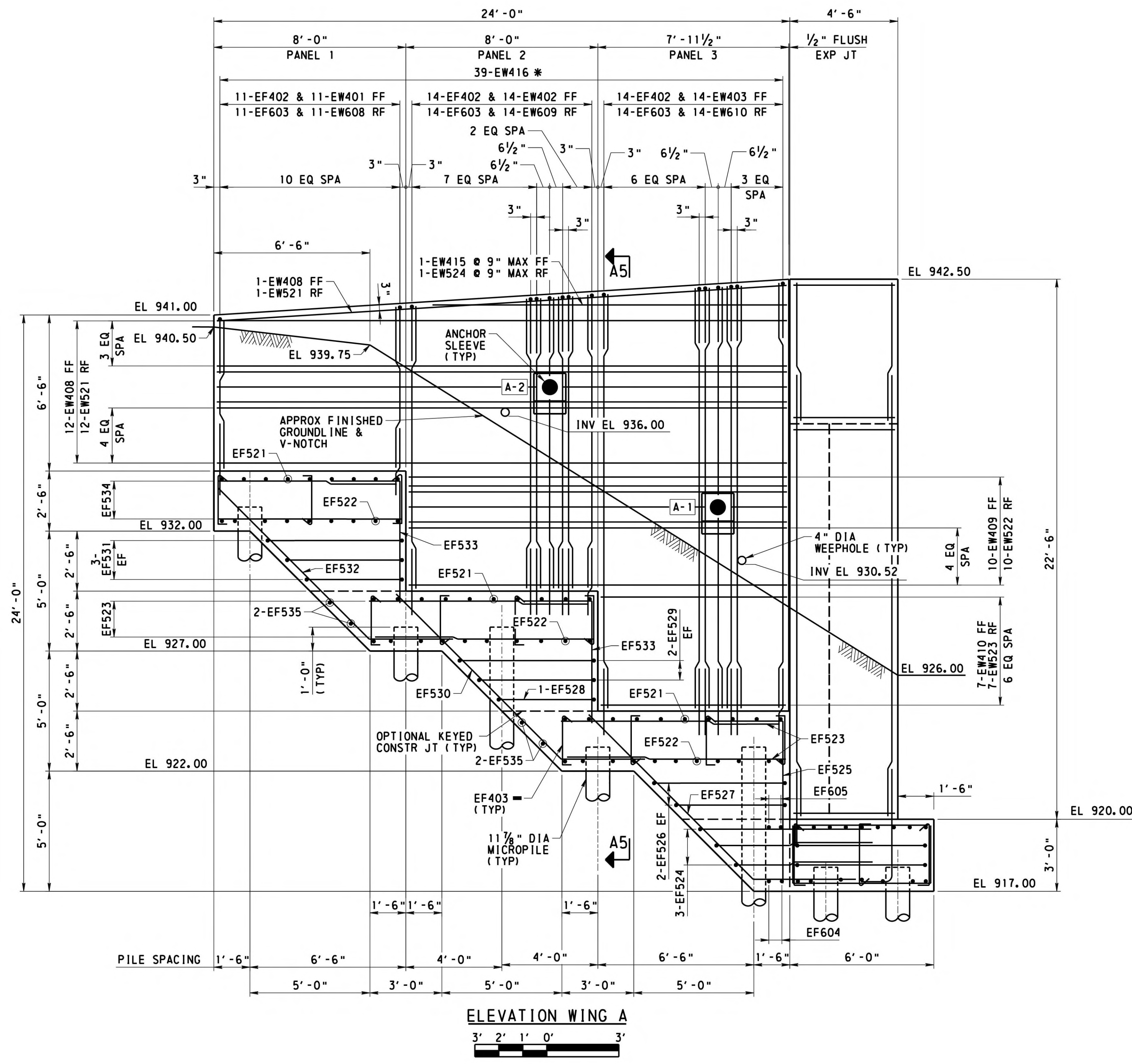
RECOMMENDED February 12<sup>th</sup>, 2026

SHEET 11 OF 50

L - 645

DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM





**WEEP HOLE REINFORCEMENT DETAIL**  
NOT TO SCALE

**NOTES**

- WORK THIS SHEET WITH SHEETS 7 THRU 14
- FOR SECTION A5-A5, SEE SHEET 14
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 40

**LEGEND**

- A-1** LATENT ANCHOR NUMBER
- EF EACH FACE
- FF FRONT FACE
- RF REAR FACE
- \* MATCH SPACING OF EW401, EW402, EW403, EW608, EW609, EW610
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

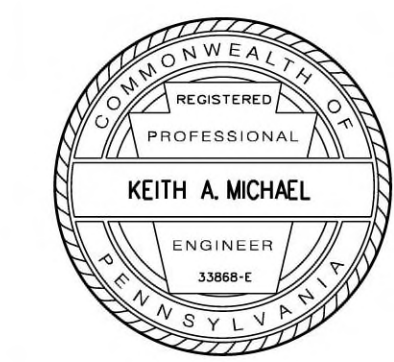
WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
WING A ELEVATION

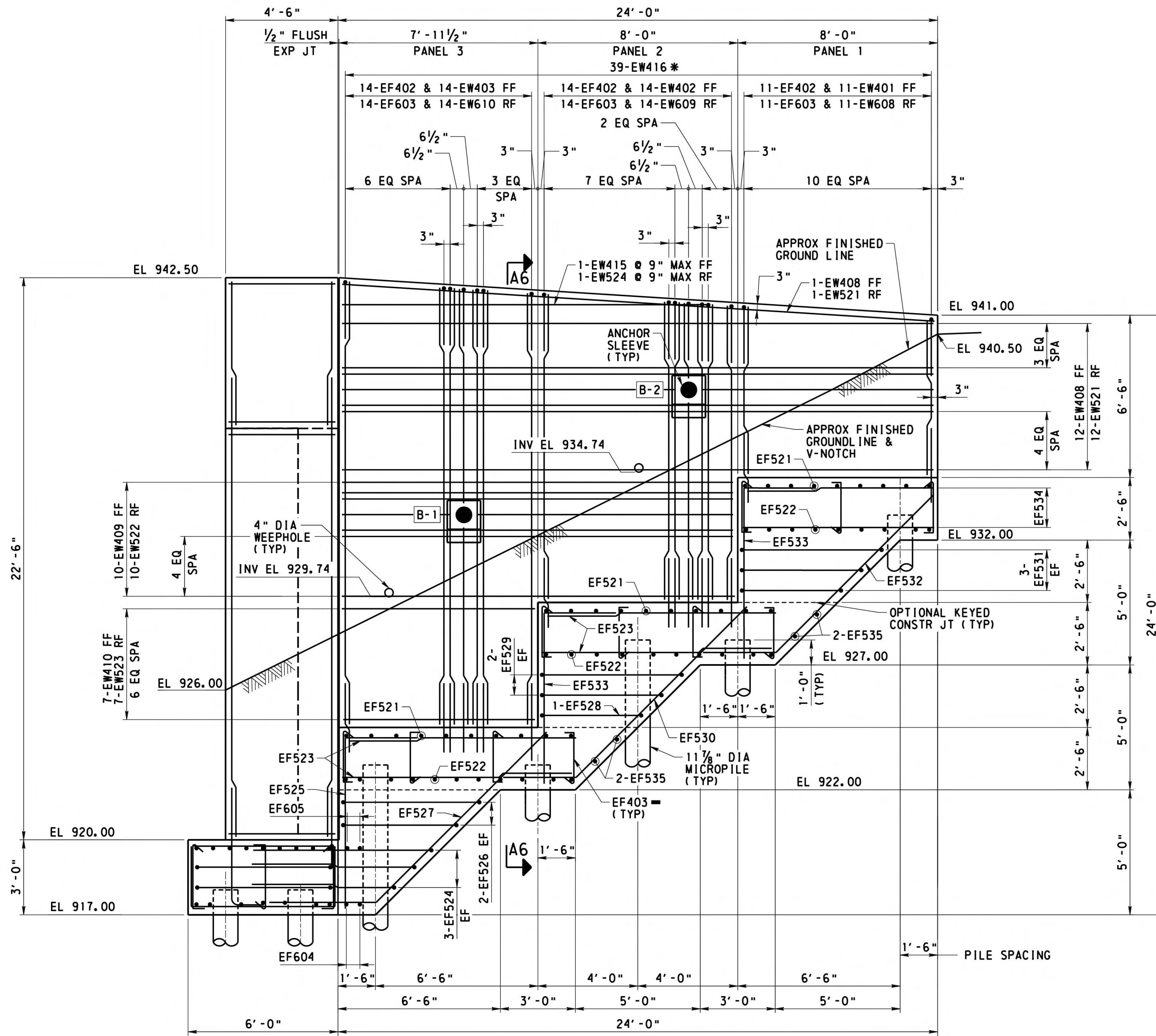
RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 12 OF 50

L - 645

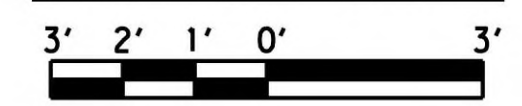


DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM

NOTE: ADJUST SPACING OF HORIZONTAL AND VERTICAL BARS AT ANCHOR LOCATIONS AS SHOWN.  
CUT HORIZONTAL AND VERTICAL BARS LOCATED AT CENTER OF ANCHOR CASING.



ELEVATION WING B



NOTE: ADJUST SPACING OF HORIZONTAL AND VERTICAL BARS AT ANCHOR LOCATIONS AS SHOWN. CUT HORIZONTAL AND VERTICAL BARS LOCATED AT CENTER OF ANCHOR CASING.

**NOTES**

- WORK THIS SHEET WITH SHEETS 7 THRU 14
- FOR WEEPHOLE REINFORCEMENT DETAIL, SEE SHEET 12
- FOR SECTION A6-A6, SEE SHEET 14
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 40

**LEGEND**

- [B-1] LATENT ANCHOR NUMBER
- EF EACH FACE
- FF FRONT FACE
- RF REAR FACE
- \* MATCH SPACING OF EW401, EW402, EW403, EW608, EW609, EW610
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

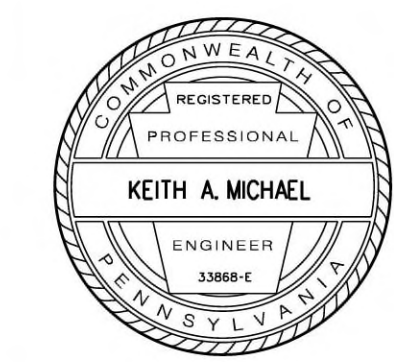
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
WING B ELEVATION

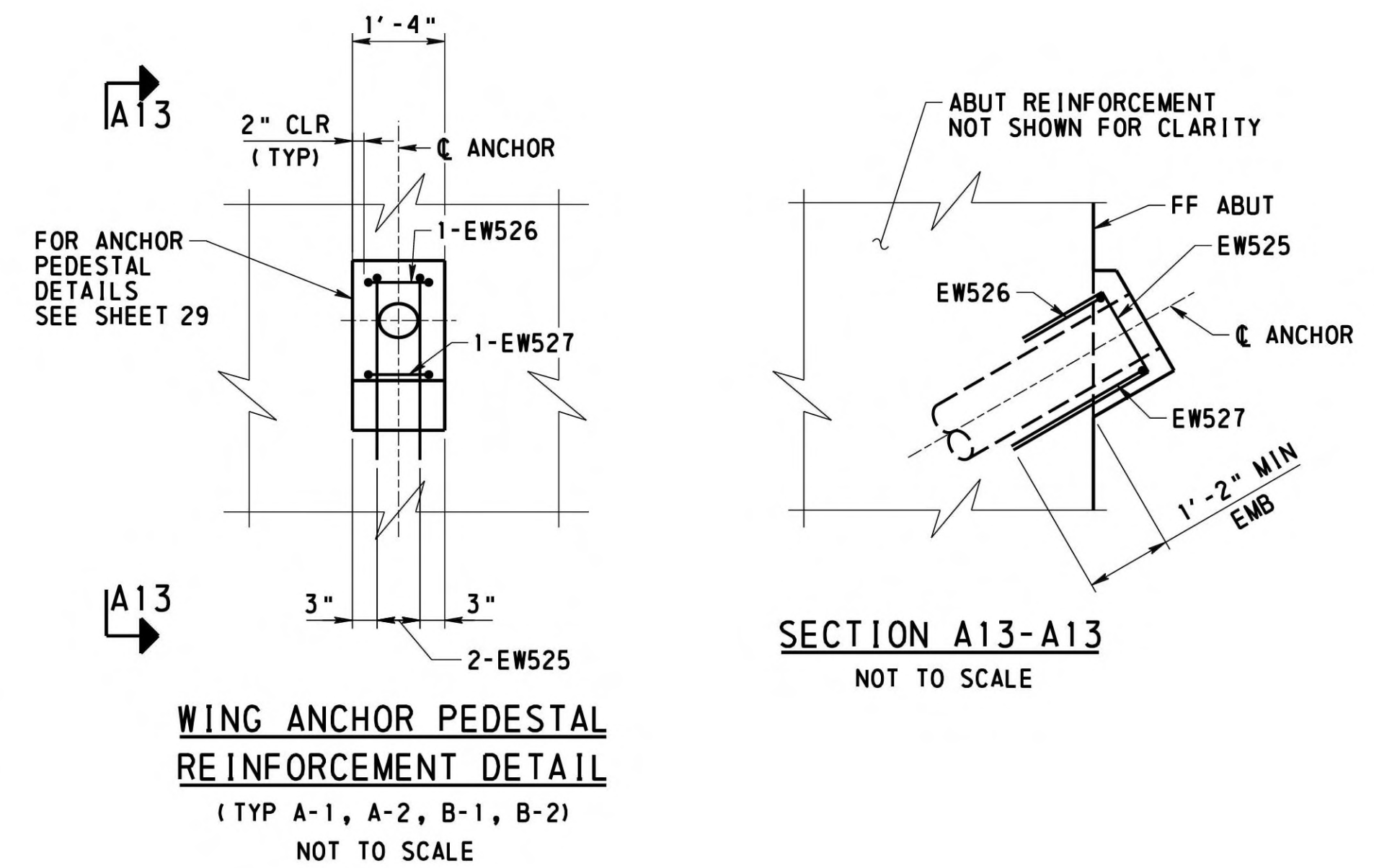
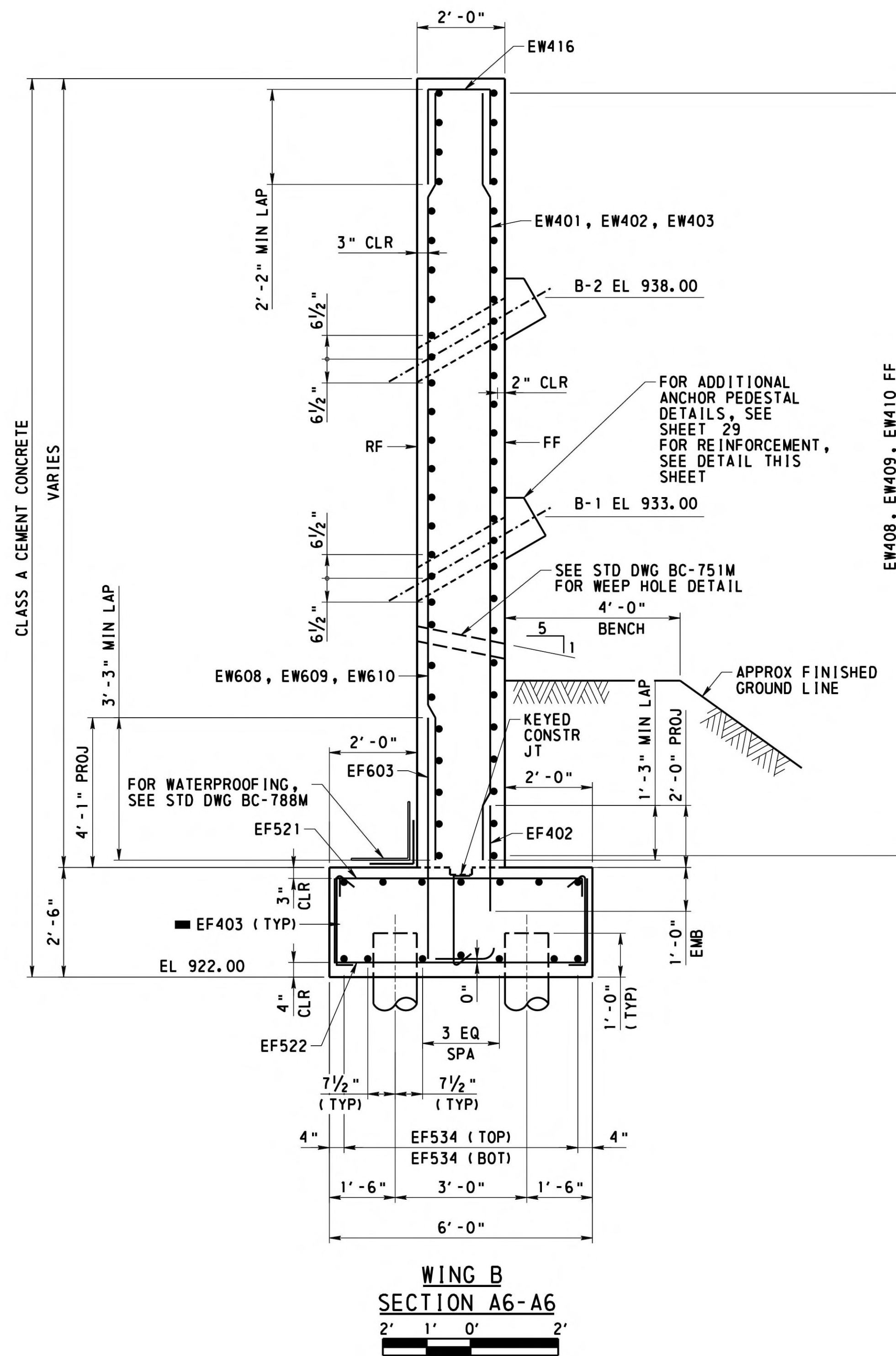
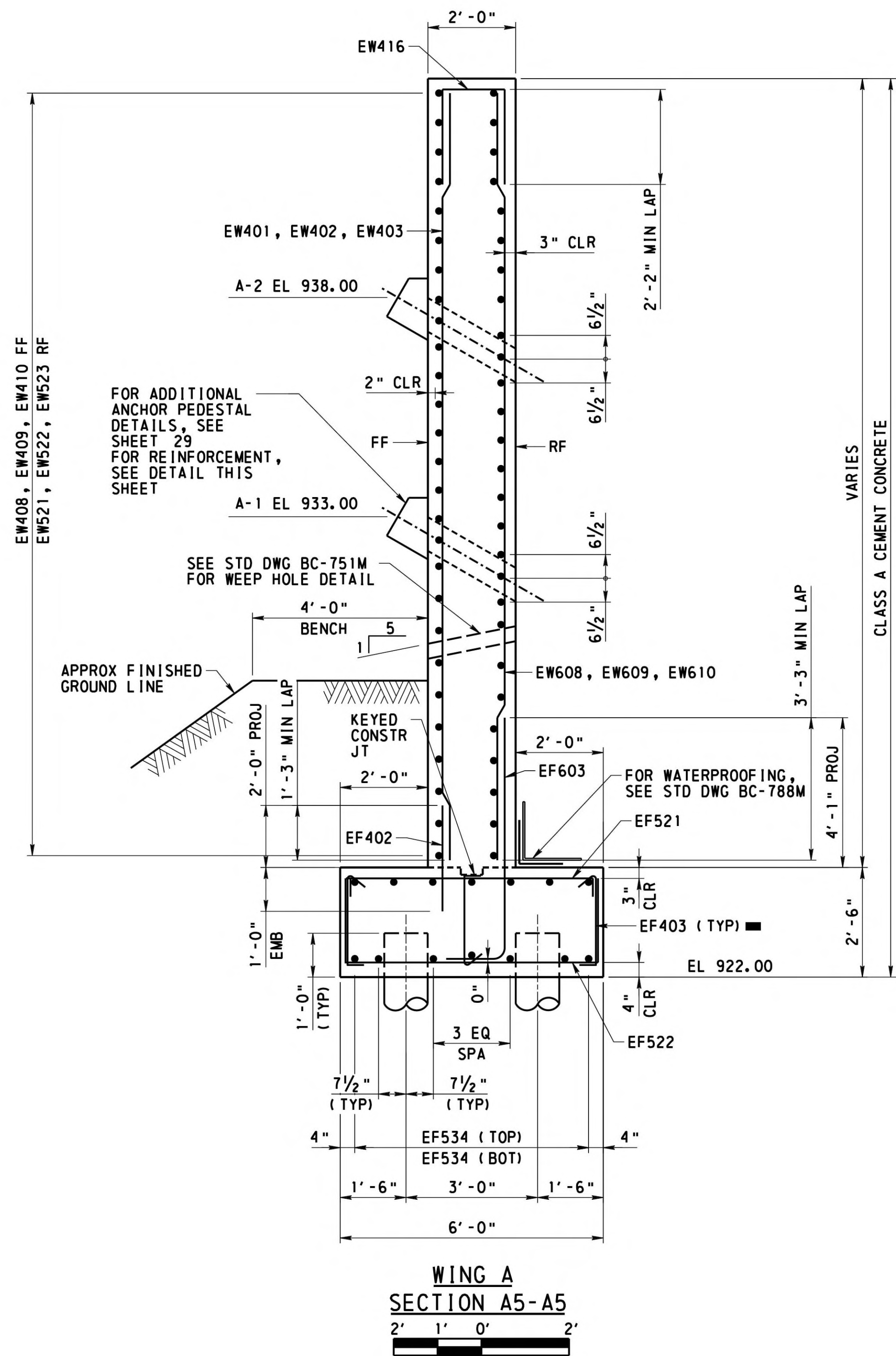
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 13 OF 50

L - 645

DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM





- NOTES**
- WORK THIS SHEET WITH SHEETS 7 THRU 14
  - FOR SECTIONS LOCATIONS, SEE SHEETS 12 & 13
  - FOR REINFORCEMENT IN FOOTING STEPS, SEE SHEETS 12 & 13
  - FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
  - FOR ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29
  - FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 40
- LEGEND**
- FF FRONT FACE
  - RF REAR FACE
  - EF EACH FACE
  - ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES.

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

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DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

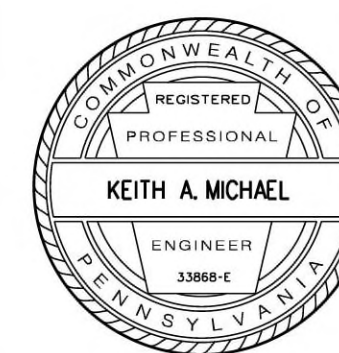
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
WING A AND B SECTIONS

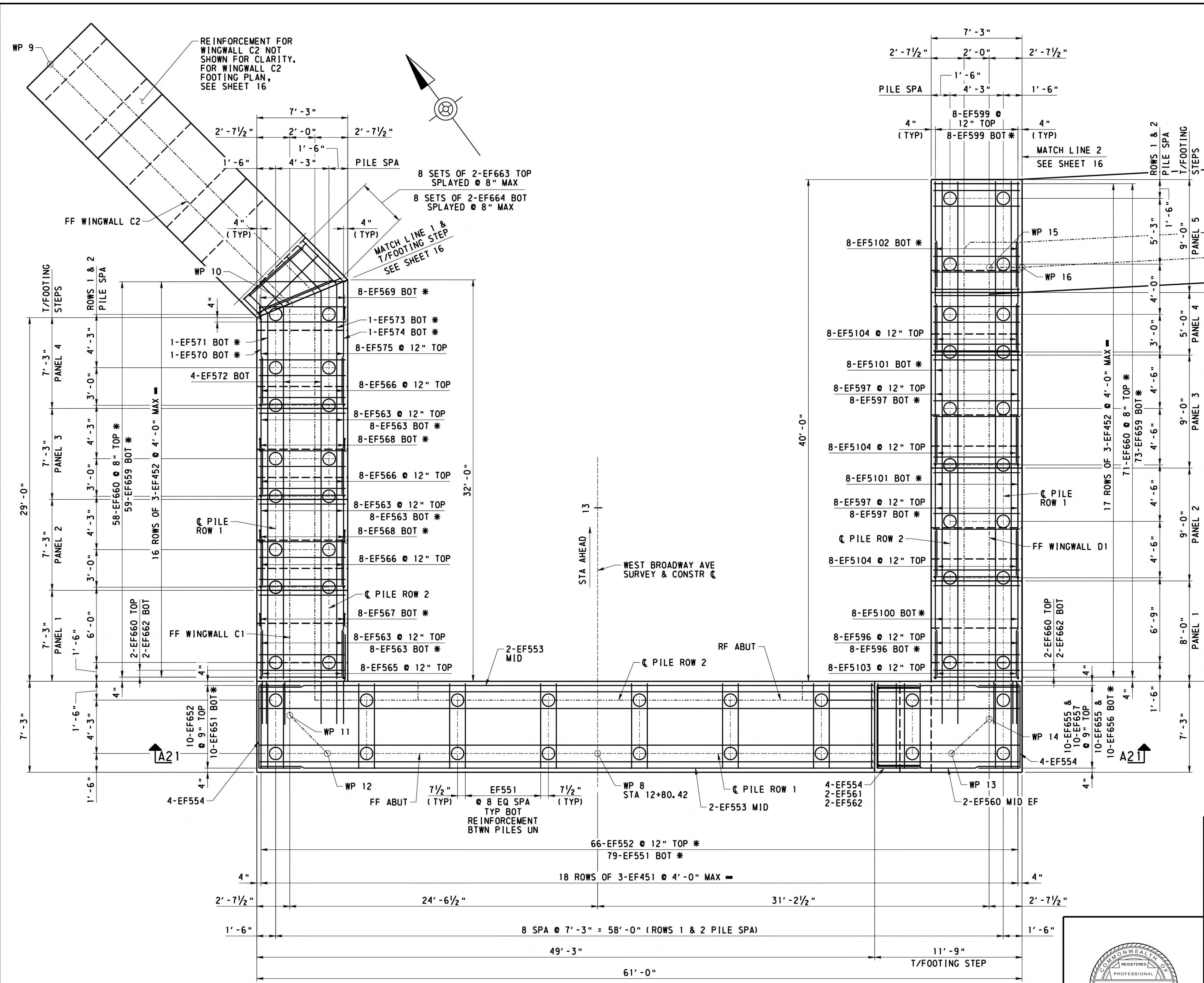
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 14 OF 50

L - 645

DESIGNED BY	CMB
DRAWN BY	TMK
CHECKED BY	KAM





**NOTES**

- WORK THIS SHEETS 16 THRU 27
- FOR SECTION A21-A21, SEE SHEET 18
- FOR ADDITIONAL C1 WINGWALL FOOTING REINFORCEMENT, SEE SHEET 22
- FOR ADDITIONAL D1 WINGWALL FOOTING REINFORCEMENT, SEE SHEET 25
- FOR STAKE OUT PLAN, SEE SHEET 5
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 41
- FOR MICROPILE DETAILS, SEE SHEET 28

**LEGEND**

- BTWN BETWEEN
- FF FRONT FACE
- RF REAR FACE
- UN UNLESS NOTED
- WP WORK POINT
- \* SEE ABUTMENT AND WINGWALL ELEVATIONS AND SECTIONS FOR SPACING
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
- 1 1/8" DIA MICROPILE

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

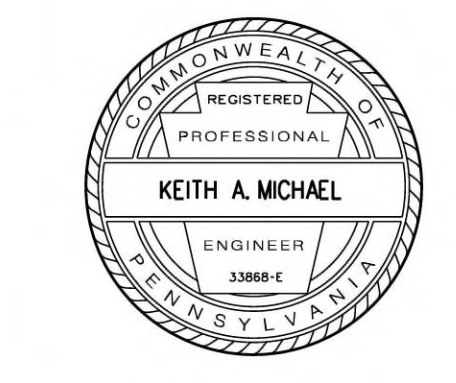
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 2 FOOTING PLAN 1

RECOMMENDED *February 12<sup>th</sup>, 2026*

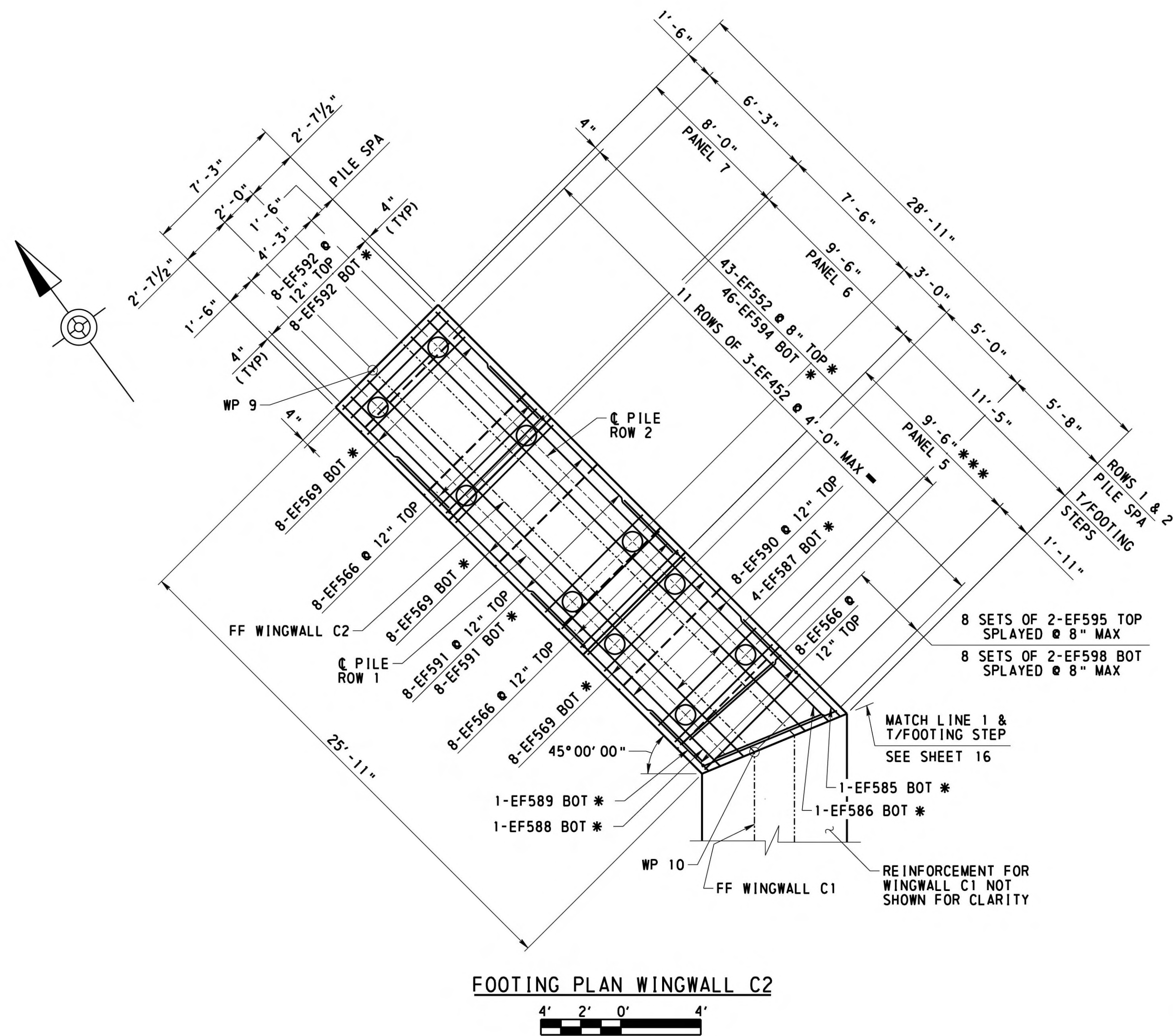
SHEET 15 OF 50

L - 645

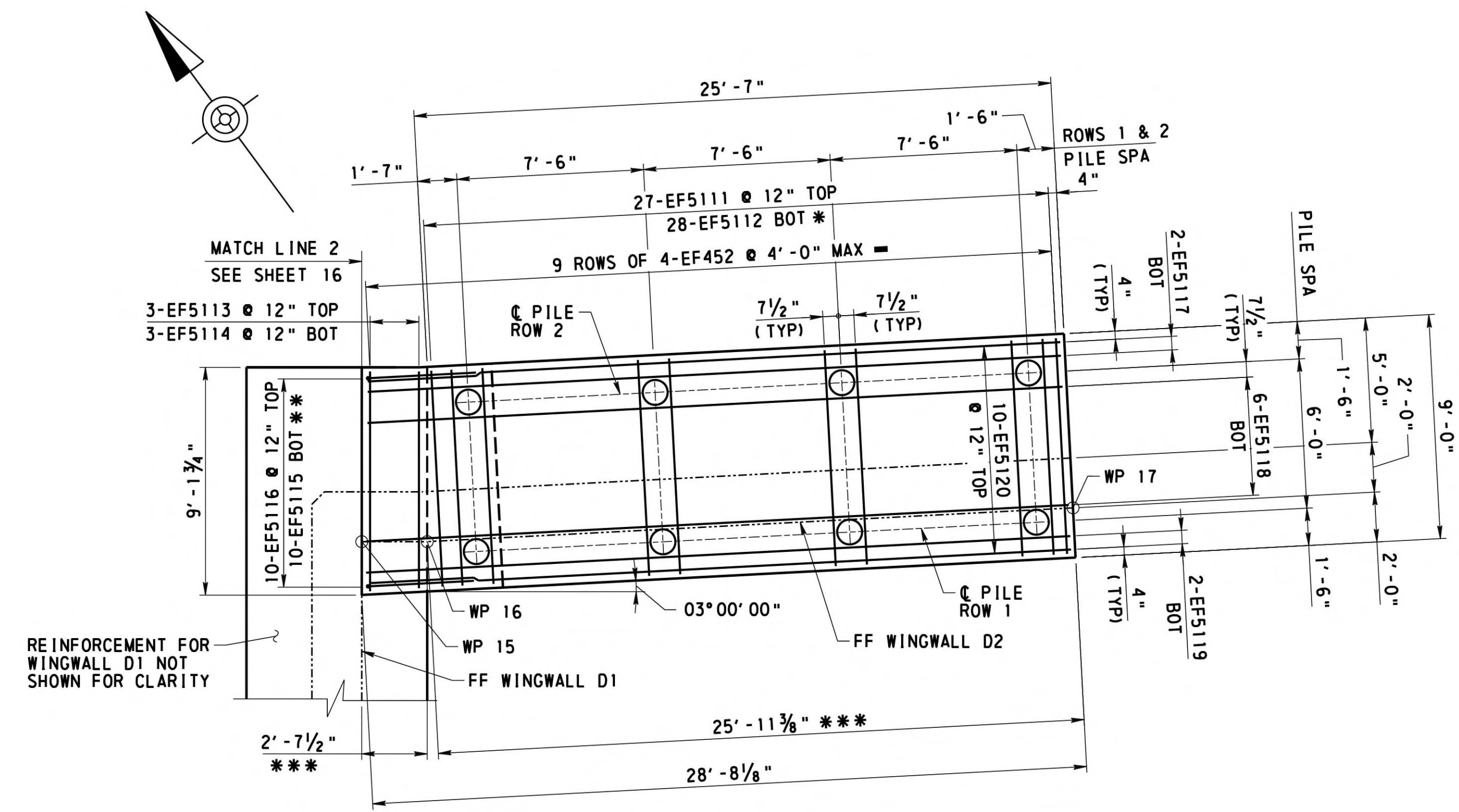


**FOOTING PLAN**  
4' 2' 0' 4'

DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB



FOOTING PLAN WINGWALL C2



FOOTING PLAN WINGWALL D2



**NOTES**

- WORK THIS SHEET WITH SHEETS 15 & 17 THRU 27
- FOR ADDITIONAL C2 WINGWALL FOOTING REINFORCEMENT, SEE SHEET 23
- FOR ADDITIONAL D2 WINGWALL FOOTING REINFORCEMENT, SEE SHEET 26
- FOR STAKE OUT PLAN, SEE SHEET 5
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 41
- FOR MICROPILE DETAILS, SEE SHEET 28

**LEGEND**

- FF FRONT FACE
- RF REAR FACE
- UN UNLESS NOTED
- WP WORK POINT
- \* SEE ABUTMENT AND WINGWALL ELEVATIONS AND SECTIONS FOR SPACING
- \*\* FIELD BEND AS REQUIRED TO AVOID WINGWALL D1 MICROPILES
- \*\*\* MEASURED ALONG FRONT FACE WALL
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
- 11 7/8" DIA MICROPILE

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

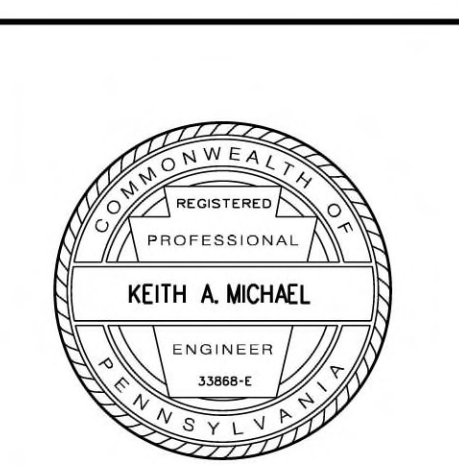
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 2 FOOTING PLAN

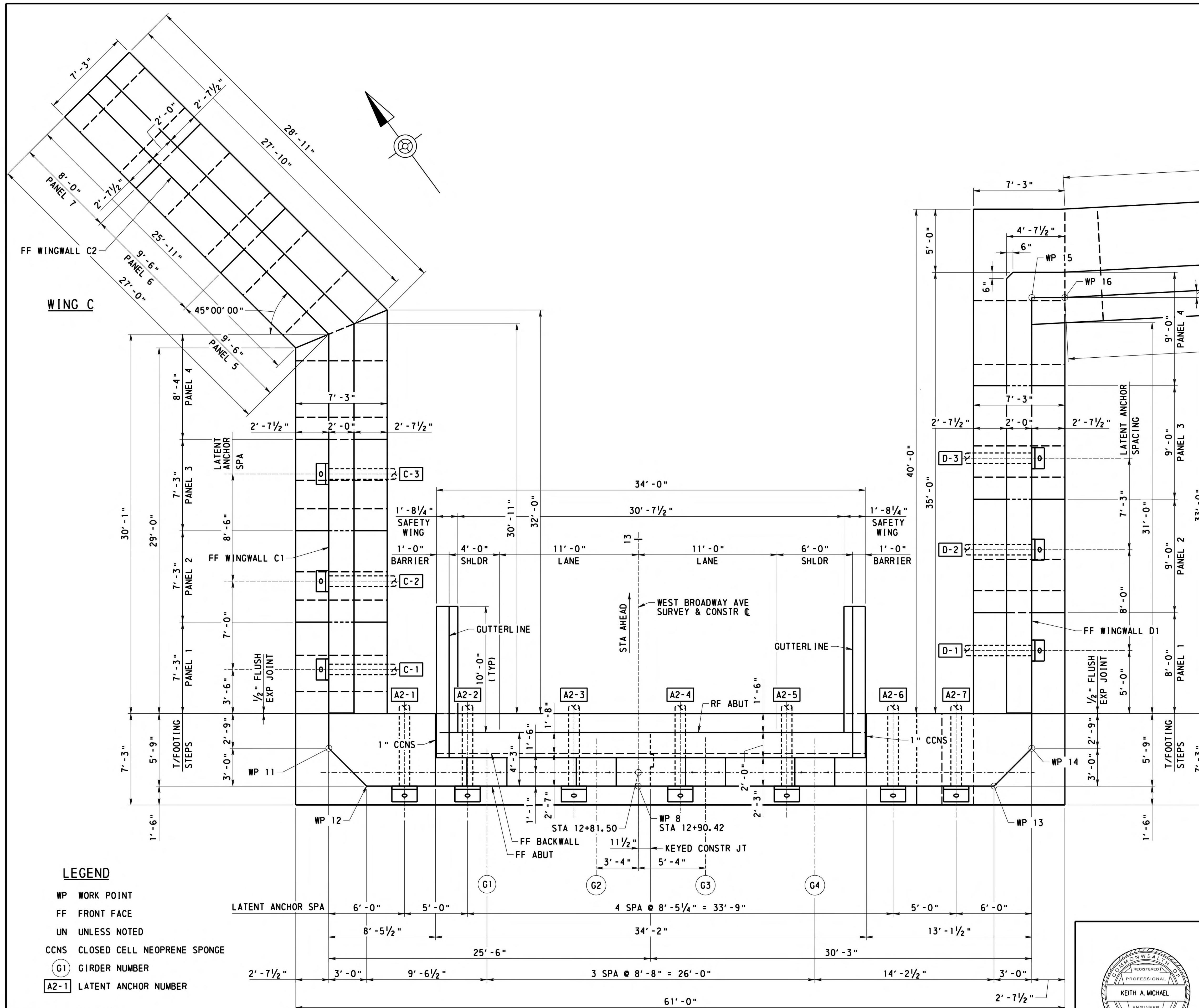
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 16 OF 50

L - 645

DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB





**NOTES**

- FOR STAKE OUT PLAN SEE SHEET 5
- FOR FOOTING PLAN, SEE SHEETS 15 & 16
- FOR WINGWALL C DETAILS, SEE SHEET 22 THRU 24
- FOR WINGWALL D DETAILS, SEE SHEET 25 THRU 27
- FOR BEARING DETAILS, SEE SHEET 34
- FOR WEEPHOLE DETAILS, SEE SHEET 22
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR ADDITIONAL STRUCTURE FOUNDATION DRAINAGE DETAILS, SEE STANDARD DRAWING BC-751M.
- FOR V-NOTCH AND CHAMFER DETAILS, SEE STANDARD DRAWING BC-752M.
- FOR KEYS CONSTRUCTION JOINT DETAILS SEE STANDARD DRAWING BC-735M.
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR DETAILS AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

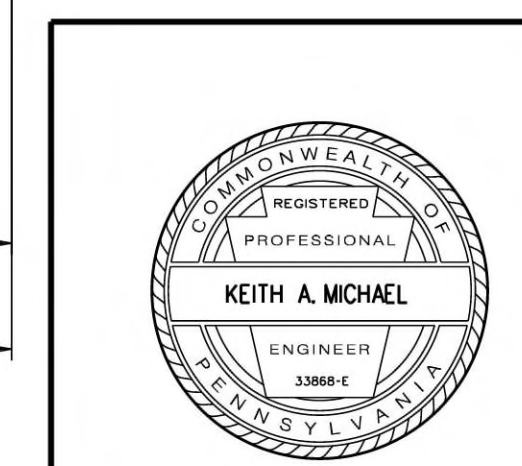
WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 2 PLAN

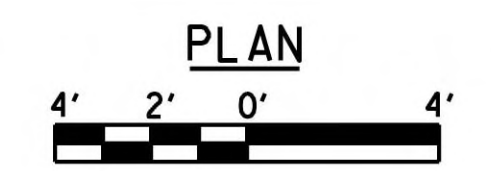
RECOMMENDED *February 12<sup>th</sup>, 2026* SHEET 17 OF 50

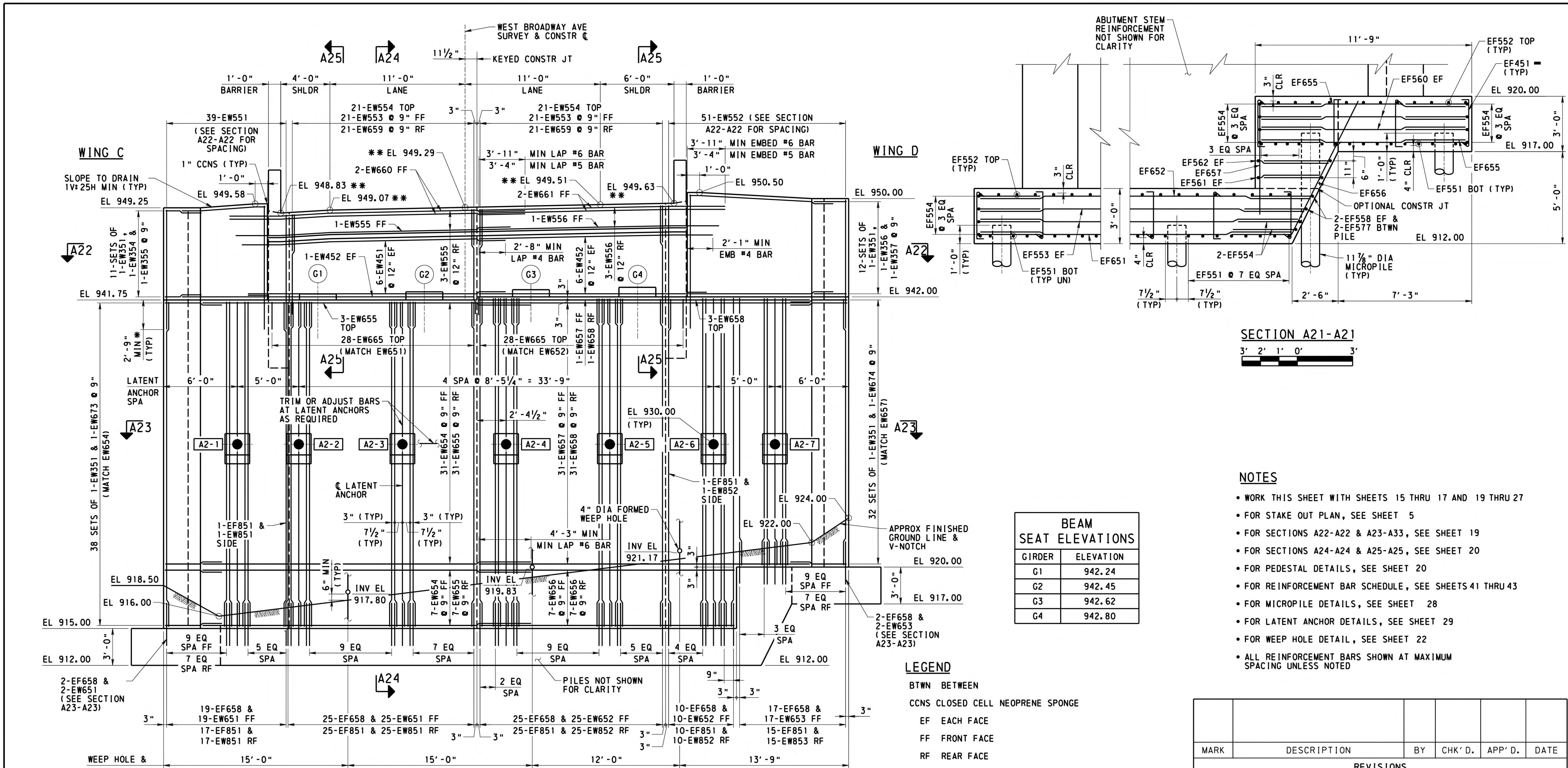
L - 645



- LEGEND**
- WP WORK POINT
  - FF FRONT FACE
  - UN UNLESS NOTED
  - CCNS CLOSED CELL NEOPRENE SPONGE
  - G1 GIRDER NUMBER
  - A2-1 LATENT ANCHOR NUMBER

DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB





**BEAM SEAT ELEVATIONS**

GIRDER	ELEVATION
G1	942.24
G2	942.45
G3	942.62
G4	942.80

**LEGEND**

- BTWN BETWEEN
- CCNS CLOSED CELL NEOPRENE SPONGE
- EF EACH FACE
- FF FRONT FACE
- RF REAR FACE
- UN UNLESS NOTED
- \* VARY LAP TO MAINTAIN COVER ON TOP/CHEEKWALL
- \*\* ELEVATION AT FRONT FACE CORBEL
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
- G1 GIRDER NUMBER
- A2-1 LATENT ANCHOR NUMBER

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS:31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

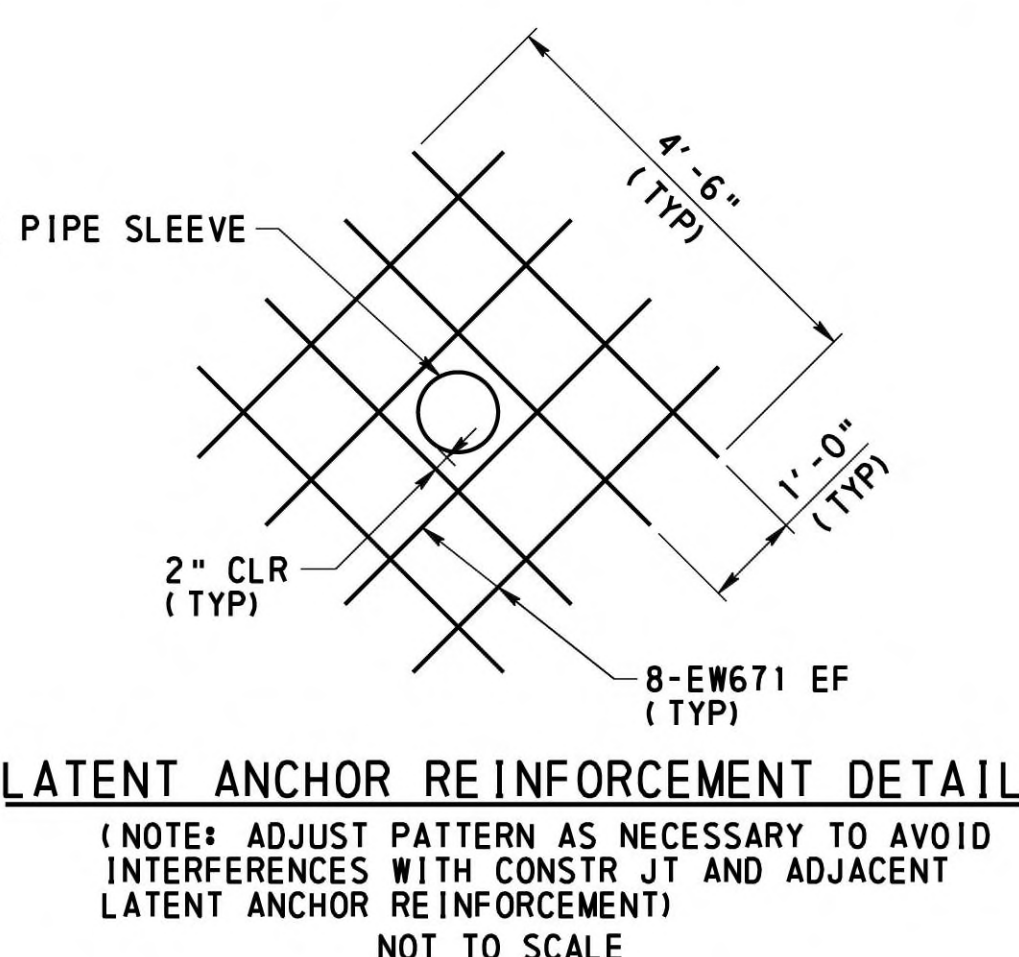
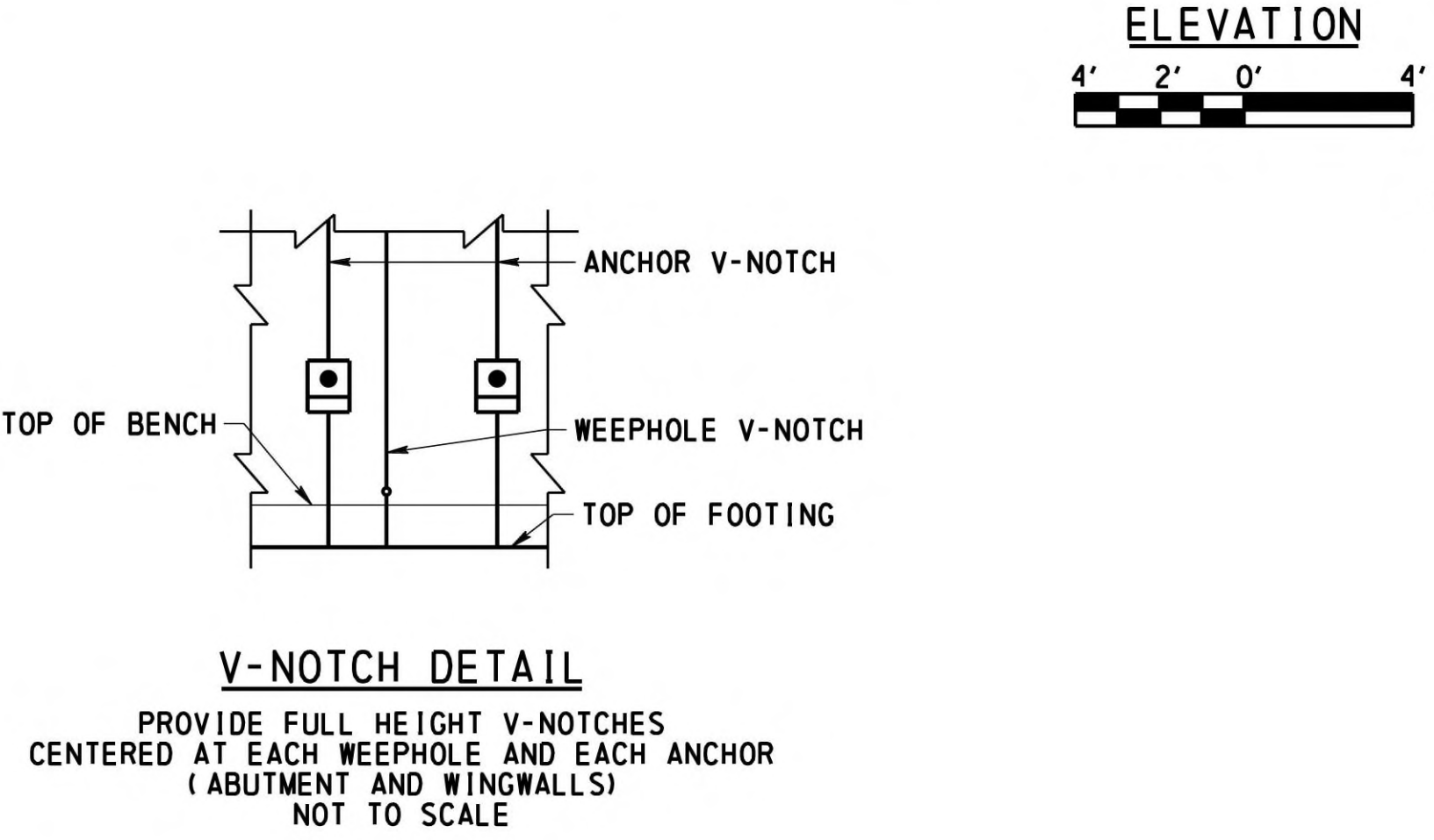
WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 2 ELEVATION

