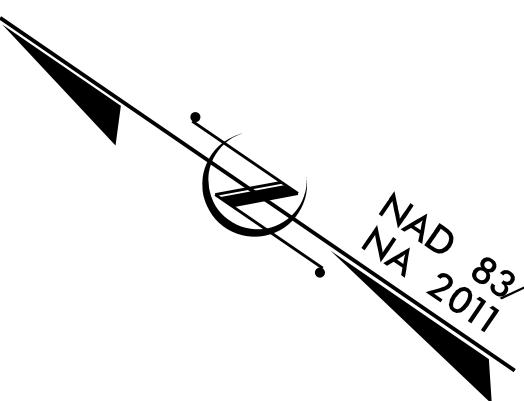


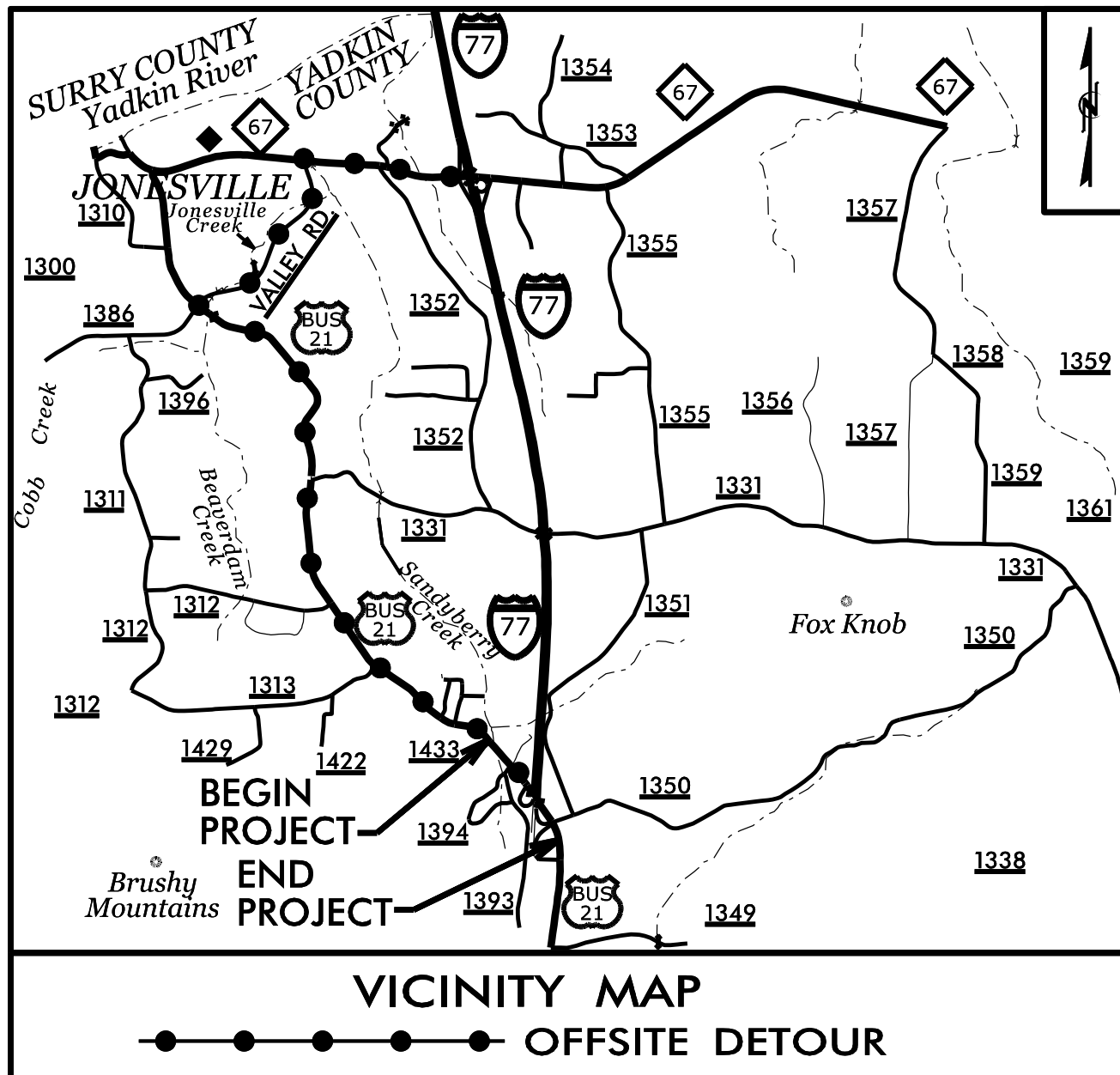
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5833		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
45786.1.2	N/A	PE	
45786.2.1	N/A	RW, UTIL	
45786.3.1	NHP-0021(023)	CONST.	



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

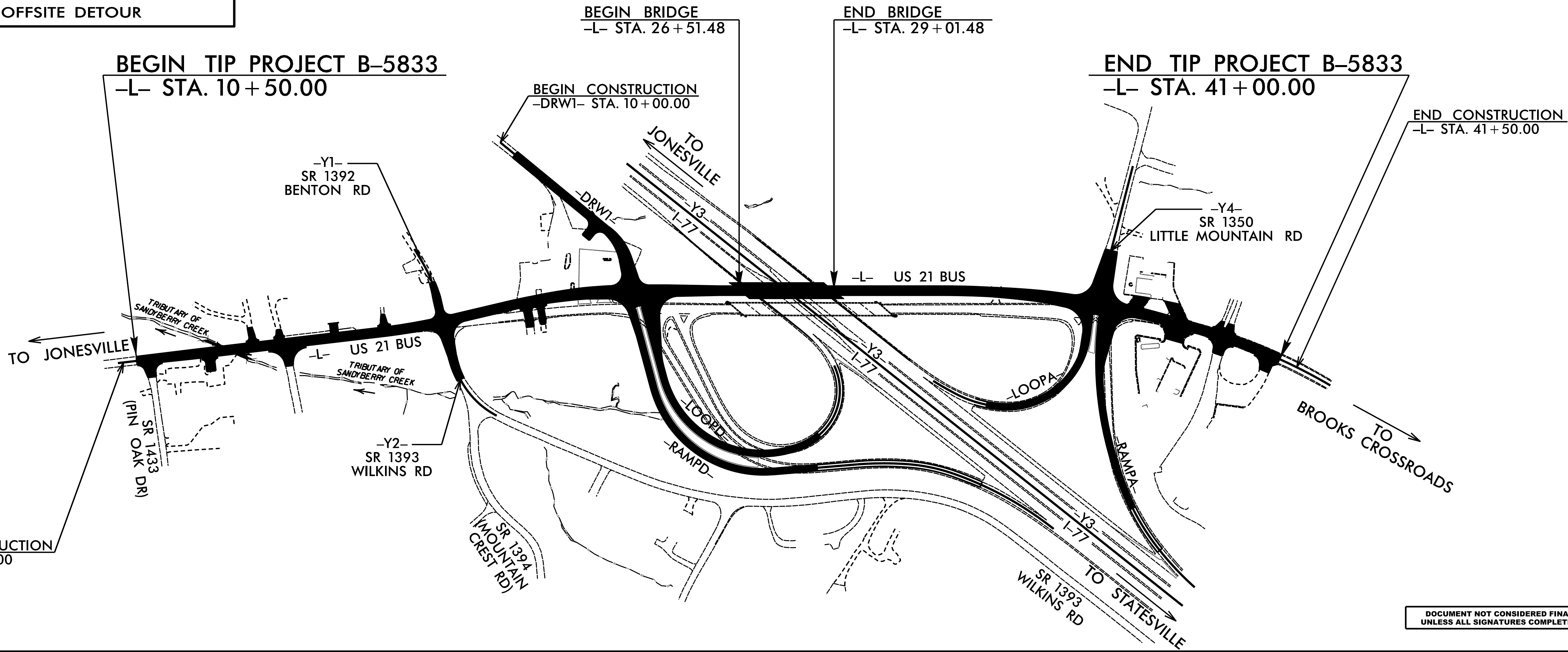
YADKIN COUNTY

LOCATION: REPLACE BRIDGE NO. 980029 OVER I-77 ON US 21 BUSINESS
TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALLS,
AND STRUCTURES

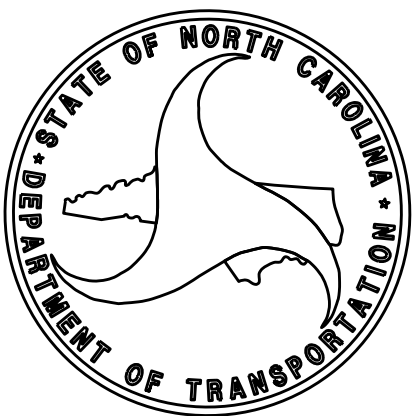


FINAL PLANS

STRUCTURES



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA	
ADT 2025	= 4200
ADT 2045	= 4700
K	= 11 %
D	= 65 %
T	= 5 % *
V	= 50 MPH
* (TTST 1% + DUAL 4%)	
FUNC CLASS= MAJOR COLLECTOR	
STATEWIDE TIER DESIGN	

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-5833	= 0.531 mile
LENGTH STRUCTURES TIP PROJECT B-5833	= 0.047 mile
TOTAL LENGTH TIP PROJECT B-5833	= 0.578 mile

PLANS PREPARED BY:
TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603

LETTING DATE:
MAY 19, 2026

2024 STANDARD SPECIFICATIONS

PLANS PREPARED FOR:
DAVID STUTTS, P.E.
NCDOT CONTACT

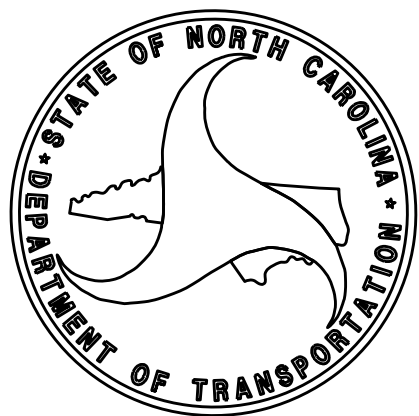
MARC CHEEK, PE
STRUCTURES DESIGN ENGINEER

STRUCTURES DESIGN ENGINEER

SEAL 20125
NORTH CAROLINA PROFESSIONAL ENGINEER
MARC CHEEK, PE
5F8C2F3A4DC413

2/10/2026

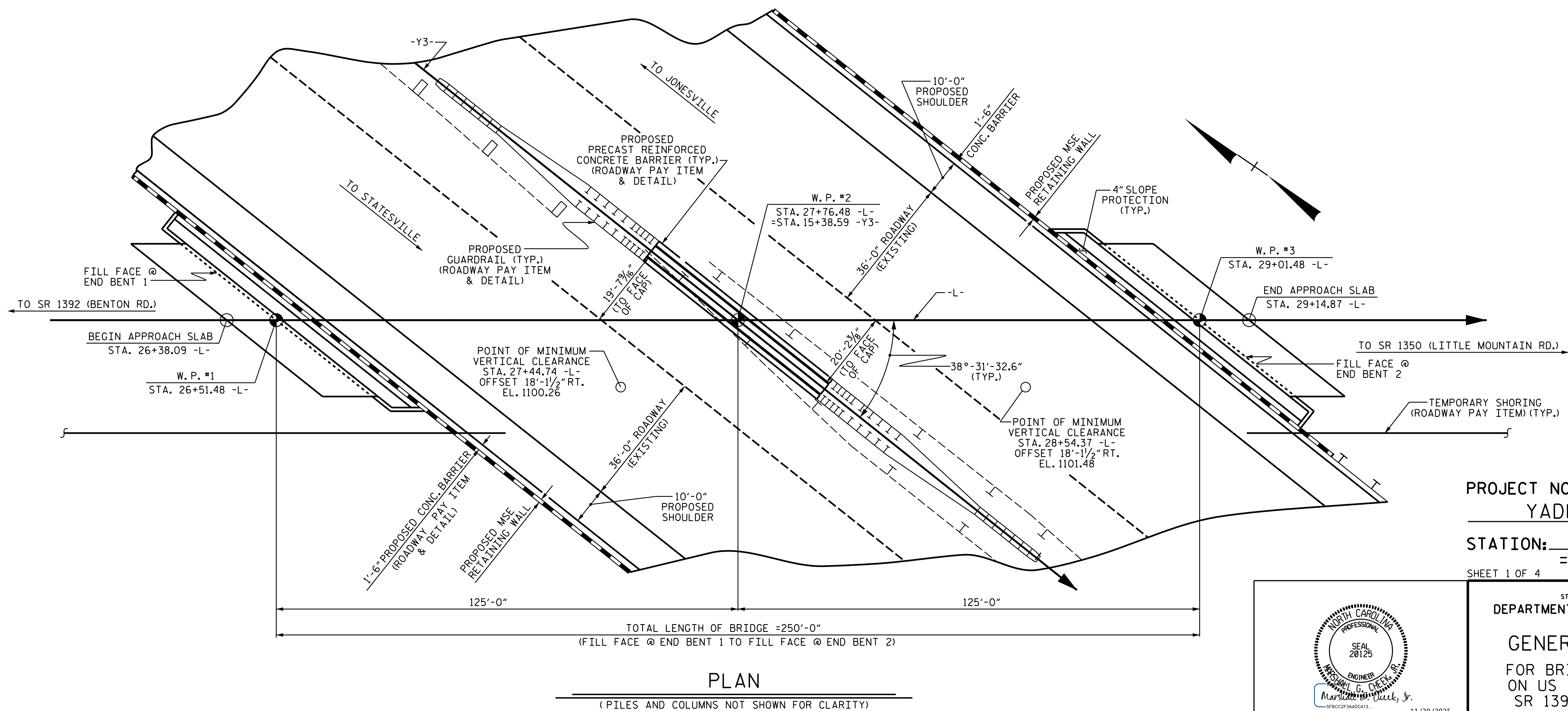
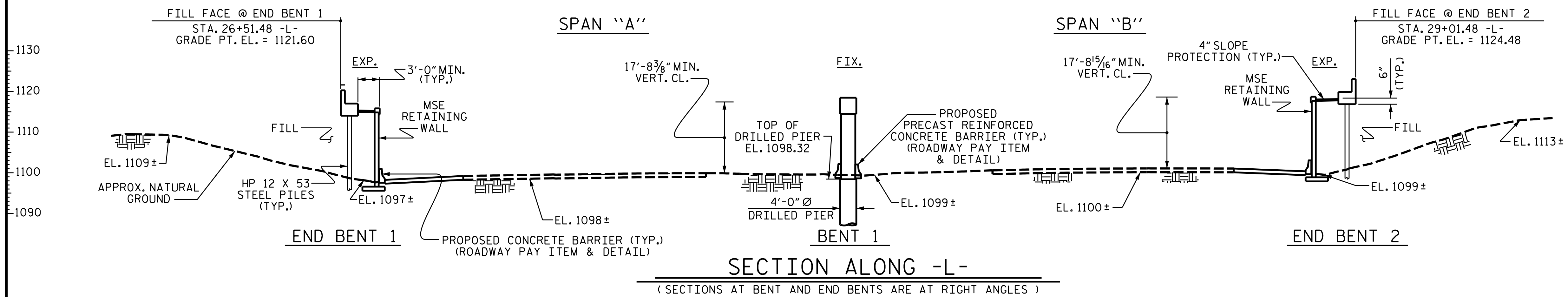
SIGNATURE: _____ P.E.



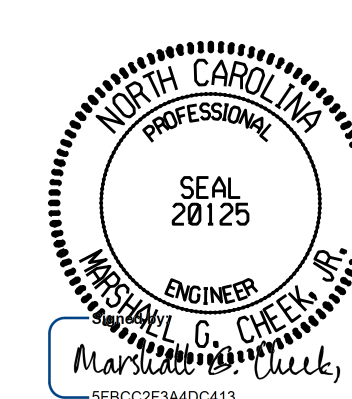
26+00 27+00 28+00 29+00
 (+)6.8333% (+)1.1520%

PI = 23+90.00 -L-
 EL. = 1118.59
 L = 400

GRADE DATA -L-



PROJECT NO. B-5833
YADKIN COUNTY
 STATION: 27+76.48 -L-
=15+38.59 -Y3-
 SHEET 1 OF 4 REPLACES BRIDGE NO. 980029



11/20/2025

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE OVER I-77
 ON US 21 BUS. BETWEEN
 SR 1392 AND SR 1350

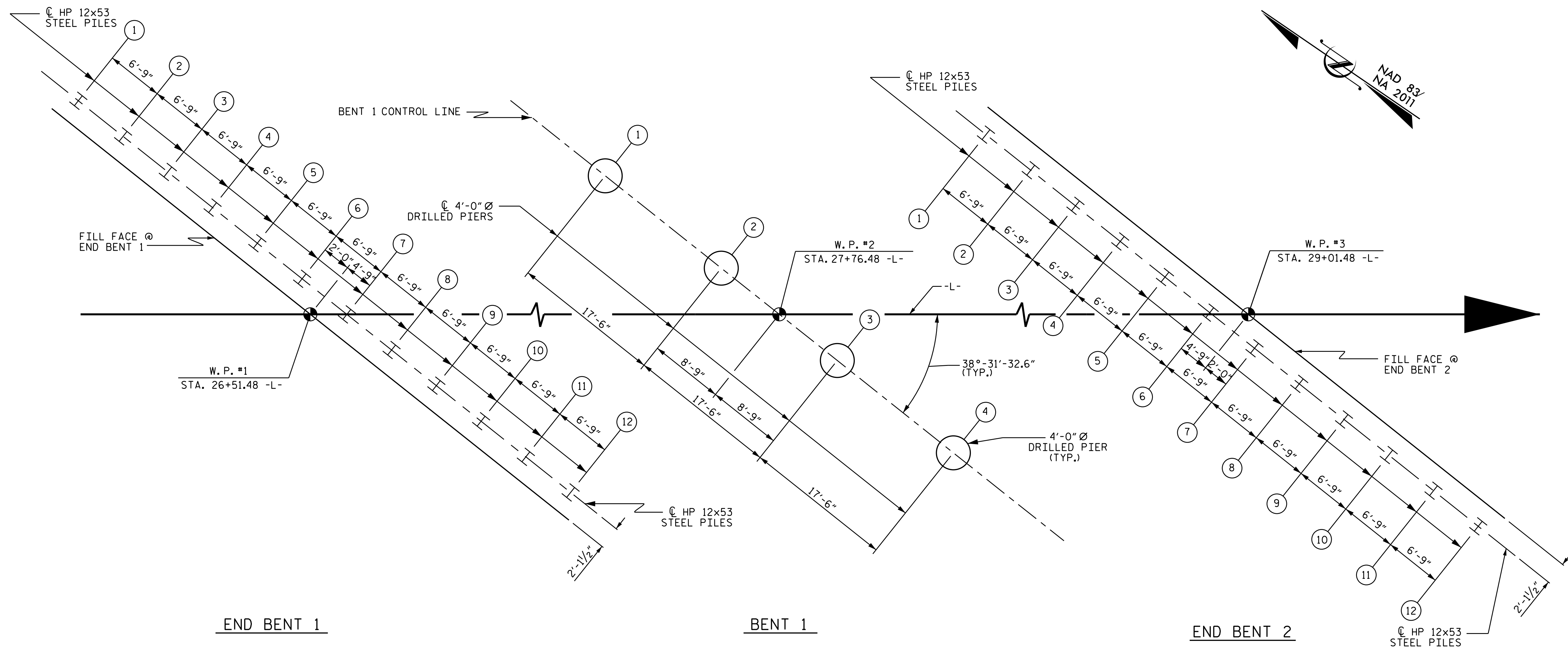
DRAWN BY : ZCS DATE : 10/21
 CHECKED BY : MGC DATE : 4-23
 DESIGN ENGINEER OF RECORD: MGC DATE : 4-23

*****SYSTEM*****
 *****DCN*****
 *****USERNAME*****

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED
 TGS ENGINEERS
 SUITE 200
 706 HILLSBOROUGH STREET
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO. : C-0275

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-1
2			4			TOTAL SHEETS 33



FOUNDATION LAYOUT PLAN

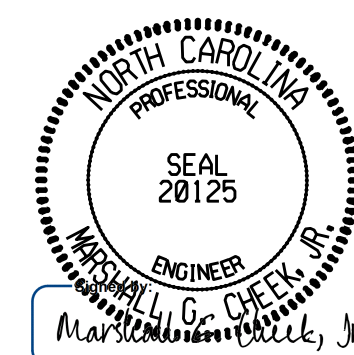
ALL END BENT PILES ARE HP 12 X 53 PILES.DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF THE PILES.ORIENT PILES AS SHOWN.
DIMENSIONS LOCATING DRILLED PIERS ARE SHOWN TO DRILLED PIER CENTERLINE.

FOUNDATION NOTES:

- 1.FOR PILES,SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- 2.OBSERVE A 1 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT 1 AND 2.
- 3.FOR DRILLED PIERS,SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- 4.INSTALL PILES AT END BENT 1 & 2 PRIOR TO CONSTRUCTION OF THE MSE ABUTMENT WALLS.

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 2 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER I-77
ON US 21 BUS. BETWEEN
SR 1392 AND SR 1350

DRAWN BY : ZCS DATE : 10/21
CHECKED BY : MGC DATE : 11/21
DESIGN ENGINEER OF RECORD: MGC DATE : 4/23

3/24/2026
X:\NCDOT\B-5833\Structures\Final plans\DCNs\Bridge\401.007.B-5833.SMU.G002.980029.dgn
User:ZSmith

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

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

* Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.

PILE DESIGN INFORMATION

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

NOTES:

1. The Pile and Drilled Pier Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Michael H. Stephens, 028893) on 12/02/2021.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a required Driving Resistance.
3. The Engineer will determine the need for Dynamic Pile Testing and Pipe Pile Plates and when DPTs or Plates may be required.

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

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

* Drilled Pier Length, Drilled Pier Length Not in Soil and Drilled Pier Length in Soil represent estimated drilled pier quantities and are measured and paid for as either "___Dia. Drilled Piers" or "___Dia. Drilled Piers Not in Soil" and "___Dia. Drilled Piers in Soil" in accordance with Article 411-7 of the NCDOT Standard Specifications. For bents with a not in soil pay item, drilled piers through air or water will be paid at the contract unit price for "___Dia. Drilled Piers in Soil."

*** Permanent Steel Casing Length equals the difference between the ground line or top of drilled pier elevation, whichever is higher, and the permanent casing tip elevation and is measured and paid for as "Permanent Steel Casing for __Dia. Drilled Pier" in accordance with Article 411-7 of the NCDOT Standard Specifications.

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

11/20/2025

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TGS ENGINEERS
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SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0277

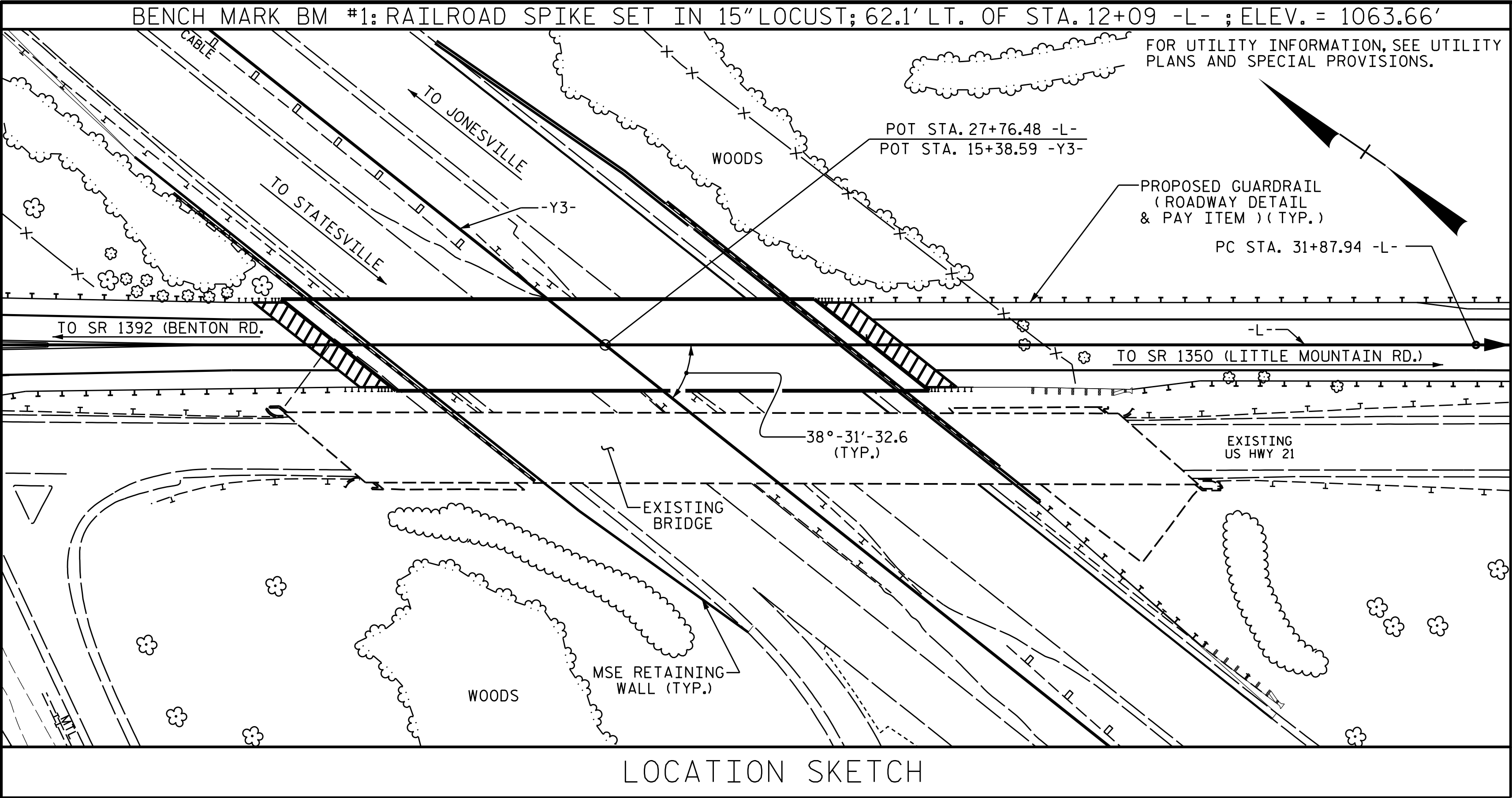
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE OVER I-77
ON US 21 BUS. BETWEEN
SR 1392 AND SR 1350

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

DRAWN BY : ZCS DATE : 4/23
CHECKED BY : MGC DATE : 4/23



NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

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.

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

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING 6-SPAN STRUCTURE (1 @ 46'-0"; 1 @ 45'-6"; 2 @ 105'-6"; 1 @ 43'-3"; 1 @ 43'-9") CONSISTING OF A REINFORCED CONCRETE DECK ON STEEL I-BEAMS WITH A 2" ASPHALT WEARING SURFACE AND A CLEAR ROADWAY WIDTH OF 28'-0" AND WITH A SUBSTRUCTURE CONSISTING OF REINFORCED CONCRETE CAPS/H-PILES AT END BENTS 1 & 2 AND BENTS 1 & 5; AND REINFORCED CONCRETE POST AND BEAM/ PILE FOOTING AT BENTS 2, 3 & 4 AND LOCATED ADJACENT TO THE PROPOSED BRIDGE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

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

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

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".

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS (360,000 KG) OF REINFORCING STEEL, ONE 30 INCH (760 MM) SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS (360,000 KG) OF REINFORCING STEEL, TWO 30 INCH (760 MM) SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

TOTAL BILL OF MATERIAL

ITEM	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	4'-0" DIA. DRILLED PIERS IN SOIL	4'-0" DIA. DRILLED PIERS NOT IN SOIL	CSL TESTING	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	APPROXIMATE 443,200 LBS. STRUCTURAL STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	HP 12X53 STEEL PILES	CONCRETE BARRIER RAIL	4" SLOPE PROTECTION	DISC BEARINGS	ELASTOMERIC BEARINGS	FOAM JOINT SEALS
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	EACH	SO. FT.	SO. FT.	C.Y.	LUMP SUM	LBS.	LBS.	LUMP SUM	EACH	NO. LIN. FT.	LIN. FT.	SO. YDS.	LUMP SUM	LUMP SUM	LUMP SUM
SUPERSTRUCTURE						10,668	9,994								493.31				
END BENT 1								67.6		9,194			12	12 420		23			
BENT 1			70.82	40.00	1			65.4		18,605	4,417								
END BENT 2								67.6		9,199			12	12 540		23			
TOTALS	LUMP SUM	LUMP SUM	70.82	40.00	1	10,668	9,994	200.6	LUMP SUM	36,998	4,417	LUMP SUM	24	24 960	493.31	46	LUMP SUM	LUMP SUM	LUMP SUM

SAMPLE BAR REPLACEMENT

SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTE:
SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60ksi.

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48 -L-

SHEET 4 OF 4



11/20/2025

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TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER I-77
ON US 21 BUS. BETWEEN
SR 1392 AND SR 1350

REVISIONS

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

SHEET NO.

S-4

TOTAL SHEETS

33

DRAWN BY : ZCS DATE : 10/21
CHECKED BY : MGC DATE : 5/23

*****SYSTEM*****
*****DCN*****
****USER*****

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE II	1.00	1.00

NOTES

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

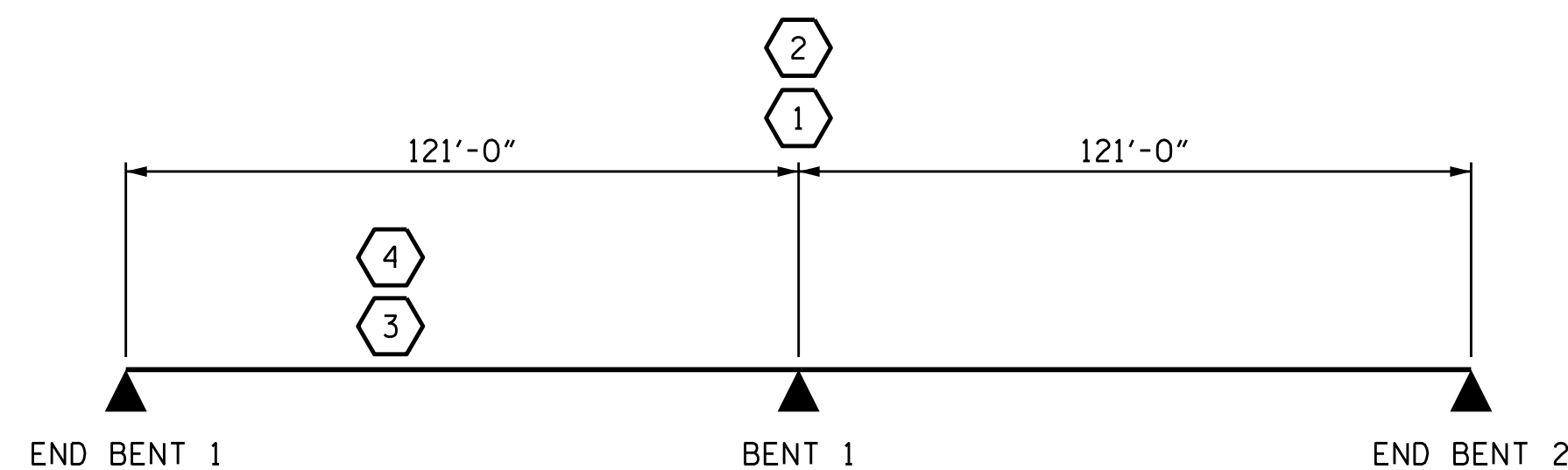
ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

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	

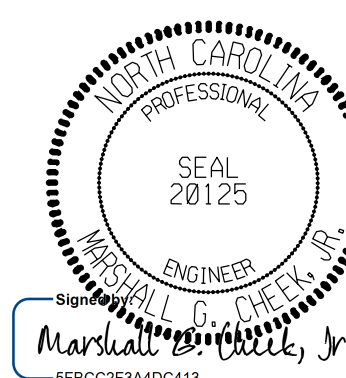
LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR STEEL GIRDERS																								
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING ⬡	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE											SERVICE II LIMIT STATE					COMMENT NUMBER		
						LIVE-LOAD FACTORS (γ _{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ _{LL})	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	⬡1	1.21	--	1.75	0.688	1.21	A	EL	121.0	0.761	2.74	A	I	121.0	1.30	0.688	1.36	A	EL	121.0		
	HL-93 (OPERATING)	N/A		1.57	--	1.35	0.688	1.57	A	EL	121.0	0.761	3.56	A	I	121.0	1.00	0.688	1.76	A	EL	121.0		
	HS-20 (INVENTORY)	36.00	⬡2	1.67	60.1	1.75	0.688	1.67	A	EL	121.0	0.761	4.23	A	I	121.0	1.30	0.688	1.88	A	EL	121.0		
	HS-20 (OPERATING)	36.00		2.17	78.1	1.35	0.688	2.71	A	EL	121.0	0.761	5.48	A	I	121.0	1.00	0.688	2.44	A	EL	121.0		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		6.71	90.5	1.40	0.688	6.71	A	EL	48.40	0.761	13.63	A	I	121.0	1.30	0.688	7.18	A	EL	48.40	
		SNGARBS2	20.000		4.82	96.4	1.40	0.688	4.82	A	EL	48.40	0.761	9.34	A	I	121.0	1.30	0.688	5.15	A	EL	48.40	
		SNAGRIS2	22.000		4.49	98.7	1.40	0.688	4.49	A	EL	48.40	0.761	8.54	A	I	121.0	1.30	0.688	4.80	A	EL	48.40	
		SNCOTTS3	27.250		3.35	91.2	1.40	0.688	3.35	A	EL	48.40	0.761	6.76	A	I	121.0	1.30	0.688	3.58	A	EL	48.40	
		SNAGGRS4	34.925		2.73	95.3	1.40	0.688	2.73	A	EL	48.40	0.761	5.37	A	I	121.0	1.30	0.688	2.92	A	EL	48.40	
		SNS5A	35.550		2.69	95.6	1.40	0.688	2.69	A	EL	48.40	0.761	5.33	A	I	121.0	1.30	0.688	2.87	A	EL	48.40	
		SNS6A	39.950		2.43	97.0	1.40	0.688	2.43	A	EL	48.40	0.761	4.78	A	I	121.0	1.30	0.688	2.60	A	EL	48.40	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	SNS7B	42.000		2.33	97.8	1.40	0.688	2.33	A	EL	48.40	0.761	4.59	A	I	121.0	1.30	0.688	2.49	A	EL	48.40	
		TNAGRIT3	33.000		2.98	98.3	1.40	0.688	2.98	A	EL	48.40	0.761	5.75	A	I	121.0	1.30	0.688	3.18	A	EL	48.40	
		TNT4A	33.075		2.95	97.5	1.40	0.688	2.95	A	EL	48.40	0.761	5.70	A	I	121.0	1.30	0.688	3.16	A	EL	48.40	
		TNT6A	41.600		2.40	99.8	1.40	0.688	2.40	A	EL	48.40	0.761	4.71	A	I	121.0	1.30	0.688	2.57	A	EL	48.40	
		TNT7A	42.000		2.40	100.8	1.40	0.688	2.40	A	EL	48.40	0.761	4.65	A	I	121.0	1.30	0.688	2.56	A	EL	48.40	
		TNT7B	42.000		2.43	102.0	1.40	0.688	2.43	A	EL	48.40	0.761	4.56	A	I	121.0	1.30	0.688	2.60	A	EL	48.40	
		TNAGRIT4	43.000		2.35	101.0	1.40	0.688	2.35	A	EL	48.40	0.761	4.44	A	I	121.0	1.30	0.688	2.51	A	EL	48.40	
EMERGENCY VEHICLE (EV)	TNAGT5A	45.000		2.24	100.8	1.40	0.688	2.24	A	EL	48.40	0.761	4.29	A	I	121.0	1.30	0.688	2.39	A	EL	48.40		
	TNAGT5B	45.000	⬡3	2.21	99.4	1.40	0.688	2.21	A	EL	48.40	0.761	4.24	A	I	121.0	1.30	0.688	2.37	A	EL	48.40		
FATIGUE	EV2	28.750		3.62	104.0	1.30	0.688	3.64	A	EL	48.40	0.761	7.02	A	I	121.0	1.30	0.688	3.62	A	EL	48.40		
	EV3	43.000	⬡4	2.40	103.2	1.30	0.688	2.42	A	EL	48.40	0.761	4.70	A	I	121.0	1.30	0.688	2.40	A	EL	48.40		
FATIGUE	HL-93 (INVENTORY)	γ _{LL} =0.75		1.20																				



LRFR SUMMARY
DIMENSIONS SHOWN ARE BEARING TO BEARING

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48-L-

11/20/2025

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

TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-022

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR STEEL GIRDERS (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			33

STD. NO. LRFR3

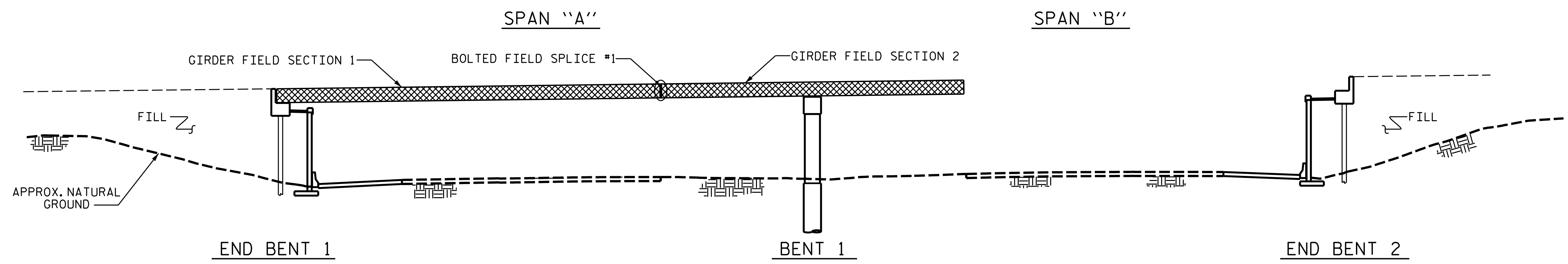
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CHECKED BY : RDE/MGC		DATE : 7/23
DRAWN BY : MAA 1/08	REV. 11/12/08RR	MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/11/II	MAA/GM
	REV. 04/23	BNB/AA

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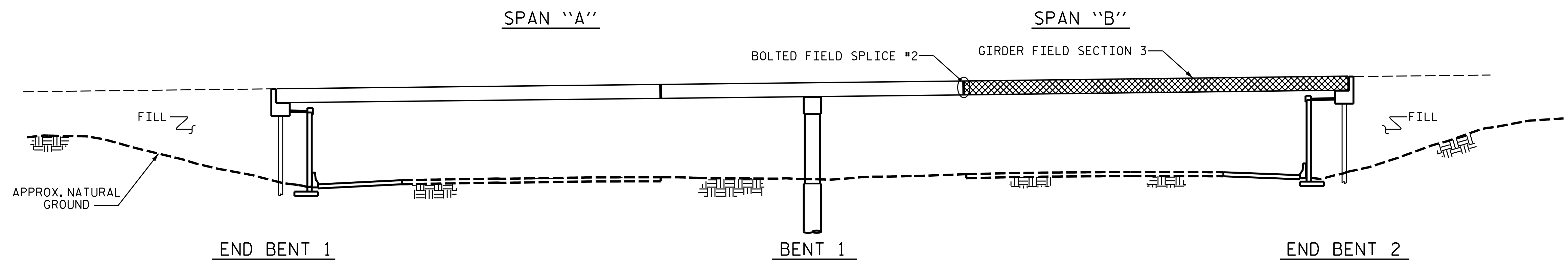
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26+00 27+00 28+00 29+00



STEP 1 GIRDER ERECTION - ELEVATION



STEP 2 GIRDER ERECTION - ELEVATION

NOTES

NO SEPARATE PAYMENT WILL BE PROVIDED FOR THE TEMPORARY BRACING OR OTHER MEANS OF TEMPORARY SUPPORT. THE COST FOR ALL MATERIALS, EQUIPMENT, TOOLS AND LABOR NECESSARY FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID PRICE FOR STRUCTURAL STEEL.

THE STRUCTURAL STEEL SHALL BE SUPPORTED DURING ERECTION IN ITS CAMBERED POSITION.

DURING GIRDER ERECTION, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING FOR TEMPORARY LATERAL BRACING AND OTHER MEANS OF SUPPORT AS REQUIRED TO ENSURE THE STABILITY OF THE GIRDERS, AVOID UPLIFT, AND ENSURE PLUMBNESS OF THE GIRDERS IN THE FINAL POSITION.

THE FIRST TWO GIRDERS IN EACH SEGMENT SHALL BE ERECTED SIMULTANEOUSLY WITH ALL DIAPHRAGMS BETWEEN THE GIRDERS IN PLACE AND THE BOLTS TIGHTENED PRIOR TO RELEASING THE GIRDERS. CONNECT ADDITIONAL GIRDERS ADJACENT TO THE PREVIOUSLY ERECTED GIRDERS AND TIGHTEN ALL BOLTS PRIOR TO RELEASING ADDITIONAL GIRDERS.

GIRDERS IN STEP 2 MAY BE INSTALLED INDIVIDUALLY.

STRUCTURAL STEEL ERECTION SHALL BE COMPLETE THROUGH STEP 2 BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE ERECTION METHOD TO THE ENGINEER FOR APPROVAL.

FABRICATOR SHALL DETAIL DIAPHRAGM MEMBERS AND CONNECTIONS FOR FULL DEAD LOAD FIT UP. GIRDERS SHALL BE PLUMB AFTER THE FULL AMOUNT OF DEAD LOAD IS APPLIED.

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

DRAWN BY : S. B. WILLIAMS DATE : 12-21
CHECKED BY : MGC DATE : 12-21
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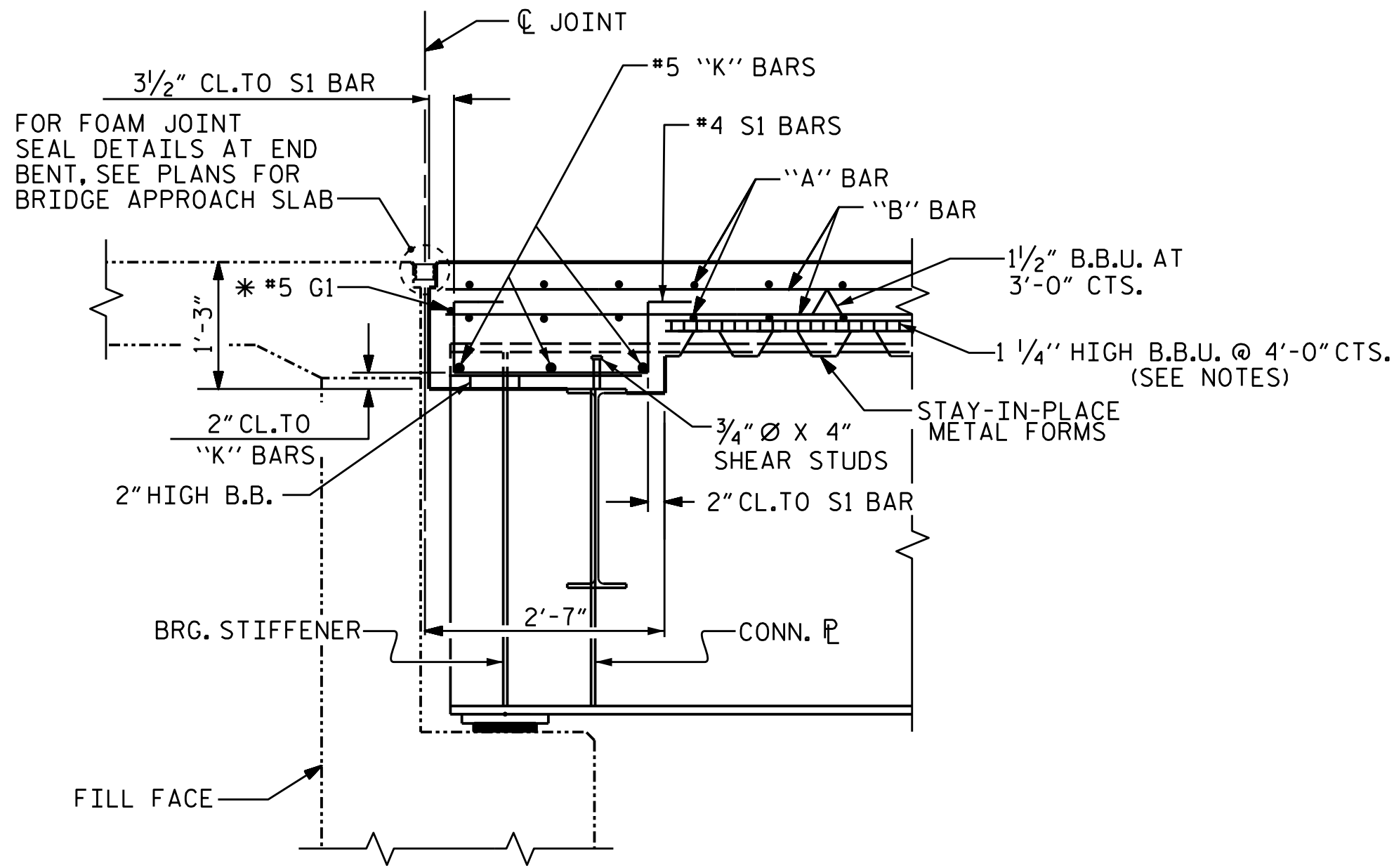
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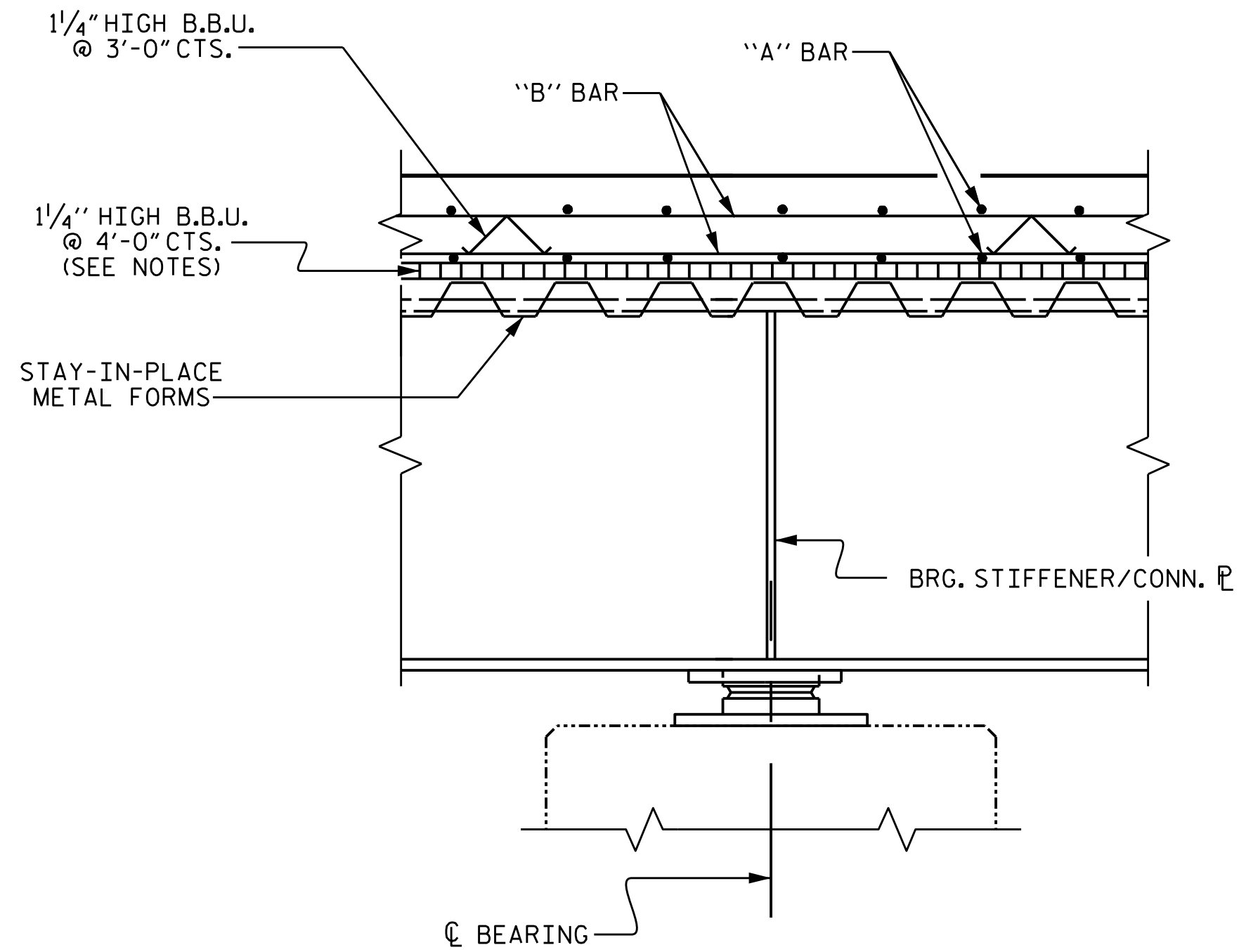
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1			3			S-6
2			4			TOTAL SHEETS 33



SECTION THRU END BENT DIAPHRAGM

*5 GI BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR STIRRUPS AND REINFORCING STEEL.



