

NOTES:

FOR 72" CHAIN LINK FENCE, SEE SPECIAL PROVISIONS.

MATERIAL FOR ANCHOR BOLTS SHALL BE TYPE 304 STAINLESS STEEL WITH A MINIMUM 9000 PSI ULTIMATE STRENGTH. NUTS AND WASHERS SHALL BE TYPE 304 STAINLESS STEEL. ANCHOR BOLTS SHALL BE EMBEDDED AS PER ADHESIVE BONDING SYSTEM MANUFACTURER SPECIFICATIONS. NUTS SHALL BE AMERICAN STANDARD FINISHED HEXAGON THICK NUTS, CLASS 2B THREADS.

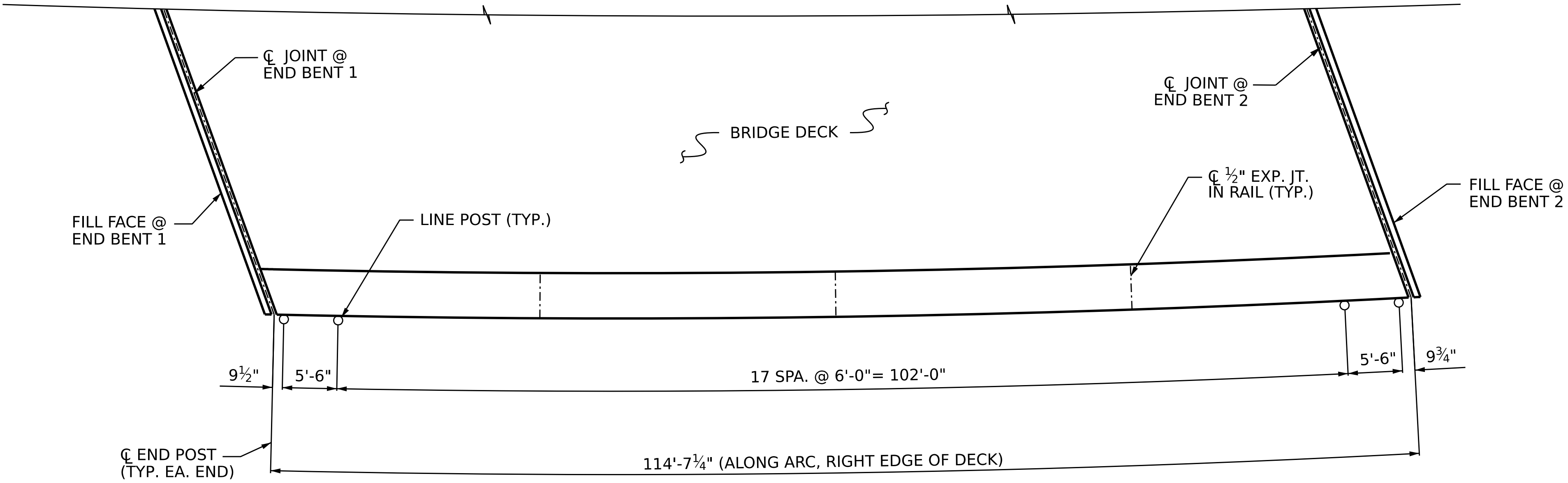
FOR SETTING ANCHOR BOLTS, THE CONTRACTOR SHALL USE AN ADHESIVE BONDING SYSTEM. SEE STANDARD SPECIFICATIONS SECTION 420-13 FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS. LEVEL ONE FIELD TESTING OF BONDING SYSTEM IS REQUIRED AND THE YIELD LOAD OF THE 3/4" ~ BOLTS IS 12.0 KIPS.

ALL FENCE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 1050 OF THE STANDARD SPECIFICATIONS, GALVANIZE ALL STEEL PARTS AND HARDWARE IN ACCORDANCE WITH ARTICLE 1076 OF THE STANDARD SPECIFICATIONS.

FENCE POST LOCATIONS SHALL BE SHIFTED, AS NECESSARY, TO MAINTAIN 12" MINIMUM DISTANCE FROM ANCHOR BOLT TO JOINTS IN BARRIER RAIL.

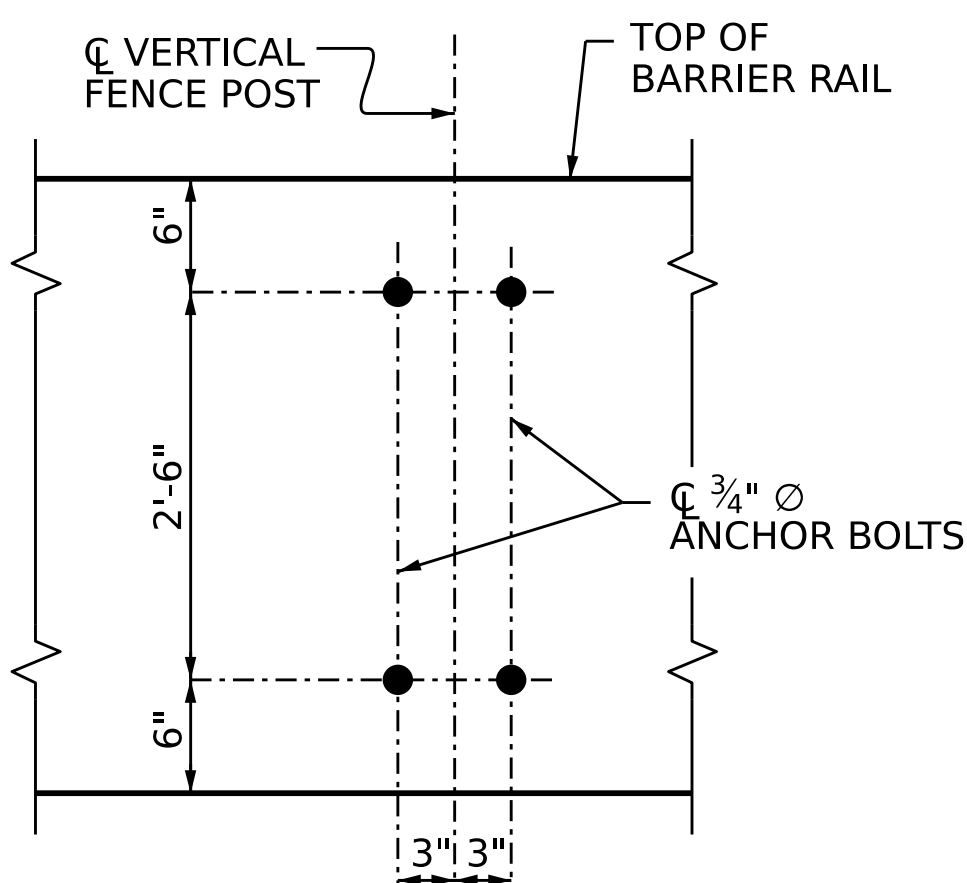
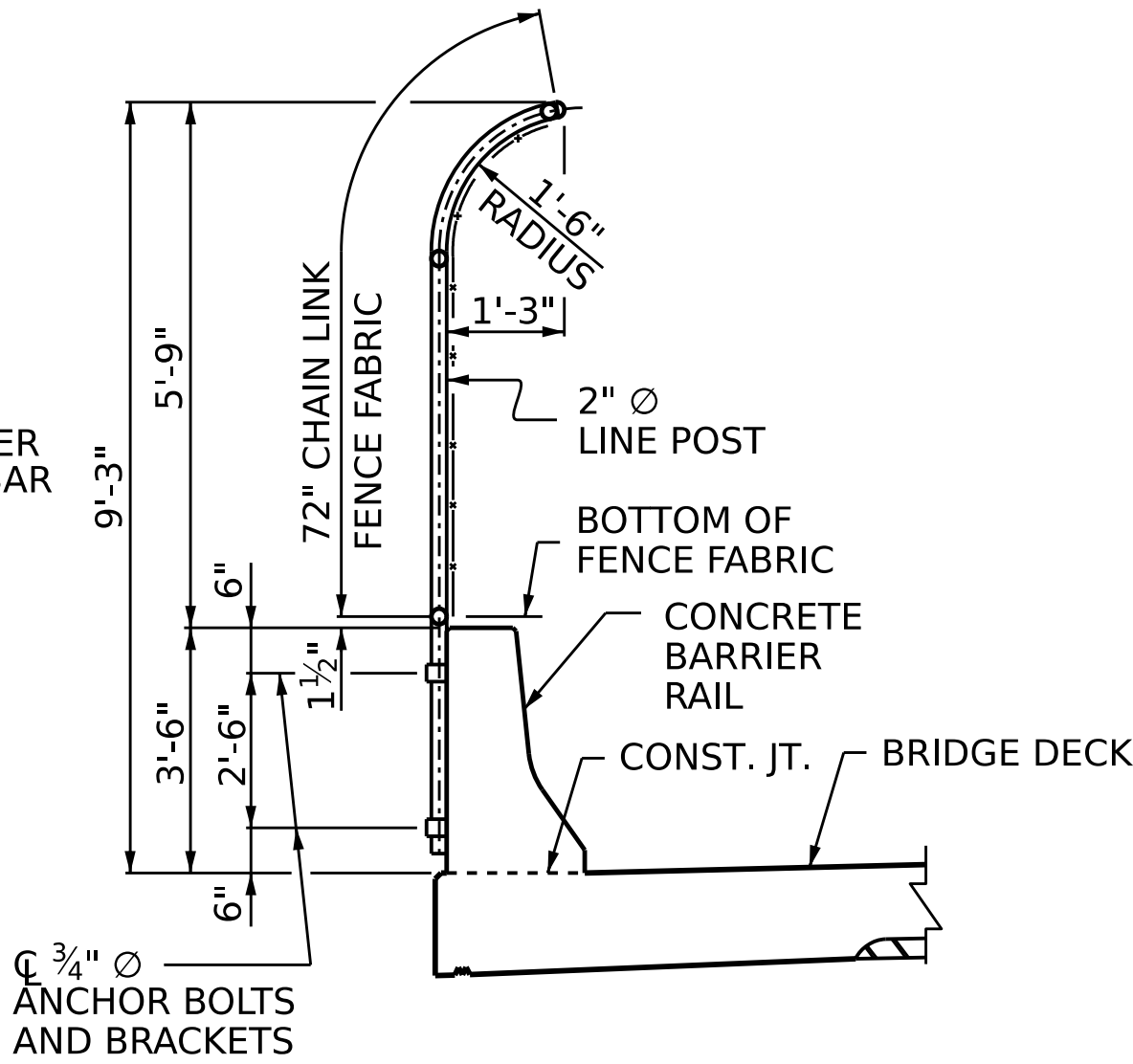
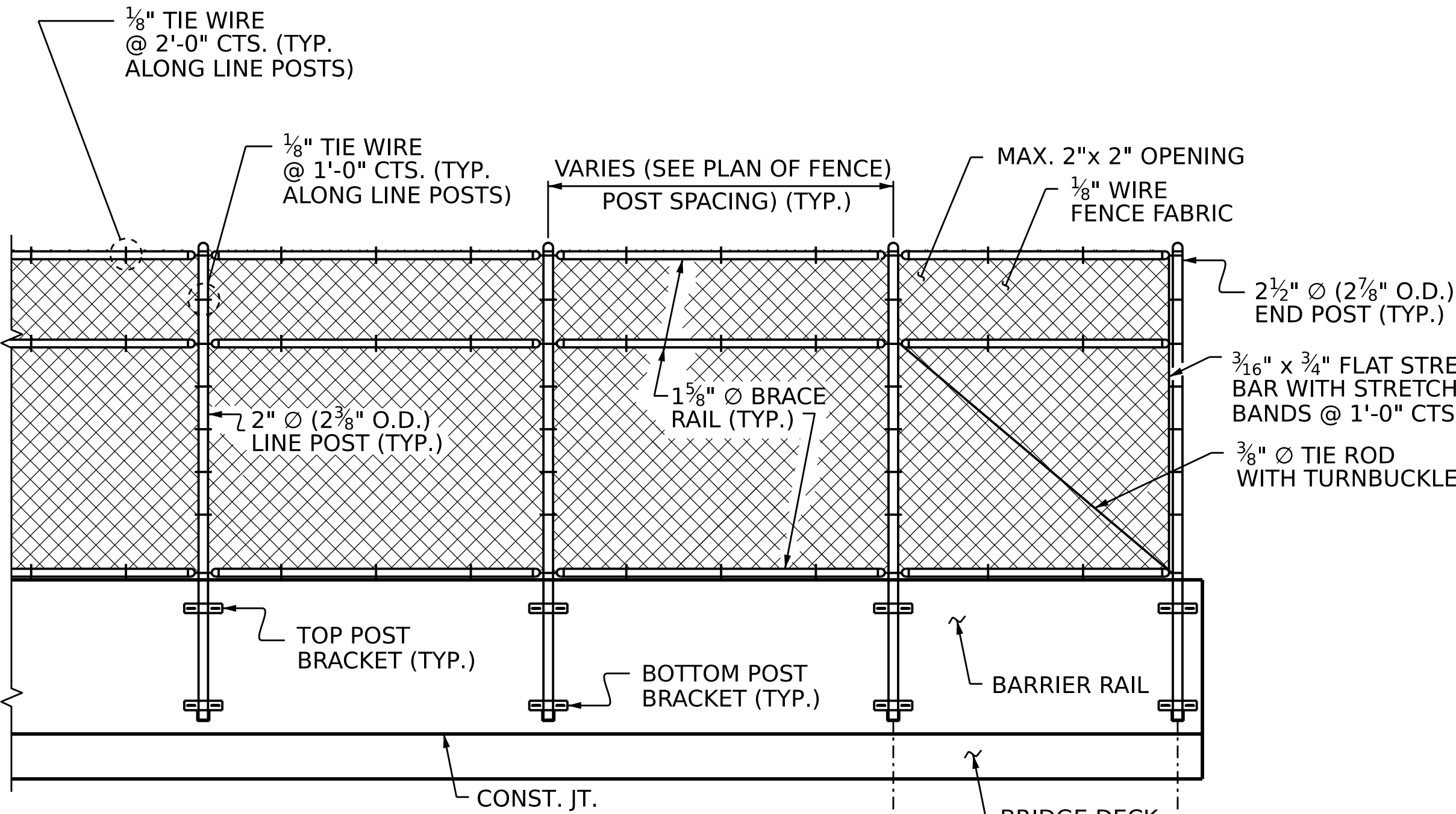
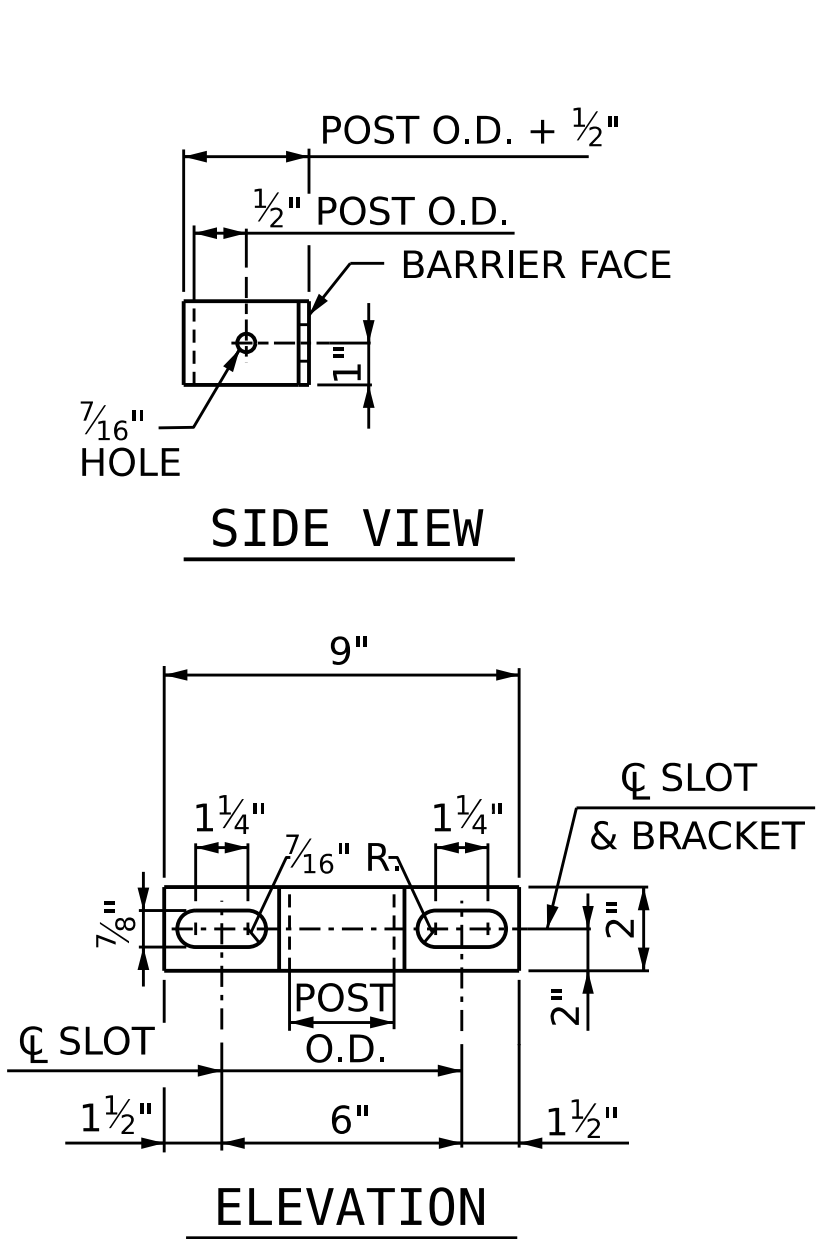
DIMENSIONS ARE SHOWN ALONG OUTSIDE EDGE OF DECK.

WELDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 1072-18 OF THE STANDARD SPECIFICATIONS.

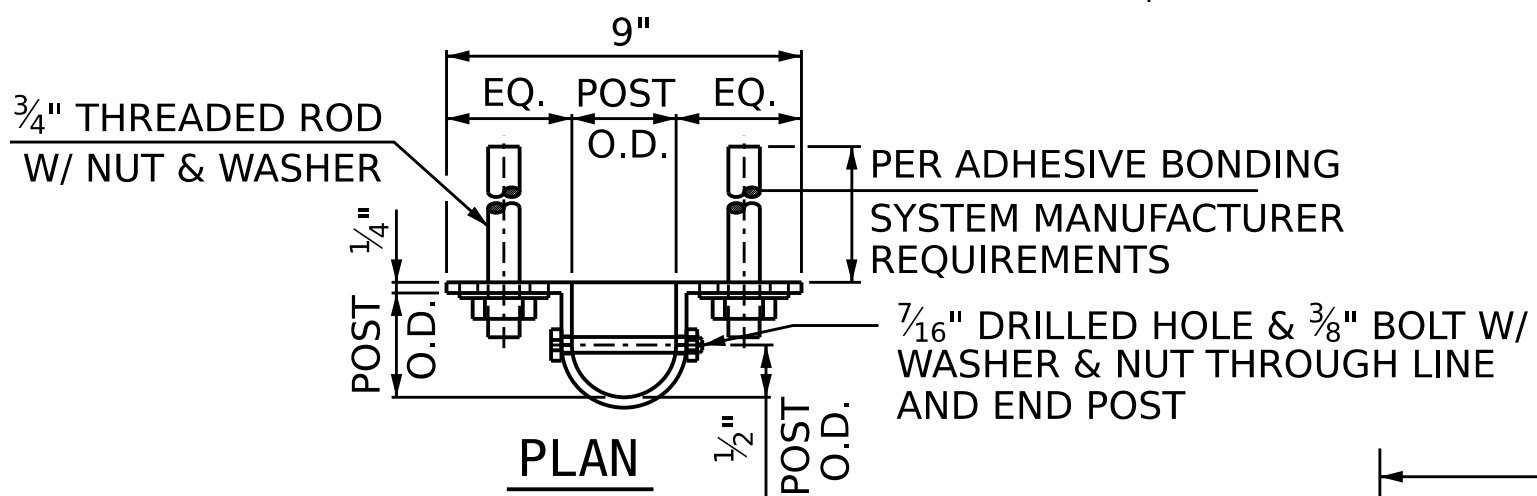


PLAN OF FENCE POST SPACING

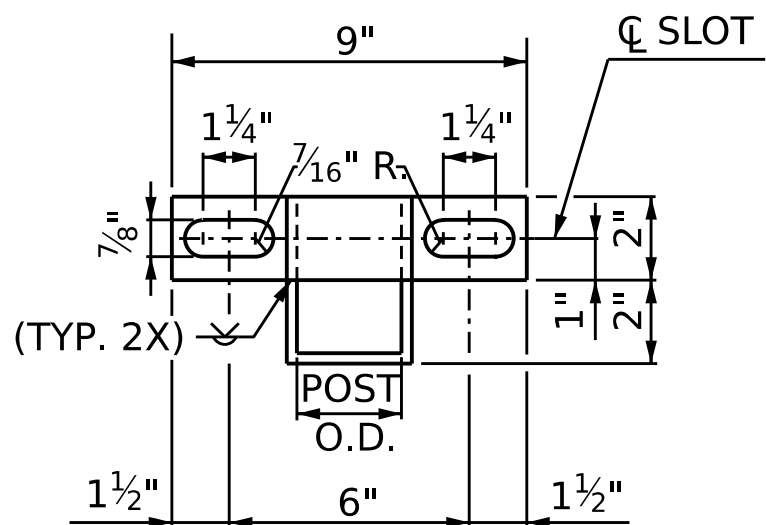
72" CHAIN LINK FENCE
PAY LENGTH 113.0 LIN. FT.



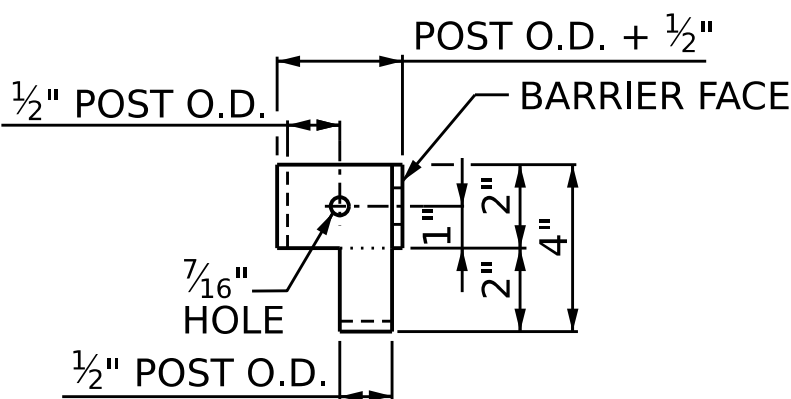
BOLT SETTING DETAIL



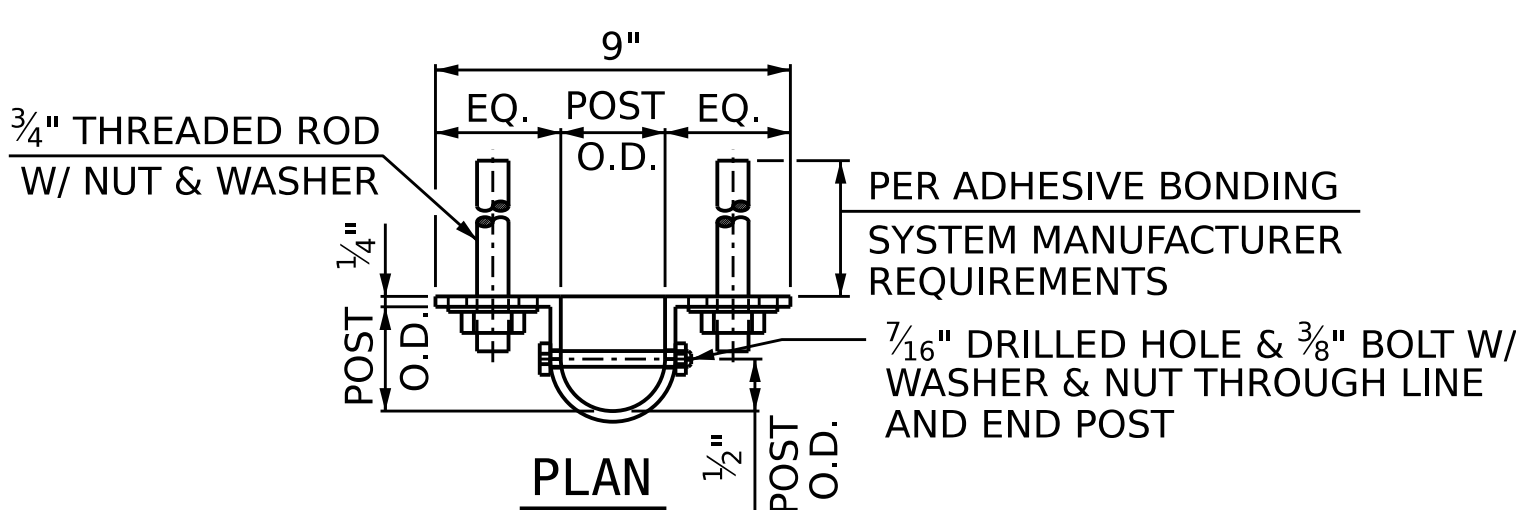
TOP POST BRACKET



ELEVATION



RIGHT SIDE VIEW



BOTTOM POST BRACKET

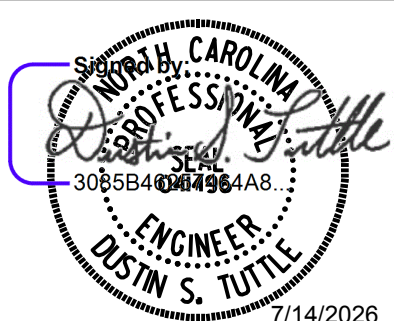
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PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

STATION: 83+50.80 -L-

SHEET 1 OF 1



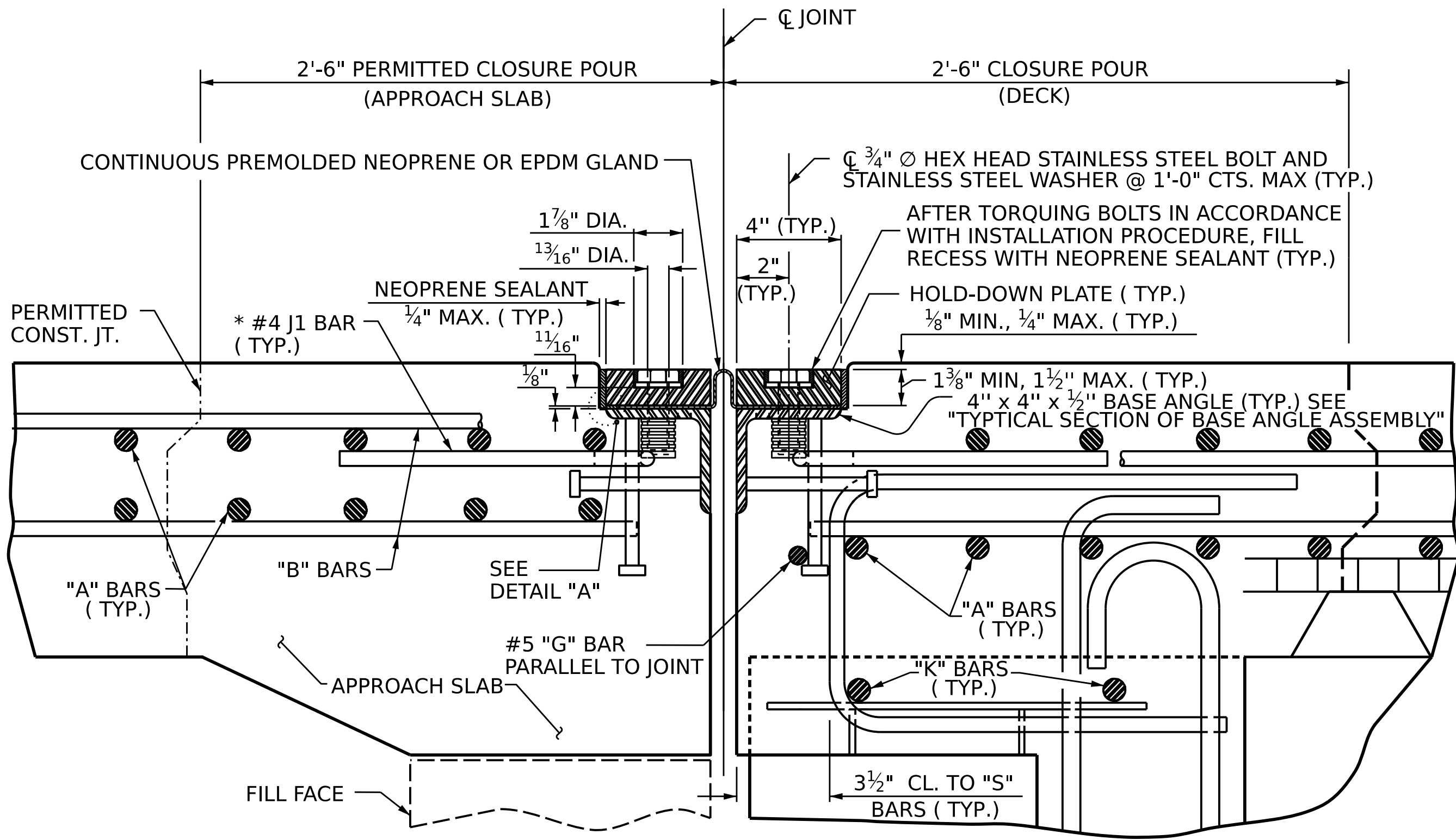
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CHAIN LINK FENCE
DETAILS

(LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S7-19 TOTAL SHEETS 41
2			4			

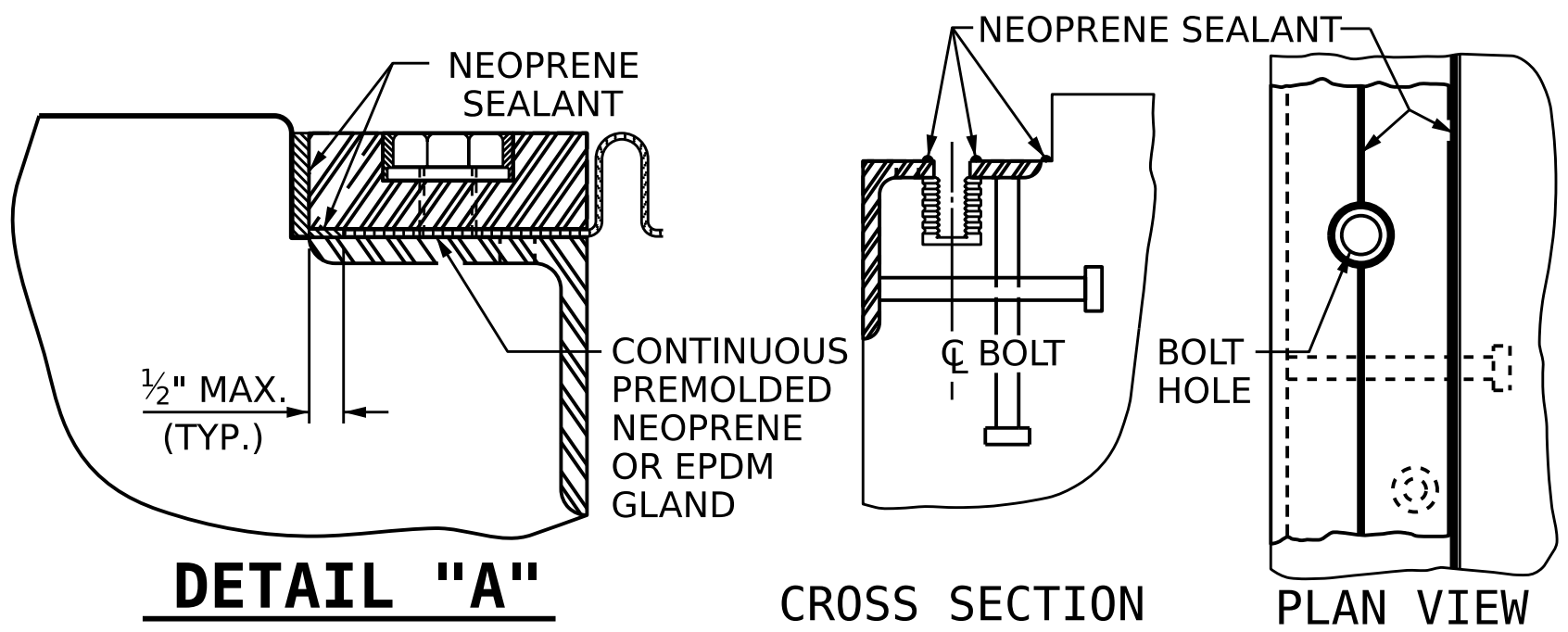
DRAWN BY : T. NEAL DATE : 12/2023
CHECKED BY : G. COLS DATE : 01/2024
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026



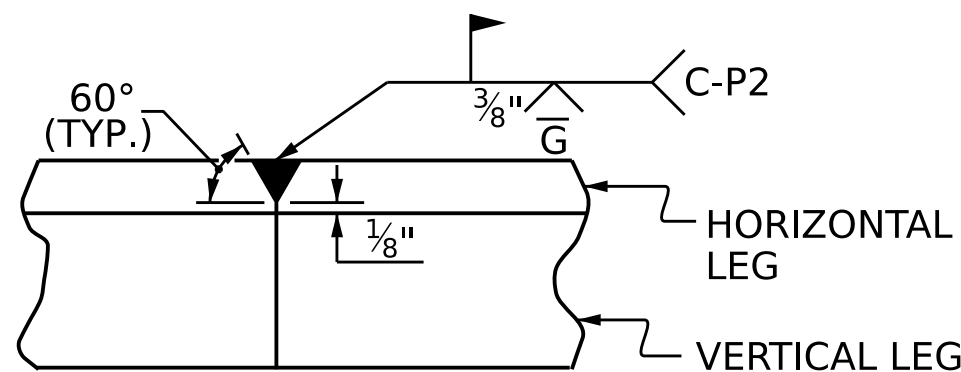
EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.



INSTALLATION SKETCH

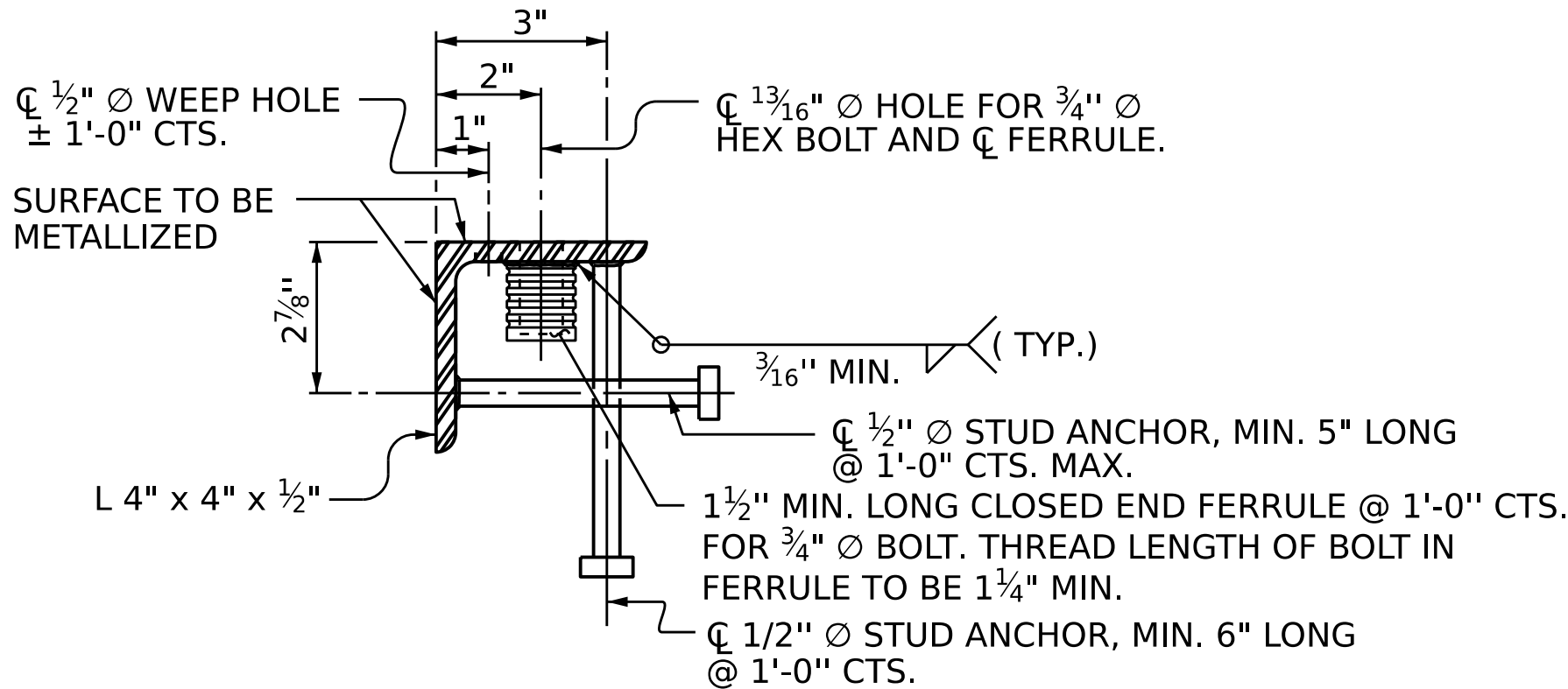


DETAIL- FIELD WELD SPLICE OF BASE ANGLE

INSTALLATION PROCEDURE :

1. A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE $4\frac{1}{8}$ " TO $4\frac{1}{4}$ " WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE $\frac{3}{4}$ " $\varnothing$ HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 1" $\varnothing$ HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 4" X 4" X $\frac{1}{2}$ " BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
2. AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE. THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
3. LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED $\frac{7}{8}$ " IN DIAMETER WITH A HAND PUNCH.
4. IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
5. AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.
6. AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES, THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE, AND THE LIFTING HOLES IN THE HOLD-DOWN PLATE, AND COMPLETELY FILL THE RECESSES AND LIFTING HOLES WITH NEOPRENE SEALANT.

MOVEMENT AND SETTING AT JOINT					
LOCATION	SKEW ANGLE	TOTAL MOVEMENT (ALONG $\varnothing$ RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	69°35'35"	-	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "
END BENT 2	73°01'30"	1 $\frac{1}{16}$ "	2"	1 $\frac{7}{8}$ "	1 $\frac{5}{8}$ "



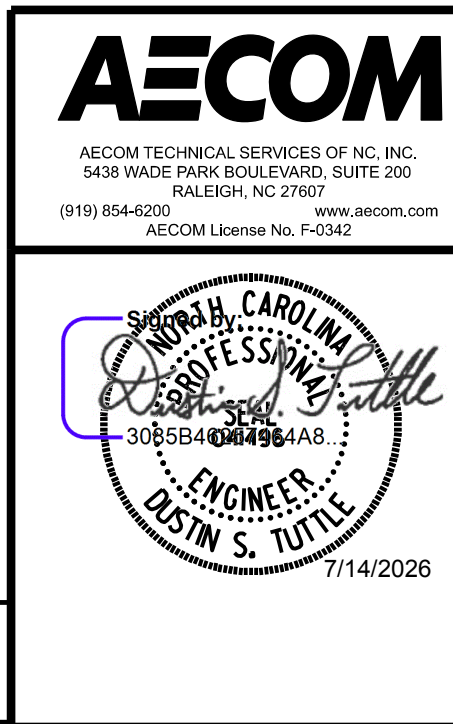
TYPICAL SECTION OF BASE ANGLE ASSEMBLY

NOTES :

1. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
2. ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MINIMUM.
3. A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
4. CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
5. SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
6. UPON COMPLETION OF SHOP FABRICATION, THE HOLD-DOWN PLATE AND BASE ANGLE ASSEMBLY, AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
7. THE COVER PLATES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
8. BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
9. FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 20' LENGTHS UNLESS APPROVED BY THE ENGINEER.
10. NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
11. THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE $\frac{3}{4}$ " $\varnothing$ BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
12. THE FABRICATOR SHALL PROVIDE $\frac{1}{2}$ " $\varnothing$ THREADED HOLES IN THE HOLD-DOWN PLATES TO ASSIST IN LIFTING AND PLACING. THE HOLES SHALL BE $\frac{3}{4}$ " DEEP AT 6'-0" MAXIMUM SPACING AND A MINIMUM OF TWO HOLES PER PLATE.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 2

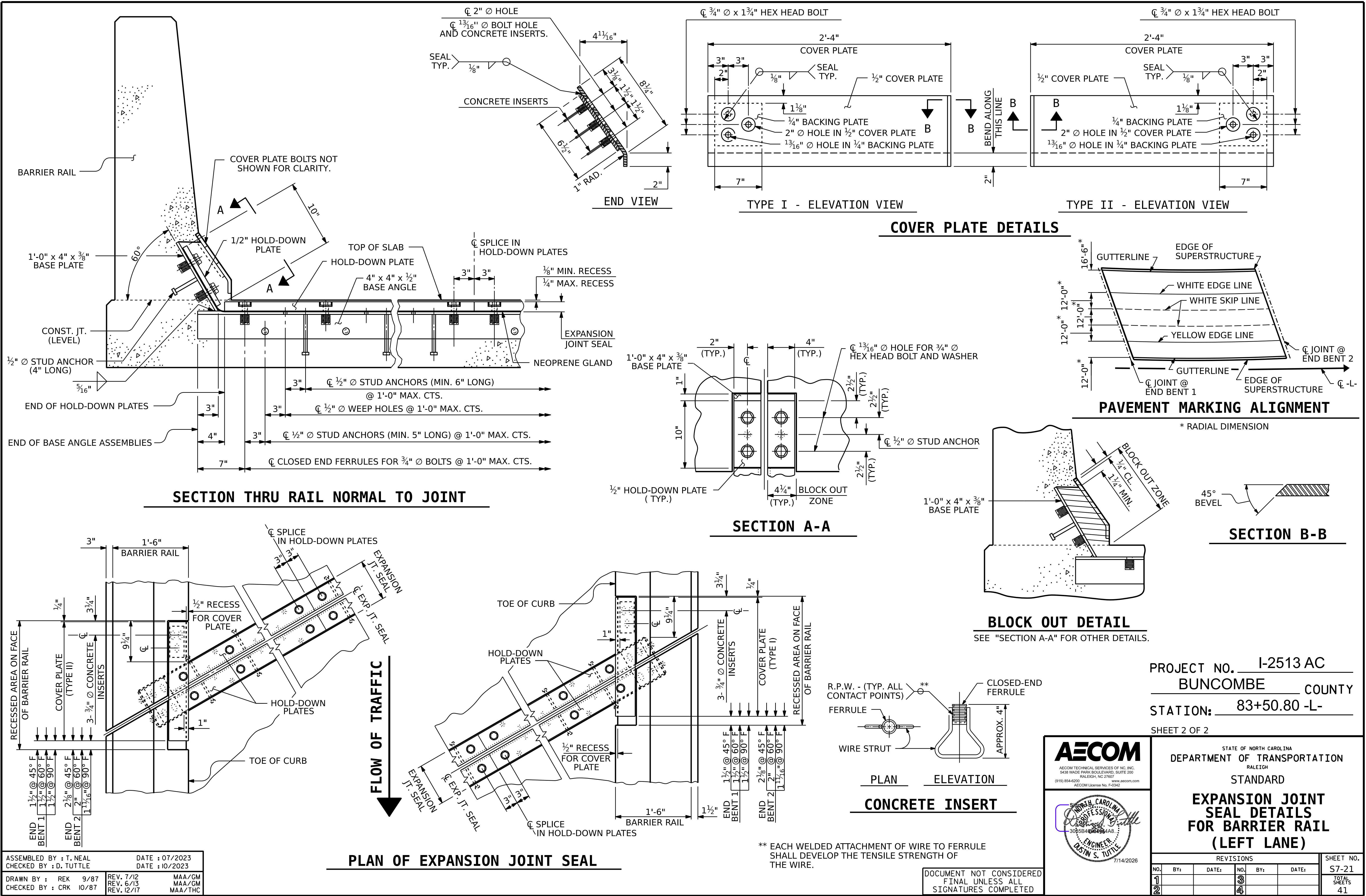


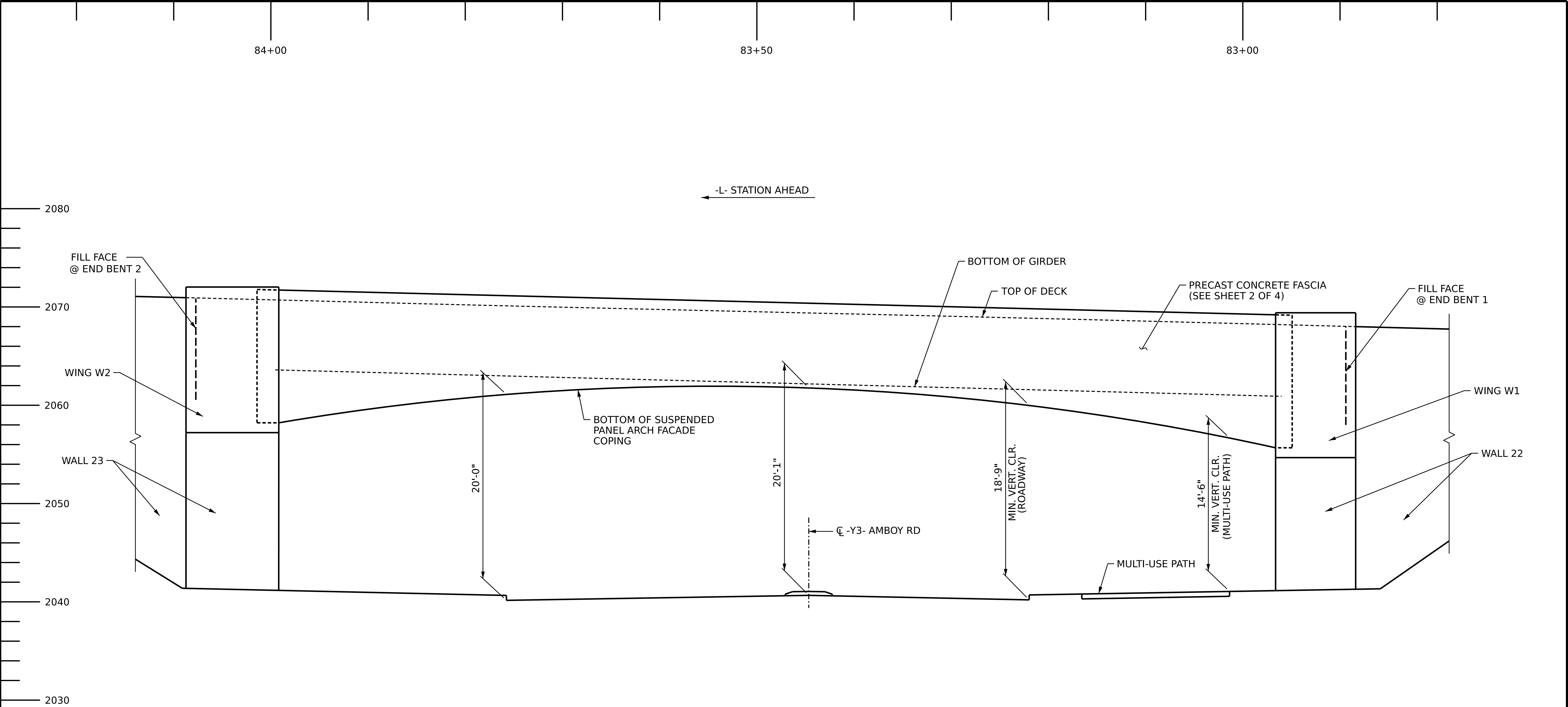
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD EXPANSION JOINT SEAL DETAILS (LEFT LANE)					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S7-20
					TOTAL SHEETS 41

STD.NO.EJS1

ASSEMBLED BY : T.NEAL	DATE : 07/2023
CHECKED BY : D.TUTTLE	DATE : 10/2023
DRAWN BY : REK 9/87	REV. 10/17 MAA/GM
CHECKED BY : CRK 10/87	REV. 10/17 MAA/THC
	REV. 6/18 MAA/THC

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SIGNATURES COMPLETED





FAÇADE ENVELOPE
LOOKING UPSTATION -Y3-

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 4

DRAWN BY :	L. LEE	DATE :	11/2025
CHECKED BY :	D. TUTTLE	DATE :	11/2025
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PRECAST CONCRETE FASCIA
ENVELOPE
(LEFT LANE)

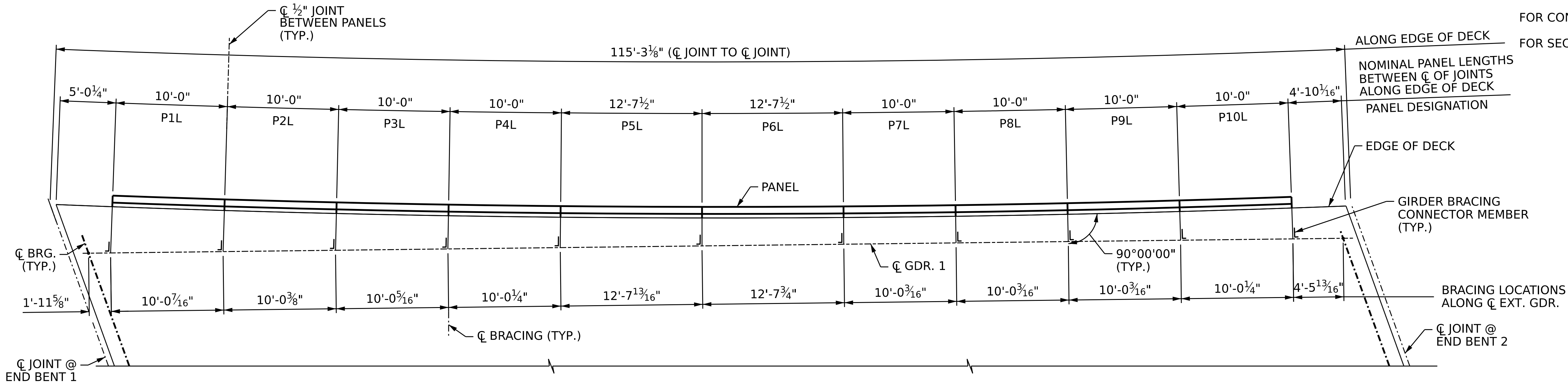
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-22
1			3			TOTAL SHEETS
2			4			41

NOTES:

FOR PRECAST CONCRETE FASCIA, SEE SPECIAL PROVISIONS.

FOR CONNECTOR SPACING, SEE SHEET 4 OF 4.

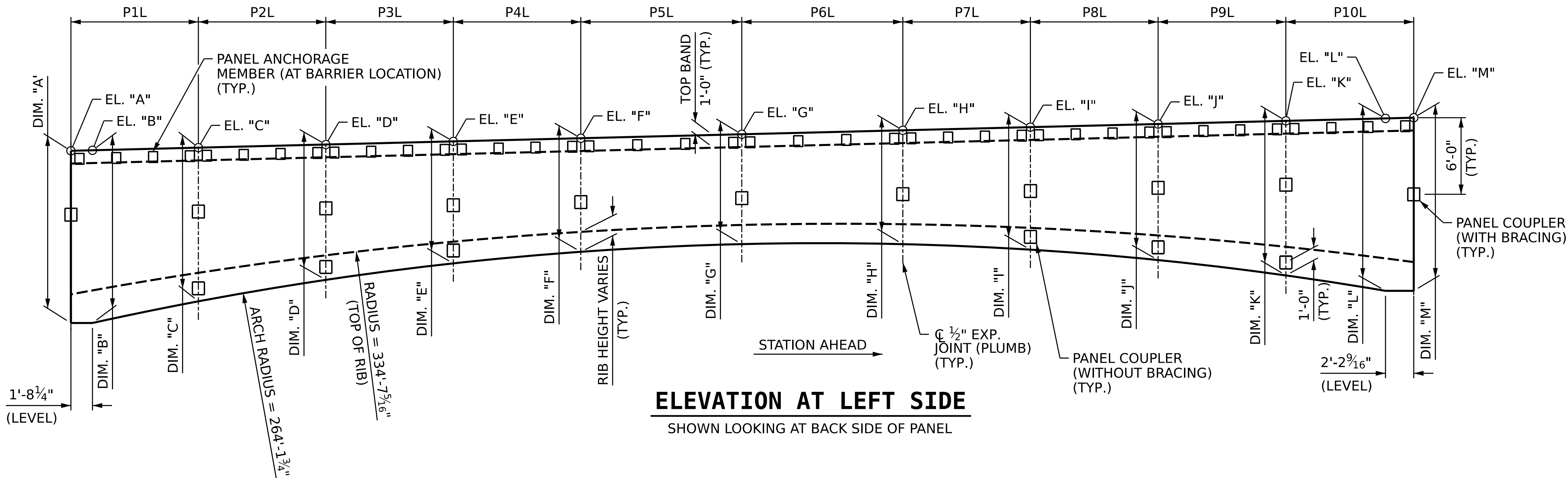
FOR SECTIONS AND DETAILS, SEE SHEETS 3 AND 4 OF 4.



PLAN AT LEFT SIDE

ALL DIMENSIONS ARE MEASURED ALONG THE OUTSIDE EDGE OF DECK EXCEPT AS NOTED.
PANEL LENGTHS ARE CHORDS, MEASURED FROM CL JOINT TO CL JOINT.

PAY ITEM "PRECAST CONCRETE FASCIA" = LUMP SUM



ELEVATION AT LEFT SIDE

SHOWN LOOKING AT BACK SIDE OF PANEL

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 2 OF 4

LOCATION	TOP OF PANEL ELEVATIONS												
	EL "A"	EL "B"	EL "C"	EL "D"	EL "E"	EL "F"	EL "G"	EL "H"	EL "I"	EL "J"	EL "K"	EL "L"	EL "M"
P1L - P10L	2069.19	2069.23	2069.44	2069.68	2069.93	2070.17	2070.49	2070.80	2071.04	2071.29	2071.54	2071.73	2071.78

LOCATION	PANEL VERTICAL DIMENSIONS												
	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	DIM. "E"	DIM. "F"	DIM. "G"	DIM. "H"	DIM. "I"	DIM. "J"	DIM. "K"	DIM. "L"	DIM. "M"
P1L - P10L	13'-5 7/8"	13'-6 3/8"	12'-0 7/16"	10'-7 3/16"	9'-6 5/8"	8'-10 3/4"	8'-7 1/4"	8'-11"	9'-7 3/16"	10'-7 7/8"	12'-1 1/4"	13'-6 1/16"	13'-6 3/4"
RIB HEIGHT	2'-3"	2'-6 11/16"	2'-2 13/16"	1'-11 1/16"	1'-8 7/16"	1'-6 3/4"	1'-6"	1'-6 13/16"	1'-8 1/2"	1'-11 3/16"	2'-2 7/8"	2'-6 1/2"	2'-3"

DRAWN BY : L. LEE DATE : 11/2025
CHECKED BY : D. TUTTLE DATE : 11/2025
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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RALEIGH

SUPERSTRUCTURE

PRECAST CONCRETE FASCIA

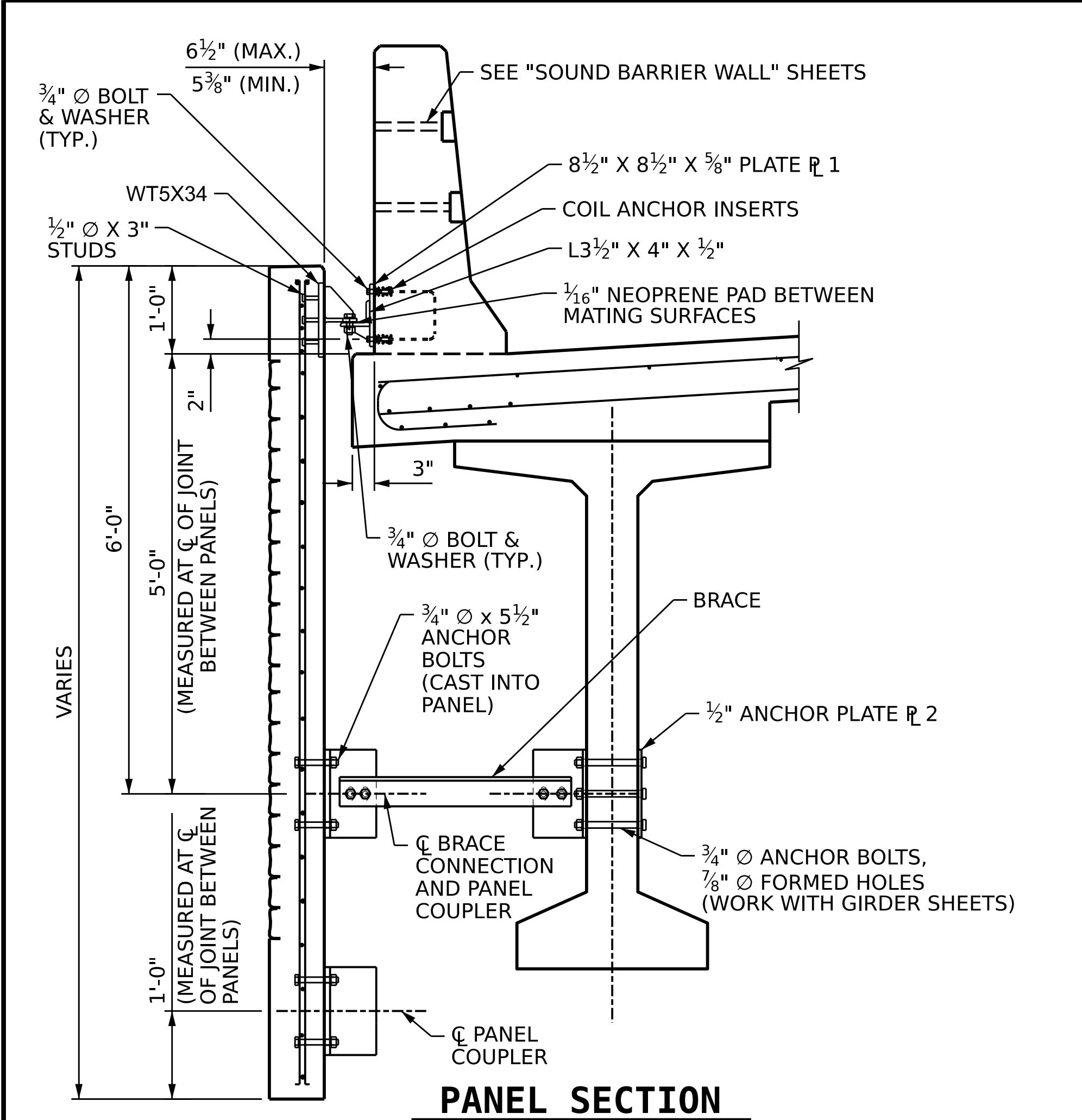
PANEL LAYOUT

(LEFT LANE)

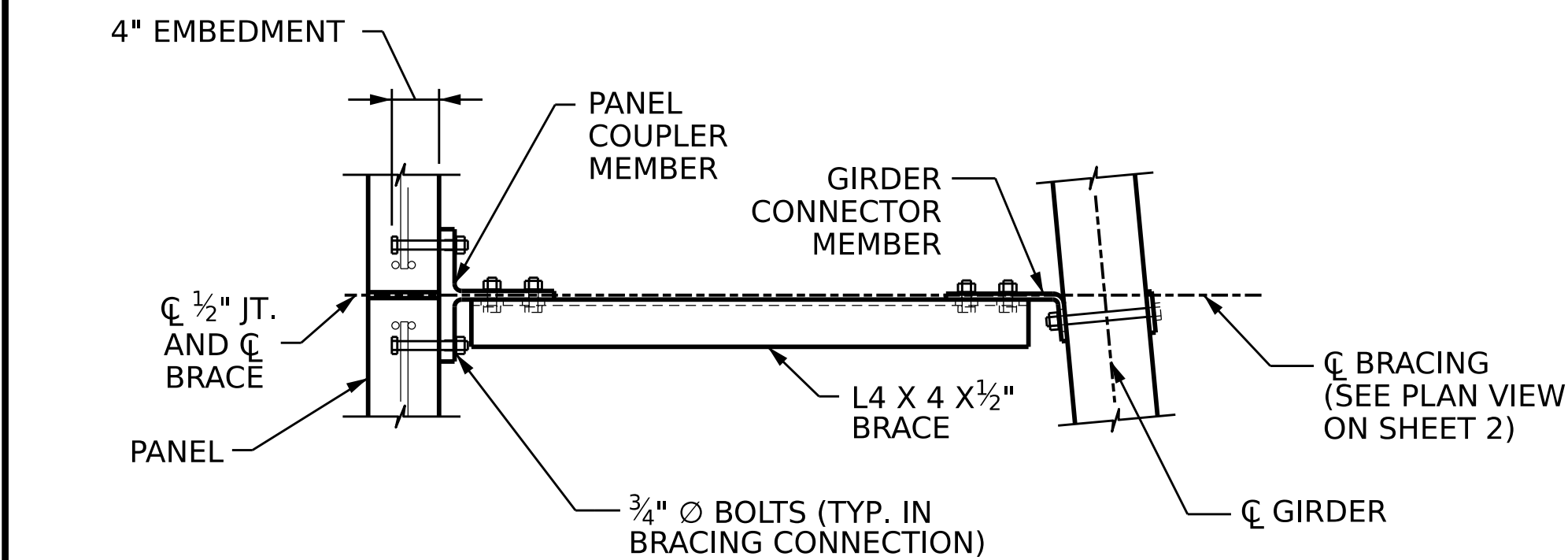
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2			4			TOTAL SHEETS 41

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7/14/2026

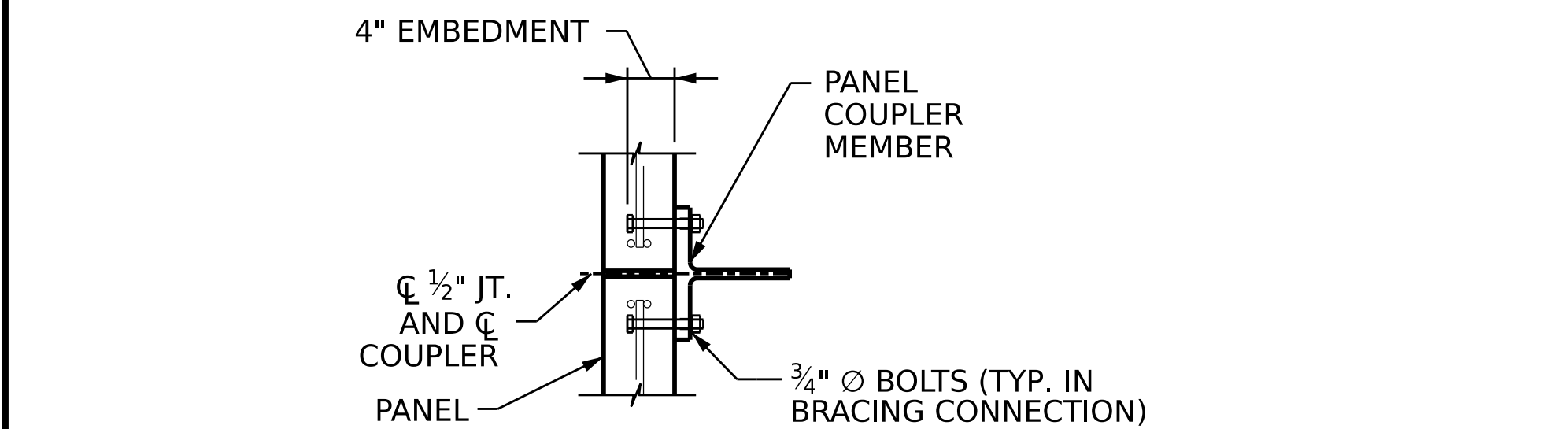


PANEL SECTION



PANEL COUPLER WITH BRACING CONNECTION

11 REQUIRED

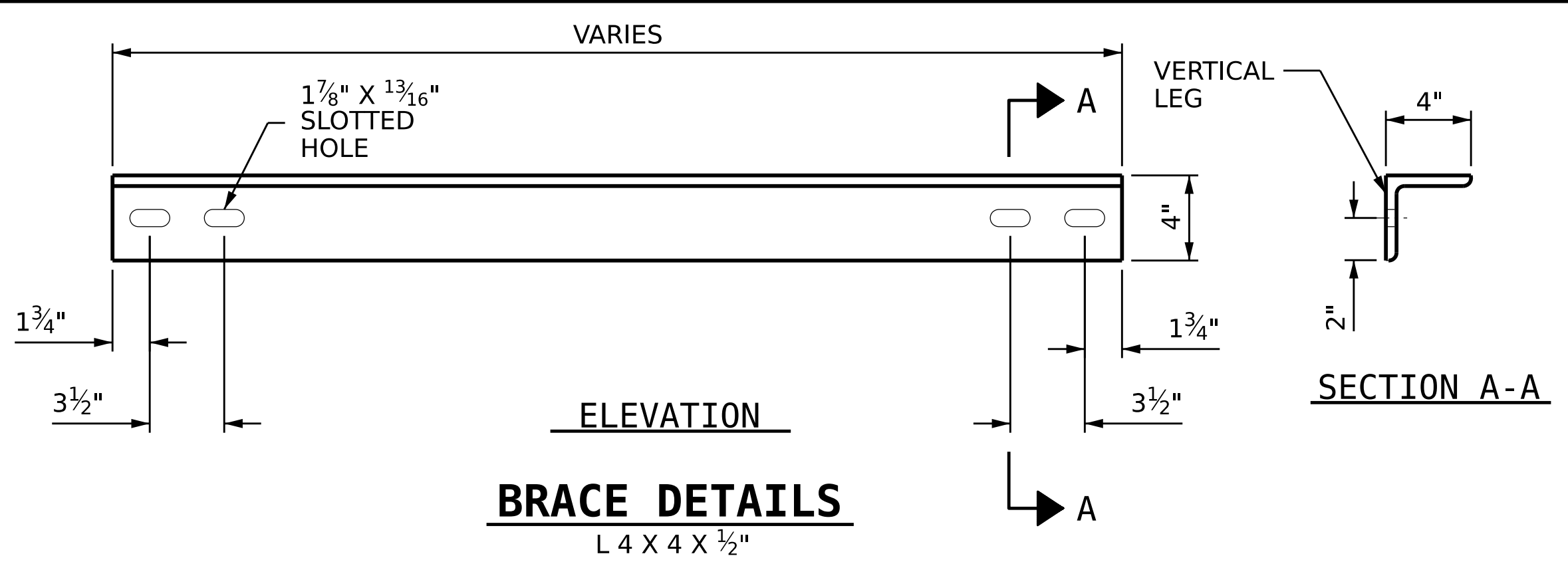


PANEL COUPLER WITHOUT BRACING CONNECTION

6 REQUIRED

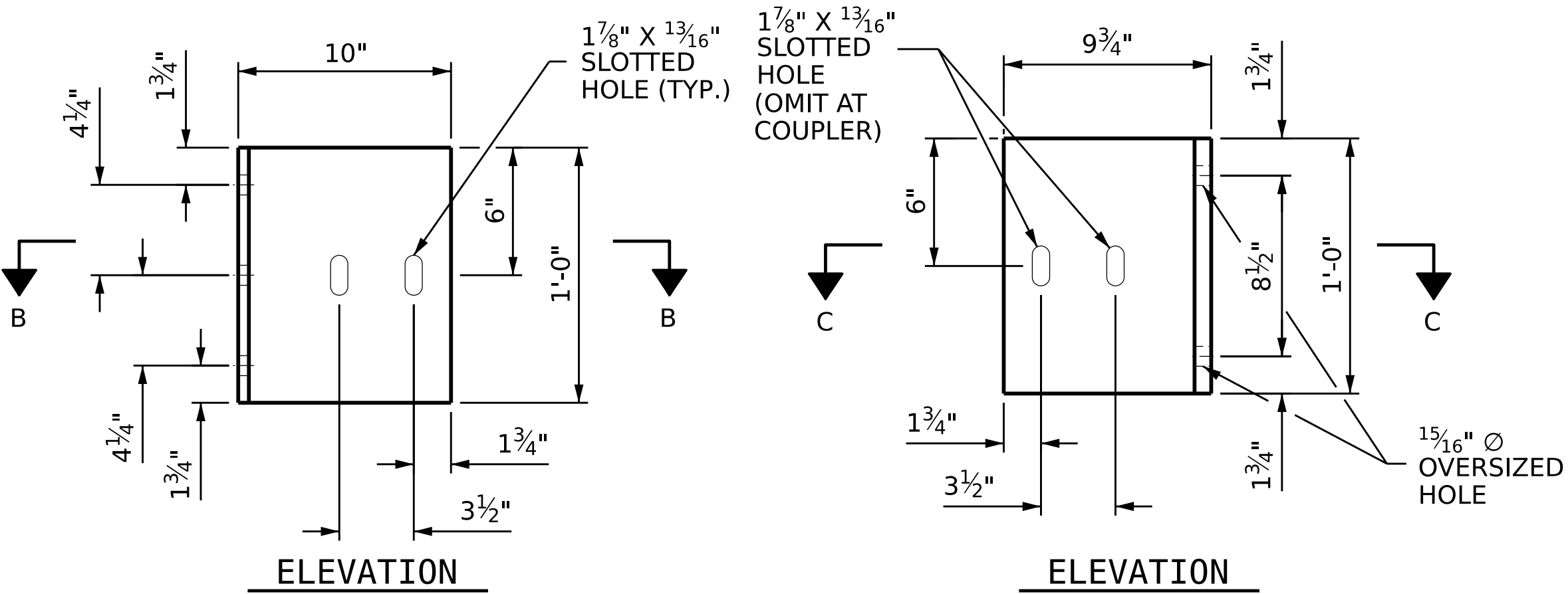
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CHECKED BY :	D. TUTTLE	DATE :	11/2025
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

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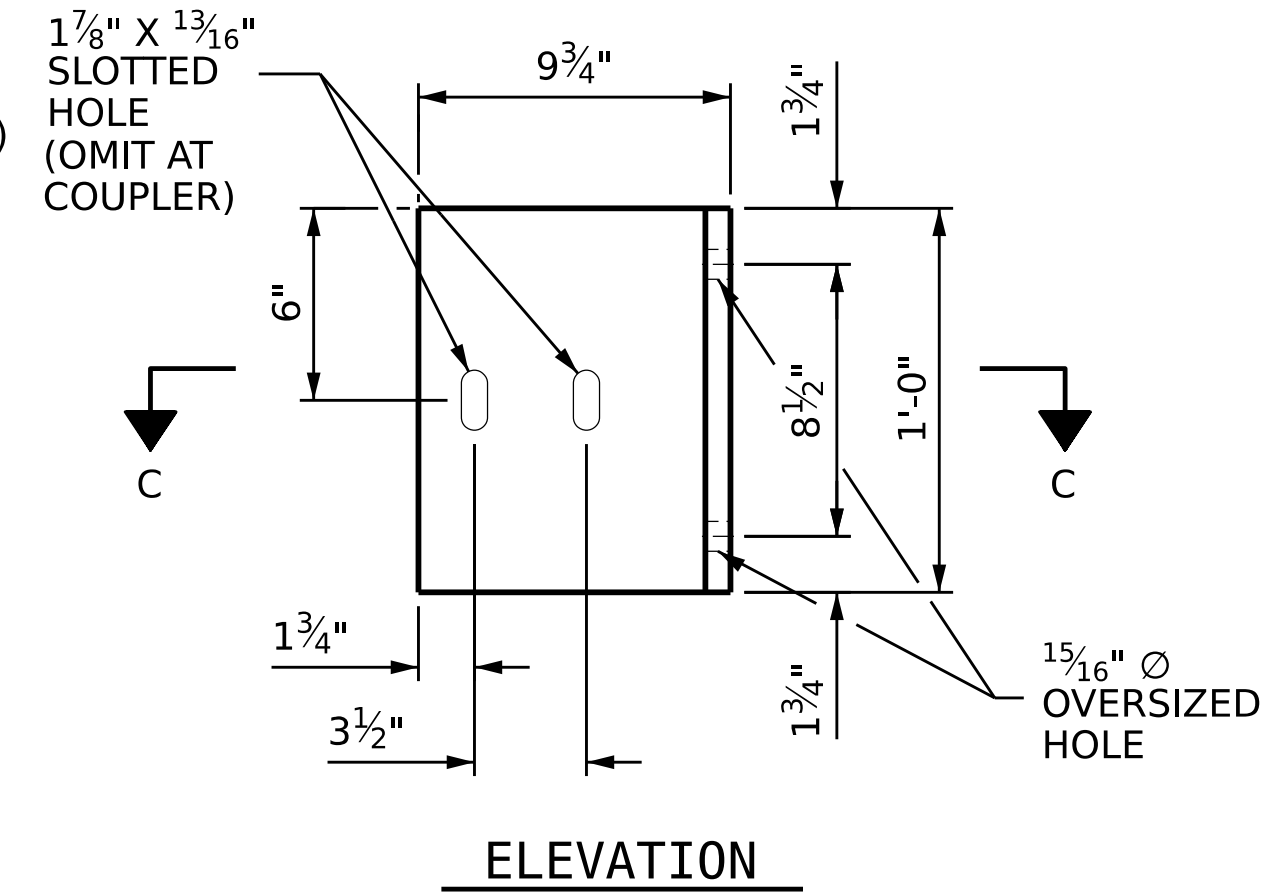
BRACE DETAILS

L 4 X 4 X 1/2"



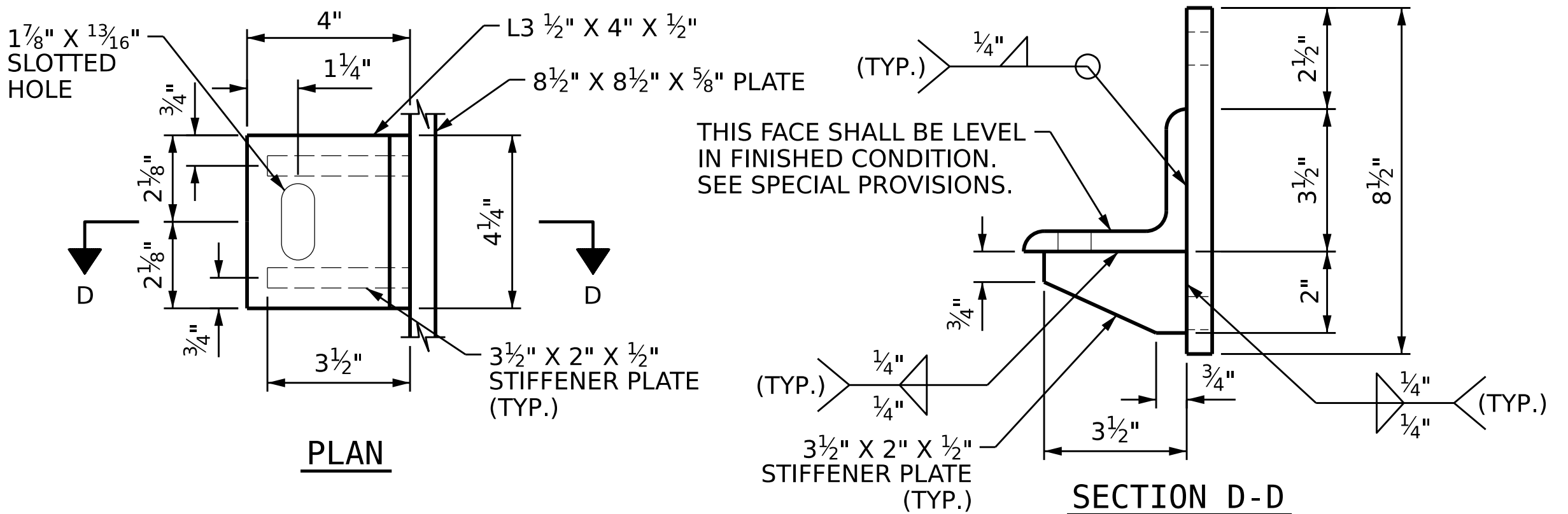
GIRDER BRACING CONNECTOR MEMBER DETAILS

10" X 4" X 1/2" BENT PLATE



PANEL COUPLER CONNECTOR MEMBER DETAILS

WT 9 X 74.5



BARRIER ANCHORAGE MEMBER DETAILS

L3 1/2" X 4 1/2" X 1/2" WITH (2) 3 1/2" X 2" X 1/2" STIFFENER PLATES
40 REQUIRED

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NOTES:

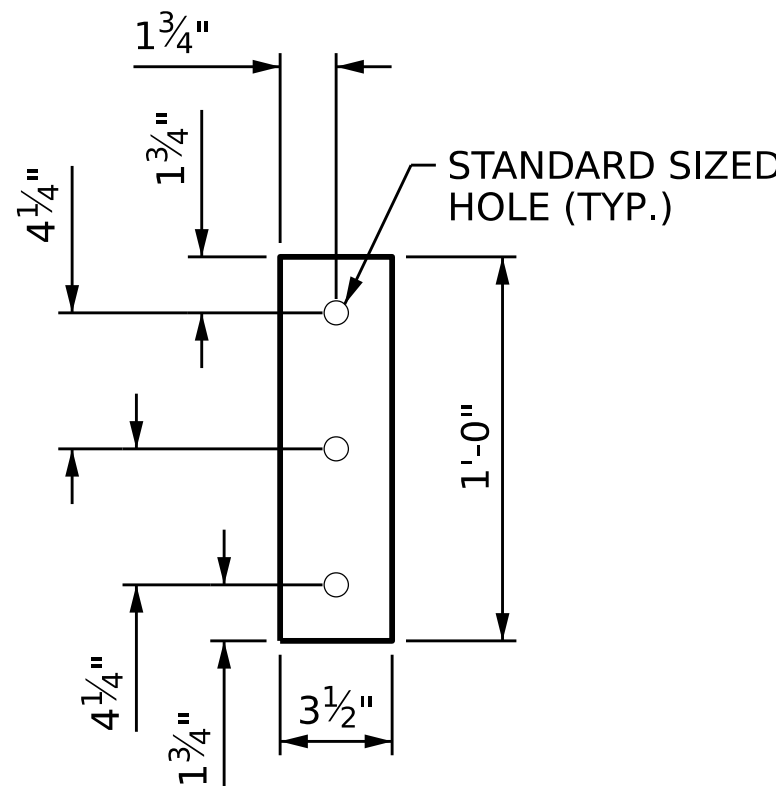
ANCHOR BOLTS SHALL BE ASTM F593, STAINLESS STEEL,
ALLOY GROUP 2, CW2 CONDITION.

WT SHAPE SHALL BE ASTM A992 GALVANIZED STEEL.

ANGLES AND BENT PLATE SHALL BE ASTM A572 GRADE 50
GALVANIZED STEEL.

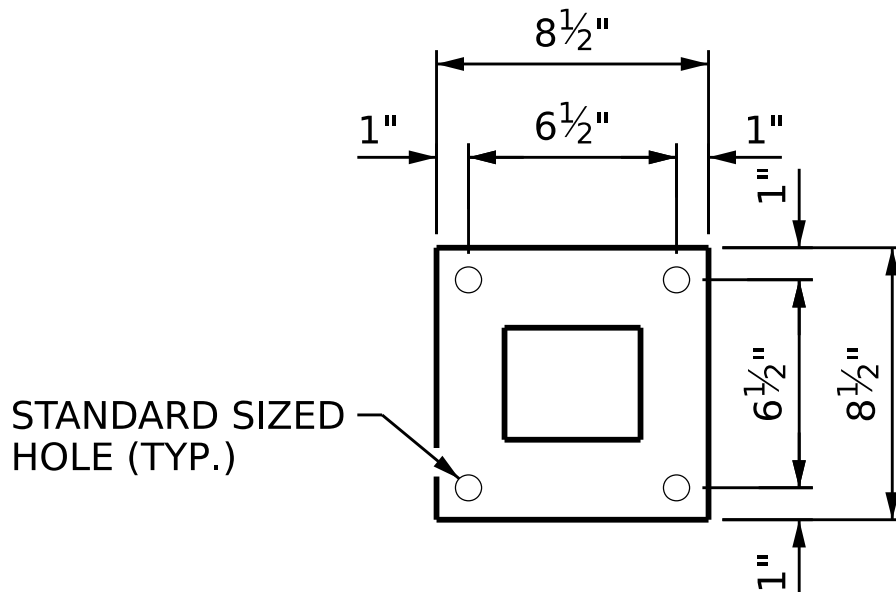
LENGTH OF L 4 X 4 X 1/2" MEMBER SHALL BE DETERMINED BY
THE CONTRACTOR FOR ALL LOCATIONS AFTER PLACEMENT OF
GIRDER AND OVERHANG FORMWORK. THE LENGTH SHALL BE
INCLUDED IN WORKING DRAWING SUBMITTAL.

COIL ANCHOR INSERTS INTO BARRIER SHALL BE DAYTON
SUPERIOR C2 COIL HANGER SADDLE TYPE OR EQUIVALENT.
INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURER'S
SPECIFICATIONS. ANCHORS SHALL BE CAPABLE OF PROVIDING
A BASE TENSION STRENGTH OF 3,600 LBS, PER BOLT
(STRENGTH CONDITION). FIELD TESTING IS NOT REQUIRED.



GIRDER ANCHORAGE PLATE R 2 MEMBER DETAILS

1'-0" X 3 1/2" X 1/2" PLATE



BARRIER ANCHORAGE PLATE R 1 MEMBER DETAILS

8 1/2" X 8 1/2" X 5/8" PLATE

PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

STATION: 83+50.80 -L-

SHEET 3 OF 4

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DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PRECAST CONCRETE FASCIA
DETAILS
(LEFT LANE)
7/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PRECAST CONCRETE FASCIA
DETAILS

(LEFT LANE)

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-24	
1			3			TOTAL SHEETS	
2			4			41	

SEE SHEET 2 OF 4 FOR PANEL GEOMETRY.

