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PROJECT WBS: 17BP.14.R.156

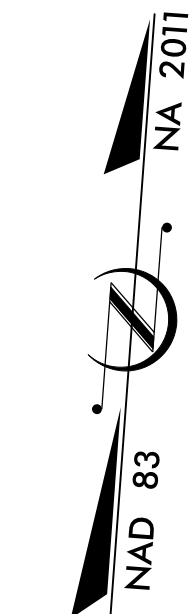
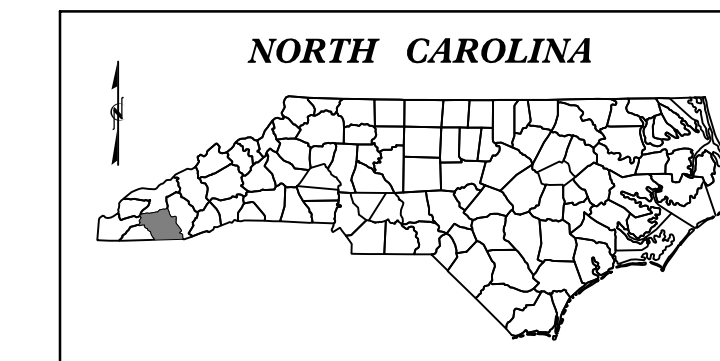
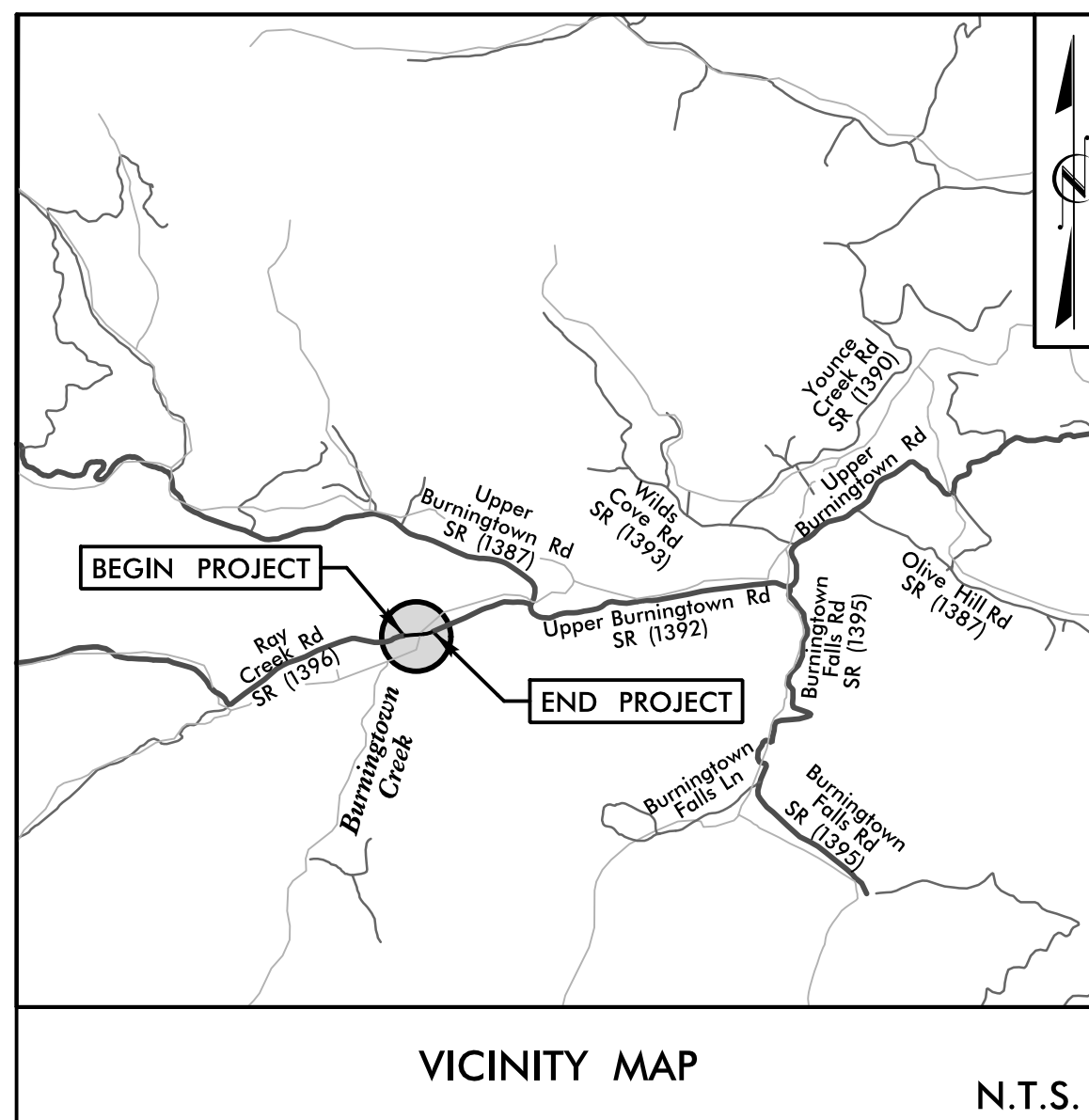
CONTRACT: DN01044

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MACON COUNTY

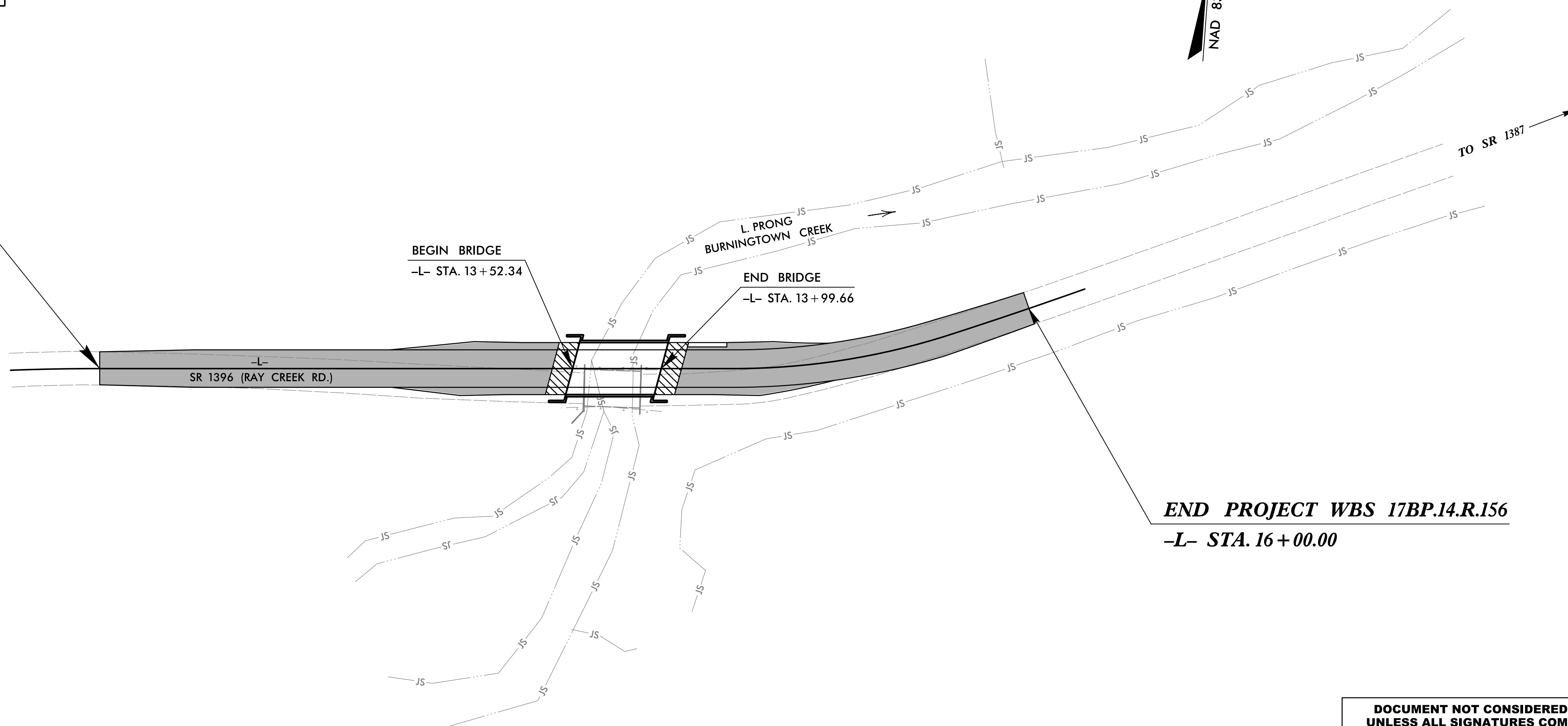
**LOCATION: BRIDGE #550236 OVER L. PRONG BURNINGTOWN CREEK
ON SR 1396 (RAY CREEK RD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.156		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.156		P.E.	
17BP.14.R.156		ROW & UTILITIES	
17BP.14.R.156		CONSTRUCTION	



BEGIN PROJECT WBS 17BP.14.R.156
-L- STA. 11+00.00

← ENDS IN 0.87 MILE



STRUCTURES

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

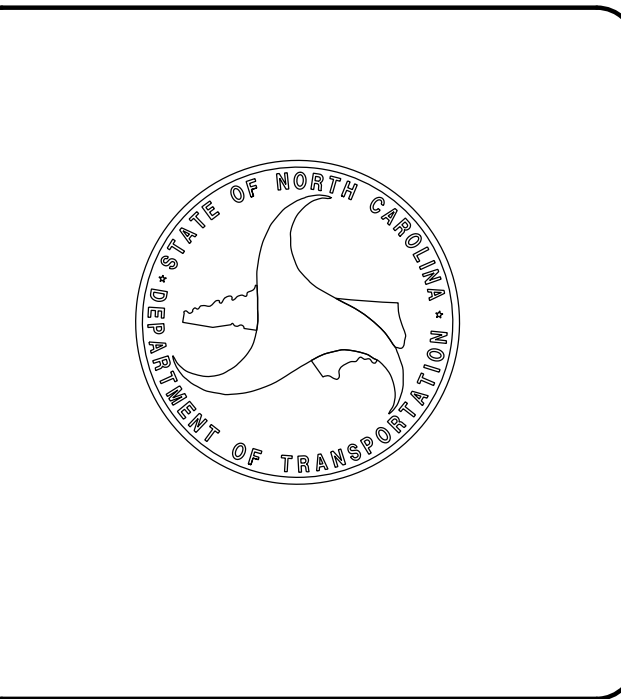
DESIGN DATA	
ADT 1995 =	70
ADT 2025 =	140
DHV =	N/A
D =	N/A
T =	N/A
V =	35 MPH
FUNC. CLASSIFICATION: LOCAL	
SUB REGIONAL TIER	

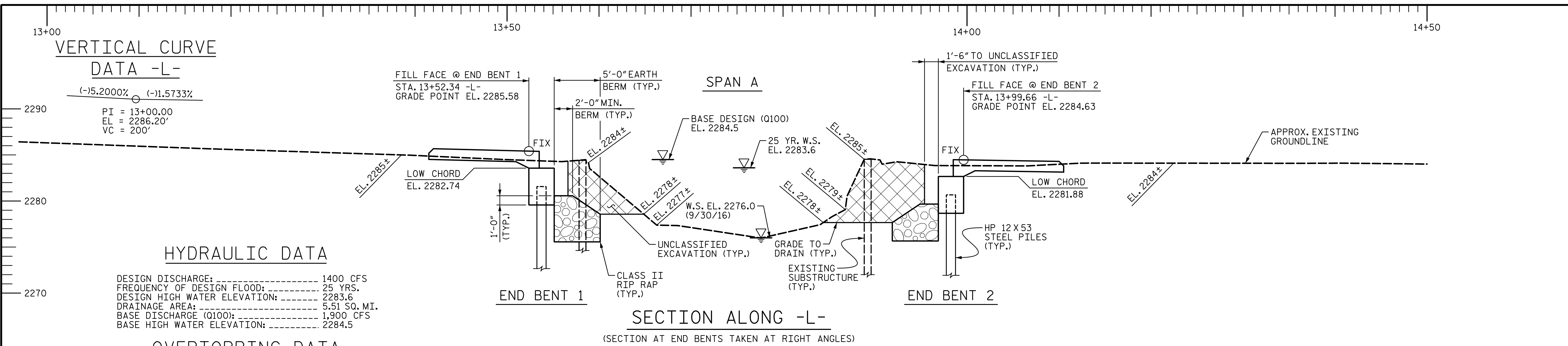
PROJECT LENGTH	
LENGTH OF ROADWAY PROJECT WBS 17BP.14.R.156 = 0.086 MILES	
LENGTH OF STRUCTURE PROJECT WBS 17BP.14.R.156 = 0.009 MILES	
TOTAL LENGTH OF PROJECT WBS 17BP.14.R.156 = 0.095 MILES	
NCDOT CONTACT: <u>ADAM DOCKERY</u> Division Bridge Manager	

PLANS PREPARED FOR THE NCDOT BY:	
stv STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991	
2018 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: AUGUST 23, 2017	J. WESLEY JONES, PE PROJECT ENGINEER
LETTING DATE: DECEMBER 12, 2023	LAURA E. MELVIN, PE PROJECT DESIGNER

STRUCTURES ENGINEER
11/14/2023

DocuSigned by:
Jason Griecom
SIGNATURE: _____ P.E.





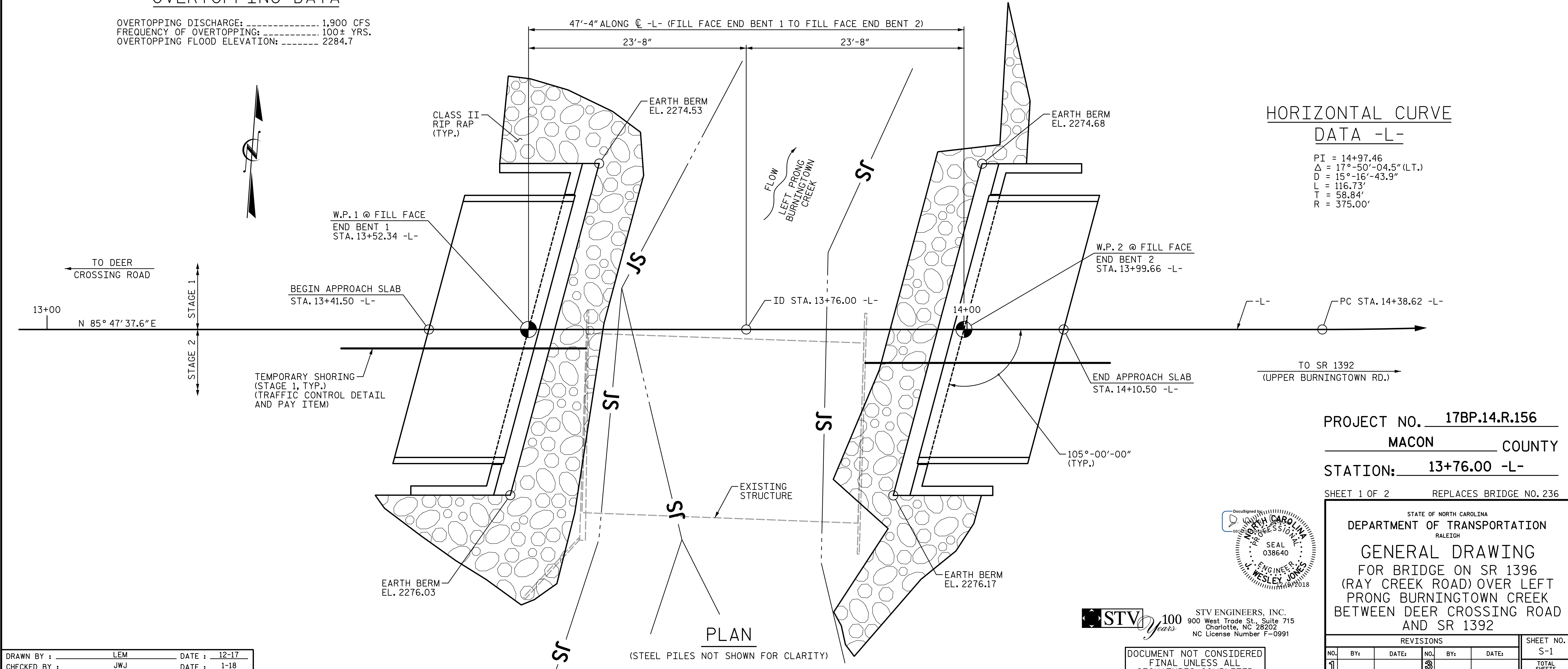
HYDRAULIC DATA

DESIGN DISCHARGE: 1400 CFS
 FREQUENCY OF DESIGN FLOOD: 25 YRS.
 DESIGN HIGH WATER ELEVATION: 2283.6
 DRAINAGE AREA: 5.51 SQ. MI.
 BASE DISCHARGE (Q100): 1,900 CFS
 BASE HIGH WATER ELEVATION: 2284.5

OVERTOPPING DATA

OVERTOPPING DISCHARGE: 1,900 CFS
 FREQUENCY OF OVERTOPPING: 100± YRS.
 OVERTOPPING FLOOD ELEVATION: 2284.7

SECTION ALONG -L-
 (SECTION AT END BENTS TAKEN AT RIGHT ANGLES)

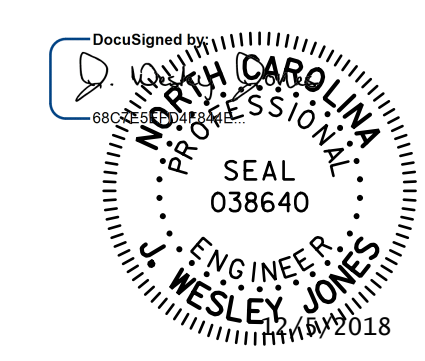


HORIZONTAL CURVE DATA -L-

PI = 14+97.46
 $\Delta = 17^\circ-50'-04.5''$ (L.T.)
 D = 15'-16"-43.9"
 L = 116.73'
 T = 58.84'
 R = 375.00'

R:\Structures\Finals\401_001_17BP.14.R.156_SMU_GD01_001_550236.dgn
 9/12/2018 9:40:03 AM

DRAWN BY : LEM DATE : 12-17
 CHECKED BY : JWJ DATE : 1-18
 DESIGN ENGINEER OF RECORD : JWJ DATE : 9-18



STV 100 YEARS
 STV ENGINEERS, INC.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

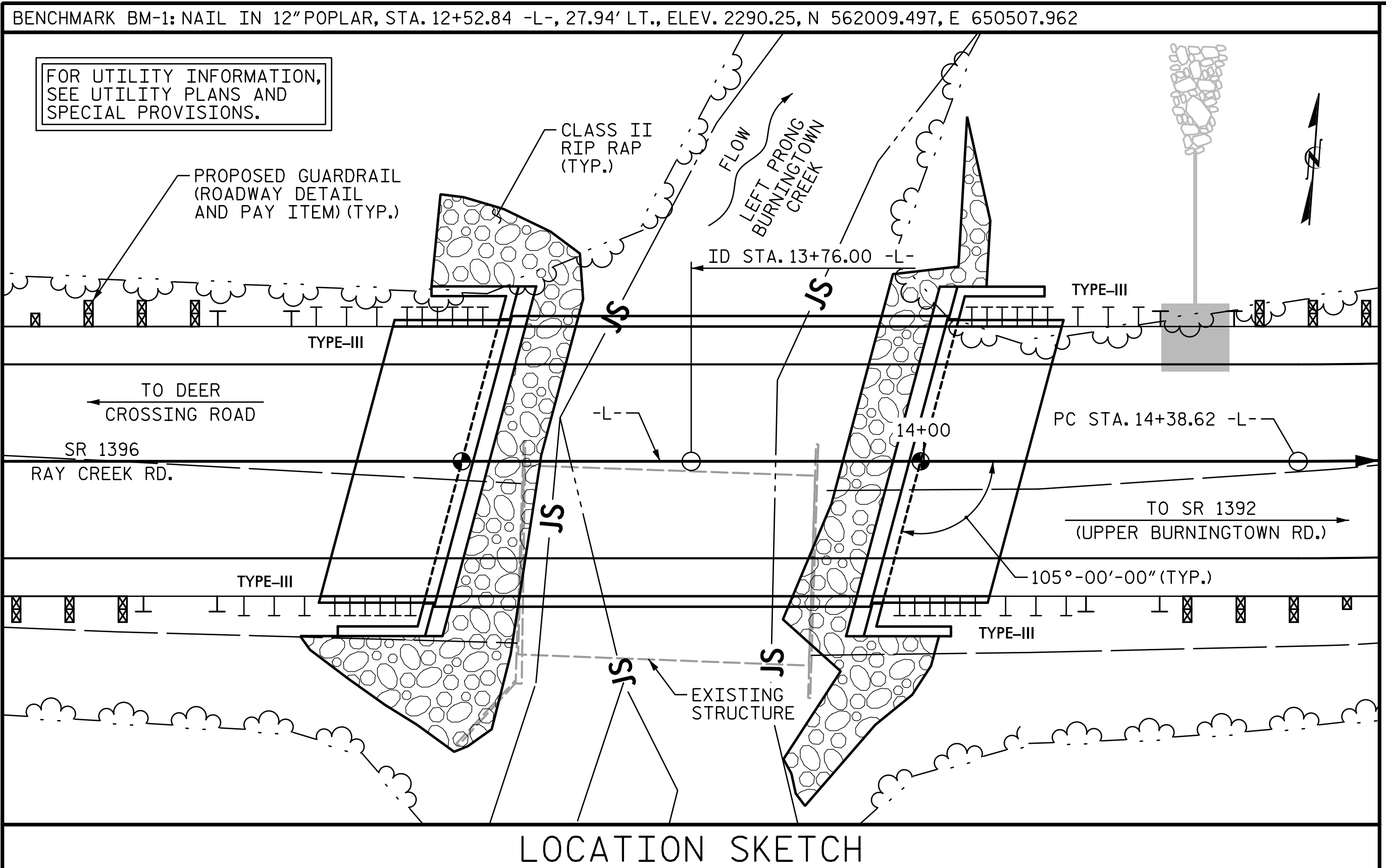
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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-
 SHEET 1 OF 2 REPLACES BRIDGE NO. 236

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1396
 (RAY CREEK ROAD) OVER LEFT
 PRONG BURNINGTOWN CREEK
 BETWEEN DEER CROSSING ROAD
 AND SR 1392

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

S-1
TOTAL SHEETS
15



LOCATION SKETCH

GENERAL NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE "STANDARD NOTES" SHEET.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE CONSISTING OF (1) 30'-6" SPAN WITH TIMBER DECK ON STEEL I-BEAMS WITH A CLEAR ROADWAY OF 19'-9" AND SUPPORTED BY TIMBER CAPS, POSTS, AND SILLS SHALL BE REMOVED IN STAGES. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, 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 13+76.00 -L-".

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA (ON SHEET 1 OF 2) SHALL BE EXCAVATED FOR A DISTANCE FROM THE CENTERLINE OF ROADWAY OF 28'± (LEFT) AND 30'± (RIGHT) AT END BENT 1, 36'± (LEFT AND RIGHT) AT END BENT 2, 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.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE 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.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES".

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

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 AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENTS 1 AND 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PREDRILLING FOR PILES IS REQUIRED AT END BENT 1. PREDRILL PILE LOCATIONS TO AN ELEVATION NO LOWER THAN 2269 FEET WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 12 INCHES. FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PREDRILLING FOR PILES IS REQUIRED AT END BENT 2. PREDRILL PILE LOCATIONS TO AN ELEVATION NO LOWER THAN 2268 FEET WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 12 INCHES. FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

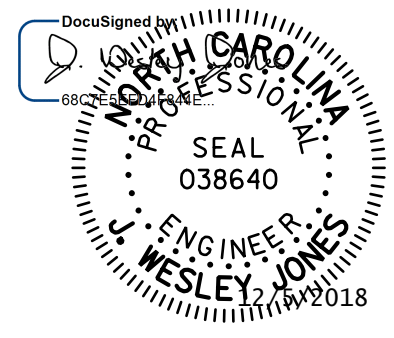
IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 20,000 TO 30,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHOULD BE MADE AWARE THAT VARIABLE ROCK ELEVATIONS WERE ENCOUNTERED AT END BENT 1.

