

TIP PROJECT: B-4484

CONTRACT: C204434

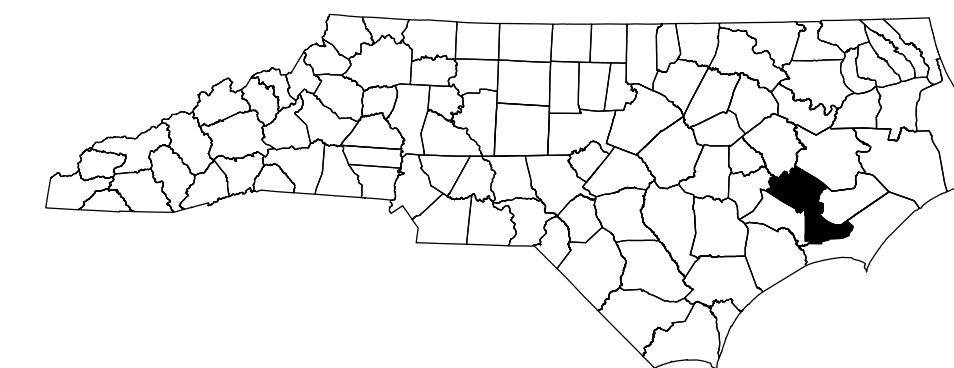
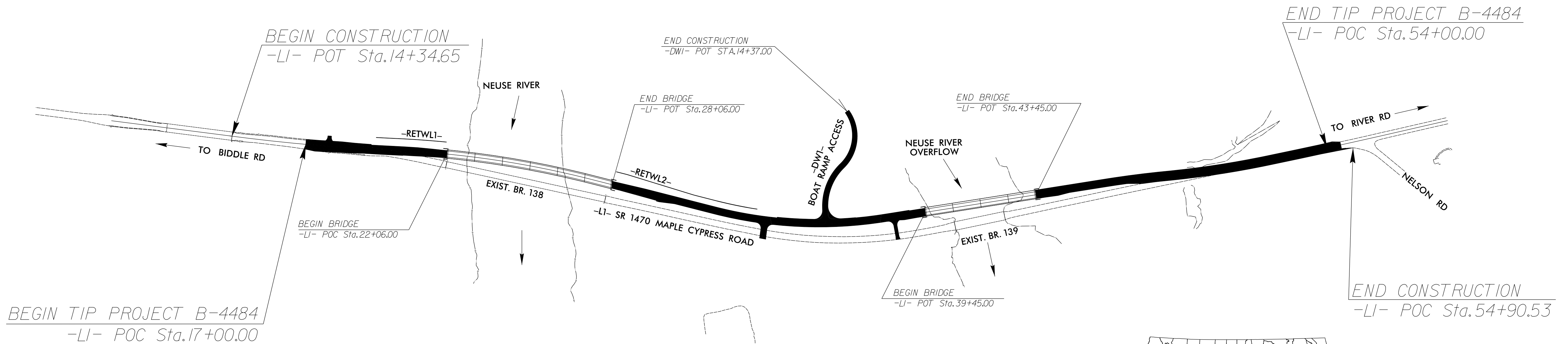
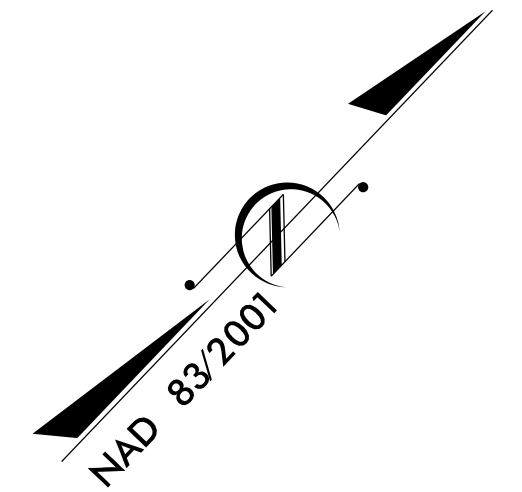
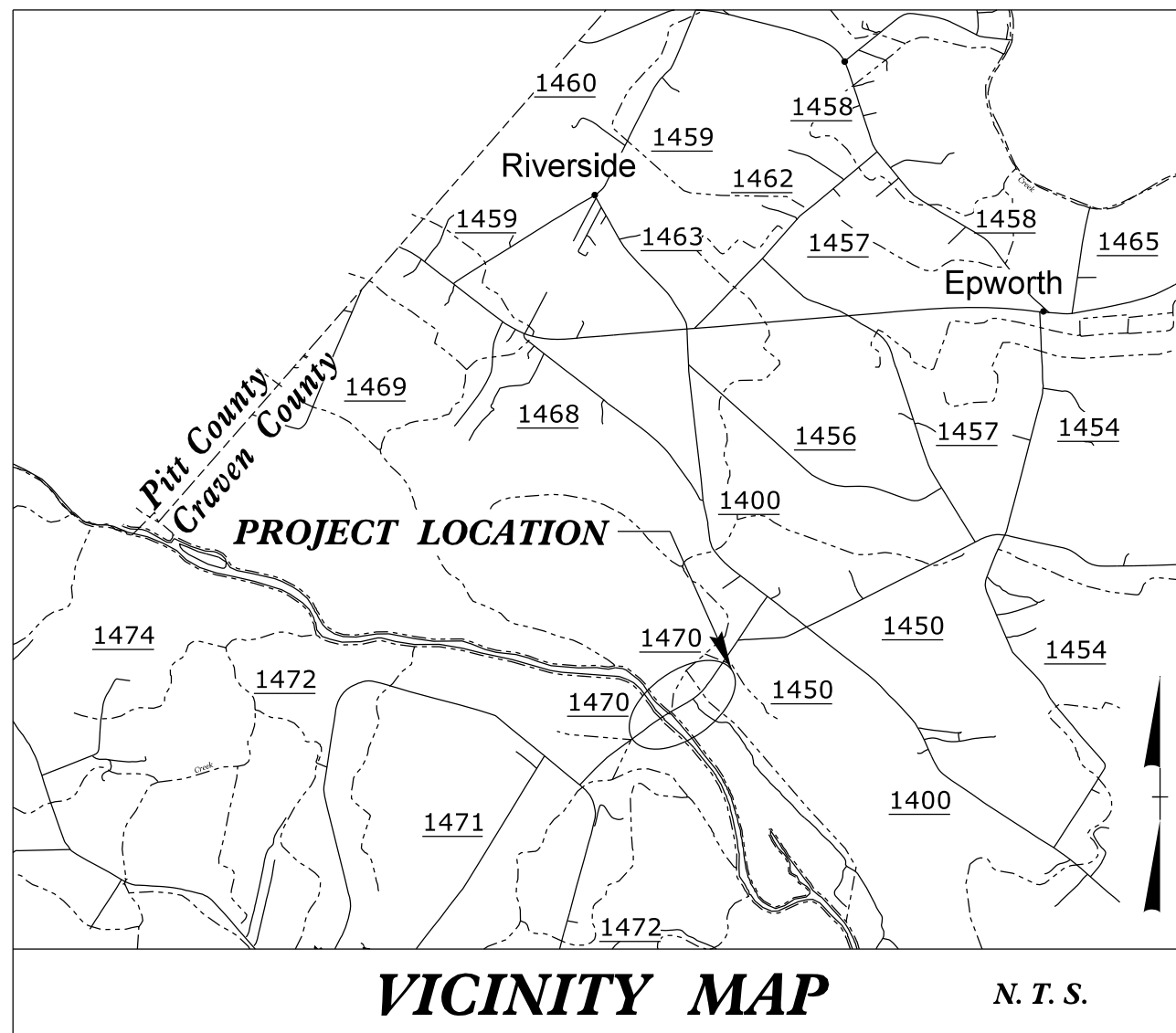
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CRAVEN COUNTY

LOCATION: REPLACE BRIDGES NO. 138 & 139 OVER NEUSE RIVER AND NEUSE RIVER OVERFLOW ON SR 1470 (MAPLE CYPRESS ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALLS, AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4484		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33723.1.2	N/A	PE	
33723.2.1	N/A	ROW, UTIL	
33723.3.1	N/A	CONST	



STRUCTURES

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DESIGN DATA

ADT 2020 = 1,884
ADT 2039 = 2,279
K = 12 %
D = 60 %
T = 10 % *
V = 60 MPH
*(TTST = 3% + DUAL = 7%)
FUNC CLASS = MAJOR
COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4484 = 0.512 MILE
LENGTH STRUCTURE TIP PROJECT B-4484 = 0.189 MILE
TOTAL LENGTH TIP PROJECT B-4484 = 0.701 MILE

PREPARED IN THE OFFICE OF:



1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
NC FIRM LICENSE No: F-0493

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 7, 2019

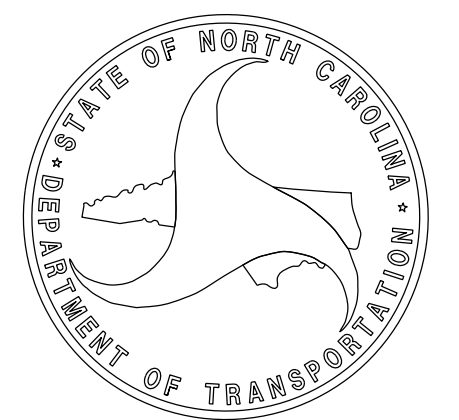
LETTING DATE:
FEBRUARY 16, 2021

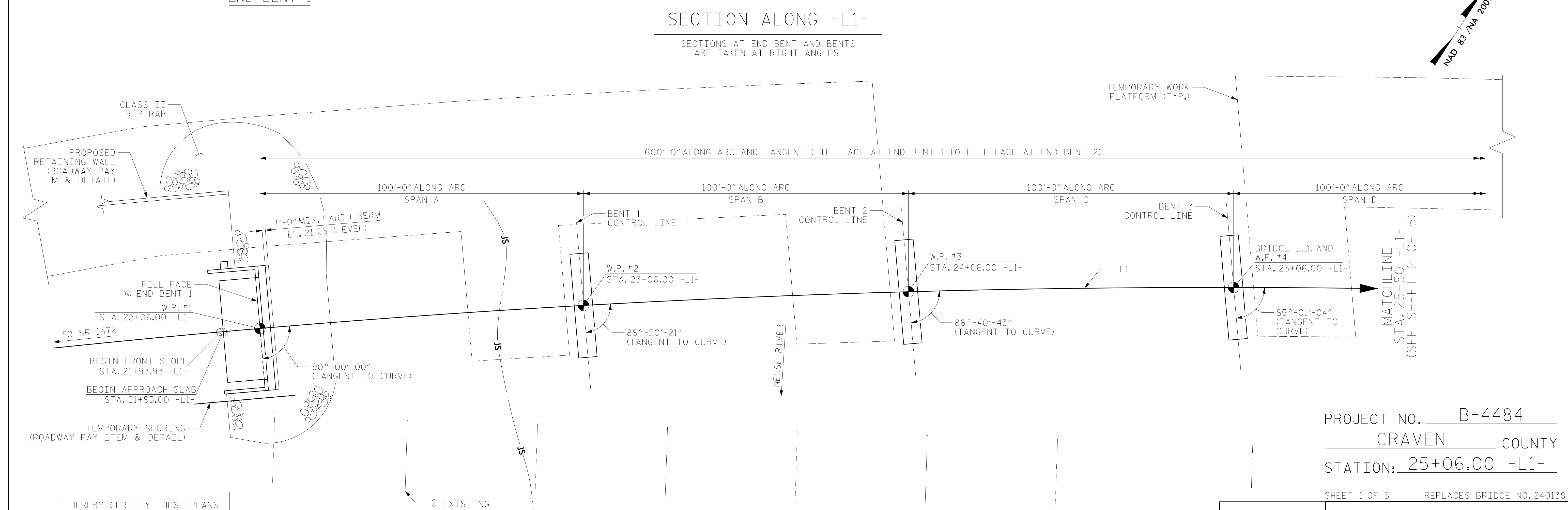
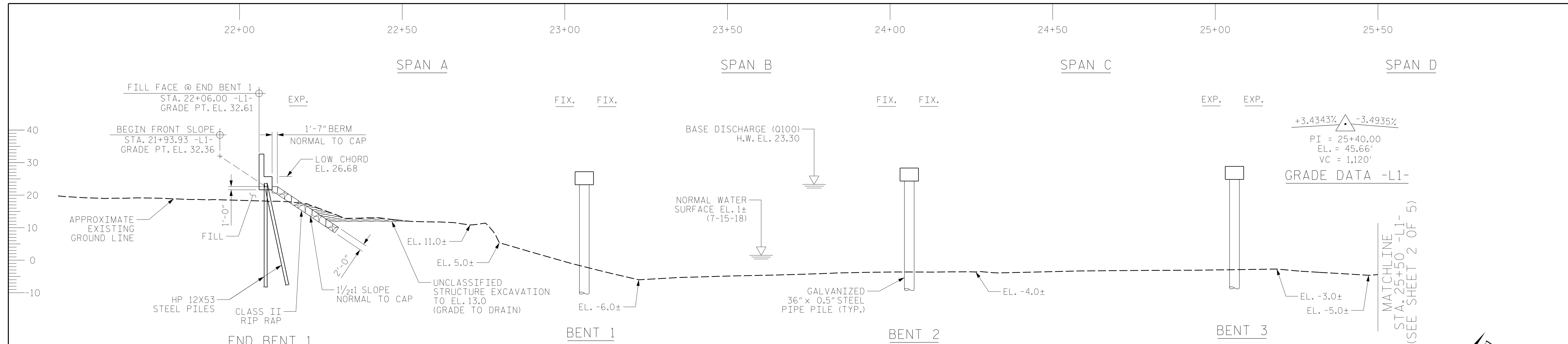
STRUCTURES ENGINEER



DocuSigned by:
Marc A. LeBlanc
SIGNATURE:

P.E. 12/8/2020





I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

DRAWN BY : TWL DATE : 04/2019
 CHECKED BY : MAL DATE : 06/2019
 DESIGN ENGINEER OF RECORD: MAL DATE : 06/2019

PLAN ALONG -L1-
PILES NOT SHOWN FOR CLARITY

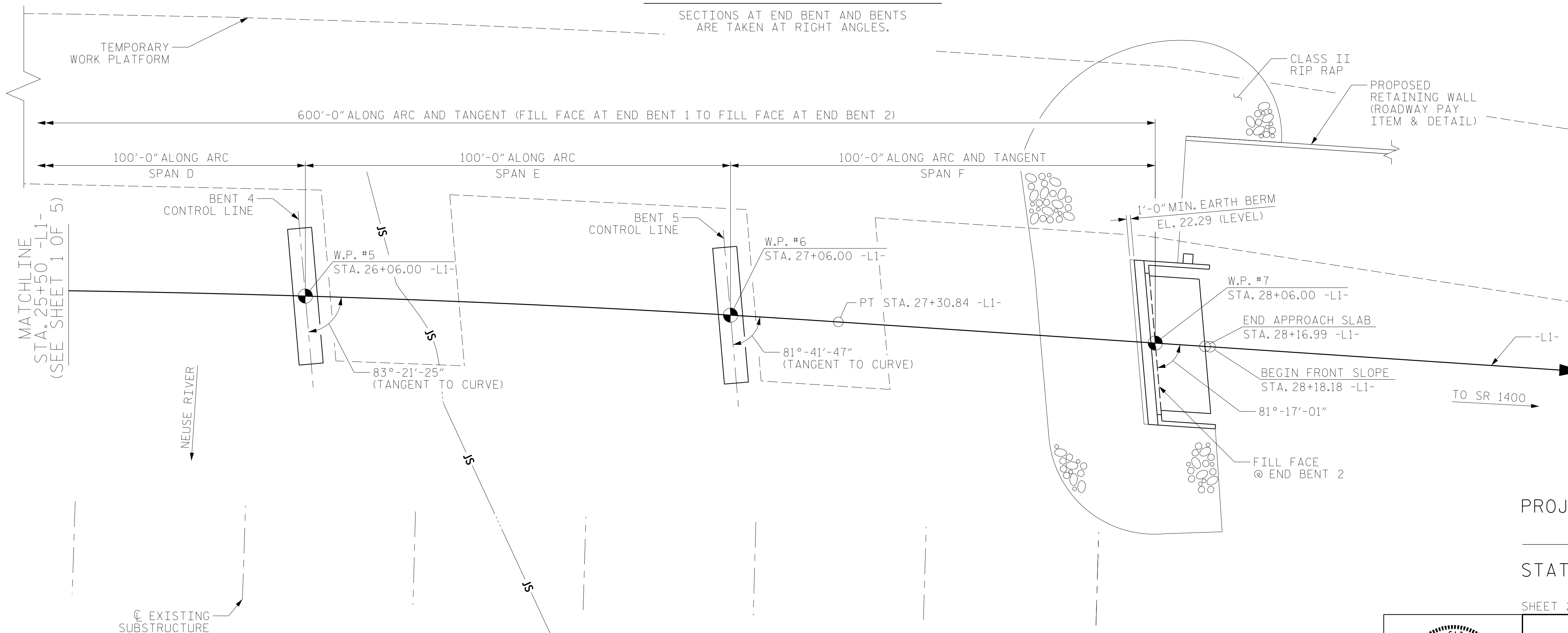
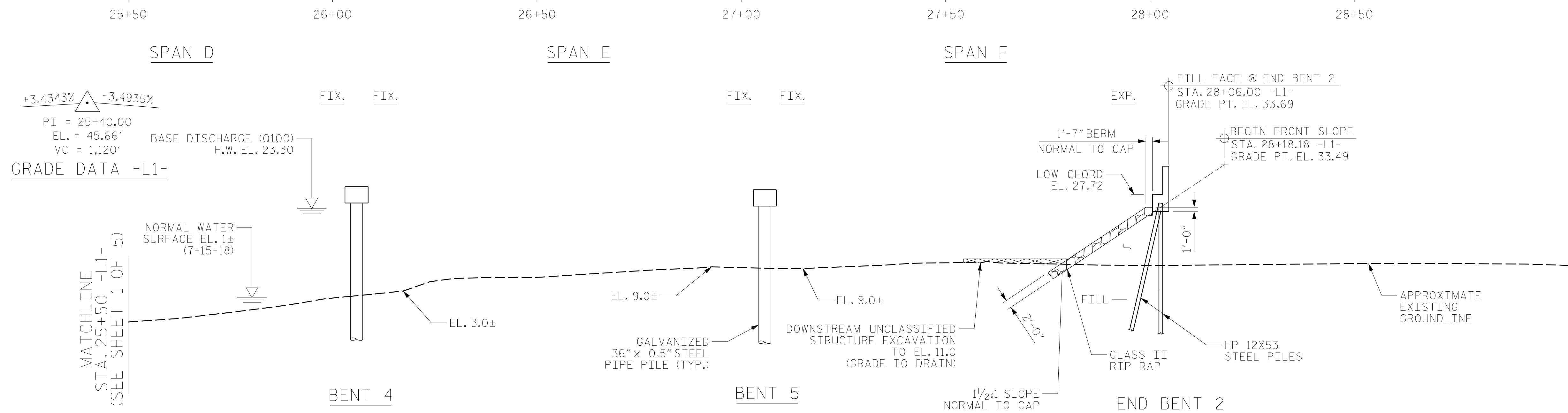
HORIZONTAL CURVE DATA -L1-
 P.I. STA. = 23+80.19
 $\Delta = 11^{\circ}-41'-14.5"$ (RT.)
 $D = 1^{\circ}-39'-38.7"$
 $L = 703.74'$
 $T = 353.10'$
 $R = 3,450.00'$
 $S.E. = 0.04$

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-
 SHEET 1 OF 5 REPLACES BRIDGE NO. 240138

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING BRIDGE OVER NEUSE RIVER ON SR 1470 BETWEEN SR 1472 AND SR 1400					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S1-1
TOTAL SHEETS					37



HORIZONTAL CURVE DATA -L1-

P.I. STA. = 23+80.19
Δ = 11°-41'-14.5" (RT.)
D = 1°-39'-38.7"
L = 703.74'
T = 353.10'
R = 3,450.00'
S.E. = 0.04

PROJECT NO. B-4484
CRAVEN COUNTY
STATION: 25+06.00 -L1-

SHEET 2 OF 5 REPLACES BRIDGE NO. 240138



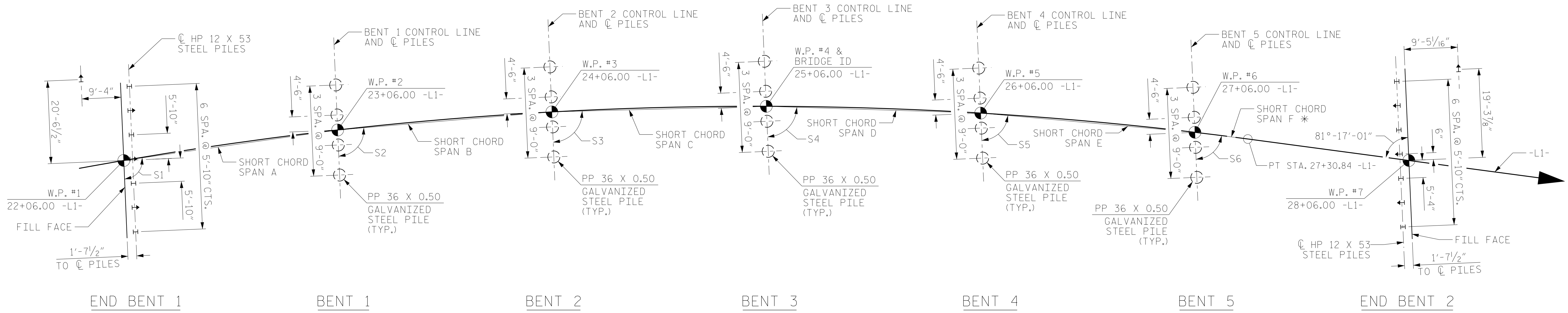
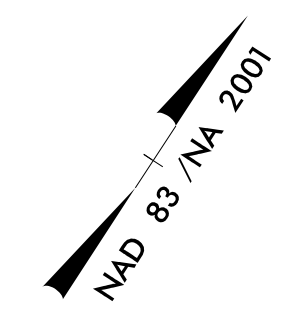
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE OVER NEUSE RIVER
ON SR 1470 BETWEEN
SR 1472 AND SR 1400

DRAWN BY : TWL	DATE : 04/2019
CHECKED BY : MAL	DATE : 06/2019
DESIGN ENGINEER OF RECORD: MAL	DATE : 06/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-2
1			3			TOTAL SHEETS
2			4			37



ANGLES TO SHORT CHORD	
S1	= 89°-10'-11"
S2	= 87°-30'-32"
S3	= 85°-50'-53"
S4	= 84°-11'-15"
S5	= 82°-31'-36"
S6	= 81°-29'-24"

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES SHOWN TO THE CENTERLINE OF PILES AT BOTTOM OF CAP ELEVATION. BRACED PILES (↑) ARE BATTERED AT 3:12 * SEE LONG CHORD LAYOUT

NOTES

- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILES AT END BENT NO.1 AND END BENT NO.2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 105 TONS PER PILE.
- PILES AT BENT NO.1, BENT NO.2, BENT NO.3, BENT NO.4, AND BENT NO.5 ARE DESIGNED FOR A FACTORED RESISTANCE OF 300 TONS PER PILE.
- DRIVE PILES AT END BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE.
- DRIVE PILES AT END BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 140 TONS PER PILE.
- DRIVE PILES AT BENT NO.1 TO A REQUIRED DRIVING RESISTANCE OF 410 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- DRIVE PILES AT BENT NO.2 TO A REQUIRED DRIVING RESISTANCE OF 405 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- DRIVE PILES AT BENT NO.3 TO A REQUIRED DRIVING RESISTANCE OF 400 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- DRIVE PILES AT BENT NO.4 TO A REQUIRED DRIVING RESISTANCE OF 425 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- DRIVE PILES AT BENT NO.5 TO A REQUIRED DRIVING RESISTANCE OF 400 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR SCOUR.
- INSTALL PILES AT BENT NO.1 TO A TIP ELEVATION NO HIGHER THAN -41.0 FT.
- INSTALL PILES AT BENT NO.2 TO A TIP ELEVATION NO HIGHER THAN -50.0 FT.
- INSTALL PILES AT BENT NO.3 TO A TIP ELEVATION NO HIGHER THAN -41.0 FT.
- INSTALL PILES AT BENT NO.4 TO A TIP ELEVATION NO HIGHER THAN -41.0 FT.
- INSTALL PILES AT BENT NO.5 TO A TIP ELEVATION NO HIGHER THAN -22.0 FT.

- IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 164 TO 186 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO.1, BENT NO.2, BENT NO.3, BENT NO.4, AND BENT NO.5. THIS ESTIMATED ENERGY RANGES DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
- TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT END BENT NO.1 AND END BENT NO.2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT BENT NO.1, BENT NO.2, BENT NO.3, BENT NO.4, AND BENT NO.5. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- STEEL PIPE PILE CONICAL POINTS ARE REQUIRED FOR STEEL PIPE PILES AT BENT NO.1, BENT NO.2, BENT NO.3, BENT NO.4, AND BENT NO.5. (USE "INSIDE FIT" PIPE PILE CONICAL POINTS, I.E., CONICAL POINTS WITH AN OUTSIDE DIAMETER EQUAL TO THE PIPE PILE DIAMETER.) FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- THE SCOUR CRITICAL ELEVATION FOR BENT NO.1, BENT NO.3, AND BENT NO.4 IS ELEVATION -11 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- THE SCOUR CRITICAL ELEVATION FOR BENT NO.2 IS ELEVATION -14 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- THE SCOUR CRITICAL ELEVATION FOR BENT NO.5 IS ELEVATION 4 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS FOR THE SETTLEMENT GAUGES REQUIRED AT END BENT NO.1 AND END BENT 2.
- OBSERVE A 3 MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT TO WITHIN 2 FT OF FINISHED GRADE BEFORE BEGINNING END BENT CONSTRUCTION AT END BENT NO.1 AND END BENT NO.2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
- PIPE PILE CONICAL POINTS ARE REQUIRED FOR THE FIRST PRODUCTION STEEL PIPE PILE TO BE TESTED WITH PDA AT EACH INTERIOR BENT. THE ENGINEER WILL DETERMINE THE NEED FOR PIPE PILE CONICAL POINTS AFTER DRIVING TEST PILES OR A FEW INITIAL PRODUCTION PILES. FOR STEEL PIPE PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- PILE CUSHIONS ARE REQUIRED TO DRIVE STEEL PIPE PILES WITHIN THE LIMITS OF THE RIVER. REFER TO PROJECT SPECIAL PROVISIONS FOR MORE INFORMATION.

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

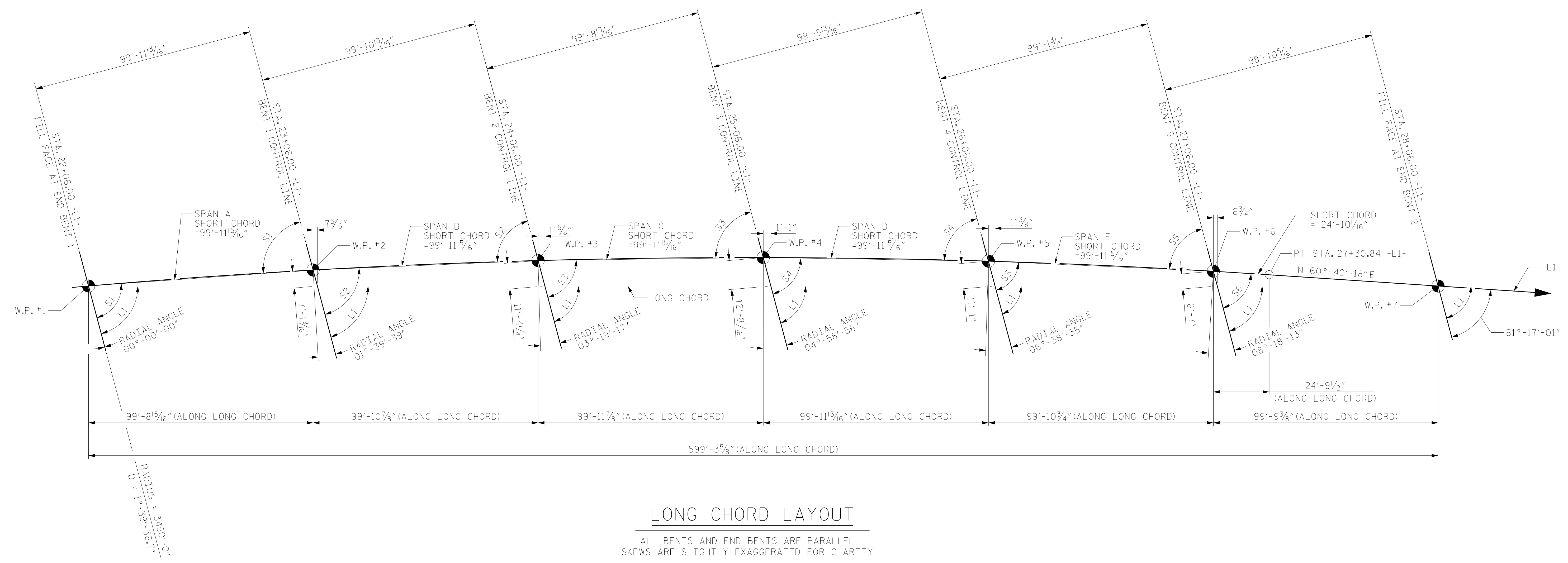
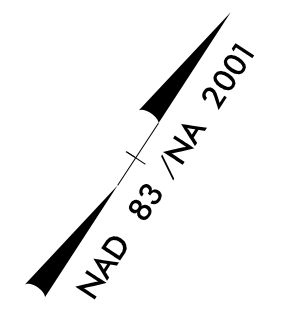
SHEET 3 OF 5 REPLACES BRIDGE NO. 240138



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING BRIDGE OVER NEUSE RIVER ON SR 1470 BETWEEN SR 1472 AND SR 1400					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S1-3
					TOTAL SHEETS 37

DRAWN BY :	MRA	DATE :	04/2019
CHECKED BY :	JMR	DATE :	06/2019
DESIGN ENGINEER OF RECORD:	MAL	DATE :	06/2019

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LONG CHORD LAYOUT

ALL BENTS AND END BENTS ARE PARALLEL
 SKEWS ARE SLIGHTLY EXAGGERATED FOR CLARITY

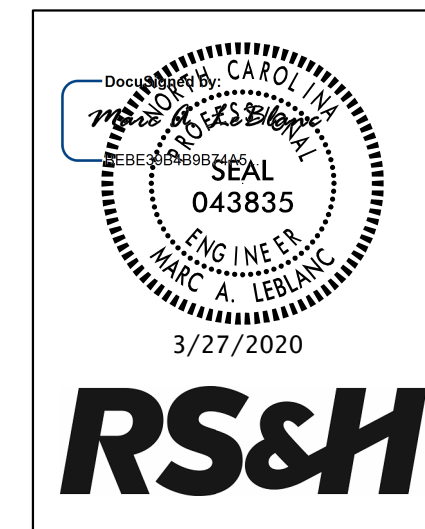
PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 4 OF 5 REPLACES BRIDGE NO. 240138

ANGLES	
LONG CHORD	SHORT CHORD
L1 = 85°-05'-45"	S1 = 89°-10'-11"
	S2 = 87°-30'-32"
	S3 = 85°-50'-53"
	S4 = 84°-11'-15"
	S5 = 82°-31'-36"
	S6 = 81°-29'-24"

HORIZONTAL CURVE DATA -L1-

P.I. STA. = 23+80.19
 Δ = 11°-41'-14.5" (RT)
 D = 1°-39'-38.7"
 L = 703.74'
 T = 353.10'
 R = 3,450.00'
 S.E. = 0.04



RS&H Architects-Engineers-Planners, Inc.
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 919-926-4100 FAX 919-846-9080
 www.rsandh.com
 North Carolina License No. 50737-F-0403-C-28

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

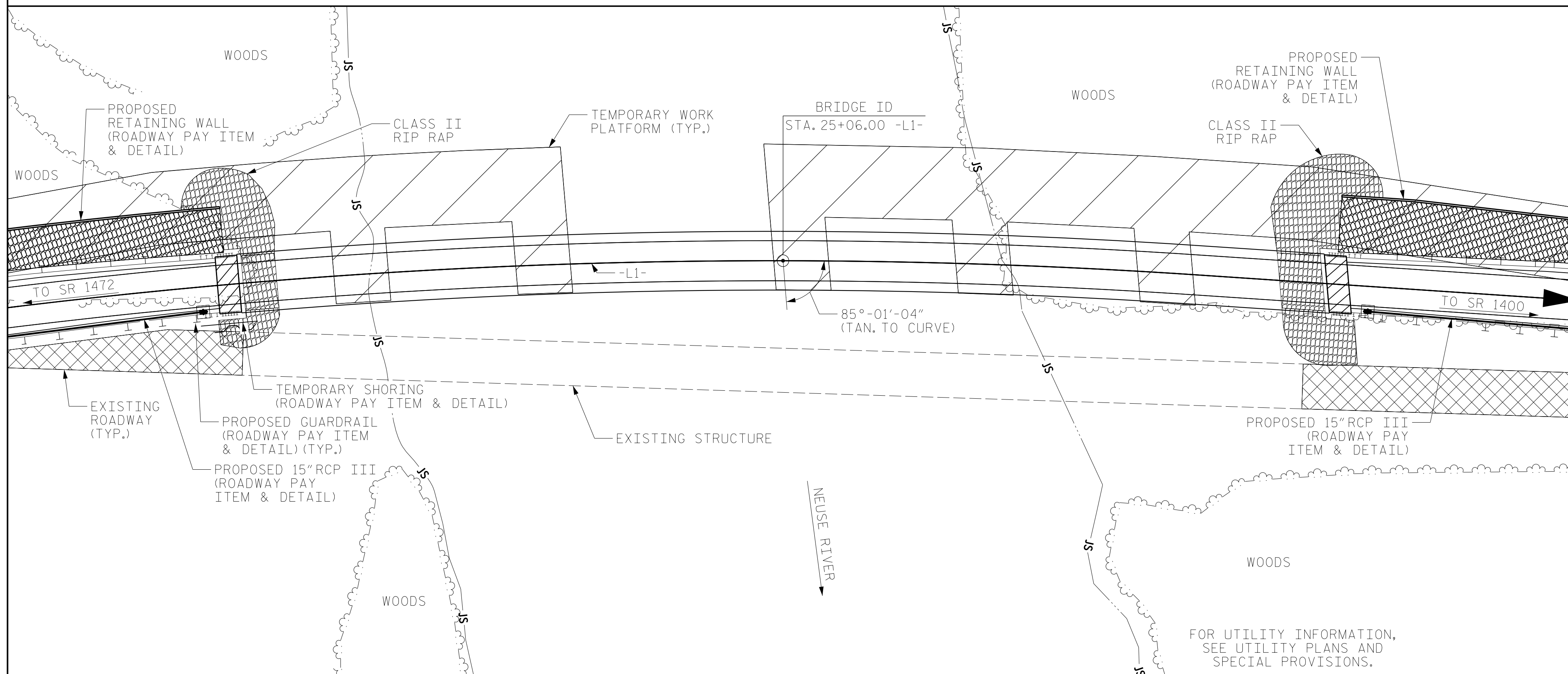
GENERAL DRAWING
 BRIDGE OVER NEUSE RIVER
 ON SR 1470 BETWEEN
 SR 1472 AND SR 1400

DRAWN BY : TWL DATE : .07/2018
 CHECKED BY : JMR DATE : .06/2019
 DESIGN ENGINEER OF RECORD: MAL DATE : .06/2019

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-4	
1			3			TOTAL SHEETS	
2			4			37	

BENCHMARK - NCDOT GPS (B4484-1), 29' RT. OF -L1- STA. 19+61.00, EL. 24.22



LOCATION SKETCH

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 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.
 PRESTRESSED CONCRETE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
 REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
 NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
 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 25+06.00 -L1-."
 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.
 AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF 1 @ 40'-3", 5 @ 40'-0", 1 @ 60'-0", 6 @ 40'-0", 1 @ 40'-3" SPANS WITH A REINFORCED CONCRETE DECK ON STEEL I-BEAMS, WITH A CLEAR ROADWAY OF 22'-0" ON REINFORCED CONCRETE CAPS ON TIMBER PILES AND STEEL CRUTCH BENTS LOCATED APPROXIMATELY 60'-0" DOWNSTREAM FROM PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, THE LOAD LIMIT MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
 THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
 THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES."
 GALVANIZE THE FULL LENGTH OF EACH INTERIOR BENT PILE. PAYMENT FOR GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.
 THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN, AND AFTERWARDS REMOVE THE TEMPORARY ACCESS AT STATION 25+06.00 -L1- FOR USE DURING CONSTRUCTION OF THE PROPOSED BRIDGE.
 FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS AT STATION 25+06.00 -L1-, SEE SPECIAL PROVISIONS.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
 FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.
 THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 114 FT RIGHT AND 11 FT LEFT OF CENTERLINE ROADWAY 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.
 FOR PAYMENT OF TOP PIPE PILE PLATES, SEE "DRIVE STEEL PIPE PILES WITH PILE CUSHION" SPECIAL PROVISION.
 FOR REMOVAL OF EXISTING STRUCTURE AT STATION 25+06.00 -L1-, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIALS

	CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS AT STA. 25+06.00 -L1-	REMOVAL OF EXISTING STRUCTURE @ STA. 25+06.00 -L1-	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION @ STA. 25+06.00 -L1-	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS	PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	
	LUMP SUM	LUMP SUM	LUMP SUM	EACH	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	EACH
SUPERSTRUCTURE	---	---	---	---	---	19,277	16,733	---	LUMP SUM	---	24	2,381.0	---
END BENT 1	---	---	---	---	---	---	---	40.9	---	7,020	---	---	8
BENT 1	---	---	---	---	---	---	---	31.3	---	3,299	---	---	---
BENT 2	---	---	---	---	---	---	---	31.3	---	3,299	---	---	---
BENT 3	---	---	---	---	---	---	---	31.3	---	3,299	---	---	---
BENT 4	---	---	---	---	---	---	---	31.4	---	3,299	---	---	---
BENT 5	---	---	---	---	---	---	---	31.5	---	3,299	---	---	---
END BENT 2	---	---	---	---	---	---	---	41.4	---	7,050	---	---	8
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	7	LUMP SUM	19,277	16,733	239.1	LUMP SUM	30,565	24	2,381.0	16

	PILE DRIVING EQUIPMENT SETUP FOR PP 36 X 0.50 GALVANIZED STEEL PILE	HP 12X53 STEEL PILES	PP 36 X 0.50 GALVANIZED STEEL PILES	STEEL PILE POINTS	PILE REDRIVES	VERTICAL CONCRETE BARRIER	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	FOAM JOINT SEALS	TOP PIPE PILE PLATES		
	EACH	NO.	LIN. FT.	NO.	LIN. FT.	EACH	EACH	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	EACH	
SUPERSTRUCTURE	---	---	---	---	---	---	---	1,195.3	---	LUMP SUM	LUMP SUM	---	
END BENT 1	---	8	520	---	---	---	5	425	470	---	---	---	
BENT 1	4	---	---	4	400	4	2	---	---	---	---	4	
BENT 2	4	---	---	4	420	4	2	---	---	---	---	4	
BENT 3	4	---	---	4	420	4	2	---	---	---	---	4	
BENT 4	4	---	---	4	400	4	2	---	---	---	---	4	
BENT 5	4	---	---	4	420	4	2	---	---	---	---	4	
END BENT 2	---	8	520	---	---	---	5	555	615	---	---	---	
TOTAL	20	16	1,040	20	2,060	20	20	1,195.3	980	1,085	LUMP SUM	LUMP SUM	20

HYDRAULIC DATA

DESIGN DISCHARGE	= 19,400 CFS
FREQUENCY OF DESIGN DISCHARGE	= 2 YRS
DESIGN HIGH WATER ELEVATION	= 13.2
DRAINAGE AREA	= 3,950 SQ. MI.
BASE DISCHARGE (Q100)	= 70,000 CFS
BASE HIGH WATER ELEVATION	= 23.3

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 22,400 CFS
FREQUENCY OF OVERTOPPING	= 2+ YRS
* OVERTOPPING ELEVATION	= 13.8
* SAG @ STA. 7+20.00 -L1- (280' BACKSTATION FROM 10+00)	

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 5 OF 5 REPLACES BRIDGE NO. 240138



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 BRIDGE OVER NEUSE RIVER
 ON SR 1470 BETWEEN
 SR 1472 AND SR 1400

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-5
1			3			TOTAL SHEETS
2			4			37

RS&H Architects-Engineers-Planners, Inc.
 8521 Six Forks Road, Suite 400
 919-926-4100 FAX 919-846-9080
 www.rsandh.com
 North Carolina License No. 50737-0403-1-C28

DRAWN BY : NSC DATE : .05/2019
 CHECKED BY : MAL DATE : .06/2019
 DESIGN ENGINEER OF RECORD: MAL DATE : .06/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOAD FACTORS:

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

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	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								
						LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.03	--	1.75	0.78	1.28	E	EL	49.13	0.88	1.62	A	I	38.61	0.80	0.73	1.03	B	I	49.13		
	HL-93 (OPERATING)	N/A		1.67	--	1.35	0.78	1.67	E	EL	49.13	0.88	3.01	A	I	28.78	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	2	1.44	51.840	1.75	0.78	1.79	E	EL	49.13	0.88	2.86	B	I	59.09	0.80	0.73	1.44	B	I	49.13		
	HS-20 (OPERATING)	36.000		2.32	83.520	1.35	0.78	2.32	E	EL	49.13	0.88	3.86	A	I	28.78	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.41	46.035	1.40	0.78	5.32	E	EL	49.13	0.88	9.20	A	I	28.78	0.80	0.73	3.41	B	I	49.13	
		SNGARBS2	20.000		2.47	49.400	1.40	0.78	3.85	E	EL	49.13	0.88	6.46	A	I	28.78	0.80	0.73	2.47	B	I	49.13	
		SNAGRIS2	22.000		2.31	50.820	1.40	0.78	3.60	E	EL	49.13	0.88	5.97	A	I	28.78	0.80	0.73	2.31	B	I	49.13	
		SNCOTTS3	27.250		1.70	46.325	1.40	0.78	2.65	E	EL	49.13	0.88	4.48	A	I	28.78	0.80	0.73	1.70	B	I	49.13	
		SNAGGRS4	34.925		1.39	48.546	1.40	0.78	2.17	E	EL	49.13	0.88	3.67	A	I	28.78	0.80	0.73	1.39	B	I	49.13	
		SNS5A	35.550		1.36	48.348	1.40	0.78	2.12	E	EL	49.13	0.88	3.71	A	I	28.78	0.80	0.73	1.36	B	I	49.13	
		SNS6A	39.950		1.24	49.538	1.40	0.78	1.93	E	EL	49.13	0.88	3.36	A	I	28.78	0.80	0.73	1.24	B	I	49.13	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.50	49.500	1.40	0.78	2.35	E	EL	49.13	0.88	4.05	A	I	28.78	0.80	0.73	1.50	B	I	49.13	
		TNT4A	33.075		1.51	49.943	1.40	0.78	2.35	E	EL	49.13	0.88	3.94	A	I	28.78	0.80	0.73	1.51	B	I	49.13	
		TNT6A	41.600		1.22	50.752	1.40	0.78	1.91	E	EL	49.13	0.88	3.51	A	I	28.78	0.80	0.73	1.22	B	I	49.13	
		TNT7A	42.000		1.22	51.240	1.40	0.78	1.91	E	EL	49.13	0.88	3.44	A	I	28.78	0.80	0.73	1.22	B	I	49.13	
		TNT7B	42.000		1.25	52.500	1.40	0.78	1.95	E	EL	49.13	0.88	3.22	A	I	28.78	0.80	0.73	1.25	B	I	49.13	
		TNAGRIT4	43.000		1.20	51.600	1.40	0.78	1.87	E	EL	49.13	0.88	3.11	A	I	28.78	0.80	0.73	1.20	B	I	49.13	
		TNAGT5A	45.000		1.14	51.300	1.40	0.78	1.77	E	EL	49.13	0.88	3.08	C	I	59.09	0.80	0.73	1.14	B	I	49.13	
TNAGT5B	45.000	3	1.13	50.850	1.40	0.78	1.76	E	EL	49.13	0.88	2.95	A	I	28.78	0.80	0.73	1.13	B	I	49.13			

NOTES:
 1. MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
 2. ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:
 1. MINIMUM RATING FACTOR FOR EACH VEHICLE IS EQUAL FOR SPANS B, C, D, AND E.
 2. TRANSFORMING ALL PRESTRESSING TENDONS.
 3. GIRDERS DESIGNED AS SIMPLE SPANS FOR FLEXURE.
 4. GIRDERS DESIGNED AS SIMPLE-MADE-CONTINUOUS (FOR LIVE AND SUPERIMPOSED DEAD LOAD) FOR SHEAR.
 5. FACTORED SHEAR AND MOMENT CAPACITIES PROVIDED FOR STRENGTH I LIMIT STATE. SECTION PROPERTIES PROVIDED FOR SERVICE III LIMIT STATE.
 6. GIRDERS LOAD RATED AS SIMPLE SPANS.

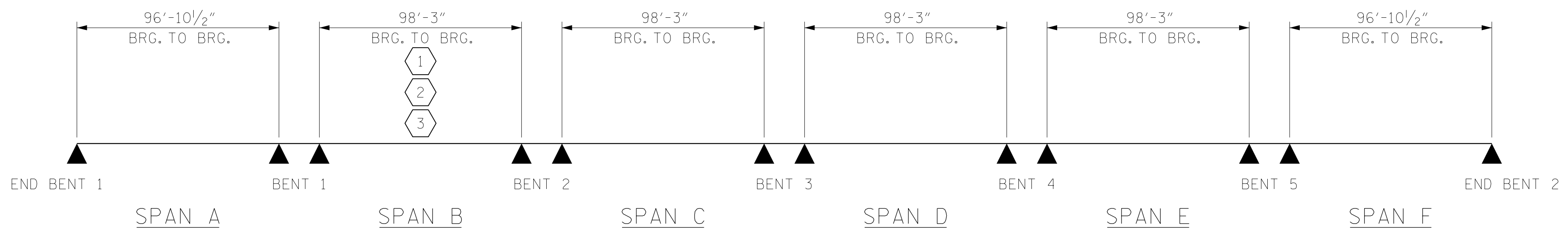
#	CONTROLLING LOAD RATING
1	DESIGN LOAD RATING (HL-93)
2	DESIGN LOAD RATING (HS-20)
3	LEGAL LOAD RATING **
** SEE CHART FOR VEHICLE TYPE	
GIRDER LOCATION	
I - INTERIOR GIRDER EL - EXTERIOR LEFT GIRDER ER - EXTERIOR RIGHT GIRDER	

		CL BRG.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	CL BRG.
EXTERIOR LEFT GIRDER (EL) SPAN E	ϕV_n (KIPS)	613	561	536	224	194	196	194	224	536	561	613
	ϕM_n (KIP-FT)	---	7101.6	8360.1	8513.5	8519.2	8521.4	8519.2	8513.5	8360.1	7101.6	---
INTERIOR GIRDER (I) SPAN A	ϕV_n (KIPS)	614	564	541	285	198	207	202	289	542	564	614
	ϕM_n (KIP-FT)	---	7085.9	8487.3	8669.8	8669.8	8669.8	8669.8	8669.8	8487.3	7085.9	---

SPAN B - INTERIOR			
	UNITS	NON-COMPOSITE	COMPOSITE
HEIGHT	IN	54.0	62.5
AREA	IN ²	829.4	1524.5
I _{xx}	IN ⁴	270652	716403
Y _{cg}	IN	23.95	39.77
SELF WT.	PLF	822	1778
EFF. WIDTH	IN	---	107.9

SECTION PROPERTIES PROVIDED AT MIDSPAN

PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-



LRFR SUMMARY

DRAWN BY : NSC DATE : 06/2019
 CHECKED BY : PDS DATE : 06/2019
 DESIGN ENGINEER OF RECORD: PDS DATE : 06/2019

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Professional Engineer Seal for Marc A. LeBlanc, No. 043835, State of North Carolina, dated 3/27/2020.
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 RS&H Architects-Engineers-Planners, Inc.
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 919-926-4100 FAX 919-846-9080
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-6
1			3			TOTAL SHEETS
2			4			37

NOTES

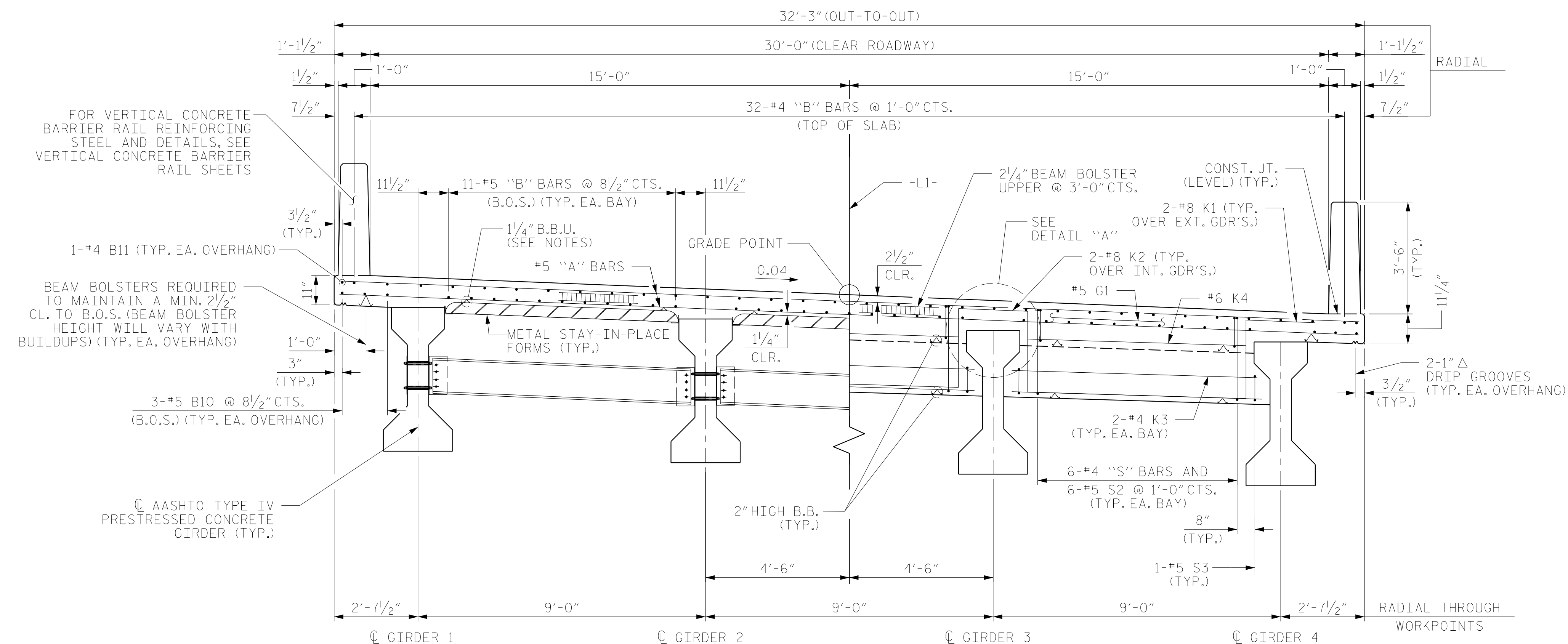
PROVIDE 1/4" HIGH BEAM BOLSTER UPPERS AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK @ 4'-0" CTS. WITH A HEIGHT TO PROVIDE 2 1/2" CLEAR DISTANCE ABOVE FORMS.

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

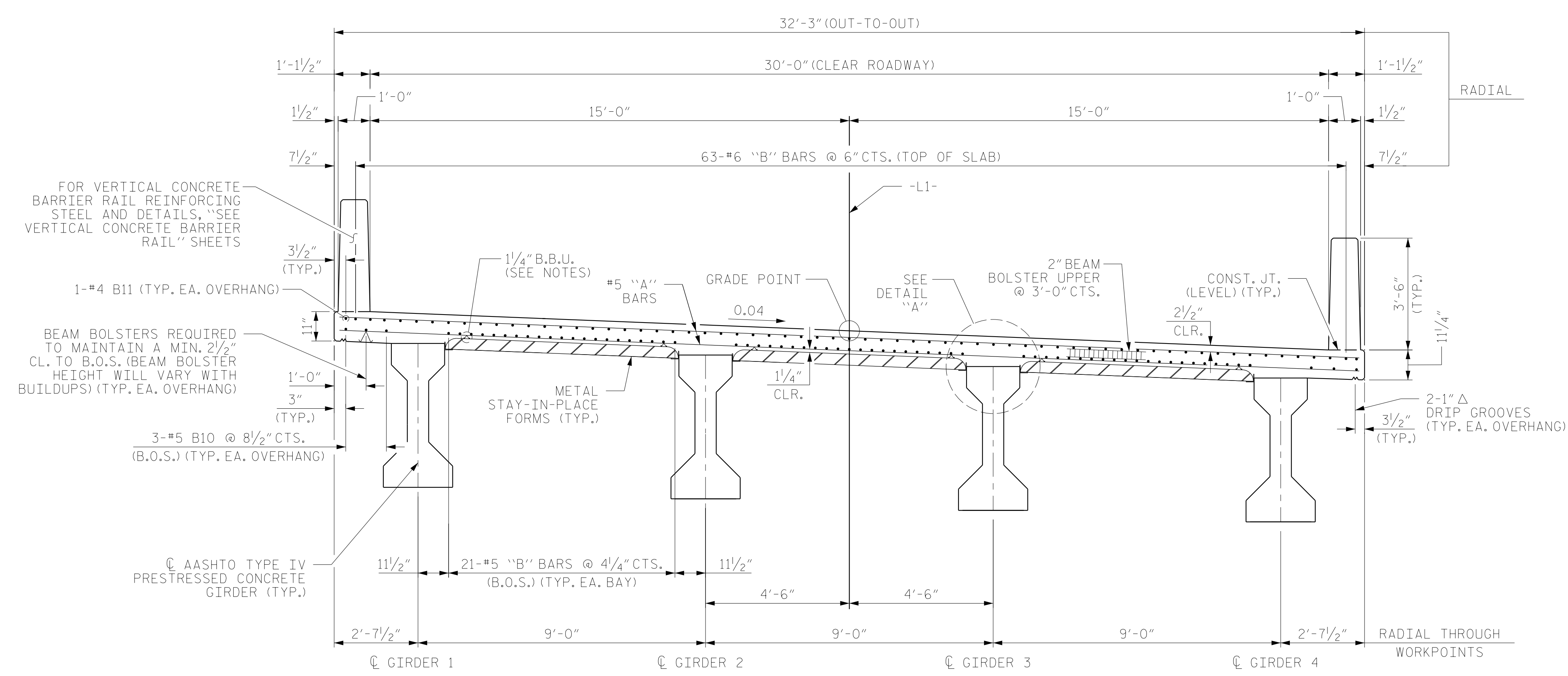
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

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

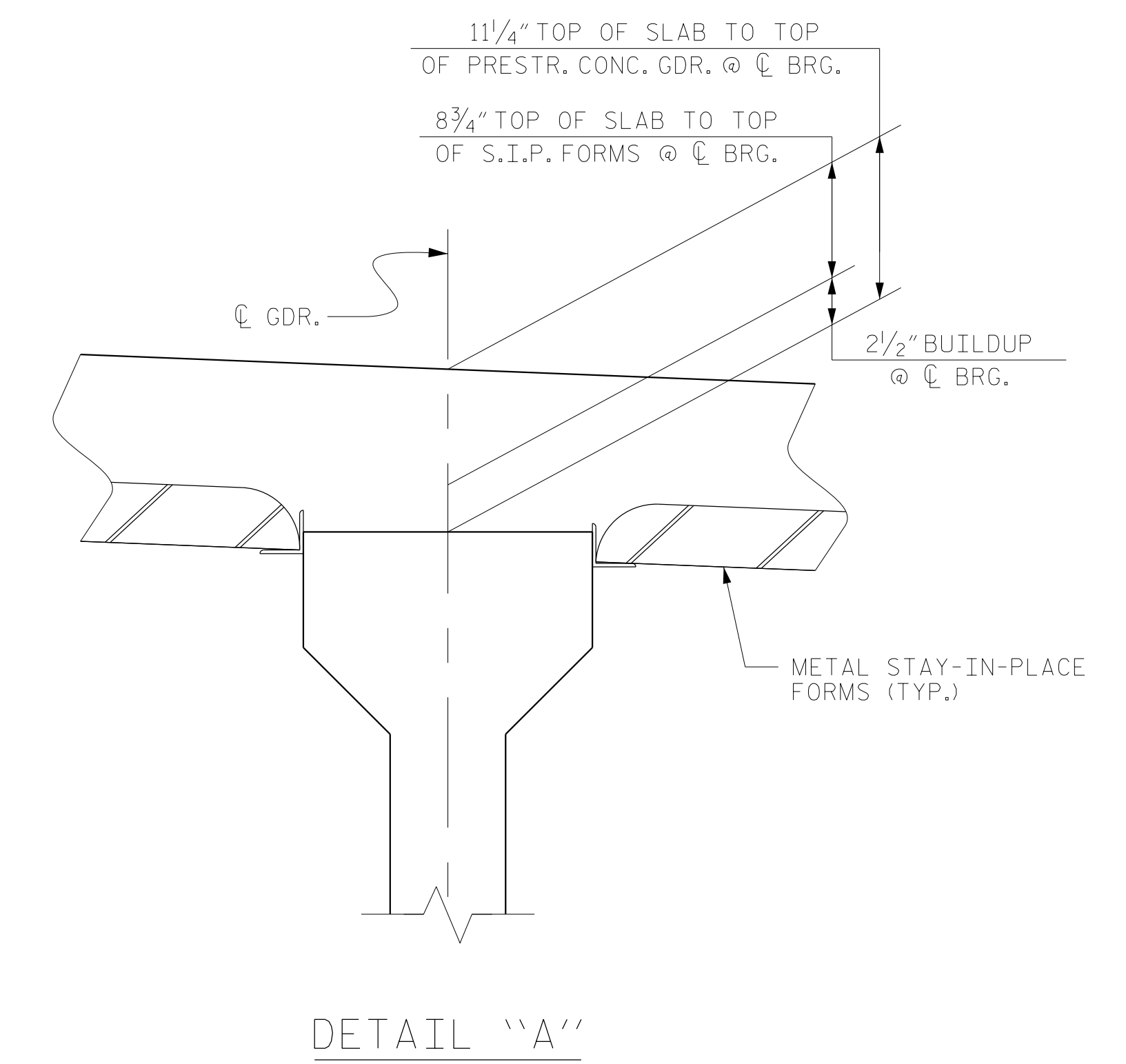
B.O.S. = BOTTOM OF SLAB



HALF SECTION AT INTERMEDIATE DIAPHRAGM HALF SECTION AT END BENT DIAPHRAGMS AND BENT 3 DIAPHRAGM



TYPICAL SECTION AT BENT 1, 2, 4, AND 5 (LINK SLAB)



PROJECT NO. B-4484
CRAVEN COUNTY
STATION: 25+06.00 -L1-

SHEET 1 OF 2 REPLACES BRIDGE NO. 240138

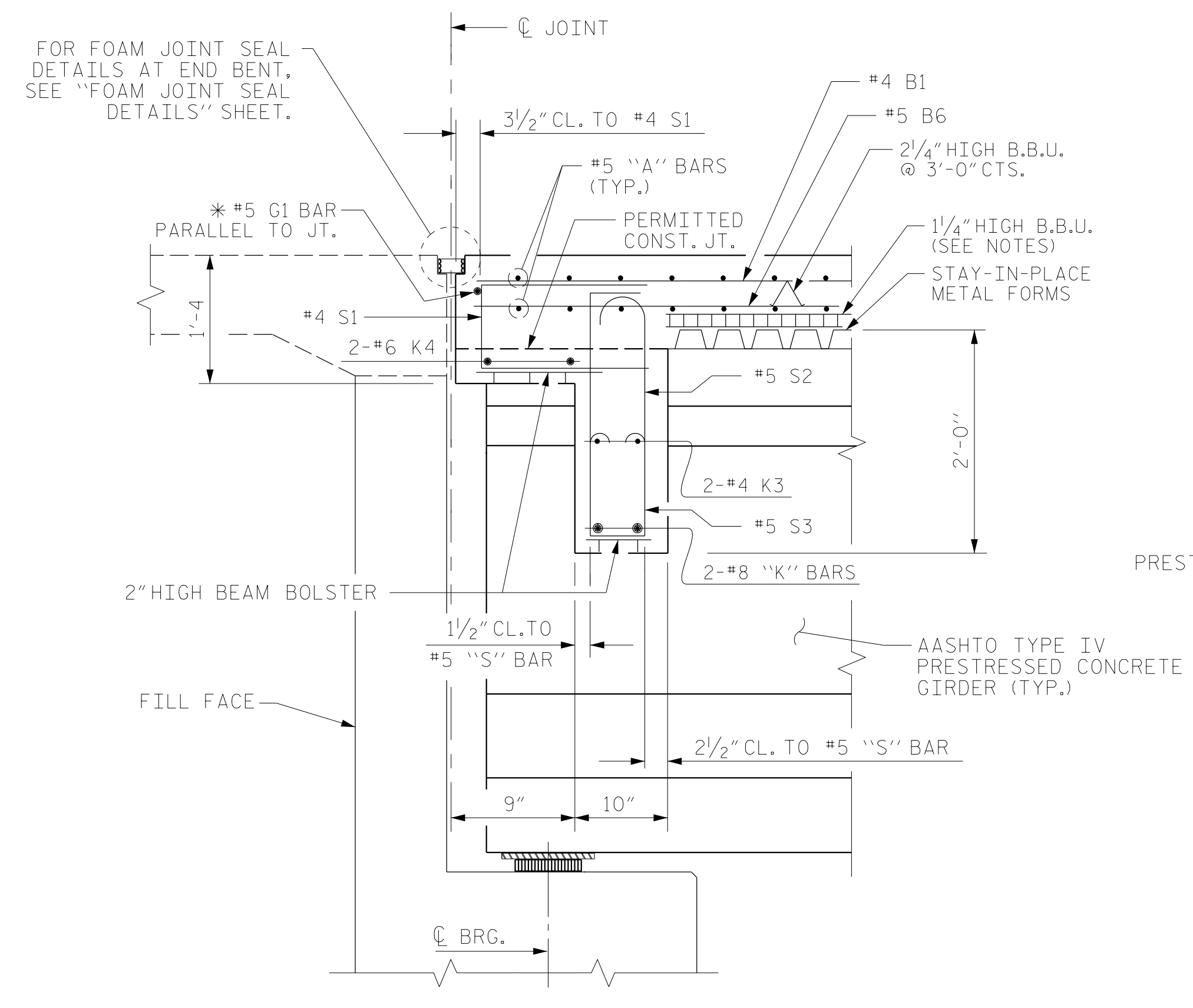


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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTION					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S1-7
TOTAL SHEETS					37

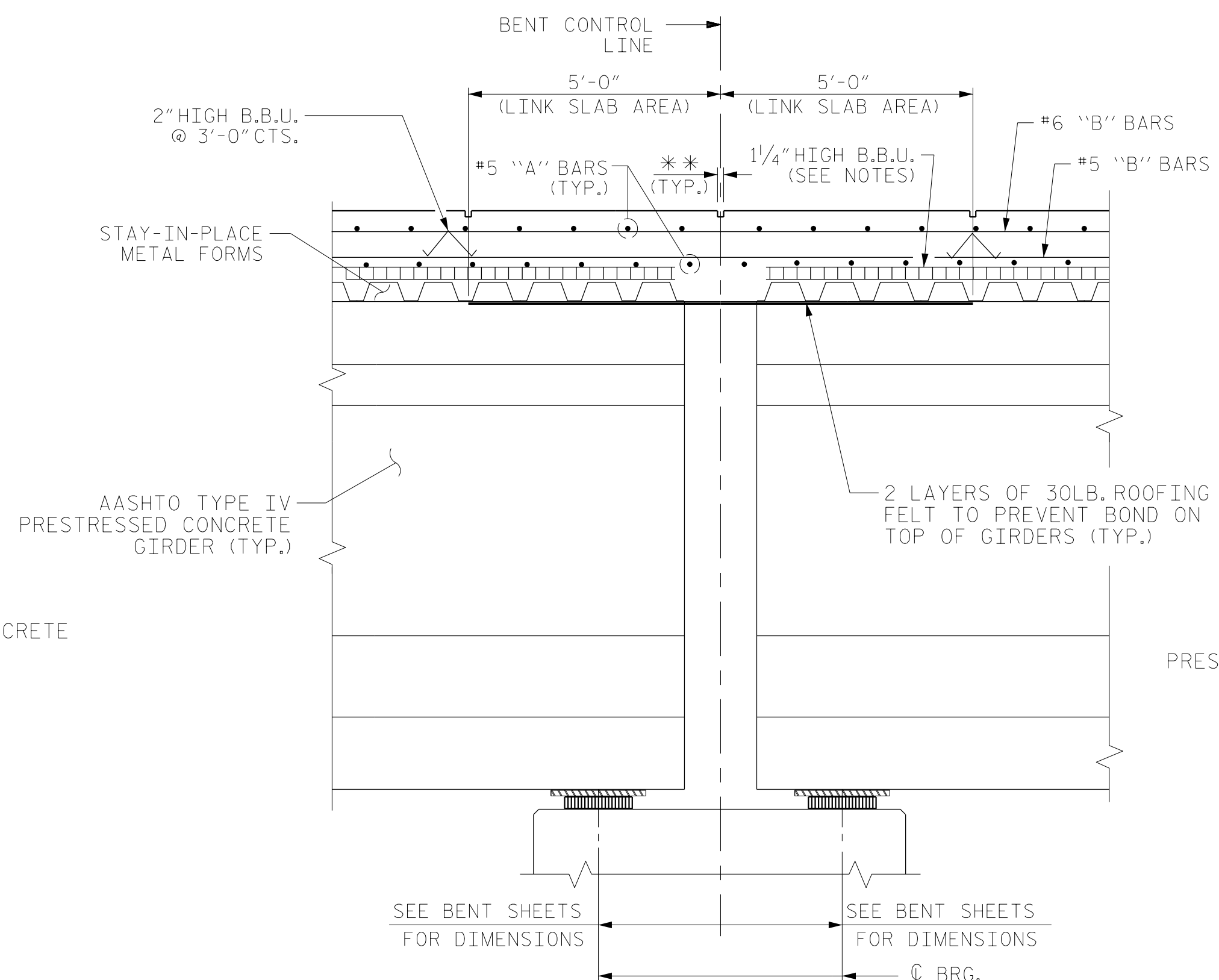
DRAWN BY : NSC DATE : 04/2019
CHECKED BY : JMR DATE : 06/2019
DESIGN ENGINEER OF RECORD: PDS DATE : 06/2019

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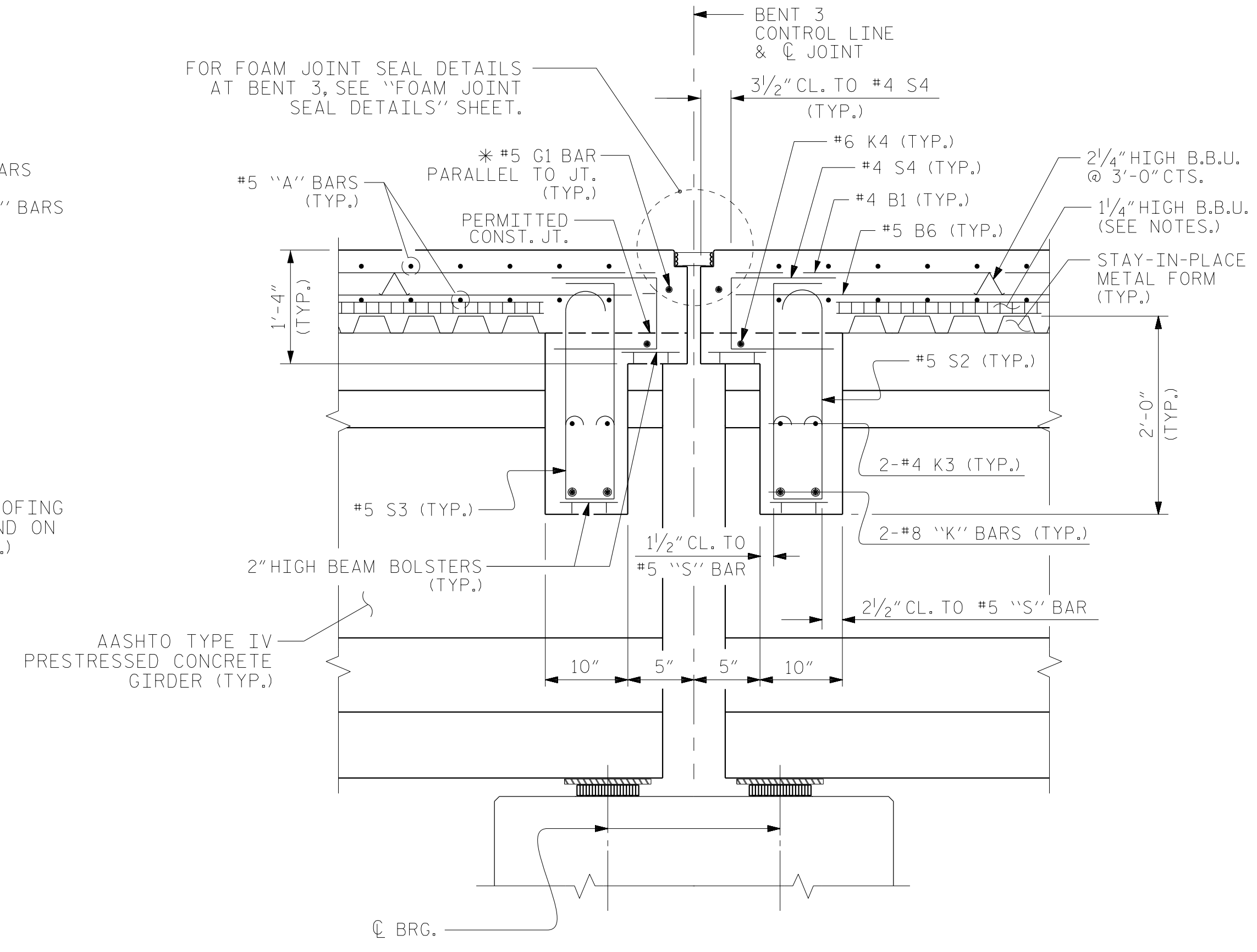
SECTION AT END BENT DIAPHRAGM

* G1 BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL & STIRRUPS. END BENT 1 SHOWN, END BENT 2 SIMILAR



SECTION AT BENT 1, 2, 4, AND 5 LINK SLAB

** A 1 1/2" DEEP X 3/8" WIDE CONTRACTION JOINT AT BENT CONTROL LINE, SHALL BE SAWN WITHIN 24 HOURS OF POURING THE DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE B LOW MODULUS SILICONE SEALANT, SEE SECTION 1028 OF THE STANDARD SPECIFICATION.

