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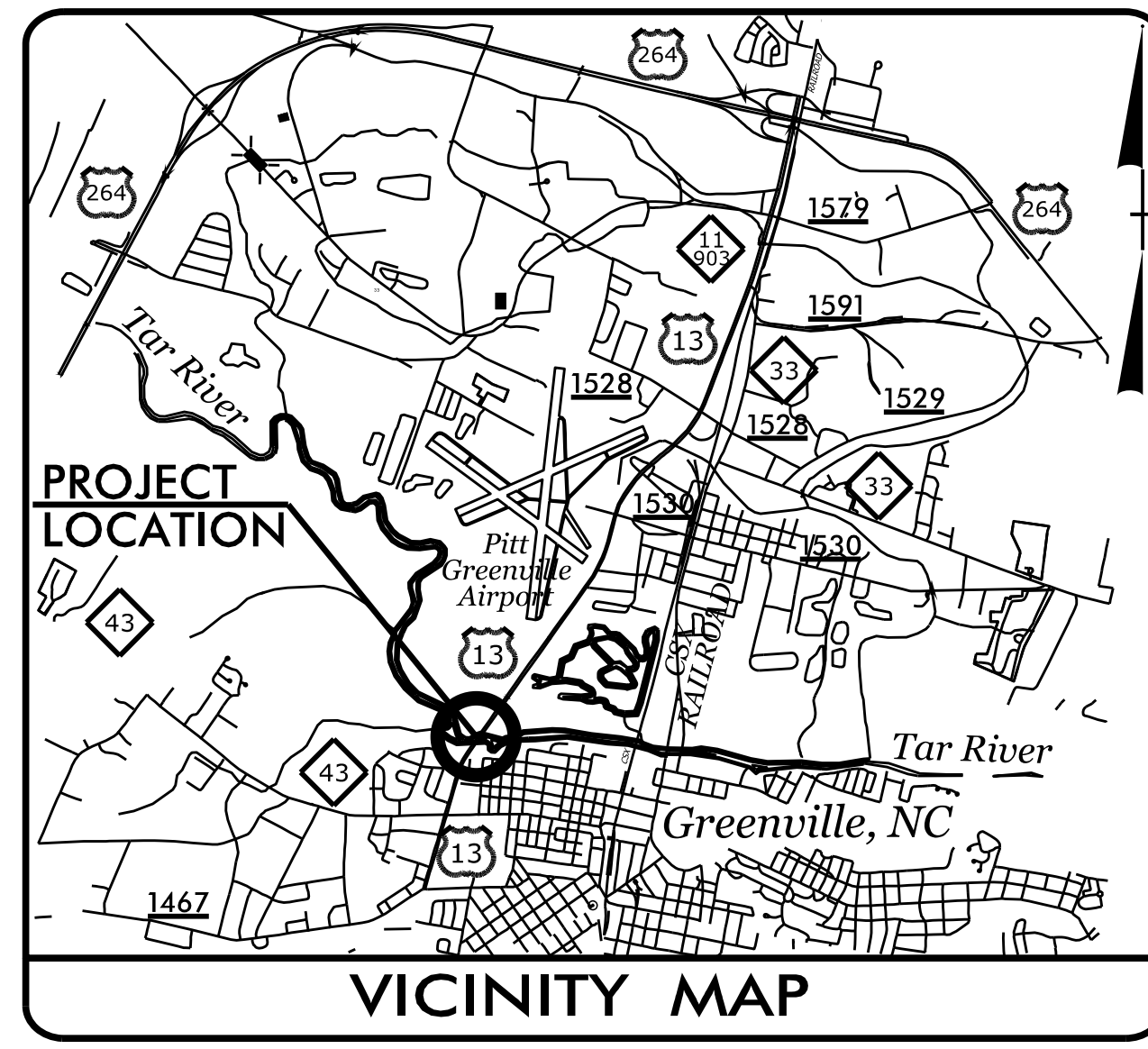
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09, 08, 99

TIP PROJECT: B-4786

CONTRACT: C204376

STRUCTURE



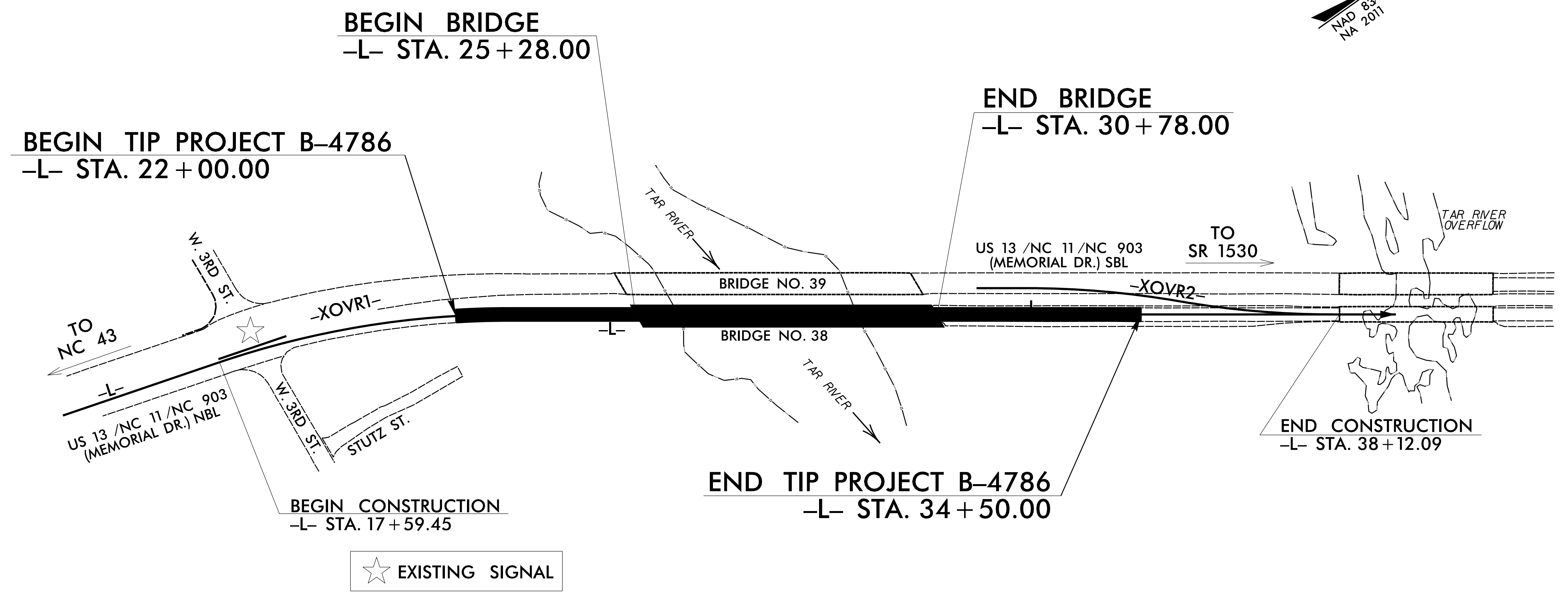
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

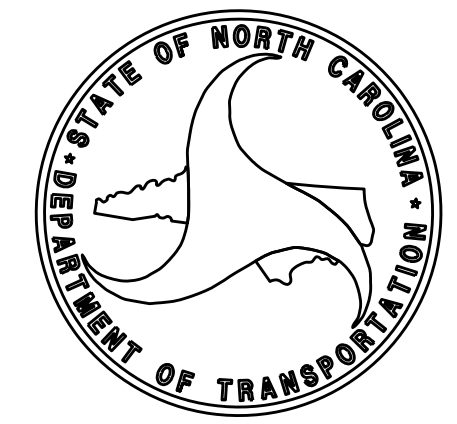
**LOCATION: REPLACE BRIDGE NO. 38 OVER THE TAR RIVER
ON US 13 IN GREENVILLE**

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4786		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38222.1.FR2	BRSTP-0013(041)	PE	
38222.2.2	BRSTP-0013(041)	RW, UTIL	
38222.3.3	0013069	CONSTR.	



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2019 =	13800 NBL
	14740 SBL
ADT 2039 =	17250 NBL
K =	8 %
D =	55 %
T =	6 % *
V =	50 MPH
* TTST =	3% DUAL 3%
FUNC CLASS =	PRINCIPAL ARTERIAL
	REGIONAL TIER

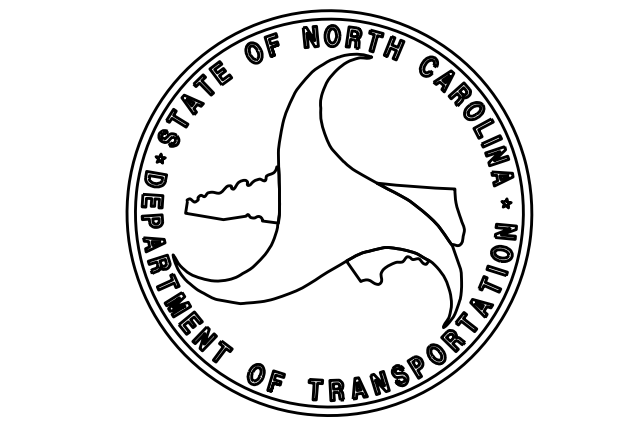
PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4786	=	0.133 mile
LENGTH STRUCTURES TIP PROJECT B-4786	=	0.104 mile
TOTAL LENGTH TIP PROJECT B-4786	=	0.237 mile

NCDOT CONTACT: DAVID STUTTS, PE	
PLANS PREPARED BY: TGS ENGINEERS 706 HILLSBOROUGH ST SUITE 200 RALEIGH, NC 27603	PLANS PREPARED FOR: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION 1000 Birch Ridge Dr. Raleigh NC, 27610
LETTING DATE: AUGUST 16, 2022	MARC CHEEK, PE STRUCTURES DESIGN ENGINEER
2018 STANDARD SPECIFICATIONS	

STRUCTURES DESIGN ENGINEER

MARSHALL E. CHEEK, JR.
P.E.
SIGNATURE: 7/14/2022 | 7:39 AM EDT



7/13/2022
\$\$\$\$\$\$\$\$\$DCN\$\$\$\$\$\$\$\$\$
User:sdwlliams

VERTICAL GRADE DATA -L-

(+).9644% (-).9382%
 PI = 28+00.00
 EL = 31.70
 VC = 650'

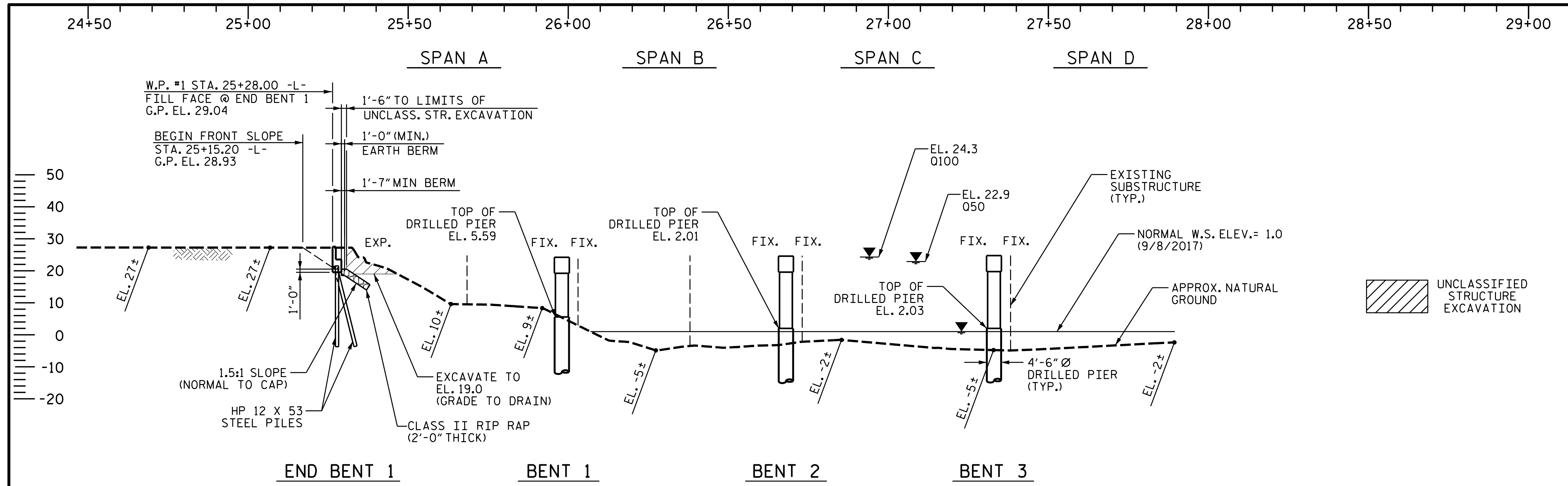
HYDRAULIC DATA:

DESIGN DISCHARGE	45200 CFS
FREQUENCY OF DESIGN FLOOD	50 YRS.
DESIGN HIGH WATER ELEVATION	22.9
DRAINAGE AREA	2690 SQ. MI.
BASE DISCHARGE	53100 CFS
FREQUENCY OF BASE DISCHARGE	100 YRS.
BASE HIGH WATER ELEVATION	24.3

OVERTOPPING FLOOD DATA:

OVERTOPPING DISCHARGE	47600 CFS
FREQUENCY OF OVERTOPPING FLOOD	50+ YRS.
OVERTOPPING FLOOD ELEVATION	23.2'*

* OVERTOPPING ELEVATION REPRESENTS LOWEST ROADWAY ELEVATION LOCATED APPROXIMATELY 4000 FT NORTHEAST OF BRIDGE.



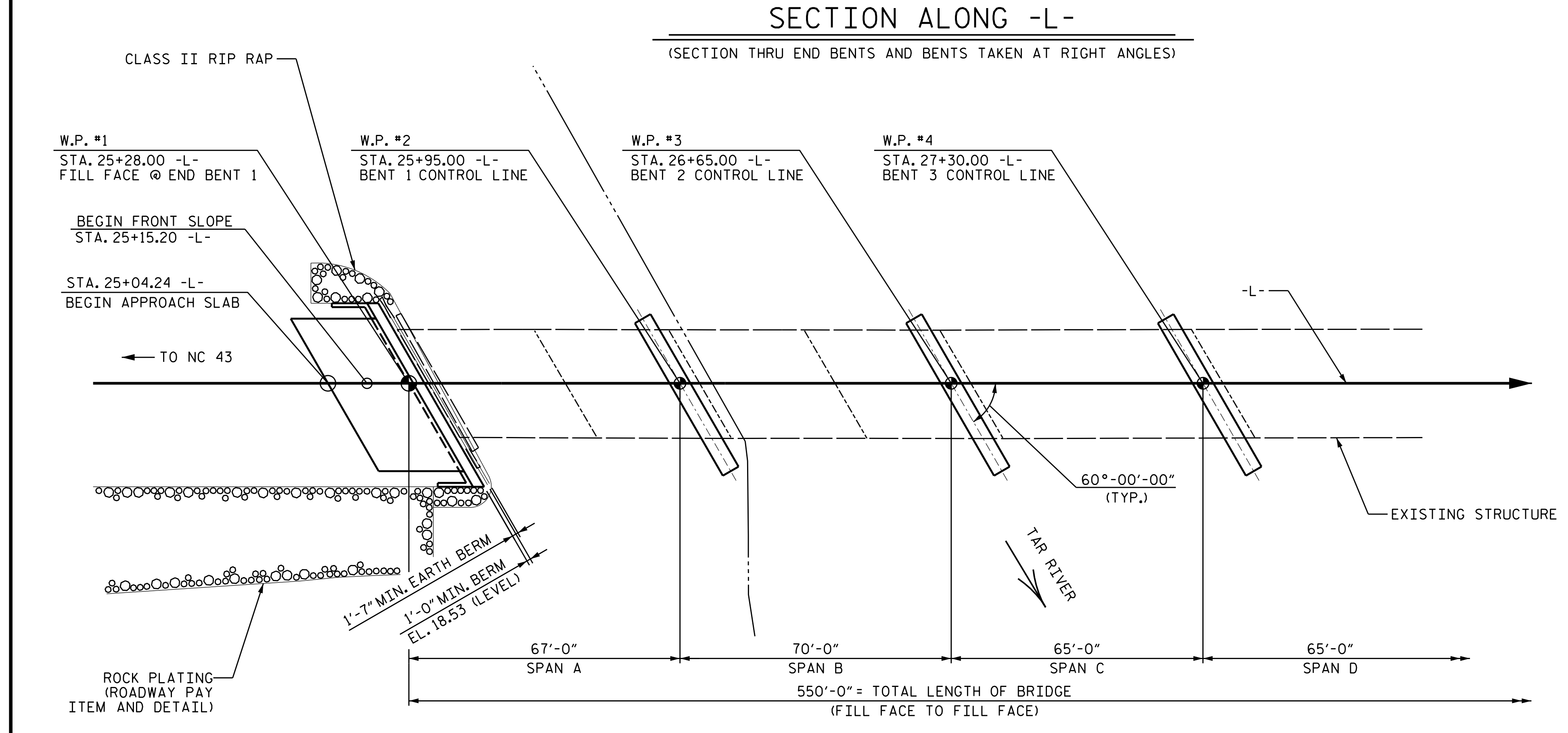
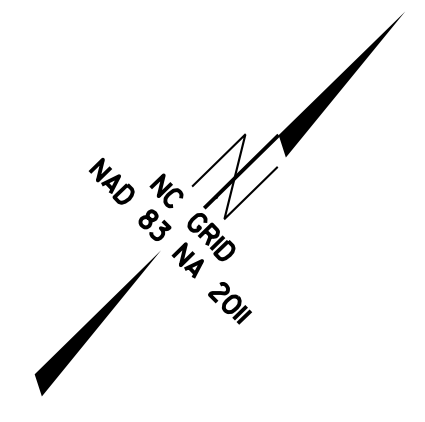
UNCLASSIFIED STRUCTURE EXCAVATION

LOW CHORD ELEVATION

EB1 23.93	EB2 23.77
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I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.

SEAL

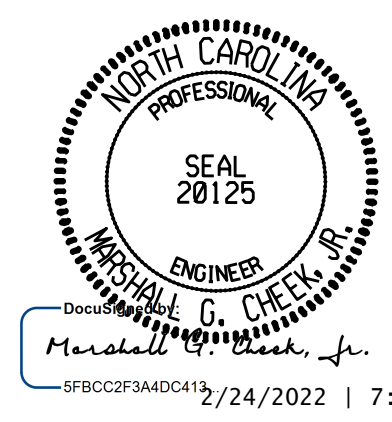


PLAN

PILES AND COLUMNS NOT SHOWN IN PLAN VIEW FOR CLARITY.

PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 1 OF 6 REPLACES BRIDGE NO. 730038



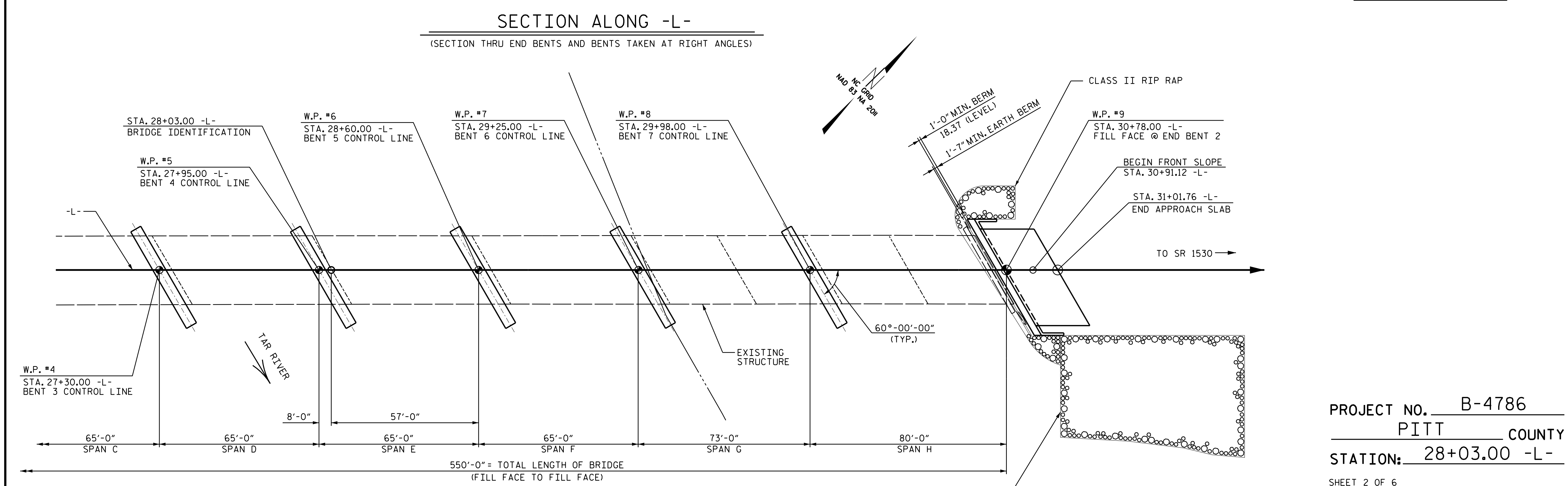
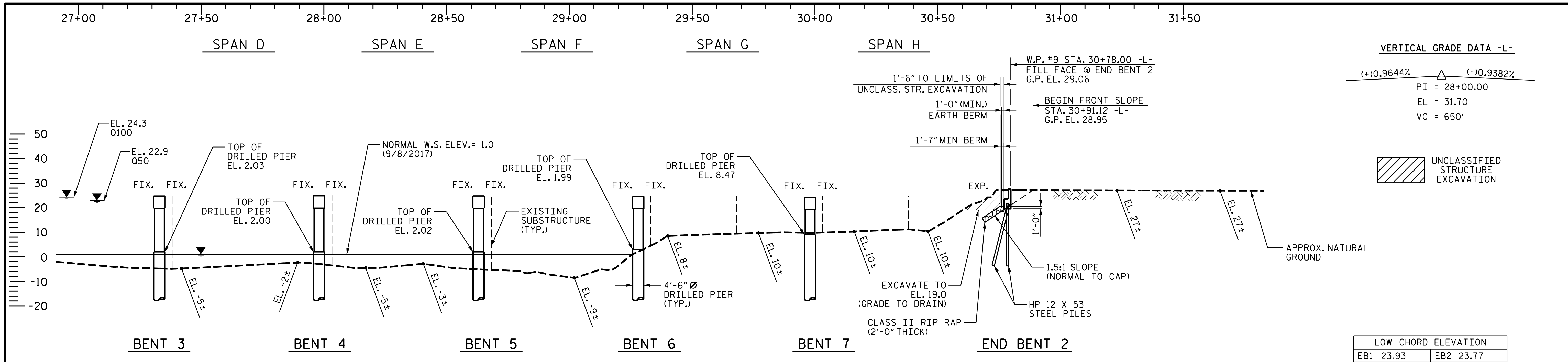
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON US 13
 OVER TAR RIVER
 BETWEEN
 NC 43 AND SR 1530

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			57

DRAWN BY : TBE/SBW DATE : 11/18
 CHECKED BY : MGC DATE : 07/19



PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON US 13
 OVER TAR RIVER
 BETWEEN
 NC 43 AND SR 1530

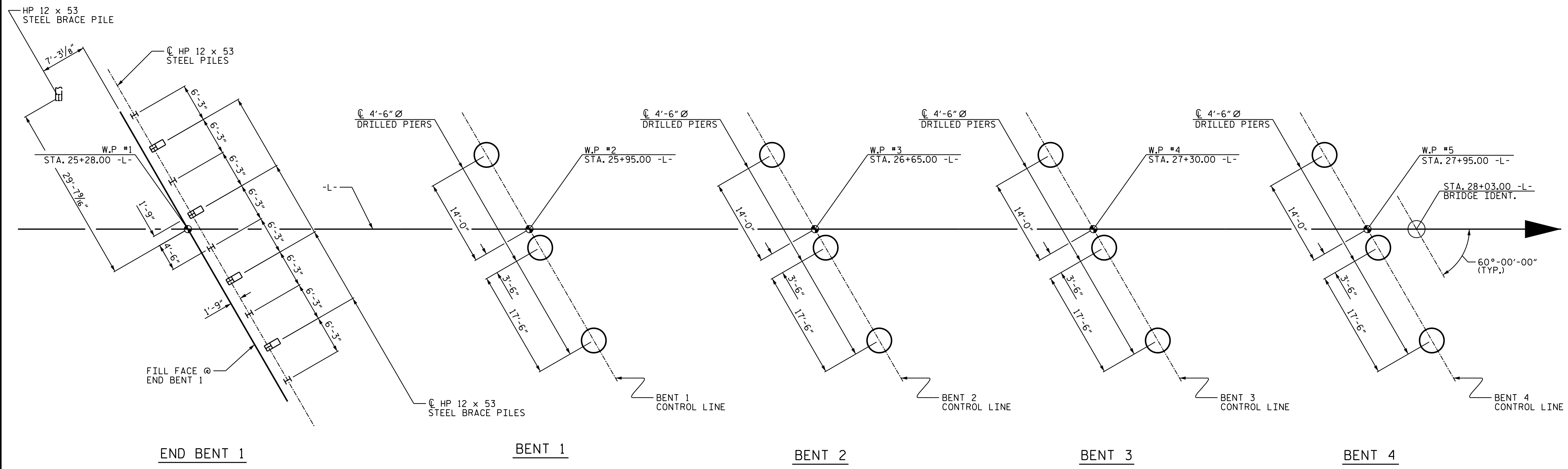
SEAL
 20125
 ENGINEER
 MARSHALL G. CHECK, JR.
 MARSHALL G. CHECK, JR.
 SFBCCP34002/24/2022 | 7:41 AM EST

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			57

DRAWN BY : TBE/SBW DATE : 11/18
 CHECKED BY : MGC DATE : 07/19



FOUNDATION LAYOUT

DIMENSIONS LOCATING ALL END BENT PILES ARE HP 12 X 53 STEEL PILES. PILES ARE SHOWN TO THE PILE CENTERLINE AT THE BOTTOM OF THE CAP. ALL END BENT BRACE PILES ARE BATTERED AT 3:12.

NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
 PILES AT END BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 85 TONS PER PILE.
 PILES AT END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE
 TESTING THE FIRST PRODUCTION PILE WITH THE PDA DURING DRIVING, RESTRIKING AND REDRIVING IS REQUIRED AT END BENT 1 AND END BENT 2. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
 DRIVE PILES AT END BENT 1 TO A REQUIRED DRIVING RESISTANCE OF 115 TONS PER PILE.
 DRIVE PILES AT END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.
 DRILLED PIERS AT BENT 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 415 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF.
 INSTALL DRILLED PIERS AT BENT 1 TO A TIP ELEVATION NO HIGHER THAN -88.0 FEET WITH THE REQUIRED TIP RESISTANCE.
 THE SCOUR CRITICAL ELEVATION FOR BENT 1 IS ELEVATION -19.2 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 DRILLED PIERS AT BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 410 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF.
 INSTALL DRILLED PIERS AT BENT 2 TO A TIP ELEVATION NO HIGHER THAN -90.0 FEET WITH THE REQUIRED TIP RESISTANCE.

THE SCOUR CRITICAL ELEVATION FOR BENT 2 IS ELEVATION -31.4 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENT 2. DO NOT EXTEND PERMANENT CASINGS BELOW ELEVATION -30.0 FEET WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 DRILLED PIERS AT BENT 3 ARE DESIGNED FOR A FACTORED RESISTANCE OF 400 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF.
 INSTALL DRILLED PIERS AT BENT 3 TO A TIP ELEVATION NO HIGHER THAN -91.0 FEET WITH THE REQUIRED TIP RESISTANCE.
 THE SCOUR CRITICAL ELEVATION OF BENT 3 IS ELEVATION -27.7 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENT 3. DO NOT EXTEND PERMANENT CASING BELOW ELEVATION -26.0 FEET WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 DRILLED PIERS AT BENT 4 ARE DESIGNED FOR A FACTORED RESISTANCE OF 400 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF.
 INSTALL DRILLED PIERS AT BENT 4 TO A TIP ELEVATION NO HIGHER THAN -91.0 FEET WITH THE REQUIRED RESISTANCE.
 THE SCOUR CRITICAL ELEVATION FOR BENT 4 IS ELEVATION -29.0 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENT 4. DO NOT EXTEND PERMANENT CASING BELOW ELEVATION -28.0 FEET WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

Professional Engineer Seal for Marshall G. Check, North Carolina, Seal 20125.

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

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

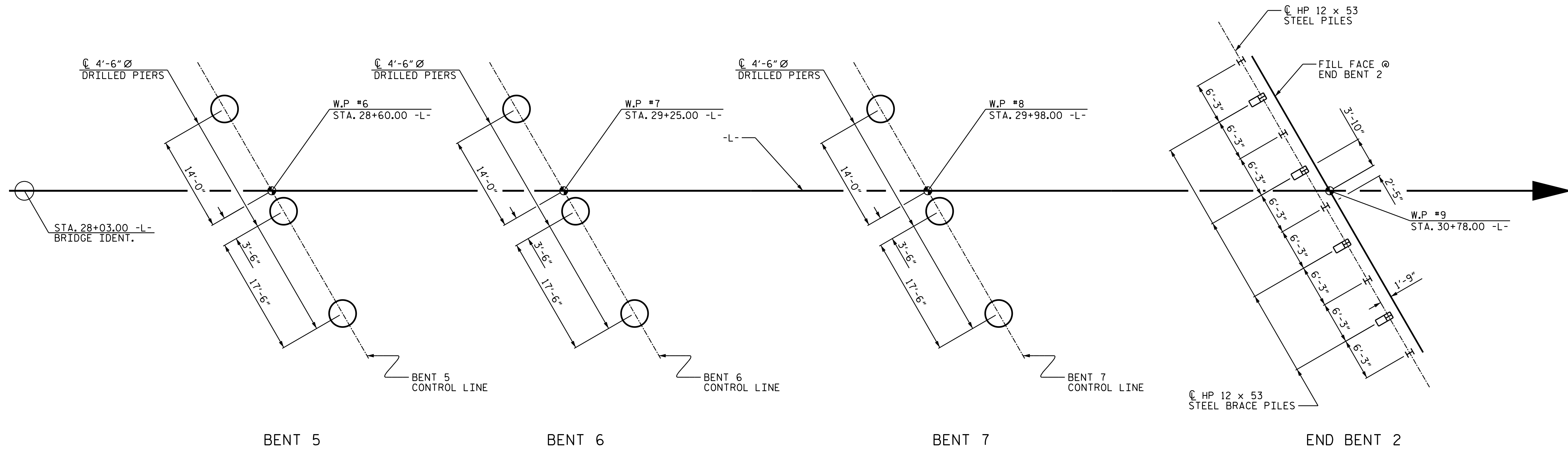
SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON US 13
 OVER TAR RIVER
 BETWEEN
 NC 43 AND SR 1530

DRAWN BY :	STM	DATE :	01/19
CHECKED BY :	MGC	DATE :	07/19
DESIGN ENGINEER OF RECORD:	TBE	DATE :	8-19

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			57



FOUNDATION LAYOUT

DIMENSIONS LOCATING ALL END BENT PILES ARE HP 12 X 53 STEEL PILES. PILES ARE SHOWN TO THE PILE CENTERLINE AT THE BOTTOM OF THE CAP. ALL END BENT BRACE PILES ARE BATTERED AT 3:12.

NOTES

DRILLED PIERS AT BENT 5 ARE DESIGNED FOR A FACTORED RESISTANCE OF 400 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF.

INSTALL DRILLED PIERS AT BENT 5 TO A TIP ELEVATION NO HIGHER THAN -89.0 FEET WITH THE REQUIRED TIP RESISTANCE.

THE SCOUR CRITICAL ELEVATION FOR BENT 5 IS ELEVATION -23.9 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PERMANENT STEEL CASINGS ARE REQUIRED FOR DRILLED PIERS AT BENT 5. DO NOT EXTEND PERMANENT CASING BELOW ELEVATION -27.0 FEET WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

DRILLED PIERS AT BENT 6 ARE DESIGNED FOR A FACTORED RESISTANCE OF 415 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF.

INSTALL DRILLED PIERS AT BENT 6 TO A TIP ELEVATION NO HIGHER THAN -89.0 FEET WITH THE REQUIRED TIP RESISTANCE.

THE SCOUR CRITICAL ELEVATION FOR BENT 6 IS ELEVATION -23.0 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PERMANENT STEEL CASINGS MAY BE REQUIRED FOR DRILLED PIERS AT BENT 6. IF REQUIRED, DO NOT EXTEND PERMANENT CASING BELOW ELEVATION -26.0 FEET WITHOUT PRIOR APPROVAL FROM THE ENGINEER. THE ENGINEER WILL DETERMINE THE NEED FOR PERMANENT CASINGS.

DRILLED PIERS AT BENT 7 ARE DESIGNED FOR A FACTORED RESISTANCE OF 445 TONS PER PIER. CHECK FIELD CONDITIONS FOR THE REQUIRED TIP RESISTANCE OF 10 TSF.

INSTALL DRILLED PIERS AT BENT 7 TO A TIP ELEVATION NO HIGHER THAN -93.0 FEET WITH THE REQUIRED TIP RESISTANCE.

THE SCOUR CRITICAL ELEVATION FOR BENT 7 IS ELEVATION -25.9 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

SLURRY CONSTRUCTION IS REQUIRED FOR DRILLED PIERS AT BENT 1 THROUGH BENT 7.

SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTION. FOR SID INSPECTIONS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CSL TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT TO THE BOTTOM OF CAP ELEVATION BEFORE BEGINNING END BENT CONSTRUCTION AT END BENT 1 AND 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

THERMAL INTEGRITY PROFILER (TIP) TESTING IS REQUIRED FOR THE FIRST DRILLED PIER CONSTRUCTED AT EACH BENT FROM BENT 1 TO BENT 7. FOR TIP TESTING, SEE GEOTECHNICAL SPECIAL PROVISIONS.

SPT MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SPT. FOR SPT TESTING, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

2/24/2022 | 7:41 AM EST

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

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 4 OF 6

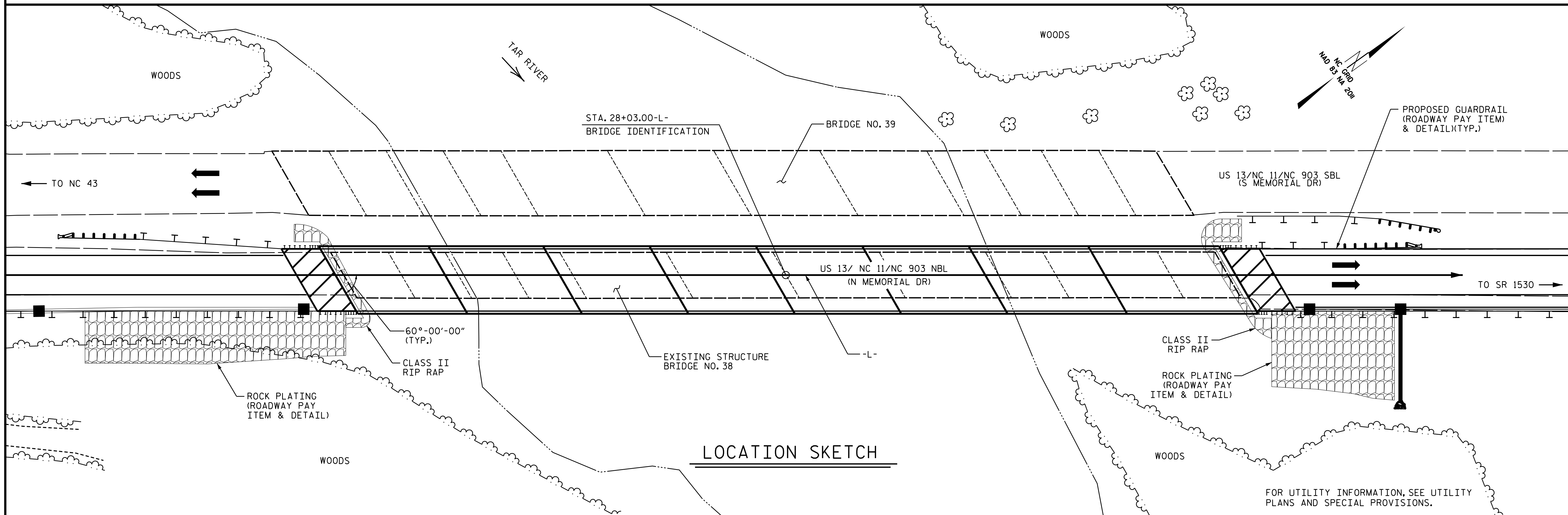
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON US 13
 OVER TAR RIVER
 BETWEEN
 NC 43 AND SR 1530

DRAWN BY :	STM	DATE :	01/19
CHECKED BY :	MGC	DATE :	07/19
DESIGN ENGINEER OF RECORD:	TBE	DATE :	8-19

10/26/2021
 X:\NCDOT\B-4786\Structures\Final plans\DCNs\401.009.B4786.SMU.GD04.004.dgn
 Users\sbwilliams

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			57

BENCH MARK #2: RR SPIKE IN BASE OF 14" ELM, 39' RT, STA. 21+09.00' -L-, ELEV. = 32.23 NAVD 88



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.

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

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 28+03.00 -L-".

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.

THE MATERIAL SHOWN IN THE HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 15 FT LEFT AND 20 FT RIGHT OF -L- AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT, MAINTAIN AND AFTERWARDS REMOVE A TEMPORARY ACCESS FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

THE EXISTING STRUCTURE CONSISTING OF 12 SPANS (1 @ 35'-3", 3 @ 35'-0", 4 @ 65'-0", 3 @ 35'-0", 1 @ 35'-3") WITH A REINFORCED CONCRETE DECK ON STEEL BEAMS WITH A CLEAR ROADWAY WIDTH OF 28'-0" AND A SUBSTRUCTURE CONSISTING OF REINFORCED CONCRETE CAPS/PRESTRESSED CONCRETE PILES ABUTMENTS AND BENTS AND LOCATED AT THE SITE OF THE PROPOSED BRIDGE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR ELECTRICAL CONDUIT SYSTEM FOR SIGNALS, SEE SPECIAL PROVISIONS.

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."

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

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

SIZE: SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND $f_y = 60\text{ksi}$.

DRAWN BY : TBE/SBW DATE : 11/18
CHECKED BY : MGC DATE : 07/19

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON US 13
OVER TAR RIVER
BETWEEN
NC 43 AND SR 1530

4/4/2022 | 10:27 AM EDT

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
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RALEIGH, NC 27603
PH (919) 773-8887
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PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 5 OF 6

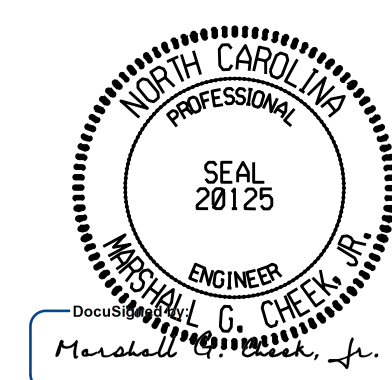
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			57

TOTAL BILL OF MATERIAL																						
	CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	4'-6" Ø DRILLED PIERS IN SOIL	PERMANENT STEEL CASING FOR 4'-6" Ø DRILLED PIERS	PDA TESTING	SID INSPECTIONS	SPT TESTING	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	45" PRESTRESSED CONCRETE GIRDERS		PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES		PILE REDRIVES
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	LUMP SUM	SO. FT.	SO. FT.	CU. YD.	LUMP SUM	LBS.	LBS.	NO.	LIN. FT.	EACH	NO.	LIN. FT.	
SUPERSTR.	LUMP SUM	LUMP SUM	LUMP SUM								22,585	20,835		LUMP SUM			40	2700.83				
END BENT 1										LUMP SUM			51.9		6,387				10	10	750	5
BENT 1				281.00									50.7		29,048	9,474						
BENT 2				276.25	96.03								56.2		29,494	9,696						
BENT 3				279.25	84.09								56.4		29,717	9,768						
BENT 4				279.00	90.00								56.6		29,717	9,791						
BENT 5				273.25	87.06								56.4		29,335	9,590						
BENT 6				273.00	83.97								56.2		29,287	9,590						
BENT 7				304.50									46.7		29,988	9,840						
END BENT 2										LUMP SUM			51.0		7,057				9	9	675	5
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	1966.25	441.15	2	7	7	7	LUMP SUM	22,585	20,835	482.1	LUMP SUM	220,030	67,749	40	2700.83	19	19	1425	10

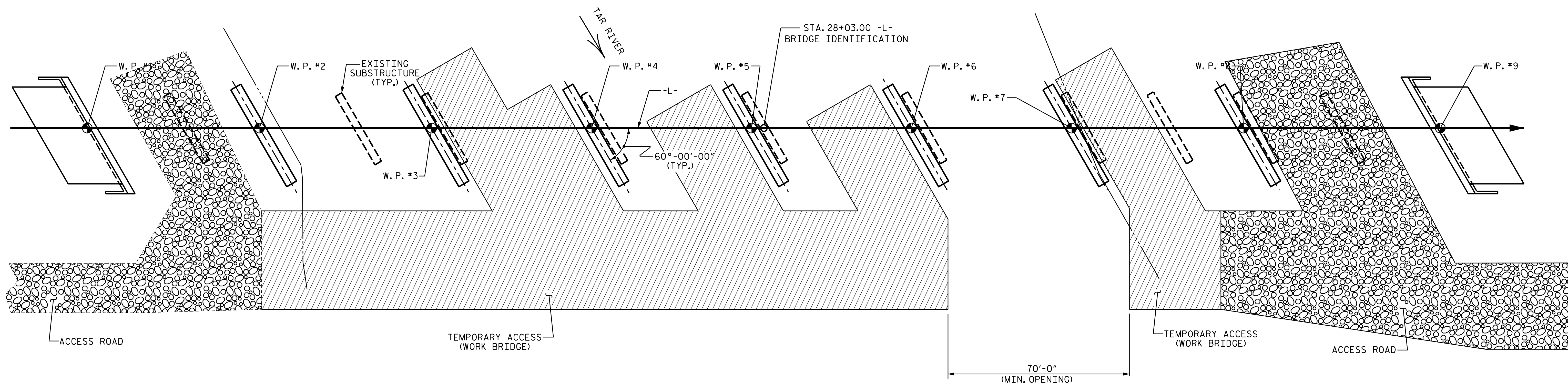
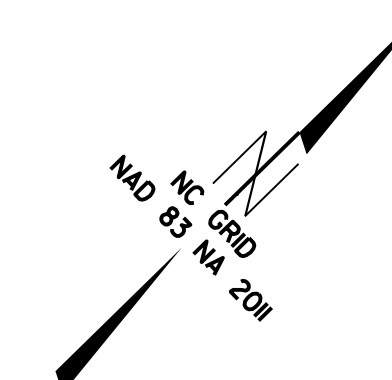
TOTAL BILL OF MATERIAL							
	CONCRETE BARRIER RAIL	CLASS II RIP RAP (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS	THERMAL INTEGRITY PROFILER TESTING	ELECTRICAL CONDUIT SYSTEM FOR SIGNALS
	LIN. FT.	TONS	SO. YD.	LUMP SUM	LUMP SUM	EACH	LUMP SUM
SUPERSTR.	1136.77			LUMP SUM	LUMP SUM		LUMP SUM
END BENT 1		170	190				
BENT 1						1	
BENT 2						1	
BENT 3						1	
BENT 4						1	
BENT 5						1	
BENT 6						1	
BENT 7						1	
END BENT 2		160	180				
TOTAL	1136.77	330	370	LUMP SUM	LUMP SUM	7	LUMP SUM

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 6 OF 6

 4/4/2022 10:27 AM EDT DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING FOR BRIDGE ON US 13 OVER TAR RIVER BETWEEN NC 43 AND SR 1530		
	REVISIONS		
TGS ENGINEERS 706 HILLSBOROUGH STREET SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	NO. 1 BY: [Signature] DATE: [Date]	NO. 2 BY: [Signature] DATE: [Date]	SHEET NO. S-6 TOTAL SHEETS 57

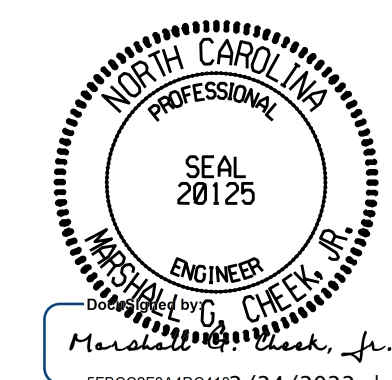
DRAWN BY : STM DATE : 06/19
 CHECKED BY : MGC DATE : 07/19
 DESIGN ENGINEER OF RECORD: MGC DATE : 07/19



PLAN OF TEMPORARY WORK BRIDGE

FOR CONSTRUCTION, MAINTENANCE & REMOVAL OF
TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TEMPORARY ACCESS

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			57

DRAWN BY : SBW DATE : 12-18
 CHECKED BY : MGC DATE : 6/19

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_L)	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_L)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (FF)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.00	--	1.75	0.734	1.19	A	EL	31.62	0.962	1.10	G	I	20.98	0.80	0.738	1.00	H	EL	38.12	1	
	HL-93 (OPERATING)	N/A		1.54	--	1.35	0.734	1.54	A	EL	31.62	0.964	2.10	H	I	14.85	N/A	--	--	--	--	--	--	1
	HS-20 (INVENTORY)	36.000	②	1.33	47.9	1.75	0.734	1.54	A	EL	31.62	0.960	1.75	A	I	25.16	0.80	0.738	1.33	H	EL	38.12	1	
	HS-20 (OPERATING)	36.000		2.00	72.0	1.35	0.734	2.00	A	EL	31.62	0.964	2.63	H	I	22.60	N/A	--	--	--	--	--	--	1
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.04	41.0	1.40	0.734	4.31	A	EL	31.62	0.964	6.13	H	I	22.60	0.80	0.690	3.04	G	I	35.41	1
		SNGARBS2	20.000		2.27	45.4	1.40	0.734	3.24	A	EL	31.62	0.964	4.35	H	I	22.60	0.80	0.690	2.27	G	I	35.41	1
		SNAGRIS2	22.000		2.12	46.6	1.40	0.734	3.03	A	EL	31.62	0.964	4.04	H	I	22.60	0.80	0.738	2.12	H	EL	38.12	1
		SNCOTTS3	27.250		1.51	41.1	1.40	0.734	2.12	A	EL	31.62	0.964	2.97	H	I	22.60	0.80	0.690	1.51	G	I	35.41	1
		SNAGGRS4	34.925		1.26	44.0	1.40	0.734	1.78	A	EL	31.62	0.964	2.47	H	I	22.60	0.80	0.690	1.26	G	I	35.41	1
		SNS5A	35.550		1.24	44.1	1.40	0.734	1.74	A	EL	31.62	0.964	2.52	H	I	22.60	0.80	0.690	1.24	G	I	35.41	1
		SNS6A	39.950		1.13	45.1	1.40	0.734	1.59	A	EL	31.62	0.964	2.29	H	I	22.60	0.80	0.690	1.13	G	I	35.41	1
	SNS7B	42.000		1.08	45.4	1.40	0.734	1.52	A	EL	31.62	0.964	2.27	H	I	22.60	0.80	0.738	1.08	H	EL	38.12	1	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.38	45.5	1.40	0.734	1.98	A	EL	31.62	0.964	2.75	H	I	22.60	0.80	0.738	1.38	H	EL	38.12	1
		TNT4A	33.075		1.38	45.6	1.40	0.734	1.97	A	EL	31.62	0.964	2.66	H	I	22.60	0.80	0.738	1.38	H	EL	38.12	1
		TNT6A	41.600		1.12	46.6	1.40	0.734	1.60	A	EL	31.62	0.964	2.44	H	I	14.85	0.80	0.738	1.12	H	EL	38.12	1
		TNT7A	42.000		1.13	47.5	1.40	0.734	1.63	A	EL	31.62	0.964	2.35	H	I	22.60	0.80	0.738	1.13	H	EL	38.12	1
		TNT7B	42.000		1.16	48.7	1.40	0.734	1.67	A	EL	31.62	0.964	2.20	H	I	22.60	0.80	0.738	1.16	H	EL	38.12	1
		TNAGRIT4	43.000		1.11	47.7	1.40	0.734	1.59	A	EL	31.62	0.964	2.12	H	I	22.60	0.80	0.738	1.11	H	EL	38.12	1
TNAGT5A		45.000		1.05	47.3	1.40	0.734	1.50	A	EL	31.62	0.964	2.12	H	I	22.60	0.80	0.738	1.05	H	EL	38.12	1	
TNAGT5B	45.000	③	1.04	46.8	1.40	0.734	1.48	A	EL	31.62	0.964	1.97	G	I	20.98	0.80	0.738	1.04	H	EL	38.12	1		

NOTES:

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

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1. GIRDERS DESIGNED AS SIMPLE SPAN

- 2.
- 3.
- 4.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

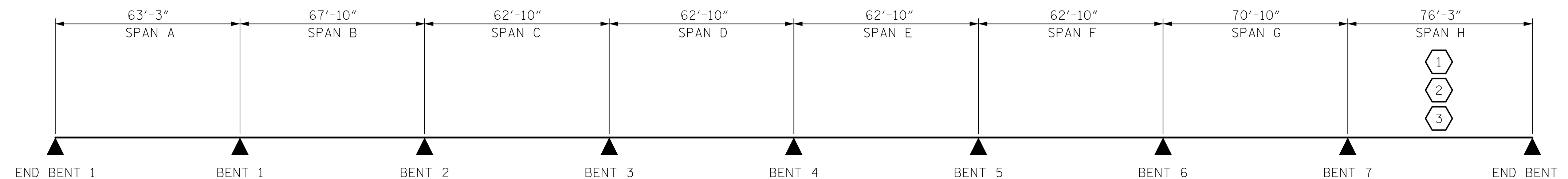
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

LRFR SUMMARY

DIMENSIONS SHOWN ARE BEARING TO BEARING

ASSEMBLED BY : STM DATE : 08/21
 CHECKED BY : ZCS DATE : 10/21
 DRAWN BY : MAA 1/08 REV. 11/2/08RR MAA/GM
 CHECKED BY : GM/DI 2/08 REV. 10/1/11 MAA/GM
 REV. 12/17 MAA/THC

10/21/2021 X:\NCDOT\B-4786\Structures\Final plans\DCNs\401_017_B4786_SMU_LRFR_008.dgn User:zsmith



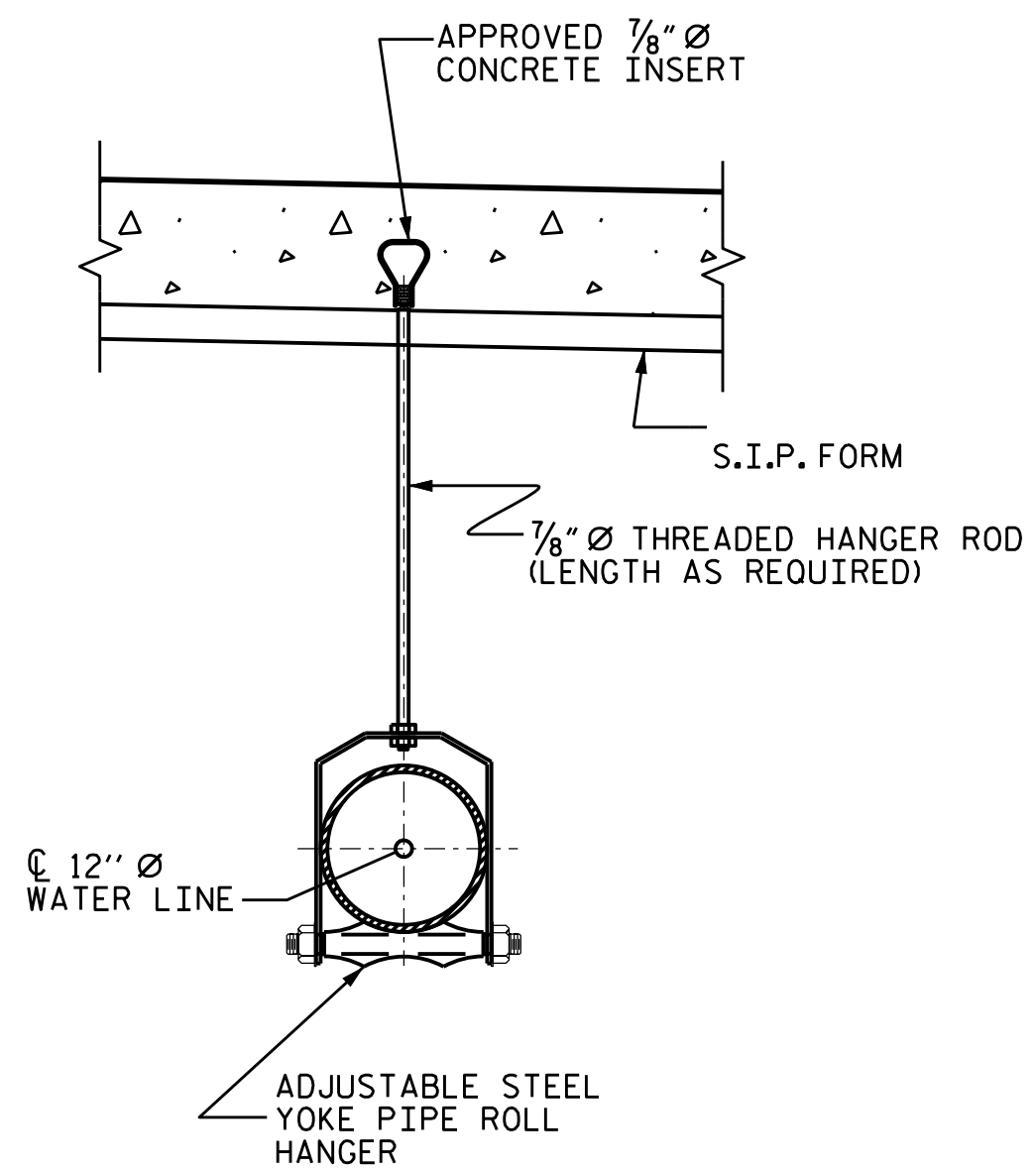
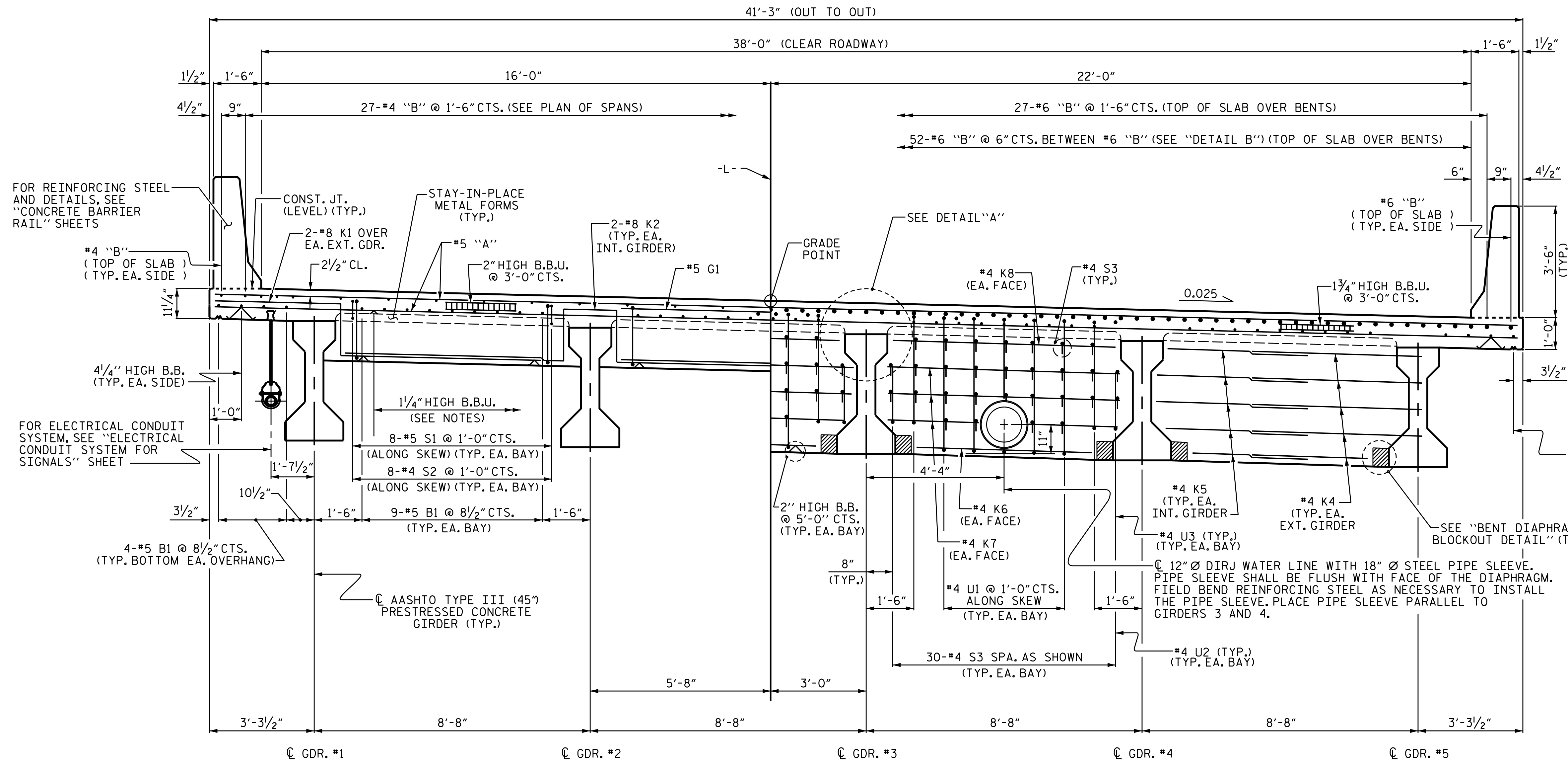
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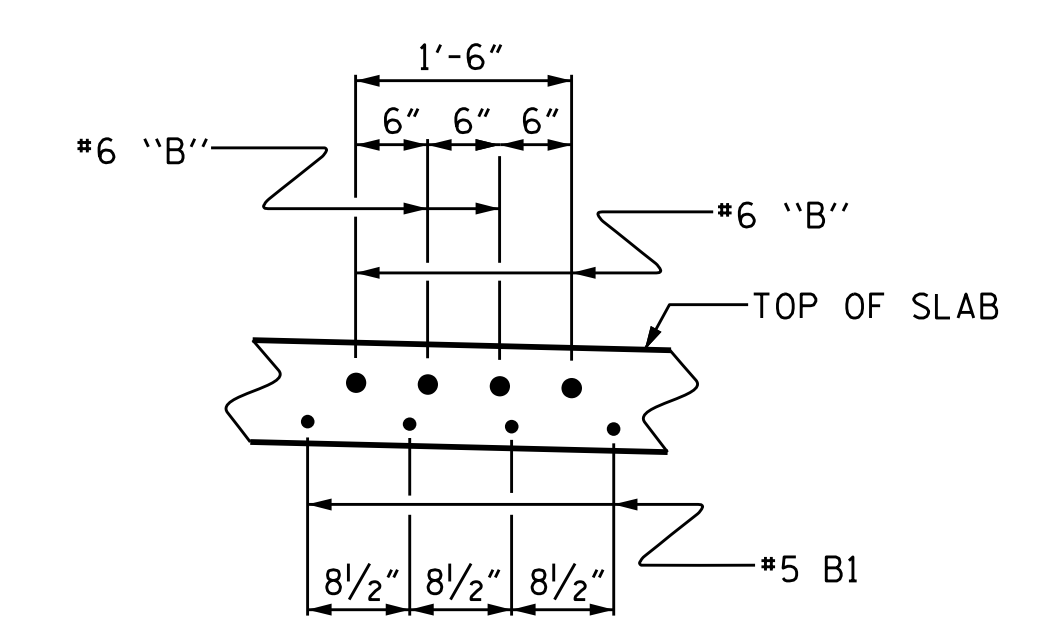
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			57
2			4			

STD. NO. LRFR1



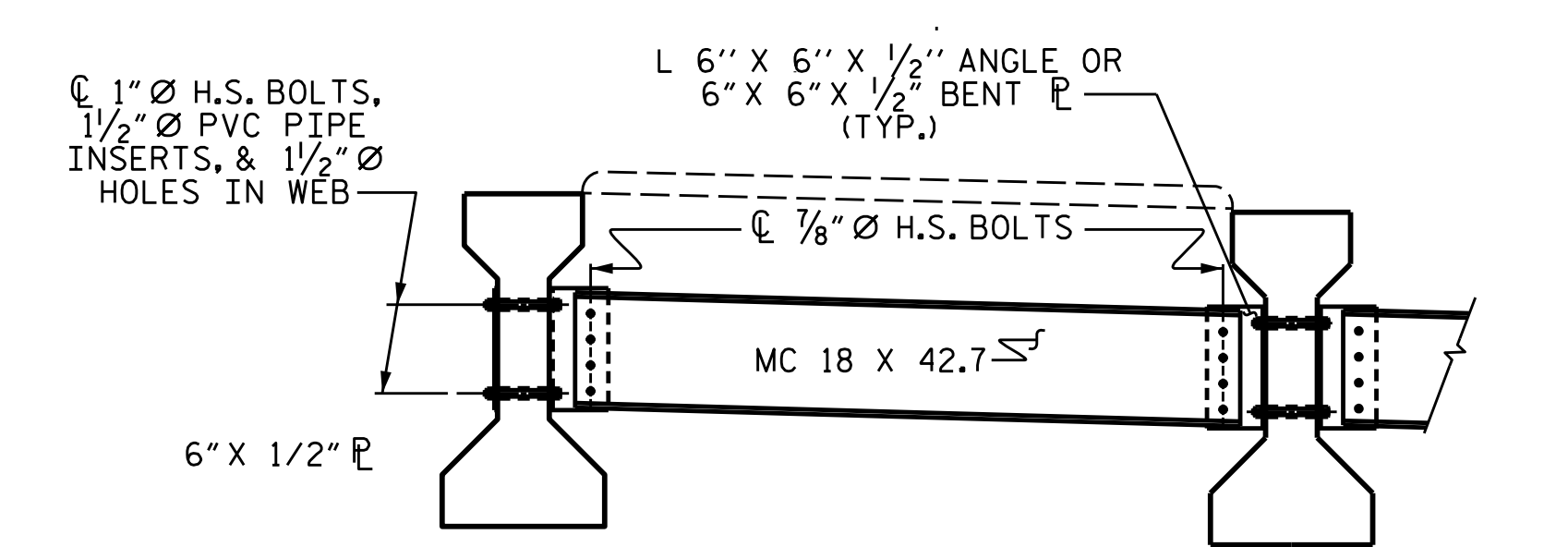
WATER LINE HANGER DETAIL
 FOR CONCRETE INSERT LAYOUT, SEE "PLAN OF SPANS" SHEETS.
 FOR 12" DIRJ WATER LINE, SEE UTILITY PLANS AND SPECIAL PROVISIONS.



DETAIL "B"

PARTIAL TYPICAL SECTION
 (SHOWING END BENT DIAPHRAGMS)

PARTIAL TYPICAL SECTION
 (SHOWING CONTINUOUS BENT DIAPHRAGMS)

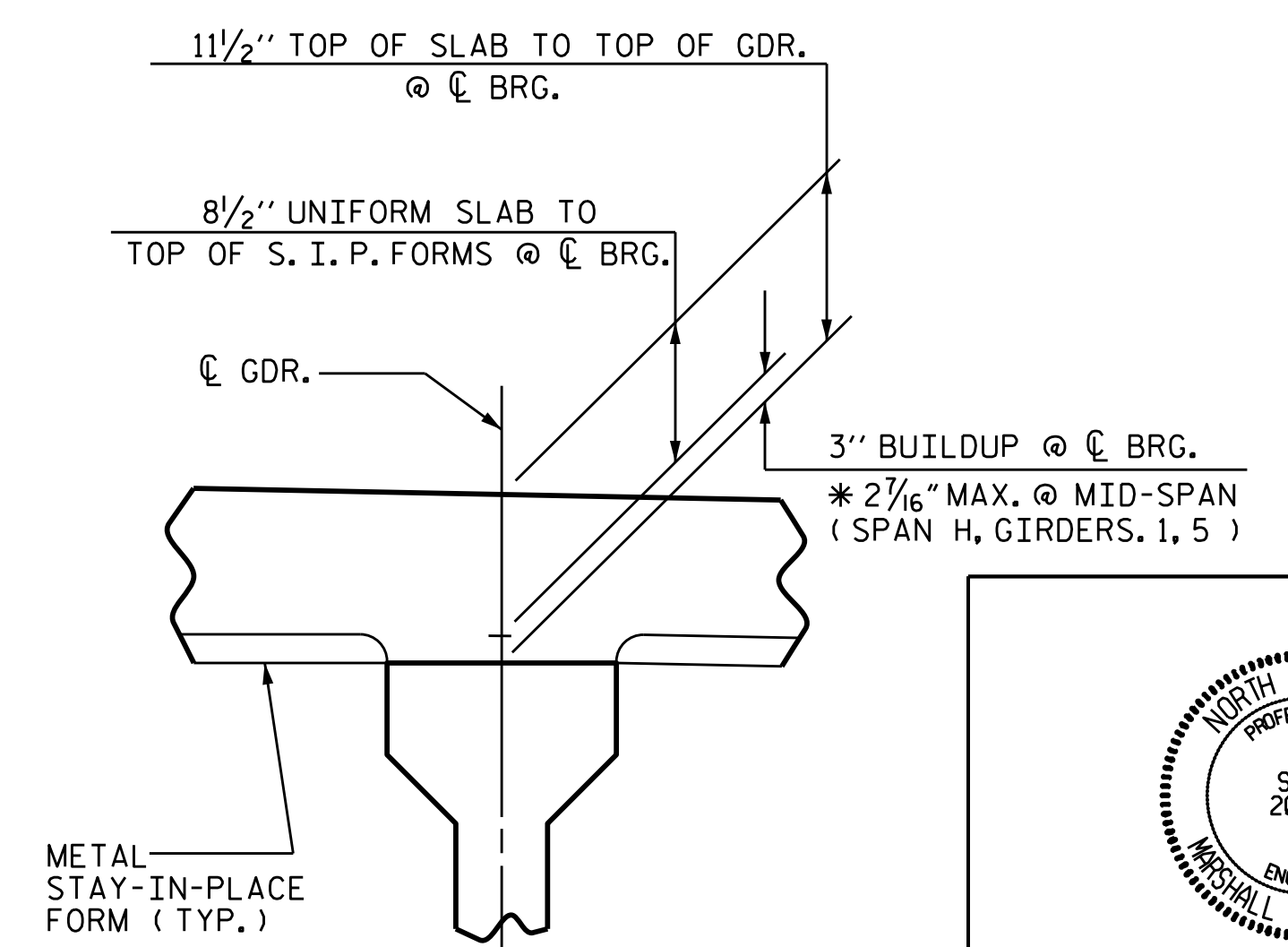


EXTERIOR GIRDER INTERIOR GIRDER

PARTIAL TYPICAL SECTION

(SHOWING INTERMEDIATE DIAPHRAGMS)
 (FOR DETAILS, SEE "INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE III PRESTRESSED CONCRETE GIRDERS" SHEET.)

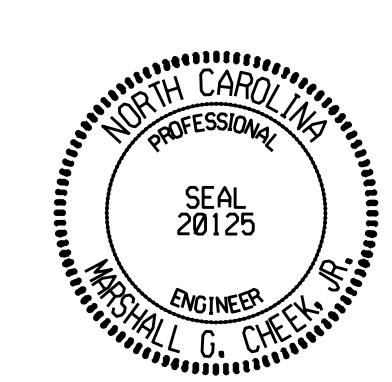
NOTE: AFTER POURING THE DECK SLAB AND PRIOR TO INSTALLATION OF THE 12" DIRJ WATER LINE, THE INTERMEDIATE STEEL DIAPHRAGMS IN BAY 3 SHALL BE REMOVED.



DETAIL "A"

* BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATION

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 1 OF 2

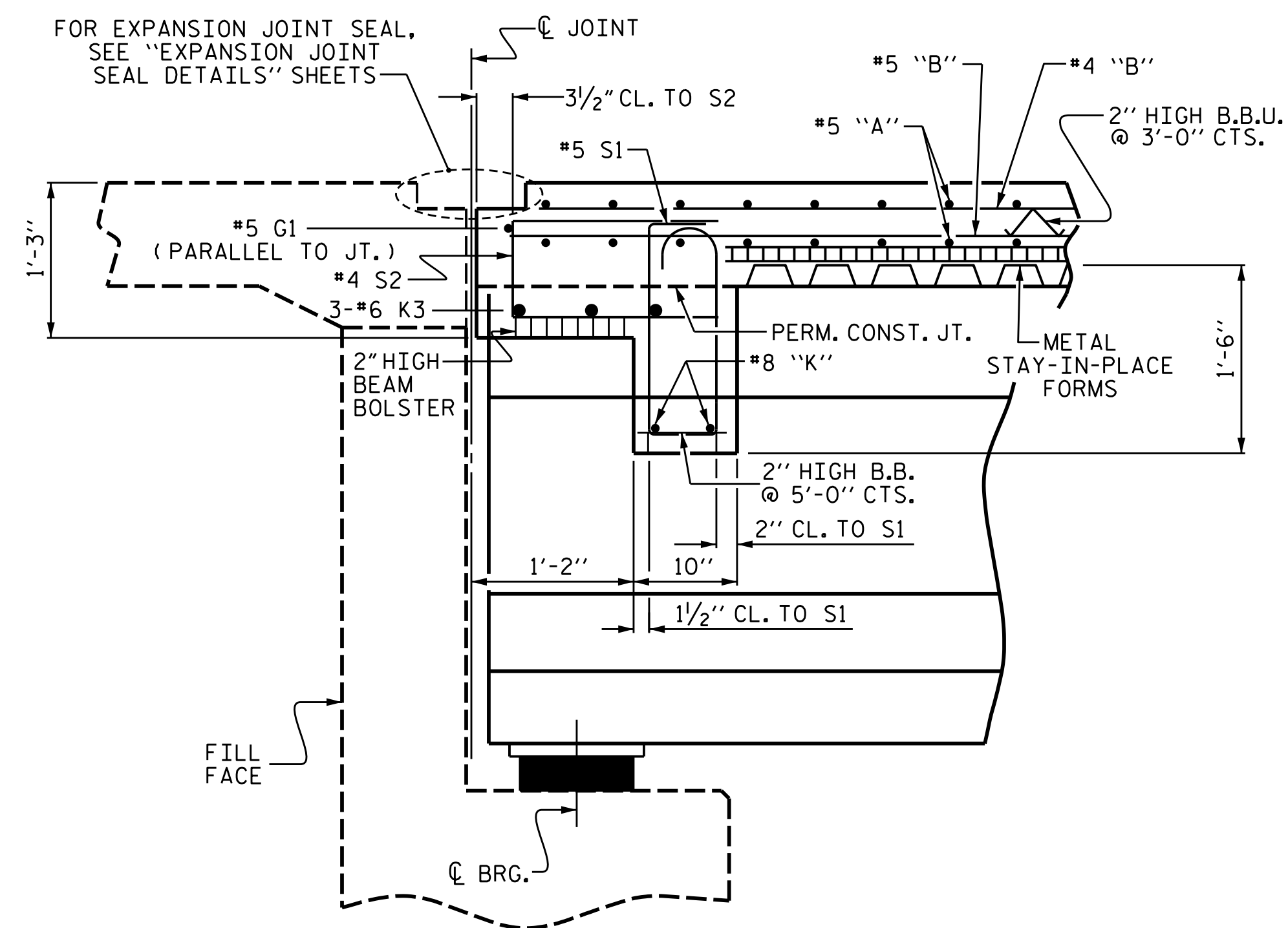


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 TYPICAL SECTION

DRAWN BY : SBW DATE : 8-18
 CHECKED BY : MGC DATE : 11-18
 DESIGN ENGINEER OF RECORD: TBE DATE : 8-19

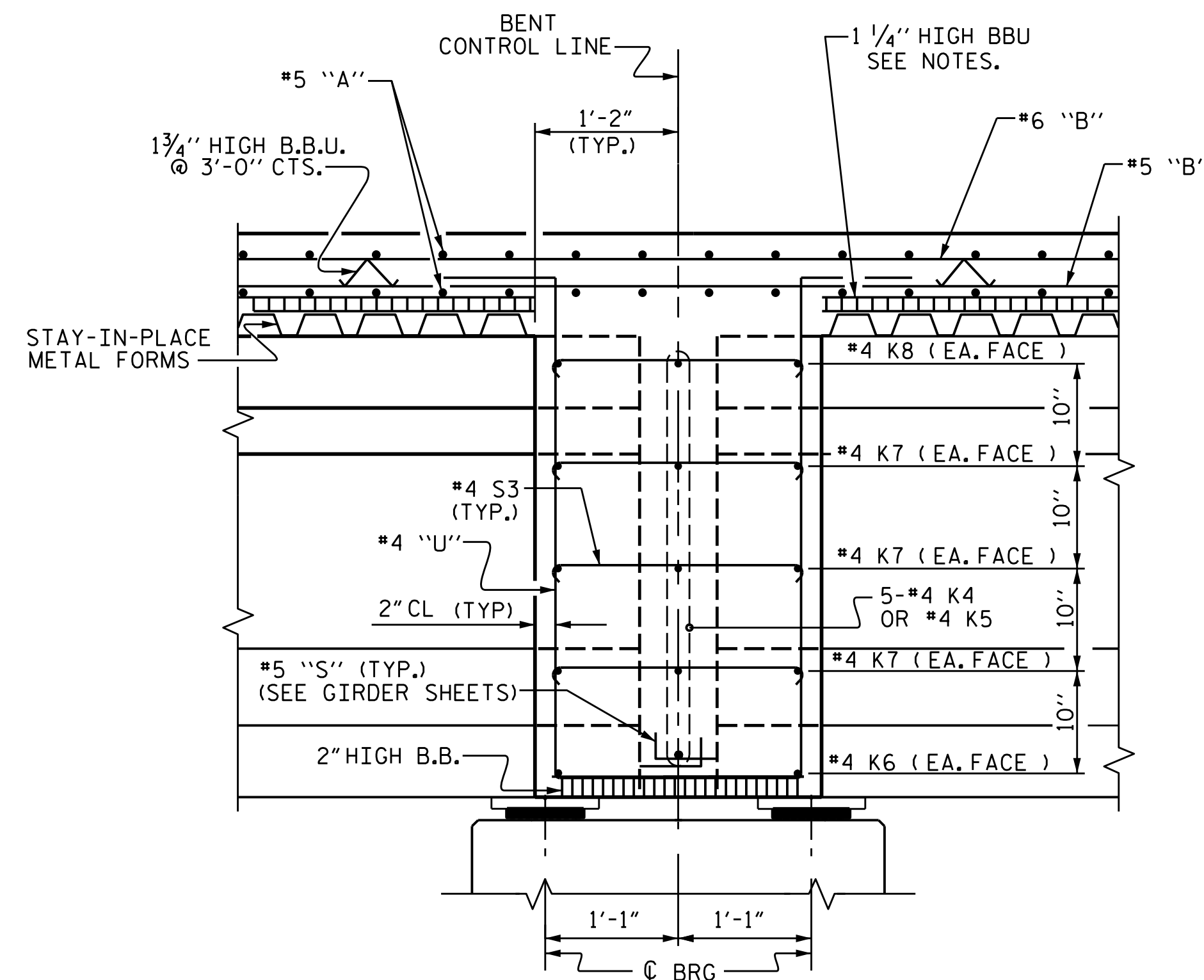
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 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			57



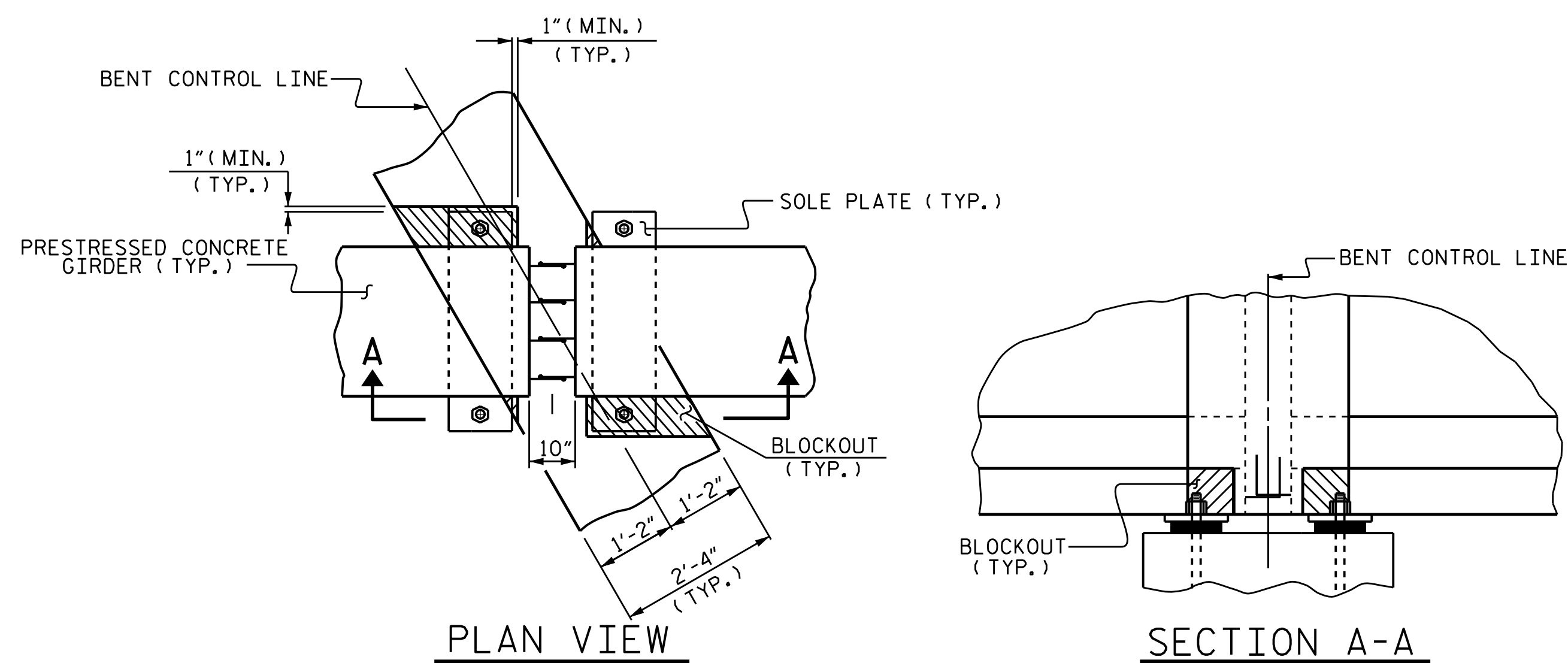
SECTION A-A

FOR LOCATION OF SECTION A-A, SEE "PLAN OF SPAN" SHEETS.



SECTION B-B

FOR LOCATION OF SECTION B-B, SEE "PLAN OF SPAN" SHEETS.



PLAN VIEW

SECTION A-A

BENT DIAPHRAGM BLOCKOUT DETAIL

NOTES

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

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

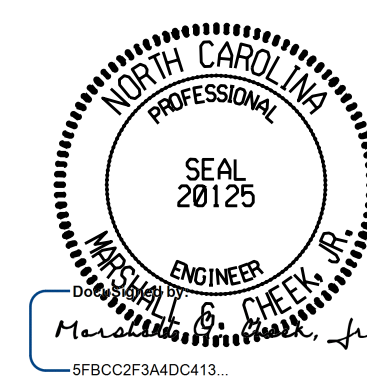
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

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

#5 G1 BAR MAY BE SHIFTED SLIGHTLY, AS NECESSARY, TO CLEAR REINFORCING STEEL AND STIRRUPS.

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 2 OF 2



2/24/2022 | 7:41 AM EST

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 TYPICAL SECTION
 DETAILS

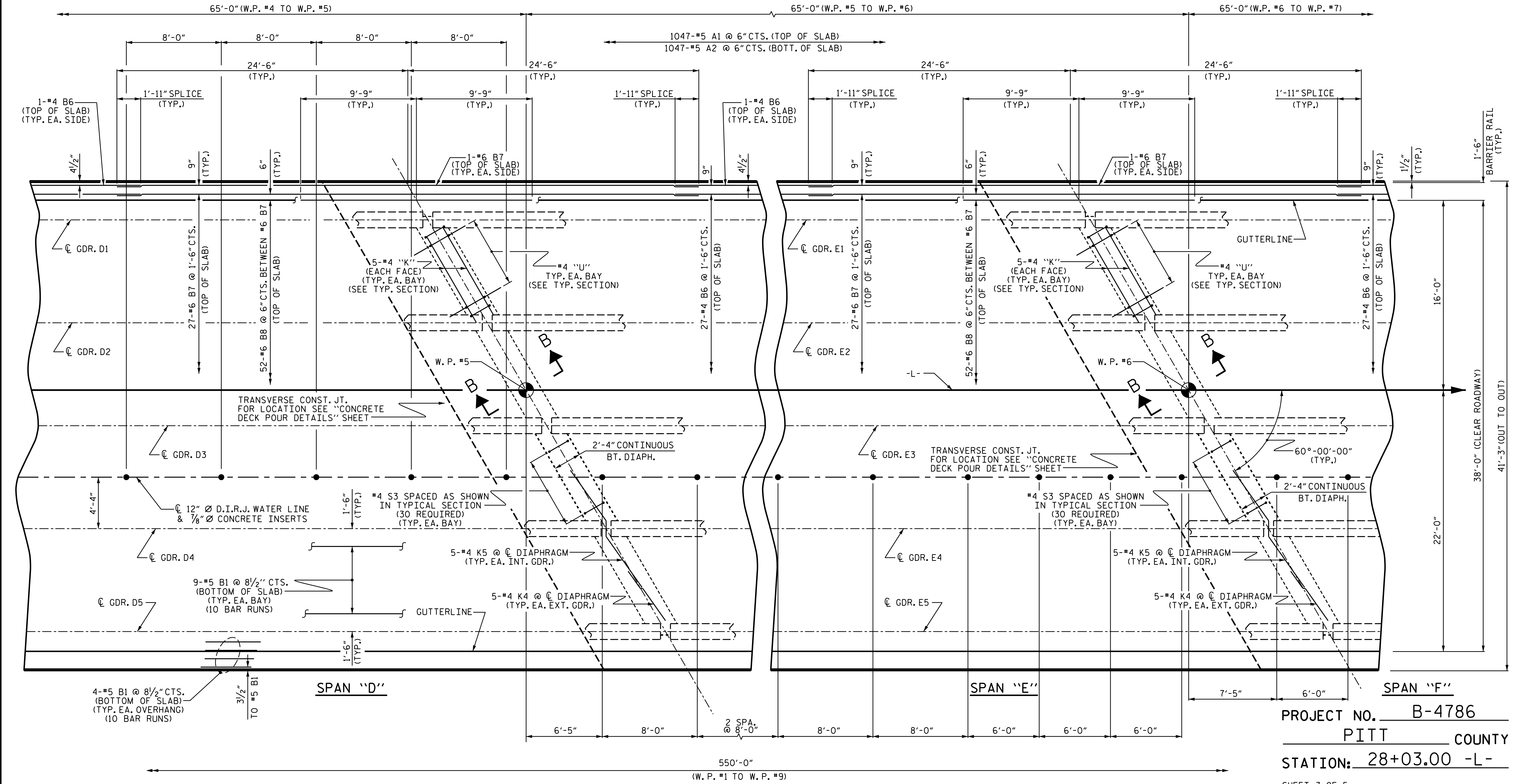
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 CHECKED BY : MGC DATE : 11-18
 DESIGN ENGINEER OF RECORD: TBE DATE : 8-19

9/23/2021
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			57



PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-

PARTIAL PLAN OF SPANS D, E, & F

FOR SECTION B-B, SEE "TYPICAL SECTION DETAILS", SHEET 2 OF 2.
 FOR BARRIER RAIL DETAILS AND REINFORCING STEEL, SEE "CONCRETE BARRIER RAIL" SHEETS.
 FOR ELECTRICAL CONDUIT SYSTEM, SEE "ELECTRICAL CONDUIT SYSTEM FOR SIGNALS" SHEET.

DRAWN BY: SBW DATE: 8-18
 CHECKED BY: MGC DATE: 11-18
 DESIGN ENGINEER OF RECORD: TBE DATE: 9-19

9/24/2021
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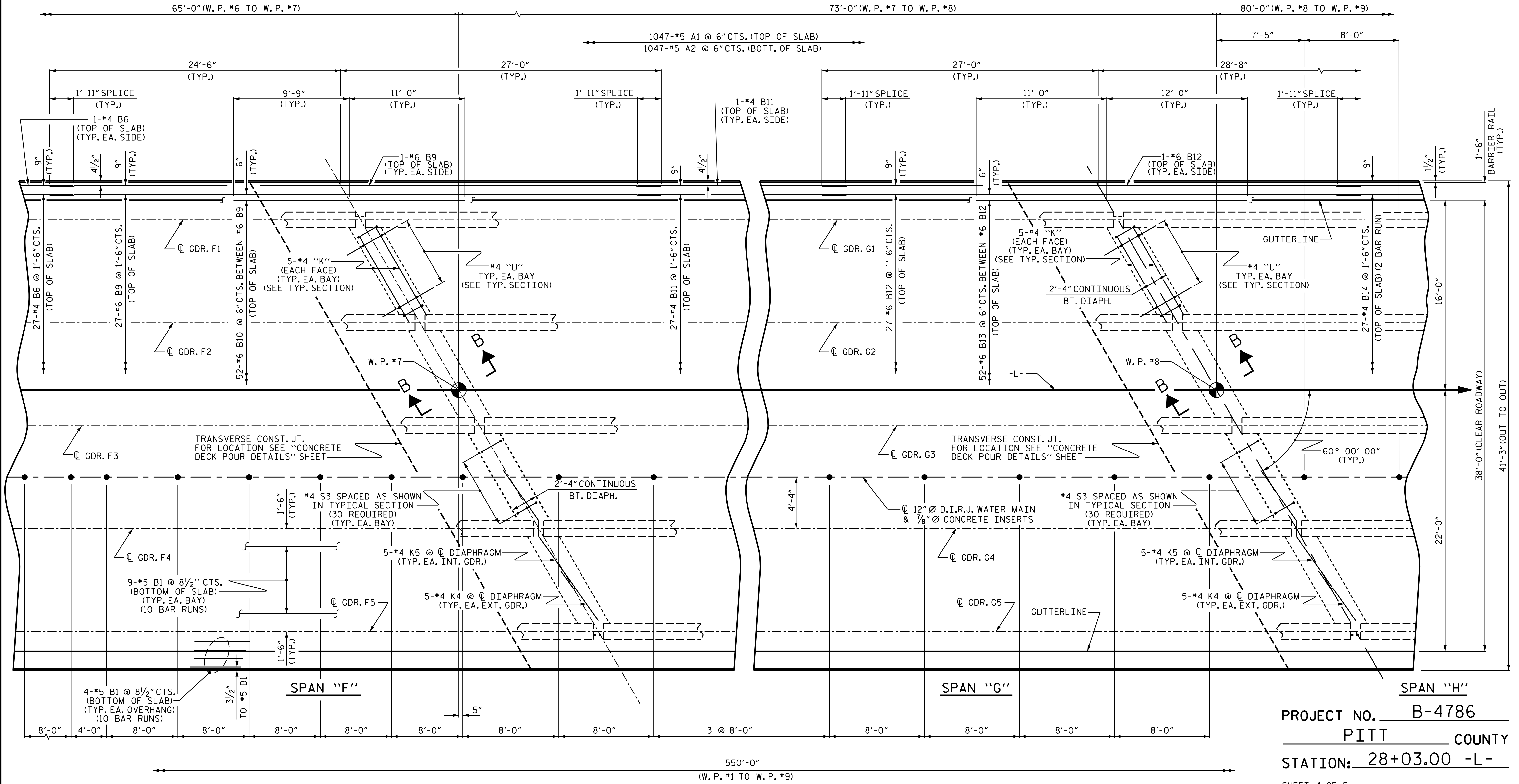
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PROFESSIONAL ENGINEER
 SEAL 20125
 M. B. CHECK, JR.
 2/24/2022 | 7:41 AM EST

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 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			57



PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-

PARTIAL PLANS OF SPAN F, G, & H

FOR SECTION B-B, SEE "TYPICAL SECTION DETAILS", SHEET 2 OF 2.
 FOR BARRIER RAIL DETAILS AND REINFORCING STEEL, SEE "CONCRETE BARRIER RAIL" SHEETS.
 FOR ELECTRICAL CONDUIT SYSTEM, SEE "ELECTRICAL CONDUIT SYSTEM FOR SIGNALS" SHEET.

DRAWN BY : SBW DATE : 8-18
 CHECKED BY : MGC DATE : 11-18
 DESIGN ENGINEER OF RECORD: TBE DATE : 9-19

STATE OF NORTH CAROLINA
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 RALEIGH

PLAN OF SPAN

9/24/2021
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 Users\sbwilliams

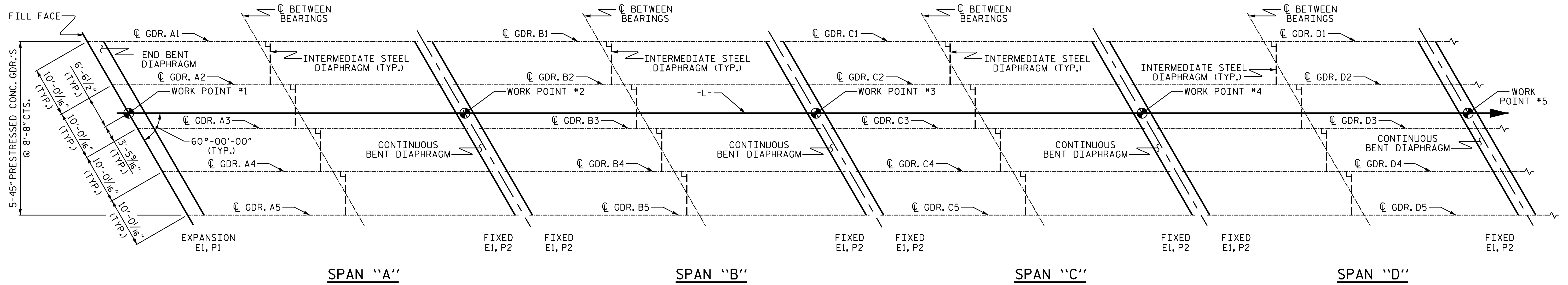
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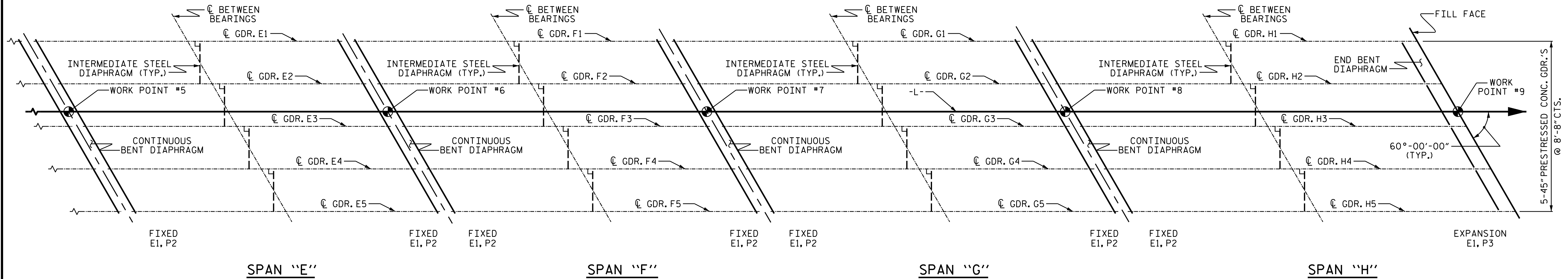
2/24/2022 | 7:41 AM EST

SHEET 4 OF 5

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-14
2			4			57



SPANS "A" THRU "D" GIRDER LAYOUT



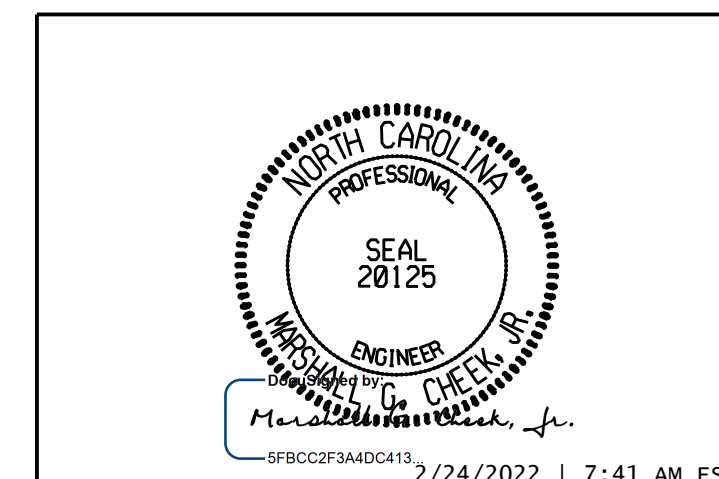
SPANS "E" THRU "H" GIRDER LAYOUT

NOTES

FOR LOCATION OF 1/2" Ø HOLES, SEE "PRESTRESSED CONCRETE GIRDER CONTINUOUS FOR LIVE LOAD DETAILS" SHEET.

FOR ELASTOMERIC BEARINGS AND SOLE PLATE DETAILS, SEE "ELASTOMERIC BEARING DETAILS" SHEET.