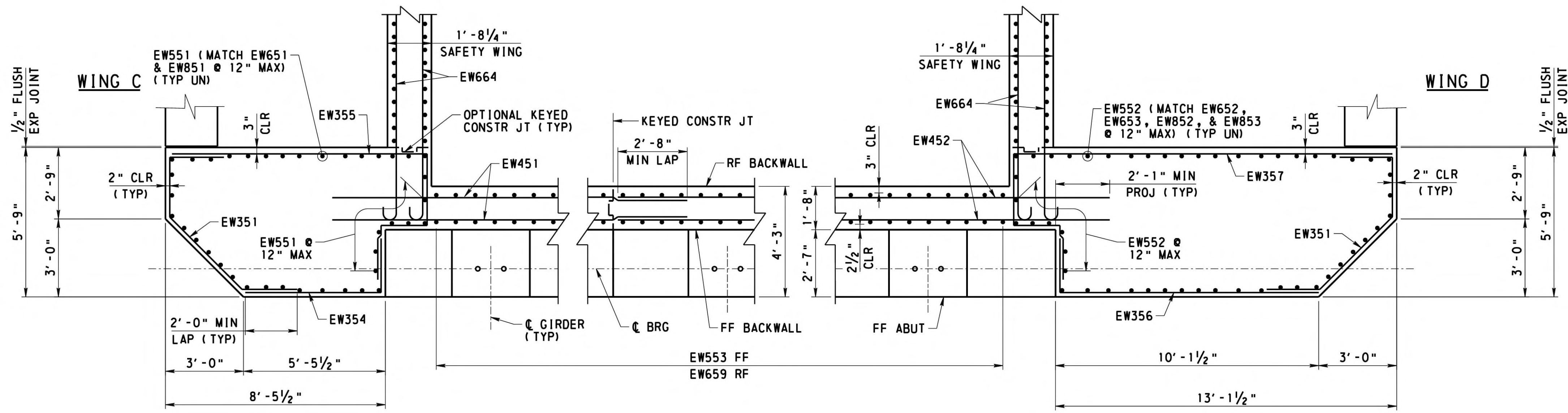
RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 18 OF 50

L - 645

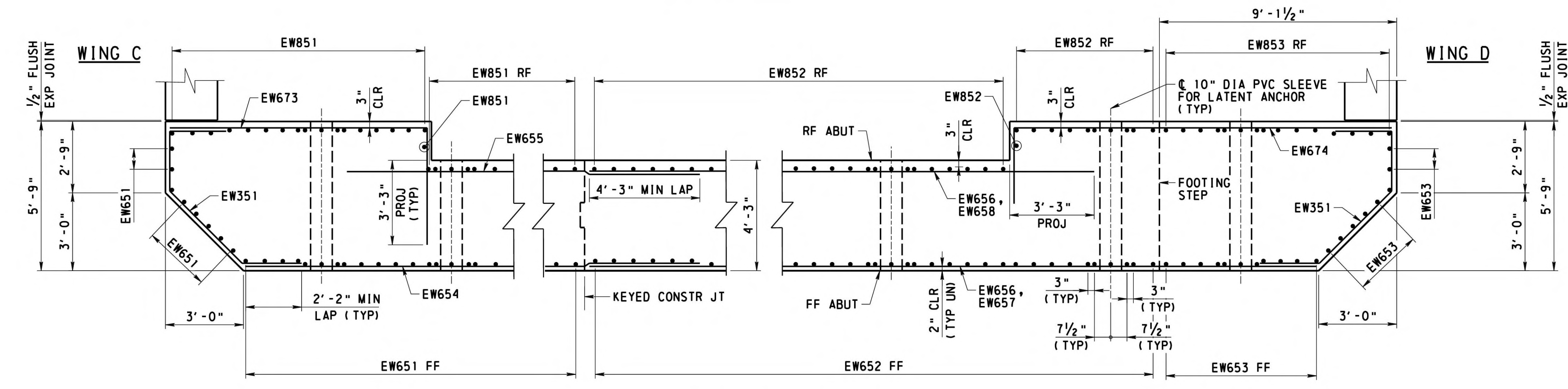


DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB

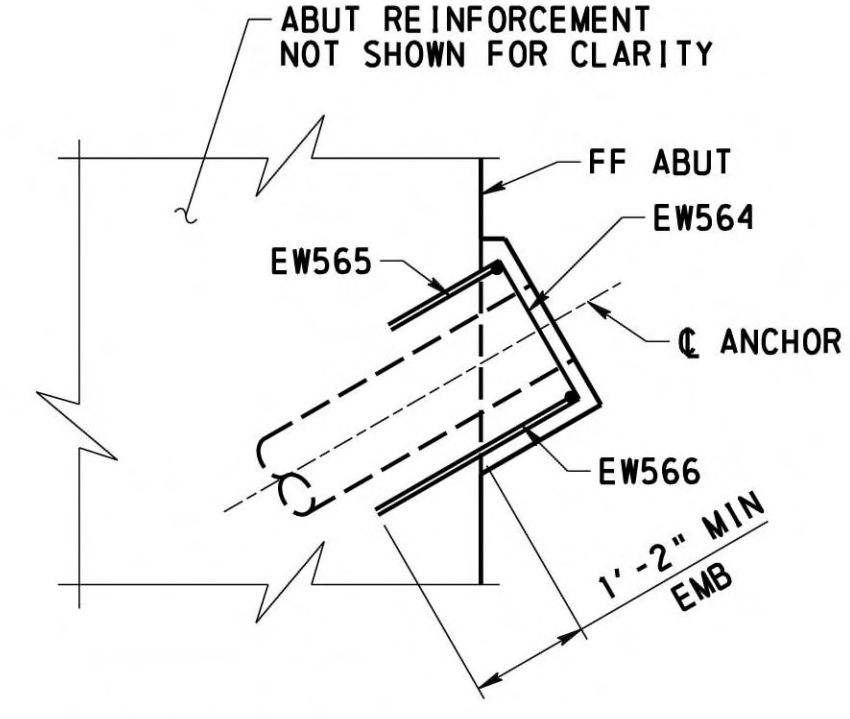
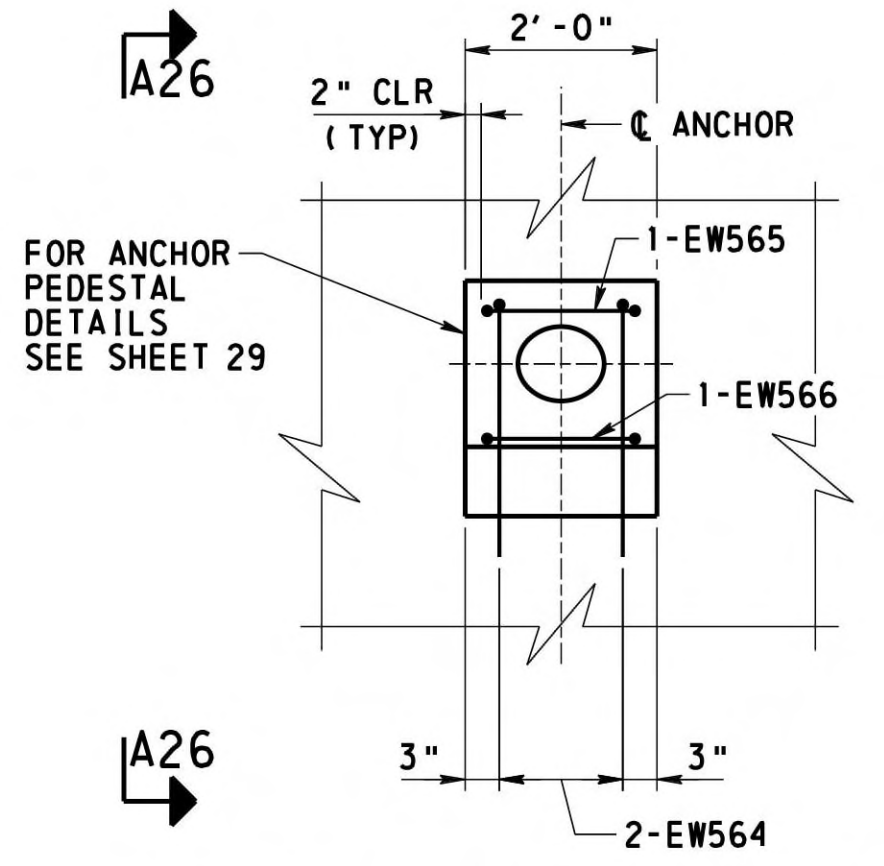




SECTION A22-A22  
3' 2' 1' 0' 3'



SECTION A23-A23  
3' 2' 1' 0' 3'



SECTION A26-A26  
NOT TO SCALE

ABUTMENT 2 ANCHOR PEDESTAL  
REINFORCEMENT DETAIL  
NOT TO SCALE

**NOTES**

- WORK THIS SHEET WITH SHEET 18
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29

**LEGEND**

- FF FRONT FACE
- RF REAR FACE
- UN UNLESS NOTED

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
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NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

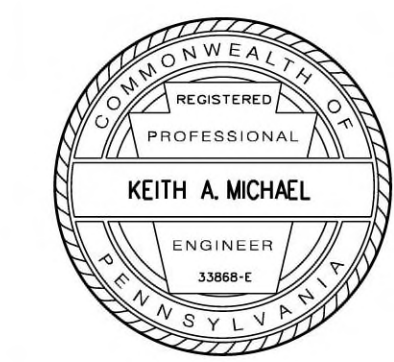
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 2 DETAILS 1

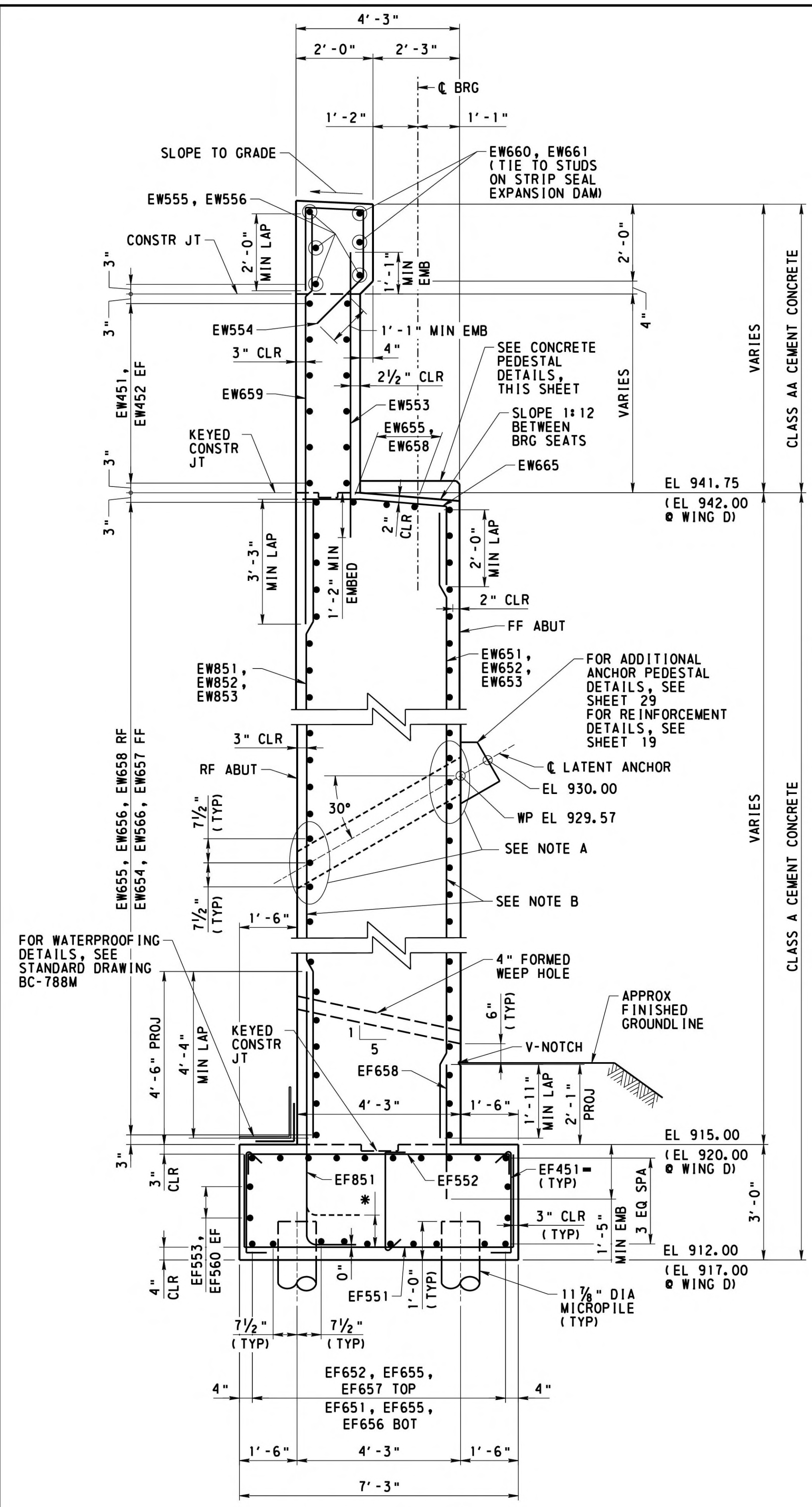
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 19 OF 50

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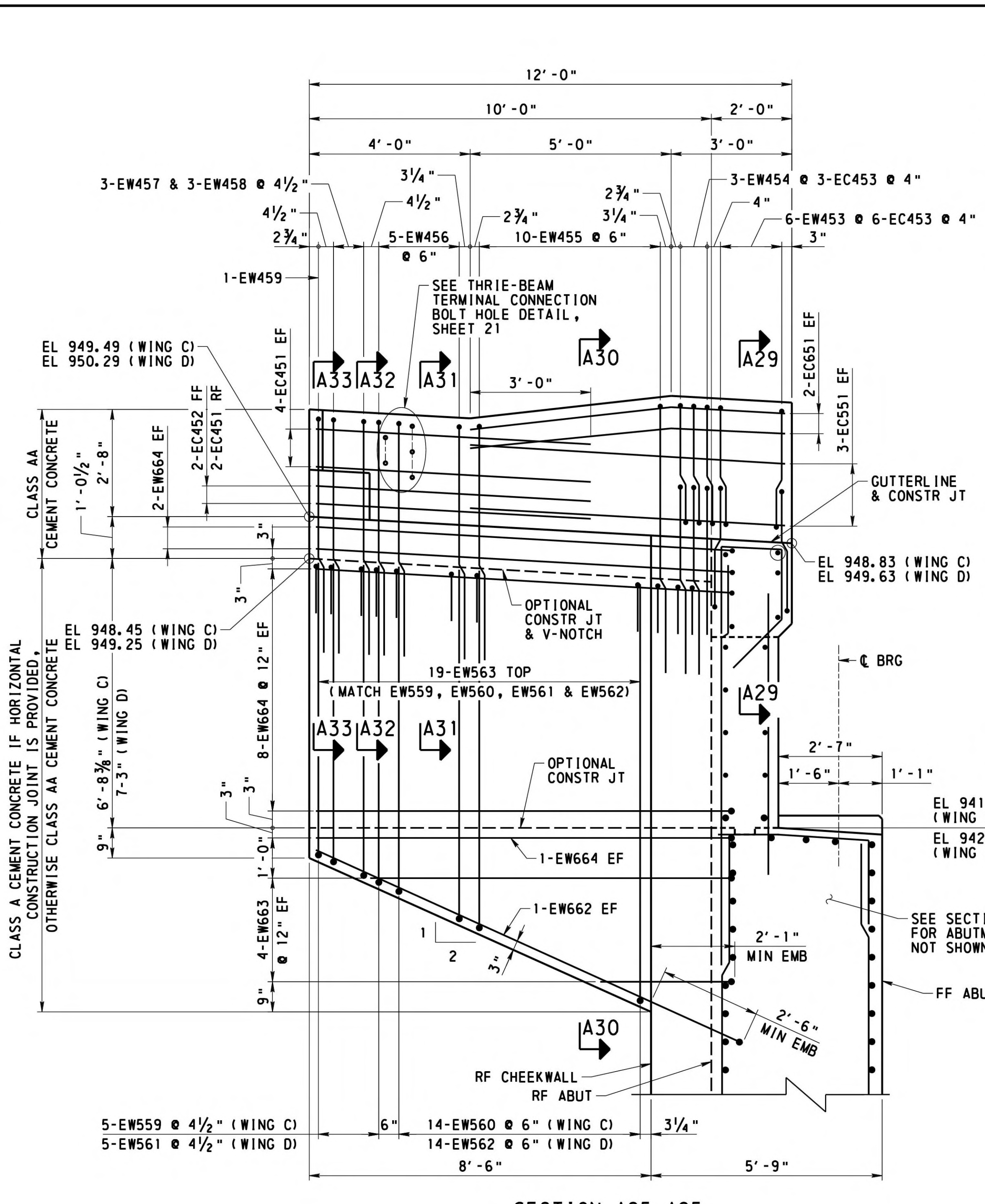
DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB





**SECTION A24-A24**  
TYPICAL SECTION SHOWN,  
STEP @ WING D SIMILAR  
2' 1' 0' 2'

DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB

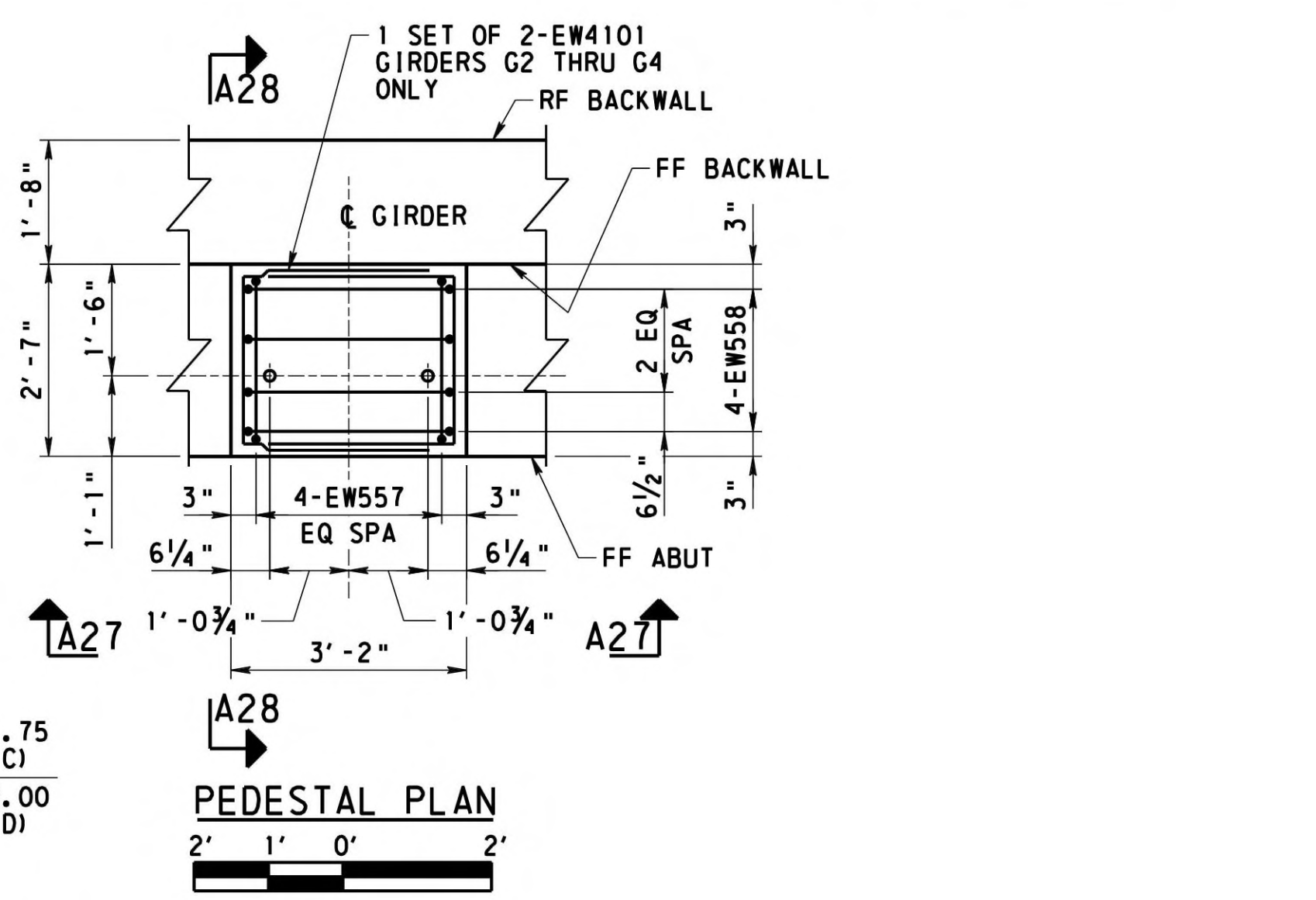
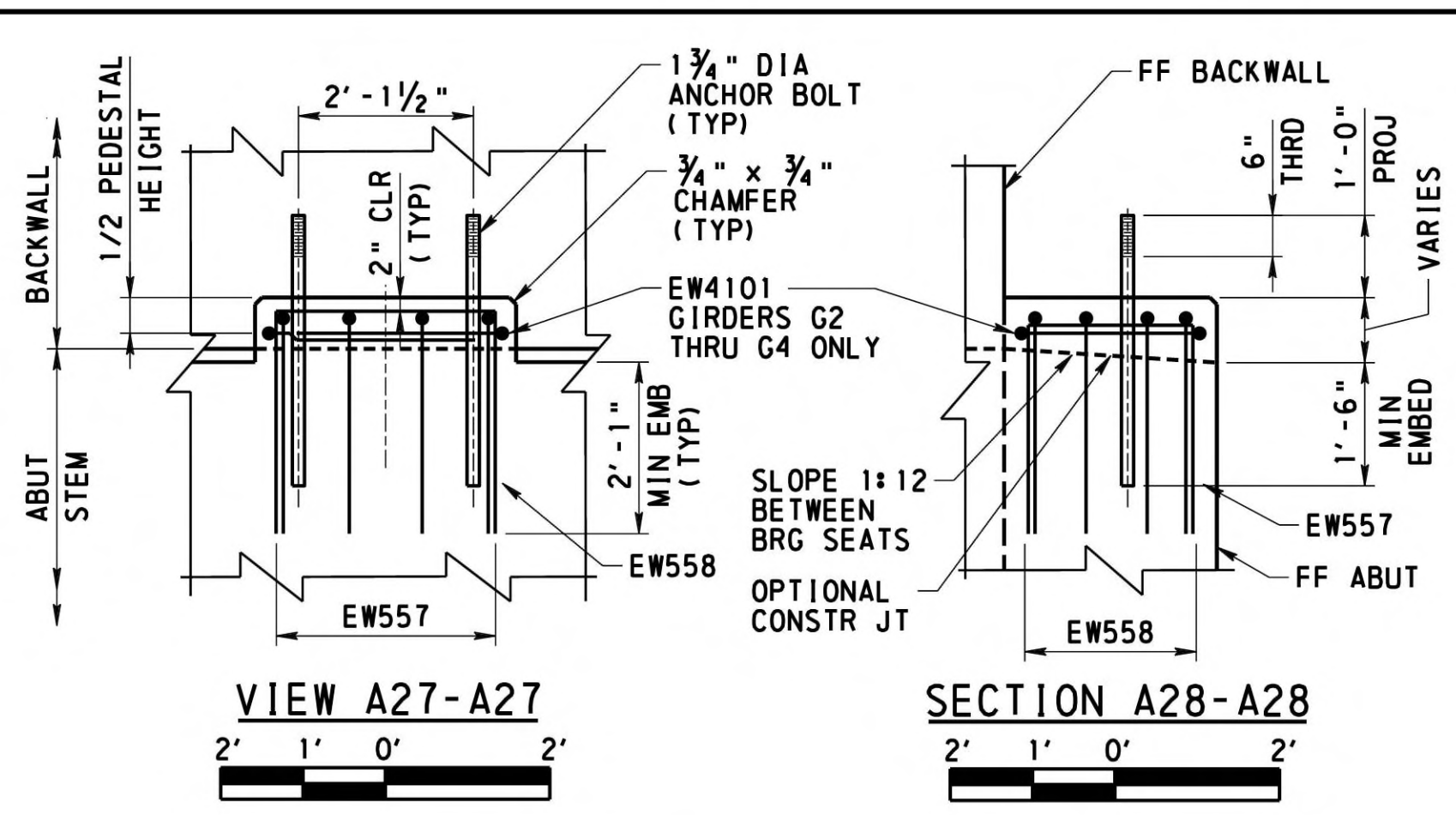


**SECTION A25-A25**  
WING D AS SHOWN  
WING C OPPOSITE HAND  
2' 1' 0' 2'

**LEGEND**

- NOTE A  
ADJUST SPACING OF HORIZONTAL BARS AT ANCHORS AS SHOWN.  
CUT HORIZONTAL BARS AT CENTER OF ANCHOR CASING. MAINTAIN  
2" CLR TO ANCHOR CASING
- NOTE B  
CUT VERTICAL BARS LOCATED AT CENTERLINE OF ANCHORS.  
MAINTAIN 2" CLR TO CASING
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
  - \* TIE HORIZONTAL LEG OF EF851 TO BOTTOM MAT OF FOOTING  
REINFORCEMENT. WHERE EF851 INTERFERES WITH MICROPILE,  
RAISE HOOK ABOVE MICROPILE AS SHOWN WITH 1'-10"  
EMBEDMENT INTO FOOTING

- EF EACH FACE
- FF FRONT FACE
- RF REAR FACE

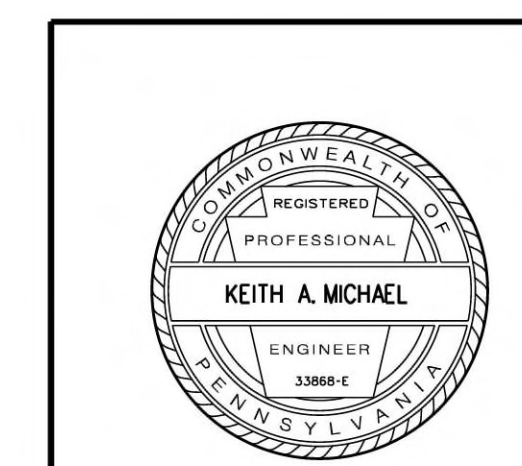


**NOTES**

- WORK THIS SHEET WITH SHEET 18 AND SHEET 21
- FOR SECTION A29-A29 THRU A33-A33, SEE SHEET 21
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR DETAILS AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793



**WESTMORELAND COUNTY**  
DEPARTMENT OF PUBLIC WORKS

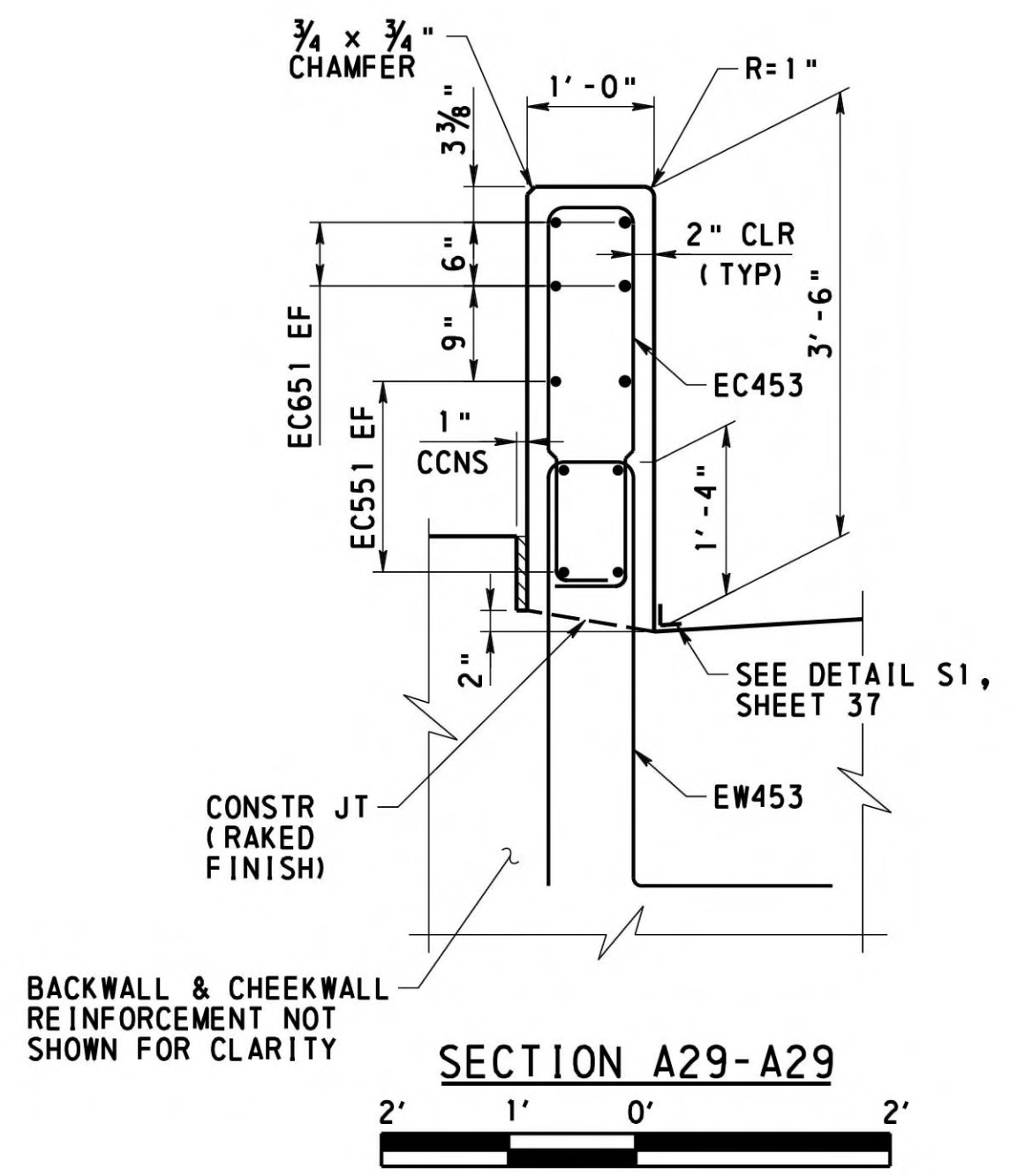
**WESTMORELAND COUNTY**  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

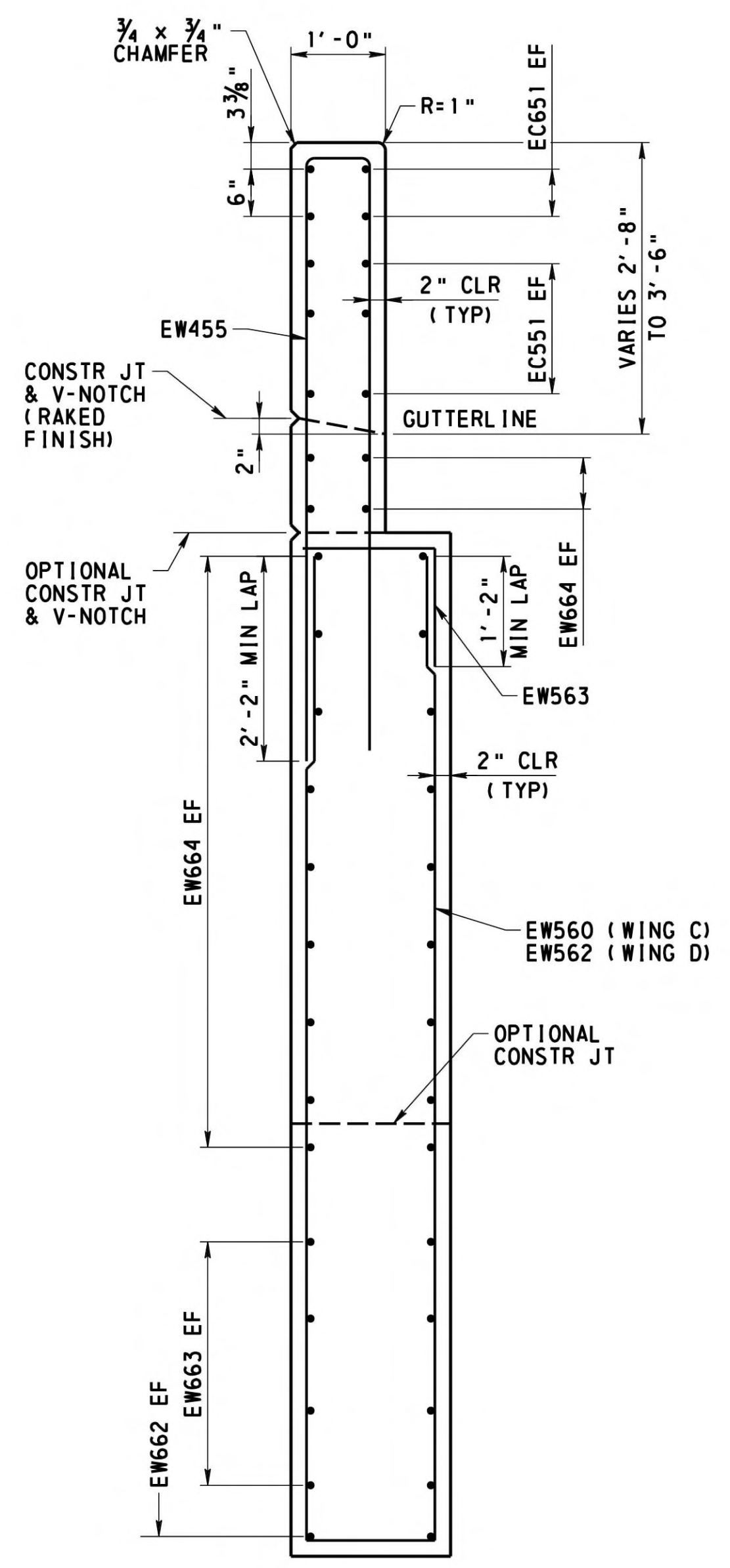
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 2 DETAILS 2

RECOMMENDED *February 12<sup>th</sup>, 2026* SHEET 20 OF 50

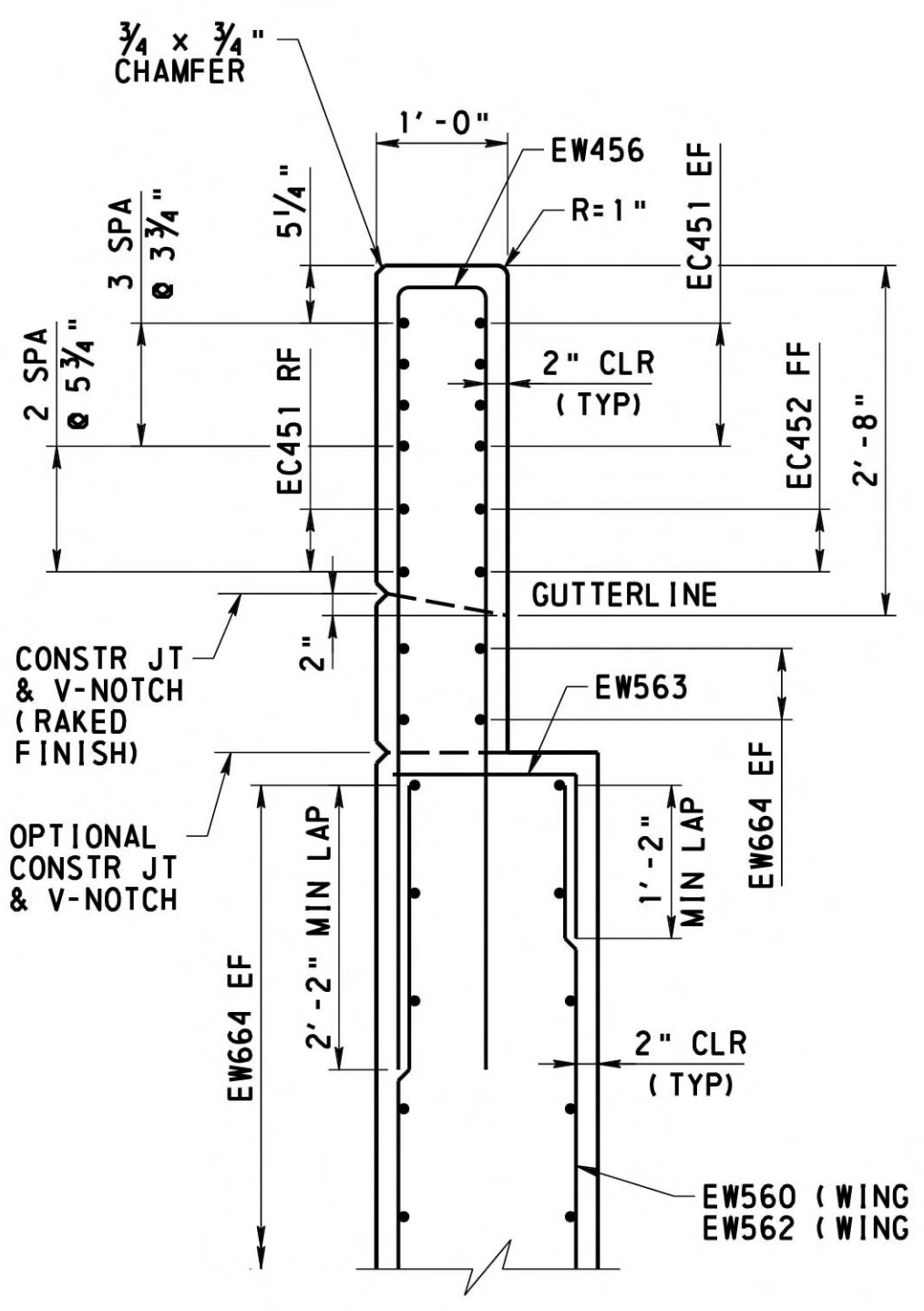
L - 645



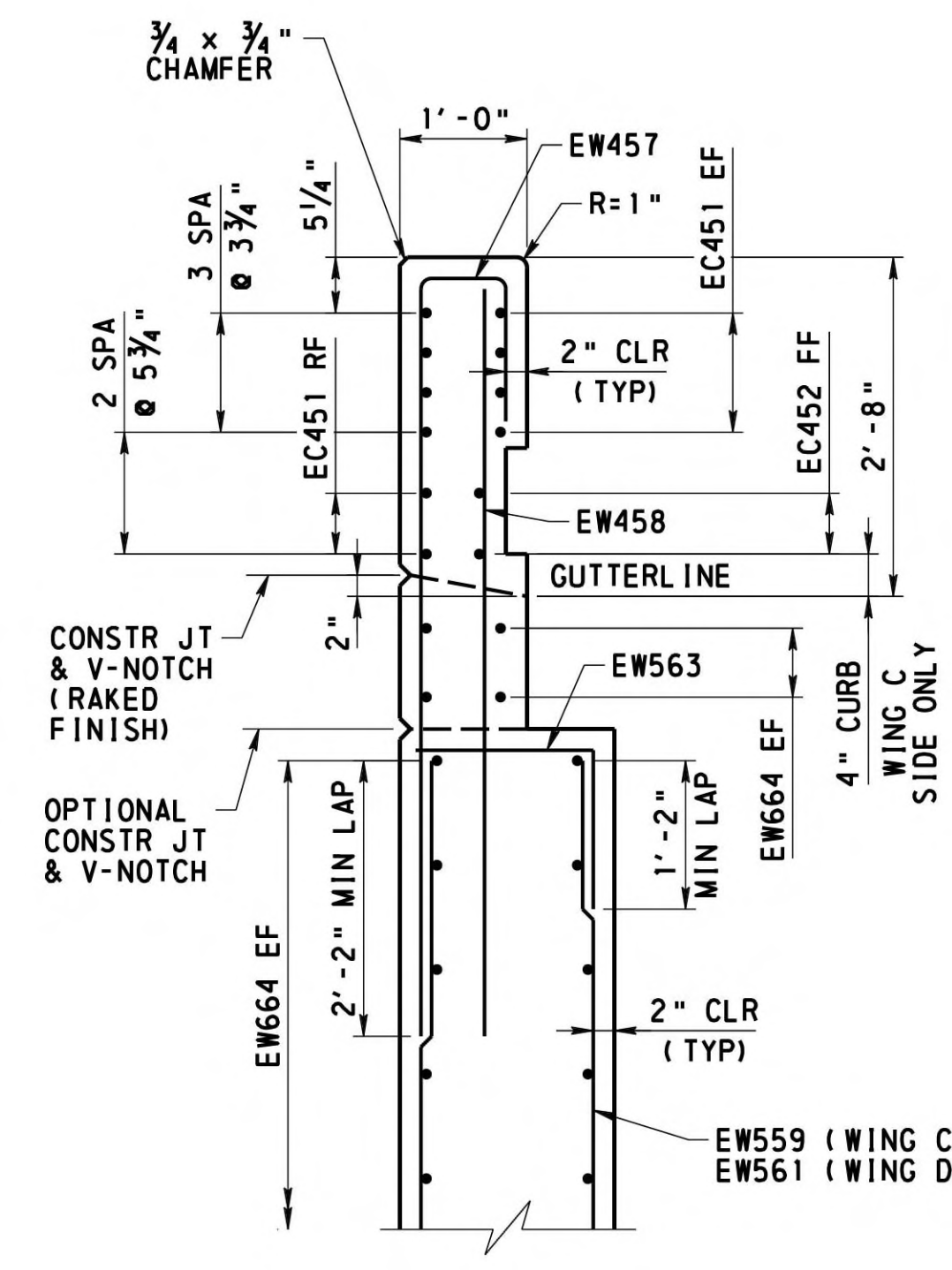
SECTION A29-A29



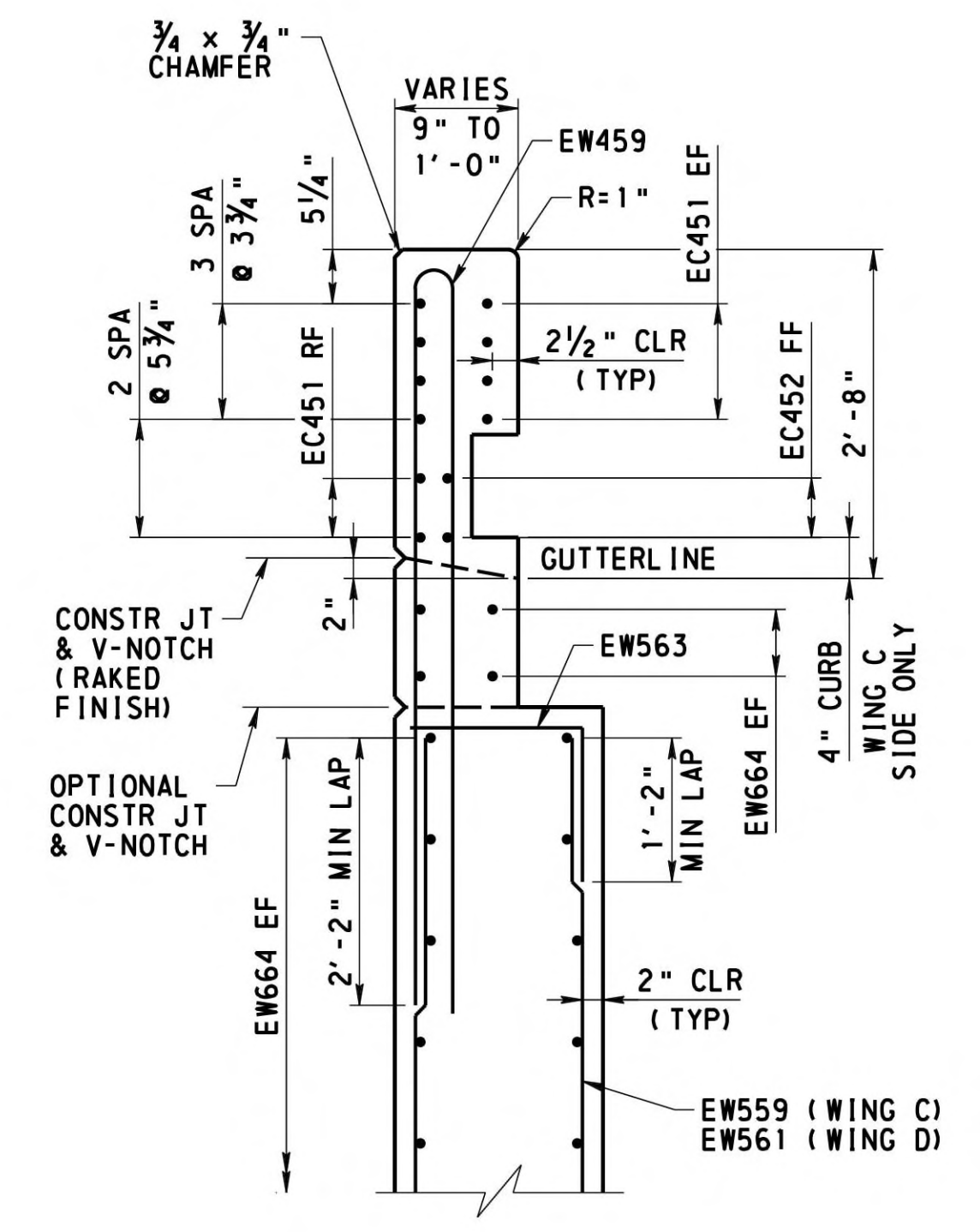
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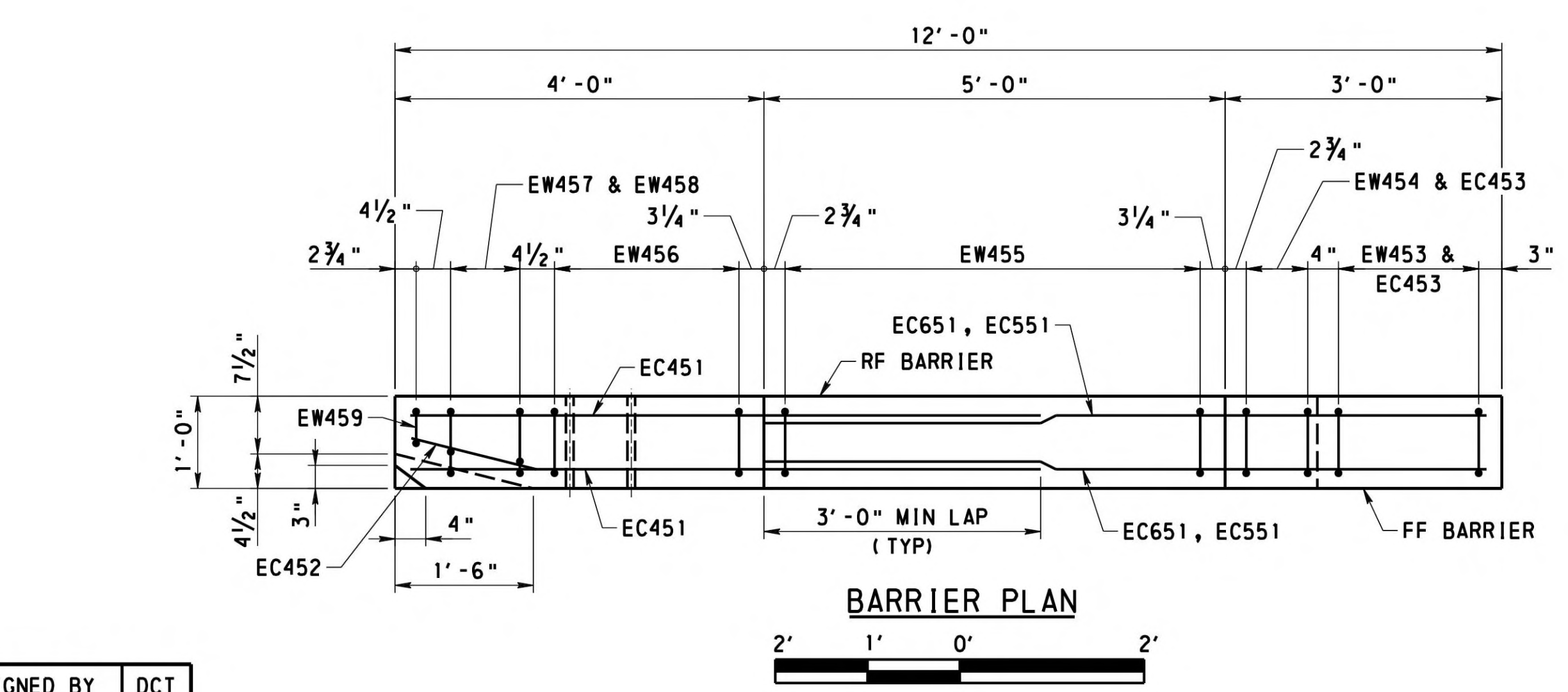
SECTION A31-A31



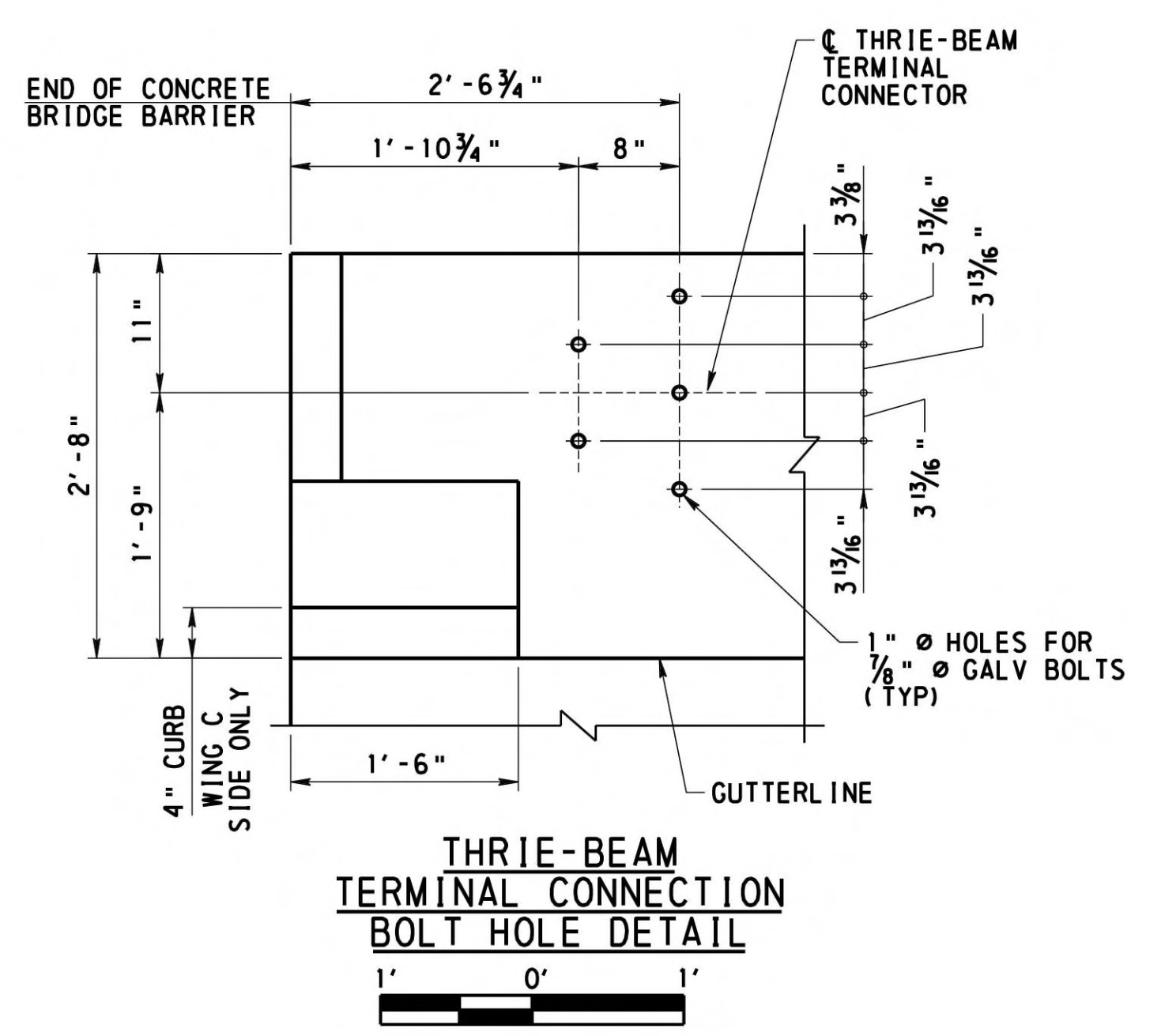
SECTION A32-A32



SECTION A33-A33



BARRIER PLAN



THRIE-BEAM TERMINAL CONNECTION BOLT HOLE DETAIL

- NOTES**
- WORK THIS SHEET WITH SHEET 20
  - FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 42