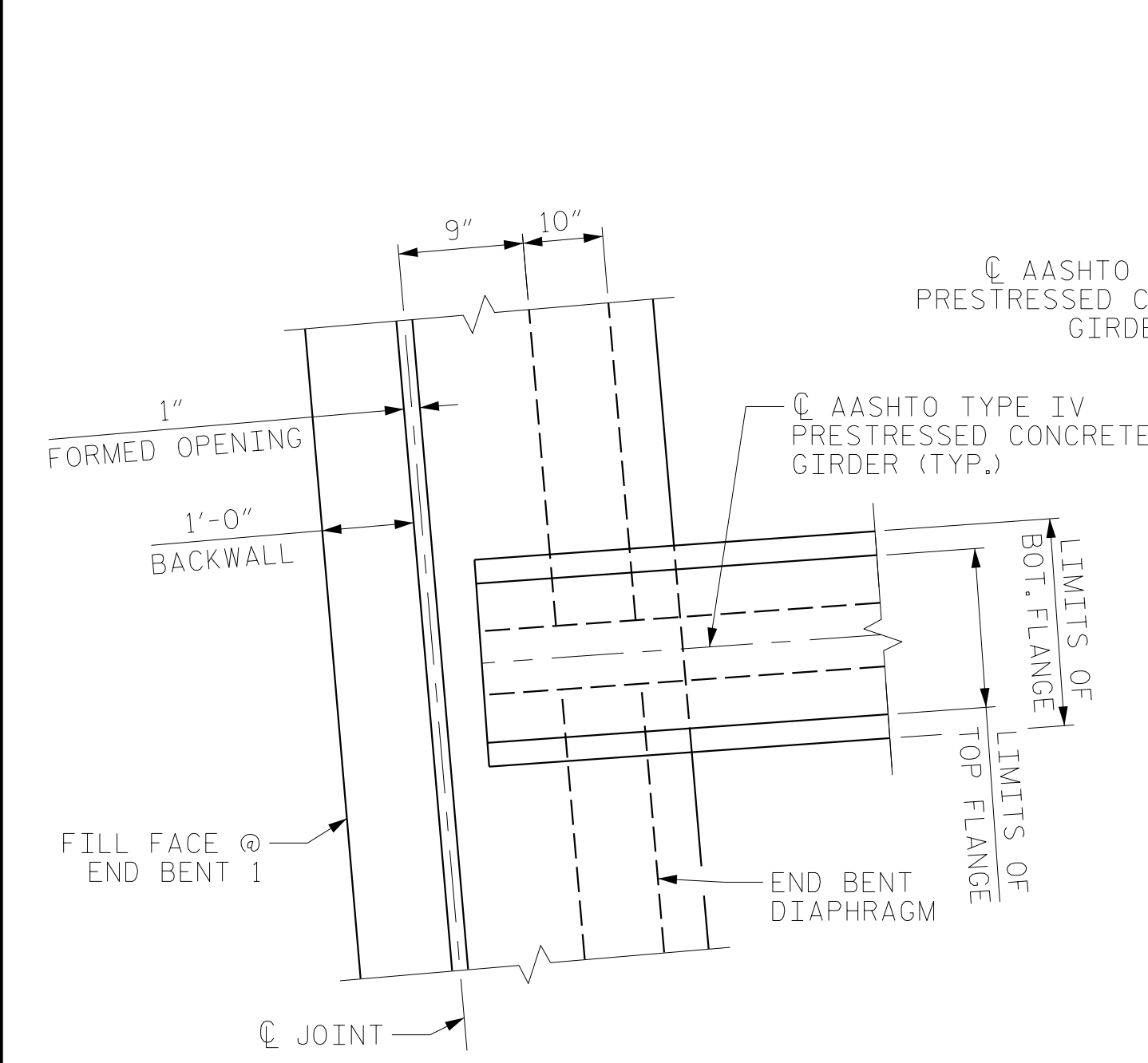


SECTION AT BENT 3 DIAPHRAGM

* G1 BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL & STIRRUPS.

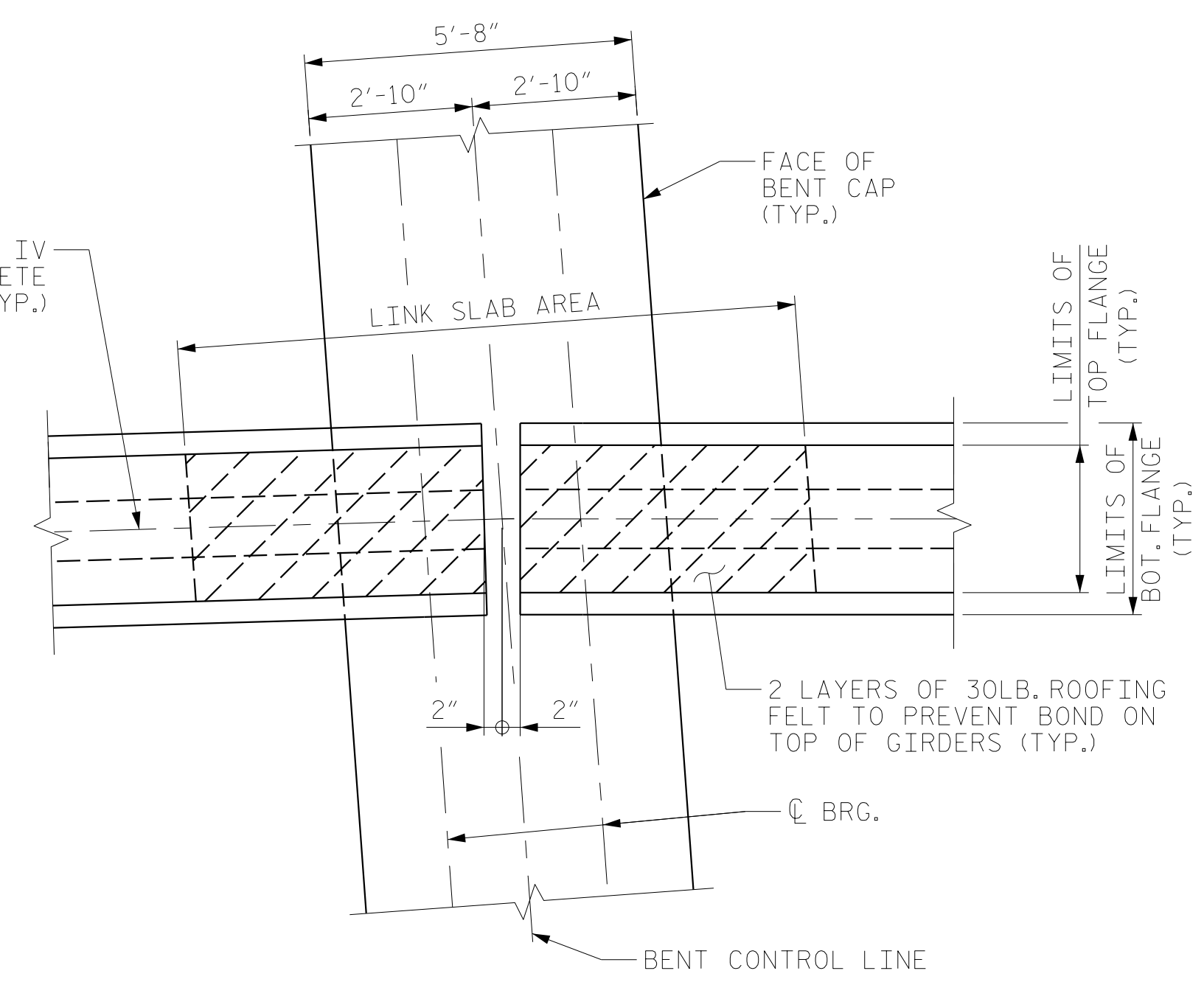
NOTE

FOR NOTES, SEE SHEET 1 OF 2.

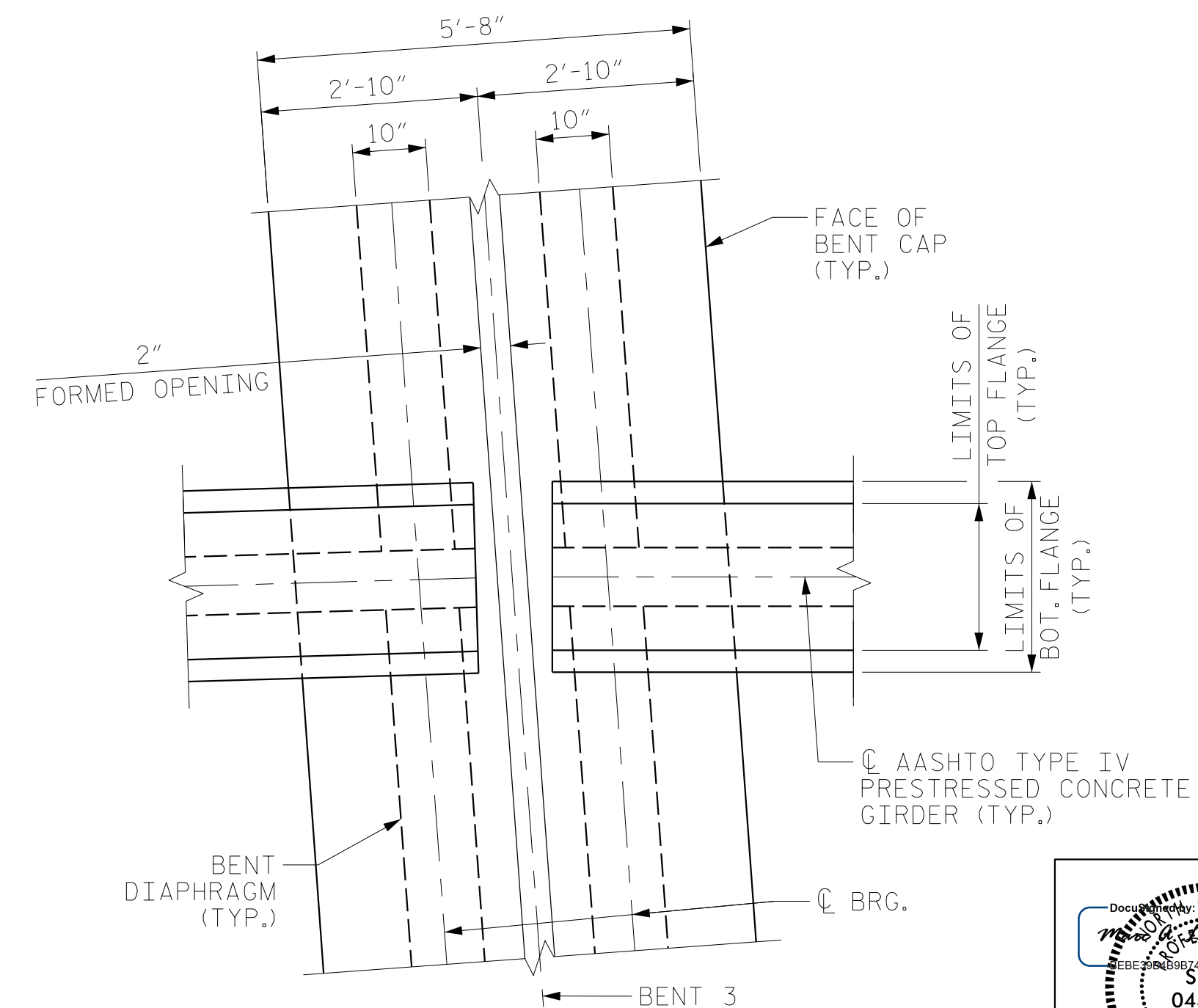


PLAN OF END BENT DIAPHRAGM

END BENT 1 SHOWN, END BENT 2 SIMILAR



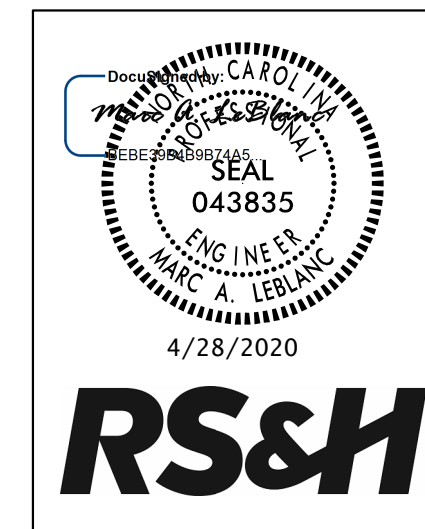
PLAN OF LINK SLAB



PLAN OF BENT 3 DIAPHRAGM

PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 2 OF 2 REPLACES BRIDGE NO. 240138



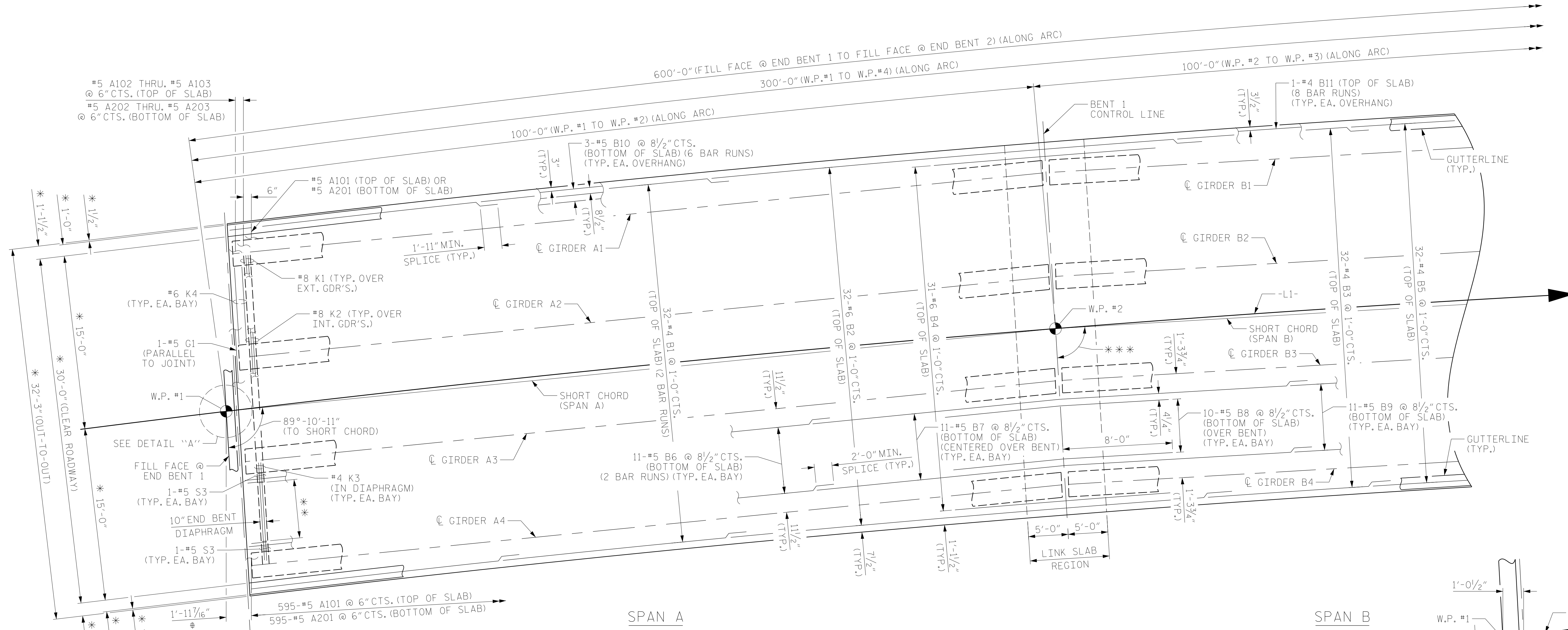
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION
 DETAILS

DRAWN BY :	NSC	DATE :	04/2019
CHECKED BY :	JMR	DATE :	06/2019
DESIGN ENGINEER OF RECORD:	PDS	DATE :	06/2019

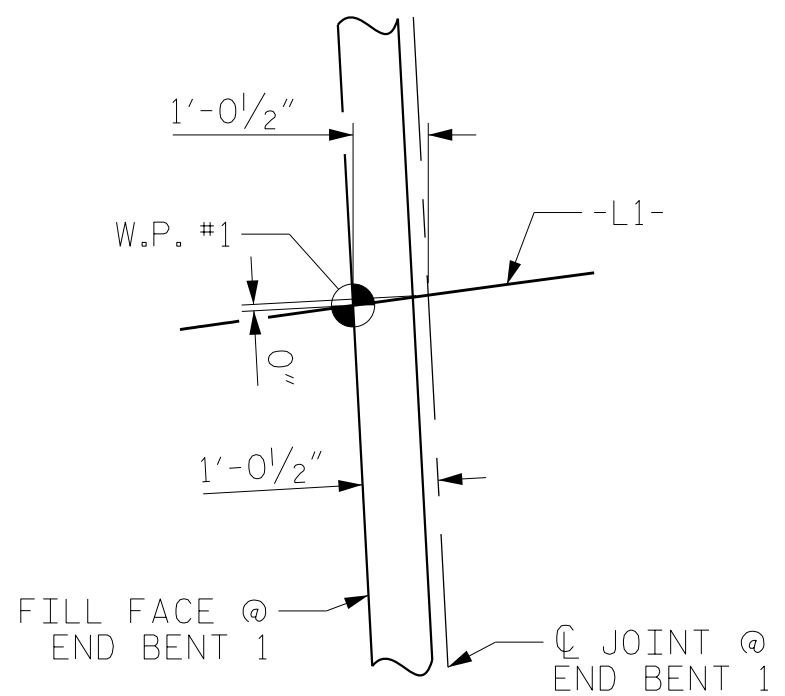
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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	SI-8	TOTAL SHEETS
1			3				37
2			4				



PLAN OF SPAN A AND PART PLAN OF SPAN B

* DIMENSIONS ARE RADIAL TO \ominus -L1-
 ** 6-#4 S1 AND 6-#5 S2 @ 1'-0" CTS. (TYP. EA. BAY)
 *** 87°-30'-32" (TO SHORT CHORD)



DETAIL "A"

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 1 OF 4 REPLACES BRIDGE NO. 240138

NOTES

FOR SPLICE LENGTHS NOT SHOWN, REFER TO MINIMUM SPLICE LENGTH TABLE ON "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.

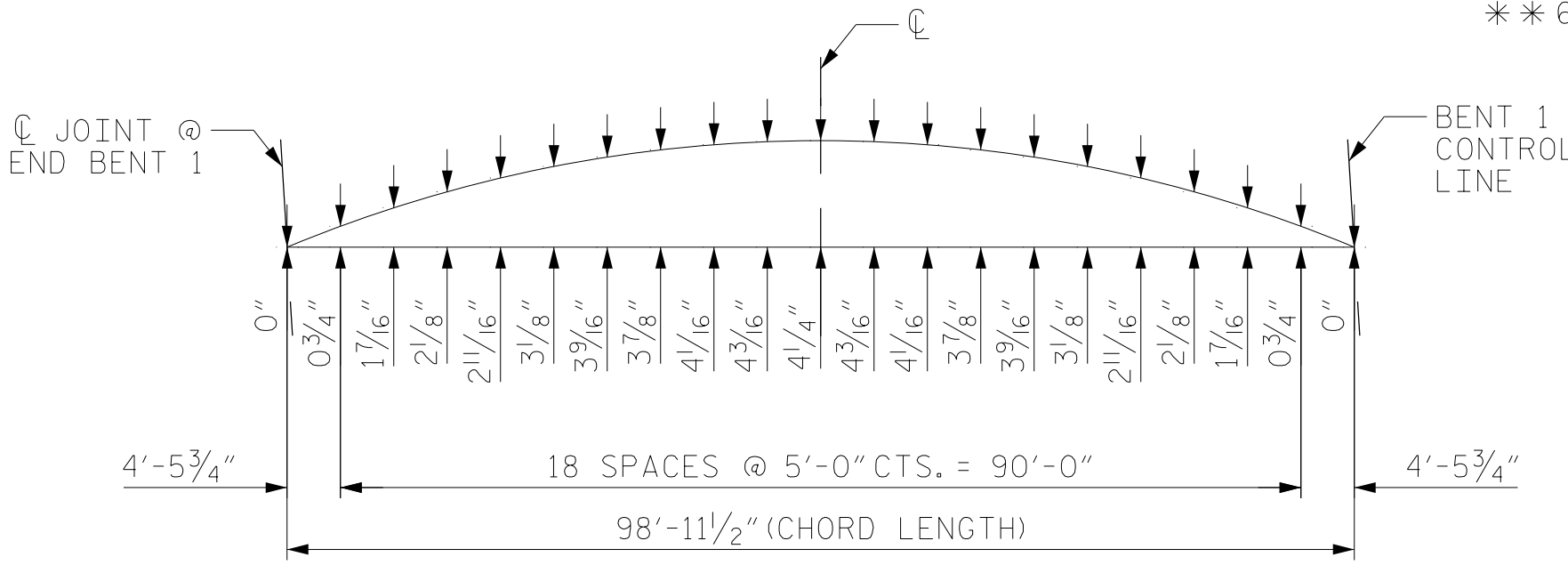
FOR END BENT DIAPHRAGM BARS AND BENT DIAPHRAGM BARS, SEE "TYPICAL SECTION DETAILS" SHEET.

STEEL INTERMEDIATE DIAPHRAGMS NOT SHOWN FOR CLARITY. FOR LOCATIONS, SEE "FRAMING PLAN" SHEETS.

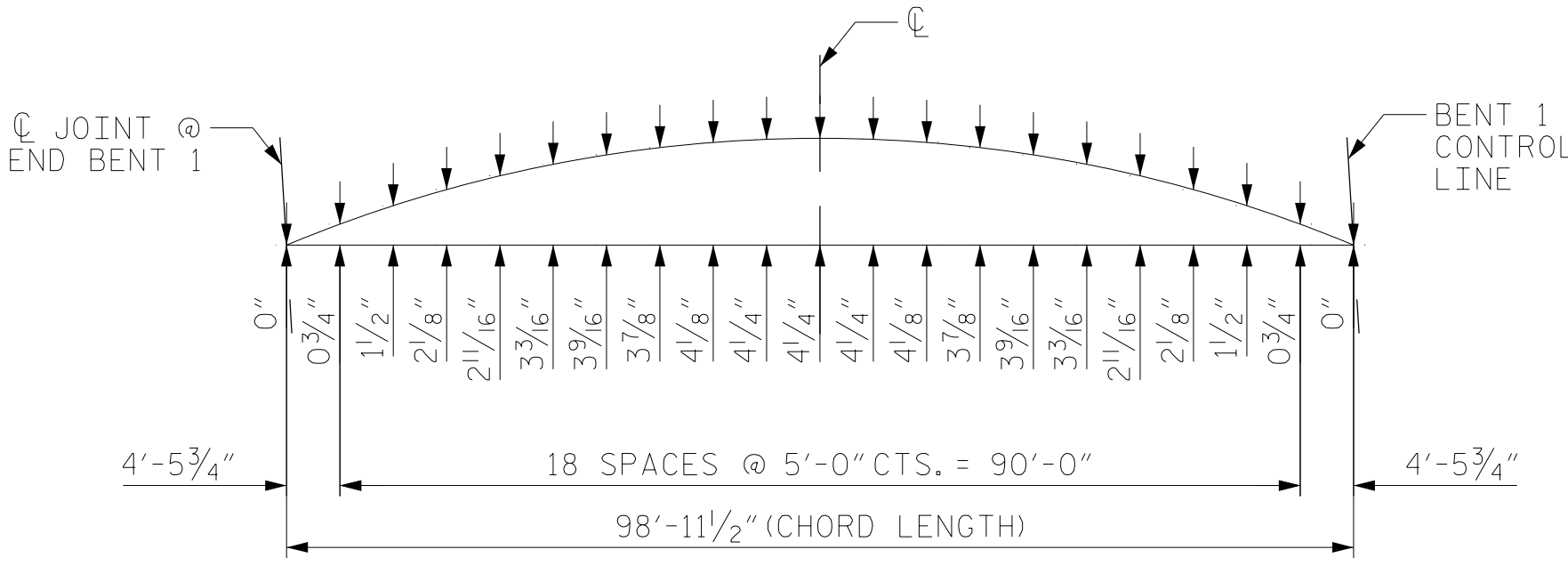
FOR BARRIER RAIL REINFORCING STEEL, SEE "VERTICAL CONCRETE BARRIER RAIL" SHEETS.

FOR POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.

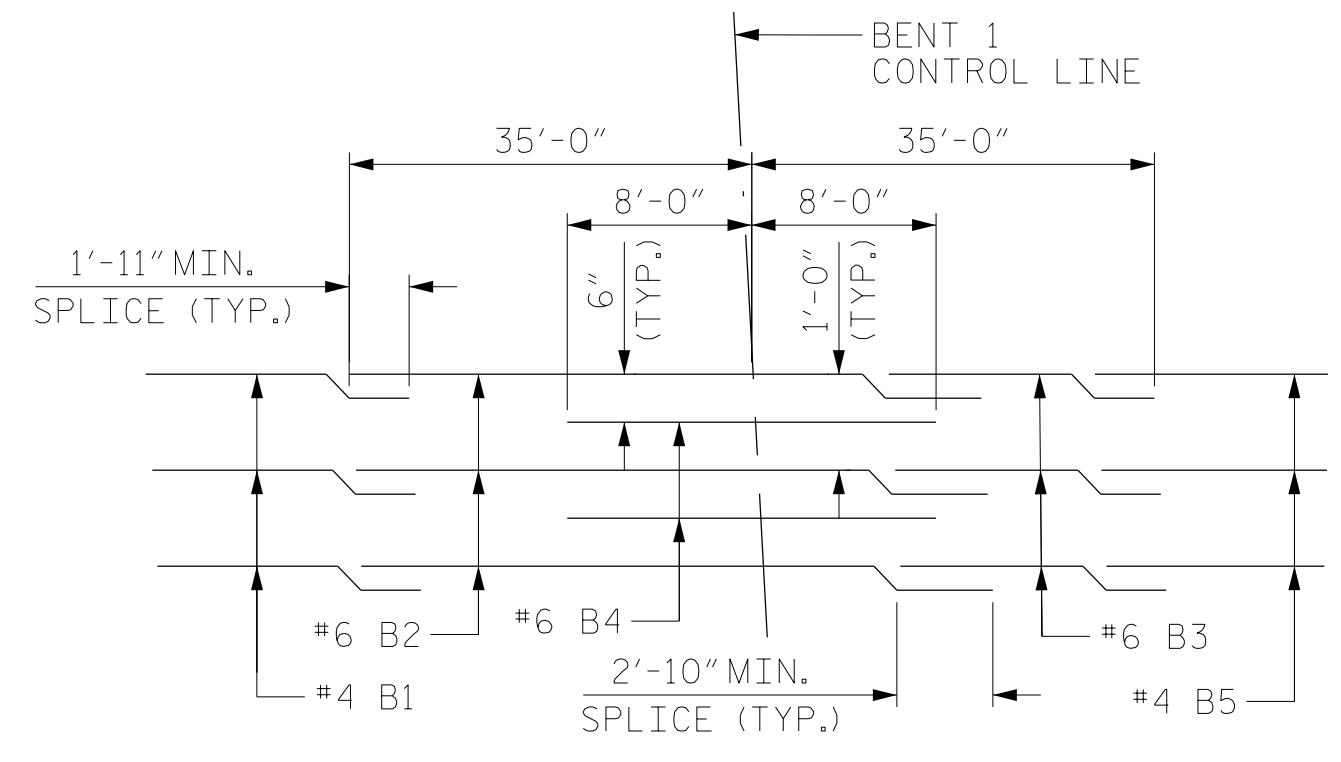
#5 "A" BARS ARE SPACED PERPENDICULAR TO THE CHORD BETWEEN W.P. #1 TO W.P. #4 (SPANS A-C).



LEFT SIDE SPAN "A" ARC OFFSETS



RIGHT SIDE SPAN "A" ARC OFFSETS

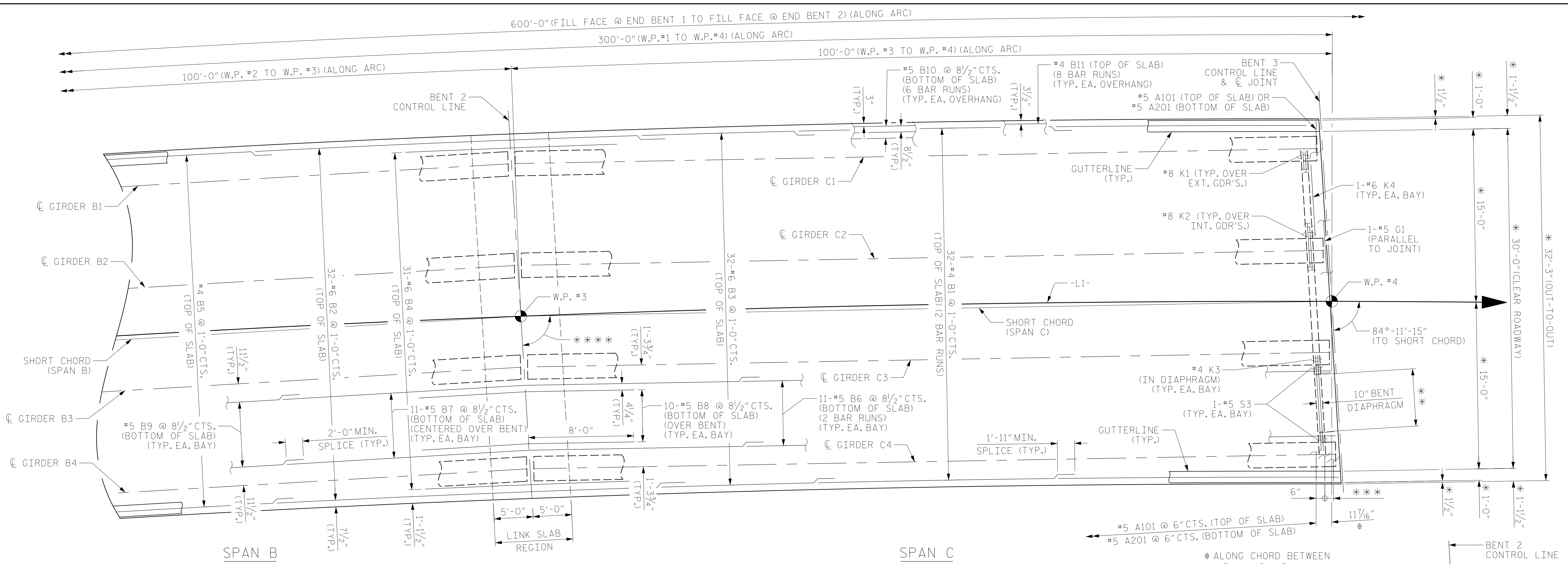


TOP OF SLAB REINFORCING STEEL LAYOUT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

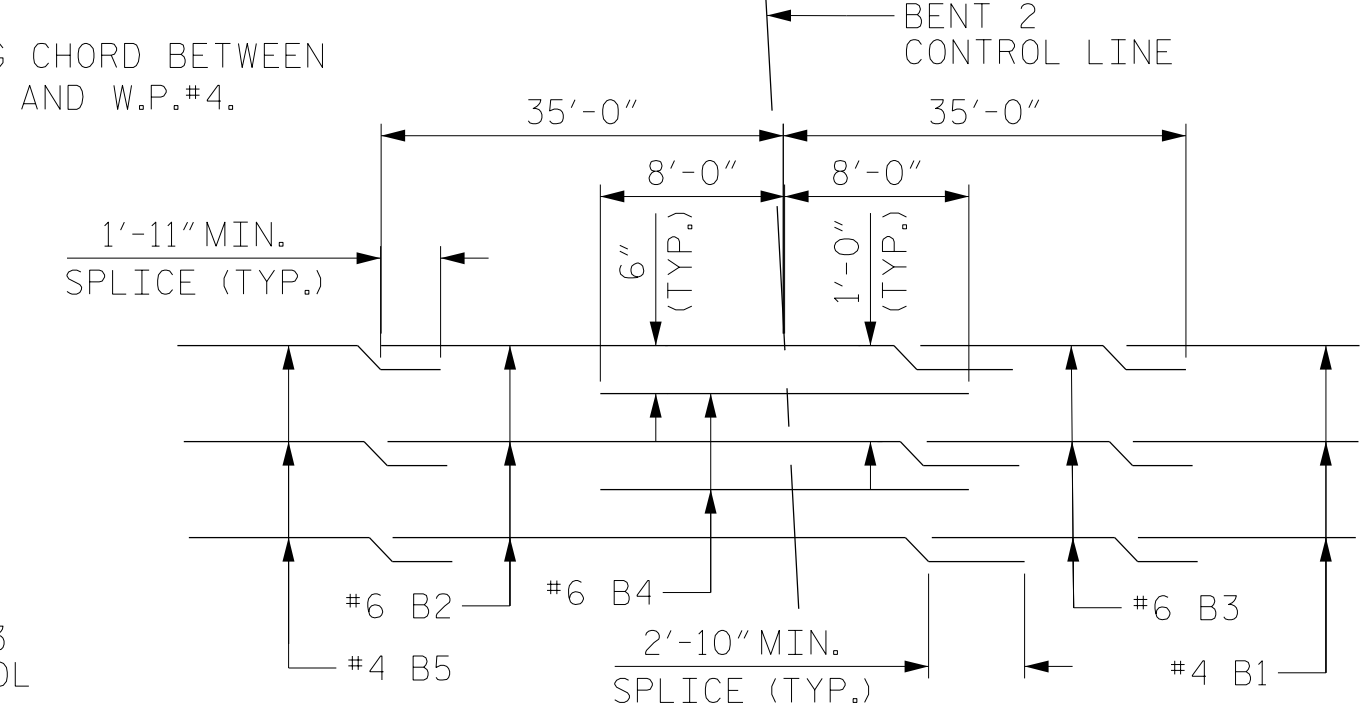
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-9
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : NSC DATE : 04/2019
 CHECKED BY : JMR DATE : 06/2019
 DESIGN ENGINEER OF RECORD: PDS DATE : 06/2019



PART PLAN OF SPAN B AND PLAN OF SPAN C

- * DIMENSIONS ARE RADIAL TO C -L1-
- ** 6-#4 S4 AND 6-#5 S2 @ 1'-0"CTS. (TYP. EA. BAY)
- *** #5 A103 THRU #5 A102 @ 6"CTS. (TOP OF SLAB)
- *** #5 A203 THRU #5 A202 @ 6"CTS. (BOTTOM OF SLAB)
- *** 85°-50'-53" (TO SHORT CHORD)

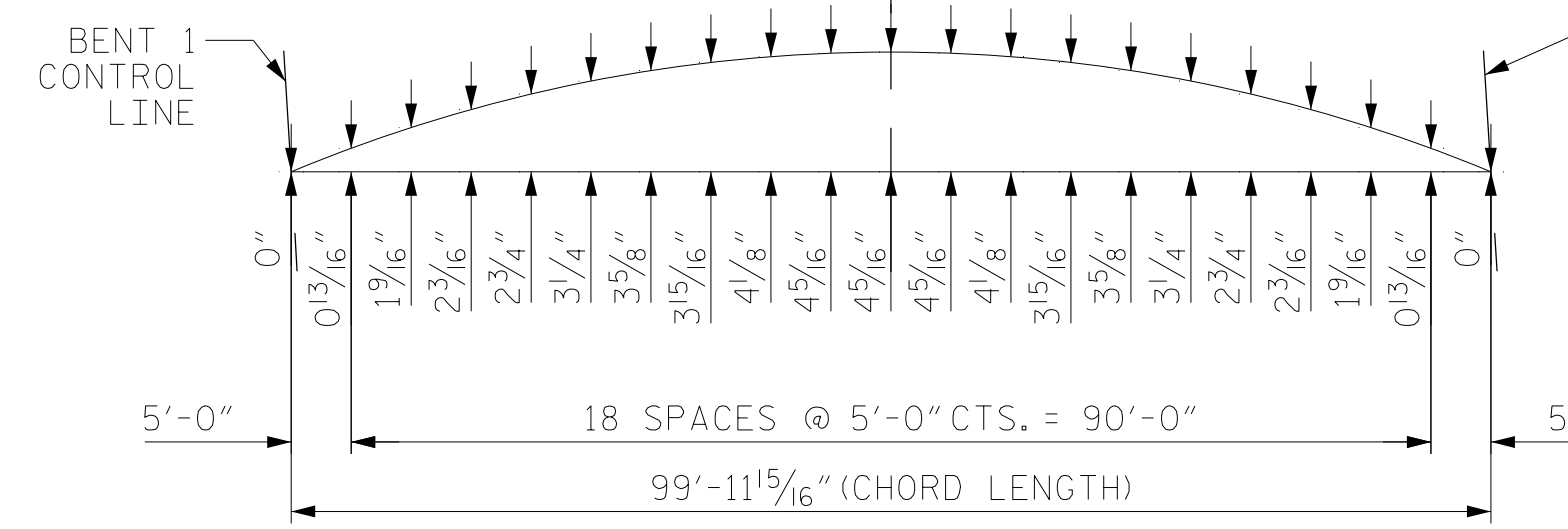


TOP OF SLAB REINFORCING STEEL LAYOUT

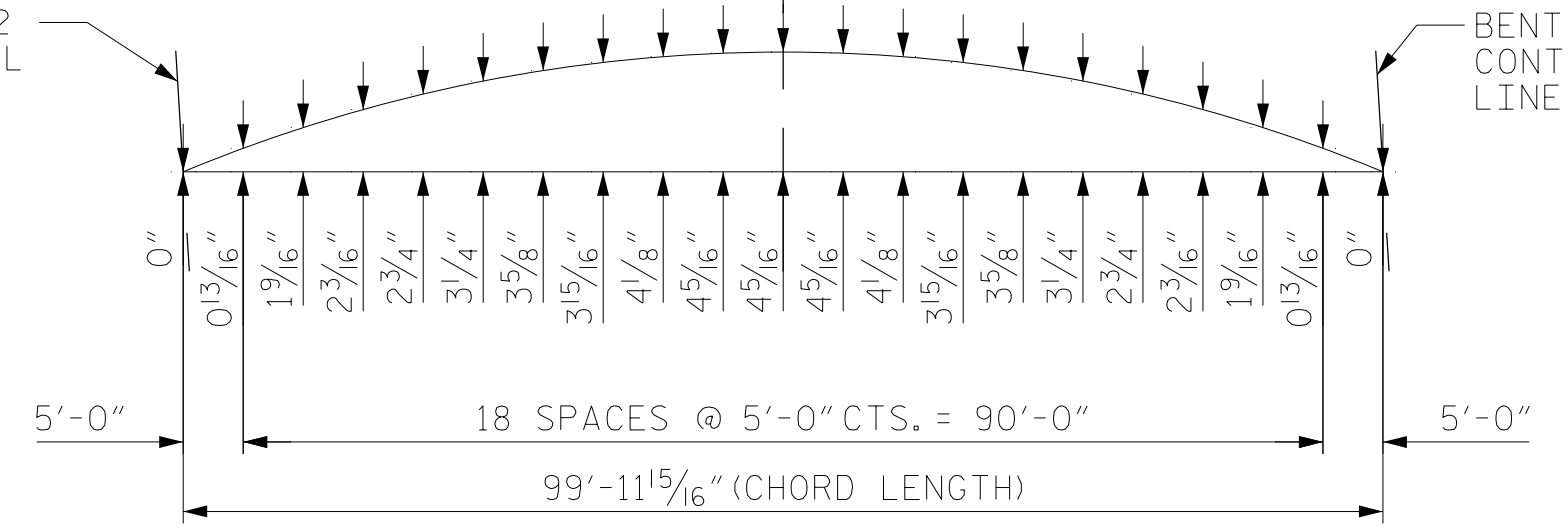
PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

NOTES

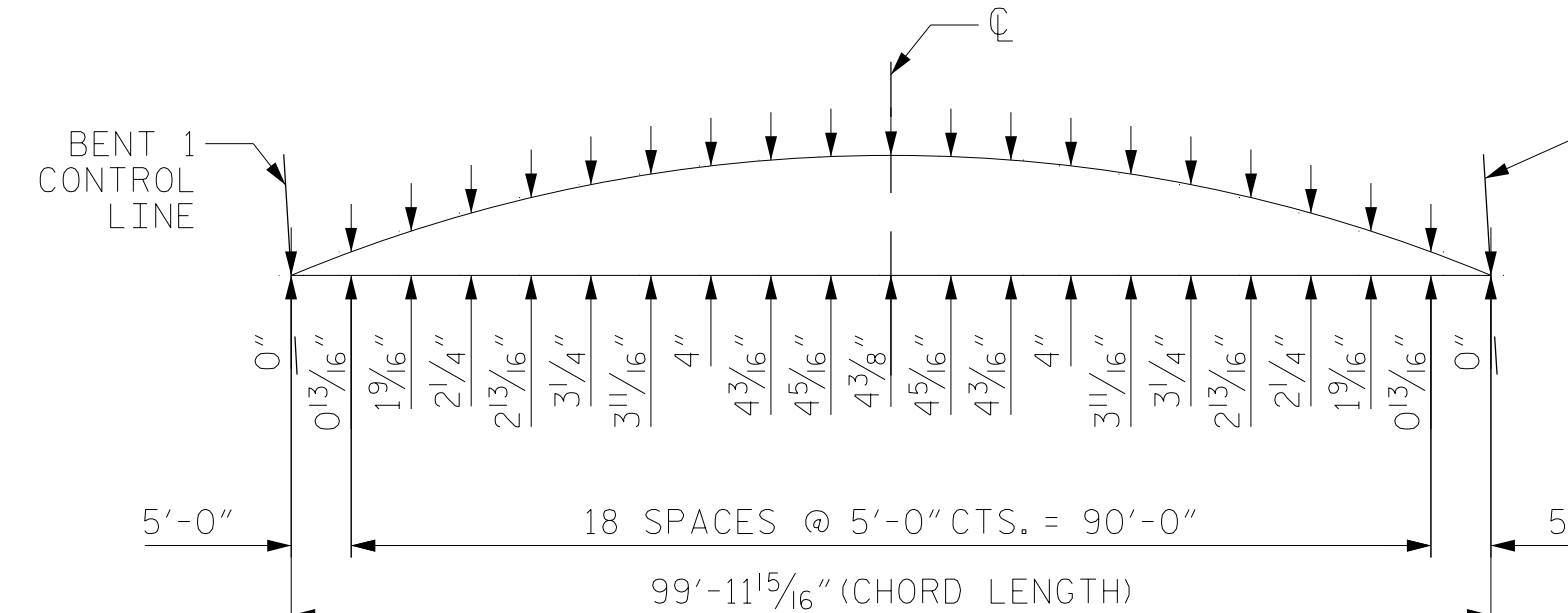
- FOR SPLICE LENGTHS NOT SHOWN, REFER TO MINIMUM SPLICE LENGTH TABLE ON "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- FOR END BENT DIAPHRAGM BARS AND BENT DIAPHRAGM BARS, SEE "TYPICAL SECTION DETAILS" SHEET.
- STEEL INTERMEDIATE DIAPHRAGMS NOT SHOWN FOR CLARITY. FOR LOCATIONS, SEE "FRAMING PLAN" SHEETS.
- FOR BARRIER RAIL REINFORCING STEEL, SEE "VERTICAL CONCRETE BARRIER RAIL" SHEETS.
- FOR POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- #5 "A" BARS ARE SPACED PERPENDICULAR TO THE CHORD BETWEEN W.P. #1 TO W.P. #4 (SPANS A-C).



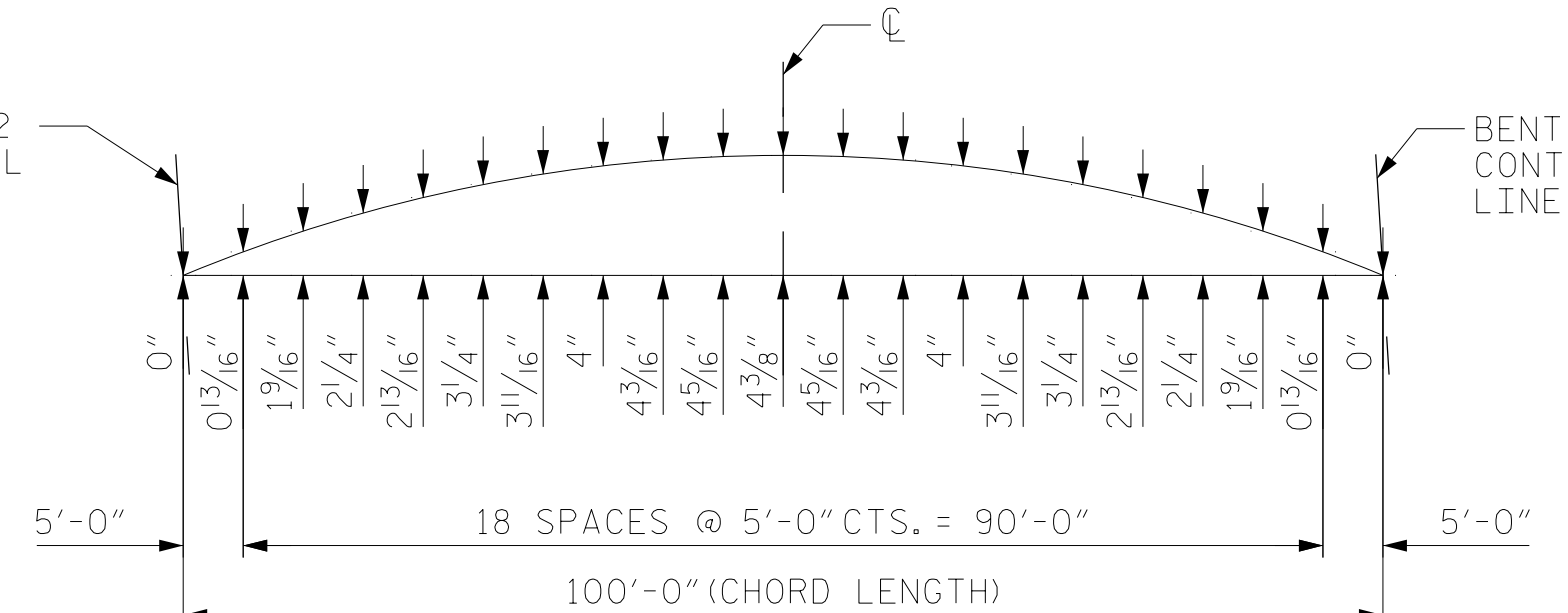
LEFT SIDE SPAN "B" ARC OFFSETS



LEFT SIDE SPAN "C" ARC OFFSETS



RIGHT SIDE SPAN "B" ARC OFFSETS



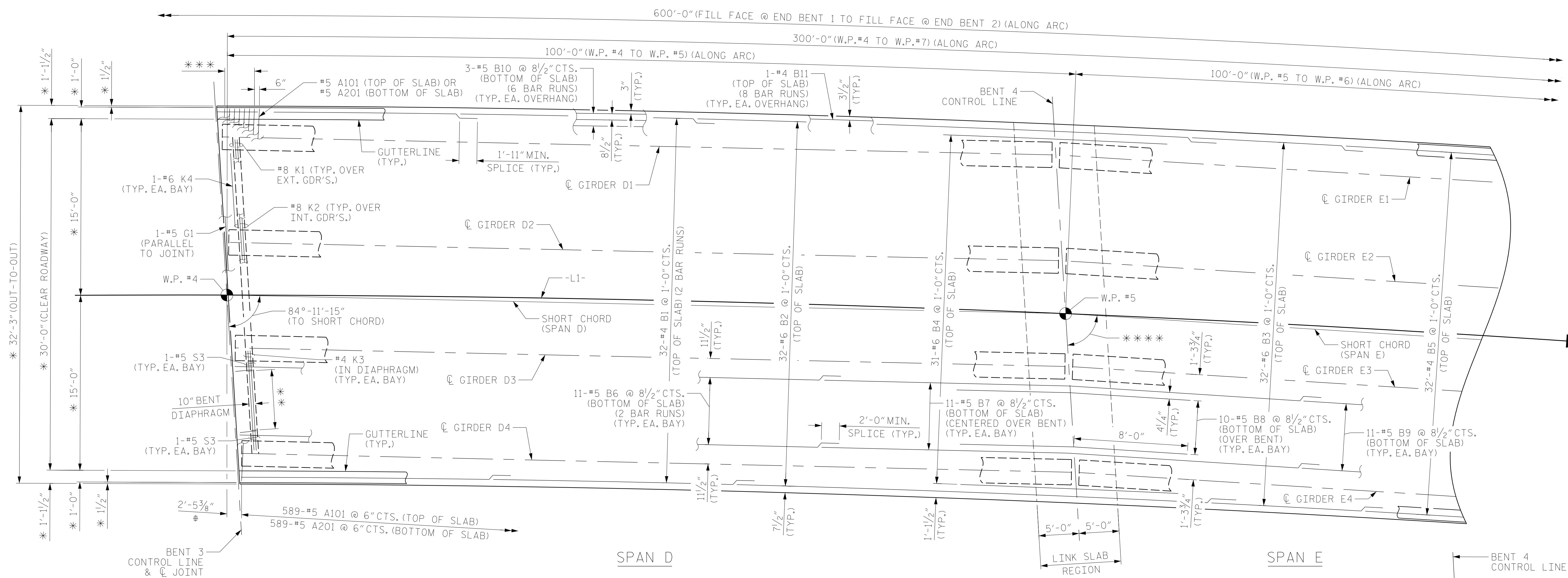
RIGHT SIDE SPAN "C" ARC OFFSETS

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DESIGN ENGINEER OF RECORD:	PDS	DATE :	06/2019

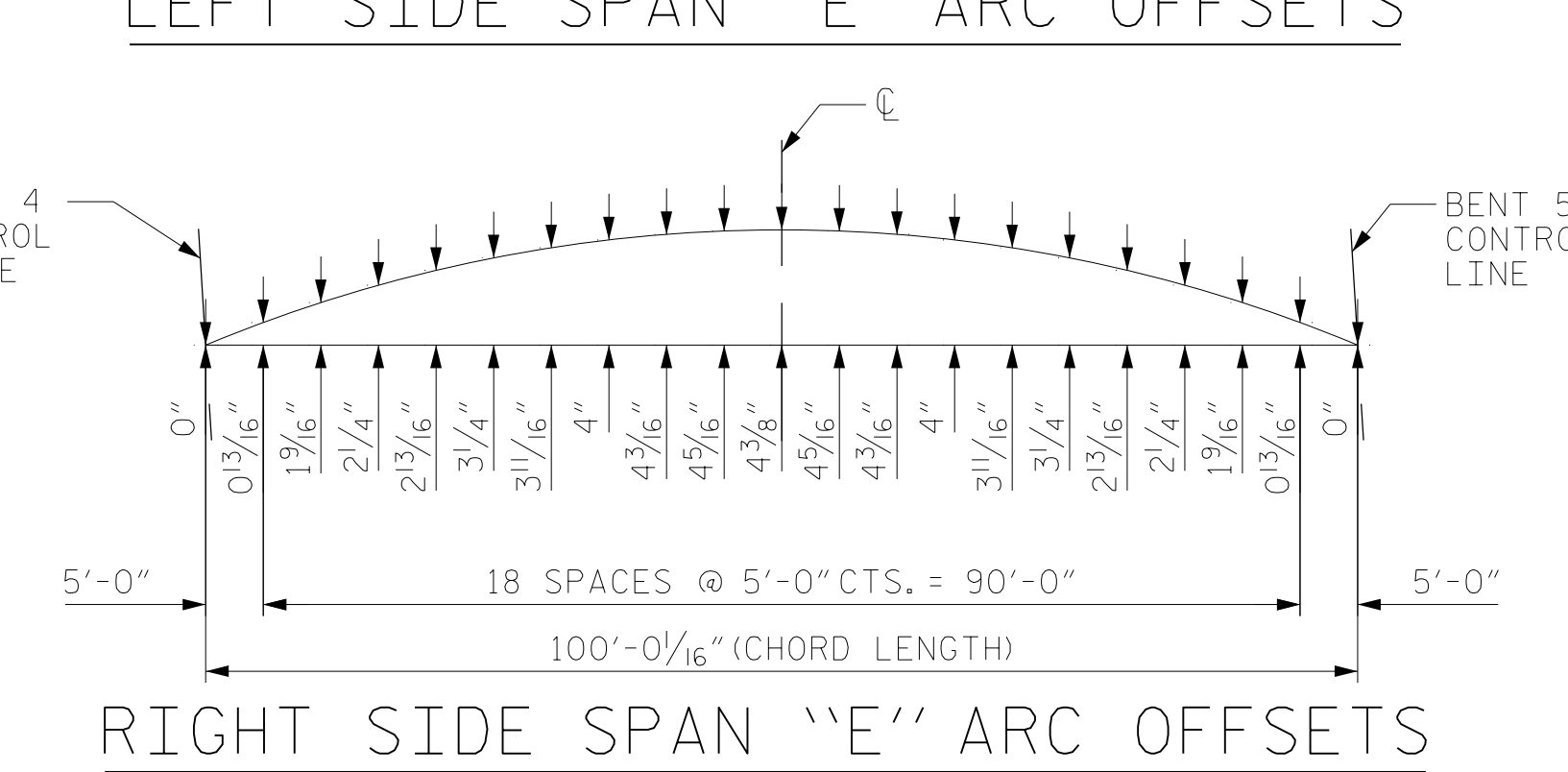
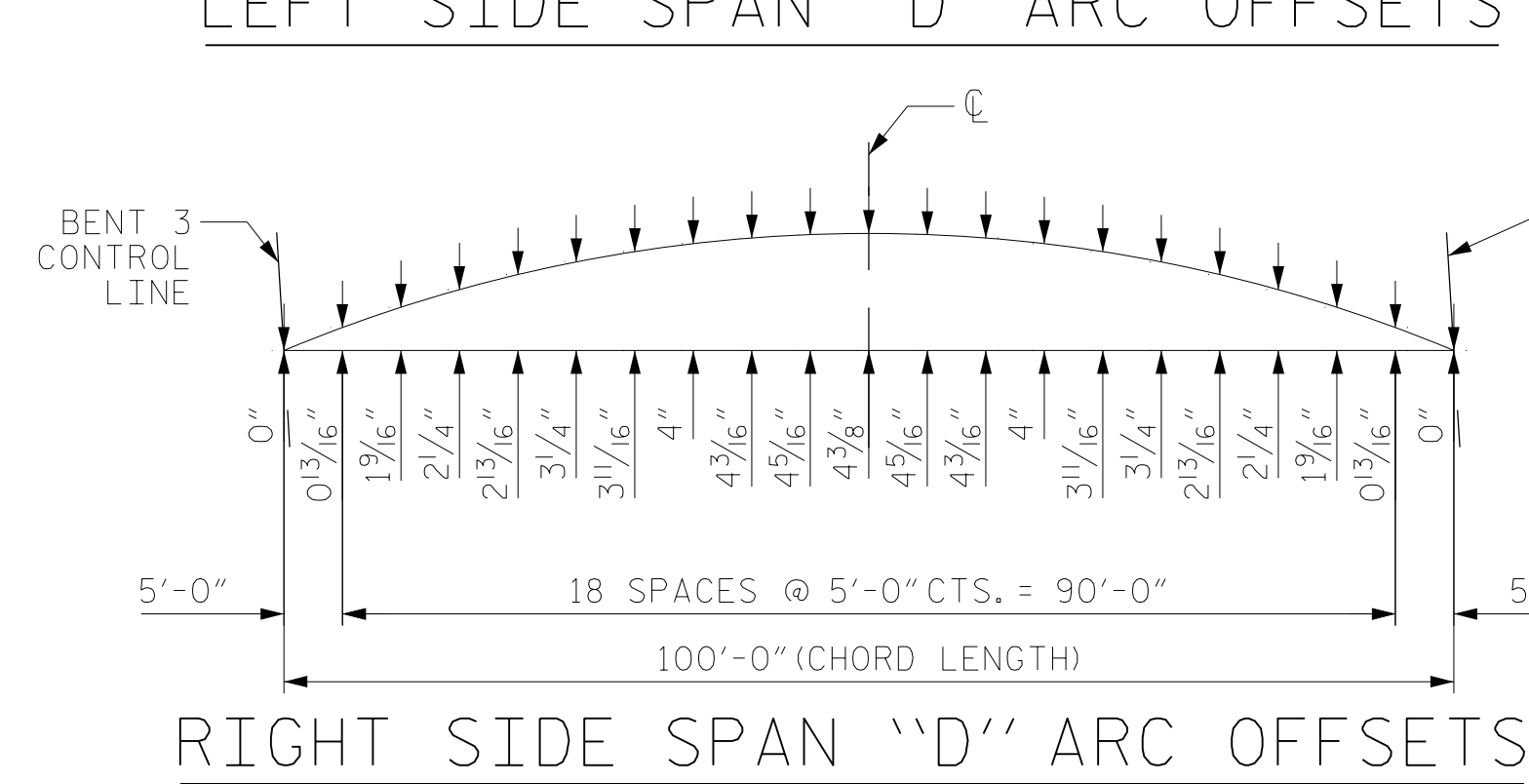
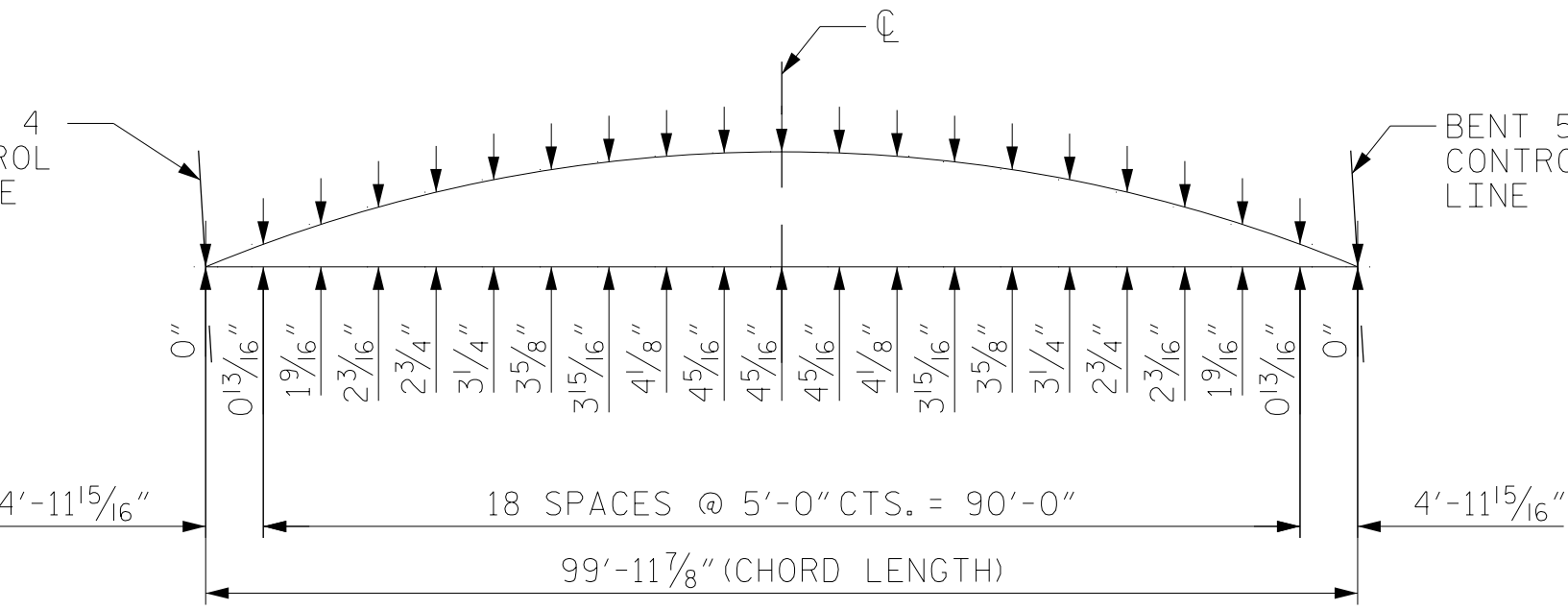
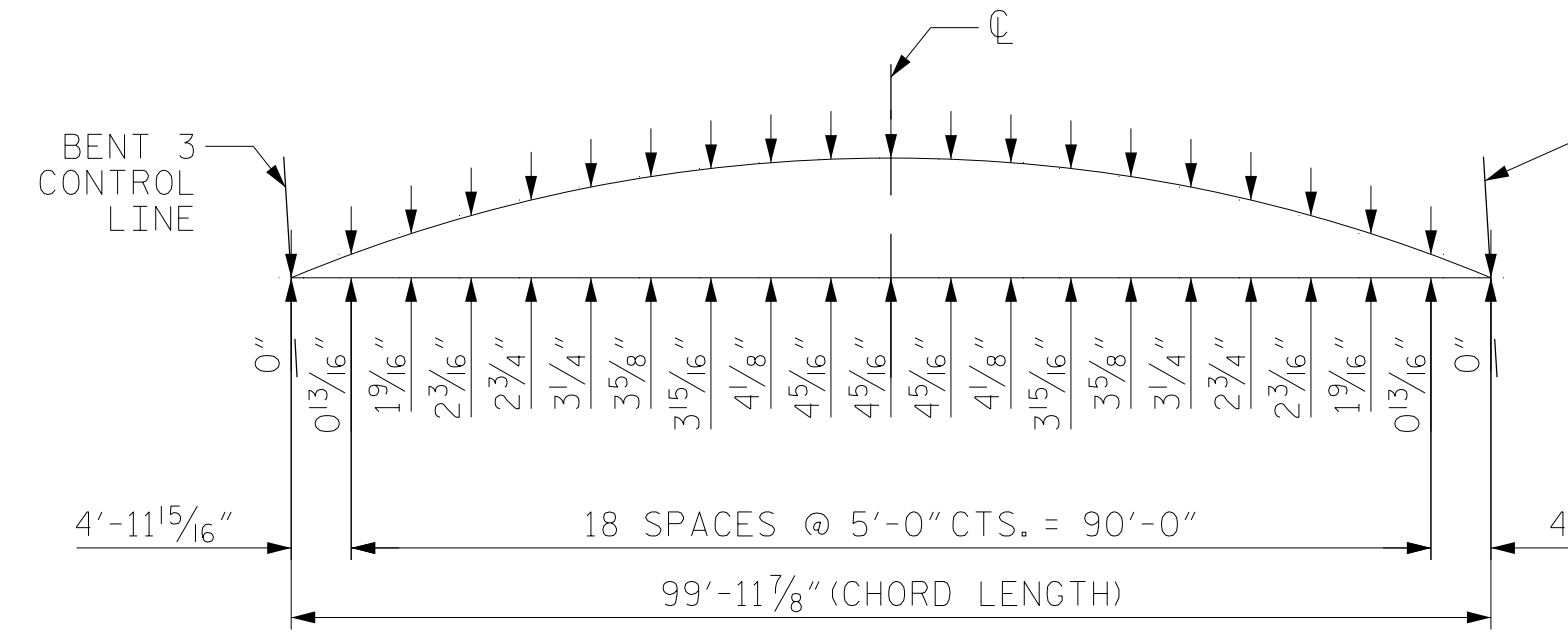
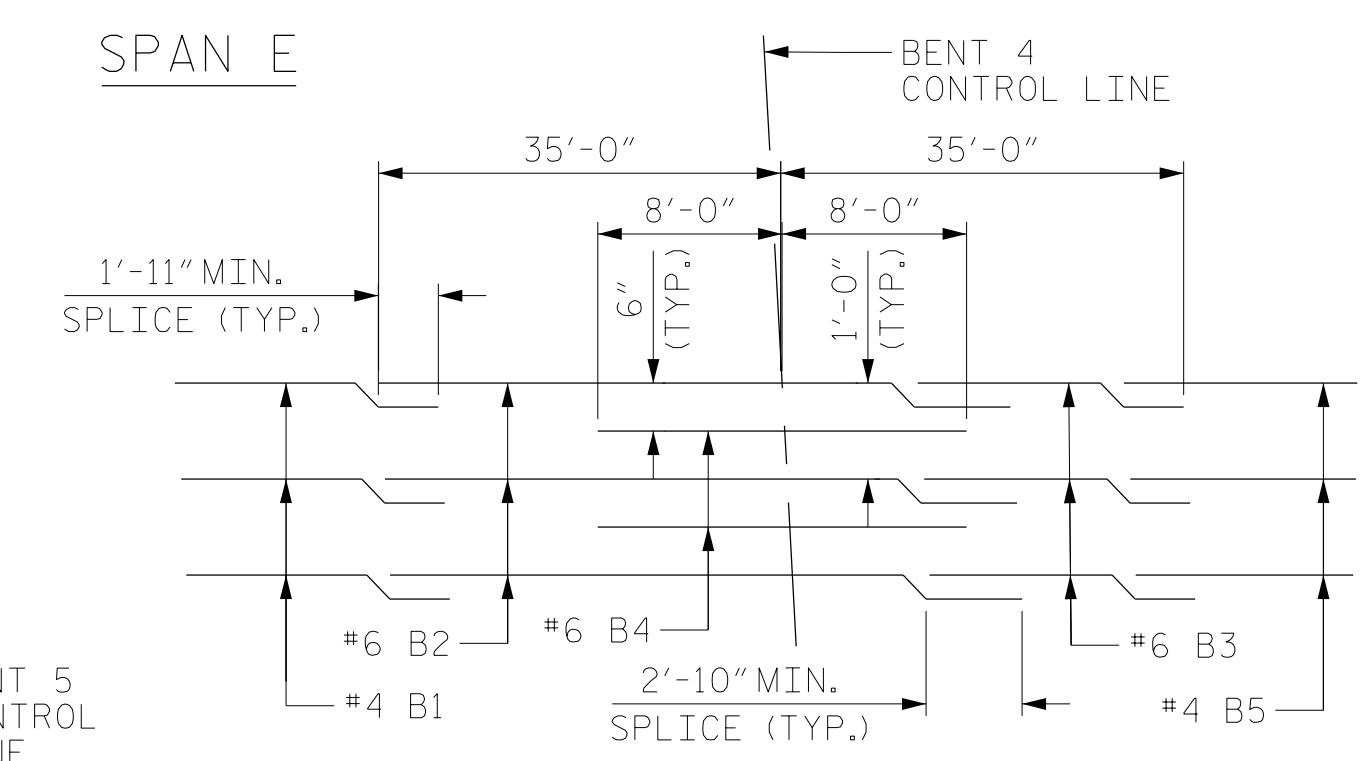
SHEET 2 OF 4 REPLACES BRIDGE NO. 240138

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE					
PART PLAN OF SPAN B PLAN OF SPAN C					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S1-10
TOTAL SHEETS					37



PLAN OF SPAN D AND PART PLAN OF SPAN E

- * DIMENSIONS ARE RADIAL TO C-L1-
- ** 6-#4 S4 AND 6-#5 S2 @ 1'-0" CTS. (TYP. EA. BAY)
- *** #5 A104 THRU #5 A110 @ 6" CTS. (TOP OF SLAB)
#5 A204 THRU #5 A210 @ 6" CTS. (BOTTOM OF SLAB)
- **** 82°-31'-36" (TO SHORT CHORD)



NOTES

FOR SPLICE LENGTHS NOT SHOWN, REFER TO MINIMUM SPLICE LENGTH TABLE ON "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.

