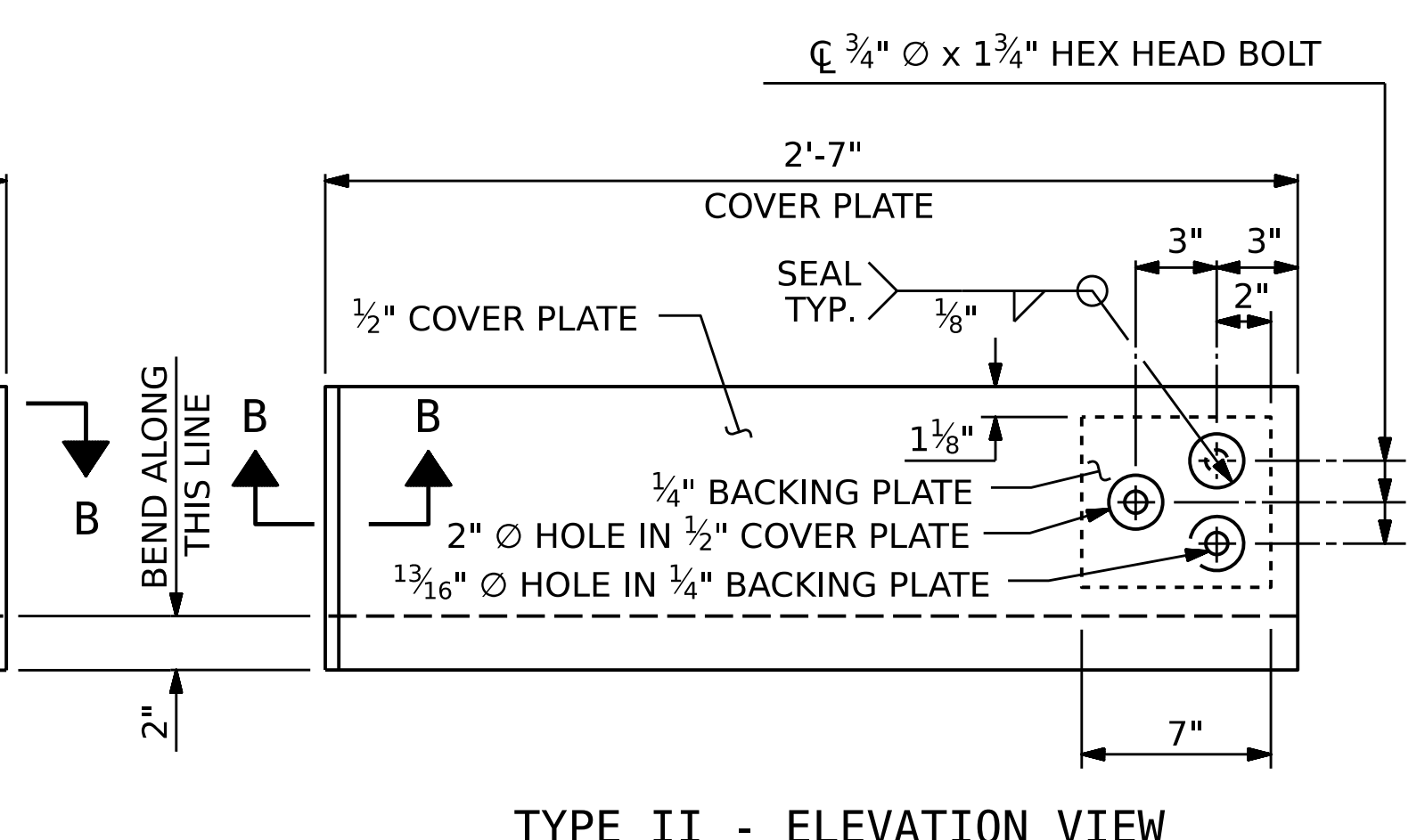


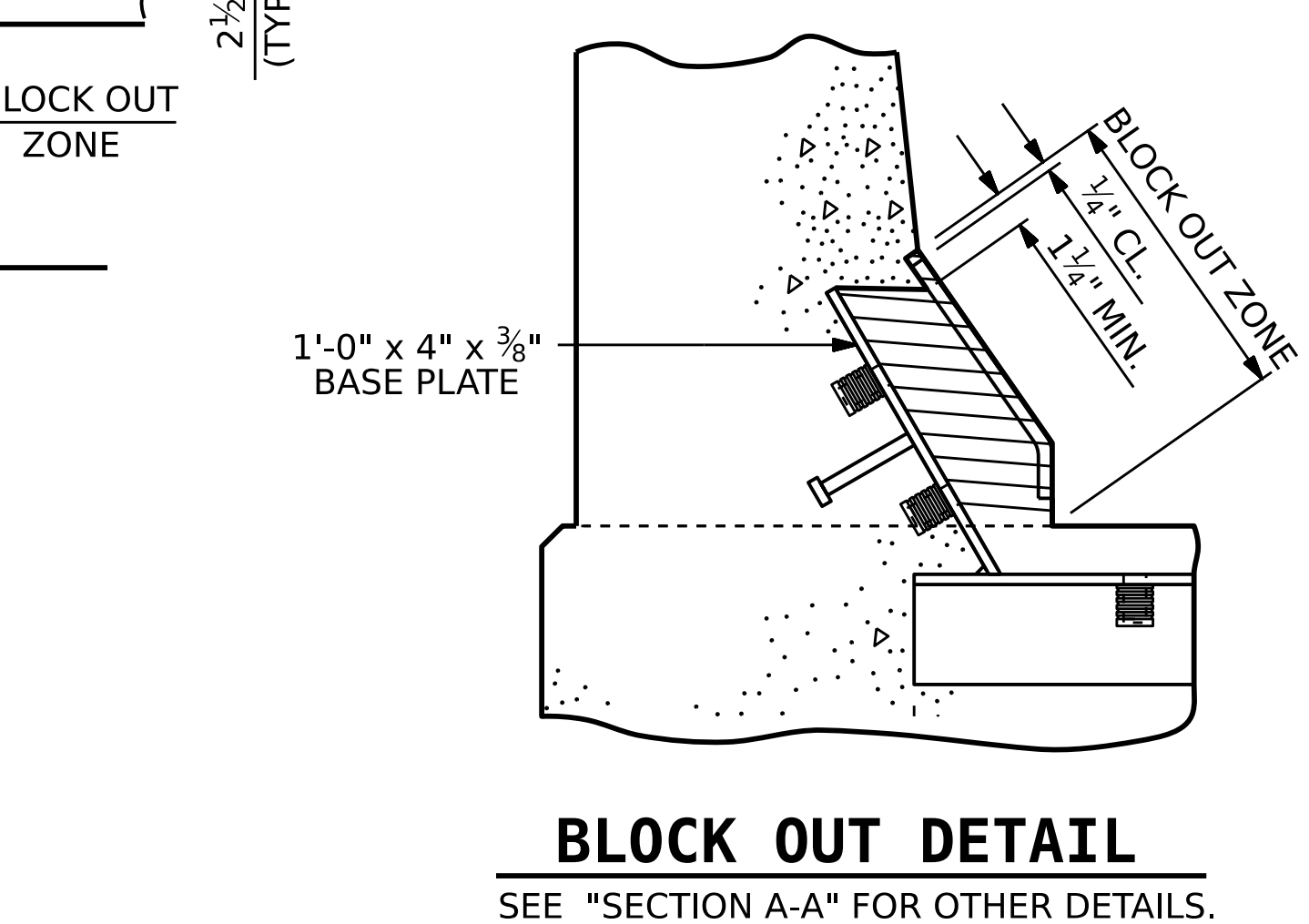


The diagram illustrates the alignment of pavement markings on a road surface. Key components and labels include:

- WHITE SKIP LINE:** A solid line at the top left, with a dashed line extending from it.
- GUTTER LINE:** A solid line indicating the edge of the gutter.
- EDGE OF SUPERSTRUCTURE:** A solid line indicating the edge of the bridge or overpass structure.
- YELLOW EDGE LINE:** Two dashed lines indicating the edge of the travel lane.
- FILL FACE @ END BENT 2:** A solid line at the bottom right, indicating the end of the bridge structure.
- EDGE OF SUPERSTRUCTURE:** A solid line at the bottom right, indicating the edge of the bridge structure.

PAVEMENT MARKING ALIGNMENT

SECTION B-B



CONCRETE INSERT

**** EACH WELDED ATTACHMENT OF WIRE TO FERRULE SHALL DEVELOP THE TENSILE STRENGTH OF THE WIRE.**

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

SHEET 2 OF 2

AECOM

AECOM TECHNICAL SERVICES OF NC, INC.
5435 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-6200www.aecom.com
AECOM License No. F-0342

SEAL

054212

Michael K. Vasquez

PROFESSIONAL ENGINEER

NORTH CAROLINA

Stored by: Michael K. Vasquez

7/15/2026

STATE OF NORTH CAROLINA

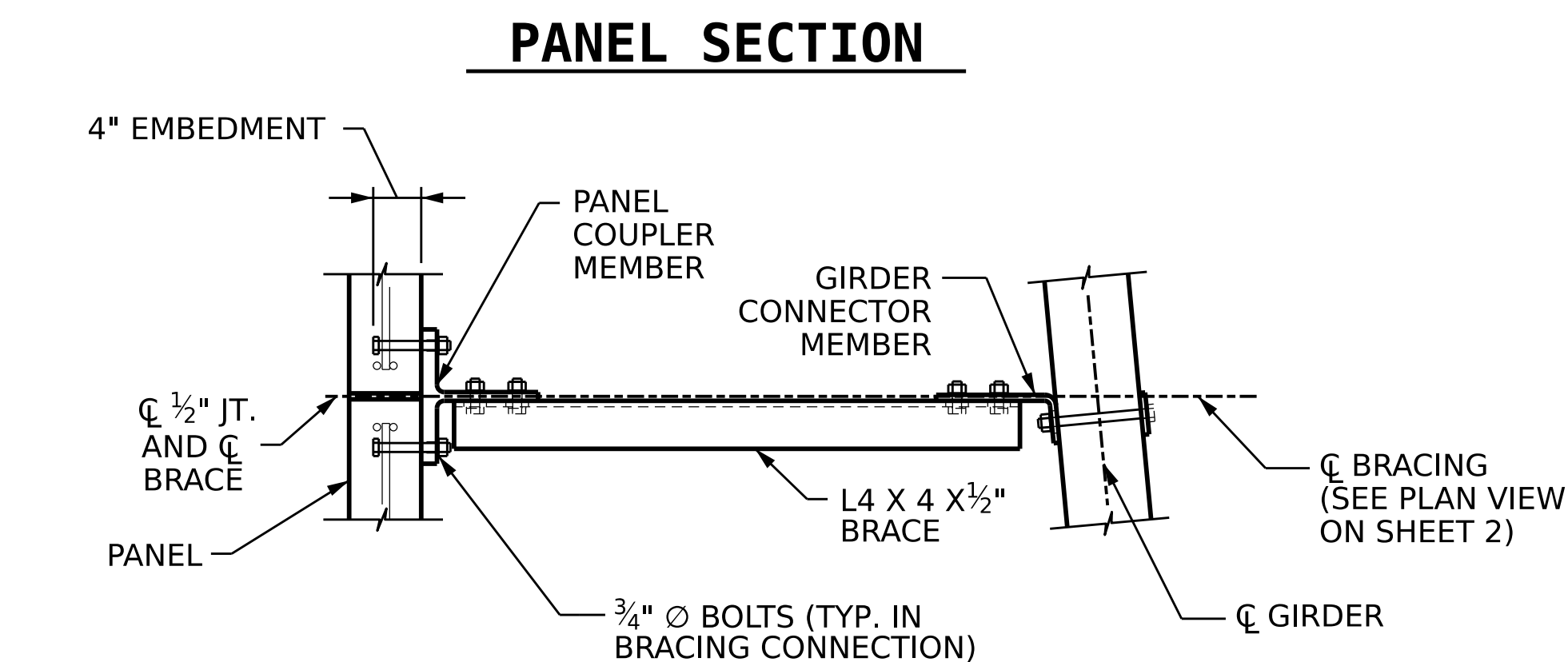
DEPARTMENT OF TRANSPORTATION

RALEIGH

STANDARD

EXPANSION JOINT
SEAL DETAILS
FOR BARRIER RAIL
(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S10-25
1			3			TOTAL SHEETS 52
2			4			



4" EMBEDMENT

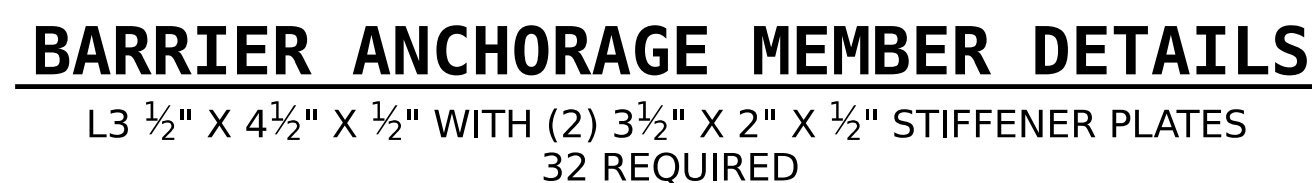
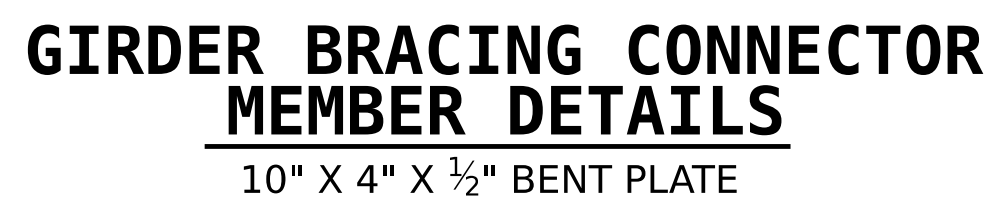
PANEL COUPLER MEMBER

CL 1/2" JT. AND C COUPLER

PANEL

3/4" Ø BOLTS (TYP. IN BRACING CONNECTION)

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



REVISIONS						SHEET NO. S10-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

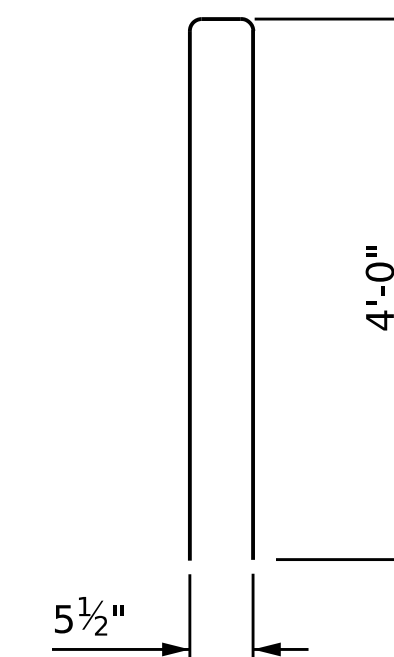
SEE SHEET 3 OF 4 FOR NOTES.

SEE SHEET 2 OF 4 FOR PANEL GEOMETRY.

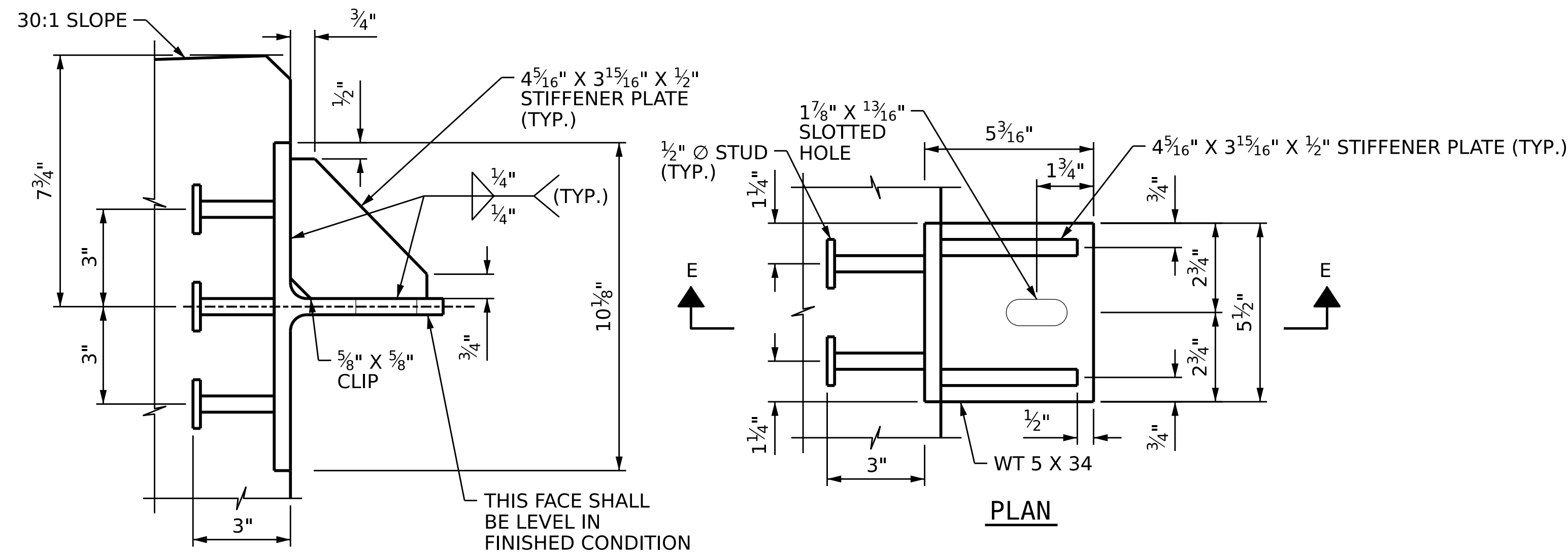
ALL STEEL IN THE PANEL SHALL BE EPOXY COATED.

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.



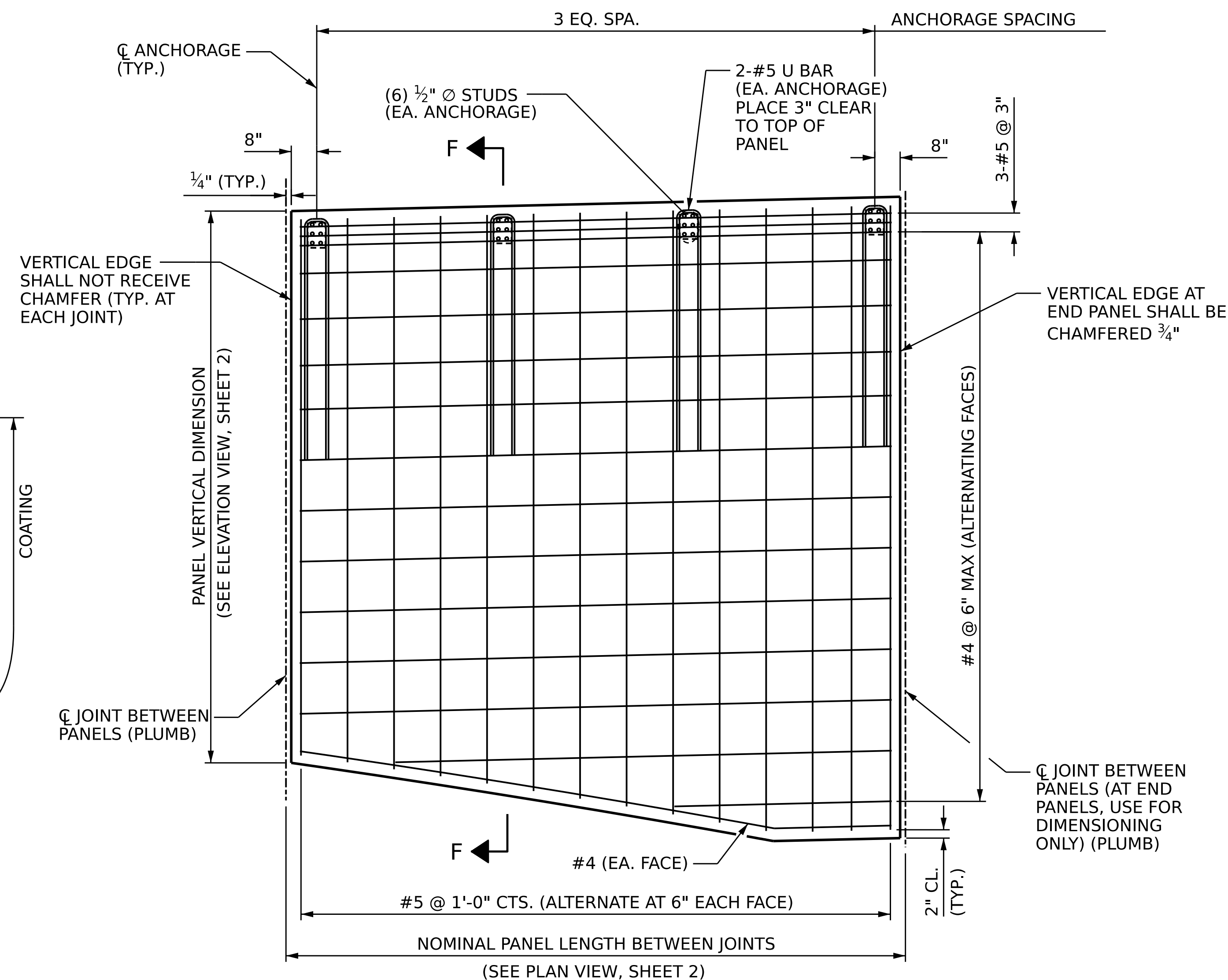
#5 U BAR DETAIL



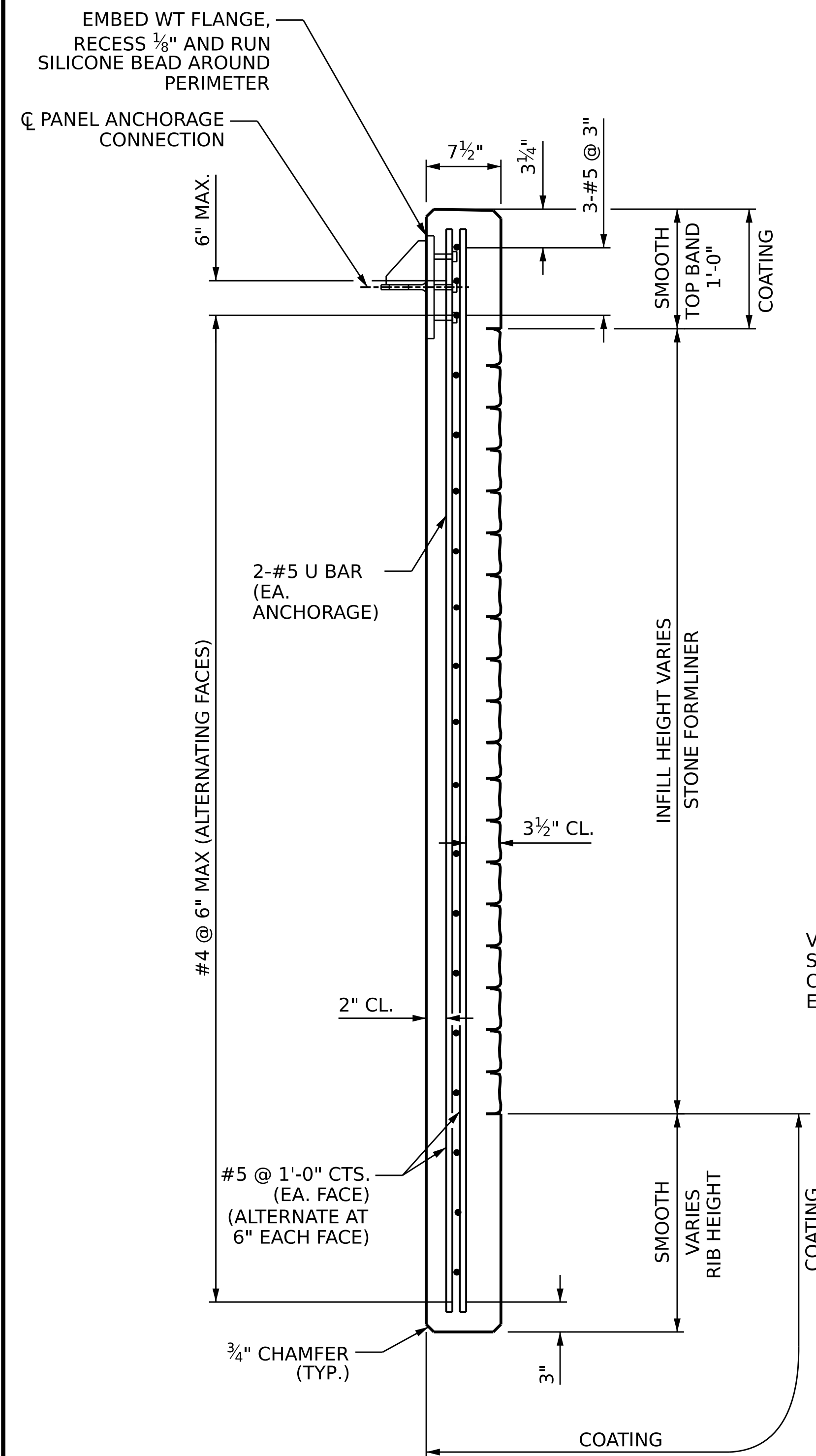
SECTION E-E

PANEL ANCHORAGE MEMBER DETAILS

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



PANEL ELEVATION



SECTION F-F

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

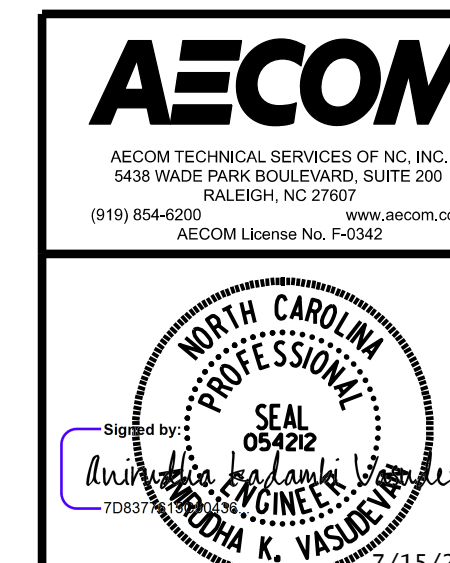
DRAWN BY :	M. CATER	DATE :	03/2026
CHECKED BY :	D. TUTTLE	DATE :	03/2026
DESIGN ENGINEER OF RECORD:	A. VASUDEVAN	DATE :	03/2026

7/13/2026
c:\pwworking\aecom_ds21_na_2020\d0223929\410_057_I-2513AC_SMU_AE4_S10-29_100901.dgn
caterm

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY

STATION: 105+49.43 -L-

SHEET 4 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

PRECAST CONCRETE FASCIA DETAILS

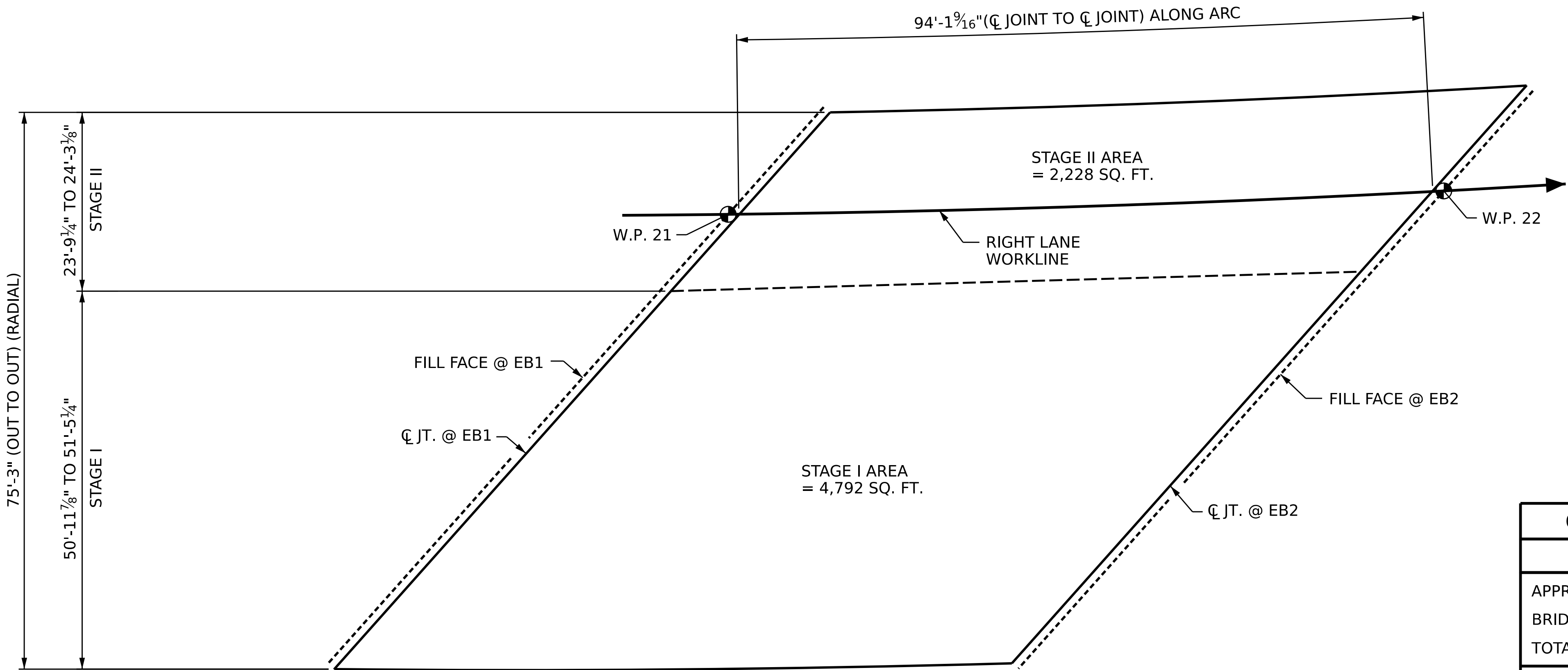
(RIGHT LANE)

REVISIONS						SHEET NO. S10-29
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

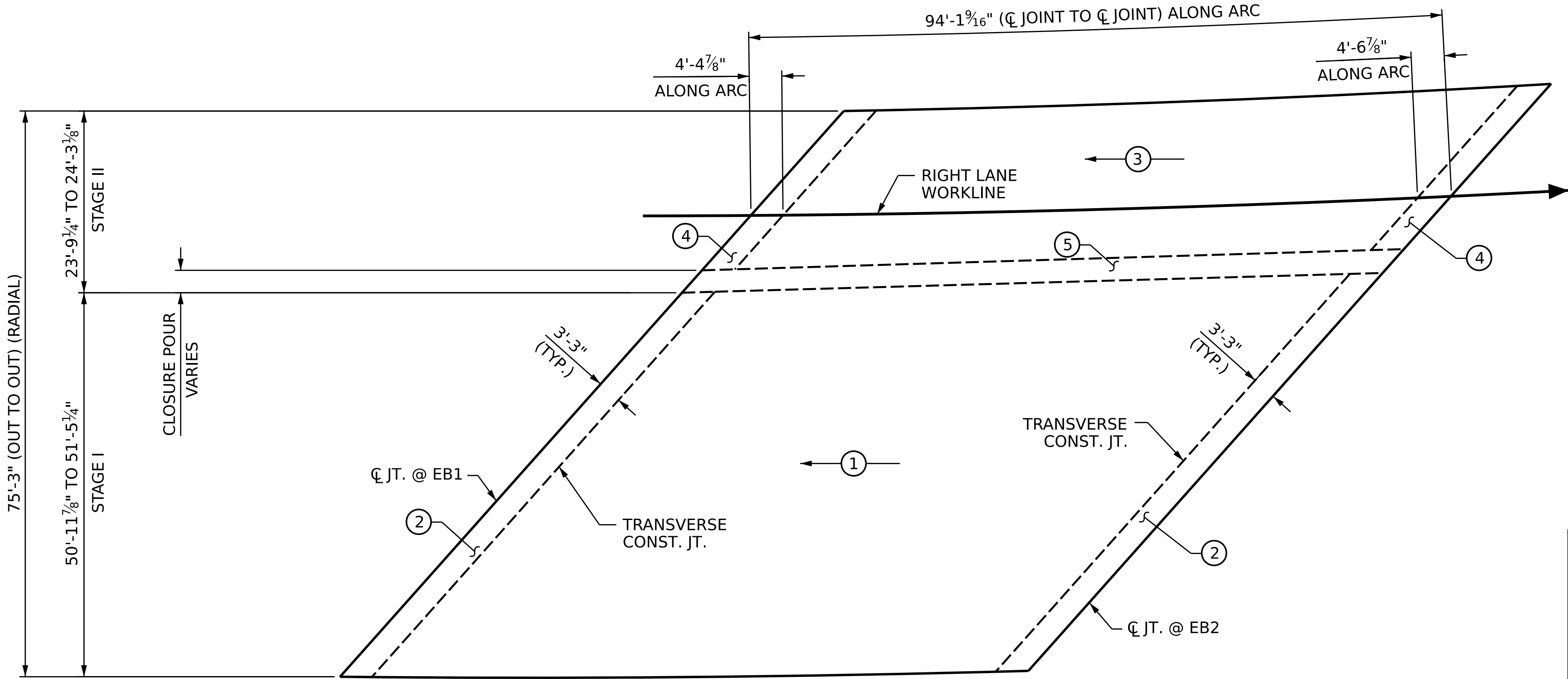
SUPERSTRUCTURE BILL OF MATERIAL	
SPAN A	(CU. YDS.)
POUR #1	141.1
POUR #2	24.6
POUR #3	57.5
POUR #4	9.4
POUR #5	9.8
TOTALS**	242.4

** QUANTITES FOR BARRIER RAILS ARE NOT INCLUDED



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 7,021)

GROOVING BRIDGE FLOORS	
STAGE I	
APPROACH SLABS	2,842 SQ. FT.
BRIDGE DECK	4,497 SQ. FT.
TOTAL	7,339 SQ. FT.
STAGE II	
APPROACH SLABS	1,343 SQ. FT.
BRIDGE DECK	1,930 SQ. FT.
TOTAL	3,273 SQ.FT.
TOTAL	
APPROACH SLABS	4,185 SQ.FT.
BRIDGE DECK	6,427 SQ.FT.
TOTAL	10,612 SQ.FT.