SECTION THRU BENT

NOTES

PROVIDE 1 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO GIRDER FLANGES IN THE ZONES REQUIRING CHARPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAIL SHEETS.

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

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

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND BEAM/GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.

ALL REINFORCING STEEL IN BARRIER RAIL SHALL BE EPOXY COATED.

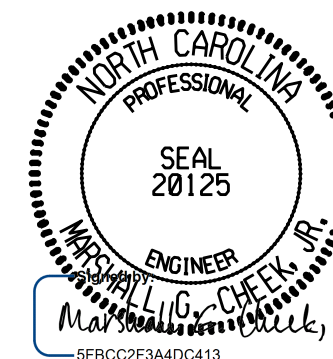
THE CONTRACTOR SHALL ADJUST THE GIRDER BUILDUPS AS NECESSARY TO INCORPORATE A MAXIMUM PERMISSIBLE VARIATION IN DISC BEARING DEPTH OF 1/2", SEE SPECIAL PROVISION FOR DISC BEARINGS.

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48 -L-

SHEET 2 OF 2



11/20/2025

STATE OF NORTH CAROLINA
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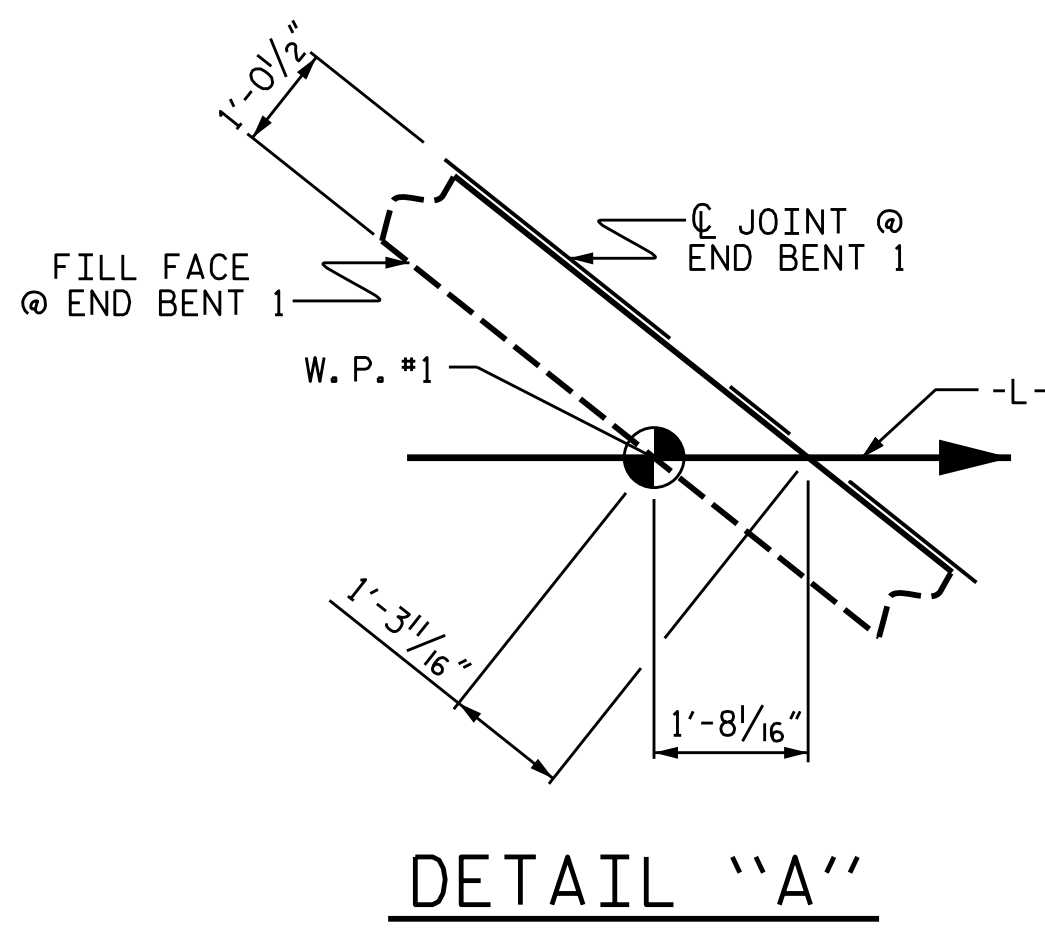
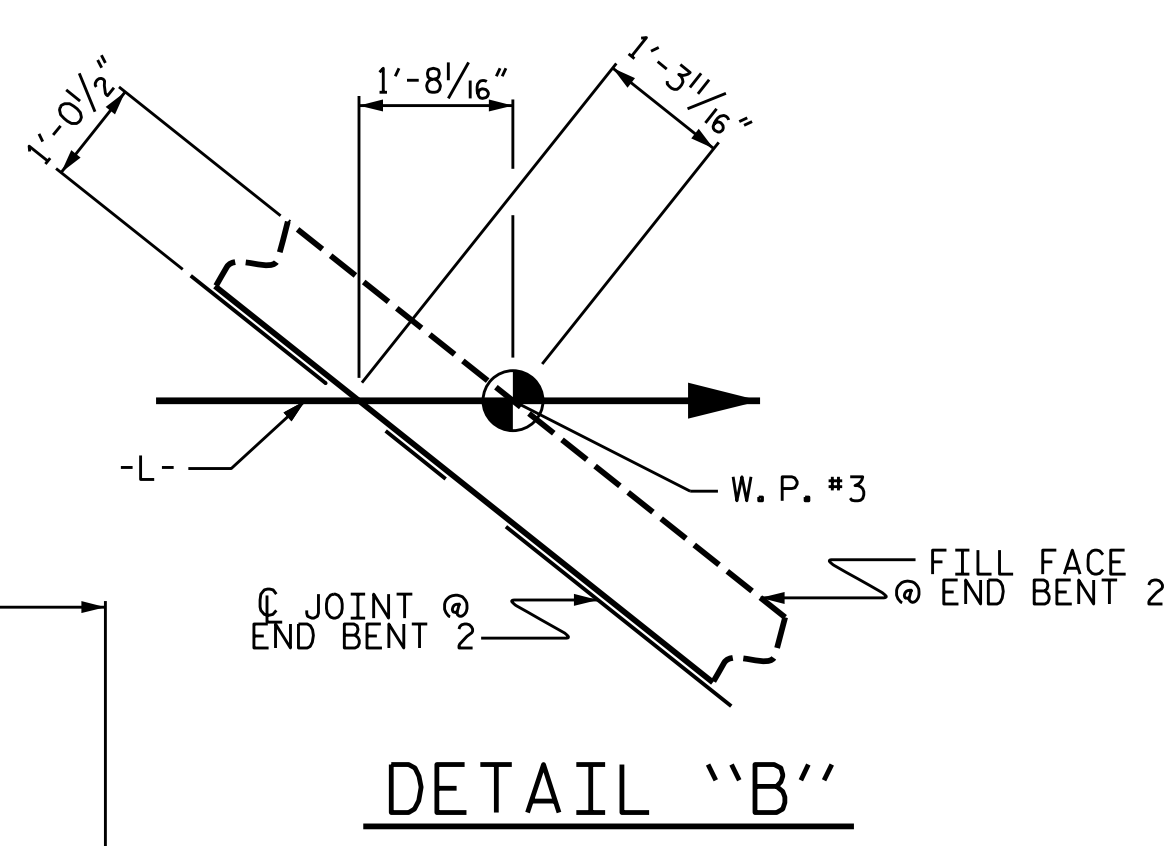
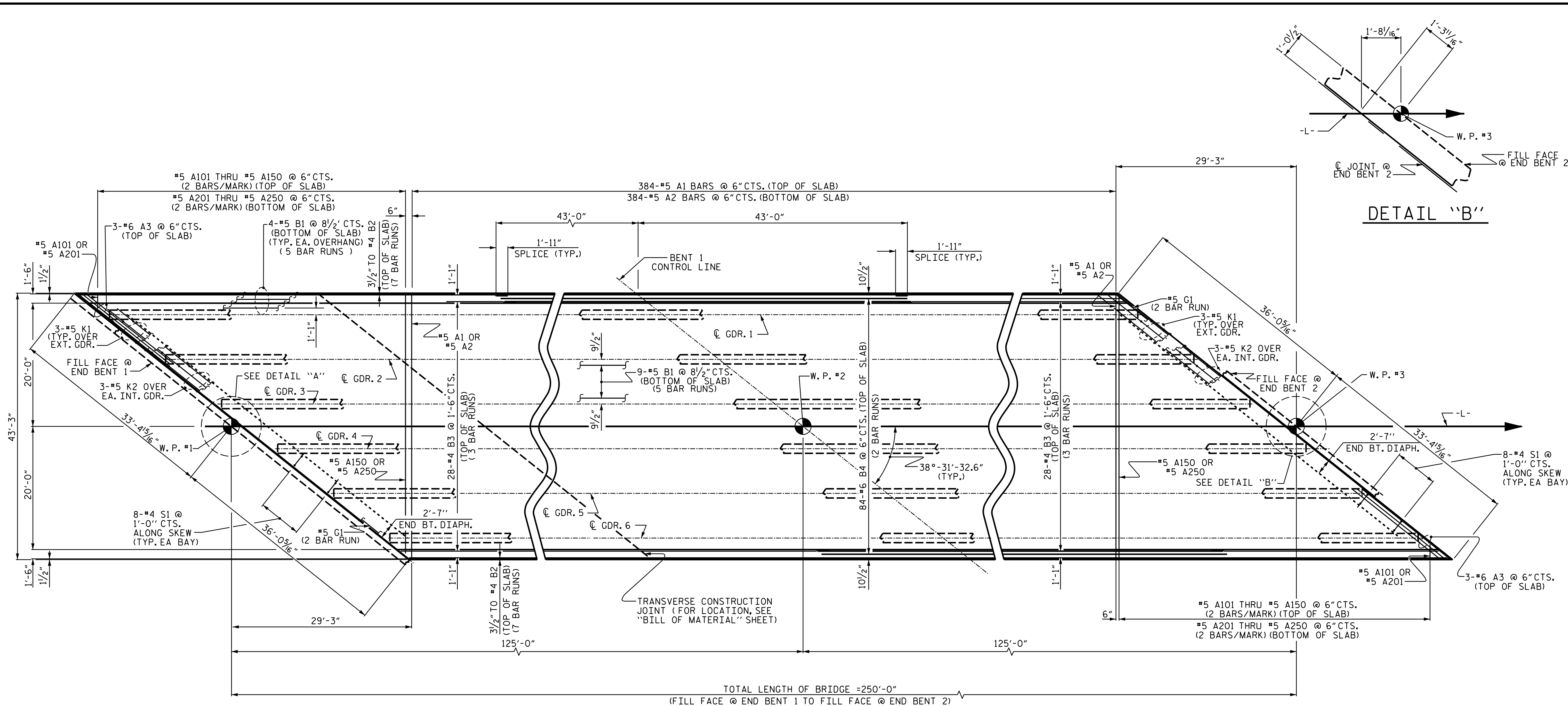
SUPERSTRUCTURE
TYPICAL SECTION
DETAILS

DRAWN BY : S. B. WILLIAMS DATE : 8-21
CHECKED BY : MGC DATE : 10-21
DESIGN ENGINEER OF RECORD: RDE DATE : 8-23

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2			4			TOTAL SHEETS 33



PLAN OF SPANS A & B

FOR BARRIER RAIL REINFORCING STEEL, SEE
"CONCRETE BARRIER RAIL DETAILS" SHEET.

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

DRAWN BY : S.B. WILLIAMS DATE : 6-21
CHECKED BY : MGC DATE : 9-21
DESIGN ENGINEER OF RECORD: RDE DATE : 8-23

*****SYSTEM*****
*****DCN*****
*****USERNAME*****

Professional Engineer Seal for Marshall B. Green, Jr., State of North Carolina, License No. 9780023400413, dated 11/20/2025.

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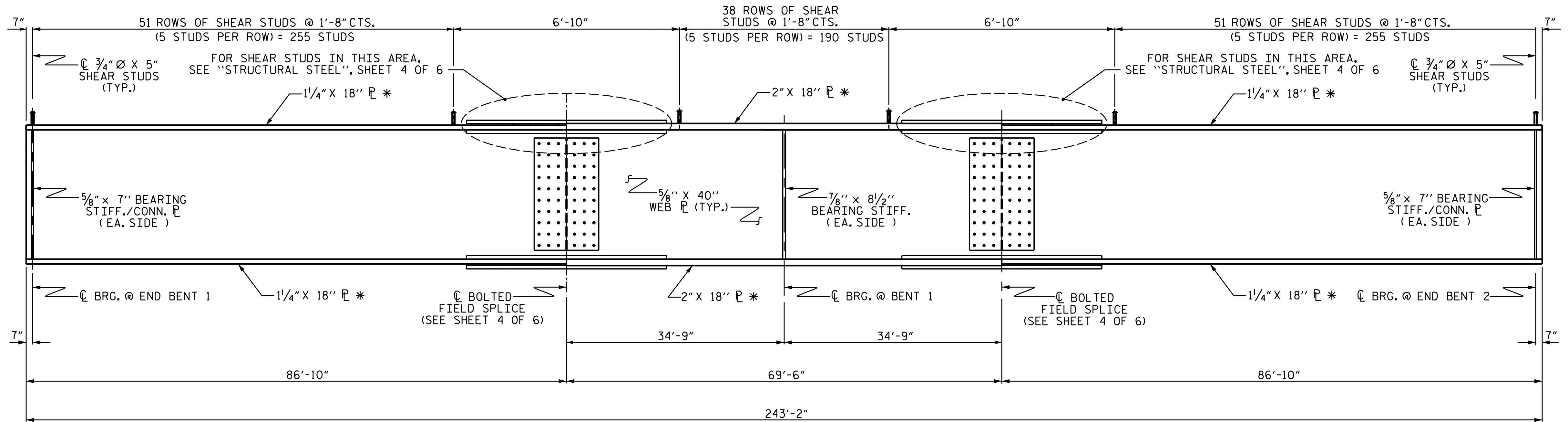
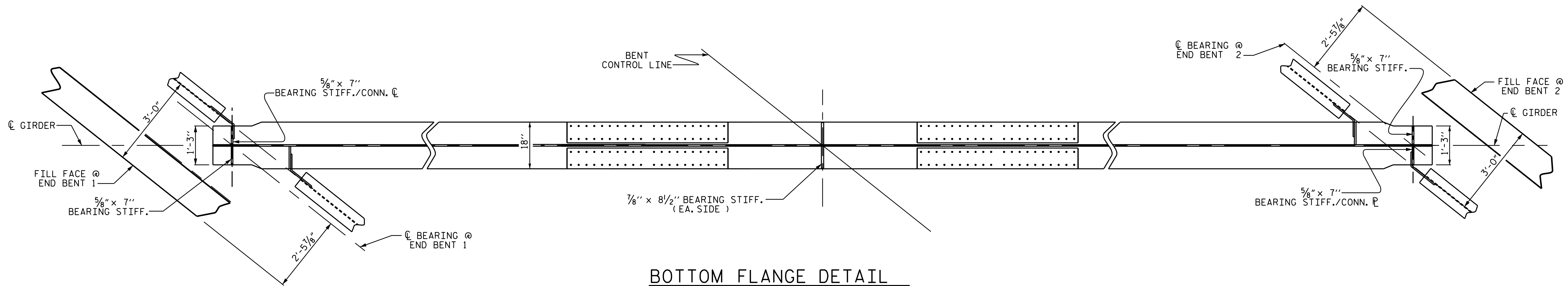
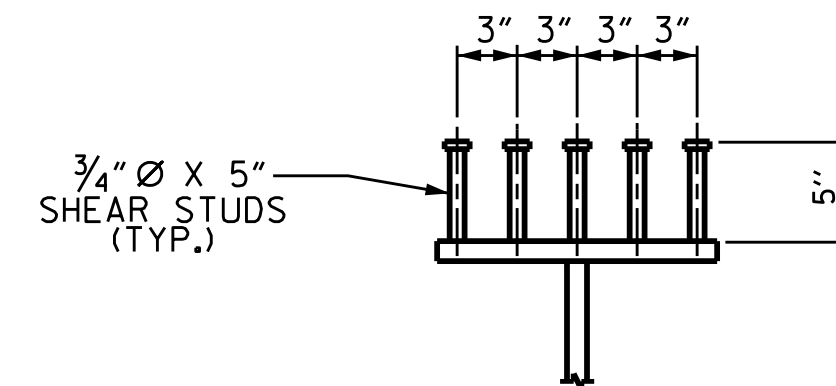
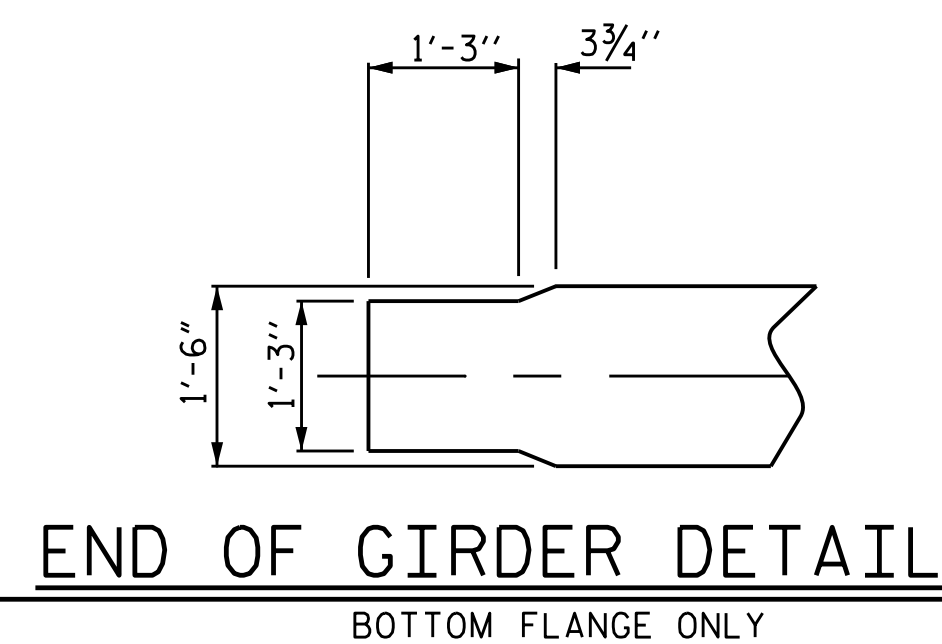


PLATE GIRDER ELEVATION

FOR STUDS ON BOLTED FIELD SPLICE PLATE, SEE
"STRUCTURAL STEEL DETAILS" SHEET 4 OF 6
* AASHTO M270 GRADE 70W

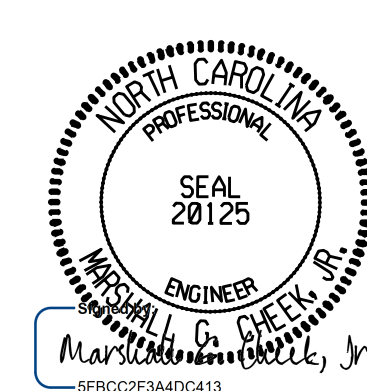


BOTTOM FLANGE DETAIL



PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 1 OF 6



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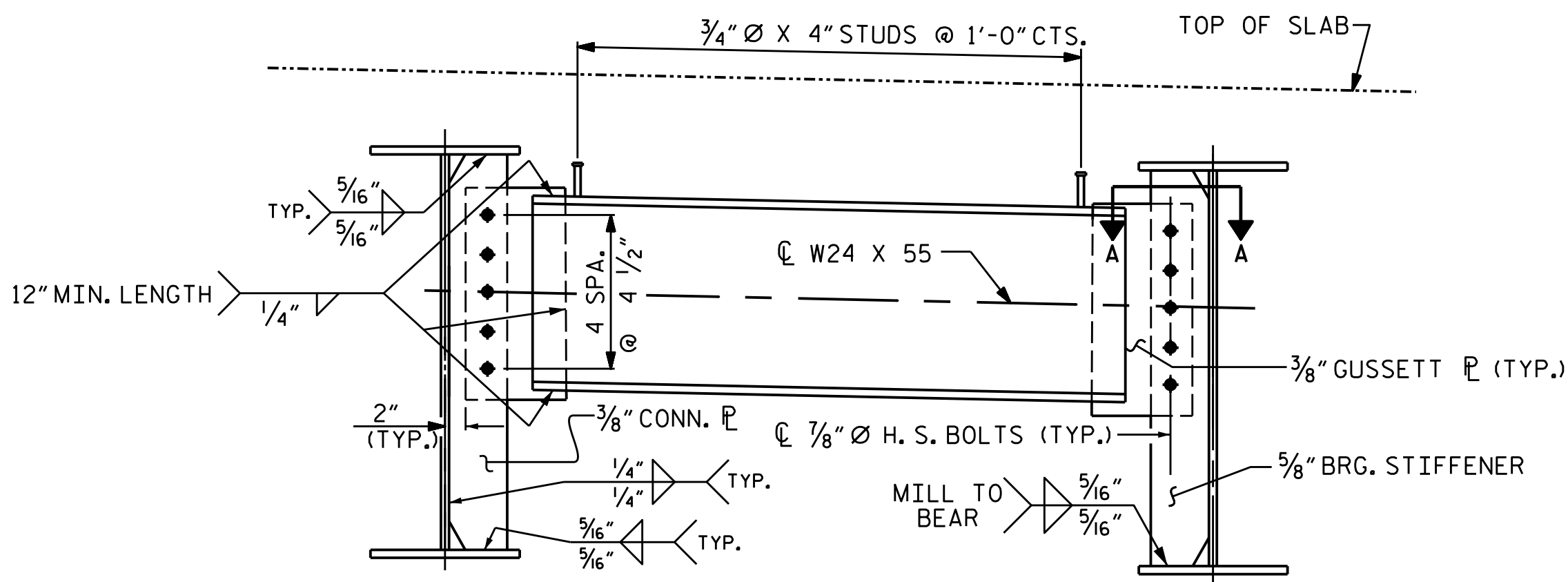
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SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS

DRAWN BY : S.B. WILLIAMS DATE : 9-21
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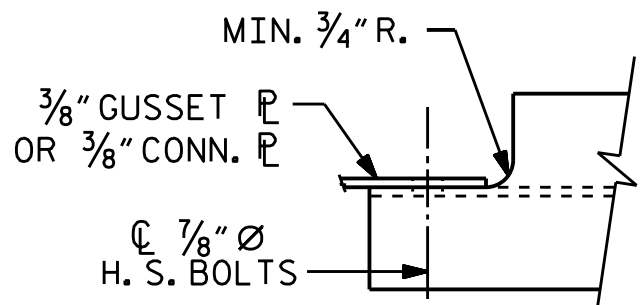
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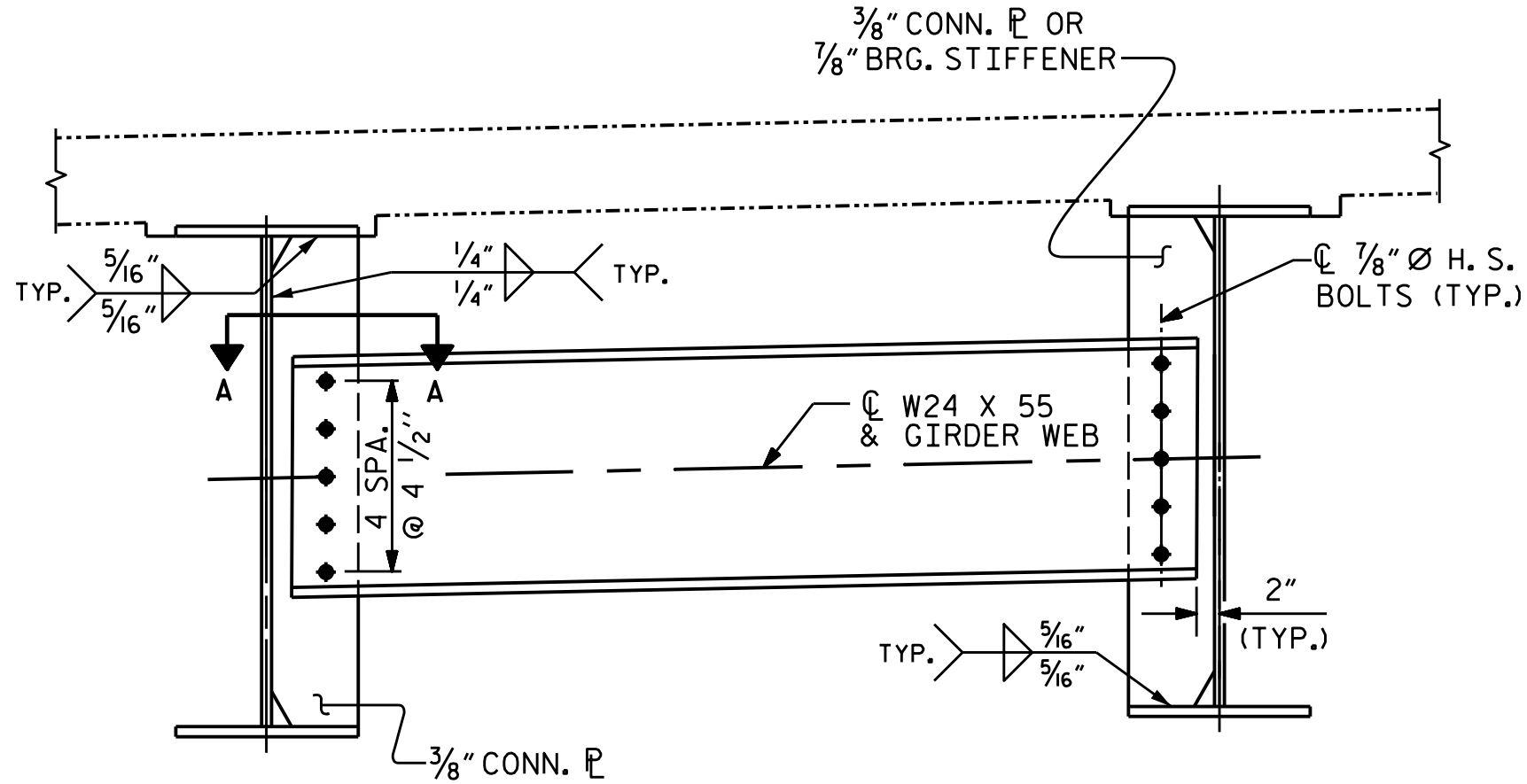


TYPICAL END BENT DIAPHRAGM

NOTE:
THE BEARING STIFFENER
SHALL BE WELDED TO THE
BOTTOM FLANGE ONLY WHEN
USED AS A CONNECTOR PLATE



SECTION A-A



TYPICAL INTERMEDIATE DIAPHRAGM

NOTES

GIRDER FLANGE PLATES SHALL BE AASHTO M270 GRADE 70W AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR SYSTEM 6 OF THE STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL OTHER STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 5 OR SYSTEM 6 OF THE STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 7/8" DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

BEARING STIFFENERS ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

END OF GIRDERS SHALL BE PLUMB.

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

THE CONTRACTOR MAY WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48 -L-

SHEET 2 OF 6



STATE OF NORTH CAROLINA
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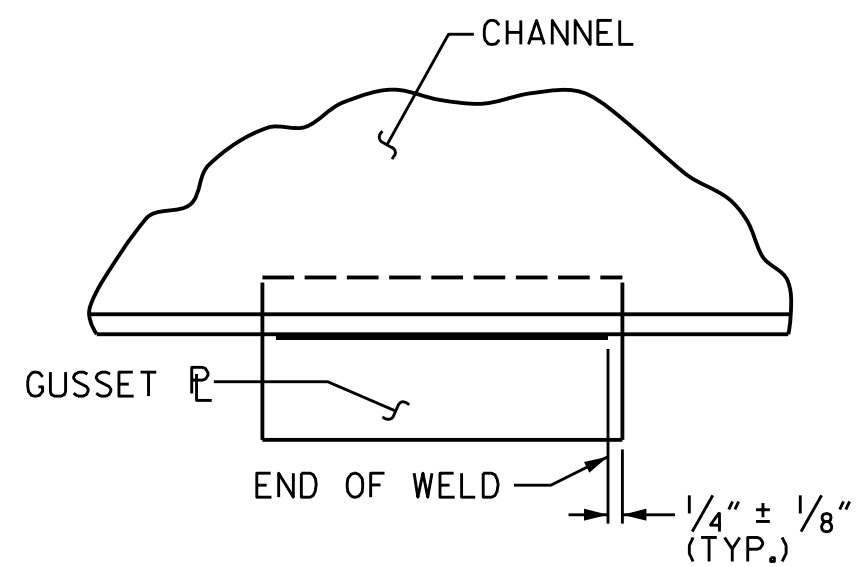
SUPERSTRUCTURE
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DETAILS

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CHECKED BY :	MGC	DATE :	10-21
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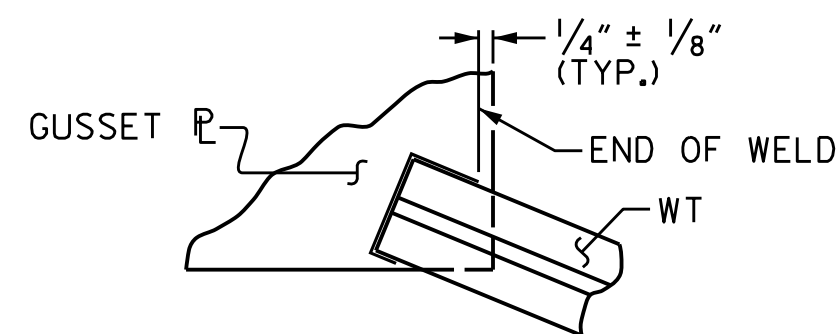
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TYPICAL GUSSET
PLATE CONNECTION



TYPICAL "TEE" TO
GUSSET PLATE CONNECTION

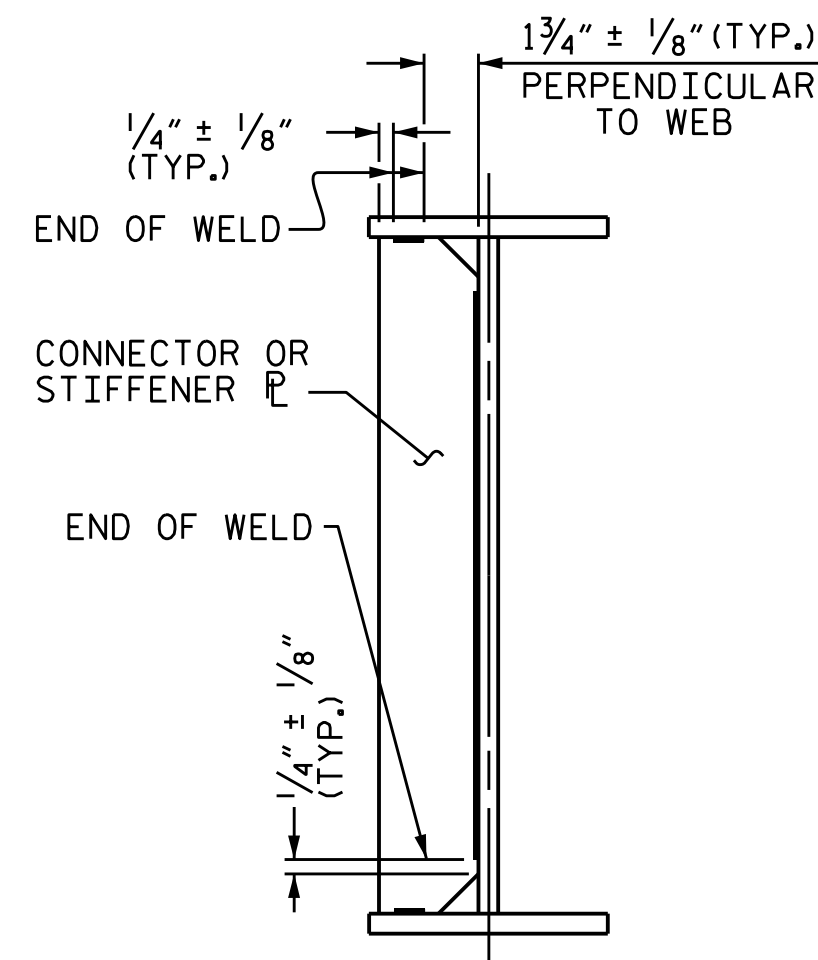
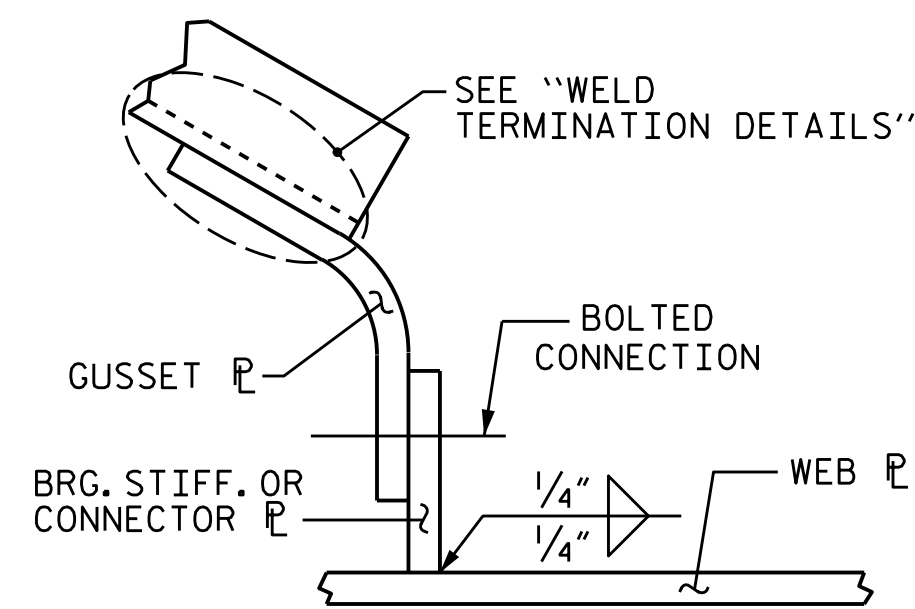
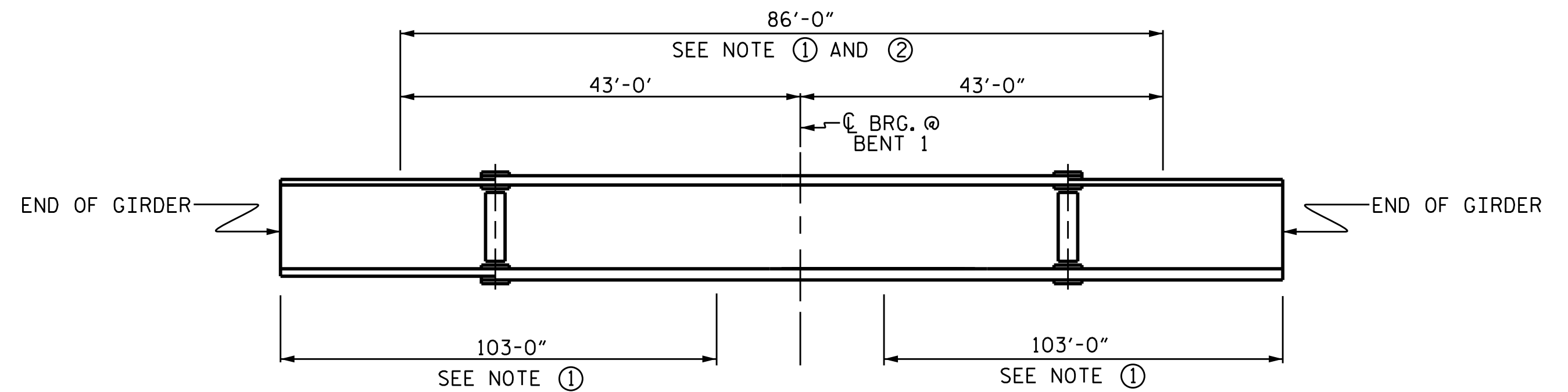


PLATE GIRDER

TYPICAL STIFFENER OR
CONNECTOR PLATE CONNECTIONS



BENT GUSSET

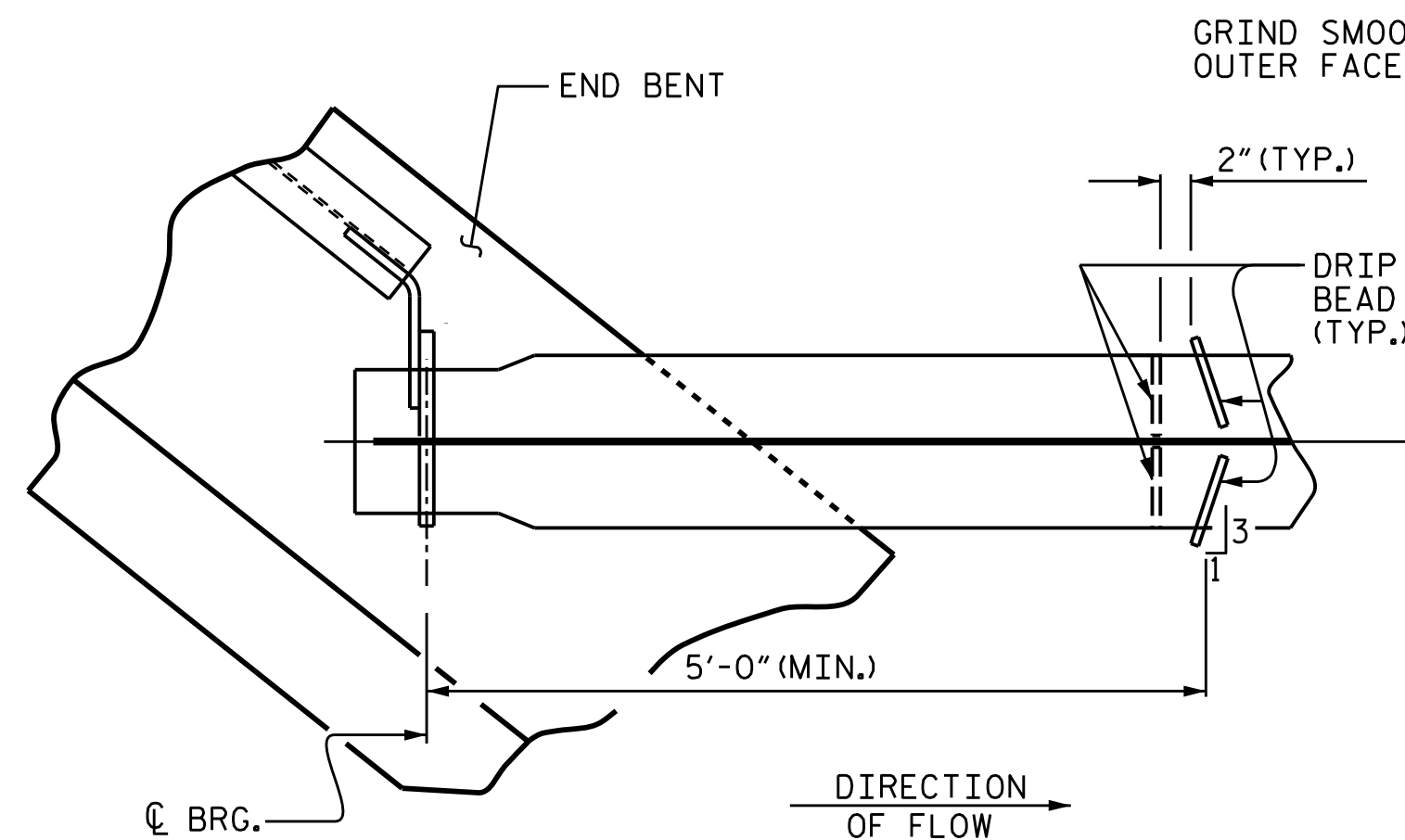


GIRDER MAKE UP

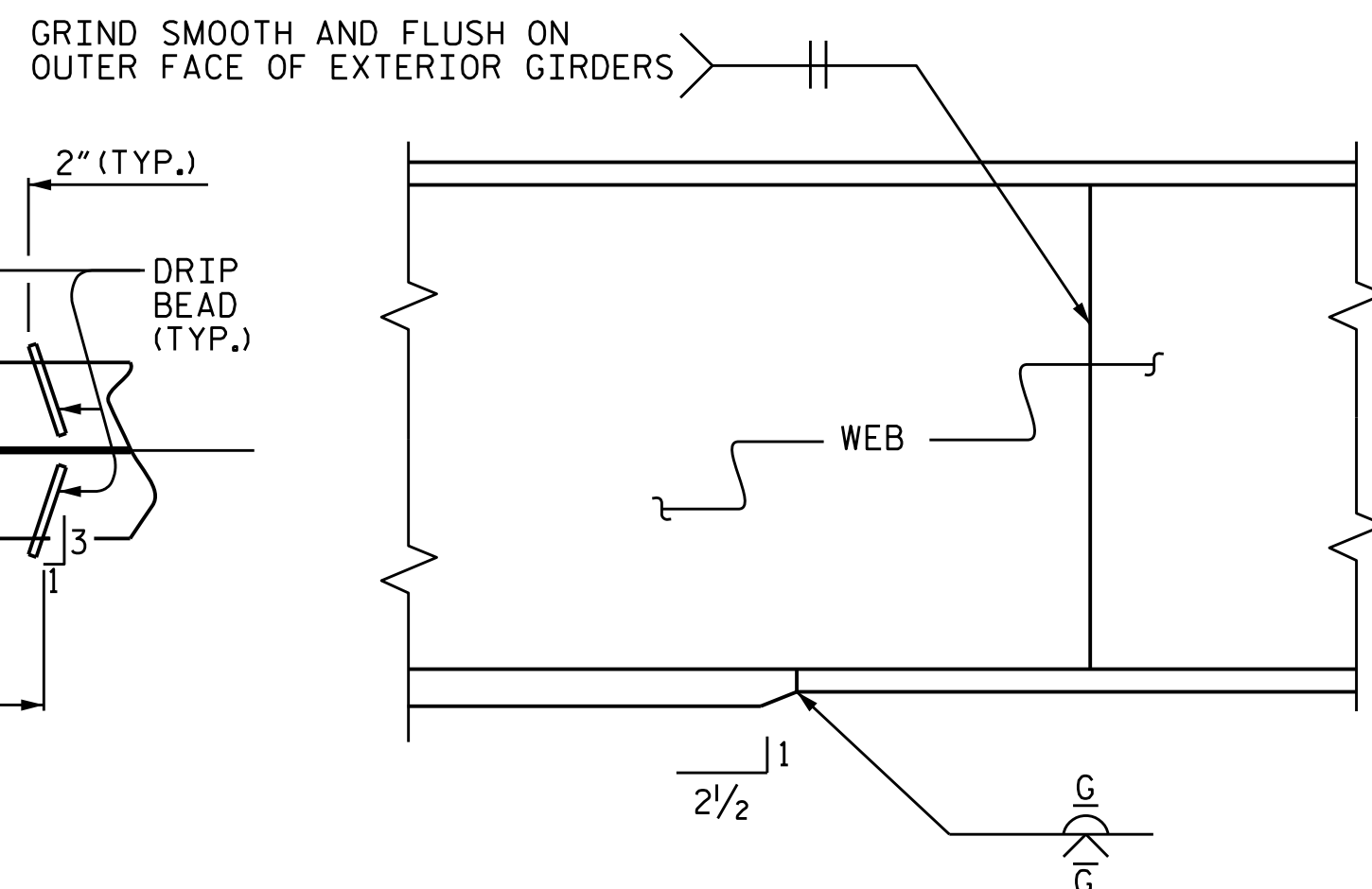
NOTE ① : CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM FLANGE PLATES WHICH FALL WITHIN THESE LIMITS, ALL WEB PLATES, AND ALL SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-7 OF THE STANDARD SPECIFICATIONS.

NOTE ② : NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION.

