

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

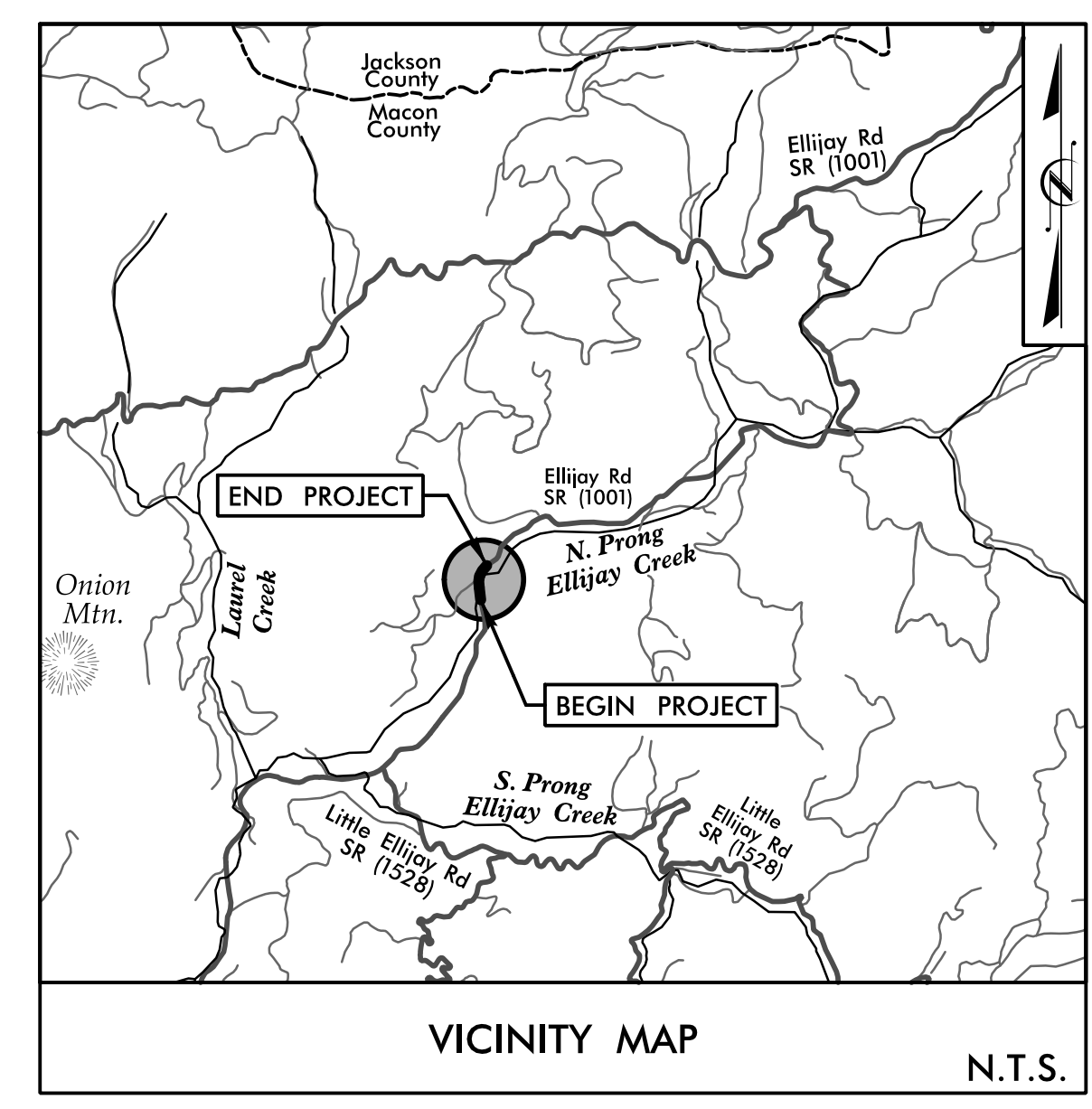
**This file or an individual page
shall not be considered a certified document.**

PROJECT TIP: B-6029
CONTRACT: DN00477

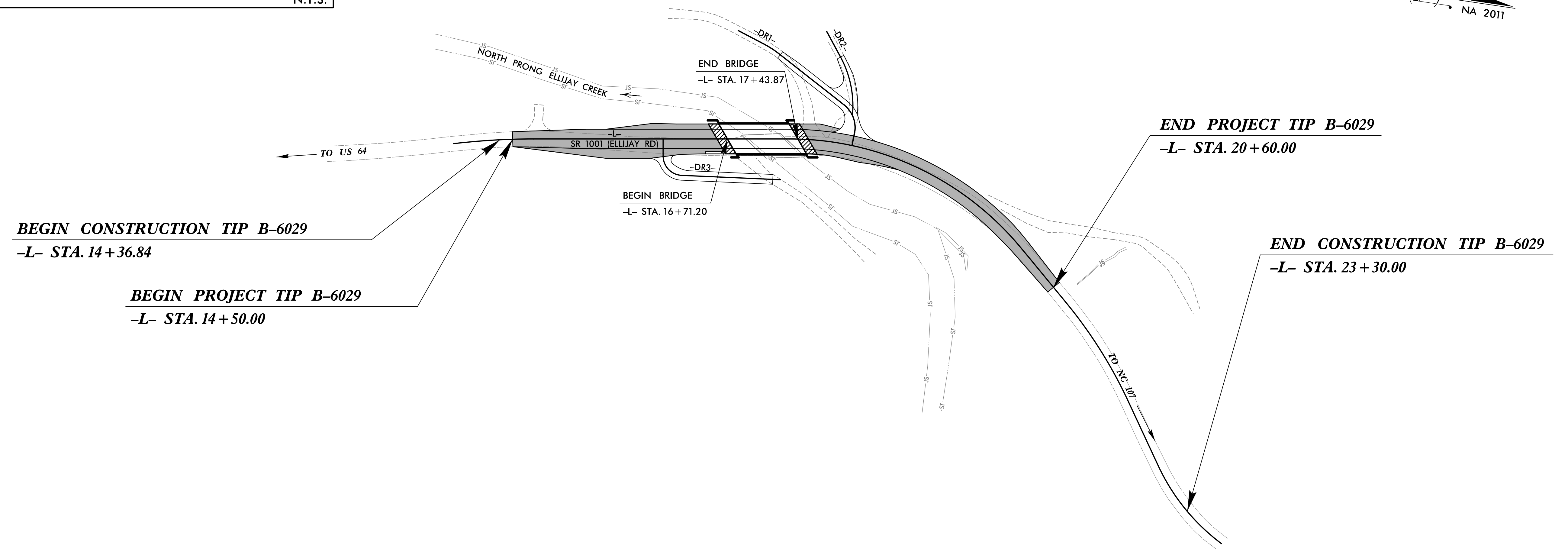
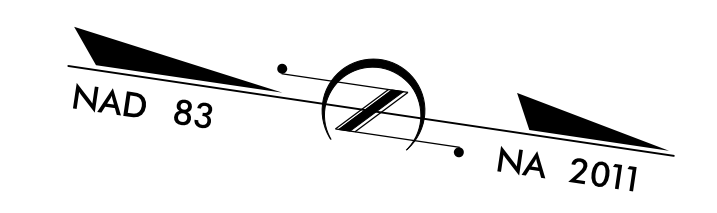
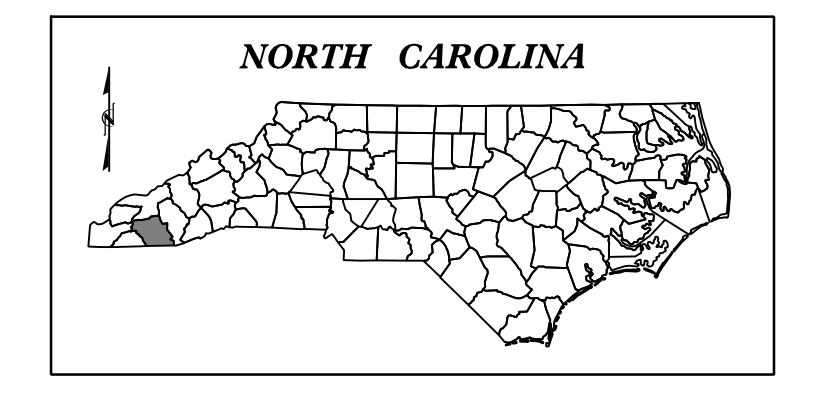
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MACON COUNTY

LOCATION: BRIDGE #550009 OVER NORTH PRONG ELLIJAY CREEK ON SR 1001 (ELLIJAY RD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURE



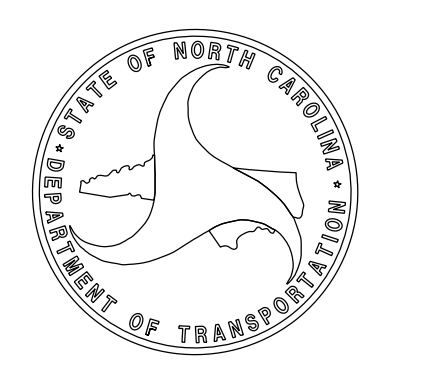
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6029		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48224.1.1		P.E.	
48224.2.1		ROW & UTILITIES	
48224.3.1		CONSTRUCTION	

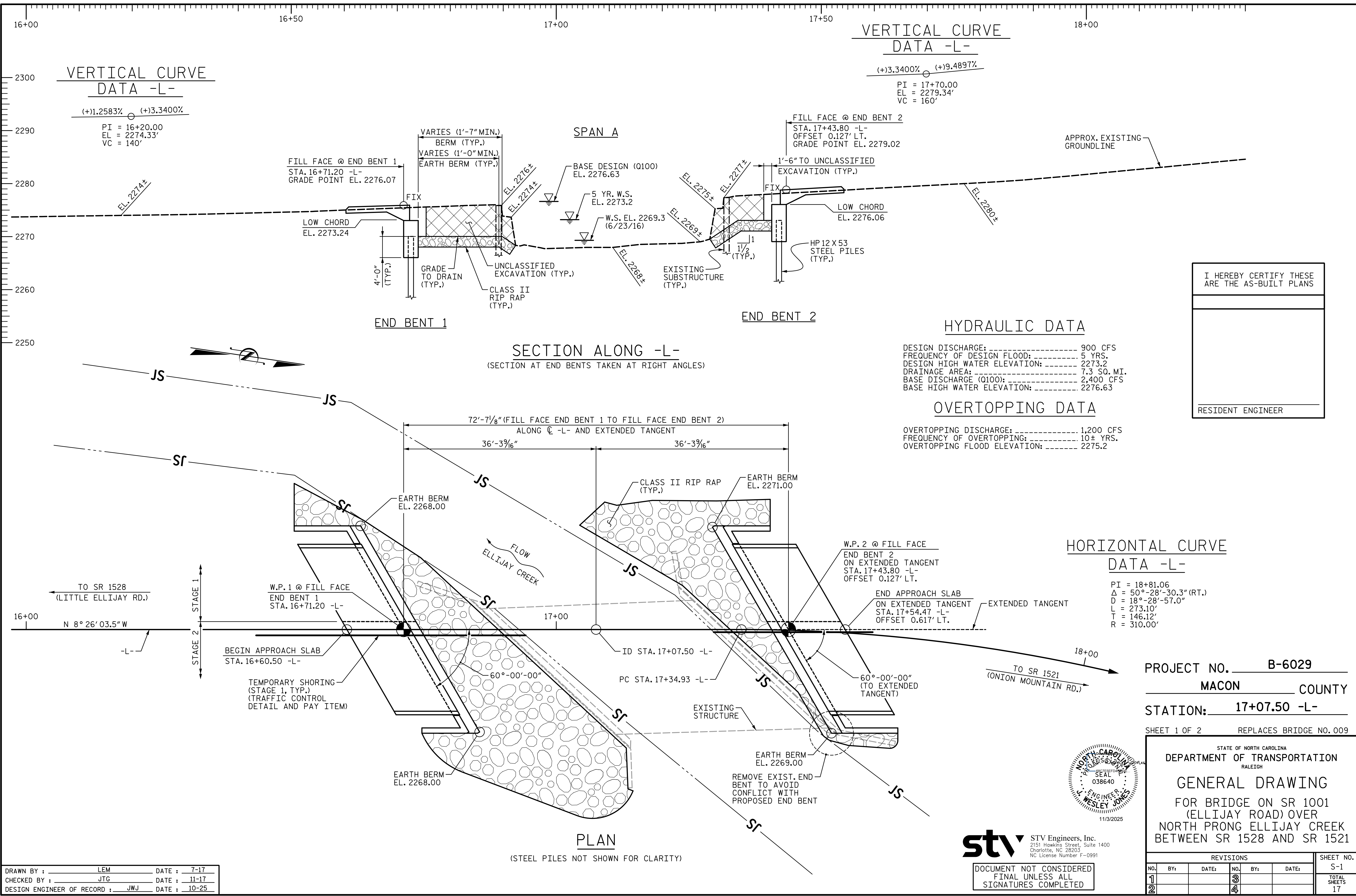


STRUCTURES

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

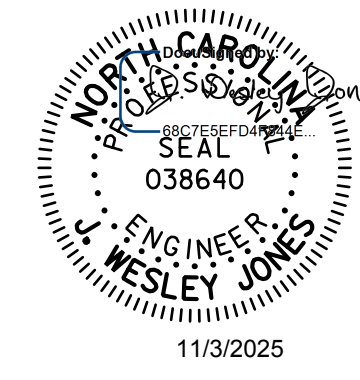
<p>DESIGN DATA</p> <p>ADT 2012 = 420 ADT 2025 = 840 DHV = N/A D = N/A T = 6% V = 30 MPH</p> <p>FUNC. CLASSIFICATION: COLLECTOR SUBREGIONAL TIER</p>	<p>PROJECT LENGTH</p> <p>LENGTH OF ROADWAY PROJECT TIP B-6029 = 0.102 MILES LENGTH OF STRUCTURE PROJECT TIP B-6029 = 0.014 MILES TOTAL LENGTH OF PROJECT TIP B-6029 = 0.116 MILES</p>	<p>PLANS PREPARED FOR THE NCDOT BY:</p> <p>stv STV Engineers, Inc. 2151 Hawks Street, Suite 1400 Charlotte, NC 28203 NC License Number F-0991</p>		<p>STRUCTURES ENGINEER</p> <p> J. WESLEY JONES, PE PROJECT ENGINEER</p>
		<p>NCDOT CONTACT: <u>ADAM DOCKERY</u> Division Bridge Manager</p>		





I HEREBY CERTIFY THESE ARE THE AS-BUILT PLANS

RESIDENT ENGINEER



stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. **B-6029**
MACON COUNTY
 STATION: **17+07.50 -L-**
 SHEET 1 OF 2 REPLACES BRIDGE NO. 009

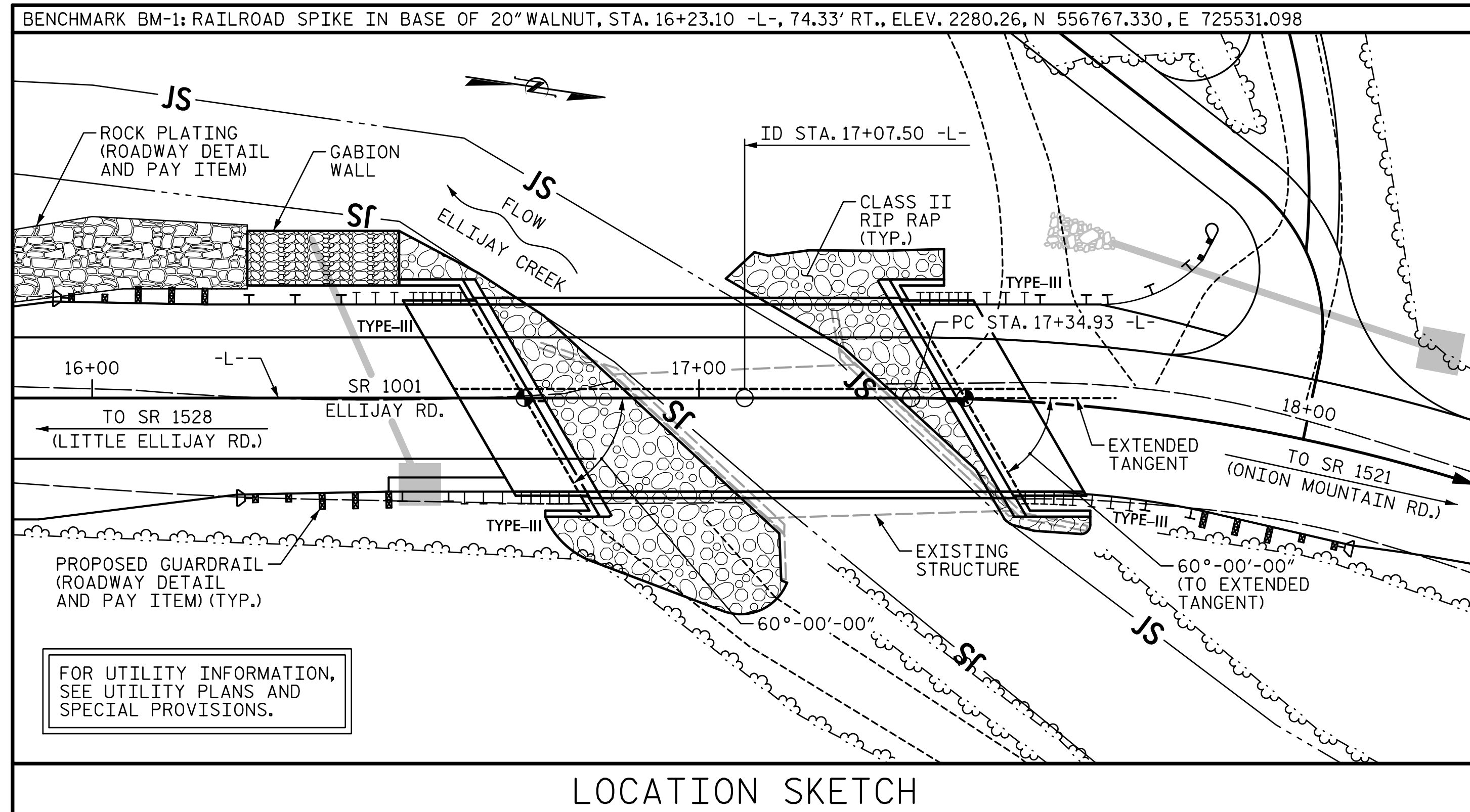
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1001
 (ELLIJAY ROAD) OVER
 NORTH PRONG ELLIJAY CREEK
 BETWEEN SR 1528 AND SR 1521

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

TOTAL SHEETS 17

R:\Structures\station\401\001\TBP\14.R\158_SML_GD01_001_550009.dgn
 10/31/2025 5:01:36 PM Jones

DRAWN BY : LEM DATE : 7-17
 CHECKED BY : JTG DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

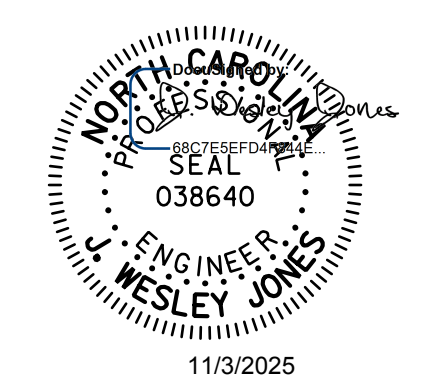


GENERAL NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE "STANDARD NOTES" SHEET.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
 THE EXISTING STRUCTURE CONSISTING OF (1) 41'-0"± TIMBER FLOOR ON STEEL I-BEAMS SPAN WITH A CLEAR ROADWAY WIDTH OF 24'-0 1/2" ON YOUNT MASONRY ABUTMENTS AND LOCATED AT THE PROPOSED STRUCTURE 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 REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION FOR REVIEW IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS. SEE PLAN AND ELEVATION FOR ADDITIONAL NOTE.
 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 17+07.50 -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 APPROXIMATELY 20 FT± (LEFT) AND 30 FT± (RIGHT) AT END BENT 1 AND 24 FT± (LEFT) AND 20 FT± (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, SEE SPECIAL PROVISIONS.

FOUNDATION NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 PILES AT END BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 95 TONS PER PILE.
 DRILLED-IN PILES ARE REQUIRED FOR END BENT 1. EXCAVATE HOLES AT PILE LOCATIONS TO ELEV. 2256.4 FEET. FOR PILE EXCAVATION, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 DRIVE PILES AT END BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.
 PILES AT END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 95 TONS PER PILE.
 DRILLED-IN PILES ARE REQUIRED FOR END BENT 2. EXCAVATE HOLES AT PILE LOCATIONS TO ELEV. 2259.2 FEET. FOR PILE EXCAVATION, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 DRIVE PILES AT END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 160 TONS PER PILE.
 CONCRETE IS REQUIRED TO FILL HOLES FOR PILE EXCAVATION AT END BENT 1 AND END BENT 2.
 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.



TOTAL BILL OF MATERIAL

SUPER-STRUCTURE	STAGE	REMOVAL OF EXISTING STRUCTURE AT STA. 17+07.50 -L-	ASBESTOS ASSESSMENT	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	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	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS	GABION RETAINING WALLS		
		LUMP SUM	LUMP SUM	LN. FT.	LN. FT.	LUMP SUM	CU. YD.	LUMP SUM	LBS.	EA.	NO.	LN. FT.	LN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LN. FT.	SQ. FT.
SUPER-STRUCTURE	STAGE 1															5	350.0		
	STAGE 2															6	420.0		
END BENT 1	STAGE 1				40.0		19.6		1,922	4	4	60.0						262.5	
	STAGE 2				30.0		21.1		1,988	3	3	45.0	115	125					
END BENT 2	STAGE 1			4.0	36.0		18.8		1,850	4	4	60.0							
	STAGE 2			3.0	27.0		21.9		2,060	3	3	45.0	60	70					
TOTAL		LUMP SUM	LUMP SUM	7.0	133.0	LUMP SUM	81.4	LUMP SUM	7,820	14	14	210.0	140.0	175	195	LUMP SUM	11	770.0	262.5

PROJECT NO. B-6029
MACON COUNTY
 STATION: 17+07.50 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1001
 (ELLIJAY ROAD) OVER
 NORTH PRONG ELLIJAY CREEK
 BETWEEN SR 1528 AND SR 1521

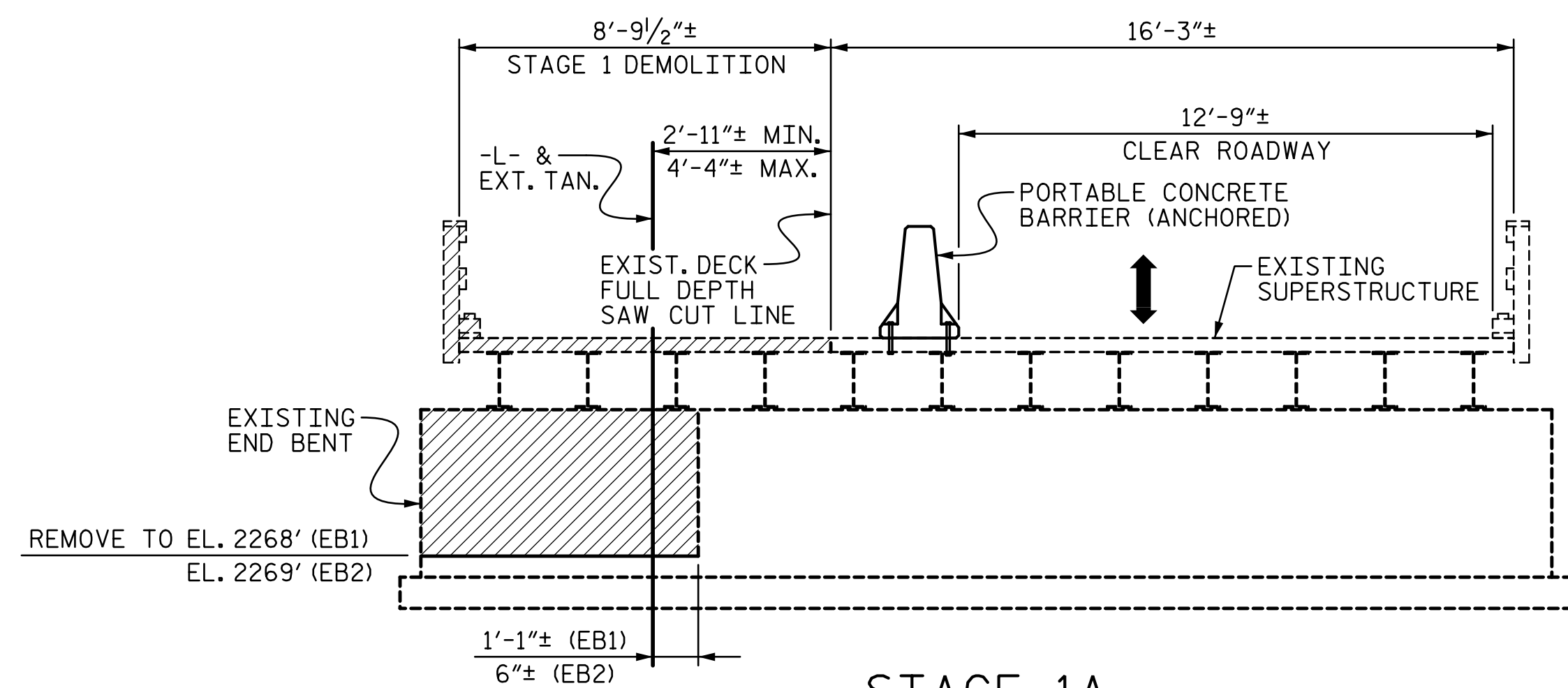


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			17

10/31/2025 5:01:37 PM R:\Structures\ustation\401_003_17BP_14.R\158_SML_GD02_002_550009.dgn

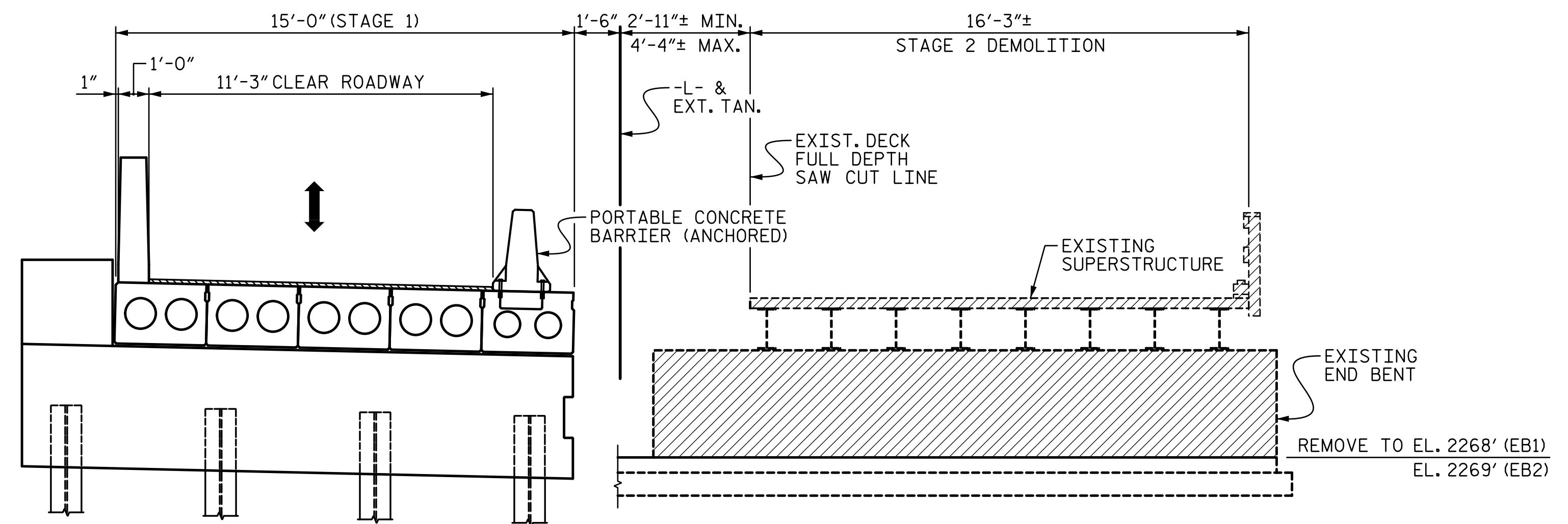
DRAWN BY : LEM DATE : 7-17
 CHECKED BY : JTG DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25



STAGE 1A

LOOKING UPSTATION
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

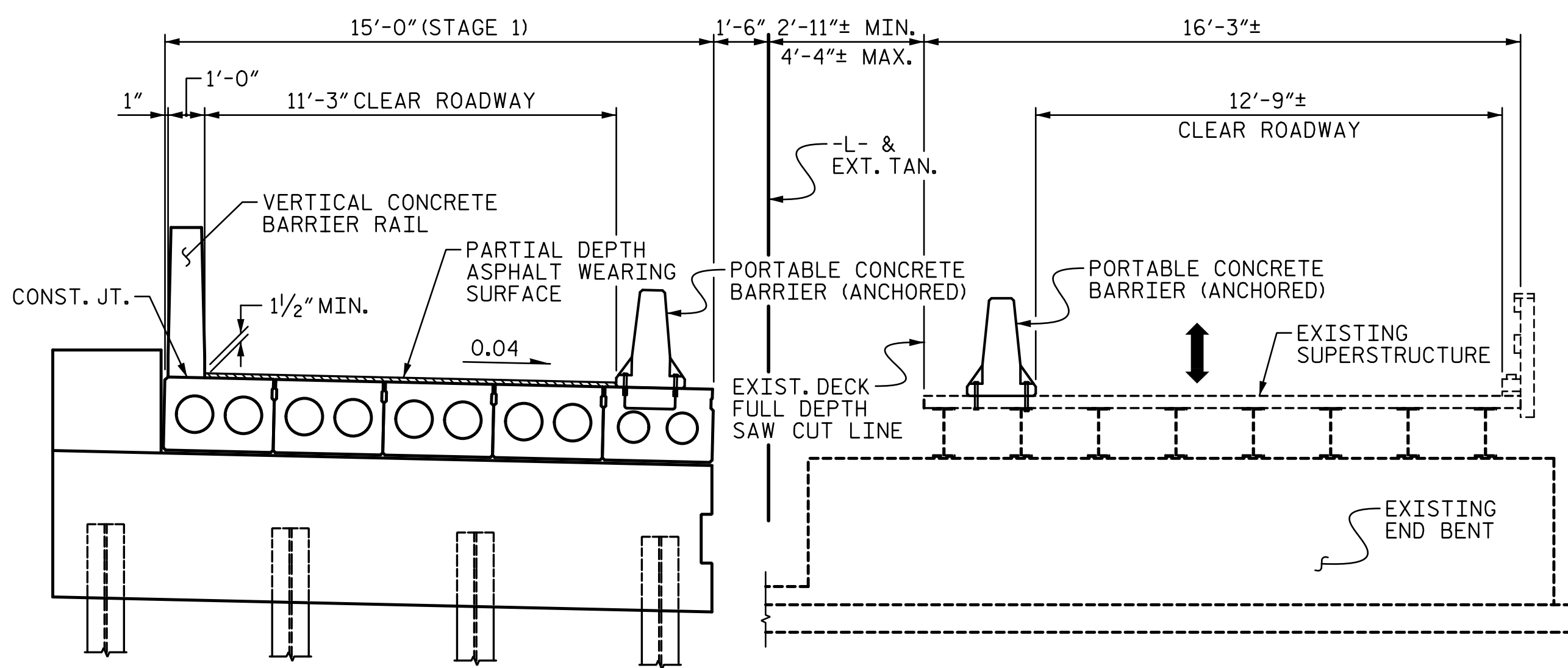
1. VERIFY EXISTING BRIDGE DIMENSIONS. CONTACT ENGINEER IF FIELD MEASUREMENTS VARY FROM PLAN DIMENSIONS.
2. ANCHOR PORTABLE CONCRETE BARRIER THROUGH EXISTING BRIDGE DECK AND TOP FLANGE OF STEEL BEAM.
3. SAW CUT AND REMOVE LEFT PORTION OF EXISTING DECK AND END BENTS.