POURING SEQUENCE - PLAN
(POUR #2 CANNOT BE STARTED UNTIL
ADJACENT POUR #1 REACHES A MINIMUM OF 3000 PSI.)
→ INDICATES POUR DIRECTION AND NUMBER

NOTES:
FOR DIMENSION NOT SHOWN, SEE
SUPERSTRUCTURE SHEETS.

PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 105+49.43 -L-
SHEET 1 OF 2

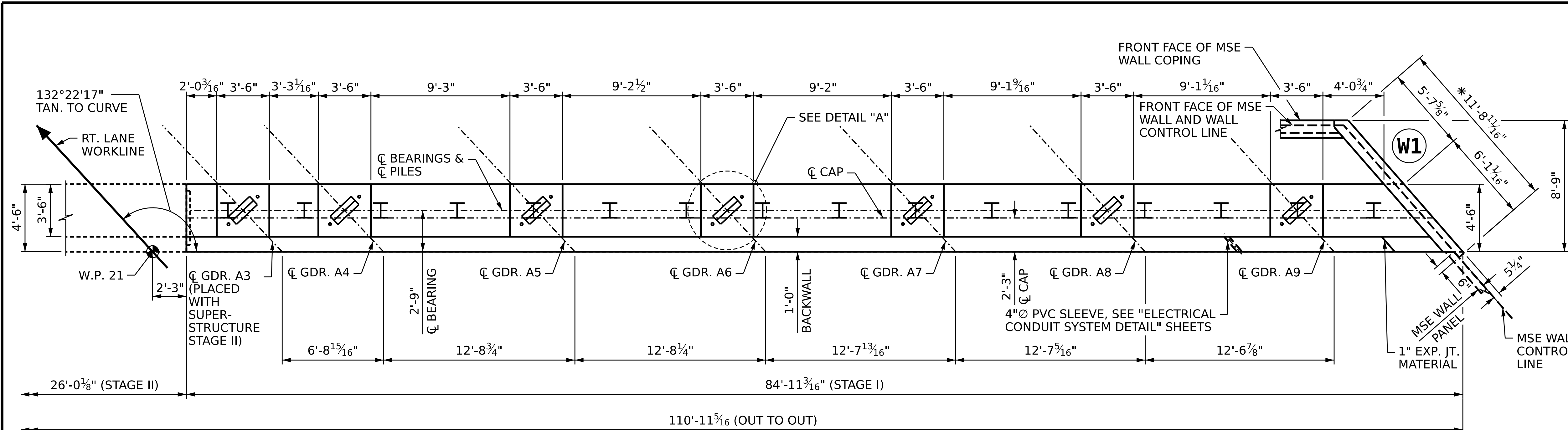
DRAWN BY :	M. CATER	DATE :	01/2024
CHECKED BY :	A.K. VASUDEVAN	DATE :	01/2024
DESIGN ENGINEER OF RECORD:	A. VASUDEVAN	DATE :	03/2026

7/13/2026
c:\pwworking\oecom.ds21.na.2020\d0223929\410.059.I2513AC.SMU.BOM1.S10-30.100901.dgn
caterm

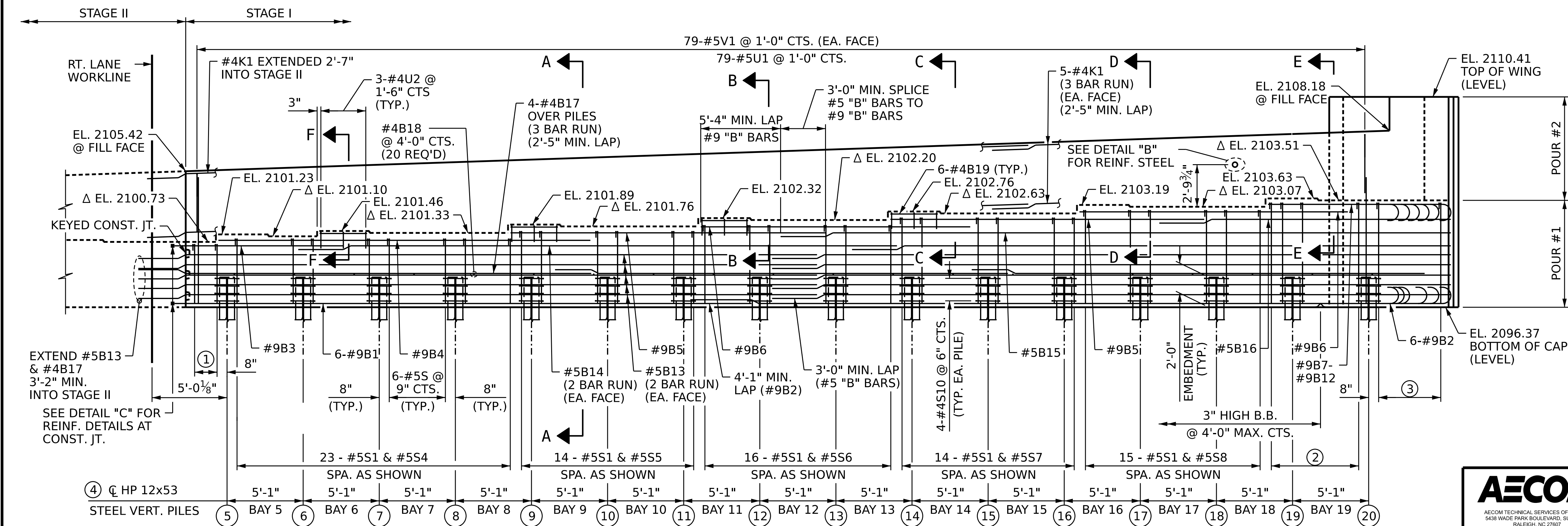
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



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. S10-30					TOTAL SHEETS 52



PLAN



ELEVATION

- ① 2 - #5S1 & 2-#5S3 @ 9" CTS.
- ② 8 - #5S1 & #5S9 SPA. AS SHOWN
- ③ 6 - #5S1 & #5S9 SPLAYED SEE "SPLAYED BAR DETAIL" ON SHEET 4 OF 4
- ④ PILE CUTOFF ELEVATION (PILES 5 THRU 20) = 2098.37

DRAWN BY : A. VAN VUREN / M. CATER DATE : 03/2026
CHECKED BY : A. VASUDEVAN DATE : 03/2026
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

Δ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTION A-A ON SHEET 3 OF 4.

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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 WING DETAILS, SEE SHEET 2 OF 5.

FOR SECTIONS A-A, B-B, C-C, D-D, E-E, AND F-F, SEE SHEET 3 OF 5.

FOR DETAIL "A" SEE SHEET 2 OF 5.

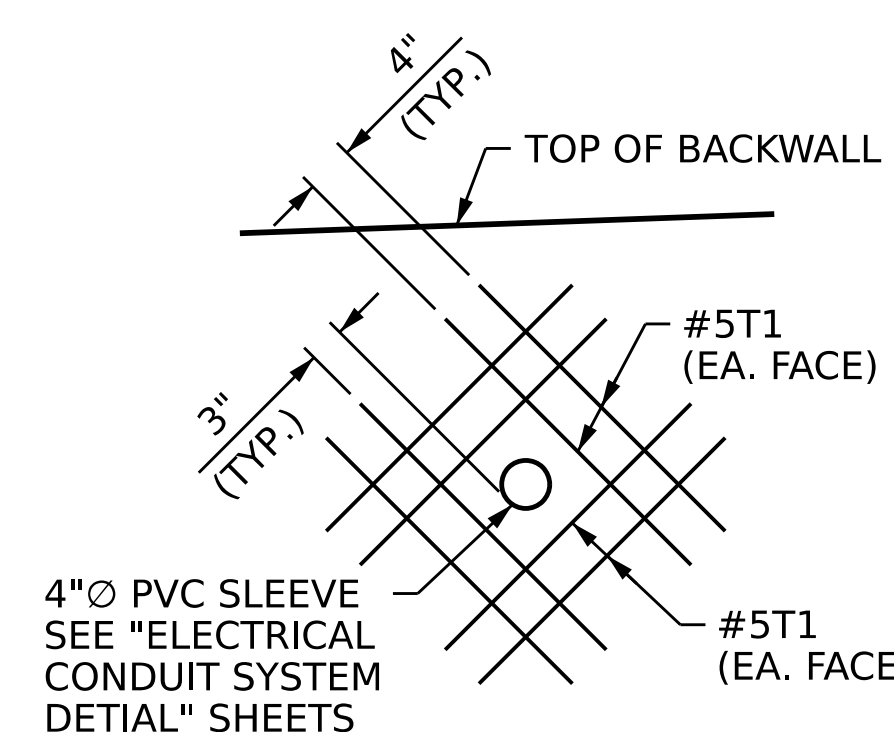
FOR PILE SPLICE DETAILS SEE SHEET 2 OF 5.

FOR TEMPORARY DRAINAGE DETAILS, SEE SHEET 4 OF 5.

SEE MSE WALL PLANS FOR MSE WALL DETAILS NOT SHOWN.

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.

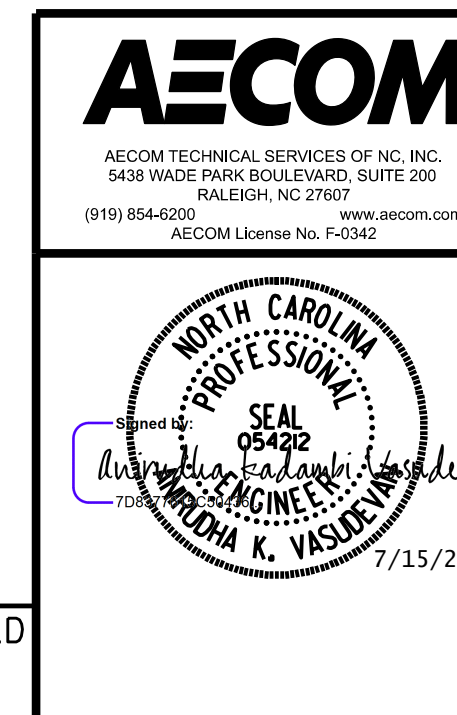
THE EXPOSED SURFACE OF WINGWALL W1 AS SHOWN ON SHEET 2 SHALL BE COATED COLOR FS #33522. SEE SPECIAL PROVISIONS FOR APPLICATION OF BRIDGE COATING.



DETAIL "B"

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

SHEET 1 OF 5

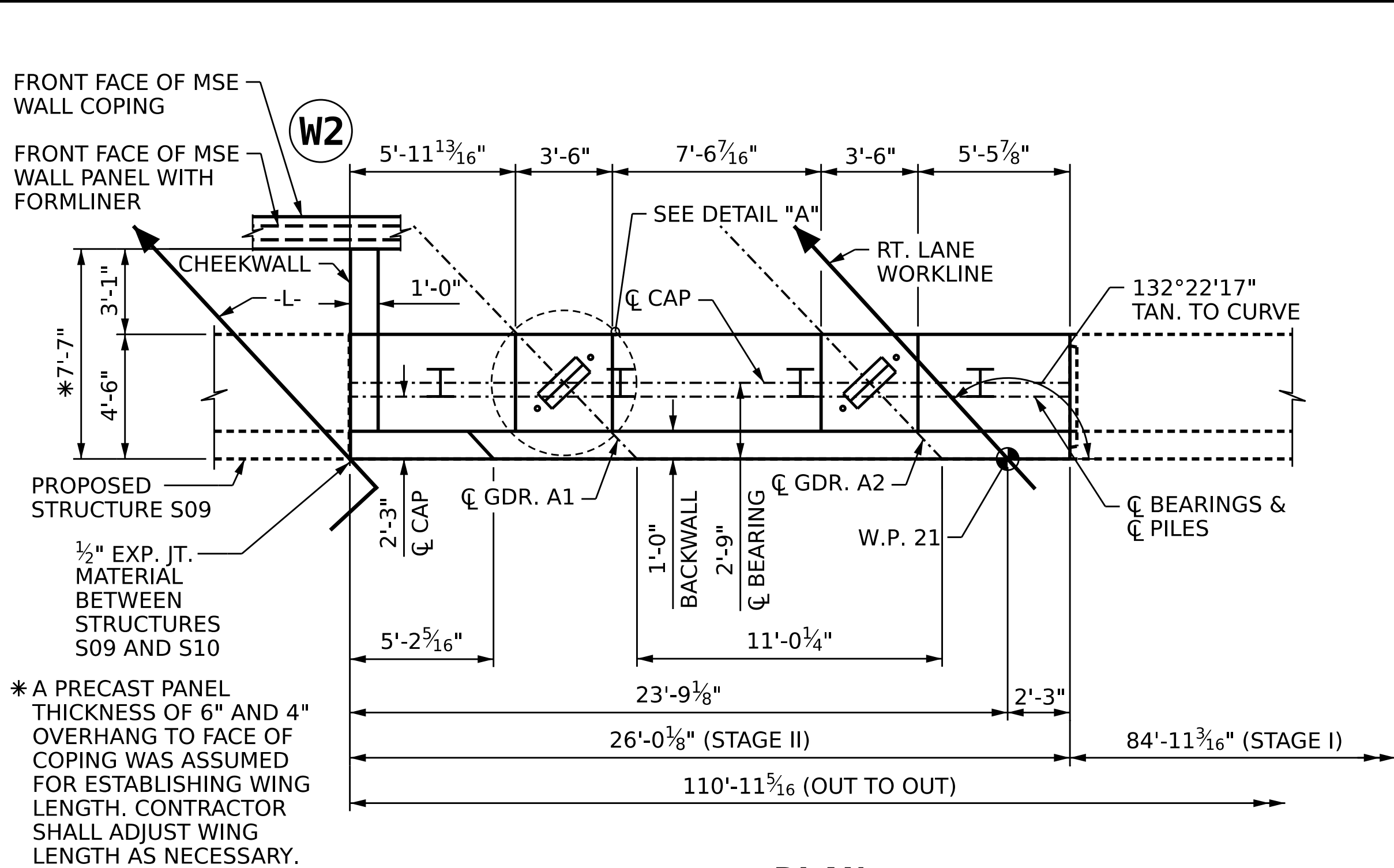


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

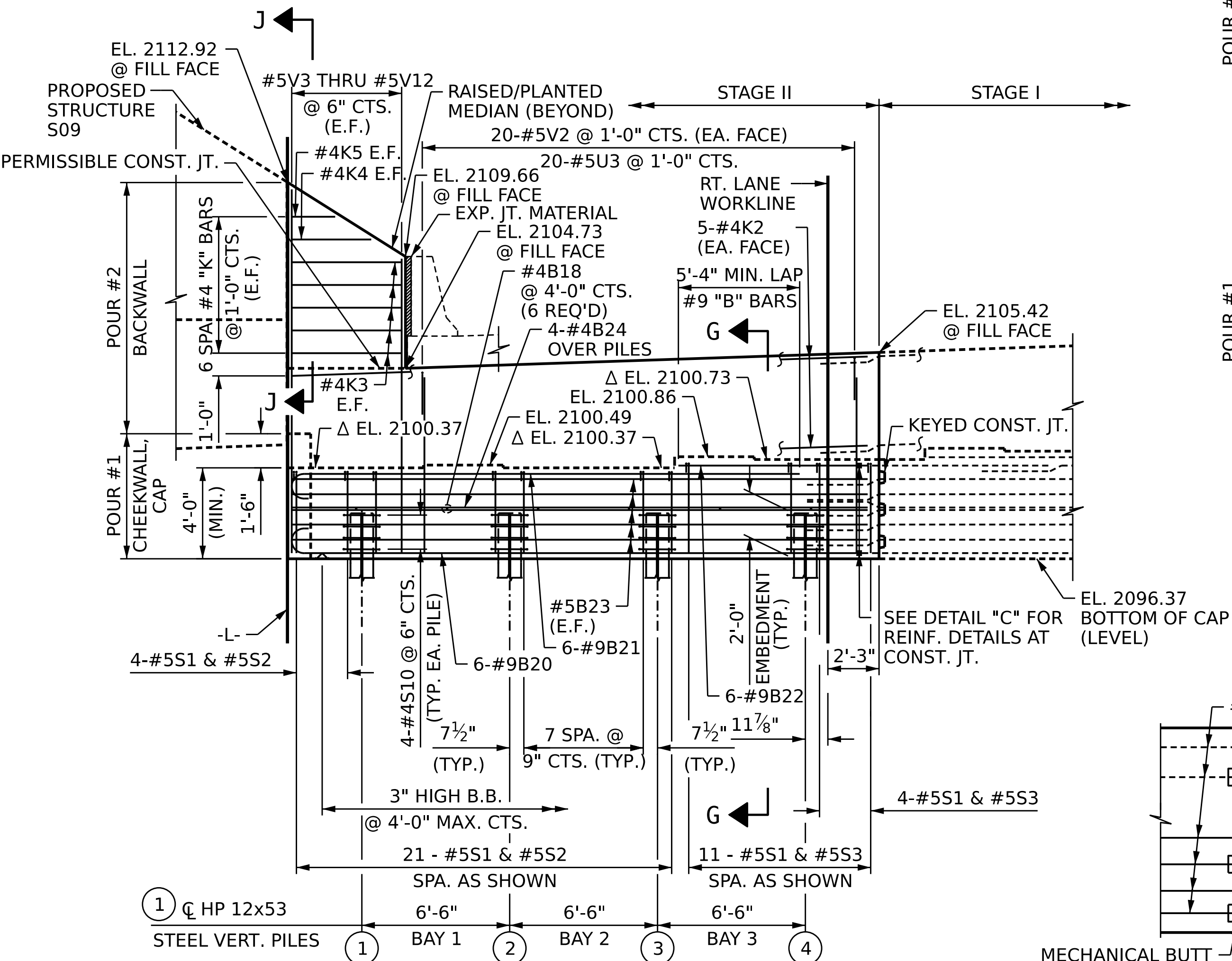
SUBSTRUCTURE
END BENT 1
STAGE I

(RIGHT LANE)

REVISIONS						SHEET NO. S10-32
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			



PLAN

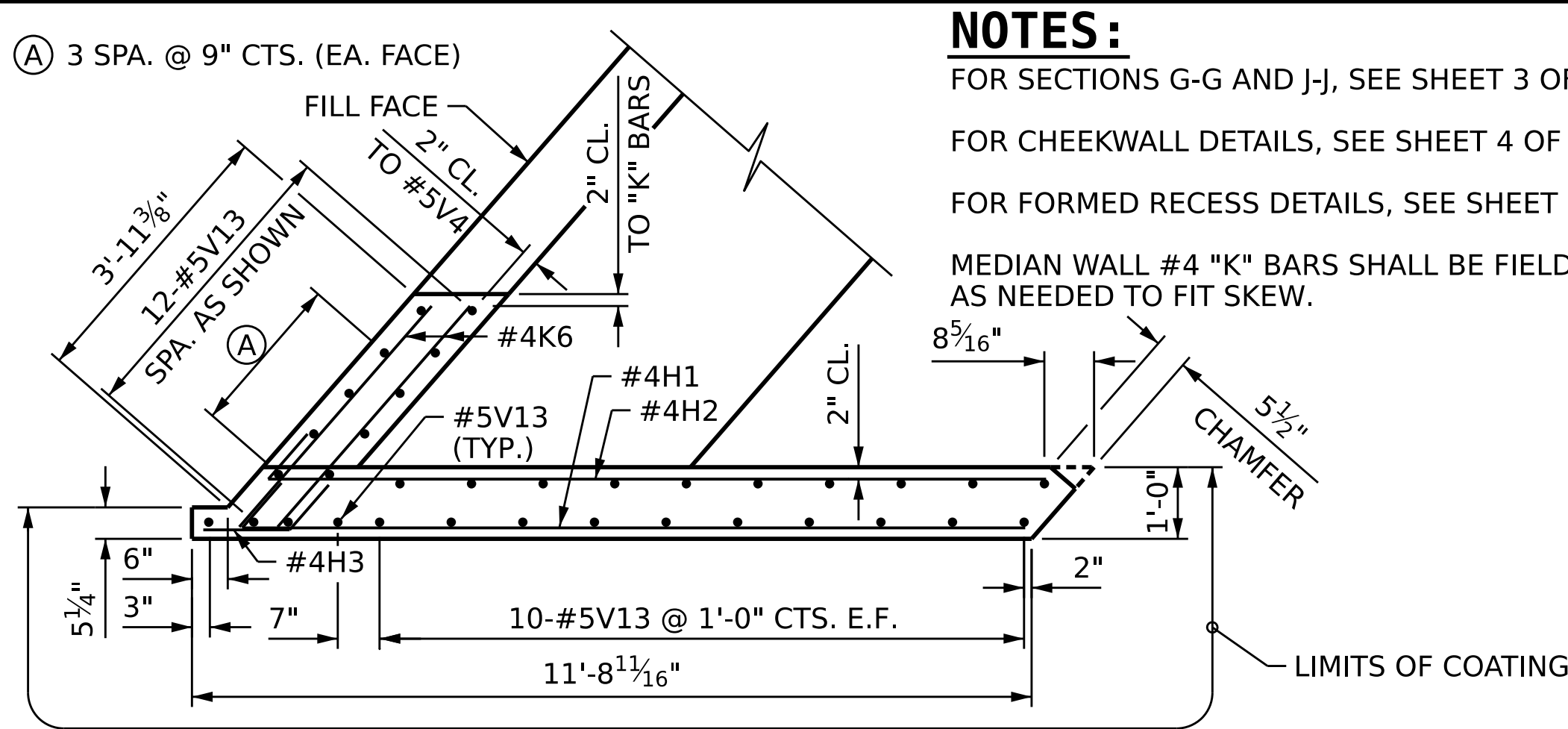


ELEVATION

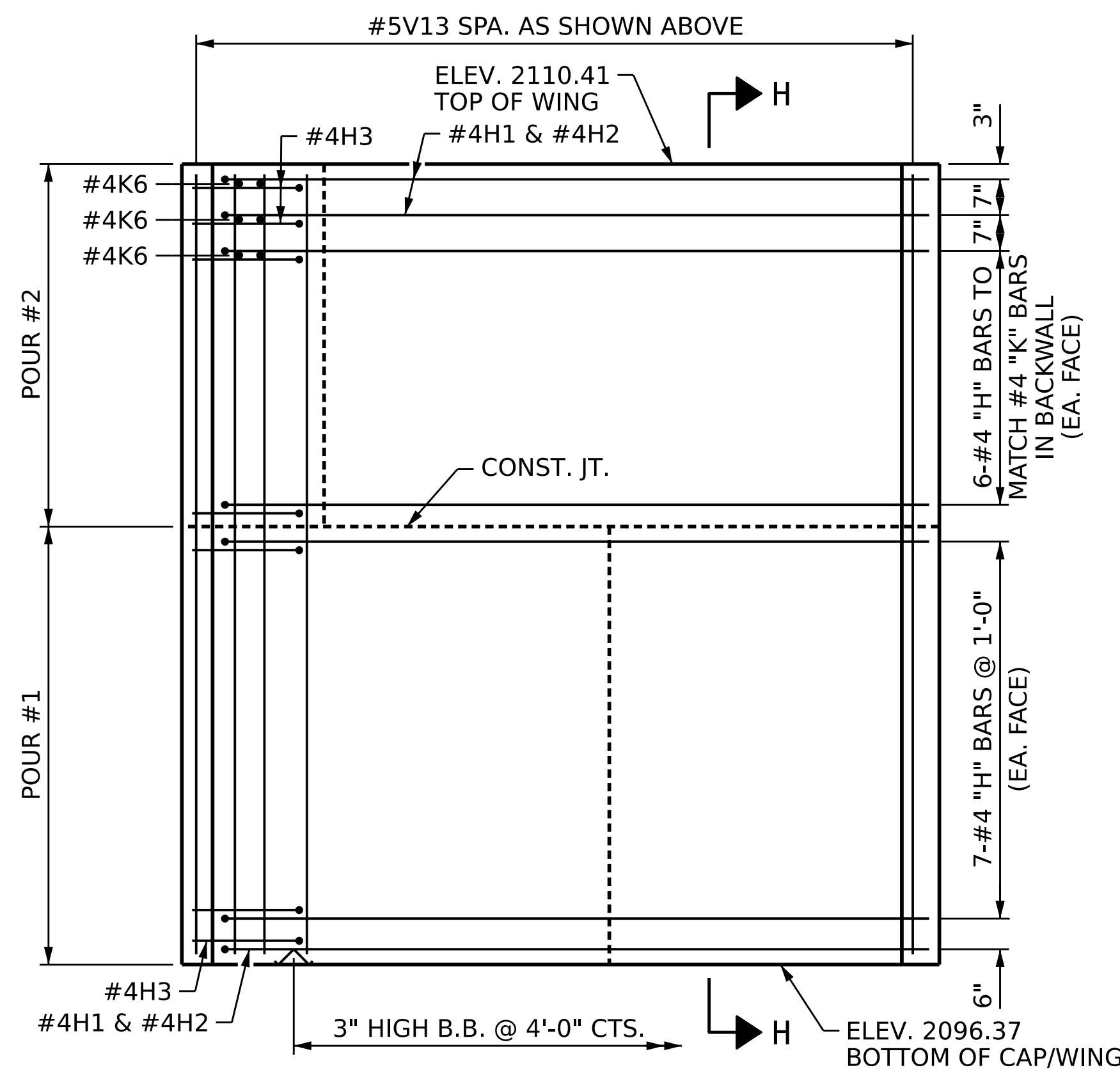
1 PILE CUTOFF ELEVATION (PILES 1 THRU 4) = 2098.37

DRAWN BY: A. VAN VUREN / M. CATER DATE: 03/2026
CHECKED BY: A. VASUDEVAN DATE: 03/2026
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE: 03/2026