FOR END BENT DIAPHRAGM BARS AND BENT DIAPHRAGM BARS, SEE "TYPICAL SECTION DETAILS" SHEET.

STEEL INTERMEDIATE DIAPHRAGMS NOT SHOWN FOR CLARITY. FOR LOCATIONS, SEE "FRAMING PLAN" SHEETS.

FOR BARRIER RAIL REINFORCING STEEL, SEE "VERTICAL CONCRETE BARRIER RAIL" SHEETS.

FOR POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.

#5 "A" BARS ARE SPACED PERPENDICULAR TO THE CHORD BETWEEN W.P. #4 TO W.P. #7 (SPANS D-F).

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DRAWN BY : NSC	DATE : 04/2019
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DESIGN ENGINEER OF RECORD: PDS	DATE : 06/2019

PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 3 OF 4 REPLACES BRIDGE NO. 240138

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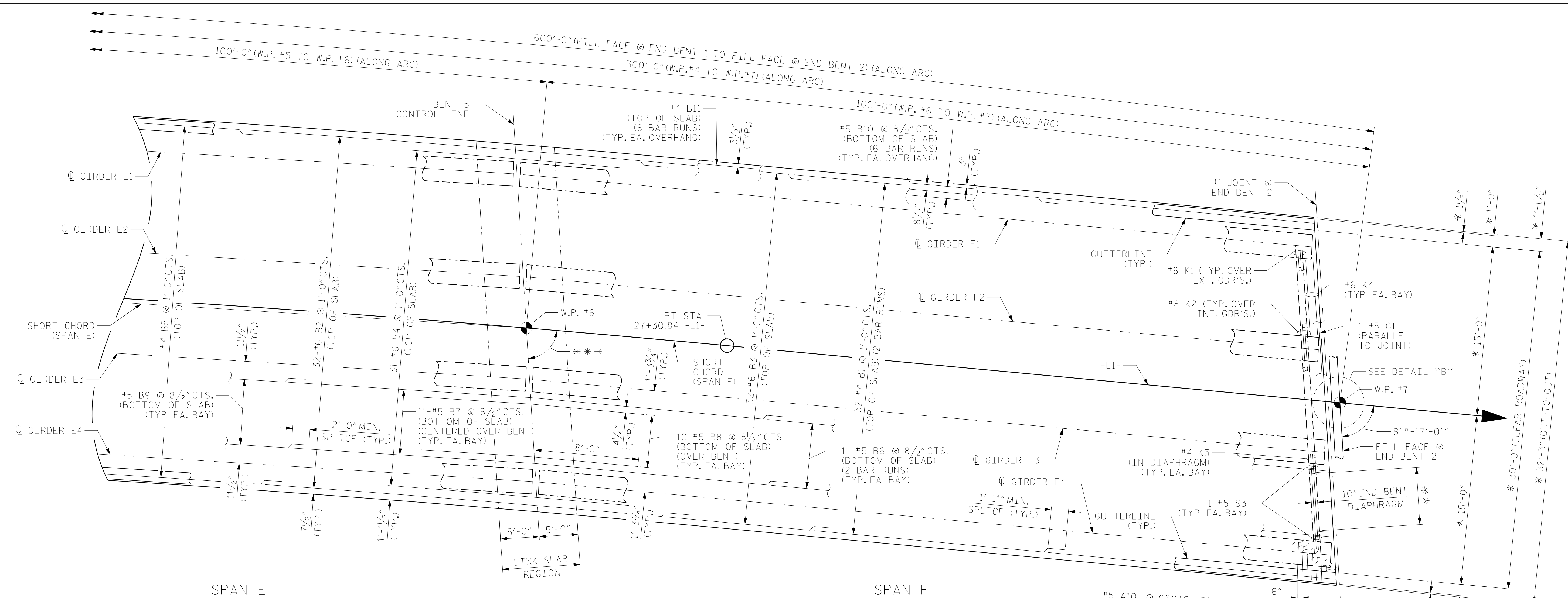
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE

PLAN OF SPAN D
 PART PLAN OF SPAN E

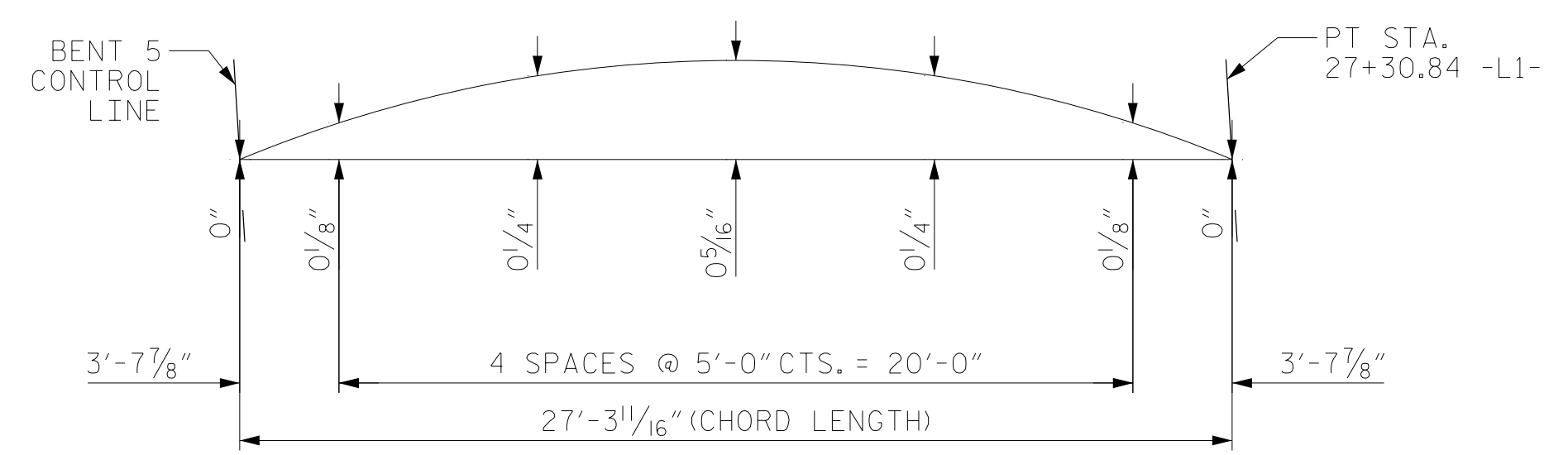
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.
 S1-11
 TOTAL SHEETS
 37

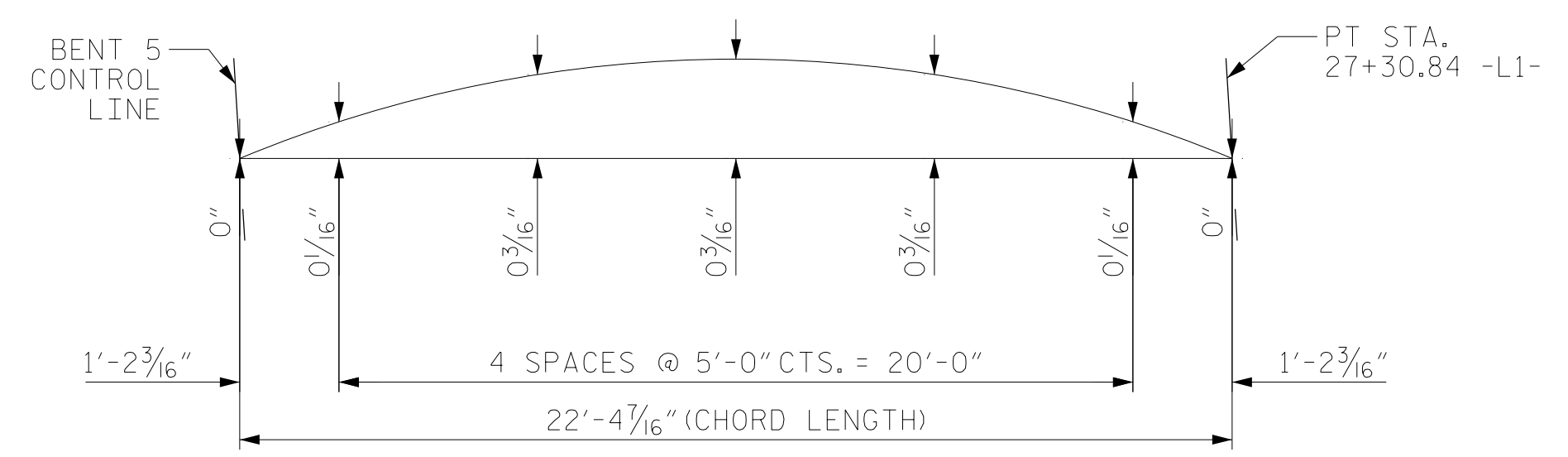


PART PLAN OF SPAN E AND PLAN OF SPAN F

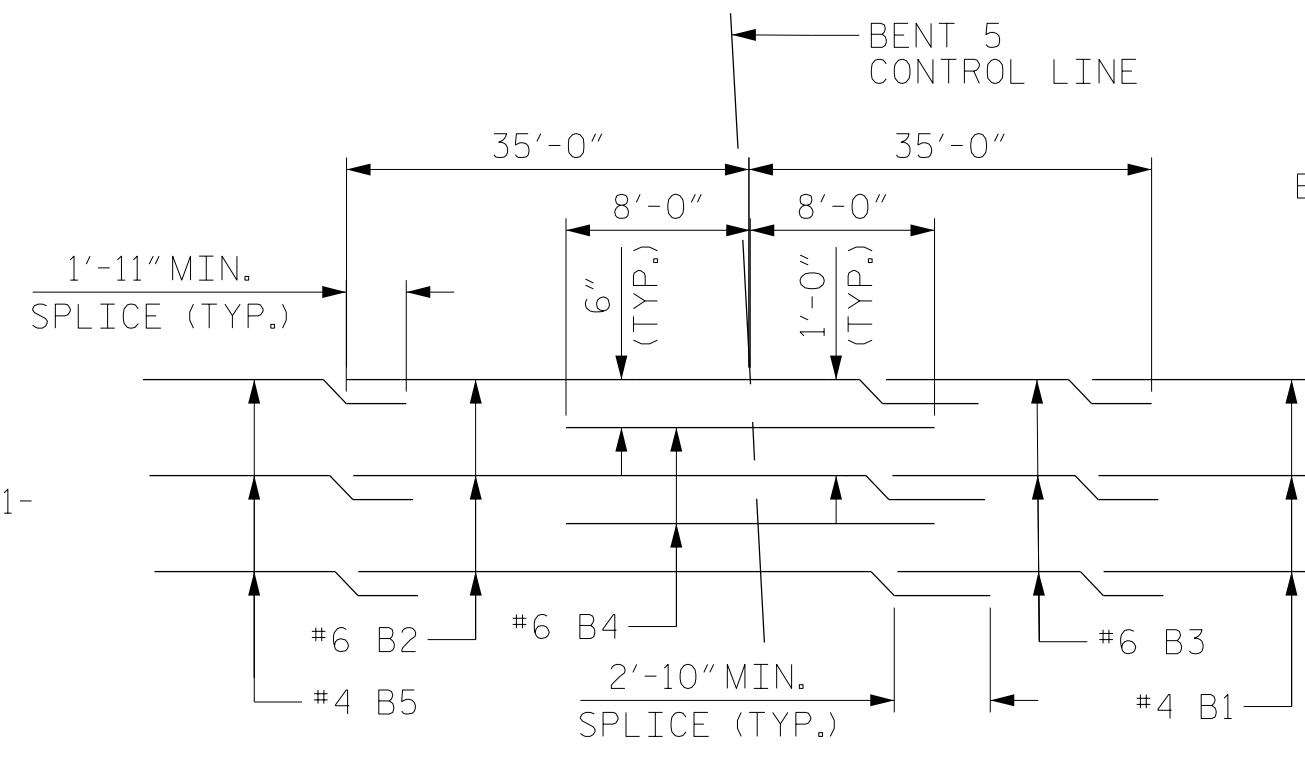
* DIMENSIONS ARE RADIAL TO ϕ -L1- IN SPAN E AND PART OF SPAN F
 ** 6-#4 S1 AND 6-#5 S2 @ 1'-0" CTS. (TYP. EA. BAY)
 *** 81°-29'-24" (TO SHORT CHORD)



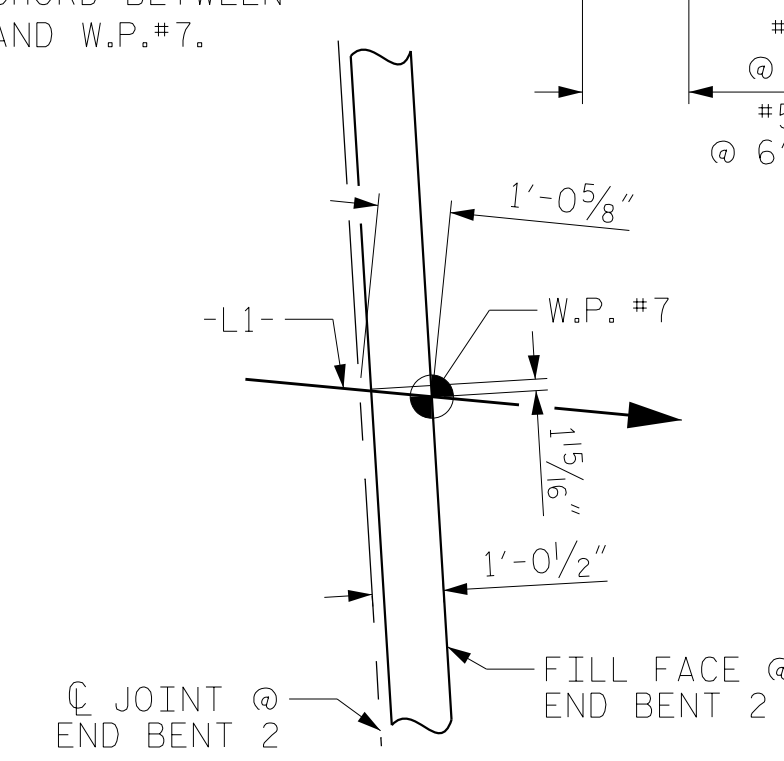
LEFT SIDE SPAN "F" ARC OFFSETS



RIGHT SIDE SPAN "F" ARC OFFSETS



TOP OF SLAB REINFORCING STEEL LAYOUT



DETAIL "B"

NOTES

- FOR SPLICE LENGTHS NOT SHOWN, REFER TO MINIMUM SPLICE LENGTH TABLE ON "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- FOR END BENT DIAPHRAGM BARS AND BENT DIAPHRAGM BARS, SEE "TYPICAL SECTION DETAILS" SHEET.
- STEEL INTERMEDIATE DIAPHRAGMS NOT SHOWN FOR CLARITY. FOR LOCATIONS, SEE "FRAMING PLAN" SHEETS.
- FOR BARRIER RAIL REINFORCING STEEL, SEE "VERTICAL CONCRETE BARRIER RAIL" SHEETS.
- FOR POURING SEQUENCE, SEE "SUPERSTRUCTURE BILL OF MATERIAL" SHEET.
- #5 "A" BARS ARE SPACED PERPENDICULAR TO THE CHORD BETWEEN W.P. #4 TO W.P. #7 (SPANS D-F).

PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 4 OF 4 REPLACES BRIDGE NO. 240138



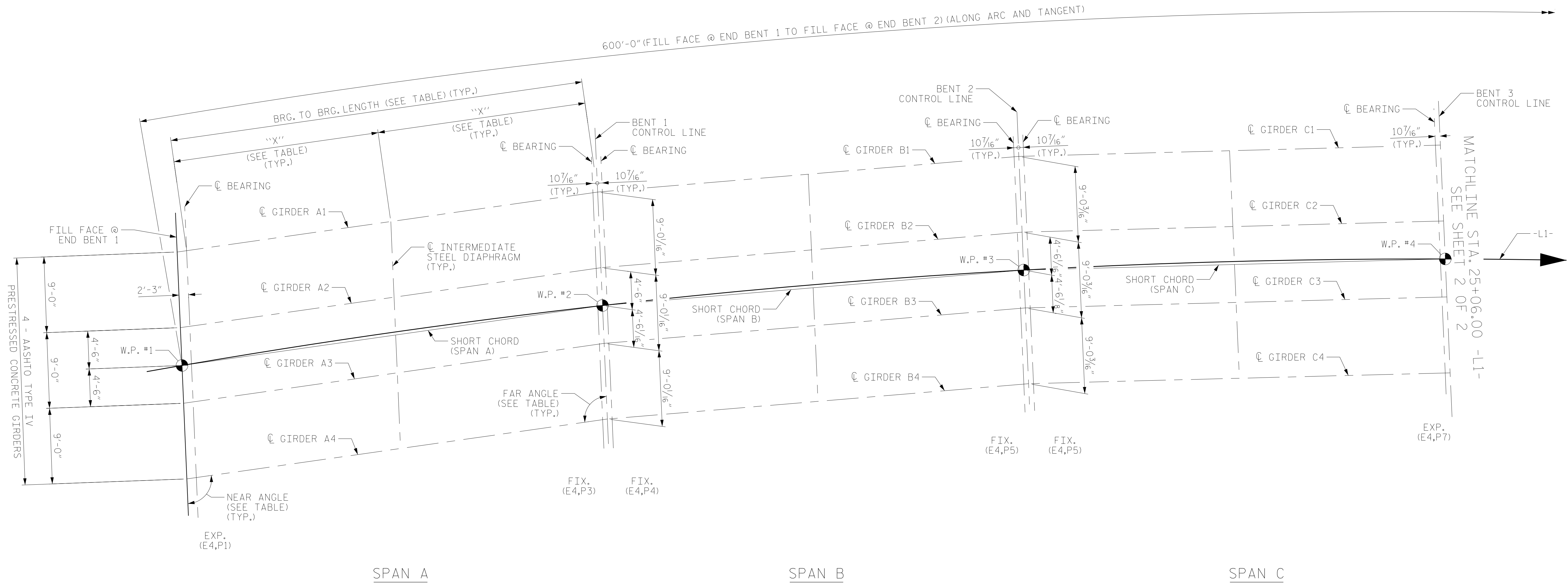
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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 SUPERSTRUCTURE
 PART PLAN OF SPAN E
 PLAN OF SPAN F

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-12
1			3			TOTAL SHEETS
2			4			37

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DRAWN BY : NSC DATE : 04/2019
 CHECKED BY : JMR DATE : 06/2019
 DESIGN ENGINEER OF RECORD: PDS DATE : 06/2019



FRAMING PLAN SPANS A - C

SPAN A				
GIRDER	BRG-BRG	NEAR ANGLE	FAR ANGLE	X
A1	96'-10 1/2"	89°-10'-22"	89°-10'-22"	48'-5 1/4"
A2	96'-10 1/2"	89°-10'-15"	89°-10'-15"	48'-5 1/4"
A3	96'-10 1/2"	89°-10'-07"	89°-10'-07"	48'-5 1/4"
A4	96'-10 1/2"	89°-09'-59"	89°-09'-59"	48'-5 1/4"

SPAN B				
GIRDER	BRG-BRG	NEAR ANGLE	FAR ANGLE	X
B1	98'-3"	87°-31'-07"	87°-31'-07"	49'-1 1/2"
B2	98'-3"	87°-30'-44"	87°-30'-44"	49'-1 1/2"
B3	98'-3"	87°-30'-20"	87°-30'-20"	49'-1 1/2"
B4	98'-3"	87°-29'-57"	87°-29'-57"	49'-1 1/2"

SPAN C				
GIRDER	BRG-BRG	NEAR ANGLE	FAR ANGLE	X
C1	98'-3"	85°-51'-52"	85°-51'-52"	49'-1 1/2"
C2	98'-3"	85°-51'-13"	85°-51'-13"	49'-1 1/2"
C3	98'-3"	85°-50'-34"	85°-50'-34"	49'-1 1/2"
C4	98'-3"	85°-49'-54"	85°-49'-54"	49'-1 1/2"

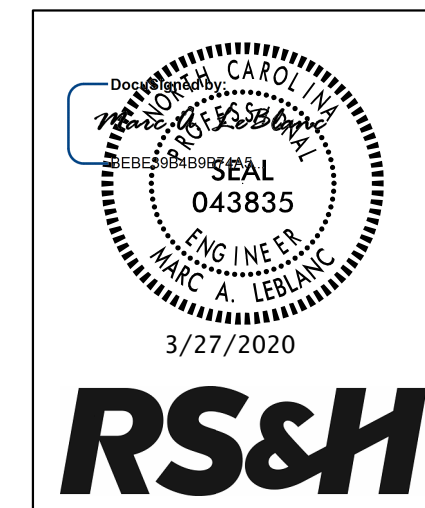
PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

NOTES:

FOR STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.

FOR END BENT DIAPHRAGM AND BENT DIAPHRAGM DETAILS, SEE TYPICAL SECTION AND PLAN OF SPAN SHEETS.

SHEET 1 OF 2 REPLACES BRIDGE NO. 240138



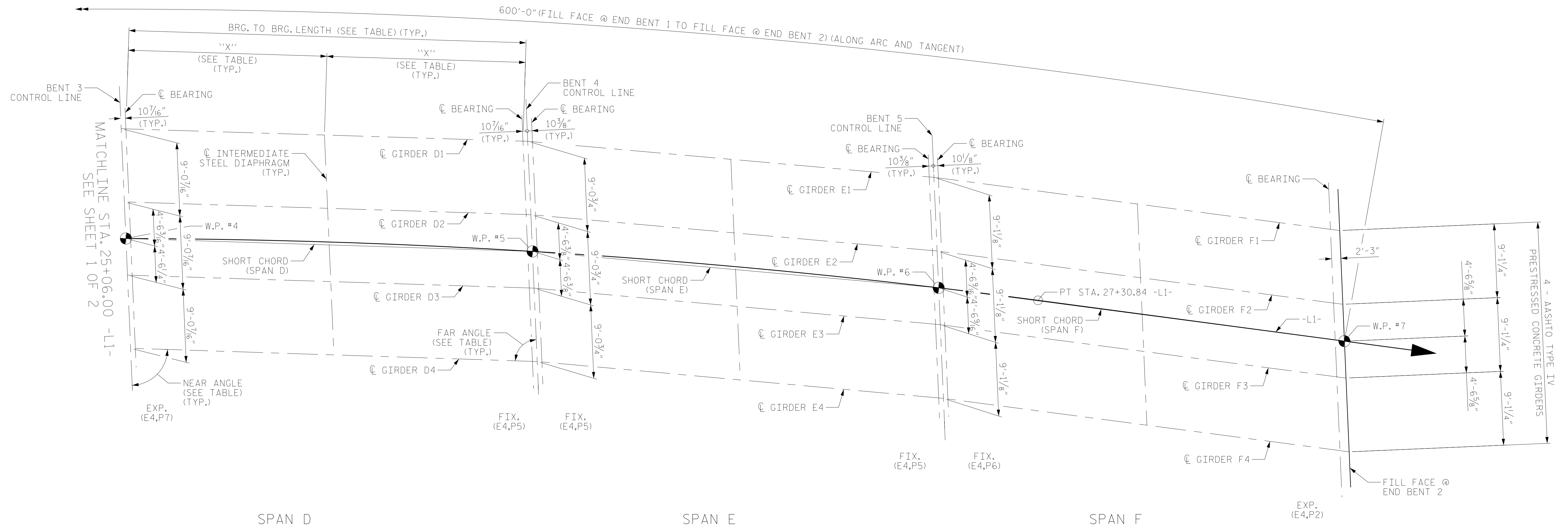
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 FRAMING PLAN
 SPANS A, B & C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-13
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : TWL DATE : 04/2019
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FRAMING PLAN SPANS D - F

SPAN D				
GIRDER	BRG-BRG	NEAR ANGLE	FAR ANGLE	X
D1	98'-3"	84°-12'-36"	84°-12'-36"	49'-1 1/2"
D2	98'-3"	84°-11'-42"	84°-11'-42"	49'-1 1/2"
D3	98'-3"	84°-10'-47"	84°-10'-47"	49'-1 1/2"
D4	98'-3"	84°-09'-52"	84°-09'-52"	49'-1 1/2"

SPAN E				
GIRDER	BRG-BRG	NEAR ANGLE	FAR ANGLE	X
E1	98'-3"	82°-33'-21"	82°-33'-21"	49'-1 1/2"
E2	98'-3"	82°-32'-11"	82°-32'-11"	49'-1 1/2"
E3	98'-3"	82°-31'-01"	82°-31'-01"	49'-1 1/2"
E4	98'-3"	82°-29'-50"	82°-29'-50"	49'-1 1/2"

SPAN F				
GIRDER	BRG-BRG	NEAR ANGLE	FAR ANGLE	X
F1	96'-10 1/2"	81°-20'-42"	81°-20'-42"	48'-5 1/4"
F2	96'-10 1/2"	81°-20'-21"	81°-20'-21"	48'-5 1/4"
F3	96'-10 1/2"	81°-20'-00"	81°-20'-00"	48'-5 1/4"
F4	96'-10 1/2"	81°-19'-41"	81°-19'-41"	48'-5 1/4"

NOTES:
 FOR STEEL DIAPHRAGM DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS" SHEET.
 FOR END BENT DIAPHRAGM AND BENT DIAPHRAGM DETAILS, SEE TYPICAL SECTION AND PLAN OF SPAN SHEETS.

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 2 OF 2 REPLACES BRIDGE NO. 240138



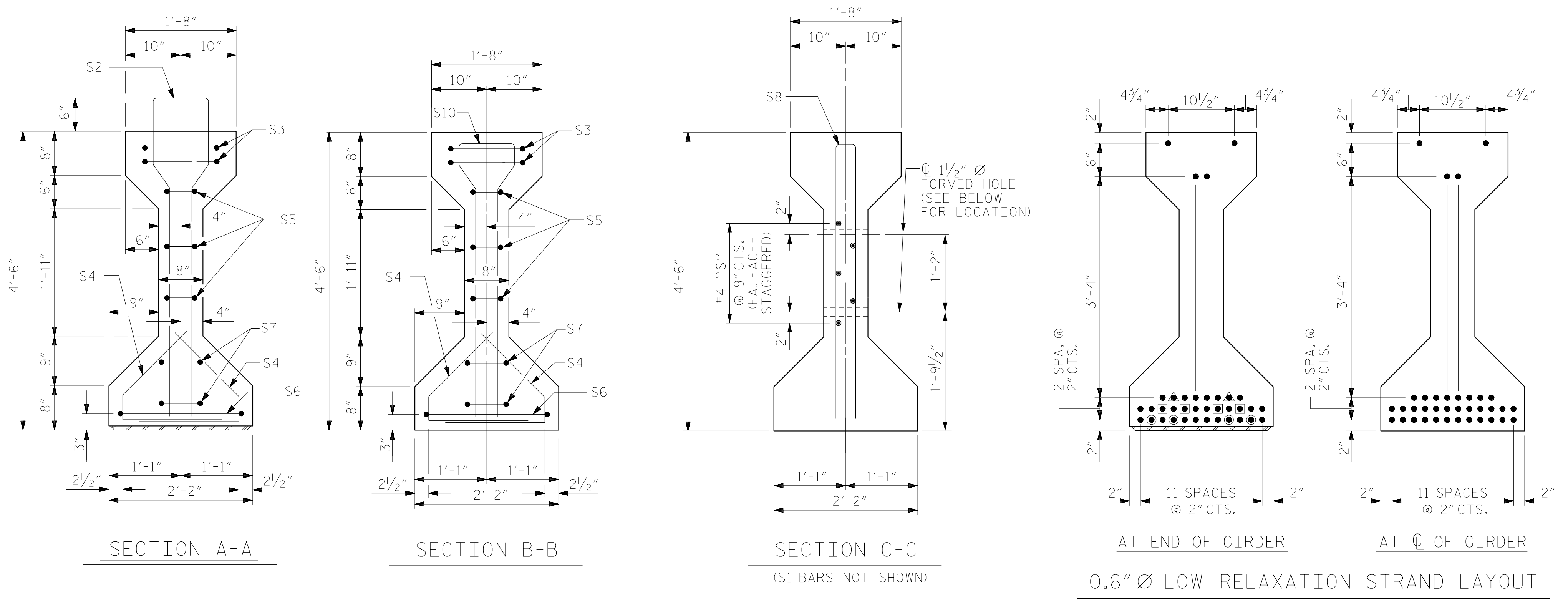
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 FRAMING PLAN
 SPANS D, E & F

DRAWN BY :	TWL	DATE :	04/2019
CHECKED BY :	MAL	DATE :	06/2019
DESIGN ENGINEER OF RECORD:	MAL	DATE :	06/2019

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-14
1			3			TOTAL SHEETS
2			4			37



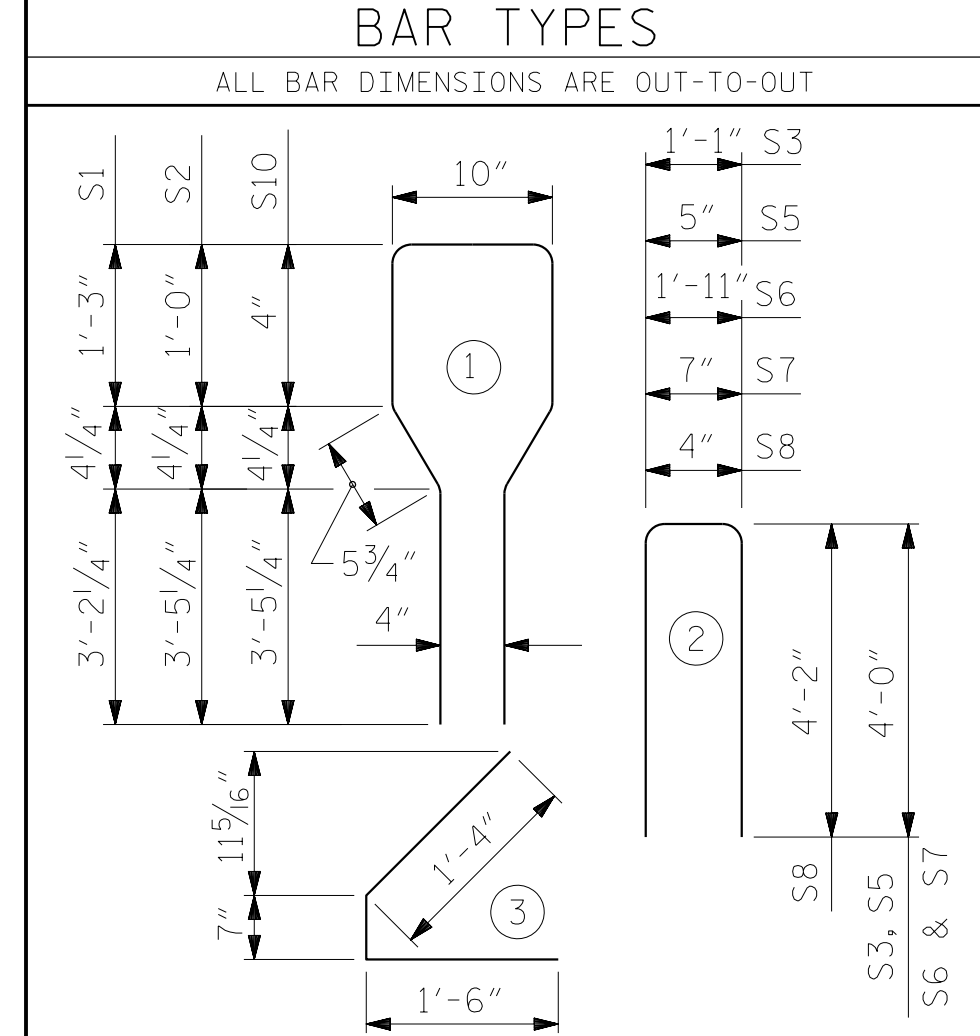
- DEBONDING LEGEND**
- FULLY BONDED STRANDS
 - ▲ STRANDS DEBONDED FOR 5'-0" FROM END OF GIRDER
 - STRANDS DEBONDED FOR 7'-0" FROM END OF GIRDER
 - STRANDS DEBONDED FOR 9'-0" FROM END OF GIRDER

0.6" Ø L. R. GRADE 270 STRANDS

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

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	113	#4	1	10'-8"	805
S2	16	#6	1	10'-8"	256
S3	4	#4	2	9'-1"	24
S4	84	#4	3	3'-5"	192
S5	6	#4	2	8'-5"	34
S6	2	#4	2	9'-11"	13
S7	4	#4	2	8'-7"	23
S8	2	#5	2	8'-8"	18
S9	5	#4	STR.	7'-0"	23
S10	16	#6	1	9'-4"	224

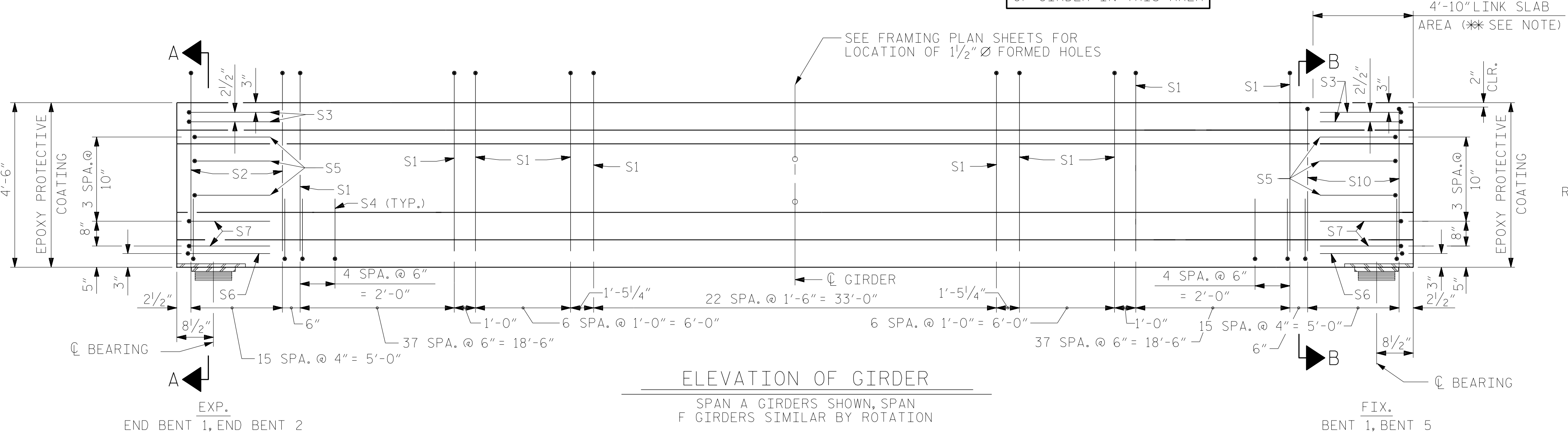
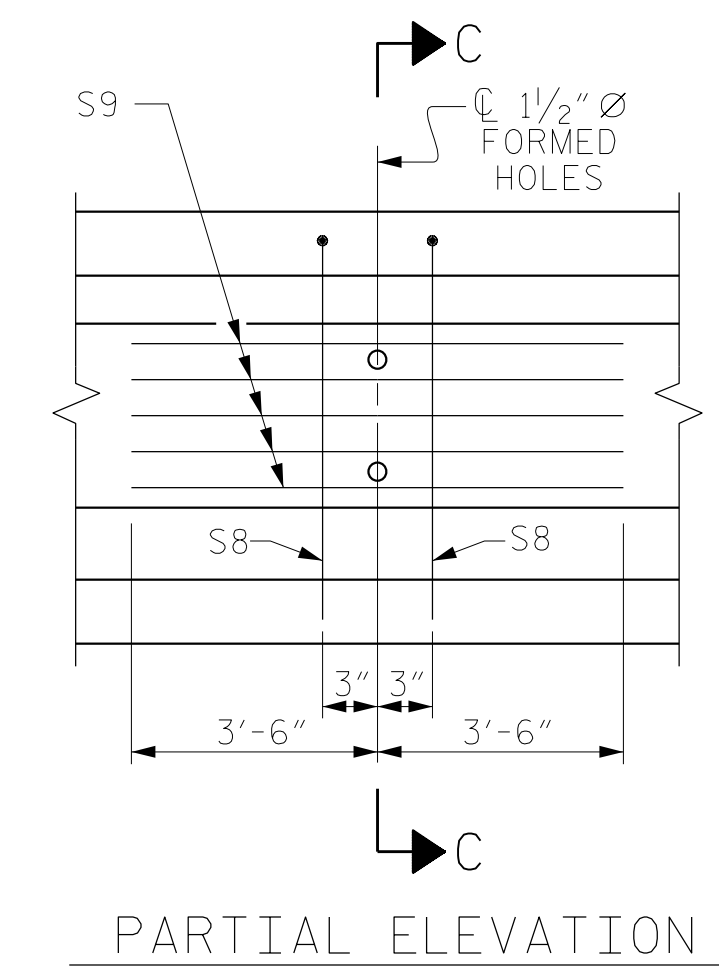
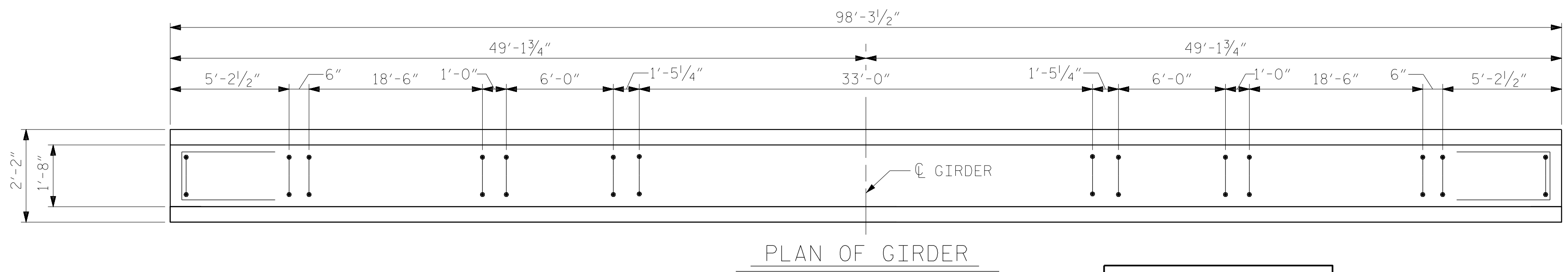


QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
SPAN A & F	1,612	20.0	36

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
8	98'-3 1/2"	786'-4"



**** DO NOT RAKE TOP OF GIRDER IN THIS AREA**

PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 1 OF 4 REPLACES BRIDGE NO. 240138

3/27/2020
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 RALEIGH

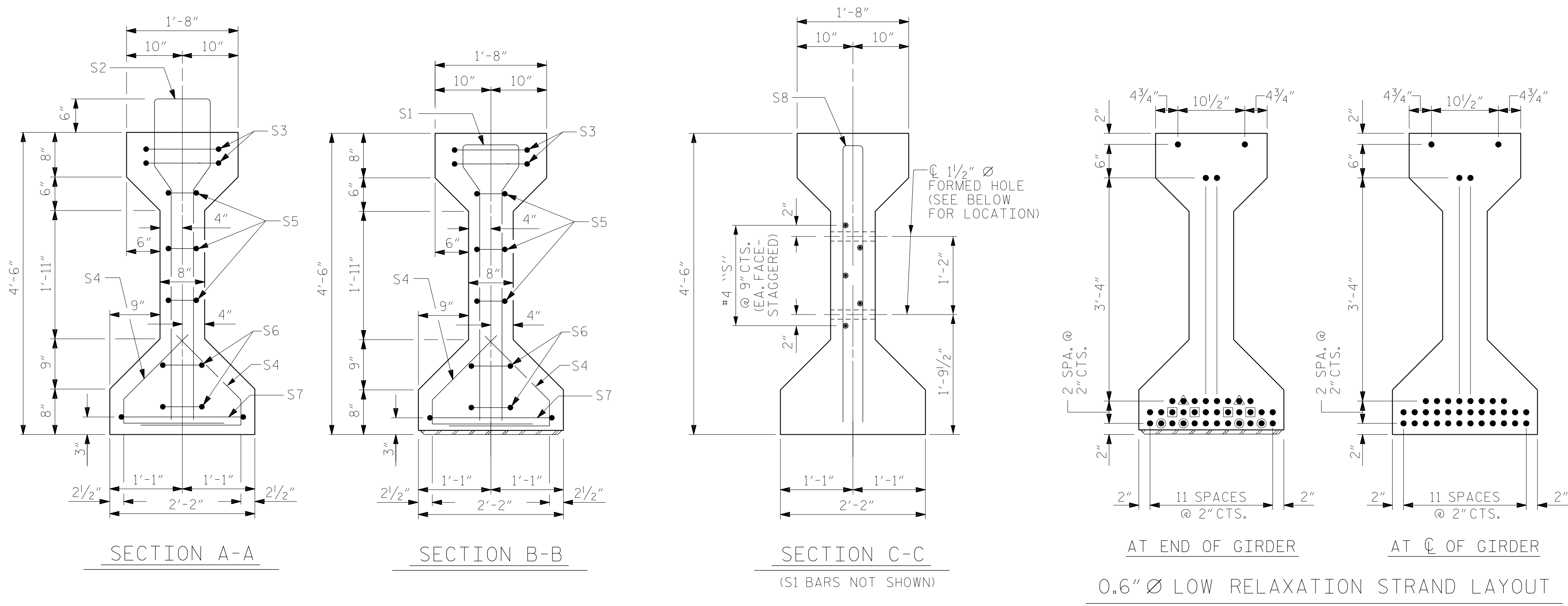
STANDARD

**AASHTO TYPE IV
 PRESTRESSED CONCRETE GIRDER
 SPANS A & F**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-15
1			3			TOTAL SHEETS
2			4			37

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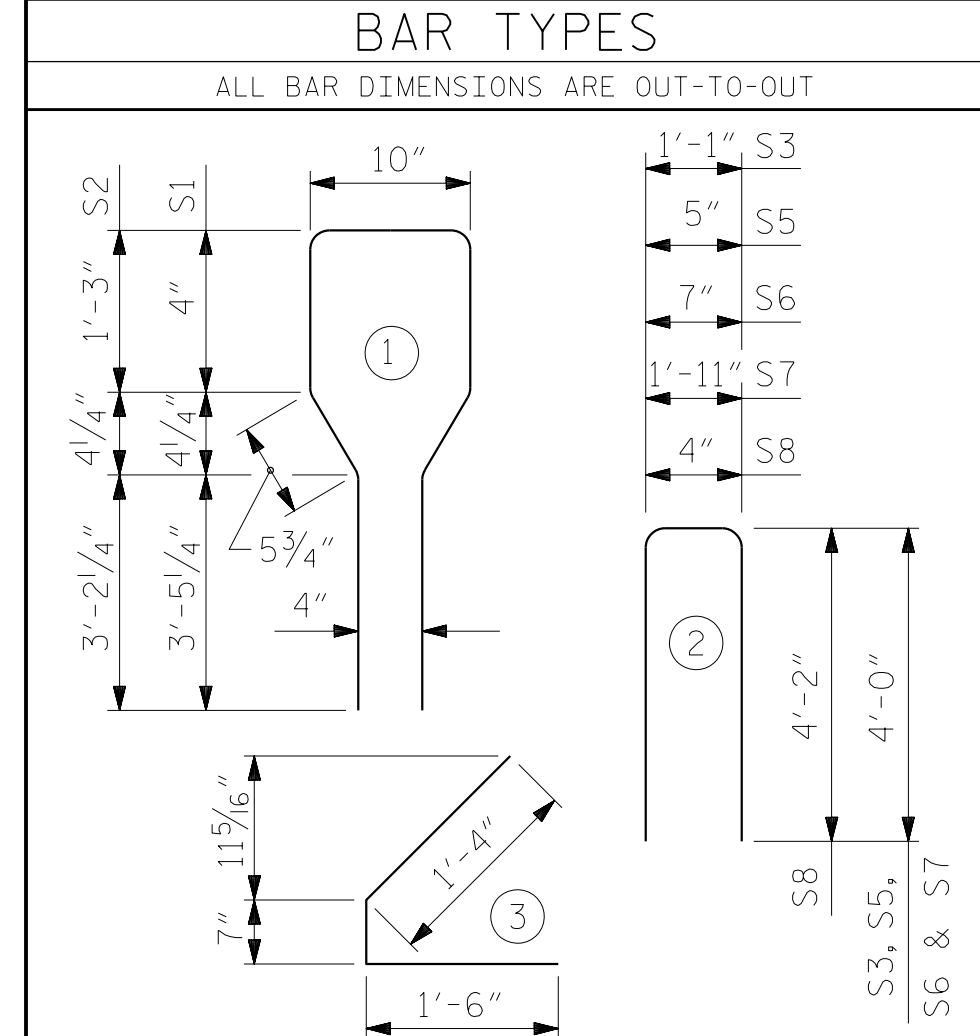


DEBONDING LEGEND

- FULLY BONDED STRANDS
- ▲ STRANDS DEBONDED FOR 5'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 7'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 9'-0" FROM END OF GIRDER

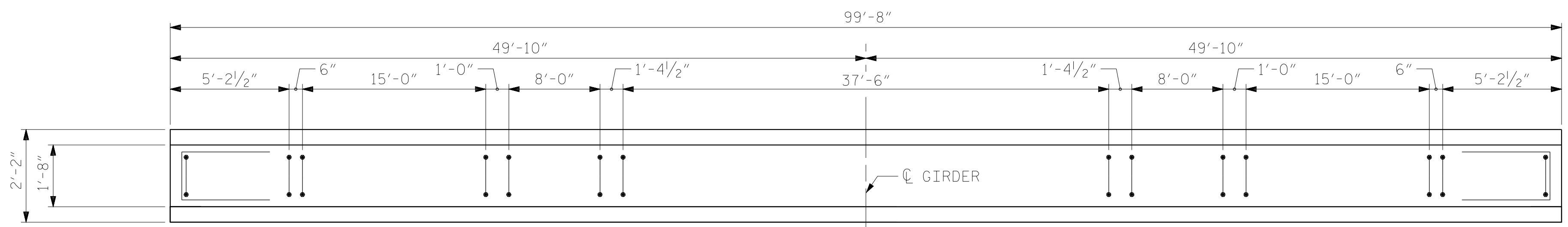
0.6" Ø L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	32	#6	1	9'-4"	449
S2	106	#4	1	10'-8"	756
S3	4	#4	2	9'-1"	24
S4	84	#4	3	3'-5"	192
S5	6	#4	2	8'-5"	34
S6	4	#4	2	8'-7"	23
S7	2	#4	2	9'-11"	13
S8	2	#5	2	8'-8"	18
S9	5	#4	STR.	7'-0"	23

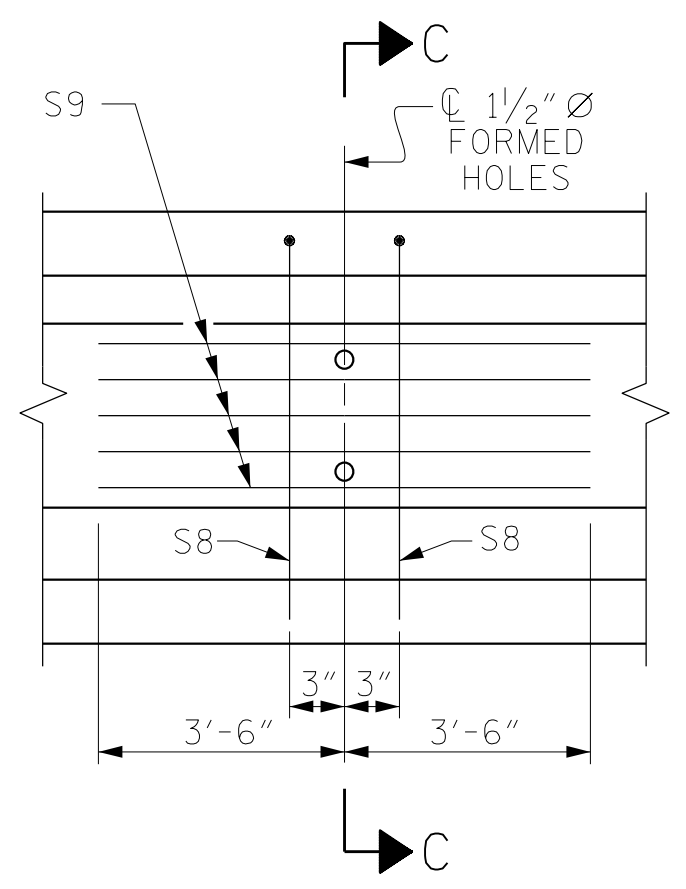


QUANTITIES FOR ONE GIRDER			
	REINFORCING STEEL LB.	8000 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
SPAN B & E	1,532	20.2	36

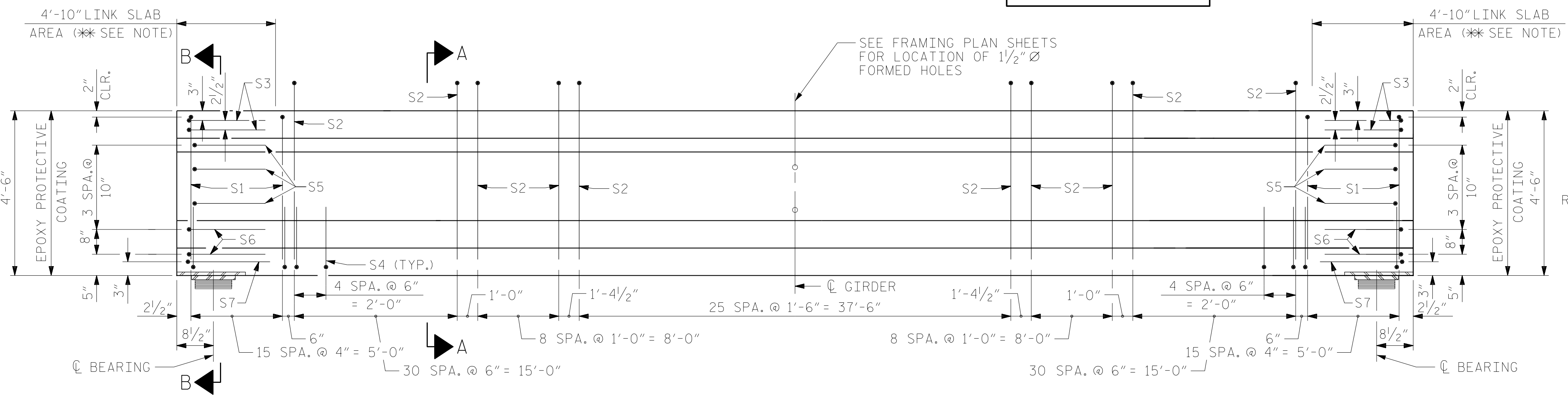
GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH
8	99'-8"	797'-4"



** DO NOT RAKE TOP OF GIRDER IN THIS AREA



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDER NO. 1 THRU 4



PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

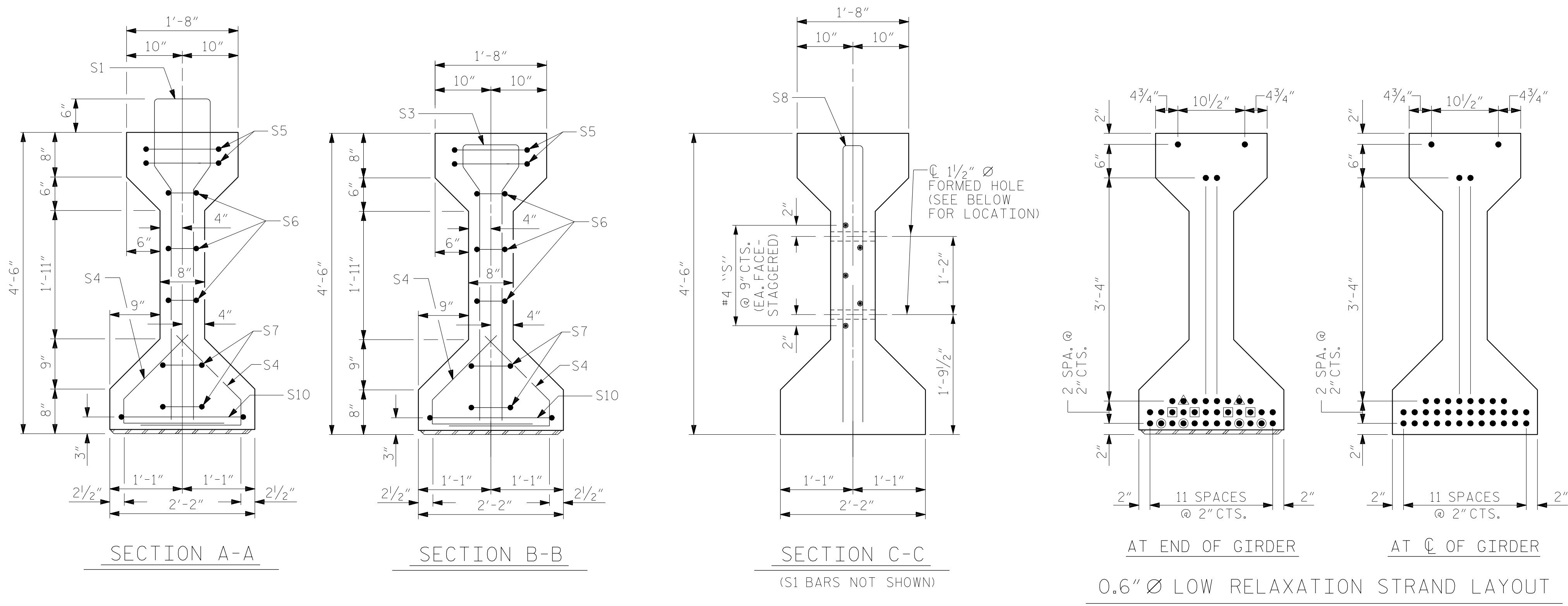
SHEET 2 OF 4 REPLACES BRIDGE NO. 240138



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
AASHTO TYPE IV PRESTRESSED CONCRETE GIRDER SPANS B & E					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S1-16
					TOTAL SHEETS 37

DRAWN BY : TWL DATE : 06/2019
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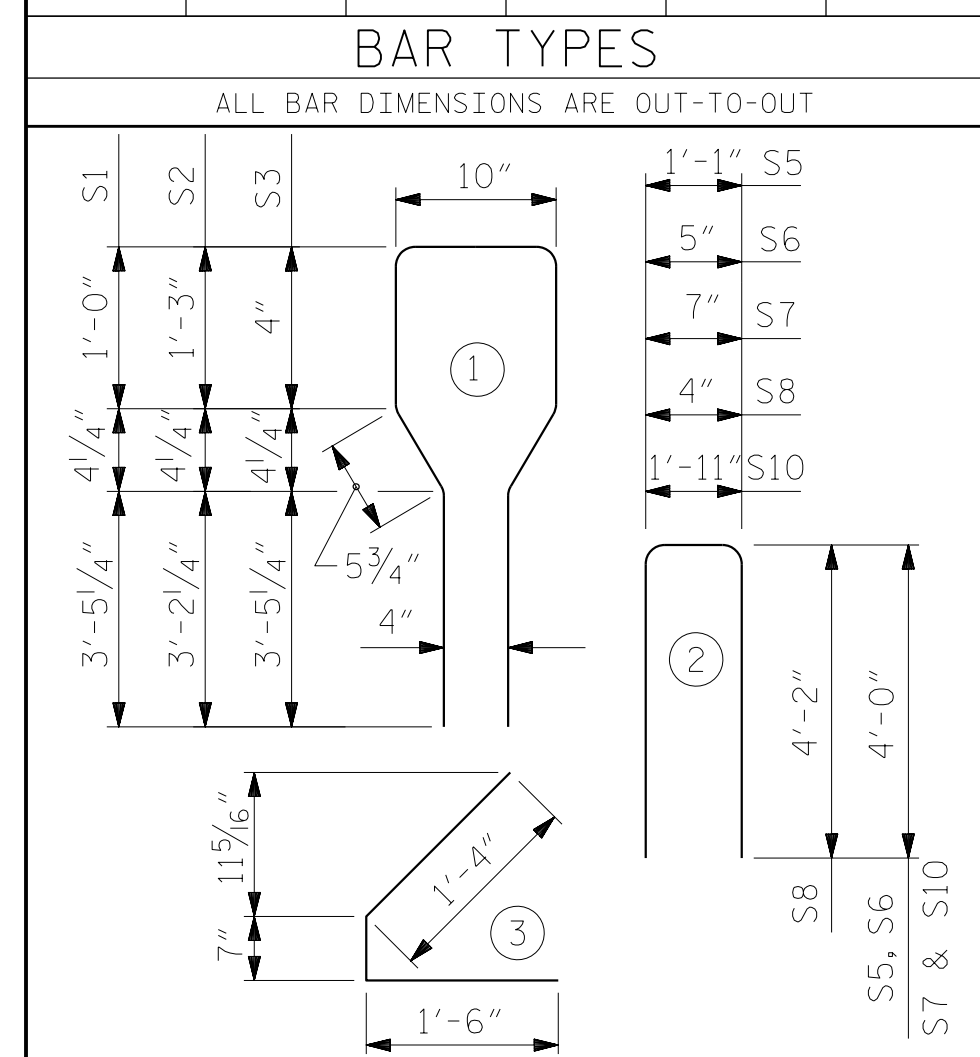
- DEBONDING LEGEND**
- FULLY BONDED STRANDS
 - ▲ STRANDS DEBONDED FOR 5'-0" FROM END OF GIRDER
 - STRANDS DEBONDED FOR 7'-0" FROM END OF GIRDER
 - STRANDS DEBONDED FOR 9'-0" FROM END OF GIRDER

0.6" Ø L. R. GRADE 270 STRANDS

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

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	16	#6	1	10'-8"	256
S2	106	#4	1	10'-8"	756
S3	16	#6	1	9'-4"	224
S4	84	#4	3	3'-5"	192
S5	4	#4	2	9'-1"	24
S6	6	#4	2	8'-5"	34
S7	4	#4	2	8'-7"	23
S8	2	#5	2	8'-8"	18
S9	5	#4	STR.	7'-0"	23
S10	2	#4	2	9'-11"	13

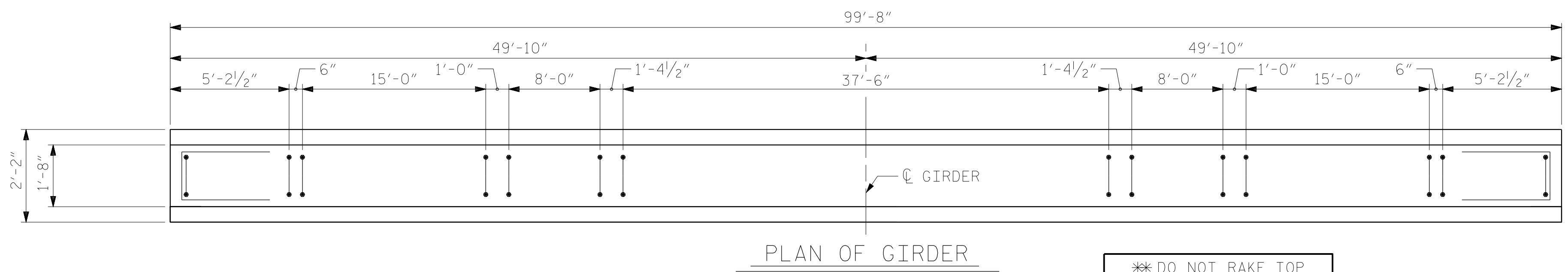


QUANTITIES FOR ONE GIRDER

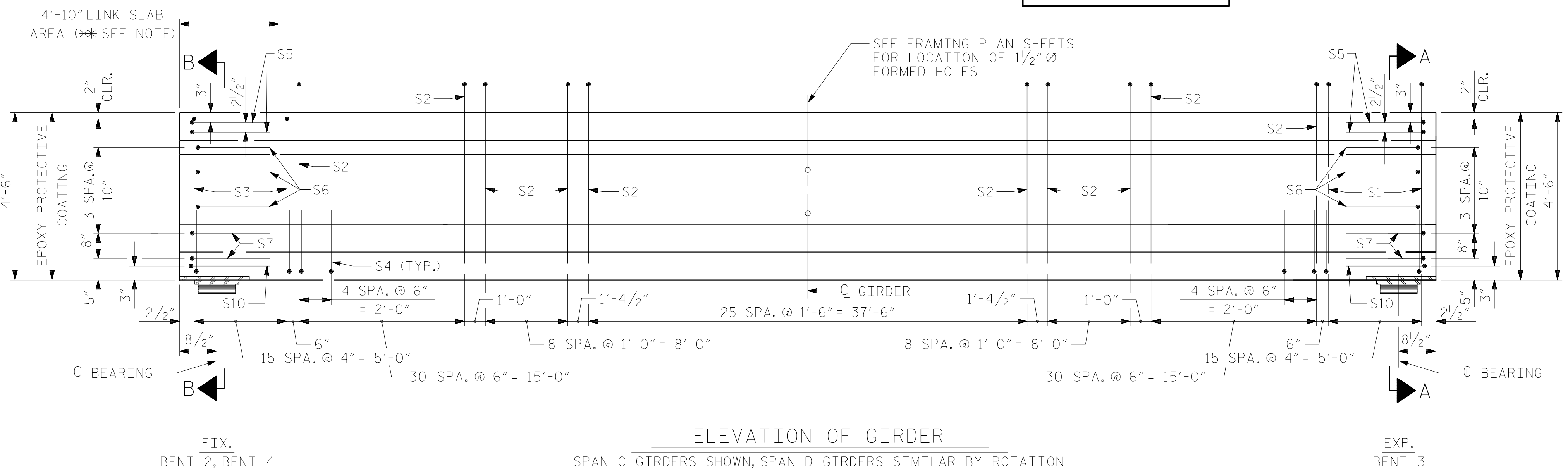
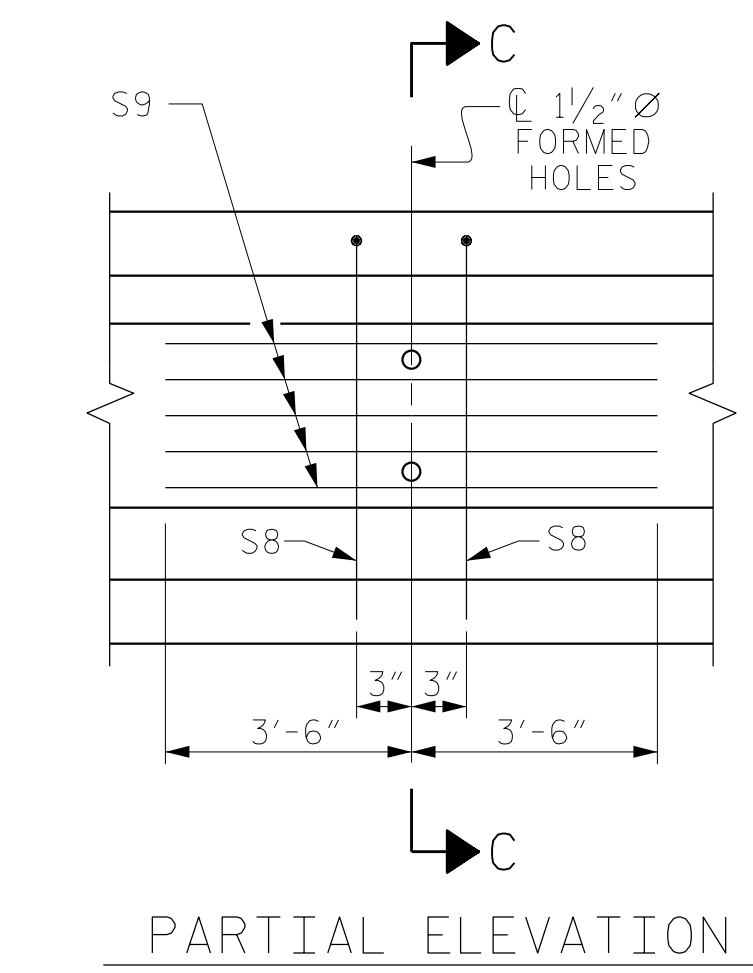
SPAN	REINFORCING STEEL	8000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
SPAN C & D	1,563	20.2	36

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
8	99'-8"	797'-4"



** DO NOT RAKE TOP OF GIRDER IN THIS AREA



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PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-
 SHEET 3 OF 4 REPLACES BRIDGE NO. 240138

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 AASHTO TYPE IV
 PRESTRESSED CONCRETE GIRDER
 SPANS C & D

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-17
1			3			TOTAL SHEETS
2			4			37

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.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES.