CHARPY V-NOTCH TESTS FOR CONTINUOUS PLATE GIRDERS

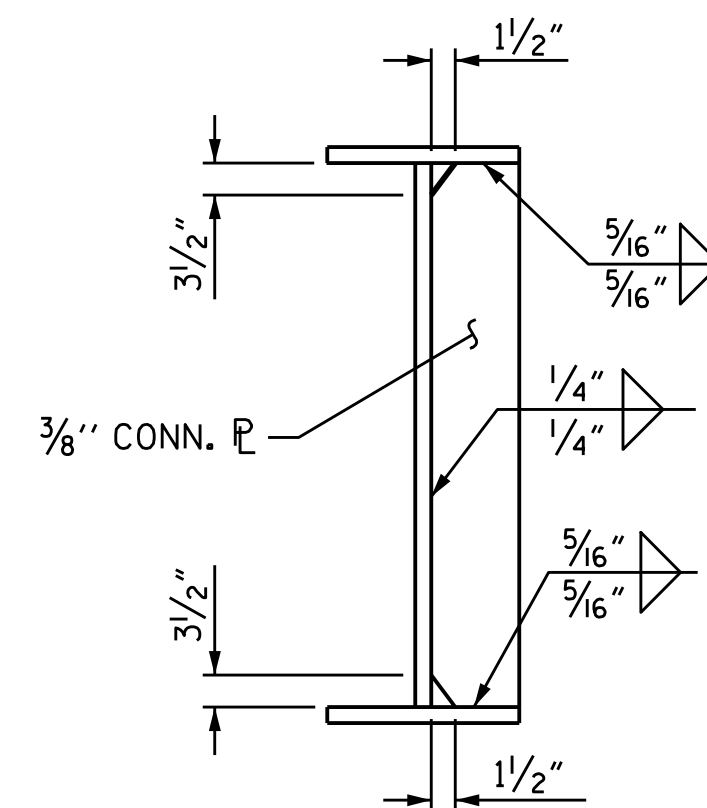


PART PLAN BOTTOM FLANGE
(END BENT SHOWN, BENT SIMILAR)

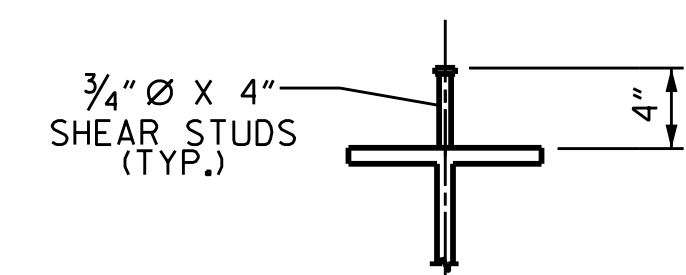


ELEVATION

TYPICAL FLANGE AND WEB BUTT JOINT

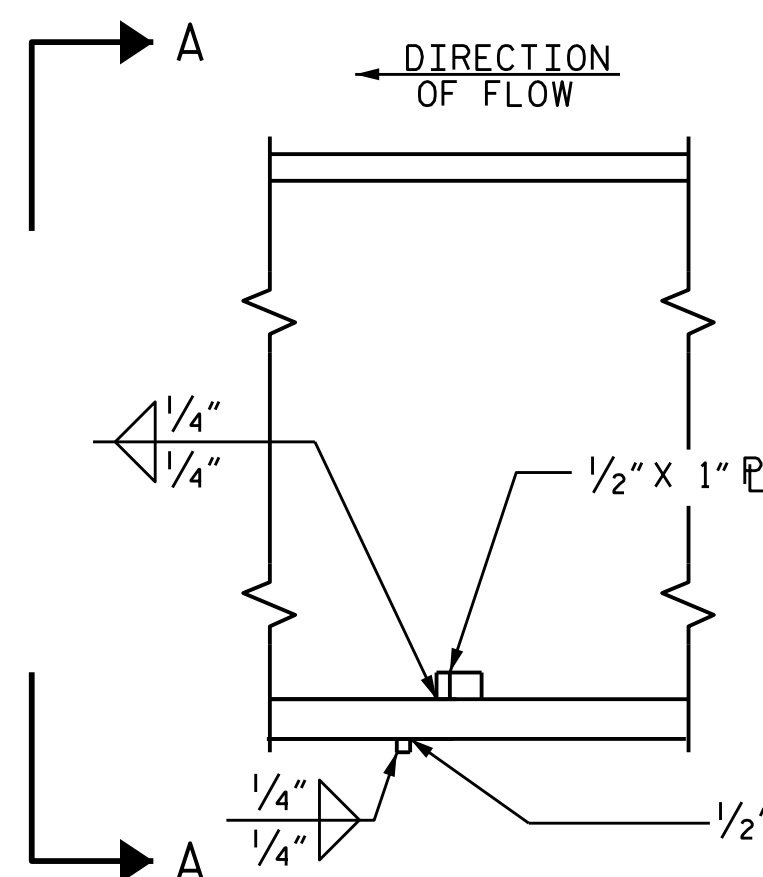


CONNECTOR
PLATE

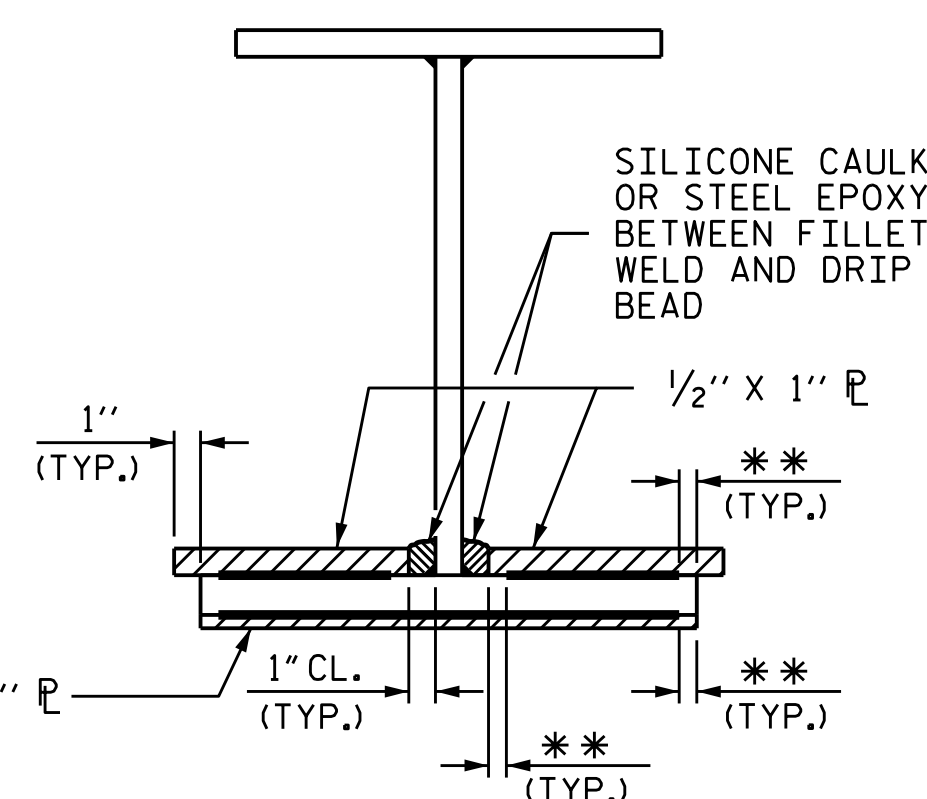


SHEAR STUD DETAILS

(TYP. EA. END BENT DIAPHRAGM)



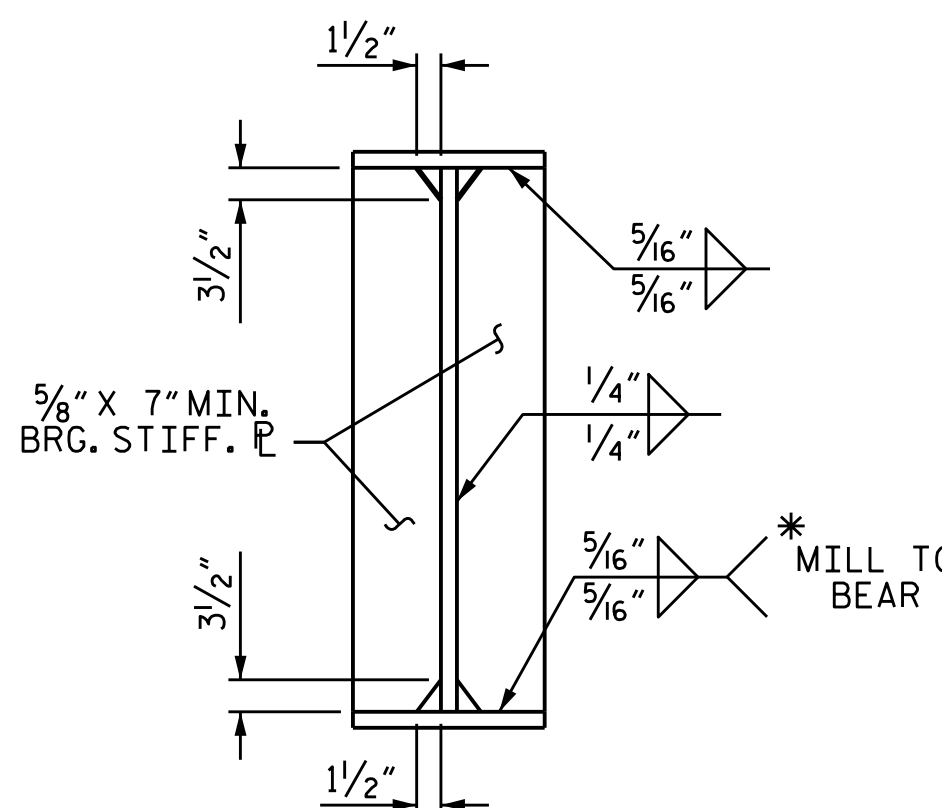
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VIEW A-A

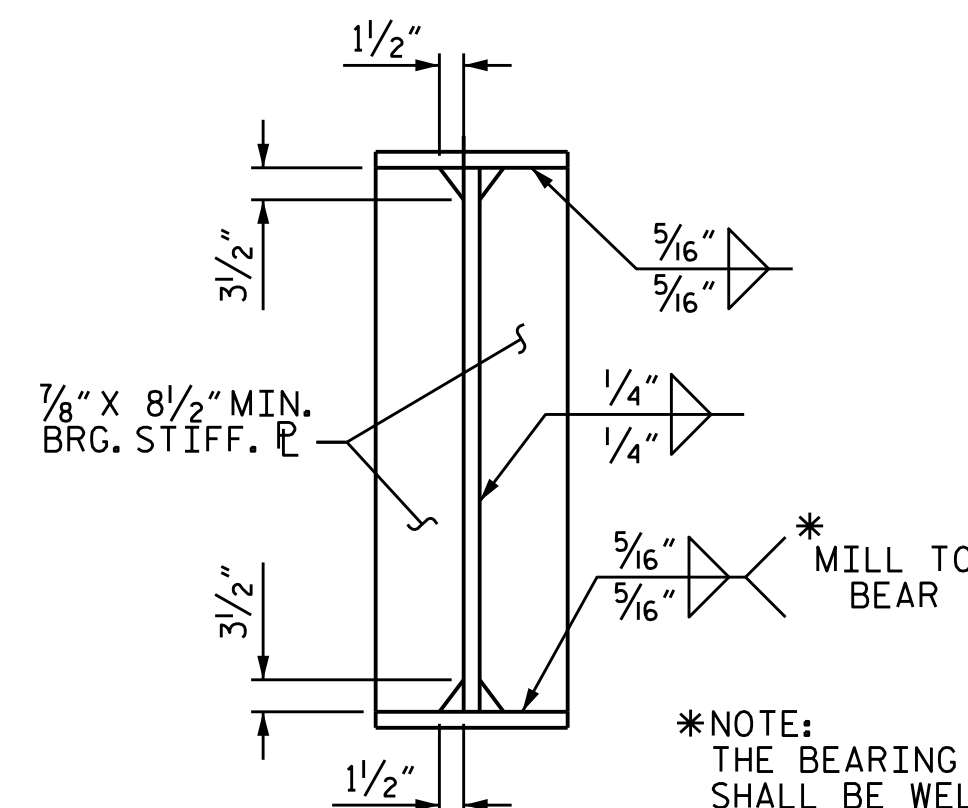
**SEE "WELD TERMINATION DETAILS"

DRIP BEAD DETAILS



BEARING
STIFFENER

(AT END BENT)



BEARING
STIFFENER

(AT BENT)

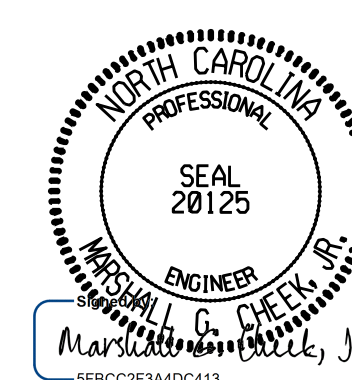
*NOTE:
THE BEARING STIFFENER
SHALL BE WELDED TO THE
BOTTOM FLANGE ONLY WHEN
USED AS A CONNECTOR

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48 -L-

SHEET 3 OF 6



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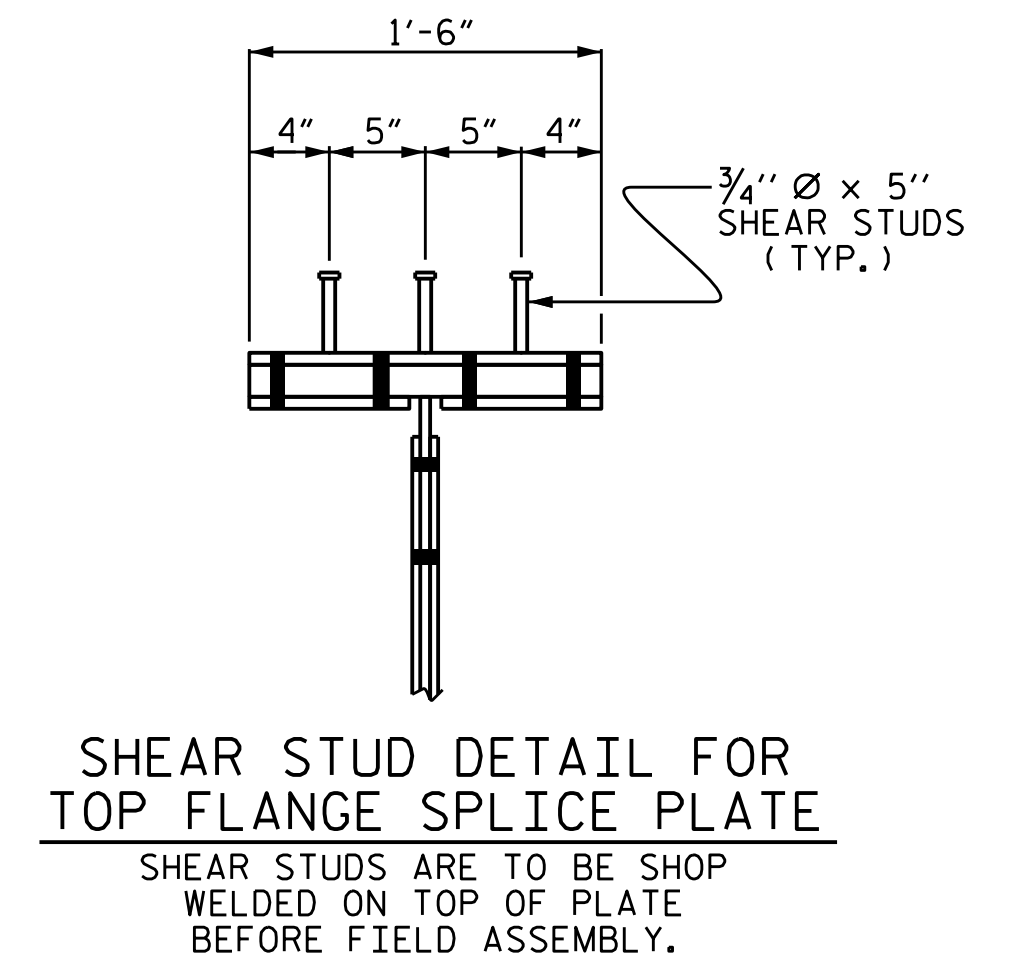
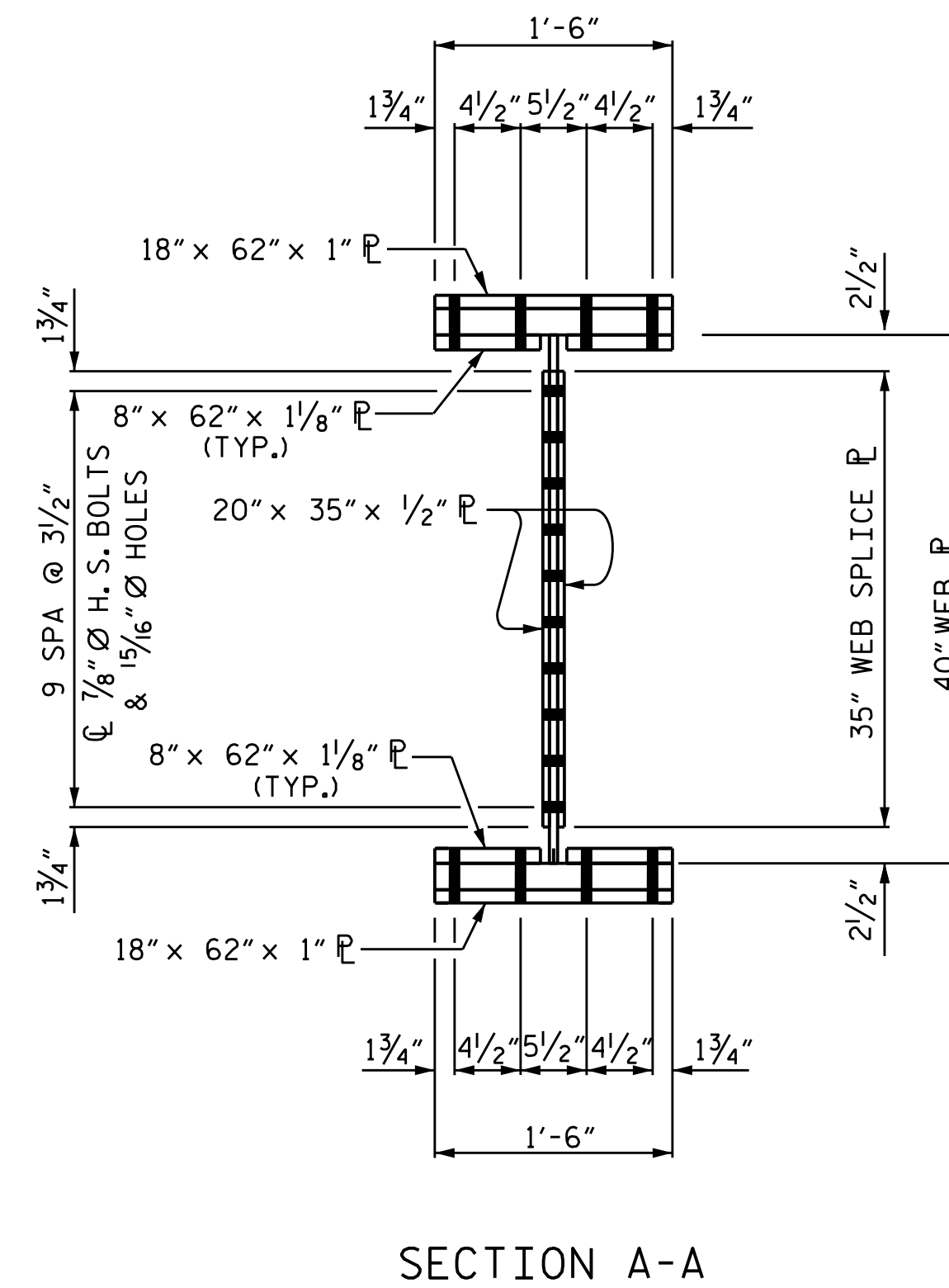
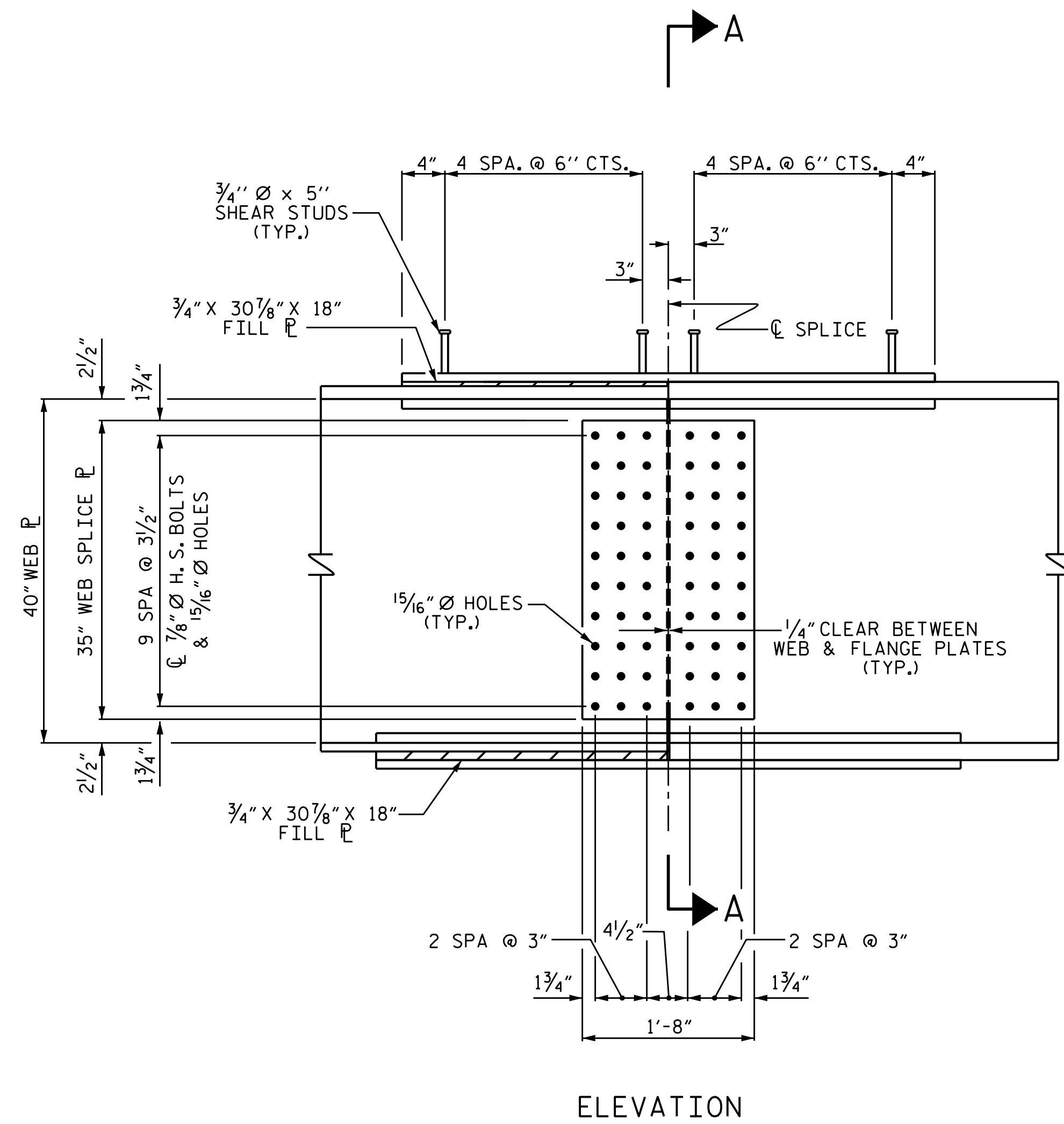
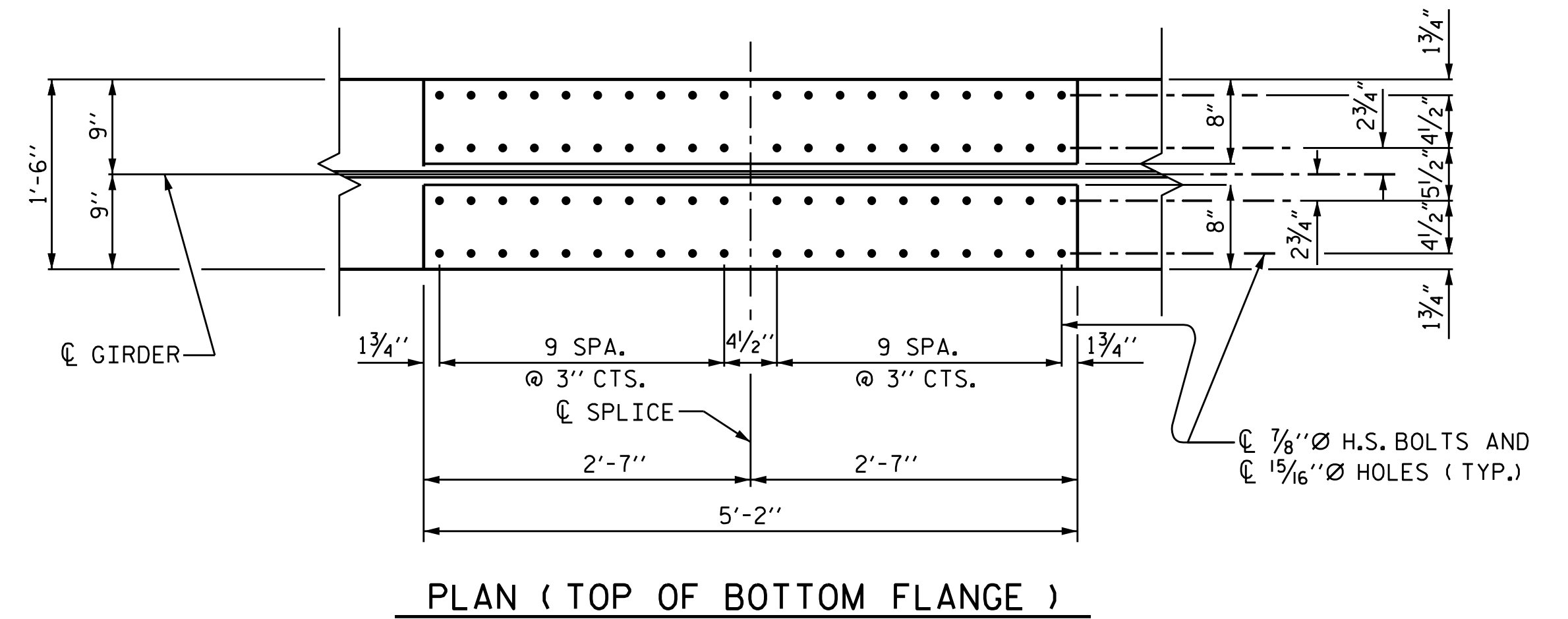
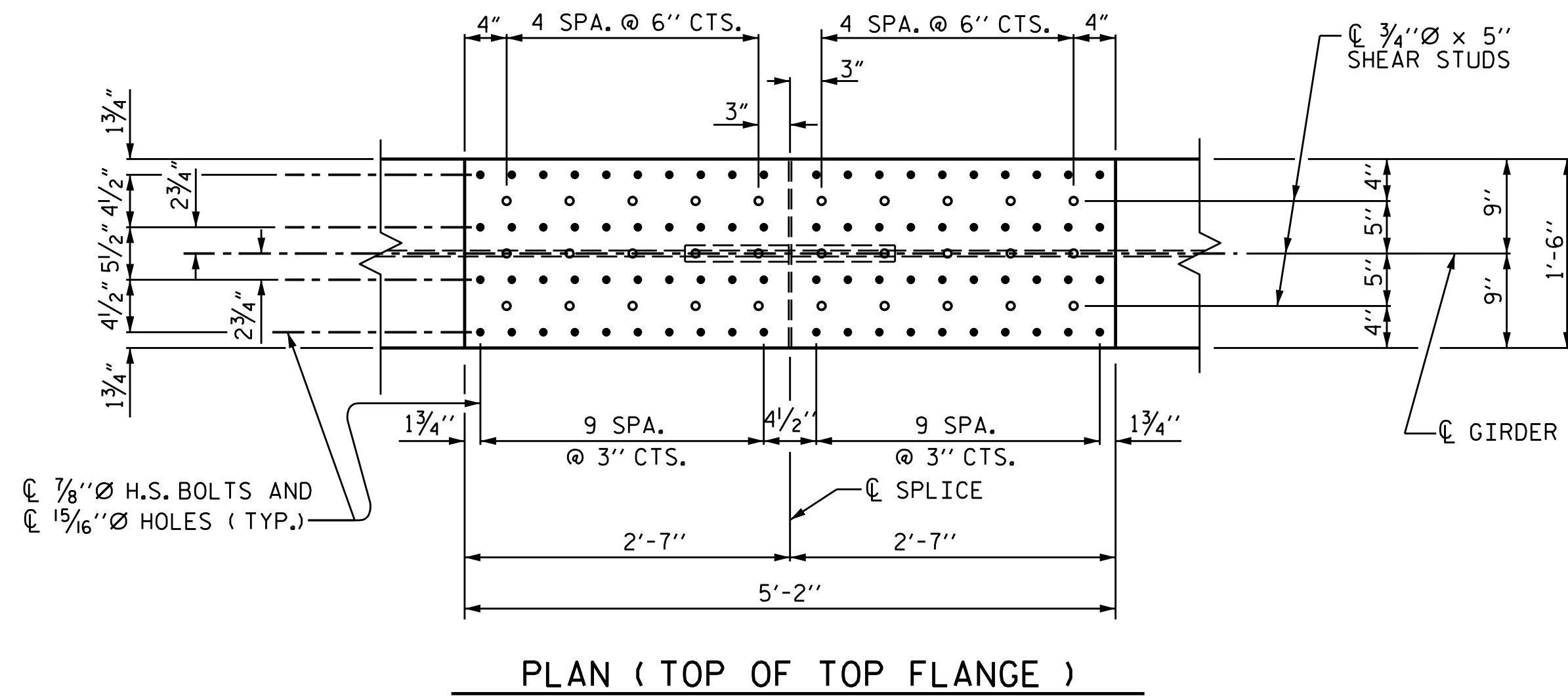
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SUPERSTRUCTURE
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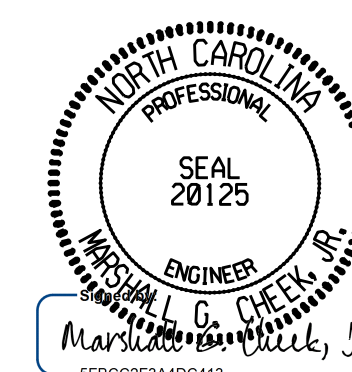
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SHEET 4 OF 6



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SUPERSTRUCTURE
 STRUCTURAL STEEL

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DRAWN BY : S.B. WILLIAMS DATE : 9-21
 CHECKED BY : MGC DATE : 10-21
 DESIGN ENGINEER OF RECORD: RDE DATE : 8-23

NOTE: FLANGE SPLICE PLATES SHALL BE AASHTO M270 GRADE 70W.
 WEB SPLICE PLATES SHALL BE AASHTO M270 GRADE 50W.

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																										
	SPAN B																																									
	GIRDER 1																																									
	℄ BRG.	0.025	0.050	0.075	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300	0.325	0.350	0.375	0.400	0.425	0.450	0.475	0.500	0.525	0.550	0.575	0.600	0.625	0.650	0.675	0.700	0.725	0.750	0.775	0.800	0.825	0.850	0.875	0.900	0.925	0.950	0.975	℄ BRG.	
FORTIETH POINTS																																										
DEFLECTION DUE TO WEIGHT OF GIRDER	↓	0.000	0.001	0.002	0.004	0.006	0.009	0.013	0.017	0.021	0.025	0.030	0.034	0.039	0.044	0.048	0.052	0.056	0.060	0.063	0.066	0.068	0.070	0.072	0.072	0.072	0.071	0.069	0.067	0.063	0.060	0.056	0.051	0.046	0.040	0.034	0.028	0.021	0.014	0.007	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.005	0.011	0.018	0.027	0.036	0.048	0.059	0.072	0.085	0.098	0.111	0.124	0.137	0.149	0.161	0.171	0.181	0.188	0.196	0.200	0.205	0.206	0.207	0.205	0.202	0.196	0.190	0.181	0.172	0.159	0.147	0.131	0.116	0.098	0.080	0.060	0.041	0.020	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	↓	0.000	0.000	0.001	0.002	0.003	0.004	0.005	0.007	0.008	0.010	0.012	0.014	0.016	0.018	0.019	0.021	0.023	0.024	0.025	0.026	0.027	0.028	0.028	0.029	0.029	0.028	0.028	0.027	0.026	0.025	0.024	0.022	0.020	0.018	0.016	0.013	0.011	0.008	0.006	0.003	0.000
TOTAL DEAD LOAD DEFLECTION		0.000	0.004	0.007	0.017	0.026	0.040	0.054	0.072	0.089	0.108	0.127	0.146	0.166	0.186	0.205	0.222	0.240	0.255	0.270	0.281	0.292	0.298	0.305	0.306	0.308	0.305	0.301	0.292	0.283	0.269	0.255	0.237	0.218	0.195	0.172	0.145	0.119	0.090	0.061	0.030	0.000
REQUIRED CAMBER	↑	0	1⁄16"	1⁄16"	3⁄16"	5⁄16"	1⁄2"	5⁄8"	7⁄8"	1 1⁄16"	1 3⁄16"	1 1⁄2"	1 3⁄4"	2"	2 1⁄4"	2 7⁄16"	2 11⁄16"	2 7⁄8"	3 1⁄16"	3 1⁄4"	3 3⁄8"	3 1⁄2"	3 3⁄16"	3 11⁄16"	3 1 1⁄16"	3 1 1⁄16"	3 3⁄8"	3 5⁄8"	3 1⁄2"	3 3⁄8"	3 1⁄4"	3 1⁄16"	2 13⁄16"	2 5⁄8"	2 5⁄16"	2 1⁄16"	1 3⁄4"	1 7⁄16"	1 1⁄16"	3⁄4"	3⁄8"	0

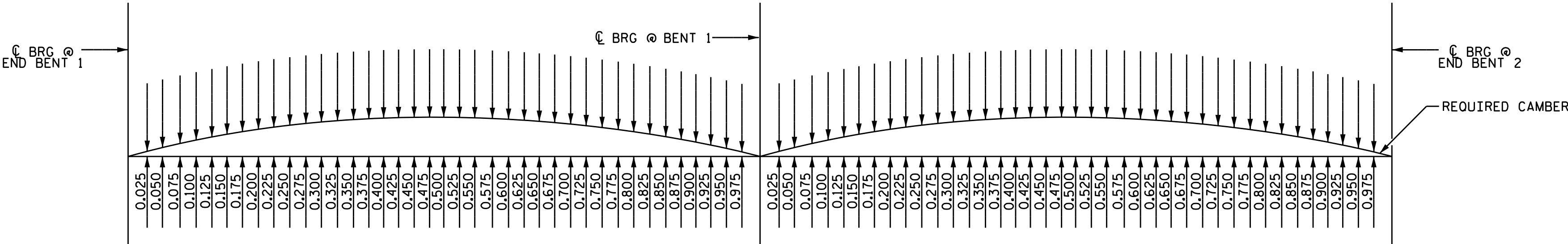
DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																										
	SPAN B																																									
	GIRDERS 2-5																																									
	℄ BRG.	0.025	0.050	0.075	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300	0.325	0.350	0.375	0.400	0.425	0.450	0.475	0.500	0.525	0.550	0.575	0.600	0.625	0.650	0.675	0.700	0.725	0.750	0.775	0.800	0.825	0.850	0.875	0.900	0.925	0.950	0.975	℄ BRG.	
FORTIETH POINTS	℄	0.000	0.001	0.002	0.004	0.006	0.010	0.013	0.017	0.022	0.026	0.031	0.036	0.041	0.045	0.050	0.054	0.059	0.062	0.066	0.069	0.071	0.073	0.074	0.075	0.075	0.074	0.074	0.071	0.069	0.066	0.062	0.058	0.053	0.048	0.042	0.036	0.029	0.022	0.015	0.007	0.000
DEFLECTION DUE TO WEIGHT OF GIRDER	↓	0.000	0.001	0.002	0.004	0.006	0.010	0.013	0.017	0.022	0.026	0.031	0.036	0.041	0.045	0.050	0.054	0.059	0.062	0.066	0.069	0.071	0.073	0.074	0.075	0.075	0.074	0.074	0.071	0.069	0.066	0.062	0.058	0.053	0.048	0.042	0.036	0.029	0.022	0.015	0.007	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.005	0.011	0.018	0.027	0.037	0.048	0.060	0.072	0.085	0.099	0.112	0.125	0.138	0.150	0.162	0.172	0.182	0.189	0.196	0.201	0.205	0.207	0.208	0.205	0.203	0.197	0.191	0.182	0.172	0.160	0.147	0.132	0.116	0.098	0.080	0.061	0.041	0.020	0.000
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	↓	0.000	0.000	0.001	0.002	0.003	0.004	0.005	0.007	0.008	0.010	0.012	0.014	0.016	0.017	0.019	0.021	0.023	0.024	0.025	0.026	0.027	0.028	0.028	0.028	0.029	0.028	0.028	0.027	0.026	0.025	0.024	0.022	0.020	0.018	0.016	0.013	0.011	0.008	0.006	0.003	0.000
TOTAL DEAD LOAD DEFLECTION		0.000	0.004	0.007	0.017	0.027	0.041	0.055	0.072	0.090	0.109	0.128	0.148	0.168	0.188	0.207	0.225	0.243	0.258	0.273	0.284	0.295	0.302	0.308	0.310	0.312	0.308	0.304	0.296	0.287	0.273	0.258	0.239	0.220	0.197	0.174	0.147	0.120	0.091	0.061	0.031	0.000
REQUIRED CAMBER	↑	0	1⁄16"	1⁄16"	3⁄16"	5⁄16"	1⁄2"	11⁄16"	7⁄8"	11⁄16"	15⁄16"	13⁄4"	2"	21⁄4"	21⁄2"	211⁄16"	215⁄16"	31⁄16"	31⁄4"	33⁄8"	33⁄16"	35⁄8"	311⁄16"	33⁄4"	33⁄4"	311⁄16"	35⁄8"	33⁄16"	33⁄16"	37⁄16"	31⁄4"	31⁄8"	27⁄8"	25⁄8"	23⁄8"	21⁄16"	13⁄4"	17⁄16"	11⁄16"	3⁄4"	3⁄8"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																																											
	SPAN B																																										
	GIRDER 6																																										
	℄ BRG.	0.025	0.050	0.075	0.100	0.125	0.150	0.175	0.200	0.225	0.250	0.275	0.300	0.325	0.350	0.375	0.400	0.425	0.450	0.475	0.500	0.525	0.550	0.575	0.600	0.625	0.650	0.675	0.700	0.725	0.750	0.775	0.800	0.825	0.850	0.875	0.900	0.925	0.950	0.975	℄ BRG.		
FORTIETH POINTS																																											
DEFLECTION DUE TO WEIGHT OF GIRDER	↓	0.000	0.001	0.002	0.004	0.006	0.009	0.013	0.017	0.021	0.025	0.030	0.034	0.039	0.044	0.048	0.052	0.056	0.060	0.063	0.066	0.068	0.070	0.072	0.072	0.072	0.071	0.069	0.067	0.063	0.060	0.056	0.051	0.046	0.040	0.034	0.028	0.021	0.014	0.007	0.000		
DEFLECTION DUE TO WEIGHT OF SLAB *	↓	0.000	0.002	0.005	0.011	0.018	0.027	0.037	0.049	0.061	0.073	0.087	0.100	0.114	0.127	0.140	0.152	0.164	0.174	0.184	0.192	0.199	0.204	0.208	0.210	0.211	0.208	0.206	0.200	0.194	0.184	0.175	0.162	0.149	0.134	0.118	0.099	0.081	0.061	0.041	0.020	0.000	
DEFLECTION DUE TO WEIGHT OF BARRIER RAIL	↓	0.000	0.000	0.001	0.002	0.003	0.004	0.005	0.007	0.008	0.010	0.012	0.014	0.016	0.018	0.019	0.021	0.023	0.024	0.025	0.026	0.027	0.028	0.028	0.029	0.029	0.028	0.028	0.027	0.026	0.025	0.024	0.022	0.020	0.018	0.016	0.013	0.011	0.008	0.006	0.003	0.000	
TOTAL DEAD LOAD DEFLECTION		0.000	0.004	0.007	0.017	0.027	0.041	0.055	0.072	0.090	0.109	0.128	0.148	0.168	0.188	0.207	0.225	0.243	0.258	0.273	0.284	0.295	0.302	0.309	0.310	0.312	0.308	0.305	0.296	0.287	0.273	0.258	0.240	0.220	0.197	0.174	0.147	0.120	0.091	0.061	0.030	0.000	
REQUIRED CAMBER	↑	0	1⁄16"	1⁄16"	3⁄16"	5⁄16"	1⁄2"	11⁄16"	7⁄8"	11⁄16"	13⁄16"	13⁄4"	2"	21⁄4"	21⁄2"	211⁄16"	215⁄16"	31⁄16"	31⁄4"	37⁄16"	33⁄16"	35⁄8"	311⁄16"	33⁄4"	33⁄4"	311⁄16"	311⁄16"	33⁄16"	37⁄16"	31⁄4"	31⁄8"	27⁄8"	25⁄8"	23⁄8"	21⁄16"	13⁄4"	11⁄16"	11⁄16"	3⁄4"	3⁄8"	0		

* INCLUDES SLAB,BUILD-UPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM) EXCEPT *REQUIRED CAMBER*,WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 6 OF 6



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

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

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

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

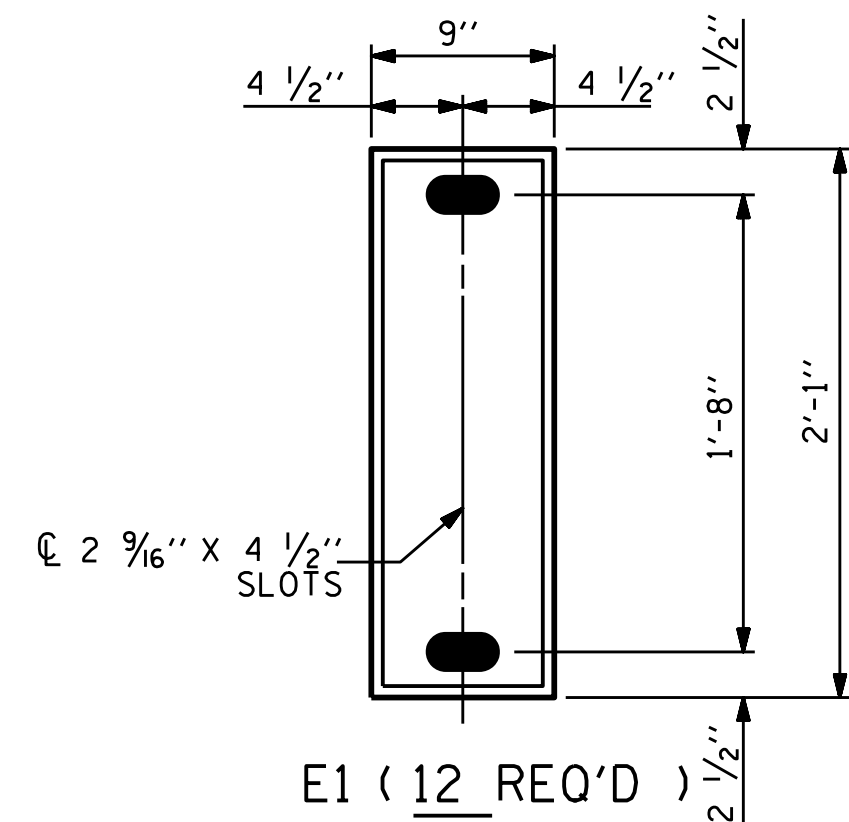
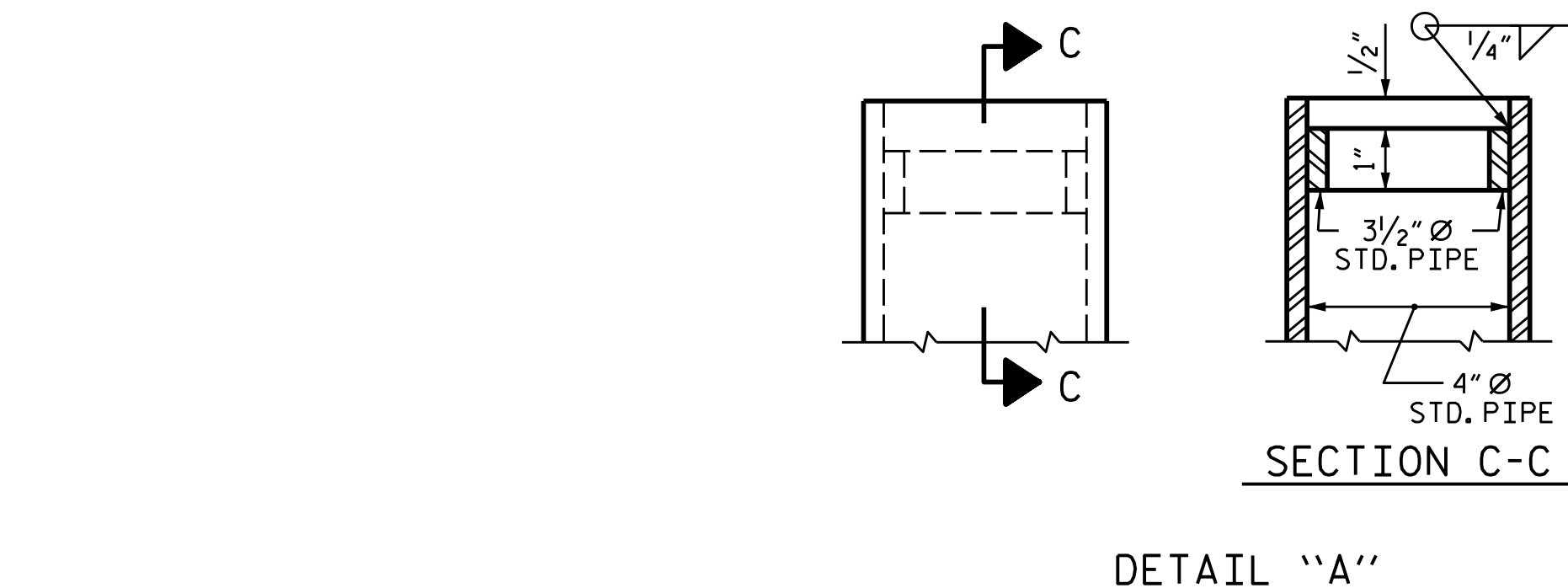
THE CLOSURE PLATE, GROUT PIPE AND STANDARD PIPE FOR THE EXPANSION ASSEMBLY MUST NOT BE GALVANIZED.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURE, WHICH MAY BE REQUIRED BY THE ENGINEER, TO RESET ELASTOMERIC BEARINGS DUE TO GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED THEN THE ANCHOR BOLTS AND ELASTOMERIC BEARING SLOTS CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60°F.
2. AFTER CENTERING THE ELASTOMERIC BEARING SLOTS AND ANCHOR BOLTS, THE ANCHOR BOLTS SHALL BE GROUTED.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.