- LEGEND**
- CCNS CLOSED CELL NEOPRENE SPONGE
  - EF EACH FACE
  - FF FRONT FACE
  - RF REAR FACE

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
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NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
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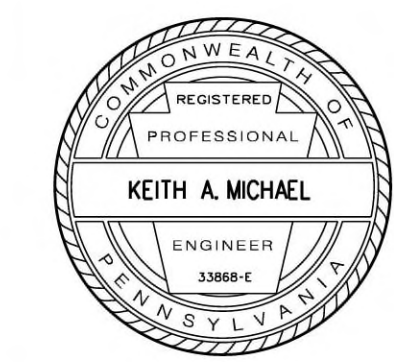
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
ABUTMENT 2 DETAILS 3

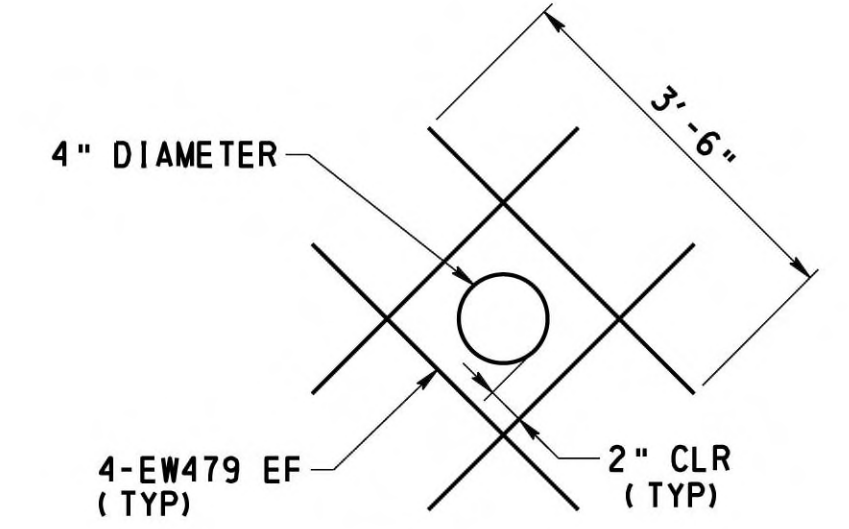
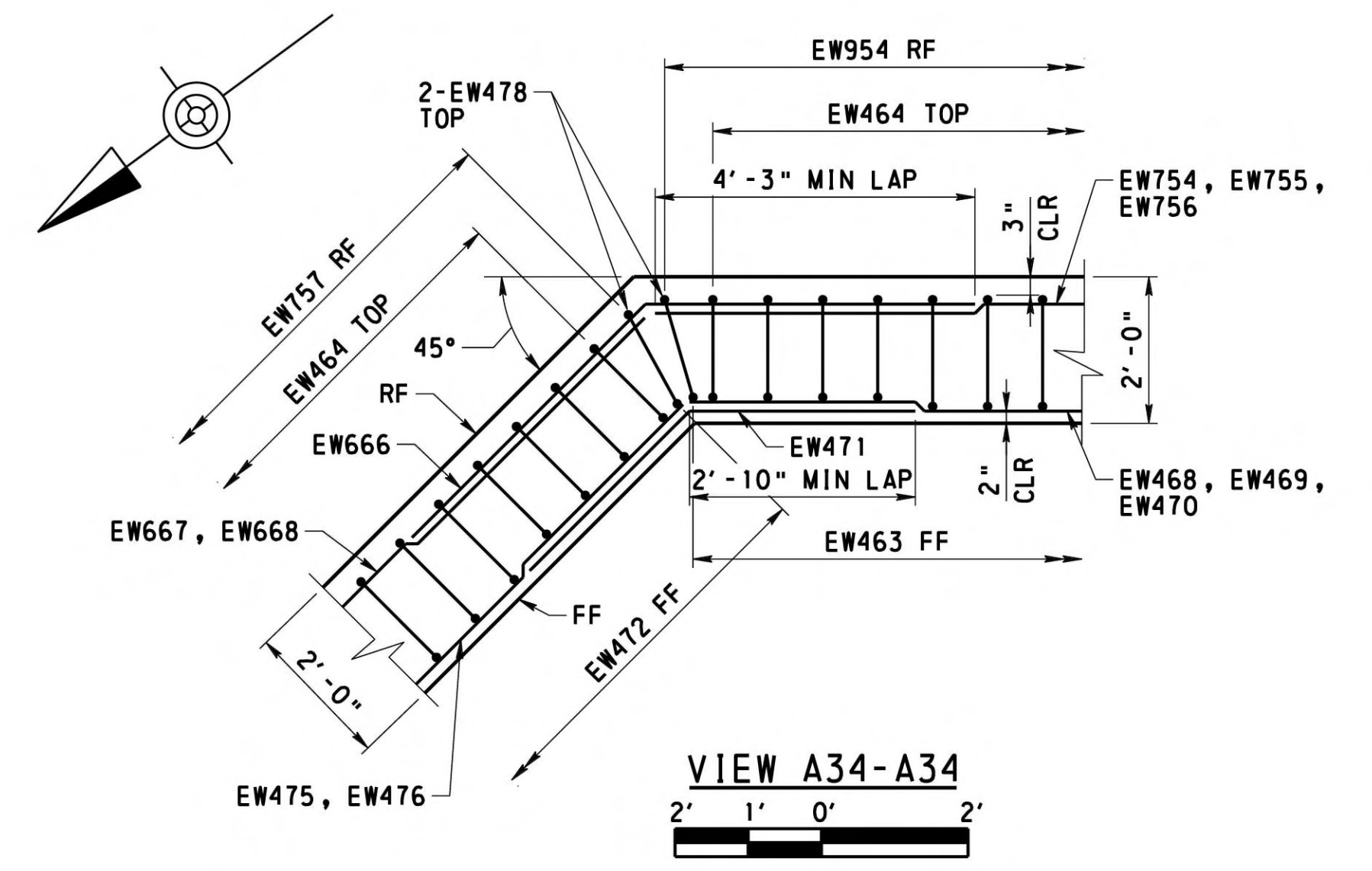
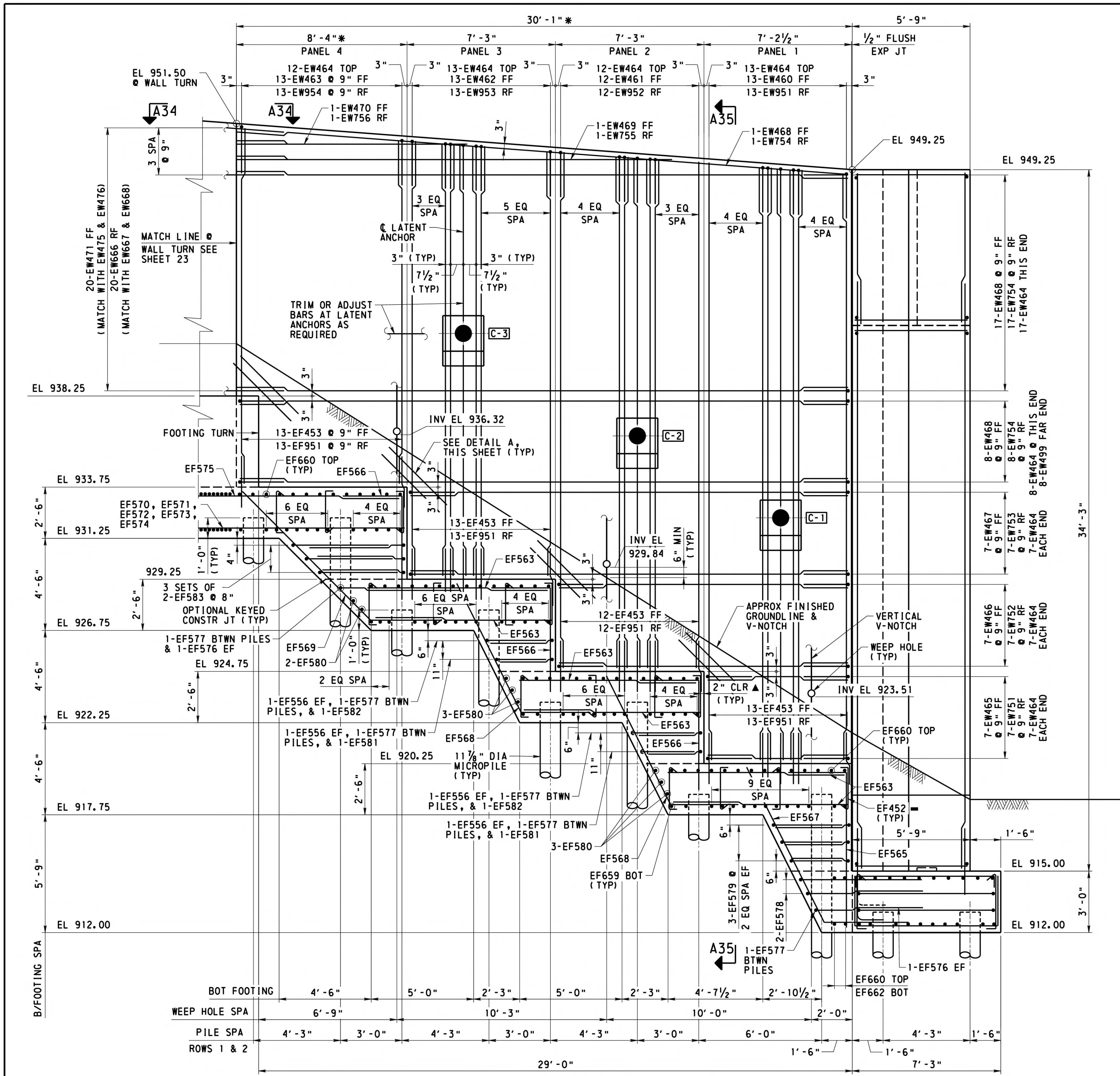
RECOMMENDED February 12<sup>th</sup>, 2026

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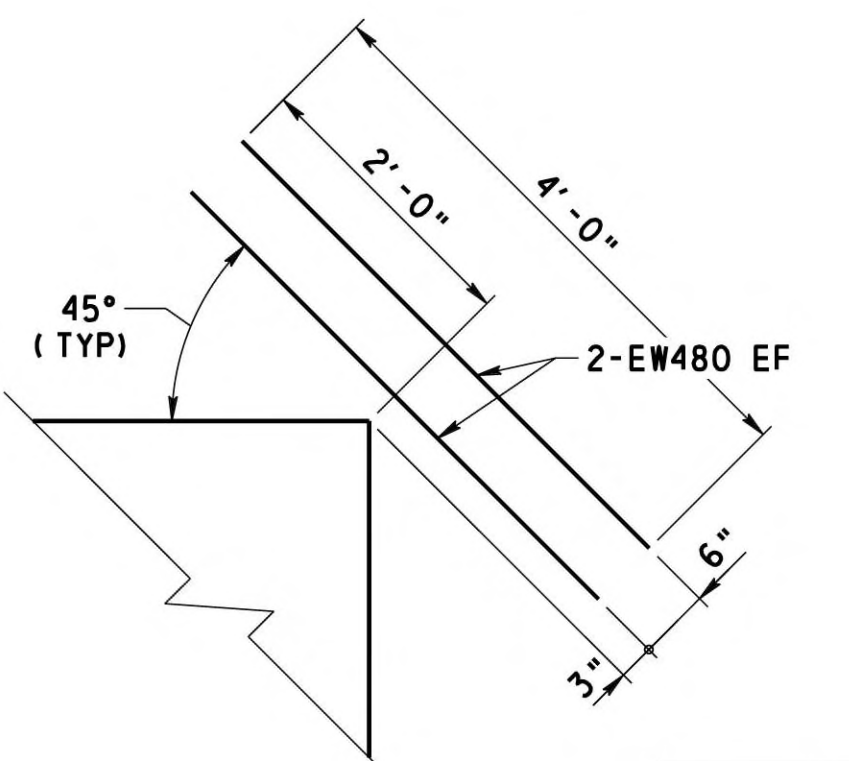
L - 645

DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB





WEEP HOLE DETAIL  
NOT TO SCALE



DETAIL A  
TYP EACH FOOTING STEP  
NOT TO SCALE

**NOTES**

- WORK THIS SHEET WITH SHEETS 15 THRU 20 AND 23 THRU 24
- FOR SECTION A35-A35, SEE SHEET 24
- FOR ADDITIONAL LATENT ANCHOR REINFORCEMENT AND V-NOTCH DETAIL, SEE SHEET 18
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR MICROPILE DETAILS SEE, SHEET 28
- FOR LATENT ANCHOR HEAD DETAILS, SEE SHEET 29
- ALL REINFORCEMENT BARS SHOWN AT MAXIMUM SPACING UNLESS NOTED

**LEGEND**

- [C-1] LATENT ANCHOR NUMBER
- BTWN BETWEEN
- EF EACH FACE
- FF FRONT FACE
- RF REAR FACE
- \* MEASURED ALONG THE FRONT FACE OF WALL
- ▲ ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
- ▲ 2" CLR TO EF452 TIE BARS, 3" CLR TO MAIN REINFORCEMENT BARS ON SIDES AND TOP

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

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DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

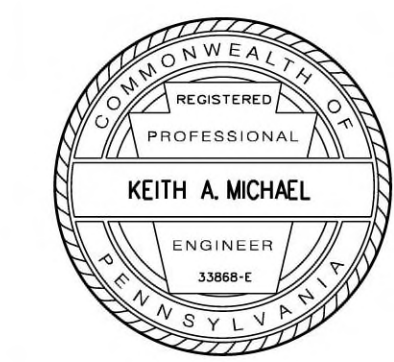
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
WINGWALL C1 ELEVATION

RECOMMENDED *February 12<sup>th</sup>, 2026*

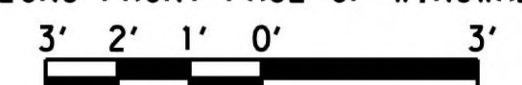
SHEET 22 OF 50

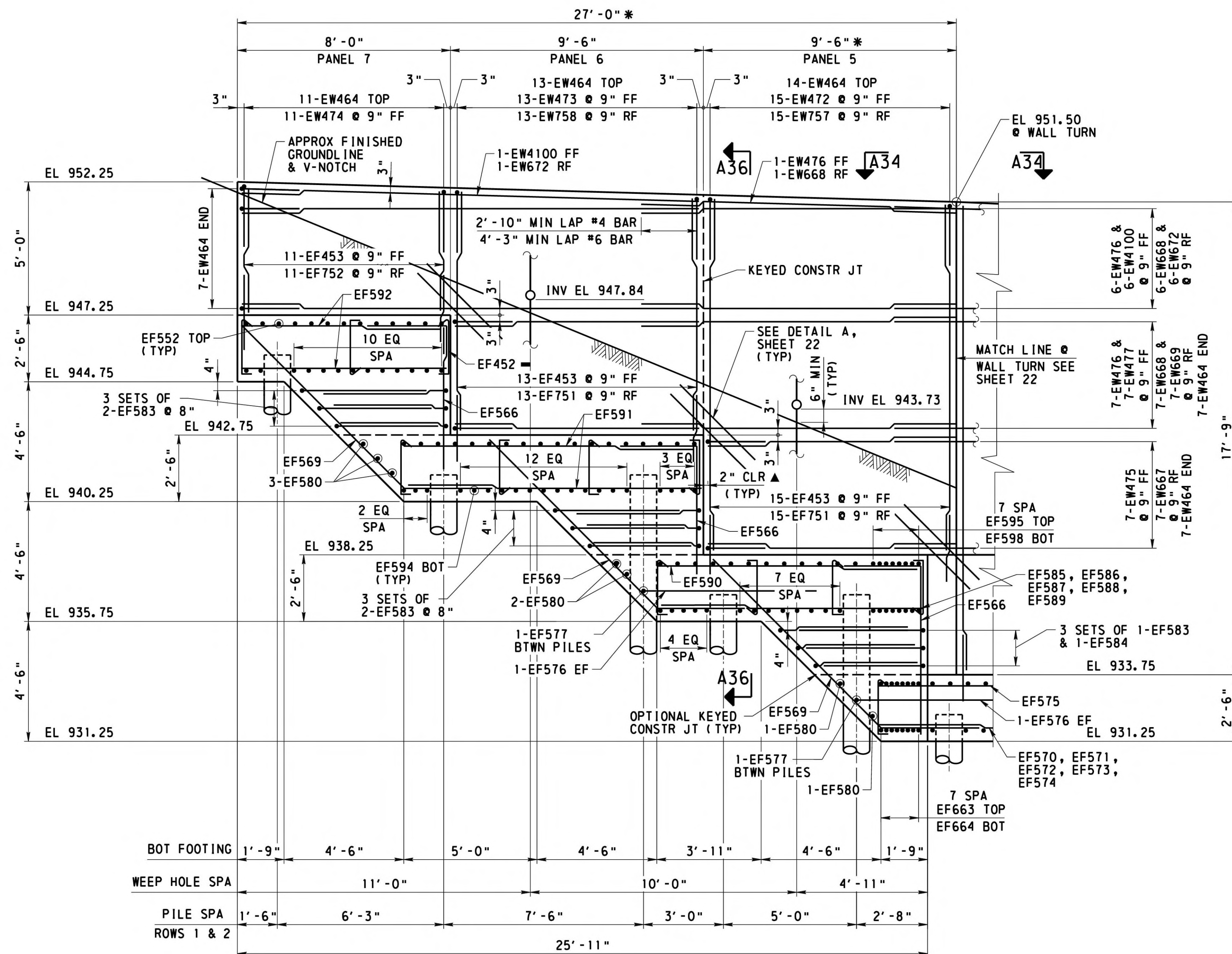
L - 645



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DRAWN BY	SJW
CHECKED BY	CMB

**WINGWALL C1 ELEVATION**  
(ALONG FRONT FACE OF WINGWALL)





**WINGWALL C2 ELEVATION**  
 (ALONG FRONT FACE OF WINGWALL)  
 3' 2' 1' 0' 3'

**NOTES**

- FOR SECTION A36-A36, SEE SHEET 24
- FOR SECTION A34-A34, WEEP HOLE DETAIL, AND DETAIL A, SEE SHEET 22
- WORK THIS SHEET WITH SHEETS 15 THRU 22 AND 24
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- ALL REINFORCEMENT BARS SHOWN AT MAXIMUM SPACING UNLESS NOTED
- FOR CONSTRUCTION JOINT DETAILS, SEE STANDARD DRAWING BC-735M

**LEGEND**

- BTWN BETWEEN
- EF EACH FACE
- FF FRONT FACE
- RF REAR FACE
- \* MEASURED ALONG THE FRONT FACE OF WALL
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
- ▲ 2" CLR TO EF452 TIE BARS, 3" CLR TO MAIN REINFORCEMENT BARS ON SIDES AND TOP

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
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WESTMORELAND COUNTY  
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WESTMORELAND COUNTY  
 NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
 OVER NORFOLK SOUTHERN RAILROAD

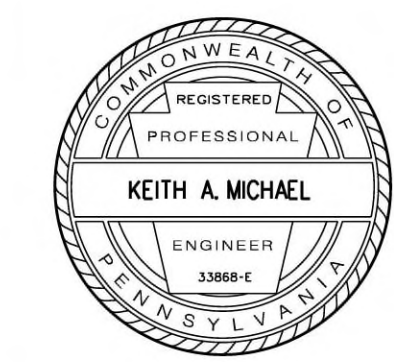
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
 WINGWALL C2 ELEVATION

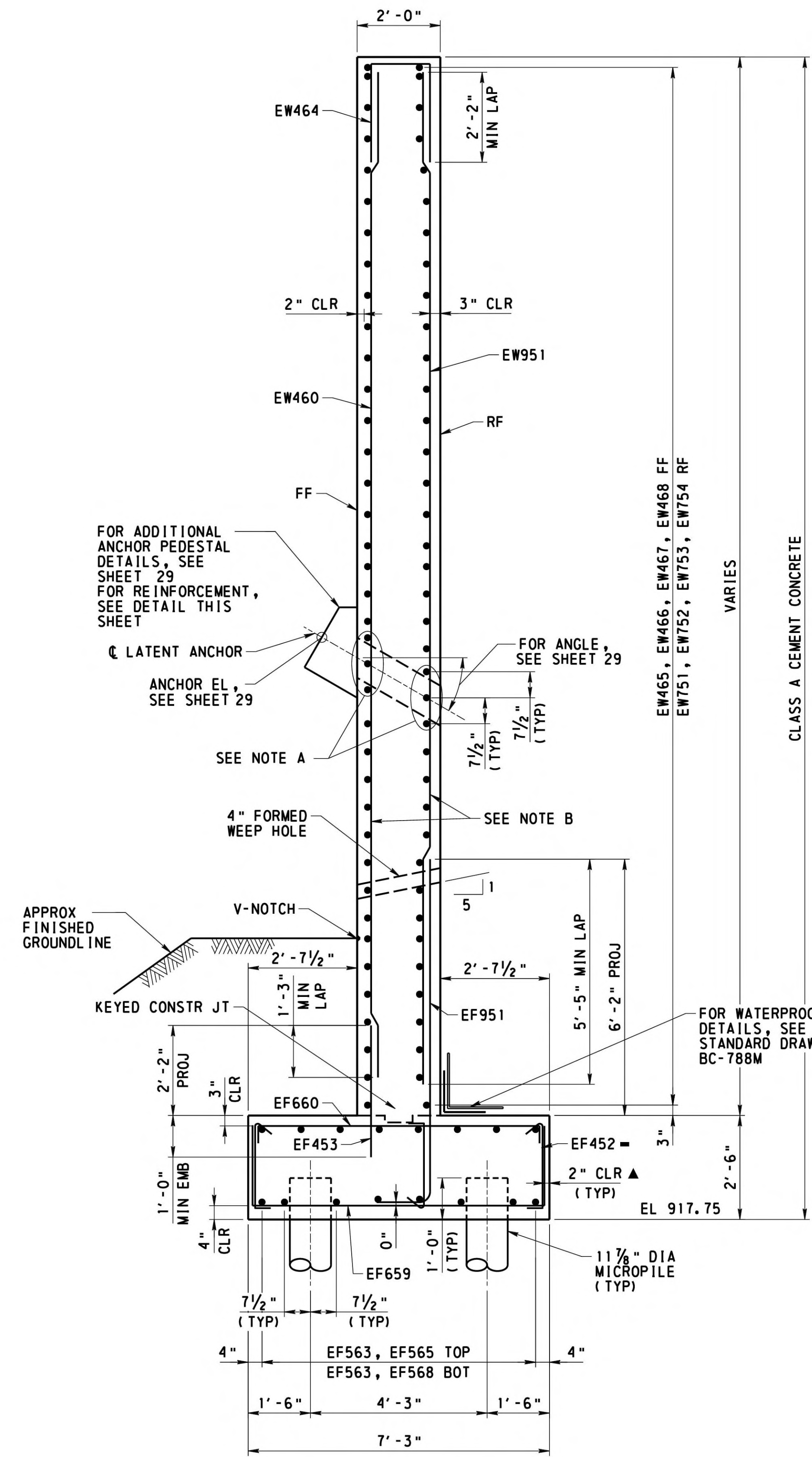
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 23 OF 50

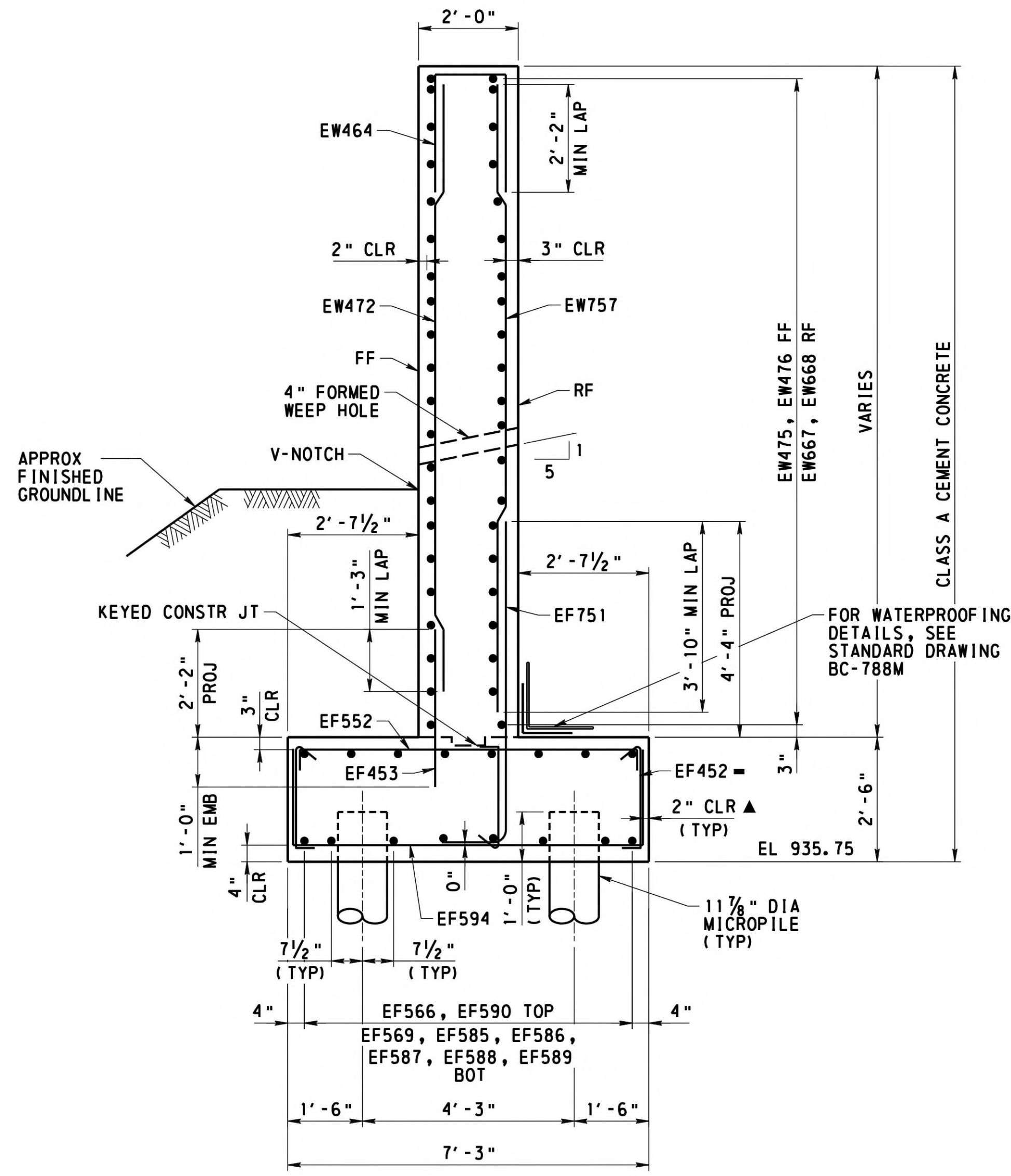
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CHECKED BY	CMB

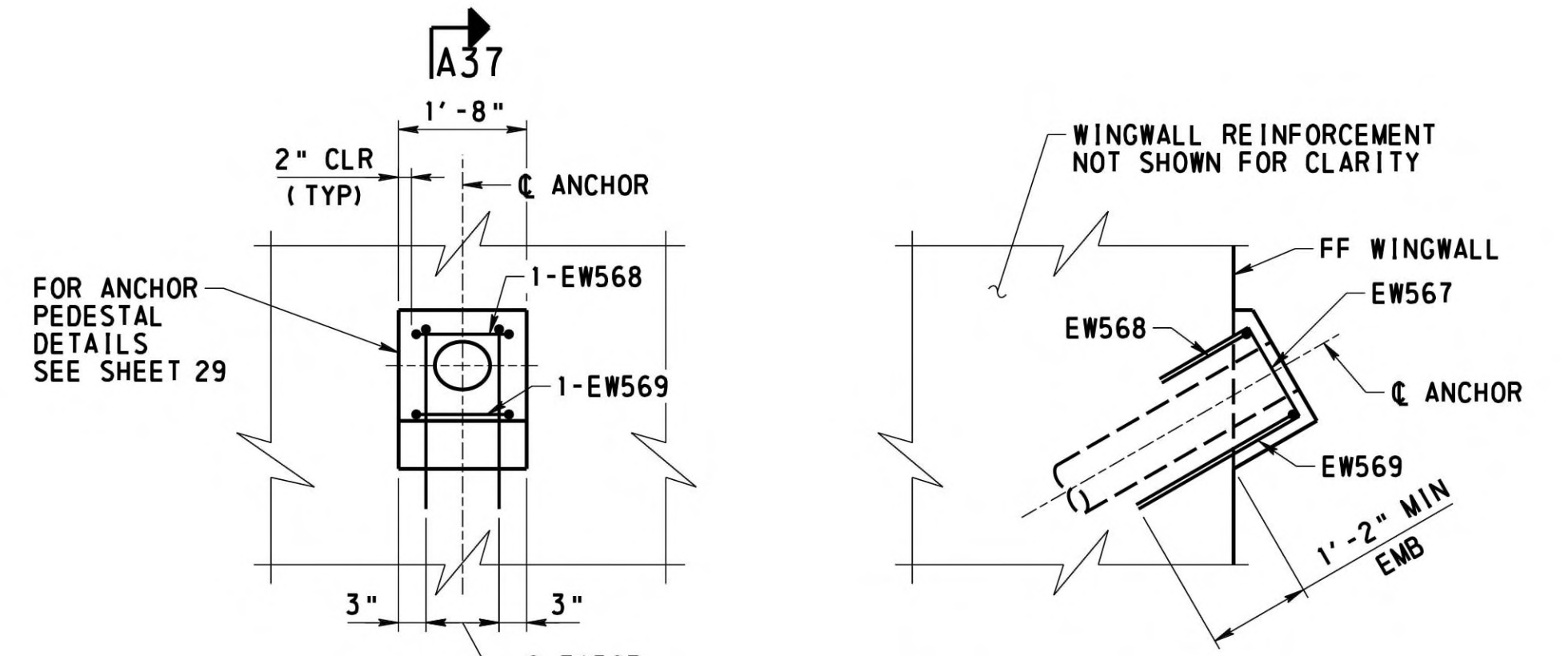




**SECTION A35-A35**  
 PANEL 1 SHOWN,  
 PANELS 2 THRU 4 SIMILAR  
 2' 1' 0' 2'



**SECTION A36-A36**  
 PANEL 5 SHOWN,  
 PANELS 6 & 7 SIMILAR  
 2' 1' 0' 2'



**SECTION A37-A37**  
 WINGWALL 'C' & 'D'  
 ANCHOR PEDESTAL  
 REINFORCEMENT DETAIL  
 NOT TO SCALE

**SECTION A37-A37**  
 NOT TO SCALE

**NOTES**

- WORK THIS SHEET WITH SHEETS 22 & 23
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR DETAILS AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29

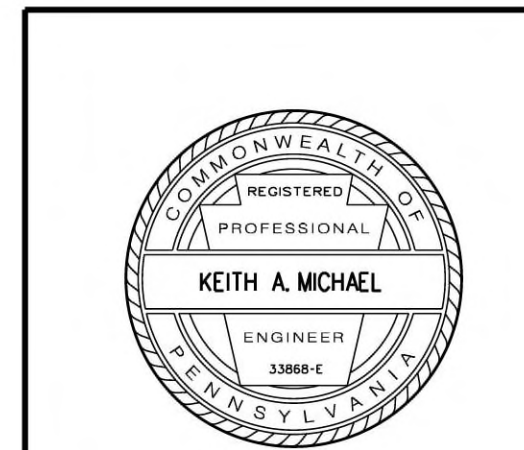
**LEGEND**

- NOTE A  
 ADJUST SPACING OF HORIZONTAL BARS AT ANCHORS AS SHOWN. CUT HORIZONTAL BARS AT CENTER OF ANCHOR CASING. MAINTAIN 2" CLR TO ANCHOR CASING
- NOTE B  
 CUT VERTICAL BARS LOCATED AT CENTERLINE OF ANCHORS. MAINTAIN 2" CLR TO CASING
- EF EACH FACE  
 FF FRONT FACE  
 RF REAR FACE
- ▲ ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
- ▲ 2" CLR TO EF452 TIE BARS, 3" CLR TO MAIN REINFORCEMENT BARS ON SIDES AND TOP

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

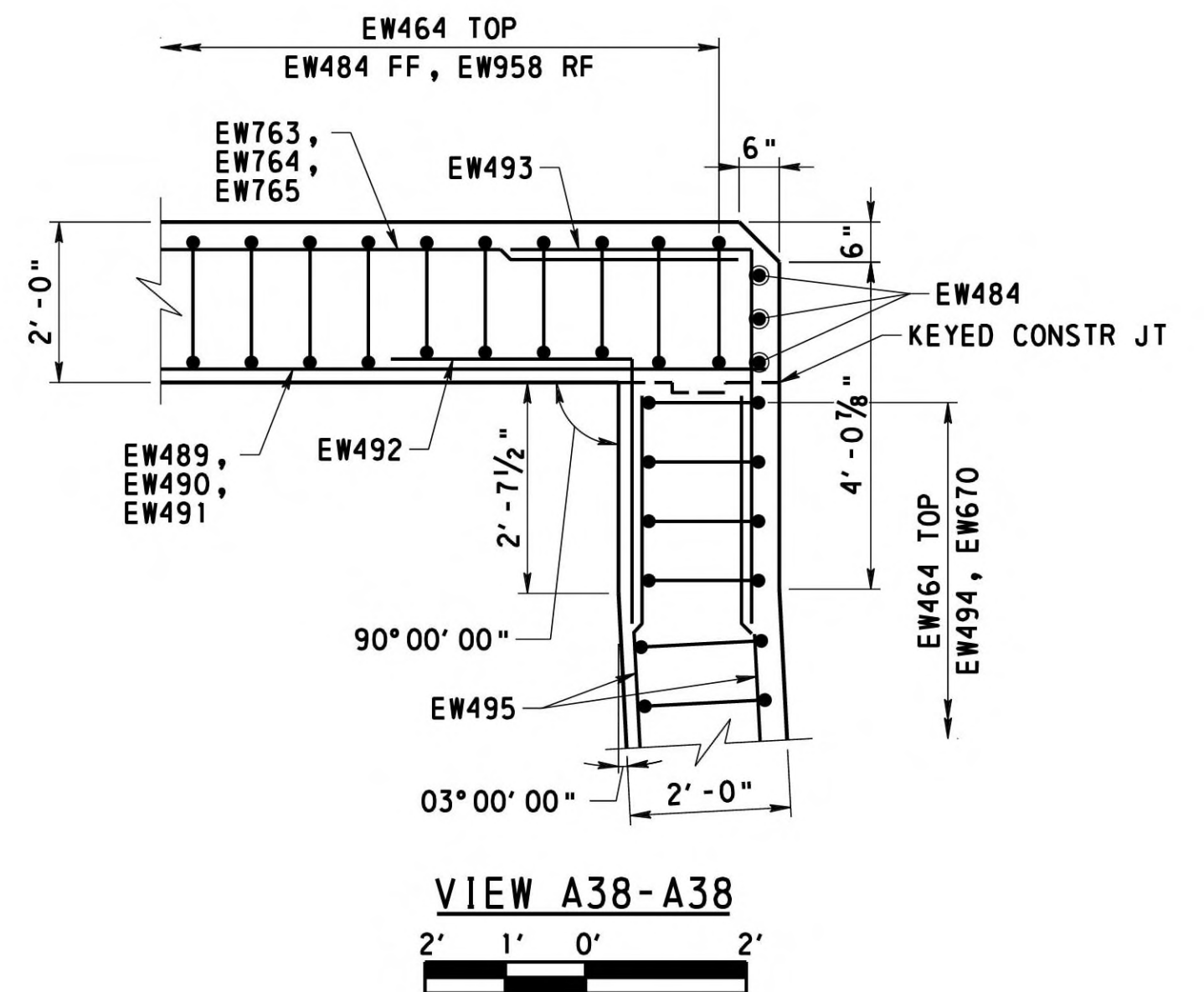
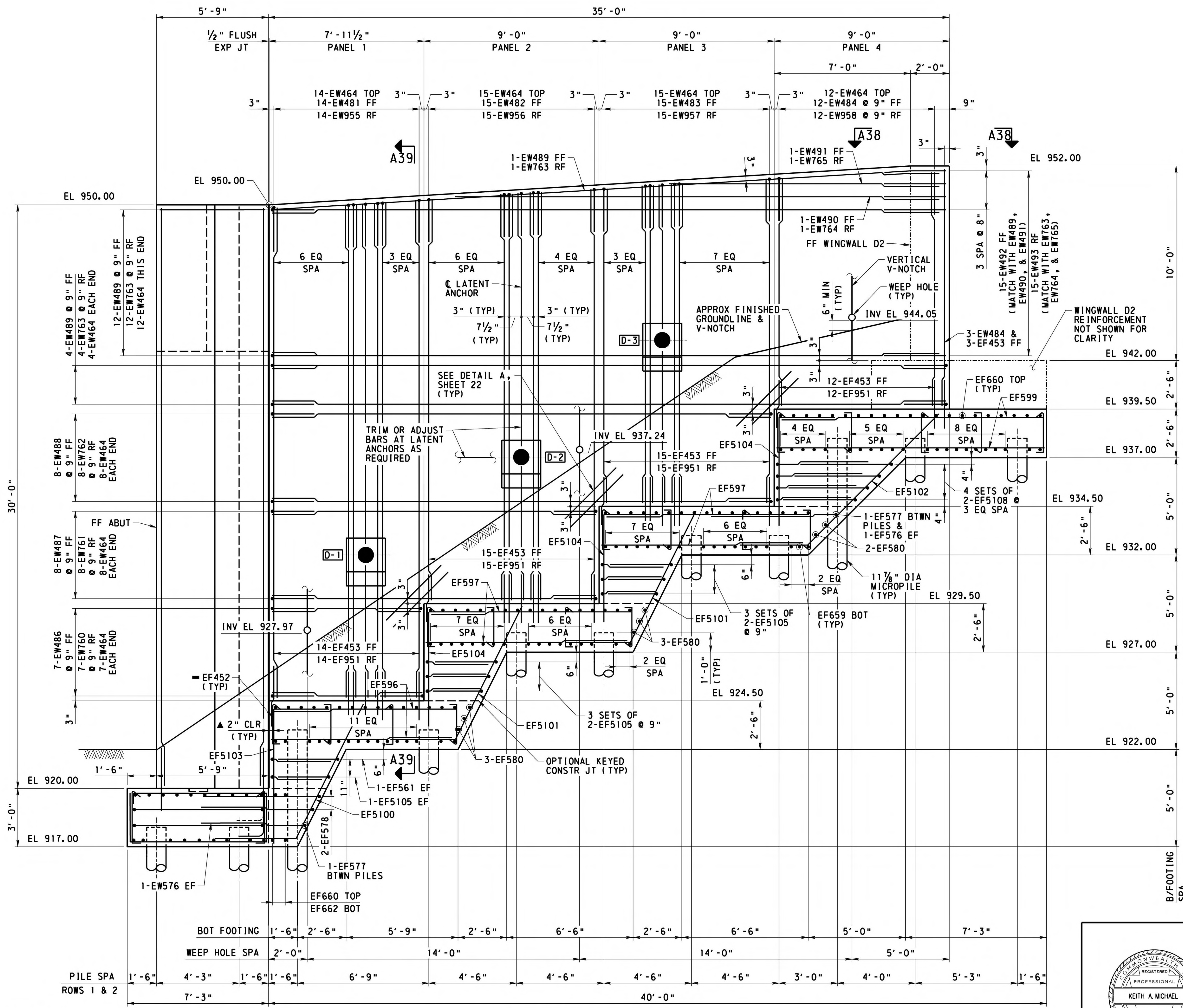
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DRAWN BY	SJW
CHECKED BY	CMB



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**DEPARTMENT OF PUBLIC WORKS**  
**WESTMORELAND COUNTY**  
**NORTH IRWIN BOROUGH**  
 WEST BROADWAY AVENUE STA. 12+22.50  
 OVER NORFOLK SOUTHERN RAILROAD  
**SINGLE SPAN STEEL MULTI-GIRDER BRIDGE**  
**WINGWALL C SECTIONS**

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 24 OF 50  
 L - 645



- NOTES**
- WORK THIS SHEET WITH SHEETS 15 THRU 21 AND 26 THRU 27
  - FOR WEEP HOLE DETAIL AND DETAIL A, SEE SHEET 22
  - FOR SECTION A39-A39, SEE SHEET 27
  - FOR ADDITIONAL LATENT ANCHOR REINFORCEMENT AND V-NOTCH DETAIL, SEE SHEET 18
  - FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
  - FOR MICROPILE DETAILS SEE, SHEET 28
  - FOR LATENT ANCHOR HEAD DETAILS, SEE SHEET 29
  - ALL REINFORCEMENT BARS SHOWN AT MAXIMUM SPACING UNLESS NOTED
- LEGEND**
- [D-1] LATENT ANCHOR NUMBER
  - BTWN BETWEEN
  - EF EACH FACE
  - FF FRONT FACE
  - RF REAR FACE
  - ▲ ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
  - ▲ 2" CLR TO EF452 TIE BARS, 3" CLR TO MAIN REINFORCEMENT BARS ON SIDES AND TOP

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
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WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

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NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
WINGWALL D1 ELEVATION

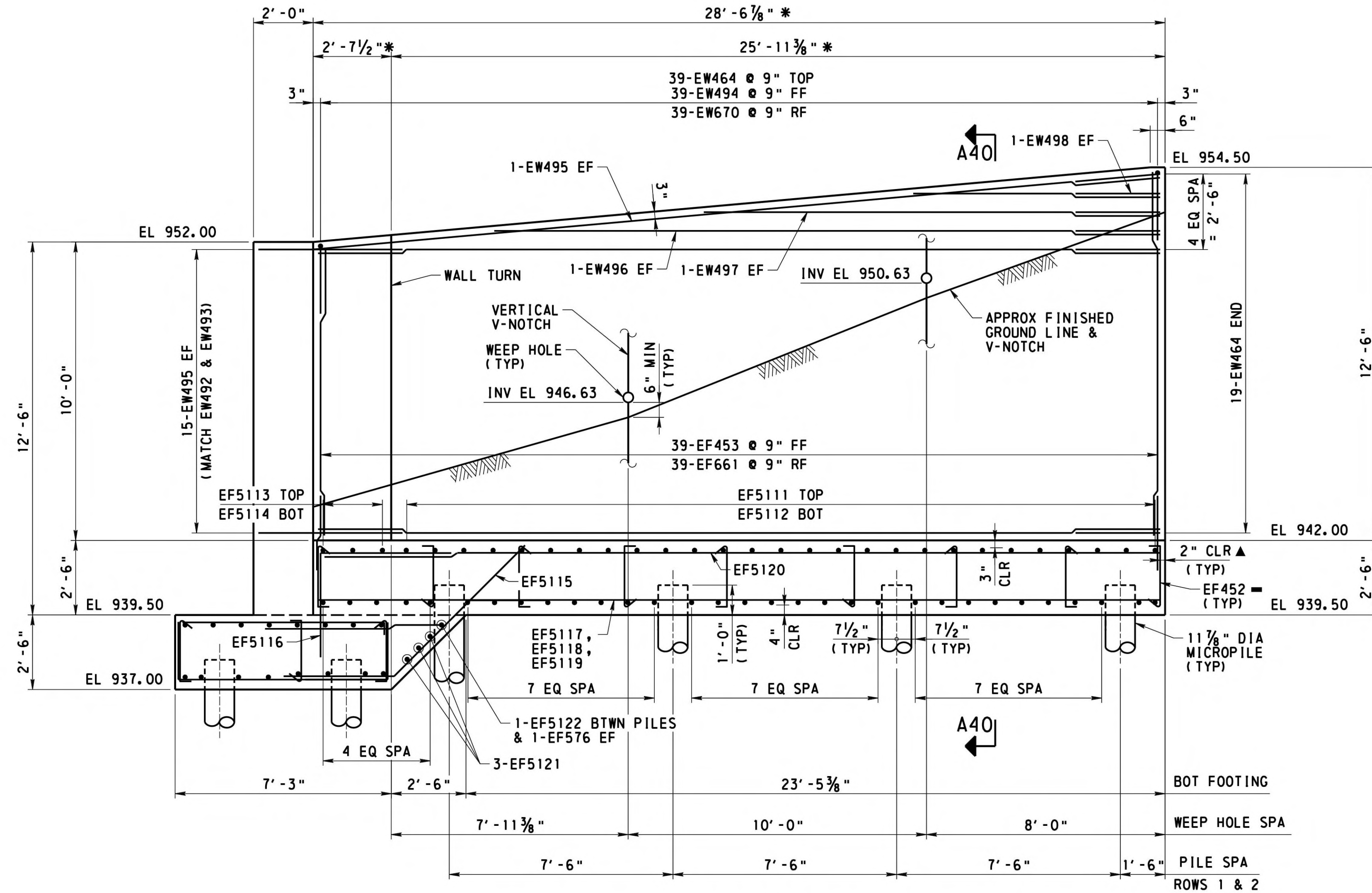
RECOMMENDED *February 12<sup>th</sup>, 2026* SHEET 25 OF 50

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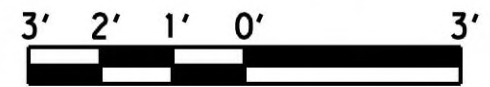
**WINGWALL D1 ELEVATION**  
3' 2' 1' 0' 3'





**WINGWALL D2 ELEVATION**

(ALONG FRONT FACE WING WALL)



**NOTES**

- WORK THIS SHEET WITH SHEETS 15 THRU 21 , 25 AND 27
- FOR SECTION A40-A40, SEE SHEET 27
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR MICROPILE DETAILS SEE, SHEET 28
- FOR LATENT ANCHOR HEAD DETAILS, SEE SHEET 29

**LEGEND**

- BTWN BETWEEN
- EF EACH FACE
- FF FRONT FACE
- RF REAR FACE
- \* MEASURED ALONG FRONT FACE WALL
- ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES
- ▲ 2" CLR TO EF452 TIE BARS, 3" CLR TO MAIN REINFORCEMENT BARS ON SIDES AND TOP

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
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WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

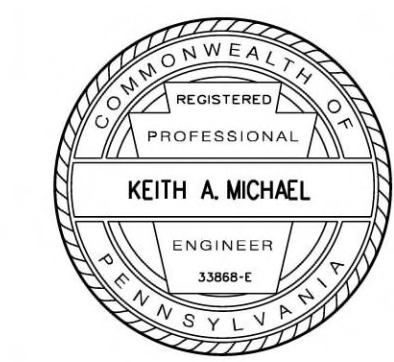
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
WINGWALL D2 ELEVATION

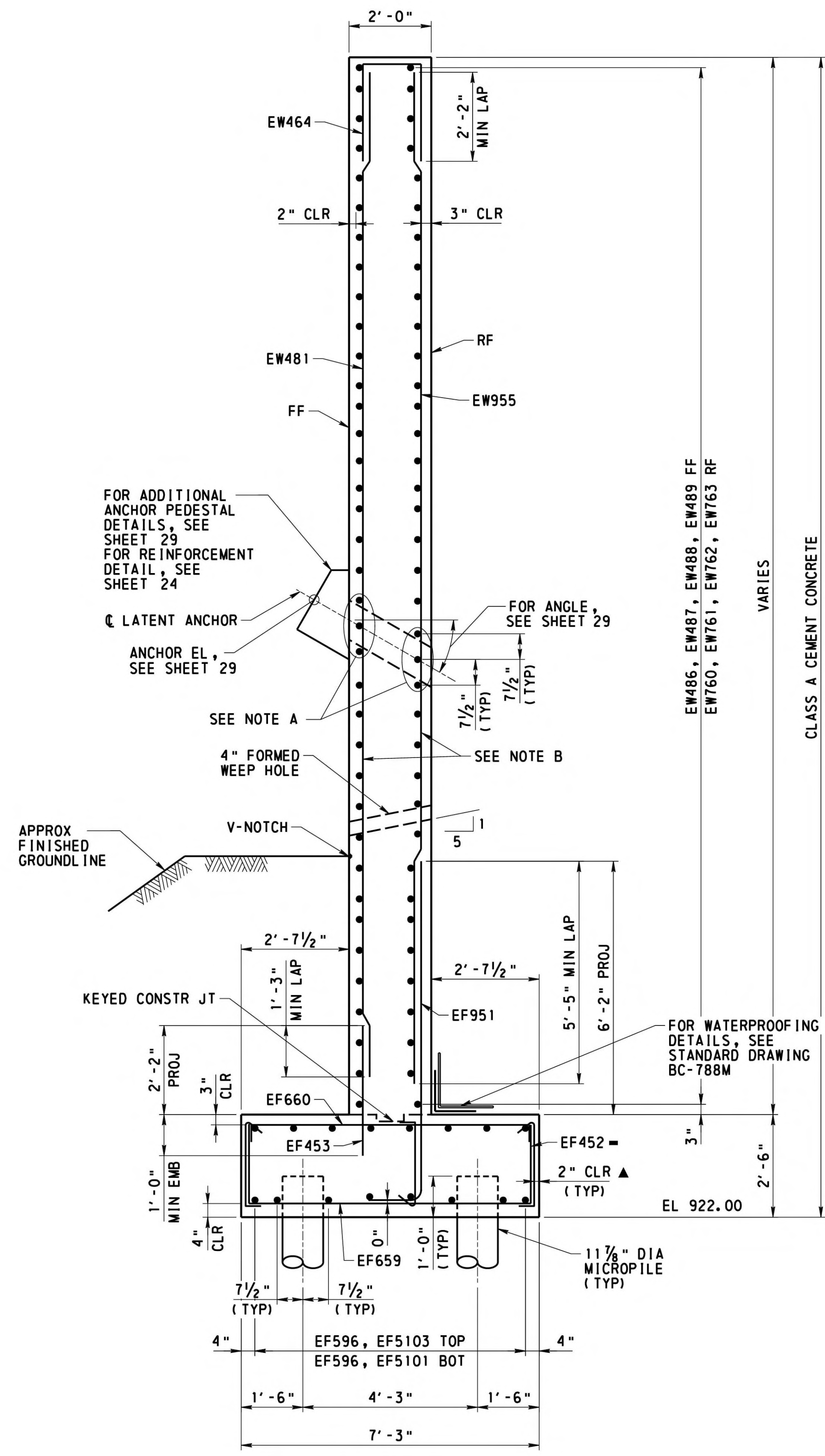
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SHEET 26 OF 50