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GIRDER LAYOUT

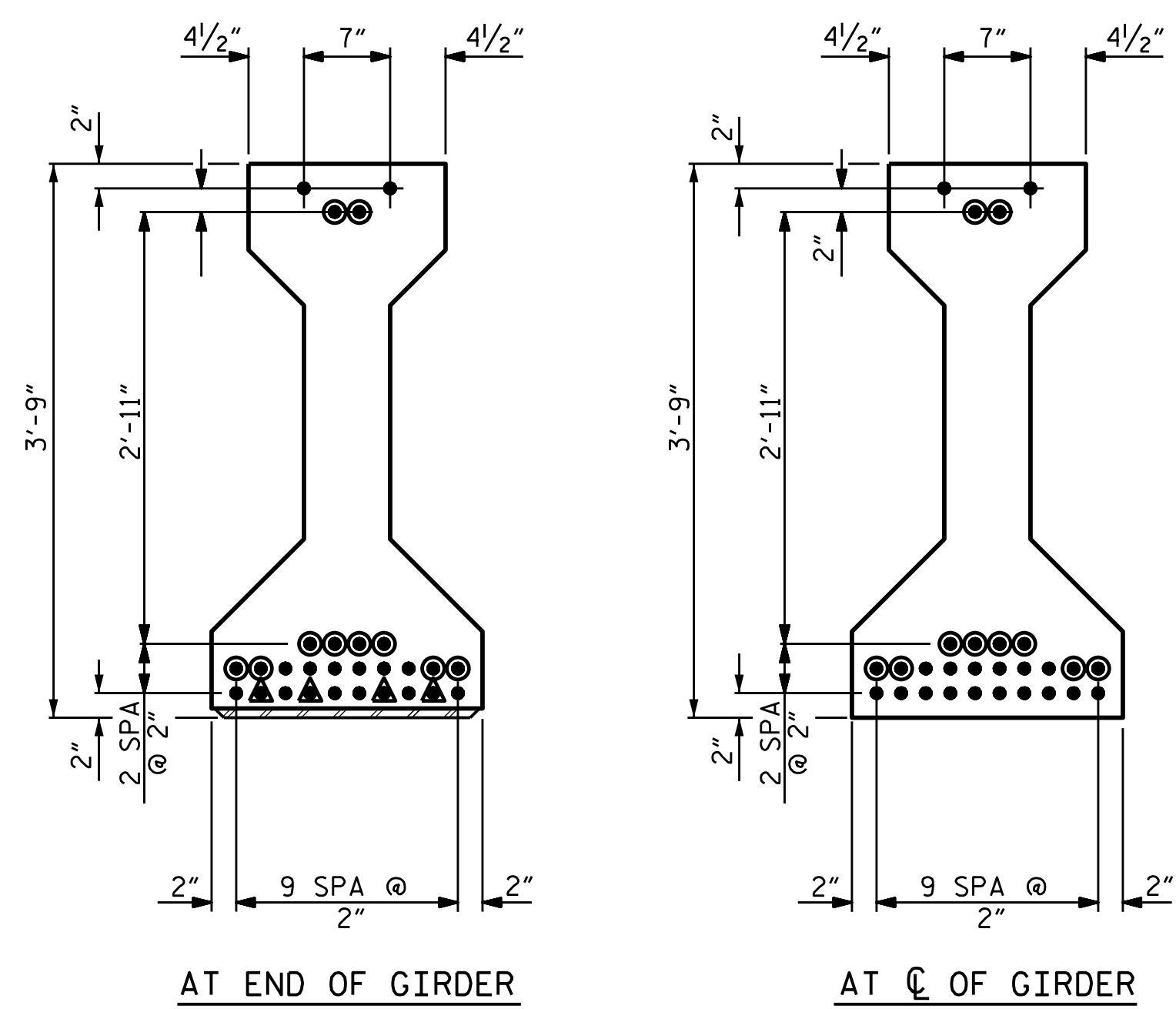
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 DESIGN ENGINEER OF RECORD: MGC DATE : 8-19

9/23/2021
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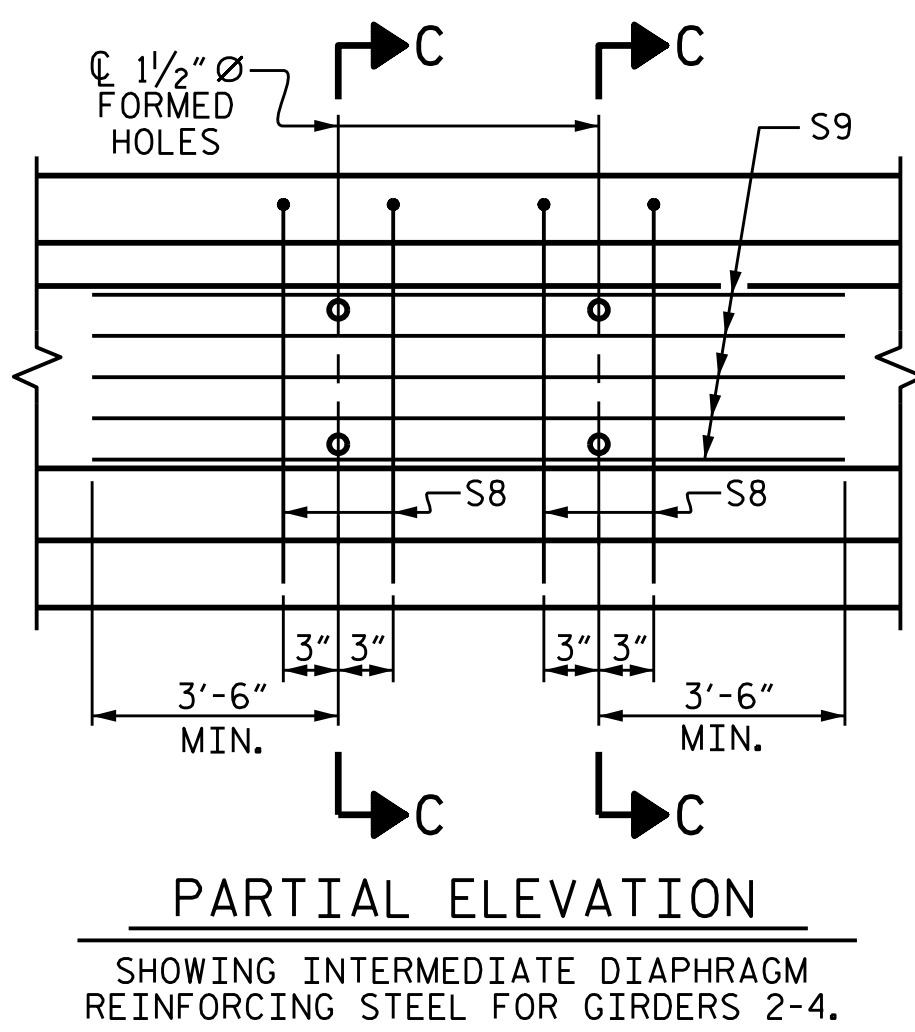
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-16
2			4			TOTAL SHEETS 57



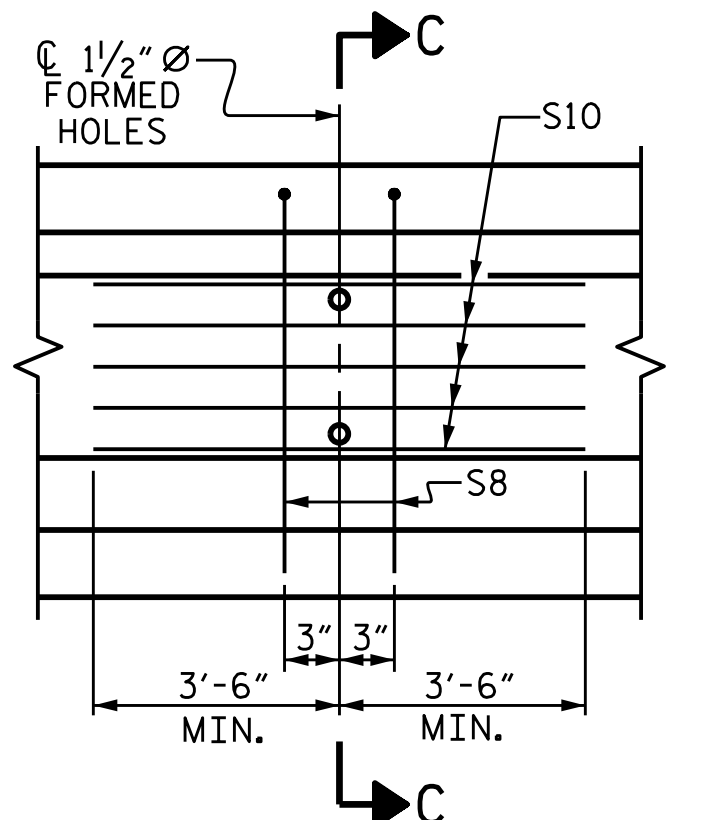
0.6" Ø LOW RELAXATION STRAND LAYOUT

- ▲ STRANDS DEBONDED FOR A DISTANCE OF 8'-0" FROM END OF GIRDER.
- OPTIONAL FULLY DEBONDED STRANDS.



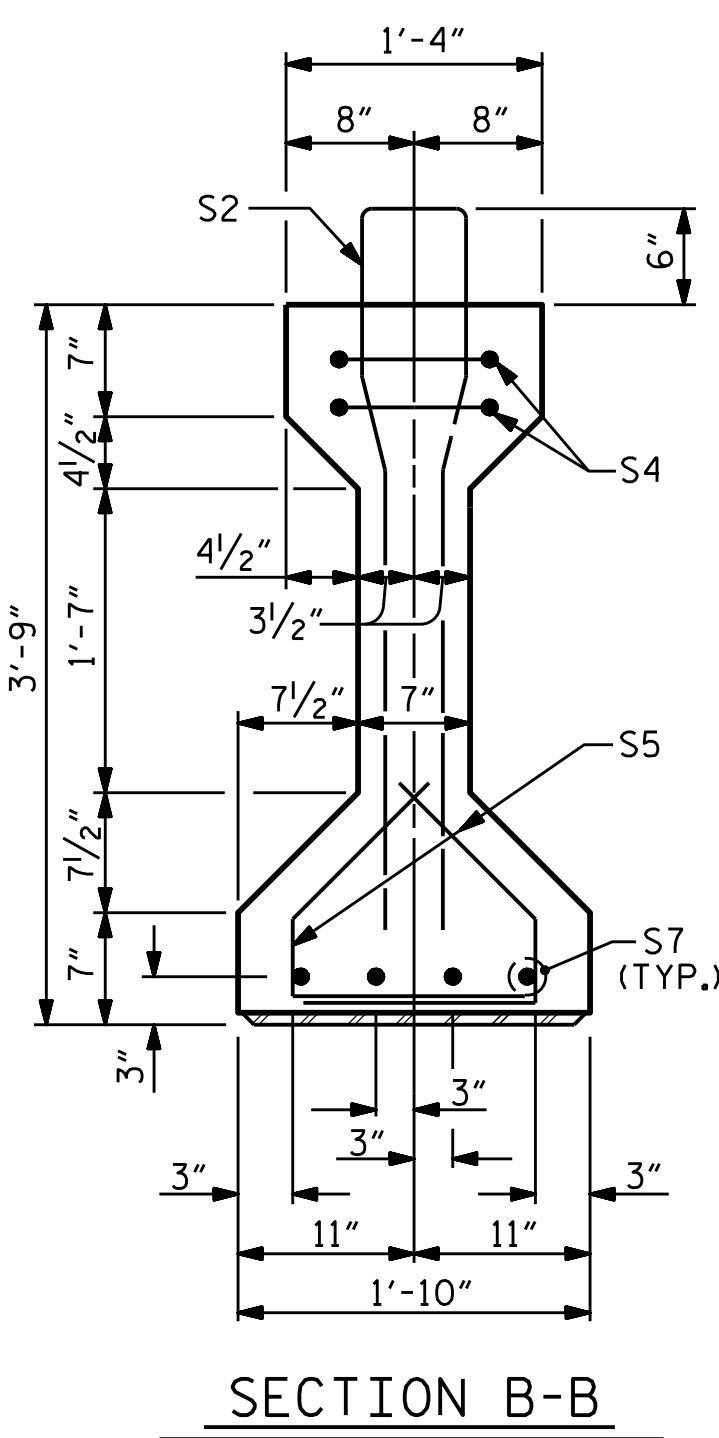
PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 2-4.

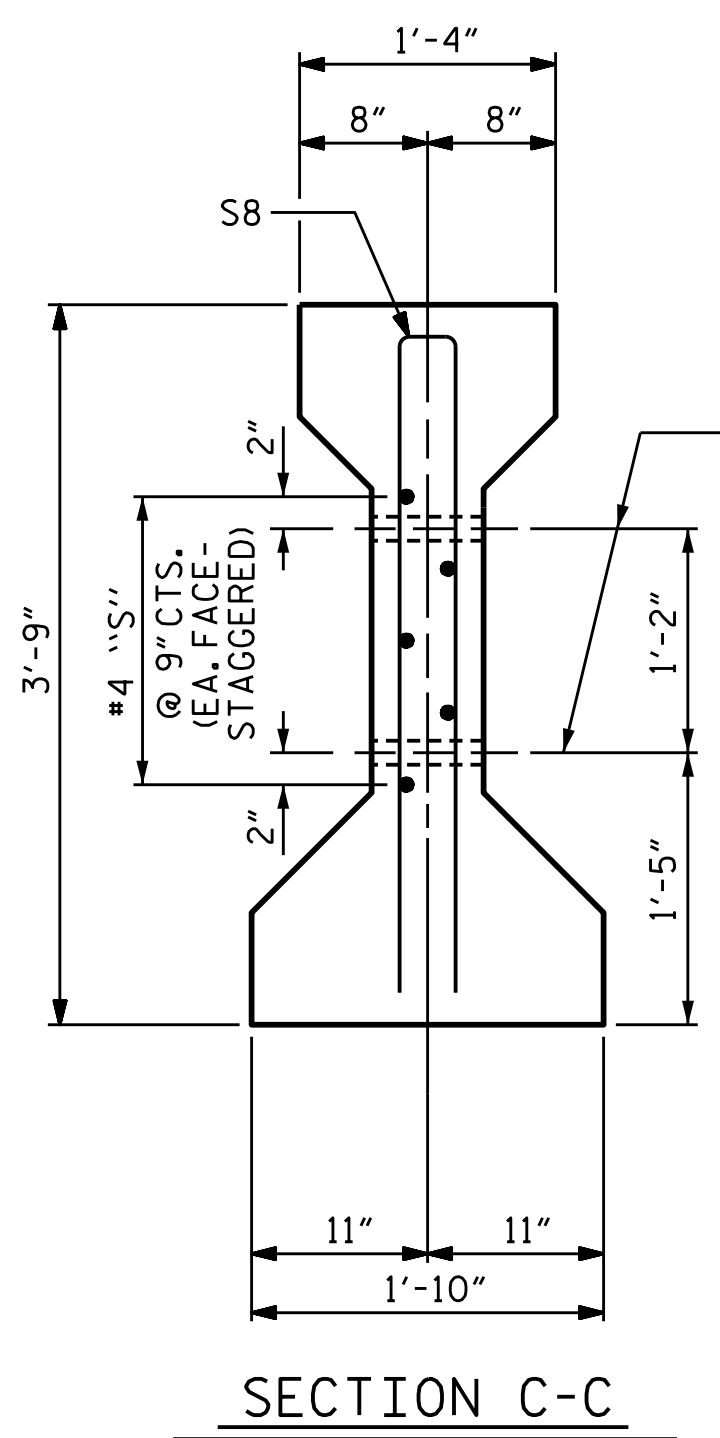


PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 1 & 5.

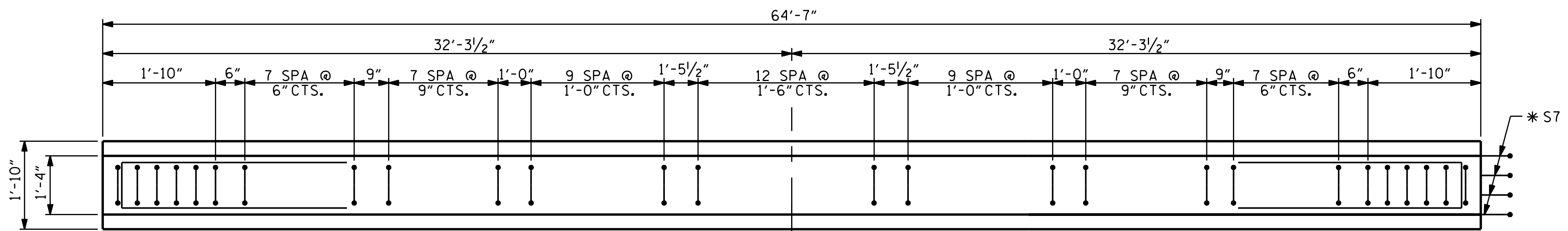


SECTION B-B

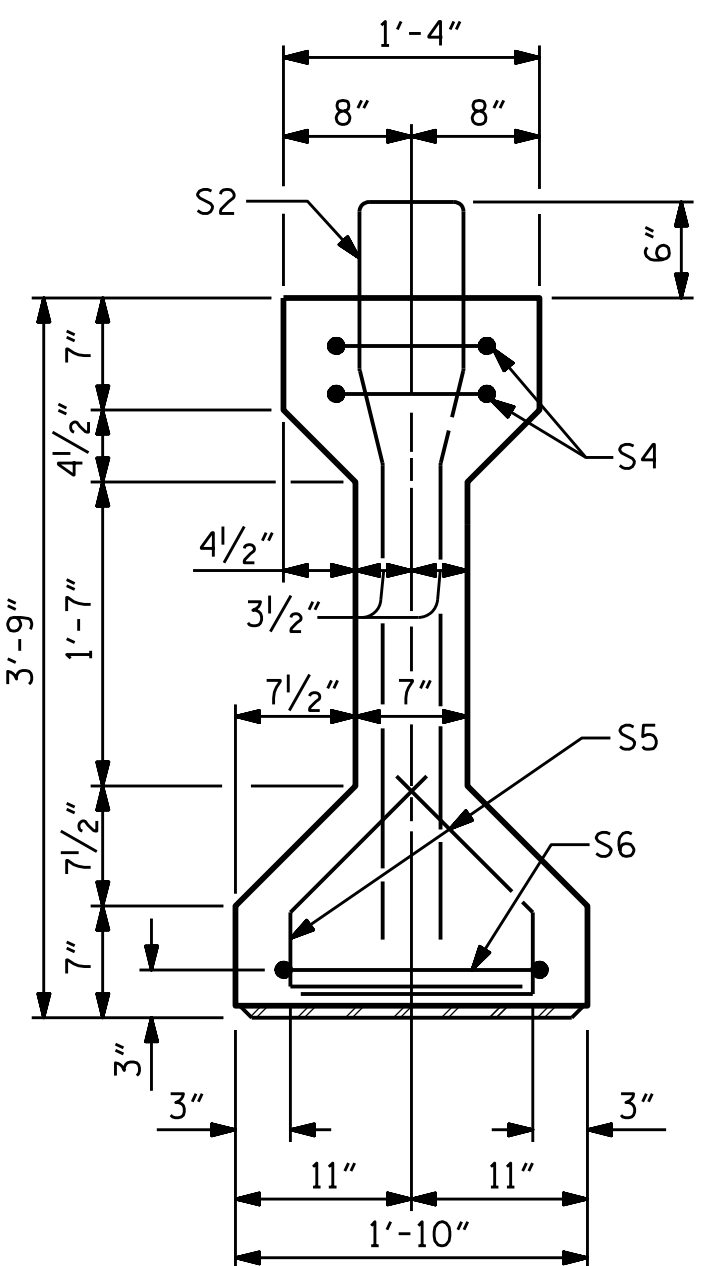


SECTION C-C

(S3 BARS NOT SHOWN)



ELEVATION OF GIRDER



SECTION A-A

0.6" Ø L. R. GRADE 270 STRANDS

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

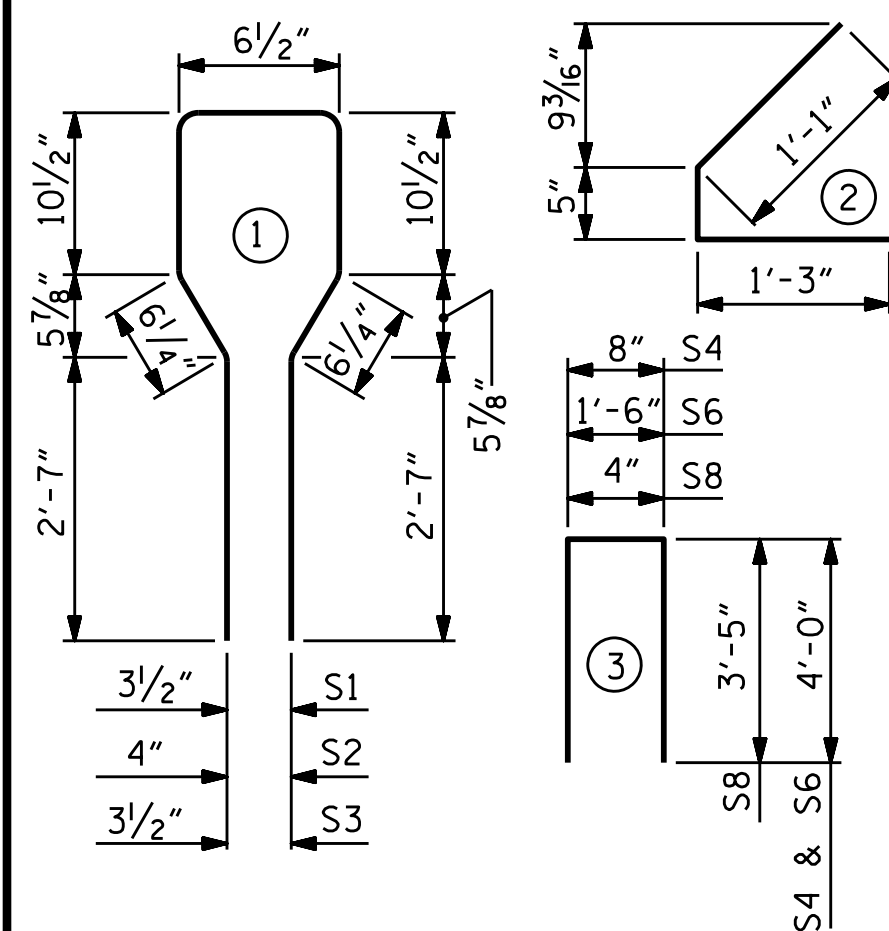
REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	16	#5	1	8'-6"	142
S2	12	#6	1	8'-6"	153
S3	49	#4	1	8'-6"	278
S4	4	#4	3	8'-8"	23
S5	56	#4	2	2'-9"	103
S6	1	#4	3	9'-6"	6
*S7	4	#5	STR	3'-8"	15
INTERIOR S8	4	#5	3	7'-2"	30
EXTERIOR S8	2	#5	3	7'-2"	15
INTERIOR S9	5	#4	STR	12'-0"	40
EXTERIOR S10	5	#4	STR	7'-0"	23

* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	7,000 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
GIRDER 2-4	790	9.3	18
GIRDER 1 & 5	758	9.3	18

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
5	64'-7"	322'-11"

PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 1 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 AASHTO TYPE III
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPAN A

9/8/2021
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 User:smassinople

9/8/2021
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 User:smassinople

ASSEMBLED BY : STM DATE : 08/21
 CHECKED BY : MGC DATE : 08/21
 DESIGN ENGINEER OF RECORD : STM DATE : 08/21

DRAWN BY : ELR 8/91
 CHECKED BY : GRP 8/91

REV. 10/1/11 MAA/GM
 REV. 1/15 MAA/TMG
 REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

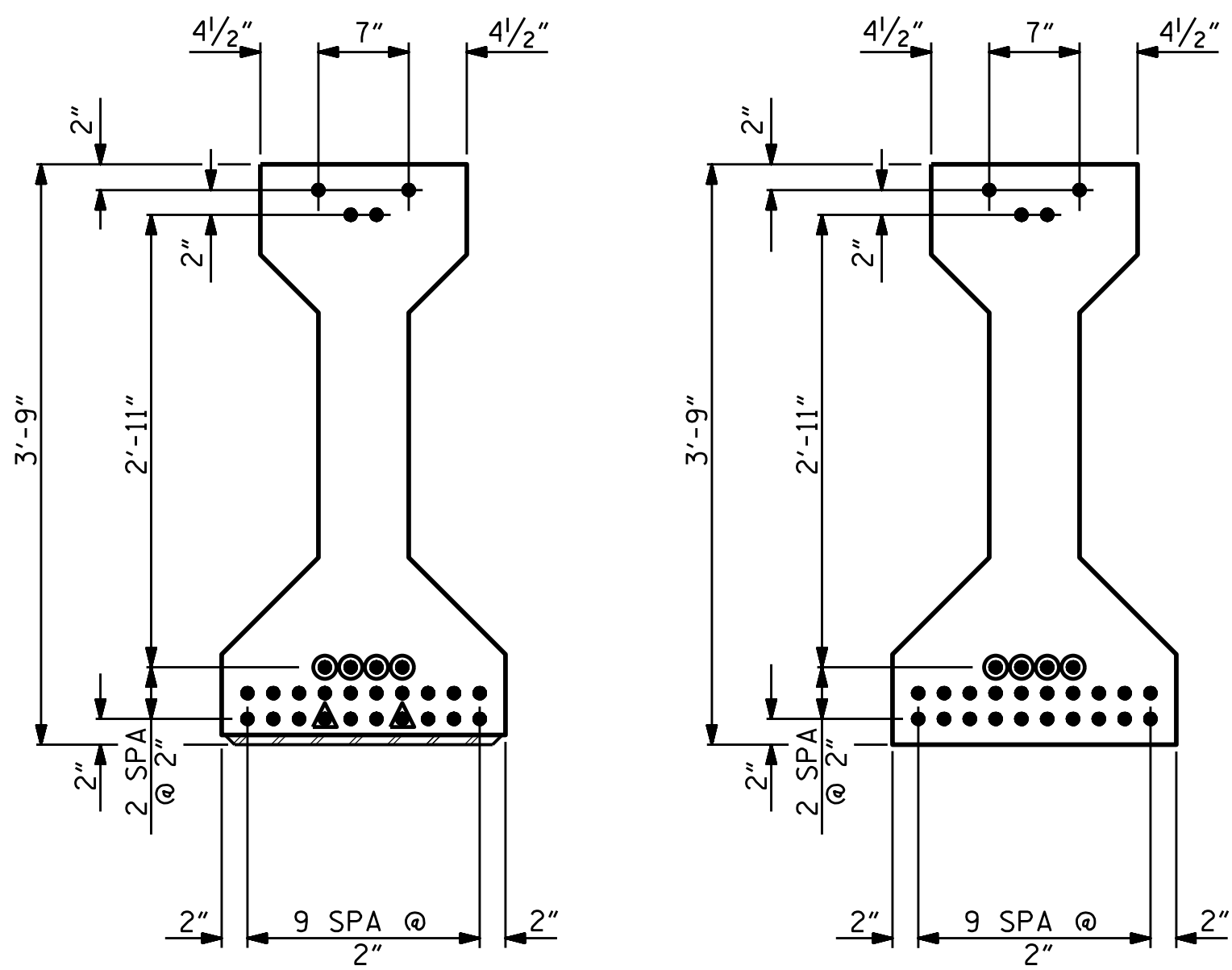
TGS ENGINEERS
 706 HILLSBOROUGH STREET
 SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS

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

SHEET NO. S-17
 TOTAL SHEETS 57

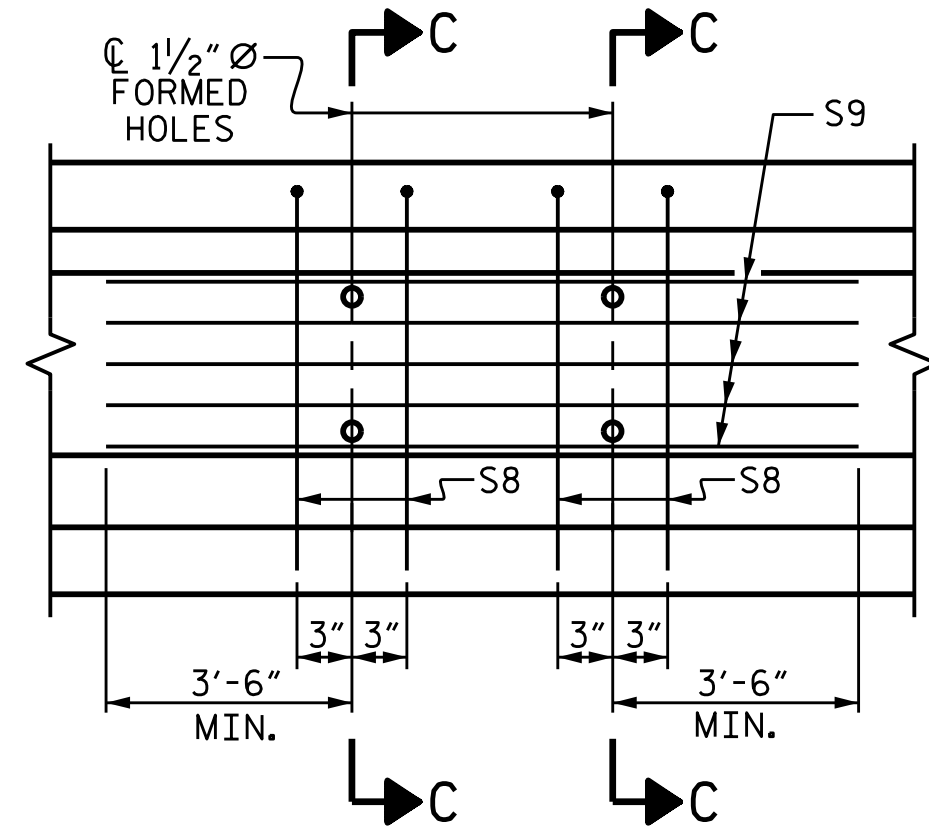
STD. NO. PCG5



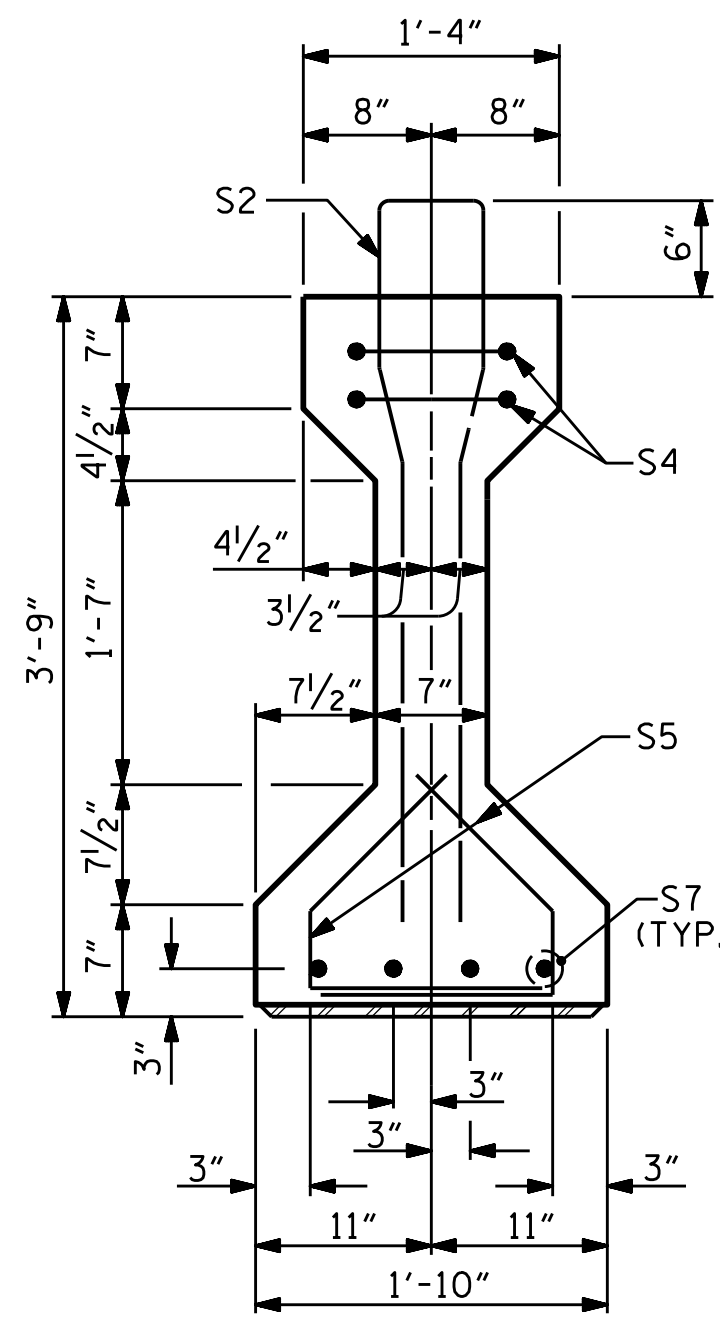
AT END OF GIRDER AT C OF GIRDER

0.6" O LOW RELAXATION STRAND LAYOUT

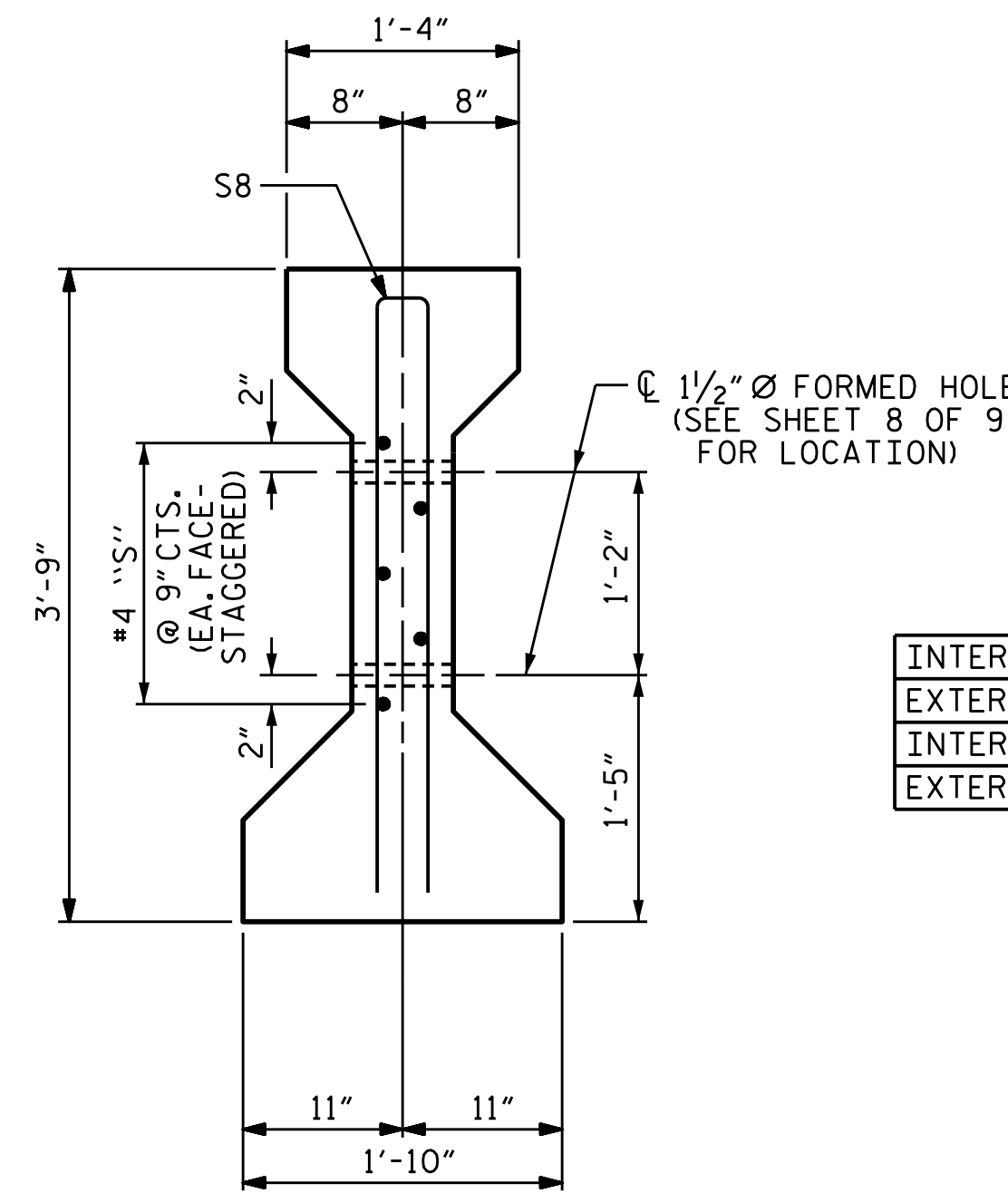
- ▲ STRANDS DEBONDED FOR A DISTANCE OF 8'-0" FROM END OF GIRDER.
- OPTIONAL FULLY DEBONDED STRANDS.



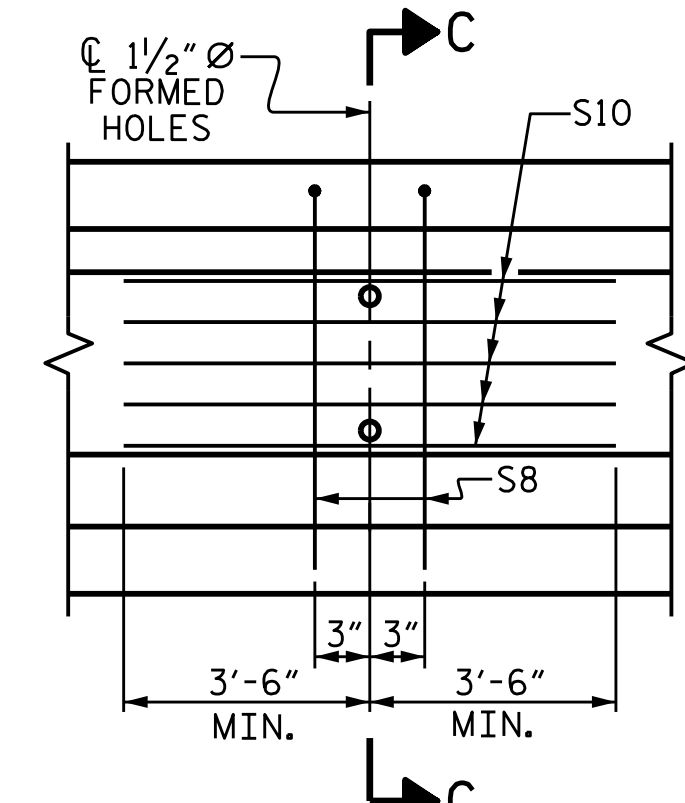
PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 2-4.



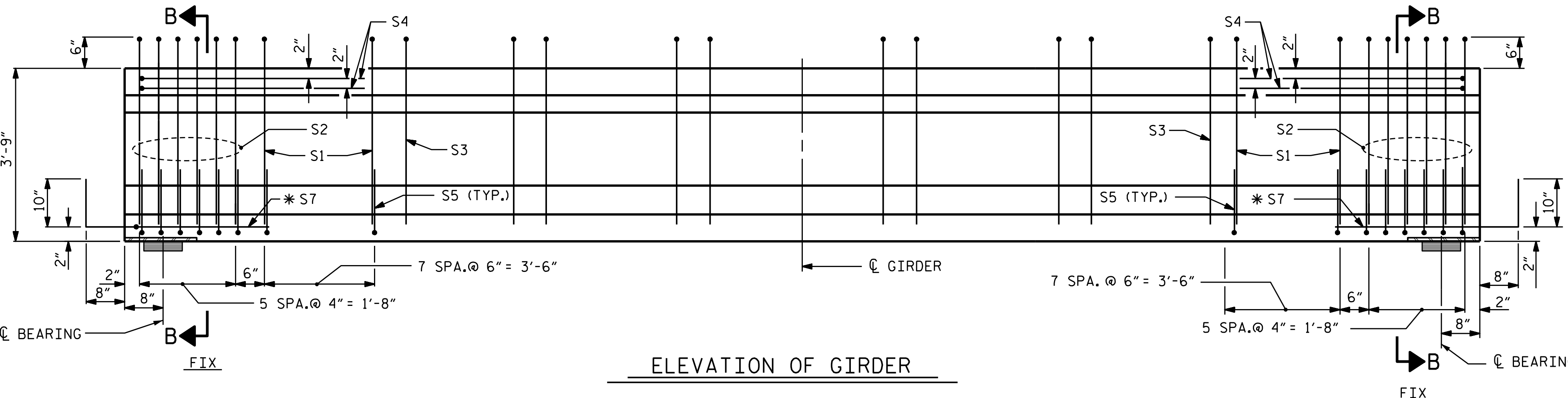
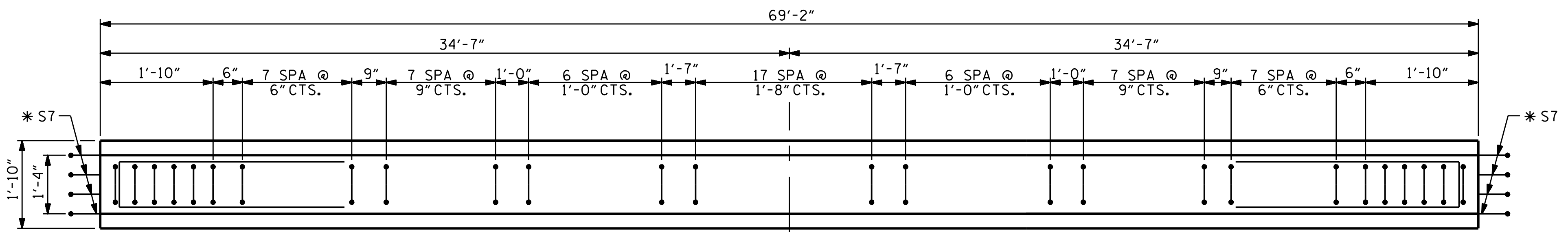
SECTION B-B



SECTION C-C
(S3 BARS NOT SHOWN)



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 1 & 5.



ELEVATION OF GIRDER

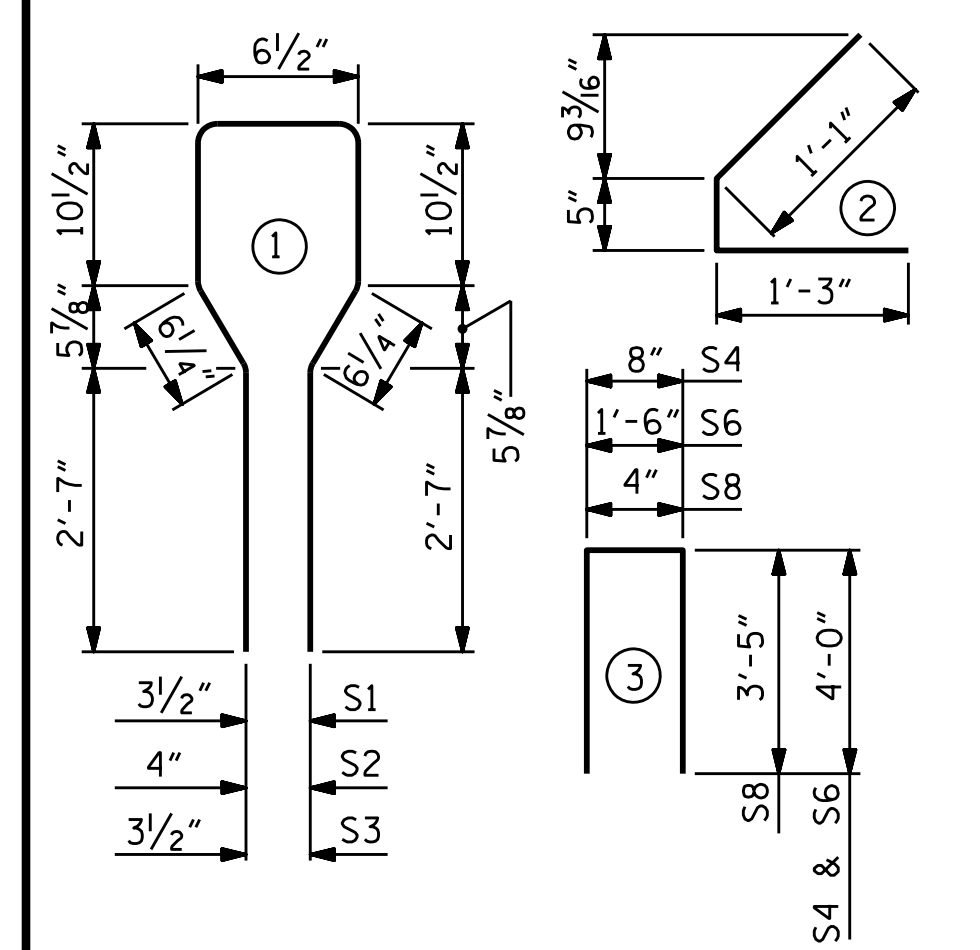
0.6" O L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	16	#5	1	8'-6"	142
S2	12	#6	1	8'-6"	153
S3	48	#4	1	8'-6"	273
S4	4	#4	3	8'-8"	23
S5	56	#4	2	2'-9"	103
*S7	8	#5	STR	3'-8"	31
INTERIOR S8	4	#5	3	7'-2"	30
EXTERIOR S8	2	#5	3	7'-2"	15
INTERIOR S9	5	#4	STR	12'-0"	40
EXTERIOR S10	5	#4	STR	7'-0"	23

* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	7,000 PSI CONCRETE	0.6" O L. R. STRANDS
	LB.	C.Y.	No.
GIRDER 2-4	795	10.0	24
GIRDER 1 & 5	763	10.0	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
5	69'-2"	345'-10"

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 2 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN B

9/24/2021
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User: sbwilliams

2/24/2022 | 7:41 AM EST

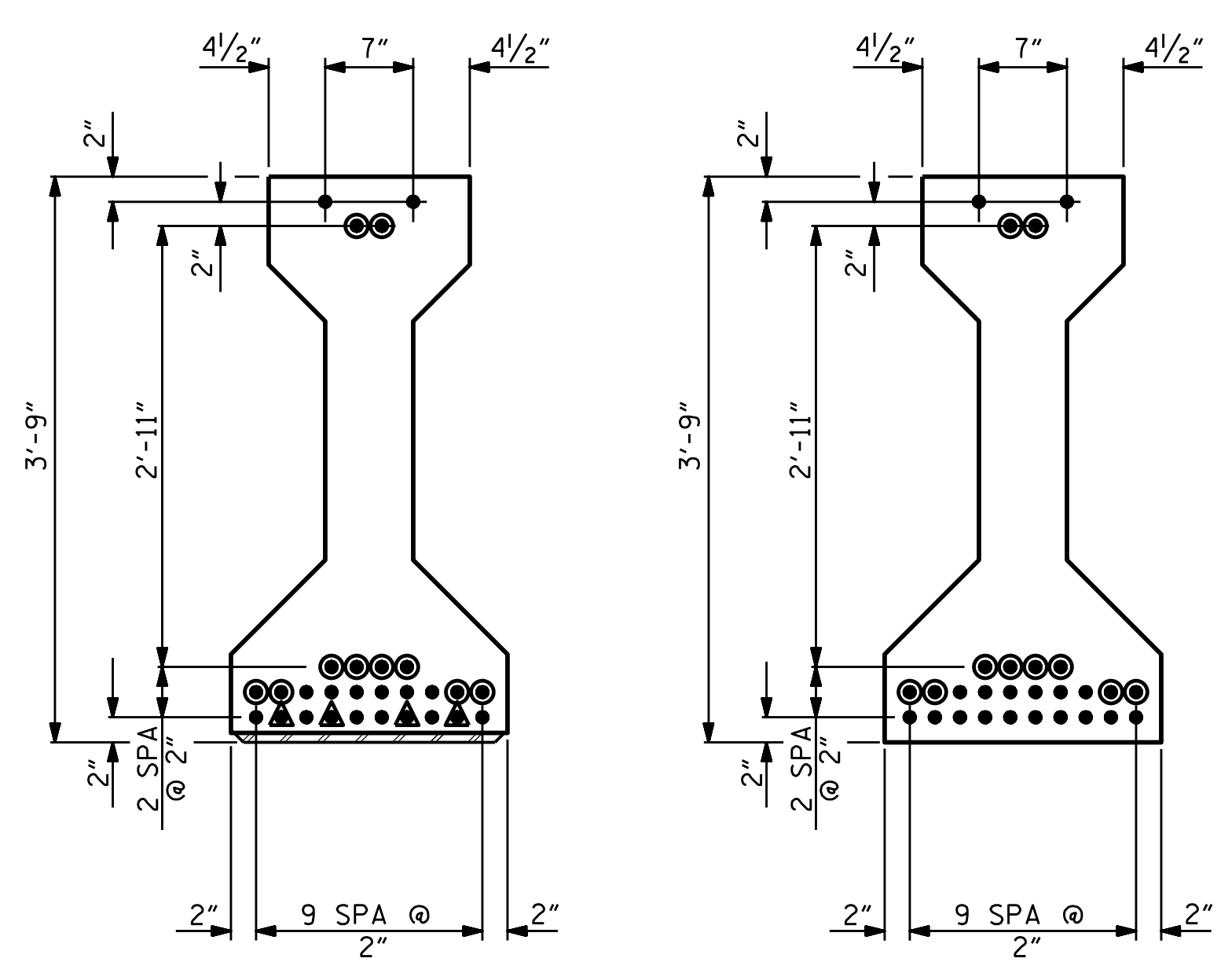
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 57
2			4			

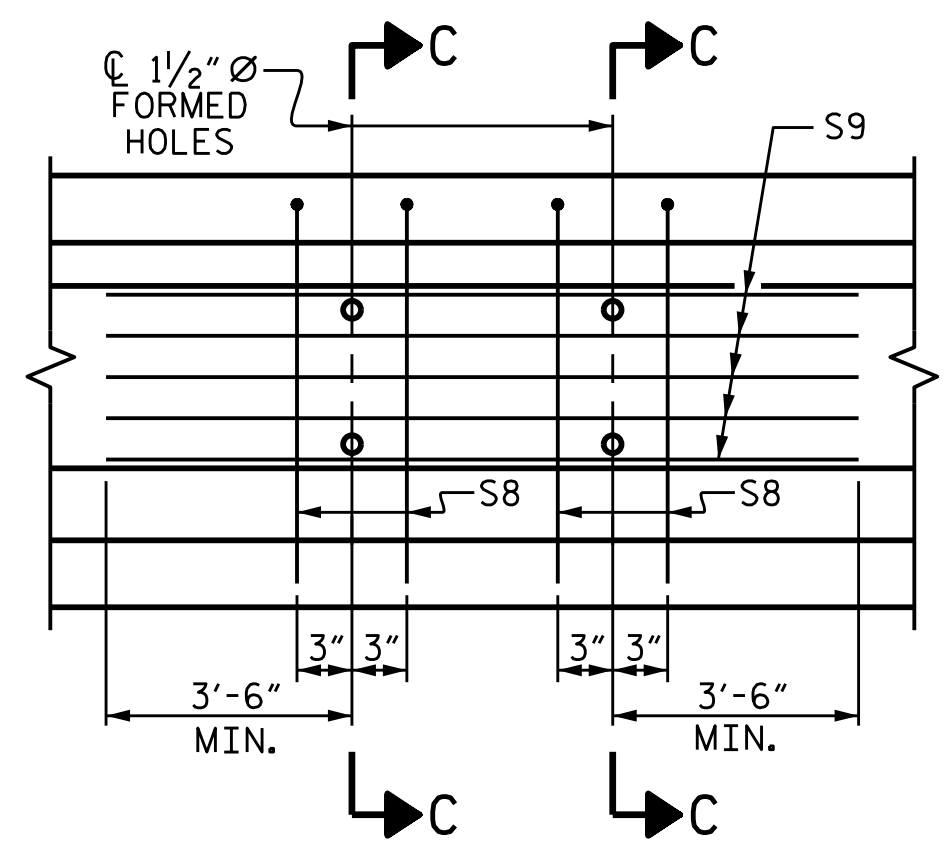
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CHECKED BY :	MGC	DATE :	08/21
DESIGN ENGINEER OF RECORD :	STM	DATE :	08/21
DRAWN BY :	ELR 8/91	REV. 10/1/11	MAA/GM
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		REV. 12/17	MAA/THC

STD. NO. PCG5

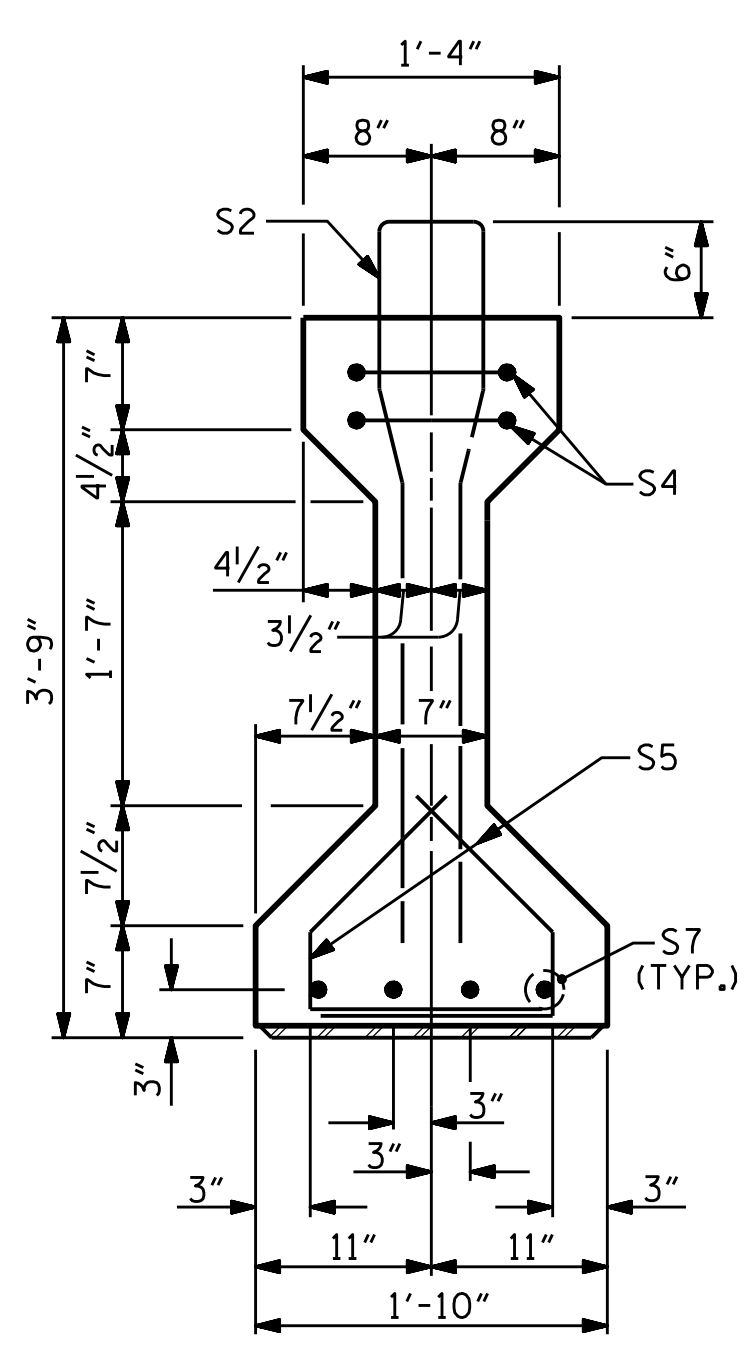


AT END OF GIRDER AT C OF GIRDER
0.6" O LOW RELAXATION STRAND LAYOUT

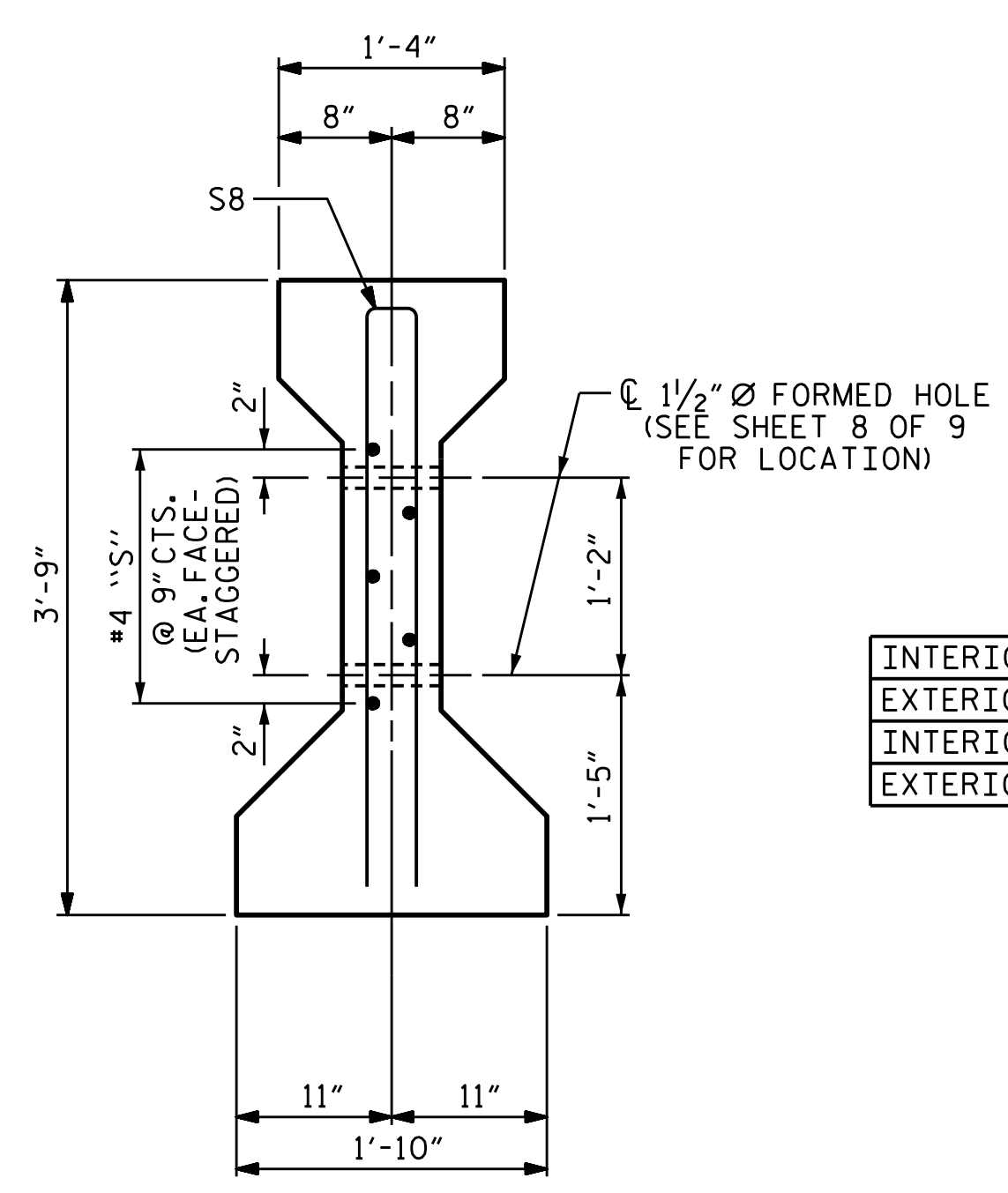
- ▲ STRANDS DEBONDED FOR A DISTANCE OF 8'-0" FROM END OF GIRDER.
- OPTIONAL FULLY DEBONDED STRANDS.



PARTIAL ELEVATION
 SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 2-4.



SECTION B-B



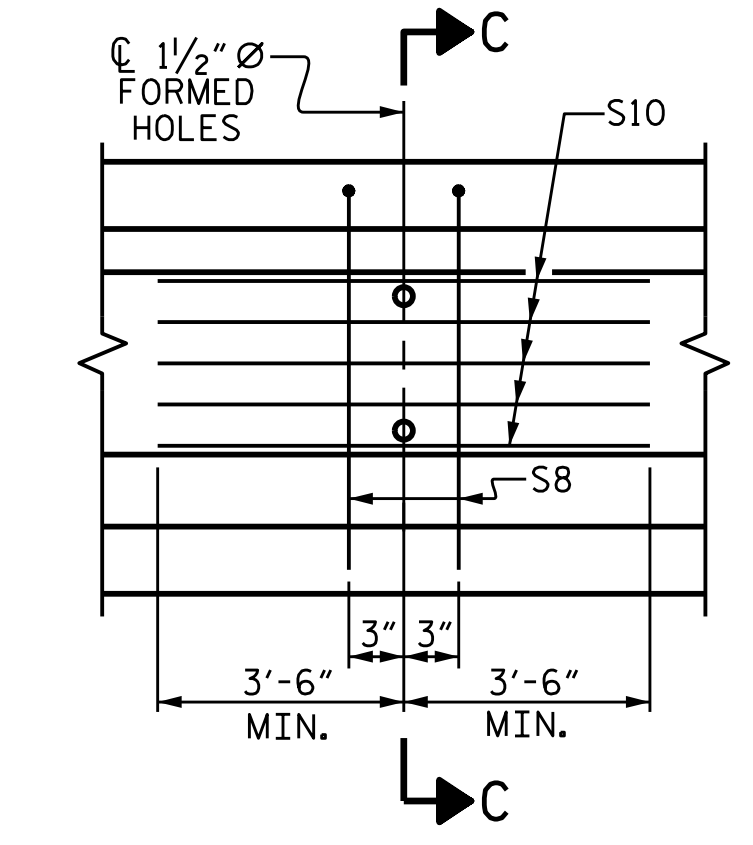
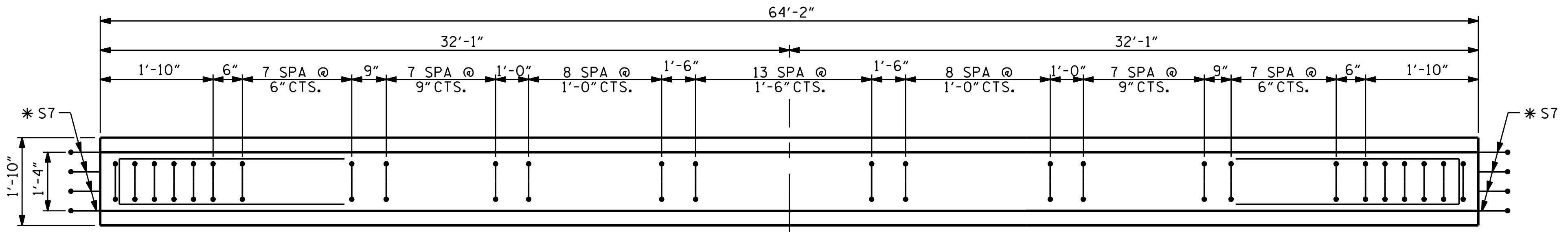
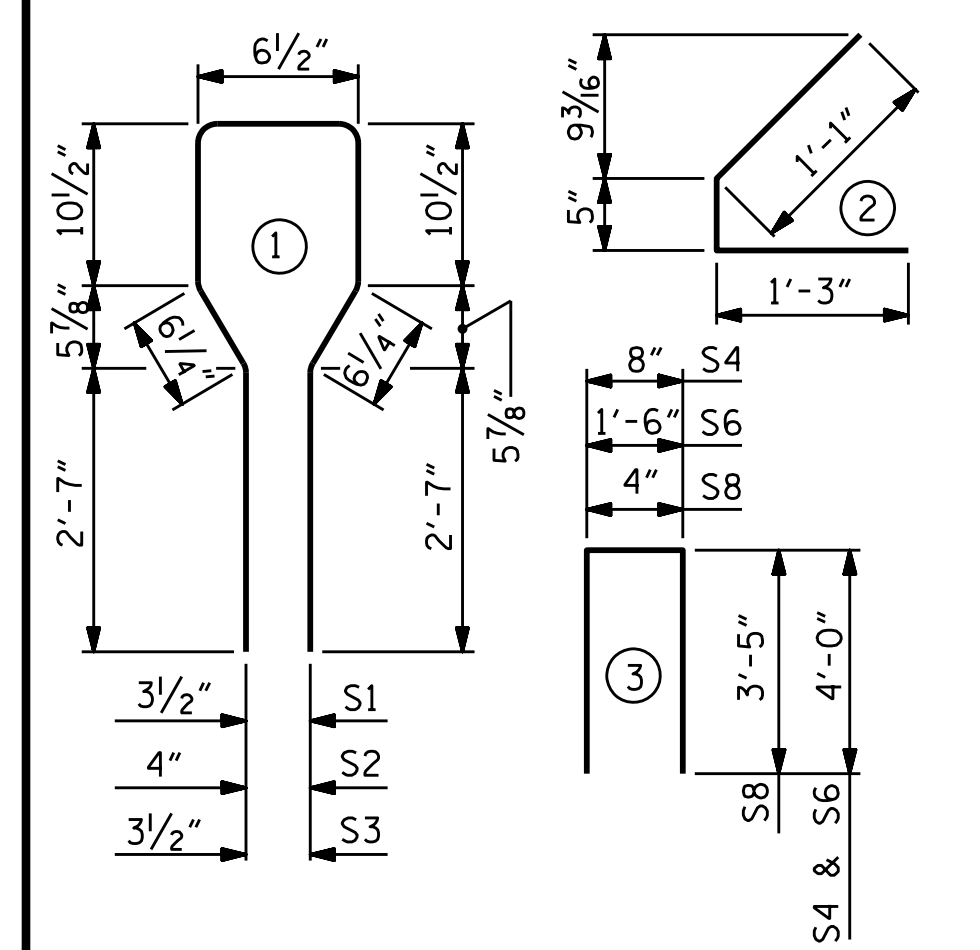
SECTION C-C
 (S3 BARS NOT SHOWN)

INTERIOR
EXTERIOR
INTERIOR
EXTERIOR

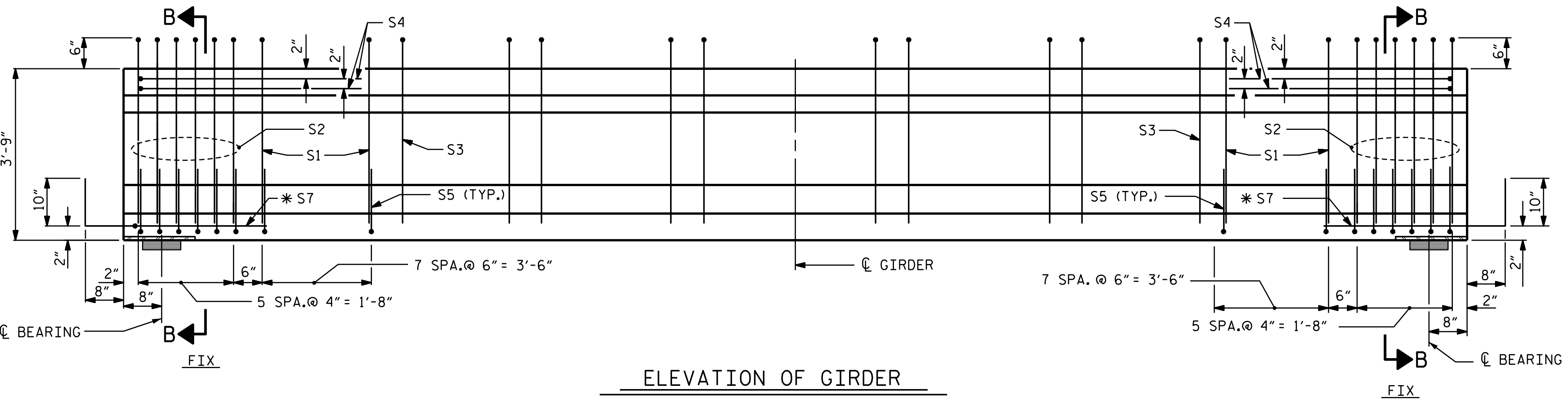
* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



PARTIAL ELEVATION
 SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 1 & 5.



ELEVATION OF GIRDER

0.6" O 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	#5	1	8'-6"	142
S2	12	#6	1	8'-6"	153
S3	48	#4	1	8'-6"	273
S4	4	#4	3	8'-8"	23
S5	56	#4	2	2'-9"	103
*S7	8	#5	STR	3'-8"	31
S8	4	#5	3	7'-2"	30
S8	2	#5	3	7'-2"	15
S9	5	#4	STR	12'-0"	40
S10	5	#4	STR	7'-0"	23

QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL LB.	7,000 PSI CONCRETE C.Y.	0.6" O L. R. STRANDS No.
GIRDER 2-4	795	9.2	18
GIRDER 1 & 5	763	9.2	18

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
20	64'-2"	1283'-4"

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 3 OF 9

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 AASHTO TYPE III
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 SPANS C-F

9/24/2021
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 User: sbwilliams

ASSEMBLED BY : STM DATE : 08/21
 CHECKED BY : MGC DATE : 08/21
 DESIGN ENGINEER OF RECORD : STM DATE : 08/21

DRAWN BY : ELR 8/91 REV. 10/1/11 MAA/GM
 CHECKED BY : GRP 8/91 REV. 1/15 MAA/TMG
 REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

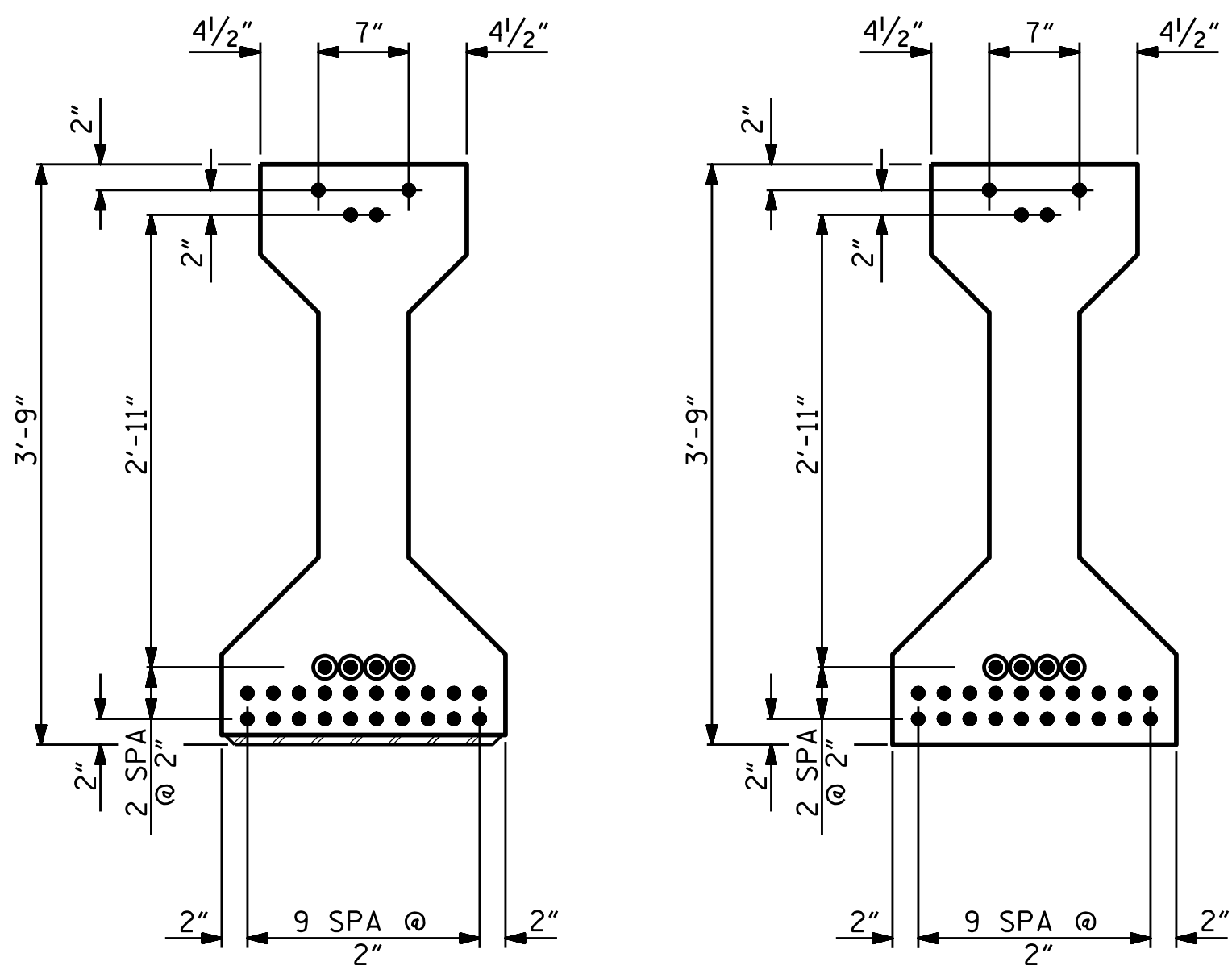
ICGS ENGINEERS
 706 HILLSBOROUGH STREET
 SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS

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

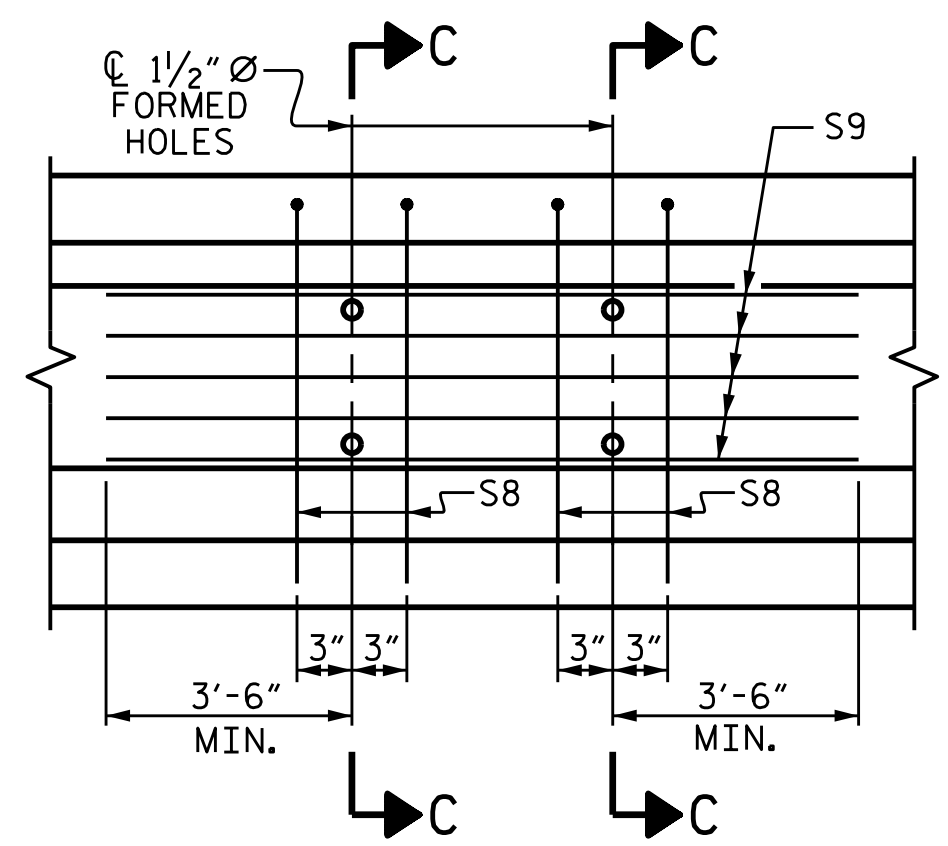
SHEET NO. S-19
 TOTAL SHEETS 57

STD. NO. PGG5

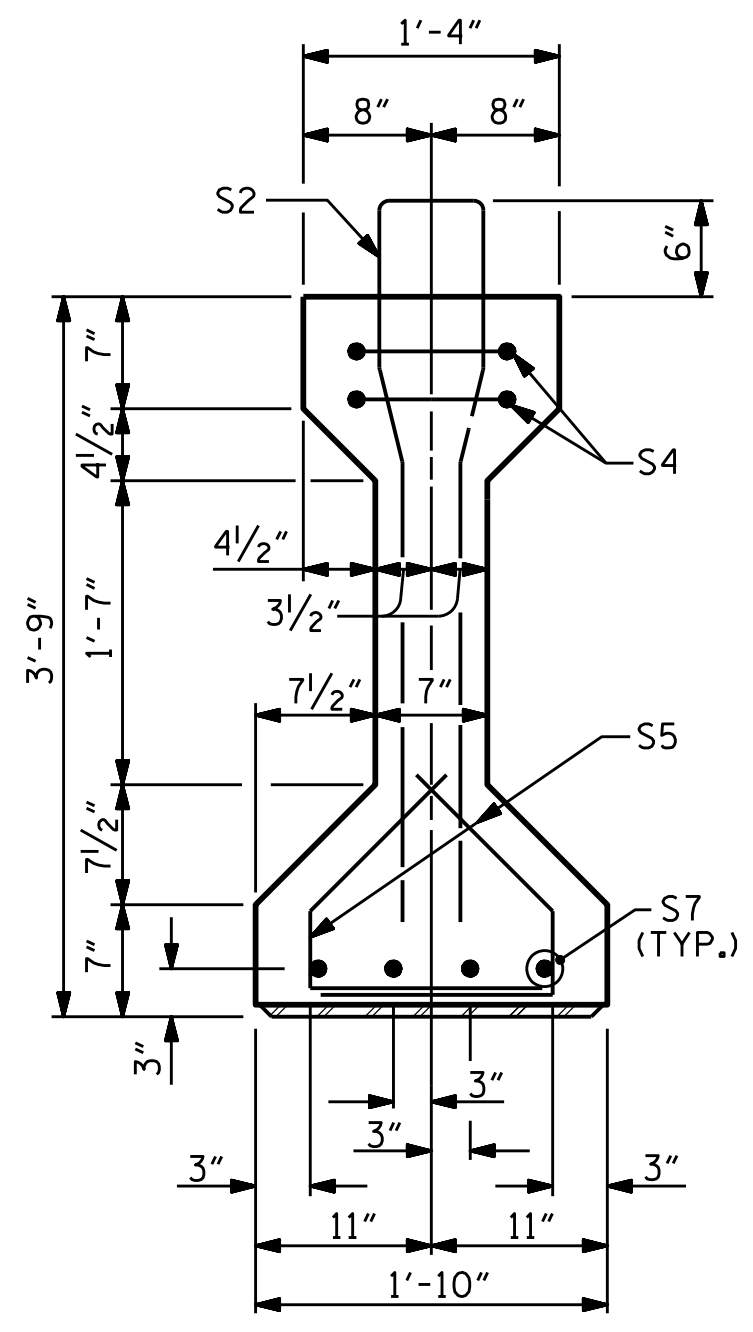


AT END OF GIRDER
AT C OF GIRDER
0.6" O LOW RELAXATION STRAND LAYOUT

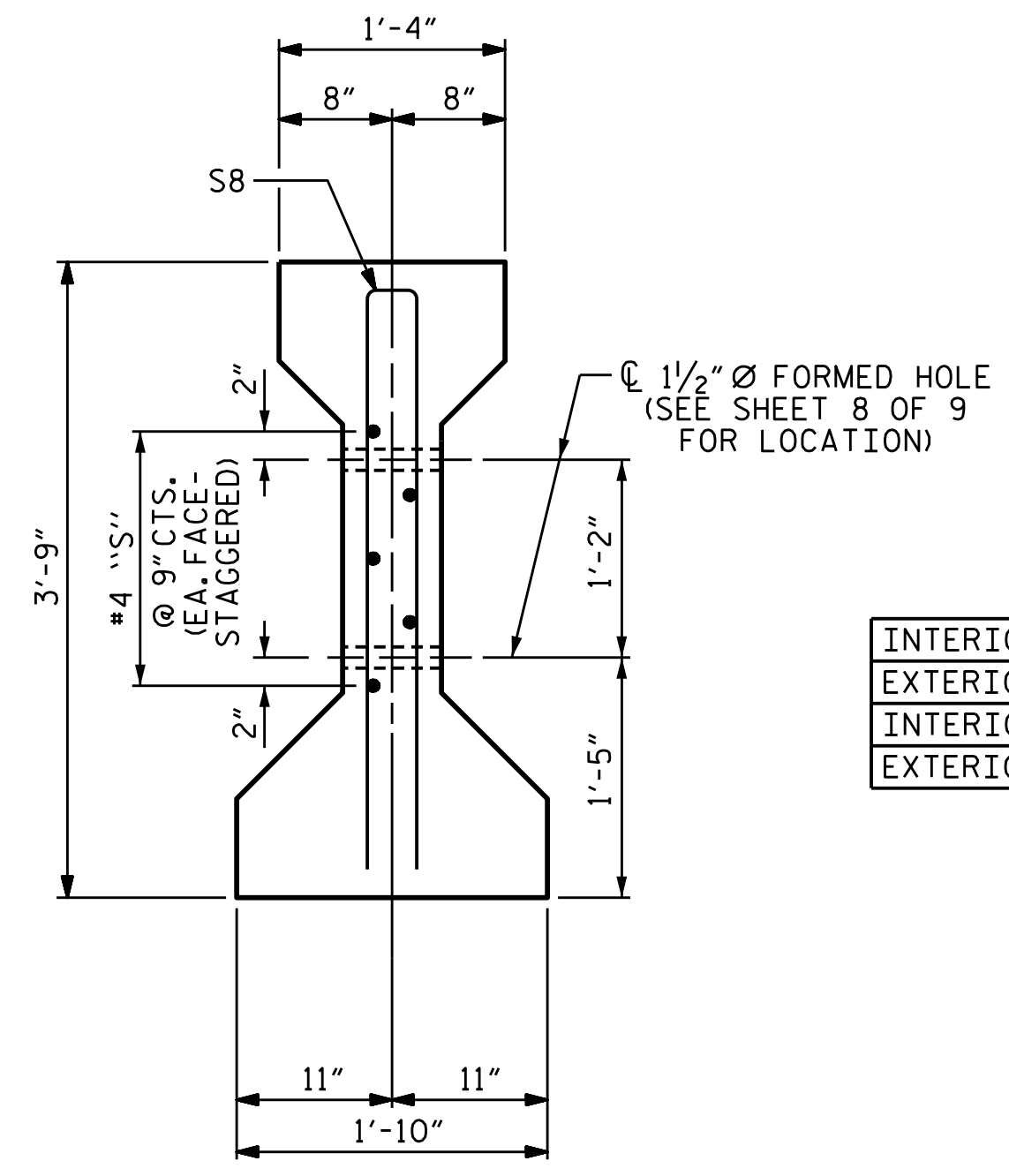
OPTIONAL FULLY DEBONDED STRANDS.



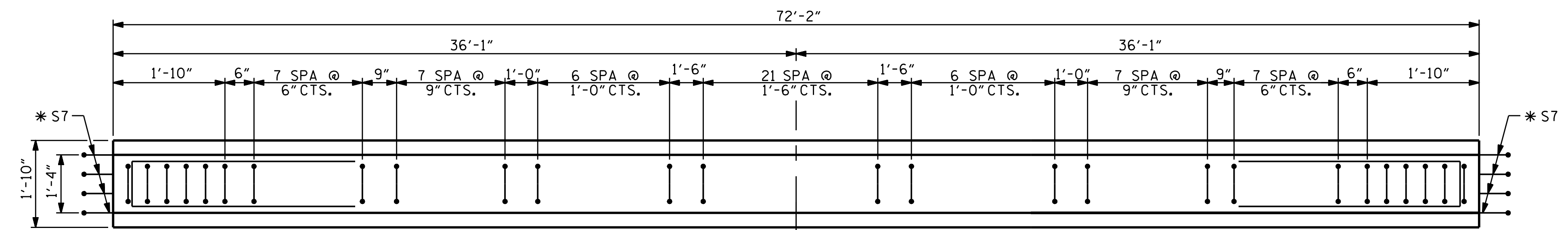
PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM
REINFORCING STEEL FOR GIRDERS 2-4.



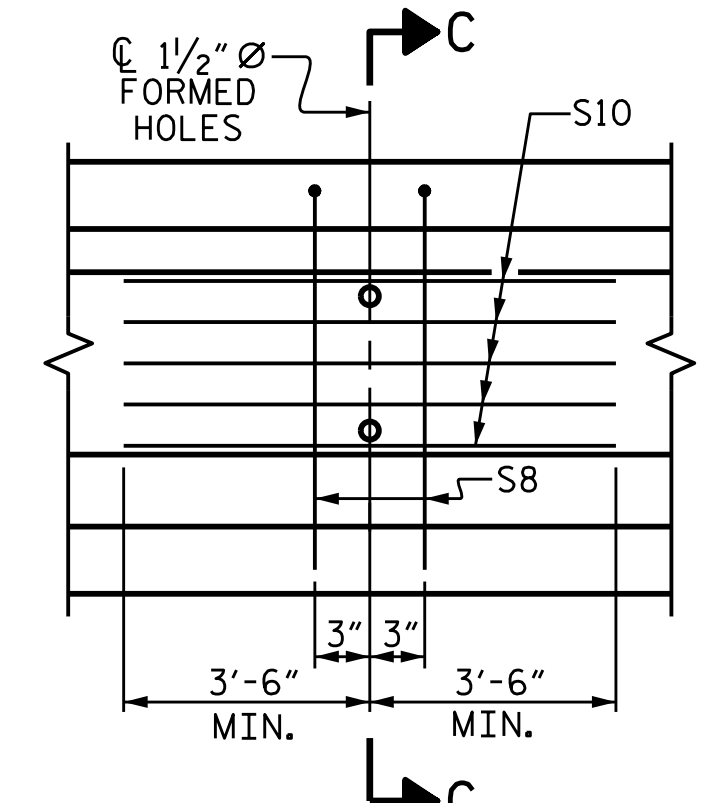
SECTION B-B
* FOR S7 BARS, SEE DETAIL "A",
SHEET 7 OF 8.



SECTION C-C
(S3 BARS NOT SHOWN)



ELEVATION OF GIRDER



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM
REINFORCING STEEL FOR GIRDERS 1 & 5.

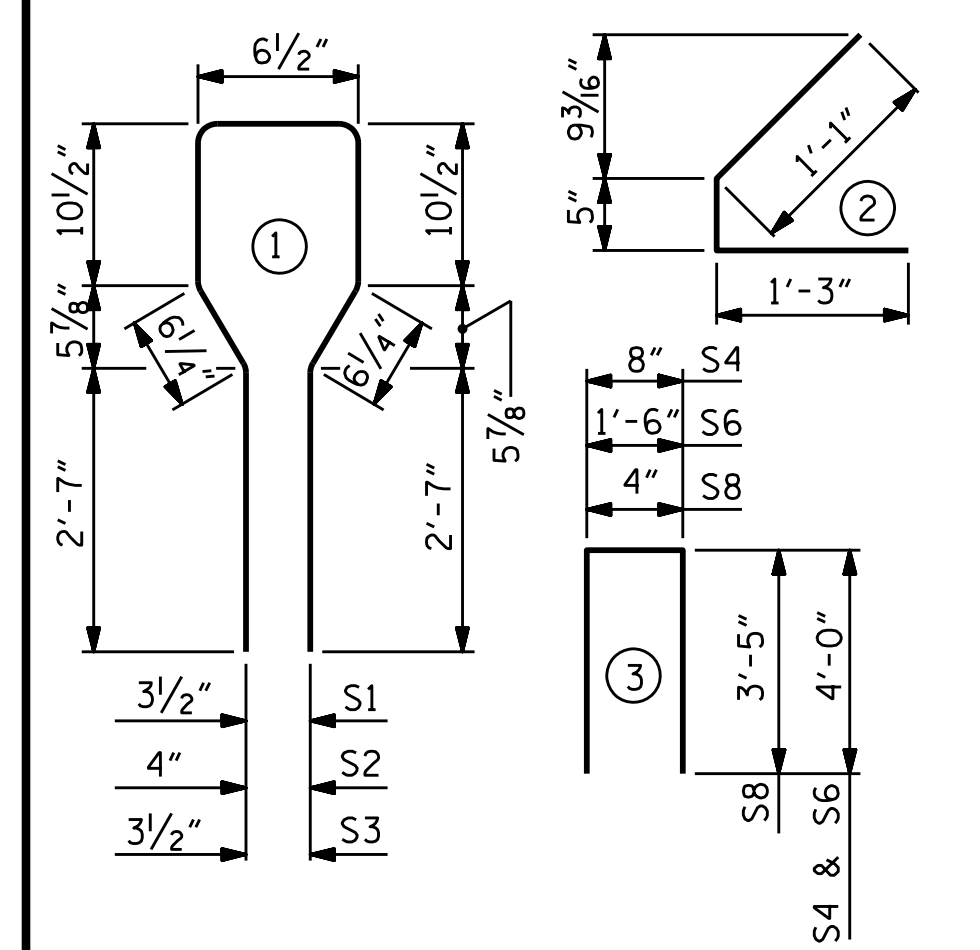
0.6" O L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	16	#5	1	8'-6"	142
S2	12	#6	1	8'-6"	153
S3	52	#4	1	8'-6"	295
S4	4	#4	3	8'-8"	23
S5	56	#4	2	2'-9"	103
*S7	8	#5	STR	3'-8"	31
INTERIOR S8	4	#5	3	7'-2"	30
INTERIOR S8	2	#5	3	7'-2"	15
INTERIOR S9	5	#4	STR	12'-0"	40
EXTERIOR S10	5	#4	STR	7'-0"	23

* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



	REINFORCING STEEL		0.6" O L. R. STRANDS No.
	8,000 PSI LB.	CONCRETE C.Y.	
GIRDER 2-4	817	10.4	24
GIRDER 1 & 5	785	10.4	24

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
5	72'-2"	360'-10"

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 4 OF 9

ASSEMBLED BY : STM	DATE : 08/21
CHECKED BY : MGC	DATE : 08/21
DESIGN ENGINEER OF RECORD : STM	DATE : 08/21
DRAWN BY : ELR 8/91	REV. 10/1/11 MAA/GM
CHECKED BY : GRP 8/91	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

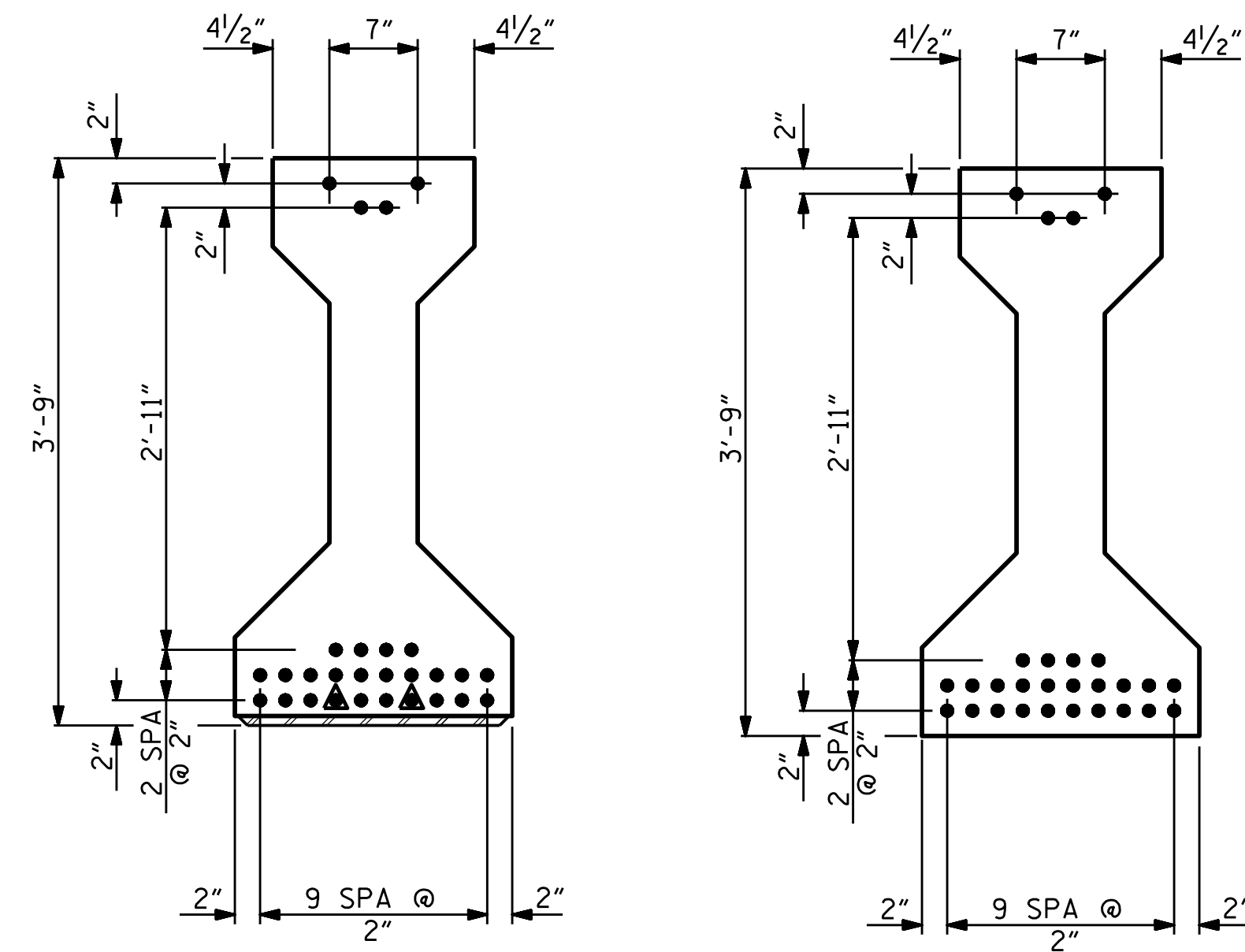
STANDARD
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN G

REVISIONS

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

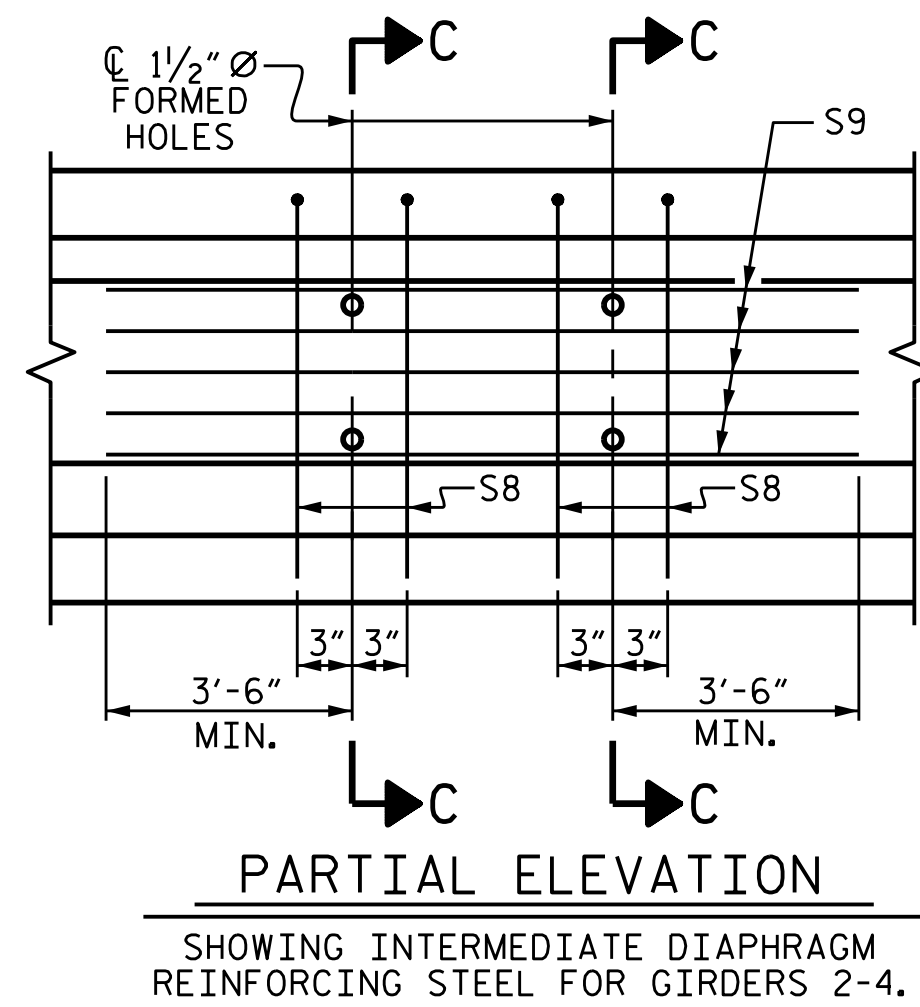
SHEET NO. S-20
TOTAL SHEETS 57

9/24/2022 7:41 AM EST
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

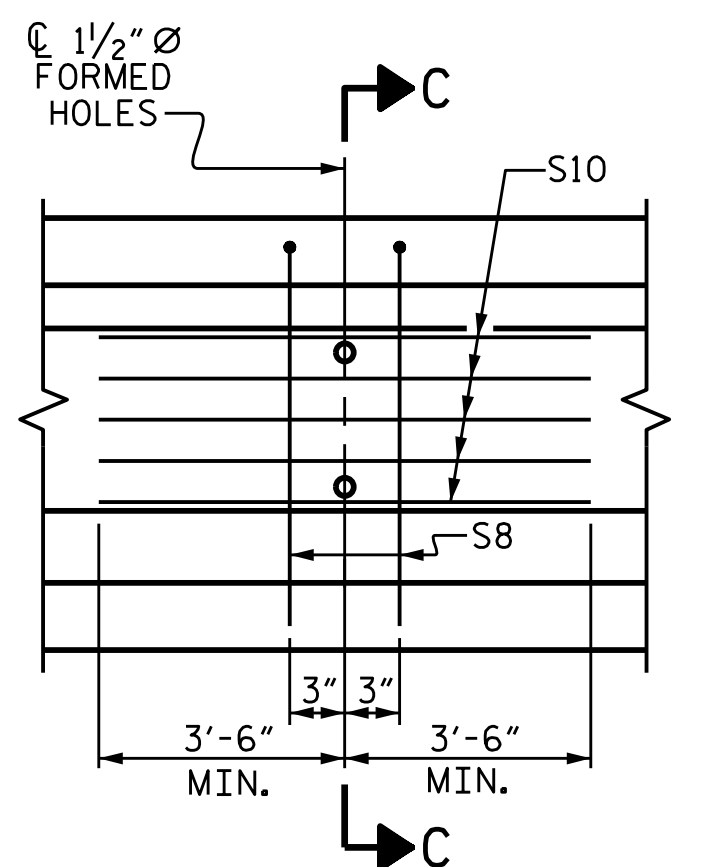


AT END OF GIRDER
AT C OF GIRDER
0.6" Ø LOW RELAXATION STRAND LAYOUT

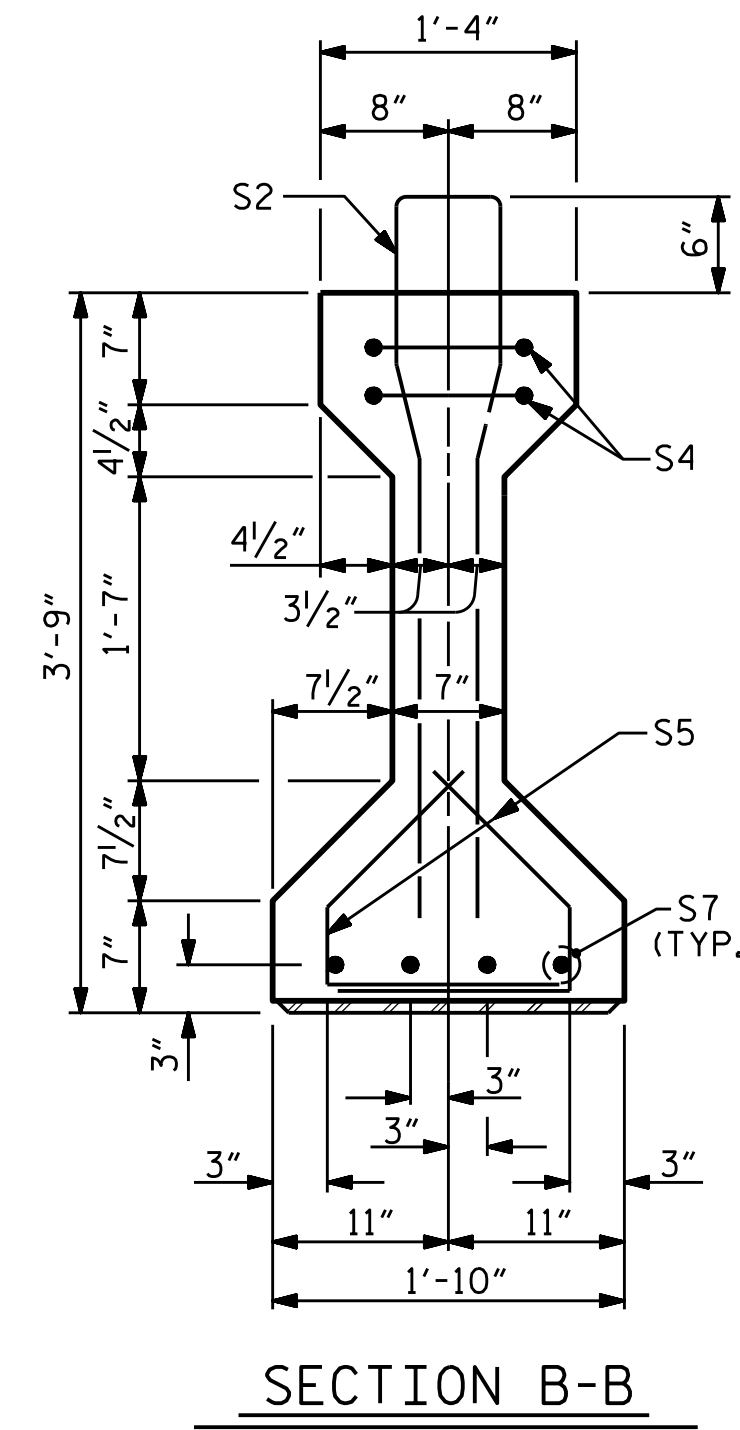
▲ STRANDS DEBONDED FOR A DISTANCE OF 8'-0" FROM END OF GIRDER.