PLAN VIEW OF ELASTOMERIC BEARING

TYPE III



MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE III	255 k

PROJECT NO. B-5833
YADKIN COUNTY
 STATION: 27+76.48 -L-

ASSEMBLED BY : S. B. WILLIAMS		DATE : 2-24
CHECKED BY : MGC		DATE : 2-24
DRAWN BY : JMB	11/87	REV. 12/17 MAA/THC
CHECKED BY : ARB	11/87	REV. 10/21 BNB/AAI
		REV. 10/23 BNB/SNM

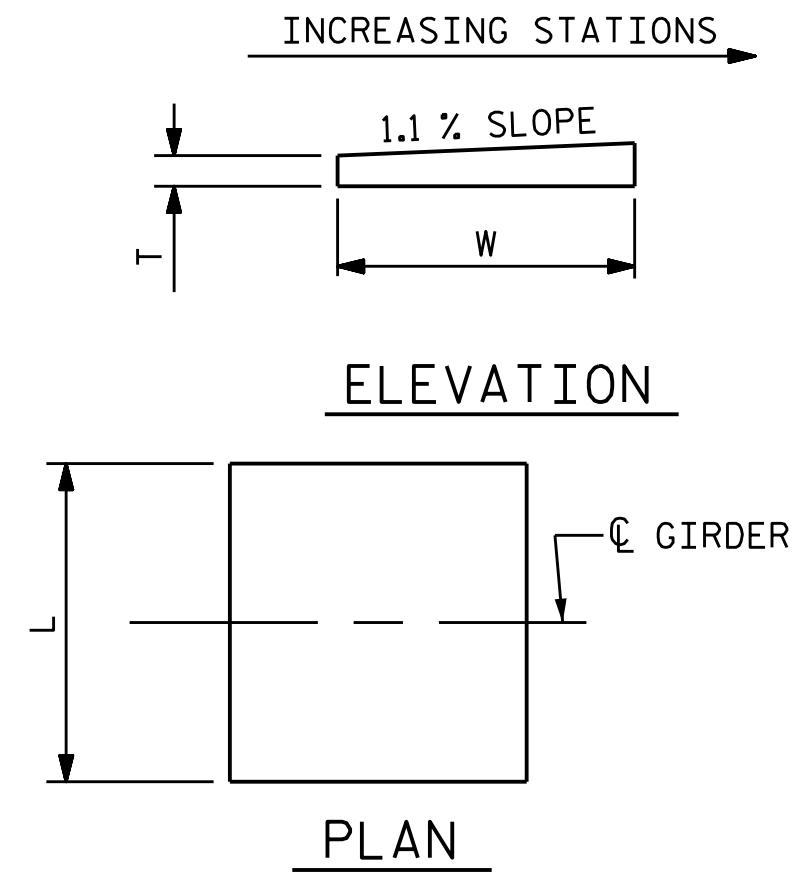
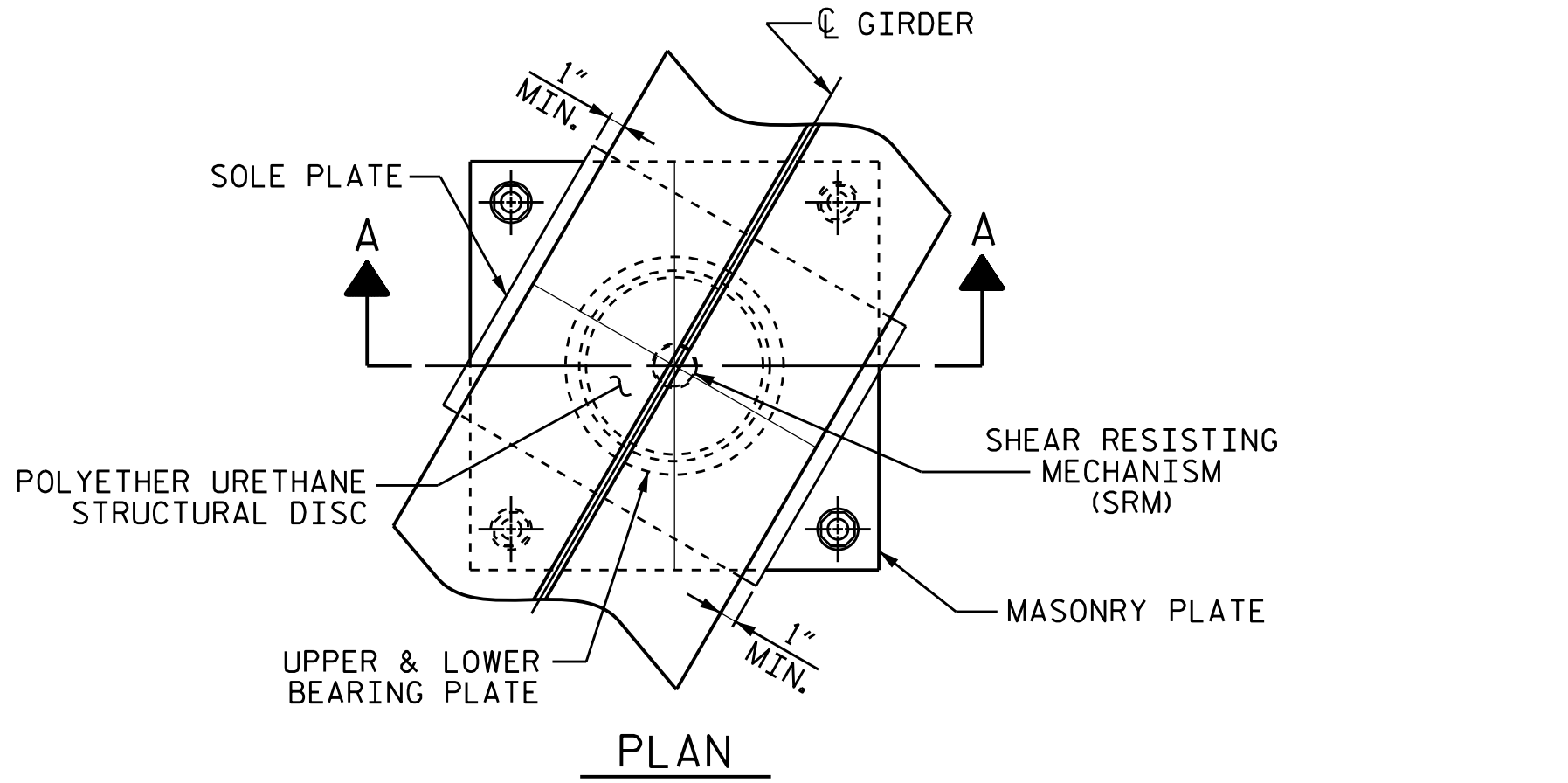
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$$$$$SYSTIME$$$$$
$$$$$DGN$$$$$
$$$$$USERNAME$$$$$

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 Seal of the State of North Carolina Professional Engineer Seal 20125 Michael B. Chevalier, Inc. SFBCC2F3A4DC413...	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD ELASTOMERIC BEARING DETAILS (STEEL SUPERSTRUCTURE)																										
11/20/2025	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="6">REVISIONS</th> <th style="width: 15%;">SHEET NO.</th> </tr> <tr> <th>NO.</th> <th>BY:</th> <th>DATE:</th> <th>NO.</th> <th>BY:</th> <th>DATE:</th> <th rowspan="3" style="text-align: center; vertical-align: middle;"> TOTAL SHEETS 33 </th> </tr> <tr> <td style="text-align: center;">1</td> <td></td> <td></td> <td style="text-align: center;">3</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td></td> <td></td> <td style="text-align: center;">4</td> <td></td> <td></td> </tr> </table>	REVISIONS						SHEET NO.	NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 33	1			3			2			4		
REVISIONS						SHEET NO.																					
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 33																					
1			3																								
2			4																								

STD. NO. EB1



NOTES

FOR DISC BEARINGS, SEE SPECIAL PROVISIONS.

ALL BEARING PLATES SHALL BE AASHTO M270 GRADE 50W OR GRADE 50.

AT ALL POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS SHALL BE FINGER-TIGHTENED PLUS AN ADDITIONAL $\frac{1}{4}$ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

WHEN WELDING THE SOLE PLATE TO THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE BEARING DOES NOT EXCEED 250°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE TFE OR URETHANE DISC.

SOLE PLATES SHOULD BE WELDED TO GIRDER FLANGES BEFORE FALSEWORK IS PLACED.

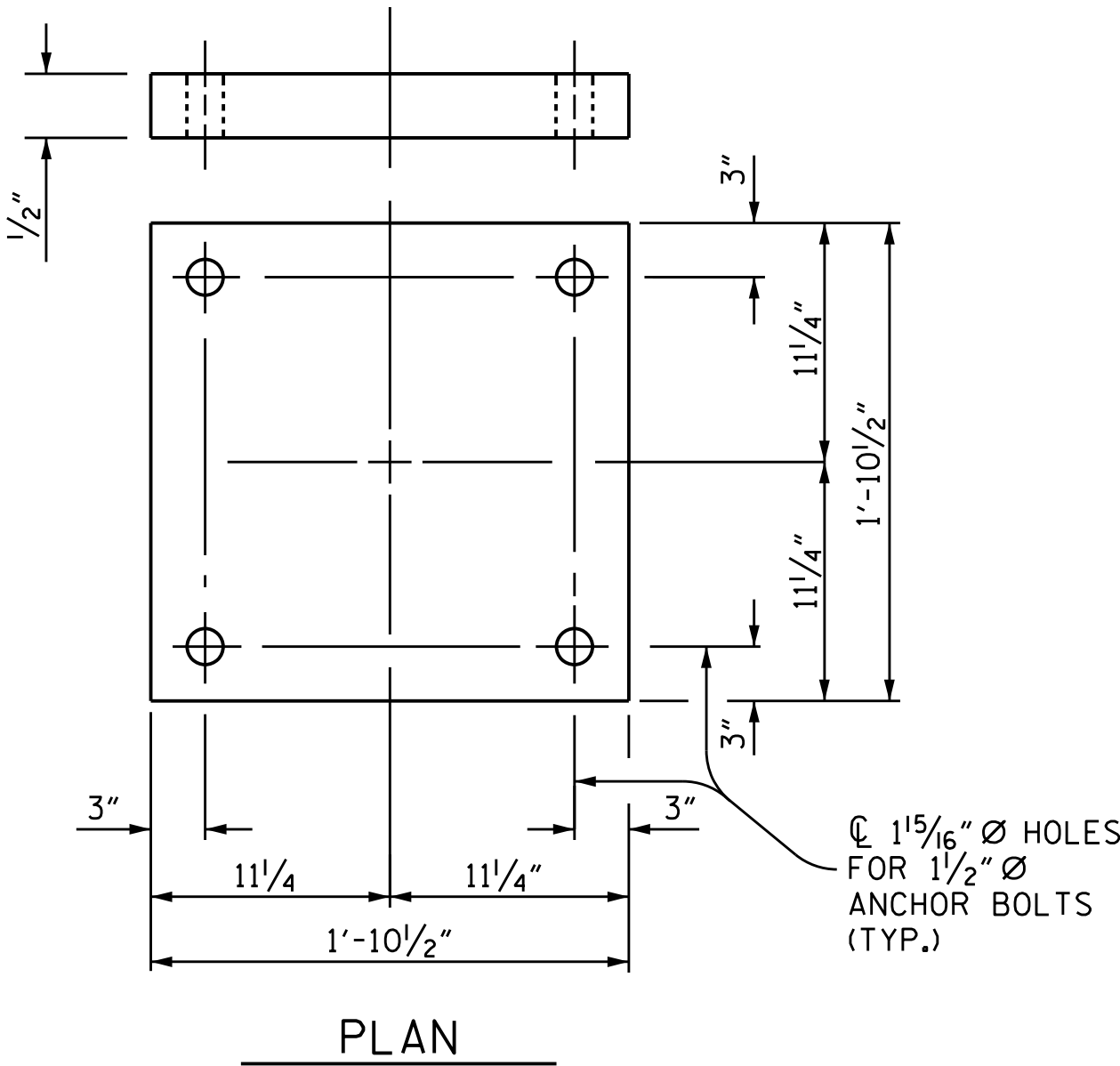
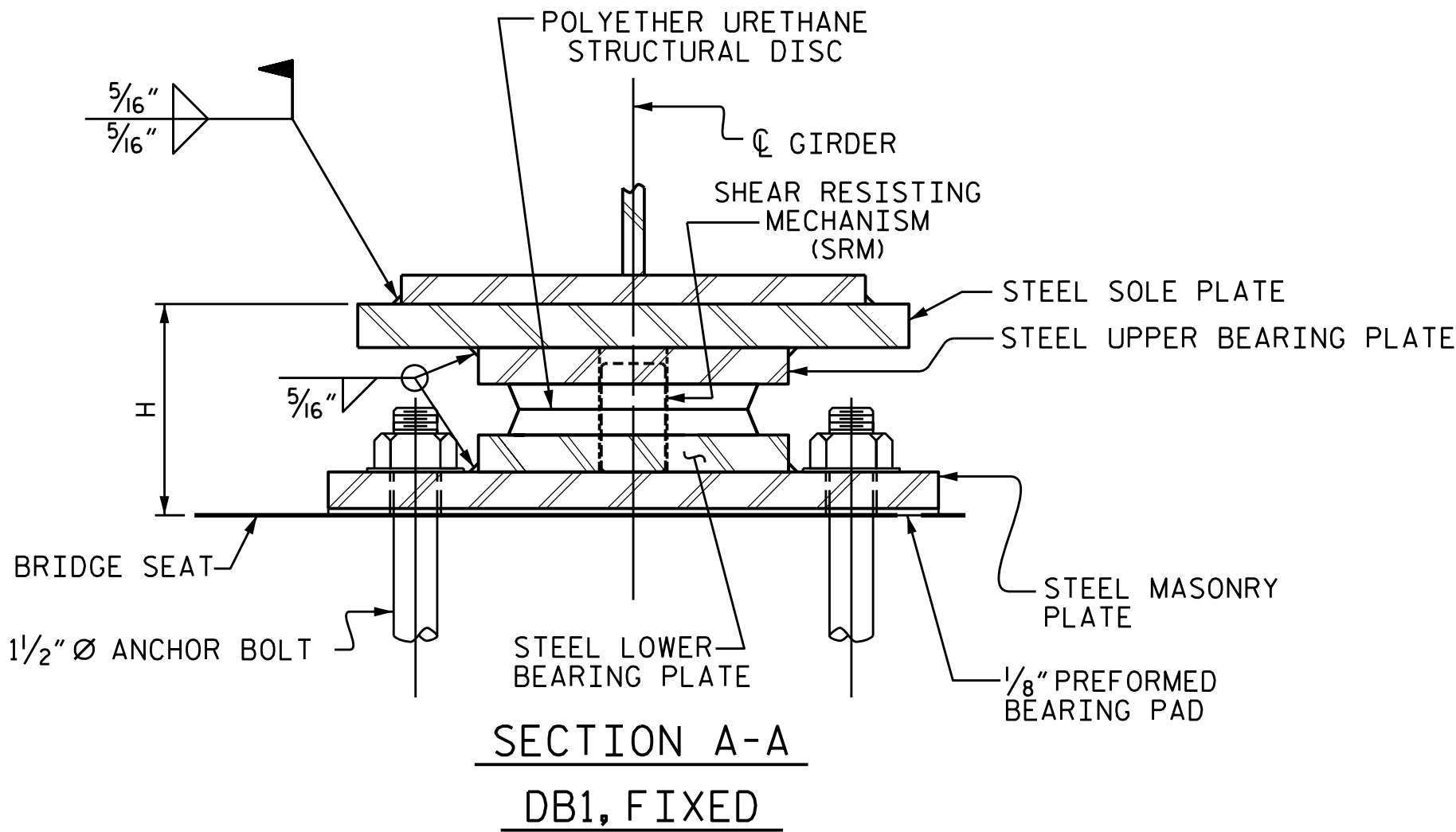
ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

THE MINIMUM ROTATIONAL CAPACITY FOR ALL BEARINGS SHALL BE 0.02 RADIAN.

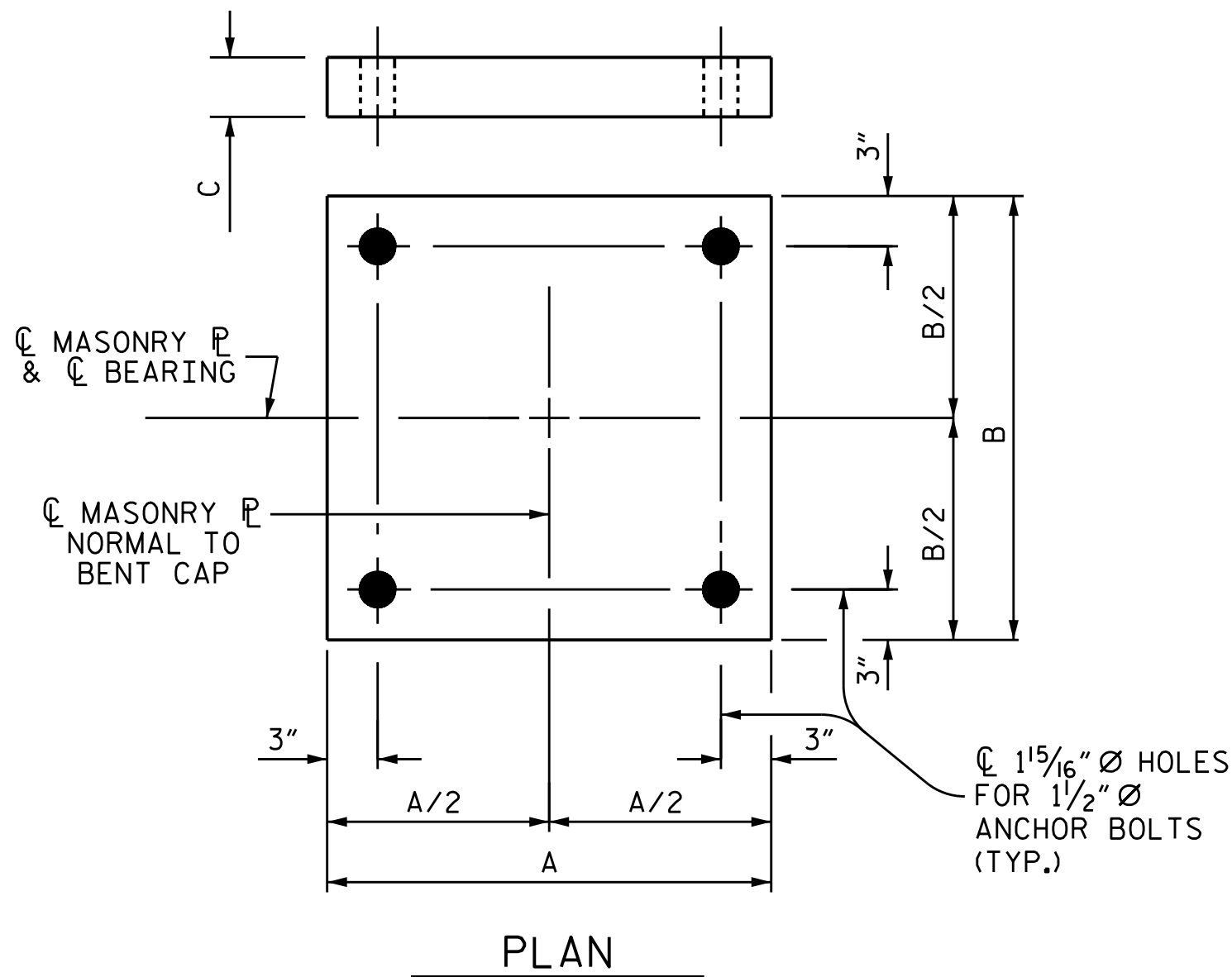
NOTE:
DIMENSIONS "W" AND "T" SHALL BE DETERMINED BY THE BEARING MANUFACTURER.

SOLE PLATE DETAILS



FILL PLATE

FOR LOCATION OF FILL PLATE, SEE "FRAMING PLAN" (3) PLATES REQ'D



MASONRY PLATE DETAILS

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

ASSEMBLED BY : S. B. WILLIAMS DATE : 7-21
CHECKED BY : MGC DATE : 10-21
DRAWN BY : TMG 08/13 REV. 12/17 MAA/THC
CHECKED BY : EKP 10/13

DESIGNATIONS		LOCATION	NUMBER OF BEARINGS	DIMENSIONS				LOADS AND MOVEMENT			
BEARINGS	MASONRY P			BEARING H (IN.)	A (IN.)	B (IN.)	C (IN.)	TOP SLOPE (%)	L (IN.)	UNFACTORED VERTICAL LOAD (KIPS) DEAD	FACTORED HORIZONTAL LOAD (KIPS) LIVE LL+IM
DB1 (FIXED)	M1	BENT 1	6	5 1/2	22 1/2	22 1/2	3/4	1.1	20	238	182

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

STANDARD

DISC BEARING DETAILS

11/20/2025

SEAL 20125

ENGINEER

Marshall C. Check, Jr.

87800234MDC413...

11/20/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS

706 HILLSBOROUGH STREET SUITE 200

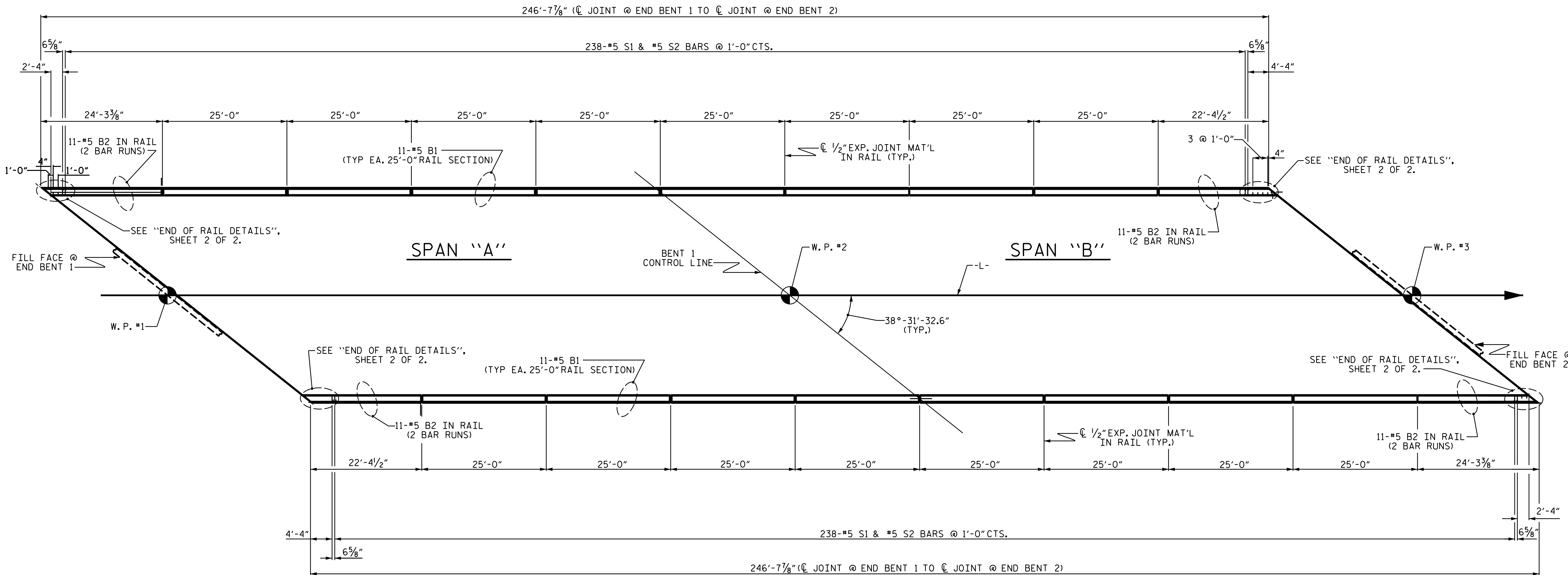
RALEIGH, NC 27603

PH (919) 773-8887

CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			TOTAL SHEETS 33

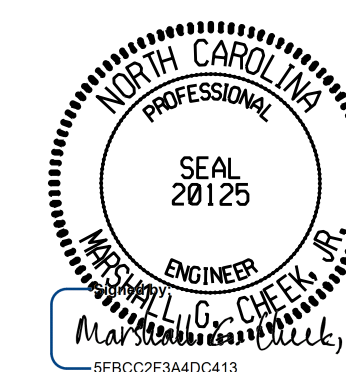
STD. NO. DB1



PLAN OF BARRIER RAIL

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

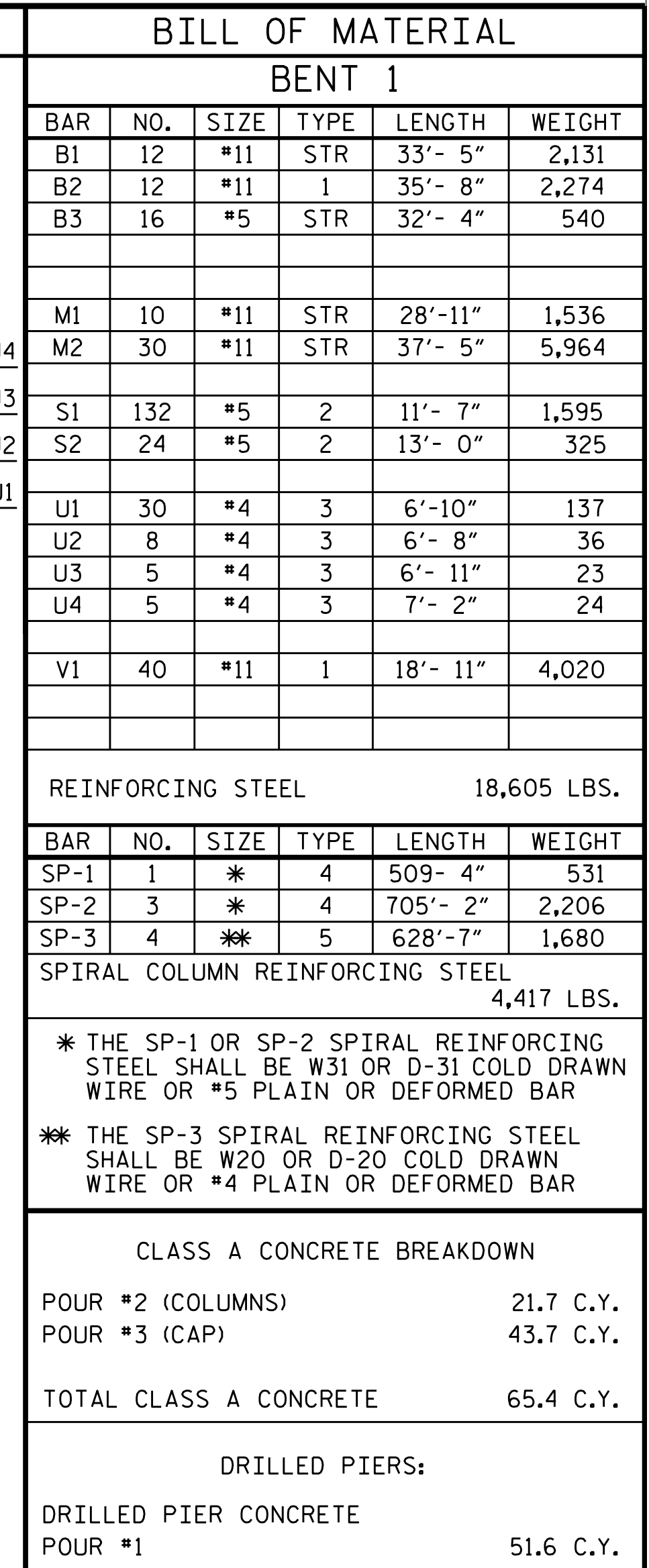
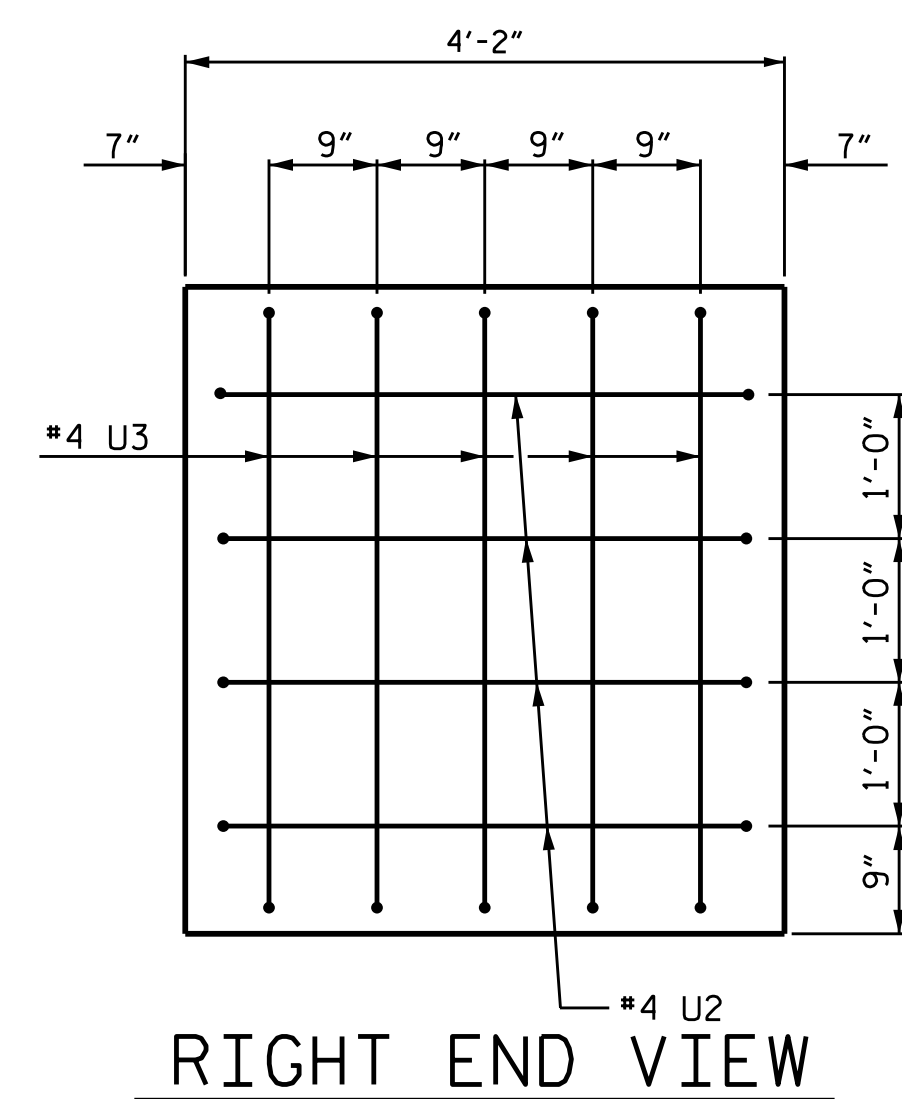
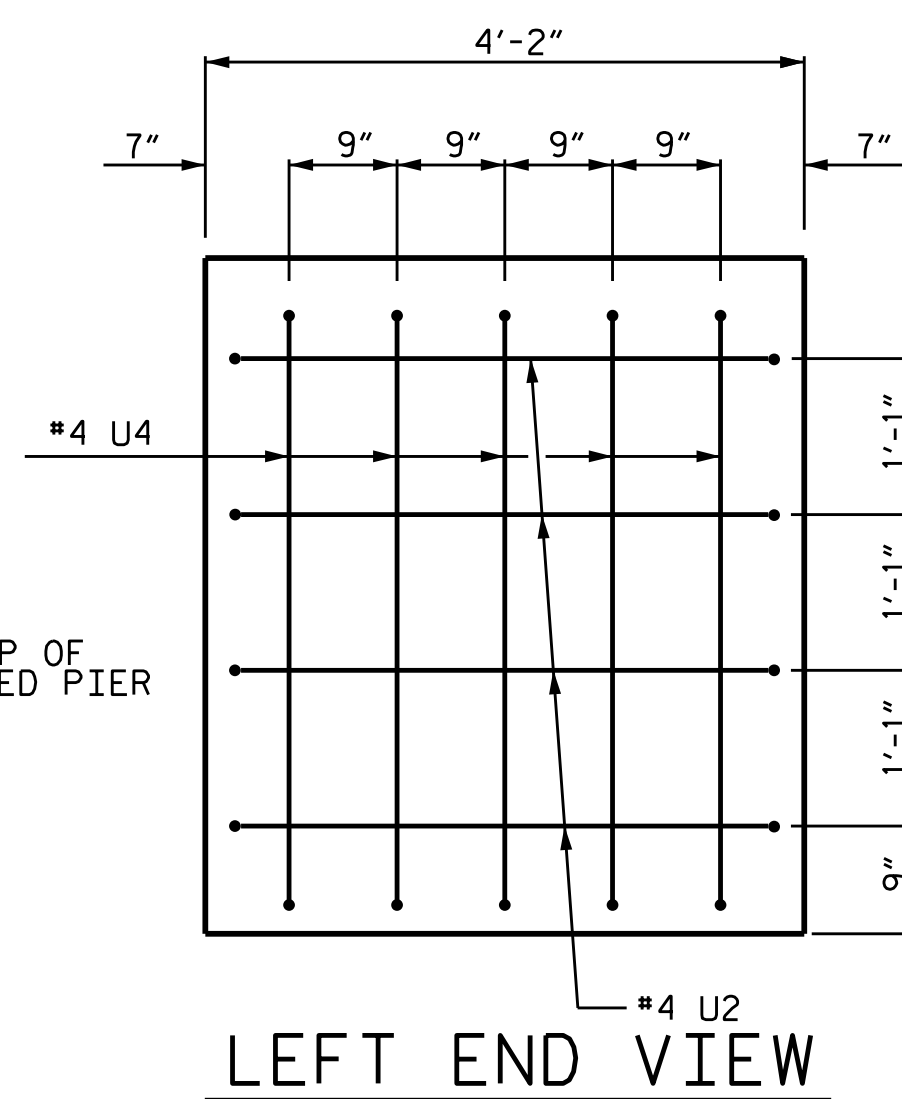
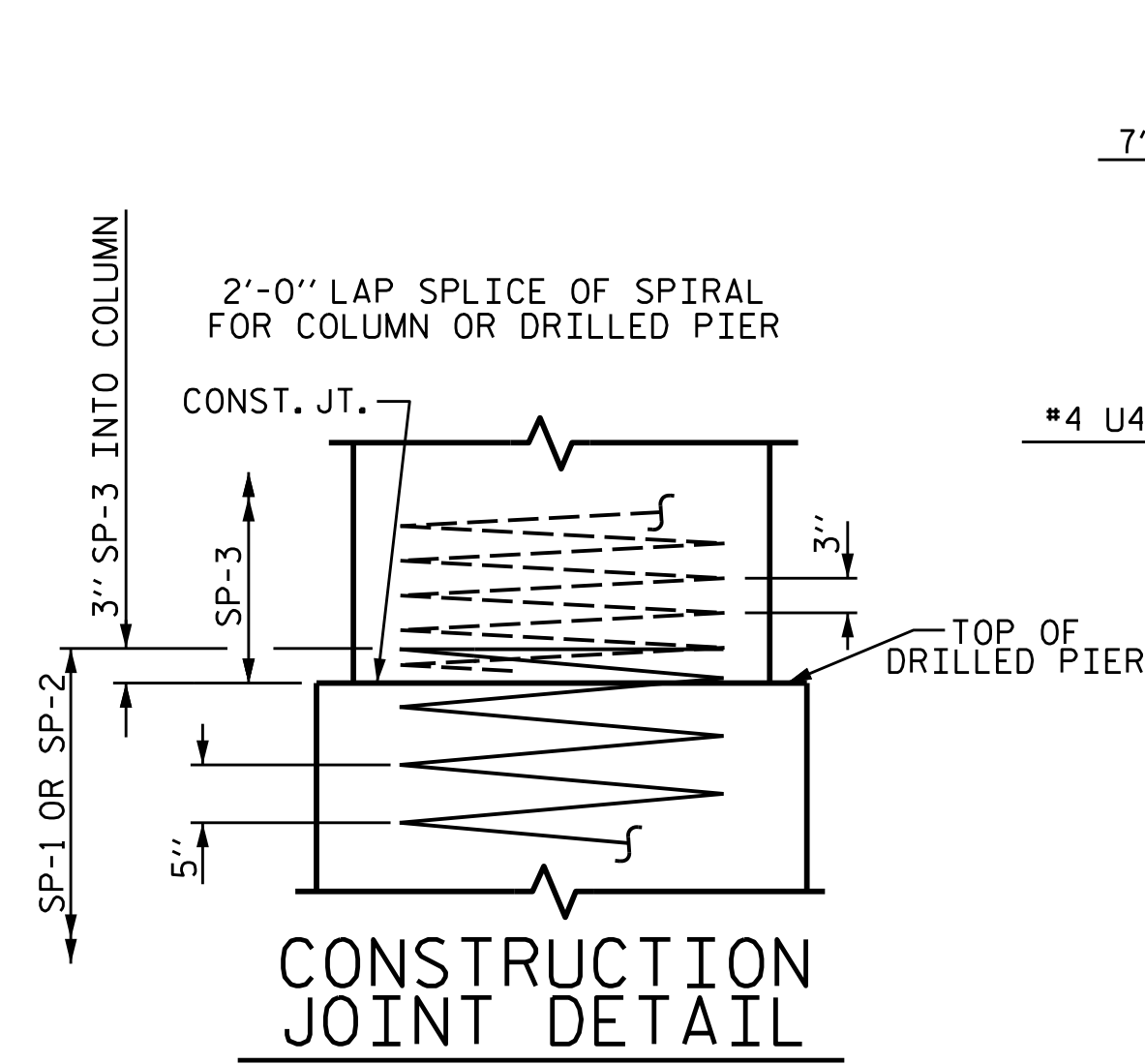
CONCRETE
BARRIER RAIL

DRAWN BY : S.B. WILLIAMS DATE : 8/21
CHECKED BY : MGC DATE : 11-21

*****SYSTEM*****
*****DCN*****
*****USERNAME*****

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-19
2			4			TOTAL SHEETS 33



PROJECT NO. B-5833
YADKIN COUNTY
 STATION: 27+76.48 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

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#####SYSTIME#####
#####DGN#####
#####USERNAME#####

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 Michael G. Cheek, Jr.
 Professional Engineer
 License No. 10000
 Exp. 12/31/2015

8/1/2015
 11/20/2015

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETE


 TGS ENGINEERS
 706 HILLSBOROUGH STREET
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP LICENSE NC-00000000

REVISIONS						SHEET NO. S-27
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

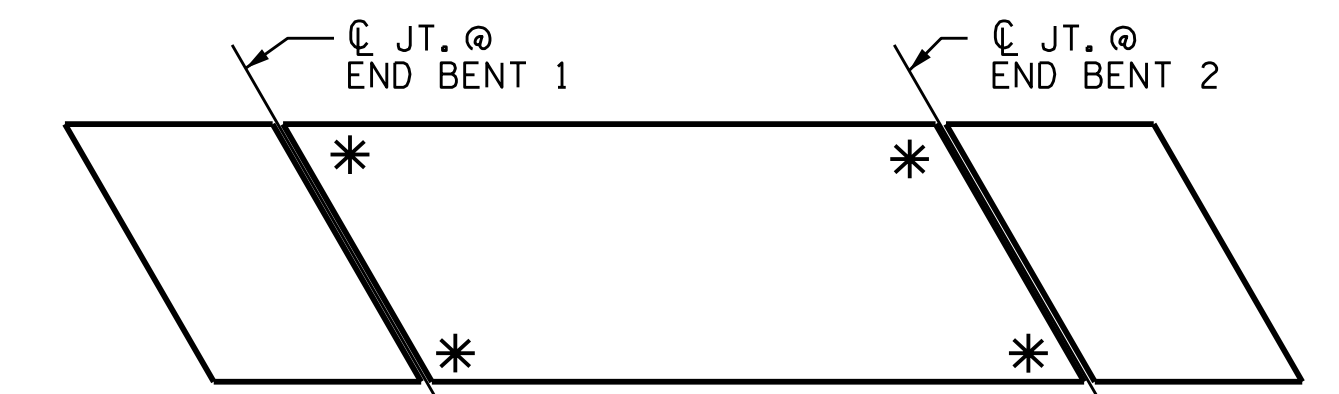
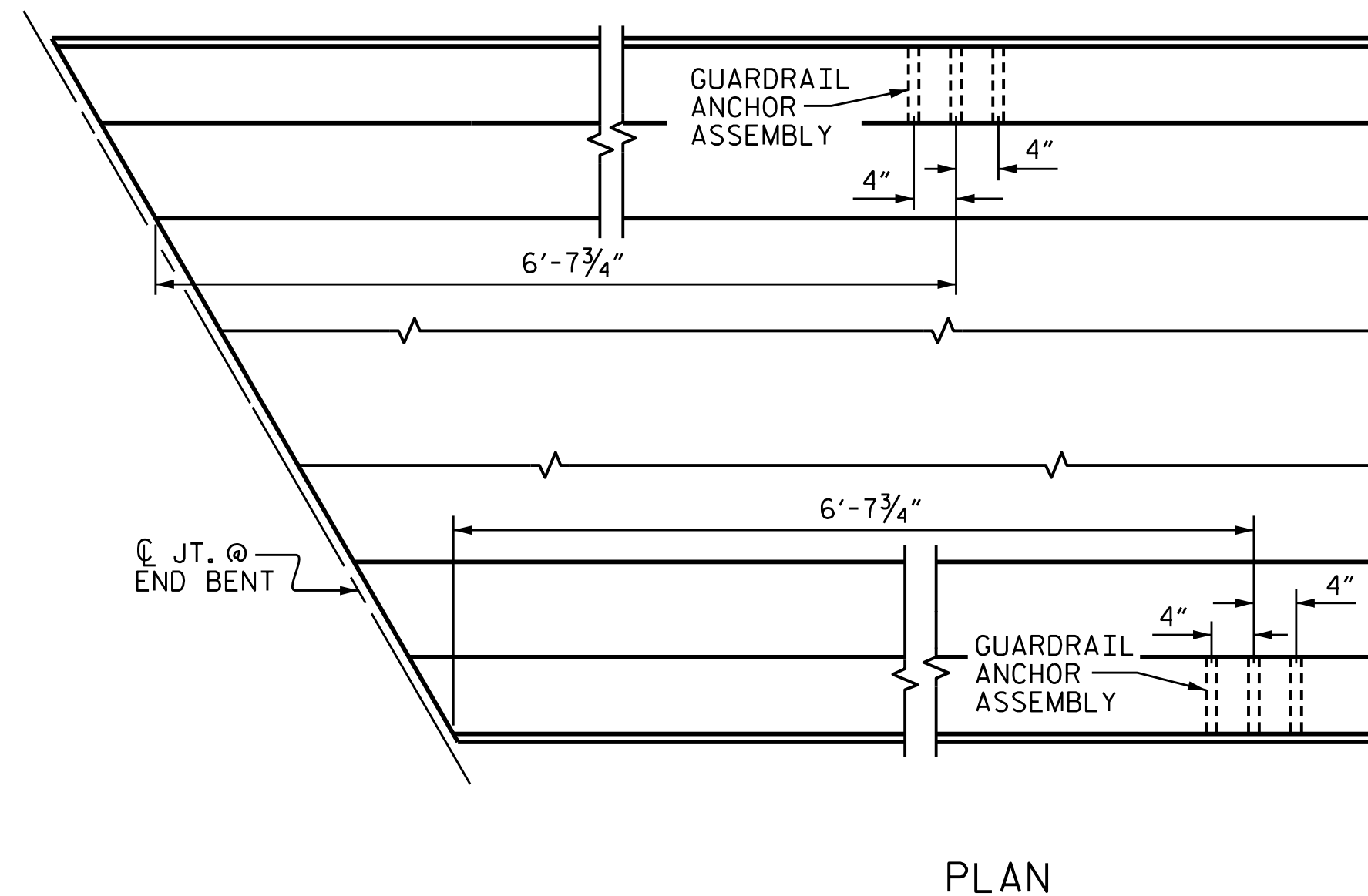
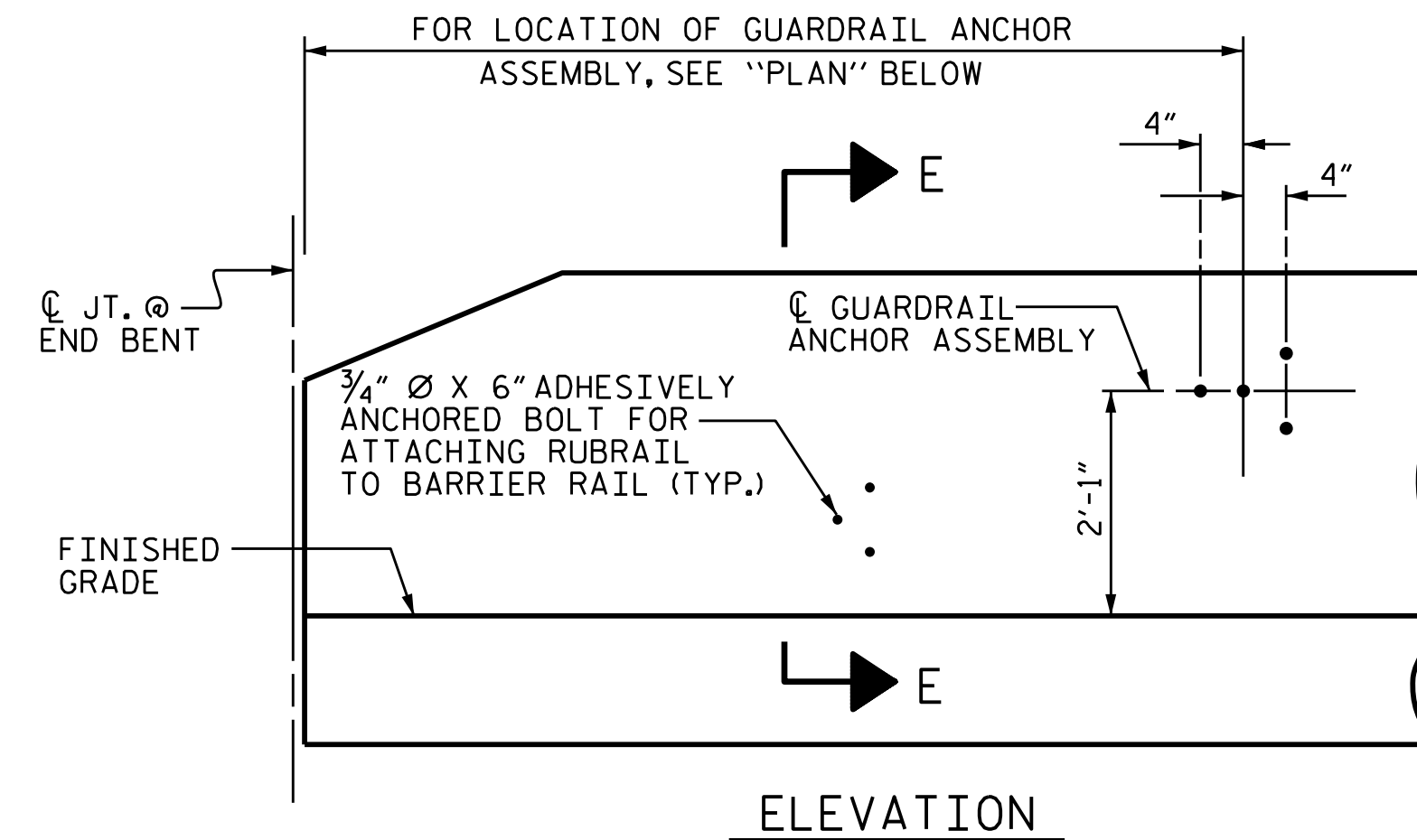
THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD-DOWN PLATE AND 4 - 7/8" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

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 $\frac{1}{2}$ " 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.)

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

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.