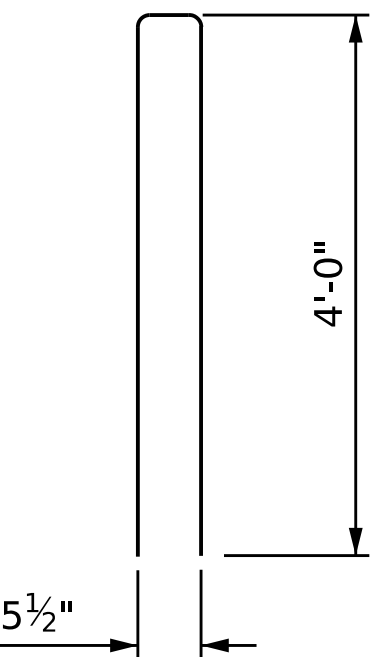
PANEL REINFORCEMENT SHALL BE DETAILED BY THE CONTRACTOR FOR EACH PANEL TO MEET THE MINIMUM REINFORCEMENT SHOWN IN THE PLANS. SEE SPECIAL PROVISIONS.

ALL STEEL IN THE PANEL SHALL BE EPOXY COATED.

VERTICAL FACE OF "TOP BAND" AND OUTSIDE AND BOTTOM OF "RIB" SHALL BE COATED COLOR FS #33522. SEE SPECIAL PROVISION "APPLICATION OF BRIDGE COATING."

ALL CONCRETE FOR PRECAST CONCRETE FASCIA PANELS SHALL BE SAND-LIGHTWEIGHT CONCRETE. FOR SAND-LIGHTWEIGHT CONCRETE, SEE SPECIAL PROVISIONS.

BOLTS AT BARRIER AND GIRDER WEB TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.



#5 U BAR DETAIL

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
 STATION: 83+50.80 -L-

SHEET 4 OF 4

AECOM

AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607

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AECOM License No. F-0342

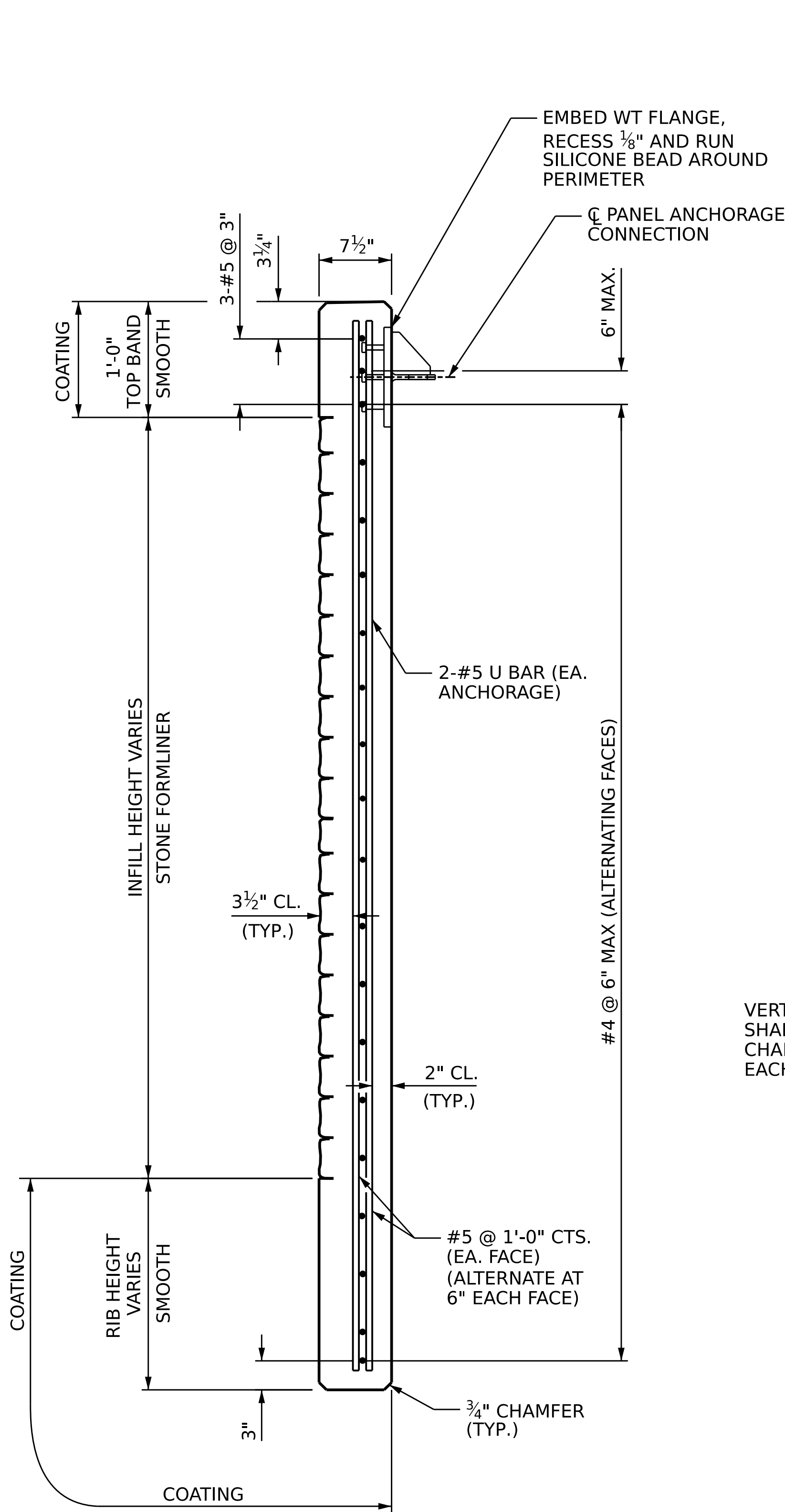
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PRECAST CONCRETE FASCIA DETAILS

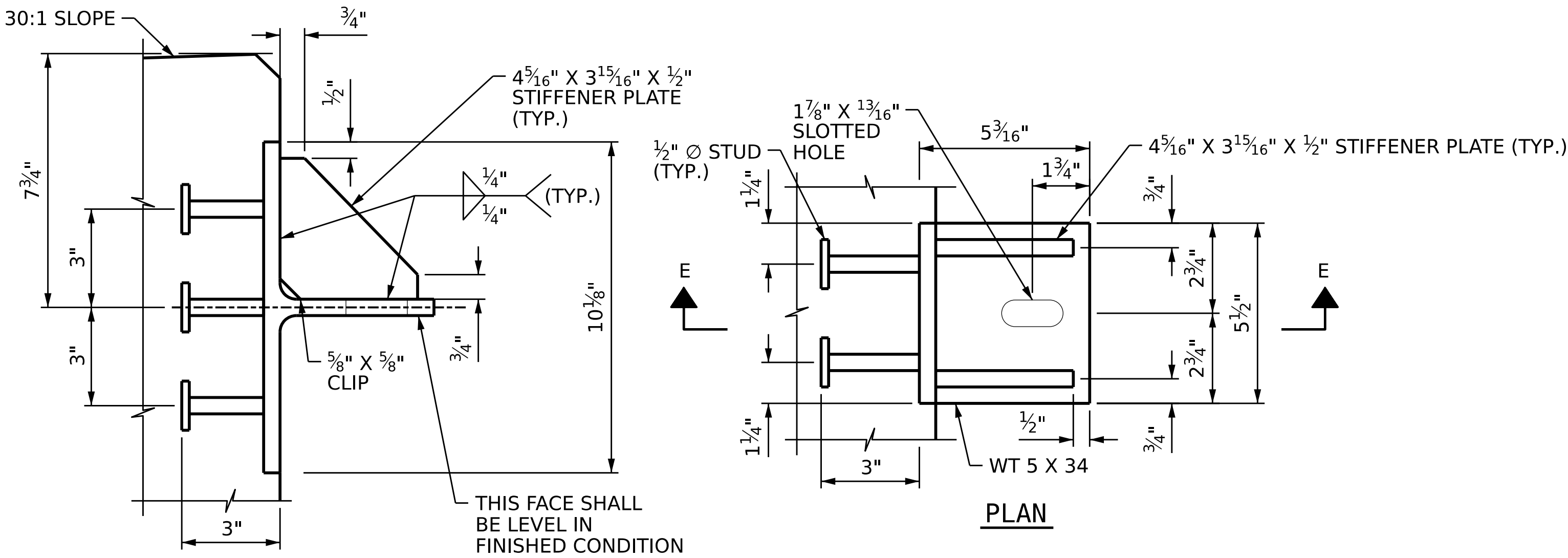
(LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-25
1			3			TOTAL SHEETS
2			4			41



SECTION F-F

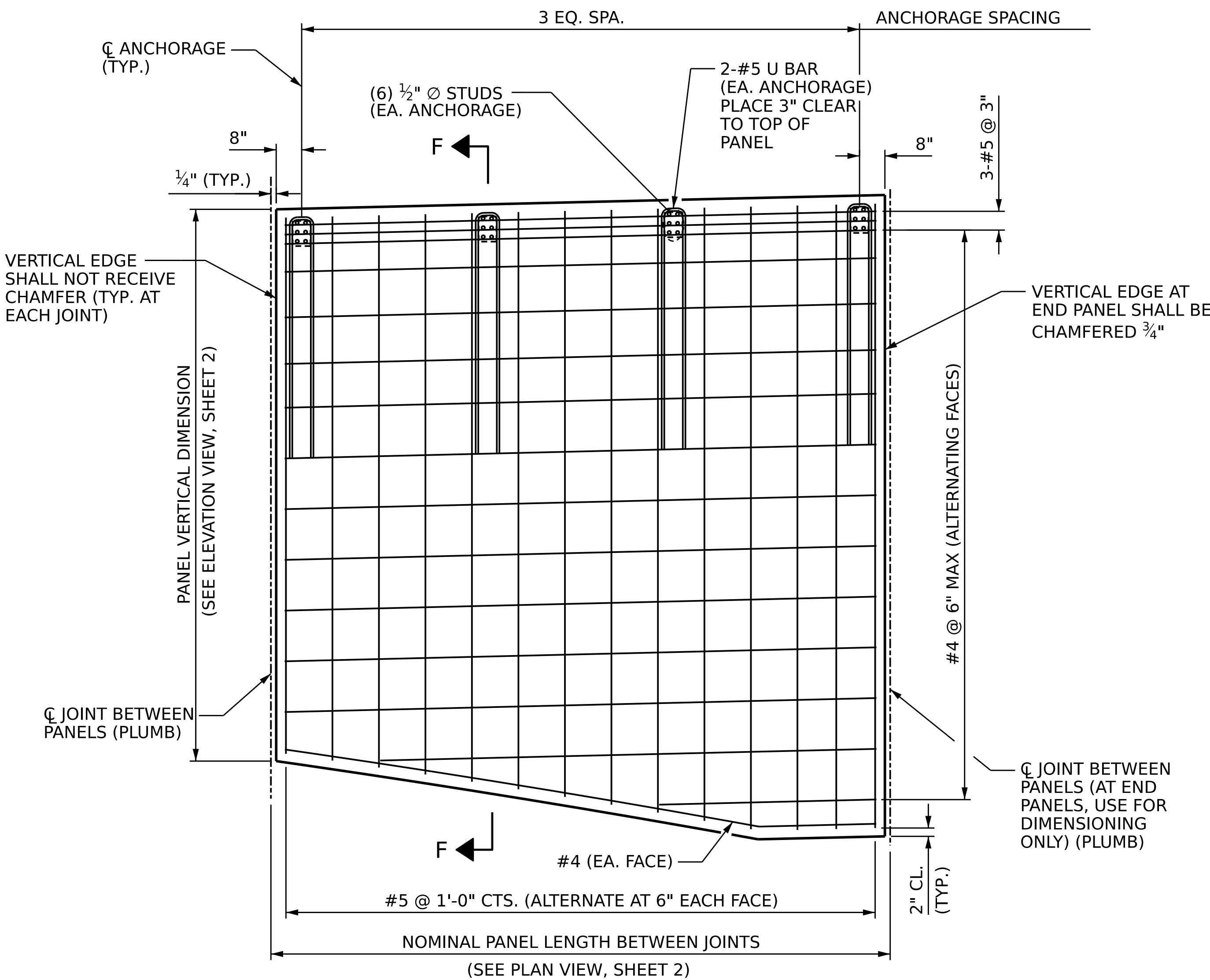
FOR PANEL, INFILL, RIB, AND TOP BAND HEIGHTS,
SEE ELEVATIONS ON SHEET 2.



SECTION E-E

PANEL ANCHORAGE MEMBER DETAILS

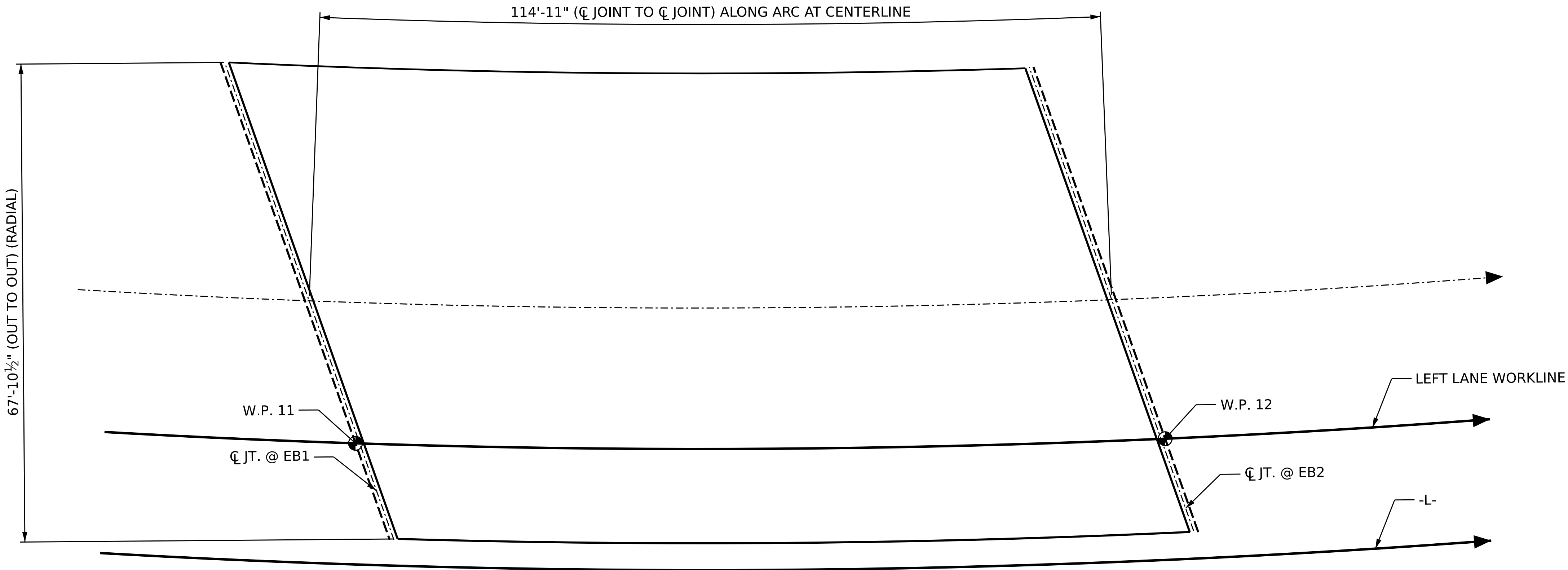
WT 5 X 34 WITH (2) 4⁵/₁₆" X 3¹⁵/₁₆" X 1/2" STIFFENER PLATES



PANEL ELEVATION

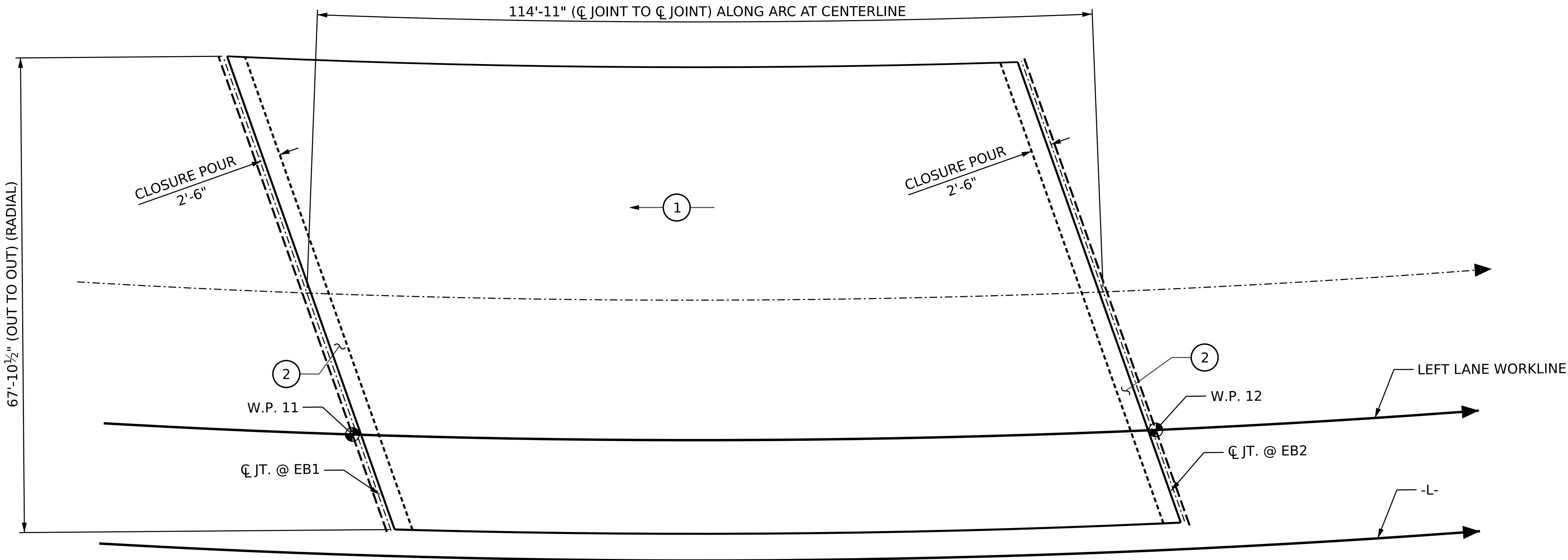
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : M. CATER DATE : 03/2026
 CHECKED BY : D. TUTTLE DATE : 03/2026
 DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026



**LAYOUT FOR COMPUTING AREA OF
REINFORCED CONCRETE DECK SLAB**

(SQ. FT. = 7,791)



POURING SEQUENCE - PLAN

(POUR #2 CANNOT BE STARTED UNTIL ADJACENT POUR LABELED POUR
#1 REACHES A MINIMUM OF 3000 PSI.)

— (#) — INDICATES POUR DIRECTION AND NUMBER

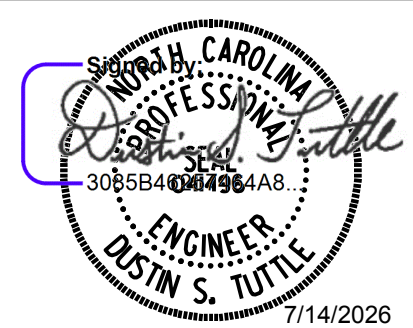
SUPERSTRUCTURE BILL OF MATERIAL	
SPAN A	(CU. YDS.)
POUR #1	253.8
POUR #2	21.5
TOTALS**	275.3

** QUANTITIES FOR BARRIER RAILS ARE NOT INCLUDED

GROOVING BRIDGE FLOORS	
APPROACH SLABS	4,472 SQ. FT.
BRIDGE DECK	6,991 SQ. FT.
TOTAL	11,463 SQ. FT.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE

**BILL OF MATERIAL
(LEFT LANE)**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-26
1			3			TOTAL SHEETS
2			4			41

DRAWN BY :	M. CATER	DATE :	11/2025
CHECKED BY :	D. TUTTLE	DATE :	11/2025
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REINFORCING BAR SCHEDULE											
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	314	5	STR	35'-1"	11,490	A218	1	5	STR	41'-5"	43
A2	318	5	STR	35'-1"	11,636	A219	1	5	STR	40'-0"	42
						A220	1	5	STR	38'-6"	40
*A101	2	5	STR	34'-11"	73	A221	1	5	STR	37'-1"	39
*A102	2	5	STR	34'-2"	71	A222	1	5	STR	35'-8"	37
*A103	2	5	STR	33'-5"	70	A223	1	5	STR	34'-2"	36
*A104	2	5	STR	32'-8"	68	A224	1	5	STR	32'-9"	34
*A105	2	5	STR	31'-11"	67	A225	1	5	STR	31'-4"	33
*A106	1	5	STR	59'-8"	62	A226	1	5	STR	29'-11'	31
*A107	1	5	STR	58'-2"	61	A227	1	5	STR	28'-6"	30
*A108	1	5	STR	56'-8"	59	A228	1	5	STR	27'-0"	28
*A109	1	5	STR	55'-2"	58	A229	1	5	STR	25'-7"	27
*A110	1	5	STR	53'-9"	56	A230	1	5	STR	24'-2"	25
*A111	1	5	STR	52'-3"	54	A231	1	5	STR	22'-9"	24
*A112	1	5	STR	50'-9"	53	A232	1	5	STR	21'-4"	22
*A113	1	5	STR	49'-3"	51	A233	1	5	STR	19'-11'	21
*A114	1	5	STR	47'-10"	50	A234	1	5	STR	18'-7"	19
*A115	1	5	STR	46'-4"	48	A235	1	5	STR	17'-2"	18
*A116	1	5	STR	44'-11"	47	A236	1	5	STR	15'-9"	16
*A117	1	5	STR	43'-5"	45	A237	1	5	STR	14'-4"	15
*A118	1	5	STR	42'-0"	44	A238	1	5	STR	12'-11'	13
*A119	1	5	STR	40'-6"	42	A239	1	5	STR	11'-7"	12
*A120	1	5	STR	39'-1"	41	A240	1	5	STR	10'-2"	11
*A121	1	5	STR	37'-7"	39	A241	1	5	STR	8'-9"	9
*A122	1	5	STR	36'-2"	38	A242	1	5	STR	7'-5"	8
*A123	1	5	STR	34'-9"	36	A243	1	5	STR	6'-0"	6
*A124	1	5	STR	33'-3"	35	A244	1	5	STR	4'-8"	5
*A125	1	5	STR	31'-10"	33	A245	1	5	STR	3'-3"	3
*A126	1	5	STR	30'-5"	32						
*A127	1	5	STR	29'-0"	30	* A301	2	5	STR	34'-11'	73
*A128	1	5	STR	27'-7"	29	* A302	2	5	STR	34'-1"	71
*A129	1	5	STR	26'-2"	27	* A303	2	5	STR	33'-2"	69
*A130	1	5	STR	24'-9"	26	* A304	2	5	STR	32'-3"	67
*A131	1	5	STR	23'-4"	24	* A305	2	5	STR	31'-5"	66
*A132	1	5	STR	21'-11'	23	* A306	1	5	STR	58'-4"	61
*A133	1	5	STR	20'-6"	21	* A307	1	5	STR	56'-7"	59
*A134	1	5	STR	19'-1"	20	* A308	1	5	STR	54'-9"	57
*A135	1	5	STR	17'-8"	18	* A309	1	5	STR	53'-0"	55
*A136	1	5	STR	16'-3"	17	* A310	1	5	STR	51'-2"	53
*A137	1	5	STR	14'-10'	15	* A311	1	5	STR	49'-5"	52
*A138	1	5	STR	13'-5"	14	* A312	1	5	STR	47'-7"	50
*A139	1	5	STR	12'-1"	13	* A313	1	5	STR	45'-10'	48
*A140	1	5	STR	10'-8"	11	* A314	1	5	STR	44'-0"	46
*A141	1	5	STR	9'-3"	10	* A315	1	5	STR	42'-2"	44
*A142	1	5	STR	7'-11"	8	* A316	1	5	STR	40'-4"	42
*A143	1	5	STR	6'-6"	7	* A317	1	5	STR	38'-7"	40
*A144	1	5	STR	5'-1"	5	* A318	1	5	STR	36'-9"	38
*A145	1	5	STR	3'-9"	4	* A319	1	5	STR	34'-11'	36
*A146	1	5	STR	2'-4'	2	* A320	1	5	STR	33'-1"	35
						* A321	1	5	STR	31'-3"	33
A201	2	5	STR	34'-5"	72	* A322	1	5	STR	29'-4"	31
A202	2	5	STR	33'-8"	70	* A323	1	5	STR	27'-6"	29
A203	2	5	STR	32'-11'	69	* A324	1	5	STR	25'-8"	27
A204	2	5	STR	32'-2"	67	* A325	1	5	STR	23'-10'	25
A205	2	5	STR	31'-5"	66	* A326	1	5	STR	21'-11'	23
A206	1	5	STR	59'-1"	62	* A327	1	5	STR	20'-1"	21
A207	1	5	STR	57'-7"	60	* A328	1	5	STR	18'-2"	19
A208	1	5	STR	56'-1"	58	* A329	1	5	STR	16'-4"	17
A209	1	5	STR	54'-8"	57	* A330	1	5	STR	14'-5"	15
A210	1	5	STR	53'-2"	55	* A331	1	5	STR	12'-7"	13
A211	1	5	STR	51'-8"	54	* A332	1	5	STR	10'-8"	11
A212	1	5	STR	50'-2"	52	* A333	1	5	STR	8'-9"	9
A213	1	5	STR	48'-9"	51	* A334	1	5	STR	6'-10"	7
A214	1	5	STR	47'-3"	49	* A335	1	5	STR	4'-11"	5
A215	1	5	STR	45'-10'	48	* A336	1	5	STR	3'-0"	3
A216	1	5	STR	44'-4"	46						
A217	1	5	STR	42'-11'	45						
DRAWN BY : J. MARROU DATE : 11/2025											
CHECKED BY : D. TUTTLE DATE : 11/2025											
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026											

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* J1	134	4	7	1'-5"	127

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.

* EPOXY COATED REINFORCING STEEL

30,335 LBS.

REINFORCING STEEL

21,776 LBS.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MIN. SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	EPOXY COATED
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"	-	-	-
#8	4'-9"	3'-2"	-	-	-

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 2 OF 2

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(919) 854-6200
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AECOM License No. F62362

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIALS

(LEFT LANE)

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

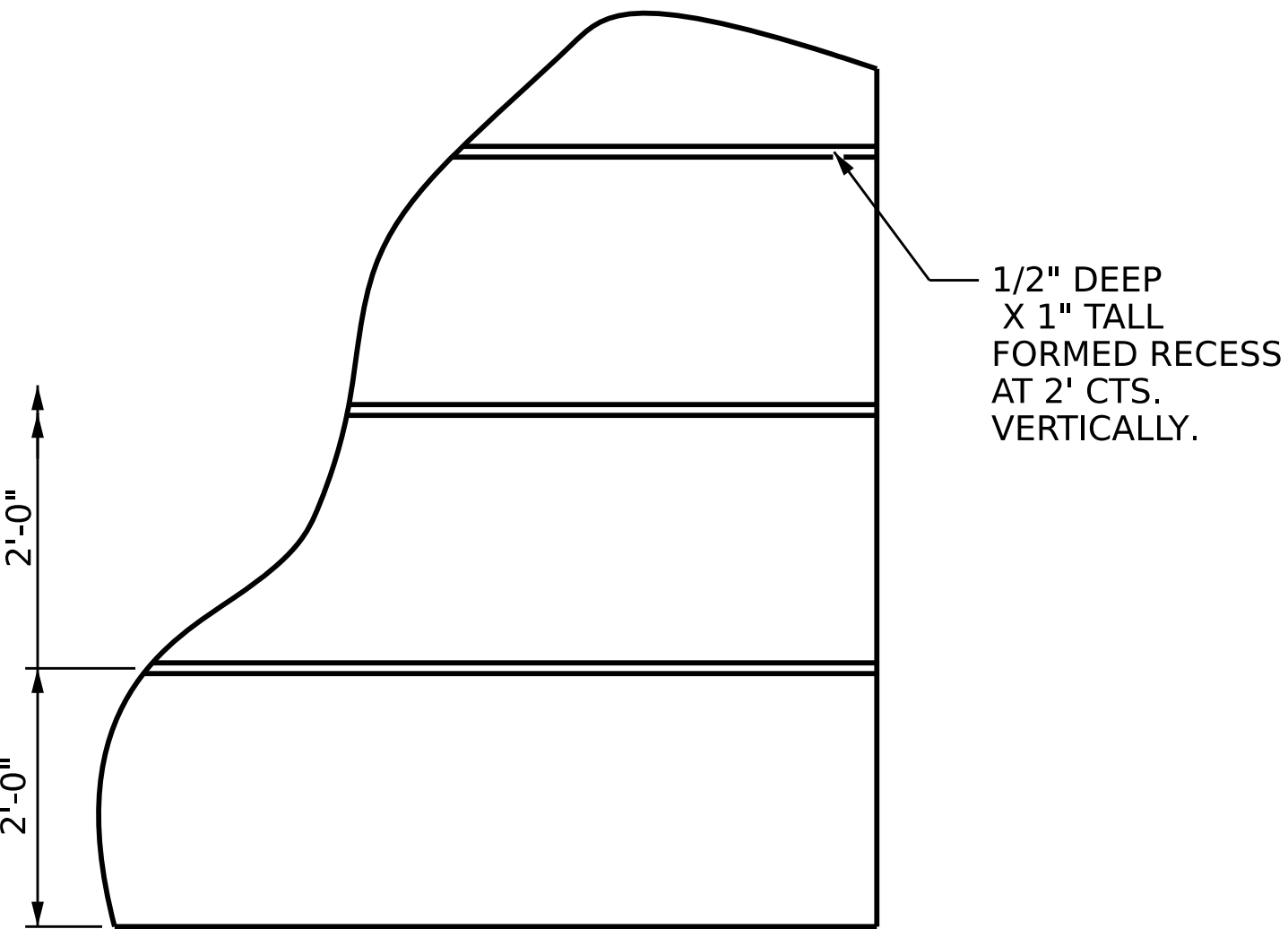
SHEET NO.
S7-27
TOTAL SHEETS
41

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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7/13/2026
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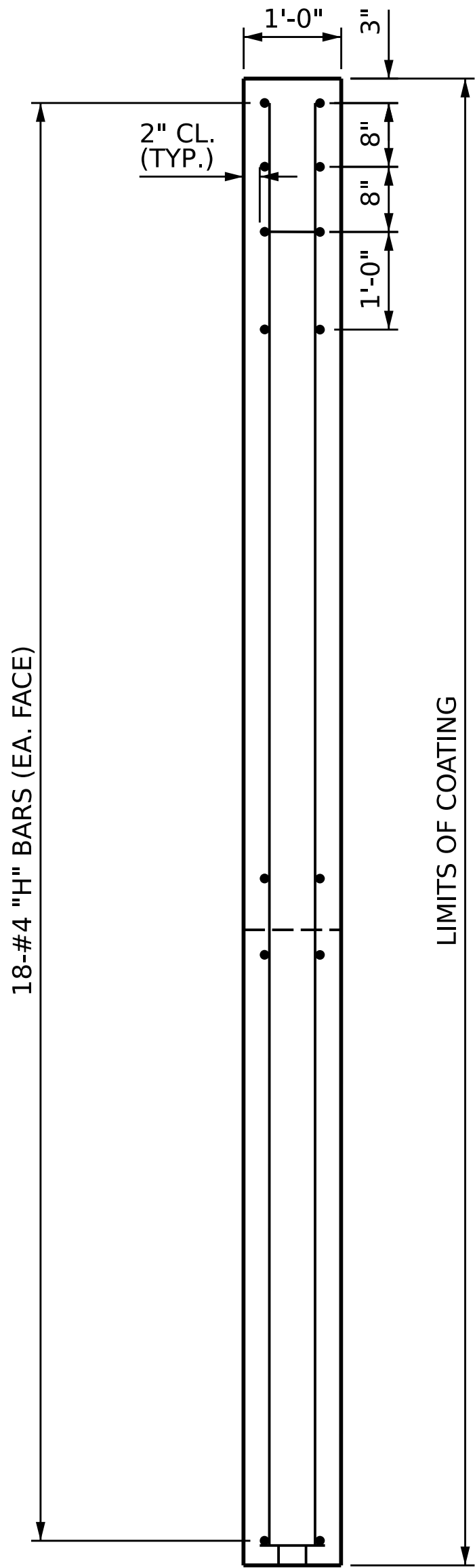
TOP OF PILE ELEVATION	
PILE NO.	PILE CUTOFF ELEV.
1	2056.44
2	2056.68
3	2056.97
4	2057.28
5	2057.57
6	2057.87
7	2058.17
8	2058.47
9	2058.77
10	2059.07
11	2059.36
12	2059.67
13	2059.96
14	2060.27
15	2060.56
16	2060.86



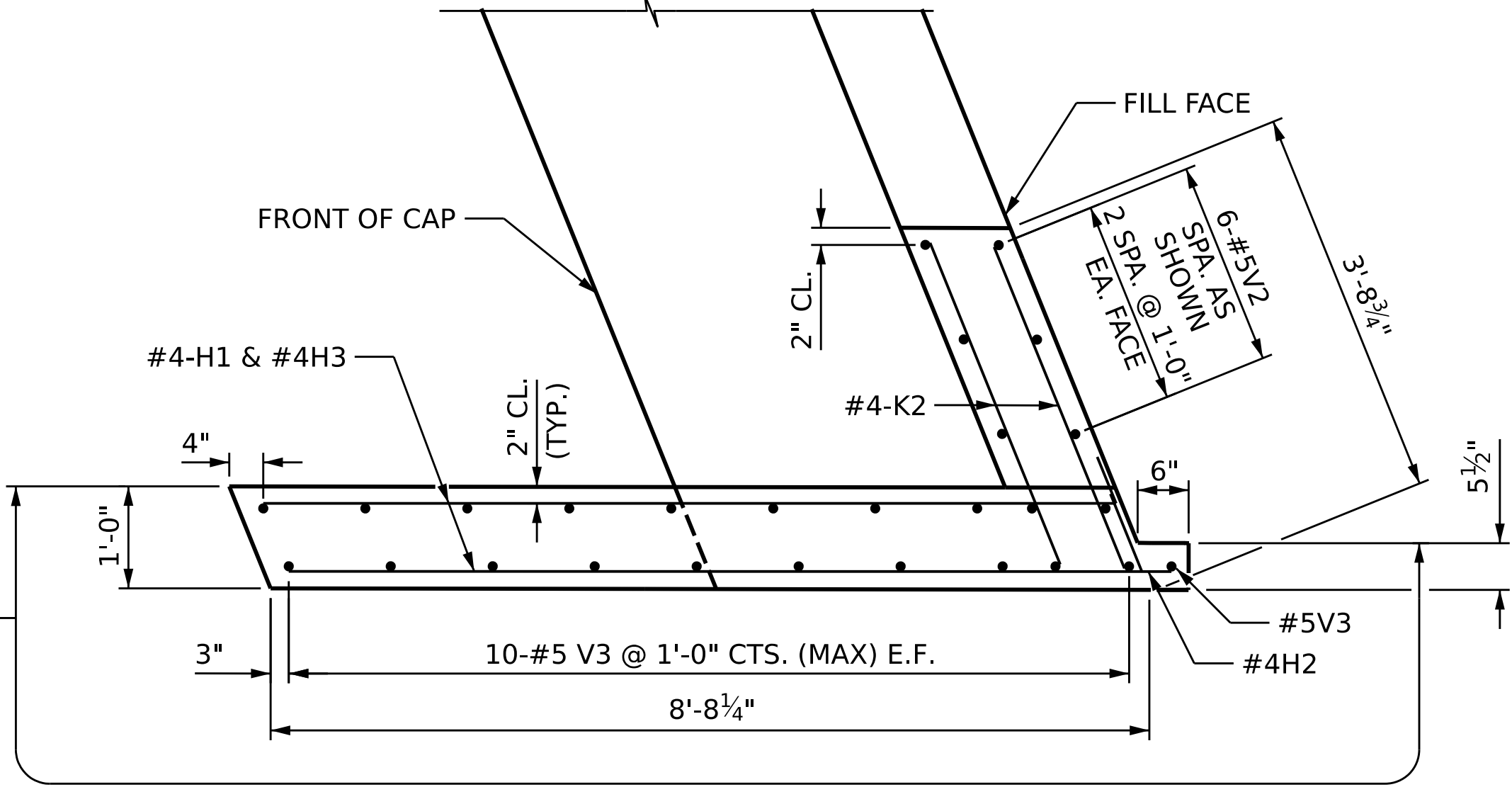
FORMED RECESS DETAIL

PROVIDE FORMED RECESS ON OUTSIDE AND END FACES OF WING W1. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF CLASS A CONCRETE

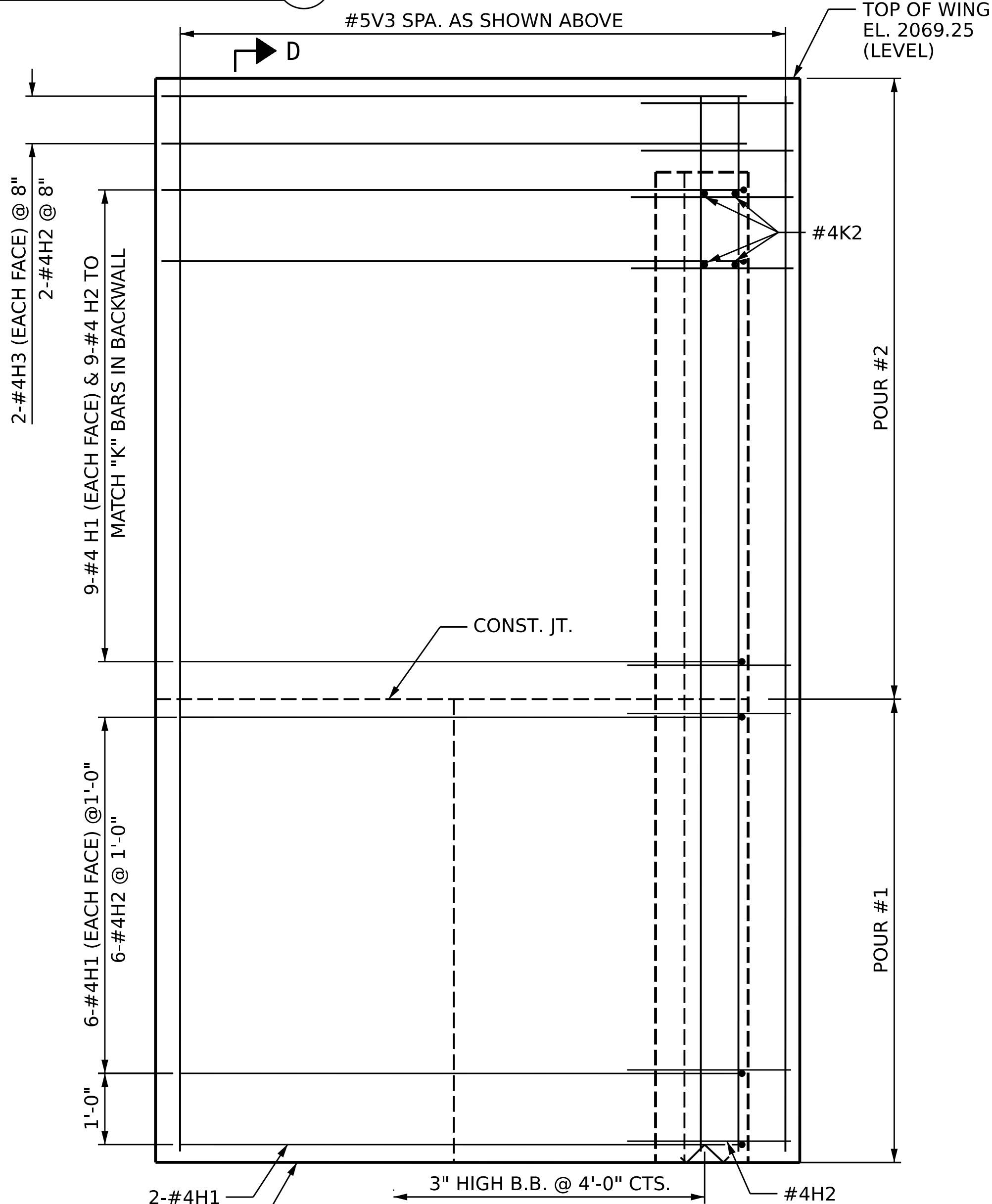
LIMITS OF COATING
AND FORMED RECESS
(SEE NOTES)



SECTION D-D



PLAN OF WING W1



ELEVATION OF WING W1

NOTES:

STIRRUPS AND "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHORS.

#5 "V" BARS IN BACKWALL SHALL BE PLACED 2" CLEAR FROM TOP OF BACKWALL.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE OF THE END BENT CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE FRONT FACE AT THE RATE OF 2%.

THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD, EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

FOR SECTIONS A-A, B-B & C-C, SEE SHEET 3 OF 4.

FOR DETAIL "A" SEE SHEET 3 OF 4.

FOR PILE SPLICE DETAILS SEE SHEET 3 OF 4.

FOR TEMPORARY DRAINAGE DETAILS, SEE SHEET 3 OF 4.

THESE SHEETS SHALL BE USED IN COORDINATION WITH MSE WALL PLANS.

THE PORTION OF BACKWALL IN POUR #2 ABOVE THE PERMITTED CONSTRUCTION JOINT MAY BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

THE EXPOSED SURFACE OF WINGWALL W1 SHALL BE COATED COLOR FS#33522. SEE SPECIAL PROVISIONS FOR APPLICATION OF BRIDGE COATING.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 2 OF 4

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RALEIGH, NC 27607
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www.aecom.com
AECOM License No. F02342

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

REGISTERED PROFESSIONAL ENGINEER
DUSTIN S. TUTTLE
30864-0000-4A8
7/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

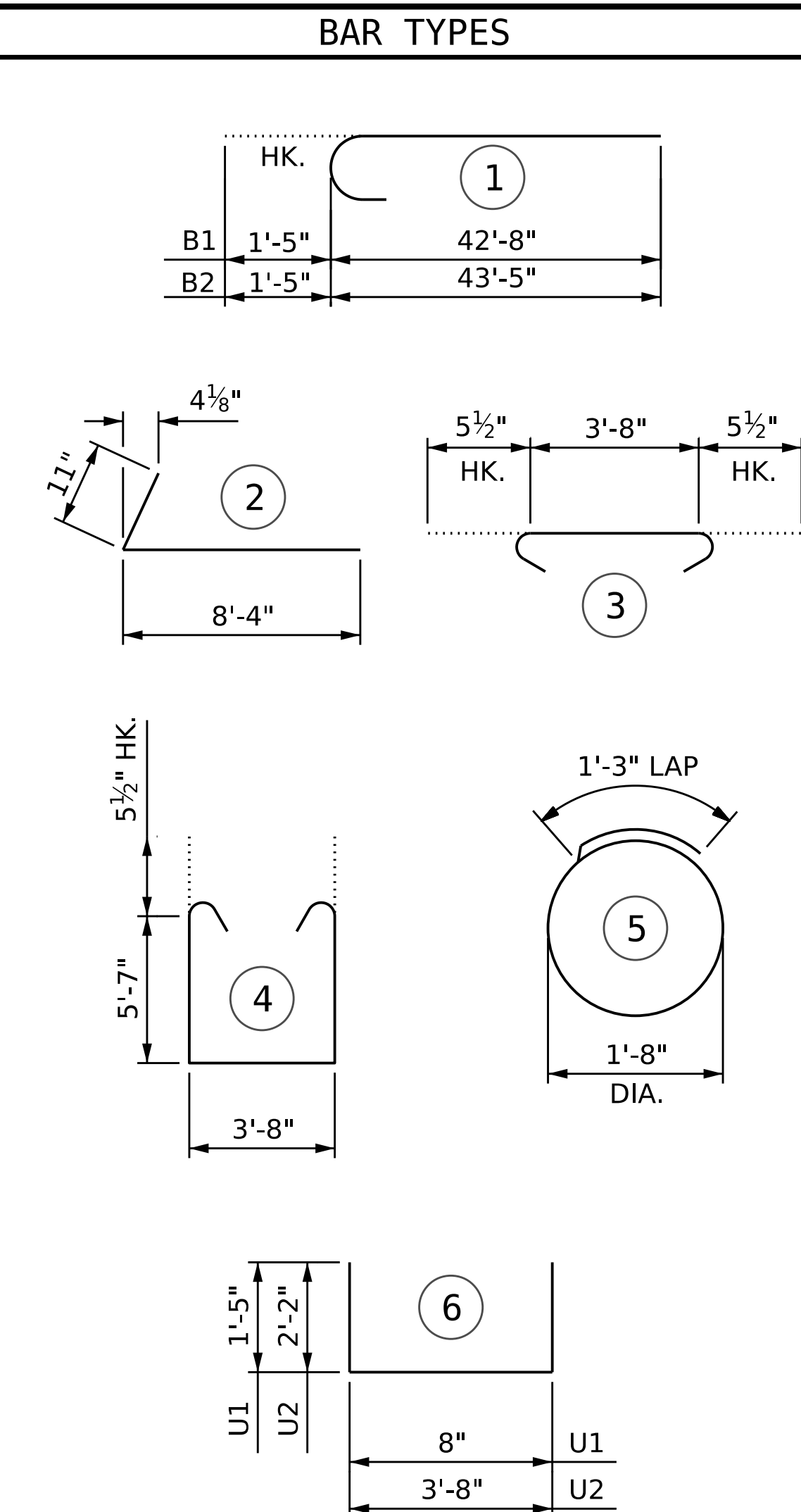
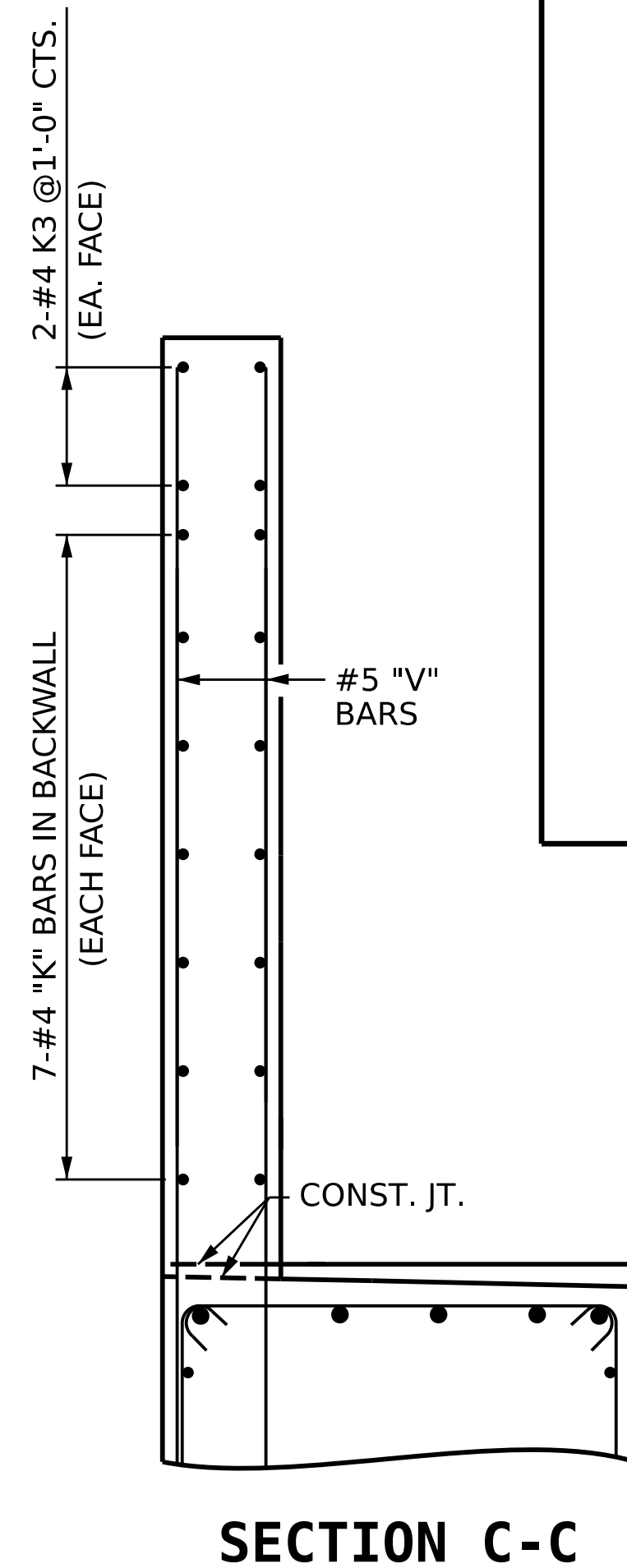
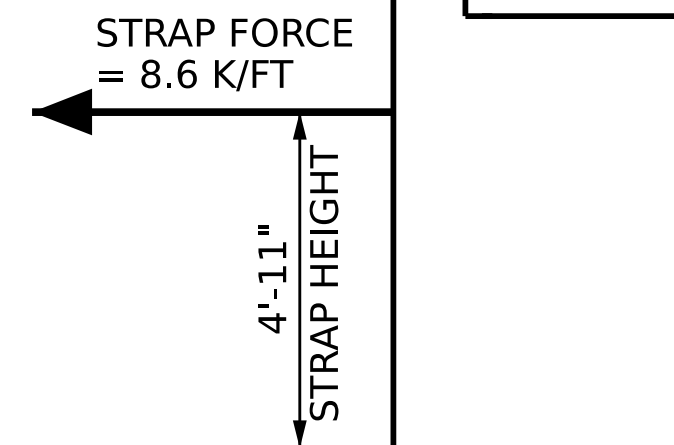
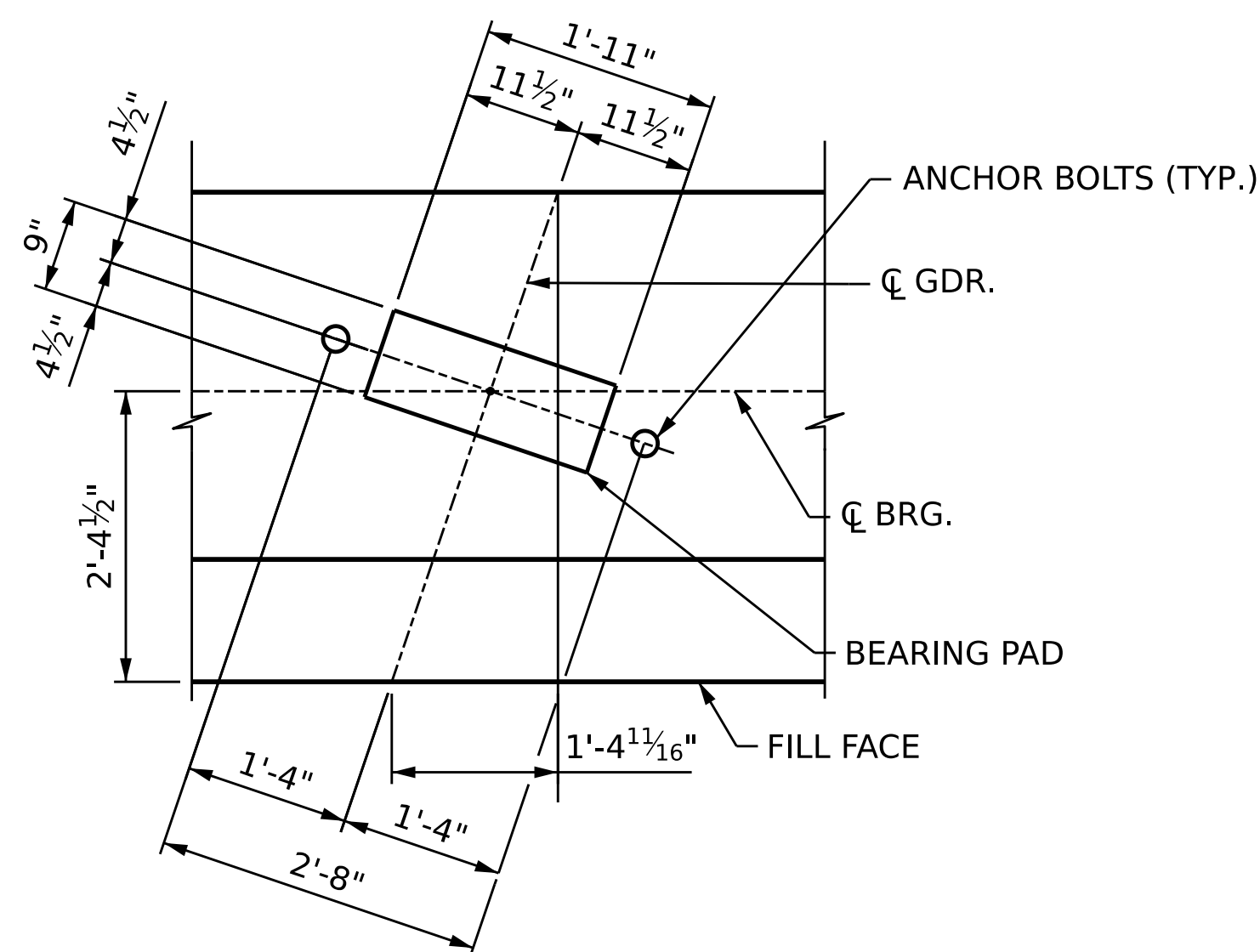
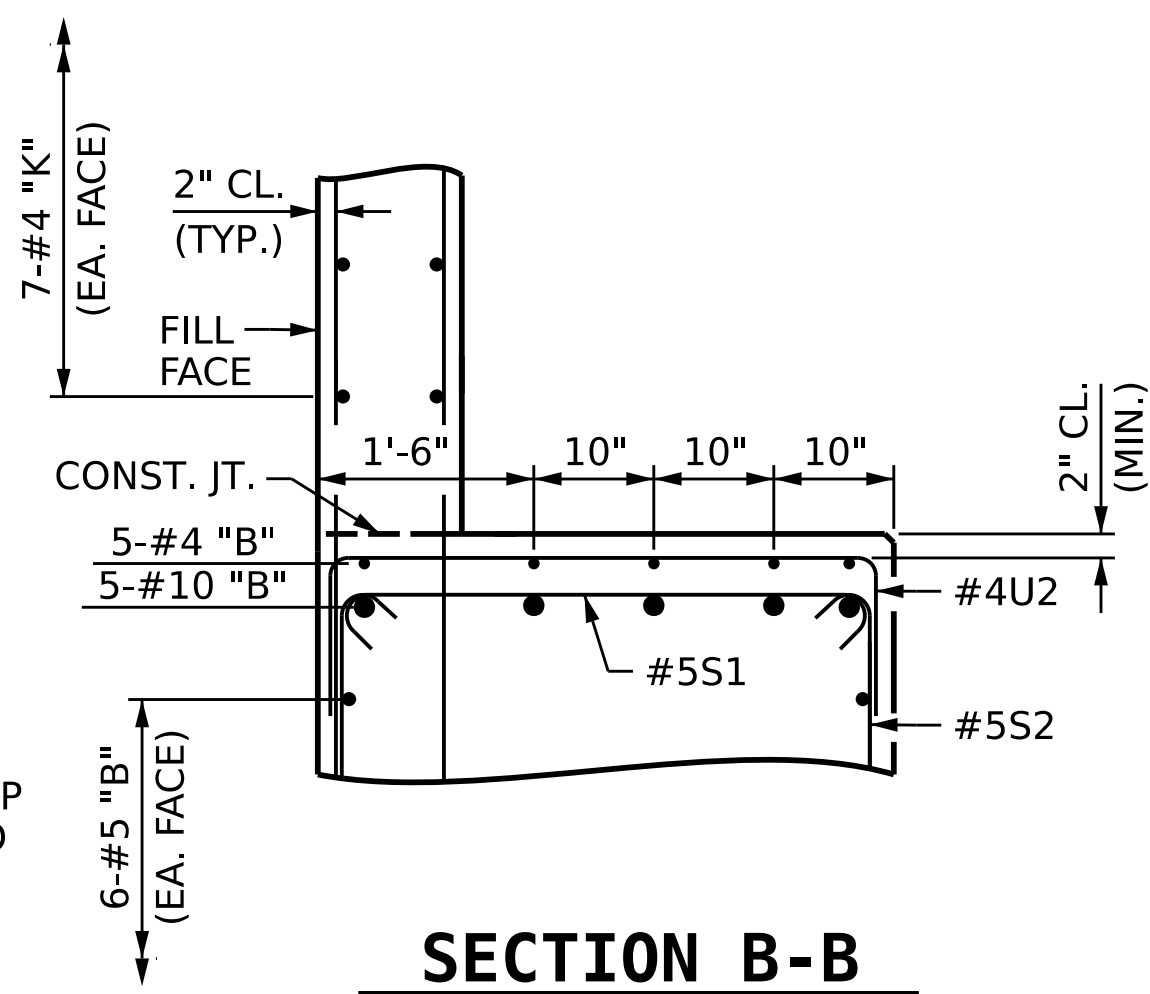
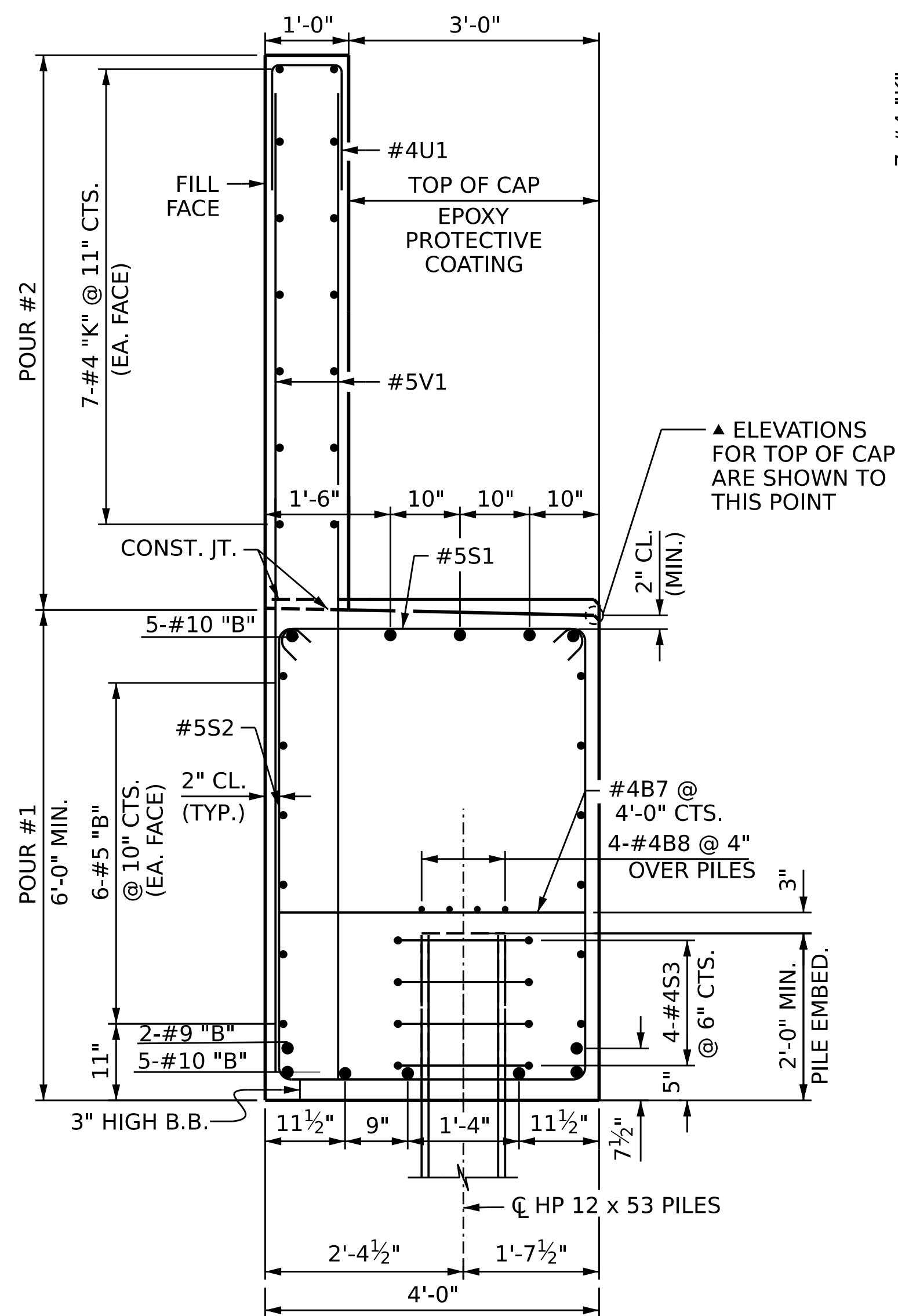
WINGWALL

(LEFT LANE)

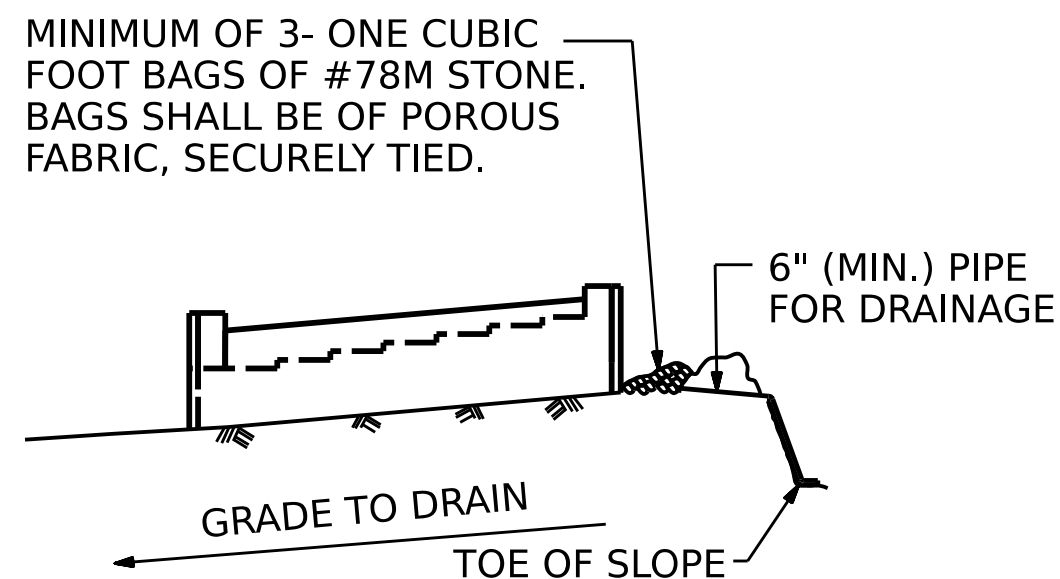
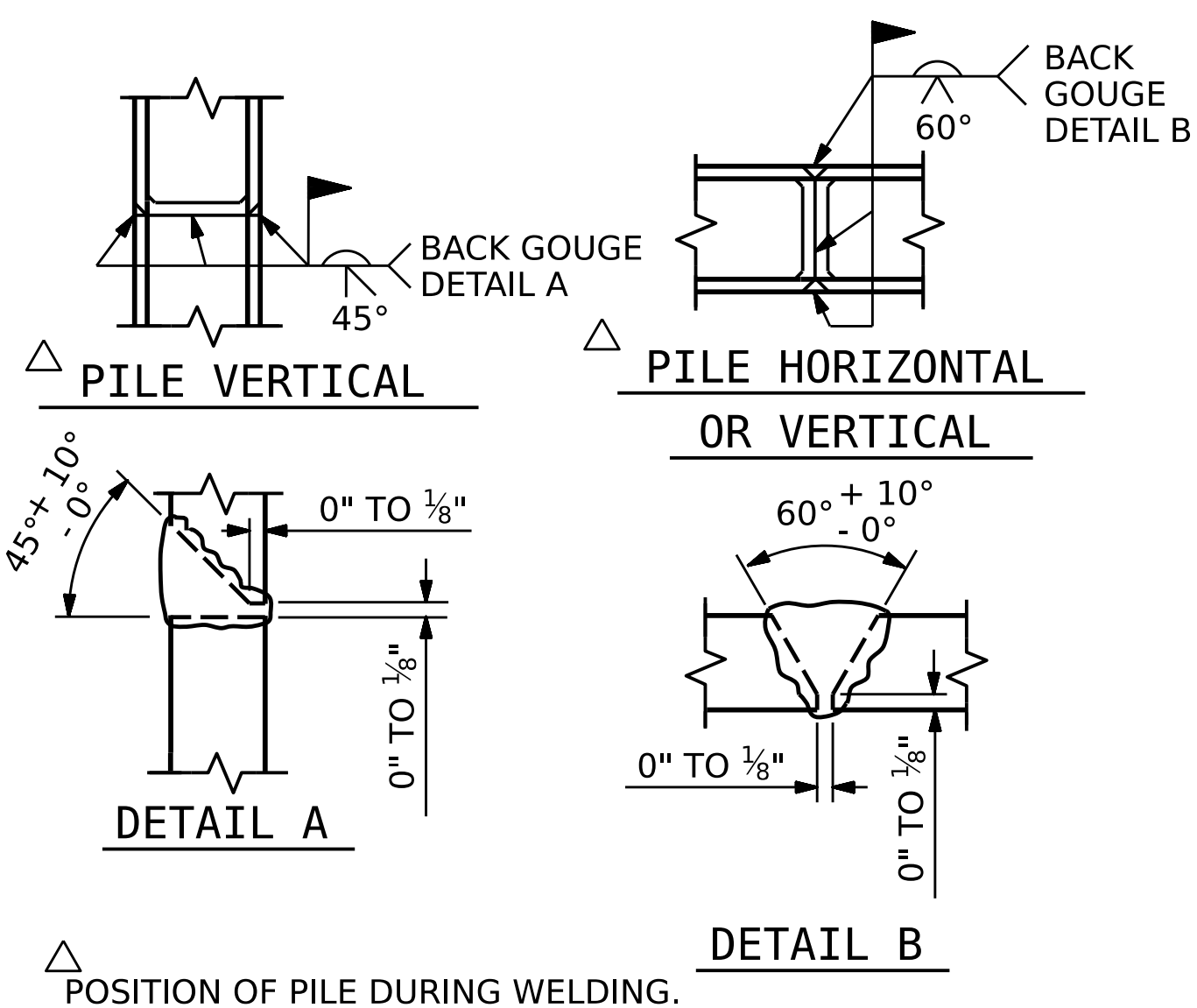
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S7-29
2			4			TOTAL SHEETS 41

DRAWN BY :	L. LEE	DATE :	10/2025
CHECKED BY :	D. TUTTLE	DATE :	10/2025
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



BILL OF MATERIAL					
END BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	10	1	44'-1"	1897
B2	10	10	1	44'-10"	1929
B3	4	9	STR	42'-5"	577
B4	30	4	STR	3'-2"	63
B5	5	4	STR	10'-10"	36
B6	24	5	STR	41'-11"	1049
B7	20	4	STR	3'-8"	49
B8	12	4	STR	27'-8"	222
H1	32	4	2	9'-2"	196
H2	18	4	STR	2'-9"	33
H3	4	4	STR	8'-4"	22
K1	42	4	STR	28'-6"	800
K2	4	4	STR	3'-4"	9
K3	4	4	STR	3'-7"	10
S1	80	5	3	4'-7"	382
S2	80	5	4	15'-9"	1314
S3	64	4	5	6'-6"	278
U1	73	4	6	3'-6"	171
U2	26	4	6	8'-0"	139
V1	146	5	STR	11'-9"	1789
V2	6	5	STR	13'-2"	82
V3	21	5	STR	13'-4"	292
V4	6	5	STR	13'-3"	83
V5	2	5	STR	13'-1"	27
V6	2	5	STR	12'-11"	27
REINFORCING STEEL				11,476 LBS.	
CLASS A CONCRETE					
POUR #1 (CAP & LOWER WINGWALL)				76.7 C.Y.	
POUR #2 (BACKWALL & UPPER WINGWALL)				21.4 C.Y.	
TOTAL = 98.1 C.Y.					
APPLICATION OF BRIDGE COATING				163.7 SF	



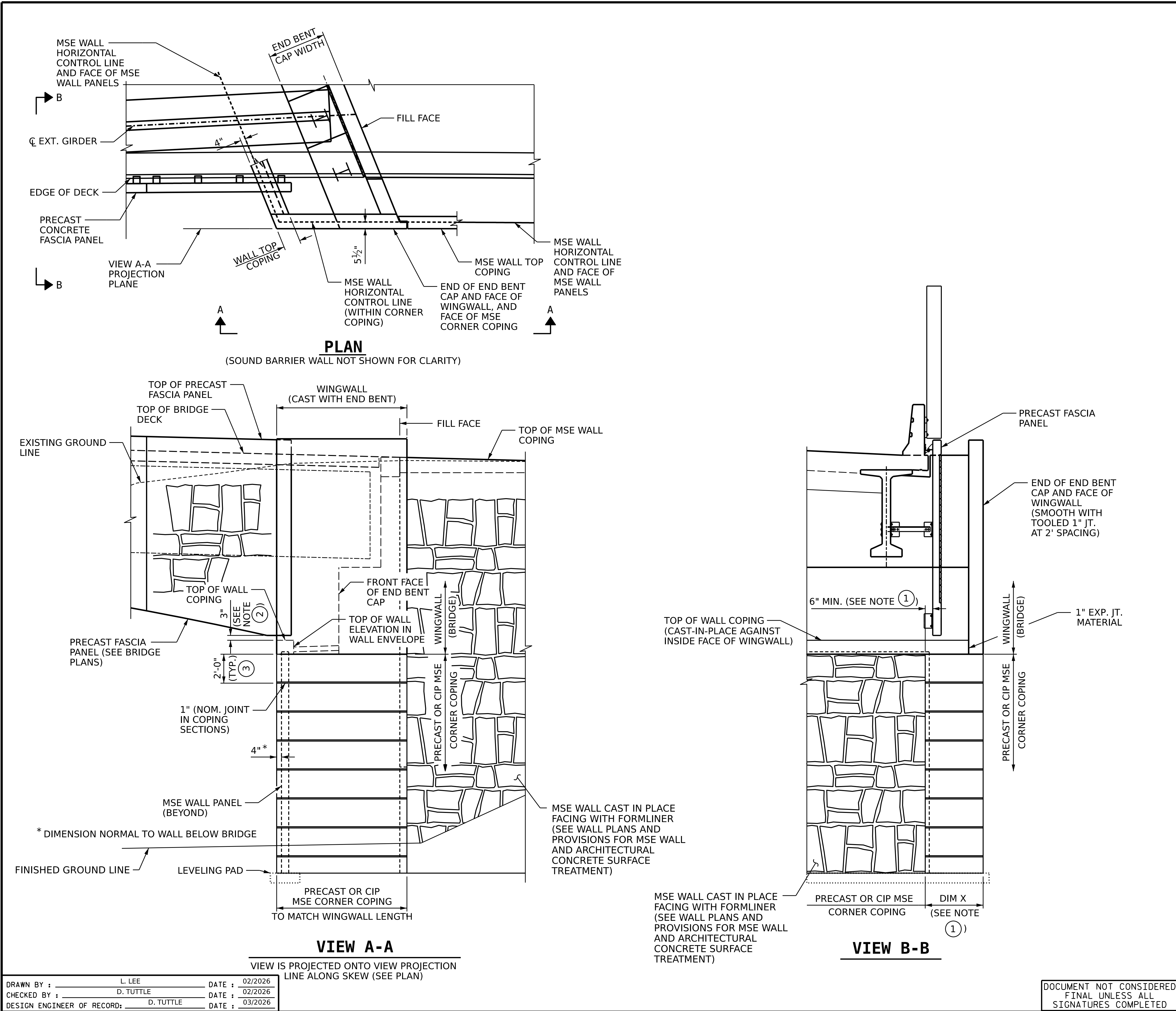
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

DRAWN BY : L. LEE DATE : 10/2025
 CHECKED BY : D. TUTTLE DATE : 10/2025
 DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

REVISIONS						SHEET NO. 57-30 TOTAL SHEETS 41
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 4 OF 4

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AECOM License No. F02342

7/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1
MSE WALL AESTHETIC DETAILS
(LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			41
2			4			

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* A PRECAST PANEL THICKNESS OF 6" AND 4" OVERHANG TO FACE OF COPING WAS ASSUMED FOR ESTABLISHING WING LENGTH. CONTRACTOR SHALL ADJUST WING LENGTH AS NECESSARY.

71-#5V1 @ 1'-0" CTS. (EA. FACE OF BACKWALL)
71-#4U1 @ 1'-0" CTS.

EL. 2071.83 TOP OF WING (LEVEL)
EL. 2070.83 TOP OF BACKWALL (LEVEL)
EL. 2069.43 AT FILL FACE

6-#4U2 @ 1'-6" CTS.

#4K2

POUR #2 BACKWALL UPPER WING

POUR #1 LOWER WING, CAP

EL. 2073.16 AT FILL FACE (AT WORKLINE)

LEFT WORKLINE

EL. 2074.08 AT FILL FACE

EL. 2075.41 TOP OF WING

#5 V4 THRU V6 BARS @ 10 1/2" CTS.

(EA. FACE)

EL. 2075.37 TOP OF WING

RAISED/PLANTED MEDIAN (BEYOND)

EL. 2075.07 TOP OF WING

#5-V6

2-#K3 (E.F.) (CUT TO FIT)

#5-V4

CONST. JT.

EL. 2067.76

EL. 2067.63

EL. 2066.37

EL. 2067.07

EL. 2066.94

EL. 2067.38

EL. 2066.25

EL. 2066.69

EL. 2065.68

EL. 2065.56

EL. 2066.00

EL. 2064.99

EL. 2064.86

EL. 2065.31

EL. 2064.29

EL. 2064.17

EL. 2064.61

EL. 2063.60

EL. 2063.92

EL. 2063.47

EL. 2063.47

5-#4B5

5-#10B2 (2 BAR RUN) (6'-0" MIN. SPLICE)

5-#4B4 (TYP.)

3-#4U2 @ 1'-6" CTS (TYP.) (U.O.N.)

3"

3"

7-#4K1 (3 BAR RUN) (EA. FACE) (2'-5" MIN. LAP)

6-#5B6 (2 BAR RUN) (EA. FACE) (3'-0" MIN. SPLICE)

2'-0" MIN. EMBEDMENT (TYP.)

4-#4B8 OVER PILES (3 BAR RUN) (2'-5" MIN. SPLICE)

4-#4S3 @ 6" CTS. (TYP. EA. PILE)

#4B7 @ 4'-0" CTS. (20 REQ'D)

3-#5S1 & 3-#5S2 @ 8 1/2" SPA.

5'-0" BAY 15

11"

7 3/8"

EL. 2061.63 BOTTOM OF CAP

PRE-MOLDED EXP. JOINT FILLER

PROPOSED STRUCTURE #8

EL. 2071.83 TOP OF WING (LEVEL)

EL. 2070.83 TOP OF BACKWALL (LEVEL)

EL. 2069.43 AT FILL FACE

EL. 2073.16 AT FILL FACE (AT WORKLINE)

EL. 2074.08 AT FILL FACE

EL. 2075.41 TOP OF WING

EL. 2075.37 TOP OF WING

EL. 2075.07 TOP OF WING

EL. 2067.76

EL. 2067.63

EL. 2066.37

EL. 2067.07

EL. 2066.94

EL. 2067.38

EL. 2066.25

EL. 2066.69

EL. 2065.68

EL. 2065.56

EL. 2066.00

EL. 2064.99

EL. 2064.86

EL. 2065.31

EL. 2064.29

EL. 2064.17

EL. 2064.61

EL. 2063.60

EL. 2063.92

EL. 2063.47

EL. 2063.47

5-#4B5

5-#10B2 (2 BAR RUN) (6'-0" MIN. SPLICE)

5-#4B4 (TYP.)

3-#4U2 @ 1'-6" CTS (TYP.) (U.O.N.)

3"

3"

7-#4K1 (3 BAR RUN) (EA. FACE) (2'-5" MIN. LAP)

6-#5B6 (2 BAR RUN) (EA. FACE) (3'-0" MIN. SPLICE)

2'-0" MIN. EMBEDMENT (TYP.)

4-#4B8 OVER PILES (3 BAR RUN) (2'-5" MIN. SPLICE)

4-#4S3 @ 6" CTS. (TYP. EA. PILE)

#4B7 @ 4'-0" CTS. (20 REQ'D)

3-#5S1 & 3-#5S2 @ 8 1/2" SPA.

5'-0" BAY 15

11"

7 3/8"

EL. 2061.63 BOTTOM OF CAP

PRE-MOLDED EXP. JOINT FILLER

PROPOSED STRUCTURE #8

EL. 2071.83 TOP OF WING (LEVEL)

EL. 2070.83 TOP OF BACKWALL (LEVEL)

EL. 2069.43 AT FILL FACE

EL. 2073.16 AT FILL FACE (AT WORKLINE)

EL. 2074.08 AT FILL FACE

EL. 2075.41 TOP OF WING

EL. 2075.37 TOP OF WING

EL. 2075.07 TOP OF WING

EL. 2067.76

EL. 2067.63

EL. 2066.37

EL. 2067.07

EL. 2066.94

EL. 2067.38

EL. 2066.25

EL. 2066.69

EL. 2065.68

EL. 2065.56

EL. 2066.00

EL. 2064.99

EL. 2064.86

EL. 2065.31

EL. 2064.29

EL. 2064.17

EL. 2064.61

EL. 2063.60

EL. 2063.92

EL. 2063.47

EL. 2063.47

5-#4B5

5-#10B2 (2 BAR RUN) (6'-0" MIN. SPLICE)

5-#4B4 (TYP.)

3-#4U2 @ 1'-6" CTS (TYP.) (U.O.N.)

3"

3"

7-#4K1 (3 BAR RUN) (EA. FACE) (2'-5" MIN. LAP)

6-#5B6 (2 BAR RUN) (EA. FACE) (3'-0" MIN. SPLICE)

2'-0" MIN. EMBEDMENT (TYP.)

4-#4B8 OVER PILES (3 BAR RUN) (2'-5" MIN. SPLICE)

4-#4S3 @ 6" CTS. (TYP. EA. PILE)

#4B7 @ 4'-0" CTS. (20 REQ'D)

3-#5S1 & 3-#5S2 @ 8 1/2" SPA.

5'-0" BAY 15

11"

7 3/8"

EL. 2061.63 BOTTOM OF CAP

PRE-MOLDED EXP. JOINT FILLER

PROPOSED STRUCTURE #8

EL. 2071.83 TOP OF WING (LEVEL)

EL. 2070.83 TOP OF BACKWALL (LEVEL)

EL. 2069.43 AT FILL FACE

EL. 2073.16 AT FILL FACE (AT WORKLINE)

EL. 2074.08 AT FILL FACE

EL. 2075.41 TOP OF WING

EL. 2075.37 TOP OF WING

EL. 2075.07 TOP OF WING

EL. 2067.76

EL. 2067.63

EL. 2066.37

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5-#4B5

5-#10B2 (2 BAR RUN) (6'-0" MIN. SPLICE)

5-#4B4 (TYP.)

3-#4U2 @ 1'-6" CTS (TYP.) (U.O.N.)

3"

3"

7-#4K1 (3 BAR RUN) (EA. FACE) (2'-5" MIN. LAP)

6-#5B6 (2 BAR RUN) (EA. FACE) (3'-0" MIN. SPLICE)

2'-0" MIN. EMBEDMENT (TYP.)

4-#4B8 OVER PILES (3 BAR RUN) (2'-5" MIN. SPLICE)

4-#4S3 @ 6" CTS. (TYP. EA. PILE)

#4B7 @ 4'-0" CTS. (20 REQ'D)

3-#5S1 & 3-#5S2 @ 8 1/2" SPA.