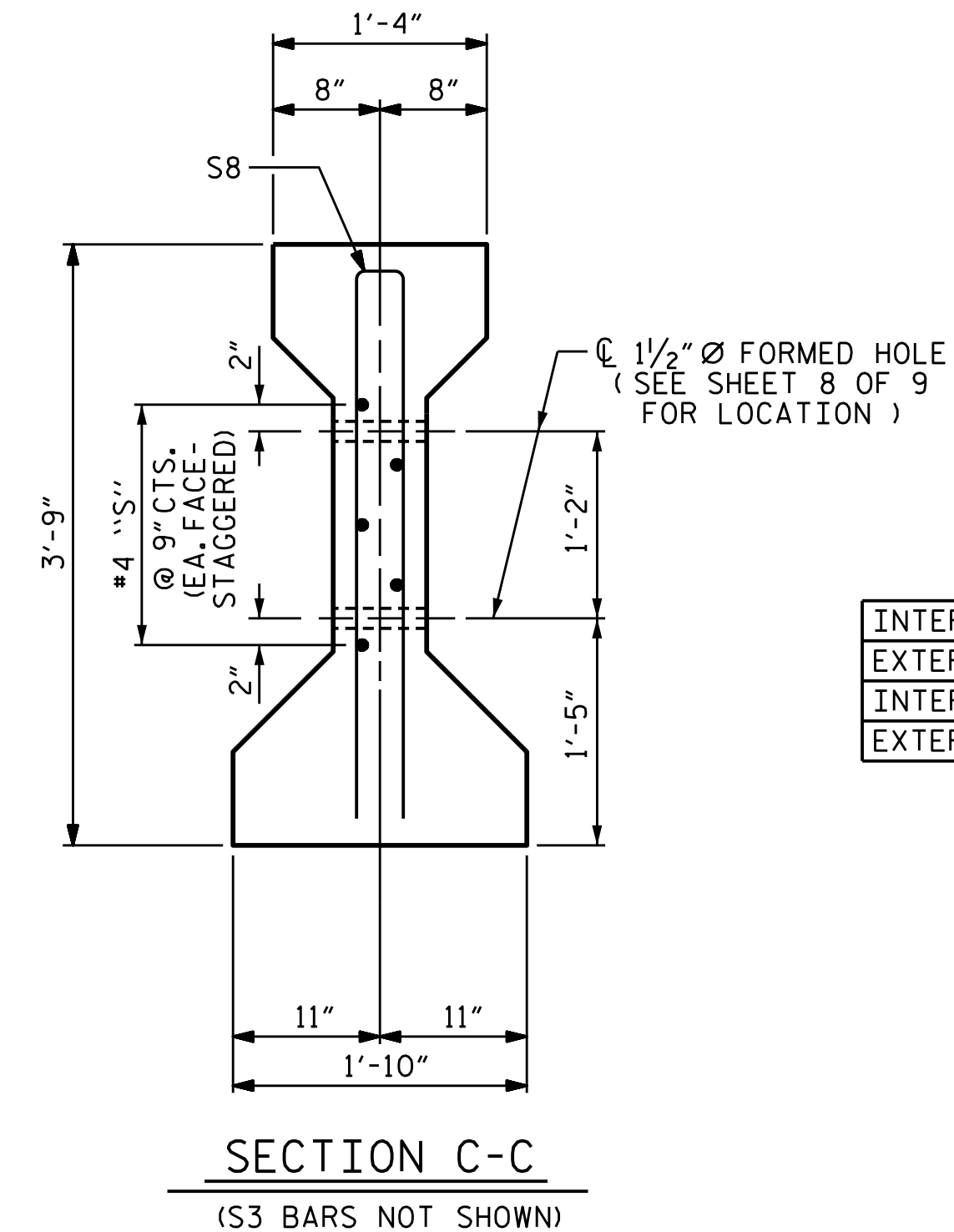
PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 2-4.



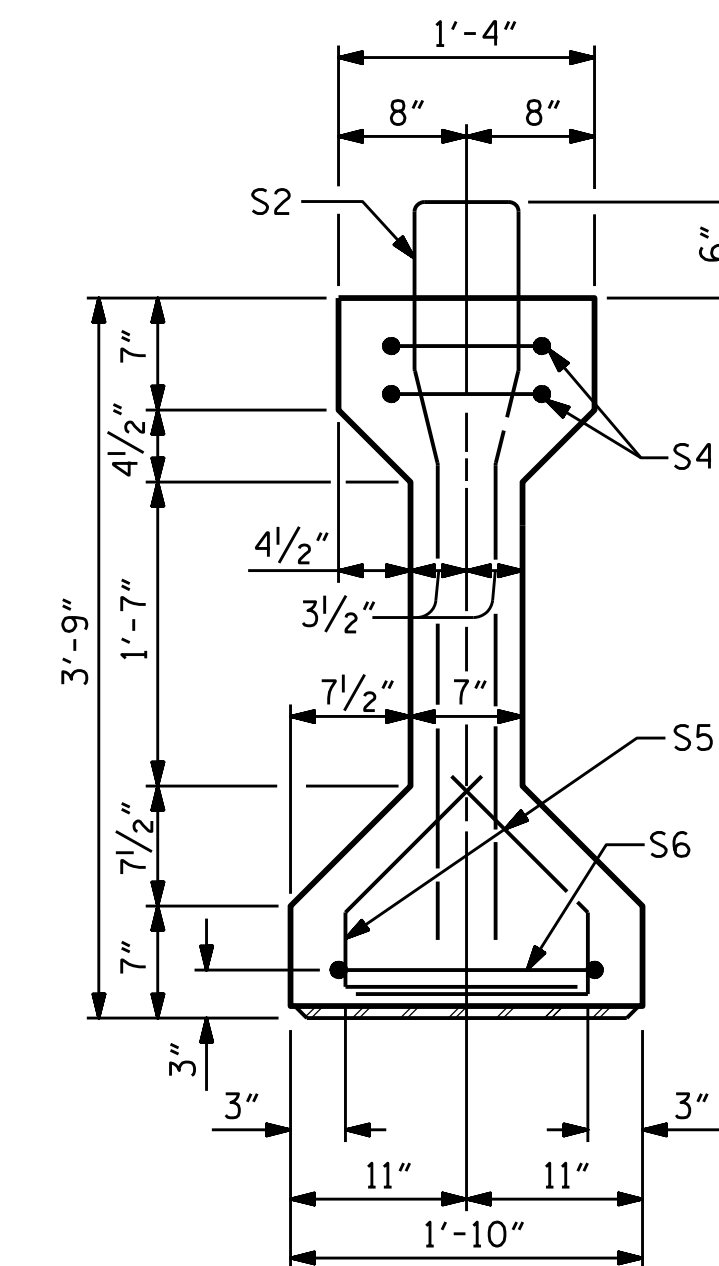
PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR GIRDERS 1 & 5.



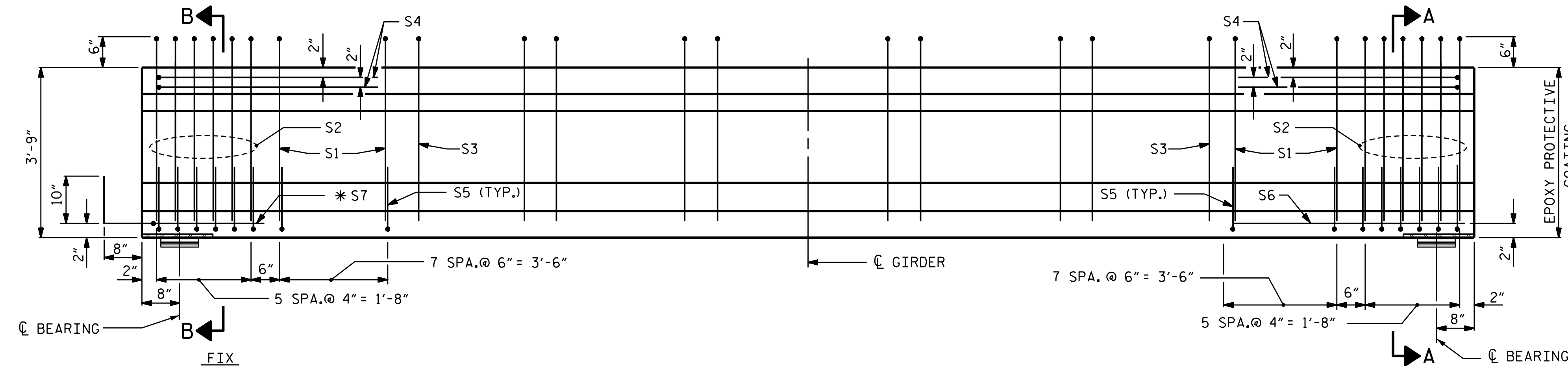
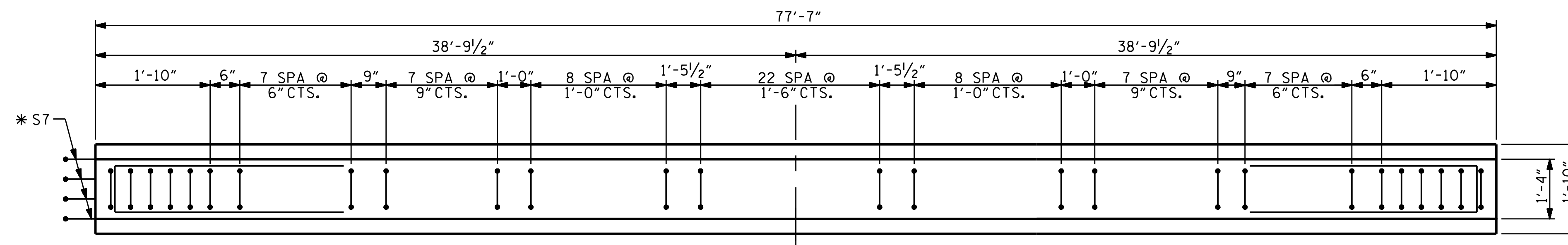
SECTION B-B



SECTION C-C
(S3 BARS NOT SHOWN)



SECTION A-A



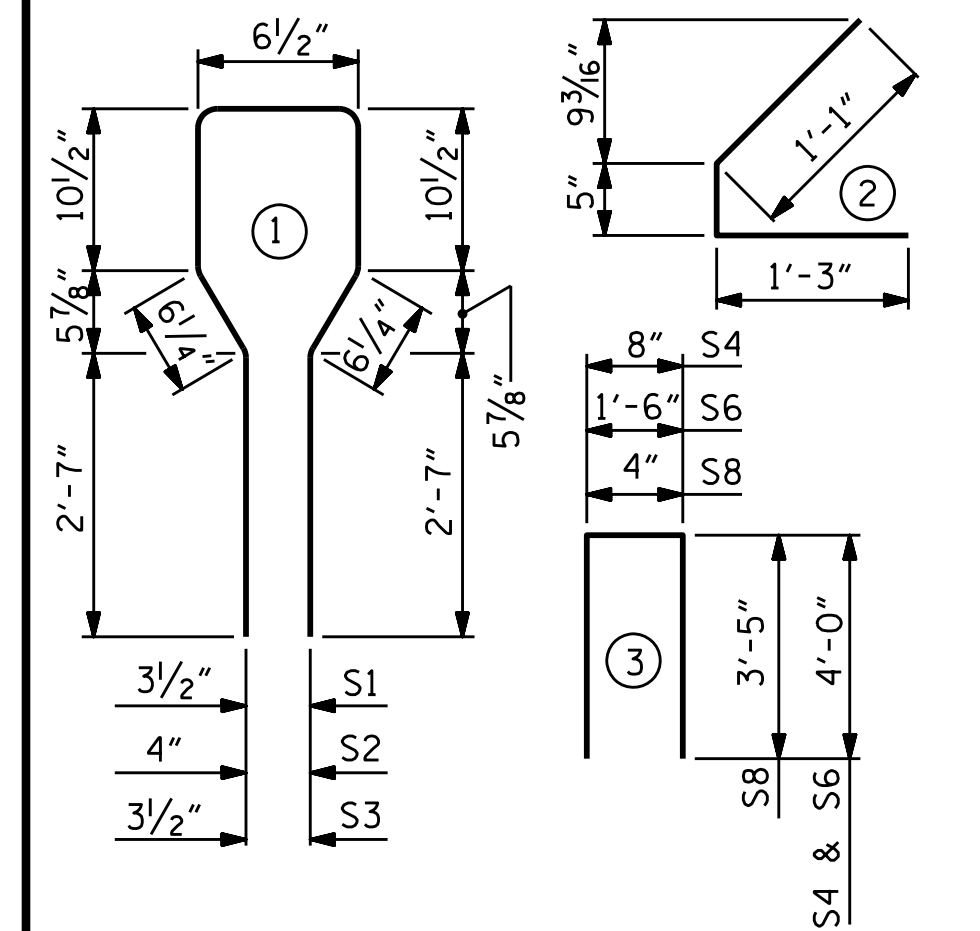
0.6" Ø L. R. GRADE 270 STRANDS		
AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	16	#5	1	8'-6"	142
S2	12	#6	1	8'-6"	153
S3	57	#4	1	8'-6"	324
S4	4	#4	3	8'-8"	23
S5	56	#4	2	2'-9"	103
S6	1	#4	3	9'-6"	6
*S7	4	#5	STR	3'-8"	15
S8	4	#5	3	7'-2"	30
S8	2	#5	3	7'-2"	15
S9	5	#4	STR	12'-0"	40
S10	5	#4	STR	7'-0"	23

* NOTE: S7 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT-TO-OUT



QUANTITIES FOR ONE GIRDER			
	REINFORCING STEEL LB.	8,000 PSI CONCRETE C.Y.	0.6" Ø L. R. STRANDS No.
GIRDER 2-4	836	10.5	28
GIRDER 1 & 5	804	10.5	28

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
5	77'-7"	387'-11"

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 5 OF 9



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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
AASHTO TYPE III
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
SPAN H

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			57

ASSEMBLED BY : STM	DATE : 08/21
CHECKED BY : MGC	DATE : 08/21
DESIGN ENGINEER OF RECORD : STM	DATE : 08/21
DRAWN BY : ELR 8/91	REV. 10/1/11 MAA/GM
CHECKED BY : GRP 8/91	REV. 1/15 MAA/TMG
	REV. 12/17 MAA/THC

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN A GIRDERS 1 & 5																				
	CL BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	CL BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.016	0.032	0.046	0.060	0.072	0.082	0.090	0.096	0.100	0.101	0.100	0.096	0.090	0.082	0.072	0.060	0.046	0.032	0.016	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.009	0.017	0.026	0.034	0.041	0.047	0.052	0.055	0.057	0.058	0.057	0.055	0.052	0.047	0.041	0.034	0.026	0.018	0.009	0.000
FINAL CAMBER	↑	0	1/16"	3/16"	1/4"	5/16"	3/8"	7/16"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"	7/16"	7/16"	3/8"	5/16"	1/4"	3/16"	1/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN A GIRDERS 2, 3, & 4																				
	CL BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	CL BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.016	0.032	0.046	0.060	0.072	0.082	0.090	0.096	0.100	0.101	0.100	0.096	0.090	0.082	0.072	0.060	0.046	0.032	0.016	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.009	0.018	0.027	0.036	0.043	0.050	0.055	0.059	0.061	0.062	0.061	0.059	0.055	0.050	0.044	0.037	0.028	0.019	0.010	0.000
FINAL CAMBER	↑	0	1/16"	3/16"	1/4"	5/16"	5/16"	3/8"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	3/8"	5/16"	5/16"	1/4"	3/16"	1/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN B GIRDERS 1 & 5																				
	CL BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	CL BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.019	0.037	0.055	0.071	0.085	0.097	0.106	0.113	0.117	0.119	0.117	0.113	0.106	0.097	0.085	0.071	0.055	0.037	0.019	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.011	0.022	0.034	0.044	0.053	0.061	0.067	0.072	0.075	0.076	0.075	0.072	0.067	0.061	0.053	0.044	0.034	0.022	0.011	0.000
FINAL CAMBER	↑	0	1/16"	3/16"	1/4"	5/16"	3/8"	7/16"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"	7/16"	7/16"	3/8"	5/16"	1/4"	3/16"	1/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN B GIRDERS 2, 3, & 4																				
	CL BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	CL BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.019	0.037	0.055	0.071	0.085	0.097	0.106	0.113	0.117	0.119	0.117	0.113	0.106	0.097	0.085	0.071	0.055	0.037	0.019	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.012	0.024	0.036	0.047	0.057	0.065	0.072	0.077	0.080	0.081	0.080	0.077	0.072	0.065	0.057	0.047	0.036	0.024	0.012	0.000
FINAL CAMBER	↑	0	1/16"	3/16"	1/4"	5/16"	5/16"	3/8"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	3/8"	5/16"	5/16"	1/4"	3/16"	1/16"	0	

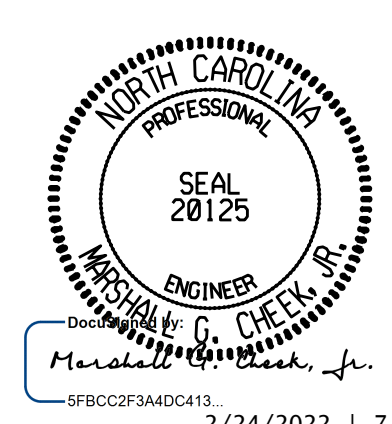
DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN C - F GIRDERS 1 & 5																				
	CL BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	CL BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.015	0.030	0.043	0.056	0.067	0.077	0.084	0.090	0.093	0.094	0.093	0.090	0.084	0.077	0.067	0.056	0.043	0.030	0.015	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.008	0.016	0.025	0.033	0.039	0.045	0.050	0.053	0.055	0.056	0.055	0.053	0.050	0.045	0.039	0.033	0.025	0.016	0.008	0.000
FINAL CAMBER	↑	0	1/16"	3/16"	1/4"	1/4"	5/16"	3/8"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	7/16"	3/8"	5/16"	1/4"	1/4"	3/16"	1/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN C - F GIRDERS 2, 3, & 4																				
	CL BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	CL BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.015	0.030	0.043	0.056	0.067	0.077	0.084	0.090	0.093	0.094	0.093	0.090	0.084	0.077	0.067	0.056	0.043	0.030	0.015	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.009	0.018	0.027	0.035	0.042	0.048	0.053	0.057	0.059	0.060	0.059	0.057	0.053	0.048	0.042	0.035	0.027	0.018	0.009	0.000
FINAL CAMBER	↑	0	1/16"	1/8"	3/16"	1/4"	5/16"	5/16"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	5/16"	5/16"	1/4"	3/16"	1/8"	1/16"	0	

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET, EXCEPT "FINAL CAMBER" WHICH IS SHOWN IN INCHES.

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 6 OF 9



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DEAD LOAD DEFLECTIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-22
2			4			TOTAL SHEETS 57

DRAWN BY : STM DATE : 08/21
CHECKED BY : MGC DATE : 08/21
DESIGN ENGINEER OF RECORD : STM DATE : 08/21

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN G GIRDERS 1 & 5																				
	℄ BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	℄ BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.020	0.039	0.057	0.073	0.088	0.100	0.110	0.117	0.121	0.123	0.121	0.117	0.110	0.100	0.088	0.073	0.057	0.039	0.020	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.013	0.026	0.039	0.051	0.062	0.071	0.078	0.083	0.087	0.088	0.087	0.083	0.078	0.071	0.062	0.051	0.039	0.026	0.013	0.000
FINAL CAMBER	↑	0	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	3/8"	7/16"	7/16"	7/16"	7/16"	7/16"	3/8"	3/8"	5/16"	1/4"	3/16"	1/8"	1/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN G GIRDERS 2, 3, & 4																				
	℄ BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	℄ BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.020	0.039	0.057	0.073	0.088	0.100	0.110	0.117	0.121	0.123	0.121	0.117	0.110	0.100	0.088	0.073	0.057	0.039	0.020	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.014	0.028	0.042	0.055	0.066	0.076	0.083	0.089	0.093	0.094	0.093	0.089	0.083	0.076	0.066	0.055	0.042	0.028	0.014	0.000
FINAL CAMBER	↑	0	1/16"	1/8"	3/16"	1/4"	1/4"	5/16"	5/16"	3/8"	3/8"	3/8"	3/8"	3/8"	5/16"	5/16"	1/4"	1/4"	3/16"	1/8"	1/16"	0

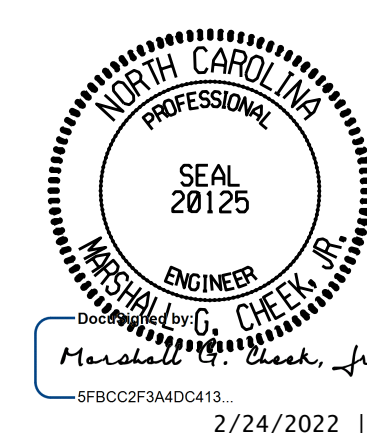
DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN H GIRDERS 1 & 5																				
	℄ BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	℄ BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.026	0.051	0.075	0.097	0.116	0.133	0.146	0.155	0.161	0.163	0.161	0.155	0.146	0.133	0.116	0.097	0.075	0.051	0.026	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.018	0.035	0.053	0.069	0.084	0.096	0.106	0.113	0.117	0.119	0.117	0.113	0.106	0.097	0.084	0.070	0.054	0.036	0.018	0.000
FINAL CAMBER	↑	0	1/16"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	9/16"	9/16"	9/16"	1/2"	1/2"	7/16"	3/8"	5/16"	1/4"	3/16"	1/16"	0

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
0.6" Ø LOW RELAXATION STRANDS		SPAN H GIRDERS 2, 3, & 4																				
	℄ BRG.	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	℄ BRG.	
CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.026	0.051	0.075	0.097	0.116	0.133	0.146	0.155	0.161	0.163	0.161	0.155	0.146	0.133	0.116	0.097	0.075	0.051	0.026	0.000
* DEFLECTION DUE TO SUPERIMPOSED D.L.	↓	0.000	0.019	0.038	0.057	0.074	0.089	0.102	0.113	0.121	0.125	0.127	0.125	0.121	0.113	0.103	0.090	0.075	0.058	0.039	0.020	0.000
FINAL CAMBER	↑	0	1/16"	3/16"	1/4"	1/4"	5/16"	3/8"	3/8"	7/16"	7/16"	7/16"	7/16"	7/16"	3/8"	3/8"	5/16"	1/4"	1/4"	3/16"	1/16"	0

* INCLUDES FUTURE WEARING SURFACE
ALL VALUES ARE SHOWN IN FEET, EXCEPT "FINAL CAMBER" WHICH IS SHOWN IN INCHES.

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 7 OF 9



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DEAD LOAD DEFLECTIONS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		REVISIONS						SHEET NO.
TGS ENGINEERS 706 HILLSBOROUGH STREET SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275		NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1					3			TOTAL SHEETS
2					4			57

DRAWN BY : STM DATE : 08/21
CHECKED BY : MGC DATE : 08/21
DESIGN ENGINEER OF RECORD : STM DATE : 08/21

NOTES

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

ALL REINFORCING STEEL SHALL BE GRADE 60.

APPLY EPOXY PROTECTIVE COATING TO END OF GIRDER SURFACES INDICATED IN ELEVATION VIEW.

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.

AT ENDS OF GIRDERS TO BE EMBEDDED IN CONCRETE DIAPHRAGMS OR END WALLS, PRESTRESSING STRANDS MAY EXTEND A MAXIMUM OF 2" BEYOND THE GIRDER ENDS. OTHERWISE, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE GIRDER ENDS.

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

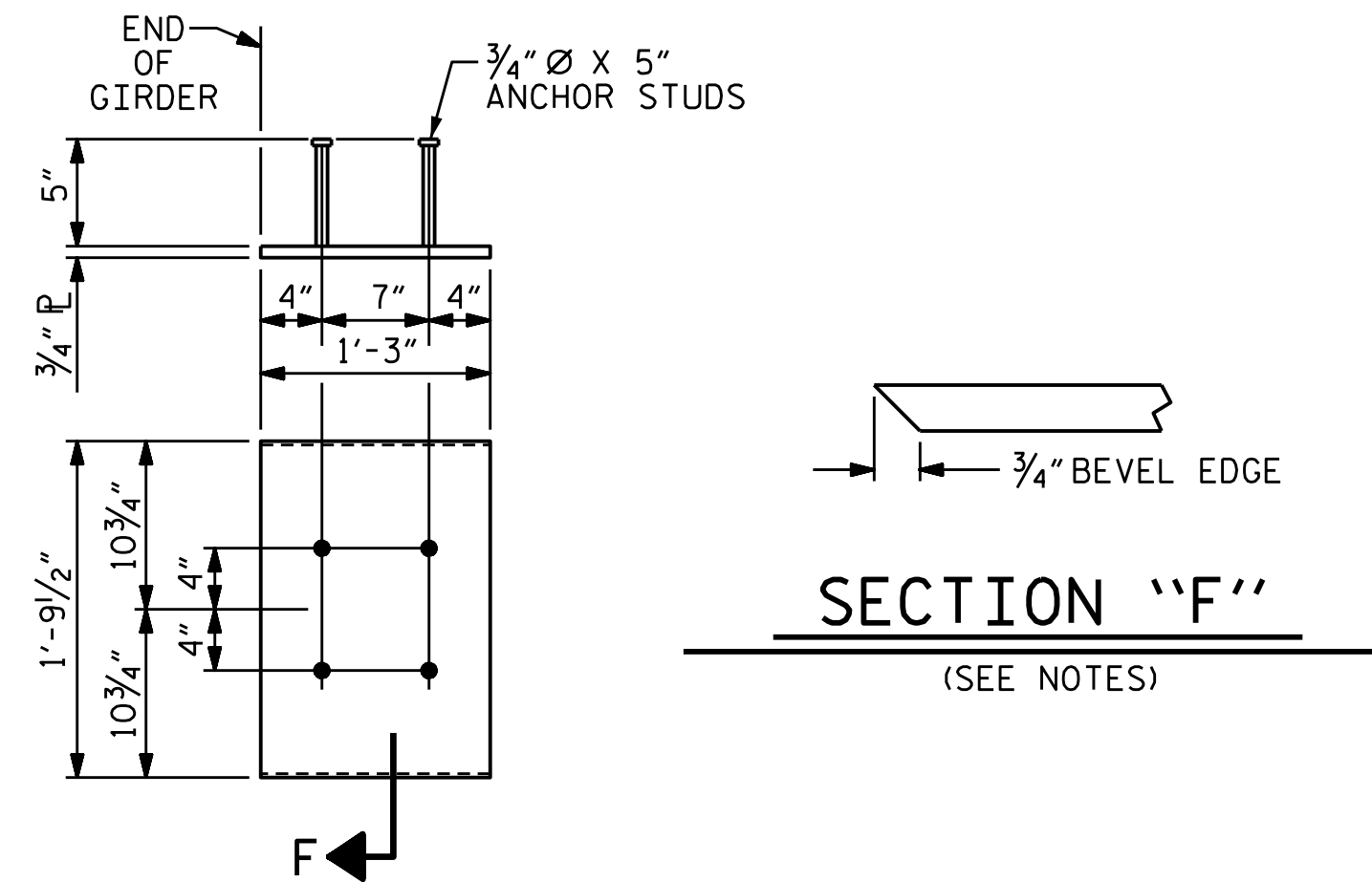
DEPENDING ON THE TYPE OF SYSTEM USED TO SUPPORT THE DECK SLAB FORMS, PRESET ANCHORS MAY BE NECESSARY IN THE PRESTRESSED CONCRETE GIRDER.

THE TOP SURFACE OF THE GIRDER, EXCLUDING THE OUTSIDE 4", SHALL BE RAKED TO A DEPTH OF 1/4".

THE CONTRACTOR HAS THE OPTION TO PROVIDE, AT NO ADDITIONAL COST TO THE DEPARTMENT, 2 ADDITIONAL STRANDS AT THE TOP OF THE GIRDER TO FACILITATE TYING OF THE REINFORCING STEEL. THESE STRANDS SHALL BE PULLED TO A LOAD OF 4500 lbs.

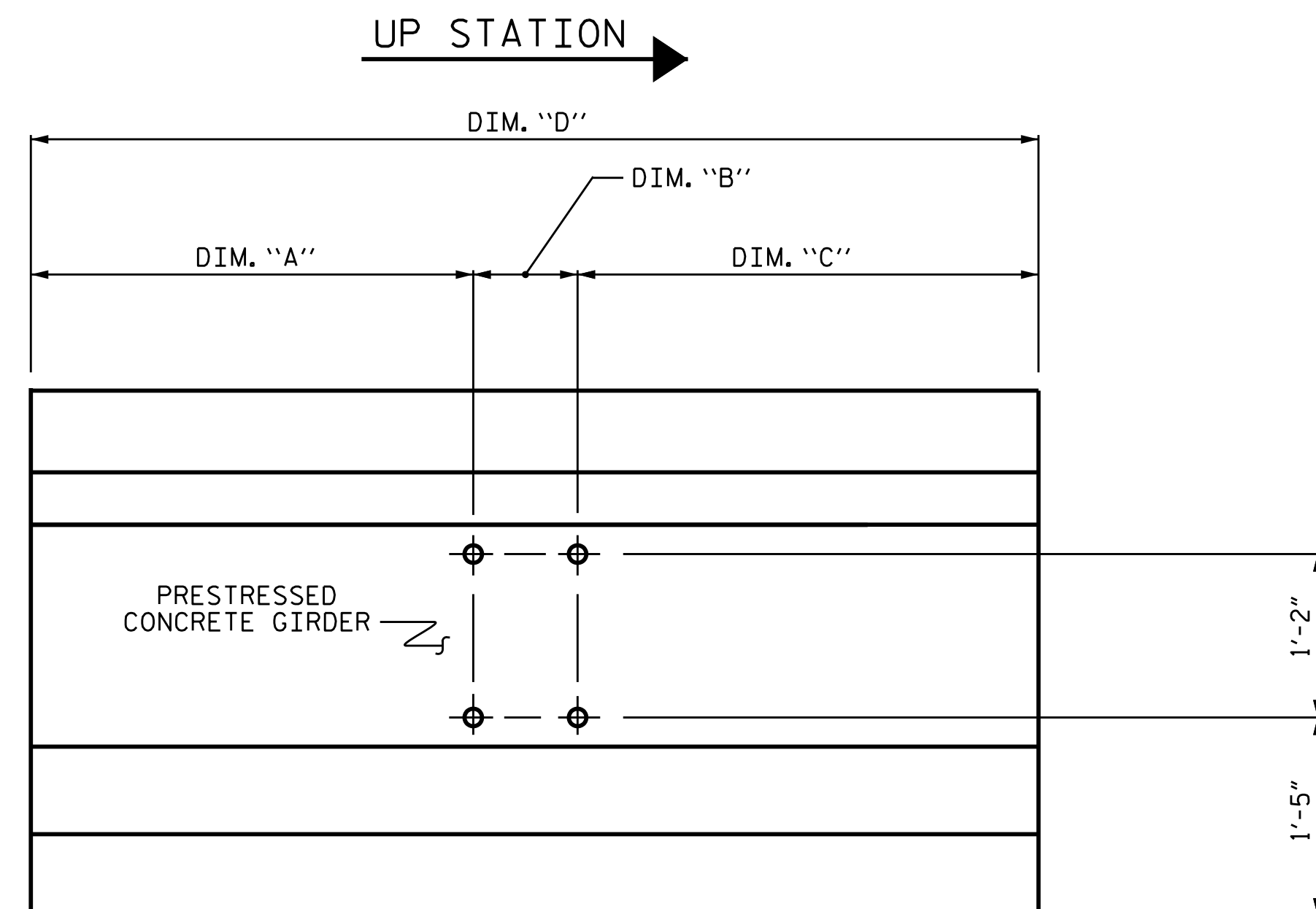
1 1/2" Ø HOLE LOCATION

GIRDER	"A"	"B"	"C"	"D"
A1	34'-9 1/2"	-	29'-9 1/2"	64'-7"
A2	29'-9 1/2"	5'-0"	29'-9 1/2"	64'-7"
A3	29'-9 1/2"	5'-0"	29'-9 1/2"	64'-7"
A4	29'-9 1/2"	5'-0"	29'-9 1/2"	64'-7"
A5	29'-9 1/2"	-	34'-9 1/2"	64'-7"
B1	37'-1"	-	32'-1"	69'-2"
B2	32'-1"	5'-0"	32'-1"	69'-2"
B3	32'-1"	5'-0"	32'-1"	69'-2"
B4	32'-1"	5'-0"	32'-1"	69'-2"
B5	32'-1"	-	37'-1"	69'-2"
C1, D1, E1, F1	34'-7"	-	29'-7"	64'-2"
C2, D2, E2, F2	29'-7"	5'-0"	29'-7"	64'-2"
C3, D3, E3, F3	29'-7"	5'-0"	29'-7"	64'-2"
C4, D4, E4, F4	29'-7"	5'-0"	29'-7"	64'-2"
C5, D5, E5, F5	29'-7"	-	34'-7"	64'-2"
G1	38'-7"	-	33'-7"	72'-2"
G2	33'-7"	5'-0"	33'-7"	72'-2"
G3	33'-7"	5'-0"	33'-7"	72'-2"
G4	33'-7"	5'-0"	33'-7"	72'-2"
G5	33'-7"	-	38'-7"	72'-2"
H1	41'-3 1/2"	-	36'-3 1/2"	77'-7"
H2	36'-3 1/2"	5'-0"	36'-3 1/2"	77'-7"
H3	36'-3 1/2"	5'-0"	36'-3 1/2"	77'-7"
H4	36'-3 1/2"	5'-0"	36'-3 1/2"	77'-7"
H5	36'-3 1/2"	-	41'-3 1/2"	77'-7"



SECTION "F"
(SEE NOTES)

EMBEDDED PLATE "B-1" DETAILS
FOR AASHTO TYPE III GIRDER
(2 REQ'D PER GIRDER)



ELEVATION- 1 1/2" Ø HOLE LOCATION

CONCRETE RELEASE STRENGTH	
SPAN	PSI
A	5500
B	5500
C-F	5500
G	6500
H	6500

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 8 OF 9

9/24/2022 2/24/2022 | 7:41 AM EST

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 PRESTRESSED CONCRETE GIRDER
 CONTINUOUS FOR LIVE LOAD
 DETAILS

NO. BY: DATE: NO. BY: DATE:

1			3		
2			4		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

ASSEMBLED BY : SBW	DATE : 10-18
CHECKED BY : MGC	DATE : 11-18
DRAWN BY : ELR 11/91	REV. 1/15 MAA/TMG
CHECKED BY : GRP 11/91	REV. 2/15 MAA/TMG
	REV. 12/17 MAA/THC

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 DEPARTMENT'S 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.

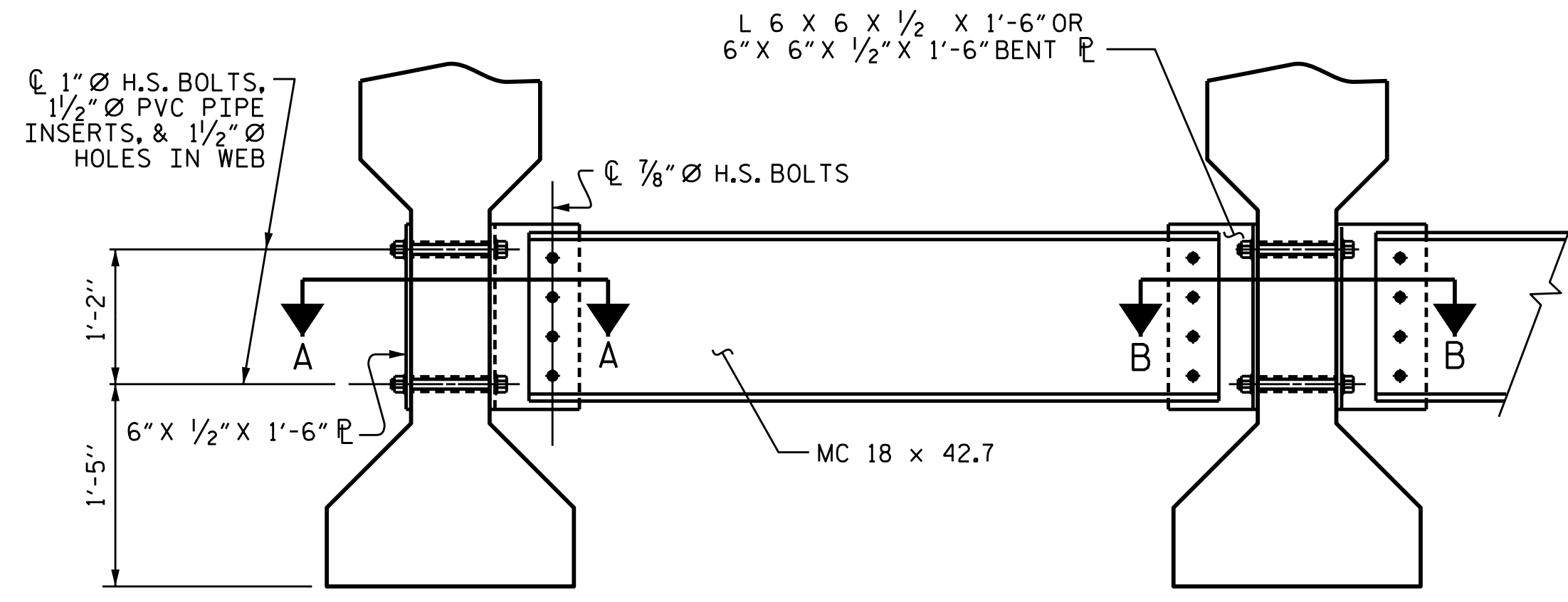
FOR BOLTS THROUGH THE GIRDER WEB, PROVIDE SUFFICIENT LENGTH OF THREADS ON ALL BOLTS TO ACCOMMODATE WASHERS AND THE THICKNESS OF CONNECTING MEMBER PLUS AT LEAST 1/4" PROJECTION BEYOND THE NUT.

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

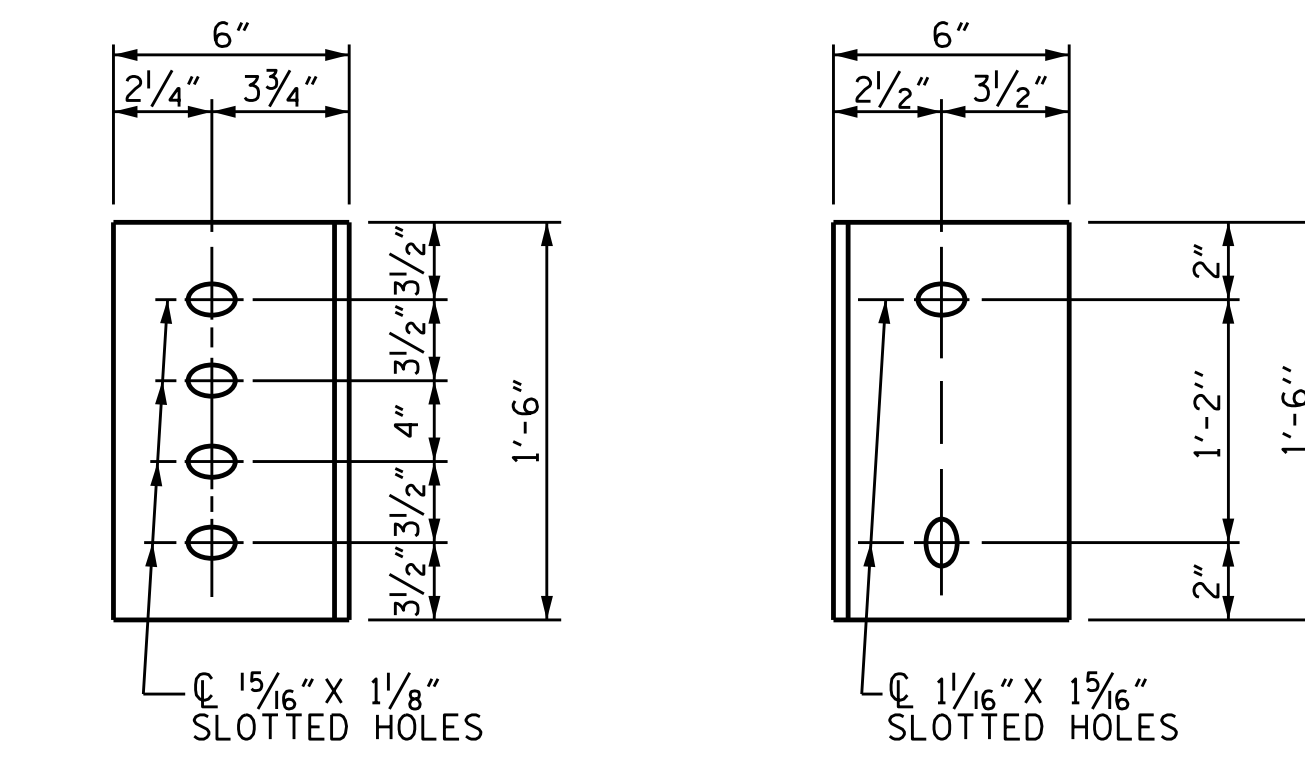
SUBMIT TWO SETS OF WORKING DRAWINGS FOR THE INTERMEDIATE DIAPHRAGM ASSEMBLY FOR REVIEW, COMMENTS AND ACCEPTANCE. AFTER REVIEW, COMMENTS, AND ACCEPTANCE, SUBMIT SEVEN SETS FOR DISTRIBUTION.

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.

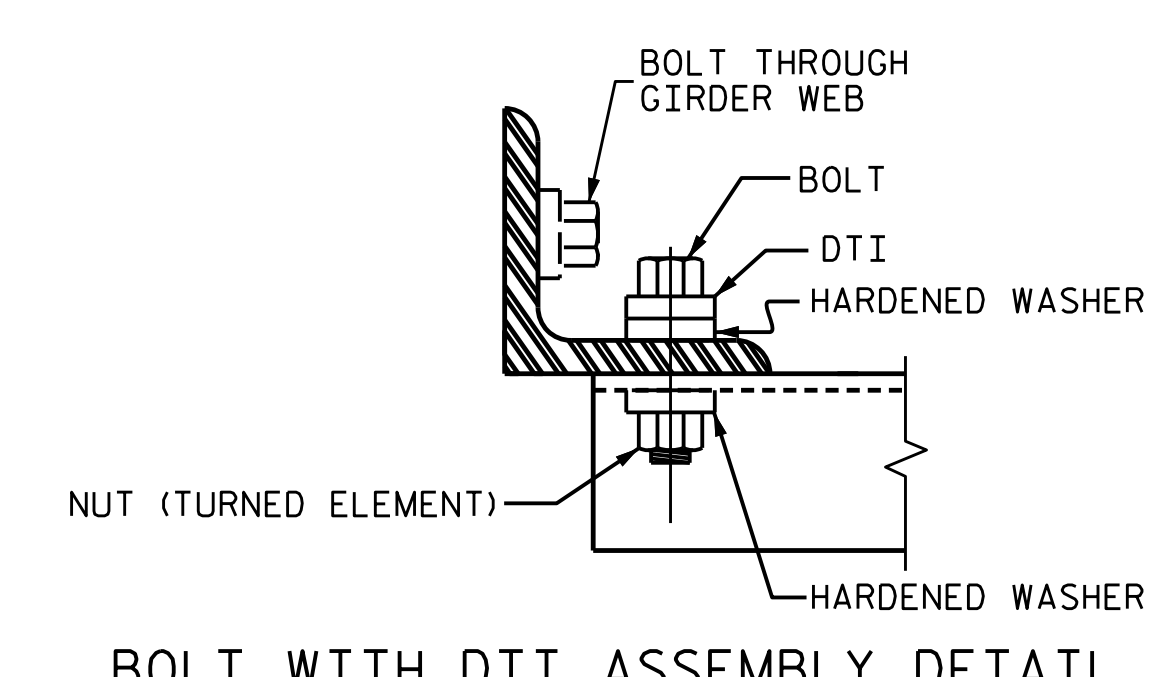
THE COST OF THE STEEL DIAPHRAGMS AND ASSEMBLIES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS.



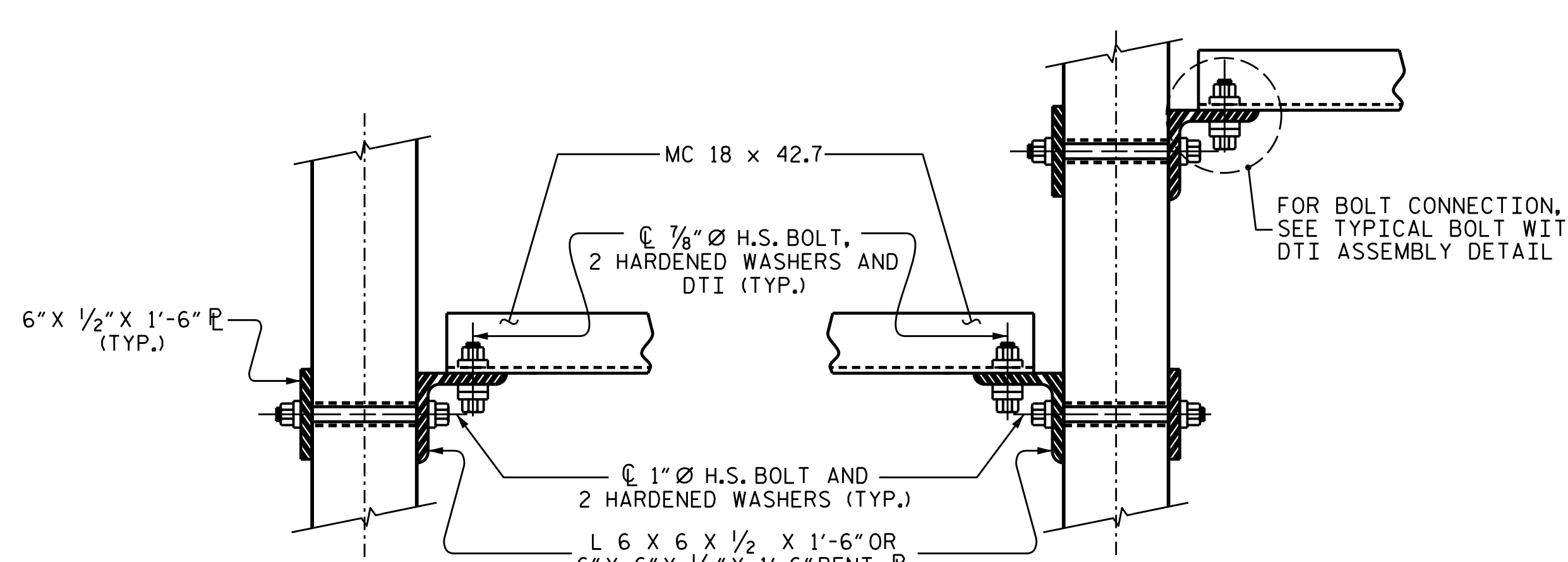
EXTERIOR GIRDER **INTERIOR GIRDER**
PART SECTION AT INTERMEDIATE DIAPHRAGM



DIAPHRAGM FACE **WEB FACE**
CONNECTOR PLATE DETAILS



BOLT WITH DTI ASSEMBLY DETAIL



SECTION A-A **SECTION B-B**
CONNECTION DETAILS

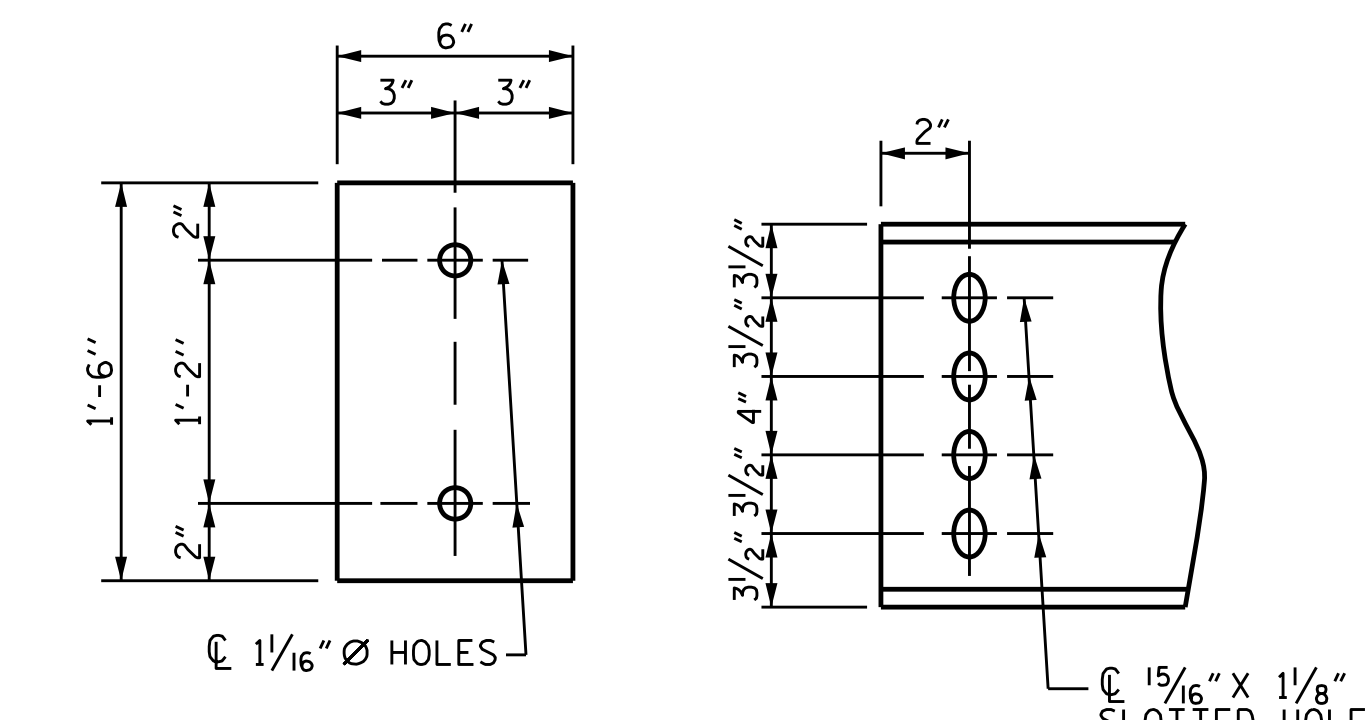
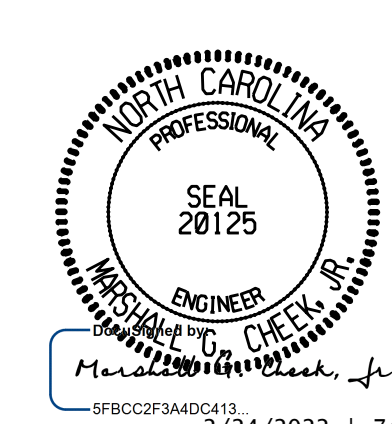


PLATE DETAILS **CHANNEL END**

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 9 OF 9



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

ASSEMBLED BY : SBW	DATE : 9-18
CHECKED BY : MGC	DATE : 11-18
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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TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			57

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.

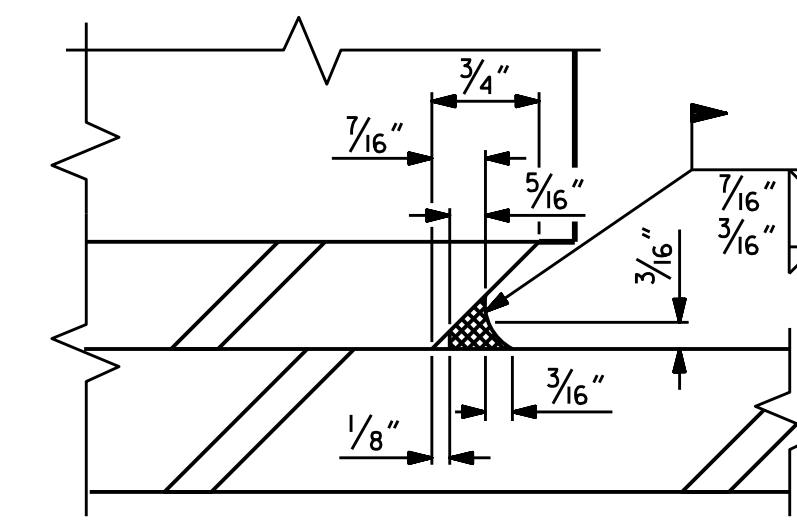
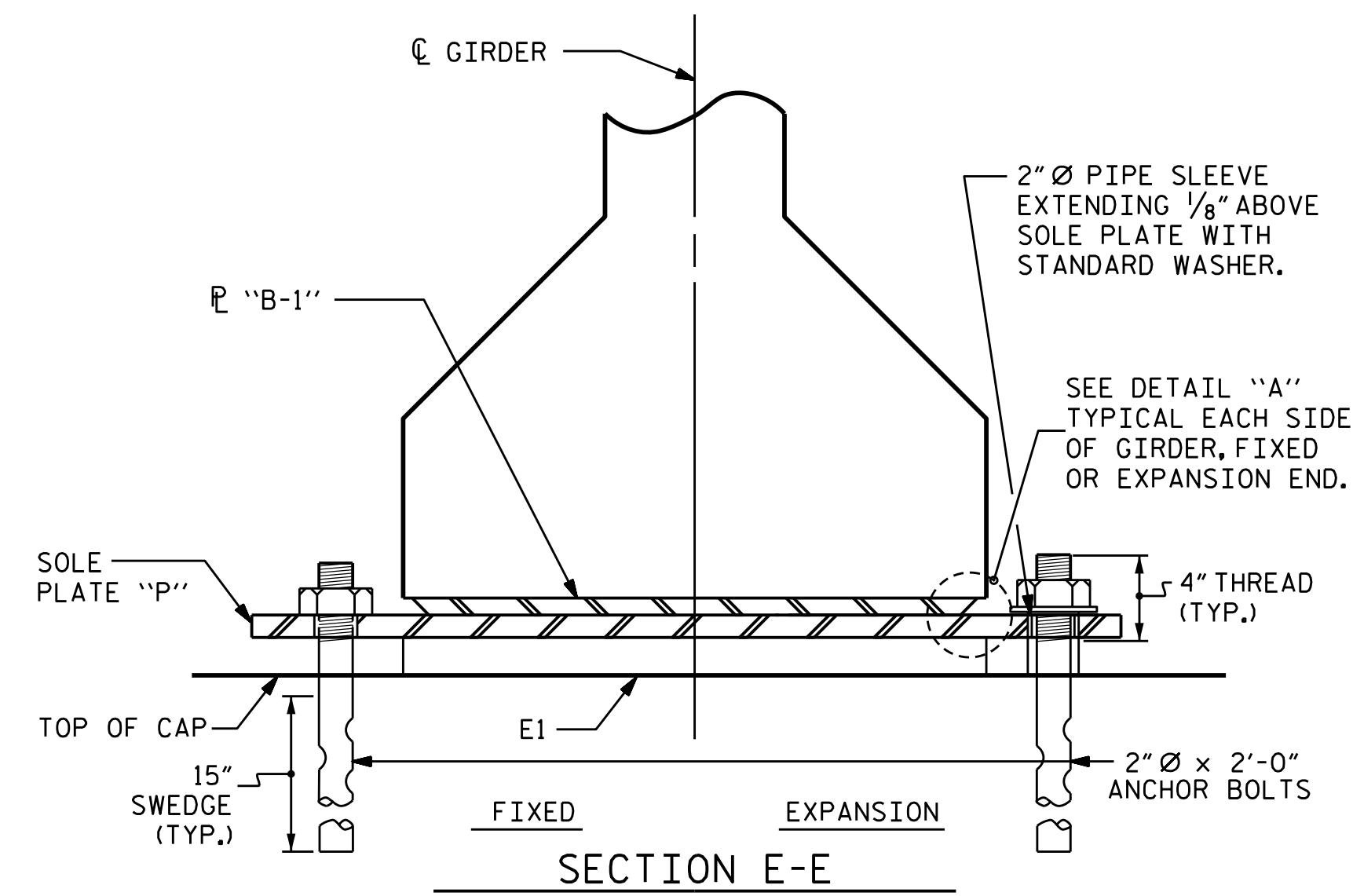
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

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.

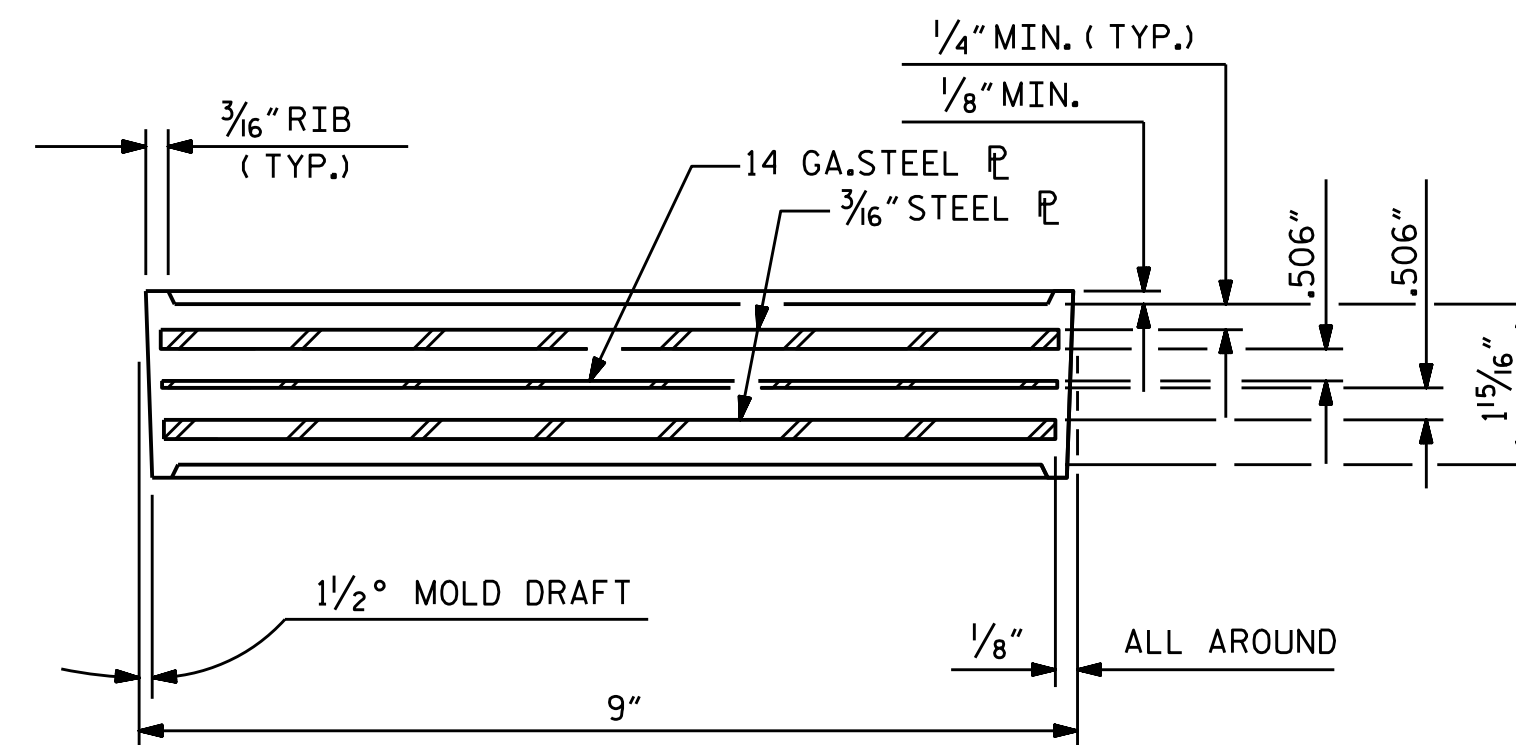
FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

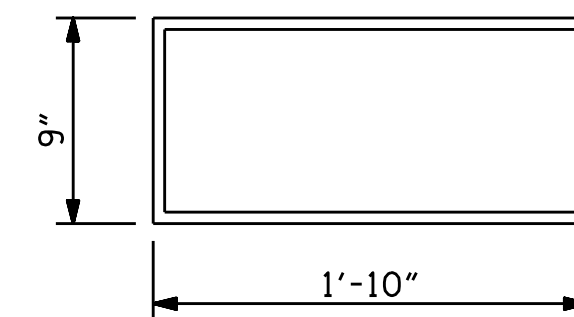


DETAIL "A"

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE IV	225 k



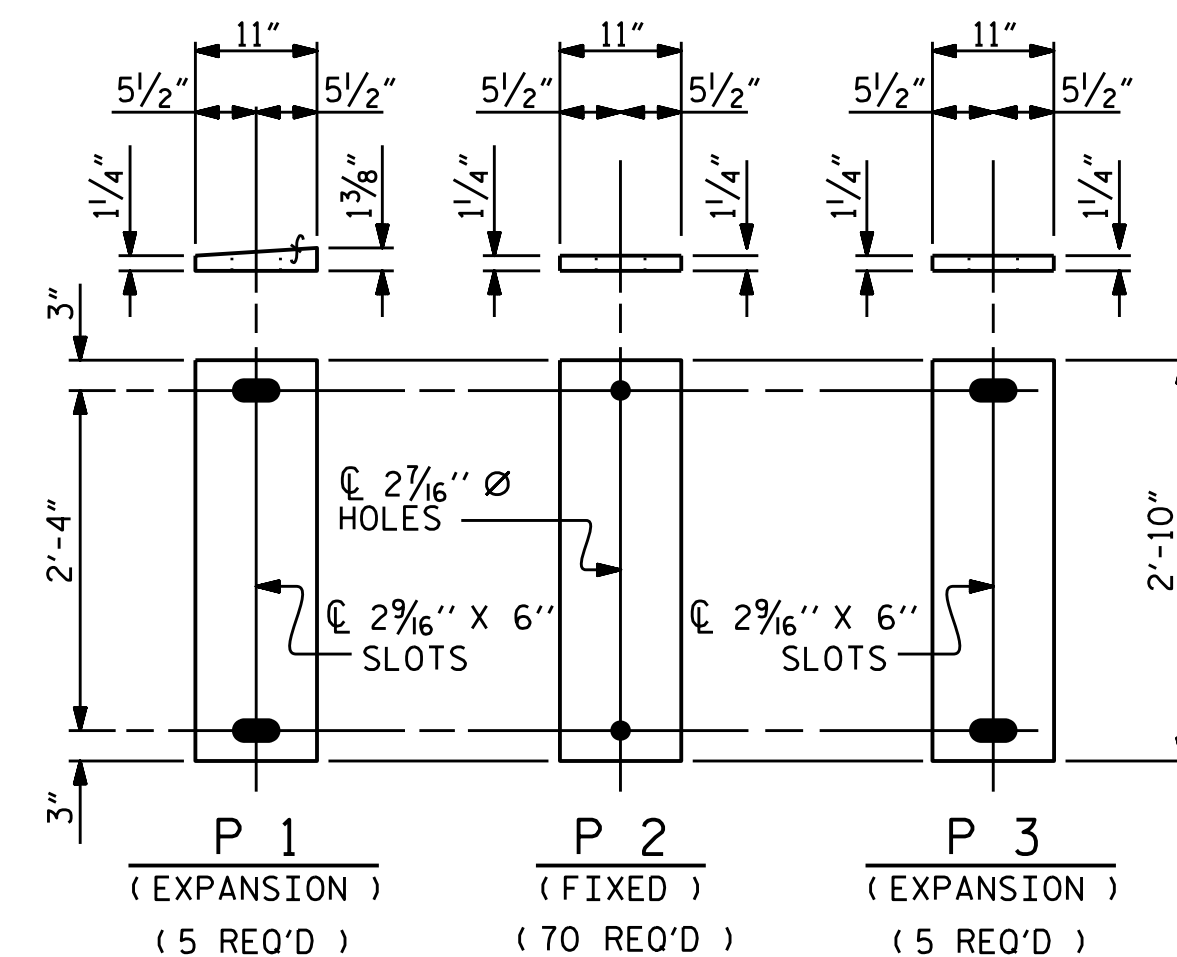
TYPICAL SECTION OF ELASTOMERIC BEARINGS



E1 (80 REQ'D)

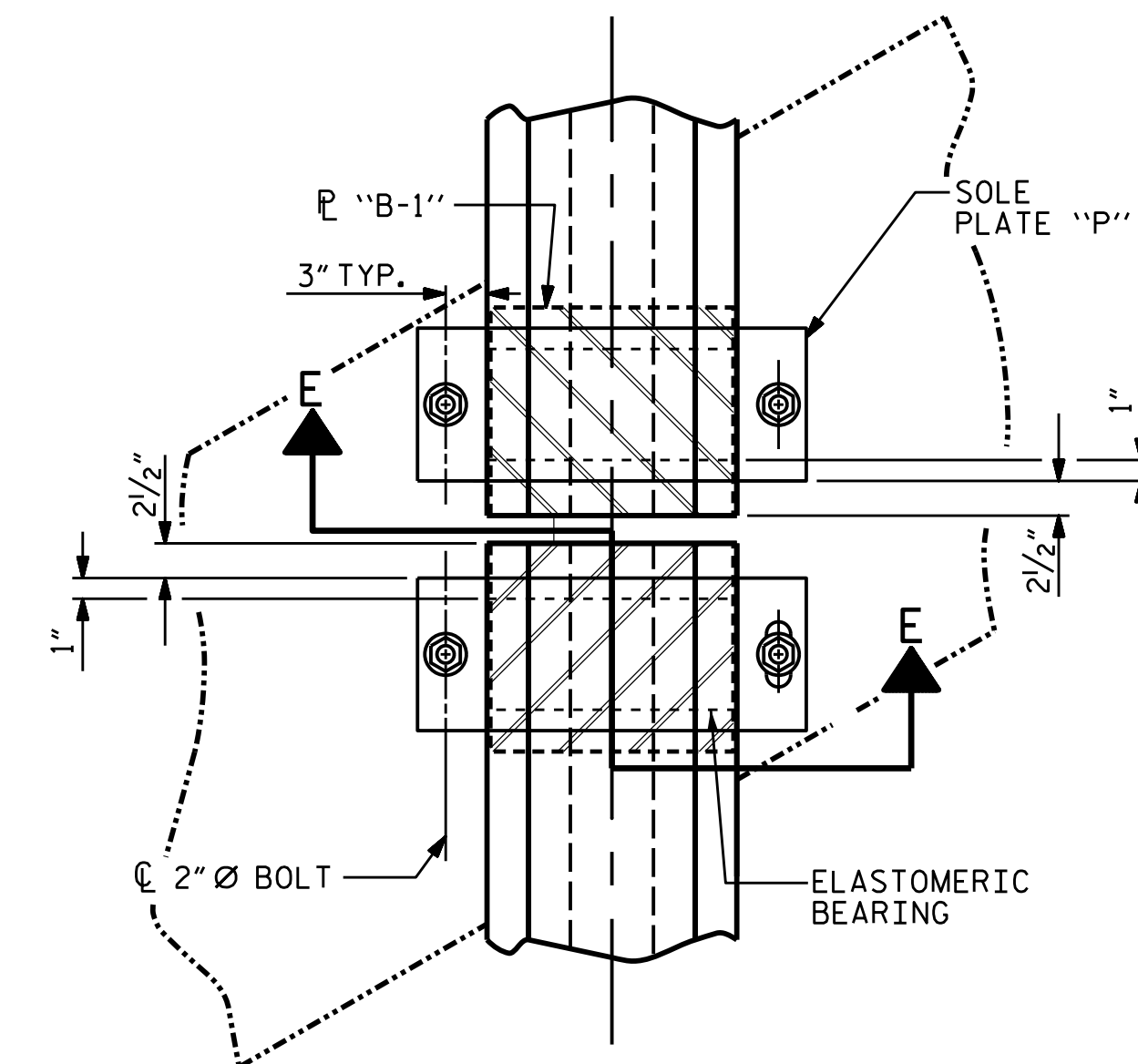
PLAN VIEW OF ELASTOMERIC BEARING

TYPE IV



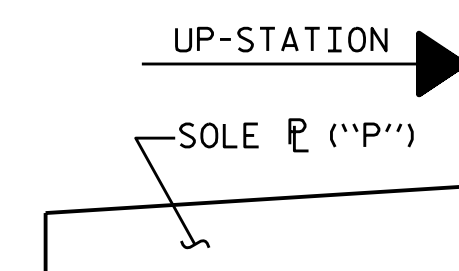
SOLE PLATE DETAILS ("P")

FOR SOLE PLATE PLACEMENT, SEE "GIRDER LAYOUT SHEET"



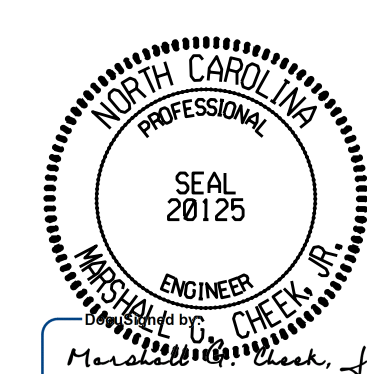
TYPICAL HALF-PLAN (SHOWING CONTINUOUS BENT)

TYPICAL HALF-PLAN (SHOWING SIMPLE SPAN BENT)



SOLE PLACEMENT DETAIL

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 ELASTOMERIC BEARING
 DETAILS
 PRESTRESSED CONCRETE GIRDER
 SUPERSTRUCTURE

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			57

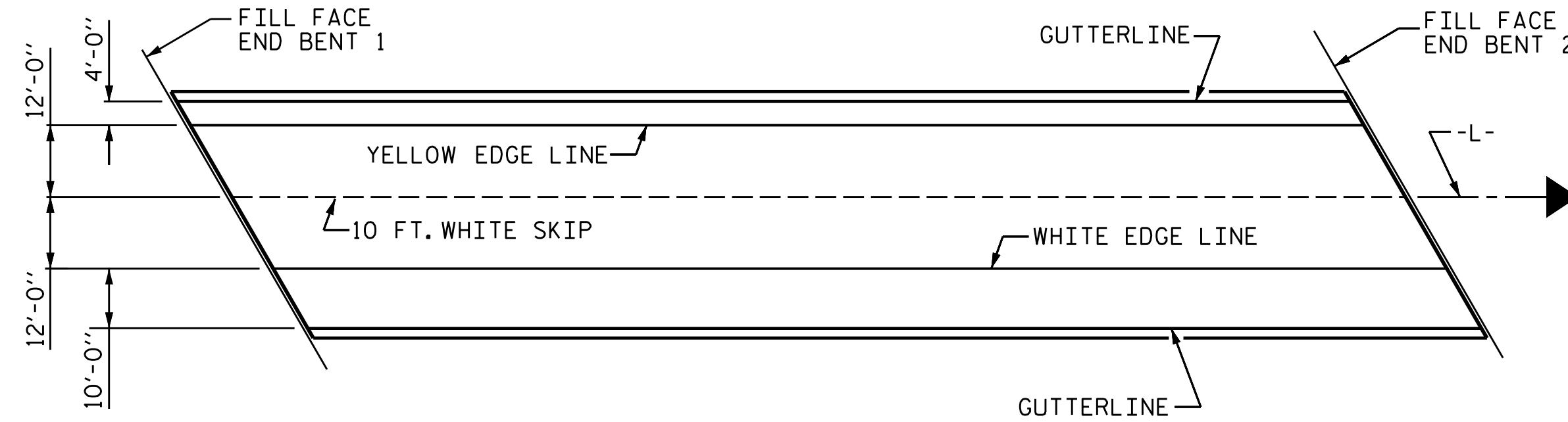
ASSEMBLED BY : S. B. WILLIAMS DATE : 1/19
 CHECKED BY : MGC DATE : 7/19
 DRAWN BY : WJH 8/89 REV. 6/13 AAC/MAA
 CHECKED BY : CRK 8/89 REV. 1/15 MAA/TMG
 REV. 12/17 MAA/THC

INSTALLATION PROCEDURE

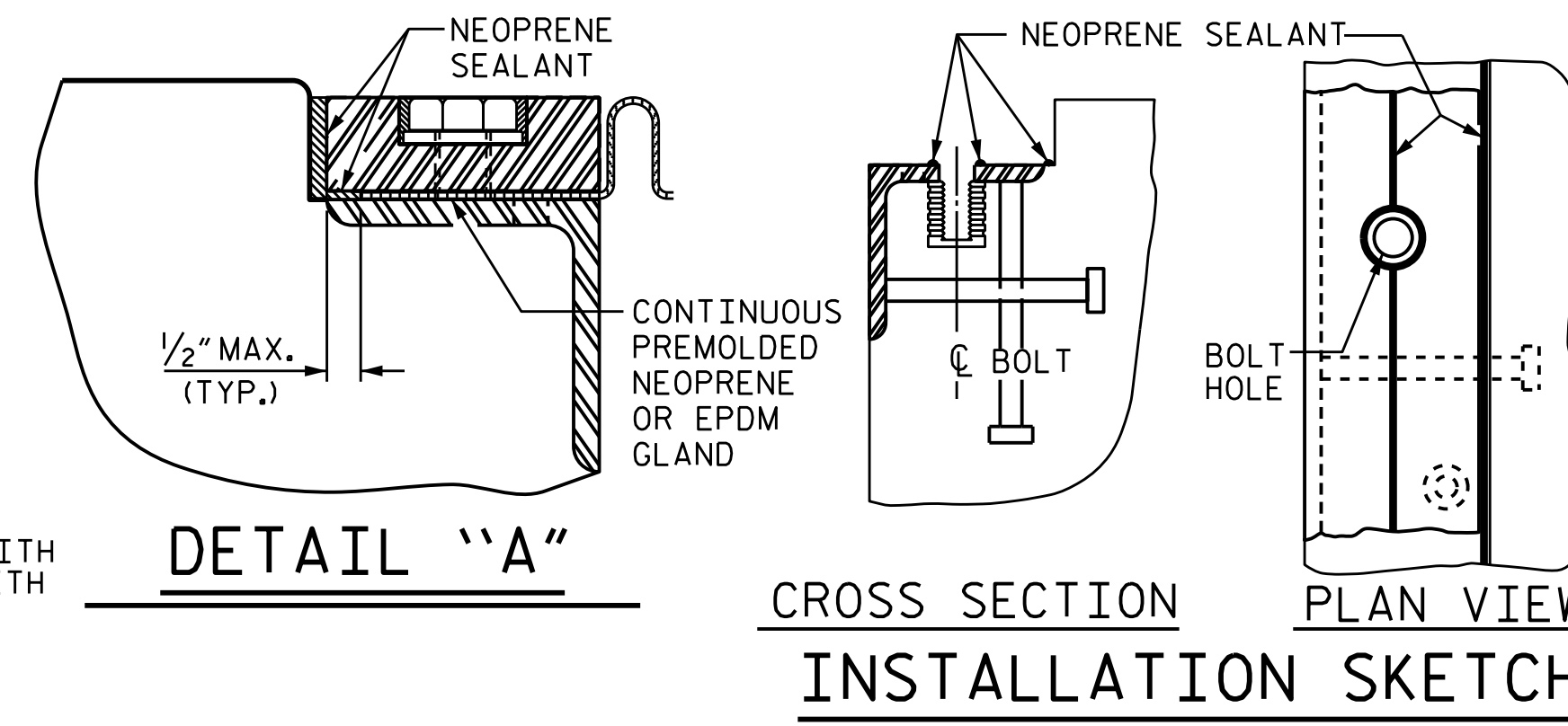
1. A TEMPLATE OR OTHER SUITABLE DEVICE SHALL BE USED TO FORM THE TOP OF THE EXPANSION JOINT SEAL BLOCKOUT TO THE PROPER DEPTH AND WIDTH. THE TEMPLATE SHALL BE 4/8" TO 4/4" WIDE AND OF SUCH THICKNESS AS TO PROVIDE FOR CORRECT FINAL ELEVATION OF TOP OF HOLD-DOWN PLATES. THE TEMPLATE SHALL BE ATTACHED TO THE BASE ANGLE ASSEMBLY WITH THE 3/4" Ø HEX HEAD BOLTS PROVIDED FOR THE HOLD-DOWN PLATES. A 1" Ø HOLE SHALL BE PROVIDED IN THE TEMPLATE CENTERED OVER EACH WEEP HOLE IN THE 4" X 4" X 1/2" BASE ANGLE. OTHER METHODS OF INSURING DRAINAGE THROUGH WEEP HOLES MAY BE EMPLOYED SUBJECT TO ENGINEER'S APPROVAL.
2. AFTER THE CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE THE TEMPLATE, THOROUGHLY CLEAN THE BOLT HOLES AND THE ANGLE PLATE. REMOVE ANY EXCESS CONCRETE THAT COMES OUT OF THE WEEP HOLES. ANY DAMAGED STEEL SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
3. LAY THE GLAND ON THE BASE ANGLE AND FIELD MARK THE GLAND FOR THE BOLT HOLES. HOLES IN THE GLAND SHALL BE PUNCHED 7/8" IN DIAMETER WITH A HAND PUNCH.
4. IN ORDER TO CHECK FOR PROPER ALIGNMENT, PLACE THE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. DO NOT APPLY NEOPRENE SEALANT. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE BUT DO NOT TIGHTEN. THE ENGINEER SHALL INSPECT THE JOINT SEAL DEVICE FOR PROPER ALIGNMENT.
5. AFTER INSPECTION, REMOVE THE HOLD-DOWN PLATES AND GLAND. APPLY NEOPRENE SEALANT TO THE BASE ANGLE IN ACCORDANCE WITH THE "INSTALLATION SKETCH". PLACE GLAND AND HOLD-DOWN PLATES ON THE BASE ANGLE. BOLT THE HOLD-DOWN PLATES TO THE BASE ANGLE ASSEMBLY AND TORQUE THE BOLTS TO 88 FT-LBS WITH A TORQUE WRENCH. CHECK THE TORQUE AFTER THREE (3) HOURS AND, IF NECESSARY, RETIGHTEN TO 88 FT-LBS. A FINAL CHECK SHALL BE MADE AT SEVEN (7) DAYS. TORQUE SHALL NOT BE LESS THAN 80 FT-LBS AFTER SEVEN (7) DAYS.
6. AFTER PROPER TORQUING, CLEAN THE BOLT HOLE RECESSES, THE RECESS BETWEEN THE JOINT SEAL DEVICE AND CONCRETE, AND THE LIFTING HOLES IN THE HOLD-DOWN PLATE, AND COMPLETELY FILL THE RECESSES AND LIFTING HOLES WITH NEOPRENE SEALANT.

GENERAL NOTES

1. FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
2. ALL PLATES AND ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL HOLD-DOWN BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304 STAINLESS STEEL AND WASHERS SHALL CONFORM TO ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169, GRADES 1010 THRU 1020 OR APPROVED EQUAL. ALL CONCRETE INSERTS SHALL BE CLOSED END AND SHALL CONFORM TO AASHTO M169, GRADE 12L14. TENSILE CAPACITY SHALL BE 3000 LBS. MINIMUM.
3. A PREMOLDED CORRUGATED OR NON-CORRUGATED GLAND SHALL BE USED FOR JOINTS SKEWED BETWEEN 50° THRU 130°. FOR JOINTS SKEWED LESS THAN 50° OR MORE THAN 130°, ONLY A CORRUGATED GLAND SHALL BE USED.
4. CLOSED END FERRULES AND STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.
5. SURFACES COMING IN CONTACT WITH NEOPRENE SHALL BE GROUND SMOOTH PRIOR TO METALLIZING.
6. UPON COMPLETION OF SHOP FABRICATION, THE HOLD-DOWN PLATE AND BASE ANGLE ASSEMBLY, AS SHOWN IN THE "TYPICAL SECTION OF BASE ANGLE ASSEMBLY", SHALL BE METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
7. THE COVER PLATES SHALL BE GALVANIZED OR METALLIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.
8. BASE ANGLE ASSEMBLY SHALL BE CONTINUOUS FOR THE LENGTH OF THE JOINT. AT CROWN BREAKS, THE ENDS OF THE BASE ANGLE ASSEMBLY SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE FOR SKEWS LESS THAN 80° AND GREATER THAN 100°. FINISHED WELD SHALL BE REPAIRED IN ACCORDANCE WITH THE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).
9. FIELD SPLICES OF HOLD-DOWN PLATES SHALL BE KEPT TO A MINIMUM. CONTRACTOR SHALL FURNISH DETAILED PLANS SHOWING PROPOSED SPLICE LOCATIONS FOR APPROVAL. HOLD-DOWN PLATES SHALL NOT EXCEED 20' LENGTHS UNLESS APPROVED BY THE ENGINEER.
10. NO ALTERNATE JOINT DETAILS SHALL BE PERMITTED IN LIEU OF THOSE SHOWN ON THESE PLANS.
11. THE CONTRACTOR MAY, AT HIS OPTION, USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CONCRETE INSERTS FOR COVER PLATES. THE YIELD LOAD OF THE 3/4" Ø BOLT IS 10 KIPS. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
12. THE FABRICATOR SHALL PROVIDE 1/2" Ø THREADED HOLES IN THE HOLD-DOWN PLATES TO ASSIST IN LIFTING AND PLACING. THE HOLES SHALL BE 3/4" DEEP AT 6'-0" MAXIMUM SPACING AND A MINIMUM OF TWO HOLES PER PLATE.

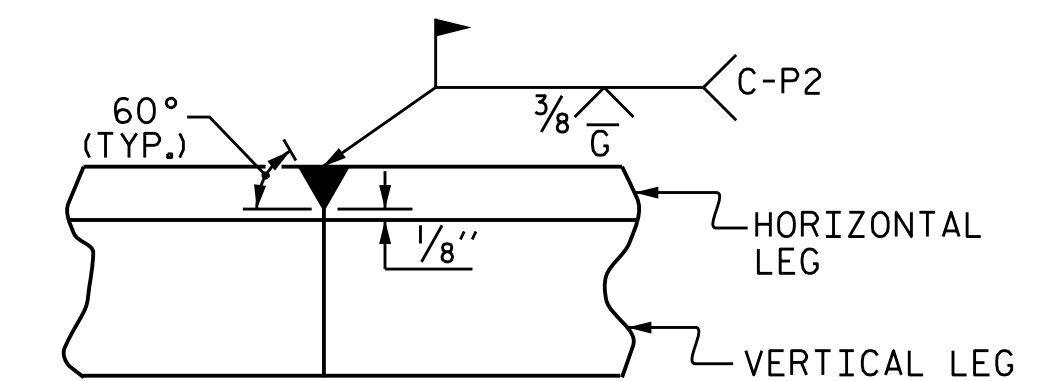


PAVEMENT MARKING SKETCH

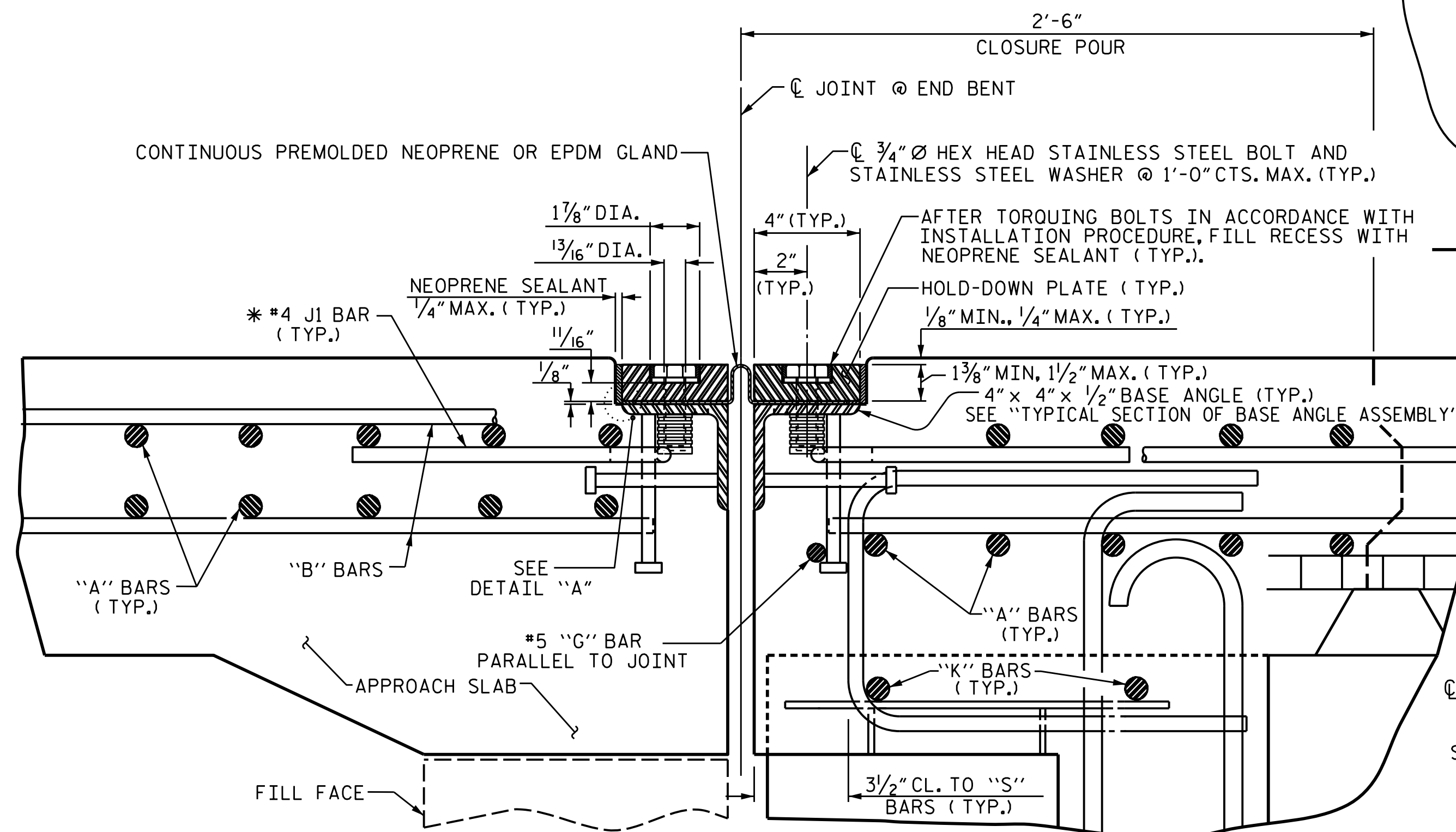


DETAIL "A"

**CROSS SECTION
PLAN VIEW
INSTALLATION SKETCH**



**DETAIL - FIELD WELD
SPLICE OF BASE ANGLE**

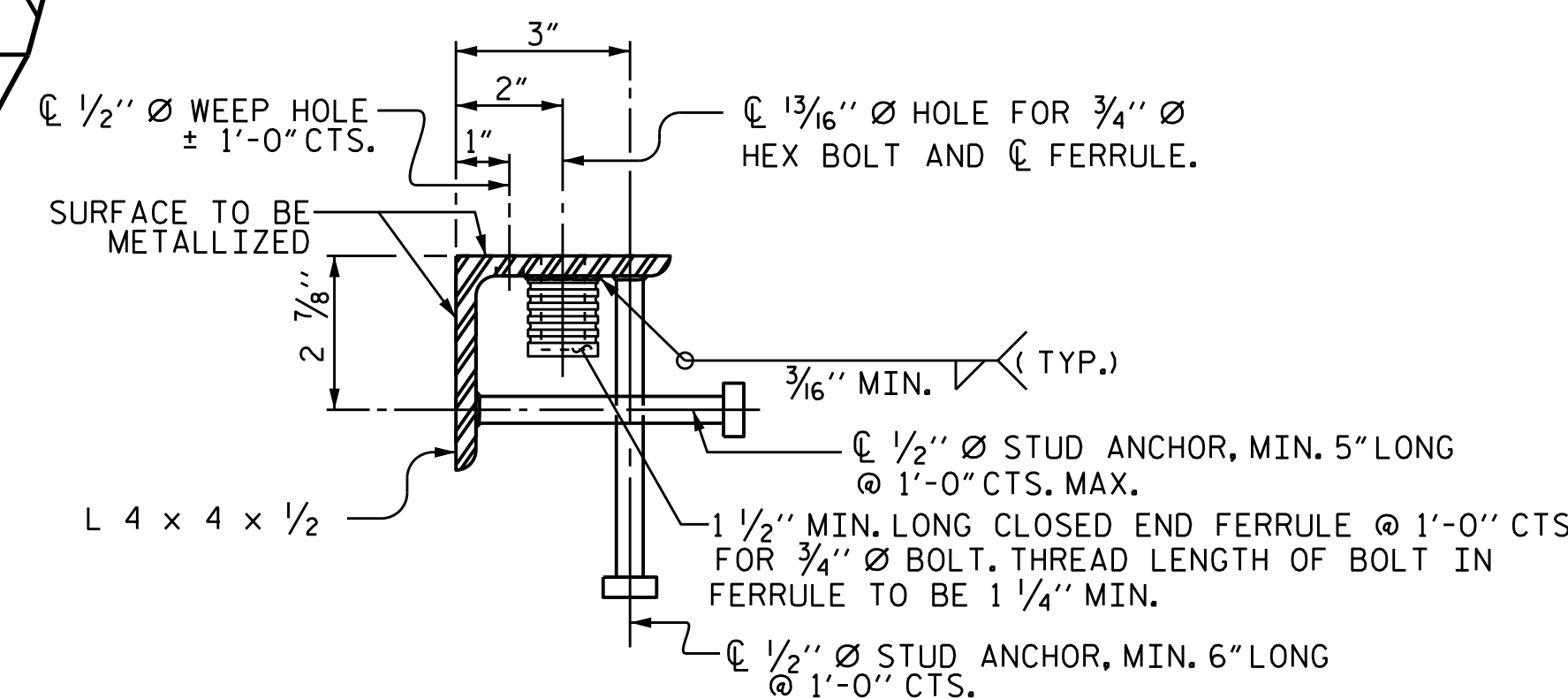


EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.