TOTAL BILL OF MATERIAL

		REMOVAL OF EXISTING STRUCTURE AT STA. 13+76.00 -L-	ASBESTOS ASSESSMENT	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES	STEEL PILE POINTS	PREDRILLING FOR PILES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS		
		LUMP SUM	LUMP SUM	LUMP SUM	CU. YD.	LUMP SUM	LBS.	EA.	NO.	LIN. FT.	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.	
SUPER-STRUCTURE	STAGE 1											45.0				5	225.0	
	STAGE 2											45.0				5	225.0	
END BENT 1	STAGE 1				10.3		1,293	3	3	120.0	3	30.0						
	STAGE 2				10.2		1,212	2	2	40.0	2	20.0	95	95				
END BENT 2	STAGE 1				10.4		1,299	3	3	45.0	3	30.0						
	STAGE 2				10.1		1,206	2	2	30.0	2	20.0	80	80				
TOTAL		LUMP SUM	LUMP SUM	LUMP SUM	41.0	LUMP SUM	5,010	10	10	235.0	10	100.0	90.0	175	175	LUMP SUM	10	450.0

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-
 SHEET 2 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1396
 (RAY CREEK ROAD) OVER LEFT
 PRONG BURNINGTOWN CREEK
 BETWEEN DEER CROSSING ROAD
 AND SR 1392

STV 100 Years
 STV ENGINEERS, INC.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

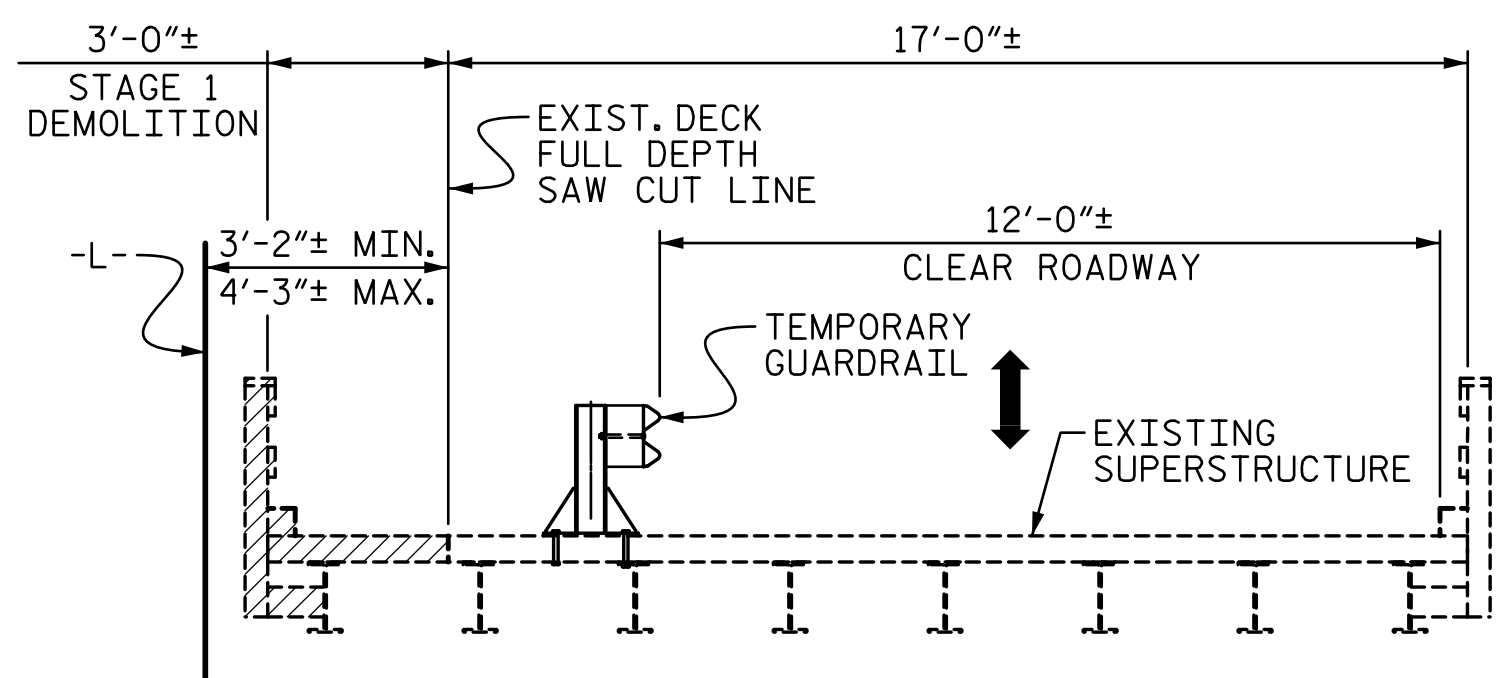
DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

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

TOTAL SHEETS: 15

DRAWN BY : LEM DATE : 12-17
 CHECKED BY : JWJ DATE : 1-18
 DESIGN ENGINEER OF RECORD : JWJ DATE : 9-18

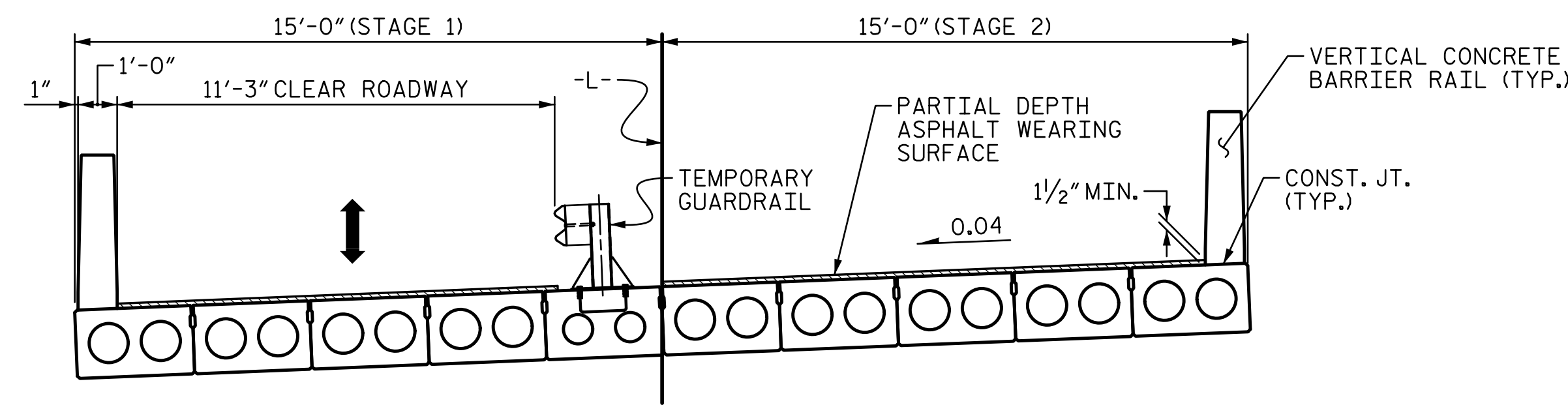
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STAGE 1A

LOOKING UPSTATION

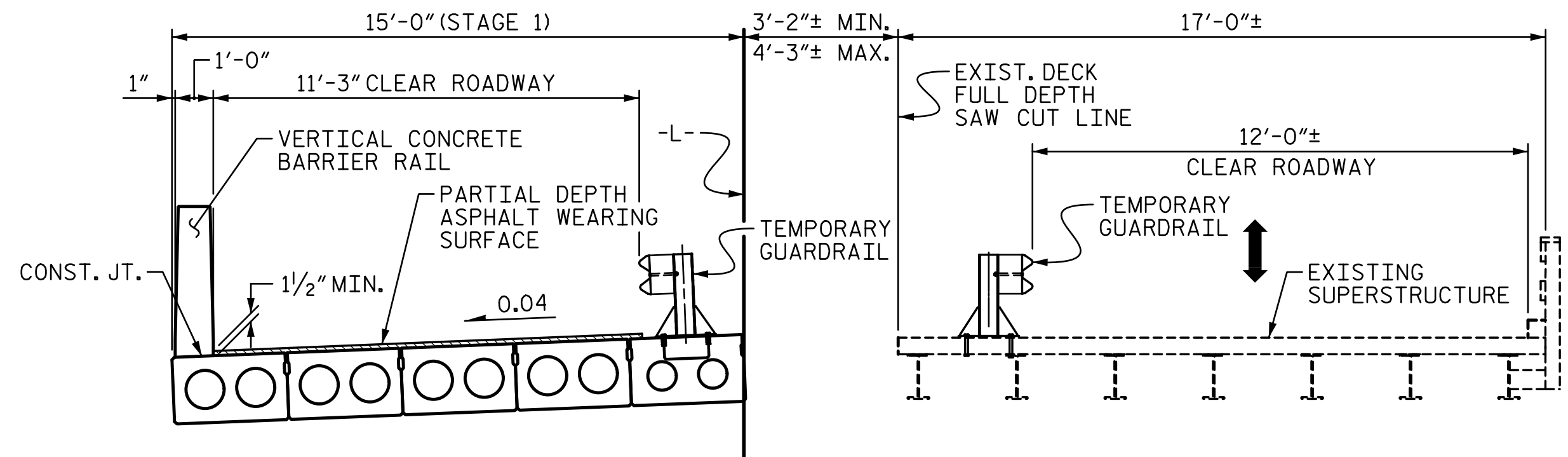
1. VERIFY EXISTING BRIDGE DIMENSIONS. CONTACT ENGINEER IF FIELD MEASUREMENTS VARY FROM PLAN DIMENSIONS.
2. ANCHOR TEMPORARY GUARDRAIL THROUGH EXISTING BRIDGE DECK AND TOP FLANGE OF STEEL BEAM.
3. SAW CUT AND REMOVE LEFT PORTION OF EXISTING DECK AND END BENTS.



STAGE 2B

LOOKING UPSTATION

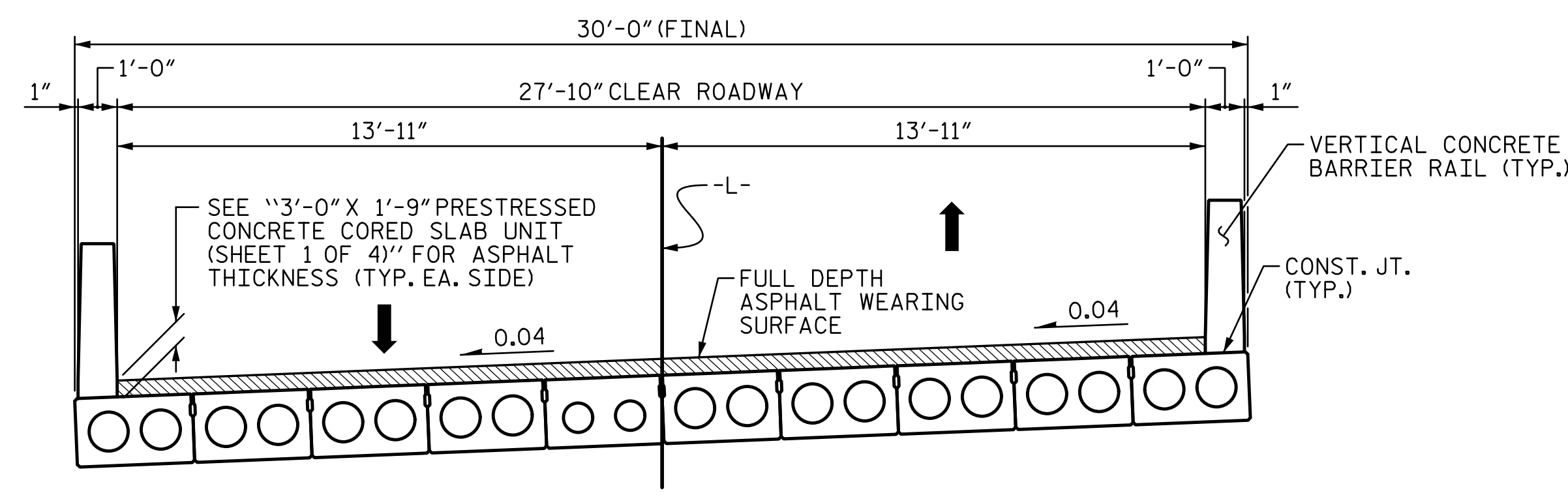
1. CONSTRUCT RIGHT PORTION OF PROPOSED BRIDGE.
2. PAVE PARTIAL DEPTH ASPHALT WEARING SURFACE TO THE LIMITS SHOWN.



STAGE 1B

LOOKING UPSTATION

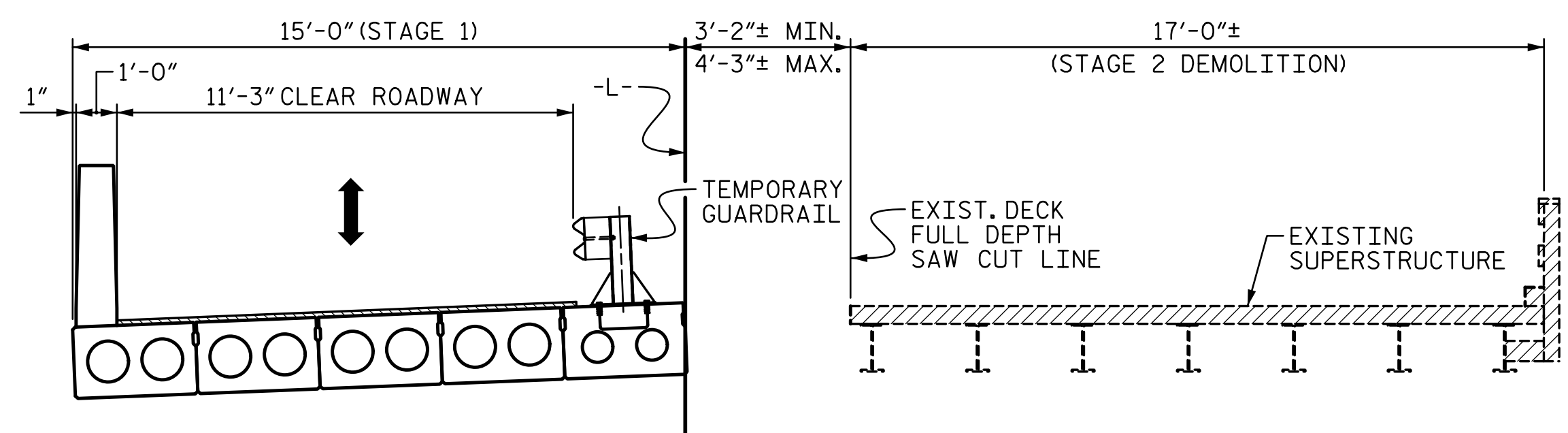
1. CONSTRUCT LEFT PORTION OF PROPOSED BRIDGE.
2. ANCHOR TEMPORARY GUARDRAIL TO NEW BRIDGE.
3. PAVE PARTIAL DEPTH ASPHALT WEARING SURFACE TO THE LIMITS SHOWN.



STAGE 3

LOOKING UPSTATION

1. REMOVE TEMPORARY GUARDRAIL.
2. PAVE FULL DEPTH ASPHALT WEARING SURFACE TO THE LIMITS SHOWN.



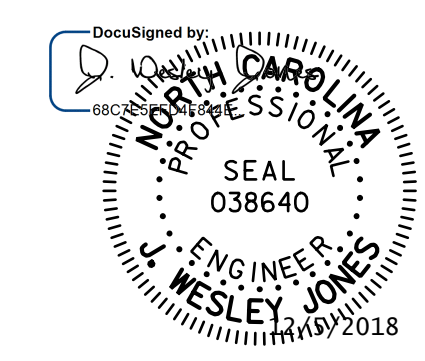
STAGE 2A

LOOKING UPSTATION

1. SHIFT TRAFFIC TO NEWLY CONSTRUCTED BRIDGE (STAGE 1).
2. REMOVE REMAINDER OF EXISTING SUPERSTRUCTURE AND END BENTS.

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PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE STAGING PLAN

STV 100 YEARS
 STV ENGINEERS, INC.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991

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DRAWN BY :	LEM	DATE :	12-17
CHECKED BY :	JWJ	DATE :	1-18
DESIGN ENGINEER OF RECORD :	JWJ	DATE :	9-18

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

LOAD AND RESISTANCE FACTOR RATING (LRFD) 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			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD	HL-93(Inv)	N/A	①	1.143	--	1.75	0.269	1.474	45'	I	21.98	0.622	1.282	45'	EL	4.48	0.80	0.269	1.143	45'	I	21.98		
	HL-93(0pr)	N/A		1.661	--	1.35	0.269	1.911	45'	I	21.98	0.622	1.661	45'	EL	4.48	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	②	1.403	50.520	1.75	0.269	1.809	45'	I	21.98	0.622	1.487	45'	EL	4.48	0.80	0.269	1.403	45'	I	21.98		
	HS-20(0pr)	36.000		1.927	69.377	1.35	0.269	2.345	45'	I	21.98	0.622	1.927	45'	EL	4.48	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.741	37.009	1.40	0.269	4.417	45'	I	21.98	0.622	4.050	45'	EL	4.48	0.80	0.269	2.741	45'	I	21.98	
		SNGARBS2	20.000		2.214	44.277	1.40	0.269	3.567	45'	I	21.98	0.622	2.992	45'	EL	4.48	0.80	0.269	2.214	45'	I	26.31	
		SNAGRIS2	22.000		2.177	47.897	1.40	0.269	3.455	45'	I	17.59	0.622	2.822	45'	EL	4.48	0.80	0.269	2.177	45'	I	26.31	
		SNCOTTS3	27.250		1.369	37.299	1.40	0.269	2.205	45'	I	21.98	0.622	2.033	45'	EL	4.48	0.80	0.269	1.369	45'	I	21.98	
		SNAGGRS4	34.925		1.208	42.190	1.40	0.269	1.946	45'	I	21.98	0.622	1.767	45'	EL	4.48	0.80	0.269	1.208	45'	I	21.98	
		SNS5A	35.550		1.177	41.833	1.40	0.269	1.896	45'	I	21.98	0.622	1.834	45'	EL	4.48	0.80	0.269	1.177	45'	I	21.98	
		SNS6A	39.950		1.109	44.286	1.40	0.269	1.786	45'	I	21.98	0.622	1.710	45'	EL	4.48	0.80	0.269	1.109	45'	I	21.98	
	SNS7B	42.000	③	1.057	44.384	1.40	0.269	1.703	45'	I	21.98	0.622	1.730	45'	EL	4.48	0.80	0.269	1.057	45'	I	21.98		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.361	44.900	1.40	0.269	2.192	45'	I	21.98	0.622	2.005	45'	EL	4.48	0.80	0.269	1.361	45'	I	21.98	
		TNT4A	33.075		1.375	45.474	1.40	0.269	2.215	45'	I	21.98	0.622	1.916	45'	EL	4.48	0.80	0.269	1.375	45'	I	21.98	
		TNT6A	41.600		1.154	48.005	1.40	0.269	1.859	45'	I	21.98	0.622	1.869	45'	EL	4.48	0.80	0.269	1.154	45'	I	21.98	
		TNT7A	42.000		1.176	49.404	1.40	0.269	1.895	45'	I	21.98	0.622	1.728	45'	EL	4.48	0.80	0.269	1.176	45'	I	21.98	
		TNT7B	42.000		1.225	51.433	1.40	0.269	1.973	45'	I	21.98	0.622	1.652	45'	EL	4.48	0.80	0.269	1.225	45'	I	21.98	
		TNAGRIT4	43.000		1.166	50.155	1.40	0.269	1.879	45'	I	21.98	0.622	1.587	45'	EL	4.48	0.80	0.269	1.166	45'	I	21.98	
TNAGT5A		45.000		1.085	48.839	1.40	0.269	1.749	45'	I	21.98	0.622	1.635	45'	EL	4.48	0.80	0.269	1.085	45'	I	21.98		
TNAGT5B	45.000		1.060	47.685	1.40	0.269	1.707	45'	I	21.98	0.622	1.503	45'	EL	4.48	0.80	0.269	1.060	45'	I	21.98			
EMERGENCY VEHICLE (EV)	EV2	28.750		1.588	45.645	1.30	0.269	2.742	45'	I	17.59	0.622	2.274	45'	EL	4.48	0.80	0.269	1.588	45'	I	21.98		
	EV3	43.000	④	1.020	43.878	1.30	0.269	1.771	45'	I	21.98	0.622	1.543	45'	EL	4.48	0.80	0.269	1.020	45'	I	21.98		

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:

- 1.
- 2.
- 3.
- 4.

⑥ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

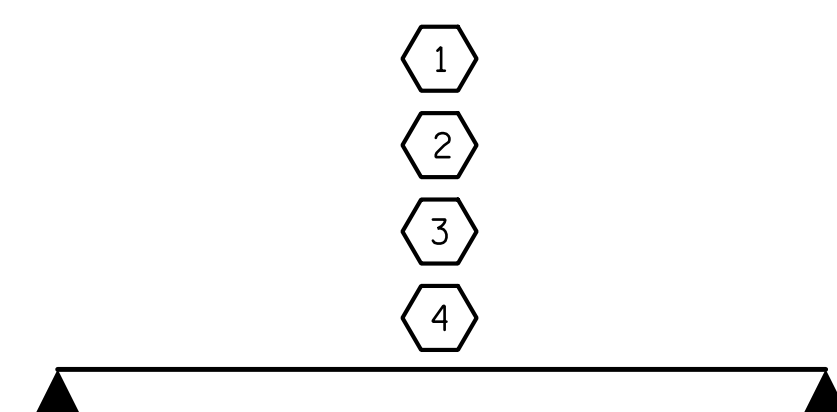
③ LEGAL LOAD RATING **

④ EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

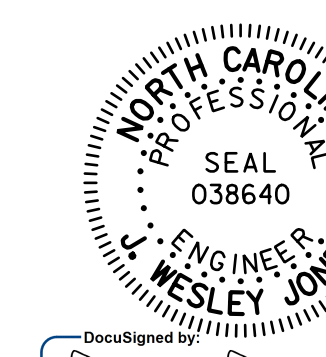
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER



LRFR SUMMARY
FOR SPAN 'A'

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-

10/3/2023



STV ENGINEERS, INC.
 900 West Trade St., Suite 715
 Charlotte, NC 28202
 NC License Number F-0991



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SIGNATURES COMPLETED

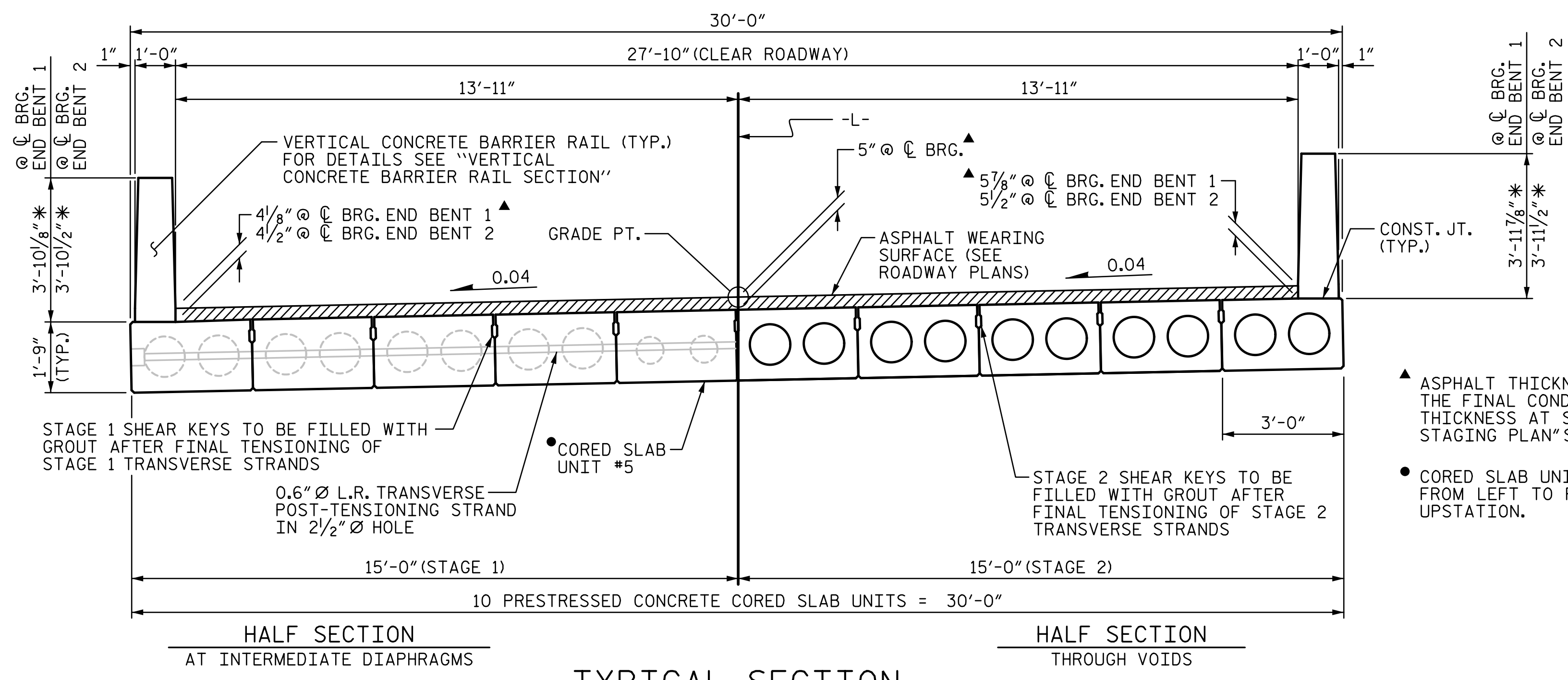
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 45' CORED SLAB UNIT
 105° SKEW
 (NON-INTERSTATE TRAFFIC)

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

S-4
TOTAL SHEETS 15

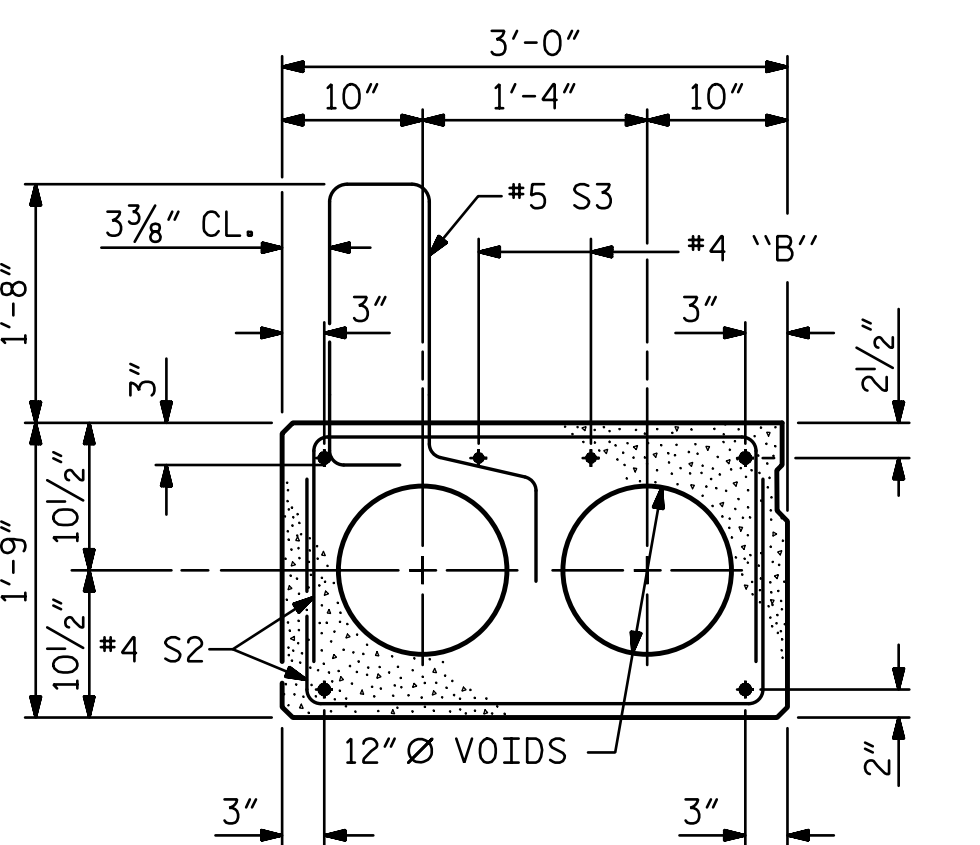
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ASSEMBLED BY : LEM	DATE : 12-17
CHECKED BY : JWJ	DATE : 1-18
DESIGN ENGINEER OF RECORD : JWJ	DATE : 9-23
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 04/23 BNB/AAI