5'-0" BAY 15

11"

7 3/8"

EL. 2061.63 BOTTOM OF CAP

PRE-MOLDED EXP. JOINT FILLER

PROPOSED STRUCTURE #8

EL. 2071.83 TOP OF WING (LEVEL)

EL. 2070.83 TOP OF BACKWALL (LEVEL)

EL. 2069.43 AT FILL FACE

EL. 2073.16 AT FILL FACE (AT WORKLINE)

EL. 2074.08 AT FILL FACE

EL. 2075.41 TOP OF WING

EL. 2075.37 TOP OF WING

EL. 2075.07 TOP OF WING

EL. 2067.76

EL. 2067.63

EL. 2066.37

EL. 2067.07

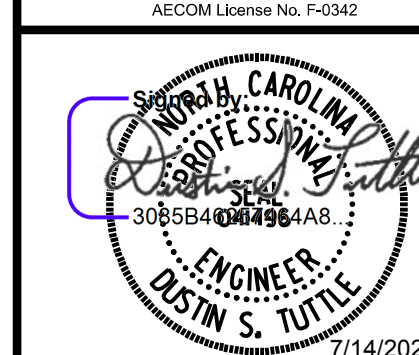
EL. 2066.94

EL. 2067.3

▲ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTION A-A ON SHEET 3.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
 STATION: 83+50.80 -L-

SHEET 1 OF 4



SUBSTRUCTURE

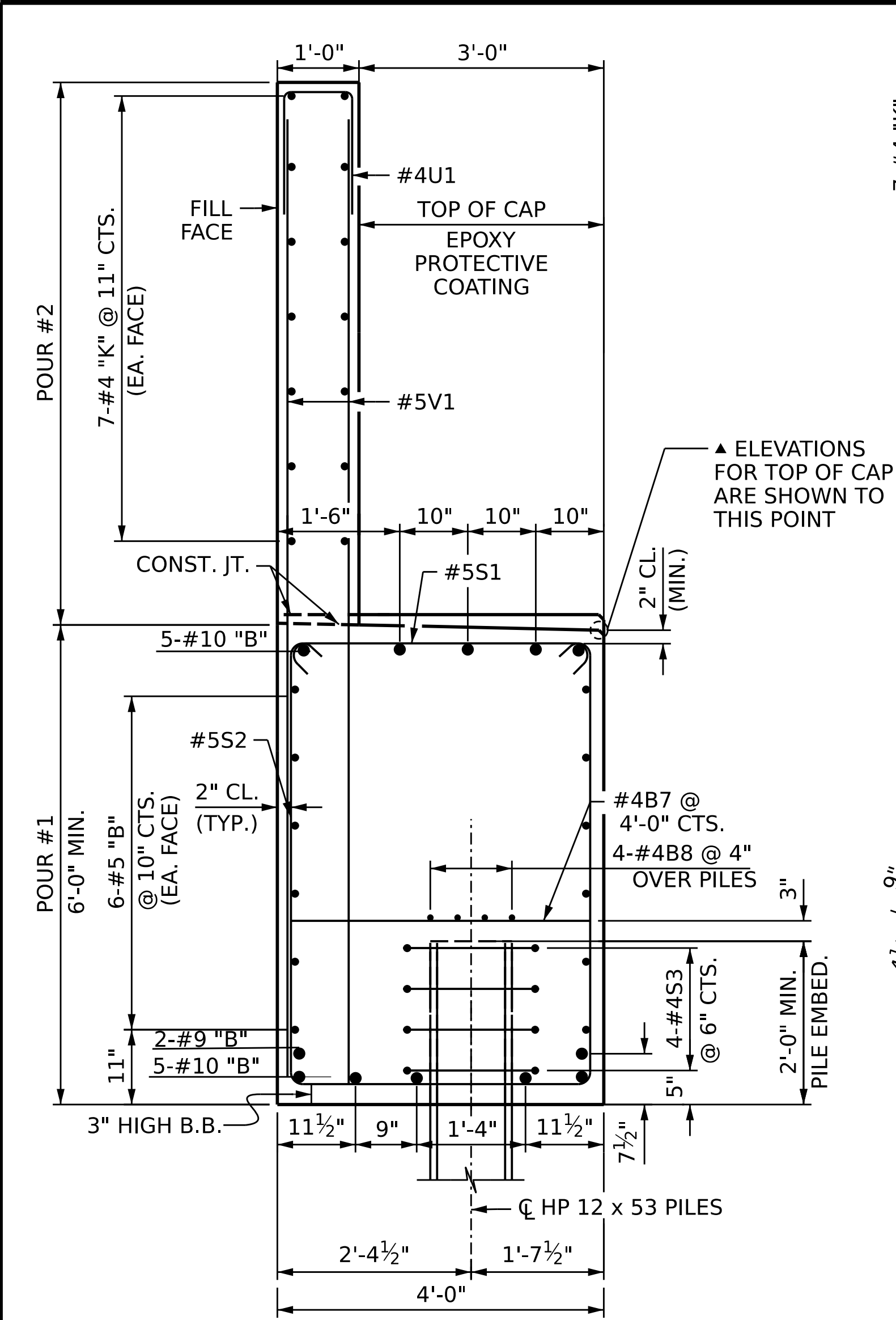
END BENT 2

(LEFT LANE)

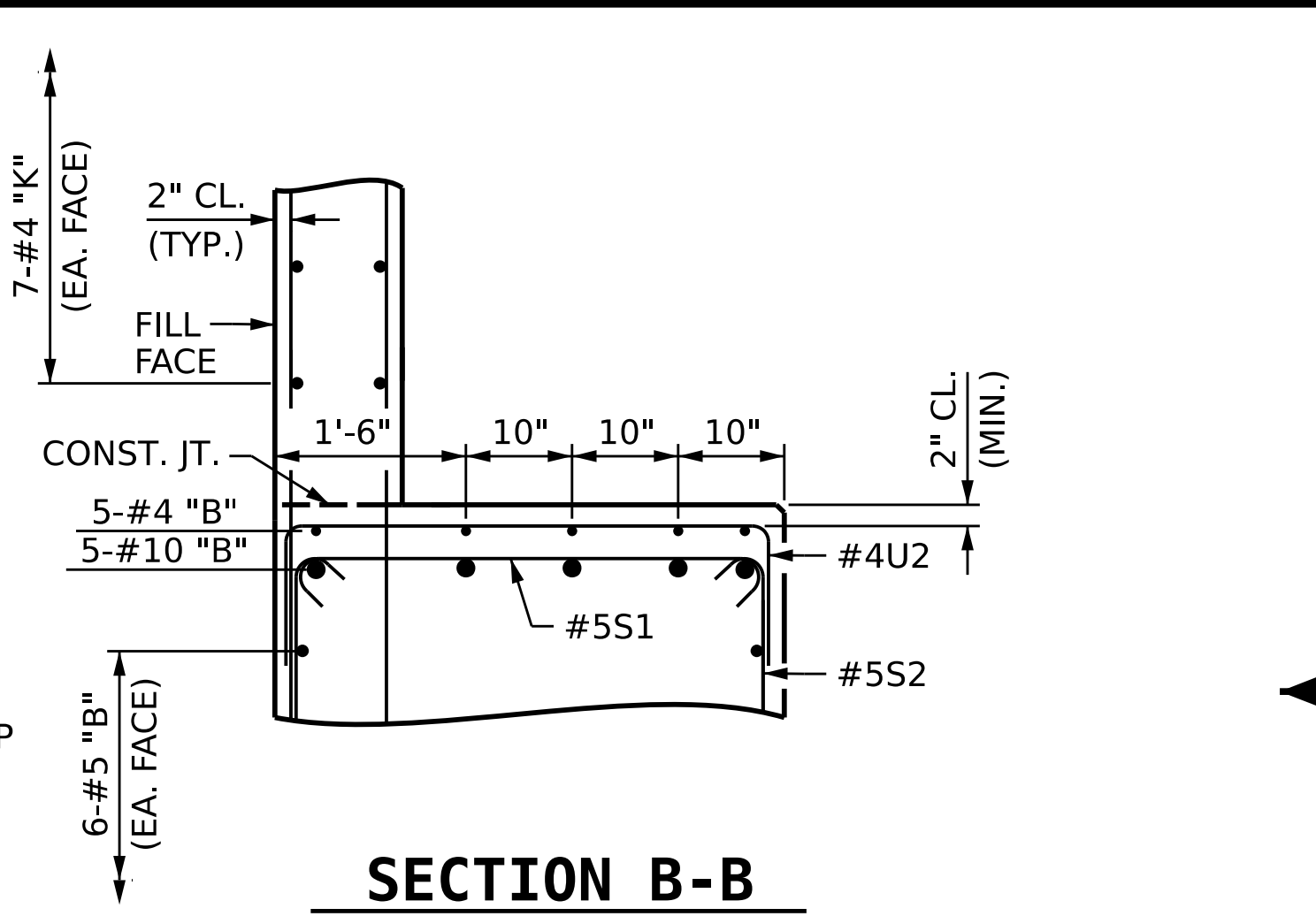
REVISONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-32
1			3			TOTAL SHEETS 41
2			4			

DRAWN BY :	L. LEE	DATE :	10/2025
CHECKED BY :	D. TUTTLE	DATE :	10/2025
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

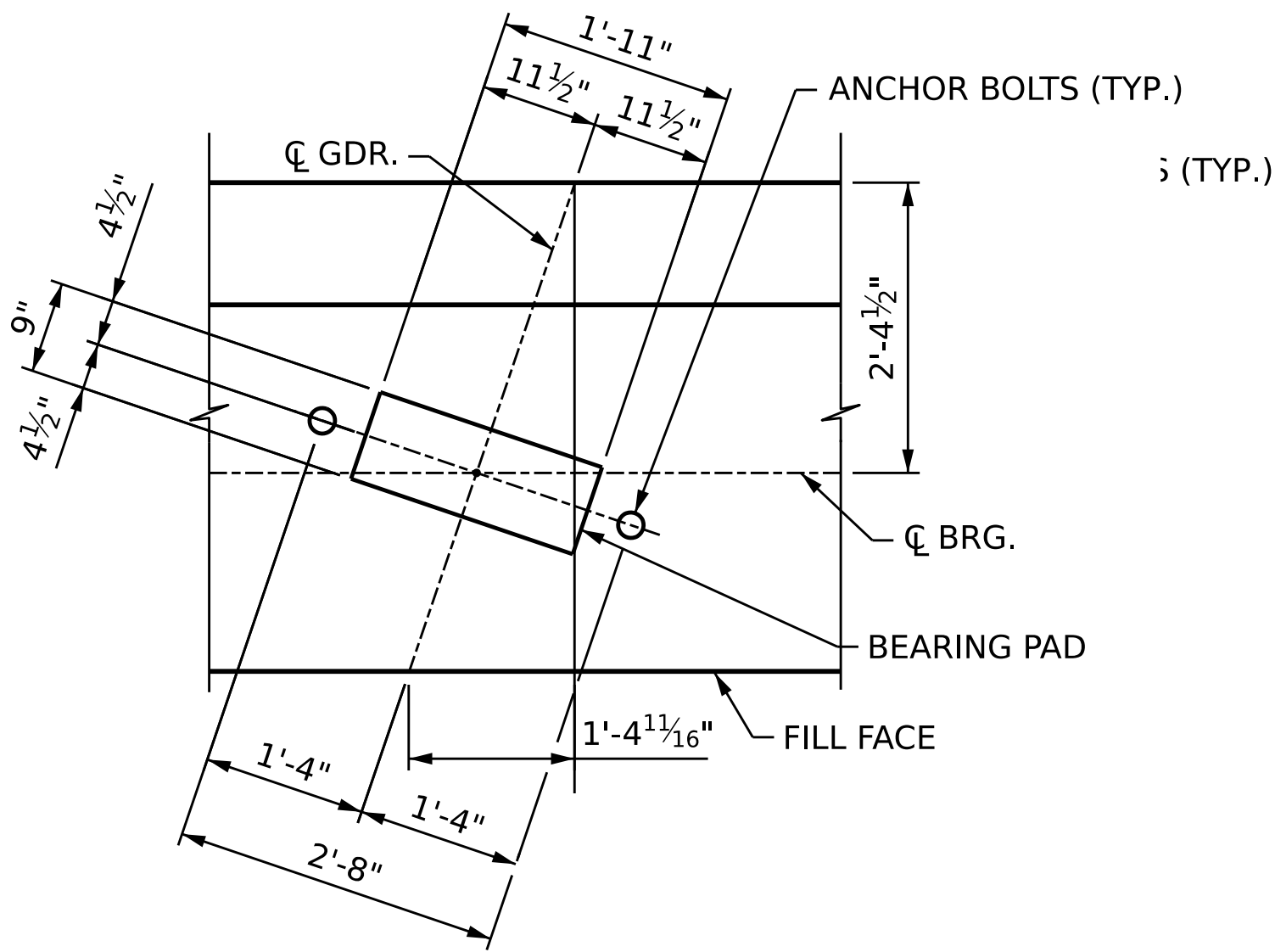
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



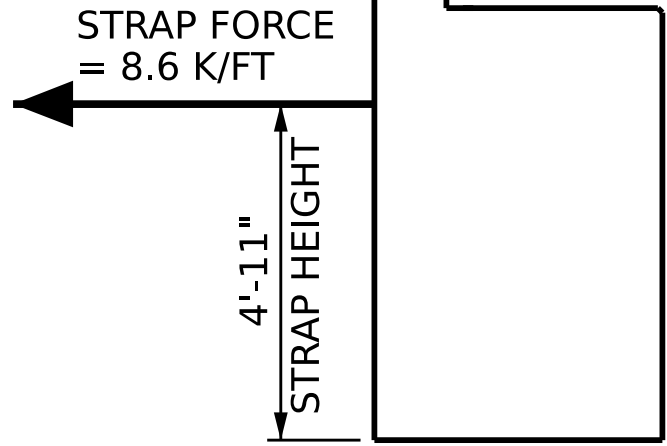
SECTION A-A



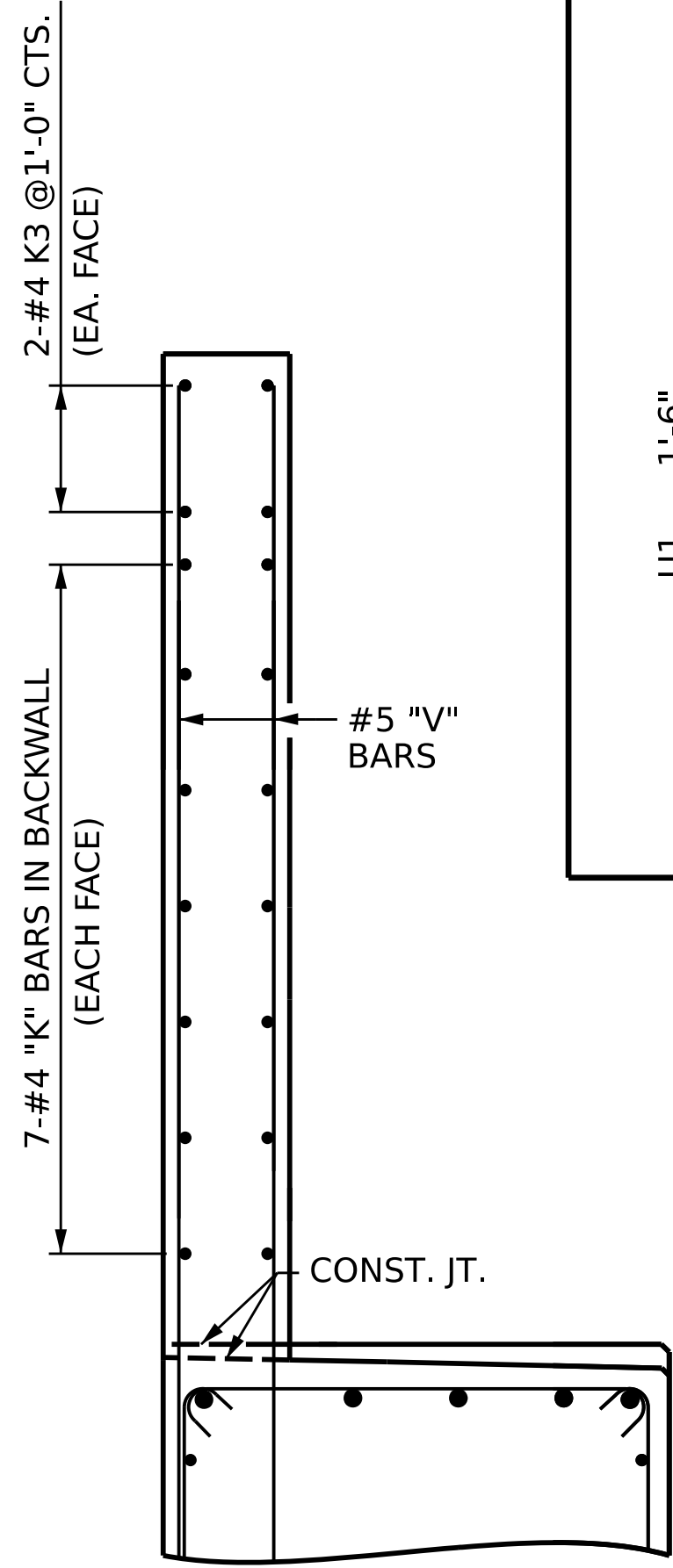
SECTION B-B



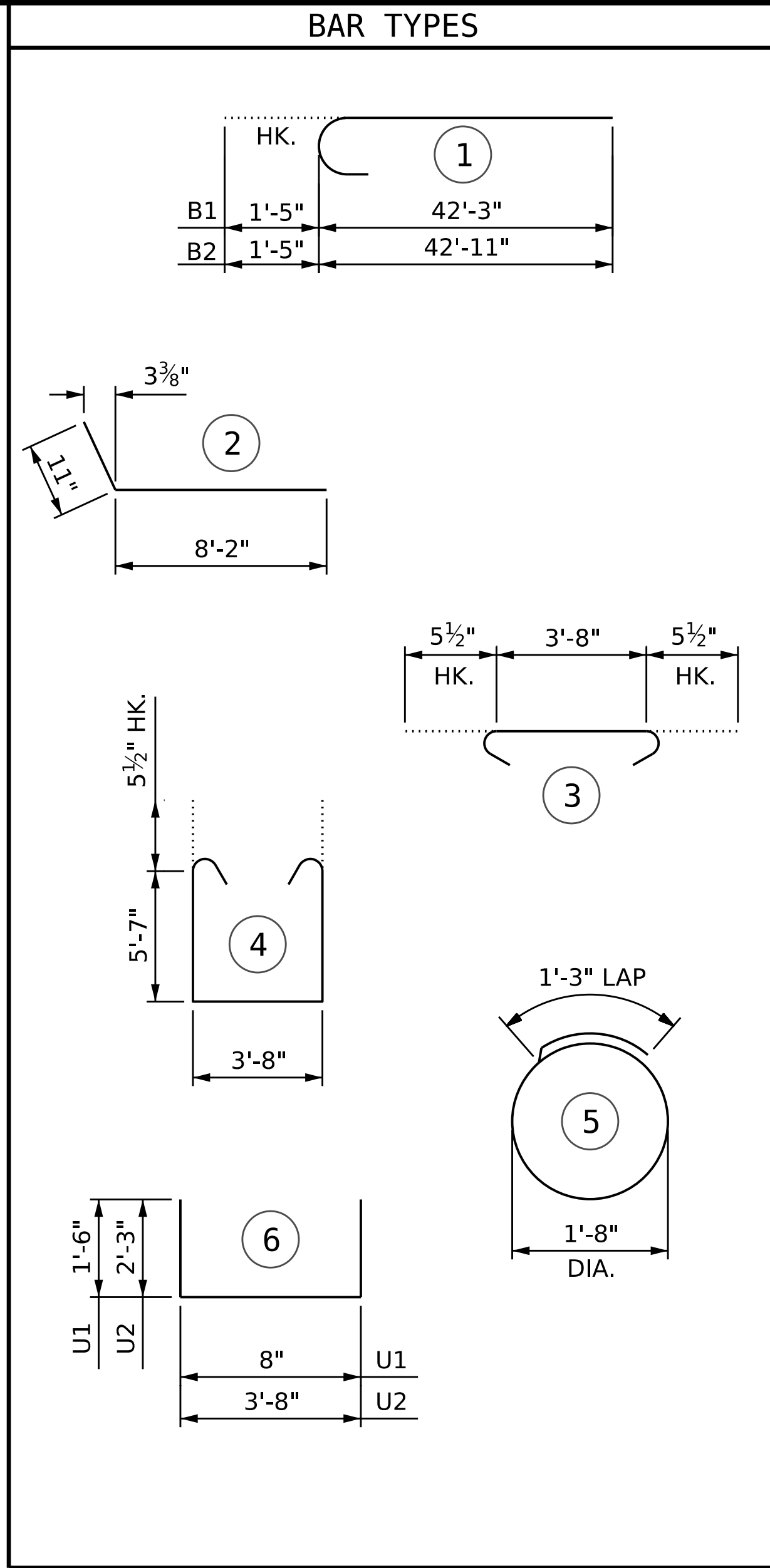
DETAIL A



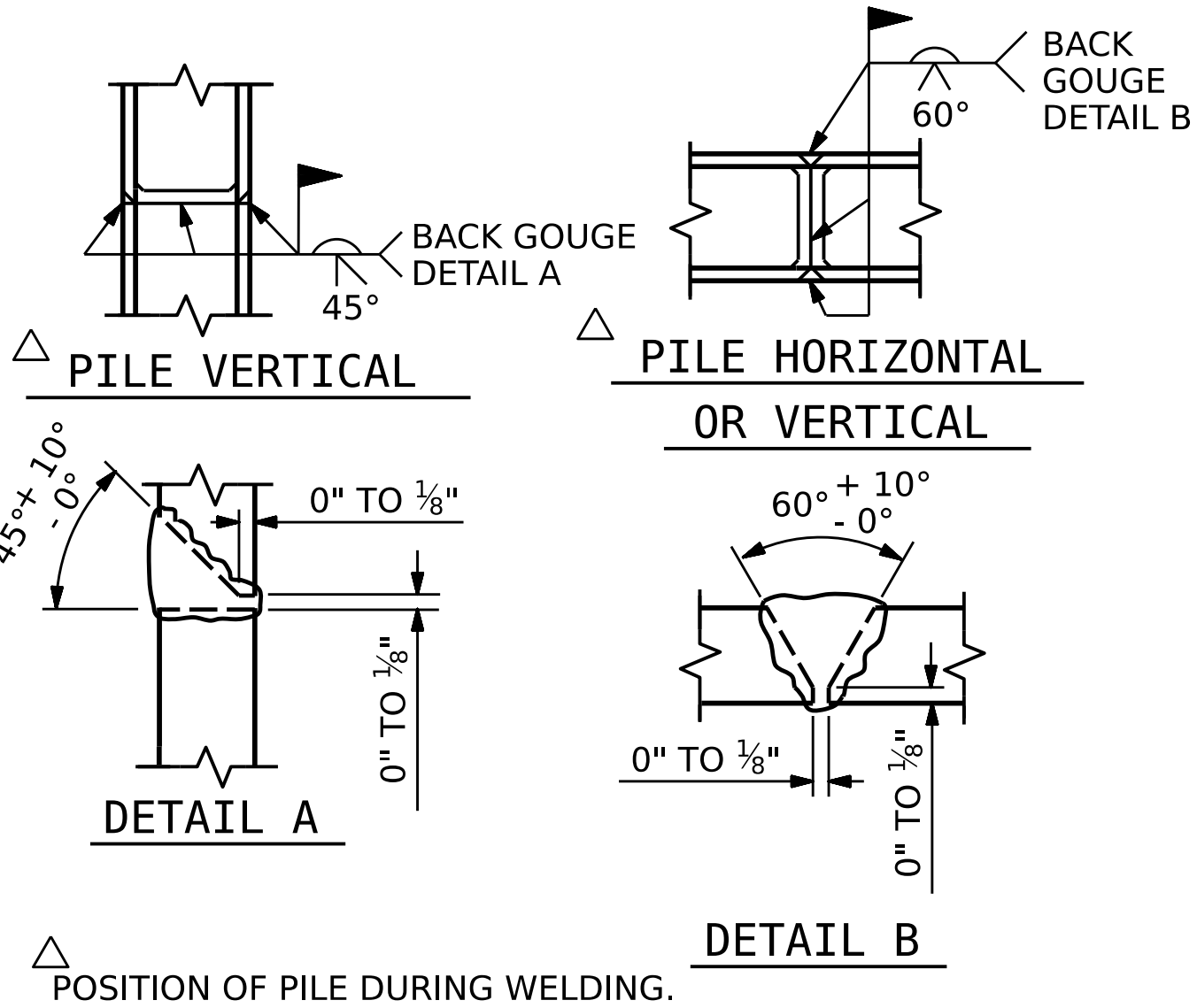
STRAP FORCE



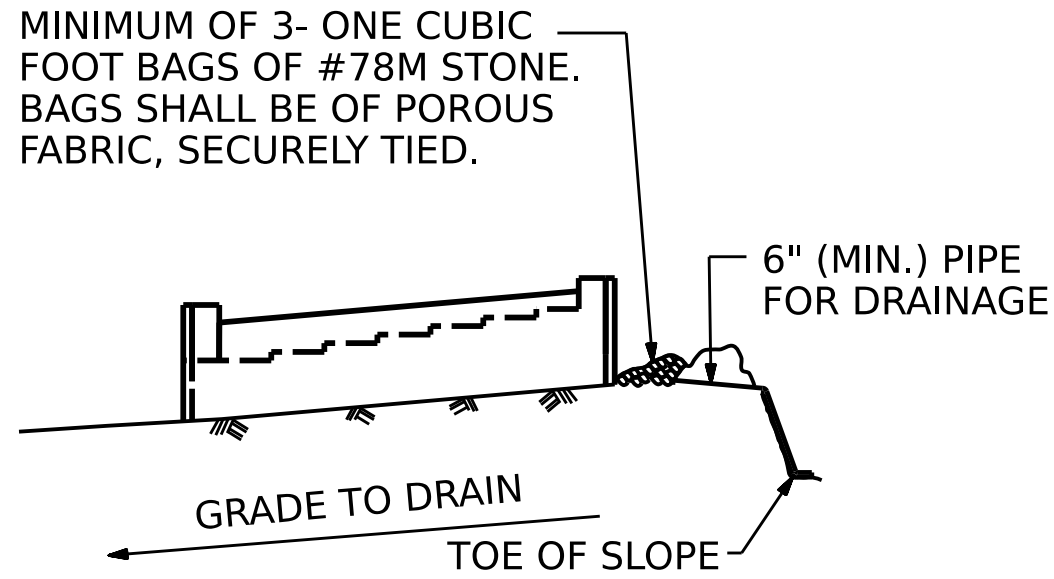
SECTION C-C



BILL OF MATERIAL					
END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	10	1	43'-8"	1879
B2	10	10	1	44'-4"	1908
B3	4	9	STR	42'-0"	571
B4	30	4	STR	3'-2"	63
B5	5	4	STR	8'-8"	29
B6	24	5	STR	41'-6"	1039
B7	20	4	STR	3'-8"	49
B8	12	4	STR	27'-6"	220
H1	32	4	2	9'-0"	192
H2	17	4	STR	2'-9"	31
H3	2	4	STR	8'-2"	11
K1	42	4	STR	28'-3"	793
K2	4	4	STR	3'-4"	9
K3	4	4	STR	3'-9"	10
S1	80	5	3	4'-7"	382
S2	80	5	4	15'-9"	1314
S3	64	4	5	6'-6"	278
U1	71	4	6	3'-8"	174
U2	24	4	6	8'-2"	131
V1	142	5	STR	11'-9"	1740
V2	6	5	STR	13'-2"	82
V3	21	5	STR	13'-6"	296
V4	6	5	STR	13'-5"	84
V5	2	5	STR	13'-3"	28
V6	2	5	STR	13'-1"	27
REINFORCING STEEL					11,340 LBS.
CLASS A CONCRETE					
POUR #1 (CAP & LOWER WINGWALL)					74.9 C.Y.
POUR #2 (BACKWALL & UPPER WINGWALL)					20.9 C.Y.
TOTAL = 95.8 C.Y.					
APPLICATION OF BRIDGE COATING					159.5 SF



PILE SPLICE DETAILS



TEMPORARY DRAINAGE AT END BENT

BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

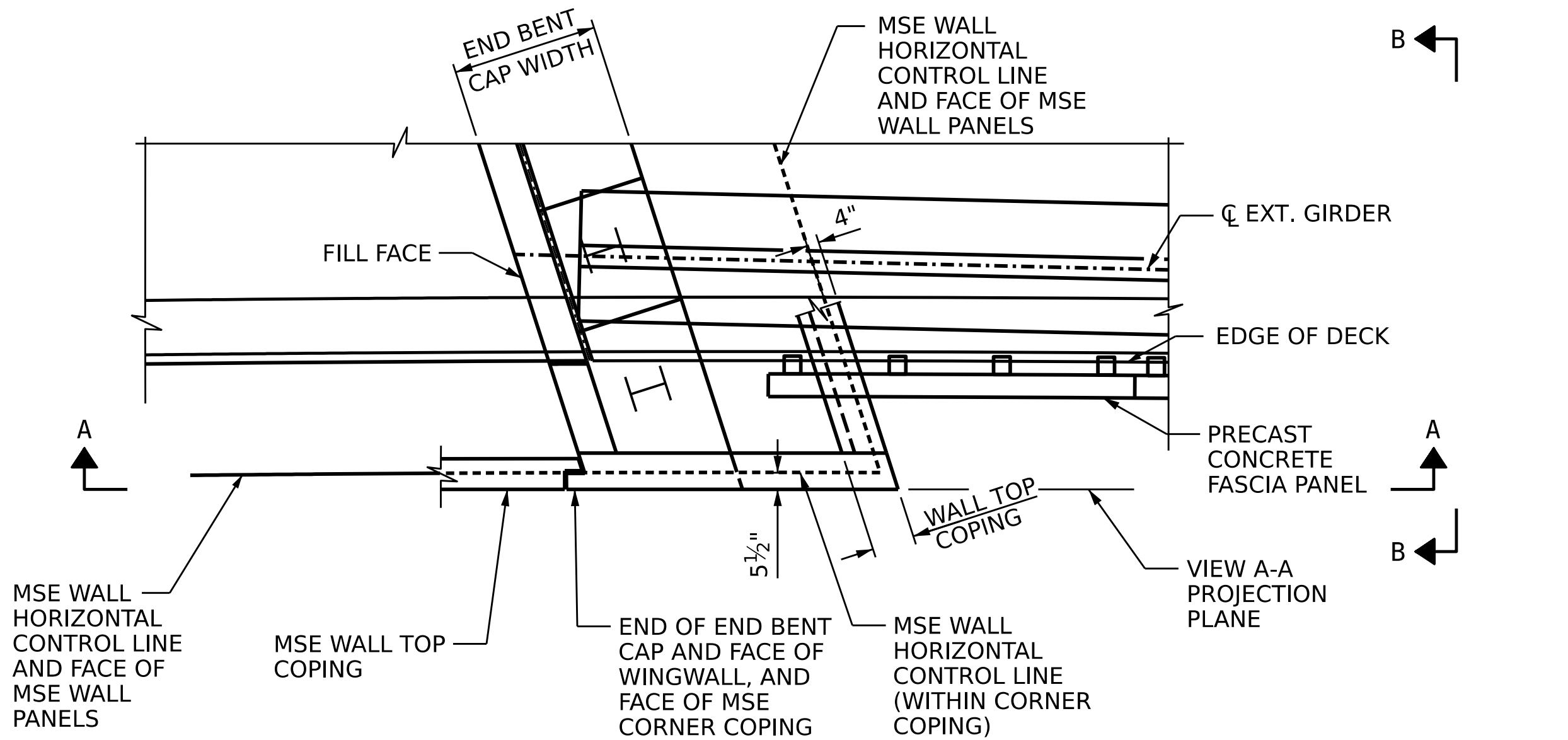
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

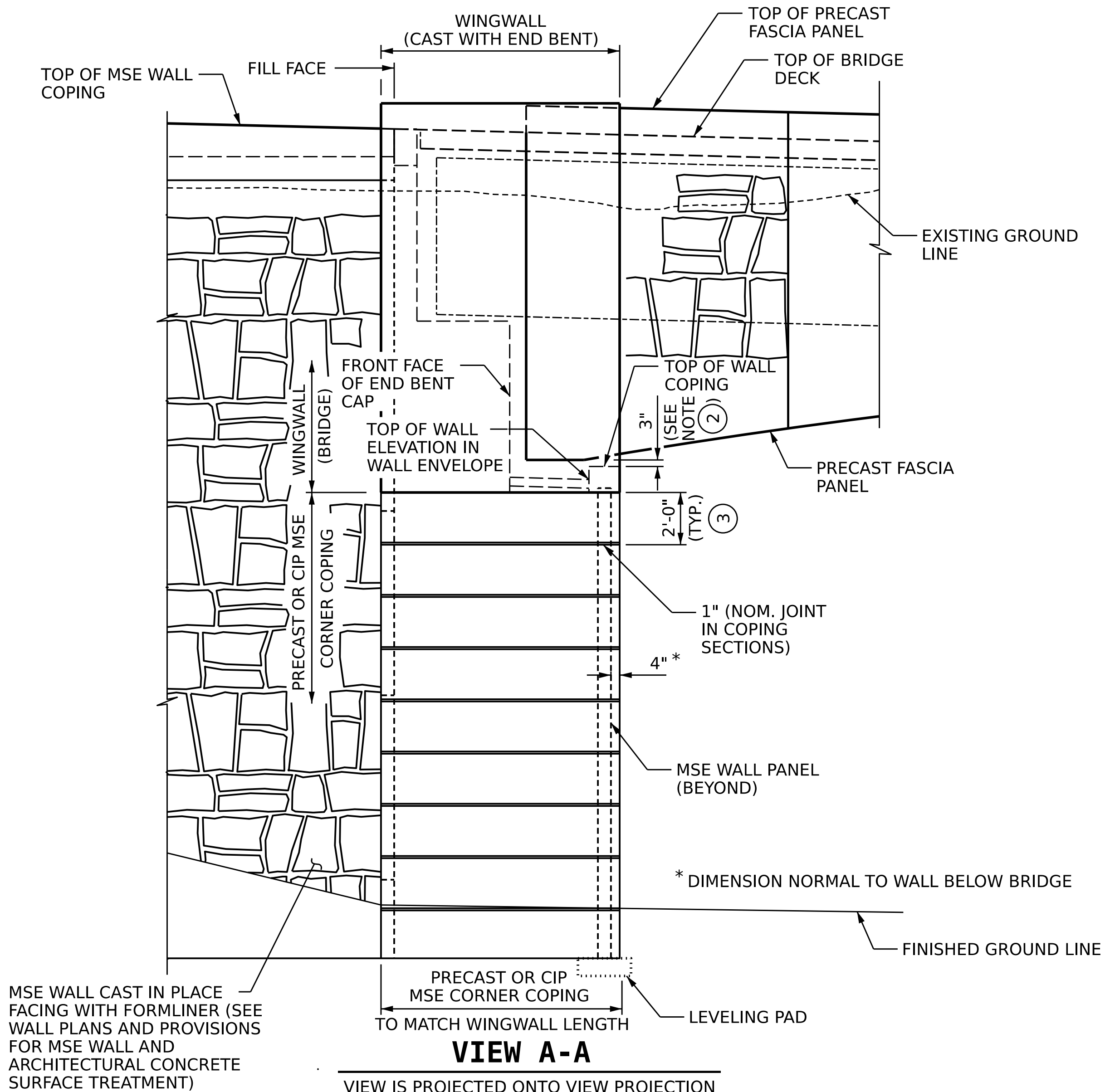
SHEET 3 OF 4



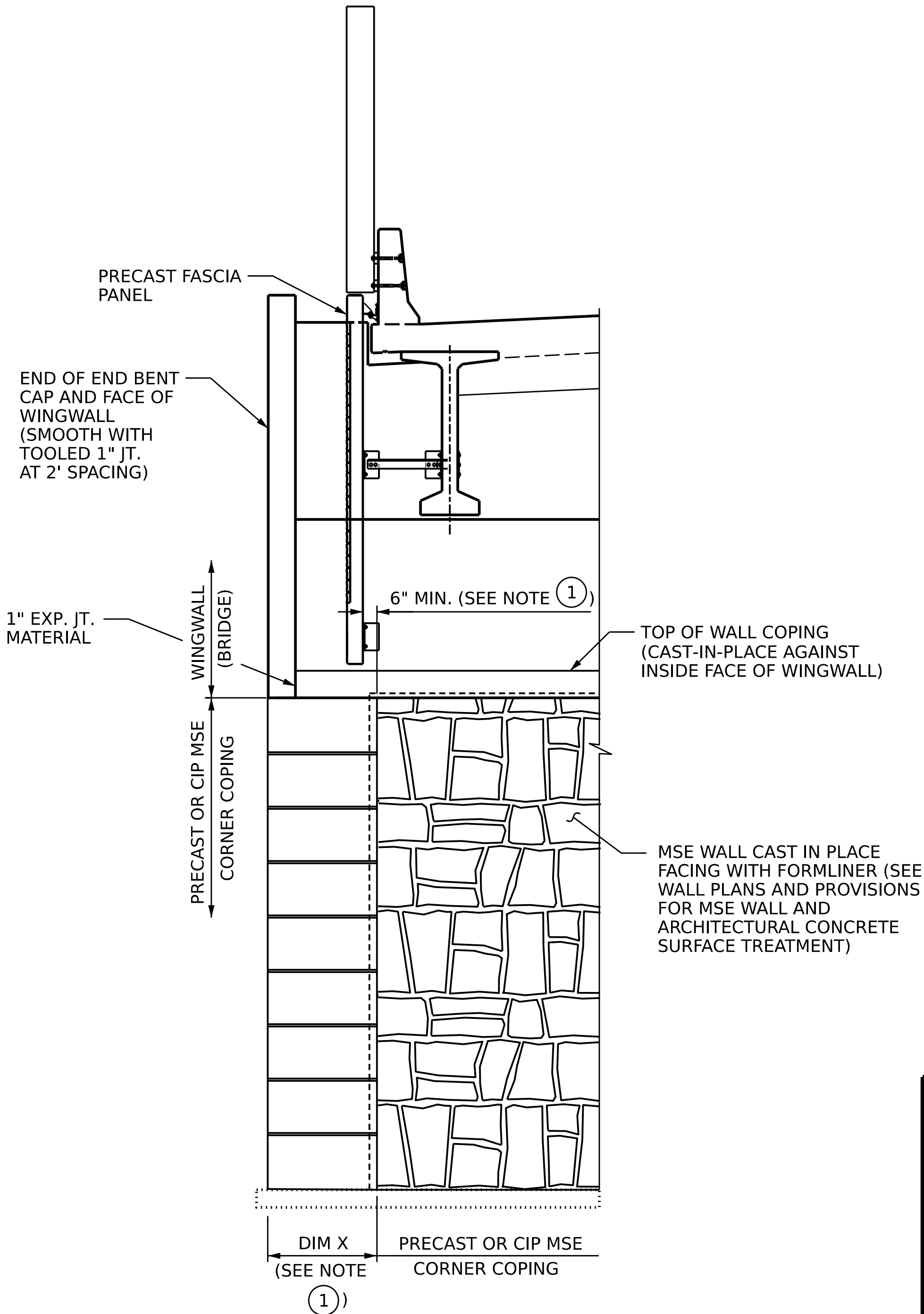
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 2 SECTION AND DETAILS (LEFT LANE)					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 41



PLAN
(SOUND BARRIER WALL NOT SHOWN FOR CLARITY)



VIEW A-A
VIEW IS PROJECTED ONTO VIEW PROJECTION
LINE ALONG SKEW (SEE PLAN)



VIEW B-B

NOTES:

MSE WALL NO. 23 PLANS SHALL BE COORDINATED CLOSELY WITH THIS PLAN SET TO ACHIEVE THE INTENDED AESTHETIC APPEARANCE. THE USE OF CUSTOM CAST-IN-PLACE (CIP) OR PRECAST COPINGS SHALL BE USED TO CREATE THE INTEGRATED APPEARANCE BETWEEN BRIDGE AND WALL ELEMENTS.

THE MSE CORNER COPING SHALL BE CONSTRUCTED SUCH THAT THE LIMITS ARE CO-PLANAR WITH THE BRIDGE WINGWALL.

SHOP DRAWINGS FOR EACH WALL SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION OF THE WALL OR BRIDGES.

THE CONTRACTOR SHALL SUBMIT METHODS FOR CONSTRUCTING THE WALL TO ACHIEVE THE INTENDED APPEARANCE.

① DIM "X" SHALL BE SET TO PROVIDE 6" MINIMUM BEYOND THE BACK OF THE PRECAST FASCIA PANEL SUSPENDED FROM THE BRIDGE DECK OVERHANG.

ALL MSE WALL PANELS, NOT INCLUDING COPING, SHALL USE FORMLINER IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR ARCHITECTURAL SURFACE TREATMENT.

ALL COPING ELEMENTS FOR RETAINING WALLS AT BRIDGE 7 SHALL BE SMOOTH AND COATED COLOR FS#33522. SEE "APPLICATION OF BRIDGE COATING" SPECIAL PROVISION. FOR COATINGS ON MSE WALL, COST OF COATING COPING ELEMENTS IS CONSIDERED INCIDENTAL TO THE WALL. COATINGS ON THESE WALLS SHALL BE APPLIED AT THE SAME TIME AS COATINGS ON THE BRIDGES AND SHALL USE THE SAME MATERIAL.

② DIMENSION IS APPROXIMATE. PRECAST CONCRETE FASCIA PANEL SHALL BE ADJUSTED IF, AFTER CONSTRUCTING THE BRIDGE SUPERSTRUCTURE BUT BEFORE CONSTRUCTING THE PRECAST CONCRETE FASCIA, THIS DIMENSION WILL EXCEED 5" OR BE LESS THAN 1" BASED ON THE DIMENSIONS SHOWN ON THE "PRECAST CONCRETE FASCIA DETAILS" SHEETS.

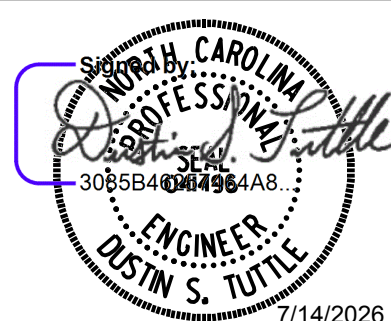
③ CORNER COPING SHALL BE PRECAST OR CAST-IN-PLACE DIRECTLY UNDER THE LIMITS OF THE END BENT CAP AND WINGWALL. COPING SEGMENTS SHALL BE 2' TALL, INCLUDING A 1" (NOMINAL) JOINT. CONSTRUCT THE COPING SEGMENTS SUCH THAT THE TOP SEGMENT DIRECTLY UNDER THE END BENT IS 2', AND ANY NON-STANDARD SEGMENTS ARE BELOW THE GROUNDLINE.

MSE WALL PANEL FORMLINER SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT.

THE FULL COST FOR CONSTRUCTING APPLICABLE MSE WALLS, INCLUDING SHOP DRAWINGS, MEANS AND METHODS, COPING DETAILS, MATERIALS AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE FOR MSE WALL NO. 23, NO SEPARATE PAYMENT SHALL BE MADE FOR COORDINATION OF BRIDGE AND WALL ITEMS.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 4 OF 4



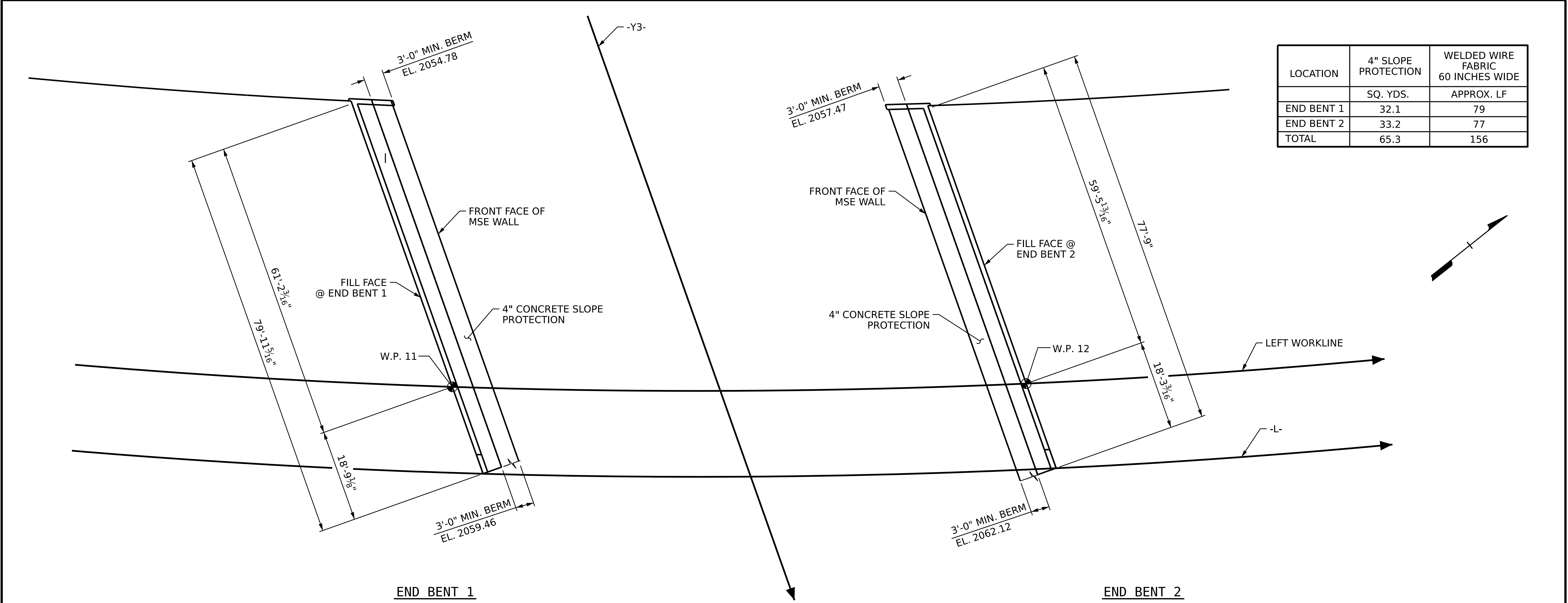
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2
MSE WALL AESTHETIC DETAILS
(LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-35
1			3			TOTAL SHEETS 41
2			4			

DRAWN BY : L. LEE DATE : 03/2026
CHECKED BY : D. TUTTLE DATE : 03/2026
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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FINAL UNLESS ALL
SIGNATURES COMPLETED

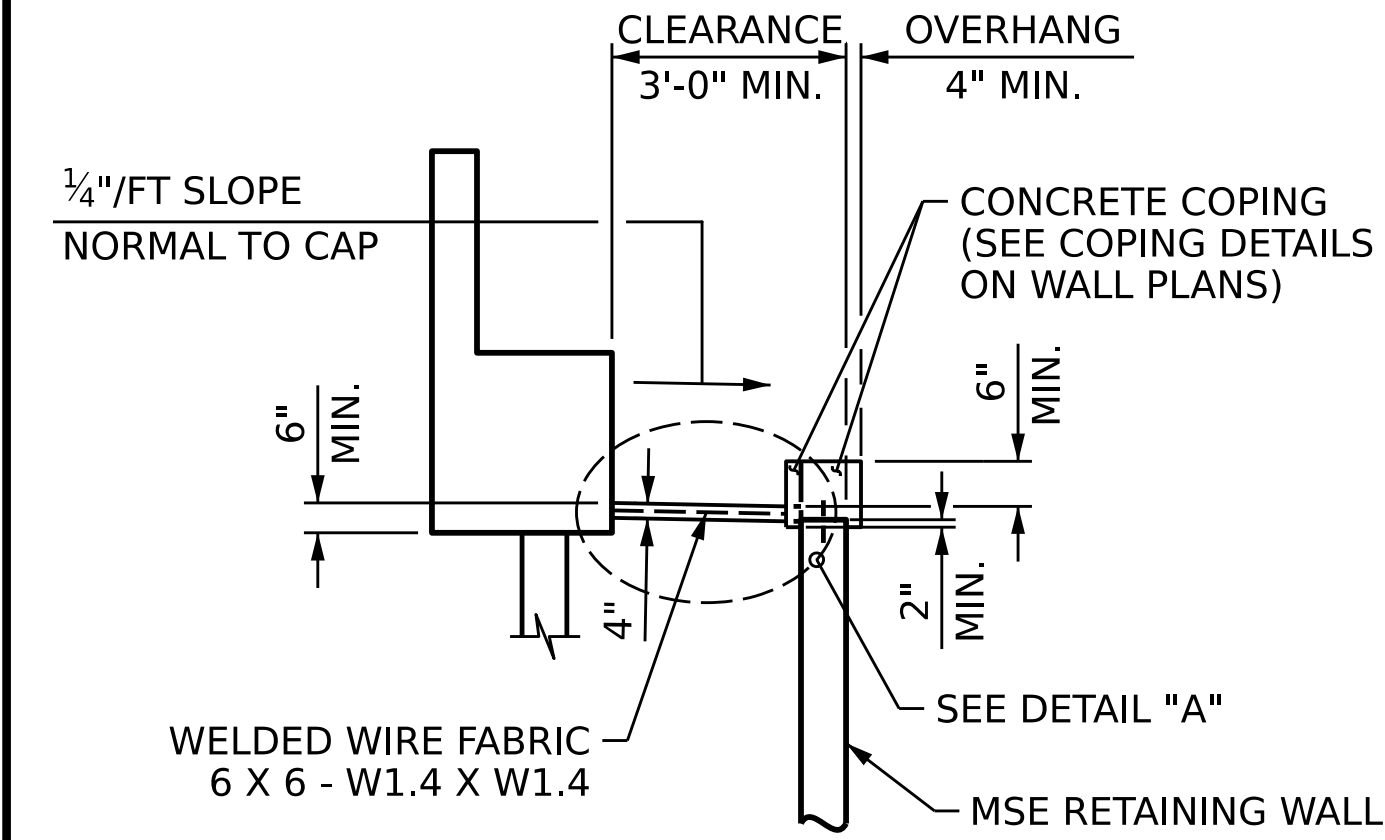


LOCATION	4" SLOPE PROTECTION	WELDED WIRE FABRIC 60 INCHES WIDE
	SQ. YDS.	APPROX. LF
END BENT 1	32.1	79
END BENT 2	33.2	77
TOTAL	65.3	156

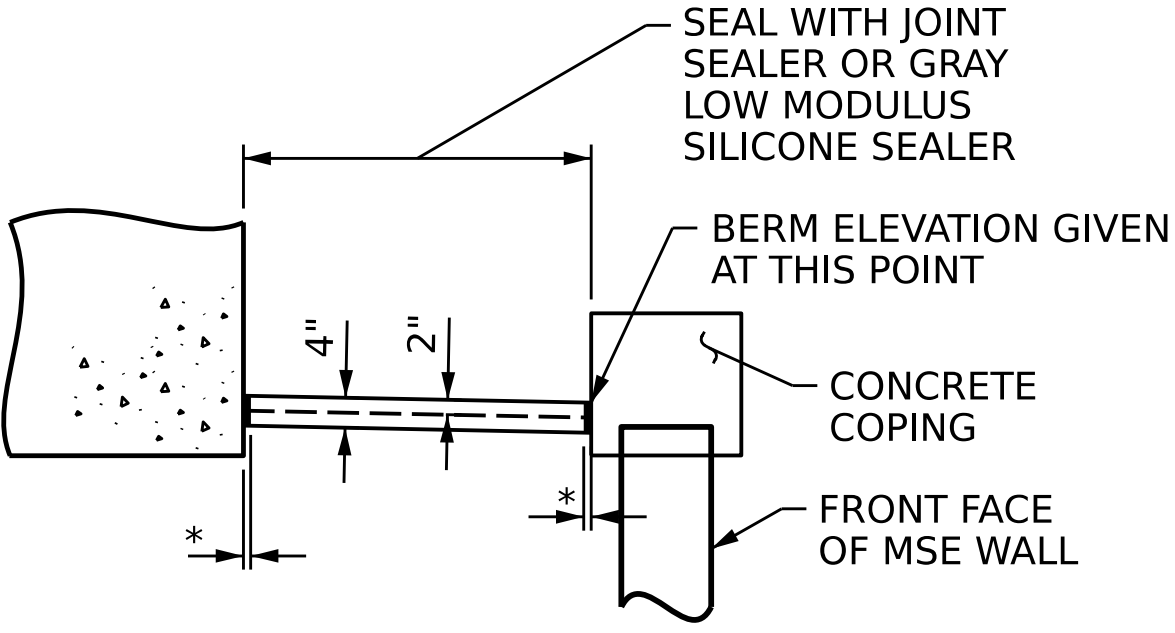
PLAN

NOTES :

CONCRETE SLOPE PROTECTION SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

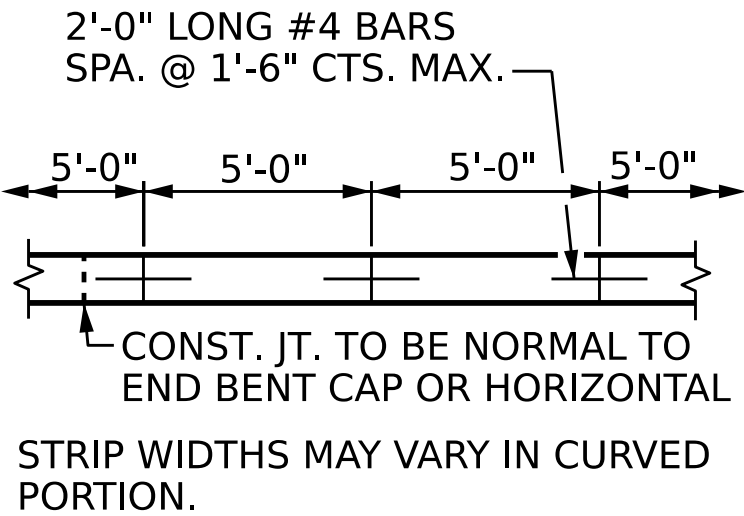


SECTION AT END BENT

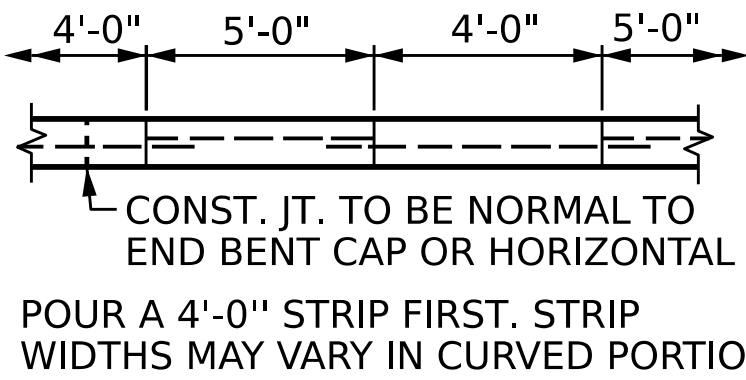


DETAIL "A"

* 1" EXP. JT. MAT'L (PLACE DEBONDING TAPE ON TOP OF EXP. JT. MAT'L)



POURING DETAIL



OPTIONAL POURING DETAIL

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 1

DRAWN BY : L. LEE DATE : 11/2025
CHECKED BY : D. TUTTLE DATE : 11/2025
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SLOPE PROTECTION
DETAILS

(LEFT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			41
2			4			

NOTES:

CONTRACTOR TO TRANSITION BARRIER ON THE APPROACH SLAB TO TIE TO PRECAST SINGLE FACED CONCRETE BARRIER OVER A LENGTH OF 8' (MIN) / 10' (MAX).

ADJACENT PRECAST BARRIER SHALL BE POSITIVELY CONNECTED TO BARRIER ON APPROACH SLAB.

CONTRACTOR TO SUBMIT WORKING DRAWINGS SHOWING MODIFICATION OF REINFORCING DETAILS IN BARRIER ON APPROACH SLAB AND POSITIVE CONNECTION DETAILS.

NO ADDITIONAL PAYMENT WILL BE MADE FOR CHANGES AND SHOP DRAWINGS. THIS WILL BE INCLUDED IN THE COST OF "CONCRETE BARRIER RAIL."

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS.

THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

#5 "S" BARS MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO PROVIDE 2" CLEAR TO THE ½" EXPANSION JOINT OR TO THE SOUND BARRIER WALL ANCHOR HOLES.

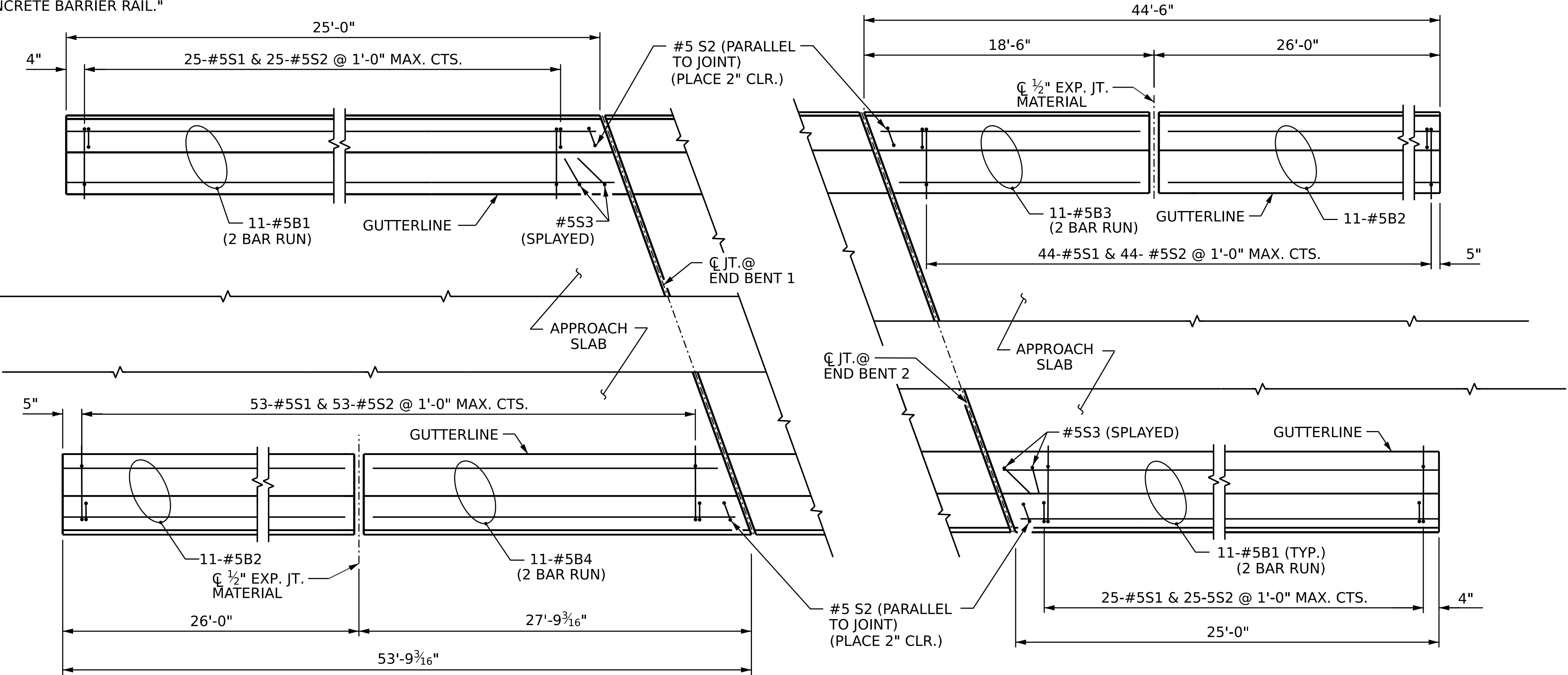
FOR LOCATION OF SOUND BARRIER WALL POSTS AND ANCHORAGES, SEE "SOUND BARRIER WALL" SHEETS.

THE COST OF THE BARRIER RAIL ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".

THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

SHIFT, BEND, OR CUT REINFORCING STEEL AS NECESSARY TO CLEAR JOINT BLOCKOUT.

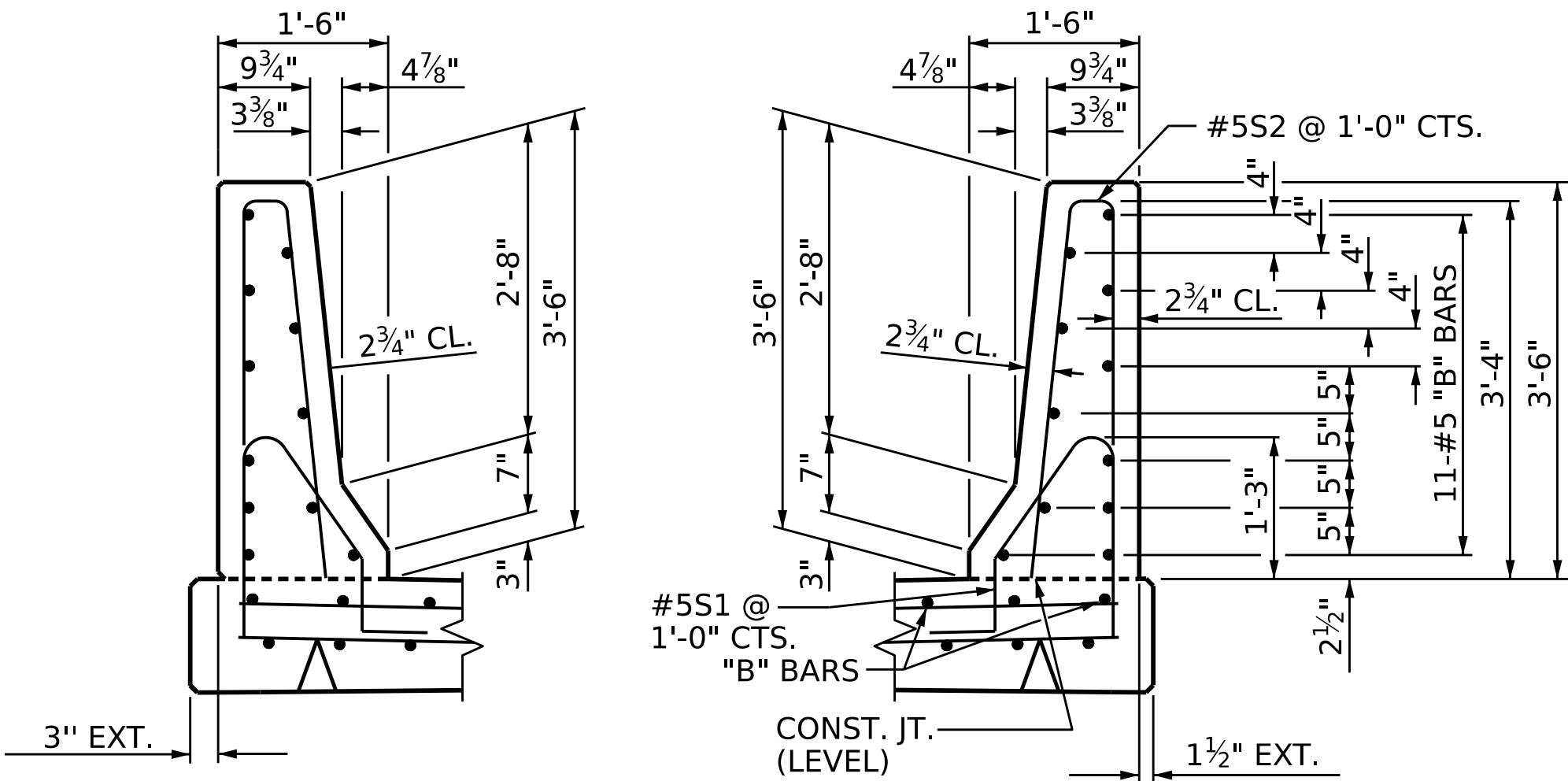


END BENT 1

PLAN OF BARRIER RAIL

ALL DIMENSIONS MEASURED ALONG ARC AT EDGE OF APPROACH SLAB.
ARC NOT SHOWN FOR CLARITY.
EXPANSION JOINT SEAL REQUIRED, SEE "EXPANSION JOINT SEAL DETAILS" SHEETS.

END BENT 2



SECTION THRU LEFT RAIL
ALL REINFORCEMENT MATCHES RIGHT RAIL

SECTION THRU RIGHT RAIL

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

BILL OF MATERIAL

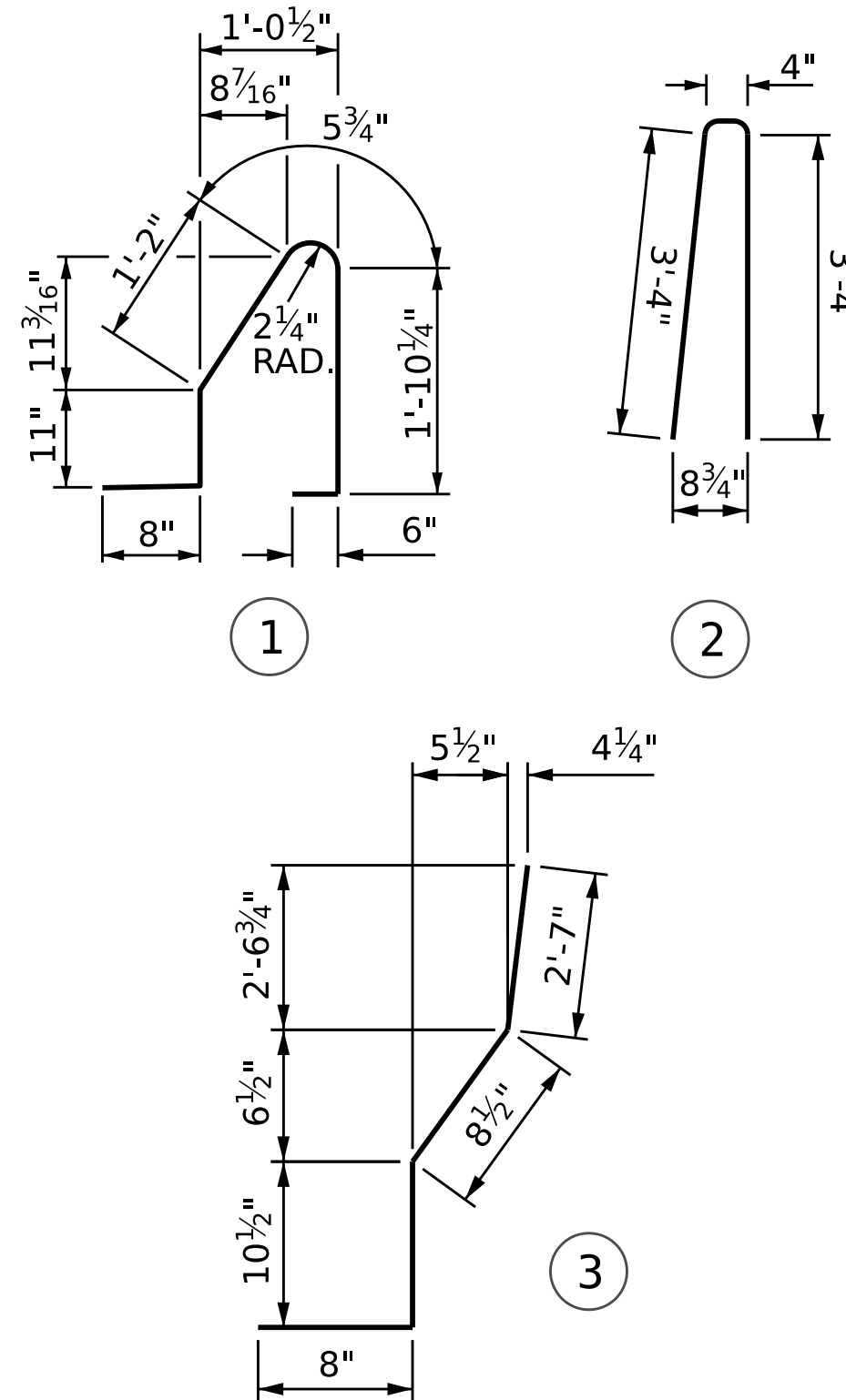
CONCRETE BARRIER RAIL
ON APPROACH SLABS

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	44	5	STR	13'-11"	639
* B2	22	5	STR	25'-7"	587
* B3	22	5	STR	10'-4"	237
* B4	22	5	STR	15'-0"	344
* S1	147	5	1	5'-7"	856
* S2	151	5	2	7'-0"	1102
* S3	4	5	3	4'-10"	20

* EPOXY COATED
REINFORCING STEEL 3,785 LBS.

CLASS AA CONCRETE 20.2 C.Y.
CONCRETE BARRIER RAIL 148.3 L.F.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 3 OF 3

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
APPROACH SLAB
DETAILS
(LEFT LANE)

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

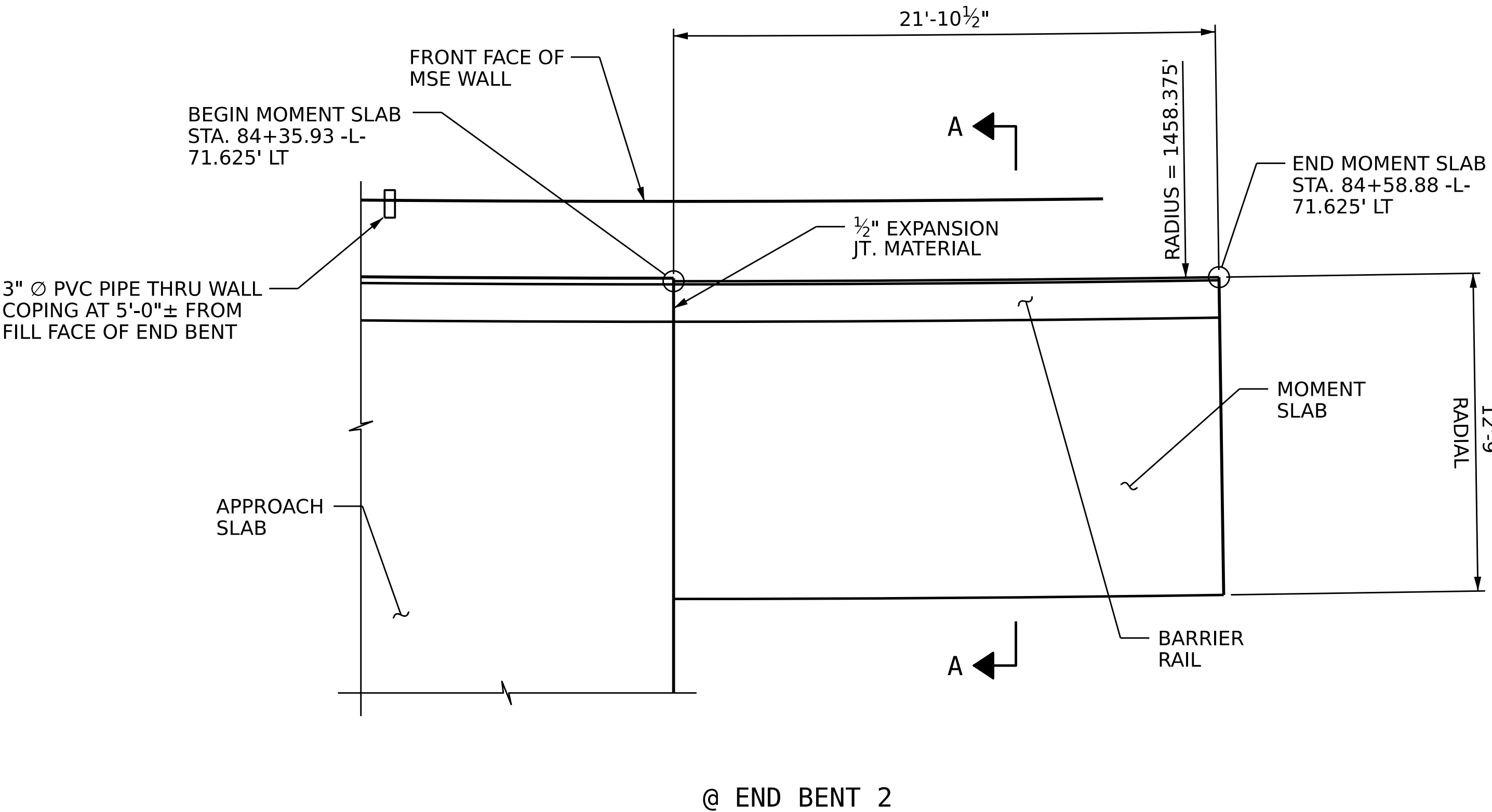
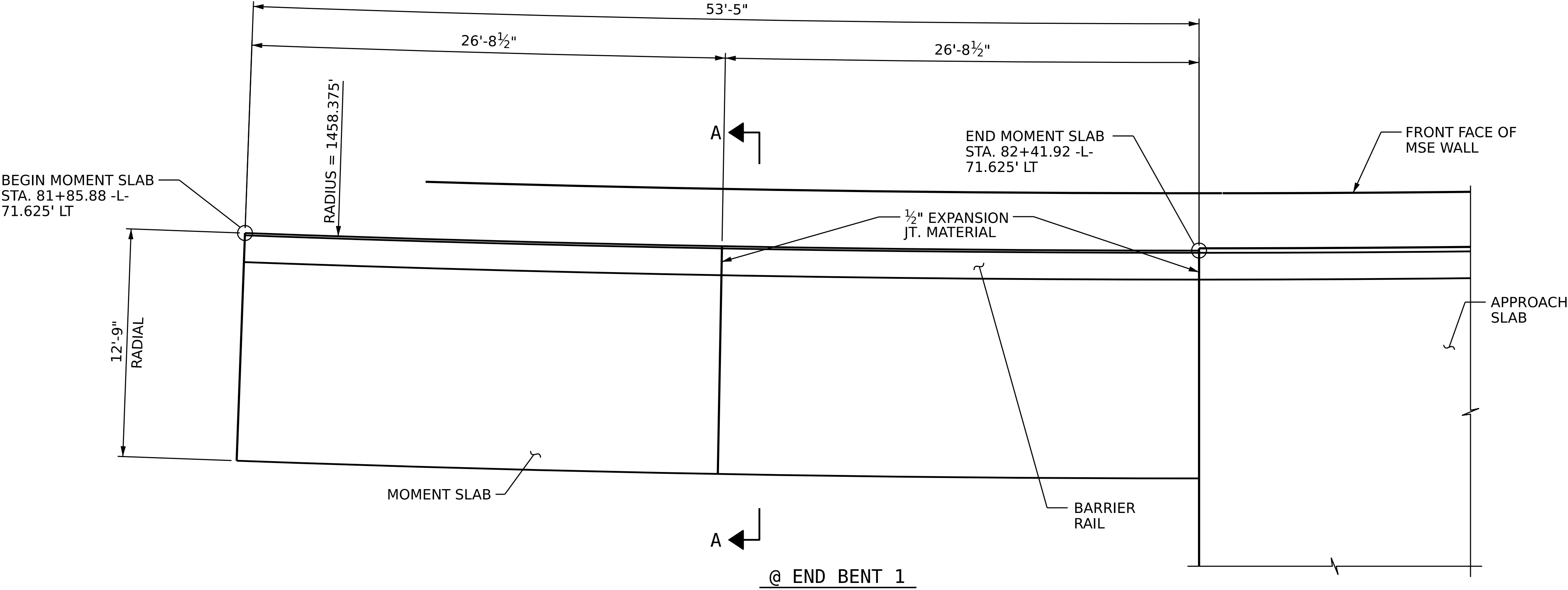
STANDARD

APPROACH SLAB
DETAILS

(LEFT LANE)

REVISIONS						SHEET NO. S7-39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 41
2			4			

ASSEMBLED BY : M. CATER		DATE : 10/2025	
CHECKED BY : D. TUTTLE		DATE : 11/2025	
DRAWN BY :	FCJ 6/87	REV. 6/13	MAA/GM
CHECKED BY :	EGA 6/87	REV. 12/17	MAA/THC
		REV. 06/19	BNB/THC



PLAN OF MOMENT SLABS

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 2

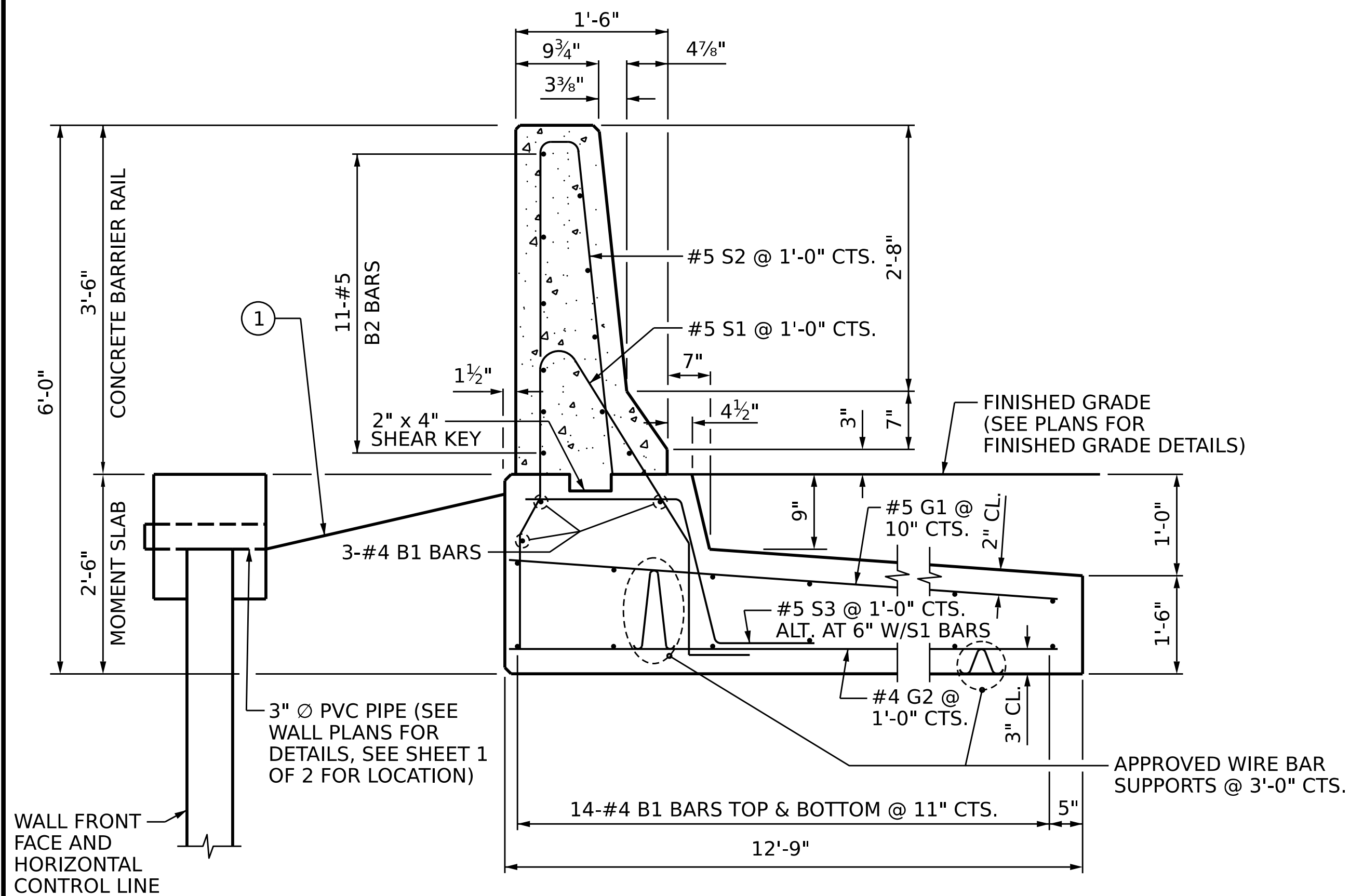
DRAWN BY : M. CATER DATE : 03/2026
CHECKED BY : D. TUTTLE DATE : 03/2026
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-40
1			3			TOTAL SHEETS
2			4			41

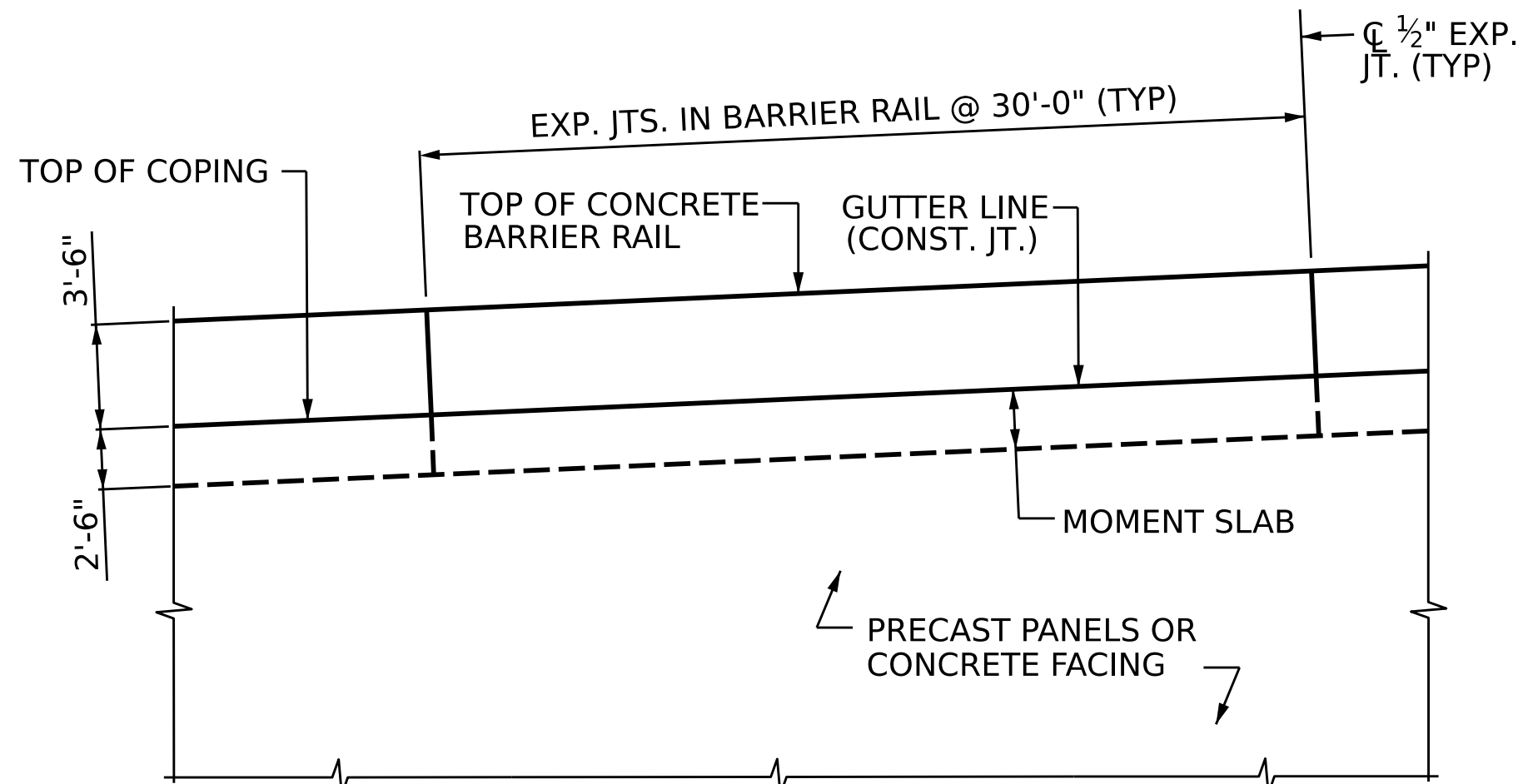


SECTION A-A

CONCRETE BARRIER WALL WITH MOMENT SLAB
SOUND BARRIER WALL NOT SHOWN FOR CLARITY

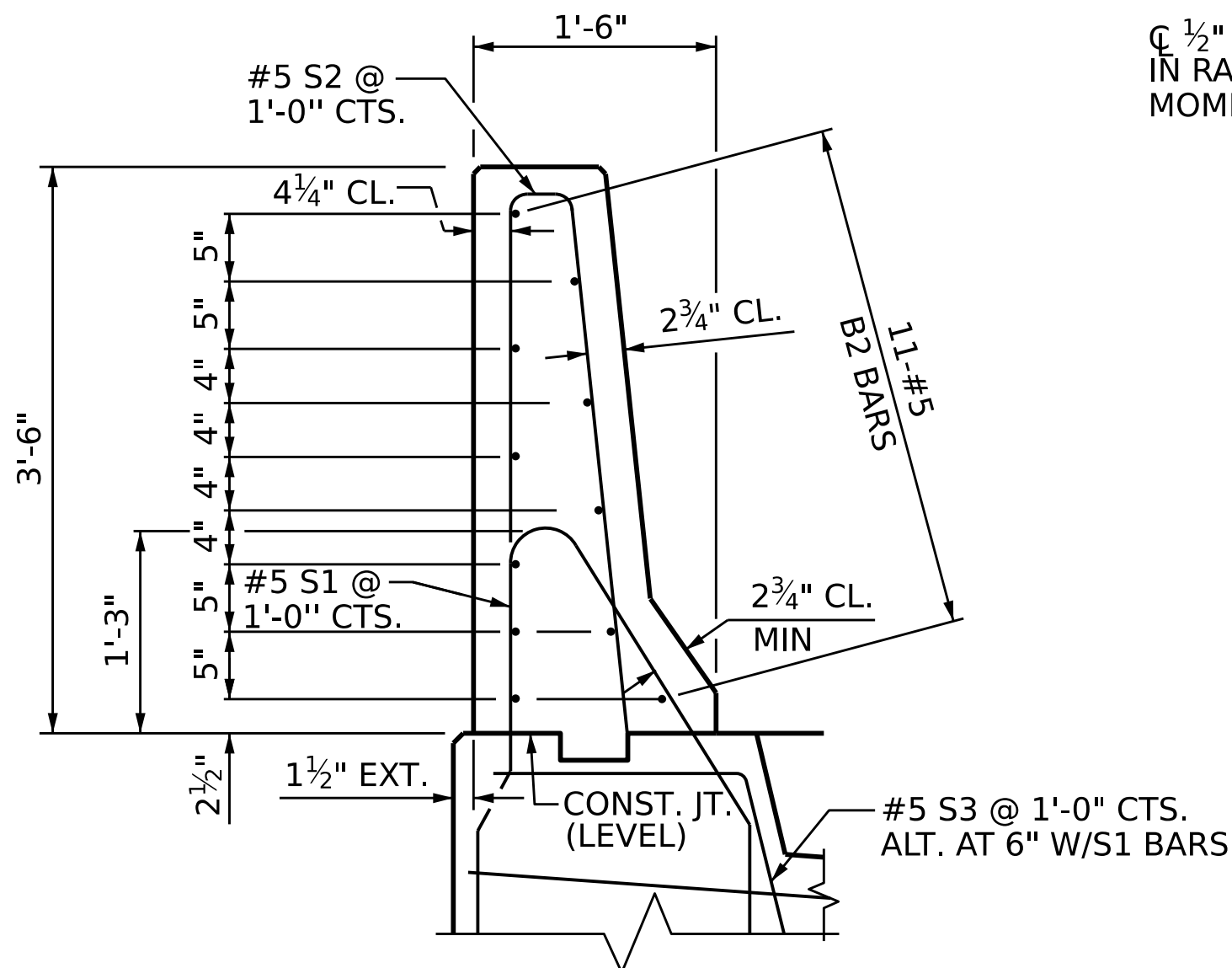
CONCRETE BARRIER RAIL WITH
MOMENT SLAB AT SOUND BARRIER WALL

PAY LENGTH = 75.3 LIN FT

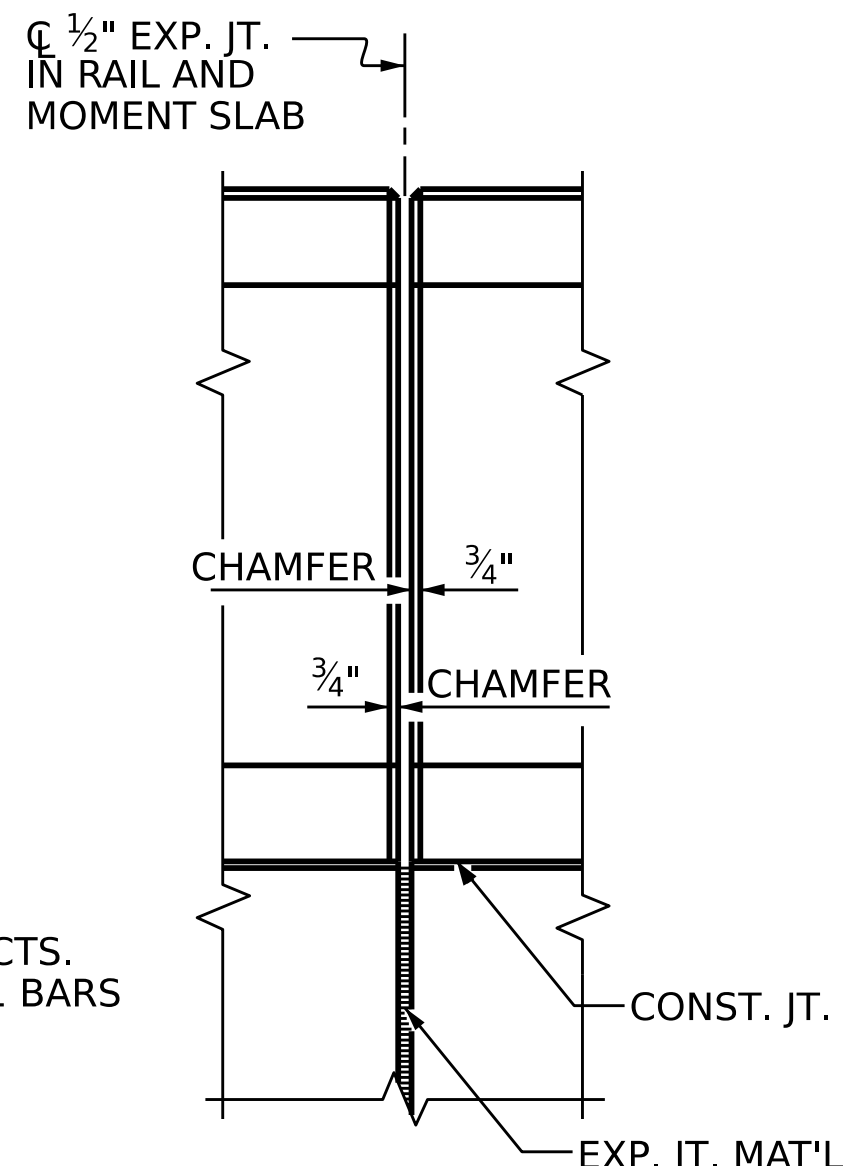


CONCRETE BARRIER RAIL WITH MOMENT SLAB - PARTIAL ELEVATION

SOUND BARRIER WALL NOT SHOWN FOR CLARITY



SECTION THRU RAIL



BARRIER RAIL DETAILS

NOTES:

FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB, SEE SECTION 460 OF THE STANDARD SPECIFICATIONS.