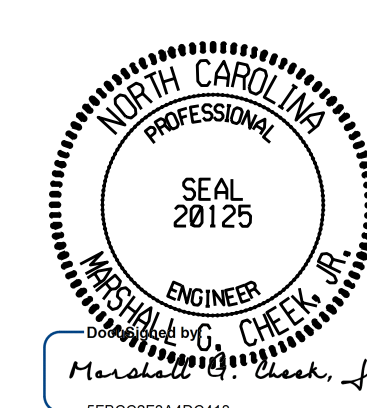
MOVEMENT AND SETTING AT JOINT					
BENT NO.	SKIEW ANGLE	TOTAL MOVEMENT (ALONG CL RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	60°-00'-00"	1 1/16"	2"	1 3/4"	1 1/4"
END BENT 2	60°-00'-00"	1 1/16"	2"	1 3/4"	1 1/4"



TYPICAL SECTION OF BASE ANGLE ASSEMBLY

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 1 OF 2

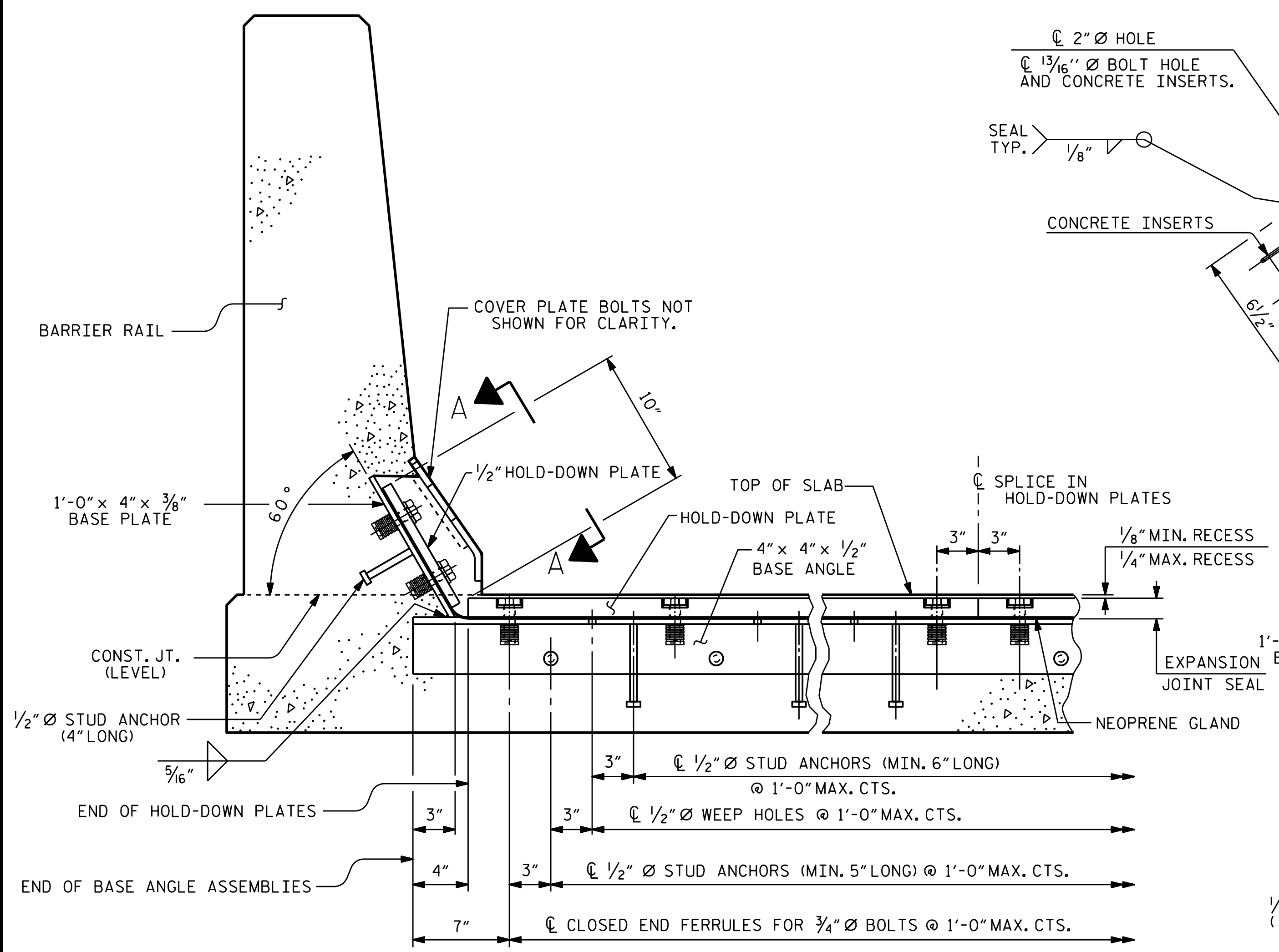


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 EXPANSION JOINT
 SEAL DETAILS

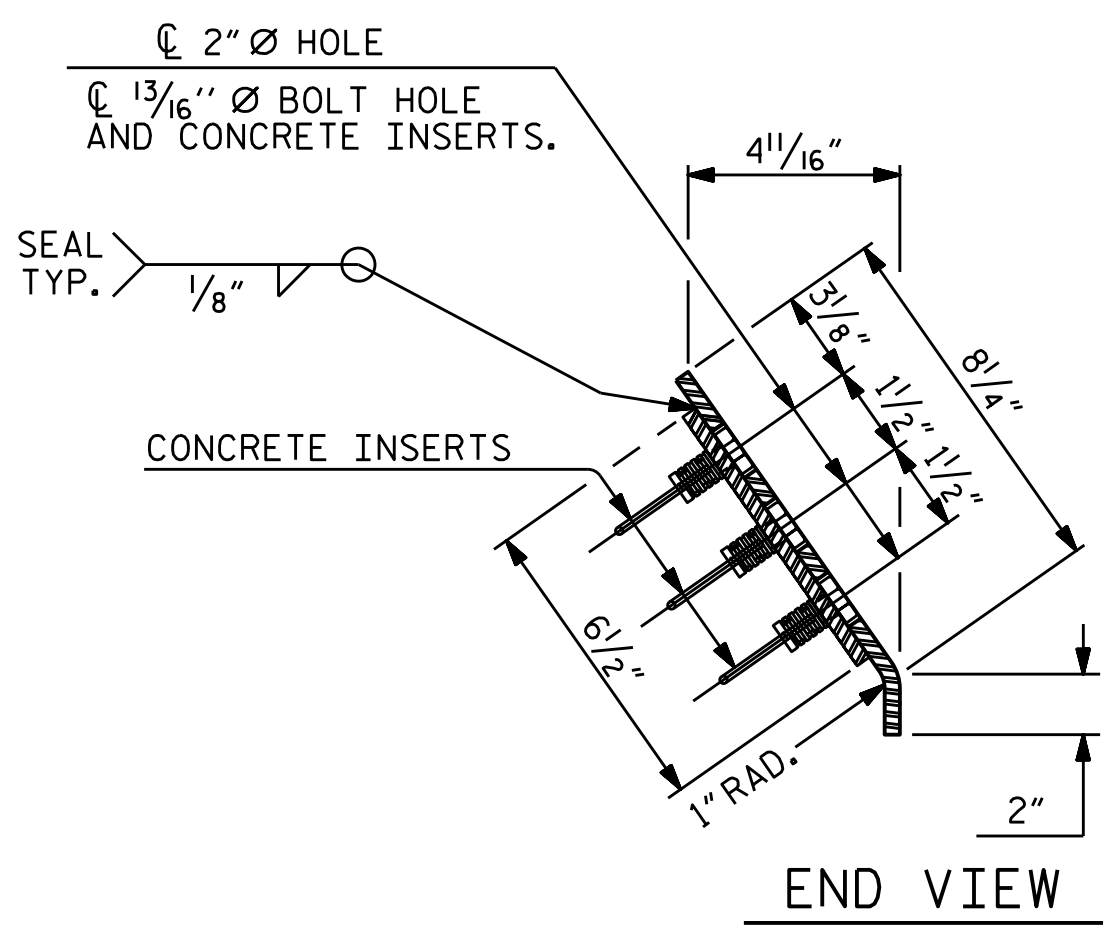
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REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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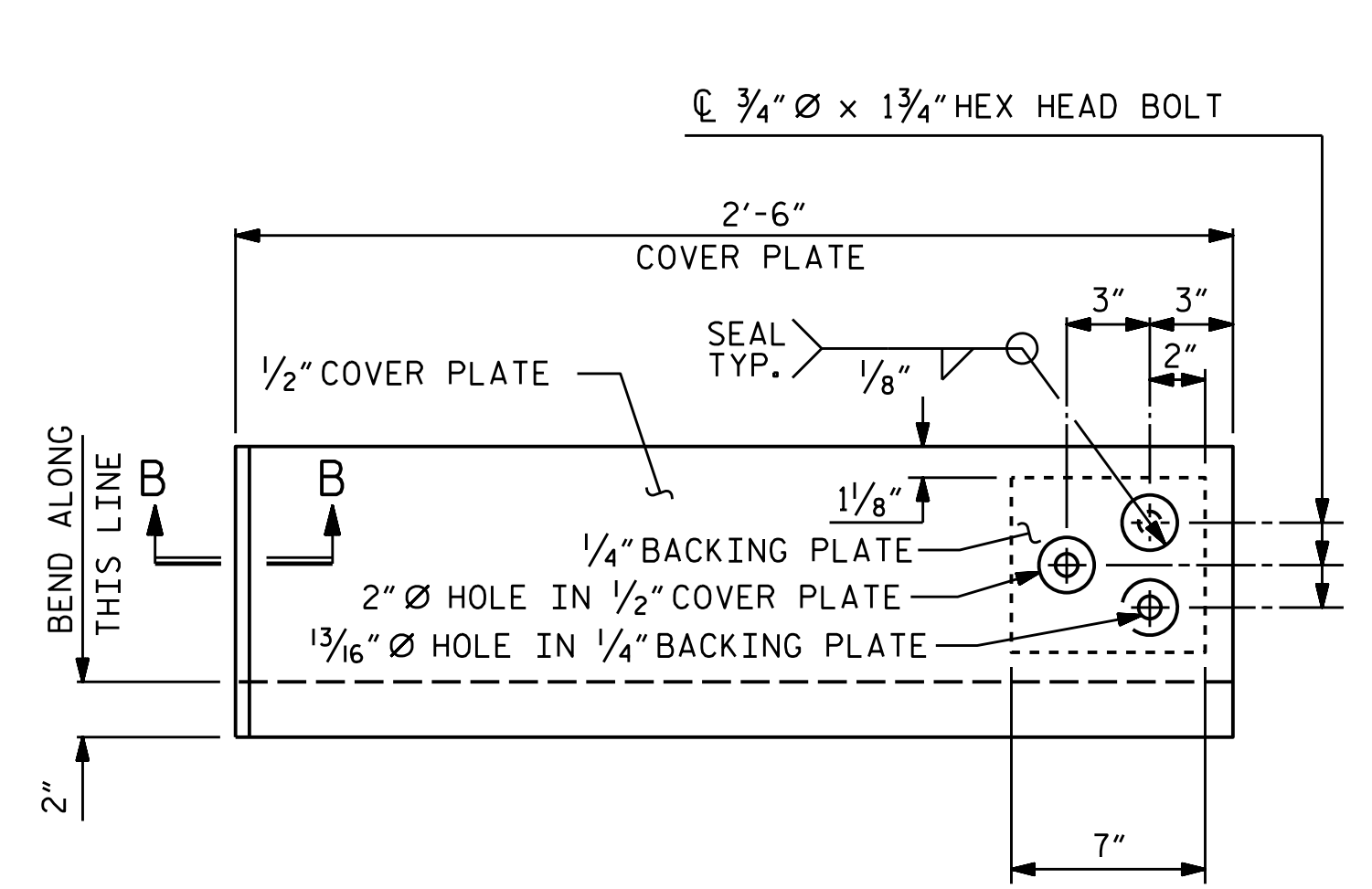
ASSEMBLED BY : SBW	DATE : 10/18
CHECKED BY : MGC	DATE : 11-18
DRAWN BY : REK 9/87	REV. 10/11 MAA/GM
CHECKED BY : CRK 10/87	REV. 10/17 MAA/THC
	REV. 6/18 MAA/THC



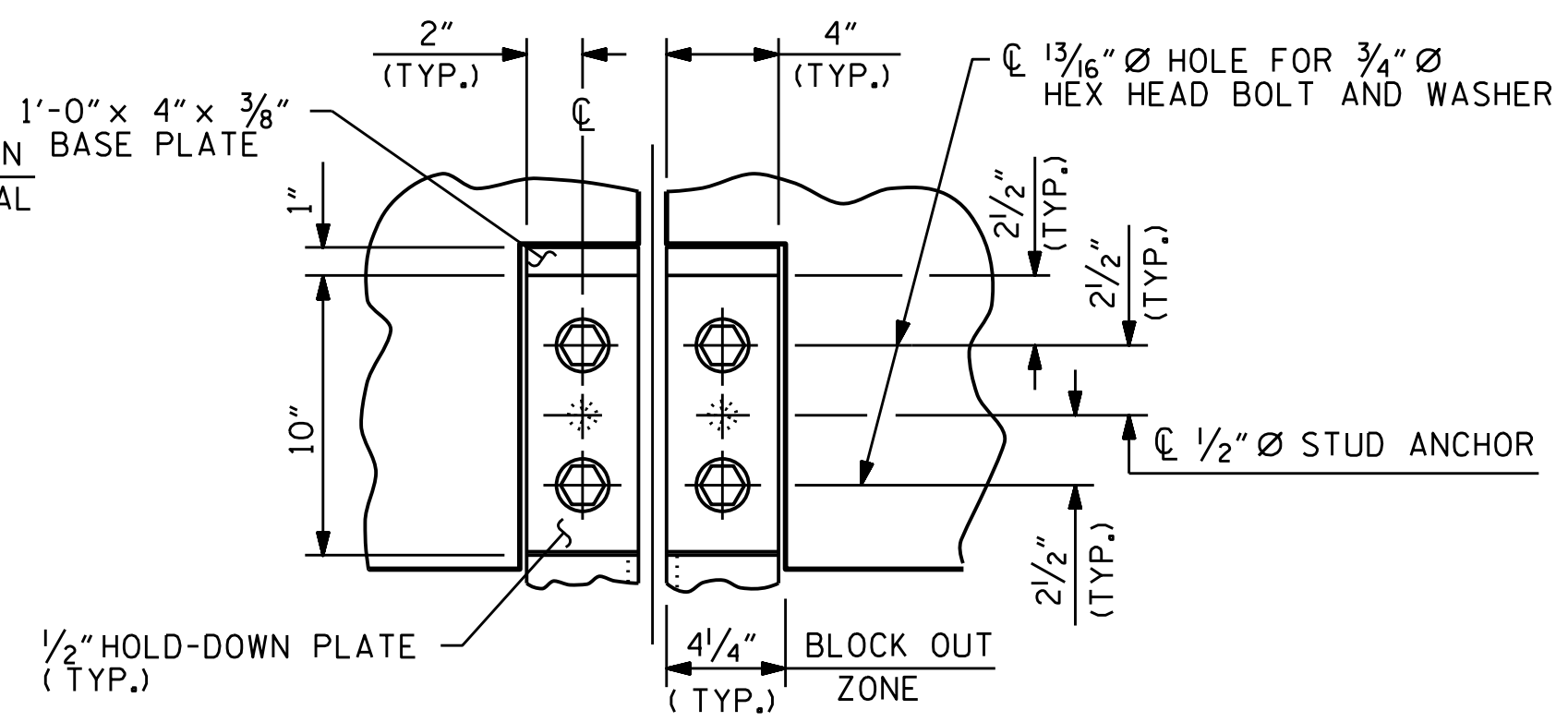
SECTION THRU RAIL NORMAL TO JOINT



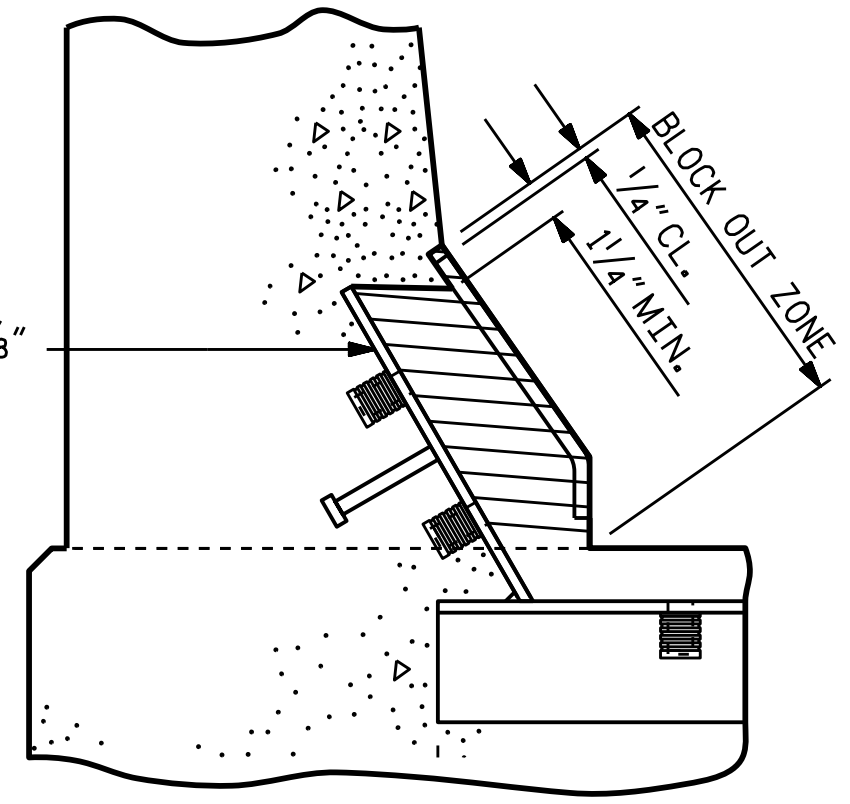
END VIEW



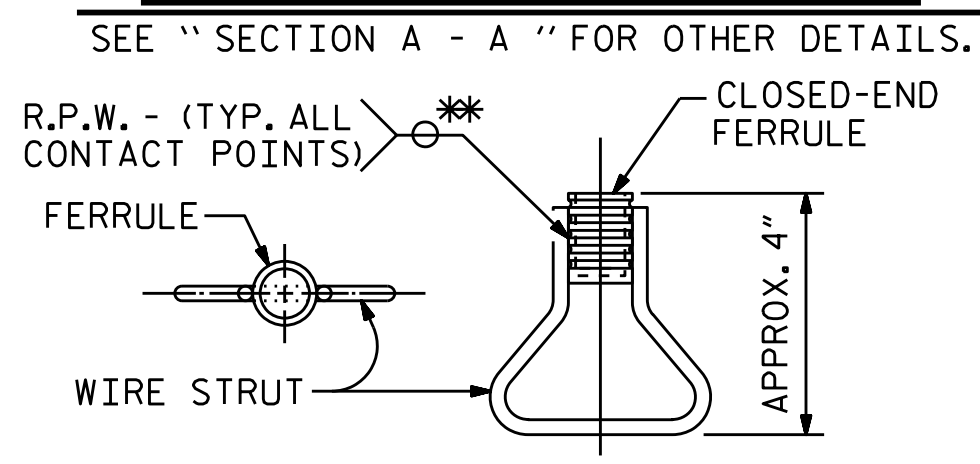
**TYPE II - ELEVATION VIEW
COVER PLATE DETAILS**



SECTION A - A

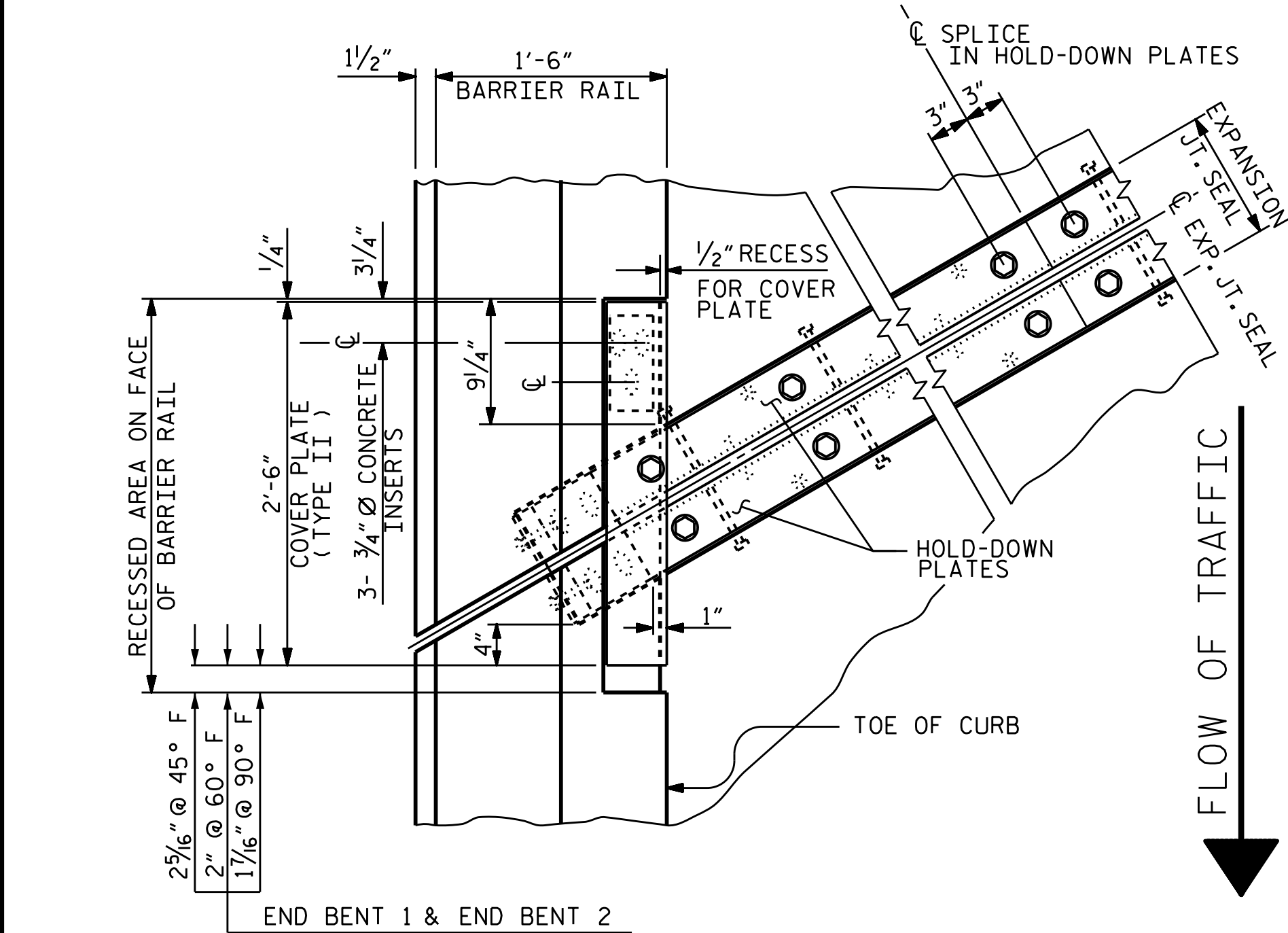


BLOCK OUT DETAIL

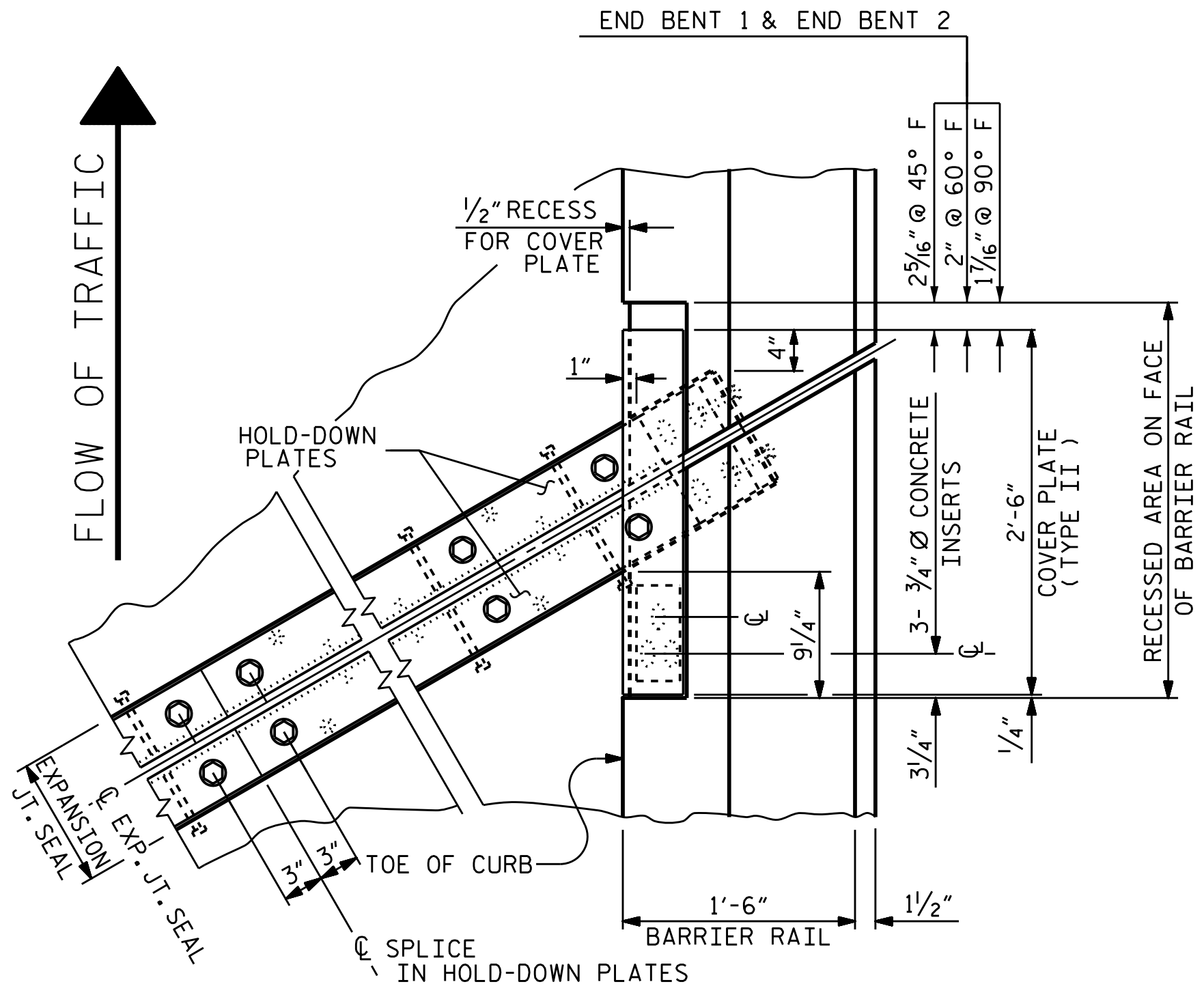


CONCRETE INSERT

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



PLAN OF EXPANSION JOINT SEAL



ASSEMBLED BY : SBW	DATE : 10-18
CHECKED BY : MGC	DATE : 11/18
DRAWN BY : REK 9/87	REV. 7/12 MAA/GM
CHECKED BY : CRK 10/87	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

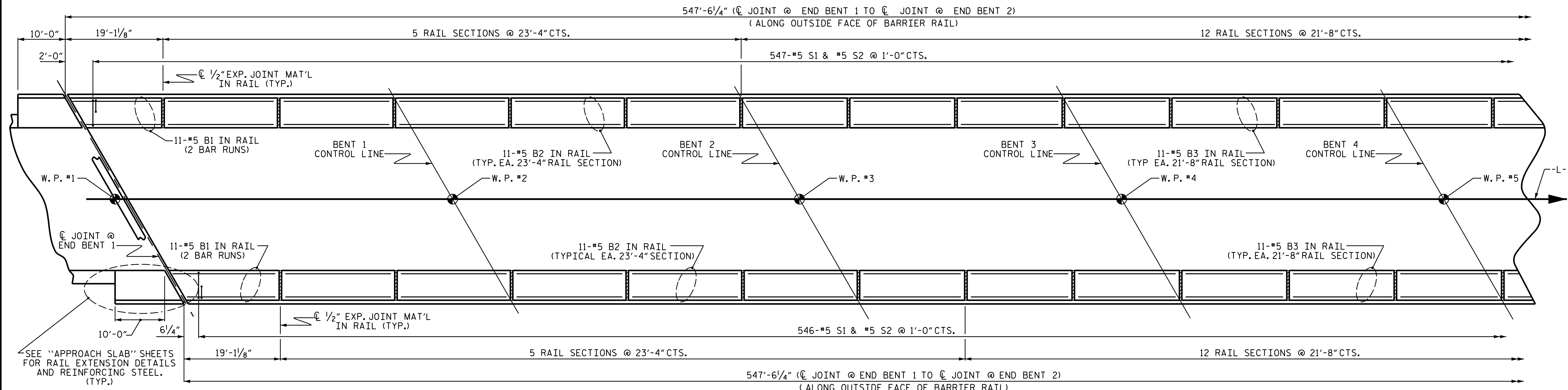
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PROJECT NO. B-4786
 COUNTY PITT
 STATION: 28+03.00 -L-

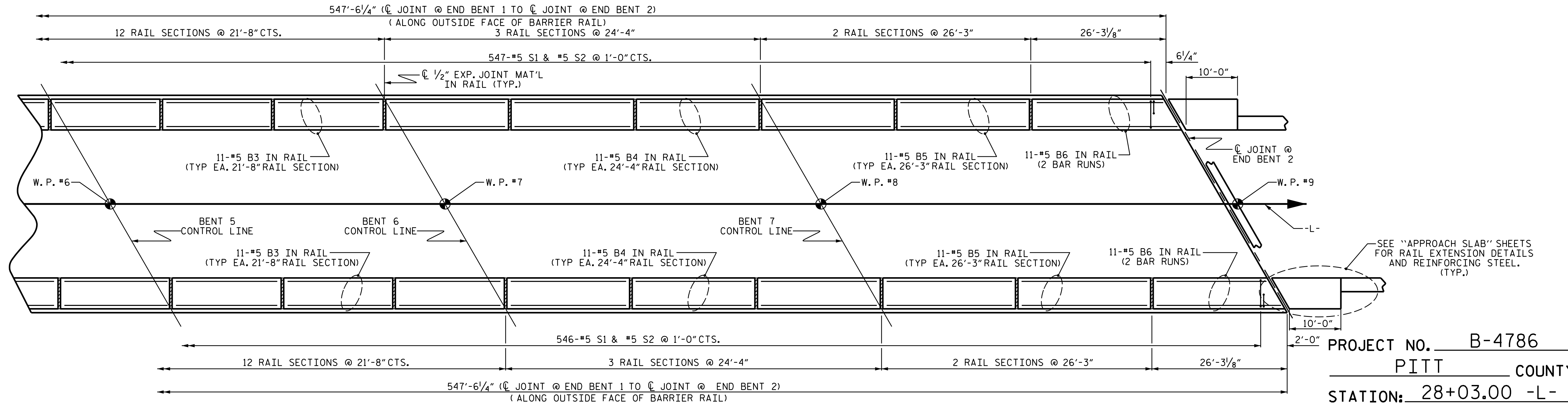
SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 EXPANSION JOINT
 SEAL DETAILS
 FOR BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			57



PLAN OF BARRIER RAIL



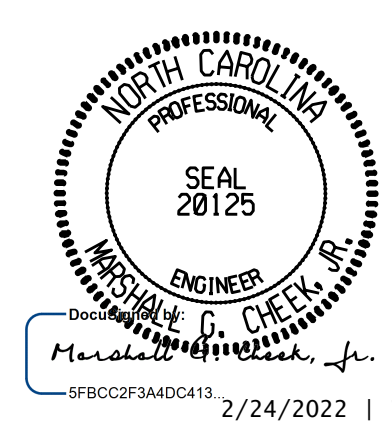
PLAN OF BARRIER RAIL

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 1 OF 2

DRAWN BY : SBW DATE : 10-18
 CHECKED BY : MGC DATE : 11-18
 DESIGN ENGINEER OF RECORD: MGC DATE : 8-21

9/24/2021 X:\NCDOT\B-4786\Structures\Final plans\DCNs\B-4786.SMU. BRI. 730038.dgn User: sbwilliams



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE CONCRETE BARRIER RAIL					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 57

NOTES

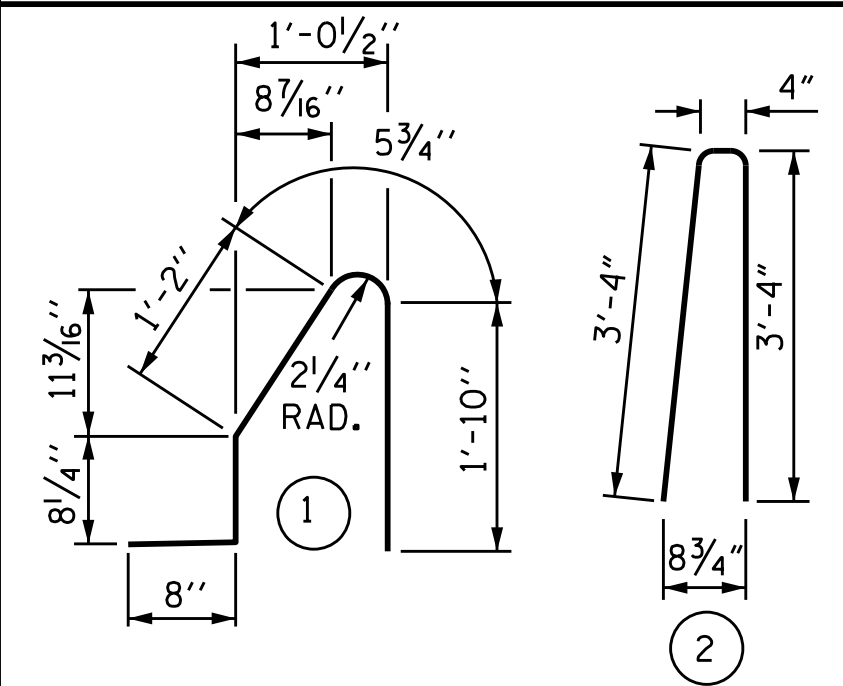
THE BARRIER RAIL IN A CONTINUOUS UNIT SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THAT SPAN HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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.

PAYMENT FOR THE BARRIER RAIL EXTENSIONS ON THE APPROACH SLABS SHALL BE PAID FOR UNDER PRICE BID FOR LINEAR FEET OF CONCRETE BARRIER RAIL. REINFORCING STEEL AND CONCRETE QUANTITIES ARE INCLUDED WITH THE APPROACH SLAB BILL OF MATERIAL.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

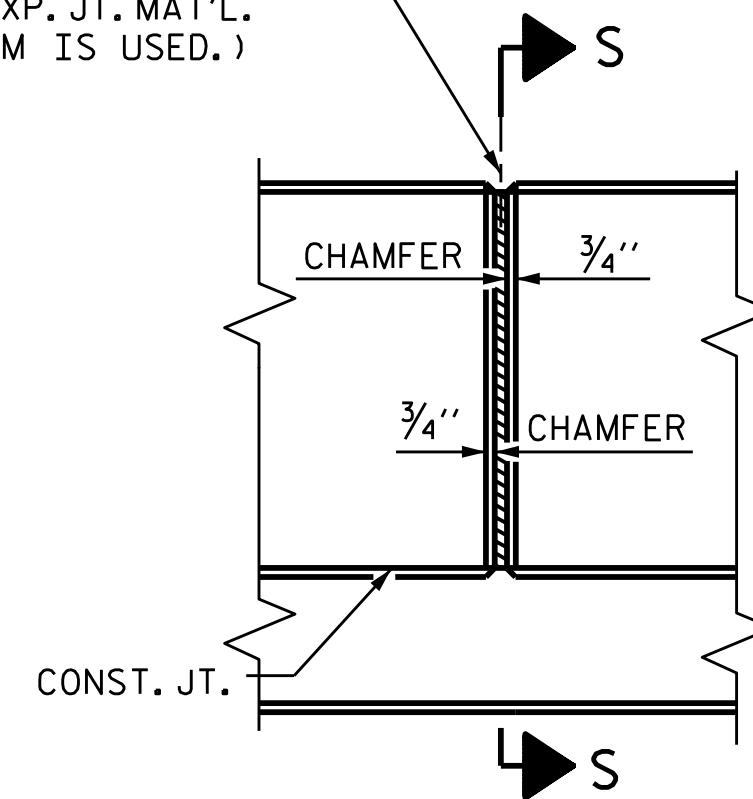
BILL OF MATERIAL

FOR CONCRETE BARRIER RAIL ONLY

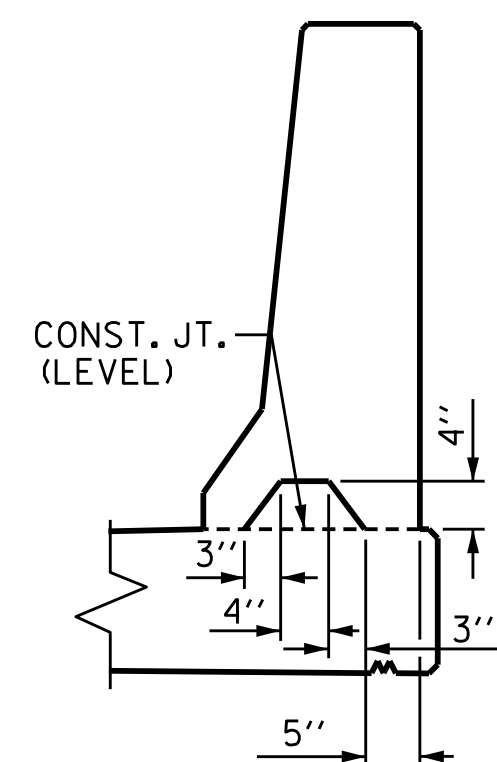
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	44	#5	STR	11'- 5"	524
* B2	110	#5	STR	22'-11"	2629
* B3	264	#5	STR	21'- 3"	5851
* B4	66	#5	STR	23'-11"	1646
* B5	44	#5	STR	25'-10"	1186
* B6	44	#5	STR	15'- 1"	692
* S1	1094	#5	1	4'-10"	5515
* S2	1094	#5	2	7'-0"	7987

* EPOXY COATED REINFORCING STEEL	26,030 LBS.
CLASS AA CONCRETE	154.5 CU. YDS.
CONCRETE BARRIER RAIL	1136.77 LIN. FT.

1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED.)

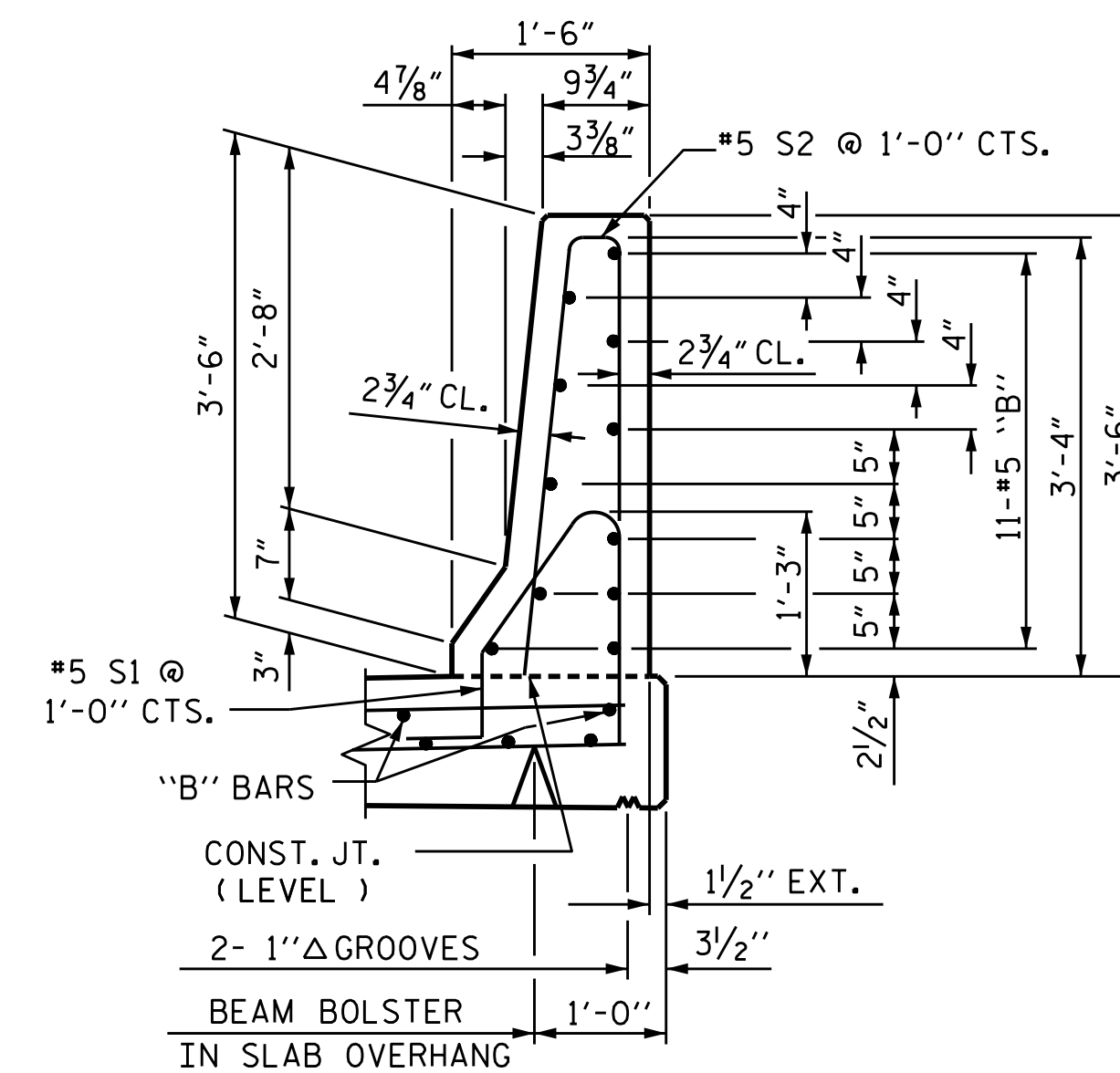


ELEVATION AT EXPANSION JOINTS



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

PROJECT NO. B-4786

PITT COUNTY

STATION: 28+03.00 -L-

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
CONCRETE
BARRIER RAIL

ASSEMBLED BY : SBW	DATE : 9/18
CHECKED BY : MGC	DATE : 11-18
DRAWN BY : ARB 5/87	REV. 7/12 MAA/GM
CHECKED BY : SJD 9/87	REV. 6/13 MAA/GM
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			57

NOTES

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

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 ASTM M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

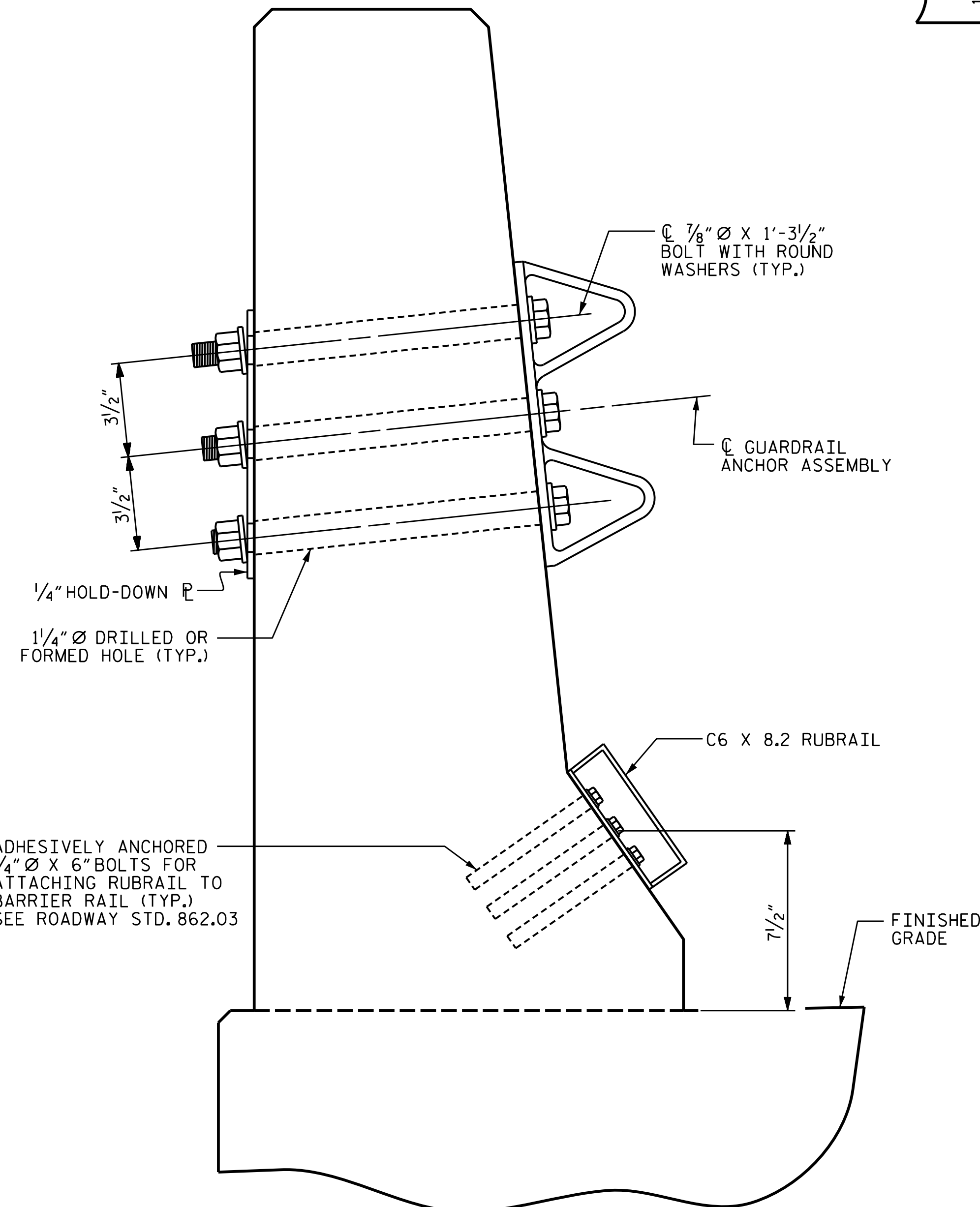
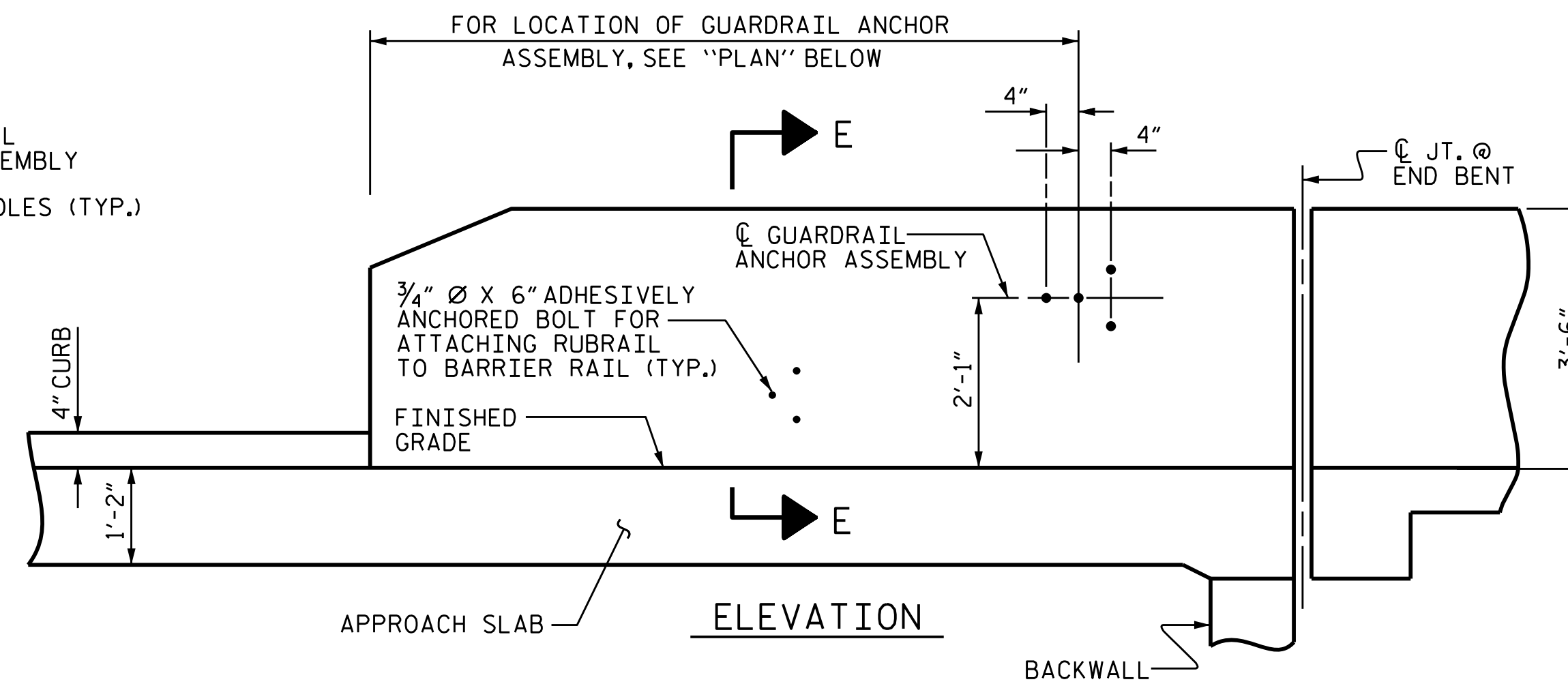
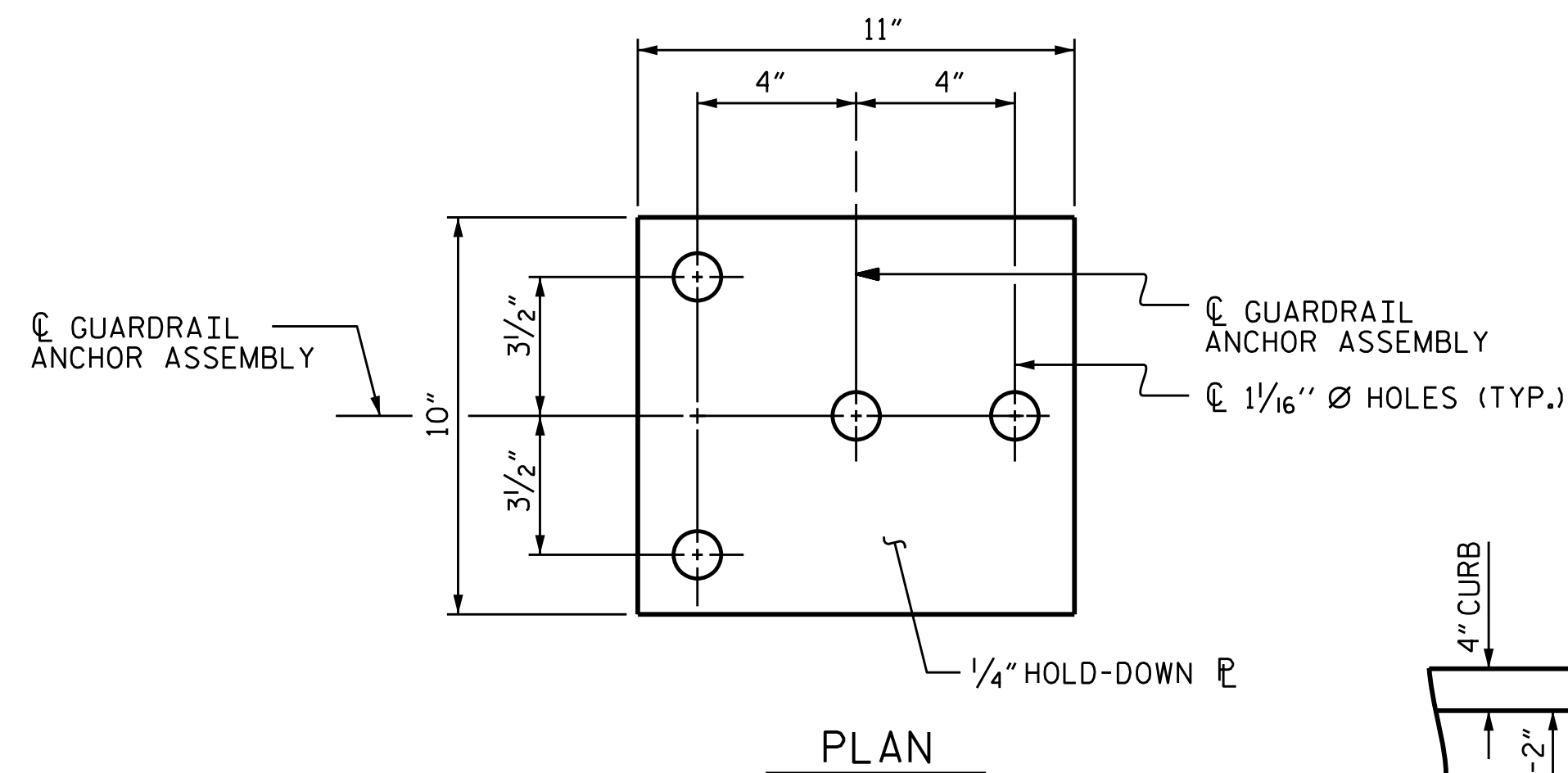
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

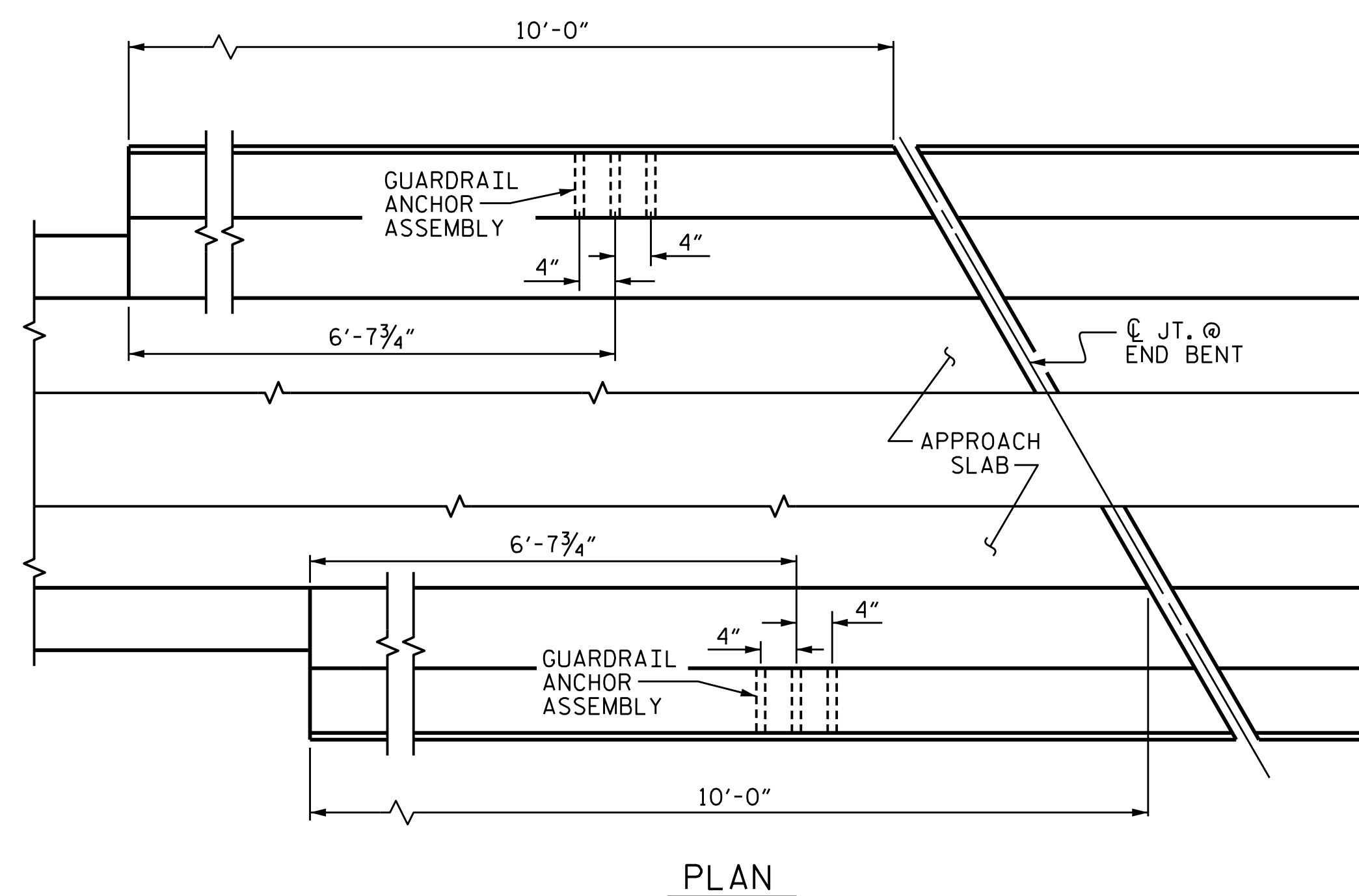
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

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

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

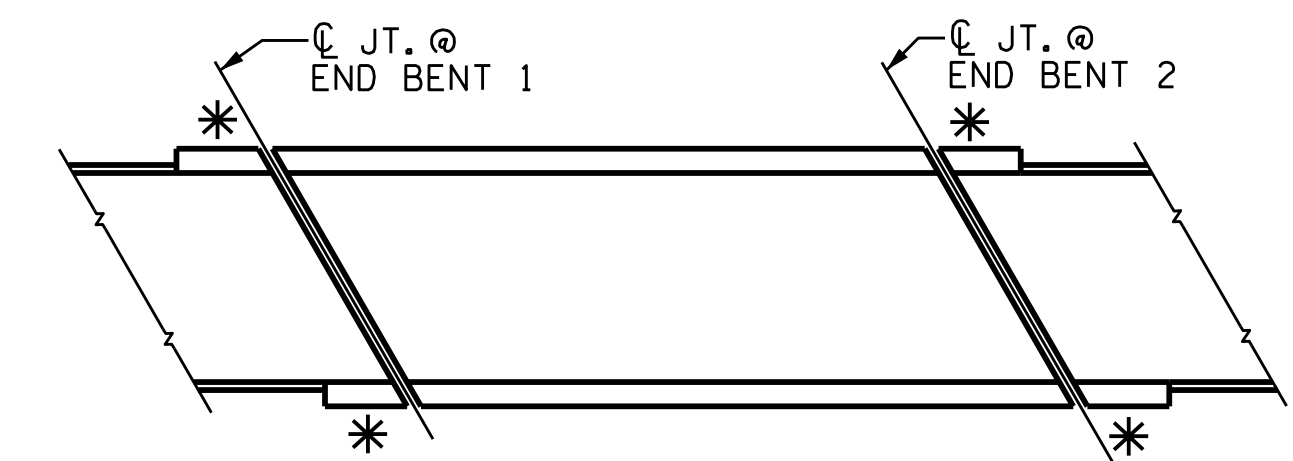


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

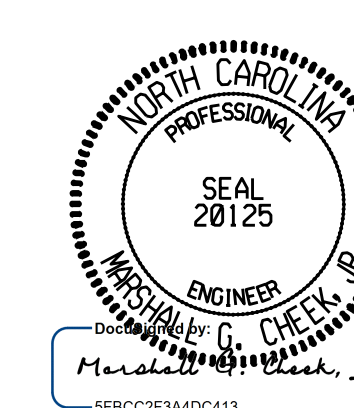
END BENT 1 SHOWN, END BENT 2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+08.00 -L-



2/24/2022 7:41 AM EST

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE
FOR BARRIER RAIL

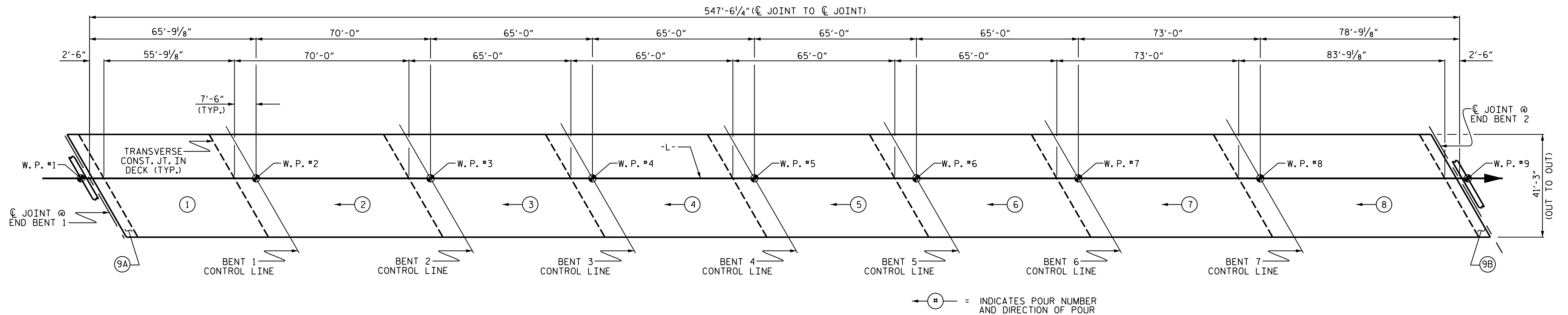
ASSEMBLED BY : S. B. WILLIAMS	DATE : 9-18
CHECKED BY : MGC	DATE : 11-18
DRAWN BY : TLA 5/06	REV. 7/12 MAA/GM
CHECKED BY : GM 5/06	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

9/24/2021 X:\NCDOT\B-4786\Structures\Final plans\DCNs\B-4786.SMU. GR.730038.dgn Users\sbwilliams

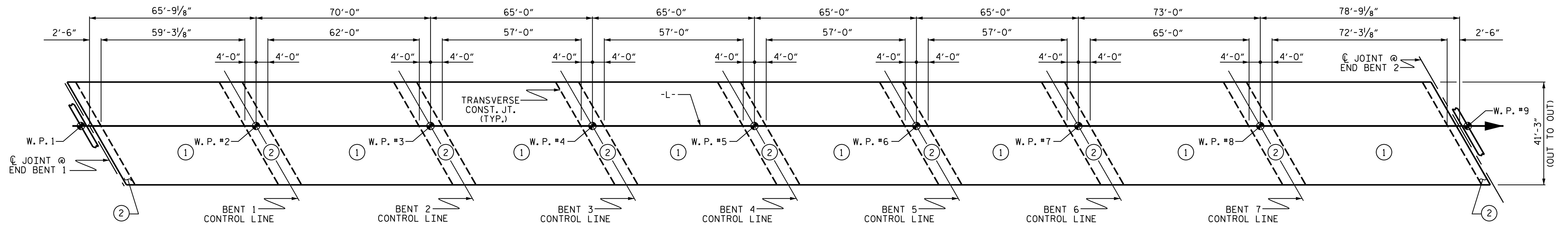
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SUITE 200
RALEIGH, NC 27603
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CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
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2			4			57

(SHT 3a) STD. NO. GRA2

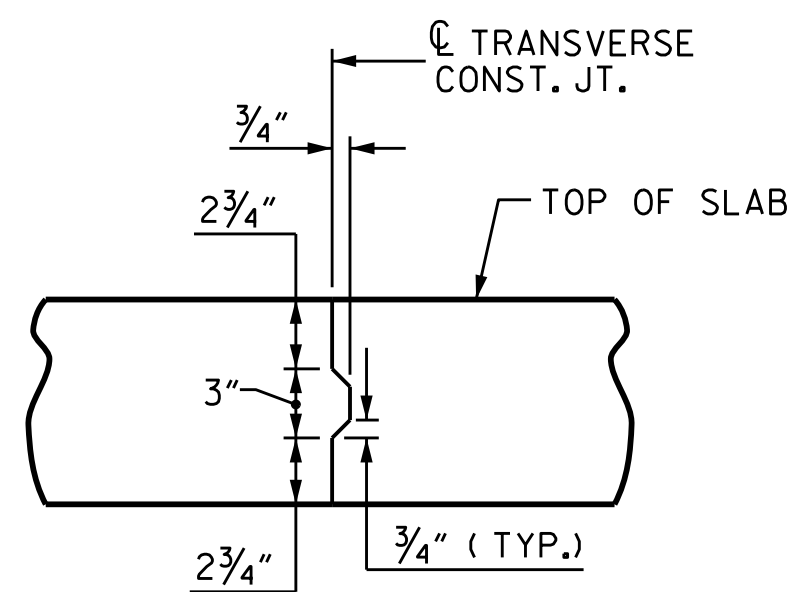


POURING SEQUENCE



OPTIONAL POURING SEQUENCE

POUR (2) CANNOT BE STARTED UNTIL BOTH ADJACENT POURS REACH A MINIMUM OF 3000 PSI.

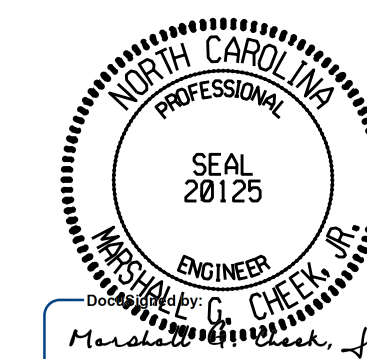


TRANSVERSE CONSTRUCTION JOINT DETAIL

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

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE DECK POUR DETAILS

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 CHECKED BY : MGC DATE : 11-18
 DESIGN ENGINEER OF RECORD: TBE DATE : 8-19

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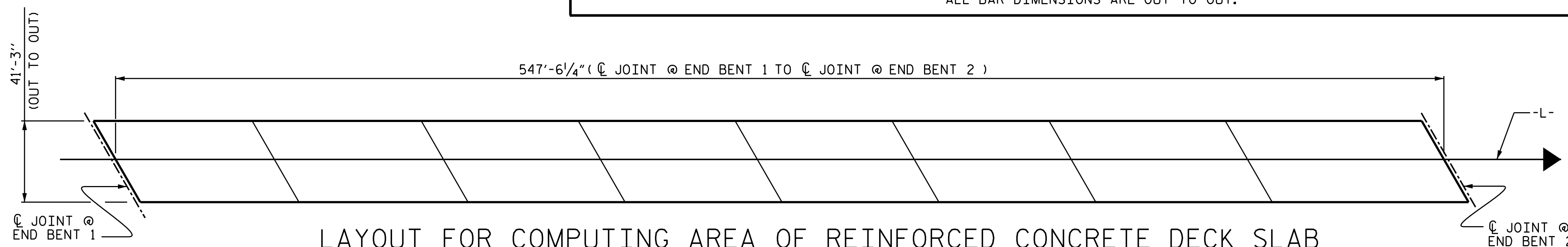
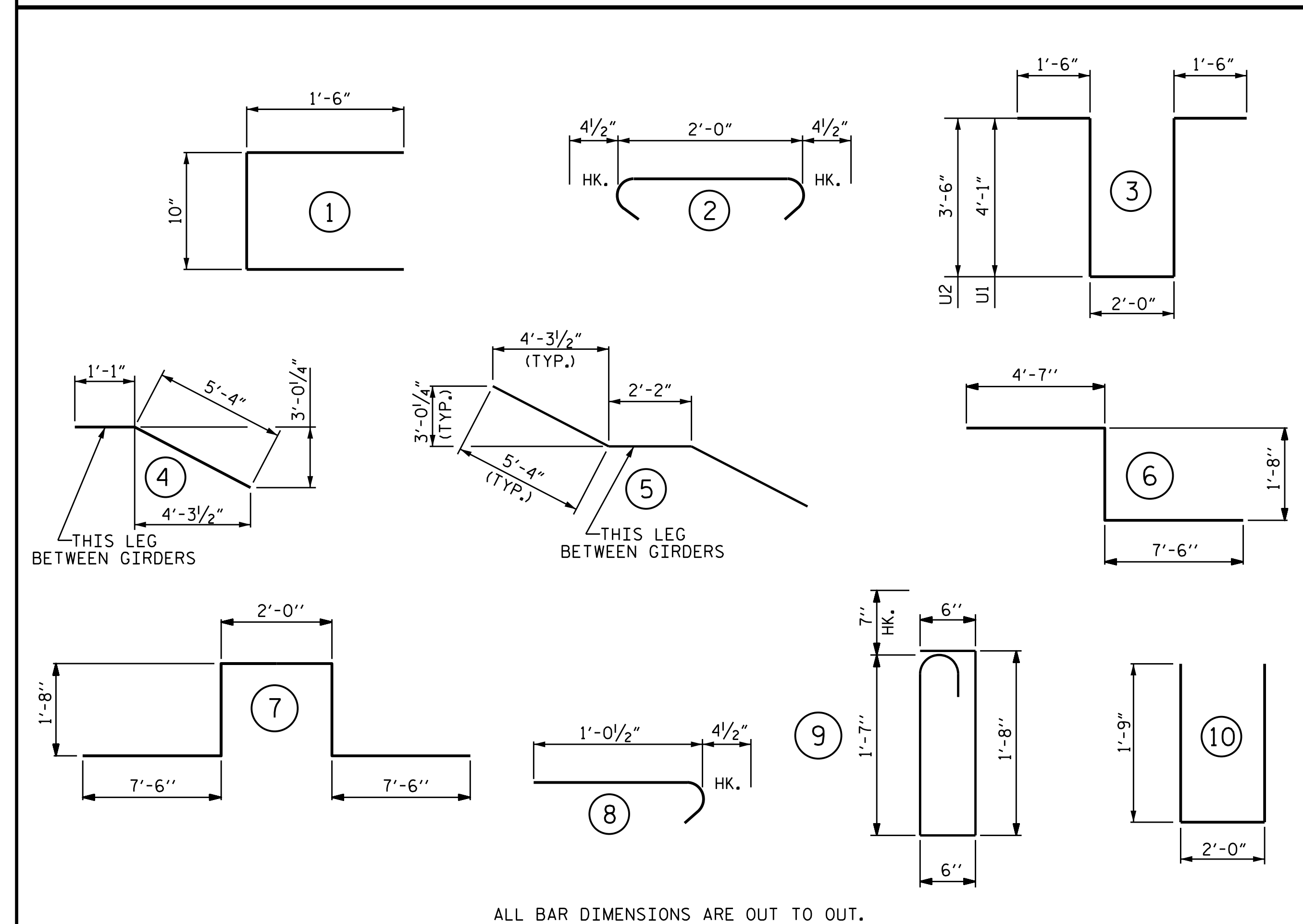
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 RALEIGH, NC 27603
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
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2			4			57

REINFORCING BAR SCHEDULE

BAR No.	SIZE	TYPE	LENGTH	WEIGHT	BAR No.	SIZE	TYPE	LENGTH	WEIGHT	BAR No.	SIZE	TYPE	LENGTH	WEIGHT			
* A1	1047	#5	STR.	40'-11"	44682	A201	2	#5	STR.	39'-11"	83	B1	440	#5	STR.	56'-9"	26044
A2	1047	#5	STR.	40'-11"	44682	A202	2	#5	STR.	39'-1"	82	* B2	58	#4	STR.	22'-5"	869
* A101	2	#5	STR.	39'-11"	83	A203	2	#5	STR.	38'-3"	80	* B3	58	#6	STR.	50'-9"	4421
* A102	2	#5	STR.	39'-1"	82	A204	2	#5	STR.	37'-4"	78	* B4	104	#6	STR.	20'-6"	3202
* A103	2	#5	STR.	38'-3"	80	A205	2	#5	STR.	36'-6"	76	* B5	29	#4	STR.	22'-0"	426
* A104	2	#5	STR.	37'-4"	78	A206	2	#5	STR.	35'-7"	74	* B6	116	#4	STR.	20'-0"	1550
* A105	2	#5	STR.	36'-6"	76	A207	2	#5	STR.	34'-9"	72	* B7	87	#6	STR.	49'-0"	6403
* A106	2	#5	STR.	35'-7"	74	A208	2	#5	STR.	33'-11"	71	* B8	156	#6	STR.	19'-6"	4569
* A107	2	#5	STR.	34'-9"	72	A209	2	#5	STR.	33'-0"	69	* B9	29	#6	STR.	51'-6"	2243
* A108	2	#5	STR.	33'-11"	71	A210	2	#5	STR.	32'-2"	67	* B10	52	#6	STR.	20'-9"	1621
* A109	2	#5	STR.	33'-0"	69	A211	2	#5	STR.	31'-3"	65	* B11	29	#4	STR.	23'-0"	446
* A110	2	#5	STR.	32'-2"	67	A212	2	#5	STR.	30'-5"	63	* B12	29	#6	STR.	55'-8"	2425
* A111	2	#5	STR.	31'-3"	65	A213	2	#5	STR.	29'-7"	62	* B13	52	#6	STR.	23'-0"	1796
* A112	2	#5	STR.	30'-5"	63	A214	2	#5	STR.	28'-8"	60	* B14	58	#4	STR.	27'-0"	1046
* A113	2	#5	STR.	29'-7"	62	A215	2	#5	STR.	27'-10"	58	* G1	2	#5	STR.	47'-3"	99
* A114	2	#5	STR.	28'-8"	60	A216	2	#5	STR.	27'-0"	56	* J1	90	#4	8	1'-5"	85
* A115	2	#5	STR.	27'-10"	58	A217	2	#5	STR.	26'-1"	54	* K1	8	#8	6	13'-9"	294
* A116	2	#5	STR.	27'-0"	56	A218	2	#5	STR.	25'-3"	53	* K2	12	#8	7	20'-4"	651
* A117	2	#5	STR.	26'-1"	54	A219	2	#5	STR.	24'-4"	51	* K3	24	#6	STR.	8'-1"	291
* A118	2	#5	STR.	25'-3"	53	A220	2	#5	STR.	23'-6"	49	K4	70	#4	4	6'-5"	300
* A119	2	#5	STR.	24'-4"	51	A221	2	#5	STR.	22'-8"	47	K5	105	#4	5	12'-10"	900
* A120	2	#5	STR.	23'-6"	49	A222	2	#5	STR.	21'-9"	45	K6	56	#4	STR.	6'-1"	228
* A121	2	#5	STR.	22'-8"	47	A223	2	#5	STR.	20'-11"	44	K7	168	#4	STR.	8'-4"	935
* A122	2	#5	STR.	21'-9"	45	A224	2	#5	STR.	20'-0"	42	K8	56	#4	STR.	8'-1"	302
* A123	2	#5	STR.	20'-11"	44	A225	2	#5	STR.	19'-2"	40	* S1	64	#5	9	4'-10"	323
* A124	2	#5	STR.	20'-0"	42	A226	2	#5	STR.	18'-4"	38	* S2	64	#4	1	3'-10"	164
* A125	2	#5	STR.	19'-2"	40	A227	2	#5	STR.	17'-5"	36	* S3	840	#4	2	2'-9"	1543
* A126	2	#5	STR.	18'-4"	38	A228	2	#5	STR.	16'-7"	35	U1	140	#4	3	13'-2"	1231
* A127	2	#5	STR.	17'-5"	36	A229	2	#5	STR.	15'-9"	33	U2	56	#4	3	12'-0"	449
* A128	2	#5	STR.	16'-7"	35	A230	2	#5	STR.	14'-10"	31	U3	56	#4	10	5'-6"	206
* A129	2	#5	STR.	15'-9"	33	A231	2	#5	STR.	14'-0"	29	REINFORCING STEEL			78,782	LBS.	
* A130	2	#5	STR.	14'-10"	31	A232	2	#5	STR.	13'-1"	27	* EPOXY COATED REINFORCING STEEL			79,568	LBS.	
* A131	2	#5	STR.	14'-0"	29	A233	2	#5	STR.	12'-3"	26						
* A132	2	#5	STR.	13'-1"	27	A234	2	#5	STR.	11'-4"	24						
* A133	2	#5	STR.	12'-3"	26	A235	2	#5	STR.	10'-6"	22						
* A134	2	#5	STR.	11'-4"	24	A236	2	#5	STR.	9'-8"	20						
* A135	2	#5	STR.	10'-6"	22	A237	2	#5	STR.	8'-9"	18						
* A136	2	#5	STR.	9'-8"	20	A238	2	#5	STR.	7'-11"	17						
* A137	2	#5	STR.	8'-9"	18	A239	2	#5	STR.	7'-0"	15						
* A138	2	#5	STR.	7'-11"	17	A240	2	#5	STR.	6'-2"	13						
* A139	2	#5	STR.	7'-0"	15	A241	2	#5	STR.	5'-4"	11						
* A140	2	#5	STR.	6'-2"	13	A242	2	#5	STR.	4'-5"	9						
* A141	2	#5	STR.	5'-4"	11	A243	2	#5	STR.	3'-7"	7						
* A142	2	#5	STR.	4'-5"	9	A244	2	#5	STR.	2'-8"	6						
* A143	2	#5	STR.	3'-7"	7	A245	2	#5	STR.	2'-0"	4						
* A144	2	#5	STR.	2'-8"	6												
* A145	2	#5	STR.	2'-0"	4												

BAR TYPES



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

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

CLASS AA CONCRETE BREAKDOWN

POUR #1	72.4	CU. YDS.
POUR #2	103.9	CU. YDS.
POUR #3	97.4	CU. YDS.
POUR #4	97.4	CU. YDS.
POUR #5	97.4	CU. YDS.
POUR #6	97.4	CU. YDS.
POUR #7	107.8	CU. YDS.
POUR #8	121.8	CU. YDS.
POUR #9A	5.2	CU. YDS.
POUR #9B	5.2	CU. YDS.
TOTAL	805.9	CU. YDS.

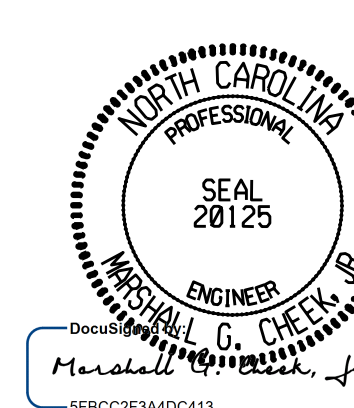
FOR LOCATION OF POURS, SEE "CONCRETE DECK POUR DETAILS" SHEET

GROOVING BRIDGE FLOORS

APPROACH SLABS	1,684	SO.FT.
BRIDGE DECK	19,151	SO.FT.
TOTAL	20,835	SO.FT.

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

SHEET 2 OF 2



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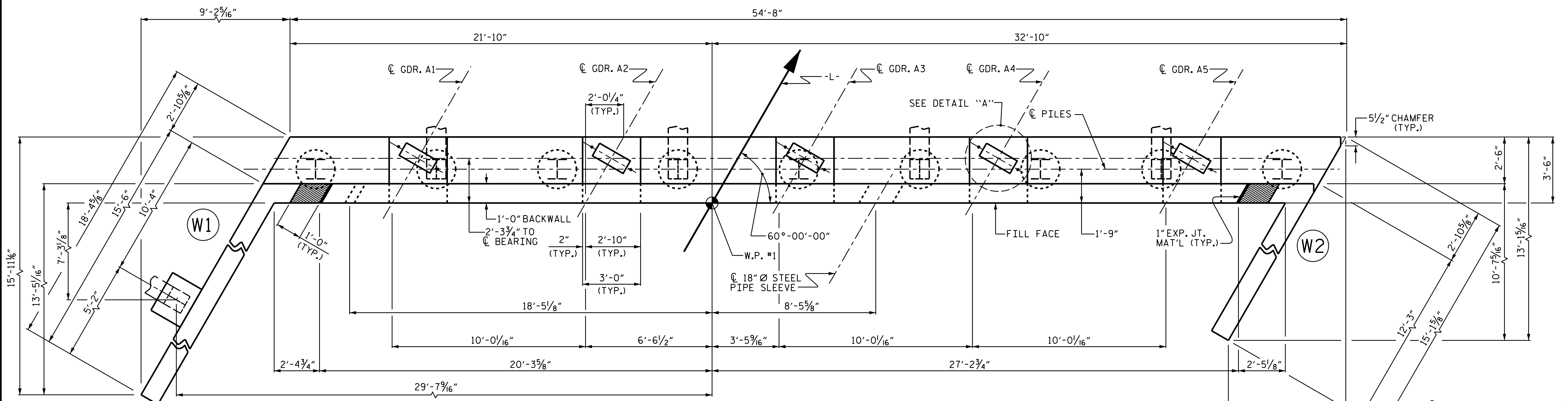
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RALEIGH

SUPERSTRUCTURE BILL OF MATERIAL

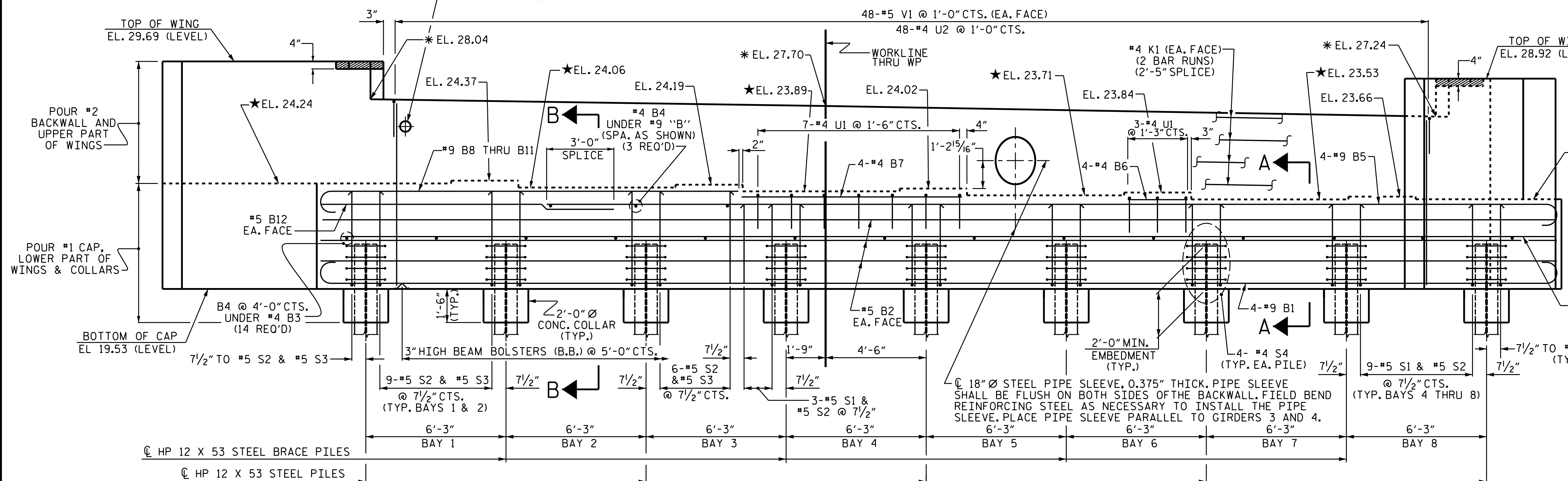
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CHECKED BY: MGC DATE: 11-18
DESIGN ENGINEER OF RECORD: MGC DATE: 8-21

9/24/2021
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User: sbwilliams

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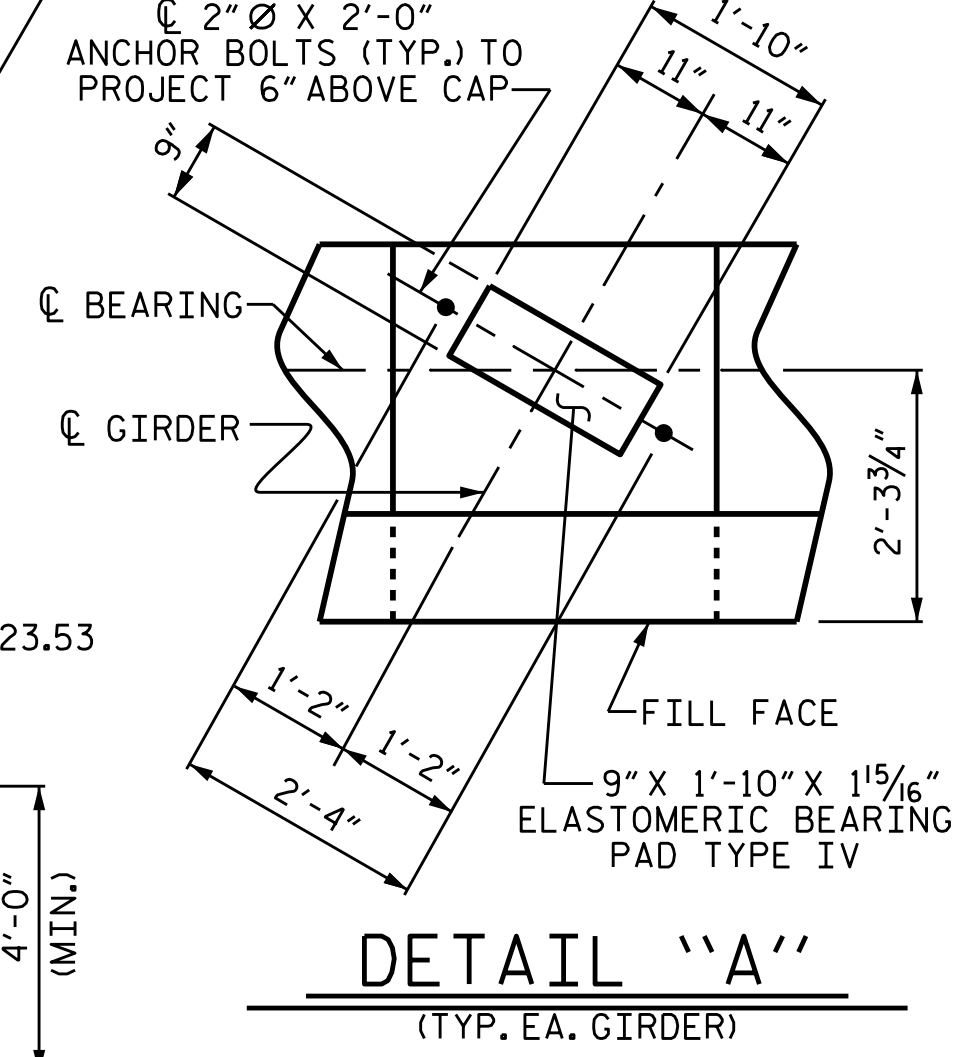


PLAN



ELEVATION

★ FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD UPS, SEE SECTION A-A, SHEET 3 OF 3.
 * THIS ELEVATION TAKEN ON FILL FACE OF BACKWALL.
 (WING BRACE PILE NOT SHOWN FOR CLARITY)



PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 1 OF 3

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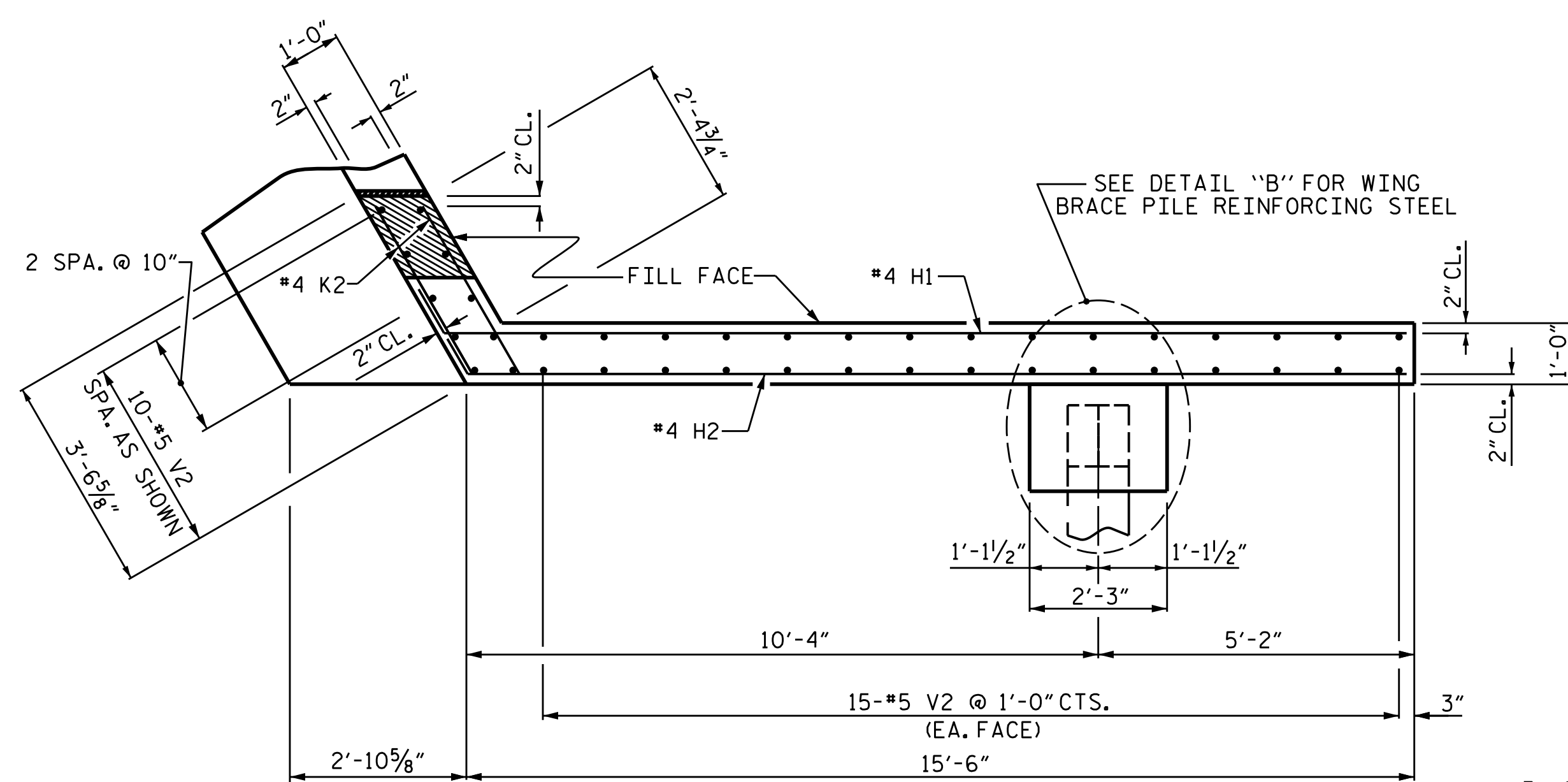
SUBSTRUCTURE
 END BENT 1

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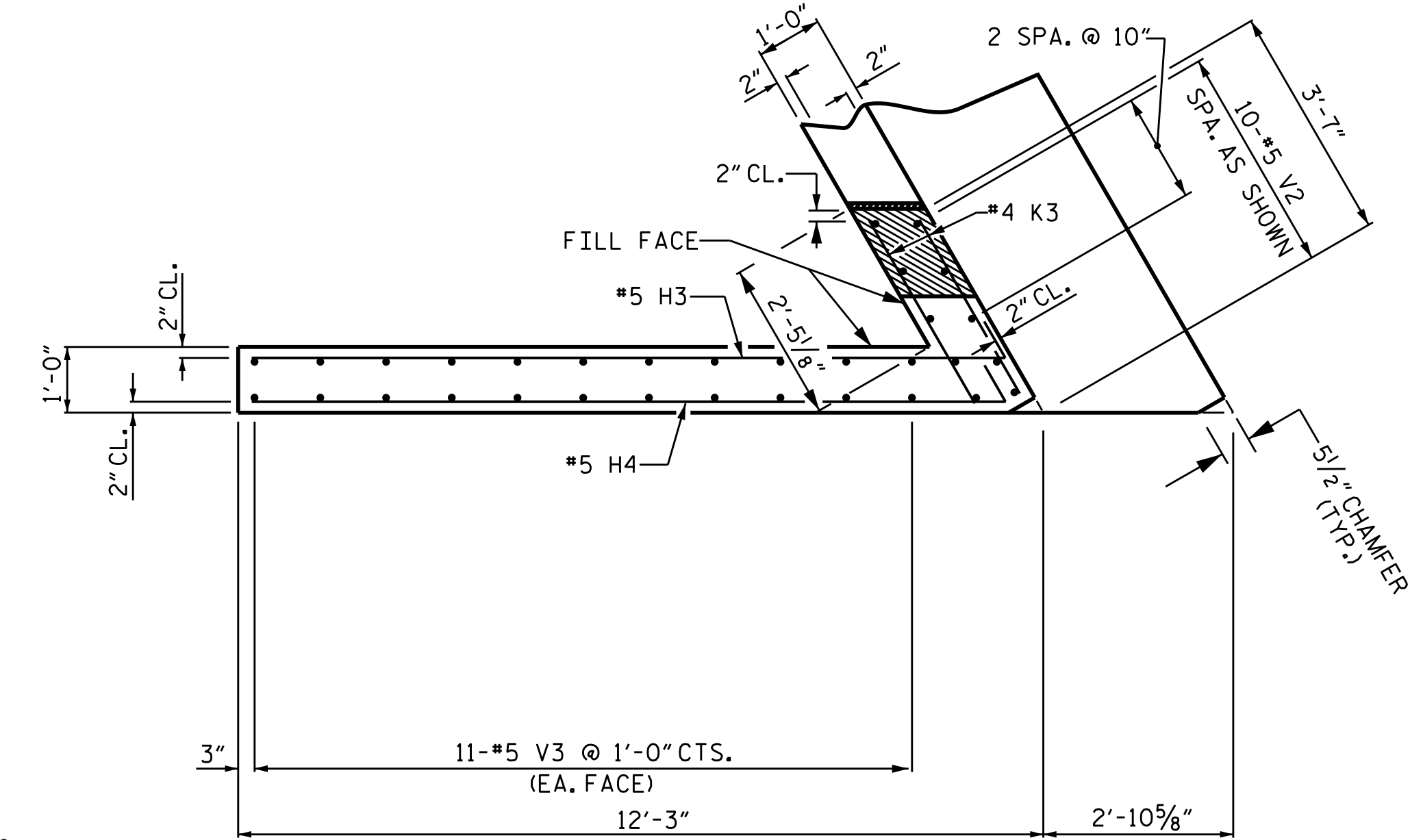
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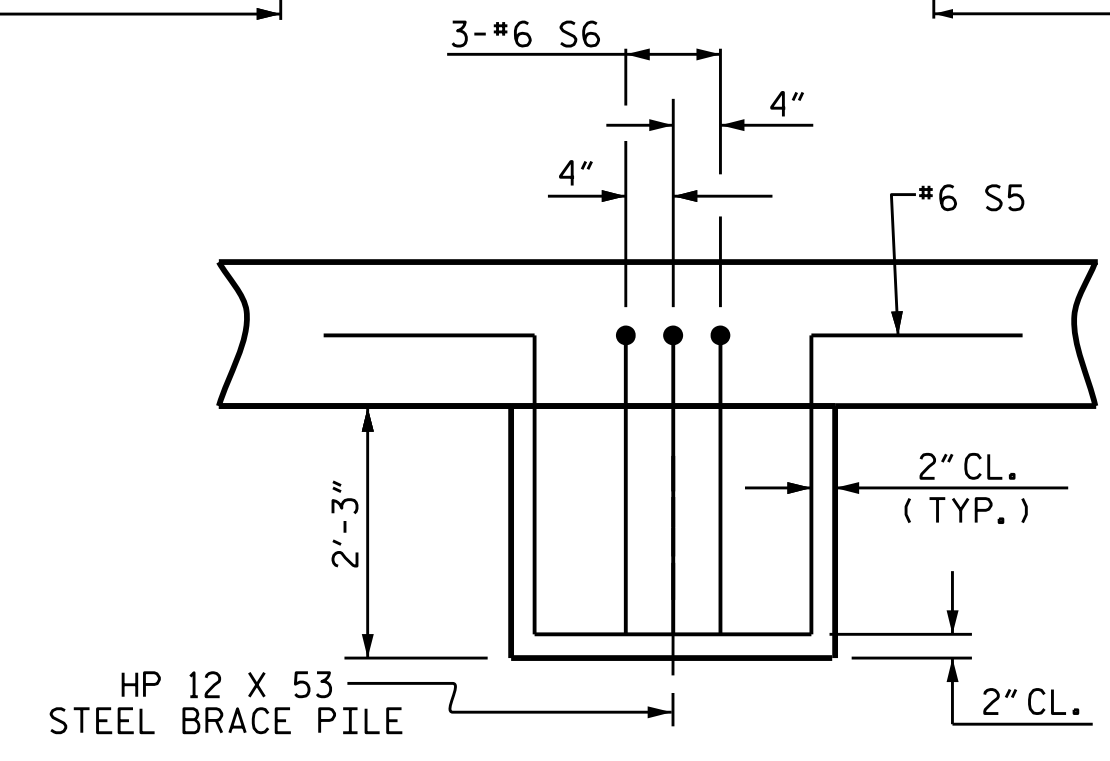
DRAWN BY: S. B. WILLIAMS DATE: 6-19
 CHECKED BY: MGC DATE: 6-19
 DESIGN ENGINEER OF RECORD: TBE DATE: 8-19



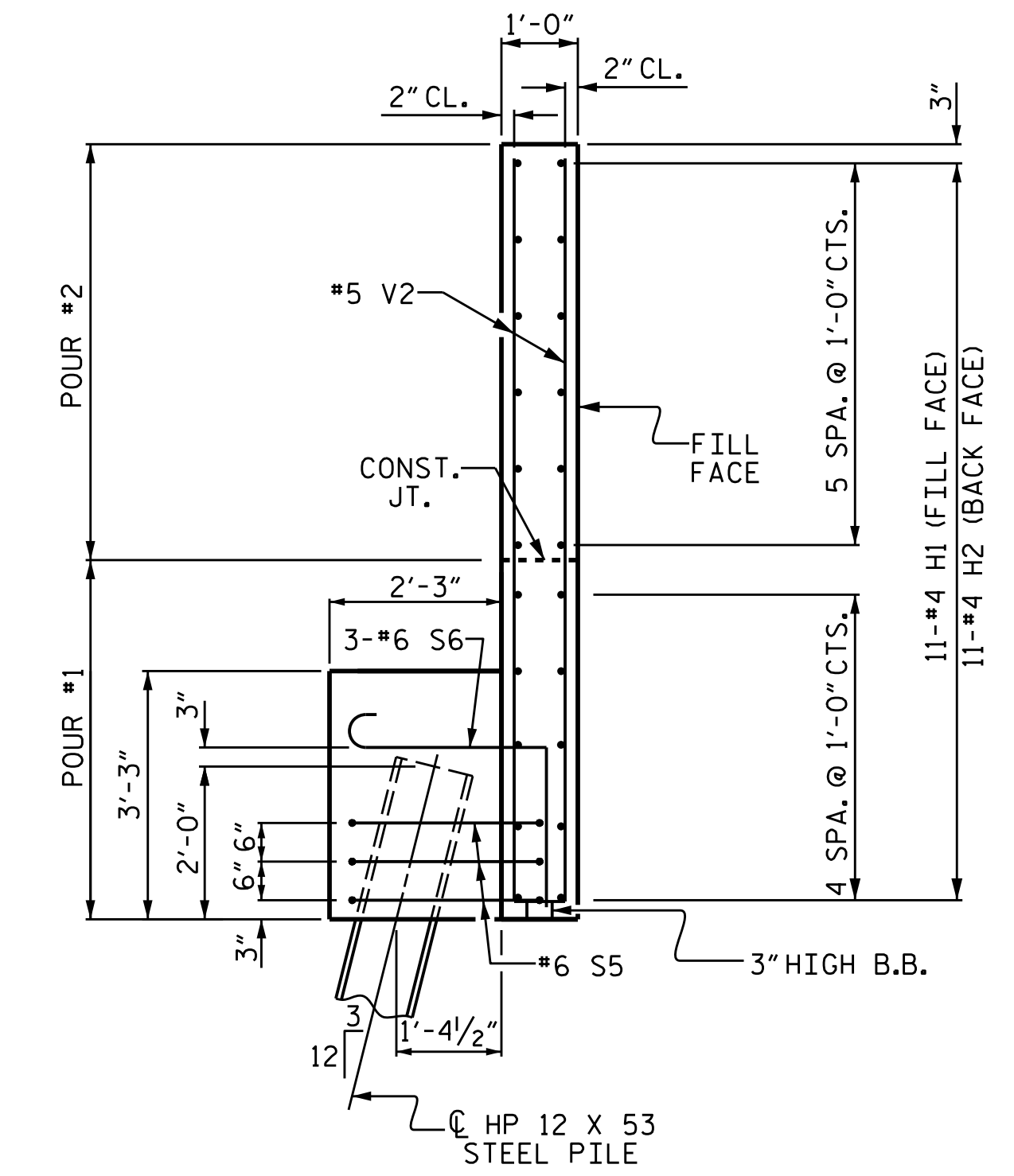
PLAN OF WING (W1)



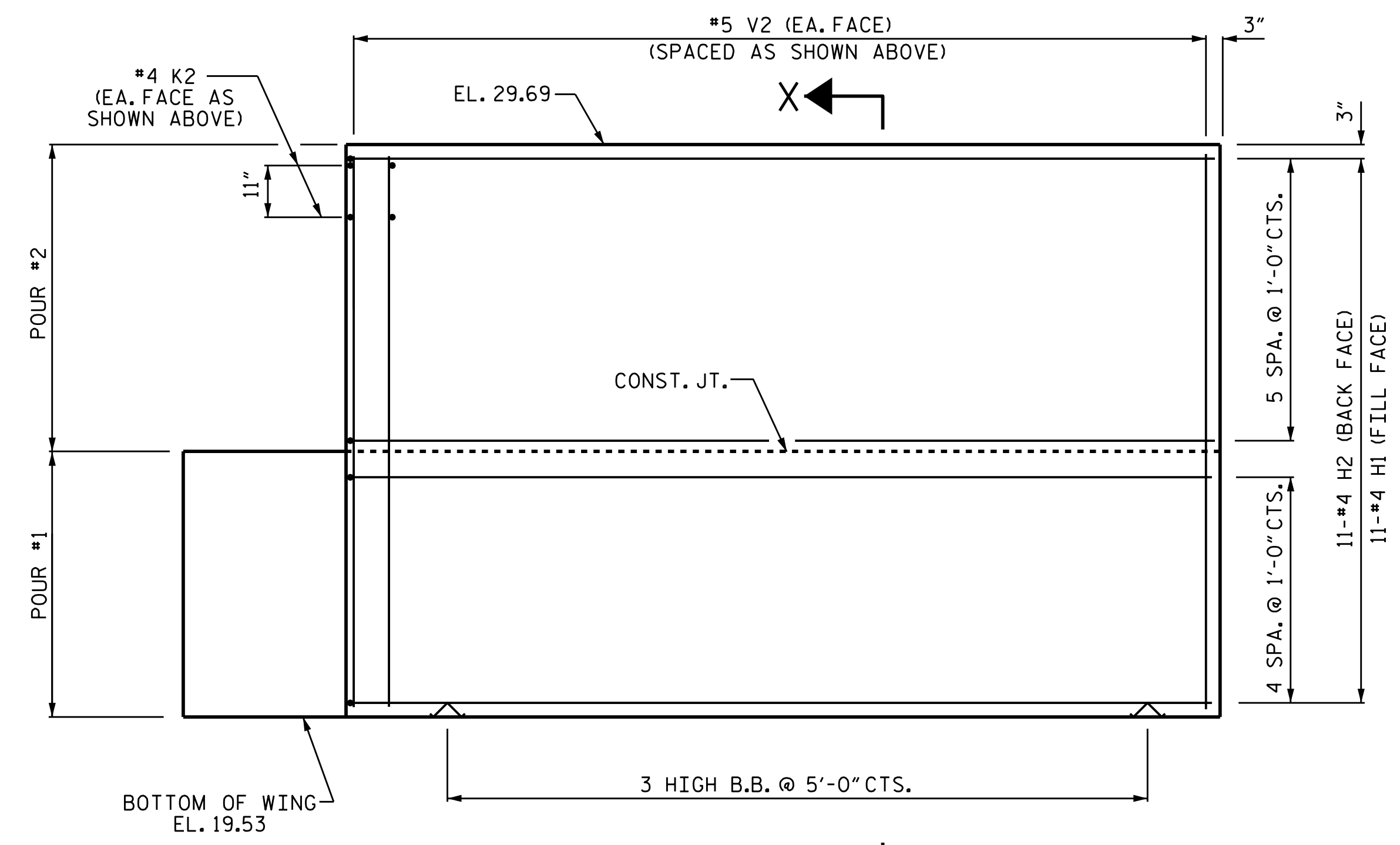
PLAN OF WING (W2)



