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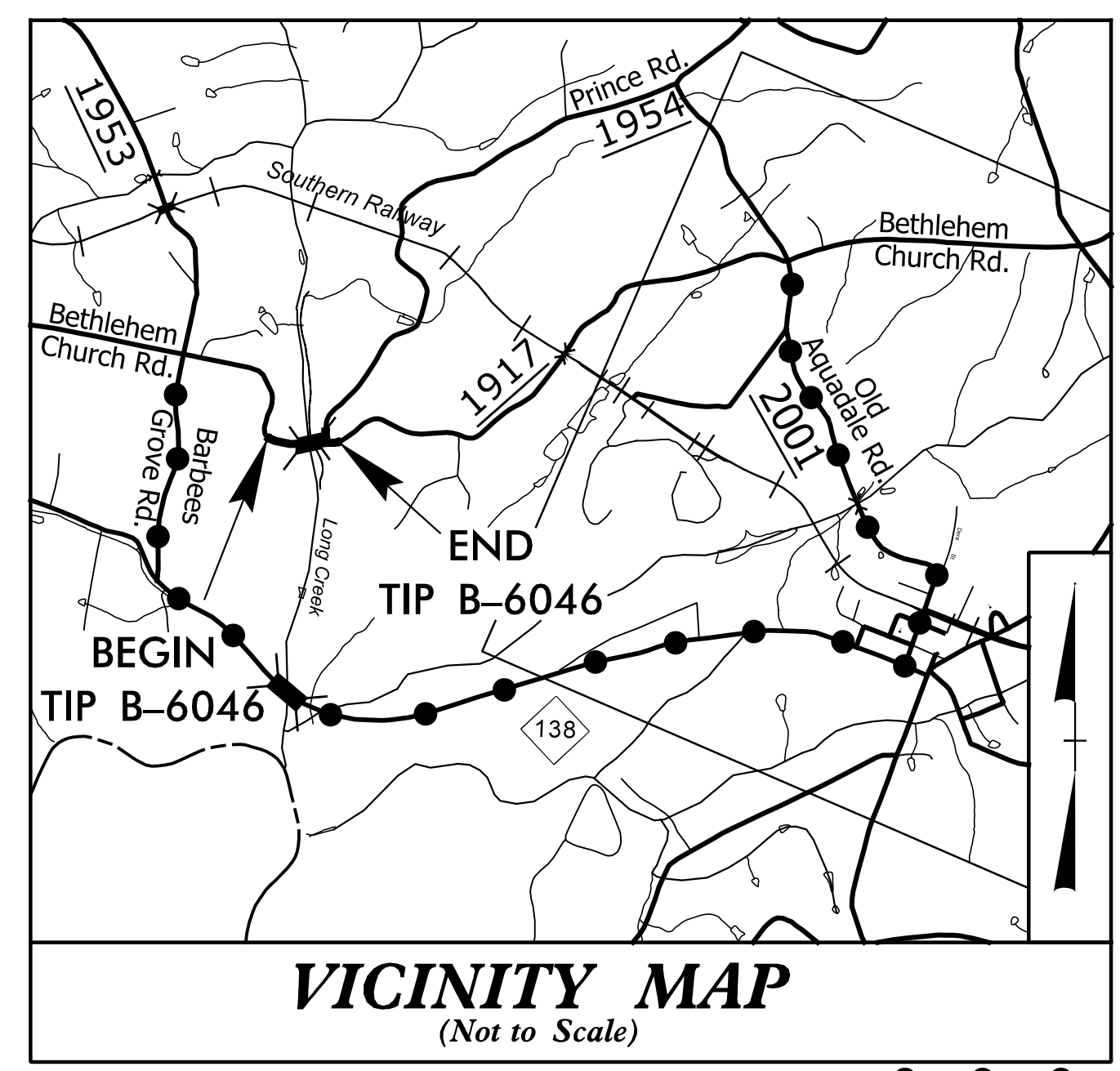
09/08/23

TIP PROJECT: B-6046

CONTRACT: 204830

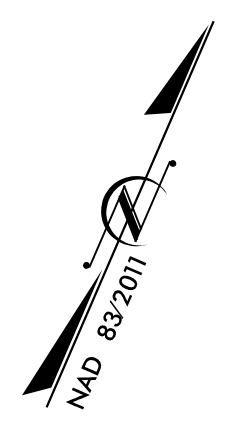
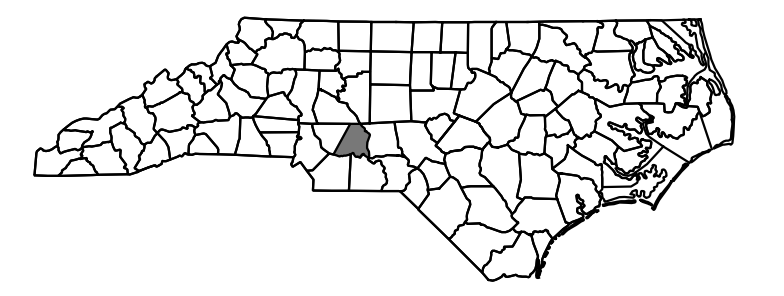
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
STANLY COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6046		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48409.1.1	BRZ-1917(003)	PE	
48409.2.1	BRZ-1917(003)	R/W & UTILITY	
48409.3.1	BRZ-1917(003)	CONST	

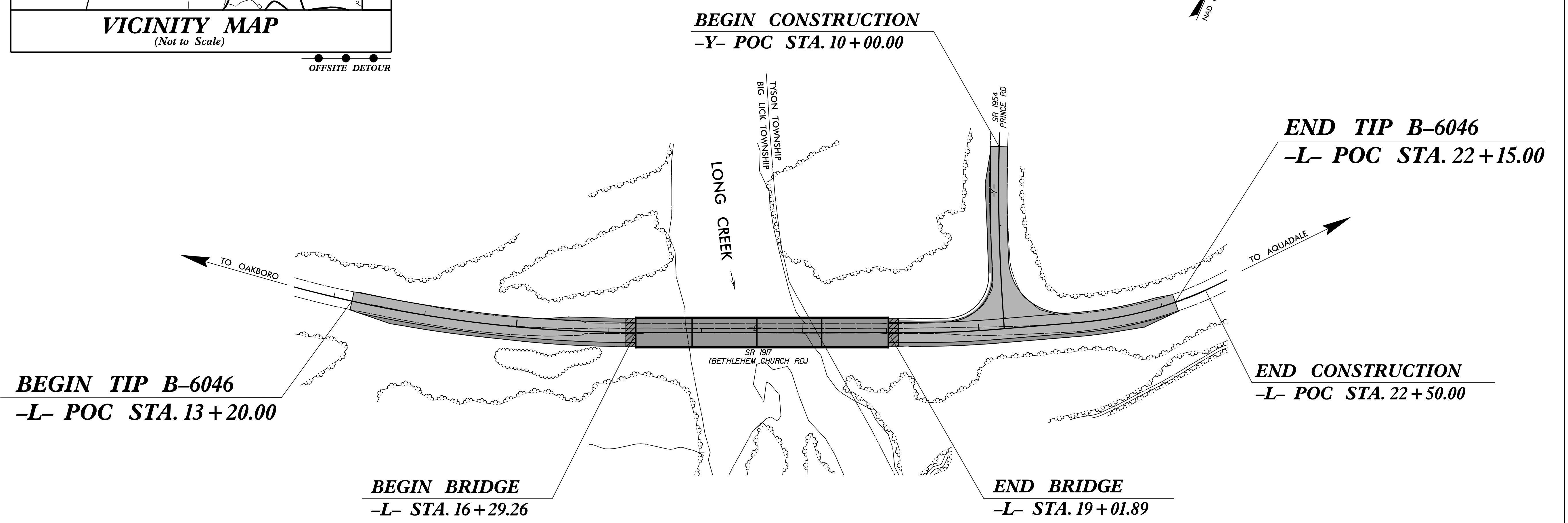


LOCATION: REPLACE BRIDGE NO. 830102 ON SR1917 (BETHLEHEM CHURCH ROAD) OVER LONG CREEK

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

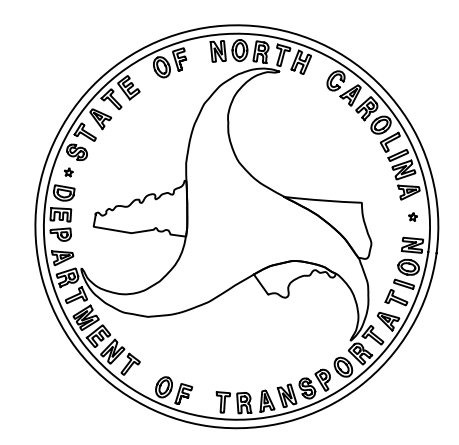


VICINITY MAP
(Not to Scale)



STRUCTURES

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UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2023 =	200
ADT 2045 =	300
K =	NOT PROVIDED
D =	NOT PROVIDED
T =	3% *
V =	60 MPH (STAT.)
*TTST =	1% *DUAL = 2%
FUNC CLASS =	LOCAL RURAL SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-6046	=	0.118 MILES
LENGTH STRUCTURE TIP PROJECT B-6046	=	0.052 MILES
TOTAL LENGTH TIP PROJECT B-6046	=	0.170 MILES

Prepared In the Office of:
ICE of CAROLINAS, PLLC
2024 STANDARD SPECIFICATIONS

LETTING DATE:
JANUARY 16, 2024

Prepared for:
**DIVISION OF HIGHWAYS
DIVISION 10**
714 W. MAIN, ST
ALBEMARLE, NC 27001

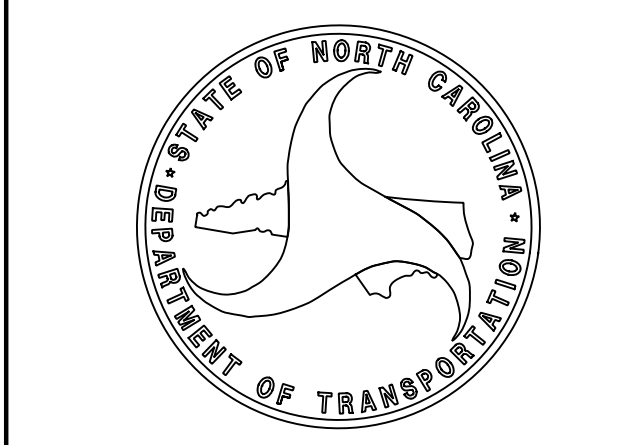
PAUL R. HOLSHOUSER, PE
PROJECT ENGINEER

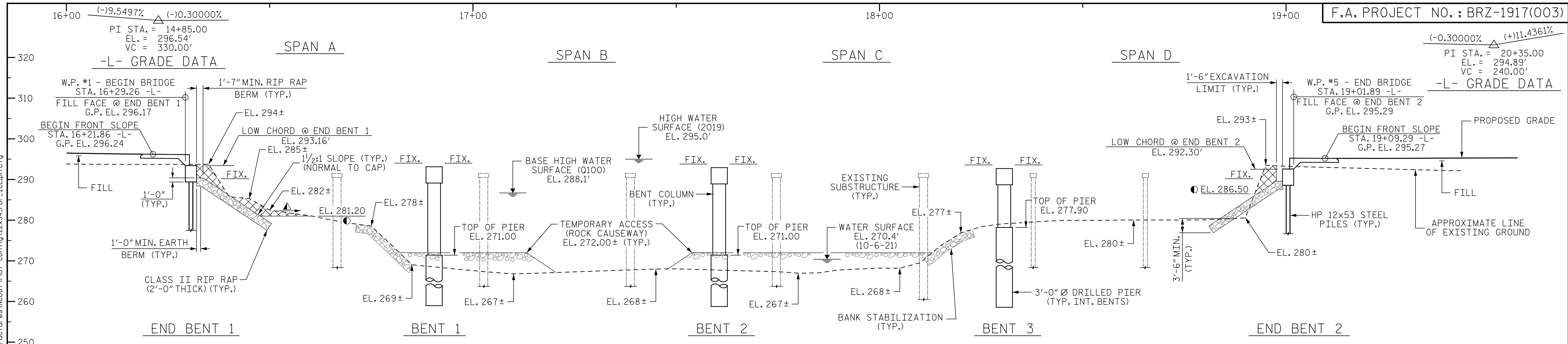
NICHOLAS D'AIUTO, PE
PROJECT DESIGN ENGINEER

STRUCTURES ENGINEER

NICHOLAS D'AIUTO
PROFESSIONAL ENGINEER
45237
11/14/2023

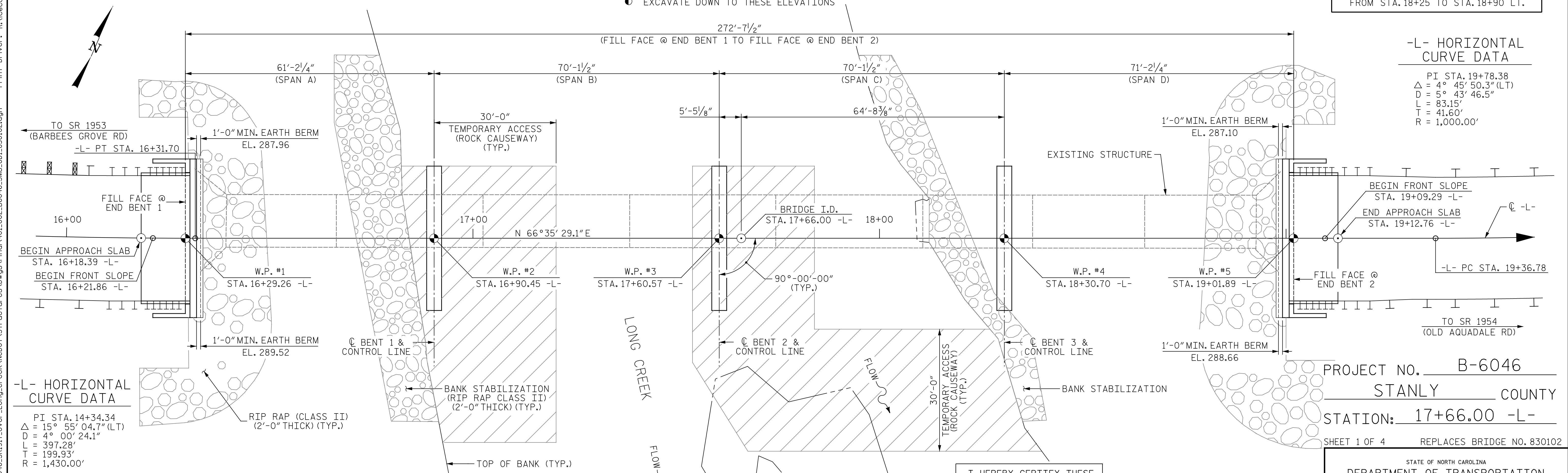
DocuSigned by:
Nicholas D'aiuto
88380C247804C1
SIGNATURE: _____ P.E.





DECK DRAINS REQUIRED
 8" X 4" SLOTS ON 5' CENTERS
 FROM STA. 16+40 TO STA. 16+65 LT.
 FROM STA. 18+25 TO STA. 18+90 LT.

-L- HORIZONTAL CURVE DATA
 PI STA. 19+78.38
 $\Delta = 4^\circ 45' 50.3" (LT)$
 $D = 5^\circ 43' 46.5"$
 $L = 83.15'$
 $T = 41.60'$
 $R = 1,000.00'$



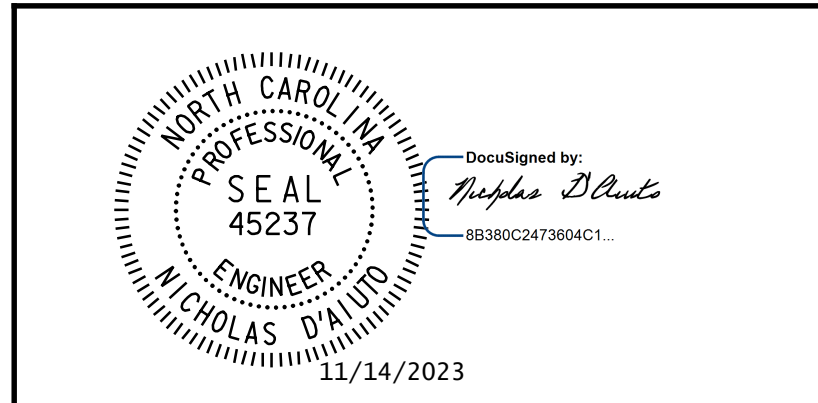
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 39,000 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YR
OVERTOPPING FLOOD ELEVATION	= 295.7'
OVERTOPPING -L- STA. 19+21 (SHLDR PT) EL. =	295.7'

HYDRAULIC DATA

DESIGN DISCHARGE	= 13,000 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YR
DESIGN HIGH WATER ELEVATION	= 283.7'
DRAINAGE AREA	= 197 SQ. MI.
BASIC DISCHARGE (Q100)	= 20,517 CFS
BASIC HIGH WATER ELEVATION	= 288.1'

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER LONG CREEK ON
 SR 1917 (BETHLEHEM CHURCH RD)
 BETWEEN SR 1953 (BARBEES GROVE
 RD) AND SR 1954 (OLD AQUADALE RD)

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

TOTAL SHEETS: 24

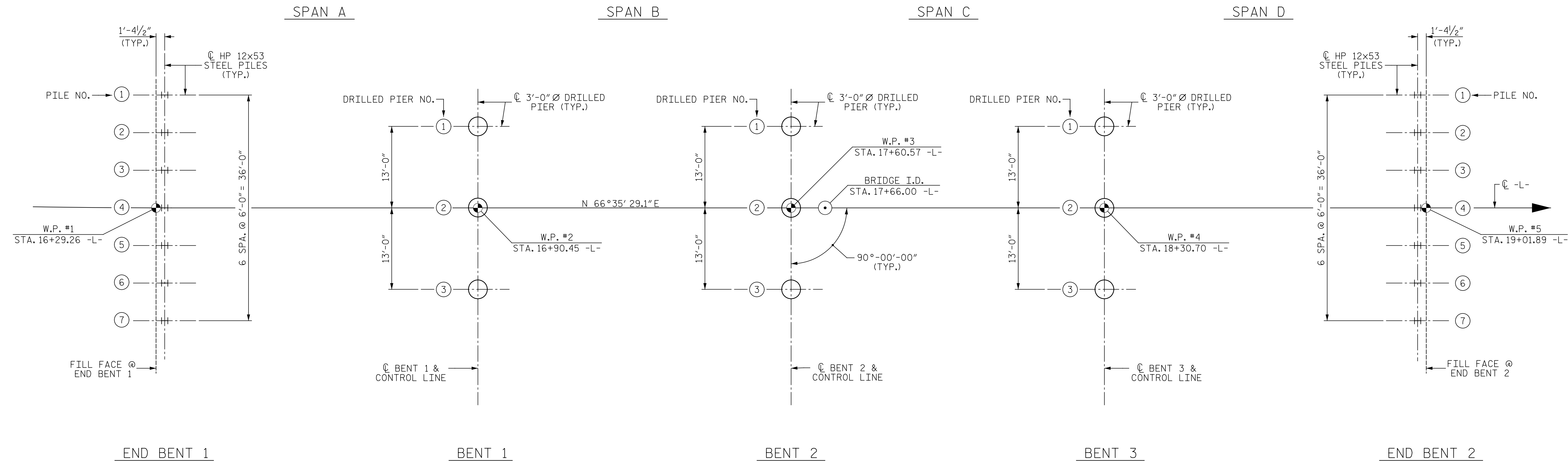
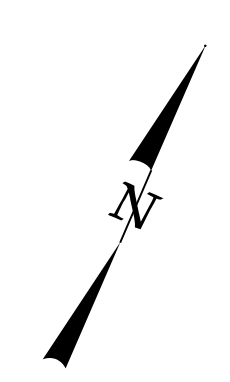
DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
 DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

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ICE of Carolinas, PLLC
 4505 Falls of Neuse Road, Suite 110
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 Phone: 919-822-0333
 License #: P-0999

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FOUNDATION LAYOUT
 (PILES DIMENSIONED FROM W.P. TO \odot PILE AT BOT. OF CAP)

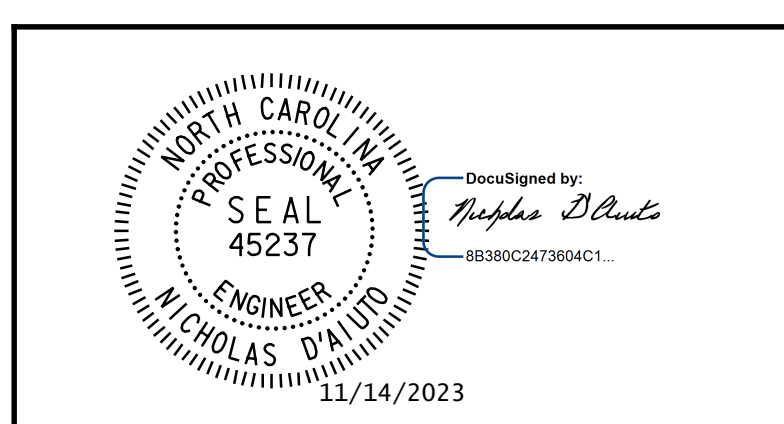
PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER LONG CREEK ON
 SR 1917 (BETHLEHEM CHURCH RD)
 BETWEEN SR 1953 (BARBEES GROVE
 RD) AND SR 1954 (OLD AQUADALE RD)