CONCRETE BARRIER RAIL WITH MOMENT SLAB SHALL BE A MINIMUM OF 15' IN LENGTH.

EXPANSION JOINTS SHALL BE PLACED IN THE BARRIER RAIL AND MOMENT SLAB AT A MAXIMUM SPACING OF 30'.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED SURFACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MID-POINT OF BARRIER RAIL SEGMENTS LESS THAN 20' IN LENGTH.

EXPANSION OR CONTRACTION JOINTS IN THE BARRIER RAIL AND MOMENT SLAB SHALL BE ALIGNED WITH JOINTS IN WALL FACING BELOW.

THE BARRIER RAIL SHALL NOT BE CAST UNTIL THE MOMENT SLAB HAS ATTAINED AN AGE OF THREE CURING DAYS OR A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI. IN ADDITION, NO FILL MATERIAL, ASPHALT, OR CONSTRUCTION EQUIPMENT IS ALLOWED ON THE MOMENT SLAB PRIOR TO SATISFYING THE MINIMUM CONCRETE CURING AND STRENGTH REQUIREMENTS.

ALL REINFORCING STEEL IN THE BARRIER RAIL SHALL BE EPOXY COATED.

IF EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, BARRIERS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH CONCRETE BARRIER RAIL WITH MOMENT SLAB OR CONCRETE FACING FOR RETAINING WALL WILL BE THICKER THAN 8", CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS SHALL BE REVISED AND SUBMITTED FOR APPROVAL.

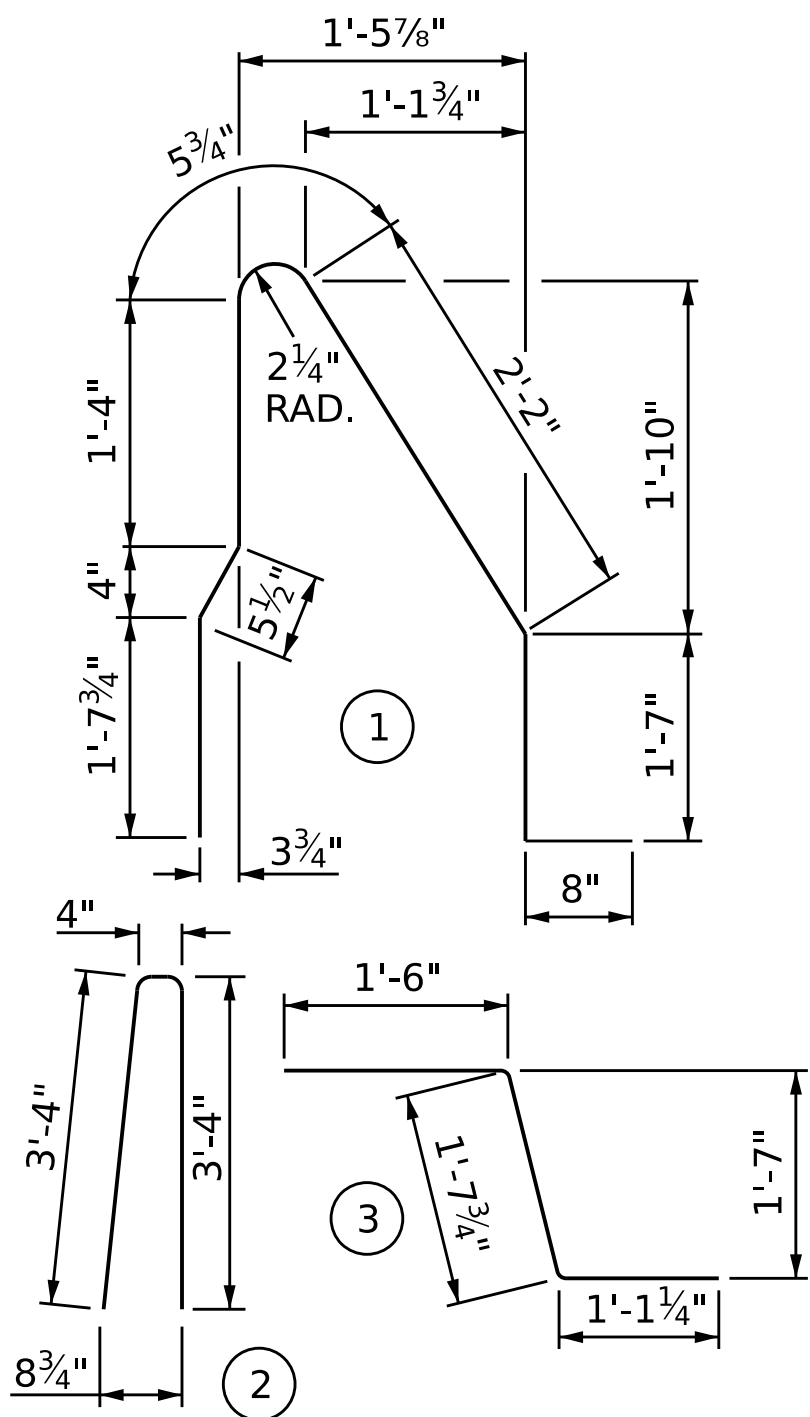
- ① AREA BETWEEN THE MOMENT SLAB AND MSE WALL SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE SLAB AND SHALL BE PAVED.

SEE SOUND BARRIER WALL SHEETS FOR SOUND BARRIER WALL DETAILS AND CONNECTION.

WORK THIS SHEET WITH "CONCRETE BARRIER WALL WITH
MOMENT SLAB AT SOUND BARRIER WALL" SPECIAL
PROVISIONS.

BILL OF MATERIAL					
FOR ONE 30'-0" SECTION OF CONCRETE BARRIER RAIL WITH MOMENT SLAB					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	31	4	STR	29'-7"	613
* B2	11	5	STR	29'-7"	339
G1	37	5	STR	12'-5"	479
G2	31	4	STR	12'-5"	257
* S1	31	5	1	8'-4"	269
* S2	31	5	2	7'-0"	226
S3	30	5	3	4'-3"	133
REINFORCING STEEL					1,482 LB.
* EPOXY COATED REINFORCING STEEL					834 LB.
CLASS AA CONCRETE BARRIER RAIL					4.3 C.Y.
CLASS A CONCRETE MOMENT SLAB					25.0 C.Y.
CONCRETE BARRIER RAIL WITH MOMENT SLAB AT SOUND WALL					30 LIN. FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
 STATION: 83+50.80 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MOMENT SLAB DETAILS

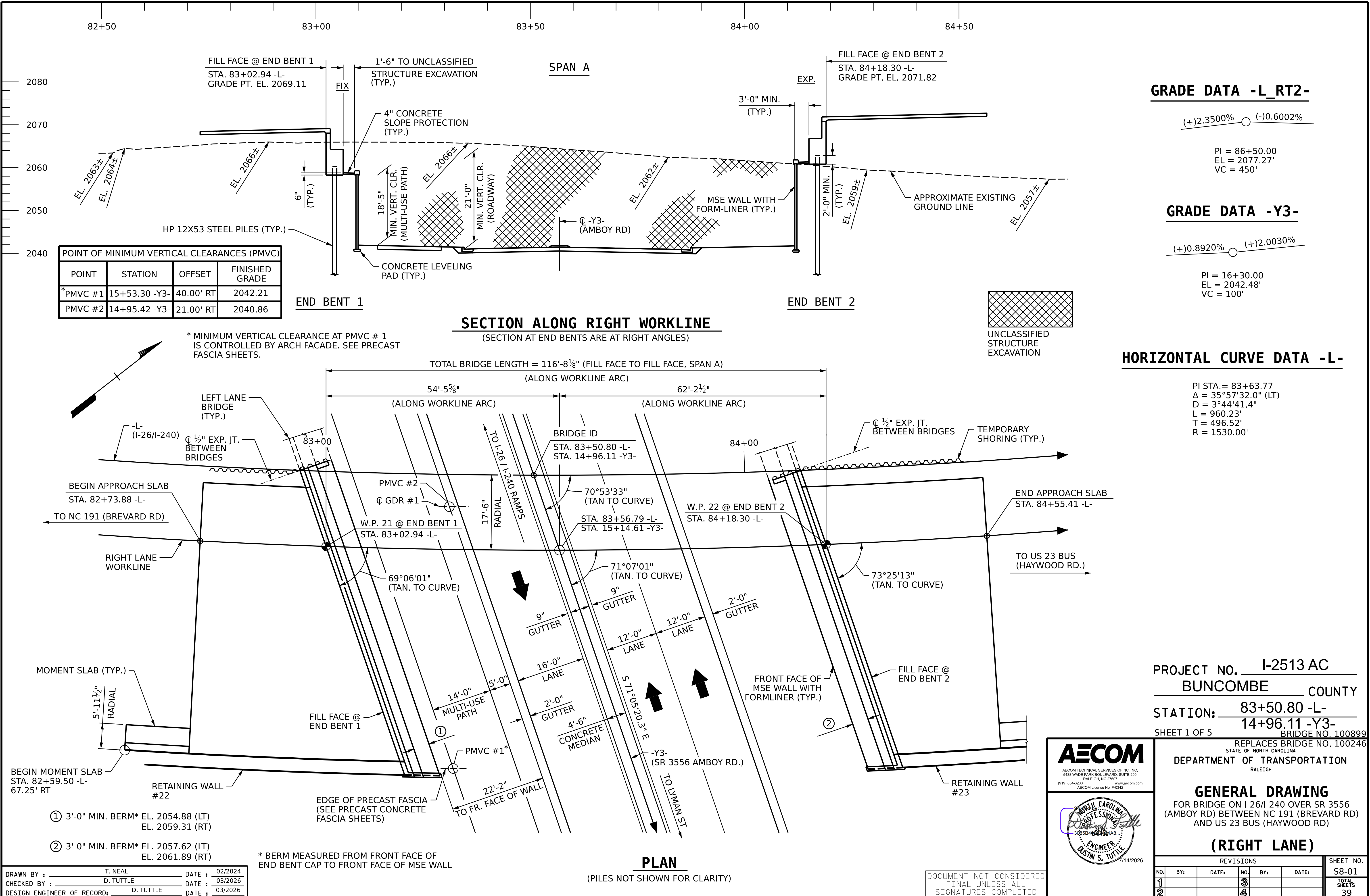
(LEFT LANE)

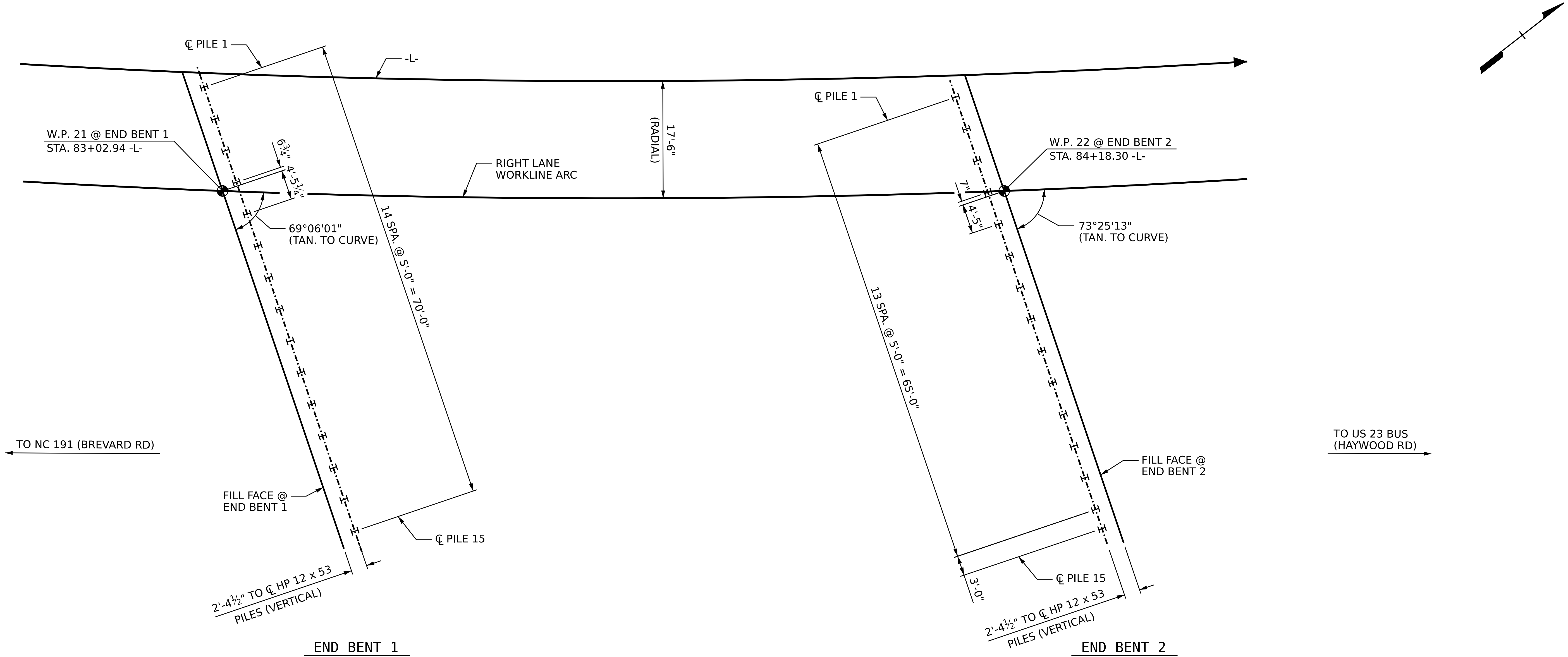
REVISIONS						SHEET NO. S7-41
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 41
2			4			

DRAWN BY : M. CATER DATE : 03/2026
 CHECKED BY : D. TUTTLE DATE : 03/2026
 DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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7/13/2026
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NOTES

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATE ENERGY IN THE RANGE OF 40,200 TO 51,220 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1 AND 2. THIS ESTIMATED ENERGY DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND BRIDGE APPROACH FILL BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 1 & 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS. BEFORE BEGINNING THE WAITING PERIOD, INSTALL HUBS IN THE SUBGRADE AT LOCATIONS CORRESPONDING TO THE CENTER OF THE APPROACH SLAB AND AT EACH CORNER OF THE END OF THE APPROACH SLAB. SURVEY THE HUBS INITIALLY AND EVERY 3 TO 4 DAYS THEREAFTER FOR RELATIVE MOVEMENT AND SUBMIT THE DATA TO THE ENGINEER WEEKLY. THE ENGINEER WILL DETERMINE WHEN THE WAITING PERIOD ENDS AND BRIDGE APPROACH SLAB CONSTRUCTION CAN BEGIN.

DRIVE PILES AT END BENT NO. 1 AND 2 PRIOR TO MSE ABUTMENT WALL CONSTRUCTION.

DRAWN BY :	M. CATER	DATE :	11/2023
CHECKED BY :	D. TUTTLE	DATE :	11/2023
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	04/2024

FOUNDATION LAYOUT

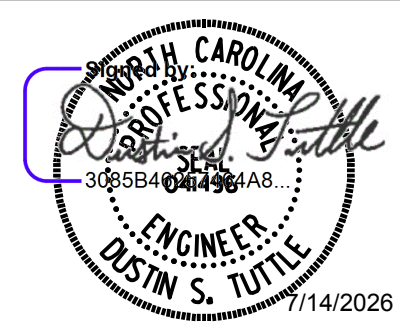
DIMENSIONS LOCATING PILES ARE TO CENTERLINES OF PILES

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 2 OF 5

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26/I-240 OVER SR 3556
(AMBOY RD) BETWEEN NC 191 (BREVARD RD)
AND US 23 BUS (HAYWOOD RD)

(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-02
1			3			TOTAL SHEETS
2			4			39

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FINAL UNLESS ALL
SIGNATURES COMPLETED

(Blank entries indicate item is not applicable to structure)

$$* RDR = \frac{\text{Factored Resistance} + \text{Factored Drag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Drag Load Resistance} + \text{Nominal Resistance from Scourable Material}$$

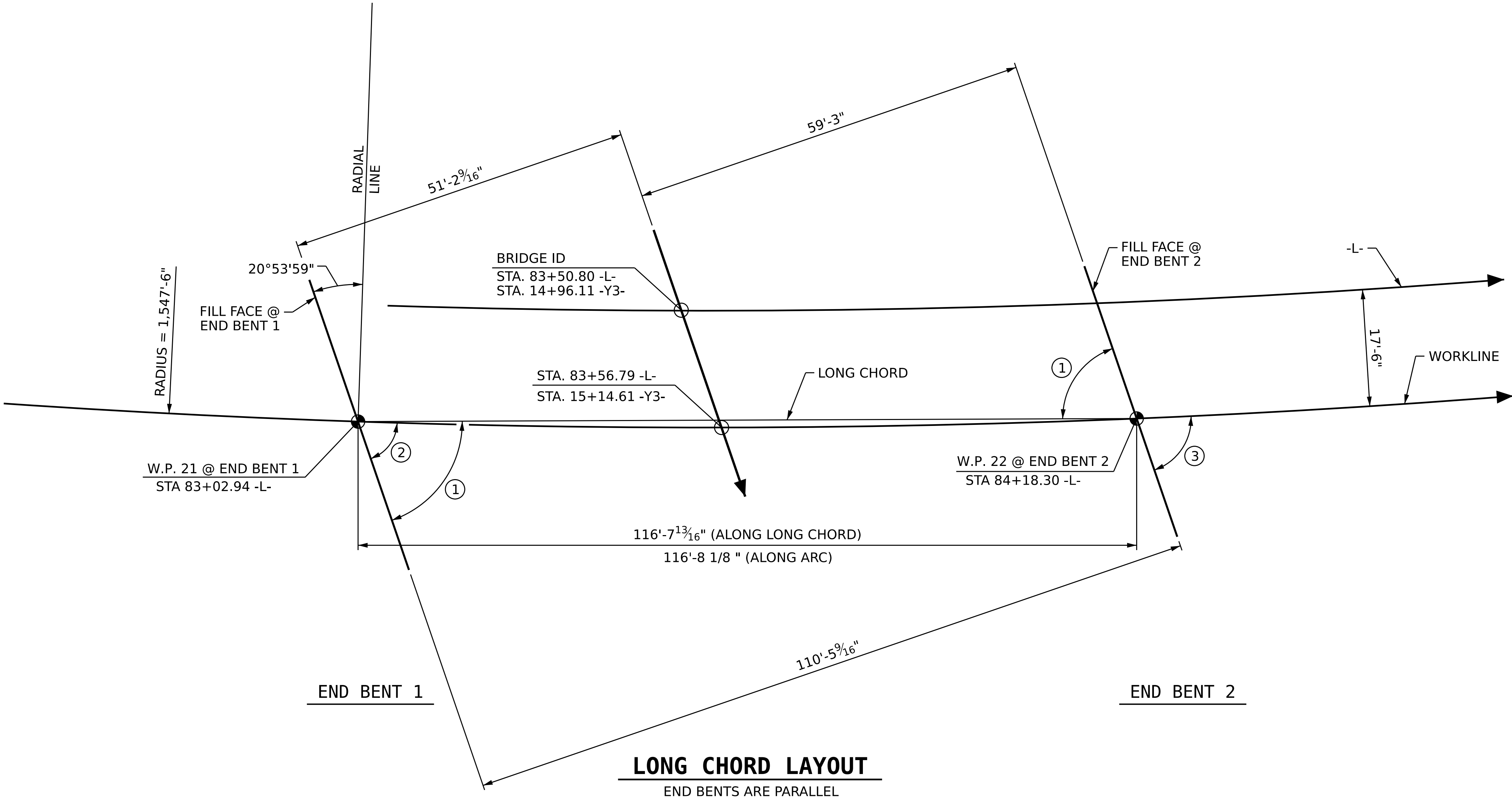
(Blank entries indicate item is not applicable to structure)

* Factored Dead Load is factored weight of pile above the ground line.

SHEET 3 OF 5

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Mohammed Mulla, #018979) on 01-14-2025.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH PILE FOUNDATION TABLES																										
Documented by: <u>18939</u> <u>Mohammed A. Mulla</u> Professional Engineer <u>1/15/2025</u> SIGNATURE _____ DATE _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6" style="text-align: center;">REVISIONS</th> <th style="text-align: center;">SHEET NO. S8-03</th> </tr> <tr> <th style="width: 10%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 15%;">DATE:</th> <th style="width: 10%;">NO.</th> <th style="width: 15%;">BY:</th> <th style="width: 15%;">DATE:</th> <th rowspan="3" style="text-align: center; vertical-align: middle;">TOTAL SHEETS 39</th> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td></td> <td></td> </tr> </table>	REVISIONS						SHEET NO. S8-03	NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 39	1			3			2			4		
REVISIONS						SHEET NO. S8-03																					
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 39																					
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2			4																								
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED																											

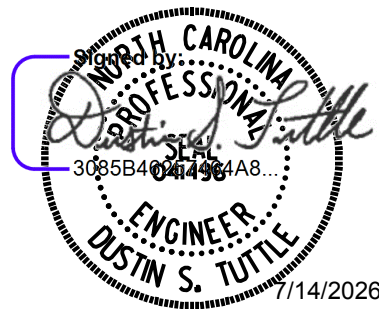


ANGLES

- ① 71°15'37"
- ② 69°6'1" (TAN TO CURVE)
- ③ 73°25'13" (TAN TO CURVE)

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 4 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26/I-240 OVER SR 3556
(AMBOY RD) BETWEEN NC 191 (BREVARD RD)
AND US 23 BUS (HAYWOOD RD)

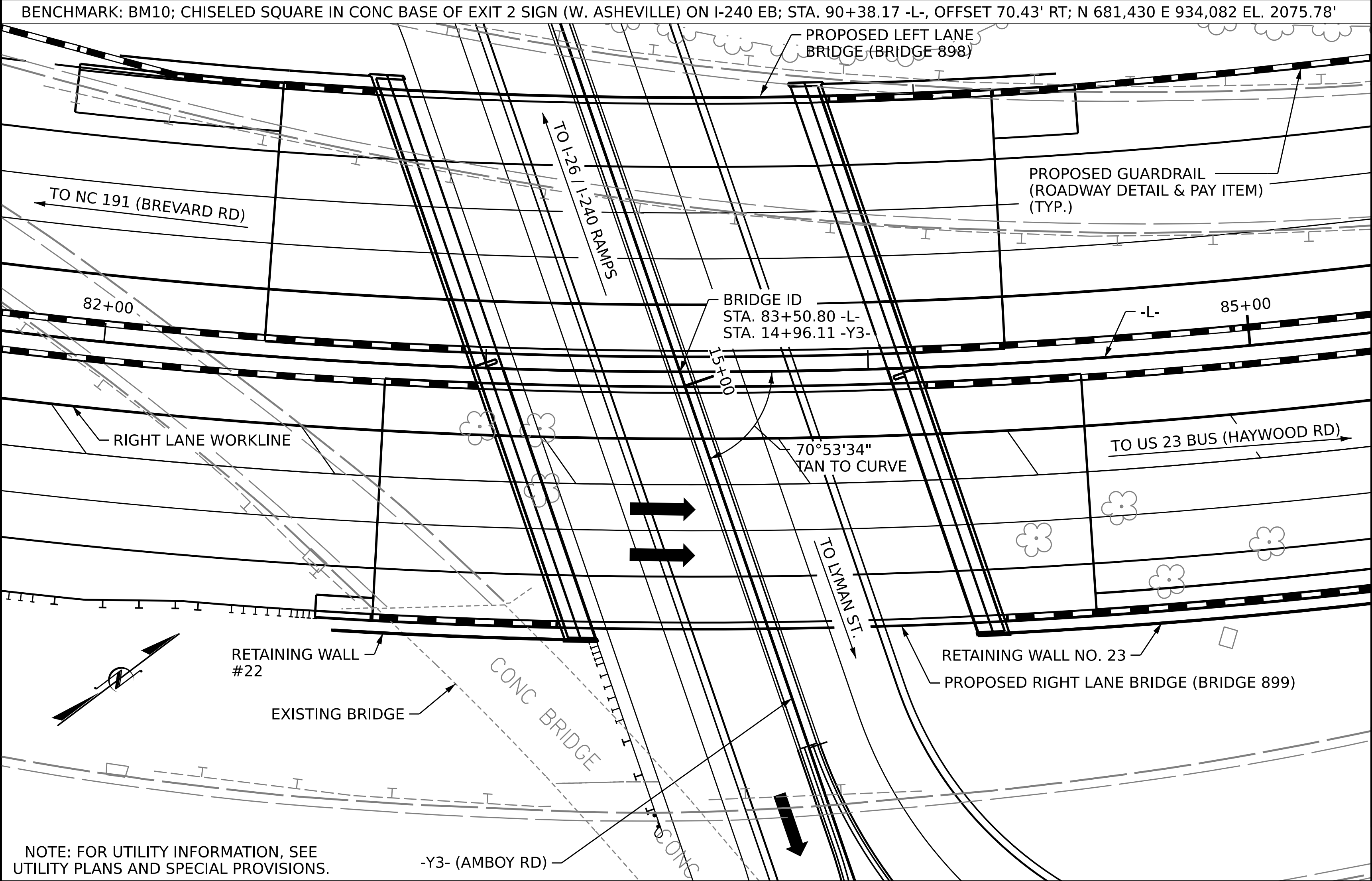
(RIGHT LANE)

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S8-04
TOTAL SHEETS
39

DRAWN BY :	L. LEE	DATE :	09/2023
CHECKED BY :	D. TUTTLE	DATE :	10/2023
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

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LOCATION SKETCH

TOTAL BILL OF MATERIAL

	ASBESTOS ASSESSMENT	REMOVAL OF EXISTING STRUCTURES AT STA. 83+50.80 -L- (RT)	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 83+50.80 -L- (RT)	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	MODIFIED 72" PRESTRESSED CONC GIRDERS	
	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.
SUPERSTRUCTURE				7,233	10,548				6	678.3
END BENT 1						93.2		11,066		
END BENT 2						91.2		10,655		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	7,233	10,548	184.4	LUMP SUM	21,721	6	678.3

TOTAL BILL OF MATERIAL

	PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	HP 12X53 STEEL PILES		DYNAMIC PILE TESTING	CONCRETE BARRIER RAIL	CONCRETE BARRIER RAIL W/ MOMENT SLAB	72" CHAIN LINK FENCE	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS	PRECAST CONCRETE FASCIA AT STA. 83+50.80 -L- (RT)	APPLICATION OF BRIDGE COATING	ARCHITECTURAL CONCRETE SURFACE TREATMENT
	EACH	NO.	LIN. FT.	EACH	LIN. FT.	LIN. FT	LIN. FT	SQ. YDS.	LUMP SUM		LUMP SUM	SQ. FT.	SQ. FT.
SUPERSTRUCTURE					371.4	114.0	113.0					361.0	701
END BENT 1	15	15	900	1				31.7				159.4	
END BENT 2	15	15	675					29.7				150.8	
TOTAL	30	30	1575	1	371.4	114.0	113.0	61.4	LUMP SUM	LUMP SUM	LUMP SUM	671.2	701

DRAWN BY : M. CATER DATE : 03/2026
CHECKED BY : D. TUTTLE DATE : 03/2026
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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GENERAL NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION & RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR MSE WALLS, SEE GEOTECHNICAL SPECIAL PROVISIONS.

FOR PRECAST CONCRETE FASCIA, SEE SPECIAL PROVISIONS.

FOR INTEGRATION OF ABUTMENT MSE WALLS' AESTHETIC SCHEME WITH BRIDGE, SEE WALL PLANS.

THE ELEVATIONS AND CLEARANCES SHOWN ON THE PLANS AT THE POINTS OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATIONS ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 17'-6" LEFT AND 49'-9" RIGHT OF THE WORKLINE AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

WORK SHALL NOT BE STARTED ON THIS BRIDGE (OR SPECIFIC PARTS OF BRIDGE) UNTIL ROADWAY SECTION HAS BEEN EXCAVATED.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD FOR THE EXISTING STRUCTURE, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 83+50.80 -L- (RT)".

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING STRUCTURES CONSISTING OF A 3 SPAN (27.00' - 64.00' - 65.00') CONCRETE DECK ON ROLLED STEEL W-SHAPE GIRDERS, WITH 24.0 FT CLEAR ROADWAY WIDTH, SUPPORTED BY PILE BENT CONCRETE END BENTS AND CONCRETE POST AND BEAM BENTS ON ISOLATED PILE FOOTINGS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGES DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PAY ITEM FOR REMOVAL OF EXISTING STRUCTURES AT STA. 83+50.80 -L- (RT) INCLUDES REMOVAL OF EXISTING BRIDGE 100246 AT STA. 83+50.80 -L- AND EXISTING PEDESTRIAN BRIDGE STRUCTURE AT STA. 97+60.50 -L-.

FOR REMOVAL OF EXISTING PEDESTRIAN BRIDGE STRUCTURE AT STA. 97+60.50 -L-, SEE DEMOLITION PLAN FOR PEDESTRIAN BRIDGE REMOVAL SPECIAL PROVISION.

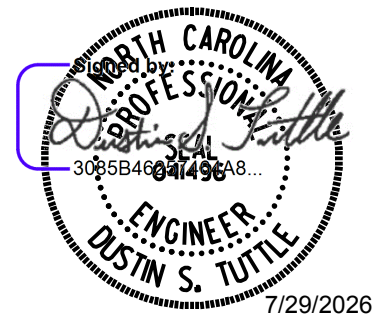
FOR APPLICATION OF BRIDGE COATING, SEE SPECIAL PROVISIONS.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 5 OF 5

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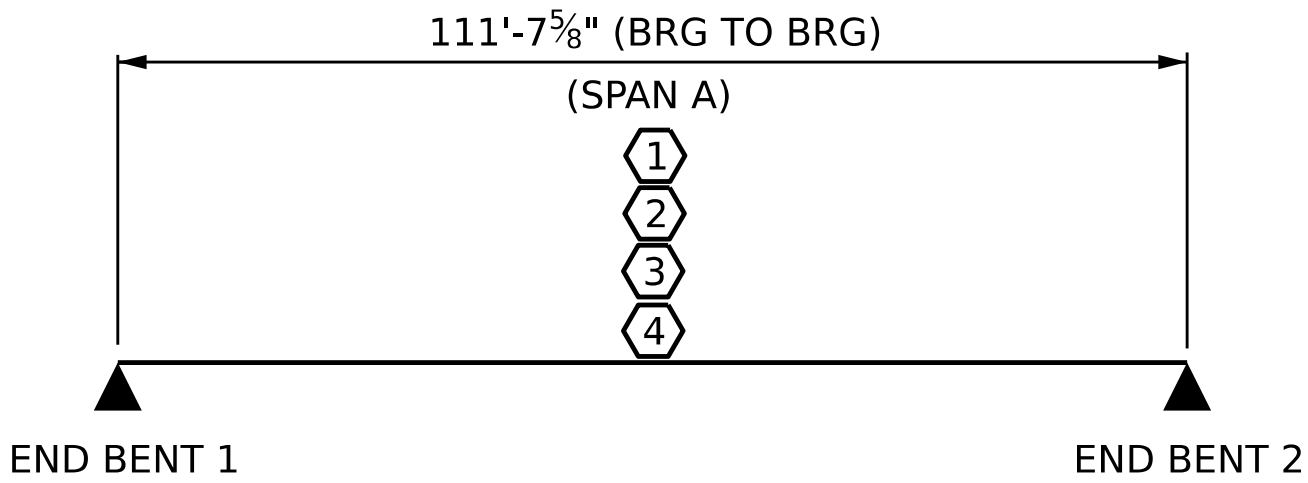
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26/I-240 OVER SR 3556
(AMBOY RD) BETWEEN NC 191 (BREVARD RD)
AND US 23 BUS (HAYWOOD RD)

(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S8-05
2			4			39

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING Ⓝ	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVE-LOAD FACTORS (γ LL)	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ LL)	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD		HL-93 (INVENTORY)	N/A	Ⓛ1	1.10	--	1.75	0.950	1.45	A	ER	55.8	1.000	1.46	A	ER	78.4	0.80	0.950	1.10	A	ER	55.8	
		HL-93 (OPERATING)	N/A		1.89	--	1.35	0.950	1.89	A	ER	55.8	1.000	2.84	A	ER	78.4	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	Ⓛ2	1.58	56.88	1.75	0.950	2.08	A	ER	55.8	1.000	2.84	A	ER	78.4	0.80	0.950	1.58	A	ER	55.8	
		HS-20 (OPERATING)	36.000		2.70	97.20	1.35	0.950	2.70	A	ER	55.8	1.090	3.81	A	I	78.4	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SH	12.500		4.12	51.50	1.40	0.950	6.80	A	ER	55.8	1.090	9.92	A	I	78.4	0.80	0.950	4.12	A	ER	55.8	
		S3C	21.500		2.40	51.60	1.40	0.950	3.97	A	ER	55.8	1.090	5.75	A	I	78.4	0.80	0.950	2.40	A	ER	55.8	
		S3A	22.750		2.28	51.87	1.40	0.950	3.76	A	ER	55.8	1.090	5.45	A	I	78.4	0.80	0.950	2.28	A	ER	55.8	
		S4A	26.750		1.99	53.23	1.40	0.950	3.28	A	ER	55.8	1.090	4.73	A	I	78.4	0.80	0.950	1.99	A	ER	55.8	
		S5A	30.500		1.75	53.38	1.40	0.950	2.89	A	ER	55.8	1.090	4.31	A	I	78.4	0.80	0.950	1.75	A	ER	55.8	
		S6A	34.500		1.58	54.51	1.40	0.950	2.61	A	ER	55.8	1.090	3.87	A	I	78.4	0.80	0.950	1.58	A	ER	55.8	
		S7B	38.500		1.43	55.06	1.40	0.950	2.37	A	ER	55.8	1.090	3.60	A	I	78.4	0.80	0.950	1.43	A	ER	55.8	
		S7A	40.000	Ⓛ3	1.41	56.40	1.40	0.950	2.32	A	ER	55.8	1.090	3.67	A	I	78.4	0.80	0.950	1.41	A	ER	55.8	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250		1.94	54.81	1.40	0.950	3.21	A	ER	55.8	1.090	4.58	A	I	78.4	0.80	0.950	1.94	A	ER	55.8	
		T5B	32.000		1.71	54.72	1.40	0.950	2.82	A	ER	55.8	1.090	4.33	A	I	78.4	0.80	0.950	1.71	A	ER	55.8	
		T6A	36.000		1.55	55.80	1.40	0.950	2.56	A	ER	55.8	1.090	3.96	A	I	78.4	0.80	0.950	1.55	A	ER	55.8	
		T7A	40.000		1.43	57.20	1.40	0.950	2.36	A	ER	55.8	1.090	3.67	A	I	78.4	0.80	0.950	1.43	A	ER	55.8	
T7B		40.000		1.50	60.00	1.40	0.950	2.47	A	ER	55.8	1.090	3.45	A	I	78.4	0.80	0.950	1.50	A	ER	55.8		
EMERGENCY VEHICLE (EV)		EV2	28.750		1.91	54.91	1.30	0.950	3.41	A	ER	55.8	1.090	4.78	A	I	78.4	0.80	0.950	1.91	A	ER	55.8	
		EV3	43.000	Ⓛ4	1.26	54.18	1.30	0.950	2.25	A	ER	55.8	1.090	3.16	A	I	78.4	0.80	0.950	1.26	A	ER	55.8	



LRFR SUMMARY

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ DC	γ DW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

-
-
-
-

Ⓝ CONTROLLING LOAD RATING

Ⓛ1

DESIGN LOAD RATING (HL-93)

Ⓛ2

DESIGN LOAD RATING (HS-20)

Ⓛ3

LEGAL LOAD RATING * *

Ⓛ4

EMERGENCY VEHICLE LOAD RATING **

* * SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

ASSEMBLED BY : L. LEE	DATE : 1/16/24
CHECKED BY : D. TUTTLE	DATE : 1/22/24
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 04/23 BNB/AAI

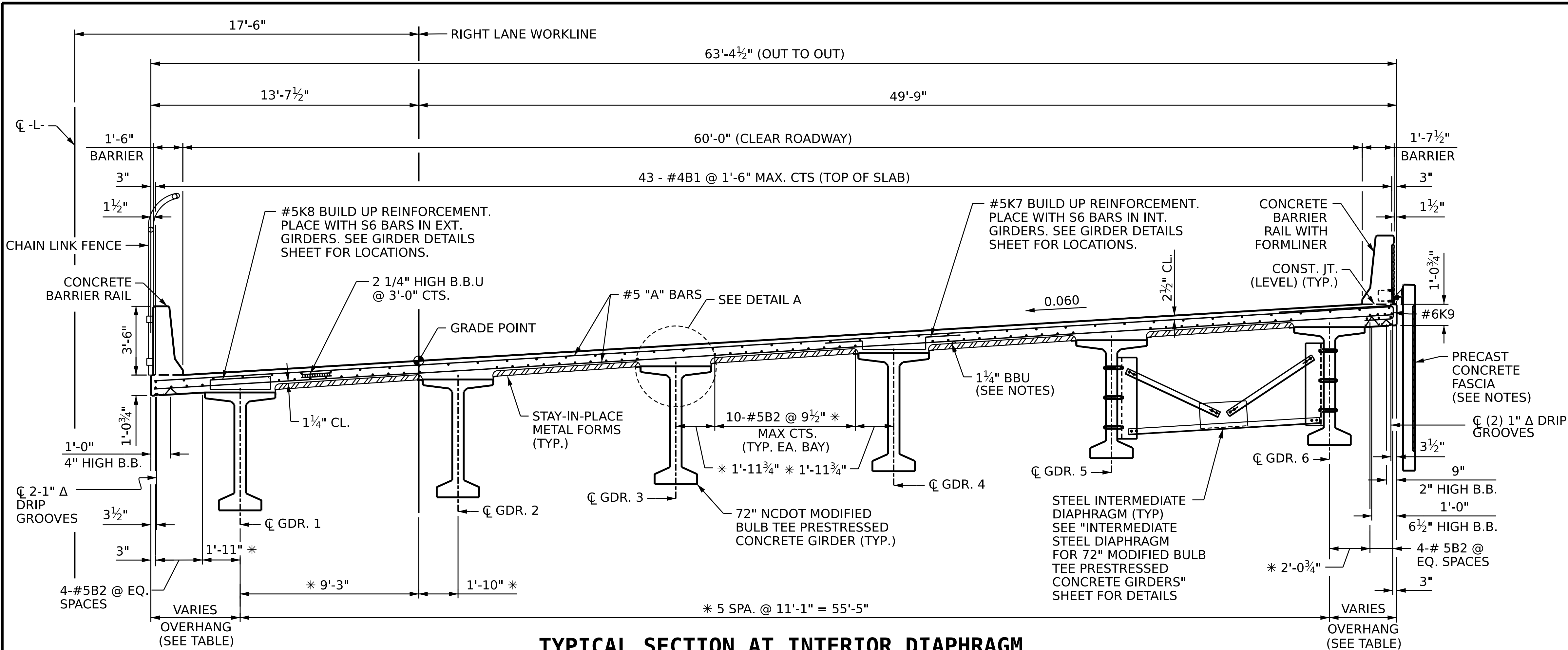
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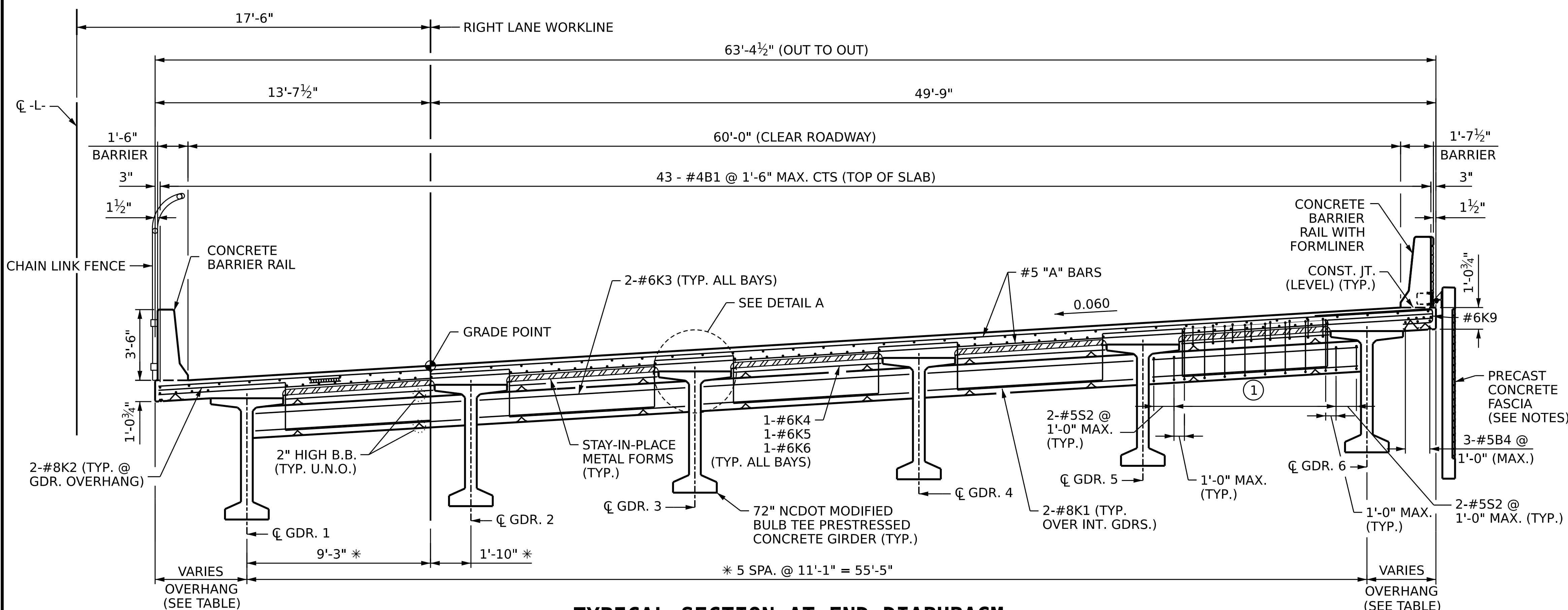
7/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**STANDARD
LRFR SUMMARY FOR
PRESTRESSED
CONCRETE GIRDERS**
(INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S8-06
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			



TYPICAL SECTION AT INTERIOR DIAPHRAGM



TYPICAL SECTION AT END DIAPHRAGM

END BENT 1 SHOWN, END BENT 2 SIMILAR

NOTES:

PROVIDE 1¼" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY IN PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (CHCM) AT 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

LONGITUDINAL STEEL MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO AVOID INTERFERENCE WITH STIRRUPS IN PRESTRESSED CONCRETE GIRDERS.

PREVIOUSLY CAST CONCRETE IN SPAN A SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN SPAN A.

BARRIER RAIL IN SPAN A SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN SPAN A HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

BUILD-UP BARS #5K7 AND #5K8 MAY BE PLACED DIAGONALLY IF NEEDED TO CLEAR THE REINFORCEMENT AT THE TOP OF BRIDGE DECK.

ALL DIMENSIONS MEASURED RADIALLY FROM WORKLINE UNLESS NOTED OTHERWISE.

FOR PRECAST CONCRETE FASCIA LOCATION AND CONNECTION DETAILS, SEE "PRECAST CONCRETE FASCIA DETAILS" SHEETS.

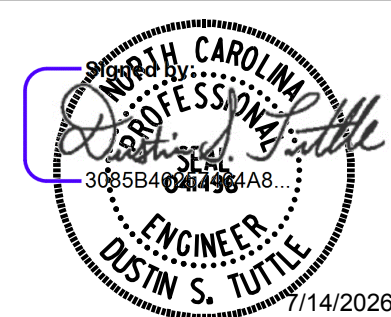
OVERHANG DIMENSIONS		
OVERHANG	AT END OF GIRDER	AT MIDSPAN
LEFT	4'-5¾" (MAX.)	3'-3¾" (MIN.)
RIGHT	3'-0¾" (MIN.)	4'-8¾" (MAX.)

① 8-#5S1 & 8-#4S3 @ 1'-0" MAX CTS. (TYP.)

* = MEASURED PERPENDICULAR TO LONG CHORD

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

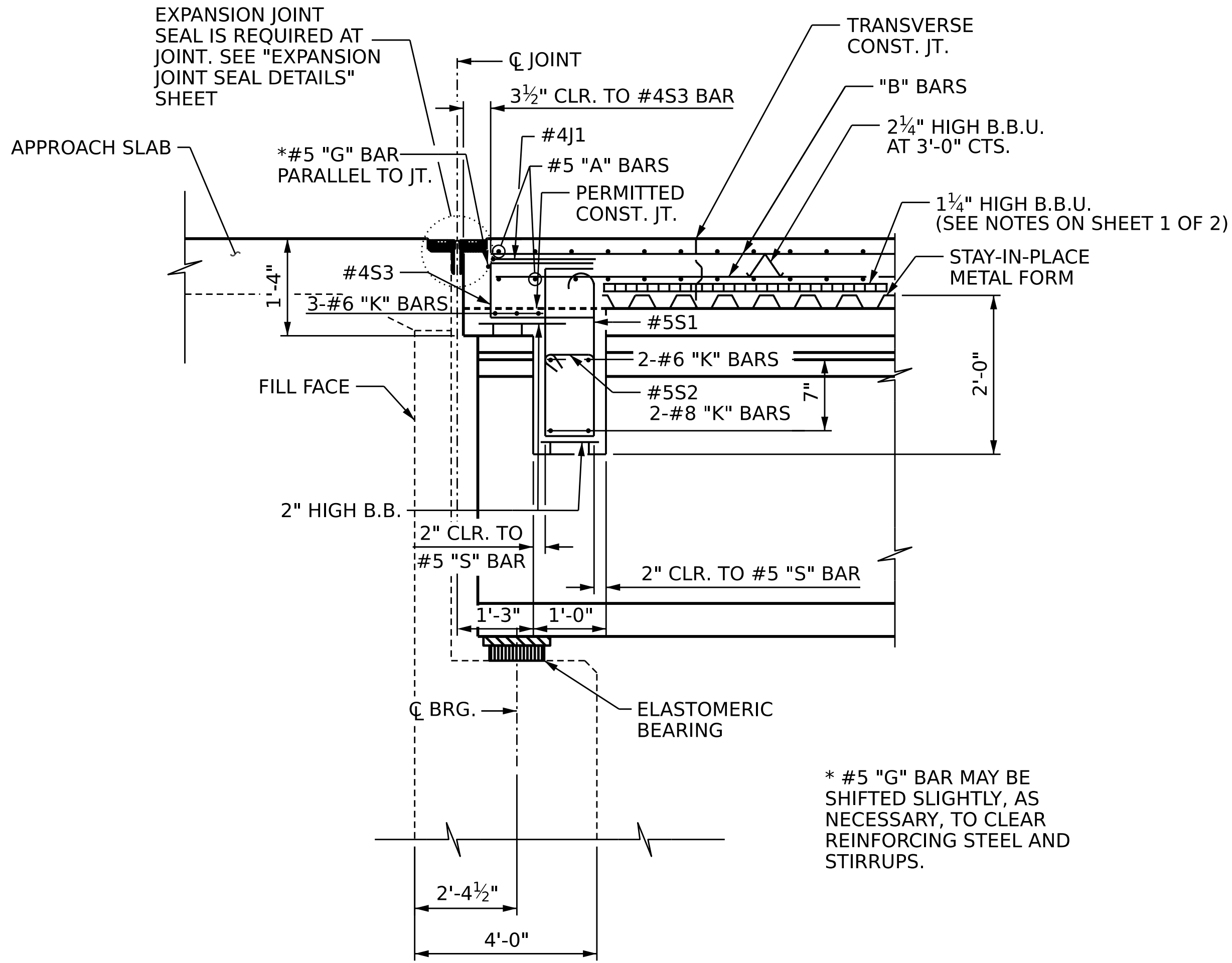
TYPICAL SECTION
& DETAILS

(RIGHT LANE)

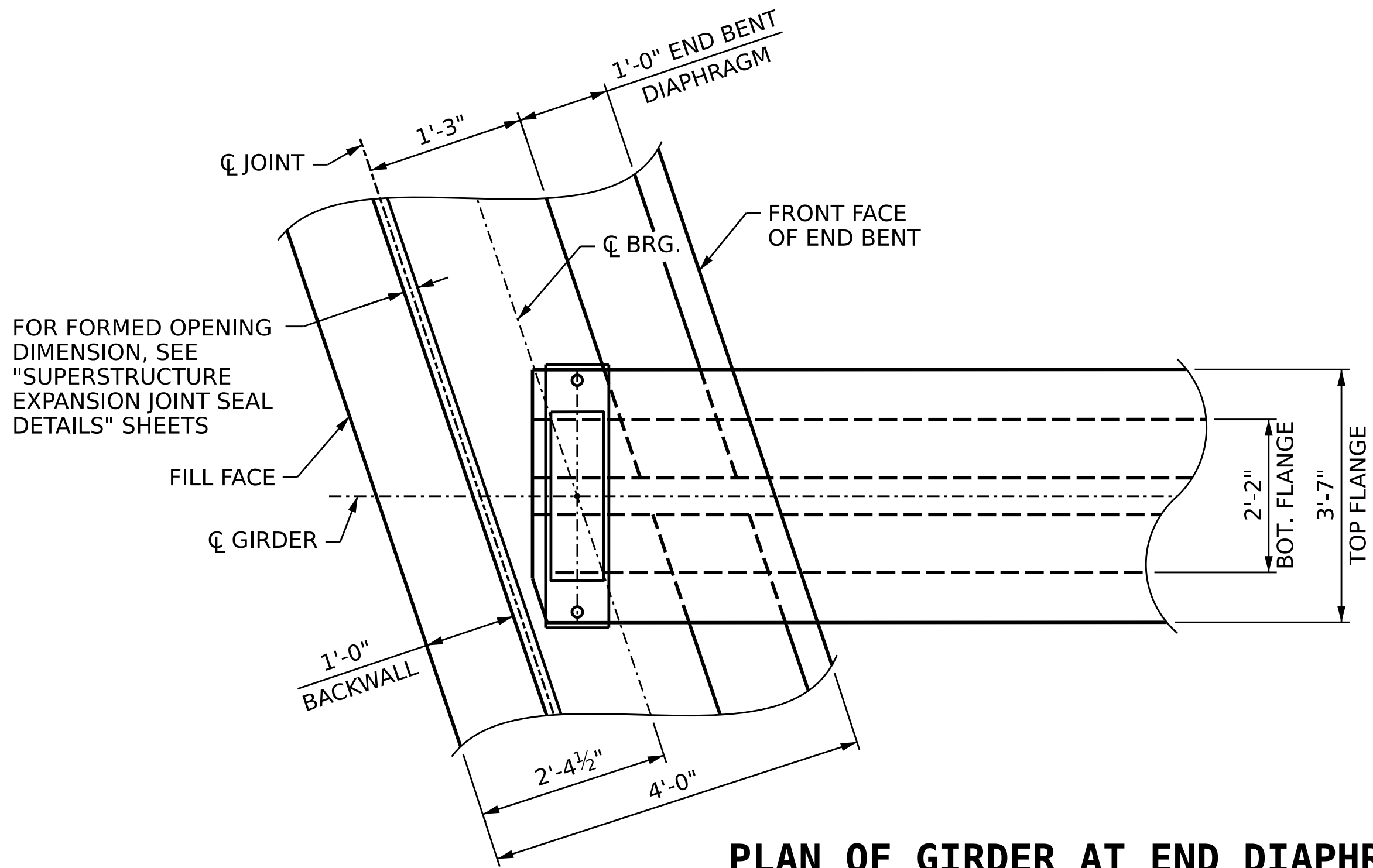
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-07
2			4			TOTAL SHEETS 39

DRAWN BY : T. NEAL DATE : 10/2023
CHECKED BY : D. TUTTLE DATE : 10/2023
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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SIGNATURES COMPLETED



SECTION @ END BENT



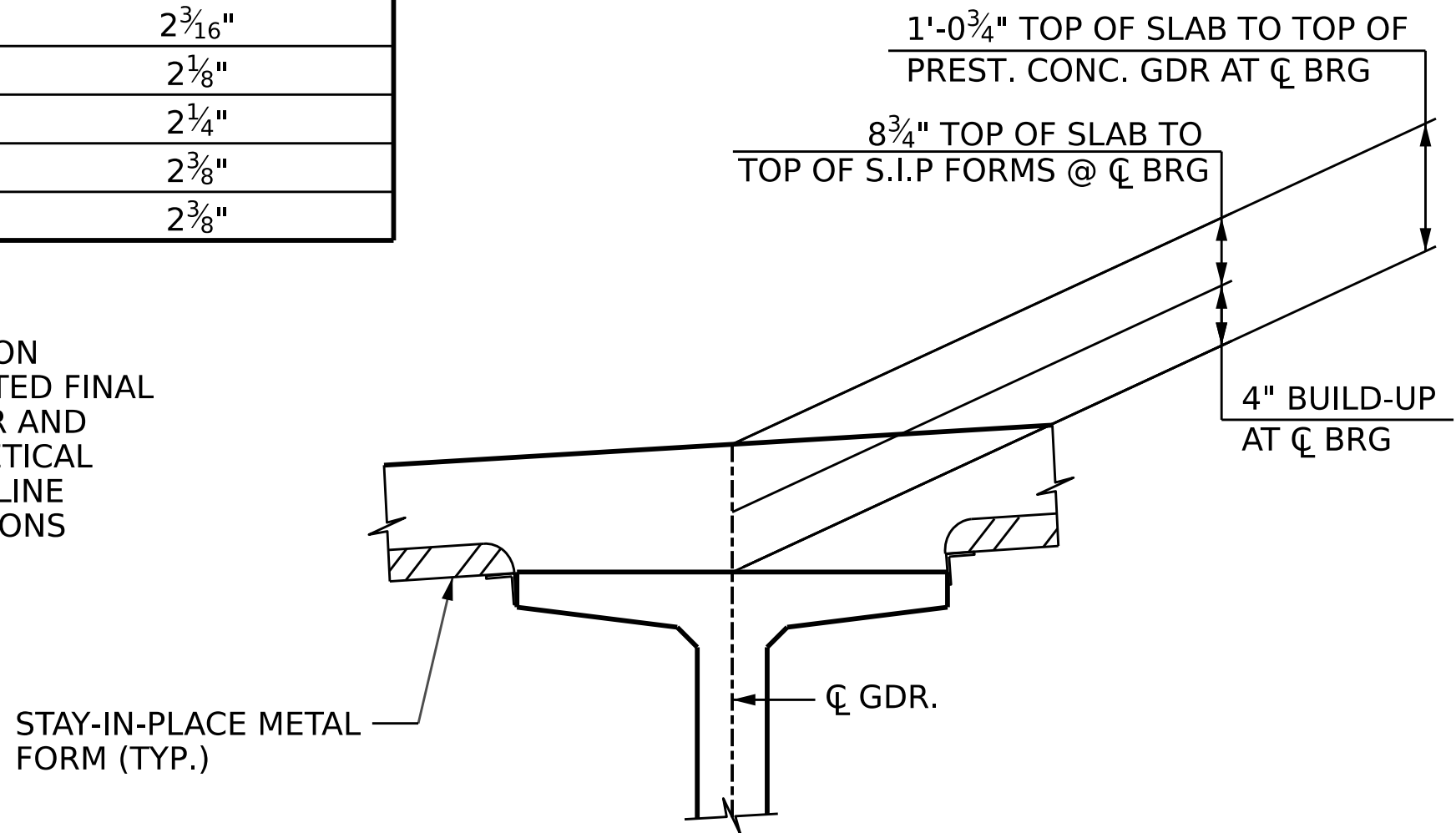
PLAN OF GIRDER AT END DIAPHRAGM

DRAWN BY :	M. CATER	DATE :	01/2024
CHECKED BY :	D. TUTTLE	DATE :	01/2024
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

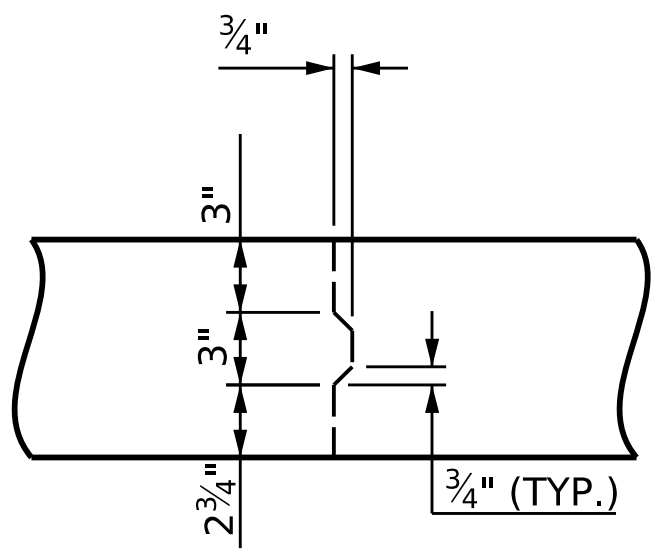
7/13/2026
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caterm

GIRDER	MAX. MIDSPAN BUILD-UP (INCHES)**
1	2"
2	2 3/16"
3	2 1/8"
4	2 1/4"
5	2 3/8"
6	2 3/8"

** BASED ON
PREDICTED FINAL
CAMBER AND
THEORETICAL
GRADE LINE
ELEVATIONS



DETAIL "A"



TRANSVERSE CONSTRUCTION
JOINT IN DECK SLAB

NOTE: REINFORCING STEEL IN
SLAB NOT SHOWN. REINFORCING
STEEL SHALL BE CONTINUOUS
THROUGH JOINT.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 2 OF 2

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STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUPERSTRUCTURE

TYPICAL SECTION
& DETAILS

(RIGHT LANE)

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.

S8-08

TOTAL SHEETS

39

7/14/2026

308584

06/14/2026

06/14/2026

STATE OF NORTH CAROLINA

PROFESSIONAL ENGINEER

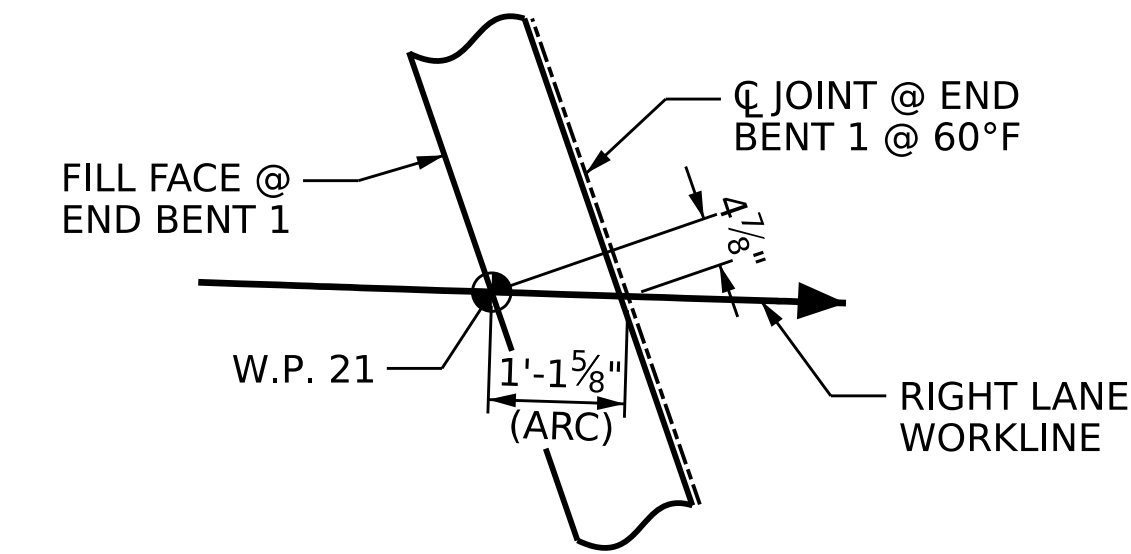
DUSTIN S. TUTTLE

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SIGNATURES COMPLETED

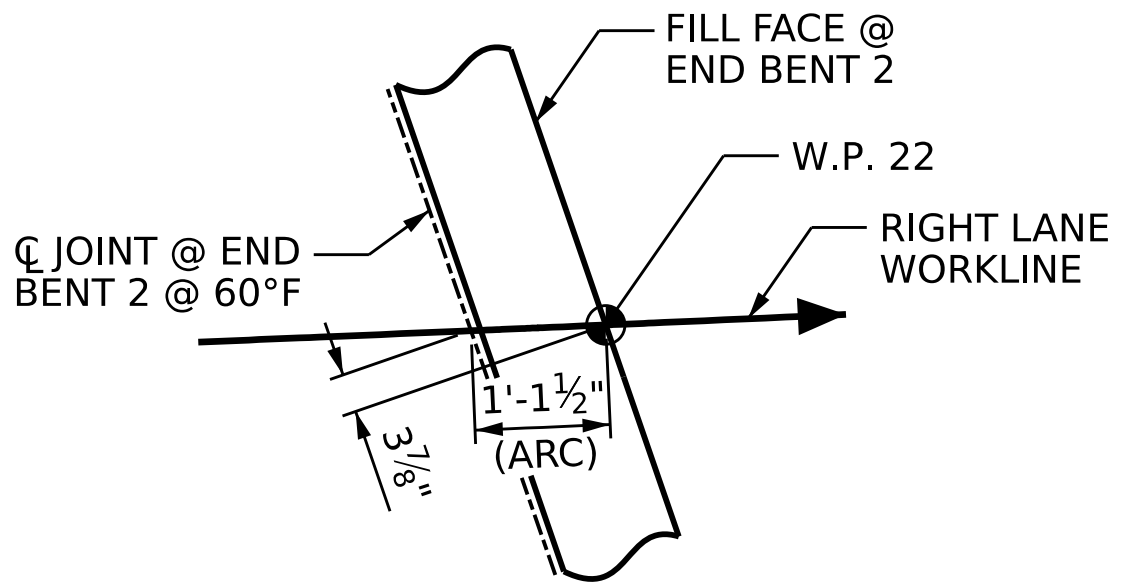
NOTES:

FOR CONCRETE BARRIER RAIL DETAILS, SEE "CONCRETE BARRIER RAIL" SHEET

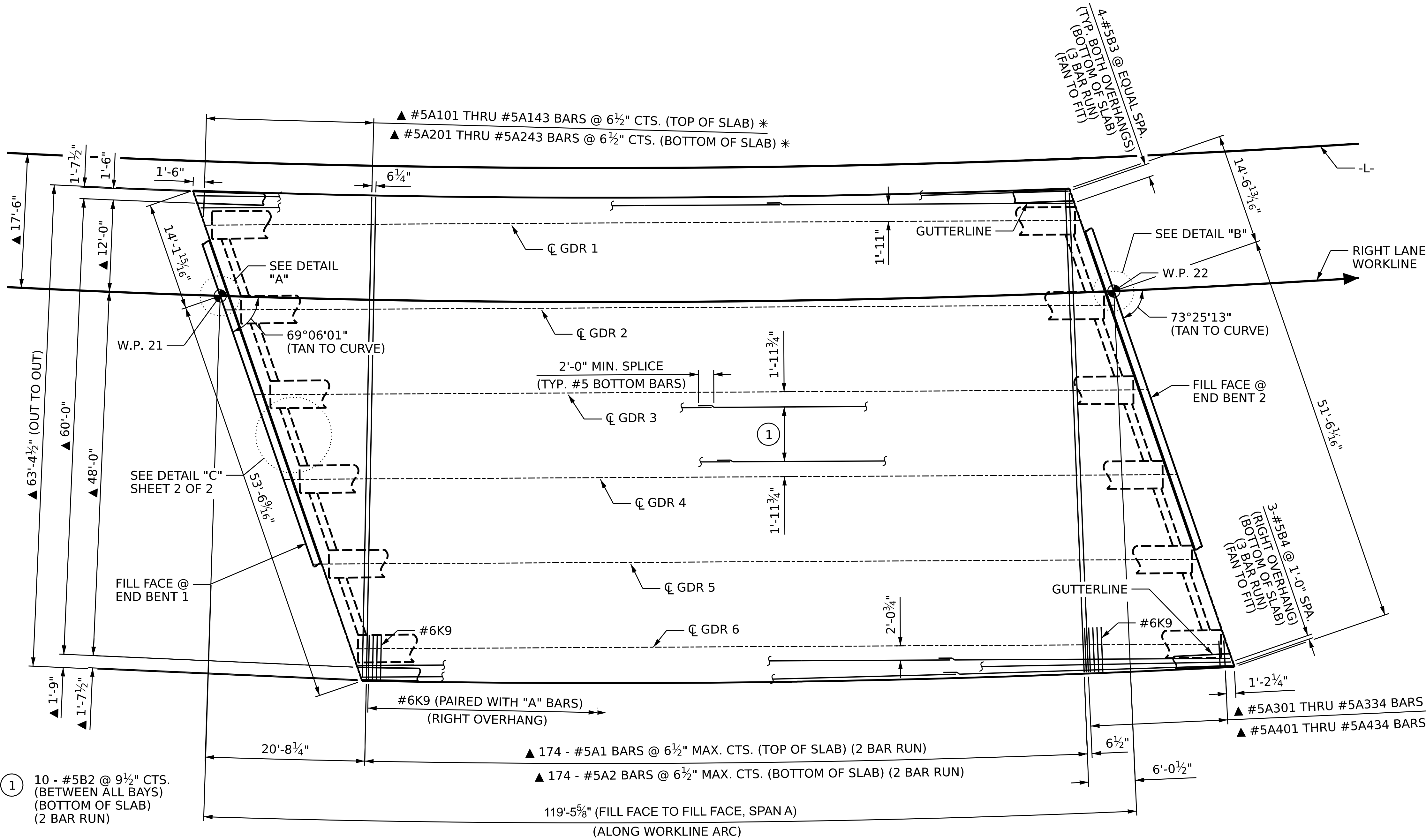
FOR END DIAPHRAGM REINFORCEMENT DETAILS, SEE SHEET 2 OF 2



DETAIL "A"



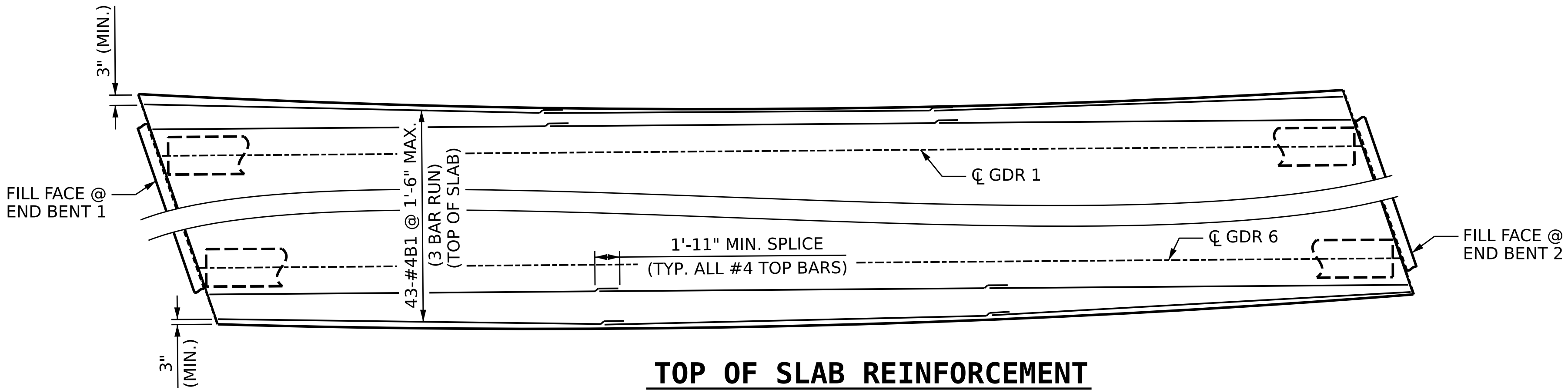
DETAIL "B"



PLAN OF SPAN "A"

▲ = MEASURED RADIALLY

* = BARS A101, A102, A201, A202, A301, A401 AND A402 ARE 2 BAR RUNS



TOP OF SLAB REINFORCEMENT

NOT DRAWN TO SCALE

DRAWN BY : M. CATER DATE : 09/2023
CHECKED BY : D. TUTTLE DATE : 10/2023
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

STATION: 83+50.80 -L-

SHEET 1 OF 2

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www.aecom.com
AECOM License No. F02342

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPAN
SPAN A
(RIGHT LANE)

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

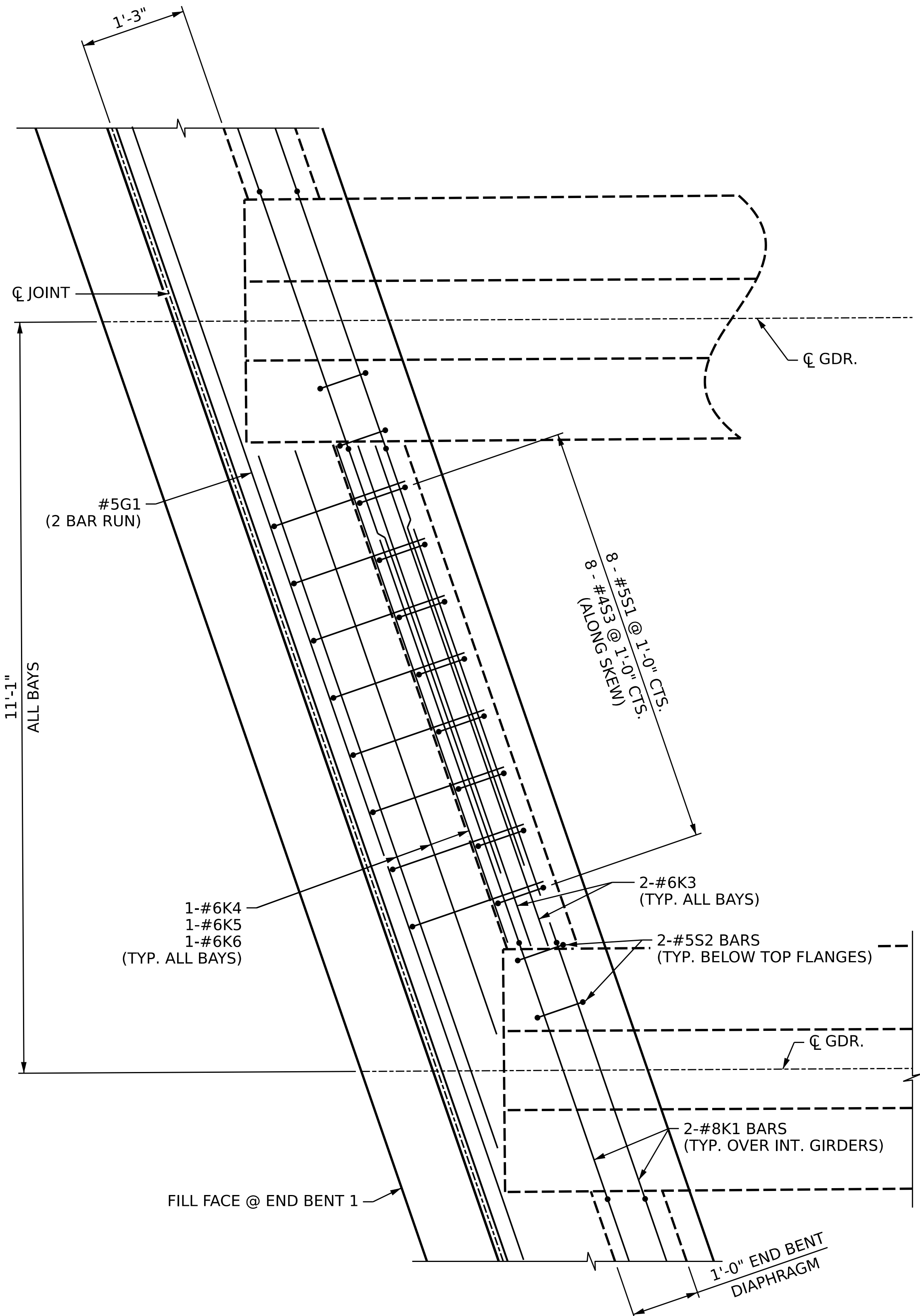
SUPERSTRUCTURE

PLAN OF SPAN

SPAN A

(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-09
2			4			TOTAL SHEETS 39

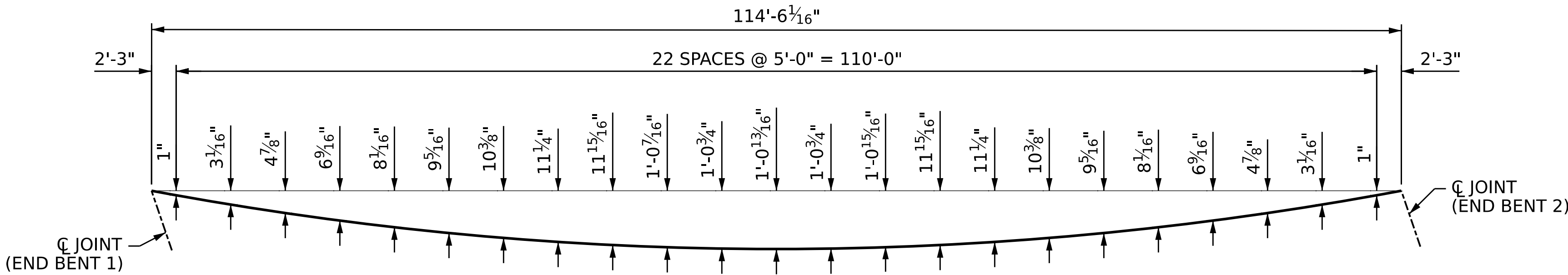


DETAIL "C"

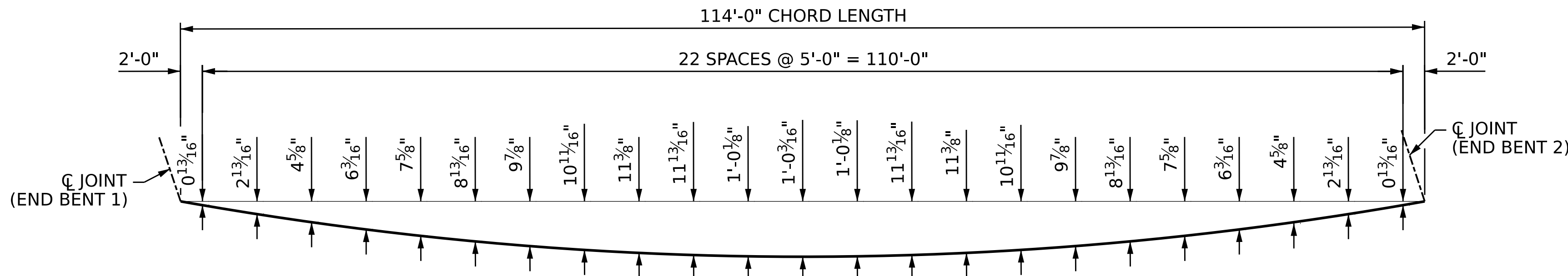
END BENT 1 SHOWN,
END BENT 2 SIMILAR

DRAWN BY :	M. CATER	DATE :	11/2023
CHECKED BY :	D. TUTTLE	DATE :	12/2023
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