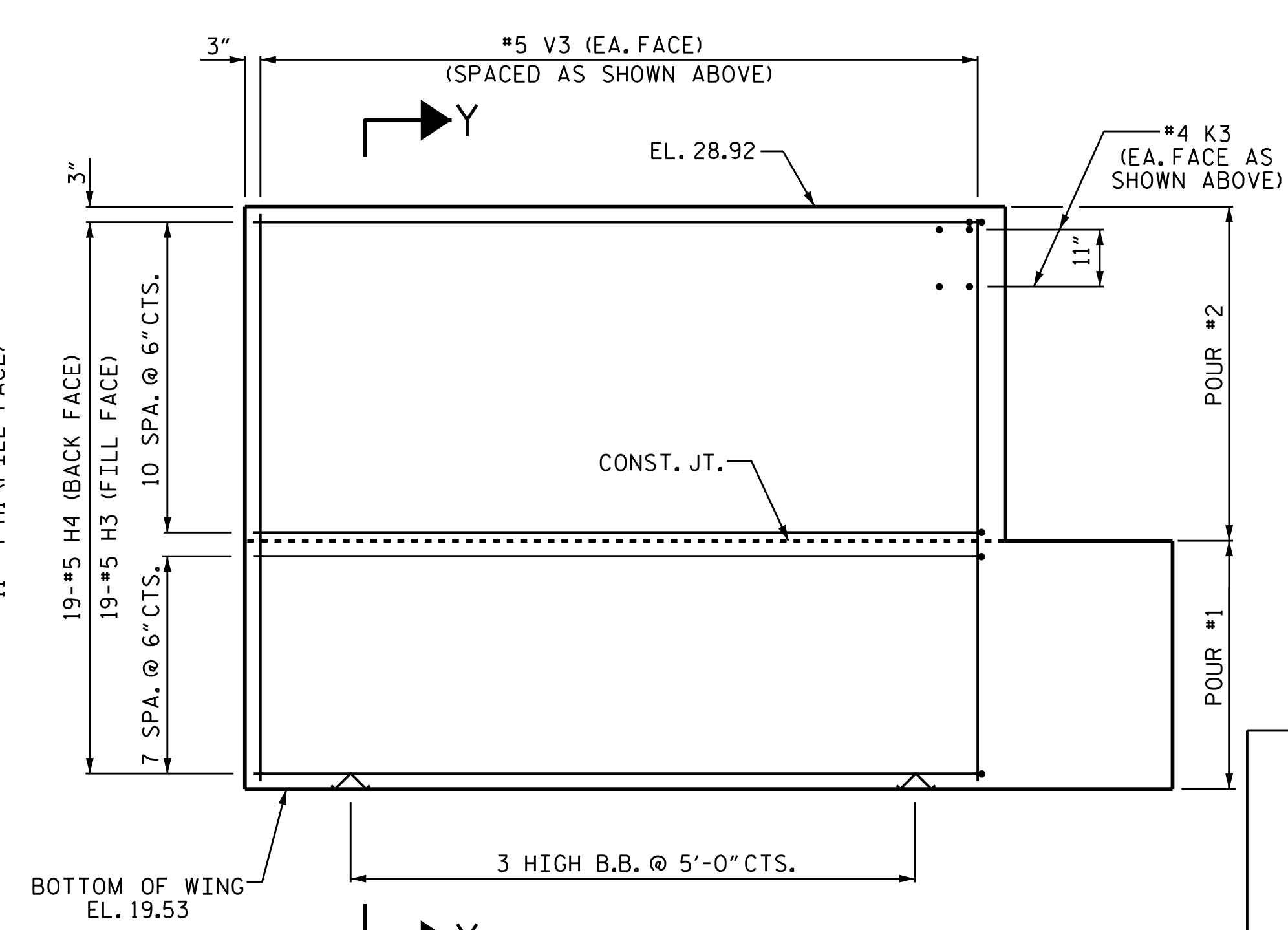
DETAIL "B"



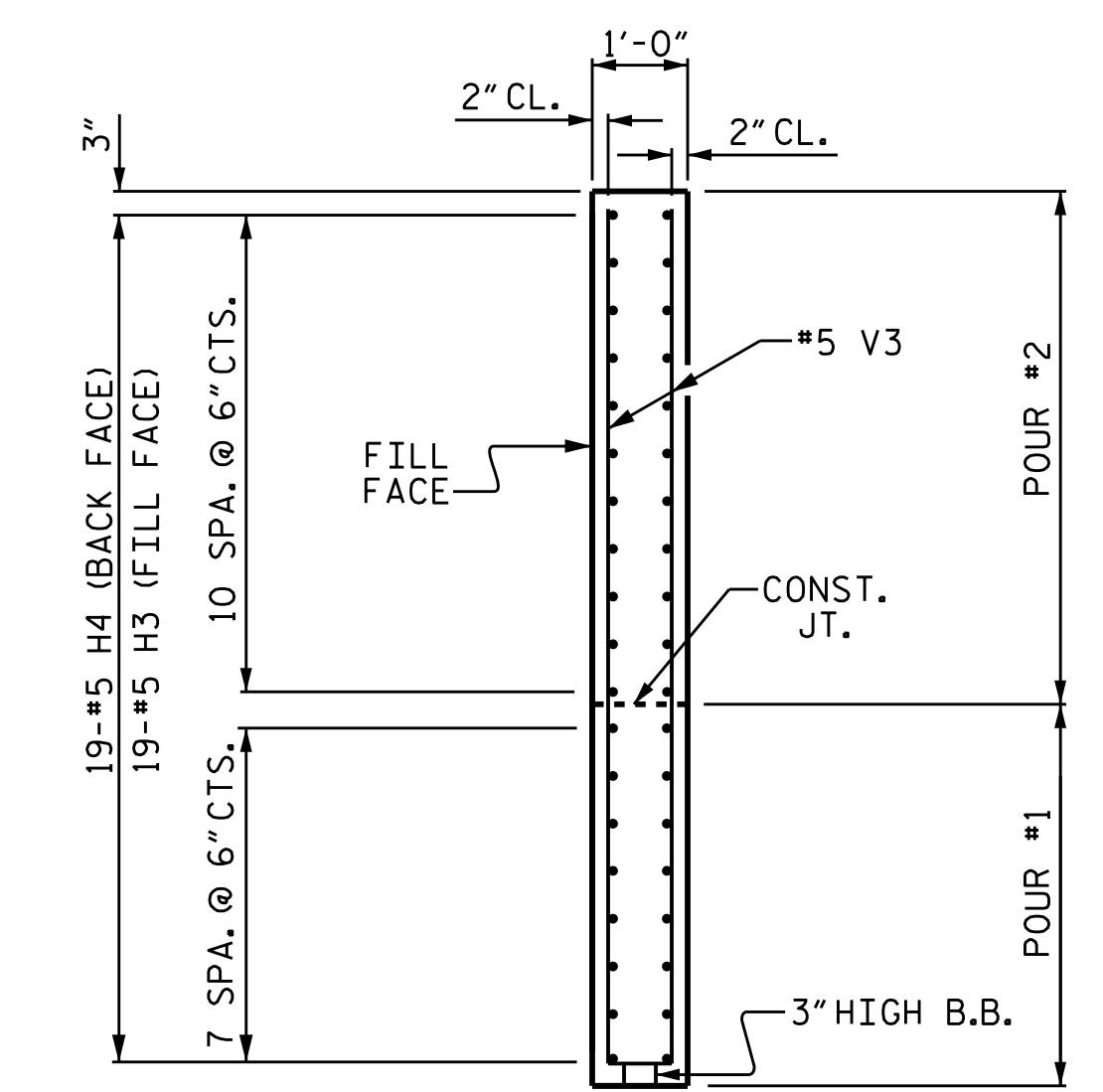
SECTION X-X



ELEVATION OF WING (W1)

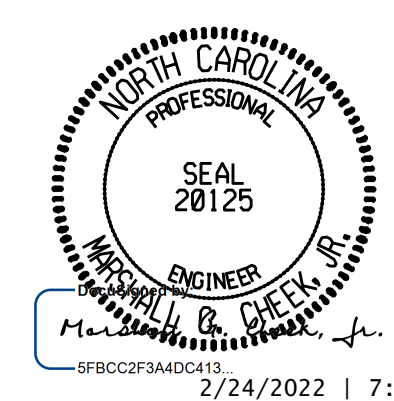


ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 1

DRAWN BY : S. B. WILLIAMS DATE : 6-19
 CHECKED BY : MGC DATE : 6-19
 DESIGN ENGINEER OF RECORD: TBE DATE : 8-19

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2			4		

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NOTES

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

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

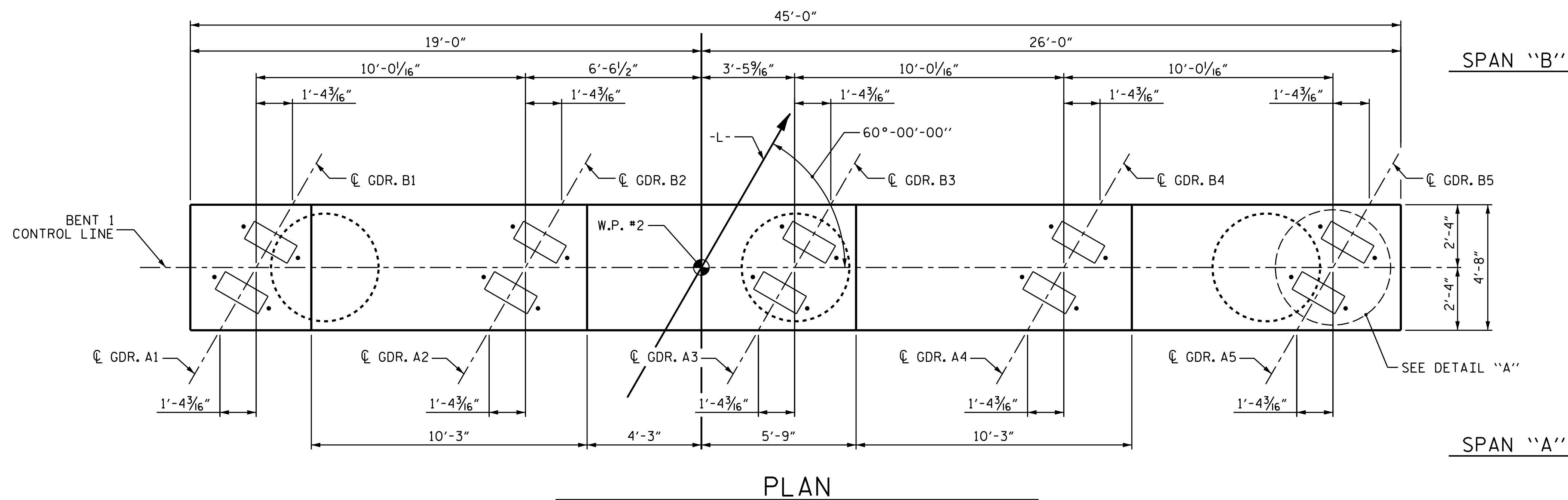
FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

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

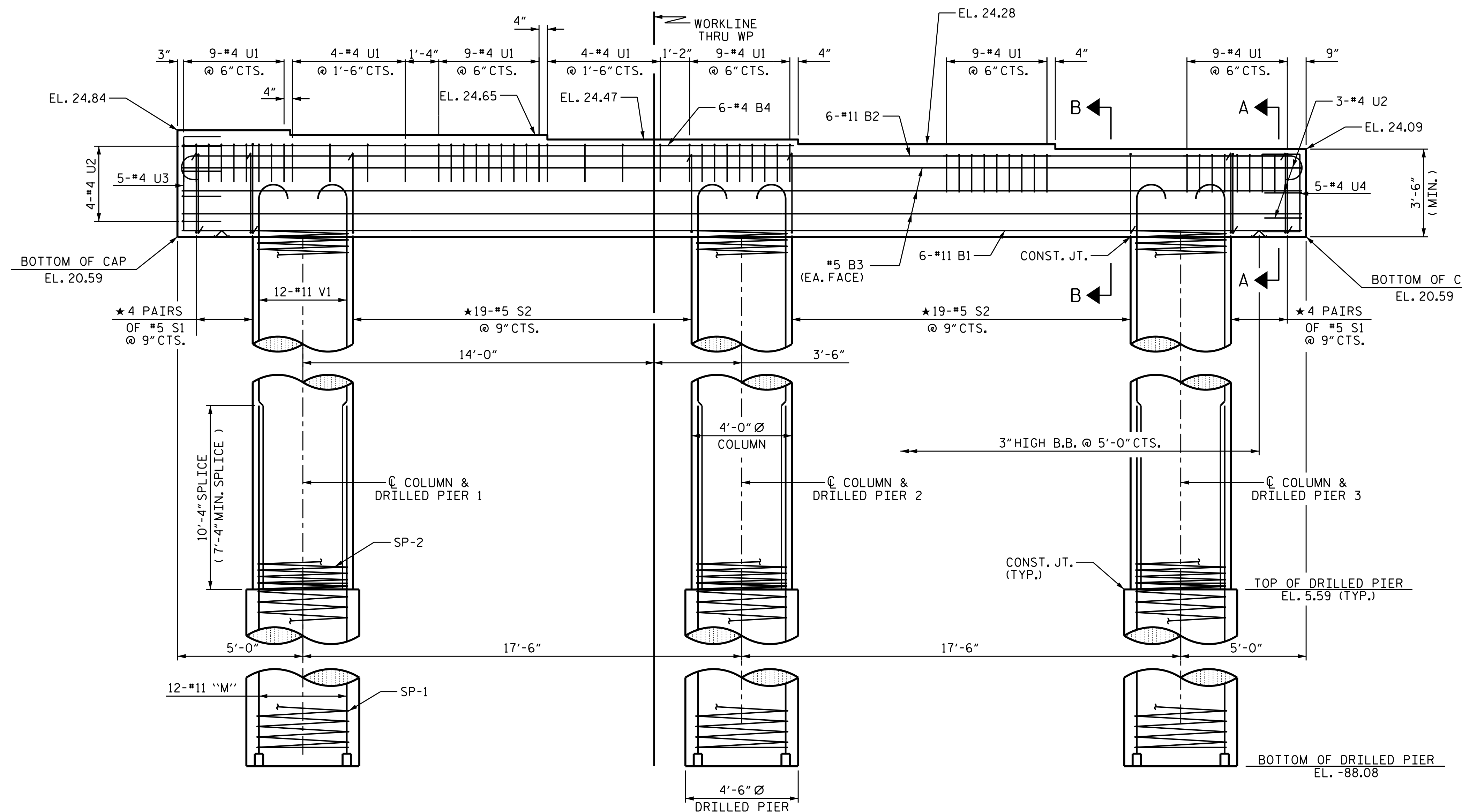
★ INVERT ALTERNATE STIRRUPS.

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

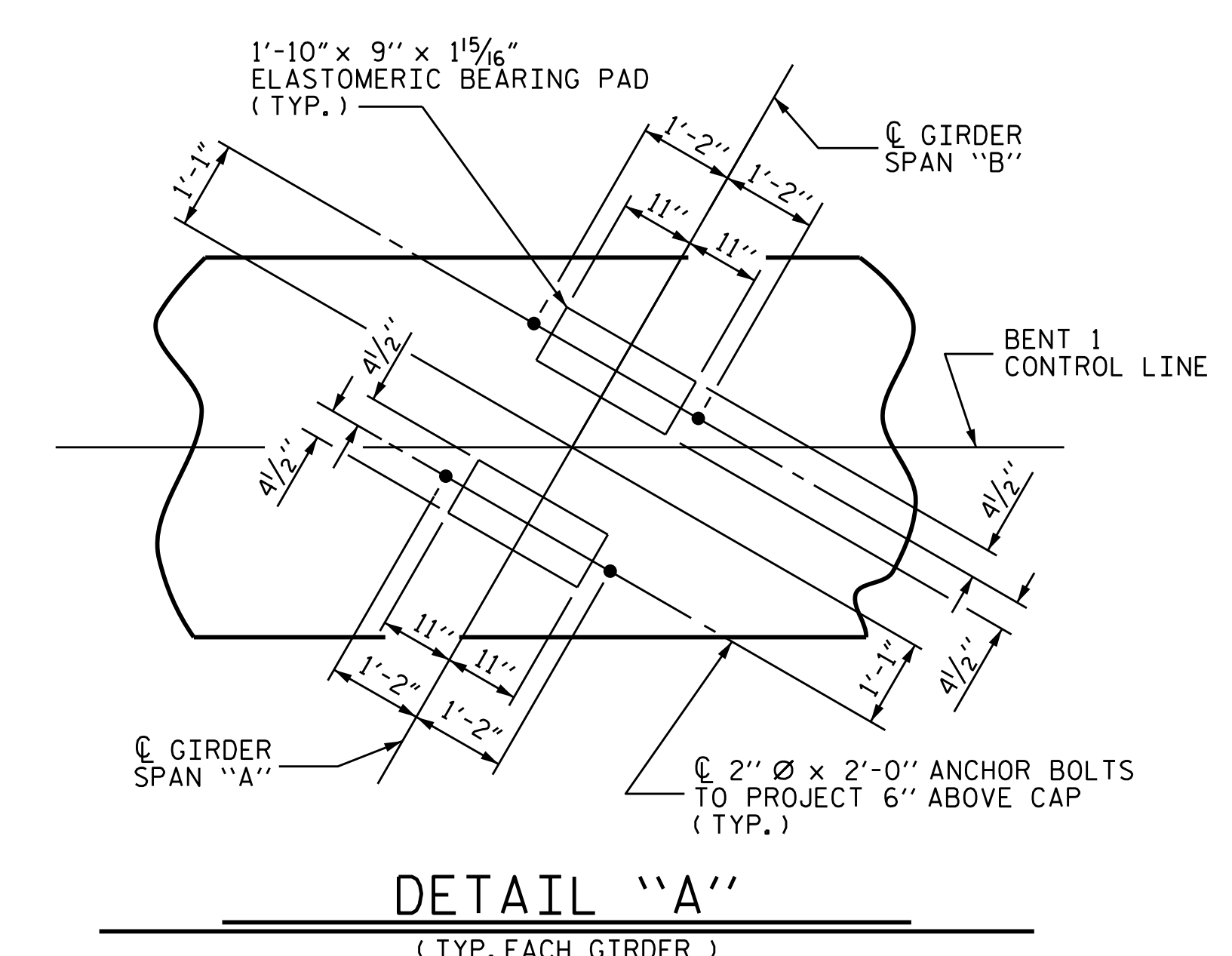
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



PLAN



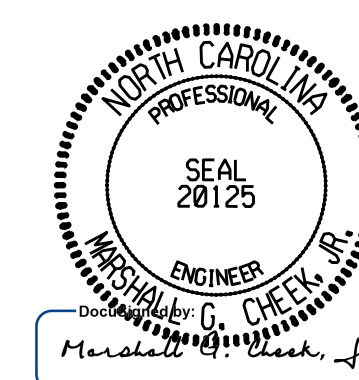
ELEVATION



DETAIL "A"
(TYP. EACH GIRDER)

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

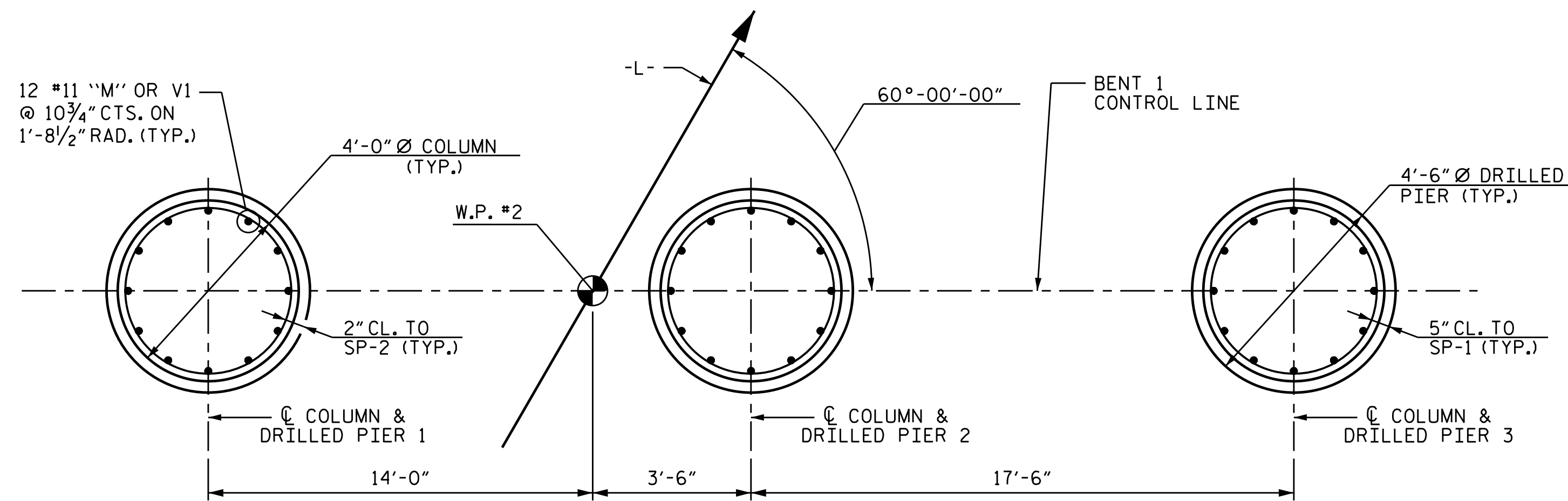
SUBSTRUCTURE
 BENT 1

DRAWN BY : TBE / ZCS DATE : 6/2019
 CHECKED BY : MGC DATE : 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE : 6/2019

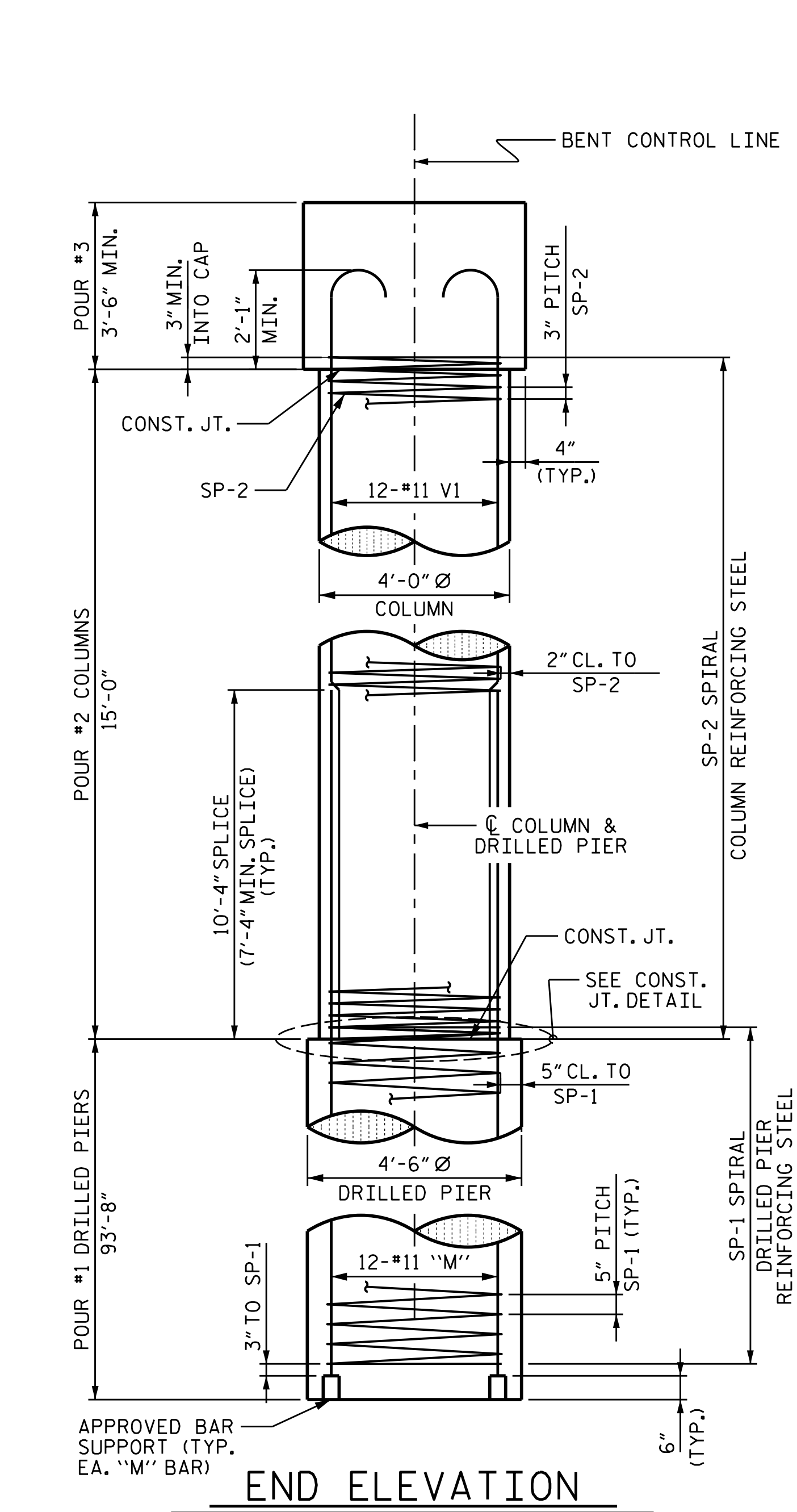
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER EXCEPT AS NOTED.

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

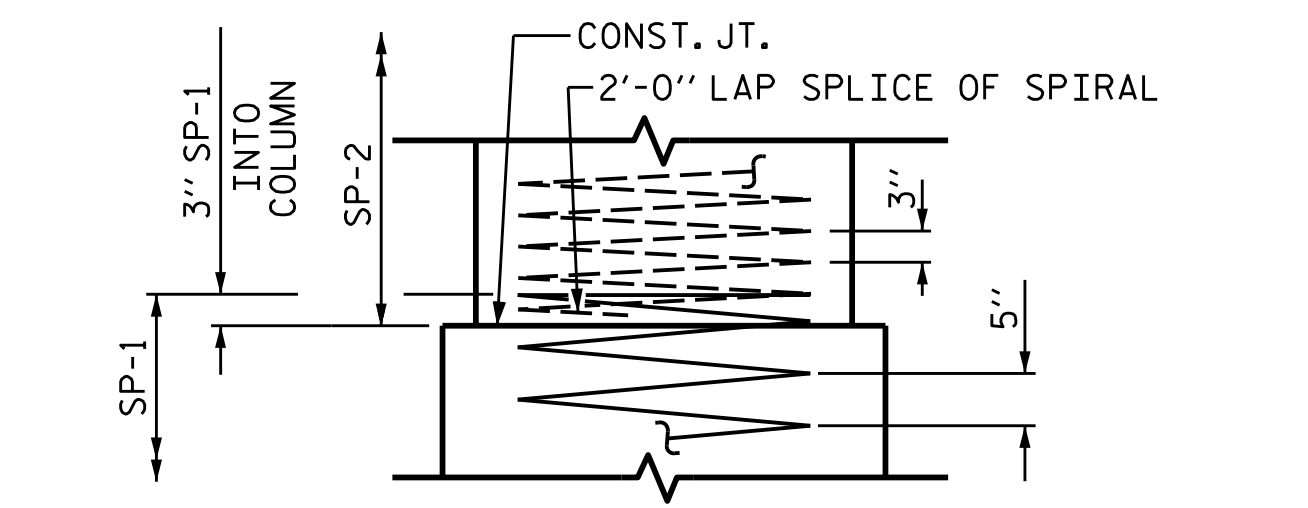
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			57



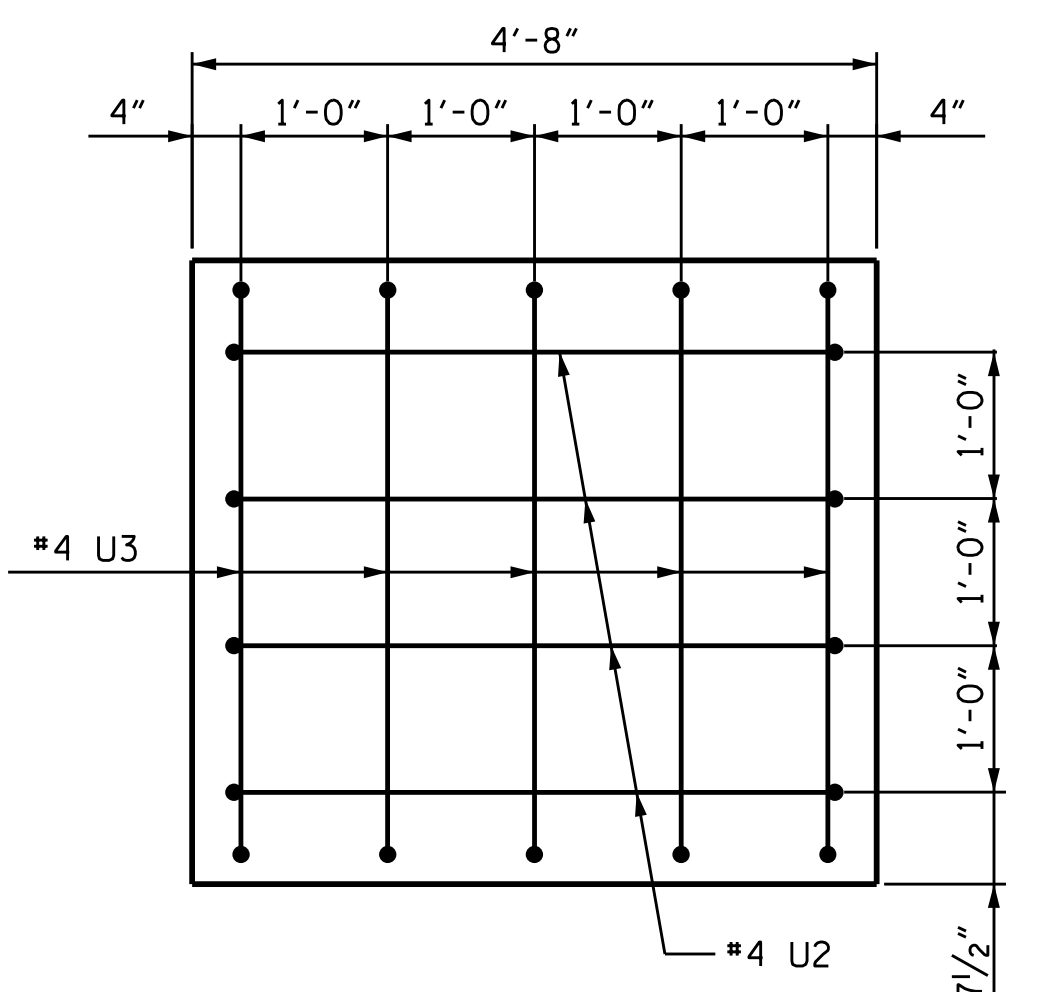
PLAN OF DRILLED PIERS & COLUMNS



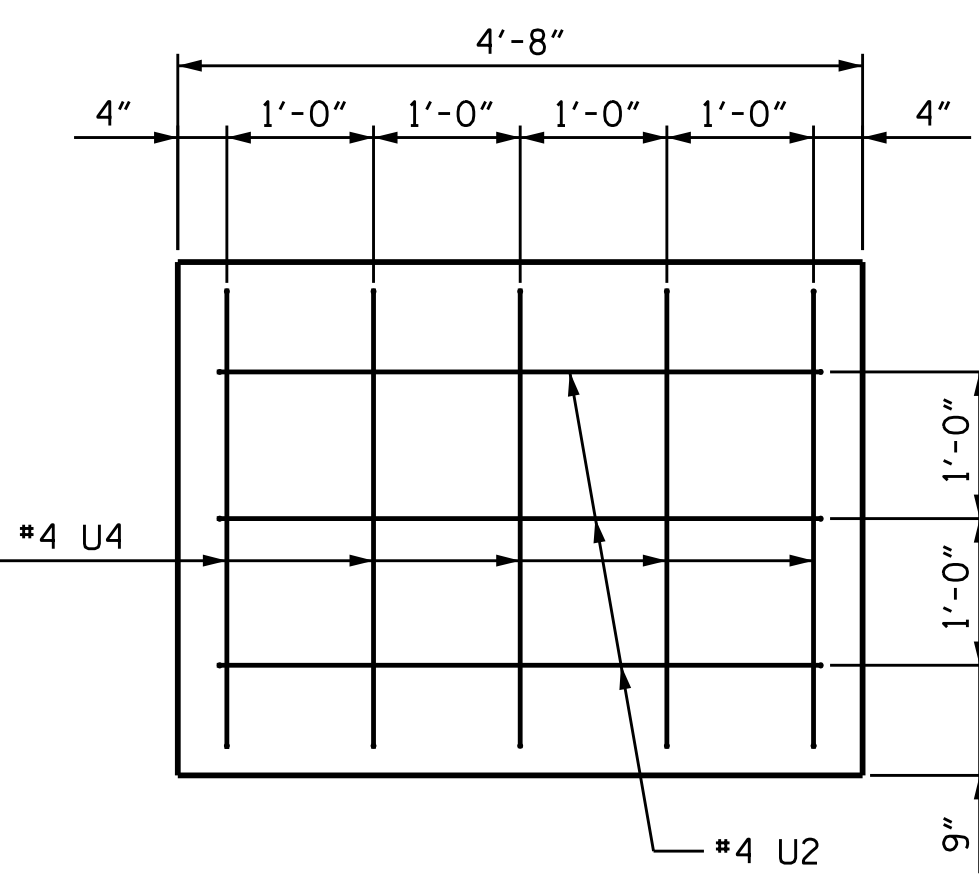
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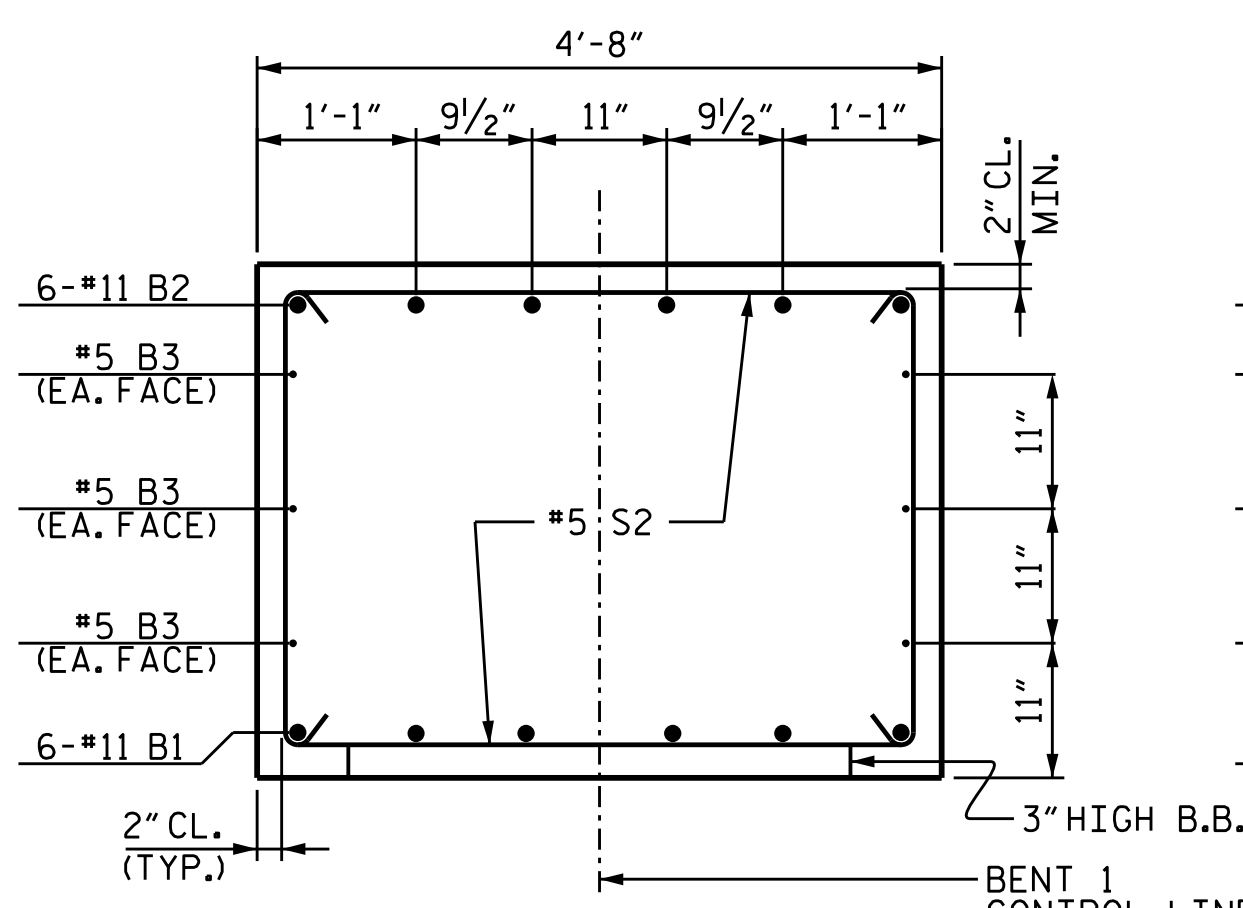
CONSTRUCTION JOINT DETAIL



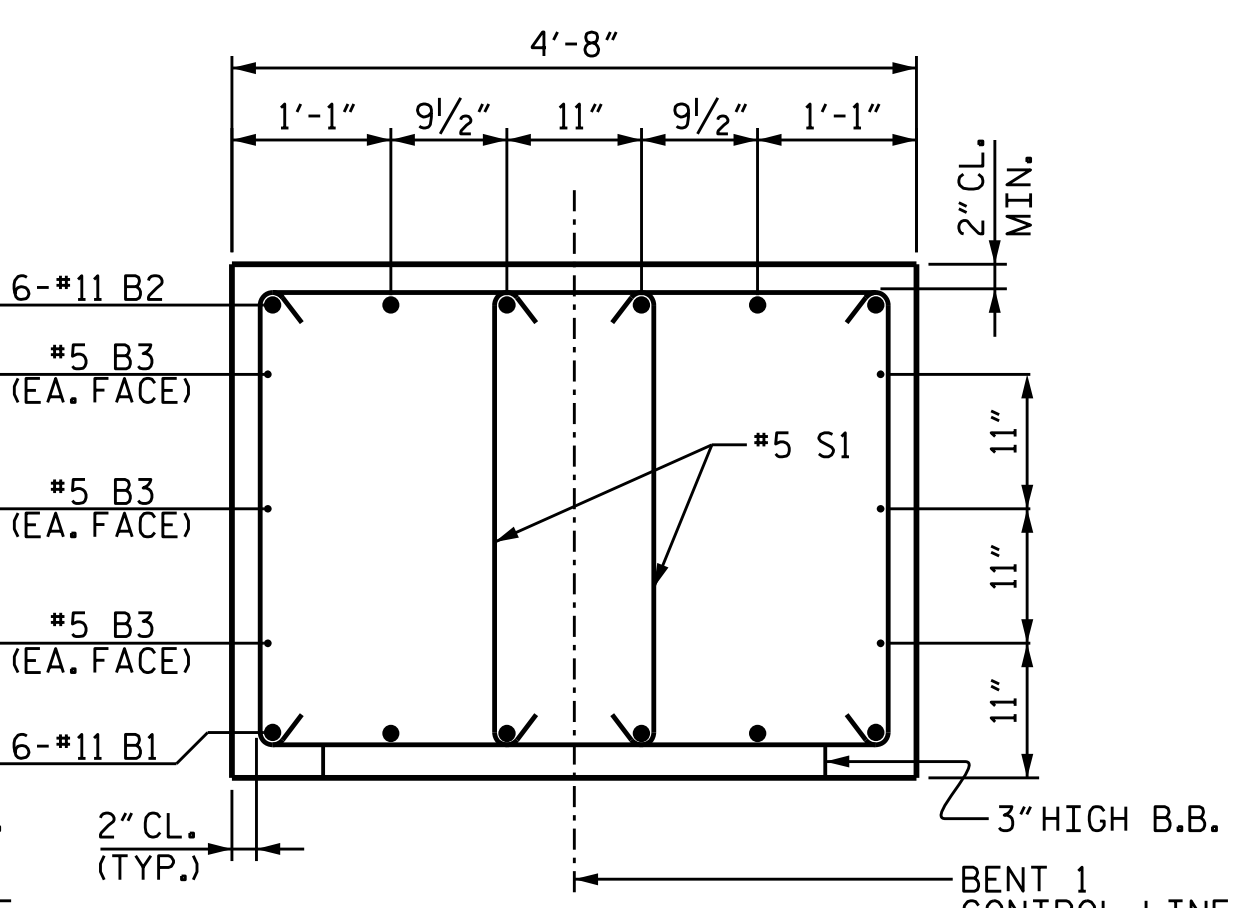
LEFT END VIEW



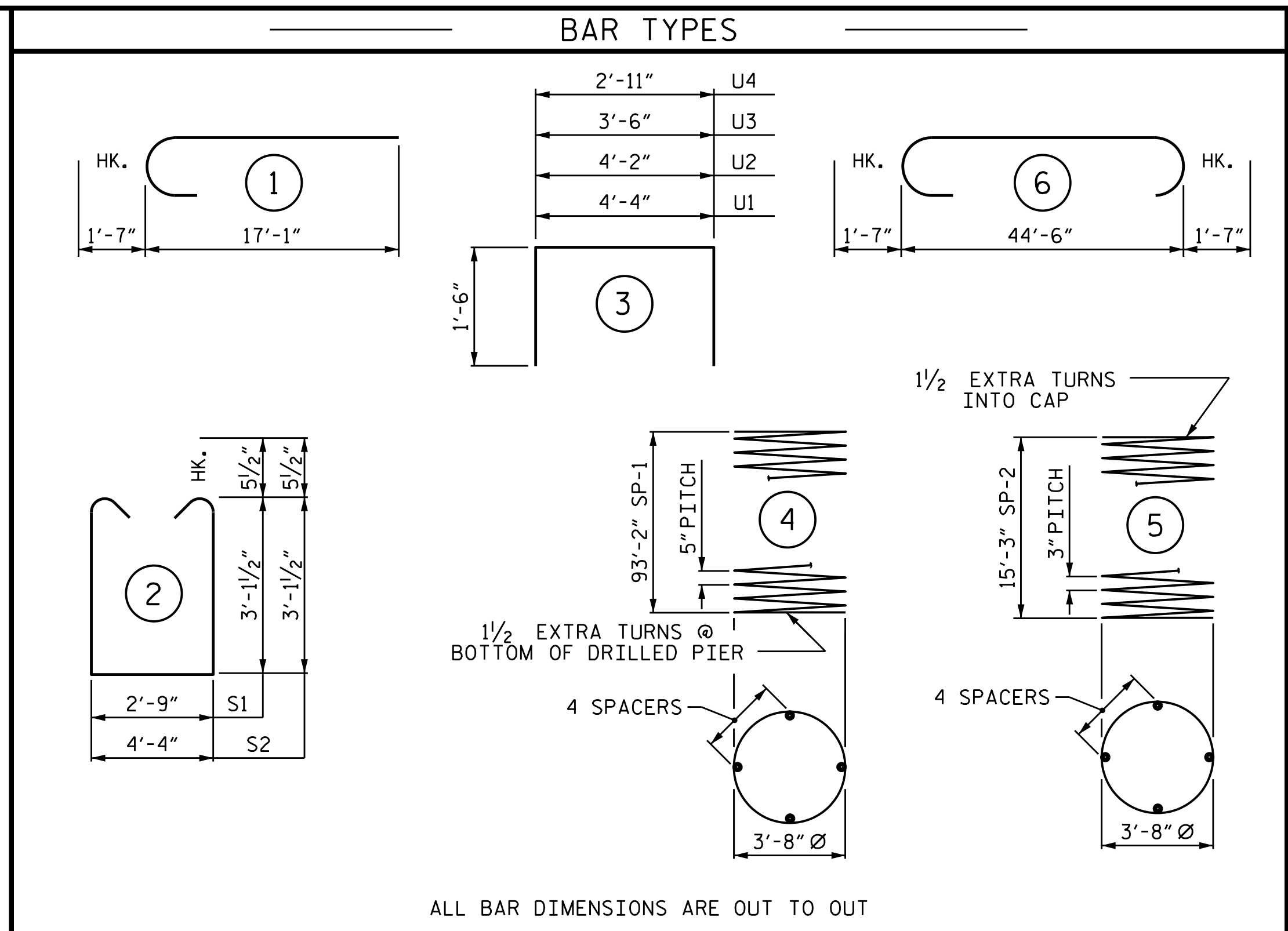
RIGHT END VIEW



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	44'-8"	1,424
B2	6	#11	6	47'-8"	1,520
B3	6	#5	STR	44'-8"	280
B4	6	#4	STR	24'-5"	98
M1	36	#11	STR	60'-0"	11,476
M2	36	#11	STR	50'-10"	9,723
S1	16	#5	2	9'-11"	165
S2	38	#5	2	11'-6"	456
U1	53	#4	3	7'-4"	260
U2	7	#4	3	7'-2"	34
U3	5	#4	3	6'-6"	22
U4	5	#4	3	5'-11"	20
V1	36	#11	1	18'-8"	3,570
REINFORCING STEEL					29,048 LBS.
SP-1	3	*	4	2,568'-1"	8,036
SP-2	3	**	5	717'-8"	1,438
SPIRAL COLUMN REINFORCING STEEL					9,474 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN					
POUR #2 (COLUMNS)					20.9 C.Y.
POUR #3 (CAP)					29.8 C.Y.
TOTAL CLASS A CONCRETE					50.7 C.Y.
DRILLED PIERS:					
DRILLED PIER CONCRETE POUR #1					165.5 C.Y.
4'-6" Ø DRILLED PIERS IN SOIL					281.00 LIN. FT.
CSL TUBES					1142.00 LIN. FT.

PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SEAL 20125
 ENGINEER
 M. CHANDLER
 M. CHANDLER, P.E.
 M. CHANDLER, P.E.
 SFB002F344DC413/2/24/2022 | 7:41 AM EST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

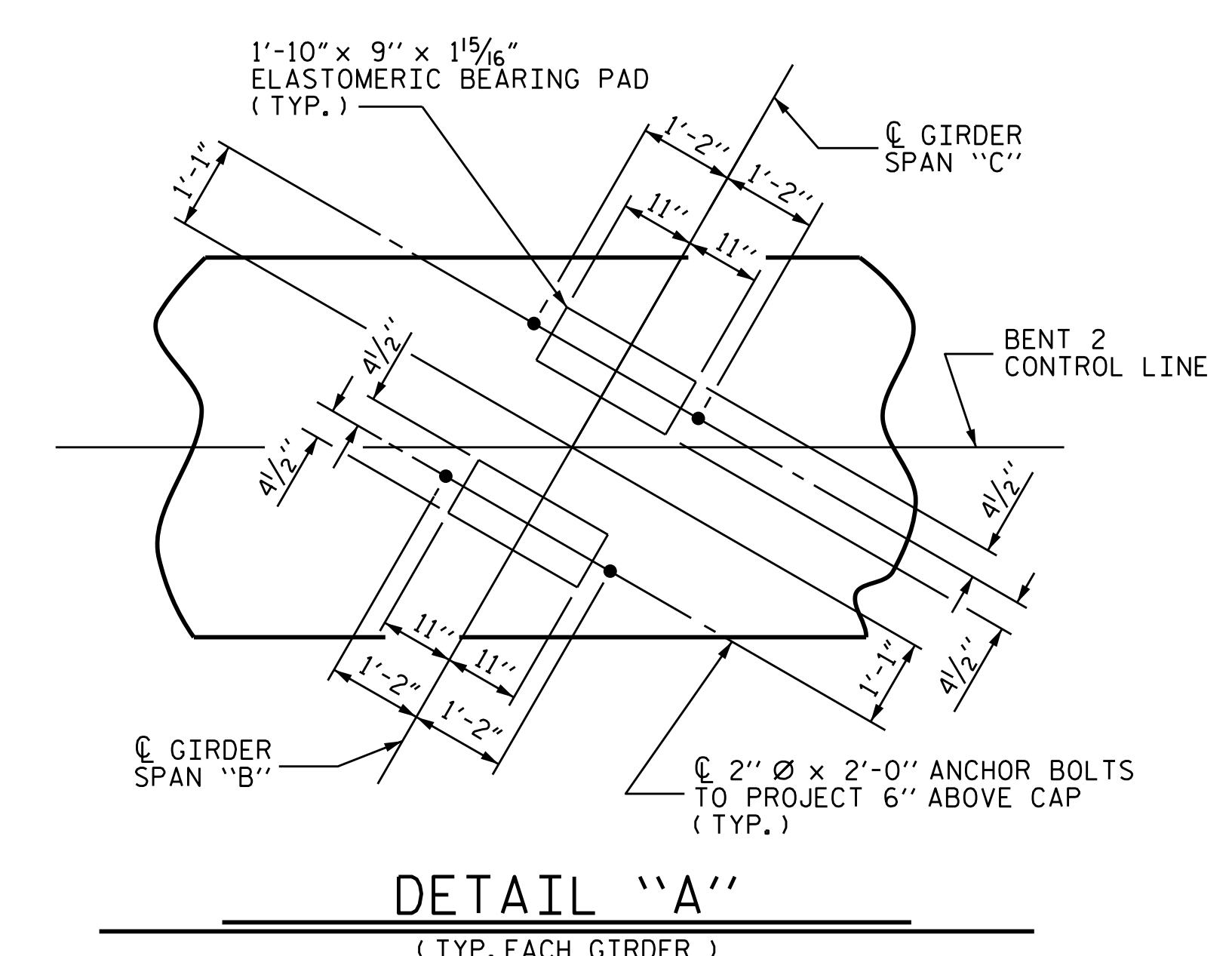
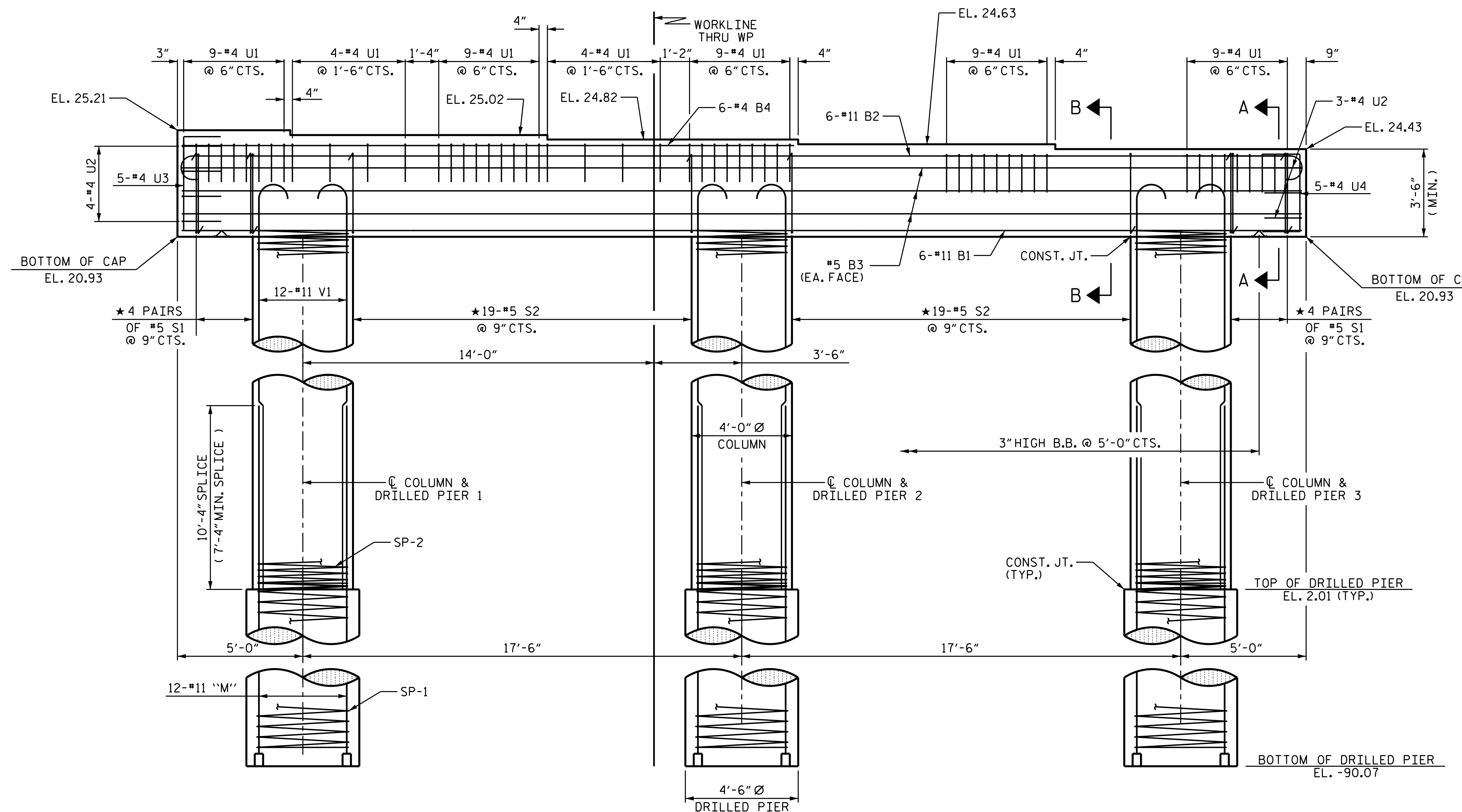
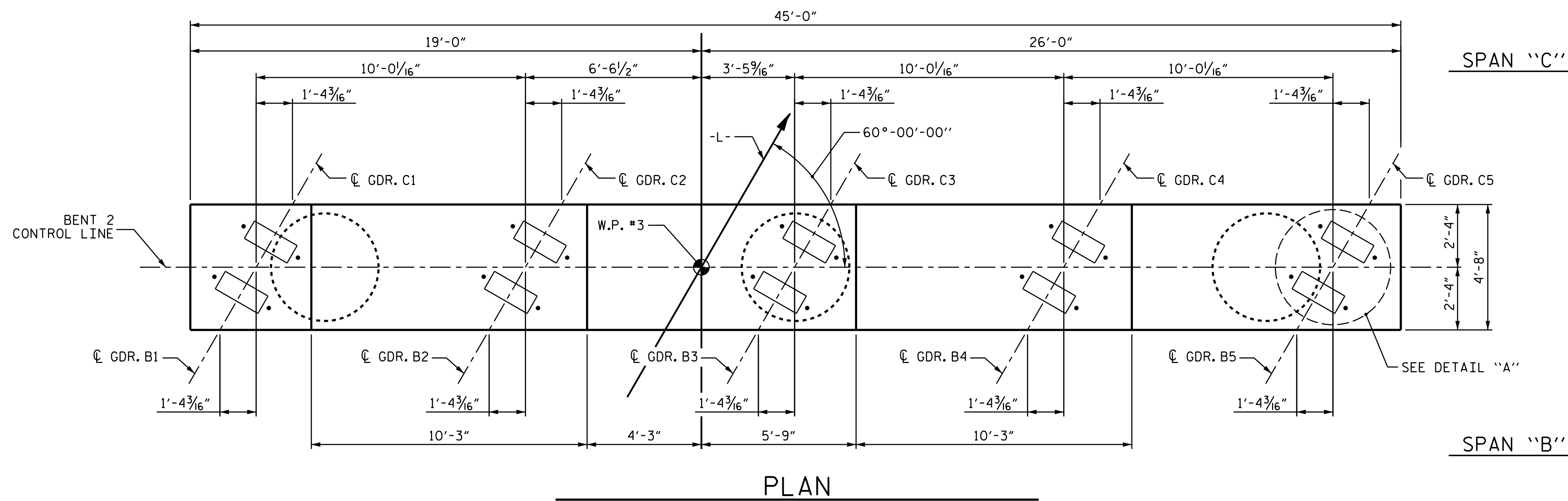
TGS ENGINEERS
 706 HILLSBOROUGH STREET
 SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			57

DRAWN BY: TBE / ZCS DATE: 6/2019
 CHECKED BY: MGC DATE: 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."
- * INVERT ALTERNATE STIRRUPS.
- DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE WATER SURFACE FOR SHAFTS LOCATED IN WATER.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 1 OF 2

2/24/2022 | 7:41 AM EST

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 2**

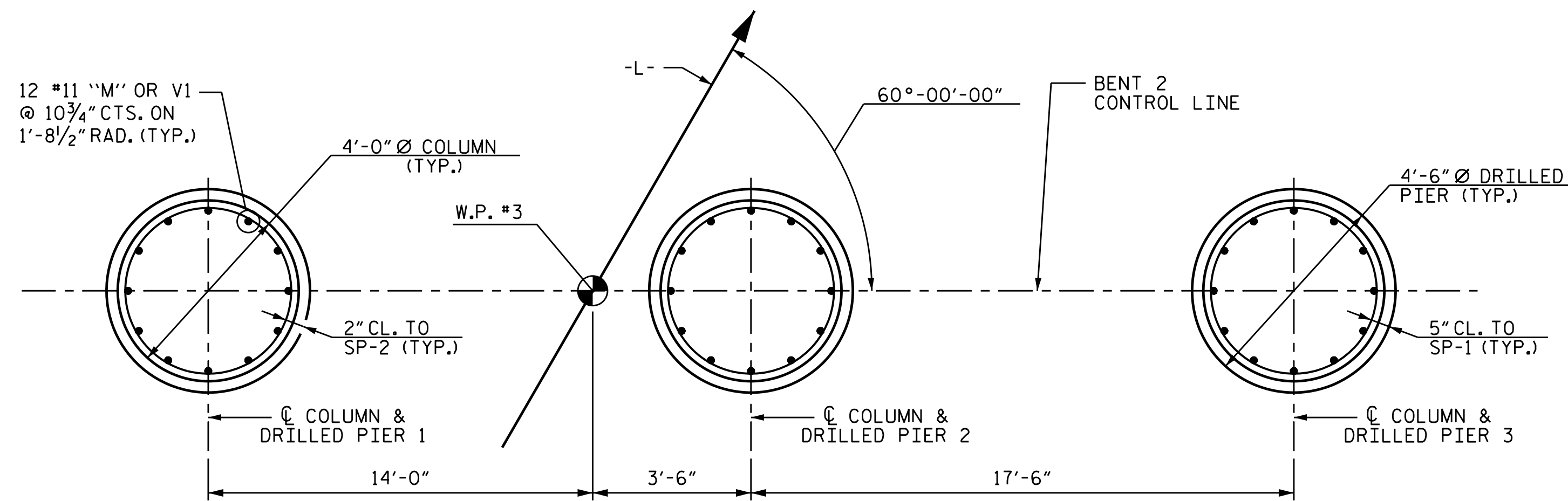
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			57

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

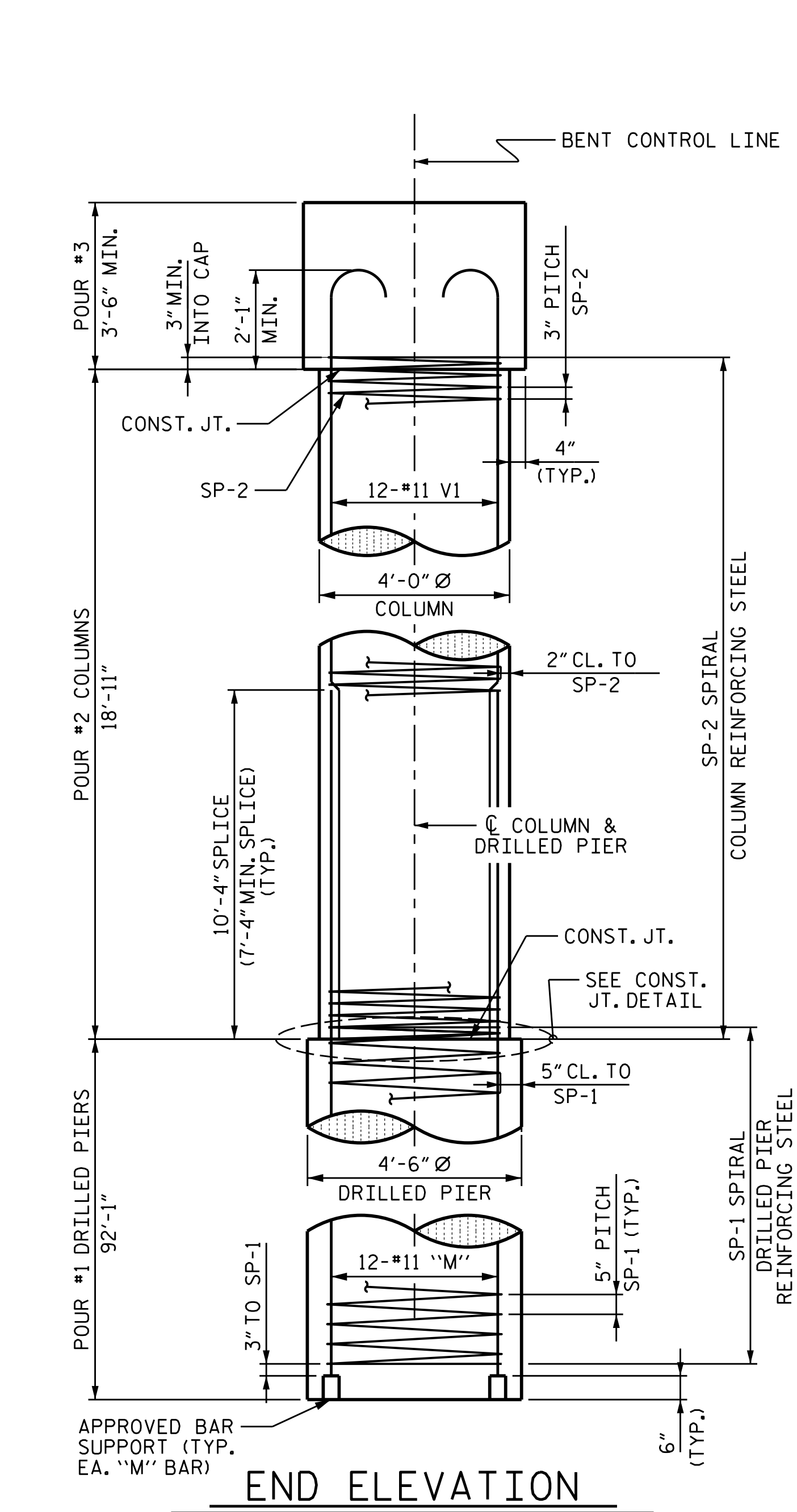
TGS ENGINEERS
 706 HILLSBOROUGH STREET SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

DRAWN BY : TBE / ZCS DATE : 6/2019
 CHECKED BY : MGC DATE : 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE : 6/2019

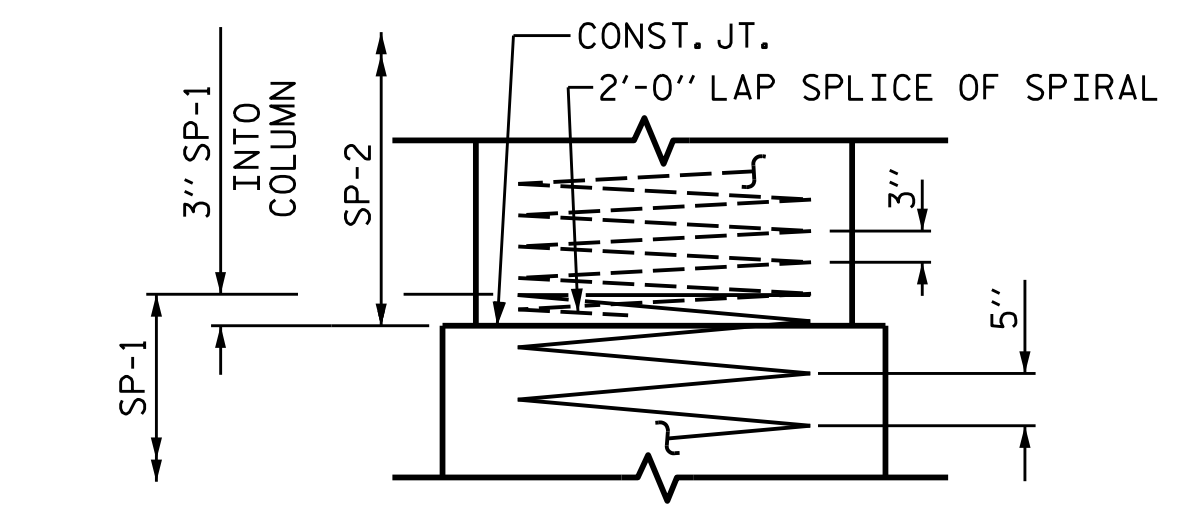
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER EXCEPT AS NOTED.



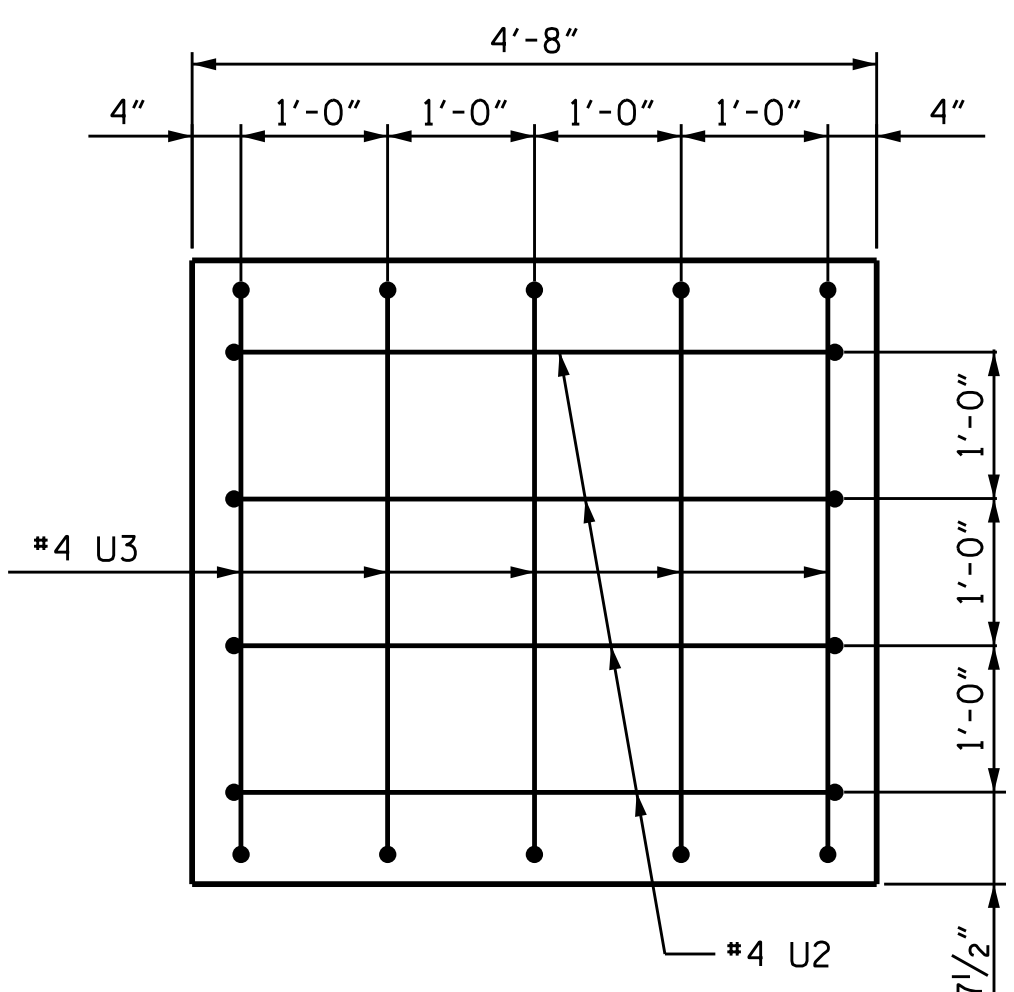
PLAN OF DRILLED PIERS & COLUMNS



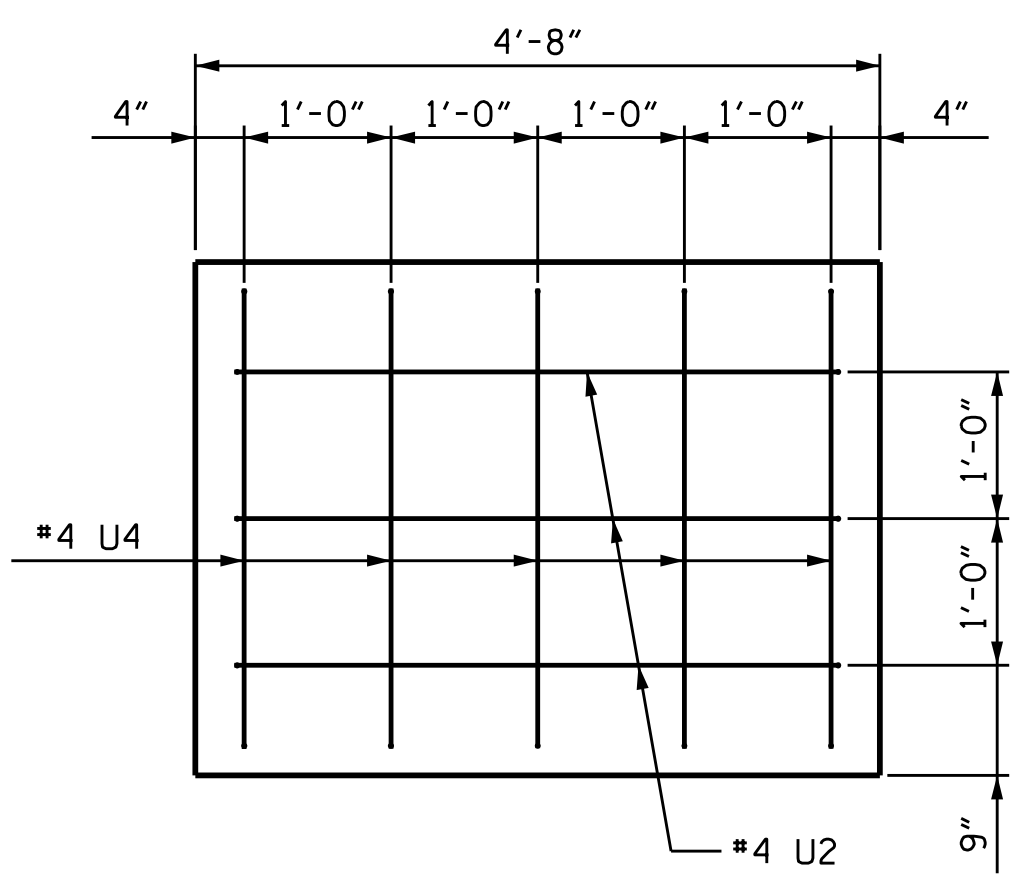
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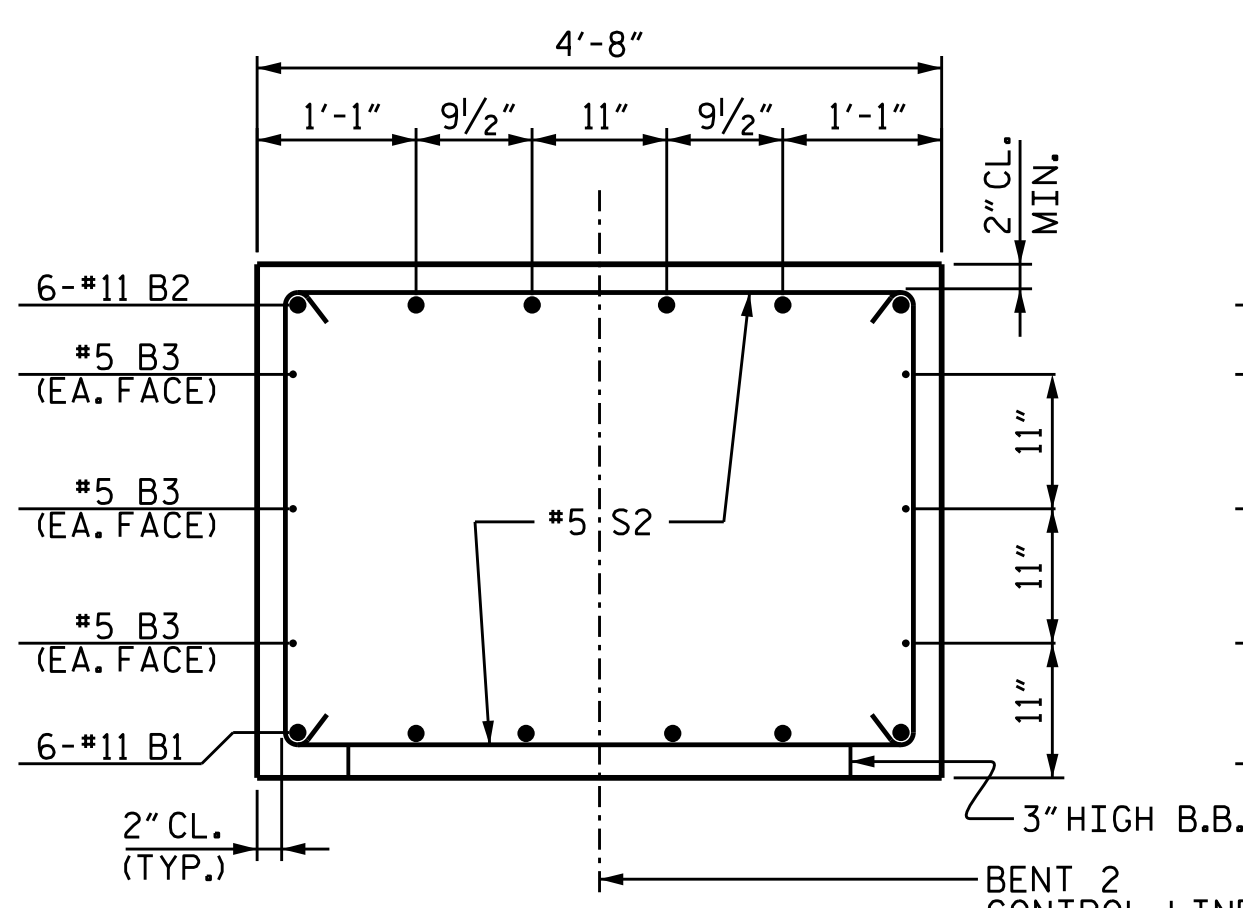
CONSTRUCTION JOINT DETAIL



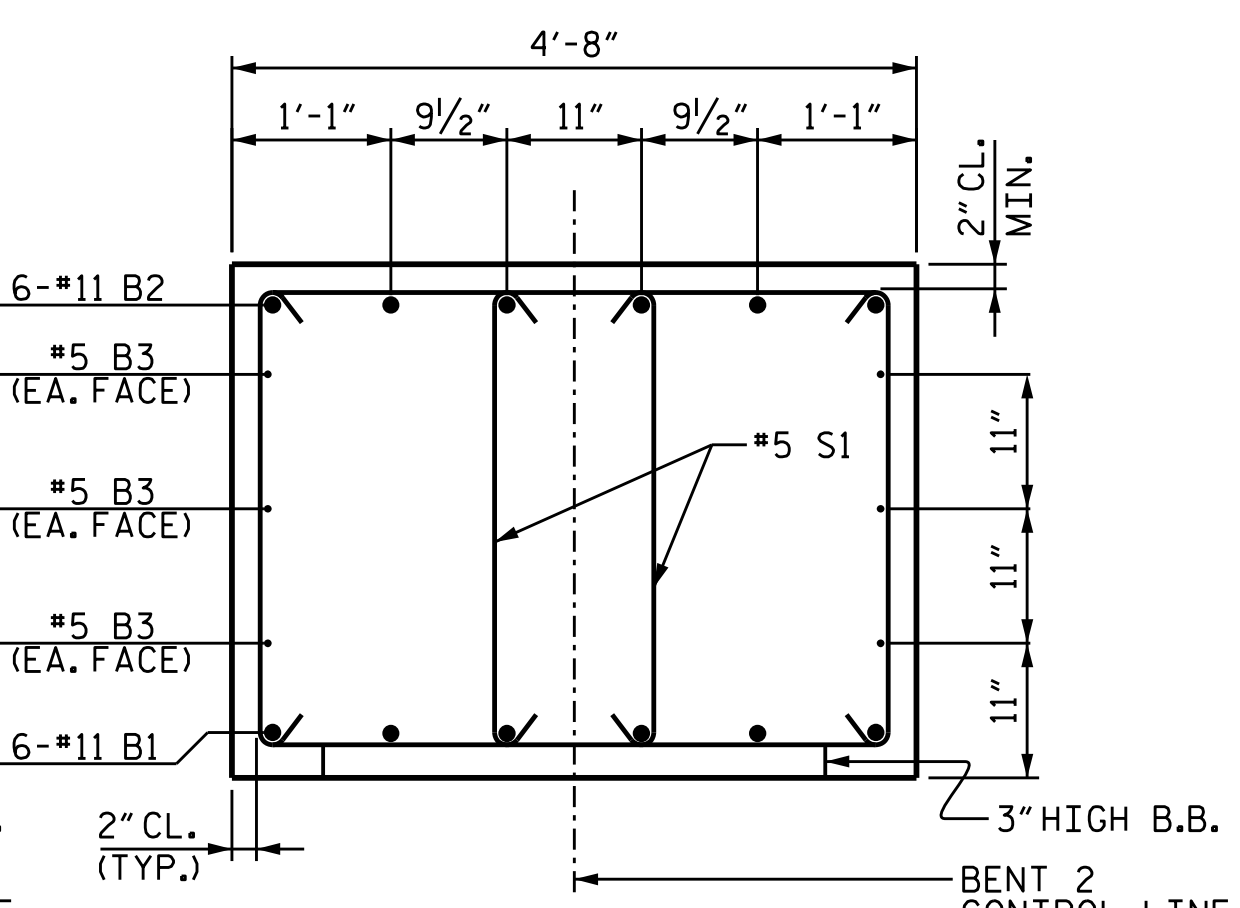
LEFT END VIEW



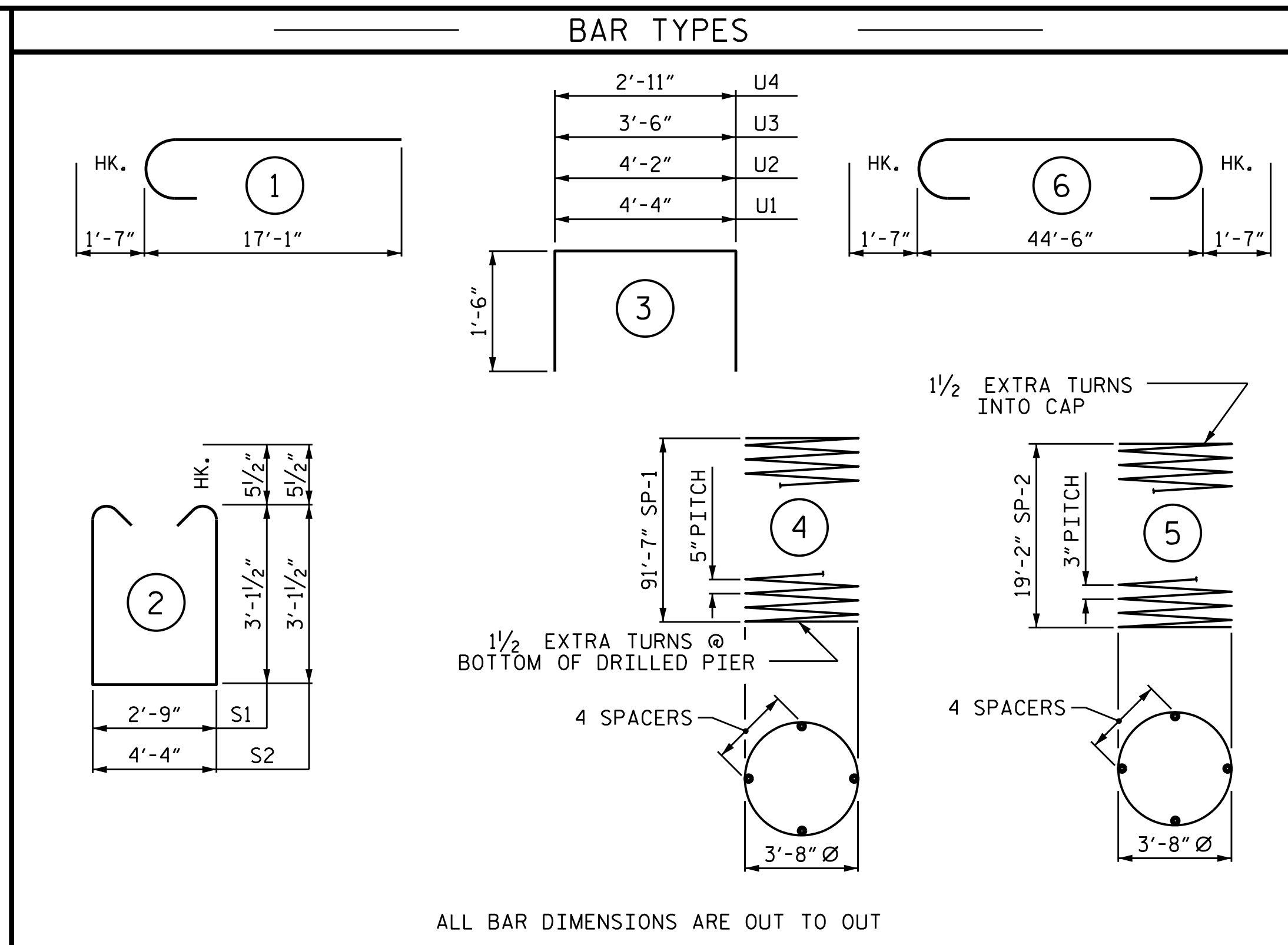
RIGHT END VIEW



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	44'-8"	1,424
B2	6	#11	6	47'-8"	1,520
B3	6	#5	STR	44'-8"	280
B4	6	#4	STR	24'-5"	98
M1	36	#11	STR	60'-0"	11,476
M2	36	#11	STR	49'-3"	9,420
S1	16	#5	2	9'-11"	165
S2	38	#5	2	11'-6"	456
U1	53	#4	3	7'-4"	260
U2	7	#4	3	7'-2"	34
U3	5	#4	3	6'-6"	22
U4	5	#4	3	5'-11"	20
V1	36	#11	1	22'-7"	4,319
REINFORCING STEEL					29,494 LBS.
SP-1	3	*	4	2,522'-8"	7,893
SP-2	3	**	5	899'-11"	1,803
SPIRAL COLUMN REINFORCING STEEL					9,696 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	26.4 C.Y.
POUR #3 (CAP)	29.8 C.Y.
TOTAL CLASS A CONCRETE	56.2 C.Y.

DRILLED PIERS:	
DRILLED PIER CONCRETE POUR #1	162.7 C.Y.
4'-6" Ø DRILLED PIERS IN SOIL	276.25 LIN. FT.
PERMANENT STEEL CASING FOR 4'-6" Ø DRILLED PIERS	96.03 LIN. FT.
CSL TUBES	1123.00 LIN. FT.

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 2 OF 2

9/24/2021
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 Users: sbwilliams

2/24/2022 | 7:41 AM EST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	
S-40	TOTAL SHEETS 57

DRAWN BY: TBE / ZCS DATE: 6/2019
 CHECKED BY: MGC DATE: 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019

NOTES

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

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

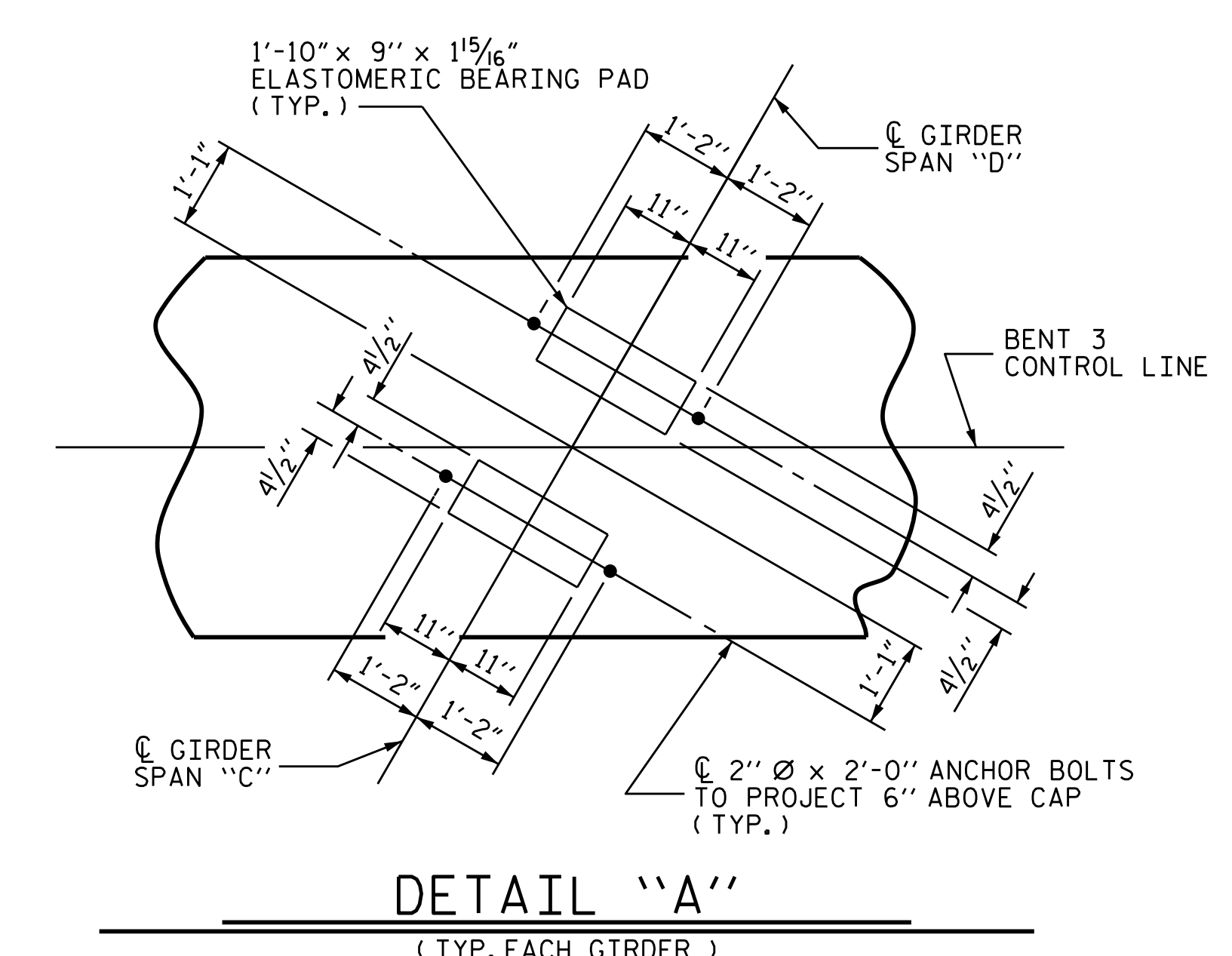
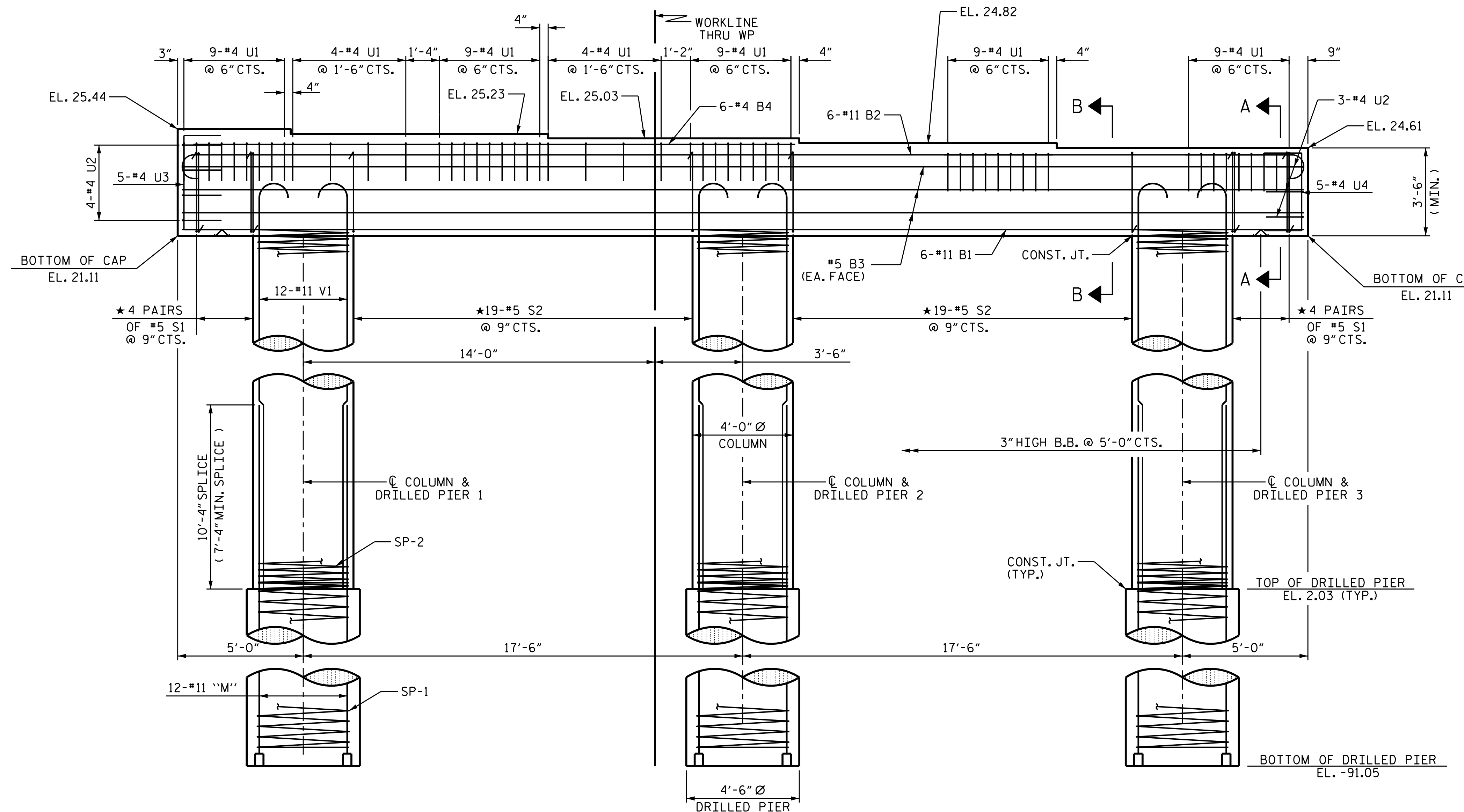
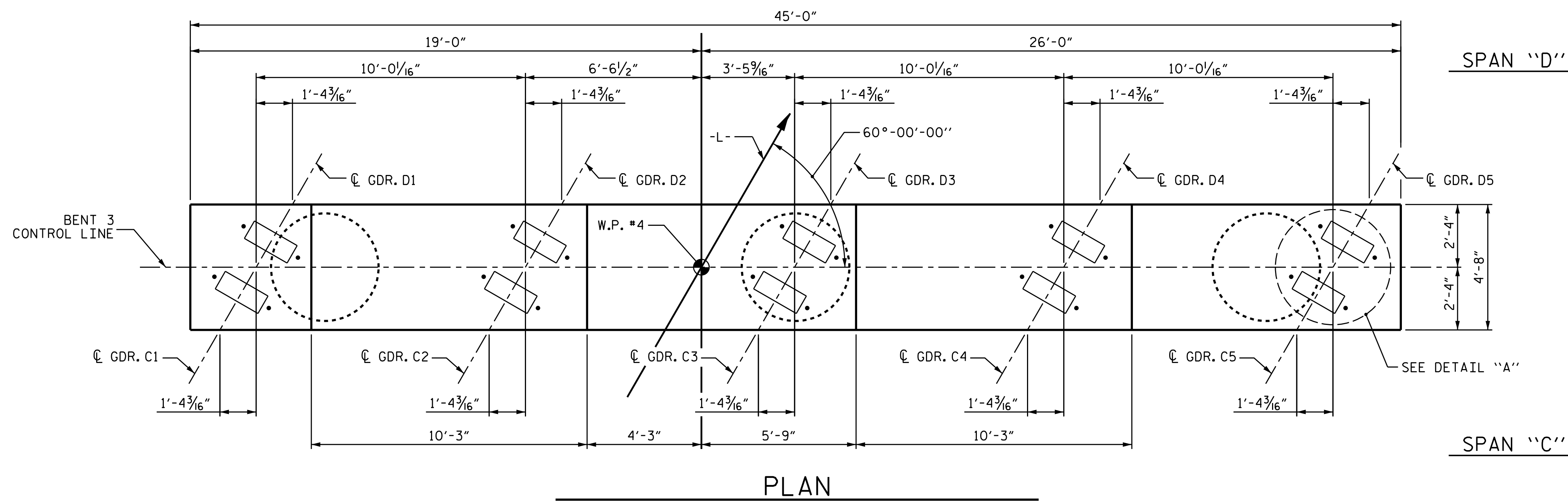
FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

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

* INVERT ALTERNATE STIRRUPS.

DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE WATER SURFACE FOR SHAFTS LOCATED IN WATER.