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

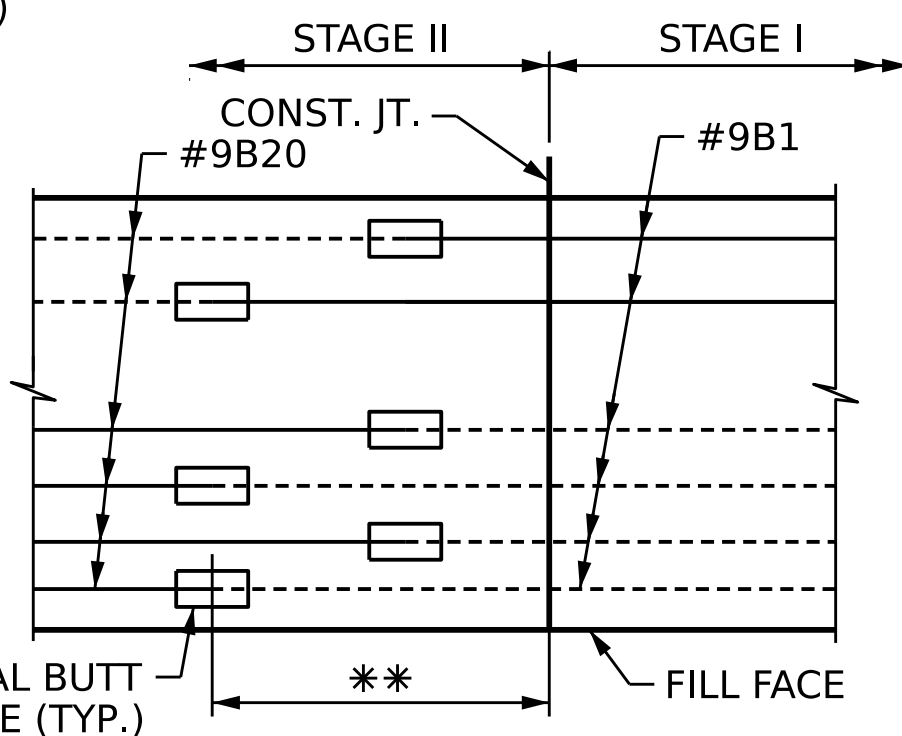


PLAN OF WING W1

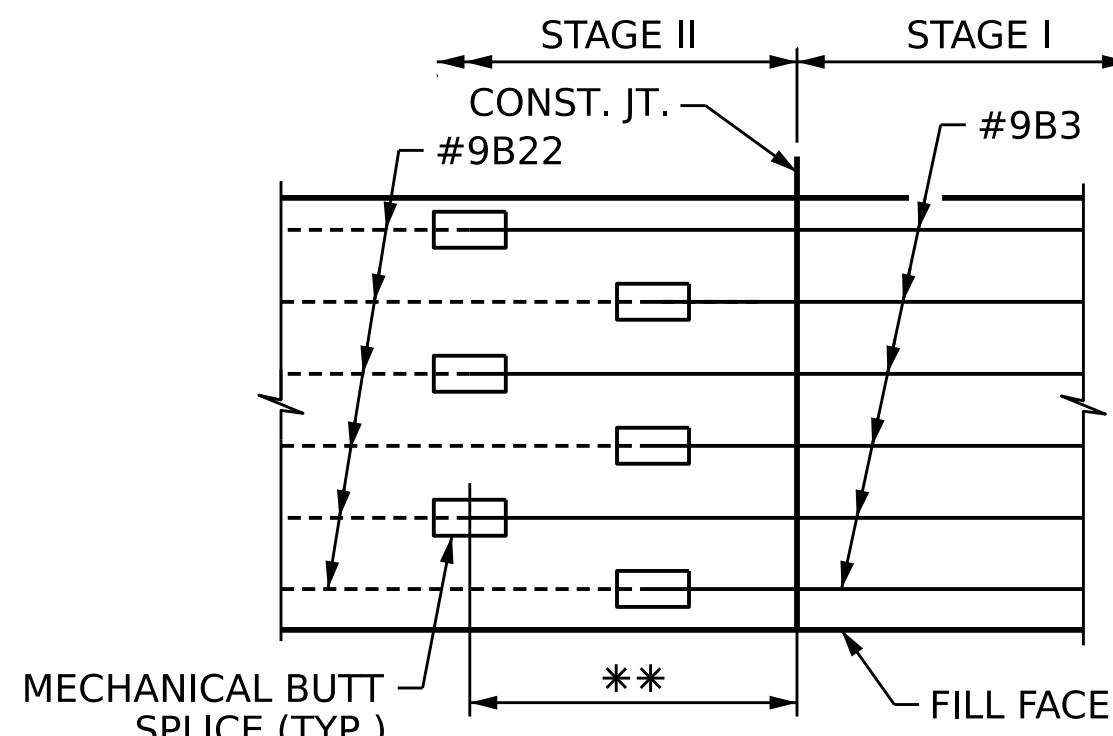


ELEVATION OF WING W1

SECTION H-H



PLAN OF BOTTOM REINFORCEMENT

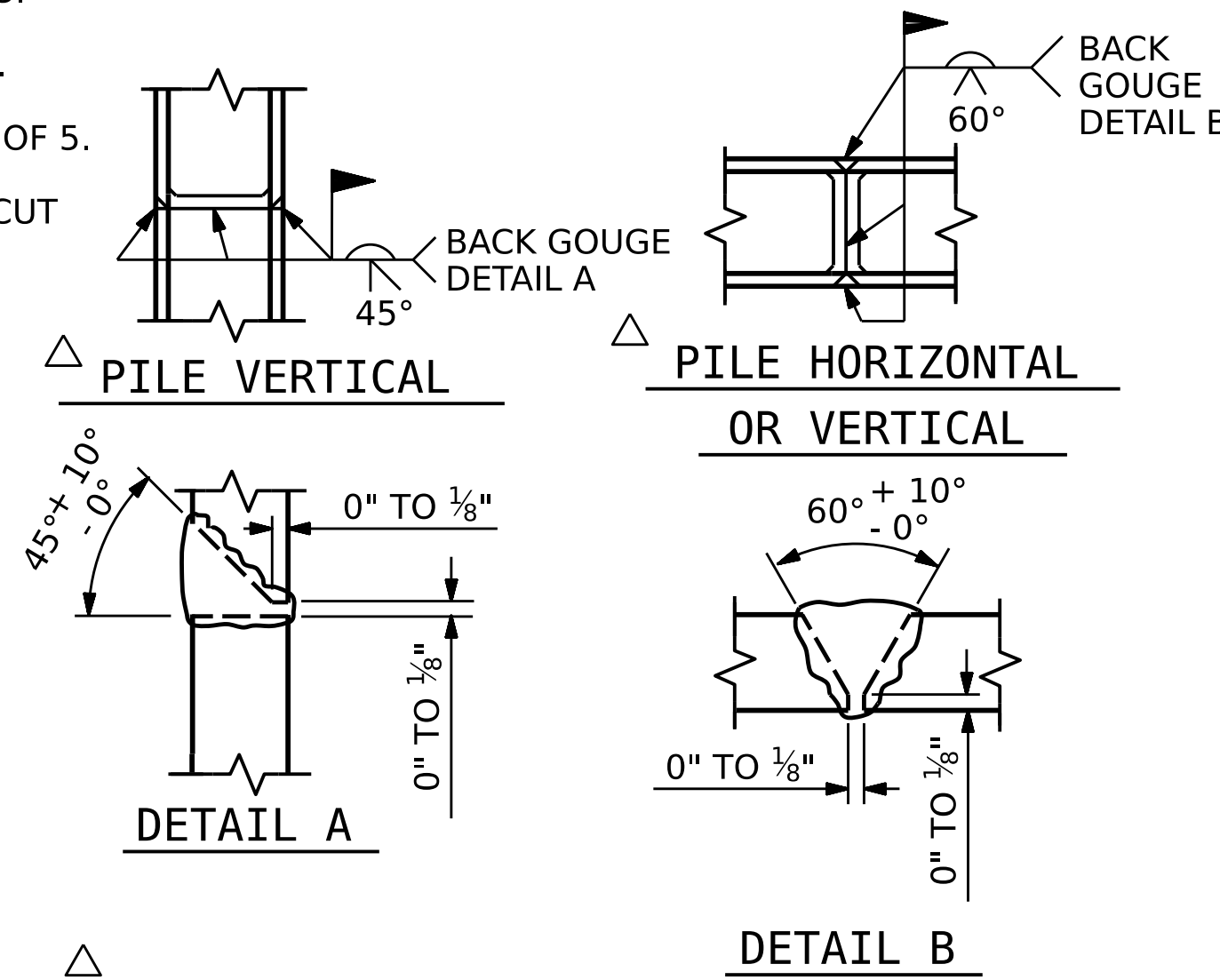


PLAN OF TOP REINFORCEMENT

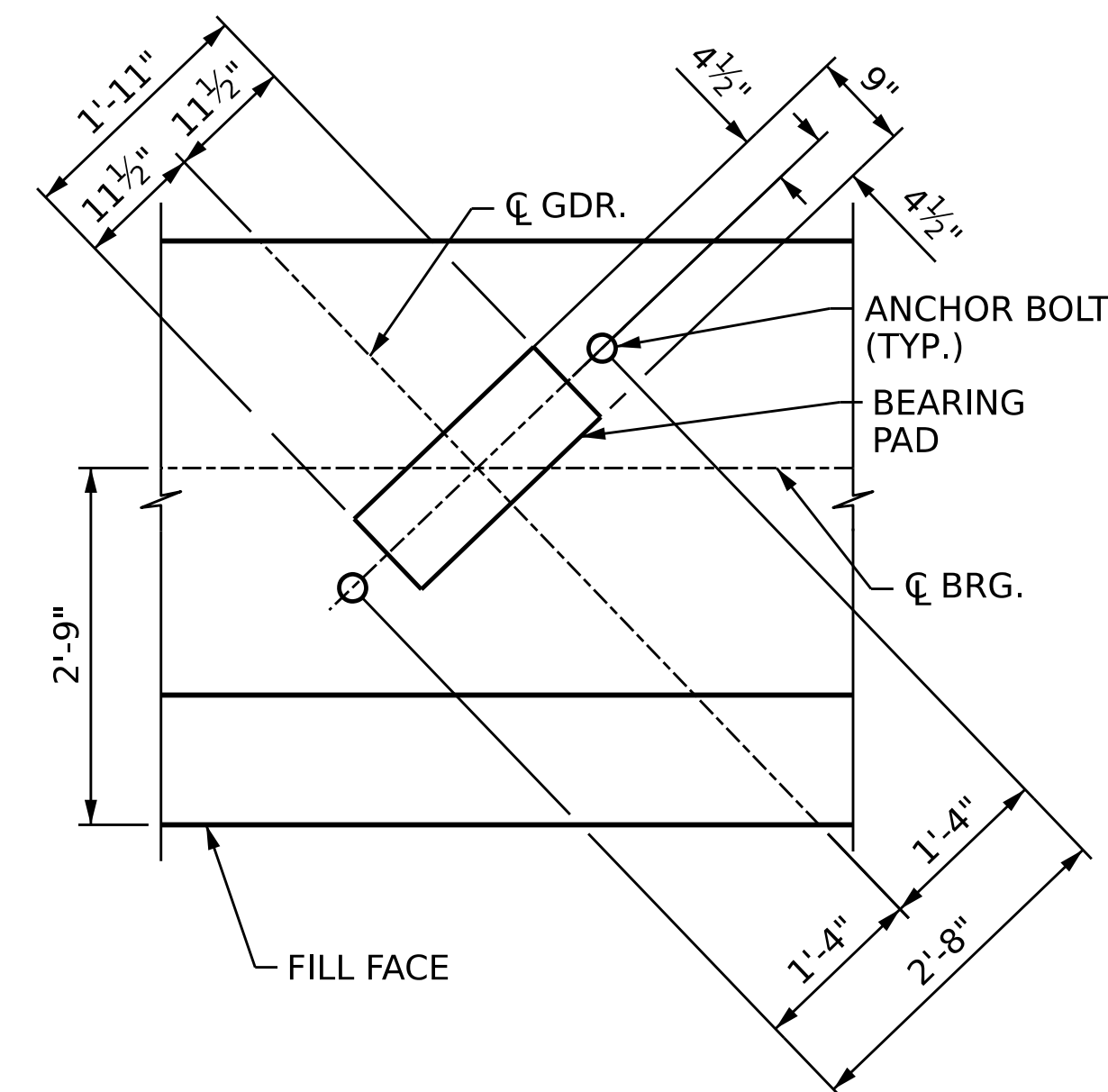
DETAIL "C"

** STAGE I TOP AND BOTTOM "B" BARS ARE DETAILED WITH STAGGERED 1'-0" AND 3'-0" EXTENSIONS BEYOND CONSTRUCTION JOINT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PILE SPLICE DETAILS



DETAIL A

PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

STATION: 105+49.43 -L-

SHEET 2 OF 5

AECOM
AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-6200
AECOM License No. F02492

NORTH CAROLINA
PROFESSIONAL
SEAL
05422
SIGNED BY
A. VASUDEVAN
7/15/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

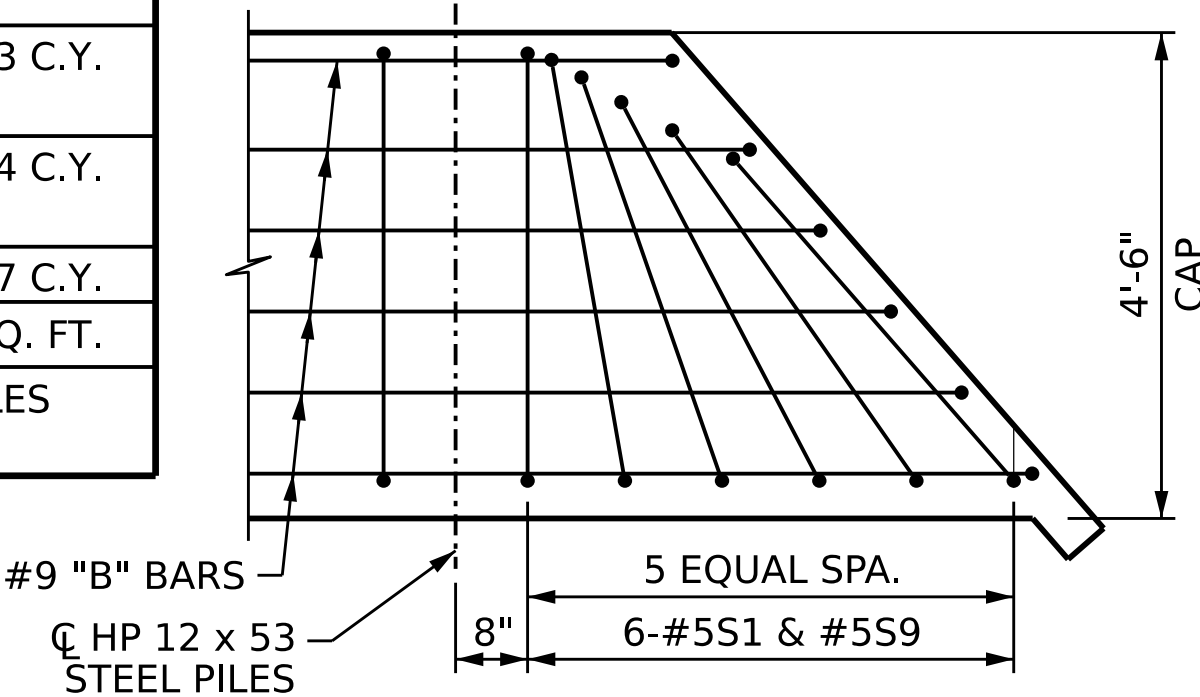
STAGE II AND DETAILS

(RIGHT LANE)

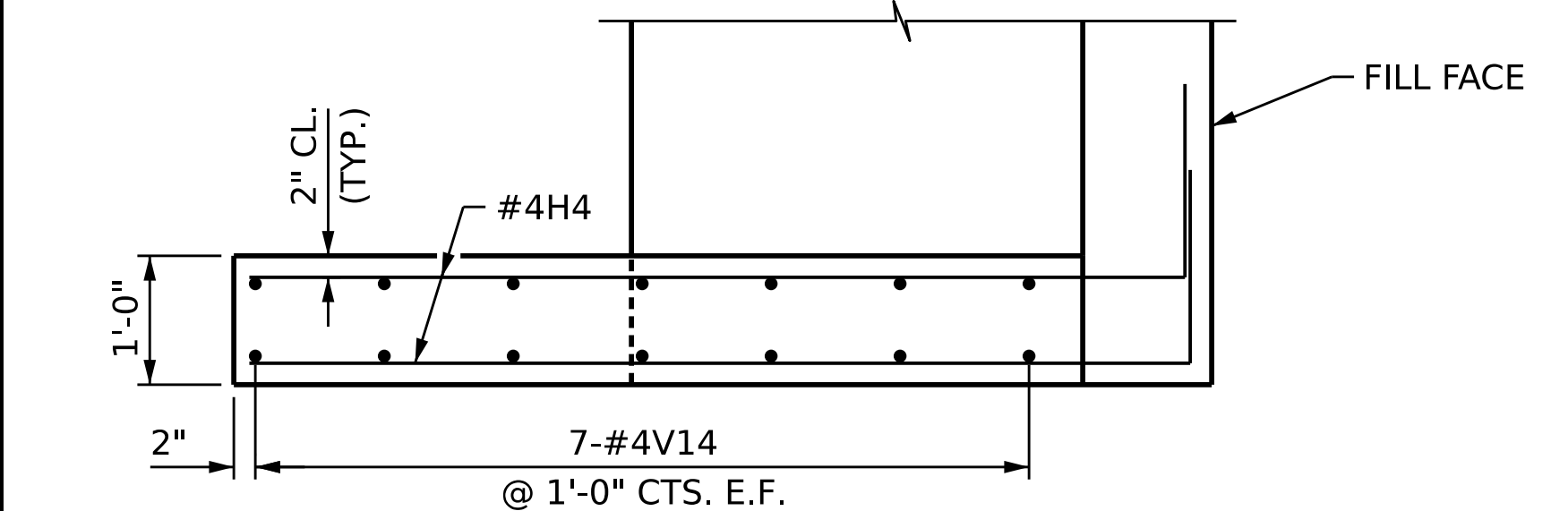
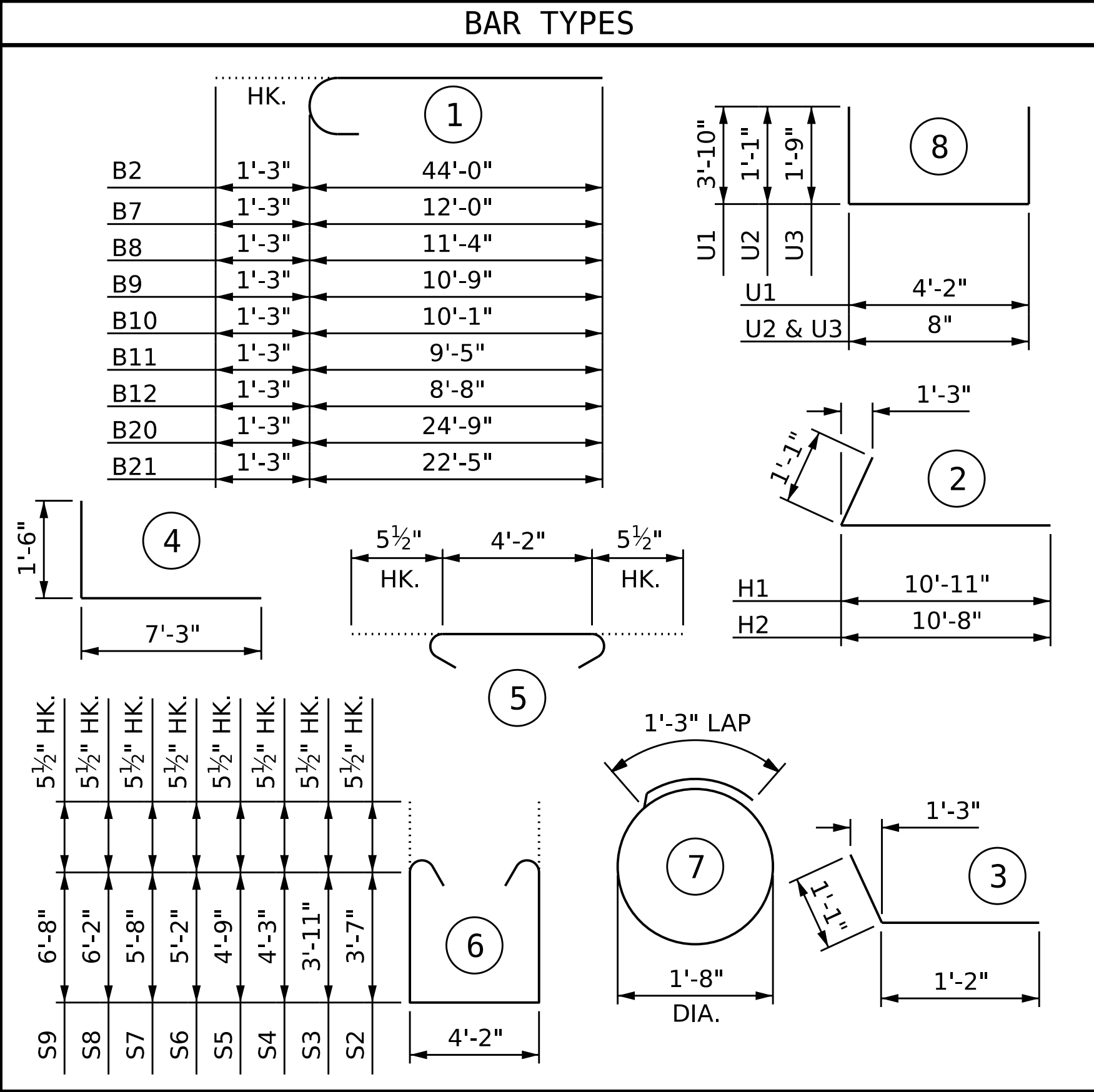
REVISIONS						SHEET NO. S10-33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

BILL OF MATERIAL											
END BENT 1											
STAGE I						STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	9	STR	48'-2"	983	B18	6	4	STR	4'-2"	17
B2	6	9	1	45'-3"	923	B20	6	9	1	26'-0"	530
B3	6	9	STR	11'-7"	236	B21	6	9	1	23'-8"	483
B4	6	9	STR	24'-11"	508	B22	6	9	STR	7'-9"	158
B5	12	9	STR	21'-1"	860	B23	10	5	STR	25'-9"	269
B6	12	9	STR	18'-1"	738	B24	4	4	STR	25'-9"	69
B7	1	9	1	13'-5"	46						
B8	1	9	1	12'-7"	43	H4	12	4	4	8'-9"	70
B9	1	9	1	12'-0"	41						
B10	1	9	1	11'-4"	39	K2	10	4	STR	25'-10"	173
B11	1	9	1	10'-8"	36	K3	10	4	STR	4'-10"	32
B12	1	9	1	9'-11"	34	K4	2	4	STR	3'-6"	5
B13	20	5	STR	45'-4"	946	K5	2	4	STR	1'-10"	2
B14	4	5	STR	40'-0"	167						
B15	2	5	STR	44'-10"	94	S1	32	5	5	5'-1"	170
B16	2	5	STR	19'-6"	41	S2	21	5	6	12'-3"	268
B17	12	4	STR	30'-3"	242	S3	11	5	6	12'-11"	148
B18	20	4	STR	4'-2"	56	S10	16	4	7	6'-6"	69
B19	24	4	STR	3'-2"	51						
						U3	20	4	8	7'-8"	102
H1	16	4	2	12'-0"	128	V2	20	5	STR	8'-0"	167
H2	16	4	2	11'-9"	126	V3	2	5	STR	16'-1"	34
H3	16	4	3	2'-2"	23	V4	2	5	STR	15'-8"	33
						V5	2	5	STR	15'-4"	32
K1	30	4	STR	30'-9"	616	V6	2	5	STR	15'-0"	31
K6	6	4	STR	4'-1"	16	V7	2	5	STR	14'-8"	31
						V8	2	5	STR	14'-4"	30
S1	98	5	5	5'-1"	520	V9	2	5	STR	14'-0"	29
S3	2	5	6	12'-11"	27	V10	2	5	STR	13'-8"	29
S4	23	5	6	13'-7"	326	V11	2	5	STR	13'-4"	28
S5	14	5	6	14'-7"	213	V12	2	5	STR	13'-0"	27
S6	16	5	6	15'-5"	257	V14	14	4	STR	5'-2"	48
S7	14	5	6	16'-5"	240						
S8	15	5	6	17'-5"	272						
S9	14	5	6	18'-5"	269	REINFORCING STEEL					3,084 LBS.
S10	64	4	7	6'-6"	278	CLASS A CONCRETE					
						POUR #1 (CAP & CHEEKWALL)					18.8 C.Y.
						POUR #2 (BACKWALL)					5.6 C.Y.
T1	16	5	STR	2'-5"	40	TOTAL = 24.4 C.Y.					
U1	79	4	8	8'-4"	440	NOTE: SEE GEOTECHNICAL FOUNDATION TABLES FOR ADDITIONAL PILE INFORMATION					
U2	12	4	8	6'-4"	51						
V1	79	5	STR	8'-8"	714						
V13	34	5	STR	13'-8"	485						

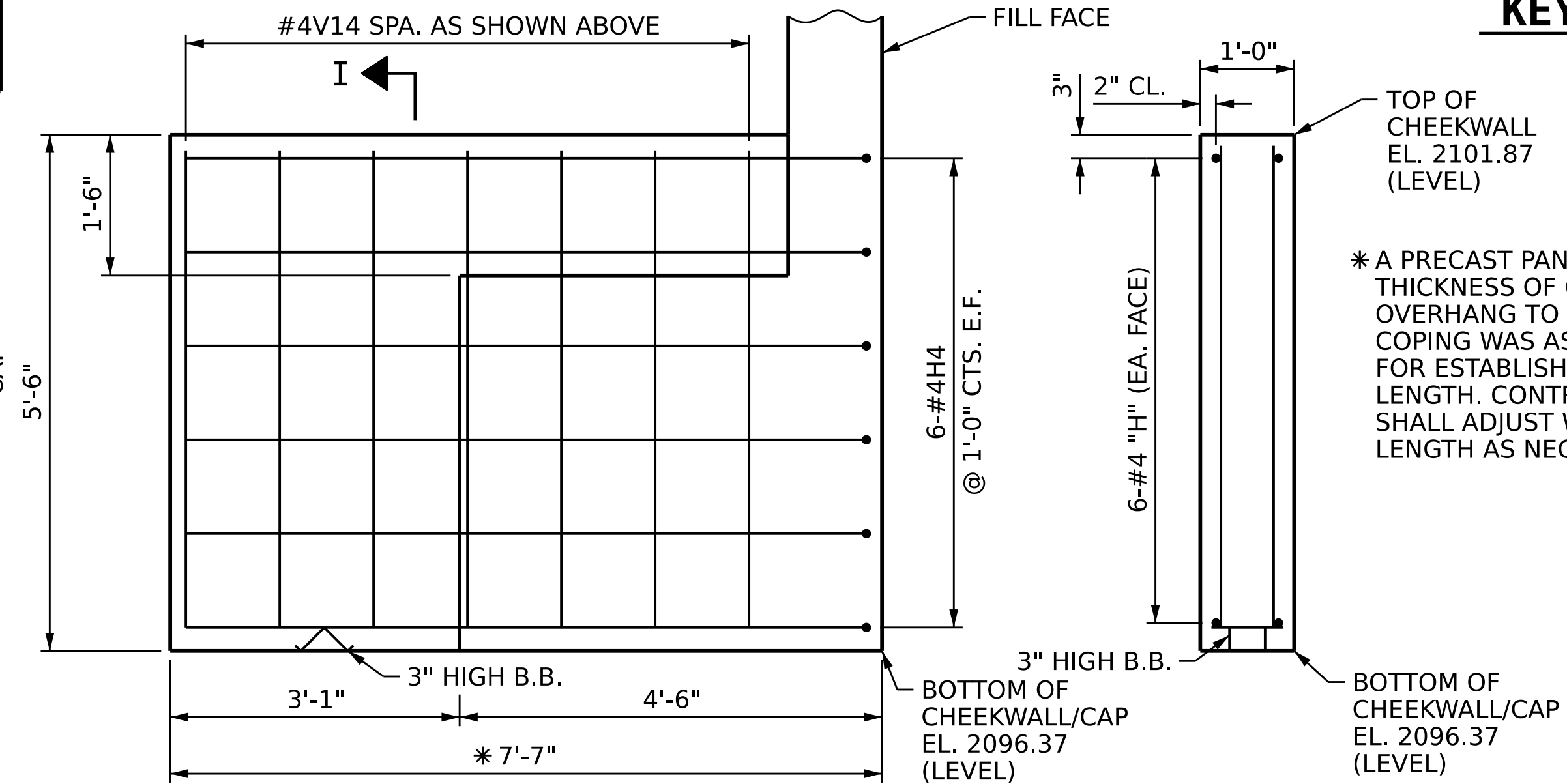
REINFORCING STEEL		11,125 LBS.
CLASS A CONCRETE		
POUR #1 (CAP & LOWER WINGWALL)	83.3 C.Y.	
POUR #2 (BACKWALL & UPPER WINGWALL)	17.4 C.Y.	
TOTAL = 100.7 C.Y.		
APPLICATION OF BRIDGE COATING	199.0 SQ. FT.	
NOTE: SEE GEOTECHNICAL FOUNDATION TABLES FOR ADDITIONAL PILE INFORMATION		



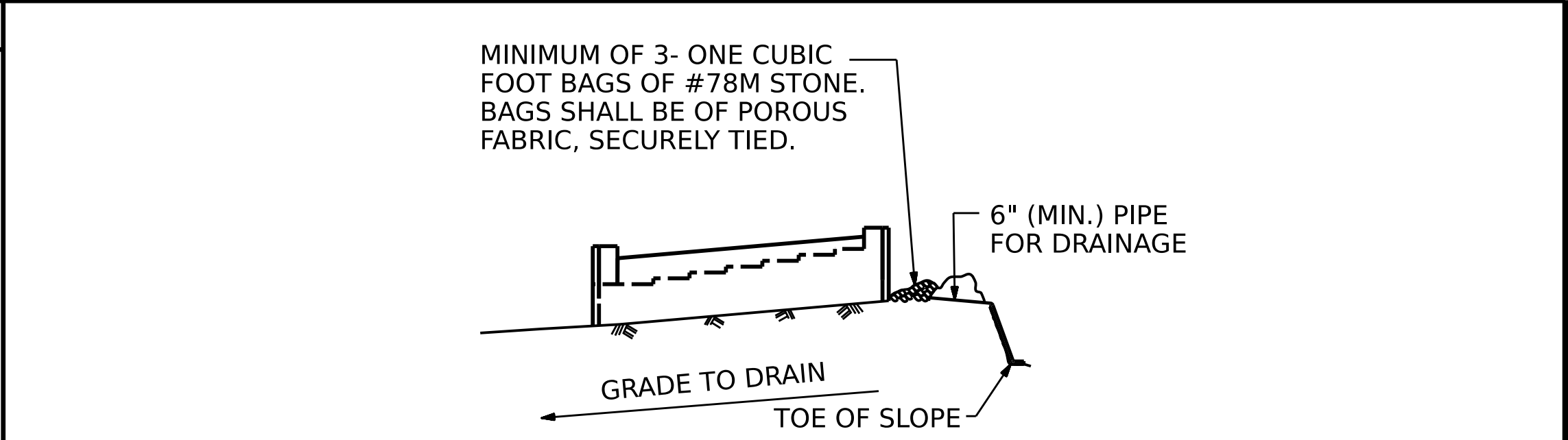
SPLAYED BAR DETAIL



PLAN OF CHEEKWALL W2



ELEVATION OF CHEEKWALL W2

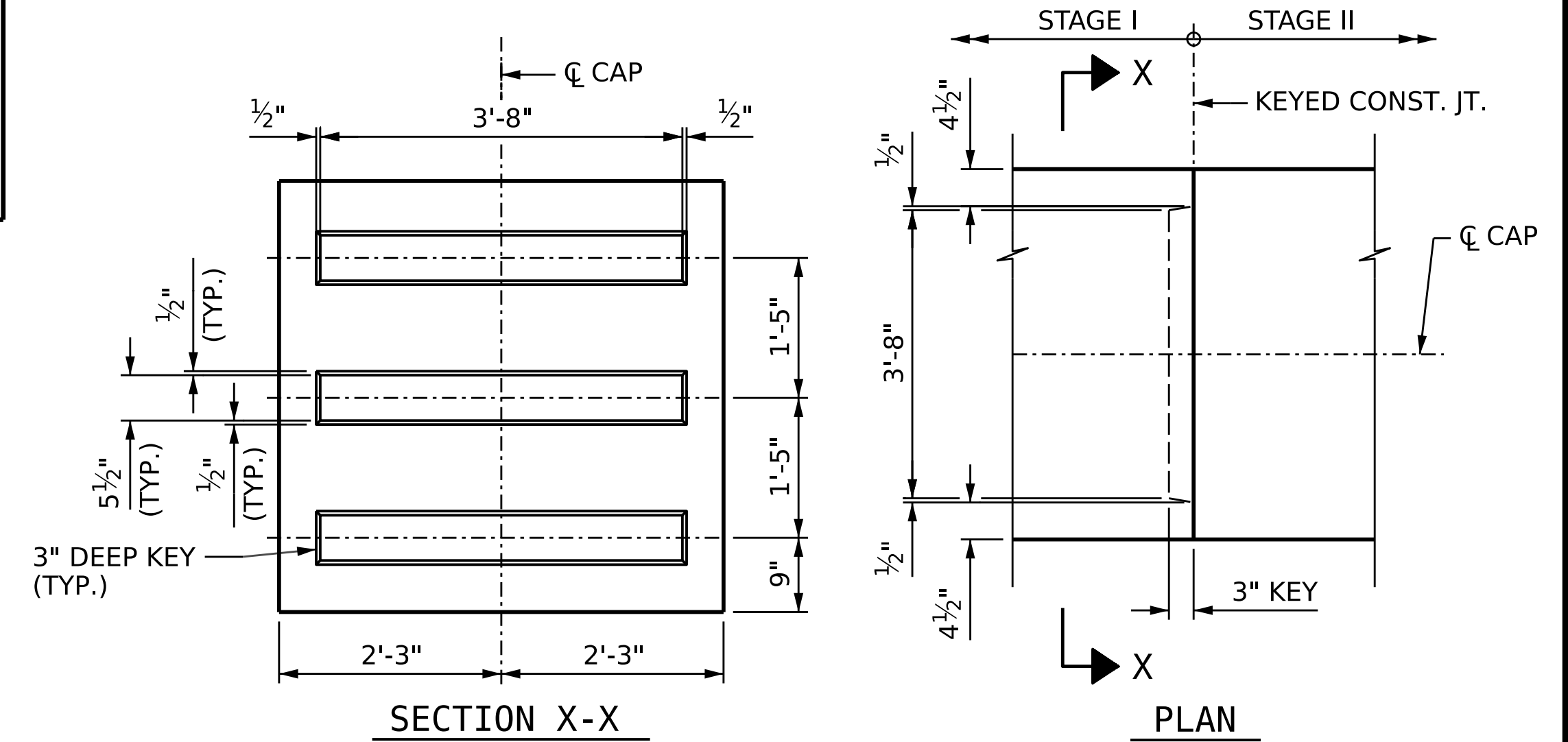


TEMPORARY DRAINAGE AT END BENT

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.