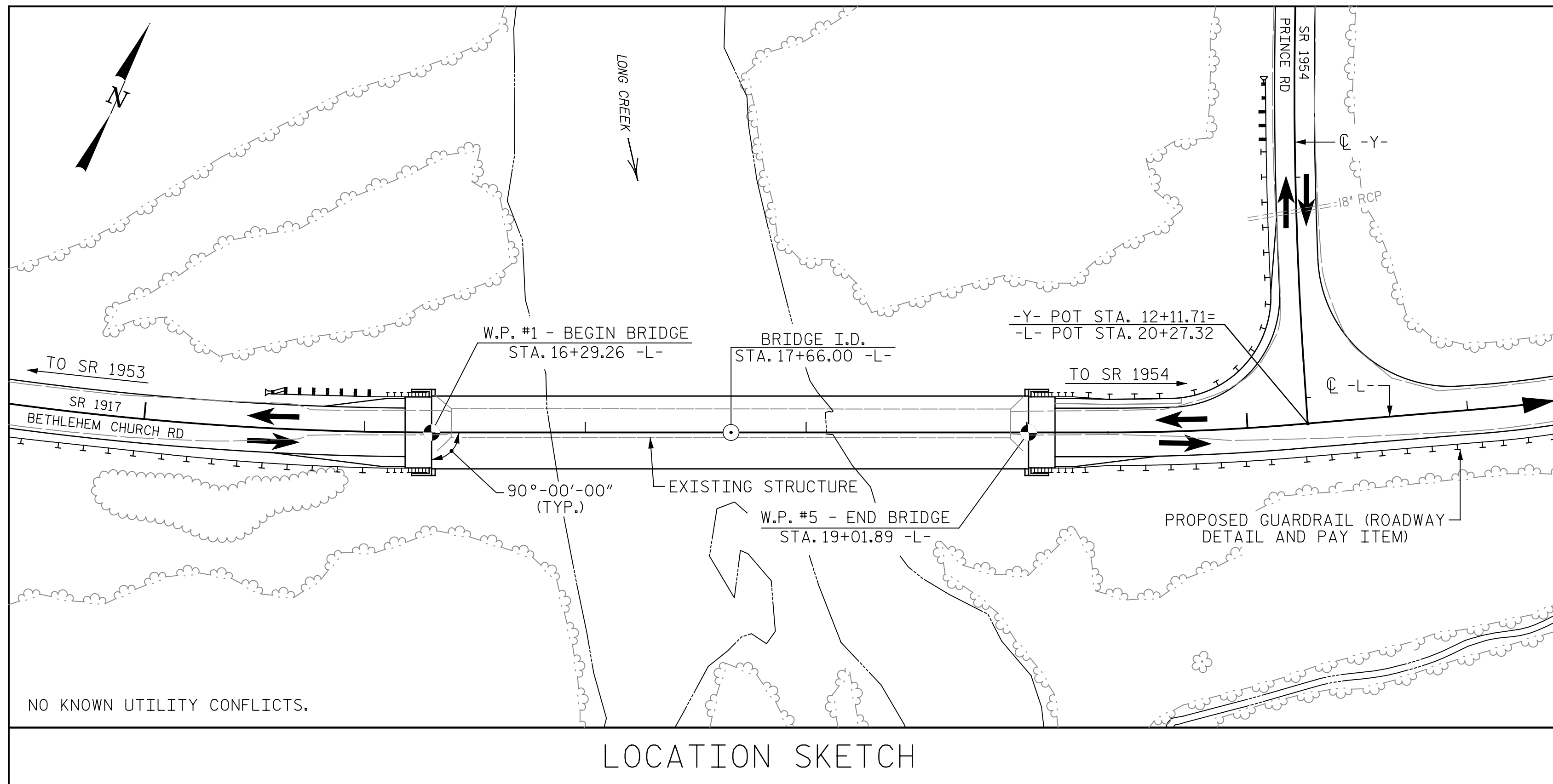
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 License #: P-0999

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DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
 DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-02
1			3			TOTAL SHEETS
2			4			24

BM #1 - RR SPIKE IN 15" OAK - EL. 304 ft (-L- STA. 13+25.24 DIST. = 137.553 RT.) (N 538498 E 1623643)



LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE 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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 40'-0" (LT) & 46'-0" (RT) OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE CONSISTING OF 8 SPANS (4 @ 27'-0" & 4 @ 36'-0" IN LENGTH) WITH A TIMBER DECK ON DECK BEAMS AND 11.2' CLEAR ROADWAY WIDTH ON MASS CONCRETE AND STEEL CAP AND PILE WITH CONCRETE PEDESTAL SUBSTRUCTURE AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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."

THE SCOUR CRITICAL ELEVATION FOR BENTS 1, 2 & 3 IS ELEVATION 258.94. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

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

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 17+66.00 -L-.

ONE ROCK CAUSEWAY SHALL BE CONSTRUCTED AND REMOVED BEFORE THE CONSTRUCTION OF THE OTHER ROCK CAUSEWAY CAN BEGIN TO LIMIT THE STREAM OBSTRUCTION AT ANY ONE TIME.

FOR DEMOLITION PLAN, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL											
	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMP ACCESS AT STA. 17+66.00 -L-	REMOVAL OF EXISTING STRUCTURE @ STA. 17+66.00 -L-	ASBESTOS ASSESSMENT	3'-0" DIA. DRILLED PIERS	PERMANENT STEEL CASING FOR 3'-0" DIA. DRILLED PIERS	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 17+66.00 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS, STA. 17+66.00 -L-	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	LBS.
SUPERSTRUCTURE											
END BENT 1								21.8		2,942	
BENT 1				48.0	18.0			23.3		10,455	1,951
BENT 2				48.0	15.0			23.1		10,420	1,941
BENT 3				72.0	39.0			19.2		10,407	1,908
END BENT 2								21.8		2,942	
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	168.0	72.0	2	LUMP SUM	109.2	LUMP SUM	37,166	5,800

TOTAL BILL OF MATERIAL										
	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES	PREDRILLING FOR PILES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS		
	EA.	NO.	LIN. FT.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE					540.76				44	2,970.00
END BENT 1	7	7	195	56		280	351			
BENT 1										
BENT 2										
BENT 3										
END BENT 2	7	7	195			357	437			
TOTAL	14	14	390	56	540.76	637	788	LUMP SUM	44	2,970.00

SAMPLE BAR REPLACEMENT

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

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

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

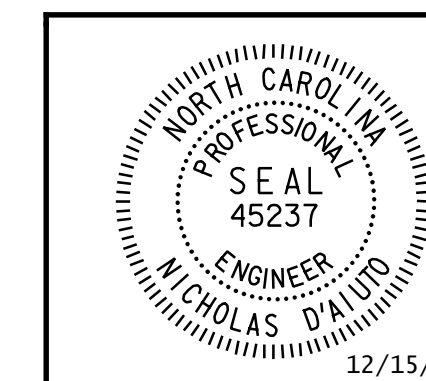
GENERAL DRAWING

FOR BRIDGE OVER LONG CREEK ON SR 1917 (BETHLEHEM CHURCH RD) BETWEEN SR 1953 (BARBEES GROVE RD) AND SR 1954 (OLD AQUADALE RD)

REVISIONS

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

SHEET NO. S-04
 TOTAL SHEETS 24



DocuSigned by:
 Nicholas D'Auto
 92390C2A73904C1...



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 Phone: 919-822-0333
 License #: P-0999

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DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
 DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No. Pile(s) #.# (e.g., "Bent 1, Piles 1-5")	Factored Resistance per Pile TONS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Lenth per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles*			Drilled-In Piles		
					Min Pile Tip (Tip No Higher Than) Elev FT	Required Driving Resistance (RDR)** per Pile TONS	Total Pile Redrives Quantity EACH	Predrilling Length per Pile Lin FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile Lin FT	Pile Exc In Soil per Pile Lin FT
End Bent 1, Piles 1-4	75	See Structure Drawings	30			125		14.0	276.0	12			
End Bent 1, Piles 5-7	75		25			125							
End Bent 2, Piles 1-3	81		25			135							
End Bent 2, Piles 4-7	81		30			135							

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

** RDR = $\frac{\text{Factored Resistance} + \text{Factored Downdrag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \frac{\text{Nominal Downdrag Resistance} + \text{Nominal Scour Resistance}}{\text{Scour Resistance Factor}}$

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No. Pile(s) #.# (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile TONS	Factored Downdrag Load per Pile TONS	Factored Dead Load* per Pile TONS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile TONS	Nominal Scour Resistance per Pile TONS	Scour Resistance Factor (Default = 1.00)
End Bent 1, Piles 1-7	74						
End Bent 2, Piles 1-7	81						

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

SUMMARY OF DRILLED PIER INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No. Pier(s) #.# (e.g., "Bent 1, Piers 1-3")	Factored Resistance per Pier TONS	Minimum Pier Tip (Tip No Higher Than) Elevation FT	Required Tip Resistance per Pier TSF	Scour Critical Elevation FT	Minimum Drilled Pier Penetration Into Rock per Pier Lin FT	Drilled Pier Length per Pier Lin FT	Drilled Pier Length Not In Soil per Pier Lin FT	Drilled Pier Length In Soil per Pier Lin FT	Permanent Steel Casing Required? YES or MAYBE	Permanent Steel Casing Tip Elevation (Elev Not To Extend Casing Below) FT	Permanent Steel Casing Length* per Pier Lin FT
Bent 1, Piers 1-3	425	254.0	140	263	11.0	16.0			YES	264.0	6.0
Bent 2, Piers 1-3	425	254.0	140	263	11.0	16.0			YES	265.0	5.0
Bent 3, Piers 1-3	425	254.0	140	263	11.0	24.0			MAYBE	265.0	13.0

*Permanent Steel Casing Length equals the difference between the ground line or top of drilled pier elevation, whichever is higher, and the permanent casing tip elevation.

Foundation Notes

- FOR PILES, SEE PILES PROVISION AND SECTION 450 OF THE STANDARD SPECIFICATIONS.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

SUMMARY OF DRILLED PIER TESTING

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No. Pier(s) #.# (e.g., "Bent 1, Piers 1-3")	Standard Penetration Test (SPT) Required? YES or MAYBE	Crosshole Sonic Logging (CSL) Required?*	Total CSL Tube Length (For All Tubes) per Pier Lin FT	Shaft Inspection Device (SID) Required? YES or MAYBE	Pile Integrity Test (PIT) Required? MAYBE
Bent 1, Piers 1-3		MAYBE	70		
Bent 2, Piers 1-3		MAYBE	70		
Bent 3, Piers 1-3		MAYBE	102		
TOTAL QTY:		2	726		

*CSL Tubes are required if CSL Testing is or may be required. The number of CSL Tubes per drilled pier is equal to one tube per foot of design pier diameter with at least 4 tubes per pier. The length of each CSL Tube is equal to the drilled pier length plus 1.5 ft.

NOTES:

- The Pile and Drilled Pier Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer Shiping Yang, P.E., License No. 031361 on 06/03/2022.
- Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
- The Engineer will determine the need for PDA Testing, Pipe Pile Plates, Permanent Steel Casing, SPTs, CSL Testing, SID Inspections and PITs when these items may be required.

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 3 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER LONG CREEK ON
 SR 1917 (BETHLEHEM CHURCH RD)
 BETWEEN SR 1953 (BARBEES GROVE
 RD) AND SR 1954 (OLD AQUADALE RD)

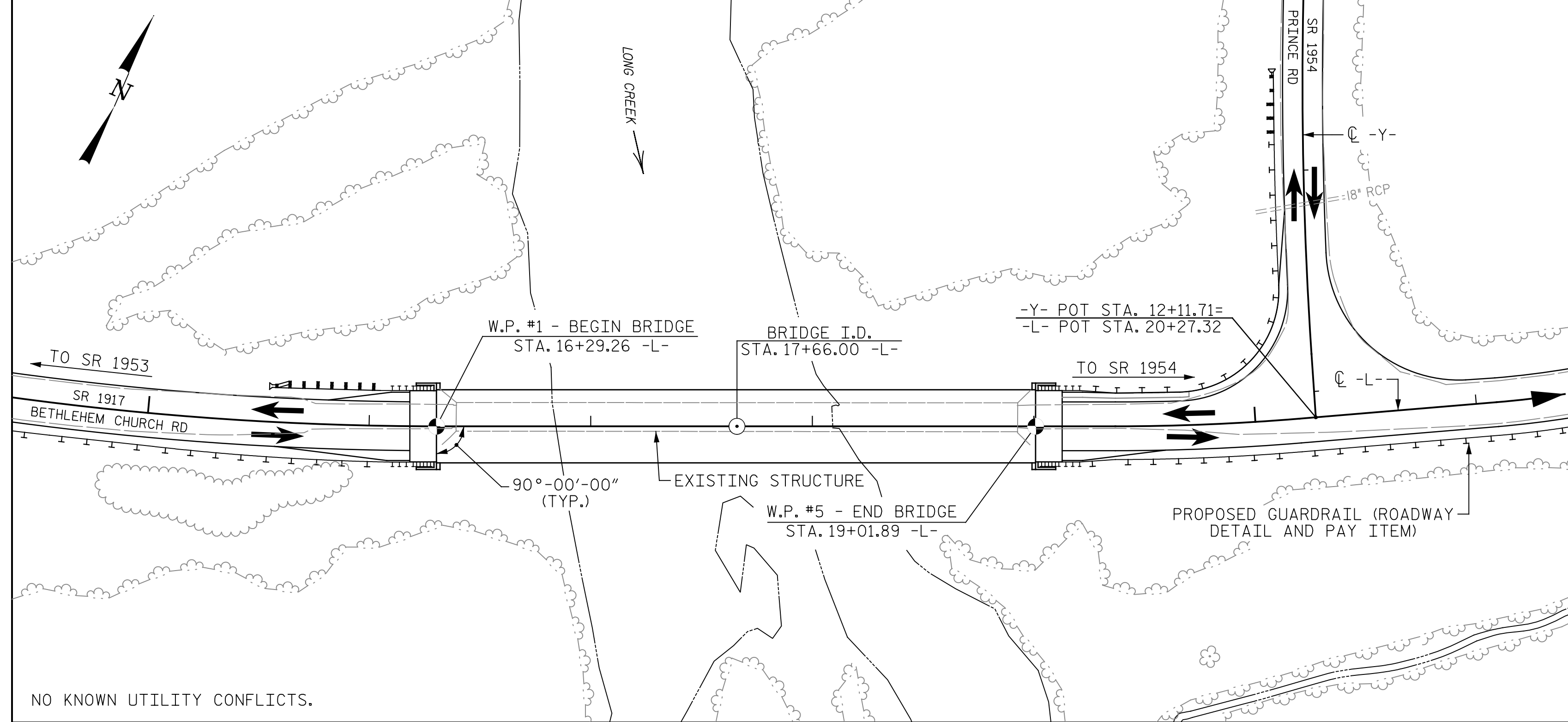
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-03
1			3			TOTAL SHEETS
2			4			24

DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
 DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

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 4505 Falls of Neuse Road, Suite 110
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 Phone: 919-822-0333
 License #: P-0999

BM #1 - RR SPIKE IN 15" OAK - EL. 304 ft (-L- STA. 13+25.24 DIST. = 137.553 RT.) (N 538498 E 1623643)



NO KNOWN UTILITY CONFLICTS.

LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE 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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 40'-0" (LT) & 46'-0" (RT) OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE CONSISTING OF 8 SPANS (4 @ 27'-0" & 4 @ 36'-0" IN LENGTH) WITH A TIMBER DECK ON DECK BEAMS AND 11.2' CLEAR ROADWAY WIDTH ON MASS CONCRETE AND STEEL CAP AND PILE WITH CONCRETE PEDESTAL SUBSTRUCTURE AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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."

THE SCOUR CRITICAL ELEVATION FOR BENTS 1, 2 & 3 IS ELEVATION 258.94. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

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

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

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 17+66.00 -L-.

ONE ROCK CAUSEWAY SHALL BE CONSTRUCTED AND REMOVED BEFORE THE CONSTRUCTION OF THE OTHER ROCK CAUSEWAY CAN BEGIN TO LIMIT THE STREAM OBSTRUCTION AT ANY ONE TIME.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMP ACCESS AT STA. 17+66.00 -L-	REMOVAL OF EXISTING STRUCTURE @ STA. 17+66.00 -L-	ASBESTOS ASSESSMENT	3'-0" DIA. DRILLED PIERS	PERMANENT STEEL CASING FOR 3'-0" DIA. DRILLED PIERS	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 17+66.00 -L-	CLASS A CONCRETE	BRIDGE APPROACH SLABS, STA. 17+66.00 -L-	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	LBS.
SUPERSTRUCTURE											
END BENT 1										2,942	
BENT 1				48.0	18.0					10,455	1,951
BENT 2				48.0	15.0					10,420	1,941
BENT 3				72.0	39.0					10,407	1,908
END BENT 2										2,942	
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	168.0	72.0	2	LUMP SUM	109.2	LUMP SUM	37,166	5,800

TOTAL BILL OF MATERIAL

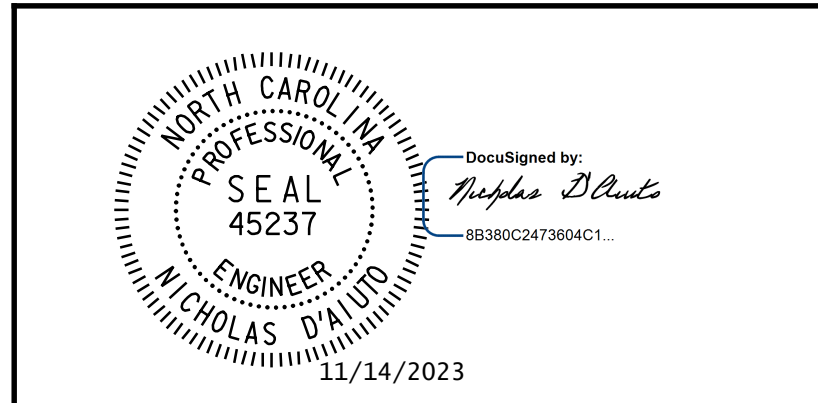
	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES	PREDRILLING FOR PILES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS		
	EA.	NO.	LIN. FT.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE					540.76				44	2,970.00
END BENT 1	7	7	195	56		280	351			
BENT 1										
BENT 2										
BENT 3										
END BENT 2	7	7	195			357	437			
TOTAL	14	14	390	56	540.76	637	788	LUMP SUM	44	2,970.00

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

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

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 4 OF 4



ICE of Carolinas, PLLC
 4505 Falls of Neuse Road, Suite 110
 Raleigh, North Carolina 27609
 Phone: 919-822-0333
 License #: P-0999

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE OVER LONG CREEK ON SR 1917 (BETHLEHEM CHURCH RD) BETWEEN SR 1953 (BARBEES GROVE RD) AND SR 1954 (OLD AQUADALE RD)					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					24

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
 DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

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

LOAD TYPE	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						LIVE-LOAD FACTORS (% LL)	MOMENT			SHEAR				LIVE-LOAD FACTORS (% LL)	MOMENT									
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR		SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD	HL-93 (INVENTORY)	N/A	1	1.330	--	1.75	0.275	1.33	60'	EL	29.5	0.52	1.33	60'	EL	5.9	0.80	0.275	1.37	60'	EL	29.5		
	HL-93 (OPERATING)	N/A		1.725	--	1.35	0.275	1.73	60'	EL	29.5	0.52	1.72	60'	EL	5.9	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	2	1.601	57.643	1.75	0.275	1.69	60'	EL	29.5	0.52	1.60	60'	EL	5.9	0.80	0.275	1.74	60'	EL	29.5		
	HS-20 (OPERATING)	36.000		2.076	74.723	1.35	0.275	2.19	60'	EL	29.5	0.52	2.08	60'	EL	5.9	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH		3.745	50.557	1.4	0.275	4.55	60'	EL	29.5	0.52	4.63	60'	EL	5.9	0.80	0.275	3.74	60'	EL	29.5		
		SNGARBS2	20.000	2.867	57.338	1.4	0.275	3.48	60'	EL	29.5	0.52	3.33	60'	EL	5.9	0.80	0.275	2.87	60'	EL	29.5		
		SNAGRIS2	22.000	2.748	60.460	1.4	0.275	3.34	60'	EL	29.5	0.52	3.11	60'	EL	5.9	0.80	0.275	2.75	60'	EL	29.5		
		SNCOTTS3	27.250	1.866	50.841	1.4	0.275	2.27	60'	EL	29.5	0.52	2.31	60'	EL	5.9	0.80	0.275	1.87	60'	EL	29.5		
		SNAGGRS4	34.925	1.588	55.465	1.4	0.275	1.93	60'	EL	29.5	0.52	1.95	60'	EL	5.9	0.80	0.275	1.59	60'	EL	29.5		
		SNS5A	35.550	1.551	55.139	1.4	0.275	1.89	60'	EL	29.5	0.52	1.99	60'	EL	5.9	0.80	0.275	1.55	60'	EL	29.5		
		SNS6A	39.950	1.435	57.347	1.4	0.275	1.74	60'	EL	29.5	0.52	1.83	60'	EL	5.9	0.80	0.275	1.44	60'	EL	29.5		
	SNS7B	42.000	1.367	57.434	1.4	0.275	1.66	60'	EL	29.5	0.52	1.81	60'	EL	5.9	0.80	0.275	1.37	60'	EL	29.5			
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.754	57.887	1.4	0.275	2.13	60'	EL	29.5	0.52	2.17	60'	EL	5.9	0.80	0.275	1.75	60'	EL	29.5	
		TNT4A	33.075		1.765	58.389	1.4	0.275	2.15	60'	EL	29.5	0.52	2.10	60'	EL	5.9	0.80	0.275	1.77	60'	EL	29.5	
		TNT6A	41.600		1.456	60.551	1.4	0.275	1.77	60'	EL	29.5	0.52	1.96	60'	EL	5.9	0.80	0.275	1.46	60'	EL	29.5	
		TNT7A	42.000		1.469	61.714	1.4	0.275	1.79	60'	EL	29.5	0.52	1.88	60'	EL	5.9	0.80	0.275	1.47	60'	EL	29.5	
		TNT7B	42.000		1.535	64.463	1.4	0.275	1.87	60'	EL	29.5	0.52	1.76	60'	EL	5.9	0.80	0.275	1.53	60'	EL	29.5	
		TNAGRIT4	43.000		1.450	62.329	1.4	0.275	1.76	60'	EL	29.5	0.52	1.70	60'	EL	5.9	0.80	0.275	1.45	60'	EL	29.5	
TNAGT5A		45.000		1.361	61.247	1.4	0.275	1.65	60'	EL	29.5	0.52	1.71	60'	EL	5.9	0.80	0.275	1.36	60'	EL	29.5		
TNAGT5B	45.000	3	1.340	60.282	1.4	0.275	1.63	60'	EL	29.5	0.52	1.61	60'	EL	5.9	0.80	0.275	1.34	60'	EL	29.5			
EMERGENCY VEHICLE (EV)	EV2	28.750		2.218	63.776	1.3	0.275	2.65	60'	EL	29.5	0.52	2.50	60'	EL	5.9	0.80	0.275	2.22	60'	EL	29.5		
	EV3	43.000	4	1.444	62.085	1.3	0.275	1.73	60'	EL	29.5	0.52	1.69	60'	EL	5.9	0.80	0.275	1.44	60'	EL	29.5		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γDC	γDW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