STAGE 2A

LOOKING UPSTATION
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

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



STAGE 1B

LOOKING UPSTATION
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

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

NOTES:

- CONTRACTOR TO VERIFY LOCATION AND DIMENSIONS OF EXISTING BRIDGE.
STAGED DEMOLITION SHALL BE DETERMINED BY CONTRACTOR AND APPROVED BY THE ENGINEER.
DIMENSIONS ARE NORMAL TO \odot BRIDGE UNLESS OTHERWISE NOTED.

R:\Structures\ustation\401.005_17BP_14.R\58_SML_P01_003_550009.dgn

5:01:38 PM

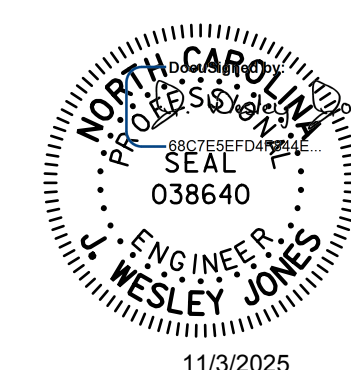
10/31/2025

Jones

DRAWN BY :	LEM	DATE :	7-17
CHECKED BY :	JTG	DATE :	11-17
DESIGN ENGINEER OF RECORD :	JWJ	DATE :	10-25

stv STV Engineers, Inc.
2151 Hawkins Street, Suite 1400
Charlotte, NC 28203
NC License Number F-0991

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



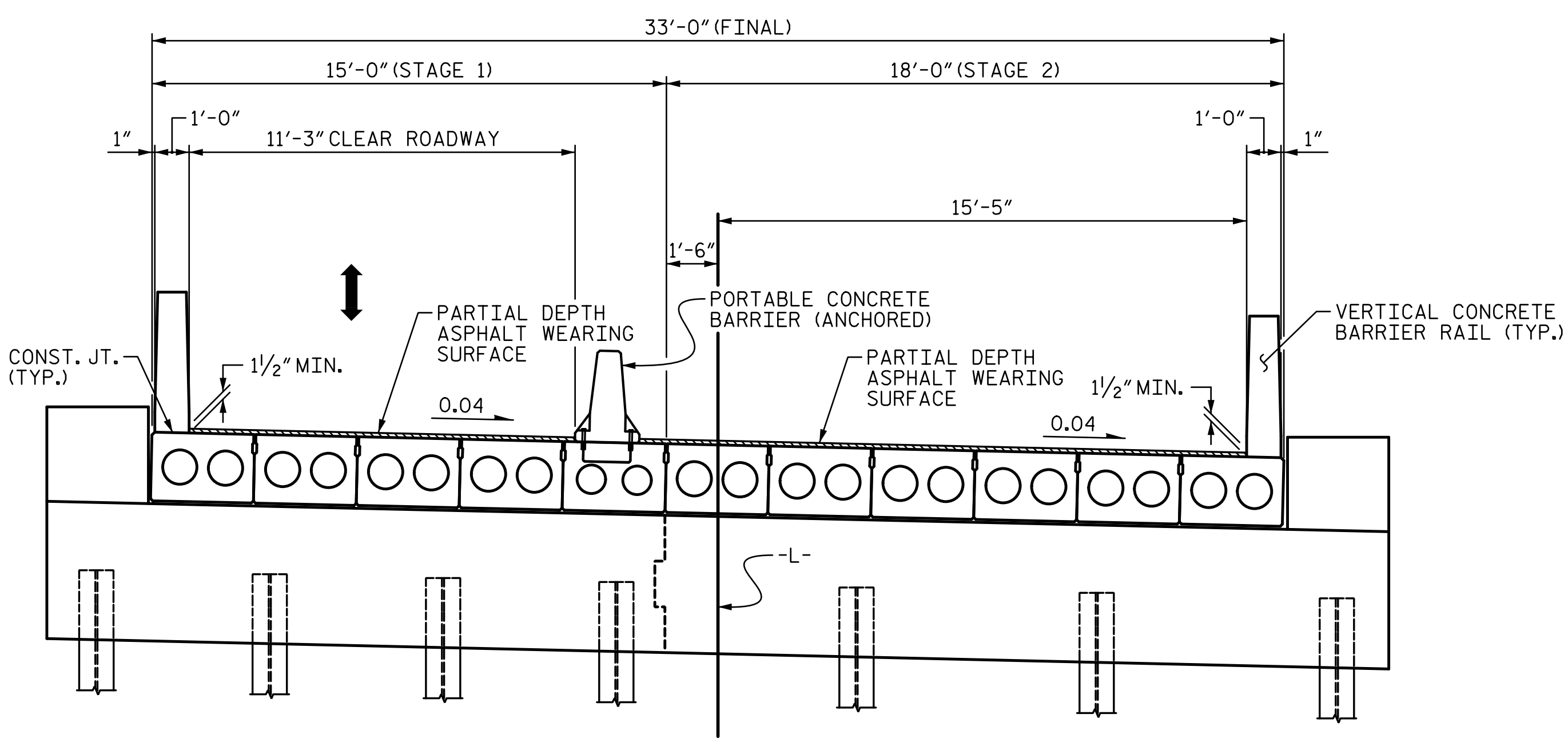
PROJECT NO. B-6029
MACON COUNTY
STATION: 17+07.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE STAGING PLAN

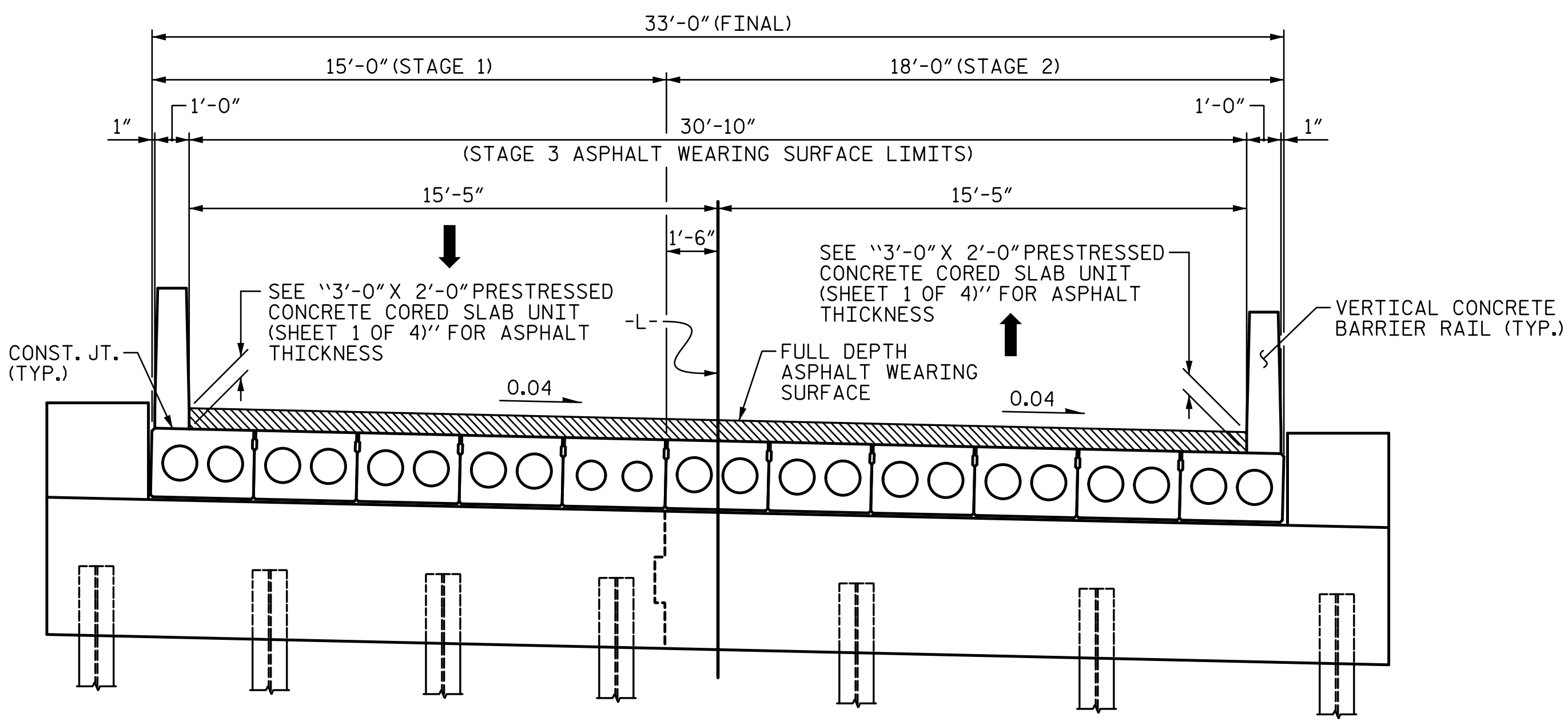
REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			17
2			4			



STAGE 2B

LOOKING UPSTATION
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

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



STAGE 3

LOOKING UPSTATION
(END BENT 1 SHOWN, END BENT 2 SIMILAR)

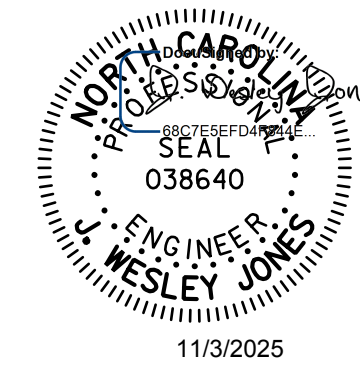
1. REMOVE PORTABLE CONCRETE BARRIER.
2. PAVE FULL DEPTH ASPHALT WEARING SURFACE TO THE LIMITS SHOWN.

PROJECT NO. B-6029

MACON COUNTY

STATION: 17+07.50 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE STAGING PLAN

stv STV Engineers, Inc.
2151 Hawkins Street, Suite 1400
Charlotte, NC 28203
NC License Number F-0991

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					17

R:\Structures\ustation\401.007_17BP_14.R\158_SMU_PC02_004_550009.dgn

5:01:39 PM

10/31/2025

DRAWN BY :	LEM	DATE :	7-17
CHECKED BY :	JTG	DATE :	11-17
DESIGN ENGINEER OF RECORD :	JWJ	DATE :	10-25

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	1.03	--	1.75	0.248	1.04	70'	EL	34.423	0.655	1.06	70'	EL	6.885	0.80	0.248	1.03	70'	I	34.423		
	HL-93(0pr)	N/A	--	1.35	--	1.35	0.248	1.35	70'	EL	34.423	0.655	1.37	70'	EL	6.885	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.32	47.520	1.75	0.248	1.35	70'	EL	34.423	0.655	1.32	70'	EL	6.885	0.80	0.248	1.34	70'	I	34.423		
	HS-20(0pr)	36.000	--	1.71	61.560	1.35	0.248	1.75	70'	EL	34.423	0.655	1.71	70'	EL	6.885	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500	--	2.99	40.365	1.4	0.248	3.76	70'	EL	34.423	0.655	3.9	70'	EL	6.885	0.80	0.248	2.99	70'	I	34.423	
		SNGARBS2	20.000	--	2.24	44.800	1.4	0.248	2.82	70'	EL	34.423	0.655	2.78	70'	EL	6.885	0.80	0.248	2.24	70'	I	34.423	
		SNAGRIS2	22.000	--	2.13	46.860	1.4	0.248	2.68	70'	EL	34.423	0.655	2.58	70'	EL	6.885	0.80	0.248	2.13	70'	I	34.423	
		SNCOTTS3	27.250	--	1.49	40.603	1.4	0.248	1.87	70'	EL	34.423	0.655	1.95	70'	EL	6.885	0.80	0.248	1.49	70'	I	34.423	
		SNAGGRS4	34.925	--	1.25	43.656	1.4	0.248	1.57	70'	EL	34.423	0.655	1.62	70'	EL	6.885	0.80	0.248	1.25	70'	I	34.423	
		SNS5A	35.550	--	1.22	43.371	1.4	0.248	1.54	70'	EL	34.423	0.655	1.65	70'	EL	6.885	0.80	0.248	1.22	70'	I	34.423	
		SNS6A	39.950	--	1.12	44.744	1.4	0.248	1.41	70'	EL	34.423	0.655	1.5	70'	EL	6.885	0.80	0.248	1.12	70'	I	34.423	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	SNS7B	42.000	--	1.07	44.940	1.4	0.248	1.35	70'	EL	34.423	0.655	1.48	70'	EL	6.885	0.80	0.248	1.07	70'	I	34.423	
		TNAGRIT3	33.000	--	1.37	45.210	1.4	0.248	1.72	70'	EL	34.423	0.655	1.79	70'	EL	6.885	0.80	0.248	1.37	70'	I	34.423	
		TNT4A	33.075	--	1.38	45.644	1.4	0.248	1.73	70'	EL	34.423	0.655	1.74	70'	EL	6.885	0.80	0.248	1.38	70'	I	34.423	
		TNT6A	41.600	--	1.13	47.008	1.4	0.248	1.42	70'	EL	34.423	0.655	1.58	70'	EL	6.885	0.80	0.248	1.13	70'	I	34.423	
		TNT7A	42.000	--	1.13	47.460	1.4	0.248	1.43	70'	EL	34.423	0.655	1.55	70'	EL	6.885	0.80	0.248	1.13	70'	I	34.423	
		TNT7B	42.000	--	1.18	49.560	1.4	0.248	1.48	70'	EL	34.423	0.655	1.44	70'	EL	6.885	0.80	0.248	1.18	70'	I	34.423	
		TNAGRIT4	43.000	--	1.12	48.160	1.4	0.248	1.41	70'	EL	34.423	0.655	1.4	70'	EL	6.885	0.80	0.248	1.12	70'	I	34.423	
EMERGENCY VEHICLE (EV)	EV2	28.750	--	1.59	45.713	1.3	0.248	2.15	70'	EL	34.423	0.655	2.08	70'	EL	6.885	0.80	0.248	1.59	70'	I	34.423		
EV3	43.000	4	1.04	44.720	1.3	0.248	1.41	70'	EL	34.423	0.655	1.41	70'	EL	6.885	0.80	0.248	1.04	70'	I	34.423			

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.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

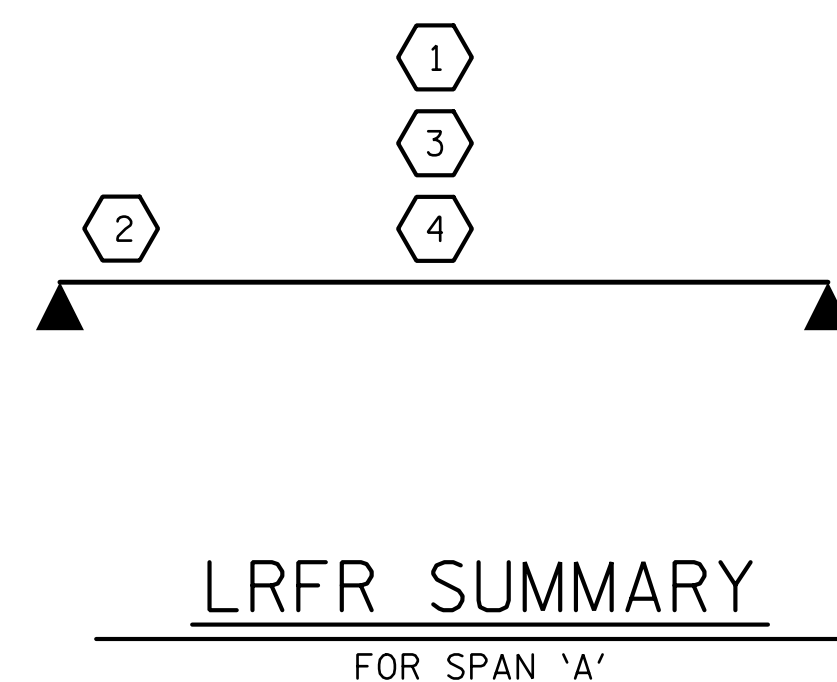
③ LEGAL LOAD RATING **

④ EMERGENCY VEHICLE LOAD RATING **

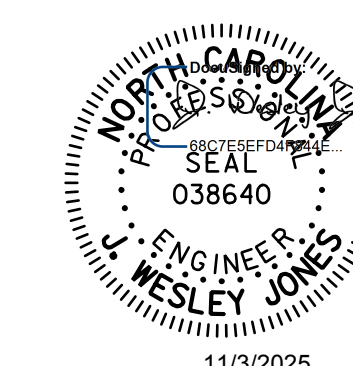
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-6029
MACON COUNTY
STATION: 17+07.50 -L-



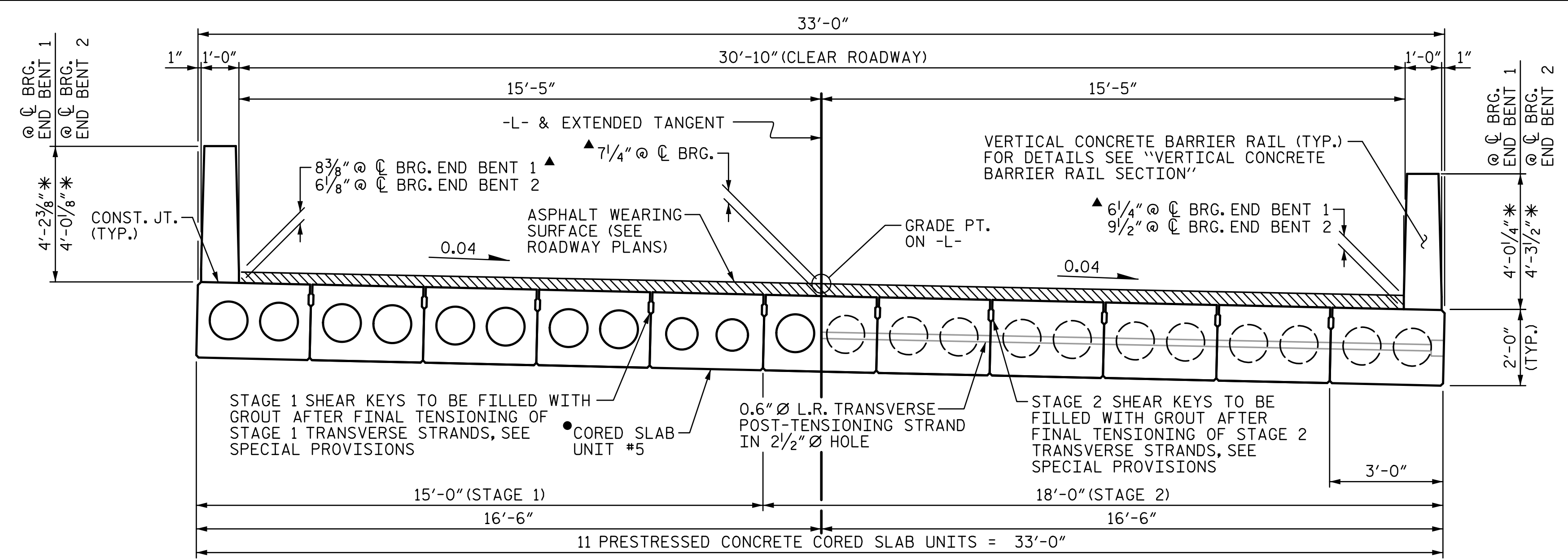
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**LRFR SUMMARY FOR
70' CORED SLAB UNIT
60° SKEW
(NON-INTERSTATE TRAFFIC)**

stv STV Engineers, Inc.
2151 Hawkins Street, Suite 1400
Charlotte, NC 28203
NC License Number F-0991

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			17

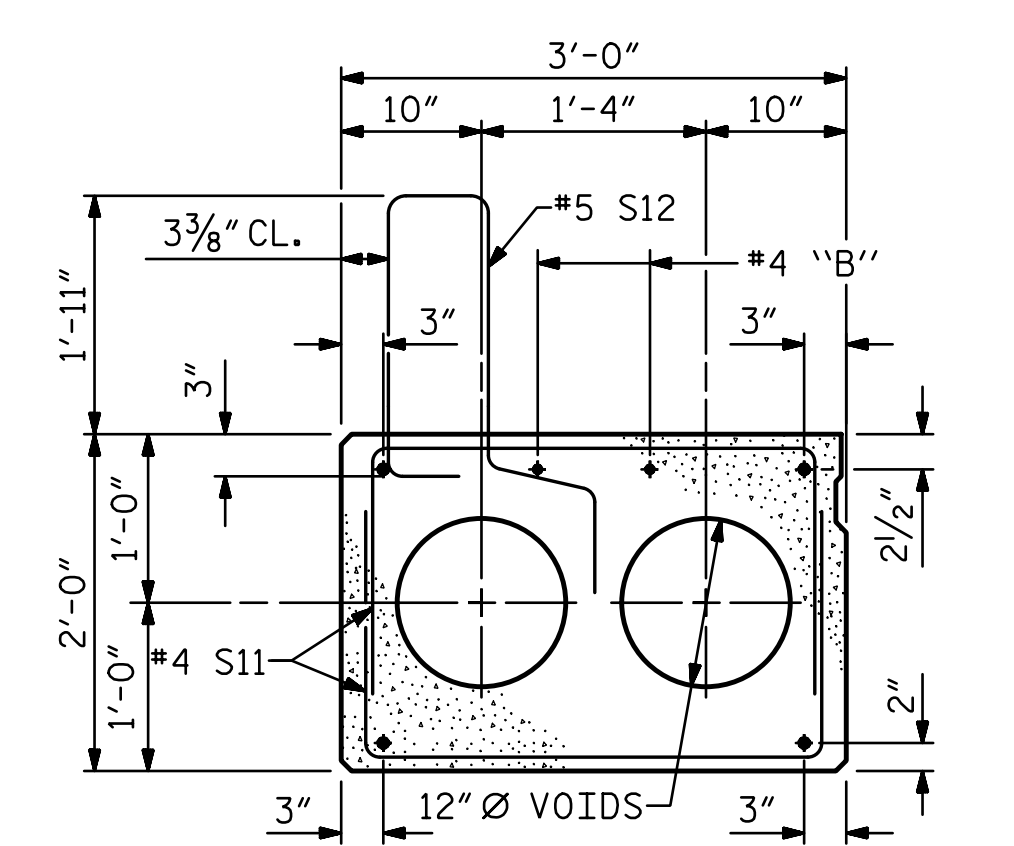


HALF SECTION THROUGH VOIDS TYPICAL SECTION HALF SECTION AT INTERMEDIATE DIAPHRAGMS

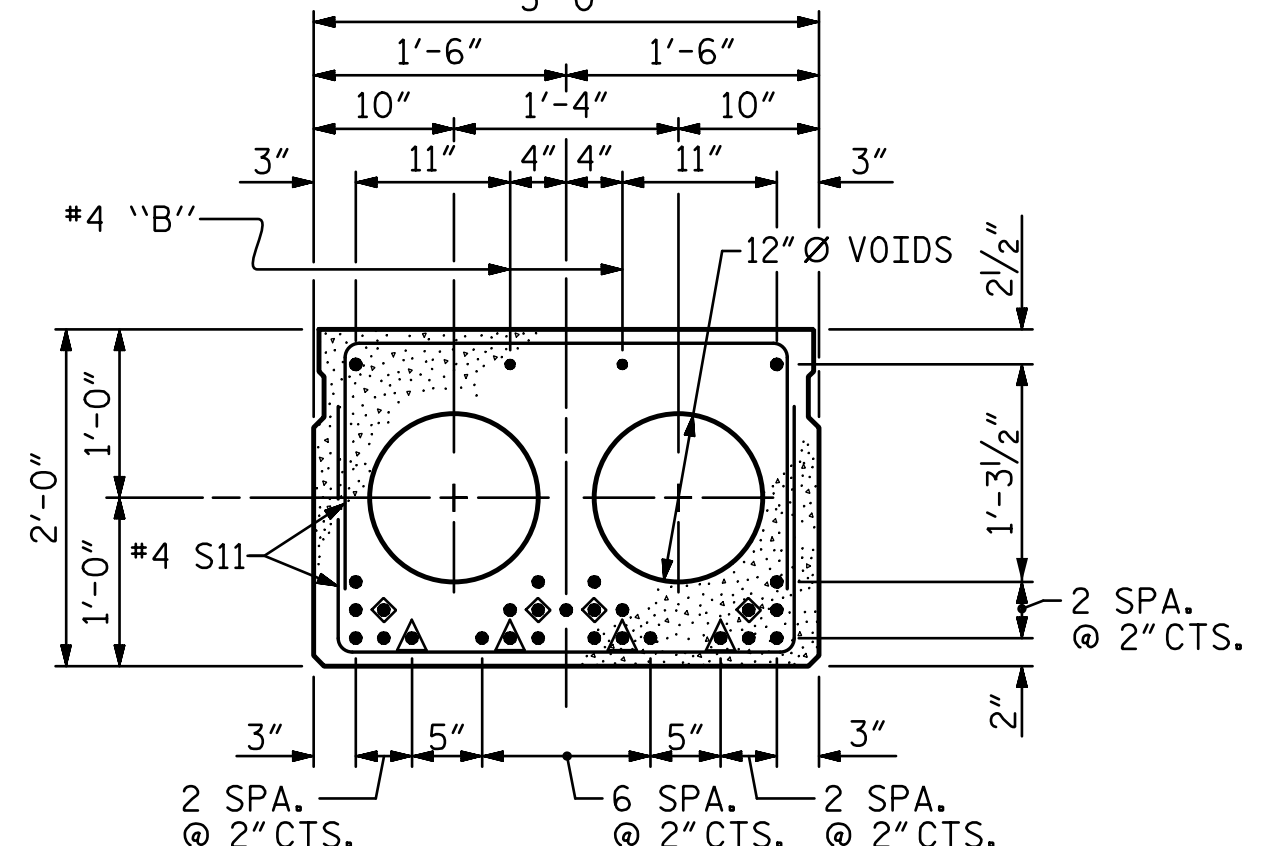
▲ ASPHALT THICKNESS SHOWN IS FOR THE FINAL CONDITION. FOR ASPHALT THICKNESS AT STAGES, SEE "BRIDGE STAGING PLAN" SHEETS.

● CORED SLAB UNITS ARE NUMBERED FROM LEFT TO RIGHT, LOOKING UPSTATION.

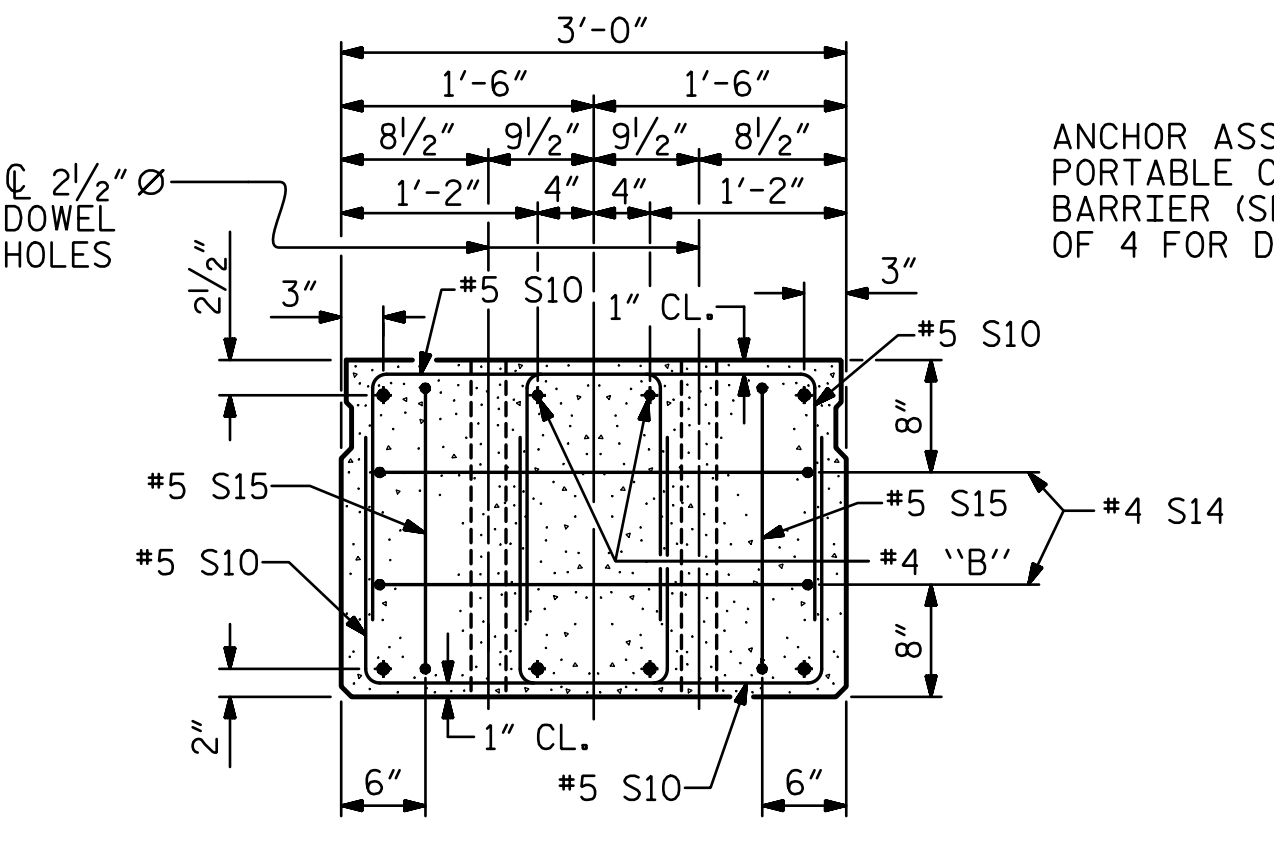
* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



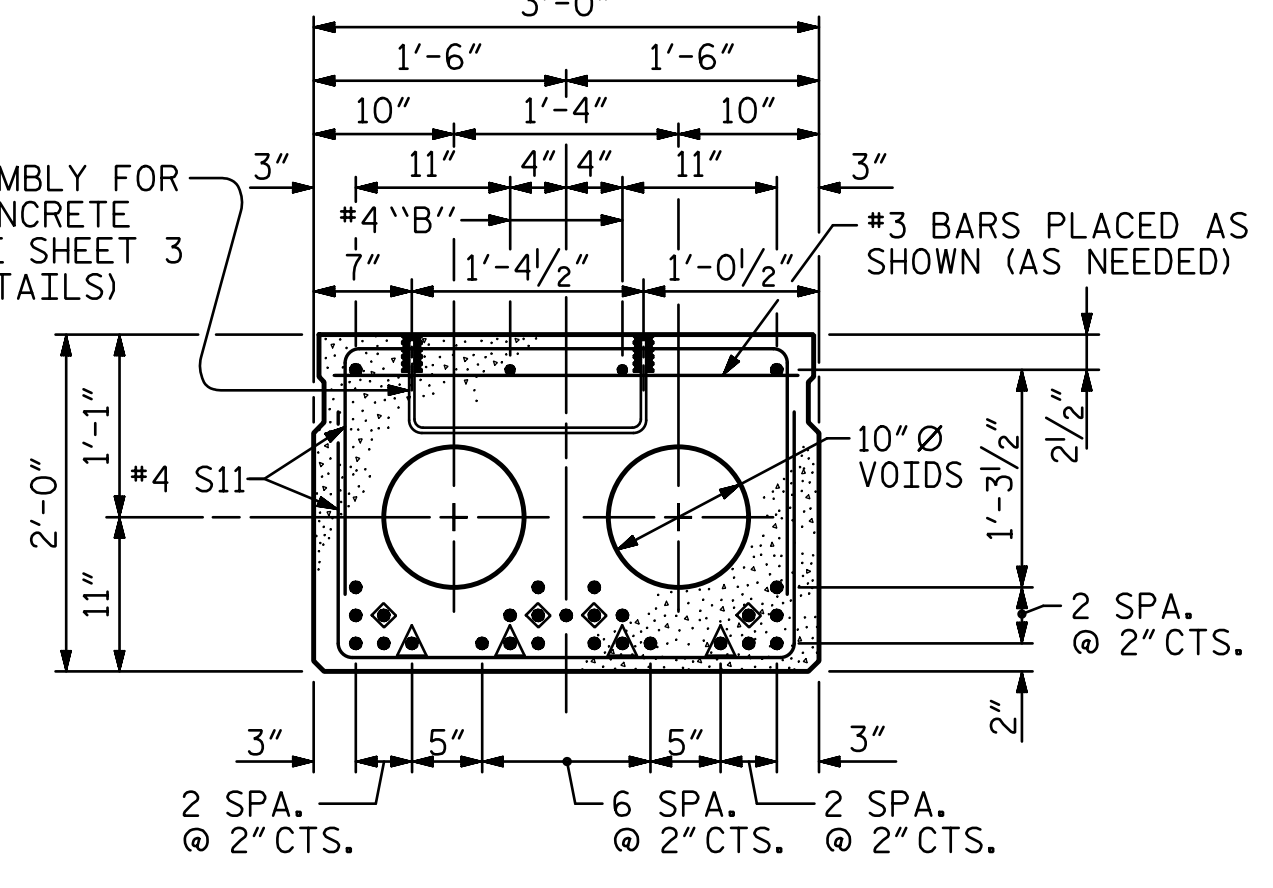
EXTERIOR SLAB SECTION (FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