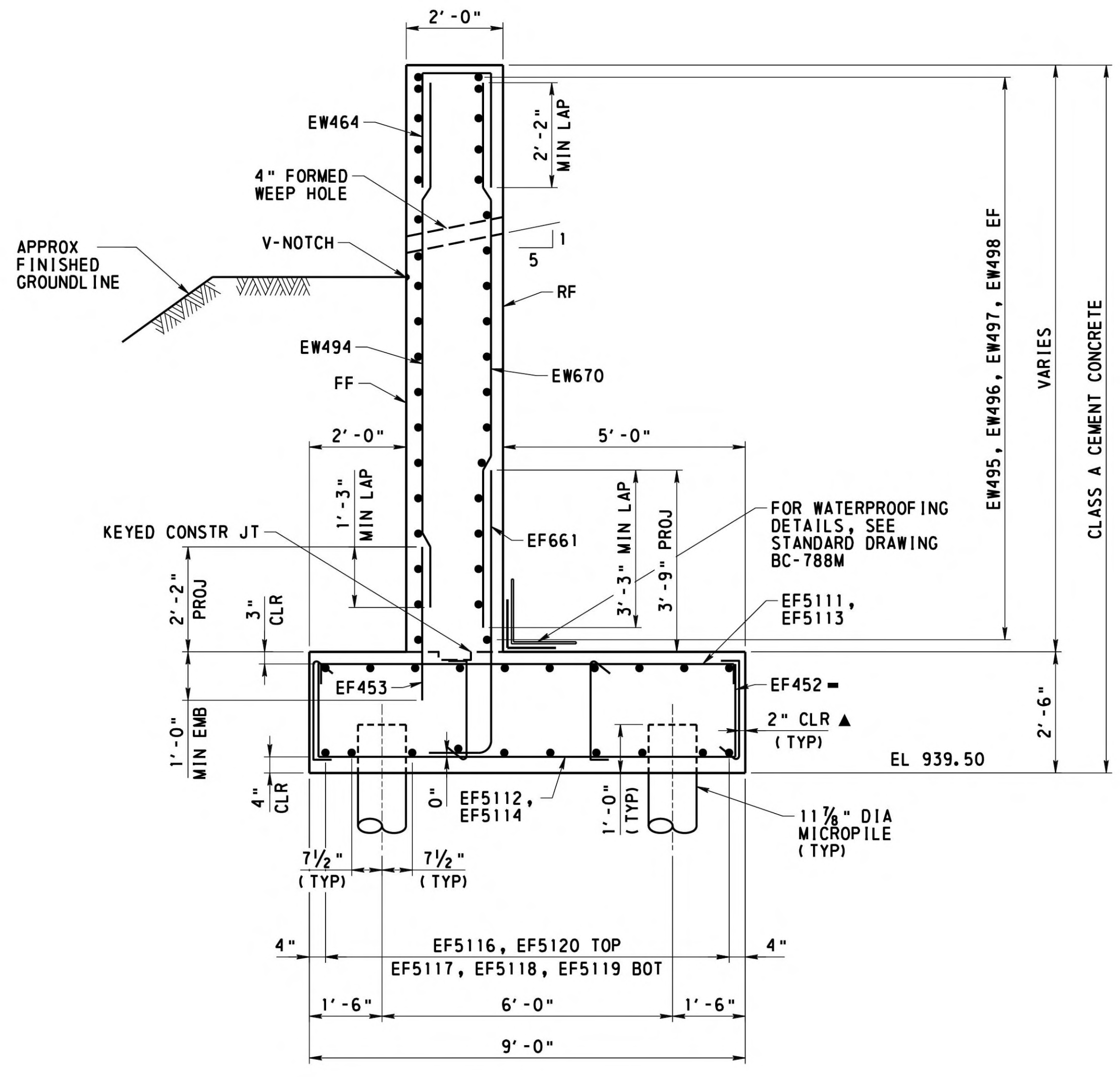
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DRAWN BY	SJW
CHECKED BY	CMB





**SECTION A39-A39**  
 PANEL 1 SHOWN,  
 PANELS 2 THRU 4 SIMILAR



**SECTION A40-A40**

**NOTES**

- WORK THIS SHEET WITH SHEETS 25 & 26
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEETS 41 THRU 43
- FOR MICROPILE DETAILS AND LOADS, SEE SHEET 28
- FOR ANCHOR DETAILS AND ANCHOR HEAD PEDESTAL DETAILS, SEE SHEET 29

**LEGEND**

- NOTE A  
 ADJUST SPACING OF HORIZONTAL BARS AT ANCHORS AS SHOWN. CUT HORIZONTAL BARS AT CENTER OF ANCHOR CASING. MAINTAIN 2" CLR TO ANCHOR CASING
- NOTE B  
 CUT VERTICAL BARS LOCATED AT CENTERLINE OF ANCHORS. MAINTAIN 2" CLR TO CASING
- EF EACH FACE  
 FF FRONT FACE  
 RF REAR FACE  
 - ALTERNATE 90° AND 135° HOOKS AT TOP IN ALTERNATE TIES  
 ▲ 2" CLR TO EF452 TIE BARS, 3" CLR TO MAIN REINFORCEMENT BARS ON SIDES AND TOP

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
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WESTMORELAND COUNTY  
 NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
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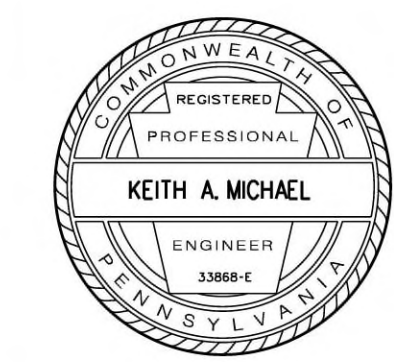
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
 WINGWALL D SECTIONS

RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 27 OF 50

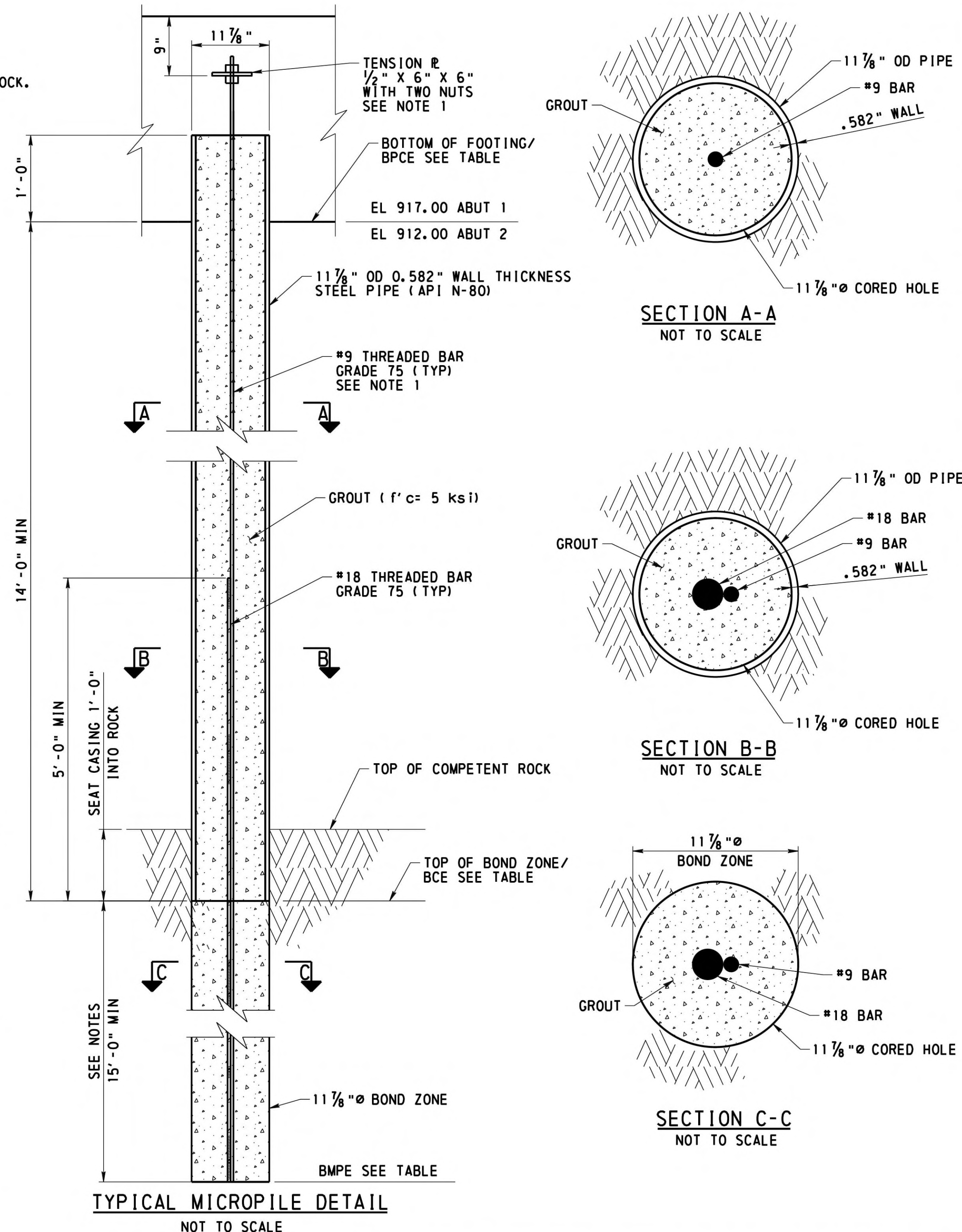
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DESIGNED BY	DCT
DRAWN BY	SJW
CHECKED BY	CMB



**MICROPILE INSTALLATION NOTES**

- EACH INDIVIDUAL PILE BOND ZONE MUST CONTAIN AN ACCUMULATION OF 15 FT OF COMPETENT ROCK.
- NO ONE SOIL SEAM IN EXCESS OF 5 FT WILL BE ACCEPTABLE.
- NO ONE ROCK SEAM LESS THAN 5 FT WILL BE ACCEPTABLE.
- NO CLAYSTONE SEAM IS TO BE INCLUDED IN BOND ZONE LENGTH.
- NO BOND ZONE SHALL BE TERMINATED WITHOUT 2.0 FT (MIN) OF ROCK AT THE BOTTOM OF THE BOND ZONE.
- EACH BOND ZONE MUST BE EXTENDED AS NECESSARY TO A LENGTH THAT INCLUDES AN ACCUMULATION OF 15 FT OF ROCK.
- THE X, Y, AND Z VALUES ARE BASED ON CALCULATIONS AND SUBSURFACE CONDITIONS AND ARE DEFINED AS FOLLOWS:  
 X = MINIMUM ROCK LENGTH (FOR SEAMED ROCK)  
 Y = MINIMUM BOND LENGTH  
 Z = TOTAL ROCK SOCKET LENGTH (CAN EQUAL X IF SOLID ROCK CONDITION, BUT MAY NOT IF ROCK IS SEAMED)  
 X, Y, & Z = 15 FT
- CONSTRUCT THE MICROPILES IN ACCORDANCE WITH PUBLICATION 408 SECTION 1007 AND THE PROJECT PLANS.
- MICROPILES ARE TO BE INSTALLED WITH A MINIMUM CASING LENGTH OF 14 FEET BELOW BASE OF THE PILE CAP OR TO A DEPTH OF 1 FOOT INTO COMPETENT ROCK WHICHEVER IS GREATER. ANY CASING JOINTS MUST BE PLACED A MINIMUM OF 14 FOOT BELOW THE BOTTOM OF THE PILE CAP ELEVATION.
- MICROPILE CASING IS TO EXTEND A MINIMUM OF 1.0 FOOT INTO THE TOP OF COMPETENT ROCK AS DEFINED BY THE ENGINEER OR THEIR REPRESENTATIVE ON SITE AT THE TIME OF DRILLING. IN AREAS WHERE COAL WAS ENCOUNTERED, THE CASING WILL EXTEND A MINIMUM OF 1.0 FEET BELOW THE COAL STRATUM.
- ROCK WITHIN THE BONDED LENGTH IS ANTICIPATED TO CONSIST OF SANDSTONE OR SILTSTONE. OTHER ROCK TYPES, IF ENCOUNTERED, ARE TO BE CONFIRMED BY THE ENGINEER AS SUITABLE FOR MICROPILE LOAD TRANSFER PRIOR TO COMPLETION.
- THE ROCK TYPE AND CONSISTENCY WITHIN THE BONDED LENGTH IS TO BE CONFIRMED BY THE ENGINEER OR AN APPROVED REPRESENTATIVE PRIOR TO COMPLETION OF EACH MICROPILE.
- DO NOT INCLUDE CLAYSTONE ENCOUNTERED IN THE BOND ZONE AS PART OF THE REQUIRED MINIMUM BOND ZONE LENGTH.
- OPEN-HOLE DRILLING IS NOT PERMITTED.
- MICROPILE INSTALLATION DEPTHS SHALL BE MEASURED USING A WEIGHTED TAPE MEASURE TO CONFIRM DESIGN DEPTH PRIOR TO PLACEMENT OF REINFORCING STEEL OR GROUT.
- MICROPILES ARE TO BE GROUTED WITHIN 24 HOURS OF THE COMPLETION OF DRILLING. IF GROUTED IS NOT POSSIBLE WITHIN THIS TIME FRAME, THEN THE CONTRACTOR MUST VERIFY THE CLEANLINESS OF THE HOLE TO THE SATISFACTION OF THE ENGINEER PRIOR TO GROUTING.
- PROVIDE TOOLING AND EQUIPMENT ON SITE CAPABLE OF DRILLING TO AT LEAST 200 PERCENT DEPTH OF THE DEEPEST EXPECTED MICROPILE.
- PROVIDE MICROPILES WITH A MINIMUM 11.875 INCH OUTSIDE DIAMETER AND A MINIMUM 0.582 INCH WALL THICKNESS WITH THREADED END SECTIONS TO ALLOW FOR INSTALLATION WITHOUT THE USE OF COUPLERS.
- PROVIDE MICROPILES CASING STEEL IS TO BE OF MINIMUM YIELD STRENGTH OF 80 KSI.
- ADVANCE CASING THROUGH ROCK TO THE BOTTOM OF THE ESTIMATED MICROPILE TIP ELEVATION (BMPE). ONCE THE BOTTOM OF THE BOND ZONE IS CONFIRMED, CASING SHALL BE LIFTED TO THE FINAL CONFIGURATION TO ALLOW GROUT/ROCK CONTACT AT THE BOND ZONE.
- THE GEOTECHNICAL REPRESENTATIVE SHALL BE PRESENT DURING THE CONSTRUCTION OF THE MICROPILES AND SHALL APPROVE THE BOND ZONE IN THE FIELD.
- PROVIDE CENTER REINFORCING STEEL CONSISTING OF A CONTINUOUS THREADED NO. 9 BAR FULL-LENGTH ALONG WITH A THREADED NO. 18 BAR EXTENDING FROM THE BOTTOM OF THE BOND ZONE TO 5 FEET INTO THE BOTTOM OF CASING.
- CENTER REINFORCING STEEL IS TO HAVE A MINIMUM YIELD STRENGTH OF 75 KSI.
- FILL MICROPILES WITH NEAT-CEMENT GROUT HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. SOME LOSS OF GROUT DUE TO JOINTS IN BEDROCK WITHIN THE BOND ZONE IS POSSIBLE. IF THE GROUT VOLUME EXCEEDS 200 PERCENT OF THE CALCULATED VOLUME AT ANY STAGE, GROUTING OPERATIONS SHALL BE CEASED. AFTER THE GROUT HAS HARDENED, DRILLING SHALL BE RESUMED, EXTENDED THROUGH THE HARDENED GROUT, AND CONTINUED DEEPER THAN THE BOND ZONE.
- PERFORM ONE VERIFICATION LOAD TEST PER SUBSTRUCTURE IN ACCORDANCE WITH DM-4 SECTION 10.9.3.5.4. AND PUBLICATION 408 SECTION 1007.3(j)1. CASE 1: VERIFICATION LOAD TESTING.



		TMPE	BPCE	ESTIMATED BCE	ESTIMATED BMPE
ABUTMENT 1		918.00	917.00	903.00	888.00
	PANEL 1	933.00	932.00 / 927.00	917.00	902.00
	PANEL 2	928.00	927.00 / 922.00	908.00	893.00
WING A	PANEL 3	923.00	922.00 / 917.00	903.00	888.00
	PANEL 1	933.00	932.00 / 927.00	917.00	902.00
	PANEL 2	928.00	927.00 / 922.00	908.00	893.00
WING B	PANEL 3	923.00	922.00 / 917.00	903.00	888.00
	ABUTMENT 2	913.00 / 918.00	912.00 / 917.00	898.00 / 904.00	883.00 / 889.00
	PANEL 1	918.75	912.00 / 917.75	898.00 / 904.00	883.00 / 889.00
WING C	PANEL 2	923.25	917.75 / 922.25	903.75 / 908.25	888.75 / 893.25
	PANEL 3	927.75	922.25 / 926.75	908.25 / 912.75	893.25 / 897.75
	PANEL 4	932.25	926.75 / 931.25	912.75 / 917.25	897.75 / 902.25
	PANEL 5	936.75	931.25 / 935.75	917.25 / 920.00	902.25 / 905.00
	PANEL 6	941.25	933.75 / 940.25	920.00	905.00
	PANEL 7	945.75	940.25 / 944.75	920.00	905.00
WING D1	PANEL 1	923.00	917.00 / 922.00	903.00 / 908.00	888.00 / 893.00
	PANEL 2	928.00	922.00 / 927.00	908.00 / 913.00	893.00 / 898.00
	PANEL 3	933.00	927.00 / 932.00	913.00 / 914.50	898.00 / 899.50
	PANEL 4	938.00	932.00 / 937.00	914.00	899.00
WING D2		940.50	939.50	914.00	899.00

**LEGEND**

- BMPE BOTTOM OF MICROPILE ELEVATION
- BPCE BOTTOM OF PILE CAP ELEVATION
- BCE BOTTOM OF CASING ELEVATION

**NOTE 1**

PROVIDE TENSION PLATE AND NUTS FOR THE FOLLOWING MICROPILES:  
 ABUTMENT 1 - PILE ROW 2  
 WING A - PILE ROW 4  
 WING B - PILE ROW 6  
 ABUTMENT 2 - PILE ROW 2  
 WING C1 - PILE ROW 4  
 WING D1 - PILE ROW 6

DESIGNED BY	KAM
DRAWN BY	TMK
CHECKED BY	KAM

	CONTROLLING MICROPILE FORCES						CONTROLLING MICROPILE FORCES PRIOR TO ANCHOR INSTALLATION			
	STRENGTH		SERVICE		EXTREME EVENT		STRENGTH		SERVICE	
	AXIAL	LATERAL	AXIAL	LATERAL	AXIAL	LATERAL	AXIAL	LATERAL	AXIAL	LATERAL
ABUTMENT 1	280.82	39.86	208.80	34.32	329.79	68.05	107.62	24.75	70.35	12.36
WING A - PANEL 1	71.46	28.20	54.18	22.44	88.08	28.17	74.45	19.09	63.61	16.75
WING A - PANEL 2	53.32	15.88	39.46	13.05	60.81	18.29	46.72	17.75	38.78	15.34
WING A - PANEL 3	54.15	16.29	38.49	13.06	66.61	19.54	41.27	16.52	27.45	5.95
WING B - PANEL 1	68.76	28.02	51.24	22.03	90.08	26.57	65.22	17.78	53.67	15.51
WING B - PANEL 2	47.32	12.10	35.30	10.00	68.12	20.48	39.83	14.59	32.03	12.46
WING B - PANEL 3	56.60	11.09	40.17	9.20	67.04	16.81	36.20	14.14	23.77	5.99

	CONTROLLING MICROPILE FORCES						CONTROLLING MICROPILE FORCES PRIOR TO ANCHOR INSTALLATION			
	STRENGTH		SERVICE		EXTREME EVENT		STRENGTH		SERVICE	
	AXIAL	LATERAL	AXIAL	LATERAL	AXIAL	LATERAL	AXIAL	LATERAL	AXIAL	LATERAL
ABUTMENT 2	398.54	39.33	296.21	31.47	384.62	49.19	246.61	43.10	191.92	33.82
WING C - PANEL 1	83.00	18.07	59.24	13.15	92.07	16.11	43.69	8.35	33.98	6.76
WING C - PANEL 2	89.42	21.81	64.41	16.20	124.86	26.78	55.65	17.28	42.94	13.42
WING C - PANEL 3	96.10	15.63	69.22	12.08	99.42	18.05	54.43	17.06	41.91	13.24
WING C - PANEL 4	58.23	11.16	43.61	9.00	51.32	15.75	50.00	17.00	37.18	13.18
WING C - PANEL 5	58.59	20.82	43.25	16.27	67.54	26.79	64.39	24.23	47.43	18.82
WING C - PANEL 6	51.30	20.11	37.67	16.01	46.81	18.14	49.93	19.29	37.01	15.57
WING C - PANEL 7	57.39	20.77	42.76	17.62	51.36	17.97	56.09	20.20	42.03	17.27
WING D1 - PANEL 1	89.26	14.41	62.18	11.12	100.89	16.88	36.54	7.37	28.07	6.43
WING D1 - PANEL 2	83.09	9.49	62.89	8.62	113.26	26.77	51.34	14.88	39.18	13.09
WING D1 - PANEL 3	76.58	9.10	55.69	8.72	76.53	17.18	54.57	17.20	41.19	15.08
WING D1 - PANEL 4	44.32	15.60	31.87	12.75	69.82	31.00	49.97	23.11	39.14	18.77
WING D2	120.70	35.20	83.90	25.40	N/A	N/A	N/A	N/A	N/A	N/A

ALL FORCE IN KIPS  
 EXTREME EVENT IS REDUNDANCY CHECK ASSUMING ONE ANCHOR HAS FAILED

	MINIMUM AXIAL FORCES (UPLIFT)			
	PRIOR TO ANCHOR INSTALLATION		FINAL CONDITION	
	STRENGTH	SERVICE	AXIAL LOAD	LIMIT STATE
ABUTMENT 1	-10.32	--	--	--
WING A - PANEL 1	-8.39	-0.33	-3.16	(EXT)
WING A - PANEL 2	-5.44	--	--	--
WING A - PANEL 3	-13.66	-5.03	-6.55	(EXT)
WING B - PANEL 1	-1.82	--	-9.07	(EXT)
WING B - PANEL 2	--	--	--	--
WING B - PANEL 3	-8.40	-2.03	-2.42	(EXT)
ABUTMENT 2	-54.41	-12.64	--	--
WING C - PANEL 1	--	--	--	--
WING C - PANEL 2	--	--	--	--
WING C - PANEL 3	--	--	--	--
WING C - PANEL 4	--	--	--	--
WING C - PANEL 5	--	--	--	--
WING C - PANEL 6	--	--	-1.12	(STR)
WING C - PANEL 7	-0.41	--	-1.62	(STR)
WING D1 - PANEL 1	--	--	--	--
WING D1 - PANEL 2	--	--	--	--
WING D1 - PANEL 3	--	--	--	--
WING D1 - PANEL 4	-9.93	-1.70	-20.65	(EXT)
WING D2	--	--	-2.1	(STR)

\* UPLIFT IS DUE TO PERMANENT LOADS  
 ALL FORCE IN KIPS

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS:31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
 DEPARTMENT OF PUBLIC WORKS  
 WESTMORELAND COUNTY  
 NORTH IRWIN BOROUGH  
 WEST BROADWAY AVENUE STA. 12+22.50  
 OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
 MICROPILE DETAILS

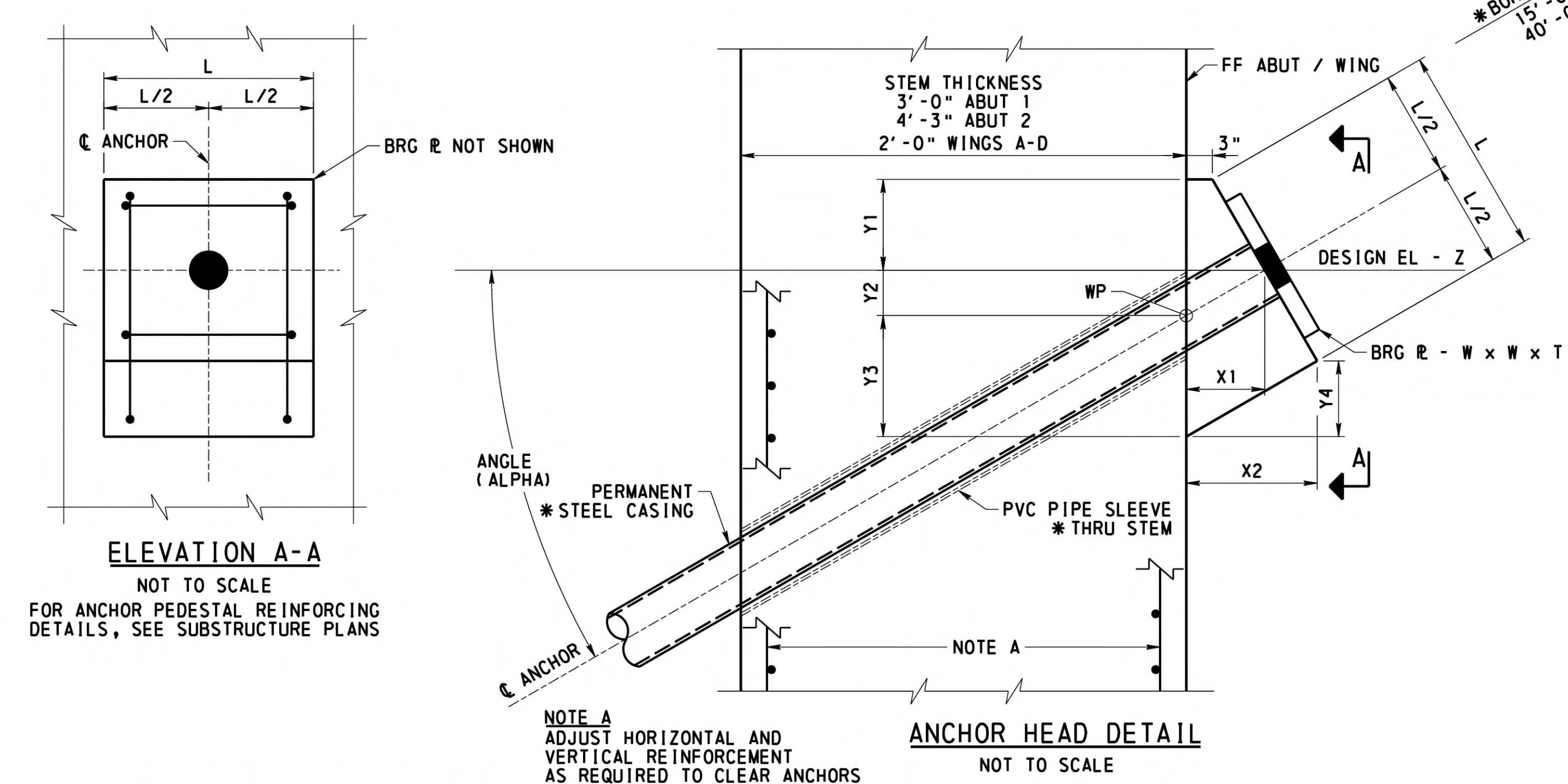
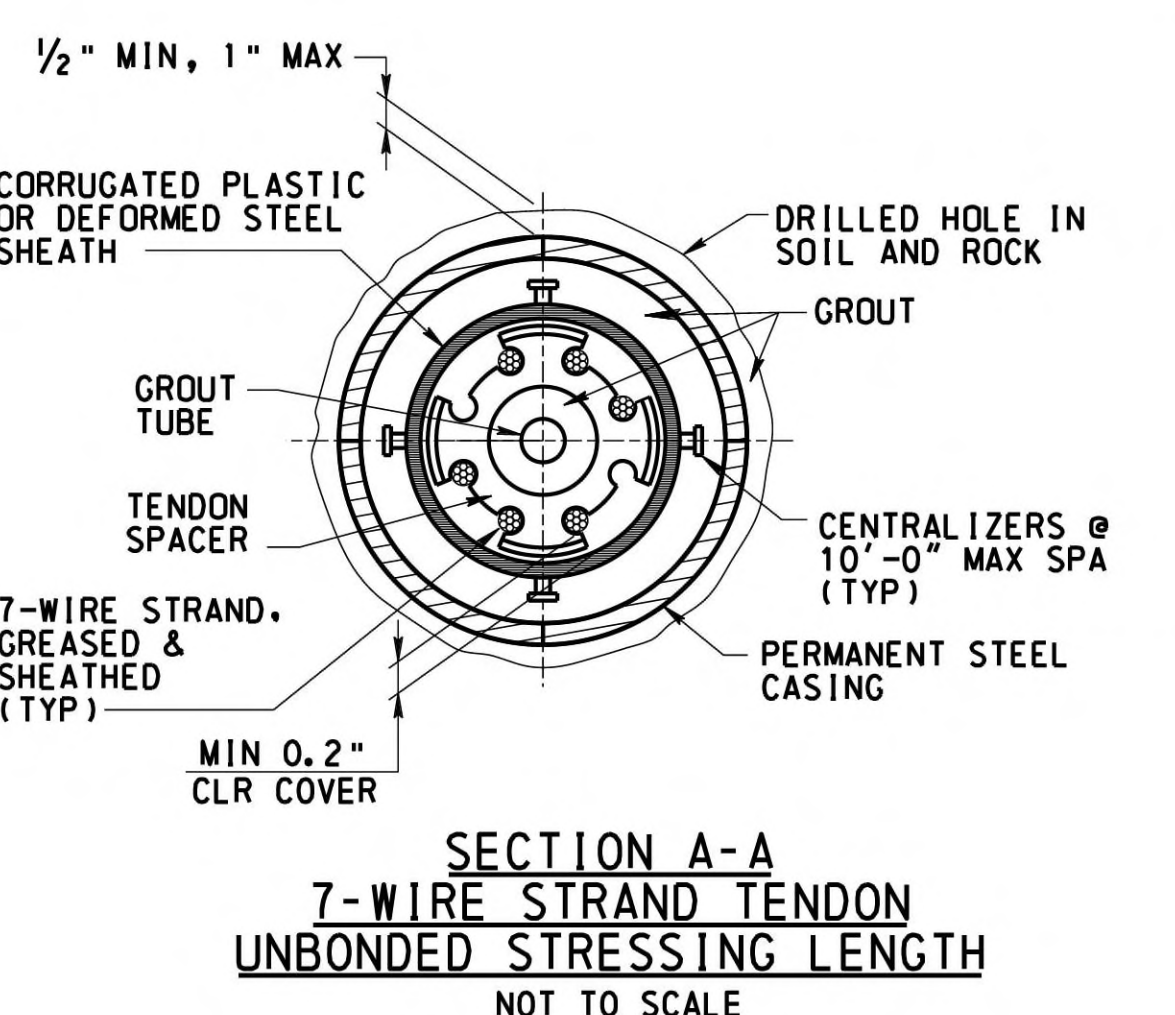
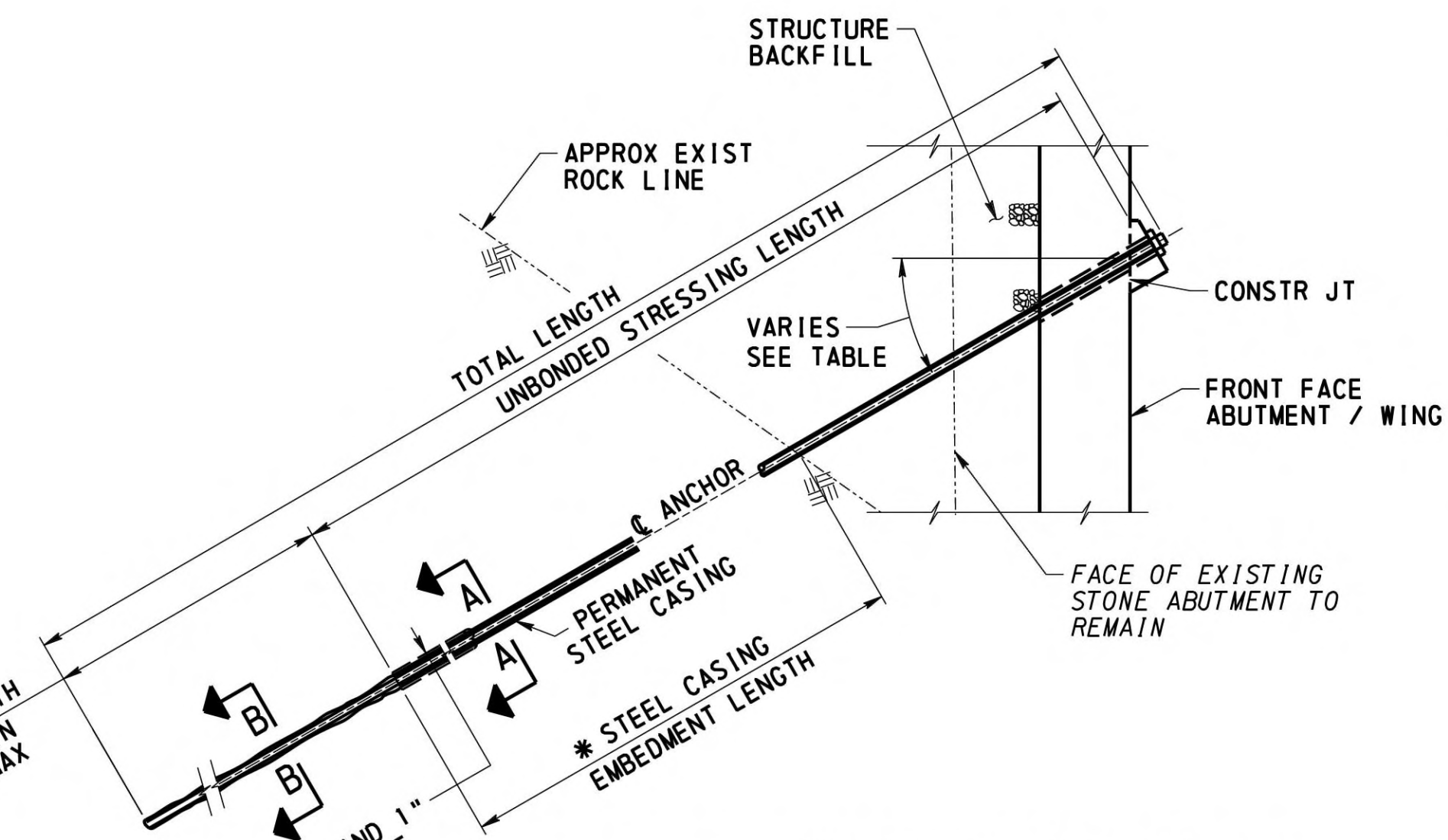
RECOMMENDED February 12<sup>th</sup>, 2026

SHEET 28 OF 50

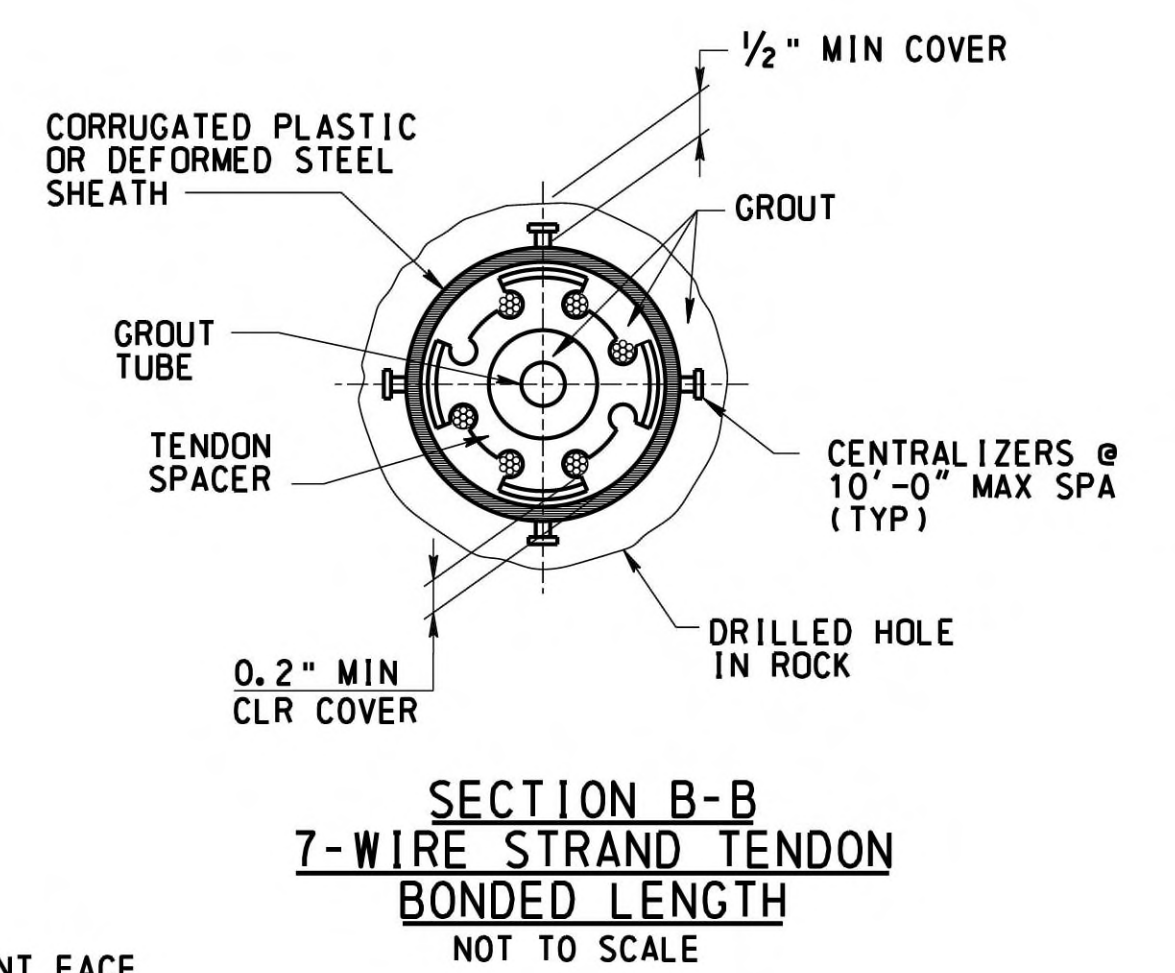
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LOCATION ANCHOR NO.	ANGLE ALPHA	ANCHOR ELEV - Z	Y1	Y2	Y3	Y4	X1	X2	L	W	T
			INCHES								
ABUT 1 - A1-1 THRU A1-5	30.00	928.00	8.66	4.62	11.55	7.51	8.00	13.00	20.00	14.00	1.50
WING A - A-1	26.00	933.00	7.19	3.17	8.90	4.88	6.51	10.01	16.00	10.00	1.00
WING A - A-2	30.00	938.00	6.93	4.04	9.24	6.35	7.00	11.00	16.00	10.00	1.00
WING B - B-1	30.00	933.00	6.93	4.04	9.24	6.35	7.00	11.00	16.00	10.00	1.00
WING B - B-2	32.00	938.00	6.78	4.52	9.43	7.17	7.24	11.48	16.00	10.00	1.00
ABUT 2 - A2-1 THRU A2-7	30.00	930.00	10.39	5.20	13.86	8.66	9.00	15.00	24.00	18.00	1.50
WING C - C-1	26.50	932.25	8.95	3.72	11.17	5.95	7.46	11.92	20.00	14.00	1.25
WING C - C-2	33.50	936.25	8.34	5.64	11.99	9.29	8.52	14.04	20.00	14.00	1.25
WING C - C-3	33.00	941.25	8.39	5.49	11.92	9.02	8.45	13.89	20.00	14.00	1.25
WING D - D-1	28.00	932.00	8.83	4.09	11.33	6.59	7.69	12.39	20.00	14.00	1.25
WING D - D-2	28.50	937.00	8.79	4.22	11.38	6.81	7.77	12.54	20.00	14.00	1.25
WING D - D-3	26.00	943.00	8.99	3.60	11.13	5.74	7.38	11.77	20.00	14.00	1.25

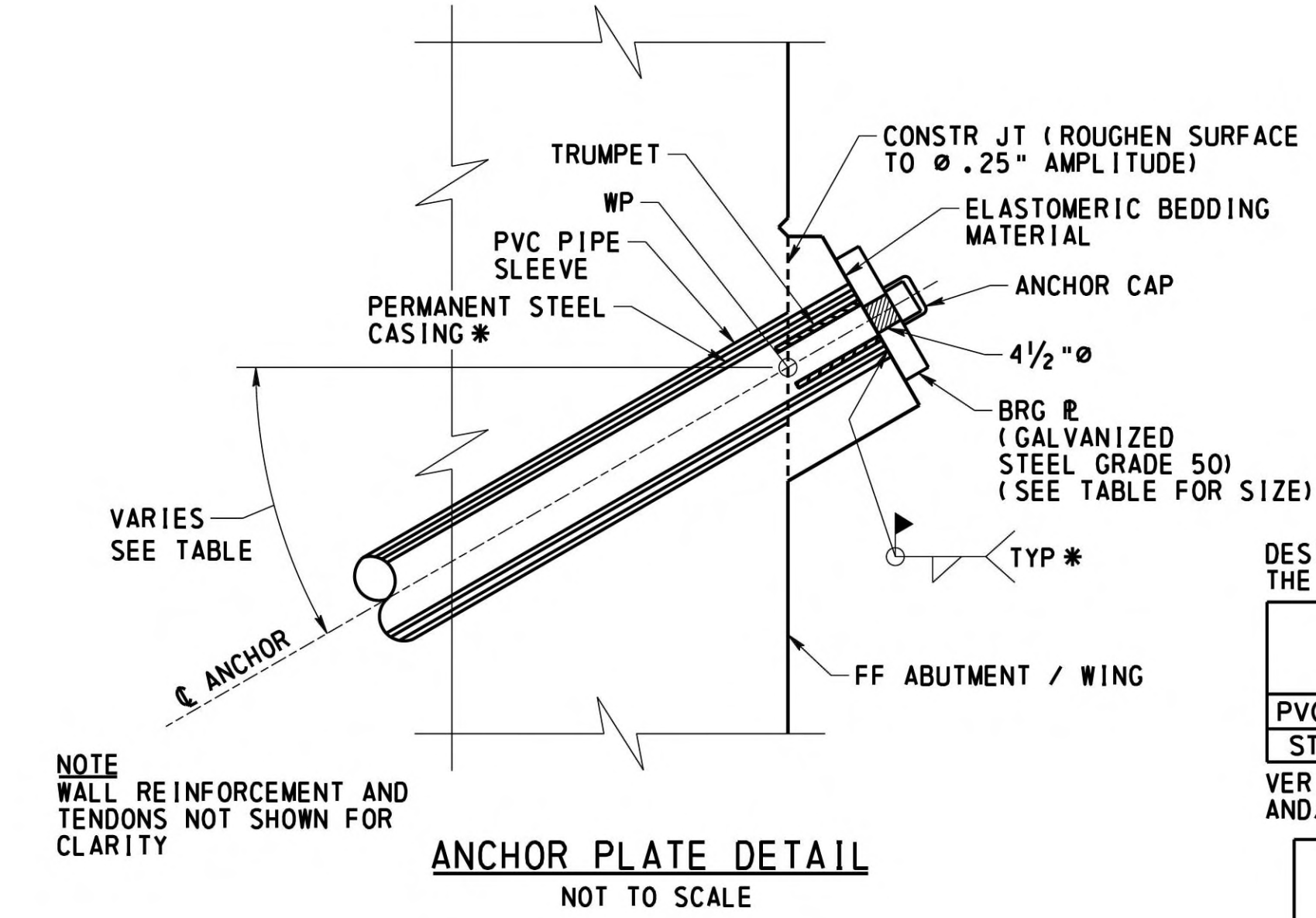


**LATENT ROCK ANCHOR DETAIL**  
(ABUT 1, ABUT 2, WINGS A THRU D)  
NOT TO SCALE



**LATENT ANCHOR CONSTRUCTION PROCEDURE**

1. THE GEOTECHNICAL REPRESENTATIVE IS TO BE PRESENT DURING THE CONSTRUCTION OF THE LATENT ANCHOR AND SHALL APPROVE THE BOND ZONE IN THE FIELD.
2. PLACE STRUCTURE BACKFILL TO 2'-0" ABOVE THE ANCHOR DESIGN ELEVATION, THEN INSTALL THE ANCHOR.
3. DRILL THROUGH WALL SLEEVE, STRUCTURE BACKFILL EXISTING ABUTMENT OR WINGWALL, EXISTING FILL MATERIAL AND INTO THE BEDROCK FOR THE REQUIRED STEEL CASING EMBEDMENT LENGTH. NO CLAYSTONE, SOIL SEAM, OR WEAK ROCK SEAM IS TO BE INCLUDED IN THE DRILL ANCHOR/PERMANENT STEEL CASING BAND LENGTH. HOLE MUST BE OF SUFFICIENT DIAMETER TO ACCEPT ALL COMPONENTS AND PROVIDE SPECIFIED COVER.
4. FILL HOLE WITH SUFFICIENT GROUT AND PLUNGE CASING TO THE FULL DEPTH OF EMBEDMENT LENGTH TO ENSURE FULL GROUTING OF ANNULAR SPACE BETWEEN PERMANENT STEEL CASING AND BEDROCK.
5. AFTER SUFFICIENT CURE OF THE GROUT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1000 PSI AND A MINIMUM OF 16 HOURS, DRILL ANCHOR BOND LENGTH, INSTALL ANCHOR, AND PRESSURE GROUT THE BOND LENGTH.
6. INSTALL HOT DIPPED GALVANIZED BEARING PLATE, FIELD WELD THE PLATE TO THE STEEL CASING, AND FIELD GALVANIZE. CLEAN AND FIELD GALVANIZE THE EXPOSED END OF CASING.
7. PRIOR TO TESTING THE ANCHORS, WEDGE THE STEEL CASING IN THE HOLE THROUGH THE WALL TO FIRMLY SECURE IT. AFTER ANCHOR BOND GROUT HAS CURED, PERFORM LOAD TESTS AND PROOF TESTS ON THE ANCHORS AND LOCK OFF LOAD TO THE DESIGN LOAD IN ACCORDANCE WITH THE SPECIAL PROVISIONS. JACK AGAINST BEARING PLATE. DO NOT APPLY JACKING LOADS TO THE WALL.
8. GROUT THE STEEL CASING UNTIL GROUT EMERGES FROM END OF CASING. GROUT ANNULAR SPACE BETWEEN CASING AND THE WALL SLEEVE.
9. CONSTRUCT ANCHOR CORBELS. ENSURE FULL CONSOLIDATION OF CONCRETE BEHIND BEARING PLATE.
10. CUT EXCESS TENDON LENGTH. INSTALL GREASE FILLED GALVANIZED CAP, AND CAULK JOINT BETWEEN BEARING PLATE AND CONCRETE ON ALL SIDES WITH APPROVED ELASTOMERIC CAULKING COMPOUND.
11. OTHER METHODS OF CONSTRUCTION MAY BE CONSIDERED WITH APPROVAL OF THE CHIEF BRIDGE ENGINEER.