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

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

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

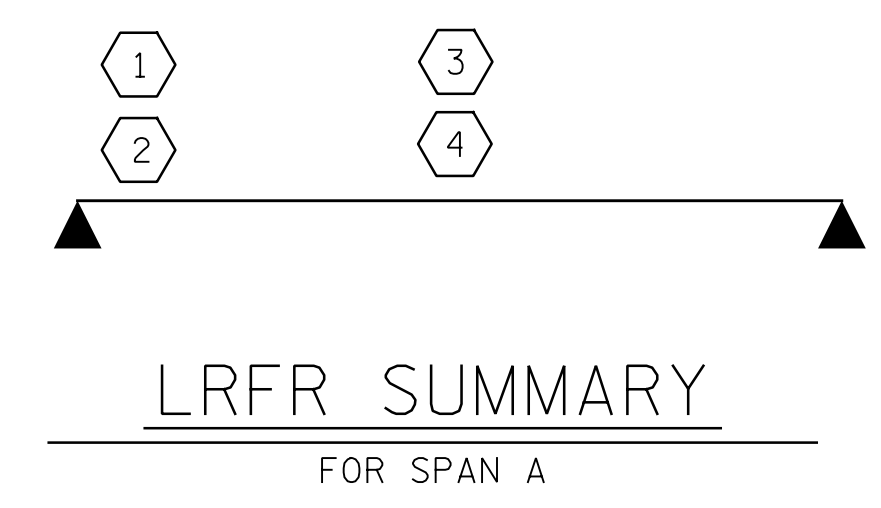
3 LEGAL LOAD RATING **

4 EMERGENCY VEHICLE LOAD RATING **

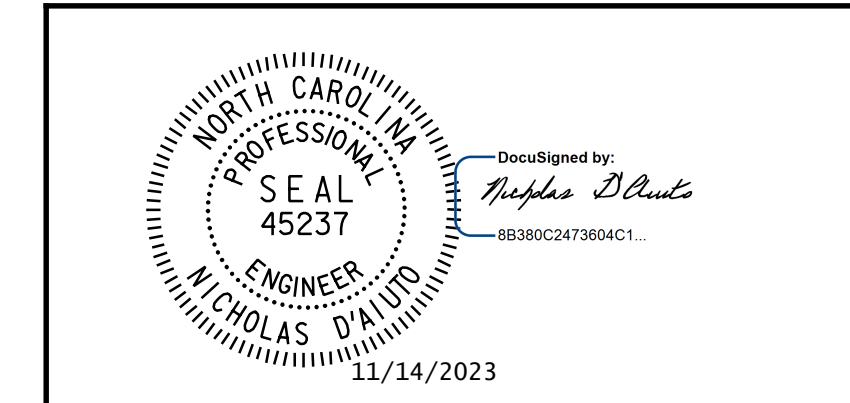
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-6046
STANLY COUNTY
STATION: 17+66.00 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR
60' CORED SLAB UNIT
90° SKEW

(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			24

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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Phone: 919-822-0333
License #: P-0999

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DRAWN BY : J. N. AUSTIN DATE : 8-10-22
CHECKED BY : N. D'AIUTO DATE : 8-12-22
DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

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

LOAD TYPE	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD	HL-93 (INVENTORY)	N/A	①	1.006	--	1.75	0.273	1.03	70'	EL	34.5	0.507	1.32	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5		
	HL-93 (OPERATING)	N/A		1.341	--	1.35	0.273	1.34	70'	EL	34.5	0.507	1.72	70'	EL	6.9	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.306	47.02	1.75	0.273	1.34	70'	EL	34.5	0.507	1.65	70'	EL	6.9	0.80	0.273	1.31	70'	EL	34.5		
	HS-20 (OPERATING)	36.000		1.740	62.64	1.35	0.273	1.74	70'	EL	34.5	0.507	2.14	70'	EL	6.9	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.917	39.379	1.4	0.273	3.75	70'	EL	34.5	0.507	4.87	70'	EL	6.9	0.80	0.273	2.92	70'	EL	34.5	
		SNGARBS2	20.000		2.187	43.741	1.4	0.273	2.81	70'	EL	34.5	0.507	3.47	70'	EL	6.9	0.80	0.273	2.19	70'	EL	34.5	
		SNAGRIS2	22.000		2.077	45.690	1.4	0.273	2.67	70'	EL	34.5	0.507	3.23	70'	EL	6.9	0.80	0.273	2.08	70'	EL	34.5	
		SNCOTTS3	27.250		1.452	39.565	1.4	0.273	1.87	70'	EL	34.5	0.507	2.43	70'	EL	6.9	0.80	0.273	1.45	70'	EL	34.5	
		SNAGRS4	34.925		1.218	42.554	1.4	0.273	1.57	70'	EL	34.5	0.507	2.03	70'	EL	6.9	0.80	0.273	1.22	70'	EL	34.5	
		SNS5A	35.550		1.191	42.346	1.4	0.273	1.53	70'	EL	34.5	0.507	2.06	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5	
		SNS6A	39.950		1.095	43.747	1.4	0.273	1.41	70'	EL	34.5	0.507	1.88	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
	SNS7B	42.000		1.043	43.801	1.4	0.273	1.34	70'	EL	34.5	0.507	1.85	70'	EL	6.9	0.80	0.273	1.04	70'	EL	34.5		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.336	44.087	1.4	0.273	1.72	70'	EL	34.5	0.507	2.23	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT4A	33.075		1.342	44.401	1.4	0.273	1.72	70'	EL	34.5	0.507	2.17	70'	EL	6.9	0.80	0.273	1.34	70'	EL	34.5	
		TNT6A	41.600		1.100	45.746	1.4	0.273	1.41	70'	EL	34.5	0.507	1.98	70'	EL	6.9	0.80	0.273	1.10	70'	EL	34.5	
		TNT7A	42.000		1.106	46.462	1.4	0.273	1.42	70'	EL	34.5	0.507	1.94	70'	EL	6.9	0.80	0.273	1.11	70'	EL	34.5	
		TNT7B	42.000		1.147	48.180	1.4	0.273	1.47	70'	EL	34.5	0.507	1.80	70'	EL	6.9	0.80	0.273	1.15	70'	EL	34.5	
		TNAGRIT4	43.000		1.089	46.838	1.4	0.273	1.40	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.09	70'	EL	34.5	
TNAGT5A		45.000		1.026	46.175	1.4	0.273	1.32	70'	EL	34.5	0.507	1.74	70'	EL	6.9	0.80	0.273	1.03	70'	EL	34.5		
TNAGT5B	45.000	③	1.013	45.579	1.4	0.273	1.30	70'	EL	34.5	0.507	1.66	70'	EL	6.9	0.80	0.273	1.01	70'	EL	34.5			
EMERGENCY VEHICLE (EV)	EV2	28.750		1.816	52.212	1.3	0.273	2.11	70'	EL	34.5	0.507	2.59	70'	EL	6.9	0.80	0.273	1.82	70'	EL	34.5		
	EV3	43.000	④	1.188	51.068	1.3	0.273	1.38	70'	EL	34.5	0.507	1.75	70'	EL	6.9	0.80	0.273	1.19	70'	EL	34.5		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ DC	γ DW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

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

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

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

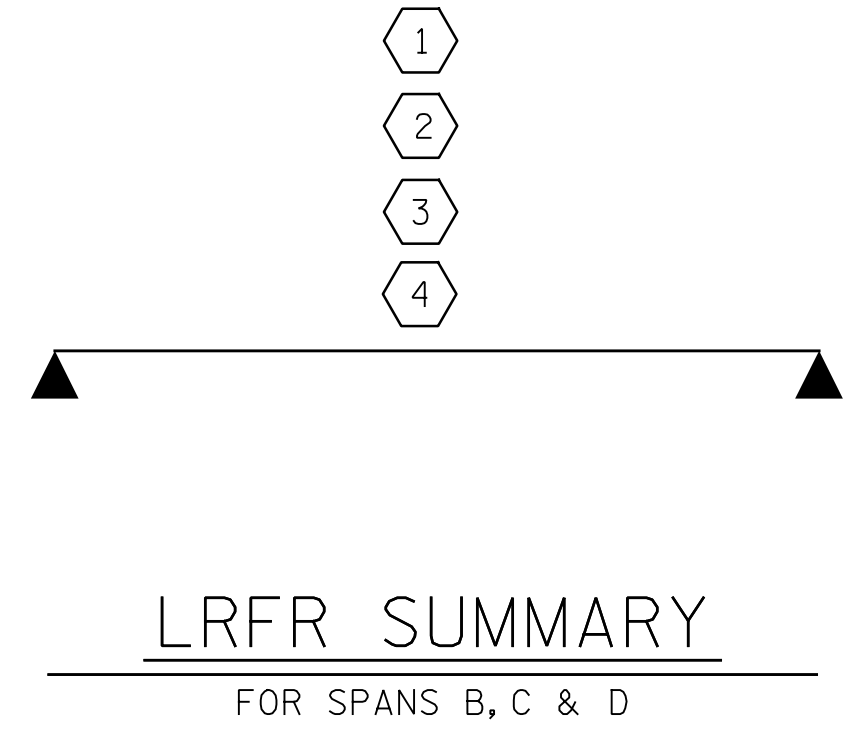
③ LEGAL LOAD RATING **

④ EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR
70' CORED SLAB UNIT
90° SKEW

(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			24

NORTH CAROLINA
PROFESSIONAL
SEAL
45237
ENGINEER
NICHOLAS D'AIUTO

DocuSigned by:
Nicholas D'AIUTO
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11/14/2023

ICE of CAROLINAS, PLLC

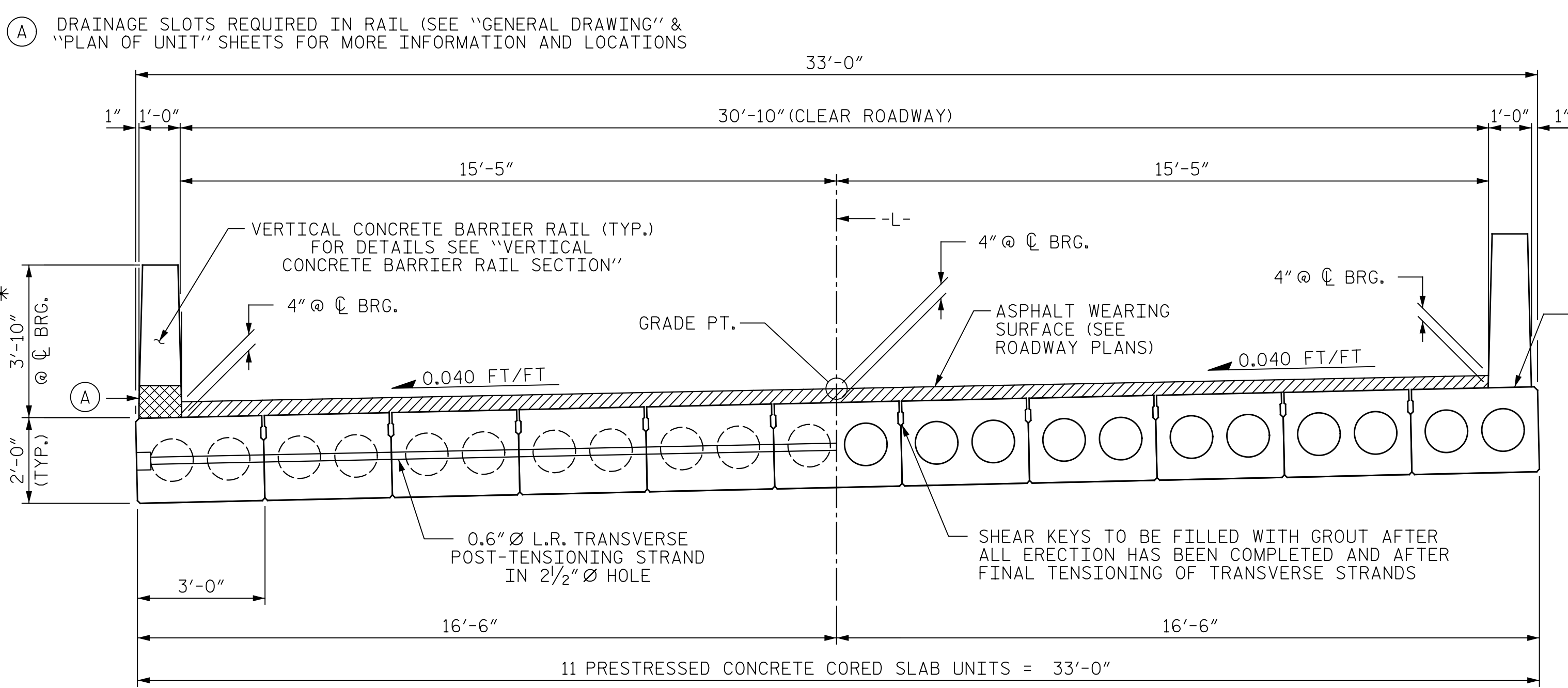
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Phone: 919-822-0333
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DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
 DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

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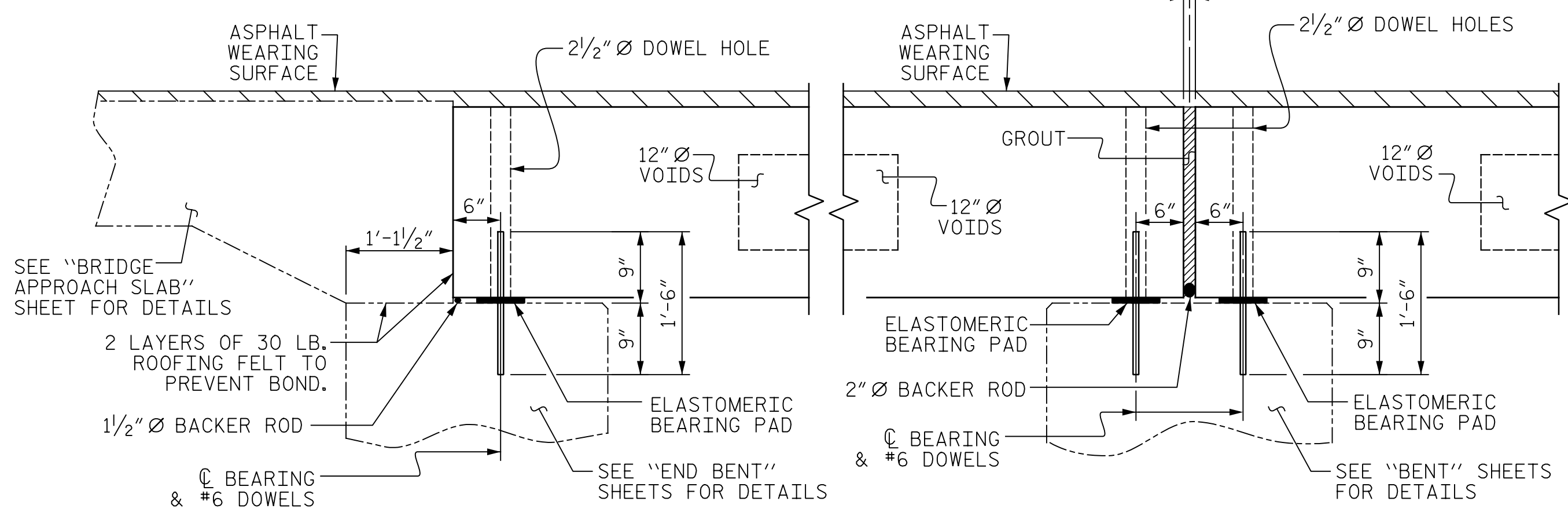


HALF SECTION AT INTERMEDIATE DIAPHRAGMS
 TYPICAL SECTION
 HALF SECTION THROUGH VOIDS

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

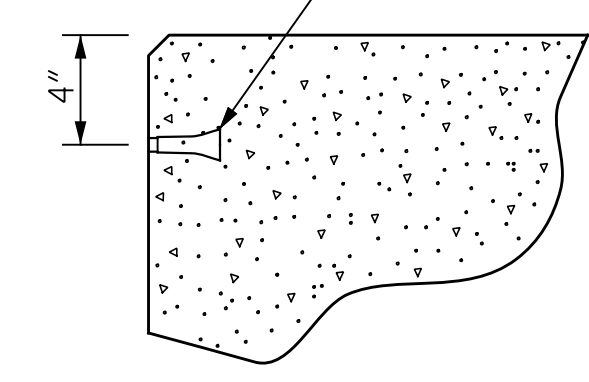
FIXED END

FIXED END AT BENT

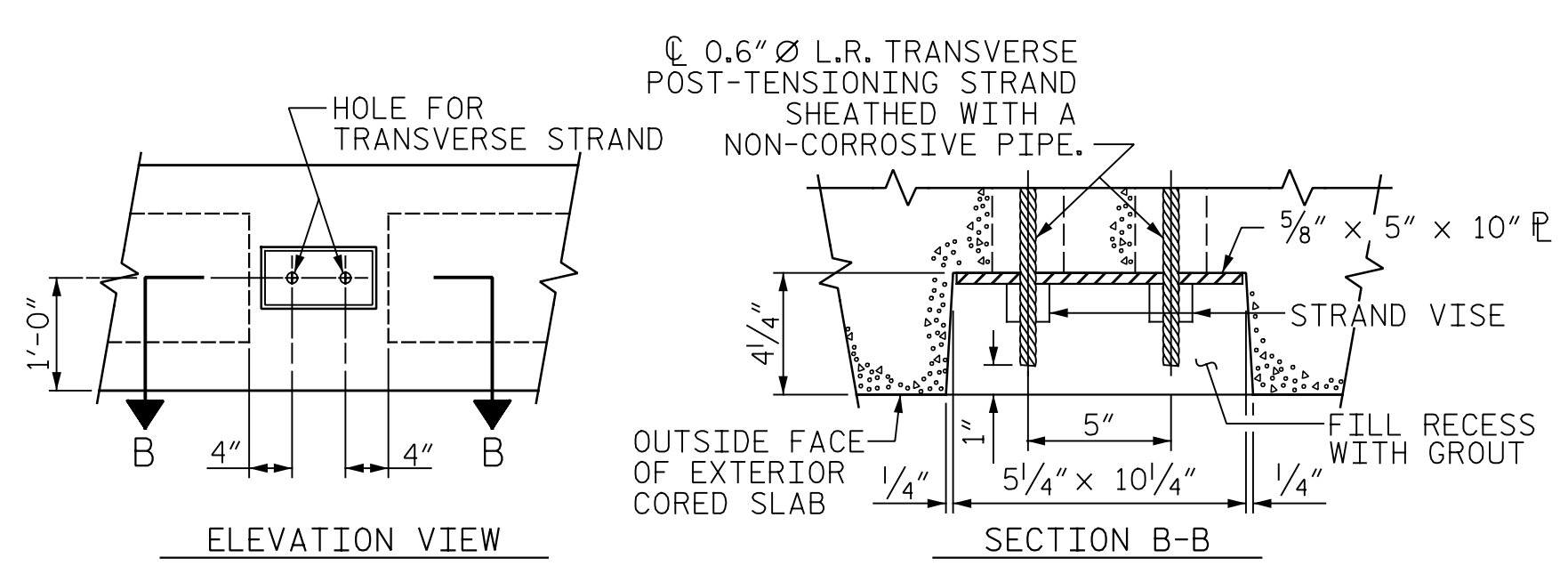


SECTION AT END BENT SECTION AT BENT

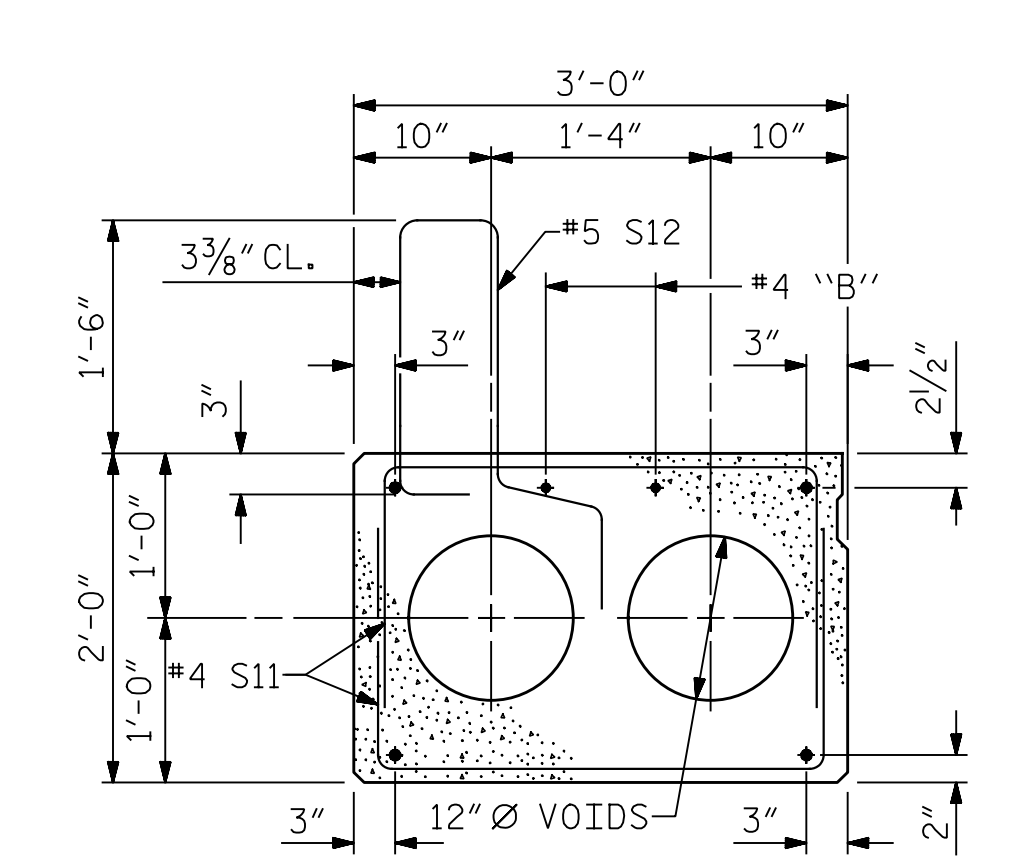
PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8" SIZE TO BE DETERMINED BY CONTRACTOR.