INTERIOR SLAB SECTION (EXCEPT C.S.U. 5) (27 STRANDS REQUIRED)

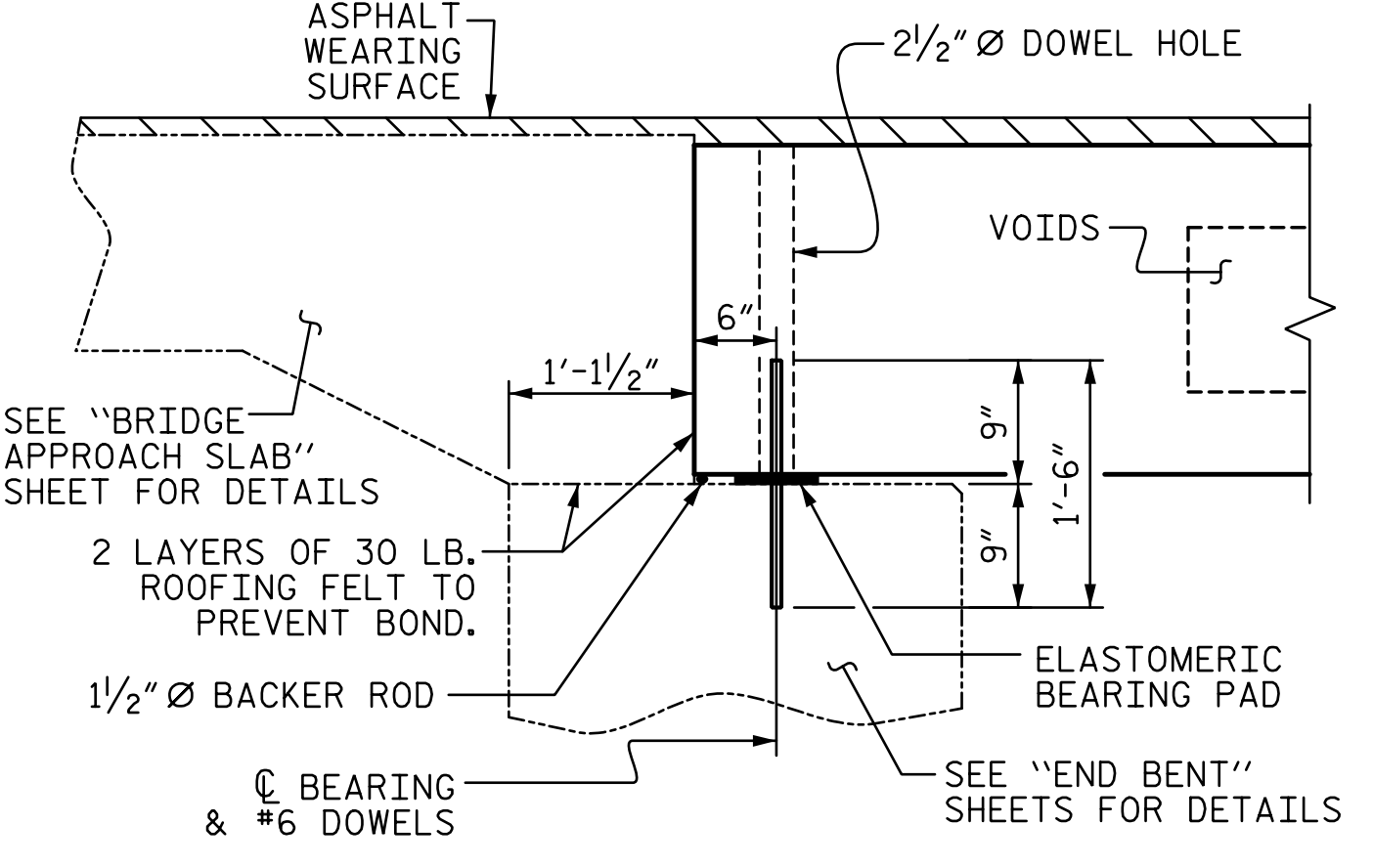


END ELEVATION SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.

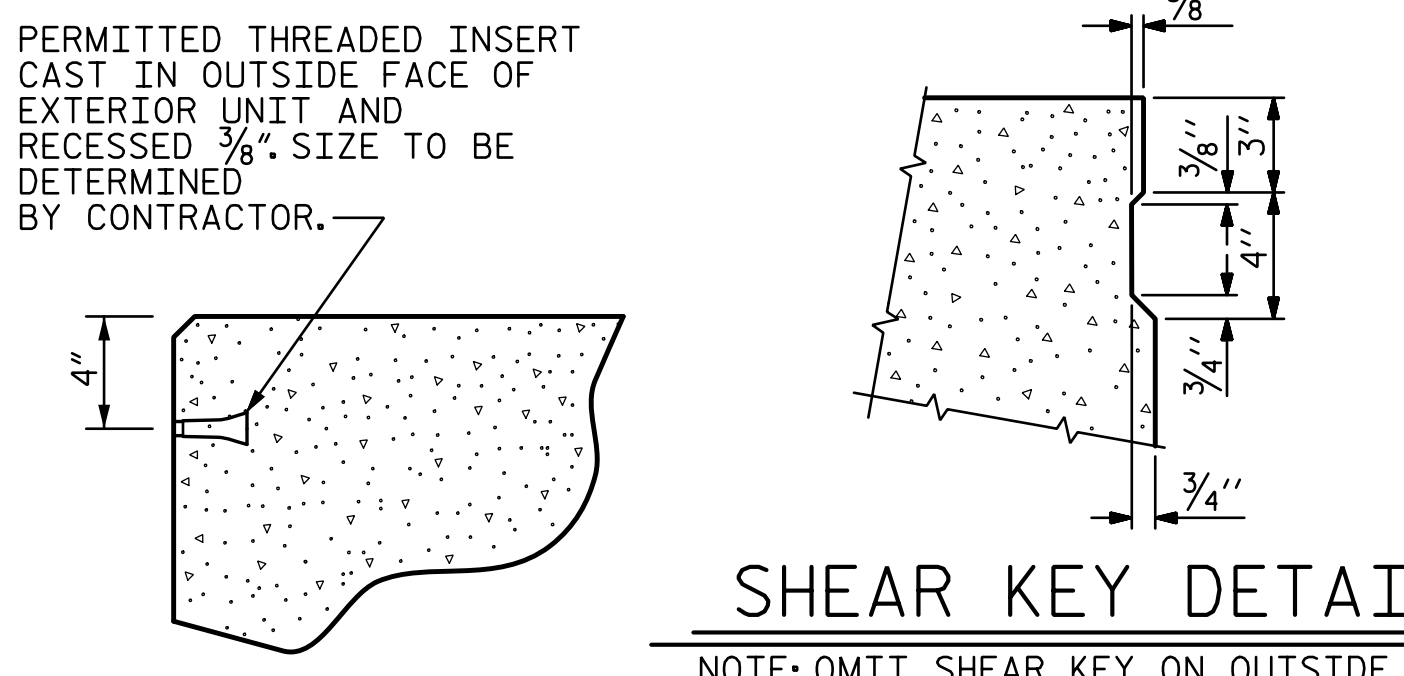


INTERIOR SLAB SECTION (C.S.U. 5 ONLY) (27 STRANDS REQUIRED) THE #3 BARS ARE INCIDENTAL AND THE COST SHALL BE INCLUDED IN THE PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS

0.6" Ø LOW RELAXATION STRAND LAYOUT



SECTION AT END BENT

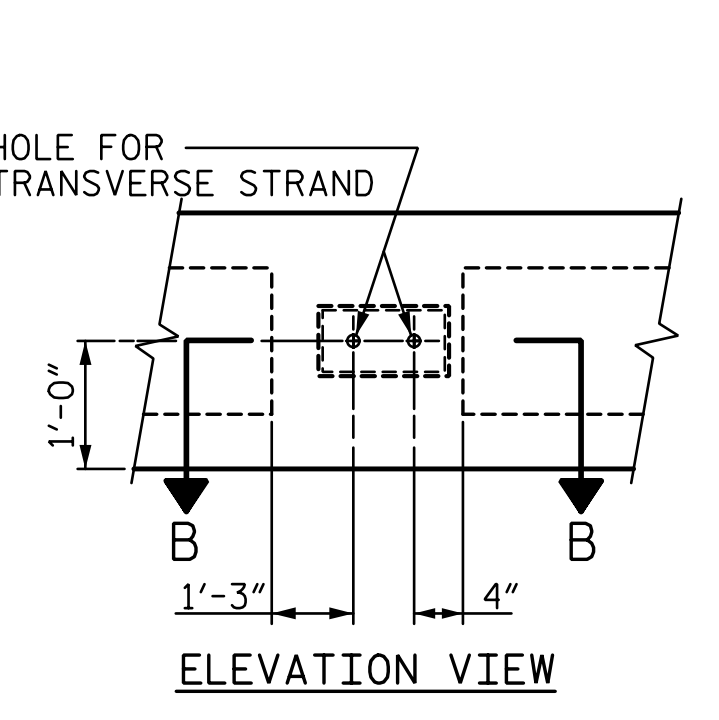


SHEAR KEY DETAIL

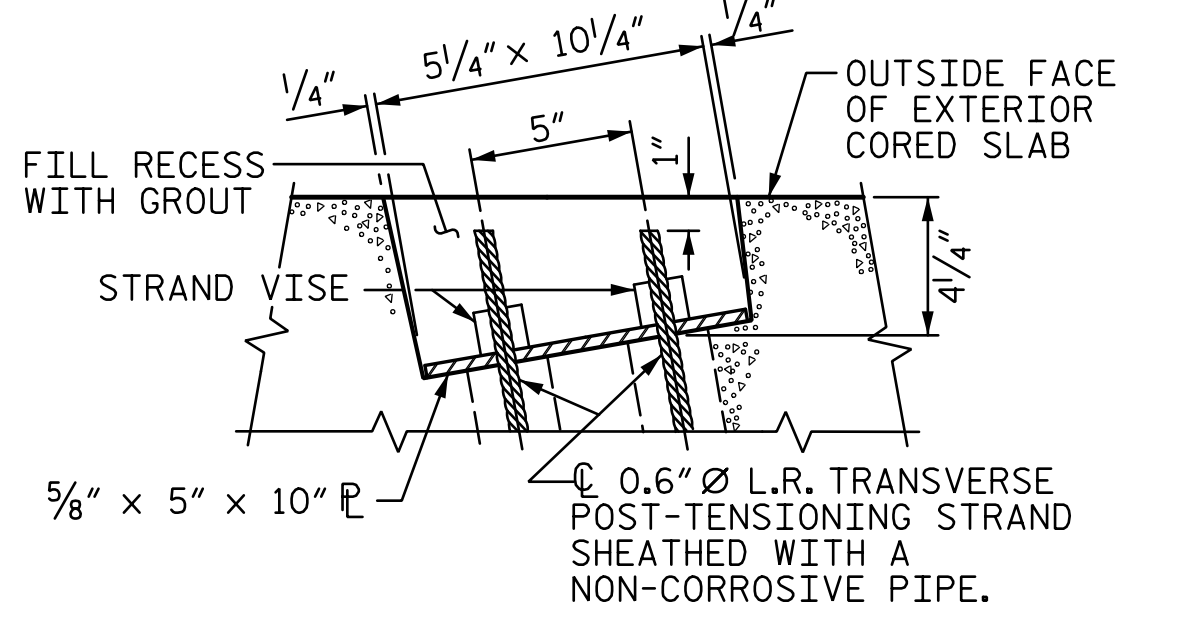
◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 10'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

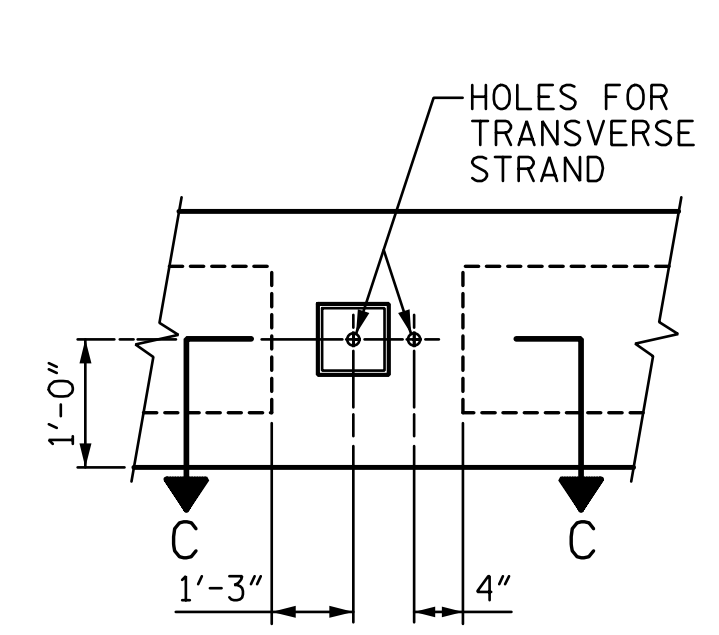


ELEVATION VIEW

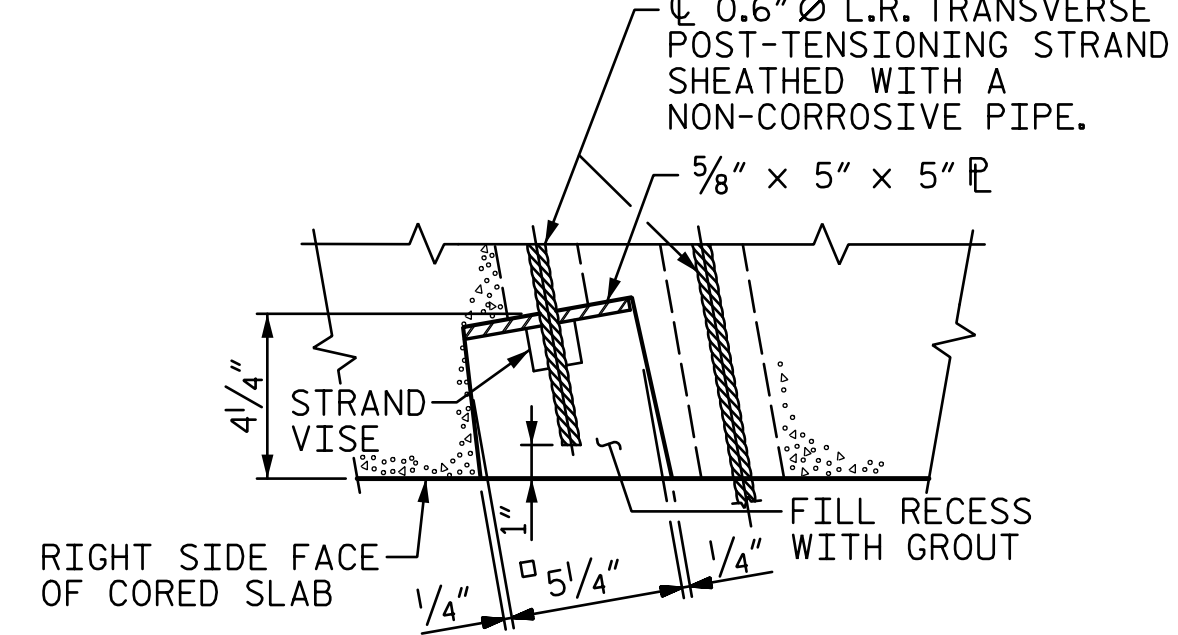


SECTION B-B

CORED SLAB UNIT #1

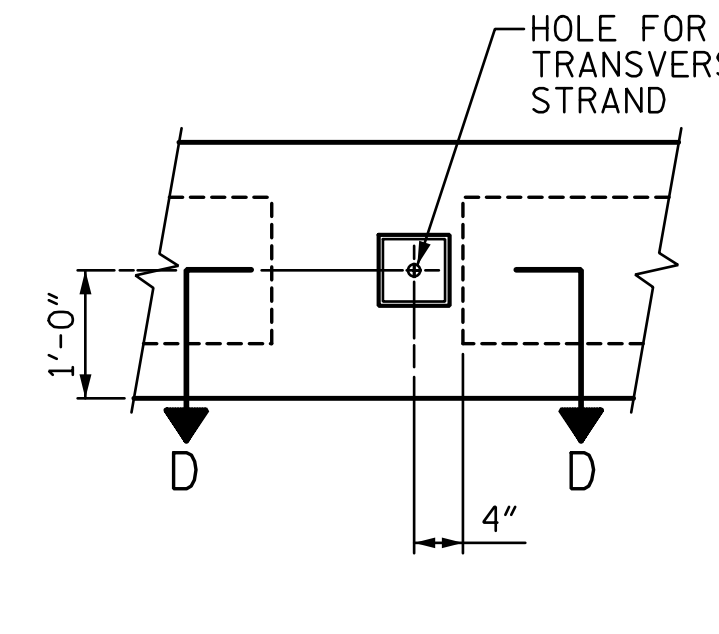


ELEVATION VIEW

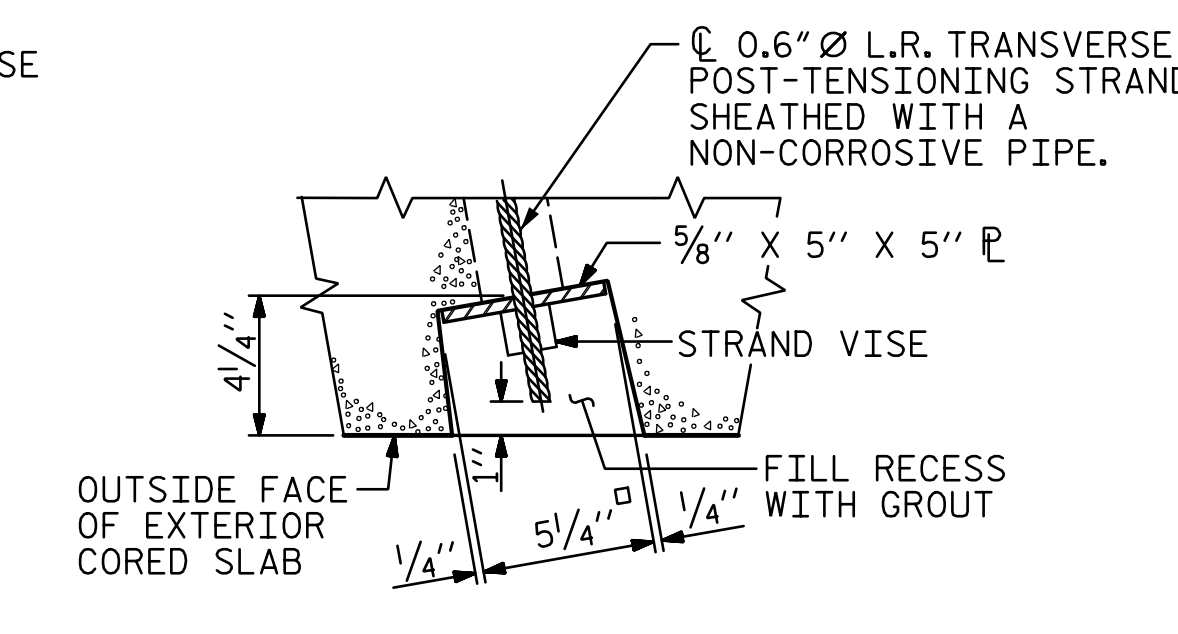


SECTION C-C

CORED SLAB UNIT #5



ELEVATION VIEW



SECTION D-D

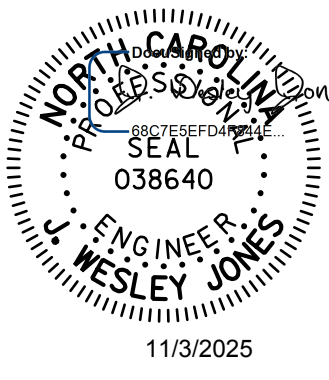
CORED SLAB UNIT #11

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

(SEE SHEET 2 OF 4 FOR LOCATIONS)

PROJECT NO. B-6029
 MACON COUNTY
 STATION: 17+07.50 -L-

SHEET 1 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 3'-0" X 2'-0"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT
 60° SKEW

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

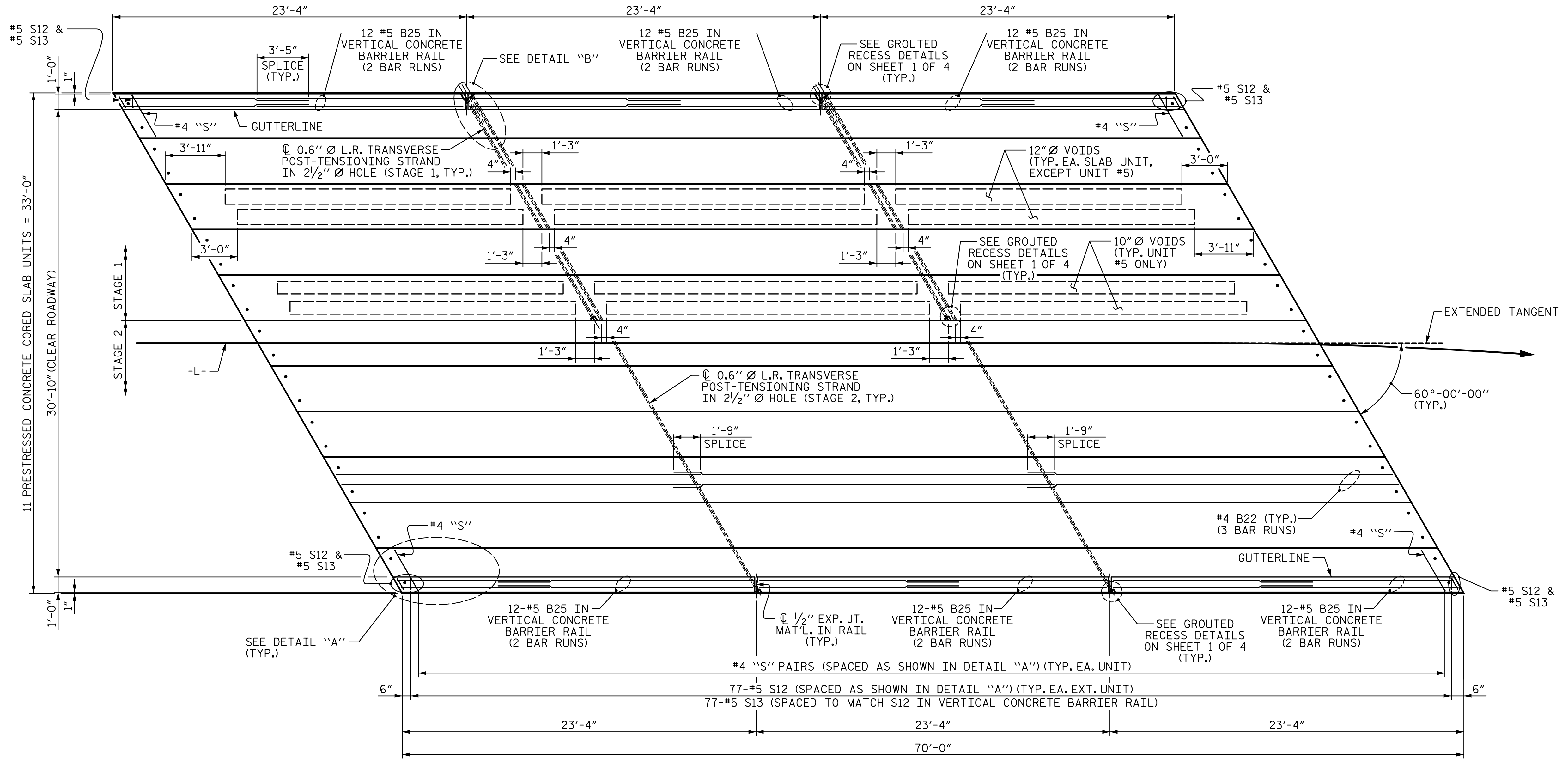
S-6
 TOTAL SHEETS 17

STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

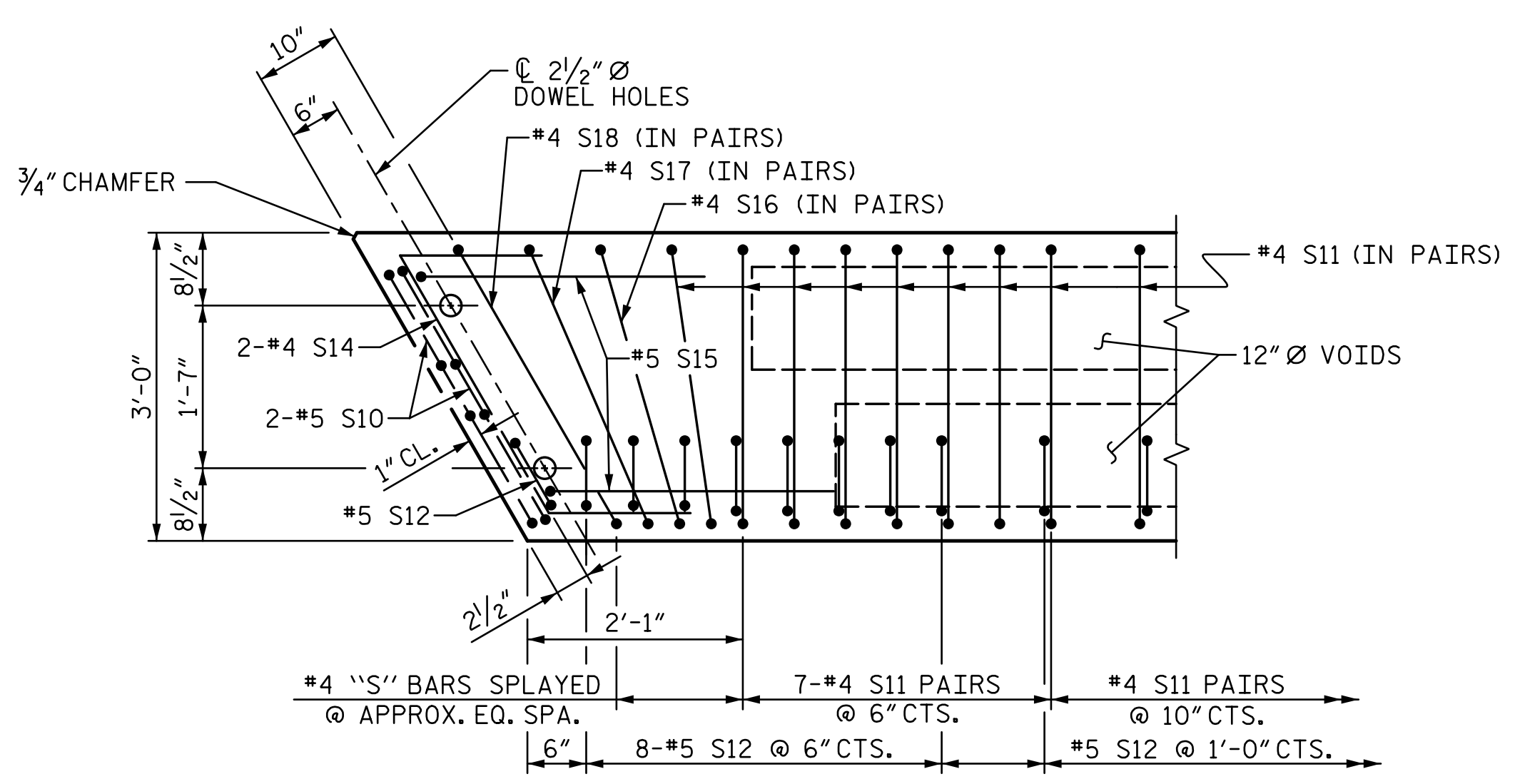
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

R:\Structures\ustation\401_01_17BP_14.RJ5B_SMU_PCCS01_006_550009.dgn 10/31/2025 5:01:41 PM Jones

R:\Structures\ustation\401.013.17BP.14.R.158.SML.PCCS02.007.550009.dgn 5:01:42 PM 10/31/2025 Jones

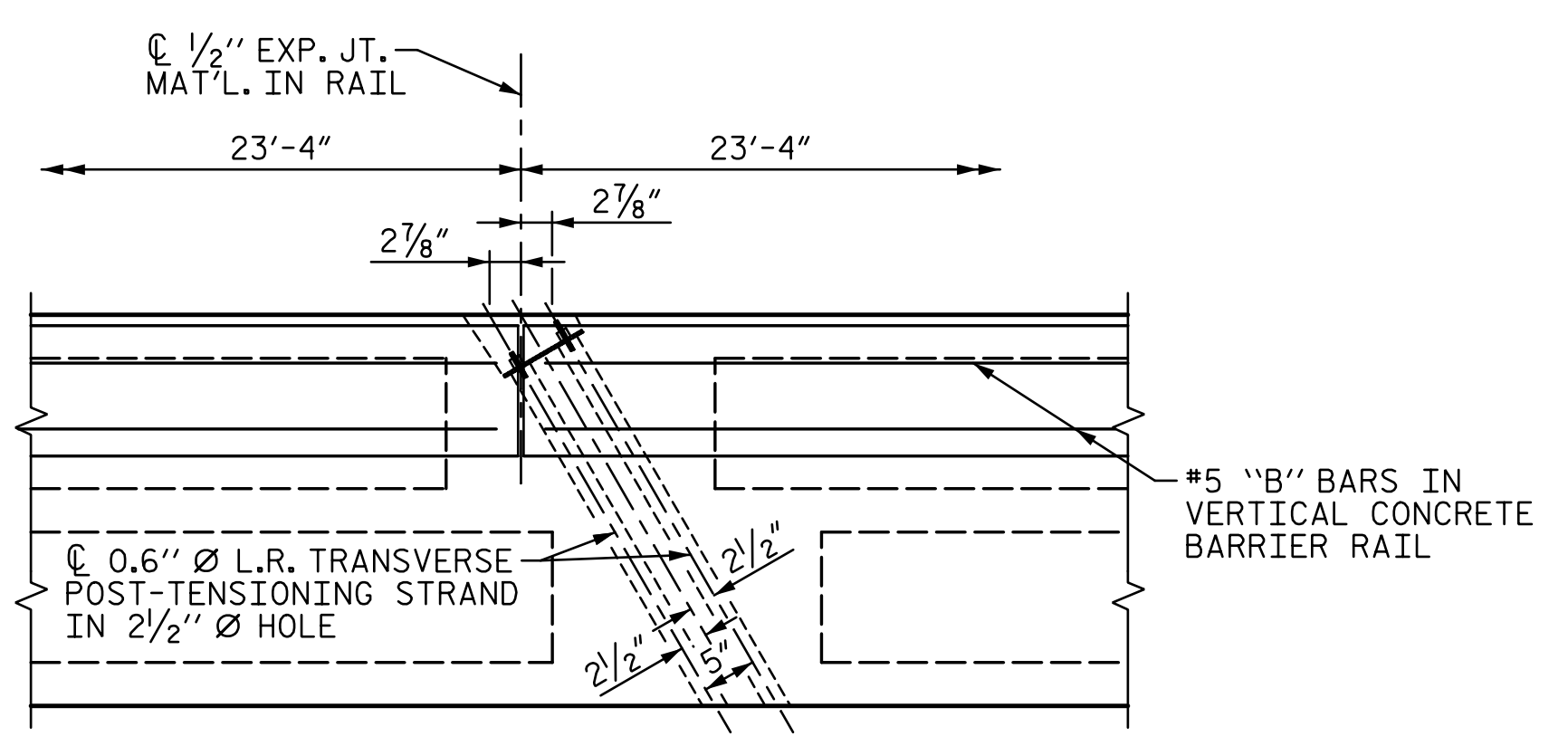


PLAN OF UNIT



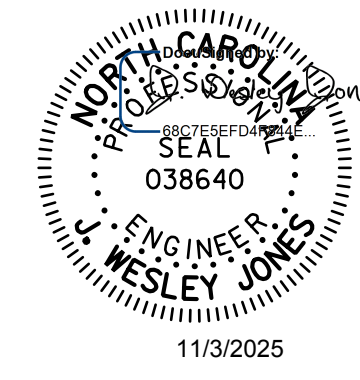
DETAIL "A"

(SIMILAR EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES



stv STV Engineers, Inc.
2151 Hawkins Street, Suite 1400
Charlotte, NC 28203
NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. B-6029
MACON COUNTY
STATION: 17+07.50 -L-
SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**PLAN OF 70' UNIT
30'-10" CLEAR ROADWAY
60° SKEW**

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

S-7
TOTAL SHEETS 17

DRAWN BY : LEM DATE : 7-17
CHECKED BY : JTG DATE : 11-17
DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

ANCHOR ASSEMBLY NOTES

THE ANCHOR ASSEMBLY FOR PORTABLE CONCRETE BARRIER 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. 2 - 1/4" Ø 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 1/4" Ø 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.