ALL REINFORCING STEEL SHALL BE GRADE 60.

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

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

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE GIRDER SHALL BE DONE WHEN CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6,000 PSI.

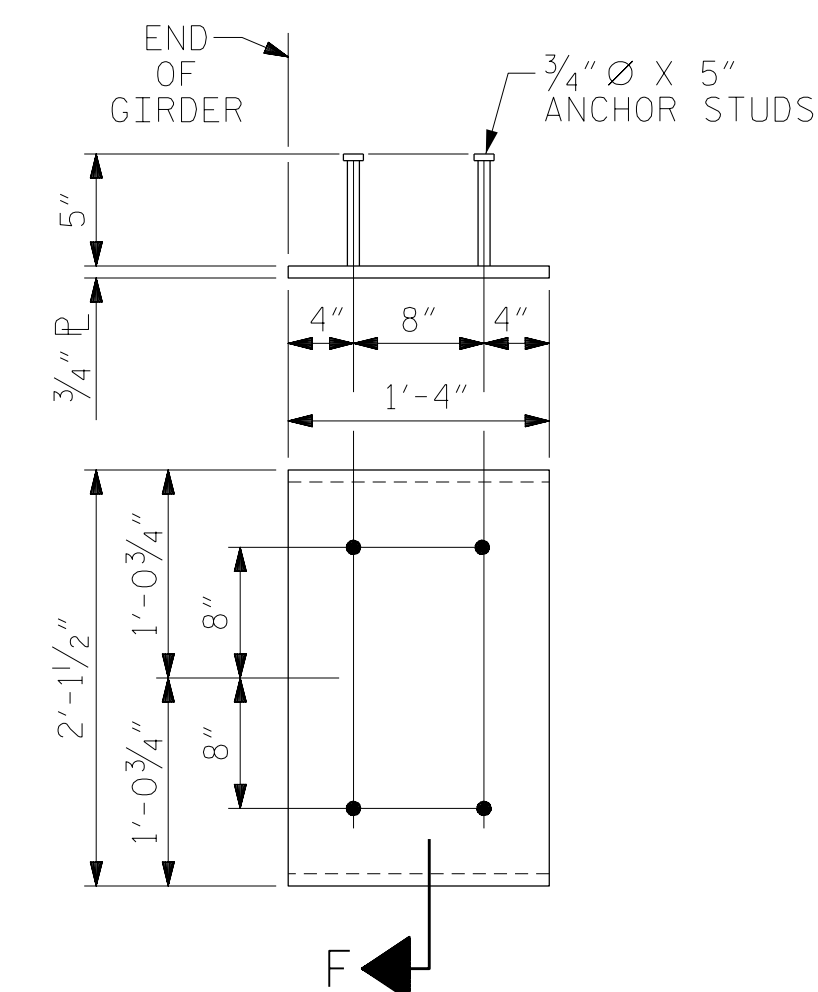
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

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

ALL PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

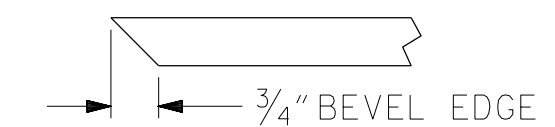
— DEAD LOAD DEFLECTION TABLE FOR GIRDERS —											
0.6" Ø LOW RELAXATION	SPAN A										
	GIRDER 1										
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.062	0.118	0.162	0.189	0.199	0.189	0.162	0.118	0.062	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.044	0.084	0.115	0.134	0.141	0.134	0.115	0.084	0.044	0.000
FINAL CAMBER	↑ 0"	1/4"	7/16"	9/16"	1 1/16"	1 1/16"	1 1/16"	9/16"	7/16"	1/4"	0"
GIRDERS 2 AND 3											
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.062	0.118	0.162	0.189	0.199	0.189	0.162	0.118	0.062	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.051	0.096	0.131	0.154	0.161	0.154	0.131	0.096	0.051	0.000
FINAL CAMBER	↑ 0"	1/8"	1/4"	3/8"	7/16"	7/16"	7/16"	3/8"	1/4"	1/8"	0"
GIRDER 4											
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.062	0.118	0.162	0.189	0.199	0.189	0.162	0.118	0.062	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.042	0.079	0.108	0.126	0.133	0.126	0.108	0.079	0.042	0.000
FINAL CAMBER	↑ 0"	1/4"	1/2"	5/8"	3/4"	13/16"	3/4"	5/8"	1/2"	1/4"	0"

— DEAD LOAD DEFLECTION TABLE FOR GIRDERS —											
0.6" Ø LOW RELAXATION	SPANS B, C, D & E										
	GIRDER 1										
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.063	0.119	0.163	0.190	0.200	0.190	0.163	0.119	0.063	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.047	0.089	0.122	0.143	0.151	0.143	0.122	0.089	0.047	0.000
FINAL CAMBER	↑ 0"	3/16"	3/8"	1/2"	9/16"	5/8"	9/16"	1/2"	3/8"	3/16"	0"
GIRDERS 2 AND 3											
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.063	0.119	0.163	0.190	0.200	0.190	0.163	0.119	0.063	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.054	0.102	0.139	0.163	0.171	0.163	0.139	0.102	0.054	0.000
FINAL CAMBER	↑ 0"	1/8"	3/16"	5/16"	5/16"	3/8"	5/16"	5/16"	3/16"	1/8"	0"
GIRDER 4											
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.063	0.119	0.163	0.190	0.200	0.190	0.163	0.119	0.063	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.044	0.084	0.115	0.135	0.141	0.135	0.115	0.084	0.044	0.000
FINAL CAMBER	↑ 0"	1/4"	7/16"	9/16"	1 1/16"	1 1/16"	1 1/16"	9/16"	7/16"	1/4"	0"



EMBEDDED PLATE "B-1" DETAILS FOR AASHTO TYPE IV GIRDER

(2 REQ'D PER GIRDER)



SECTION "F"
(SEE NOTES)

— DEAD LOAD DEFLECTION TABLE FOR GIRDERS —											
0.6" Ø LOW RELAXATION	SPAN F										
	GIRDER 1										
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.062	0.118	0.162	0.189	0.199	0.189	0.162	0.118	0.062	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.044	0.082	0.113	0.132	0.139	0.132	0.113	0.082	0.044	0.000
FINAL CAMBER	↑ 0"	1/4"	7/16"	9/16"	1 1/16"	3/4"	1 1/16"	9/16"	7/16"	1/4"	0"
GIRDERS 2 AND 3											
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.062	0.118	0.162	0.189	0.199	0.189	0.162	0.118	0.062	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.051	0.096	0.131	0.154	0.162	0.154	0.131	0.096	0.051	0.000
FINAL CAMBER	↑ 0"	1/8"	1/4"	3/8"	7/16"	7/16"	7/16"	3/8"	1/4"	1/8"	0"
GIRDER 4											
TENTH POINTS	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CAMBER (GIRDER ALONE IN PLACE)	↑ 0.000	0.062	0.118	0.162	0.189	0.199	0.189	0.162	0.118	0.062	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓ 0.000	0.043	0.082	0.112	0.131	0.138	0.131	0.112	0.082	0.043	0.000
FINAL CAMBER	↑ 0"	1/4"	7/16"	5/8"	1 1/16"	3/4"	1 1/16"	5/8"	7/16"	1/4"	0"

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

PROJECT NO. B-4484
CRAVEN COUNTY
STATION: 25+06.00 -L1-

SHEET 4 OF 4 REPLACES BRIDGE NO. 240138

Professional Engineer Seal for Marc A. LeBlanc, No. 043835, State of North Carolina, dated 3/27/2020.

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DEAD LOAD DEFLECTION TABLES
AND PRESTRESSED CONCRETE
GIRDER DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-18
1			3			TOTAL SHEETS
2			4			37

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DRAWN BY : TWL DATE : 06/2019
CHECKED BY : MAL DATE : 06/2019
DESIGN ENGINEER OF RECORD: PDS DATE : 06/2019

STRUCTURAL STEEL NOTES

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

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

TENSION ON THE ASTM A449 BOLTS THROUGH THE GIRDER WEB SHALL BE SNUG TIGHTENED FOLLOWED BY AN ADDITIONAL 1/4 TURN.

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

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

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

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

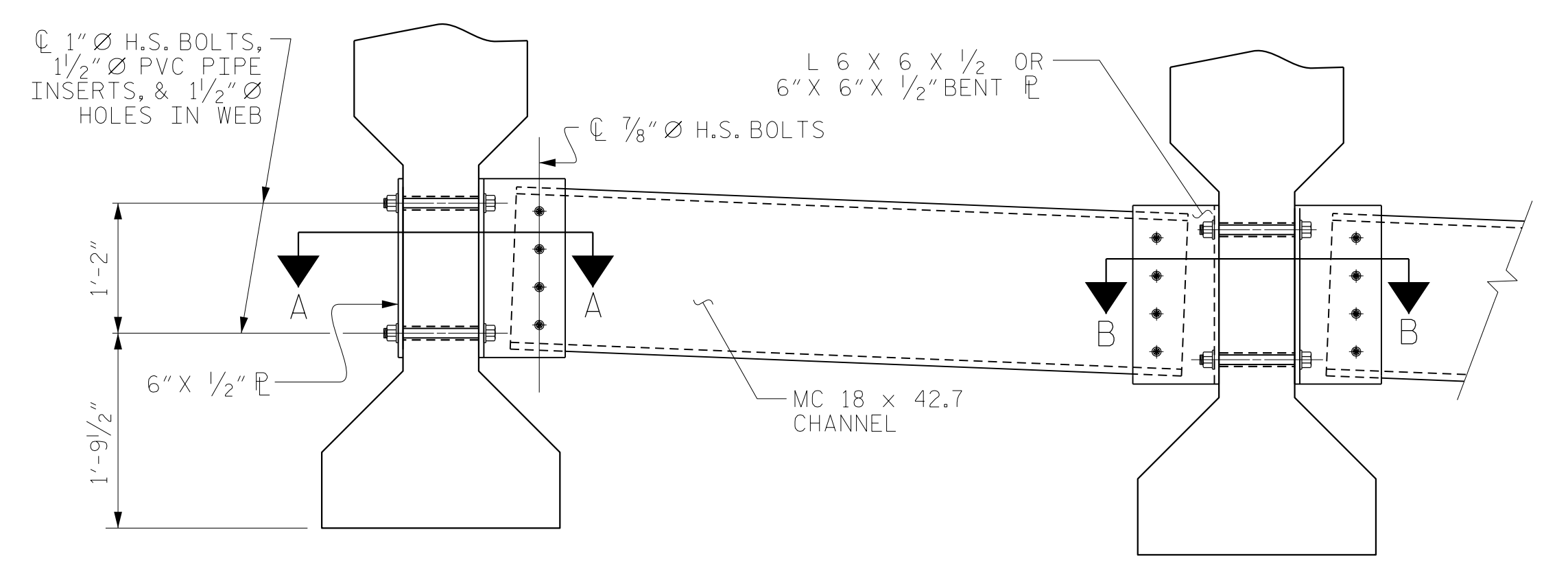
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

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

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

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

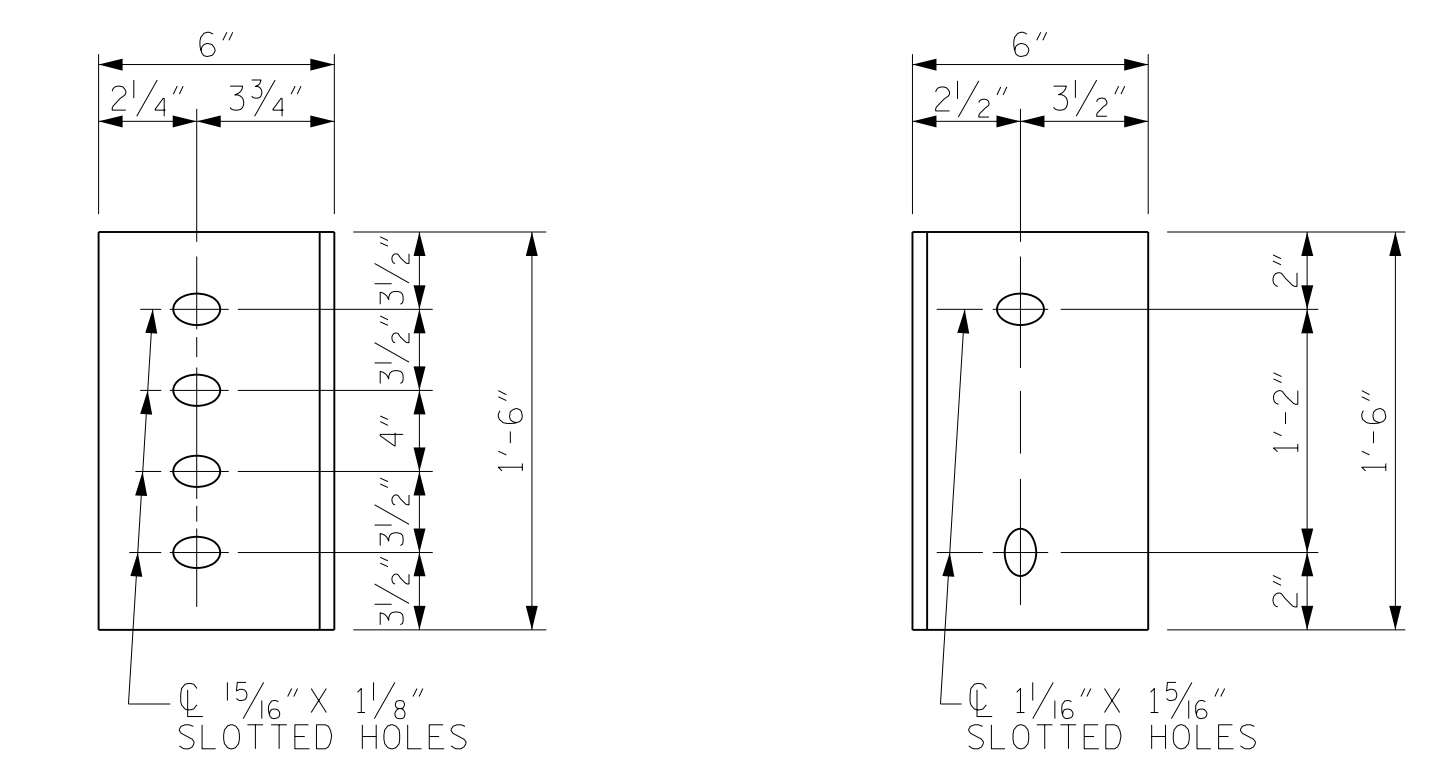
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.



EXTERIOR GIRDER

INTERIOR GIRDER

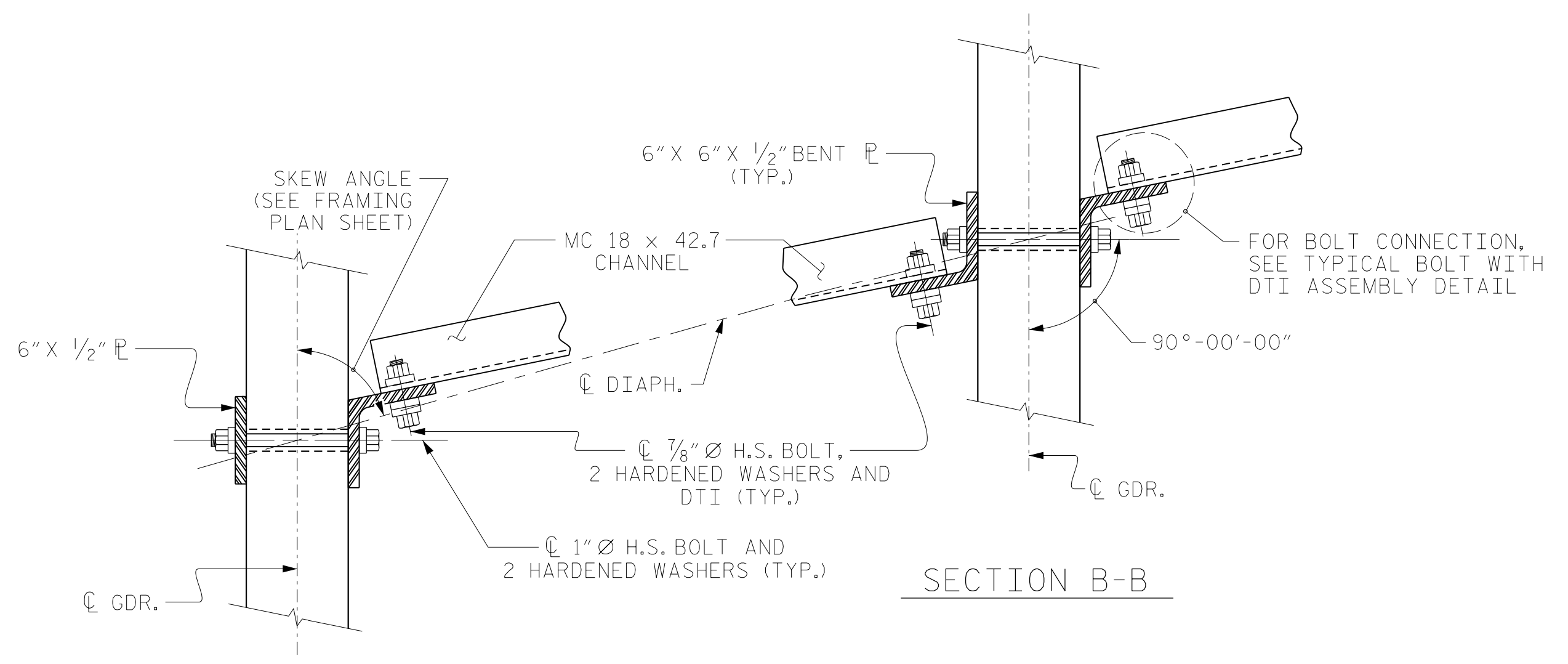
PART SECTION AT INTERMEDIATE DIAPHRAGM



DIAPHRAGM FACE

WEB FACE

CONNECTOR PLATE DETAILS



SECTION A-A

SECTION B-B

CONNECTION DETAILS

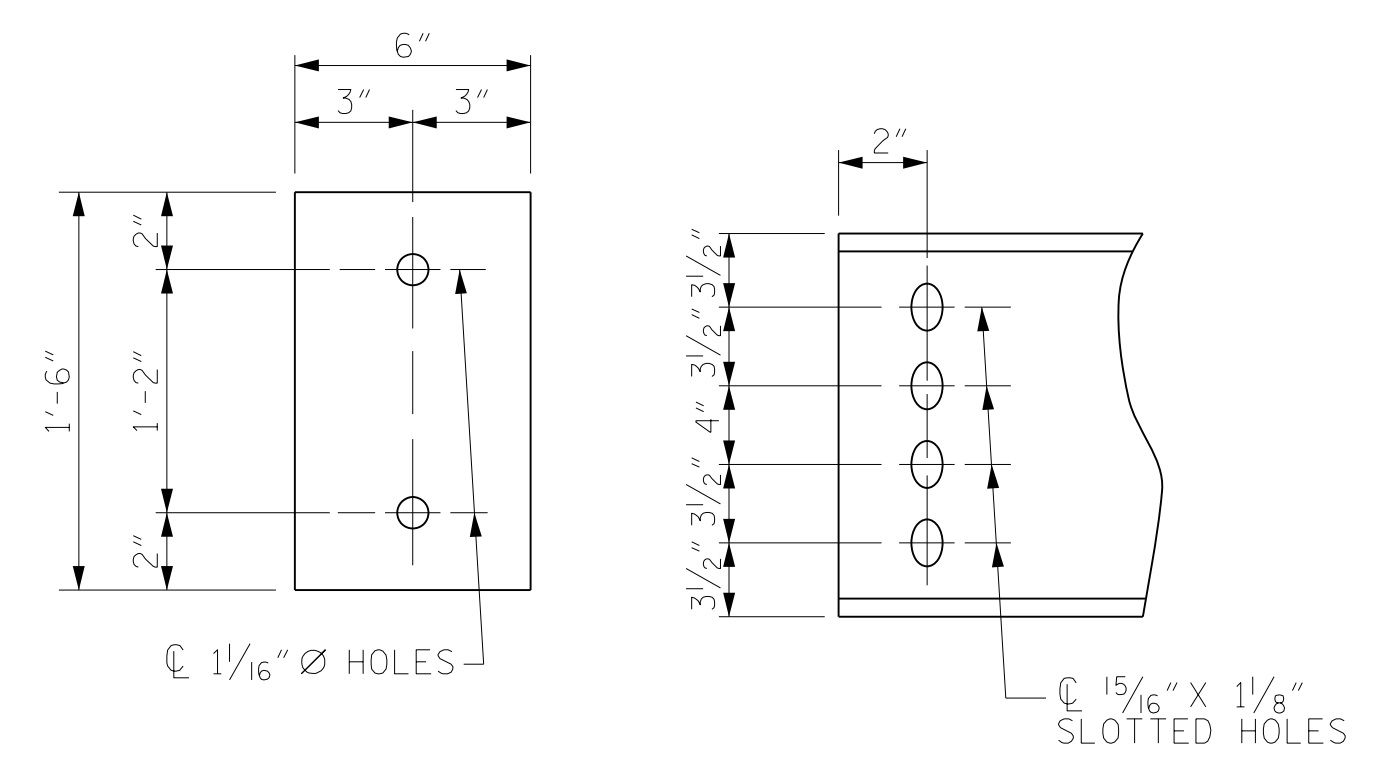
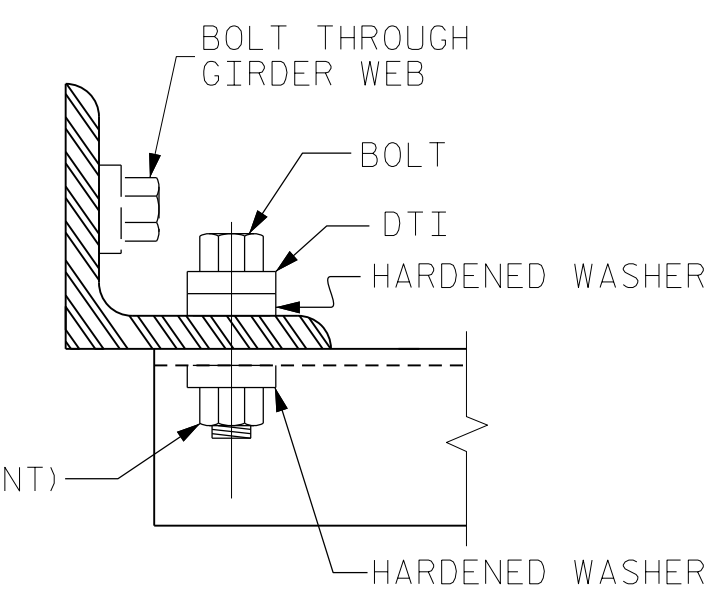


PLATE DETAILS

CHANNEL END



BOLT WITH DTI ASSEMBLY DETAIL

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

REPLACES BRIDGE NO. 240138

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 INTERMEDIATE
 STEEL DIAPHRAGMS
 FOR TYPE IV PRESTRESSED
 CONCRETE GIRDERS

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

ASSEMBLED BY : TWL	DATE : 04/2019
CHECKED BY : MAL	DATE : 06/2019
DRAWN BY : TLA 6/05	REV. 5/1/06RRR KMM/GM
CHECKED BY : VC 6/05	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

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NOTES

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

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

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

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

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

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

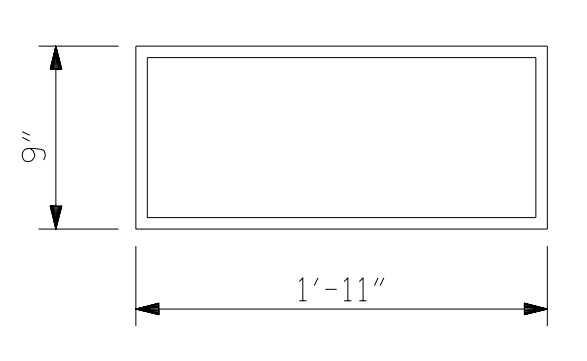
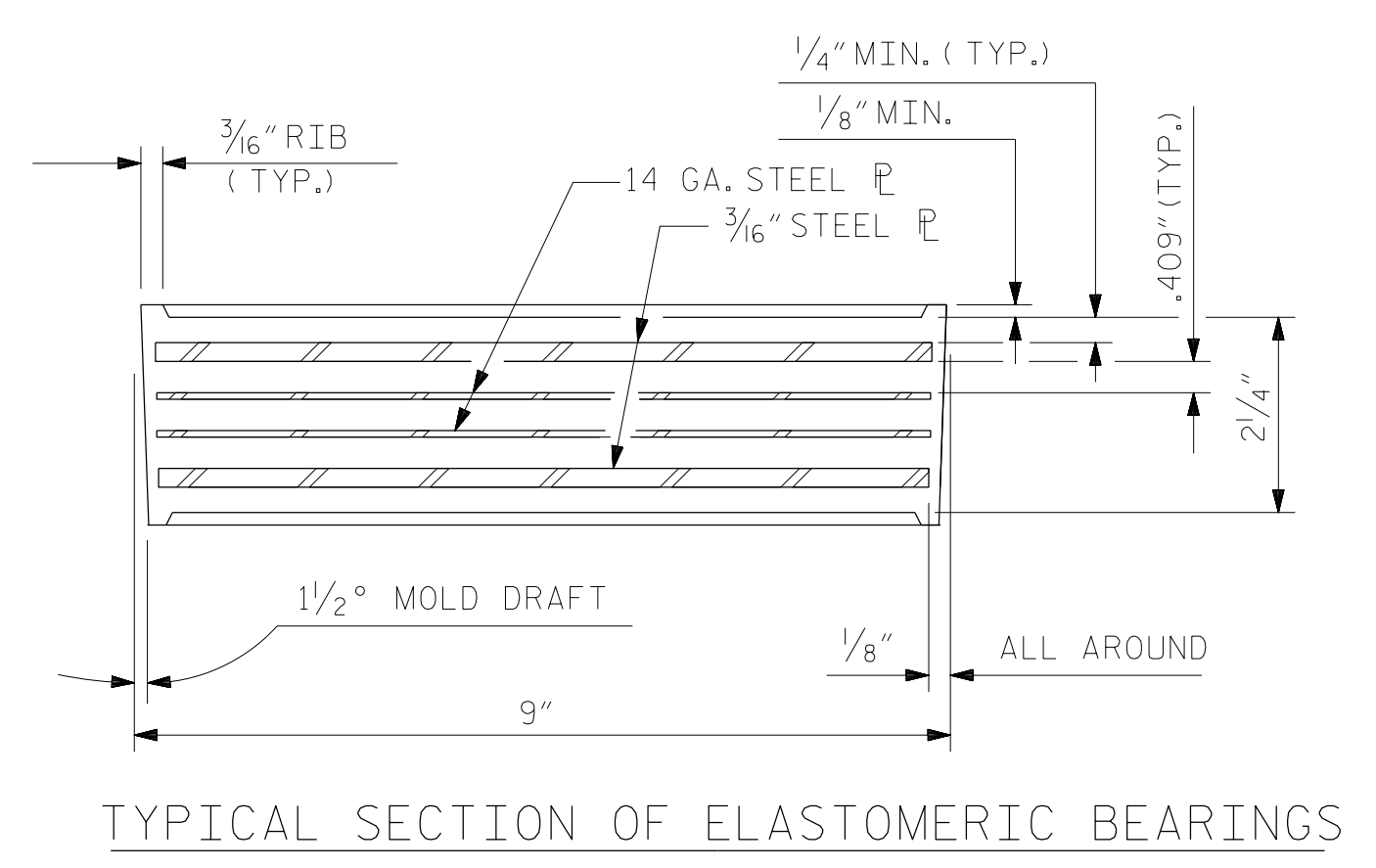
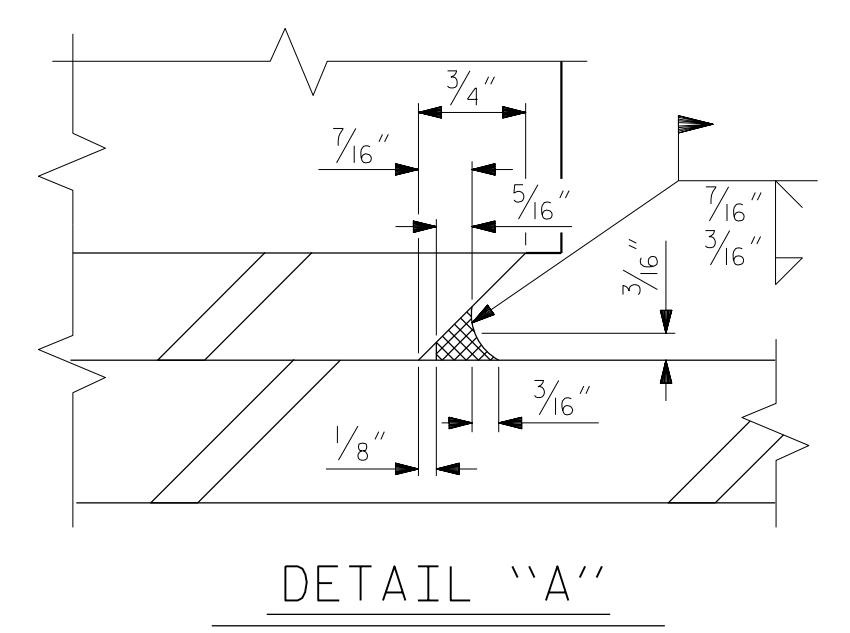
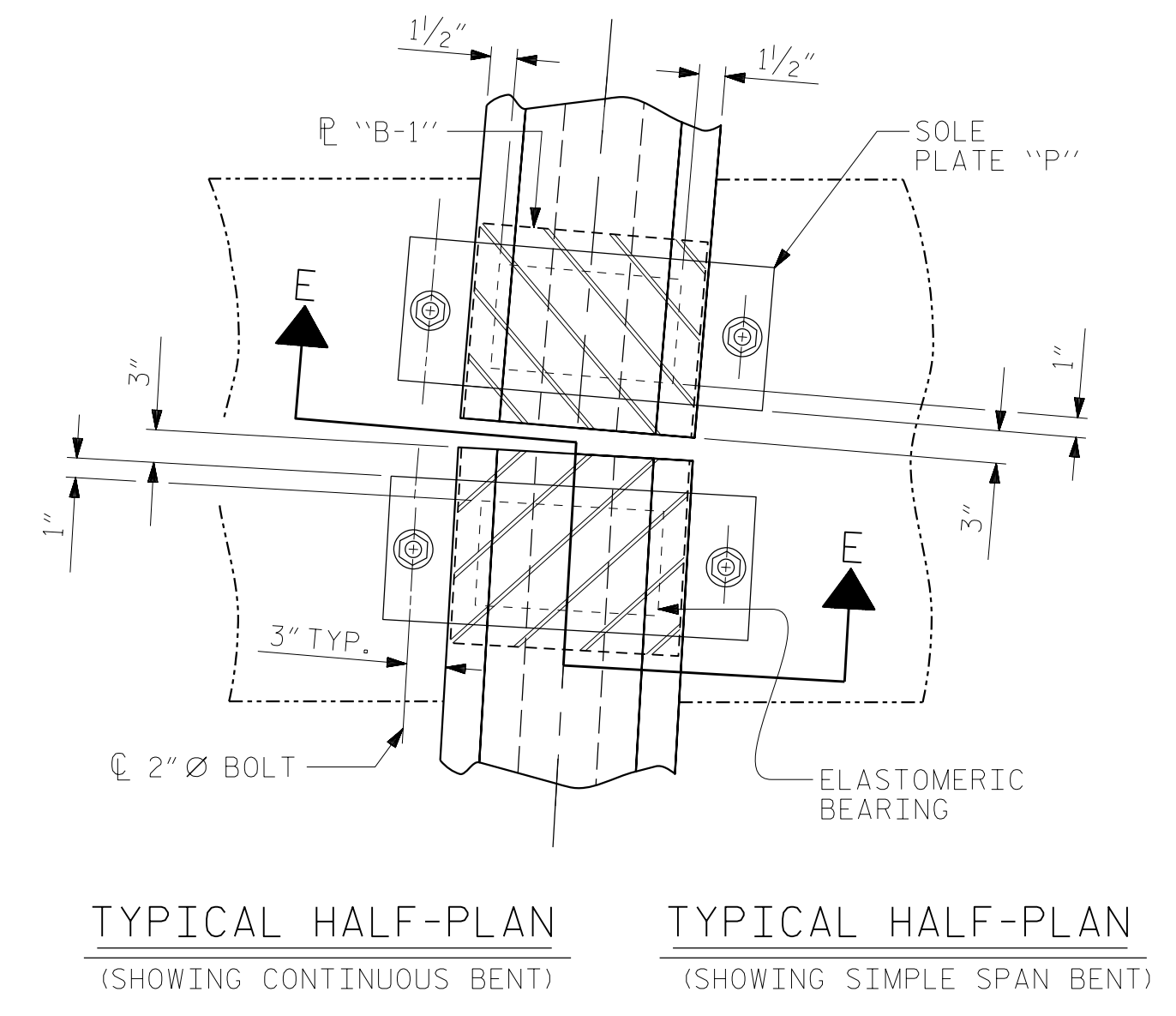
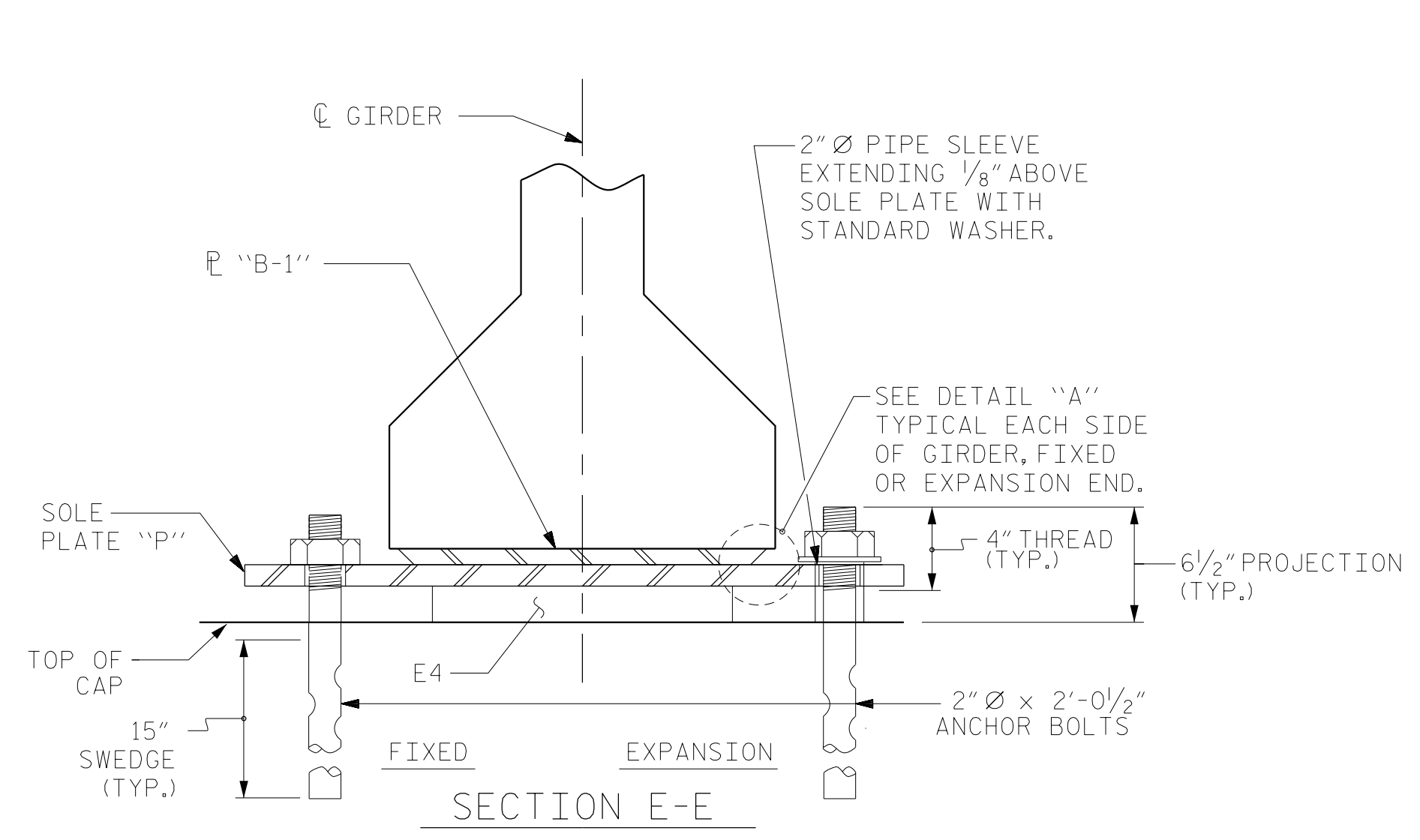
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. NO SHOP DRAWINGS ARE REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

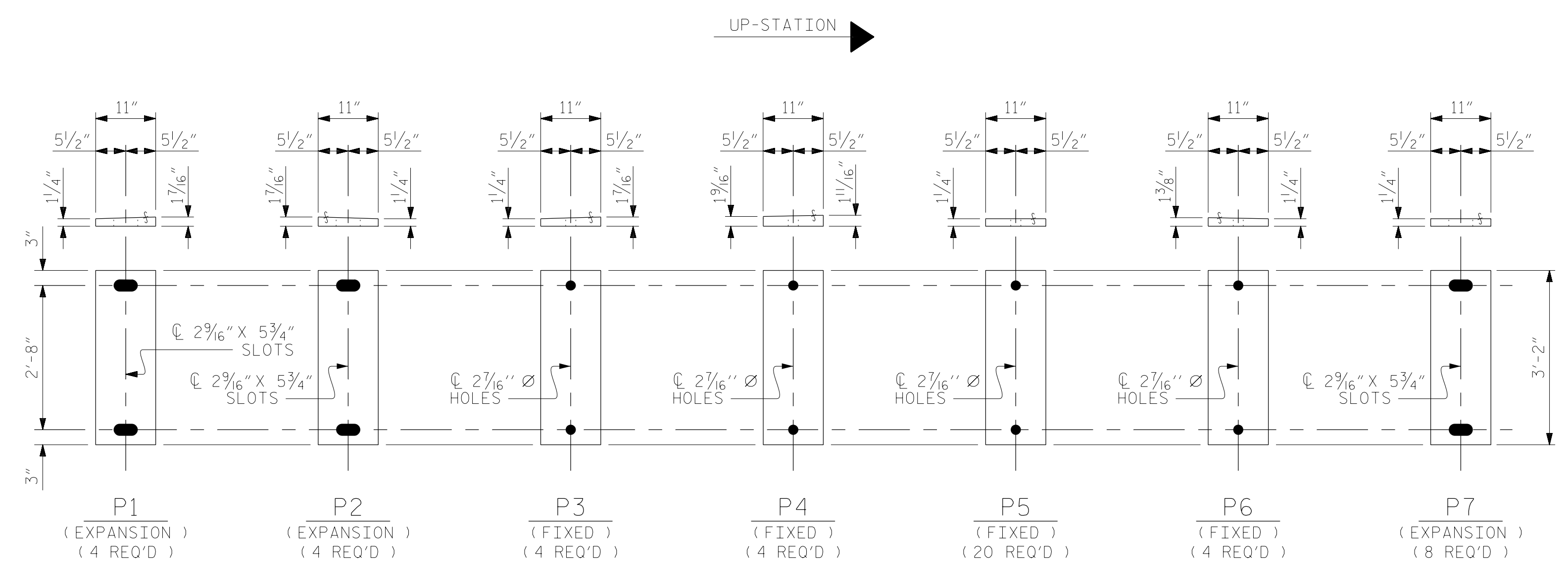
THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.



E4 (48 REQ'D)
PLAN VIEW OF ELASTOMERIC BEARING
TYPE V



SOLE PLATE DETAILS ("P")

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

PROJECT NO. B-4484
CRAVEN COUNTY
STATION: 25+06.00 -L1-

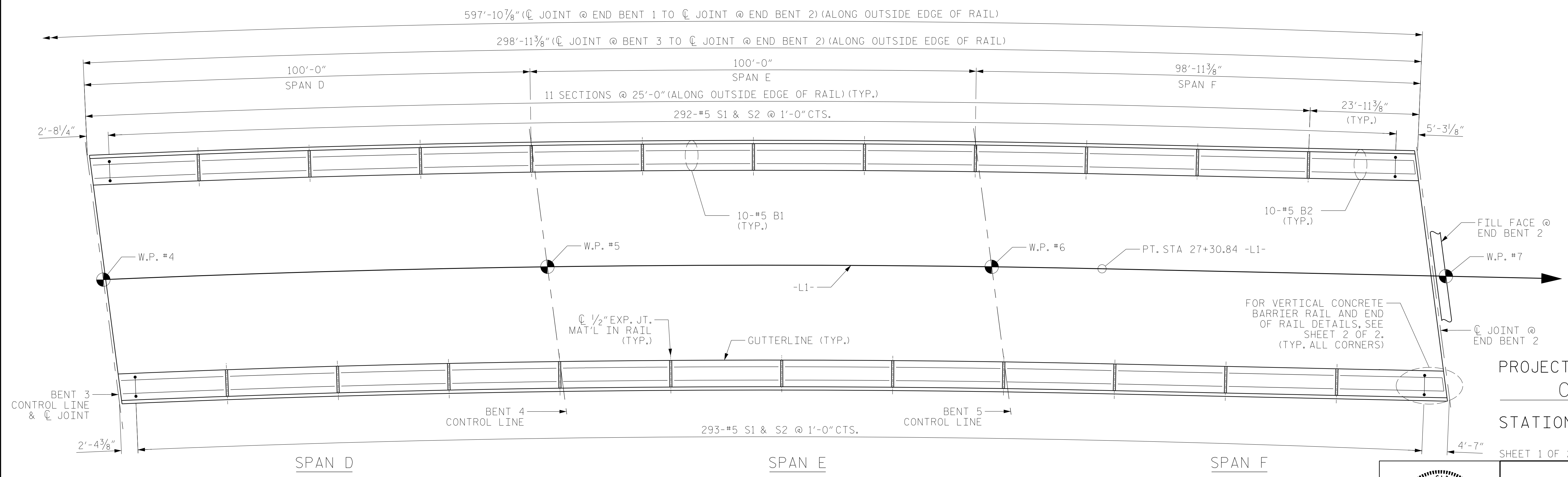
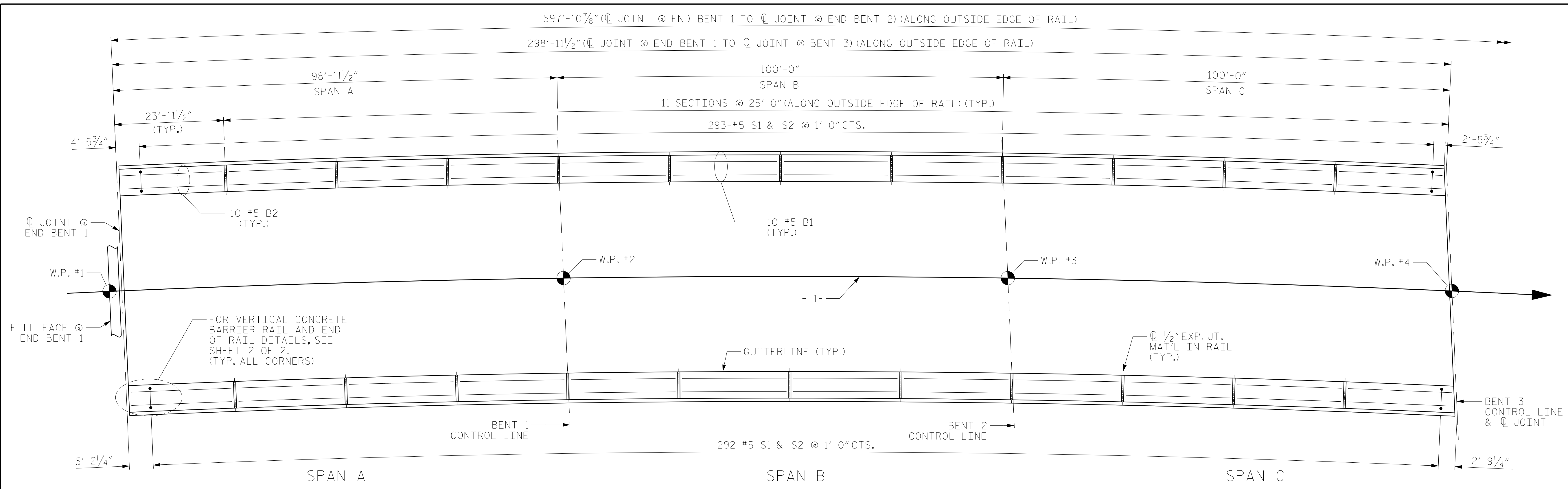
REPLACES BRIDGE NO. 240138

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD ELASTOMERIC BEARING DETAILS PRESTRESSED CONCRETE GIRDER					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S1-20					TOTAL SHEETS 37

ASSEMBLED BY : NSC	DATE : 06/2019
CHECKED BY : MAL	DATE : 06/2019
DRAWN BY : EEM 2/97	REV. 6/13 AAC/MAA
CHECKED BY : VAP 2/97	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

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PLAN OF VERTICAL CONCRETE BARRIER RAIL

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 1 OF 2 REPLACES BRIDGE NO. 240138



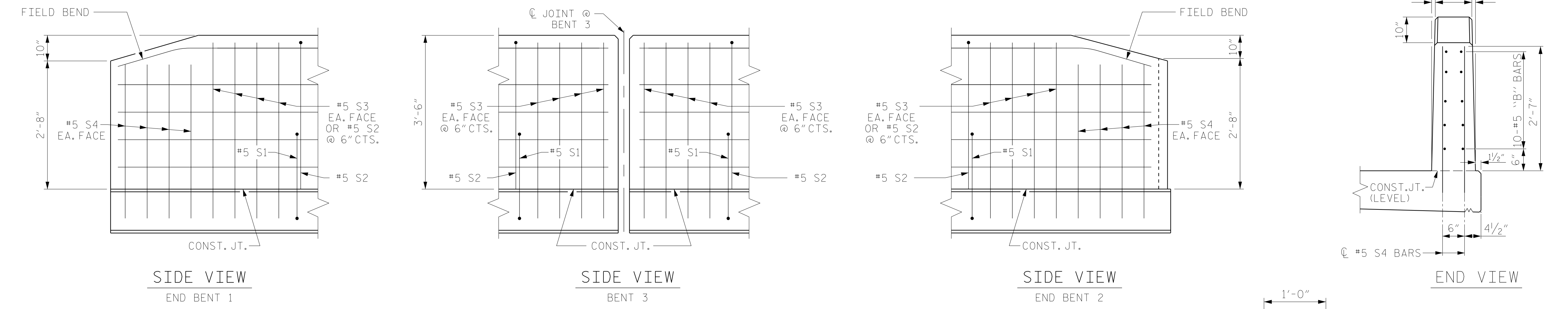
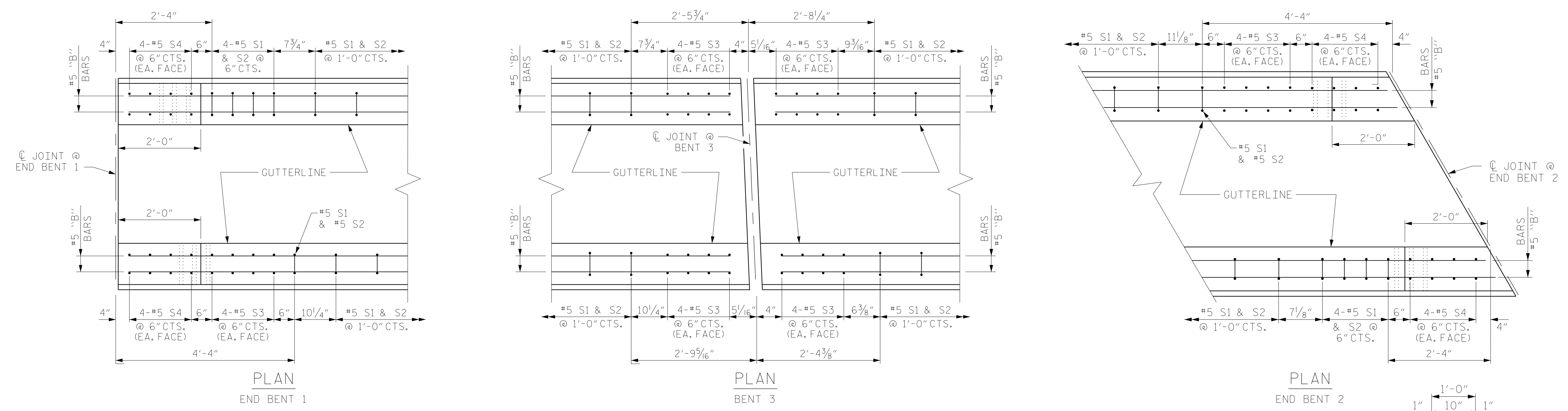
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 VERTICAL CONCRETE
 BARRIER RAIL
 SPANS A - F

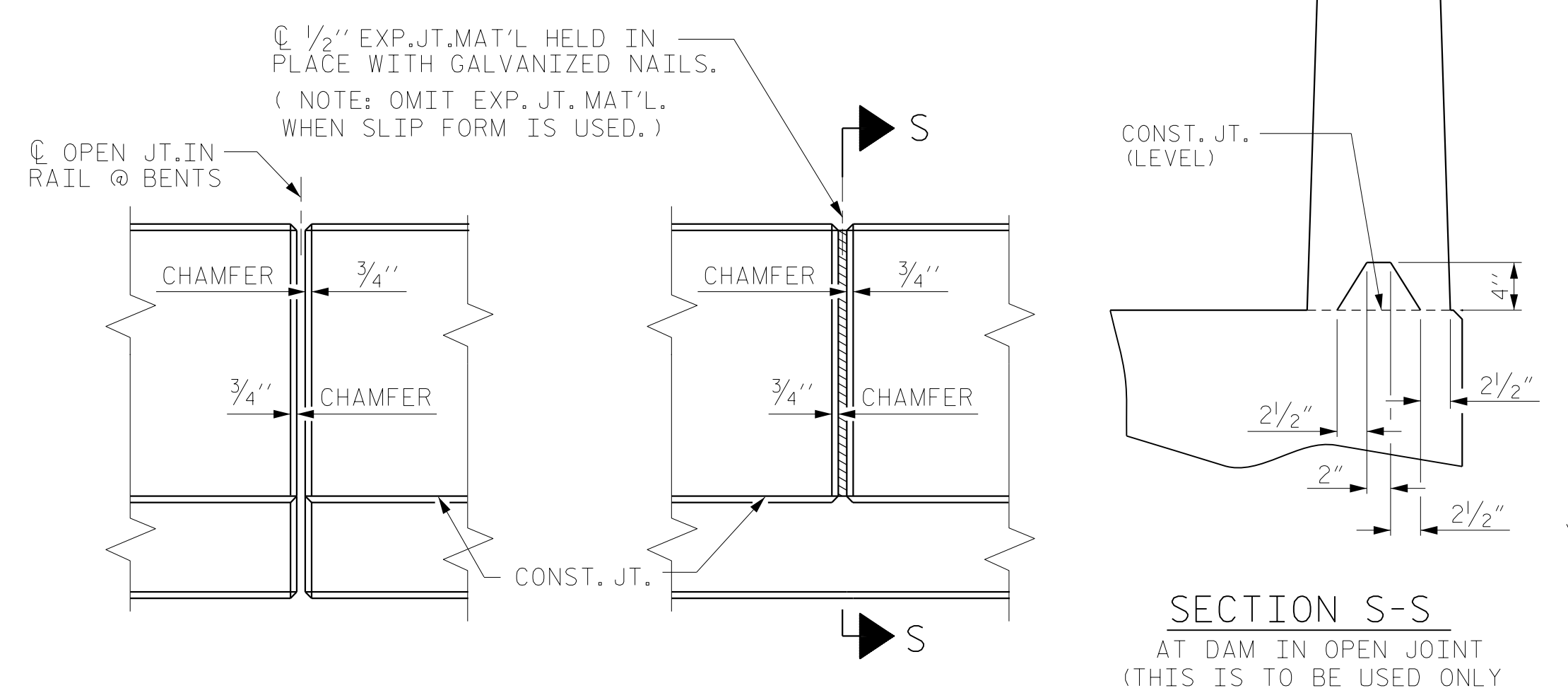
DRAWN BY : TWL DATE : 05/2019
 CHECKED BY : JMR DATE : 06/2019
 DESIGN ENGINEER OF RECORD: MAL DATE : 06/2019

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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-21
1			3			TOTAL SHEETS
2			4			37



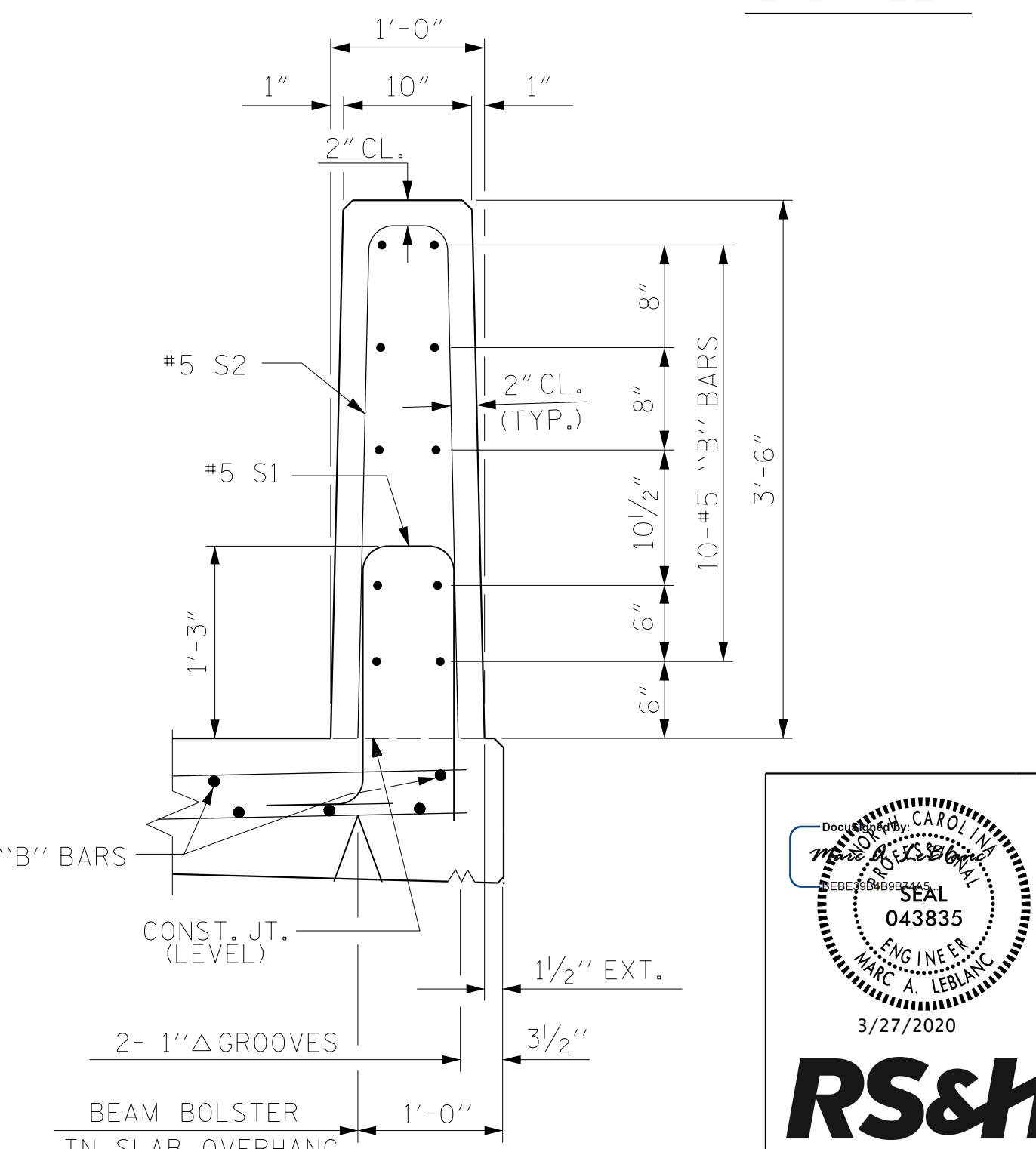
END OF RAIL DETAILS
FOR ADHESIVE ANCHORING AT SAWED JOINTS



ELEVATION AT EXPANSION JOINTS

SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

BARRIER RAIL DETAILS



SECTION THRU RAIL

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR VERTICAL CONCRETE BARRIER RAIL ONLY

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	440	#5	STR	24'-6"	11244
* B2	40	#5	STR	23'-4"	973
* S1	1180	#5		4'-11"	6051
* S2	1180	#5		7'-2"	8820
* S3	48	#5	STR	4'-0"	200
* S4	32	#5	STR	3'-6"	117

* EPOXY COATED REINFORCING STEEL 27,405 LBS.
CLASS AA CONCRETE 142.9 CU. YDS.
VERTICAL CONCRETE BARRIER RAIL 1,195.30 LIN. FT.

NOTES

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

WHEN FOAM JOINT SEAL IS REQUIRED, THE JOINT IN THE DECK SHALL BE SAWED PRIOR TO THE CASTING OF VERTICAL CONCRETE BARRIER RAIL.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

THE #5 S3 & S4 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM, AFTER SAWING THE JOINT. THE YIELD LOAD FOR THE #5 S3 & S4 BARS IS 18.6 KIPS. FIELD TESTING FOR THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

PROJECT NO. B-4484
CRAVEN COUNTY
STATION: 25+06.00 -L1-

SHEET 2 OF 2 REPLACES BRIDGE NO. 240138



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

VERTICAL CONCRETE BARRIER RAIL DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-22
1			3			TOTAL SHEETS
2			4			37

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ASSEMBLED BY : TWL	DATE : 05/2019
CHECKED BY : JMR	DATE : 06/2019
DRAWN BY : MAA 5/10	REV. 6/13 MAA/GM
CHECKED BY : GM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC

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.