7/13/2026
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caterm



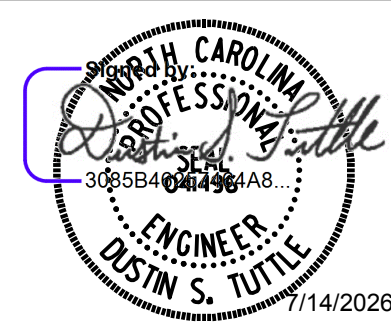
ARC OFFSETS AT LEFT EDGE OF DECK



ARC OFFSETS AT RIGHT EDGE OF DECK

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPAN
DETAILS

(RIGHT LANE)

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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-10
2			4			TOTAL SHEETS 39

$+$ $+$

FRAMING PLAN

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
 STATION: 83+50.80 -L-



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(919) 854-6200 www.aecom.com
AECOM License No. FC0942

STATE OF NORTH CAROLINA

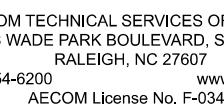
DEPARTMENT OF TRANSPORTATION

RALEIGH

SUPERSTRUCTURE

FRAMING PLAN

(RIGHT LANE)

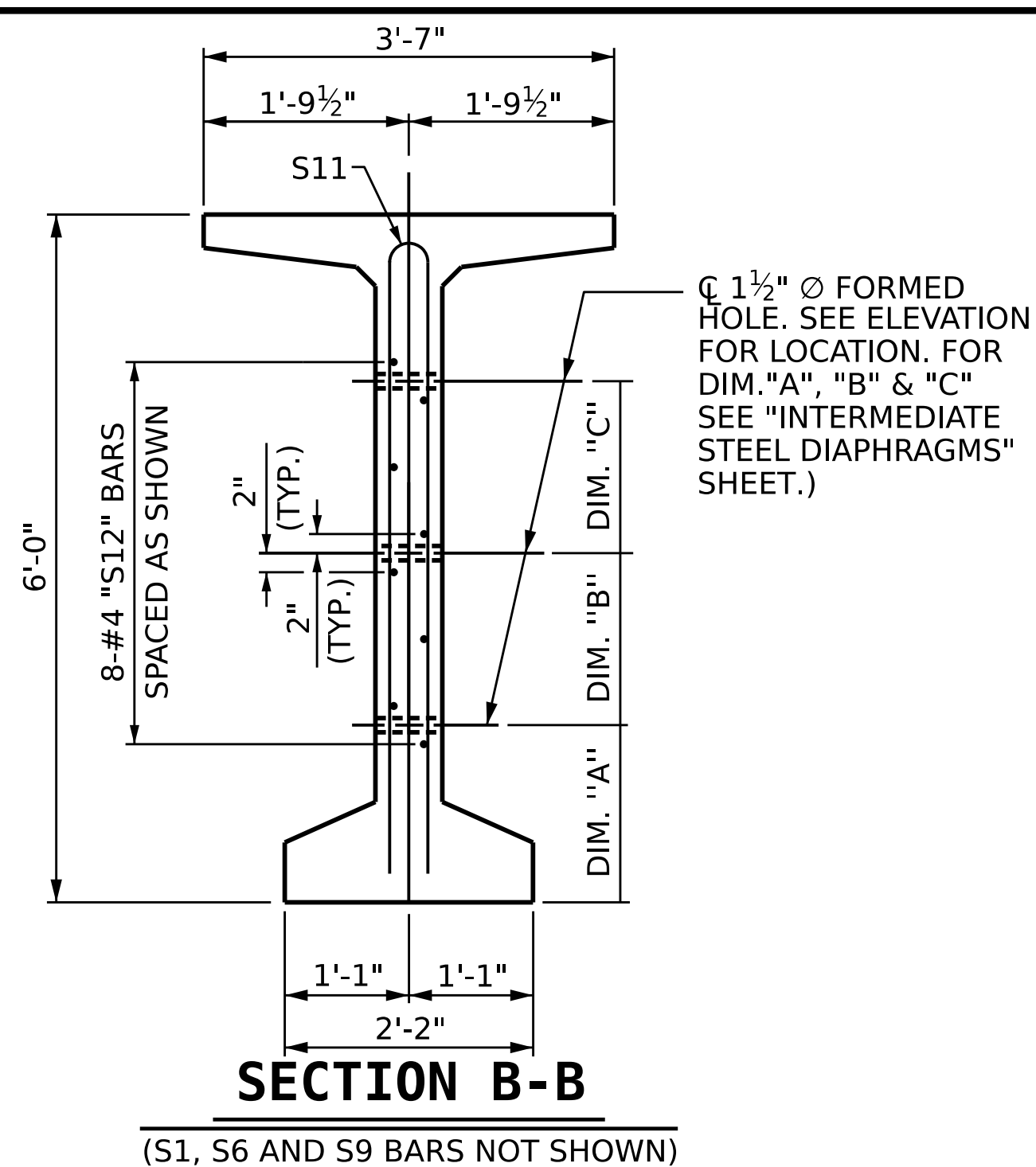
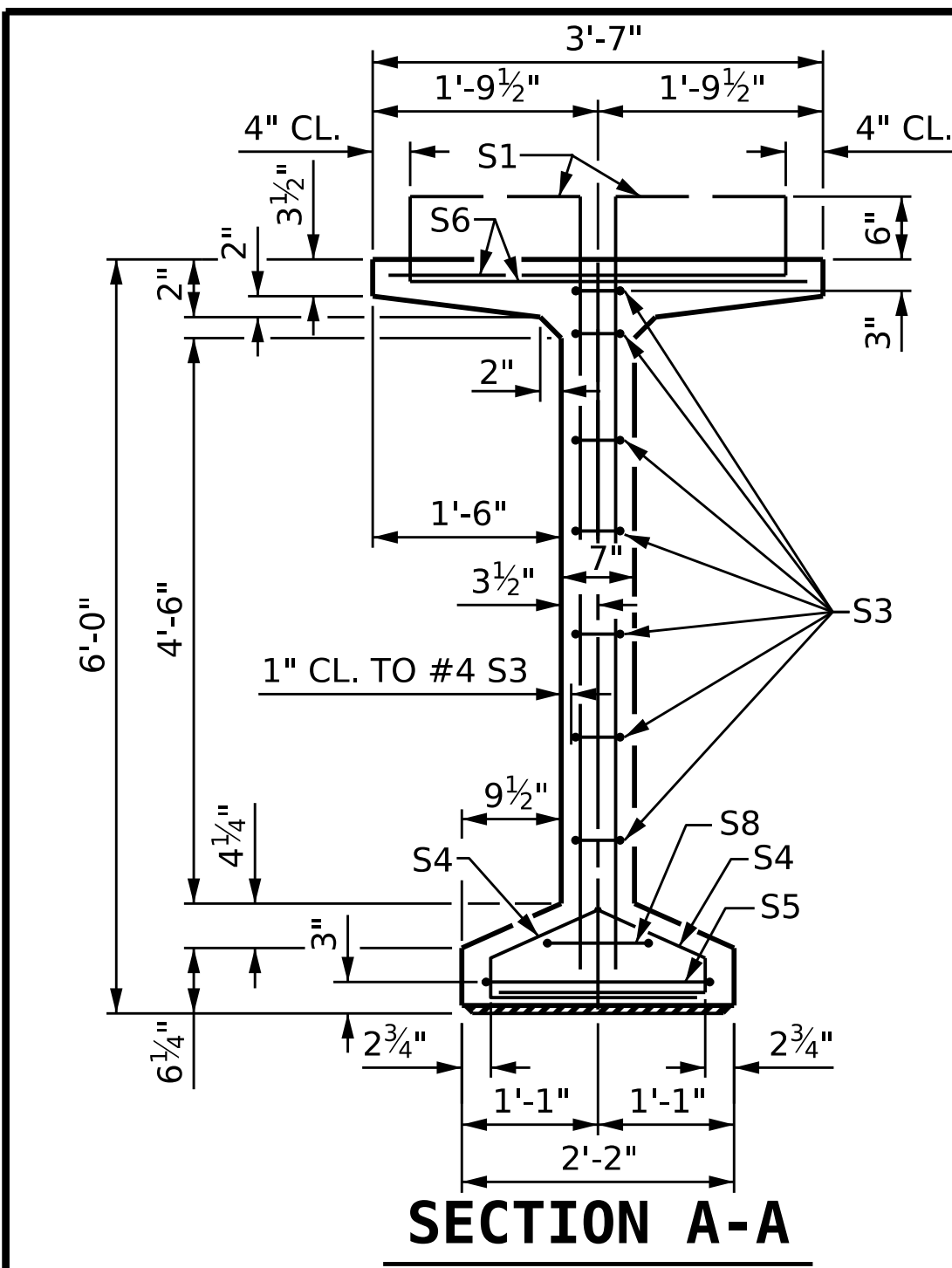


7/14/2026

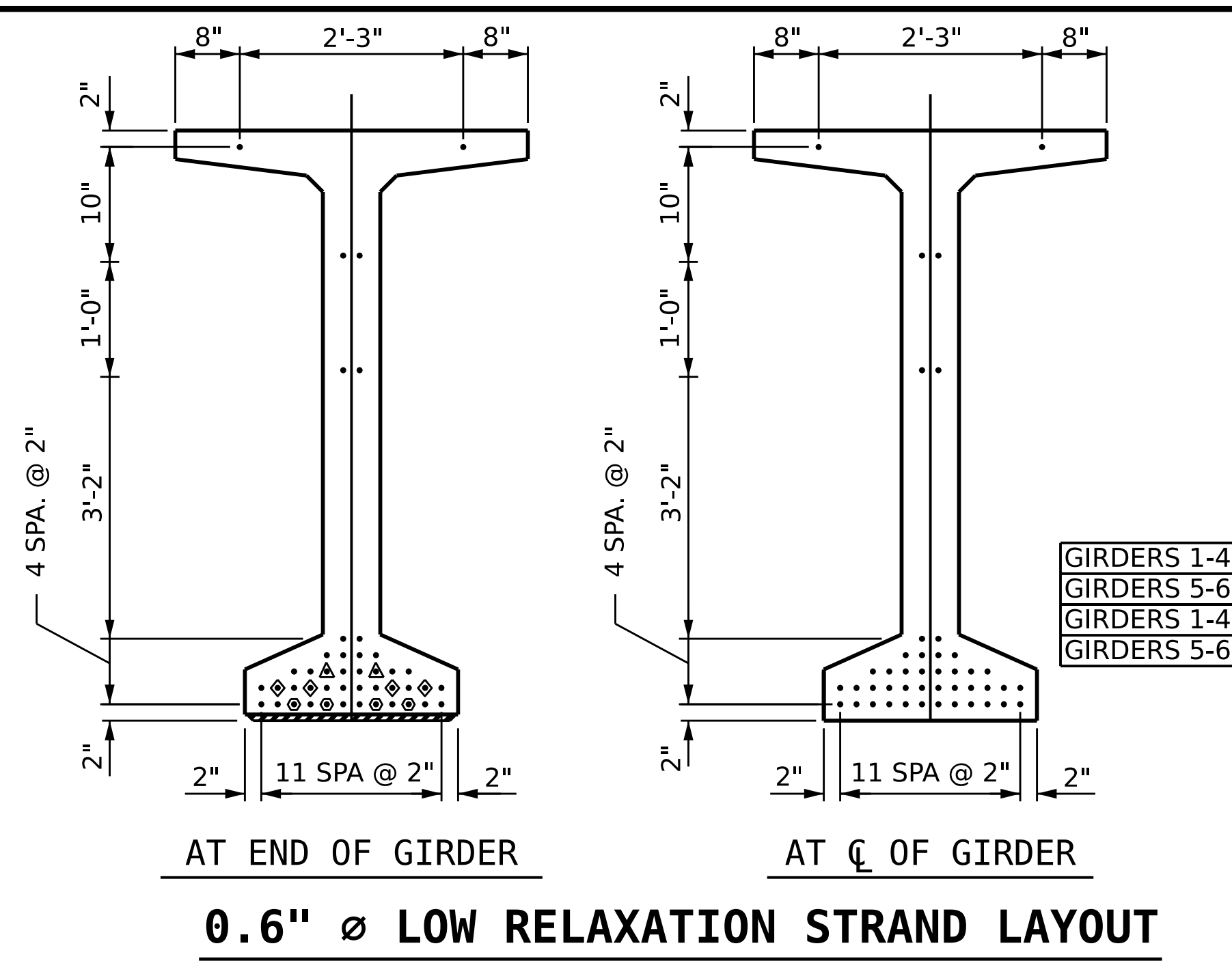
REVISONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	58-11 TOTAL SHEETS 39
1			3			
2			4			

DRAWN BY :	T. NEAL	DATE :	09/2023
CHECKED BY :	D. TUTTLE	DATE :	10/2023
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	04/2024

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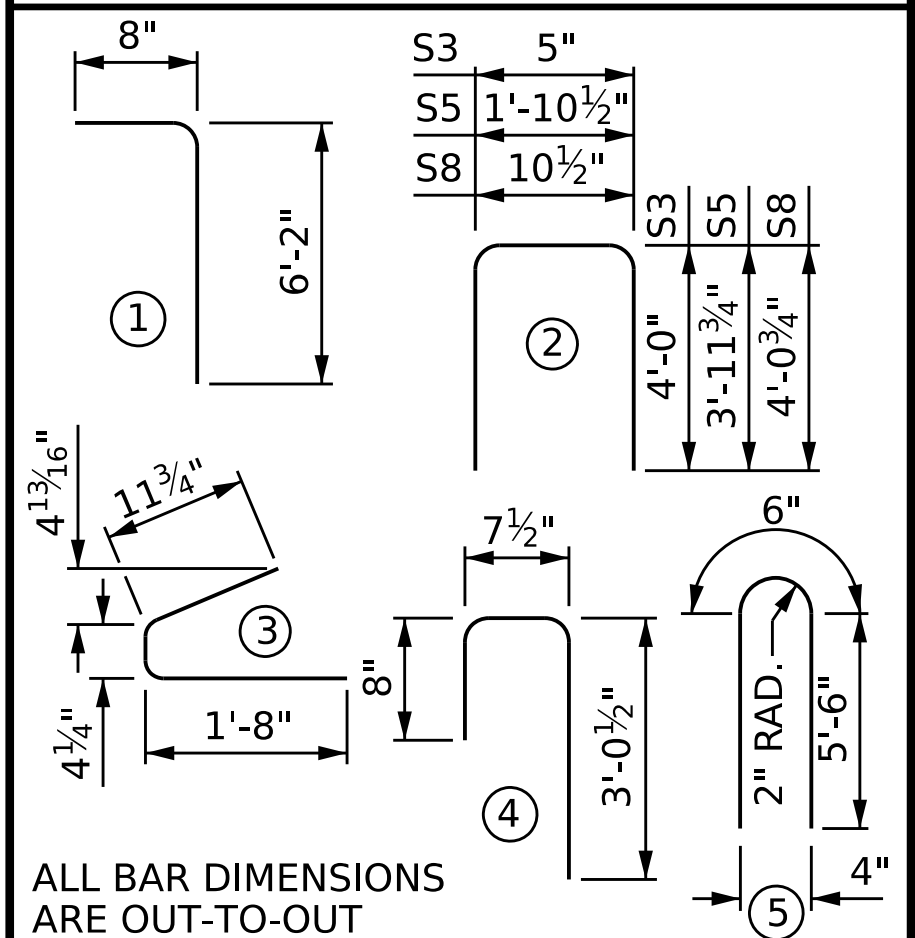


- ### DEBONDING LEGEND
- FULLY BONDED STRANDS
 -  STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER
 -  STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER
 -  STRANDS DEBONDED FOR 12'-0" FROM END OF GIRDER



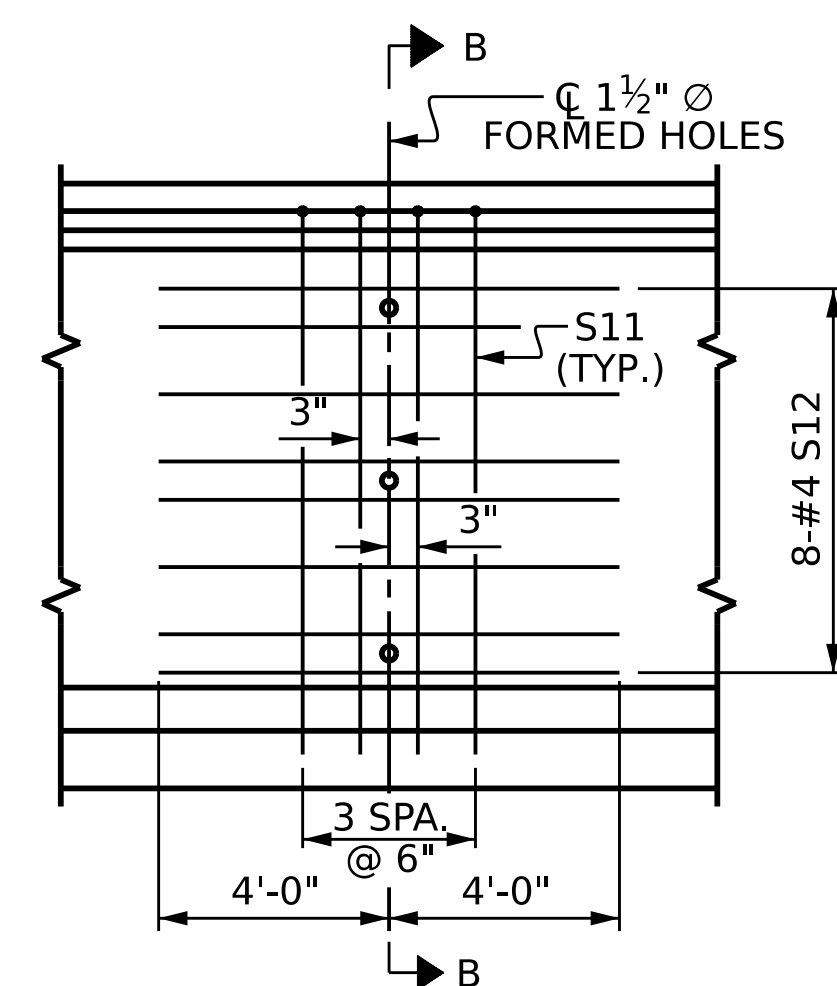
0.6"Ø L.R. GRADE 270 STRANDS						
AREA (SQUARE INCHES)		ULTIMATE STRENGTH (LBS. PER STRAND)		APPLIED PRESTRESS (LBS. PER STRAND)		
0.217		58,600		43,950		
REINFORCING STEEL FOR ONE GDR						
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	
S1	214	#5	1	6'-10"	1526	
S3	14	#4	2	8'-5"	79	
S4	88	#4	3	3'-0"	177	
S5	2	#5	2	9'-10"	21	
S6	214	#5	4	4'-4"	968	
S8	2	#5	2	9'-0"	19	
S9	33	#5	STR	3'-3"	112	
S11	8	#5	5	11'-6"	96	
S11	20	#5	5	11'-6"	240	
S12	16	#4	STR	8'-0"	86	
S12	40	#4	STR	8'-0"	214	

BAR TYPES									
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



QUANTITIES FOR ONE GIRDER			
GIRDERS	REINFORCING STEEL	9000PSI CONCRETE	0.6" Ø L.R. STRANDS
	LB.	C.Y.	No.
1 - 4	3084	24.22	44
5 & 6	3356	24.22	44

GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH
6	113'-0 ⁵ / ₈ "	678'-3 ³ / ₄ "



PARTIAL ELEVATION

SHOWING INTERMEDIATE STEEL DIAPHRAGM
REINFORCING STEEL FOR GIRDER Nos. 1-6

NOTES

SEE FRAMING PLAN FOR LOCATION OF FORMED HOLES
FOR INTERMEDIATE DIAPHRAGMS.

SEE PRECAST CONCRETE FASCIA PANEL LAYOUT SHEET FOR FORMED HOLE LOCATIONS FOR PRECAST CONCRETE FASCIA PANEL BRACING AT GIRDER 6.

FABRICATOR SHALL ADJUST GIRDER SHEAR REINFORCEMENT SPACING UP TO A MAXIMUM OF 3 INCHES IN ORDER TO MISS THE PRECAST CONCRETE FASCIA PANEL BRACING CONNECTIONS.

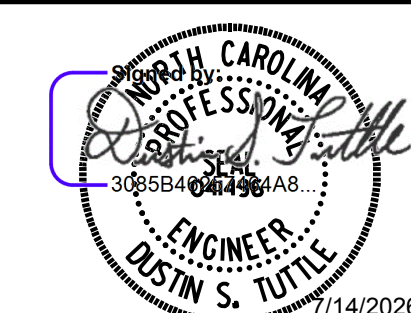
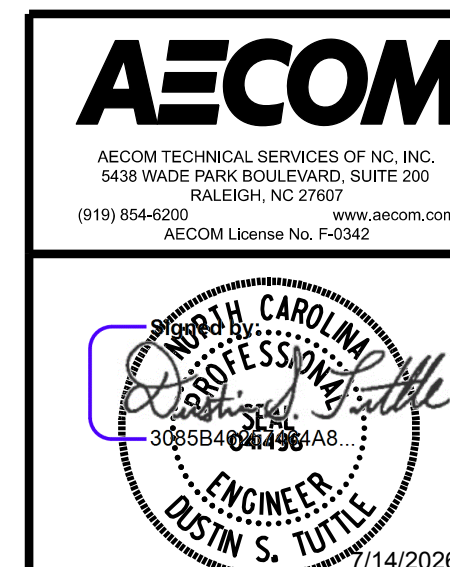
SEE SHEET 2 OF 3 FOR ADDITIONAL NOTES.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
 STATION: 83+50.80 -L-

BUNCOMBE COUNTY

STATION: 83+50.80 -L-

SHEET 1 OF 3



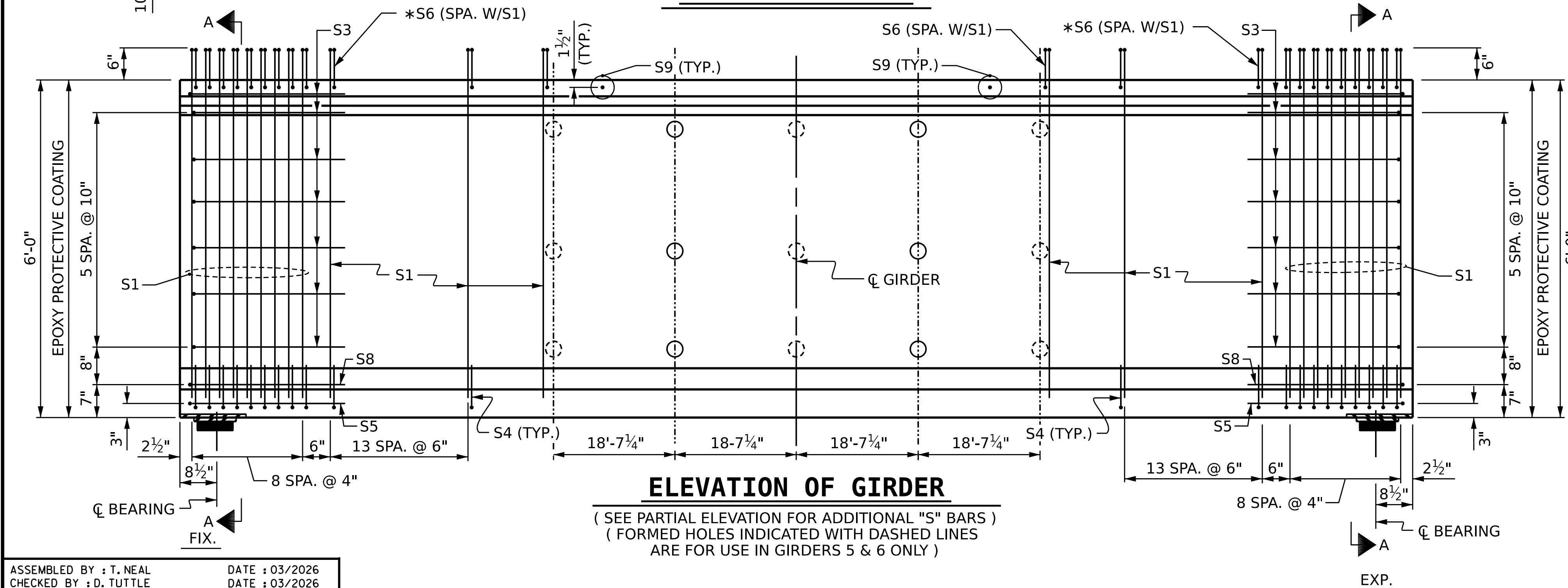
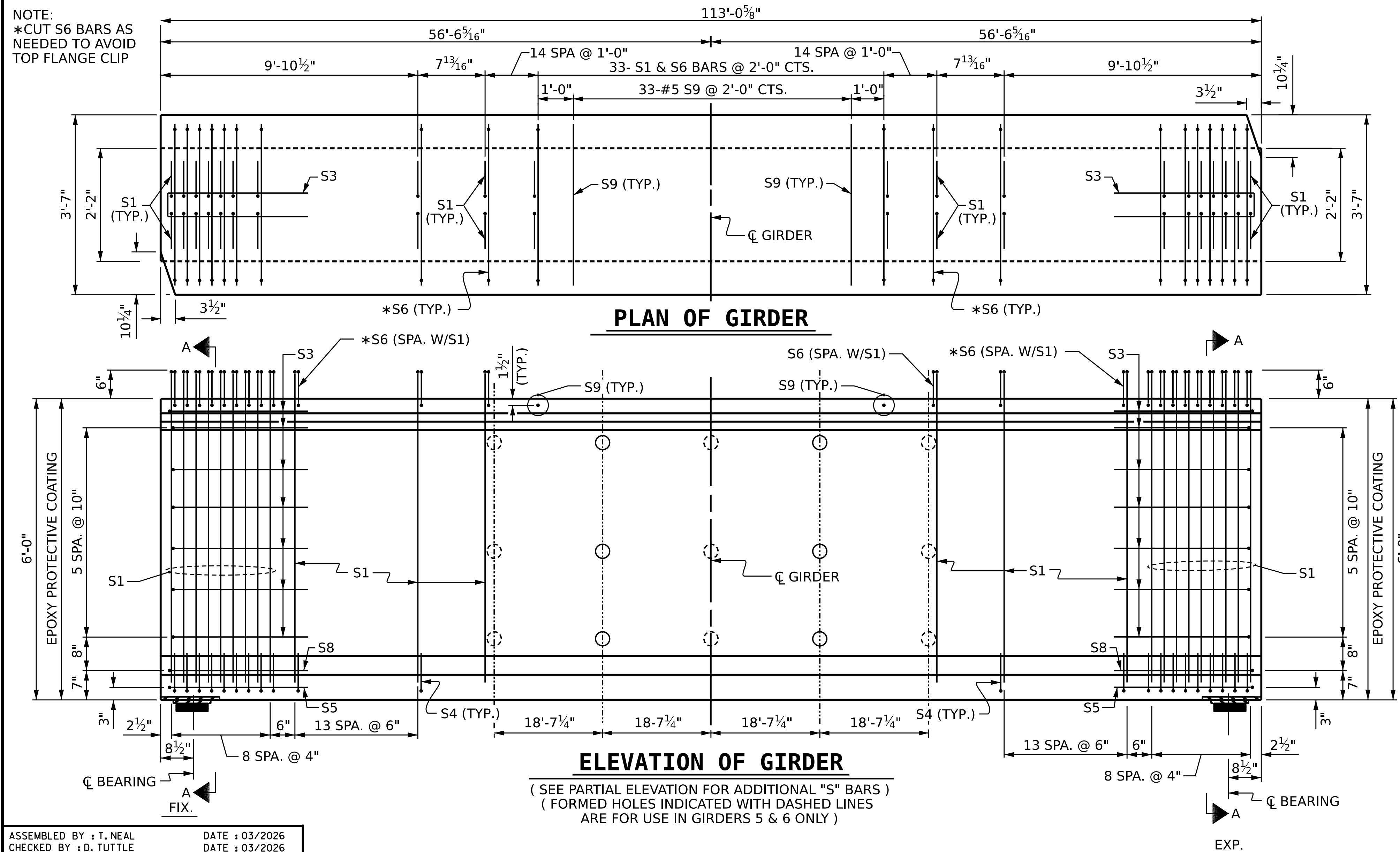
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RALEIGH

STANDARD
72" PRESTRESSED
CONCRETE
MODIFIED BULB TEE
(RIGHT LANE)

REVISIONS						SHEET NO. S8-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			

NOTE:
*CUT S6 BARS AS
NEEDED TO AVOID
TOP FLANGE CLIP



(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)
(FORMED HOLES INDICATED WITH DASHED LINES
ARE FOR USE IN GIRDERS 5 & 6 ONLY)

ASSEMBLED BY : T. NEAL	DATE : 03/2026
CHECKED BY : D. TUTTLE	DATE : 03/2026
DRAWN BY : BNB 09/21	
CHECKED BY : AAI 09/21	

DATE : 03/2026
DATE : 03/2026

DRAWN BY : BNB 09/21
CHECKED BY : AAI 09/21

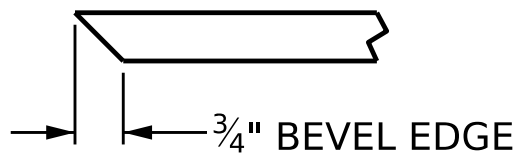
CHECKED BY : AAI 09/21

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DEAD LOAD DEFLECTION TABLE FOR GIRDERS OF SPAN A

0.6" ø LOW RELAXATION		GIRDER 1																					
40TH POINTS		0.000	0.025	0.05	0.075	0.10	0.125	0.15	0.175	0.20	0.225	0.25	0.275	0.30	0.325	0.35	0.375	0.40	0.425	0.45	0.475	0.50	
CAMBER (GIRDER IN PLACE)	↑	0.000	0.021	0.042	0.062	0.082	0.101	0.120	0.138	0.154	0.171	0.186	0.200	0.212	0.224	0.233	0.242	0.249	0.254	0.258	0.260	0.261	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓	0.000	0.012	0.024	0.036	0.048	0.059	0.071	0.082	0.093	0.102	0.111	0.120	0.129	0.135	0.141	0.146	0.152	0.154	0.156	0.158	0.160	
FINAL CAMBER	↑	0"	⅛"	¼"	⅜"	½"	⅝"	⅞"	1⅛"	¾"	⅞"	1⅜"	1"	1"	1⅝"	1⅞"	1⅜"	1⅜"	1⅜"	1⅜"	1⅜"	1⅜"	
40TH POINTS			0.525	0.55	0.575	0.60	0.625	0.65	0.675	0.70	0.725	0.75	0.775	0.80	0.825	0.85	0.875	0.90	0.925	0.95	0.975	1.00	
CAMBER (GIRDER IN PLACE)	↑		0.260	0.258	0.253	0.249	0.242	0.233	0.224	0.212	0.200	0.186	0.171	0.155	0.138	0.120	0.104	0.082	0.062	0.042	0.021	0.000	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓		0.158	0.156	0.154	0.152	0.146	0.141	0.135	0.129	0.120	0.111	0.102	0.093	0.082	0.071	0.059	0.048	0.036	0.024	0.012	0.000	
FINAL CAMBER	↑		1¼"	1¼"	1¼"	1⅜"	1⅜"	1⅞"	1⅞"	1"	1"	1⅝"	⅞"	¾"	1⅛"	⅝"	⅝"	⅝"	⅝"	⅝"	⅝"	0"	
0.6" ø LOW RELAXATION		GIRDER 2																					
40TH POINTS		0.000	0.025	0.05	0.075	0.10	0.125	0.15	0.175	0.20	0.225	0.25	0.275	0.30	0.325	0.35	0.375	0.40	0.425	0.45	0.475	0.50	
CAMBER (GIRDER IN PLACE)	↑	0.000	0.021	0.042	0.062	0.082	0.101	0.120	0.138	0.154	0.171	0.186	0.200	0.212	0.224	0.233	0.242	0.249	0.254	0.258	0.260	0.261	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓	0.000	0.013	0.026	0.039	0.052	0.064	0.077	0.089	0.102	0.111	0.121	0.131	0.141	0.147	0.153	0.159	0.165	0.167	0.170	0.172	0.174	
FINAL CAMBER	↑	0"	⅛"	⅜"	⅝"	⅝"	½"	⅝"	⅝"	1⅛"	¾"	1⅜"	⅞"	⅞"	1⅝"	1"	1"	1"	1⅛"	1⅛"	1⅞"	1⅛"	
40TH POINTS			0.525	0.55	0.575	0.60	0.625	0.65	0.675	0.70	0.725	0.75	0.775	0.80	0.825	0.85	0.875	0.90	0.925	0.95	0.975	1.00	
CAMBER (GIRDER IN PLACE)	↑		0.260	0.258	0.253	0.249	0.242	0.233	0.224	0.212	0.200	0.186	0.171	0.155	0.138	0.120	0.101	0.082	0.062	0.042	0.021	0.000	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓		0.172	0.170	0.167	0.165	0.159	0.153	0.147	0.141	0.131	0.121	0.111	0.102	0.089	0.077	0.064	0.052	0.039	0.026	0.013	0.000	
FINAL CAMBER	↑		1⅞"	1⅜"	1⅜"	1"	1"	1"	1⅝"	⅞"	⅞"	1⅜"	¾"	1⅜"	⅝"	⅝"	½"	⅝"	⅝"	⅝"	⅝"	0"	
0.6" ø LOW RELAXATION		GIRDER 3																					
40TH POINTS		0.000	0.025	0.05	0.075	0.10	0.125	0.15	0.175	0.20	0.225	0.25	0.275	0.30	0.325	0.35	0.375	0.40	0.425	0.45	0.475	0.50	
CAMBER (GIRDER IN PLACE)	↑	0.000	0.021	0.042	0.062	0.082	0.101	0.120	0.138	0.154	0.171	0.186	0.200	0.212	0.224	0.233	0.242	0.249	0.254	0.258	0.260	0.261	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓	0.000	0.013	0.026	0.038	0.051	0.064	0.076	0.088	0.100	0.110	0.120	0.129	0.139	0.145	0.151	0.157	0.163	0.165	0.167	0.170	0.172	
FINAL CAMBER	↑	0"	⅛"	¼"	⅝"	⅝"	½"	⅝"	⅝"	1⅛"	¾"	1⅜"	⅞"	1⅝"	1"	1"	1⅛"	1⅛"	1⅞"	1⅞"	1⅞"	1⅞"	
40TH POINTS			0.525	0.55	0.575	0.60	0.625	0.65	0.675	0.70	0.725	0.75	0.775	0.80	0.825	0.85	0.875	0.90	0.925	0.95	0.975	1.00	
CAMBER (GIRDER IN PLACE)	↑		0.260	0.258	0.253	0.249	0.242	0.233	0.224	0.212	0.200	0.186	0.171	0.155	0.138	0.120	0.101	0.082	0.062	0.042	0.021	0.000	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓		0.170	0.167	0.165	0.163	0.157	0.151	0.145	0.138	0.129	0.120	0.110	0.100	0.088	0.076	0.064	0.051	0.038	0.026	0.013	0.000	
FINAL CAMBER	↑		1⅞"	1⅞"	1⅜"	1⅜"	1⅜"	1"	1"	1⅝"	⅞"	1⅜"	¾"	1⅜"	⅝"	⅝"	½"	⅝"	⅝"	⅝"	⅝"	0"	
0.6" ø LOW RELAXATION		GIRDER 4																					
40TH POINTS		0.000	0.025	0.05	0.075	0.10	0.125	0.15	0.175	0.20	0.225	0.25	0.275	0.30	0.325	0.35	0.375	0.40	0.425	0.45	0.475	0.50	
CAMBER (GIRDER IN PLACE)	↑	0.000	0.021	0.042	0.062	0.082	0.101	0.120	0.138	0.154	0.171	0.186	0.200	0.212	0.224	0.233	0.242	0.249	0.254	0.258	0.260	0.261	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓	0.000	0.013	0.027	0.040	0.053	0.066	0.079	0.092	0.104	0.114	0.125	0.135	0.145	0.151	0.157	0.164	0.170	0.172	0.174	0.177	0.179	
FINAL CAMBER	↑	0"	⅛"	⅜"	⅝"	⅝"	½"	⅝"	⅝"	1⅛"	¾"	1⅜"	⅞"	⅞"	1⅝"	1"	1"	1"	1⅛"	1⅛"	1"	1"	
40TH POINTS			0.525	0.55	0.575	0.60	0.625	0.65	0.675	0.70	0.725	0.75	0.775	0.80	0.825	0.85	0.875	0.90	0.925	0.95	0.975	1.000	
CAMBER (GIRDER IN PLACE)	↑		0.260	0.258	0.261	0.249	0.242	0.233	0.224	0.212	0.200	0.186	0.171	0.155	0.138	0.120	0.101	0.082	0.062	0.042	0.021	0.000	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓		0.177	0.174	0.179	0.170	0.164	0.157	0.151	0.145	0.135	0.125	0.114	0.104	0.092	0.079	0.066	0.053	0.040	0.027	0.013	0.000	
FINAL CAMBER	↑		1⅜"	1⅜"	1"	1"	1"	1⅝"	⅞"	⅞"	1⅜"	¾"	1⅜"	⅝"	⅝"	½"	⅞"	⅝"	⅝"	⅝"	⅝"	0"	
0.6" ø LOW RELAXATION		GIRDER 5																					
40TH POINTS		0.000	0.025	0.05	0.075	0.10	0.125	0.15	0.175	0.20	0.225	0.25	0.275	0.30	0.325	0.35	0.375	0.40	0.425	0.45	0.475	0.50	
CAMBER (GIRDER IN PLACE)	↑	0.000	0.021	0.042	0.062	0.082	0.101	0.120	0.138	0.154	0.171	0.186	0.200	0.212	0.224	0.233	0.242	0.249	0.254	0.258	0.260	0.261	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓	0.000	0.014	0.027	0.041	0.055	0.068	0.081	0.094	0.108	0.118	0.128	0.138	0.149	0.155	0.162	0.168	0.175	0.177	0.180	0.182	0.184	
FINAL CAMBER	↑	0"	⅛"	⅜"	¼"	⅝"	⅜"	⅝"	⅝"	⅝"	1⅛"	¾"	¾"	1⅜"	⅞"	⅞"	1⅝"	1⅝"	1⅝"	1"	1"	1⅝"	
40TH POINTS			0.525	0.55	0.575	0.60	0.625	0.65	0.675	0.70	0.725	0.75	0.775	0.80	0.825	0.85	0.875	0.90	0.925	0.95	0.975	1.00	
CAMBER (GIRDER IN PLACE)	↑		0.260	0.258	0.253	0.249	0.242	0.233	0.224	0.212	0.200	0.186	0.171	0.155	0.138	0.120	0.101	0.082	0.062	0.042	0.021	0.000	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓		0.182	0.180	0.177	0.175	0.168	0.162	0.155	0.149	0.138	0.128	0.118	0.108	0.094	0.081	0.068	0.055	0.041	0.027	0.014	0.000	
FINAL CAMBER	↑		1"	1"	1⅝"	1⅝"	1⅝"	⅞"	⅞"	1⅜"	¾"	¾"	1⅜"	⅝"	⅝"	½"	⅞"	⅝"	⅝"	⅝"	⅝"	0"	
0.6" ø LOW RELAXATION		GIRDER 6																					
40TH POINTS		0.000	0.025	0.05	0.075	0.10	0.125	0.15	0.175	0.20	0.225	0.25	0.275	0.30	0.325	0.35	0.375	0.40	0.425	0.45	0.475	0.50	
CAMBER (GIRDER IN PLACE)	↑	0.000	0.021	0.042	0.062	0.082	0.101	0.120	0.138	0.154	0.171	0.186	0.200	0.212	0.224	0.233	0.242	0.249	0.254	0.258	0.260	0.261	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓	0.000	0.014	0.028	0.042	0.056	0.070	0.083	0.096	0.110	0.120	0.131	0.141	0.152	0.158	0.165	0.172	0.179	0.181	0.183	0.185	0.188	
FINAL CAMBER	↑	0"	⅛"	⅜"	¼"	⅝"	⅜"	⅝"	⅝"	⅝"	⅝"	1⅛"	¾"	¾"	1⅜"	⅞"	⅞"	⅞"	1⅝"	1⅝"	1⅝"	1⅝"	
40TH POINTS			0.525	0.55	0.575	0.60	0.625	0.65	0.675	0.70	0.725	0.75	0.775	0.80	0.825	0.85	0.875	0.90	0.925	0.95	0.975	1.000	
CAMBER (GIRDER IN PLACE)	↑		0.260	0.258	0.253	0.249	0.242	0.233	0.224	0.212	0.200	0.186	0.171	0.155	0.138	0.120	0.101	0.082	0.062	0.042	0.021	0.000	
* DEFLECTION DUE TO SUPERIMPOSED DL	↓		0.185	0.183	0.181	0.179	0.172	0.165	0.158	0.152	0.141	0.131	0.120	0.110	0.096	0.083	0.070	0.056	0.042	0.028	0.014	0.000	
FINAL CAMBER	↑		1⅝"	1⅝"	⅞"	⅞"	⅞"	⅞"	1⅜"	¾"	¾"	1⅜"	⅝"	⅝"	⅝"	½"	⅞"	⅝"	⅝"	⅝"	⅝"	0"	

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS SHOWN IN INCHES (FRACTION FORM)



SECTION "F"

(SEE NOTES)

NOTES:

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW-RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO BOTH SIDES AND BOTTOM OF END 2 FEET OF GIRDER AND END OF GIRDER SURFACES AS INDICATED IN ELEVATION VIEW.

EMBEDDED PLATE "B-1" SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

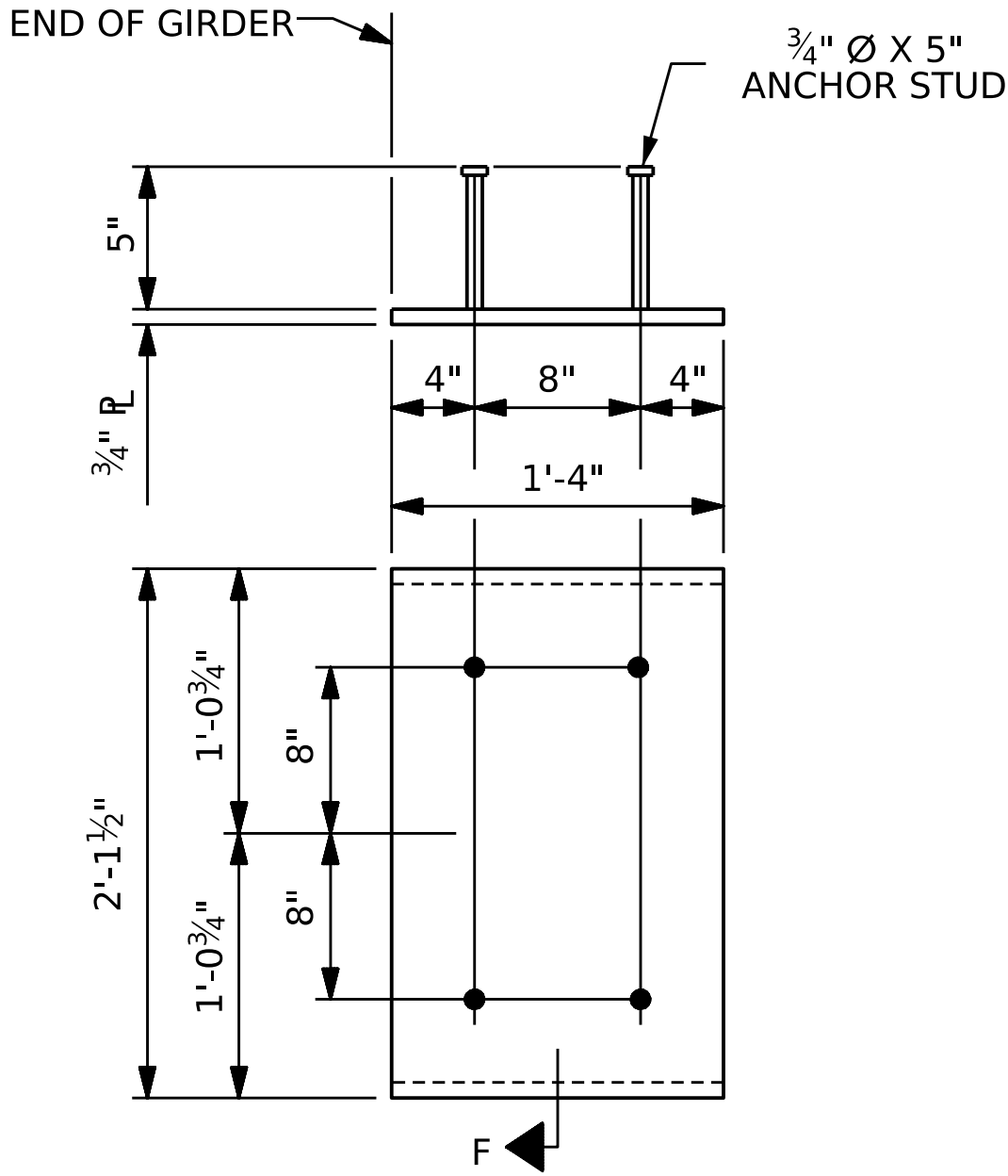
ANCHOR STUDS SHALL CONFORM TO AASHTO M169 GRADES 1010 THROUGH 1020 OR APPROVED EQUAL, AND SHALL MEET THE TYPE "B" REQUIREMENTS OF SUBSECTION 7.3 OF THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 7200 PSI.

DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER SHALL BE RAKED TO A DEPTH OF 1/4" EXCEPT IN THE AREA BETWEEN THE STIRRUP AND THE EDGE OF THE GIRDER.



EMBEDDED PLATE "B-1" DETAILS
FOR 72" MODIFIED BULB TEES

(2 REQ'D PER GIRDER)

PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

STATION: 83+50.80 -L-

SHEET 2 OF 3

DRAWN BY : M. CATER DATE : 03/2026
CHECKED BY : D. TUTTLE DATE : 03/2026
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

AECOM
AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-6200
www.aecom.com
AECOM License No. FC6342

7/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTION TABLES
(RIGHT LANE)

REVISIONS						SHEET NO. S8-13 TOTAL SHEETS 39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

STRUCTURAL STEEL NOTES:

ALL INTERMEDIATE DIAPHRAGM STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS THROUGH THE ANGLE MEMBER SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL ¼ TURN.

THE PLATES, BENT PLATES, AND ANGLES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

FOR METALLIZATION, APPLY A THERMAL SPRAYED COATING WITH A SEAL COAT TO ALL STEEL DIAPHRAGM SURFACES IN ACCORDANCE WITH THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM, THERMAL SPRAYED COATINGS SPECIAL PROVISION AND SECTION 442 OF THE STANDARD SPECIFICATIONS.

GALVANIZE THE HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER WITH STANDARD AND SLOTTED HOLES UNDER EACH BOLT HEAD AND NUT.

FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST ¼" PROJECTION BEYOND THE NUT.

INTERMEDIATE DIAPHRAGM ASSEMBLY SHALL COMPLY WITH SECTION 1072 OF THE STANDARD SPECIFICATIONS.

SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

IN THE EXTERIOR BAYS, PLACE TEMPORARY STRUTS BETWEEN PRESTRESSED GIRDERS ADJACENT TO THE STEEL DIAPHRAGMS. STRUTS SHALL REMAIN IN PLACE 3 DAYS AFTER CONCRETE IS PLACED.

THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.

TABLE

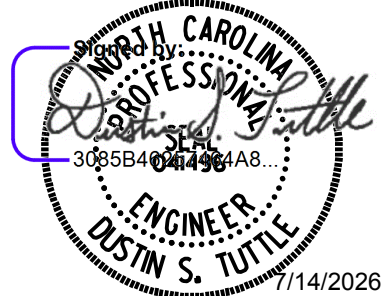
GIRDER TYPE	DIM "A"	DIM "B"	DIM "C"	DIM "L"
BULB TEE	1'-4¼"	1'-7¾"	1'-10¾"	4'-2"

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 3 OF 3

AECOM

AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F02362



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

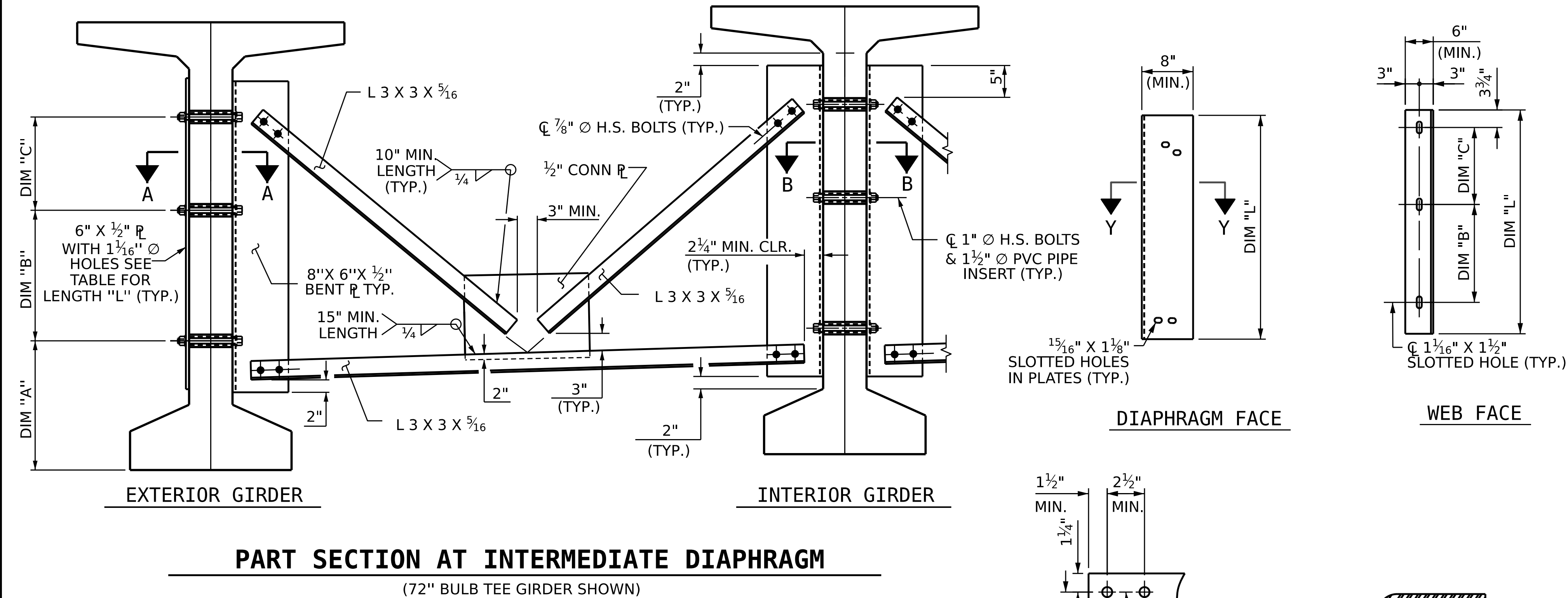
INTERMEDIATE STEEL DIAPHRAGMS
FOR 72" MODIFIED BULB TEE
PRESTRESSED CONCRETE GIRDERS

(RIGHT LANE)

REVISIONS						SHEET NO. S8-14 TOTAL SHEETS 39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

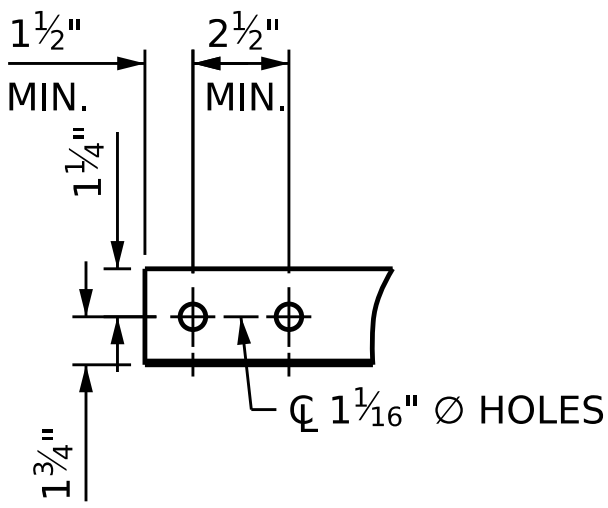
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STD.NO.PCG11



DIAPHRAGM FACE

WEB FACE

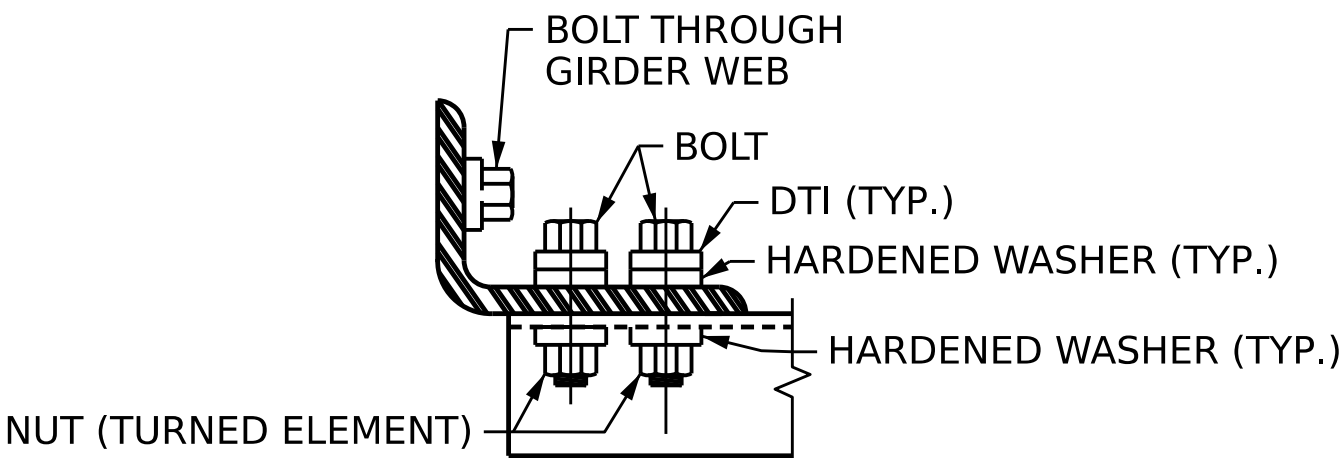


ANGLE END
(L 3 X 3 X 5/16)

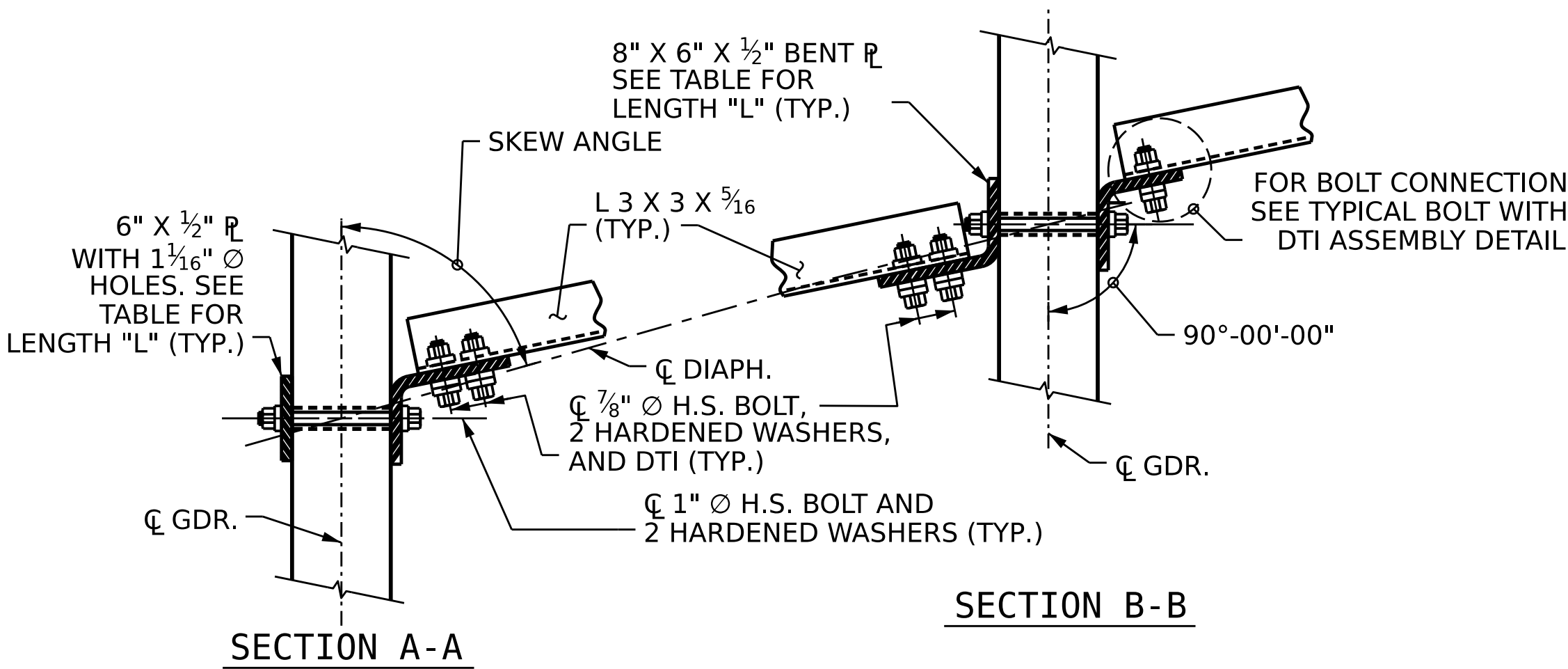


SECTION Y-Y

CONNECTOR PLATE DETAIL

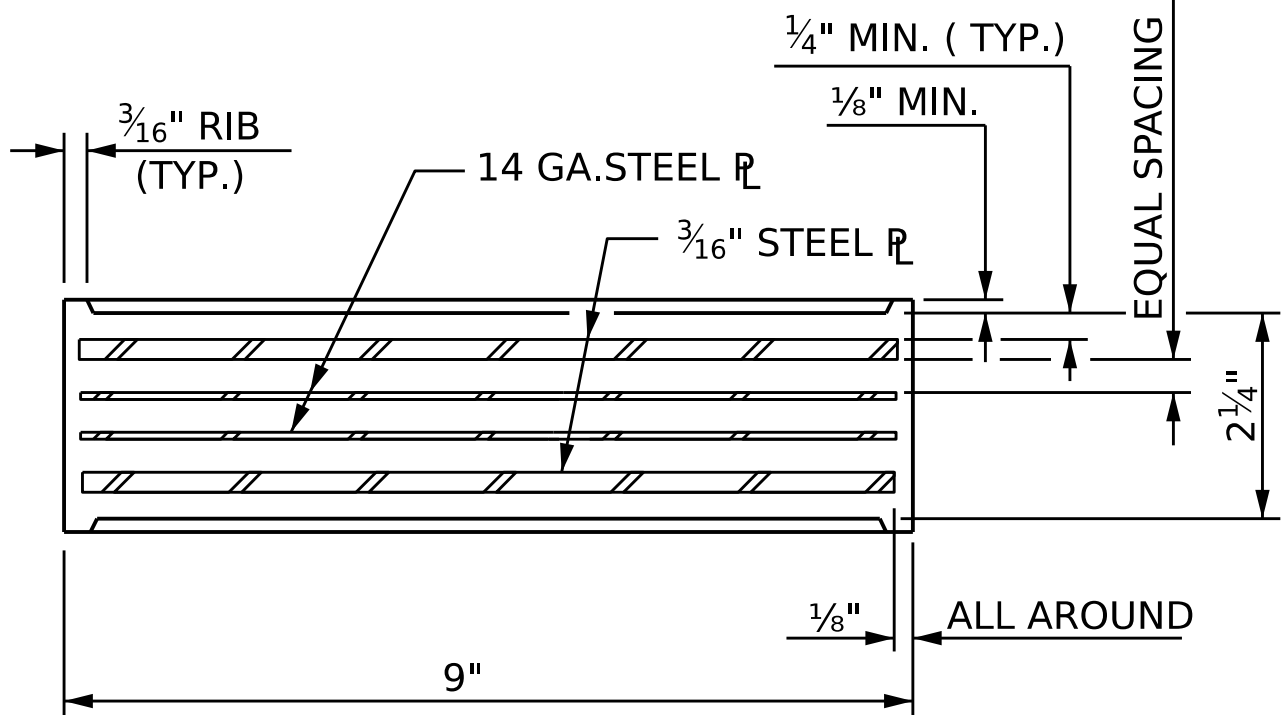
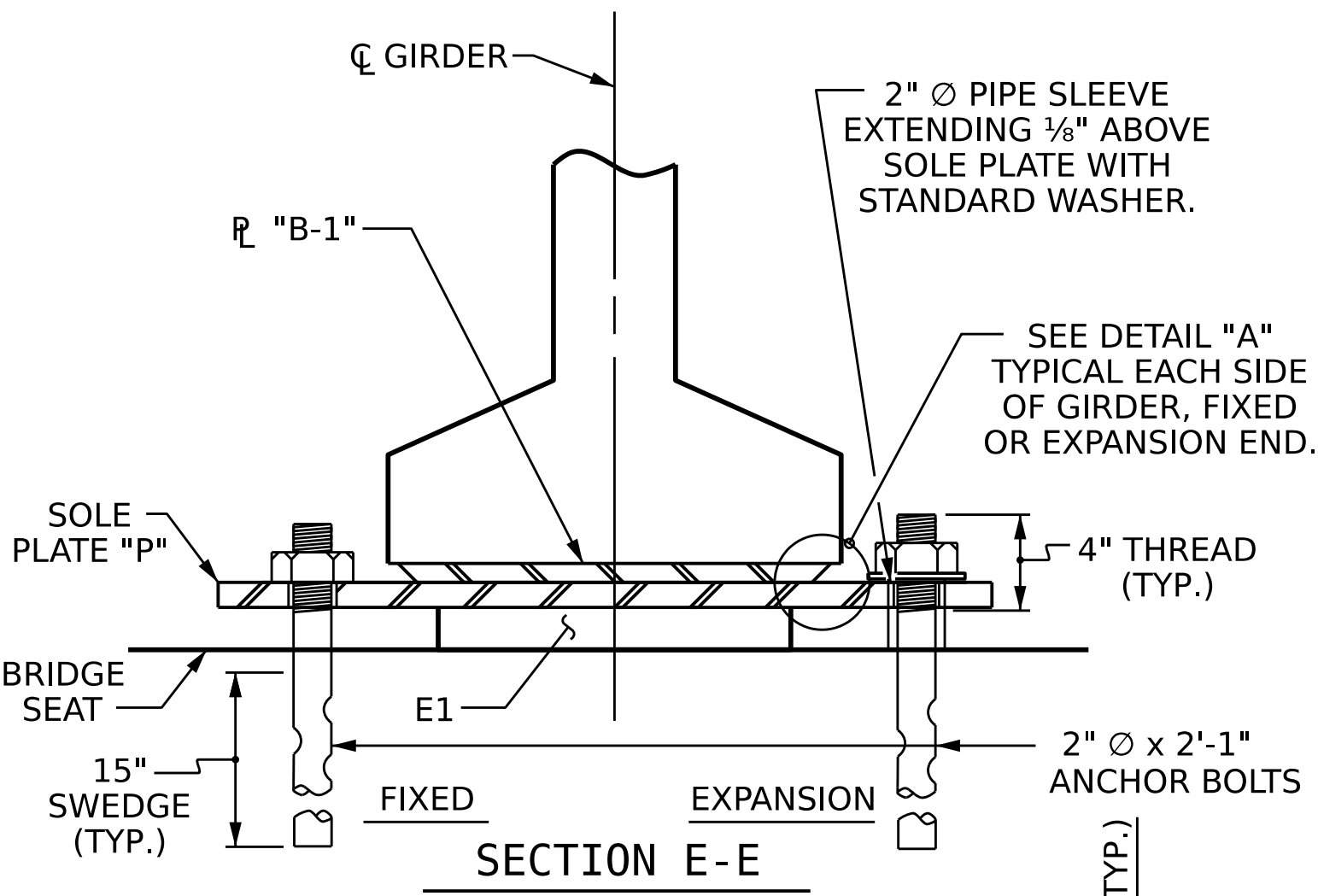


BOLT WITH DTI ASSEMBLY DETAIL

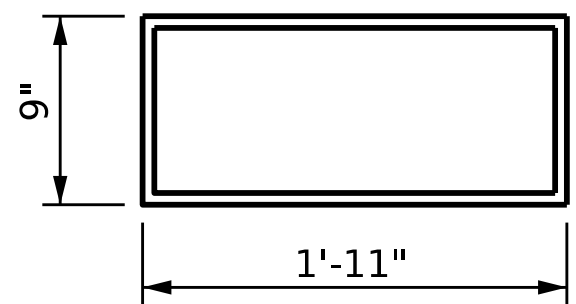


CONNECTION DETAILS

ASSEMBLED BY : T. NEAL CHECKED BY : D. TUTTLE	DATE : 07/2023 DATE : 10/2023
DRAWN BY : RWW 11/09 CHECKED BY : GM 11/09	REV. 10/1/11 MAA/GM REV. 12/17 MAA/THC

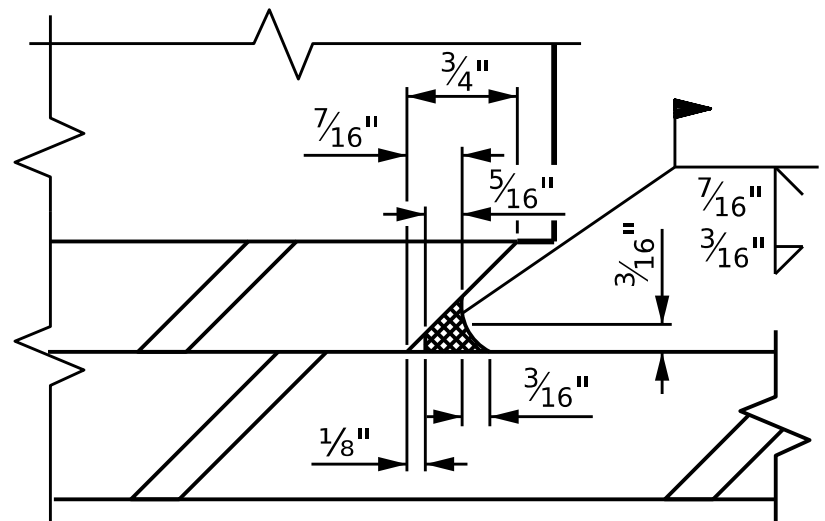


TYPICAL SECTION OF ELASTOMERIC BEARINGS

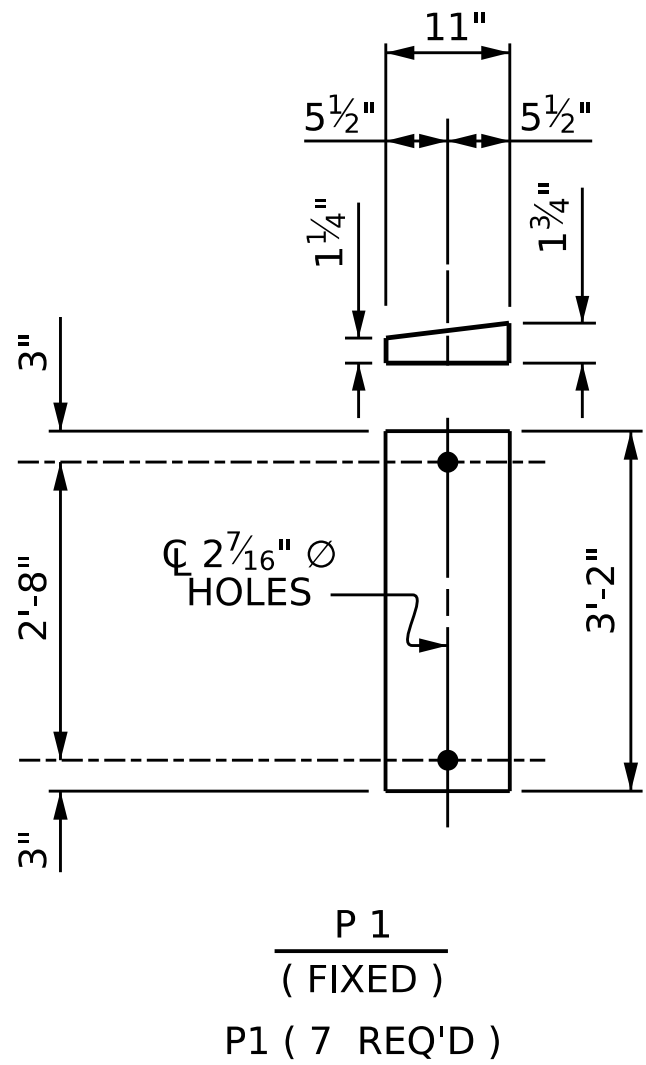


PLAN VIEW OF ELASTOMERIC BEARING

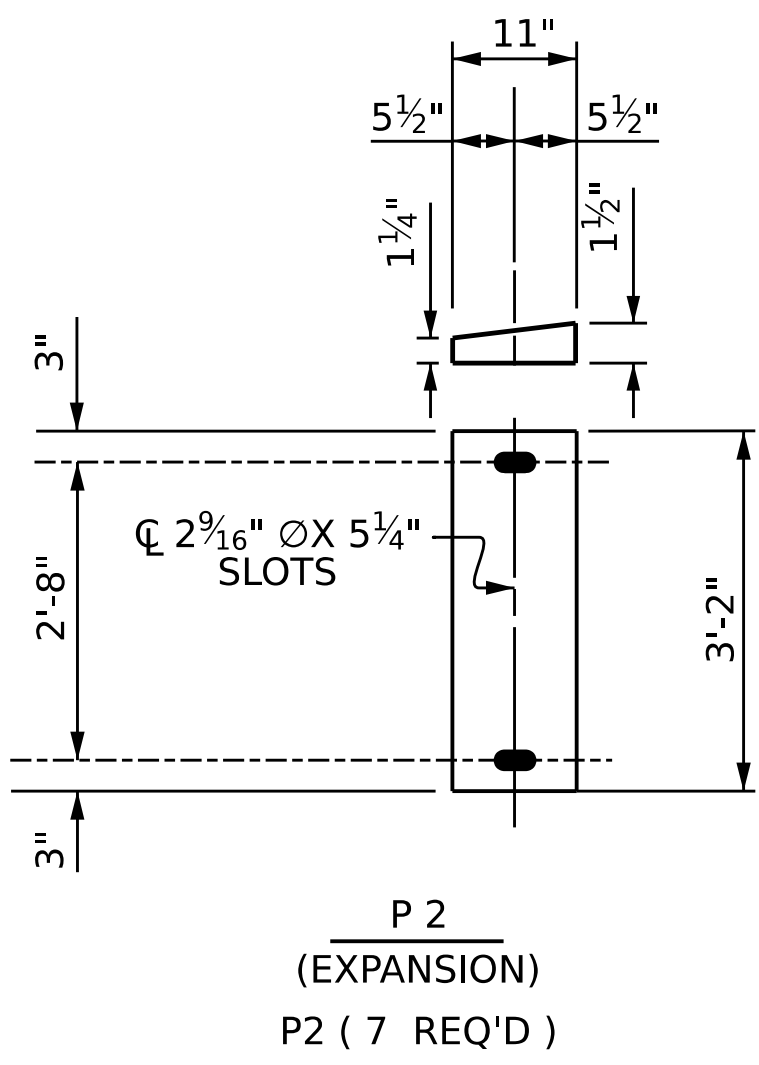
TYPE V



DETAIL "A"

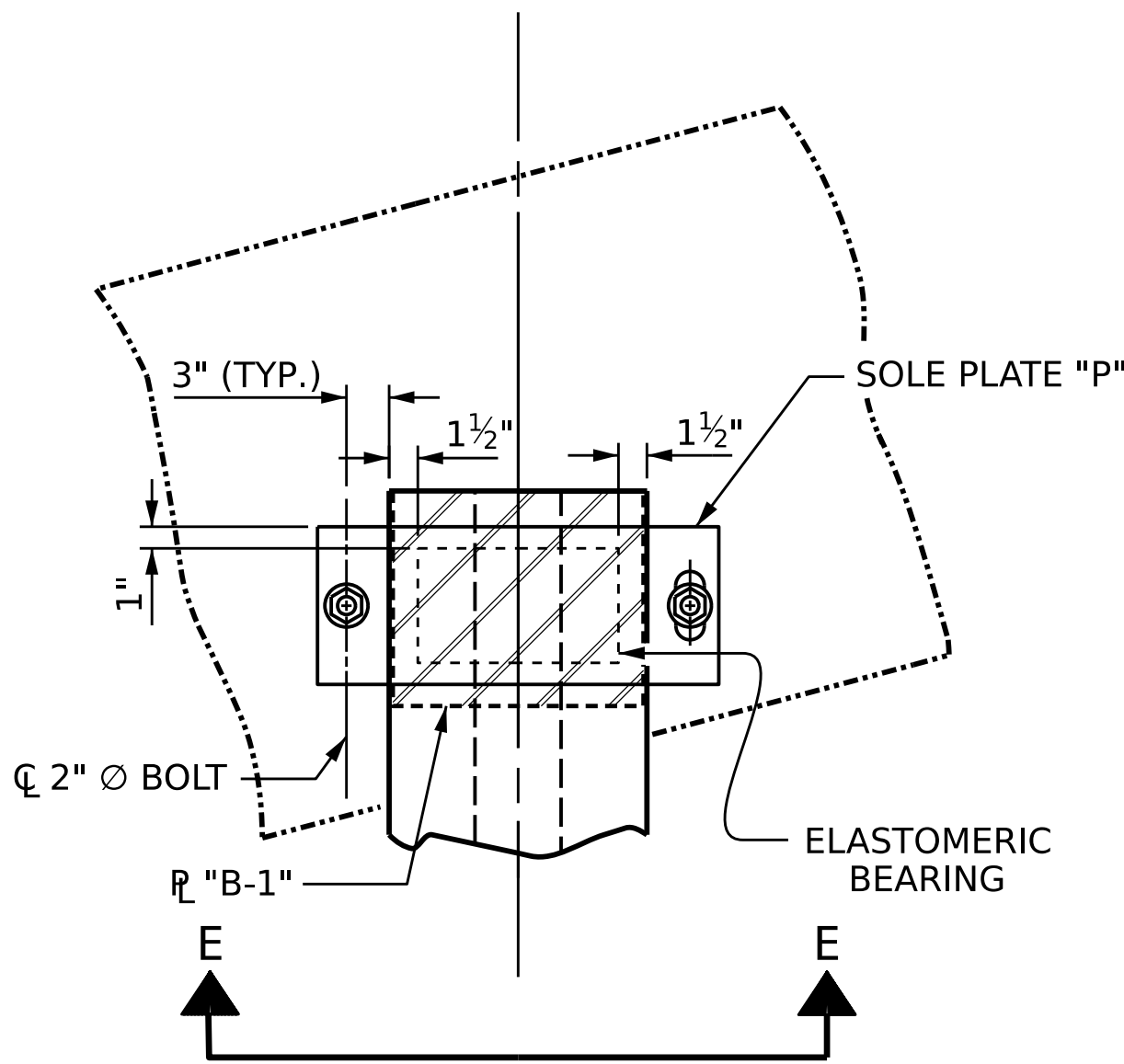


SOLE PLATE DETAILS ("P1")

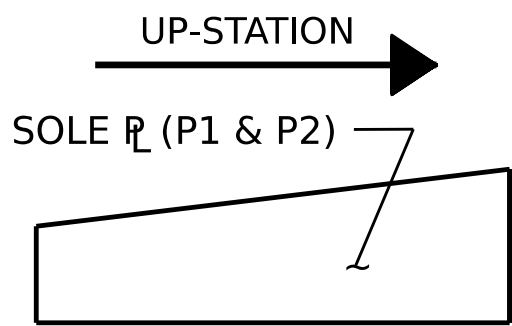


SOLE PLATE DETAILS ("P2")

SOLE PLATE DETAILS ("P")



TYPICAL HALF-PLAN
(SHOWING SIMPLE SPAN END BENT)



SOLE PLACEMENT DETAIL

NOTES:

AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

THE 2" Ø PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

STEEL SOLE PLATES, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

SOLE PLATE "P", BOLTS, NUTS, WASHERS, AND PIPE SLEEVE SHALL BE INCLUDED IN THE PAY ITEM FOR PRESTRESSED CONCRETE GIRDERS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE V	365K

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

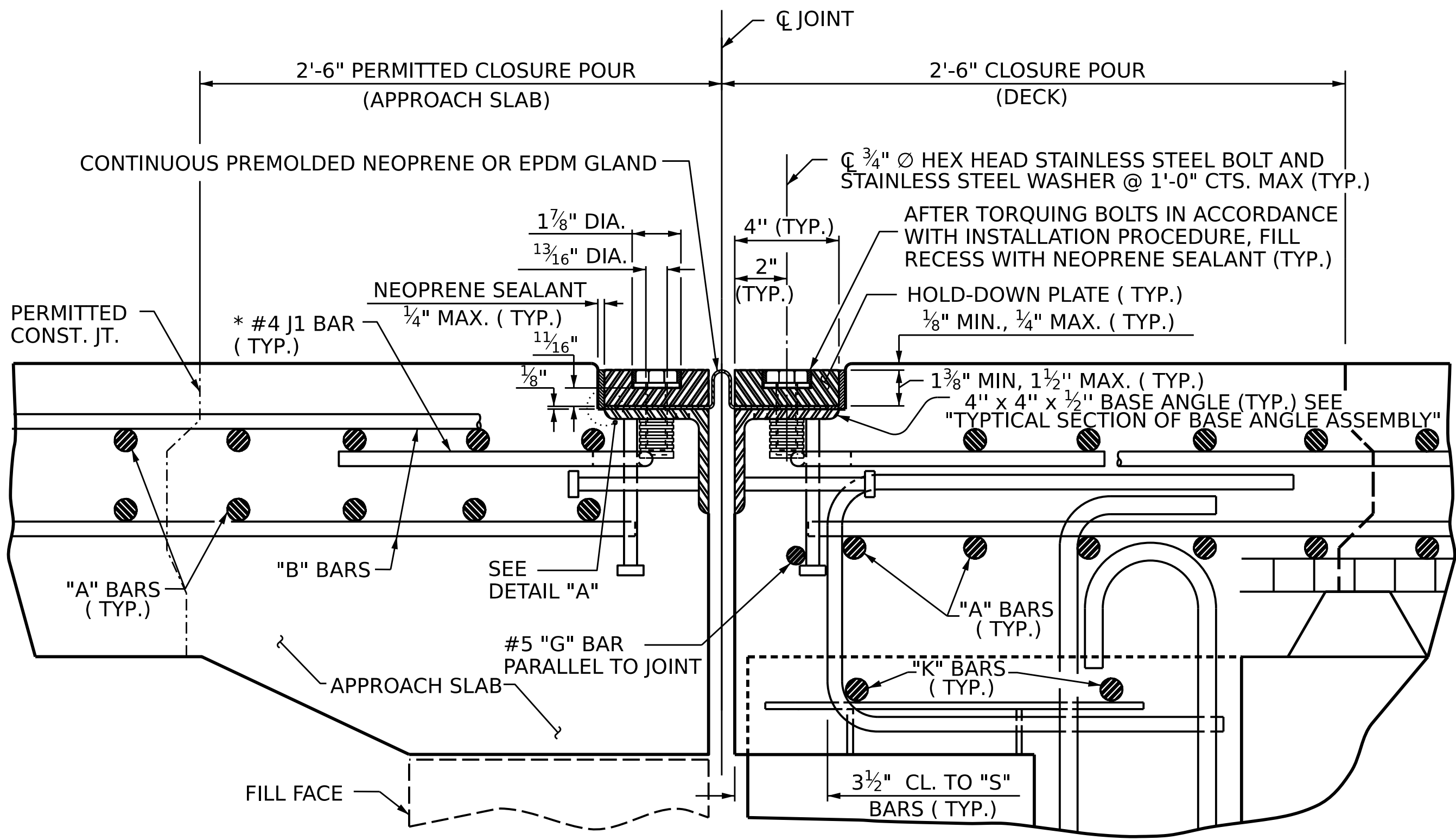


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
ELASTOMERIC BEARING DETAILS
PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE

REVISIONS						SHEET NO. S8-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

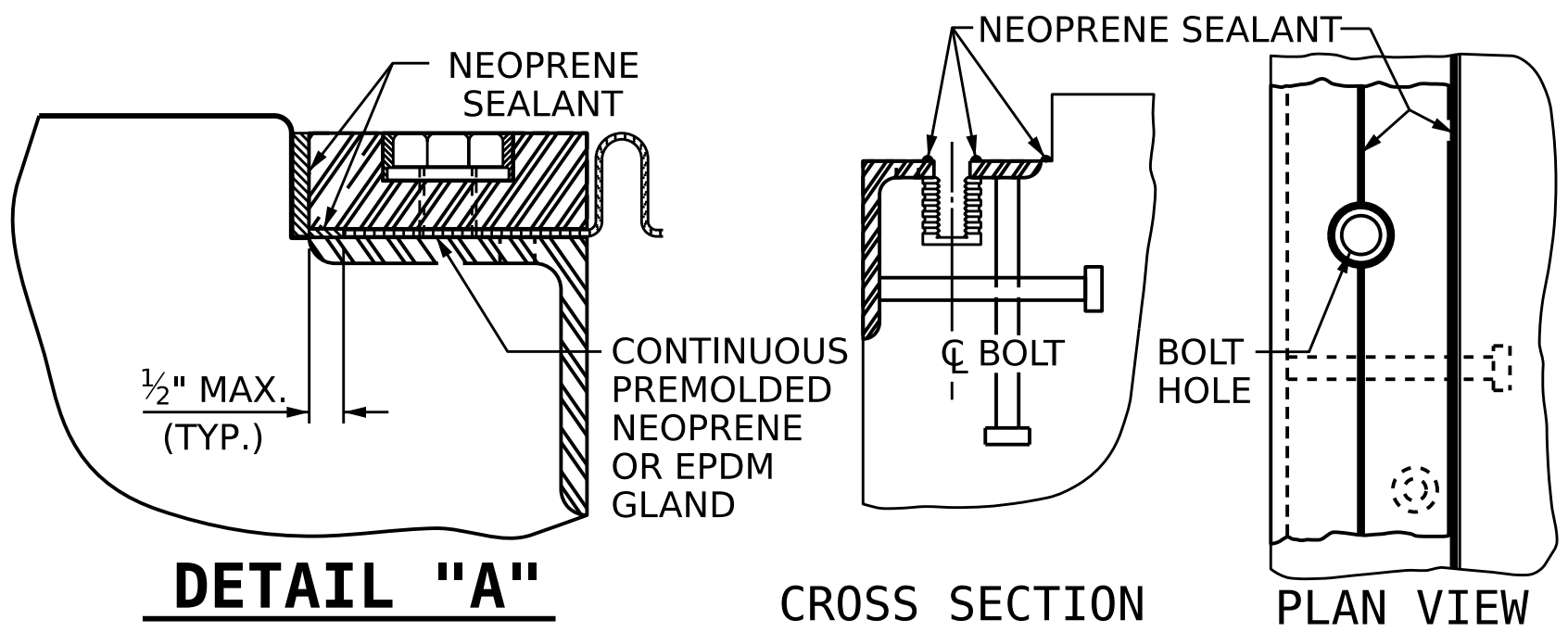
ASSEMBLED BY : T. NEAL DATE : 11/2023



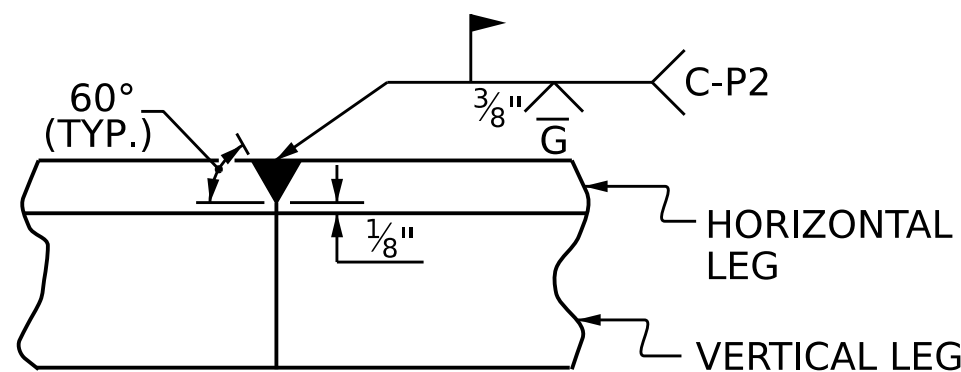
EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.