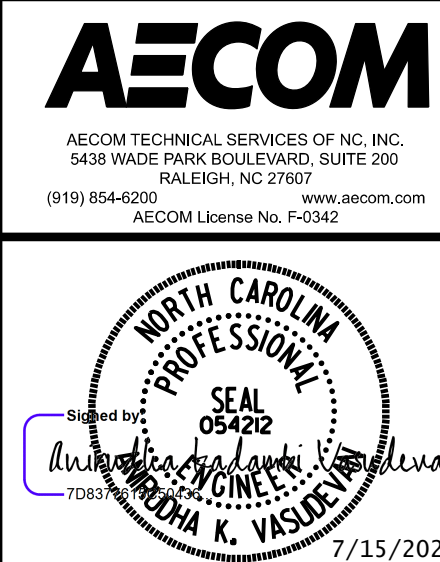


KEYED CONSTRUCTION JOINT DETAIL

* 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.

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

SHEET 4 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

BILL OF MATERIAL

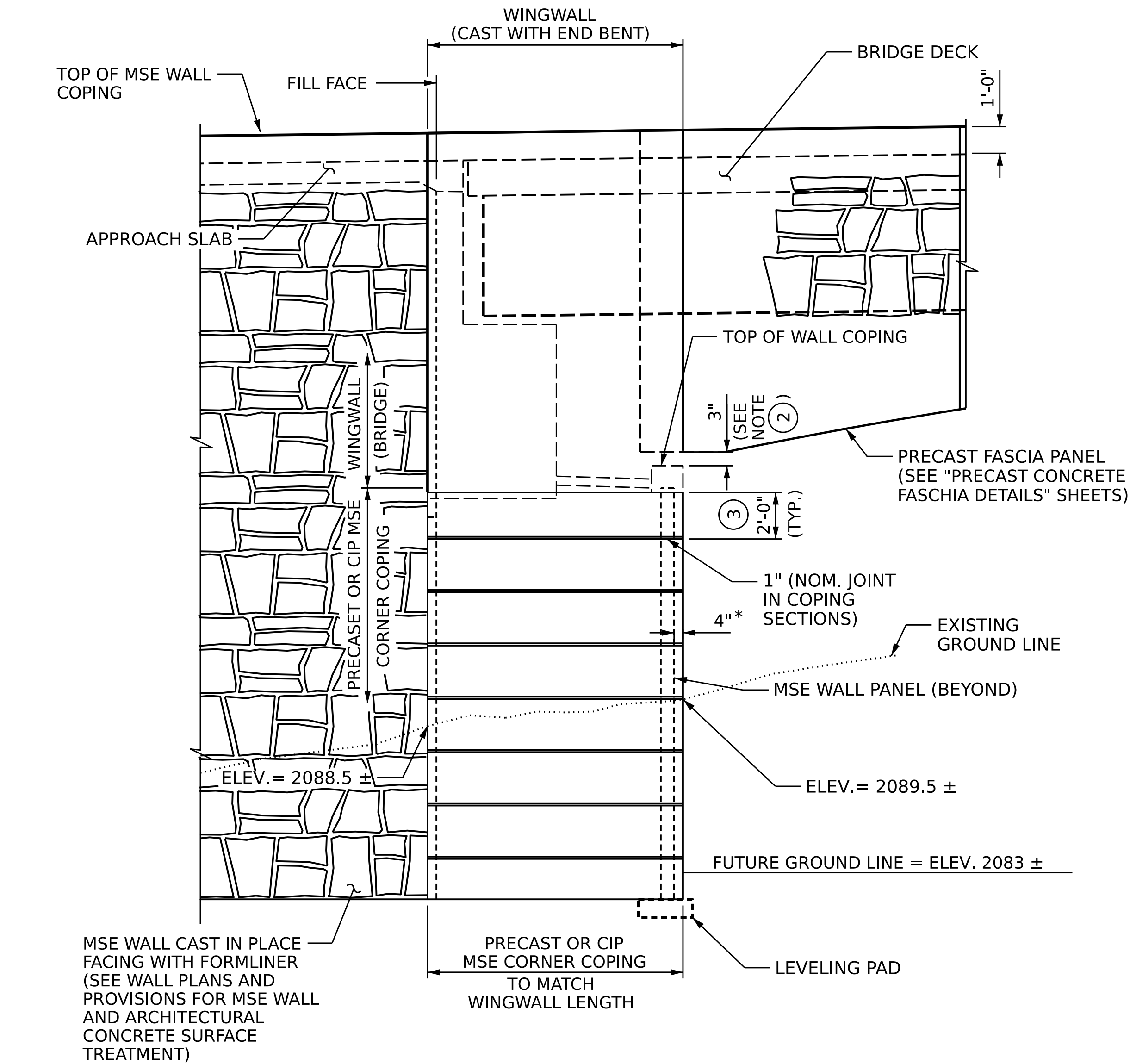
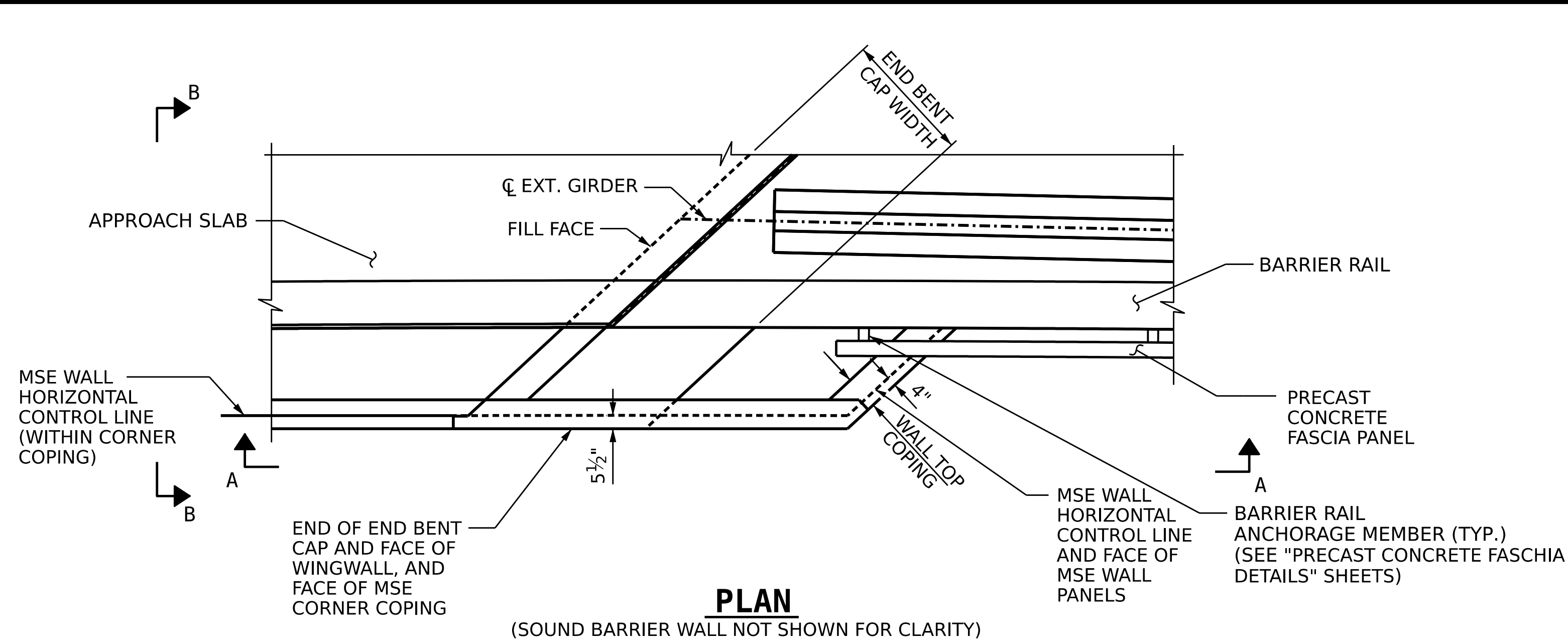
(RIGHT LANE)

DRAWN BY : A. VAN VUREN DATE : 02/2024
CHECKED BY : A. VASUDEVAN DATE : 03/2024
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

7/13/2026
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caterm

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

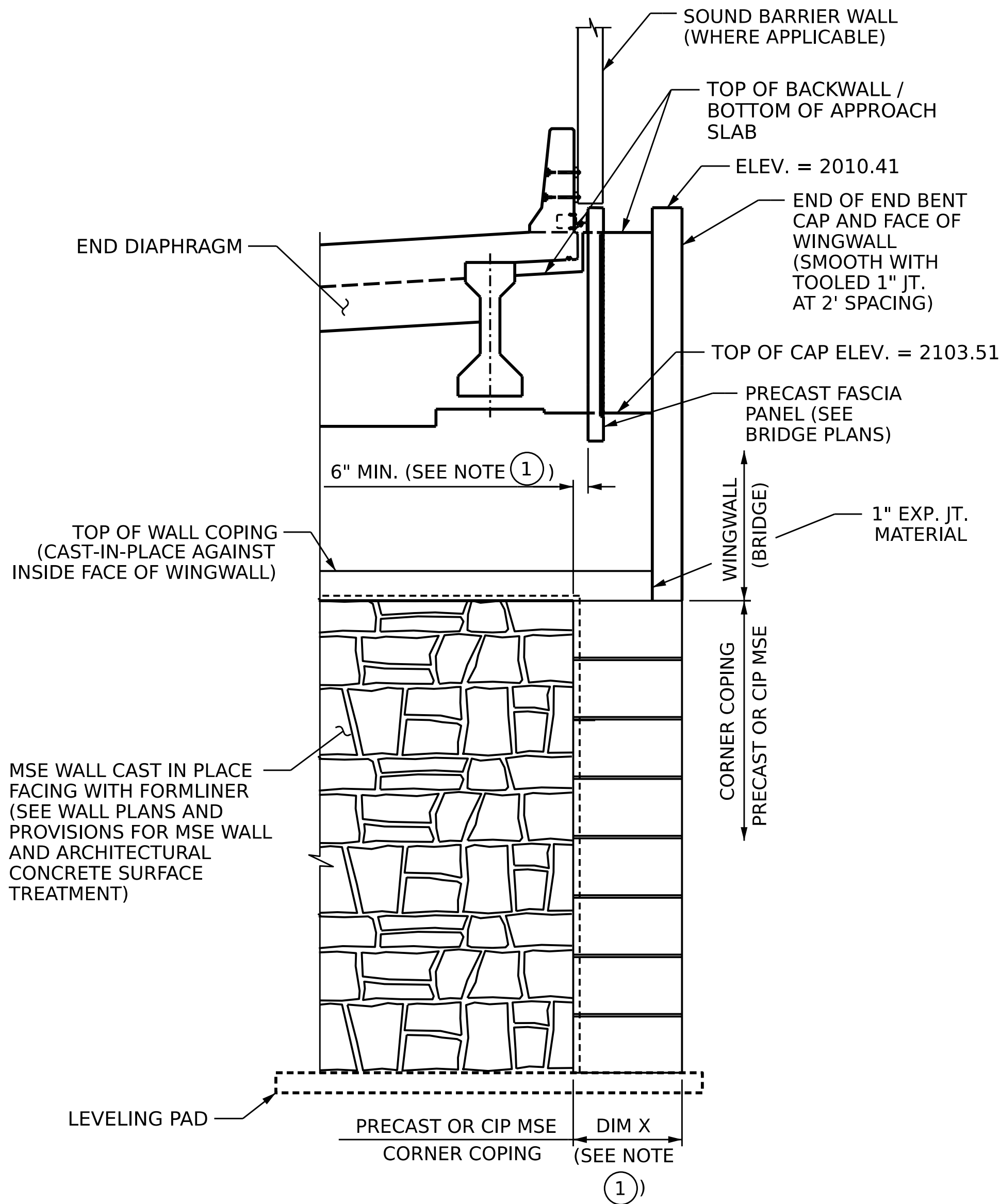
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-35
2			4			TOTAL SHEETS 52



VIEW A-A * DIMENSION NORMAL TO WALL BELOW BRIDGE
VIEW IS PROJECTED ONTO VIEW PROJECTION LINE ALONG SKEW (SEE PLAN)

DRAWN BY : M. CATER DATE : 03/2026
CHECKED BY : A. VASUDEVAN DATE : 03/2026
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

7/13/2026
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caterm



VIEW B-B

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NOTES:

MSE WALL NO. 24 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 9 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.

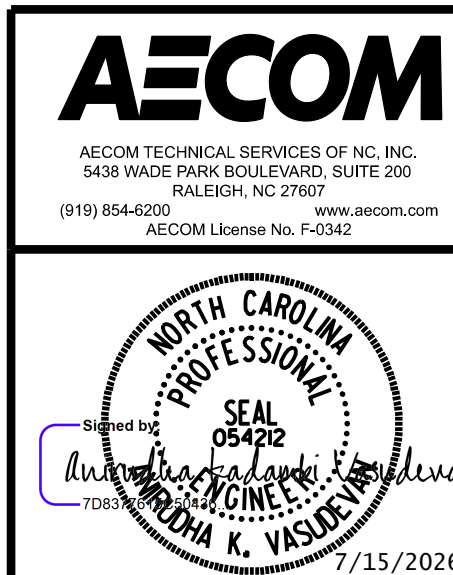
③ CORNER COPING SHALL BE PRECAST OR CAST-IN-PLACE DIRECTLY UNDER THE LIMITS OF THE END BENT CAP AND WINGWALL. COPING SEGMENTS SHALL BE 2' TALL, INCLUDING A 1" (NOMINAL) JOINT. CONSTRUCT THE COPING SEGMENTS SUCH THAT THE TOP SEGMENT DIRECTLY UNDER THE END BENT IS 2', AND ANY NON-STANDARD SEGMENTS ARE 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. 24, NO SEPARATE PAYMENT SHALL BE MADE EXCEPT AS EXPLICITLY NOTED IN THE PLANS OR SPECIAL PROVISIONS.

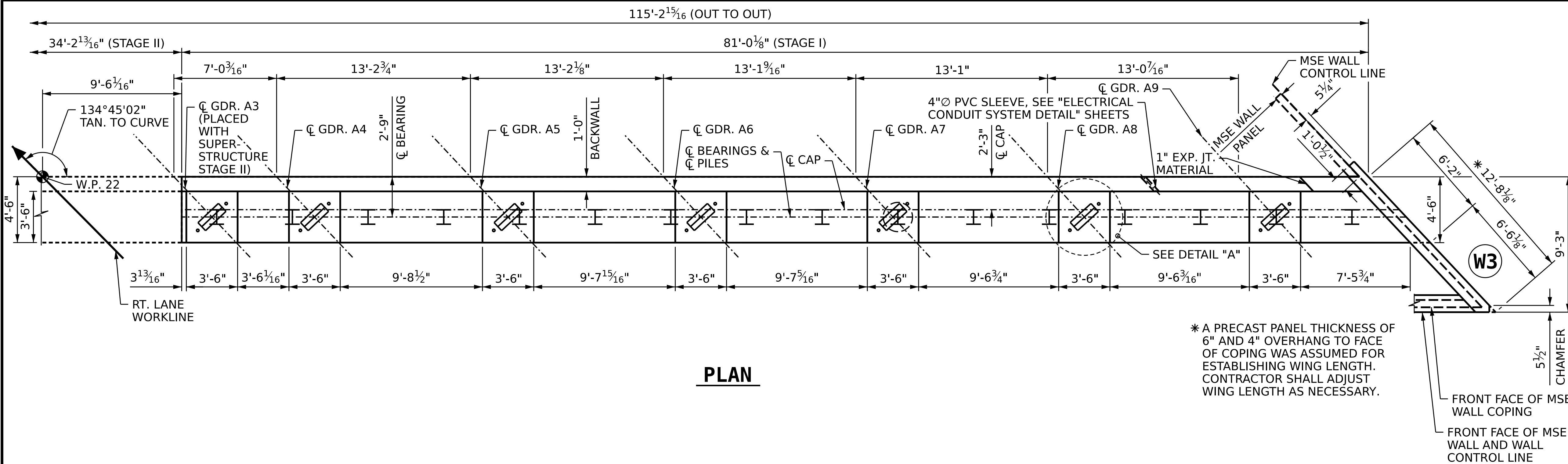
PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 105+49.43 -L-

SHEET 5 OF 5



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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-36 TOTAL SHEETS 52
2			4			



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 WING DETAILS, SEE SHEET 2 OF 5.

FOR SECTIONS A-A, B-B, C-C, D-D, E-E, AND F-F, SEE SHEET 3 OF 5.

FOR DETAIL "A" SEE SHEET 2 OF 5.

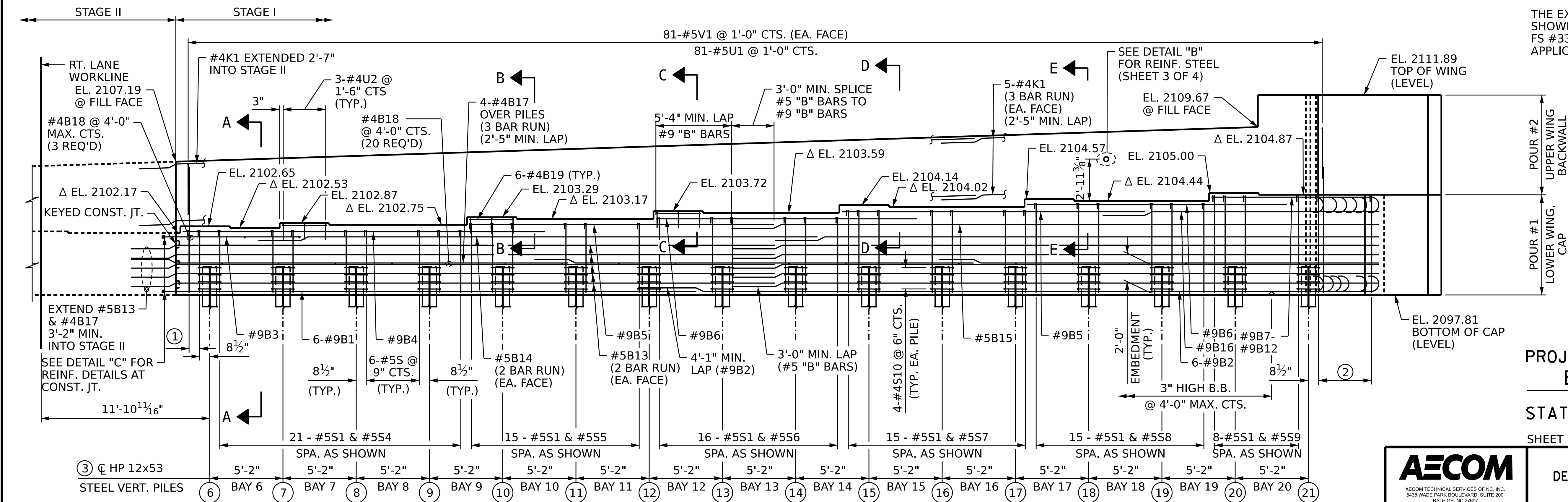
FOR PILE SPlice DETAILS SEE SHEET 3 OF 5.

FOR TEMPORARY DRAINAGE DETAILS, SEE SHEET 4 OF 5.

SEE MSE WALL PLANS FOR MSE WALL DETAILS NOT SHOWN.

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 W3 AS SHOWN ON SHEET 2 SHALL BE COATED COLOR FS #33522. SEE SPECIAL PROVISIONS FOR APPLICATION OF BRIDGE COATING.



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

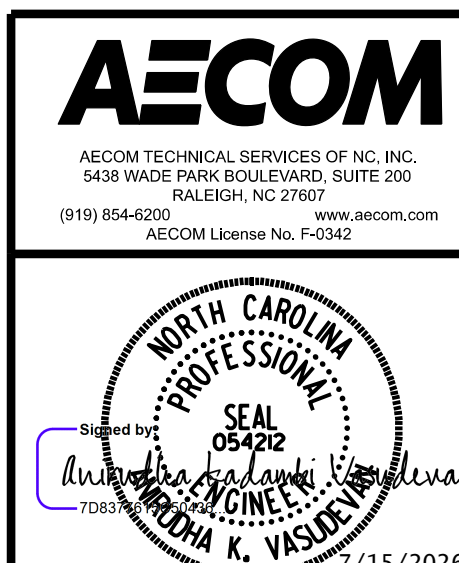
SHEET 1 OF 5

- ① 2 - #5S1 & 2-#5S4 @ 9" CTS.
- ② 6 - #5S1 & #5S9 SPLAYED SEE "SPLAYED BAR DETAIL" ON SHEET 4 OF 4
- ③ PILE CUTOFF ELEVATION (PILES 6 THRU 21) = 2099.81

DRAWN BY : A. VAN VUREN DATE : 02/2024
CHECKED BY : A. VASUDEVAN DATE : 03/2024
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

Δ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTION A-A ON SHEET 3 OF 4.

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

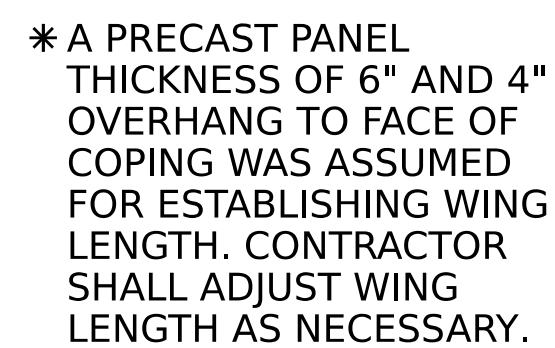
SUBSTRUCTURE

END BENT 2

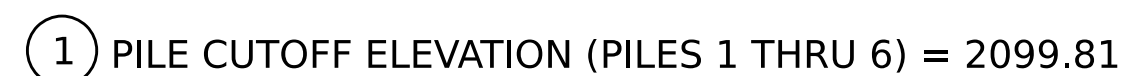
STAGE I

(RIGHT LANE)

REVISIONS						SHEET NO. S10-37
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			



PLAN



ELEVATION



SECTION G-G



NOTES:

FOR SECTIONS F-F AND G-G, SEE SHEET 3 OF 5.

FOR CHEEKWALL DETAILS, SEE SHEET 4 OF 5.

FOR FORMED RECESS DETAILS, SEE SHEET 3 OF 5.

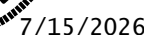
MEDIAN WALL #4 "K" BARS SHALL BE FIELD CUT
AS NEEDED FOR SKEW.



DETAIL "C"



PLAN OF TOP REINFORCEMENT



PROJECT NO. I-2513 AC

BUNCOMBE COUNTY

STATION: 105+49.43 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

STAGE II AND DETAILS

(RIGHT LANE)

026	REVISIONS						SHEET NO.
	NO.	BY:	DATE:	NO.	BY:	DATE:	S10-38
	1			3			TOTAL SHEETS
	2			4			52

SHEET NO
S10-38

DRAWN BY :	A. VAN VUREN	DATE :	02/2024
CHECKED BY :	A. VASUDEVAN	DATE :	03/2024
DESIGN ENGINEER OF RECORD:	A. VASUDEVAN	DATE :	03/2026

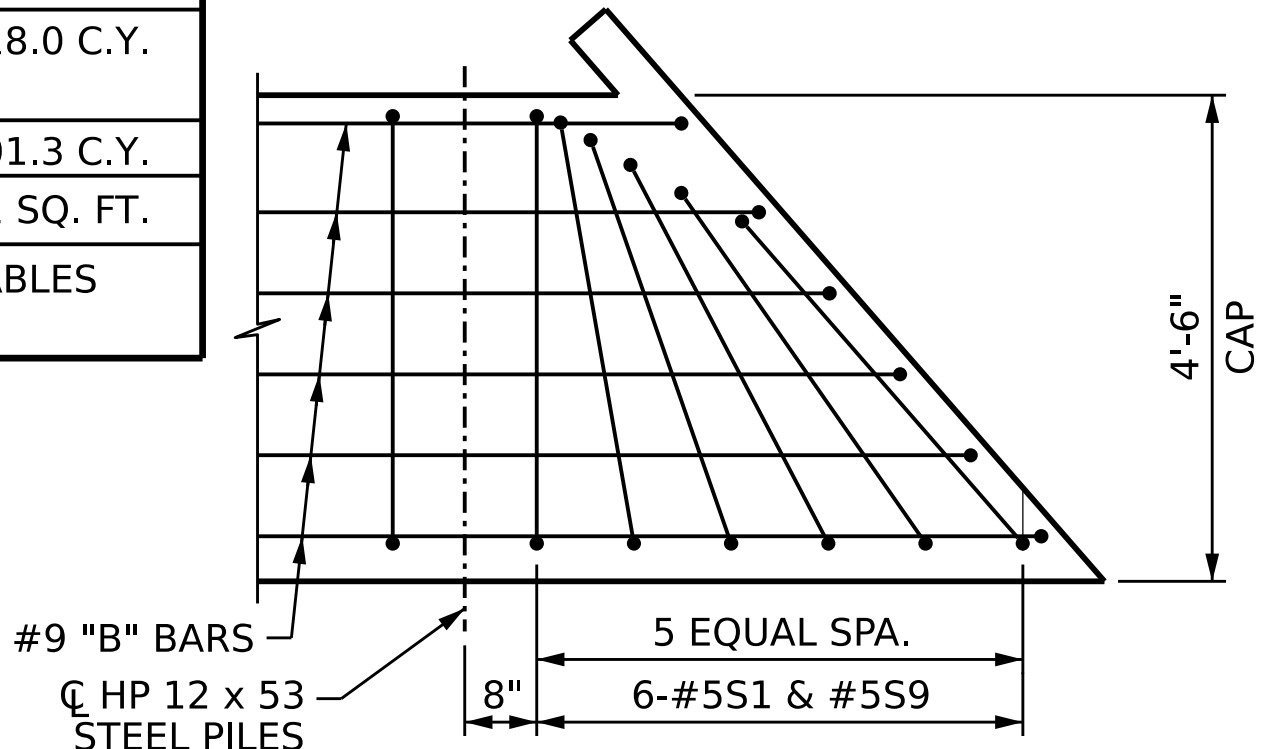
Δ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTION A-A ON SHEET 3.