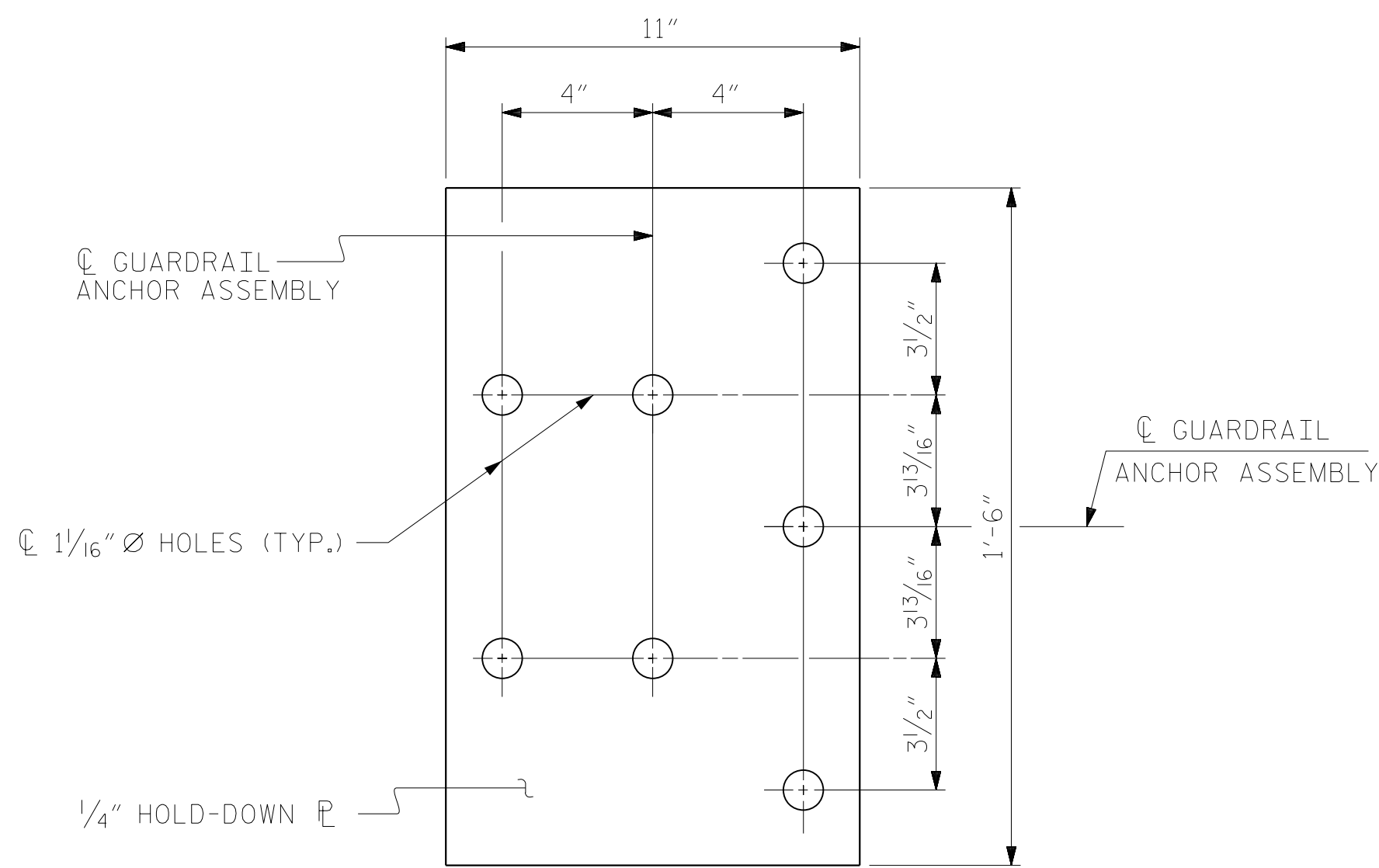
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF THE PARAPET. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

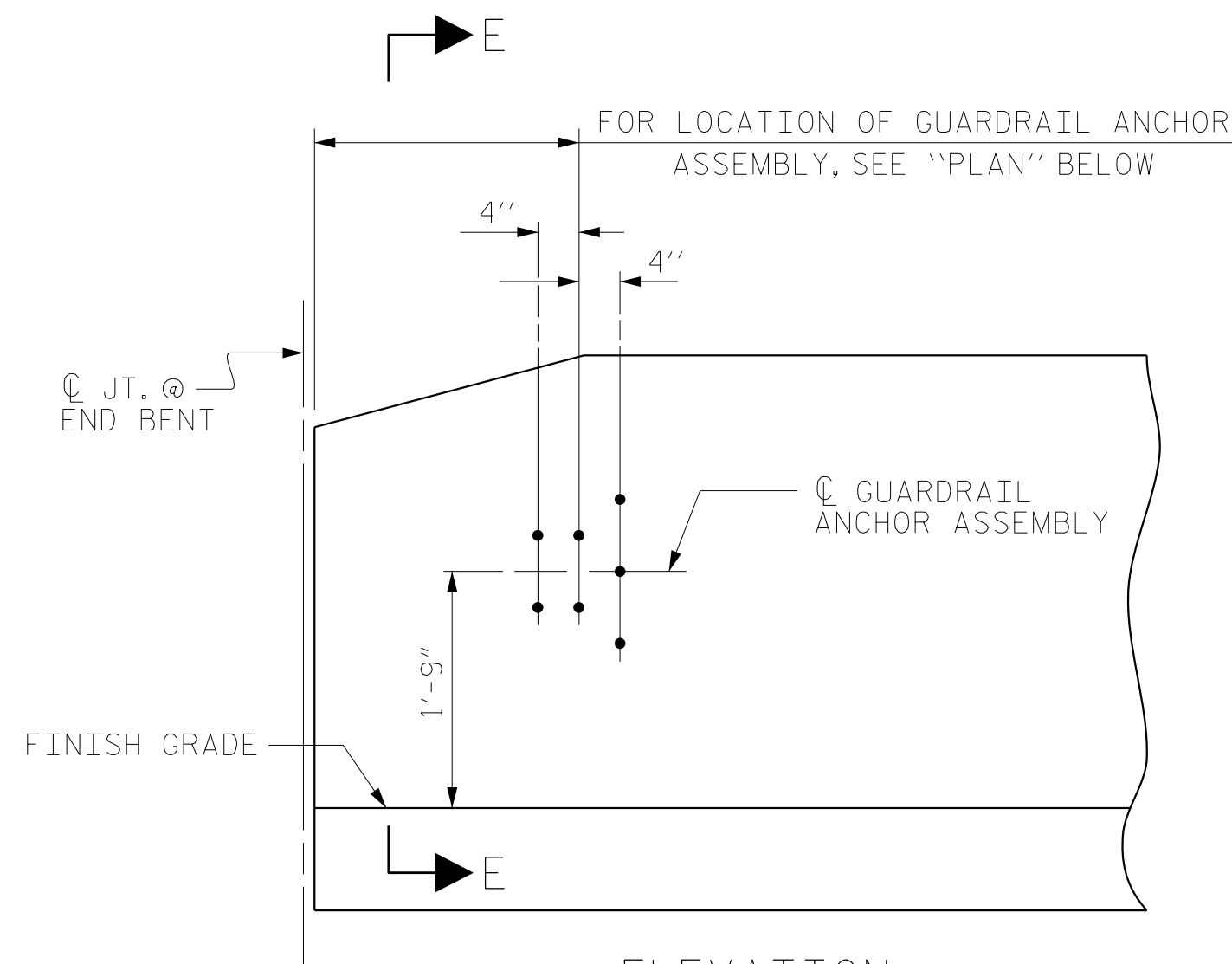
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLIES WITH BOLTS, NUTS AND WASHERS COMPLETE IN PLACE, SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

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.

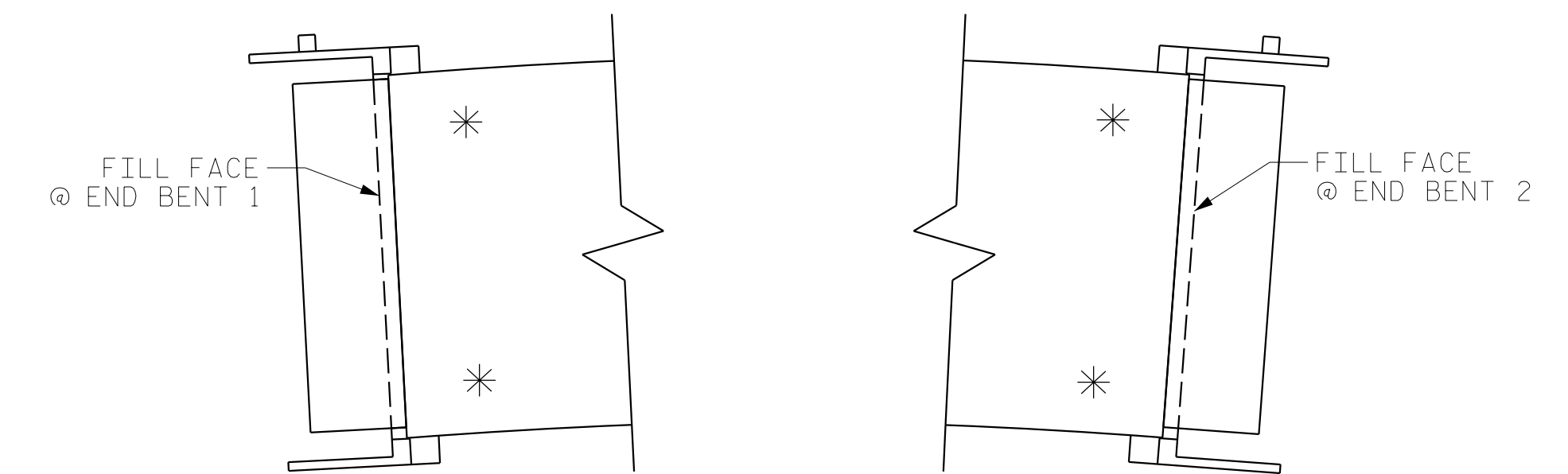


PLAN



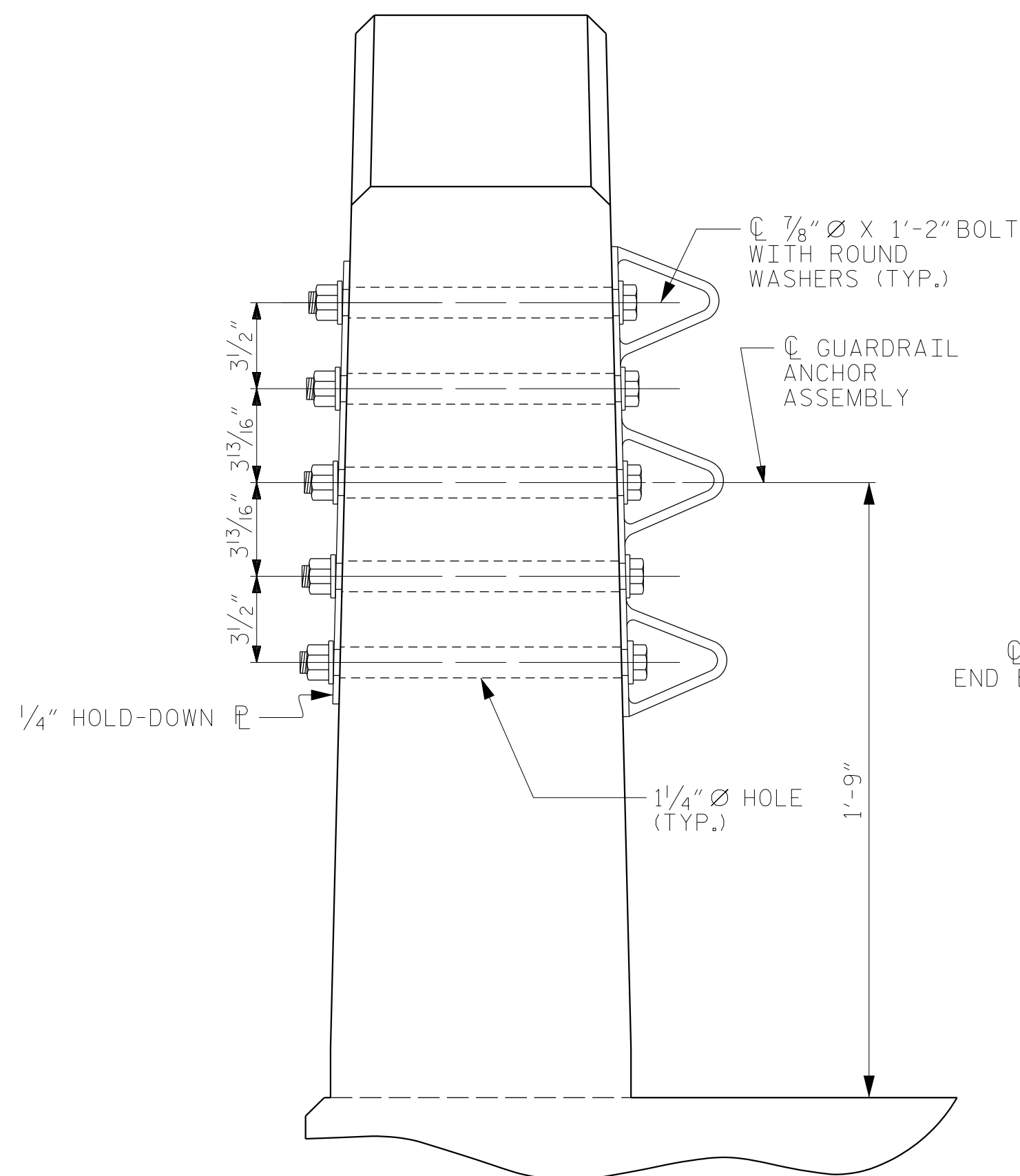
ELEVATION

GUARDRAIL ANCHOR ASSEMBLY DETAILS



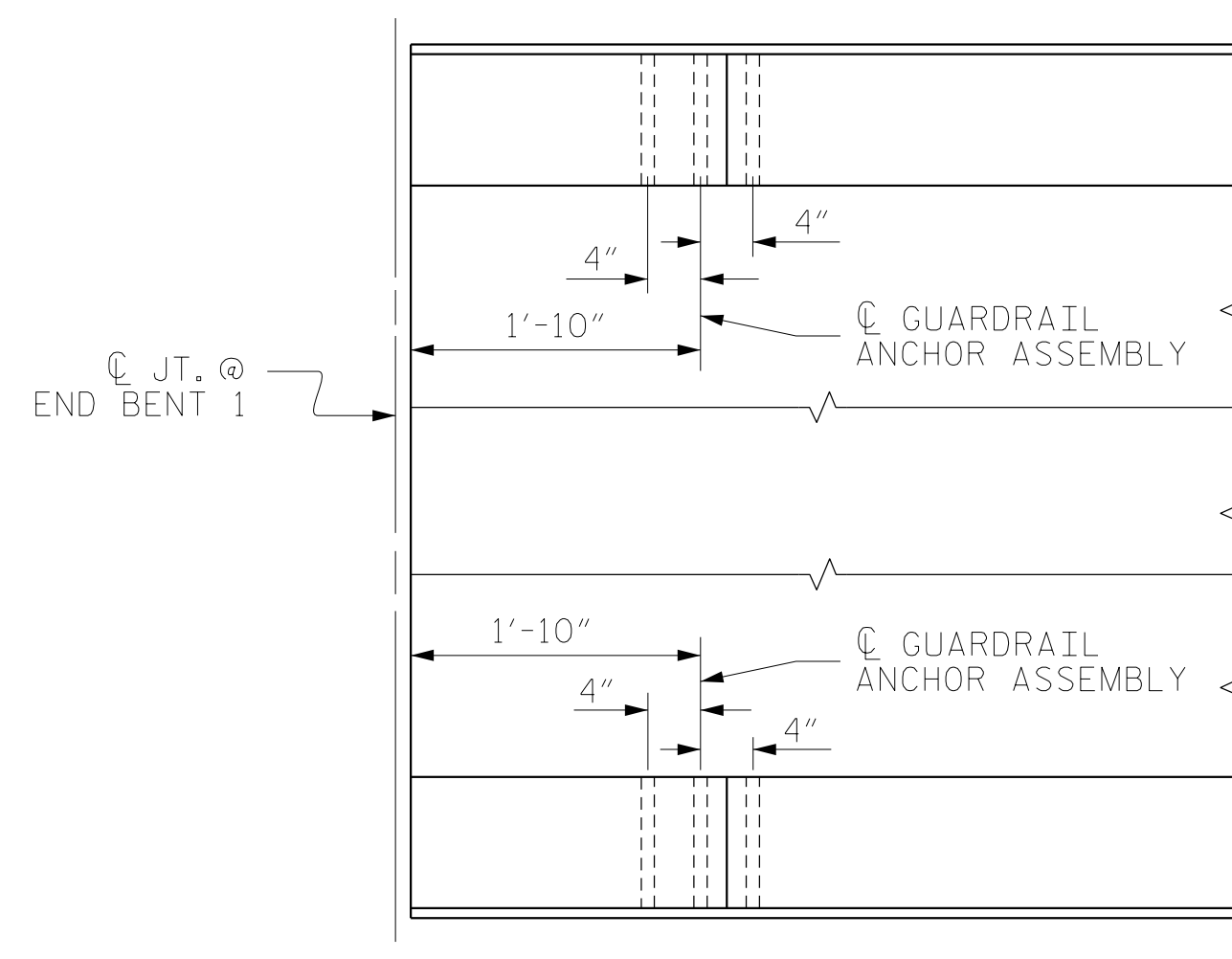
SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT

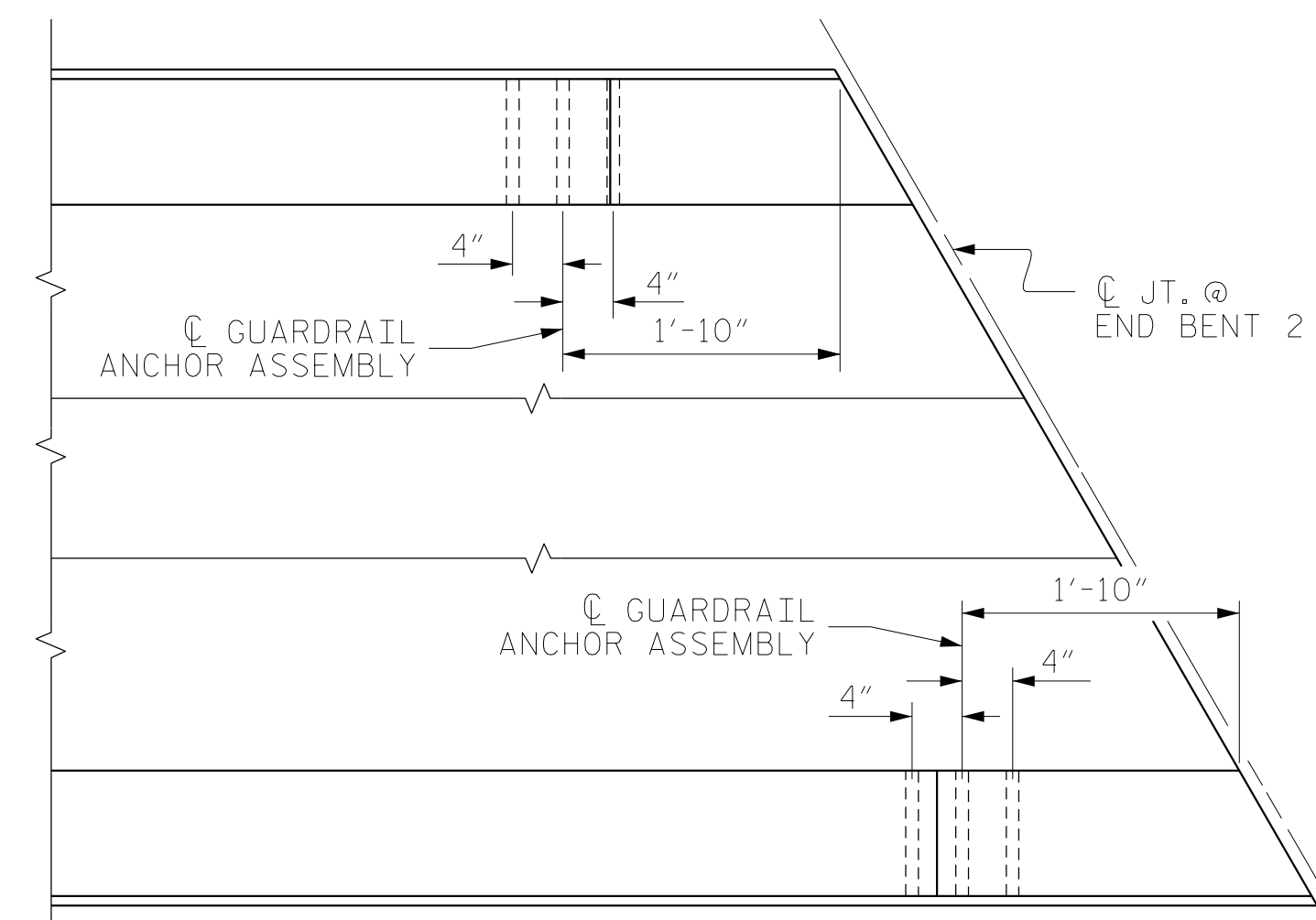


SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN @ END BENT 1

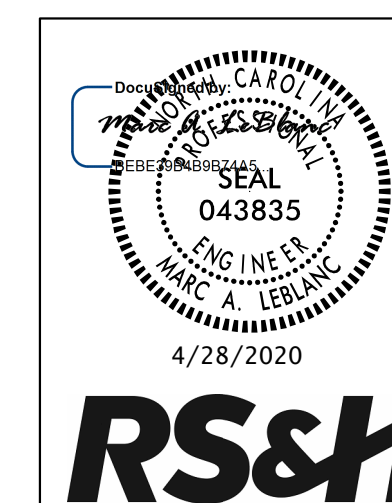


PLAN @ END BENT 2

LOCATION OF GUARDRAIL ANCHOR AT END POST

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

REPLACES BRIDGE NO. 240138



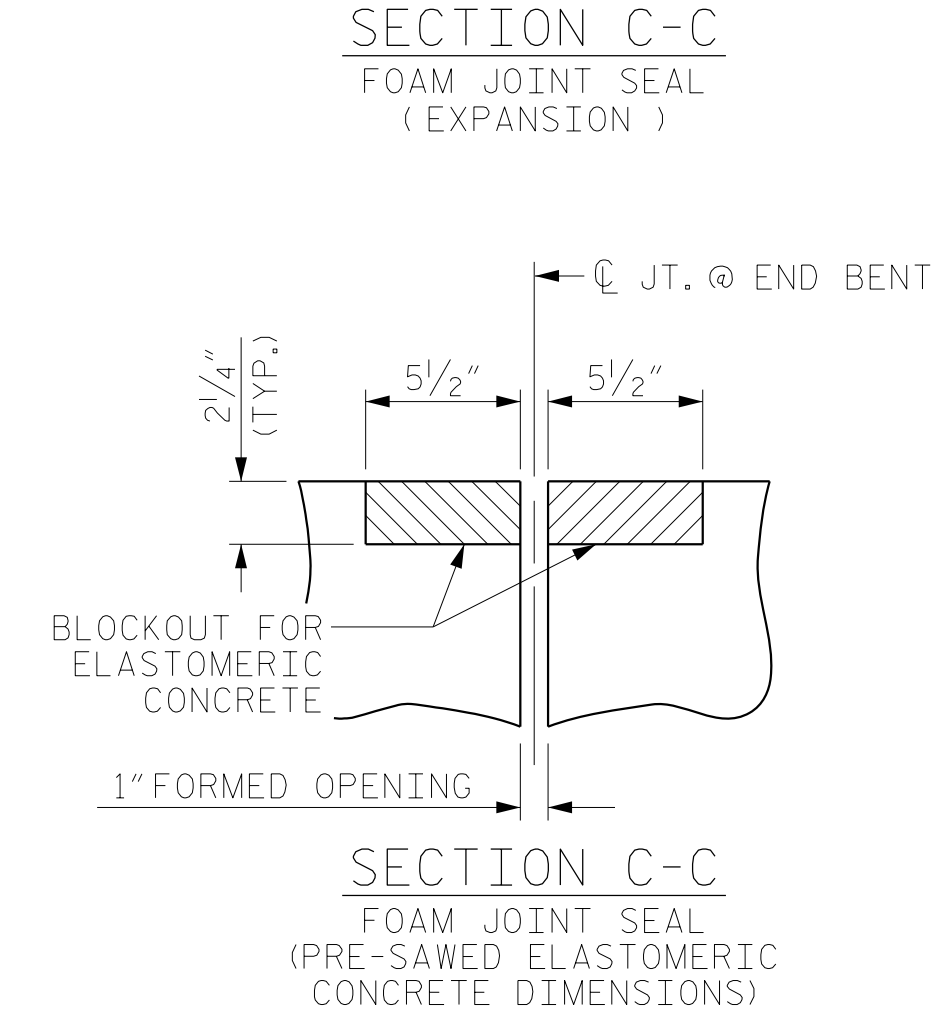
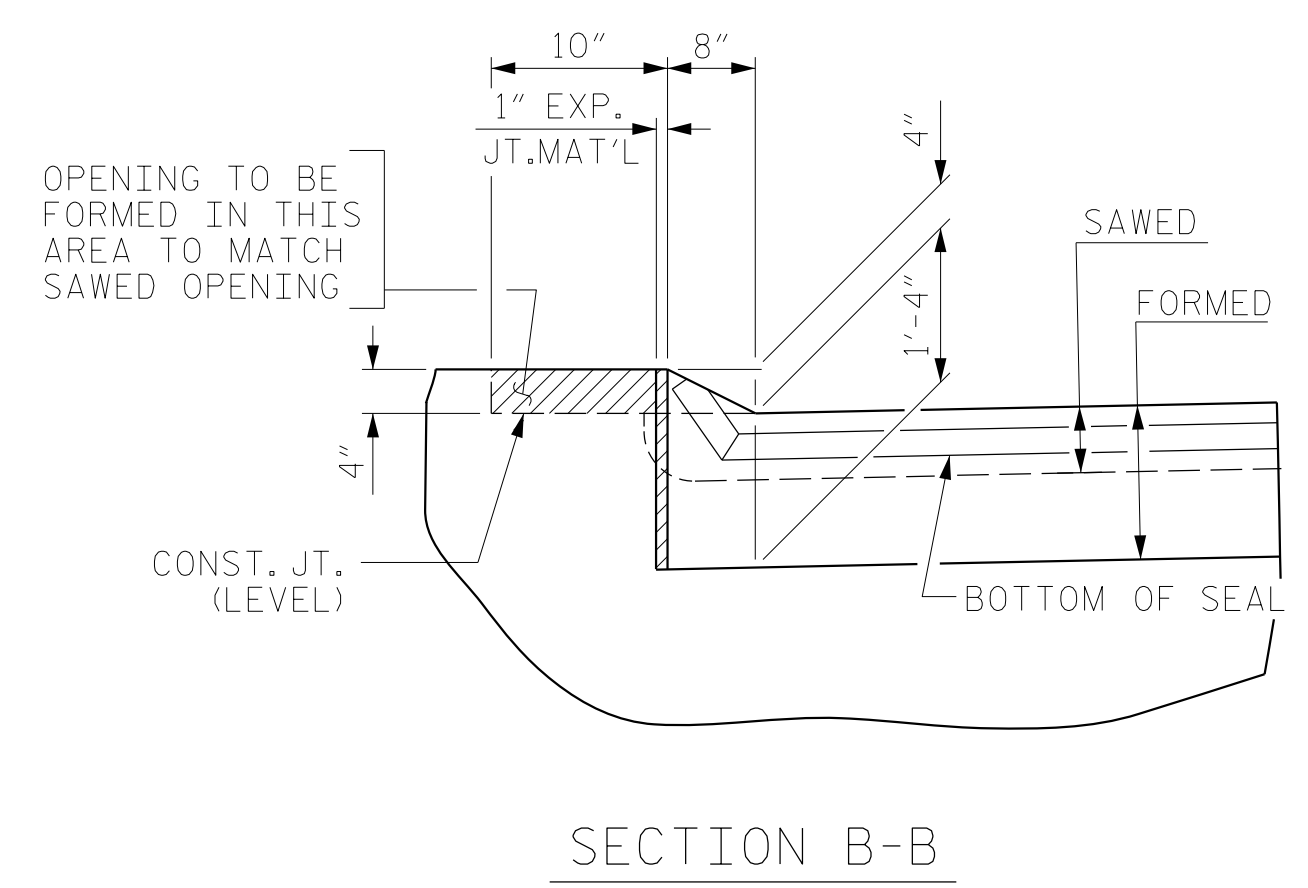
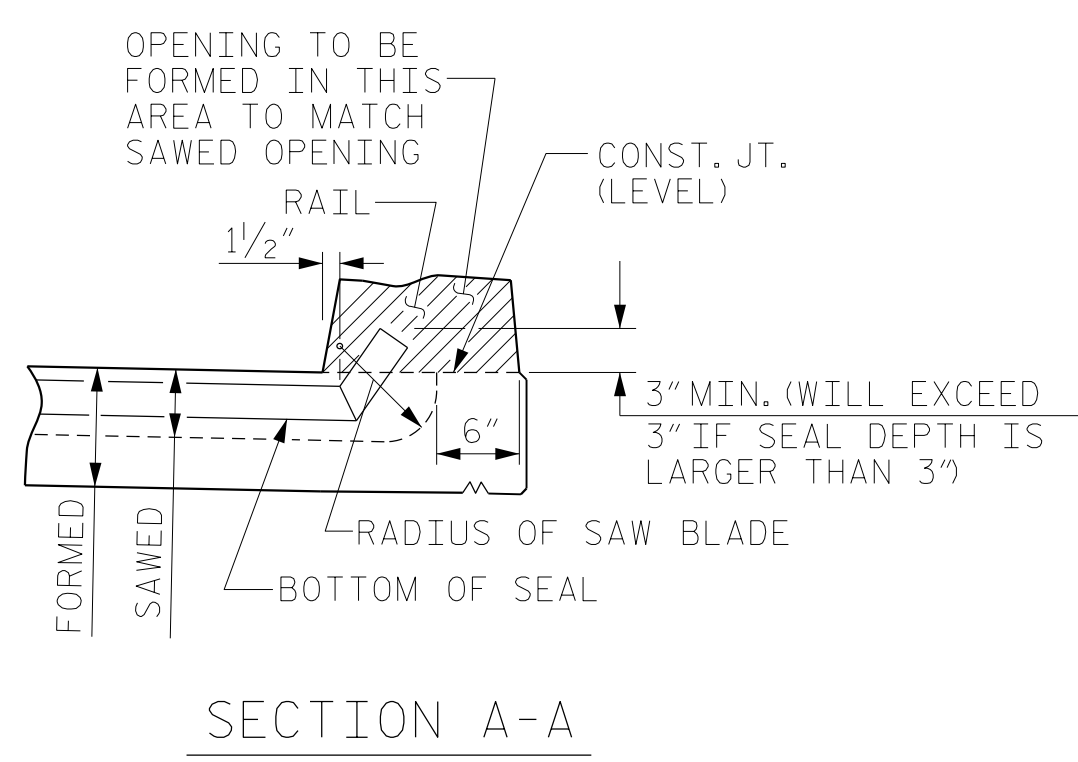
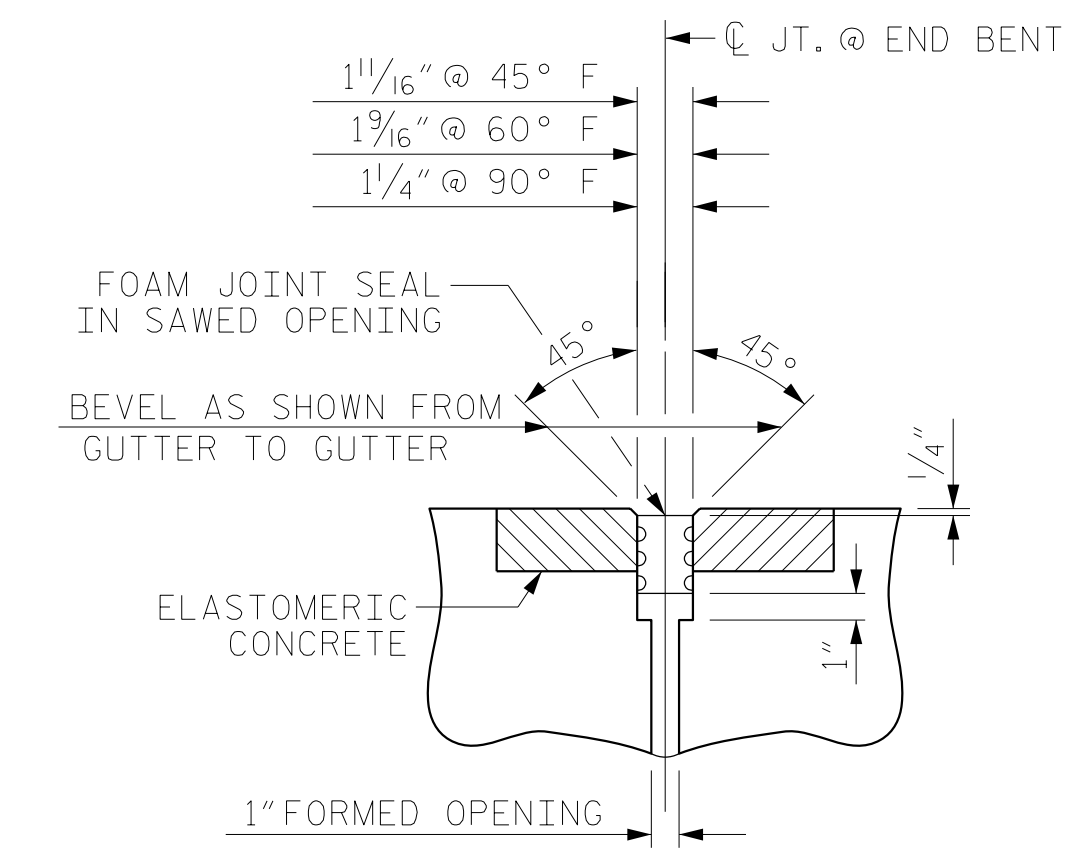
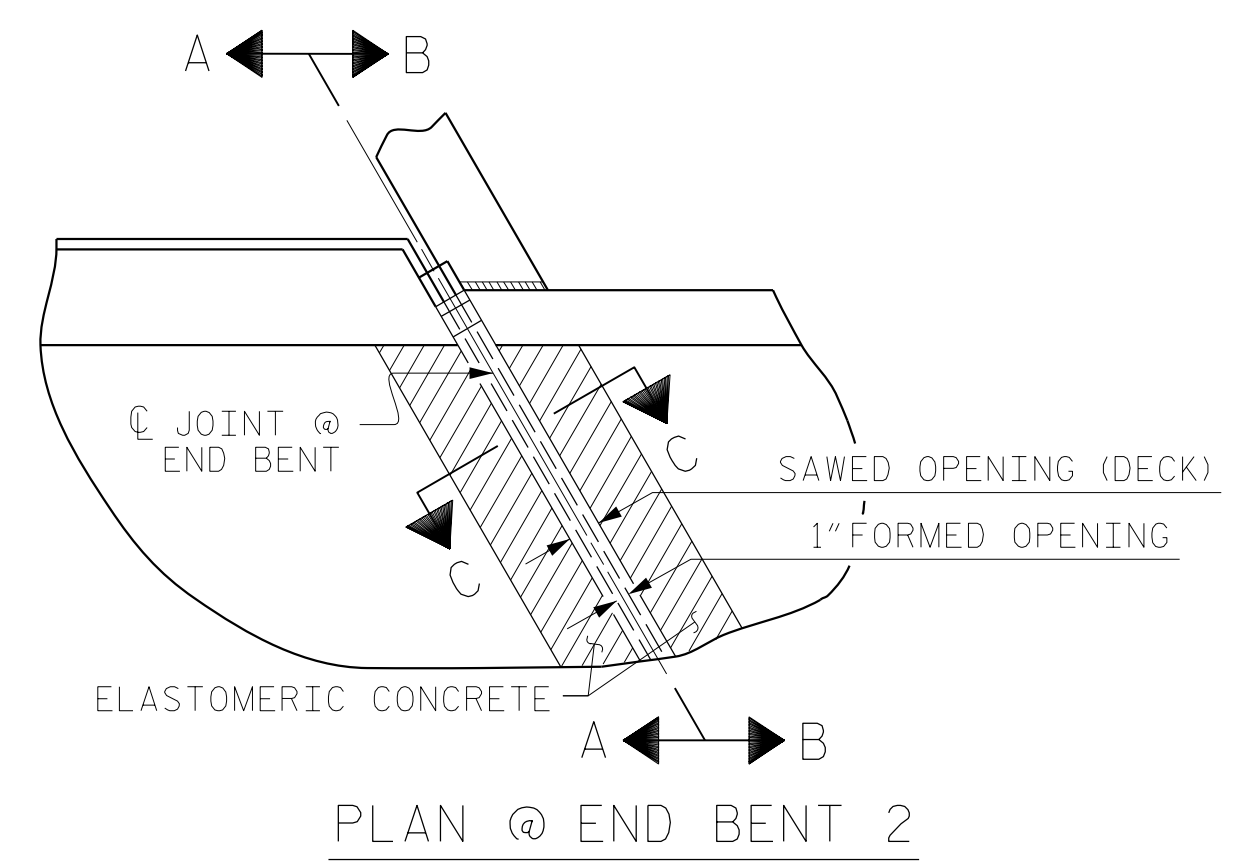
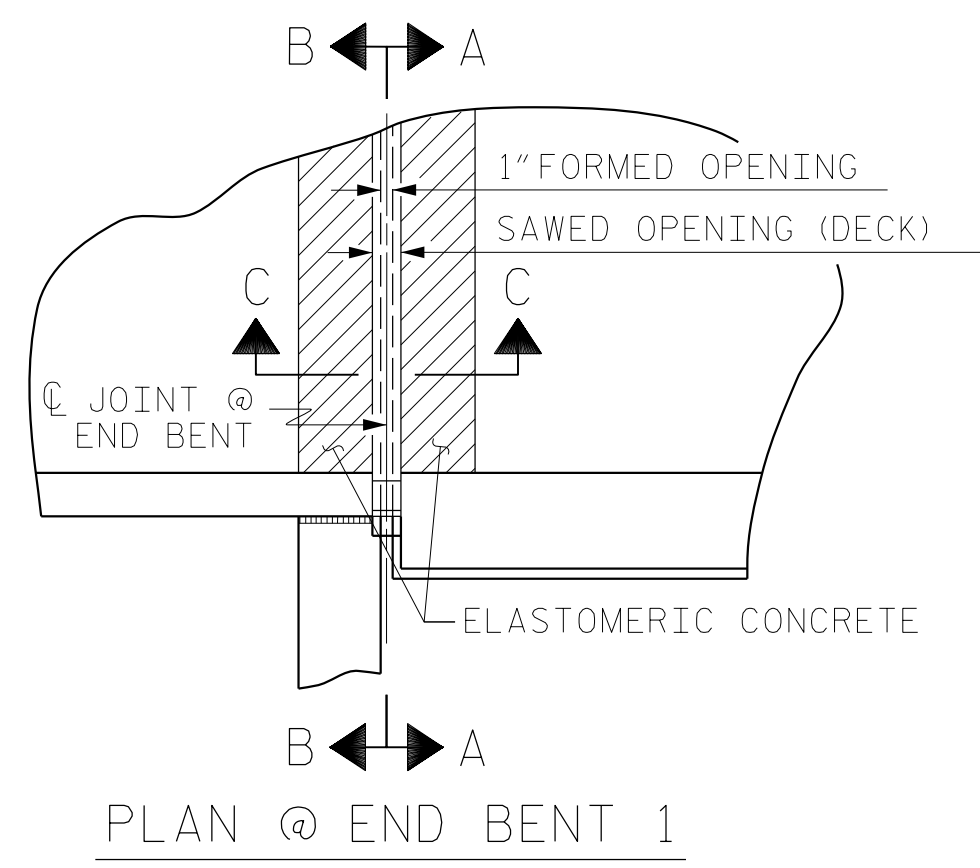
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS FOR
 VERTICAL CONCRETE
 BARRIER RAIL

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

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ASSEMBLED BY : NSC	DATE : 06/2019
CHECKED BY : JMR	DATE : 06/2019
DRAWN BY : MAA 5/10	REV. 1/15 MAA/TMG
CHECKED BY : GM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC

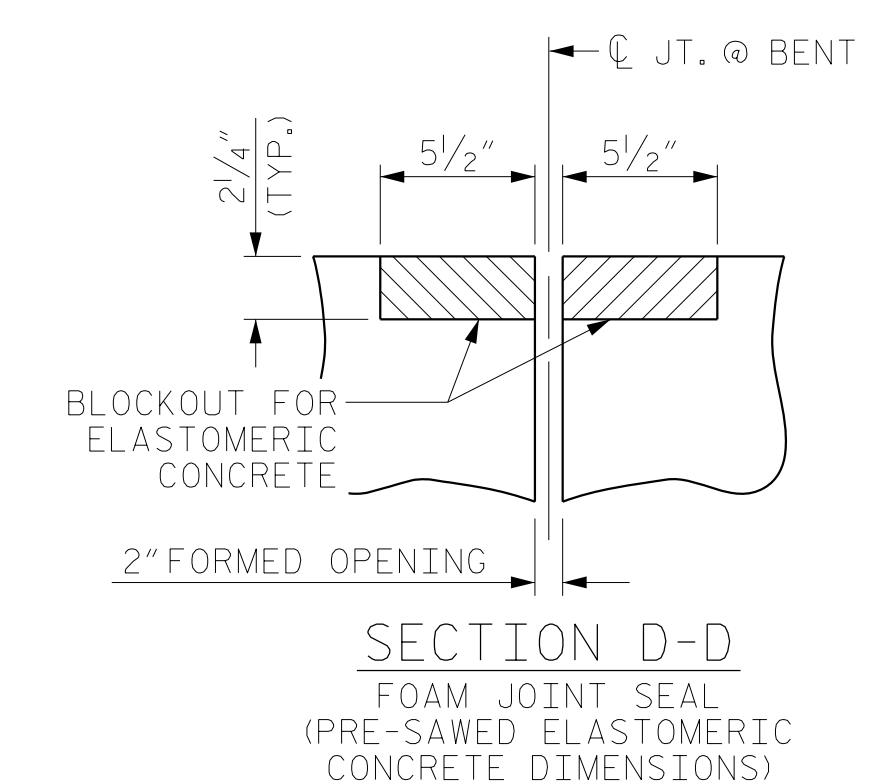
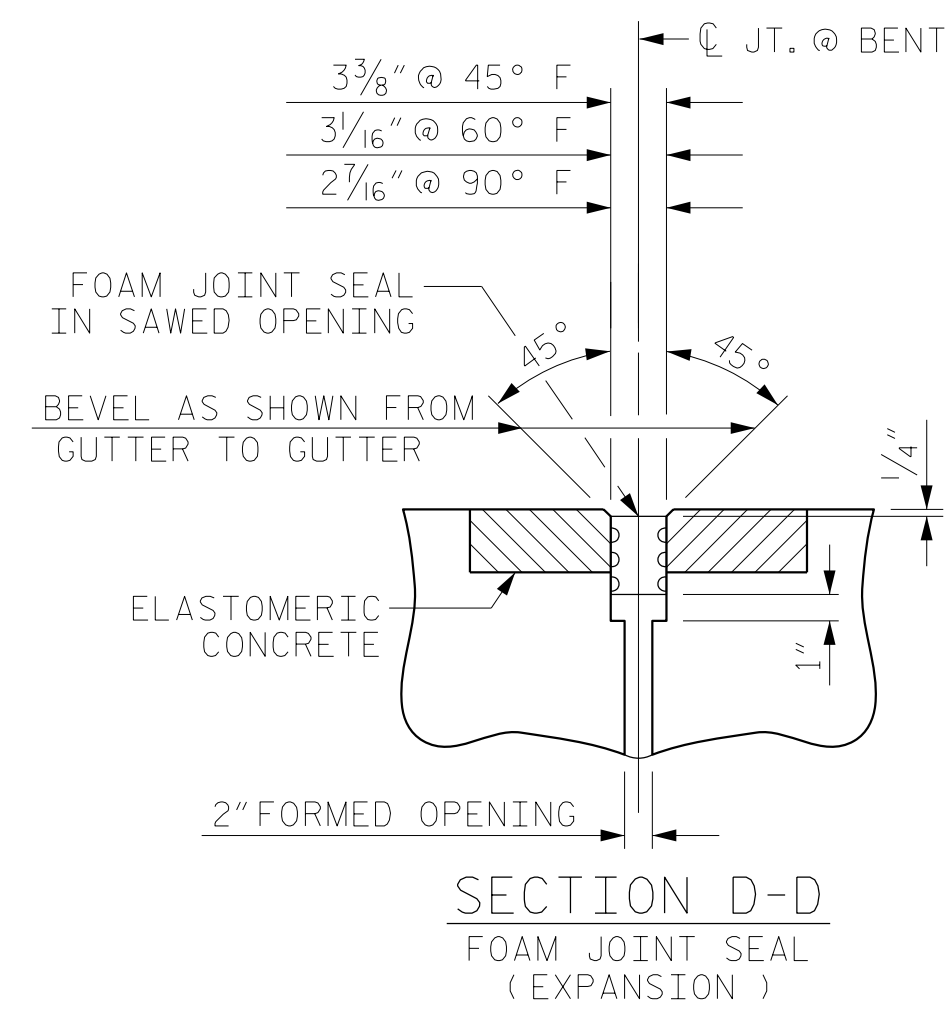
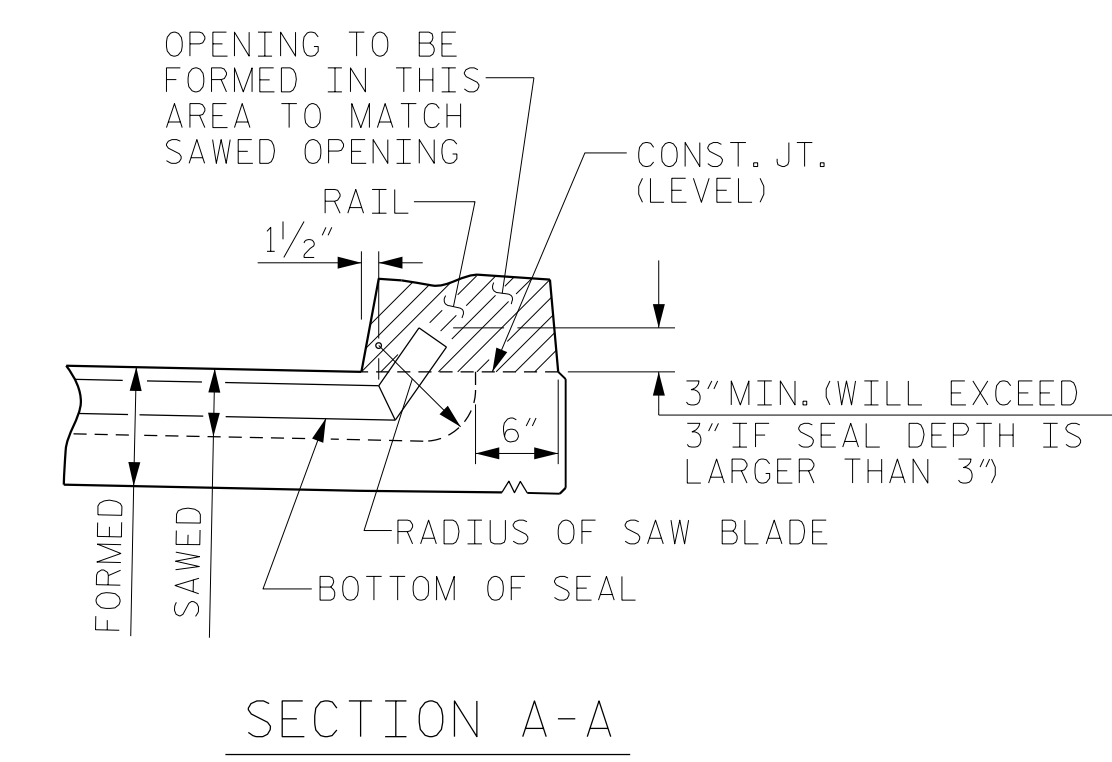
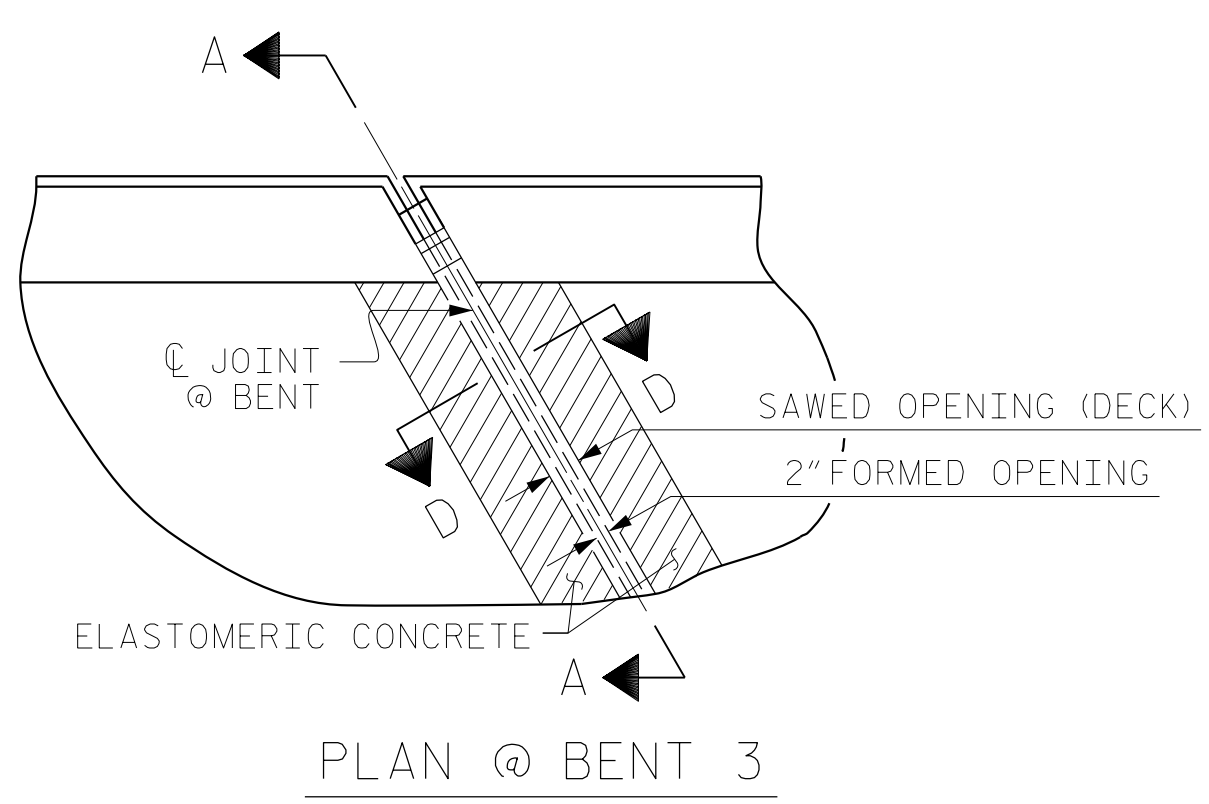


JOINT SEAL DETAILS @ END BENTS

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.
 THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE VERTICAL CONCRETE BARRIER RAIL.

ELASTOMERIC CONCRETE	
JOINT LOCATION	ELASTOMERIC CONCRETE * (CU. FT.)
END BENT NO. 1	5.2
BENT NO. 3	5.2
END BENT NO. 2	5.3
TOTAL	15.7

* BASED ON THE MINIMUM BLOCKOUT SHOWN.



JOINT SEAL DETAILS @ BENT 3

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.
 THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE VERTICAL CONCRETE BARRIER RAIL.

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

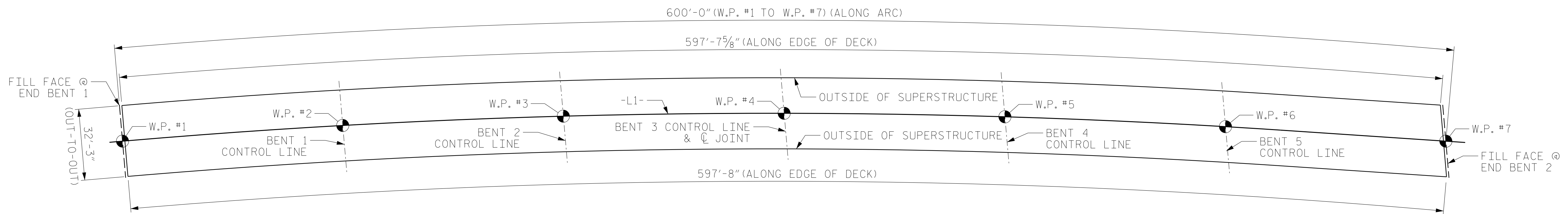
REPLACES BRIDGE NO. 240138



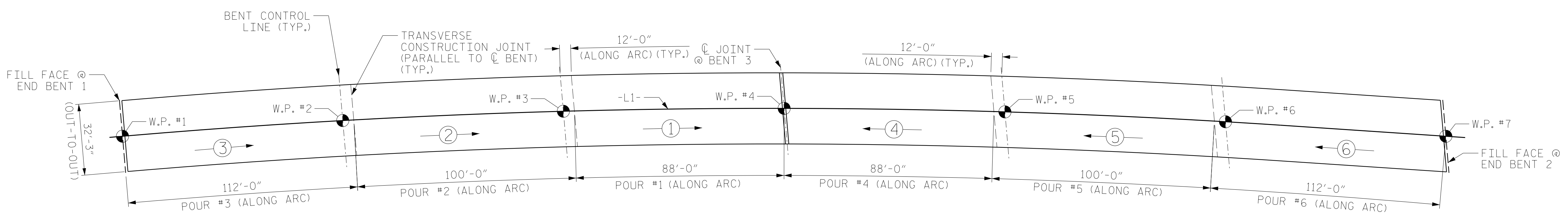
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE FOAM JOINT SEAL DETAILS						SHEET NO.
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			1-24
2			4			37

DRAWN BY :	NSC	DATE :	06/2019
CHECKED BY :	PDS	DATE :	06/2019
DESIGN ENGINEER OF RECORD:	MAL	DATE :	06/2019

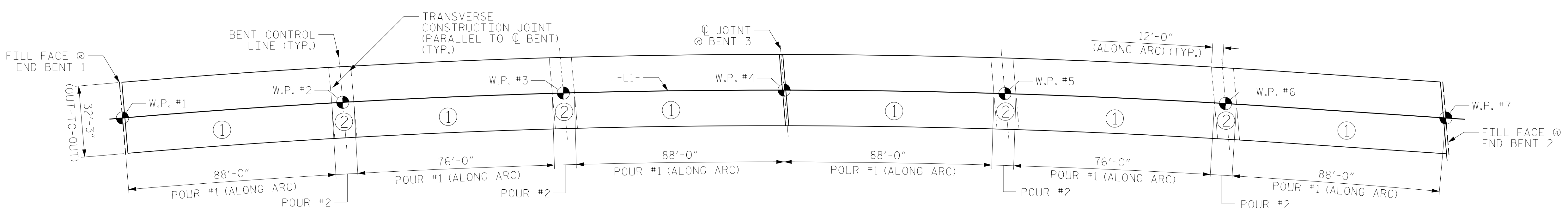
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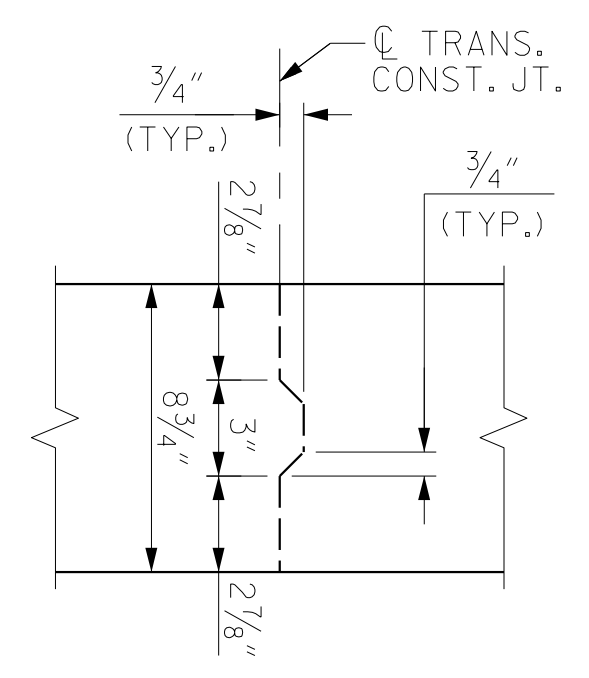
LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB
(SQ. FT = 19,277)



POURING SEQUENCE



OPTIONAL POURING SEQUENCE

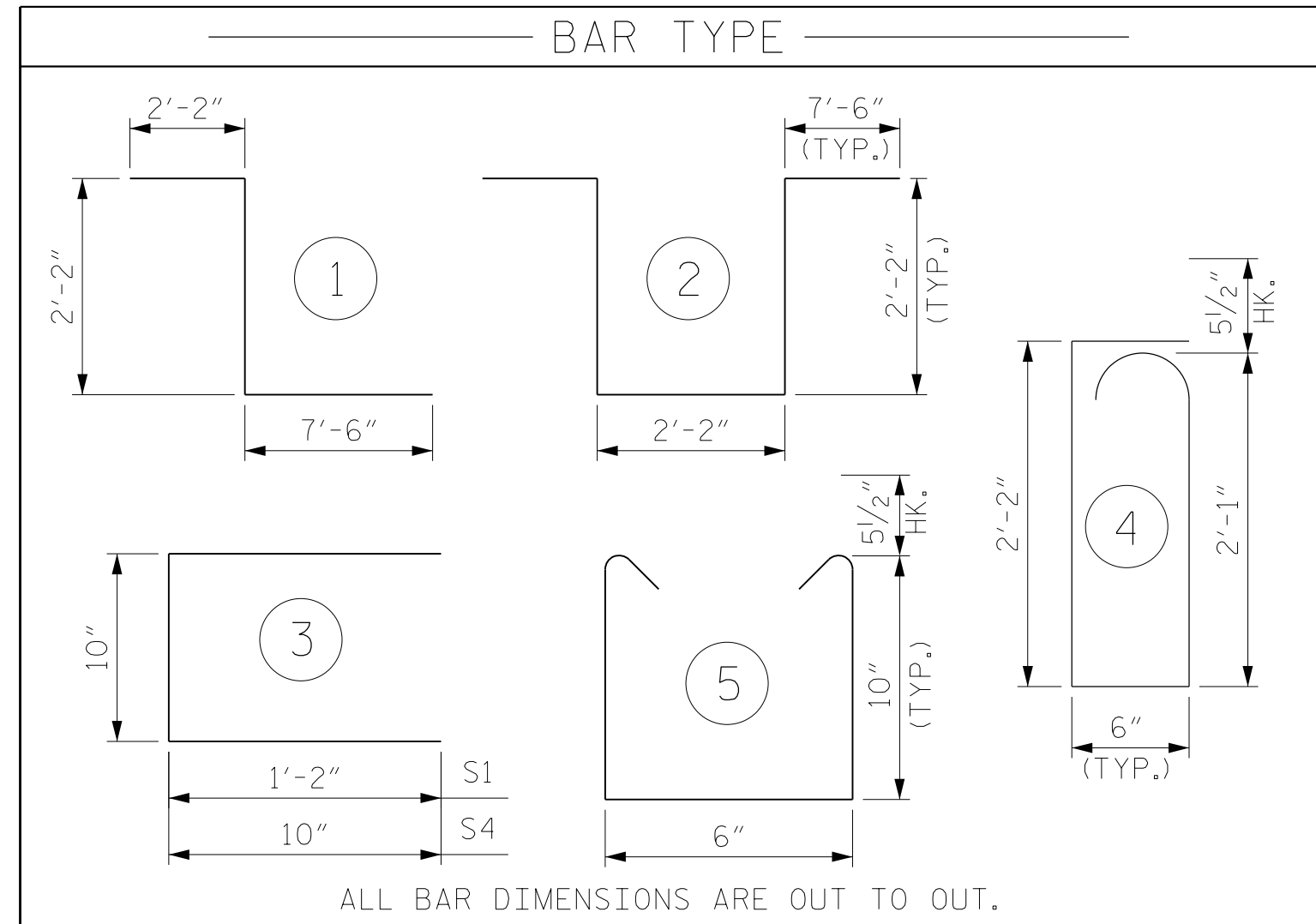


TRANSVERSE CONSTRUCTION JOINT DETAIL

REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH JOINT.

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

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



ALL BAR DIMENSIONS ARE OUT TO OUT.

CLASS AA CONCRETE

	CU. YDS.
POUR 1	91.7
POUR 2	101.8
POUR 3	115.1
POUR 4	91.7
POUR 5	101.8
POUR 6	115.1
TOTALS**	617.2

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A101	1184	#5	STR	31'-11"	39414
* A102	2	#5	STR	9'-1"	19
* A103	2	#5	STR	20'-7"	43
* A104	2	#5	STR	5'-9"	12
* A105	2	#5	STR	9'-8"	20
* A106	2	#5	STR	13'-7"	28
* A107	2	#5	STR	17'-6"	37
* A108	2	#5	STR	21'-5"	45
* A109	2	#5	STR	25'-4"	53
* A110	2	#5	STR	29'-3"	61
A201	1184	#5	STR	31'-11"	39414
A202	2	#5	STR	9'-1"	19
A203	2	#5	STR	20'-7"	43
A204	2	#5	STR	5'-9"	12
A205	2	#5	STR	9'-8"	20
A206	2	#5	STR	13'-7"	28
A207	2	#5	STR	17'-6"	37
A208	2	#5	STR	21'-5"	45
A209	2	#5	STR	25'-4"	53
A210	2	#5	STR	29'-3"	61
* B1	256	#4	STR	34'-6"	5900
* B2	128	#6	STR	60'-0"	11535
* B3	128	#6	STR	12'-10"	2467
* B4	124	#6	STR	16'-0"	2980
* B5	64	#4	STR	34'-2"	1461
B6	264	#5	STR	36'-10"	10142
B7	132	#5	STR	60'-0"	8261
B8	120	#5	STR	16'-0"	2003
B9	66	#5	STR	44'-0"	3029
B10	72	#5	STR	51'-5"	3861
* B11	32	#4	STR	39'-0"	834
* G1	4	#5	STR	31'-11"	133
* K1	16	#8	1	11'-10"	506
* K2	16	#8	2	21'-6"	918
* K3	24	#4	STR	7'-6"	120
* K4	18	#6	STR	7'-0"	189
* S1	36	#4	3	3'-2"	76
* S2	72	#5	4	5'-9"	432
* S3	24	#5	5	3'-1"	77
* S4	36	#4	3	2'-6"	60
REINFORCING STEEL					67,028 LBS.
* EPOXY COATED REINFORCING STEEL					67,420 LBS.

GROOVING BRIDGE FLOORS

APPROACH SLABS	612 SQ.FT.
BRIDGE DECK	16,121 SQ.FT.
TOTAL	16,733 SQ.FT.