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



DETAIL "A"
(TYP. EACH GIRDER)

PROJECT NO. B-4786

PITT COUNTY

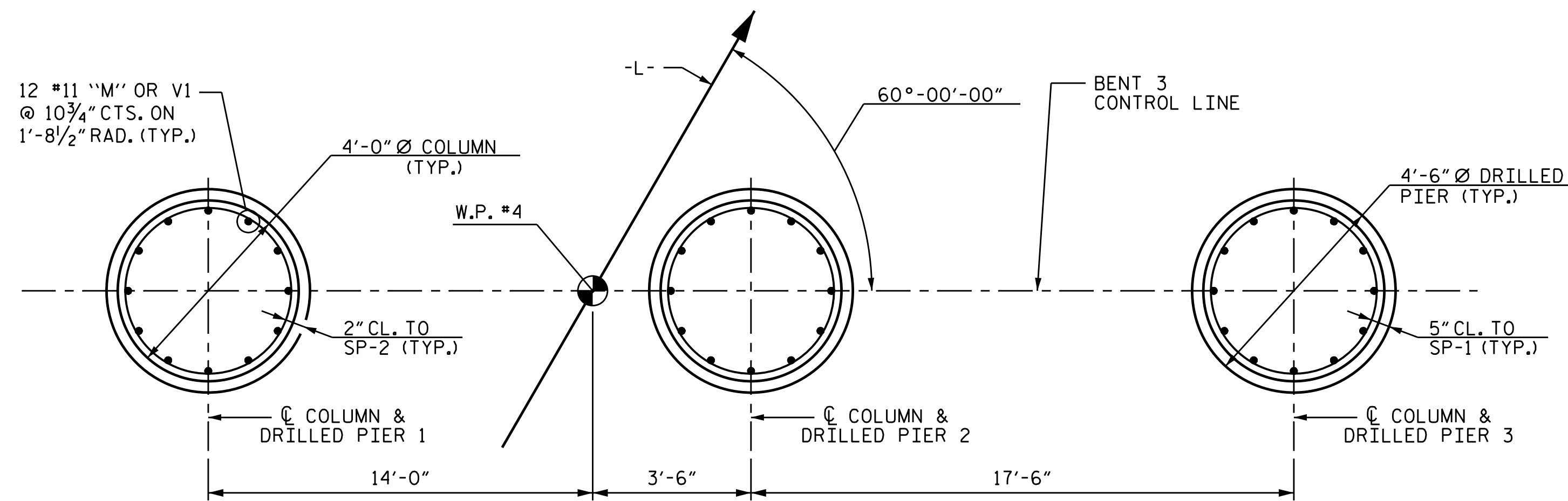
STATION: 28+03.00 -L-

SHEET 1 OF 2

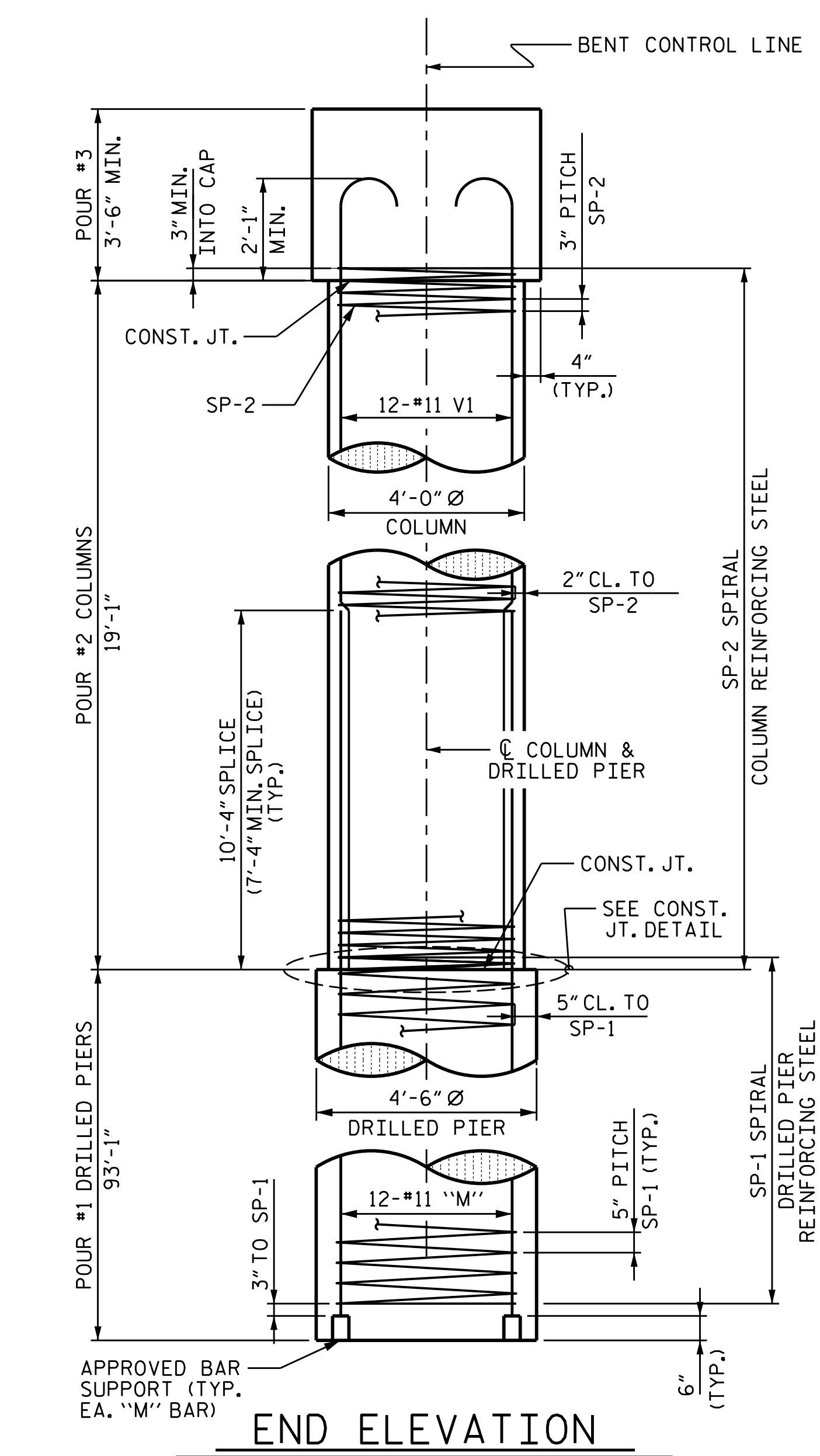
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		REVISIONS		TOTAL SHEETS			
TGS ENGINEERS 706 HILLSBOROUGH STREET SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275		NO.	BY:	DATE:	NO.	BY:	DATE:
		1			3		
		2			4		

DRAWN BY : TBE / ZCS DATE : 6/2019
 CHECKED BY : MGC DATE : 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE : 6/2019

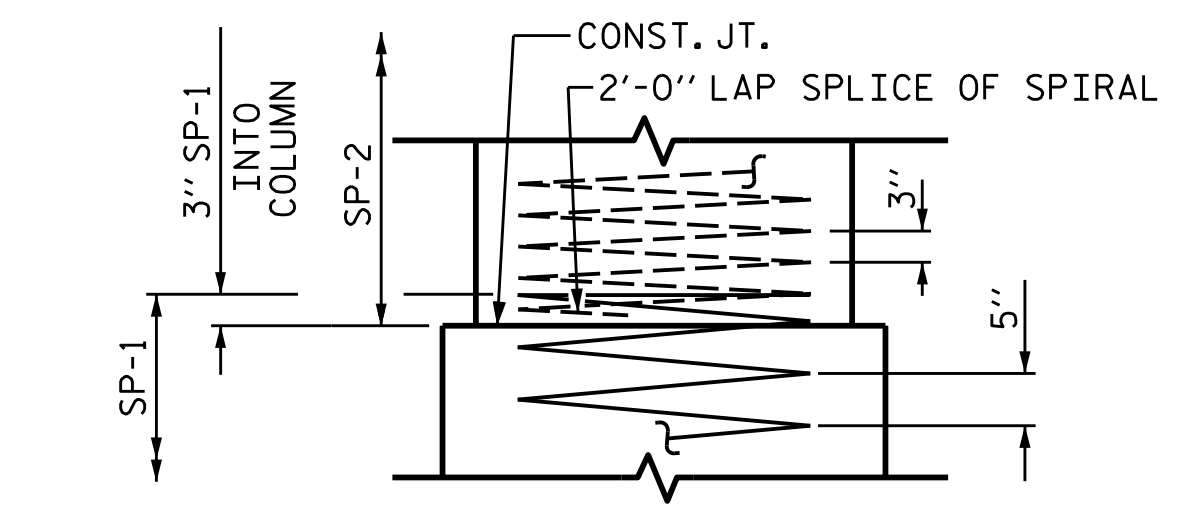
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER EXCEPT AS NOTED.



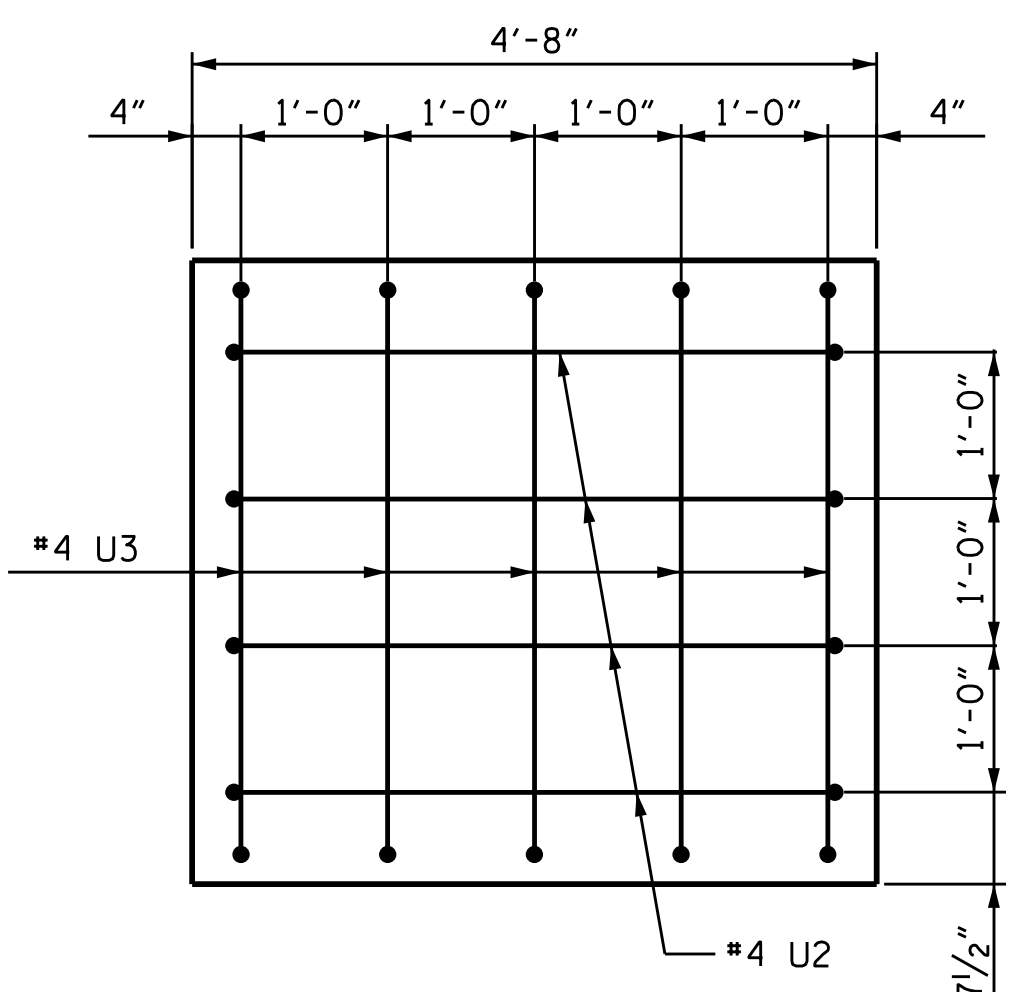
PLAN OF DRILLED PIERS & COLUMNS



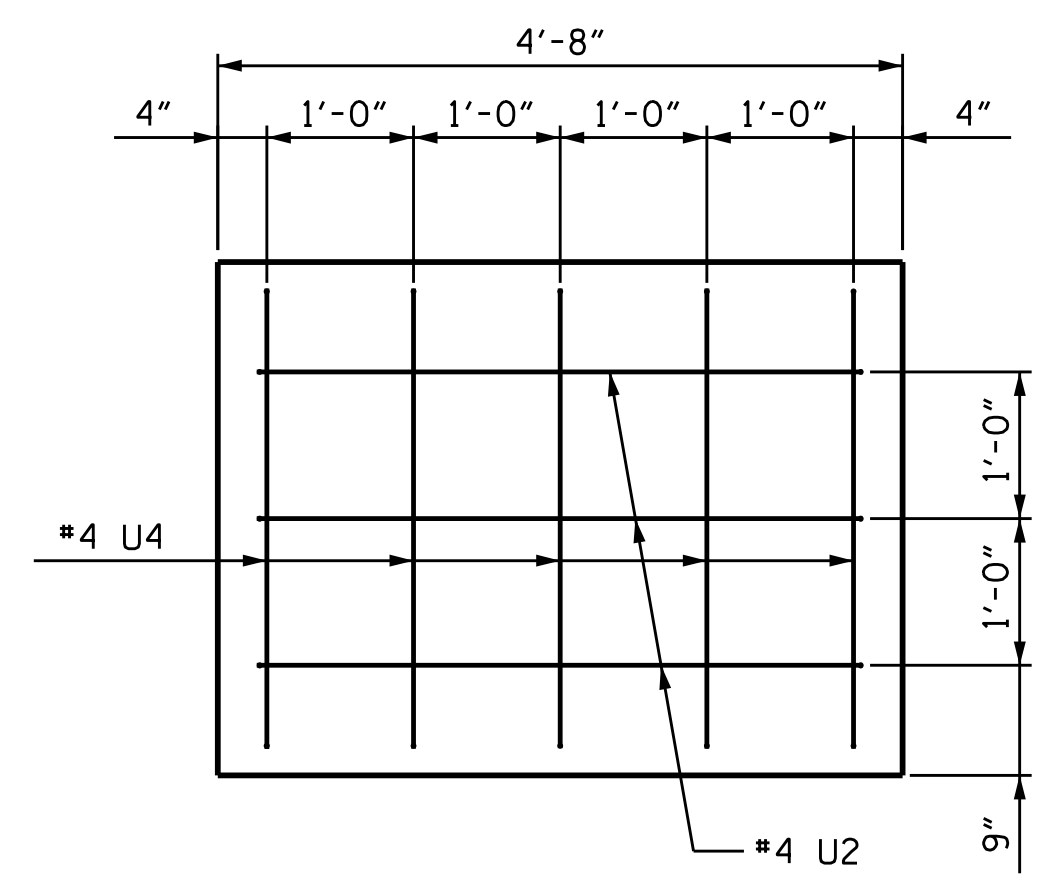
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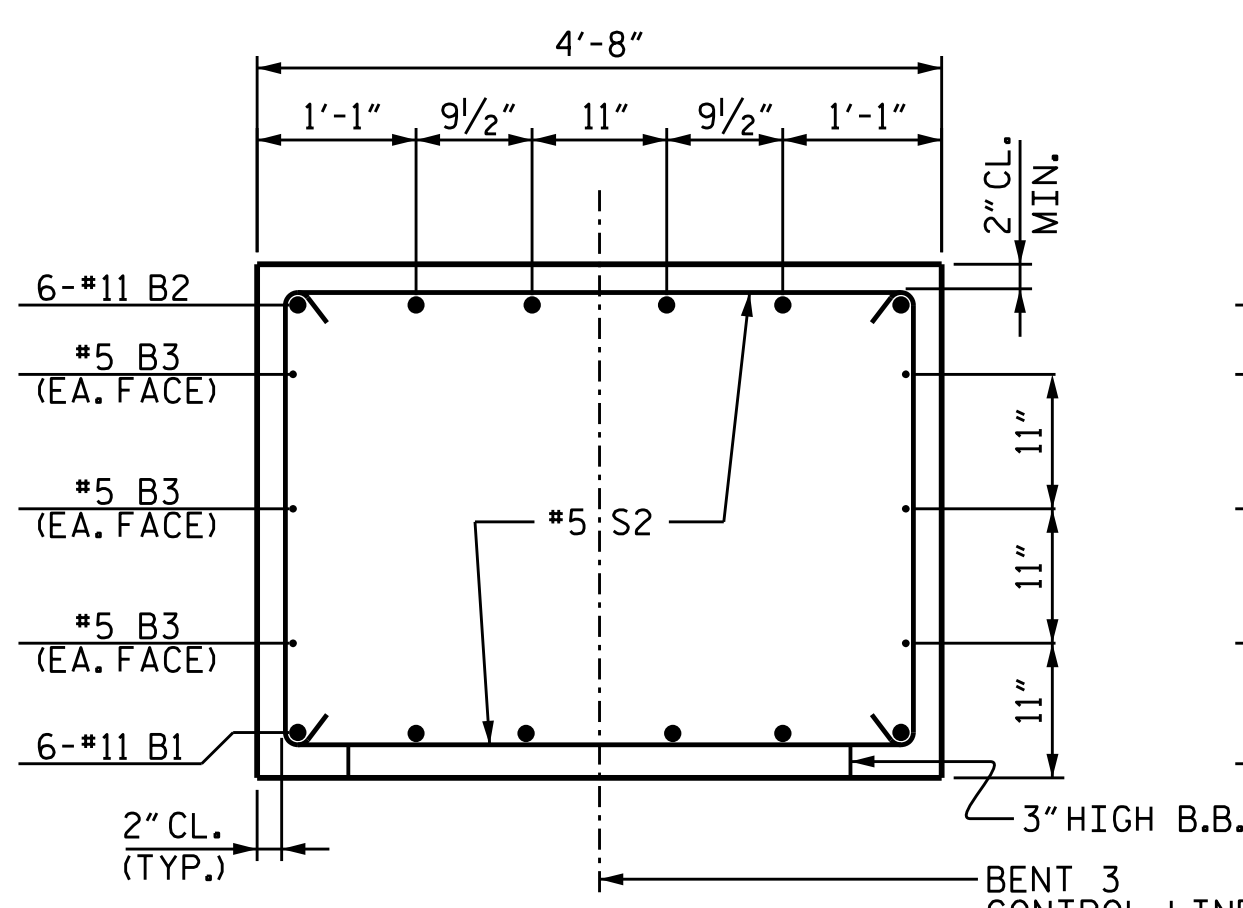
CONSTRUCTION JOINT DETAIL



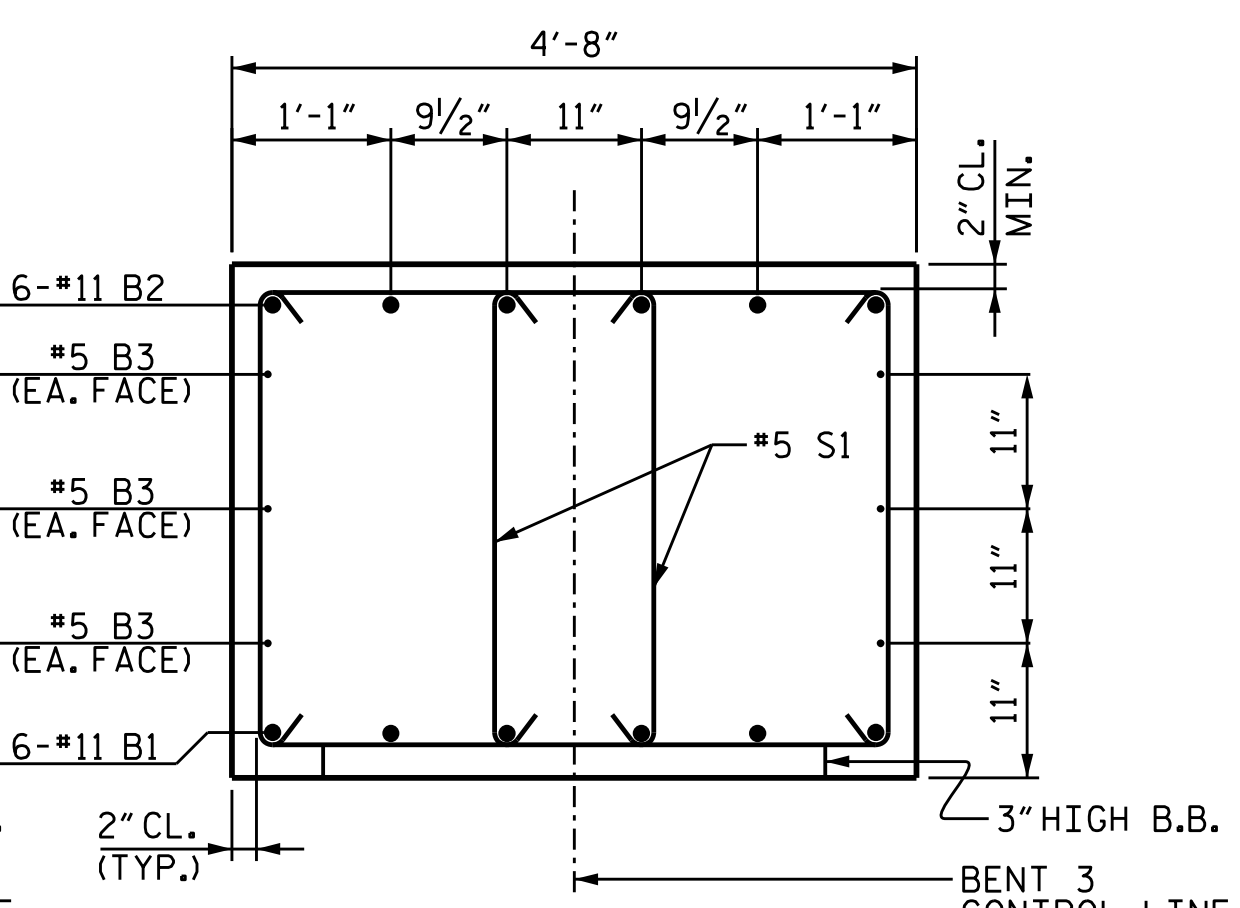
LEFT END VIEW



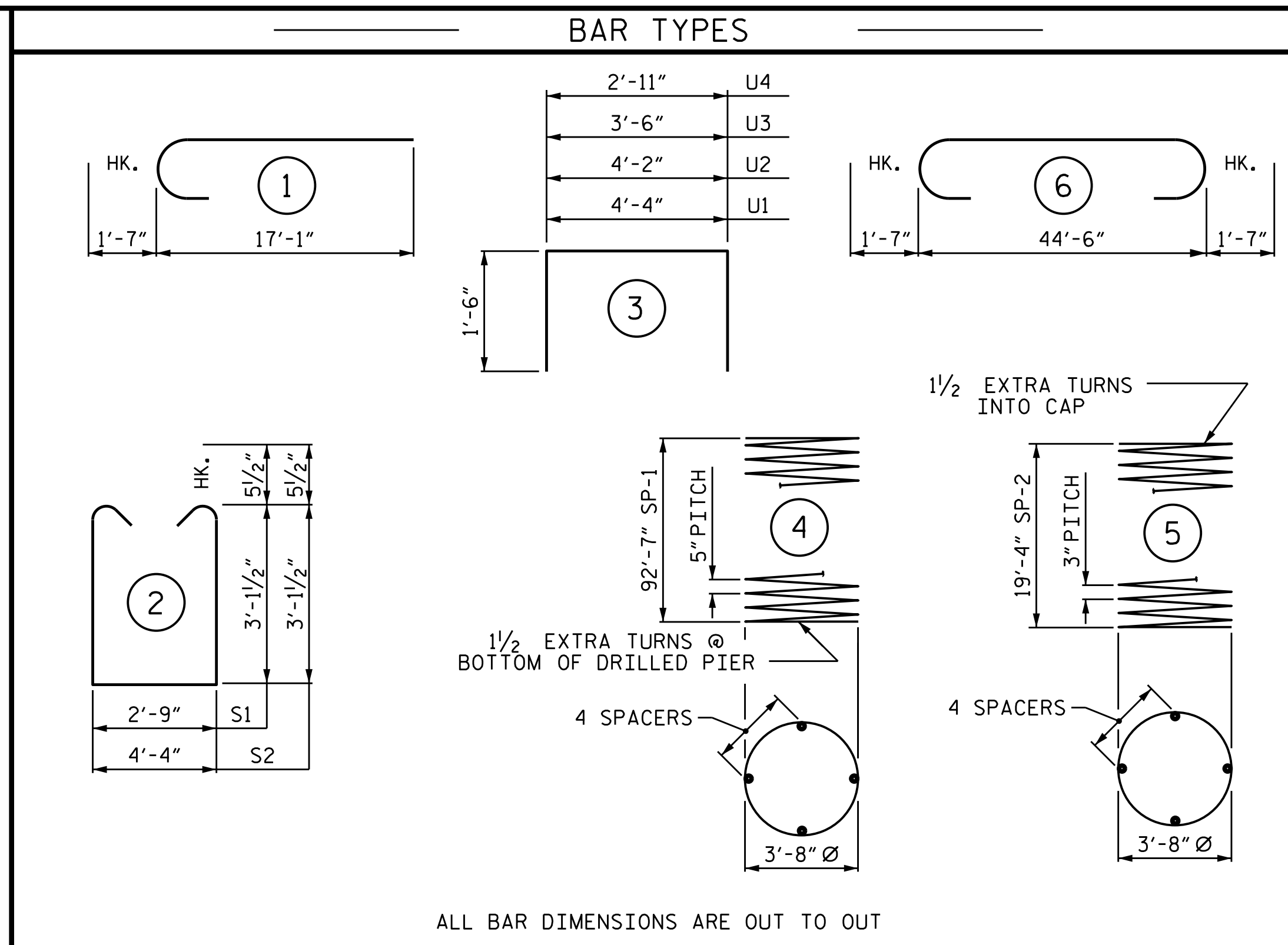
RIGHT END VIEW



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BENT 3					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	44'-8"	1,424
B2	6	#11	6	47'-8"	1,520
B3	6	#5	STR	44'-8"	280
B4	6	#4	STR	24'-5"	98
M1	36	#11	STR	60'-0"	11,476
M2	36	#11	STR	50'-3"	9,611
S1	16	#5	2	9'-11"	165
S2	38	#5	2	11'-6"	456
U1	53	#4	3	7'-4"	260
U2	7	#4	3	7'-2"	34
U3	5	#4	3	6'-6"	22
U4	5	#4	3	5'-11"	20
V1	36	#11	1	22'-9"	4,351
REINFORCING STEEL					29,717 LBS.
SP-1	3	*	4	2,545'-5"	7,965
SP-2	3	**	5	899'-11"	1,803
SPIRAL COLUMN REINFORCING STEEL					9,768 LBS.

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

** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	26.6 C.Y.
POUR #3 (CAP)	29.8 C.Y.
TOTAL CLASS A CONCRETE	56.4 C.Y.

DRILLED PIERS:	
DRILLED PIER CONCRETE POUR #1	164.5 C.Y.
4'-6" Ø DRILLED PIERS IN SOIL	279.25 LIN. FT.
PERMANENT STEEL CASING FOR 4'-6" Ø DRILLED PIERS	84.09 LIN. FT.
CSL TUBES	1135.00 LIN. FT.

PROJECT NO. B-4786
 COUNTY PITT
 STATION: 28+03.00 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SEAL
 20125
 ENGINEER
 MICHAEL G. CHEE, JR.
 2/24/2022 | 7:41 AM EST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

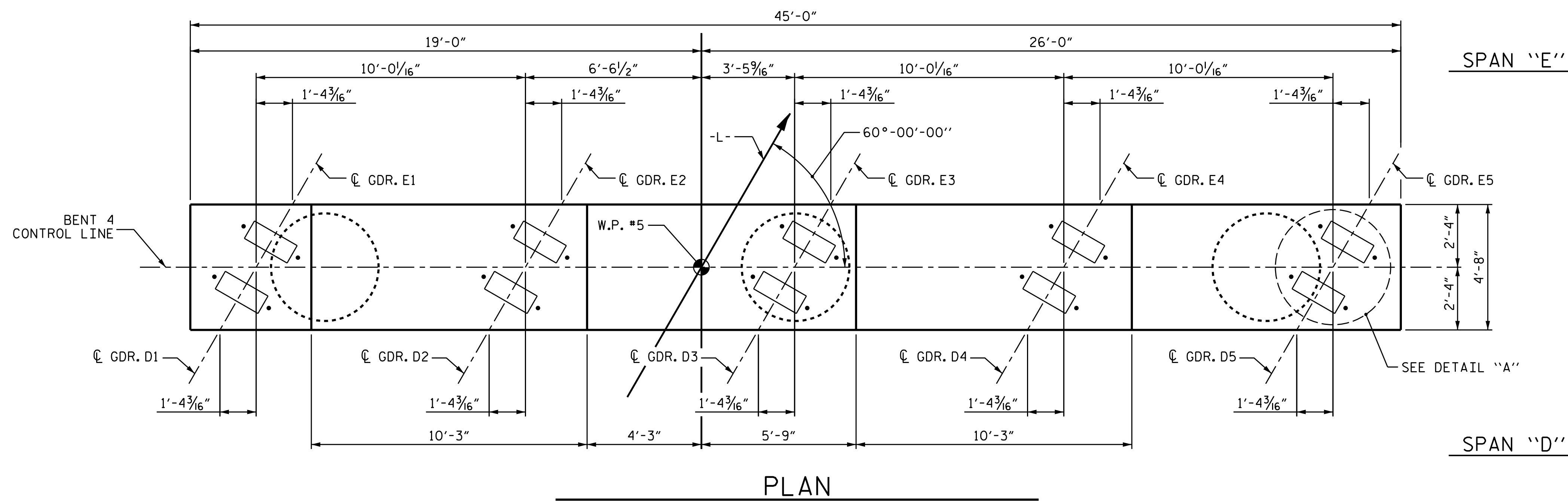
TGS ENGINEERS
 706 HILLSBOROUGH STREET
 SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42
1			3			TOTAL SHEETS
2			4			57

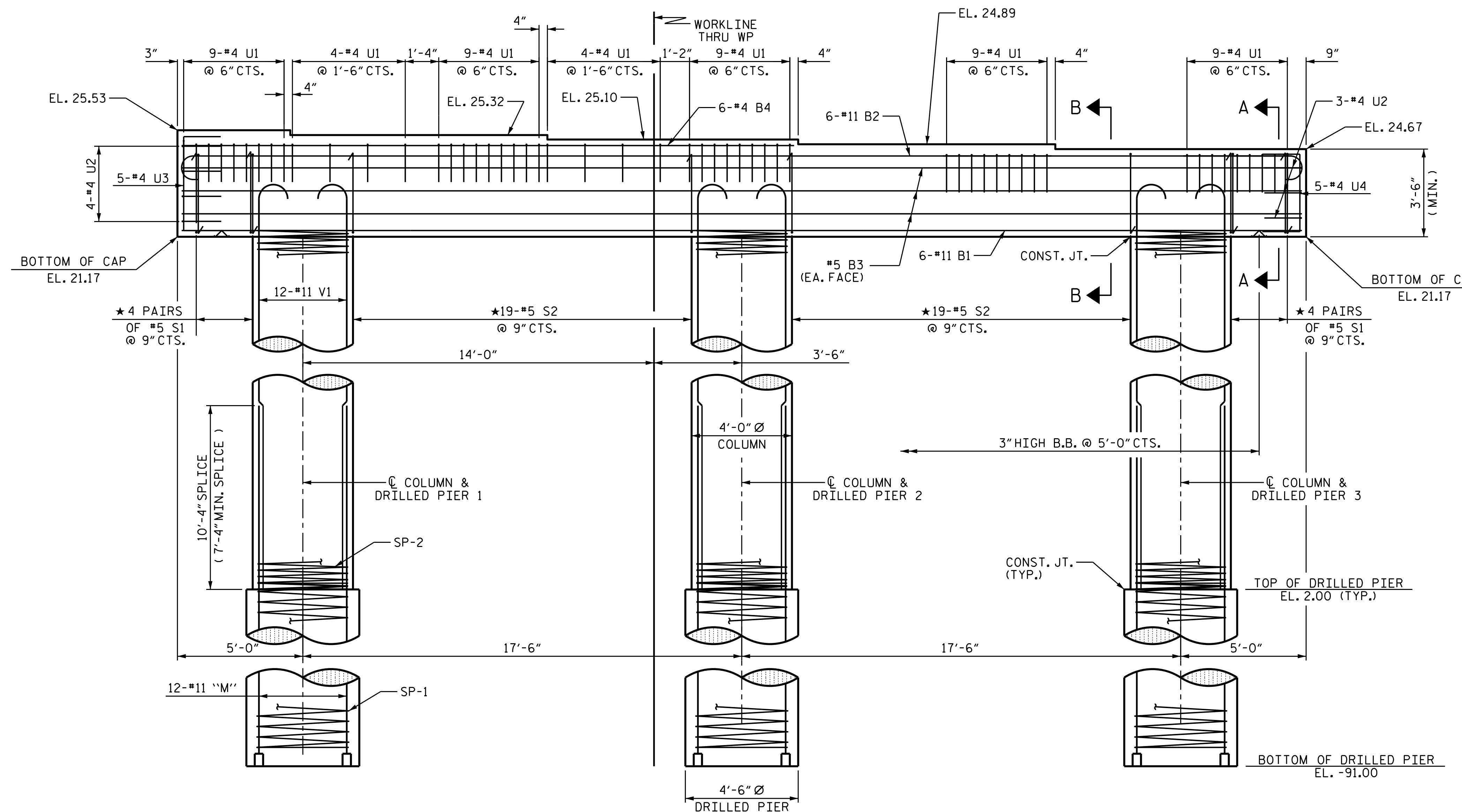
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 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019

NOTES

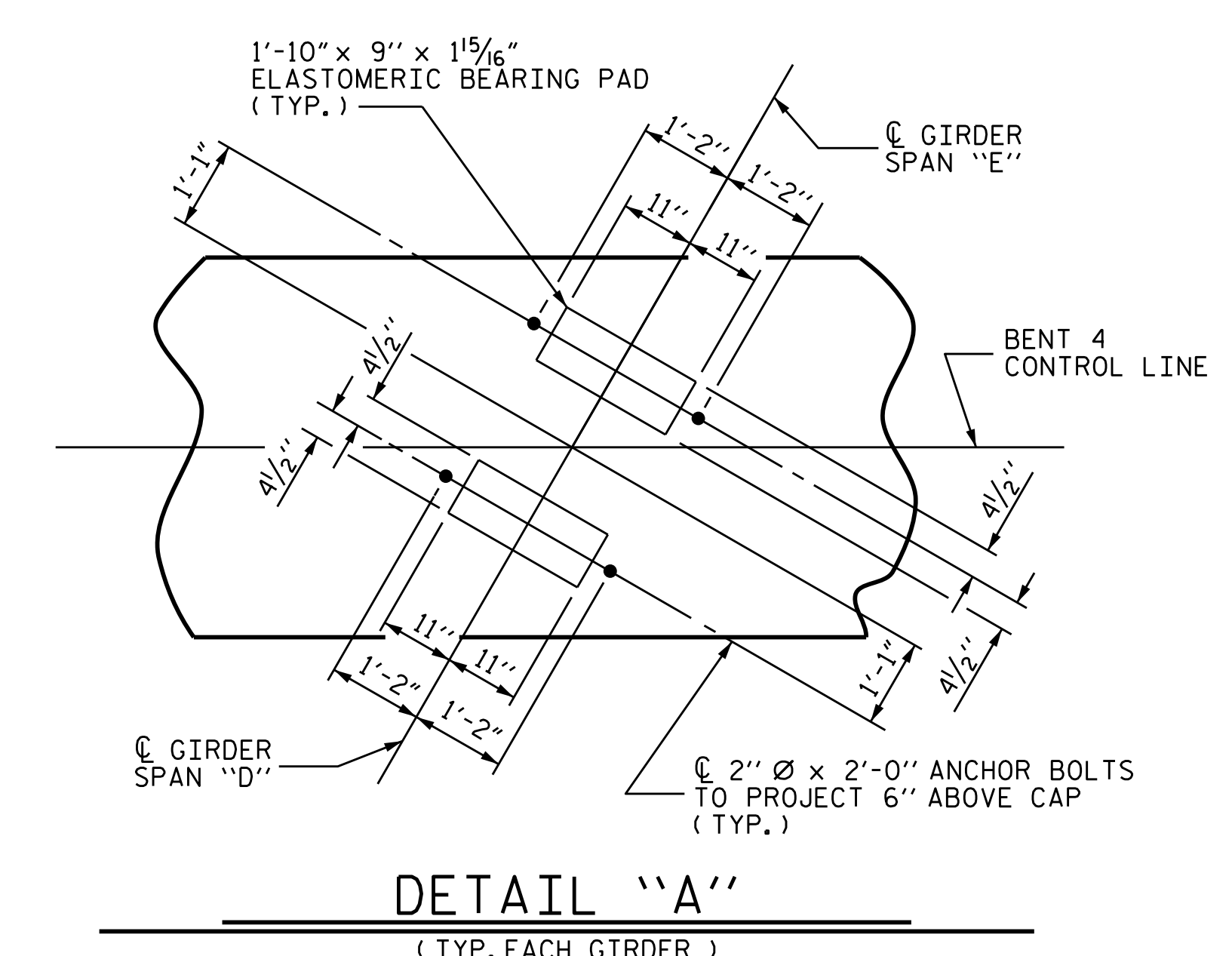
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
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- ★ INVERT ALTERNATE STIRRUPS.
- DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE WATER SURFACE FOR SHAFTS LOCATED IN WATER.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



PLAN



ELEVATION



DETAIL "A"
(TYP. EACH GIRDER)

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

ENGINEER
 MICHAEL S. STEVENSON
 2/24/2022 | 7:41 AM EST

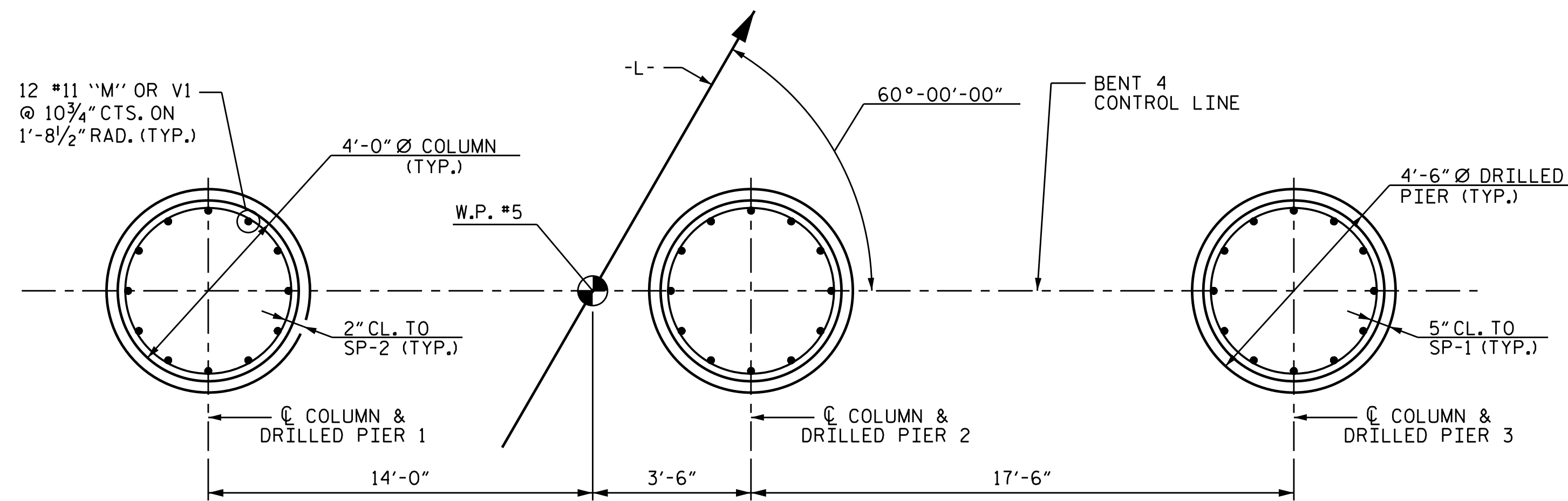
DOCUMENT NOT CONSIDERED FINAL
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TGS ENGINEERS
 706 HILLSBOROUGH STREET
 SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

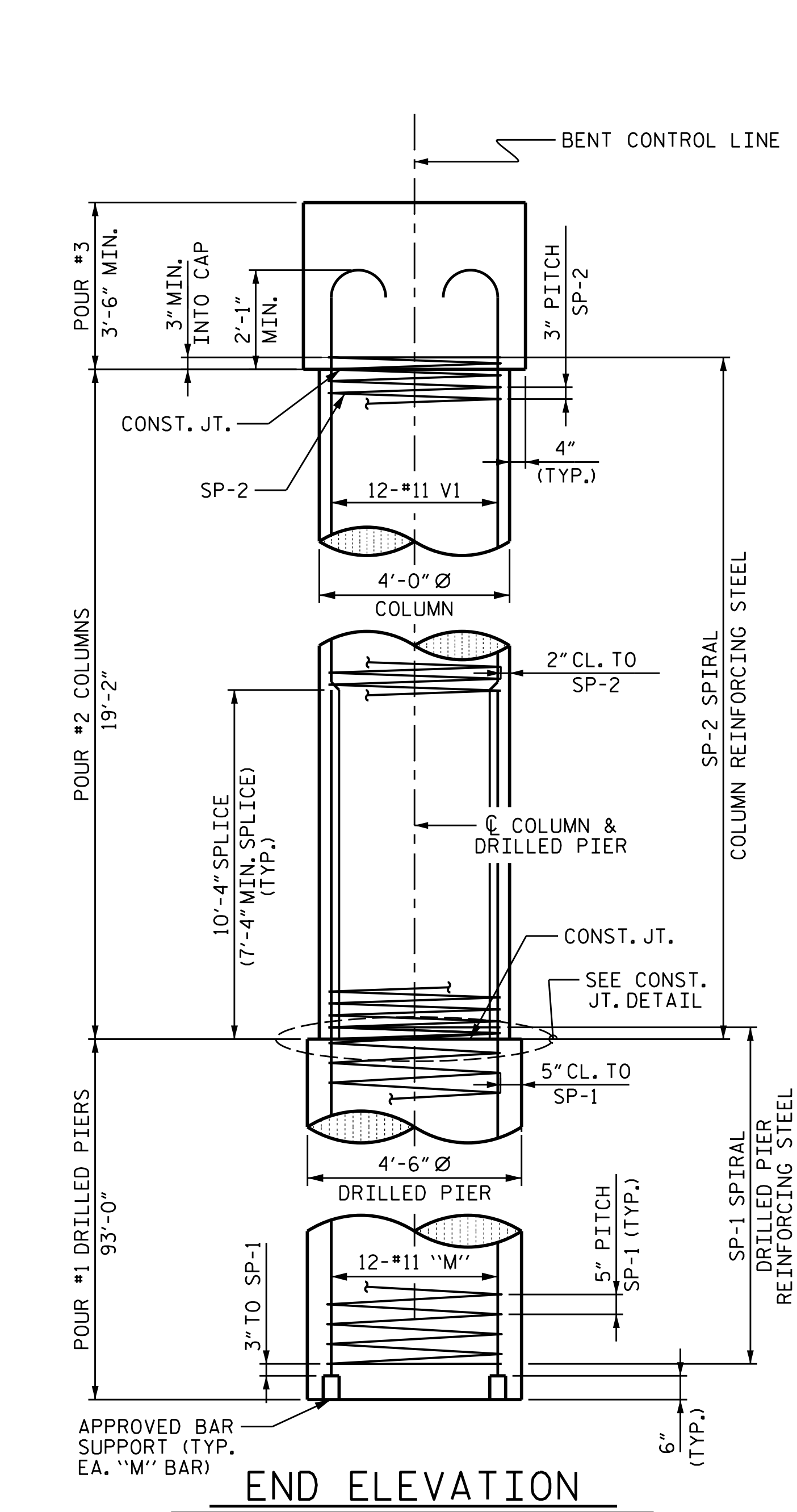
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-43
1			3			TOTAL SHEETS
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DRAWN BY : TBE / ZCS DATE : 6/2019
 CHECKED BY : MGC DATE : 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE : 6/2019

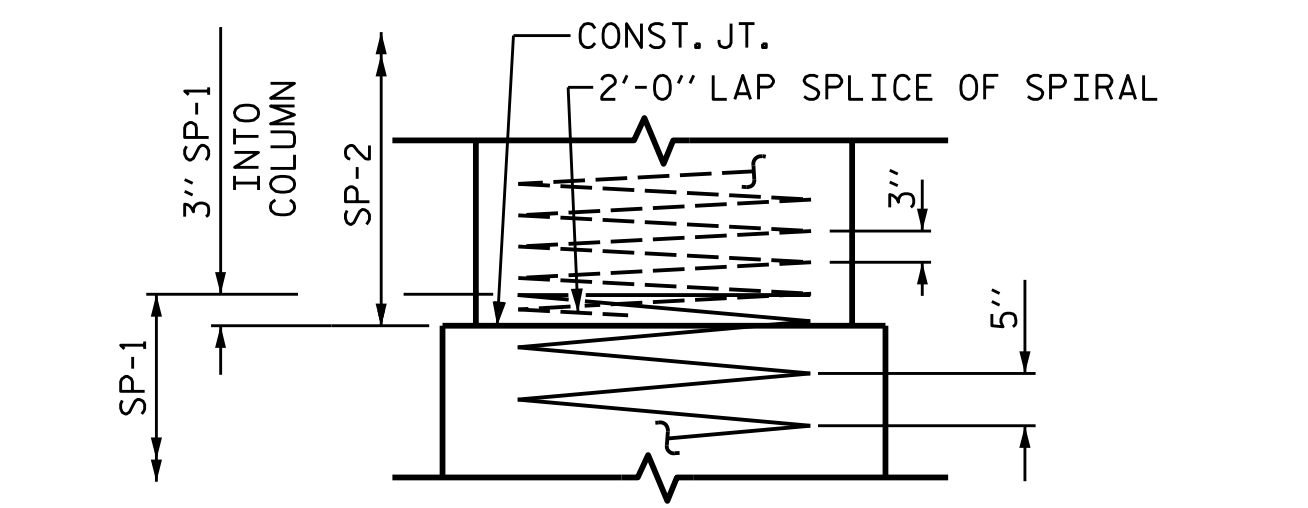
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER EXCEPT AS NOTED.



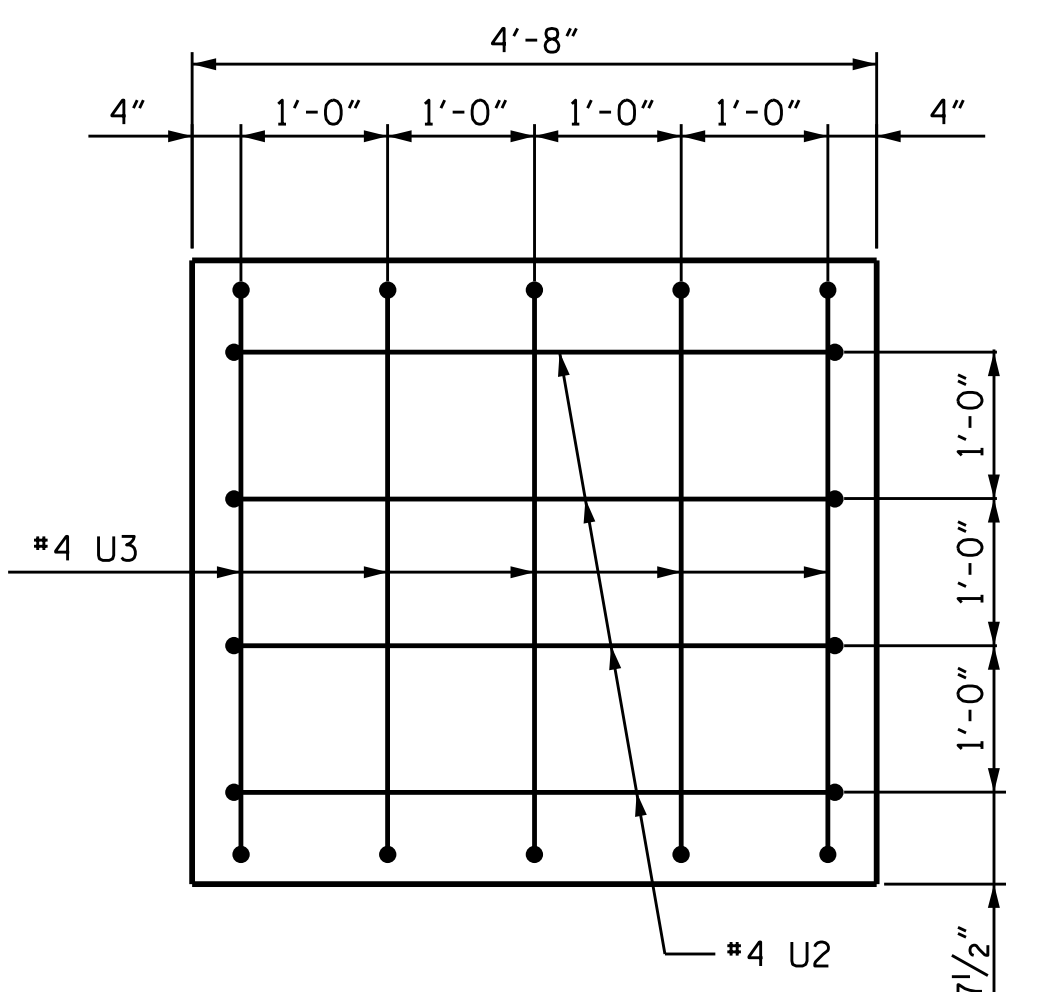
PLAN OF DRILLED PIERS & COLUMNS



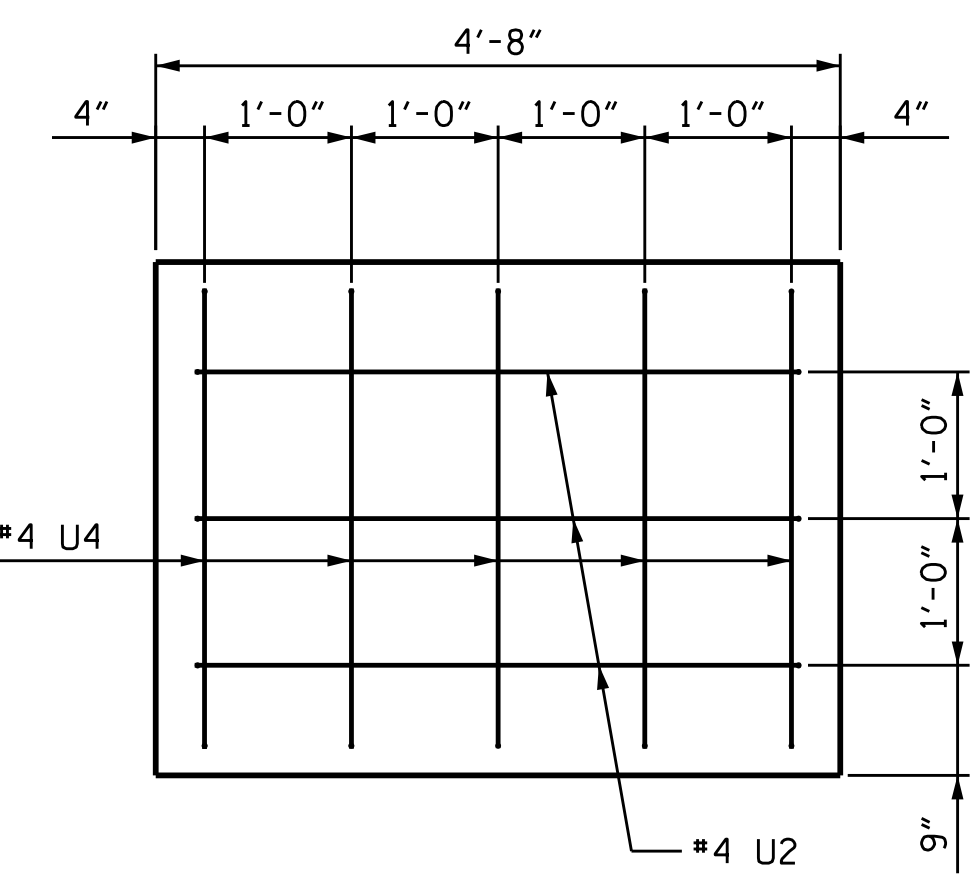
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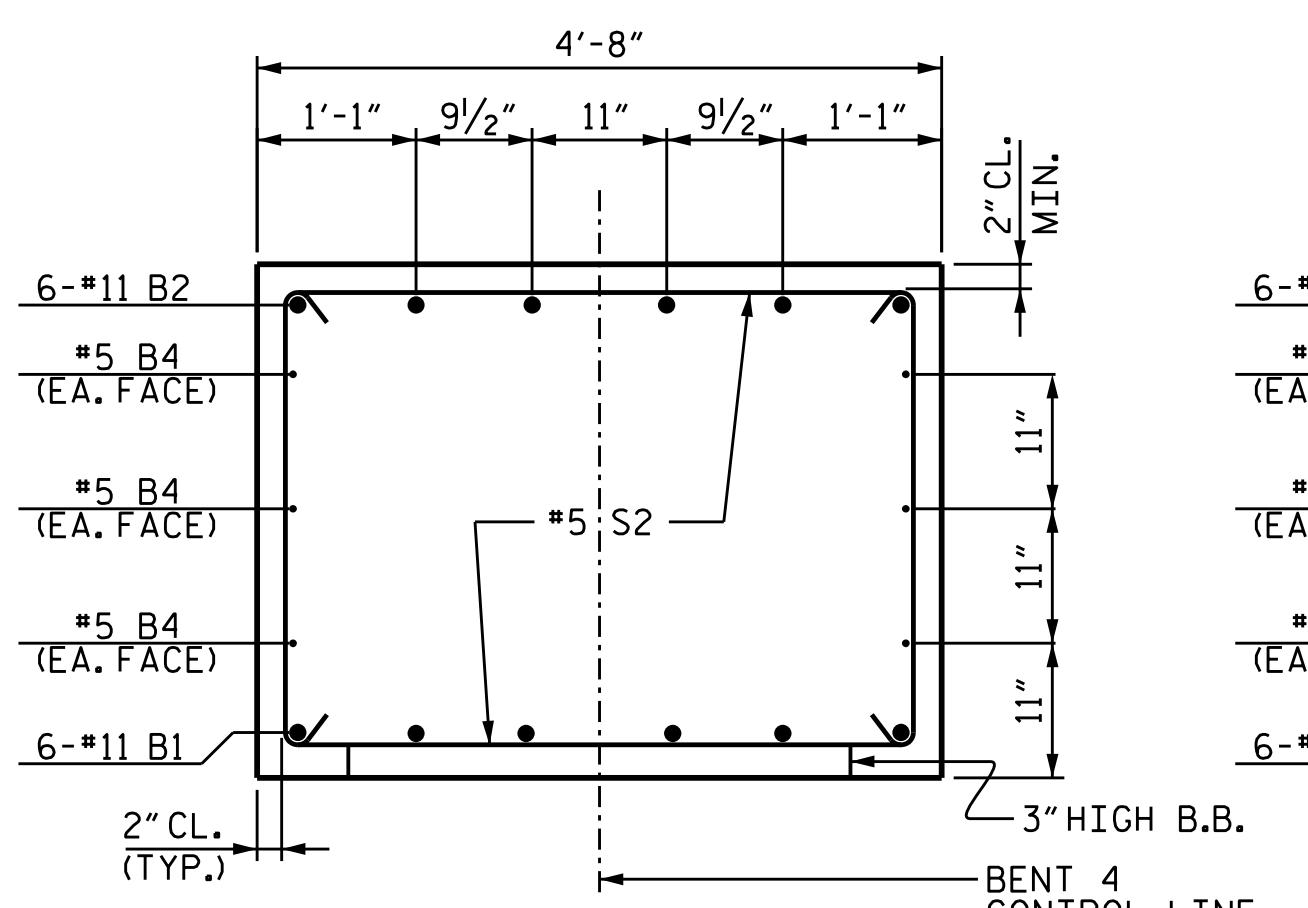
CONSTRUCTION JOINT DETAIL



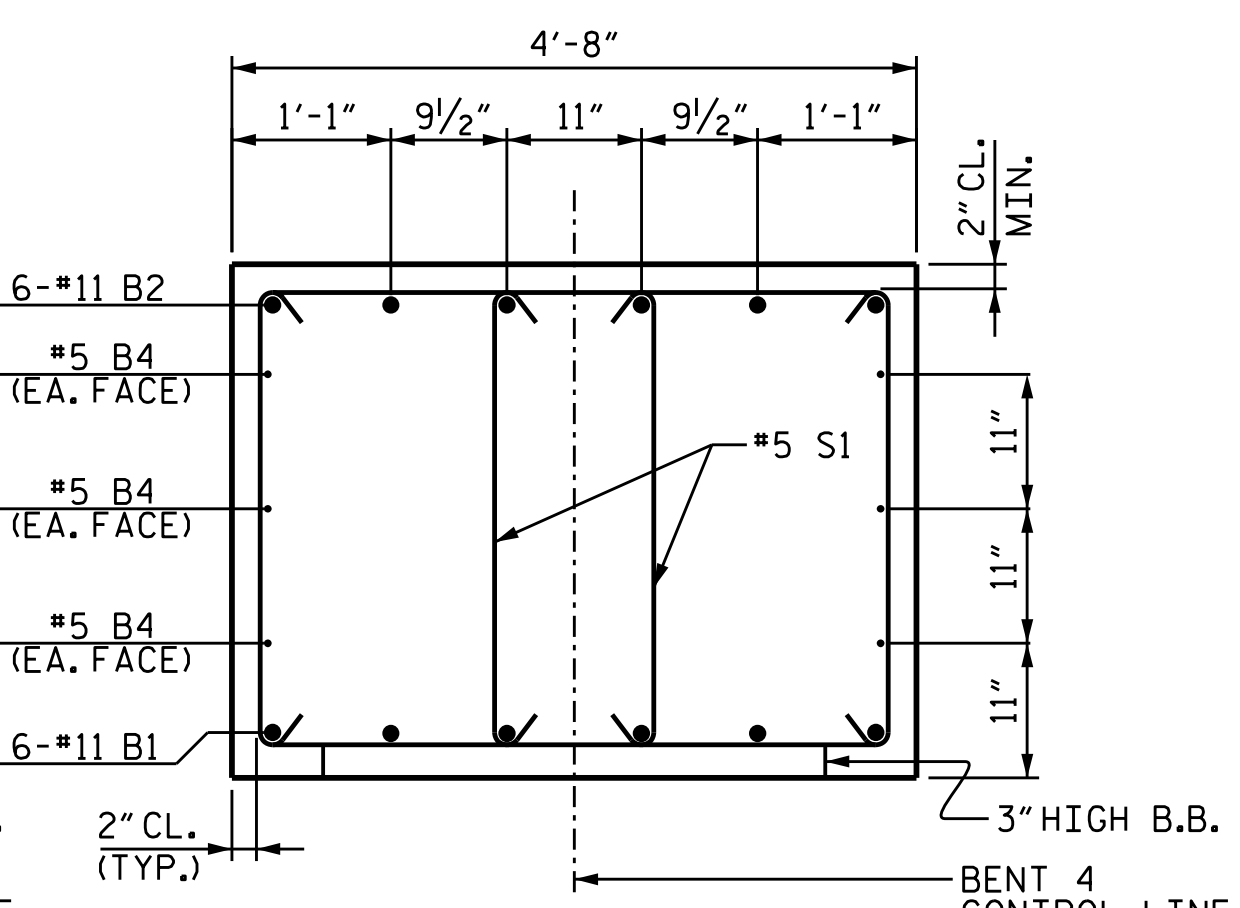
LEFT END VIEW



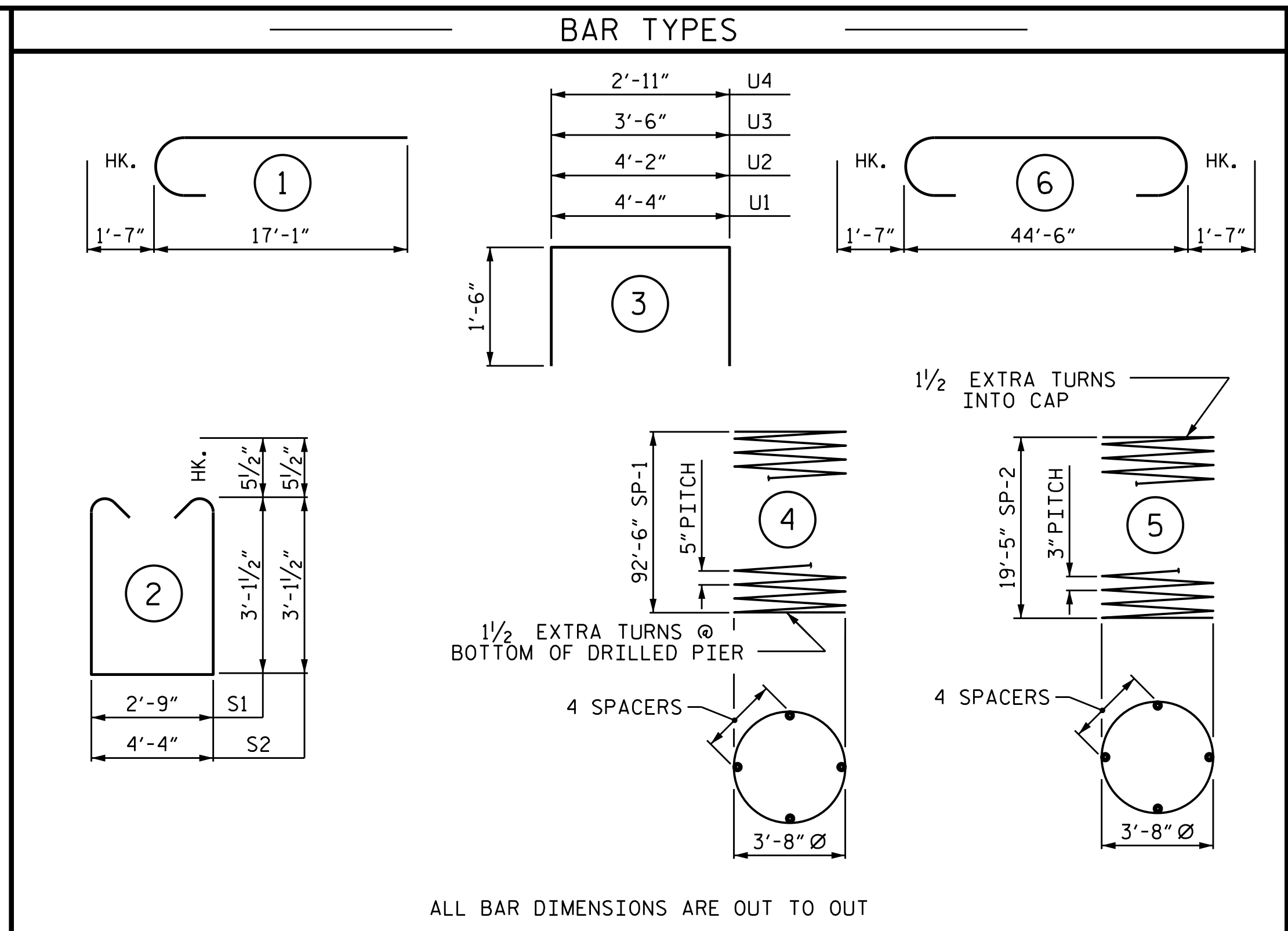
RIGHT END VIEW



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BENT 4					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	44'-8"	1,424
B2	6	#11	6	47'-8"	1,520
B3	6	#5	STR	44'-8"	280
B4	6	#4	STR	24'-5"	98
M1	36	#11	STR	60'-0"	11,476
M2	36	#11	STR	50'-2"	9,595
S1	16	#5	2	9'-11"	165
S2	38	#5	2	11'-6"	456
U1	53	#4	3	7'-4"	260
U2	7	#4	3	7'-2"	34
U3	5	#4	3	6'-6"	22
U4	5	#4	3	5'-11"	20
V1	36	#11	1	22'-10"	4,367
REINFORCING STEEL					29,717 LBS.
SP-1	3	*	4	2,545'-5"	7,965
SP-2	3	**	5	911'-4"	1,826
SPIRAL COLUMN REINFORCING STEEL					9,791 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	26.8 C.Y.
POUR #3 (CAP)	29.8 C.Y.
TOTAL CLASS A CONCRETE	56.6 C.Y.

DRILLED PIERS:	
DRILLED PIER CONCRETE POUR #1	164.4 C.Y.
4'-6" Ø DRILLED PIERS IN SOIL	279.00 LIN. FT.
PERMANENT STEEL CASING FOR 4'-6" Ø DRILLED PIERS	90.00 LIN. FT.
CSL TUBES	1134.00 LIN. FT.

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 2 OF 2

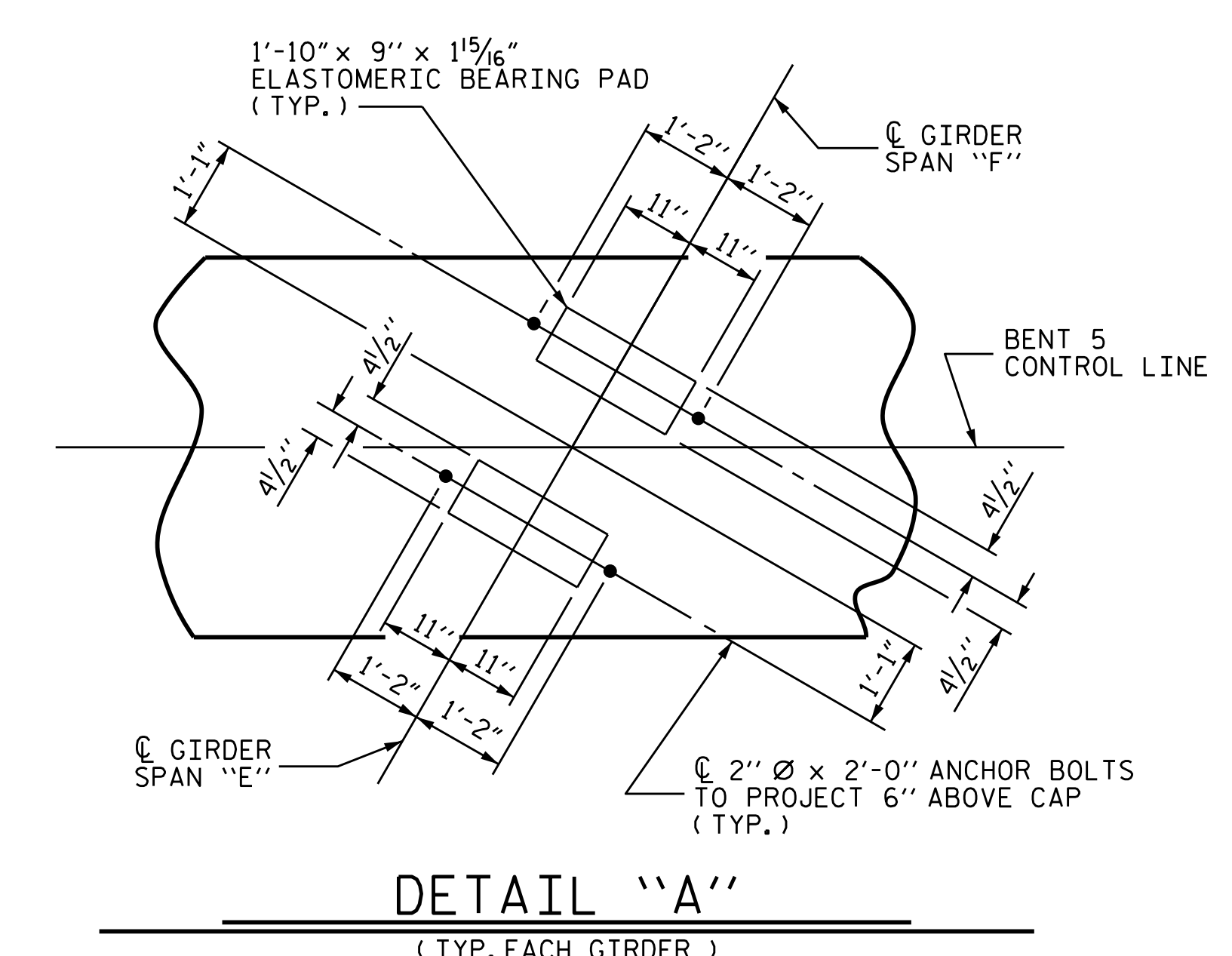
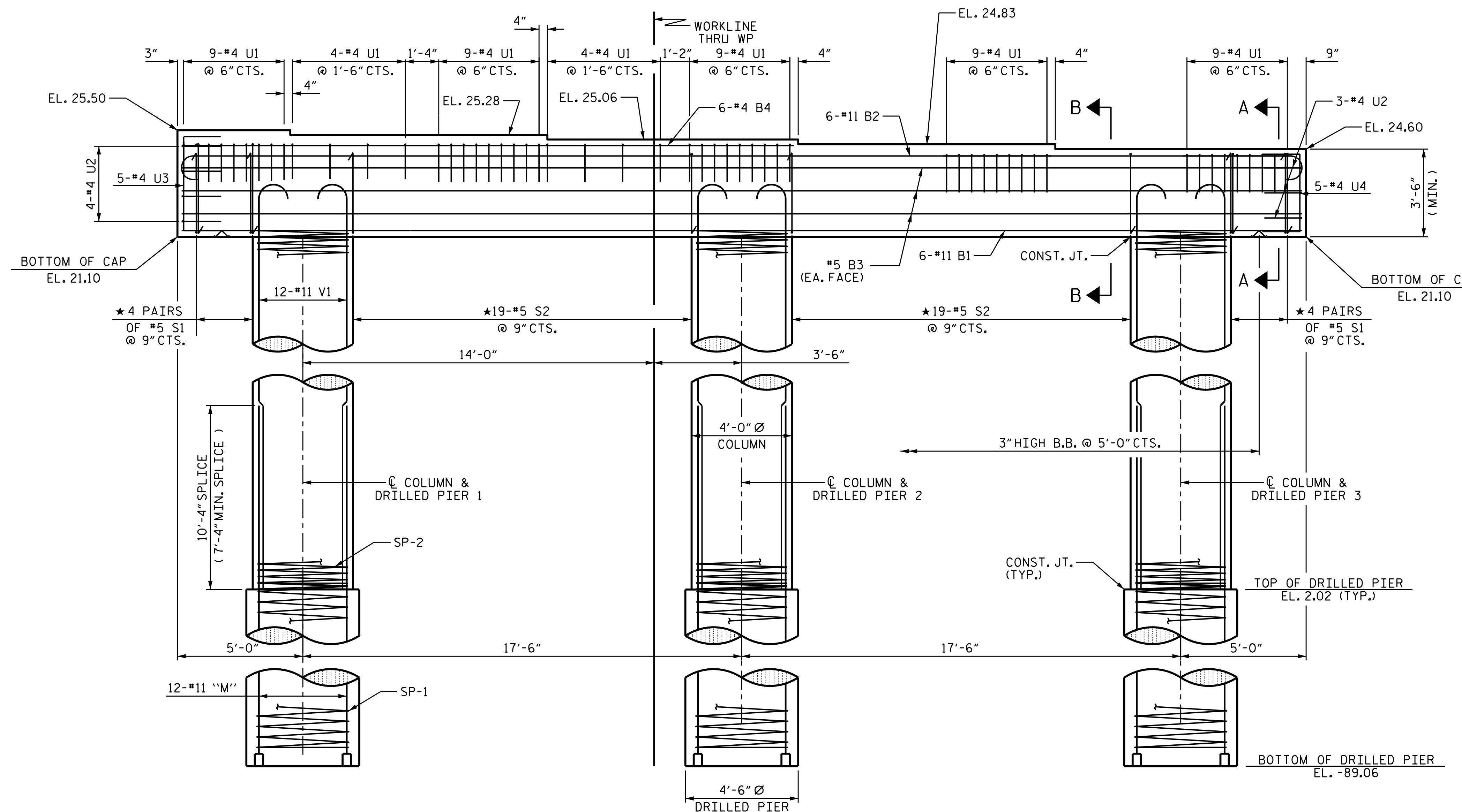
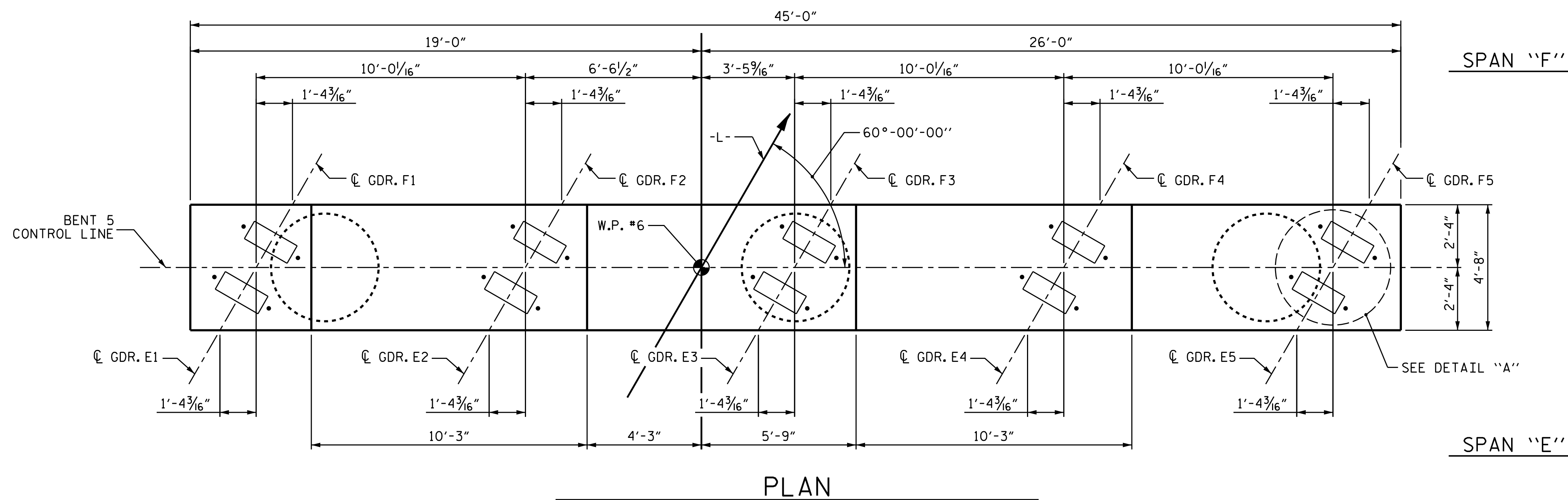
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
 TGS ENGINEERS
 706 HILLSBOROUGH STREET SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-44
1			3			TOTAL SHEETS
2			4			57

DRAWN BY: TBE / ZCS DATE: 6/2019
 CHECKED BY: MGC DATE: 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."
- ★ INVERT ALTERNATE STIRRUPS.
- DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE WATER SURFACE FOR SHAFTS LOCATED IN WATER.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.

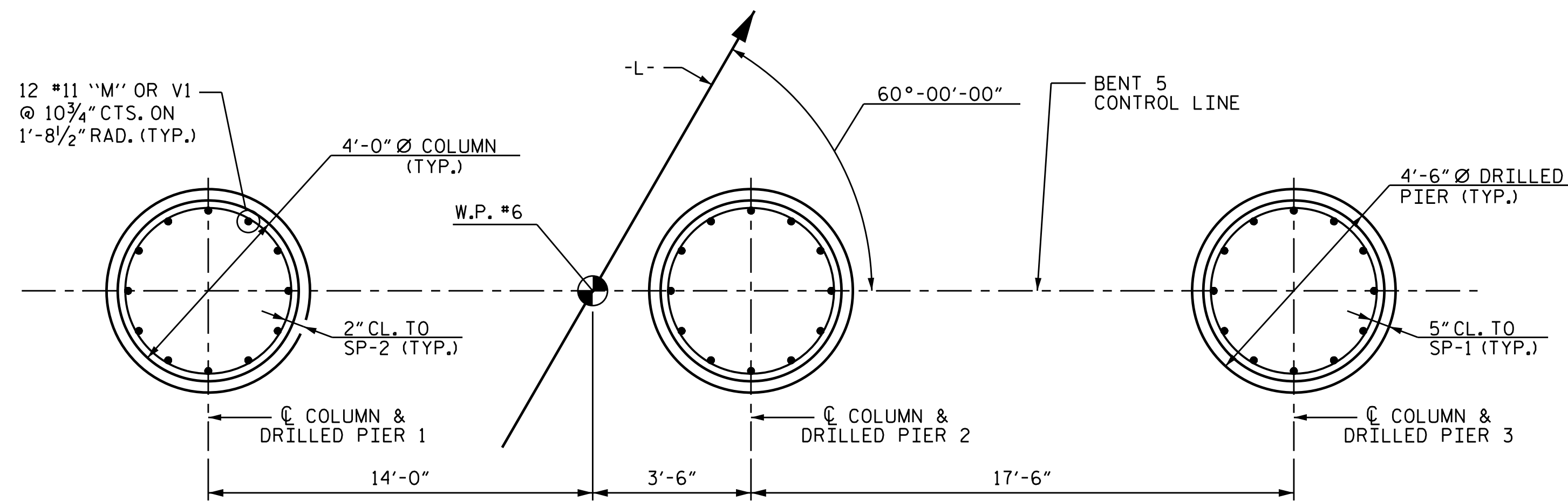


PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 1 OF 2

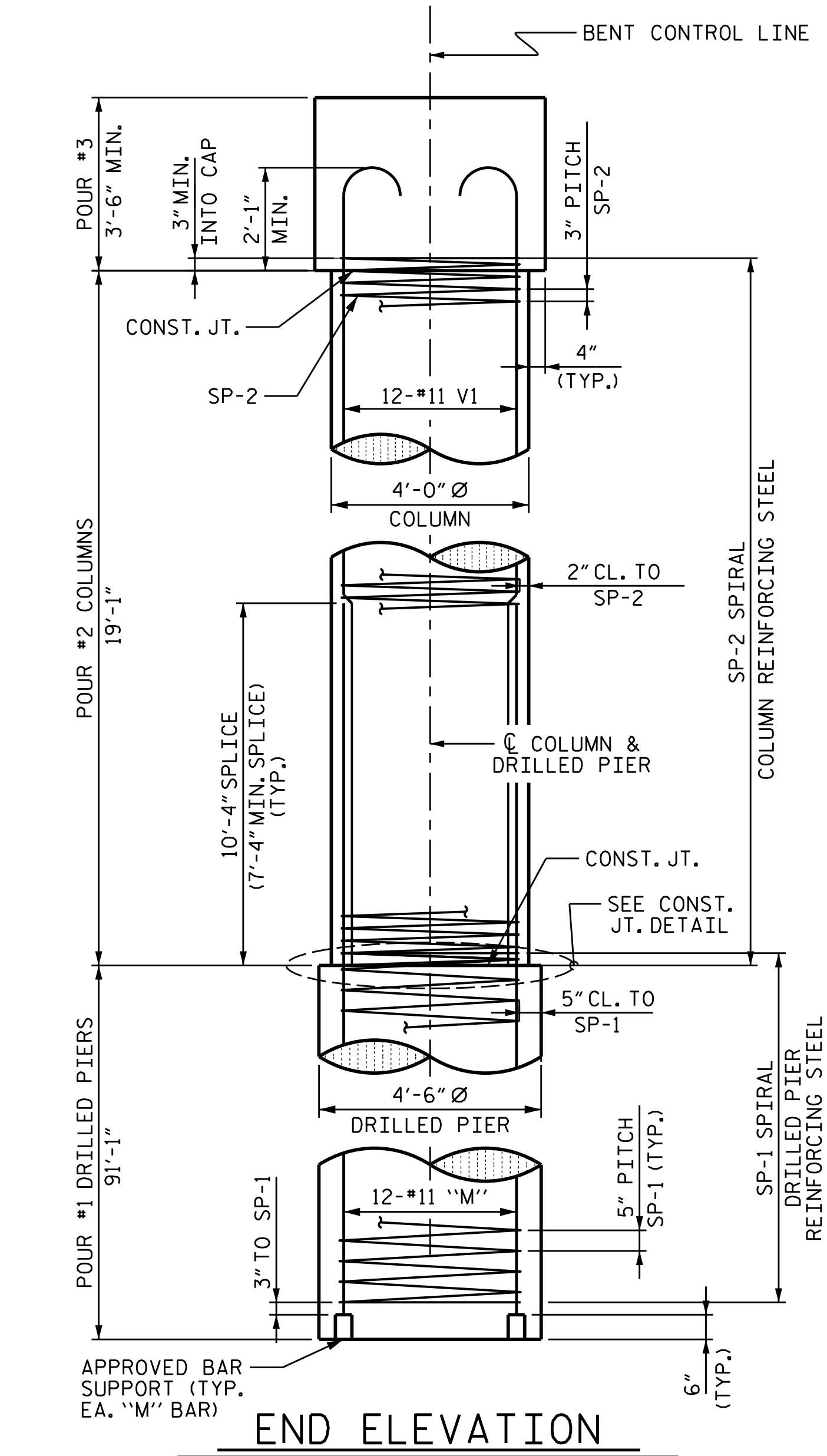
		STATE OF NORTH CAROLINA		SHEET NO. S-45
		DEPARTMENT OF TRANSPORTATION RALEIGH		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED TGS ENGINEERS 706 HILLSBOROUGH STREET SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275		SUBSTRUCTURE BENT 5		TOTAL SHEETS 57
		REVISIONS NO. BY: DATE: NO. BY: DATE:		

DRAWN BY : TBE / ZCS DATE : 6/2019
 CHECKED BY : MGC DATE : 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE : 6/2019

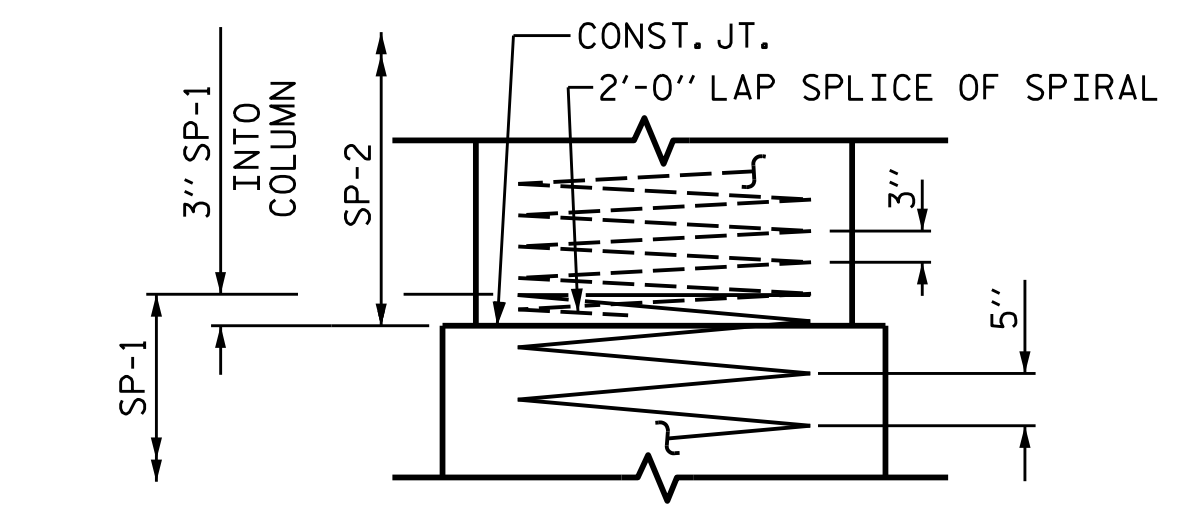
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER EXCEPT AS NOTED.



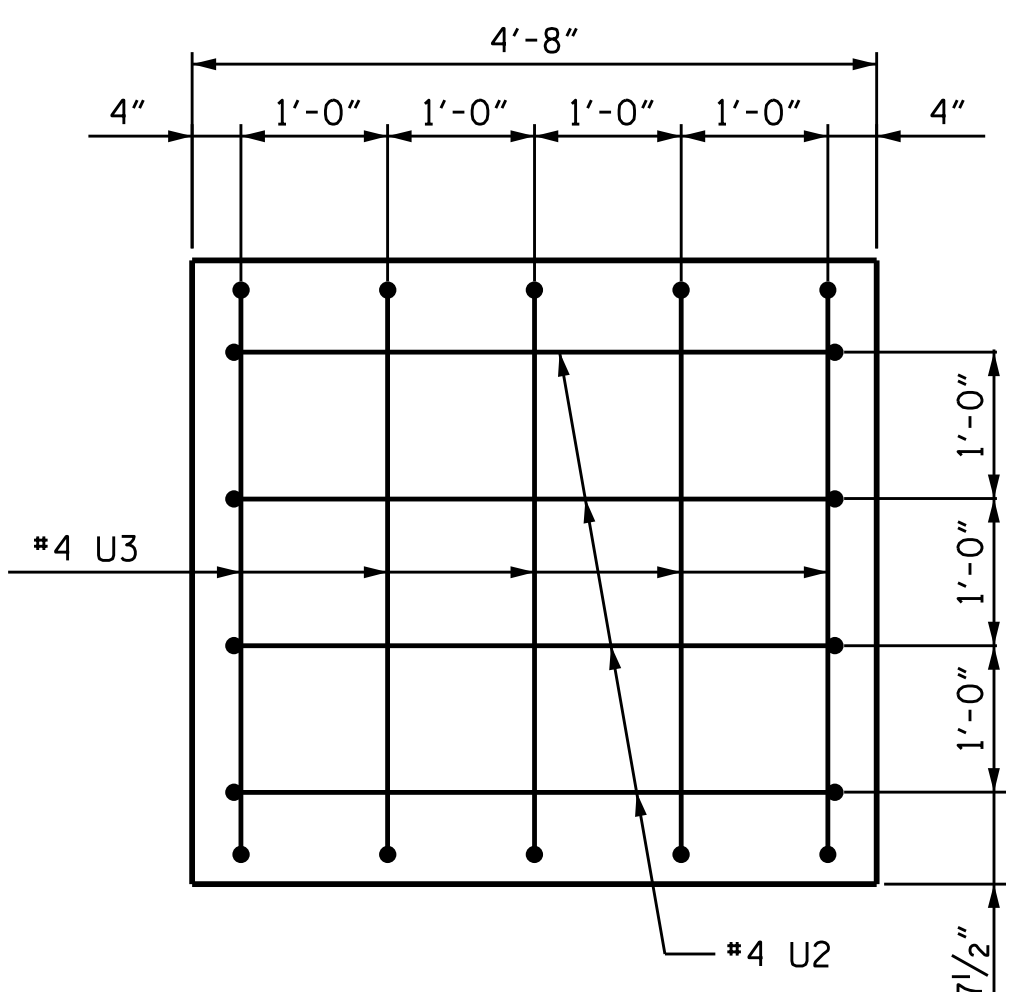
PLAN OF DRILLED PIERS & COLUMNS



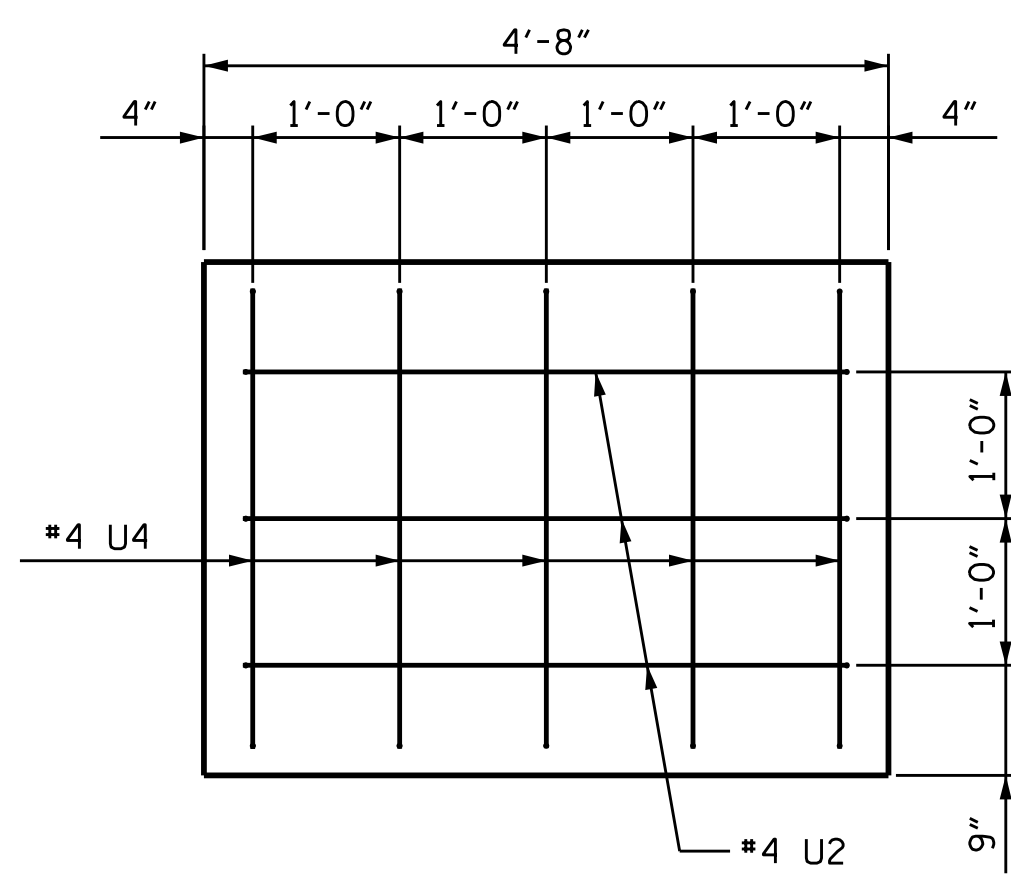
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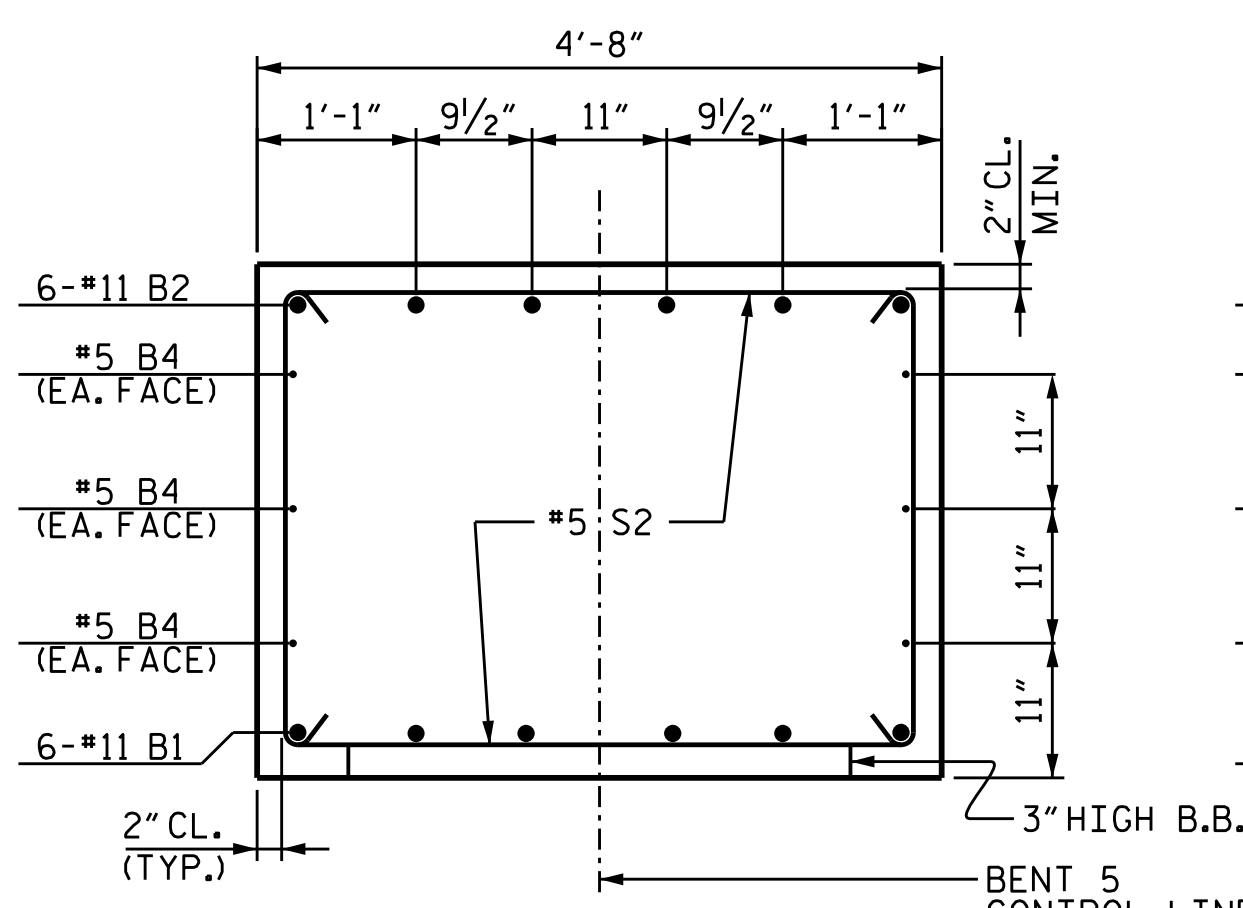
CONSTRUCTION JOINT DETAIL



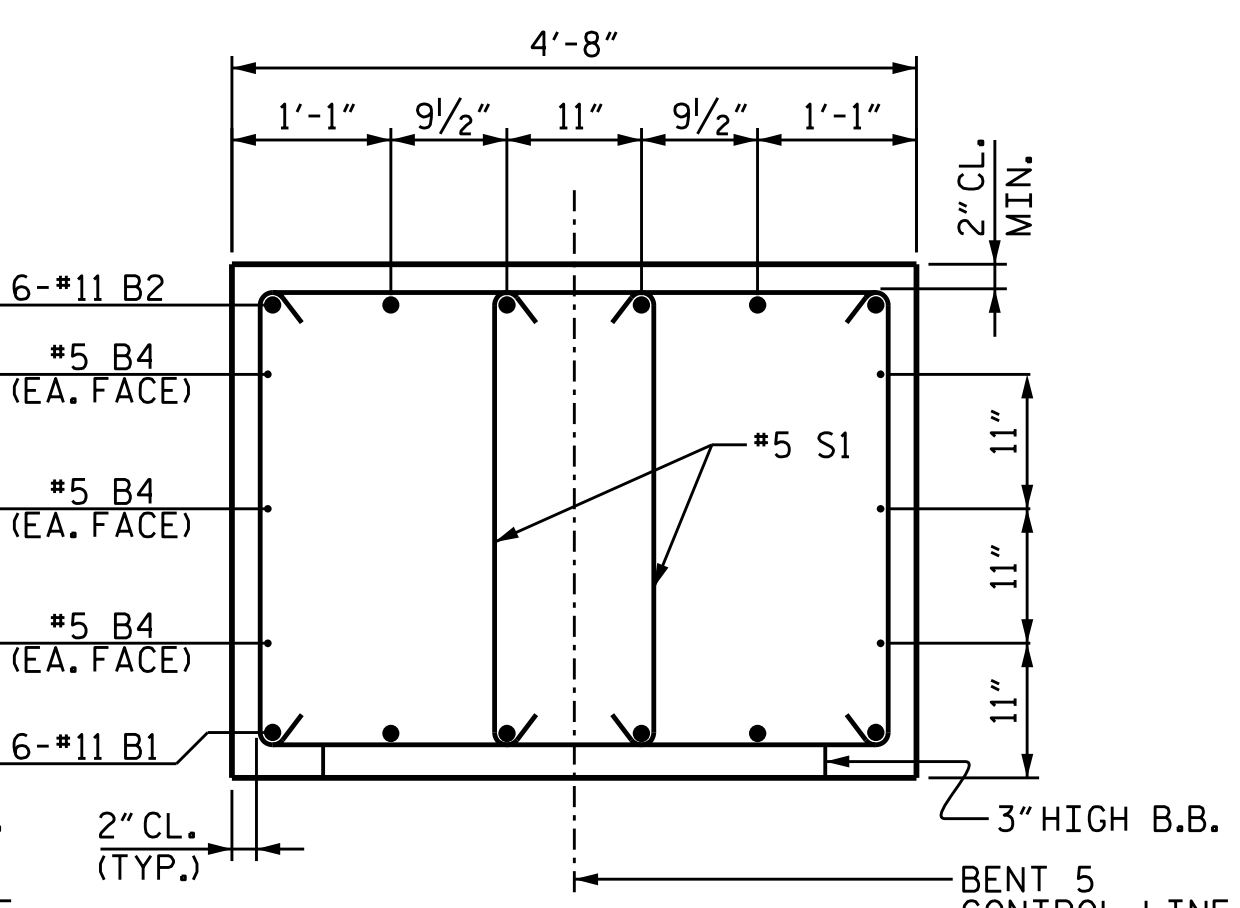
LEFT END VIEW



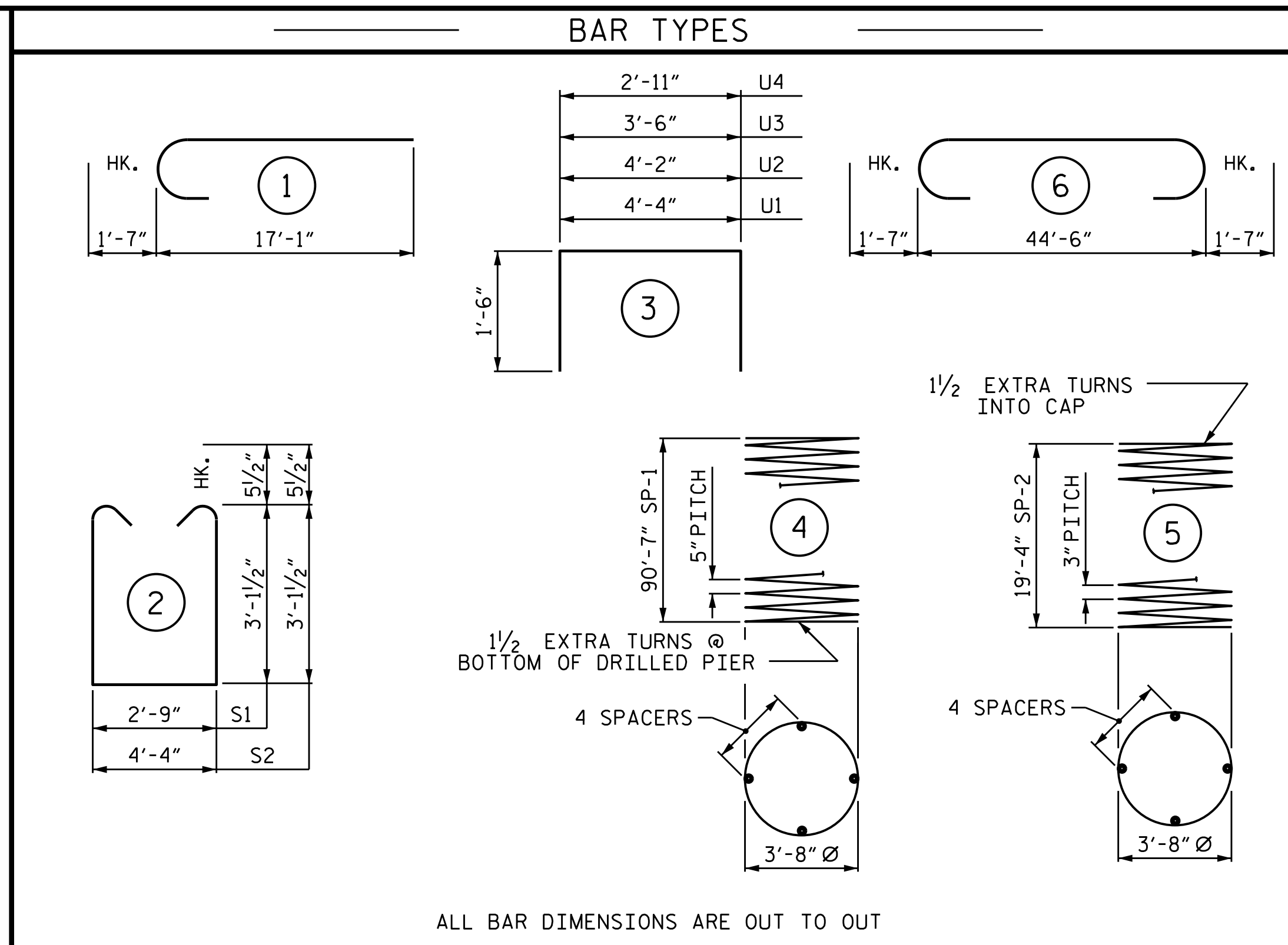
RIGHT END VIEW



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BENT 5					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	44'-8"	1,424
B2	6	#11	6	47'-8"	1,520
B3	6	#5	STR	44'-8"	280
B4	6	#4	STR	24'-5"	98
M1	36	#11	STR	60'-0"	11,476
M2	36	#11	STR	48'-3"	9,229
S1	16	#5	2	9'-11"	165
S2	38	#5	2	11'-6"	456
U1	53	#4	3	7'-4"	260
U2	7	#4	3	7'-2"	34
U3	5	#4	3	6'-6"	22
U4	5	#4	3	5'-11"	20
V1	36	#11	1	22'-9"	4,351
REINFORCING STEEL					29,335 LBS.
SP-1	3	*	4	2,488'-7"	7,787
SP-2	3	**	5	899'-11"	1,803
SPIRAL COLUMN REINFORCING STEEL					9,590 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	26.6 C.Y.
POUR #3 (CAP)	29.8 C.Y.
TOTAL CLASS A CONCRETE	56.4 C.Y.