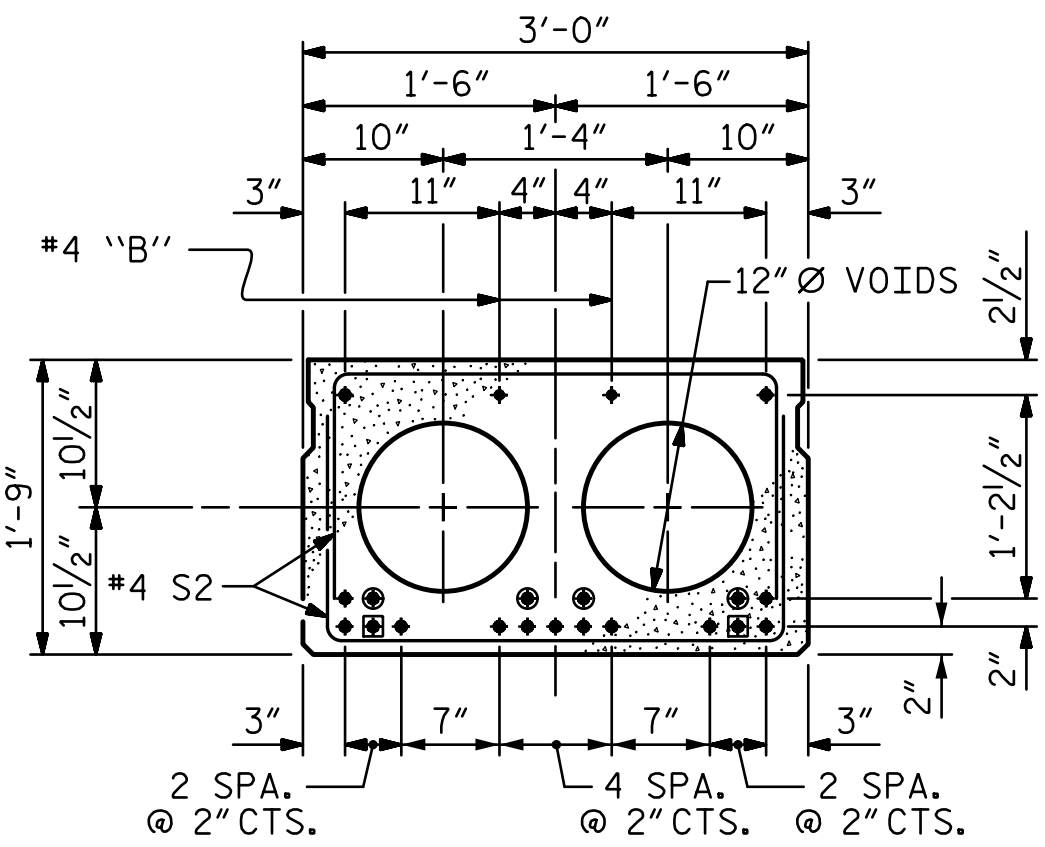
TYPICAL SECTION

* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



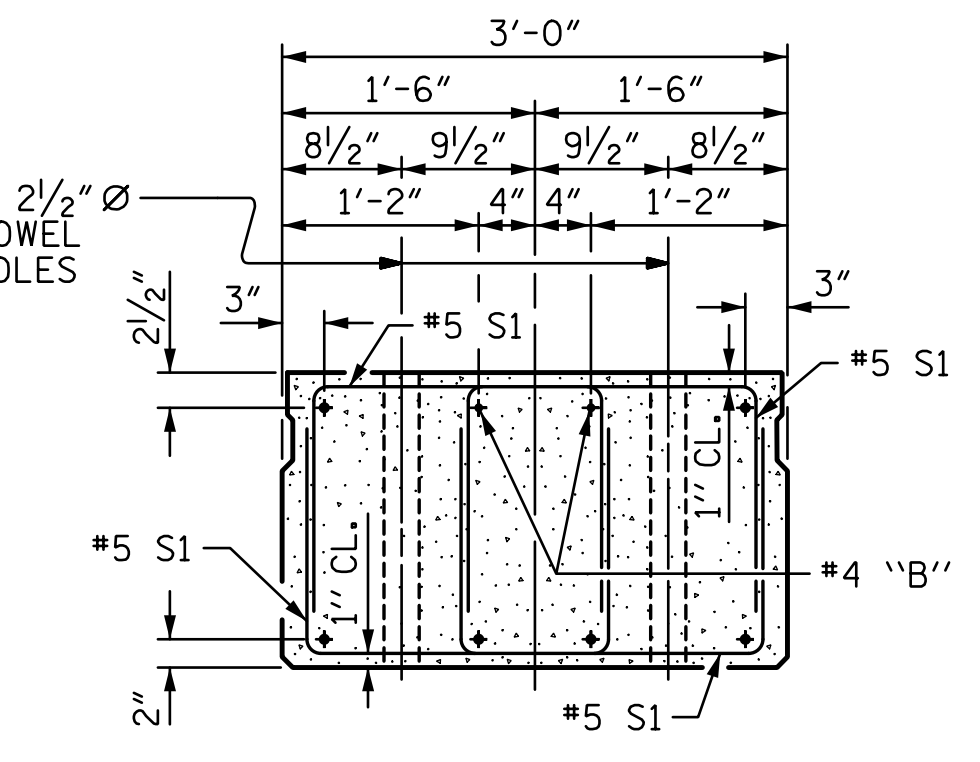
EXT. SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION)



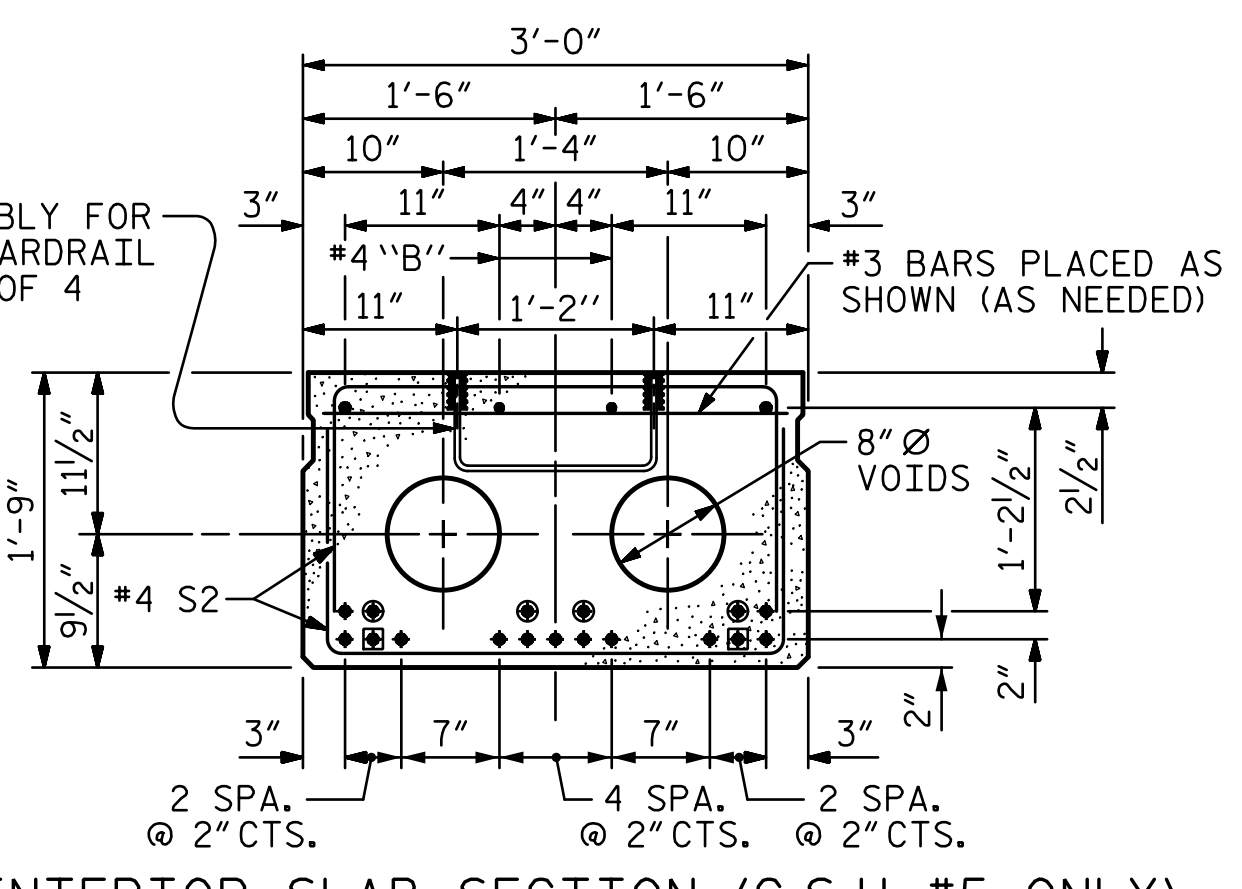
INTERIOR SLAB SECTION

(15 STRANDS REQUIRED)



END ELEVATION

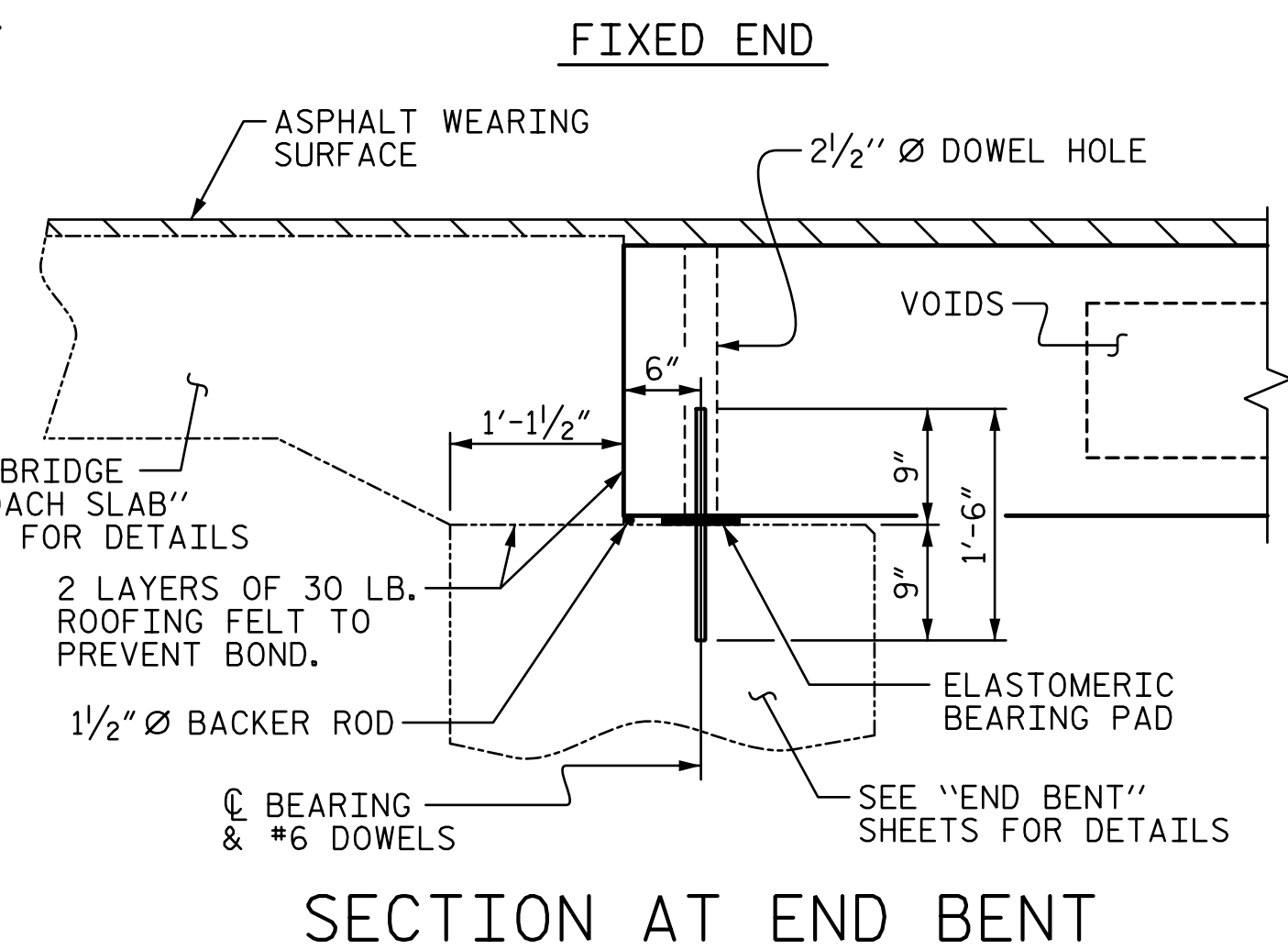
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



INTERIOR SLAB SECTION (C.S.U. #5 ONLY)

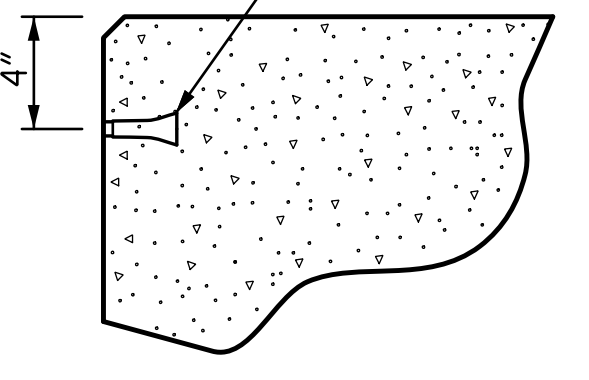
(15 STRANDS REQUIRED) THE #3 BARS ARE INCIDENTAL AND THE COST SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS

0.6" Ø LOW RELAXATION STRAND LAYOUT

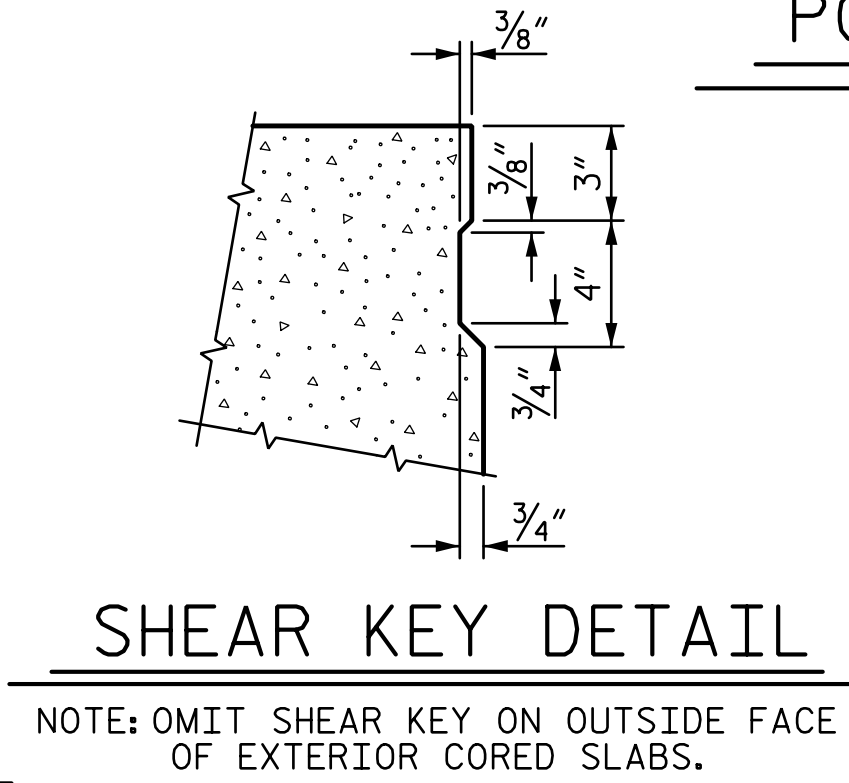


SECTION AT END BENT

PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8" SIZE TO BE DETERMINED BY CONTRACTOR.



THREADED INSERT DETAIL

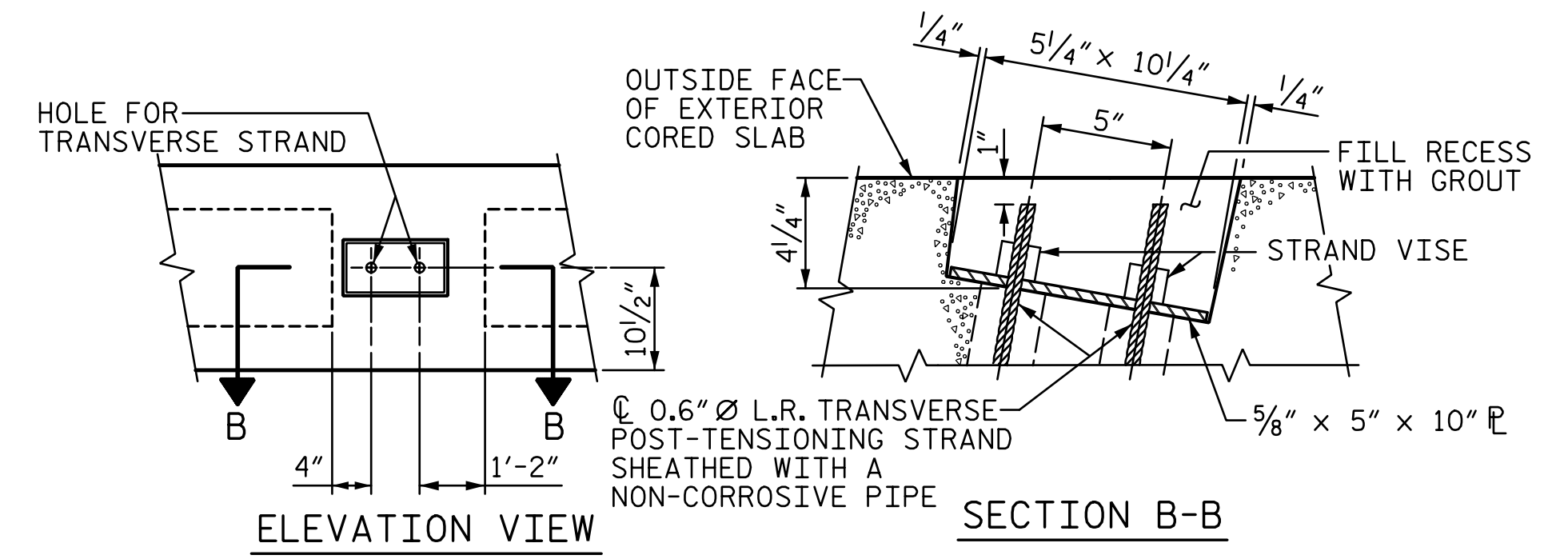


SHEAR KEY DETAIL

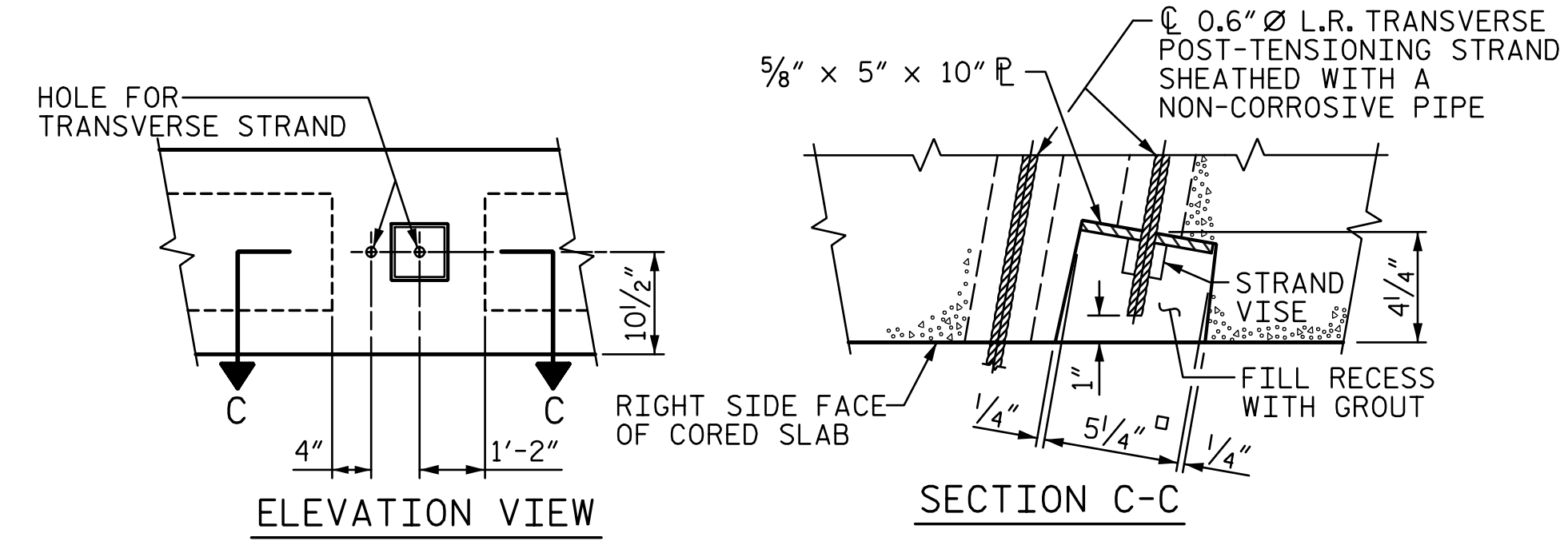
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

- BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 4'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

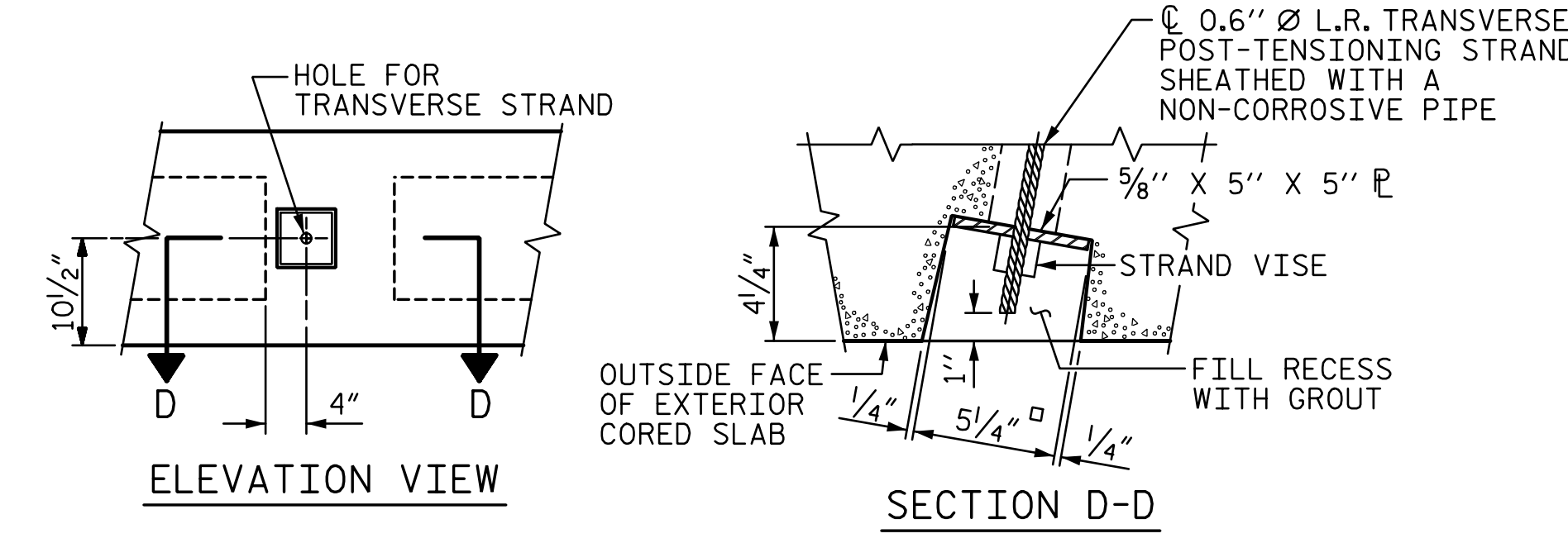
DEBONDING LEGEND



CORED SLAB UNIT #1



CORED SLAB UNIT #5



CORED SLAB UNIT #10

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

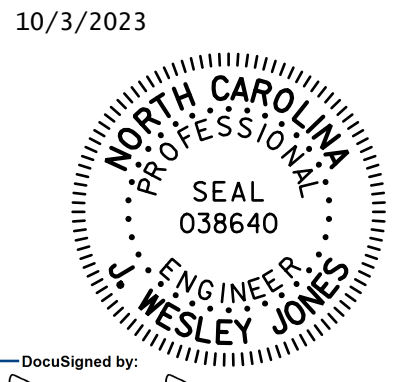
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 CHECKED BY : JWJ DATE : 1-18
 DESIGN ENGINEER OF RECORD : JWJ DATE : 9-23

PROJECT NO. 17BP.14.R.156
 MACON COUNTY
 STATION: 13+76.00 -L-
 SHEET 1 OF 4



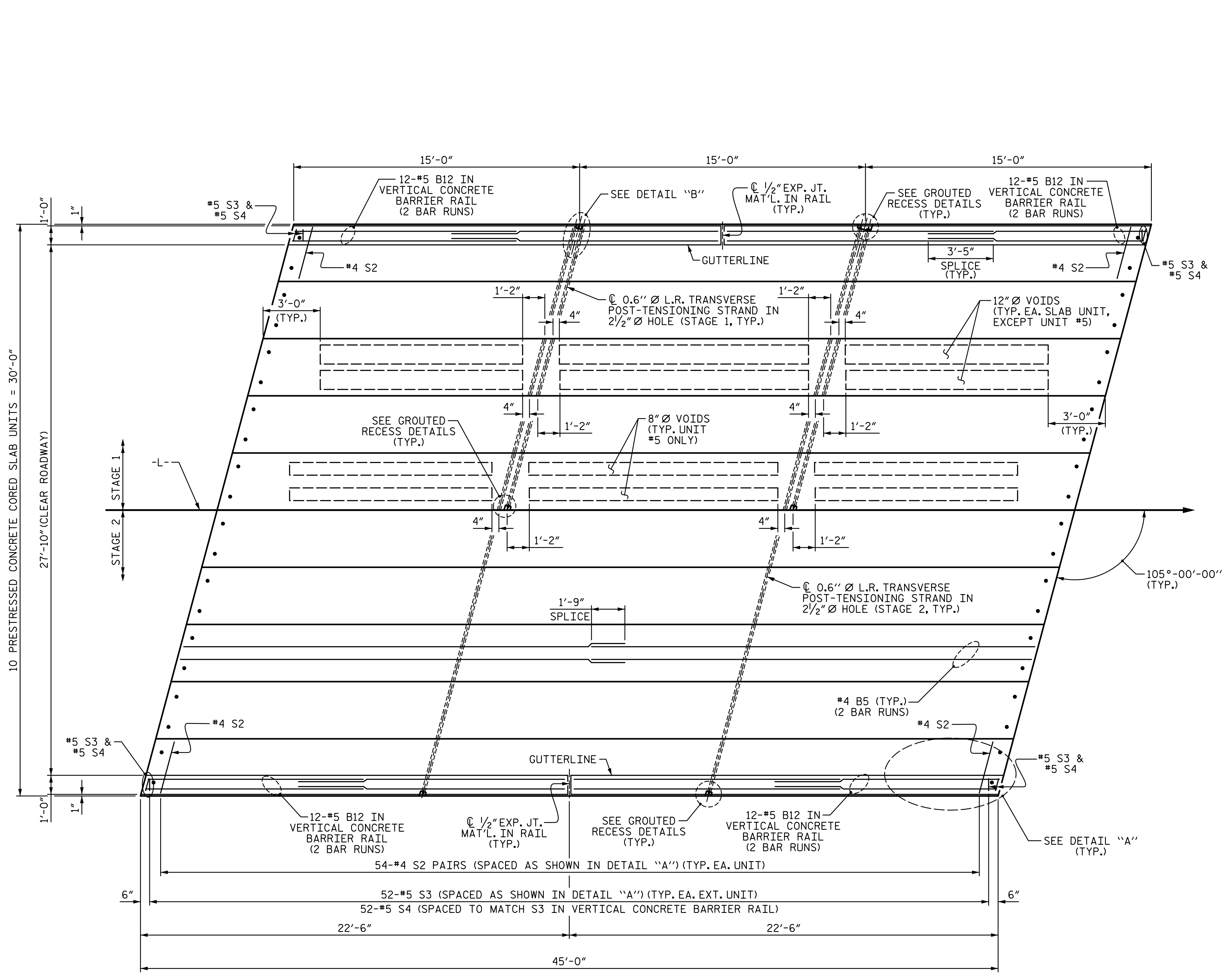
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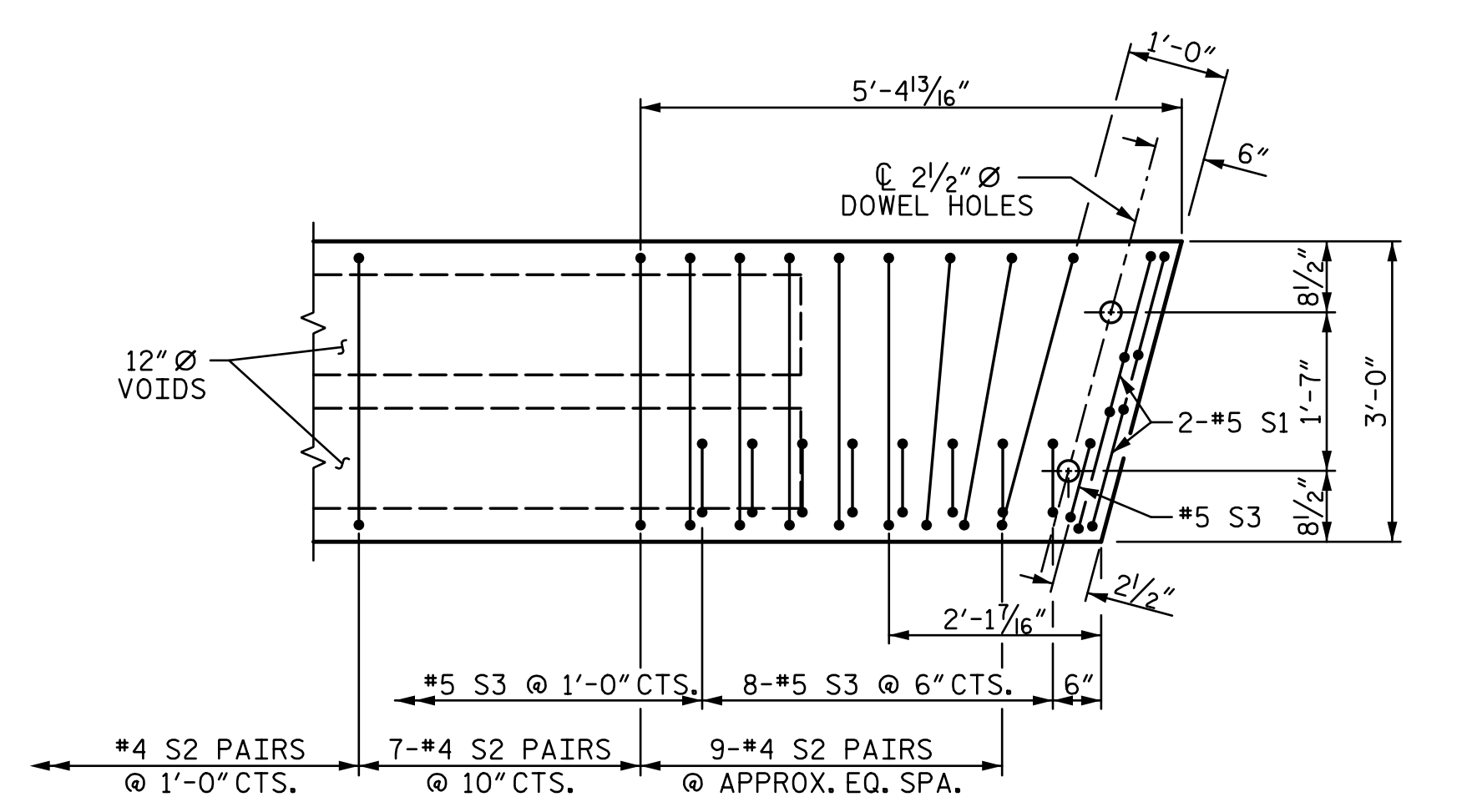
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			
1			3				S-5	
2			4				TOTAL SHEETS 15	