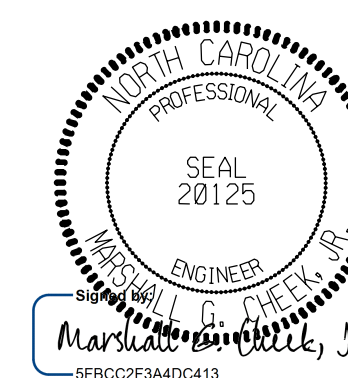
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE $\frac{3}{4}" \times 6"$ BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE $\frac{3}{4}" \times 6"$ BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-5833
YADKIN COUNTY
 STATION: 27+76.48 -L-



11/20/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD GUARDRAIL ANCHORAGE FOR BARRIER RAIL

ASSEMBLED BY : S. B. WILLIAMS		DATE : 8-21
CHECKED BY : MGC		DATE : 11-21
DRAWN BY : TLA 5/06	REV. 6/13	MAA/GM
CHECKED BY : GM 5/06	REV. 12/17	MAA/THC
	REV. 6/22	RNR/AA

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$$$$$SYSTIME$$$$$
$$$$$DGN$$$$$
$$$$$USERNAME$$$$$

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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		REVISIONS					SHEET NO. S-21
 TGS ENGINEERS 706 HILLSBOROUGH STREET SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO. 00775	NO.		BY:	DATE:	NO.	BY:	DATE:
	1				3		
	2				4		
							TOTAL SHEETS 33

(SHT 1a) STD. NO. GRA2

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

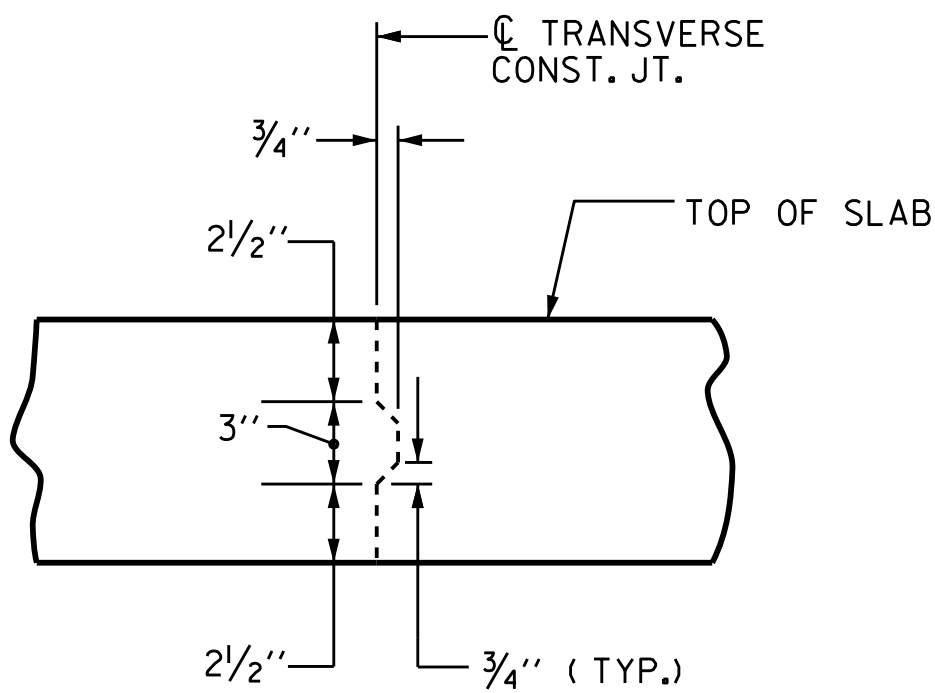
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPETS, AND BARRIER RAILS		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"			
#8	4'-9"	3'-2"			

GROOVING BRIDGE FLOORS

APPROACH SLABS	949	SO.FT.
BRIDGE DECK	9,045	SO.FT.
TOTAL	9,994	SO.FT.

CLASS AA CONCRETE BREAKDOWN

POUR #1	93.7	CU. YDS.
POUR #2	200.2	CU. YDS.
TOTAL	293.9	CU. YDS.



TRANSVERSE CONSTRUCTION JOINT DETAIL

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

REINFORCING BAR SCHEDULE SPANS A & B

BAR	No.	SIZE	TYPE	LENGTH	WEIGHT	BAR	No.	SIZE	TYPE	LENGTH	WEIGHT	BAR	No.	SIZE	TYPE	LENGTH	WEIGHT
* A1	384	#5	STR.	42'-11"	17,189	A201	4	#5	STR.	2'- 3"	9	B1	265	#5	STR.	50'-11"	14,073
A2	384	#5	STR.	42'-11"	17,189	A202	4	#5	STR.	3'- 1"	13	* B2	14	#4	STR.	36'-10"	344
* A3	6	#6	STR.	18'-3"	164	A203	4	#5	STR.	3'-11"	16	* B3	168	#4	STR.	28'- 8"	3,217
						A204	4	#5	STR.	4'- 8"	19	* B4	168	#6	STR.	44'-5"	11,208
* A101	4	#5	STR.	2'- 3"	9	A205	4	#5	STR.	5'- 6"	23						
* A102	4	#5	STR.	3'- 1"	13	A206	4	#5	STR.	6'- 3"	26	* G1	4	#5	STR.	35'- 8"	149
* A103	4	#5	STR.	3'-11"	16	A207	4	#5	STR.	7'- 1"	30						
* A104	4	#5	STR.	4'- 8"	19	A208	4	#5	STR.	7'-10"	33	* K1	12	#5	1	14'-10"	186
* A105	4	#5	STR.	5'- 6"	23	A209	4	#5	STR.	8'- 7"	36	* K2	24	#5	2	19'- 2"	480
* A106	4	#5	STR.	6'- 3"	26	A210	4	#5	STR.	9'- 5"	39						
* A107	4	#5	STR.	7'- 1"	30	A211	4	#5	STR.	10'- 3"	43	* S1	80	#4	3	4'-9"	254
* A108	4	#5	STR.	7'-10"	33	A212	4	#5	STR.	11'- 0"	46						
* A109	4	#5	STR.	8'- 7"	36	A213	4	#5	STR.	11'-10"	49						
* A110	4	#5	STR.	9'- 5"	39	A214	4	#5	STR.	12'- 8"	53						
* A111	4	#5	STR.	10'- 3"	43	A215	4	#5	STR.	13'- 5"	56						
* A112	4	#5	STR.	11'- 0"	46	A216	4	#5	STR.	14'- 2"	59						
* A113	4	#5	STR.	11'-10"	49	A217	4	#5	STR.	15'- 0"	63						
* A114	4	#5	STR.	12'- 8"	53	A218	4	#5	STR.	15'-10"	66						
* A115	4	#5	STR.	13'- 5"	56	A219	4	#5	STR.	16'- 7"	69						
* A116	4	#5	STR.	14'- 2"	59	A220	4	#5	STR.	17'- 5"	73						
* A117	4	#5	STR.	15'- 0"	63	A221	4	#5	STR.	18'- 2"	76						
* A118	4	#5	STR.	15'-10"	66	A222	4	#5	STR.	19'- 0"	79						
* A119	4	#5	STR.	16'- 7"	69	A223	4	#5	STR.	19'-10"	83						
* A120	4	#5	STR.	17'- 5"	73	A224	4	#5	STR.	20'- 7"	86						
* A121	4	#5	STR.	18'- 2"	76	A225	4	#5	STR.	21'- 5"	89						
* A122	4	#5	STR.	19'- 0"	79	A226	4	#5	STR.	22'- 2"	92						
* A123	4	#5	STR.	19'-10"	83	A227	4	#5	STR.	23'- 0"	96						
* A124	4	#5	STR.	20'- 7"	86	A228	4	#5	STR.	23'- 9"	99						
* A125	4	#5	STR.	21'- 5"	89	A229	4	#5	STR.	24'- 7"	103						
* A126	4	#5	STR.	22'- 2"	92	A230	4	#5	STR.	25'- 4"	106						
* A127	4	#5	STR.	23'- 0"	96	A231	4	#5	STR.	26'- 2"	109						
* A128	4	#5	STR.	23'- 9"	99	A232	4	#5	STR.	26'-11"	112						
* A129	4	#5	STR.	24'- 7"	103	A233	4	#5	STR.	27'- 9"	116						
* A130	4	#5	STR.	25'- 4"	106	A234	4	#5	STR.	28'- 6"	119						
* A131	4	#5	STR.	26'- 2"	109	A235	4	#5	STR.	29'- 4"	122						
* A132	4	#5	STR.	26'-11"	112	A236	4	#5	STR.	30'- 2"	126						
* A133	4	#5	STR.	27'- 9"	116	A237	4	#5	STR.	31'- 9"	132						
* A134	4	#5	STR.	28'- 6"	119	A238	4	#5	STR.	32'- 6"	136						
* A135	4	#5	STR.	29'- 4"	122	A239	4	#5	STR.	33'- 4"	139						
* A136	4	#5	STR.	30'- 2"	126	A240	4	#5	STR.	34'- 2"	143						
* A137	4	#5	STR.	31'- 9"	132	A241	4	#5	STR.	34'- 11"	146						
* A138	4	#5	STR.	32'- 6"	136	A242	4	#5	STR.	35'- 9"	149						
* A139	4	#5	STR.	33'- 4"	139	A243	4	#5	STR.	36'- 6"	152						
* A140	4	#5	STR.	34'- 2"	143	A244	4	#5	STR.	37'- 4"	156						
* A141	4	#5	STR.	34'- 11"	146	A245	4	#5	STR.	38'- 1"	159						
* A142	4	#5	STR.	35'- 9"	149	A246	4	#5	STR.	38'-11"	162						
* A143	4	#5	STR.	36'- 6"	152	A247	4	#5	STR.	39'- 8"	165						
* A144	4	#5	STR.	37'- 4"	156	A248	4	#5	STR.	40'- 6"	169						
* A145	4	#5	STR.	38'- 1"	159	A249	4	#5	STR.	41'- 3"	172						
* A146	4	#5	STR.	38'-11"	162	A250	4	#5	STR.	42'- 1"	176						
* A147	4	#5	STR.	39'- 8"	165												
* A148	4	#5	STR.	40'- 6"	169												
* A149	4	#5	STR.	41'- 3"	172												
* A150	4	#5	STR.	42'- 1"	176												

6'-9"

THIS LEG OVER GDR.

1

9"

7'-4"

3'-0"

2

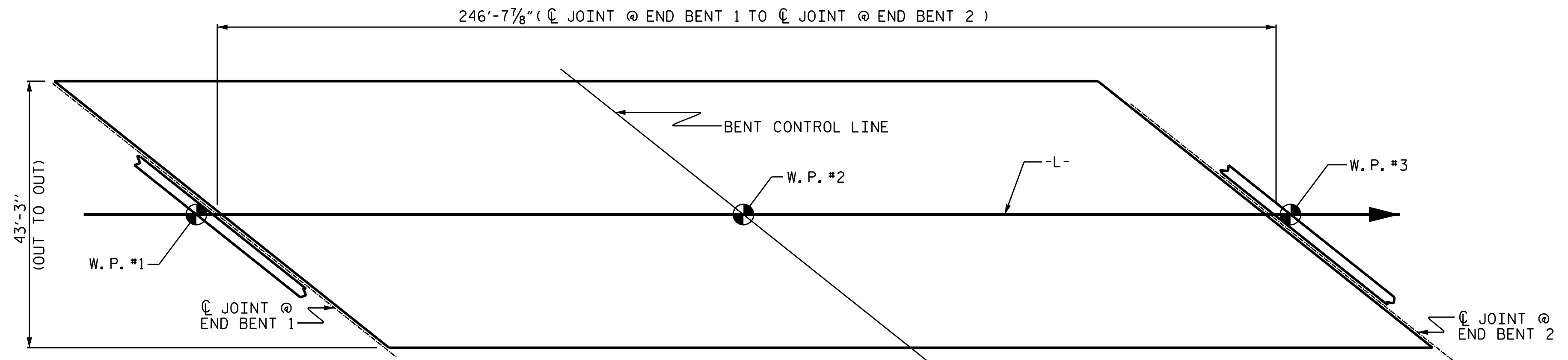
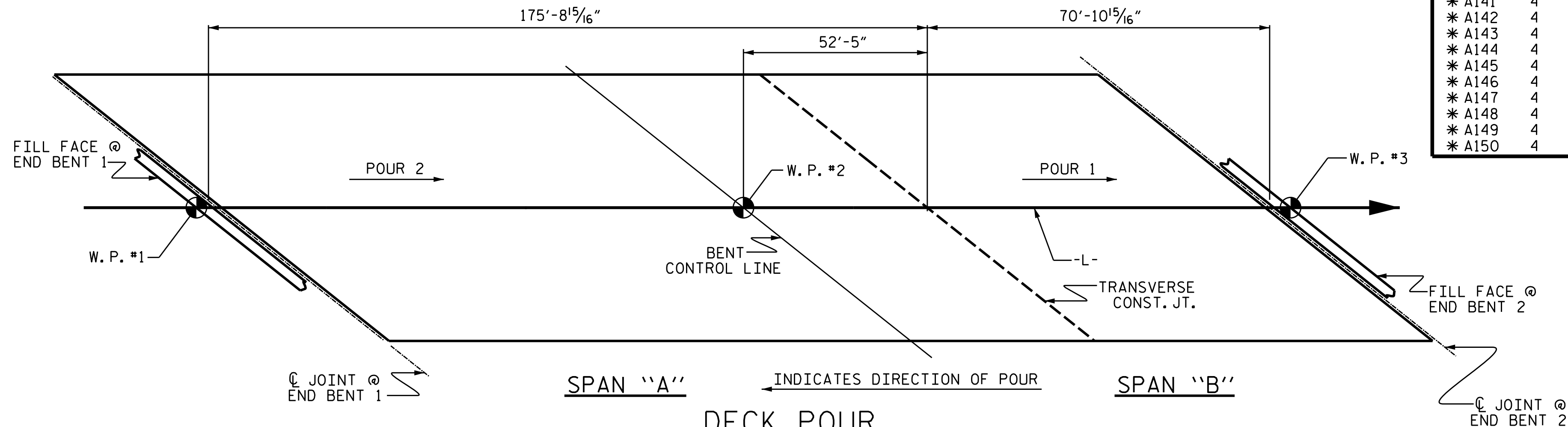
9"

7'-4"

7'-4"

6"

6"



LAYOUT FOR COMPUTING AREA REINFORCED CONCRETE DECK SLAB (SQ. FT. =10,668)

—SUPERSTRUCTURE BILL OF MATERIAL—

	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU. YDS.)	(LBS.)	(LBS.)
TOTALS**	293.9	35,852	37,781

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-



11/20/2025

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SUITE 200
RALEIGH, NC 27603
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CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

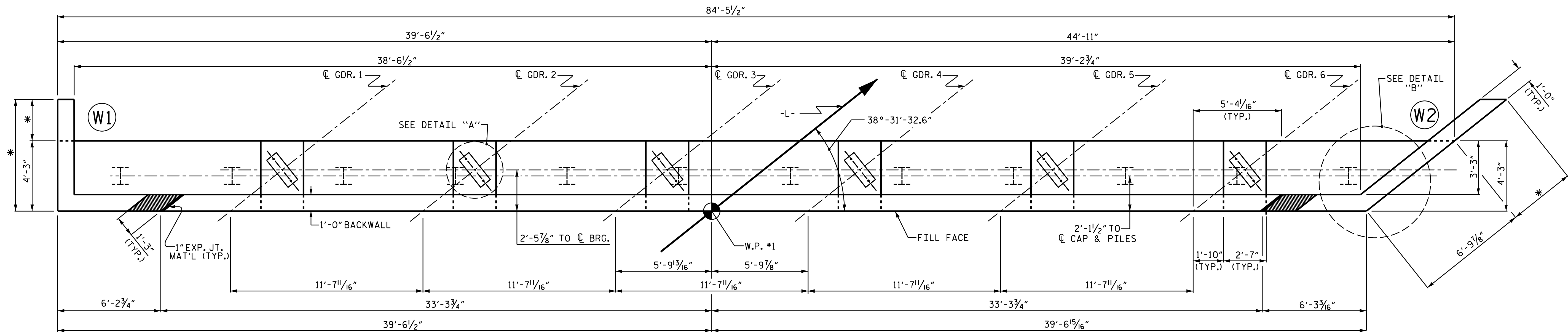
SUPERSTRUCTURE BILL OF MATERIAL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-22
2			4			TOTAL SHEETS 33

STD. NO. BOM2

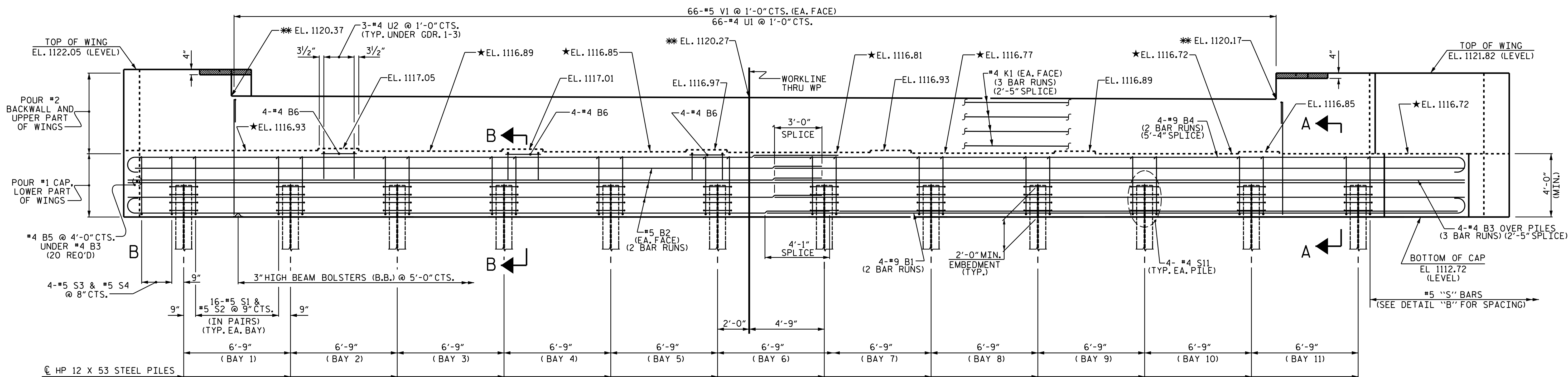
ASSEMBLED BY : S. B. WILLIAMS	DATE : 7-21
CHECKED BY : MGC	DATE : 11/21
DRAWN BY : JMB 5/87	REV. 10/1/11 MAA/GM
CHECKED BY : SJD 9/87	REV. 12/17 MAA/THC
	REV. 06/19 BNB/THC

*****SYSTEMTIME*****
*****DCN*****
*****USERNAME*****



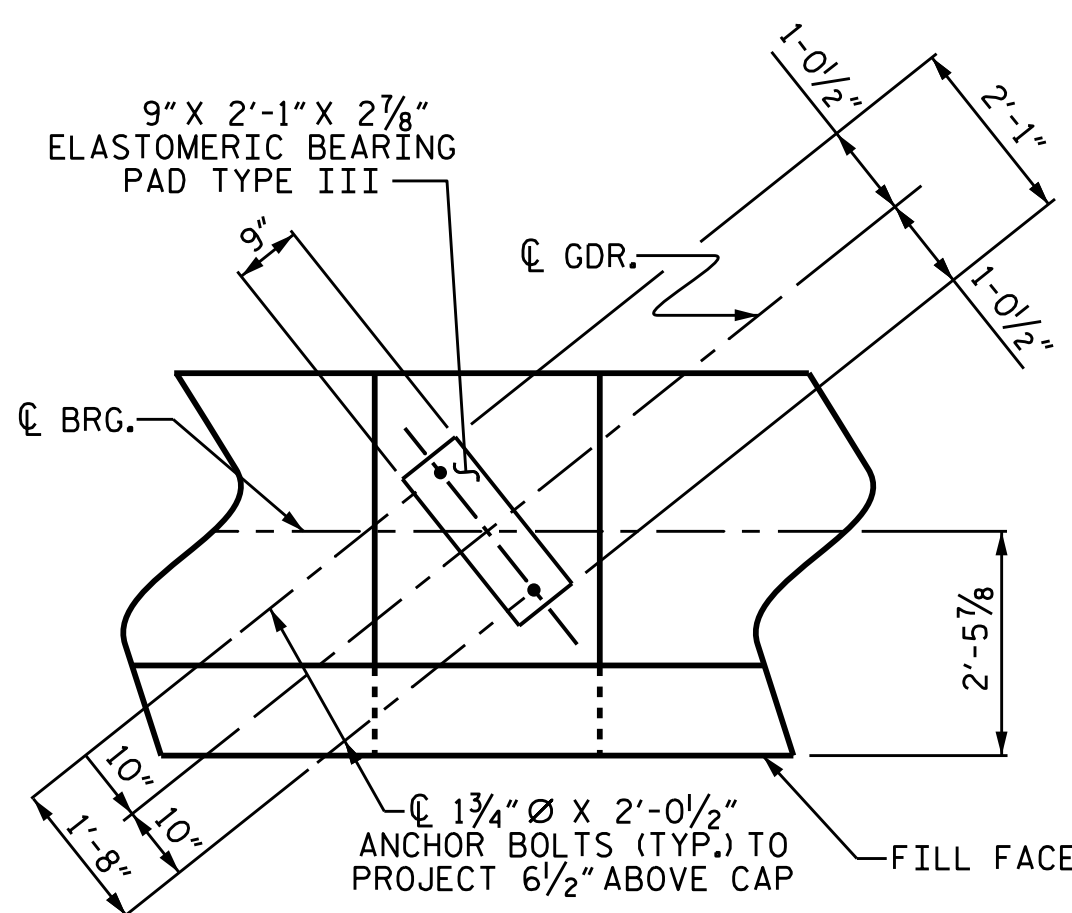
PLAN

* WINGWALL EXTENSION DISTANCE TO BE FIELD ADJUSTED AS REQUIRED TO PROVIDE 1' EXP. JT. BETWEEN THE MSE WALL COPING AND THE EXTENDED WINGWALL.

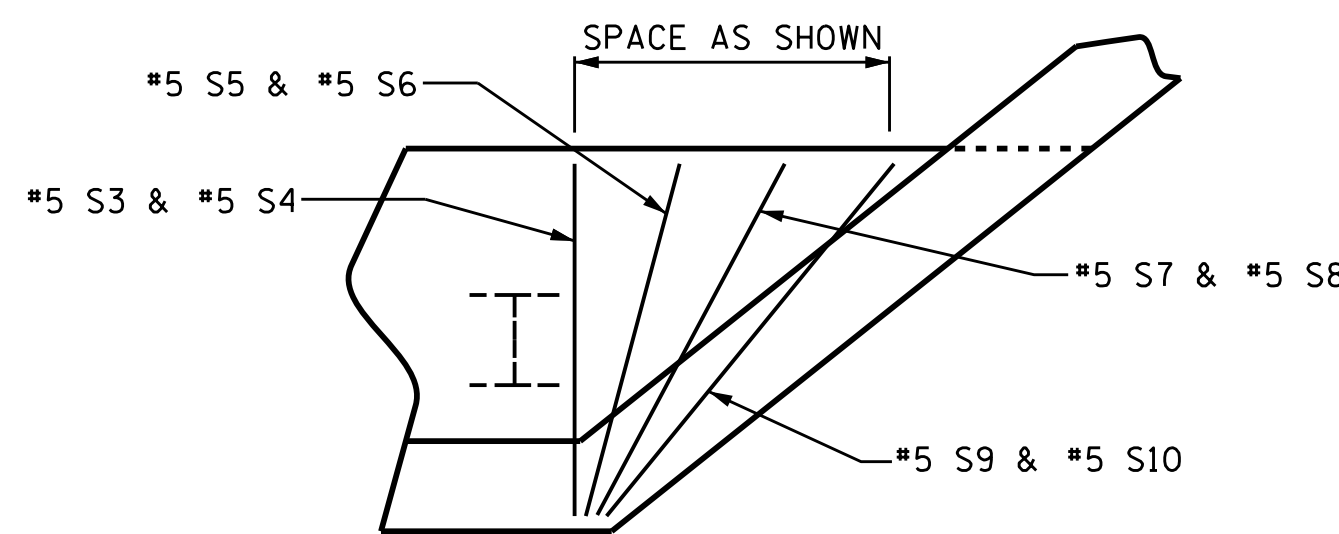


ELEVATION

* FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD UPS, SEE SECTION A-A, SHEET 3 OF 3.
** ELEVATION TAKEN AT FILL FACE OF BACKWALL.



DETAIL "A"
(TYP. EA. GDR.)



DETAIL "B"
(SHOWING STIRRUPS @ RIGHT END OF CAP)

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 1 OF 3

DRAWN BY : S. B. WILLIAMS DATE : 9-21
CHECKED BY : MGC DATE : 10-21
DESIGN ENGINEER OF RECORD: RDE DATE : 8-23

11/19/2025
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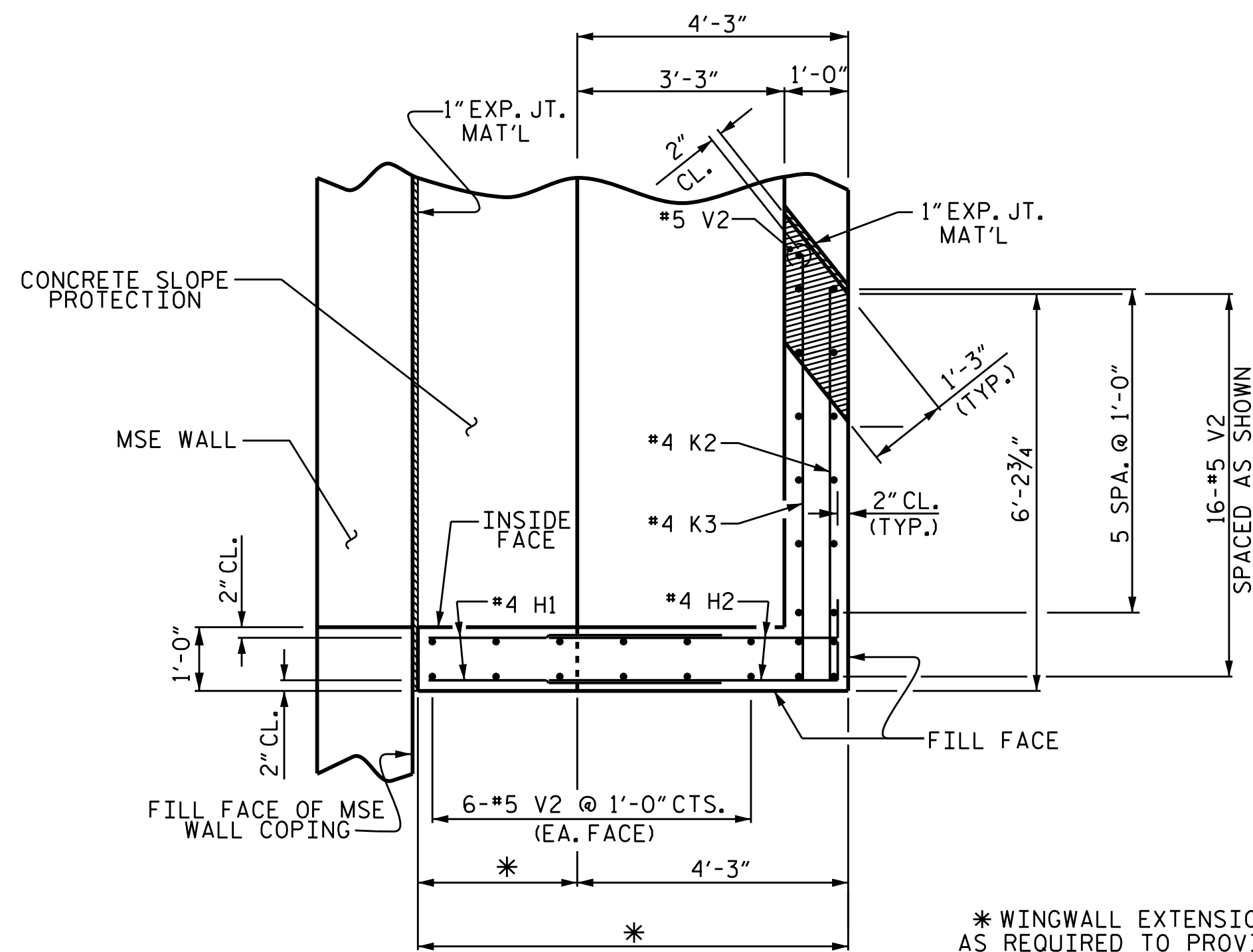
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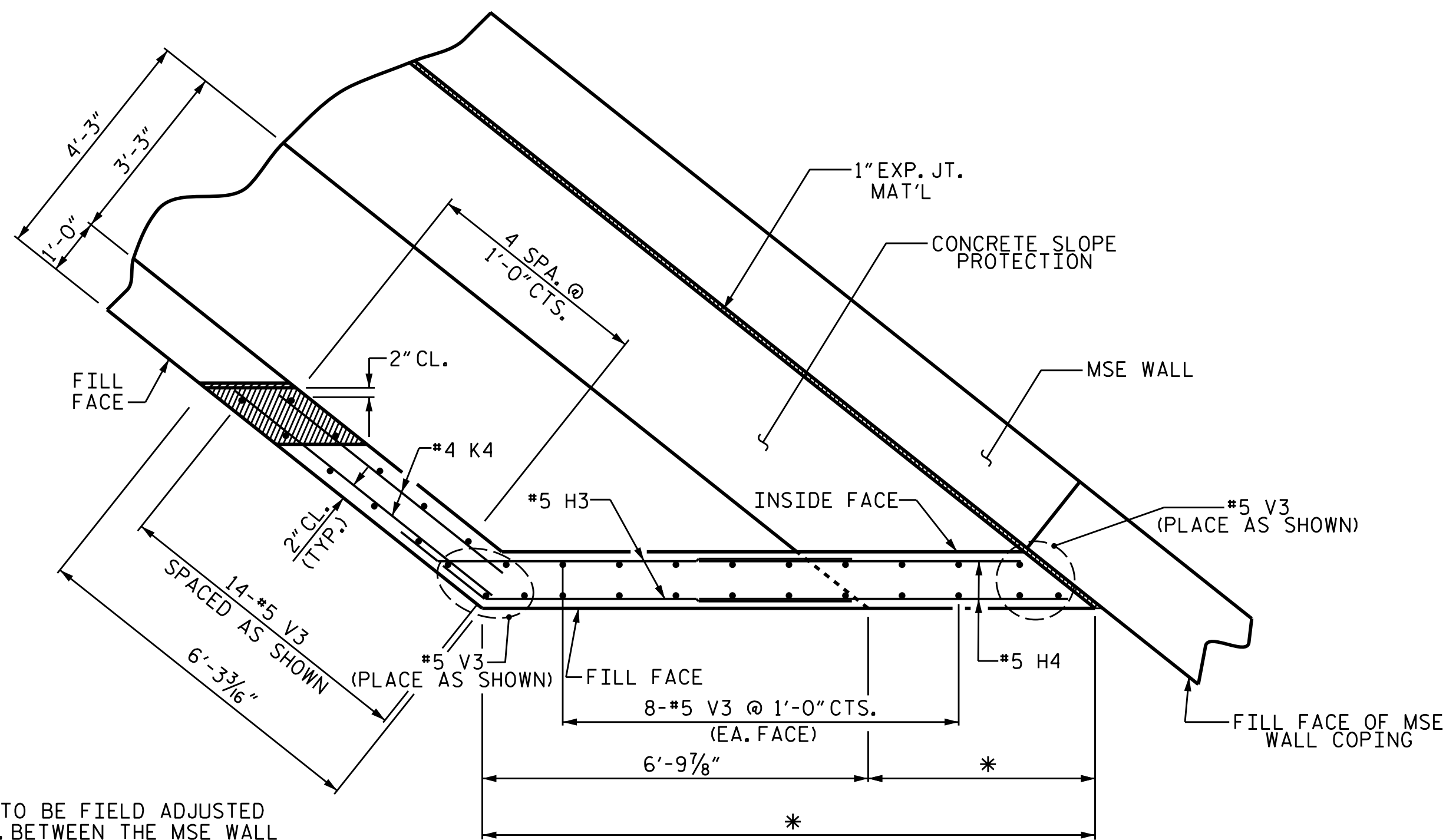
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SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

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1			3			S-23
2			4			TOTAL SHEETS 33

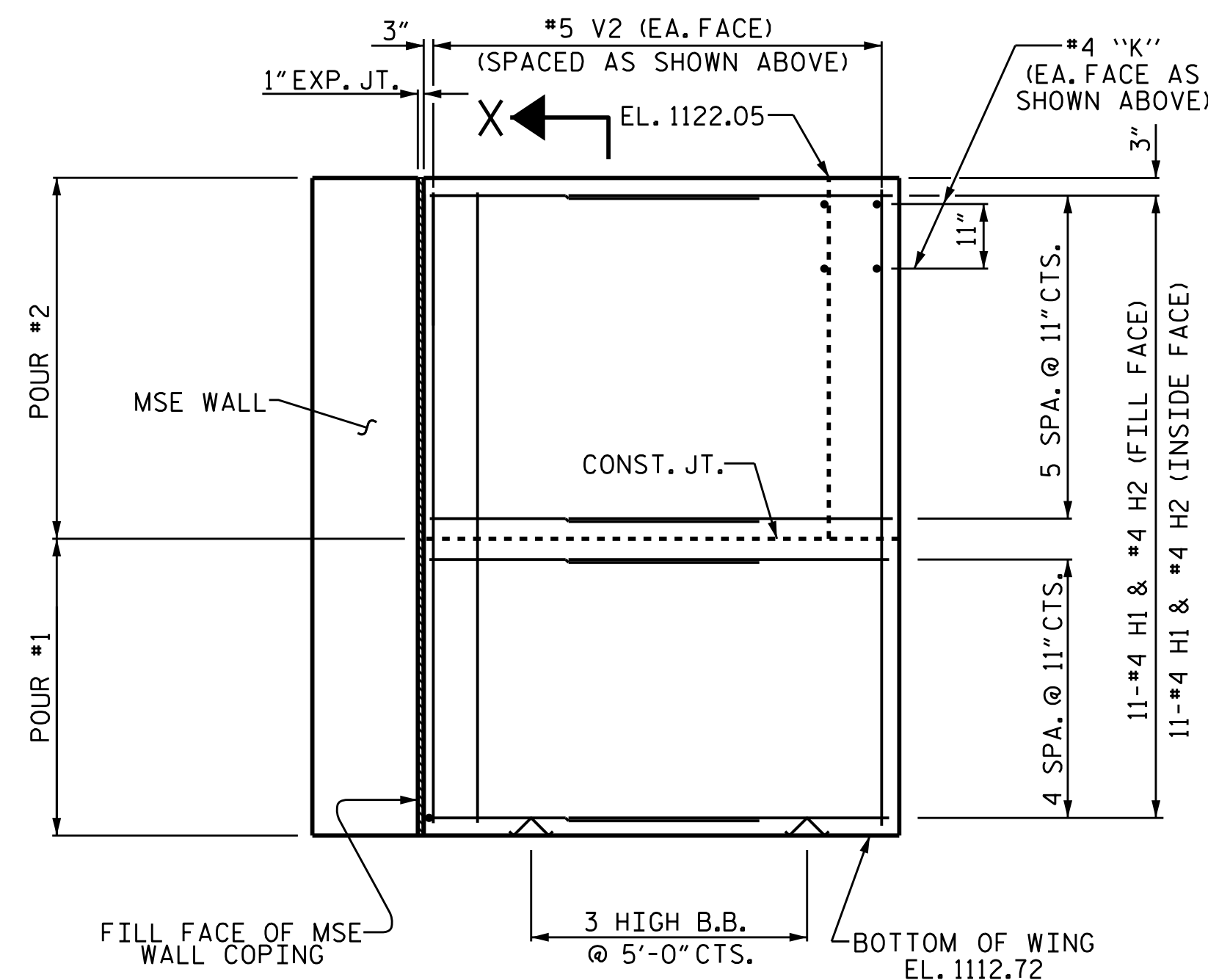


PLAN OF WING (W1)

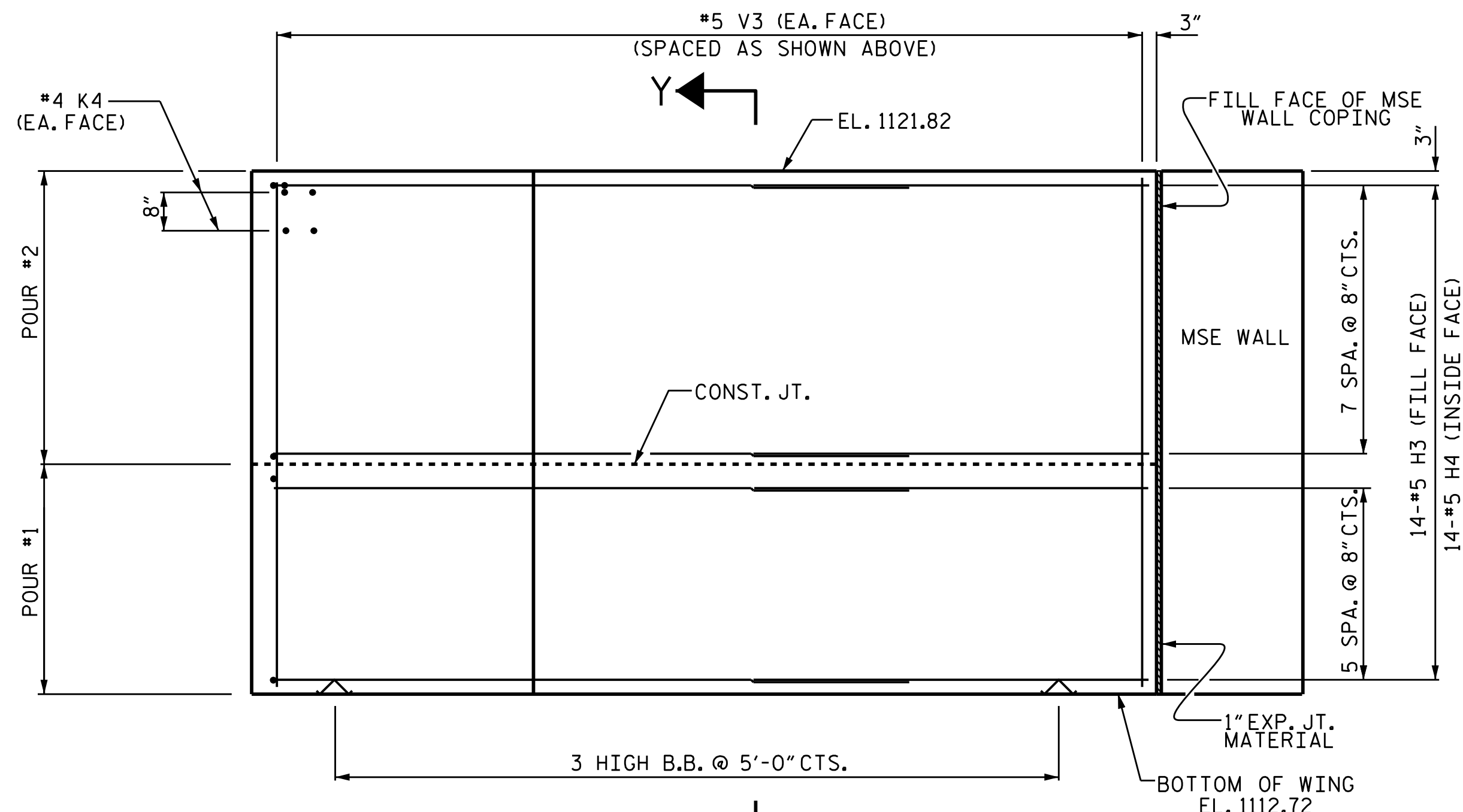
* WINGWALL EXTENSION DISTANCE TO BE FIELD ADJUSTED AS REQUIRED TO PROVIDE 1" EXP. JT. BETWEEN THE MSE WALL COPING AND THE EXTENDED WINGWALL.



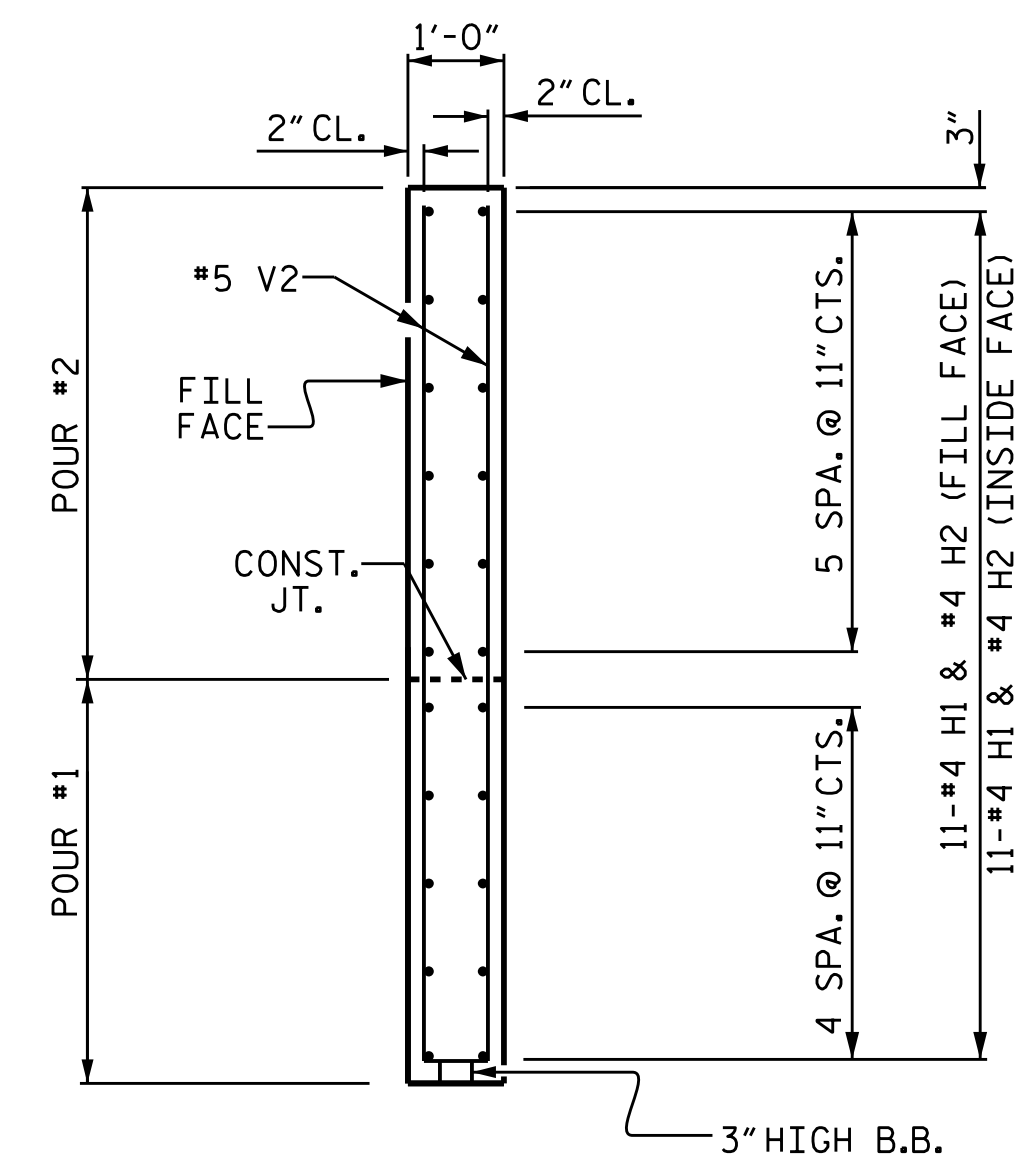
PLAN OF WING (W2)



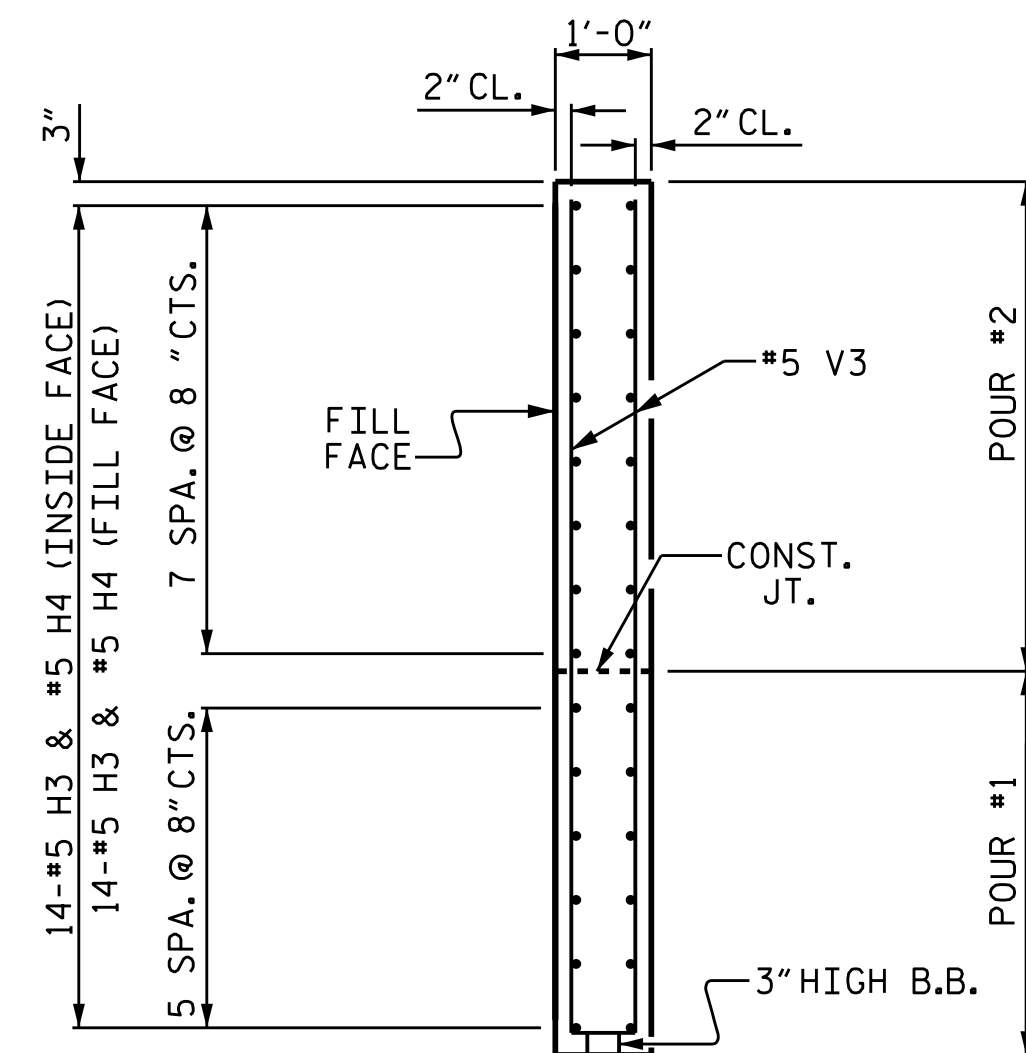
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



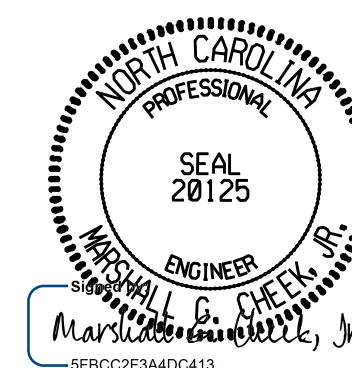
SECTION X-X



SECTION Y-Y

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 2 OF 3



11/20/2025

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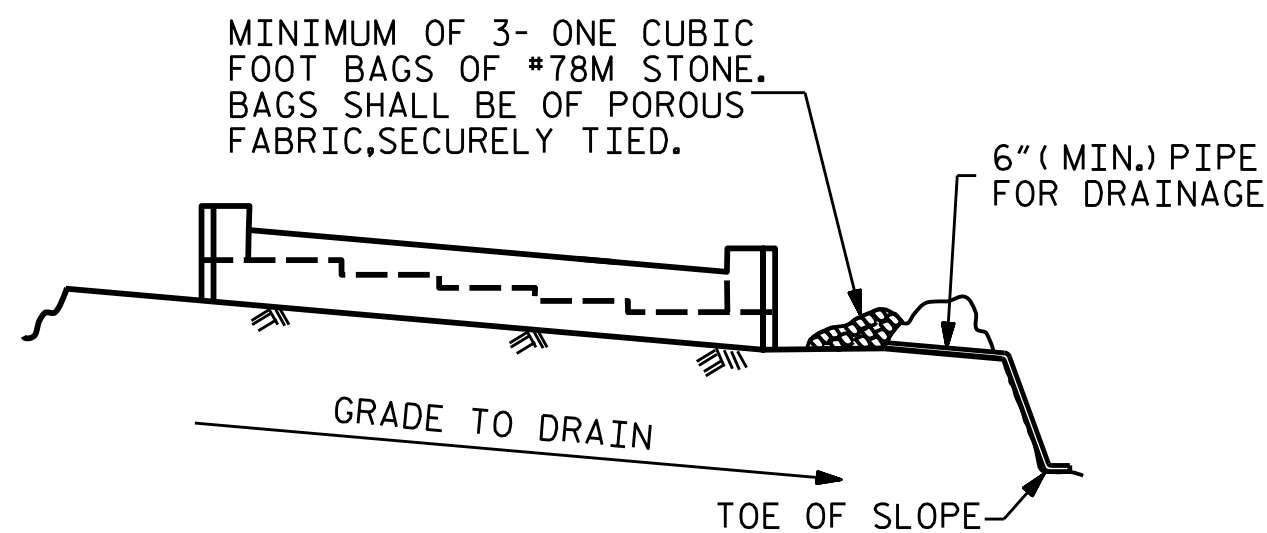
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