PROJECT NO. B-4484
CRAVEN COUNTY
STATION: 25+06.00 -L1-

REPLACES BRIDGE NO. 240138

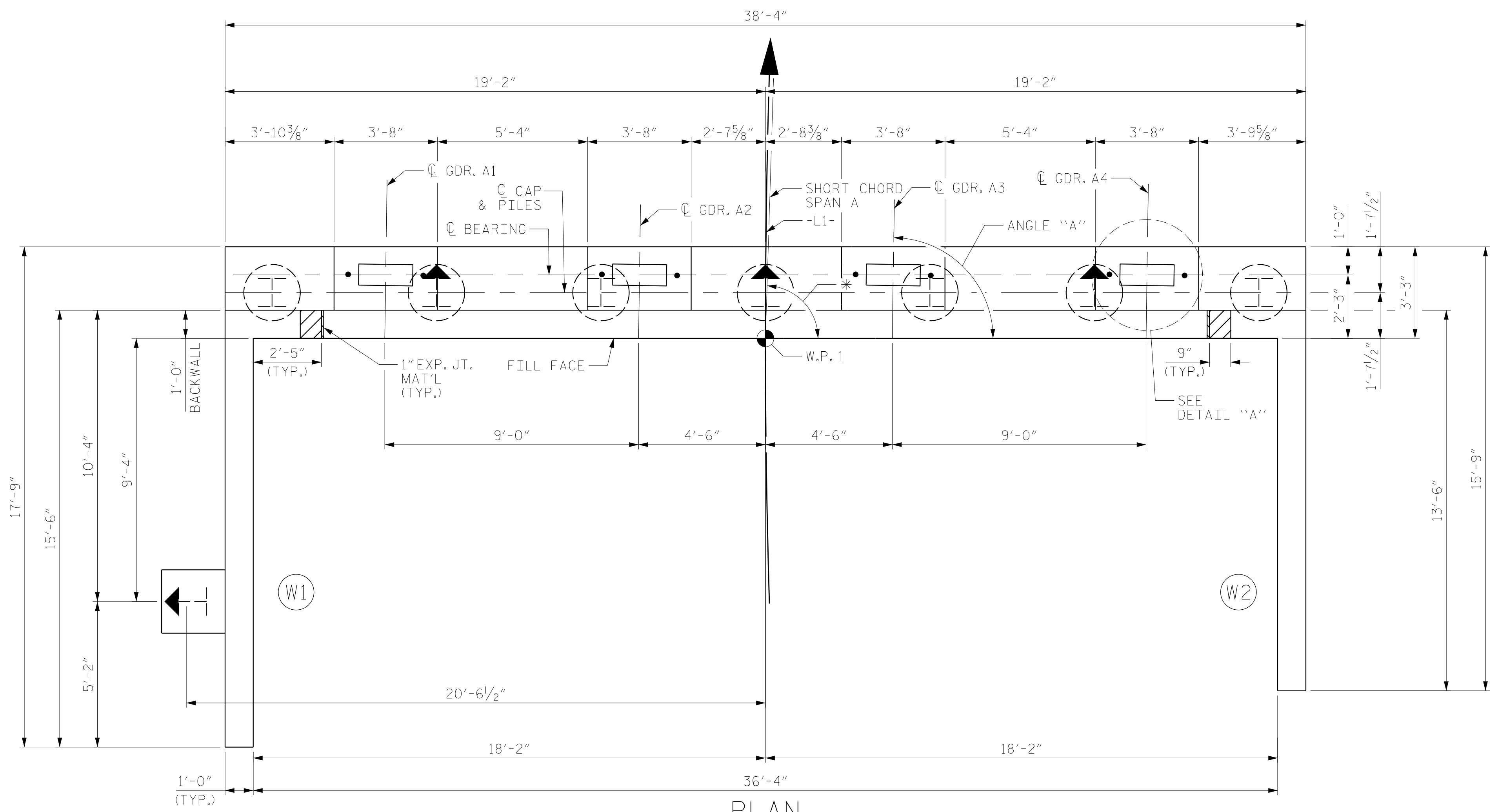


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
BILL OF MATERIAL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-25
1			3			TOTAL SHEETS
2			4			37

DRAWN BY : NSC DATE : 04/2019
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DESIGN ENGINEER OF RECORD: PDS DATE : 06/2019

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PLAN

* 89°-10'-11" (TO SHORT CHORD)

NOTES

STIRRUPS AND U1 BARS IN CAP MAY BE SHIFTED, AS NECESSARY, TO CLEAR ANCHOR BOLTS.

FOR SECTION A-A AND PARTIAL SECTION B-B, SEE SHEET 3 OF 3.

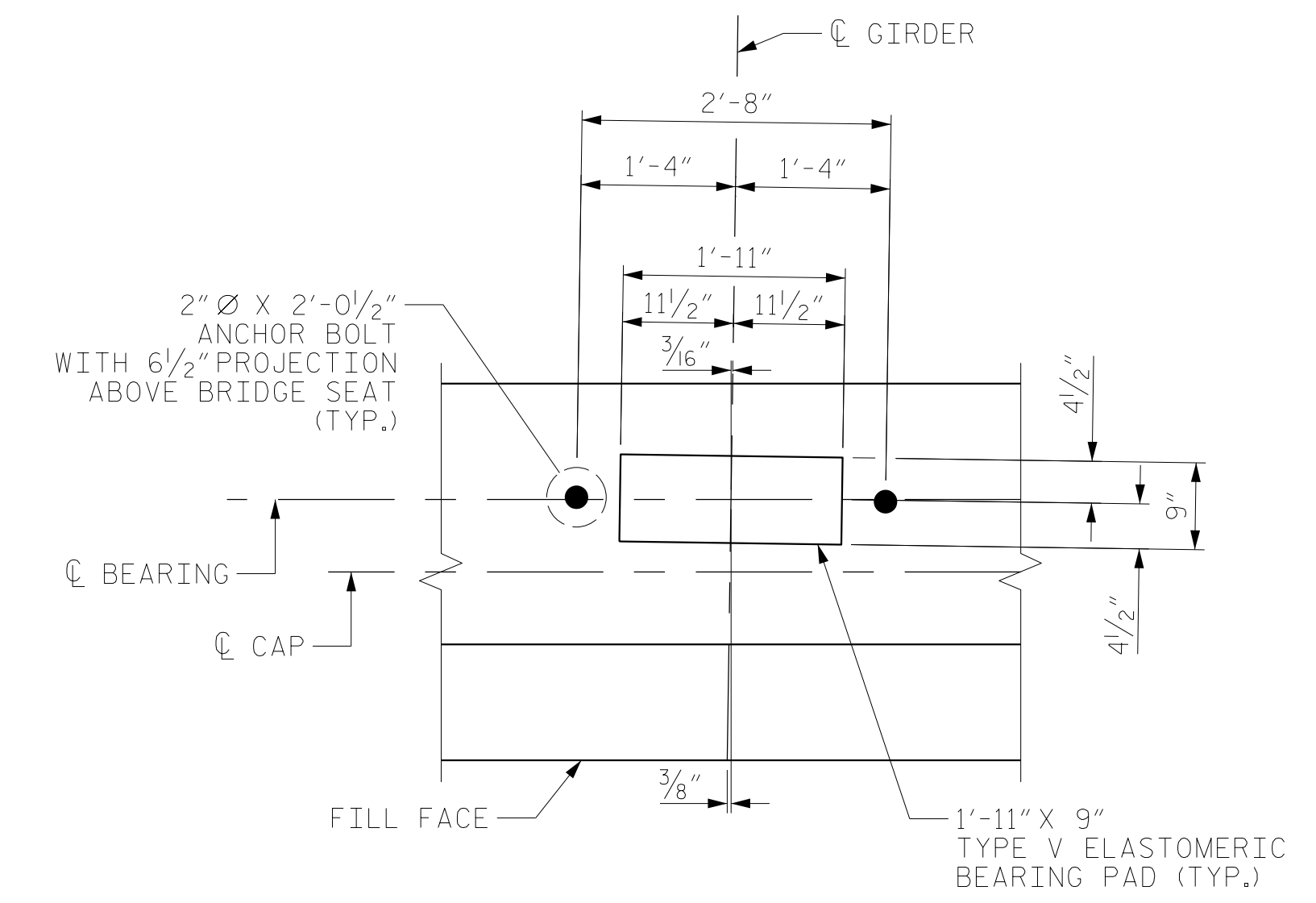
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

THE TOP SURFACE AREAS 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%.

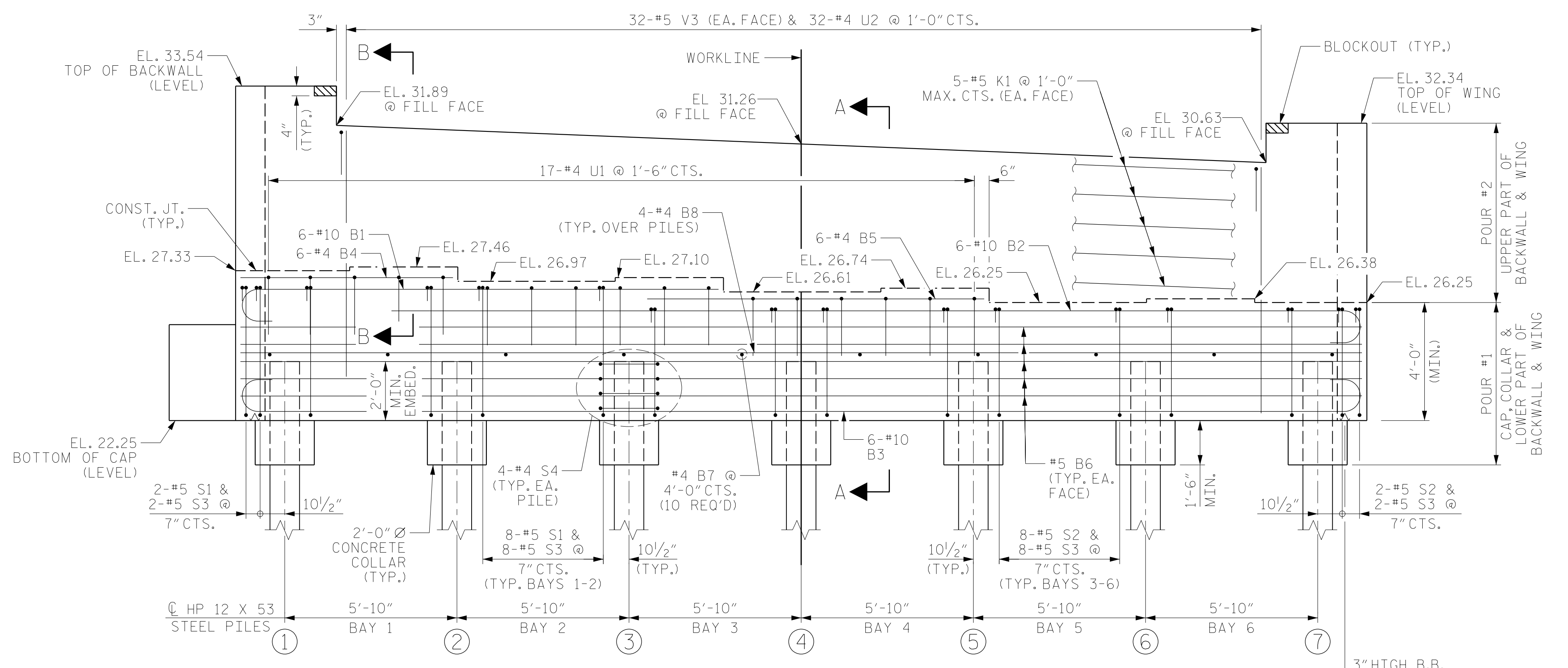
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE CONCRETE BARRIER IS CAST IF SLIP FORMING IS USED.

↑ INDICATES BATTERED PILE.



DETAIL "A"

DIMENSIONS TYPICAL FOR EACH BEARING. PILES NOT SHOWN FOR CLARITY



ELEVATION

GIRDER ANGLES	
GIRDER	ANGLE "A"
1	89°-10'-22"
2	89°-10'-15"
3	89°-10'-07"
4	89°-09'-59"

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

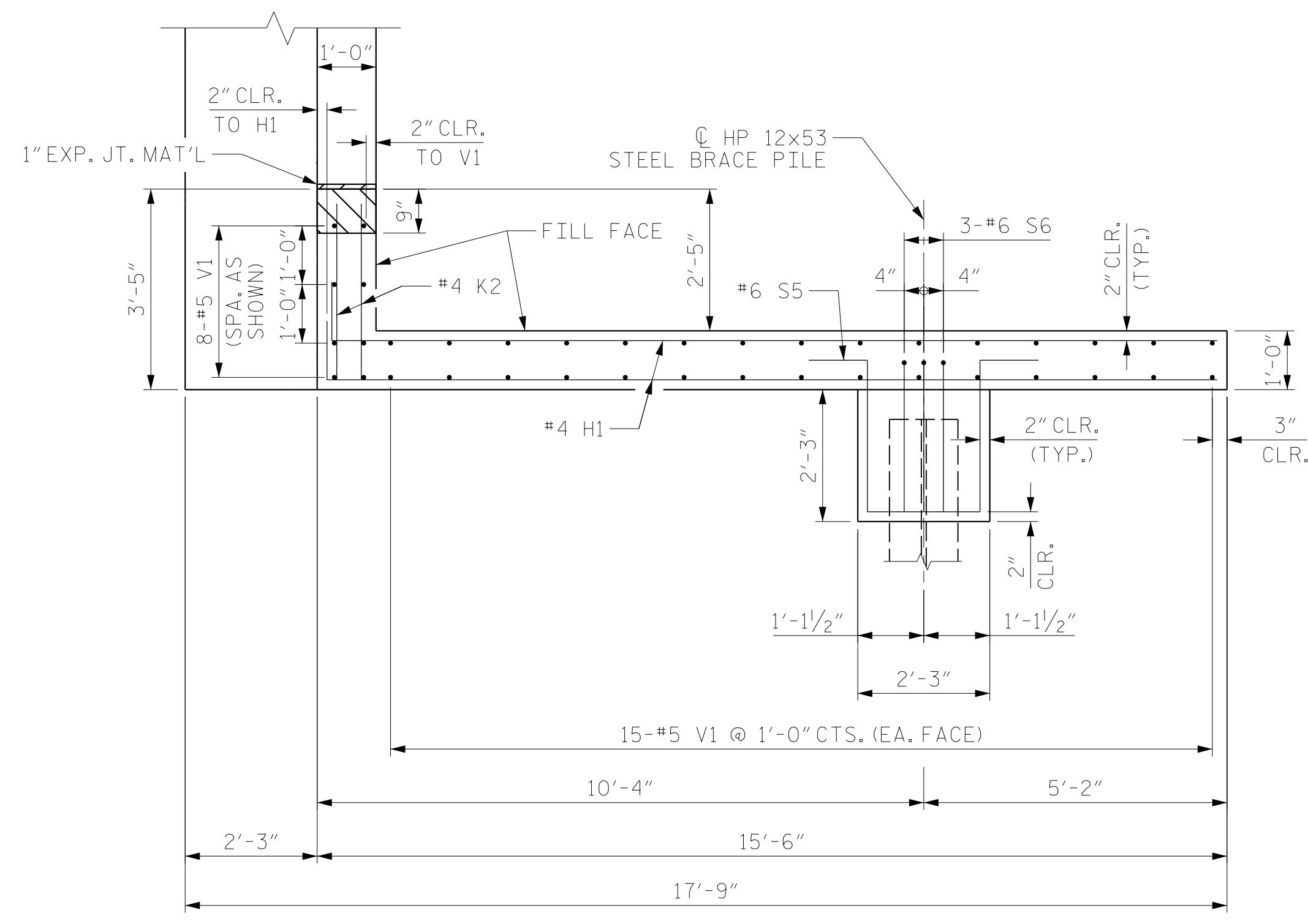
SHEET 1 OF 3 REPLACES BRIDGE NO. 240138



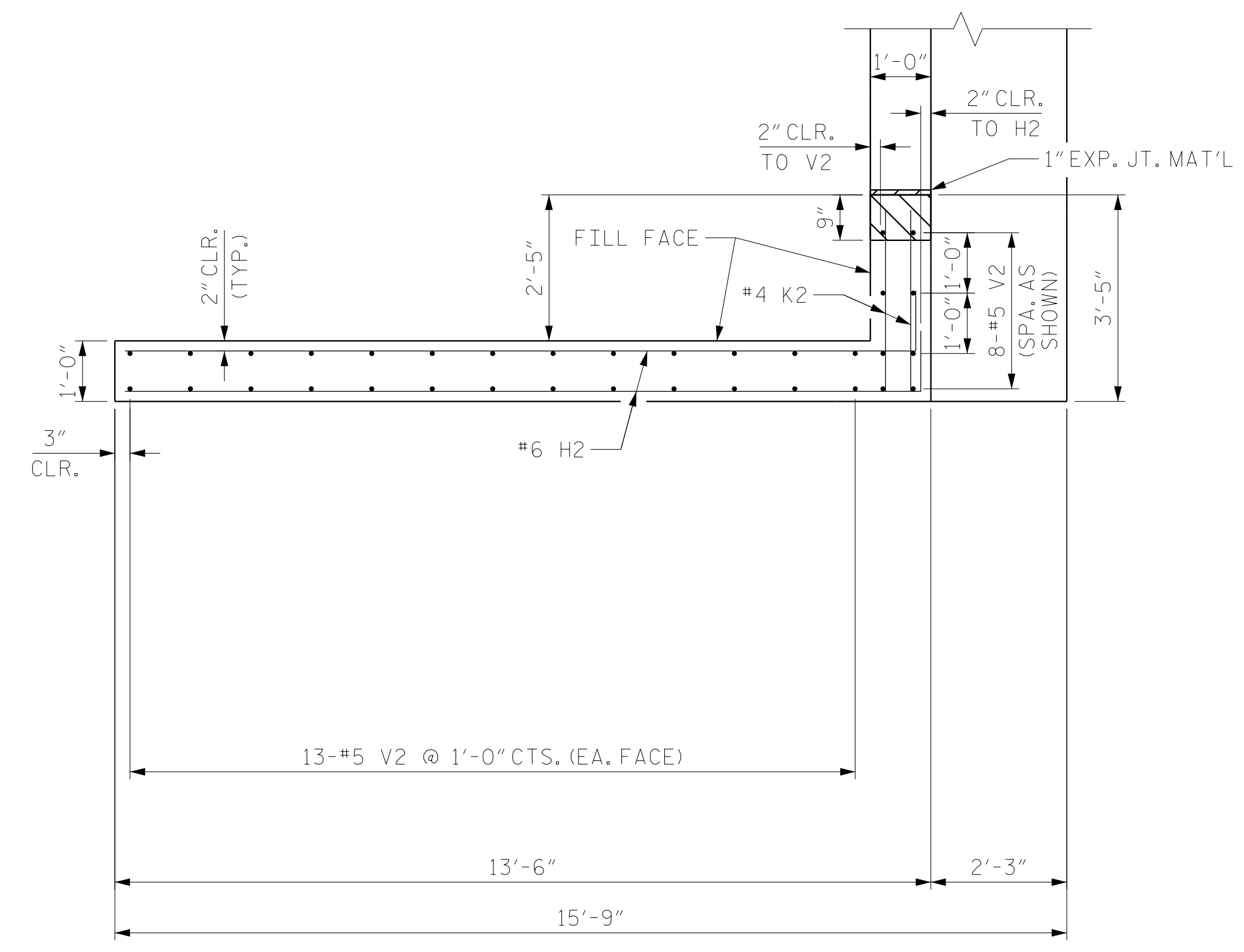
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-26	
1			3			TOTAL SHEETS	
2			4			37	

DRAWN BY : MRA DATE : 04/2019
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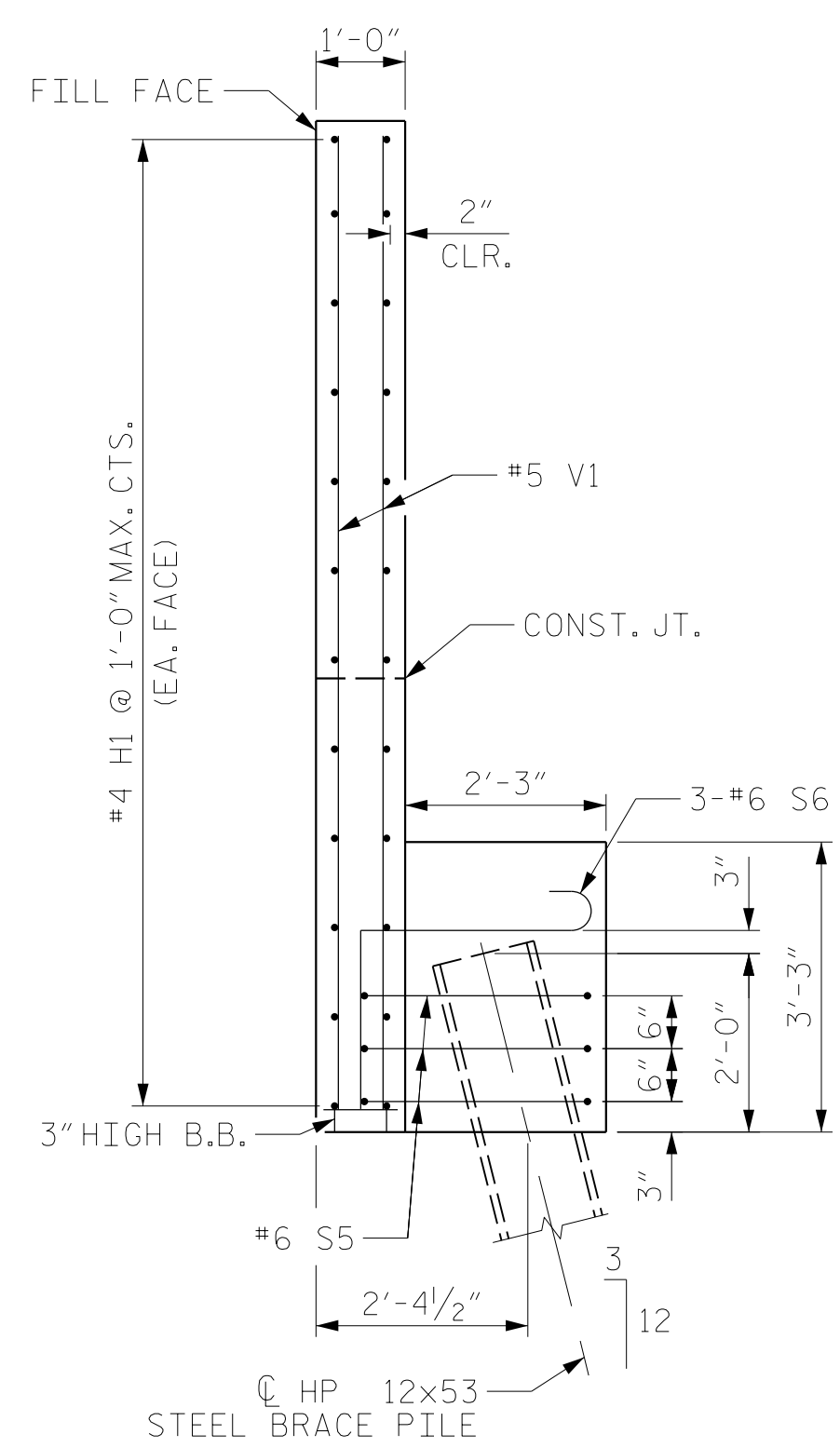
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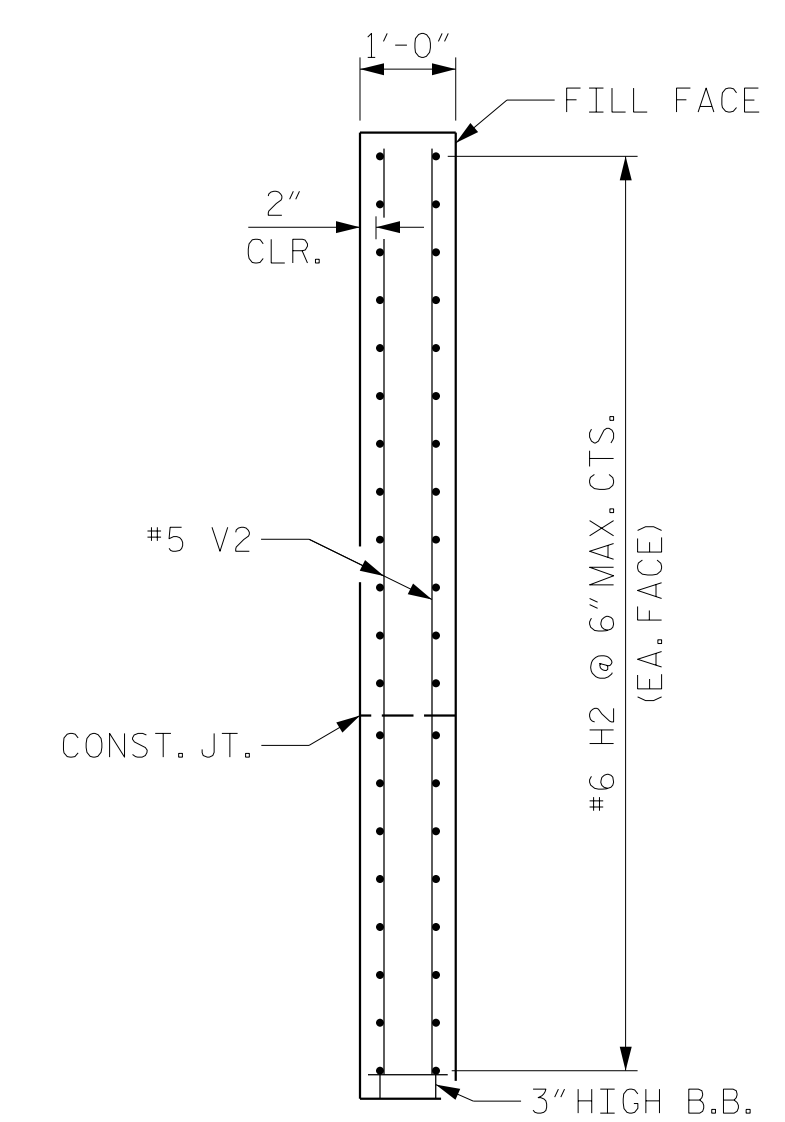
PLAN OF WING - W1



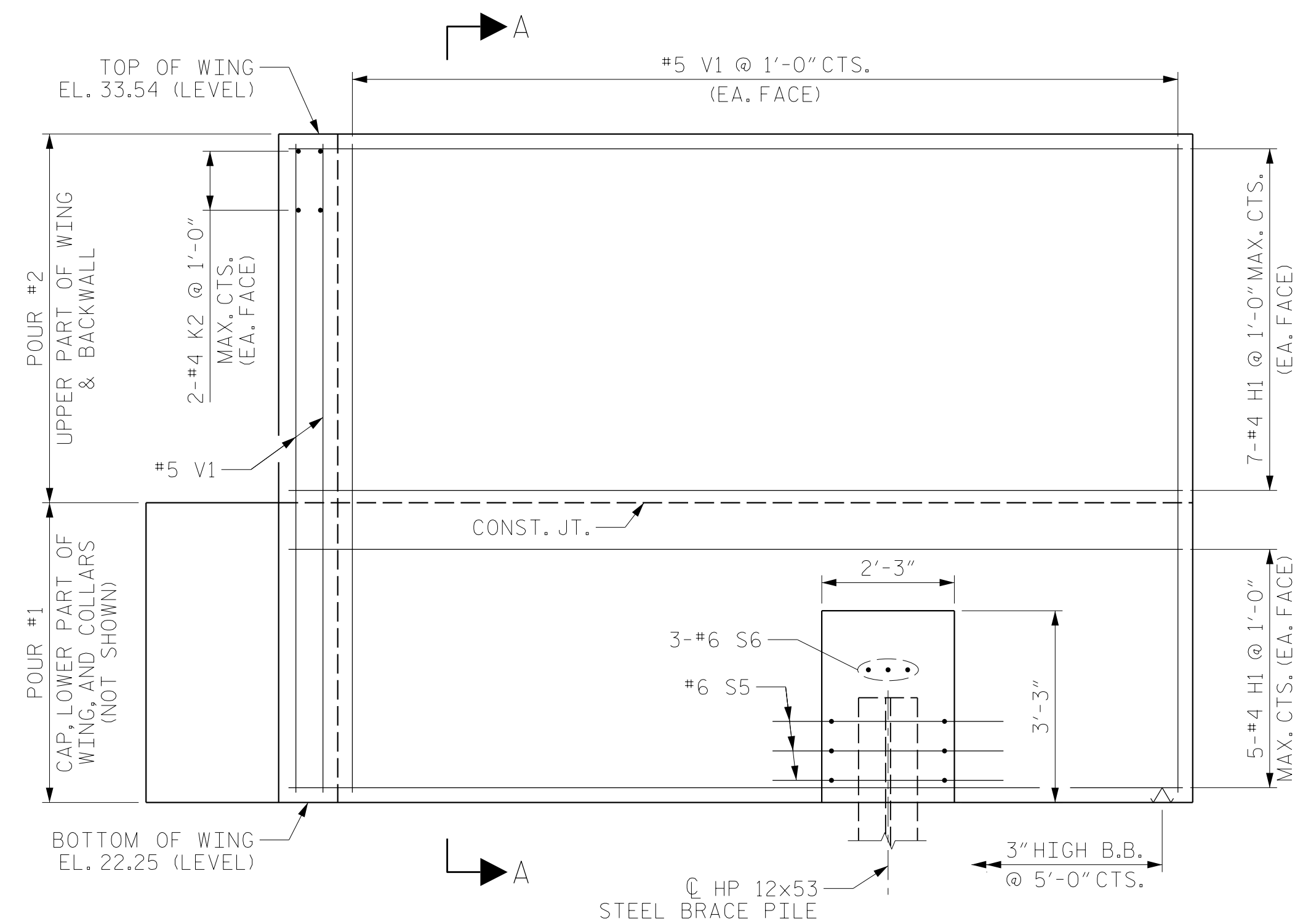
PLAN OF WING - W2



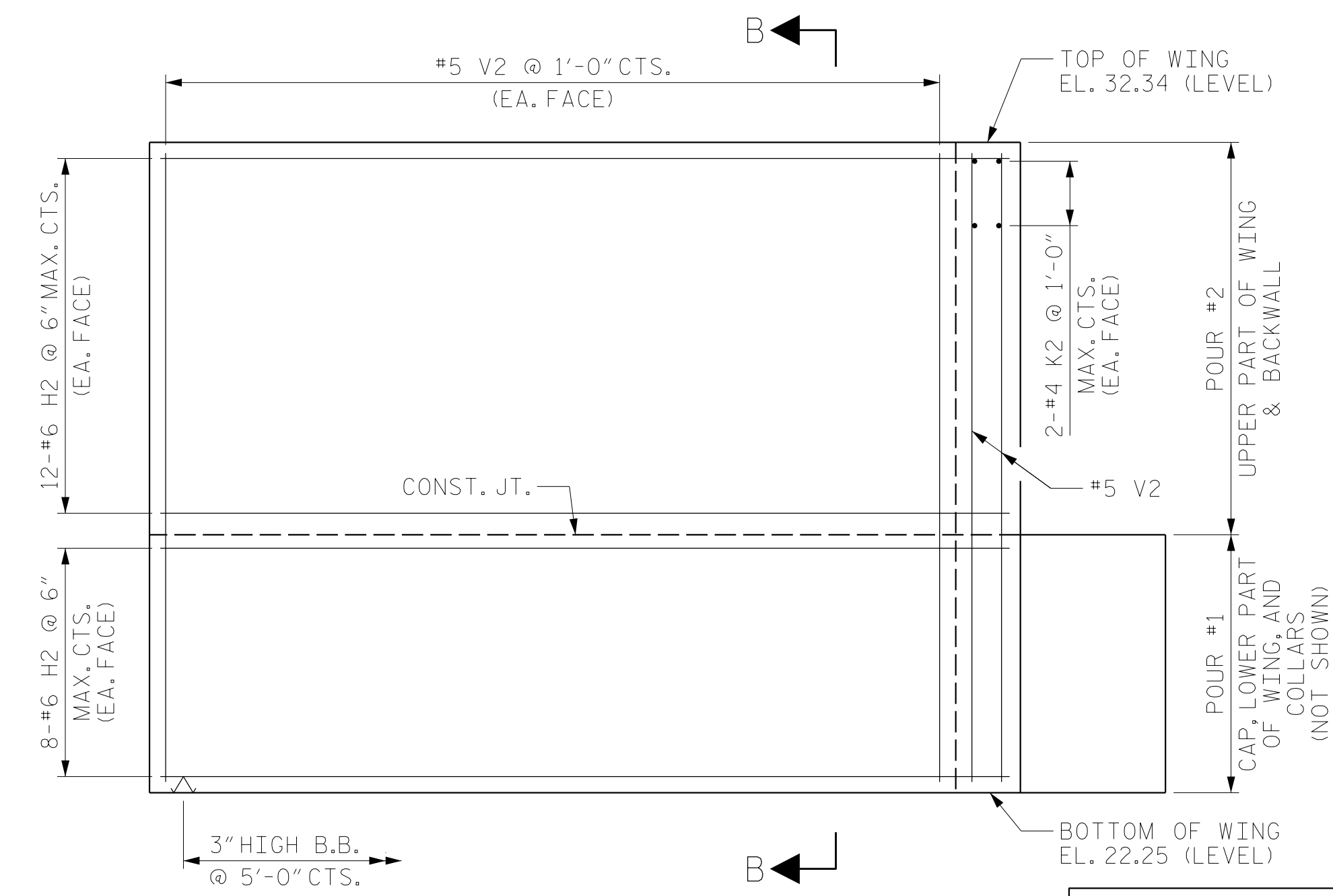
SECTION A-A



SECTION B-B



ELEVATION OF WING - W1



ELEVATION OF WING - W2

PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 2 OF 3 REPLACES BRIDGE NO. 240138

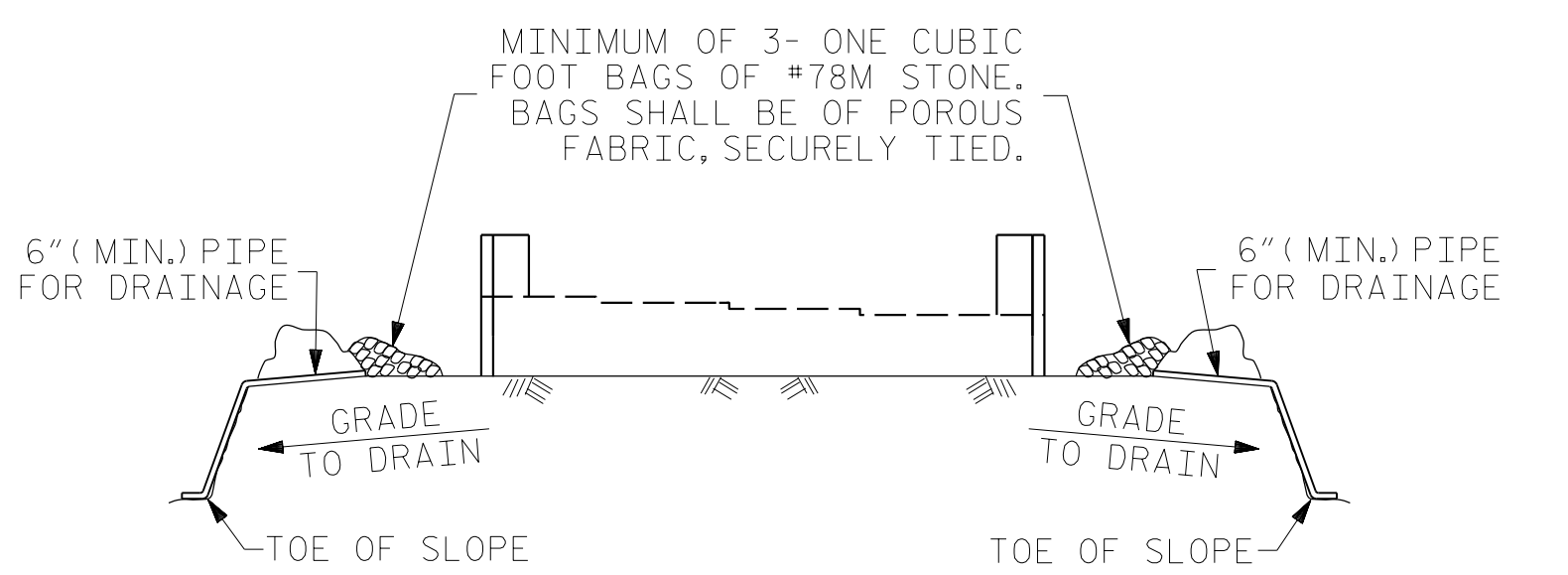


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REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 37

DRAWN BY : NSC DATE : 05/2019
 CHECKED BY : JMR DATE : 06/2019
 DESIGN ENGINEER OF RECORD: MAL DATE : 06/2019

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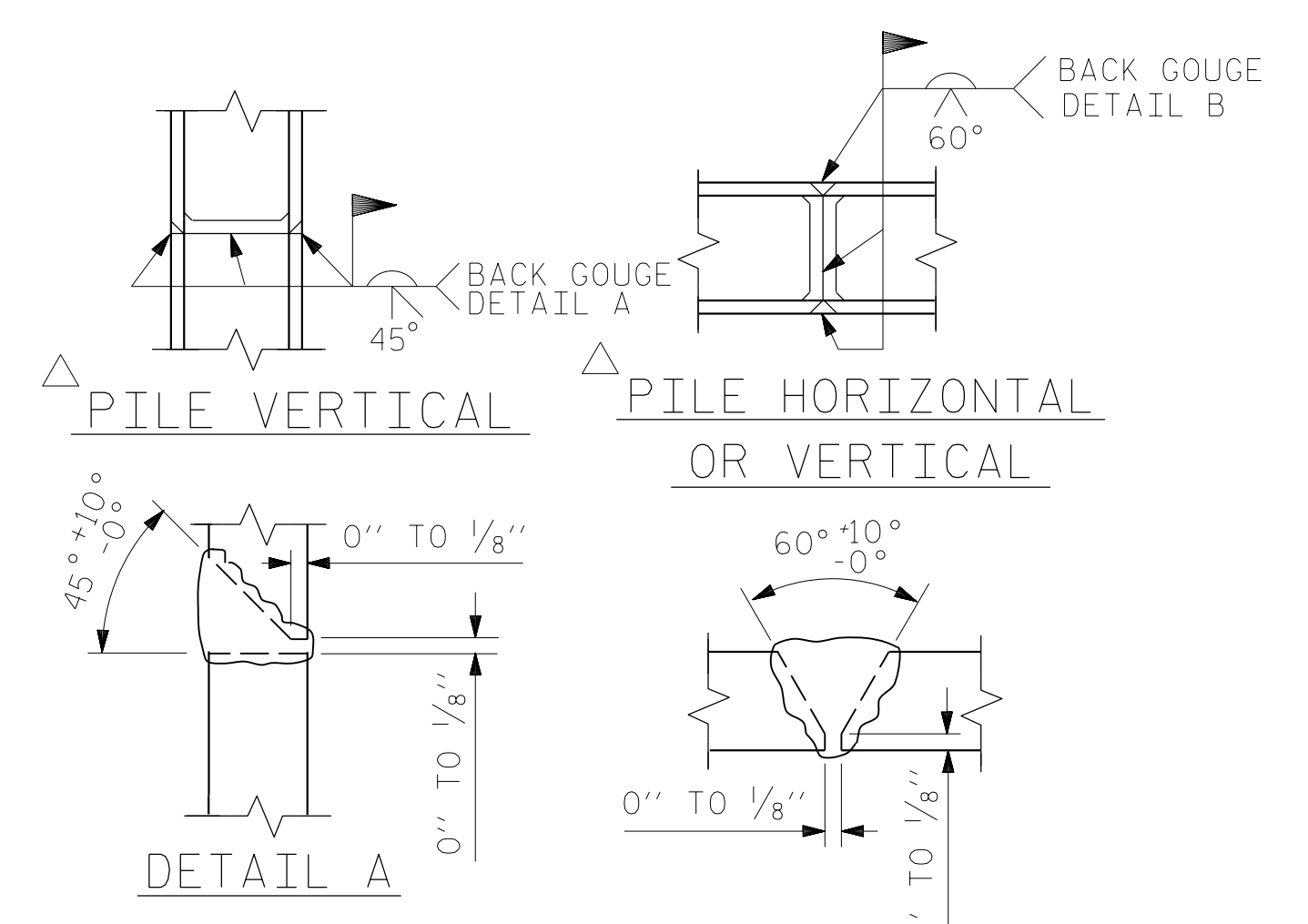


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

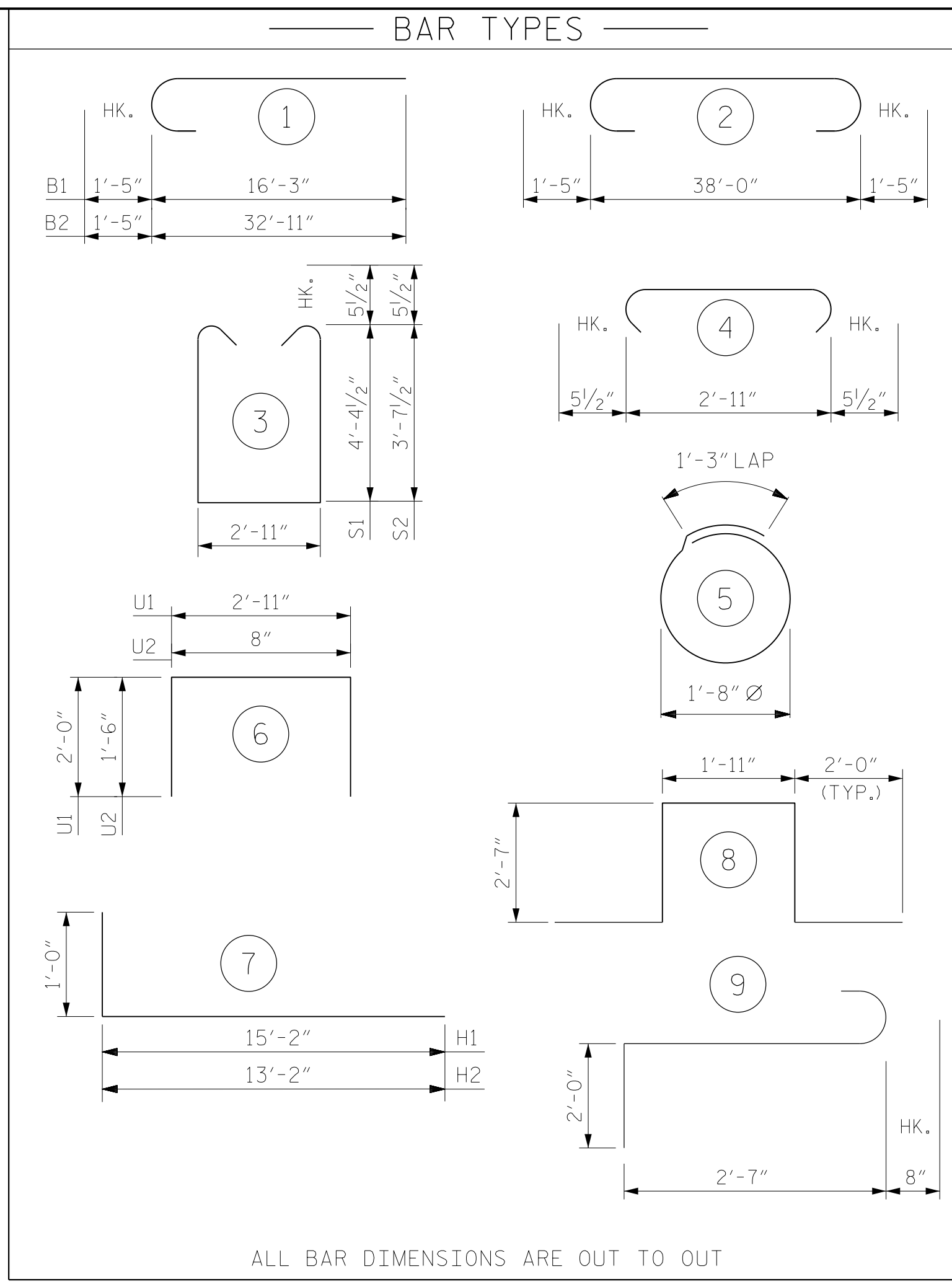
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



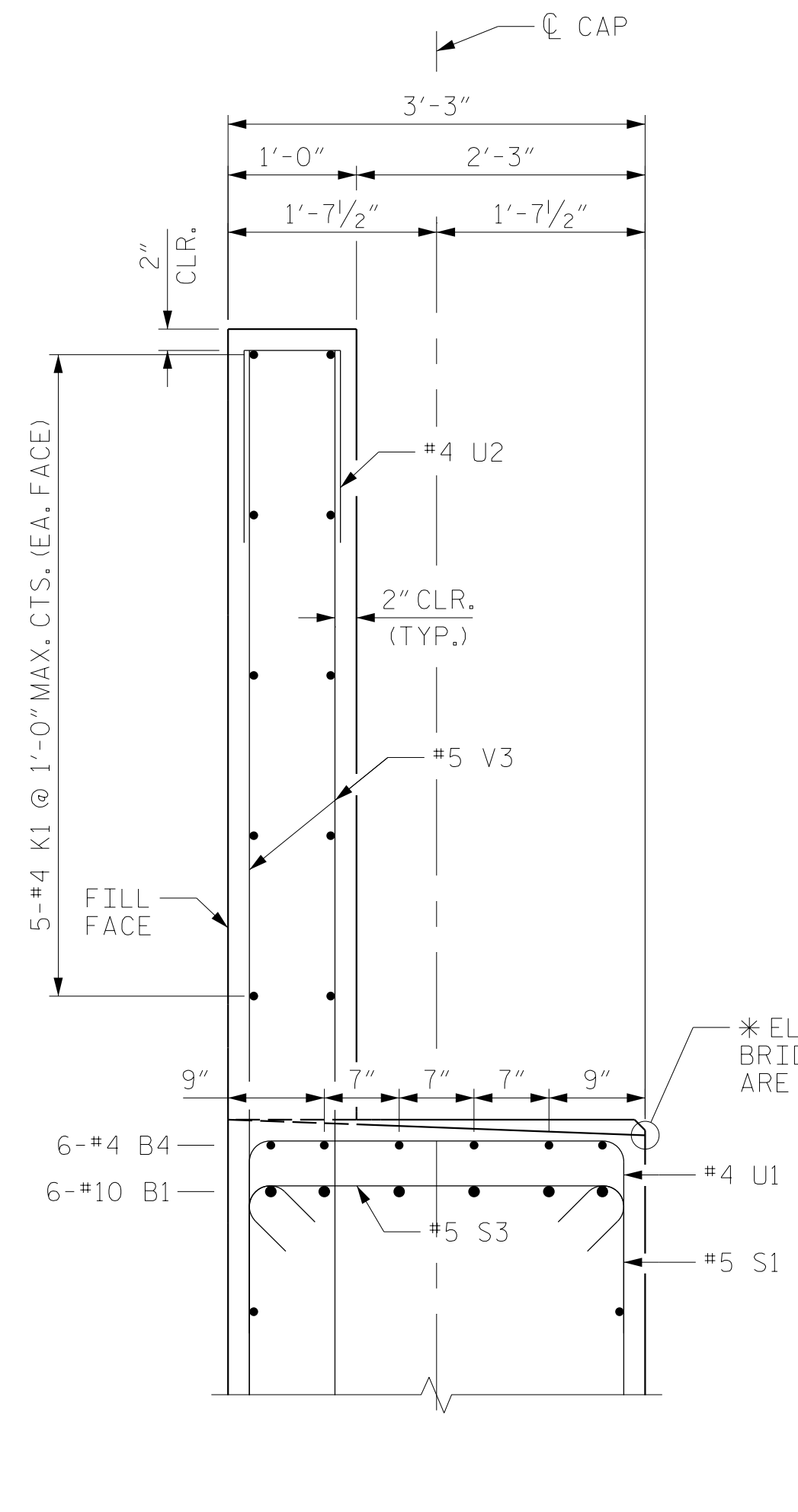
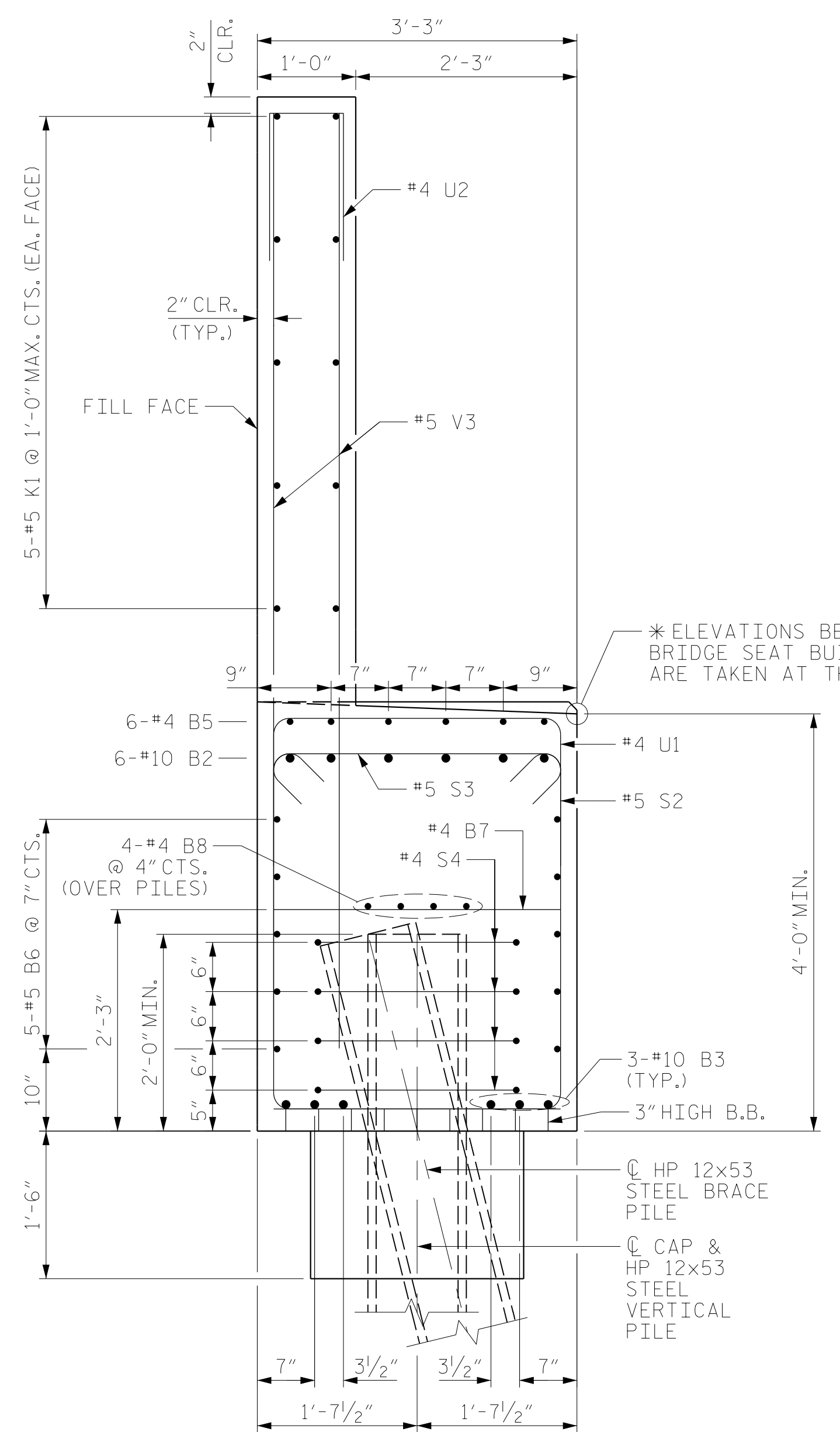
POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL					
END BENT NO. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	1	17'-8"	456
B2	6	#10	1	34'-4"	886
B3	6	#10	2	40'-10"	1054
B4	6	#4	STR	7'-3"	29
B5	6	#4	STR	11'-5"	46
B6	10	#5	STR	38'-0"	396
B7	10	#4	STR	2'-11"	19
B8	4	#4	STR	38'-0"	102
H1	24	#4	7	16'-2"	259
H2	40	#6	7	14'-2"	851
K1	10	#5	STR	38'-0"	396
K2	8	#4	STR	3'-0"	16
S1	18	#5	3	12'-7"	236
S2	34	#5	3	11'-1"	393
S3	52	#5	4	3'-10"	208
S4	28	#4	5	6'-6"	122
S5	3	#6	8	11'-1"	50
S6	3	#6	9	5'-3"	24
U1	18	#4	6	6'-11"	83
U2	32	#4	6	3'-8"	78
V1	38	#5	STR	11'-0"	436
V2	34	#5	STR	9'-9"	346
V3	64	#5	STR	8'-0"	534
REINFORCING STEEL					7,020 LBS.
CLASS A CONCRETE					
POUR #1					
CAP, COLLAR & LOWER PART OF WING & BACKWALL					27.5 C.Y.
POUR #2					
UPPER PART OF WING & BACKWALL					13.4 C.Y.
TOTAL CLASS A CONCRETE					40.9 C.Y.
HP 12 X 53 STEEL PILES					
NO. 8					520 LIN. FT.
PILE DRIVING EQUIPMENT SETUP					8 EA.
PILE REDRIVES					5 EA.



DRAWN BY : MRA DATE : 04/2019
 CHECKED BY : JMR DATE : 06/2019
 DESIGN ENGINEER OF RECORD: MAL DATE : 06/2019

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 STATION: 25+06.00 -L1-

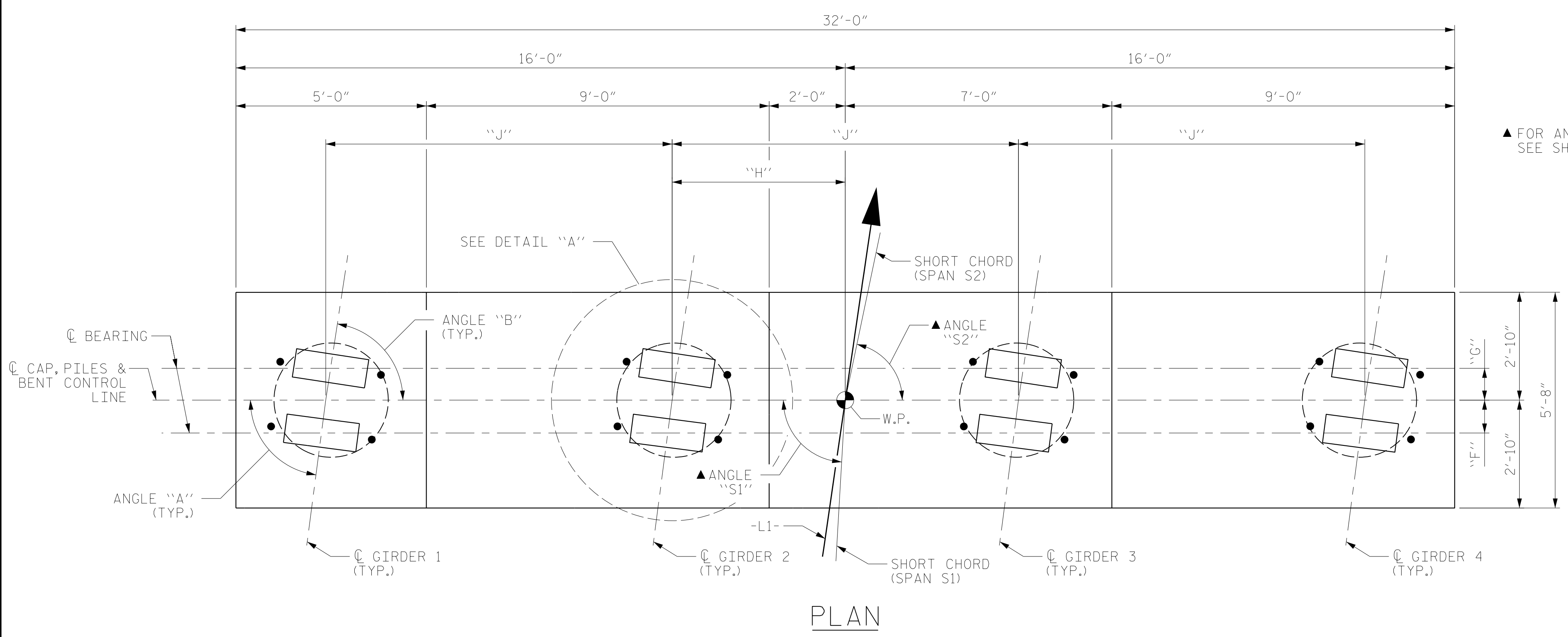
SHEET 3 OF 3 REPLACES BRIDGE NO. 240138

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1 DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.		S1-28
TOTAL SHEETS		37

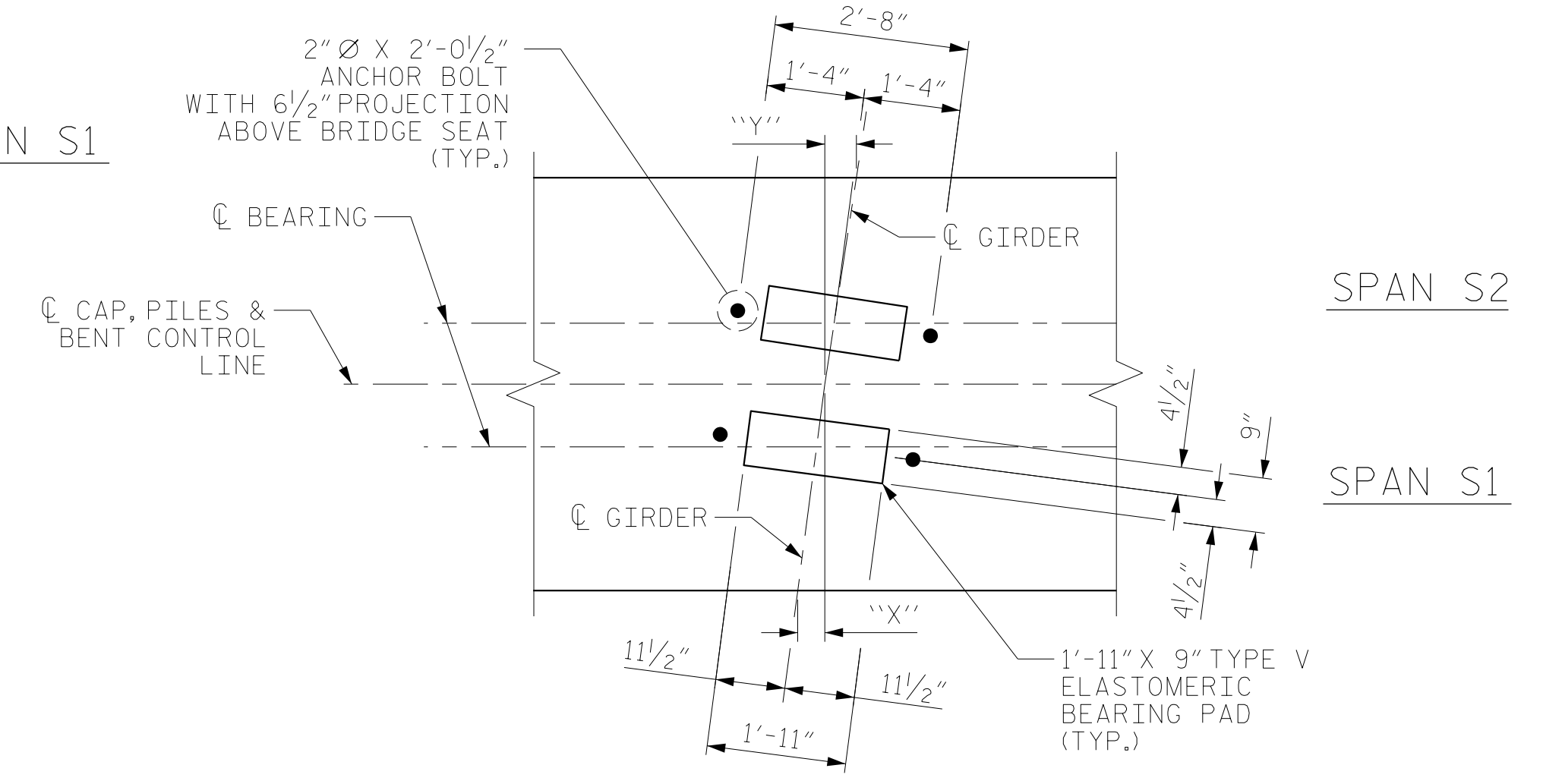
NOTES

- FOR SECTION A-A, PARTIAL SECTIONS B-B AND C-C AND VIEWS D-D AND E-E, SEE SHEET 2 OF 2.
- FOR REINFORCING STEEL BILL OF MATERIAL, SEE SHEET 2 OF 2.
- FOR ADDITIONAL REINFORCING STEEL IN PP 36 X 0.50 GALVANIZED STEEL PILES, SEE "36"STEEL PIPE PILE" SHEET.
- U3, S1, AND S2 BARS MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLT.
- U1 AND U2 BARS MAY BE ROTATED AS NECESSARY SO LEGS OF BARS CLEAR PIPE PILES
- *INVERT ALTERNATE STIRRUPS.
- GALVANIZE THE FULL LENGTH OF EACH INTERIOR BENT PILE. SEE "36"STEEL PIPE PILE" SHEET FOR ADDITIONAL NOTES.
- THE TOP SURFACE AREAS OF THE BENT CAP AT BENT 3 SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.