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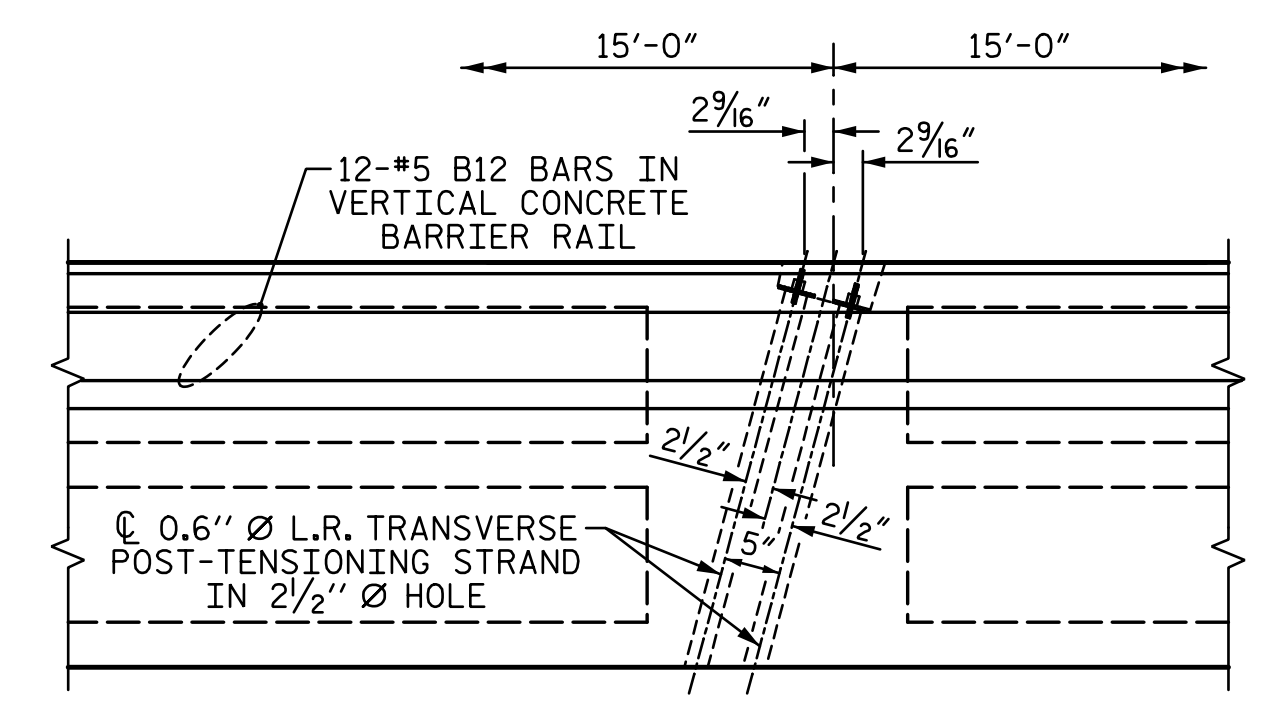


PLAN OF UNIT



DETAIL "A"

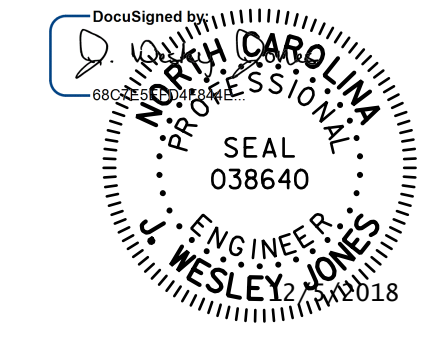
(SIMILAR EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.



DETAIL "B"

#4 S2 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. 17BP.14.R.156
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SHEET 2 OF 4



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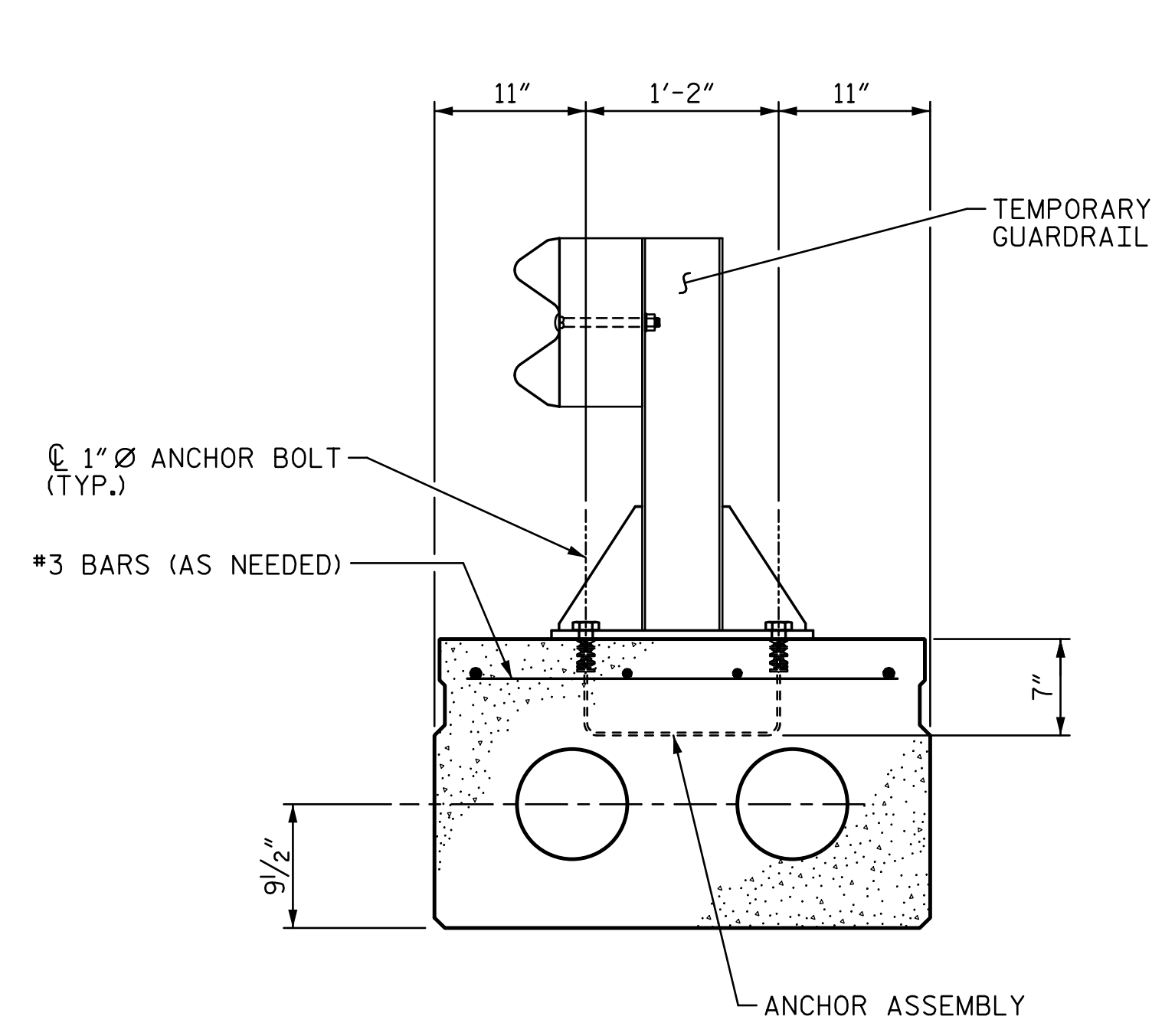
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 45' UNIT 27'-10" CLEAR ROADWAY 105° SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-6
					TOTAL SHEETS 15

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ANCHOR ASSEMBLY NOTES

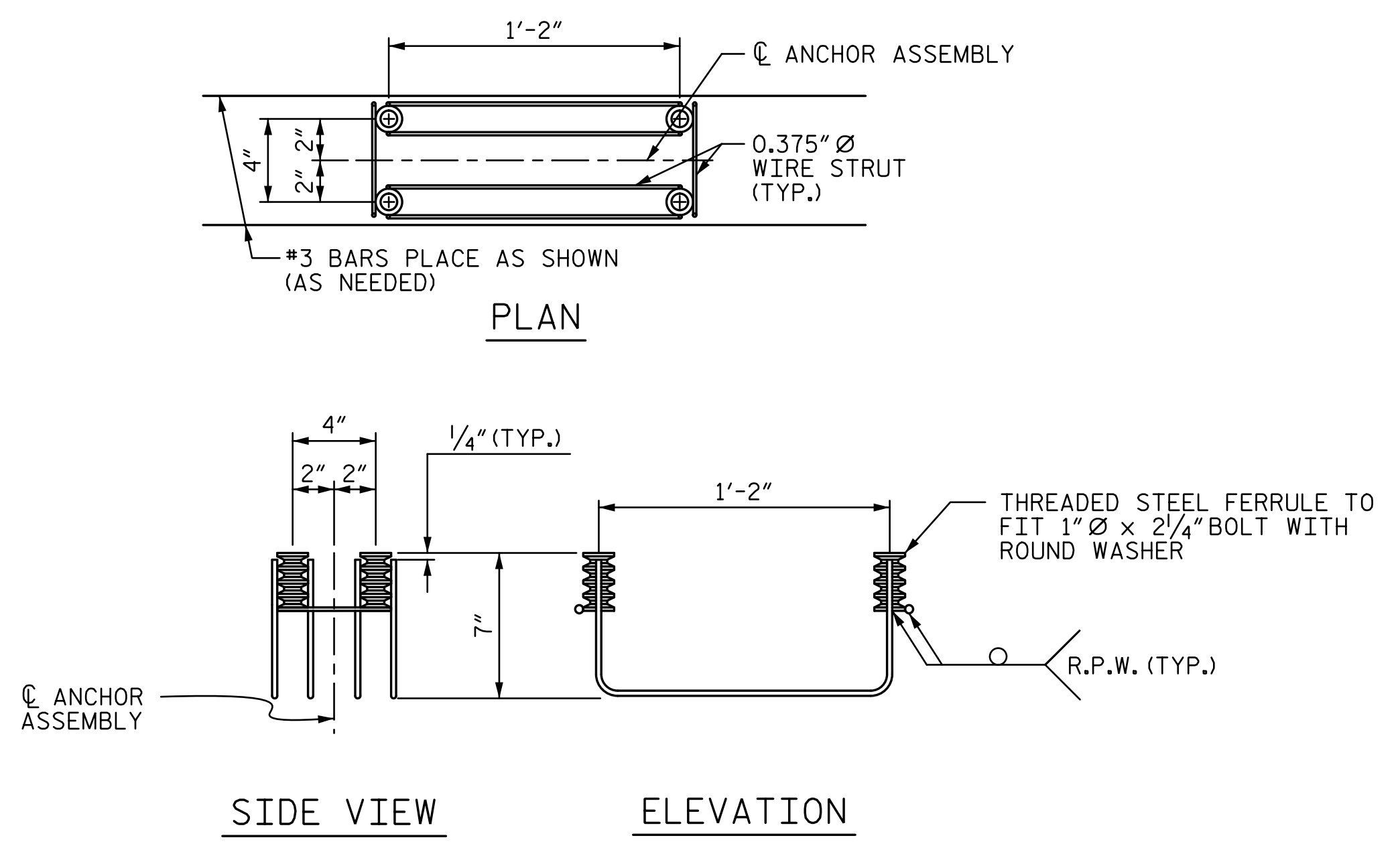
- THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2 1/2".
 - B. 4- 1"Ø x 2/4" ANCHOR BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS MAY BE USED AS AN ALTERNATE FOR THE 1"Ø x 2/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
 - C. WIRE STRUTS SHOWN IN THE ANCHOR ASSEMBLY FOR TEMPORARY GUARDRAIL DETAIL ARE THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 P.S.I.
- TEMPORARY GUARDRAIL ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO ENSURE FIT.
- THE COST OF THE TEMPORARY GUARDRAIL ANCHOR ASSEMBLY, COMPLETE IN PLACE, SHALL BE INCLUDED, AS APPLICABLE, IN THE UNIT CONTRACT PRICE BID FOR 3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLAB OR LUMP SUM FOR THE APPROACH SLABS.
- FERRULES TO BE PLUGGED DURING CASTING OF THE CORED SLAB UNITS OR POURING OF APPROACH SLABS AS RECOMMENDED BY THE MANUFACTURER.
- AT THE CONTRACTOR'S OPTION, FERRULES WITH OPEN OR CLOSED ENDS MAY BE USED.
- PAYMENT FOR THE TEMPORARY GUARDRAIL, POST AND POST BASE PLATES IS INCLUDED IN THE TRAFFIC CONTROL PLANS.
- ONCE TEMPORARY GUARDRAIL HAS BEEN REMOVED, COMPLETELY FILL ANCHOR ASSEMBLY HOLES WITH AN NCDOT APPROVED, NON-SHRINK, NON-METALLIC GROUT, OR AS DIRECTED BY THE ENGINEER.



SECTION A-A

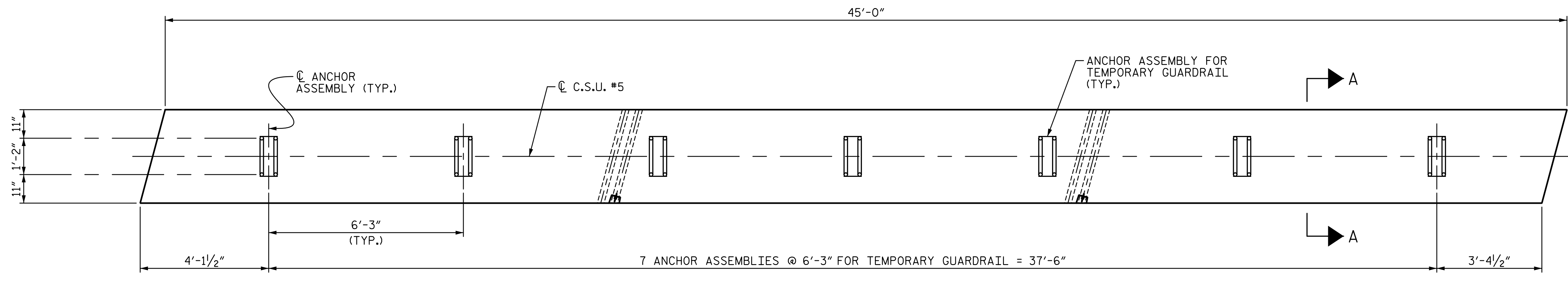
(SHOWING PLACEMENT OF ANCHOR ASSEMBLIES)

NOTE: THE #3 BARS ARE INCIDENTAL AND THEIR COST SHALL BE INCLUDED IN THE PRICE BID FOR THE PRESTRESSED CONCRETE CORED SLAB.



TEMPORARY GUARDRAIL ANCHOR ASSEMBLY

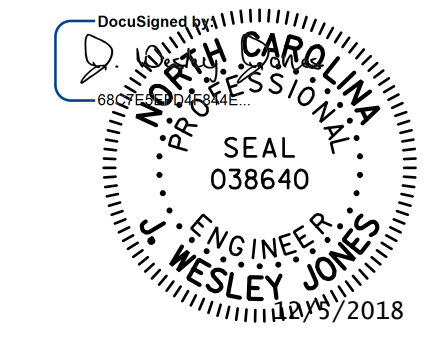
(7 ASSEMBLIES REQUIRED IN CORED SLAB UNIT #5, 4 ASSEMBLIES REQUIRED IN APPROACH SLABS)



PLAN OF CORED SLAB UNIT #5

(SHOWING LOCATION OF ANCHOR ASSEMBLIES)
(FOR ANCHOR ASSEMBLY SPACING ON APPROACH SLABS, SEE "BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT")

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MACON COUNTY
 STATION: 13+76.00 -L-
 SHEET 3 OF 4



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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 3'-0" X 1'-9"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 105° SKEW

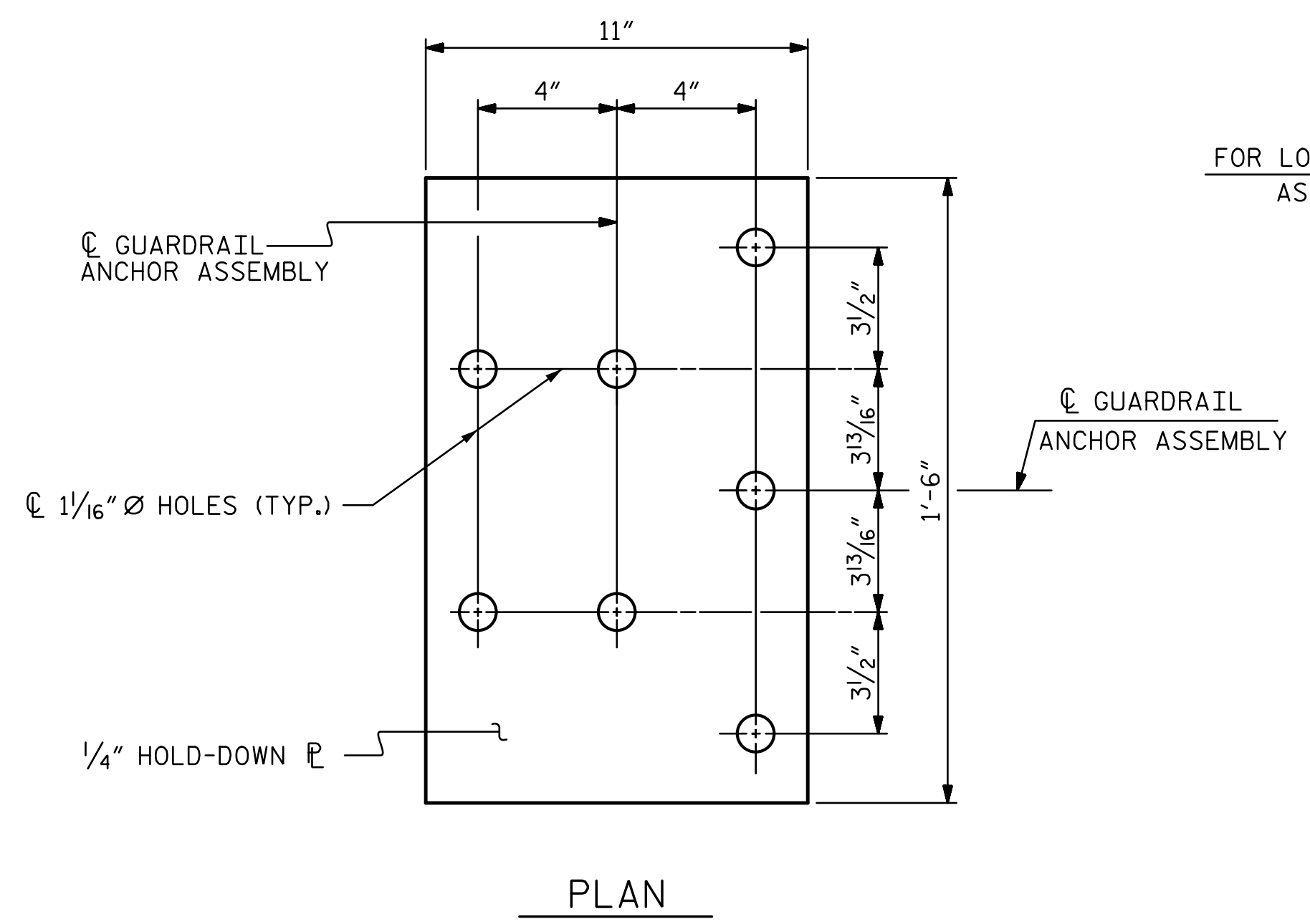
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1			3		
2			4		

S-7				
TOTAL SHEETS				
15				

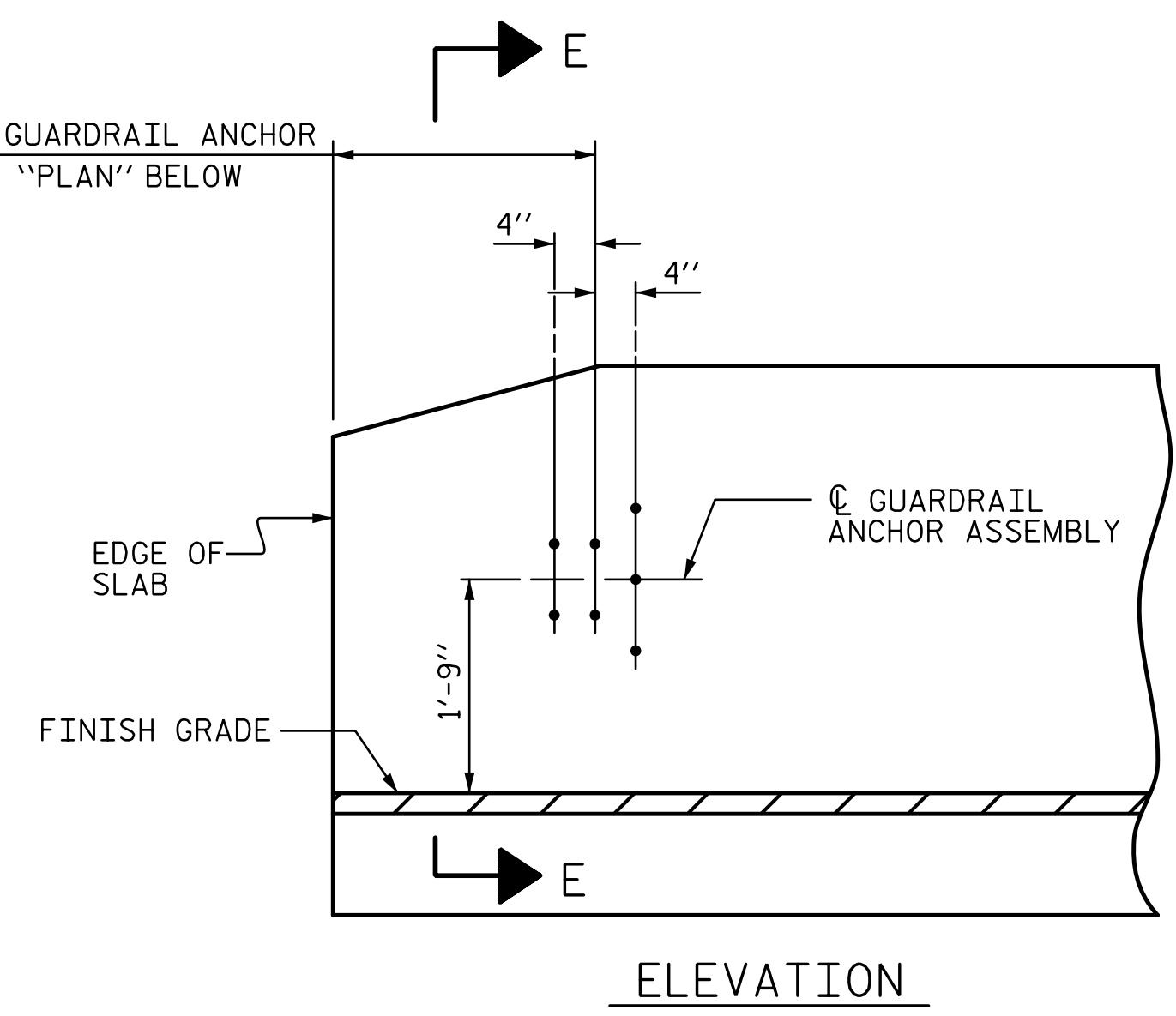
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 DESIGN ENGINEER OF RECORD : JWJ DATE : 9-18