*** STAGE I TOP AND BOTTOM "B" BARS ARE DETAILED WITH STAGGERED
1'-0" AND 3'-0" EXTENSIONS BEYOND CONSTRUCTION JOINT

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

BILL OF MATERIAL											
END BENT 2											
STAGE I						STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	9	STR	48'-5"	988	B18	9	4	STR	4'-2"	25
B2	6	9	1	46'-9"	954	B20	6	9	1	34'-3"	699
B3	6	9	STR	9'-10"	201	B21	6	9	1	29'-9"	607
B4	6	9	STR	25'-11"	529	B22	6	9	STR	9'-11"	202
B5	12	9	STR	21'-6"	877	B23	10	5	STR	34'-0"	355
B6	12	9	STR	18'-6"	755	B24	4	4	STR	34'-0"	91
B7	1	9	1	12'-11"	44						
B8	1	9	1	12'-2"	41	H4	12	4	4	8'-9"	70
B9	1	9	1	11'-5"	39						
B10	1	9	1	10'-9"	37	K2	10	4	STR	34'-0"	227
B11	1	9	1	10'-0"	34	K3	10	4	STR	6'-0"	40
B12	1	9	1	9'-2"	31	K4	2	4	STR	4'-2"	6
B13	20	5	STR	45'-8"	953	K5	2	4	STR	2'-0"	3
B14	4	5	STR	41'-2"	172						
B15	2	5	STR	45'-10"	96	S1	42	5	5	5'-1"	223
B16	2	5	STR	19'-8"	41	S2	28	5	6	12'-3"	358
B17	12	4	STR	31'-1"	249	S3	14	5	6	12'-11"	189
B18	23	4	STR	4'-2"	64						
B19	18	4	STR	3'-2"	38	U3	28	4	8	4'-6"	84
H1	16	4	2	12'-11"	138	V2	28	5	STR	8'-1"	236
H2	16	4	2	13'-10"	148	V3	2	5	STR	15'-10"	33
H3	16	4	3	2'-7"	28	V4	2	5	STR	15'-6"	32
						V5	2	5	STR	15'-2"	32
K1	30	4	STR	29'-8"	595	V6	2	5	STR	14'-11"	31
K6	4	4	STR	4'-2"	17	V7	2	5	STR	14'-7"	30
						V8	2	5	STR	14'-3"	30
S1	98	5	5	5'-1"	520	V9	2	5	STR	14'-0"	29
S4	23	5	6	13'-7"	326	V10	2	5	STR	13'-8"	29
S5	15	5	6	14'-11"	233	V11	2	5	STR	13'-4"	28
S6	16	5	6	15'-9"	263	V12	2	5	STR	13'-1"	27
S7	15	5	6	16'-7"	259	V14	14	4	STR	5'-2"	48
S8	15	5	6	17'-5"	272						
S9	14	5	6	18'-5"	269	REINFORCING STEEL					3,764 LBS.
S10	64	4	7	6'-6"	278	CLASS A CONCRETE					
						POUR #1 (CAP & CHEEKWALL)					28.4 C.Y.
T1	16	5	STR	2'-5"	40	POUR #2 (BACKWALL)					7.3 C.Y.
U1	81	4	8	7'-8"	415	TOTAL = 35.7 C.Y.					
U2	9	4	8	5'-6"	33	NOTE: SEE GEOTECHNICAL FOUNDATION TABLES FOR ADDITIONAL PILE INFORMATION					
V1	81	5	STR	9'-0"	760						
V13	34	5	STR	13'-8"	485						

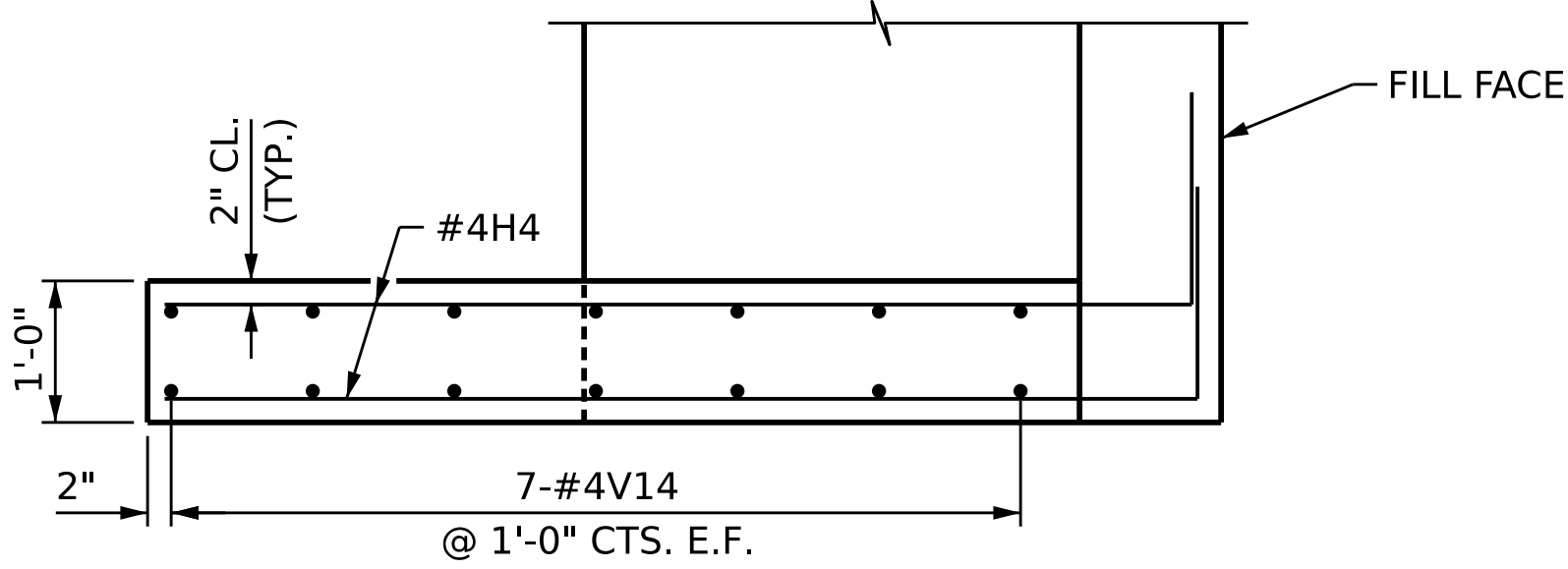
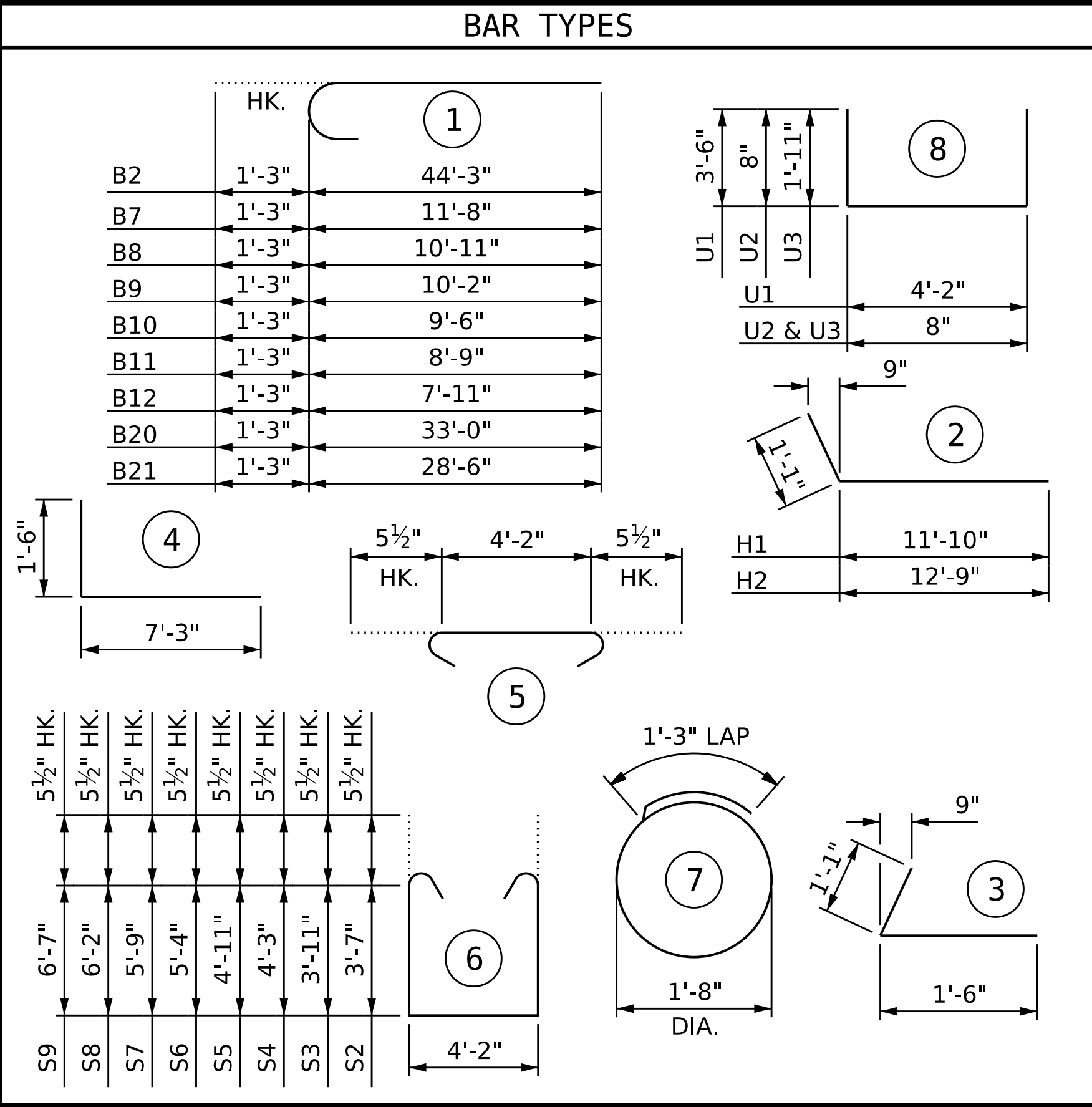
REINFORCING STEEL	11,222 LBS.
CLASS A CONCRETE	
POUR #1 (CAP & LOWER WINGWALL)	83.3 C.Y.
POUR #2 (BACKWALL & UPPER WINGWALL)	18.0 C.Y.
TOTAL = 101.3 C.Y.	
APPLICATION OF BRIDGE COATING	211.1 SQ. FT.
NOTE: SEE GEOTECHNICAL FOUNDATION TABLES FOR ADDITIONAL PILE INFORMATION	



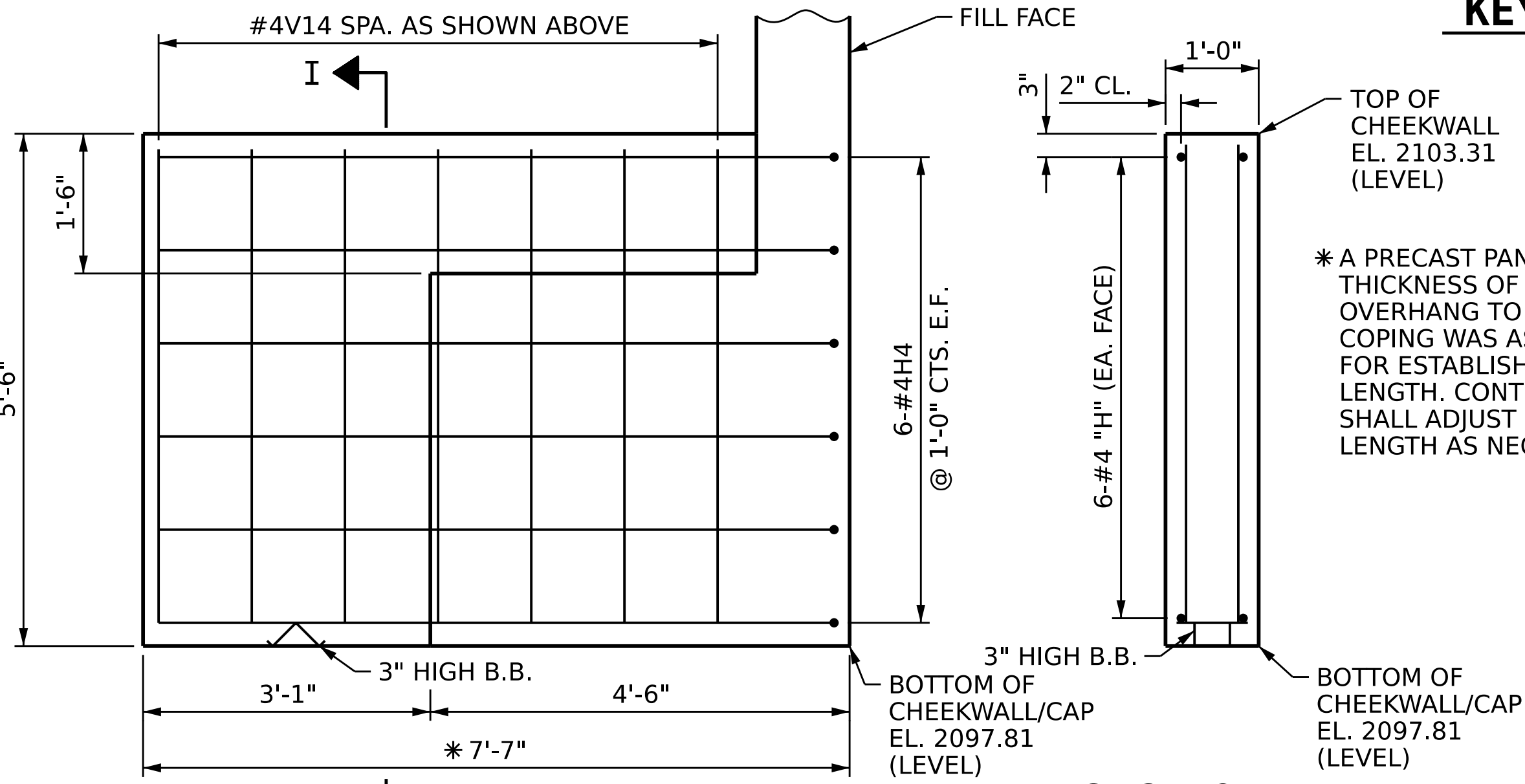
SPLAYED BAR DETAIL

DRAWN BY :	A. VAN VUREN	DATE :	02/2024
CHECKED BY :	A. VASUDEVAN	DATE :	03/2024
DESIGN ENGINEER OF RECORD:	A. VASUDEVAN	DATE :	03/2026

7/13/2026
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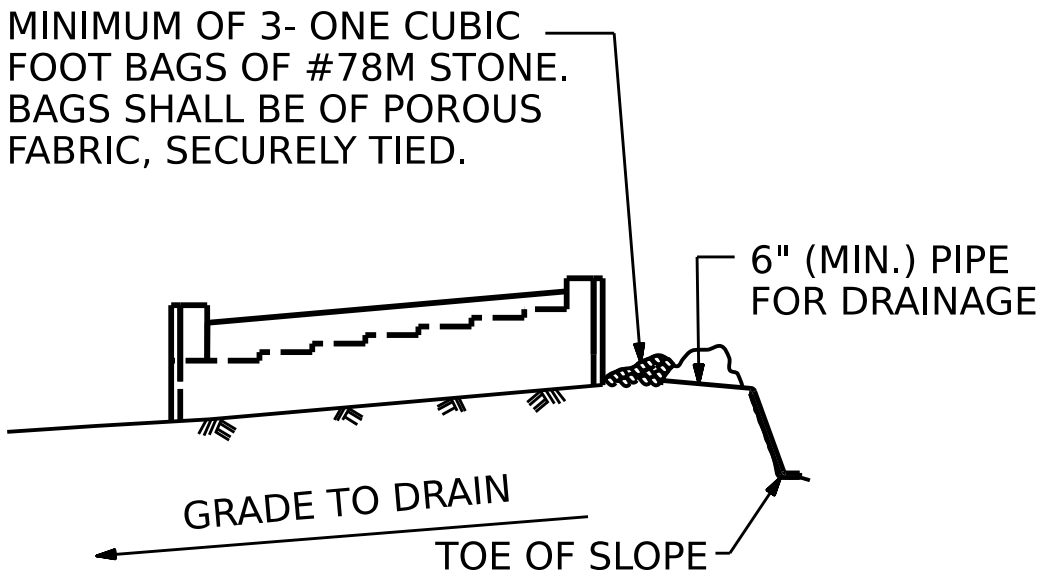
PLAN OF CHEEKWALL W4



ELEVATION OF CHEEKWALL W4

SECTION I-I

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

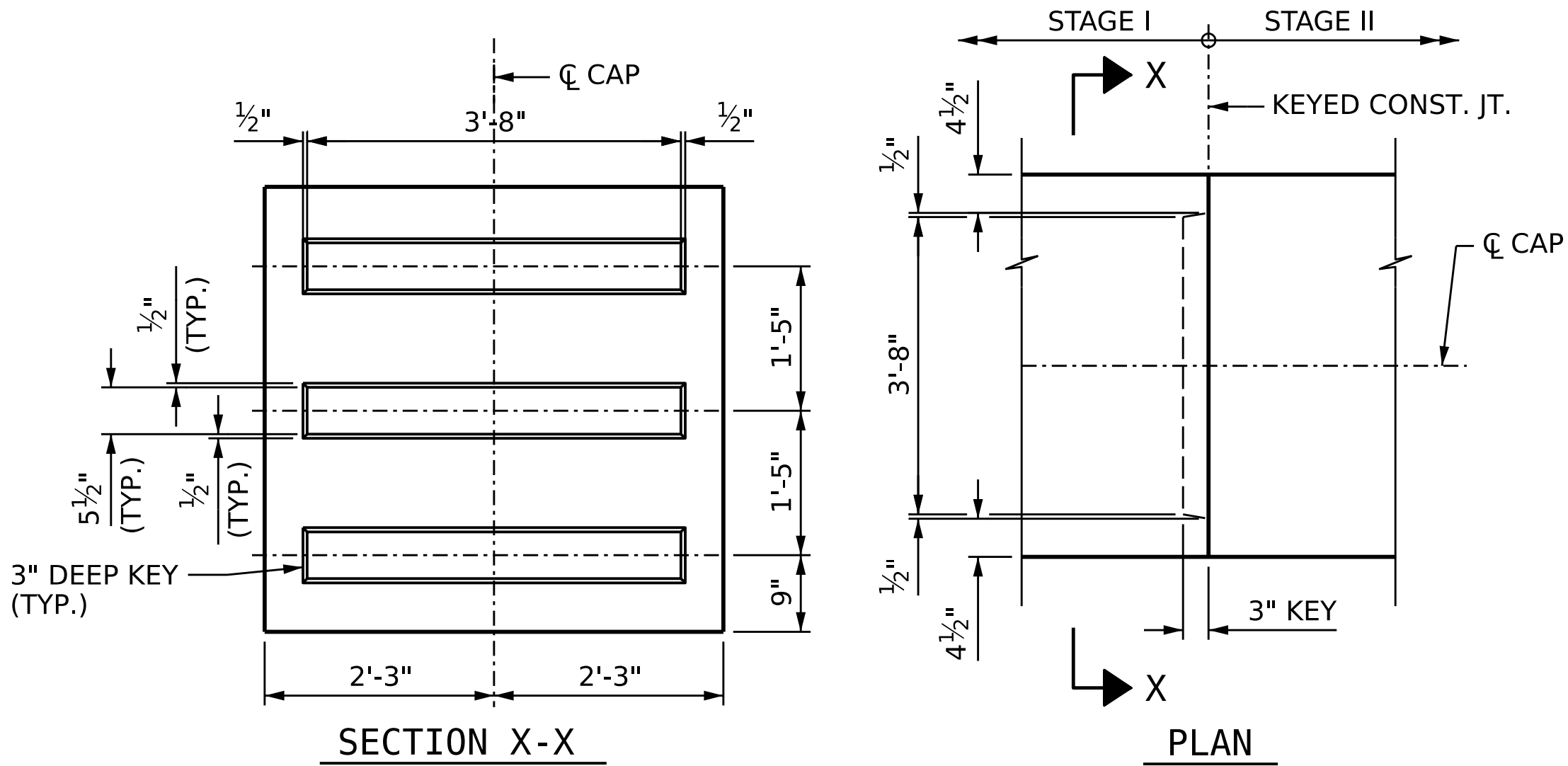


TEMPORARY DRAINAGE AT END BENT

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.

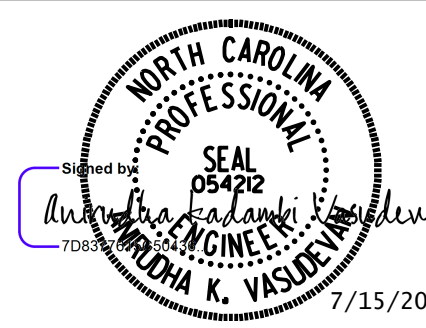
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.



KEYED CONSTRUCTION JOINT DETAIL

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

SHEET 4 OF 5



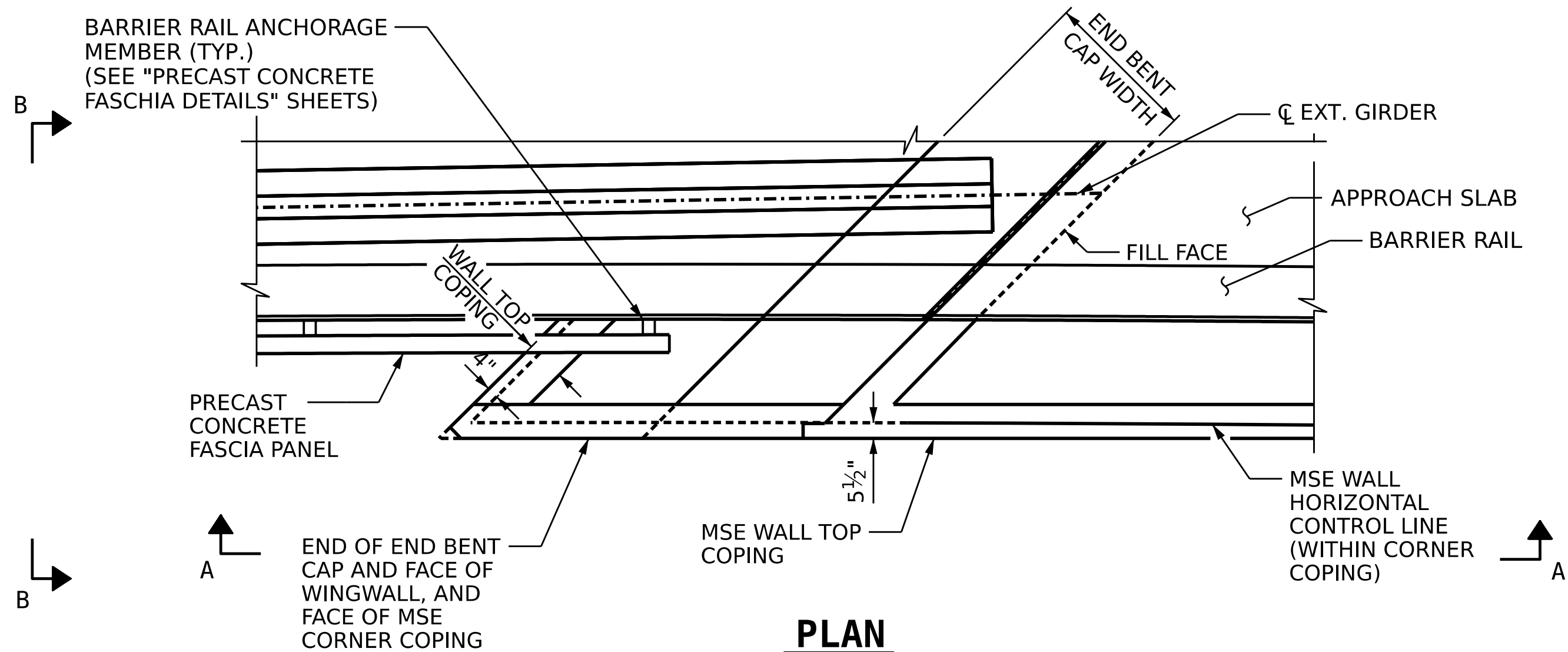
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2
BILL OF MATERIAL

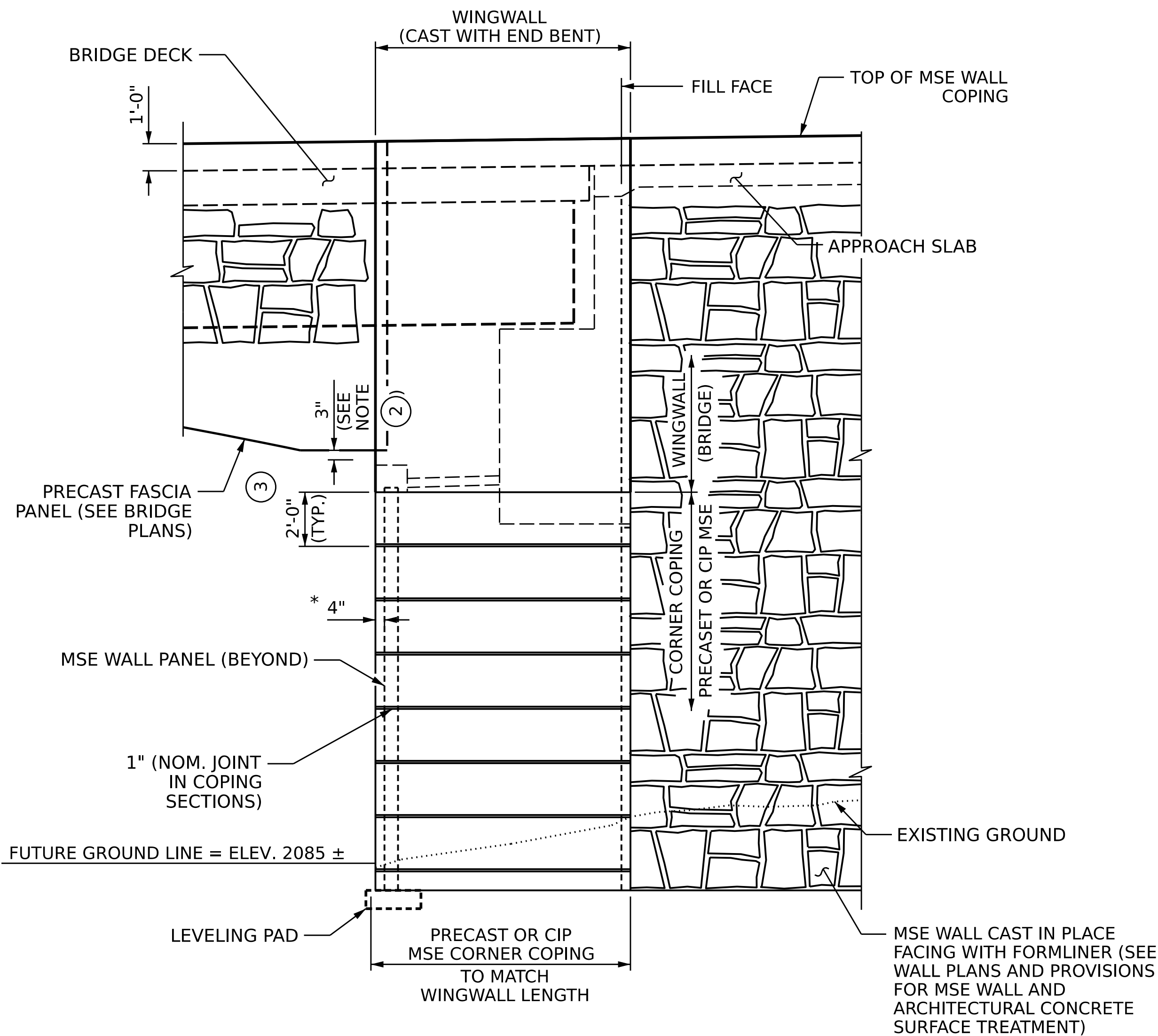
(RIGHT LANE)

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

SHEET NO.
S10-40
TOTAL SHEETS
52



PLAN
(SOUND BARRIER WALL NOT SHOWN FOR CLARITY)



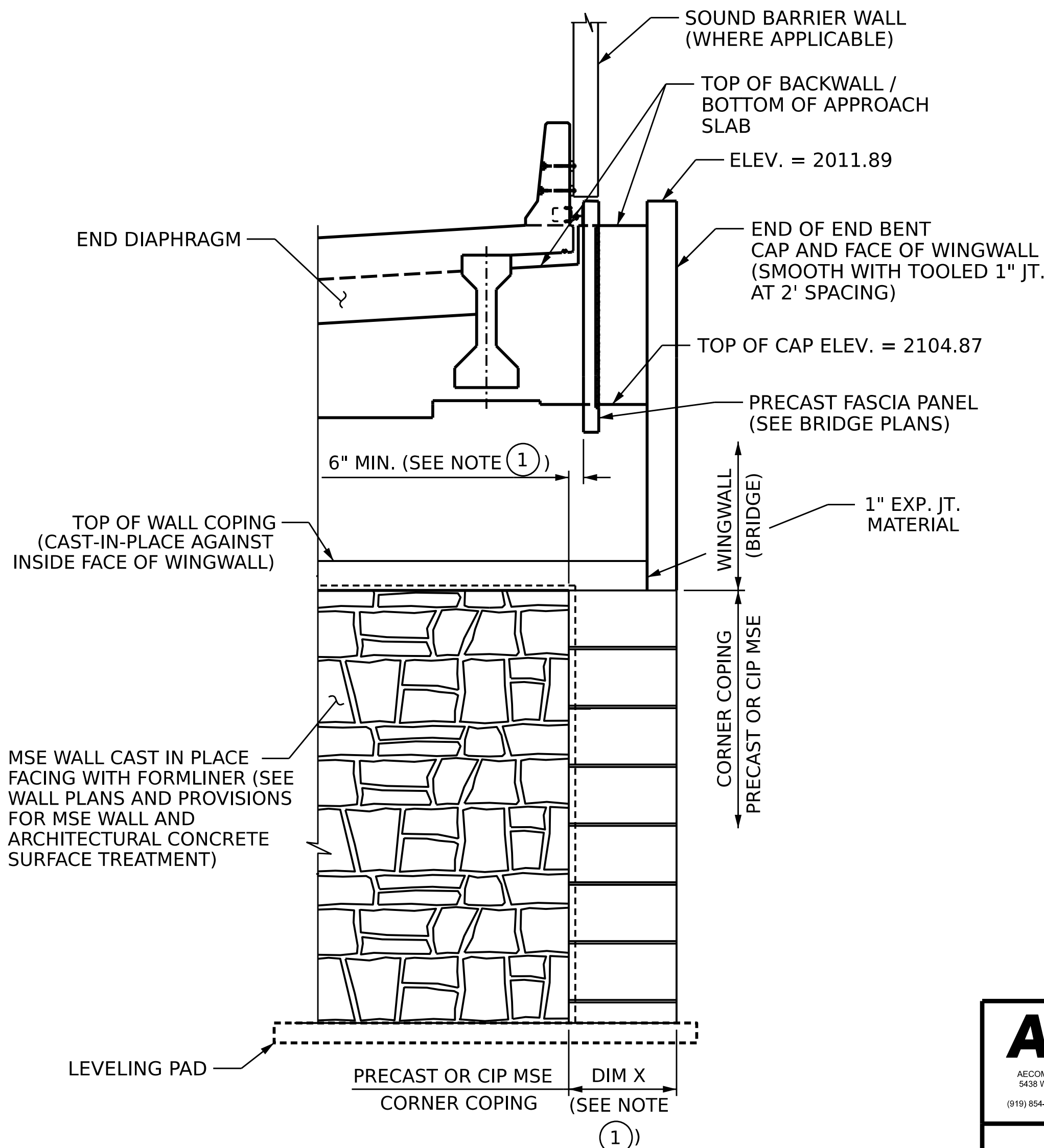
VIEW A-A

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

* DIMENSION NORMAL TO WALL BELOW BRIDGE

DRAWN BY : M. CATER DATE : 03/2026
CHECKED BY : A. VASUDEVAN DATE : 03/2026
DESIGN ENGINEER OF RECORD : A. VASUDEVAN DATE : 03/2026

7/13/2026
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caterm



VIEW B-B

NOTES:

MSE WALL NO. 25 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 10 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.

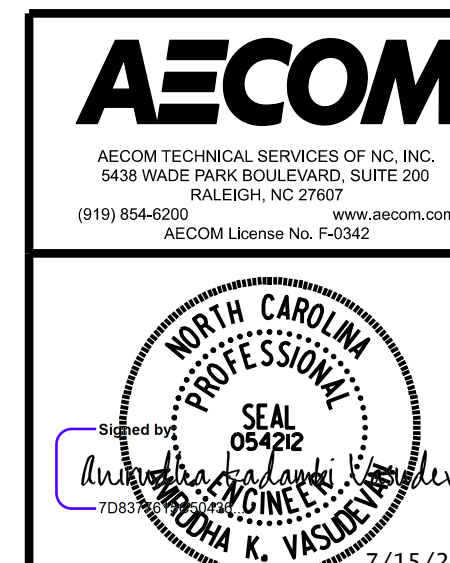
③ CORNER COPING SHALL BE PRECAST OR CAST-IN-PLACE DIRECTLY UNDER THE LIMITS OF THE END BENT CAP AND WINGWALL. COPING SEGMENTS SHALL BE 2' TALL, INCLUDING A 1" (NOMINAL) JOINT. CONSTRUCT THE COPING SEGMENTS SUCH THAT THE TOP SEGMENT DIRECTLY UNDER THE END BENT IS 2', AND ANY NON-STANDARD SEGMENTS ARE 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. 24, NO SEPARATE PAYMENT SHALL BE MADE EXCEPT AS EXPLICITLY NOTED IN THE PLANS OR SPECIAL PROVISIONS.