**ANCHOR PLATE DETAIL**  
NOT TO SCALE

**LEGEND**

- FF FRONT FACE
- WP WORK POINT
- \* CONTRACTOR DESIGN

DESIGN DETAILS SHOWN IN THESE PLANS ARE BASED ON USING THE FOLLOWING ELEMENTS:

	ABUT 1, ABUT 2, WINGS C AND D	WINGS A AND B
PVC PIPE SLEEVE	10" DIA	8" DIA
STEEL CASING	8" DIA	6" DIA

VERIFY ADEQUACY OF DESIGN DETAILS IF DIFFERENT ELEMENT SIZES ARE PROPOSED AND/OR REVISE DESIGN DETAILS AS REQUIRED FOR THE REVISED ELEMENT SIZES

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS:31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

LOCATION ANCHOR NO.	ANCHOR HEAD ELEVATION	ANCHOR LOADS AND ANGLES			
		ANGLE DEGREES	STRENGTH KIPS	SERVICE KIPS	EXTREME EVENT KIPS
ABUT 1 - A1-1 THRU A1-5	928.00	30.00	282.42	195.11	220.84
WING A - A-1	933.00	26.00	54.87	37.75	68.81
WING A - A-2	938.00	30.00	65.43	45.82	75.15
WING B - B-1	933.00	30.00	52.31	35.26	71.85
WING B - B-2	938.00	32.00	99.94	67.73	89.84
ABUT 2 - A2-1 THRU A2-7	930.00	30.00	342.93	229.60	403.96
WING C - C-1	932.25	26.50	180.01	117.57	176.28
WING C - C-2	936.25	33.50	169.46	108.56	253.42
WING C - C-3	941.25	33.00	222.95	143.64	210.00
WING D1 - D-1	932.00	28.00	225.06	148.64	202.53
WING D1 - D-2	937.00	28.50	164.13	108.35	232.49
WING D1 - D-3	943.00	26.00	189.65	123.75	174.91



WESTMORELAND COUNTY  
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WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

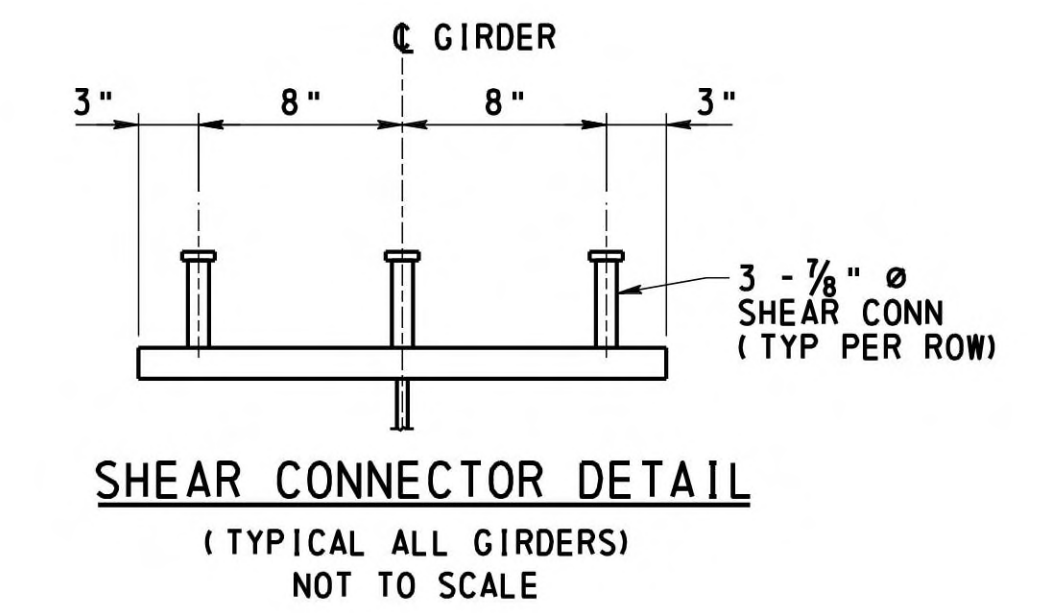
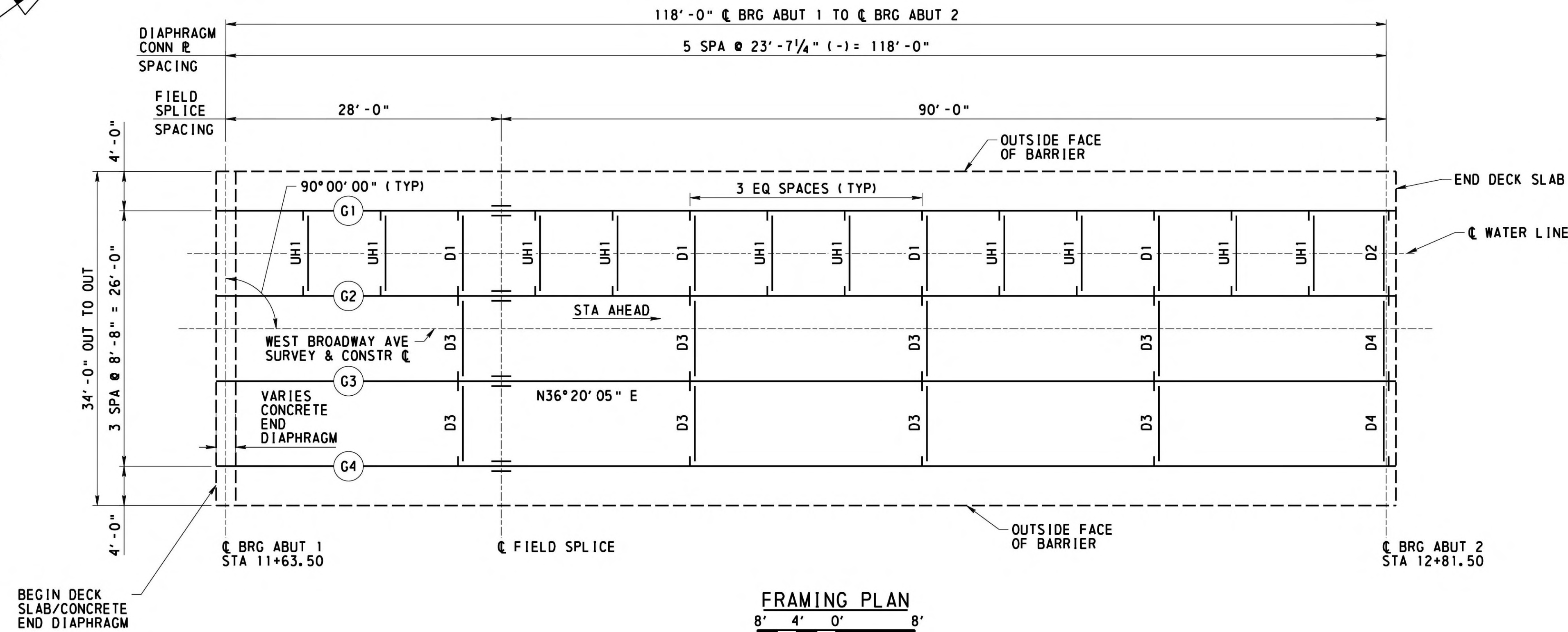
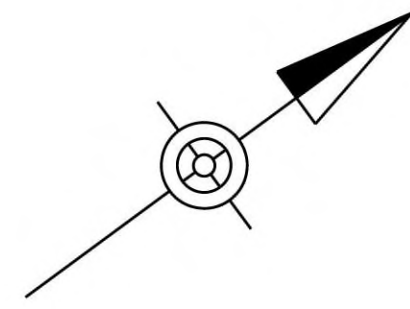
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
LATENT ANCHOR DETAILS

DESIGNED BY	KAM
DRAWN BY	TMK
CHECKED BY	KAM

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 29 OF 50

L - 645

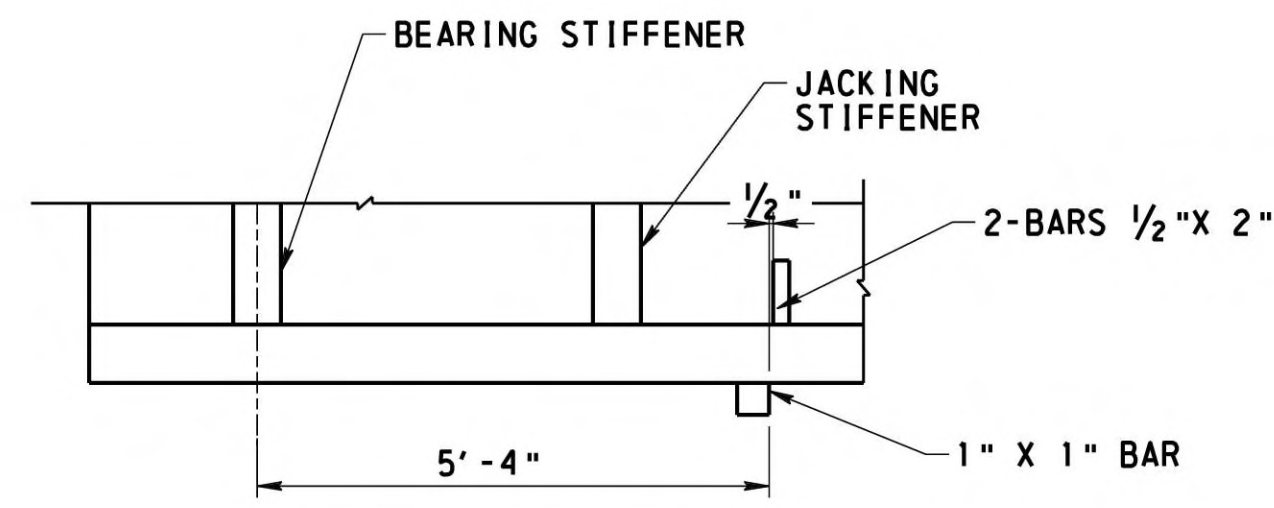
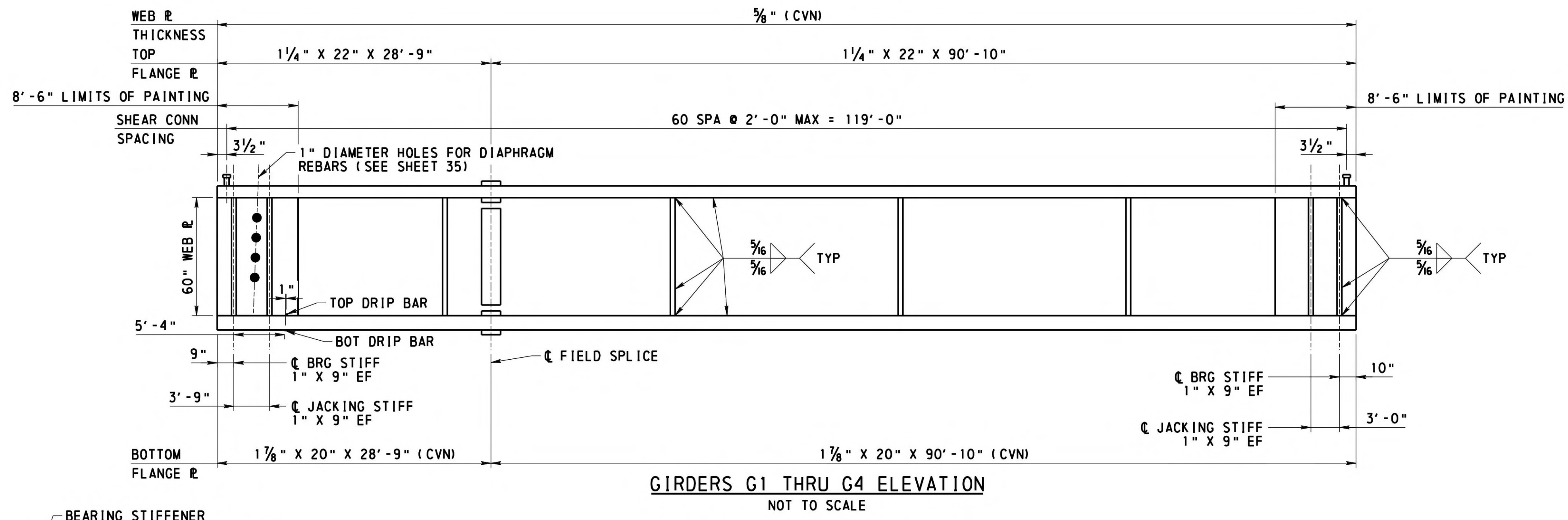


**NOTES**

- FOR GENERAL NOTES SEE SHEETS 3
- FOR BEARING DETAILS SEE SHEET 34
- FOR FIELD SPLICE DETAILS SEE SHEET 31
- FOR DIAPHRAGM DETAILS SEE SHEET 32
- FOR UTILITY HANGER DETAILS SEE SHEET
- FOR CAMBER DETAILS & GIRDER REACTIONS SEE SHEET 33
- FOR GIRDER SECTION PROPERTIES SEE SHEET 33
- FOR CONCRETE END DIAPHRAGM ABUTMENT 1 SEE SHEET 35
- ALL GIRDER MEASUREMENTS ARE HORIZONTAL AND ARE MEASURED ALONG C GIRDER
- FOR BEARING STIFFENER, CONNECTION PLATE, SHEAR CONNECTOR, DRIP BAR DETAILS, AND ADDITIONAL STEEL GIRDER DETAILS SEE STANDARD DRAWING BC-753M
- FOR JACKING STIFFENERS FOLLOW PROCEDURE FOR BEARING STIFFENERS IN STANDARD DRAWING BC-753M
- ALL STIFFENER AND CONNECTION PLATES ARE MEASURED TO C PLATE
- ALL STEEL AASHTO M270 GRADE 50W (ASTM A709 GRADE 50W)
- PERFORM CHARPY V-NOTCH TESTS IN ACCORDANCE WITH SECTION 1105.02(d) 5
- INSTALL SHEAR CONNECTIONS IN THE FIELD AFTER INSTALLING DECK FORMS

**LEGEND**

- (G1) GIRDER NUMBER
- CVN CHARPY V-NOTCH
- EF EACH FACE
- D1 DIAPHRAGM MARK
- RF REAR FACE



**STEEL NOTES**

1. WELD BEARING STIFFENERS AT TOP AND BOTTOM WHEN THE BEARING STIFFENER IS USED AS CONNECTION PLATE.
2. UNDER FULL DEAD LOAD, BEAM ENDS AND ALL BEARING STIFFENERS, JACKING STIFFENERS, CONNECTION PLATES AND UTILITY SUPPORT HANGER CONNECTION ANGLES ARE VERTICAL TO WITHIN APPLICABLE AASHTO/AWS FABRICATION AND CONSTRUCTION TOLERANCES.
3. DIRECTION OF WELDS IS NOT APPLICABLE IF STIFFENERS ARE FITTED WITH TACK WELDS.
4. FILLET WELD BEARING STIFFENERS OVER END SUPPORTS.
5. BEARING AREAS: PROVIDE BOTTOM FLANGE IN A TRUE HORIZONTAL PLANE IN TRANSVERSE DIRECTION AND IN A TRUE PLANE LONGITUDINALLY OVER DIMENSION "L", WHERE L = WIDTH OF SOLE PLATE + 6" AHEAD AND BACK, WHERE APPLICABLE. IF THE SOLE PLATE IS WELDED TO THE BOTTOM FLANGE PROVIDE THE SOLE PLATE MEETING THE SAME FLATNESS REQUIREMENTS. EACH BEARING MUST BE STRESSED UNIFORMLY AFTER ALL DEAD LOAD IS PLACED. MAKE NECESSARY SHOP AND/OR FIELD ADJUSTMENTS TO PROVIDE UNIFORM BEARING STRESS UNDER ALL DEAD LOADS.
6. SEE STANDARD DRAWING BC-753M FOR THE BEARING STIFFENER AND CONNECTION PLATE INSTALLATION DETAILS.
7. USE ASTM F3125 GRADE A325 TYPE 3 BOLTS, EXCLUDE THREADS FROM SHEAR PLANE.
8. USE STANDARD DIAMETER HOLES IN BEARING STIFFENERS AND CONNECTION PLATES. USE 1 1/16" DIAMETER HOLES IN GUSSET PLATES OR DIAPHRAGM MEMBERS.

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

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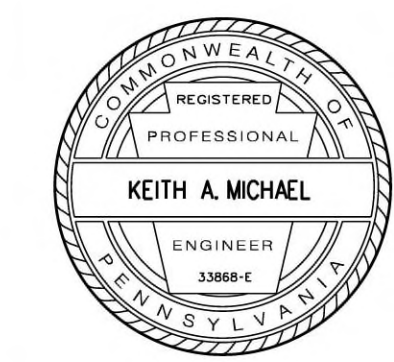
WESTMORELAND COUNTY  
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WEST BROADWAY AVENUE STA. 12+22.50  
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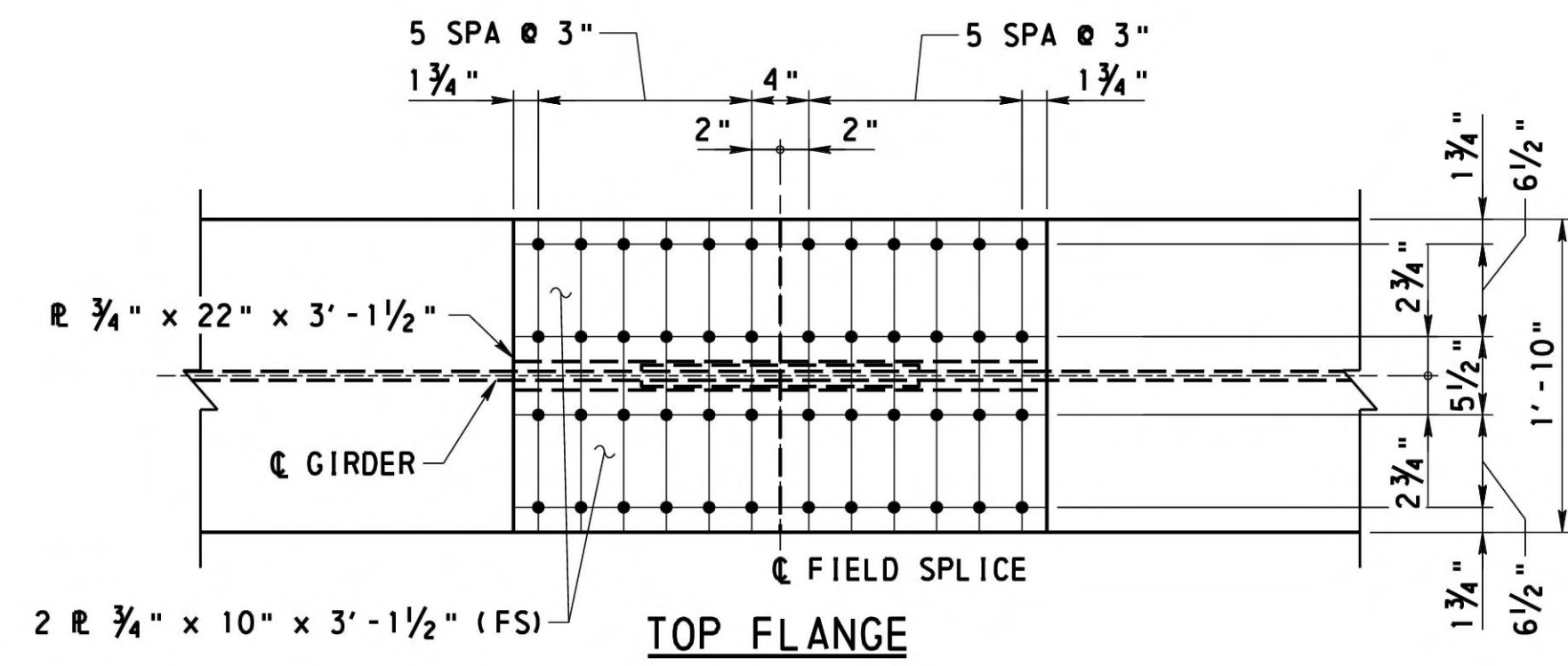
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
FRAMING PLAN AND GIRDER ELEVATION

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 30 OF 50

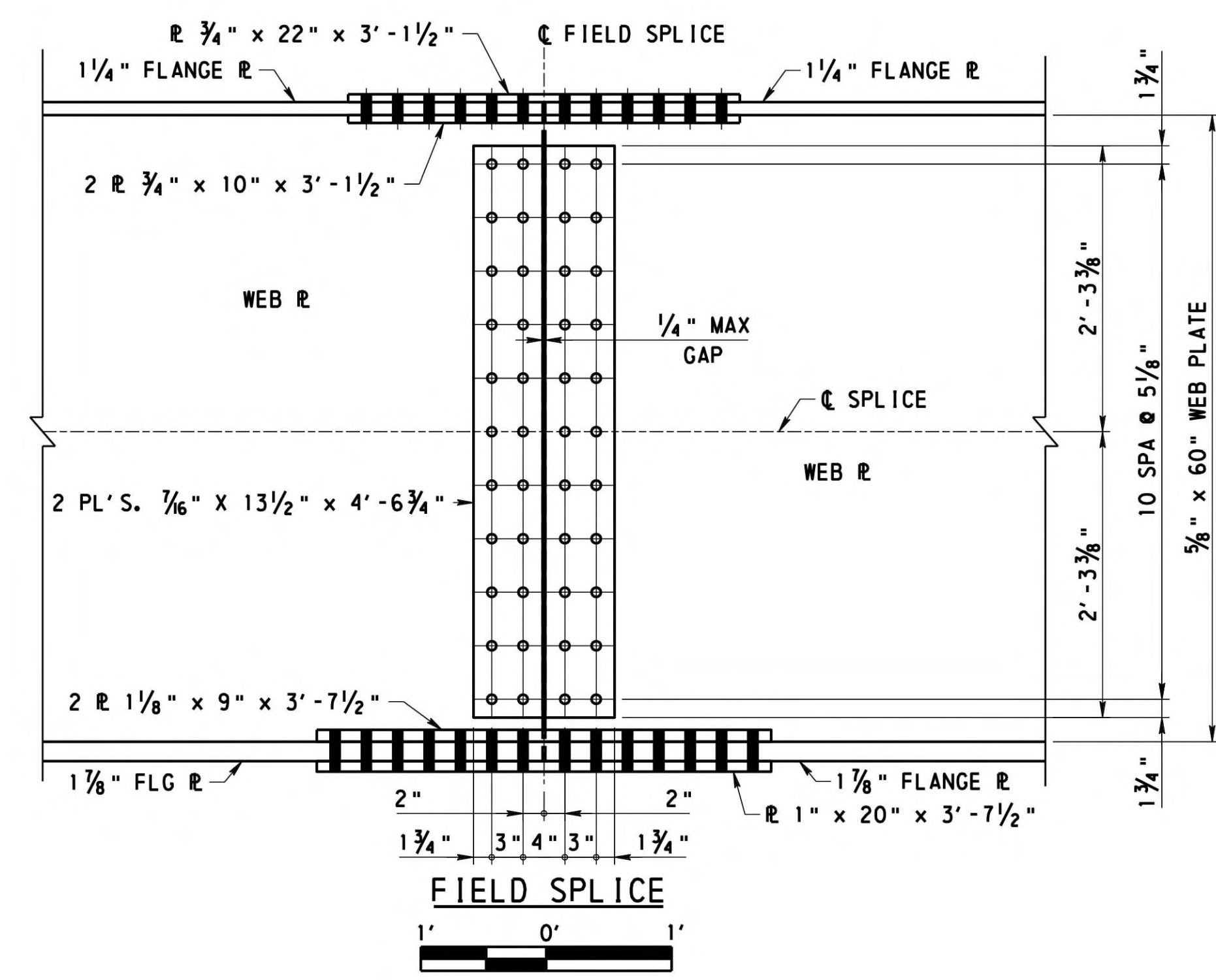
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DESIGNED BY	SRE
DRAWN BY	TMK
CHECKED BY	CHB

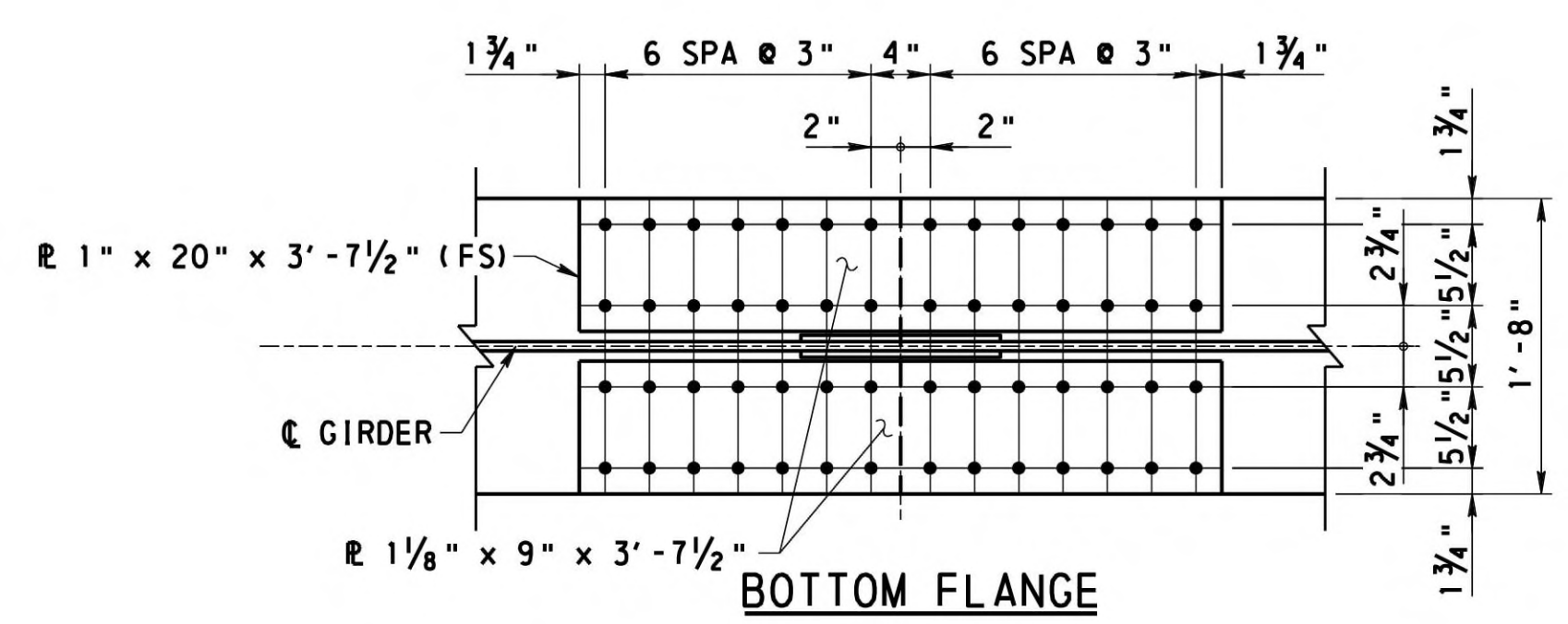




TOP FLANGE



FIELD SPLICE



BOTTOM FLANGE

**NOTES**

- FOR FIELD SPLICE LOCATIONS SEE FRAMING PLAN AND GIRDER ELEVATION SHEET.
- ALL SPLICE PLATES CONFORMING TO AASHTO M270 GRADE 50W (ASTM A 709 GRADE 50W) UNLESS OTHERWISE NOTED.
- ALL HOLES 1/16" Ø FOR 7/16" Ø A325 HS BOLTS TYPE 3, EXCLUDE THREADS FROM SHEAR PLANE.
- PROVIDE CLASS B SLIP SURFACE CONDITION FOR ALL FIELD SPLICES.
- ALL SPLICE PLATES TO CONFORM TO CHARPY V-NOTCH REQUIREMENTS.
- BLAST CLEAN THE FAYING SURFACES OF SPLICES AND CONNECTIONS IN ACCORDANCE WITH SECTION 1060.3(b) 3. REBLAST UNPAINTED ELEMENTS THAT REMAIN UNASSEMBLED FOR A PERIOD OF 12 MONTHS OR MORE FOLLOWING THE INITIAL CLEANING, BLAST CLEAN HIGH STRENGTH BOLTED CONNECTIONS IN ACCORDANCE WITH SSPC-SP-10.
- PLACE NUTS ON INSIDE FACE OF WEB SPLICE PLATES AT THE FASCIA GIRDERS. PLACE THE NUTS ON THE INSIDE FACE OF ALL FLANGE SPLICE PLATES.

**LEGEND**

FS FAR SIDE

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS:31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

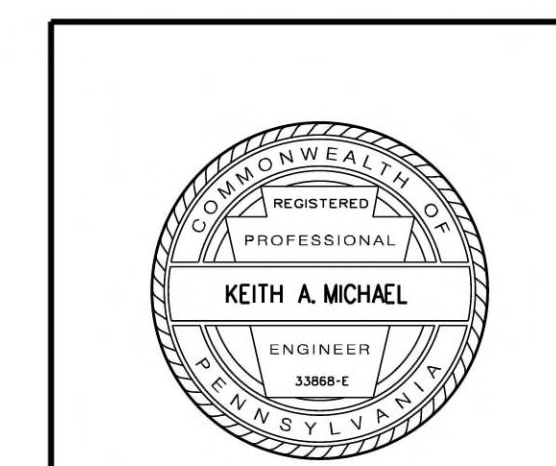
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
GIRDER FIELD SPLICE MISC DETAILS

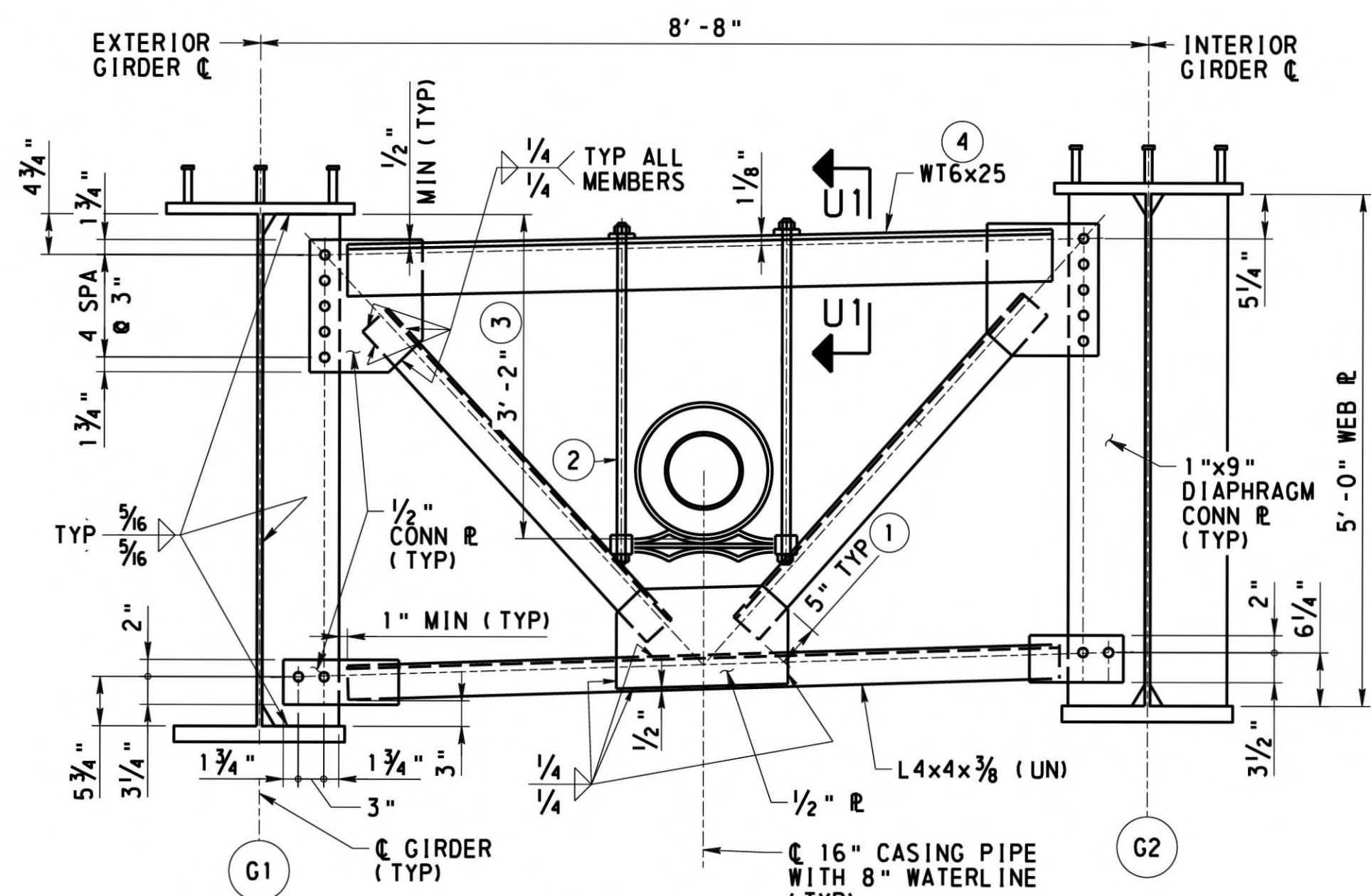
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 31 OF 50

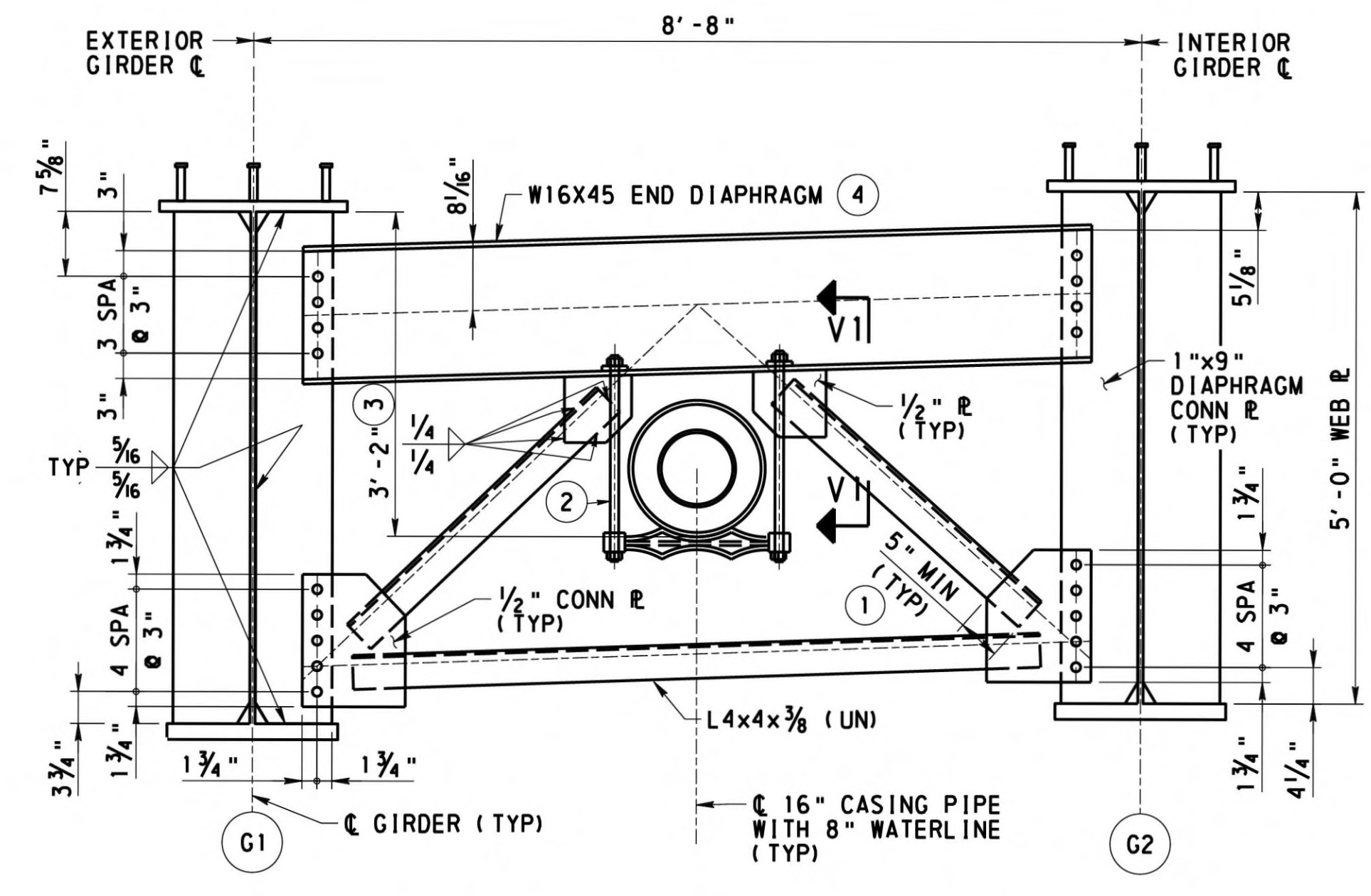
L - 645



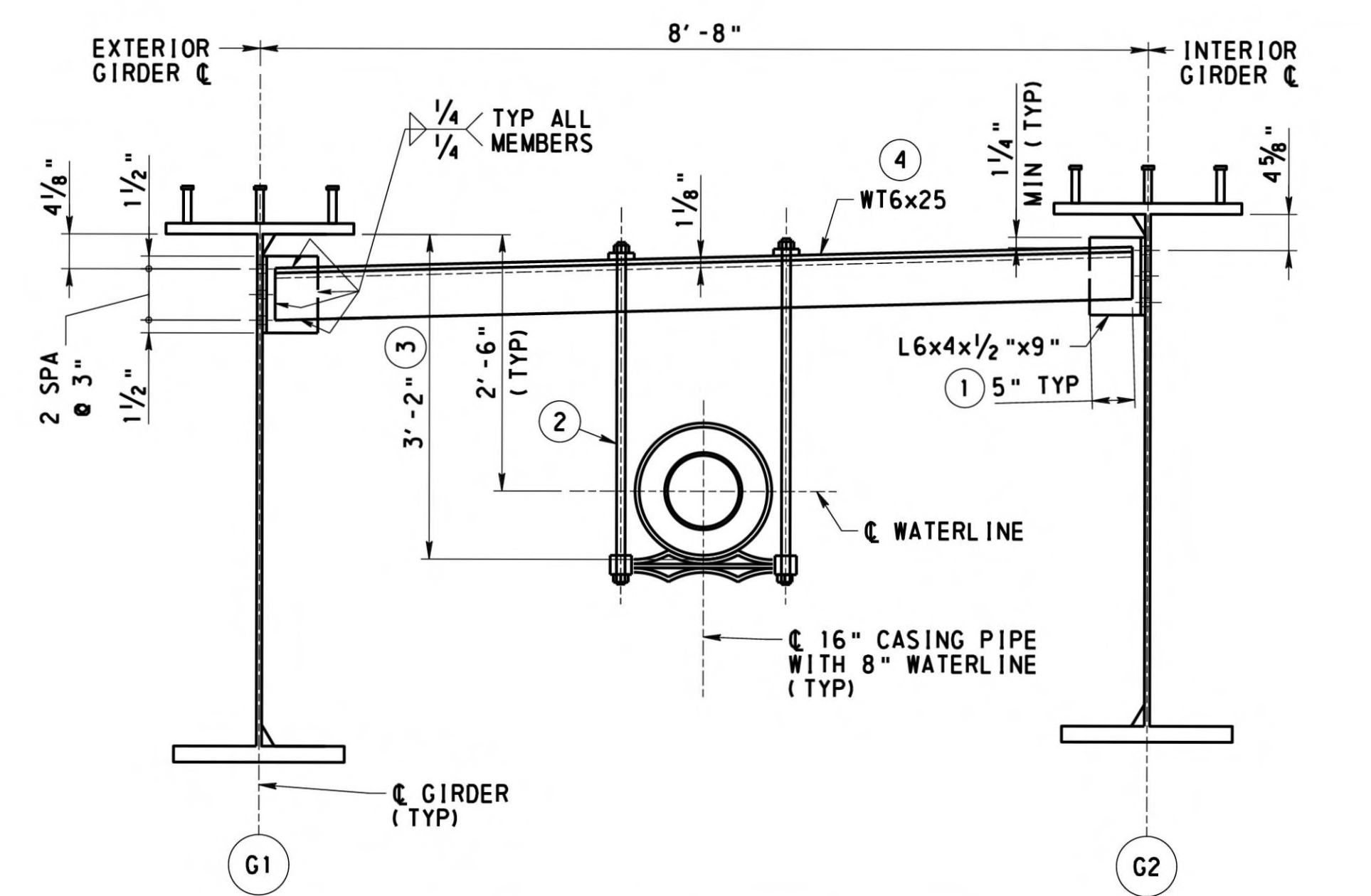
DESIGNED BY	SRE
DRAWN BY	SRE
CHECKED BY	KAM



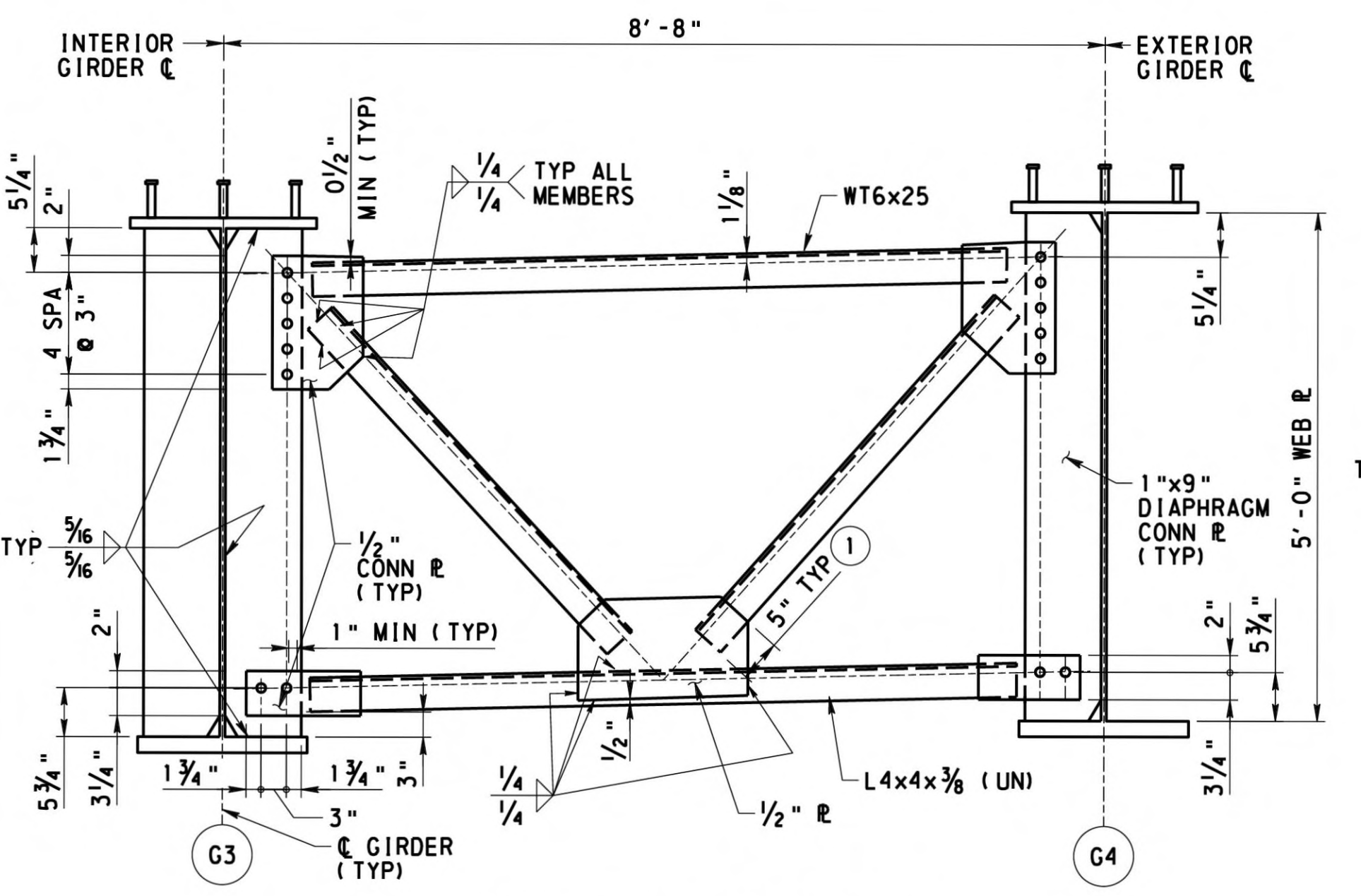
**DIAPHRAGM D1 - BAY 1**  
(LOOKING STA AHEAD)  
2' 1' 0' 2'



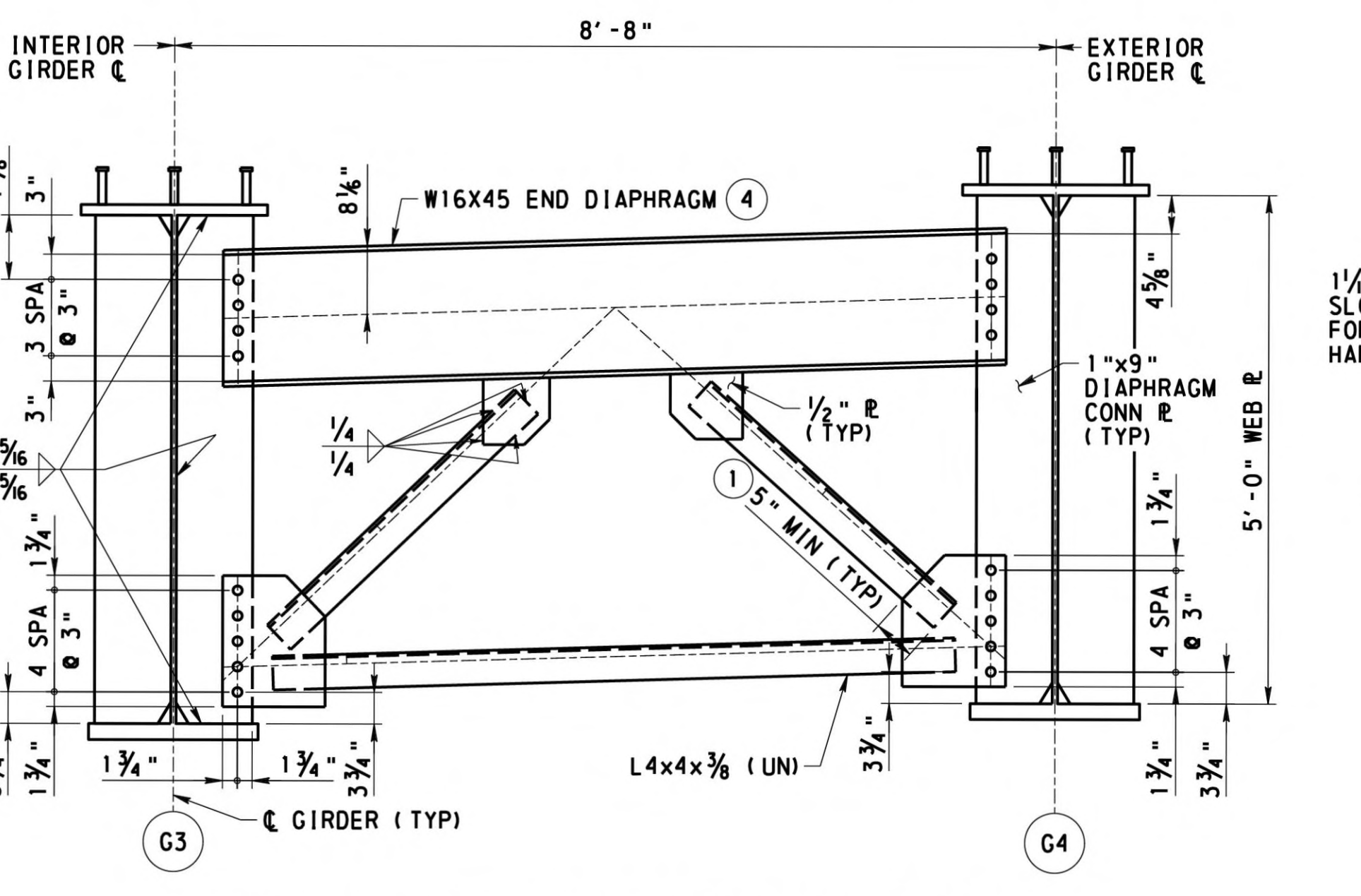
**DIAPHRAGM D2 AT ABUTMENT 2 - BAY 1**  
(LOOKING STA AHEAD)  
2' 1' 0' 2'



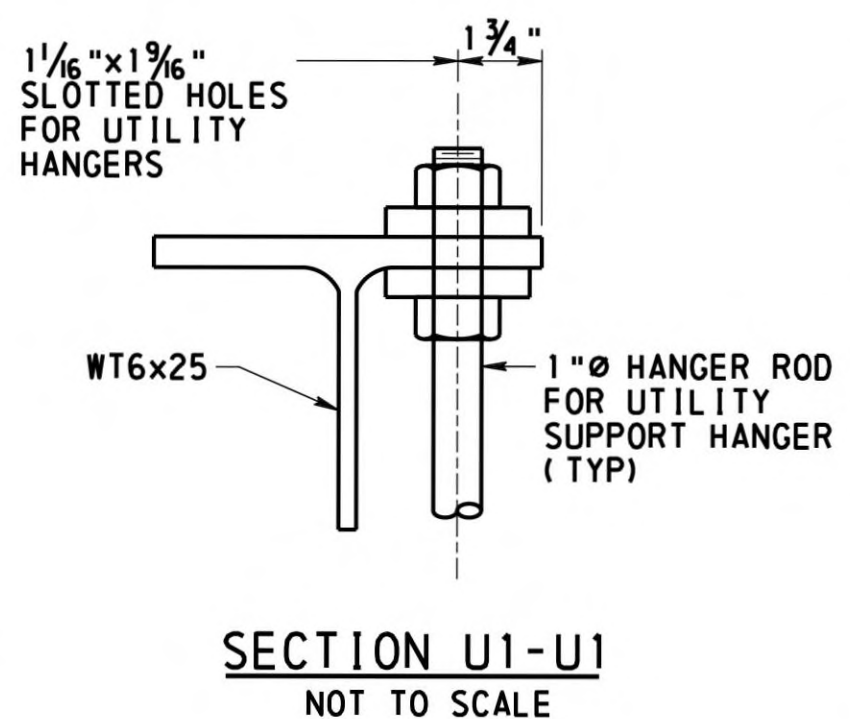
**TYPICAL UTILITY SUPPORT HANGER UH1 - BAY 1**  
(LOOKING STA AHEAD)  
2' 1' 0' 2'



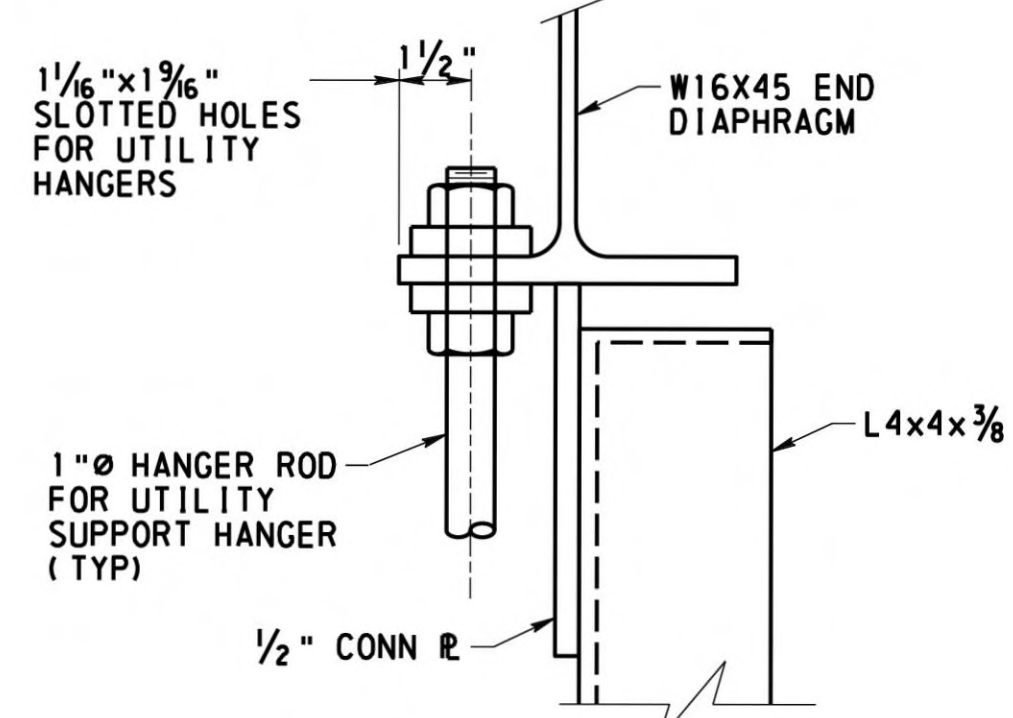
**DIAPHRAGM D3 - BAYS 2 & 3**  
(LOOKING STA AHEAD)  
2' 1' 0' 2'



**DIAPHRAGM D4 AT ABUTMENT 2 - BAYS 2 & 3**  
(LOOKING STA AHEAD)  
2' 1' 0' 2'



**SECTION U1-U1**  
NOT TO SCALE



**SECTION V1-V1**  
NOT TO SCALE

**NOTES**

- ① 4" MIN WELD LENGTH, TERMINATE WELDS 1/2" SHORT OF EDGE AT EACH END OF EACH WELD (TYP ALL MEMBERS)
- ② BAY 1 ONLY, (1) 16"Ø CASING PIPE AND (1) 8"Ø WATER LINE SUPPORTED BY UTILITY SUPPORT HANGERS. CONTRACTOR TO COORDINATE WITH MAWC FOR PREPARATION OF STEEL SHOP DRAWINGS BASED ON SELECTED PIPE ROLLERS. FOR ADDITIONAL INFORMATION SEE UTILITY INSTALLATION NOTES
- ③ TO 16" CASING PIPE INVERT
- ④ PROVIDE 1 1/8" x 1 9/16" SLOTTED HOLES IN WT AND W SECTIONS FOR HANGER RODS. COORDINATE WITH UTILITY COMPANY
- FOR FRAMING PLAN SEE SHEET 30
- FOR TYPICAL DECK SECTION SEE SHEET 37
- FOR BEARING STIFFENER AND CONNECTION PLATE INSTALLATION DETAILS SEE STANDARD DRAWING BC-754M
- 1 5/16" Ø HOLES IN CONNECTION PLATES AND CONNECTION ANGLES. 1 1/8" Ø HOLES IN BEARING STIFFENERS AND DIAPHRAGM CONNECTION PLATES FOR 7/8" Ø ASTM A325 HS BOLTS. THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE
- STRUCTURAL STEEL FOR DIAPHRAGMS TO CONFORM TO ASTM A709, GRADE 50W, WEATHERING STEEL

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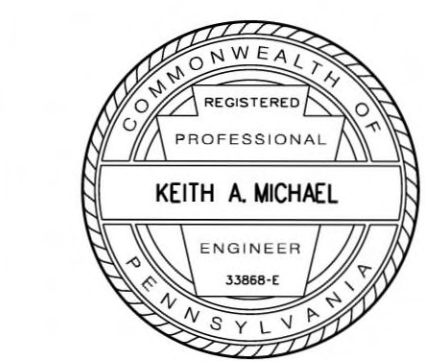
**UTILITY INSTALLATION NOTES**

- ROLLER HANGER ASSEMBLIES (INCLUDING THE STRUCTURAL WT'S, CONNECTION ANGLES, PIPE ROLLERS, HANGER RODS, AND NUTS) WILL BE FURNISHED AND INSTALLED BY THE BRIDGE CONTRACTOR.
- BRIDGE CONTRACTOR TO DIG PIT WITH GRADE RAMP TO ACCOMMODATE INSTALLATION OF 8" WATERLINE. MINIMUM PIT LENGTH IS AS INDICATED ON THE MAWC PROPOSED WATERLINE REPLACEMENT PLANS PLUS THE LENGTH OF THE GRADED ACCESS RAMP.
- MAWC WILL SUPPLY & INSTALL THE 8" WATERLINE. BRIDGE CONTRACTOR TO FURNISH AND INSTALL THE 16" CASING PIPE ACROSS THE ROLLER SUPPORT HANGERS ON THE BRIDGE AND THROUGH THE CONCRETE END DIAPHRAGM AT ABUTMENT 1 AND THE CONCRETE BACKWALL AT ABUTMENT 2. COORDINATION WITH THE BRIDGE CONTRACTOR WILL BE NECESSARY.

DESIGNED BY	SRE
DRAWN BY	SRE
CHECKED BY	KAM

**LEGEND**

UN UNLESS NOTED



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WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
DIAPHRAGM DETAILS

RECOMMENDED February 12<sup>th</sup>, 2026

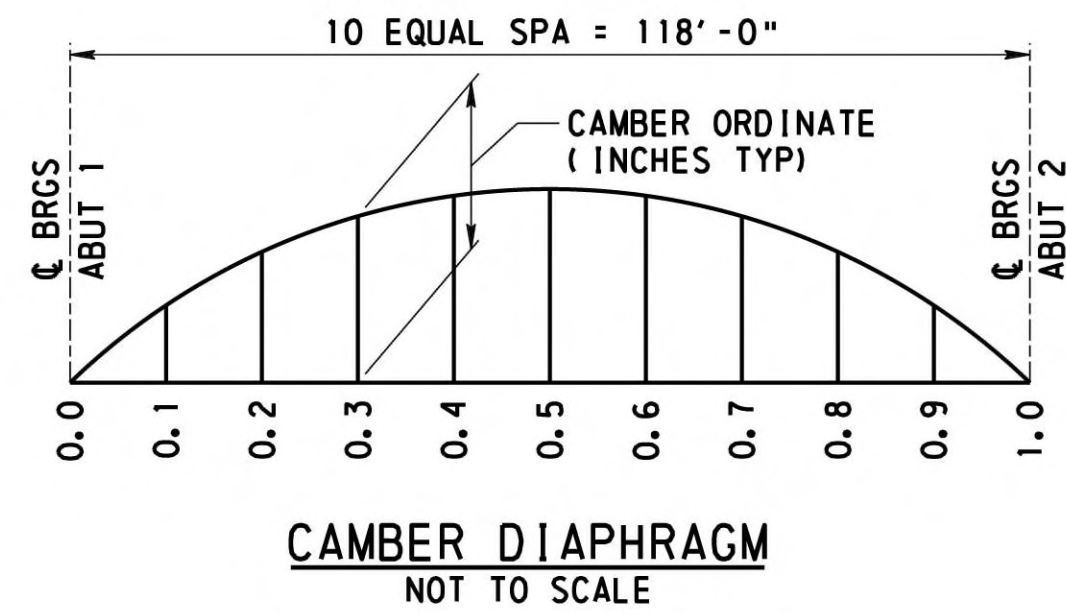
SHEET 32 OF 50

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GIRDER CAMBER ORDINATES ( INCHES )														
GIRDERS G1 & G5	TYPE OF CAMBER	SPAN 1												
		ABUT 1	0.0	0.1	0.2	F.S.	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
	STEEL	0.000	0.370	0.701	0.808	0.960	1.124	1.181	1.124	0.960	0.701	0.370	0.000	
	CONCRETE	0.000	0.695	1.316	1.514	1.801	2.109	2.215	2.109	1.801	1.316	0.695	0.000	
	SUPERIMPOSED DL	0.000	0.123	0.234	0.269	0.320	0.375	0.393	0.375	0.320	0.234	0.123	0.000	
	TOTAL	0.000	1.065	2.017	2.322	2.761	3.233	3.396	3.233	2.761	2.017	1.065	0.000	
GIRDERS G2 & G4	TYPE OF CAMBER	SPAN 1												
		ABUT 1	0.0	0.1	0.2	F.S.	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
	STEEL	0.000	0.382	0.724	0.835	0.992	1.162	1.220	1.162	0.992	0.724	0.382	0.000	
	CONCRETE	0.000	0.689	1.303	1.501	1.785	2.091	2.196	2.091	1.785	1.303	0.689	0.000	
	SUPERIMPOSED DL	0.000	0.122	0.231	0.266	0.317	0.371	0.389	0.371	0.317	0.231	0.122	0.000	
	TOTAL	0.000	1.071	2.027	2.336	2.777	3.253	3.416	3.253	2.777	2.027	1.071	0.000	

**NOTES**

- STEEL CAMBER INCLUDES GIRDER SELF WEIGHT, DIAPHRAGMS, UTILITIES AND MISCELLANEOUS STEEL DETAILS
- SUPERIMPOSED DL CAMBER INCLUDES BARRIER
- CONCRETE CAMBER INCLUDES DECK, HAUNCH, AND SIP FORMS
- FOR CALCULATION OF DECK FORM ELEVATIONS, SUBTRACT THE STEEL CAMBER VALUES FROM THE TOTAL CAMBER VALUE.