INSTALLATION SKETCH

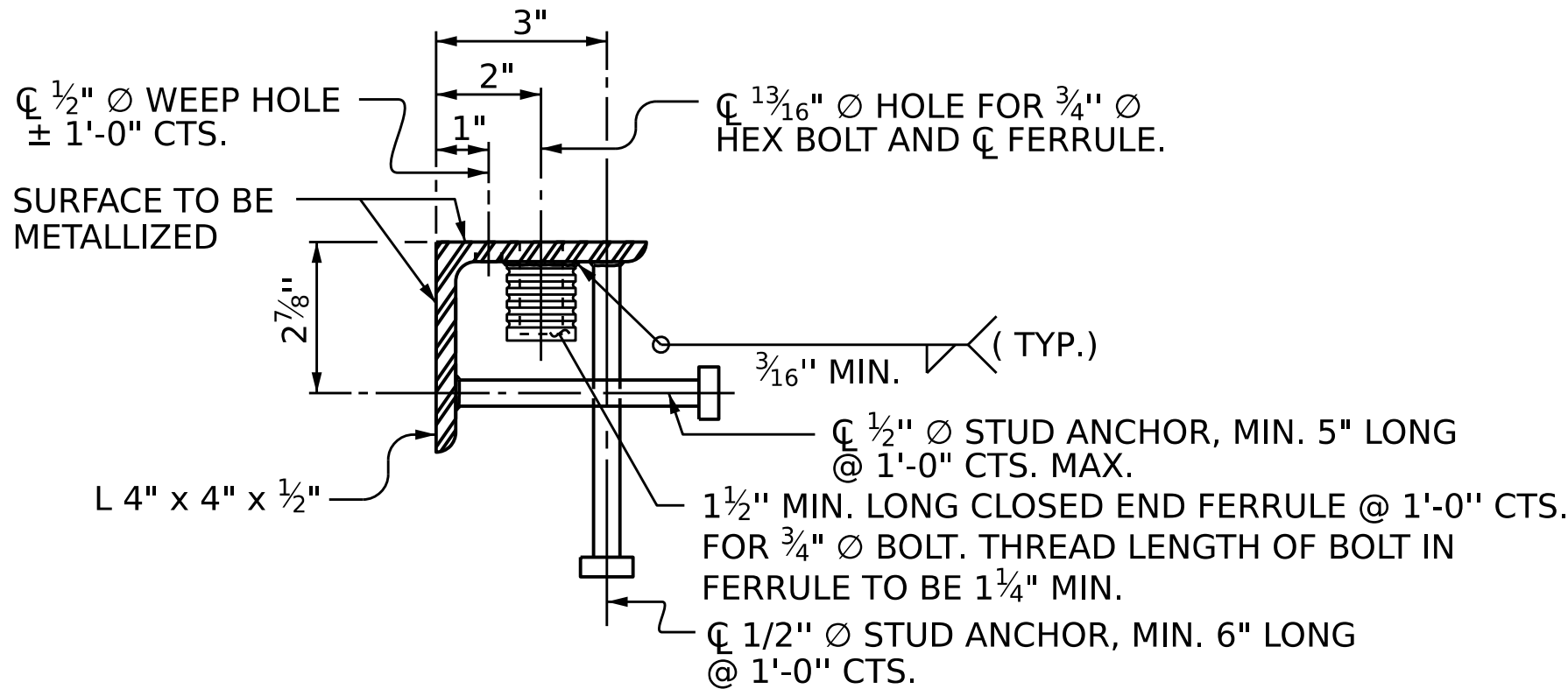


DETAIL- FIELD WELD SPLICE OF BASE ANGLE

INSTALLATION PROCEDURE :

1. A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE $4\frac{1}{8}$ " TO $4\frac{1}{4}$ " WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE $\frac{3}{4}$ " $\varnothing$ HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 1" $\varnothing$ HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 4" X 4" X $\frac{1}{2}$ " BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
2. AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE. THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
3. LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED $\frac{7}{8}$ " IN DIAMETER WITH A HAND PUNCH.
4. IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
5. AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.
6. AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES, THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE, AND THE LIFTING HOLES IN THE HOLD-DOWN PLATE, AND COMPLETELY FILL THE RECESSES AND LIFTING HOLES WITH NEOPRENE SEALANT.

MOVEMENT AND SETTING AT JOINT					
LOCATION	SKEW ANGLE	TOTAL MOVEMENT (ALONG $\varnothing$ RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	69°06'01"	-	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "	$1\frac{1}{2}$ "
END BENT 2	73°25'13"	$1\frac{1}{16}$ "	2"	$1\frac{1}{8}$ "	$1\frac{3}{8}$ "



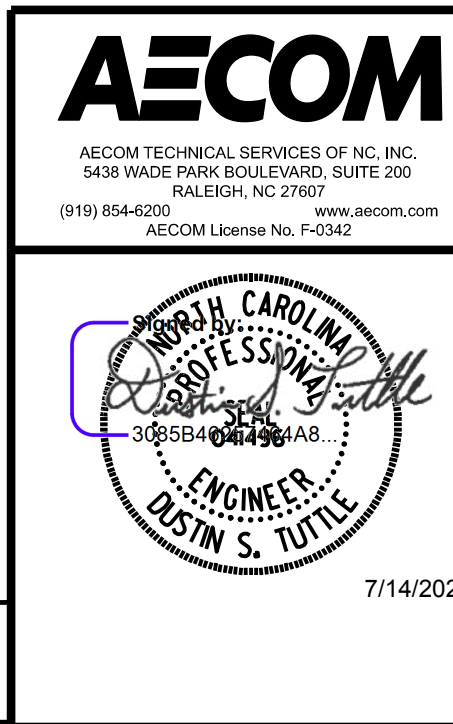
TYPICAL SECTION OF BASE ANGLE ASSEMBLY

NOTES :

1. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
2. ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MINIMUM.
3. A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
4. CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
5. SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
6. UPON COMPLETION OF SHOP FABRICATION, THE HOLD-DOWN PLATE AND BASE ANGLE ASSEMBLY, AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
7. THE COVER PLATES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
8. BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
9. FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 20' LENGTHS UNLESS APPROVED BY THE ENGINEER.
10. NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
11. THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE $\frac{3}{4}$ " $\varnothing$ BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
12. THE FABRICATOR SHALL PROVIDE $\frac{1}{2}$ " $\varnothing$ THREADED HOLES IN THE HOLD-DOWN PLATES TO ASSIST IN LIFTING AND PLACING. THE HOLES SHALL BE $\frac{3}{4}$ " DEEP AT 6'-0" MAXIMUM SPACING AND A MINIMUM OF TWO HOLES PER PLATE.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

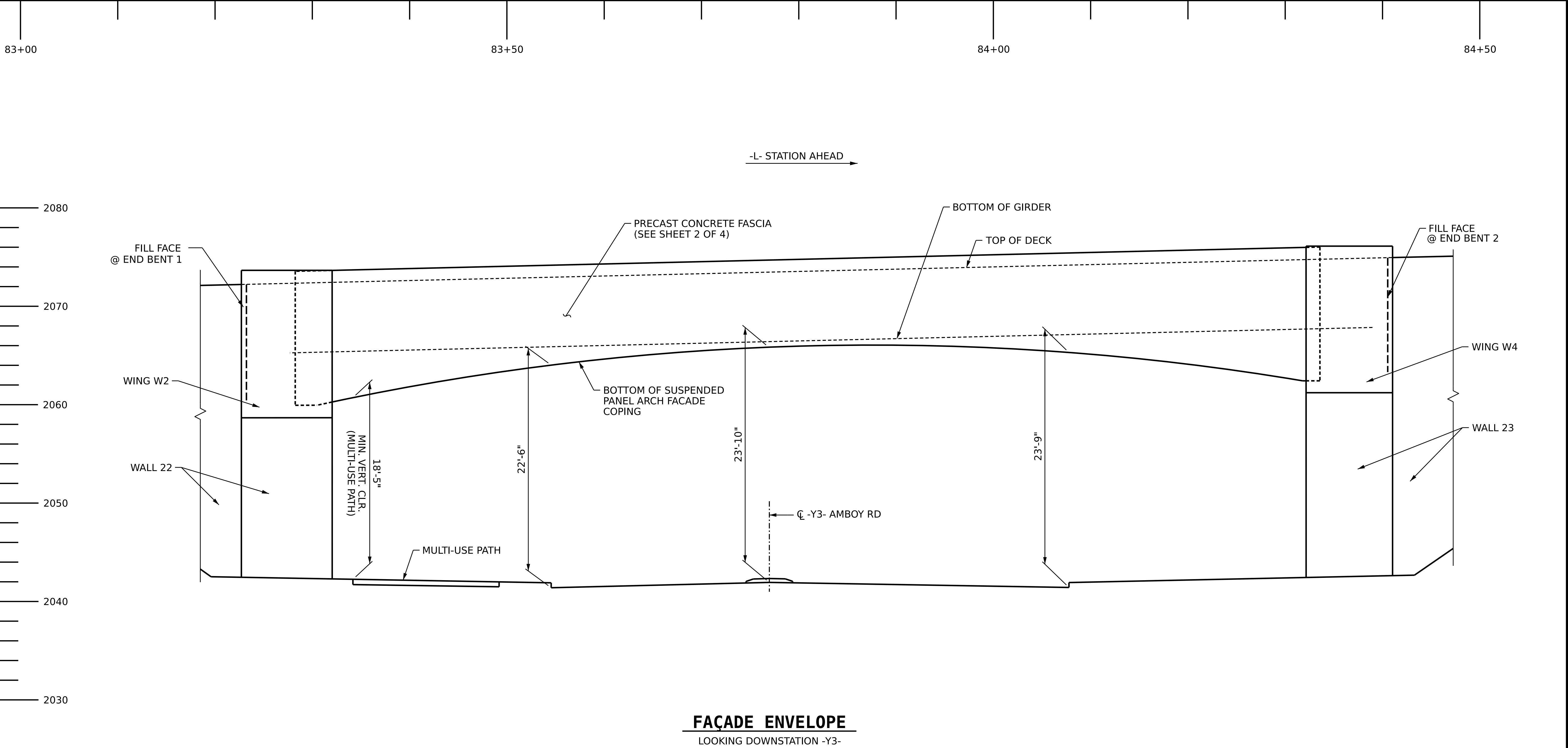
EXPANSION JOINT
SEAL DETAILS

(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-18
1			3			TOTAL SHEETS 39
2			4			

ASSEMBLED BY : T. NEAL	DATE : 7/2023
CHECKED BY : D. TUTTLE	DATE : 10/2023
DRAWN BY : REK 9/87	REV. 10/17/11 MAA/GM
CHECKED BY : CRK 10/87	REV. 10/17 MAA/THC
	REV. 6/18 MAA/THC

DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED



PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 4

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7/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**PRECAST CONCRETE FASCIA
ENVELOPE
(RIGHT LANE)**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-20
1			3			TOTAL SHEETS
2			4			39

DRAWN BY :	M. CATER	DATE :	03/2026
CHECKED BY :	D. TUTTLE	DATE :	03/2026
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

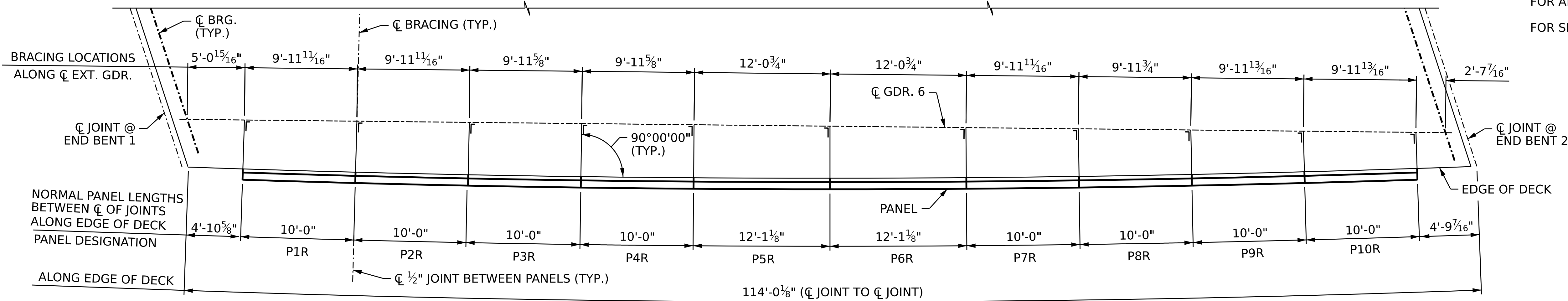
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SIGNATURES COMPLETED

NOTES:

FOR PRECAST CONCRETE FASCIA, SEE SPECIAL PROVISIONS.

FOR ANCHOR BOLT SPACING, SEE SHEET 4 OF 4.

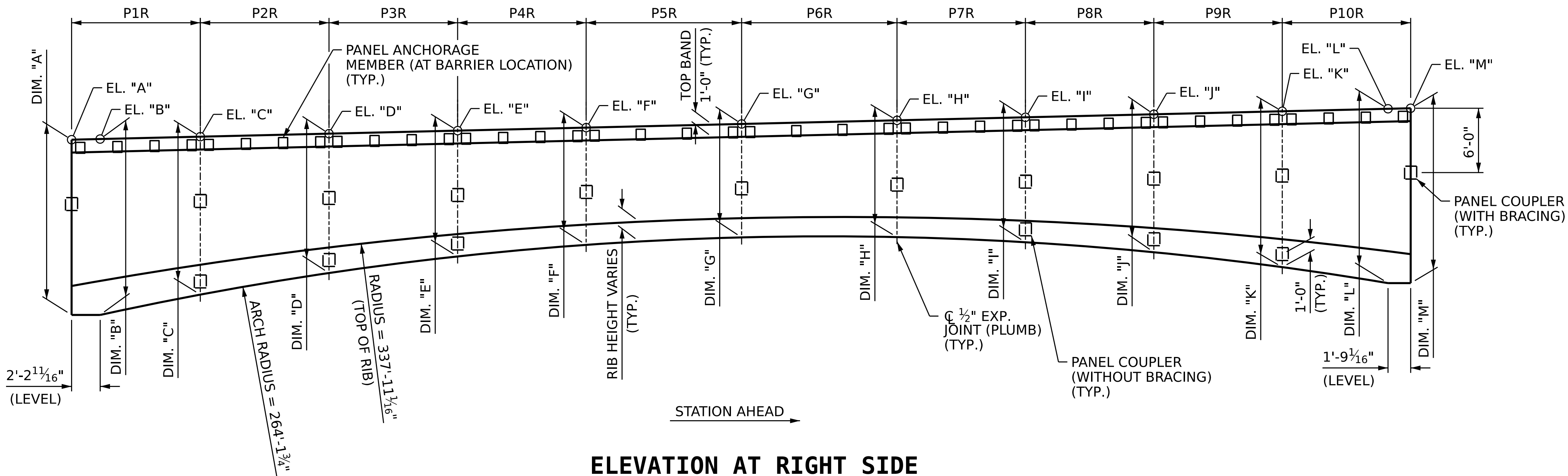
FOR SECTIONS AND DETAILS, SEE SHEETS 3 AND 4 OF 4.



PLAN AT RIGHT SIDE

ALL DIMENSIONS ARE MEASURED ALONG THE OUTSIDE EDGE OF DECK EXCEPT AS NOTED.
PANEL LENGTHS ARE CHORDS, MEASURED FROM ϕ JOINT TO ϕ JOINT.

PAY ITEM "PRECAST CONCRETE FASCIA" = LUMP SUM



ELEVATION AT RIGHT SIDE

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 2 OF 4

LOCATION	TOP OF PANEL ELEVATIONS												
	EL "A"	EL "B"	EL "C"	EL "D"	EL "E"	EL "F"	EL "G"	EL "H"	EL "I"	EL "J"	EL "K"	EL "L"	EL "M"
P1R - P10R	2073.56	2073.61	2073.78	2074.01	2074.23	2074.46	2074.73	2075.00	2075.23	2075.45	2075.68	2075.86	2075.90

LOCATION	PANEL VERTICAL DIMENSIONS												
	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	DIM. "E"	DIM. "F"	DIM. "G"	DIM. "H"	DIM. "I"	DIM. "J"	DIM. "K"	DIM. "L"	DIM. "M"
P1R - P10R	13'-7 $\frac{1}{16}$ "	13'-8 $\frac{1}{16}$ "	12'-3 $\frac{3}{4}$ "	10'-9 $\frac{15}{16}$ "	9'-9 $\frac{3}{8}$ "	9'-1 $\frac{3}{8}$ "	8'-9 $\frac{13}{16}$ "	9'-0 $\frac{15}{16}$ "	9'-8 $\frac{1}{2}$ "	10'-8 $\frac{5}{8}$ "	12'-1 $\frac{3}{8}$ "	13'-6 $\frac{5}{8}$ "	13'-7 $\frac{1}{8}$ "
RIB HEIGHT	2'-3"	2'-7 $\frac{11}{16}$ "	2'-3 $\frac{13}{16}$ "	1'-11 $\frac{13}{16}$ "	1'-8 $\frac{7}{8}$ "	1'-6 $\frac{15}{16}$ "	1'-6"	1'-6 $\frac{1}{2}$ "	1'-8"	1'-10 $\frac{1}{2}$ "	2'-2"	2'-5 $\frac{3}{4}$ "	2'-3"

DIMENSIONS AND ELEVATIONS ARE TAKEN AT THE ϕ OF THE $\frac{1}{2}$ " EXPANSION JOINTS BETWEEN PANELS.

DRAWN BY : T. NEAL / M. CATER DATE : 03/2026
CHECKED BY : D. TUTTLE DATE : 03/2026
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

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7/14/2026

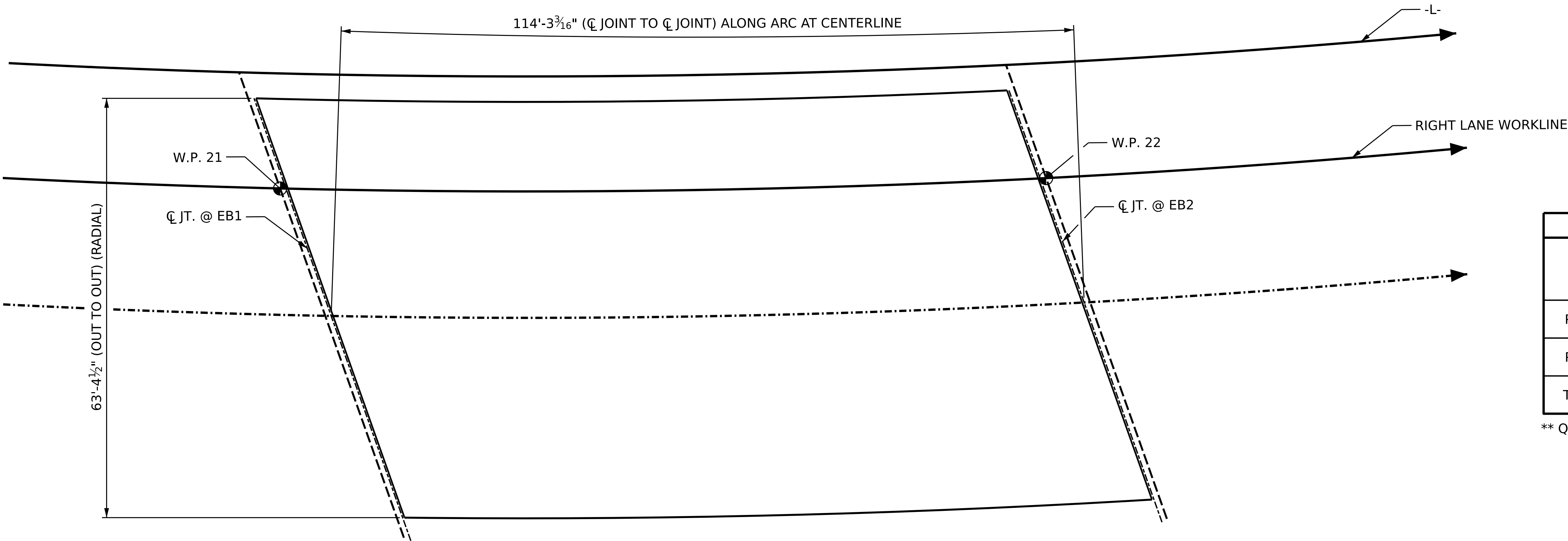
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PRECAST CONCRETE FASCIA
PANEL LAYOUT
(RIGHT LANE)

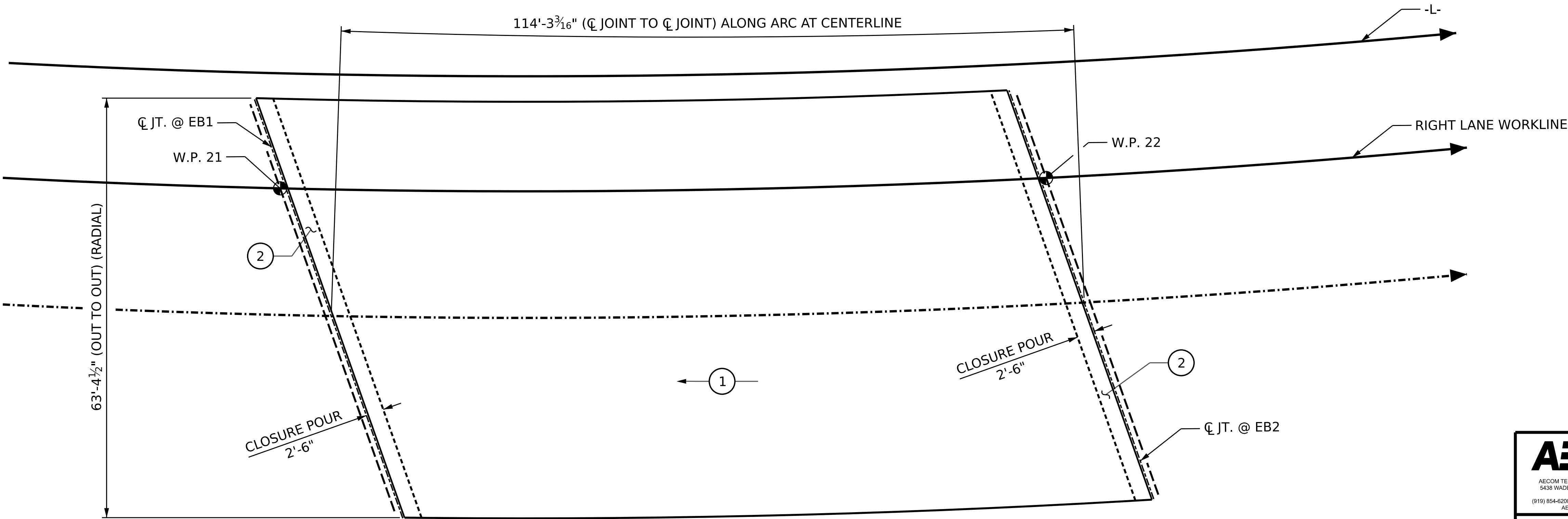
REVISIONS						SHEET NO. S8-21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			

+

+



**LAYOUT FOR COMPUTING AREA OF
REINFORCED CONCRETE DECK SLAB**
(SQ. FT. = 7,233)



POURING SEQUENCE - PLAN

(POUR #2 CANNOT BE STARTED UNTIL ADJACENT POUR LABELED POUR
#1 REACHES A MINIMUM OF 3000 PSI.)

① → INDICATES POUR DIRECTION AND NUMBER

DRAWN BY :	L. LEE	DATE :	01/2024
CHECKED BY :	D. TUTTLE	DATE :	01/2024
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SUPERSTRUCTURE BILL OF MATERIAL	
SPAN A	(CU. YDS.)
POUR #1	233.9
POUR #2	20.0
TOTALS**	253.9

** QUANTITES FOR BARRIER RAILS ARE NOT INCLUDED

GROOVING BRIDGE FLOORS	
APPROACH SLABS	4,055 SQ. FT.
BRIDGE DECK	6,494 SQ. FT.
TOTAL	10,548 SQ. FT.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 2

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RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

(RIGHT LANE)

REVISIONS						SHEET NO. S8-24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			

REINFORCING BAR SCHEDULE																	
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	348	5	STR	32'-10"	11,917	A221	1	5	STR	33'-9"	35	A409	1	5	STR	48'-7"	51
A2	348	5	STR	32'-10"	11,917	A222	1	5	STR	32'-4"	34	A410	1	5	STR	46'-10"	49
						A223	1	5	STR	30'-11"	32	A411	1	5	STR	45'-1"	47
*A101	2	5	STR	32'-2"	67	A224	1	5	STR	29'-6"	31	A412	1	5	STR	43'-4"	45
*A102	2	5	STR	31'-6"	66	A225	1	5	STR	28'-2"	29	A413	1	5	STR	41'-6"	43
*A103	1	5	STR	58'-9"	61	A226	1	5	STR	26'-9"	28	A414	1	5	STR	39'-9"	41
*A104	1	5	STR	57'-4"	60	A227	1	5	STR	25'-4"	26	A415	1	5	STR	38'-0"	40
*A105	1	5	STR	55'-10"	58	A228	1	5	STR	23'-11"	25	A416	1	5	STR	36'-2"	38
*A106	1	5	STR	54'-5"	57	A229	1	5	STR	22'-6"	23	A417	1	5	STR	34'-5"	36
*A107	1	5	STR	52'-11"	55	A230	1	5	STR	21'-2"	22	A418	1	5	STR	32'-7"	34
*A108	1	5	STR	51'-6"	54	A231	1	5	STR	19'-9"	21	A419	1	5	STR	30'-10"	32
*A109	1	5	STR	50'-0"	52	A232	1	5	STR	18'-4"	19	A420	1	5	STR	29'-0"	30
*A110	1	5	STR	48'-7"	51	A233	1	5	STR	17'-0"	18	A421	1	5	STR	27'-2"	28
*A111	1	5	STR	47'-2"	49	A234	1	5	STR	15'-7"	16	A422	1	5	STR	25'-5"	27
*A112	1	5	STR	45'-8"	48	A235	1	5	STR	14'-3"	15	A423	1	5	STR	23'-7"	25
*A113	1	5	STR	44'-3"	46	A236	1	5	STR	12'-10"	13	A424	1	5	STR	21'-9"	23
*A114	1	5	STR	42'-10"	45	A237	1	5	STR	11'-5"	12	A425	1	5	STR	19'-11"	21
*A115	1	5	STR	41'-4"	43	A238	1	5	STR	10'-1"	11	A426	1	5	STR	18'-1"	19
*A116	1	5	STR	39'-11"	42	A239	1	5	STR	8'-9"	9	A427	1	5	STR	16'-3"	17
*A117	1	5	STR	38'-6"	40	A240	1	5	STR	7'-4"	8	A428	1	5	STR	14'-5"	15
*A118	1	5	STR	37'-1"	39	A241	1	5	STR	6'-0"	6	A429	1	5	STR	12'-7"	13
*A119	1	5	STR	35'-8"	37	A242	1	5	STR	4'-7"	5	A430	1	5	STR	10'-9"	11
*A120	1	5	STR	34'-3"	36	A243	1	5	STR	3'-3"	3	A431	1	5	STR	8'-11"	9
*A121	1	5	STR	32'-10"	34							A432	1	5	STR	7'-0"	7
*A122	1	5	STR	31'-5"	33	*A301	2	5	STR	32'-1"	67	A433	1	5	STR	5'-2"	5
*A123	1	5	STR	30'-0"	31	*A302	1	5	STR	59'-8"	62	A434	1	5	STR	3'-4"	3
*A124	1	5	STR	28'-7"	30	*A303	1	5	STR	57'-11"	60						
*A125	1	5	STR	27'-2"	28	*A304	1	5	STR	56'-2"	59	* B1	129	4	STR	39'-5"	3,397
*A126	1	5	STR	25'-9"	27	*A305	1	5	STR	54'-5"	57	B2	100	5	STR	58'-1"	6,058
*A127	1	5	STR	24'-5"	25	*A306	1	5	STR	52'-8"	55	B3	24	5	STR	39'-6"	989
*A128	1	5	STR	23'-0"	24	*A307	1	5	STR	50'-11"	53	B4	9	5	STR	39'-6"	371
*A129	1	5	STR	21'-7"	23	*A308	1	5	STR	49'-2"	51						
*A130	1	5	STR	20'-2"	21	*A309	1	5	STR	47'-5"	49	* K1	16	8	1	26'-10"	1,146
*A131	1	5	STR	18'-10"	20	*A310	1	5	STR	45'-8"	48	* K2	8	8	2	16'-4"	349
*A132	1	5	STR	17'-5"	18	*A311	1	5	STR	43'-11"	46	* K3	20	6	STR	10'-8"	320
*A133	1	5	STR	16'-0"	17	*A312	1	5	STR	42'-2"	44	* K4	10	6	STR	7'-6"	113
*A134	1	5	STR	14'-8"	15	*A313	1	5	STR	40'-4"	42	* K5	10	6	STR	8'-8"	130
*A135	1	5	STR	13'-3"	14	*A314	1	5	STR	38'-7"	40	* K6	10	6	STR	9'-8"	145
*A136	1	5	STR	11'-11"	12	*A315	1	5	STR	36'-10"	38	* K7	428	5	1	7'-6"	3,348
*A137	1	5	STR	10'-6"	11	*A316	1	5	STR	35'-0"	37	* K8	214	5	5	7'-10"	1,748
*A138	1	5	STR	9'-2"	10	*A317	1	5	STR	33'-3"	35	* K9	208	6	6	8'-11"	2,786
*A139	1	5	STR	7'-9"	8	*A318	1	5	STR	31'-5"	33						
*A140	1	5	STR	6'-5"	7	*A319	1	5	STR	29'-8"	31	* S1	80	5	3	6'-2"	515
*A141	1	5	STR	5'-1"	5	*A320	1	5	STR	27'-10"	29	* S2	40	5	5	3'-10"	160
*A142	1	5	STR	3'-8"	4	*A321	1	5	STR	26'-0"	27	* S3	80	4	4	4'-3"	227
*A143	1	5	STR	2'-4"	2	*A322	1	5	STR	24'-2"	25						
						*A323	1	5	STR	22'-5"	23	* G1	4	5	STR	35'-0"	146
A201	2	5	STR	32'-6"	68	*A324	1	5	STR	20'-7"	21	EXPANSION JOINT					
A202	2	5	STR	31'-9"	66	*A325	1	5	STR	18'-9"	20	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A203	1	5	STR	59'-9"	62	*A326	1	5	STR	16'-11"	18	* J1	126	4	7	1'-5"	119
A204	1	5	STR	58'-3"	61	*A327	1	5	STR	15'-1"	16						
A205	1	5	STR	56'-10"	59	*A328	1	5	STR	13'-3"	14						
A206	1	5	STR	55'-4"	58	*A329	1	5	STR	11'-5"	12						
A207	1	5	STR	53'-11"	56	*A330	1	5	STR	9'-7"	10						
A208	1	5	STR	52'-5"	55	*A331	1	5	STR	7'-8"	8						
A209	1	5	STR	51'-0"	53	*A332	1	5	STR	5'-10"	6						
A210	1	5	STR	49'-6"	52	*A333	1	5	STR	4'-0"	4						
A211	1	5	STR	48'-1"	50	*A334	1	5	STR	2'-1"	2						
A212	1	5	STR	46'-8"	49												
A213	1	5	STR	45'-2"	47	A401	2	5	STR	32'-5"	68						
A214	1	5	STR	43'-9"	46	A402	2	5	STR	31'-7"	66						
A215	1	5	STR	42'-4"	44	A403	1	5	STR	59'-1"	62						
A216	1	5	STR	40'-11"	43	A404	1	5	STR	57'-4"	60						
A217	1	5	STR	39'-6"	41	A405	1	5	STR	55'-7"	58						
A218	1	5	STR	38'-0"	40	A406	1	5	STR	53'-10"	56						
A219	1	5	STR	36'-7"	38	A407	1	5	STR	52'-1"	54						
A220	1	5	STR	35'-2"	37	A408	1	5	STR	50'-4"	52						
DRAWN BY : _____ M. CATER DATE : 03/2024																	
CHECKED BY : _____ D. TUTTLE DATE : 03/2024																	
DESIGN ENGINEER OF RECORD: _____ D. TUTTLE DATE : 03/2026																	
7/13/2026 C:\pwworking\oecom.ds21.na.2020\d0223857\408.049.I-2513AC.SMU.B0M2.S8-25.100899.dgn caterm																	

BAR TYPES

* EPOXY COATED REINFORCING STEEL29,133 LBS.

REINFORCING STEEL21,986 LBS.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MIN. SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	EPOXY COATED
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"	-	-	-
#8	4'-9"	3'-2"	-	-	-

PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

STATION: 83+50.80 -L-

SHEET 2 OF 2

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RALEIGH, NC 27607
(919) 854-6200
www.aecom.com
AECOM License No. F62842

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

BILL OF MATERIAL

(RIGHT LANE)

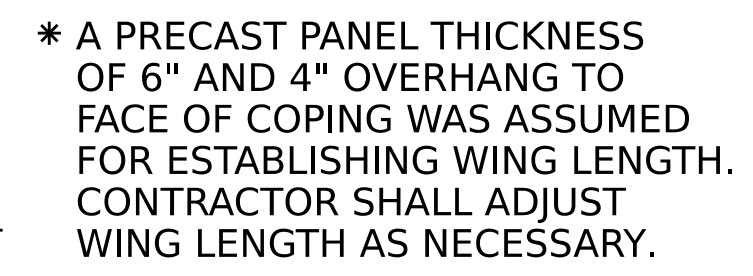
REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S8-25

TOTAL SHEETS
39

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



STIRRUPS AND "U" BARS IN CAP MAY BE
SHIFTED AS NECESSARY TO CLEAR ANCHORS.

BACKWALL SHALL BE PLACED BEFORE
APPLYING THE EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD, EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

FOR WING DETAILS, SEE SHEET 2 OF 4.

FOR SECTION A-A, B-B, OR C-C SEE SHEET 3
OF 4.

FOR DETAIL "A" SEE SHEET 3 OF 4.

FOR PILE SPLICE DETAILS SEE SHEET 3 OF 4.

FOR TEMPORARY DRAINAGE DETAILS,
SEE SHEET 3 OF 4.

FOR TOP OF PILE ELEVATIONS, SEE SHEET 2
OF 4.

THESE SHEETS SHALL BE USED IN
COORDINATION WITH MSE WALL PLANS.

THE PORTION OF BACKWALL IN POUR #2
ABOVE THE PERMITTED CONSTRUCTION
JOINT MAY BE POURED AFTER THE BARRIER
RAIL IS CAST IF SLIP FORMING IS USED.

THE EXPOSED SURFACE OF WINGWALL W2 AS SHOWN ON SHEET 2 SHALL BE COATED COLOR FS #33522. SEE SPECIAL PROVISIONS FOR APPLICATION OF BRIDGE COATING.

SHEET 1 OF 4



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RALEIGH, NC 27607

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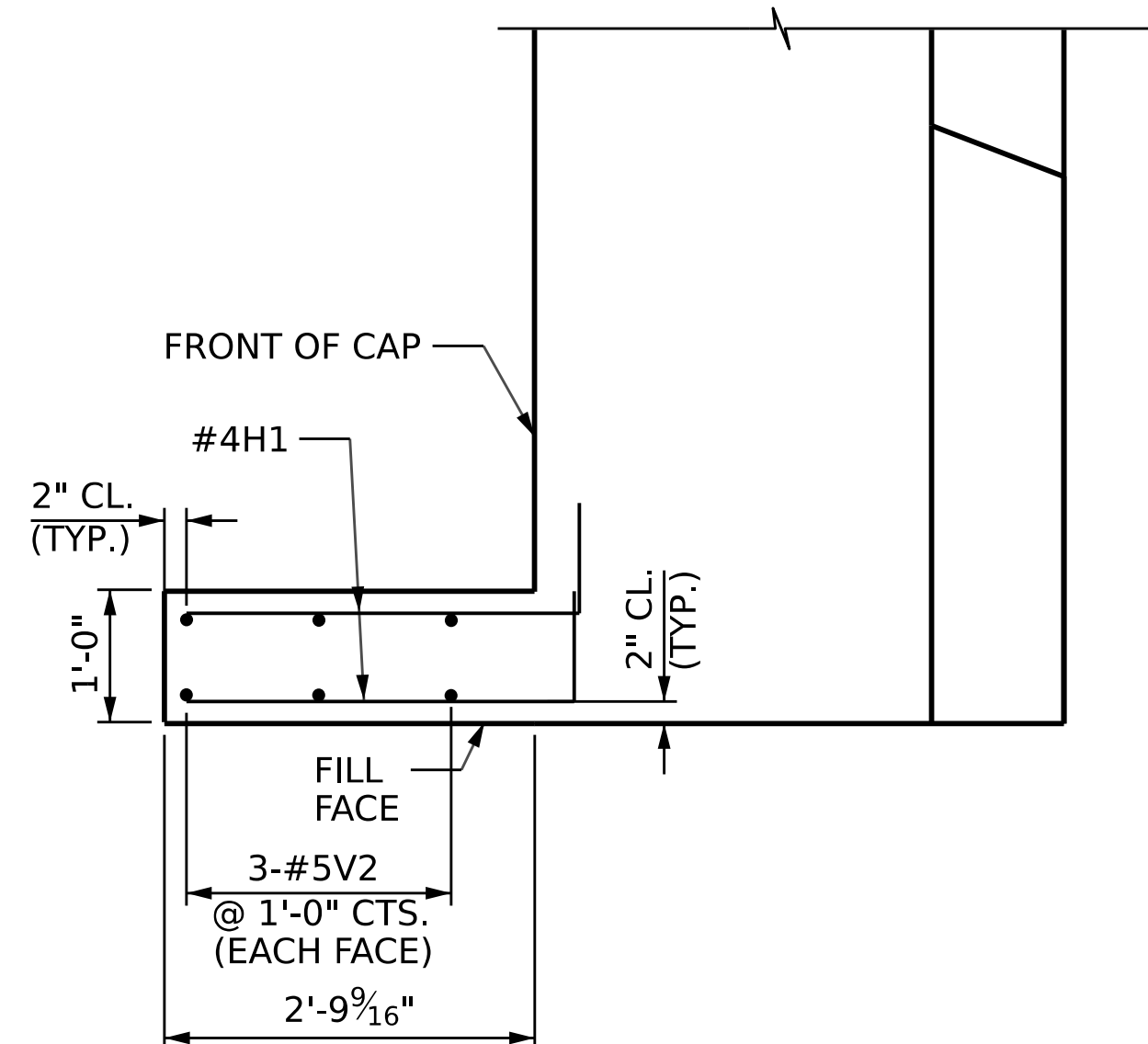
7/14/2026

**END BENT 1
(RIGHT LANE)**

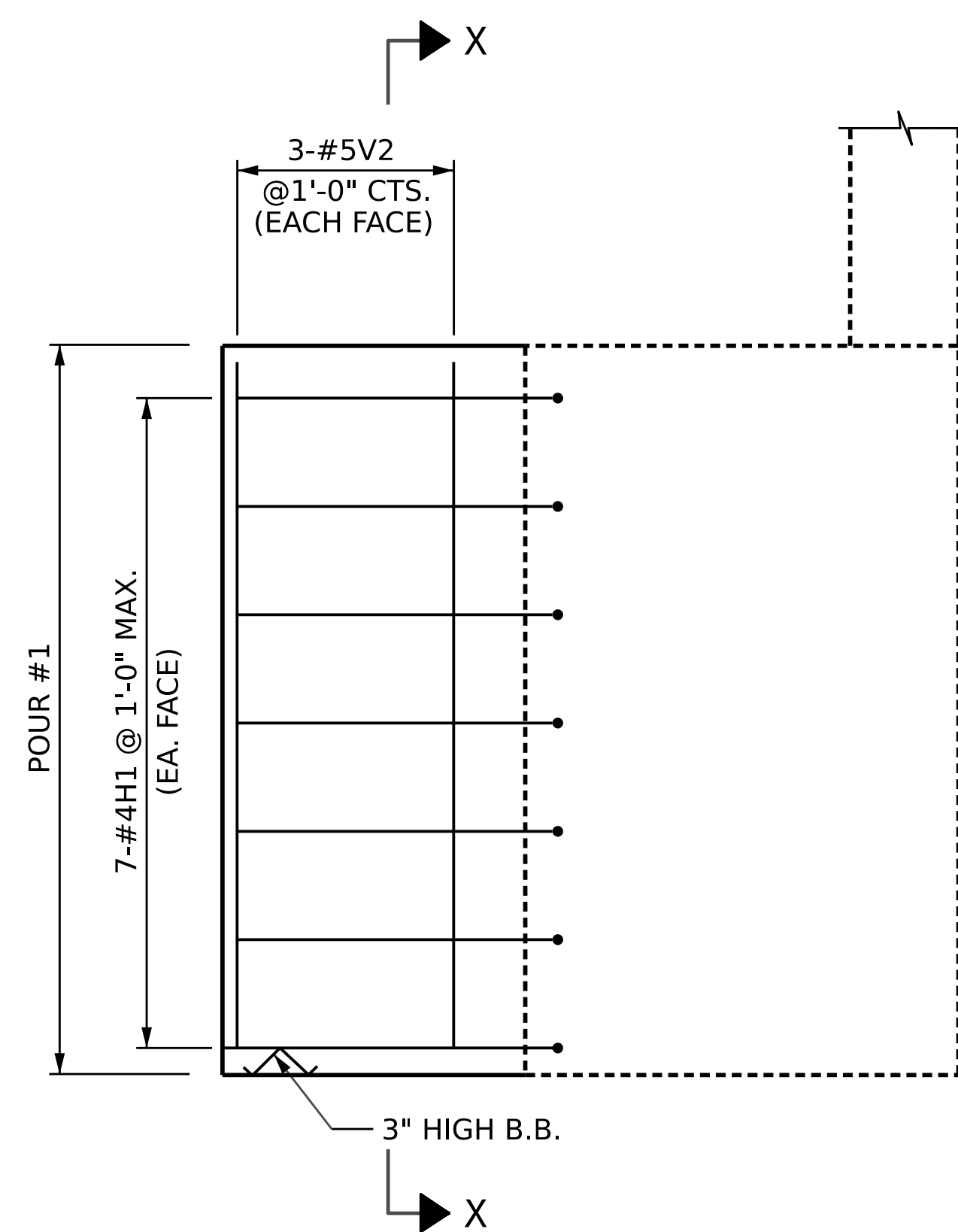
REVISIONS						SHEET NO. 58-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

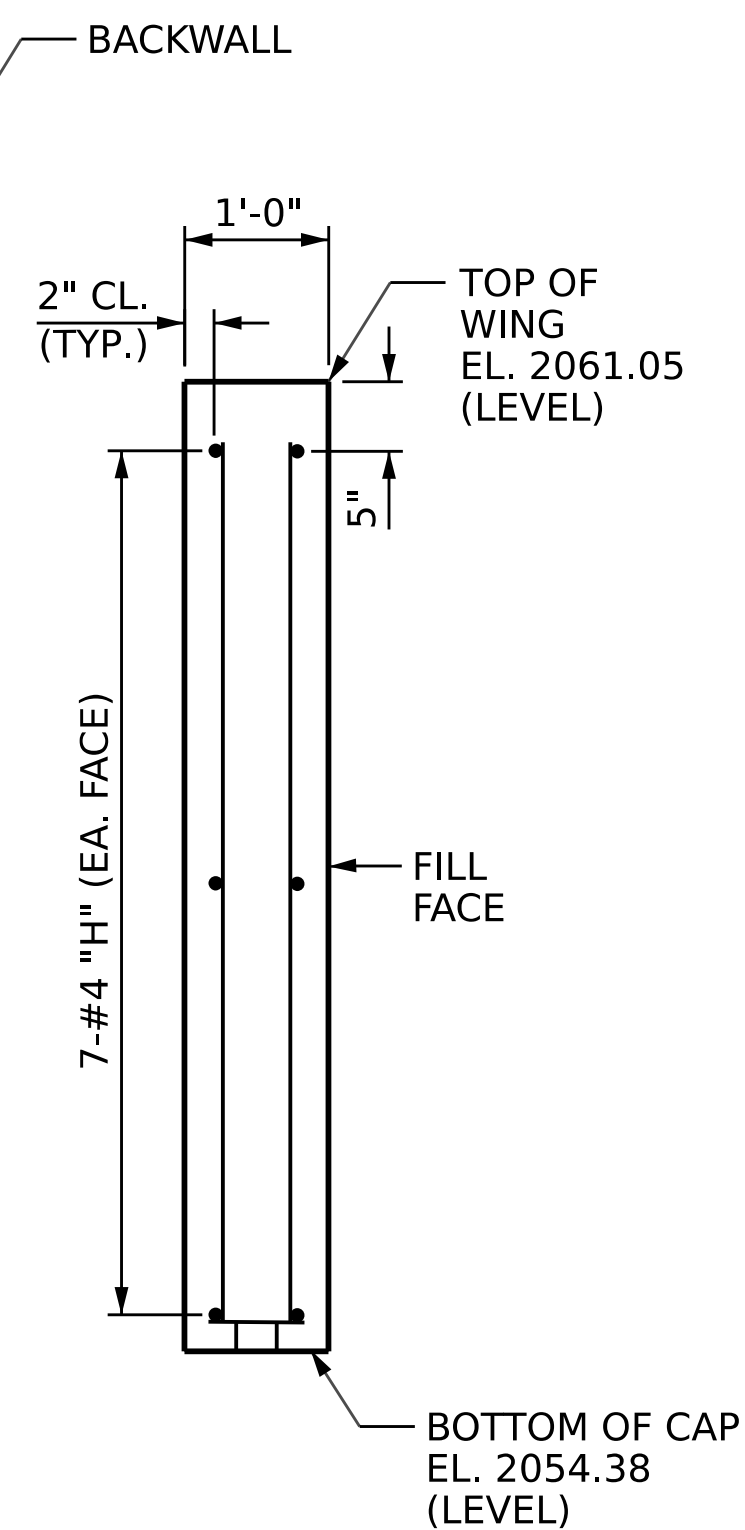
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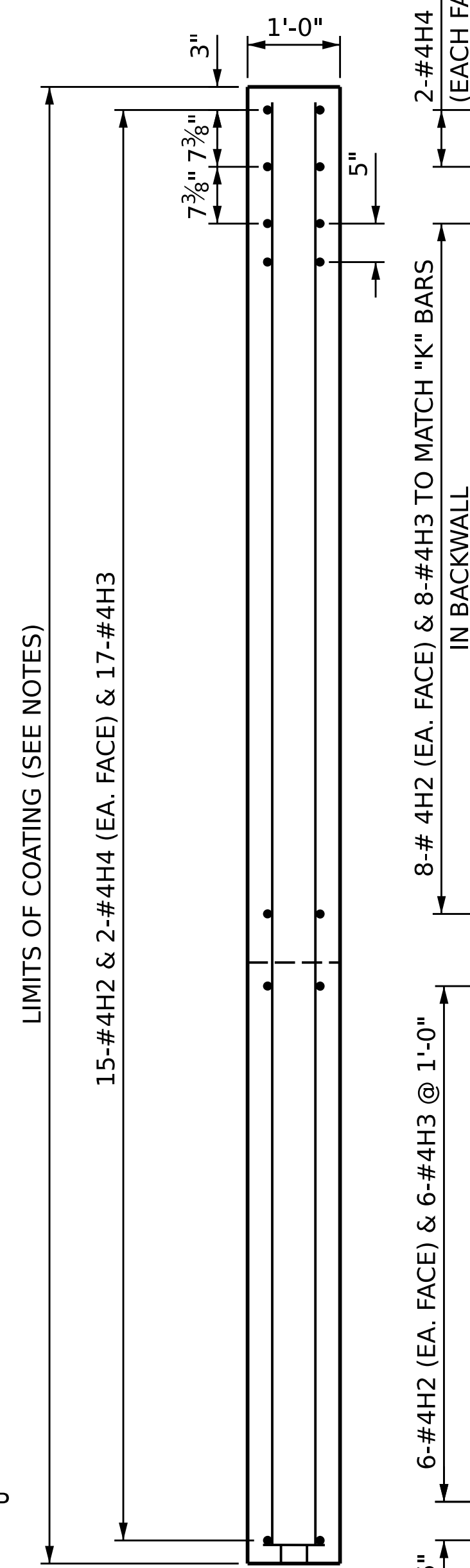
PLAN OF WING (W1)



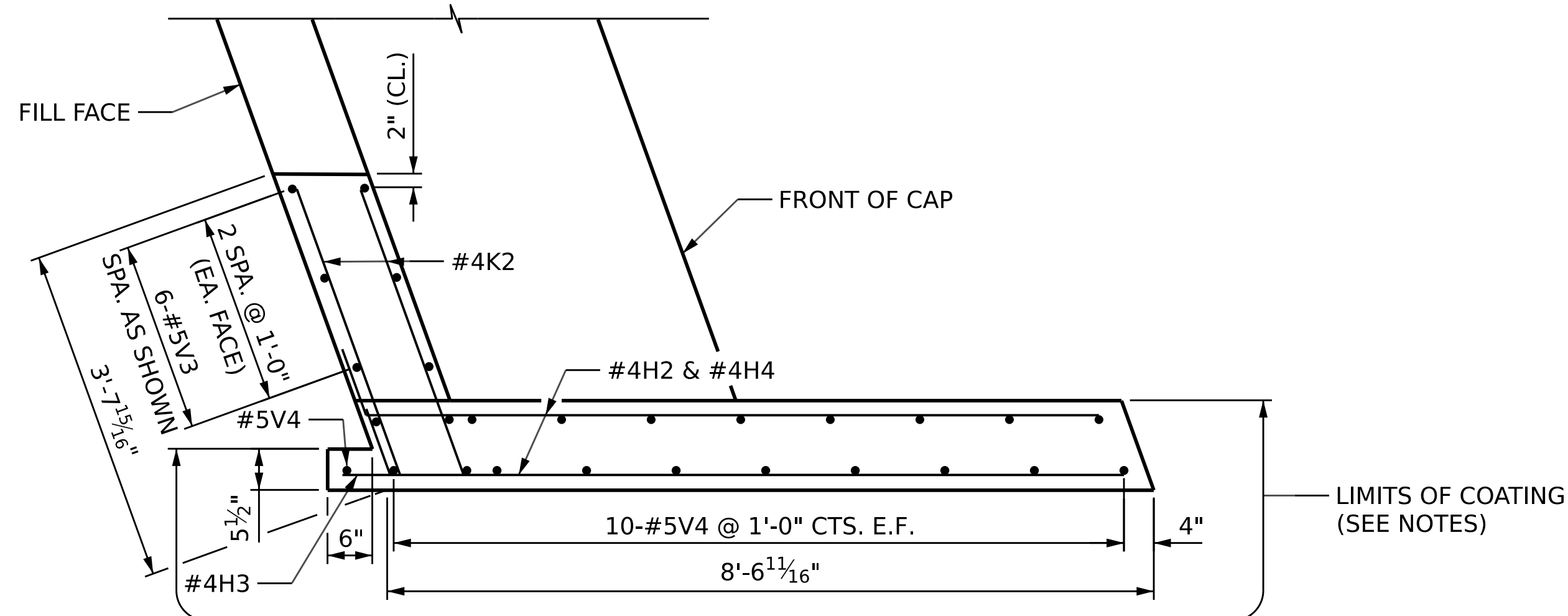
ELEVATION OF WING (W1)



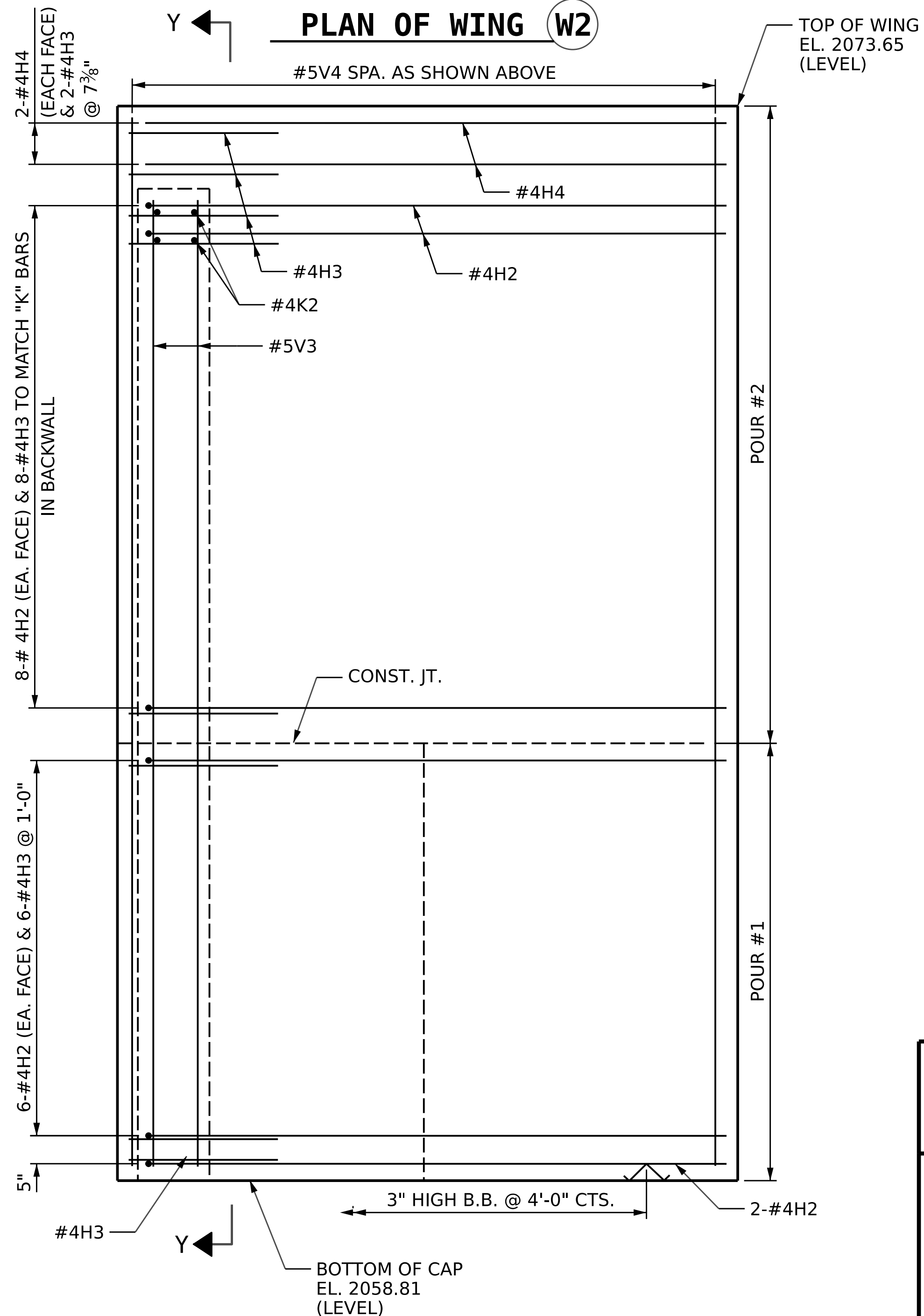
SECTION X-X



SECTION Y-Y

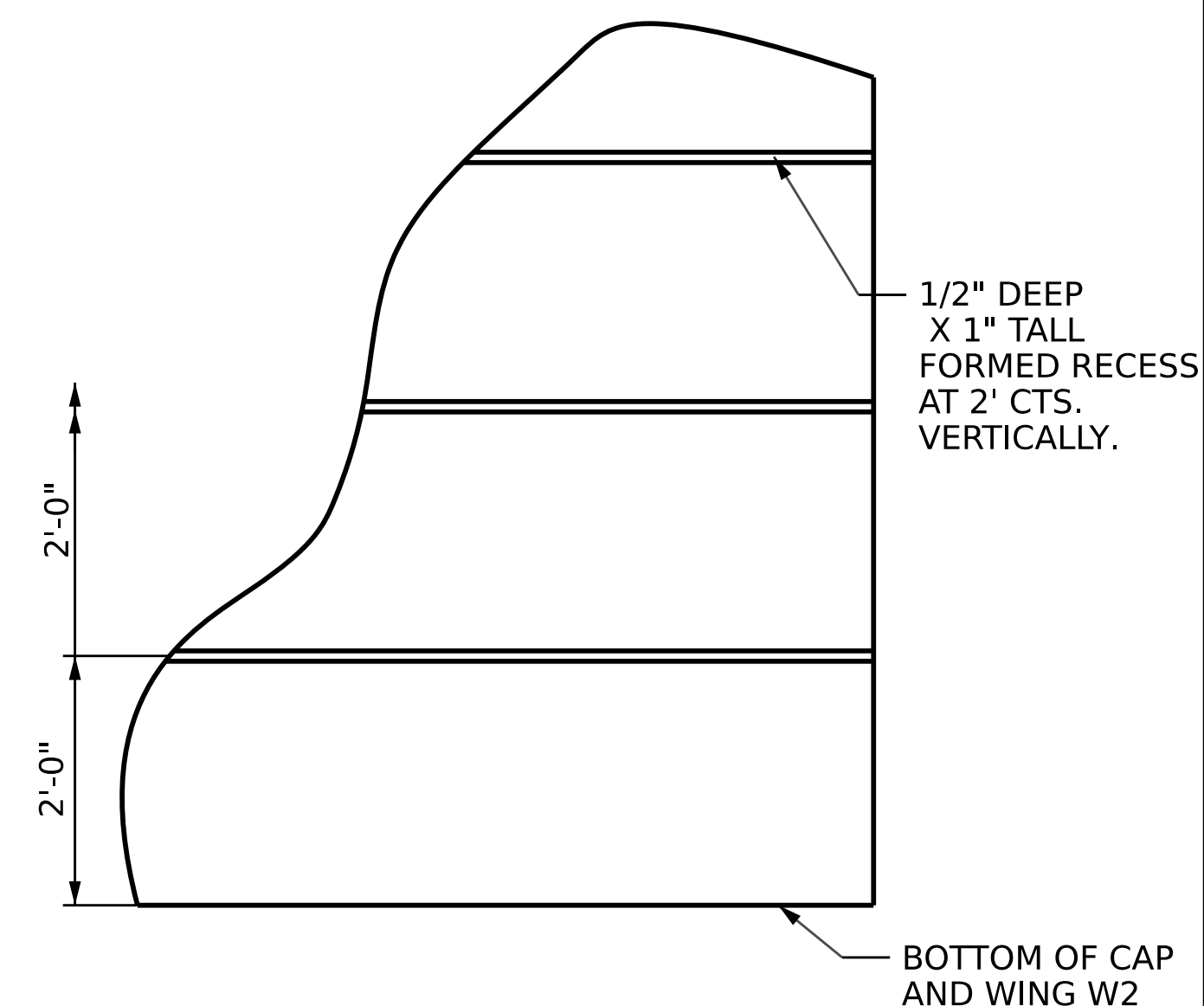


PLAN OF WING (W2)



ELEVATION OF WING (W2)

TOP OF PILE ELEVATION	
PILE NO.	PILE CUTOFF ELEV.
1	2056.57
2	2056.86
3	2057.15
4	2057.44
5	2057.74
6	2058.03
7	2058.32
8	2058.62
9	2058.91
10	2059.20
11	2059.50
12	2059.79
13	2060.08
14	2060.37
15	2060.67

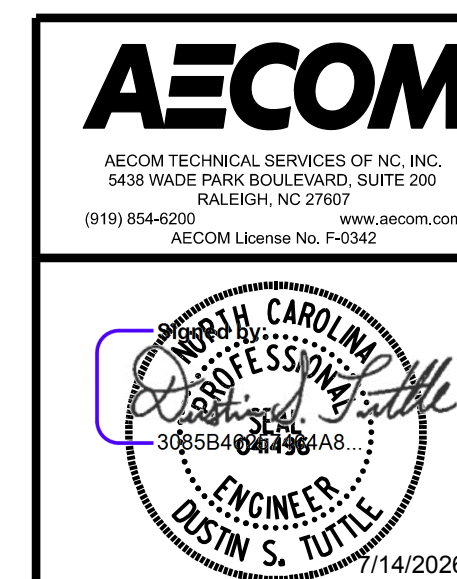


FORMED RECESS DETAIL

PROVIDE FORMED RECESS ON OUTSIDE AND END FACES OF WING W2.
THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF
CLASS A CONCRETE

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
 STATION: 83+50.80 -L-

SHEET 2 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

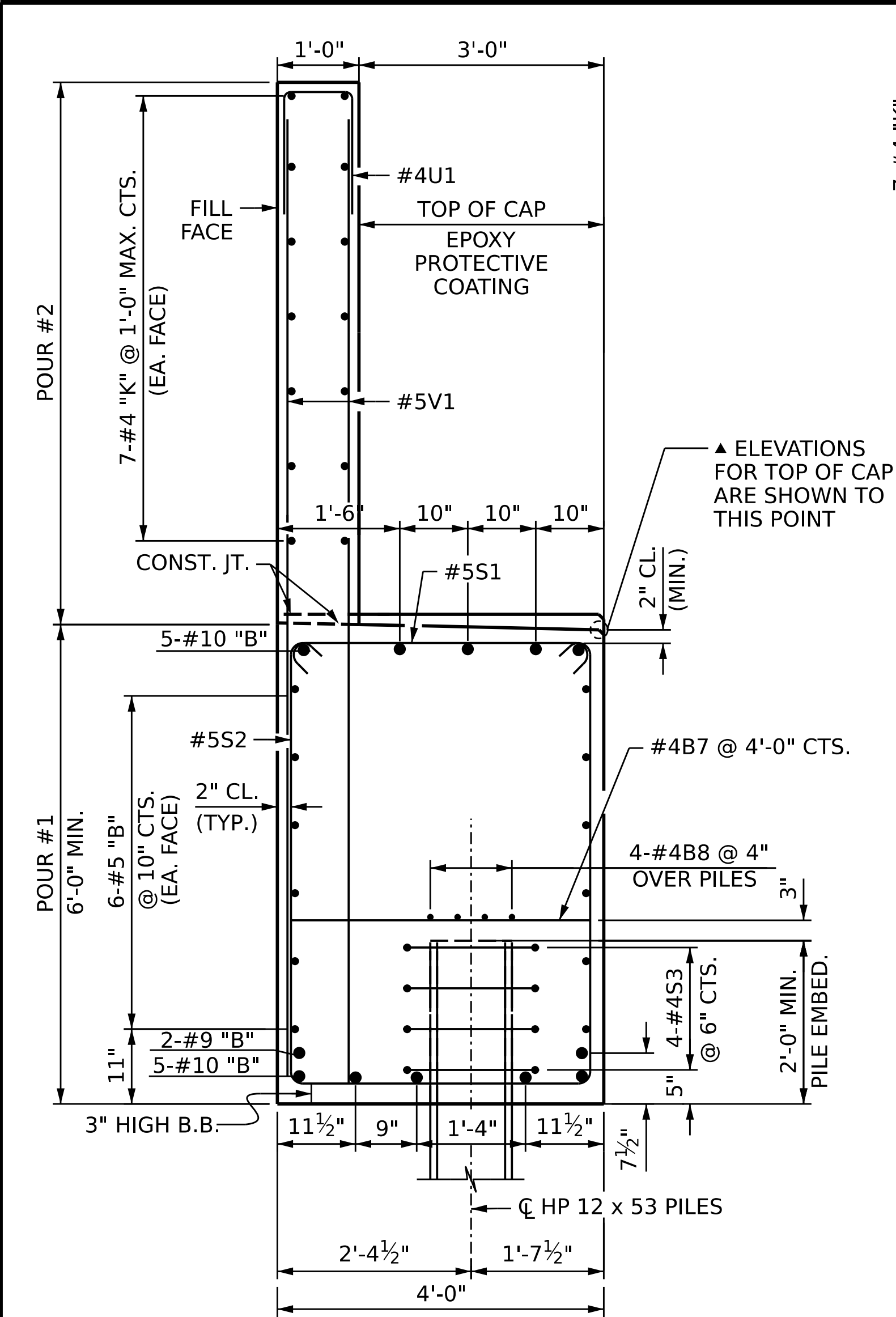
END BENT 1

WINGWALLS

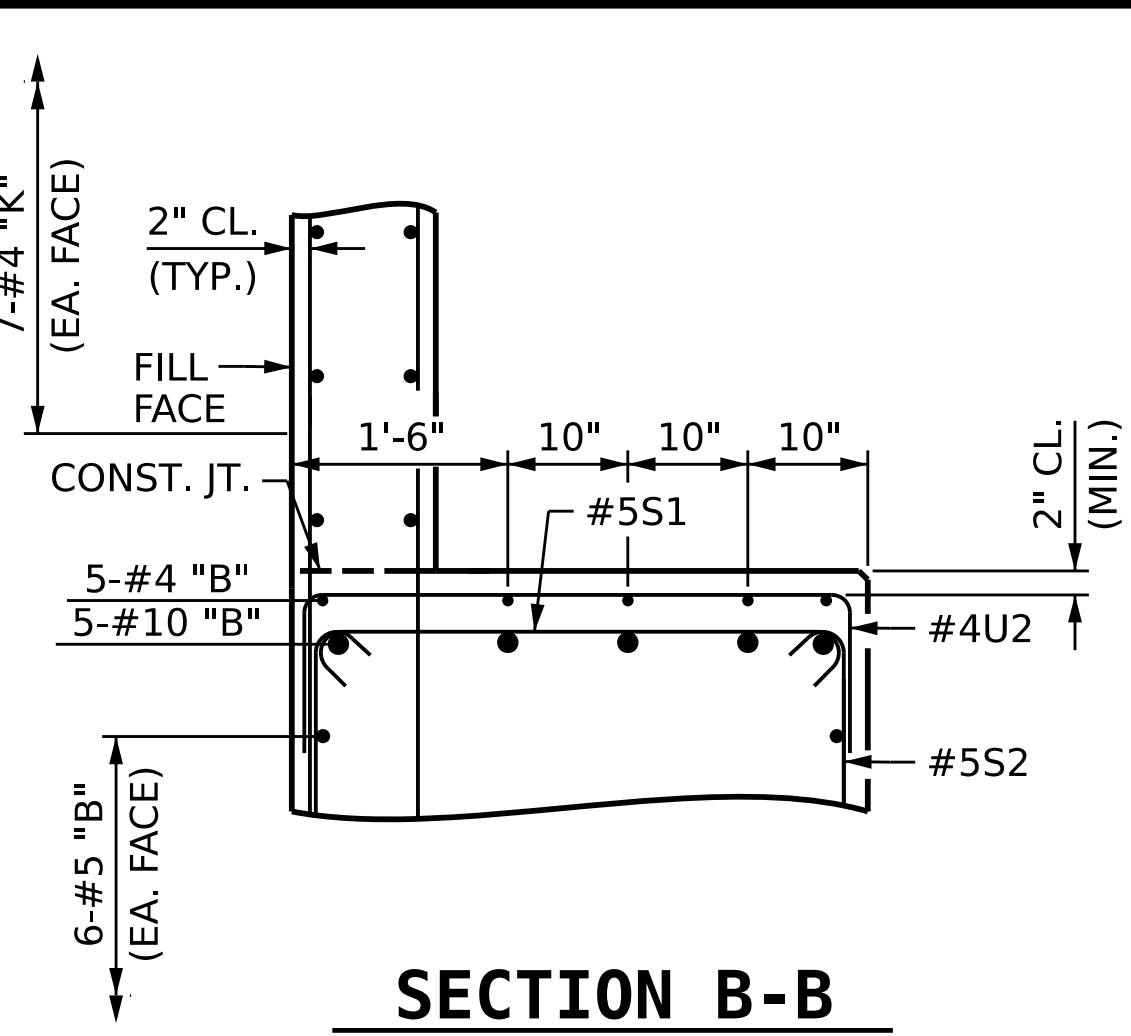
(RIGHT LANE)

REVISIONS						SHEET NO. S8-2 TOTAL SHEETS 39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

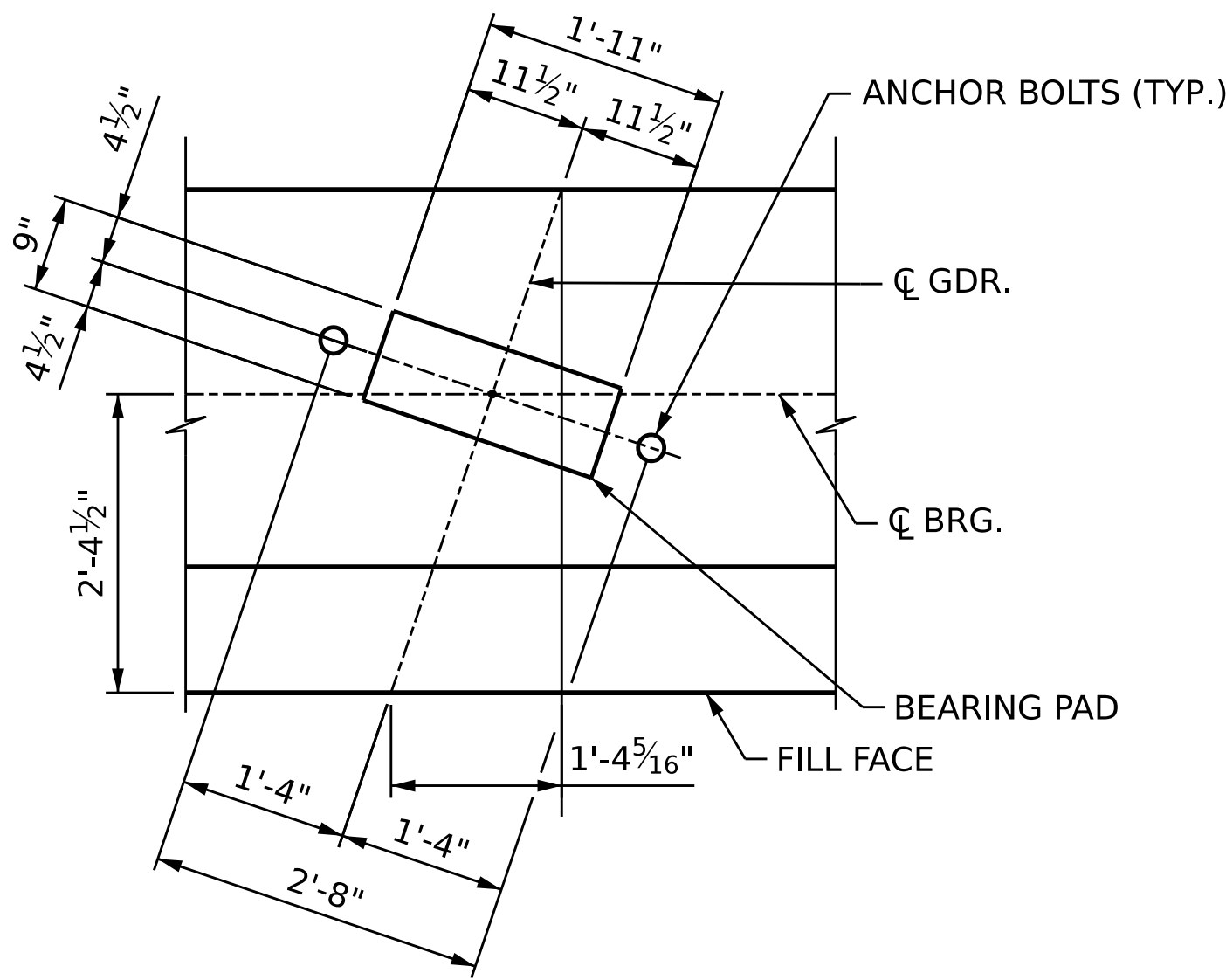
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



SECTION A-A



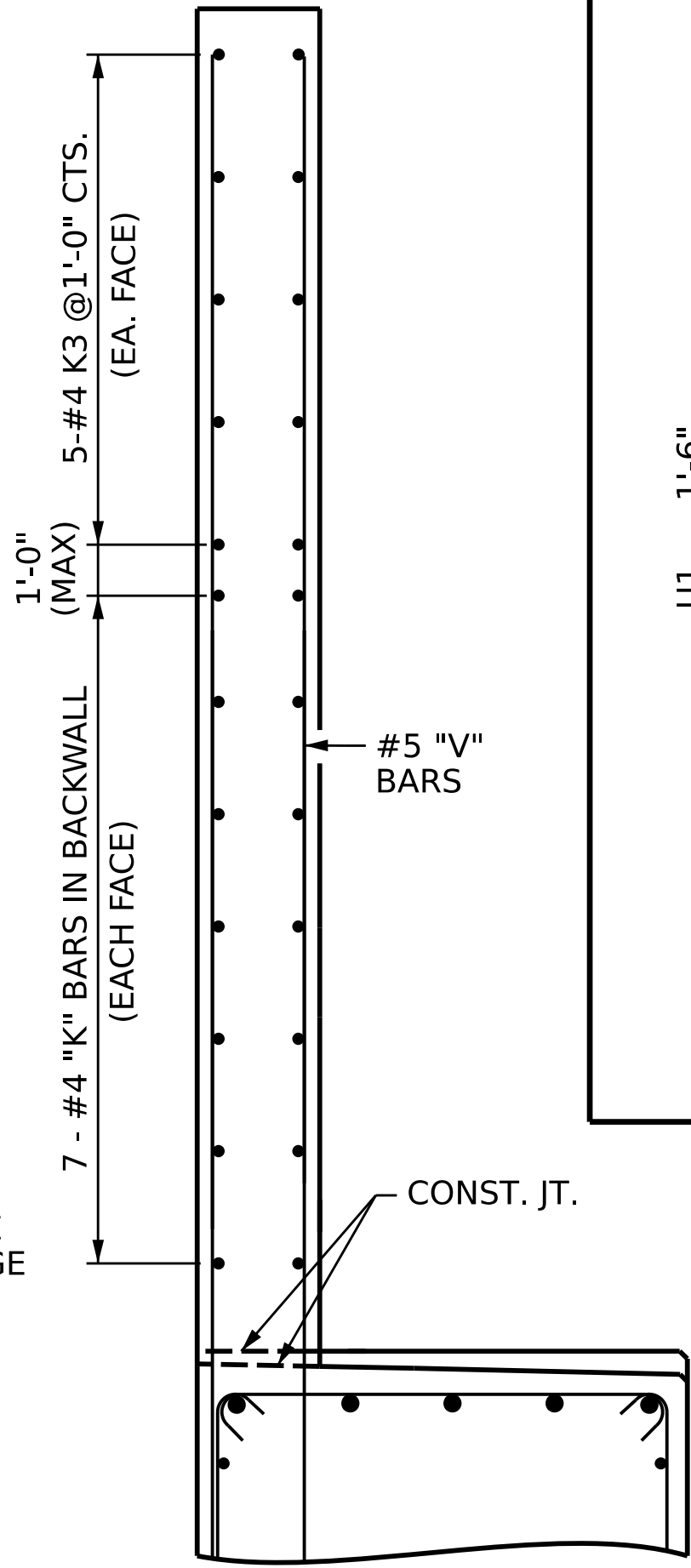
SECTION B-B



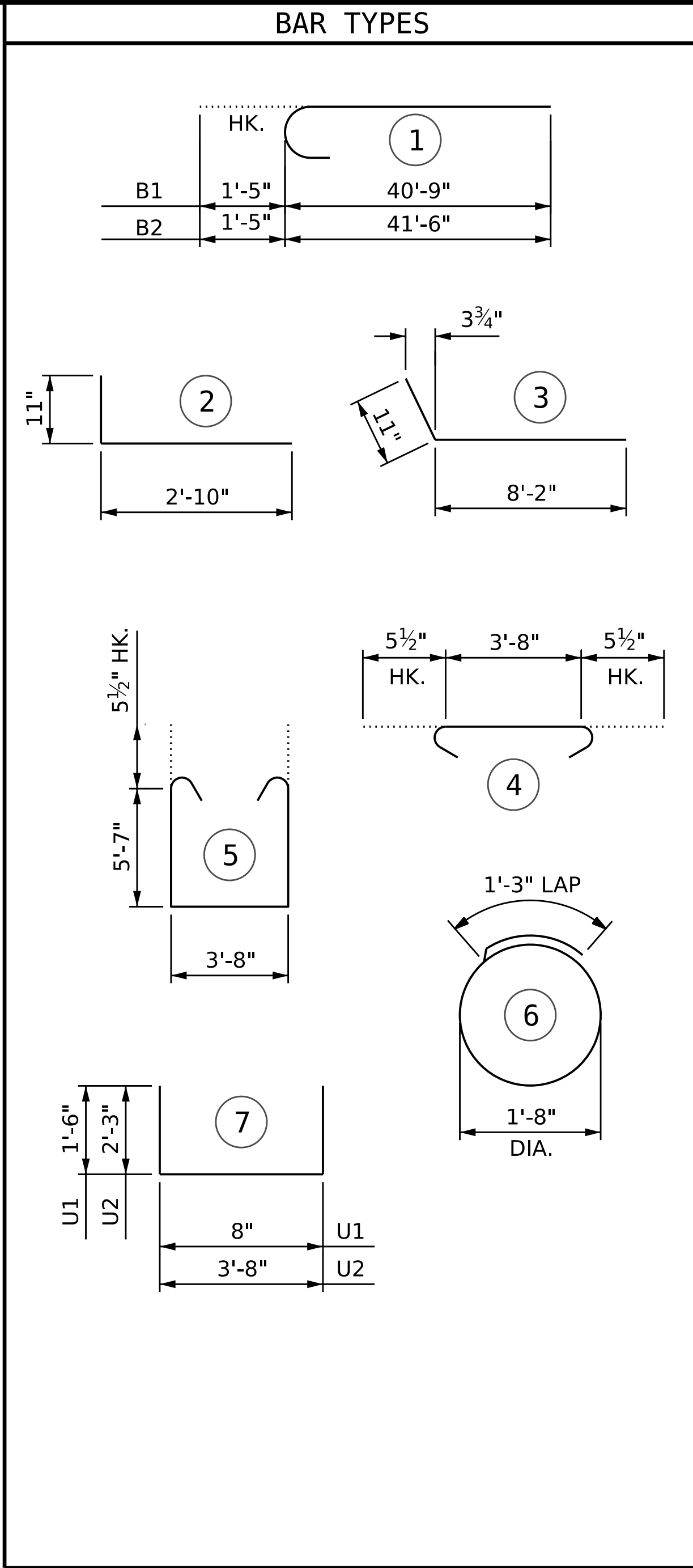
DETAIL A

STRAP FORCE
= 8.6 K/FT

STRAP FORCE



SECTION C-C



BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	10	1	42'-2"	1814
B2	10	10	1	42'-11"	1847
B3	4	9	STR	40'-6"	551
B4	25	4	STR	3'-2"	53
B5	5	4	STR	11'-3"	38
B6	24	5	STR	40'-2"	1005
B7	18	4	STR	3'-8"	44
B8	8	4	STR	39'-10"	213
H1	14	4	2	3'-9"	35
H2	30	4	3	9'-1"	182
H3	17	4	STR	2'-9"	31
H4	4	4	STR	8'-2"	22
K1	28	4	STR	39'-0"	729
K2	4	4	STR	3'-4"	9
K3	10	4	STR	3'-8"	24
S1	77	5	4	4'-7"	368
S2	77	5	5	15'-9"	1265
S3	60	4	6	6'-6"	261
U1	68	4	7	3'-8"	167
U2	23	4	7	8'-2"	125
V1	136	5	STR	11'-9"	1667
V2	6	5	STR	6'-3"	39
V3	6	5	STR	13'-4"	83
V4	21	5	STR	14'-5"	316
V5	2	5	STR	17'-5"	36
V6	2	5	STR	17'-3"	36
V7	2	5	STR	17'-1"	36
V8	2	5	STR	16'-11"	35
V9	2	5	STR	16'-9"	35

REINFORCING STEEL 11,066 LBS.