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

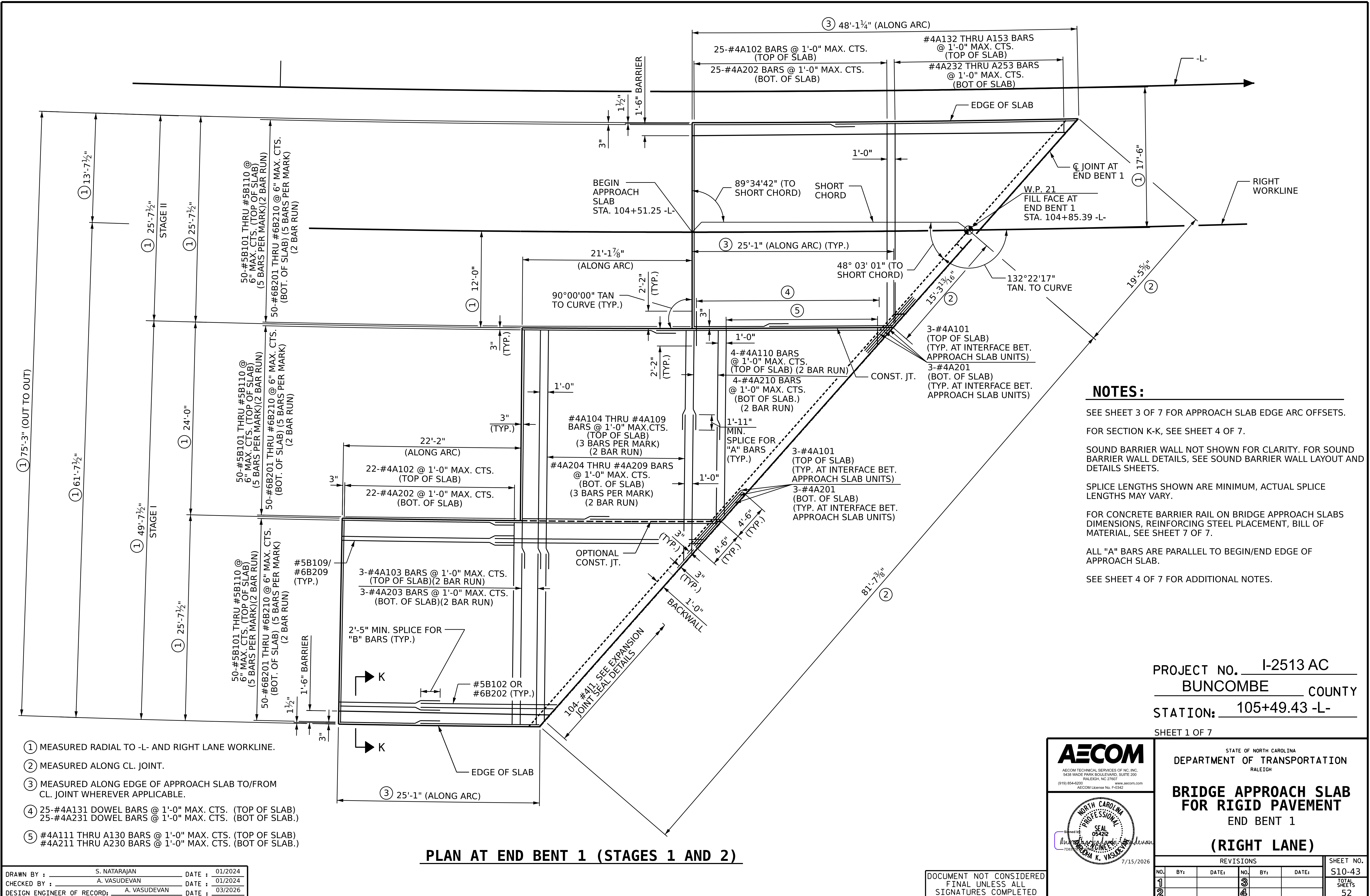
SHEET 5 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 2
MSE WALL & AESTHETIC
PRECAST PANEL DETAILS
(RIGHT LANE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S10-41
2			4			
TOTAL SHEETS						52

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



- NOTES:**
- SEE SHEET 3 OF 7 FOR APPROACH SLAB EDGE ARC OFFSETS.
 - FOR SECTION K-K, SEE SHEET 4 OF 7.
 - SOUND BARRIER WALL NOT SHOWN FOR CLARITY. FOR SOUND BARRIER WALL DETAILS, SEE SOUND BARRIER WALL LAYOUT AND DETAILS SHEETS.
 - SPLICE LENGTHS SHOWN ARE MINIMUM, ACTUAL SPLICE LENGTHS MAY VARY.
 - FOR CONCRETE BARRIER RAIL ON BRIDGE APPROACH SLABS DIMENSIONS, REINFORCING STEEL PLACEMENT, BILL OF MATERIAL, SEE SHEET 7 OF 7.
 - ALL "A" BARS ARE PARALLEL TO BEGIN/END EDGE OF APPROACH SLAB.
 - SEE SHEET 4 OF 7 FOR ADDITIONAL NOTES.

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

SHEET 1 OF 7

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. F02342

Seal of North Carolina Professional Engineer
A. Vasudevan
05422
7/15/2026

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BRIDGE APPROACH SLAB FOR RIGID PAVEMENT END BENT 1 (RIGHT LANE)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S10-43 TOTAL SHEETS 52					

1 MEASURED RADIAL TO -L- AND RIGHT LANE WORKLINE.

2 MEASURED ALONG CL. JOINT.

3 MEASURED ALONG EDGE OF APPROACH SLAB TO/FROM CL. JOINT WHEREVER APPLICABLE.

4 25-#4A131 DOWEL BARS @ 1'-0" MAX. CTS. (TOP OF SLAB)
25-#4A231 DOWEL BARS @ 1'-0" MAX. CTS. (BOT OF SLAB.)

5 #4A111 THRU A130 BARS @ 1'-0" MAX. CTS. (TOP OF SLAB)
#4A211 THRU A230 BARS @ 1'-0" MAX. CTS. (BOT OF SLAB.)

DRAWN BY : S. NATARAJAN DATE : 01/2024

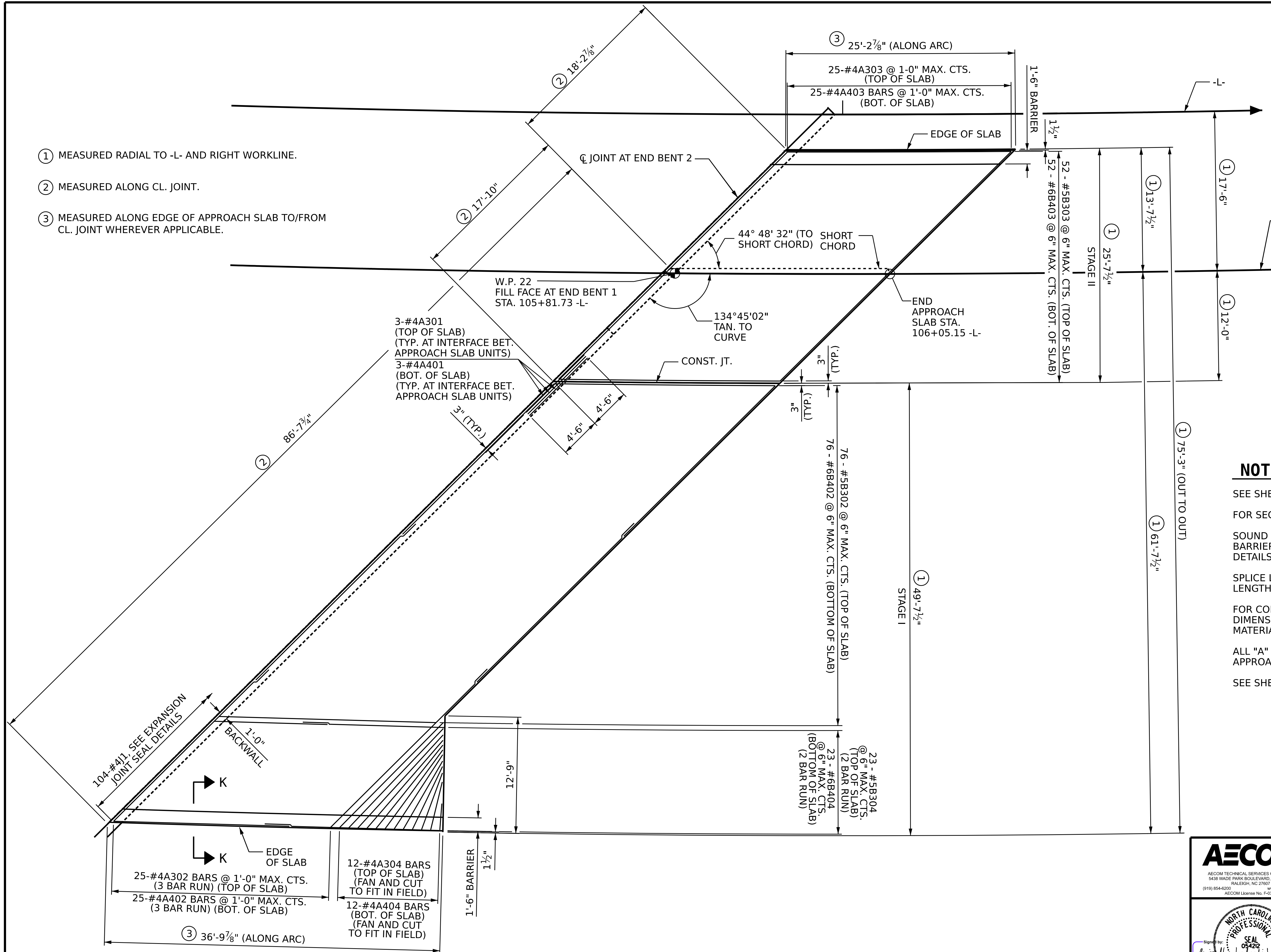
CHECKED BY : A. VASUDEVAN DATE : 01/2024

DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

PLAN AT END BENT 1 (STAGES 1 AND 2)

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

- ① MEASURED RADIAL TO -L- AND RIGHT WORKLINE.
- ② MEASURED ALONG CL. JOINT.
- ③ MEASURED ALONG EDGE OF APPROACH SLAB TO/FROM CL. JOINT WHEREVER APPLICABLE.

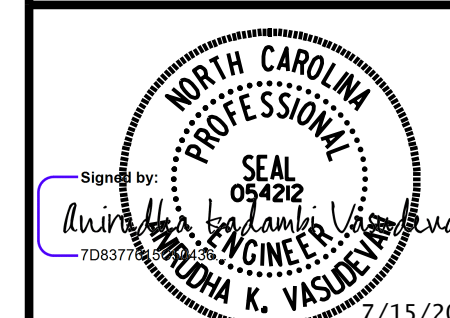


NOTES:

- SEE SHEET 3 OF 7 FOR APPROACH SLAB EDGE ARC OFFSETS.
- FOR SECTION K-K, SEE SHEET 4 OF 7.
- SOUND BARRIER WALL NOT SHOWN FOR CLARITY. FOR SOUND BARRIER WALL DETAILS, SEE SOUND BARRIER WALL LAYOUT AND DETAILS SHEETS.
- SPLICE LENGTHS SHOWN ARE MINIMUM, ACTUAL SPLICE LENGTHS MAY VARY.
- FOR CONCRETE BARRIER RAIL ON BRIDGE APPROACH SLABS DIMENSIONS, REINFORCING STEEL PLACEMENT, BILL OF MATERIAL, SEE SHEET 7 OF 7.
- ALL "A" BARS ARE PARALLEL TO BEGIN/END EDGE OF APPROACH SLAB.
- SEE SHEET 4 OF 7 FOR ADDITIONAL NOTES

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

SHEET 2 OF 7



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR RIGID PAVEMENT END BENT 2 (RIGHT LANE)

REVISIONS						SHEET NO. S10-44
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

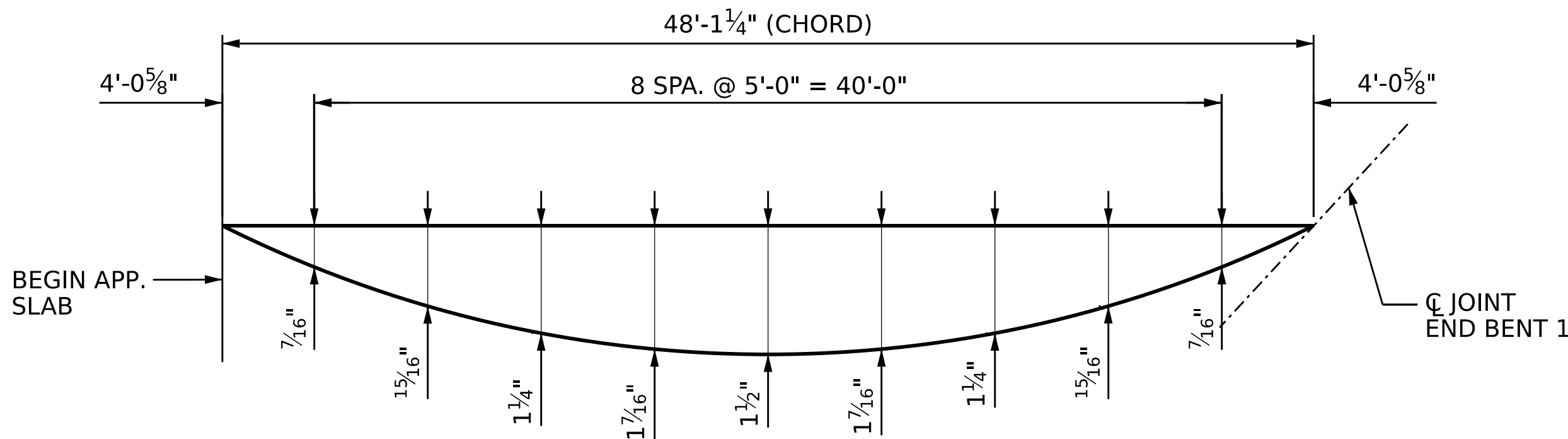
DRAWN BY : M. CATER DATE : 02/2024
CHECKED BY : A. VASUDEVAN DATE : 01/2024
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

PLAN AT END BENT 2 (STAGES 1 AND 2)

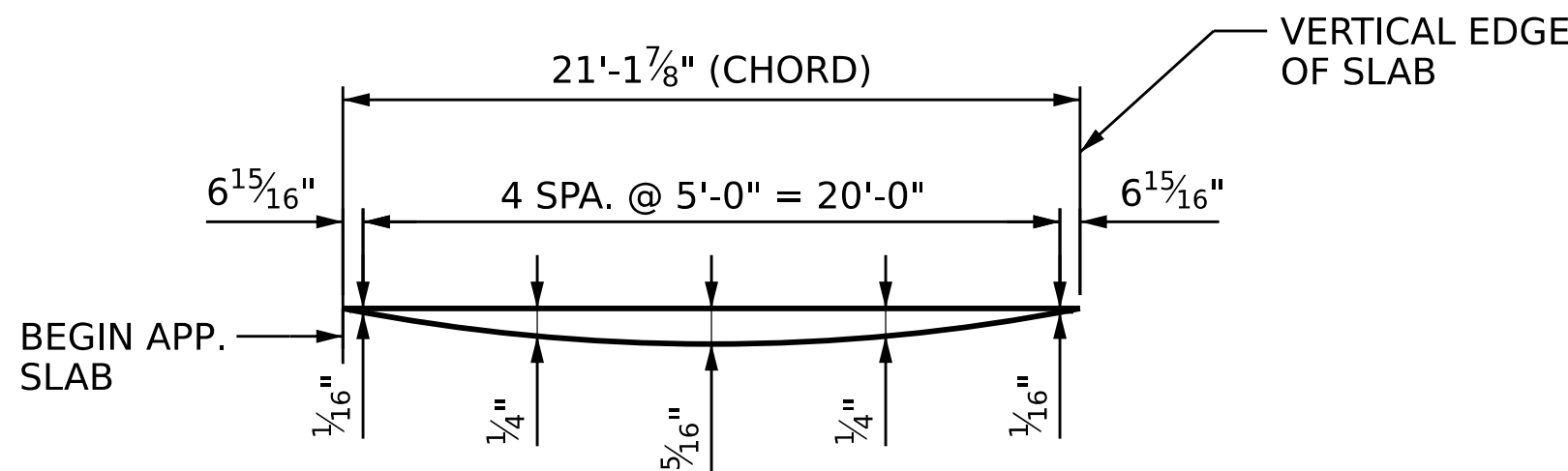
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

NOTES:

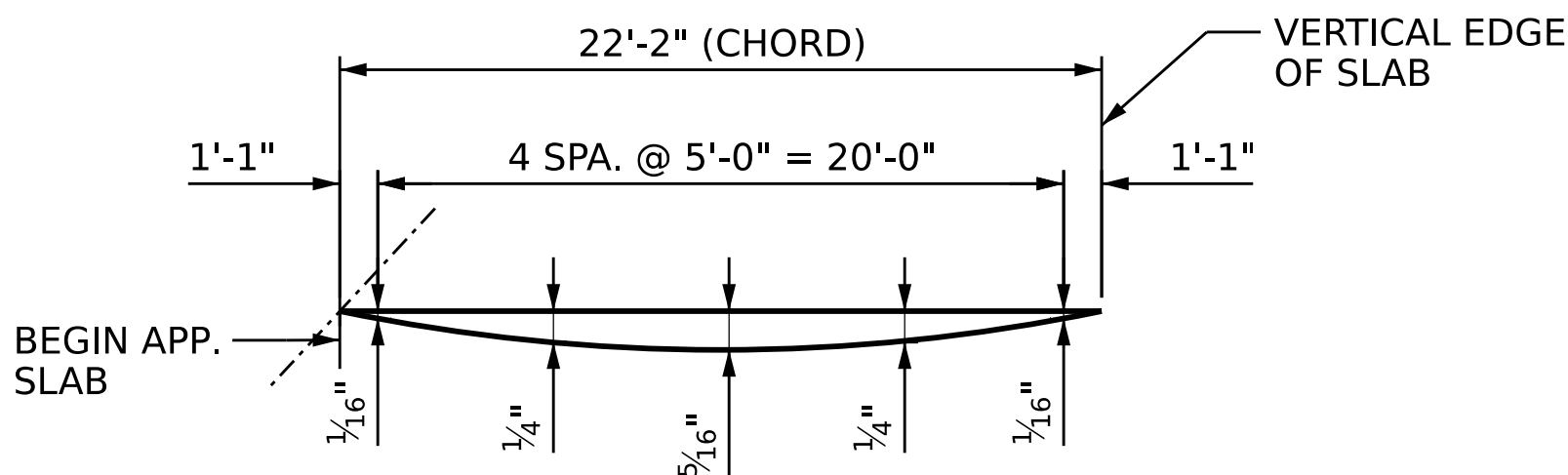
SEE SHEET 1 OF 7 AND 2 OF 7 FOR LOCATIONS OF EDGES OF APPROACH SLAB.



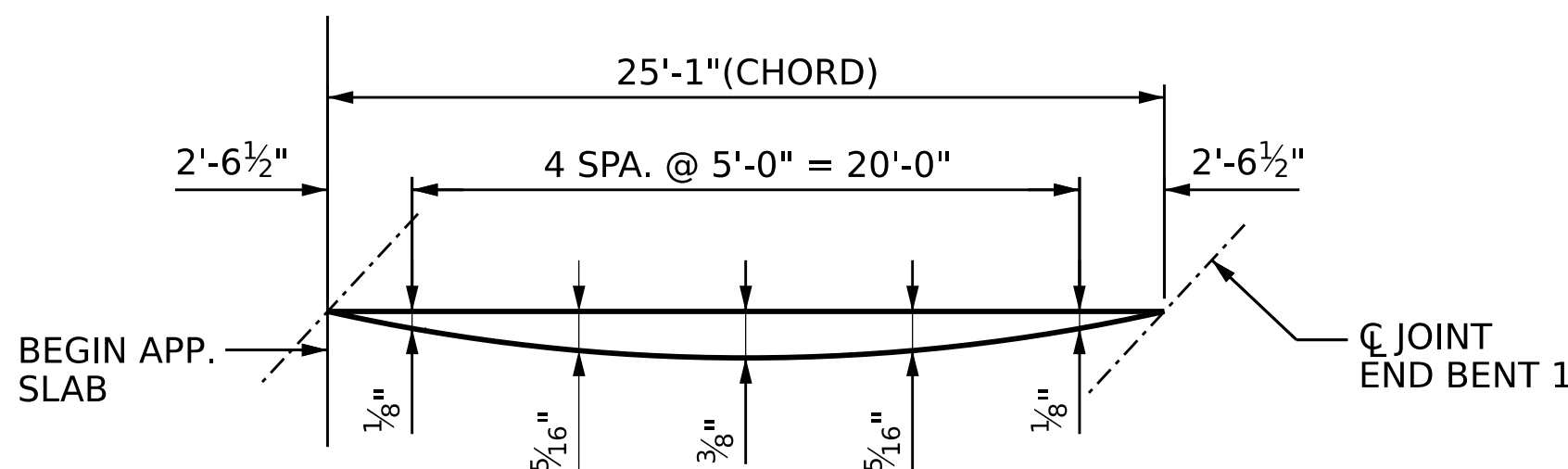
LEFT EDGE OF SLAB



EDGE OF SLAB AT 29'-6" FROM -L-

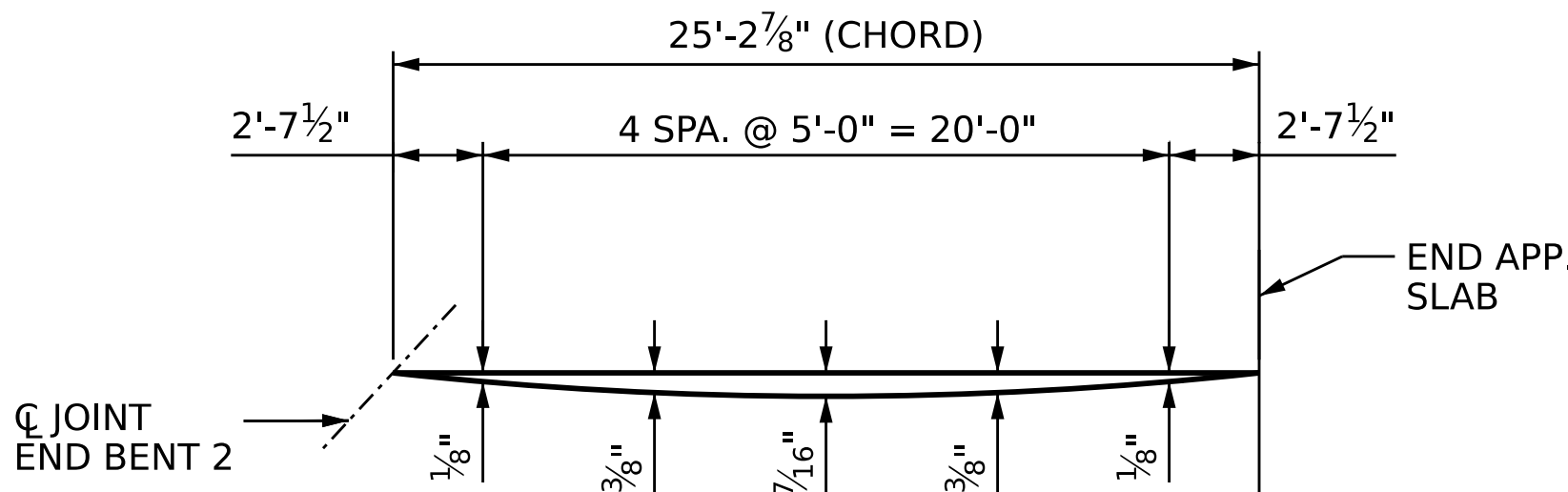


EDGE OF SLAB AT 53'-6" FROM -L-

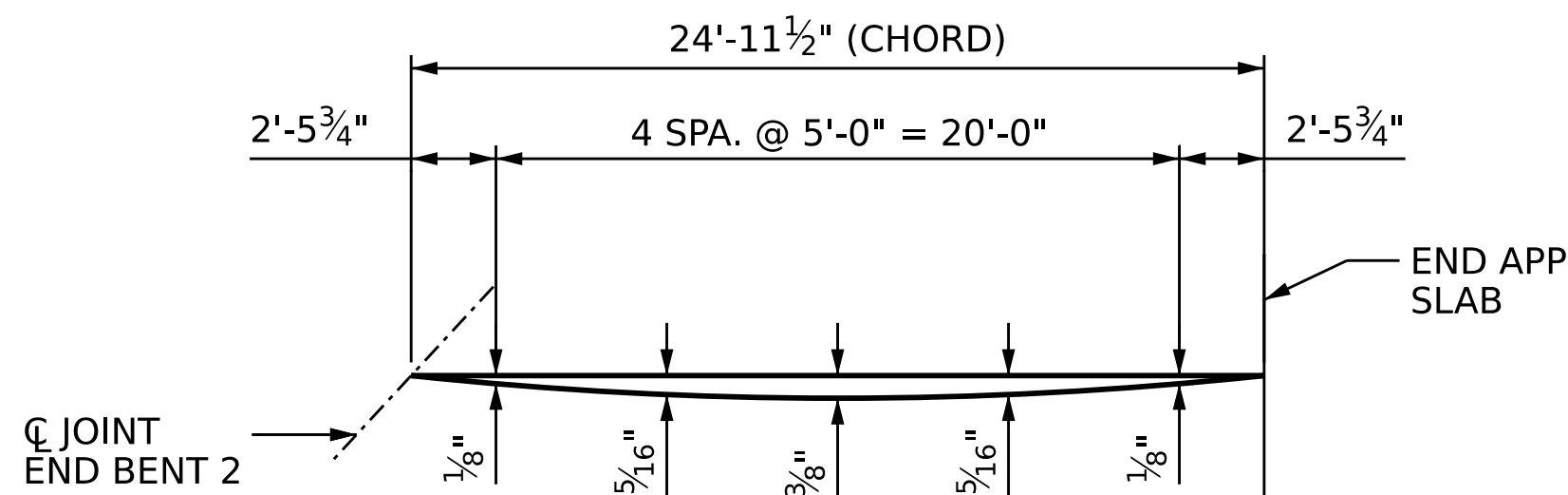


RIGHT EDGE OF SLAB

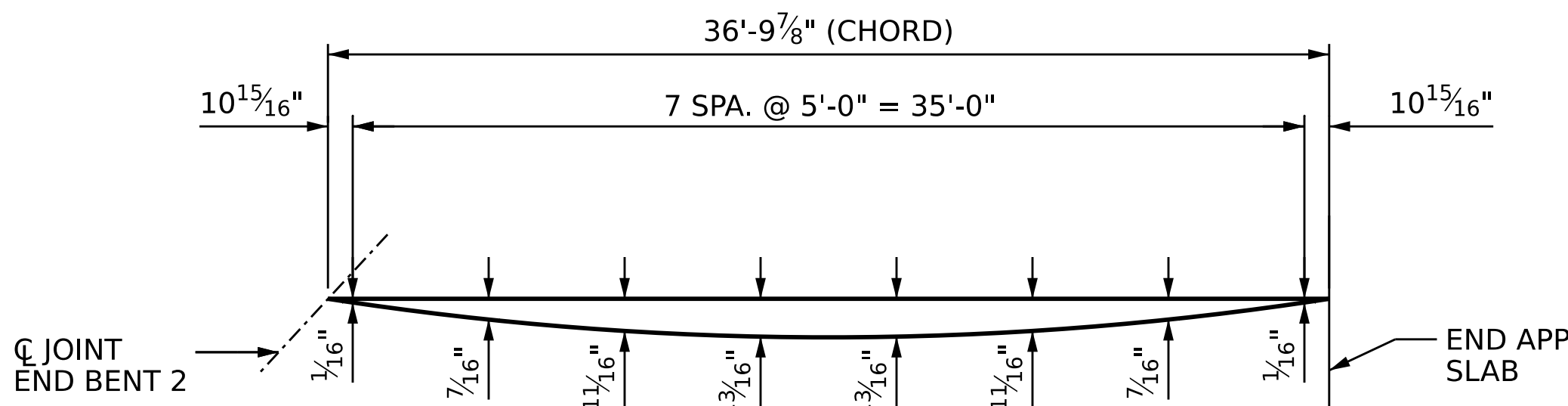
ARC OFFSETS - APPROACH SLAB AT END BENT 1
(NOT DRAWN TO SCALE)



LEFT EDGE OF SLAB



EDGE OF SLAB AT 29'-6" FROM -L-

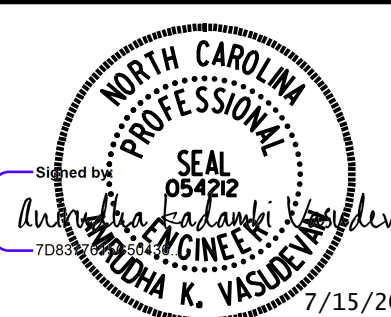


RIGHT EDGE OF SLAB

ARC OFFSETS - APPROACH SLAB AT END BENT 2
(NOT DRAWN TO SCALE)

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

SHEET 3 OF 7



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH
SLAB DETAILS

(RIGHT LANE)

DRAWN BY : S. NATARAJAN / M. CATER DATE : 03/2026
CHECKED BY : A. VASUDEVAN DATE : 03/2026
DESIGN ENGINEER OF RECORD: A. VASUDEVAN DATE : 03/2026

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REVISIONS						SHEET NO. S10-45
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

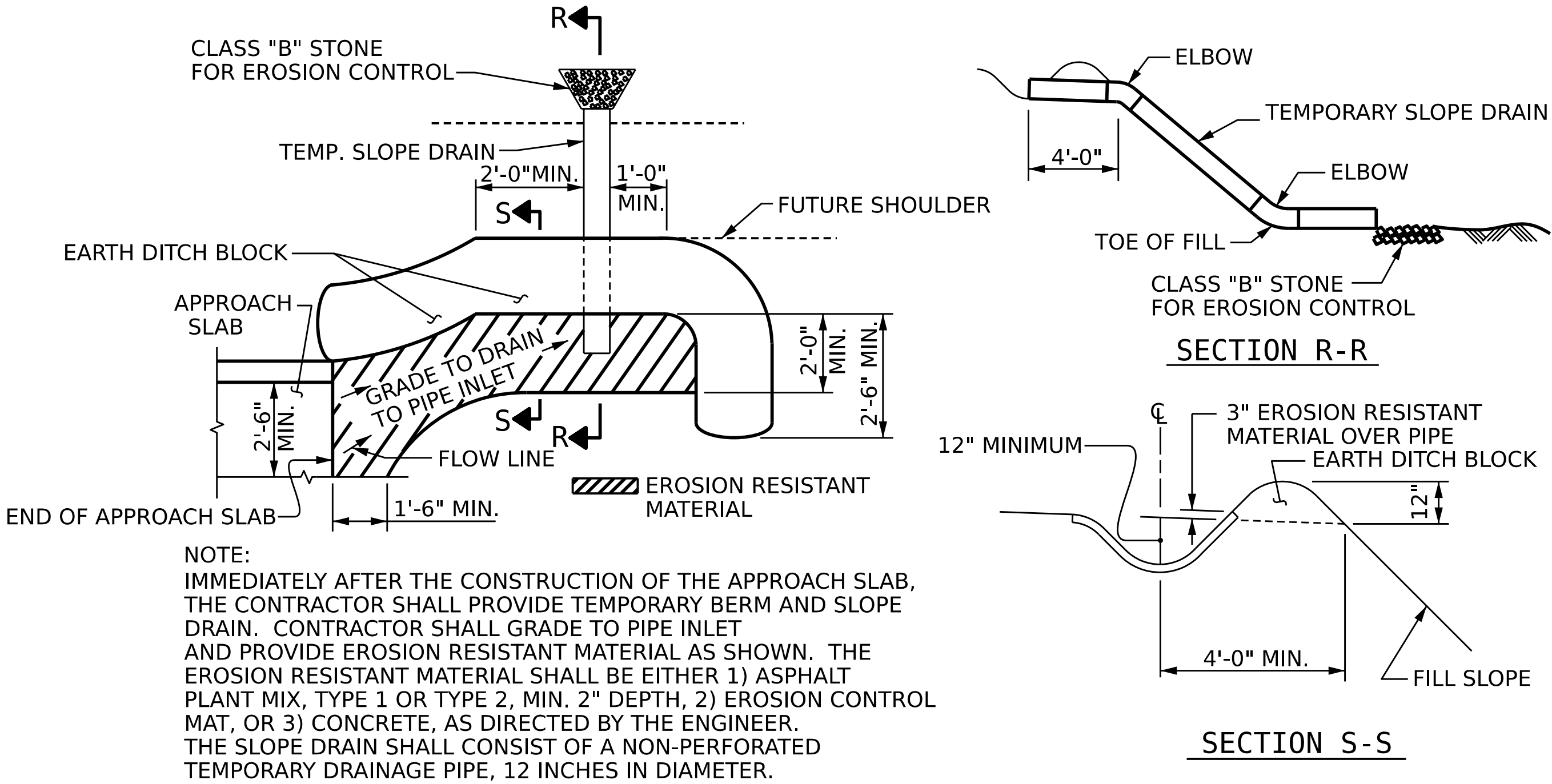
NOTES:

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

AREA BETWEEN THE MSE WALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

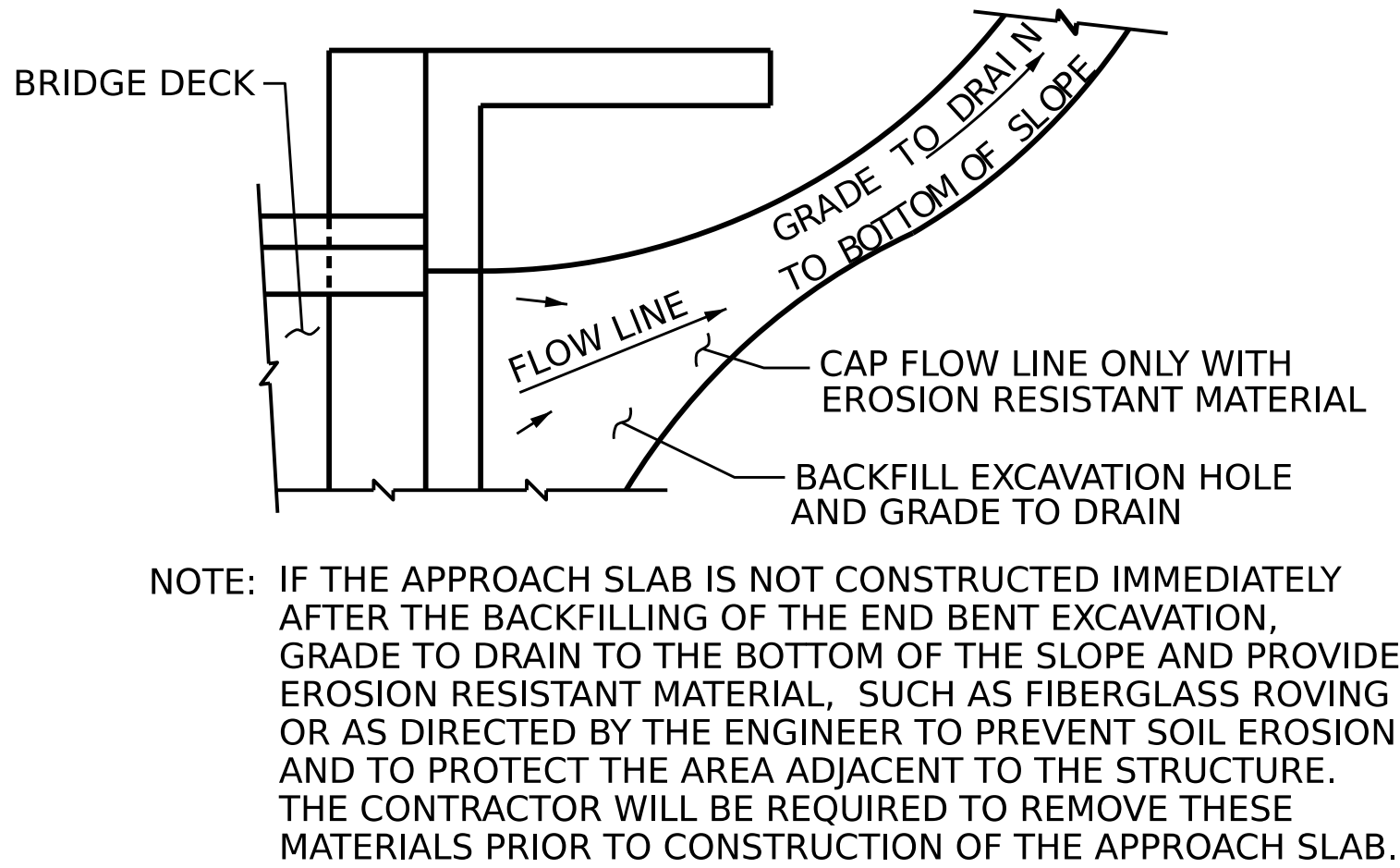
FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.