DRILLED PIERS:	
DRILLED PIER CONCRETE POUR #1	161.0 C.Y.
4'-6" Ø DRILLED PIERS IN SOIL	273.25 LIN. FT.
PERMANENT STEEL CASING FOR 4'-6" Ø DRILLED PIERS	87.06 LIN. FT.
CSL TUBES	1111.00 LIN. FT.

PROJECT NO. B-4786
 COUNTY PITT
 STATION: 28+03.00 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SEAL
 20125
 ENGINEER
 M. G. GREEN, JR.
 SFBCCF340C412/2/24/2022 | 7:41 AM EST

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

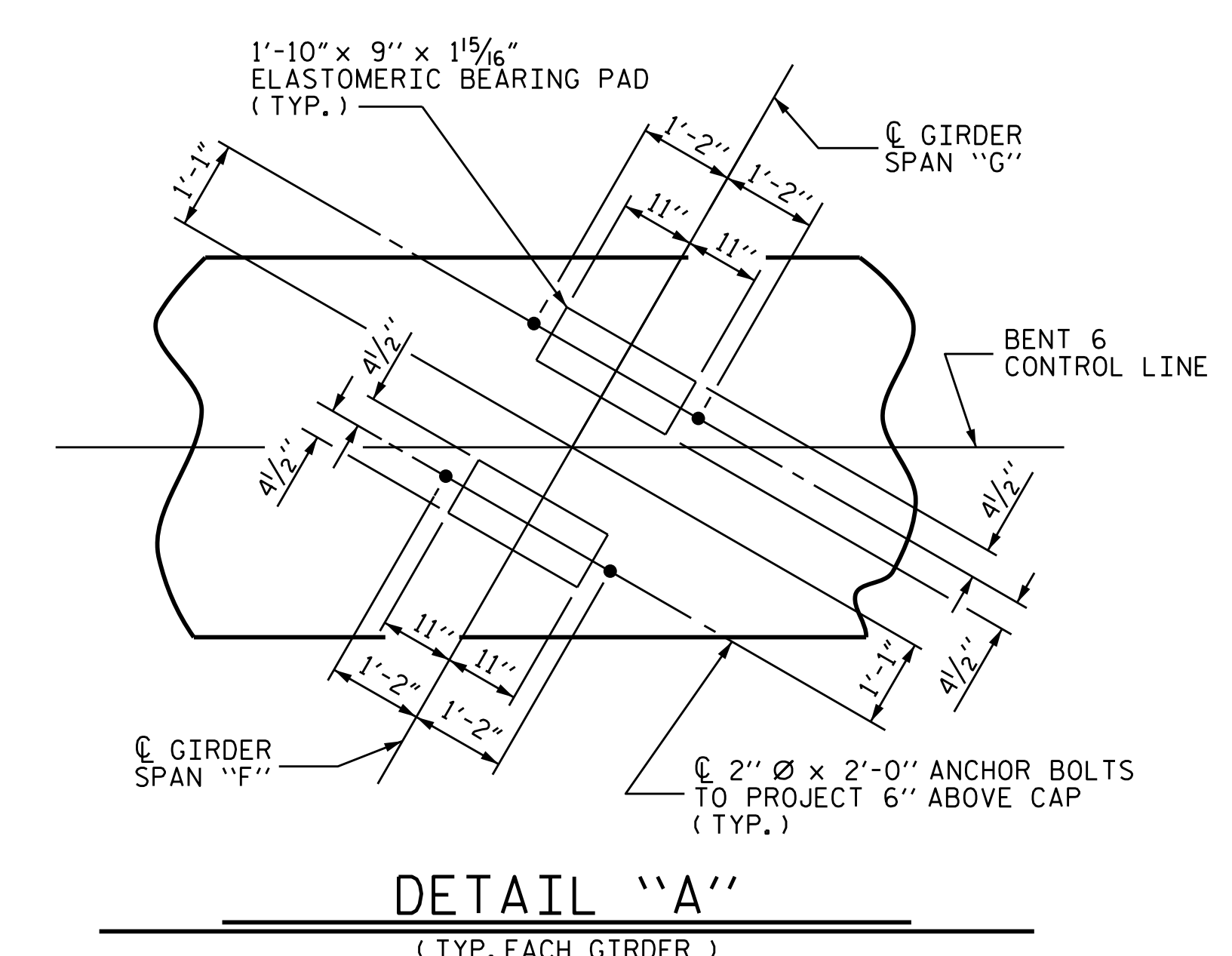
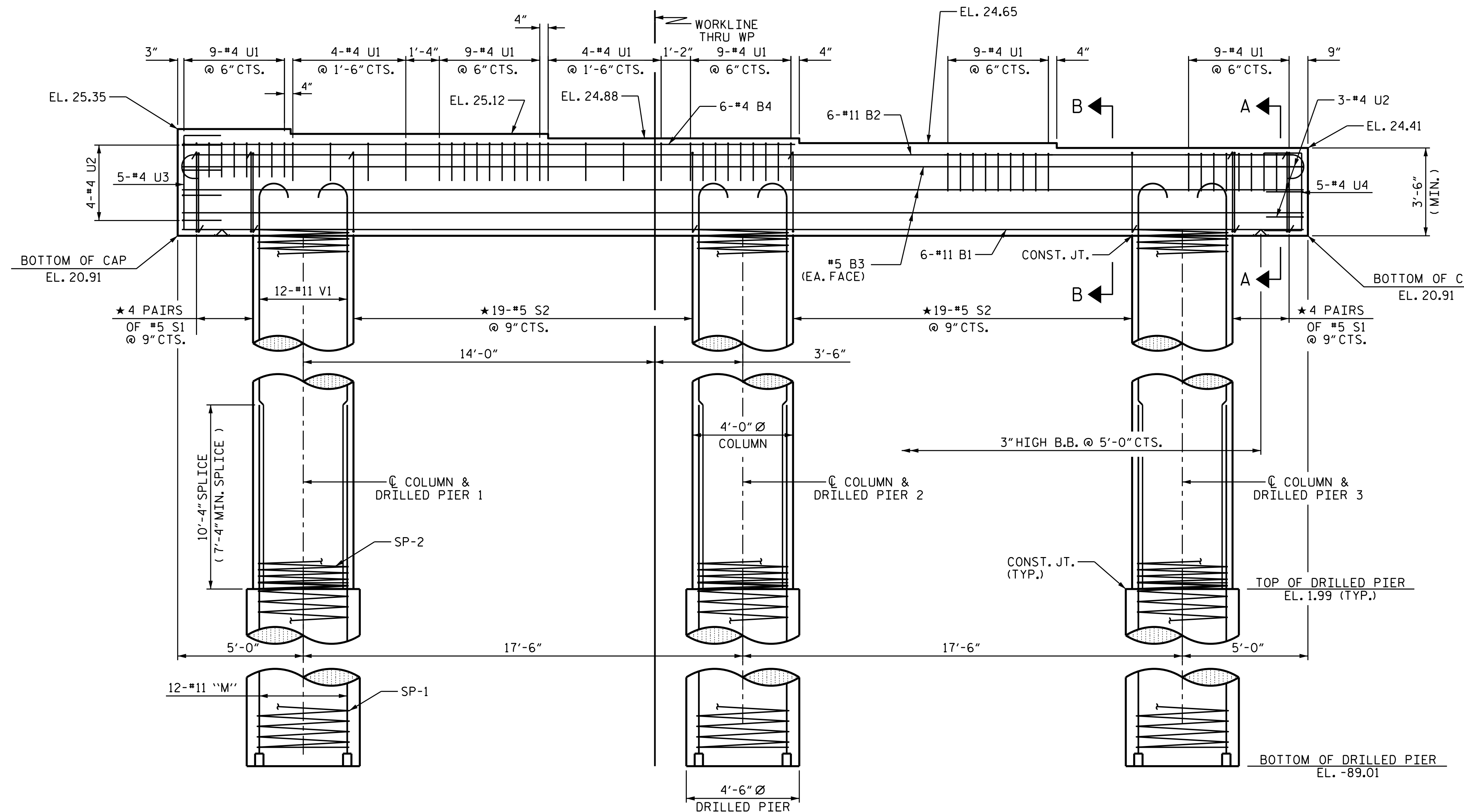
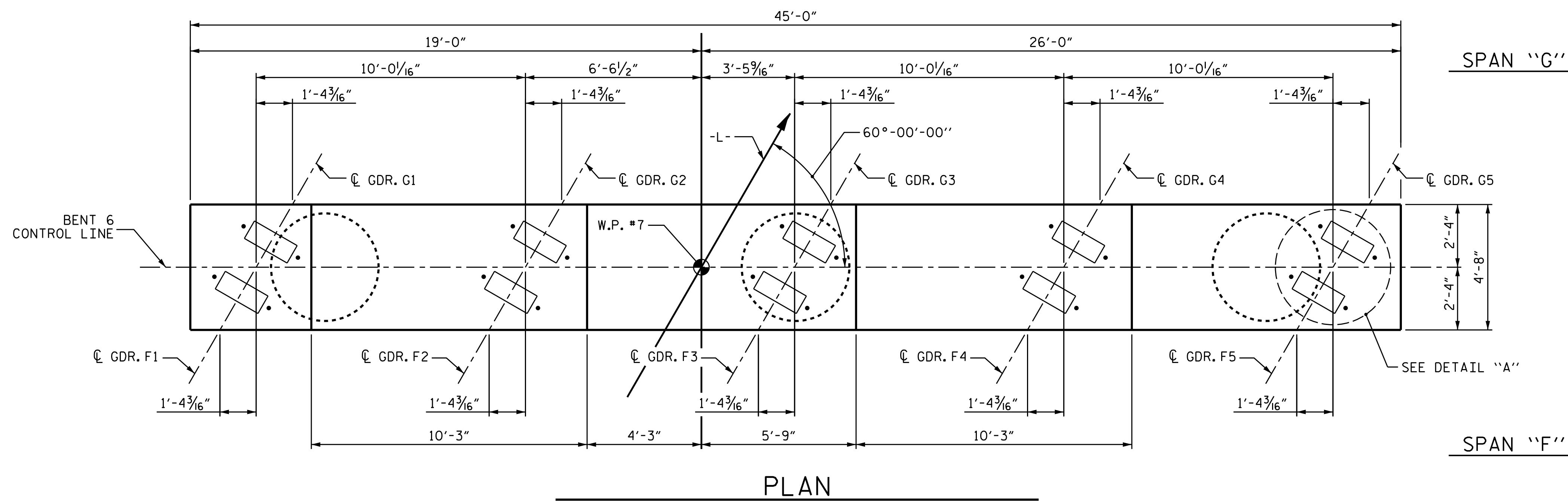
TGS ENGINEERS
 706 HILLSBOROUGH STREET
 SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-46
1			3			TOTAL SHEETS
2			4			57

DRAWN BY: TBE / ZCS DATE: 6/2019
 CHECKED BY: MGC DATE: 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019

NOTES

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."
- ★ INVERT ALTERNATE STIRRUPS.
- DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE WATER SURFACE FOR SHAFTS LOCATED IN WATER.
- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 1 OF 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

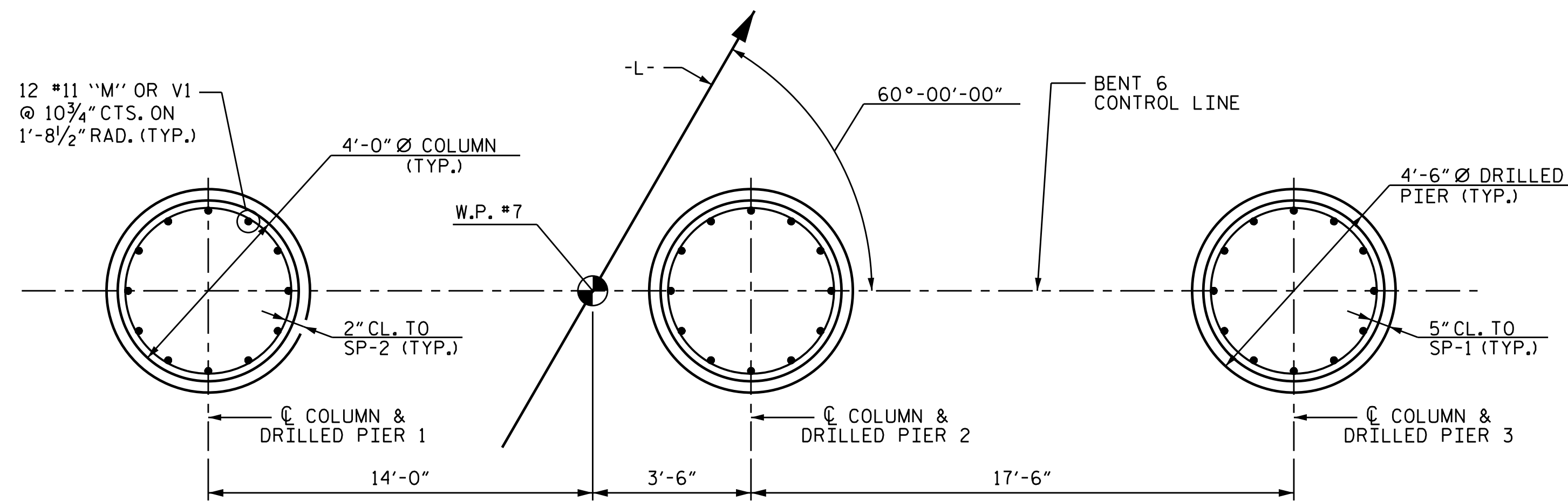
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 6**

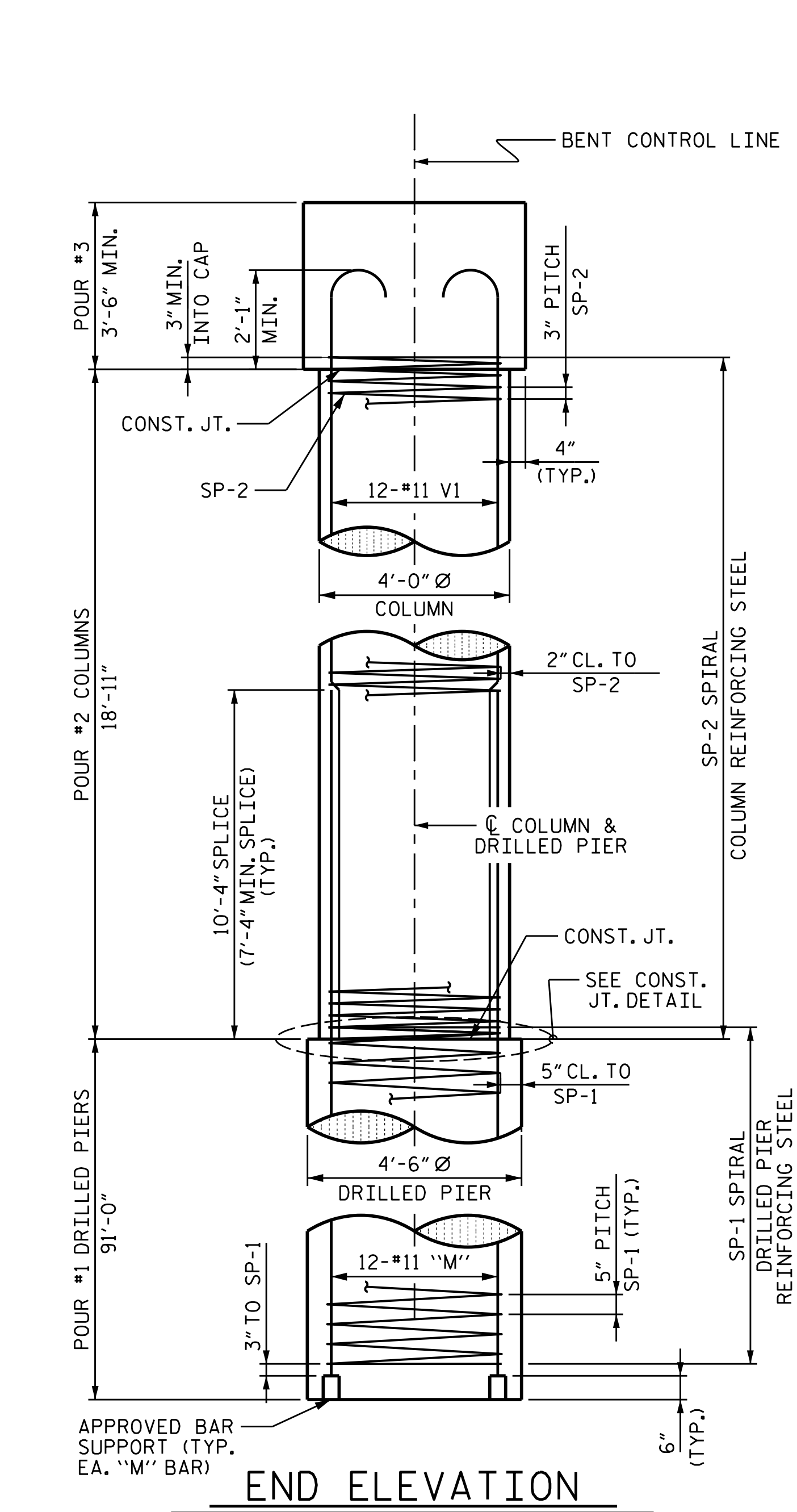
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTAL SHEETS
2			4			57

DRAWN BY: TBE / ZCS DATE: 6/2019
 CHECKED BY: MGC DATE: 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019

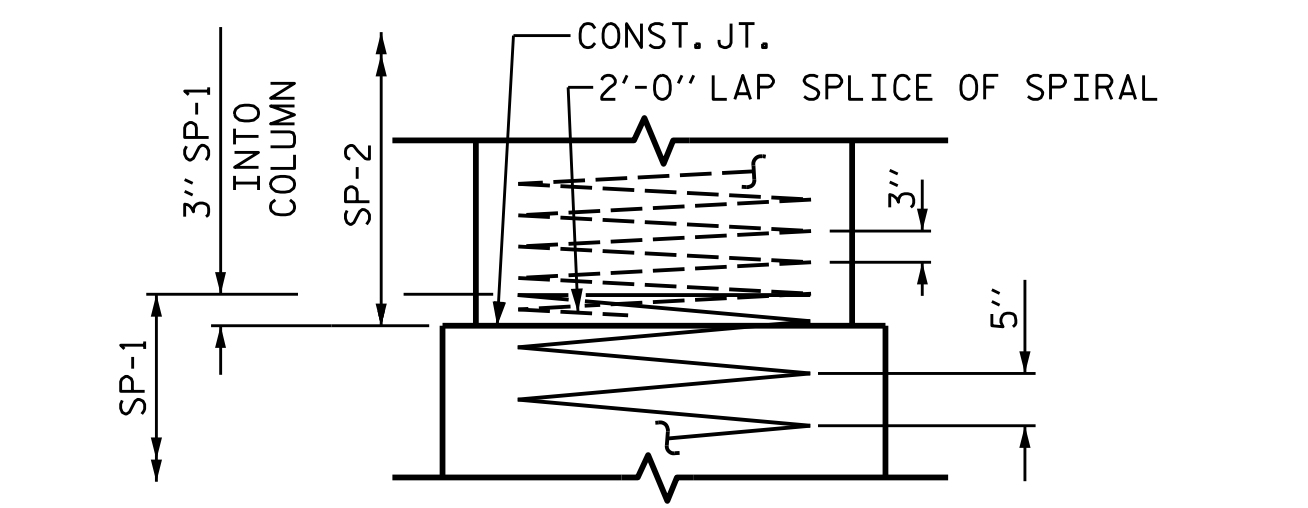
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER EXCEPT AS NOTED.



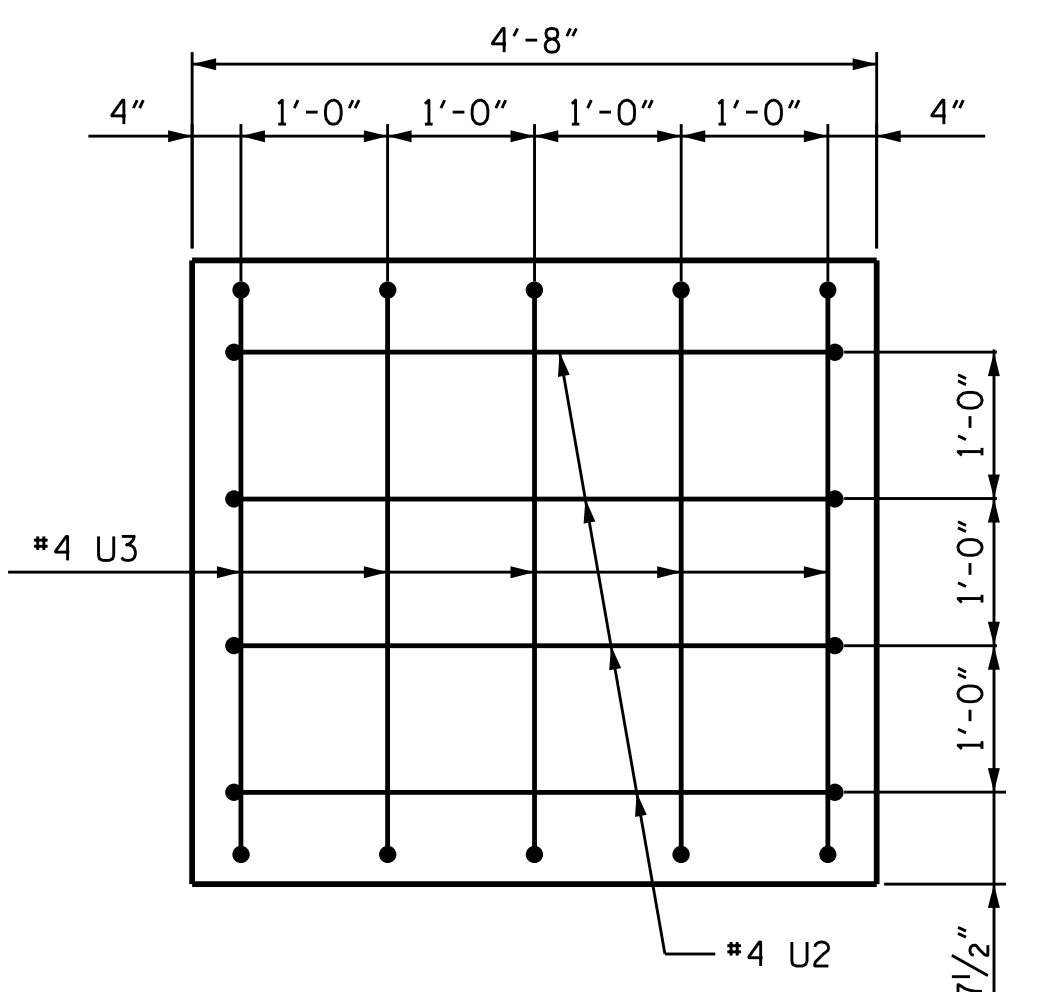
PLAN OF DRILLED PIERS & COLUMNS



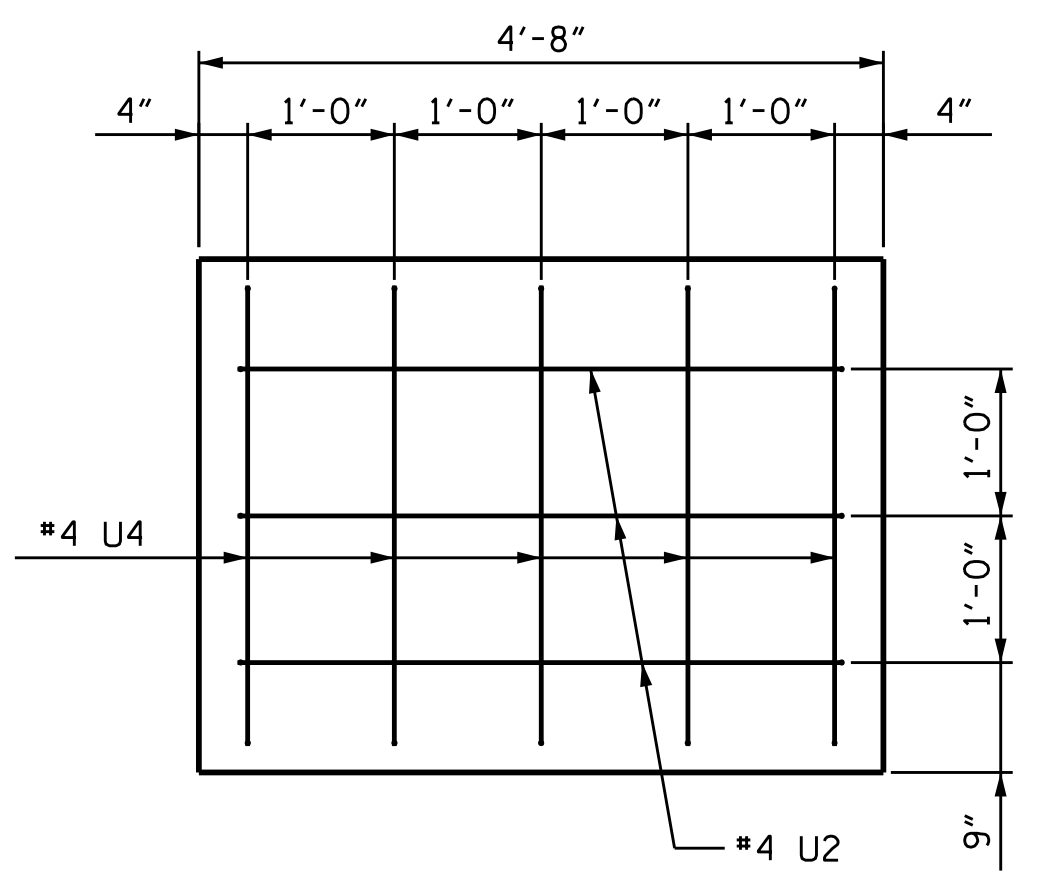
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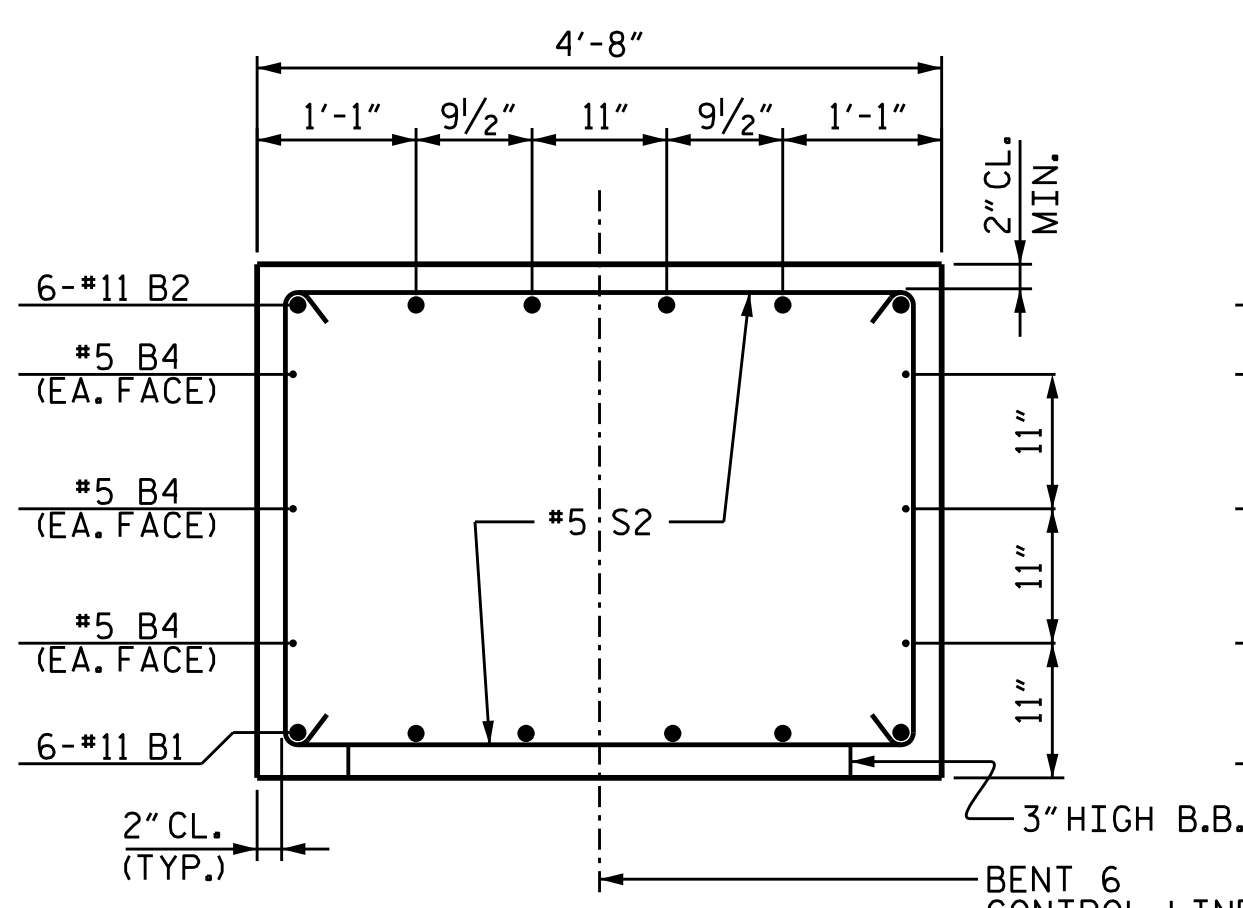
CONSTRUCTION JOINT DETAIL



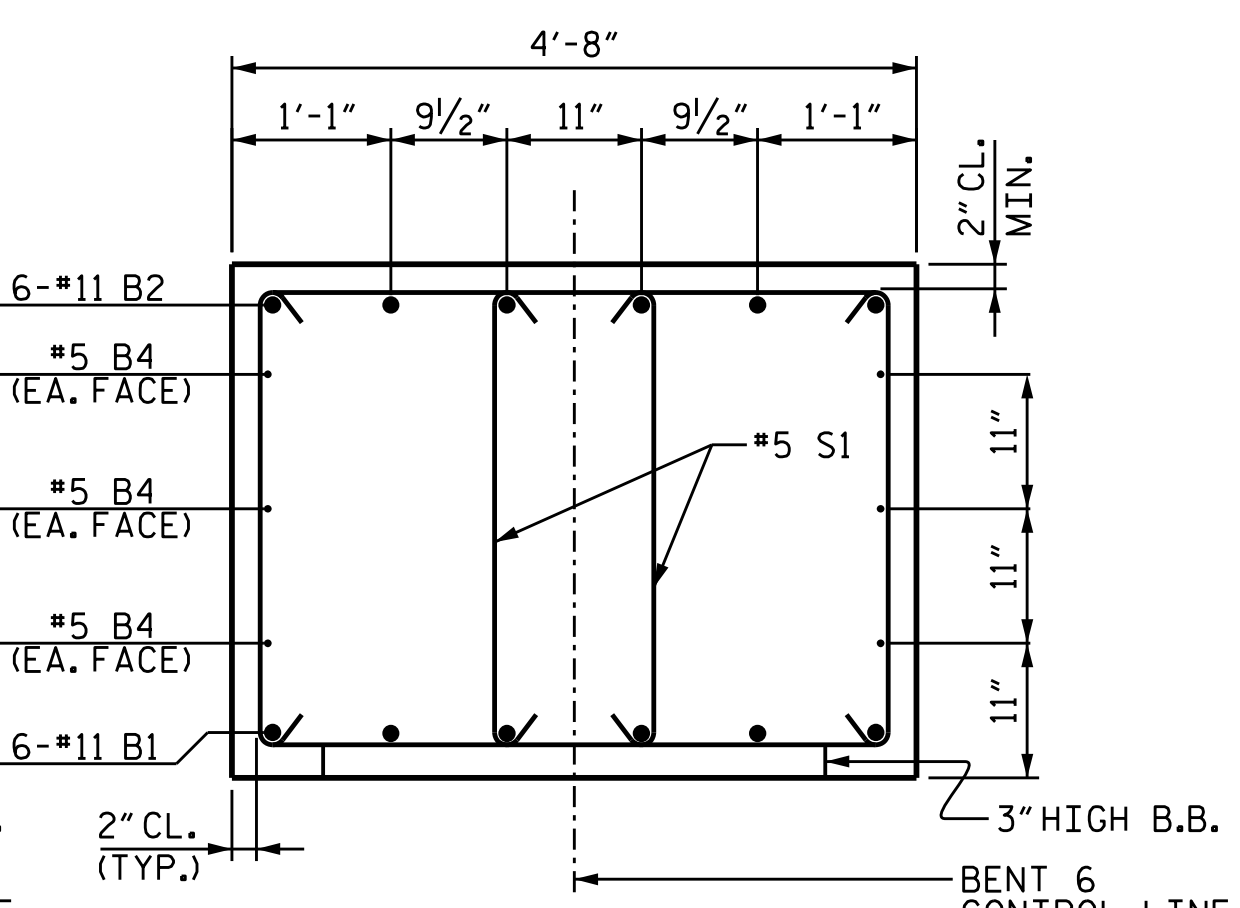
LEFT END VIEW



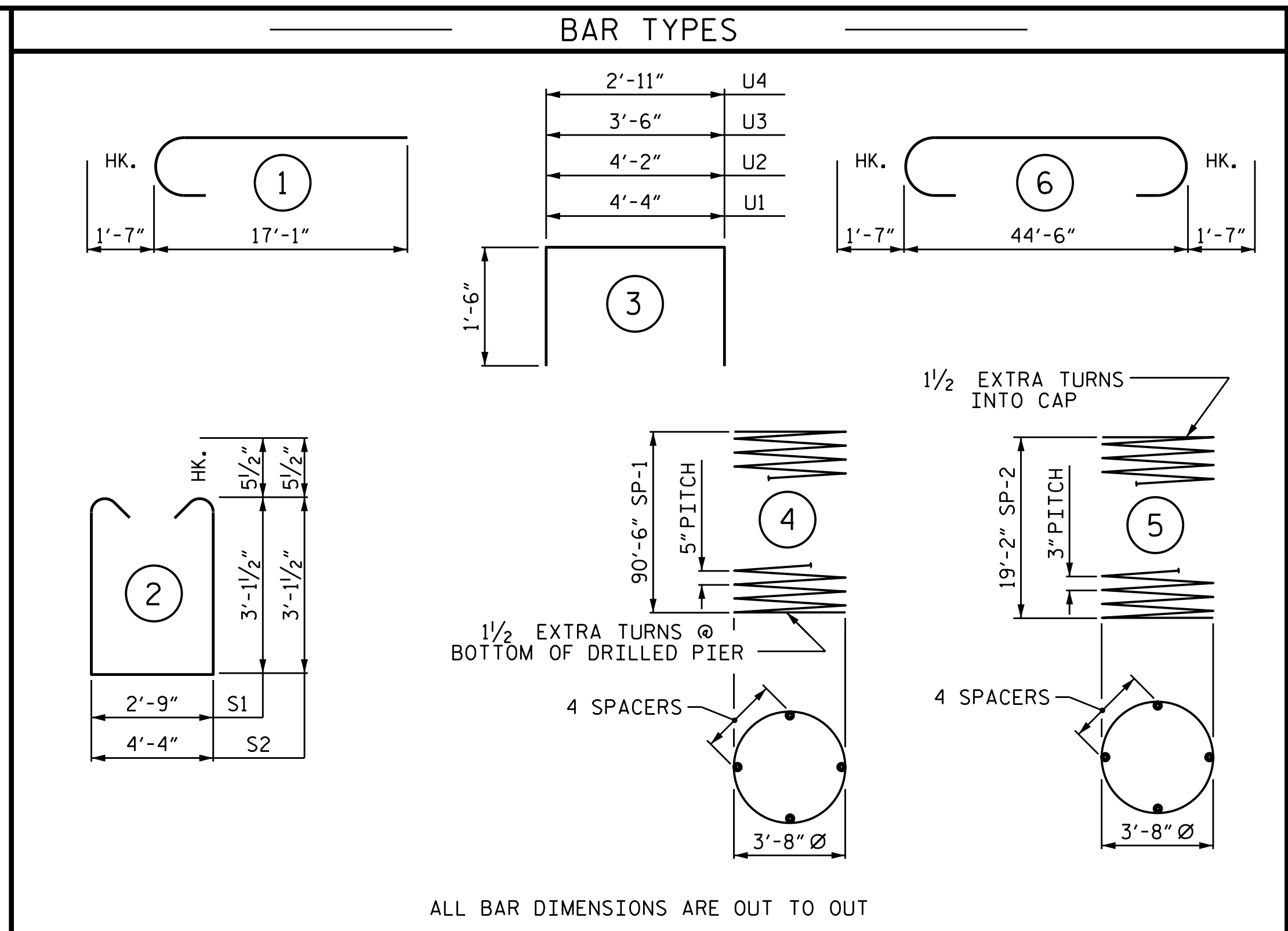
RIGHT END VIEW



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BENT 6					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	44'-8"	1,424
B2	6	#11	6	47'-8"	1,520
B3	6	#5	STR	44'-8"	280
B4	6	#4	STR	24'-5"	98
M1	36	#11	STR	60'-0"	11,476
M2	36	#11	STR	48'-2"	9,213
S1	16	#5	2	9'-11"	165
S2	38	#5	2	11'-6"	456
U1	53	#4	3	7'-4"	260
U2	7	#4	3	7'-2"	34
U3	5	#4	3	6'-6"	22
U4	5	#4	3	5'-11"	20
V1	36	#11	1	22'-7"	4,319
REINFORCING STEEL					29,287 LBS.
SP-1	3	*	4	2,488'-7"	7,787
SP-2	3	**	5	899'-11"	1,803
SPIRAL COLUMN REINFORCING STEEL					9,590 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	26.4 C.Y.
POUR #3 (CAP)	29.8 C.Y.
TOTAL CLASS A CONCRETE	56.2 C.Y.

DRILLED PIERS:	
DRILLED PIER CONCRETE POUR #1	160.8 C.Y.
4'-6" Ø DRILLED PIERS IN SOIL	273.00 LIN. FT.
PERMANENT STEEL CASING FOR 4'-6" Ø DRILLED PIERS	83.97 LIN. FT.
CSL TUBES	1110.00 LIN. FT.

PROJECT NO. B-4786
 COUNTY PITT
 STATION: 28+03.00 -L-
 SHEET 2 OF 2

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS
2			4			57

DRAWN BY: TBE / ZCS DATE: 6/2019
 CHECKED BY: MGC DATE: 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019

NOTES

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

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

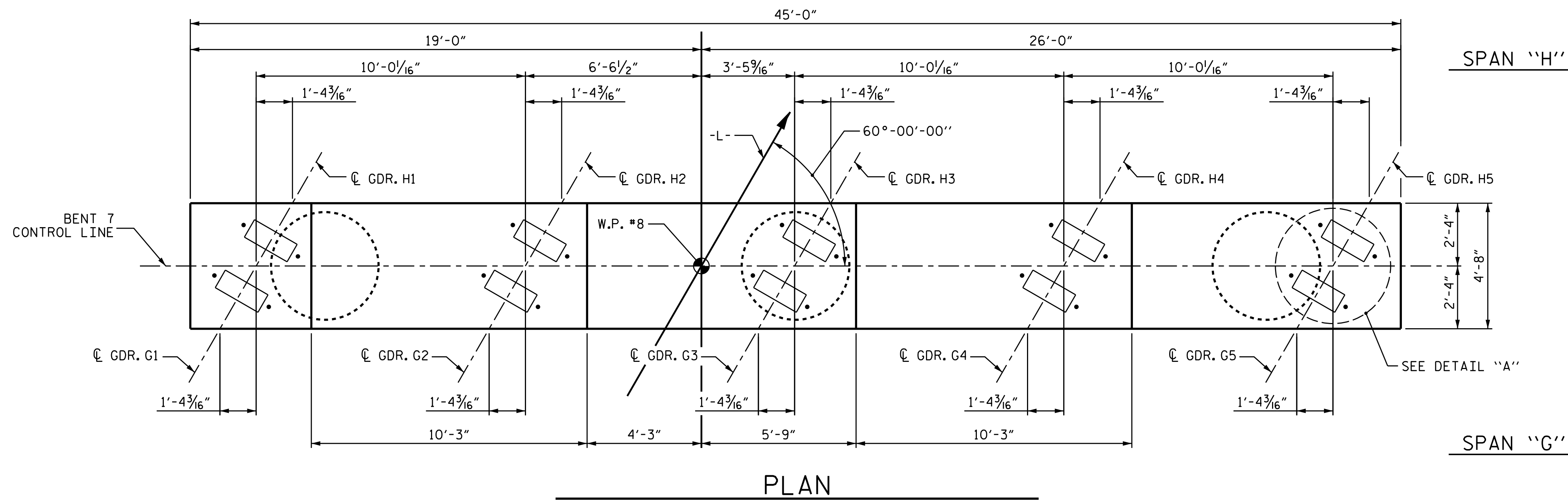
FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

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

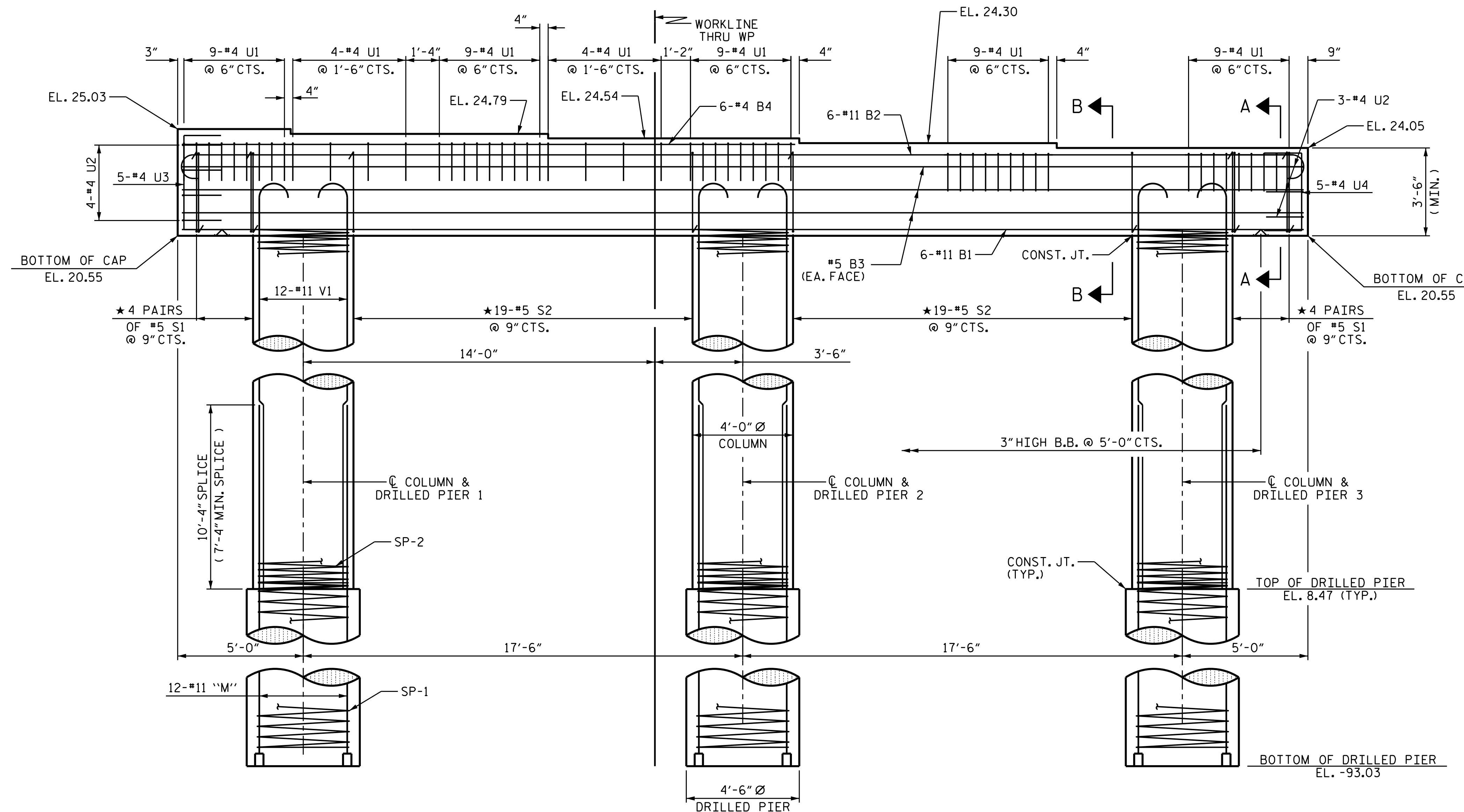
★ INVERT ALTERNATE STIRRUPS.

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

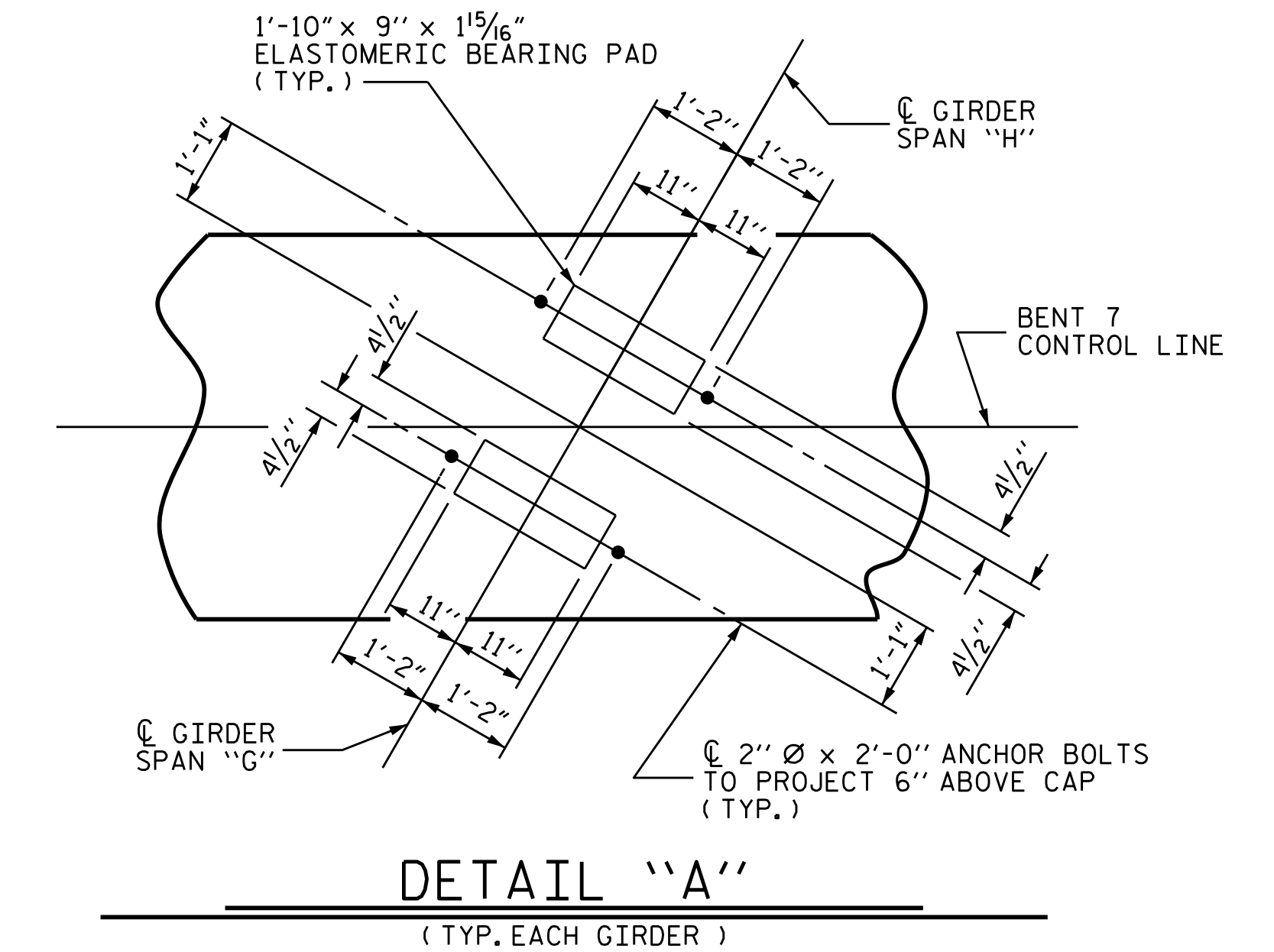
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



PLAN



ELEVATION



DETAIL "A"
(TYP. EACH GIRDER)

PROJECT NO. B-4786

PITT COUNTY

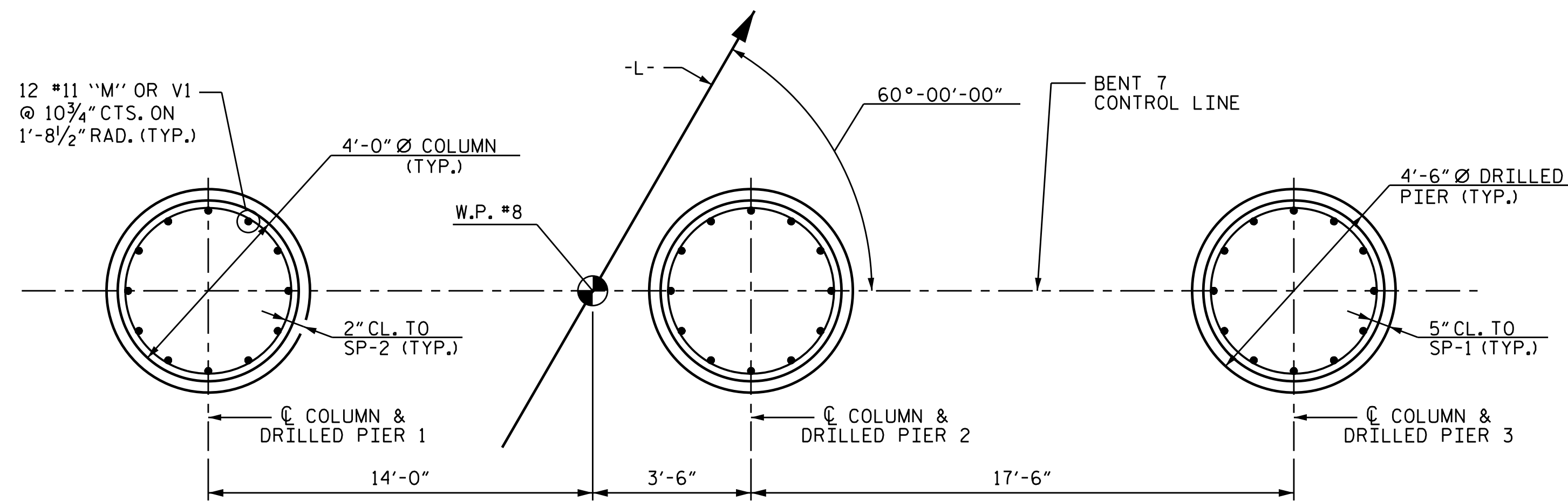
STATION: 28+03.00 -L-

SHEET 1 OF 2

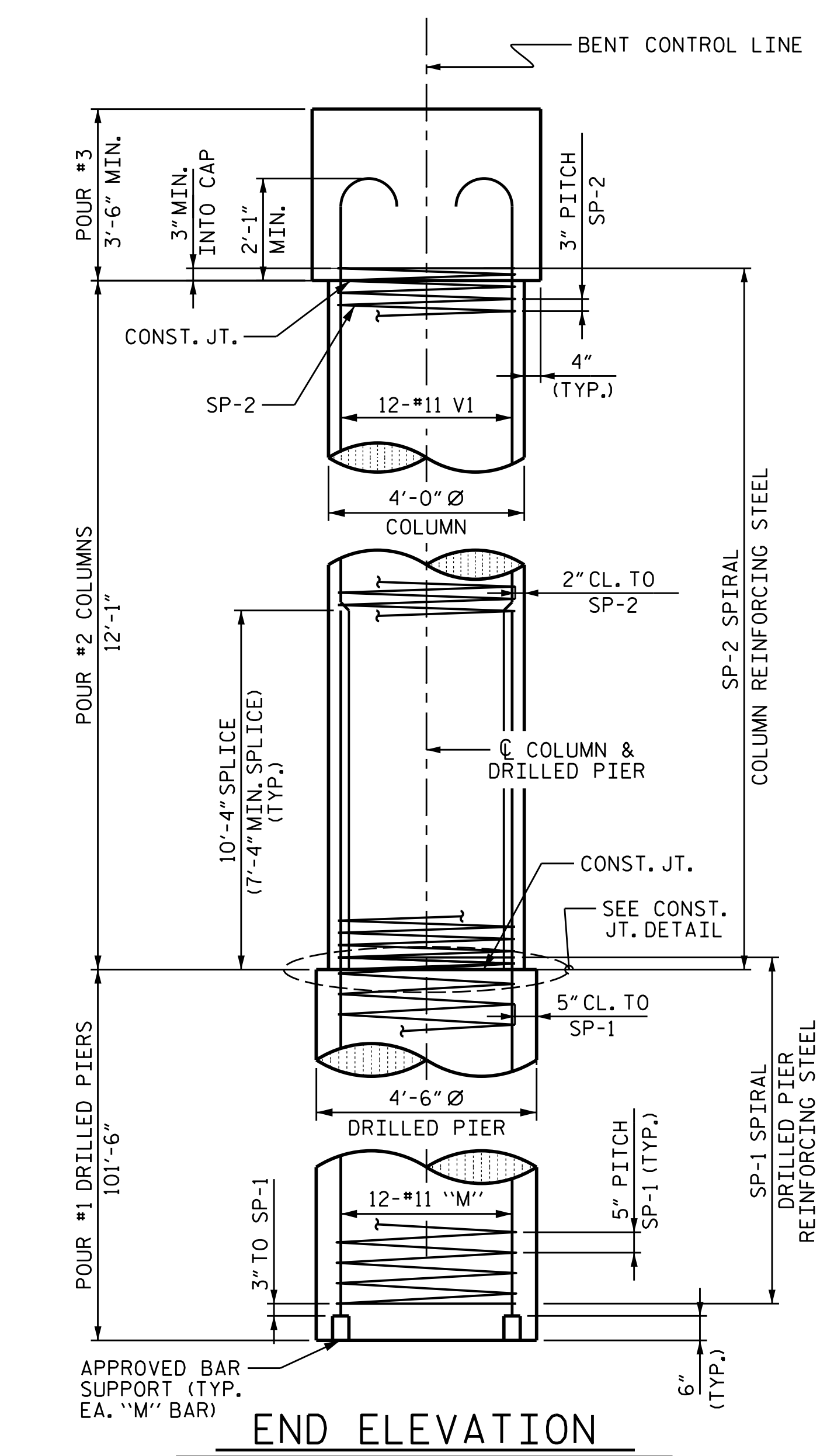
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				1			3			S-49
TGS ENGINEERS 706 HILLSBOROUGH STREET SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275		REVISIONS		2			4			TOTAL SHEETS 57

DRAWN BY : TBE / ZCS DATE : 6/2019
 CHECKED BY : MGC DATE : 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE : 6/2019

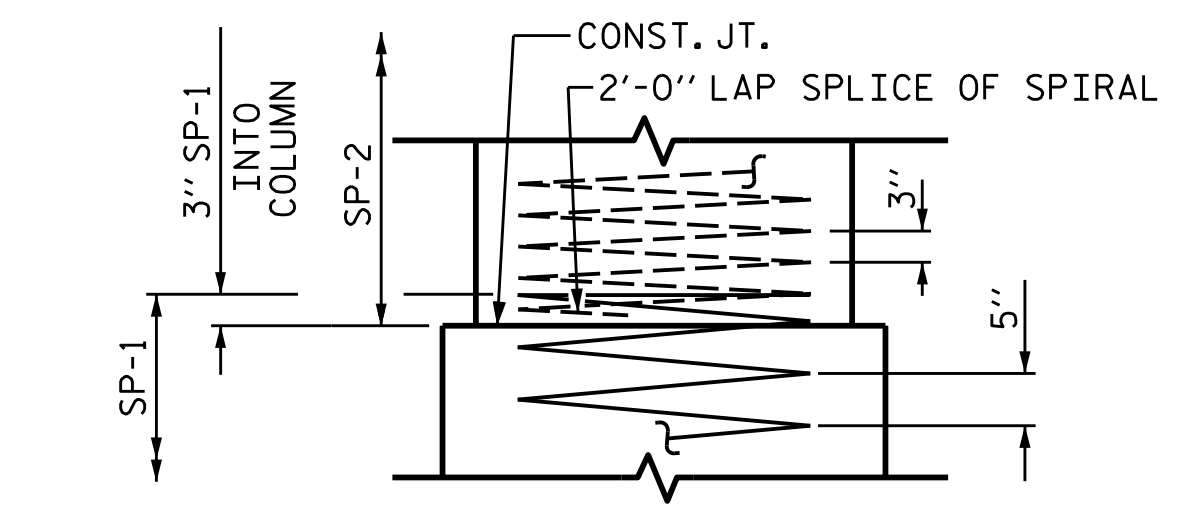
DIMENSIONS AND REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER EXCEPT AS NOTED.



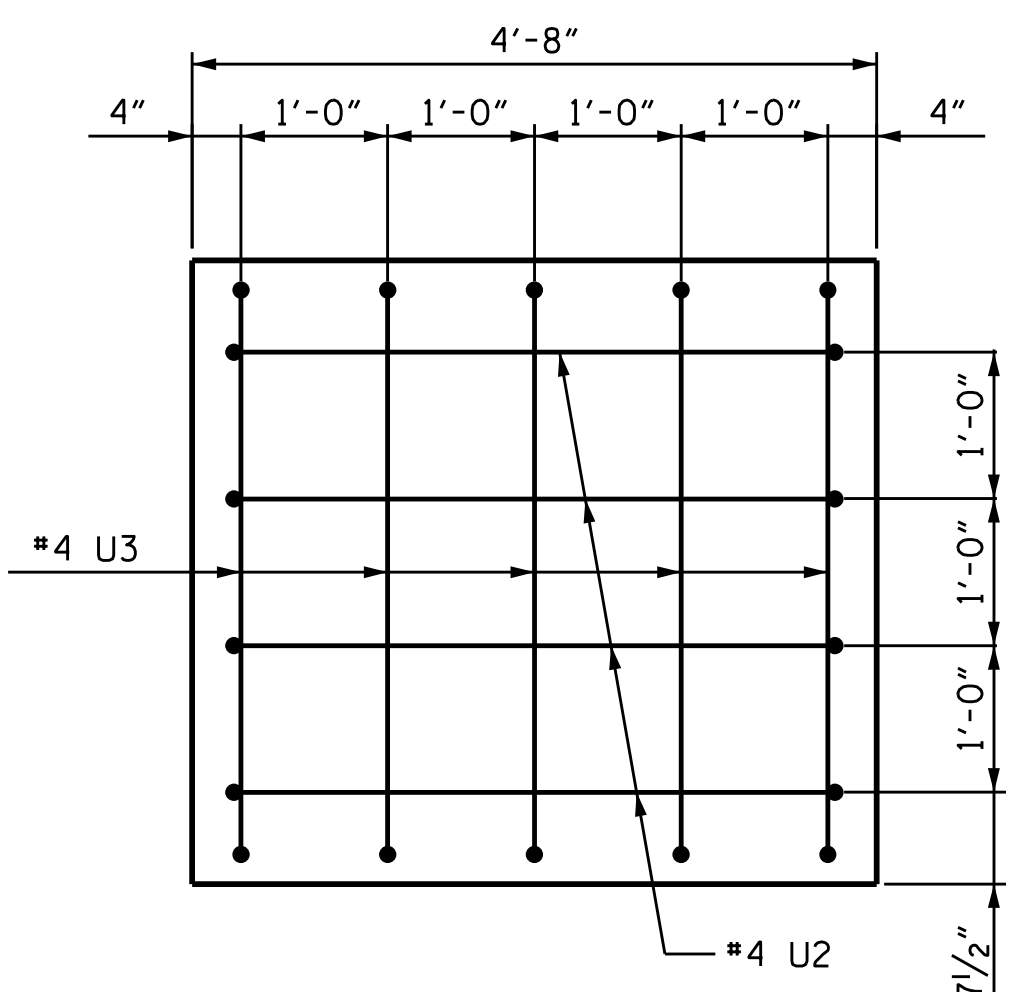
PLAN OF DRILLED PIERS & COLUMNS



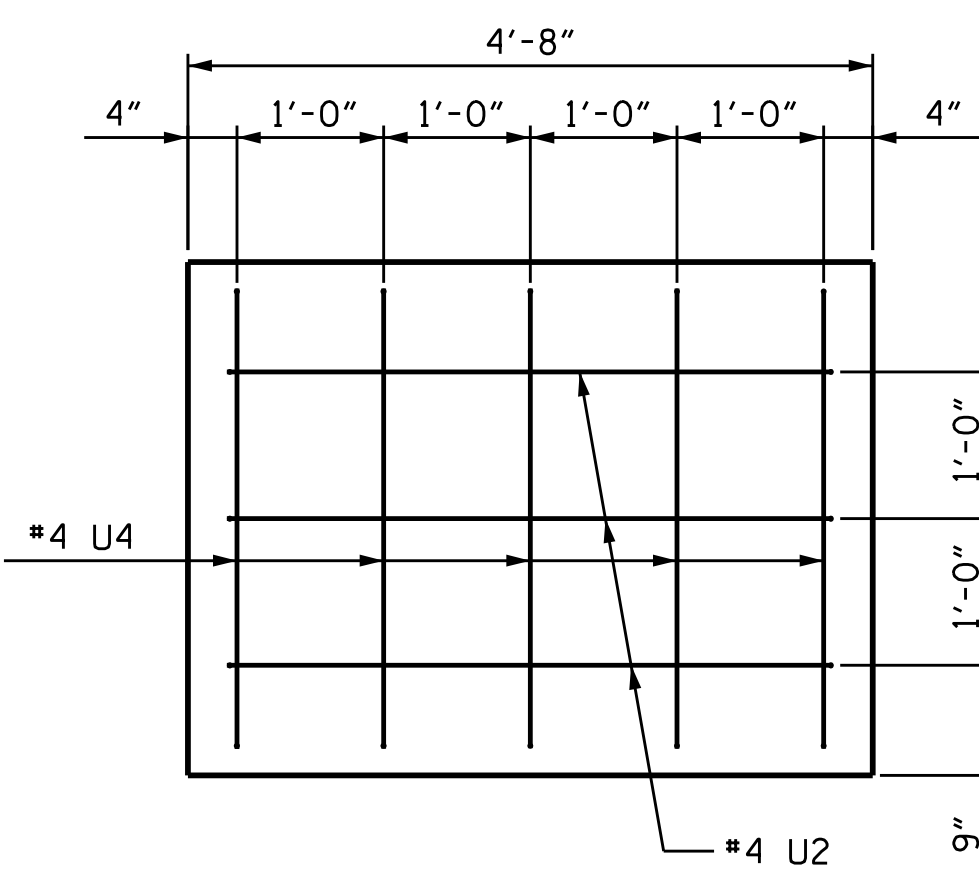
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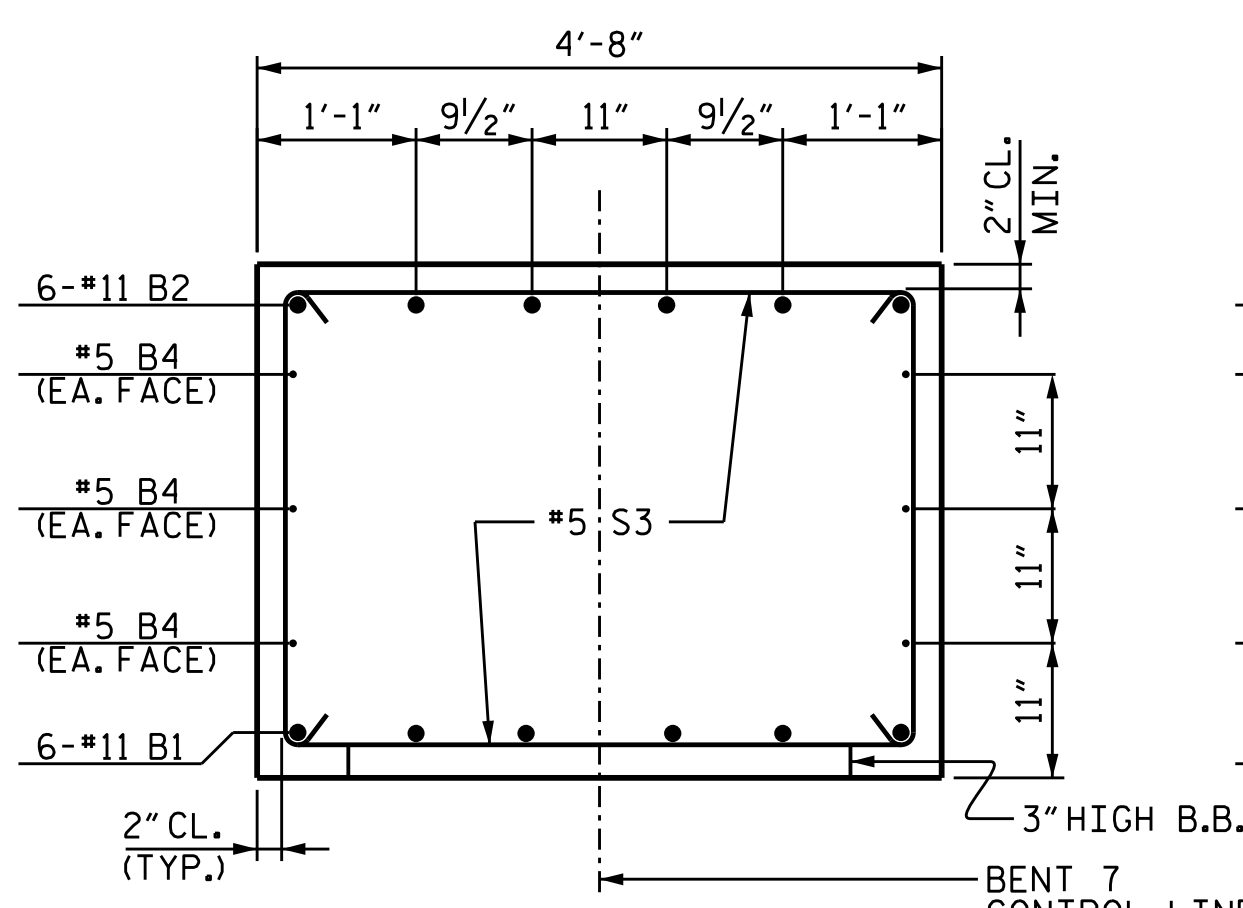
CONSTRUCTION JOINT DETAIL



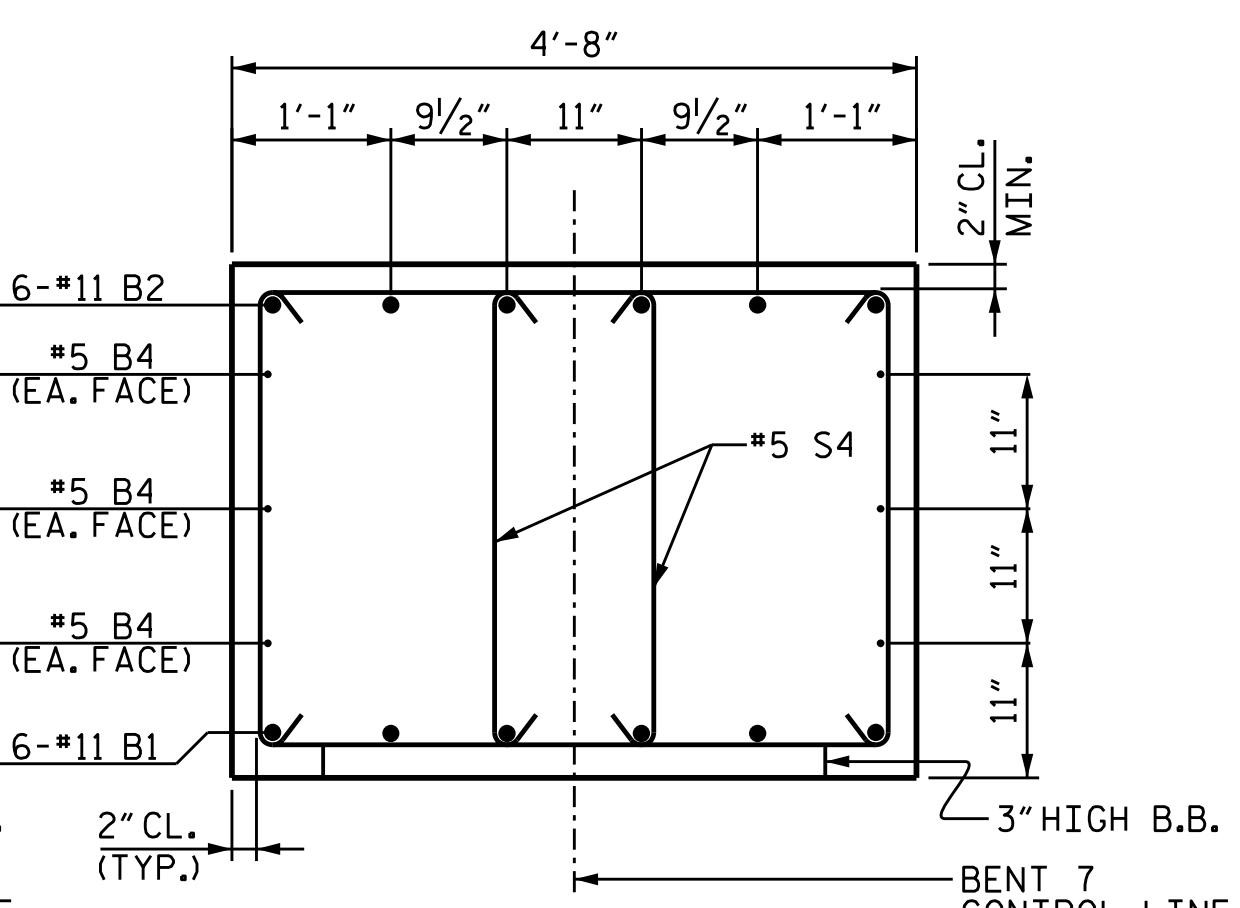
LEFT END VIEW



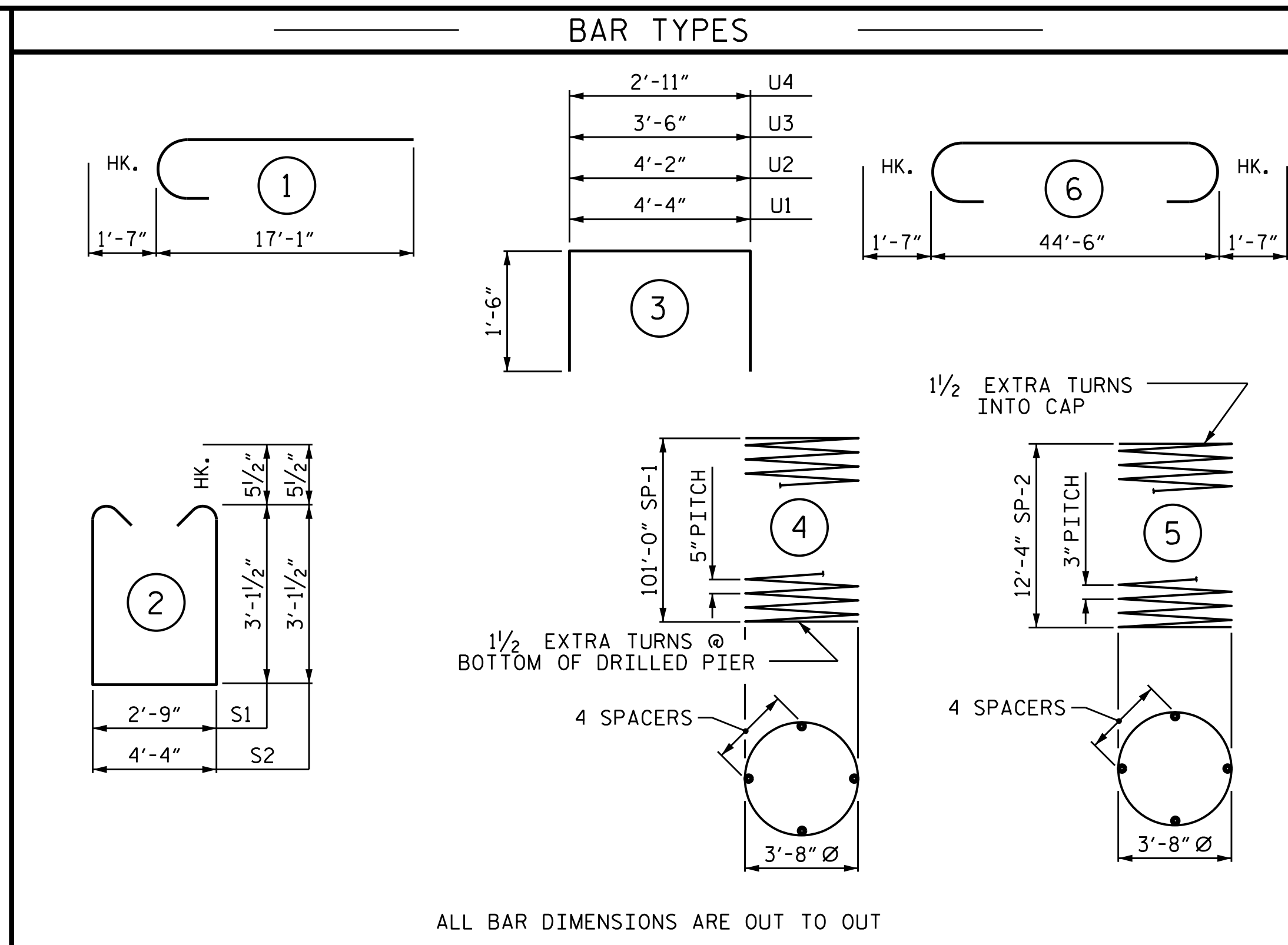
RIGHT END VIEW



SECTION B-B



SECTION A-A



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BENT 7					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	STR	44'-8"	1,424
B2	6	#11	6	47'-8"	1,520
B3	6	#5	STR	44'-8"	280
B4	6	#4	STR	24'-5"	98
M1	36	#11	STR	60'-0"	11,476
M2	36	#11	STR	58'-8"	11,221
S1	16	#5	2	9'-11"	165
S2	38	#5	2	11'-6"	456
U1	53	#4	3	7'-4"	260
U2	7	#4	3	7'-2"	34
U3	5	#4	3	6'-6"	22
U4	5	#4	3	5'-11"	20
V1	36	#11	1	15'-9"	3,012
REINFORCING STEEL					29,988 LBS.
SP-1	3	*	4	2,772'-8"	8,676
SP-2	3	**	5	581'-0"	1,164
SPIRAL COLUMN REINFORCING STEEL					9,840 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-2 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					

CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	16.9 C.Y.
POUR #3 (CAP)	29.8 C.Y.
TOTAL CLASS A CONCRETE	46.7 C.Y.
DRILLED PIERS:	
DRILLED PIER CONCRETE POUR #1	179.4 C.Y.
4'-6" Ø DRILLED PIERS IN SOIL	304.50 LIN. FT.
CSL TUBES	1236.00 LIN. FT.

PROJECT NO. B-4786
 COUNTY PITT
 STATION: 28+03.00 -L-
 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

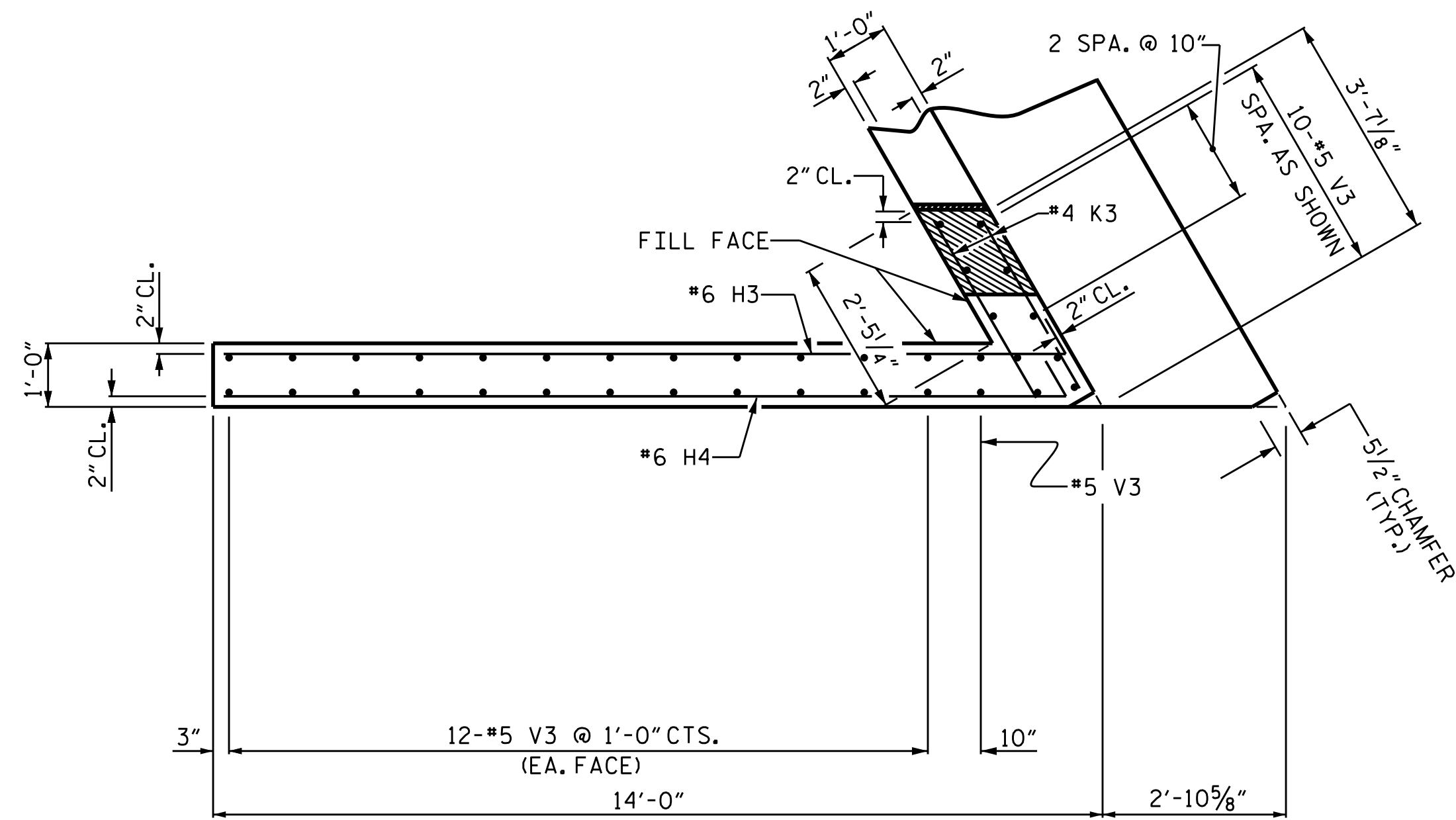
PROFESSIONAL ENGINEER
 SEAL 20125
 MICHAEL G. CHEN, P.E.
 2/24/2022 | 7:41 AM EST

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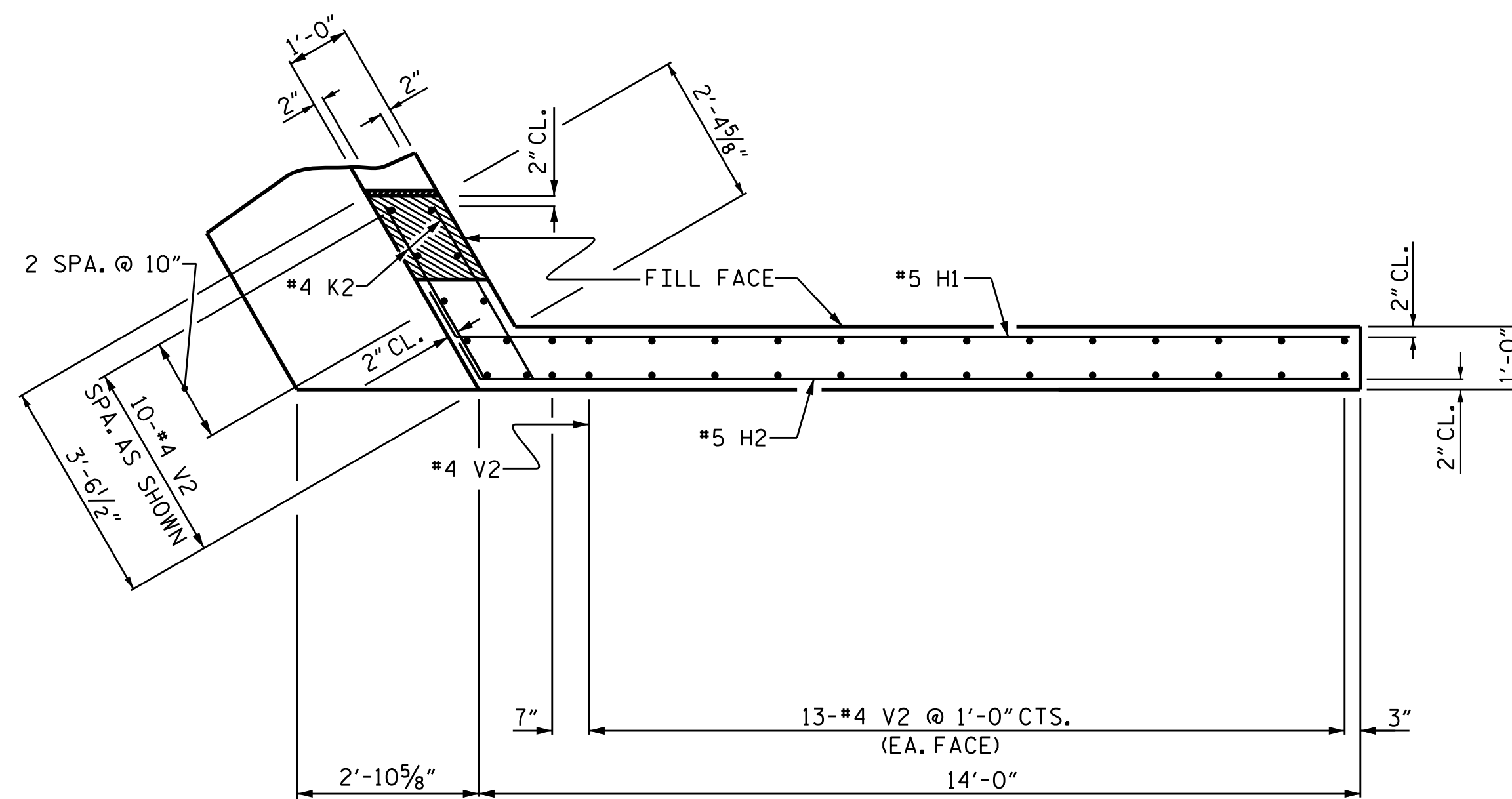
TGS ENGINEERS
 706 HILLSBOROUGH STREET SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-50
1			3			TOTAL SHEETS
2			4			57

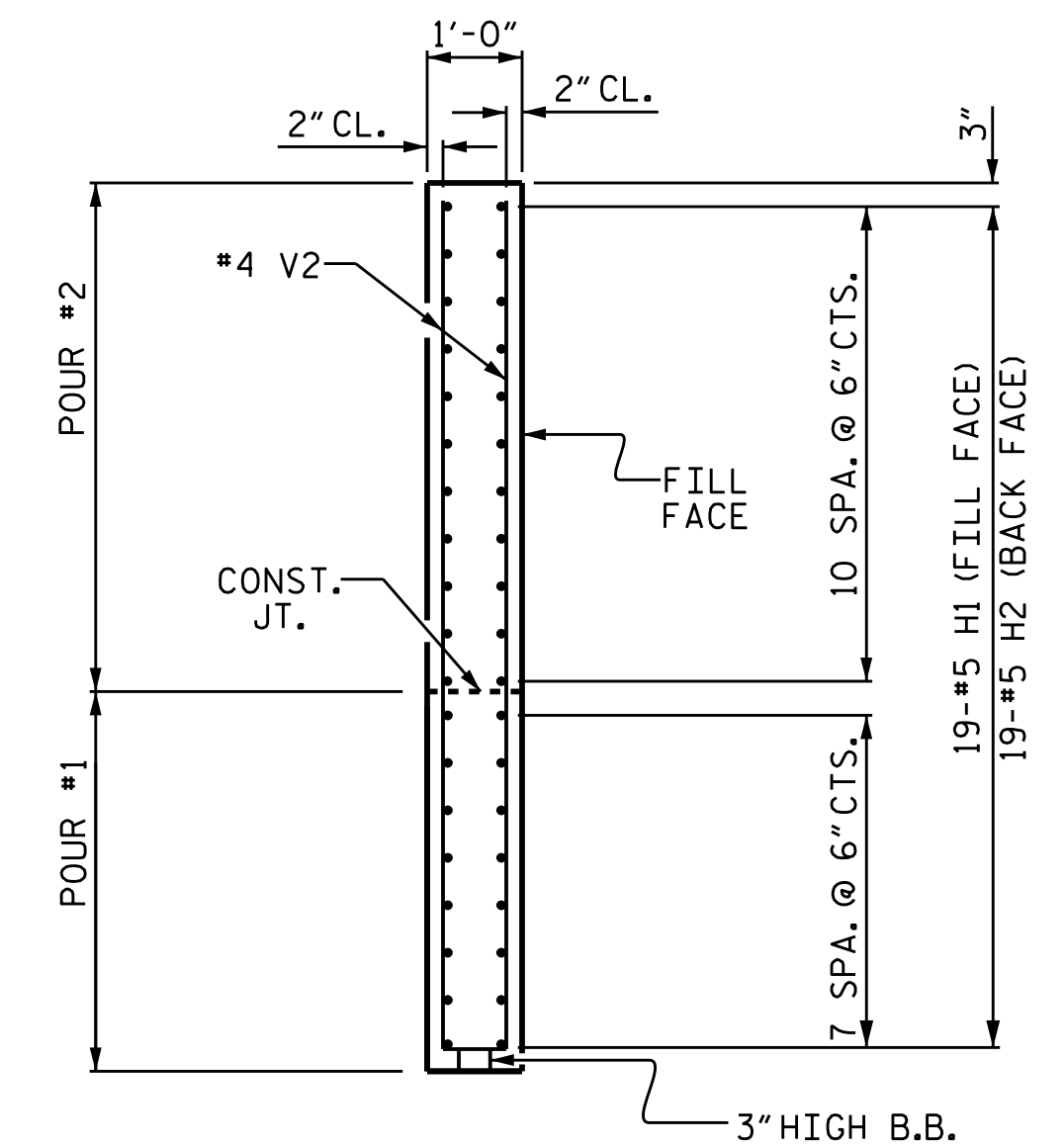
DRAWN BY: TBE / ZCS DATE: 6/2019
 CHECKED BY: MGC DATE: 6/2019
 DESIGN ENGINEER OF RECORD: TBE DATE: 6/2019



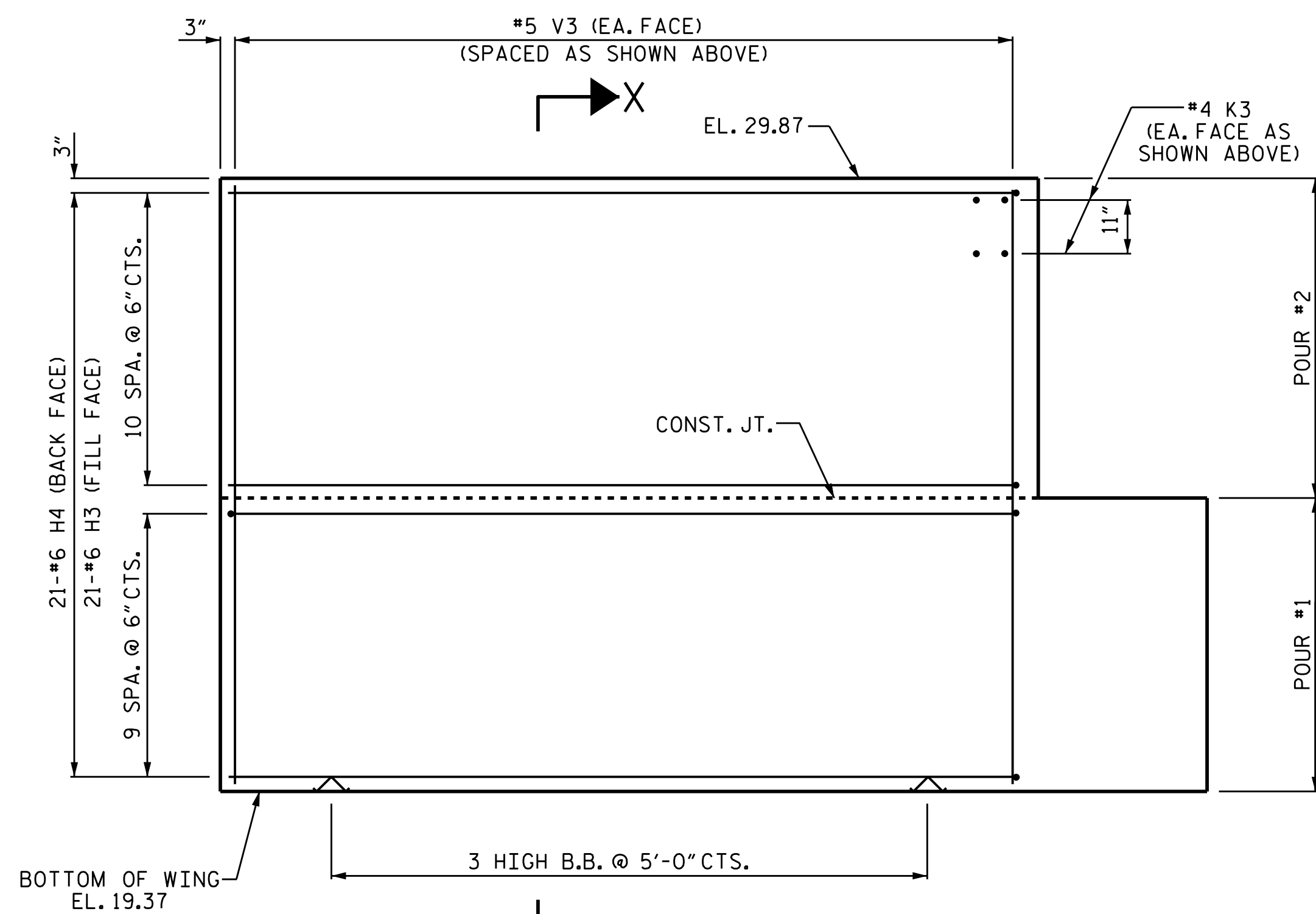
PLAN OF WING (W1)



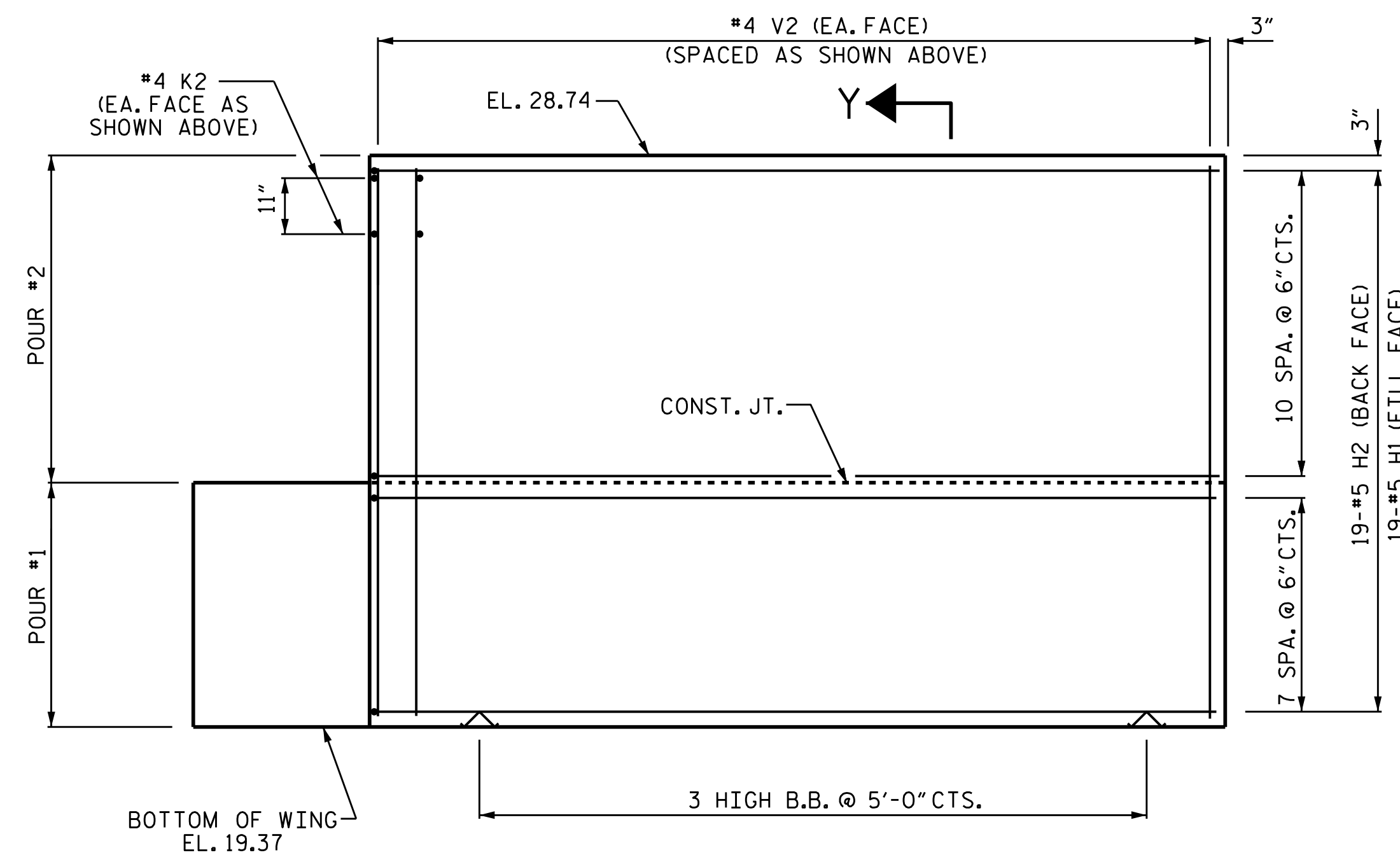
PLAN OF WING (W2)