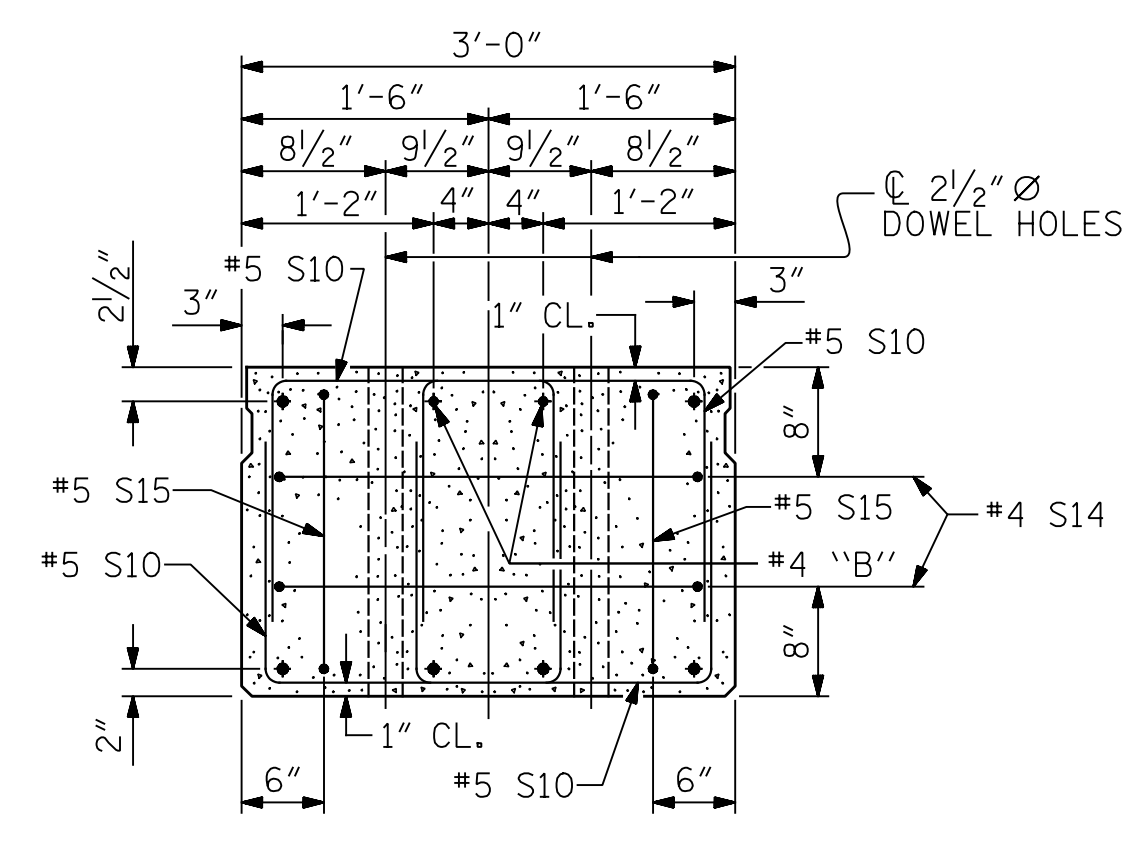
THREADED INSERT DETAIL



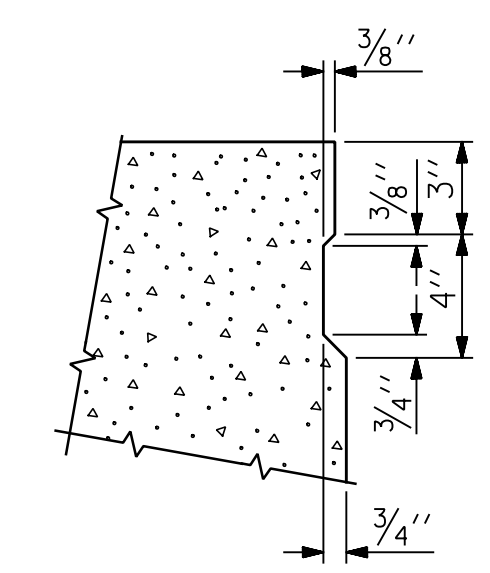
ELEVATION VIEW SECTION B-B
GROUTED RECESS AT END OF POST-TENSIONED STRAND-CORED SLABS



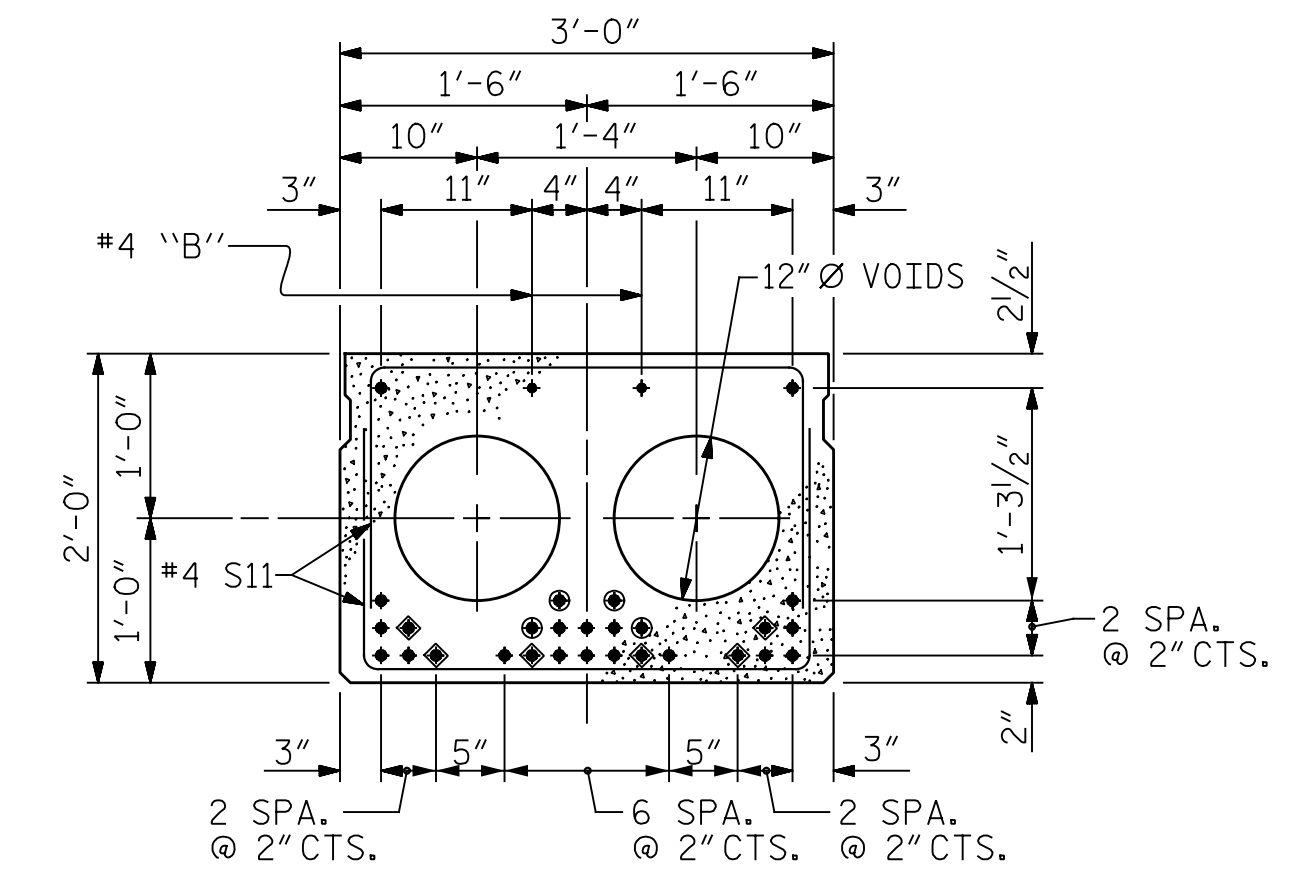
EXTERIOR SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)



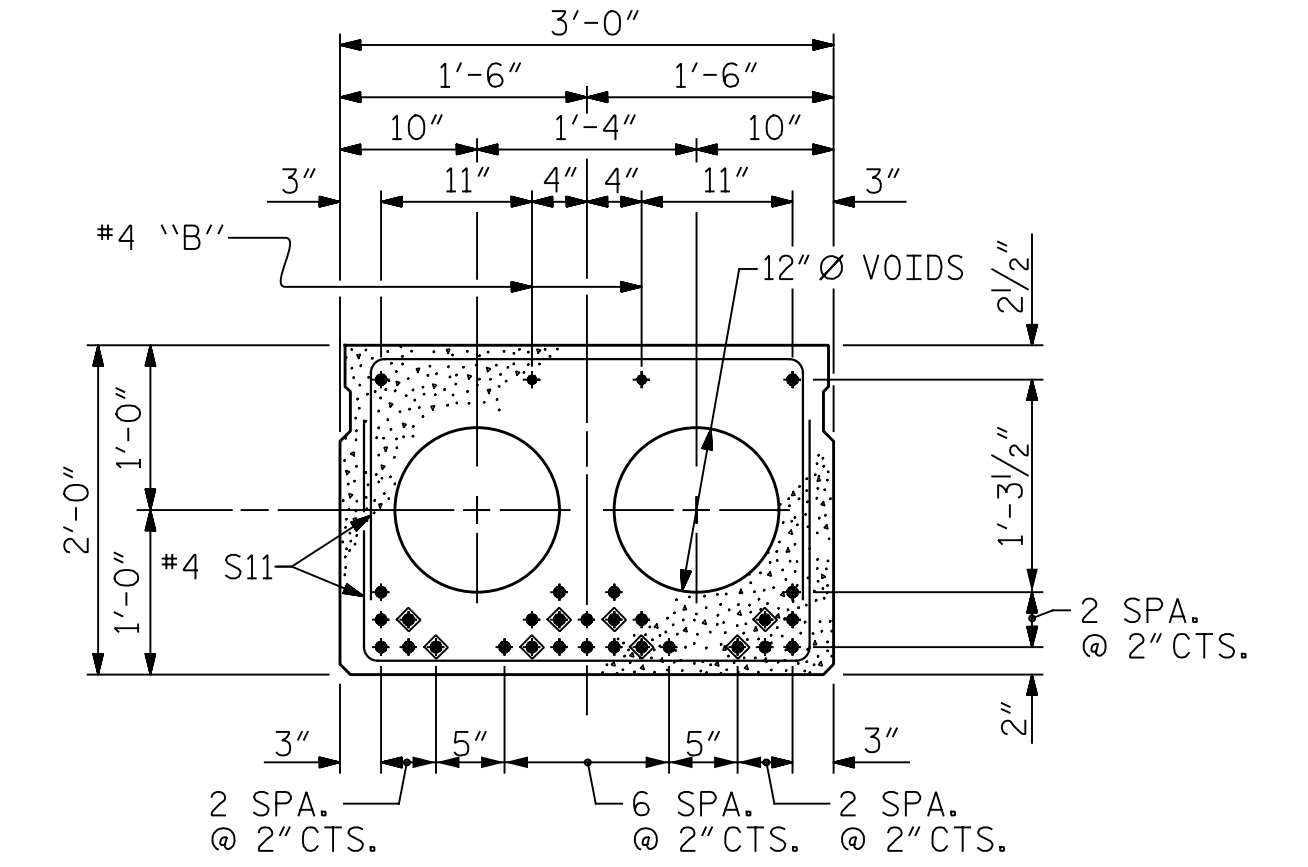
END ELEVATION
SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



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



INTERIOR SLAB SECTION (60' UNIT)
(24 STRANDS REQUIRED)



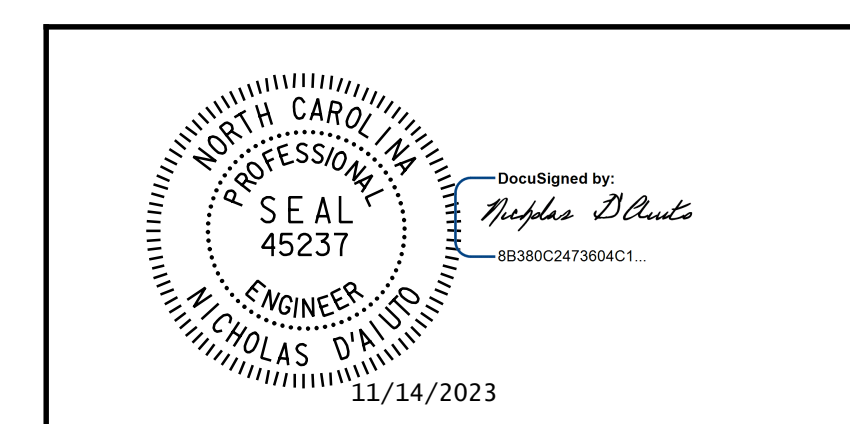
INTERIOR SLAB SECTION (70' UNIT)
(28 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

- ◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
- OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

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STANLY COUNTY
STATION: 17+66.00 -L-



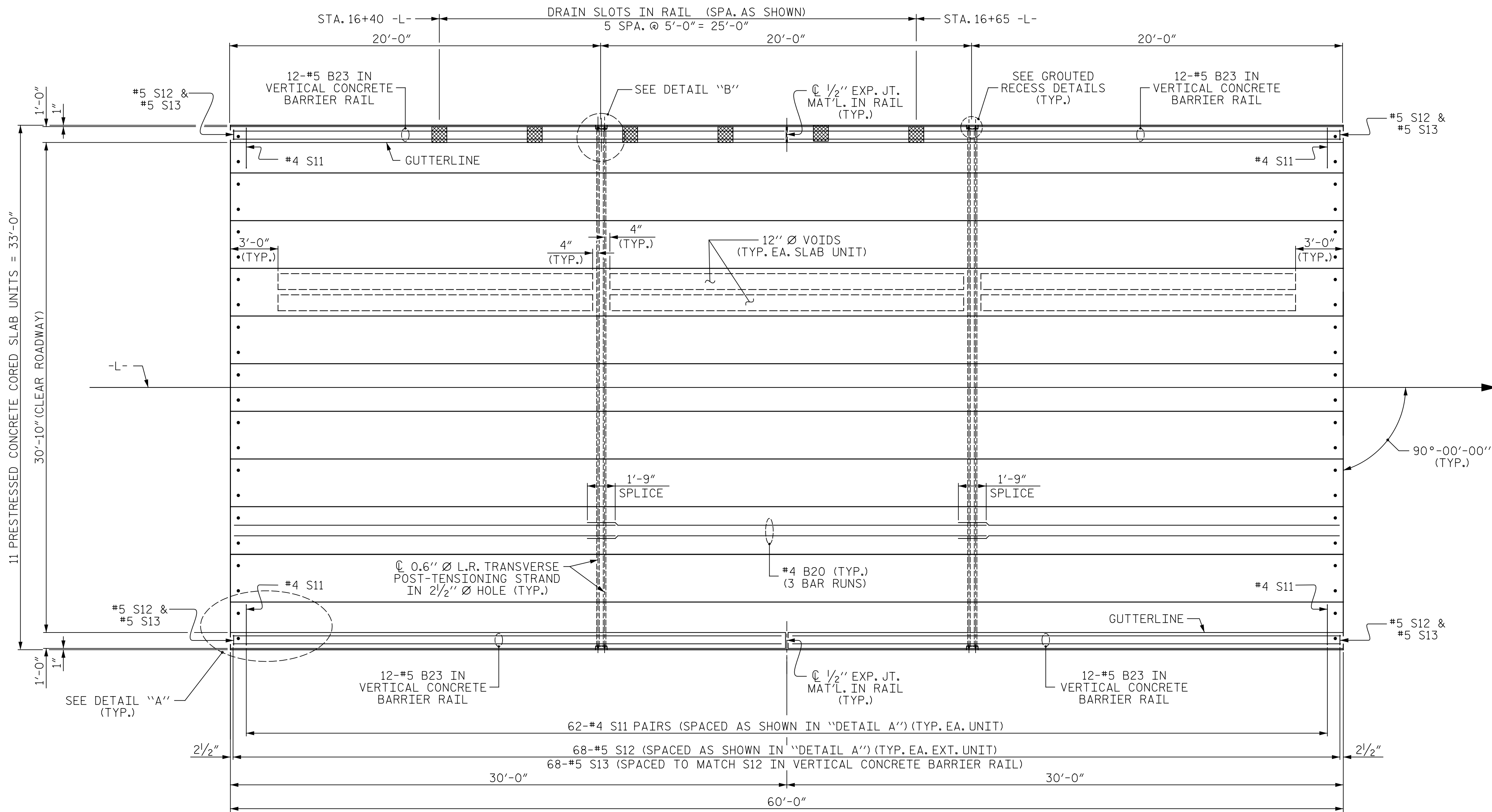
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT

DRAWN BY :	J. N. AUSTIN	DATE :	8-10-22
CHECKED BY :	N. D'AIUTO	DATE :	8-12-22
DESIGN E.O.R. :	N. D'AIUTO	DATE :	1-4-23

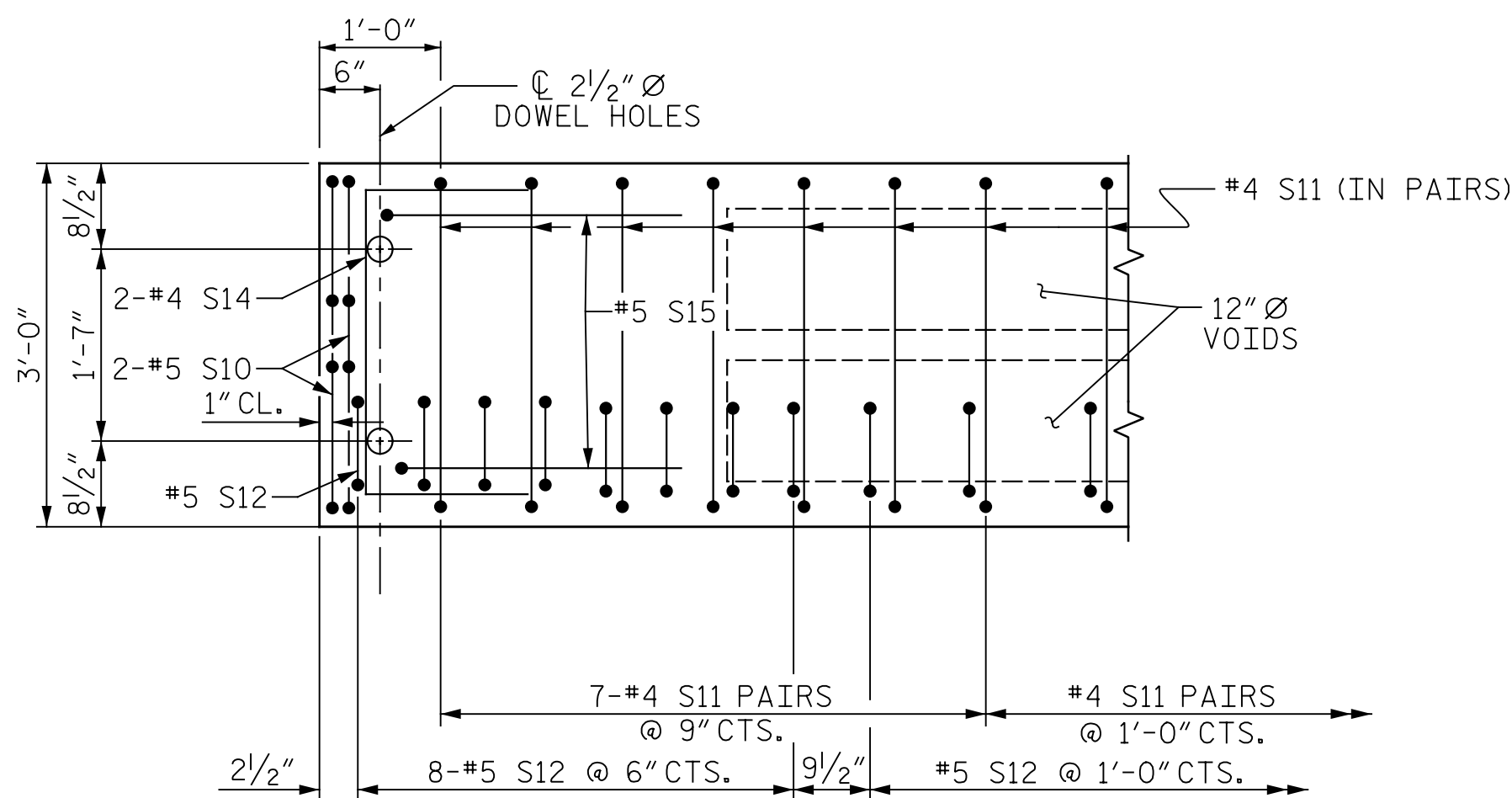
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1			3			24
2			4			

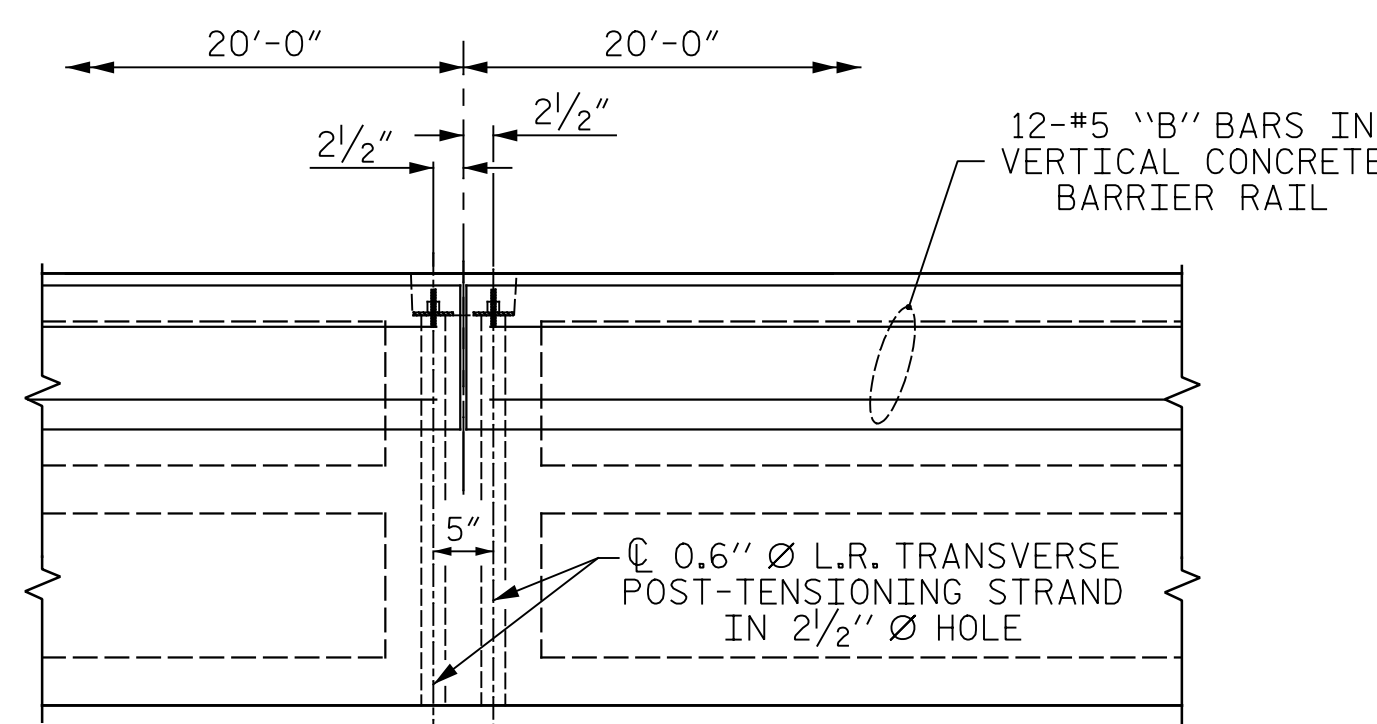


PLAN OF UNIT



DETAIL A

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

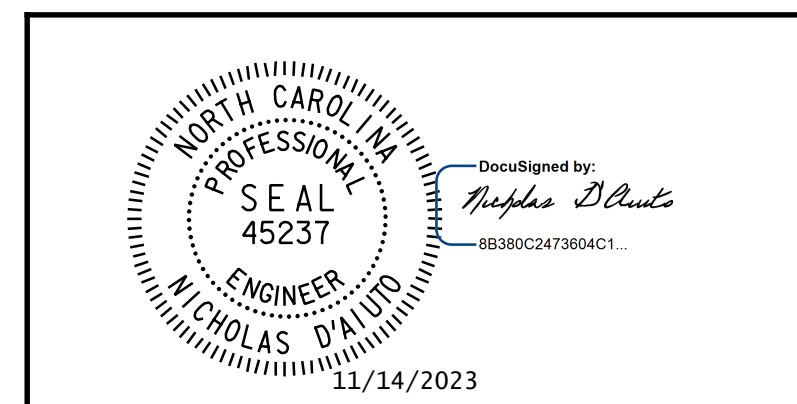


DETAIL B

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

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF 60' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW



REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
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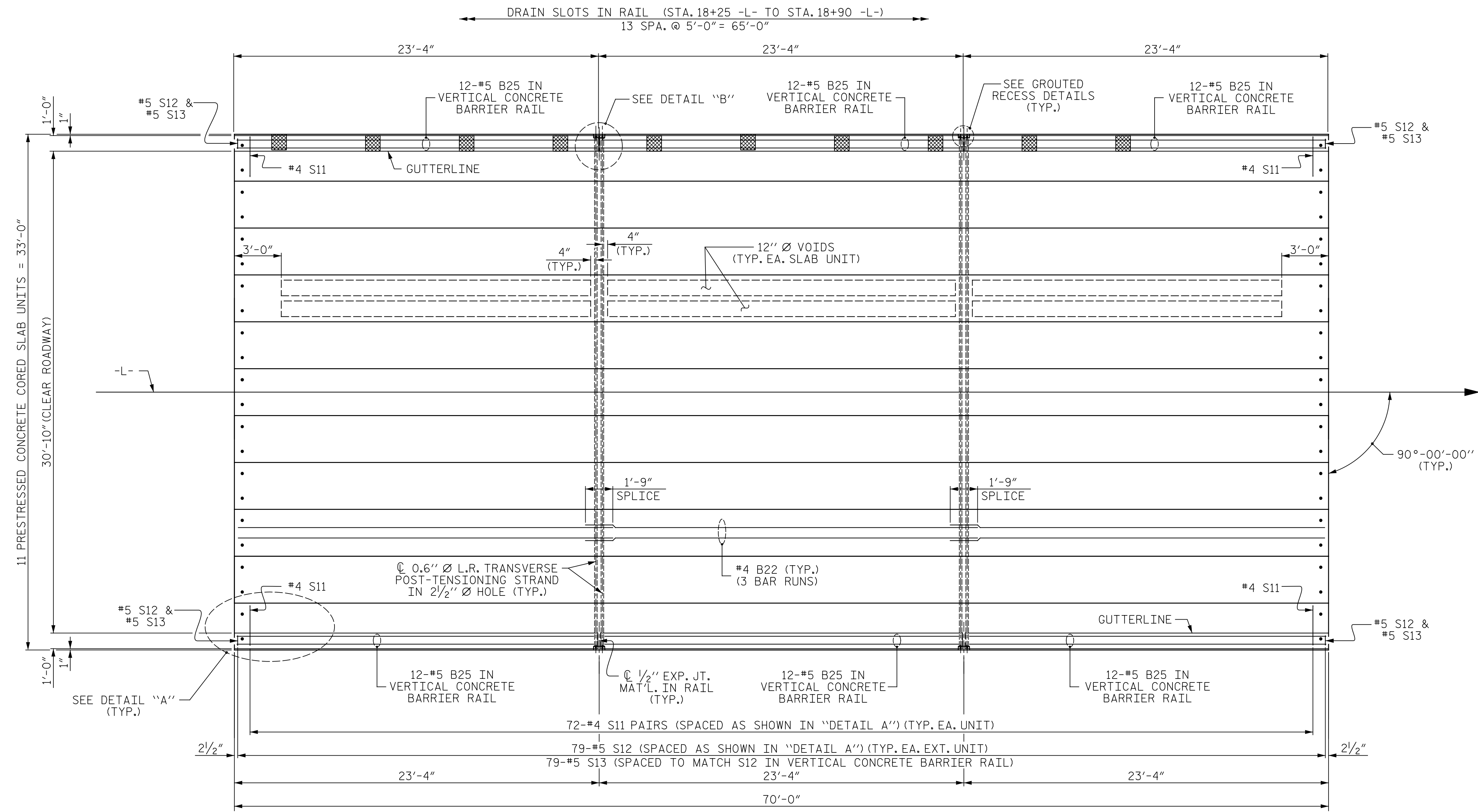
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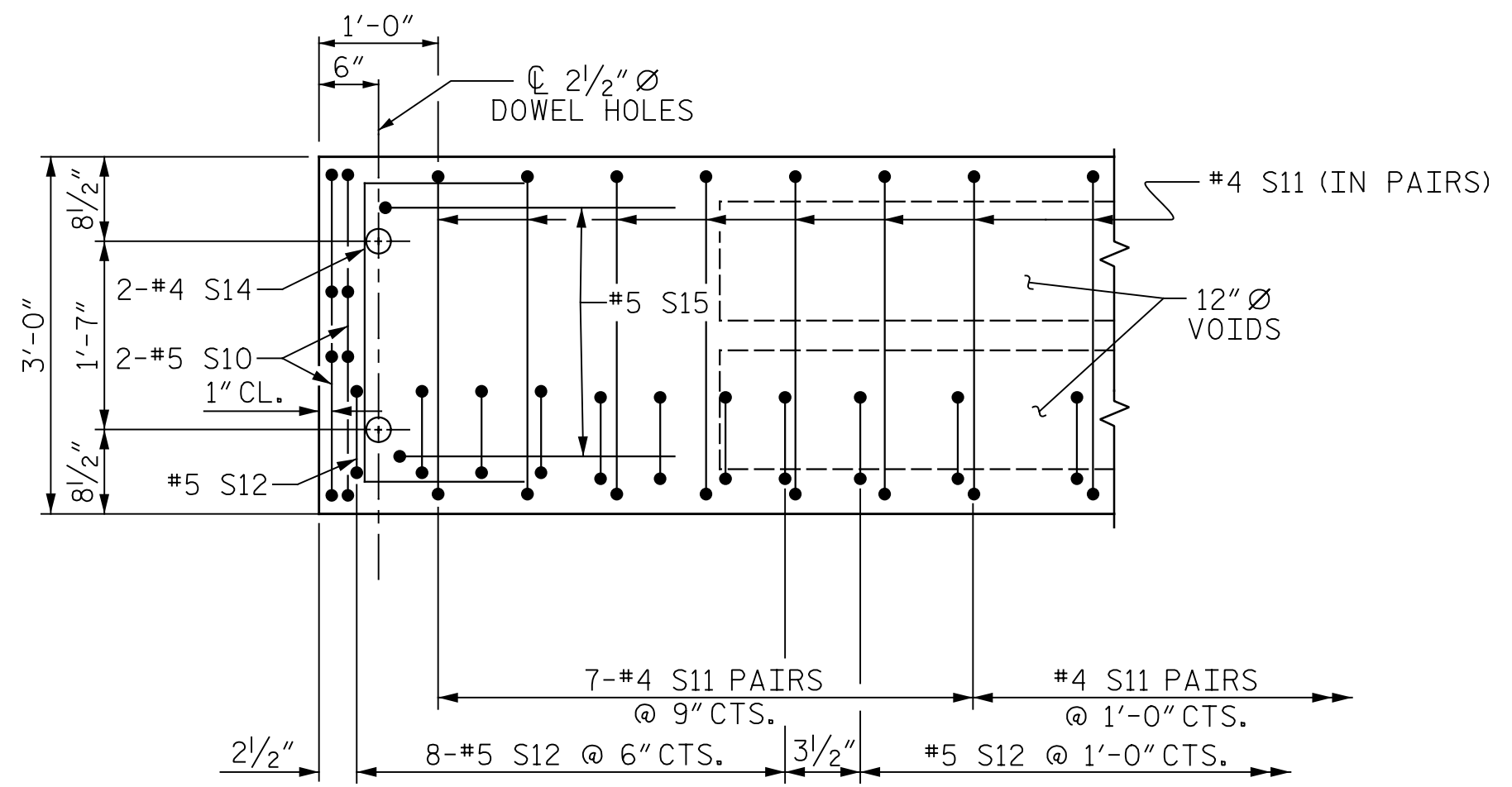
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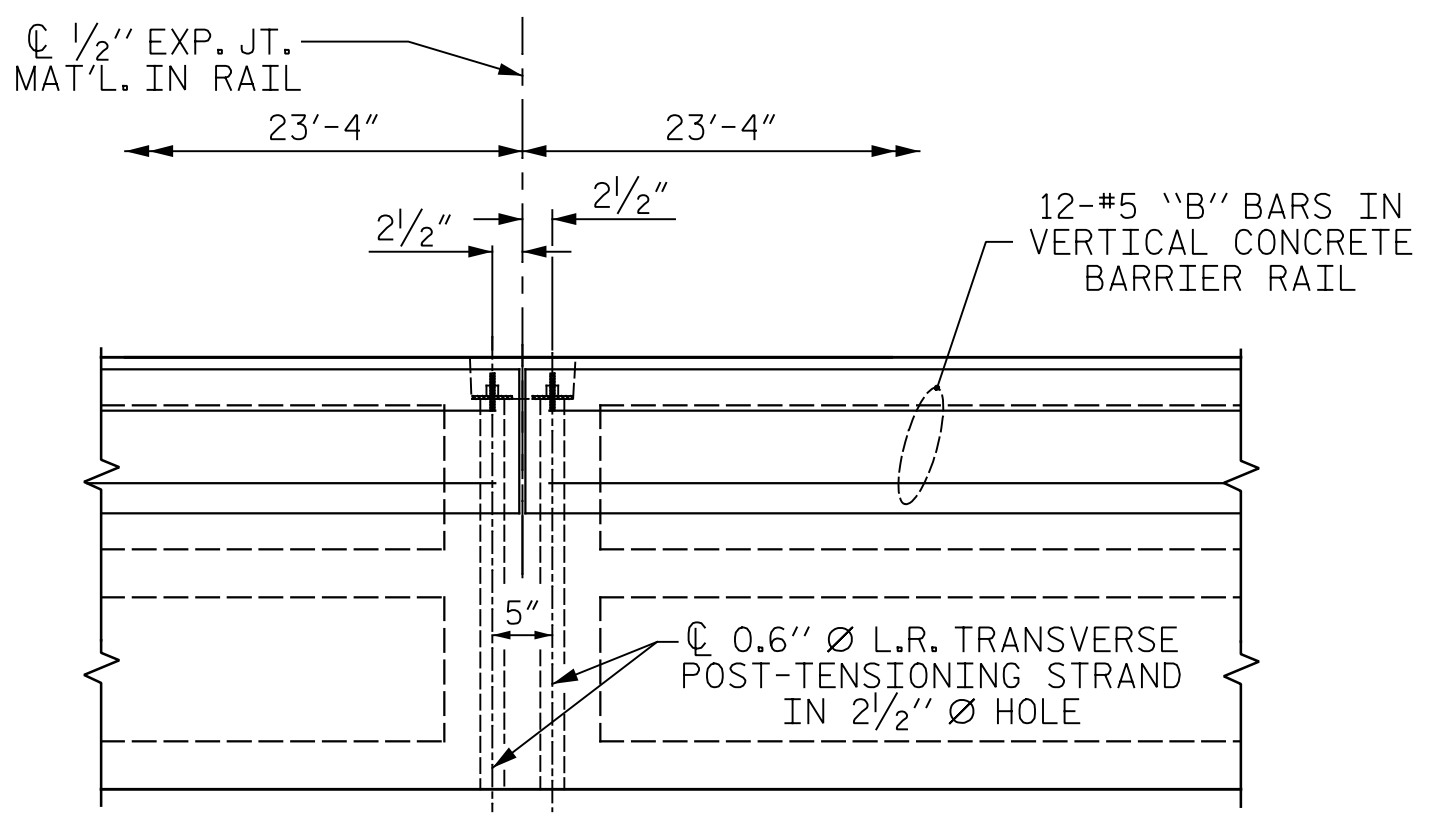


PLAN OF UNIT



DETAIL A

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

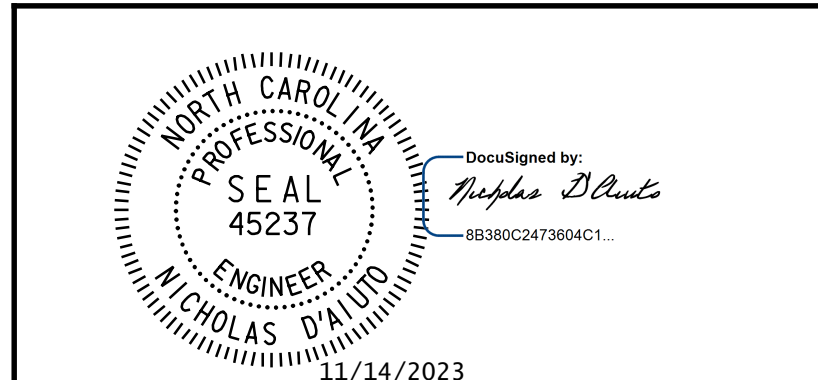


DETAIL B

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

PROJECT NO. B-6046
 STANLY COUNTY
 STATION: 17+66.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 PLAN OF 70' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW



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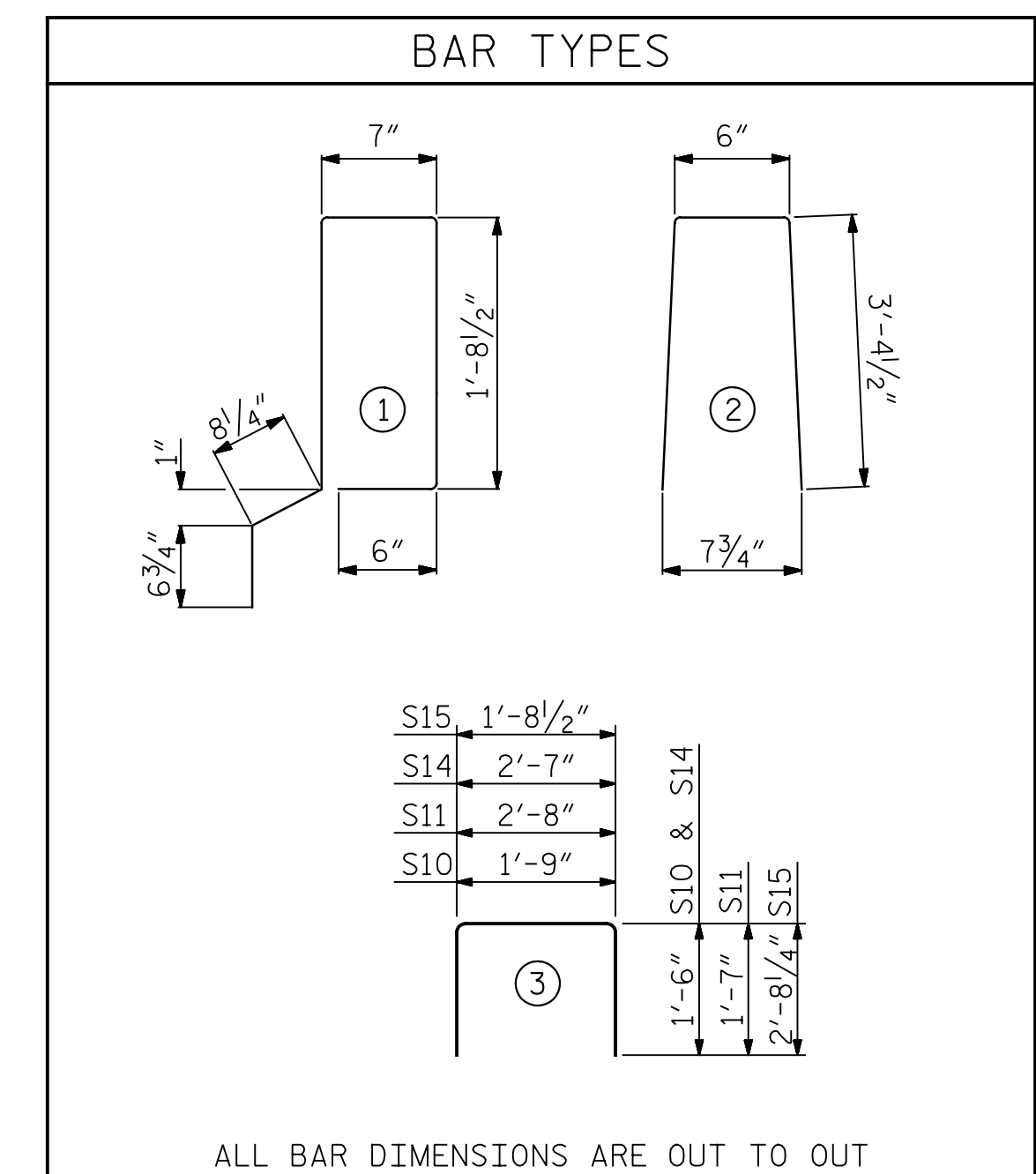
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BILL OF MATERIAL FOR ONE 60' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B20	6	#4	STR	21'-2"	85	21'-2"	85
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	124	#4	3	5'-10"	483	5'-10"	483
*S12	68	#5	1	5'-9"	408		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	653		653
* EPOXY COATED REINFORCING STEEL				LBS.	408		
6000 P.S.I. CONCRETE				CU. YDS.	10.2		10.2
0.6" Ø L.R. STRANDS				No.	24		24