ANCHOR ASSEMBLY WITH BOLTS SHALL BE ASSEMBLED IN THE SHOP. BOLT THREADS MAY BE RECUT AS NECESSARY TO ENSURE FIT.

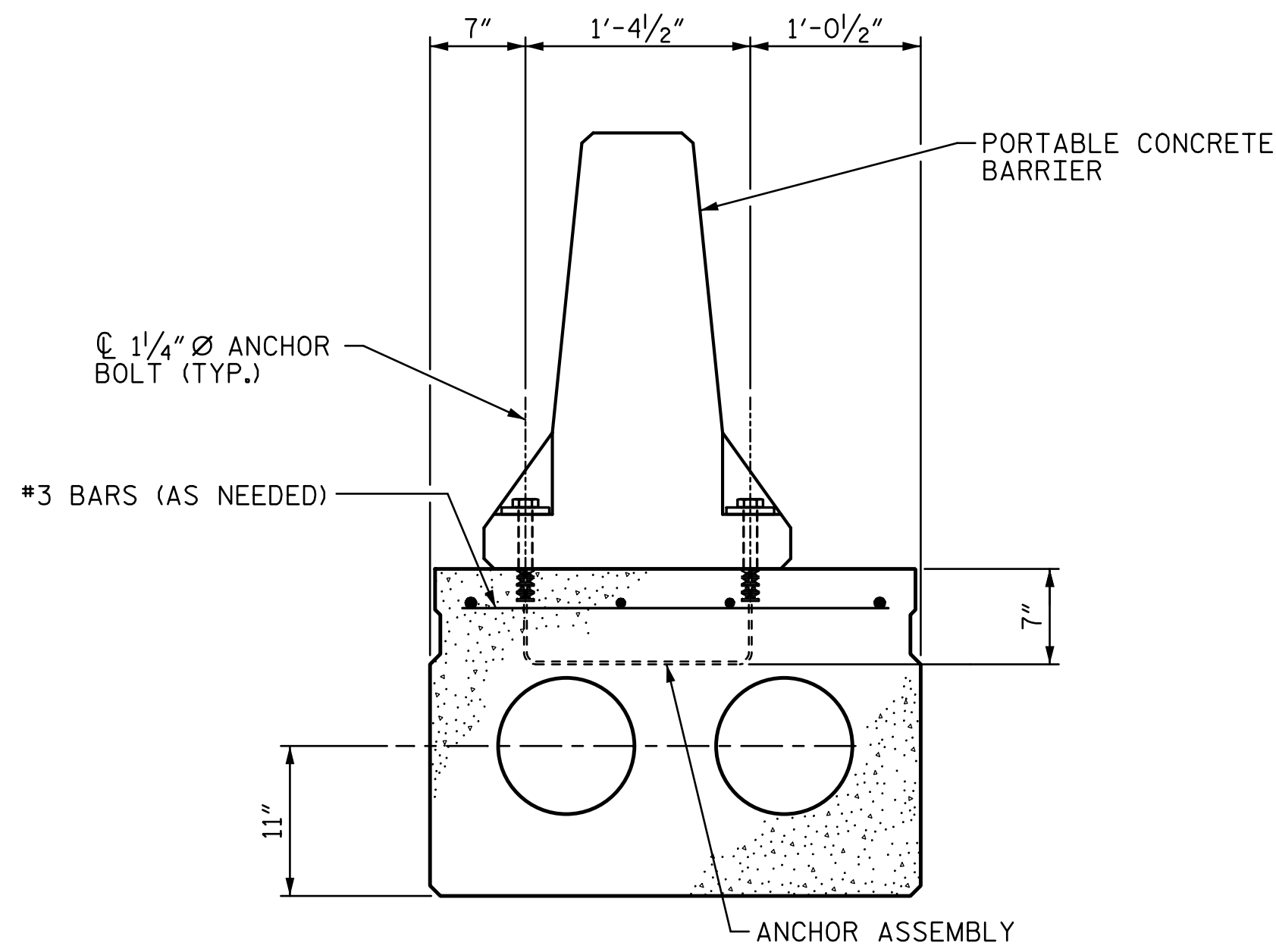
THE COST OF THE ANCHOR ASSEMBLY, COMPLETE IN PLACE, SHALL BE INCLUDED, AS APPLICABLE, IN THE UNIT CONTRACT PRICE BID FOR 3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB OR LUMP SUM FOR THE APPROACH SLABS.

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 PORTABLE CONCRETE BARRIER IS INCLUDED IN THE TRAFFIC CONTROL PLANS.

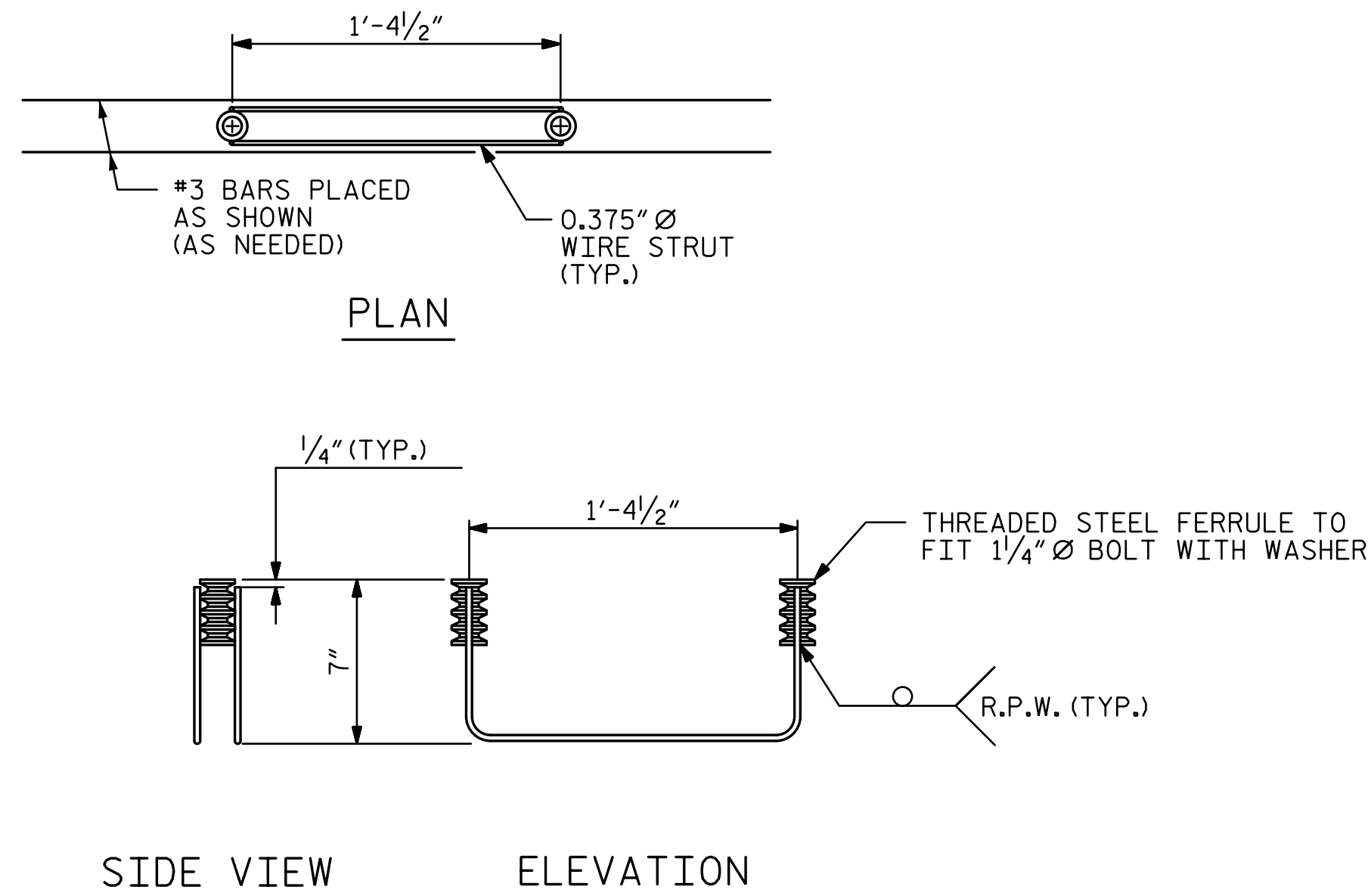
ONCE PORTABLE CONCRETE BARRIER HAS BEEN REMOVED, COMPLETELY FILL ANCHOR ASSEMBLY HOLES WITH AN NCDOT APPROVED, NON-SHRINK, NON-METALLIC GROUT, OR AS DIRECTED BY THE ENGINEER.



SECTION A-A

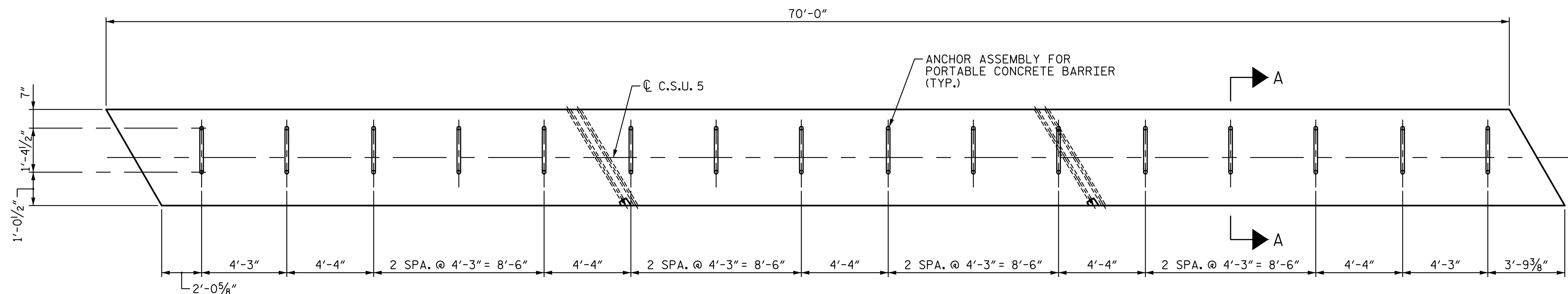
(SHOWING PLACEMENT OF ANCHOR ASSEMBLIES)

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



ANCHOR ASSEMBLY FOR PORTABLE CONCRETE BARRIER

(16 ASSEMBLIES REQUIRED IN CORED SLAB UNIT 5,
6 ASSEMBLIES REQUIRED IN APPROACH SLABS)



PLAN OF CORED SLAB UNIT #5

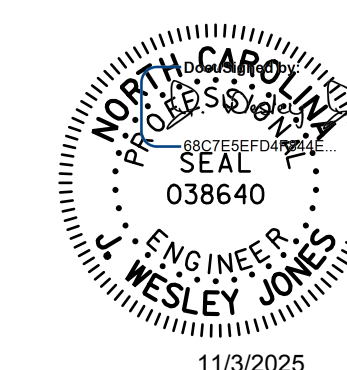
(SHOWING LOCATION OF ANCHOR ASSEMBLIES)
(FOR ANCHOR ASSEMBLY SPACING ON APPROACH SLABS, SEE "BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT")

PROJECT NO. B-6029

MACON COUNTY

STATION: 17+07.50 -L-

SHEET 3 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT
60° SKEW

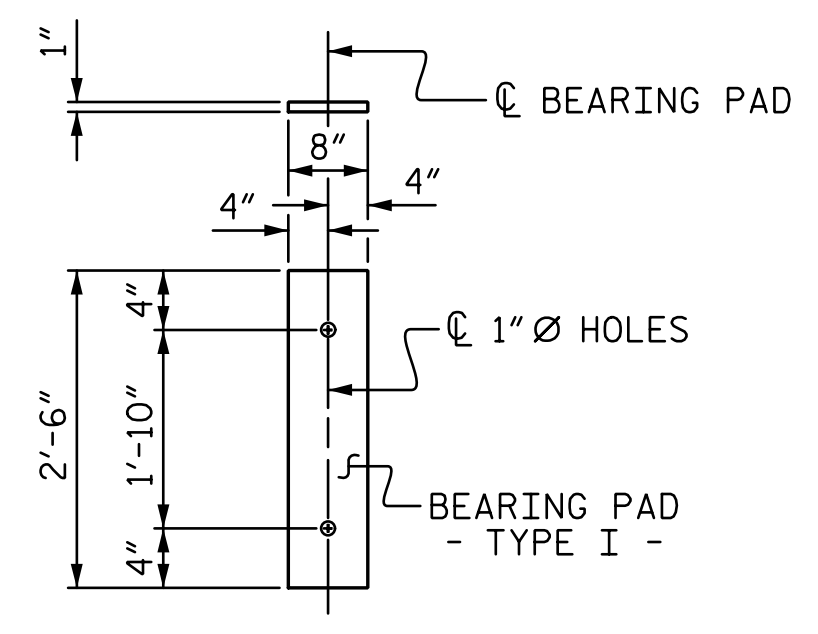
stv STV Engineers, Inc.
2151 Hawkins Street, Suite 1400
Charlotte, NC 28203
NC License Number F-0991

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

S-8
TOTAL SHEETS
17

DRAWN BY : LEM DATE : 7-17
CHECKED BY : JTG DATE : 11-17
DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25



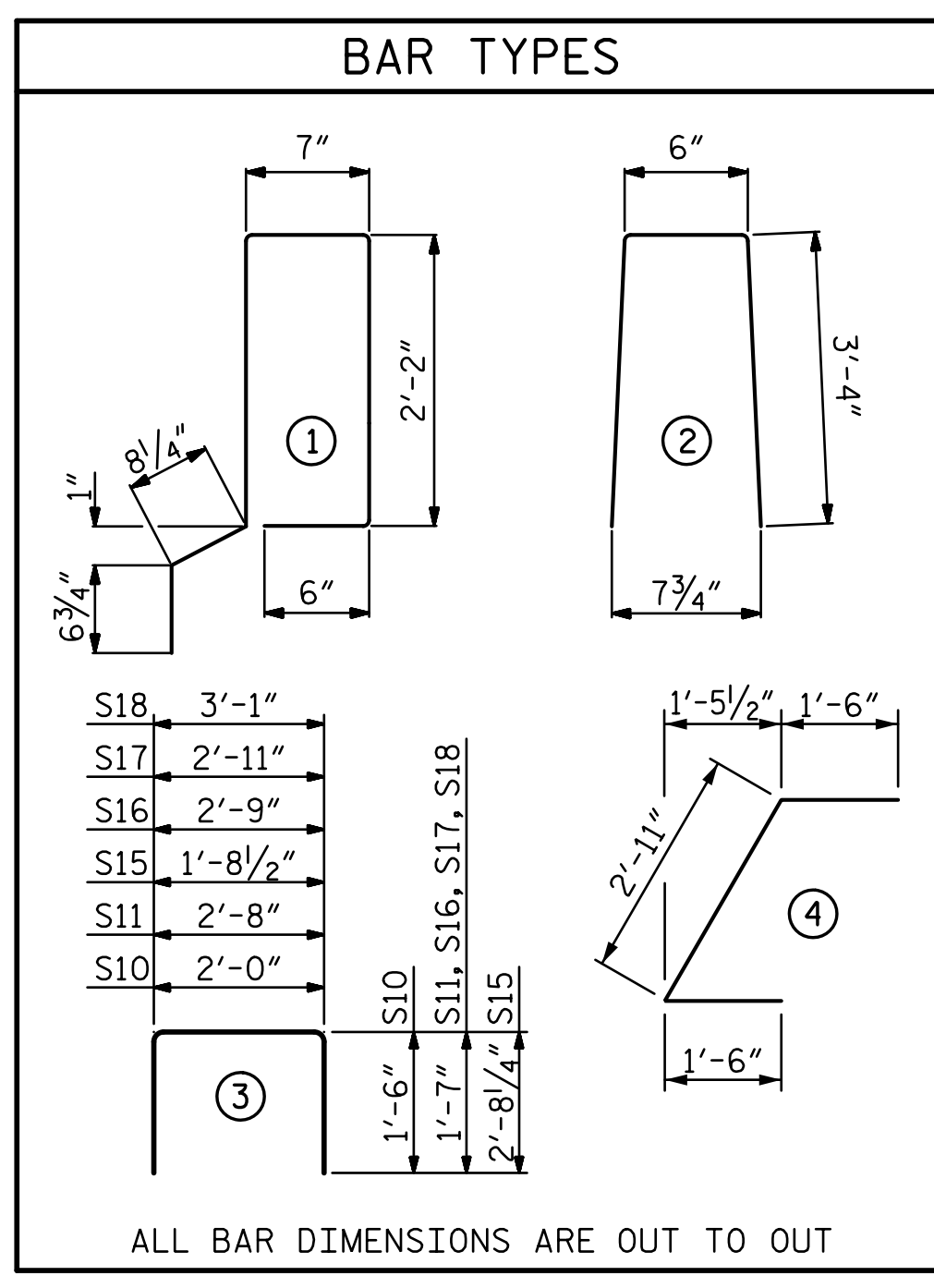
FIXED END
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT

				EXTERIOR UNITS C.S.U. 1 & 11		INTERIOR UNITS C.S.U. 2-4 & 6-10		INTERIOR UNIT C.S.U. 5	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT	LENGTH	WEIGHT
B22	6	#4		24'-6"	98	24'-6"	98	24'-6"	98
S10	8	#5	3	5'-0"	42	5'-0"	42	5'-0"	42
S11	170	#4	3	5'-10"	662	5'-10"	662	5'-10"	662
*S12	79	#5	1	6'-8"	549				
S14	4	#4	4	5'-11"	16	5'-11"	16	5'-11"	16
S15	4	#5	3	7'-1"	30	7'-1"	30	7'-1"	30
S16	4	#4	3	5'-11"	16	5'-11"	16	5'-11"	16
S17	4	#4	3	6'-1"	16	6'-1"	16	6'-1"	16
S18	4	#4	3	6'-3"	17	6'-3"	17	6'-3"	17
REINFORCING STEEL			LBS.		897		897		897
*EPOXY COATED REINFORCING STEEL			LBS.		549				
7000 P.S.I. CONCRETE			CU. YDS.		12.0		12.0		13.1
0.6" Ø L.R. STRANDS			No.		27		27		27



NOTES

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

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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. A 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.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS ▲			RAIL HEIGHT		
	CL. BRG. EB1	@ MID-SPAN	CL. BRG. EB2	CL. BRG. EB1	@ MID-SPAN	CL. BRG. EB2
STAGE 1	8 3/8"	3 1/2"	6 1/8"	4'-2 3/8"	3'-9 1/2"	4'-0 1/8"
STAGE 2	6 1/4"	3 1/2"	9 1/2"	4'-0 1/4"	3'-9 1/2"	4'-3 1/2"

▲ ASPHALT THICKNESS SHOWN IS FOR THE FINAL CONDITION. FOR ASPHALT THICKNESS AT STAGES, SEE "BRIDGE STAGING PLAN" SHEETS.

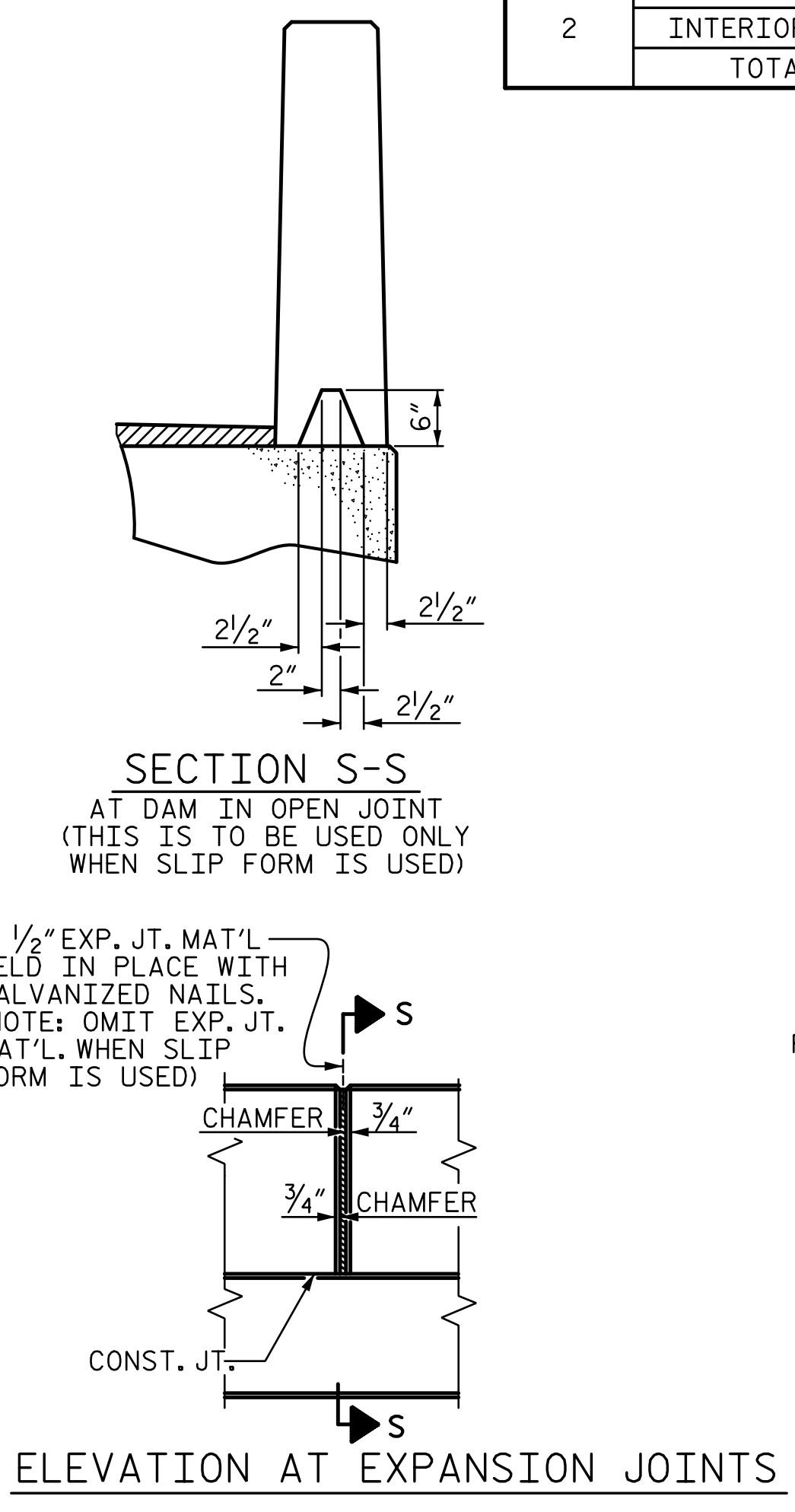
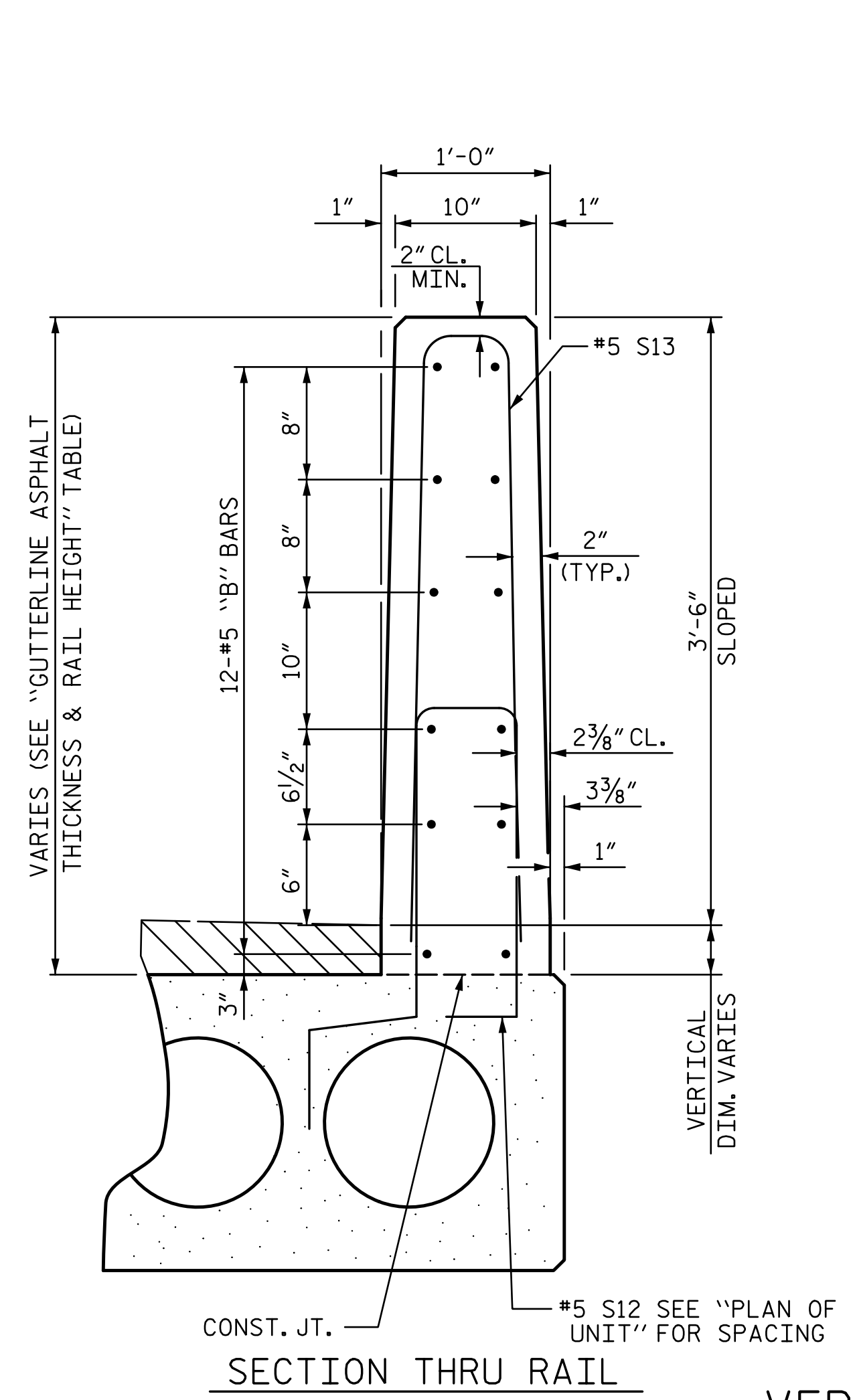
CORED SLABS REQUIRED

STAGE NUMBER		NUMBER	LENGTH	TOTAL LENGTH
1	EXTERIOR C.S.	1	70'-0"	70'-0"
	INTERIOR C.S.	3	70'-0"	210'-0"
	INTERIOR C.S. W/ 10" Ø VOIDS	1	70'-0"	70'-0"
	TOTAL	5	—	350'-0"
2	EXTERIOR C.S.	1	70'-0"	70'-0"
	INTERIOR C.S.	5	70'-0"	350'-0"
	TOTAL	6	—	420'-0"

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 2'-0"
70' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/4" ↓
FINAL CAMBER	1 1/4" ↑

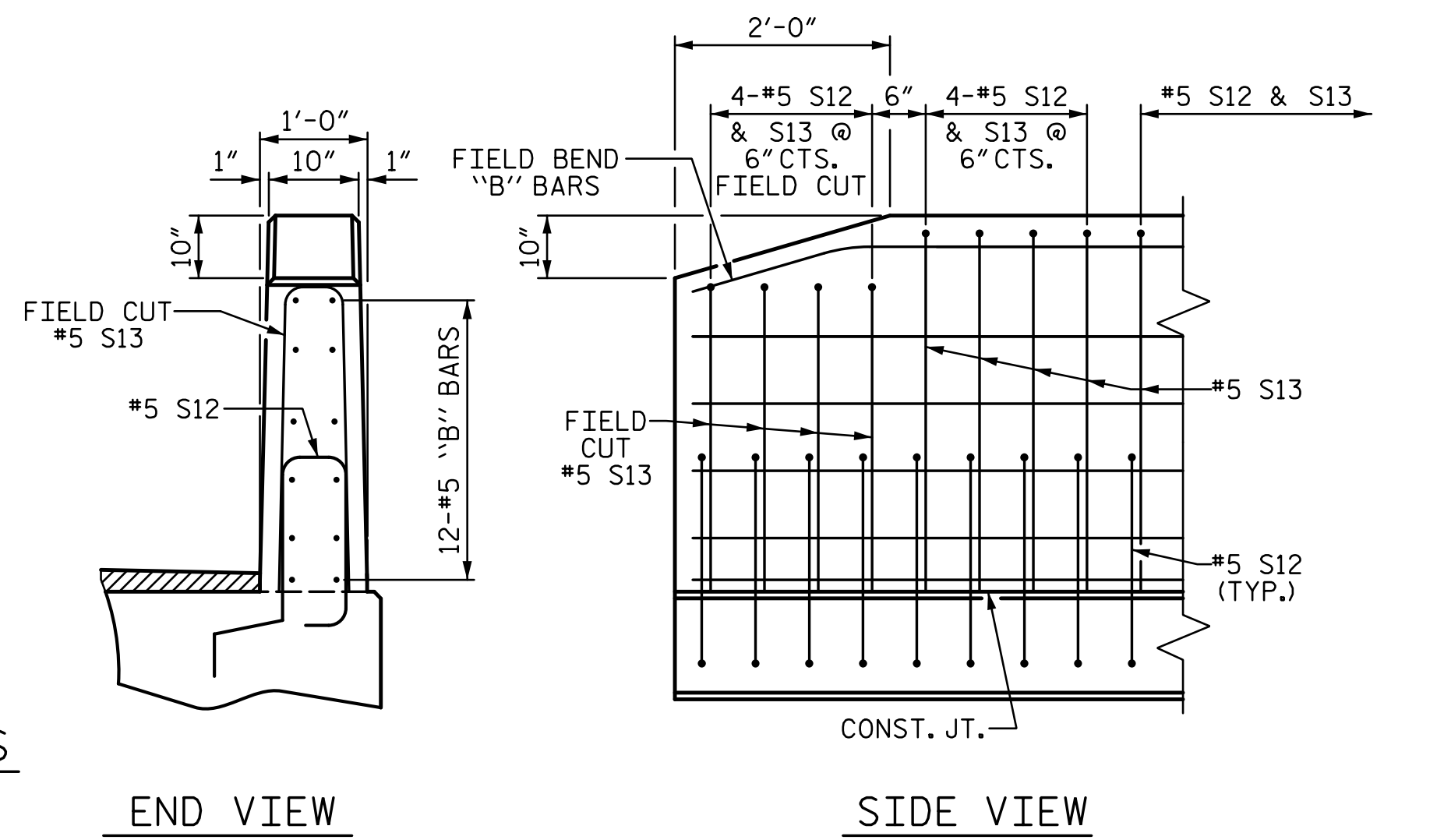
** INCLUDES FUTURE WEARING SURFACE



VERTICAL CONCRETE BARRIER RAIL DETAILS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS 70' UNIT	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B25	144	144	#5	STR	13'-8"	2053
*S13	158	158	#5	2	7'-2"	1181
*EPOXY COATED REINFORCING STEEL					LBS.	3234
CLASS AA CONCRETE					CU. YDS.	19.0
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN. FT.	140.0