DRAWN BY : S.B. WILLIAMS DATE : 10-21
CHECKED BY : MCC DATE : 11-21
DESIGN ENGINEER OF RECORD: RDE DATE : 8-23

8/28/2023
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Users\sbwilliams

REVISIONS						SHEET NO.
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1			3			S-24
2			4			TOTAL SHEETS 33

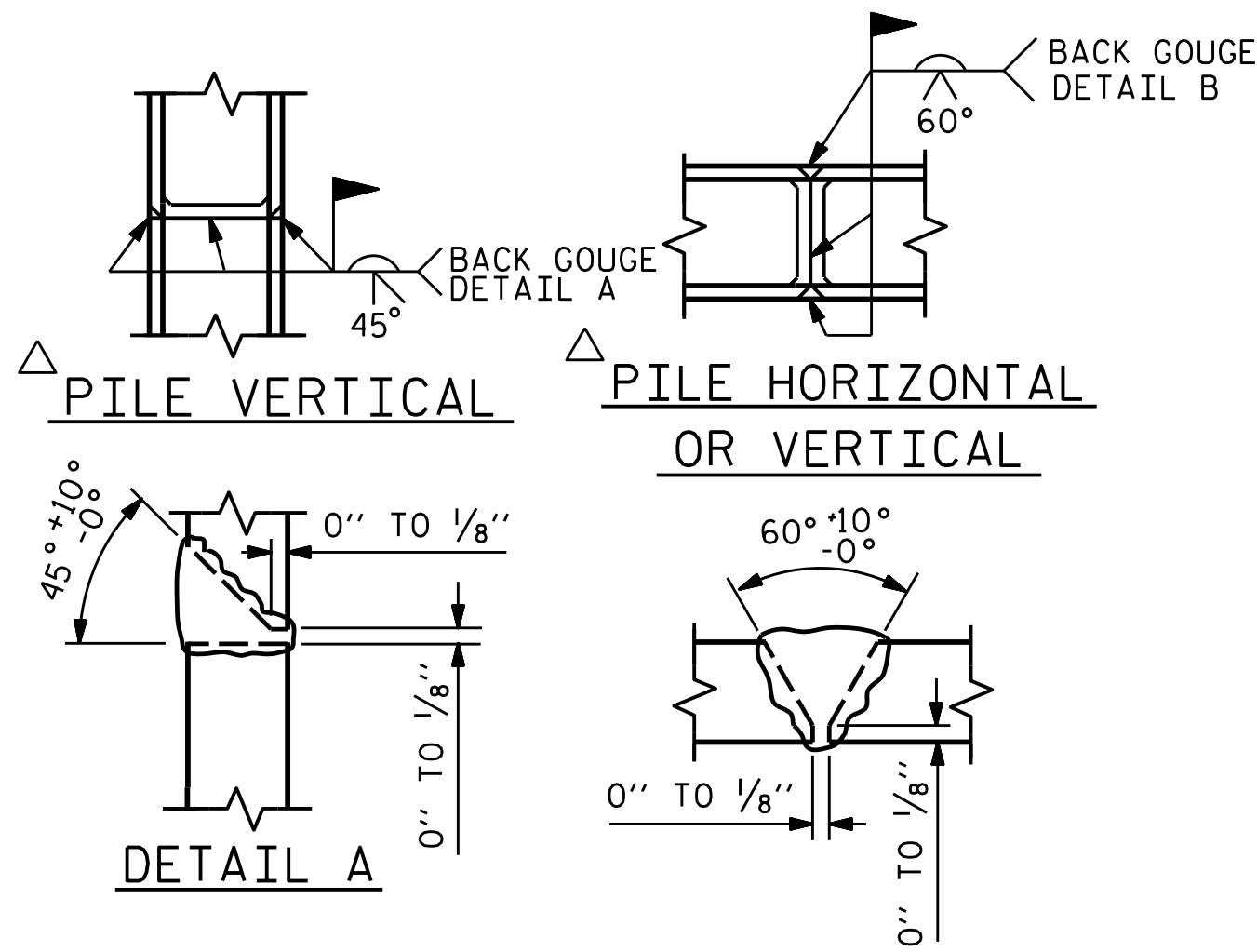


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

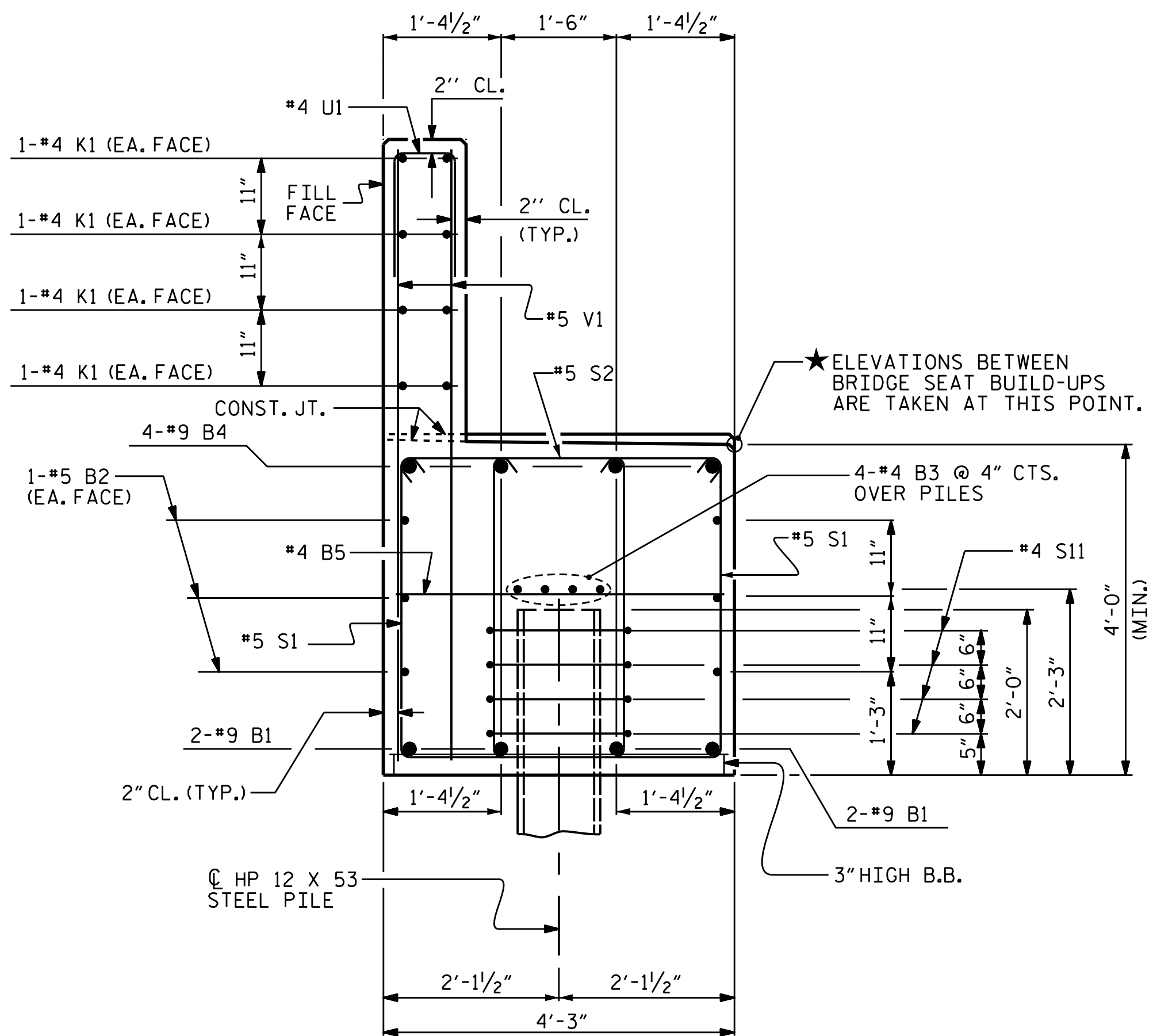
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

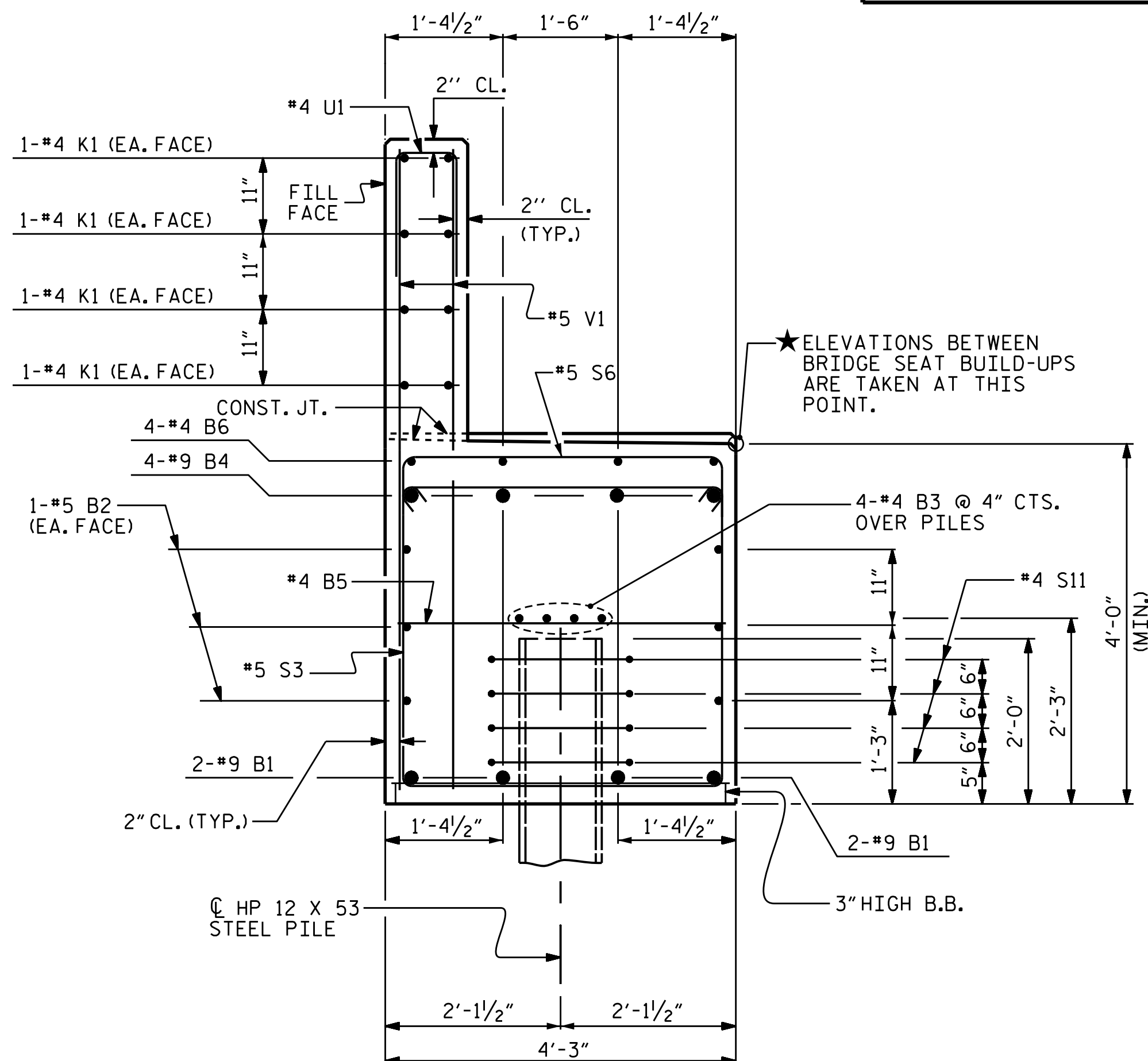


POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

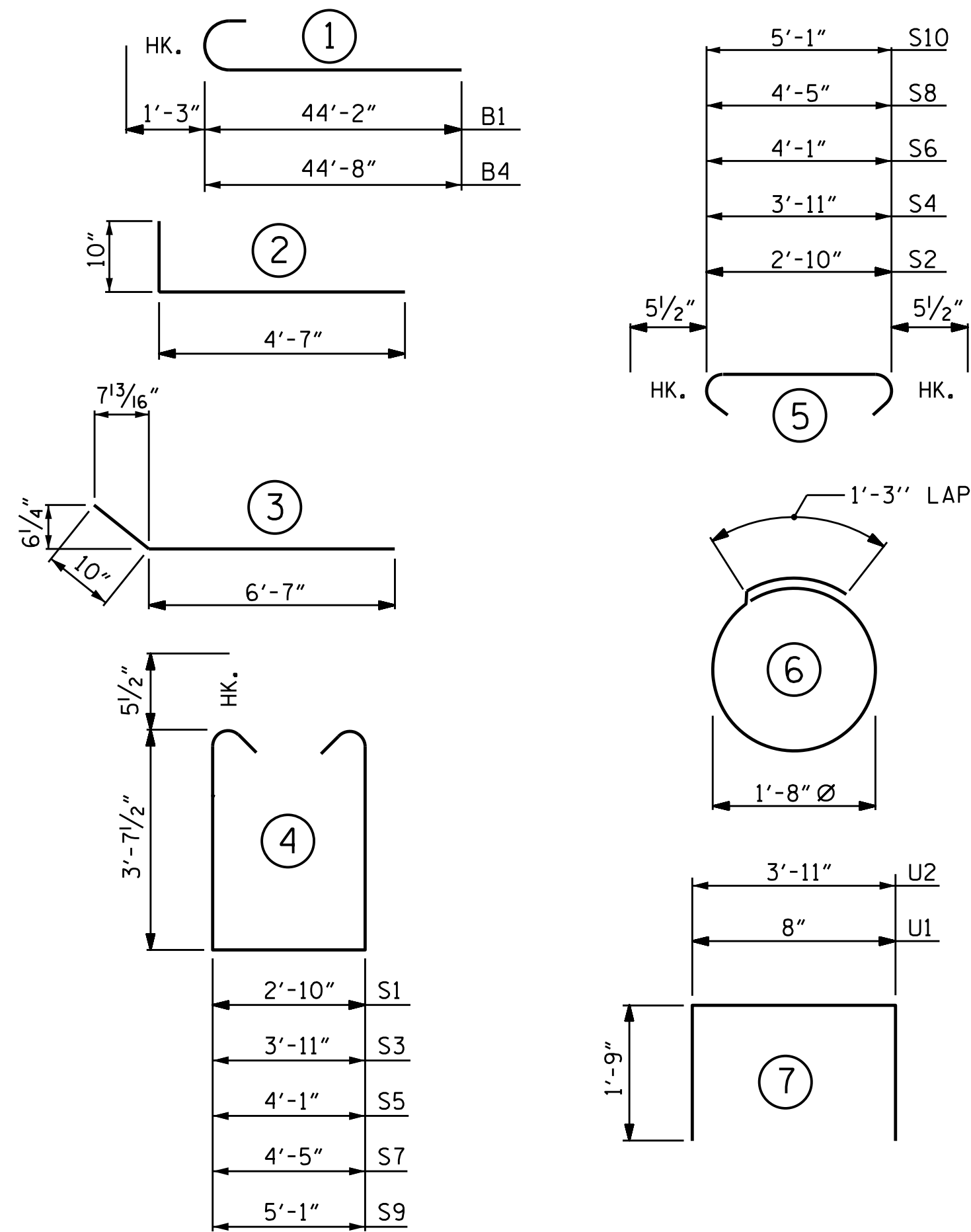


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

NOTES

STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

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

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

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

BILL OF MATERIAL

END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	45'- 5"	1,235
B2	12	#5	STR	43'- 7"	545
B3	12	#4	STR	29'- 0"	232
B4	8	#9	1	45'- 11"	1,249
B5	20	#4	STR	3'-11"	52
B6	12	#4	STR	2'- 3"	18
H1	22	#4	STR	4'- 8"	69
H2	22	#4	2	5'- 5"	80
H3	28	#5	3	7'- 5"	217
H4	28	#5	STR	5'- 5"	158
K1	24	#4	STR	28'- 3"	453
K2	2	#4	STR	6'- 1"	8
K3	2	#4	STR	6'- 11"	9
K4	4	#4	STR	5'- 11"	16

S1	176	#5	4	11'- 0"	2,019
S2	176	#5	5	3'- 9"	688
S3	5	#5	4	12'- 1"	63
S4	5	#5	5	4'- 10"	25
S5	1	#5	4	12'- 3"	13
S6	1	#5	5	5'- 0"	5
S7	1	#5	4	12'- 7"	13
S8	1	#5	5	5'- 4"	6
S9	1	#5	4	13'- 3"	14
S10	1	#5	5	6'- 0"	6
S11	48	#4	6	6'- 6"	208

U1	66	#4	7	4'- 2"	184
U2	9	#4	7	7'- 5"	45

V1	132	#5	STR	7'- 1"	975
V2	29	#5	STR	8'-11"	270
V3	35	#5	STR	8'- 9"	319

REINFORCING STEEL 9,194 LBS.

CLASS A CONCRETE

POUR #1
(CAP, LOWER PART OF WINGS) 54.1 C.Y.

POUR #2
(BACKWALL & UPPER PART OF WINGS) 13.5 C.Y.

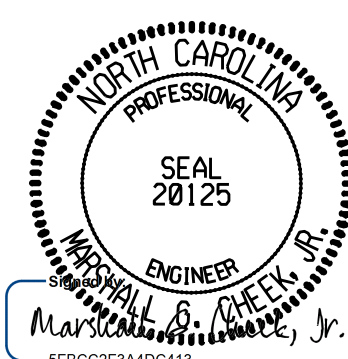
TOTAL CLASS A CONCRETE 67.6 C.Y.

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48 -L-

SHEET 3 OF 3



11/20/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

DRAWN BY : S. B. WILLIAMS DATE : 9-21
CHECKED BY : MGC DATE : 11-21
DESIGN ENGINEER OF RECORD: RDE DATE : 8-23

*****SYSTEM*****
*****DCN*****
*****USERNAME*****

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SUITE 200
RALEIGH, NC 27603
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CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-25
2			4			TOTAL SHEETS 33

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY
TO CLEAR ANCHOR BOLTS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY
FOR PLACING REINFORCING STEEL.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE
PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL
COLUMN REINFORCING STEEL."

★ INVERT ALTERNATE STIRRUPS.

*INVERT ALTERNATE PAIRS OF STIRRUPS

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FOOT BELOW THE GROUND LINE.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



DIMENSIONS AND REINFORCING STEEL ARE TYPICAL
FOR EACH COLUMN AND DRILLED PIER EXCEPT AS NOTED

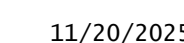


(TYP. EA. BRG.)

YADKIN COUNTY

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

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SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-027

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1			3			S-26 TOTAL SHEETS 33
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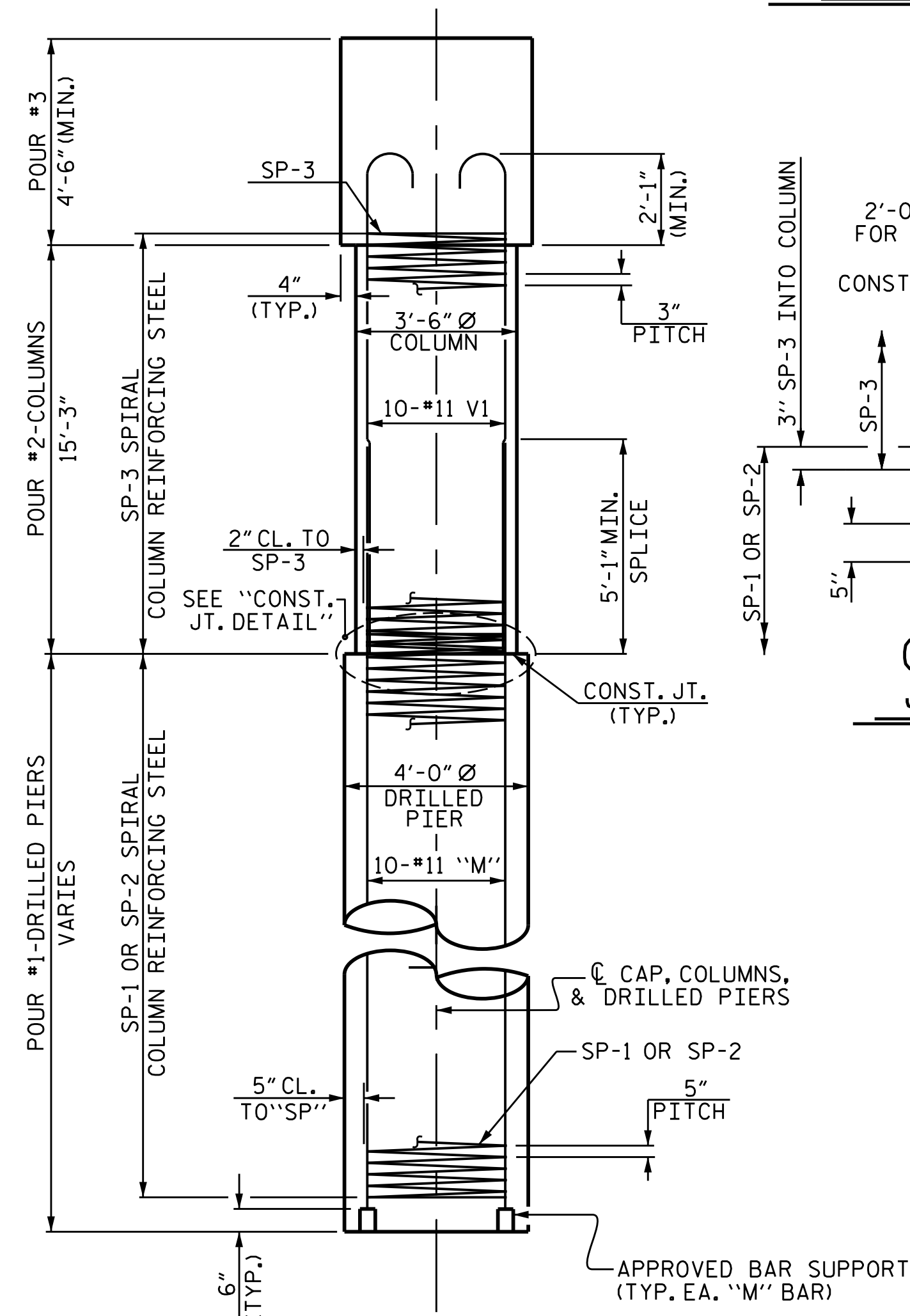
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CHECKED BY : MGC DATE : 12-21
DESIGN ENGINEER OF RECORD: RDE DATE : 8-23

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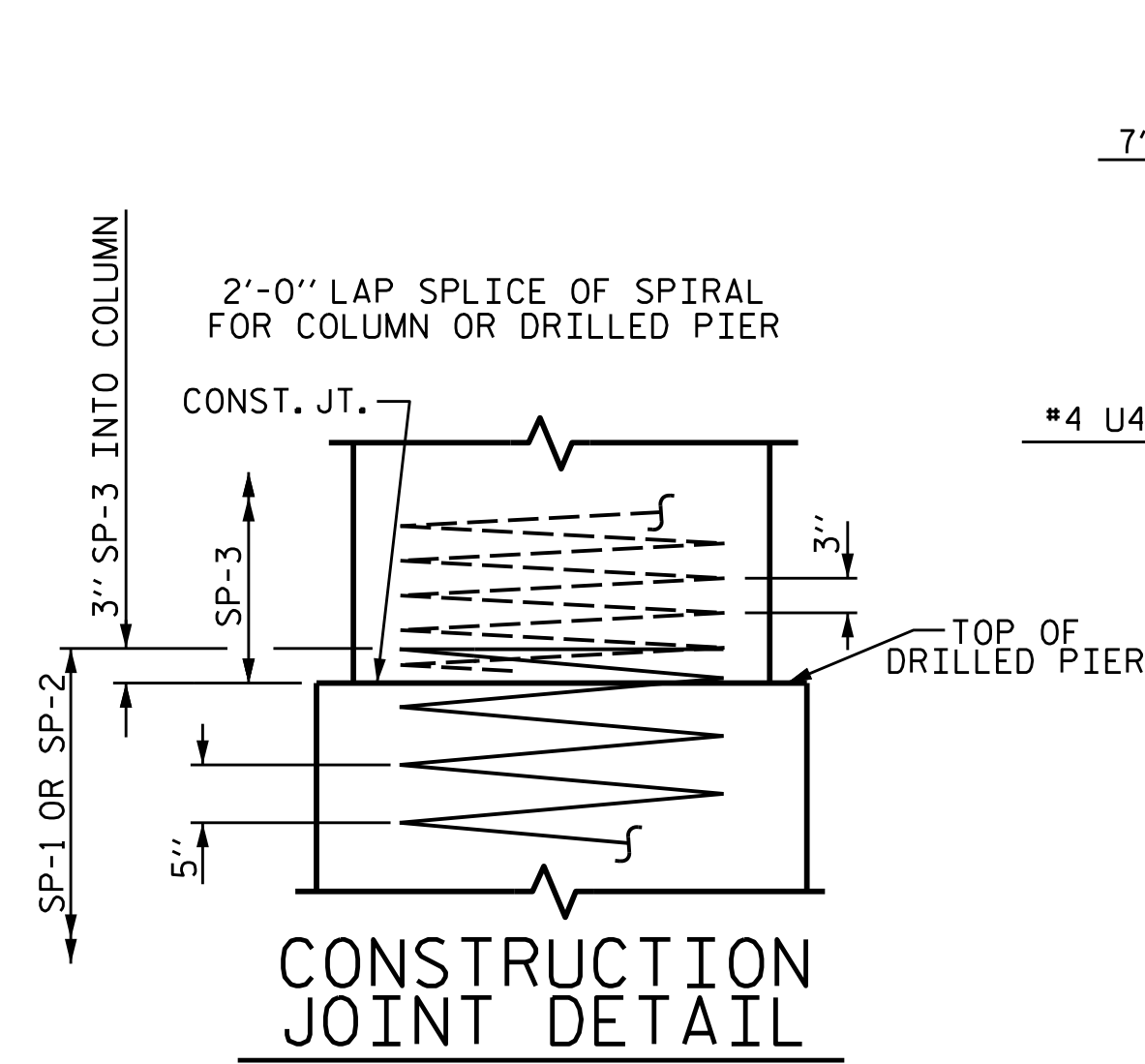
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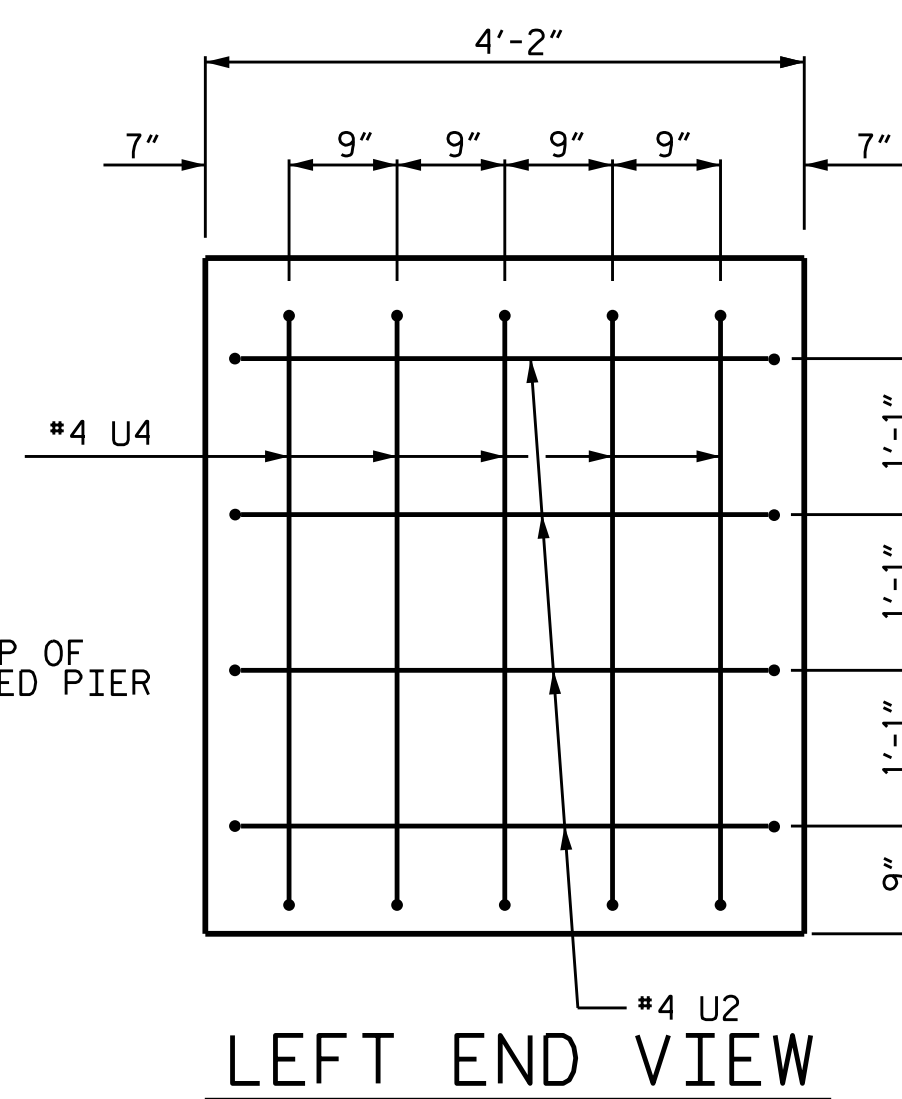
PLAN OF DRILLED PIERS & COLUMNS



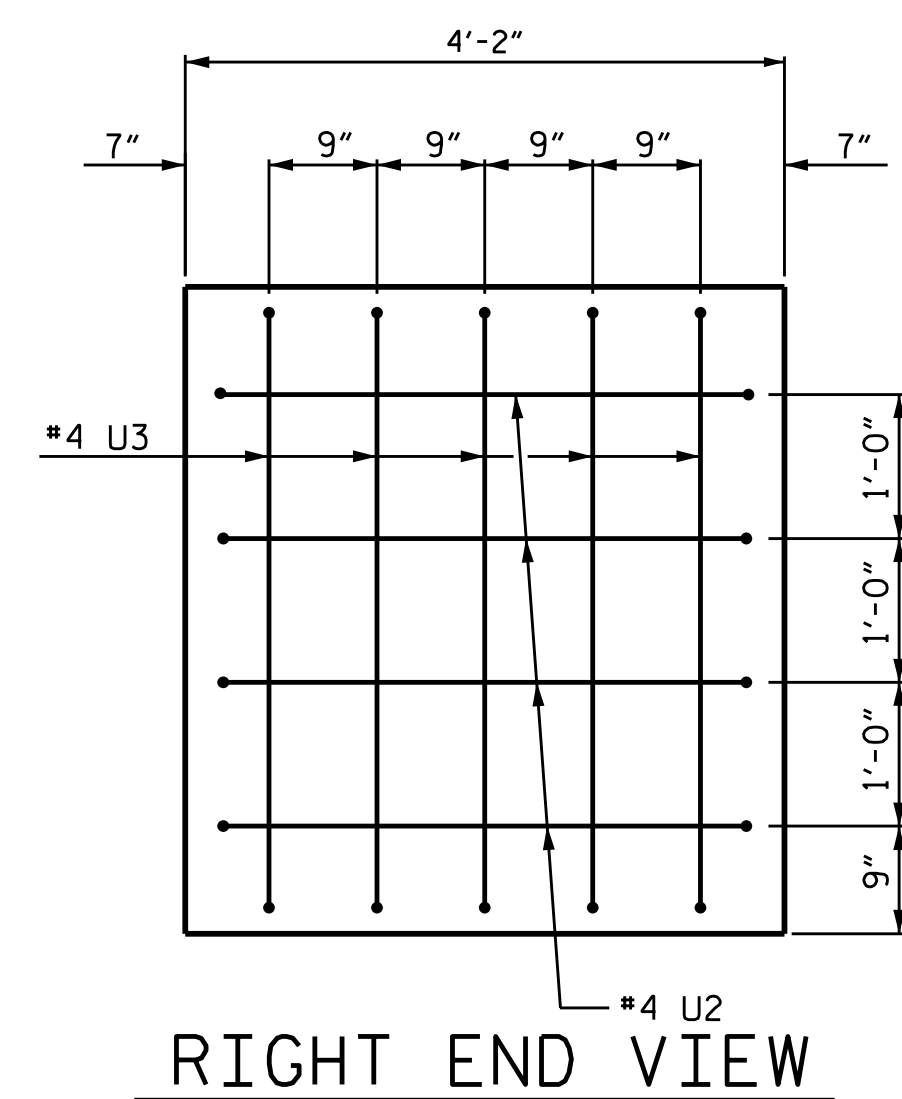
END ELEVATION



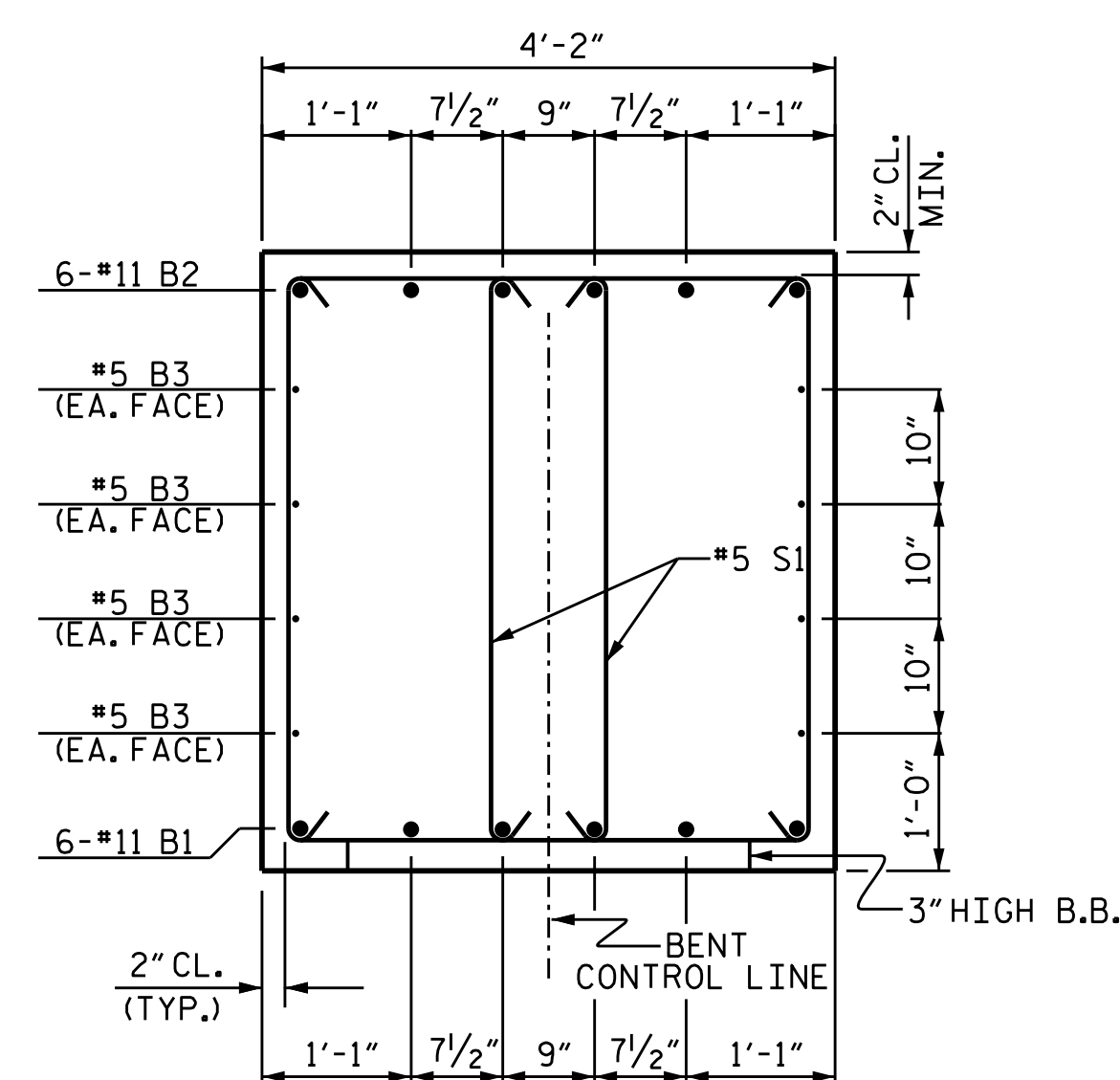
CONSTRUCTION JOINT DETAIL



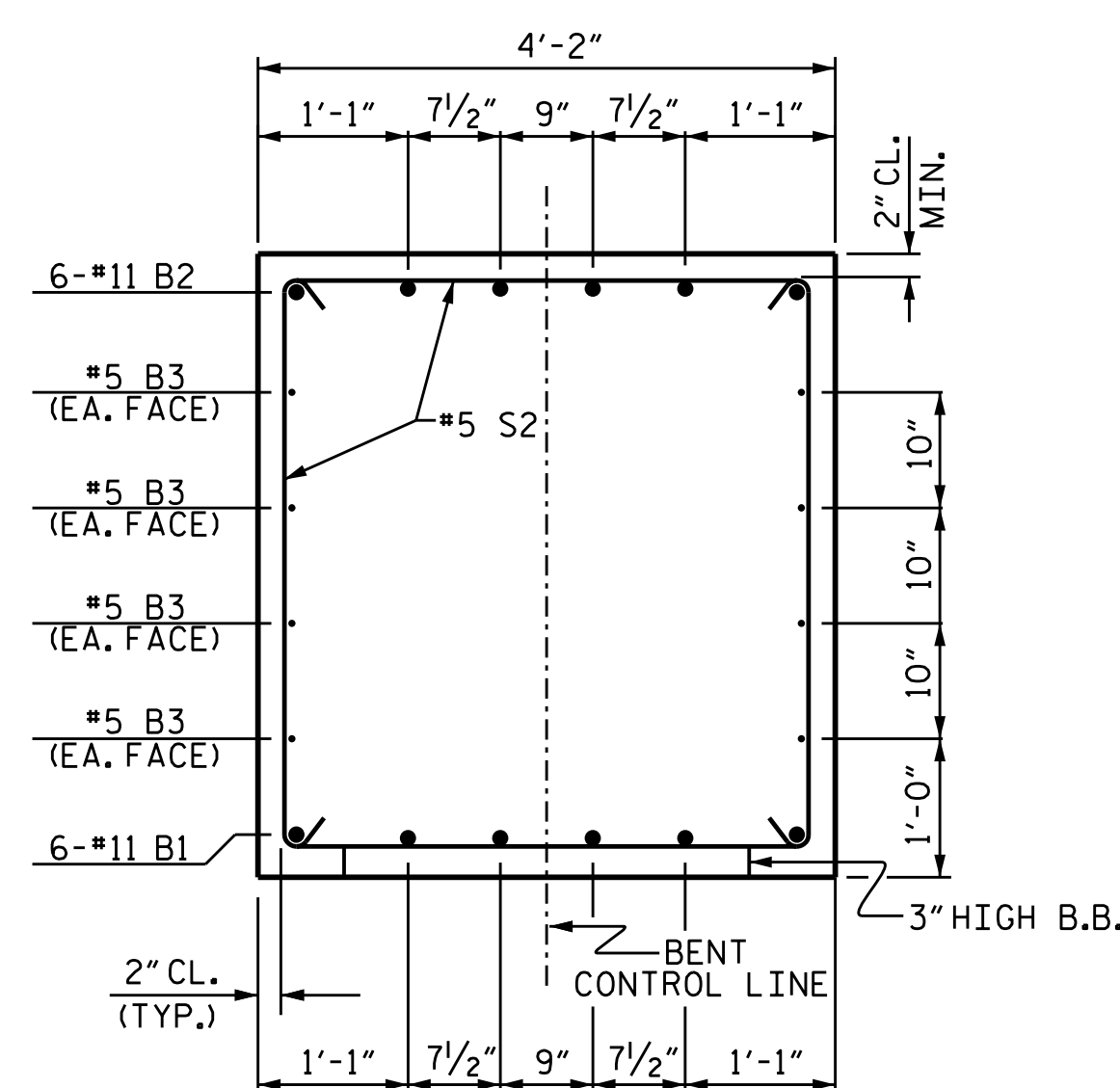
LEFT END VIEW



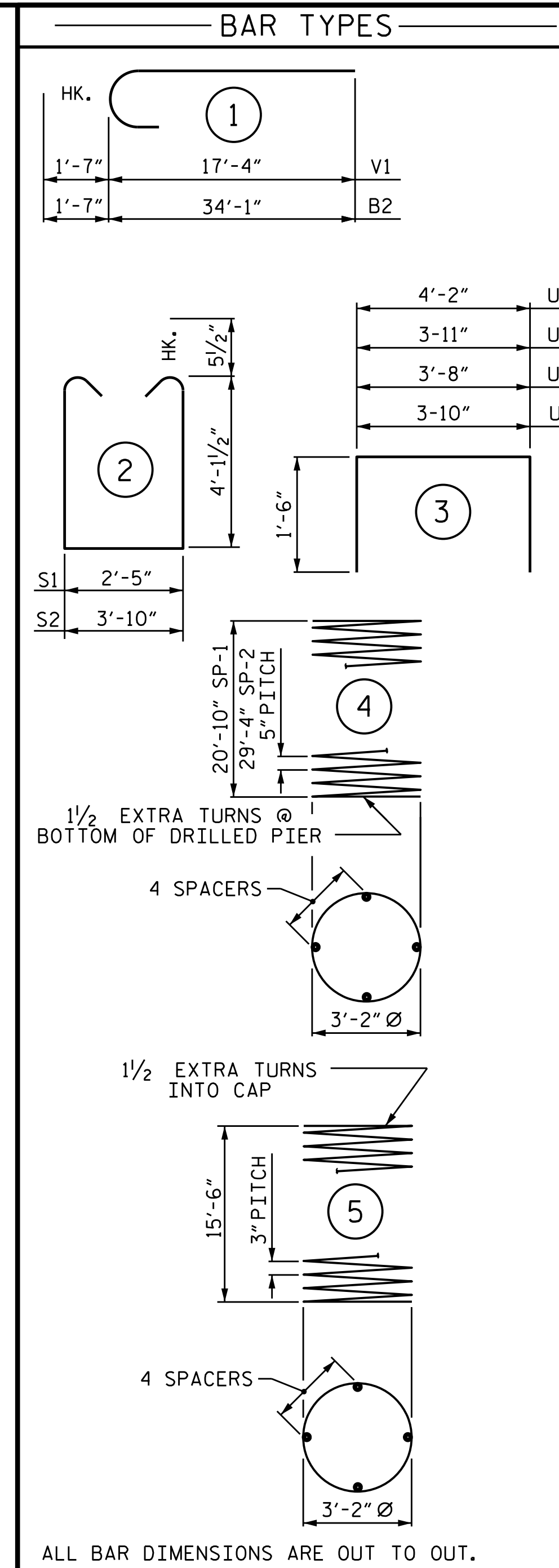
RIGHT END VIEW



SECTION A-A



SECTION B-B



BILL OF MATERIAL					
BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#11	STR	33'- 5"	2,131
B2	12	#11	1	35'- 8"	2,274
B3	16	#5	STR	32'- 4"	540
M1	10	#11	STR	28'-11"	1,536
M2	30	#11	STR	37'- 5"	5,964
S1	132	#5	2	11'- 7"	1,595
S2	24	#5	2	13'- 0"	325
U1	30	#4	3	6'-10"	137
U2	8	#4	3	6'- 8"	36
U3	5	#4	3	6'- 11"	23
U4	5	#4	3	7'- 2"	24
V1	40	#11	1	18'- 11"	4,020

REINFORCING STEEL					18,605 LBS.
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
SP-1	1	※	4	509'- 4"	531
SP-2	3	※	4	705'- 2"	2,206
SP-3	4	※※	5	628'- 7"	1,680

SPIRAL COLUMN REINFORCING STEEL	4,417 LBS.
---------------------------------	------------

* THE SP-1 OR SP-2 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR

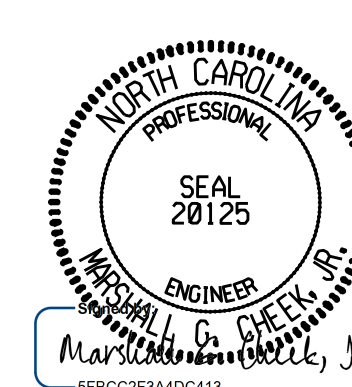
** THE SP-3 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	21.7 C.Y.
POUR #3 (CAP)	43.7 C.Y.
TOTAL CLASS A CONCRETE	65.4 C.Y.

DRILLED PIERS:	
DRILLED PIER CONCRETE	
POUR #1	51.6 C.Y.