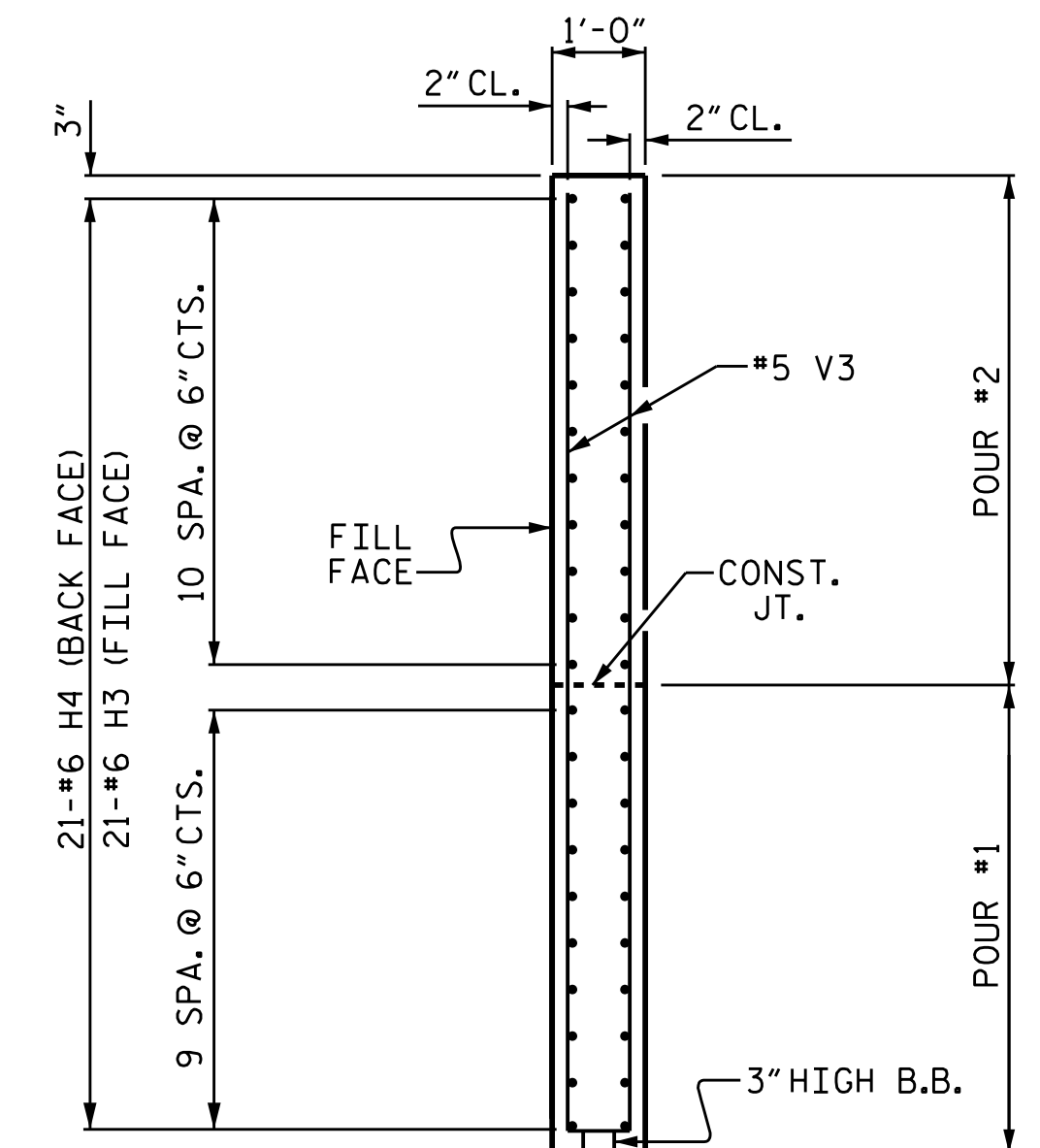
SECTION Y-Y



ELEVATION OF WING (W1)



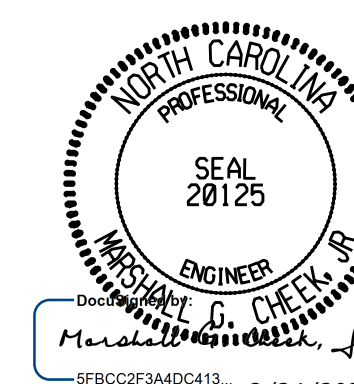
ELEVATION OF WING (W2)



SECTION X-X

PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-

SHEET 2 OF 3



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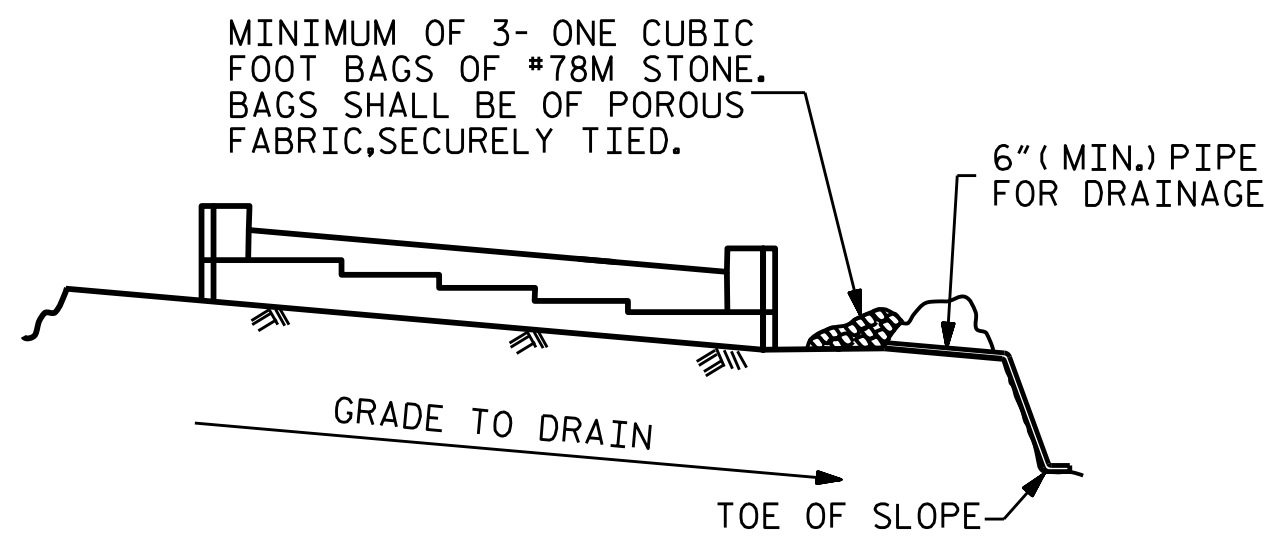
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT 2

DRAWN BY : S. B. WILLIAMS DATE : 6-19
 CHECKED BY : MGC DATE : 7-19
 DESIGN ENGINEER OF RECORD: TBE DATE : 8-19

9/26/2021
 X:\NCDOT\B-4786\Structures\Final plans\DCNs\B-4786.SMU. E22.730038.dgn
 Users\sbwilliams

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS 57
2			4			



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

NOTES

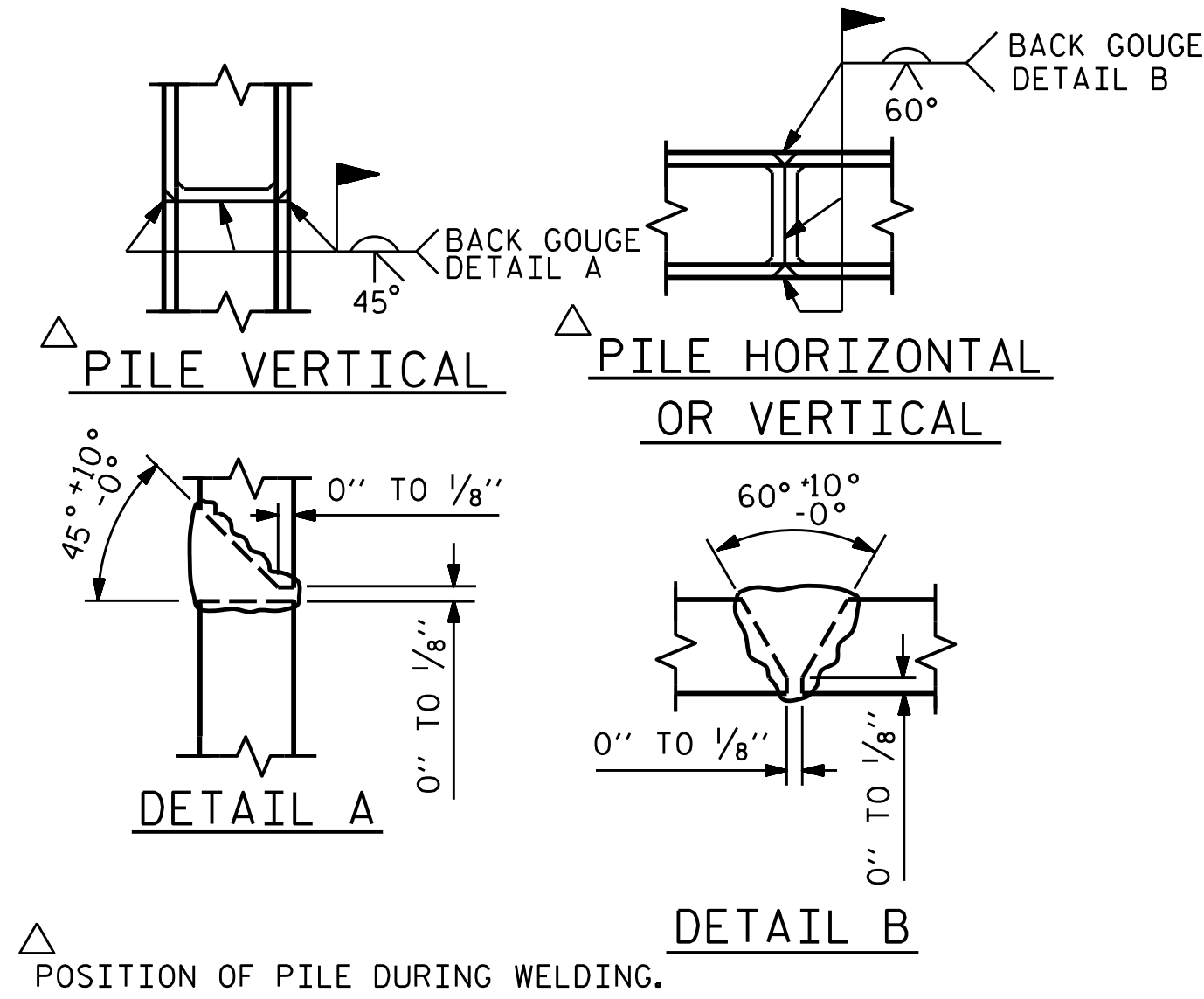
STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

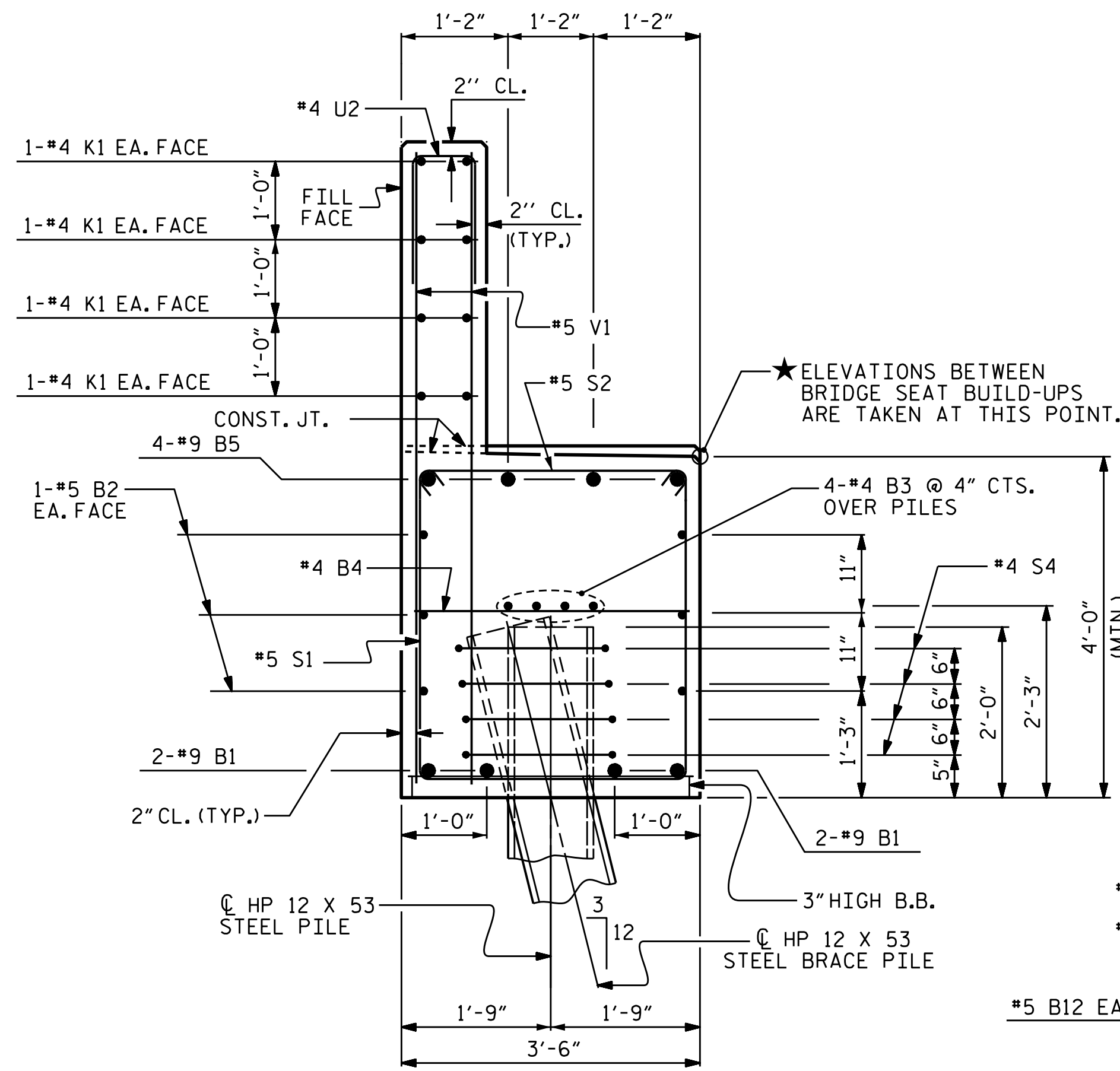
THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

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

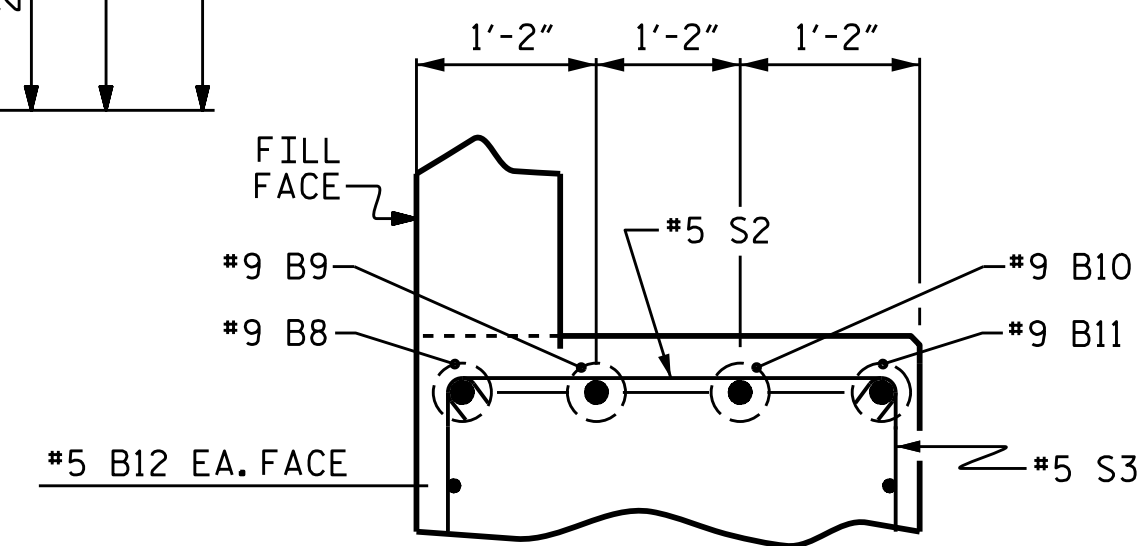
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.



PILE SPLICE DETAILS

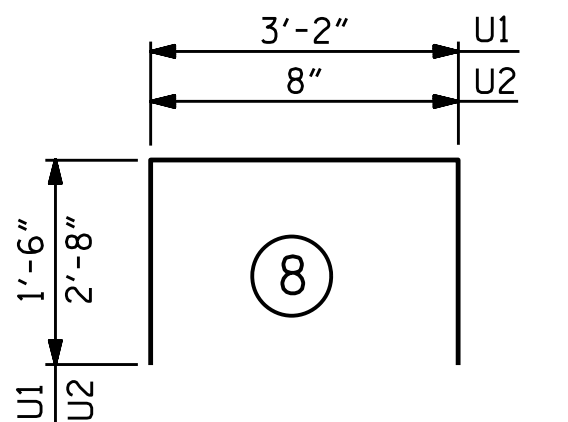
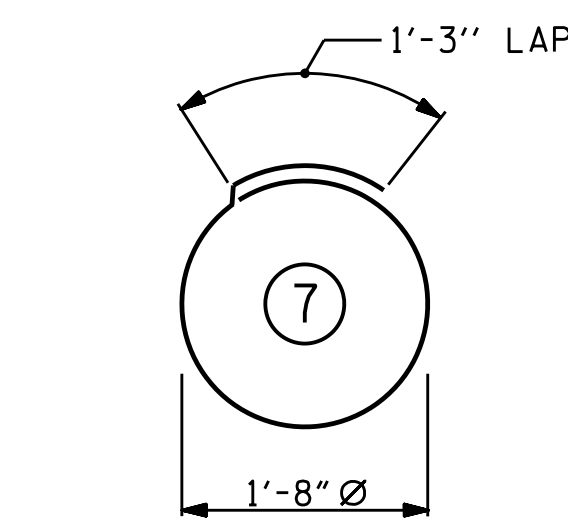
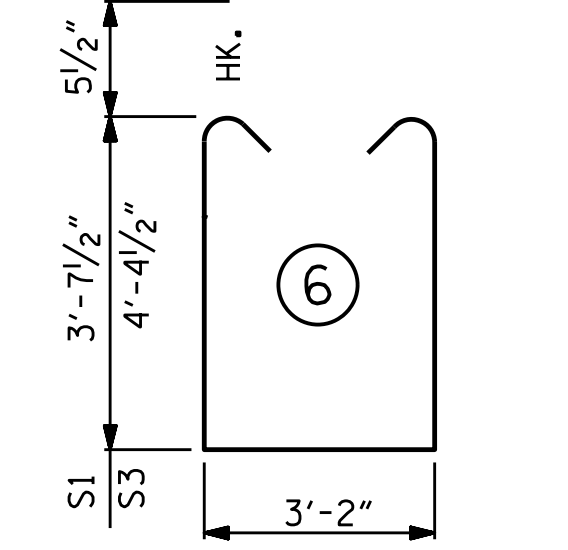
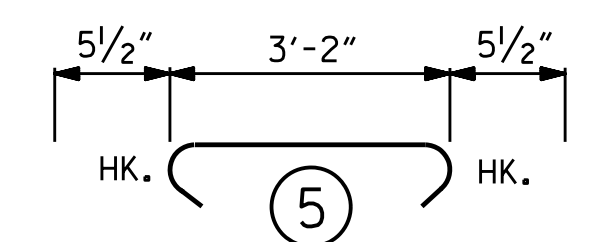
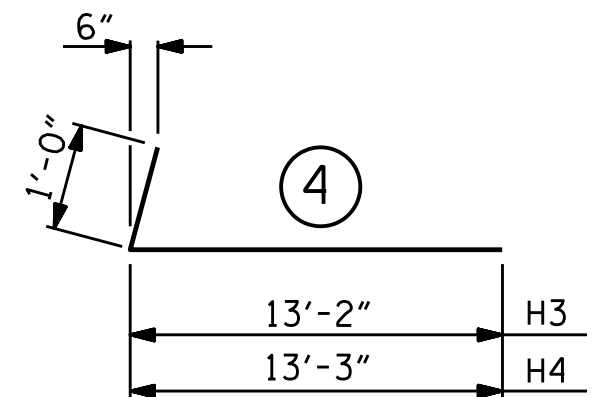
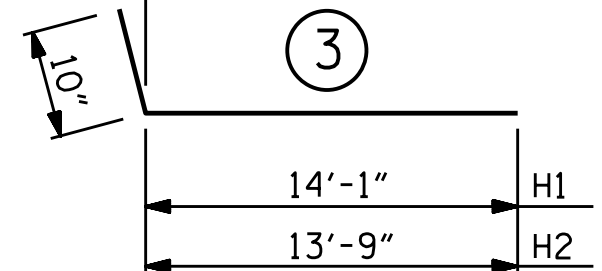
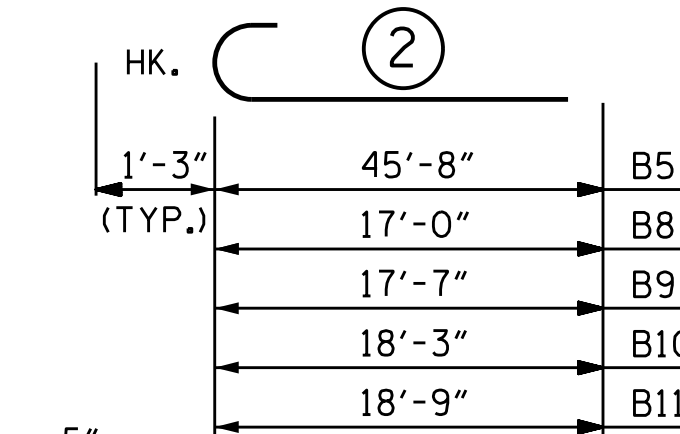
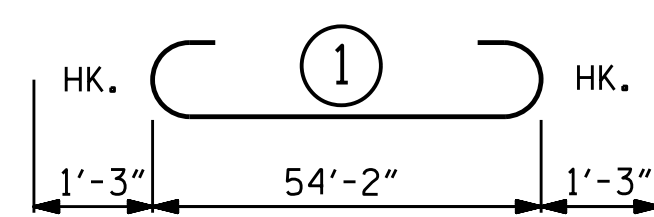


SECTION A-A



PART SECTION B-B

BAR TYPES



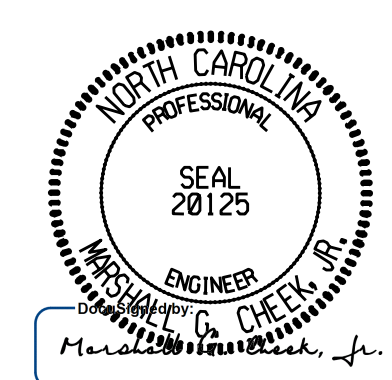
ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

END BENT 2

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#9	1	56'-8"	771
B2	6	#5	STR	54'-4"	340
B3	8	#4	STR	28'-5"	152
B4	16	#4	STR	3'-2"	36
B5	4	#9	2	46'-11"	638
B6	4	#4	STR	2'-8"	7
B7	4	#4	STR	9'-10"	26
B8	1	#9	2	18'-3"	62
B9	1	#9	2	18'-10"	64
B10	1	#9	2	19'-6"	66
B11	1	#9	2	20'-0"	68
B12	2	#5	STR	11'-8"	24
B13	4	#4	STR	7'-1"	19
H1	19	#5	3	14'-11"	296
H2	19	#5	3	14'-7"	289
H3	21	#6	4	14'-2"	447
H4	21	#6	4	14'-3"	449
K1	16	#4	STR	28'-5"	304
K2	4	#4	STR	3'-4"	9
K3	4	#4	STR	3'-3"	9
S1	50	#5	6	11'-4"	591
S2	74	#5	5	4'-1"	315
S3	24	#5	6	12'-10"	321
S4	36	#4	7	6'-6"	156
U1	15	#4	8	6'-2"	62
U2	48	#4	8	6'-0"	192
V1	96	#5	STR	7'-4"	734
V2	38	#4	STR	9'-0"	228
V3	36	#5	STR	10'-2"	382
REINFORCING STEEL					7057 LBS.
CLASS A CONCRETE					
POUR #1 (CAP, COLLARS, LOWER PART OF WINGS)					37.7 C.Y.
POUR #2 (BACKWALL & UPPER PART OF WINGS)					13.3 C.Y.
TOTAL CLASS A CONCRETE					51.0 C.Y.
HP 12 X 53 STEEL PILES					
NO. = 9 LIN. FT. = 675					
PILE REDRIVES					EA. 5
PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES					EA. 9

PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

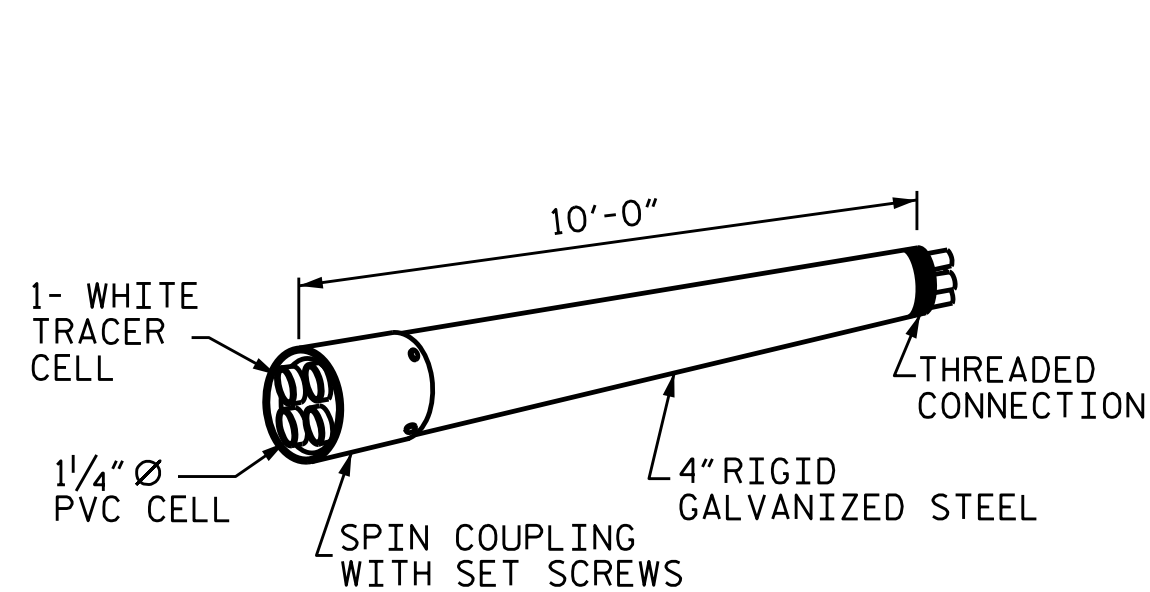
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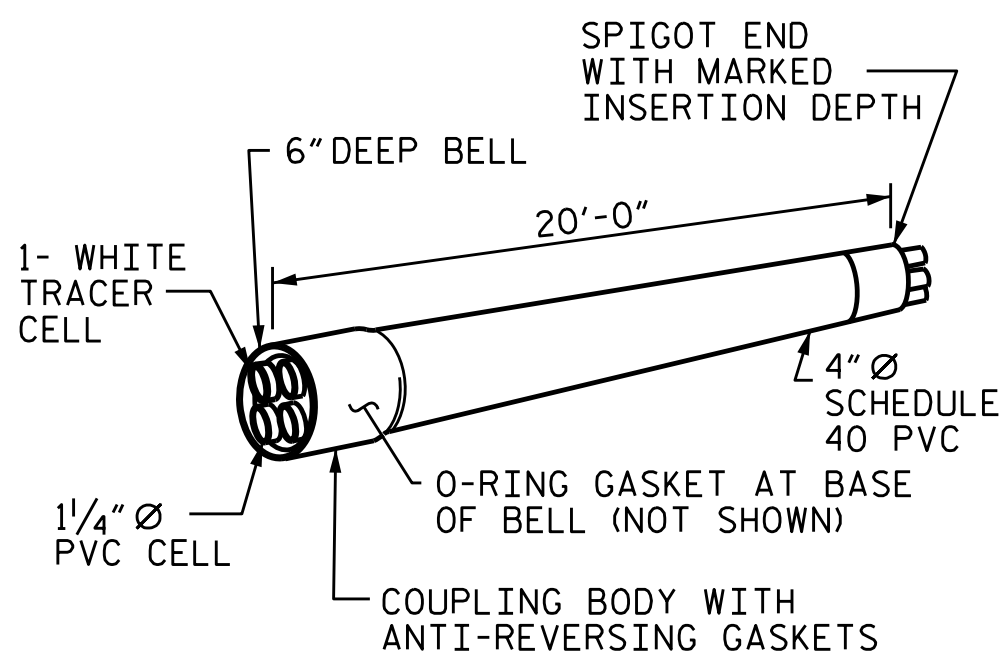
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1			3			TOTAL SHEETS 57
2			4			

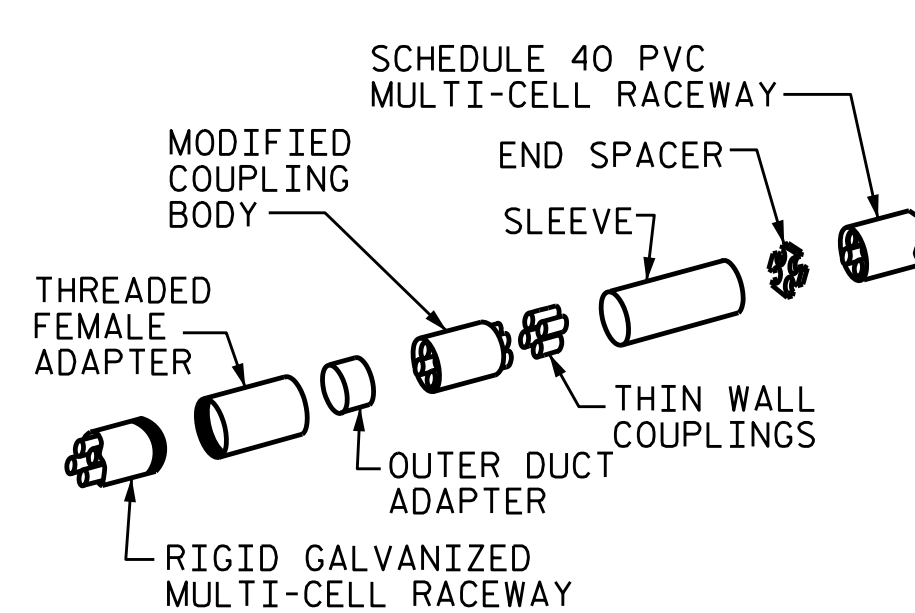
DRAWN BY: S. B. WILLIAMS DATE: 6-19
 CHECKED BY: MGC DATE: 7-19
 DESIGN ENGINEER OF RECORD: TBE DATE: 8-19



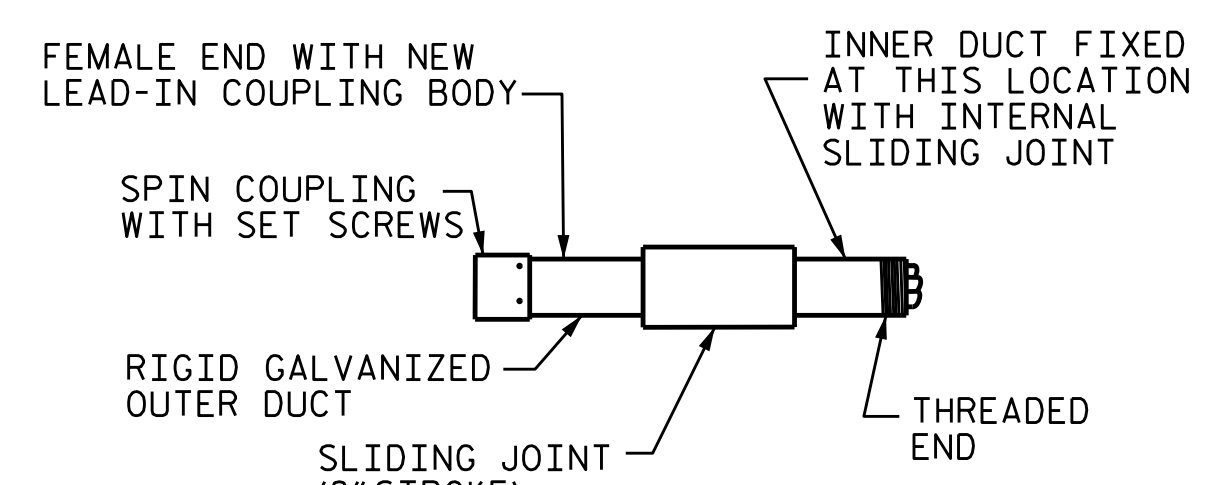
RIGID GALVANIZED (RGC) MULTI-CELL RACEWAY



SCHEDULE 40 PVC MULTI-CELL RACEWAY



TRANSITION ADAPTER



EXPANSION JOINT FITTING

NOTES

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

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

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

SEE DETAIL "C" FOR HANGER ASSEMBLY INSTALLATION.

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

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

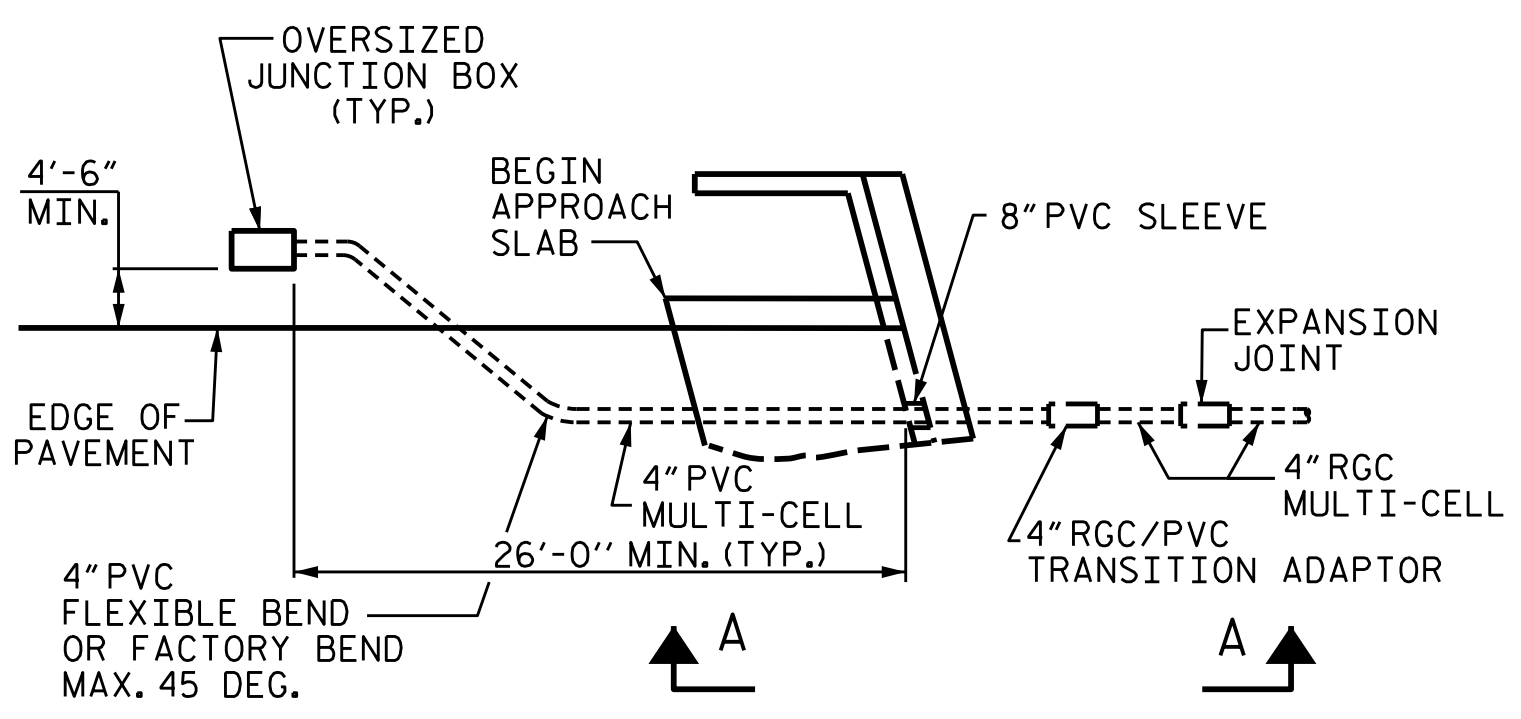
INSTALL STABILIZER'S MIDWAY BETWEEN DECK EXPANSION JOINTS. STABILIZER CAN NOT BE USED INSTEAD OF A HANGER ASSEMBLY.

INSTALL EXPANSION JOINTS AT END BENT 1 & END BENT 2.

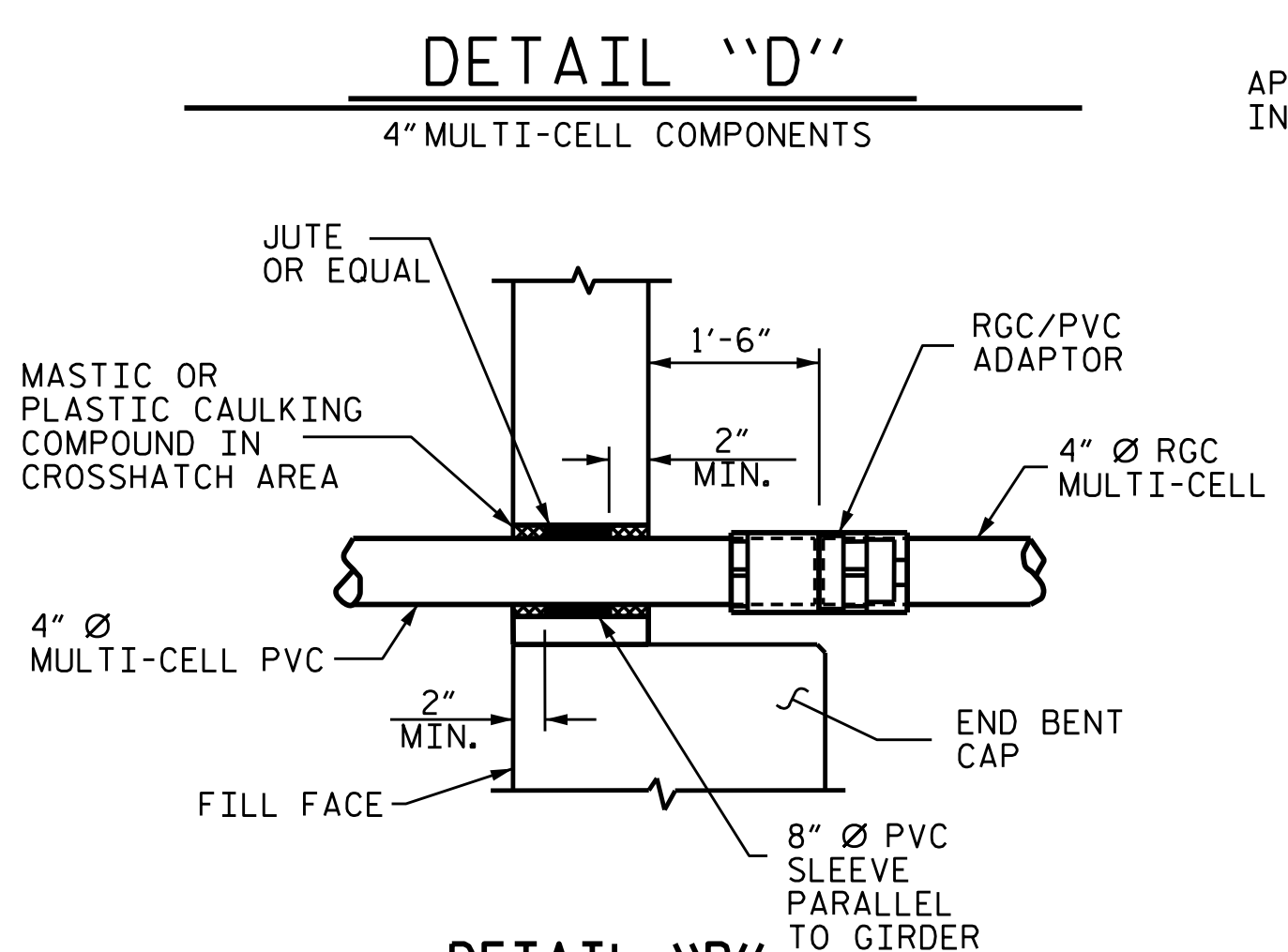
THE CONCRETE SCREW INSERT SHALL HAVE A ROD SIZE OF 5/8" AND A PULL FORCE OF 1260 lbs.

FOR ELECTRICAL CONDUIT SYSTEM FOR SIGNALS, SEE SPECIAL PROVISIONS.

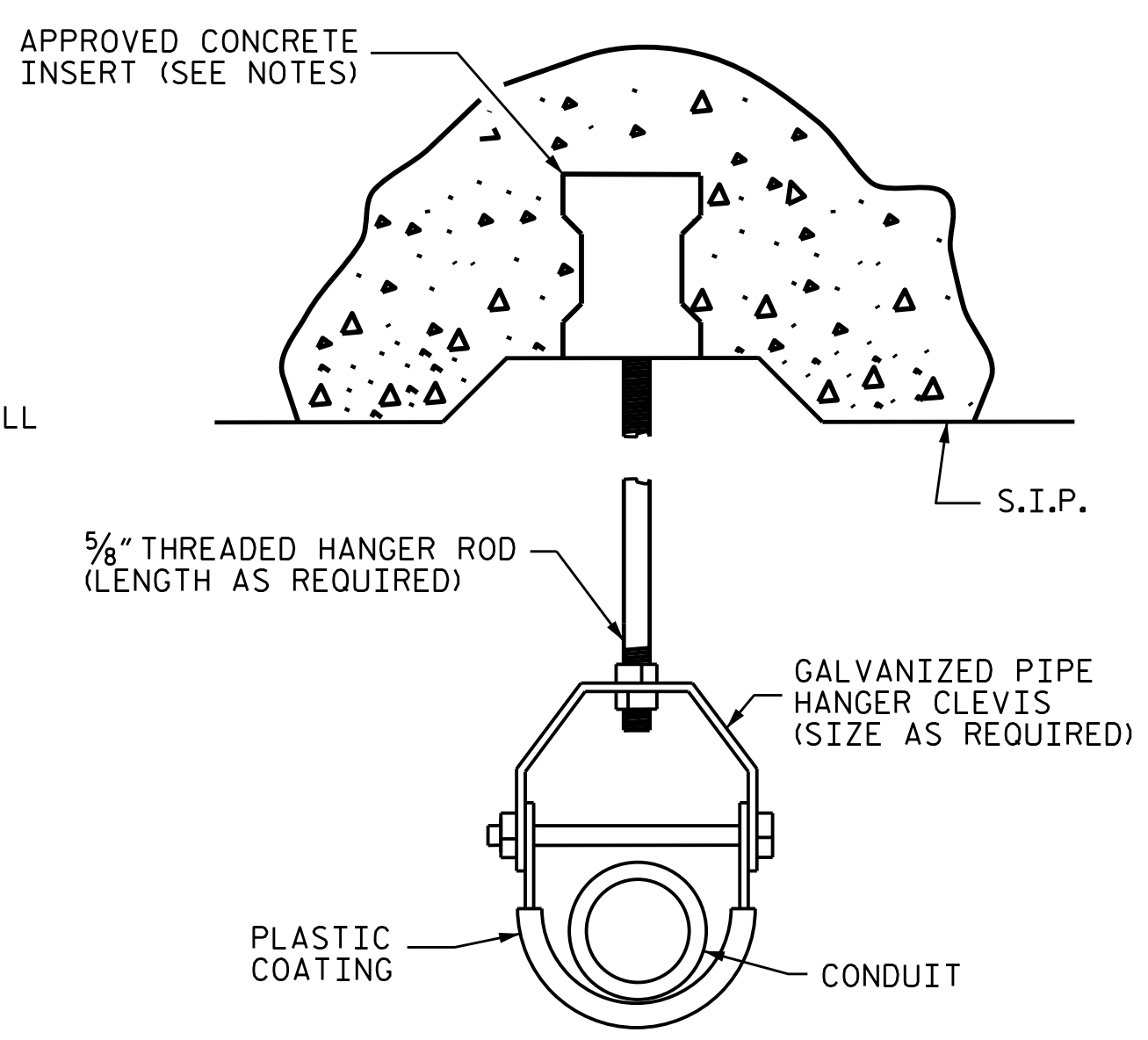
FOR JUNCTION BOX (SPECIAL OVERSIZED) AND ELECTRONIC MARKER BALL, SEE SPECIAL PROVISIONS.



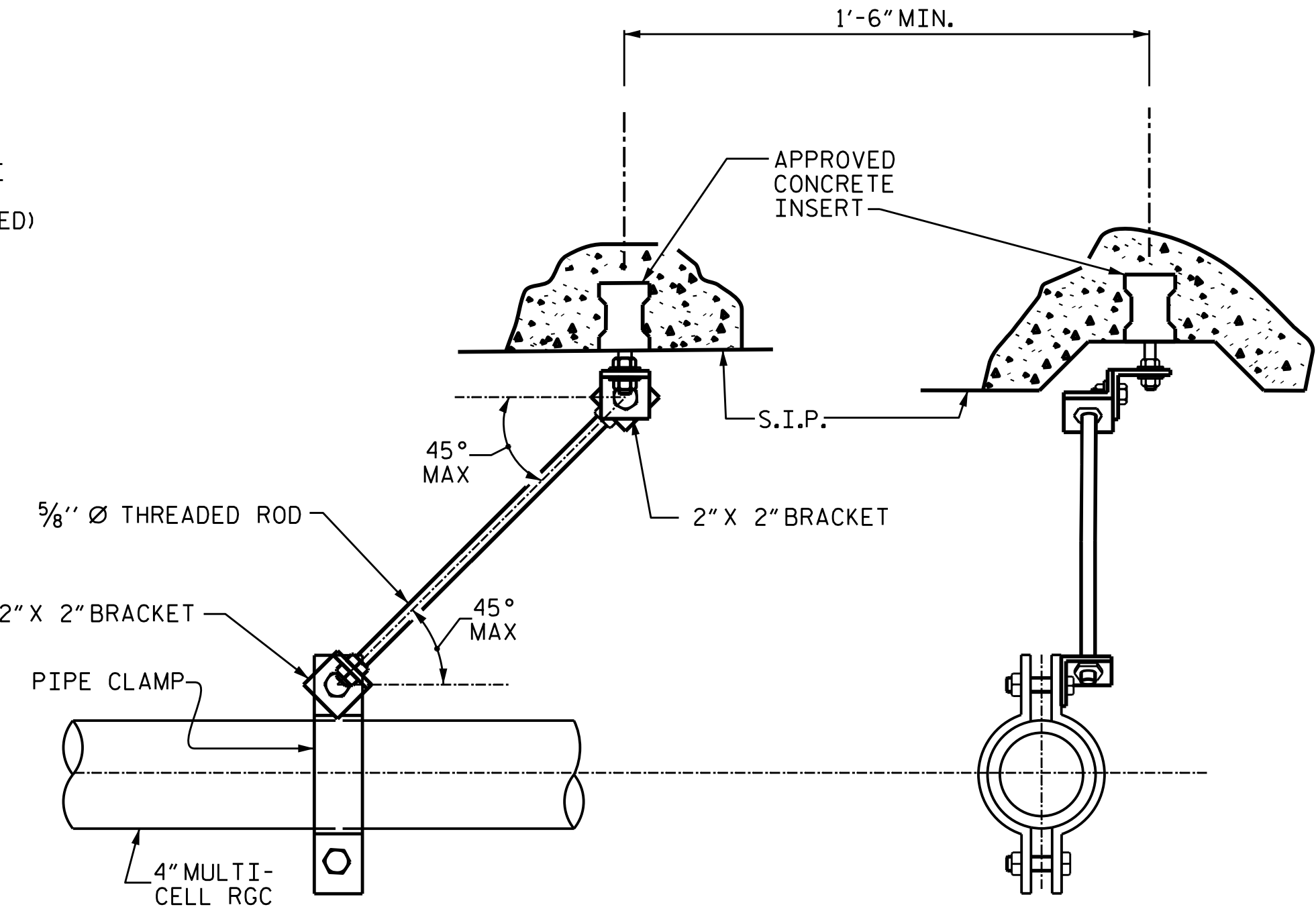
DETAIL "A"
TERMINATION OF CONDUIT AT WING WALL TO OVERSIZED JUNCTION BOX.



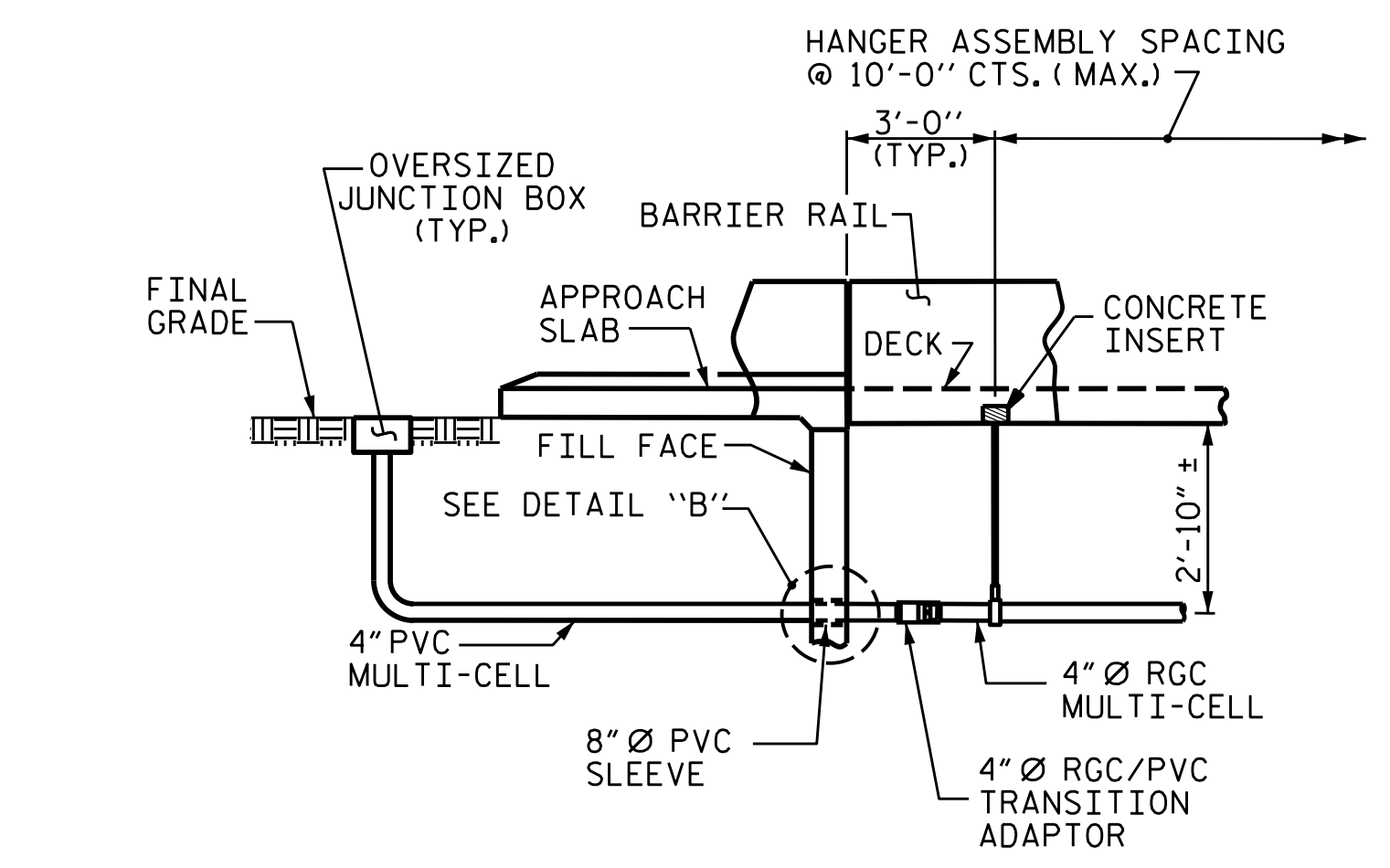
DETAIL "B"
PVC SLEEVE INSTALLATION & RGC/PVC ADAPTOR AT BACKWALL.



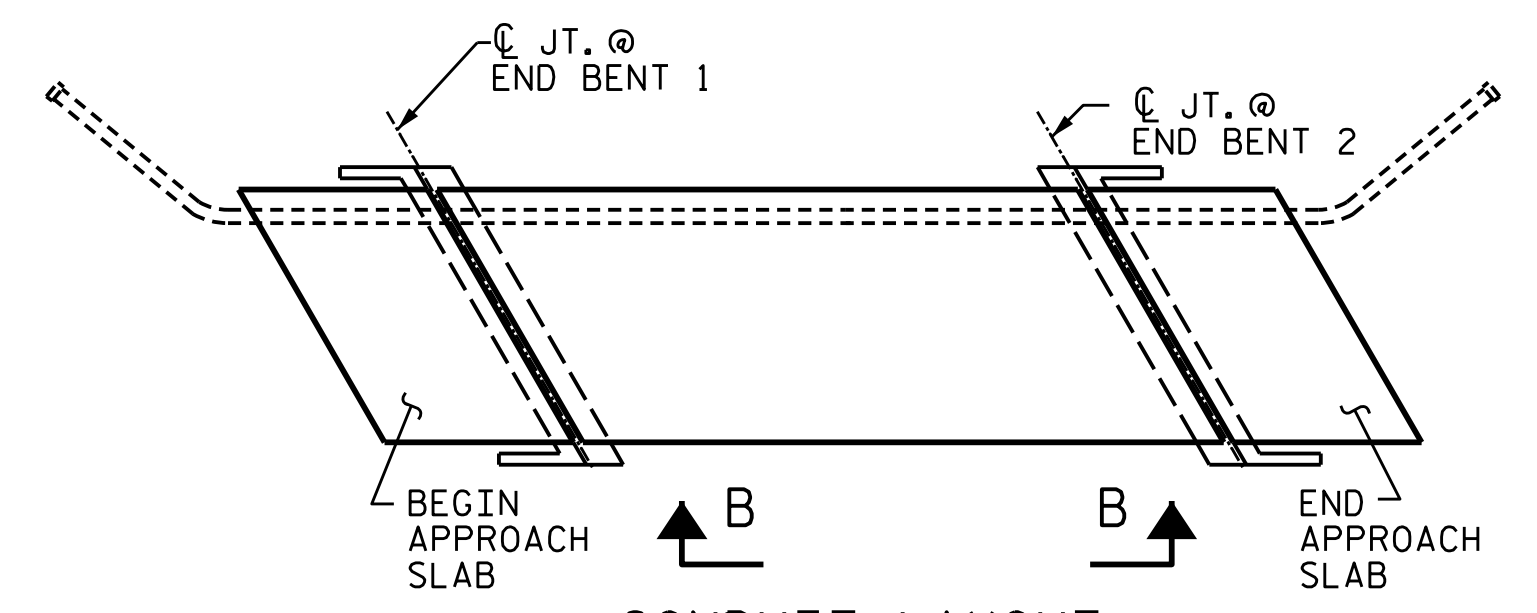
DETAIL "C"
HANGER ASSEMBLY



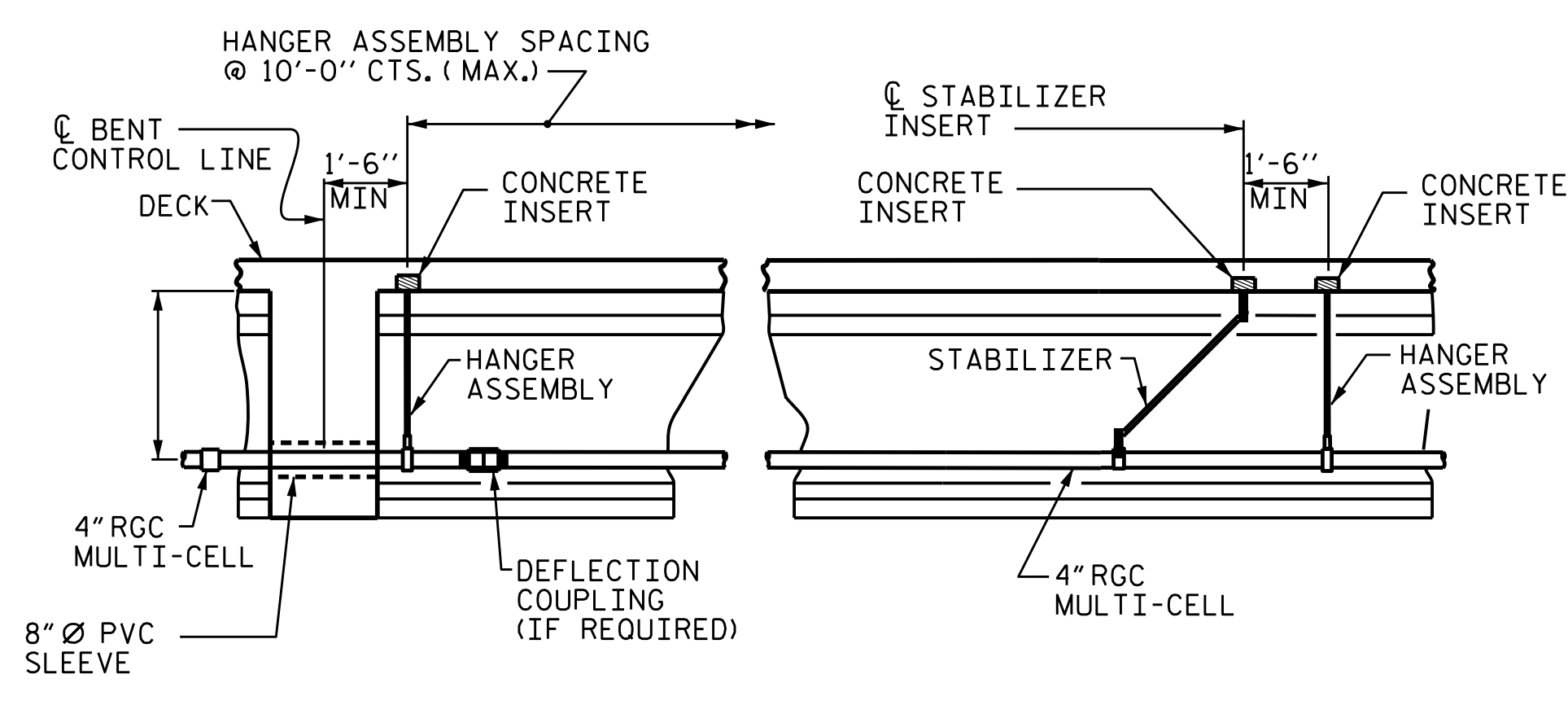
DETAIL "E"
STABILIZER



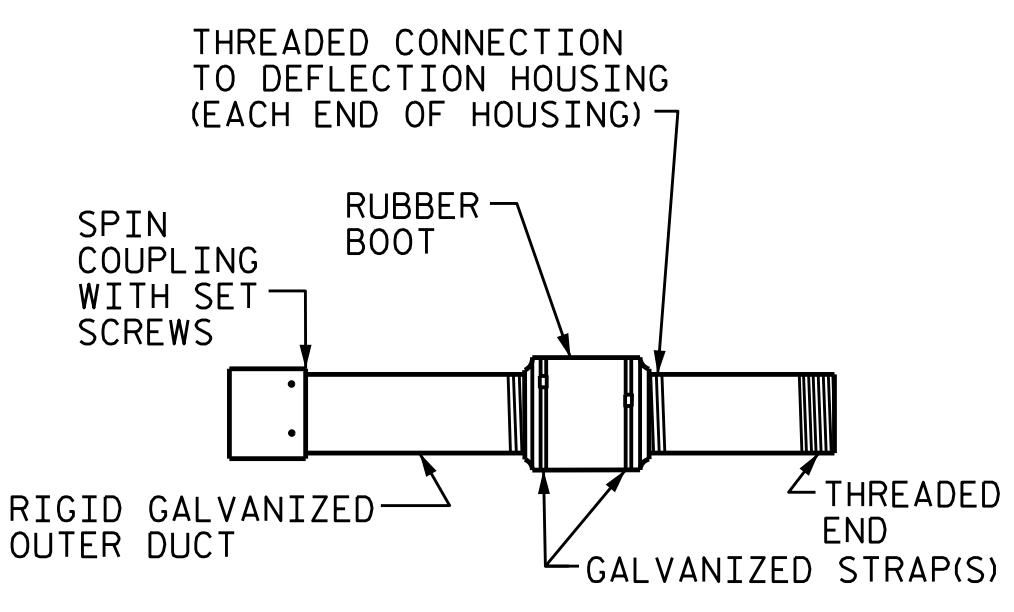
VIEW A-A



CONDUIT LAYOUT



VIEW B-B
PRESTRESSED GIRDERS CONTINUOUS FOR LIVE LOAD



DETAIL "F"
DEFLECTION COUPLING

PROJECT NO. B-4786
PITT COUNTY
STATION: 28+03.00 -L-

ASSEMBLED BY : S. B. WILLIAMS	DATE : 7-21
CHECKED BY : MGC	DATE : 8-21
DRAWN BY : RWW	2-4-03
CHECKED BY : DBM	2-4-03
REV. 5/1/06	TLA/GM
REV. 10/1/11	MAA/GM
REV. 12/17	MAA/THC

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
ELECTRICAL CONDUIT SYSTEM FOR SIGNALS

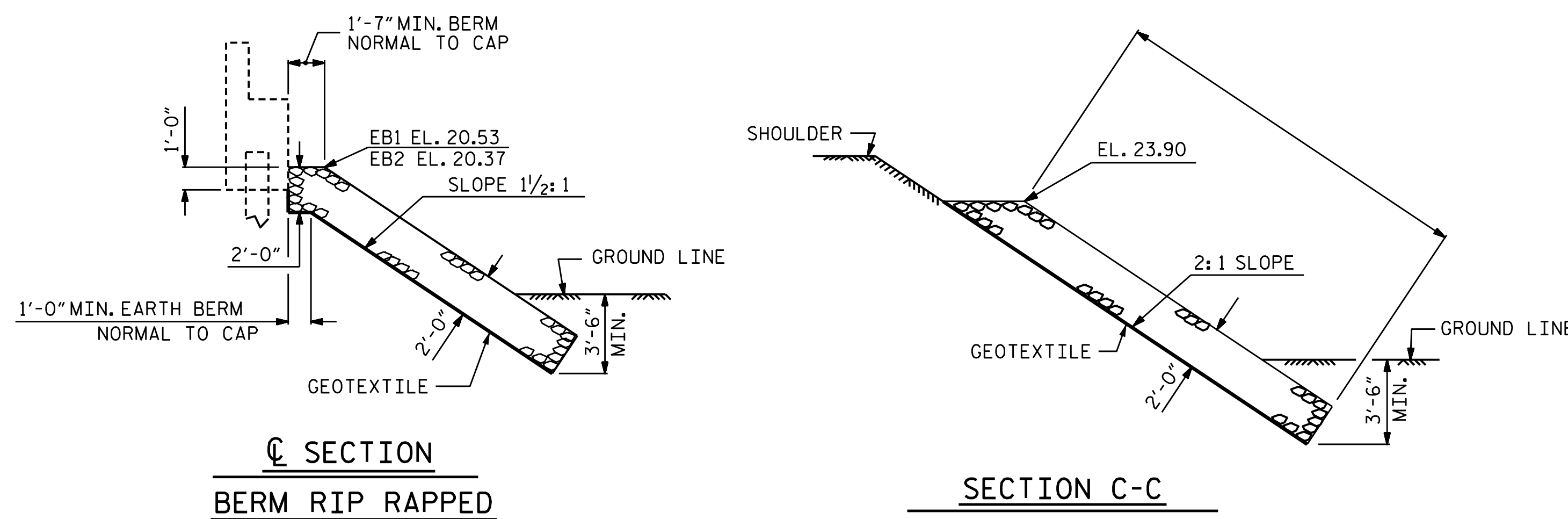
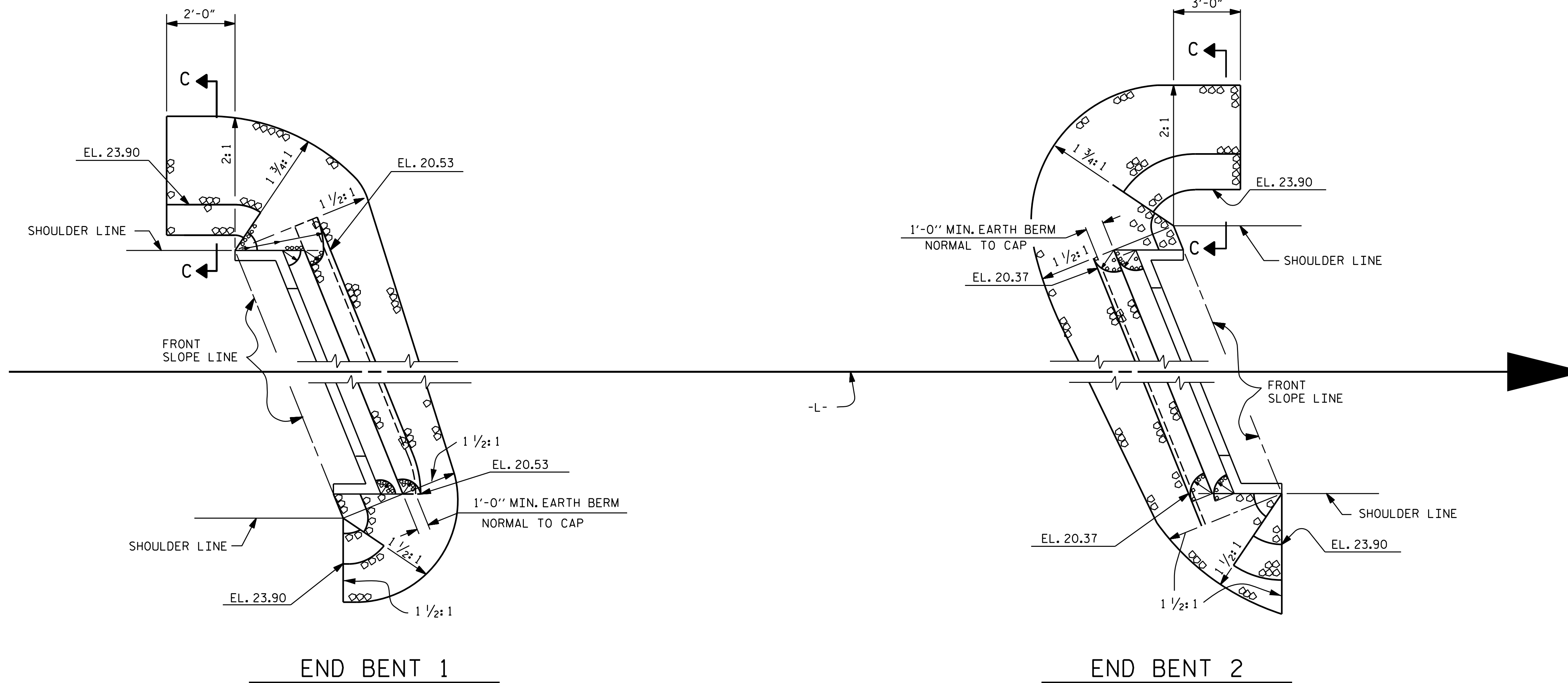
9/26/2021
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User:rsbwilliams

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2			4			57



ESTIMATED QUANTITIES		
BRIDGE @ STA. 28+03.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	170	190
END BENT 2	160	180

PROJECT NO. B-4786
PITT COUNTY
 STATION: 28+03.00 -L-

2/24/2022 | 7:41 AM EST

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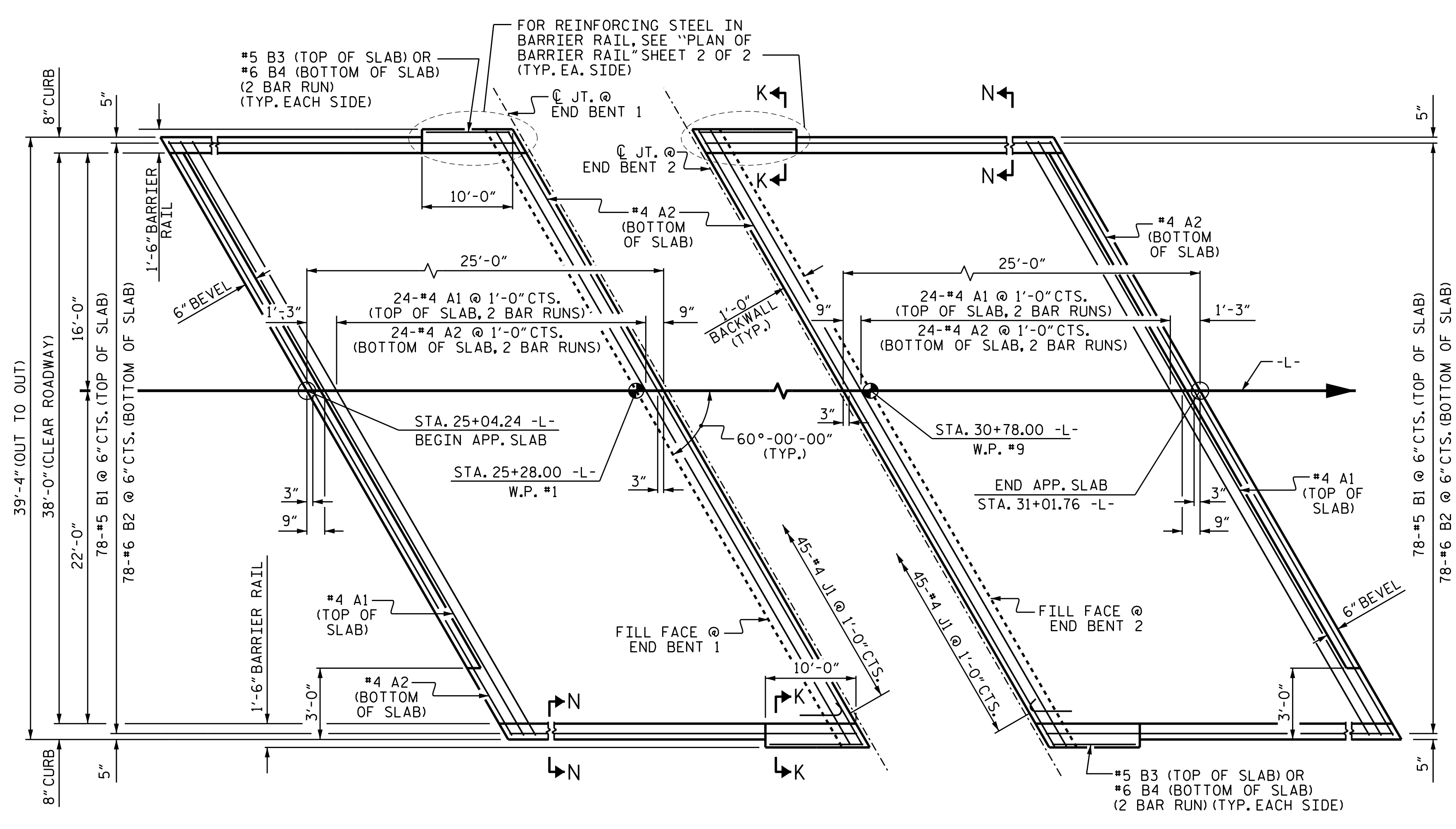
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

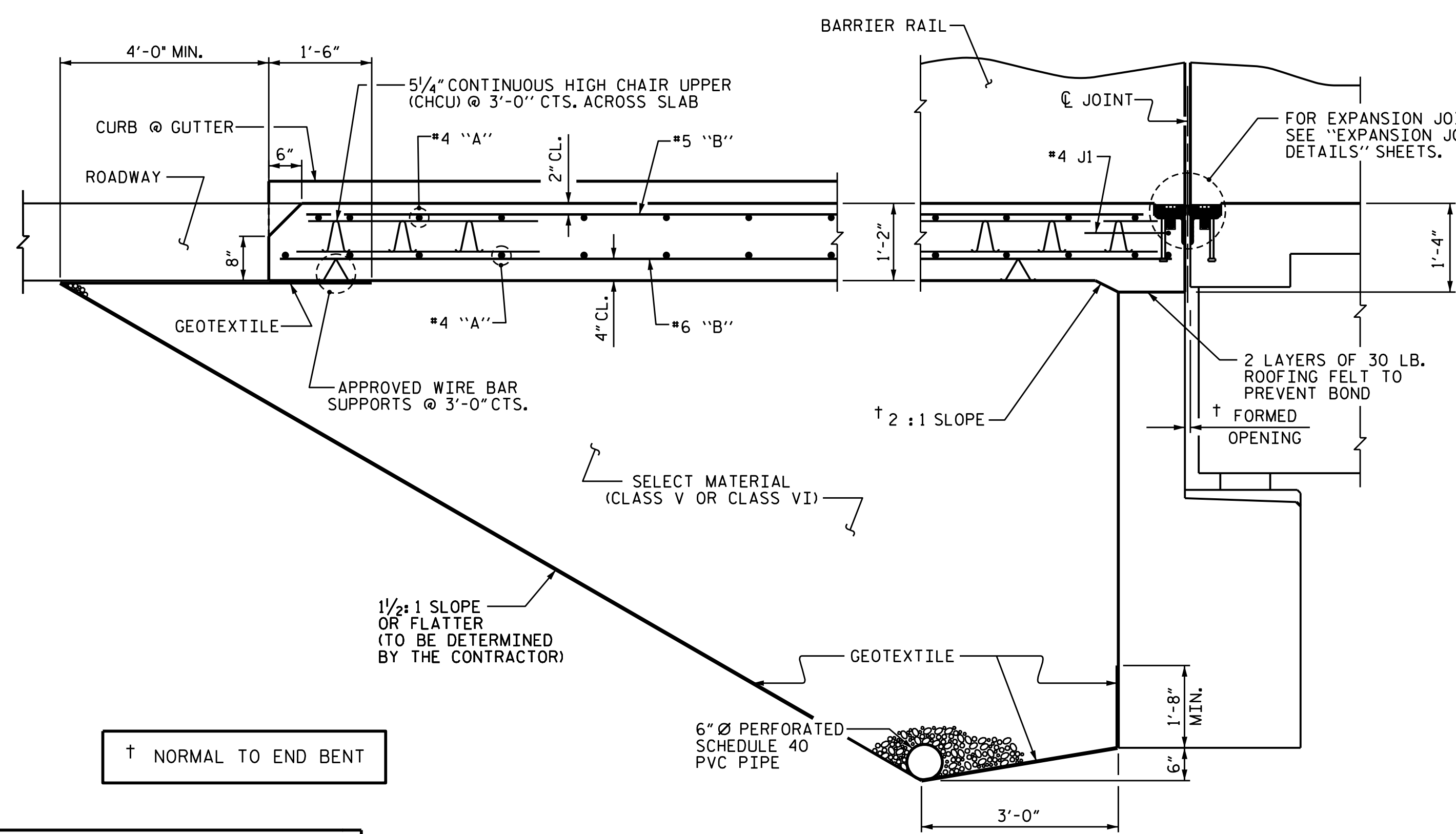
STANDARD
RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-55
1			3			TOTAL SHEETS
2			4			57

ASSEMBLED BY : STM	DATE : 01/19
CHECKED BY : MGC	DATE : 07/19
DRAWN BY : REK 1/84	REV. 10/1/11 MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/11 MAA/GM
	REV. 12/17 MAA/THC

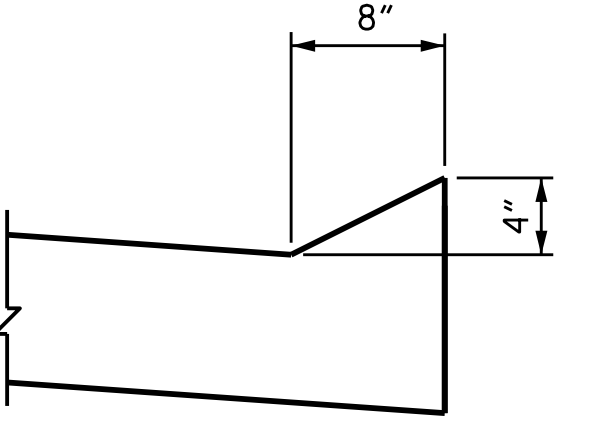


PLAN @ END BENT 1
 PLAN @ END BENT 2
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS EXCEPT AS SHOWN

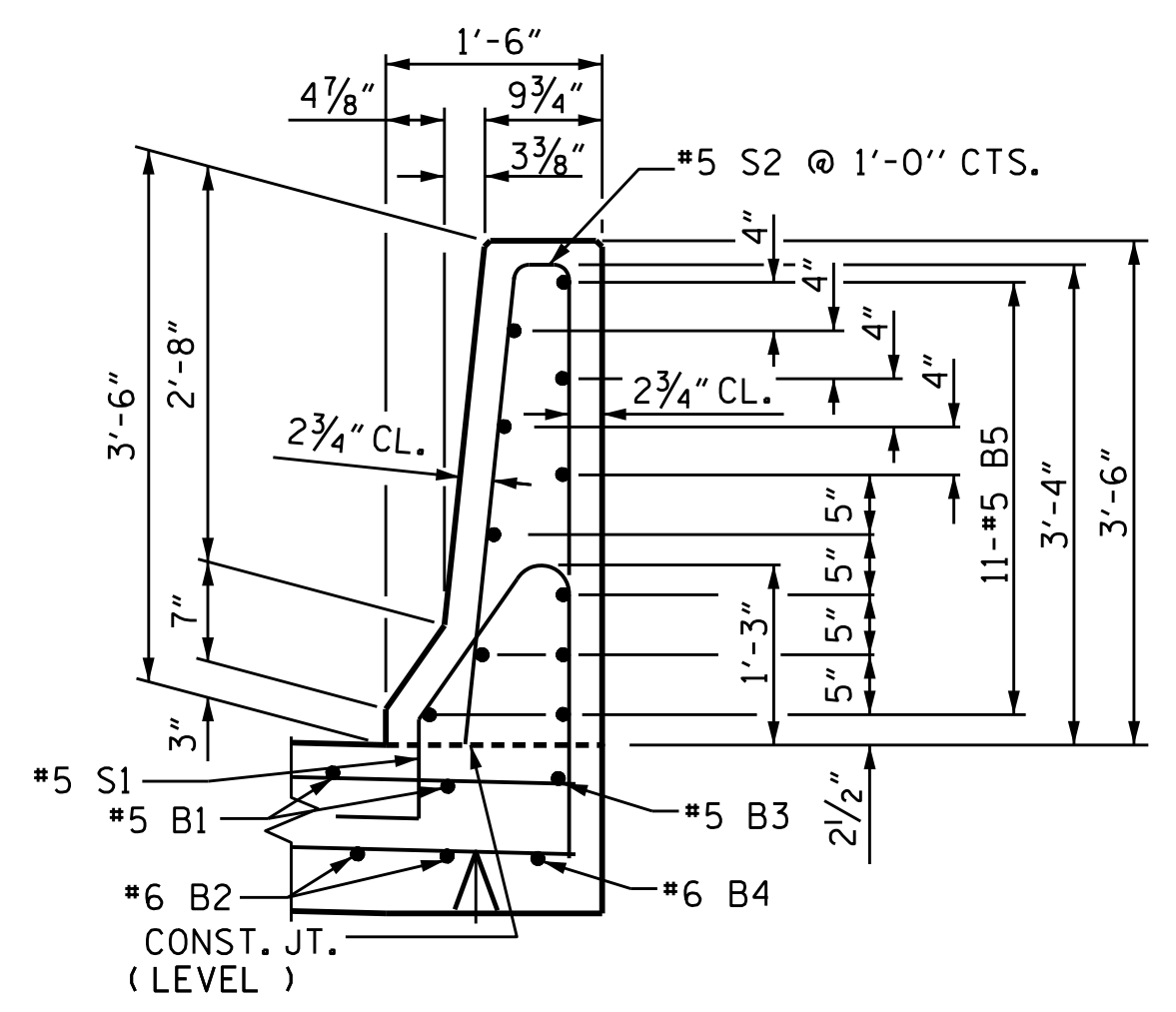


SECTION THRU SLAB
 (TYPE I - STANDARD APPROACH FILL)

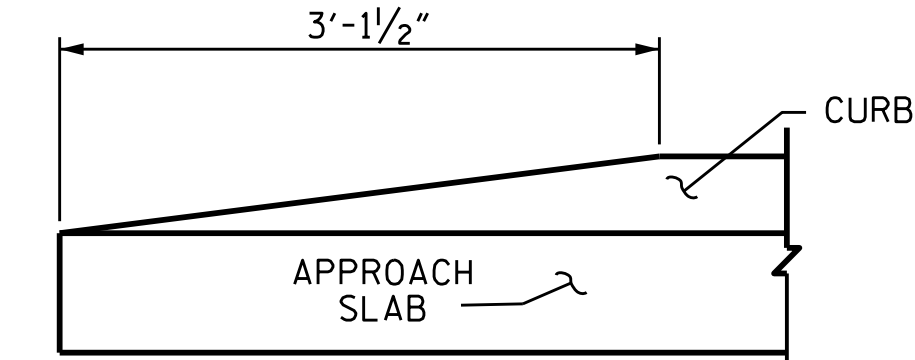
SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"



SECTION N-N
 CURB DETAILS

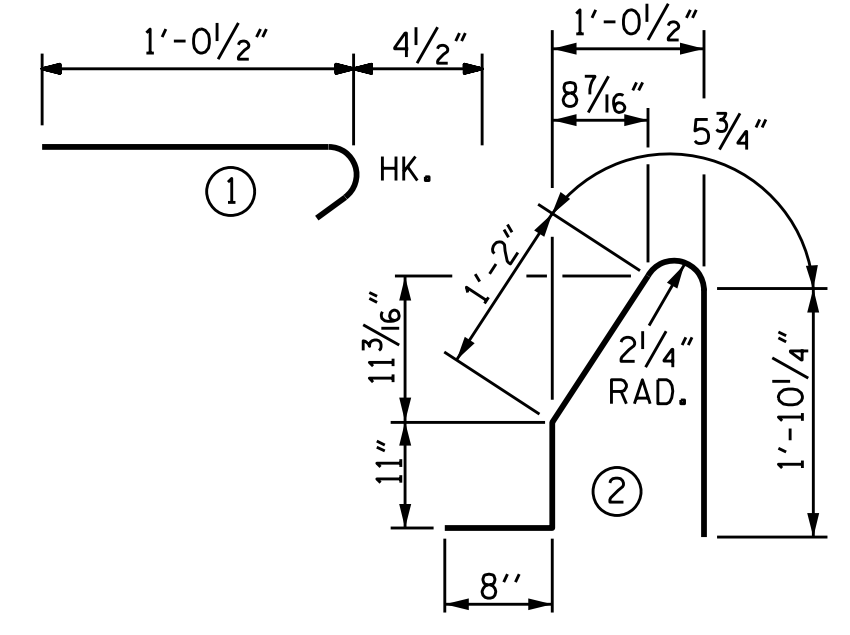


SECTION K-K



END OF CURB WITHOUT SHOULDER BERM GUTTER

BILL OF MATERIAL					
APPROACH SLAB AT EB 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	24'-6"	818
A2	52	#4	STR	24'-5"	848
*B1	78	#5	STR	24'-0"	1952
B2	78	#6	STR	24'-7"	2880
*B3	4	#5	STR	6'-7"	27
B4	4	#6	STR	7'-3"	44
*J1	45	#4	1	1'-5"	43
*S1	20	#5	2	5'-1"	106
REINFORCING STEEL					3772 LBS.
*EPOXY COATED REINFORCING STEEL					2946 LBS.
CLASS AA CONCRETE					43.5 C. Y.
APPROACH SLAB AT EB 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	50	#4	STR	24'-6"	818
A2	52	#4	STR	24'-5"	848
*B1	78	#5	STR	24'-0"	1952
B2	78	#6	STR	24'-7"	2880
*B3	4	#5	STR	6'-7"	27
B4	4	#6	STR	7'-3"	44
*J1	45	#4	1	1'-5"	43
*S1	20	#5	2	5'-1"	106
REINFORCING STEEL					3772 LBS.
*EPOXY COATED REINFORCING STEEL					2946 LBS.
CLASS AA CONCRETE					43.5 C. Y.



ALL BAR DIMENSIONS ARE OUT TO OUT
 ** QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED. SEE SHEET 2 OF 2.

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 6" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.
 GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.
 SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.
 SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
 APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.
 FOR THE 6" 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.
 FOR EXPANSION JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE QUANTITY OF #4 J1 BARS IN THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.

ASSEMBLED BY : STM/ZCS	DATE : 01/19
CHECKED BY : MGC	DATE : 07/19
DESIGN ENGINEER OF RECORD : MGC	DATE : 07/19
DRAWN BY : EEM 3/95	REV. 12/21/11 MAA/GM
CHECKED BY : VAP 3/95	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

9/28/2021
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 Users\billwilliams

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT

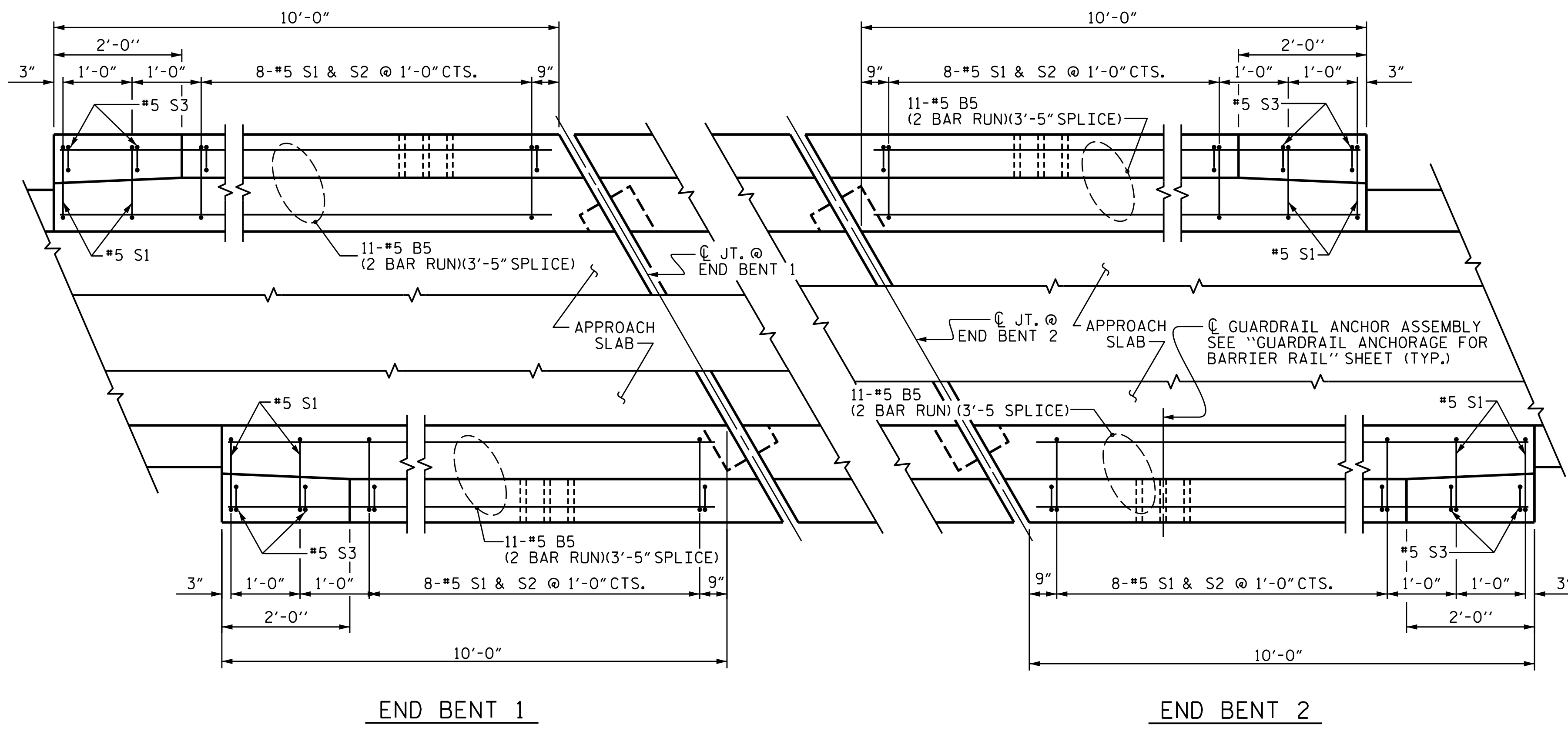
PROFESSIONAL ENGINEER
 SEAL 20125
 MICHAEL D. CHICK, P.E.
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 706 HILLSBOROUGH STREET
 SUITE 200
 RALEIGH, NC 27603
 PH (919) 773-8887
 CORP. LICENSE NO.: C-0275

PROJECT NO. B-4786
 PITT COUNTY
 STATION: 28+03.00 -L-
 SHEET 1 OF 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-56
1			3			TOTAL SHEETS
2			4			57



END BENT 1
END BENT 2
PLAN OF BARRIER RAIL

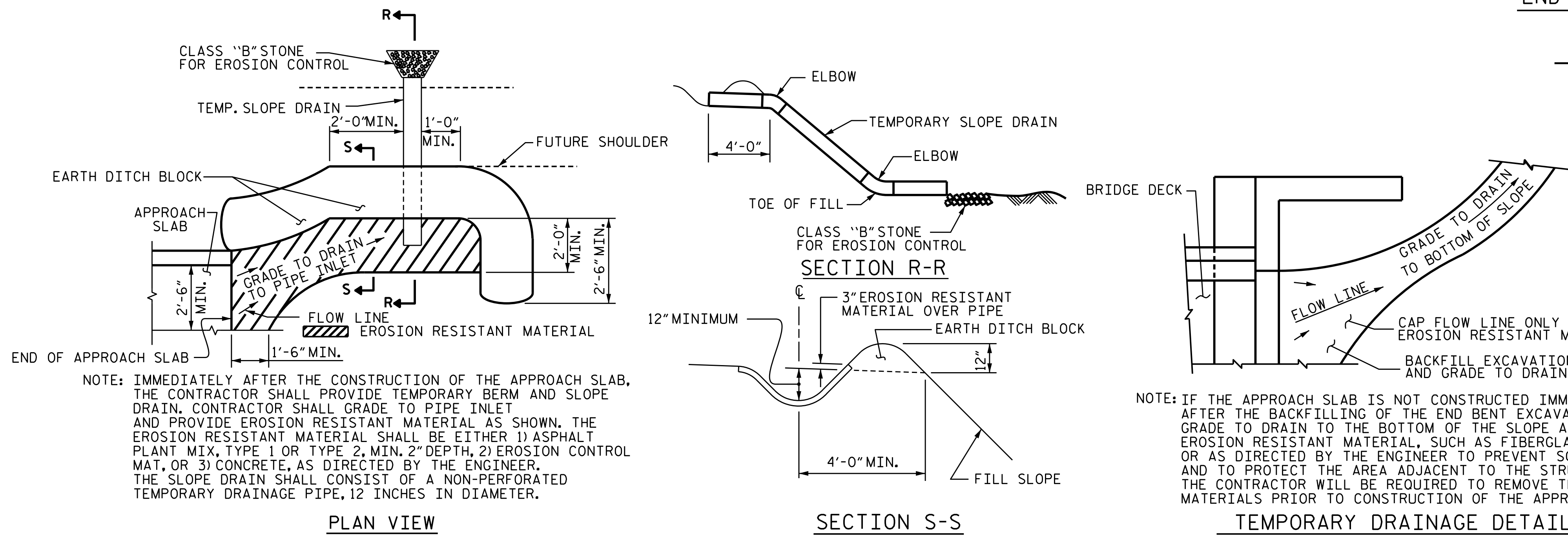
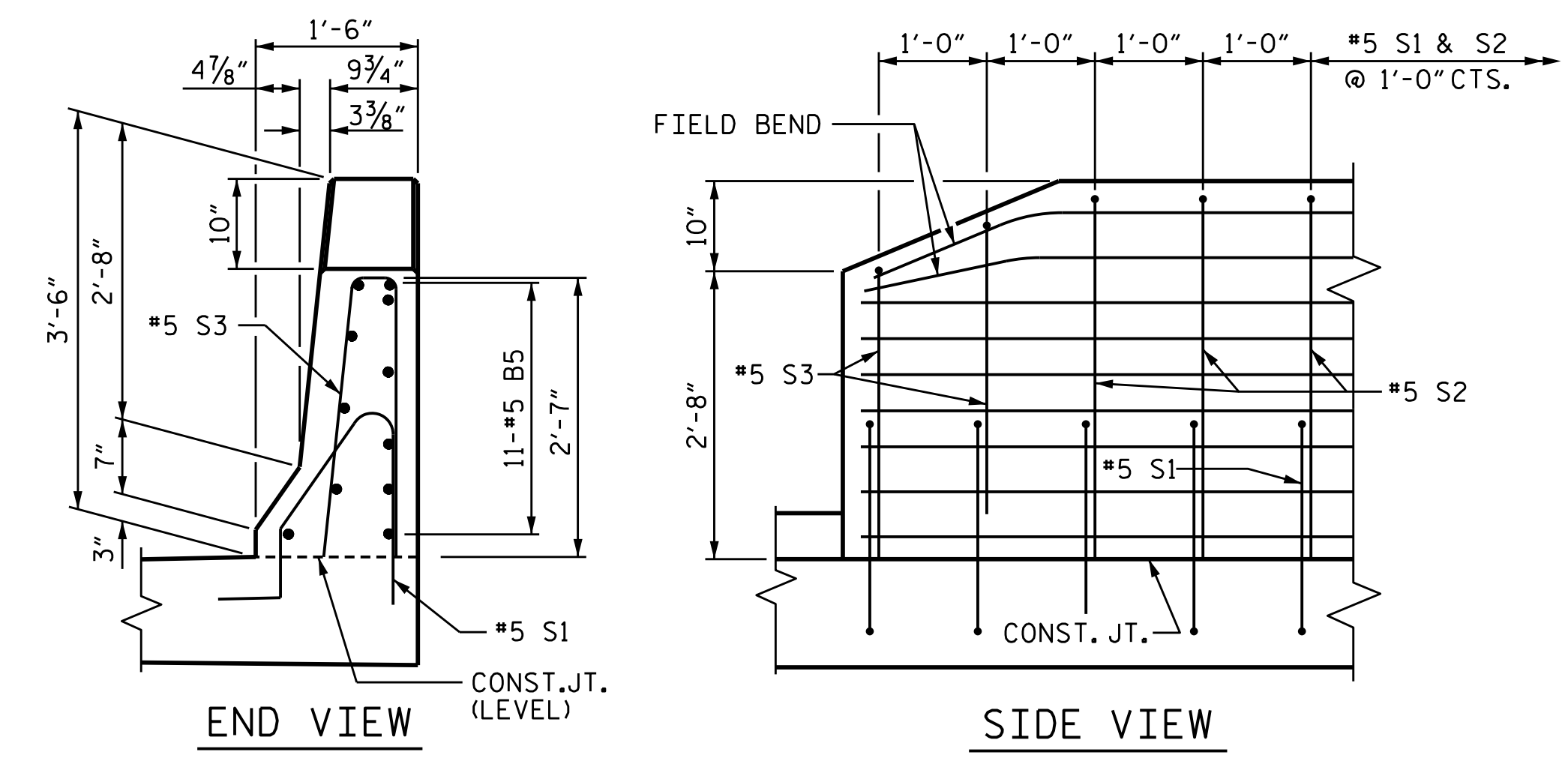
NOTES
 THE COST OF THE BARRIER RAIL ON THE APPROACH SLAB SHALL BE INCLUDED IN THE LINEAR FOOT CONTRACT PRICE BID FOR "CONCRETE BARRIER RAIL".
 THE BARRIER RAIL ON EACH APPROACH SLAB SHALL NOT BE CAST UNTIL ALL APPROACH SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
 ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*B5	88	#5	STR	7'-0"	642
*S2	32	#5	3	7'-0"	234
*S3	8	#5	3	5'-6"	46
* EPOXY COATED REINFORCING STEEL					922 LBS.
CLASS AA CONCRETE					5.4 C. Y.



TEMPORARY BERM AND SLOPE DRAIN DETAILS
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. B-4786
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 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 BRIDGE APPROACH
 SLAB DETAILS

2/24/2022 | 7:41 AM EST

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

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

REVISIONS						SHEET NO.
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ASSEMBLED BY : STM/ZCS	DATE : 01/19
CHECKED BY : MGC	DATE : 07/19
DESIGN ENGINEER OF RECORD : MGC	DATE : 07/19
DRAWN BY : FCJ 11/88	REV. 7/12 MAA/GM
CHECKED BY : ARB 11/88	REV. 6/13 MAA/GM
	REV. 12/17 MAA/THC

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{3}{16}$ " IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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



ENGLISH

JANUARY, 1990

STD. NO. SN