END OF RAIL DETAILS

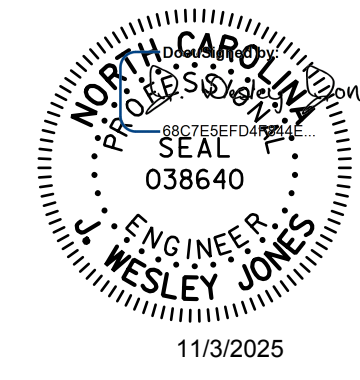
GRADE 270 STRANDS

AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

CONCRETE RELEASE STRENGTH

UNIT	PSI
70' UNITS	5500

PROJECT NO. **B-6029**
MACON COUNTY
 STATION: **17+07.50 -L-**
 SHEET 4 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT
60° SKEW

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

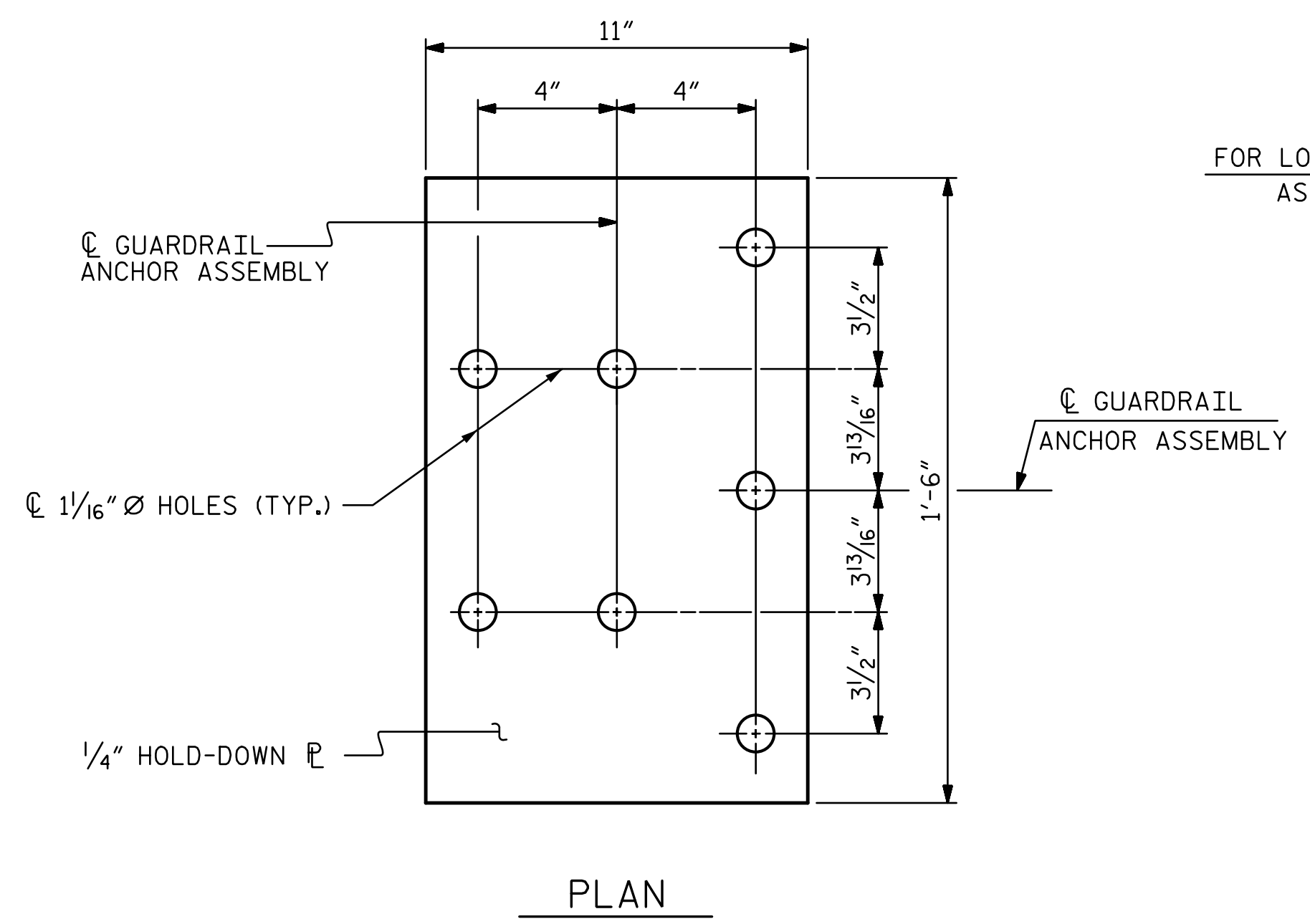
REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-9
2			4			TOTAL SHEETS 17

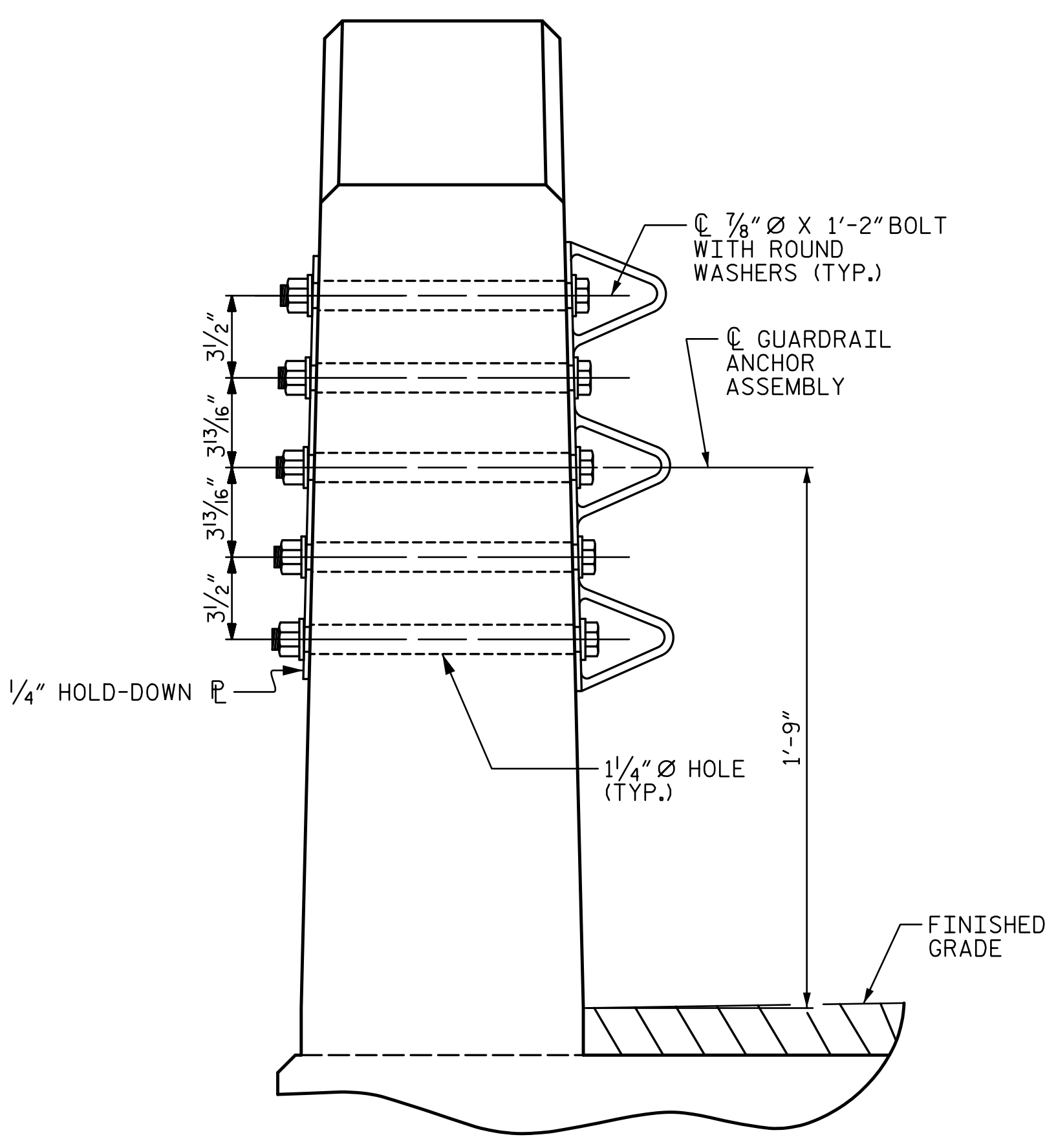
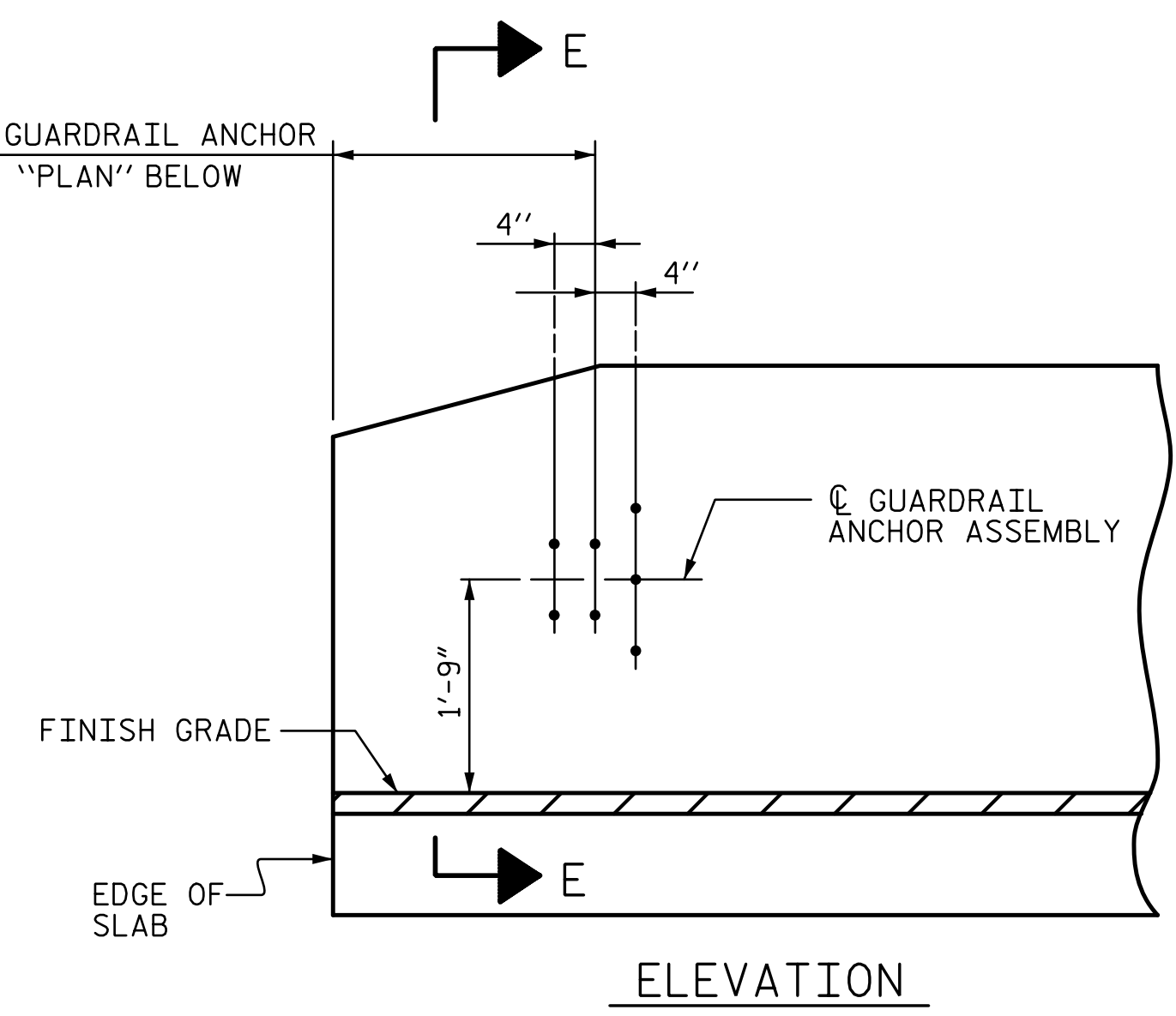
10/31/2025 5:01:43 PM R:\Structures\ustction\401_017BP_14.R\58_SML_PCCS04_009_550009.dgn Jones

DRAWN BY : LEM DATE : 7-17
 CHECKED BY : JTG DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

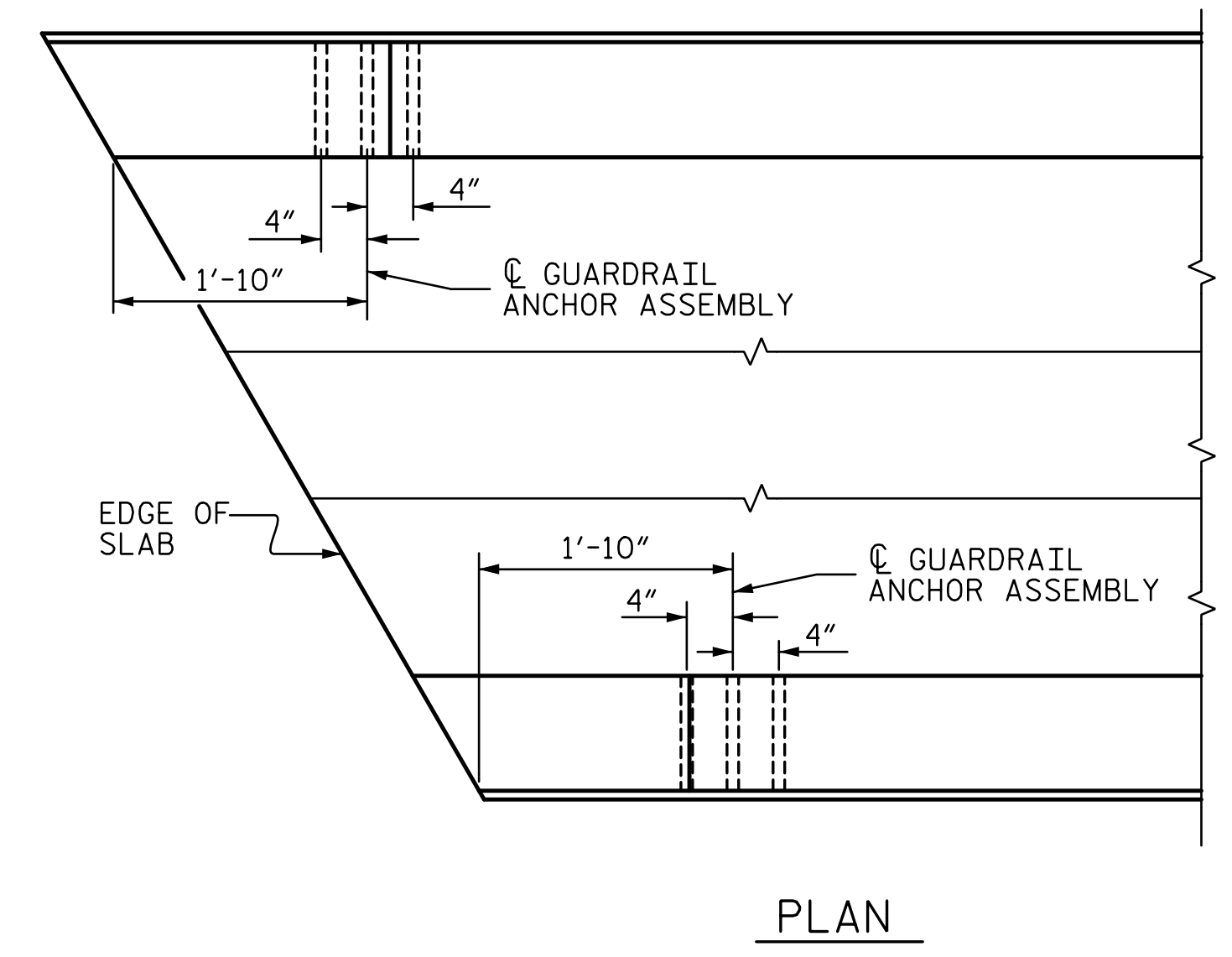
R:\Structures\ustation\401.019.17BP.14.R.158.SML.GRA.010.550009.dgn 10/31/2025 5:01:45 PM J.Jones



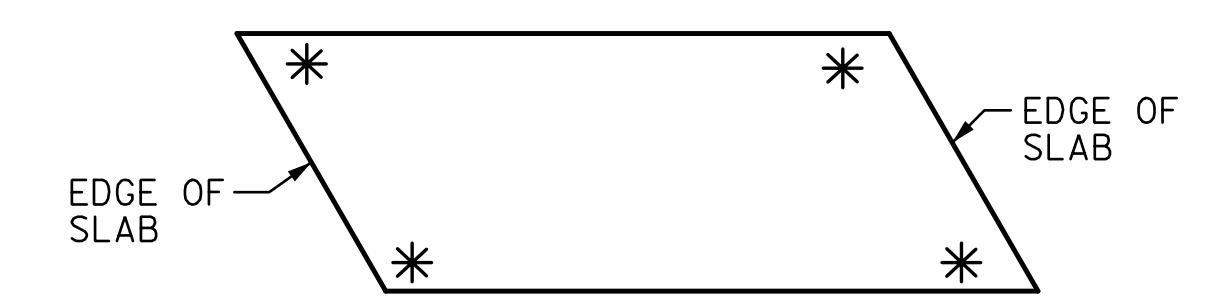
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" 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 7/8" 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.

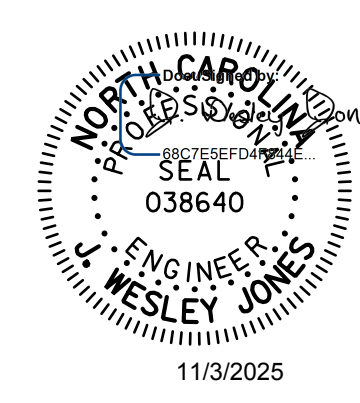
AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

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 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.

PROJECT NO. B-6029
MACON COUNTY
 STATION: 17+07.50 -L-



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

ASSEMBLED BY : LEM	DATE : 7-17
CHECKED BY : JTG	DATE : 11-17
DESIGN ENGINEER OF RECORD : JWJ	DATE : 11-23
DRAWN BY : MAA 5/10	REV. 12/5/11 MAA/GM
CHECKED BY : GM 5/10	REV. 6/13 MAA/GM
	REV. 1/15 MAA/TMG

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

S-10
TOTAL SHEETS 17

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.

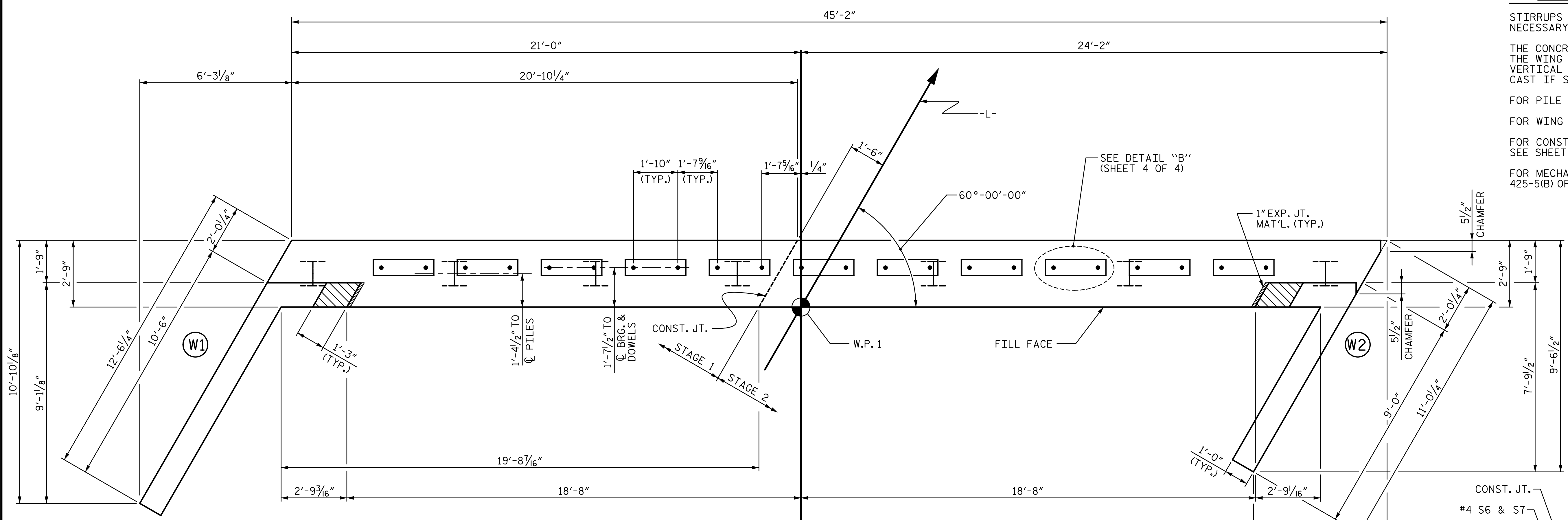
FOR WING DETAILS, SEE SHEET 3 OF 4.

FOR CONSTRUCTION JOINT DETAILS, SEE SHEET 4 OF 4.

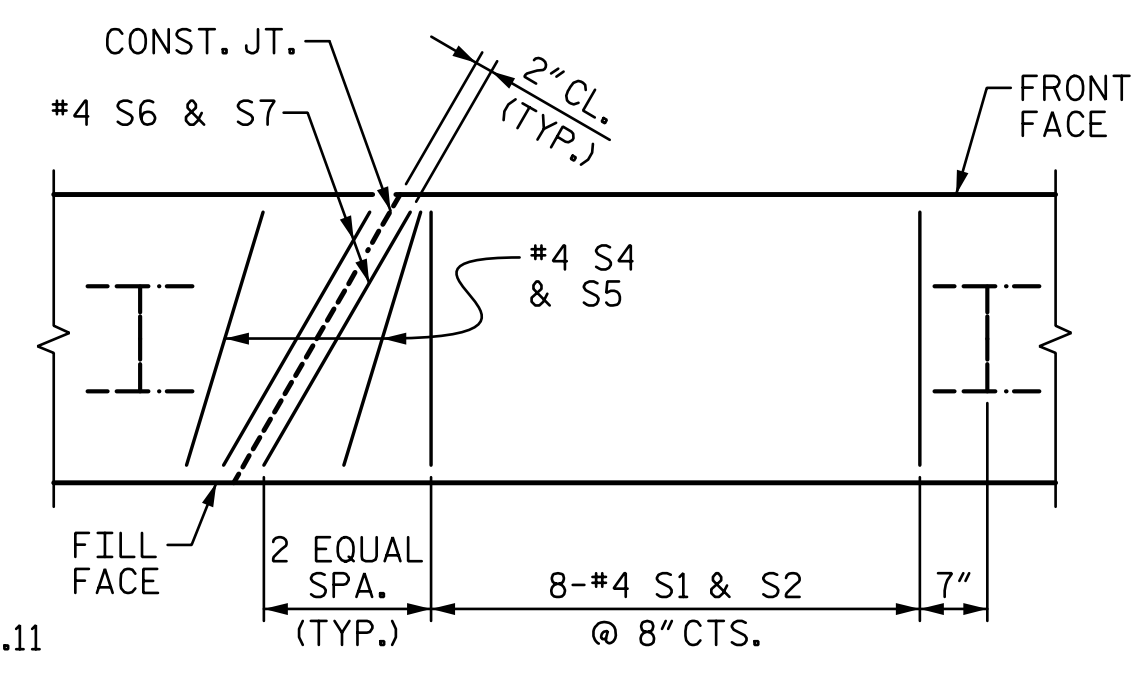
FOR MECHANICAL SPLICES, SEE SECTION 425-5(B) OF THE STANDARD SPECIFICATIONS.

TOP OF PILE ELEVATIONS

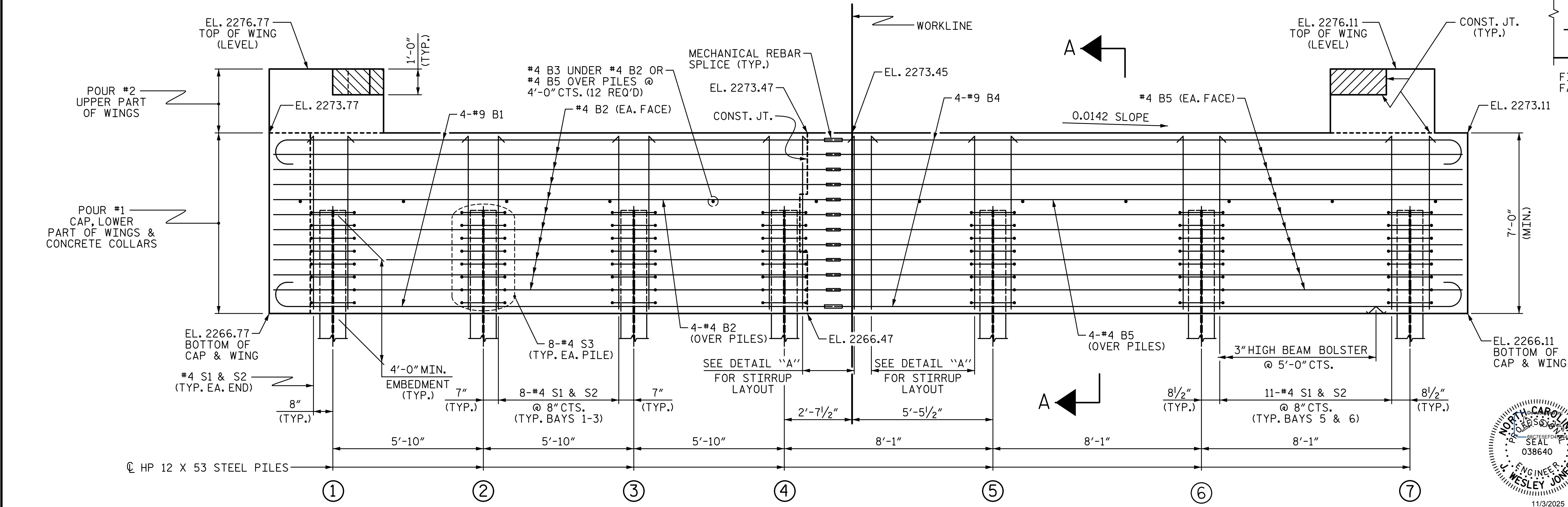
①	2270.74
②	2270.66
③	2270.57
④	2270.49
⑤	2270.38
⑥	2270.26
⑦	2270.15



PLAN



DETAIL "A"

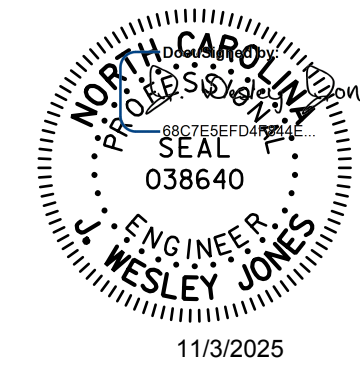


ELEVATION

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. **B-6029**
MACON COUNTY
 STATION: **17+07.50 -L-**
 SHEET 1 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT No. 1**

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

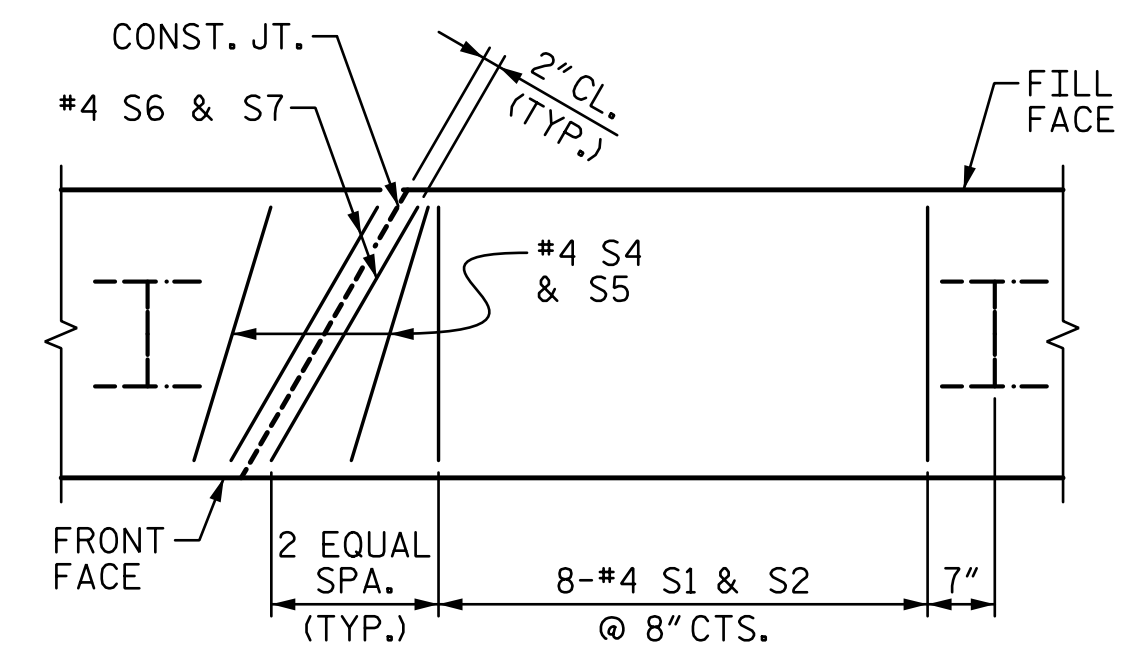
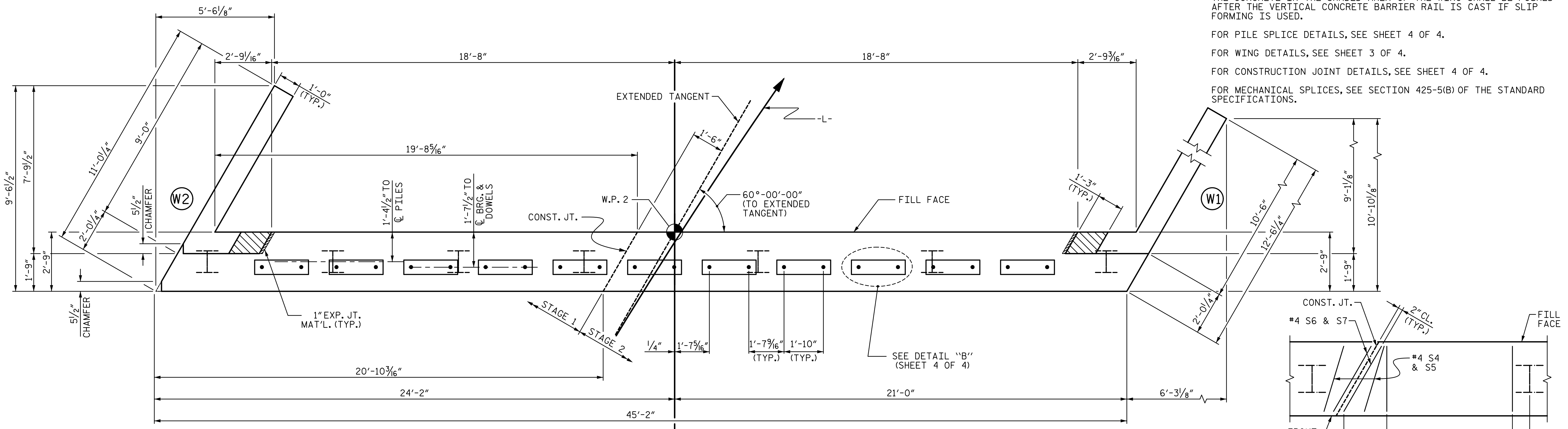
S-11
 TOTAL SHEETS 17

R:\Structures\ustation\401.02\17BP.14.R.158_SML_EB01_OIL_5500009.dgn
 10/31/2025 5:01:46 PM Jones

DRAWN BY : LEM DATE : 7-17
 CHECKED BY : JTG DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

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.