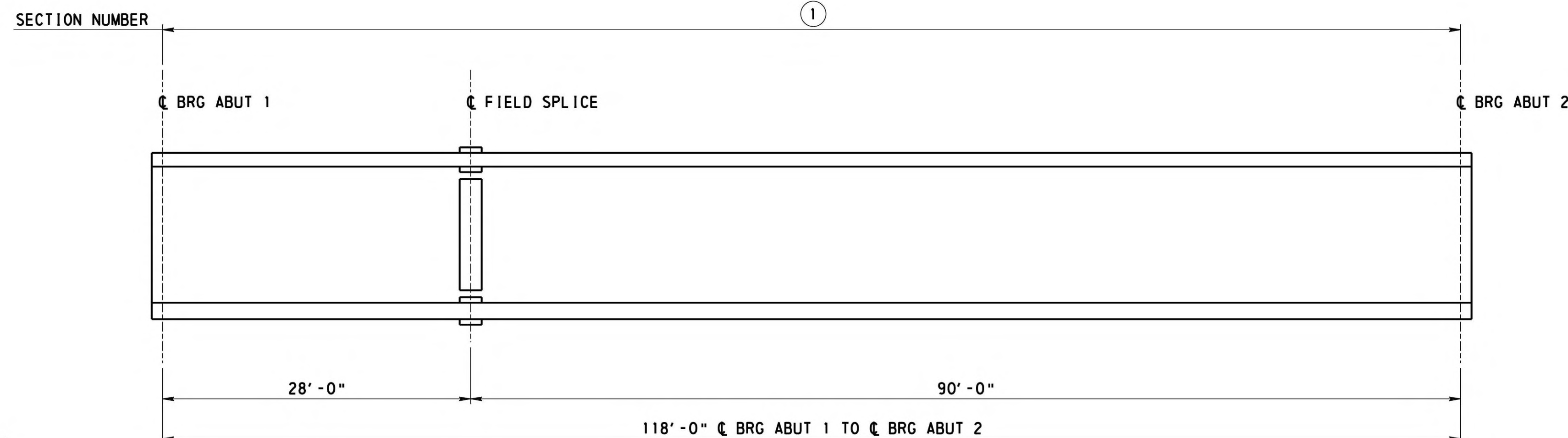


UNFACTORED GIRDER REACTIONS (KIPS)						
LOCATION		DC1	DC2	FWS	MAX LL + I	MIN LL + I
GIRDERS G1 & G4	ABUTMENT 1	96.0	16.5	14.2	96.1	0.0
	ABUTMENT 2	96.0	16.5	14.2	96.1	0.0
GIRDERS G2 & G3	ABUTMENT 1	96.6	16.5	14.2	89.6	0.0
	ABUTMENT 2	96.6	16.5	14.2	89.6	0.0

UNFACTORED JACKING REACTIONS (KIPS)						
LOCATION		(1) STEEL	(2) CONCRETE	(3) SUPER-IMPOSED DL	FWS	(4) LIVE LOAD + IMPACT
GIRDERS G1 & G5	ABUTMENT 1	33.4	62.7	16.5	14.2	116.3
	ABUTMENT 2	33.4	62.7	16.5	14.2	116.3
GIRDERS G2 - G4	ABUTMENT 1	34.5	62.1	16.5	14.2	108.4
	ABUTMENT 2	34.5	62.1	16.5	14.2	108.4

- NOTES:**
- DC1 = DEAD LOAD 1 (INCLUDES STEEL, DECK, FORMS, AND UTILITY LOAD)
  - DC2 = DEAD LOAD 2 (INCLUDES BARRIERS).
  - FWS = FUTURE WEARING SURFACE.
  - MAX LL+I = MAXIMUM LIVE LOAD REACTION DUE TO PHL-93 LOADING INCLUDING IMPACT.
  - MIN LL+I = MINIMUM LIVE LOAD REACTION DUE TO PHL-93 LOADING INCLUDING IMPACT.
  - DC1 REACTIONS DO NOT INCLUDE LOADING FROM END DIAPHRAGMS OR APPROACH SLABS.

- (1) STEEL REACTIONS INCLUDE UTILITY LOADS.
- (2) CONCRETE REACTIONS DO NOT INCLUDE LOADING FROM END DIAPHRAGMS OR APPROACH SLABS.
- (3) SUPERIMPOSED DL INCLUDES BARRIERS AND IS NOT INCLUDED FOR GIRDER G3.
- (4) LIVE LOADS SHOWN ARE FOR THE PHL-93 DESIGN VEHICLE INCLUDING IMPACT.



GIRDERS G1 THRU G4  
NOT TO SCALE

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DRAWN BY	TMK
CHECKED BY	KAM

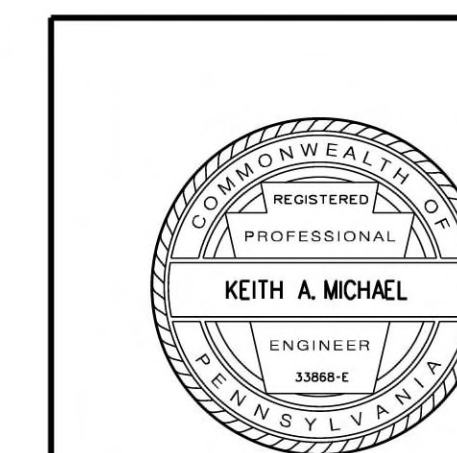
GIRDER SECTION PROPERTIES				
SECTION NUMBER		1		
SECTION LENGTH		118'-0"		
GIRDERS G1 & G4	SLAB	Ws X ts X hs	104" X 7.5" X 1.25"	
	REBAR	As ( IN2 ) X Hs†	0.584 X 4.660"	
	TOP FLANGE	bf X tf	22.00" X 1.25"	
	WEB	Dw X tw	60.00" X 0.625"	
	BOTTOM FLANGE	bf X tf	20.00" X 1.875"	
	STEEL ONLY	I ( IN4 )		71,963
		C ( IN )		28.773
		S-TOP ( IN3 )		2,095
		S-BOTT ( IN3 )		2,501
	COMPOSITE ( 3n=24 )	I ( IN4 )		106,877
C ( IN )			37.675	
S-TOP ( IN3 )			4,200	
S-BOTT ( IN3 )			2,837	
COMPOSITE ( n=8 )	I ( IN4 )		143,488	
	C ( IN )		46.975	
	S-TOP ( IN3 )		8,884	
	S-BOTT ( IN3 )		3,055	
GIRDERS G2 & G3	SLAB	Ws X ts X hs	104" X 7.5" X 1.25"	
	REBAR	As ( IN2 ) X Hs†	0.584 X 4.660"	
	TOP FLANGE	bf X tf	22.00" X 1.25"	
	WEB	Dw X tw	60.00" X 0.625"	
	BOTTOM FLANGE	bf X tf	20.00" X 1.875"	
	STEEL ONLY	I ( IN4 )		71,963
		C ( IN )		28.773
		S-TOP ( IN3 )		2,095
		S-BOTT ( IN3 )		2,501
	COMPOSITE ( 3n=24 )	I ( IN4 )		107,939
C ( IN )			37.946	
S-TOP ( IN3 )			4,287	
S-BOTT ( IN3 )			2,845	
COMPOSITE ( n=8 )	I ( IN4 )		144,963	
	C ( IN )		47.348	
	S-TOP ( IN3 )		9,188	
	S-BOTT ( IN3 )		3,062	

**NOTES**

- ALL PROPERTIES ARE IN UNITS OF INCHES UNLESS NOTED OTHERWISE.
- hs DENOTES HAUNCH THICKNESS FOR SECTION PROPERTY CALCULATION PURPOSES ONLY (MEASURED FROM TOP OF WEB).
- As DENOTES THE TOTAL AREA OF SLAB REINFORCEMENT IN THE EFFECTIVE SLAB WIDTH.
- Hs† DENOTES THE DISTANCE FROM TOP OF EFFECTIVE SLAB TO C.G. OF SLAB REINFORCEMENT.
- ts DENOTES EFFECTIVE SLAB THICKNESS (NOT INCLUDING INTEGRAL WEARING SURFACE).
- C DENOTES THE DISTANCE FROM BOTTOM OF GIRDER TO NEUTRAL AXIS.

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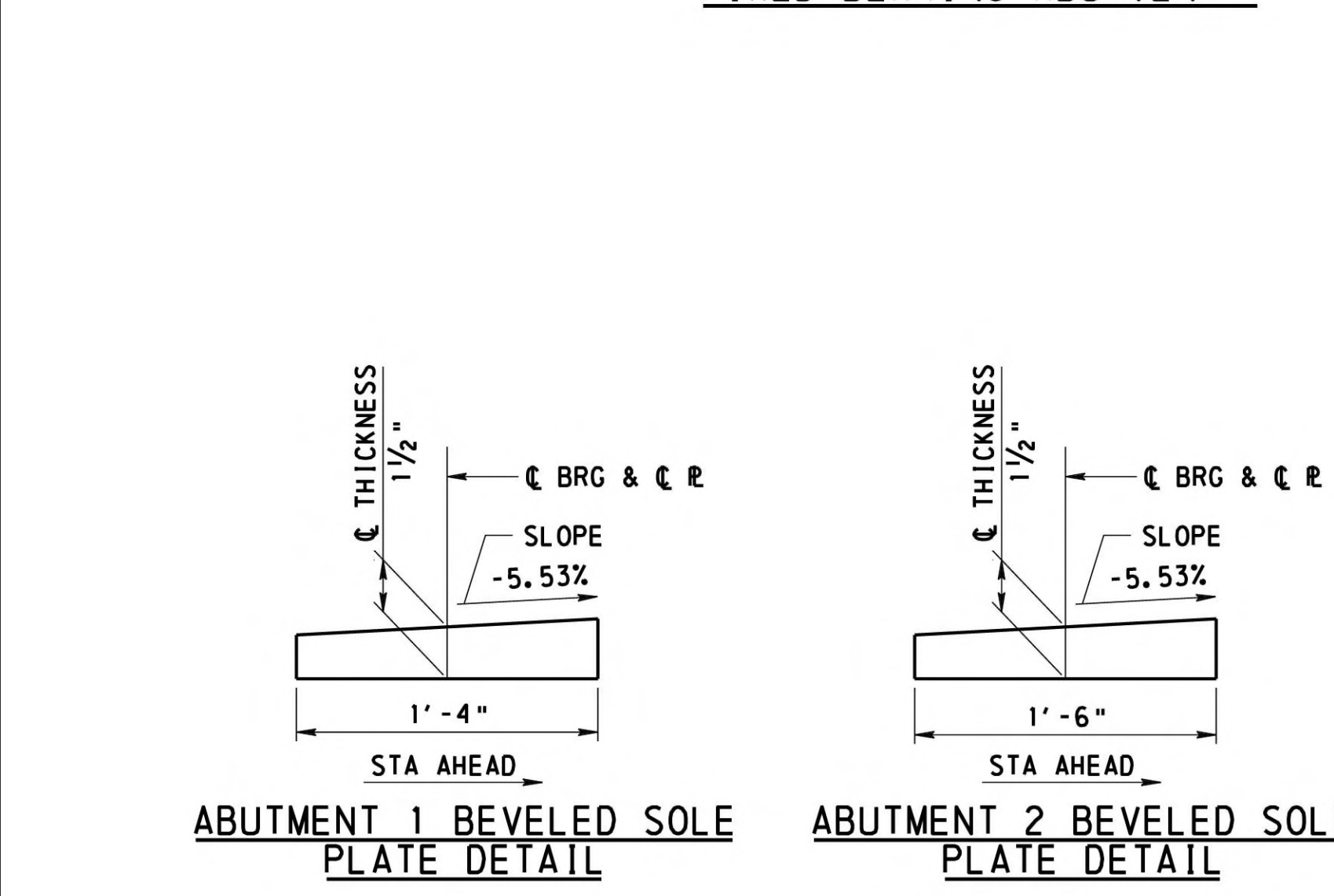
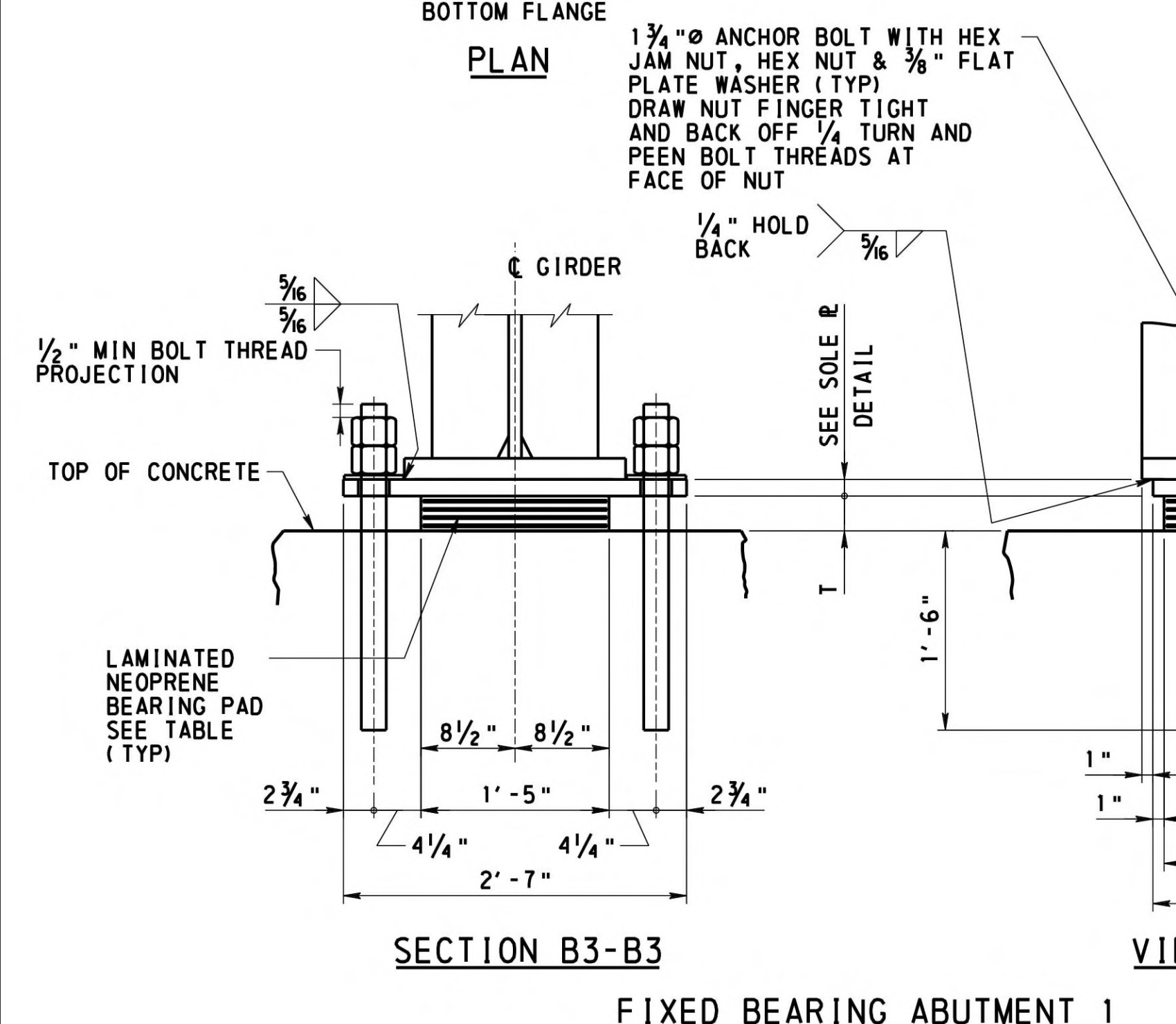
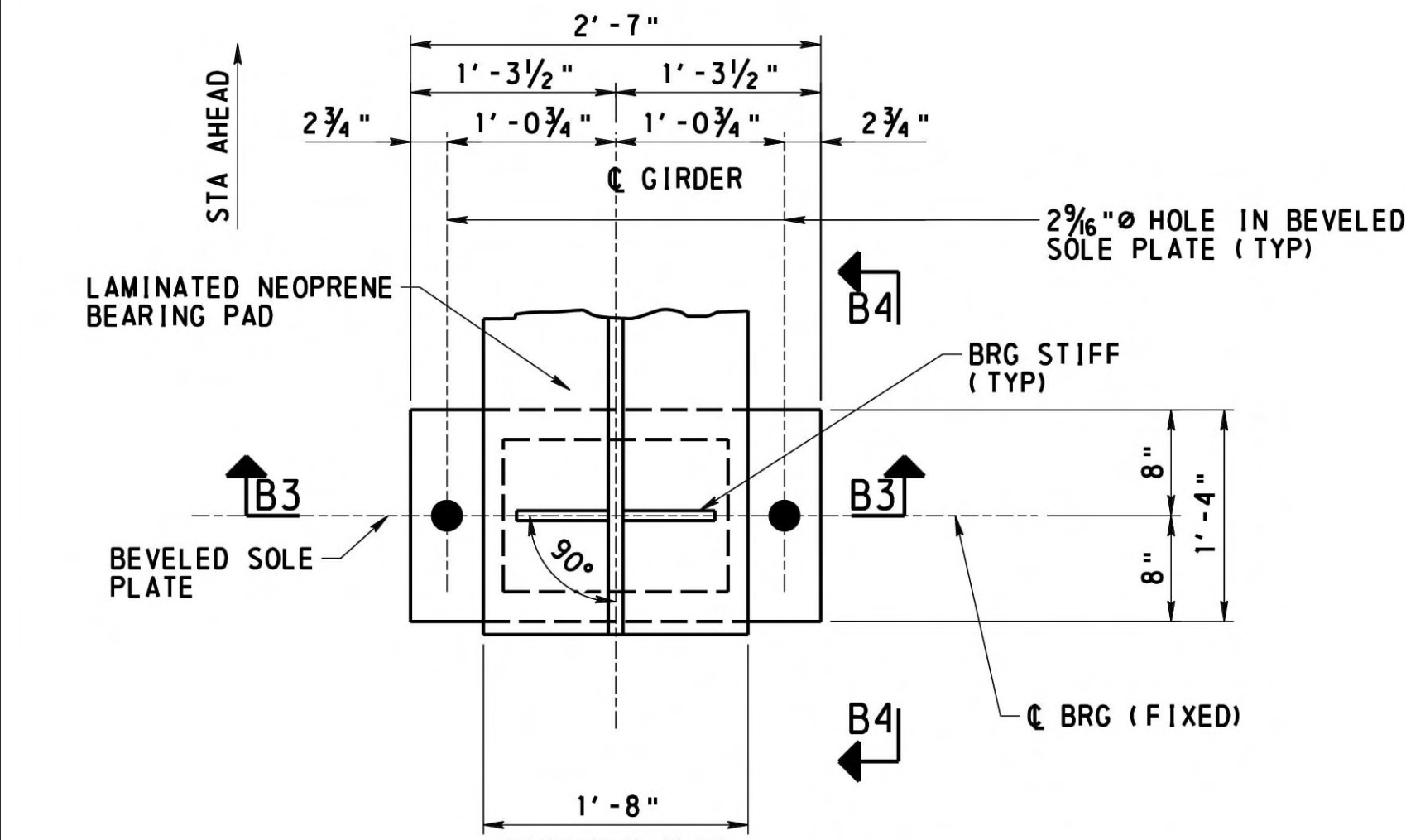
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WEST BROADWAY AVENUE STA. 12+22.50  
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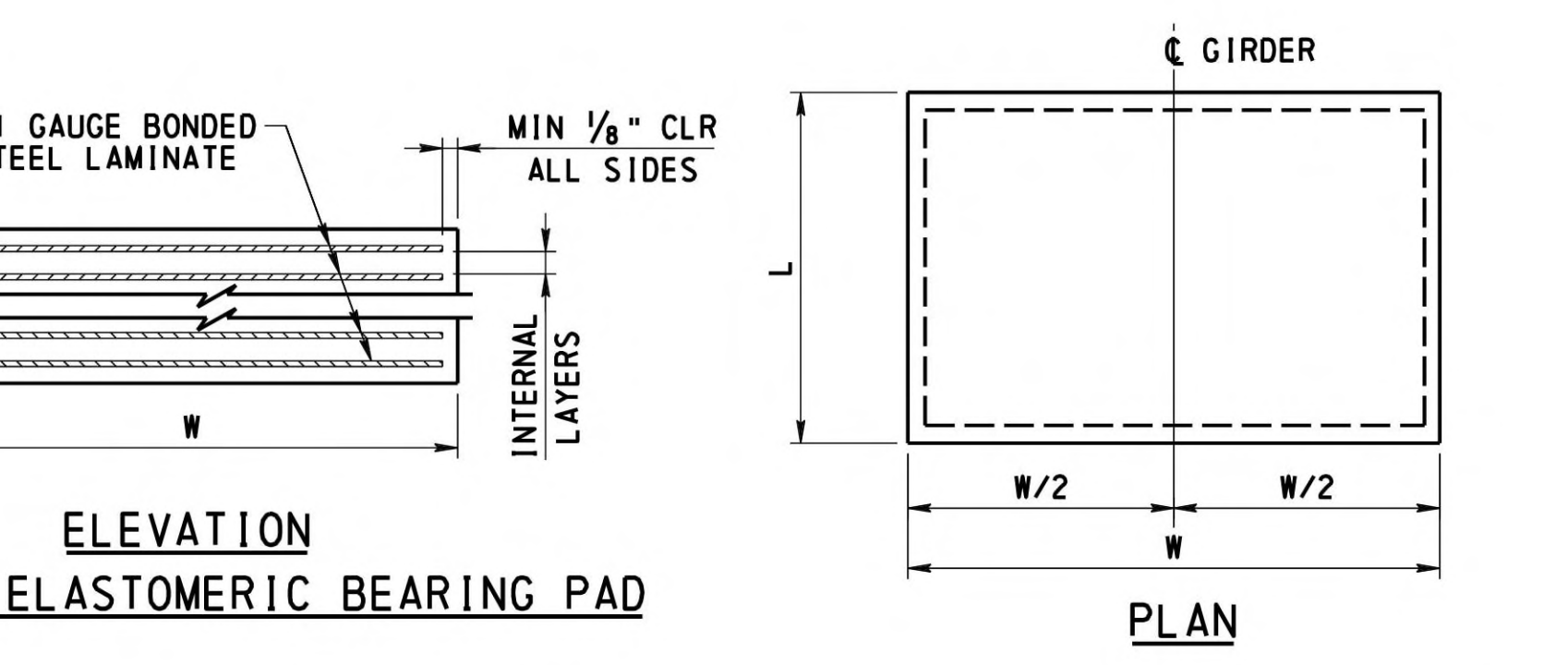
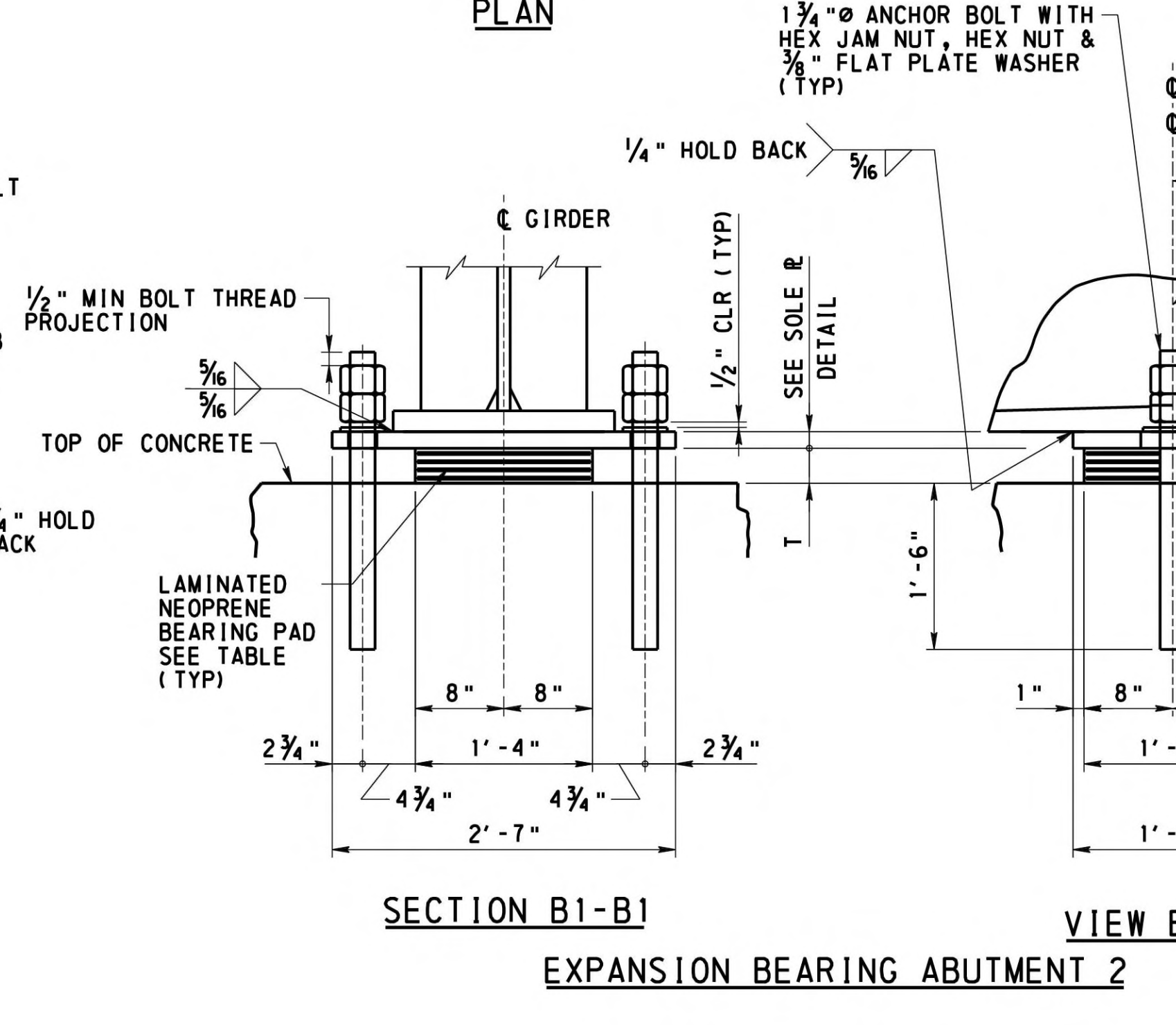
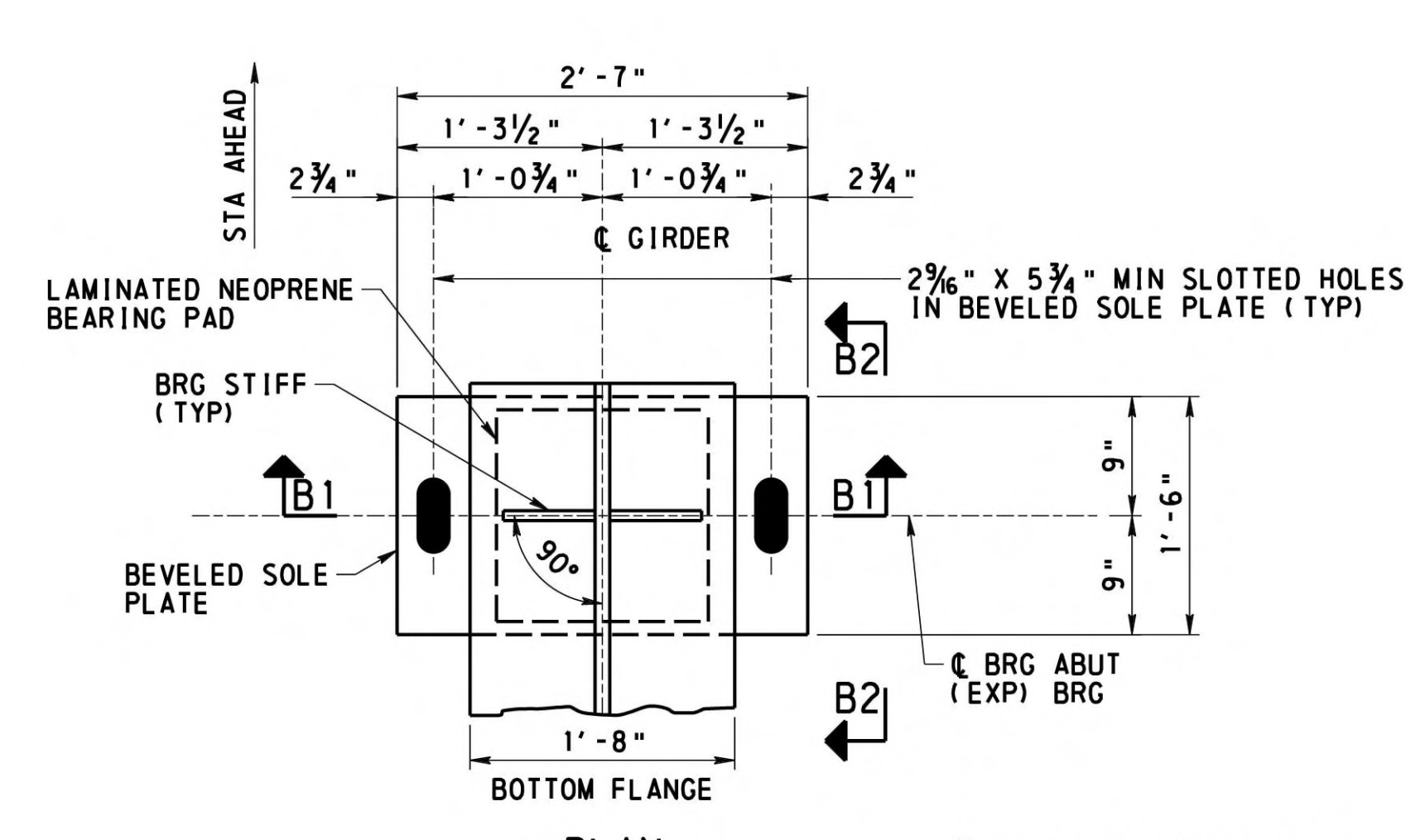
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
CAMBER AND REACTION TABLES

RECOMMENDED February 12<sup>th</sup>, 2026 SHEET 33 OF 50

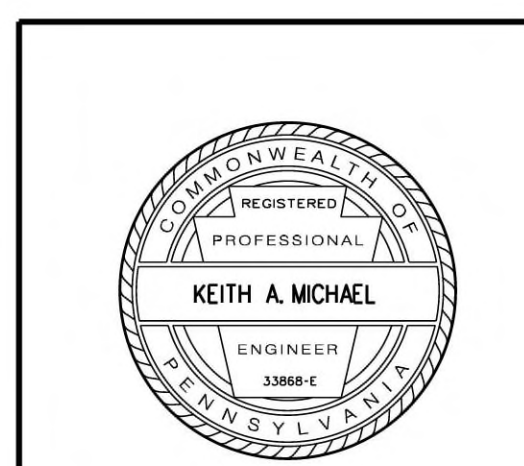
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LOCATION	SIZE		NO. OF INTERNAL LAYERS	INTERNAL LAYER THICKNESS	COVER LAYER THICKNESS	NO. OF STEEL LAMINATES	TOTAL BEARING THICK. (T)	NUMBER REQUIRED
	W	L						
E1	1'-4"	1'-4"	11	3/8"	1/4"	10	5.0710"	4
F1	1'-5"	1'-2"	6	3/8"	1/4"	5	2.5980"	4



- NOTES**
- FOR FRAMING PLAN SEE SHEET 30
  - FOR BEARING PAD NOTES AND ADDITIONAL NOTES AND DETAILS NOT SHOWN SEE STD DWG BC-755M
  - VERTICAL DIMENSIONS ARE AT C BEARINGS
  - HOT DIP GALVANIZE ANCHOR BOLTS, NUTS AND WASHERS IN ACCORDANCE WITH PUBLICATION 408, SECTION 1105.02 (S)
  - BEARING DESIGN FOR ROTATIONAL CONSTRUCTION TOLERANCE ABOUT THE TRANSVERSE AND LONGITUDINAL AXIS EQUAL TO 0.005 RAD AND 0.005 RAD, RESPECTIVELY
  - PROVIDE INTERNAL SHIMS AS PER ASTM A1011 GRADE 36
  - PREPARE BEARING AREA AND SET BEARING PADS IN ACCORDANCE WITH SECTION 1050.3(C) 4
  - PROVIDE ELASTOMER WITH A NOMINAL HARDNESS OF 50 ± 5 DUROMETER
  - PROVIDE BEARINGS CONSTRUCTED FROM LOW TEMPERATURE ELASTOMER, GRADE 3.
  - CONFORM TO REQUIREMENTS OF SECTION 1113 FOR MATERIAL AND FABRICATION
  - FABRICATOR MAY USE THIS CONTRACT DRAWING TO FABRICATE THE NEOPRENE BEARINGS
  - PROVIDE STEEL CONFORMING TO AASHTO M270 (ASTM A709) GRADE 50.
  - SWEDGED ANCHOR BOLTS ASTM F1554, GRADE 105, PROVIDE SWEDGES THAT ARE PRESSED (STAMPED) OR ROLLED. CUT SWEDGE AND ALL-THREAD BOLTS ARE NOT PERMITTED.
  - USE PREFORMED HOLES TO SET ANCHOR BOLTS.

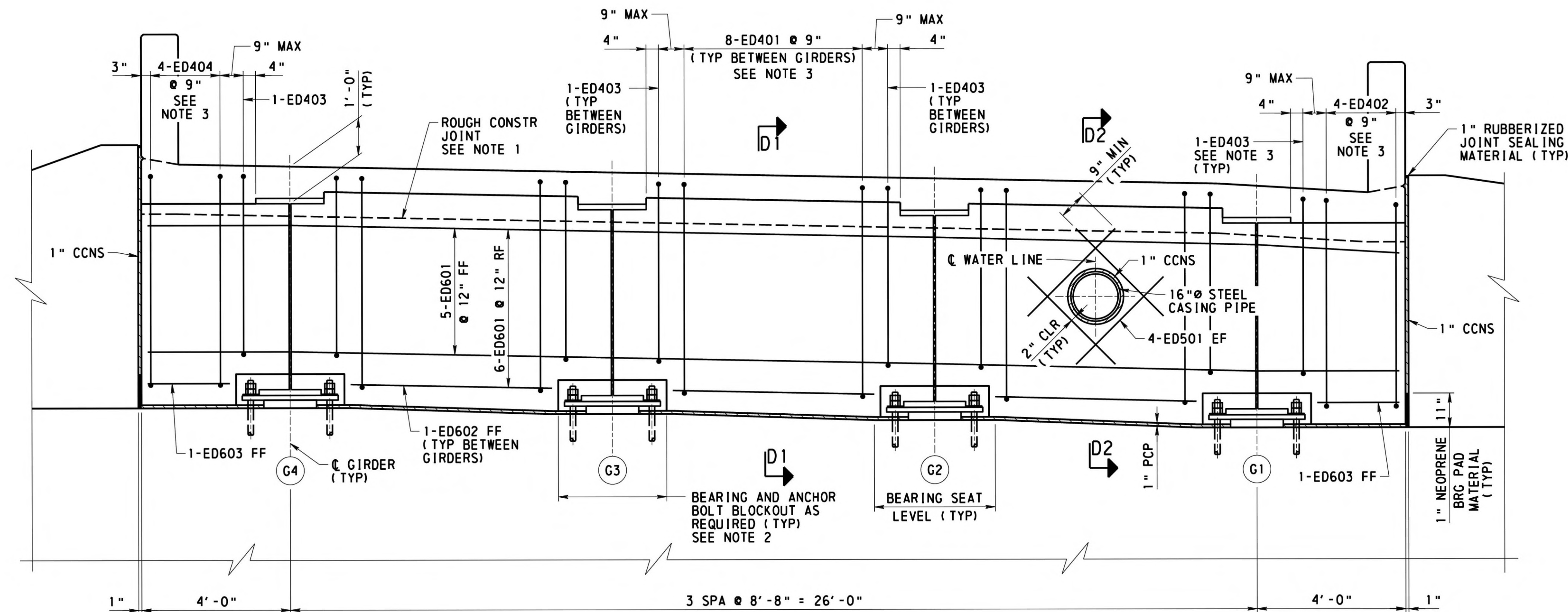
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 NORTH IRWIN BOROUGH  
 WEST BROADWAY AVENUE STA. 12+22.50  
 OVER NORFOLK SOUTHERN RAILROAD  
 SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
**NEOPRENE BEARING DETAILS**

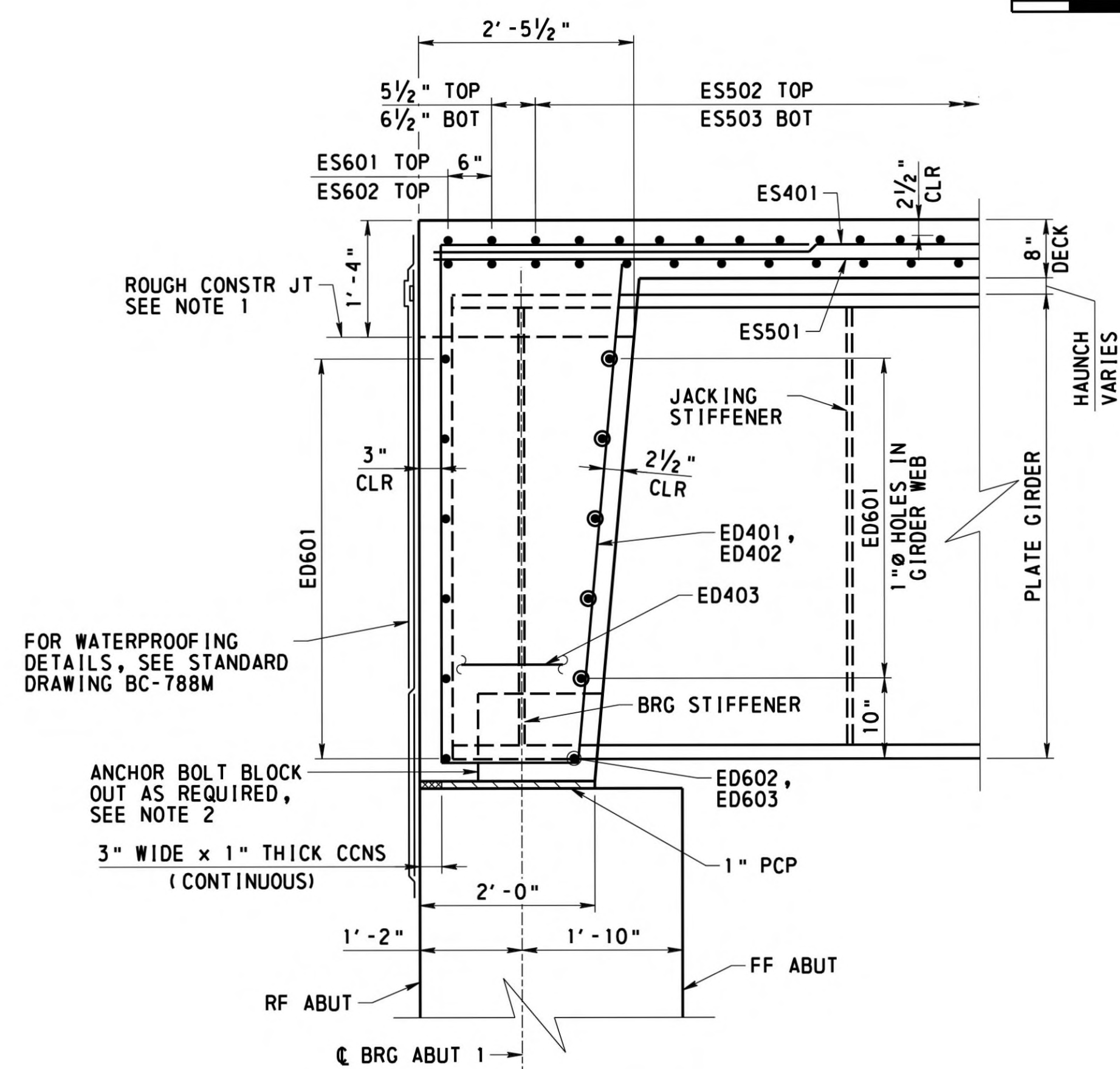
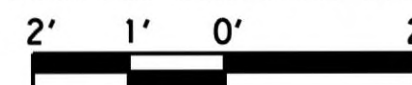
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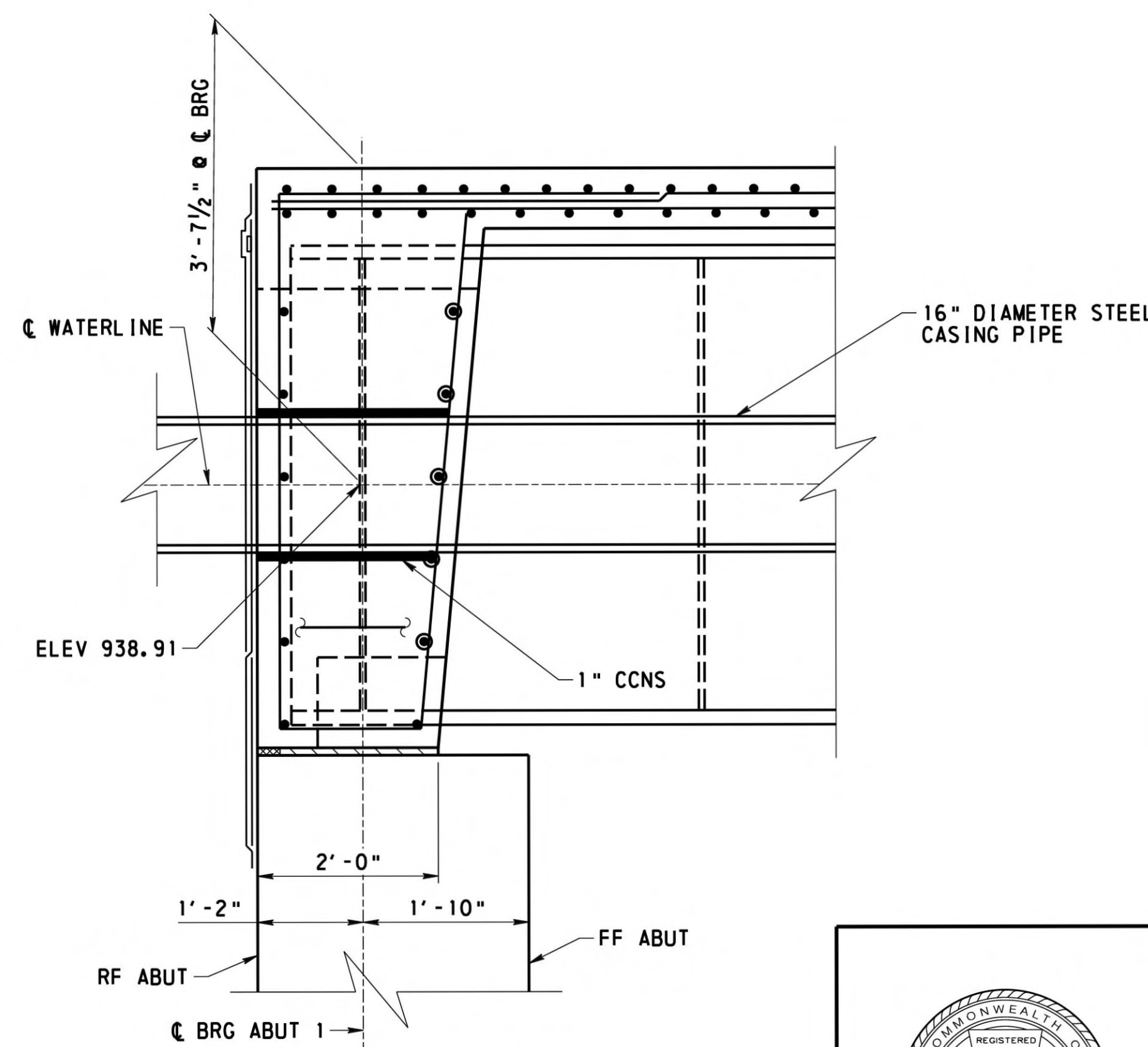
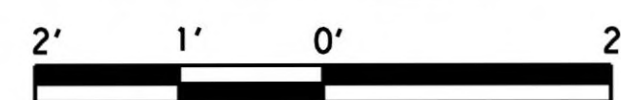


**CONCRETE END DIAPHRAGM ABUTMENT 1**

(LOOKING STATIONS BACK)

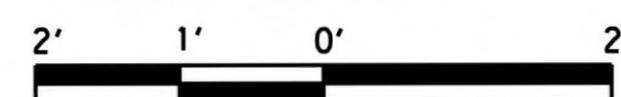


**SECTION D1-D1**



**SECTION D2-D2**

FOR DETAILS NOT SHOWN REFER TO SECTION D1-D1



**NOTES**

- FOR ABUTMENT 1, SEE SHEETS 6 THRU 11
- FOR DECK PLAN, SEE SHEET 36
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 44
- FOR WATERPROOFING DETAILS, SEE STANDARD DRAWING BC-788M
- REFER TO PROPOSED WATERLINE REPLACEMENT PLANS BY MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY FOR ADDITIONAL DETAILS INCLUDING REQUIRED COORDINATION BETWEEN THE CONTRACTOR AND THE MUNICIPAL AUTHORITY.