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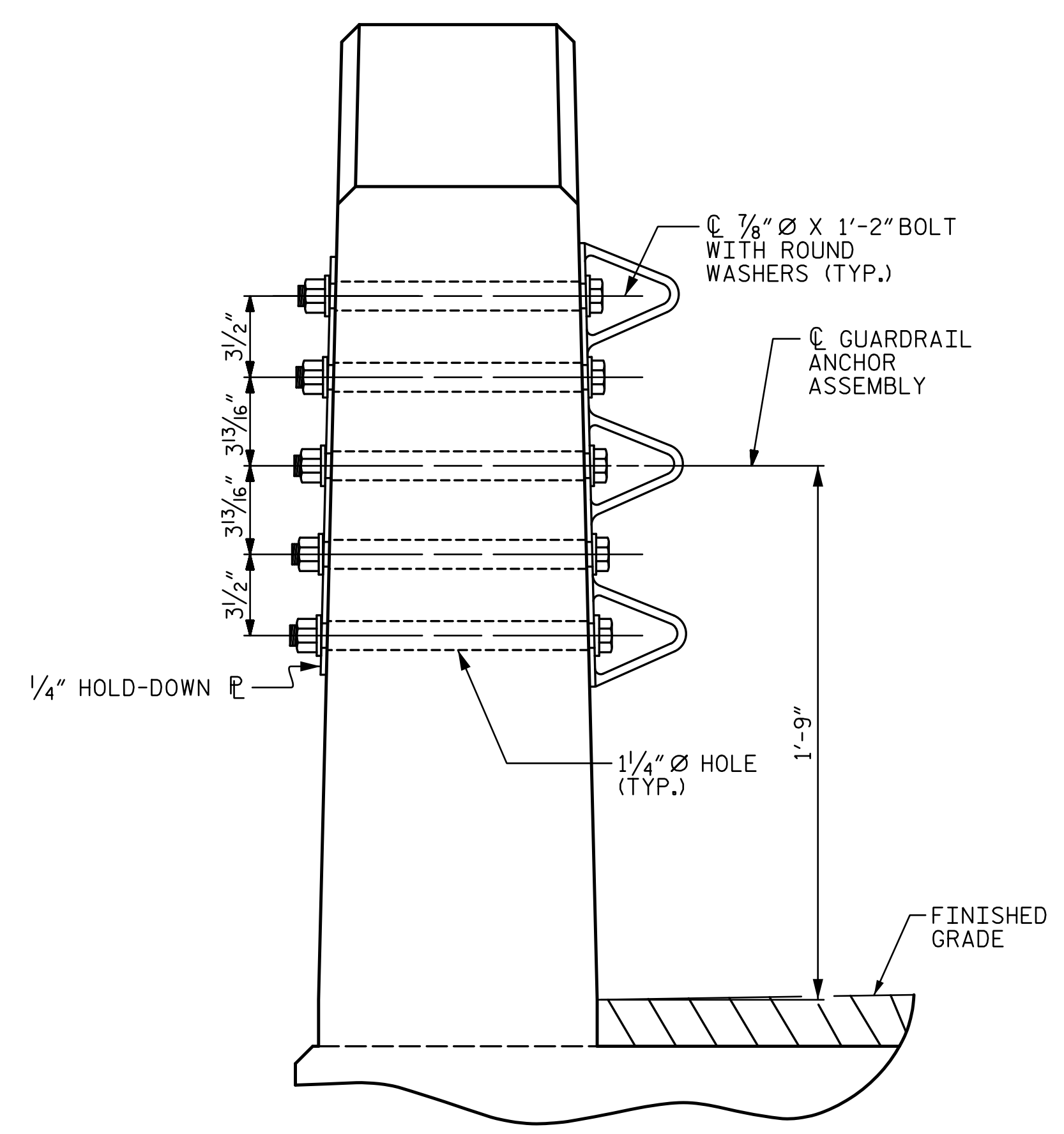


FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW

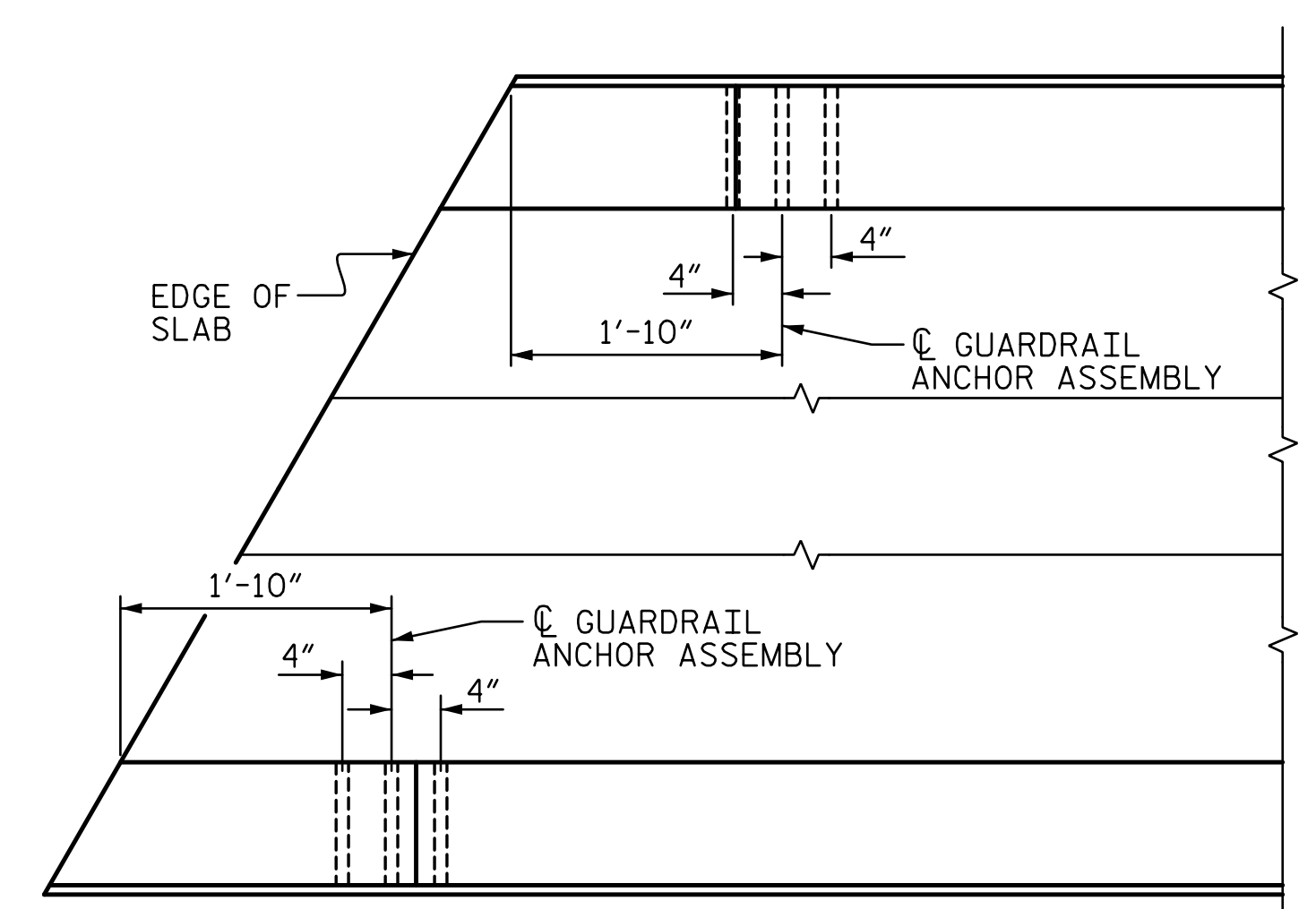


PLAN

ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.

PLAN

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 3/8" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

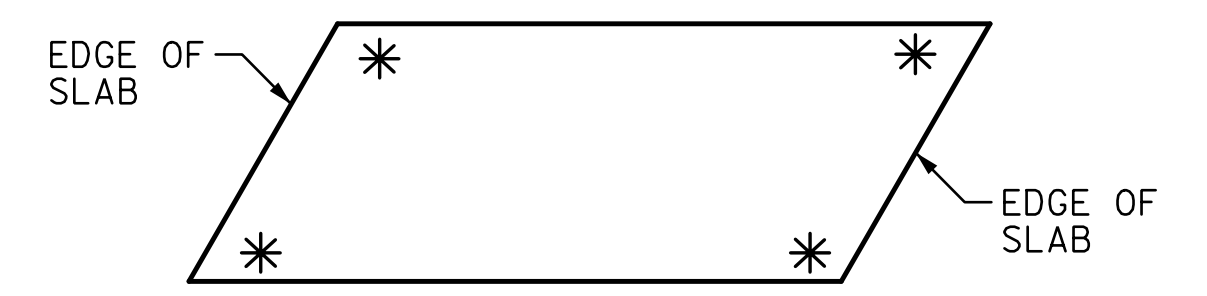
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

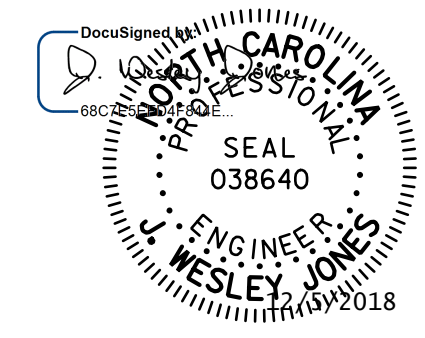
THE 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS FOR VERTICAL
 CONCRETE BARRIER RAIL

ASSEMBLED BY : LEM	DATE : 12-17
CHECKED BY : JWJ	DATE : 1-18
DESIGN ENGINEER OF RECORD : JWJ	DATE : 9-18
DRAWN BY : MAA 5/10	REV. 6/13 MAA/GM
CHECKED BY : GM 5/10	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

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1			3		
2			4		

TOTAL SHEETS: 15

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

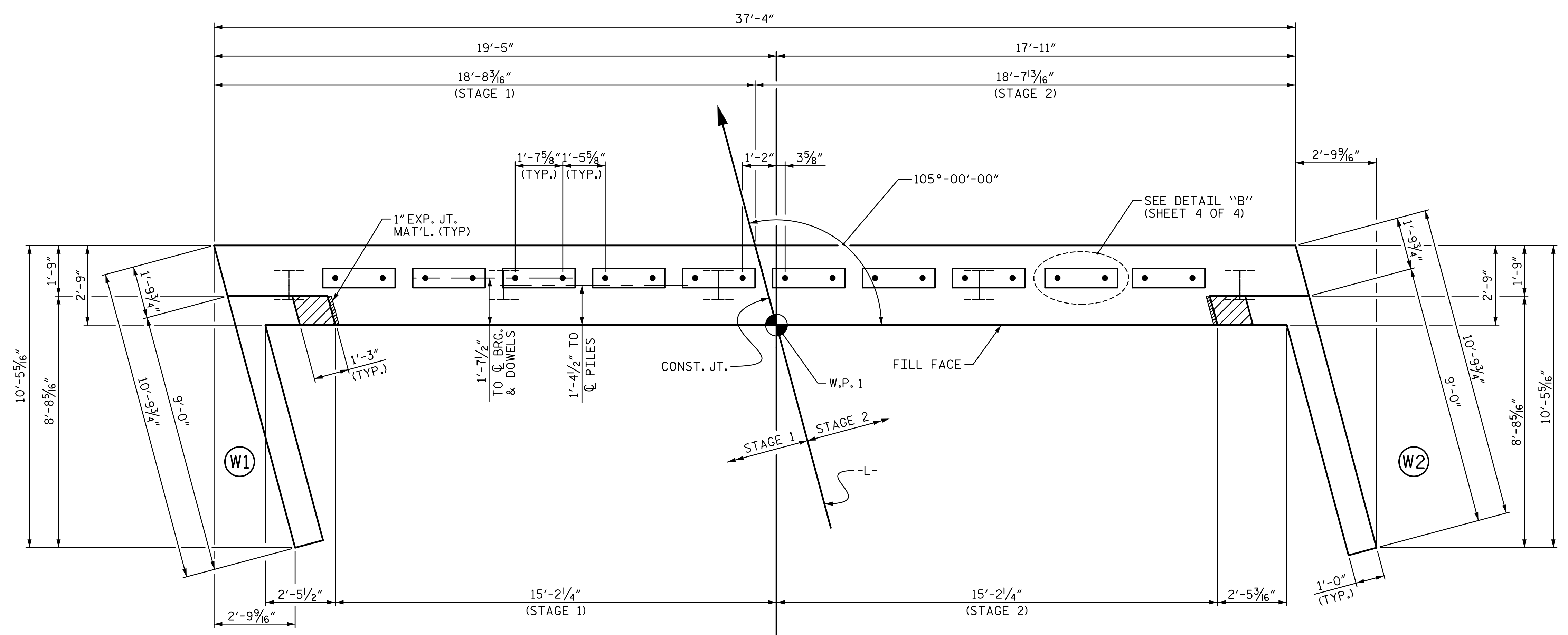
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

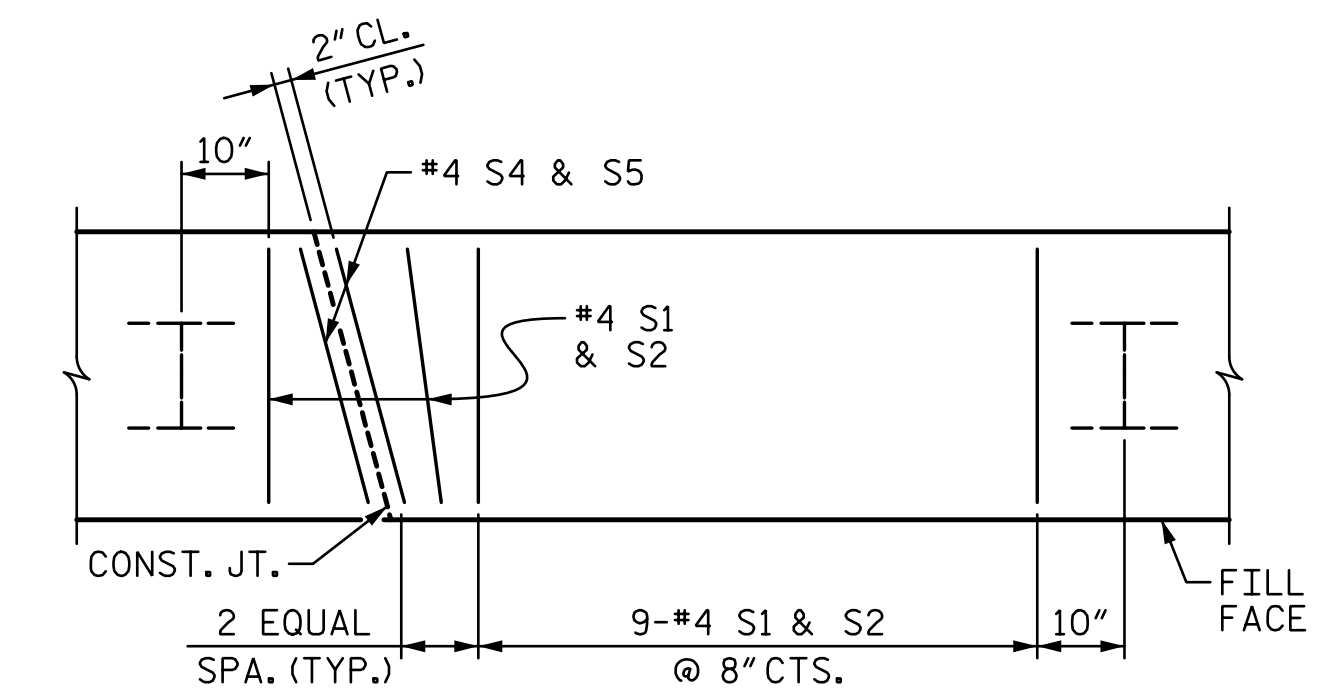
FOR CONSTRUCTION JOINT DETAILS, SEE SHEET 4 OF 4.

FOR MECHANICAL SPLICES, SEE SECTION 425-5(B) OF THE STANDARD SPECIFICATIONS.

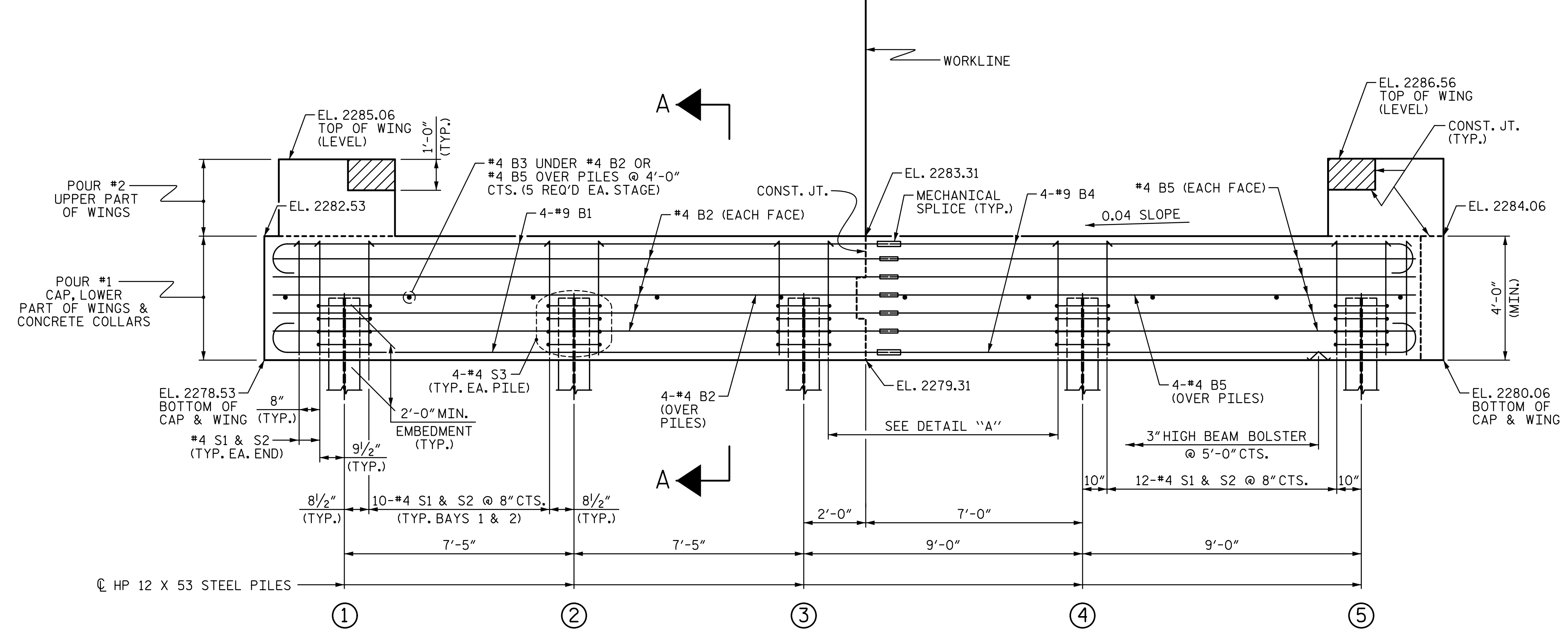
TOP OF PILE ELEVATIONS	
①	2280.65
②	2280.95
③	2281.24
④	2281.60
⑤	2281.96



PLAN



DETAIL "A"



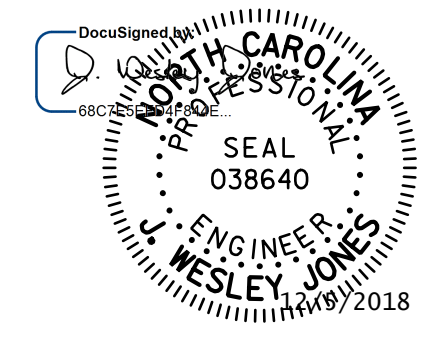
ELEVATION

WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-
 SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT No. 1**



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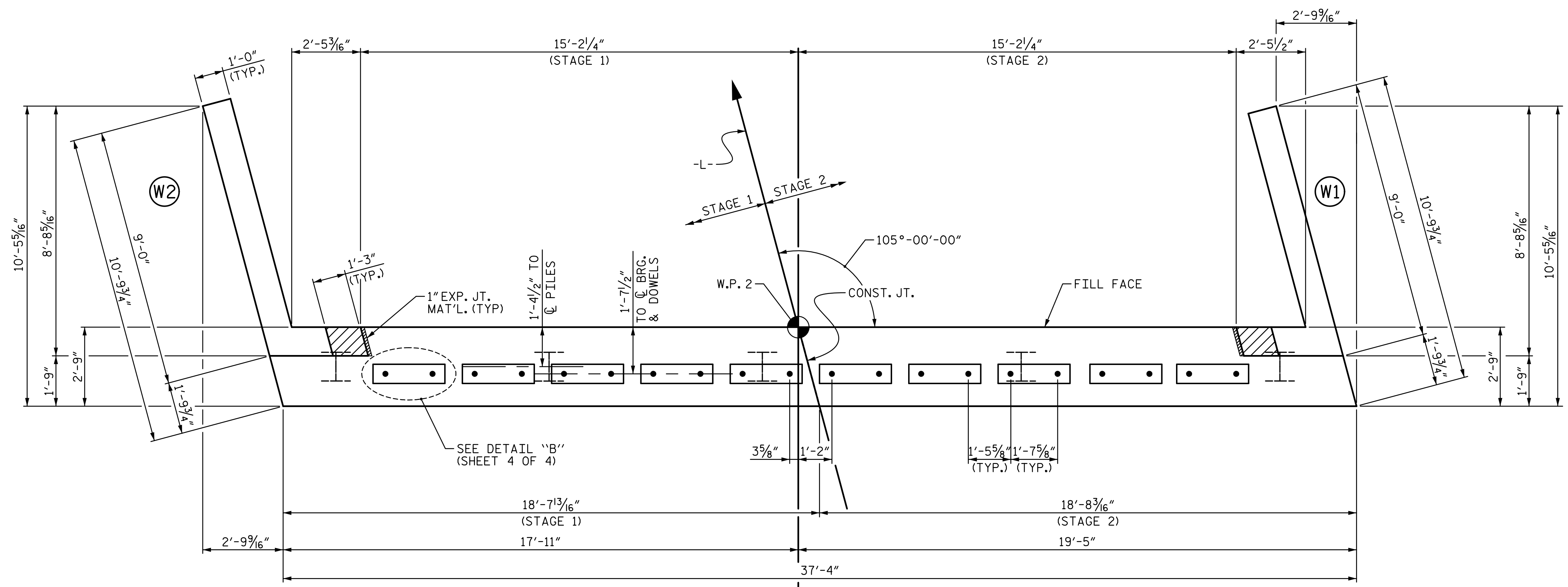
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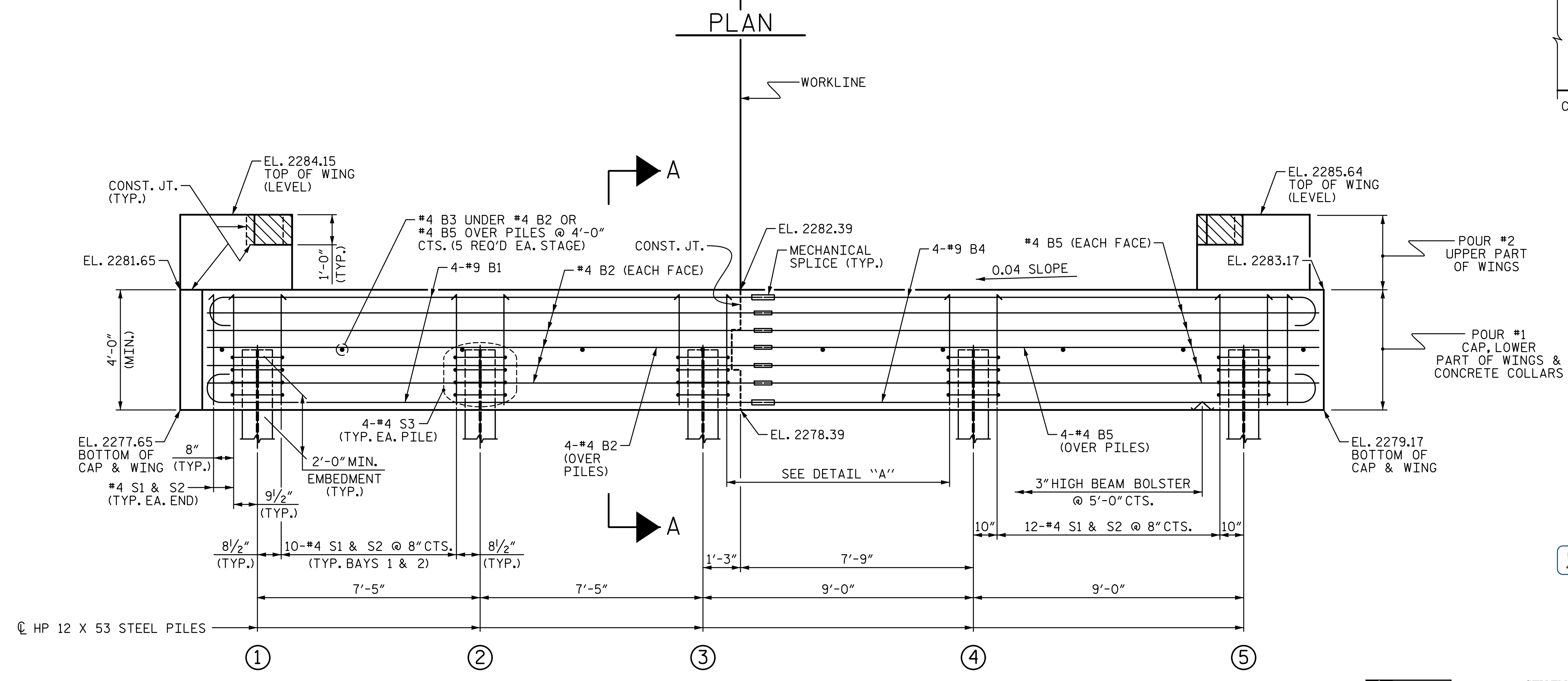
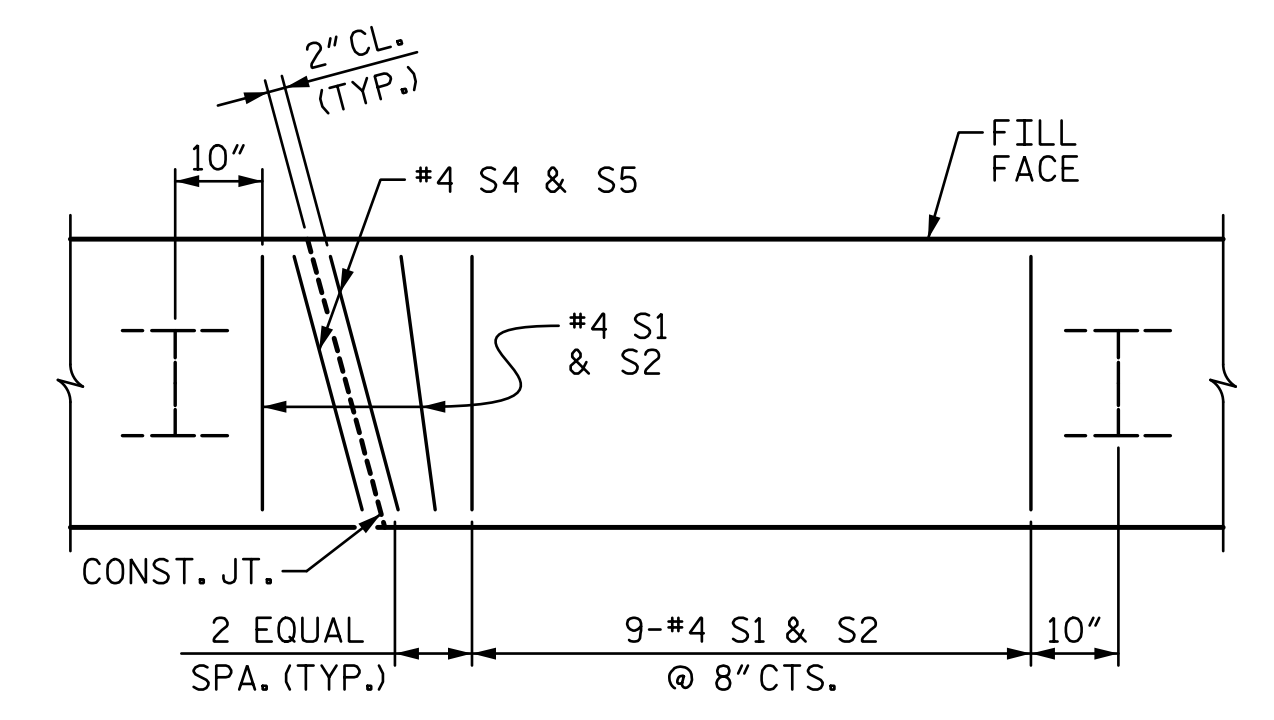
DRAWN BY : LEM DATE : 12-17
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 DESIGN ENGINEER OF RECORD : JWJ DATE : 9-18

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
 FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.
 FOR WING DETAILS, SEE SHEET 3 OF 4.
 FOR CONSTRUCTION JOINT DETAILS, SEE SHEET 4 OF 4.
 FOR MECHANICAL SPLICES, SEE SECTION 425-5(B) OF THE STANDARD SPECIFICATIONS.