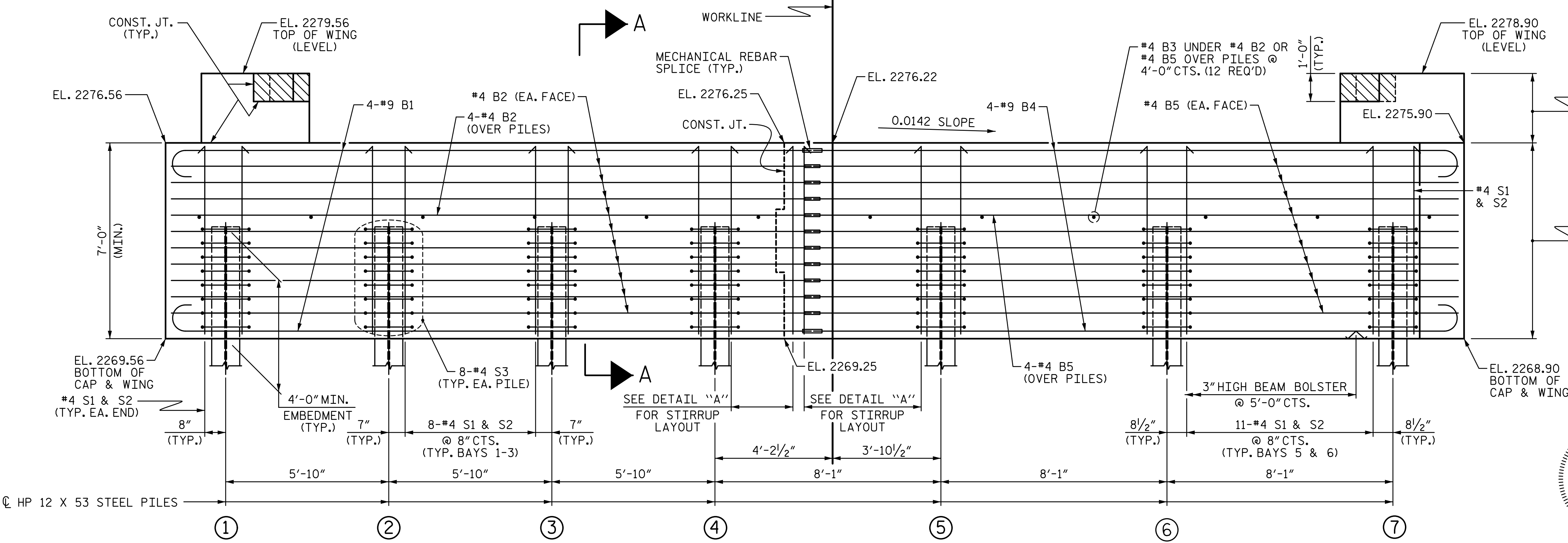


PLAN

DETAIL "A"

TOP OF PILE ELEVATIONS	
①	2273.53
②	2273.45
③	2273.36
④	2273.28
⑤	2273.17
⑥	2273.05
⑦	2272.94

PROJECT NO. **B-6029**
MACON COUNTY
 STATION: **17+07.50 -L-**
 SHEET 2 OF 4

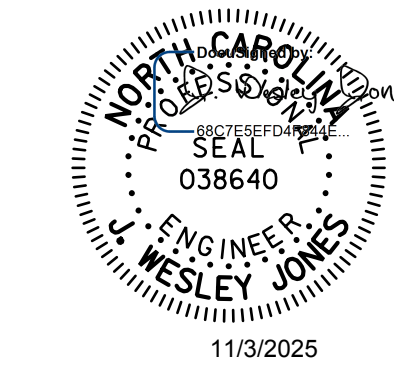


ELEVATION

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.

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

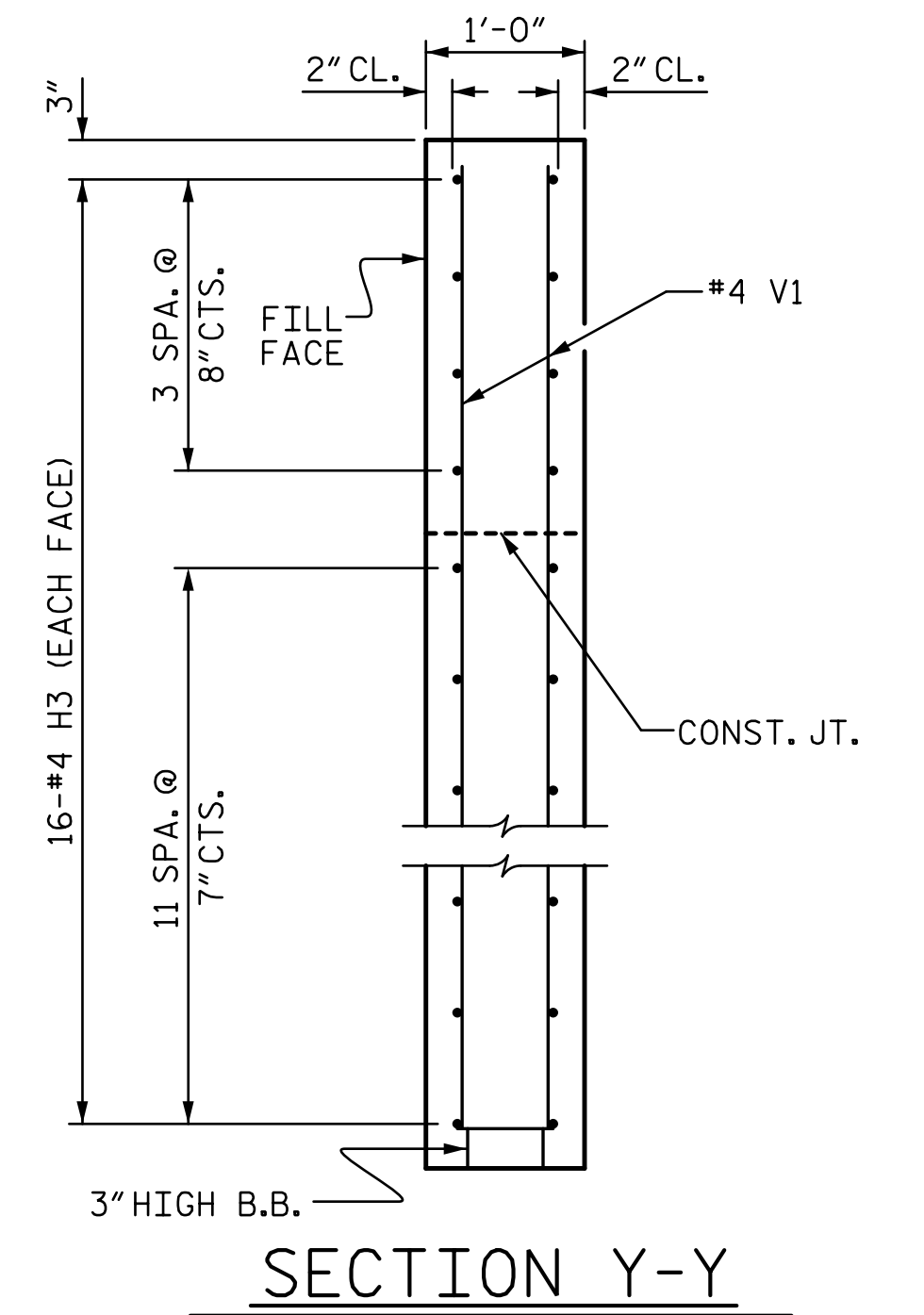
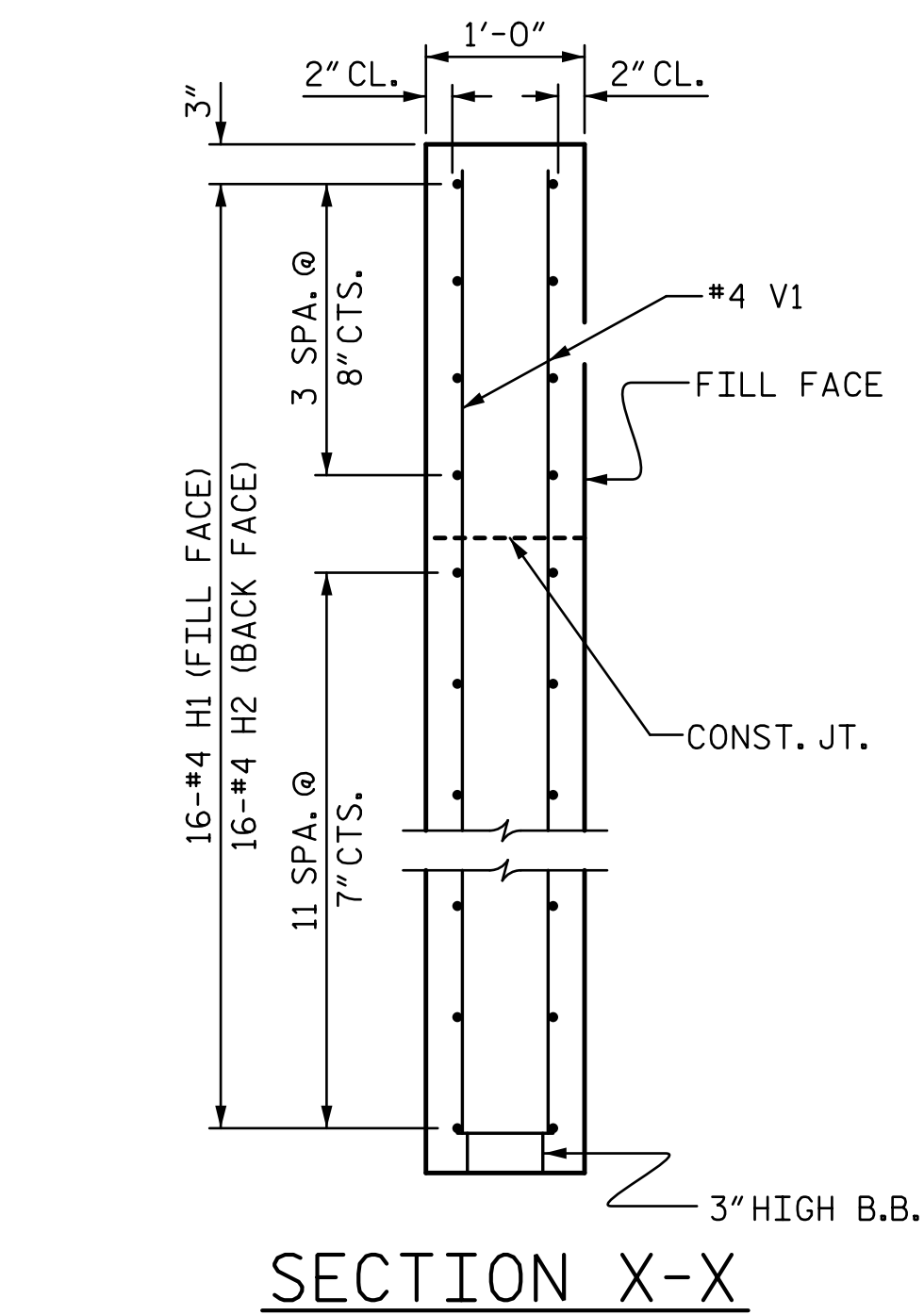
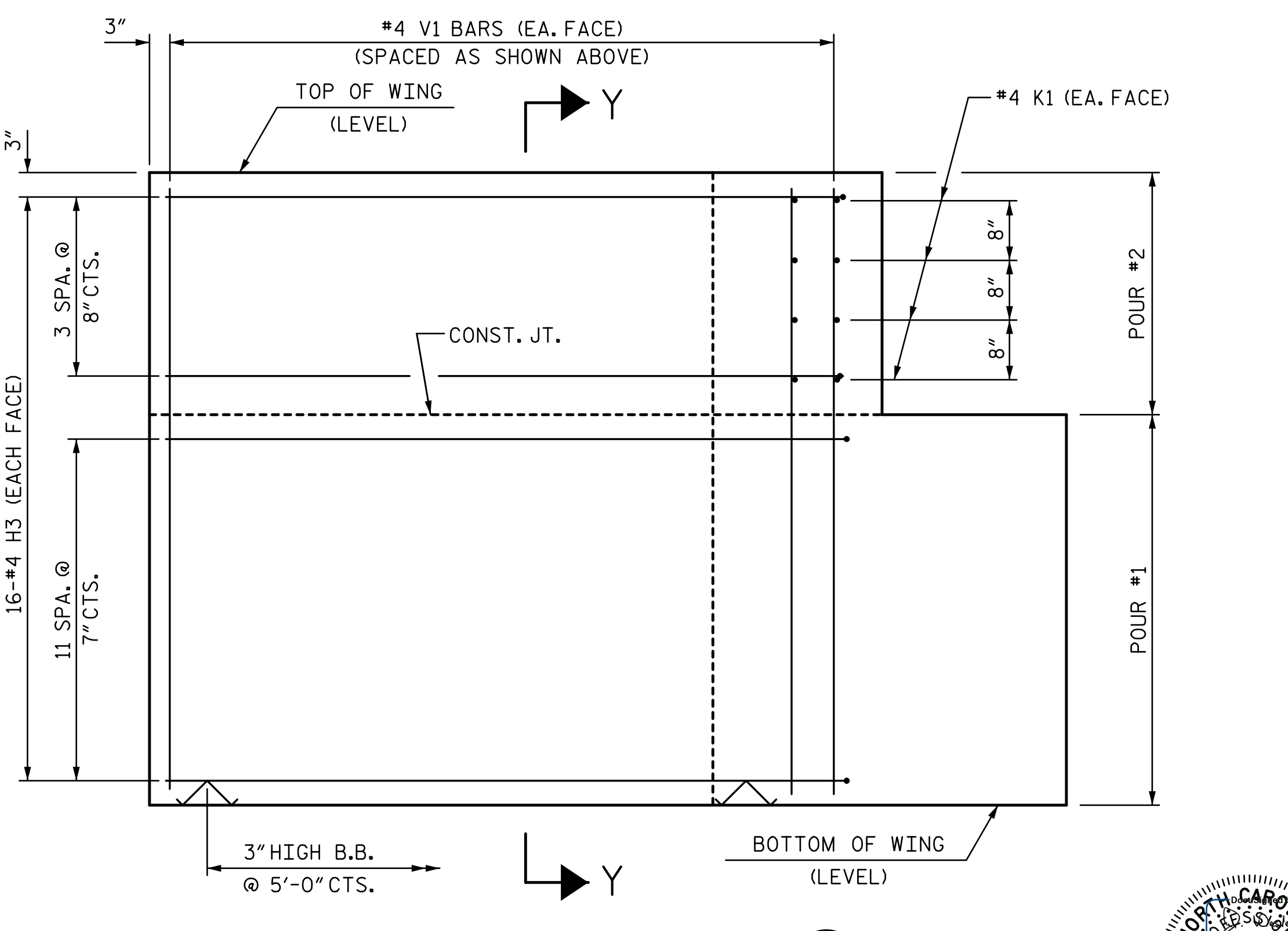
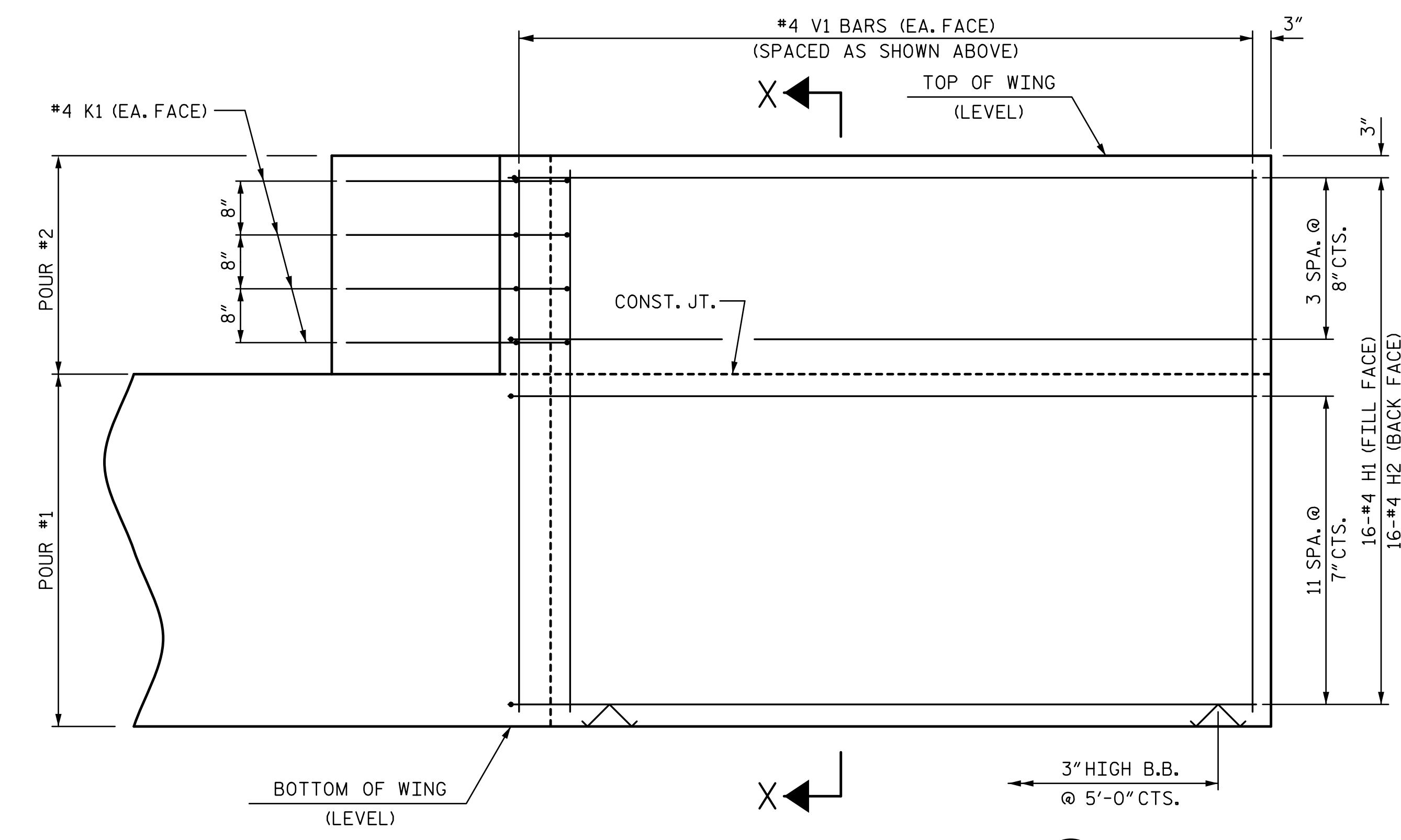
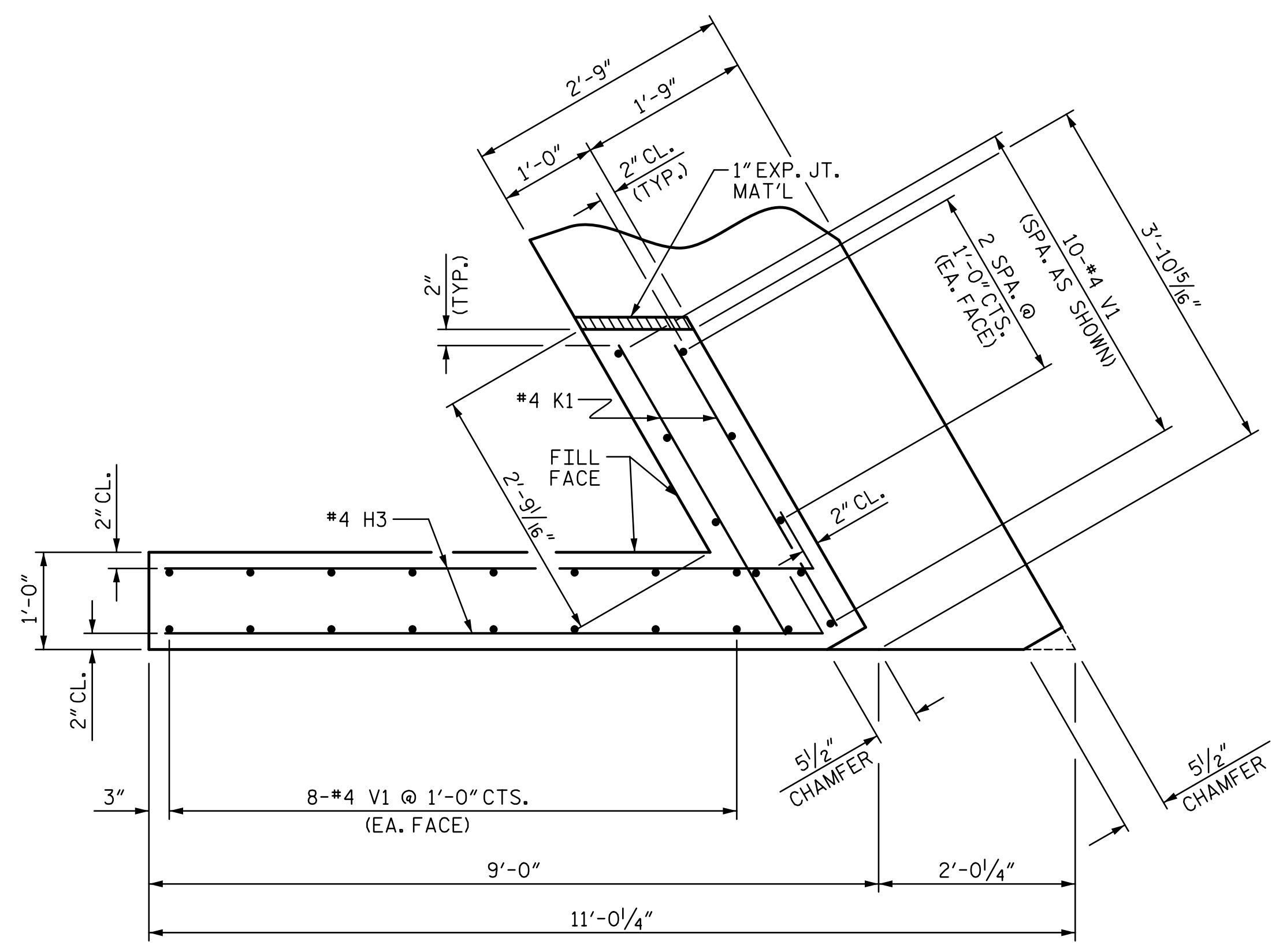
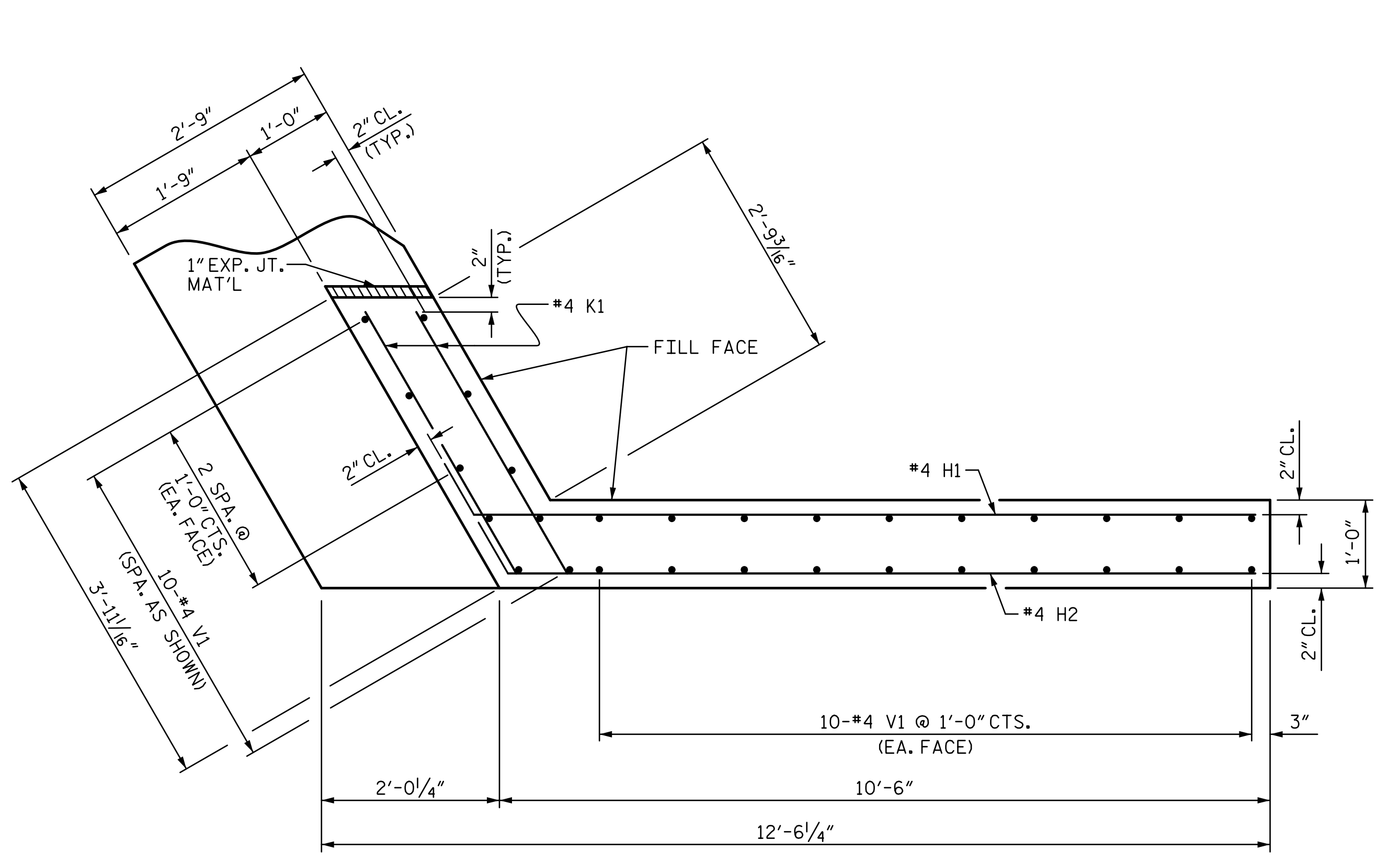


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						
SUBSTRUCTURE END BENT No. 2						
REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			17

10/31/2025 5:01:47 PM R:\Structures\ustation\401_023_17BP\4.R\58_SMU_EB02_012_5500009.dgn Jones

DRAWN BY : LEM DATE : 7-17
 CHECKED BY : JTG DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

10/31/2025 5:01:48 PM R:\Structures\ustation\401.025_17BP.14.R.158_SMU_EB03_013_550009.dgn



ELEVATION OF WING (W1)

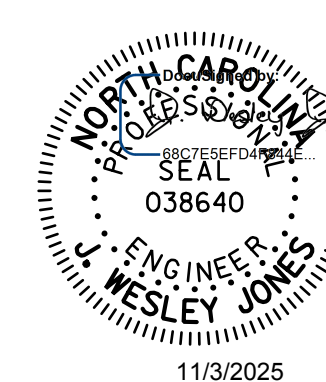
ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. B-6029
 MACON COUNTY
 STATION: 17+07.50 -L-
 SHEET 3 OF 4

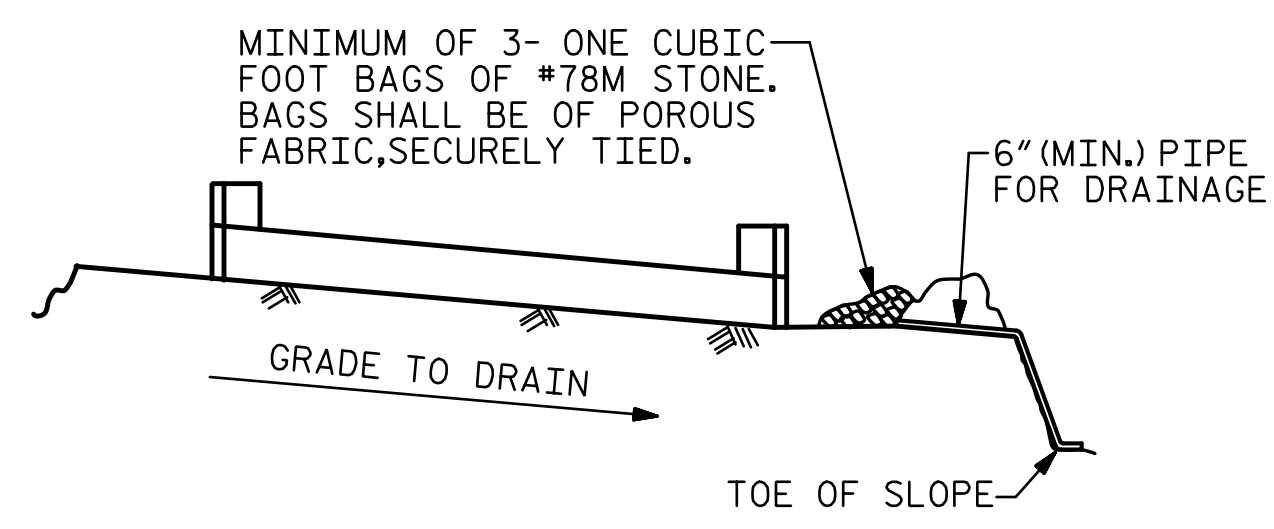
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT WING DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-13
					TOTAL SHEETS 17

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991



DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

DRAWN BY : LEM DATE : 7-17
 CHECKED BY : JTG DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