**LEGEND**

- CCNS CLOSED CELL NEOPRENE SPONGE
- PCP PREFORMED CELLULAR POLYSTYRENE
- FF FRONT FACE
- RF REAR FACE

**NOTE 1**

PLACE PORTION OF DIAPHRAGM TO THE CONSTRUCTION JOINT INDICATED. WAIT TWO HOURS MINIMUM BEFORE PLACING DECK CONCRETE

**NOTE 2**

FORM AN OPENING AS REQUIRED TO CLEAR ANCHOR BOLTS BY 1" MINIMUM ALL AROUND AT LIMITS OF THERMAL MOVEMENT. ADJUST REINFORCEMENT TO PROVIDE MINIMUM CONCRETE COVER

**NOTE 3**

PLACE TOP LEG OF ED401, ED402, ED403 AND ED404 PARALLEL TO AND ON THE SAME PLANE AS THE TOP LONGITUDINAL DECK SLAB REINFORCEMENT

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SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
CONCRETE END DIAPHRAGM ABUTMENT 1

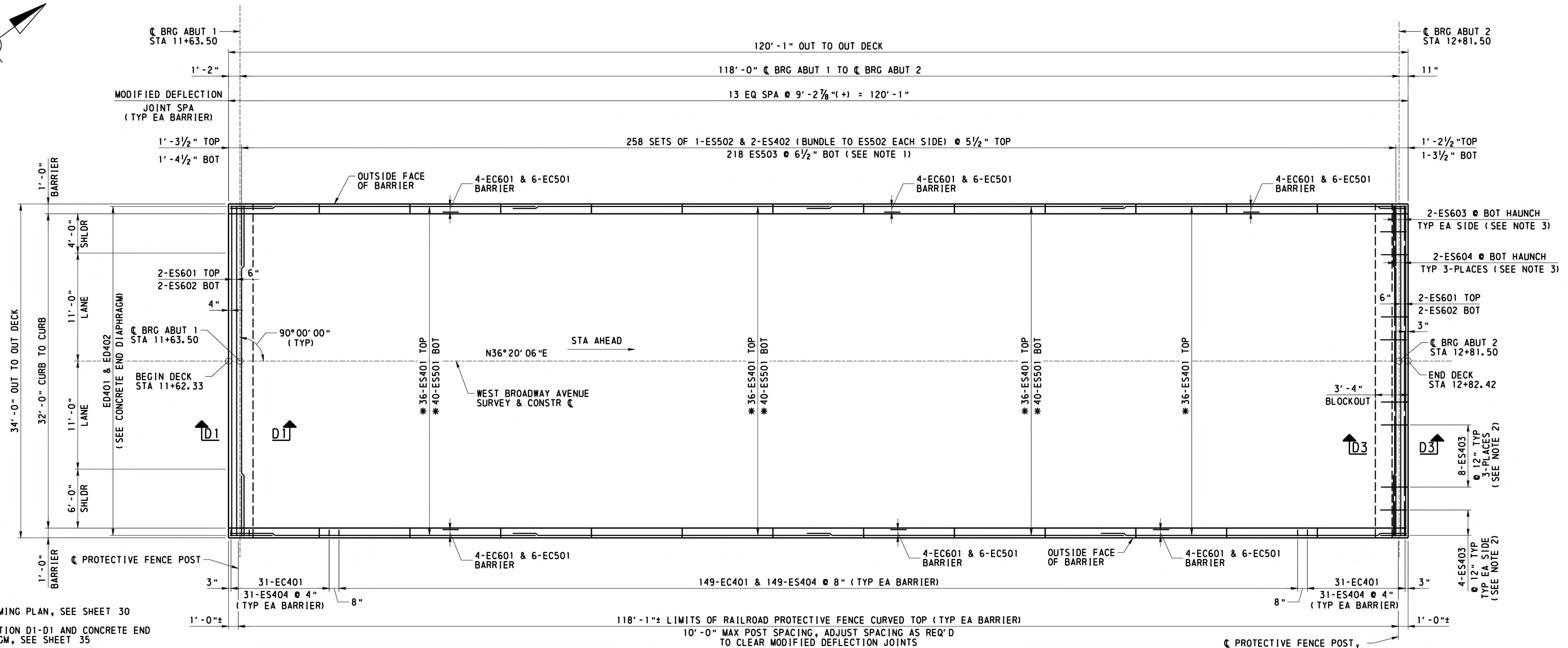
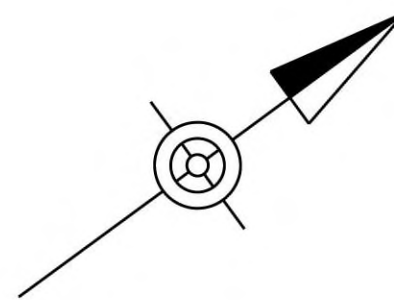
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SHEET 35 OF 50

L - 645

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CHECKED BY	CHB

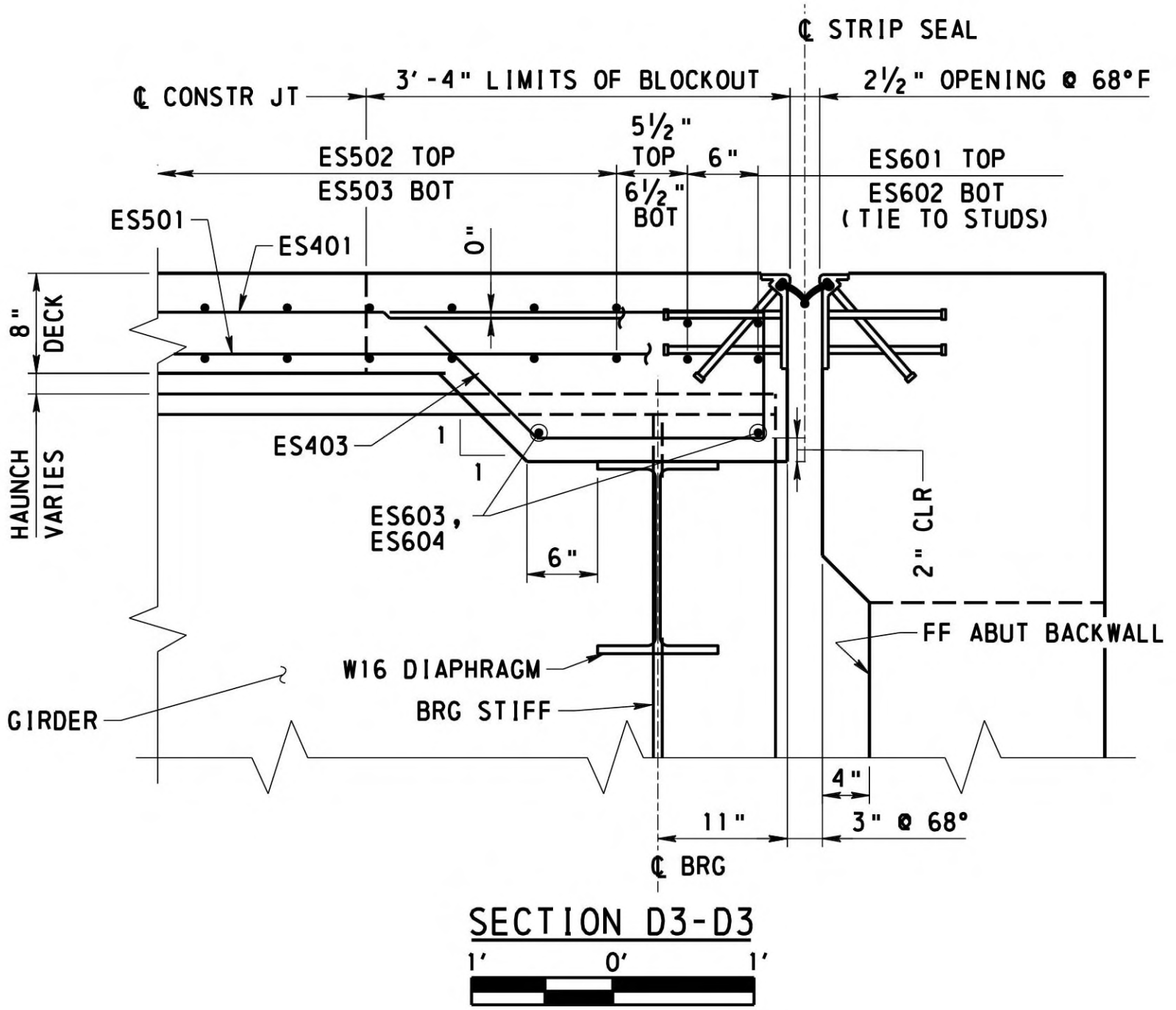
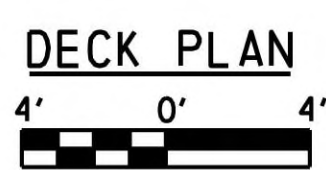




- NOTES**
- FOR FRAMING PLAN, SEE SHEET 30
  - FOR SECTION D1-D1 AND CONCRETE END DIAPHRAGM, SEE SHEET 35
  - FOR TYPICAL DECK SECTION, SEE SHEET 37
  - FOR FINISHED DECK ELEVATIONS, SEE SHEET 38
  - FOR DECK POURING SEQUENCE, SEE SHEET 39
  - FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 44
  - FOR NEOPRENE STRIP SEAL DAM, SEE STANDARD DRAWING BC767M AND SHEET
  - FOR MODIFIED DEFLECTION JOINT AND TRANSVERSE CONSTRUCTION JOINT DETAILS SEE STANDARD DRAWING BC-752M
  - FOR PROTECTIVE FENCE POST DETAILS SEE STANDARD DRAWING BC-701M

- LEGEND**
- \* SEE TYPICAL SECTION FOR SPACING AND PLACEMENT
  - FF FRONT FACE
- NOTE 1**  
EXTEND ONE HALF OF THE #5 BOTTOM TRANSVERSE BARS ACROSS THE FULL WIDTH OF OVERHANG, THE ALTERNATING BARS WHICH DO NOT EXTEND INTO THE OVERHANG SHALL EXTEND 6" MINIMUM BEYOND THE INTERIOR EDGE OF THE FLANGE OF THE FASCIA BEAM
- NOTE 2**  
PLACED PARALLEL TO AND CENTERED BETWEEN LONGITUDINAL TOP REINFORCEMENT BETWEEN GIRDER FLANGES
- NOTE 3**  
PLACED PARALLEL TO STRIP SEAL AND CENTERED BETWEEN GIRDER WEBS AT BOTTOM OF HAUNCH

DESIGNED BY	SRE
DRAWN BY	SJW
CHECKED BY	CHB

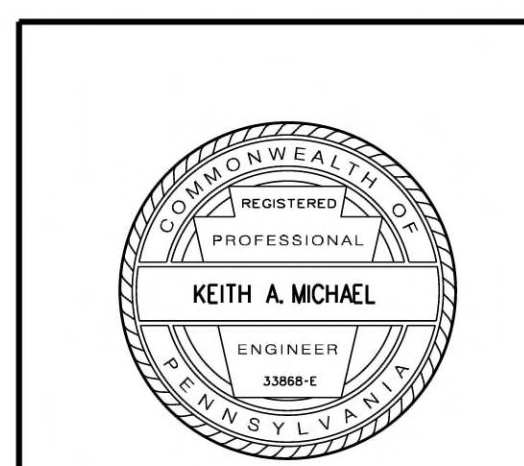


**MINIMUM REINFORCEMENT SPLICE TABLE**

BAR SIZE	DECK SPLICE LENGTH	BARRIER SPLICE LENGTH
4	2'-4"	—
5	3'-0"	3'-7"
6	3'-7"	4'-4"

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793



WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

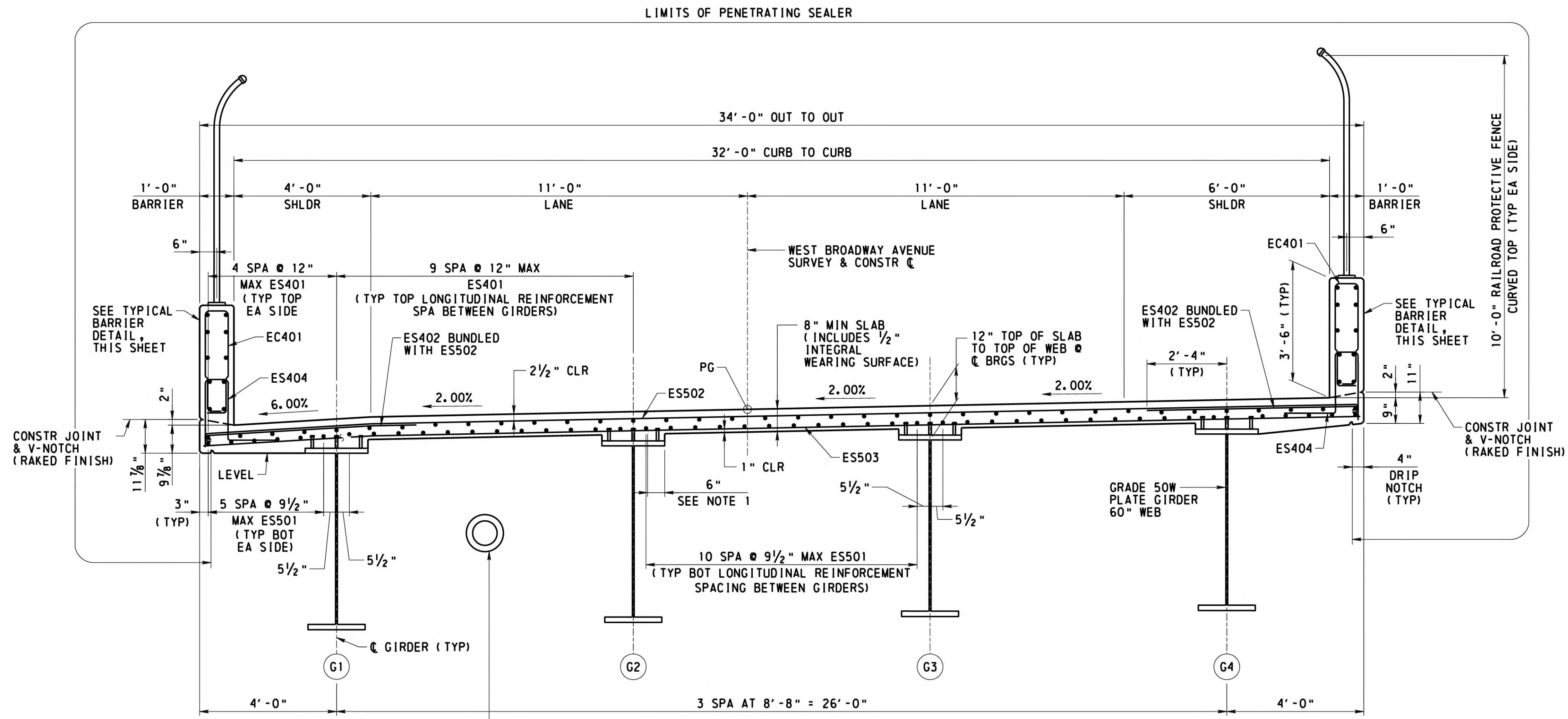
WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
DECK PLAN

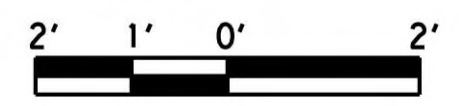
RECOMMENDED *February 12<sup>th</sup>, 2026* SHEET 36 OF 50

L - 645



16" DIAMETER STEEL CASING PIPE AND 8" DIAMETER DUCTILE IRON WATERLINE SEE DIAPHRAGM DETAILS FOR UTILITY SUPPORT DETAILS AND REFER TO PROPOSED WATERLINE REPLACEMENT PLANS BY MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY FOR ADDITIONAL DETAILS INCLUDING REQUIRED COORDINATION BETWEEN THE CONTRACTOR AND THE MUNICIPAL AUTHORITY.

TYPICAL DECK SECTION



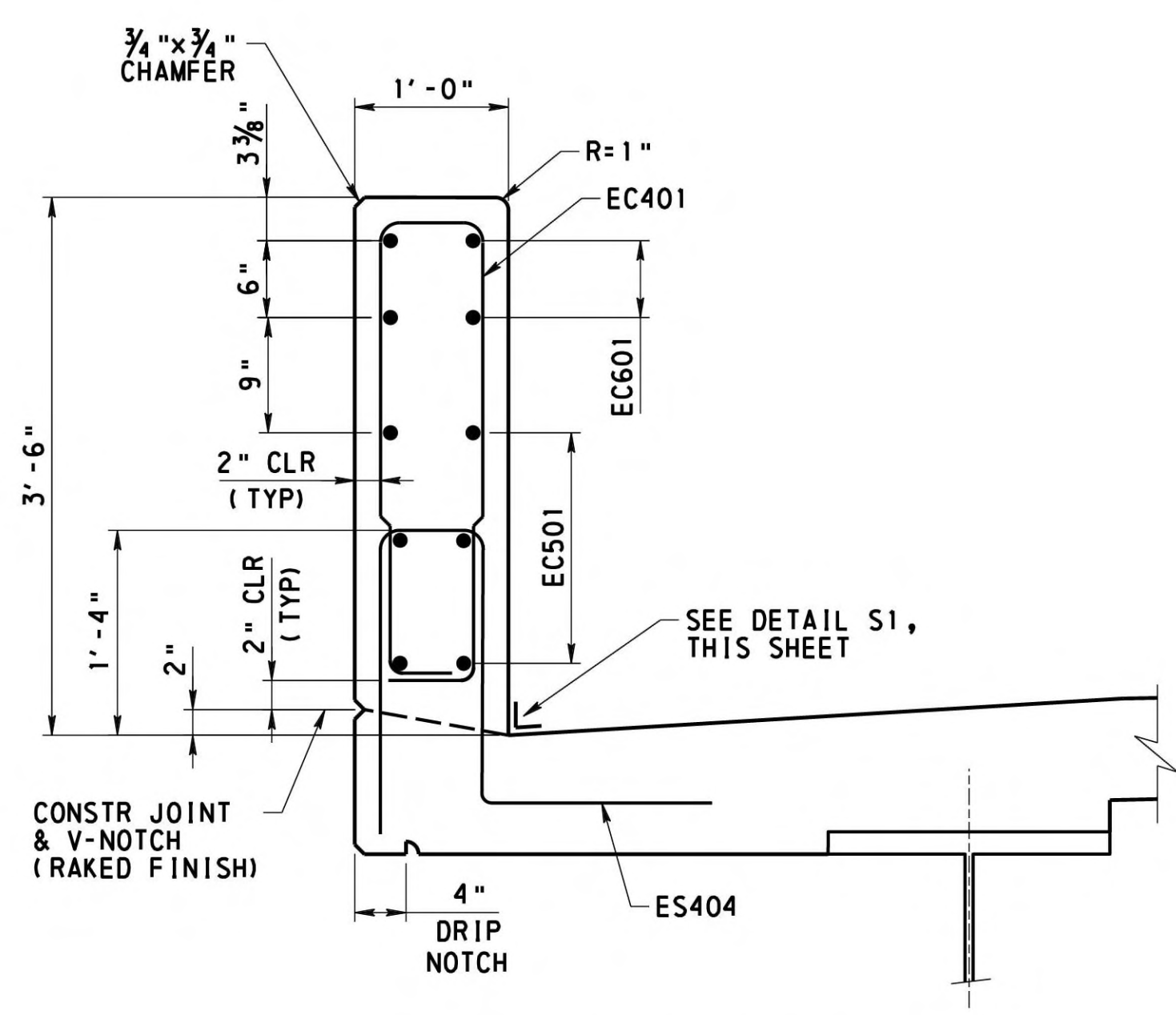
NOTES

- WORK THIS SHEET WITH SHEET 36
- FOR FINISHED DECK ELEVATIONS, SEE SHEET 38
- FOR FRAMING PLAN, SEE SHEET 30
- FOR REINFORCEMENT BAR SCHEDULE, SEE SHEET 44
- FOR V-NOTCH DETAILS SEE STANDARD DRAWING BC-752M
- FOR DRIP NOTCH DETAILS SEE STANDARD DRAWING BC-775M
- FOR PROTECTIVE FENCE DETAILS AND FENCE POST SPACING SEE STANDARD DRAWING BC-701M
- ALL REINFORCEMENT BARS SHOWN ARE AT MAXIMUM SPACING UNLESS NOTED

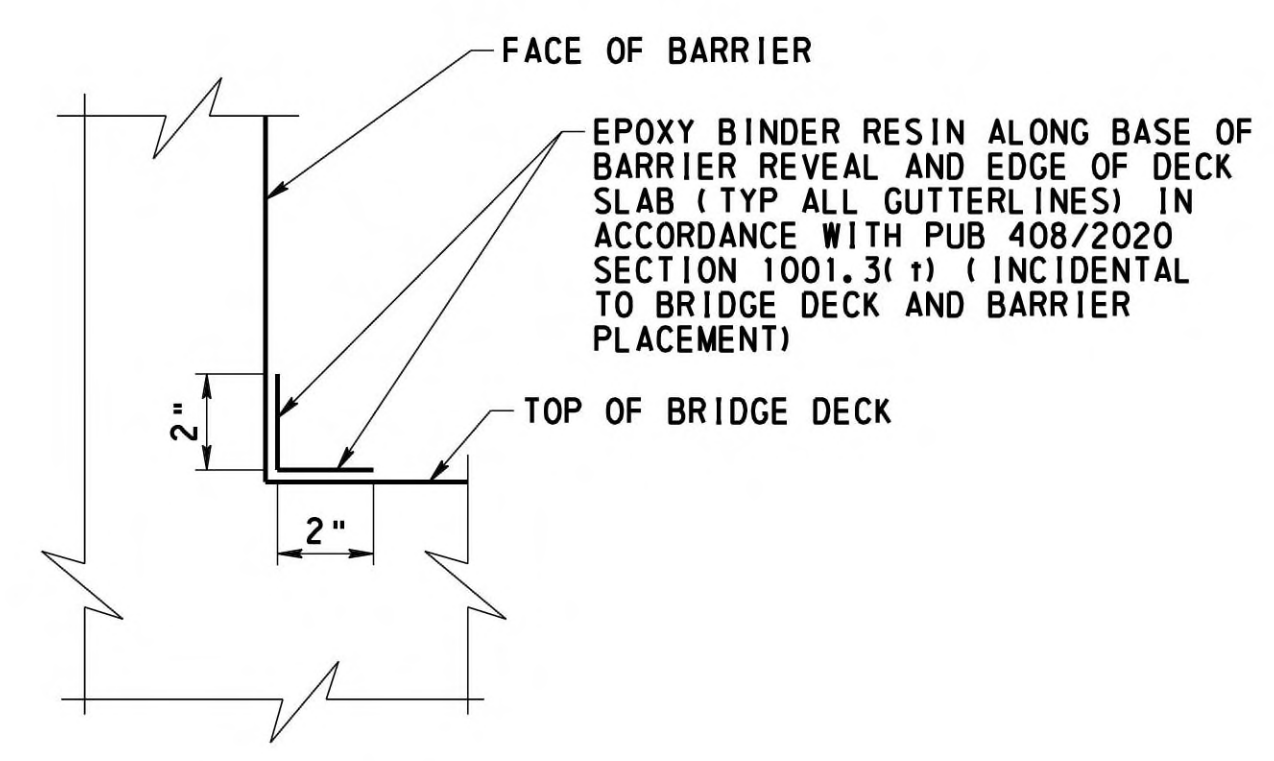
LEGEND

NOTE 1

EXTEND ONE HALF OF THE #5 BOTTOM TRANSVERSE BARS ACROSS THE FULL WIDTH OF OVERHANG, THE ALTERNATE BARS WHICH DO NOT EXTEND INTO THE OVERHANG SHALL EXTEND 6" MINIMUM BEYOND THE INTERIOR EDGE OF THE FLANGE OF THE FASCIA BEAM



TYPICAL BARRIER DETAIL  
(DECK REINFORCEMENT NOT SHOWN FOR CLARITY)  
NOT TO SCALE



DETAIL S1  
NOT TO SCALE

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

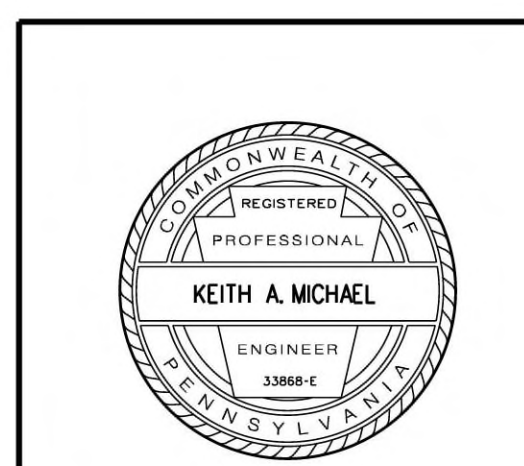
MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
TYPICAL DECK SECTION



RECOMMENDED February 12<sup>th</sup>, 2026

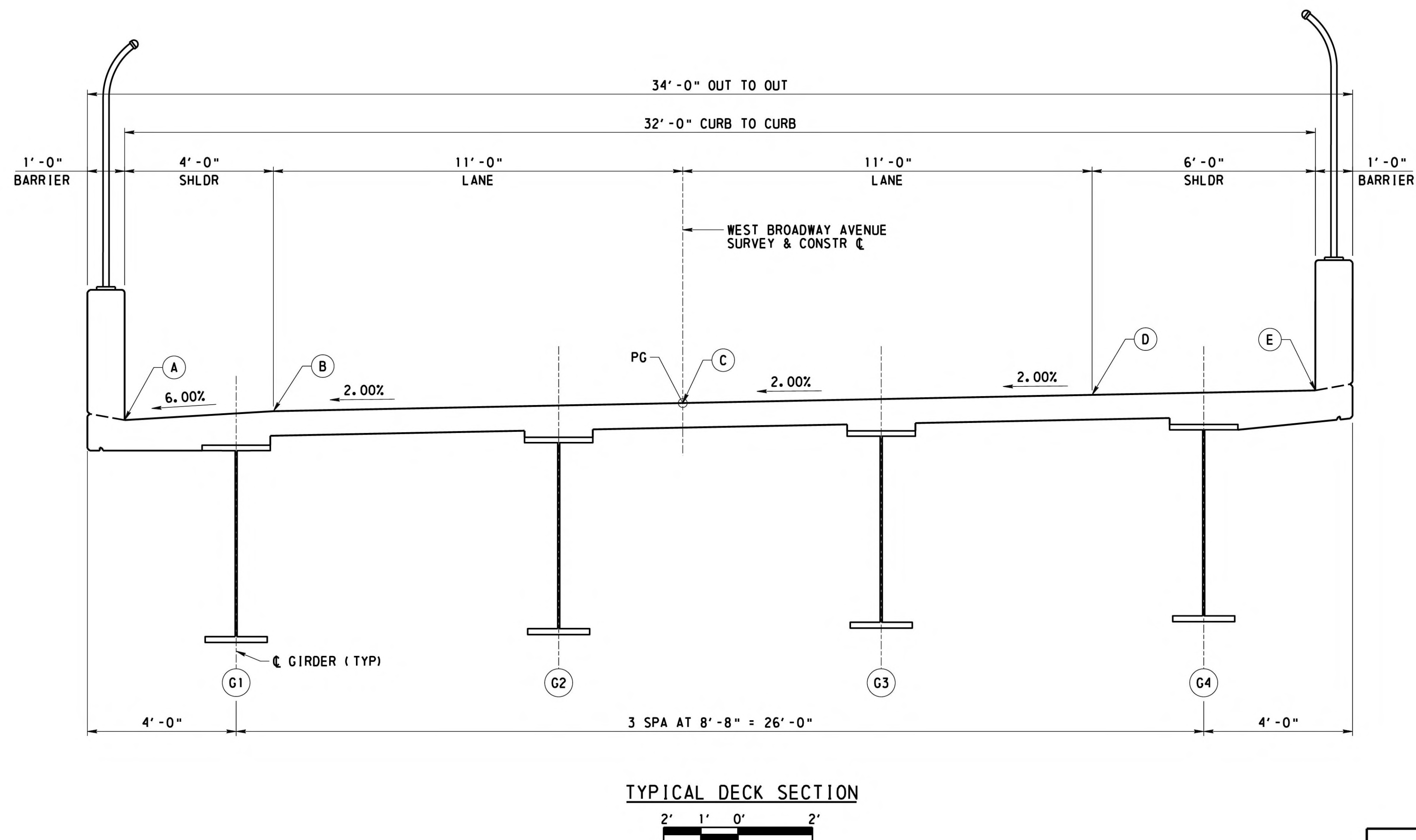
SHEET 37 OF 50

L - 645

DESIGNED BY	SRE
DRAWN BY	SJW
CHECKED BY	CHB

FINISHED DECK ELEVATIONS AT BREAK POINTS					
STATION	(A)	(B)	(C)	(D)	(E)
11+62.33	942.17	942.41	942.63	942.85	942.97
11+60.00	942.04	942.28	942.50	942.72	942.84
11+70.00	942.59	942.83	943.05	943.27	943.39
11+80.00	943.15	943.39	943.61	943.83	943.95
11+90.00	943.70	943.94	944.16	944.38	944.50
12+00.00	944.25	944.49	944.71	944.93	945.05
12+10.00	944.81	945.05	945.27	945.49	945.61
12+20.00	945.36	945.60	945.82	946.04	946.16
12+30.00	945.91	946.15	946.37	946.59	946.71
12+40.00	946.47	946.71	946.93	947.15	947.27
12+50.00	947.02	947.26	947.48	947.70	947.82
12+60.00	947.57	947.81	948.03	948.25	948.37
12+70.00	948.13	948.37	948.59	948.81	948.93
12+80.00	948.68	948.92	949.14	949.36	949.48
12+82.42	948.81	949.05	949.27	949.49	949.61

FINISHED DECK ELEVATIONS OVER CL GIRDERS												
GIRDER NO.	ABUT 1	SPAN 1									ABUT 2	
		0.1	0.2	F.S.	0.3	0.4	0.5	0.6	0.7	0.8		0.9
G1	942.41	943.07	943.72	943.96	944.37	945.02	945.68	946.33	946.98	947.64	948.29	948.94
G2	942.63	943.28	943.93	944.18	944.59	945.24	945.89	946.54	947.20	947.85	948.50	949.15
G3	942.80	943.45	944.11	944.35	944.76	945.41	946.06	946.72	947.37	948.02	948.68	949.33
G4	942.97	943.63	944.28	944.52	944.93	945.58	946.24	946.89	947.54	948.20	948.85	949.50



MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
FINISHED DECK ELEVATIONS

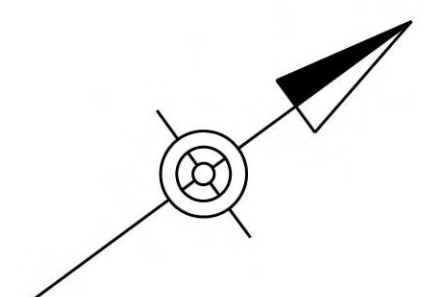
RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 38 OF 50

L - 645



DESIGNED BY	KAM
DRAWN BY	TMK
CHECKED BY	KAM



CL BRG ABUT 1  
STA 11+63.50

CL BRG ABUT 2  
STA 12+81.50

120'-1" OUT TO OUT DECK

118'-0" CL BRG ABUT 1 TO CL BRG ABUT 2

1'-2"

11"

34'-0" OUT TO OUT DECK

BEGIN DECK  
STA 11+62.33

END DECK  
STA 12+82.42

1  
90°00'00"  
(TYP)

STA AHEAD

WEST BROADWAY AVENUE  
SURVEY & CONSTR CL

3'-4"  
BLOCKOUT

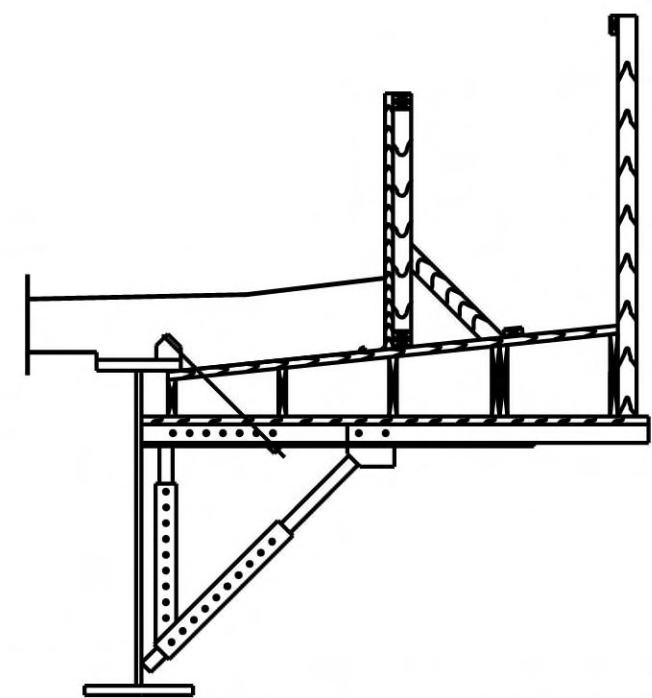
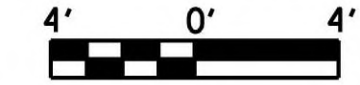
3

4

2

PLACE END DIAPHRAGM AT ABUTMENT 1. WAIT 2 HOURS.  
PLACE DECK POUR 2 UP TO THE BLOCKOUT AT ABUTMENT 2.  
PLACE CONCRETE IN THE BLOCKOUT AT ABUTMENT 2.  
PLACE BARRIERS

DECK PLACEMENT SEQUENCE PLAN



WEB DEPTH	MAXIMUM PERMISSIBLE HORIZONTAL LOAD (kips)
60"	2.165

MAXIMUM PERMISSIBLE SUPPORT SPACING 2'-9"

TYPICAL OVERHANG FORMING DETAIL

NOT TO SCALE

OVERHANG FORMING NOTES

- SUPPORT DECK SLAB OVERHANG FORMS NEAR THE BOTTOM FLANGE OF THE FASCIA GIRDER.
- DESIGN THE BRACING FOR ACTUAL LOADING OF FORM WORK CONCRETE, DECK FINISHING MACHINE AND CONSTRUCTION LOADS. PROVIDE CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA. THIS WORK IS INCIDENTAL TO CLASS AAAP CEMENT CONCRETE.
- THE FASCIA GIRDERS ARE DESIGNED FOR A TEMPORARY CONSTRUCTION LOAD APPLIED TO THE WEB NEAR THE BOTTOM FLANGE AT A MAXIMUM 2'-9" INTERVAL. THIS LOAD (SEE TABLE) APPROXIMATES THE HORIZONTAL COMPONENT OF A DECK OVERHANG FORM SUPPORT BRACKET AND CONSISTS OF AN ALLOWANCE FOR THE WEIGHT OF THE CONCRETE, FORMS AND INCIDENTAL LOADS, PLUS THE DECK FINISHING MACHINE.
- THE CONTRACTOR HAS THE OPTION TO MODIFY THE OVERHANG BRACKET FROM THAT DESCRIBED HEREIN PROVIDED WORKING DRAWINGS INCLUDING CALCULATIONS, SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA, ARE SUBMITTED FOR REVIEW AND ACCEPTANCE AND SHOW THE MODIFICATIONS DO NOT CAUSE UNACCEPTABLE DEFORMATIONS, OR STRESSES IN THE BRIDGE AND IT IS UNDERSTOOD THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE SATISFACTORY COMPLETION OF THE BRIDGE.
- SEE GENERAL NOTES FOR ADDITIONAL NOTES

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

MPMS/ECMS: 31554 BMS STR ID: 64-7421-0993-0003 BRKEY: 56793

WESTMORELAND COUNTY  
DEPARTMENT OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH

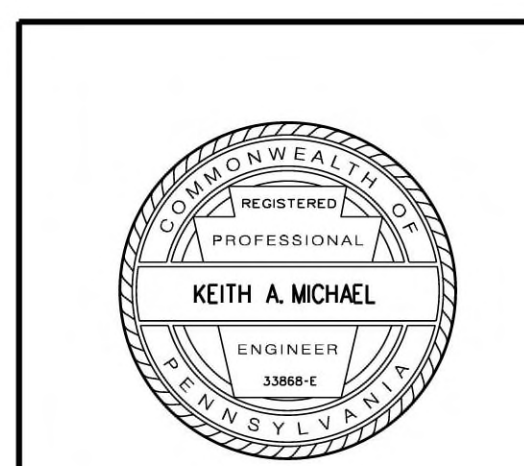
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE  
MISC DECK DETAILS

RECOMMENDED *February 12<sup>th</sup>, 2026*

SHEET 39 OF 50

L - 645



DESIGNED BY	KAM
DRAWN BY	TMK
CHECKED BY	KAM

# REINFORCEMENT BAR SCHEDULE

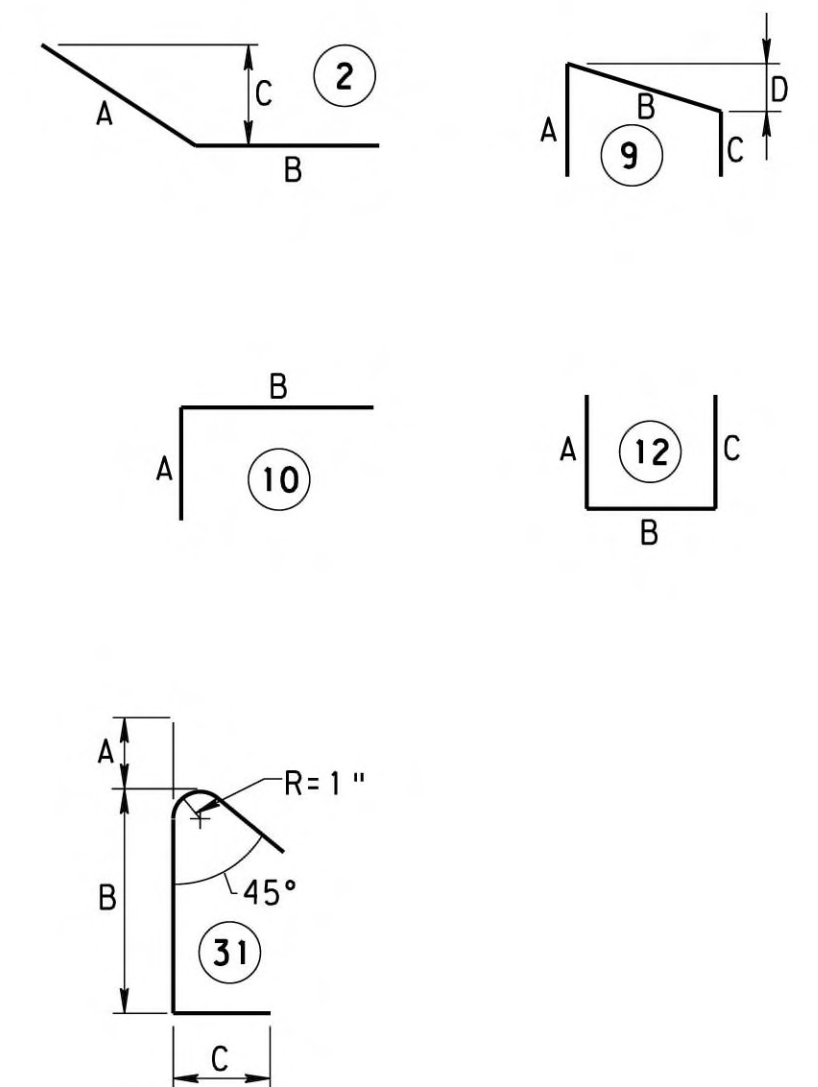
## BAR BENDING DIAGRAMS

MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	G	H	K	R	REMARKS	MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	G	H	K	R	REMARKS										
ABUTMENT 1																																									
EF401	4	3'-3"	45	31	4 1/2"	2'-6"	4 1/2"									EW509	5	8'-6"	8	STR																					
EF402	4	3'-0"	78	STR												EW510	5	8'-6" TO 9'-0"	10	STR															VARY 2 EACH BY 1/2"						
EF403	4	2'-9"	66	31	4 1/2"	2'-0"	4 1/2"									EW511	5	9'-0"	7	STR																					
EF501	5	10'-4"	67	12	2'-5"	5'-6"	2'-5"									EW512	5	13'-3 1/2" TO 21'-5"	14	12	5'-11" TO 10'-0 1/2"	1'-4 1/2"	5'-11" TO 10'-0 1/2"											VARY 'A' & 'C' EACH BY 3/4" 2 SETS OF 8-WING A							
EF502	5	7'-2"	55	12	10"	5'-6"	10"									EW513	5	12'-8 1/2" TO 21'-1"	14	12	5'-8" TO 9'-10 1/2"	1'-4 1/2"	5'-8" TO 9'-10 1/2"													VARY 'A' & 'C' EACH BY 3/4" 2 SETS OF 8-WING B					
EF503	5	60'-6 1/2"	4	12	3'-3"	54'-0 1/2"	3'-3"									EW514	5	2'-7"	32	10	1'-3"	1'-4"																			
EF504	5	3'-6"	82	STR												EW515	5	6'-5"	5	STR																					
EF521	5	7'-2"	58	12	10"	5'-6"	10"									EW516	5	6'-2 1/2"	5	STR																					
EF522	5	9'-4"	60	12	1'-11"	5'-6"	1'-11"									EW518	5	4'-11"	10	12	1'-4"	1'-4"	2'-3"																		
EF523	5	9'-0"	56	STR												EW519	5	4'-0"	5	12	1'-4"	1'-4"	1'-4"																		
EF524	5	20'-0"	12	12	7'-3"	5'-6"	7'-3"									EW520	5	5'-10"	5	12	2'-3"	1'-4"	2'-3"																		
EF525	5	7'-9"	14	10	10"	6'-11"										EW521	5	23'-7 1/2"	26	STR																					
EF526	5	12'-9" TO 13'-9"	8	12	4'-1 1/2"	4'-6" TO 5'-6"	4'-1 1/2"									EW522	5	15'-7 1/2"	20	STR																		VARY 2 SETS OF 2 "B" BY 1'-0"			
EF527	5	14'-8 1/2"	14	2	9'-9 1/2"	4'-11"	6'-11"									EW523	5	7'-7 1/2"	14	STR																					
EF528	5	13'-4"	2	12	3'-11"	5'-6"	3'-11"									EW524	5	15'-6 1/2"	2	STR																					
EF529	5	13'-0" TO 13'-9"	8	12	4'-1 1/2"	4'-9" TO 5'-6"	4'-1 1/2"									EW525	5	4'-9"	8	12	1'-4"	1'-2"	2'-3"																VARY 2 SETS OF 2 "B" BY 9"		
EF530	5	12'-9 1/2"	14	2	9'-9 1/2"	3'-0"	6'-11"									EW526	5	3'-10"	4	12	1'-4"	1'-2"	1'-4"																		
EF531	5	12'-3" TO 13'-9"	12	12	4'-1 1/2"	4'-0" TO 5'-6"	4'-1 1/2"									EW527	5	5'-9"	4	12	2'-3"	1'-3"	2'-3"																	VARY 3 SETS OF 2 "B" BY 9"	
EF532	5	12'-1"	14	2	9'-1"	3'-0"	6'-5"									EW528	5	12'-0 1/2" TO 13'-3 1/2"	5	12	5'-4" TO 5'-11"	1'-4 1/2"	5'-4" TO 5'-11"																	VARY 'A' & 'C' EACH BY 1 1/4" 2 SETS OF 8-WING A	
EF533	5	5'-10"	28	10	10"	5'-0"										EW529	5	11'-6 1/2" TO 12'-8 1/2"	5	12	5'-1" TO 5'-8"	1'-4 1/2"	5'-1" TO 5'-8"																	VARY 'A' & 'C' EACH BY 1 1/4" 2 SETS OF 8-WING B	
EF534	5	7'-6"	28	STR												EW601	6	24'-7"	22	STR																					
EF535	5	5'-6"	8	STR												EW602	6	22'-2"	23	STR																					
EF601	6	58'-8"	7	12	2'-4"	54'-0"	2'-4"									EW603	6	9'-5"	1	STR																					
EF602	6	56'-0"	9	12	1'-0"	54'-0"	1'-0"									EW608	6	6'-2"	22	STR																					
EF603	6	6'-11"	78	10	8"	6'-3"										EW609	6	11'-8"	28	STR																					
EF604	6	10'-2"	4	12	2'-4"	5'-6"	2'-4"									EW610	6	17'-2"	28	STR																					
EF605	6	7'-6"	4	12	1'-0"	5'-6"	1'-0"									EW611	6	12'-9"	4	1	12'-9"	8"																		J = 6"	
EF801	8	9'-1"	85	10	1'-4"	7'-9"										EW612	6	10'-2"	32	1	9'-6"	8"																	J = 6"		
EW301	3	15'-8"	9	12	1'-10"	4'-1"	9'-9"									EW613	6	3'-0" TO 11'-7"	24	1	2'-4" TO 10'-11"	8"																		VARY 'A' FOR 6 BARS EACH BY 1'-5 1/4" (4 SETS OF 6)	
EW302	3	14'-3"	9	54	2'-8"	2'-2"	1'-10"	7'-7"	1'-11"							EW614	6	4'-6"	144	STR																					
EW303	3	9'-11"	7	2	9'-1"	0'-10"	1'-7"									EW615	6	15'-9"	22	12	9'-6"	4'-0"	2'-3"																		
EW304	3	11'-10"	10	12	1'-10"	4'-1"	5'-11"									EW616	6	12'-11"	22	12	6'-8"	4'-0"	2'-3"																		
EW305	3	10'-5"	10	54	2'-8"	2'-2"	1'-10"	3'-9"	1'-11"							EW801	8	15'-5"	85	STR																					
EW306	3	5'-11 1/2"	7	1	5'-1 1/2"	0'-10"	9'-0 3/8"									EC401	4	6'-10"	20	STR																					
EW308	3	6'-3"	44	54	2'-8"	2'-1"	2'-3"	2'-3"	1'-11"							EC402	4	7'-7 1/2"	6	52	5 1/2"	4"	2'-7"	3"	2'-9"	3"															2"
EW310	3	20'-2"	1	STR												EC403	4	6'-11"	4	2	1'-5"	5'-6"	4 1/8"																		
EW311	3	10'-10"	2	STR												EC501	5	5'-11"	12	STR																					
EW312	3	7'-1"	16	12	2'-11"	1'-3"	2'-11"									EC601	6	5'-11"	8	2	9"	5'-2"	1 1/2"																		
EW401	4	6'-2"	22	STR																																					
EW402	4	11'-8"	28	STR																																					
EW403	4	17'-2"	28	STR																																					
EW408	4	23'-7 1/2"	26	STR																																					
EW409	4	15'-7 1/2"	20	STR																																					
EW410	4	7'-7 1/2"	14	STR																																					
EW415	4	15'-6 1/2"	2	STR																																					
EW416	4	6'-0"	78	12	2'-2"	1'-8"	2'-2"																																		
EW419	4	3'-6"	64	STR																																					
EW420	4	12'-3 1/4"	2	53	5'-10 1/2"	6 1/4"	5'-10 1/2"	4"																																	
EW421	4	6'-0 1/2"	6	STR																																					
EW422	4	12'-7 3/4"	10	17	5'-11"	2 3/8"	5"	5'-11"																																	
EW423	4	12'-11 3/4" TO 14'-2 3/4"	20	17	6'-1" TO 6'-8 1/2"	2 3/8"	5"	6'-1" TO 6'-8 1/2"																																VARY 2 EACH BY 3/8" 2 SETS OF 10	
EW424	4	10'-1"	6	17	4'-7"	4"	3"	4'-7"																																	
EW425	4	7'-9 1/4"	6	17	5'-11"	2 3/8"	5"	1'-0 1/2"																																	
EW501	5	15'-5"	82	STR																																					
EW502	5	25'-0"	22	STR																																					
EW503	5	24'-10"	26	STR				</																																	

# REINFORCEMENT BAR SCHEDULE

## BAR BENDING DIAGRAMS

MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	G	H	K	R	REMARKS	MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	G	H	K	R	REMARKS									
ABUTMENT 2																																								
EF451	4	3'-3"	54	31	4 1/2"	2'-6"	4 1/2"									EF5114	5	12'-6" TO 12'-8"	3	12	1'-11"	8'-6" TO 8'-8"	1'-11"								VARY EA 'B' BY 3/4"									
EF452	4	2'-9"	168	31	4 1/2"	2'-0"	4 1/2"									EF5115	5	9'-3"	10	2	6'-3"	3'-0"	4'-5"									FIELD BEND AS REQ'D AROUND PILES								
EF453	4	3'-0"	188	STR												EF5116	5	7'-9"	10	10	3'-8"	4'-1"																		
EF551	5	11'-7"	79	12	2'-5"	6'-9"	2'-5"									EF5117	5	27'-9"	2	STR																				
EF552	5	8'-5"	109	12	10"	6'-9"	10"									EF5118	5	27'-10" TO 28'-1"	6	STR														VARY EA BY 5/8" (-)						
EF553	5	51'-5"	4	STR												EF5119	5	28'-1"	2	STR																				
EF554	5	14'-9"	14	12	4'-0"	6'-9"	4'-0"									EF5120	5	27'-8"	10	STR																				
EF556	5	3'-4"	8	10	7"	2'-9"										EF5121	5	8'-6"	3	STR																				
EF558	5	4'-7"	4	10	7"	4'-0"										EF5122	5	4'-9"	1	STR																				
EF560	5	11'-3"	4	STR												EF651	6	50'-11"	10	STR																				
EF561	5	13'-3"	4	12	3'-3"	6'-9"	3'-3"									EF652	6	52'-2"	10	STR																				
EF562	5	14'-3"	2	12	3'-9"	6'-9"	3'-9"									EF655	6	11'-3"	20	STR																				
EF563	5	8'-6"	48	STR												EF656	6	11'-9"	10	2	8'-3"	3'-6"	7'-5"																	
EF565	5	11'-3"	8	10	7'-8"	3'-7"										EF657	6	11'-8"	10	10	7'-5"	4'-3"																		
EF566	5	9'-3"	56	10	5'-8"	3'-7"										EF658	6	3'-6"	100	STR																				
EF567	5	12'-9"	8	2	8'-6"	4'-3"	7'-8"									EF659	6	10'-7"	132	12	1'-11"	6'-9"	1'-11"																	
EF568	5	10'-1"	16	2	7'-1"	3'-0"	6'-4"									EF660	6	8'-9"	133	12	1'-0"	6'-9"	1'-0"																	
EF569	5	11'-11"	32	2	8'-11"	3'-0"	6'-4"									EF661	6	6'-11"	39	10	1'-0"	5'-11"																		
EF570	5	9'-0"	1	2	1'-10 1/2"	7'-1 1/2"	1'-4"									EF662	6	11'-7"	4	12	2'-5"	6'-9"	2'-5"																	
EF571	5	9'-5"	1	2	2'-1"	7'-4"	1'-6"									EF663	6	6'-9"	16	10	1'-0"	5'-9"																		
EF572	5	10'-6" TO 13'-0"	4	2	2'-7 1/2" TO 3'-10 1/2"	7'-10 1/2" TO 9'-1 1/2"	1'-10 1/2" TO 2'-9"									EF664	6	7'-8"	16	10	1'-11"	5'-9"																		
EF573	5	14'-0"	1	2	4'-5"	9'-7"	3'-1 1/2"									EF751	7	7'-8"	28	10	1'-2"	6'-6"																		
EF574	5	14'-5"	1	2	4'-7"	9'-10"	3'-3"									EF752	7	7'-11" TO 8'-2"	11	10	1'-2"	6'-9" TO 7'-0"																		
EF575	5	9'-0" TO 14'-5"	8	2	1'-10 1/2" TO 4'-7"	7'-1 1/2" TO 9'-10"	1'-6" TO 3'-3"										EF851	8	8'-6"	94	10	1'-4"	7'-2"																	
EF576	5	6'-6"	12	10	7"	5'-11"										EF951	9	9'-11"	107	10	1'-7"	8'-4"																		
EF577	5	3'-0"	10	STR																																				
EF578	5	23'-1"	4	12	8'-2"	6'-9"	8'-2"																																	
EF579	5	12'-3" TO 13'-11"	6	12	2'-9" TO 3'-7"	6'-9"	2'-9" TO 3'-7"																																	
EF580	5	6'-9"	23	STR																																				
EF581	5	12'-3"	2	12	2'-9"	6'-9"	2'-9"																																	
EF582	5	13'-3"	2	12	3'-3"	6'-9"	3'-3"																																	
EF583	5	10'-11"	21	12	4'-1"	6'-9"	4'-1"																																	
EF584	5	18'-0 1/2"	3	9	6'-10"	7'-1 1/2"	4'-1"	2'-8 3/4"																																
EF585	5	12'-9"	1	STR																																				
EF586	5	12'-6"	1	STR																																				
EF587	5	10'-9" TO 12'-0"	4	STR																																				
EF588	5	10'-3"	1	STR																																				
EF589	5	10'-0"	1	STR																																				
EF590	5	10'-0" TO 12'-9"	8	STR																																				
EF591	5	11'-0"	16	STR																																				
EF592	5	7'-6"	16	STR																																				
EF594	5	10'-7"	46	12	1'-11"	6'-9"	1'-11"																																	
EF595	5	6'-4"	16	10	10"	5'-6"																																		
EF596	5	9'-5"	16	STR																																				
EF597	5	10'-6"	32	STR																																				
EF598	5	7'-5"	16	10	1'-11"	5'-6"																																		
EF599	5	13'-6"	16	STR																																				
EF5100	5	12'-0"	8	2	7'-9"	4'-3"	6'-11"																																	
EF5101	5	10'-9"	16	2	7'-9"	3'-0"	6'-11"																																	
EF5102	5	12'-9"	8	2	9'-9"	3'-0"	6'-11"																																	
EF5103	5	10'-6"	8	10	6'-11"	3'-7"																																		
EF5104	5	9'-9"	24	10	6'-2"	3'-7"																																		
EF5105	5	12'-3"	14	12	2'-9"	6'-9"	2'-9"																																	
EF5108	5	13'-1" TO 14'-11"	8	12	3'-2" TO 4'-1"	6'-9"	3'-2" TO 4'-1"																																	
EF5111	5	10'-2"	27	12	10"	8'-6"	10"																																	
EF5112	5	12'-4"	28	12	1'-11"	8'-6"	1'-11"																																	
EF5113	5	10'-2" TO 10'-4"	3	12	10"	8'-6" TO 8'-8"	10"																																	



### NOTES

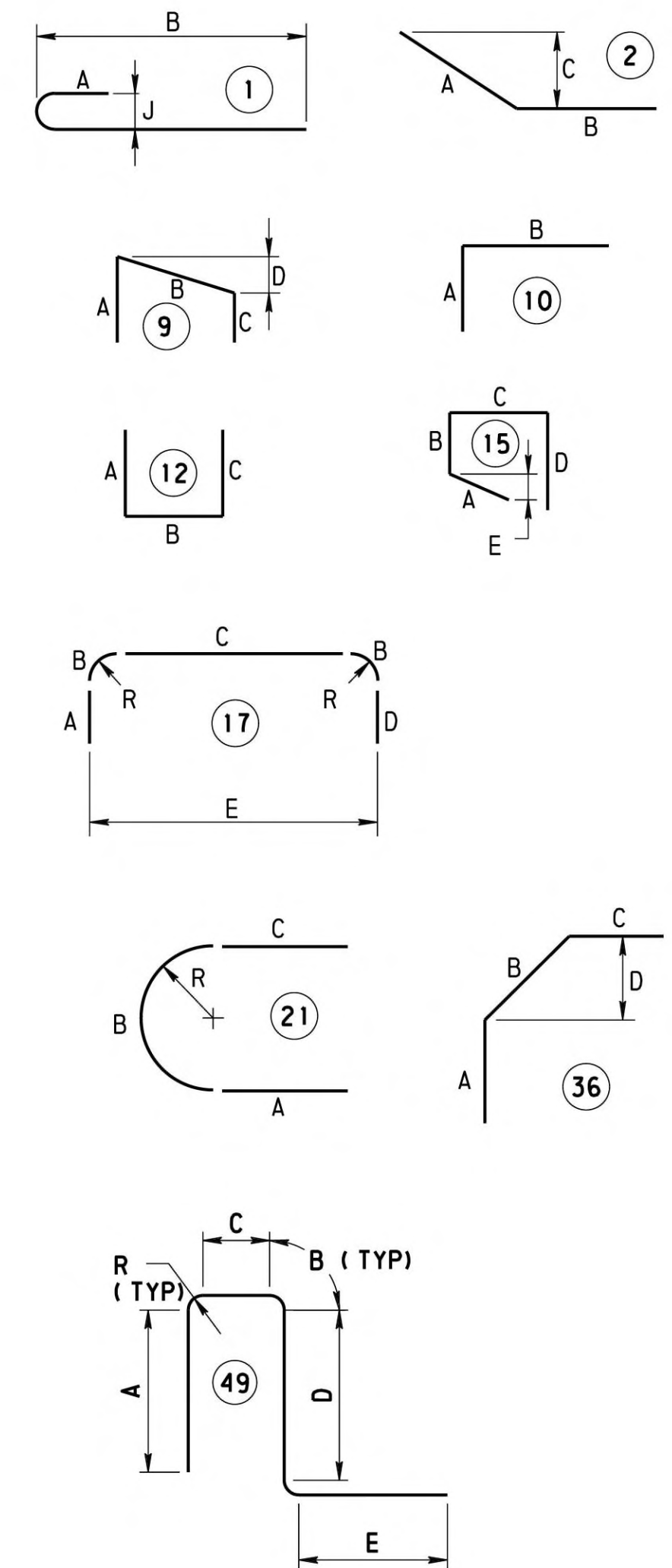
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- DIMENSIONS ALONG CURVED PORTIONS OF BAR ARE MEASURED ALONG THE OUTSIDE EDGE
- FIGURES IN CIRCLES SHOW TYPES
- "J" DIMENSION STANDARD BAR BEND UNLESS NOTED