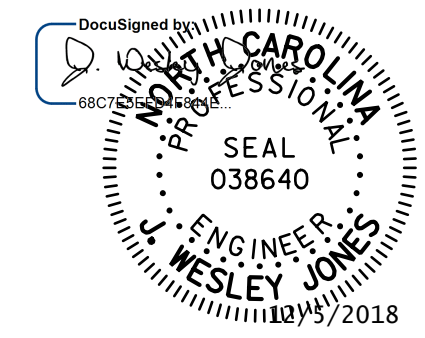


TOP OF PILE ELEVATIONS	
①	2279.77
②	2280.07
③	2280.36
④	2280.72
⑤	2281.08



DETAIL "A"

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-
 SHEET 2 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
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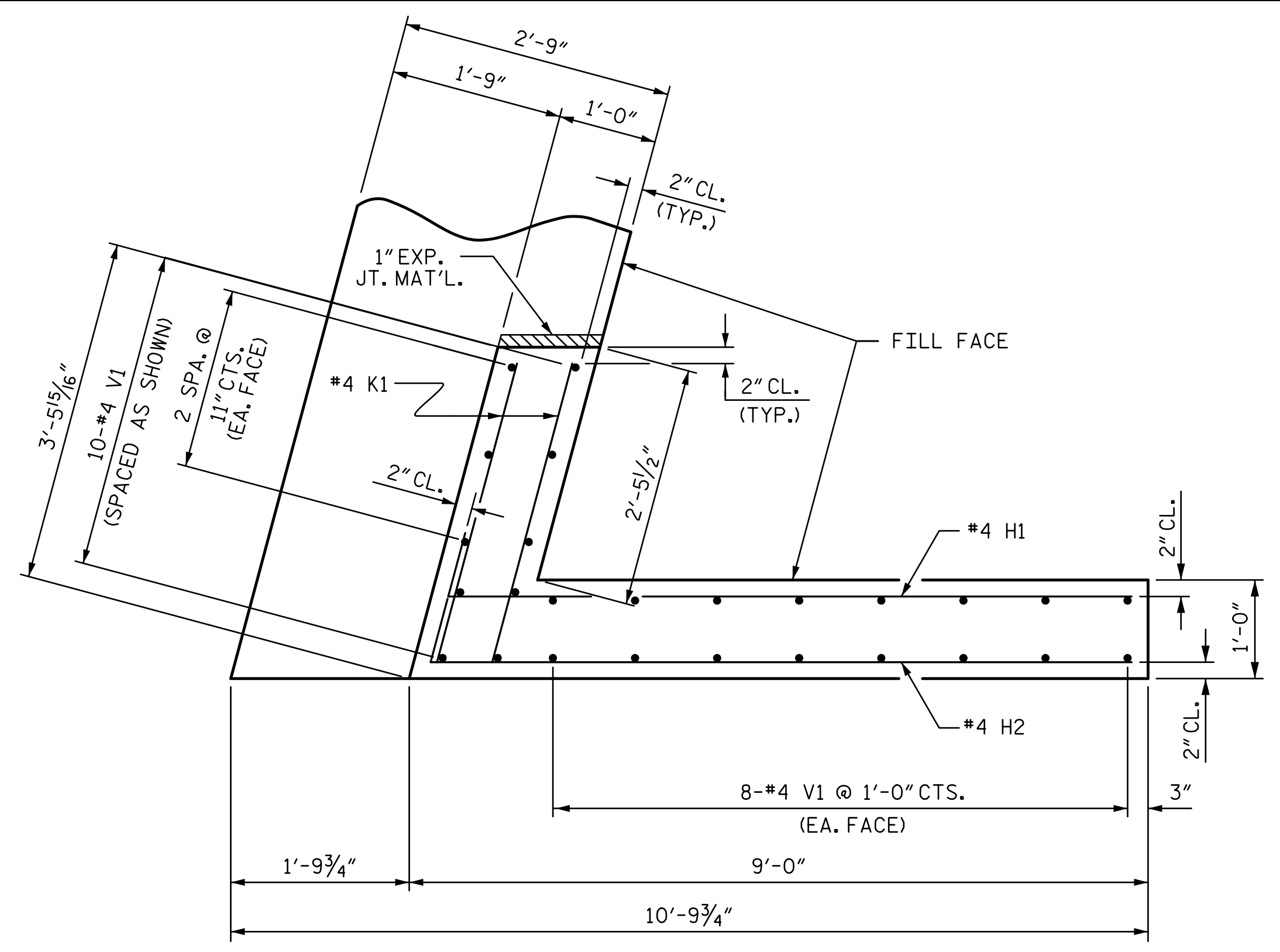
S-11
 TOTAL SHEETS 15

WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

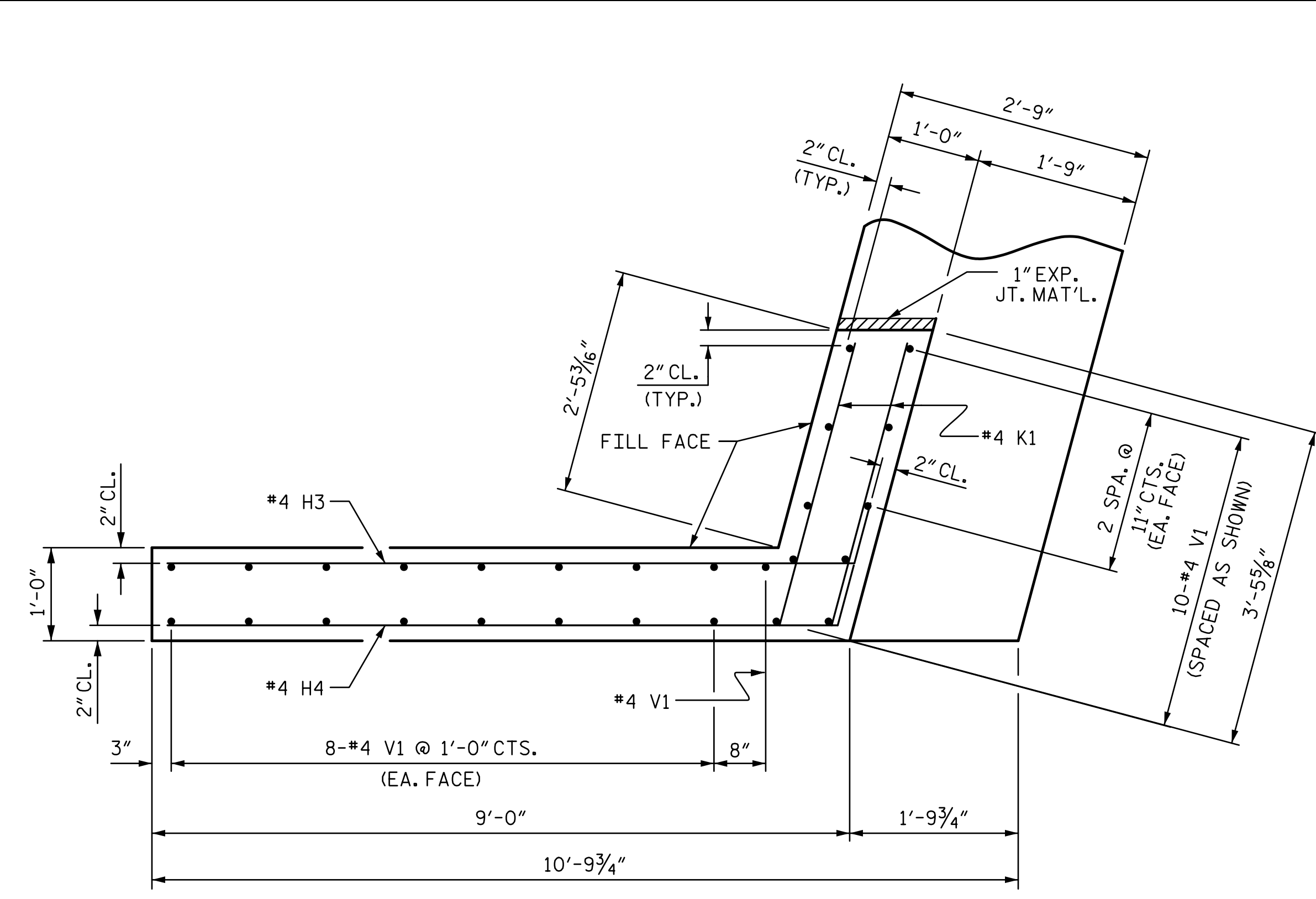
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 CHECKED BY : JWJ DATE : 1-18
 DESIGN ENGINEER OF RECORD : JWJ DATE : 9-18

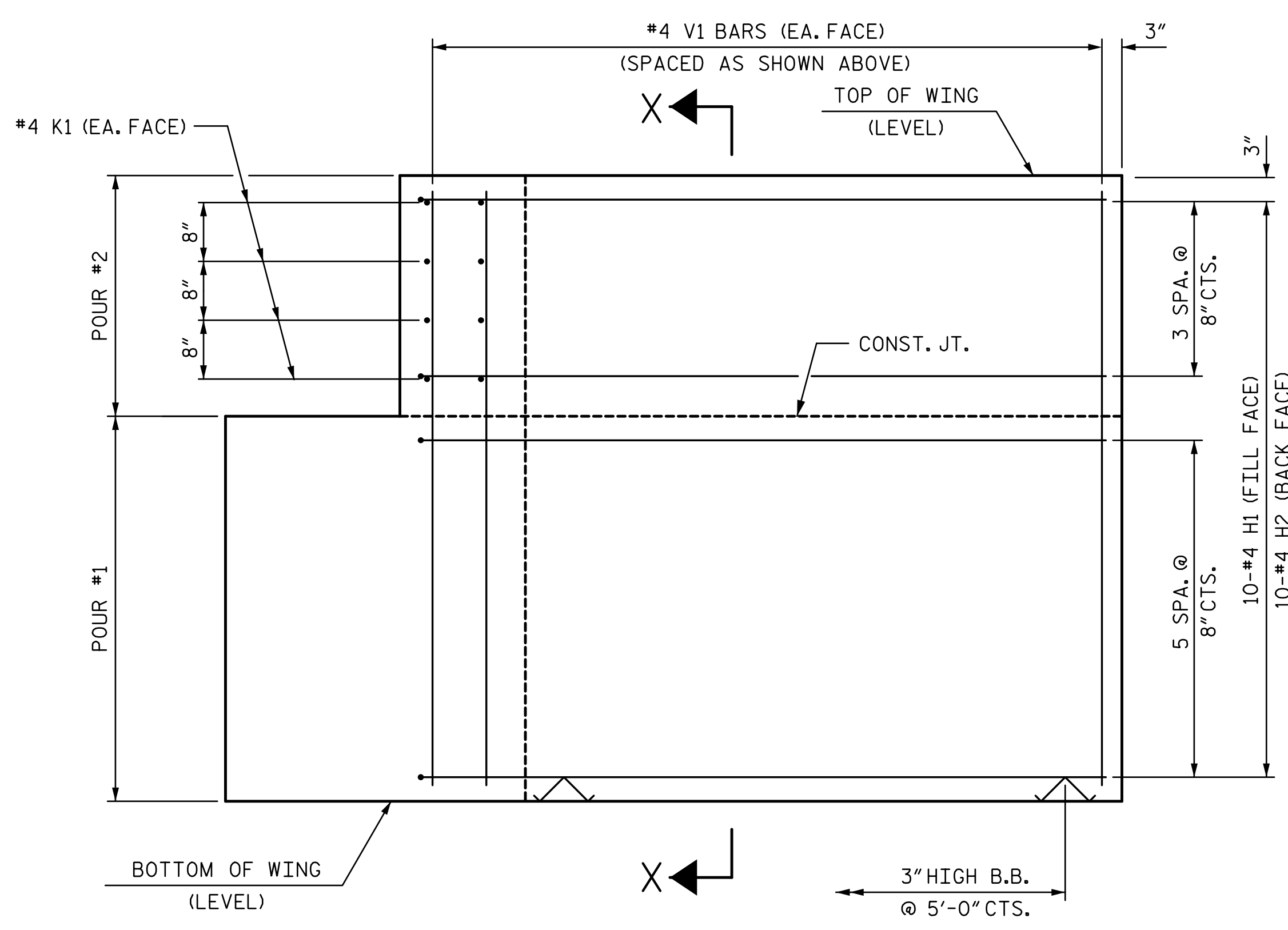
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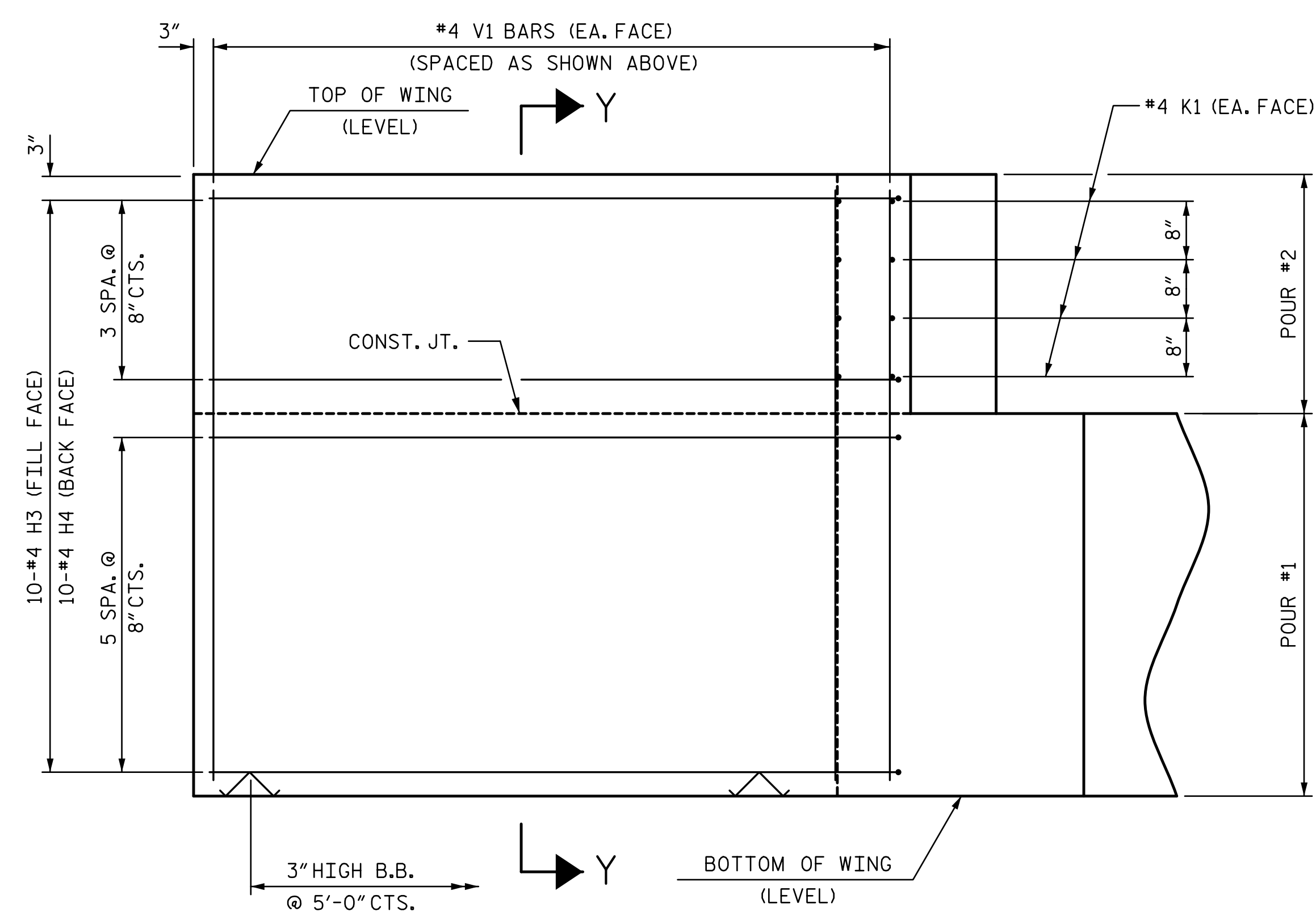
PLAN OF WING (W1)



PLAN OF WING (W2)

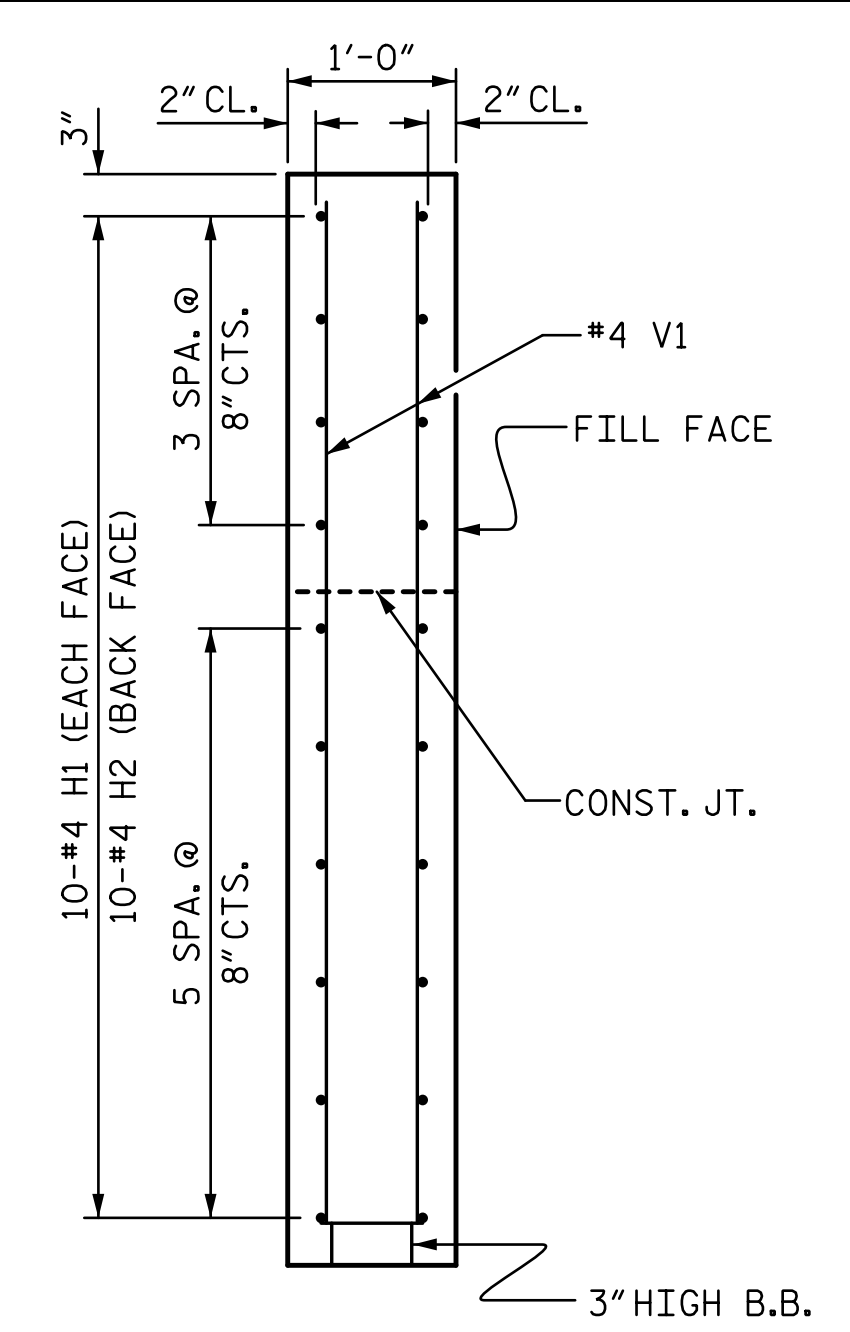


ELEVATION OF WING (W1)

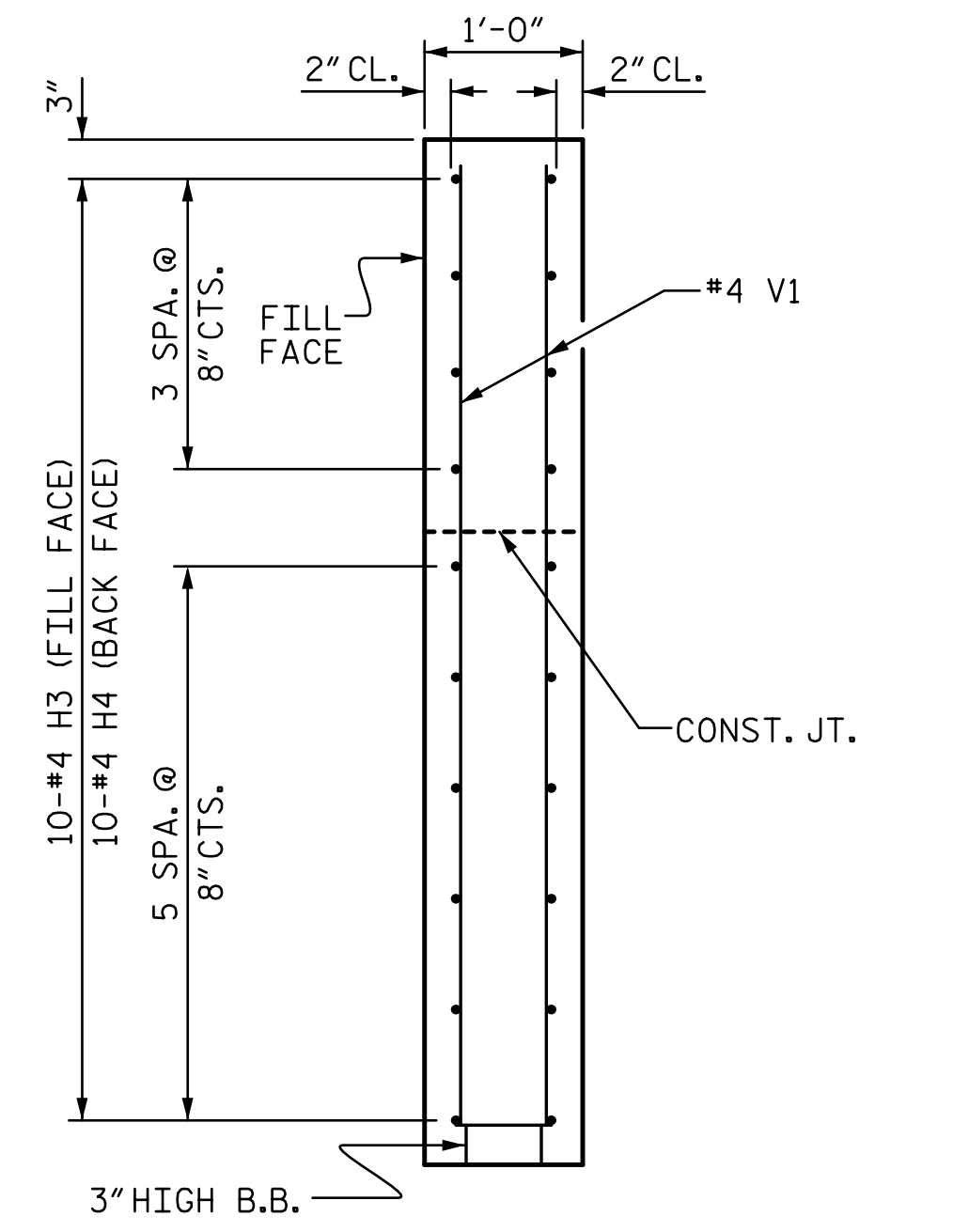


ELEVATION OF WING (W2)

WING DETAILS



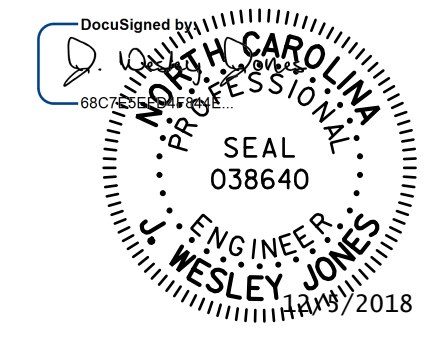
SECTION X-X



SECTION Y-Y

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-

SHEET 3 OF 4

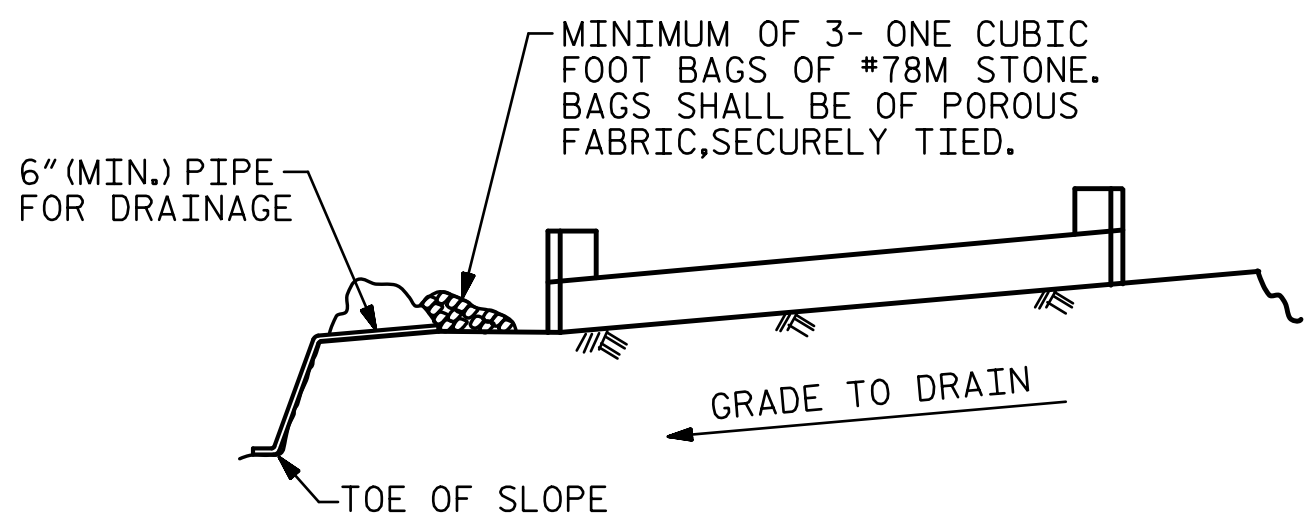


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CHECKED BY : JWJ	DATE : 1-18
DESIGN ENGINEER OF RECORD : JWJ	DATE : 9-18
DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG
CHECKED BY : AAC 12/11	

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT WING DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-12
					TOTAL SHEETS 15