PROJECT NO. B-5833
YADKIN COUNTY
 STATION: 27+76.48 -L-

SHEET 2 OF 2



11/20/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT 1

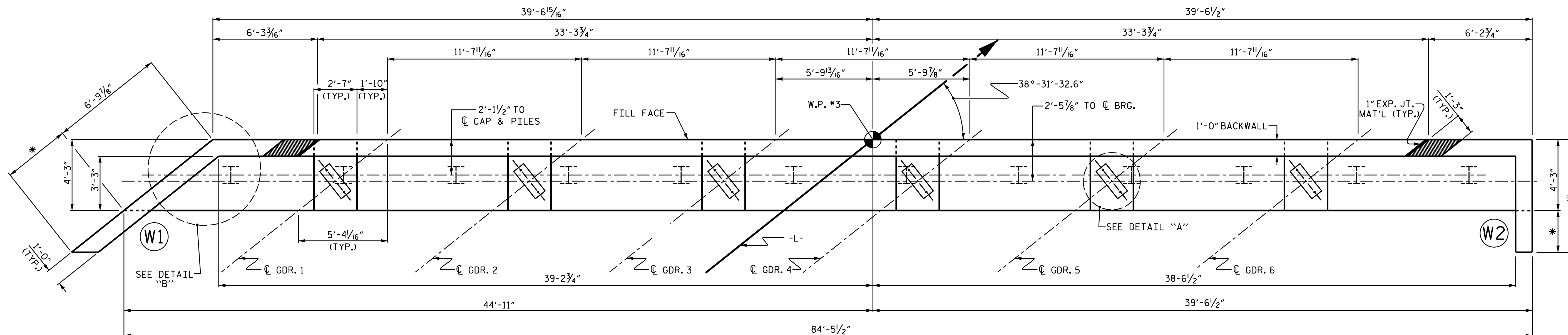
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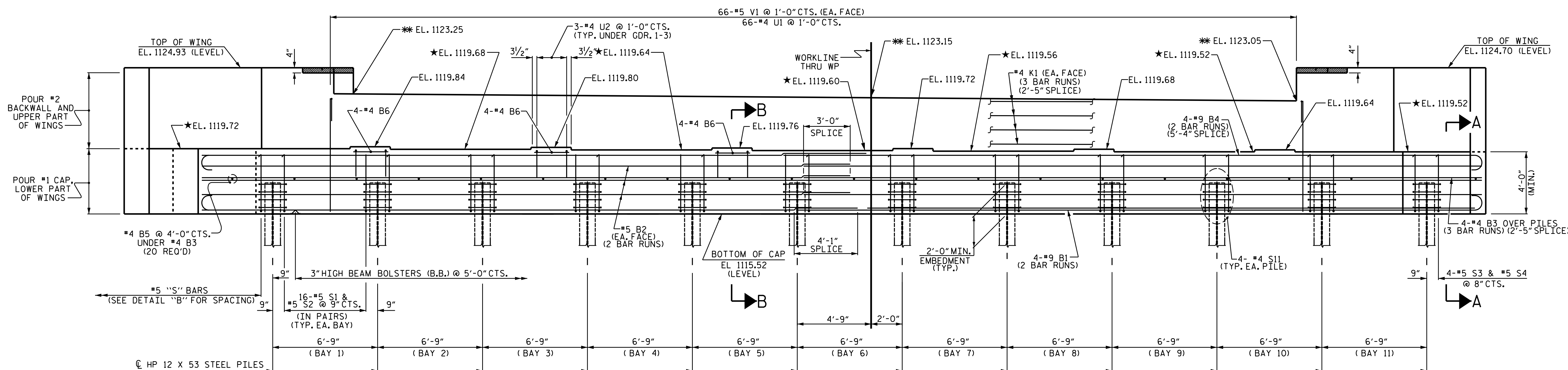
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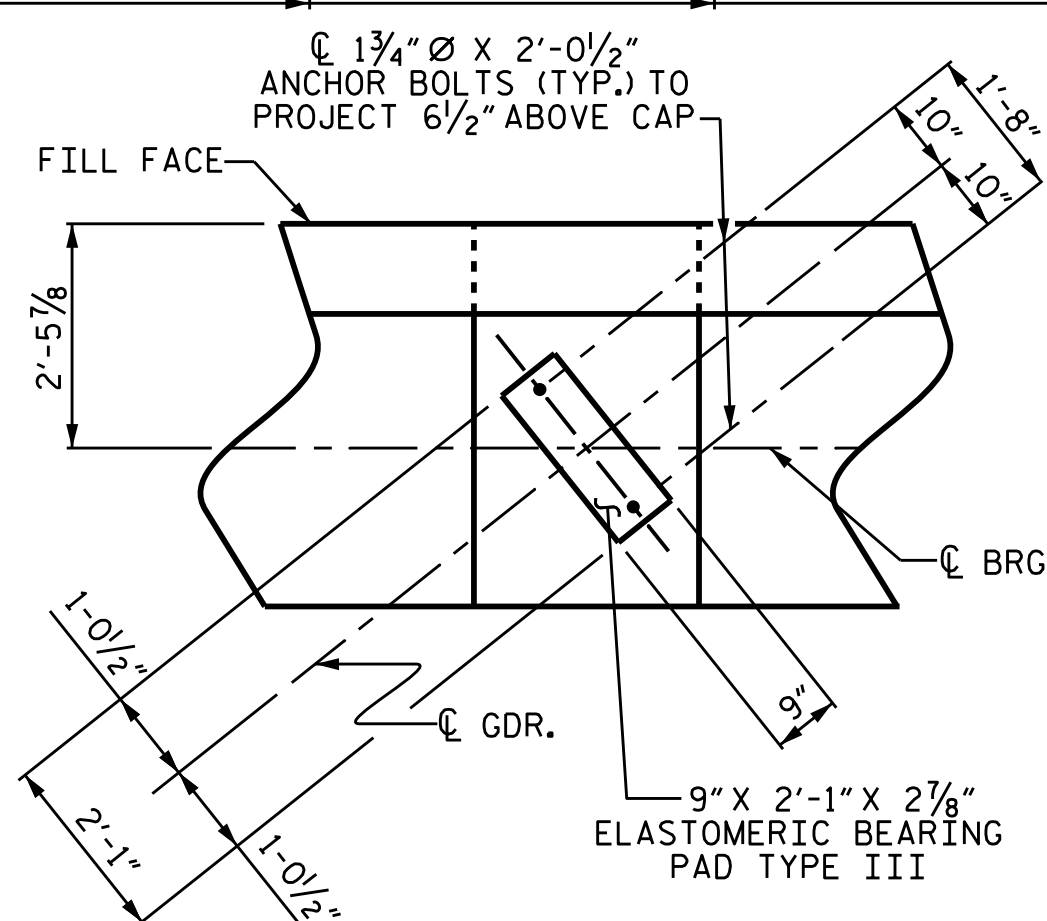
PLAN

* WINGWALL EXTENSION DISTANCE TO BE FIELD ADJUSTED AS REQUIRED TO PROVIDE 1\"/>

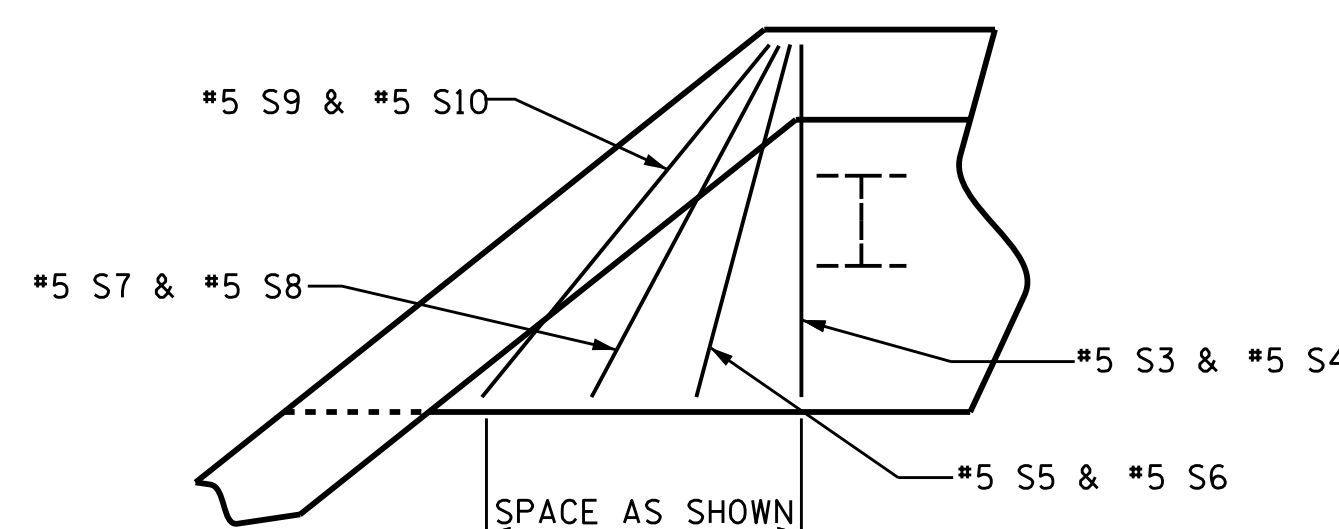


ELEVATION

★ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD UPS, SEE SECTION A-A, SHEET 3 OF 3.
* ELEVATION TAKEN AT FILL FACE OF BACKWALL.



DETAIL "A"
(TYP. EA. GDR.)



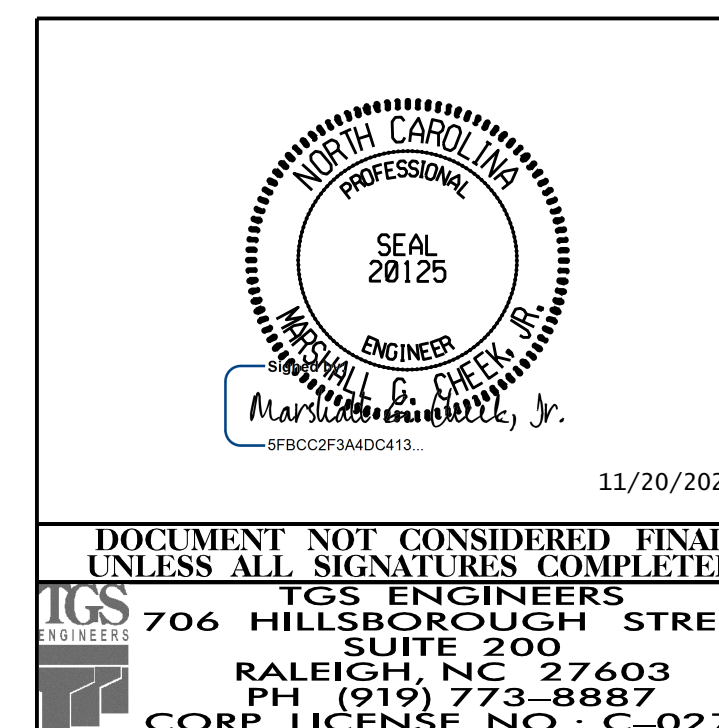
DETAIL "B"
(SHOWING STIRRUPS @ LEFT END OF CAP)

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48 -L-

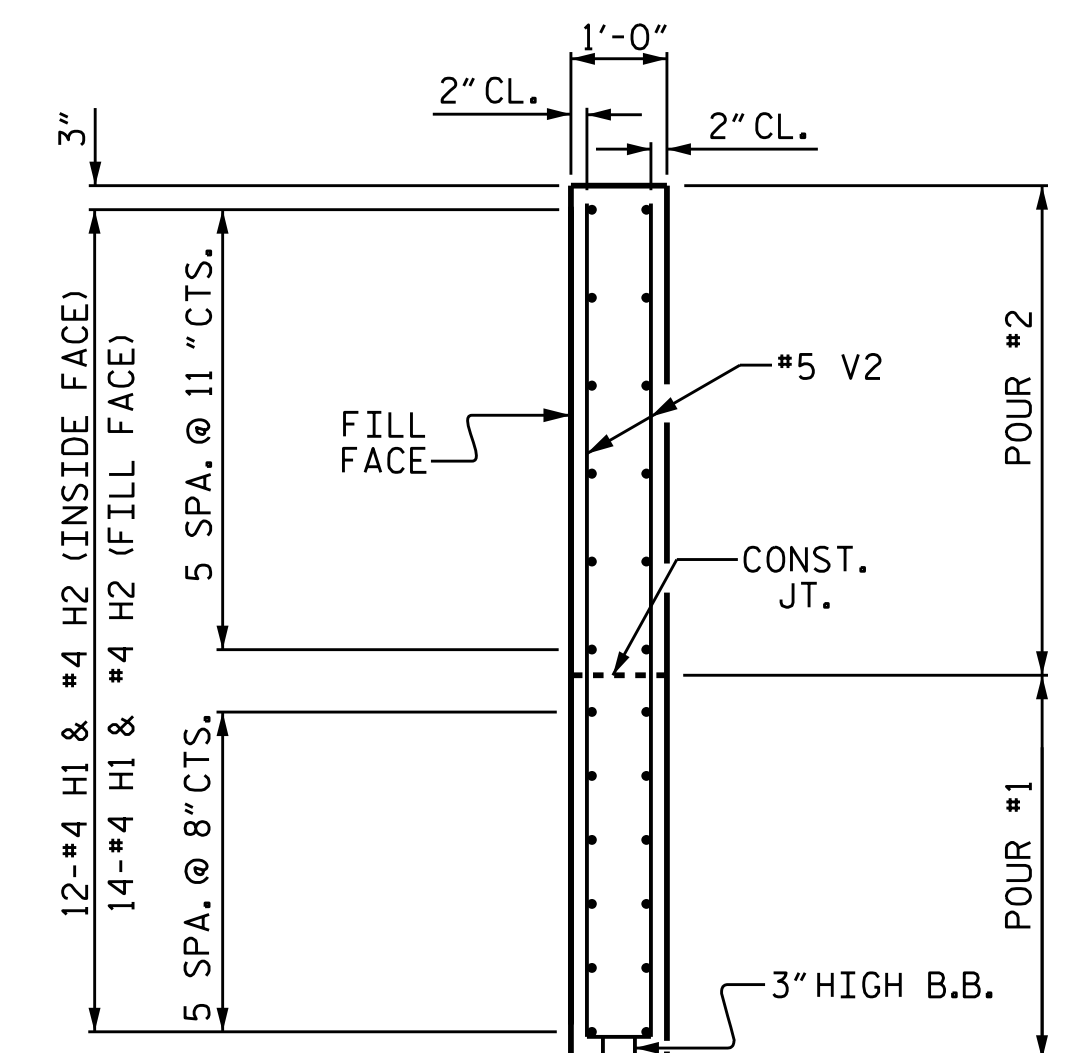
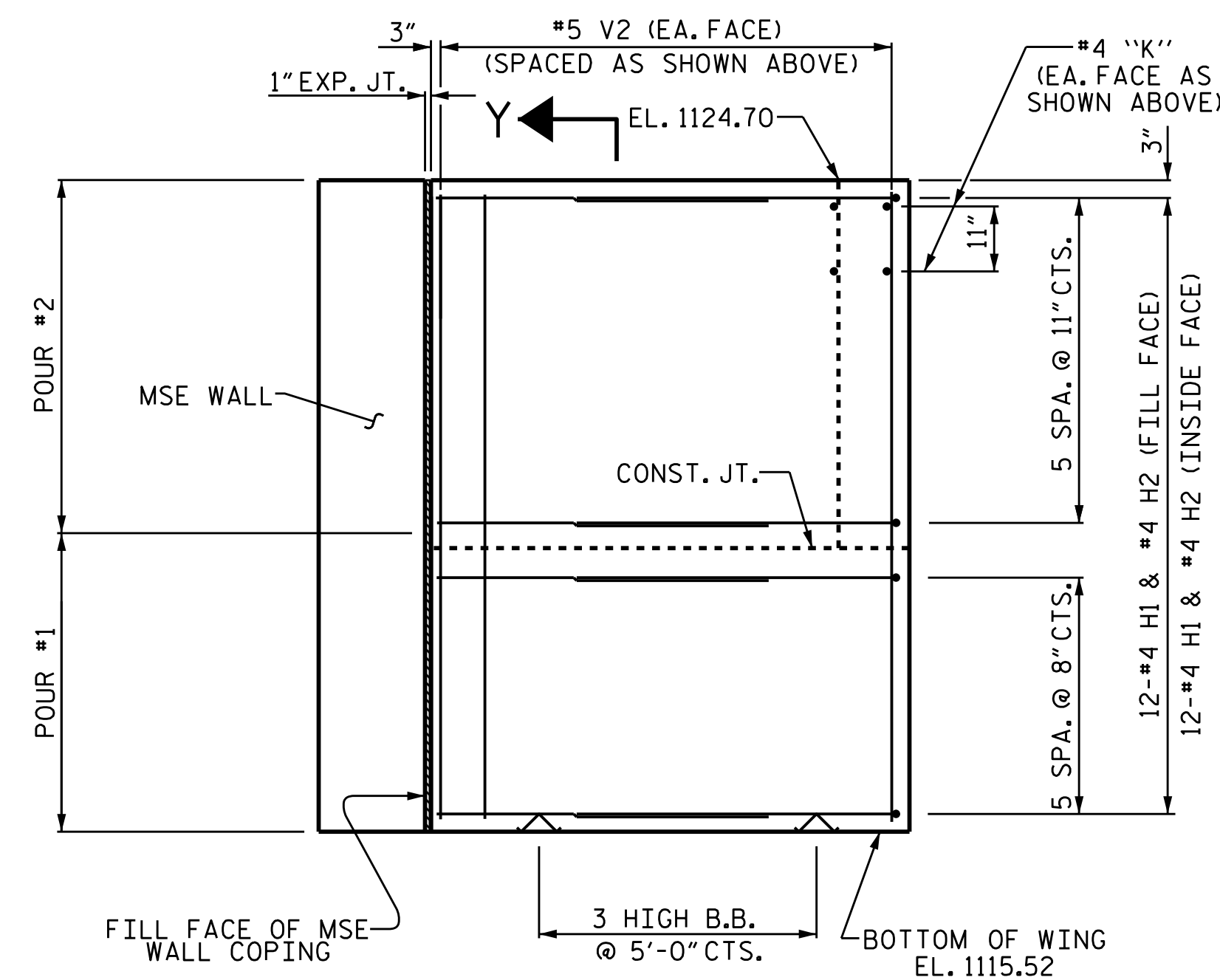
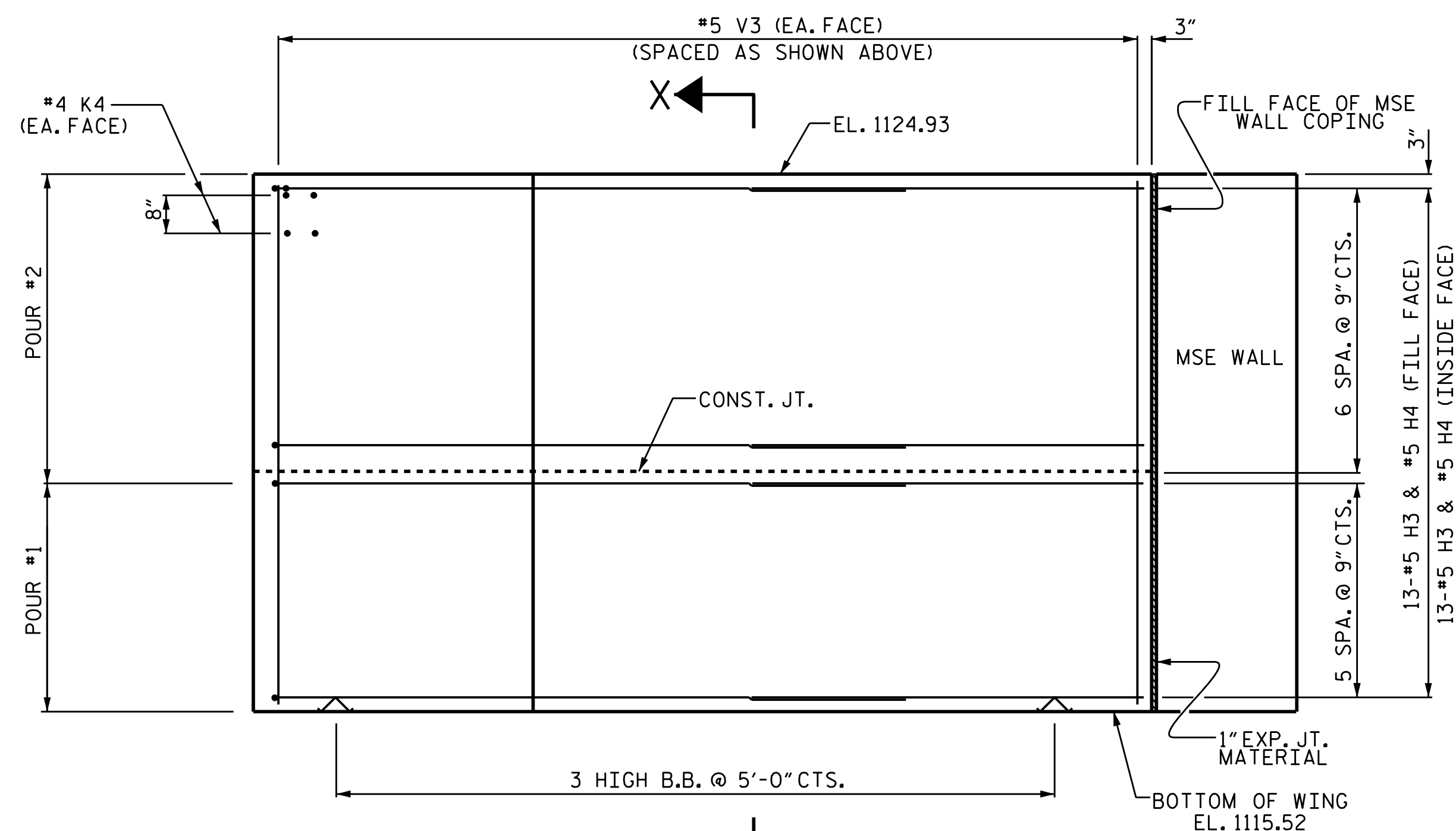
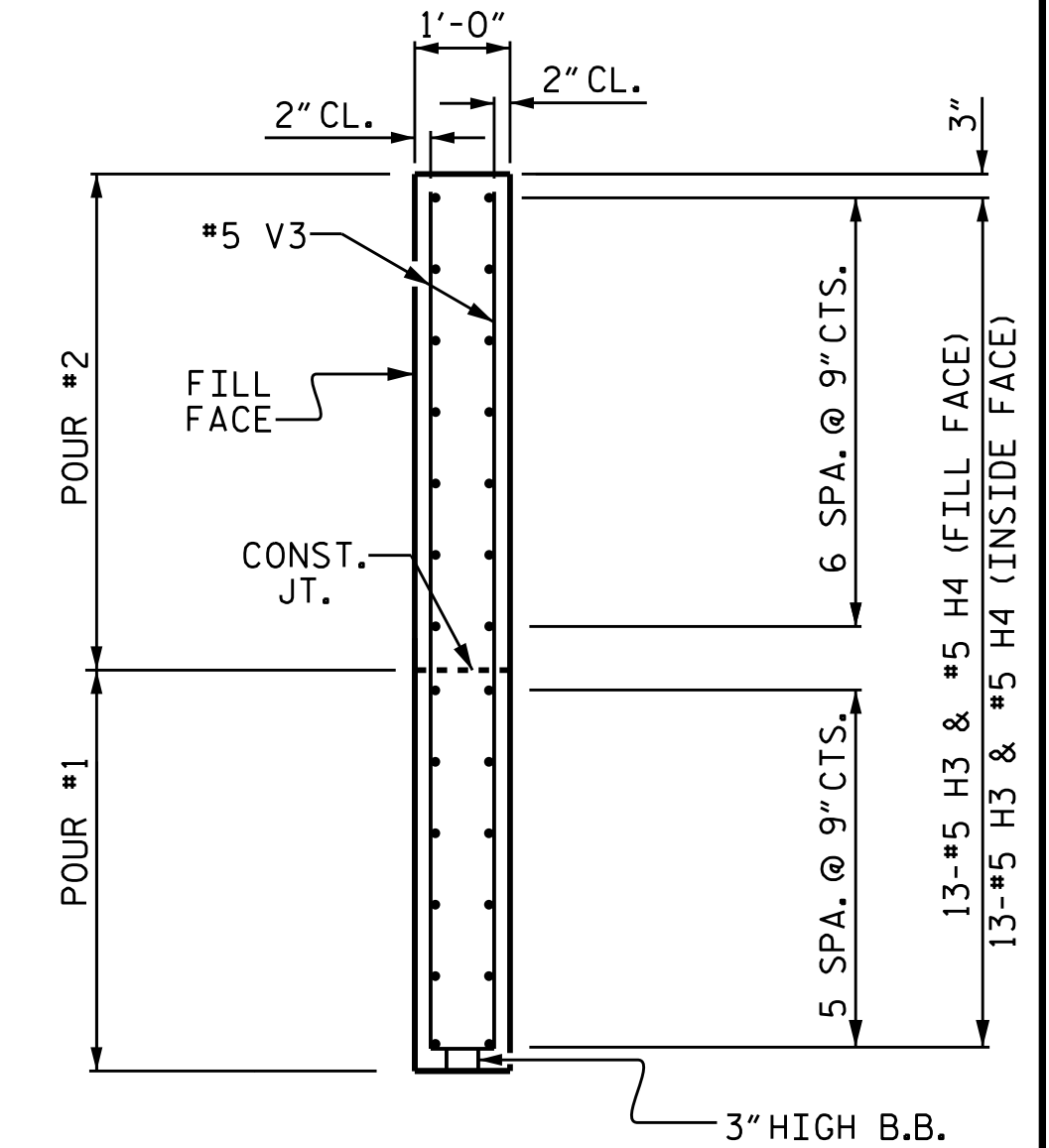
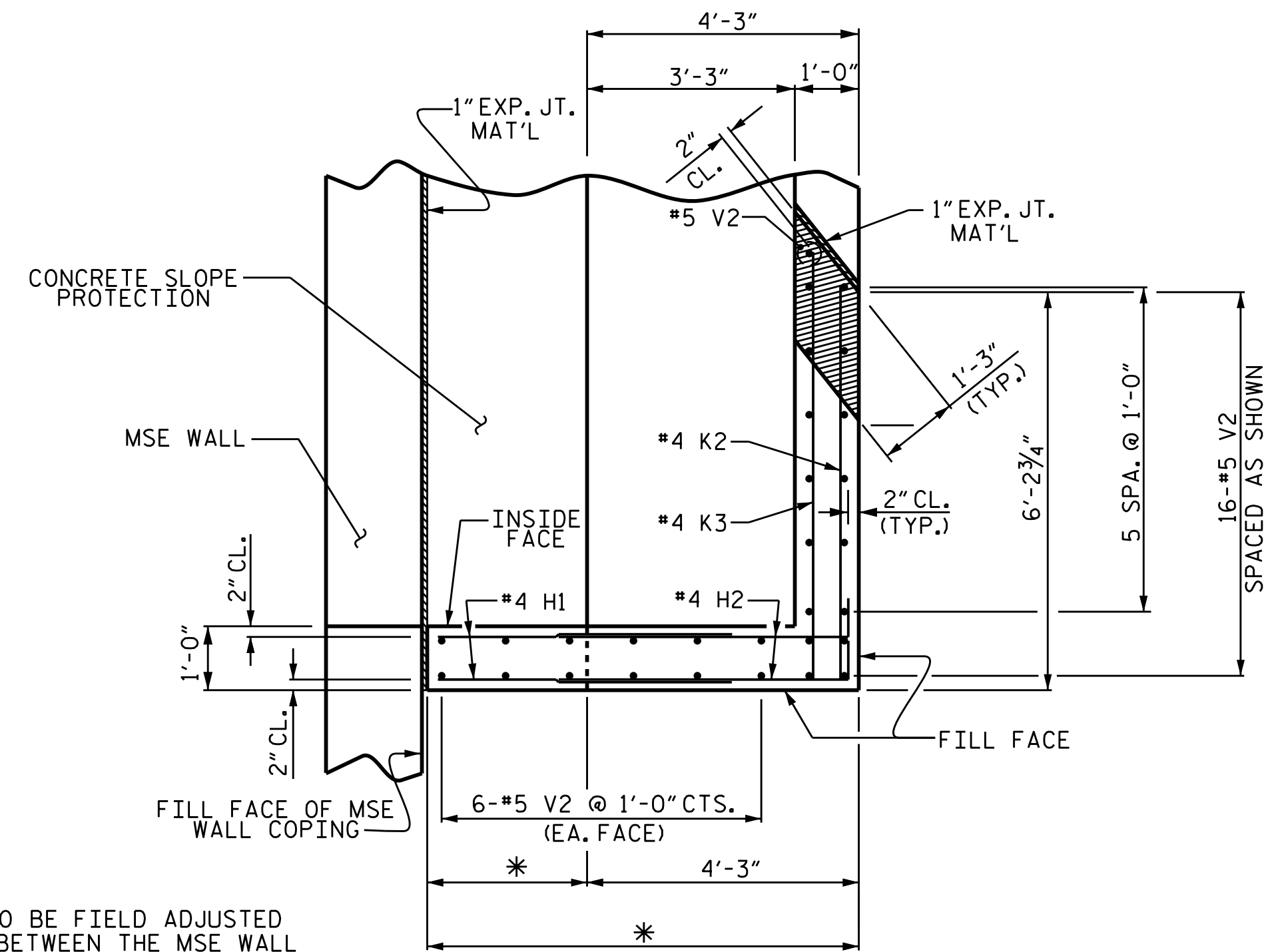
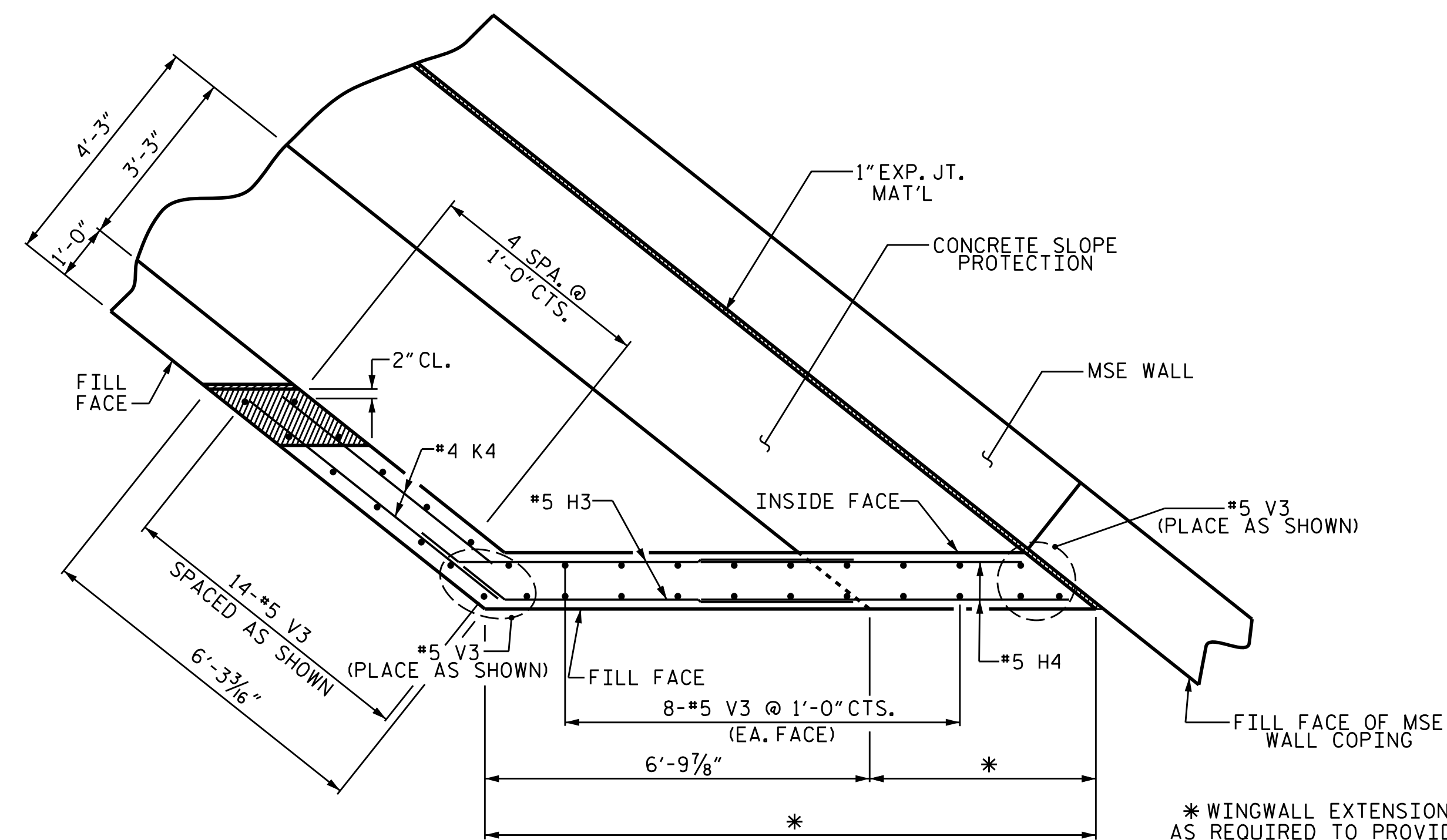
SHEET 1 OF 3



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11/19/2025
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PROJECT NO. B-5833
YADKIN COUNTY
 STATION: 27+76.48 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
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RALEIGH

SUBSTRUCTURE
END BENT 2

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8/28/2023
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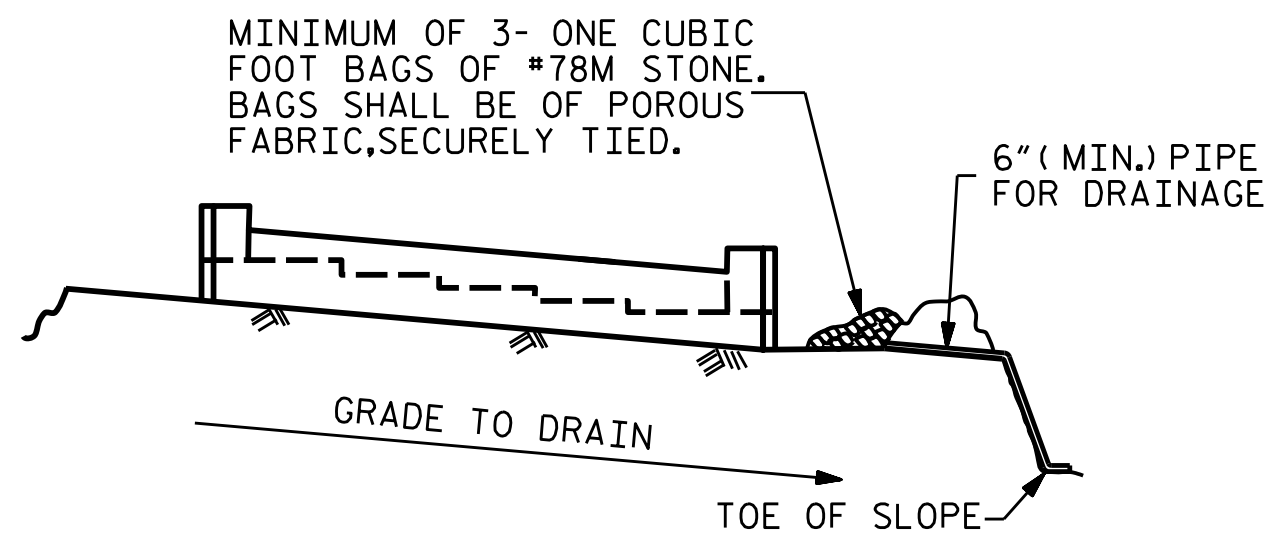


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SHEET NO.	REVISIONS						SHEET NO. S-29
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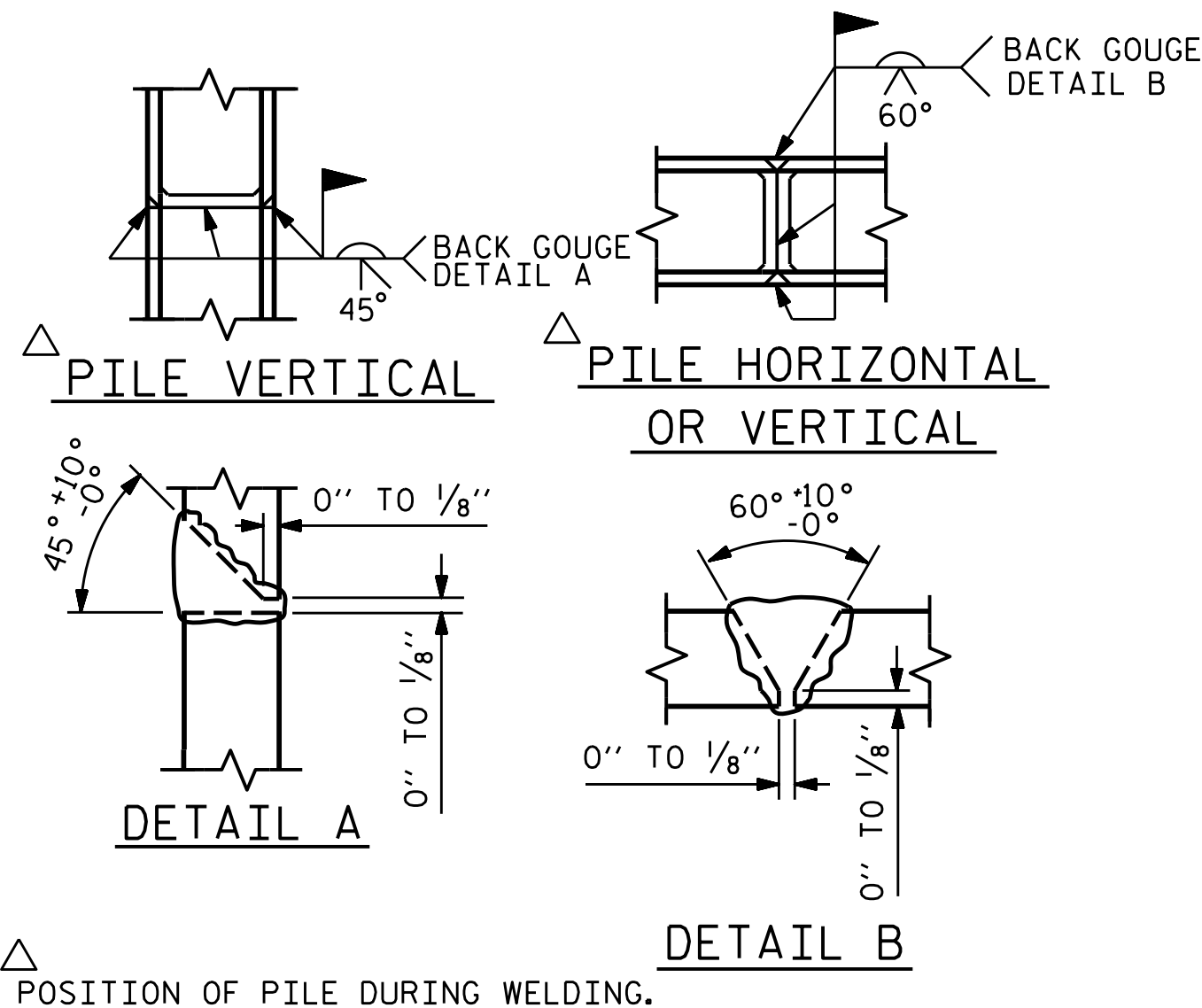


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

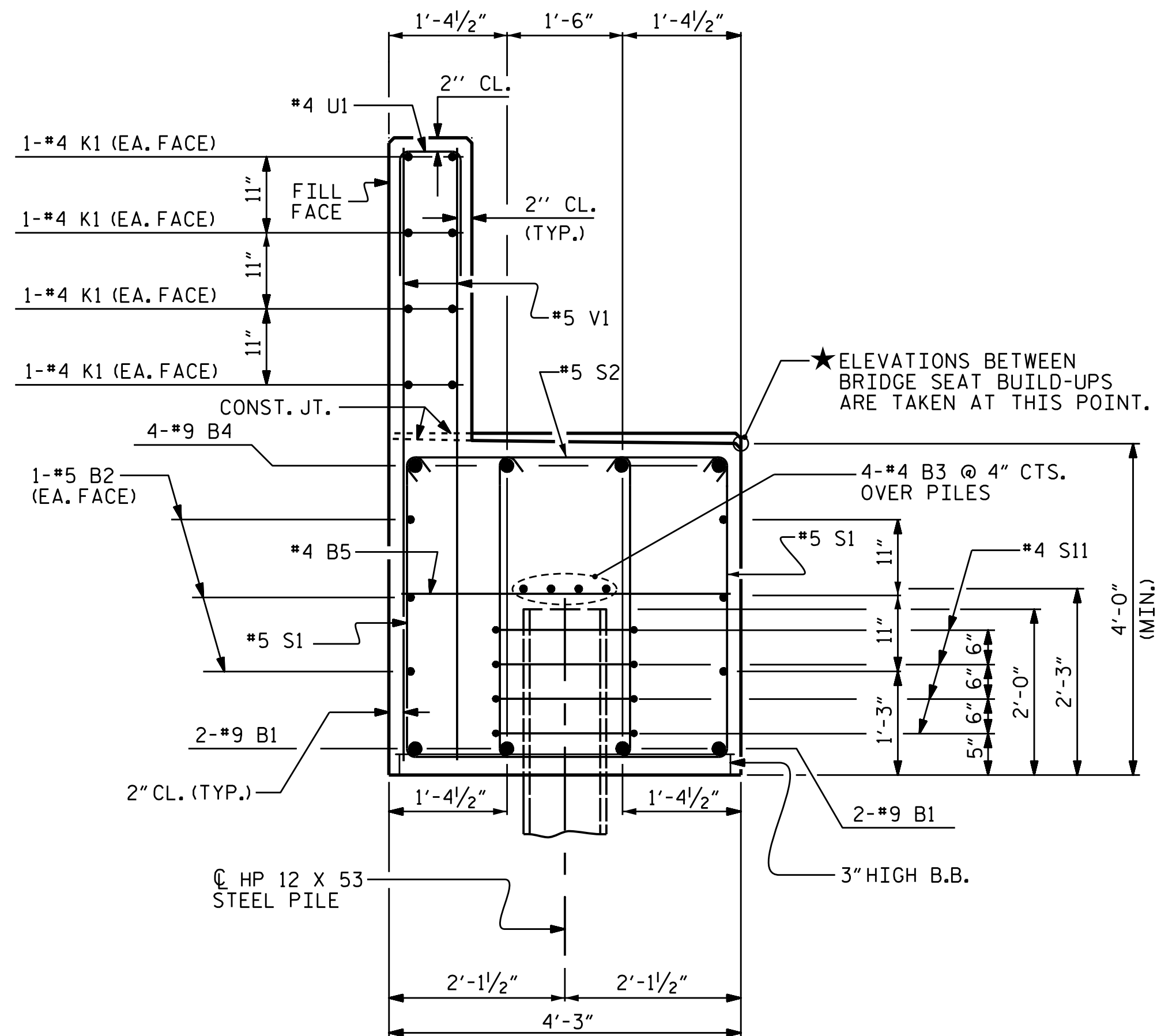
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

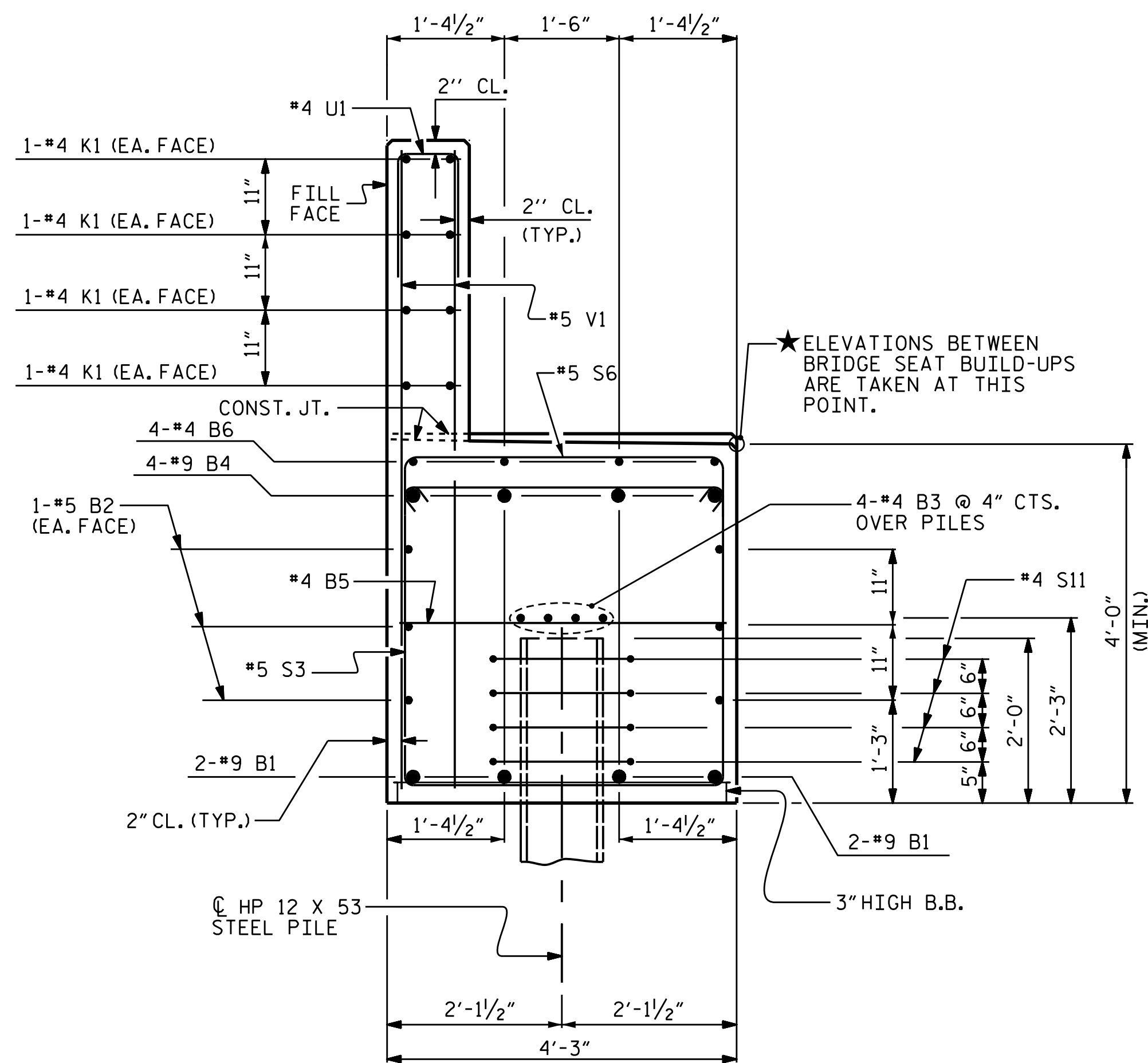
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

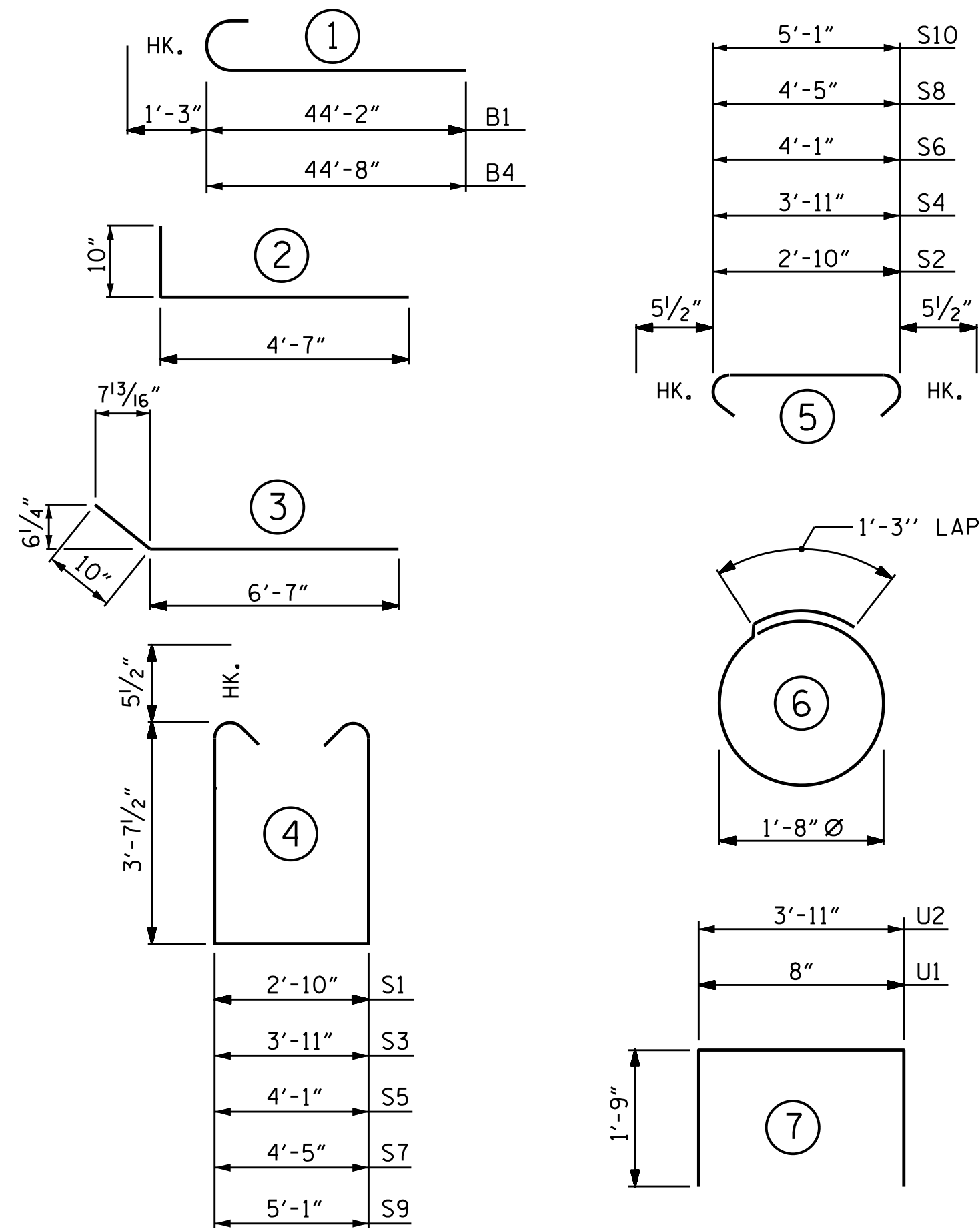


SECTION A-A



SECTION B-B

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

NOTES

STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

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

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

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

BILL OF MATERIAL

END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	45'- 5"	1,235
B2	12	#5	STR	43'- 7"	545
B3	12	#4	STR	29'- 0"	232
B4	8	#9	1	45'- 11"	1,249
B5	20	#4	STR	3'-11"	52
B6	12	#4	STR	2'- 3"	18
H1	24	#4	STR	4'- 8"	75
H2	24	#4	2	5'- 5"	87
H3	26	#5	3	7'- 5"	201
H4	26	#5	STR	5'- 5"	147
K1	24	#4	STR	28'- 3"	453
K2	2	#4	STR	6'- 1"	8
K3	2	#4	STR	6'- 11"	9
K4	4	#4	STR	5'- 11"	16
S1	176	#5	4	11'- 0"	2,019
S2	176	#5	5	3'- 9"	688
S3	5	#5	4	12'- 1"	63
S4	5	#5	5	4'- 10"	25
S5	1	#5	4	12'- 3"	13
S6	1	#5	5	5'- 0"	5
S7	1	#5	4	12'- 7"	13
S8	1	#5	5	5'- 4"	6
S9	1	#5	4	13'- 3"	14
S10	1	#5	5	6'- 0"	6
S11	48	#4	6	6'- 6"	208
U1	66	#4	7	4'- 2"	184
U2	9	#4	7	7'- 5"	45
V1	132	#5	STR	7'- 2"	987
V2	29	#5	STR	8'-10"	267
V3	35	#5	STR	9'- 0"	329

REINFORCING STEEL 9,199 LBS.