MARK	DESCRIPTION	BY	CHK'D.	APP'D.	DATE
REVISIONS					

# REINFORCEMENT BAR SCHEDULE

MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	G	H	K	R	REMARKS	MARK	SIZE	LENGTH	NO.	TYPE	A	B	C	D	E	F	G	H	K	R	REMARKS					
ABUTMENT 2																																				
EW351	3	10'-10"	93	STR											BEND IN FIELD	EW559	5	15'-8" TO 16'-10"	5	12	7'-2" TO 7'-9"	1'-4"	7'-2" TO 7'-9"							VARY EA 'A' & 'C' BY 1 3/4"						
EW354	3	7'-8"	11	STR											BEND IN FIELD	EW560	5	17'-2" TO 22'-0"	14	12	7'-11" TO 10'-4"	1'-4"	7'-11" TO 10'-4"							VARY EA 'A' & 'C' BY 2 1/4" (-)						
EW355	3	16'-10"	11	STR											BEND IN FIELD	EW561	5	16'-10" TO 18'-0"	5	12	7'-9" TO 8'-4"	1'-4"	7'-9" TO 8'-4"							VARY EA 'A' & 'C' BY 1 3/4"						
EW356	3	12'-1"	12	STR											BEND IN FIELD	EW562	5	18'-4" TO 23'-0"	14	12	8'-6" TO 10'-10"	1'-4"	8'-6" TO 10'-10"							VARY EA 'A' & 'C' BY 2 1/4" (-)						
EW357	3	21'-5"	12	STR											BEND IN FIELD	EW563	5	2'-9"	38	10	1'-3"	1'-6"														
EW451	4	22'-5"	12	STR												EW564	5	5'-6"	14	12	1'-4"	1'-8"	2'-6"													
EW452	4	19'-1"	14	STR												EW565	5	4'-4"	7	12	1'-4"	1'-8"	1'-4"													
EW453	4	8'-7 1/2"	12	49	3'-0 1/2"	4"	3"	2'-10"	1'-6"							EW566	5	6'-8"	7	12	2'-6"	1'-8"	2'-6"													
EW454	4	10'-0"	6	17	4'-6 1/2"	4"	3"	4'-6 1/2"	8"							EW567	5	5'-1"	12	12	1'-4"	1'-4"	2'-5"													
EW455	4	13'-1 3/4" TO 14'-7 3/4"	20	17	6'-2" TO 6'-11"	2 3/8"	5"	6'-2" TO 6'-11"	8"						VARY 2 SETS OF 10 'A' 'D' BY 1"	EW568	5	4'-0"	6	12	1'-4"	1'-4"	1'-4"													
EW456	4	12'-9 3/4"	10	17	6'-0"	2 3/8"	5"	6'-0"	8"							EW569	5	6'-2"	6	12	2'-5"	1'-4"	2'-5"													
EW457	4	7'-10 1/4"	6	17	6'-0"	2 3/8"	5"	1'-0 1/2"	8"																											
EW458	4	6'-1"	6	STR																																
EW459	4	12'-3 1/4"	2	21	5'-10 1/2"	6 1/4"	5'-10 1/2"																													
EW460	4	28'-8"	13	STR												EW651	6	26'-3"	46	STR																
EW461	4	24'-8"	12	STR												EW652	6	26'-6"	35	STR																
EW462	4	20'-9"	13	STR												EW653	6	21'-8"	19	STR																
EW463	4	16'-10"	13	STR												EW654	6	26'-11"	38	STR																
EW464	4	5'-10"	356	12	2'-2"	1'-6"	2'-2"									EW655	6	23'-0"	41	STR																
EW465	4	6'-9"	7	STR												EW656	6	20'-9"	14	STR																
EW466	4	14'-0"	7	STR												EW657	6	27'-1"	32	STR																
EW467	4	21'-3"	7	STR												EW658	6	18'-5"	35	STR																
EW468	4	29'-8"	26	STR												EW659	6	10'-11"	42	STR																
EW469	4	21'-0"	1	STR												EW660	6	25'-1"	2	STR																
EW470	4	11'-0"	1	STR												EW661	6	20'-11"	2	STR																
EW471	4	6'-2"	20	2	3'-1"	3'-1"	2'-2 1/4"									EW662	6	12'-4"	4	1	8"	11'-8"														
EW472	4	13'-0"	15	STR												EW663	6	9'-9" TO 4'-0"	16	1	8"	3'-4" TO 9'-1"												VARY 4 SETS OF 4 'B' BY 1'-11"		
EW473	4	8'-8"	13	STR												EW664	6	11'-1"	44	1	8"	10'-5"														
EW474	4	4'-6"	11	STR												EW665	6	5'-11 1/2"	56	36	2'-2"	2'-4 1/2"	1'-5"	2 1/2"												
EW475	4	9'-1"	7	STR												EW666	6	9'-0"	20	2	4'-6"	4'-6"	3'-2 1/4"													
EW476	4	12'-6"	14	STR												EW667	6	9'-10"	7	STR																
EW477	4	9'-2"	7	STR												EW668	6	14'-9"	14	STR																
EW478	4	5'-11 1/2"	2	12	2'-2"	1'-7 1/2"	2'-2"									EW669	6	9'-2"	7	STR																
EW479	4	3'-6"	104	STR												EW670	6	9'-8" TO 12'-2"	39	STR															VARY EA BY 3/4" (+)	
EW480	4	4'-0"	36	STR												EW671	6	4'-6"	208	STR																
EW481	4	25'-2"	14	STR												EW672	6	17'-2"	7	STR																
EW482	4	20'-8"	15	STR												EW673	6	14'-4"	38	10	4'-6"	9'-10"														
EW483	4	16'-3"	15	STR												EW674	6	19'-0"	32	10	4'-6"	14'-6"														
EW484	4	11'-9"	15	STR																																
EW486	4	7'-6"	7	STR																																
EW487	4	16'-6"	8	STR																																
EW488	4	25'-6"	8	STR																																
EW489	4	34'-6"	17	STR																																
EW490	4	24'-11"	1	STR																																
EW491	4	13'-11"	1	STR																																
EW492	4	6'-4"	15	10	3'-2"	3'-2"																														
EW493	4	7'-10"	15	10	3'-2"	4'-8"																														
EW494	4	9'-8" TO 12'-2"	39	STR											VARY EA BY 3/4" (+)																					
EW495	4	28'-2"	32	2	2'-5"	25'-9"																														
EW496	4	22'-4"	2	STR																																
EW497	4	15'-3"	2	STR																																
EW498	4	8'-3"	2	STR																																
EW499	4	4'-6"	8	9	2'-2"	1'-8"	2'-2"	8"																												
EW4100	4	17'-2"	7	STR																																
EW4101	4	7'-3"	6	12	2'-6"	2'-3"	2'-6"																													
EW551	5	10'-5"	39	STR																																
EW552	5	11'-1"	51	STR																																
EW553	5	7'-7"	42	STR																																
EW554	5	7'-0"	42	15	1'-8 1/2"	1'-9"	1'-6 1/2"	2'-0"	1'-2 1/2"																											
EW555	5	23'-11"	4	STR																																
EW556	5	20'-4"	4	STR																																
EW557	5	8'-0"	16	12	2'-11"	2'-2"	2'-11"																													
EW558	5	8'-7"	16	12	2'-11"	2'-9"	2'-11"																													

## BAR BENDING DIAGRAMS



### NOTES

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- "J" DIMENSION STANDARD BAR BEND UNLESS NOTED

MARK</
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SUBSTRUCTURE UNIT: ABUTMENT 1 WING B		LOG 1 OF 1									
BORING NUMBER: SB-3		BORING LOCATION STATION: 10+94.7 OFFSET: 31.5 FT. LT.		START: 07/23/2019 2:00 PM		HAMMER: AUTOMATIC					
DRILLING METHOD AND EQUIPMENT: DOUBLE TUBE WIRE LINE-NO, AUTOMATIC, CME 55 TRACK		SIZE OF CORE: 2.000 IN.		VERTICAL SCALE: 0 FT. 5 FT.		TOP OF BORING ELEVATION: 939.8 FT.					
DRILLING INSPECTOR: STEVE HARGENRADER DRILLER & DRILLING COMPANY: C.RYCHORCEWICZ AWK DRILLING, INC.		▽ 0 HR. READING - ELAPSED TIME: El. 934.3 ft. - 0.0 hr.									
		▼ 24 HR. READING - ELAPSED TIME: El. 908.0 ft. - 192.3 hr.									
ELEV.	GRAPHIC	MATERIAL DESCRIPTION	ASHTO/ USCS	SAMPLE DEPTH	SAMPLE NO.	BLOW COUNT	PP/T, TSF	N, 60 / %ROD	REC (ft.)	REC (%)	◇ ROD % ◇ Soil/Rock Rec. % 20 40 60 80
939.5	TOPSOIL	0.3'/El. 939.5		1.5	S-1	1-2-2	5	0.8	53		
935	SAND and CLAY, trace Gravel, loose to medium dense, dry, homogeneous, poorly graded, high plastic fines, light orange, residuum, - pushed coarse gravel in S-5 - bag sample collected from 0.0'-9.0' - Class on thin wall tube sample collected in an offset hole from 4.0 to 6.0 ft.	a-6 / sc		3.0	S-2	2-4-3	9	1.2	80		
932.00	Coarse GRAVEL, some Clay, little fine to coarse Sand, medium dense, dry, homogeneous, poorly graded, sub-angular to angular, medium plastic fines, light orange, residuum.	a-2-6 / gc		4.5	S-3	2-3-2	7	1.2	80		
930	MECHANICALLY BROKEN ROCK, very dense, dry, fissured, poorly graded, angular, non-plastic, black, residuum, (Pittsburgh coal seam).	a-1-c / gp		6.0	S-4	3-2-3	7	1.3	87		
926.10	BITUMINOUS COAL, black, dull luster, soft to medium hard, slightly weathered, indistinct bedding, random fractures, narrow to close spacing, flat to shear dip, narrow joint opening, ROD=0%			7.5	S-5	4-4-5	12	0.6	40		
925				9.0	S-6	5-7-12	25	1.2	80		
922.7				10.5	S-7	12-12-50	83	1.2	80		
920.7				12.0	S-8	15-43-50	124	1.5	100		
920				12.2	S-9	50/.2'	>67	0.2	100		
918.6				13.5	S-10	50/.2'	>67	0.2	100		
918.6				13.7	R-1		0%	1.0	50		
918.6				15.7	R-2			0%	2.5	100	
918.6				18.2	R-3			27%	2.3	77	
918.6				21.2	R-4			100%	2.0	100	
918.6				23.2	R-5			98%	5.0	100	
918.6				28.2	R-6			82%	5.0	100	
918.6				33.2	R-7			88%	4.6	92	

\*\*SAMPLE NO. shading indicates lab testing performed.

\* - BPCE & BMPE AT WINGS VARY, PROVIDED VALUES ARE THOSE CLOSEST TO BORING LOCATION.

GENERAL NOTES

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT. 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

- PP POCKET PENETROMETER
- T TORVANE
- NTS NOT TO SCALE
- BMPE BOTTOM OF MICROPILE ELEVATION
- BPCE BOTTOM OF PILE CAP ELEVATION
- TOR ESTIMATED TOP OF ROCK ELEVATION
- TEST BORING LOCATION

THE DESCRIPTIONS OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

CSM

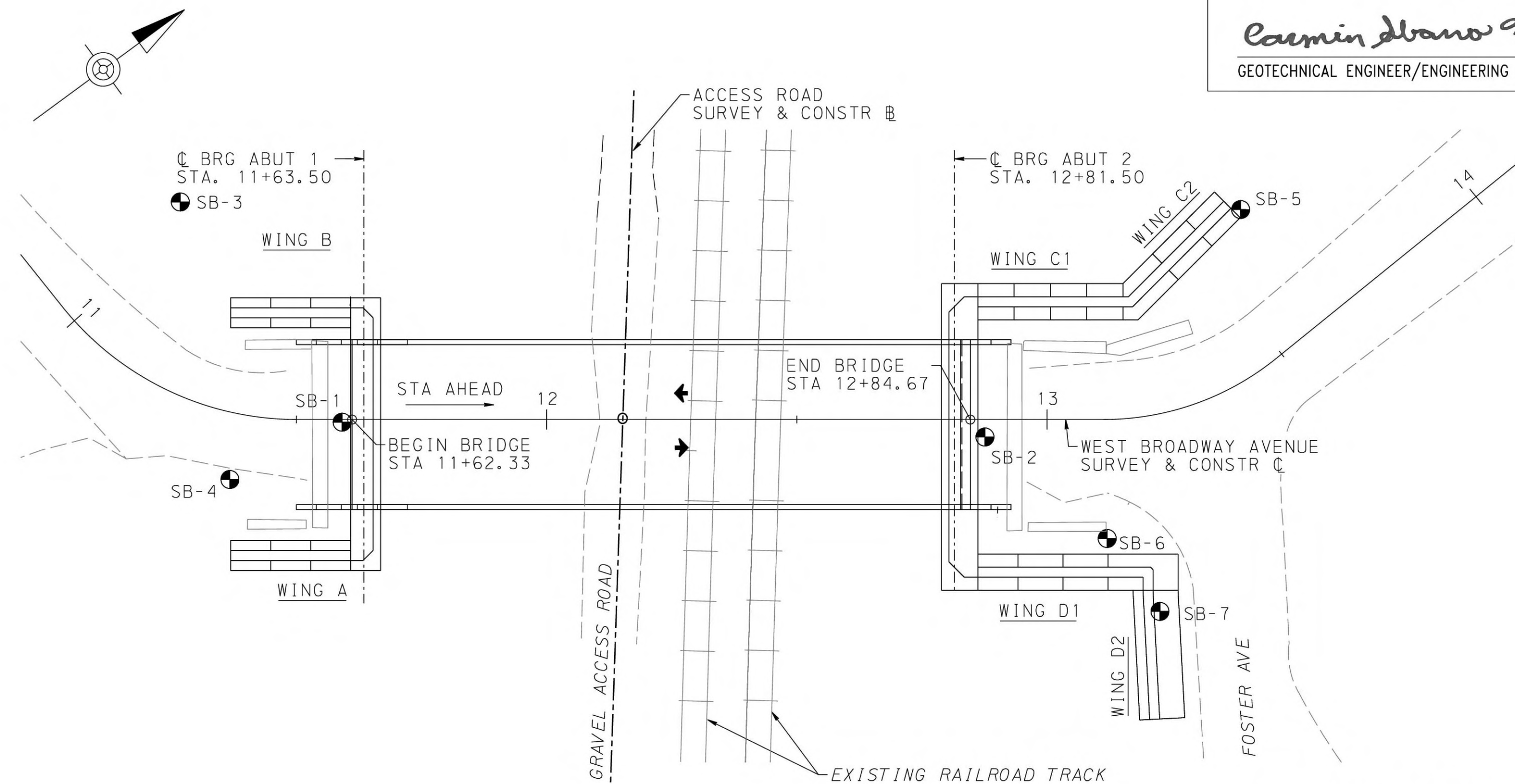
THE SUBSURFACE EXPLORATION DATA THAT ARE PRESENTED ON THESE DRAWINGS (INCLUDING BORING LOGS, EARTH SAMPLES, ROCK CORES, CLASSIFICATION OF MATERIALS AND DEPTH OF BORINGS) ACCURATELY REPRESENT THE CONDITIONS ENCOUNTERED BY THE TEST BORING PROGRAM AT EACH BORING LOCATION.

*Carmin Sbarro Minnaugh*

GEOTECHNICAL ENGINEER/ENGINEERING GEOLOGIST

2/7/2025

DATE:



BMS STR ID: 64-7241-0993-0003 BRKEY: 56793

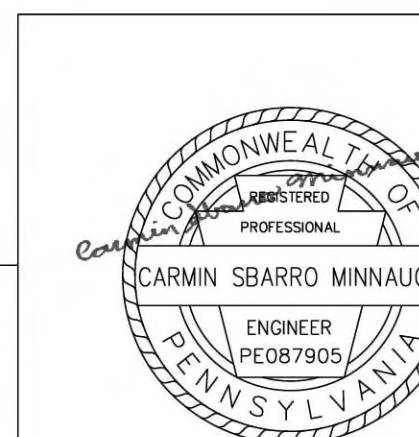
WEST. CO. DEPT. OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE

STRUCTURE BORINGS

PLAN PROVIDED BY:  
SAI CONSULTING ENGINEERS, INC.  
1350 PENN AVENUE  
SUITE 300  
PITTSBURGH, PA 15222-4211

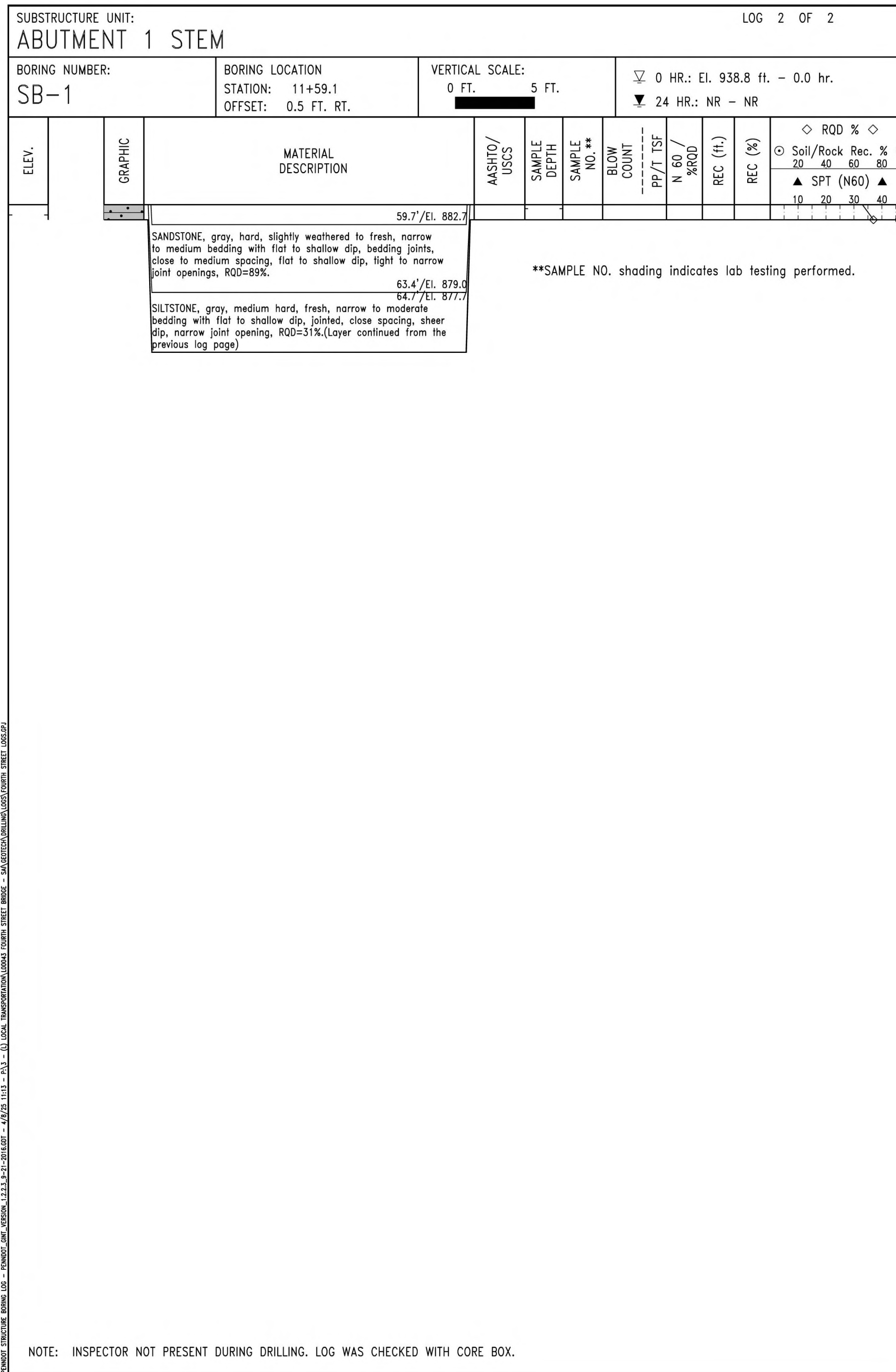
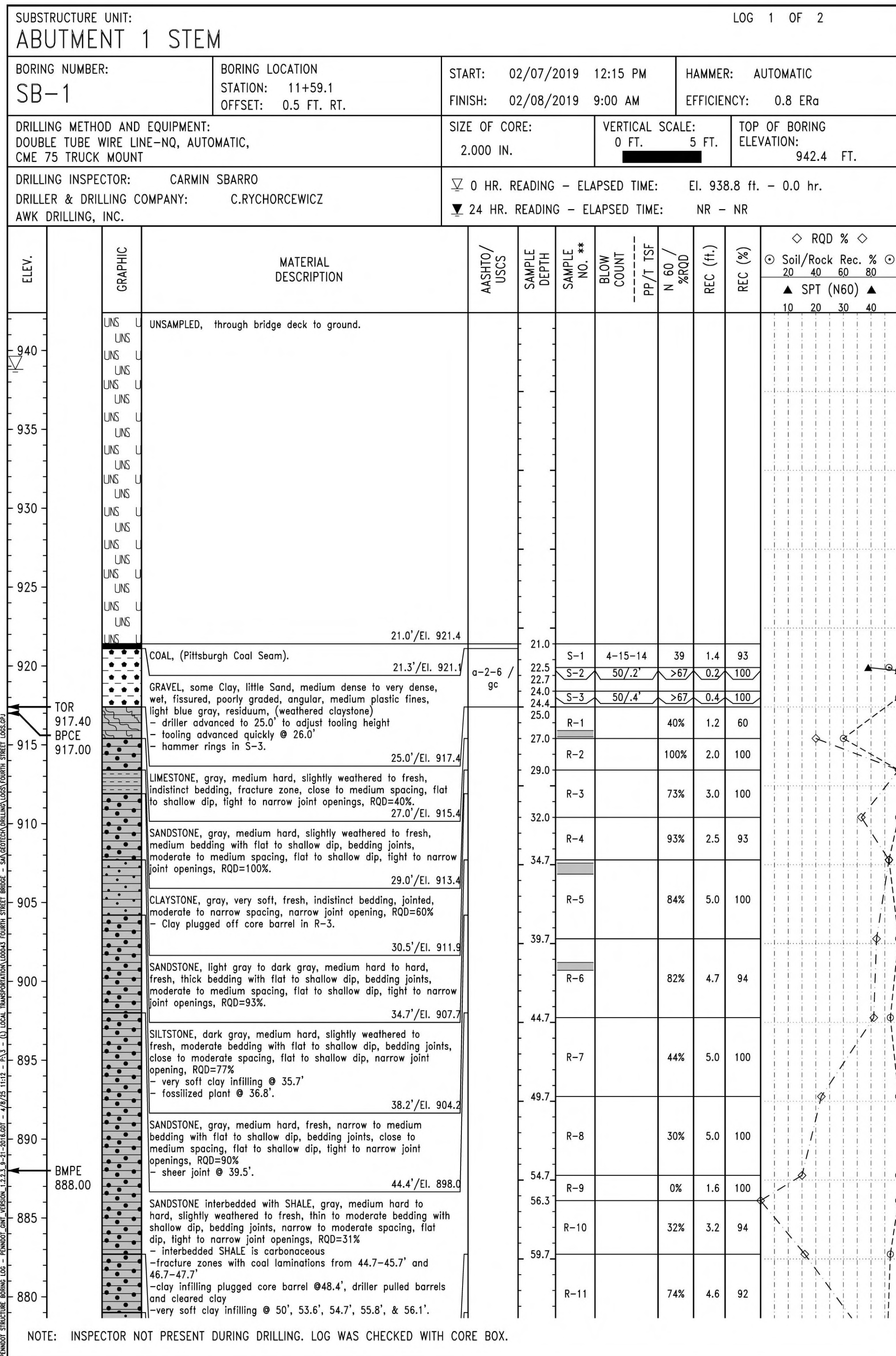


*Proy A. Painter*  
DISTRICT GEOTECHNICAL ENGINEER

2/9/2026

SHEET 45 OF 50

L - 645



GENERAL NOTES

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LEGEND

- PP POCKET PENETROMETER
- T TORVANE
- NTS NOT TO SCALE
- BMPE BOTTOM OF MICROPILE ELEVATION
- BPCE BOTTOM OF PILE CAP ELEVATION
- TOR ESTIMATED TOP OF ROCK ELEVATION

THE DESCRIPTIONS OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

CSM

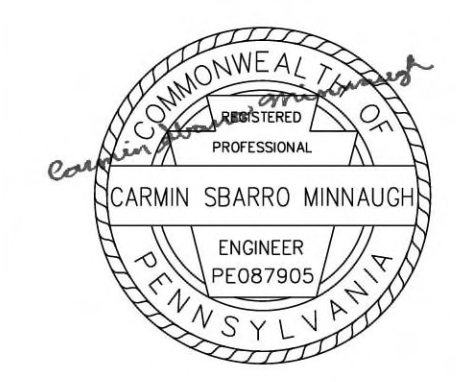
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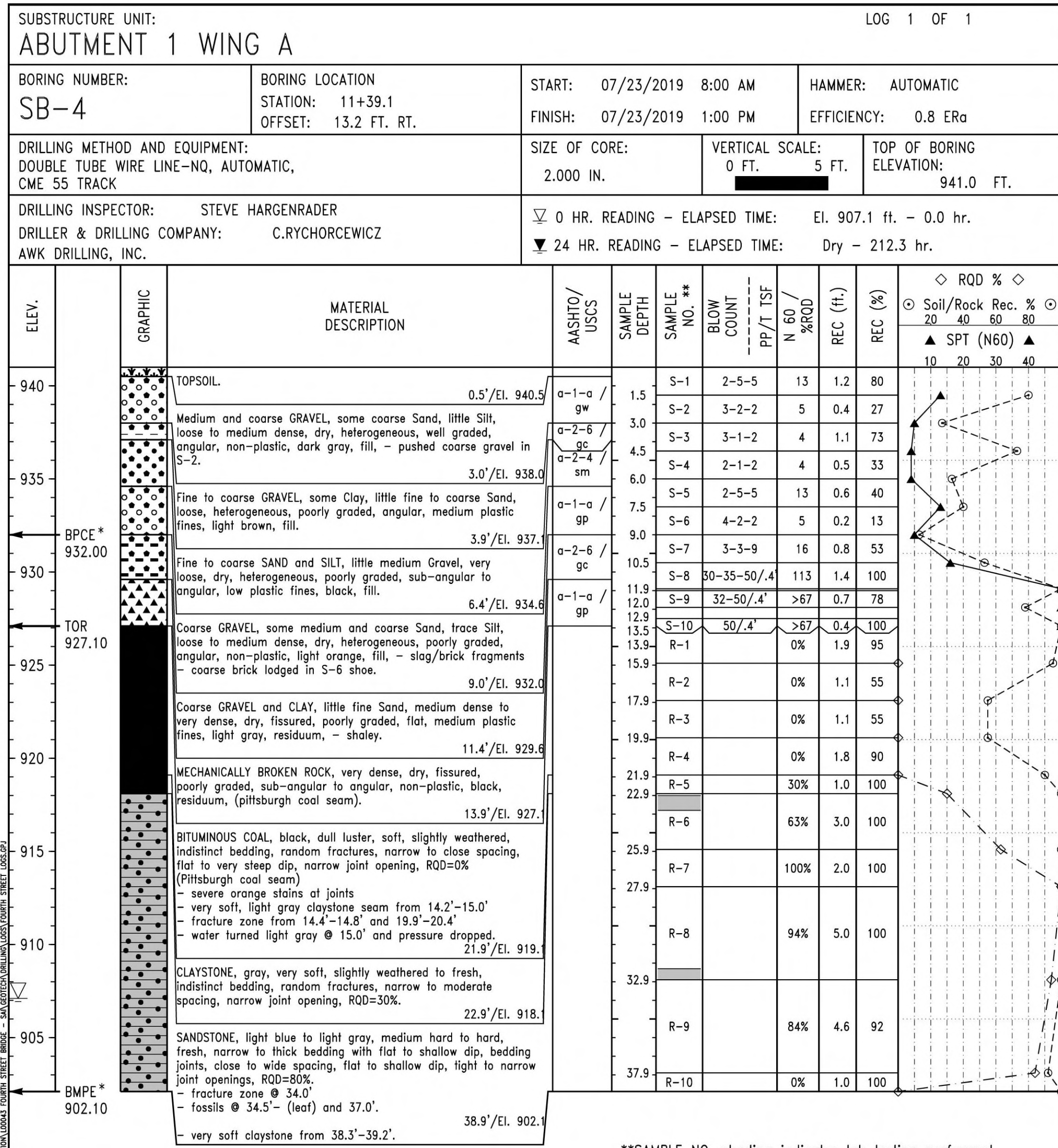
WEST. CO. DEPT. OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

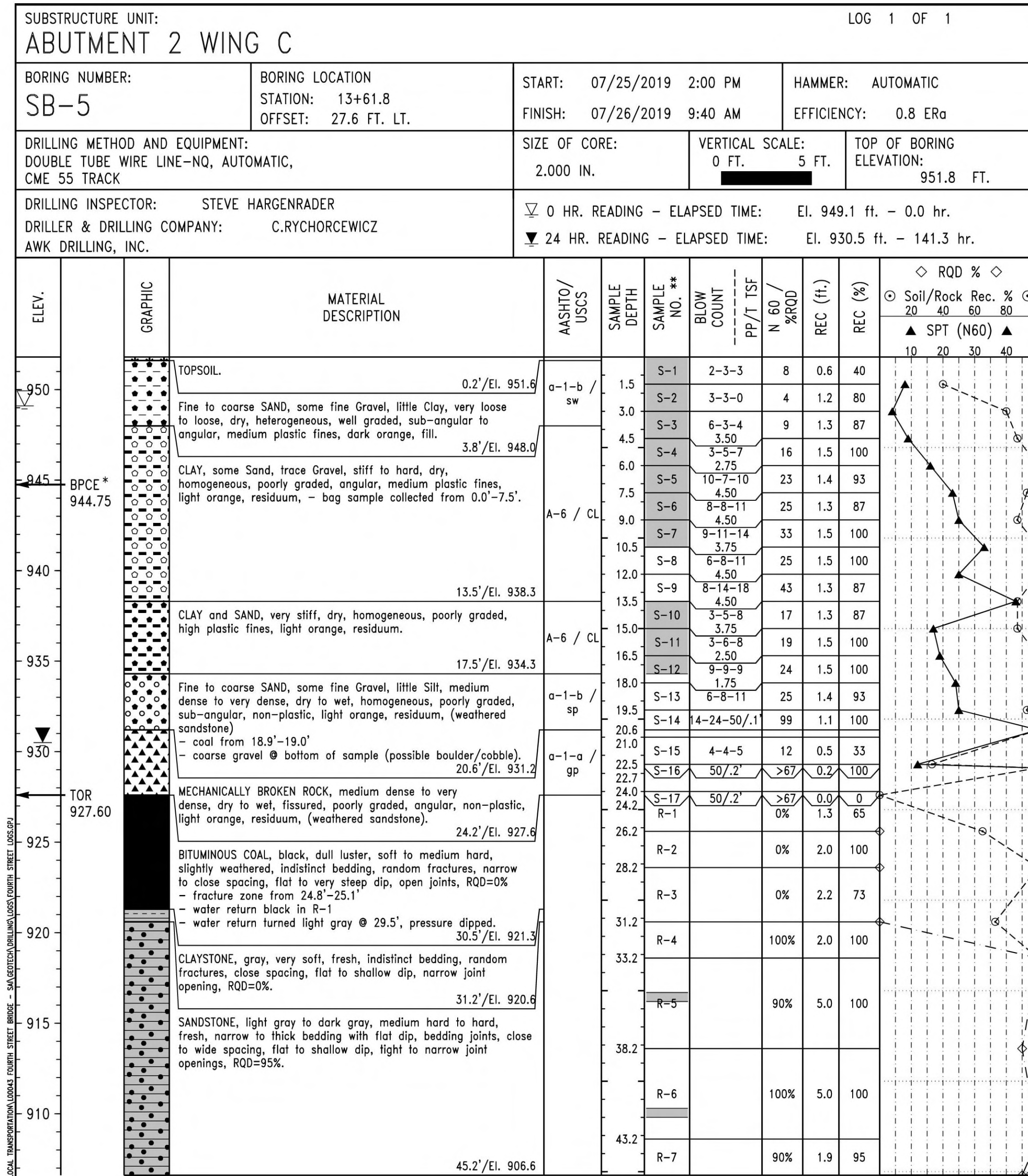
SINGLE SPAN STEEL MULTI-GIRDER BRIDGE

STRUCTURE BORINGS





\* - BPCE & BMPE AT WINGS VARY, PROVIDED VALUES ARE THOSE CLOSEST TO BORING LOCATION.



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LEGEND

- PP POCKET PENETROMETER
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THE DESCRIPTIONS OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

CSM

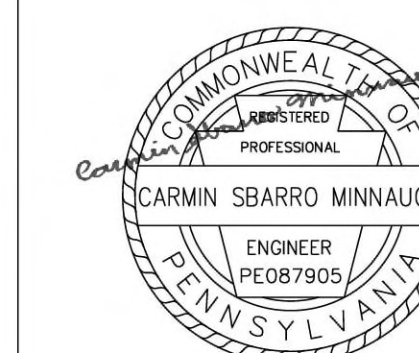
BMS STR ID: 64-7241-0993-0003 BRKEY: 56793

WEST. CO. DEPT. OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE

STRUCTURE BORINGS



SHEET 47 OF 50

L - 645

SUBSTRUCTURE UNIT:		LOG 1 OF 2											
ABUTMENT 2 STEM		BORING NUMBER:		BORING LOCATION		START:		HAMMER:		EFFICIENCY:			
SB-2		STATION: 12+87.6 OFFSET: 3.5 FT. RT.		12+87.6 3.5 FT. RT.		02/13/2019 8:30 AM		AUTOMATIC		0.8 ERo			
DRILLING METHOD AND EQUIPMENT:		SIZE OF CORE:		VERTICAL SCALE:		TOP OF BORING ELEVATION:							
DOUBLE TUBE WIRE LINE-NQ, AUTOMATIC, CME 75 TRUCK MOUNT		2.000 IN.		0 FT. 5 FT.		949.8 FT.							
DRILLING INSPECTOR:		▽ 0 HR. READING - ELAPSED TIME: Dry - 0.0 hr.											
RACHEL MILLER		▼ 24 HR. READING - ELAPSED TIME: NR - NR											
DRILLER & DRILLING COMPANY:													
C.RYCHORCEWICZ AWK DRILLING, INC.													
ELEV.	GRAPHIC	MATERIAL DESCRIPTION	AASHTO/USCS	SAMPLE DEPTH	SAMPLE NO.**	BLOW COUNT	PP/T TSF	N 60 / %RQD	REC (ft.)	REC (%)	◇ RQD % ◇	Soil/Rock Rec. %	▲ SPT (N60) ▲
945	UNS	UNSAMPLED, through bridge deck to ground.											
920.3		29.5'/El. 920.3											
918.70	TOR	GRAVEL, trace Sand, very dense, dry, homogeneous, poorly graded, angular, non-plastic, gray, residuum, - sand is black. 31.1'/El. 918.7	a-1-a / GP		S-1	5-50/2'	>67	0.7	100				
912.00	BPCE*	SANDSTONE, gray, medium hard to hard, fresh to slightly weathered, thin to medium bedding with flat dip, bedding joints, close to medium spacing, tight to narrow joint openings, RQD=81% - shale laminations - siltstone from 32.0'-32.5' - clay seam @ 32.2' and 32.5' - claystone from 43.4'-44.1'			R-1	50/.1'	>67/45%	0.0/1.6	0/80				
905.7		44.1'/El. 905.7			R-2		100%	3.0	100				
903.5		46.3'/El. 903.5			R-3		83%	3.0	100				
900.7		49.1'/El. 900.7			R-4		82%	5.0	100				
896.8		53.2'/El. 896.8			R-5		76%	5.0	100				
890		59.1'/El. 890			R-6		74%	5.0	100				
		54.1'/El. 896.8			R-7		74%	4.7	94				
		55.2'-56.8'			R-8		94%	5.0	100				

SUBSTRUCTURE UNIT:		LOG 2 OF 2											
ABUTMENT 2 STEM		BORING NUMBER:		BORING LOCATION		START:		HAMMER:		EFFICIENCY:			
SB-2		STATION: 12+87.6 OFFSET: 3.5 FT. RT.		12+87.6 3.5 FT. RT.		02/13/2019 8:30 AM		AUTOMATIC		0.8 ERo			
DRILLING METHOD AND EQUIPMENT:		SIZE OF CORE:		VERTICAL SCALE:		TOP OF BORING ELEVATION:							
DOUBLE TUBE WIRE LINE-NQ, AUTOMATIC, CME 75 TRUCK MOUNT		2.000 IN.		0 FT. 5 FT.		949.8 FT.							
DRILLING INSPECTOR:		▽ 0 HR.: Dry - 0.0 hr.											
RACHEL MILLER		▼ 24 HR.: NR - NR											
DRILLER & DRILLING COMPANY:													
C.RYCHORCEWICZ AWK DRILLING, INC.													
ELEV.	GRAPHIC	MATERIAL DESCRIPTION	AASHTO/USCS	SAMPLE DEPTH	SAMPLE NO.**	BLOW COUNT	PP/T TSF	N 60 / %RQD	REC (ft.)	REC (%)	◇ RQD % ◇	Soil/Rock Rec. %	▲ SPT (N60) ▲
885		65.1'/El. 884.7			R-9		68%	5.0	100				
883.00	BMPE*	CLAYSTONE, gray, very soft, fresh, indistinct bedding, random fractures, narrow to close spacing, narrow joint opening, RQD=0%.			R-10		65%	2.0	100				
880		66.4'/El. 883.4											
		71.1'/El. 878.7											
		SANDSTONE, gray, hard to very hard, fresh to slightly weathered, thin to moderate bedding with shallow dip, bedding joints, moderate to medium spacing, shallow dip, tight to narrow joint openings, RQD=83% - siltstone from 66.4'-67.0' - black shale laminations from 66.4'-67.5' - clay seam @ 69.8'											

**GENERAL NOTES**

THIS SHEET IS INCLUDED FOR THE CONVENIENCE OF THE DEPARTMENT. 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**

PP POCKET PENETROMETER  
T TORVANE  
NTS NOT TO SCALE  
BMPE BOTTOM OF MICROPILE ELEVATION  
BPCE BOTTOM OF PILE CAP ELEVATION  
TOR ESTIMATED TOP OF ROCK ELEVATION

THE DESCRIPTIONS OF THE MATERIALS ENCOUNTERED HAVE BEEN VERIFIED.

CSM

BMS STR ID: 64-7241-0993-0003 BRKEY: 56793

WEST. CO. DEPT. OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE

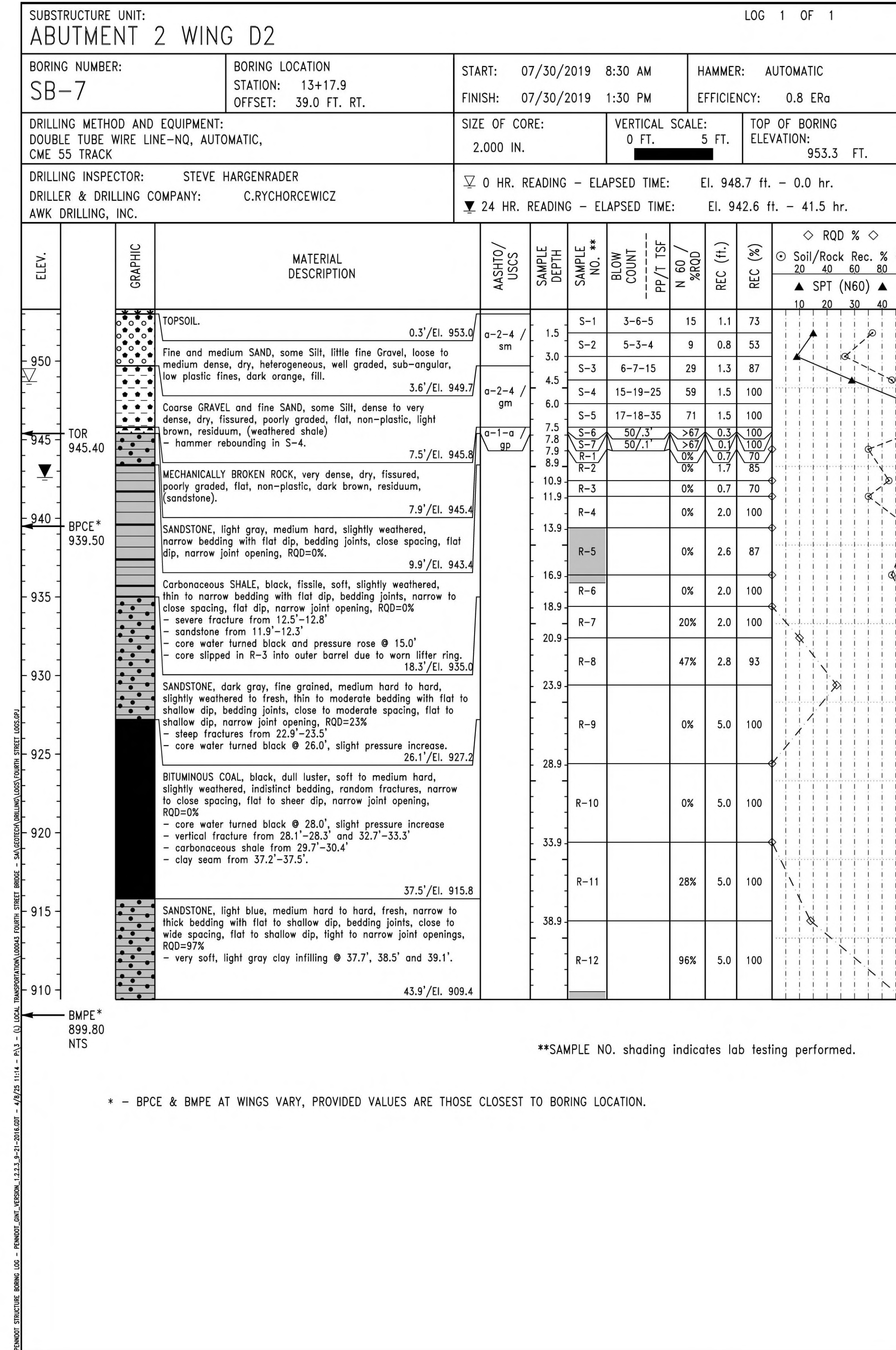
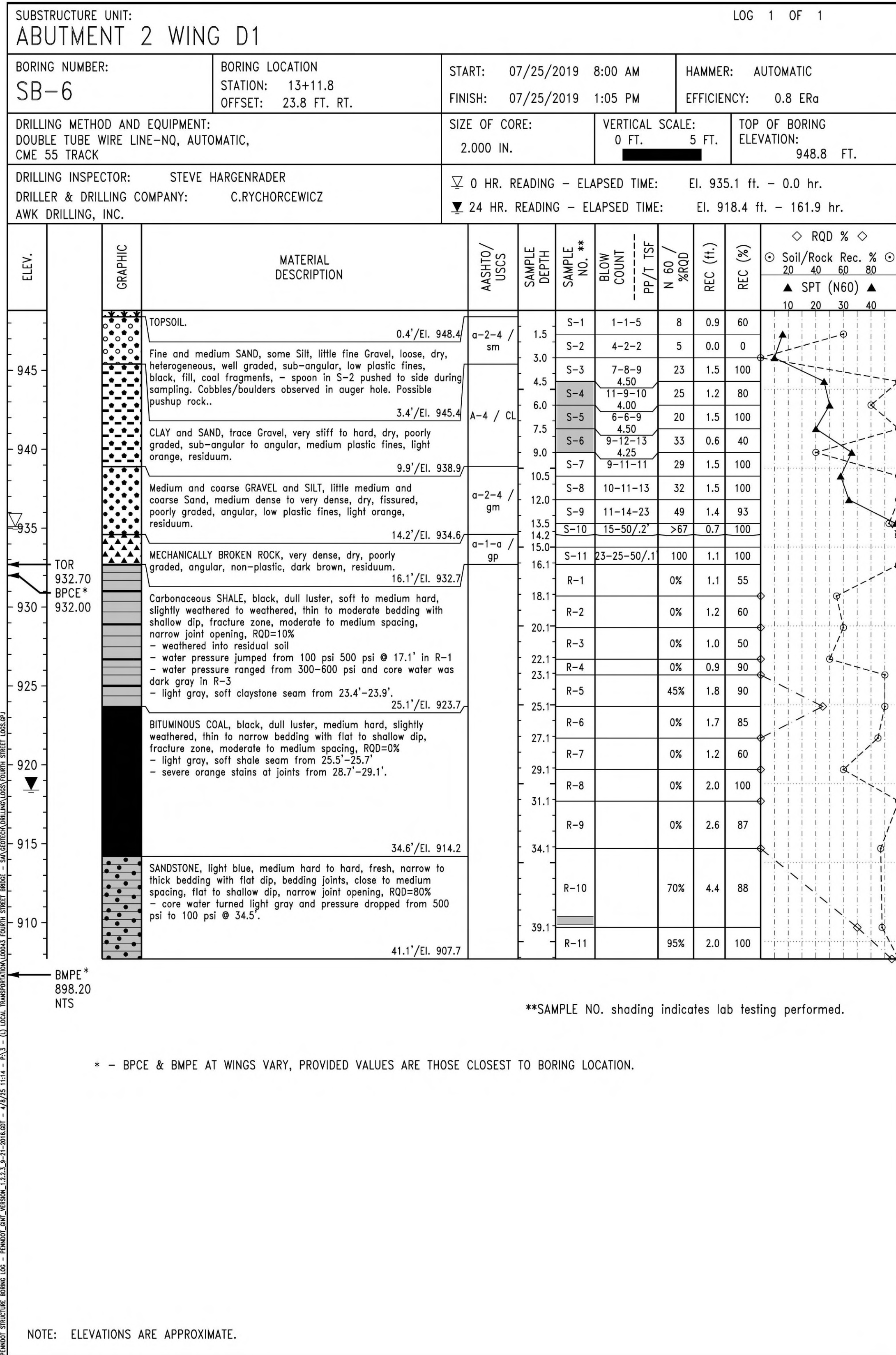
STRUCTURE BORINGS

SHEET 48 OF 50

L - 645



7/8/2024 9:28:39 AM P:\3 - (L) Local Transportation\020413 Fourth Bridge - SA\GEOTECH\Boring\_Logs\CD\Fourth St. StructureBoringSheet - DR23.dgn



GENERAL NOTES

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LEGEND

- PP POCKET PENETROMETER
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WEST. CO. DEPT. OF PUBLIC WORKS

WESTMORELAND COUNTY  
NORTH IRWIN BOROUGH  
WEST BROADWAY AVENUE STA. 12+22.50  
OVER NORFOLK SOUTHERN RAILROAD

SINGLE SPAN STEEL MULTI-GIRDER BRIDGE

STRUCTURE BORINGS

SHEET 49 OF 50

L - 645



LABORATORY TEST SUMMARY - SOILS

BORING NUMBER	STATION & OFFSET	SAMPLE #	TEST DEPTH (FT.)	NATURAL MOISTURE %	% GRAIN SIZE DISTRIBUTION (AASHTO)							CLASSIFICATION			PLASTICITY PARAMETERS			SHEAR STRENGTH				TEST METHOD
					GRAVEL %	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.)	
SB-3A	10+94.7 31.46 ft. LT.	ST-1	4.0 to 6.0	19.7	22.0	31.9	8.2	23.8	46.0	27.1	18.9	A-4	SC-SM	2.75	27	20	7	0.293	22.5			DIR. SHR.
SB-5	13+61.8 27.61 ft. LT.	S-4 to S-7	4.5 to 10.5	18.7	9.4	14.2	3.8	10.4	76.4	40.7	35.7	A-6	CL		34	21	13					
SB-5	13+61.8 27.61 ft. LT.	S-10 to S-12	13.5 to 17.5	27.2	24.5	13.5	1.3	12.1	62.0	31.9	30.1	A-6	CL		34	18	16					
SB-6	13+11.8 23.76 ft. RT.	S-4 to S-6	4.5 to 9.0	13.6	25.1	19.5	9.2	10.3	55.4	35.7	19.7	A-4	CL		33	23	10					

GENERAL NOTES

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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 %	ROD %	BEDROCK LITHOLOGY	STRATIGRAPHIC UNIT
SB-1	11+59.1 0.51 ft. RT.	R-1	26.5 to 26.9	UNCONFINED COMPRESSIVE TEST	7606.8 PSI / 547.7 TSF	NO		60	40	LIMESTONE	
SB-1	11+59.1 0.51 ft. RT.	R-5	34.9 to 35.6	UNCONFINED COMPRESSIVE TEST	3836.6 PSI / 276.2 TSF	YES	98.5% / TYPE 1	100	84	SILTSTONE	
SB-1	11+59.1 0.51 ft. RT.	R-6	41.2 to 41.7	UNCONFINED COMPRESSIVE TEST	11567.9 PSI / 832.9 TSF	NO		94	82	SANDSTONE	
SB-2	12+87.6 3.48 ft. RT.	R-5	44.1 to 44.6	UNCONFINED COMPRESSIVE TEST	7312.7 PSI / 526.5 TSF	YES	98.3% / TYPE 1	100	76	SILTSTONE	
SB-2	12+87.6 3.48 ft. RT.	R-5	46.3 to 46.7	UNCONFINED COMPRESSIVE TEST	7680.3 PSI / 553.0 TSF	NO		100	76	SANDSTONE	
SB-3	10+94.7 31.46 ft. LT.	R-3	20.3 to 20.7	UNCONFINED COMPRESSIVE TEST	6408.3 PSI / 461.4 TSF	NO		77	27	SANDSTONE	
SB-3	10+94.7 31.46 ft. LT.	R-5	23.8 to 24.3	UNCONFINED COMPRESSIVE TEST	9839.7 PSI / 708.5 TSF	NO		100	98	SANDSTONE	
SB-4	11+39.1 13.21 ft. RT.	R-6	23.0 to 23.8	UNCONFINED COMPRESSIVE TEST	4648.2 PSI / 334.7 TSF	NO		100	63	SANDSTONE	
SB-4	11+39.1 13.21 ft. RT.	R-8	32.3 to 32.9	UNCONFINED COMPRESSIVE TEST	4227.1 PSI / 304.4 TSF	NO		100	94	SANDSTONE	
SB-5	13+61.8 27.61 ft. LT.	R-5	35.1 to 35.6	UNCONFINED COMPRESSIVE TEST	5960.5 PSI / 429.2 TSF	NO		90	100	SANDSTONE	
SB-5	13+61.8 27.61 ft. LT.	R-6	41.5 to 42.0	UNCONFINED COMPRESSIVE TEST	6379.4 PSI / 459.3 TSF	NO		100	100	SANDSTONE	
SB-6	13+11.8 23.76 ft. RT.	R-10	38.4 to 38.9	UNCONFINED COMPRESSIVE TEST	13854.2 PSI / 997.5 TSF	NO		88	70	SANDSTONE	
SB-7	13+17.9 39.02 ft. RT.	R-5 to R-6	13.9 to 17.4	POINT LOAD TEST	7326.6 PSI / 527.5 TSF	YES	92% / TYPE 2	87	0	SHALE	
SB-7	13+17.9 39.02 ft. RT.	R-12	43.4 to 43.9	UNCONFINED COMPRESSIVE TEST	6479.1 PSI / 466.5 TSF	NO		100	96	SANDSTONE	

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?
SB-3	10+94.7 31.46 ft. LT.	S-1 to S-6	0.0 to 9.0	SOIL	7.6	3,568	220	1	No	No	Resist.w/Chlor.
SB-5	13+61.8 27.61 ft. LT.	S-1 to S-5	0.0 to 7.5	SOIL	7.0	3,095	90	2	No	No	No

POTENTIALLY CORROSIVE ENVIRONMENTS PER DM-4

SOIL: RESISTIVITY < 2,000 OHM-CM  
 2,000 OHM-CM < RESISTIVITY < 5000 OHM-CM WITH SULFATE CONCENTRATION > 200 PPM  
 2,000 OHM-CM < RESISTIVITY < 5000 OHM-CM WITH CHLORIDE CONCENTRATION > 100 PPM  
 PH < 5.5  
 5.5 < PH < 8.5 IN SOILS WITH HIGH ORGANIC CONTENT  
 SULFATE > 1,000 PPM

WATER: CHLORIDE CONTENT > 1000 PPM  
 SULFATE CONTENT > 150 PPM  
 HIGH ORGANIC CONTENT  
 PH < 5.5

CORROSIVE FOR CONCRETE: PH<4 OR SULFATES > 1000 PPM

REFER TO DM-4 FOR LANDFILL AND CINDER FILLS, SOILS SUBJECT TO MINE OR INDUSTRIAL DRAINAGE, AND MIXTURES OF HIGH RESISTIVITY AND LOW RESISTIVITY HIGH ALKALINE SOILS

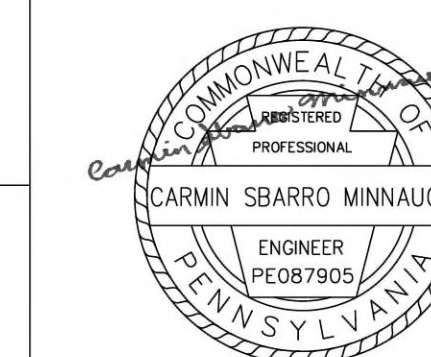
BMS STR ID: 64-7241-0993-0003 BRKEY: 56793

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STRUCTURE BORINGS



LABORATORY TESTING PERFORMED BY:  
 NAVARRO & WRIGHT  
 CONSULTING ENGINEERS, INC.  
 151 RENO AVENUE  
 NEW CUMBERLAND, PA 17070

SHEET 50 OF 50

L - 645