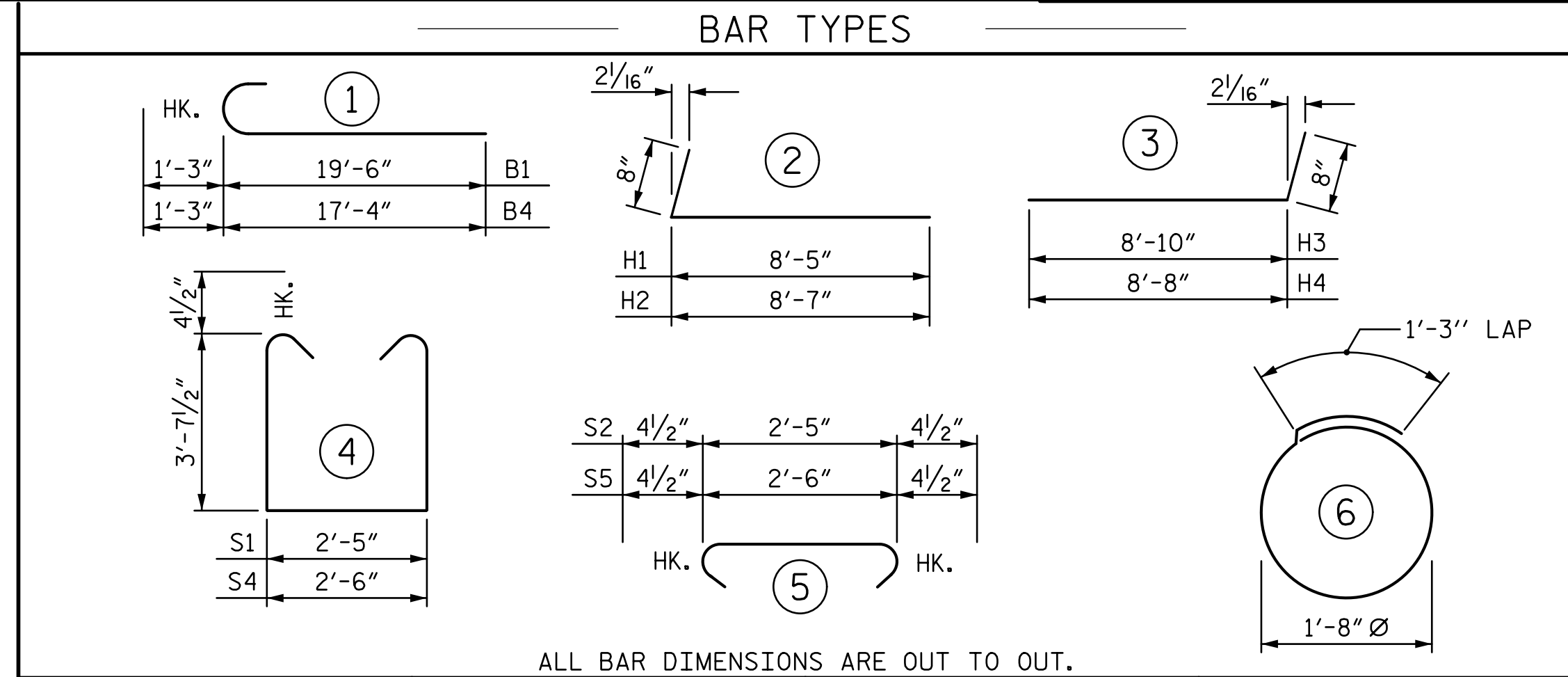


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

TEMPORARY DRAINAGE AT END BENT

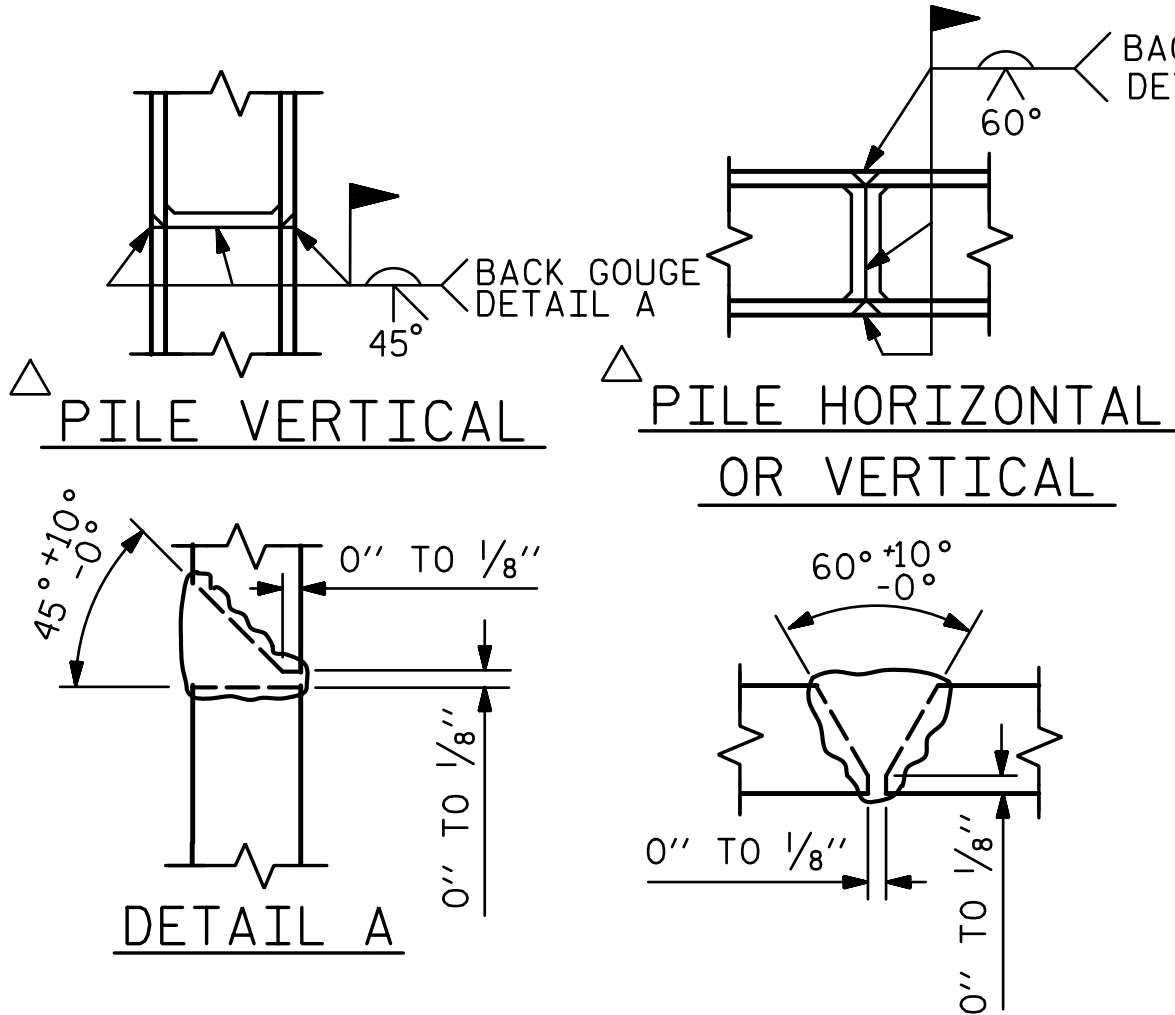


ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1 (STAGE 1)	END BENT No. 1 (STAGE 2)	END BENT No. 2 (STAGE 1)	END BENT No. 2 (STAGE 2)
HP 12 X 53 STEEL PILES NO: 3 LIN. FT.= 120.0	HP 12 X 53 STEEL PILES NO: 2 LIN. FT.= 40.0	HP 12 X 53 STEEL PILES NO: 3 LIN. FT.= 45.0	HP 12 X 53 STEEL PILES NO: 2 LIN. FT.= 30.0
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 3	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 2	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 3	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 2
PREDRILLING FOR PILES LIN. FT.= 30.0	PREDRILLING FOR PILES LIN. FT.= 20.0	PREDRILLING FOR PILES LIN. FT.= 30.0	PREDRILLING FOR PILES LIN. FT.= 20.0
STEEL PILE POINTS NO: 3	STEEL PILE POINTS NO: 2	STEEL PILE POINTS NO: 3	STEEL PILE POINTS NO: 2

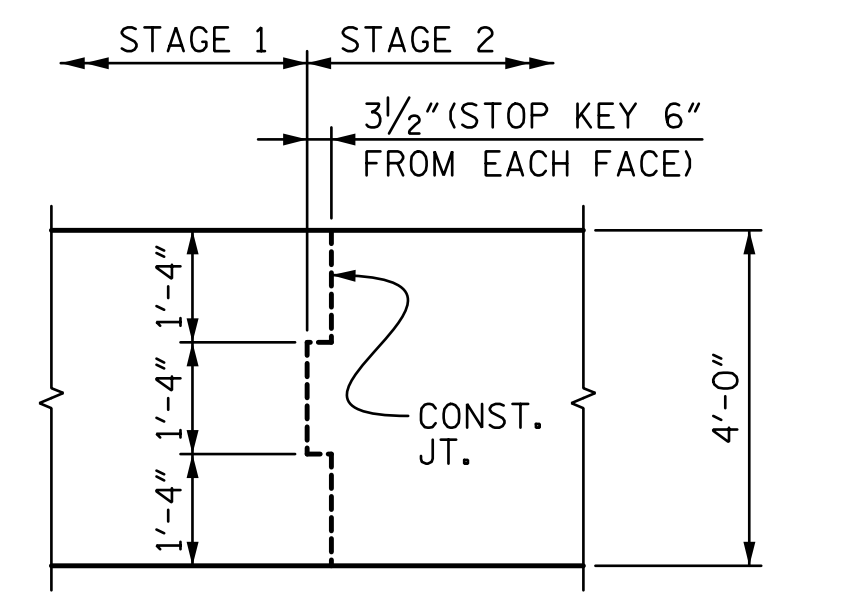
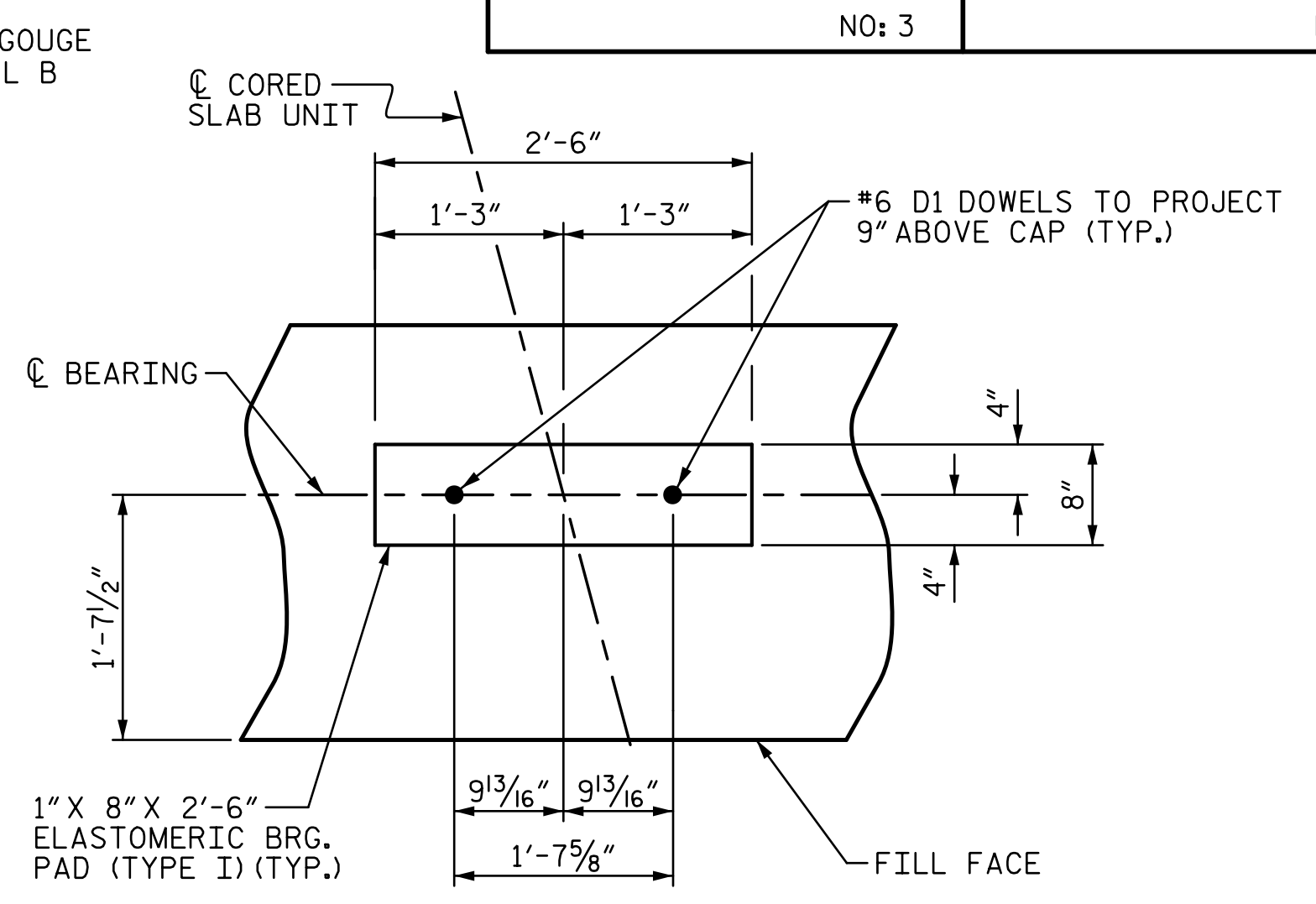
BILL OF MATERIAL					
END BENT 1 (STAGE 1)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	20'-9"	564
B2	14	#4	STR	19'-6"	182
B3	5	#4	STR	2'-5"	8
D1	10	#6	STR	1'-6"	23
H1	10	#4	2	9'-1"	61
H2	10	#4	2	9'-3"	62
K1	8	#4	STR	3'-1"	16
S1	23	#4	4	10'-5"	160
S2	23	#4	5	3'-2"	49
S3	12	#4	6	6'-6"	52
S4	1	#4	4	10'-6"	7
S5	1	#4	5	3'-3"	2
V1	26	#4	STR	6'-2"	107
REINFORCING STEEL				1293 LBS.	
CLASS A CONCRETE BREAKDOWN				POUR #1 CAP, LOWER PART OF WINGS & COLLARS 9.3 C.Y.	
POUR #2 UPPER PART OF WINGS				1.0 C.Y.	
TOTAL CLASS A CONCRETE				10.3 C.Y.	

BILL OF MATERIAL					
END BENT 1 (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	5	#4	STR	2'-5"	8
B4	8	#9	1	18'-7"	505
B5	14	#4	STR	17'-4"	162
D1	10	#6	STR	1'-6"	23
H3	10	#4	3	9'-6"	63
H4	10	#4	3	9'-4"	62
K1	8	#4	STR	3'-1"	16
S1	24	#4	4	10'-5"	167
S2	24	#4	5	3'-2"	51
S3	8	#4	6	6'-6"	35
S4	1	#4	4	10'-6"	7
S5	1	#4	5	3'-3"	2
V1	27	#4	STR	6'-2"	111
REINFORCING STEEL				1212 LBS.	
CLASS A CONCRETE BREAKDOWN				POUR #1 CAP, LOWER PART OF WINGS & COLLARS 9.1 C.Y.	
POUR #2 UPPER PART OF WINGS				1.1 C.Y.	
TOTAL CLASS A CONCRETE				10.2 C.Y.	



PILE SPLICE DETAILS

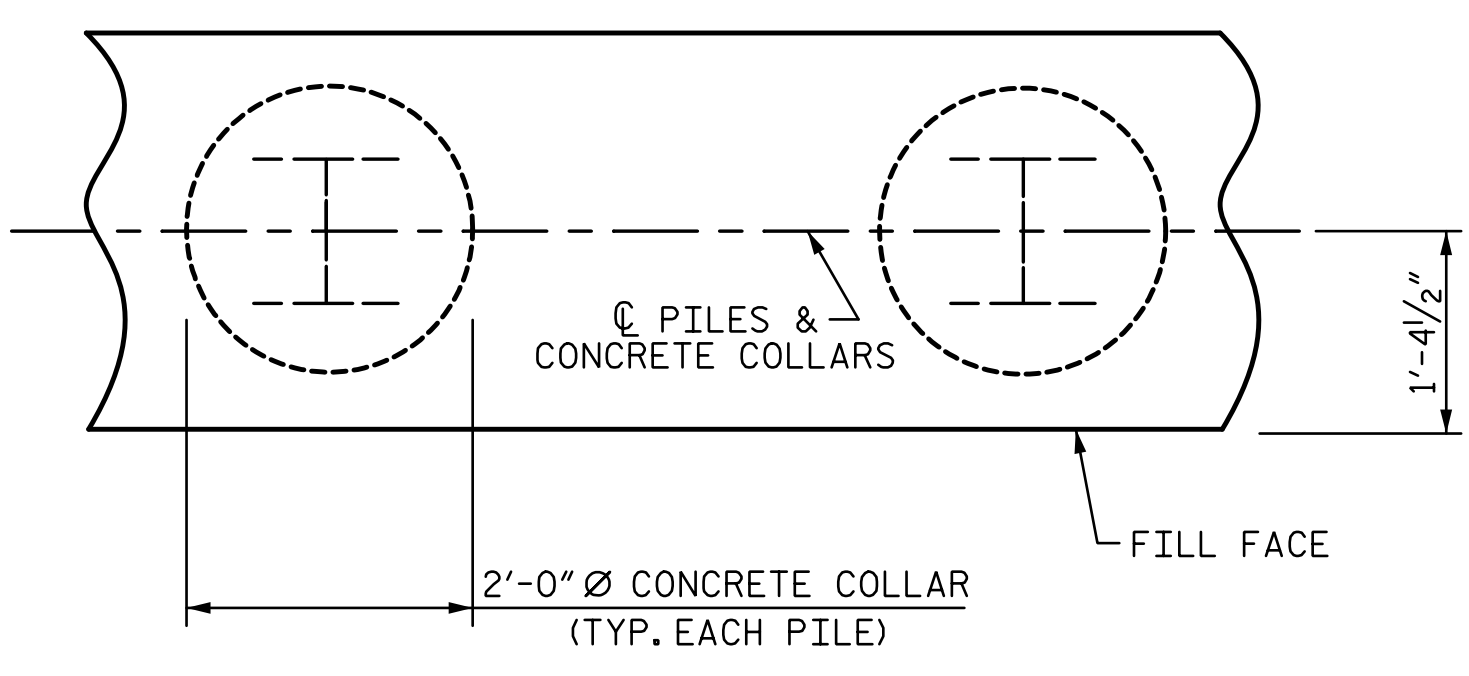
POSITION OF PILE DURING WELDING.



CONST. JT. DETAIL

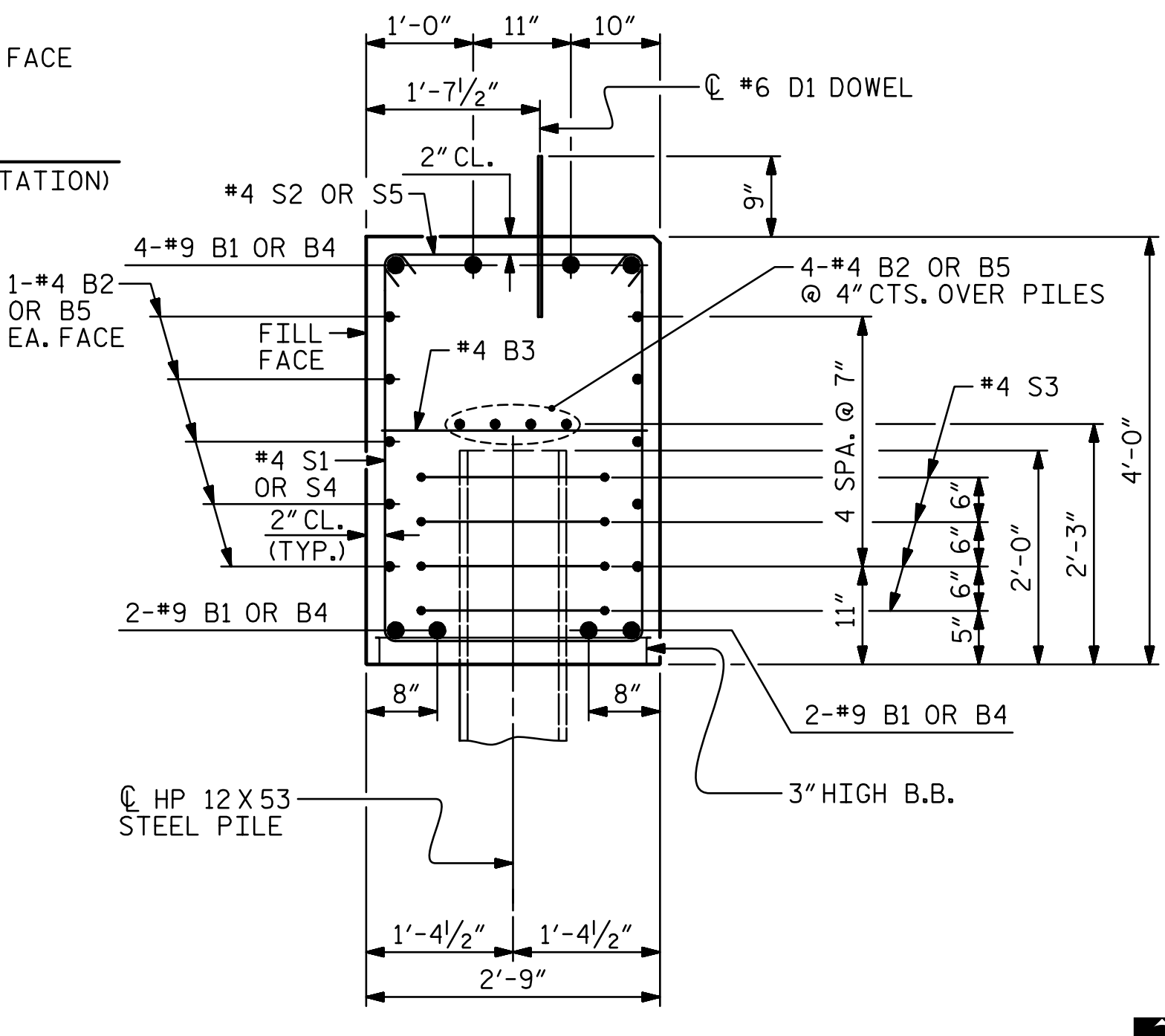
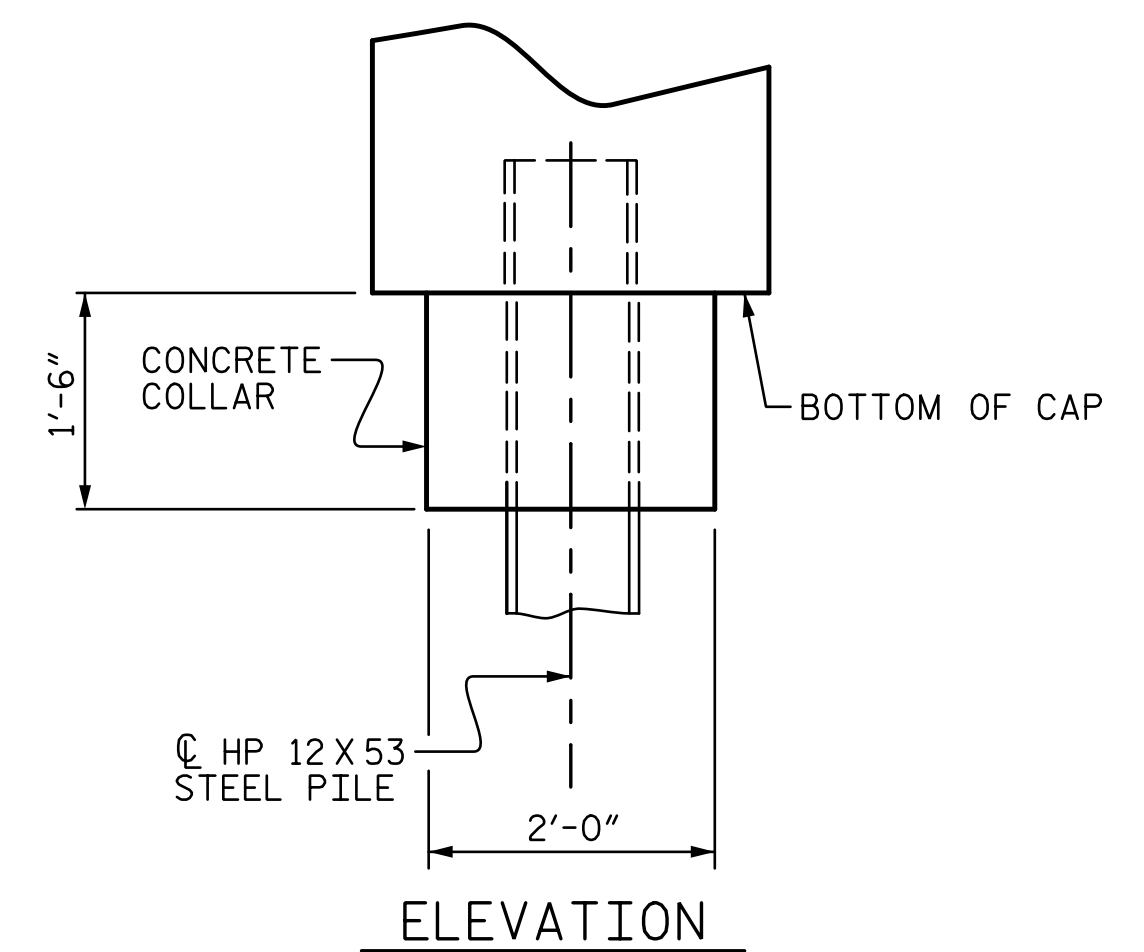
BILL OF MATERIAL					
END BENT 2 (STAGE 1)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	20'-9"	564
B2	14	#4	STR	19'-6"	182
B3	5	#4	STR	2'-5"	8
D1	10	#6	STR	1'-6"	23
H3	10	#4	3	9'-6"	63
H4	10	#4	3	9'-4"	62
K1	8	#4	STR	3'-1"	16
S1	23	#4	4	10'-5"	160
S2	23	#4	5	3'-2"	49
S3	12	#4	6	6'-6"	52
S4	1	#4	4	10'-6"	7
S5	1	#4	5	3'-3"	2
V1	27	#4	STR	6'-2"	111
REINFORCING STEEL				1299 LBS.	
CLASS A CONCRETE BREAKDOWN				POUR #1 CAP, LOWER PART OF WINGS & COLLARS 9.3 C.Y.	
POUR #2 UPPER PART OF WINGS				1.1 C.Y.	
TOTAL CLASS A CONCRETE				10.4 C.Y.	

BILL OF MATERIAL					
END BENT 2 (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	5	#4	STR	2'-5"	8
B4	8	#9	1	18'-7"	505
B5	14	#4	STR	17'-4"	162
D1	10	#6	STR	1'-6"	23
H1	10	#4	2	9'-1"	61
H2	10	#4	2	9'-3"	62
K1	8	#4	STR	3'-1"	16
S1	24	#4	4	10'-5"	167
S2	24	#4	5	3'-2"	51
S3	8	#4	6	6'-6"	35
S4	1	#4	4	10'-6"	7
S5	1	#4	5	3'-3"	2
V1	26	#4	STR	6'-2"	107
REINFORCING STEEL				1206 LBS.	
CLASS A CONCRETE BREAKDOWN				POUR #1 CAP, LOWER PART OF WINGS & COLLARS 9.1 C.Y.	
POUR #2 UPPER PART OF WINGS				1.0 C.Y.	
TOTAL CLASS A CONCRETE				10.1 C.Y.	



CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)

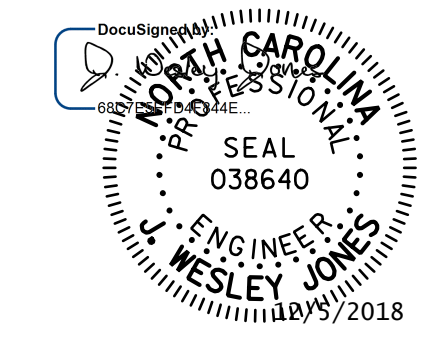


(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

PROJECT NO. 17BP.14.R.156
 MACON COUNTY
 STATION: 13+76.00 -L-

SHEET 4 OF 4

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 SUBSTRUCTURE
 END BENT DETAILS



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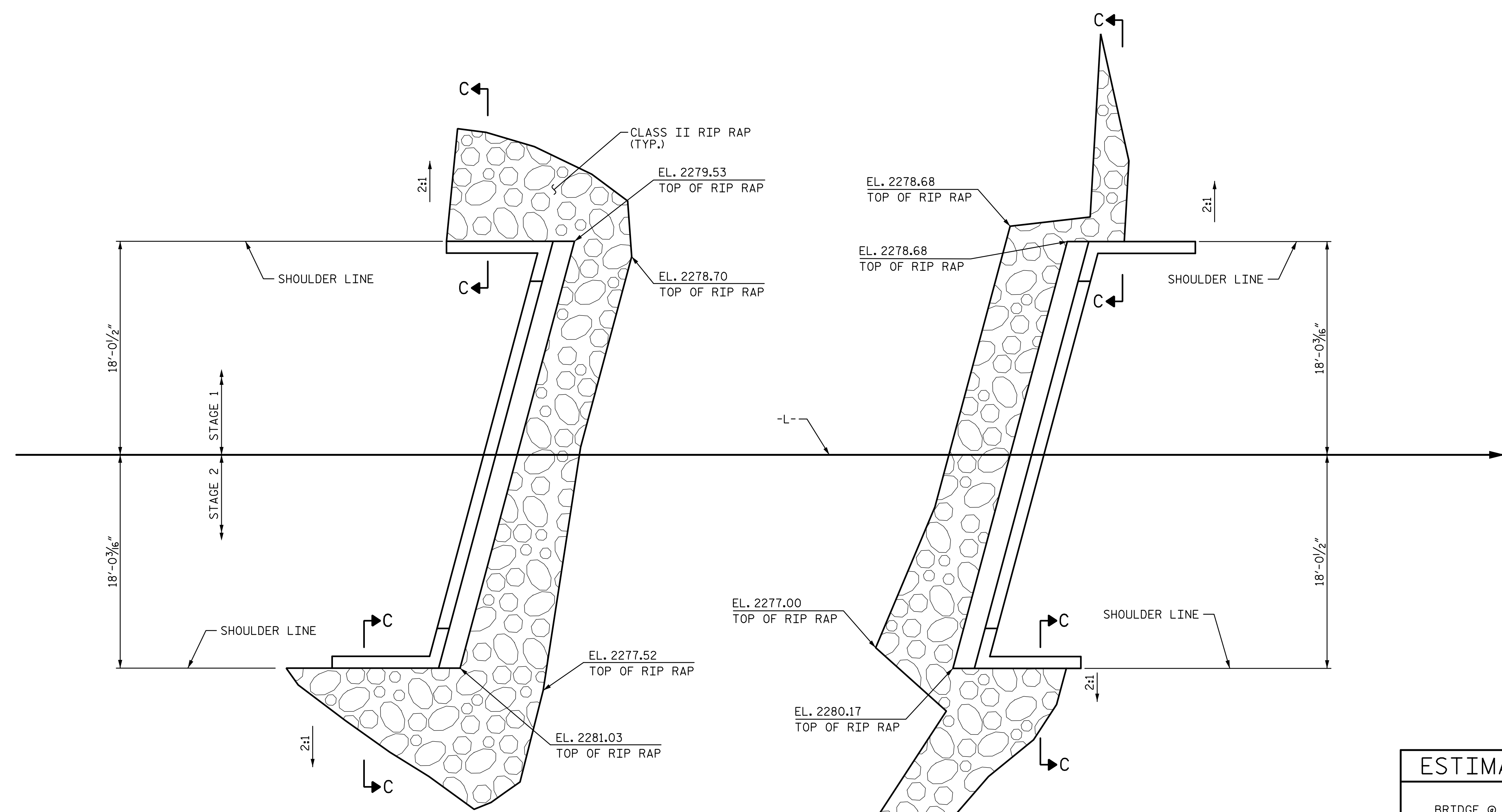
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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1			3		
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S-13
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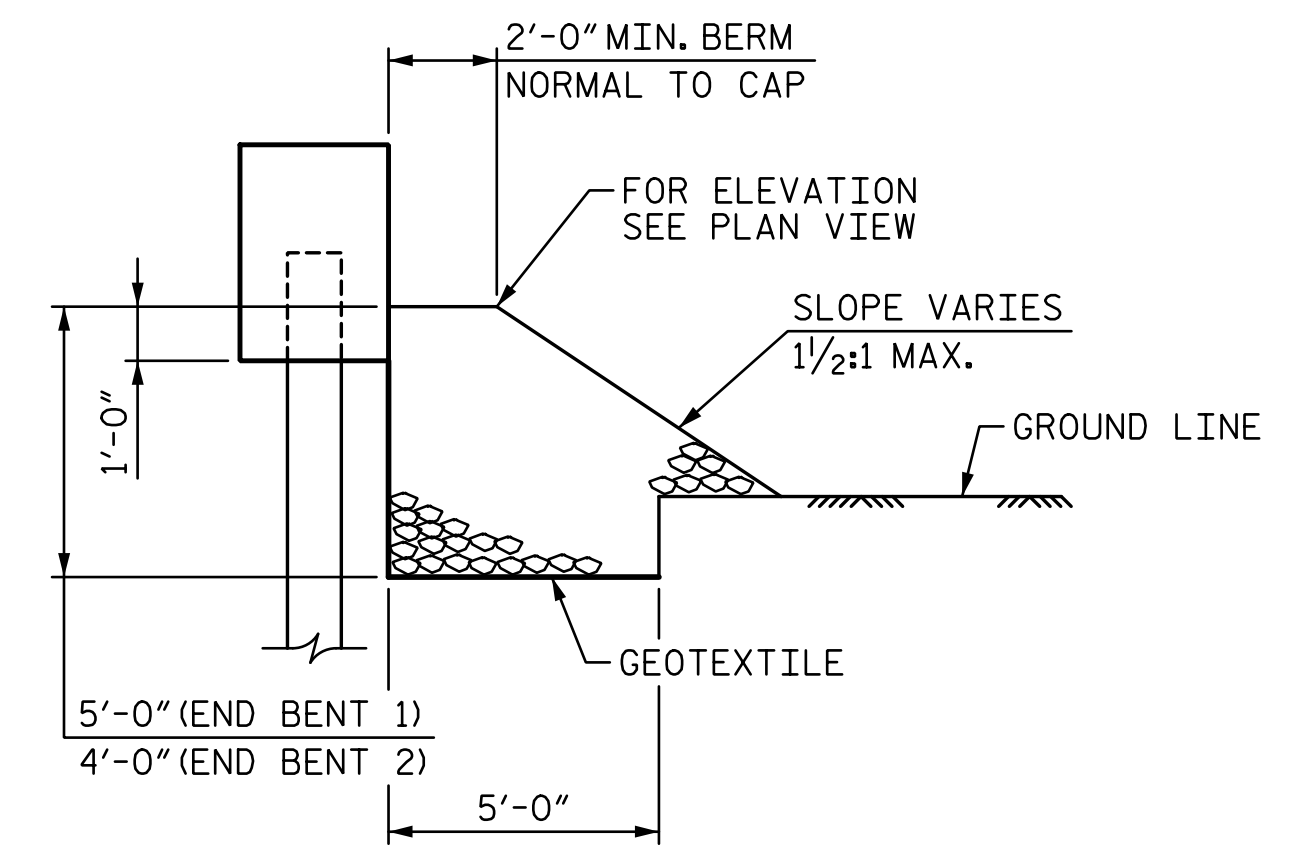
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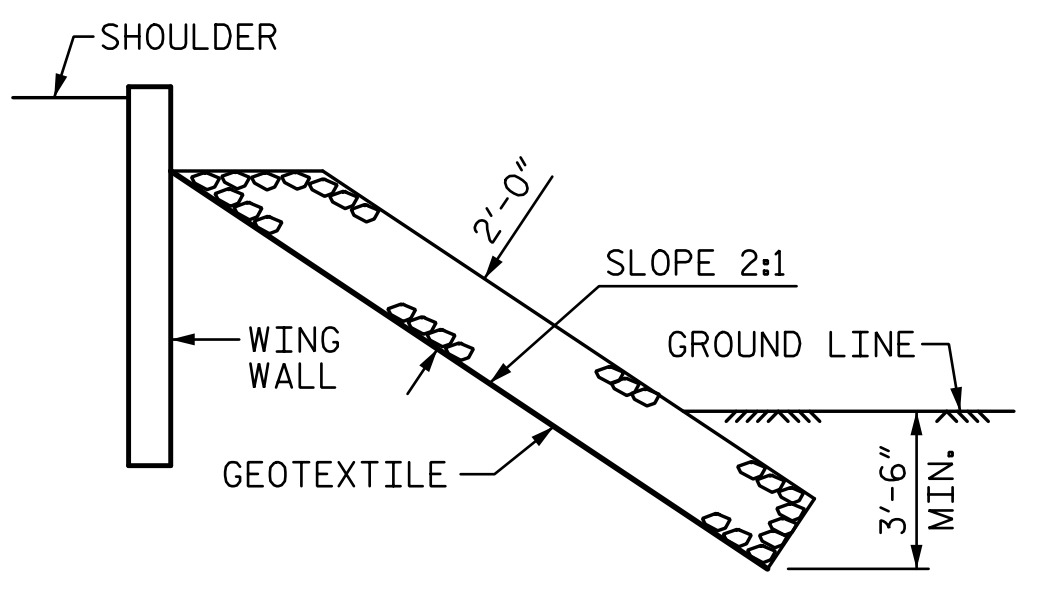
PLAN - END BENT 1

PLAN - END BENT 2

ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+76.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	95	95
END BENT 2	80	80

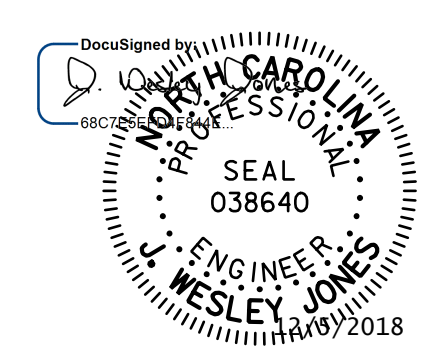


SECTION BERM RIP RAPPED



SECTION C-C

PROJECT NO. 17BP.14.R.156
MACON COUNTY
 STATION: 13+76.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RIP RAP DETAILS

DRAWN BY :	LEM	DATE :	12-17
CHECKED BY :	JWJ	DATE :	1-18
DESIGN ENGINEER OF RECORD :	JWJ	DATE :	9-18

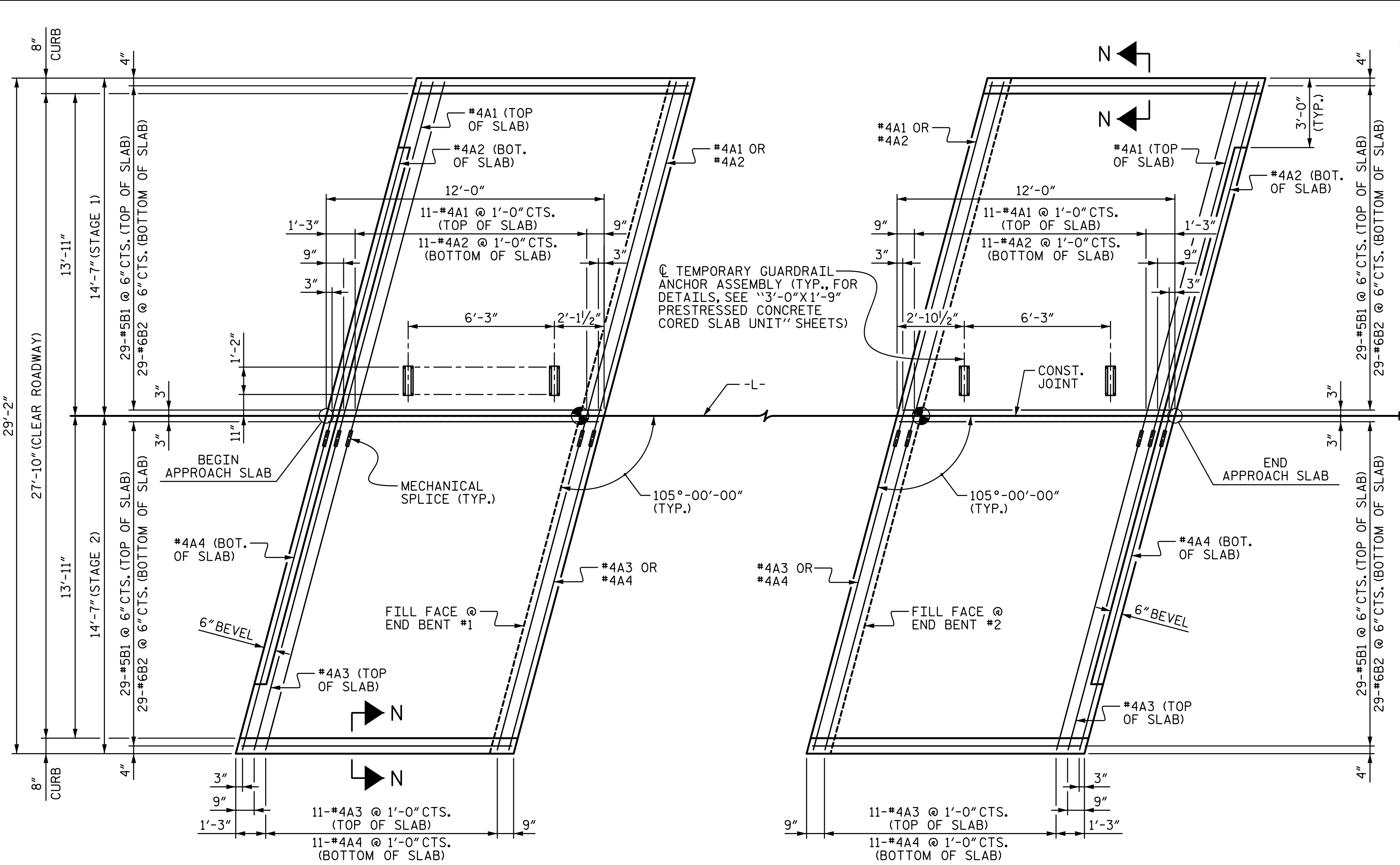
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TOTAL SHEETS	15
SHEET NO.	S-14

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PLAN @ END BENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

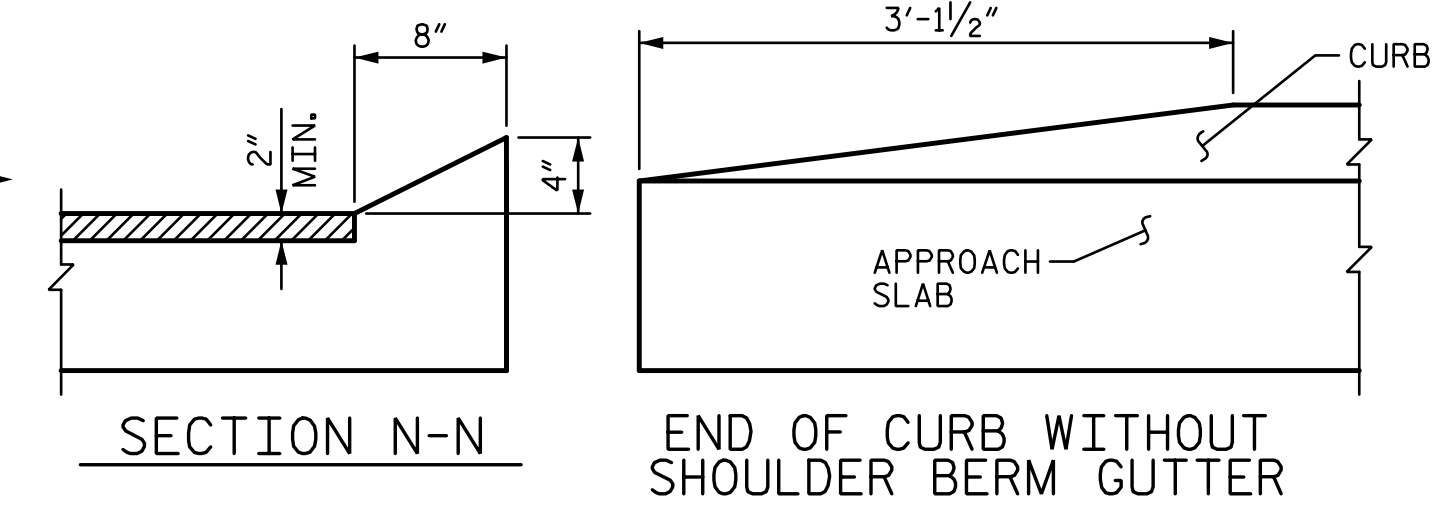
SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

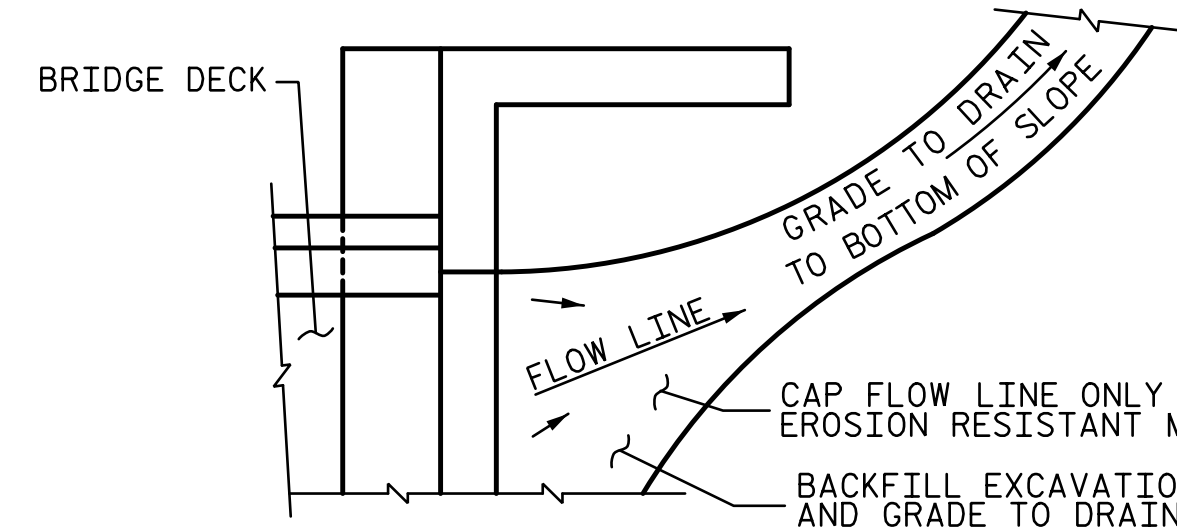
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

FOR MECHANICAL SPLICES, SEE SECTION 425-5(B) OF THE STANDARD SPECIFICATIONS.

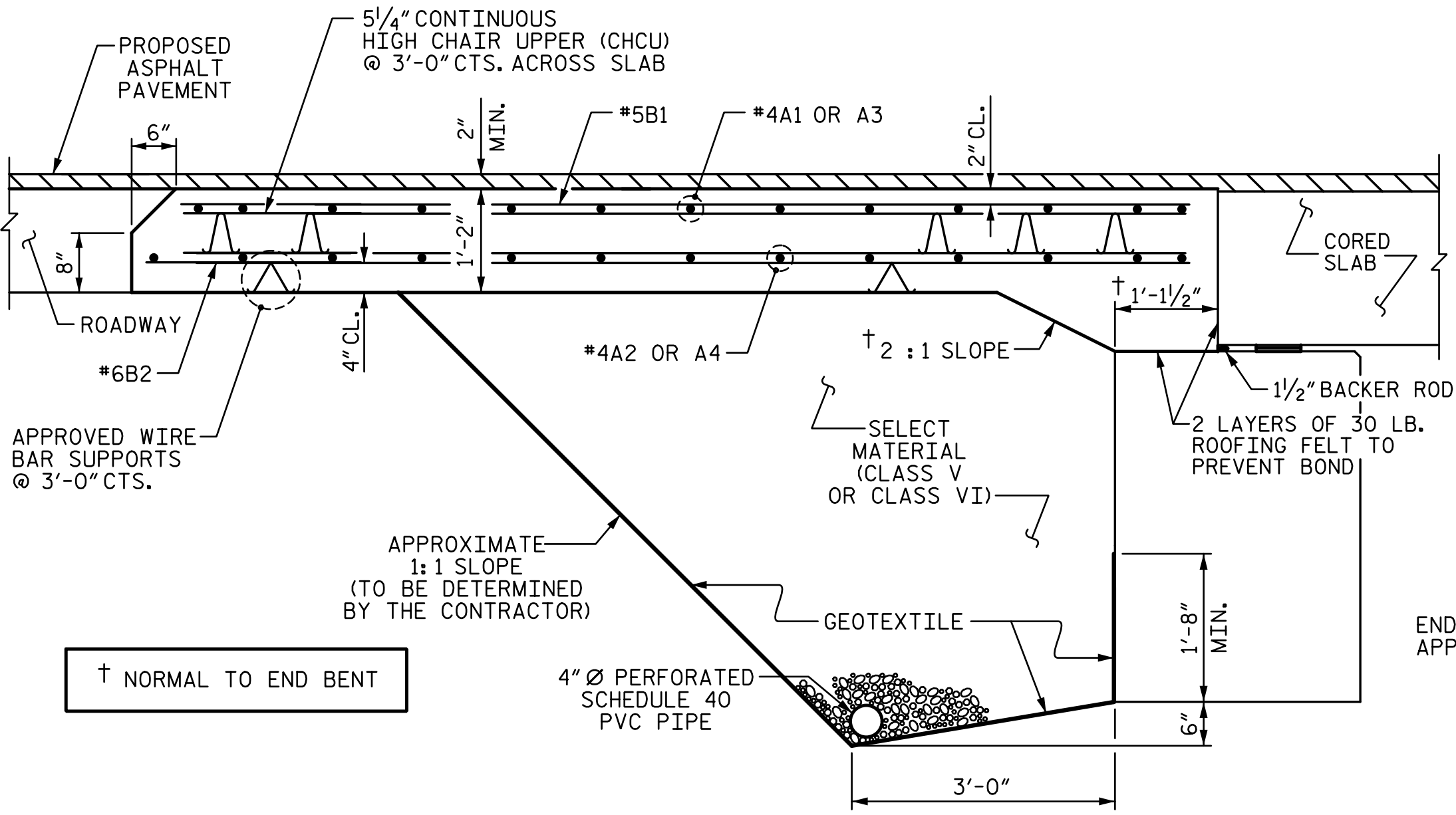


CURB DETAILS



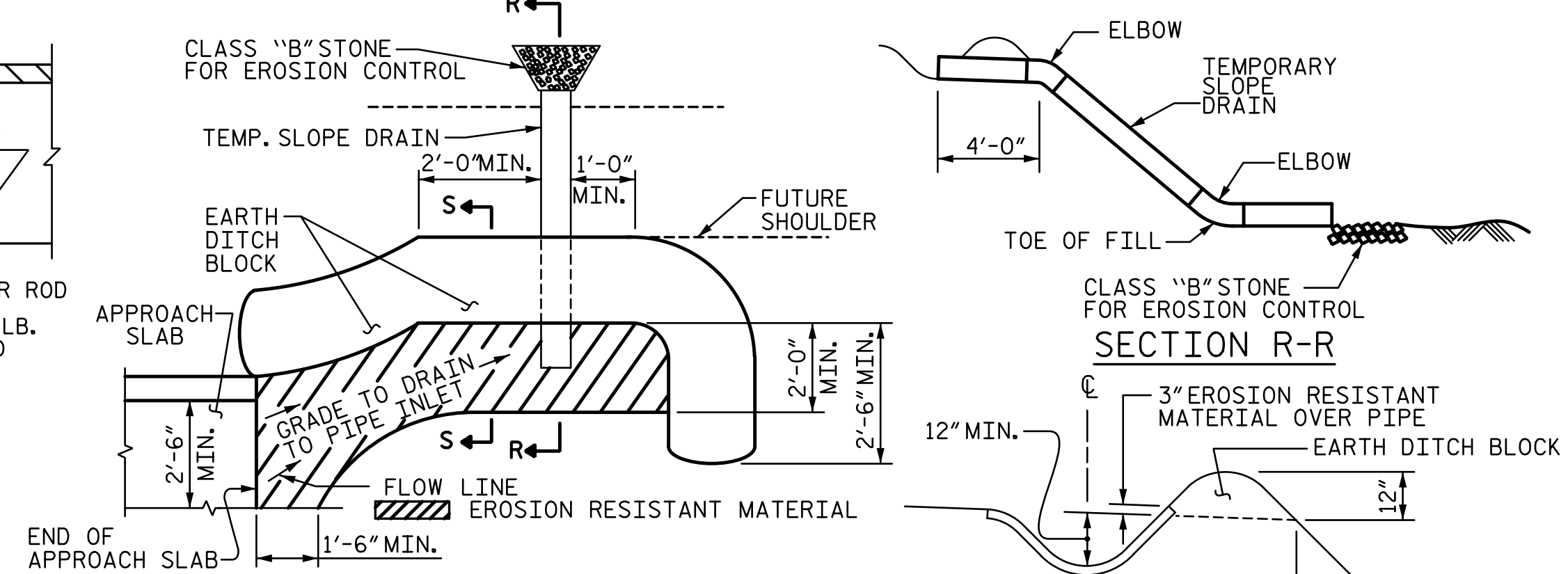
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL



SECTION THRU SLAB

(TYPE II - MODIFIED APPROACH FILL)



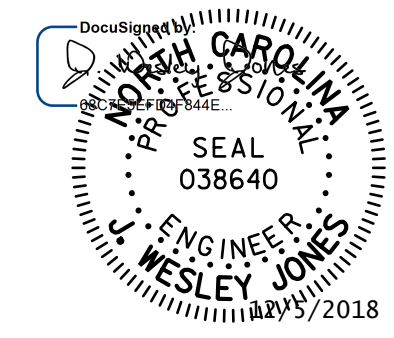
PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

BILL OF MATERIAL						
APPROACH SLAB AT EB 1 (STAGE 1)						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	15'-11"	138	
A2	13	#4	STR	15'-11"	138	
*B1	29	#5	STR	11'-1"	335	
B2	29	#6	STR	11'-7"	505	
REINFORCING STEEL					LBS.	643
*EPOXY COATED REINFORCING STEEL					LBS.	473
CLASS AA CONCRETE					C. Y.	8.7
APPROACH SLAB AT EB 1 (STAGE 2)						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A3	13	#4	STR	13'-11"	121	
A4	13	#4	STR	13'-11"	121	
*B1	29	#5	STR	11'-1"	335	
B2	29	#6	STR	11'-7"	505	
REINFORCING STEEL					LBS.	626
*EPOXY COATED REINFORCING STEEL					LBS.	456
CLASS AA CONCRETE					C. Y.	8.7
APPROACH SLAB AT EB 2 (STAGE 1)						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	13	#4	STR	15'-11"	138	
A2	13	#4	STR	15'-11"	138	
*B1	29	#5	STR	11'-1"	335	
B2	29	#6	STR	11'-7"	505	
REINFORCING STEEL					LBS.	643
*EPOXY COATED REINFORCING STEEL					LBS.	473
CLASS AA CONCRETE					C. Y.	8.7
APPROACH SLAB AT EB 2 (STAGE 2)						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A3	13	#4	STR	13'-11"	121	
A4	13	#4	STR	13'-11"	121	
*B1	29	#5	STR	11'-1"	335	
B2	29	#6	STR	11'-7"	505	
REINFORCING STEEL					LBS.	626
*EPOXY COATED REINFORCING STEEL					LBS.	456
CLASS AA CONCRETE					C. Y.	8.7

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 STATION: 13+76.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 105° SKEW

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1				TOTAL SHEETS
2				15

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