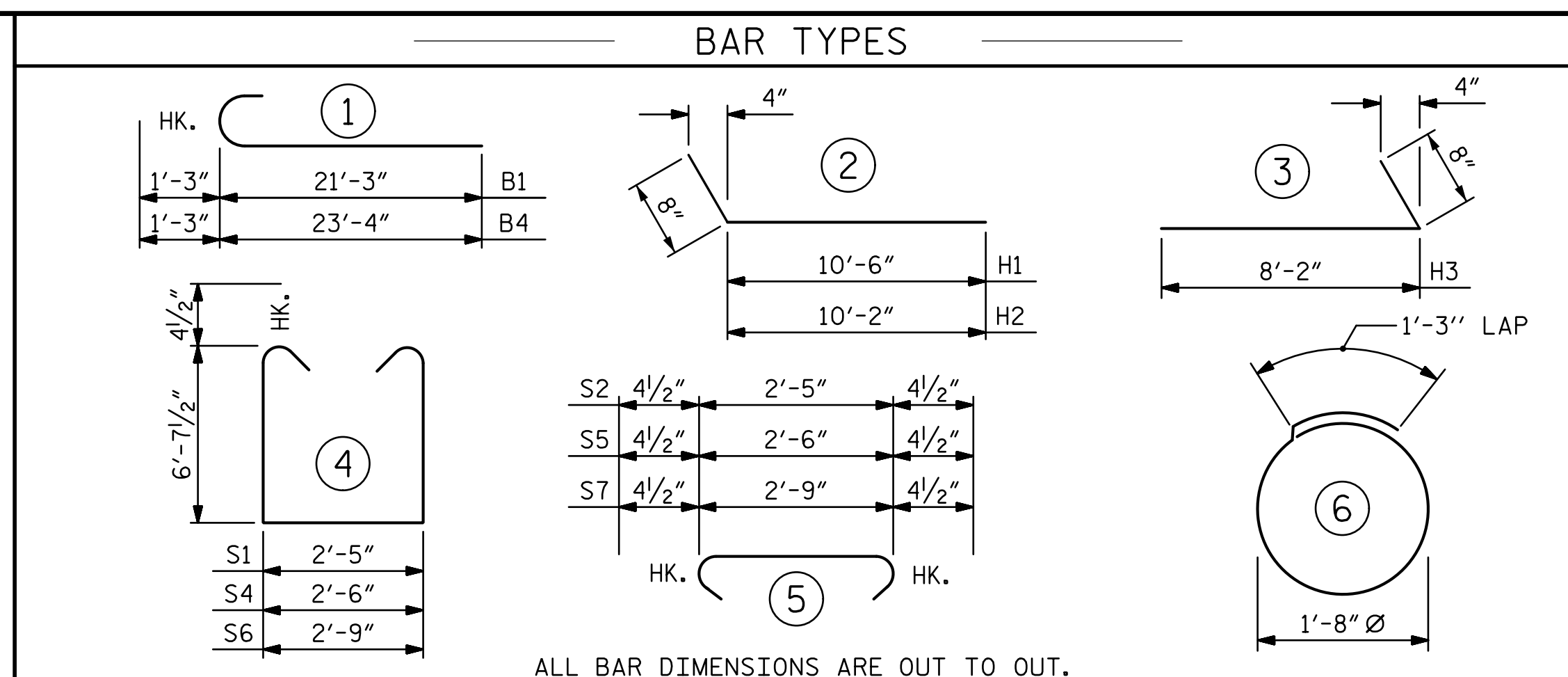


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

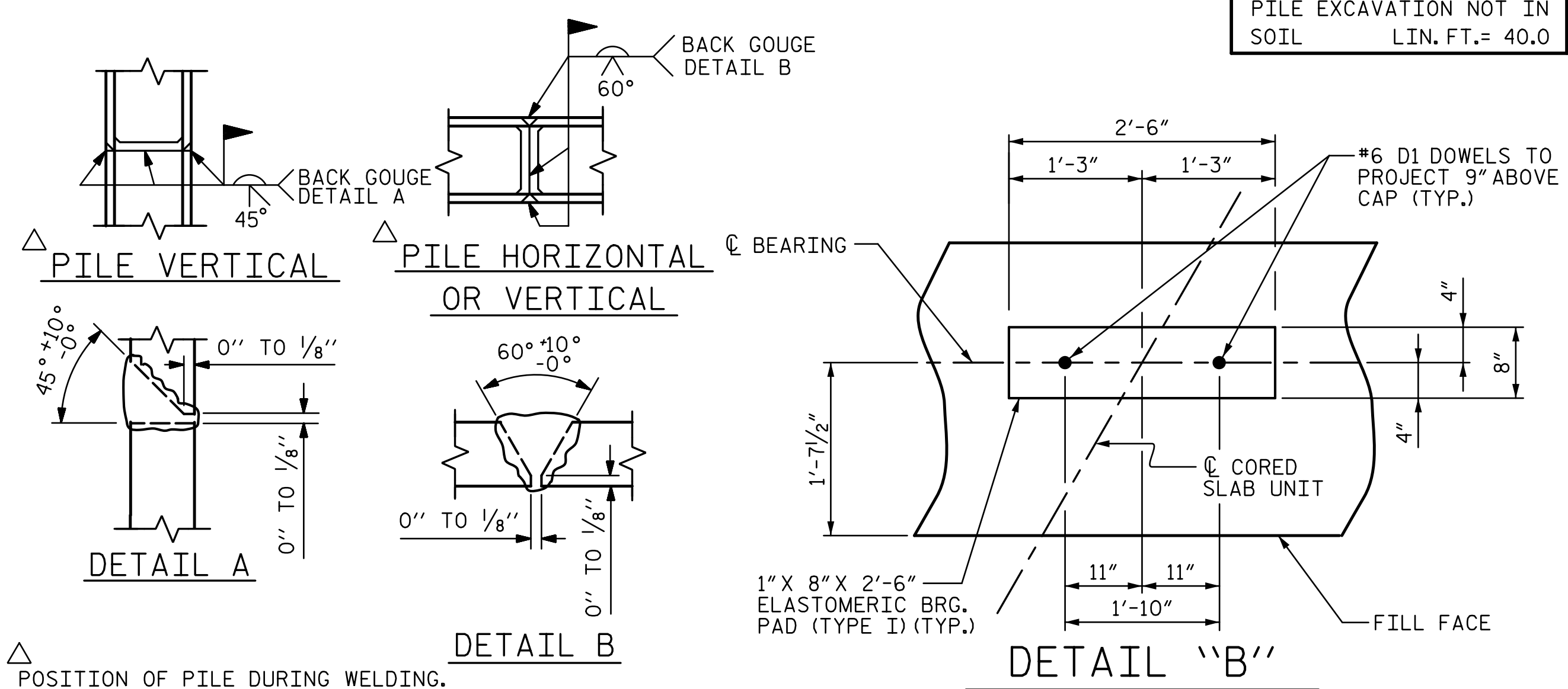
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

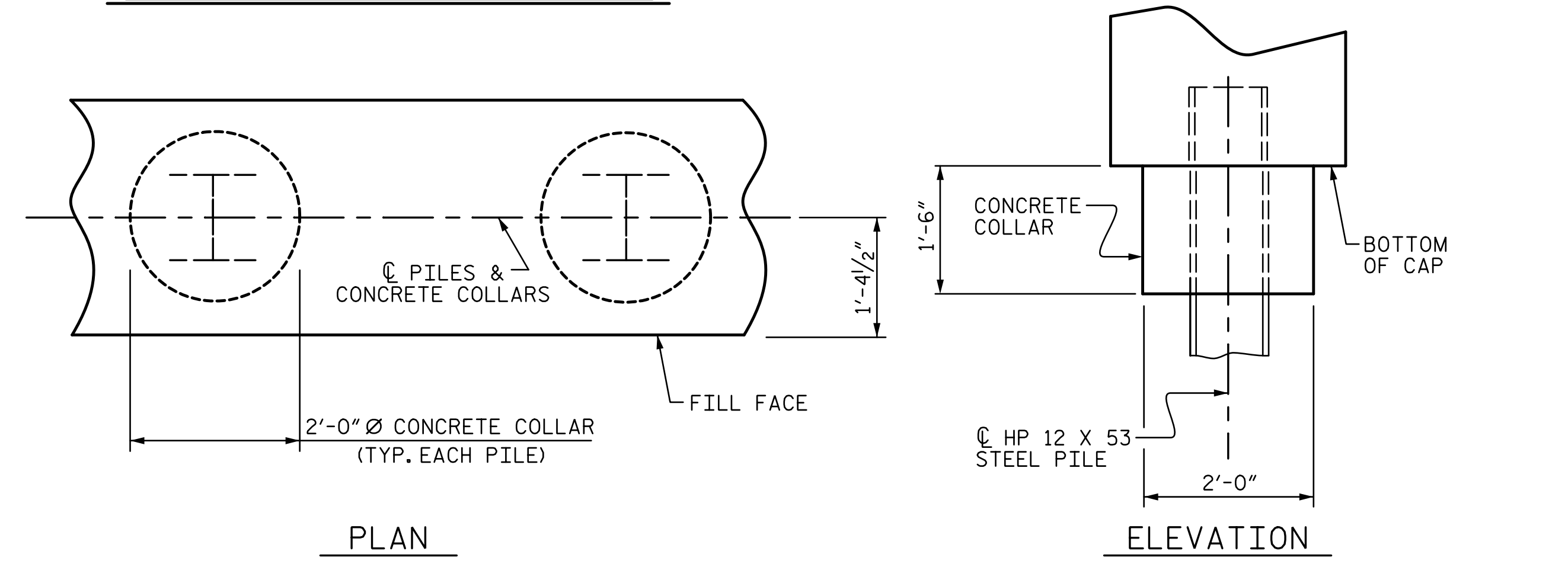
TEMPORARY DRAINAGE AT END BENT



END BENT No. 1 (STAGE 1) HP 12 X 53 STEEL PILES NO: 4 LIN. FT.= 60.0	END BENT No. 1 (STAGE 2) HP 12 X 53 STEEL PILES NO: 3 LIN. FT.= 45.0	END BENT No. 2 (STAGE 1) HP 12 X 53 STEEL PILES NO: 4 LIN. FT.= 60.0	END BENT No. 2 (STAGE 2) HP 12 X 53 STEEL PILES NO: 3 LIN. FT.= 45.0
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 4	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: 4	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES NO: 3
PILE EXCAVATION IN SOIL LIN. FT.= 0.0	PILE EXCAVATION IN SOIL LIN. FT.= 0.0	PILE EXCAVATION IN SOIL LIN. FT.= 4.0	PILE EXCAVATION IN SOIL LIN. FT.= 3.0
PILE EXCAVATION NOT IN SOIL LIN. FT.= 40.0	PILE EXCAVATION NOT IN SOIL LIN. FT.= 30.0	PILE EXCAVATION NOT IN SOIL LIN. FT.= 36.0	PILE EXCAVATION NOT IN SOIL LIN. FT.= 27.0

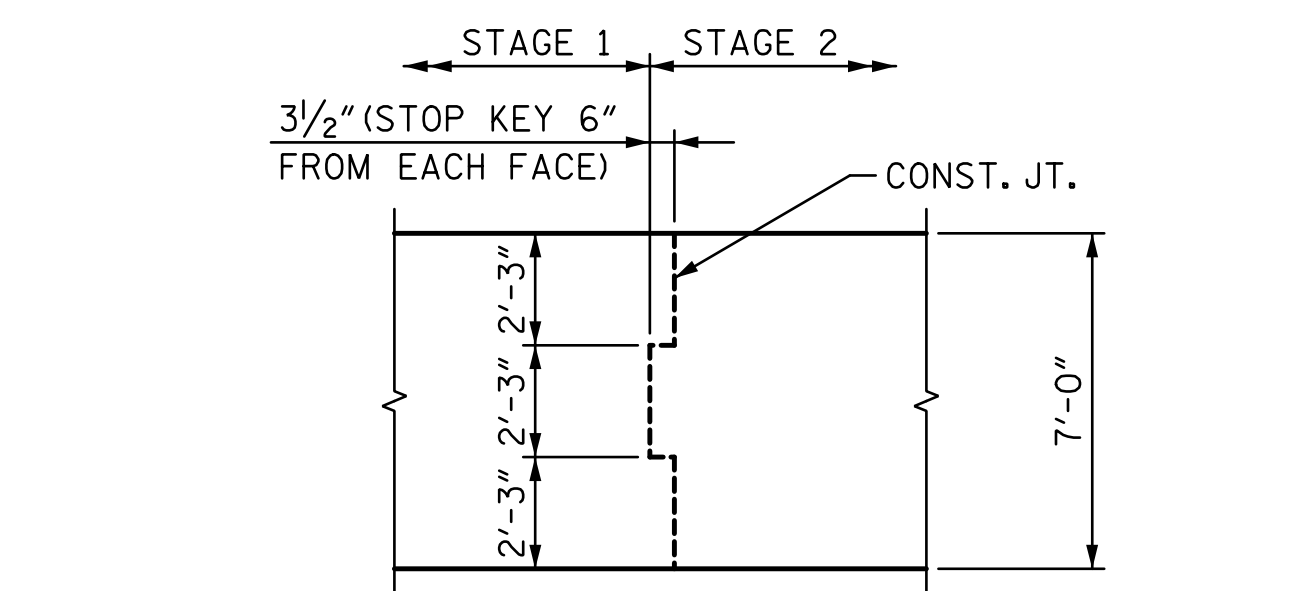


PILE SPLICE DETAILS

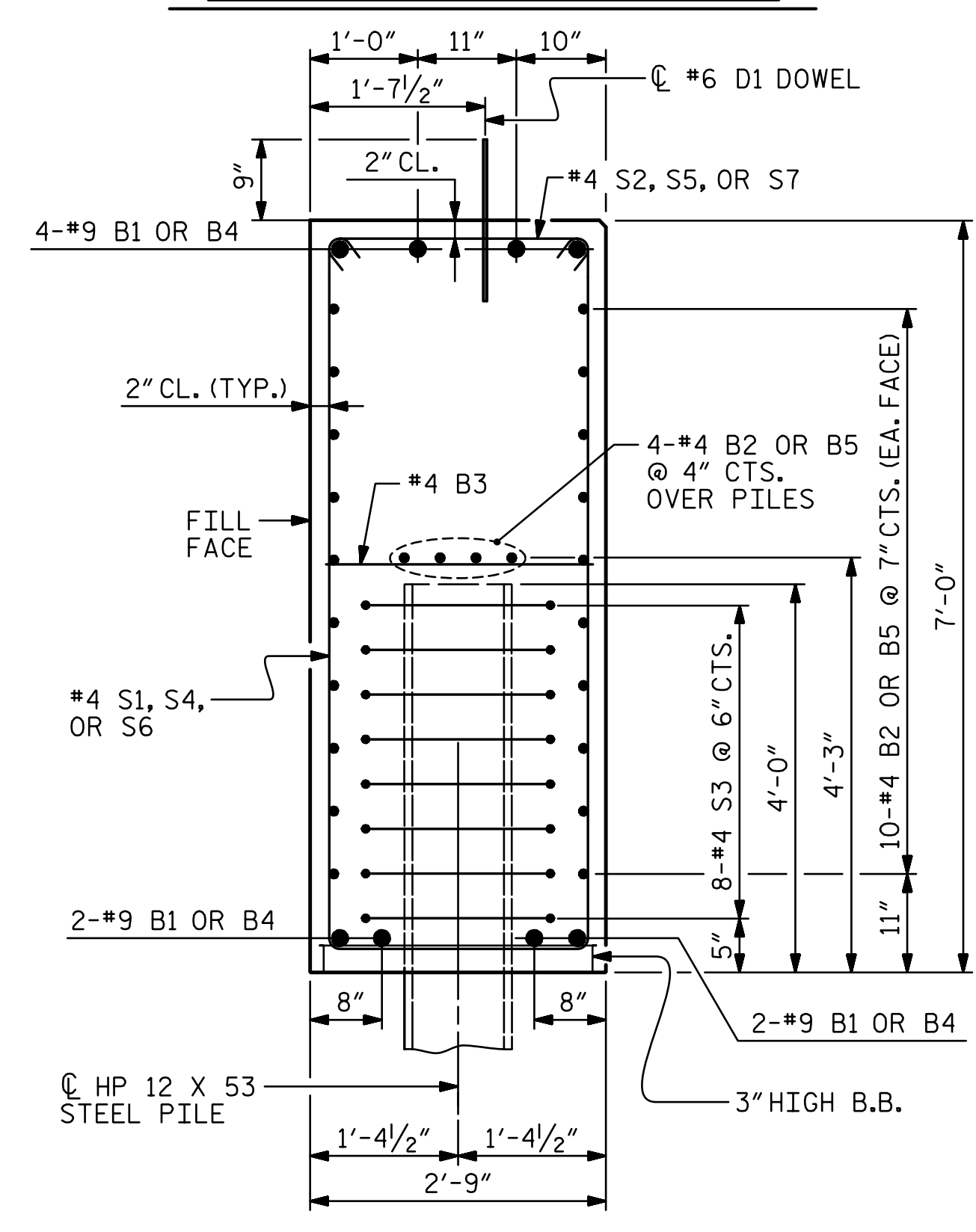


CORROSION PROTECTION FOR STEEL PILES DETAIL

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



CONST. JT. DETAIL



SECTION A-A

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

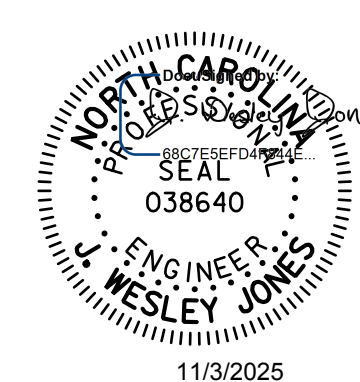
BILL OF MATERIAL					
END BENT 1 (STAGE 1)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	22'-6"	612
B2	24	#4	STR	21'-3"	341
B3	6	#4	STR	2'-5"	10
D1	10	#6	STR	1'-6"	23
H1	16	#4	2	11'-2"	119
H2	16	#4	2	10'-10"	116
K1	8	#4	STR	3'-3"	17
S1	25	#4	4	16'-5"	274
S2	25	#4	5	3'-2"	53
S3	32	#4	6	6'-6"	139
S4	1	#4	4	16'-6"	11
S5	1	#4	5	3'-3"	2
S6	1	#4	4	16'-9"	11
S7	1	#4	5	3'-6"	2
V1	30	#4	STR	9'-7"	192
REINFORCING STEEL				1922 LBS.	
CLASS A CONCRETE BREAKDOWN POUR #1 CAP, LOWER PART OF WINGS & COLLARS				18.1 C.Y.	
POUR #2 UPPER PART OF WINGS				1.5 C.Y.	
TOTAL CLASS A CONCRETE				19.6 C.Y.	

BILL OF MATERIAL					
END BENT 1 (STAGE 2)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	6	#4	STR	2'-5"	10
B4	8	#9	1	24'-7"	669
B5	24	#4	STR	23'-4"	374
D1	12	#6	STR	1'-6"	27
H3	32	#4	3	8'-10"	189
K1	8	#4	STR	3'-3"	17
S1	31	#4	4	16'-5"	340
S2	31	#4	5	3'-2"	66
S3	24	#4	6	6'-6"	104
S4	1	#4	4	16'-6"	11
S5	1	#4	5	3'-3"	2
S6	1	#4	4	16'-9"	11
S7	1	#4	5	3'-6"	2
V1	26	#4	STR	9'-7"	166
REINFORCING STEEL				1988 LBS.	
CLASS A CONCRETE BREAKDOWN POUR #1 CAP, LOWER PART OF WINGS & COLLARS				19.8 C.Y.	
POUR #2 UPPER PART OF WINGS				1.3 C.Y.	
TOTAL CLASS A CONCRETE				21.1 C.Y.	

BILL OF MATERIAL					
END BENT 2 (STAGE 1)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	22'-6"	612
B2	24	#4	STR	21'-3"	341
B3	6	#4	STR	2'-5"	10
D1	10	#6	STR	1'-6"	23
H3	32	#4	3	8'-10"	189
K1	8	#4	STR	3'-3"	17
S1	25	#4	4	16'-5"	274
S2	25	#4	5	3'-2"	53
S3	32	#4	6	6'-6"	139
S4	1	#4	4	16'-6"	11
S5	1	#4	5	3'-3"	2
S6	1	#4	4	16'-9"	11
S7	1	#4	5	3'-6"	2
V1	26	#4	STR	9'-7"	166
REINFORCING STEEL				1850 LBS.	
CLASS A CONCRETE BREAKDOWN POUR #1 CAP, LOWER PART OF WINGS & COLLARS				17.5 C.Y.	
POUR #2 UPPER PART OF WINGS				1.3 C.Y.	
TOTAL CLASS A CONCRETE				18.8 C.Y.	

BILL OF MATERIAL					
END BENT 2 (STAGE 2)					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	6	#4	STR	2'-5"	10
B4	8	#9	1	24'-7"	669
B5	24	#4	STR	23'-4"	374
D1	12	#6	STR	1'-6"	27
H1	16	#4	2	11'-2"	119
H2	16	#4	2	10'-10"	116
K1	8	#4	STR	3'-3"	17
S1	31	#4	4	16'-5"	340
S2	31	#4	5	3'-2"	66
S3	24	#4	6	6'-6"	104
S4	1	#4	4	16'-6"	11
S5	1	#4	5	3'-3"	2
S6	1	#4	4	16'-9"	11
S7	1	#4	5	3'-6"	2
V1	30	#4	STR	9'-7"	192
REINFORCING STEEL				2060 LBS.	
CLASS A CONCRETE BREAKDOWN POUR #1 CAP, LOWER PART OF WINGS & COLLARS				20.4 C.Y.	
POUR #2 UPPER PART OF WINGS				1.5 C.Y.	
TOTAL CLASS A CONCRETE				21.9 C.Y.	

PROJECT NO. **B-6029**
MACON COUNTY
 STATION: **17+07.50 -L-**
 SHEET 4 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE
END BENT DETAILS

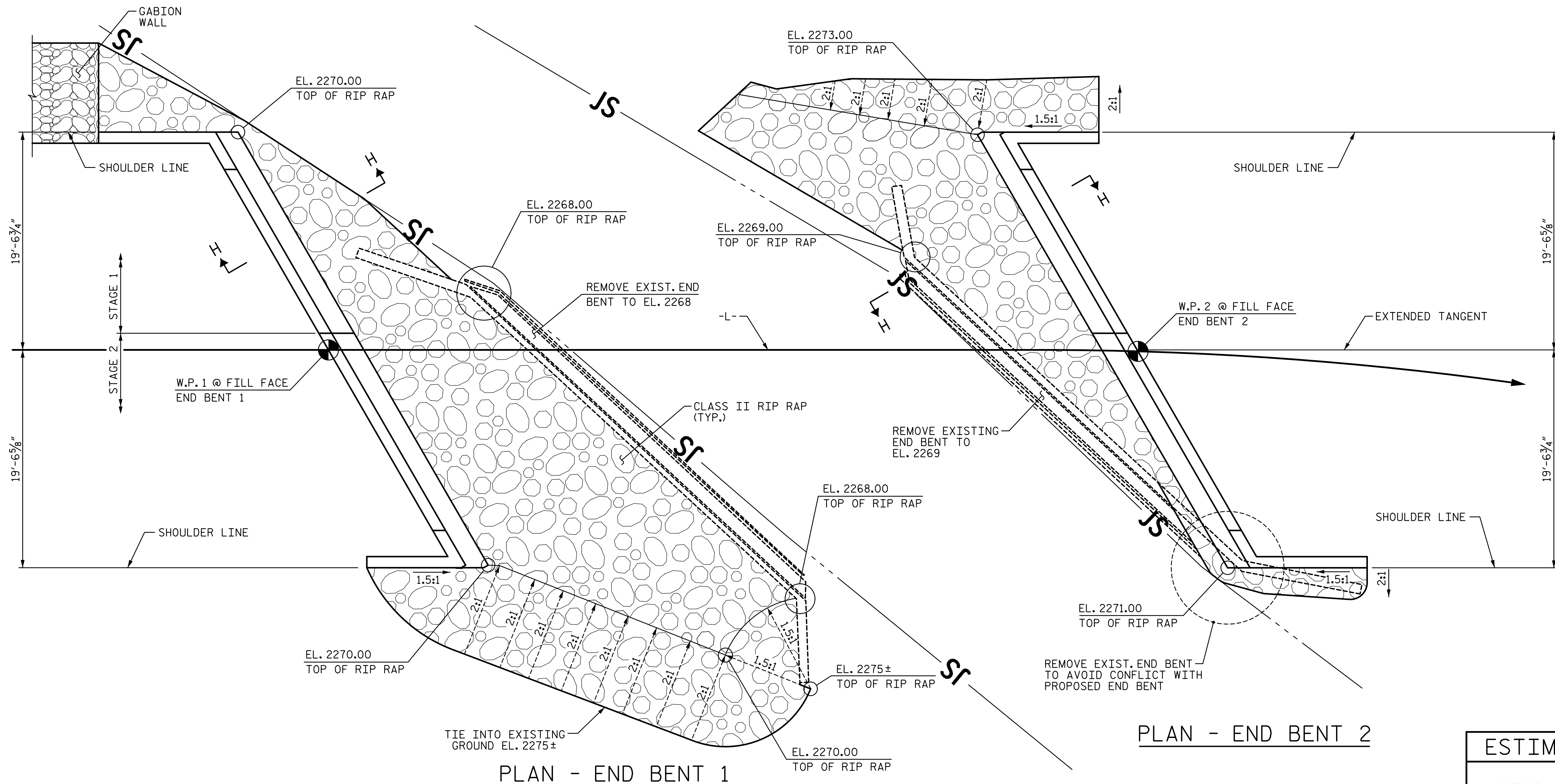
stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

10/31/2025 5:01:49 PM R:\Structures\ustation\401_027_17BP_14_R_158_SMU_EB04_014_550009.dgn Jones

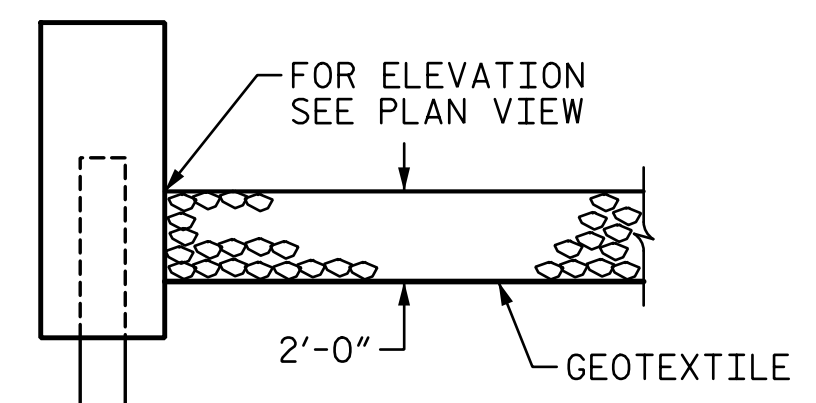
DRAWN BY: LEM DATE: 7-17
 CHECKED BY: JTG DATE: 11-17
 DESIGN ENGINEER OF RECORD: JWJ DATE: 10-25



PLAN - END BENT 1

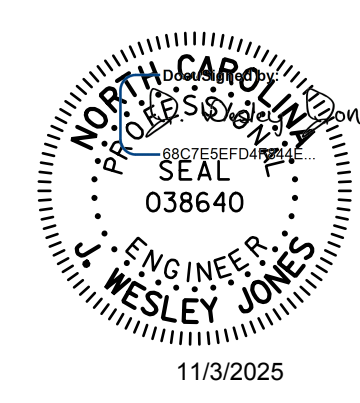
PLAN - END BENT 2

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+07.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	115	125
END BENT 2	60	70



SECTION H-H

PROJECT NO. B-6029
MACON COUNTY
 STATION: 17+07.50 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
RIP RAP DETAILS

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

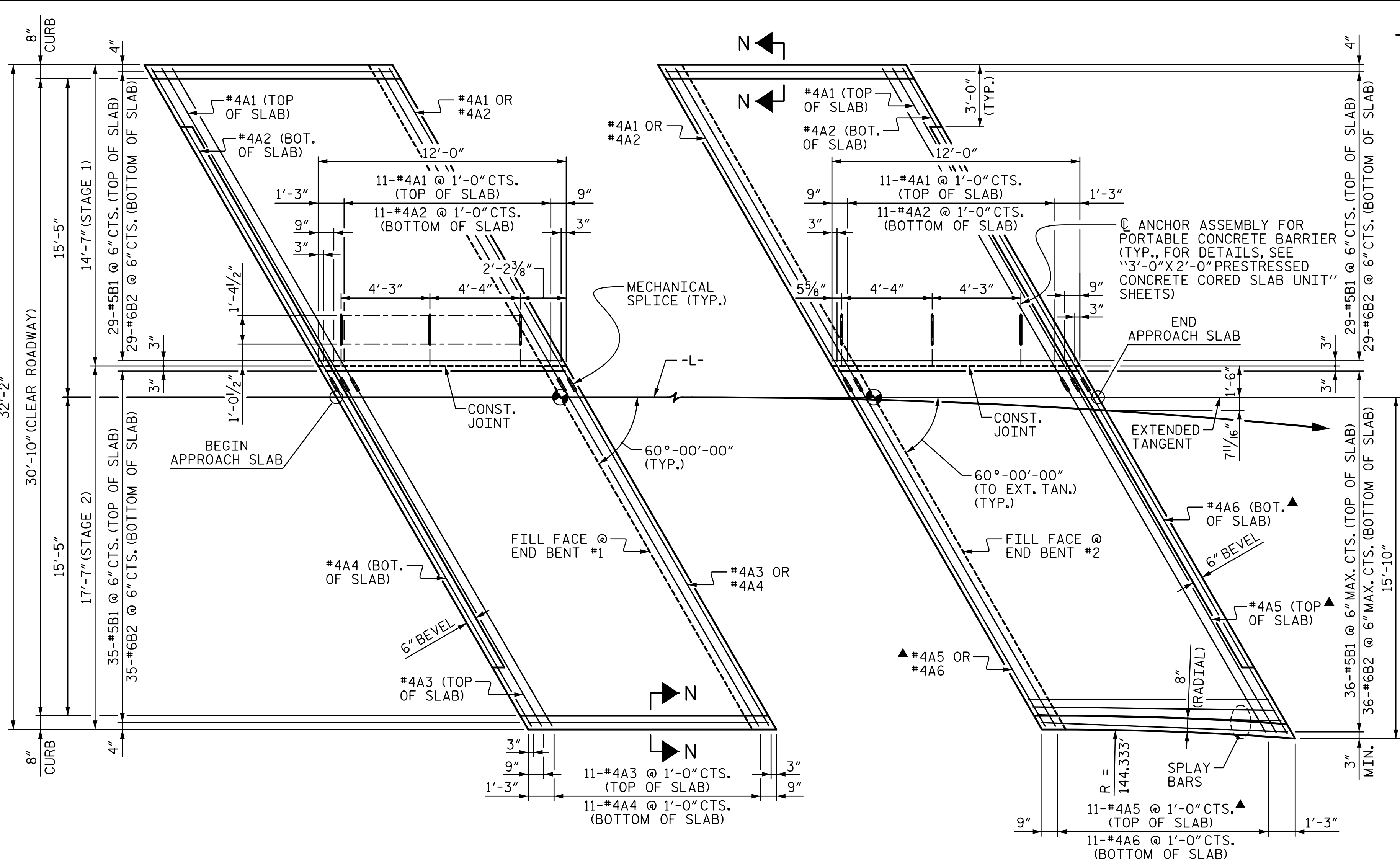
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 17

10/31/2025 5:04:50 PM R:\Structures\ustation\401_029_17BP_14.R\158_SMU_RR_015_550009.dgn Jones

DRAWN BY : LEM DATE : 7-17
 CHECKED BY : JTG DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