CLASS A CONCRETE

POUR #1
(CAP & LOWER WINGWALL) 72.4 C.Y.

POUR #2
(BACKWALL & UPPER WINGWALL) 20.8 C.Y.

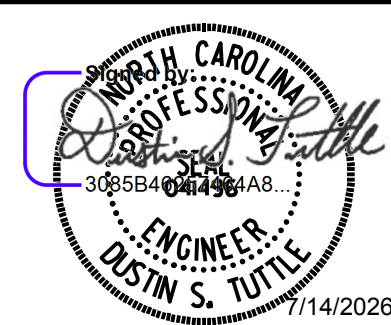
TOTAL: 93.2 C.Y.

NOTE: SEE GEOTECHNICAL FOUNDATION TABLES
FOR ADDITIONAL PILE INFORMATION

APPLICATION OF BRIDGE
COATING 159.4 SF

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 3 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

SECTIONS AND DETAILS

(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-28
2			4			TOTAL SHEETS 39

DRAWN BY :	S. NATARAJAN	DATE :	12/2023
CHECKED BY :	D. TUTTLE	DATE :	12/2023
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NOTES:

MSE WALL NO. 22 PLANS SHALL BE COORDINATED CLOSELY WITH THIS PLAN SET TO ACHIEVE THE INTENDED AESTHETIC APPEARANCE. THE USE OF CUSTOM CAST-IN-PLACE (CIP) OR PRECAST COPINGS SHALL BE USED TO CREATE THE INTEGRATED APPEARANCE BETWEEN BRIDGE AND WALL ELEMENTS.

THE MSE CORNER COPING SHALL BE CONSTRUCTED SUCH THAT THE LIMITS ARE CO-PLANAR WITH THE BRIDGE WINGWALL.

SHOP DRAWINGS FOR EACH WALL SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION OF THE WALL OR BRIDGES.

THE CONTRACTOR SHALL SUBMIT METHODS FOR CONSTRUCTING THE WALL TO ACHIEVE THE INTENDED APPEARANCE.

① DIM "X" SHALL BE SET TO PROVIDE 6" MINIMUM BEYOND THE BACK OF THE PRECAST FASCIA PANEL SUSPENDED FROM THE BRIDGE DECK OVERHANG.

ALL MSE WALL PANELS, NOT INCLUDING COPING, SHALL USE FORMLINER IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR ARCHITECTURAL SURFACE TREATMENT.

ALL COPING ELEMENTS FOR RETAINING WALLS AT BRIDGE 8 SHALL BE SMOOTH AND COATED COLOR FS#33522. SEE "APPLICATION OF BRIDGE COATING" SPECIAL PROVISION. FOR COATINGS ON MSE WALL, COST OF COATING COPING ELEMENTS IS CONSIDERED INCIDENTAL TO THE WALL. COATINGS ON THESE WALLS SHALL BE APPLIED AT THE SAME TIME AS COATINGS ON THE BRIDGES AND SHALL USE THE SAME MATERIAL.

② DIMENSION IS APPROXIMATE. PRECAST CONCRETE FASCIA PANEL SHALL BE ADJUSTED IF, AFTER CONSTRUCTING THE BRIDGE SUPERSTRUCTURE BUT BEFORE CONSTRUCTING THE PRECAST CONCRETE FASCIA, THIS DIMENSION WILL EXCEED 5" OR BE LESS THAN 1" BASED ON THE DIMENSIONS SHOWN ON THE "CONCRETE FASCIA DETAILS" SHEETS.

③ CORNER COPING SHALL BE PRECAST OR CAST-IN-PLACE DIRECTLY UNDER THE LIMITS OF THE END BENT CAP AND WINGWALL. COPING SEGMENTS SHALL BE 2' TALL, INCLUDING A 1" (NOMINAL) JOINT. CONSTRUCT THE COPING SEGMENTS SUCH THAT THE TOP SEGMENT DIRECTLY UNDER THE END BENT IS 2', AND ANY NON-STANDARD SEGMENTS ARE BELOW THE GROUNDLINE.

MSE WALL PANEL FORMLINER SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT.

THE FULL COST FOR CONSTRUCTING APPLICABLE MSE WALLS, INCLUDING SHOP DRAWINGS, MEANS AND METHODS, COPING DETAILS, MATERIALS AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE FOR MSE WALL NO. 22, NO SEPARATE PAYMENT SHALL BE MADE FOR COORDINATION OF BRIDGE AND WALL ITEMS.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 4 OF 4

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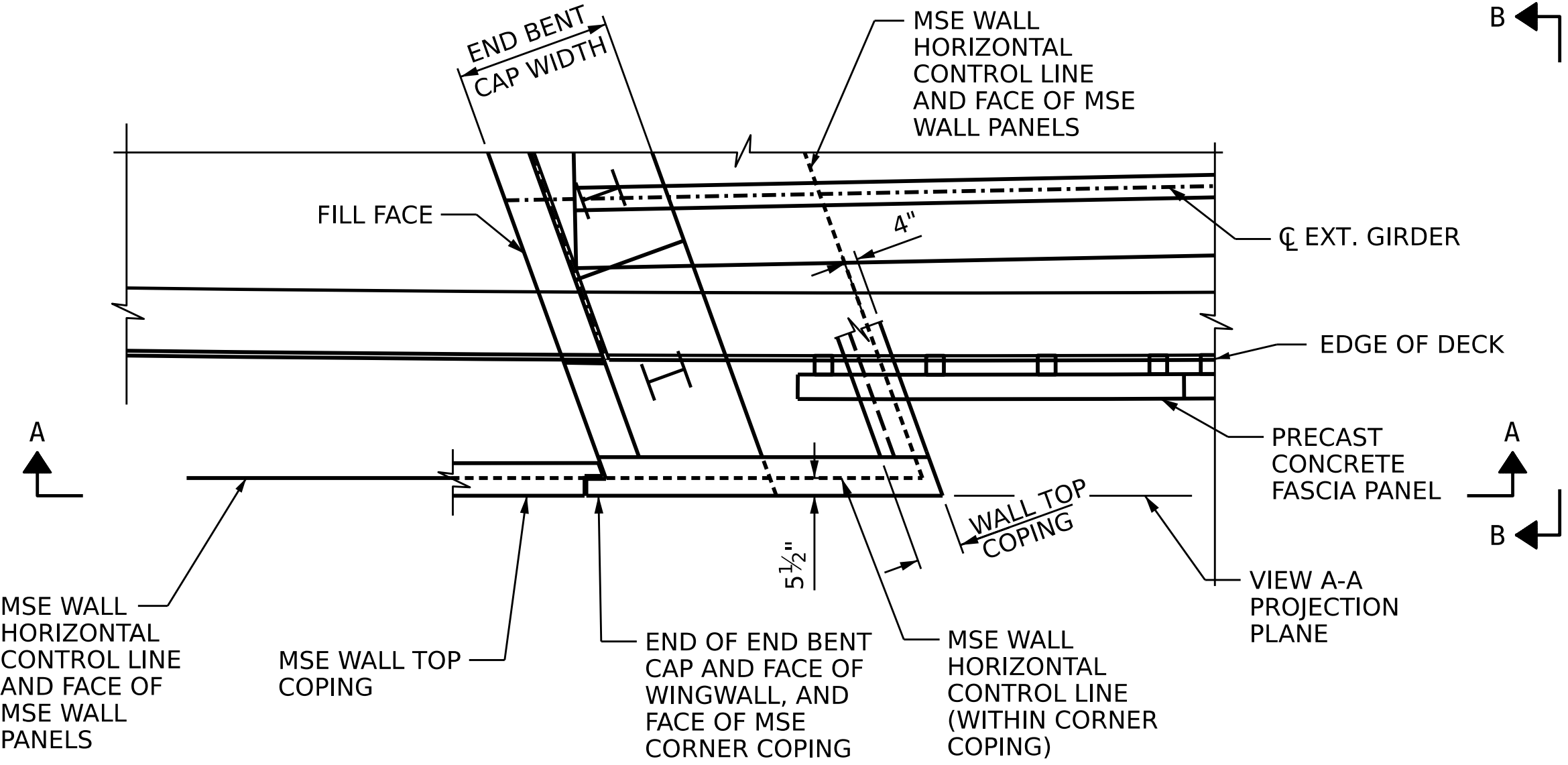
AECOM TECHNICAL SERVICES OF NC, INC.
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RALEIGH, NC 27607
(919) 854-6200
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AECOM License No. F02422

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
MSE WALL AESTHETIC DETAILS
(RIGHT LANE)

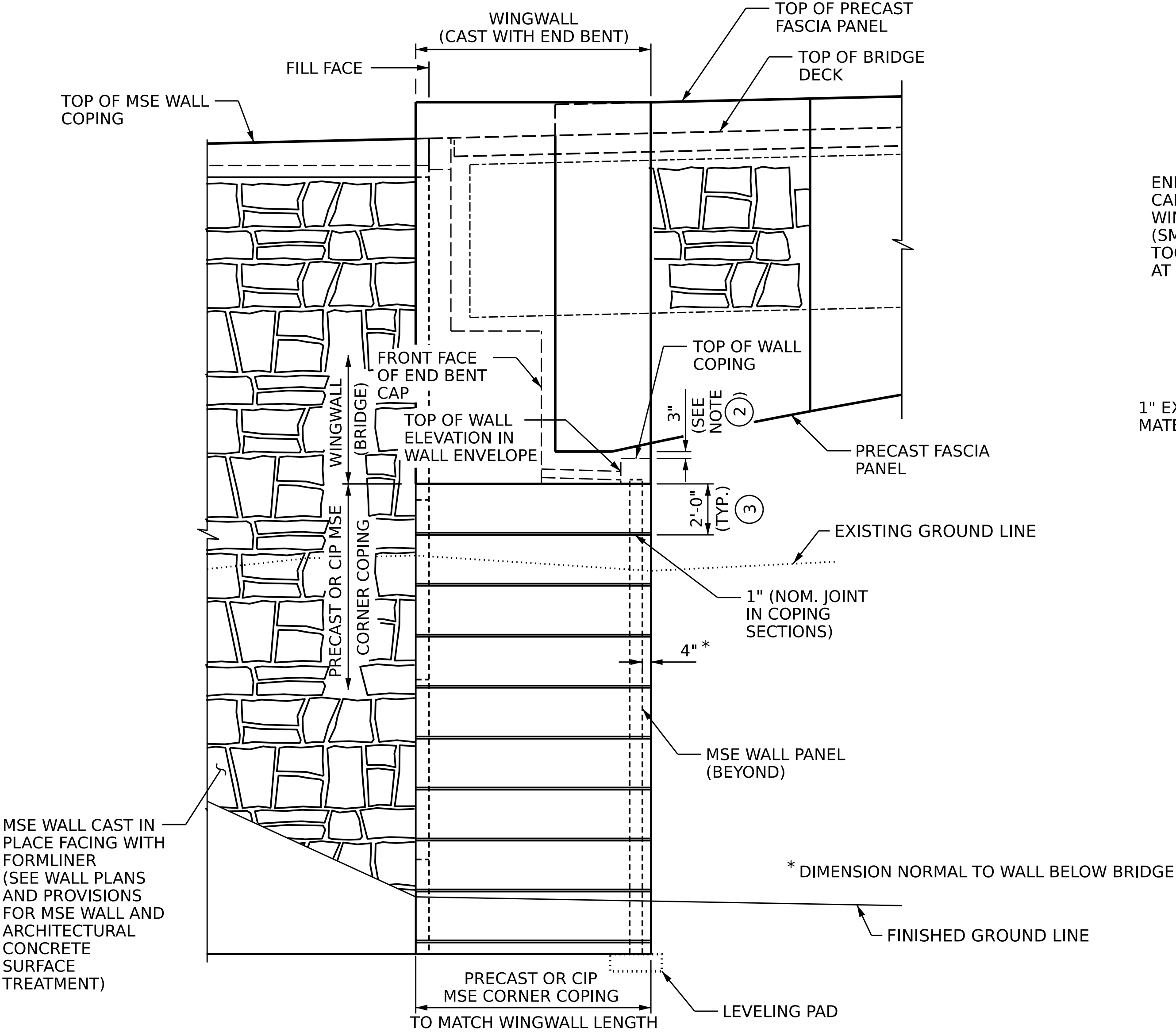
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
MSE WALL AESTHETIC DETAILS
(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-29
2			4			TOTAL SHEETS 39

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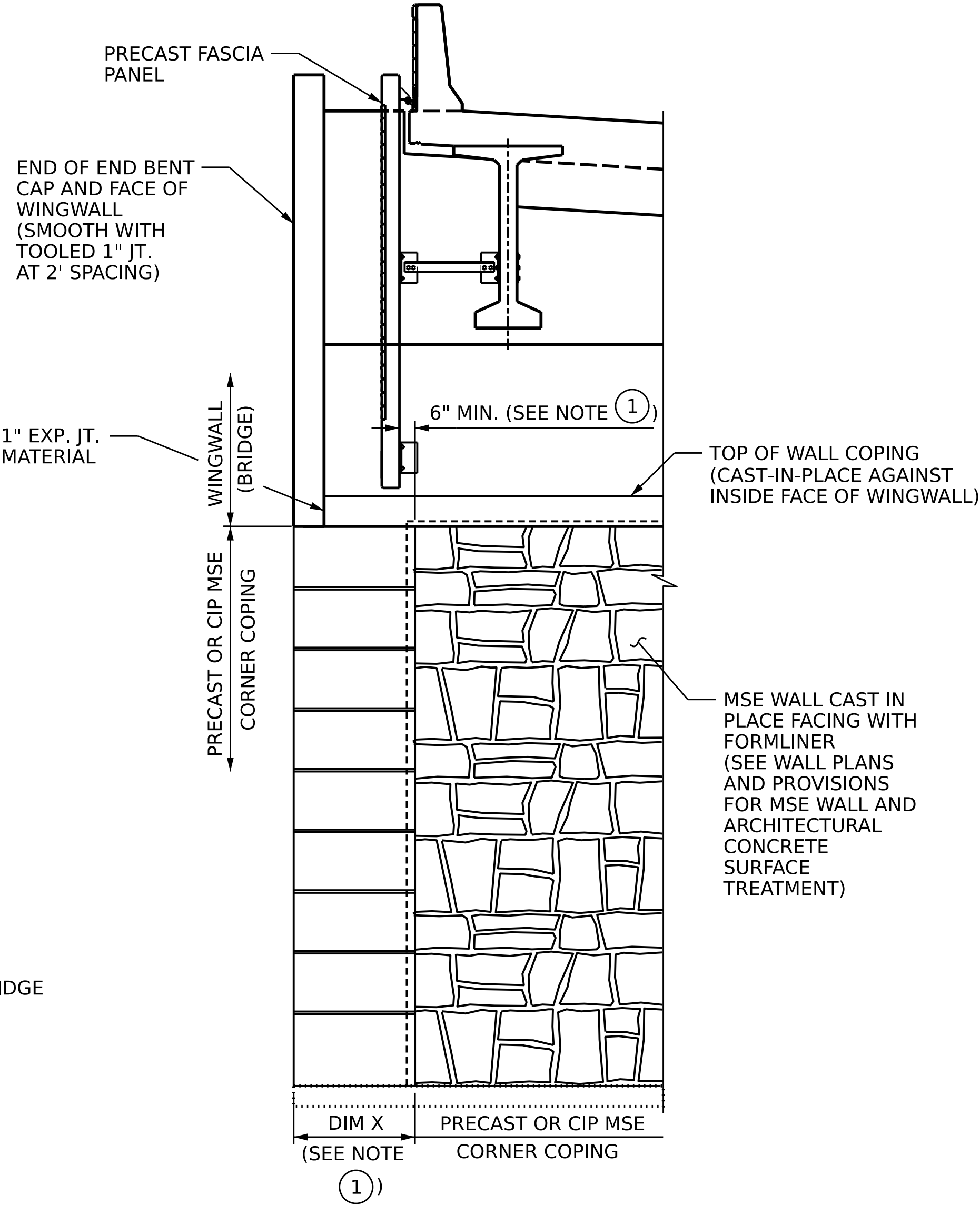


PLAN



VIEW A-A

VIEW IS PROJECTED ONTO VIEW PROJECTION
LINE ALONG SKEW (SEE PLAN)



VIEW B-B

DRAWN BY : L. LEE DATE : 03/2026
CHECKED BY : D. TUTTLE DATE : 03/2026
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

NOTES:

THE EXPOSED SURFACE OF WINGWALL W2 AS SHOWN ON SHEET 2 SHALL BE COATED COLOR FS #33522. SEE SPECIAL PROVISIONS FOR APPLICATION OF BRIDGE COATING.

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RALEIGH, NC 27607

(919) 854-6200 www.aecom.com

AECOM License No. F-0342

A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "STATE OF NORTH CAROLINA" at the top and "PROFESSIONAL ENGINEER" at the bottom. Inside the ring, the name "DUSTIN S. TUTTLE" is written in a large, bold, sans-serif font. Below the name, the license number "368584" and the expiration date "12/31/2016" are printed. The seal is stamped over a document that includes the AECOM logo and contact information.

7/14/2026

(RIGHT LANE)

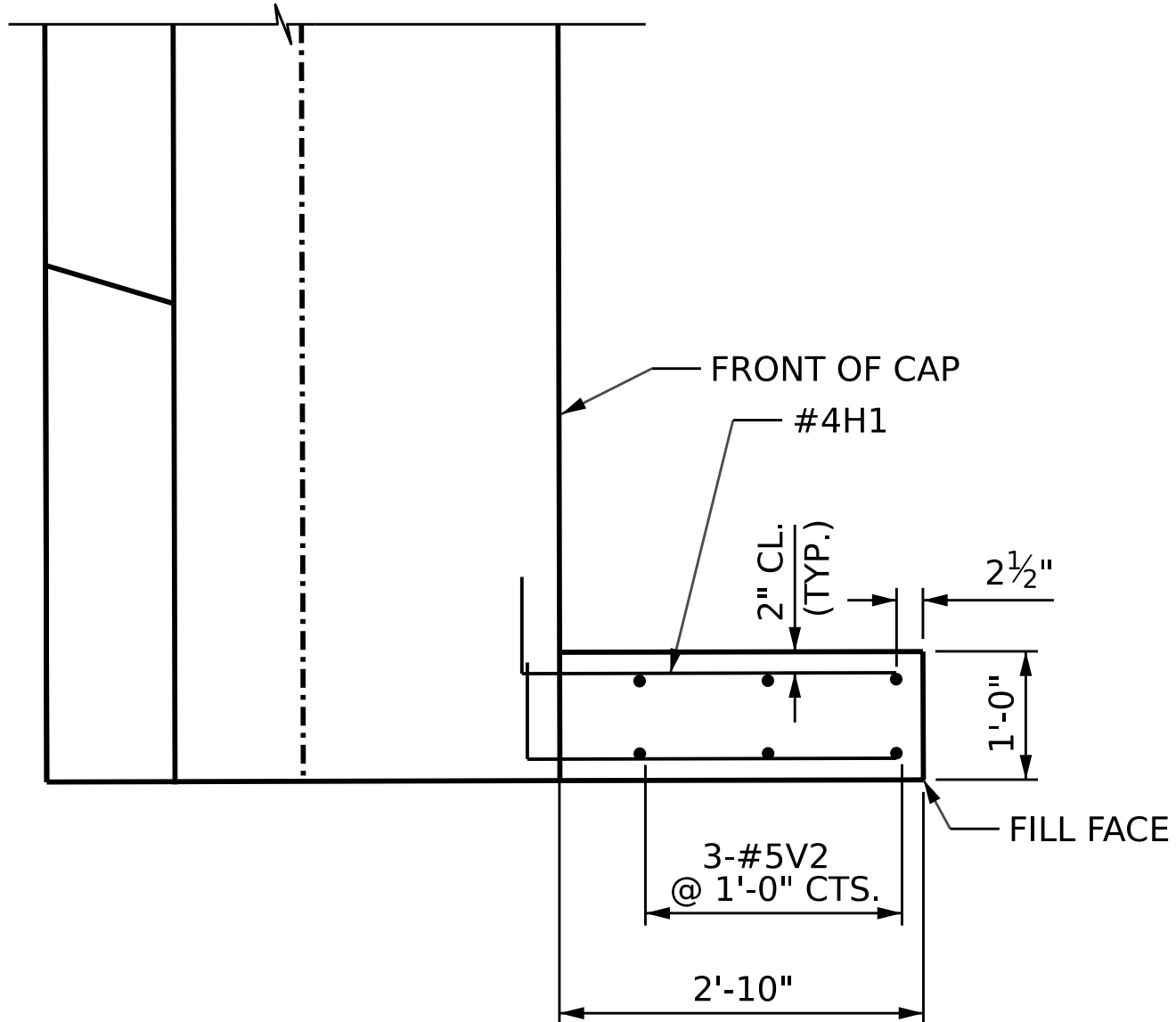
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2			4			

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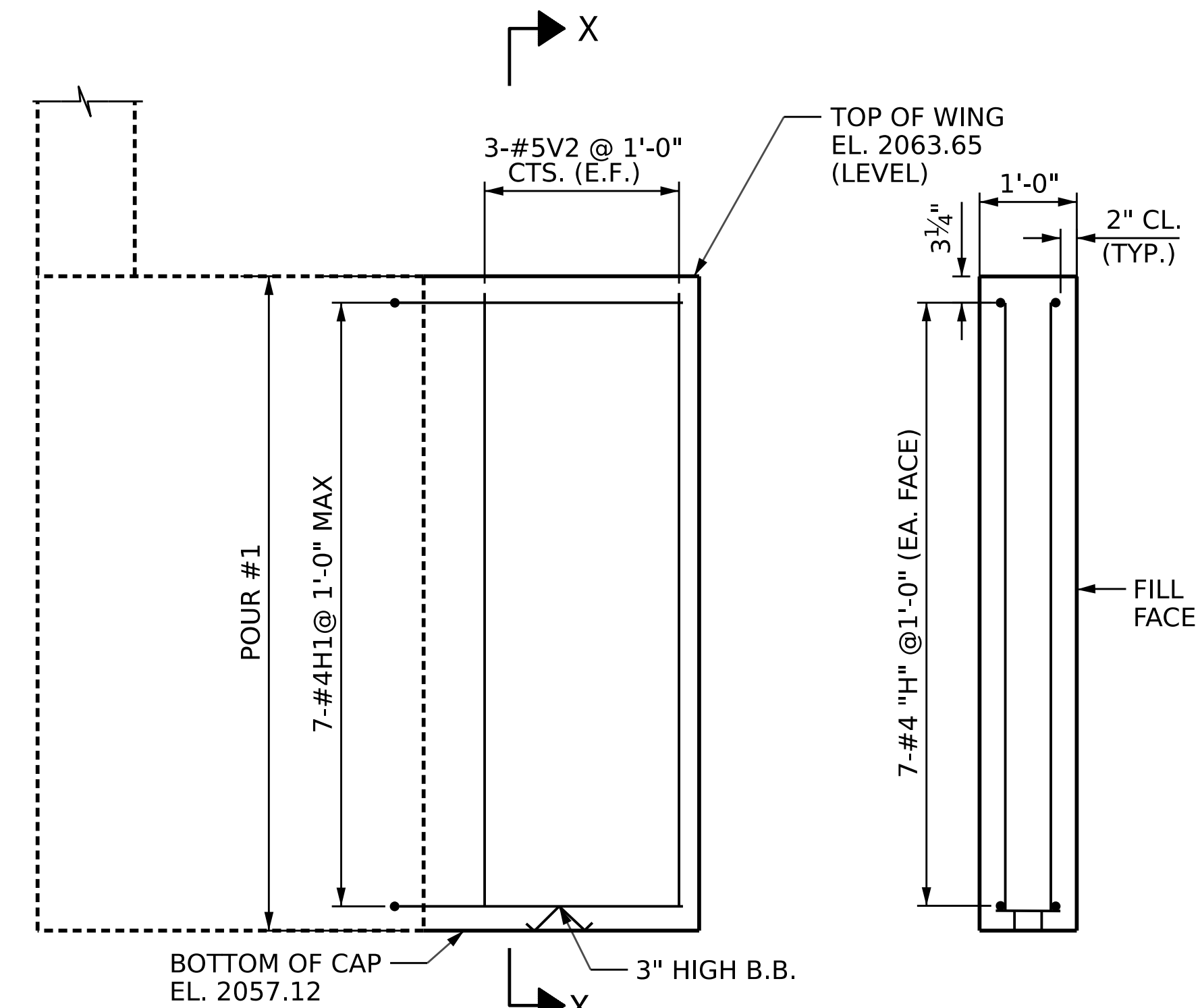
ELEVATION

DRAWN BY :	S. NATARAJAN	DATE :	01/2024
CHECKED BY :	D. TUTTLE	DATE :	01/2024
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

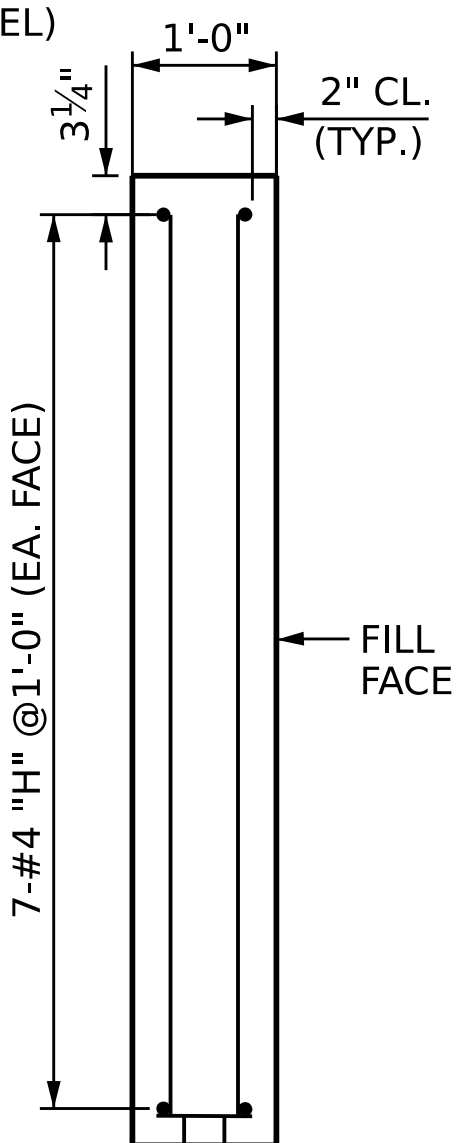
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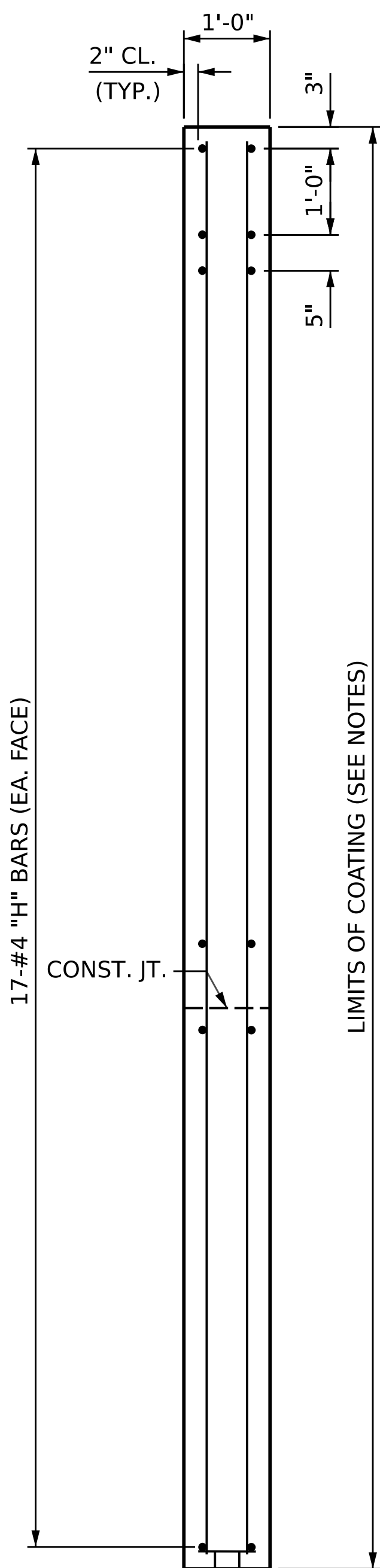
PLAN OF WING (W3)



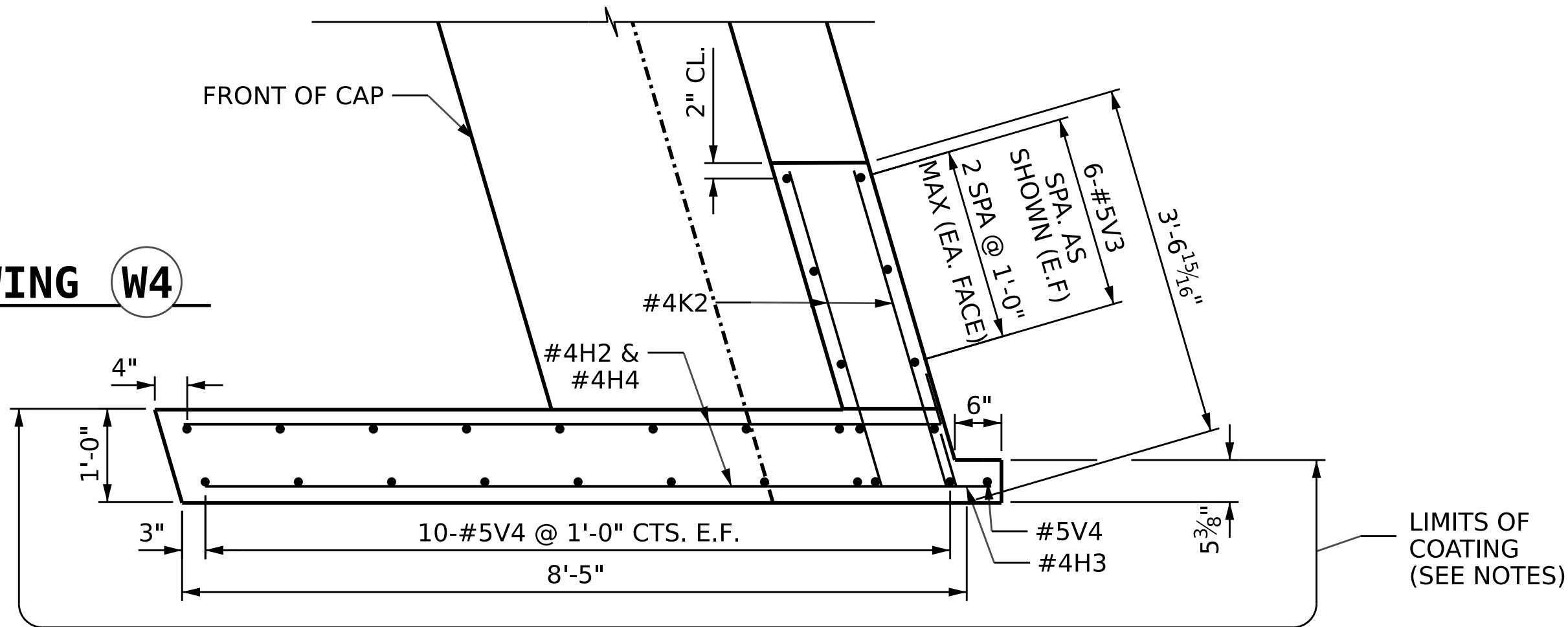
ELEVATION OF WING (W3)



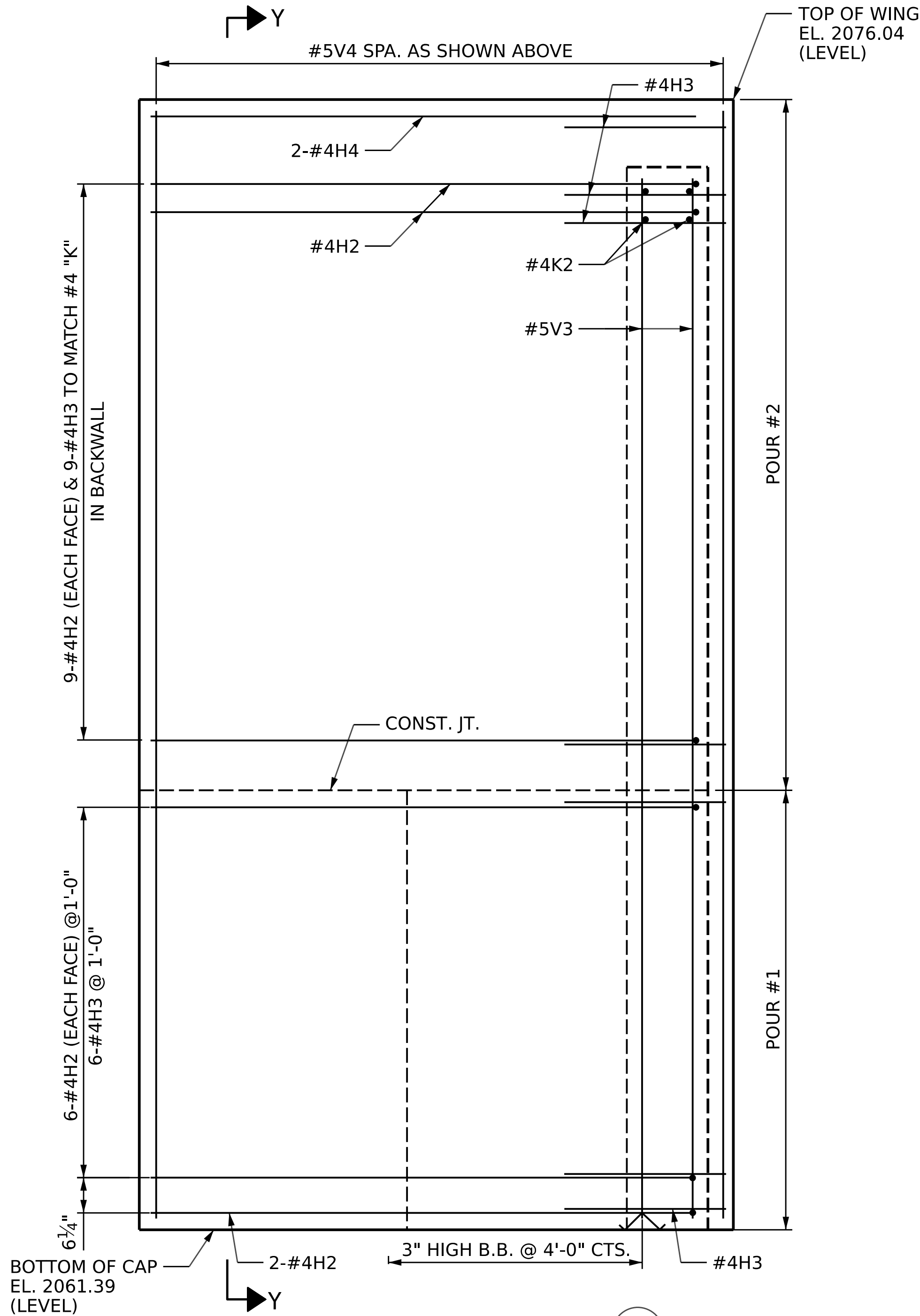
SECTION X-X



SECTION Y-Y

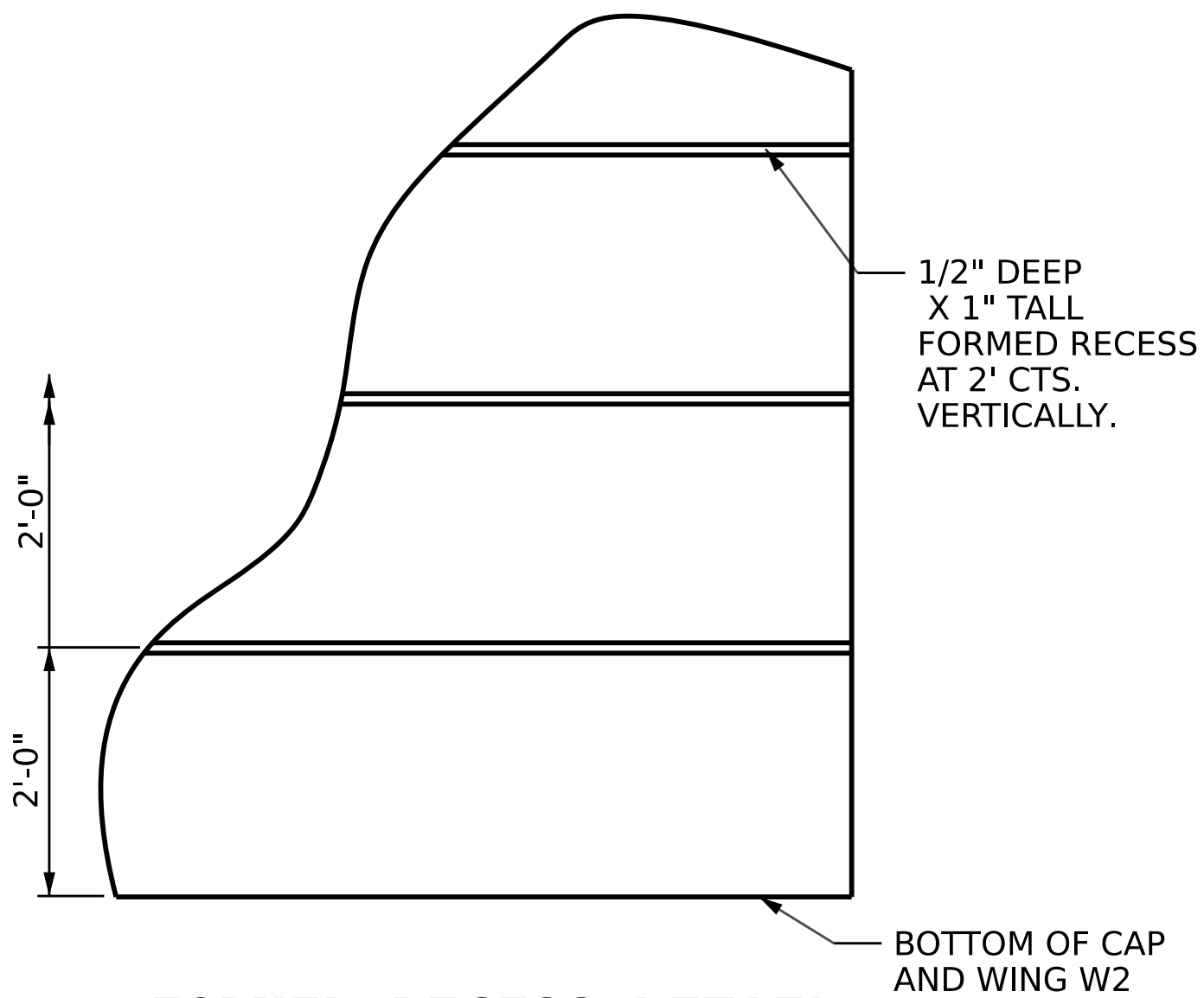


PLAN OF WING (W4)



ELEVATION OF WING (W4)

TOP OF PILE ELEVATION	
PILE NO.	PILE CUTOFF ELEV.
1	2059.27
2	2059.56
3	2059.85
4	2060.14
5	2060.43
6	2060.72
7	2061.01
8	2061.30
9	2061.59
10	2061.88
11	2062.17
12	2062.46
13	2062.75
14	2063.04
15	2063.21



FORMED RECESS DETAIL

PROVIDE FORMED RECESS ON OUTSIDE AND END FACES OF WING W2.
THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE COST OF
CLASS A CONCRETE

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
 STATION: 83+50.80 -L-

SHEET 2 OF 4

AECOM

AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607

(919) 854-4200 www.aecom.com

AECOM License No. F-0342

2013 NORTH CAROLINA
PROFESSIONAL
ENGINEER
DUSTIN S. TUTTLE

7/14/2026

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

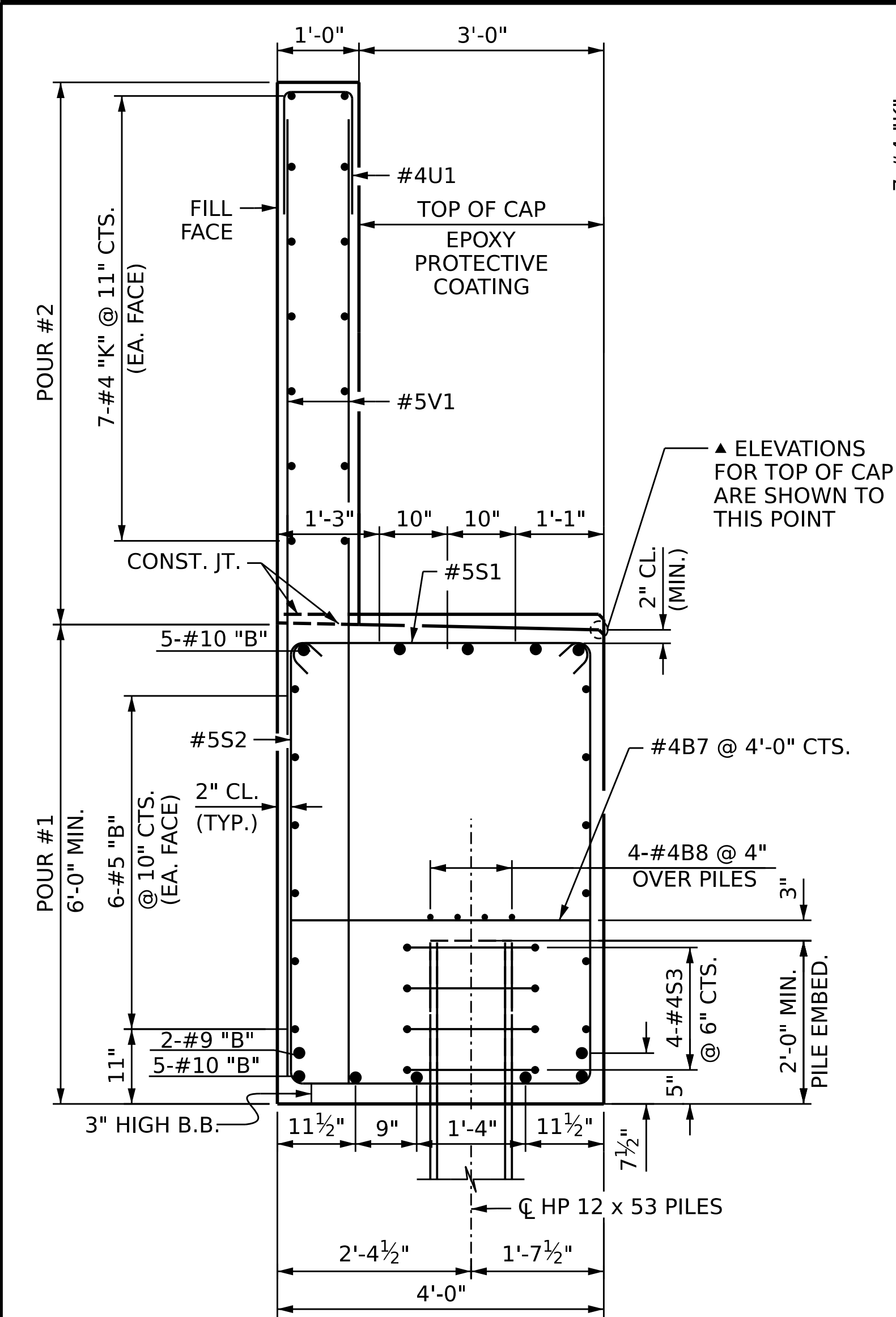
SUBSTRUCTURE

END BENT 2

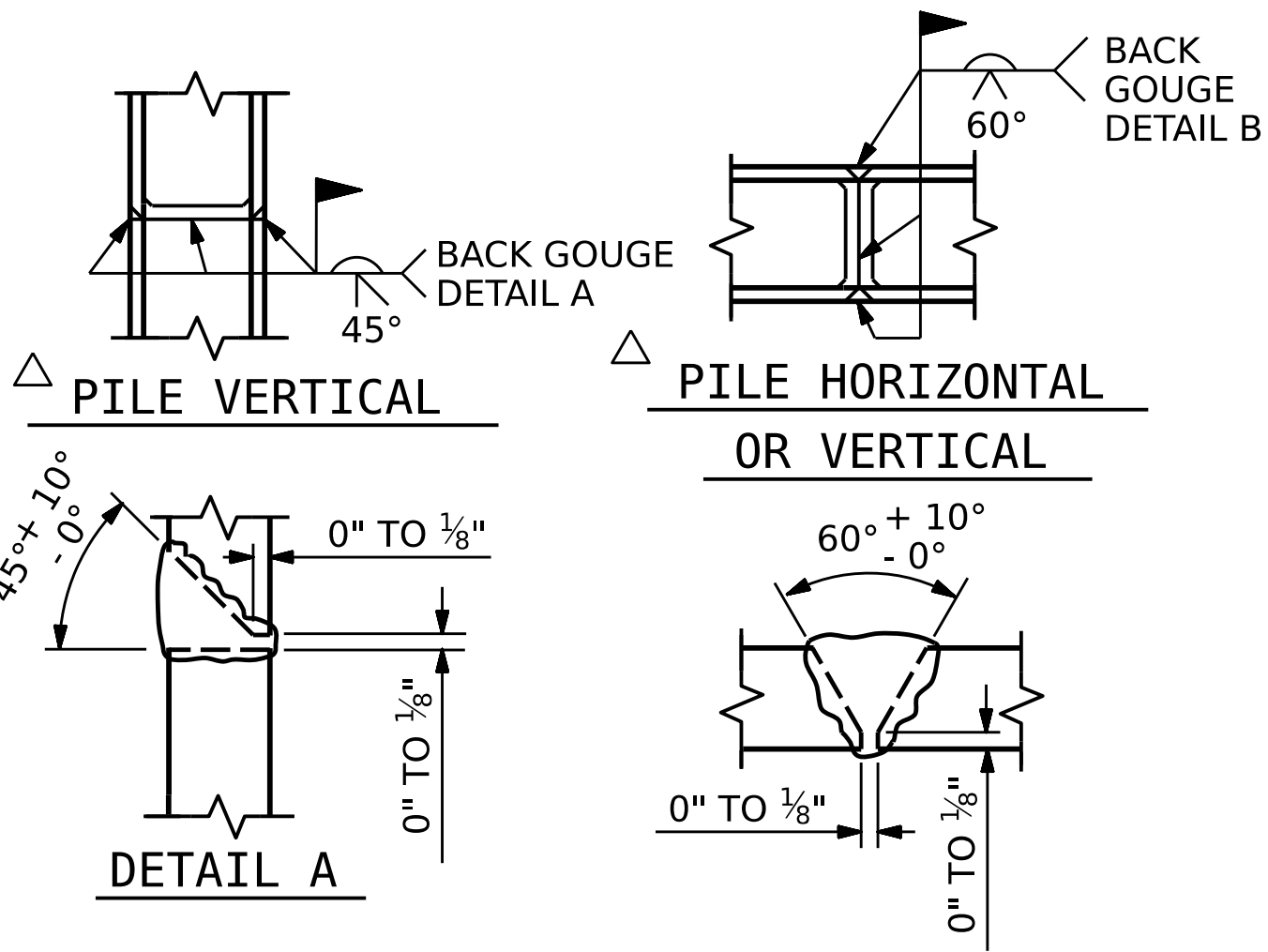
WINGWALLS

(RIGHT LANE)

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

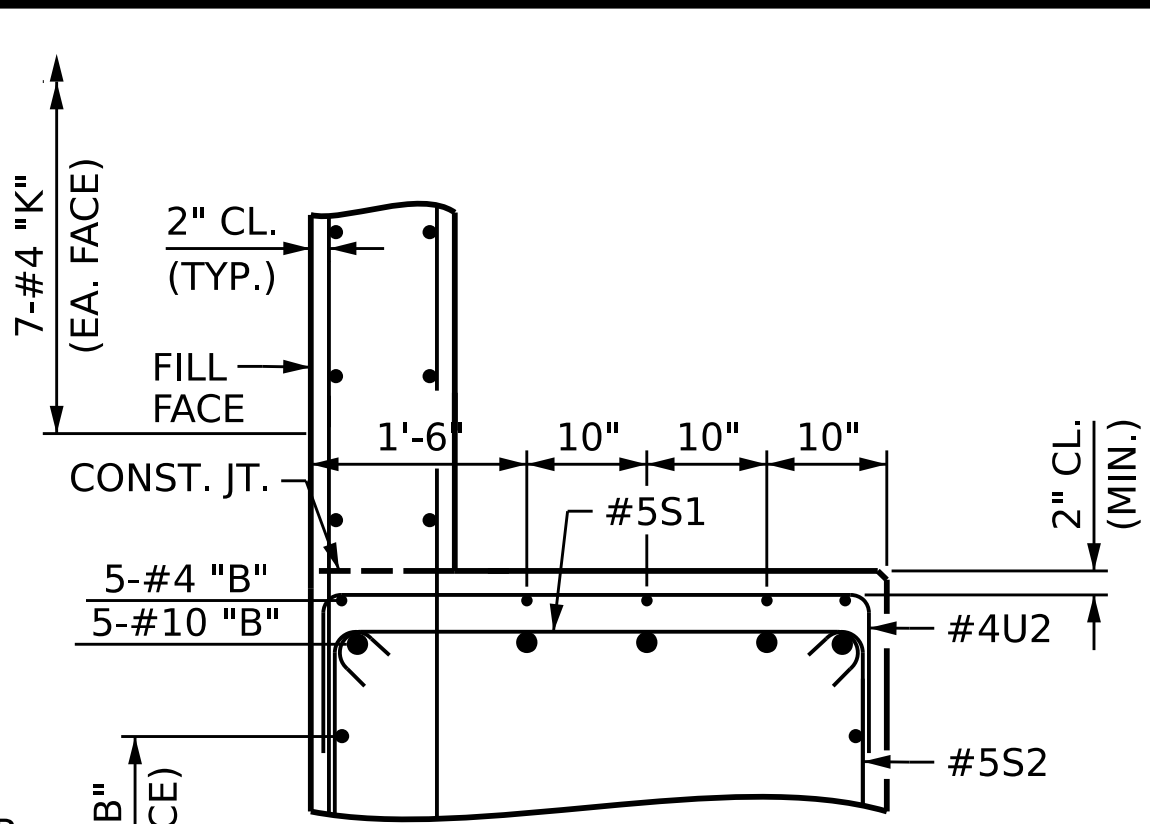


SECTION A-A

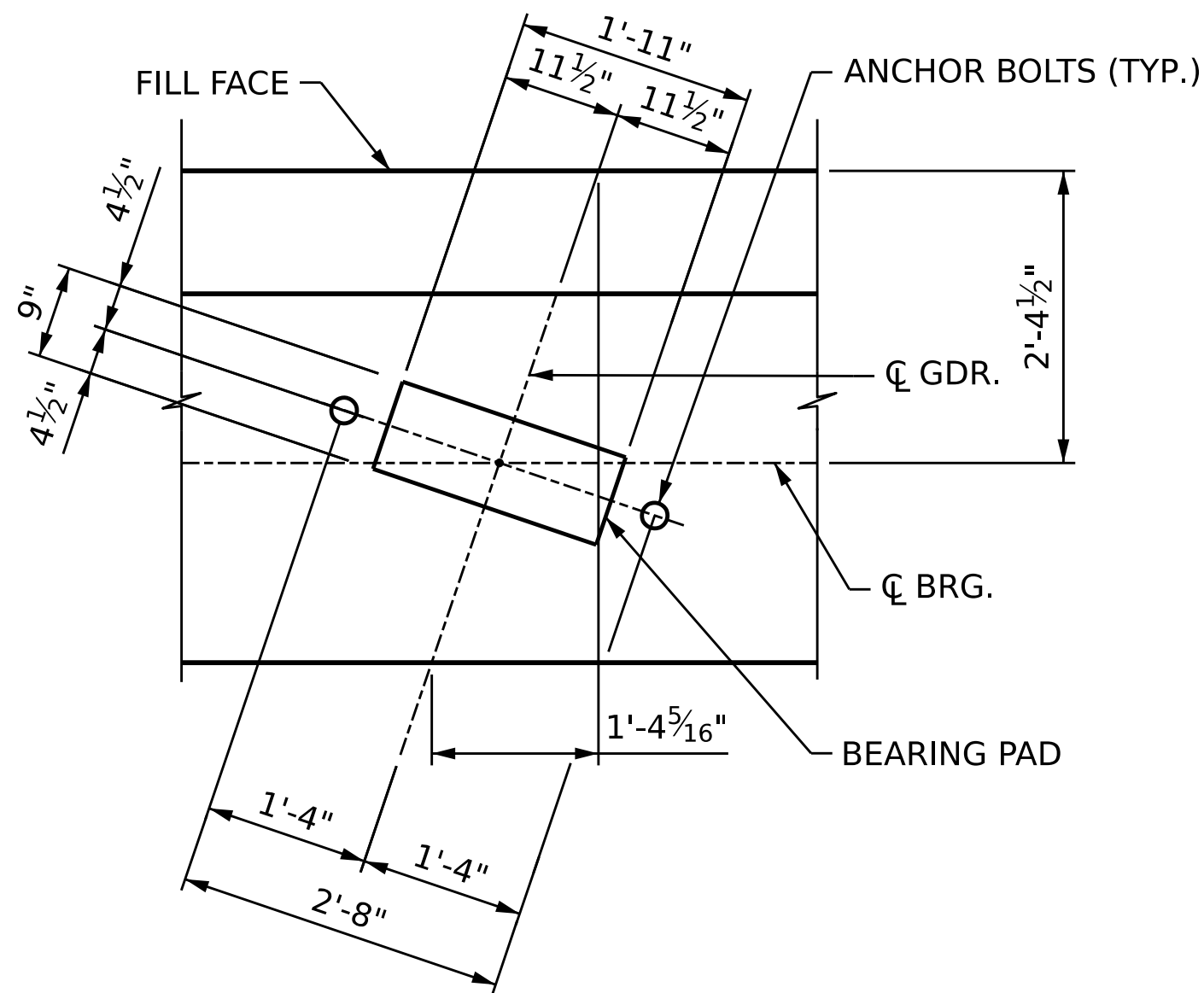


PILE SPLICE DETAILS

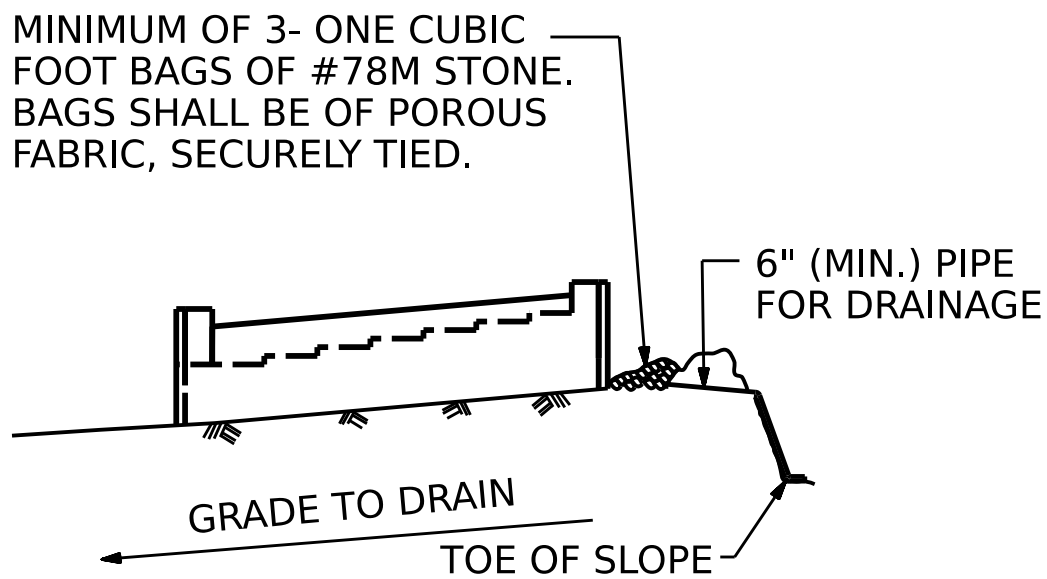
DRAWN BY :	S. NATARAJAN	DATE :	01/2024
CHECKED BY :	D. TUTTLE	DATE :	01/2024
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026



SECTION B-B



DETAIL A

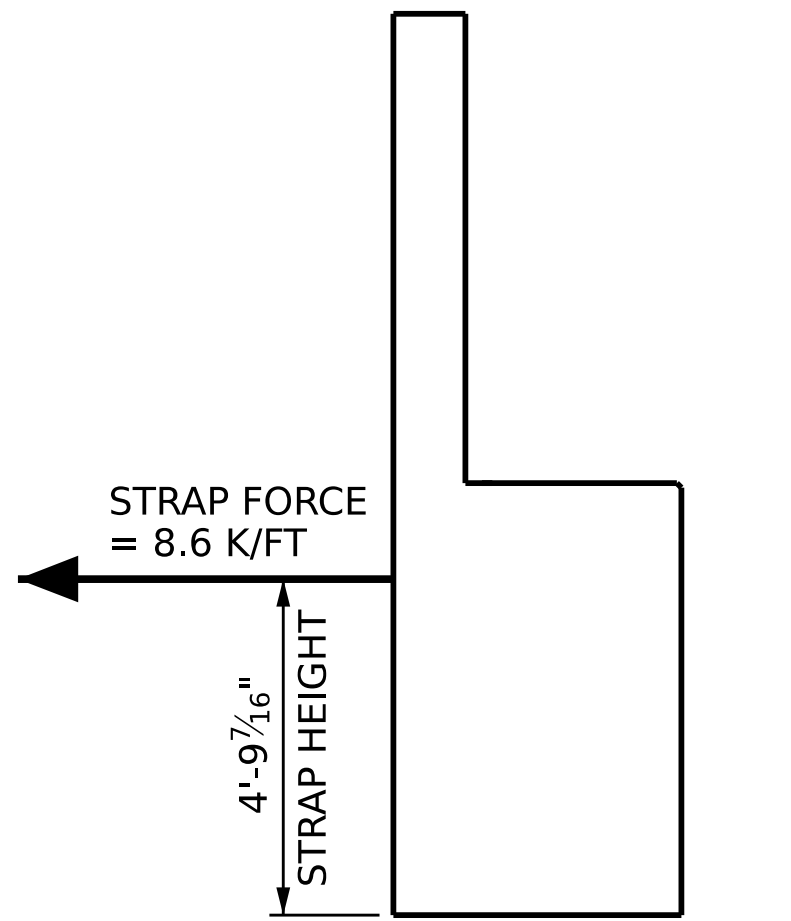


TEMPORARY DRAINAGE AT END BENT

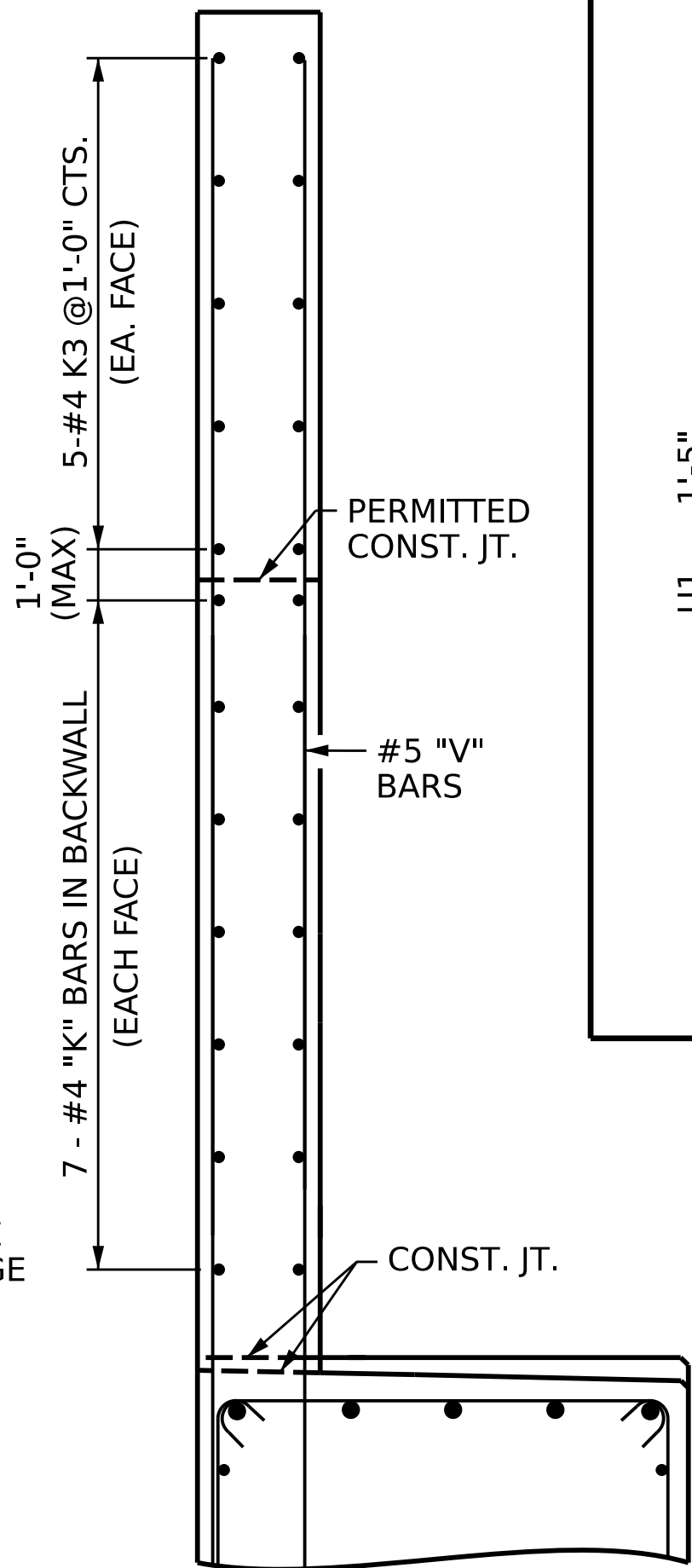
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

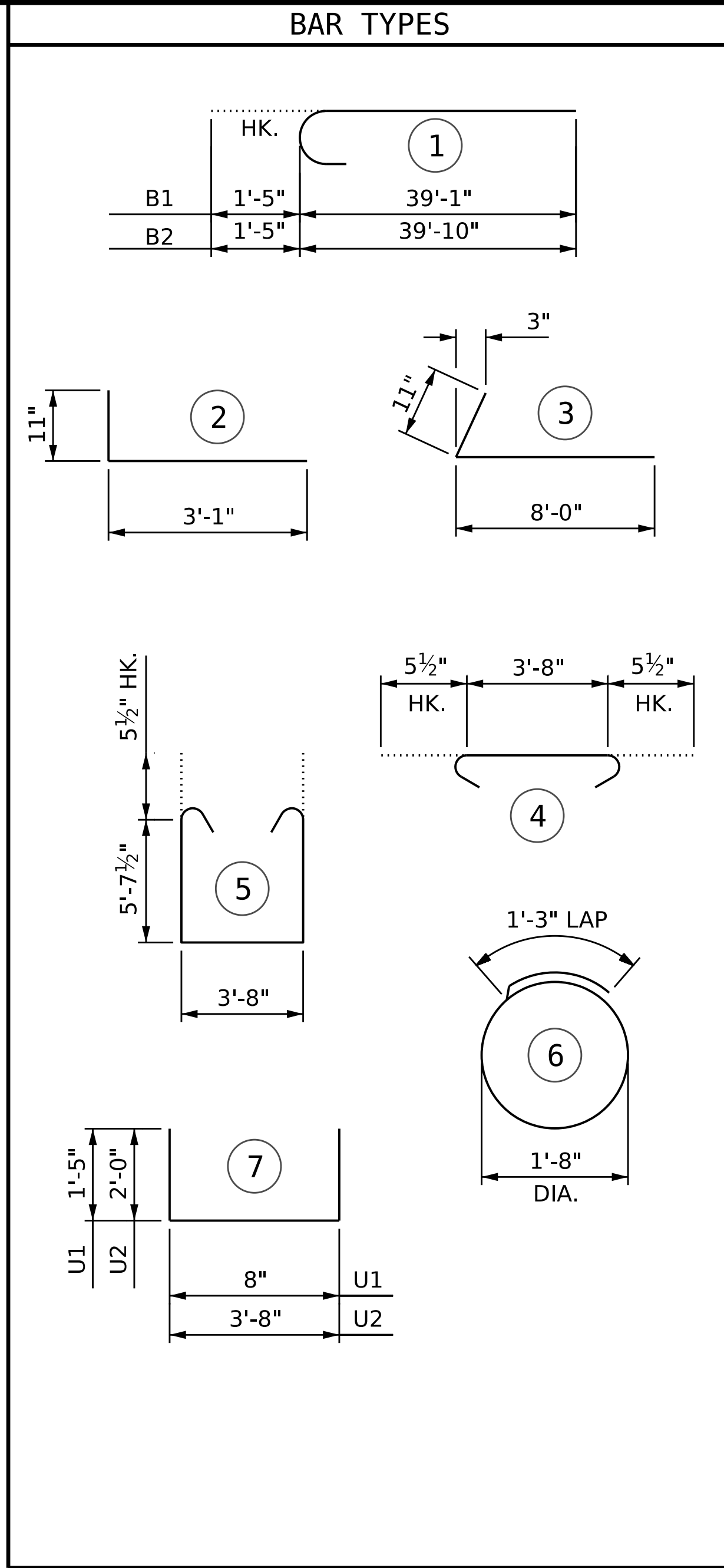
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.



STRAP FORCE



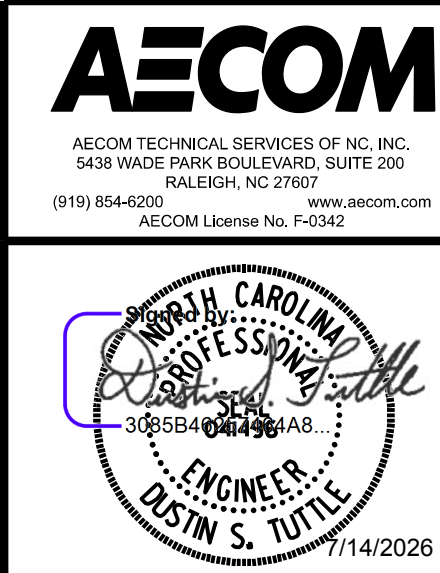
SECTION C-C



BILL OF MATERIAL					
END BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	10	1	40'-6"	1743
B2	10	10	1	41'-3"	1775
B3	4	9	STR	38'-10"	528
B4	25	4	STR	3'-2"	53
B5	5	4	STR	9'-2"	31
B6	24	5	STR	38'-5"	962
B7	18	4	STR	3'-8"	44
B8	8	4	STR	38'-2"	204
H1	14	4	2	4'-0"	37
H2	32	4	3	8'-11"	191
H3	17	4	STR	2'-9"	31
H4	2	4	STR	8'-0"	11
K1	28	4	STR	37'-11"	709
K2	4	4	STR	3'-2"	8
K3	10	4	STR	3'-7"	24
S1	73	5	4	4'-7"	349
S2	73	5	5	15'-9"	1199
S3	60	4	6	6'-6"	261
U1	66	4	7	3'-6"	154
U2	22	4	7	7'-10"	115
V1	132	5	STR	11'-9"	1618
V2	6	5	STR	6'-1"	38
V3	6	5	STR	13'-4"	83
V4	21	5	STR	14'-2"	310
V5	2	5	STR	17'-4"	36
V6	2	5	STR	17'-1"	36
V7	2	5	STR	16'-11"	35
V8	2	5	STR	16'-9"	35
V9	2	5	STR	16'-7"	35
REINFORCING STEEL					10,655 LBS.
CLASS A CONCRETE					
POUR #1 (CAP & LOWER WINGWALL)					70.2 C.Y.
POUR #2 (BACKWALL & UPPER WINGWALL)					21.0 C.Y.
TOTAL = 91.2 C.Y.					
APPLICATION OF BRIDGE COATING					150.8 SF

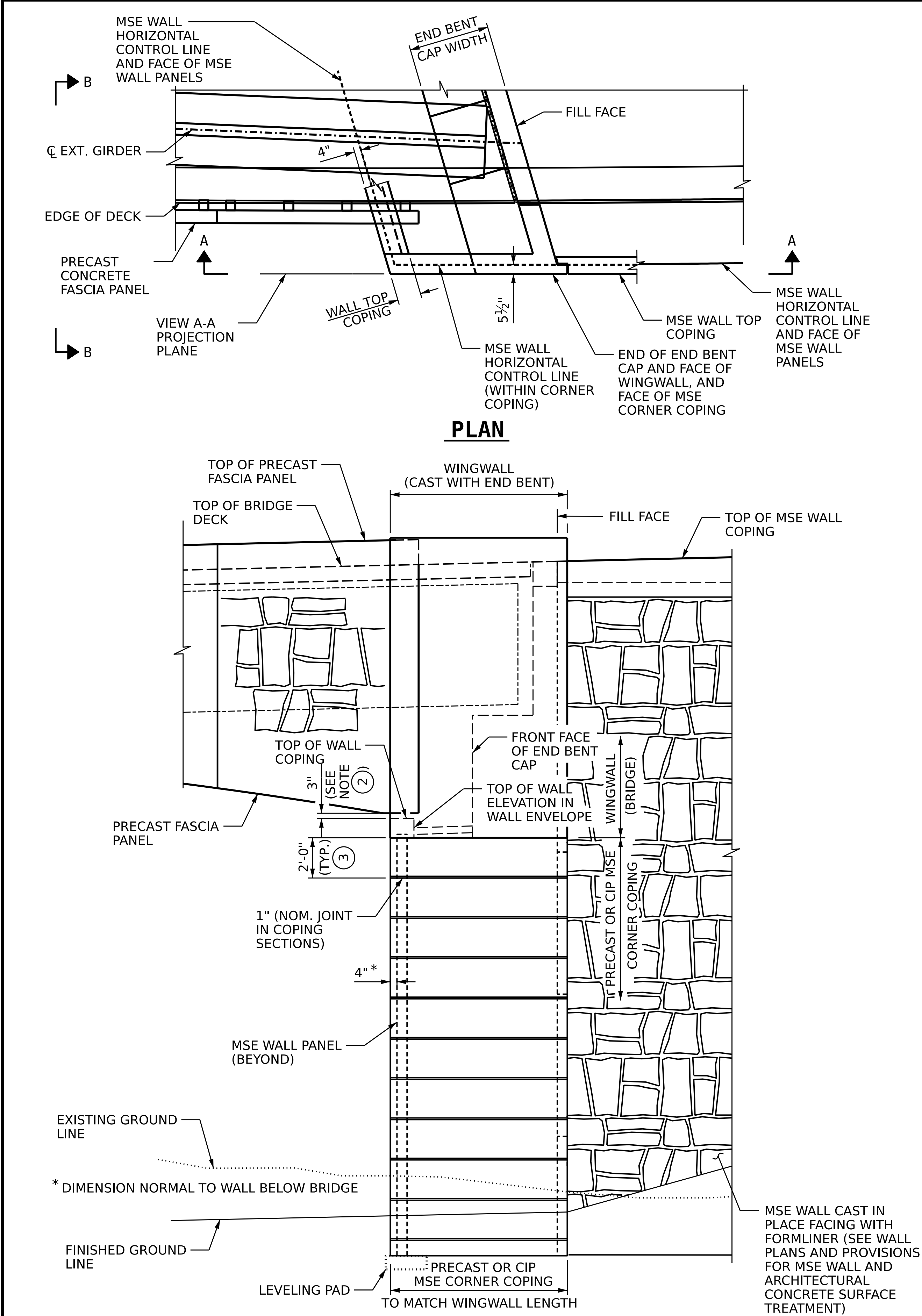
PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 3 OF 4

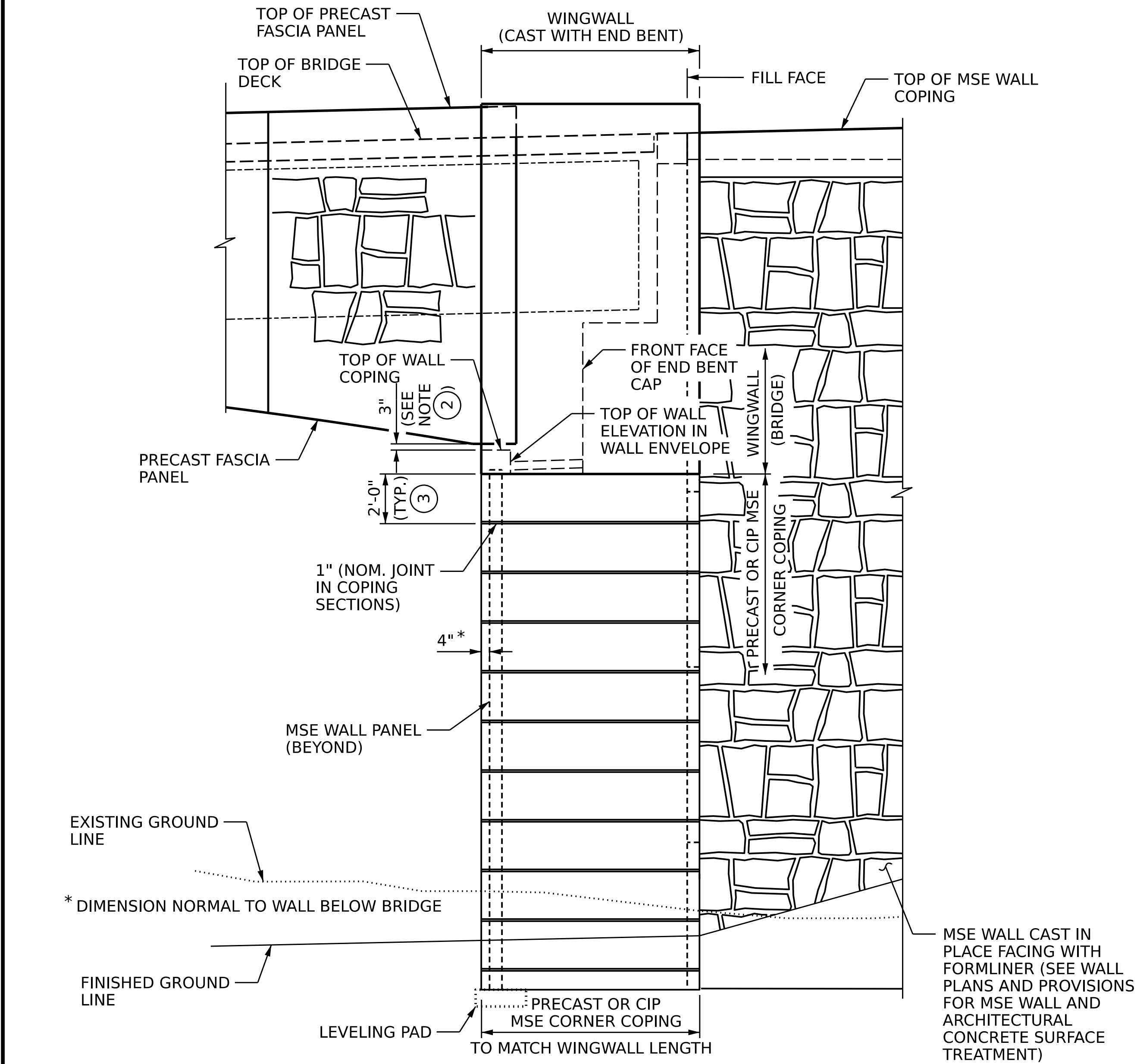


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S8-32
2			4			TOTAL SHEETS 39

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SIGNATURES COMPLETED



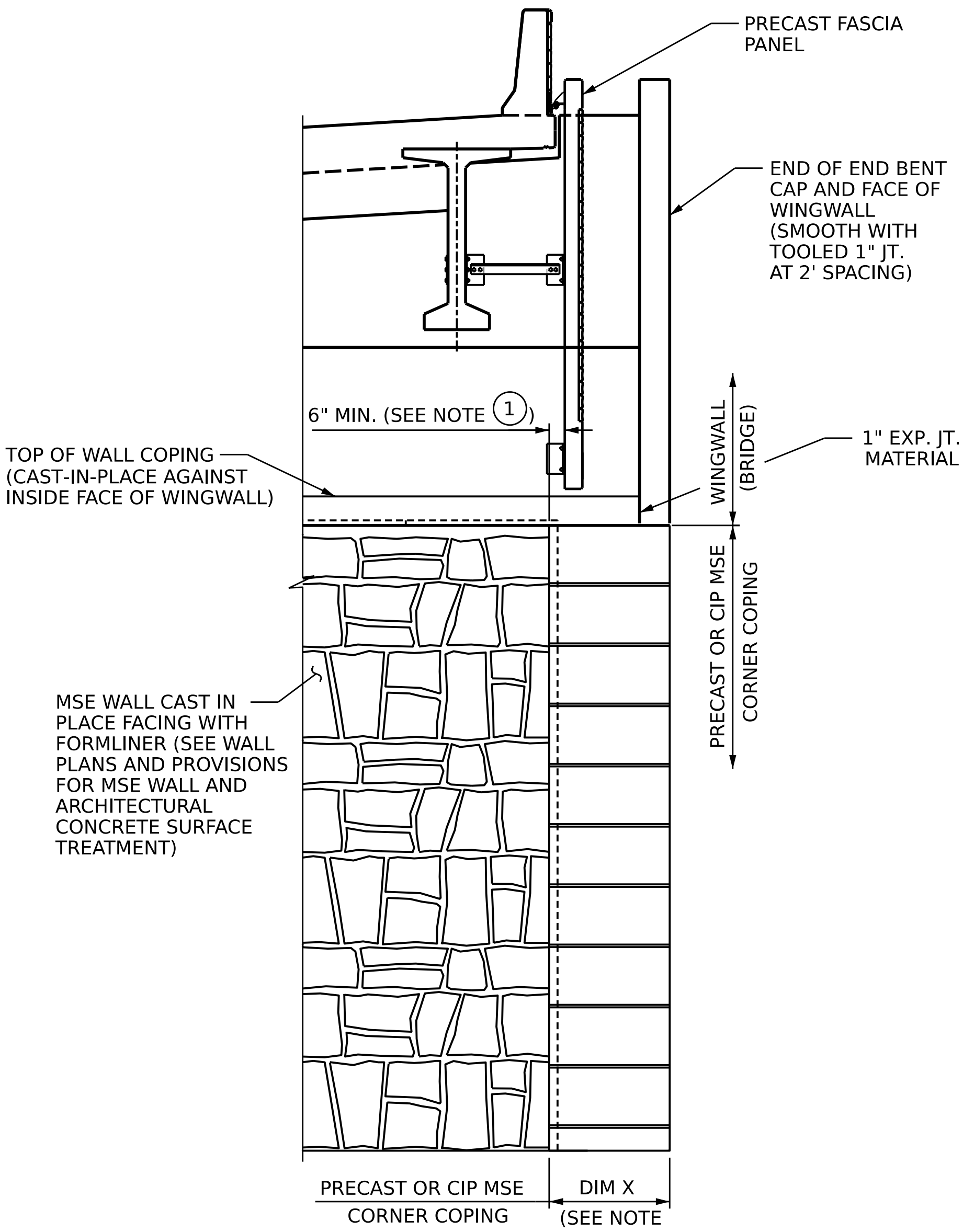
PLAN



VIEW A-A

DRAWN BY : L. LEE DATE : 03/2026
CHECKED BY : D. TUTTLE DATE : 03/2026
DESIGN ENGINEER OF RECORD: D. TUTTLE DATE : 03/2026

VIEW IS PROJECTED ONTO VIEW PROJECTION
LINE ALONG SKEW (SEE PLAN)



VIEW B-B

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NOTES:

MSE WALL NO. 23 PLANS SHALL BE COORDINATED CLOSELY WITH THIS PLAN SET TO ACHIEVE THE INTENDED AESTHETIC APPEARANCE. THE USE OF CUSTOM CAST-IN-PLACE (CIP) OR PRECAST COPINGS SHALL BE USED TO CREATE THE INTEGRATED APPEARANCE BETWEEN BRIDGE AND WALL ELEMENTS.

THE MSE CORNER COPING SHALL BE CONSTRUCTED SUCH THAT THE LIMITS ARE CO-PLANAR WITH THE BRIDGE WINGWALL.

SHOP DRAWINGS FOR EACH WALL SHALL BE SUBMITTED FOR REVIEW PRIOR TO CONSTRUCTION OF THE WALL OR BRIDGES.

THE CONTRACTOR SHALL SUBMIT METHODS FOR CONSTRUCTING THE WALL TO ACHIEVE THE INTENDED APPEARANCE.

① DIM "X" SHALL BE SET TO PROVIDE 6" MINIMUM BEYOND THE BACK OF THE PRECAST FASCIA PANEL SUSPENDED FROM THE BRIDGE DECK OVERHANG.

ALL MSE WALL PANELS, NOT INCLUDING COPING, SHALL USE FORMLINER IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR ARCHITECTURAL SURFACE TREATMENT.

ALL COPING ELEMENTS FOR RETAINING WALLS AT BRIDGE 8 SHALL BE SMOOTH AND COATED COLOR FS#33522. SEE "APPLICATION OF BRIDGE COATING" SPECIAL PROVISION. FOR COATINGS ON MSE WALL, COST OF COATING COPING ELEMENTS IS CONSIDERED INCIDENTAL TO THE WALL. COATINGS ON THESE WALLS SHALL BE APPLIED AT THE SAME TIME AS COATINGS ON THE BRIDGES AND SHALL USE THE SAME MATERIAL.