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B22	6	#4	STR	24'-6"	98	24'-6"	98
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	144	#4	3	5'-10"	561	5'-10"	561
*S12	79	#5	1	5'-9"	474		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL				LBS.	744		744
* EPOXY COATED REINFORCING STEEL				LBS.	474		
7000 P.S.I. CONCRETE				CU. YDS.	11.8		11.8
0.6" Ø L.R. STRANDS				No.	28		28



ALL BAR DIMENSIONS ARE OUT TO OUT

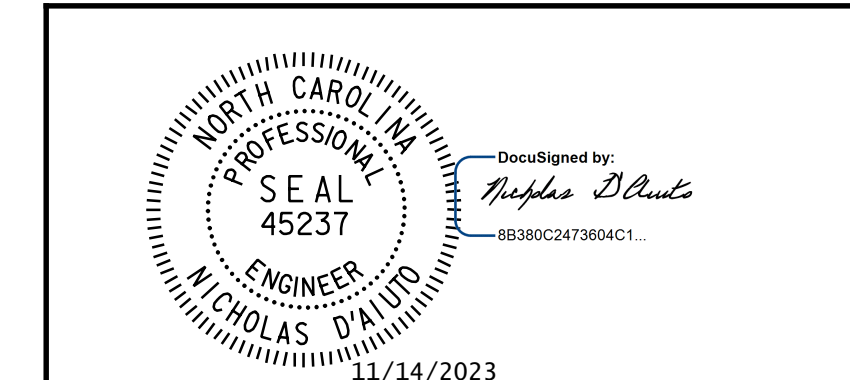
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
60' UNIT						
*B23	48	48	#5	STR	29'-7"	1482
*S13	136	136	#5	2	7'-3"	1028
* EPOXY COATED REINFORCING STEEL				LBS.		2510
CLASS AA CONCRETE				CU. YDS.		15.7
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		120.13

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
70' UNIT						
*B25	72	216	#5	STR	22'-11"	5163
*S13	158	474	#5	2	7'-3"	3584
* EPOXY COATED REINFORCING STEEL				LBS.		8747
CLASS AA CONCRETE				CU. YDS.		54.8
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		420.63

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
60' UNIT			
EXTERIOR C.S.	2	60'-0"	120'-0"
INTERIOR C.S.	9	60'-0"	540'-0"
TOTAL	11		660'-0"

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
70' UNIT			
EXTERIOR C.S.	6	70'-0"	420'-0"
INTERIOR C.S.	27	70'-0"	1890'-0"
TOTAL	33		2310'-0"

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STANLY COUNTY
 STATION: 17+66.00 -L-



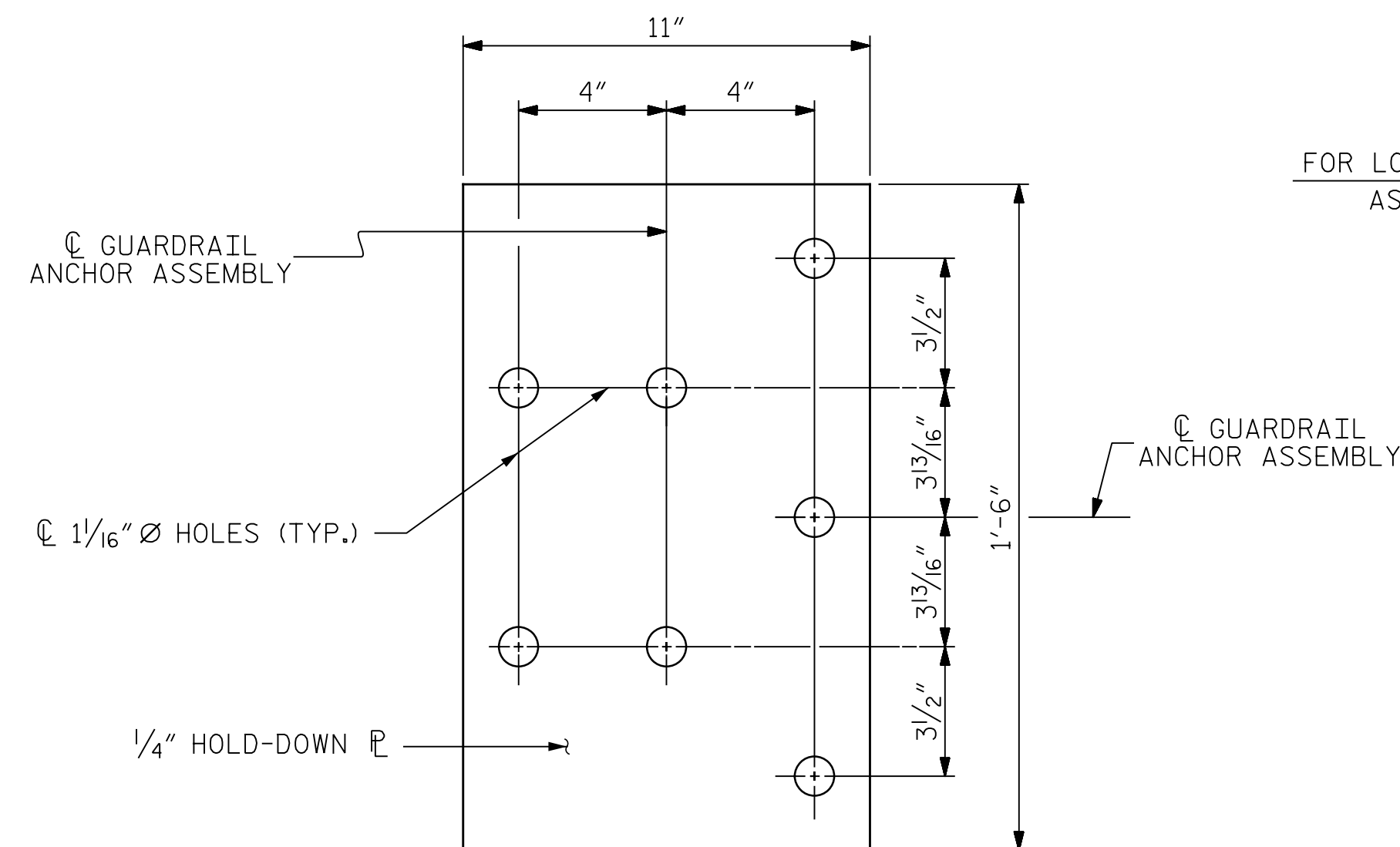
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 3'-0" X 2'-0"
 PRESTRESSED CONCRETE
 CORED SLAB UNIT

DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
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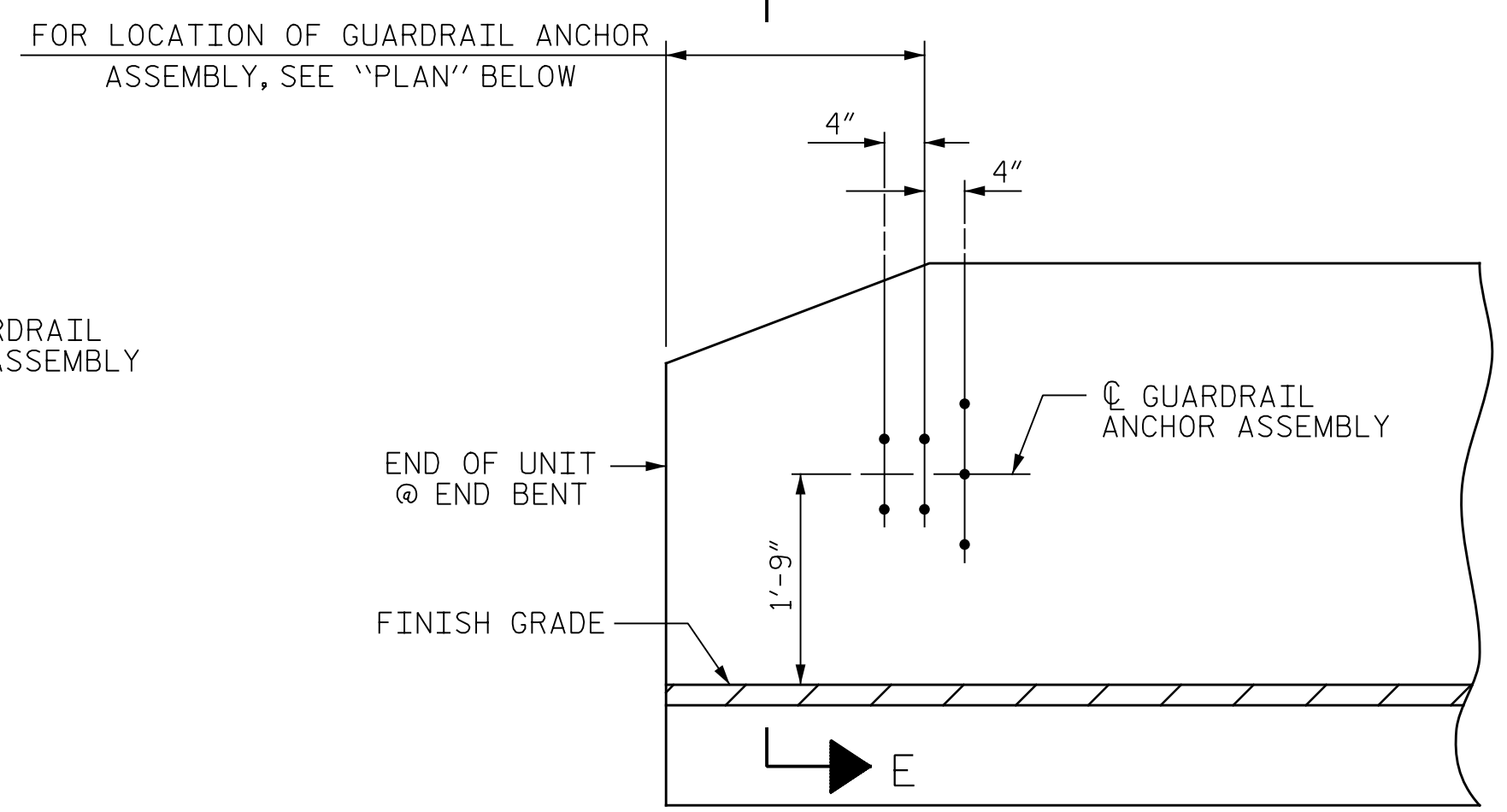
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NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		
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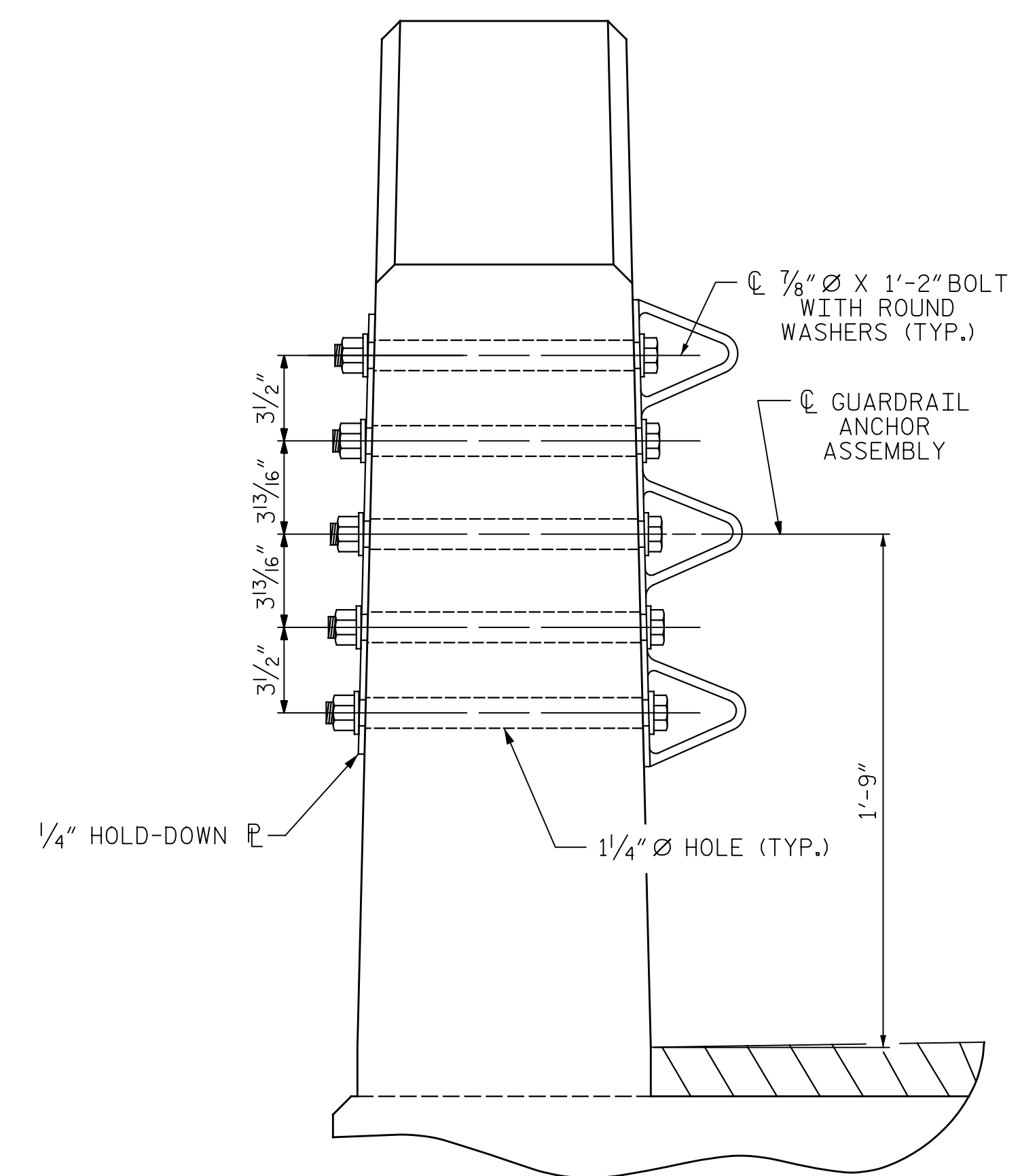
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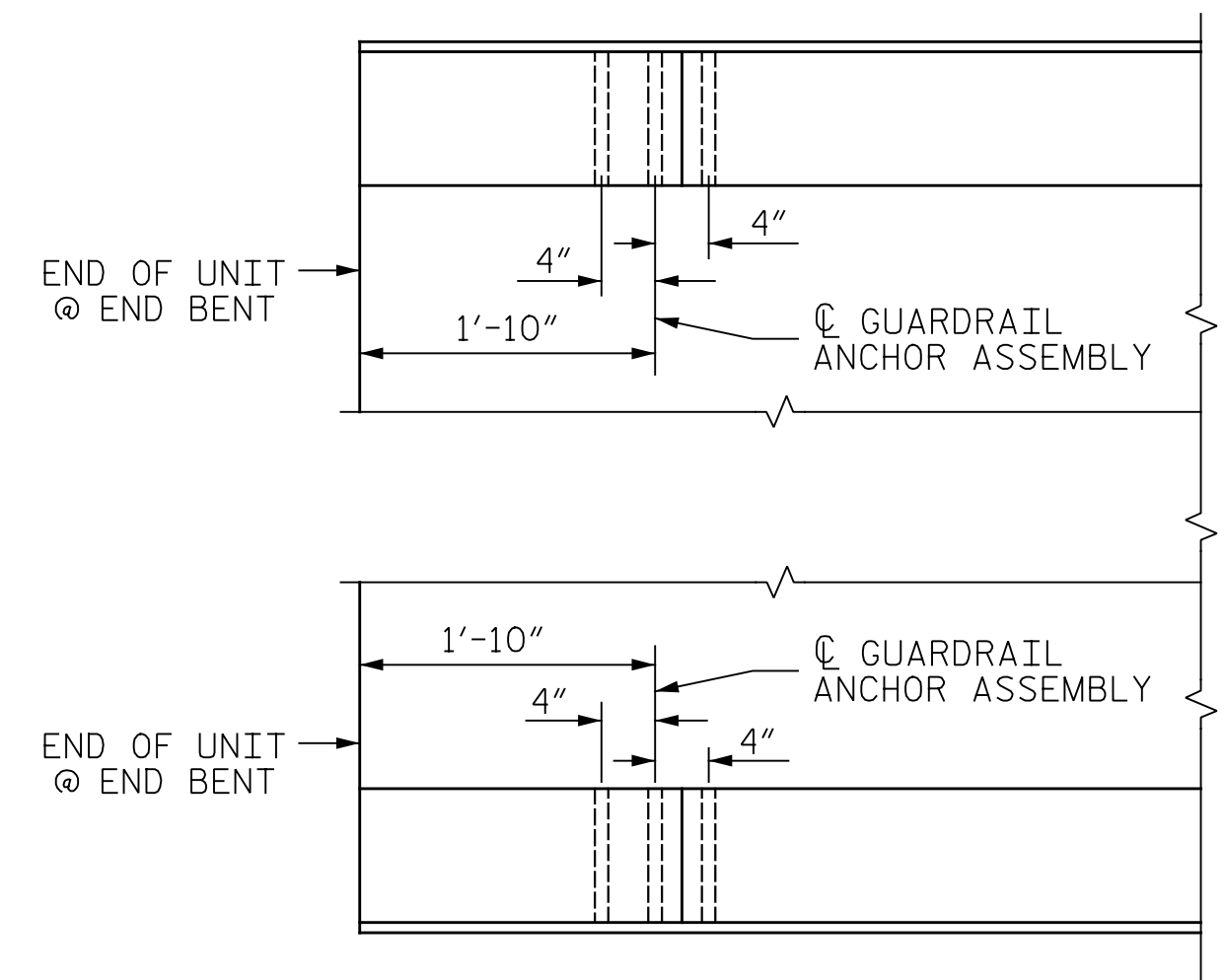
PLAN



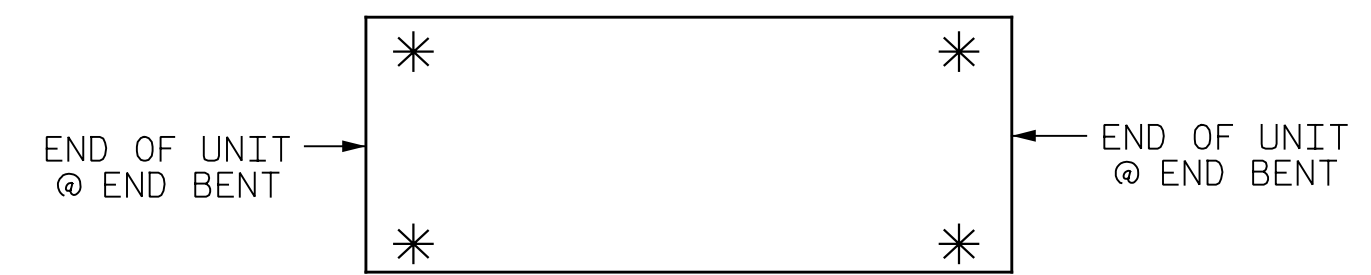
ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