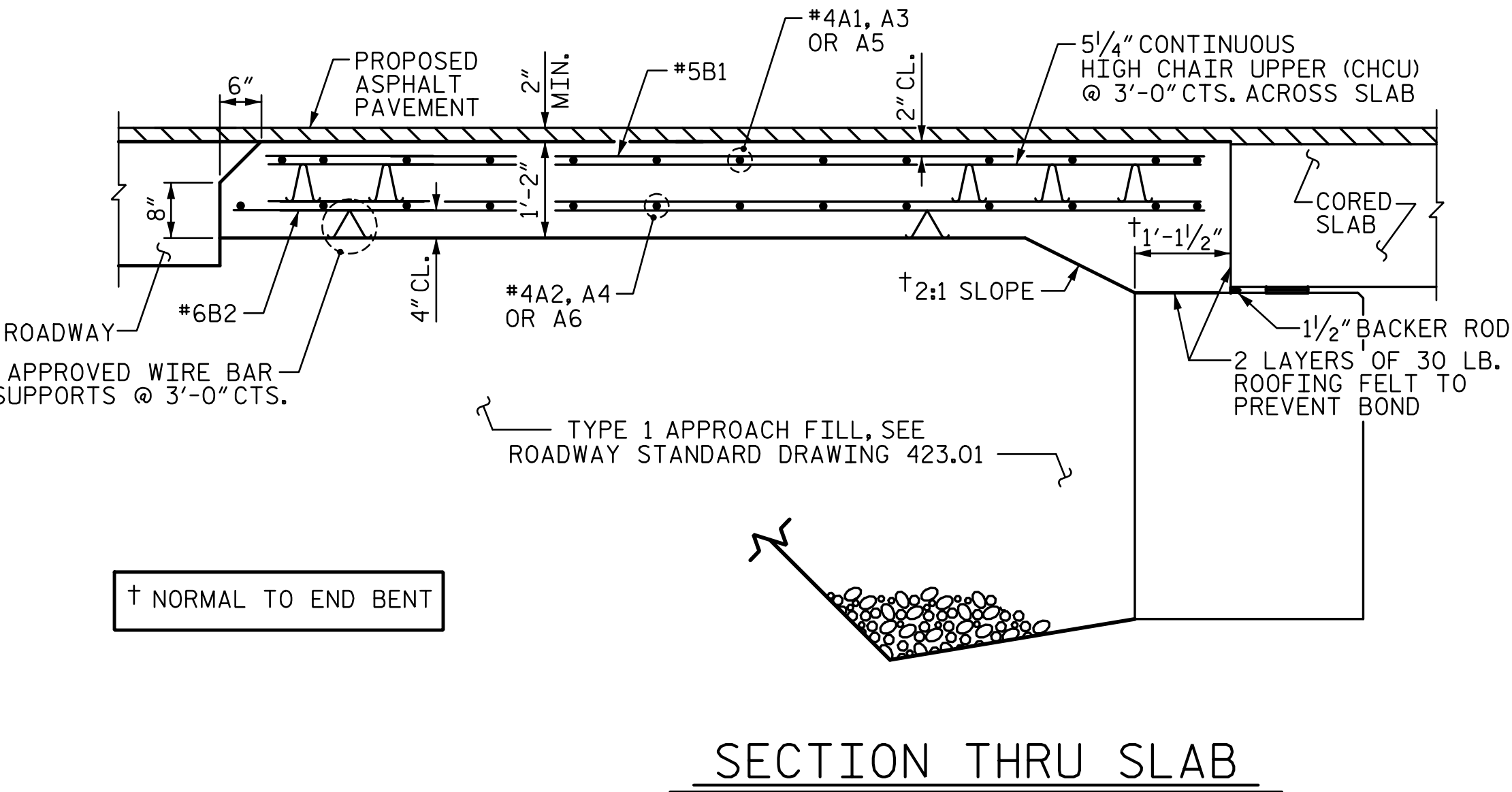
R:\Structures\ustation\401_031\17BP\14.R\158_SML_BAS_016_550009.dgn 5:04:51 PM 10/31/2025 Jones



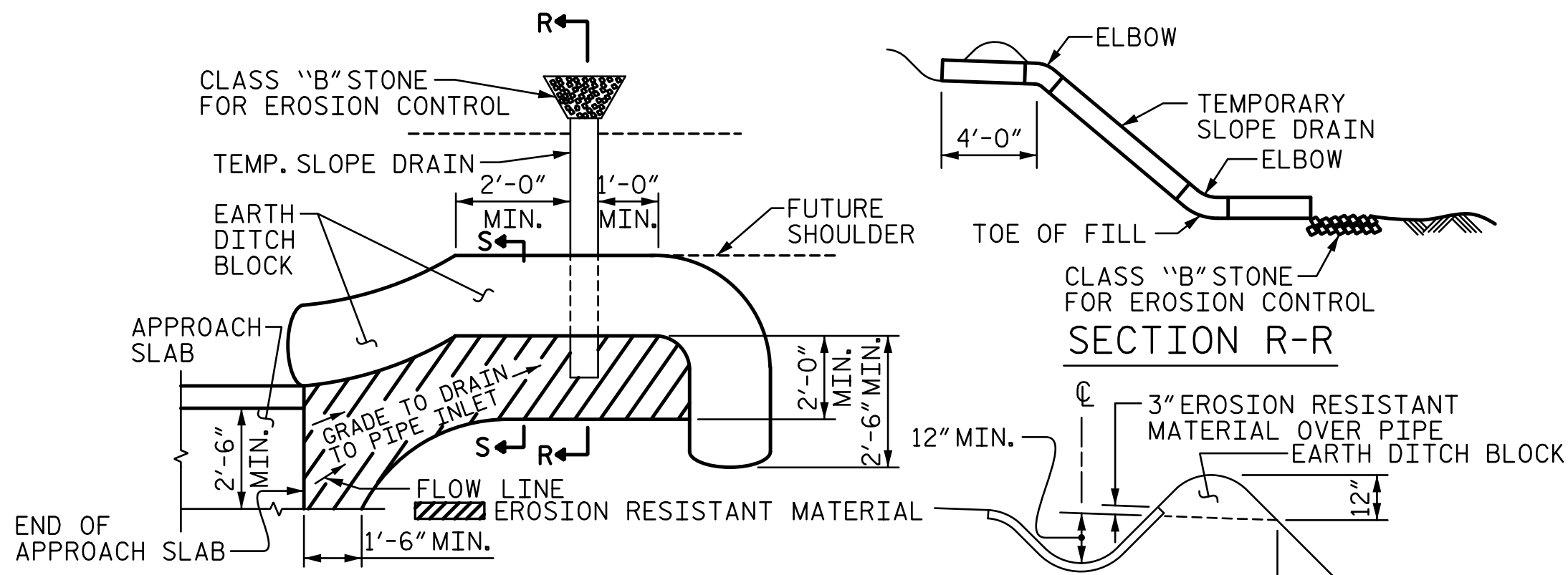
PLAN @ END BENT 1

PLAN @ END BENT 2

(DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS, U.N.O.)
 ▲ CONTRACTOR SHALL FIELD CUT BARS, AS NECESSARY, TO MAINTAIN 2" MIN. CLEARANCE.



SECTION THRU SLAB



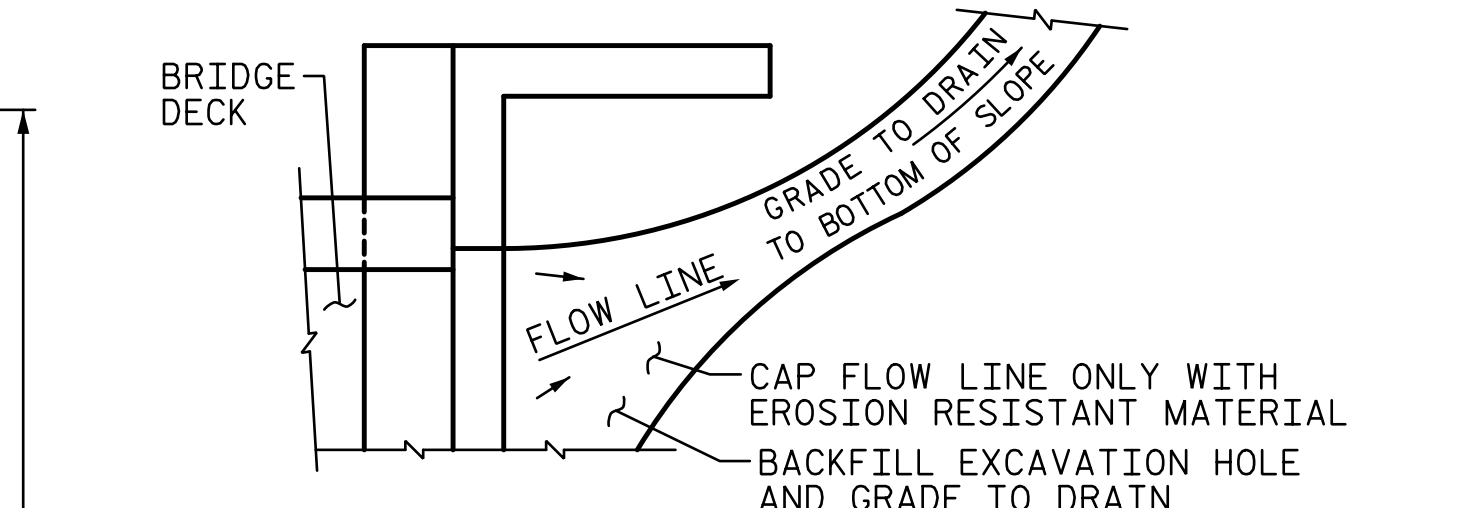
PLAN VIEW

TEMPORARY BERM AND SLOPE DRAIN DETAILS

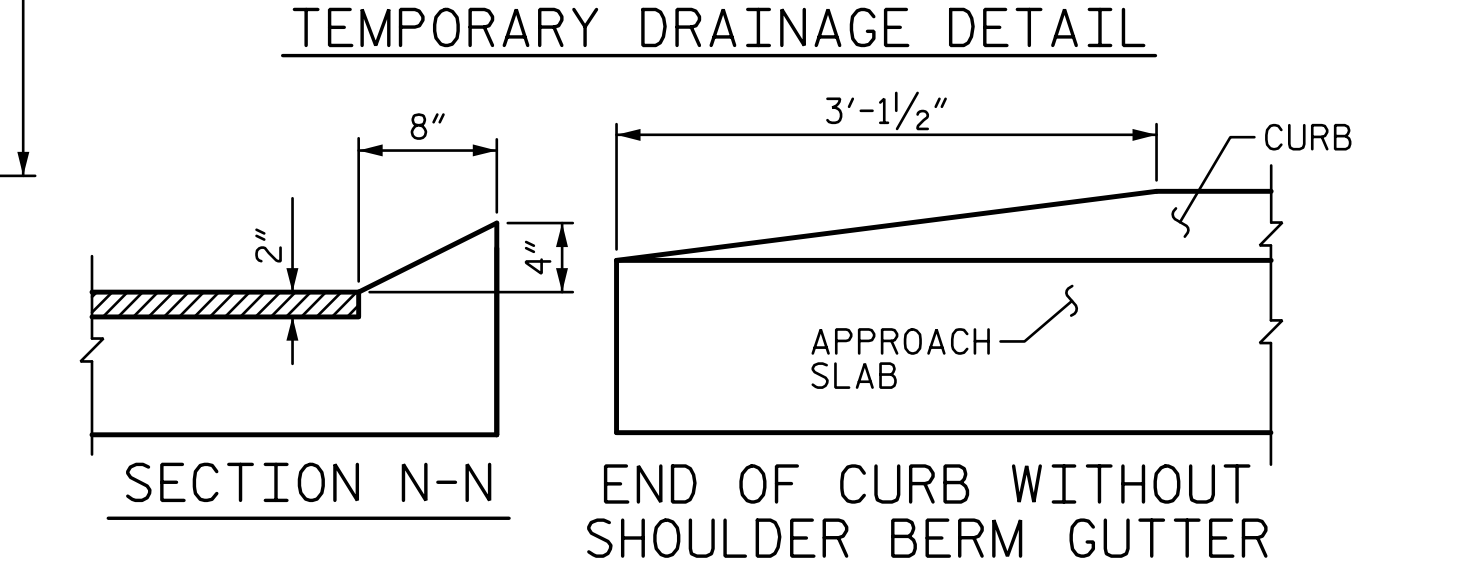
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

NOTES

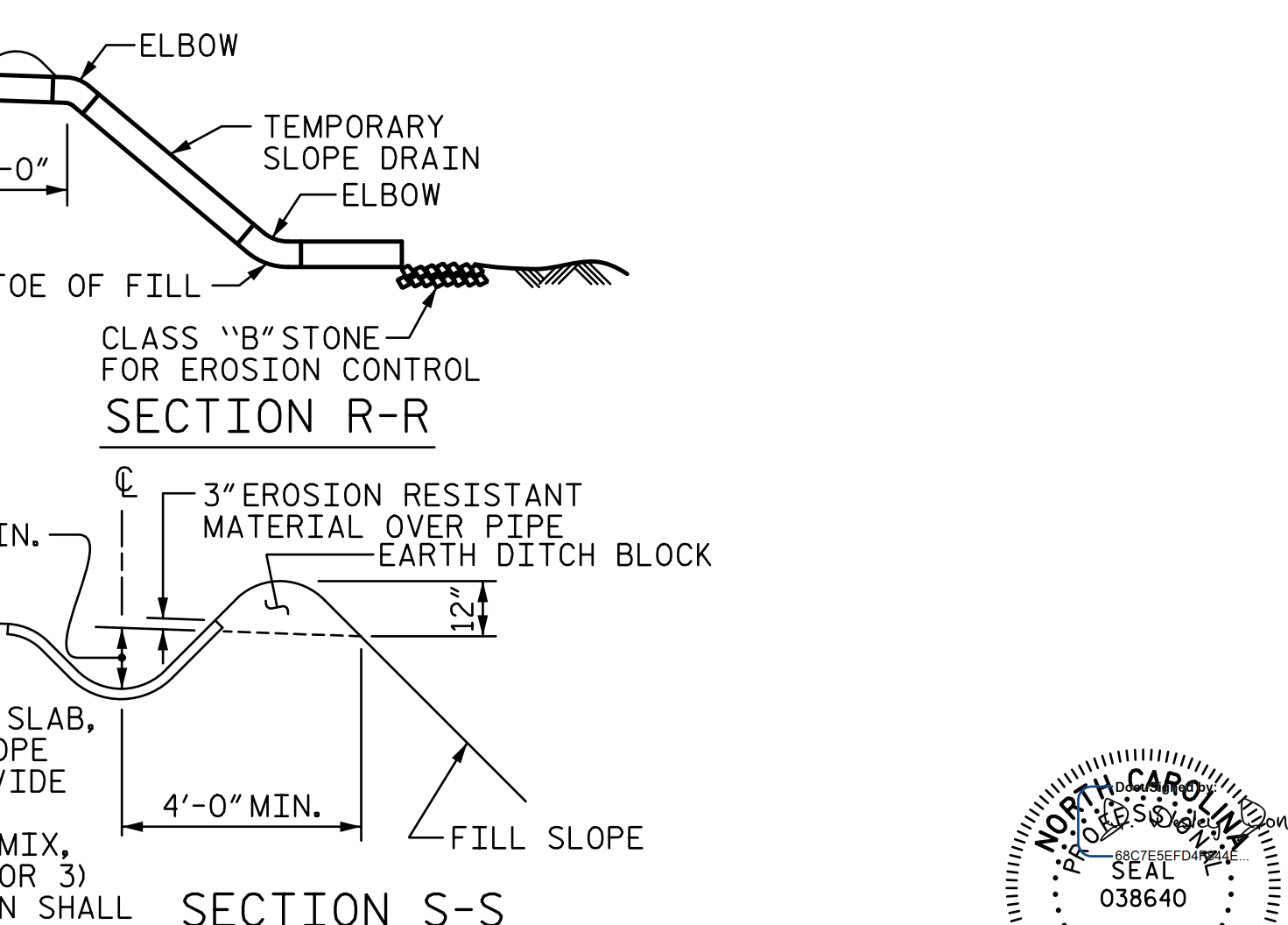
FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.
 AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.
 APPROACH SLAB GROOVING IS NOT REQUIRED.
 FOR MECHANICAL SPLICES, SEE SECTION 425-5(B) OF THE STANDARD SPECIFICATIONS.



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.



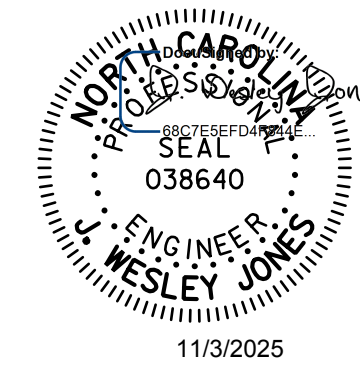
CURB DETAILS



SECTION S-S

BILL OF MATERIAL					
APPROACH SLAB AT EB 1 (STAGE 1)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	17'-8"	153
A2	13	#4	STR	17'-8"	153
*B1	29	#5	STR	11'-1"	335
B2	29	#6	STR	11'-7"	505
REINFORCING STEEL				LBS.	658
* EPOXY COATED REINFORCING STEEL				LBS.	488
CLASS AA CONCRETE				C. Y.	9.8
APPROACH SLAB AT EB 1 (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A3	13	#4	STR	19'-1"	166
A4	13	#4	STR	19'-1"	166
*B1	35	#5	STR	11'-1"	405
B2	35	#6	STR	11'-7"	609
REINFORCING STEEL				LBS.	775
* EPOXY COATED REINFORCING STEEL				LBS.	571
CLASS AA CONCRETE				C. Y.	11.5
APPROACH SLAB AT EB 2 (STAGE 1)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	17'-8"	153
A2	13	#4	STR	17'-8"	153
*B1	29	#5	STR	11'-1"	335
B2	29	#6	STR	11'-7"	505
REINFORCING STEEL				LBS.	658
* EPOXY COATED REINFORCING STEEL				LBS.	488
CLASS AA CONCRETE				C. Y.	9.6
APPROACH SLAB AT EB 2 (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A5	13	#4	STR	19'-6"	169
A6	13	#4	STR	19'-6"	169
*B1	36	#5	STR	11'-1"	416
B2	36	#6	STR	11'-7"	626
REINFORCING STEEL				LBS.	795
* EPOXY COATED REINFORCING STEEL				LBS.	585
CLASS AA CONCRETE				C. Y.	12.0

PROJECT NO. **B-6029**
MACON COUNTY
 STATION: **17+07.50 -L-**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 60° SKEW

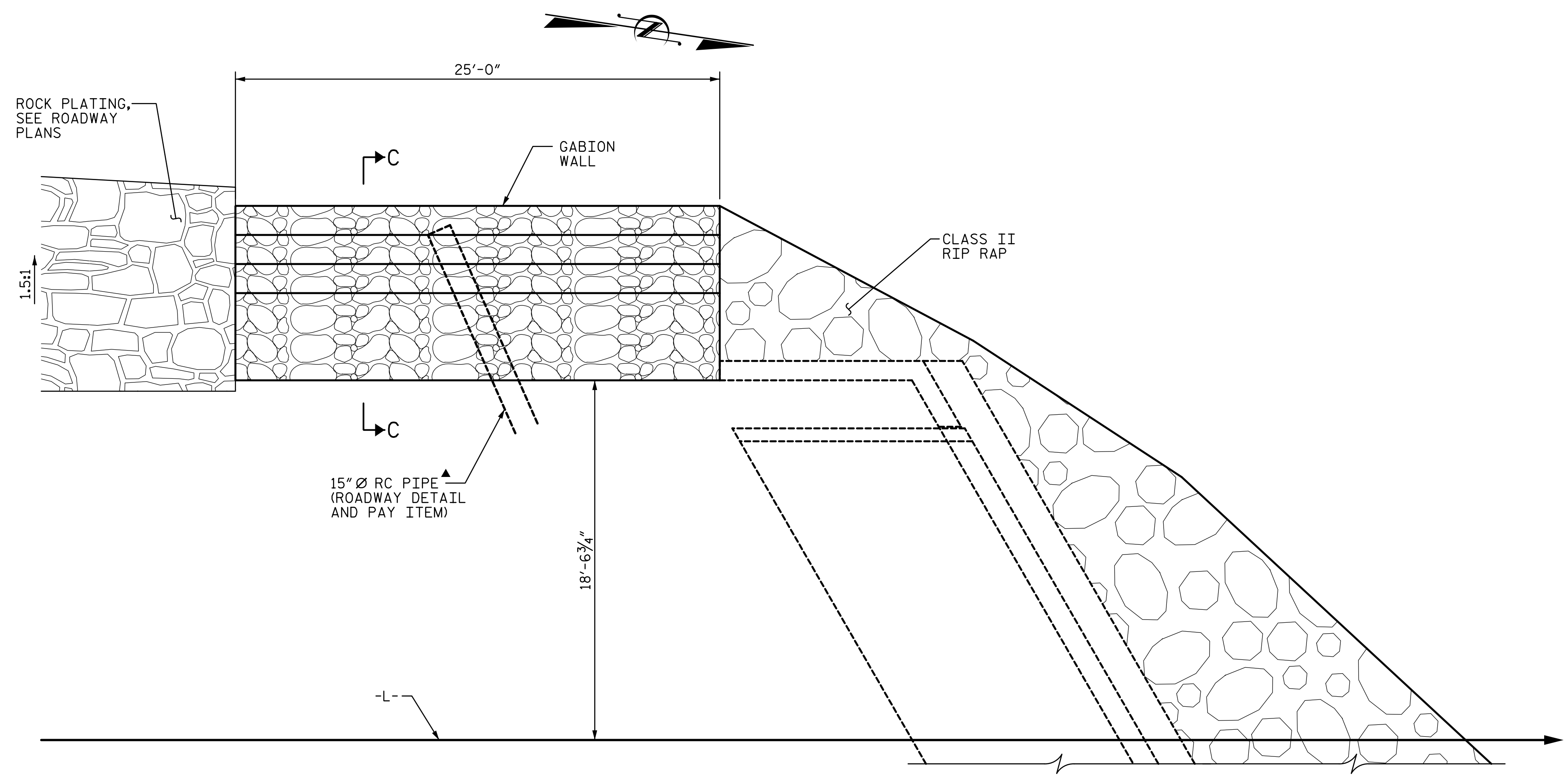
DRAWN BY : LEM DATE : 7-17
 CHECKED BY : MLO DATE : 11-17
 DESIGN ENGINEER OF RECORD : JWJ DATE : 10-25

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

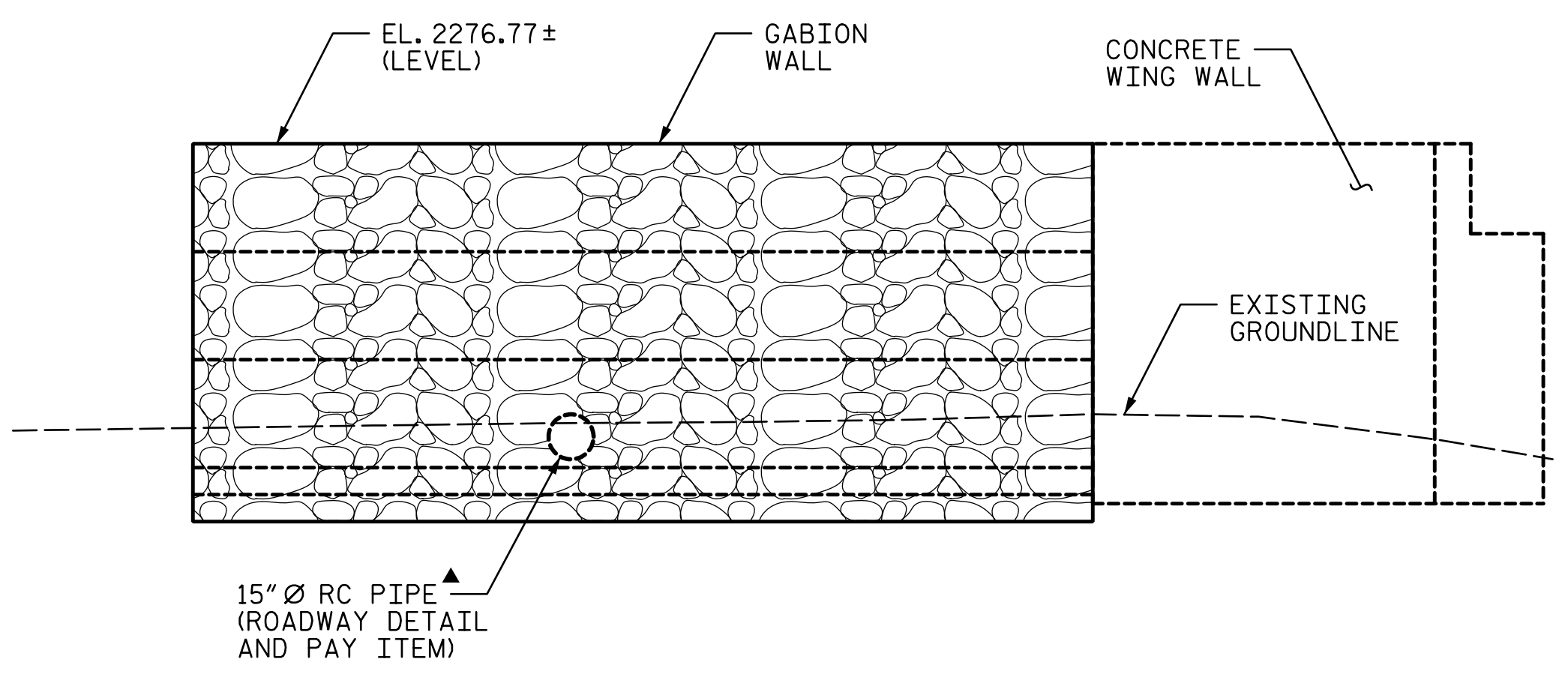
REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			17

R:\Structures\ustation\401.033_17BP.14.R.158_SMU_RW_017_550009.dgn 10/31/2025 5:04:52 PM J.Jones

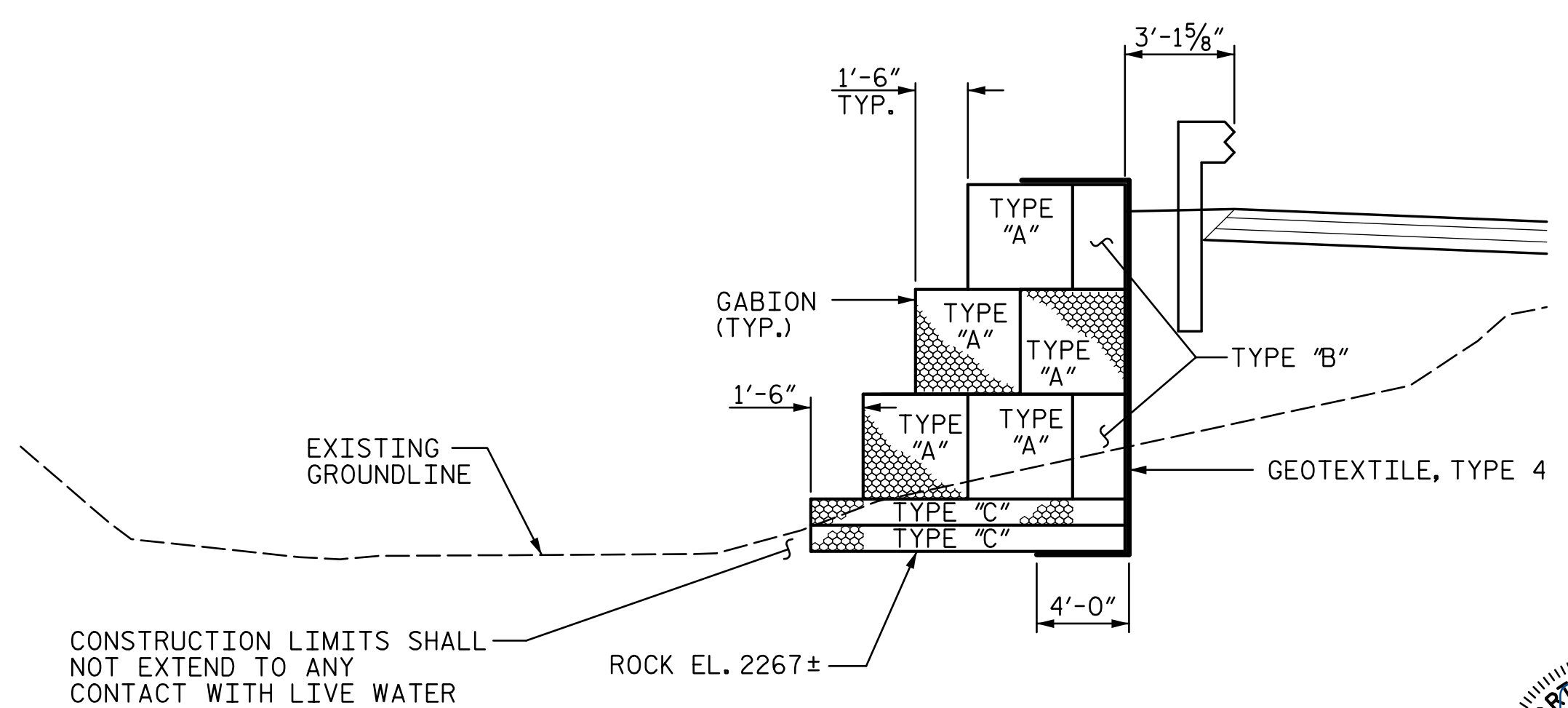


PLAN

▲ PIPE TO OUTLET THROUGH GABION WALL AS SHOWN. CONTRACTOR SHALL ACCOMODATE FOR PIPE PENETRATION DURING CONSTRUCTION OF GABION WALL.



ELEVATION



SECTION C-C

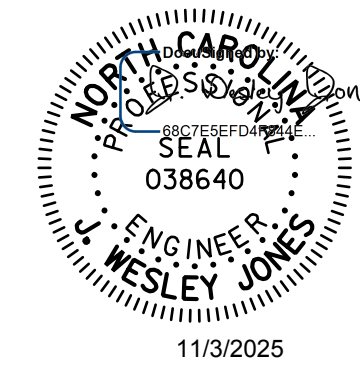
CONSTRUCTION LIMITS SHALL NOT EXTEND TO ANY CONTACT WITH LIVE WATER

NOTES:

- THE CONTRACTOR SHALL FIELD VERIFY THAT THERE ARE NO CONFLICTS BETWEEN WALL SYSTEM AND EXISTING UTILITIES PRIOR TO INSTALLING ANY PORTION OF THE WALL.
- INSTALL GABIONS PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- BACKFILL GABIONS WITH SELECT MATERIAL, CLASS II, TYPE I IN ACCORDANCE WITH SECTION 1016 OF THE STANDARD SPECIFICATIONS.
- A MINIMUM BEARING OF 2,000 PSF SHALL BE VERIFIED PRIOR TO CONSTRUCTION OF WALL. IF NECESSARY, CONTRACTOR SHALL PREPARE AND/OR MAKE GROUND MODIFICATIONS IN ORDER TO SATISFY MINIMUM BEARING PRESSURE.
- GABION INFILL MATERIAL ASSUMED TO HAVE A UNIT WEIGHT OF 120 PCF FOR DESIGN. CONTRACTOR SHALL VERIFY DESIGN BASED ON ACTUAL INFILL MATERIALS.
- OVERLAP GEOTEXTILE A MINIMUM OF 18" OR AS DIRECTED BY THE ENGINEER.
- IF REQUIRED, TYPE "C" GABION TO BE CUT AND FILLED TO CREATE A LEVEL PLATFORM FOR THE GABIONS IN ACCORDANCE TO THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.
- BACKFILL BEHIND GABION WALL WITH CLASS II TYPE I SELECT MATERIAL IN ACCORDANCE WITH SECTION 1016 OF THE STANDARD SPECIFICATIONS.
- FOR GABION RETAINING WALL, SEE SPECIAL PROVISIONS.

GABION TYPE	WIDTH	HEIGHT
TYPE "A" GABION	3'-0"	3'-0"
TYPE "B" GABION	1'-6"	3'-0"
TYPE "C" GABION	9'-0"	9"

PROJECT NO. B-6029
MACON COUNTY
 STATION: 17+07.50 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GABION WALL

DRAWN BY : JWJ	DATE : 1-18
CHECKED BY : JTG	DATE : 1-18
DESIGN ENGINEER OF RECORD : JWJ	DATE : 10-25

stv STV Engineers, Inc.
 2151 Hawkins Street, Suite 1400
 Charlotte, NC 28203
 NC License Number F-0991

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

W-1
TOTAL SHEETS 17

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	--	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	--	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	--	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	----	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $\frac{1}{4}$ " RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{5}{16}$ " IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $\frac{1}{16}$ " INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990