CLASS A CONCRETE

POUR #1
(CAP, LOWER PART OF WINGS) 54.1 C.Y.

POUR #2
(BACKWALL & UPPER PART OF WINGS) 13.5 C.Y.

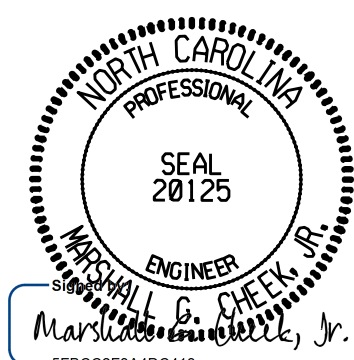
TOTAL CLASS A CONCRETE 67.6 C.Y.

PROJECT NO. B-5833

YADKIN COUNTY

STATION: 27+76.48 -L-

SHEET 3 OF 3



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CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2

REVISIONS

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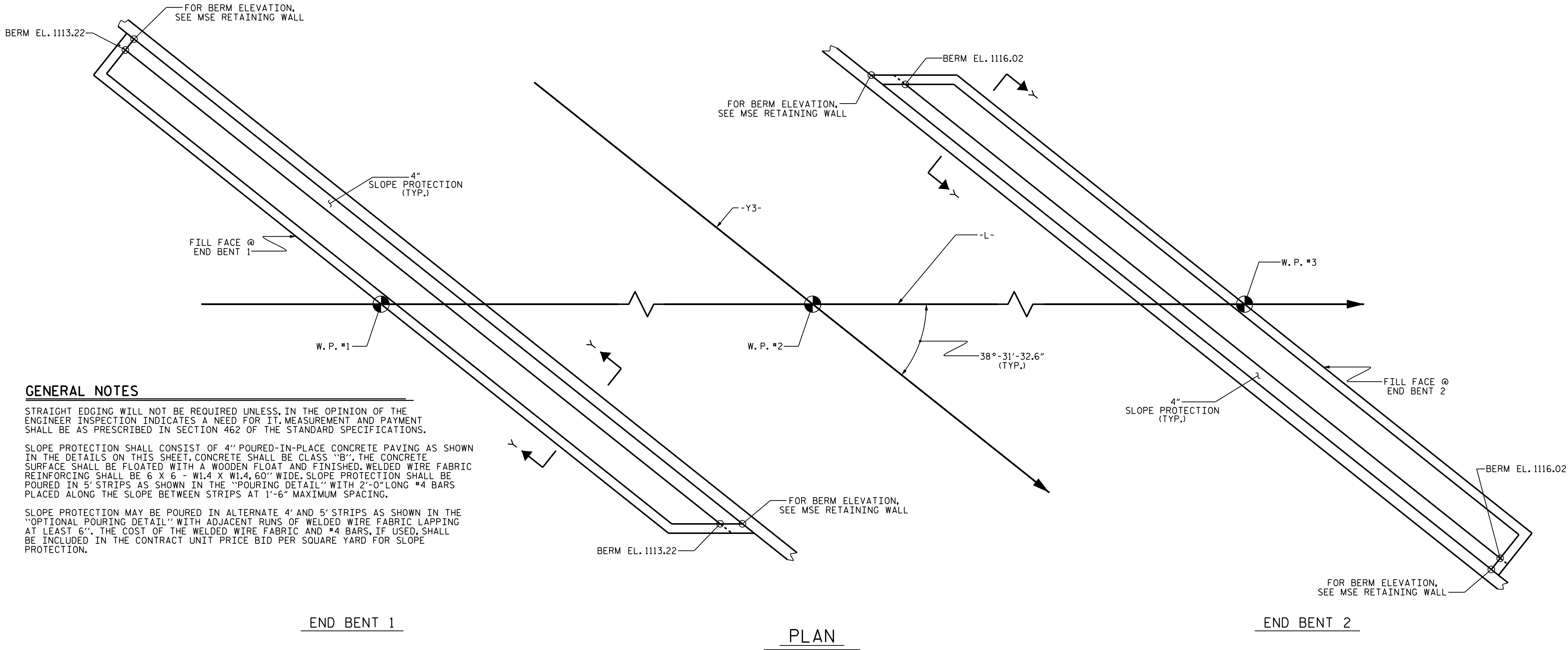
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TOTAL SHEETS

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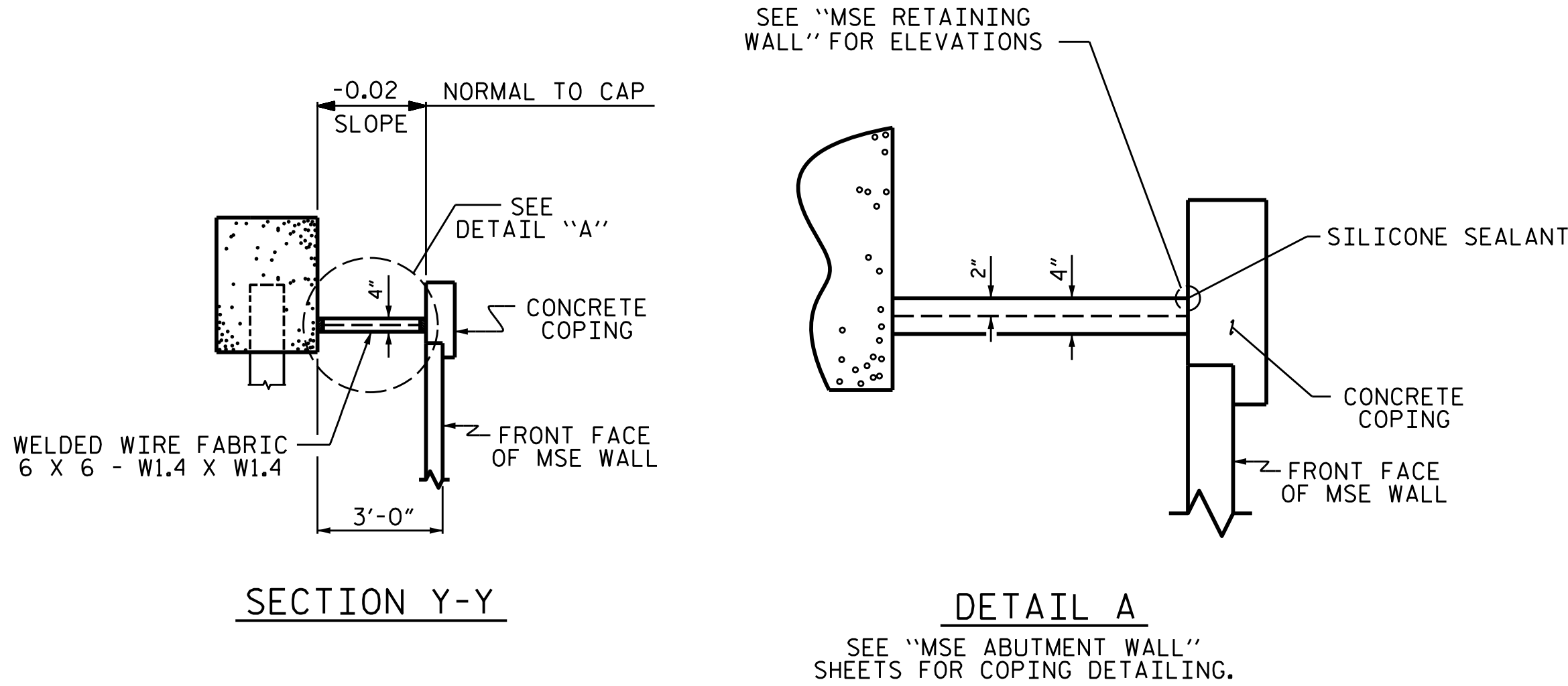


GENERAL NOTES

STRAIGHT EDGING WILL NOT BE REQUIRED UNLESS, IN THE OPINION OF THE ENGINEER INSPECTION INDICATES A NEED FOR IT. MEASUREMENT AND PAYMENT SHALL BE AS PRESCRIBED IN SECTION 462 OF THE STANDARD SPECIFICATIONS.

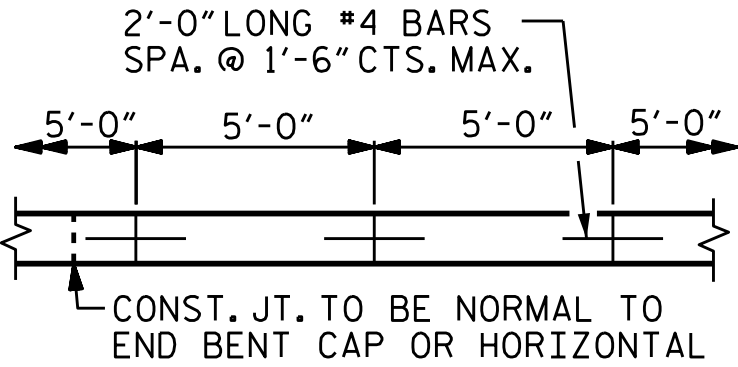
SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS "B". THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6' X 6' - W1.4 X W1.4, 60" WIDE. SLOPE PROTECTION SHALL BE POURED IN 5' STRIPS AS SHOWN IN THE "POURING DETAIL" WITH 2'-0" LONG #4 BARS PLACED ALONG THE SLOPE BETWEEN STRIPS AT 1'-6" MAXIMUM SPACING.

SLOPE PROTECTION MAY BE POURED IN ALTERNATE 4' AND 5' STRIPS AS SHOWN IN THE "OPTIONAL POURING DETAIL" WITH ADJACENT RUNS OF WELDED WIRE FABRIC LAPPING AT LEAST 6". THE COST OF THE WELDED WIRE FABRIC AND #4 BARS, IF USED, SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR SLOPE PROTECTION.

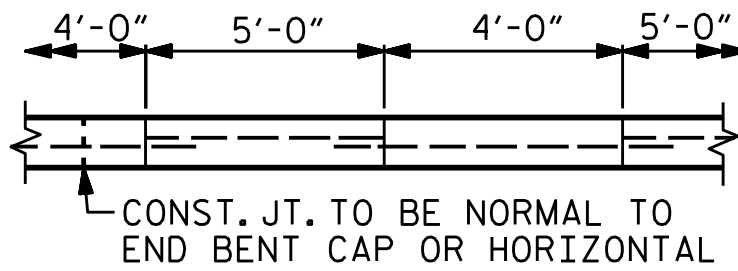


BRIDGE @ STA. 27+76.48 -L-	4" SLOPE PROTECTION	* WELDED WIRE FABRIC 60 INCHES WIDE
	SQUARE YARDS	APPROX. L.F.
END BENT 1	23	43
END BENT 2	23	43

* QUANTITY SHOWN IS BASED ON 5' POURS.



POURING DETAIL



OPTIONAL POURING DETAIL

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

11/20/2025

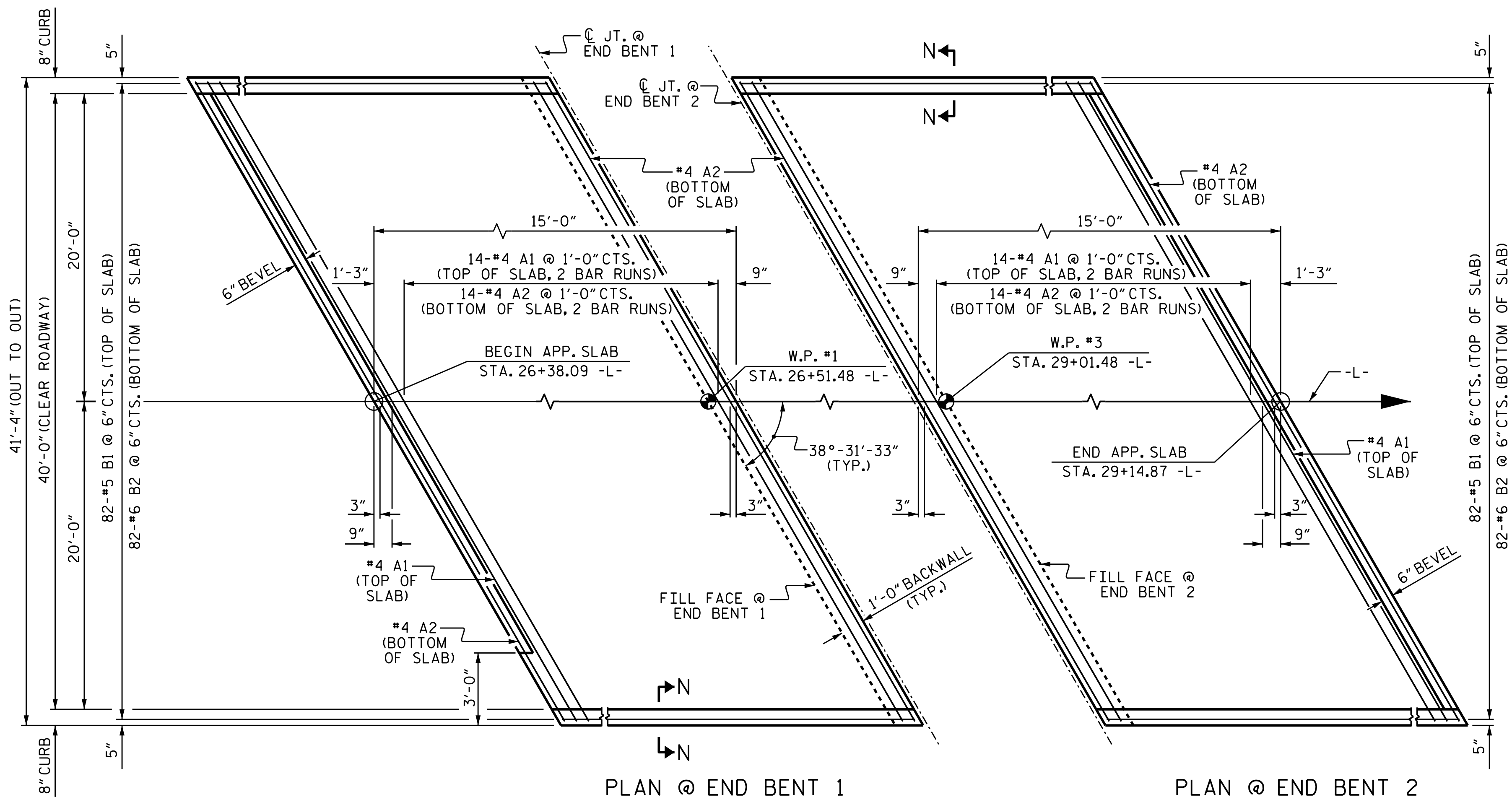
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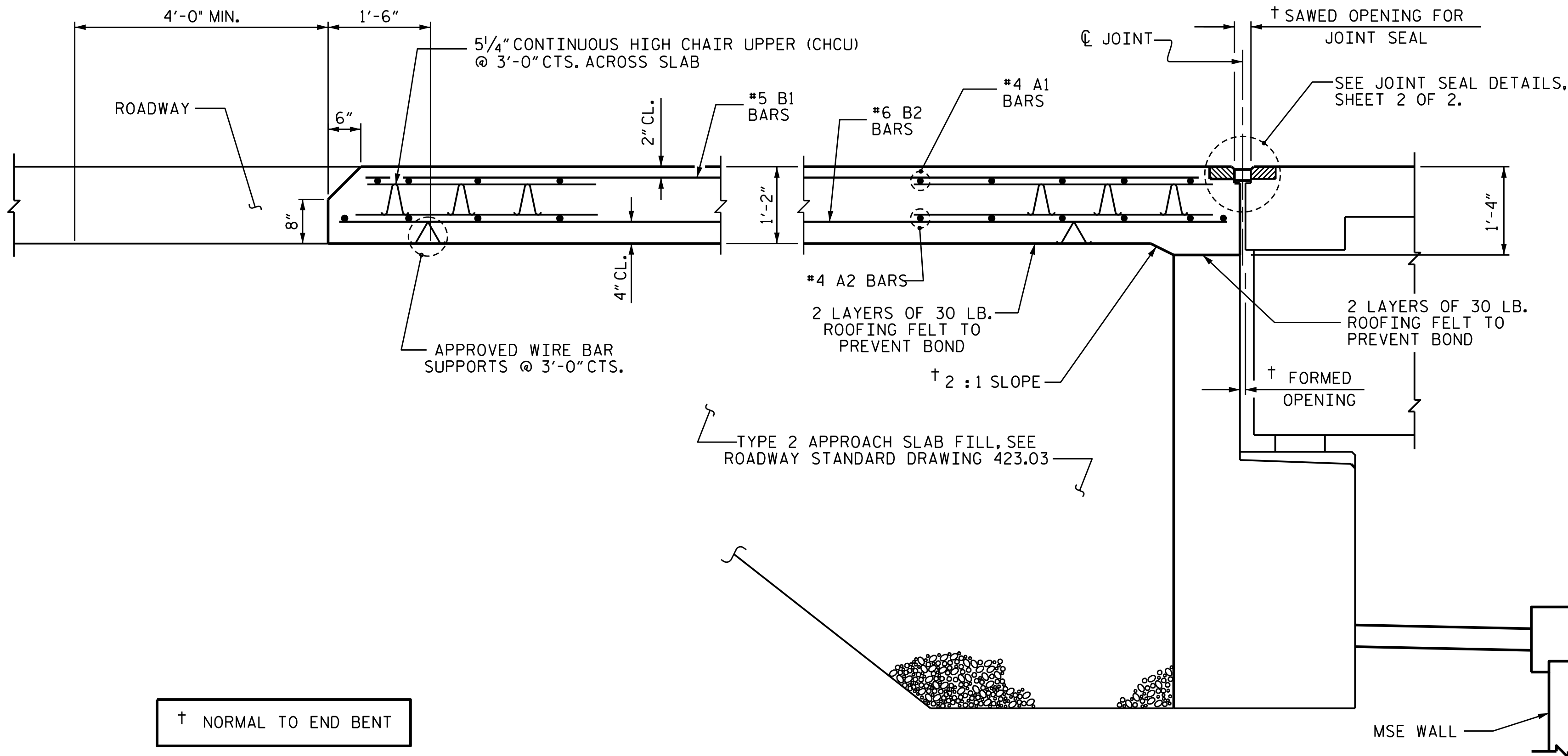
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PLAN @ END BENT 1

PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

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

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

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.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL

APPROACH SLAB AT END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	30	#4	STR	33'-11"	680
A2	32	#4	STR	33'-9"	721
* B1	82	#5	STR	13'-11"	1190
B2	82	#6	STR	14'-5"	1776

REINFORCING STEEL	LBS.	2497
* EPOXY COATED REINFORCING STEEL	LBS.	1870
CLASS AA CONCRETE	C. Y.	26.9

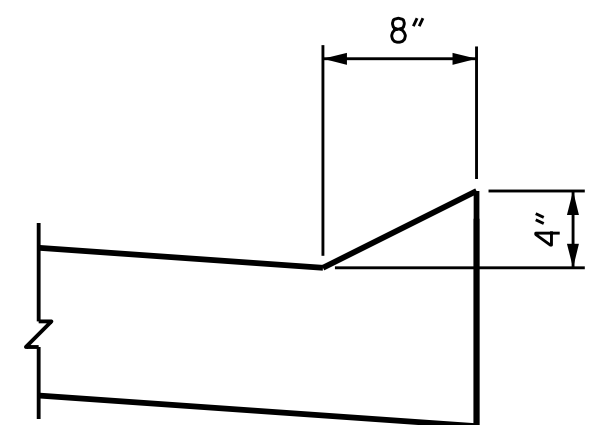
APPROACH SLAB AT END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	30	#4	STR	33'-11"	680
A2	32	#4	STR	33'-9"	721
* B1	82	#5	STR	13'-11"	1190
B2	82	#6	STR	14'-5"	1776

REINFORCING STEEL	LBS.	2497
* EPOXY COATED REINFORCING STEEL	LBS.	1870
CLASS AA CONCRETE	C. Y.	26.9

SPLICE LENGTHS

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



SECTION N-N

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
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RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT

11/20/2025

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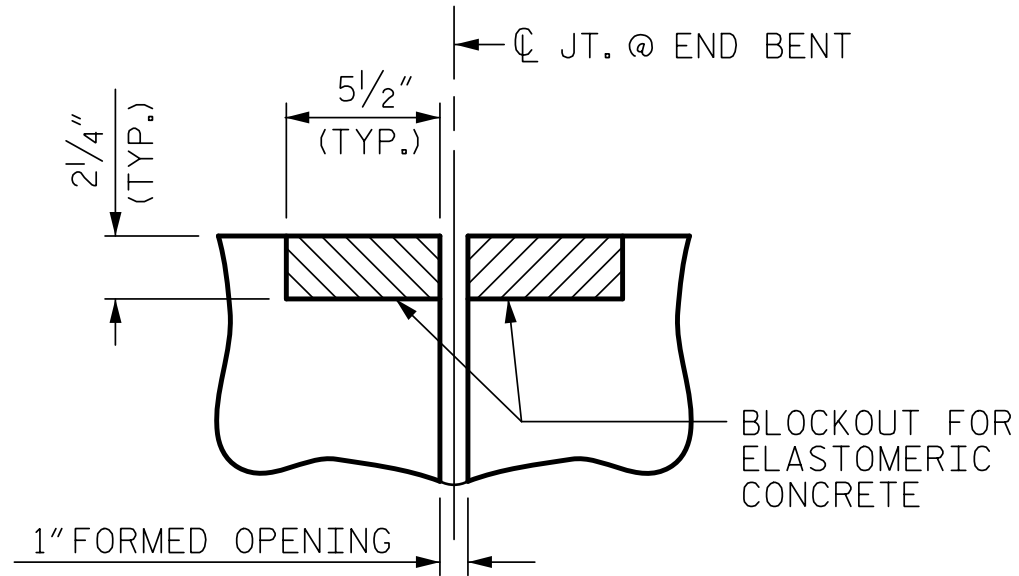
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20125
MARSHALL G. CHEN, JR.
ENGINEER
SFBCC2F344DC413...

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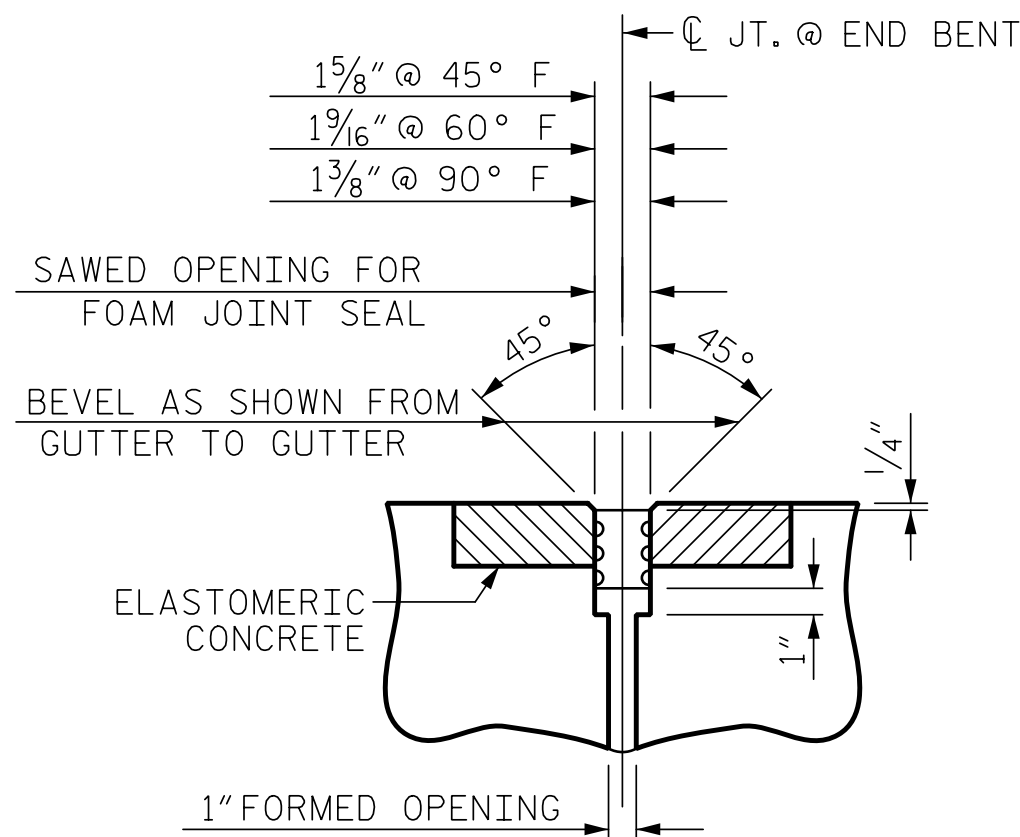
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*****USERNAME*****

STD. NO. BAS2 (SHT 1a)



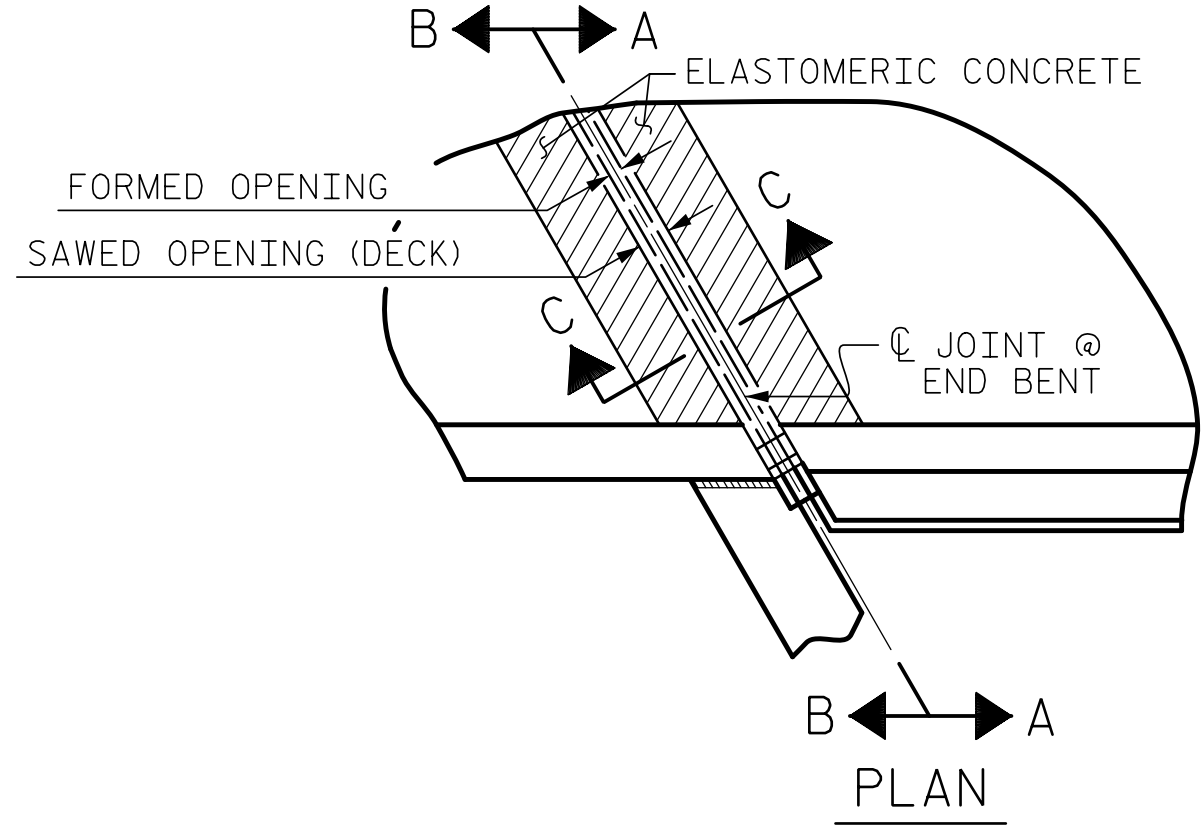
SECTION C-C
FOAM JOINT SEAL
(PRE-SAWED ELASTOMERIC
CONCRETE DIMENSIONS)



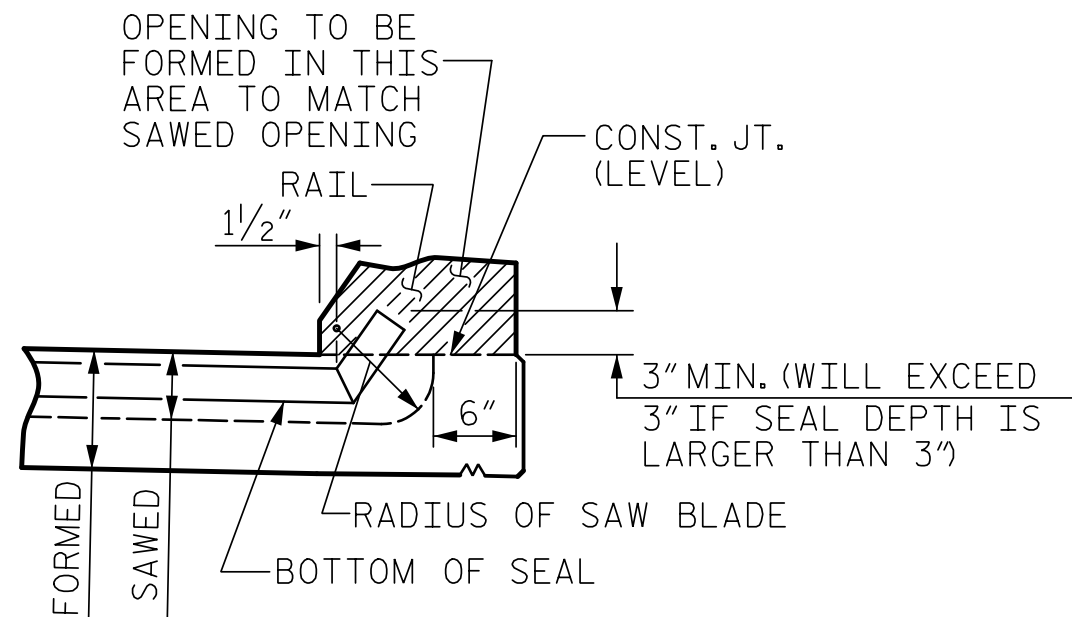
SECTION C-C
FOAM JOINT SEAL
(EXPANSION)

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	11.4
2	11.4
TOTAL	22.8

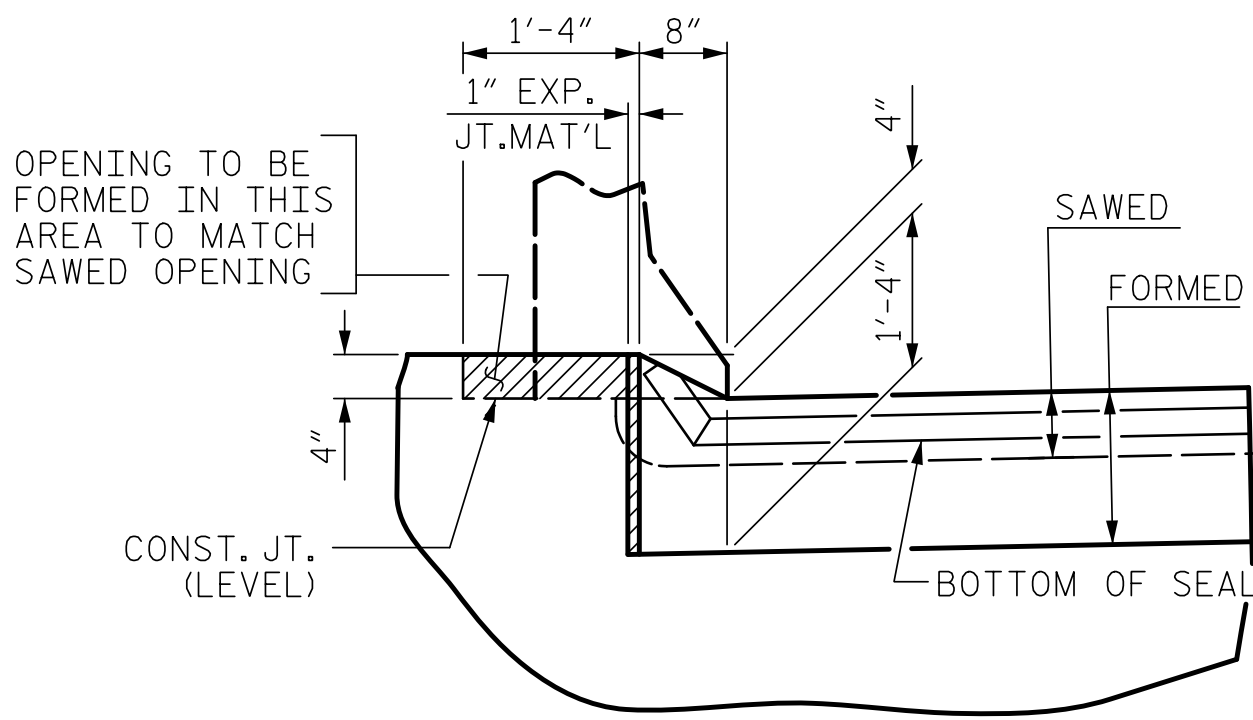
* BASED ON THE MINIMUM BLOCKOUT SHOWN.



PLAN



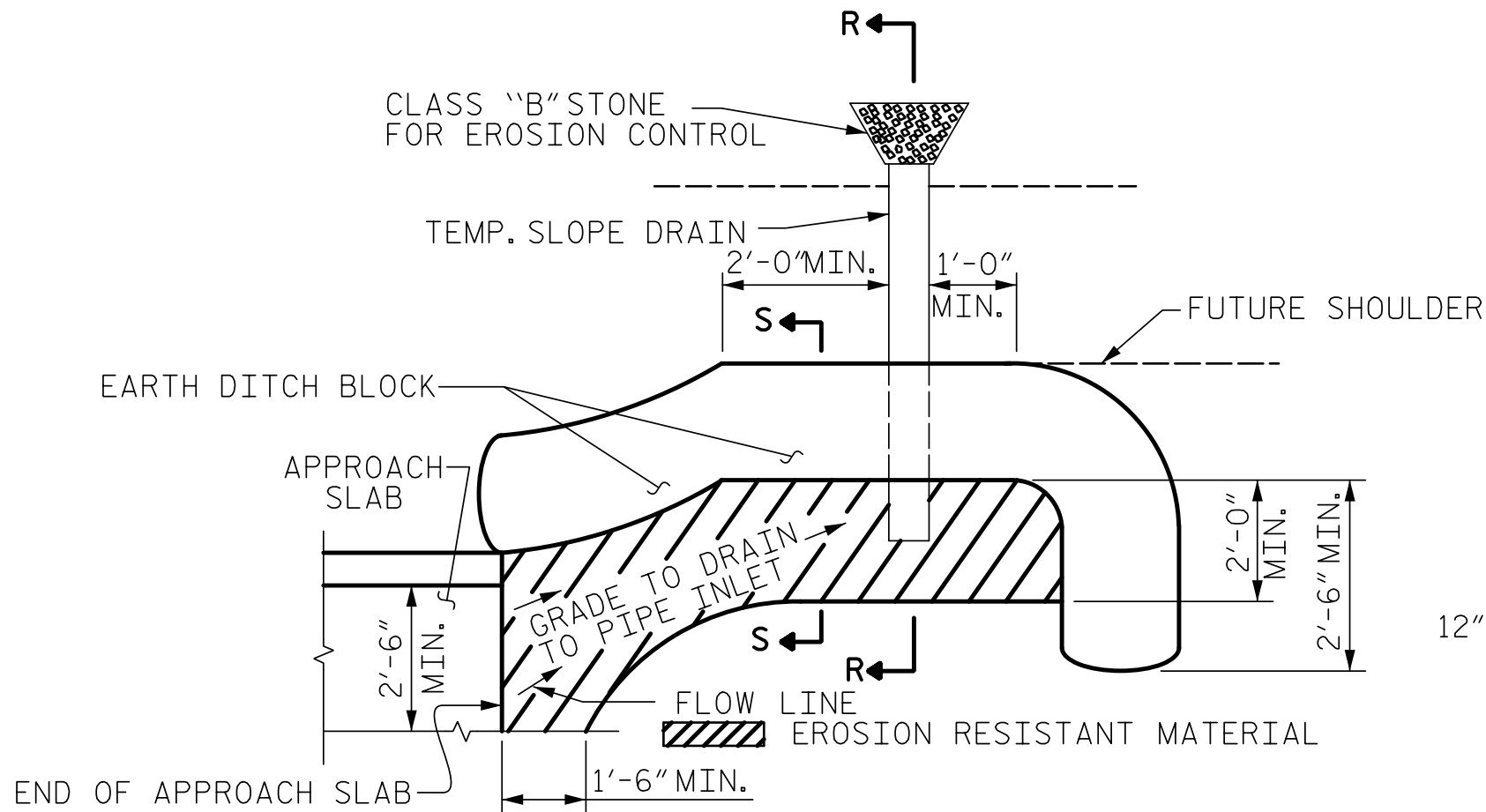
SECTION A-A



SECTION B-B

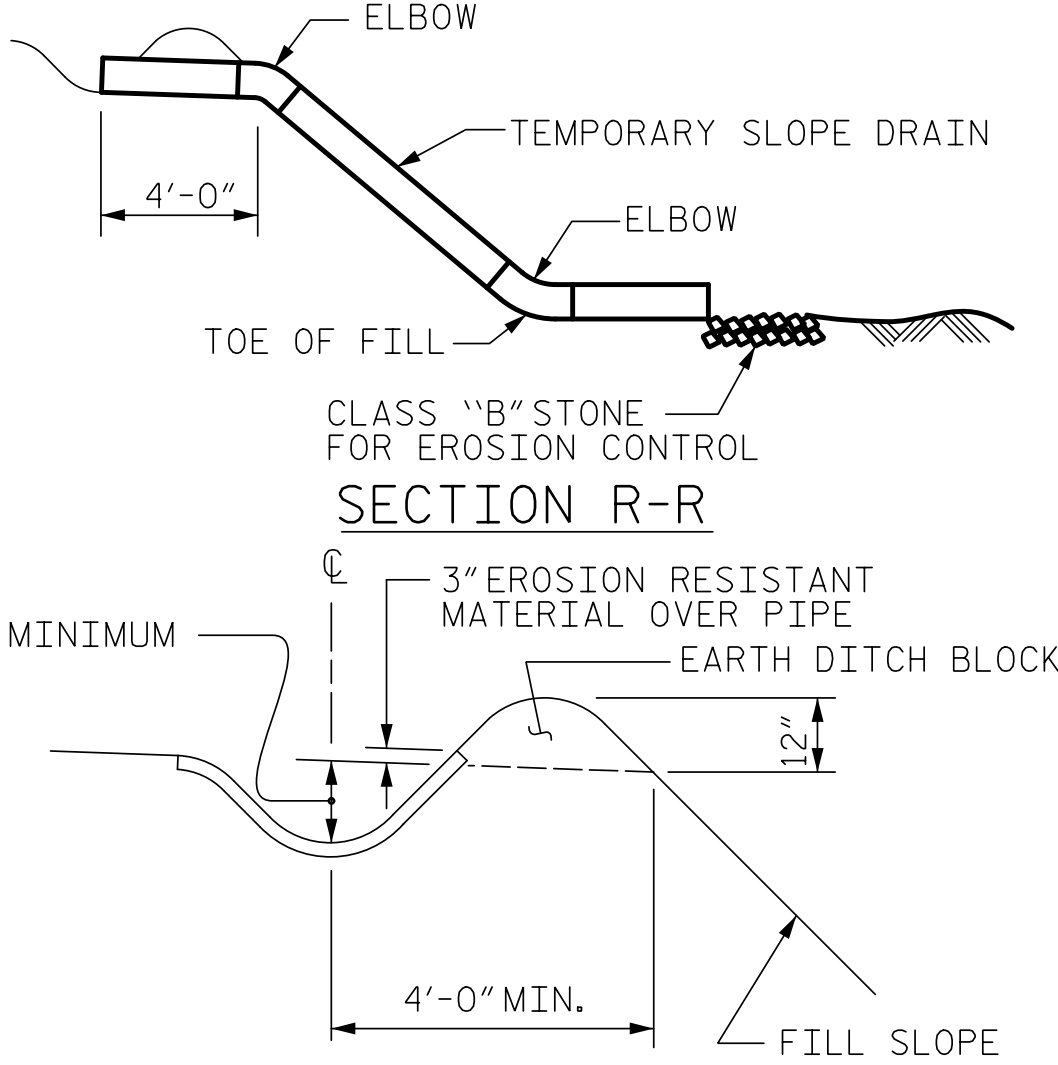
JOINT SEAL DETAILS @ END BENT

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

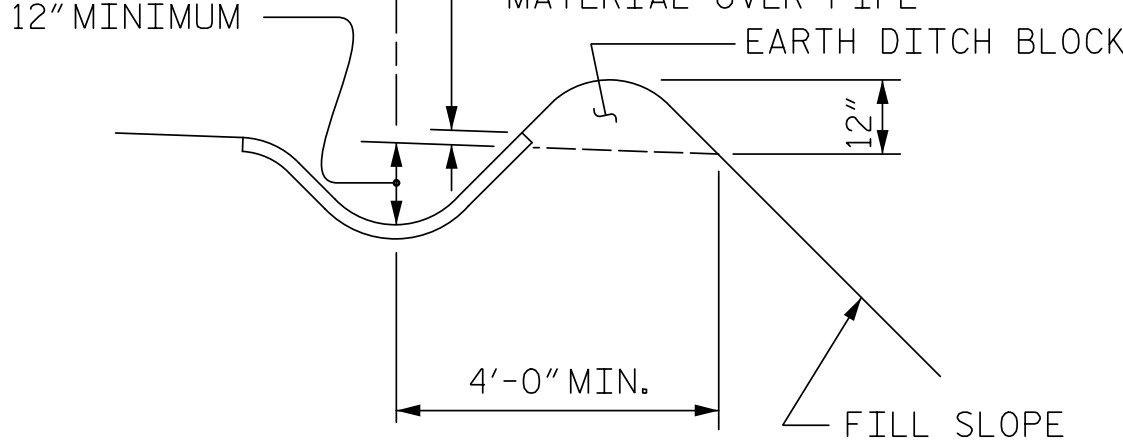


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW



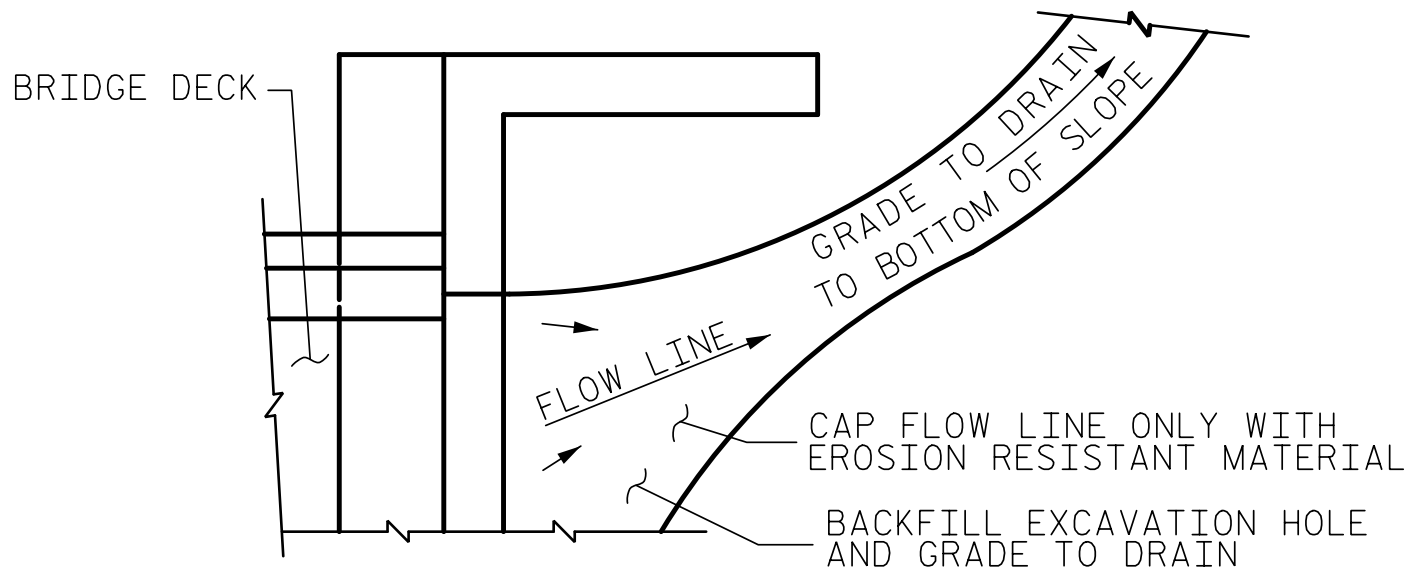
SECTION R-R



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



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

PROJECT NO. B-5833
YADKIN COUNTY
STATION: 27+76.48 -L-

SHEET 2 OF 2

11/20/2025

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH
SLAB DETAILS

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

ASSEMBLED BY :	ZCS	DATE :	11/21
CHECKED BY :	MGC	DATE :	11/21
DRAWN BY :	FCJ	11/88	REV. 6/13
CHECKED BY :	ARB	11/88	REV. 12/17
			REV. 5/18
			MAA/GM
			MAA/THC
			MAA/THC