② DIMENSION IS APPROXIMATE. PRECAST CONCRETE FASCIA PANEL SHALL BE ADJUSTED IF, AFTER CONSTRUCTING THE BRIDGE SUPERSTRUCTURE BUT BEFORE CONSTRUCTING THE PRECAST CONCRETE FASCIA, THIS DIMENSION WILL EXCEED 5" OR BE LESS THAN 1" BASED ON THE DIMENSIONS SHOWN ON THE "PRECAST CONCRETE FASCIA DETAILS" SHEETS.

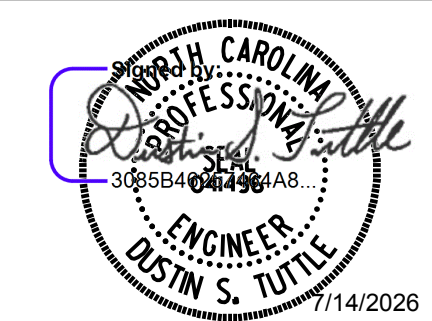
③ CORNER COPING SHALL BE PRECAST OR CAST-IN-PLACE DIRECTLY UNDER THE LIMITS OF THE END BENT CAP AND WINGWALL. COPING SEGMENTS SHALL BE 2' TALL, INCLUDING A 1" (NOMINAL) JOINT. CONSTRUCT THE COPING SEGMENTS SUCH THAT THE TOP SEGMENT DIRECTLY UNDER THE END BENT IS 2', AND ANY NON-STANDARD SEGMENTS ARE BELOW THE GROUNDLINE.

MSE WALL PANEL FORMLINER SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR ARCHITECTURAL CONCRETE SURFACE TREATMENT.

THE FULL COST FOR CONSTRUCTING APPLICABLE MSE WALLS, INCLUDING SHOP DRAWINGS, MEANS AND METHODS, COPING DETAILS, MATERIALS AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE FOR MSE WALL NO. 23, NO SEPARATE PAYMENT SHALL BE MADE FOR COORDINATION OF BRIDGE AND WALL ITEMS.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 4 OF 4

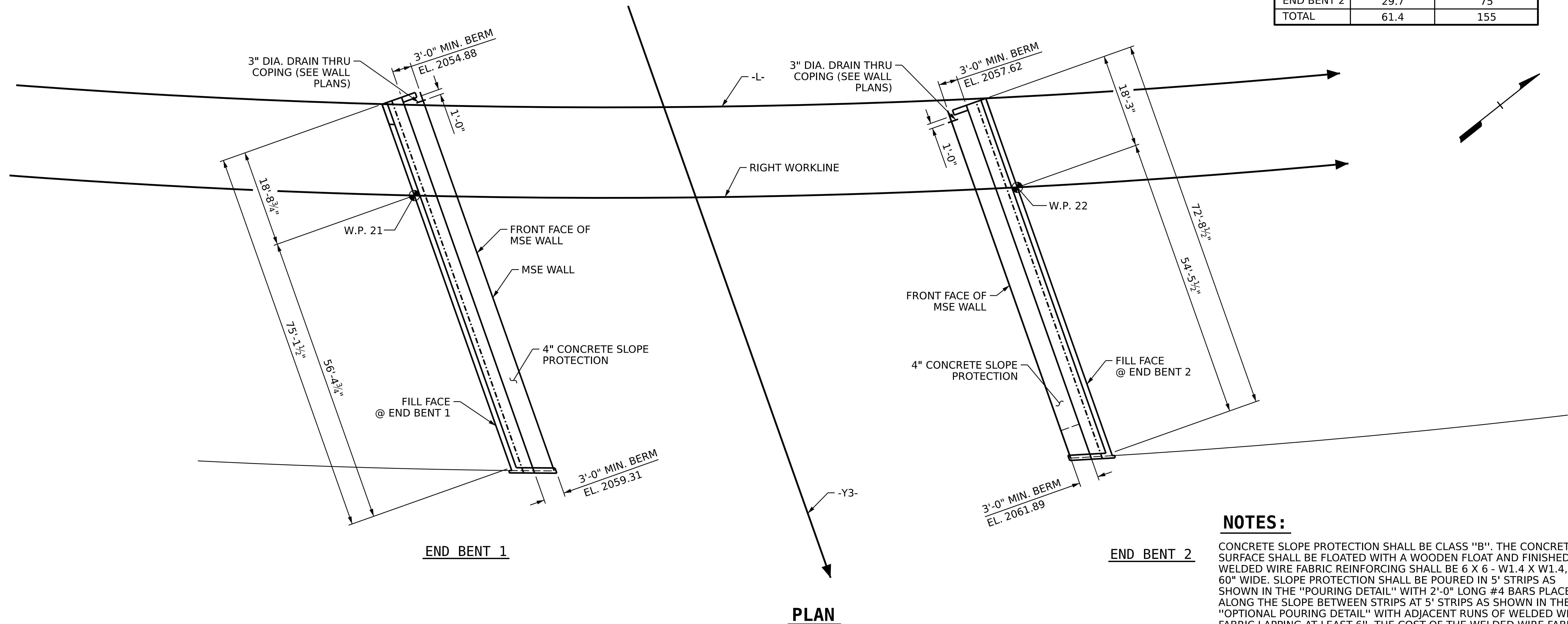


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

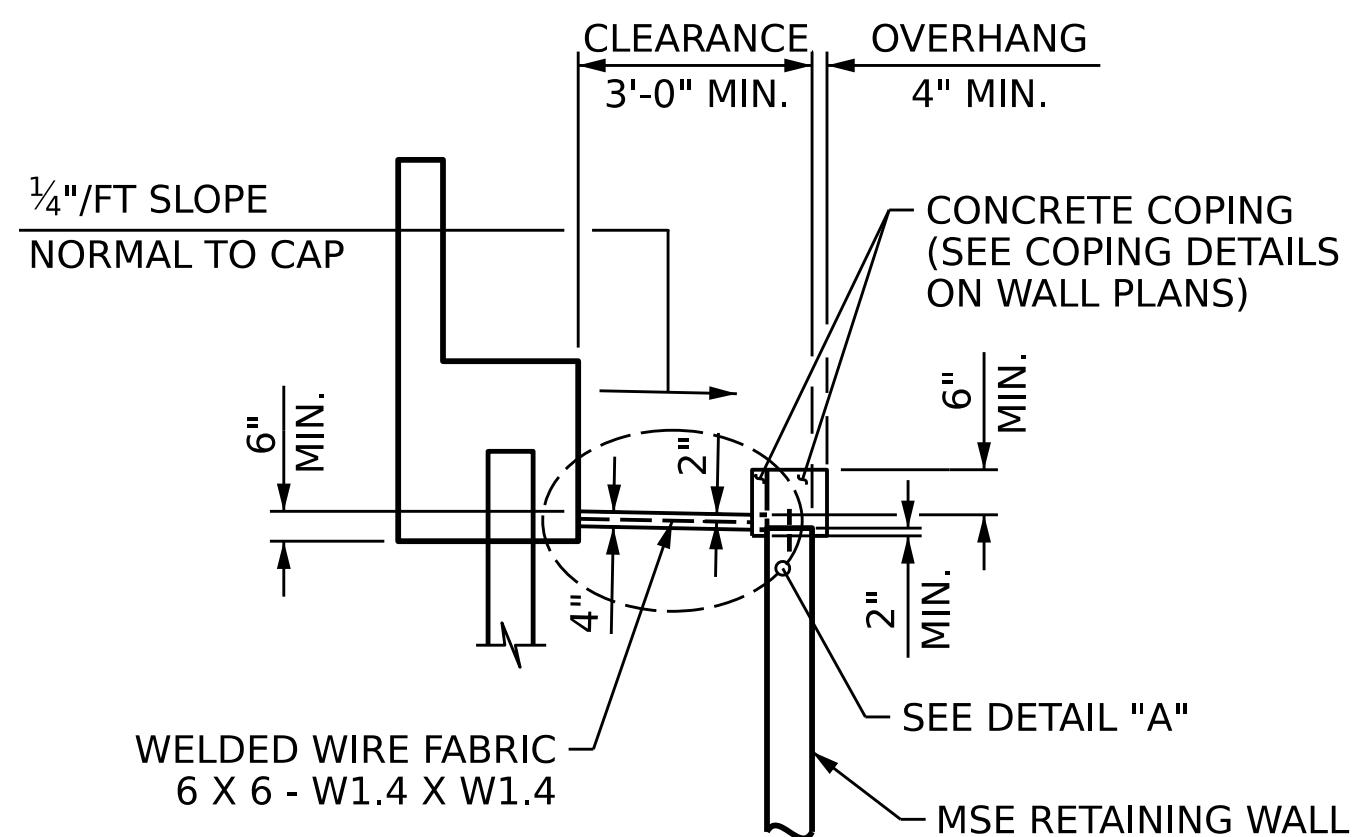
SUBSTRUCTURE
END BENT 2
MSE WALL AESTHETIC DETAILS

(RIGHT LANE)

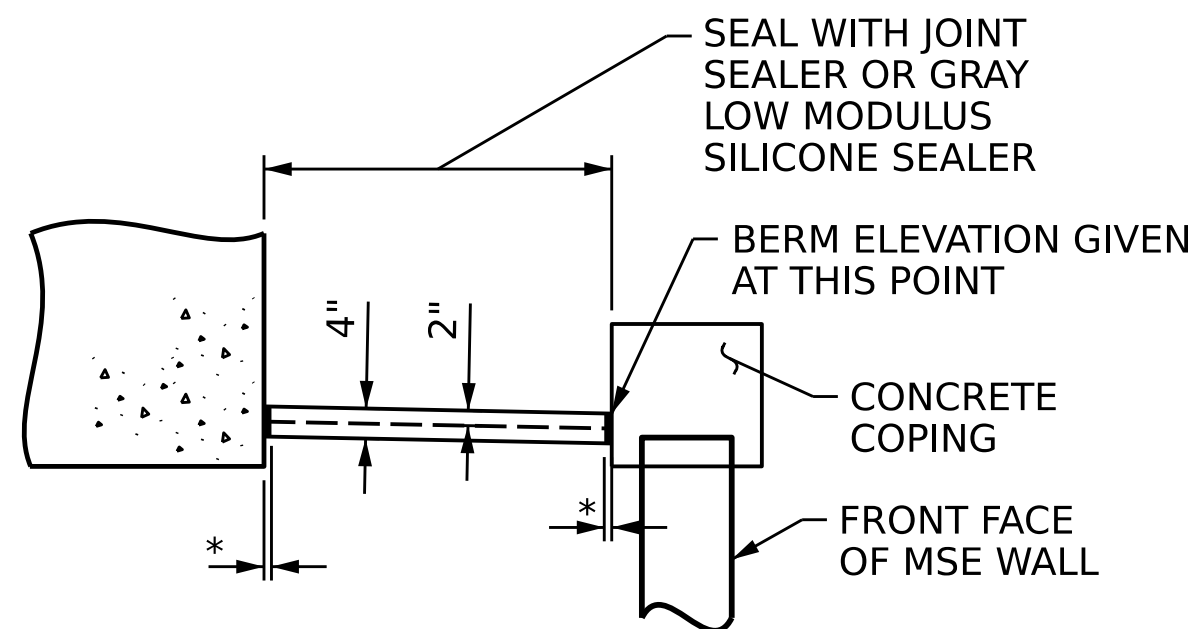
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-33	
1			3			TOTAL SHEETS	
2			4			39	



CONCRETE SLOPE PROTECTION SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

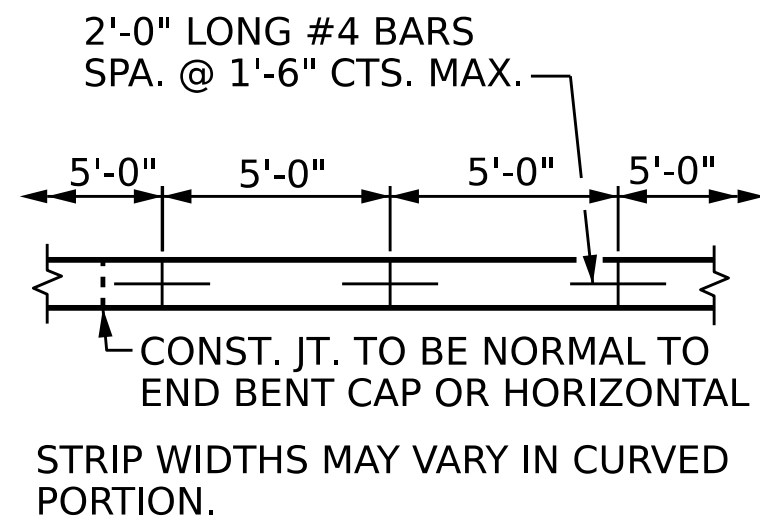


SECTION AT END BENT

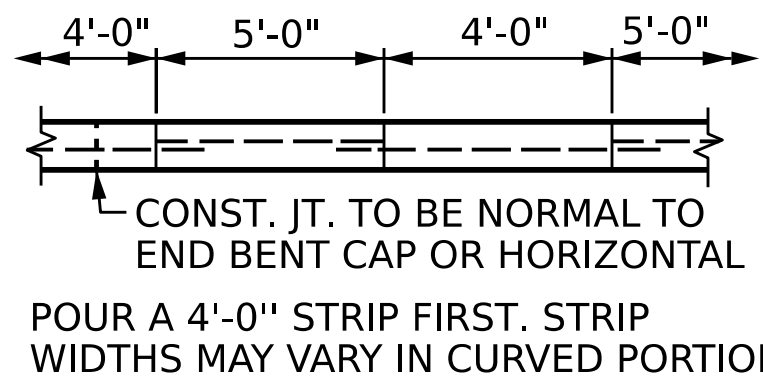


DETAIL "A"

* 1" EXP. JT. MAT'L
(PLACE DEBONDING TAPE
ON TOP OF EXP. JT. MAT'L)

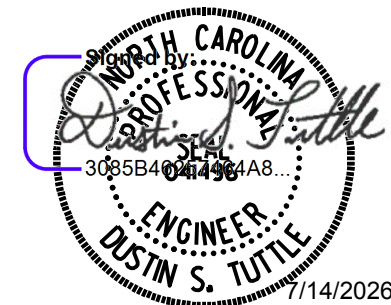


POURING DETAIL



OPTIONAL POURING DETAIL

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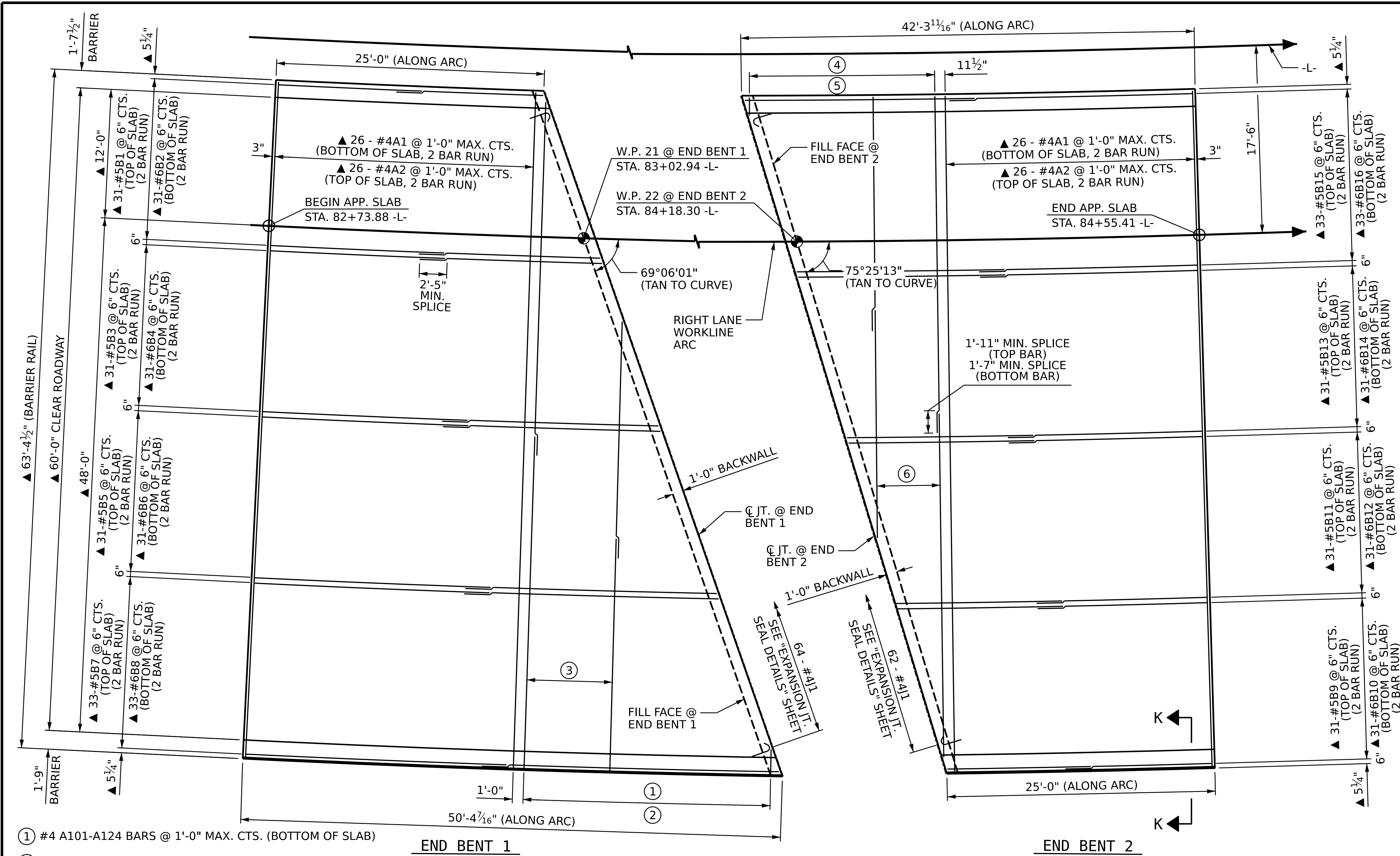


STATE OF NORTH CAROLINA
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RALEIGH

SLOPE PROTECTION DETAILS

(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-34
1			3			TOTAL SHEETS
2			4			39



NOTES:

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS.

THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

#5 "S" BARS MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO PROVIDE 2" CLEAR TO THE ½" EXPANSION JOINT OR TO THE SOUND BARRIER WALL ANCHOR HOLES.

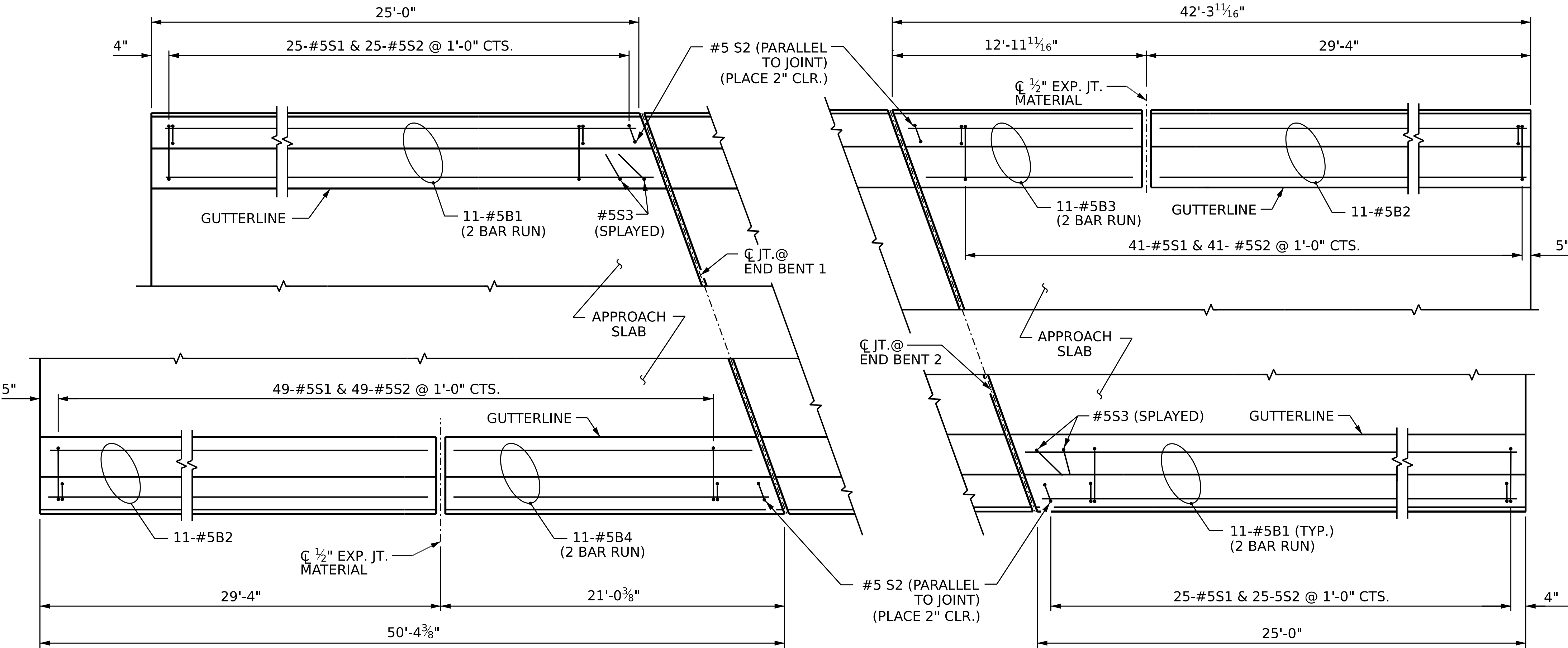
THE COST OF THE BARRIER RAIL ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".

THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

SHIFT, BEND, OR CUT REINFORCING STEEL AS NECESSARY TO CLEAR JOINT BLOCKOUT.

① THE AREAS DESIGNATED "SMOOTH" ON THE BACK FACE OF THE RIGHT RAIL SHALL BE COATED COLOR FS #33522. SEE "APPLICATION OF BRIDGE COATING" SPECIAL PROVISION.

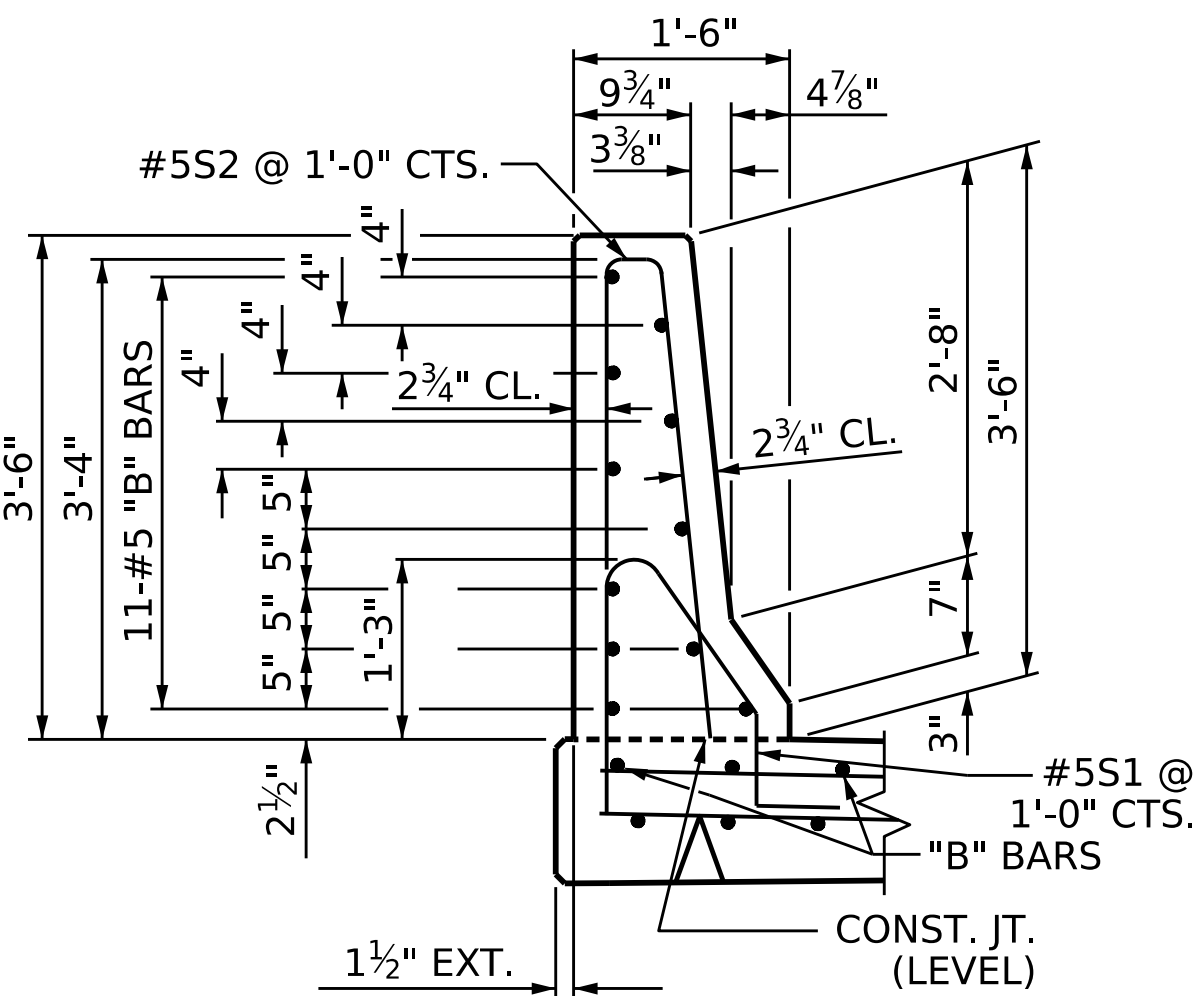


END BENT 1

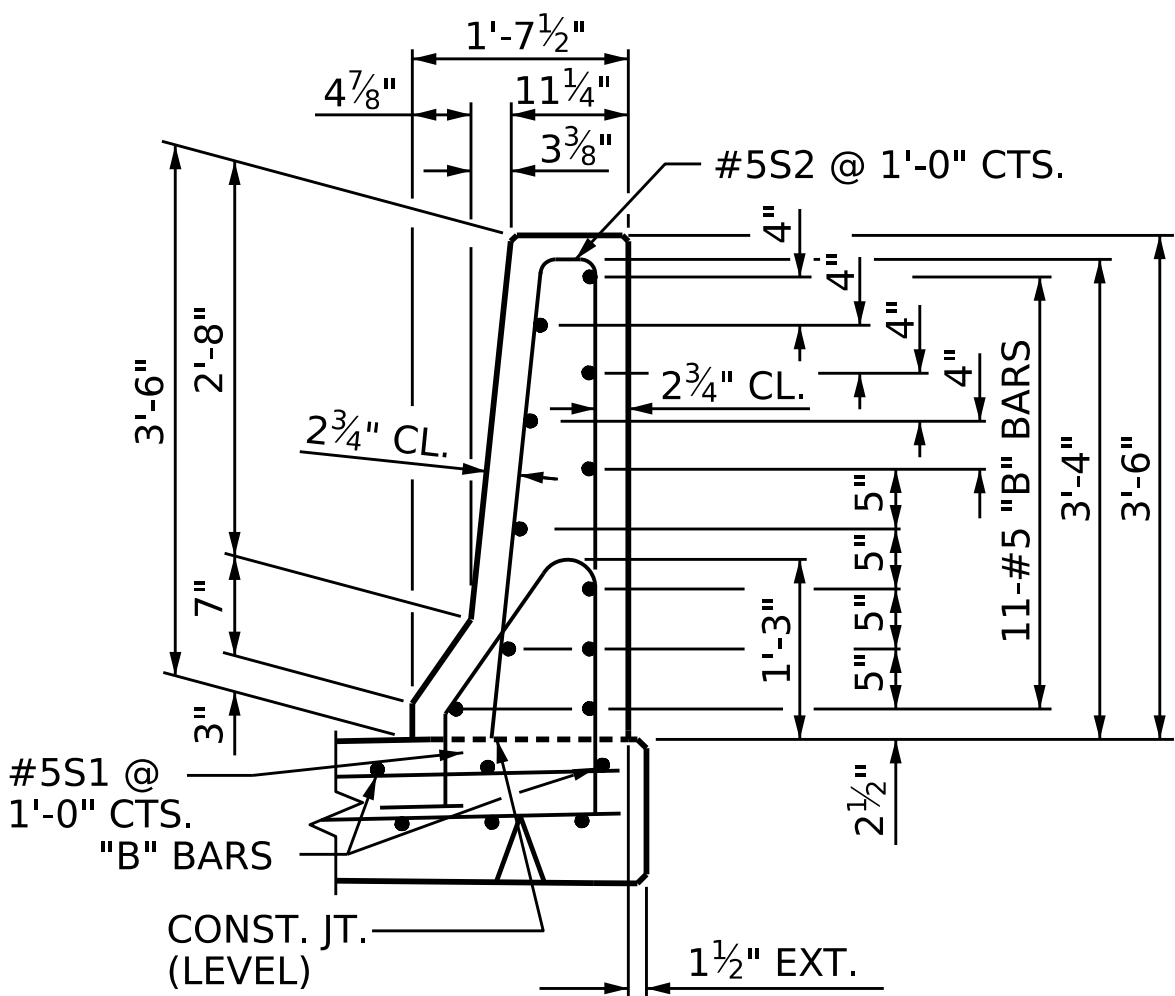
PLAN OF BARRIER RAIL

ALL DIMENSIONS MEASURED ALONG ARC AT EDGE OF APPROACH SLAB. ARC NOT SHOWN FOR CLARITY.

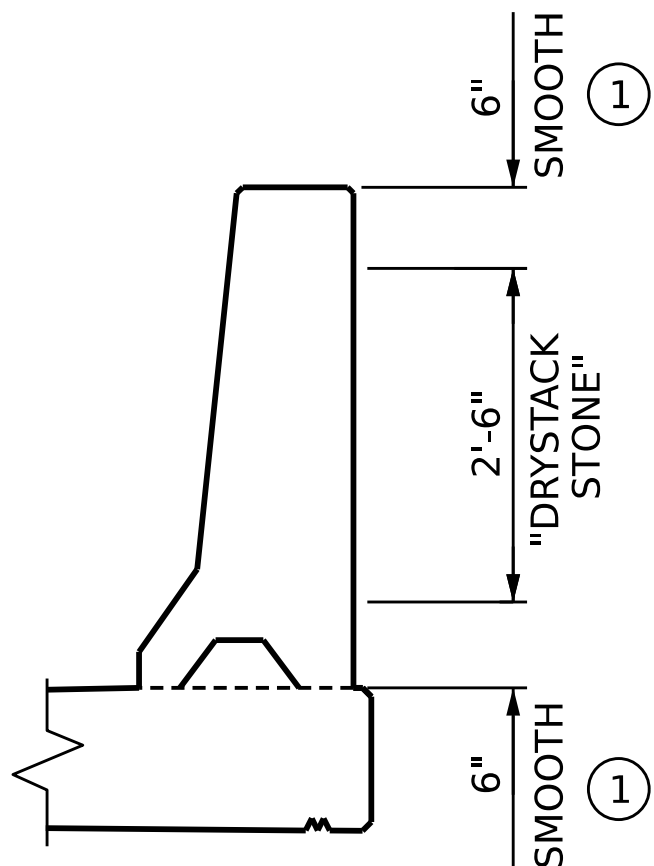
END BENT 2



SECTION THRU LEFT RAIL



SECTION THRU RIGHT RAIL



RIGHT RAIL SURFACE FINISH
THE PORTION DESIGNATED "DRYSTACK STONE" SHALL BE PAID FOR AS "ARCHITECTURAL CONCRETE SURFACE TREATMENT". SEE SPECIAL PROVISIONS.

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

BILL OF MATERIAL

CONCRETE BARRIER RAIL
ON APPROACH SLABS

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	44	5	STR	14'-3"	652
* B2	22	5	STR	28'-11"	664
* B3	22	5	STR	7'-10"	180
* B4	22	5	STR	12'-0"	275
* S1	140	5	1	5'-7"	827
* S2	144	5	2	7'-0"	1066
* S3	4	5	3	7'-9"	32

* EPOXY COATED REINFORCING STEEL 3,696 LBS.

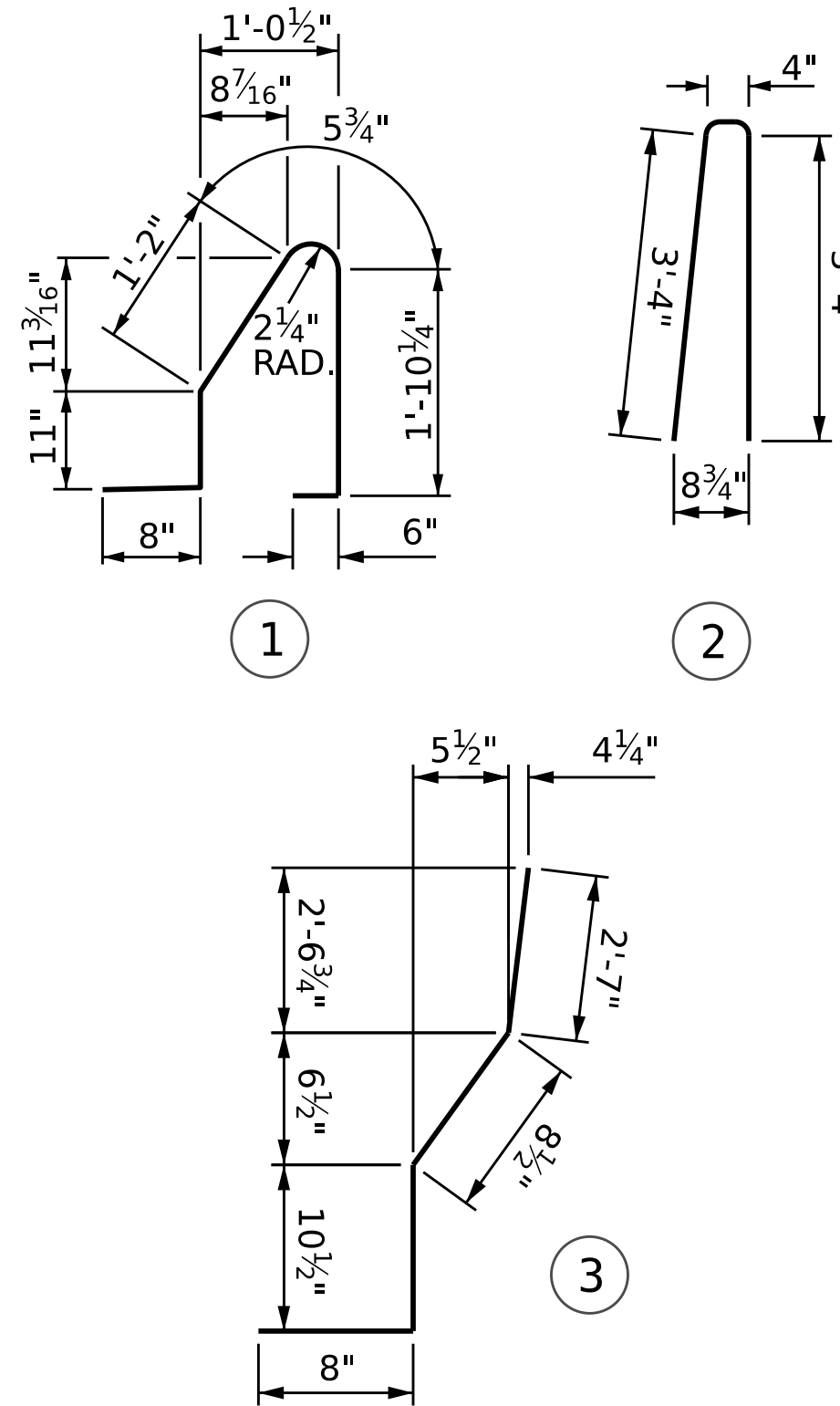
CLASS AA CONCRETE 19.9 C.Y.

CONCRETE BARRIER RAIL 142.7 L.F.

ARCHITECTURAL CONCRETE SURFACE TREATMENT 188 SQ. FT.

APPLICATION OF BRIDGE COATING 76 SQ. FT.

BAR TYPES



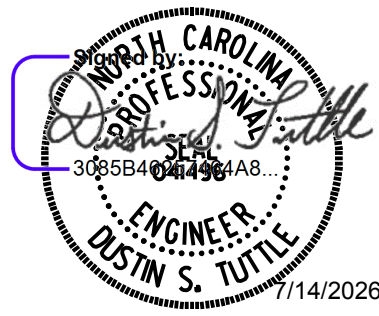
ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 3 OF 3

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RALEIGH, NC 27607
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AECOM License No. F02342



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

APPROACH SLAB
DETAILS

(RIGHT LANE)

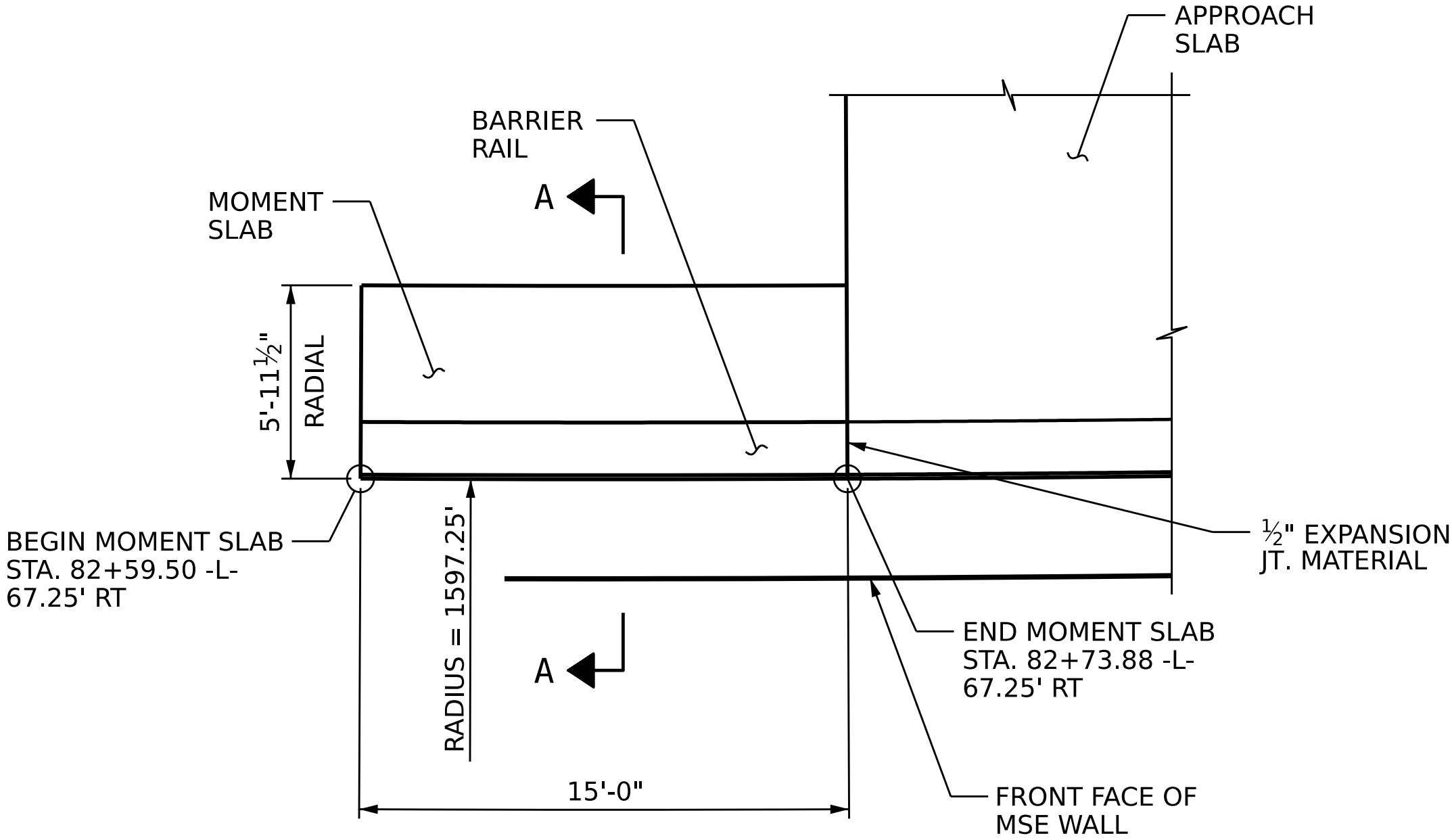
REVISIONS						SHEET NO. S8-37
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			

STD. NO. BAS3

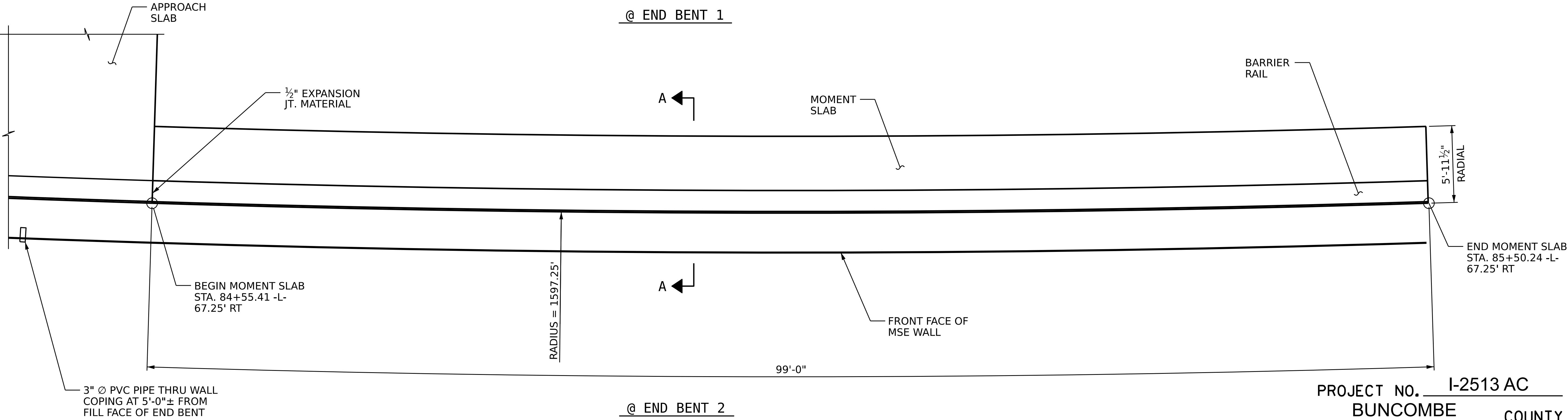
ASSEMBLED BY : T. NEAL	DATE : 01/2024
CHECKED BY : S. NATARAJAN	DATE : 02/2024
DRAWN BY : FCJ 6/87	REV. 6/13 MAA/GM
CHECKED BY : EGA 6/87	REV. 12/17 MAA/THC
	REV. 06/19 BNB/THC

NOTES:

FOR ADDITIONAL NOTES AND SECTION A-A,
SEE SHEET 2 OF 2.



@ END BENT 1



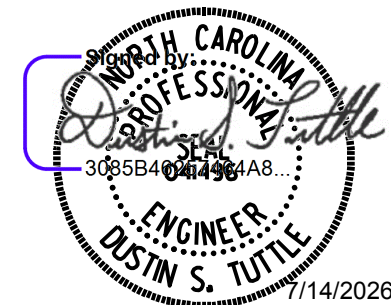
@ END BENT 2

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 83+50.80 -L-

SHEET 1 OF 2

PLAN OF MOMENT SLABS

AECOM
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5438 WADE PARK BOULEVARD, SUITE 200
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(919) 854-6200
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

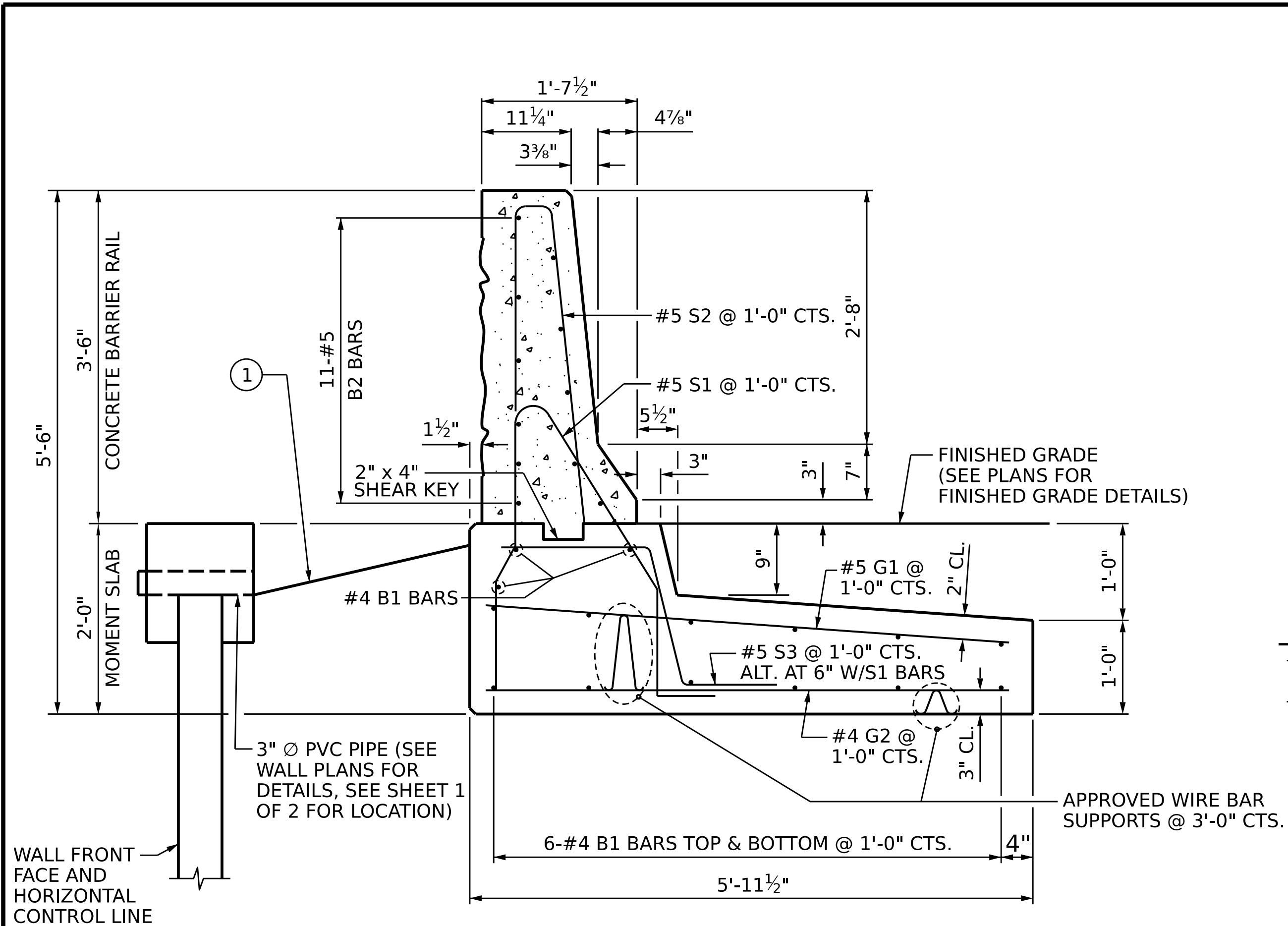
MOMENT SLAB
DETAILS

(RIGHT LANE)

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-38	
1			3			TOTAL SHEETS	
2			4			39	

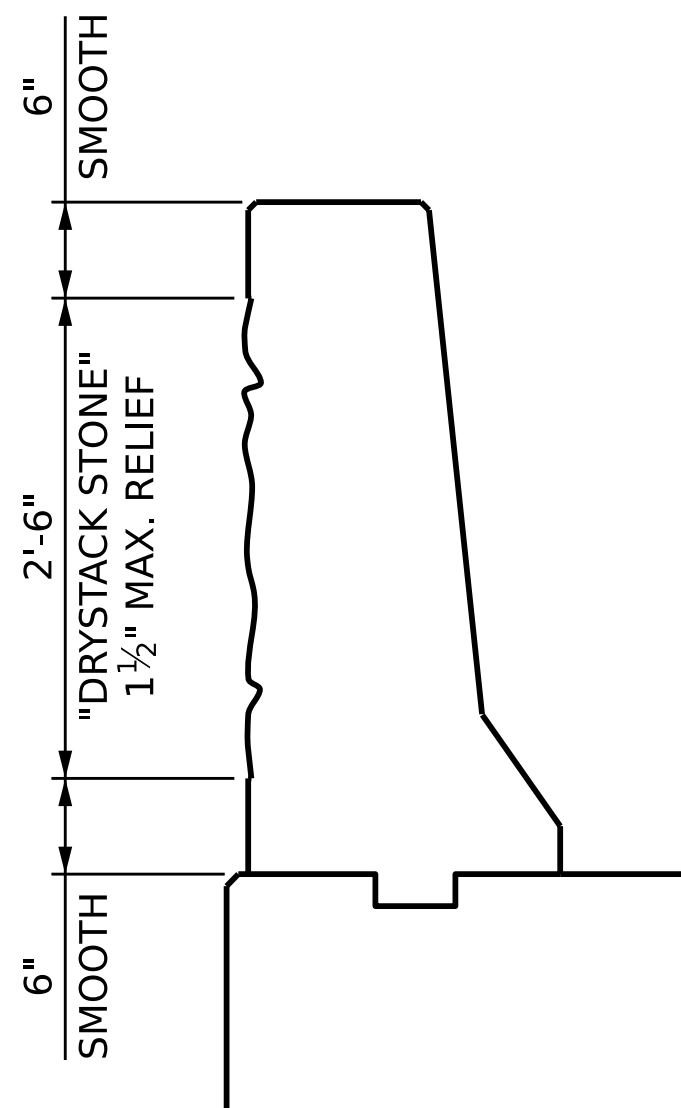
DRAWN BY :	D. DRUM	DATE :	01/2024
CHECKED BY :	G. COLS	DATE :	01/2024
DESIGN ENGINEER OF RECORD:	D. TUTTLE	DATE :	03/2026

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SECTION A-A

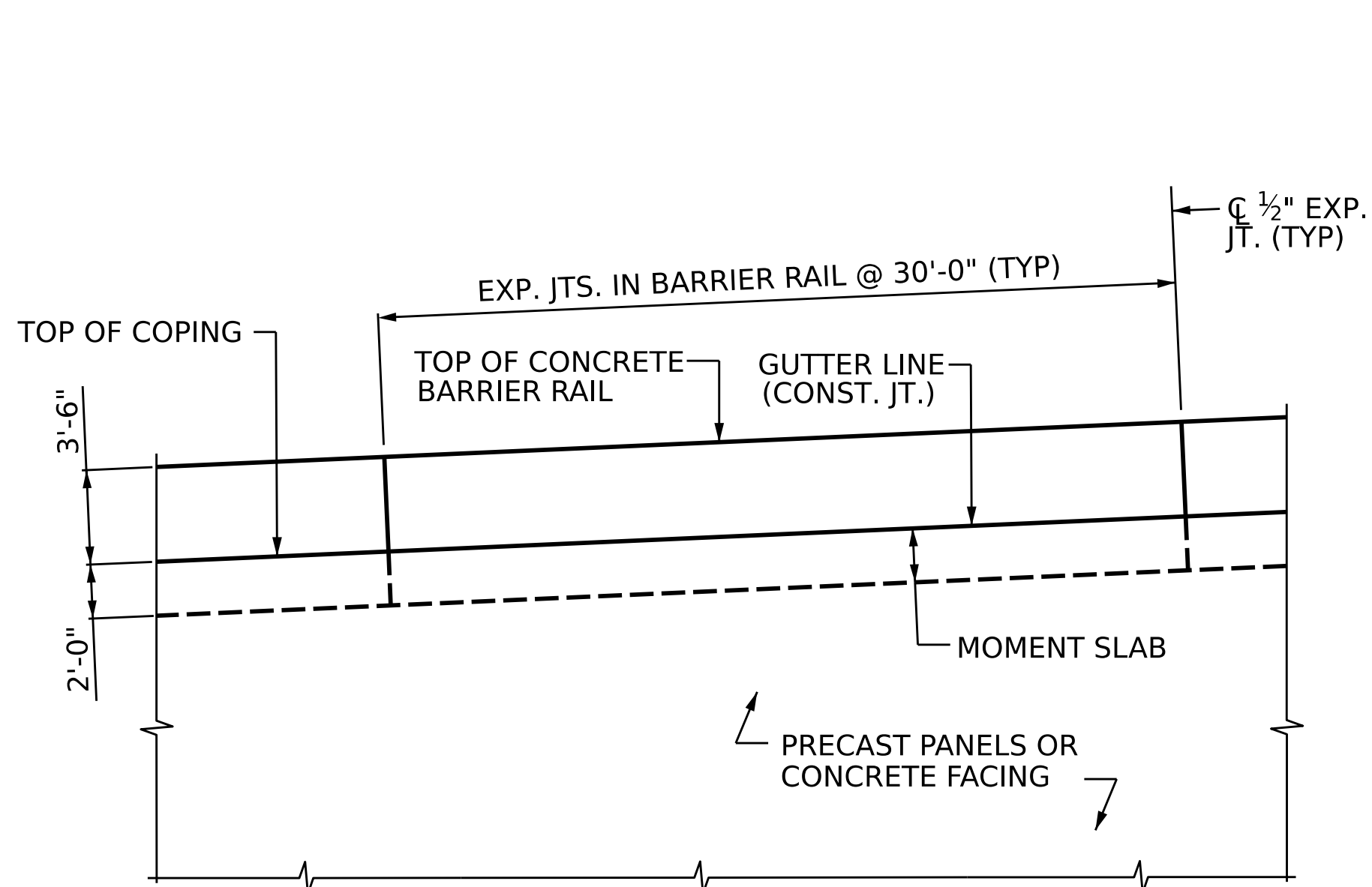
CONCRETE BARRIER RAIL WITH MOMENT SLAB



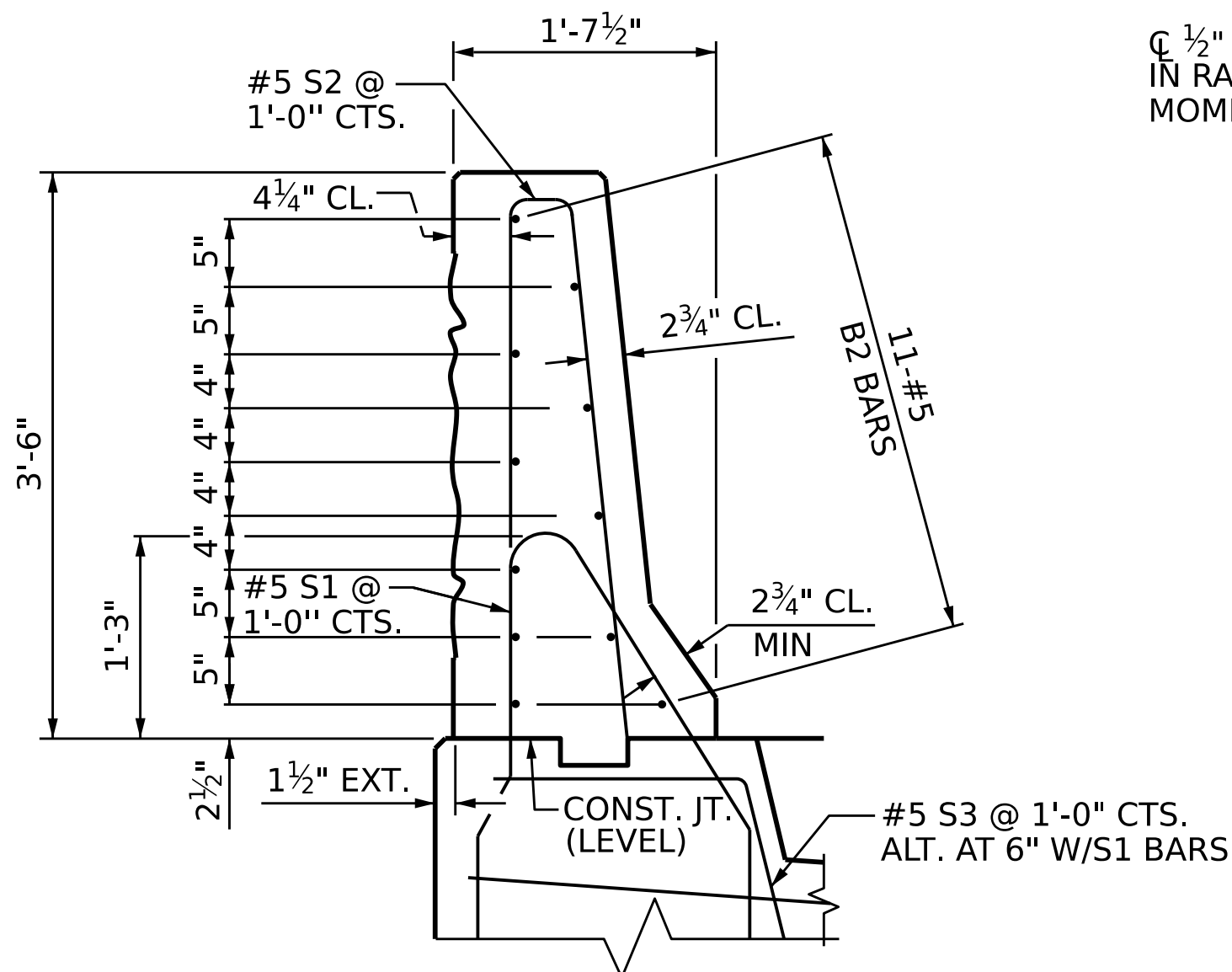
RIGHT RAIL SURFACE FINISH

THE PORTION DESIGNATED "DRystack STONE" SHALL BE PAID FOR AS "ARCHITECTURAL CONCRETE SURFACE TREATMENT". SEE SPECIAL PROVISIONS.

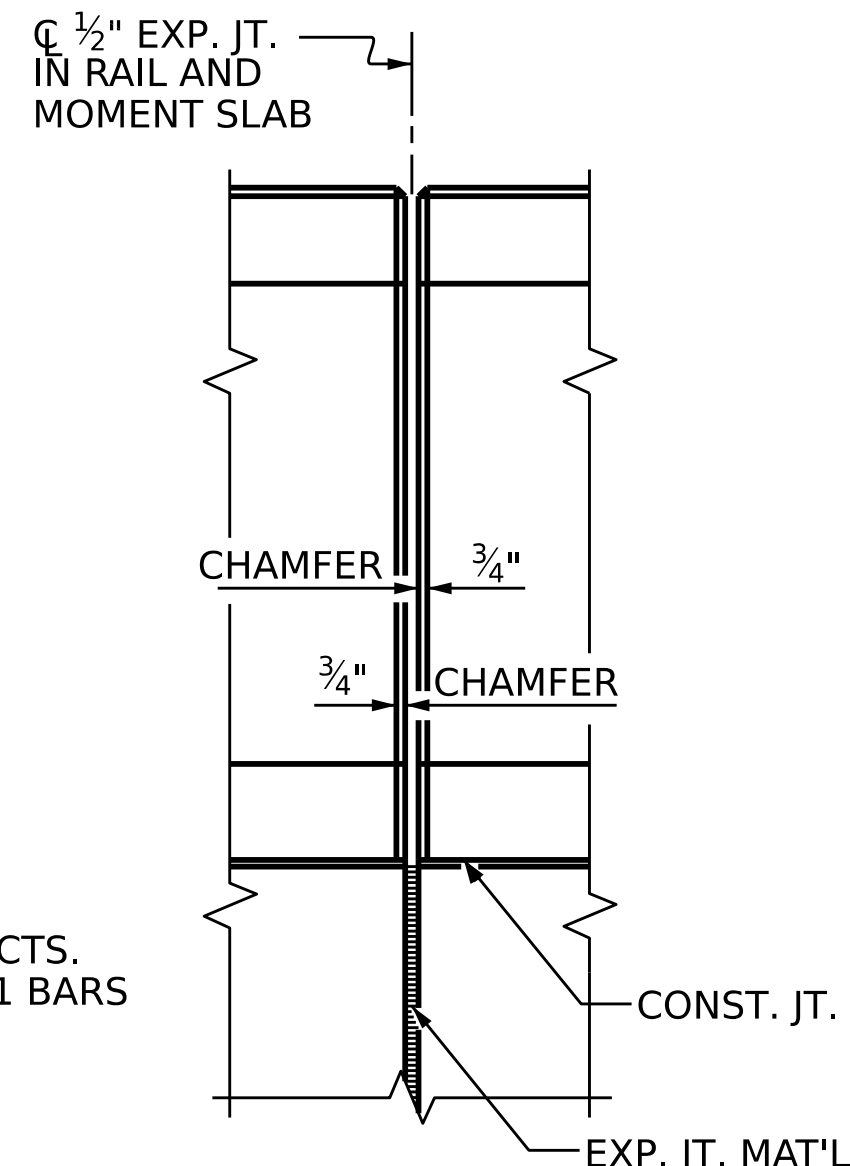
CONCRETE BARRIER RAIL WITH MOMENT SLAB BEGIN MOMENT SLAB -L- STA. 84+55.41 (67.25' RT) END MOMENT SLAB -L- STA. 85+50.24 (67.25' RT) PAY LENGTH = <u>114</u> LIN FT
ARCHITECTURAL CONCRETE SURFACE TREATMENT PAY AREA = <u>285</u> SQ FT
APPLICATION OF BRIDGE COATING PAY AREA = <u>114</u> SQ FT



CONCRETE BARRIER RAIL WITH MOMENT SLAB - PARTIAL ELEVATION



SECTION THRU RAIL



ELEV. @ EXP. JOINTS

BARRIER RAIL DETAILS

NOTES:

FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB, SEE SECTION 460 OF THE STANDARD SPECIFICATIONS.

CONCRETE BARRIER RAIL WITH MOMENT SLAB SHALL BE A MINIMUM OF 15' IN LENGTH.

EXPANSION JOINTS SHALL BE PLACED IN THE BARRIER RAIL AND MOMENT SLAB AT A MAXIMUM SPACING OF 30'.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED SURFACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MID-POINT OF BARRIER RAIL SEGMENTS LESS THAN 20' IN LENGTH.

EXPANSION OR CONTRACTION JOINTS IN THE BARRIER RAIL AND MOMENT SLAB SHALL BE ALIGNED WITH JOINTS IN WALL FACING BELOW.

THE BARRIER RAIL SHALL NOT BE CAST UNTIL THE MOMENT SLAB HAS ATTAINED AN AGE OF THREE CURING DAYS OR A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI. IN ADDITION, NO FILL MATERIAL, ASPHALT, OR CONSTRUCTION EQUIPMENT IS ALLOWED ON THE MOMENT SLAB PRIOR TO SATISFYING THE MINIMUM CONCRETE CURING AND STRENGTH REQUIREMENTS.

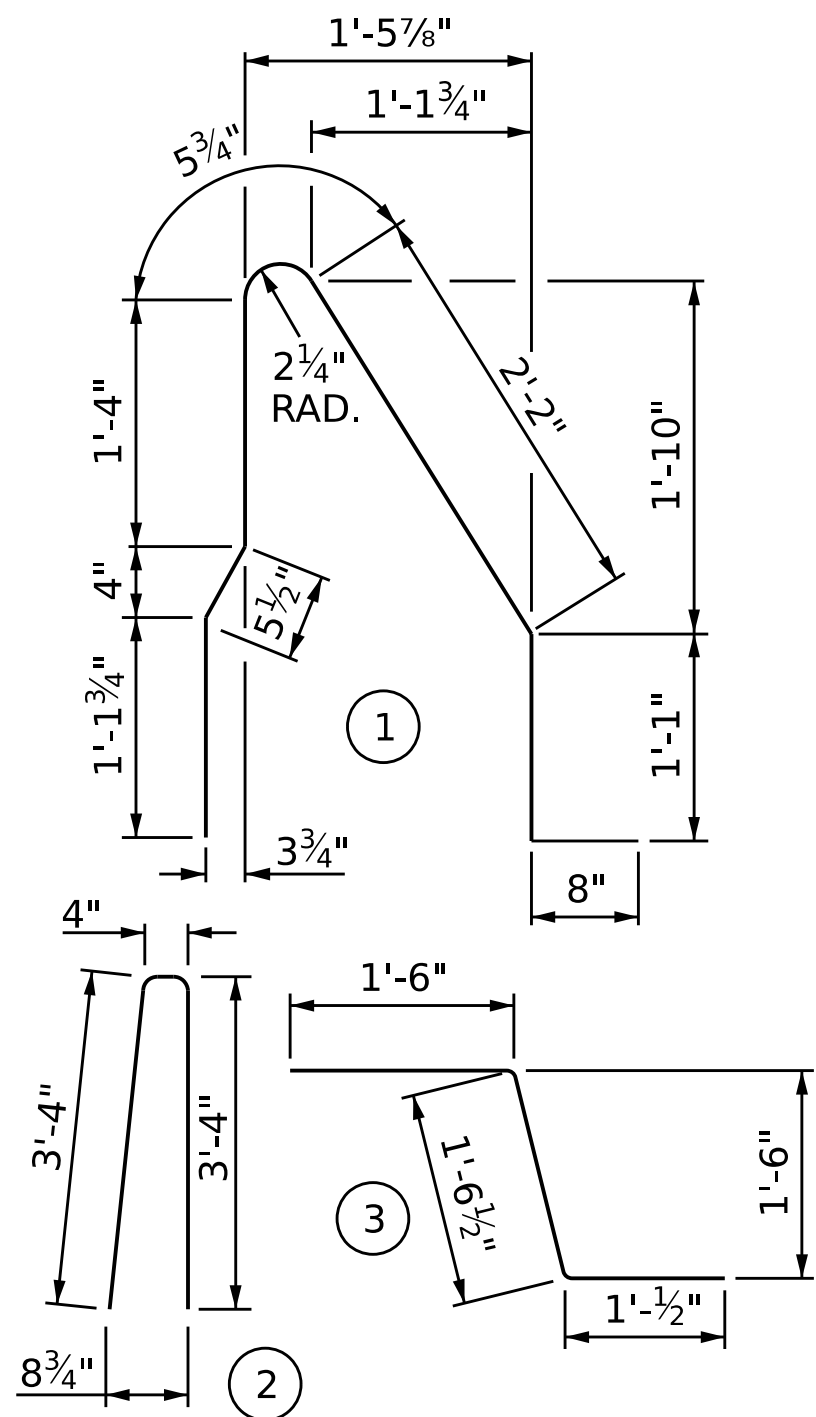
ALL REINFORCING STEEL IN THE BARRIER RAIL SHALL BE EPOXY COATED.

IF EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, BARRIERS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH CONCRETE BARRIER RAIL WITH MOMENT SLAB OR CONCRETE FACING FOR RETAINING WALL WILL BE THICKER THAN 8", CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS SHALL BE REVISED AND SUBMITTED FOR APPROVAL.

- ① AREA BETWEEN THE MOMENT SLAB AND MSE WALL SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE SLAB AND SHALL BE PAVED.

BILL OF MATERIAL					
FOR ONE 30'-0" SECTION OF CONCRETE BARRIER RAIL WITH MOMENT SLAB					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	15	4	STR	29'-7"	296
* B2	11	5	STR	29'-7"	339
G1	31	5	STR	5'-7"	181
G2	31	4	STR	5'-7"	116
* S1	31	5	1	7'-4"	237
* S2	31	5	2	7'-0"	226
S3	30	5	3	4'-1"	128
REINFORCING STEEL					721 LB.
* EPOXY COATED REINFORCING STEEL					802 LB.
CLASS AA CONCRETE BARRIER RAIL					4.3 C.Y.
CLASS A CONCRETE MOMENT SLAB					9.4 C.Y.
CONCRETE BARRIER RAIL WITH MOMENT SLAB					30 LIN. FT.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

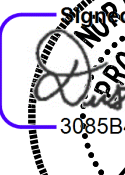
STATION: 83+50.80 -L-

SHEET 2 OF 2

AECOM

AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607

(919) 854-6200 www.aecom.com
AECOM License No. F-0342

A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "ENGINEER" at the bottom. Inside the ring, the name "DUSTIN S. TUTTLE" is written in a stylized font. Below the name, the license number "30858404" and the expiration date "12/31/2016" are printed. A blue ink signature, which appears to be "Dustin S. Tuttle", is written across the seal. A blue rectangular box is drawn over the left side of the seal, partially obscuring the text "NORTH CAROLINA" and "ENGINEER".

7/14/2026

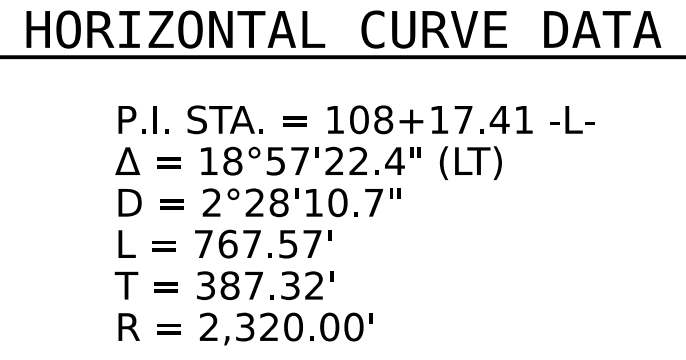
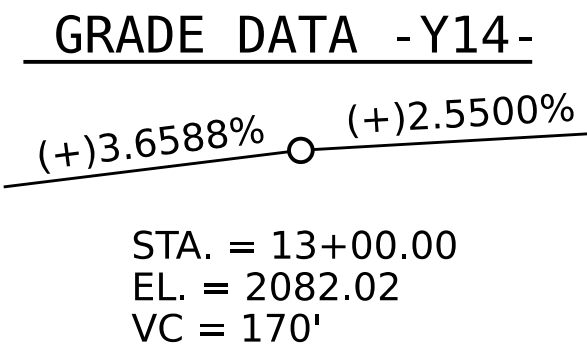
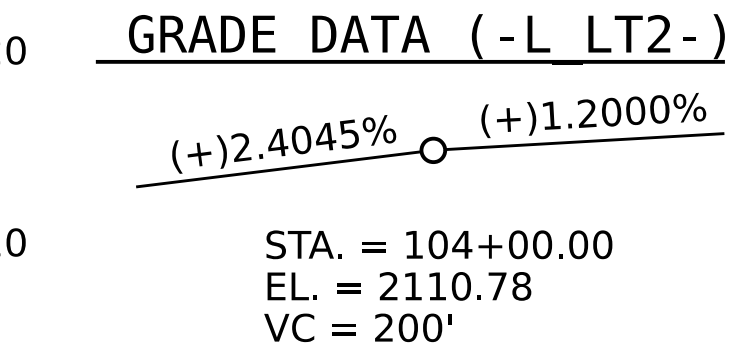
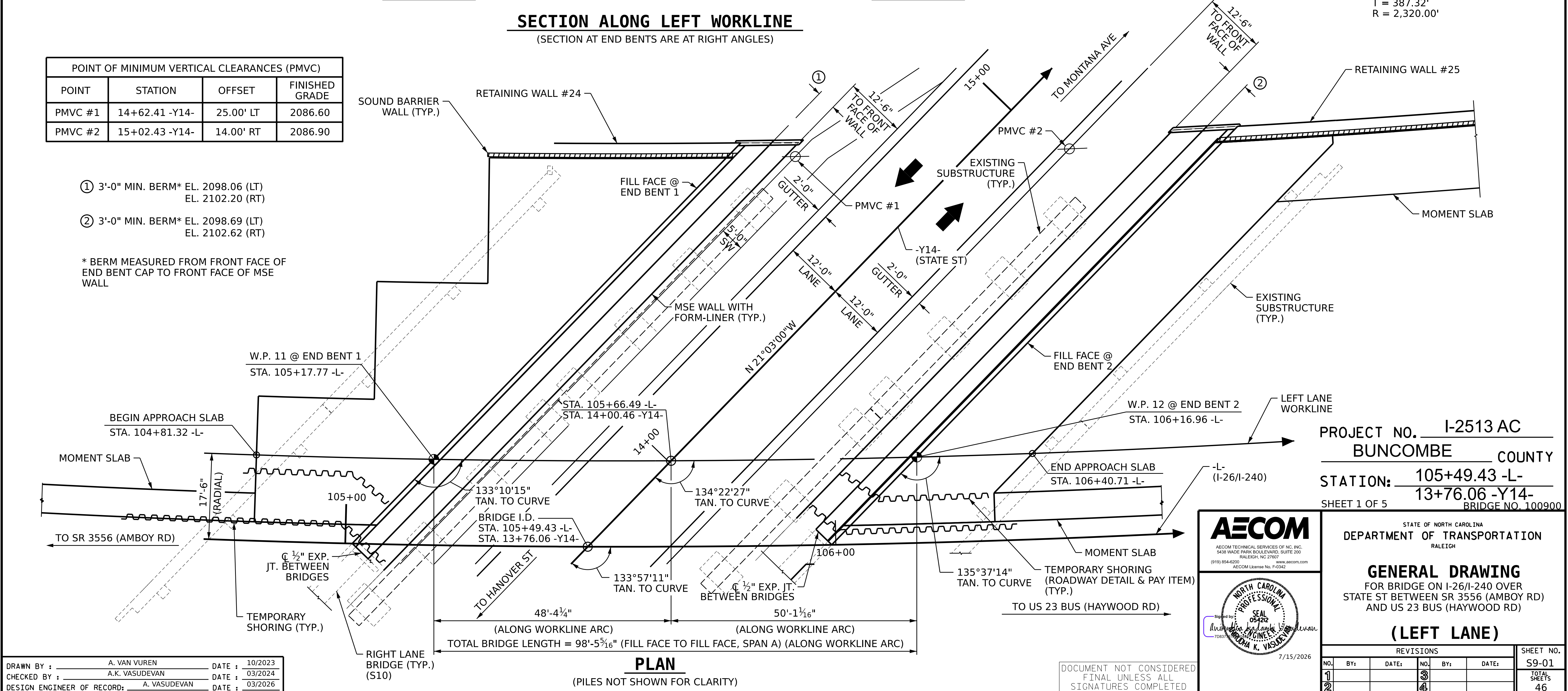
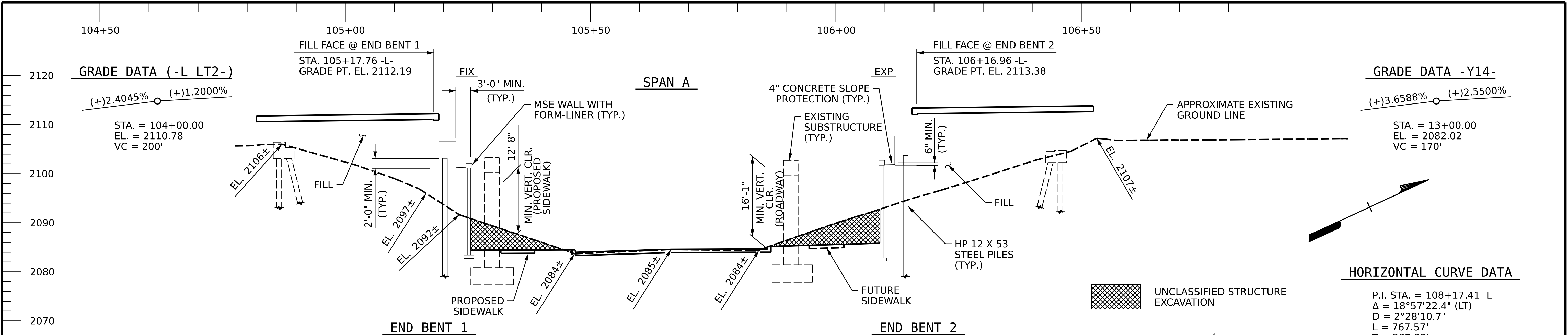
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MOMENT SLAB DETAILS

(RIGHT LANE)

REVISIONS						SHEET NO. S8-39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 39
2			4			

DRAWN BY : _____ D. DRUM DATE : 01/2024
CHECKED BY : _____ G. COLS DATE : 01/2024
DESIGN ENGINEER OF RECORD: _____ D. TUTTLE DATE : 03/2026



POINT OF MINIMUM VERTICAL CLEARANCES (PMVC)			
POINT	STATION	OFFSET	FINISHED GRADE
PMVC #1	14+62.41 -Y14-	25.00' LT	2086.60
PMVC #2	15+02.43 -Y14-	14.00' RT	2086.90

- ① 3'-0" MIN. BERM* EL. 2098.06 (LT)
EL. 2102.20 (RT)
- ② 3'-0" MIN. BERM* EL. 2098.69 (LT)
EL. 2102.62 (RT)

* BERM MEASURED FROM FRONT FACE OF
END BENT CAP TO FRONT FACE OF MSE
WALL

AECOM
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www.aecom.com
AECOM License No. F02362

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

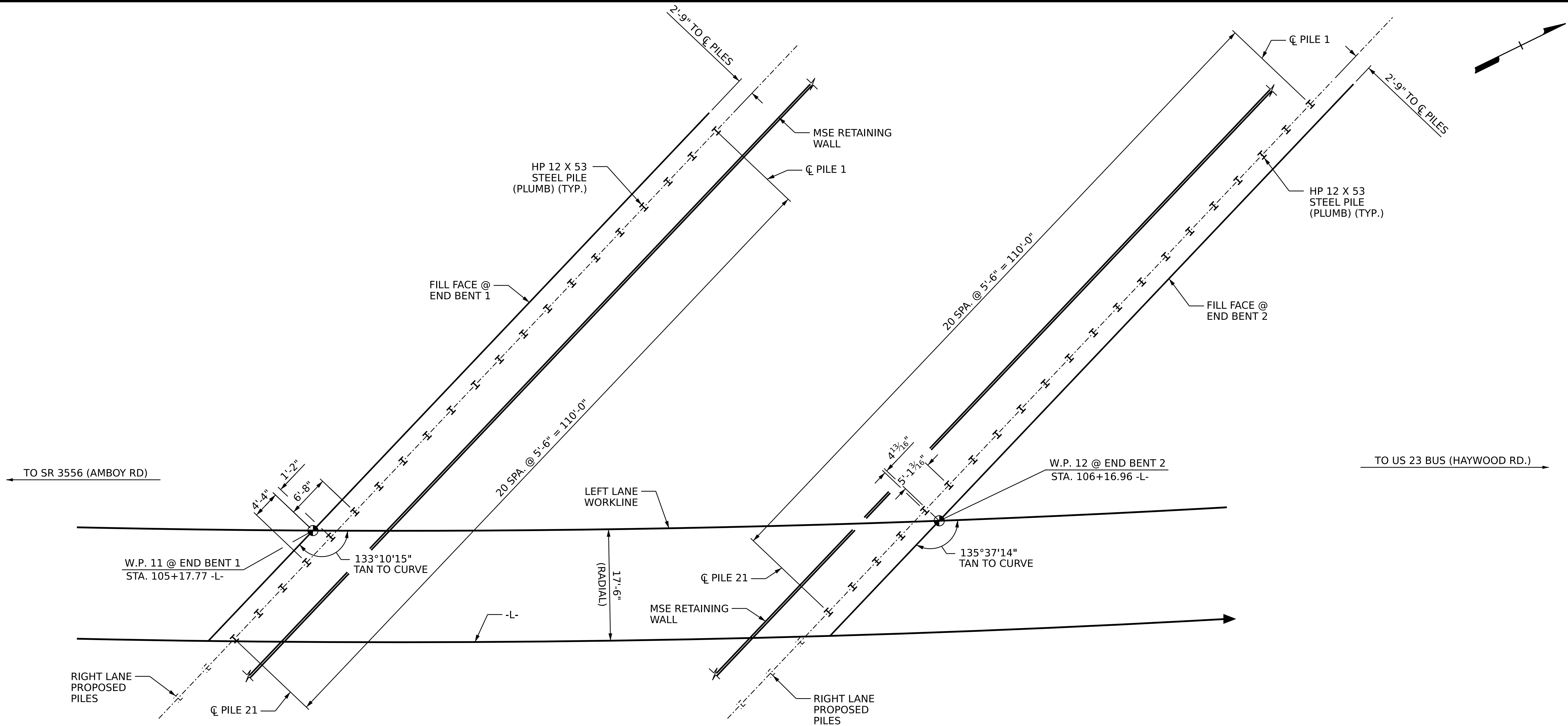
GENERAL DRAWING
FOR BRIDGE ON I-26/I-240 OVER
STATE ST BETWEEN SR 3556 (AMBOY RD)
AND US 23 BUS (HAYWOOD RD)

(LEFT LANE)

REVISIONS						SHEET NO. S9-01 TOTAL SHEETS 46
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

DRAWN BY : A. VAN VUREN DATE : 10/2023
CHECKED BY : A.K. VASUDEVAN DATE : 03/2024
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



END BENT 1

END BENT 2

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE TO CENTERLINES OF PILES

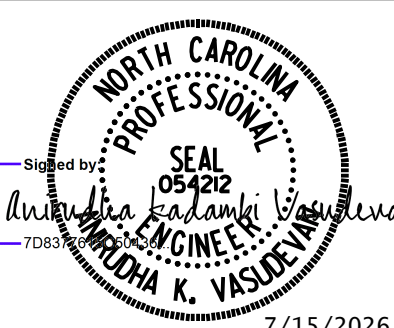
FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

INSTALL PILES FOR END BENT No. 1 AND 2 PRIOR TO MSE WALL CONSTRUCTION AND AFTER MSE WALL IS EXCAVATED.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 105+49.43 -L-

SHEET 2 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON I-26/I-240 OVER
STATE ST BETWEEN SR 3556 (AMBOY RD)
AND US 23 BUS (HAYWOOD RD)

(LEFT LANE)

DRAWN BY : T. NEAL DATE : 12/2023
CHECKED BY : A. VASUDEVAN DATE : 12/2023
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
S9-02
TOTAL
SHEETS
46