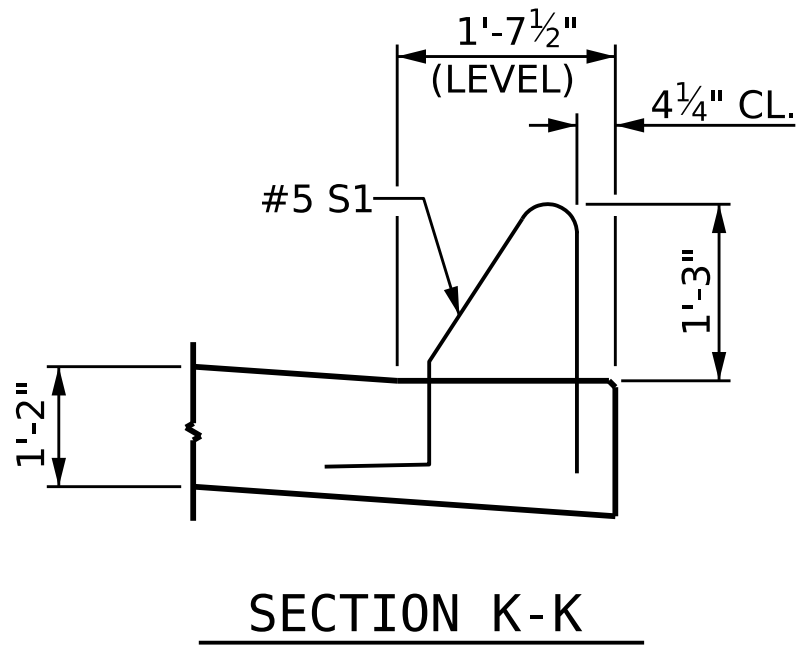
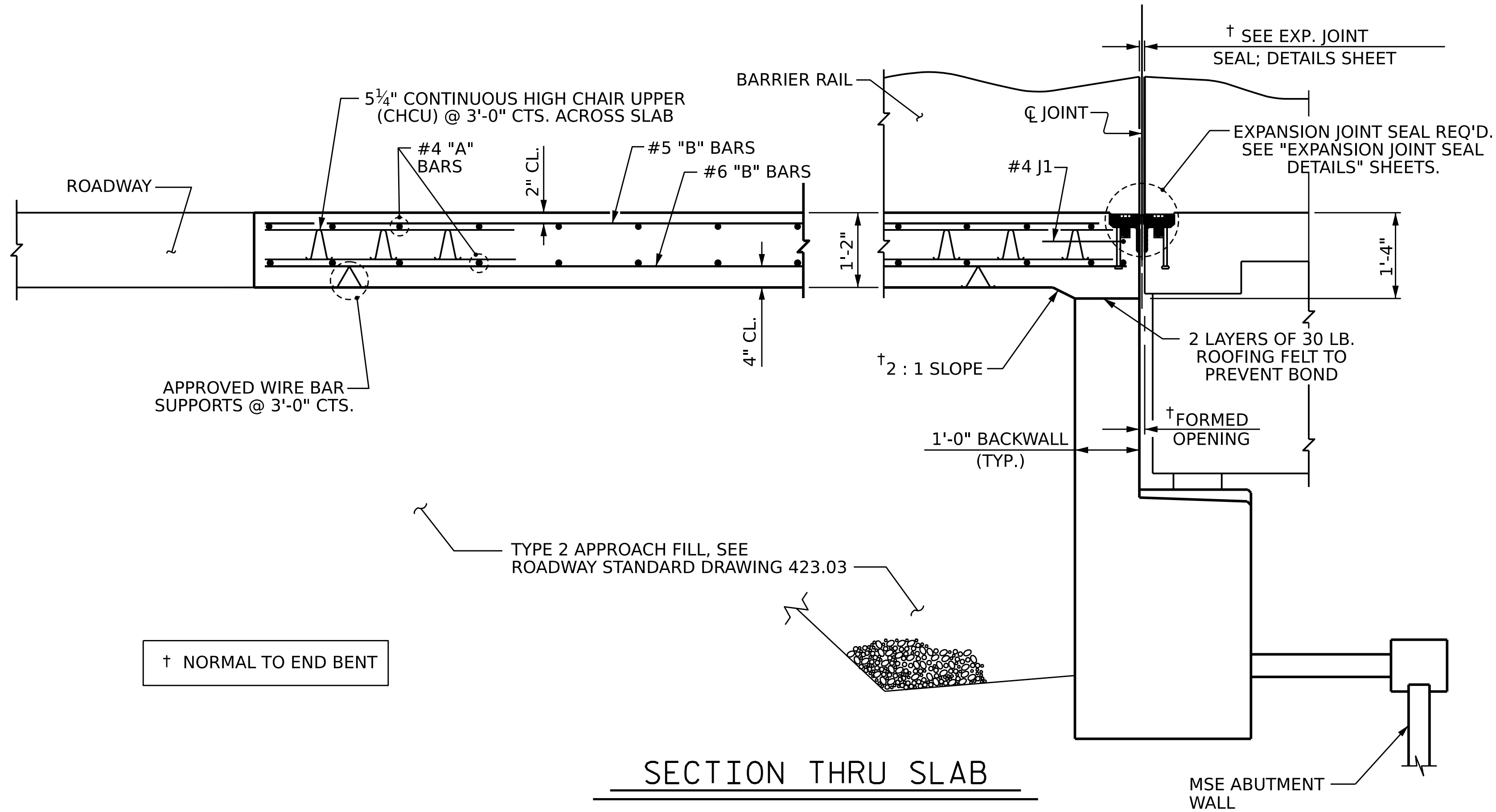
PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



TEMPORARY DRAINAGE DETAIL



PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 105+49.43 -L-
SHEET 4 OF 7

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AECOM TECHNICAL SERVICES OF NC, INC.
5438 WADE PARK BOULEVARD, SUITE 200
RALEIGH, NC 27607
(919) 854-6200
www.aecom.com
AECOM License No. F02342

Signed by: *Madhavi K. Vasudevan*
SEAL 05422
ENGINEER
7/15/2026

REVISIONS						SHEET NO. S10-46 TOTAL SHEETS 52
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

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SIGNATURES COMPLETED

ASSEMBLED BY: T. NEAL	DATE : 12/2023		
CHECKED BY : A. K. VASUDEVAN	DATE : 01/2024		
DRAWN BY : RH	5/99	REV. 6/13	MAA/GM
CHECKED BY : RDR	5/99	REV. 6/13	MAA/THC
		REV. 6/13	BNB/SNM

BILL OF MATERIAL	
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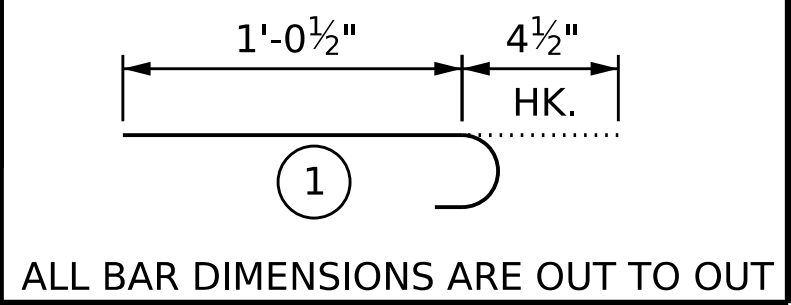
**APPROACH SLAB AT
END BENT 2 (STAGE 1)**

**APPROACH SLAB AT
END BENT 2 (STAGE 2)**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A301*	3	4	STR	9'-0"	18	A303*	25	4	STR	35'-8"	596
A401	3	4	STR	9'-0"	18	A403	25	4	STR	35'-8"	596
A302*	75	4	STR	30'-8"	1,537	B303*	52	5	STR	24'-7"	1,333
A402	75	4	STR	30'-8"	1,537	B403	52	6	STR	24'-7"	1,920
A304*	12	4	STR	16'-4"	131	J1*	42	4	1	1'-5"	40
A404	12	4	STR	16'-4"	131	REINFORCING STEEL					LBS. 2,516
						* EPOXY COATED REINFORCING STEEL					LBS. 1,969
B302*	76	5	STR	24'-3"	1,922						
B402	76	6	STR	24'-3"	2,768	CLASS AA CONCRETE					C.Y. 27.9
B304*	46	5	STR	19'-4"	928						
B404	46	6	STR	19'-11"	1376						
J1*	62	4	1	1'-5"	59						
REINFORCING STEEL					LBS. 6,889						
* EPOXY COATED REINFORCING STEEL					LBS. 3,536						
CLASS AA CONCRETE					C.Y. 56.7						

QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED,
SEE APPROACH SLAB BARRIER DETAILS SHEET

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

NOTE:

THE QUANTITY OF #4J1 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.

QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED,
SEE APPROACH SLAB BARRIER DETAILS SHEET

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

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

SHEET 6 OF 7



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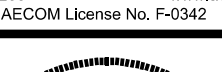
STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

BRIDGE APPROACH SLAB DETAILS

(RIGHT LANE)



Signed by: *David L. K. Vasquez*
 PROFESSIONAL ENGINEER
 NORTH CAROLINA
 7/15/2026

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S10-48 TOTAL SHEETS 52
2			4			

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SIGNATURES COMPLETED

NOTES:

GROOVED CONTRACTION JOINTS 1/2" 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 1/2" EXPANSION JOINT OR TO THE SOUND BARRIER WALL ANCHOR HOLES.

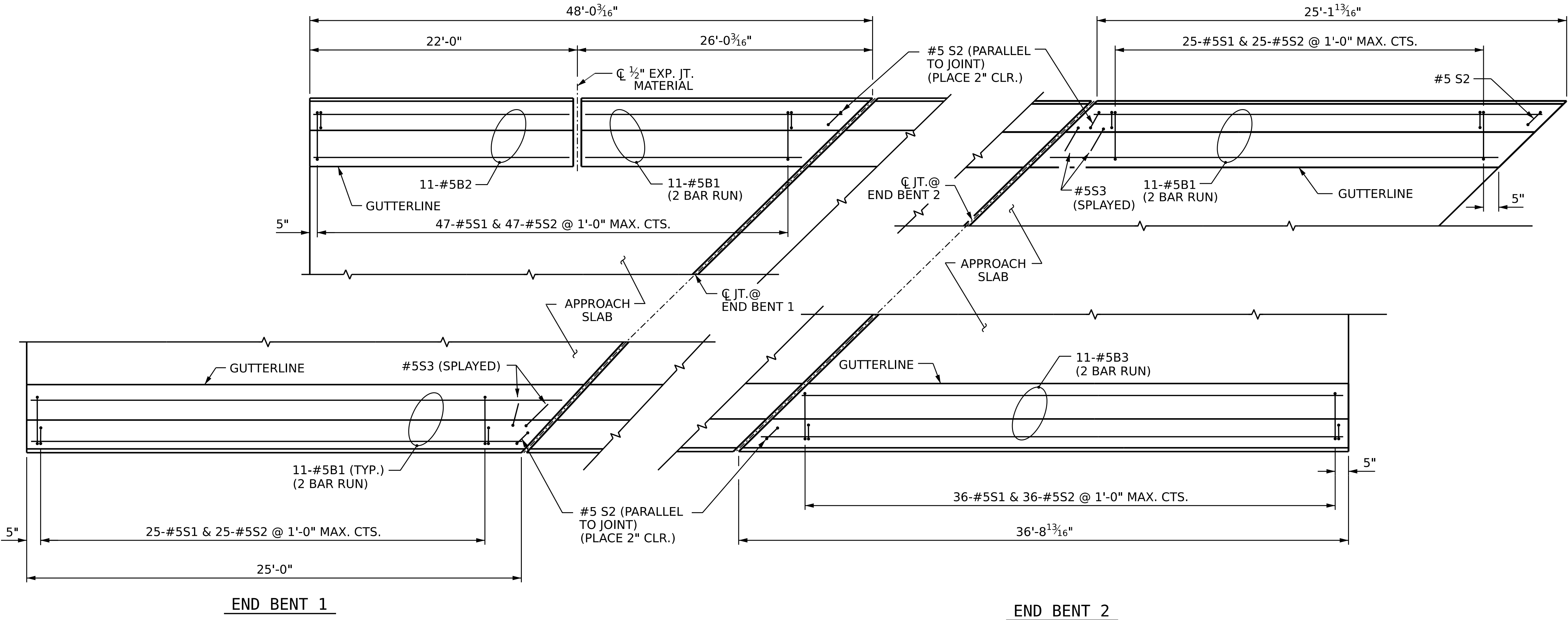
FOR LOCATION OF SOUND BARRIER WALL POSTS AND ANCHORAGES, SEE "SOUND BARRIER WALL" SHEETS.

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.

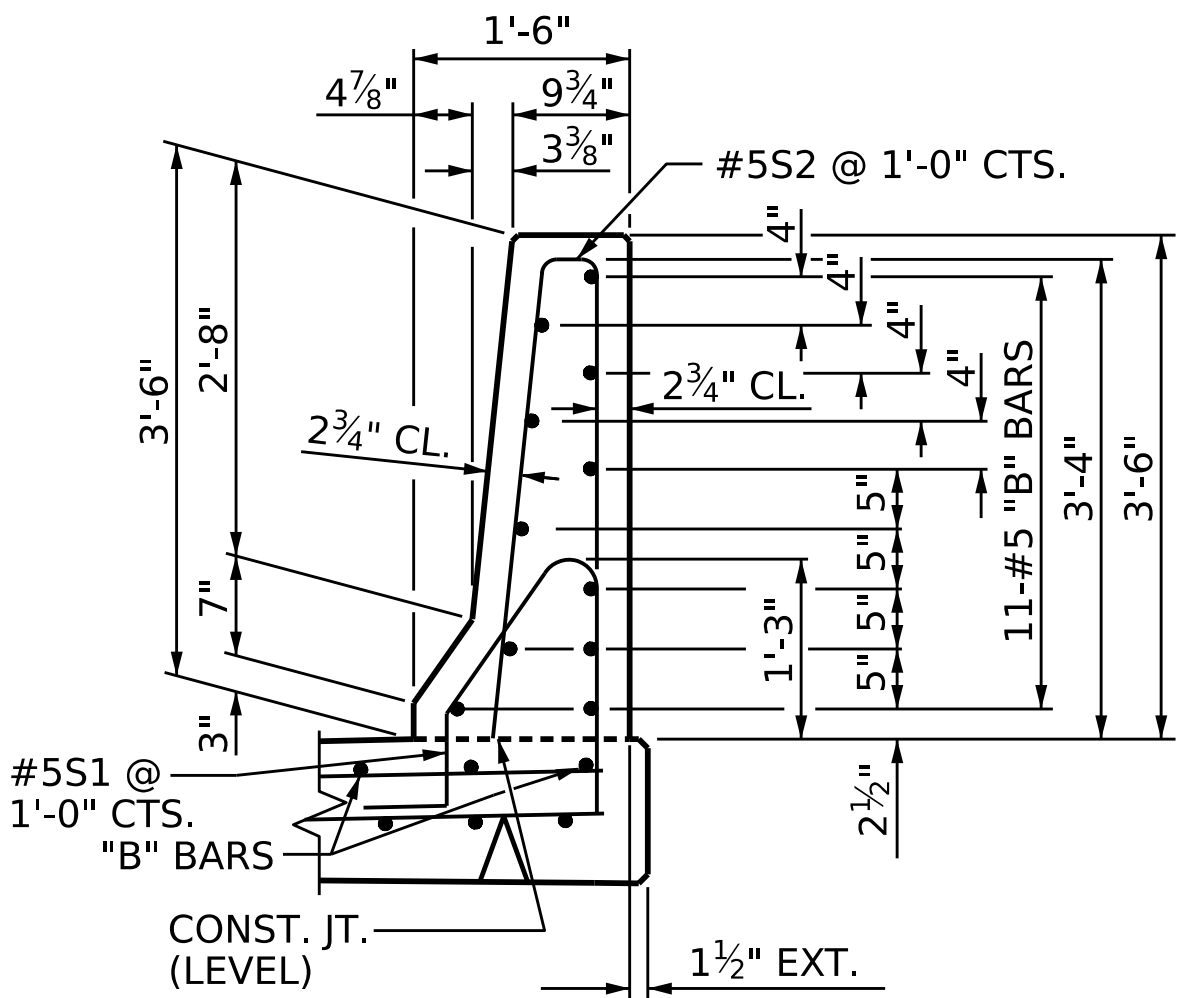
ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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



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.



SECTION THRU RAIL

BILL OF MATERIAL

CONCRETE BARRIER RAIL ON APPROACH SLABS

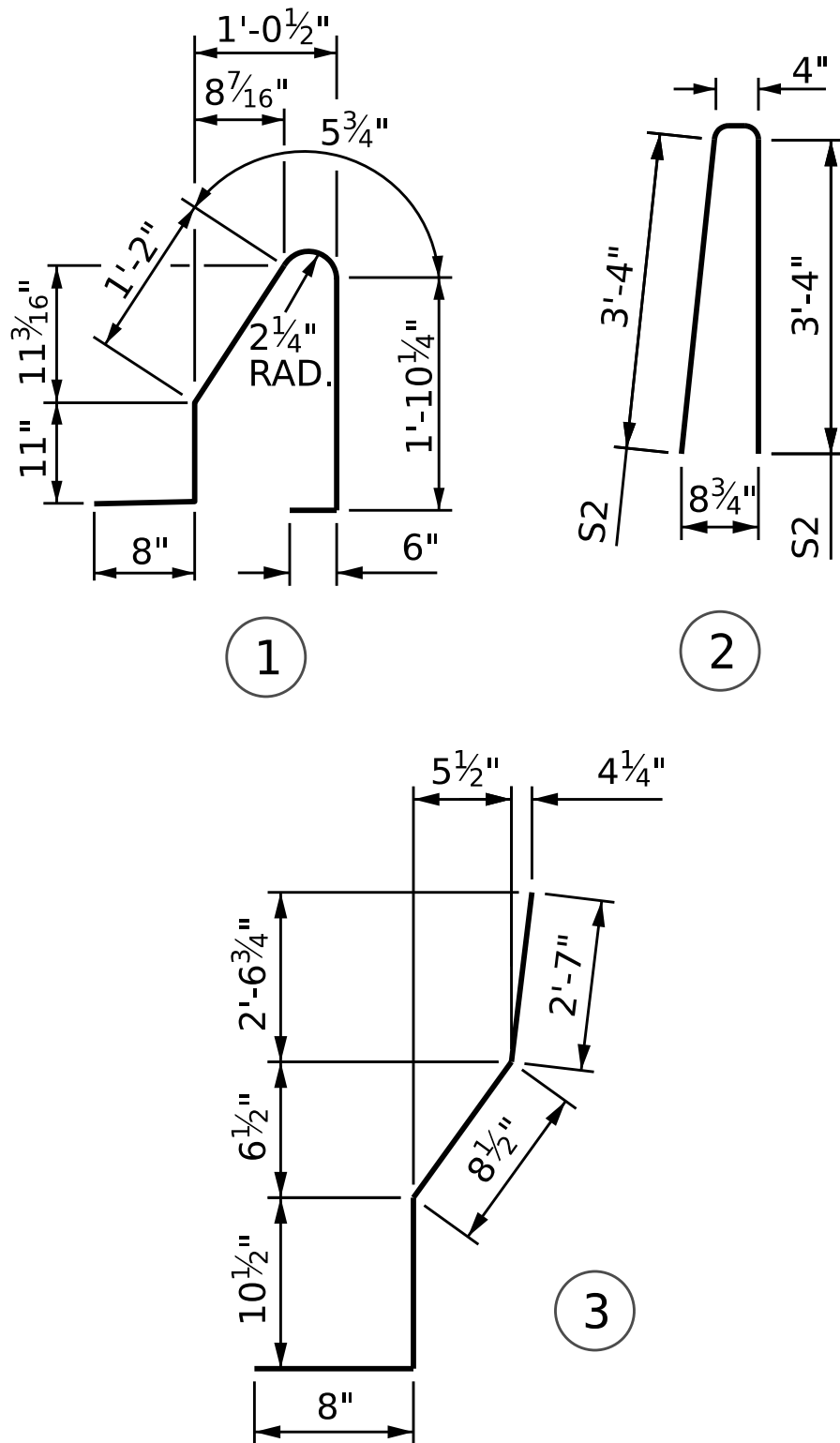
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	66	5	STR	14'-6"	998
* B2	11	5	STR	21'-7"	248
* B3	22	5	STR	19'-9"	453
* S1	133	5		5'-7"	775
* S2	137	5		7'-0"	1,000
* S3	4	5		7'-9"	32

* EPOXY COATED REINFORCING STEEL 3,506 LBS.

CLASS AA CONCRETE 18.4 C.Y.

CONCRETE BARRIER RAIL 134.9 L.F.

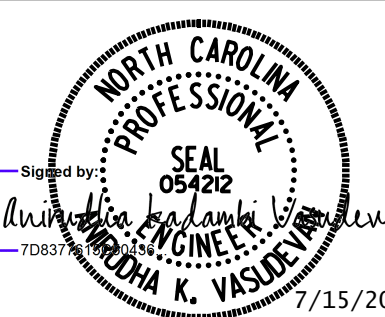
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

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

SHEET 7 OF 7



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH
SLAB DETAILS

(RIGHT LANE)

REVISIONS						SHEET NO. S10-49
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			

ASSEMBLED BY : M. CATER	DATE : 02/2026
CHECKED BY : G. COLS	DATE : 12/2023
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

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SIGNATURES COMPLETED

32 - #5G1 @ 10" CTS. (TOP OF SLAB)
27 - #4G2 @ 1'-0" MAX CTS. (BOT. OF SLAB)

32 - #5G1 @ 10" CTS. (TOP OF SLAB)
27 - #4G2 @ 1'-0" MAX CTS. (BOT. OF SLAB)

12'-9" RADIAL

14 - #4B1 @ 11" CTS. TOP & BOT. OF SLAB

14 - #4B1 @ 11" CTS. TOP & BOT. OF SLAB

1/2" EXPANSION JT. MATERIAL (TYP.)

APPROACH SLAB

END MOMENT SLAB STA. 104+08.68 -L- 79.13' RT

FRONT FACE OF MSE WALL

RADIUS = 2399.125'

① 26'-0"

① 26'-0"

① 52'-0"

8.12'-L-

ENT SLAB

MOMENT SLAB

BARRIER RAIL

A

A

REINFORCEMENT IN BARRIER NOT SHOWN FOR CLARITY



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**MOMENT SLAB
DETAILS AT SOUND
BARRIER WALL**

(RIGHT LANE)

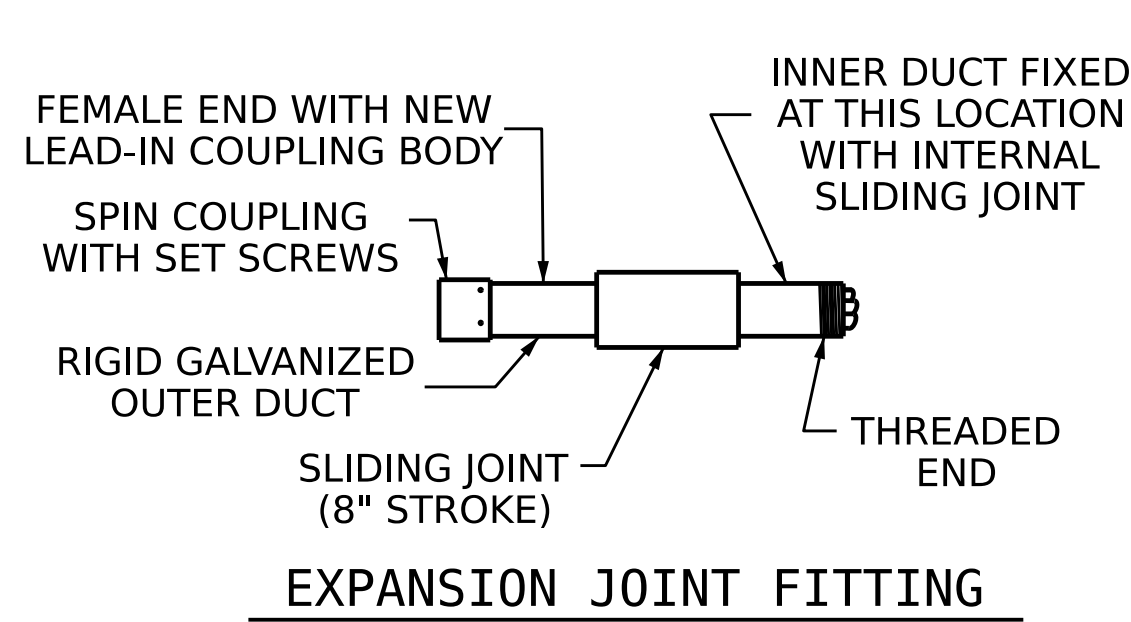
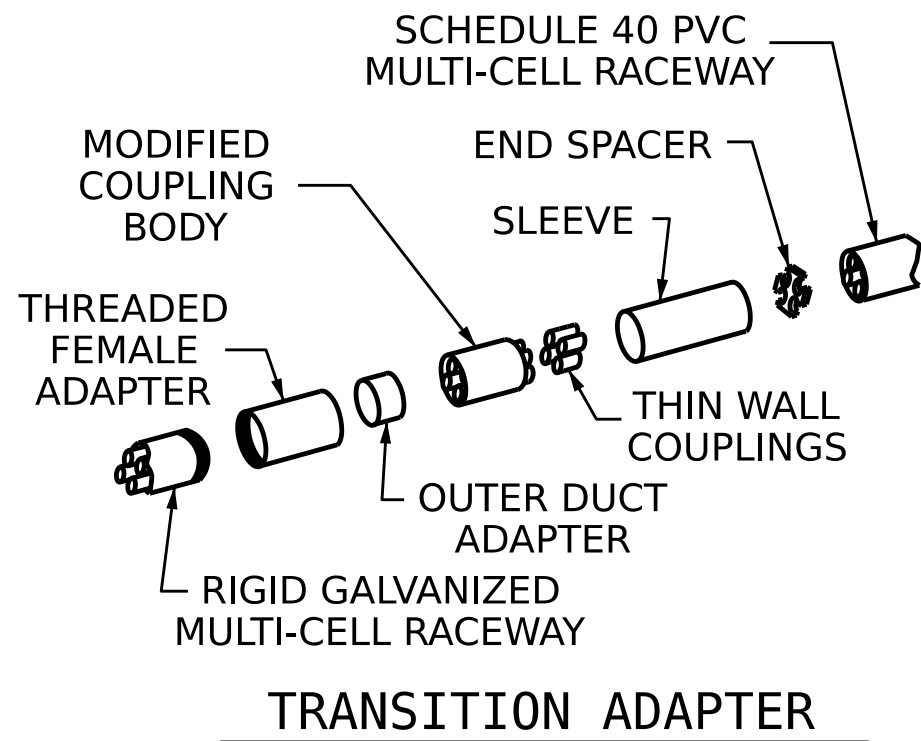
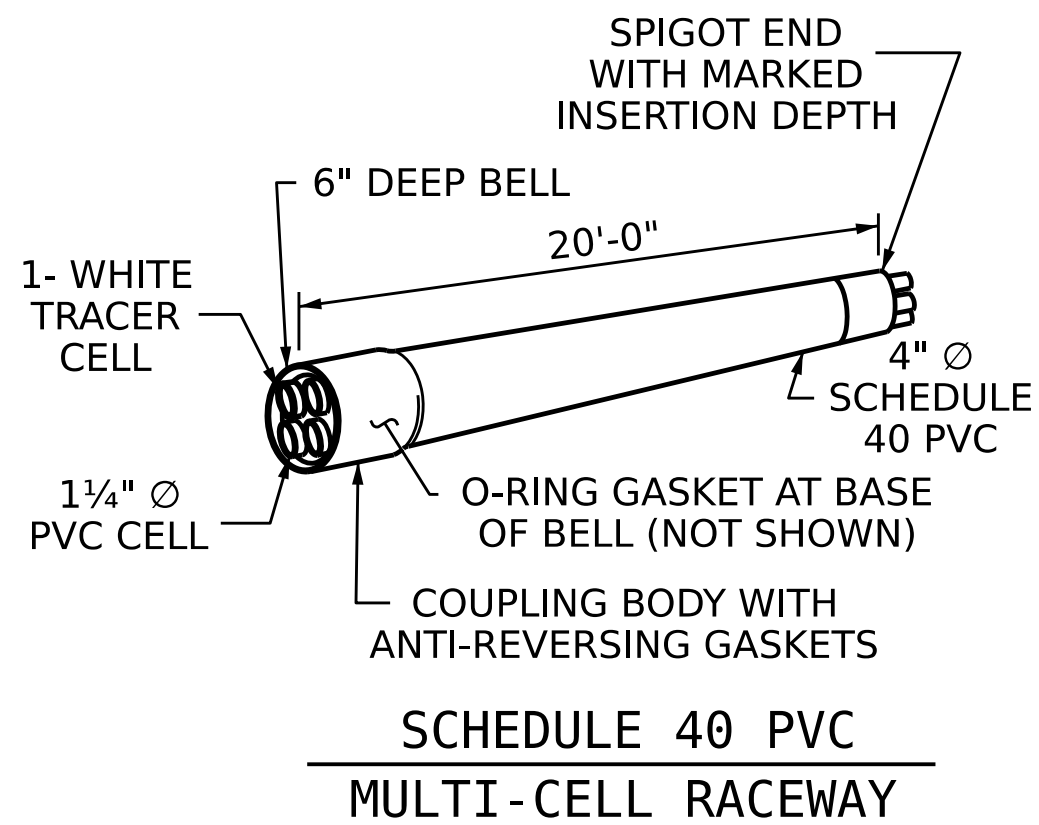
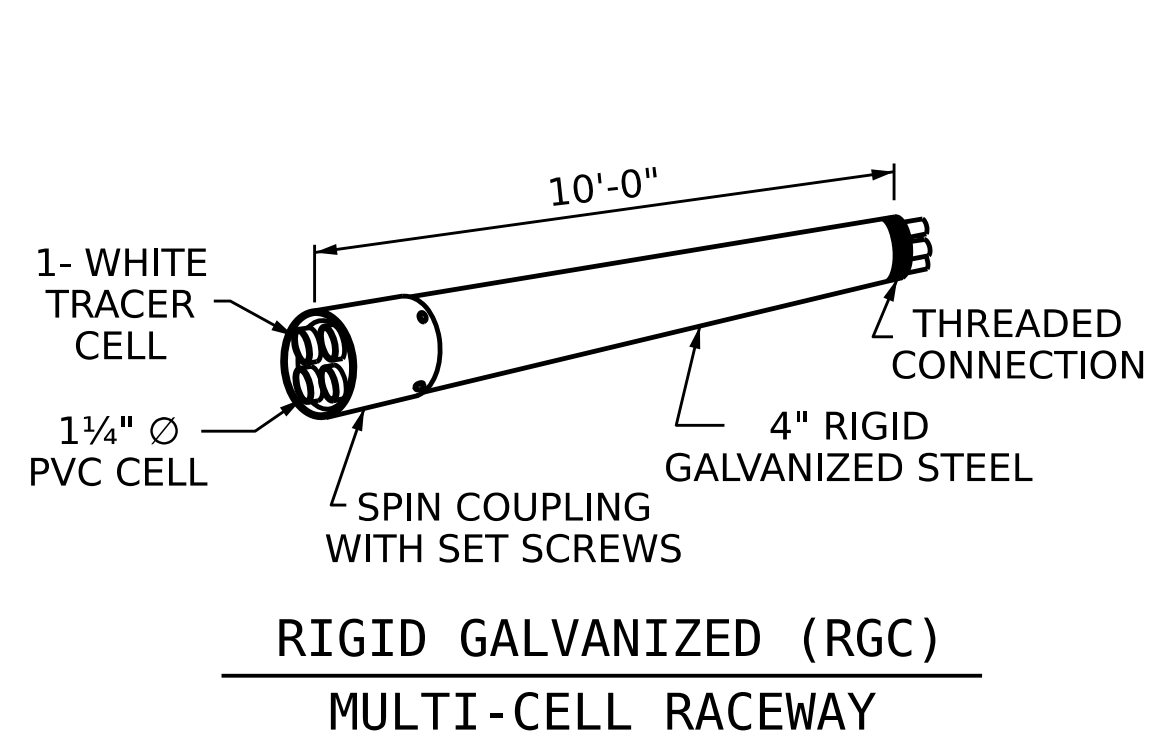


Sealed by
David K. Vasdek
7/15/2026

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 52
1			3			
2			4			



7/13/2026
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NOTES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TOTAL QUANTITY OF CONDUIT NEEDED TO COMPLETE THE WORK AND THAT THE CONDUIT(S) ARE PLACED AT THE NOTED DIMENSION AND ABOVE THE BOTTOM OF THE GIRDER.