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

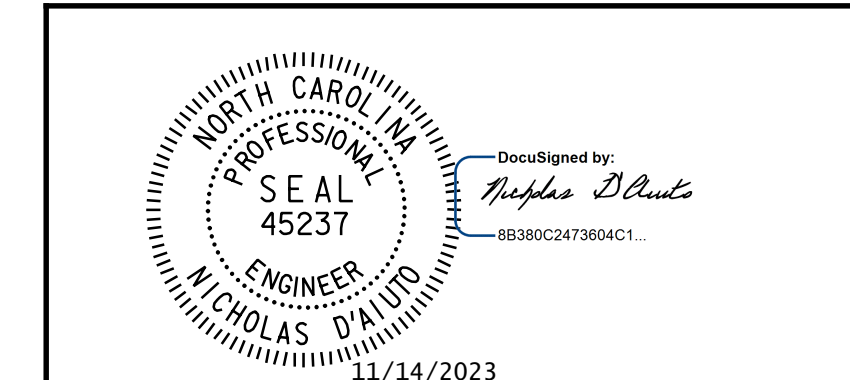


SKETCH SHOWING POINTS OF ATTACHMENT
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

NOTES

- THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 1/8" Ø BOLTS WITH NUTS AND WASHERS.
- THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.
- BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
- THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.
- AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.
- THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.
- THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.
- THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			24

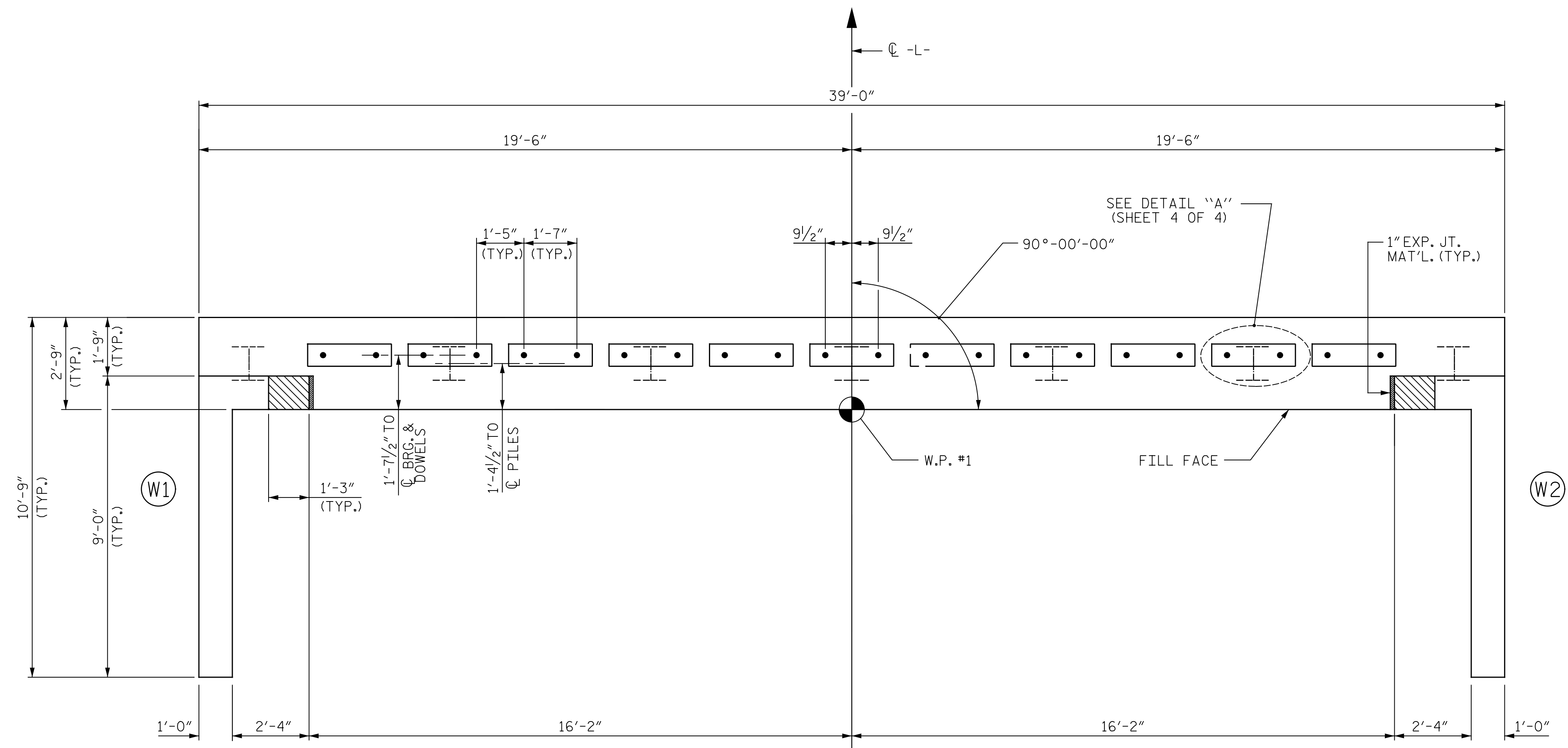
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CHECKED BY :	N. D'AIUTO	DATE :	8-12-22
DESIGN E.O.R. :	N. D'AIUTO	DATE :	1-4-23

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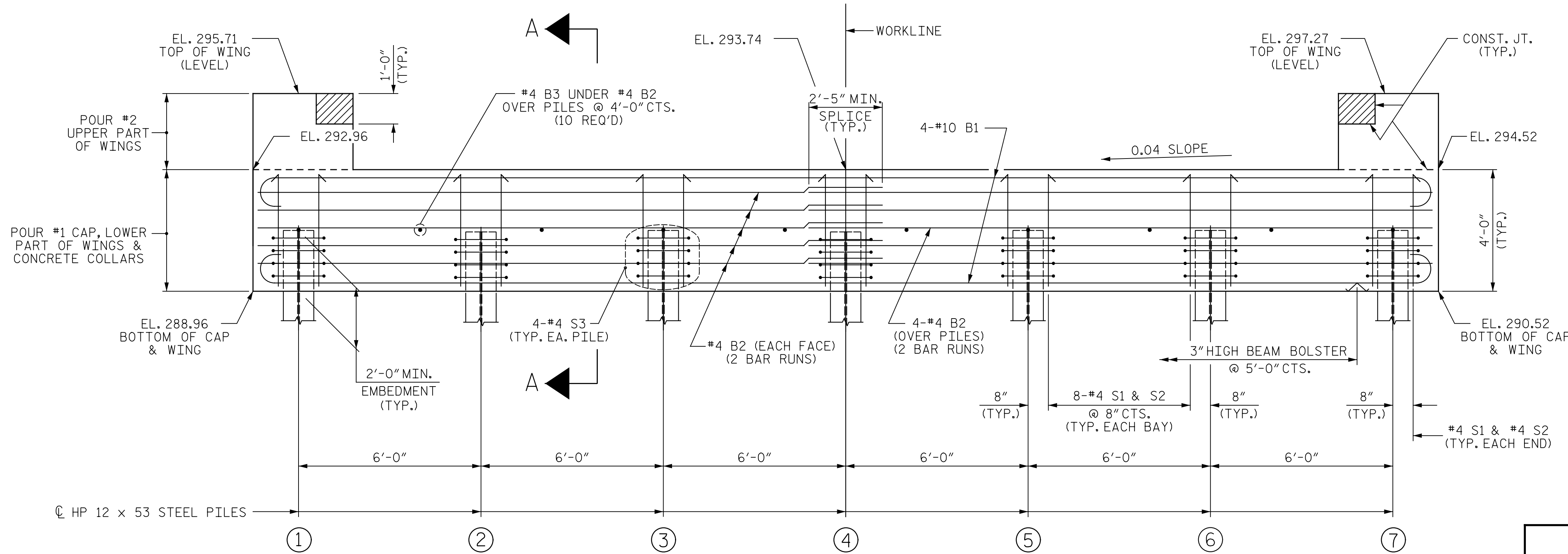
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NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
 FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.
 FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



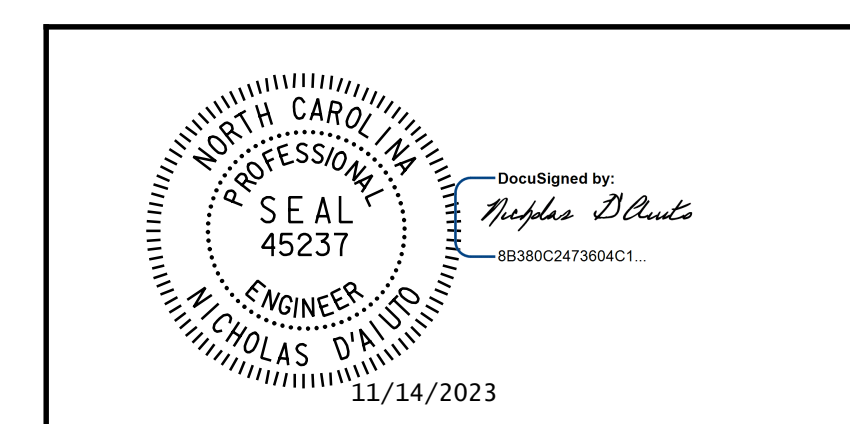
ELEVATION

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

TOP OF PILE ELEVATIONS	
①	291.04
②	291.28
③	291.52
④	291.76
⑤	292.00
⑥	292.24
⑦	292.48

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-
 SHEET 1 OF 4

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



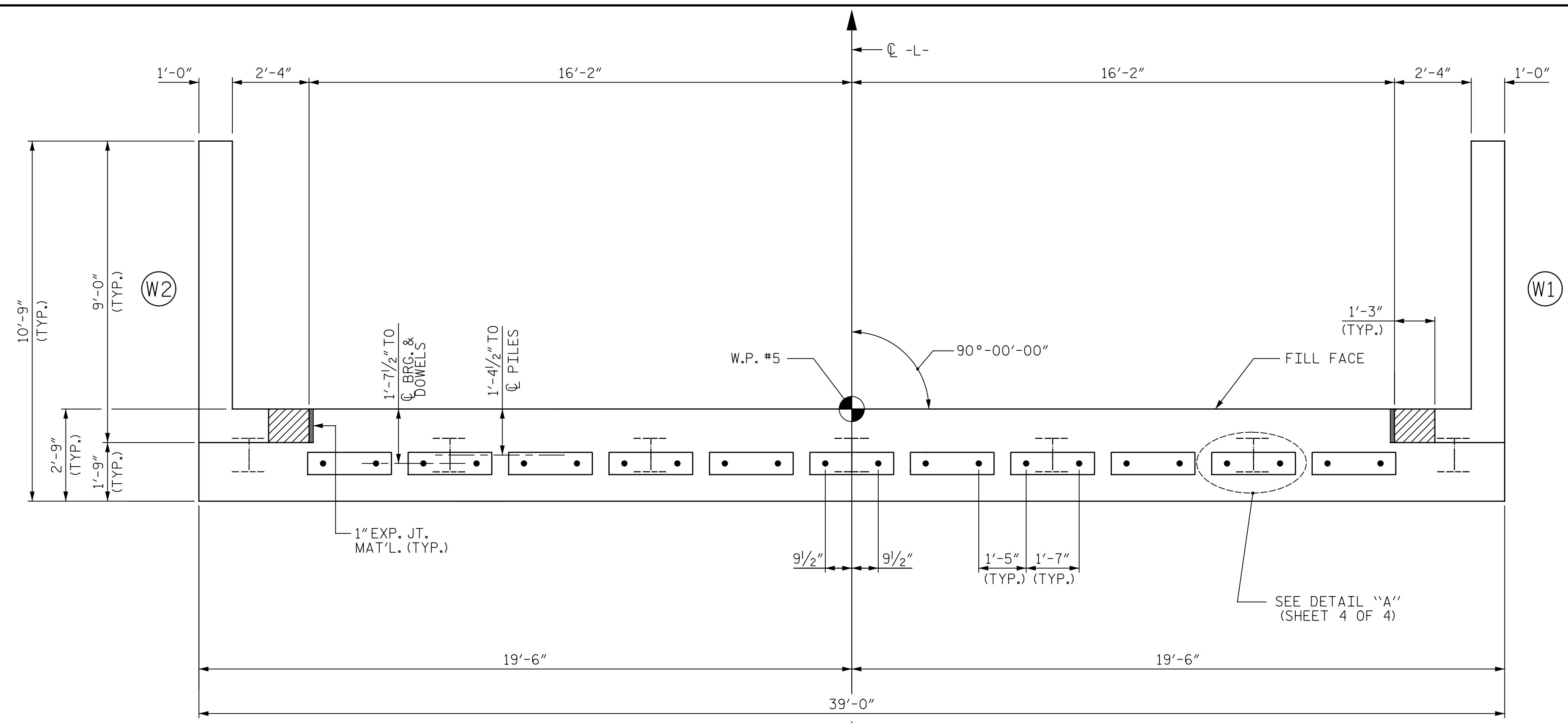
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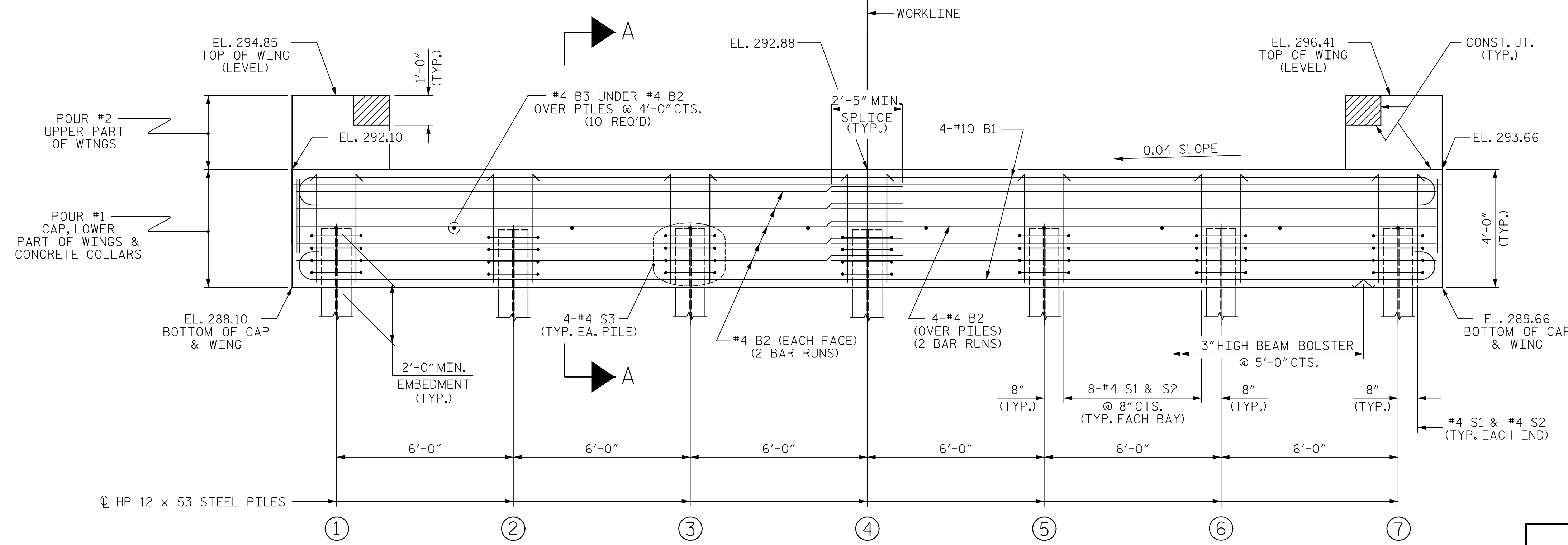
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1			3			TOTAL SHEETS
2			4			24

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 User Name: jim.austin



PLAN



ELEVATION

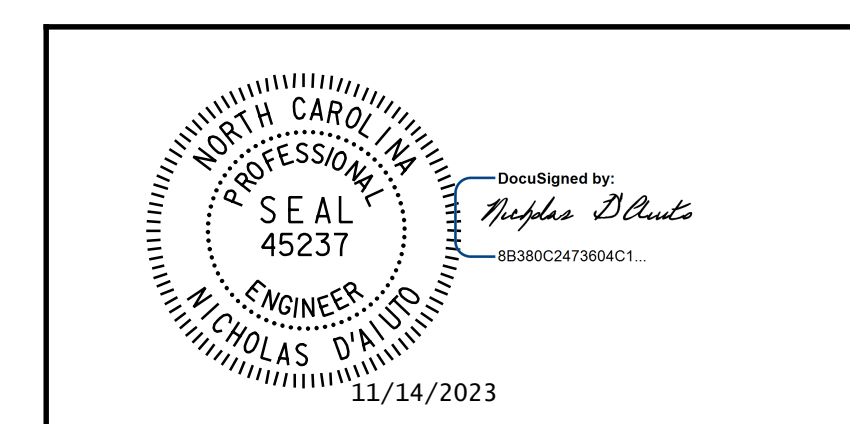
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

NOTES:
 STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.
 THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.
 FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.
 FOR WING DETAILS, SEE SHEET 3 OF 4.

TOP OF PILE ELEVATIONS	
①	290.18
②	290.42
③	290.66
④	290.90
⑤	291.14
⑥	291.38
⑦	291.62

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-
 SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT 2



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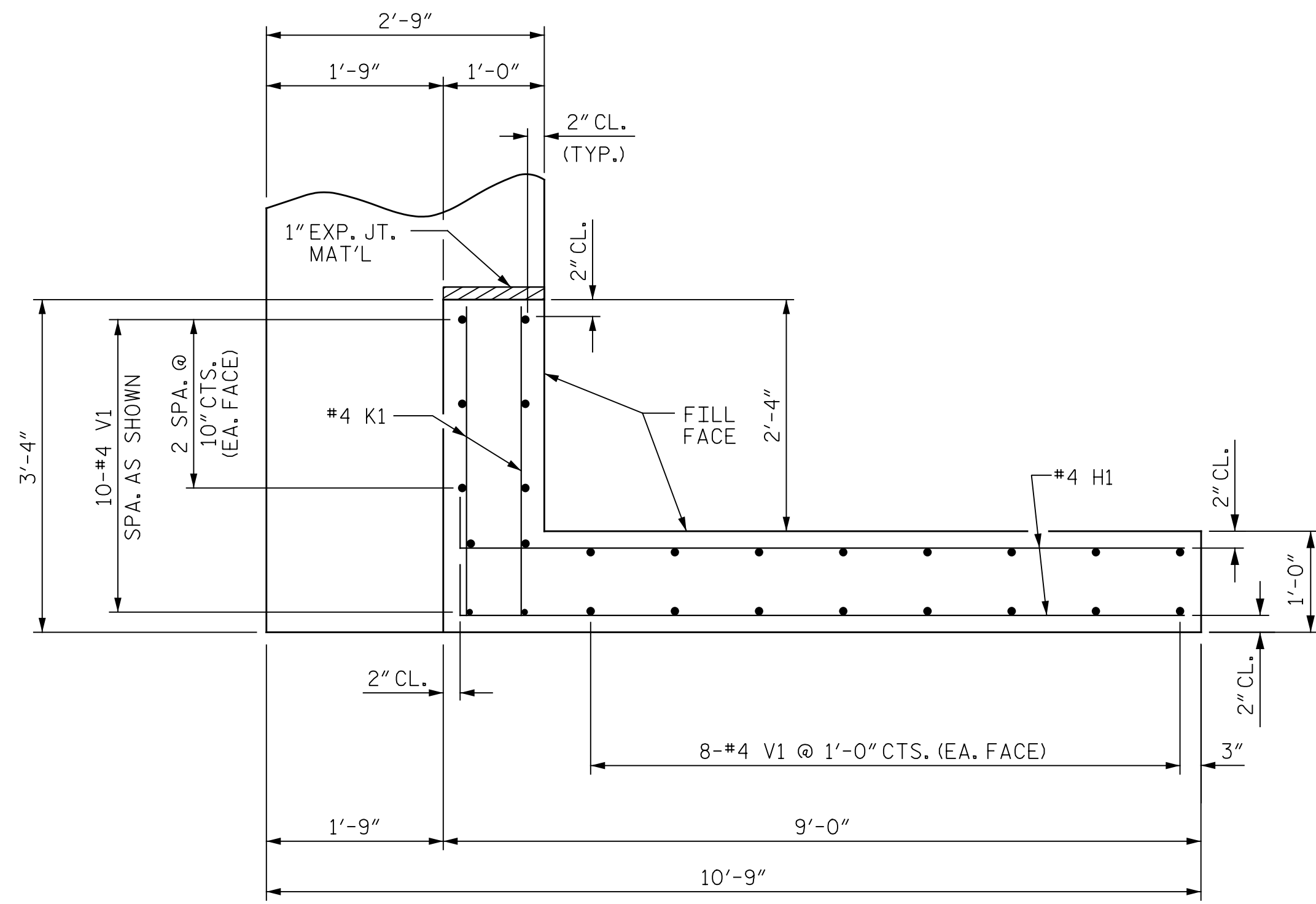
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 Raleigh, North Carolina 27609
 Phone: 919-822-0333
 License #: P-0999