PLAN

SPAN S2
SPAN S1



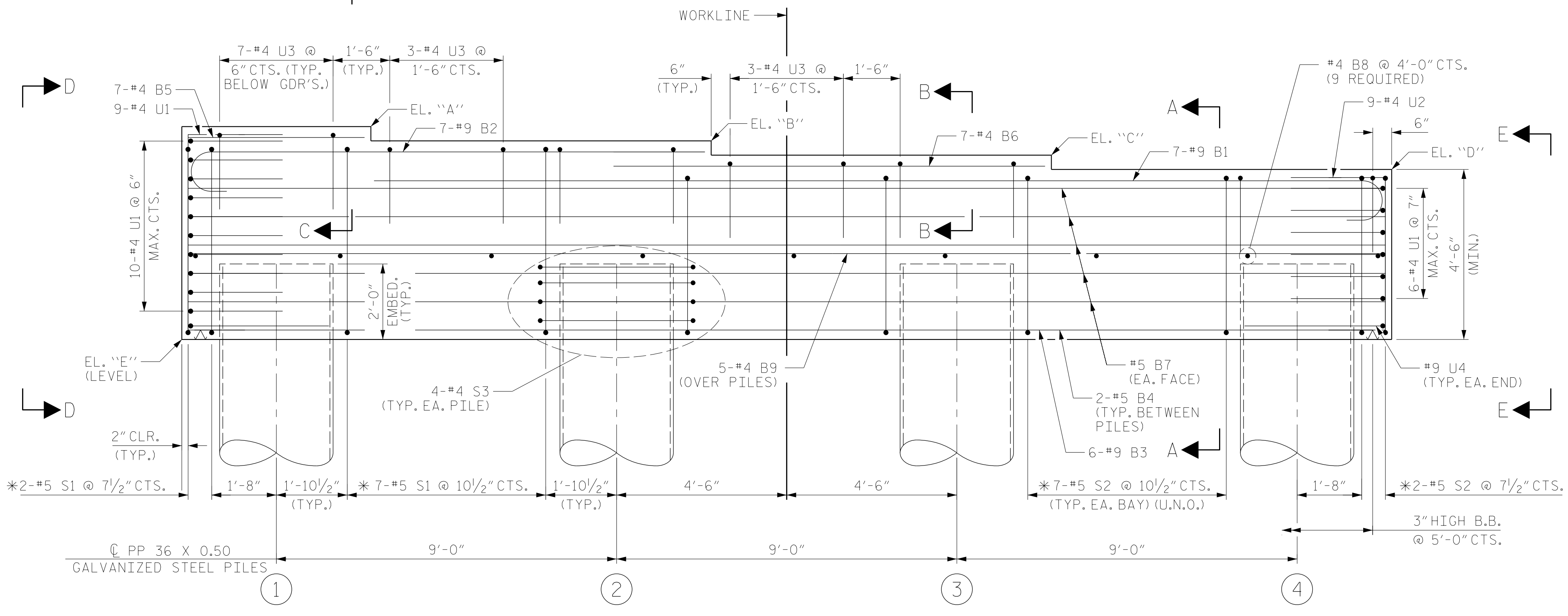
DETAIL "A"

DIMENSIONS TYPICAL FOR EACH BEARING. STEP NOT SHOWN FOR CLARITY. FOR DIMENSIONS "X" AND "Y", SEE GIRDER ANGLES TABLE

BENT 1					BENT 2				
GIRDER	ANGLE "A"	ANGLE "B"	X	Y	GIRDER	ANGLE "A"	ANGLE "B"	X	Y
1	89°-10'-22"	87°-31'-07"	1/2"	1 1/2"	1	87°-31'-07"	85°-51'-52"	1 1/2"	2 1/16"
2	89°-10'-15"	87°-30'-44"	1/2"	1 1/2"	2	87°-30'-44"	85°-51'-13"	1 1/2"	2 1/16"
3	89°-10'-07"	87°-30'-20"	1/2"	1 1/2"	3	87°-30'-20"	85°-50'-34"	1 1/2"	2 1/2"
4	89°-09'-59"	87°-29'-57"	1/2"	1 1/2"	4	87°-29'-57"	85°-49'-54"	1 1/2"	2 1/2"

BENT 3					BENT 4				
GIRDER	ANGLE "A"	ANGLE "B"	X	Y	GIRDER	ANGLE "A"	ANGLE "B"	X	Y
1	85°-51'-52"	84°-12'-36"	2 1/16"	3 1/16"	1	84°-12'-36"	82°-33'-21"	3 1/16"	4 1/16"
2	85°-51'-13"	84°-11'-42"	2 1/16"	3 1/16"	2	84°-11'-42"	82°-32'-11"	3 1/16"	4 1/16"
3	85°-50'-34"	84°-10'-48"	2 1/2"	3 1/16"	3	84°-10'-48"	82°-31'-01"	3 1/16"	4 1/16"
4	85°-49'-54"	84°-09'-52"	2 1/2"	3 1/2"	4	84°-09'-52"	82°-29'-50"	3 1/2"	4 1/2"

BENT 5				
GIRDER	ANGLE "A"	ANGLE "B"	X	Y
1	82°-33'-21"	81°-20'-42"	4 1/16"	5 3/16"
2	82°-32'-11"	81°-20'-21"	4 1/16"	5 3/16"
3	82°-31'-01"	81°-20'-00"	4 1/16"	5 3/16"
4	82°-29'-50"	81°-19'-41"	4 1/2"	5 3/16"



ELEVATION

BENT	W.P.	SPANS		ELEVATIONS					BEARING OFFSETS				
		S1	S2	A	B	C	D	E	TOP OF PILE	F	G	H	J
1	2	A	B	29.12	28.77	28.41	28.05	23.55	25.55	10 1/16"	10 1/16"	4'-6"	9'-0 1/16"
2	3	B	C	30.24	29.89	29.53	29.17	24.67	26.67	10 1/16"	10 1/16"	4'-6 1/16"	9'-0 1/16"
3	4	C	D	30.74	30.38	30.02	29.66	25.16	27.16	10 1/16"	10 1/16"	4'-6 3/16"	9'-0 1/16"
4	5	D	E	30.62	30.26	29.89	29.52	25.02	27.02	10 1/16"	10 3/8"	4'-6 3/8"	9'-0 3/4"
5	6	E	F	29.88	29.51	29.13	28.75	24.25	26.25	10 3/8"	10 1/8"	4'-6 3/16"	9'-1 1/8"

SHORT CHORD ANGLES		
BENT	ANGLE "S1"	ANGLE "S2"
1	89°-10'-11"	87°-30'-32"
2	87°-30'-32"	85°-50'-53"
3	85°-50'-53"	84°-11'-15"
4	84°-11'-15"	82°-31'-36"
5	82°-31'-36"	81°-29'-24"

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 RALEIGH
 SUBSTRUCTURE
 BENTS 1 - 5

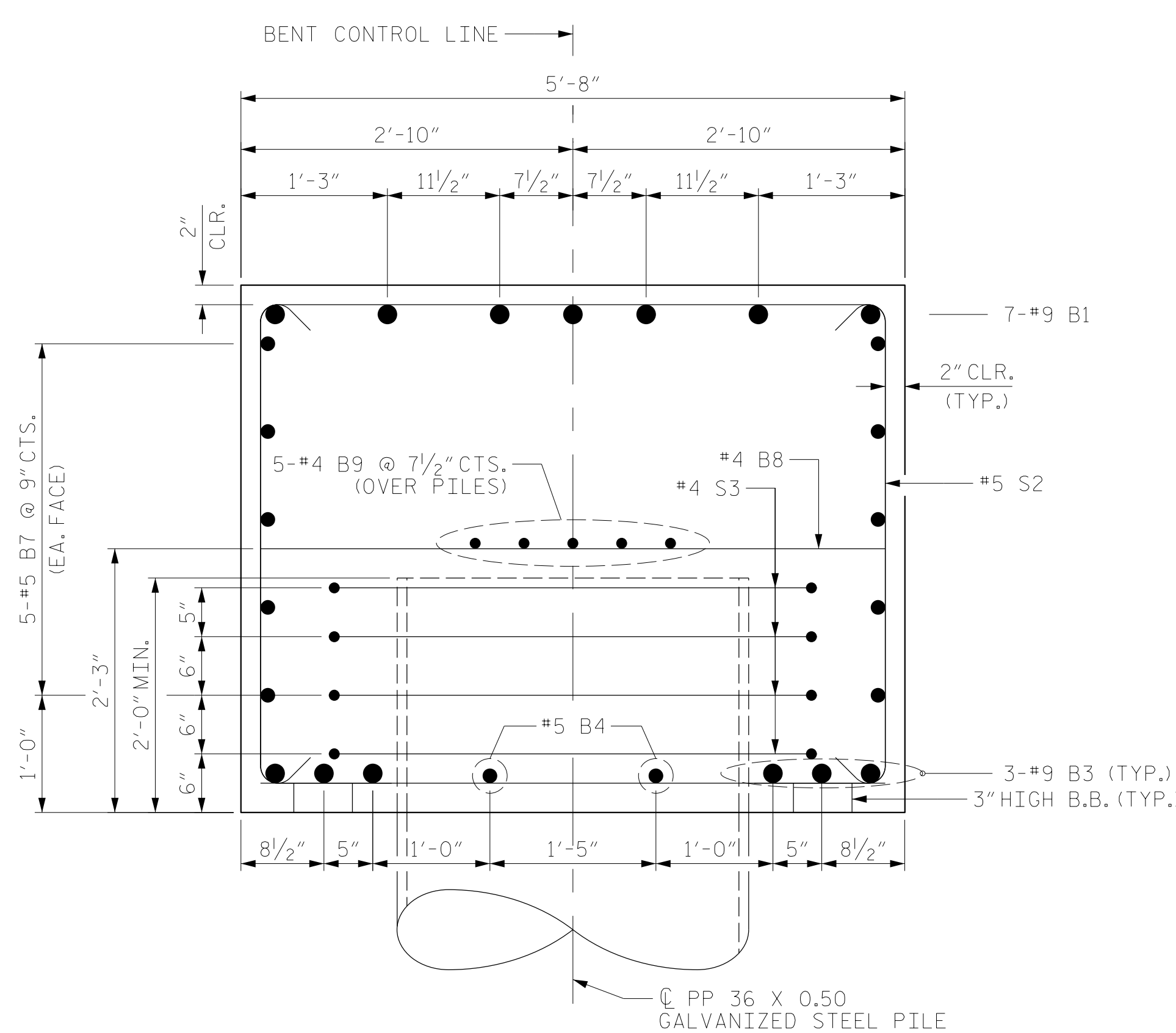
REVISIONS

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

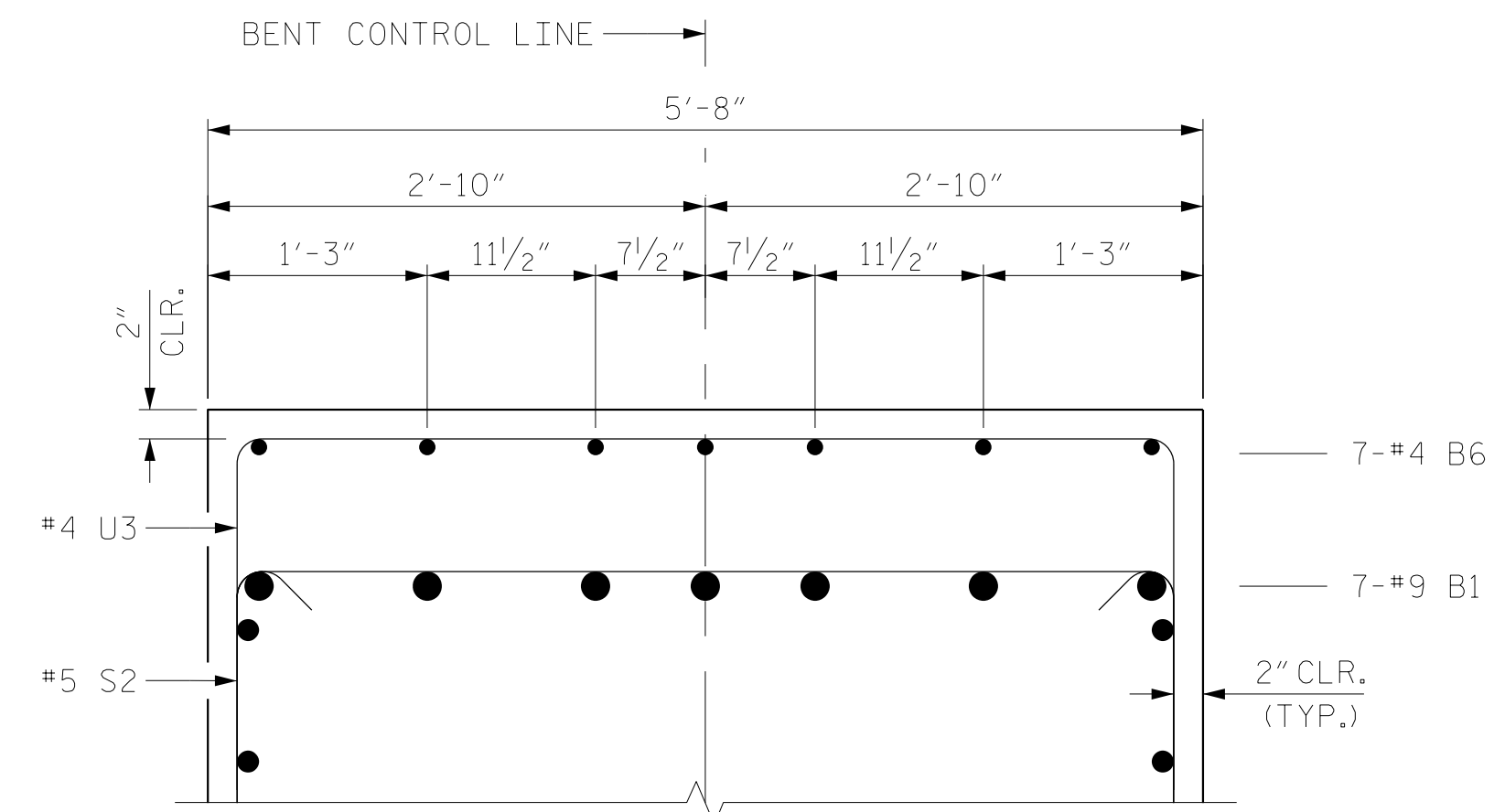
SHEET NO. S1-29
 TOTAL SHEETS 37

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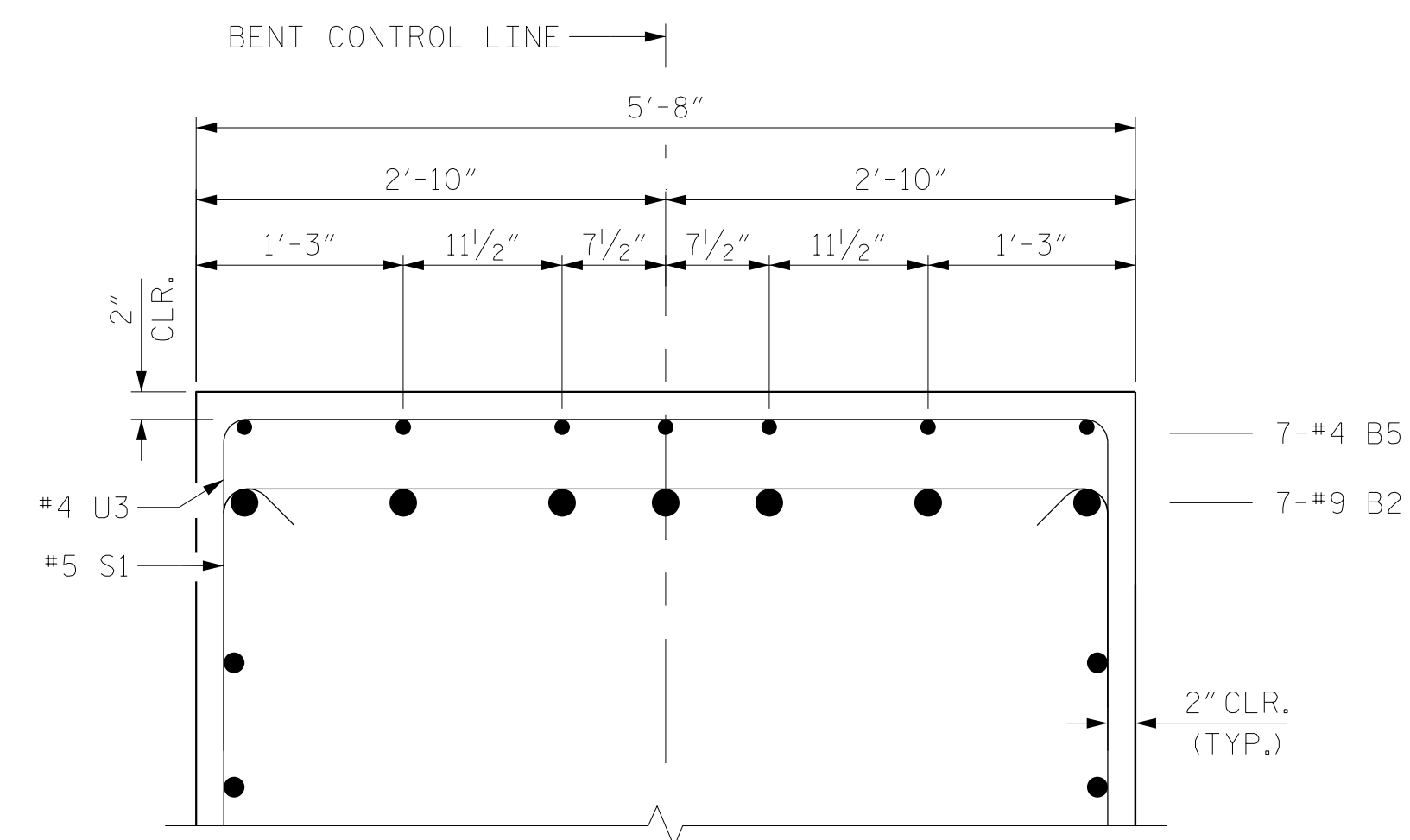
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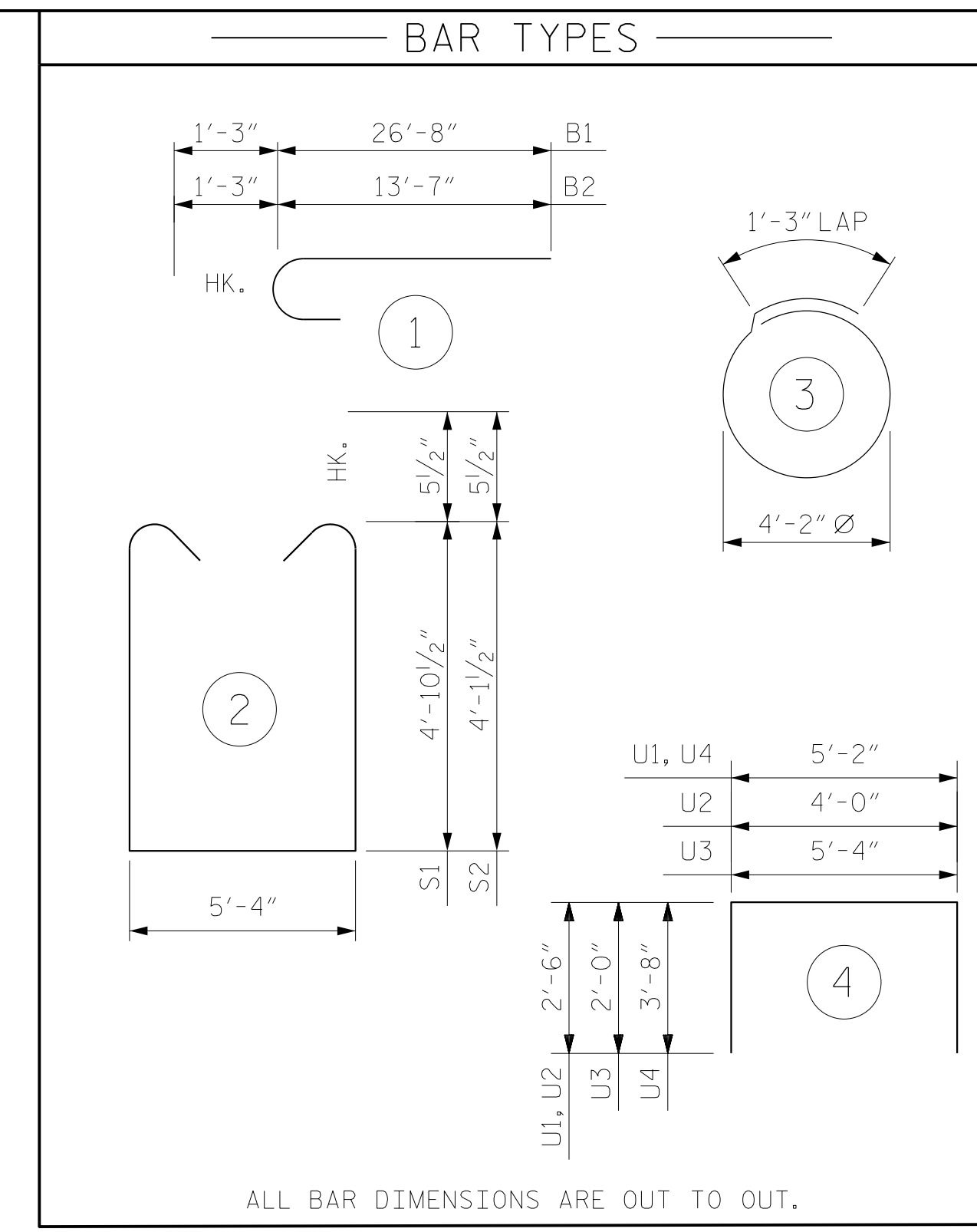
SECTION A-A



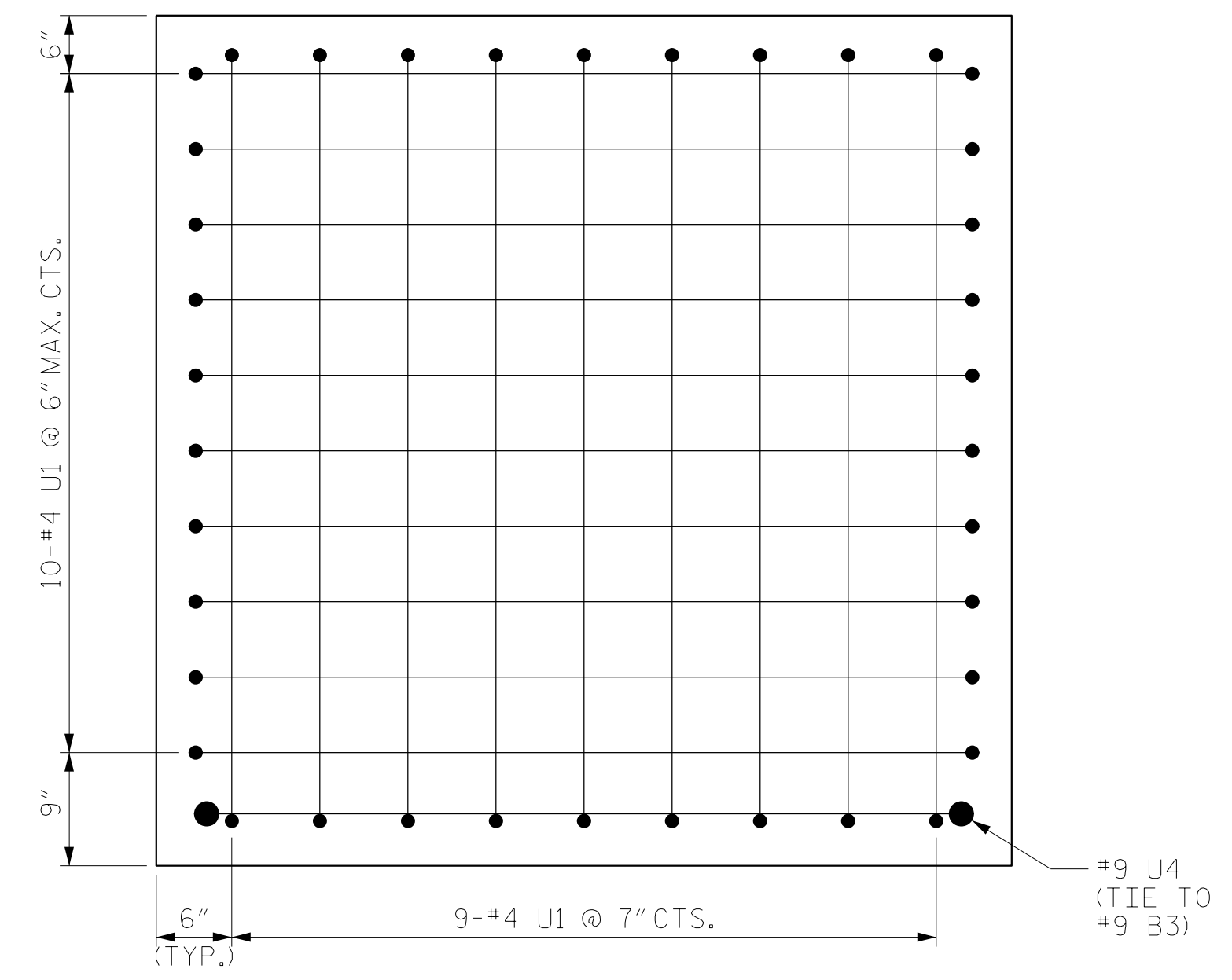
PARTIAL SECTION B-B



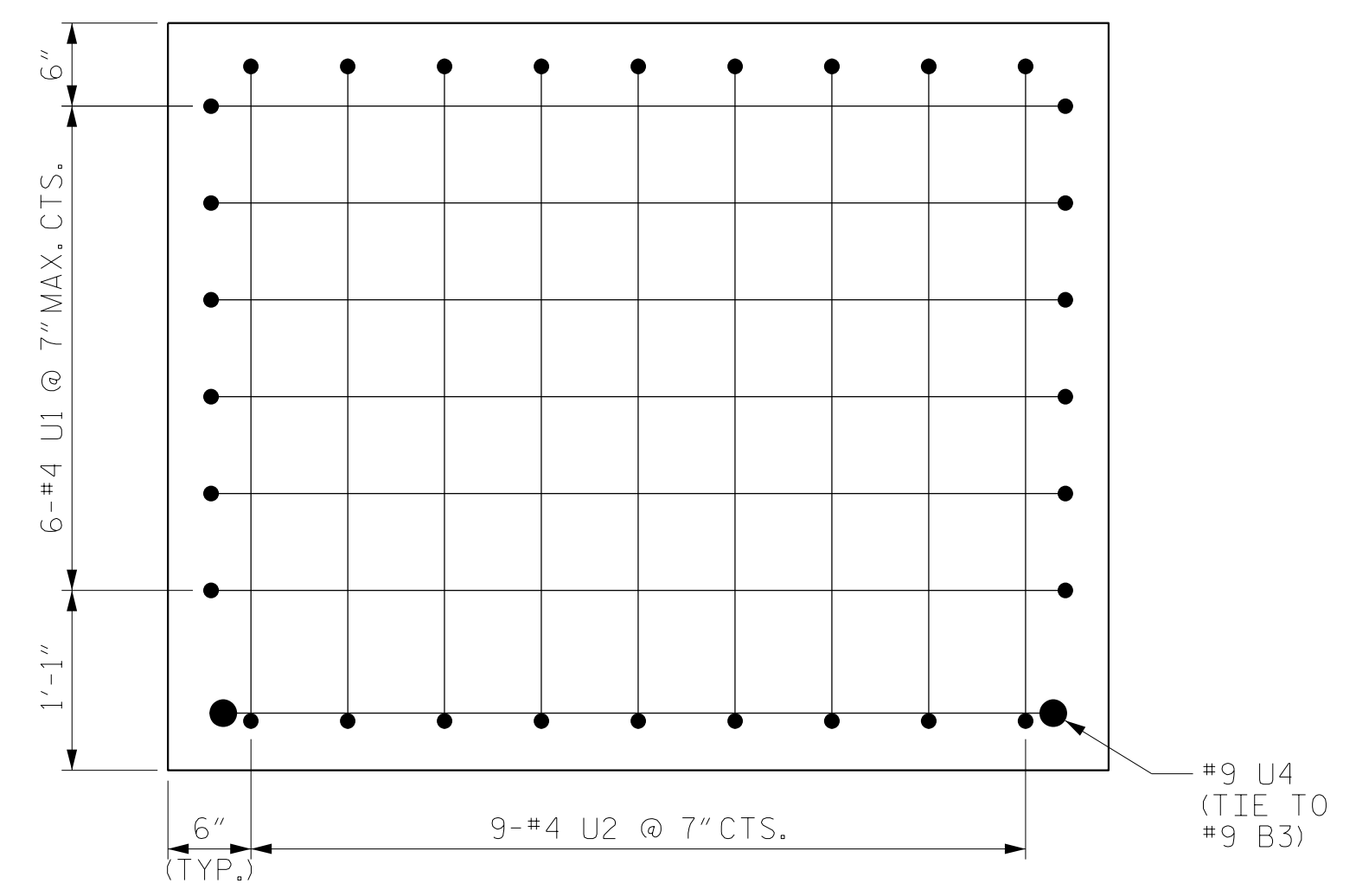
PARTIAL SECTION C-C



BILL OF MATERIAL					
FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	7	#9	1	27'-11"	664
B2	7	#9	1	14'-10"	353
B3	6	#9	STR	31'-4"	639
B4	6	#5	STR	5'-6"	34
B5	7	#4	STR	4'-8"	22
B6	7	#4	STR	11'-5"	53
B7	10	#5	STR	31'-8"	330
B8	9	#4	STR	5'-4"	32
B9	5	#4	STR	31'-8"	106
S1	9	#5	2	16'-0"	150
S2	16	#5	2	14'-6"	242
S3	16	#4	3	14'-4"	153
U1	25	#4	4	10'-2"	170
U2	9	#4	4	9'-0"	54
U3	34	#4	4	9'-4"	212
U4	2	#9	4	12'-6"	85
REINFORCING STEEL (FOR ONE BENT)					3,299 LBS.
CLASS A CONCRETE BREAKDOWN					
▲ CLASS A CONCRETE (BENT 1)					31.3 C.Y.
▲ CLASS A CONCRETE (BENT 2)					31.3 C.Y.
▲ CLASS A CONCRETE (BENT 3)					31.3 C.Y.
▲ CLASS A CONCRETE (BENT 4)					31.4 C.Y.
▲ CLASS A CONCRETE (BENT 5)					31.5 C.Y.
PP 36 X 0.50 GALVANIZED STEEL PILES					
BENT 1	NO. 4				400 LIN. FT.
BENT 2	NO. 4				420 LIN. FT.
BENT 3	NO. 4				420 LIN. FT.
BENT 4	NO. 4				400 LIN. FT.
BENT 5	NO. 4				420 LIN. FT.
STEEL PILE POINTS (FOR ONE BENT)					NO. 4
PILE DRIVING EQUIPMENT SETUP (FOR ONE BENT)					NO. 4
PILE REDRIVES (FOR ONE BENT)					NO. 2
TOP PIPE PILE PLATES (FOR ONE BENT)					NO. 4



VIEW D-D



VIEW E-E

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 2 OF 2 REPLACES BRIDGE NO. 240138



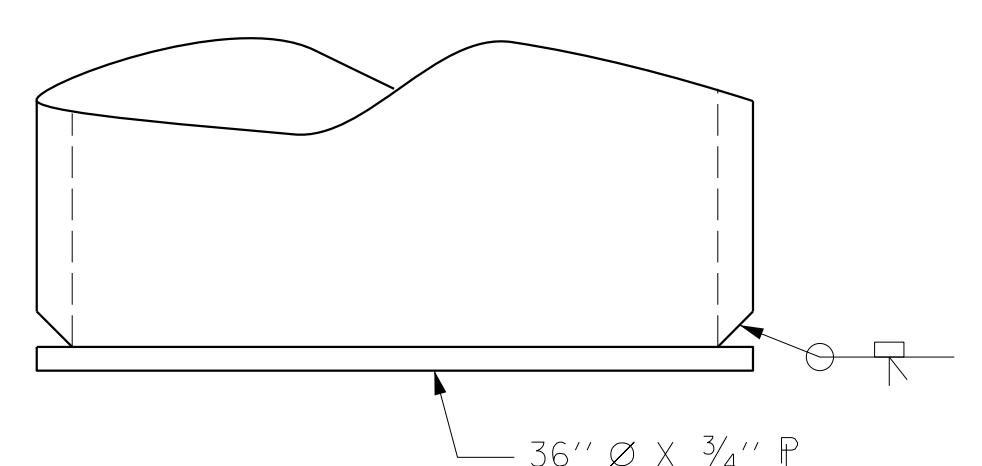
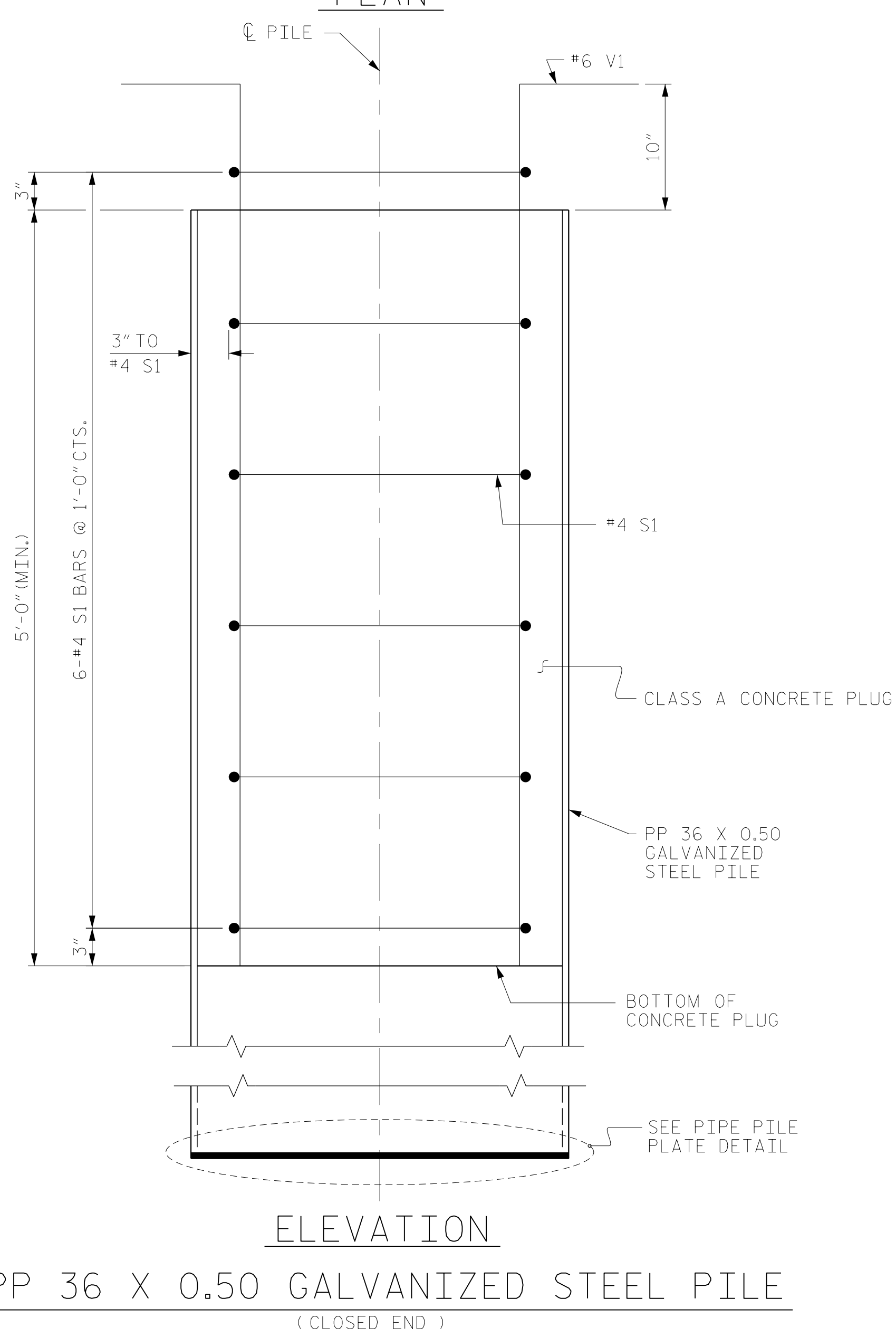
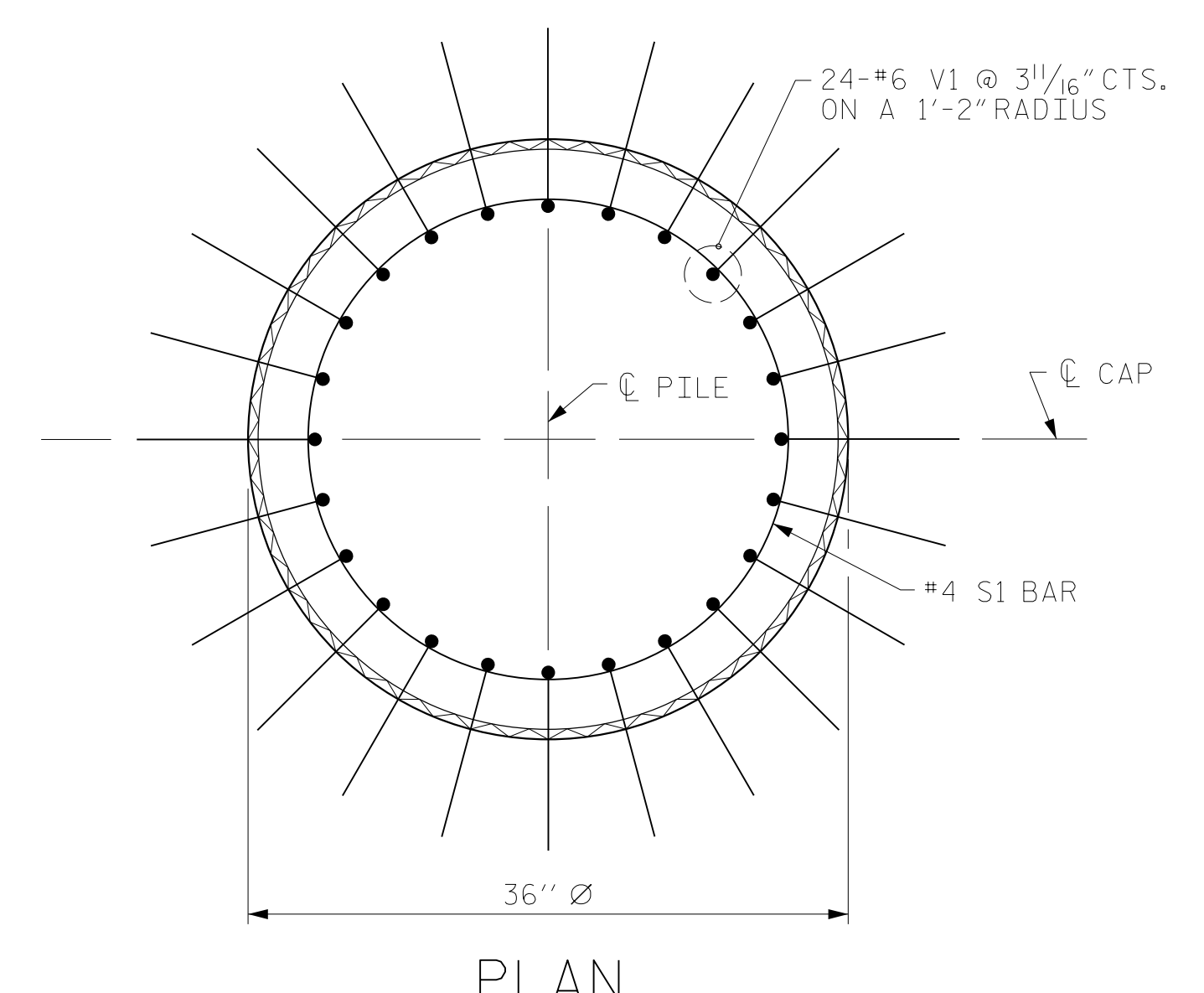
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENTS 1 - 5
 DETAILS

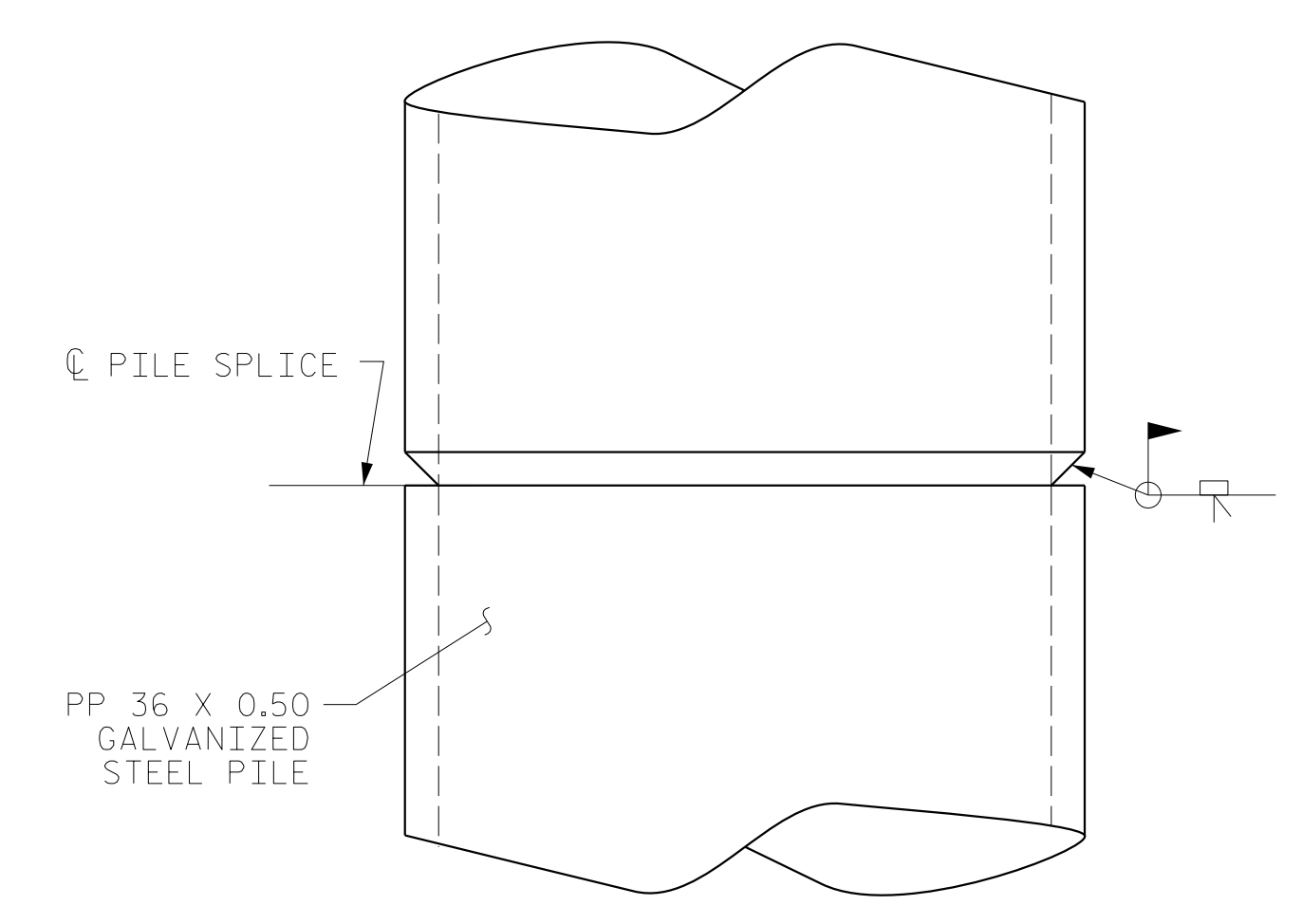
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-30
1			3			TOTAL SHEETS
2			4			37



PIPE PILE PLATE DETAIL



PIPE PILE SPLICE DETAIL

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS UNLESS METALLIZING IS REQUIRED. GALVANIZING OR METALLIZING PIPE PILE PLATES IS NOT REQUIRED.

PIPE PILE PLATES, IF REQUIRED, SHALL BE IN ACCORDANCE WITH SECTION 450 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR CLOSED END PIPE PILES, REMOVE ALL SOIL AND WATER FROM INSIDE THE PILES JUST PRIOR TO PLACING REINFORCING STEEL AND CONCRETE FOR THE CONCRETE PLUG.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE BENT CAP UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

THE REINFORCING STEEL, CLASS A CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 36 X 0.50 GALVANIZED STEEL PILES.

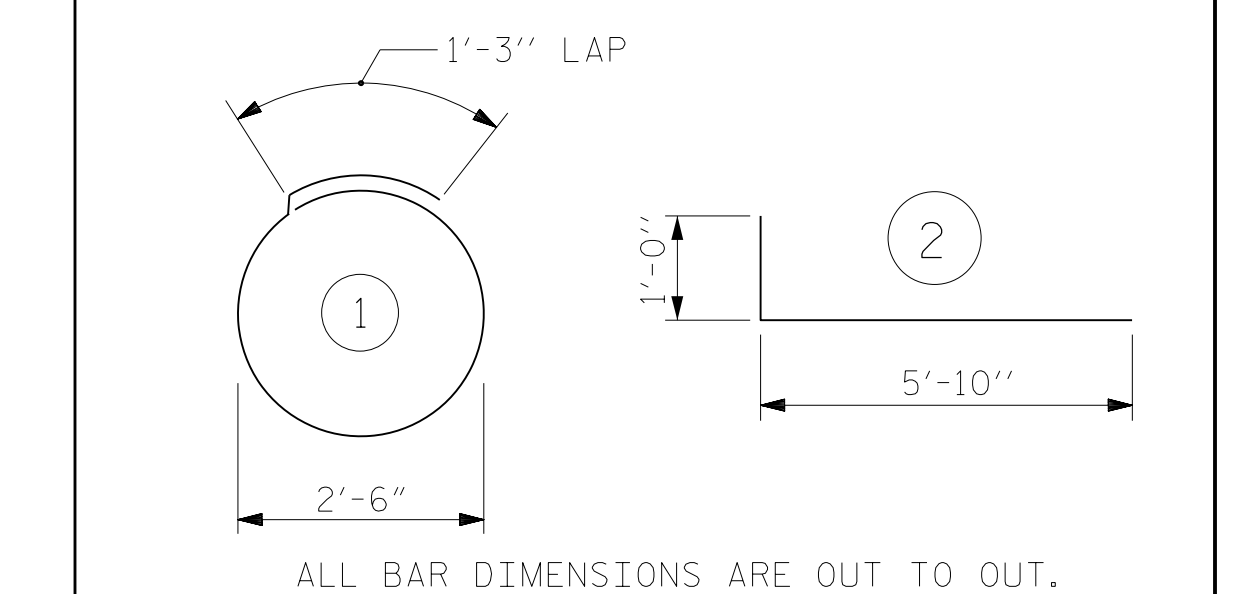
BILL OF MATERIAL FOR ONE PP 36 X 0.50 GALVANIZED STEEL PILE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
S1	6	#4	1	9'-1"	36
V1	24	#6	2	6'-10"	246
REINFORCING STEEL					282 LBS.

CLASS A CONCRETE

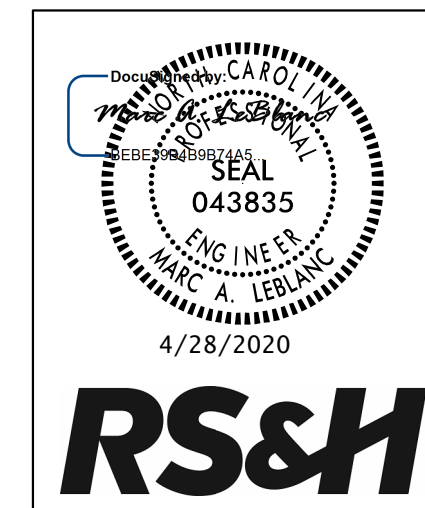
5'-0" MINIMUM PLUG 1.2 C.Y.

BAR TYPES



PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

REPLACES BRIDGE NO. 240138



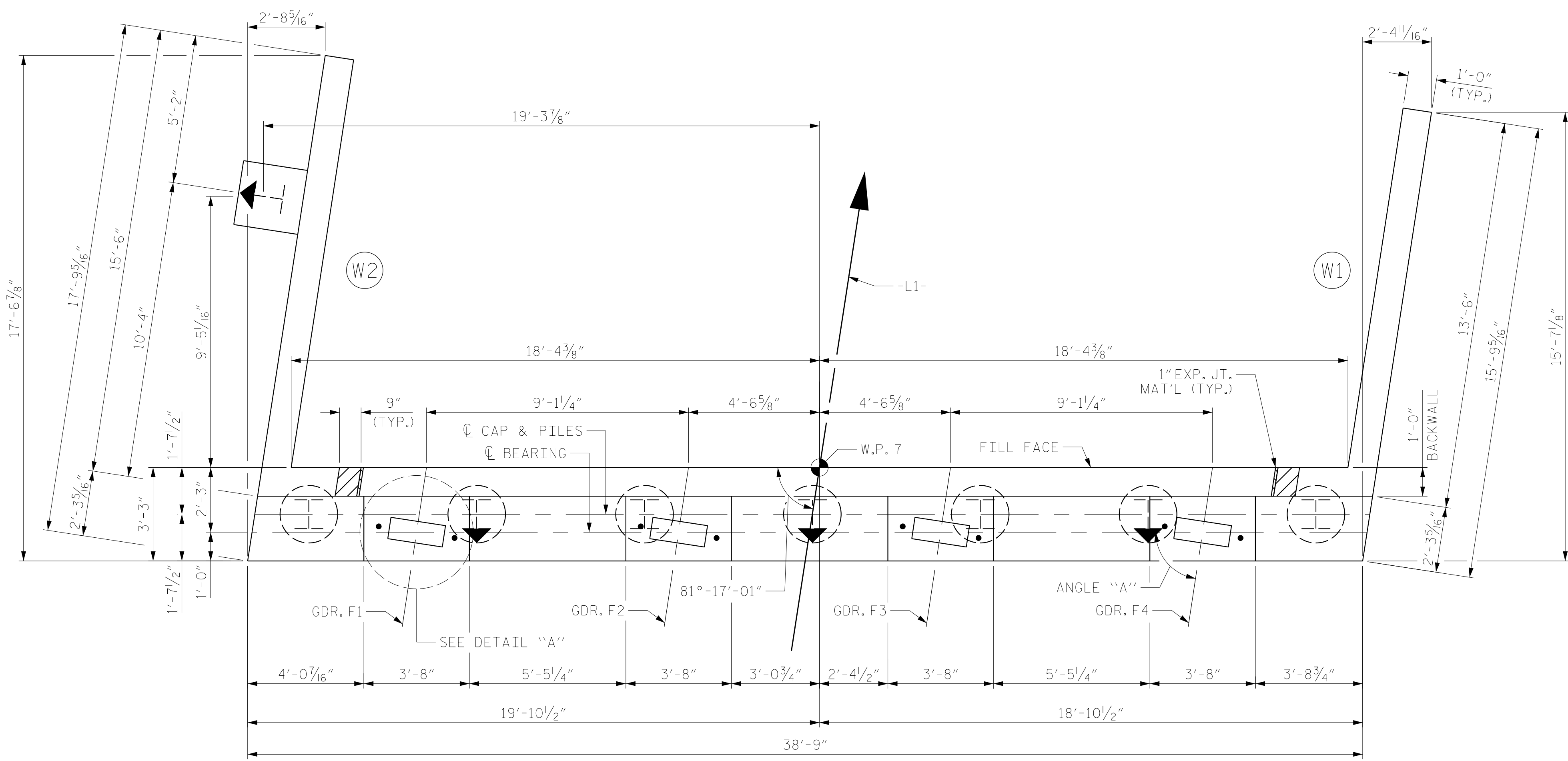
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 SUBSTRUCTURE
 36" STEEL PIPE PILE

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			37

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DESIGN ENGINEER OF RECORD: MAL	DATE : 06/2019



PLAN

NOTES

STIRRUPS AND U1 BARS IN CAP MAY BE SHIFTED, AS NECESSARY, TO CLEAR ANCHOR BOLTS.

FOR SECTION A-A AND PARTIAL SECTION B-B, SEE SHEET 3 OF 3.

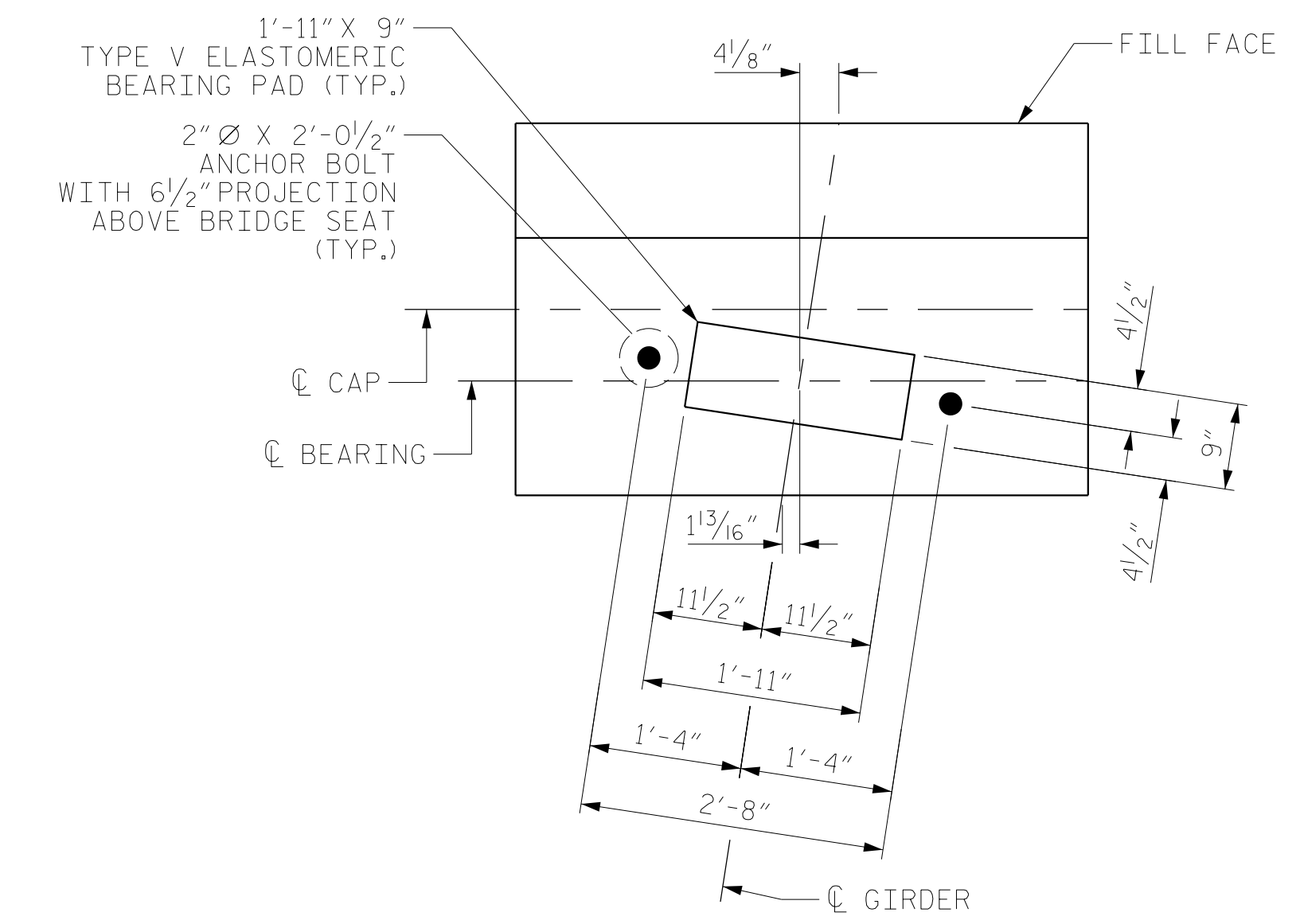
BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

THE TOP SURFACE AREAS 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 CONCRETE BARRIER IS CAST IF SLIP FORMING IS USED.

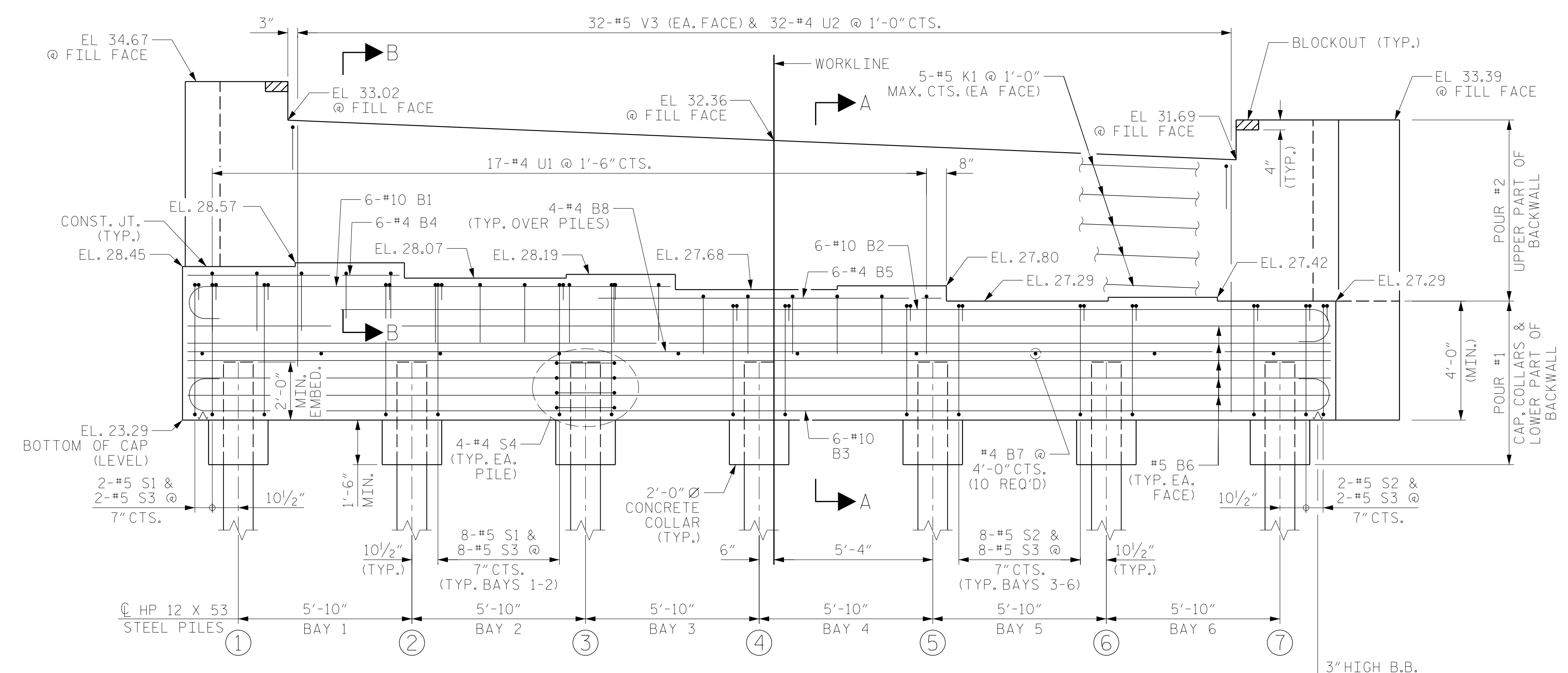
↑ INDICATES BATTERED PILE.



DETAIL "A"

DIMENSIONS TYPICAL FOR EACH BEARING PILES NOT SHOWN FOR CLARITY

GIRDER ANGLES	
GIRDER	ANGLE "A"
1	81°-20'-42"
2	81°-20'-21"
3	81°-20'-00"
4	81°-19'-41"



ELEVATION

PROJECT NO. B-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 1 OF 3 REPLACES BRIDGE NO. 240138



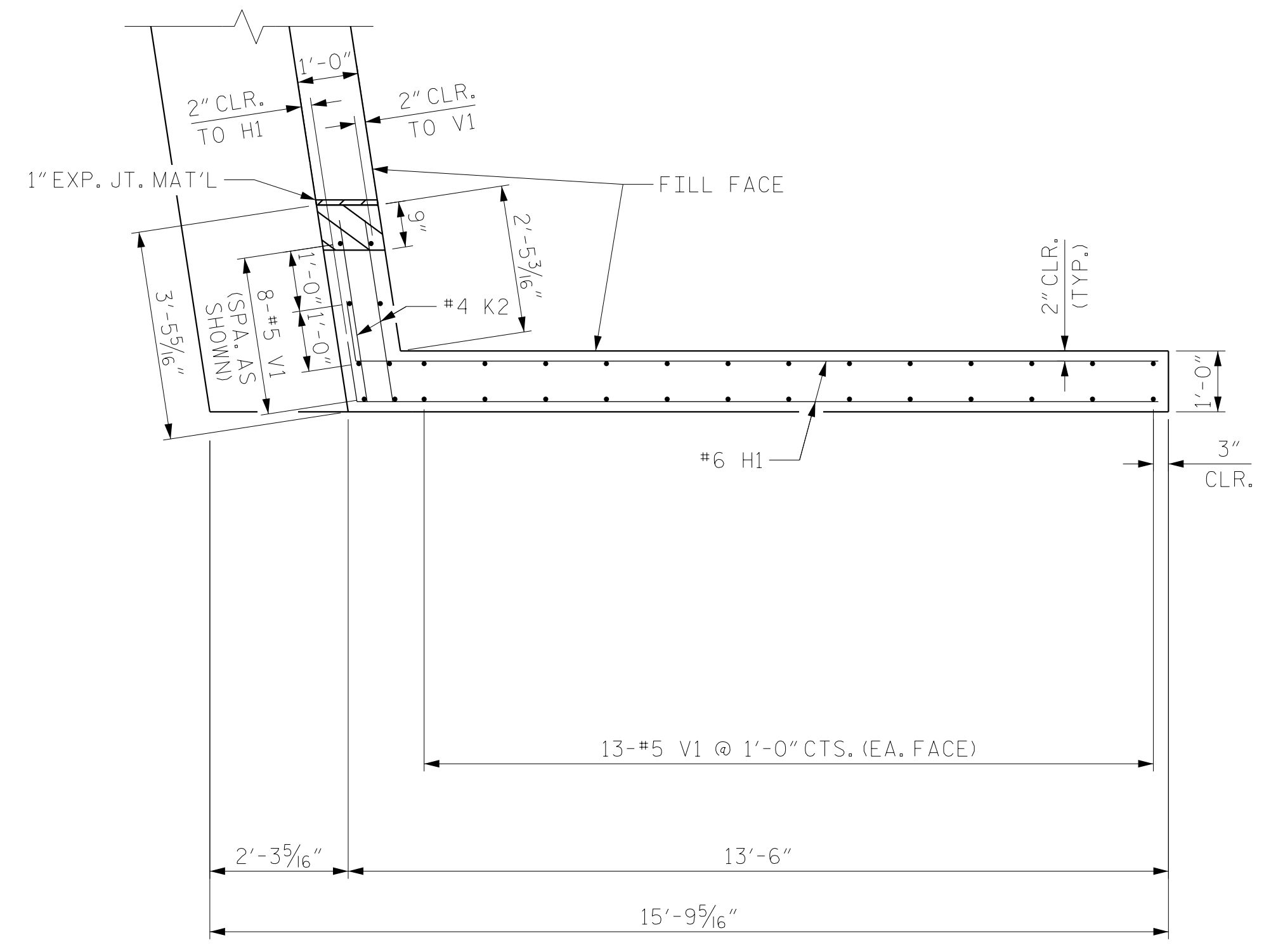
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 RALEIGH
 SUBSTRUCTURE
 END BENT 2

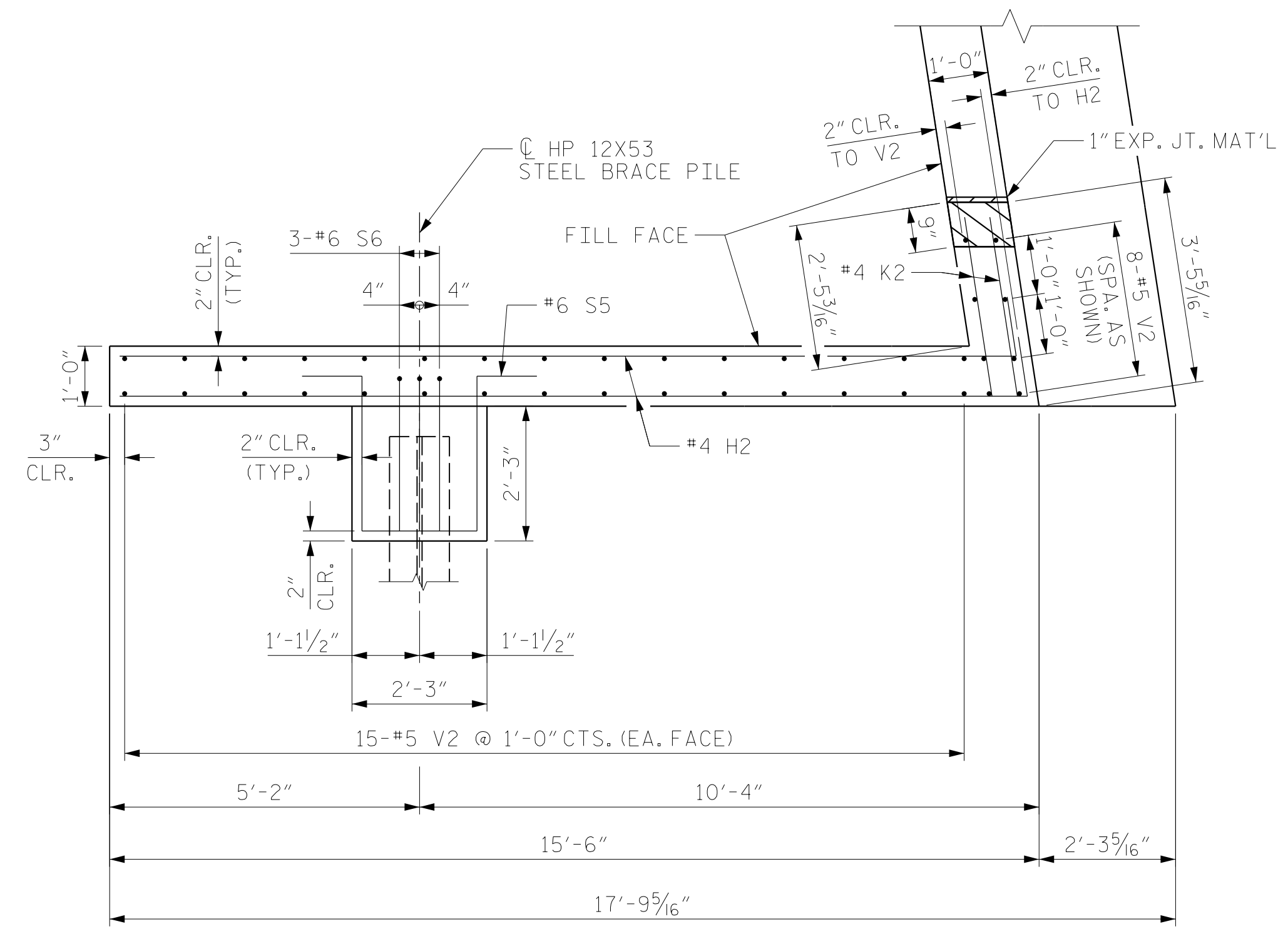
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-32	
1			3			TOTAL SHEETS	
2			4			37	