THE INSTALLATION OF THE CONDUIT SYSTEM SHALL BE PAID FOR AS LUMP SUM. THE PRICE SHALL INCLUDE ALL CONDUIT HANGERS, STABILIZERS, EXPANSION JOINTS, CONCRETE INSERTS, PVC SLEEVES AND ALL NECESSARY HARDWARE TO COMPLETE THE WORK.

THE CONTRACTOR SHALL FIELD VERIFY THAT THE CONDUIT SYSTEM IS NOT IN CONFLICT WITH THE GUARDRAIL POSTS.

SEE DETAIL "C" FOR HANGER ASSEMBLY INSTALLATION.

INSTALL SLEEVES PARALLEL TO GIRDERS. SEE DETAIL "B" FOR SLEEVE INSTALLATION.

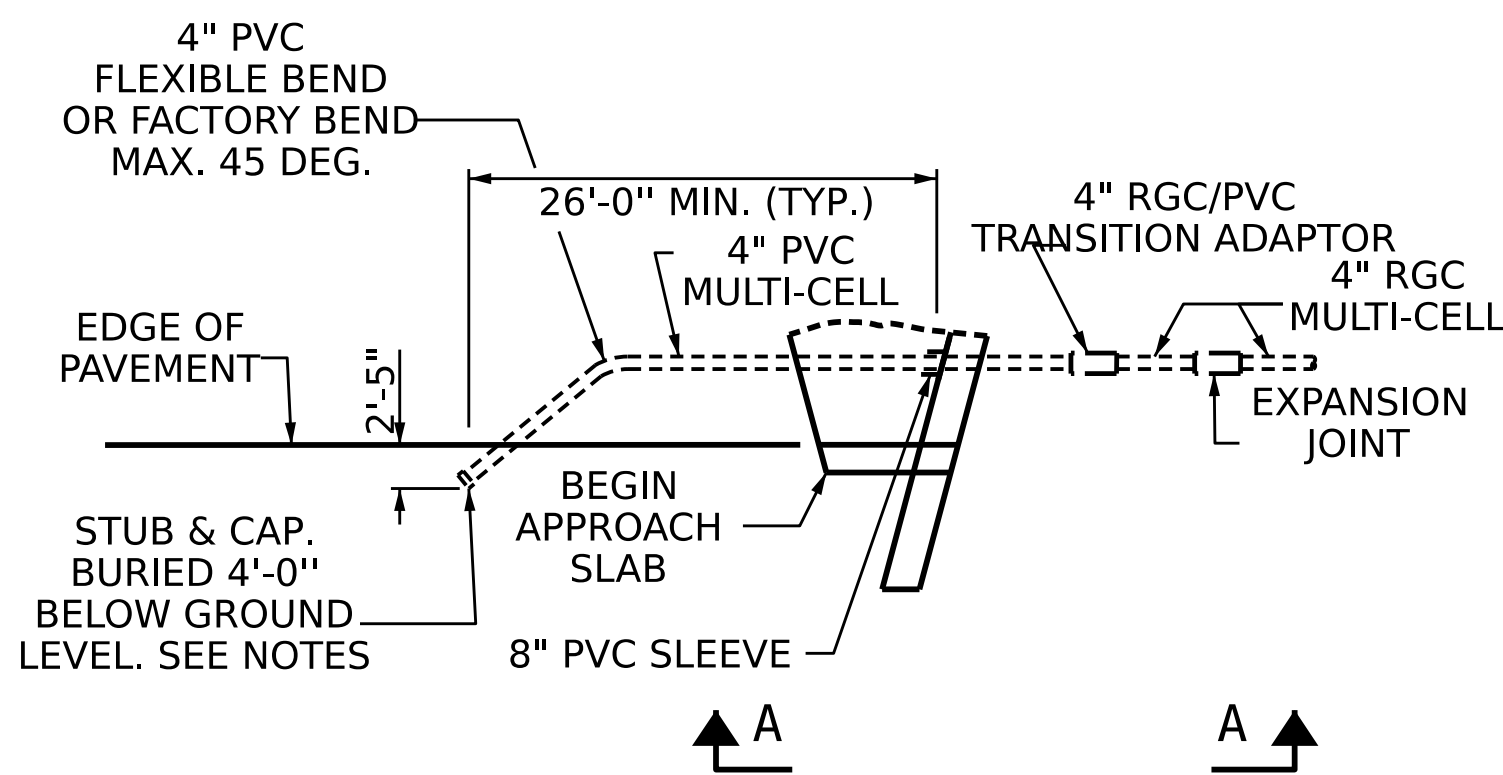
PROVIDE TRANSITION ADAPTOR (AND EXPANSION JOINT) FOR CONDUIT AT END BENT 1 AND END BENT 2.

INSTALL STABILIZER'S MIDWAY BETWEEN DECK EXPANSION JOINTS. STABILIZER CANNOT BE USED INSTEAD OF A HANGER ASSEMBLY.

THE CONCRETE SCREW INSERT SHALL HAVE A ROD SIZE OF 5/8" AND A PULL FORCE OF 1260 lbs.

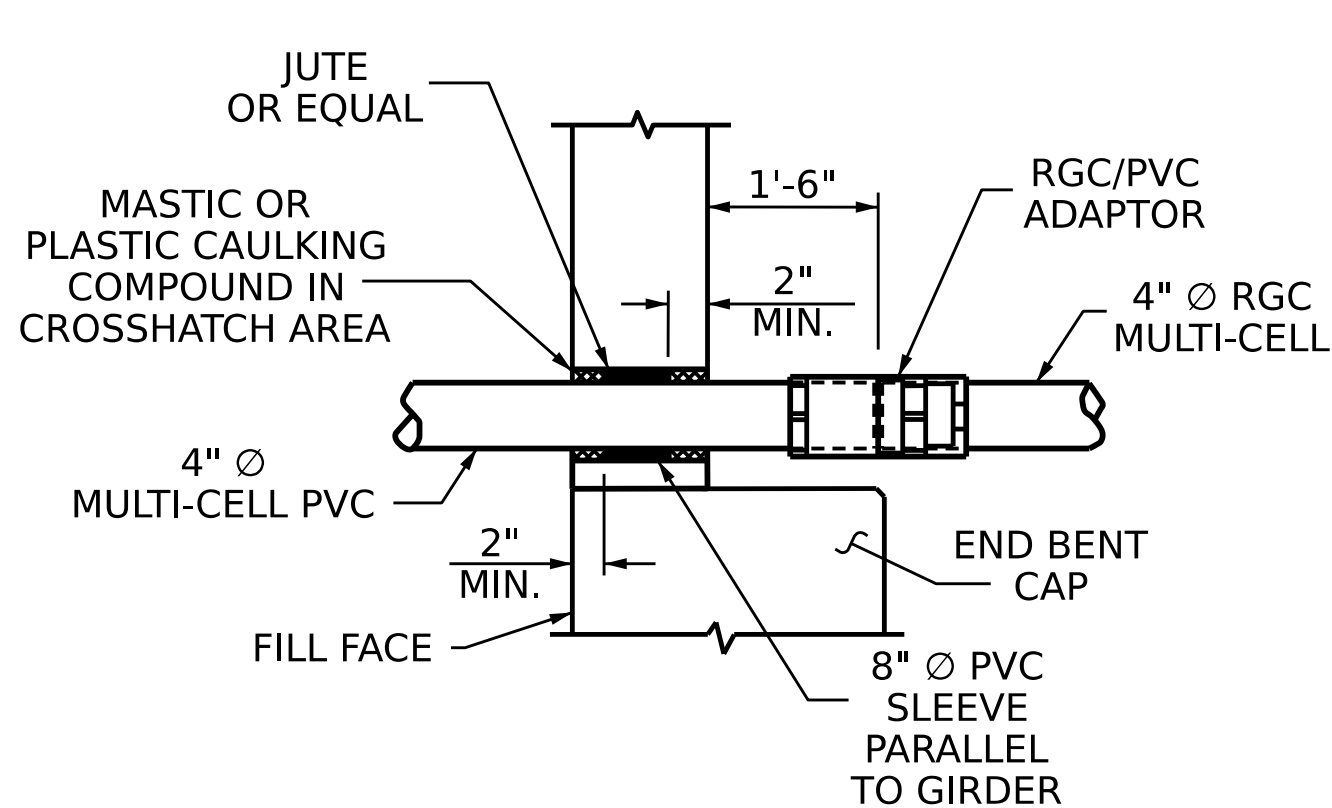
FOR ELECTRICAL CONDUIT SYSTEM FOR SIGNALS, SEE SPECIAL PROVISIONS.

SEE TYPICAL SECTIONS SHEET 1 OF 3 FOR HORIZONTAL LOCATION OF CONDUIT.



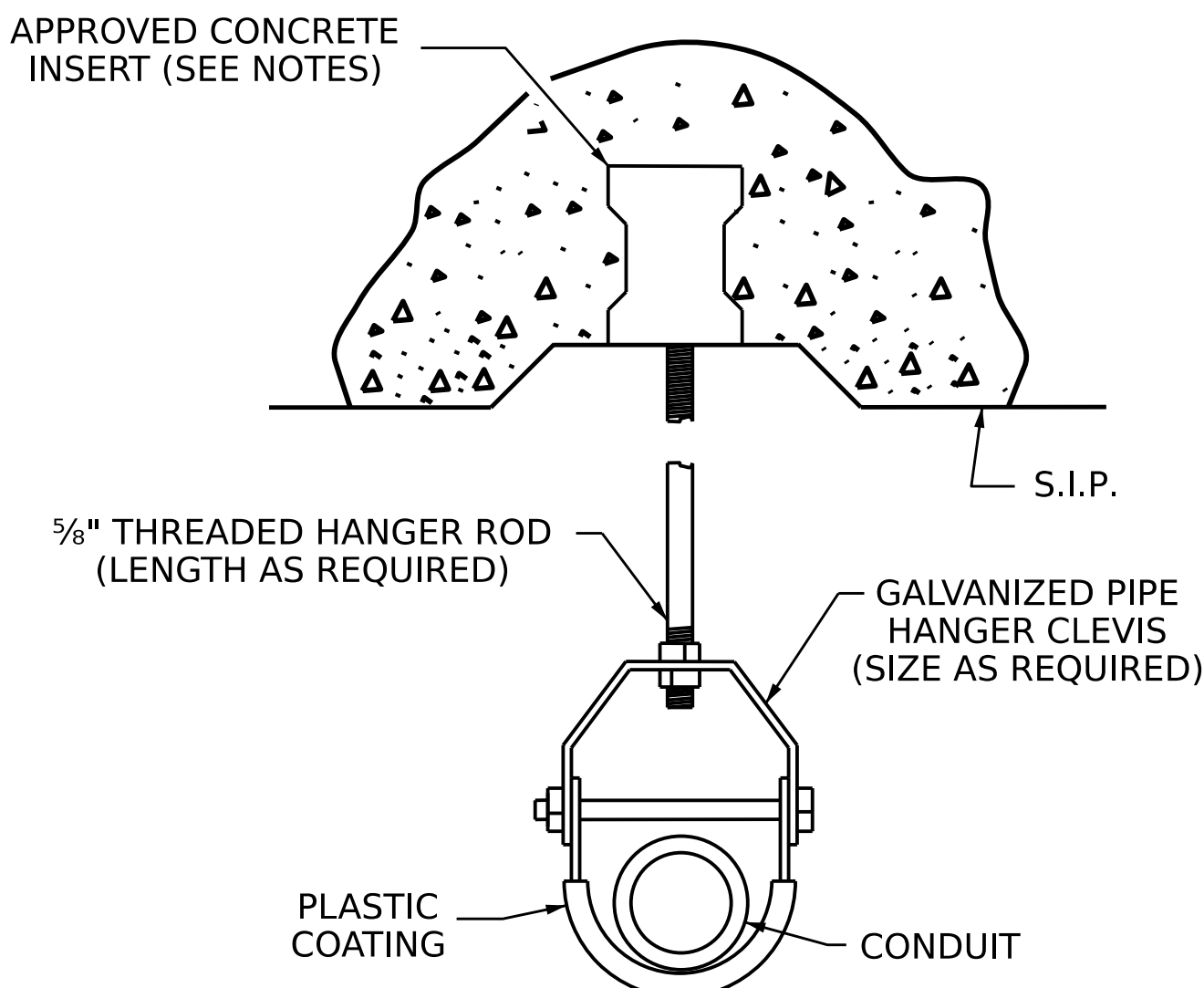
DETAIL "A"

TERMINATION OF CONDUIT AT END BENT 1
(END BENT 2 SIMILAR)



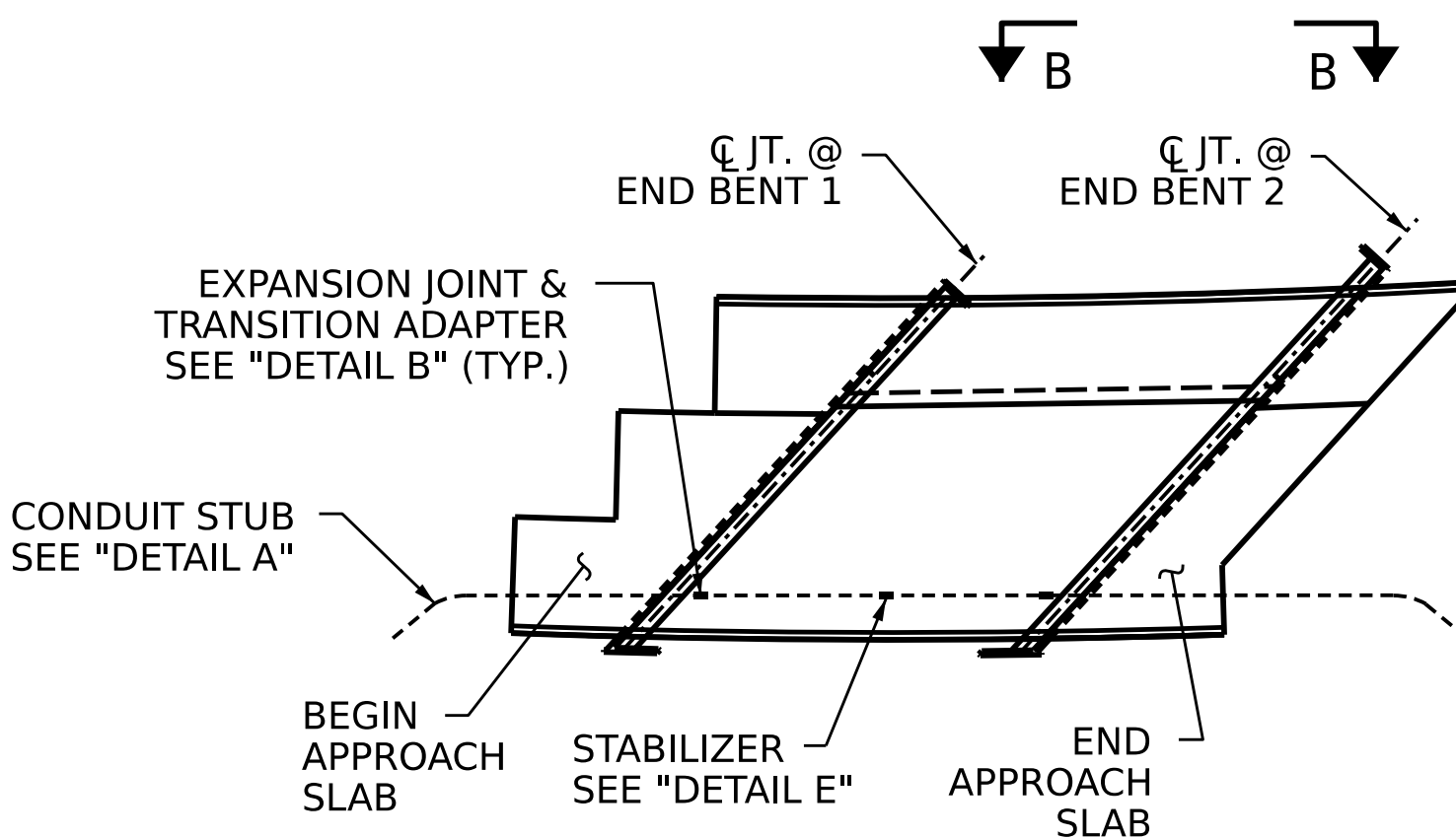
DETAIL "B"

PVC SLEEVE INSTALLATION & RGC/PVC
ADAPTOR AT BACKWALL.

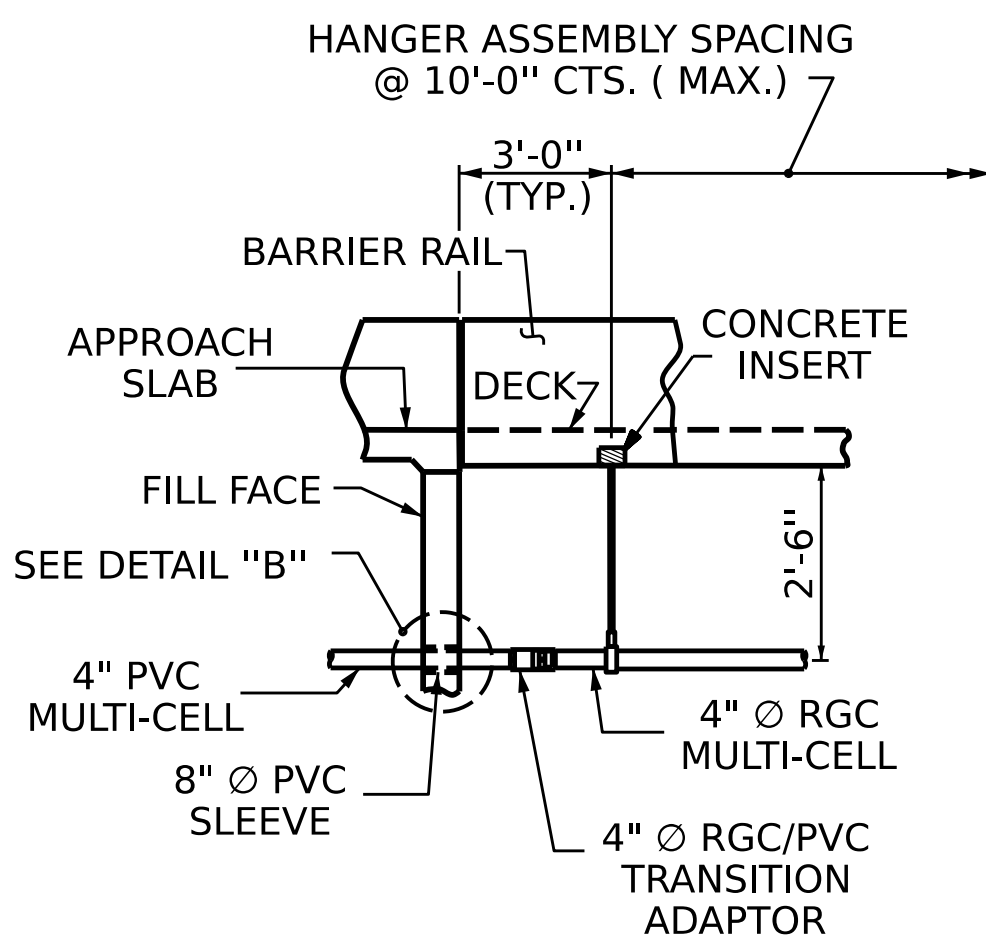


DETAIL "C"

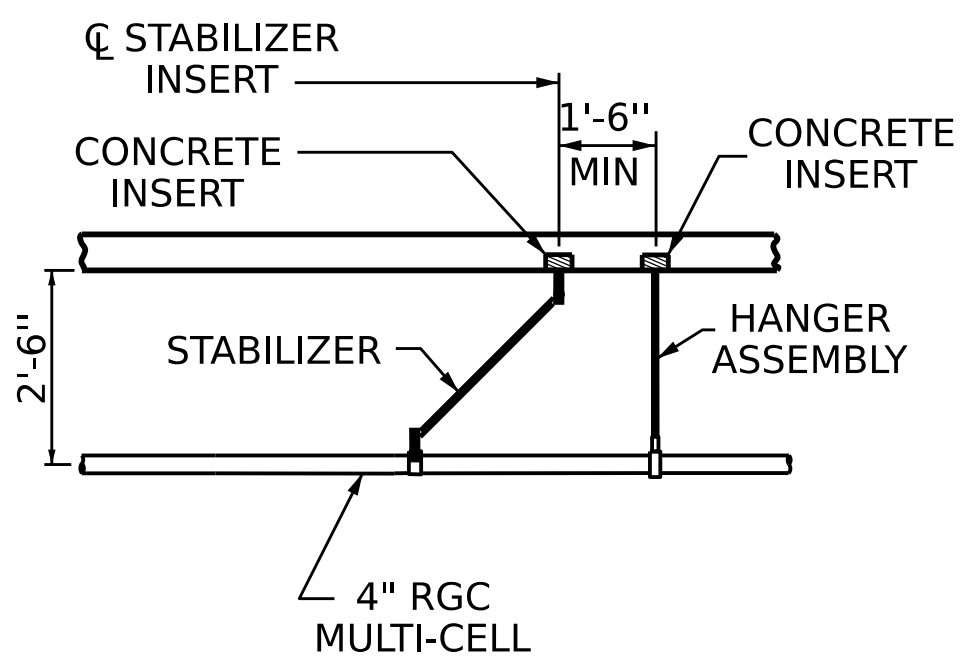
HANGER ASSEMBLY



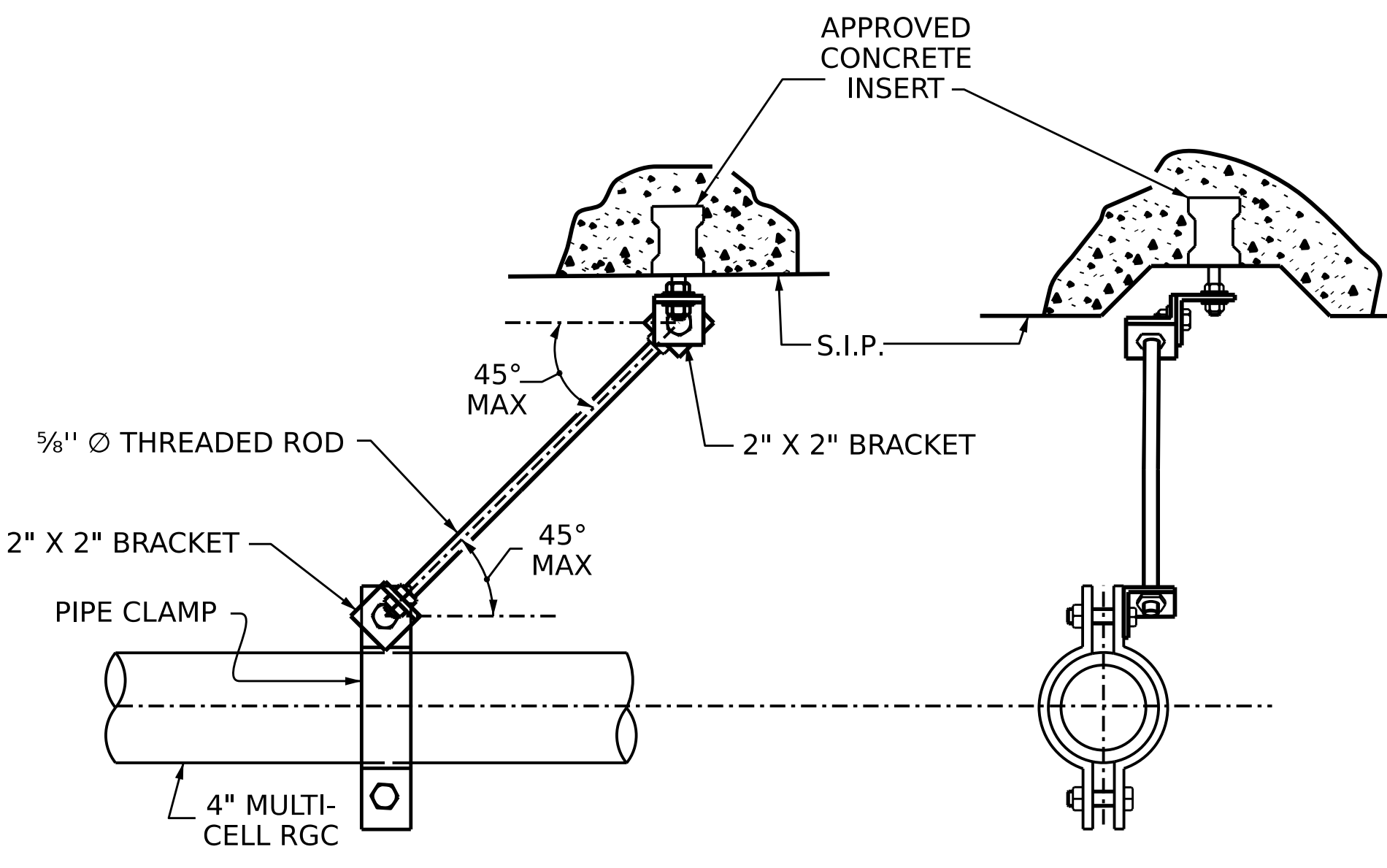
CONDUIT LAYOUT



VIEW A-A



VIEW B-B



DETAIL "D"

STABILIZER

ELECTRIC CONDUIT DETAILS

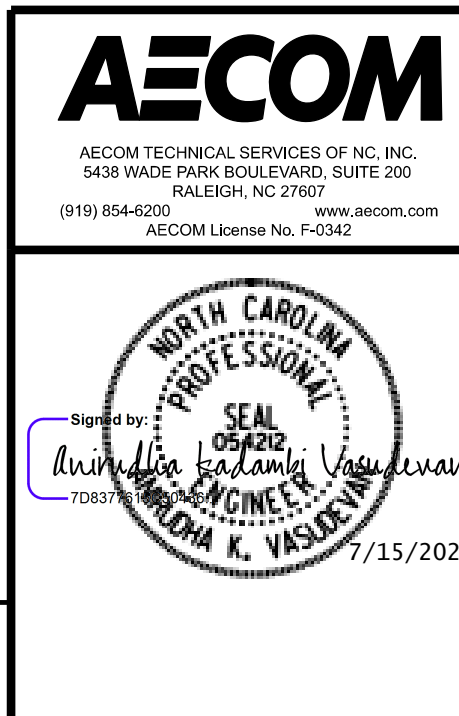
DRAWN BY : I.N. HART DATE : 02/2024
CHECKED BY : A.K. VASUDEVAN DATE : 02/2024
DESIGN ENGINEER OF RECORD: A.K. VASUDEVAN DATE : 03/2026

7/13/2026
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PROJECT NO. I-2513 AC
BUNCOMBE COUNTY
STATION: 105+49.43 -L-

SHEET 1 OF 1



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ELECTRICAL CONDUIT DETAILS

REVISIONS						SHEET NO. S10-52
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 52
2			4			