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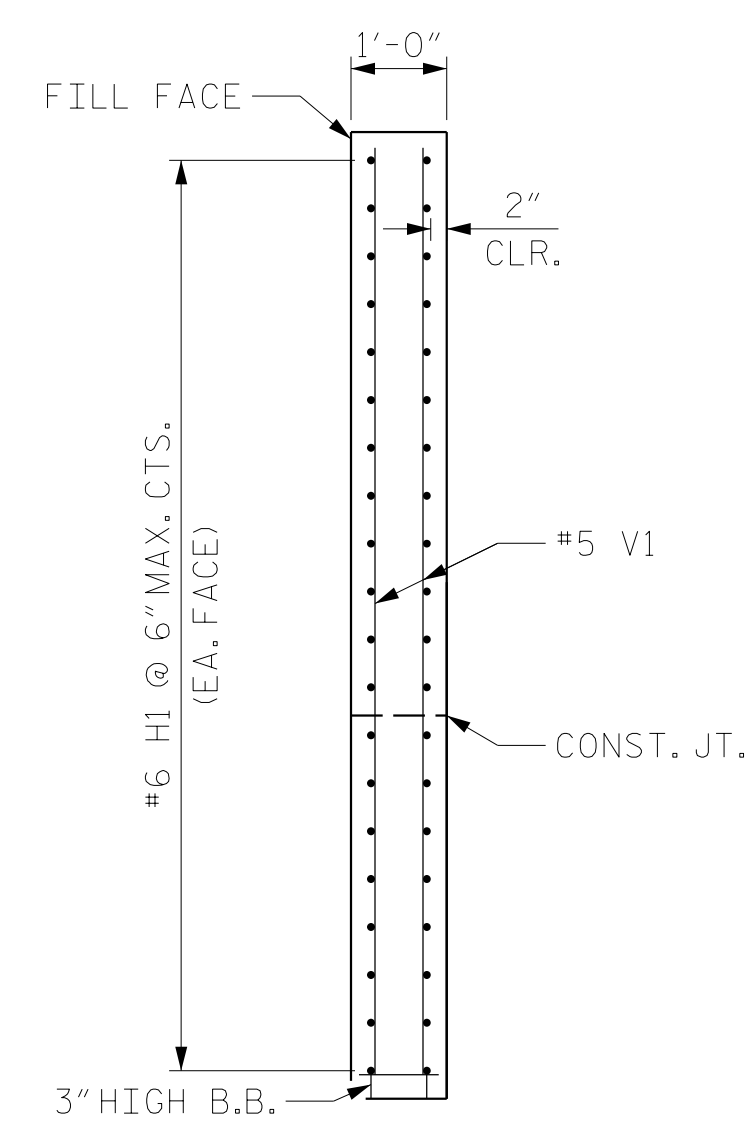
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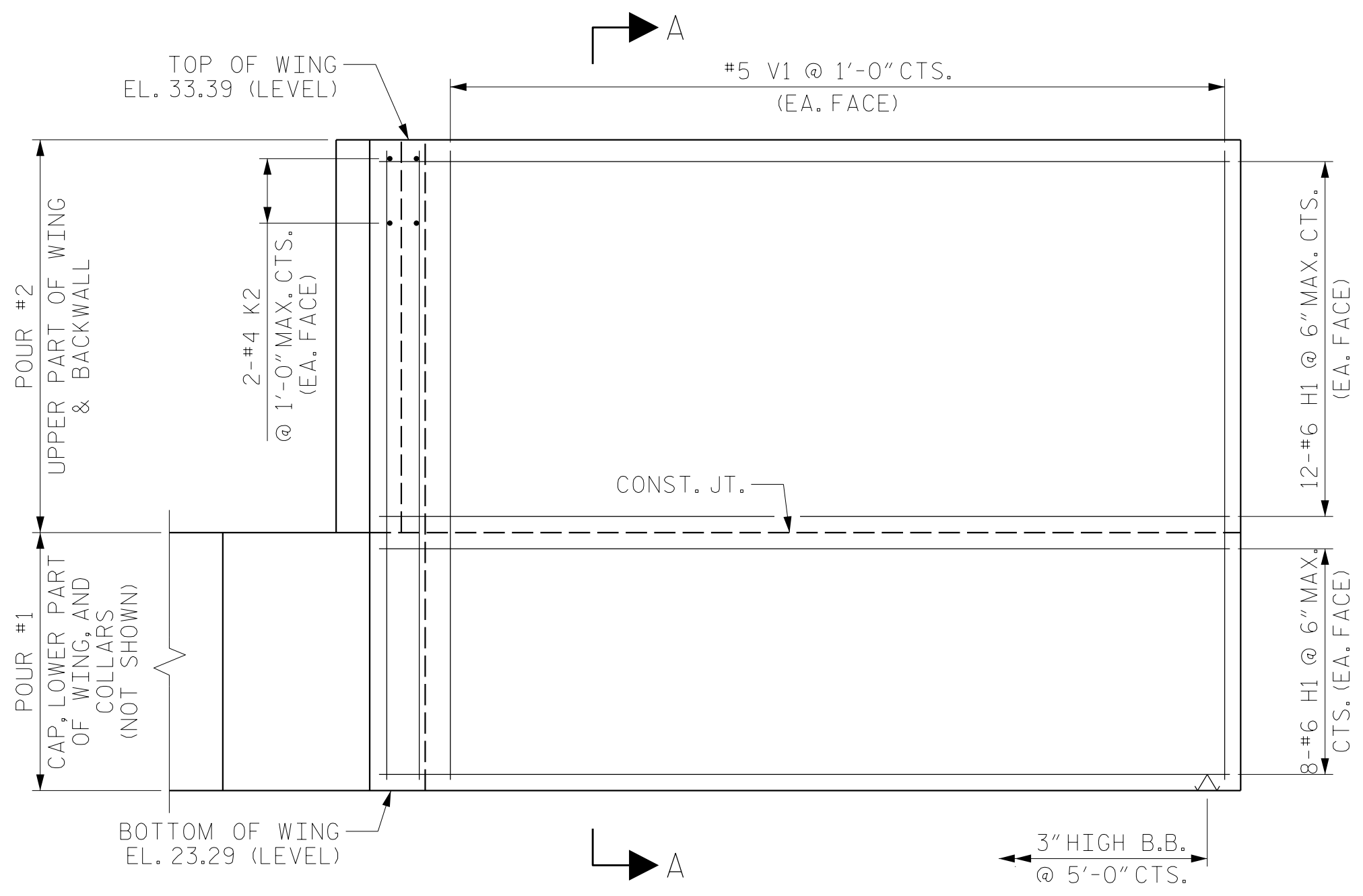
PLAN OF WING - W1



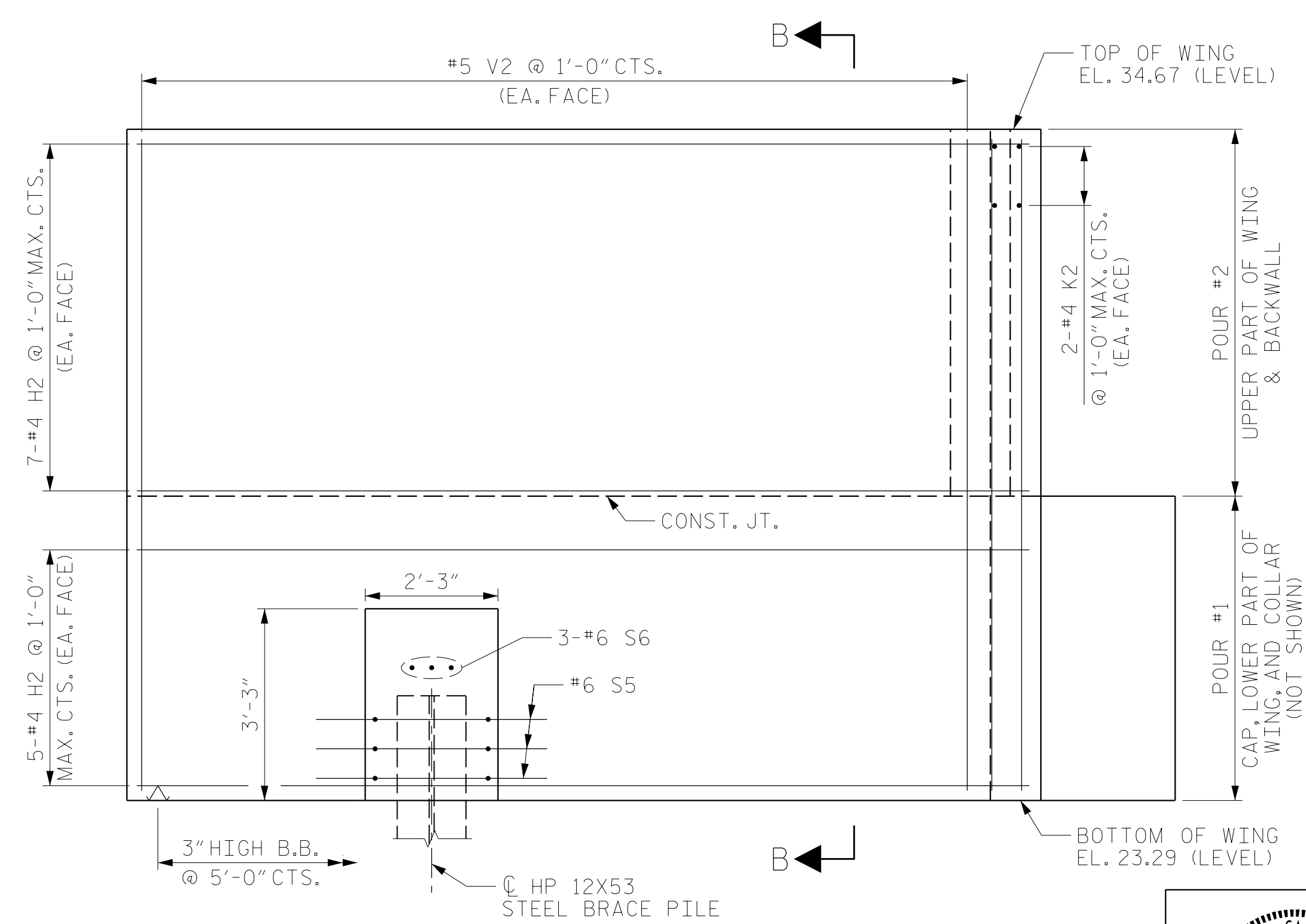
PLAN OF WING - W2



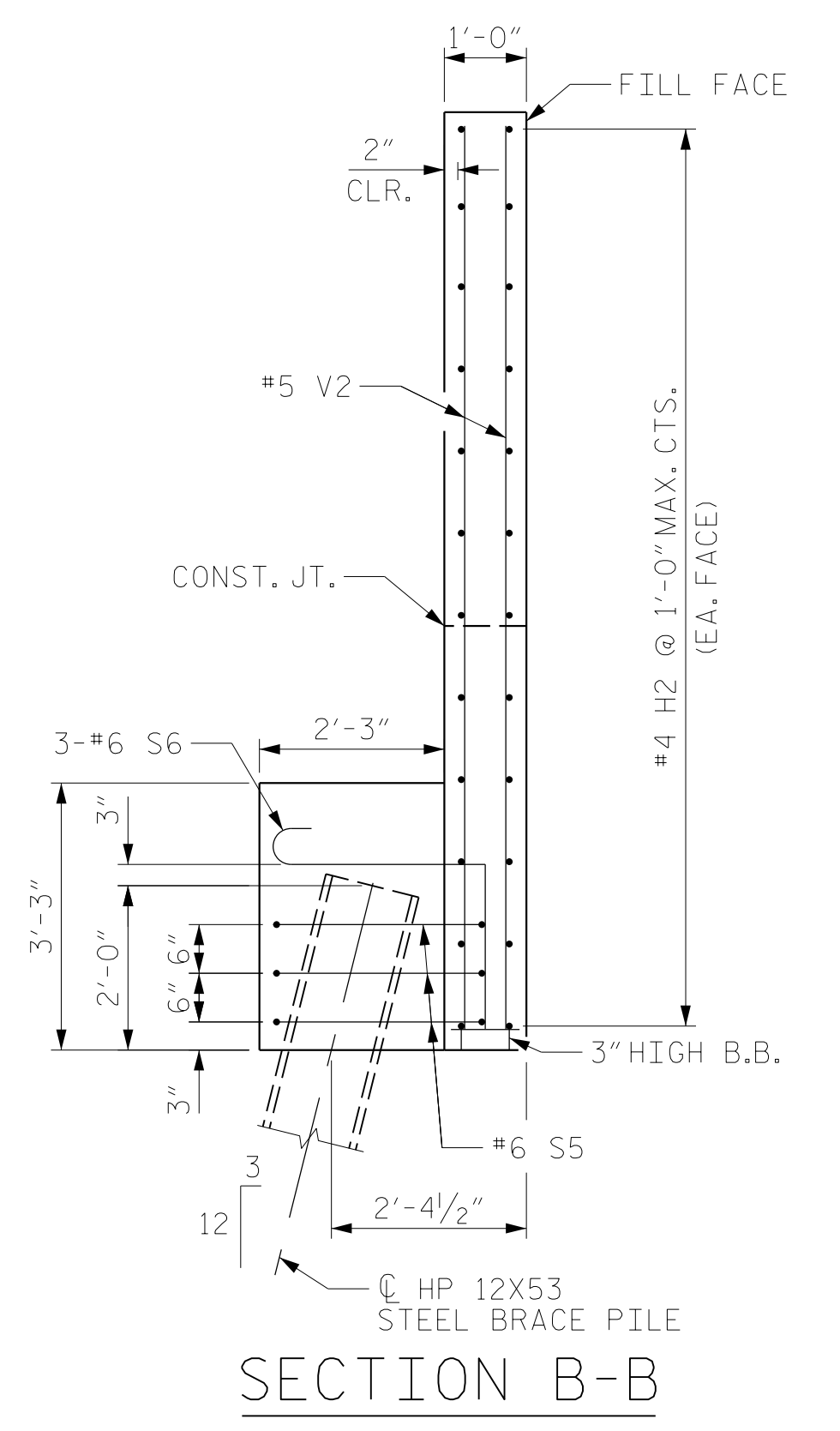
SECTION A-A



ELEVATION OF WING - W1



ELEVATION OF WING - W2



SECTION B-B

PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 2 OF 3 REPLACES BRIDGE NO. 240138



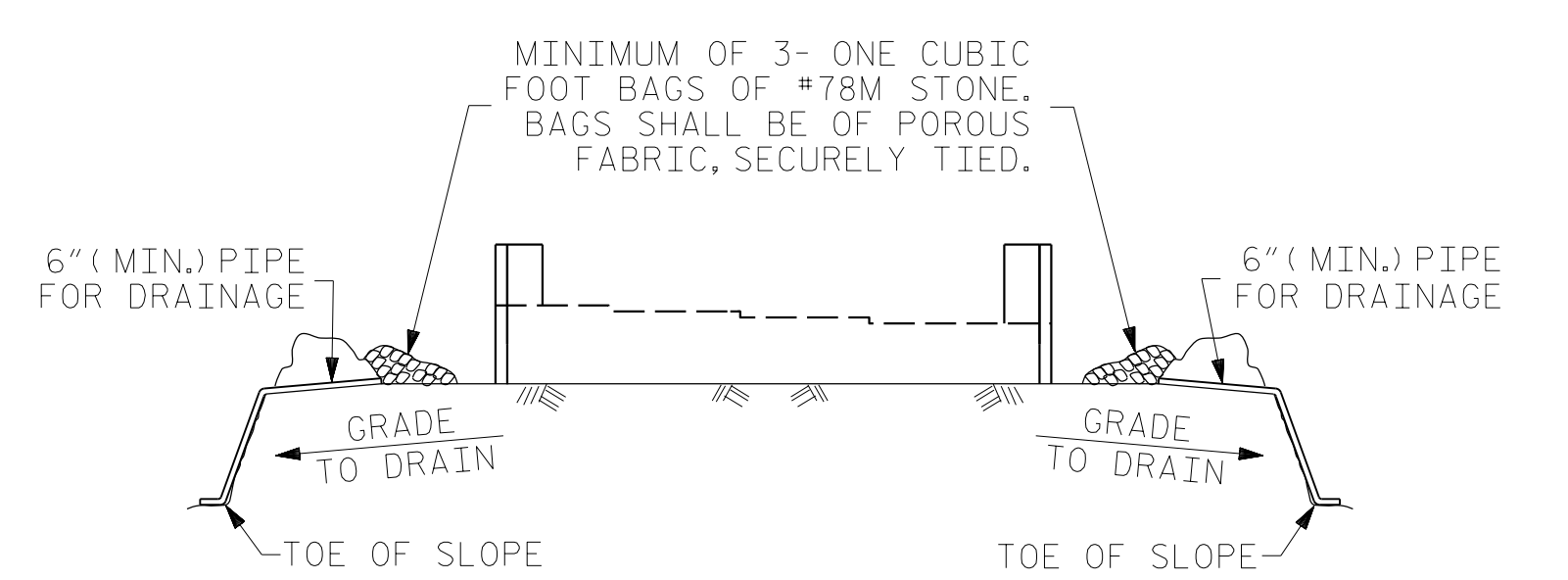
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 RALEIGH
 SUBSTRUCTURE
 END BENT 2
 WING WALL DETAILS

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 DESIGN ENGINEER OF RECORD: MAL DATE : 06/2019

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1			3			TOTAL SHEETS
2			4			37

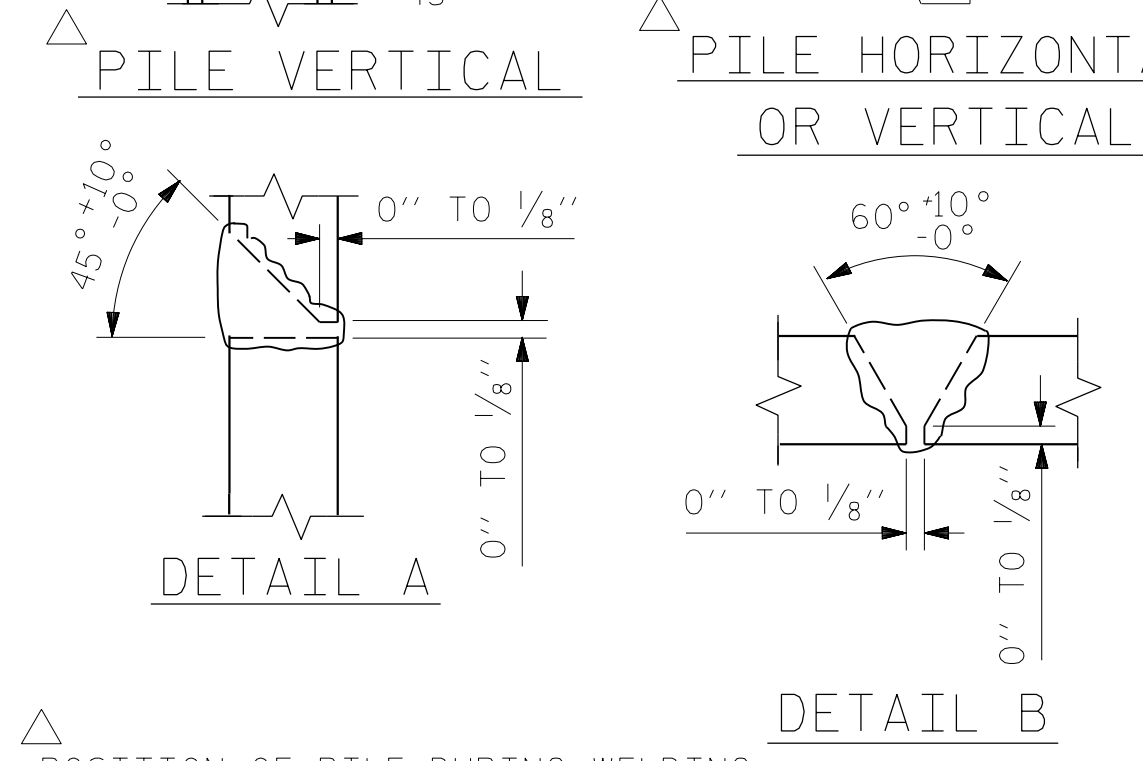
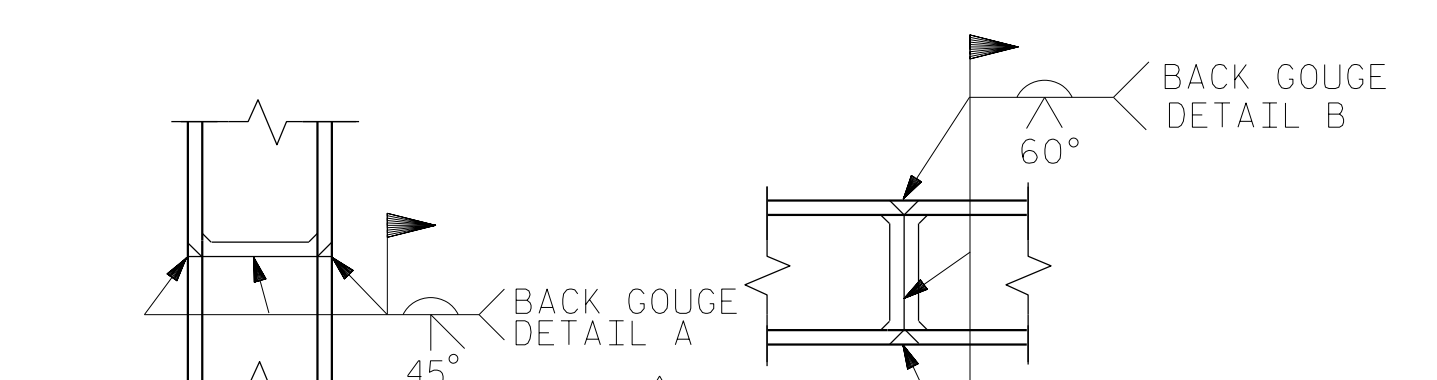


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

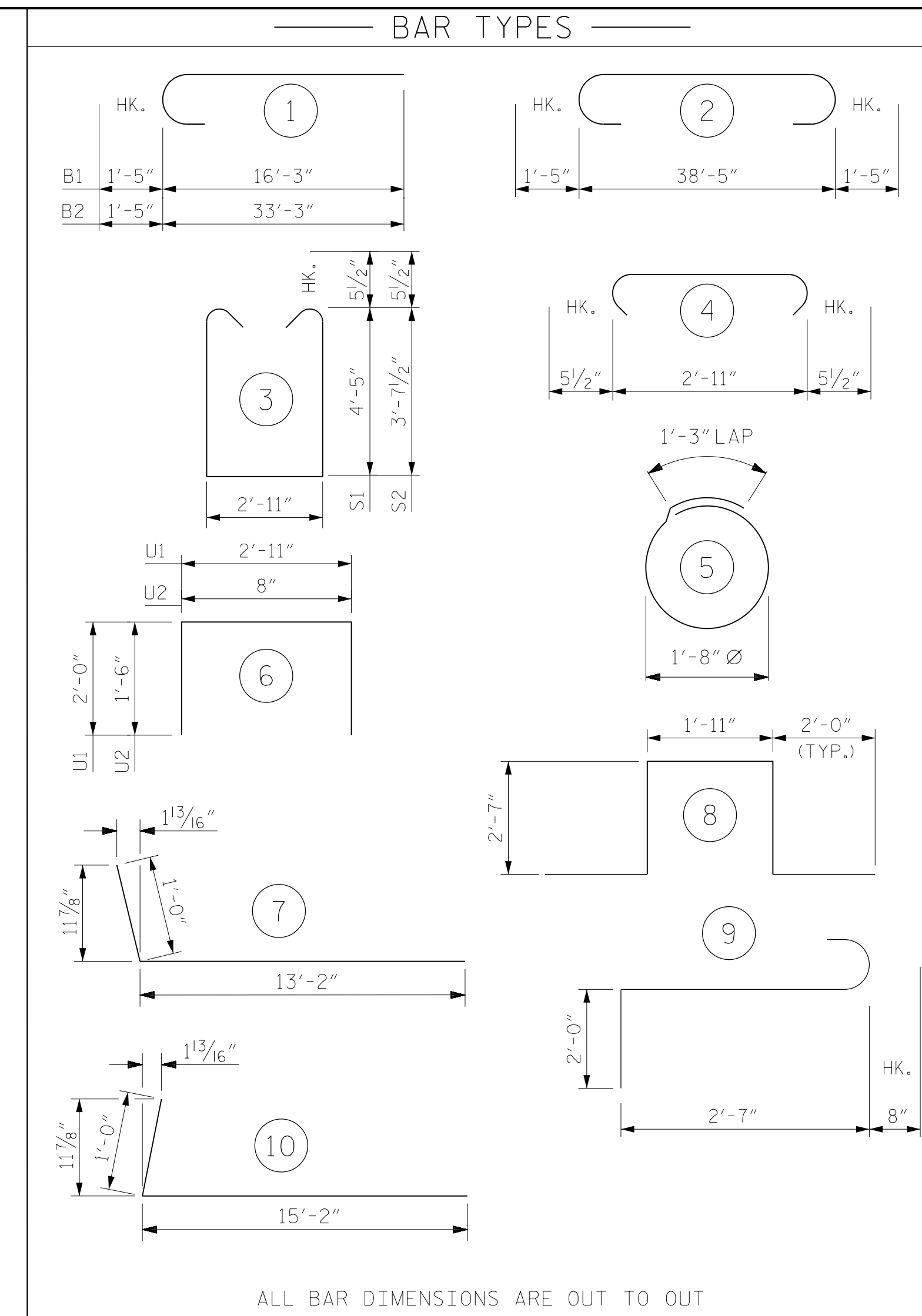
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

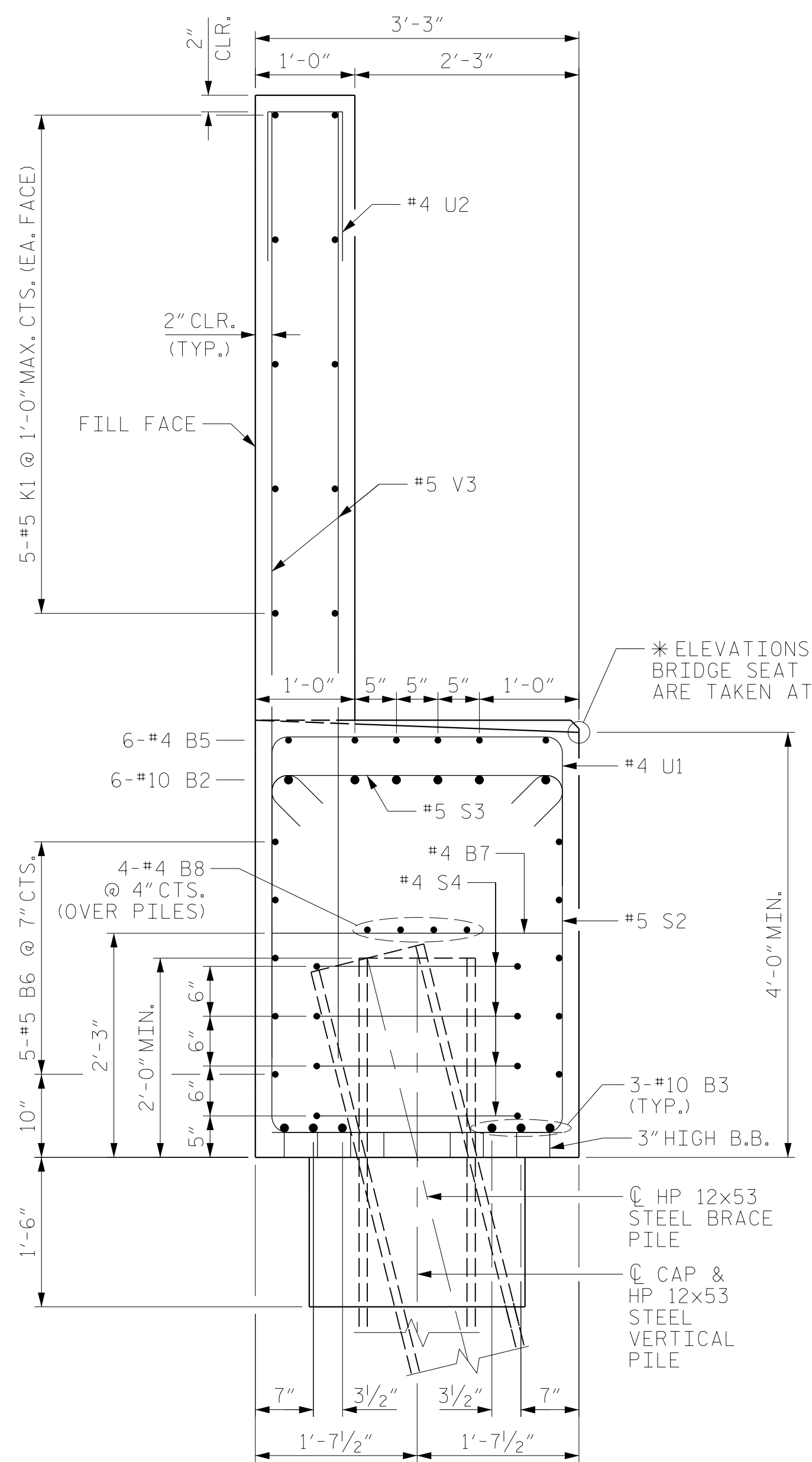
TEMPORARY DRAINAGE AT END BENT



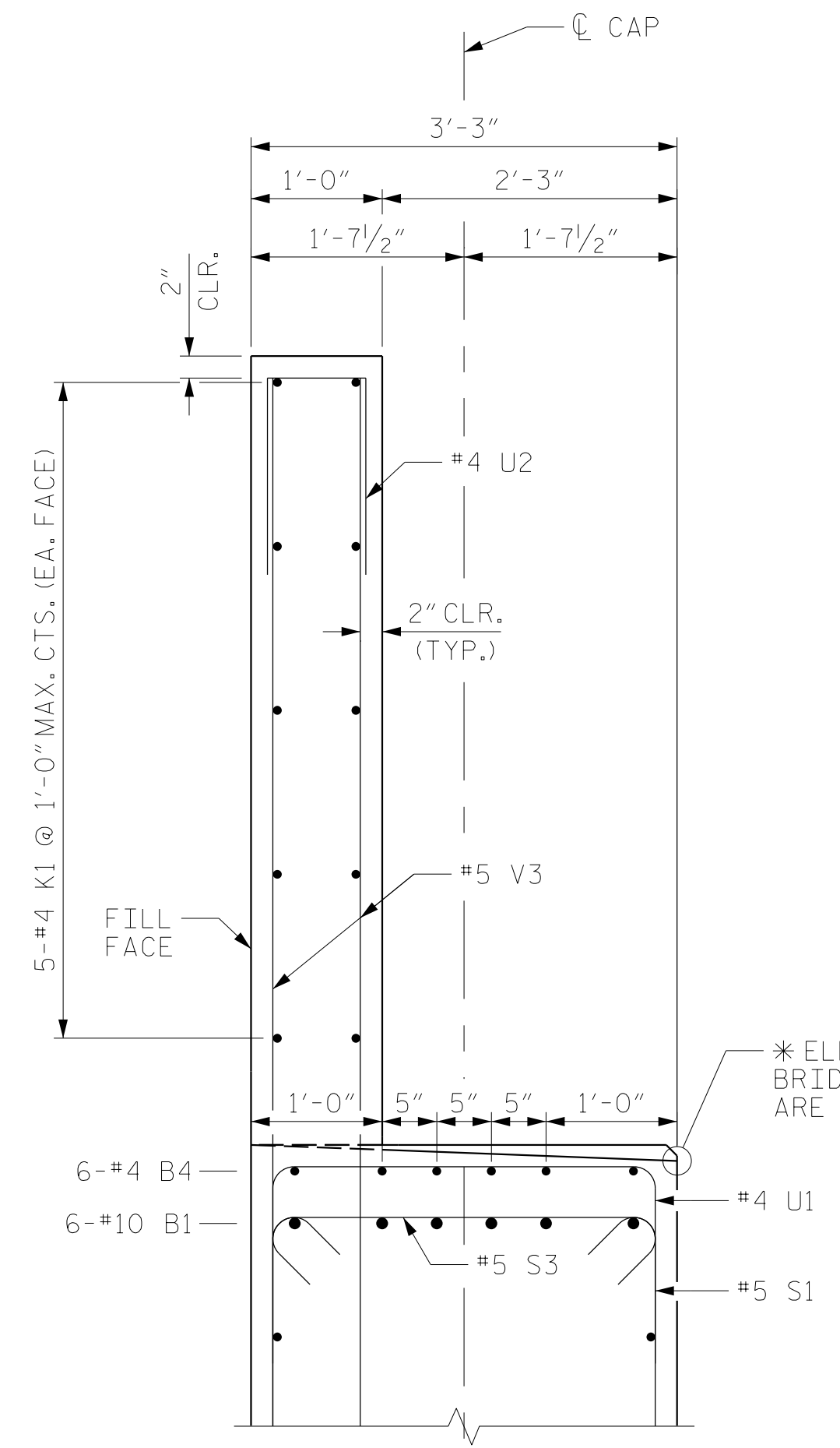
PILE SPLICE DETAILS



BILL OF MATERIAL					
END BENT NO. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#10	1	17'-8"	456
B2	6	#10	1	34'-8"	895
B3	6	#10	2	41'-3"	1065
B4	6	#4	STR	7'-2"	29
B5	6	#4	STR	11'-7"	46
B6	10	#5	STR	38'-5"	401
B7	10	#4	STR	2'-11"	19
B8	4	#4	STR	38'-5"	103
H1	40	#6	7	14'-2"	851
H2	24	#4	10	16'-2"	259
K1	10	#5	STR	38'-5"	401
K2	8	#4	STR	3'-0"	16
S1	18	#5	3	12'-8"	238
S2	34	#5	3	11'-1"	393
S3	52	#5	4	3'-10"	208
S4	28	#4	5	6'-6"	122
S5	3	#6	8	11'-1"	50
S6	3	#6	9	5'-3"	24
U1	18	#4	6	6'-11"	83
U2	32	#4	6	3'-8"	78
V1	34	#5	STR	9'-8"	343
V2	38	#5	STR	11'-0"	436
V3	64	#5	STR	8'-0"	534
REINFORCING STEEL					7,050 LBS.
CLASS A CONCRETE					
POUR #1					
CAP, COLLAR & LOWER PART OF WING & BACKWALL					27.9 C.Y.
POUR #2					
UPPER PART OF WING & BACKWALL					13.5 C.Y.
TOTAL CLASS A CONCRETE					41.4 C.Y.
HP 12 X 53 STEEL PILES					
NO. 8					520 LIN. FT.
PILE DRIVING EQUIPMENT SETUP					8 EA.
PILE REDRIVES					5 EA.



SECTION A-A



SECTION B-B

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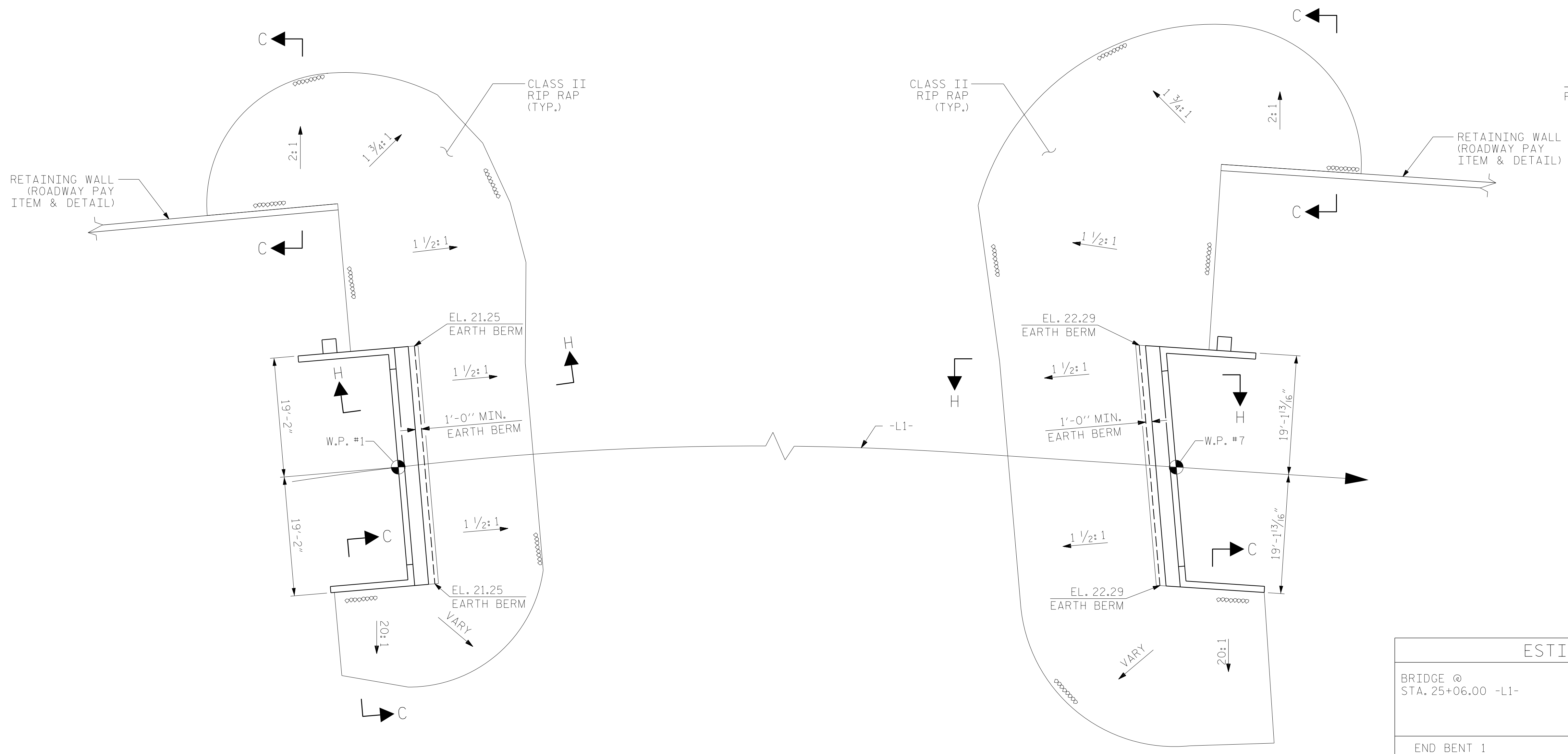
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PROJECT NO. B-4484
 CRAVEN COUNTY
 STATION: 25+06.00 -L1-
 SHEET 3 OF 3 REPLACES BRIDGE NO. 240138

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 2 DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

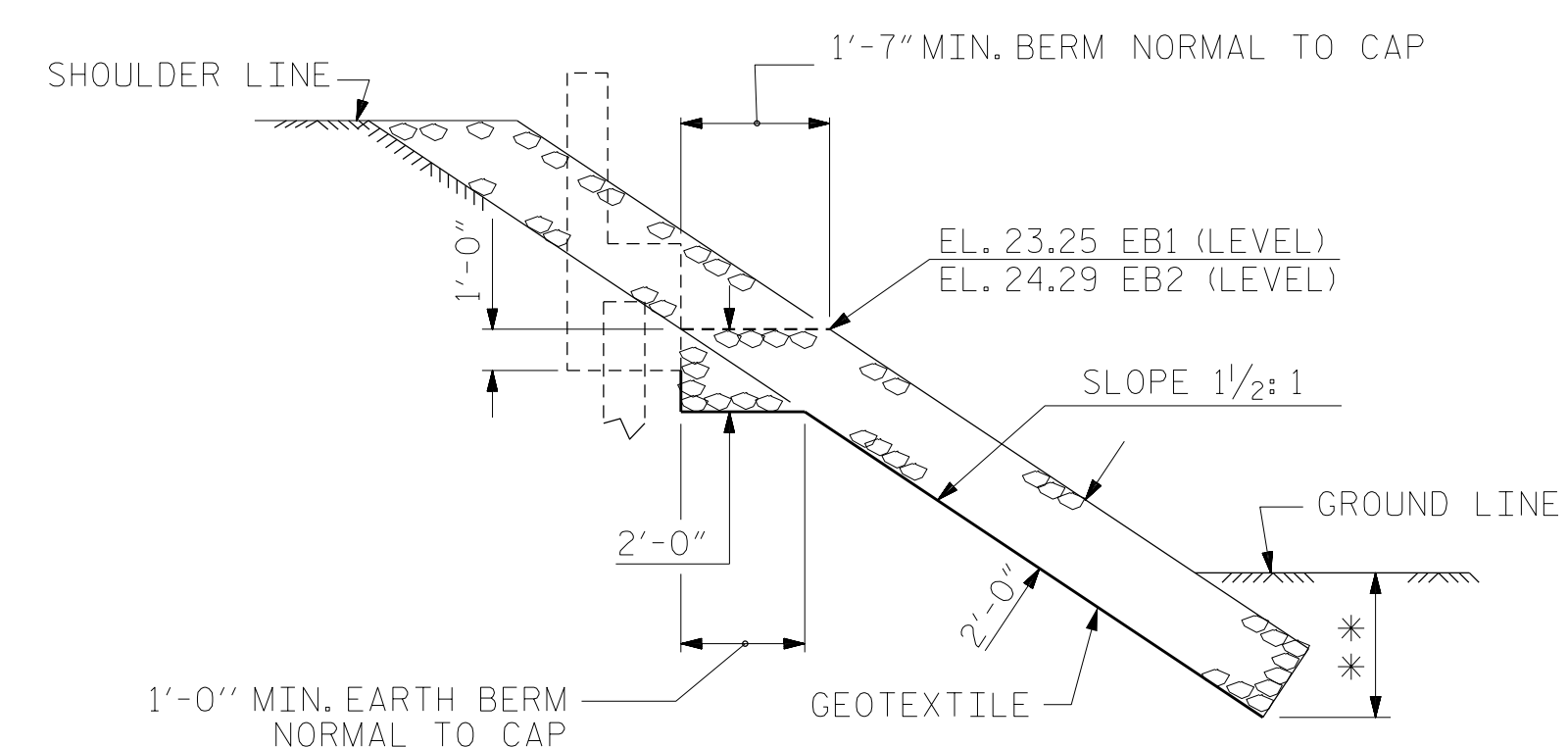
SHEET NO.	
S1-34	TOTAL SHEETS
37	



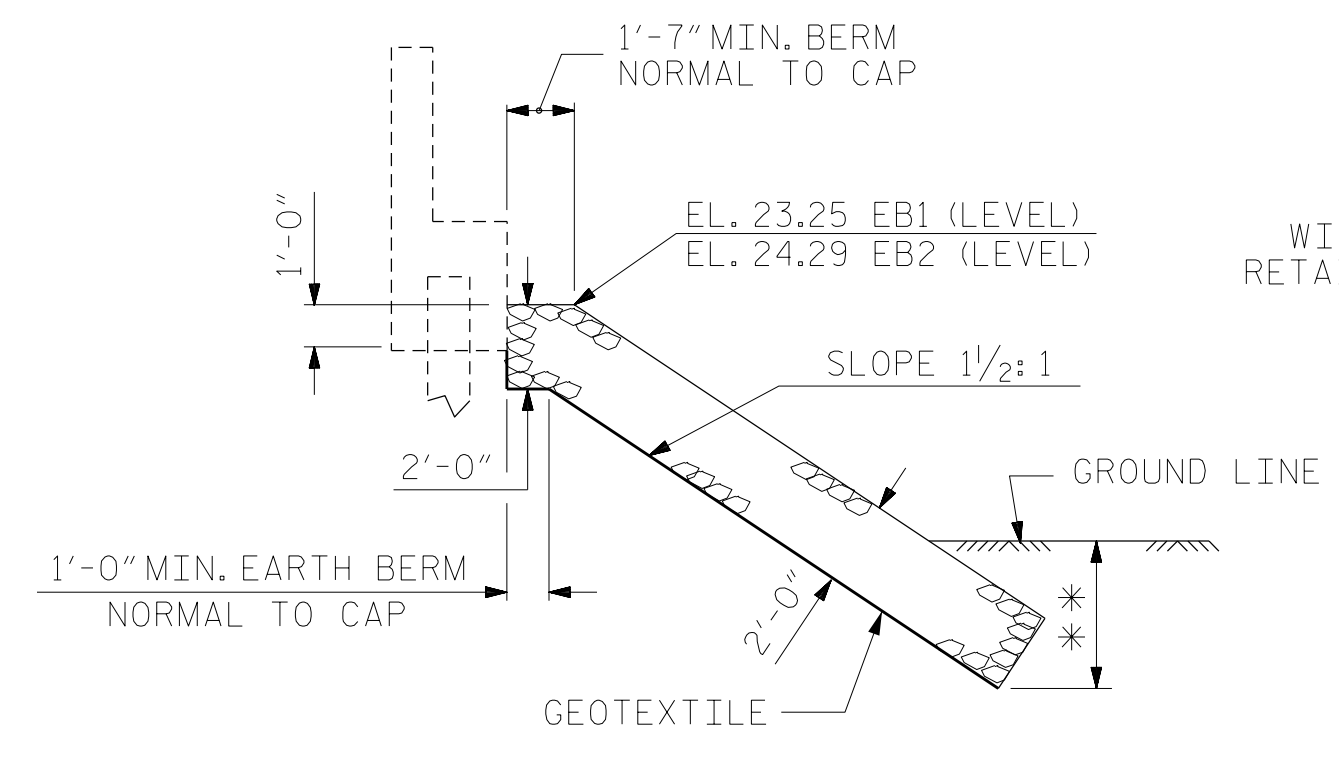
PLAN

NOTES
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

ESTIMATED QUANTITIES		
BRIDGE @ STA. 25+06.00 -L1-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	425	470
END BENT 2	555	615

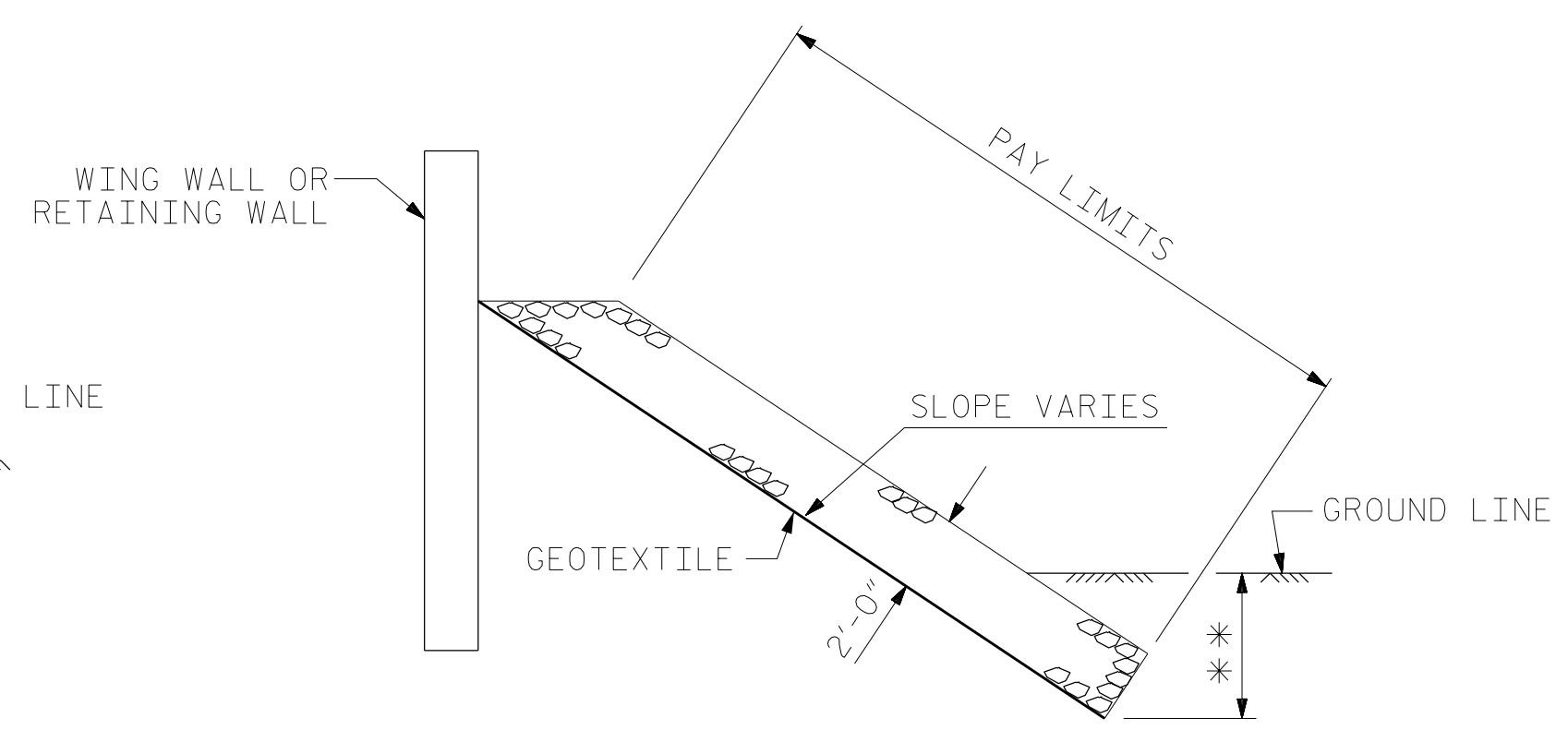


SECTION H-H



SECTION C-C
BERM RIP RAPPED

** KEY IN 3'-6" MIN. BELOW EL. 6.0 @ END BENT 1
KEY IN 3'-6" MIN. BELOW EL. 7.0 @ END BENT 2



SECTION C-C

PROJECT NO. B-4484
 CRAVEN COUNTY
STATION: 25+06.00 -L1-

REPLACES BRIDGE NO. 240138



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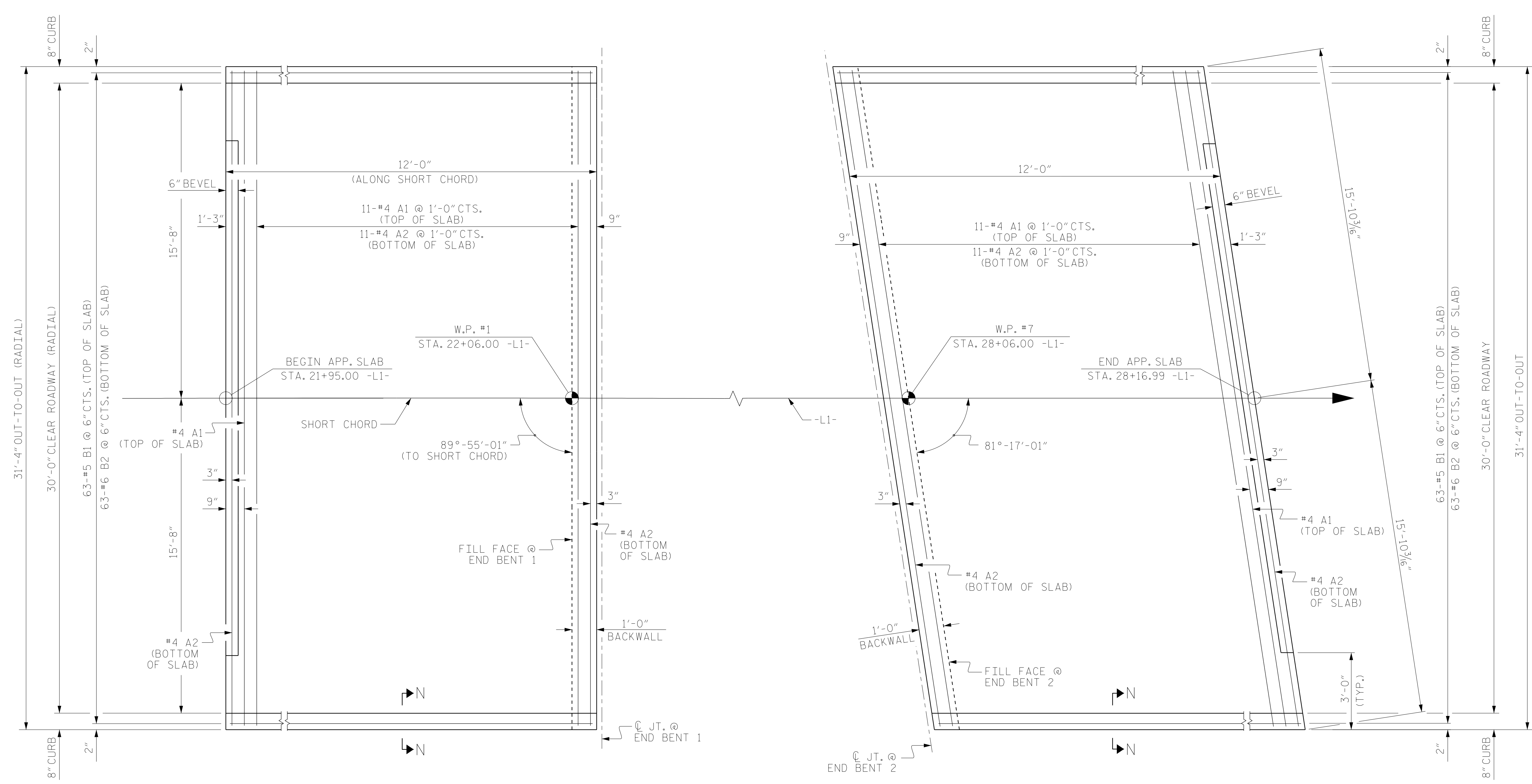
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

DRAWN BY : TRM DATE : .05/2019
CHECKED BY : PDS DATE : .06/2019
DESIGN ENGINEER OF RECORD: MAL DATE : .06/2019

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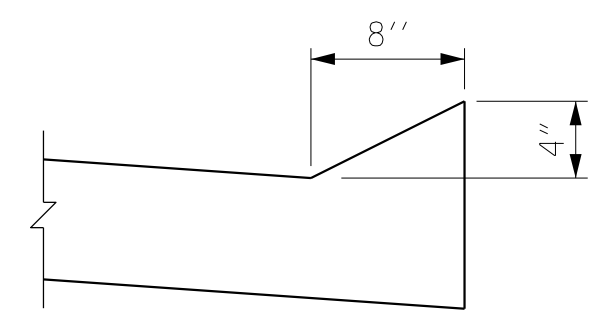
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-35
1			3			TOTAL SHEETS
2			4			37



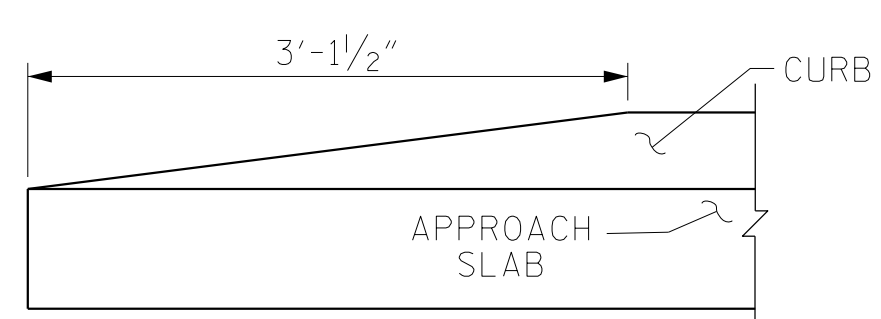
PLAN @ END BENT 1

PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS UNLESS NOTED OTHERWISE



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

BILL OF MATERIAL

APPROACH SLAB @ END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	12	#4	STR	31'-0"	248
A2	13	#4	STR	31'-0"	269
*B1	63	#5	STR	10'-10"	712
B2	63	#6	STR	11'-8"	1104

REINFORCING STEEL 1,373 LBS.

* EPOXY COATED REINFORCING STEEL 960 LBS.

CLASS AA CONCRETE 16.5 C.Y.

APPROACH SLAB @ END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	12	#4	STR	31'-4"	251
A2	13	#4	STR	31'-4"	272
*B1	63	#5	STR	10'-10"	712
B2	63	#6	STR	11'-8"	1104

REINFORCING STEEL 1,376 LBS.

* EPOXY COATED REINFORCING STEEL 963 LBS.

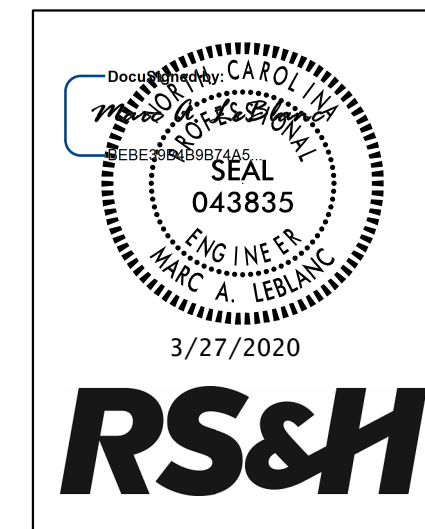
CLASS AA CONCRETE 16.5 C.Y.

NOTES

FOR NOTES, SEE SHEET 2 OF 2.
FOR SECTION THRU SLAB, SEE SHEET 2 OF 2.

PROJECT NO. B-4484
CRAVEN COUNTY
STATION: 25+06.00 -L1-

SHEET 1 OF 2 REPLACES BRIDGE NO. 240138



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR FLEXIBLE PAVEMENT

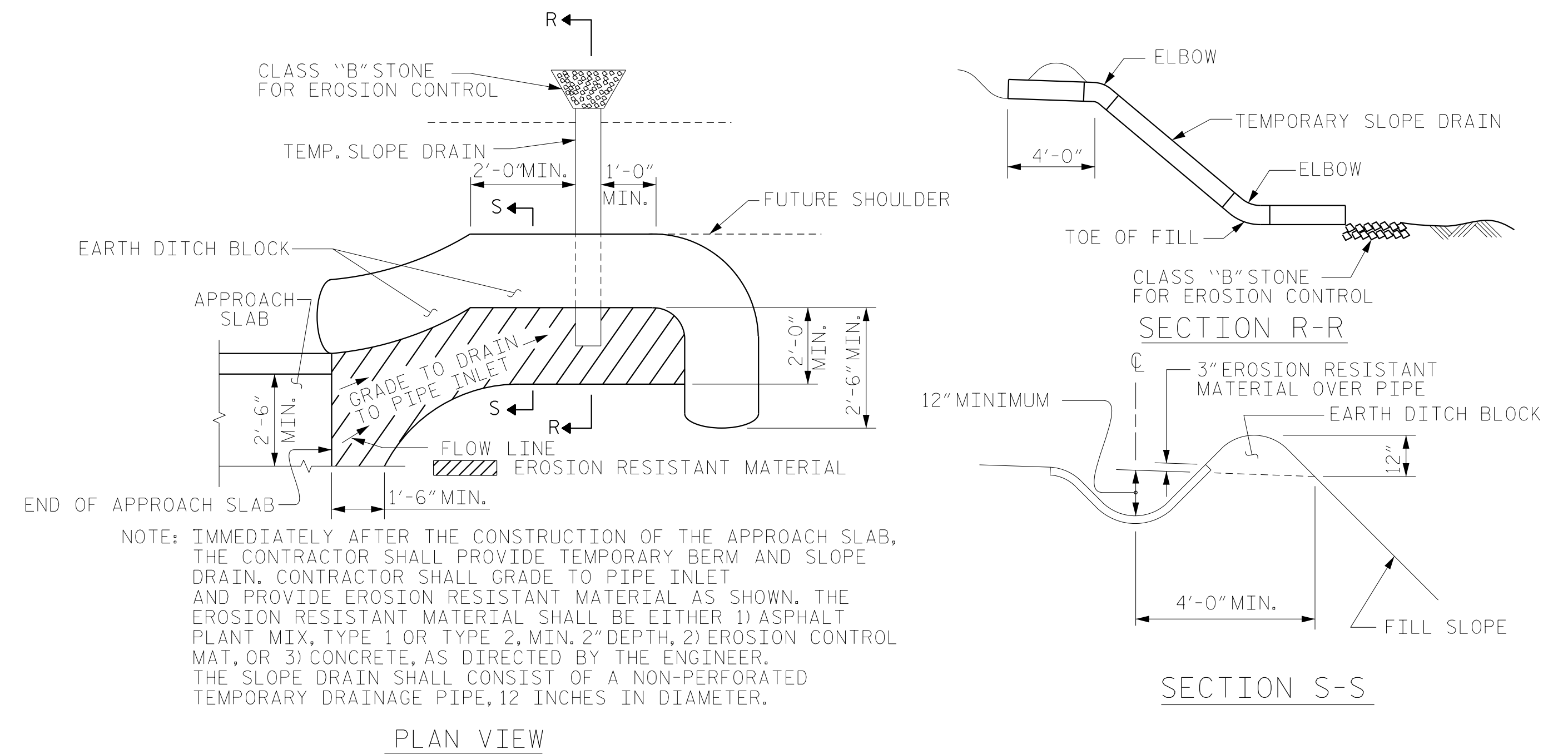
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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-36
1			3			TOTAL SHEETS
2			4			37

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NOTES

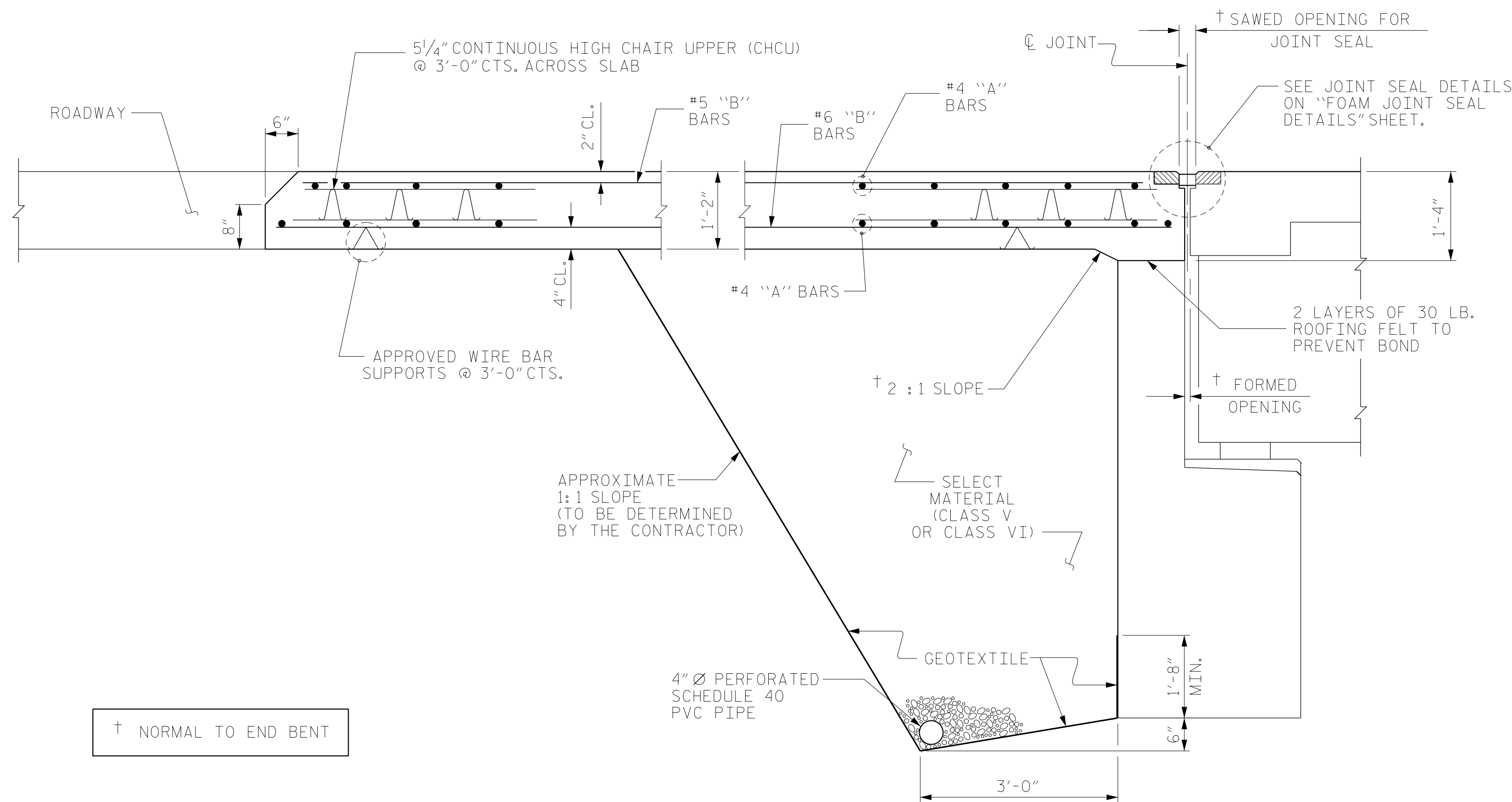
- APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
- FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.
- GEOTEXTILE SHALL BE TYPE I IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.
- SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.
- SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
- FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.
- AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.
- THE JOINT SHALL BE SAWSD PRIOR TO THE CASTING OF THE VERTICAL CONCRETE BARRIER RAIL.
- ARC OFFSETS ARE NEGLIGIBLE, AND THEREFORE NOT SHOWN.



PLAN VIEW

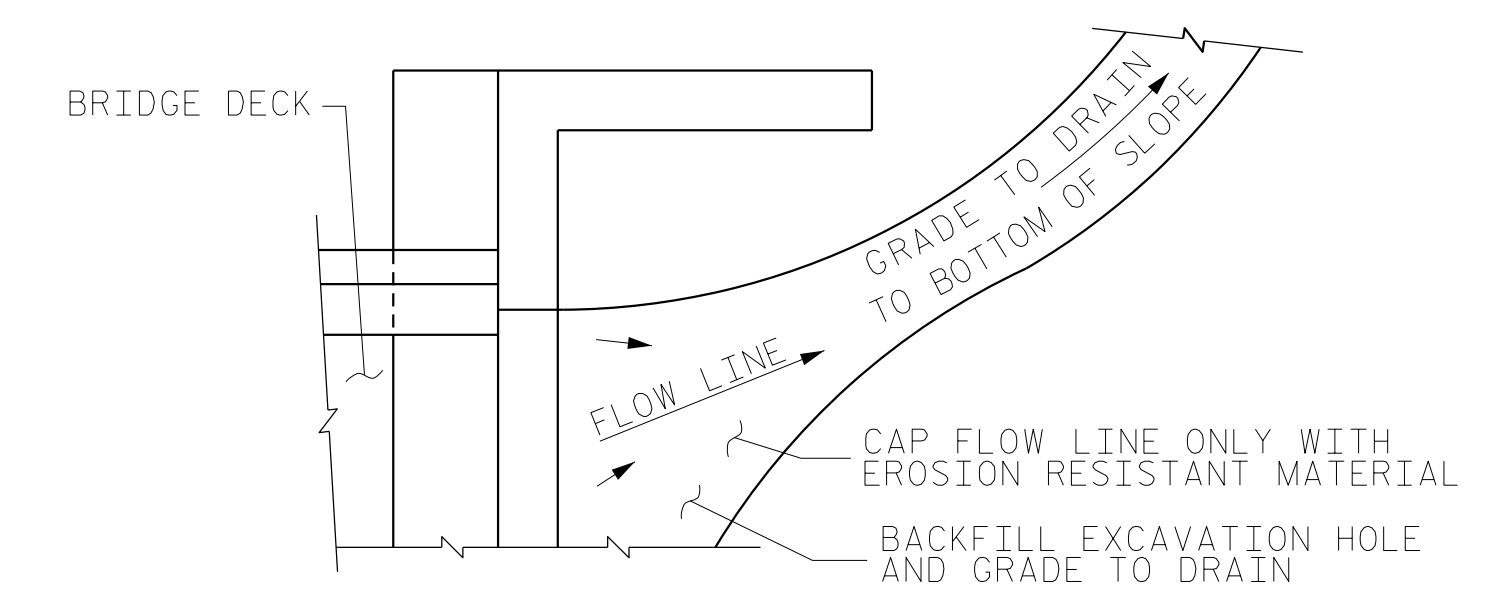
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION THRU SLAB

(TYPE II - MODIFIED APPROACH FILL)



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-4484
CRAVEN COUNTY
 STATION: 25+06.00 -L1-

SHEET 2 OF 2 REPLACES BRIDGE NO. 240138

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH
 SLAB DETAILS

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