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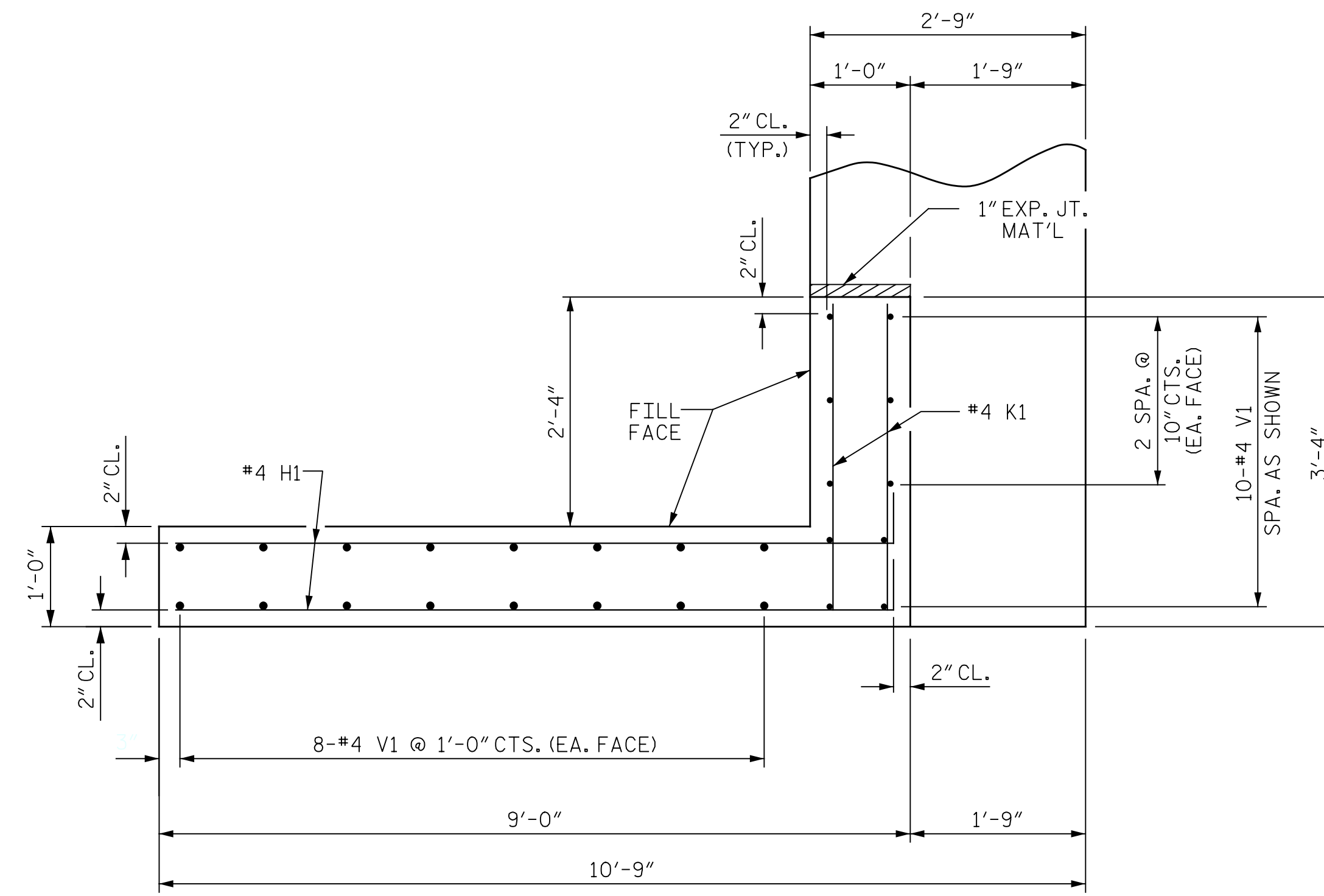
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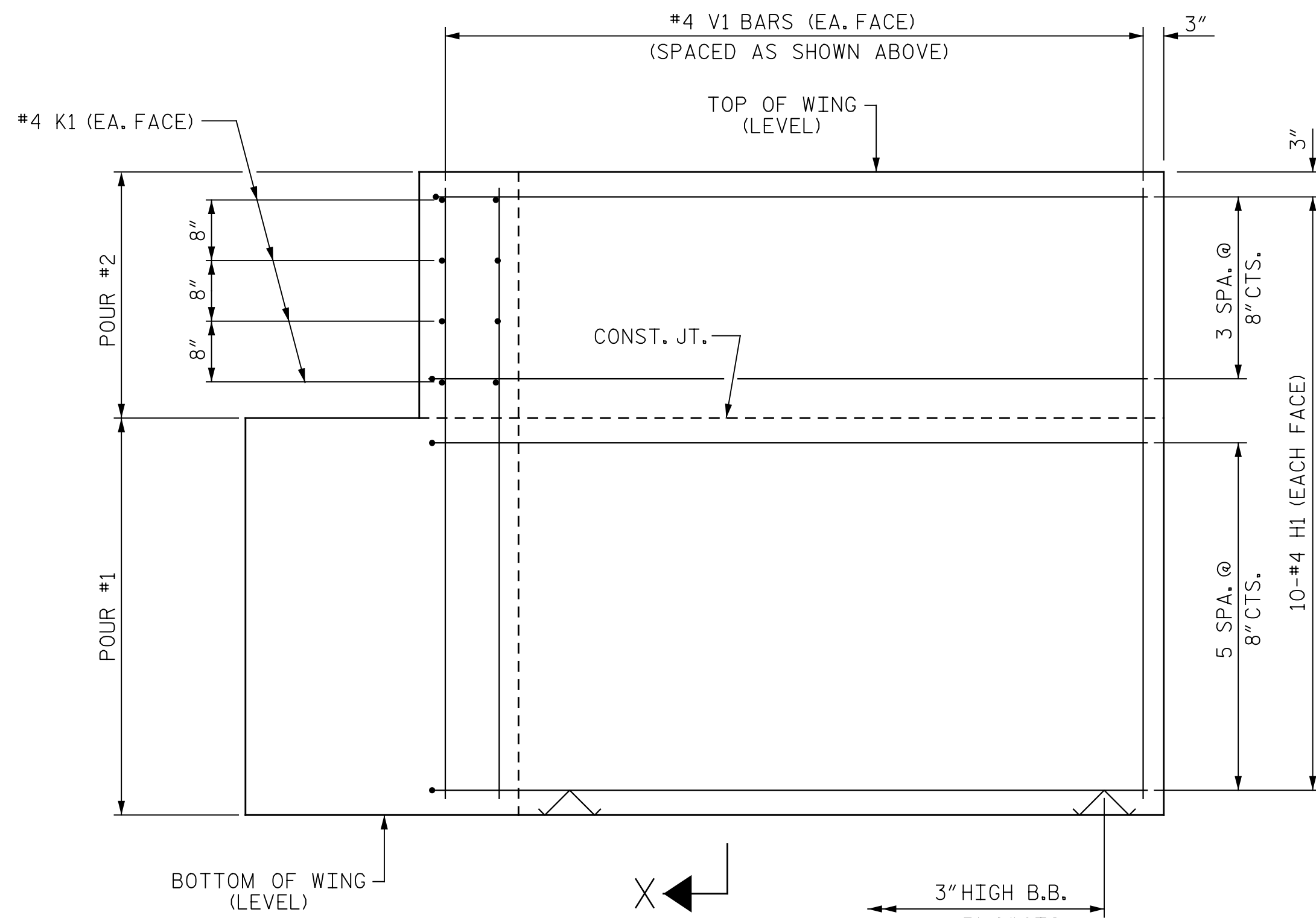
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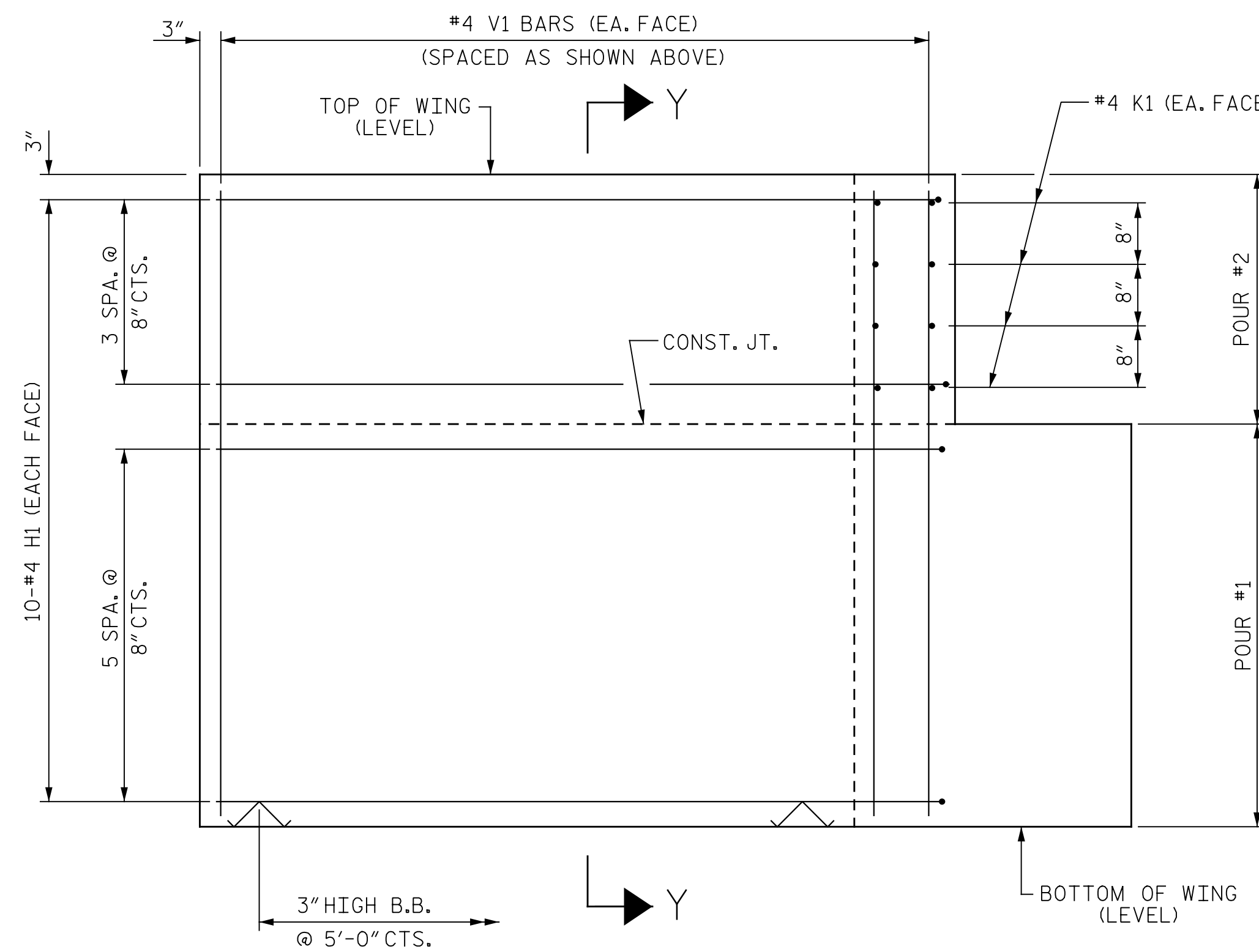
PLAN OF WING (W1)



PLAN OF WING (W2)

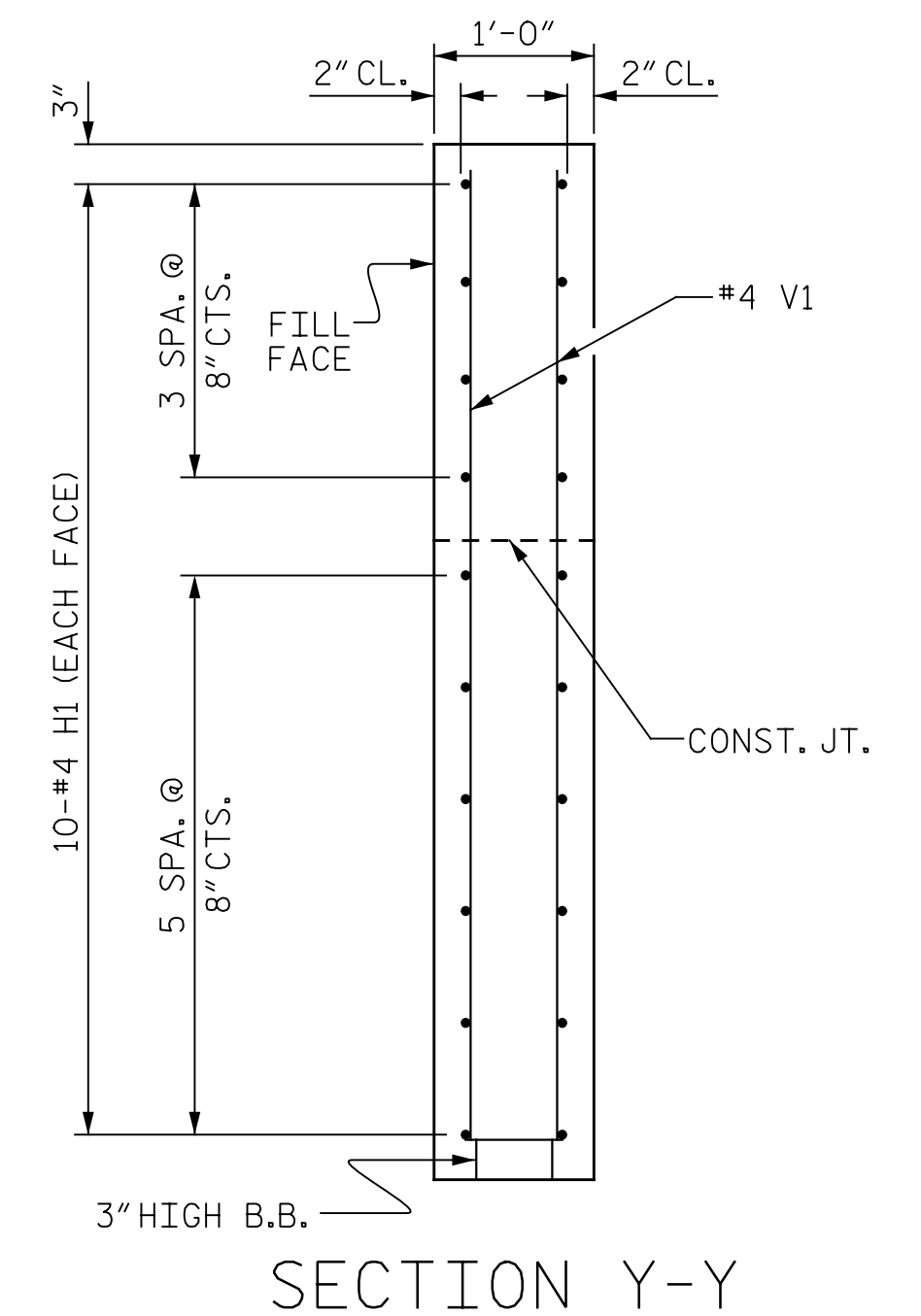
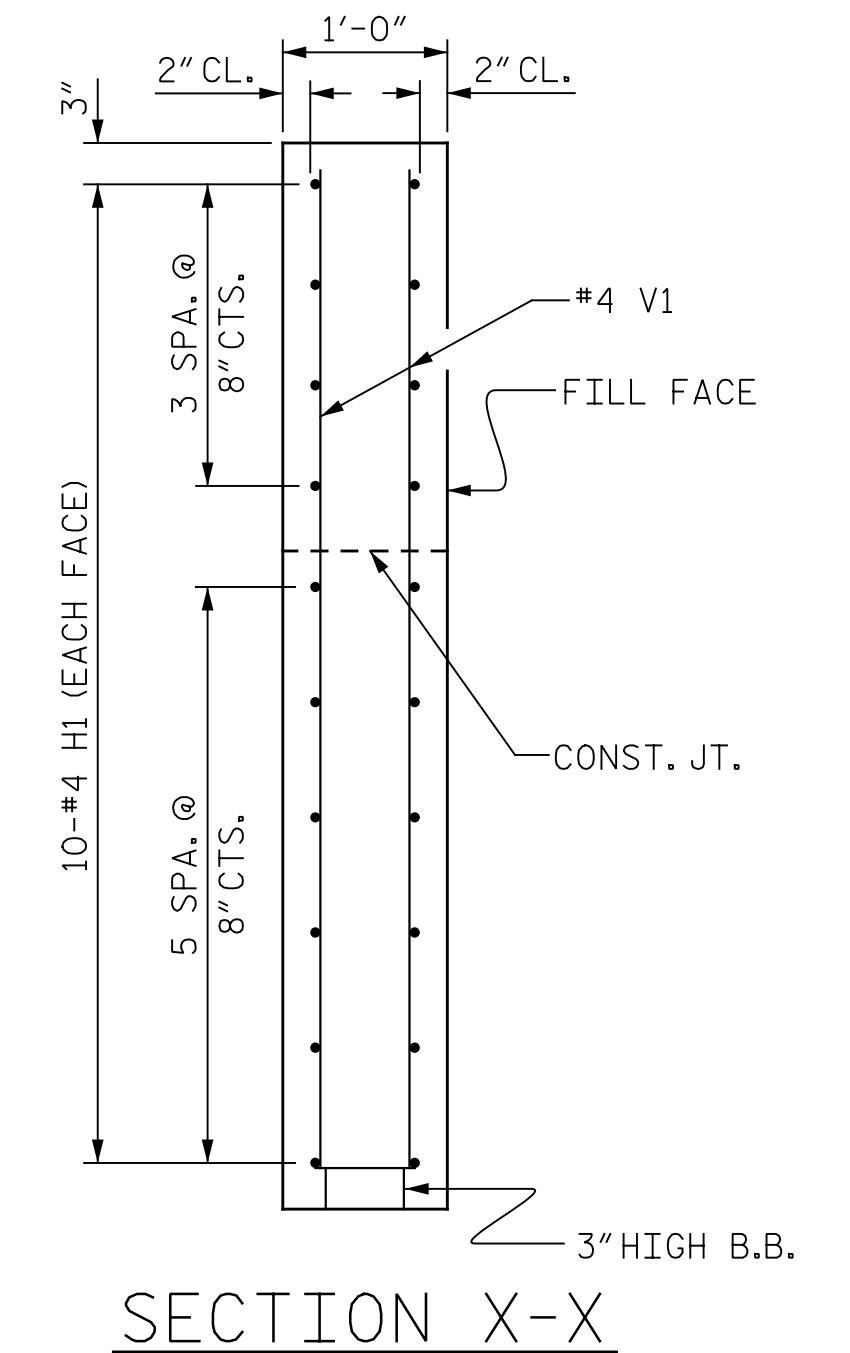


ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

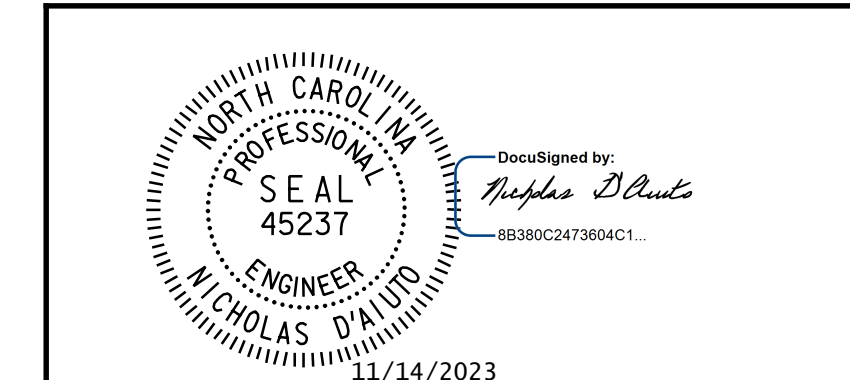


PROJECT NO. B-6046
 STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS

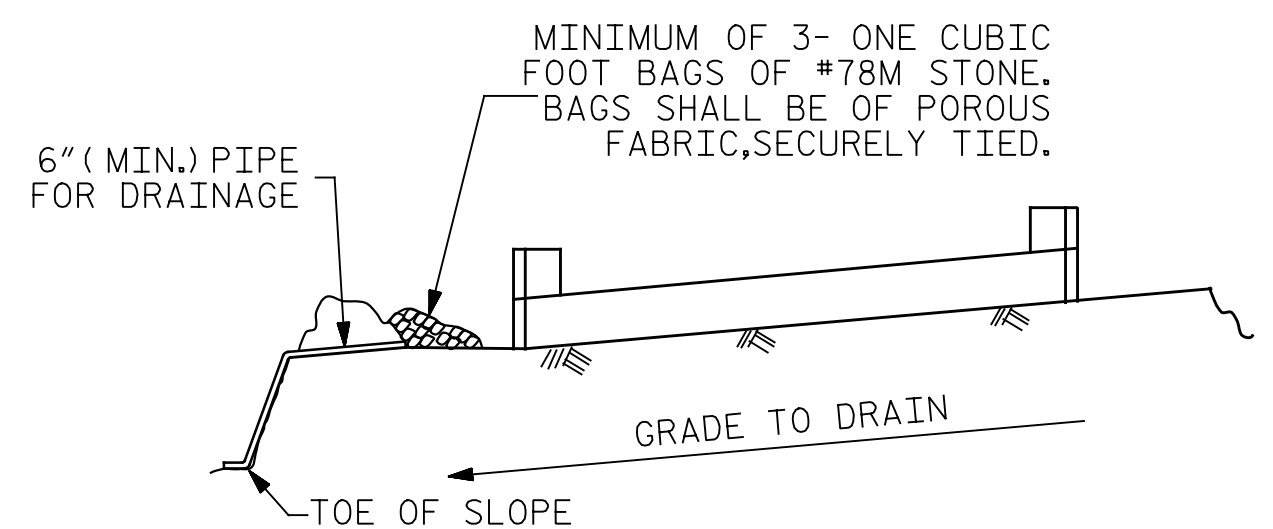


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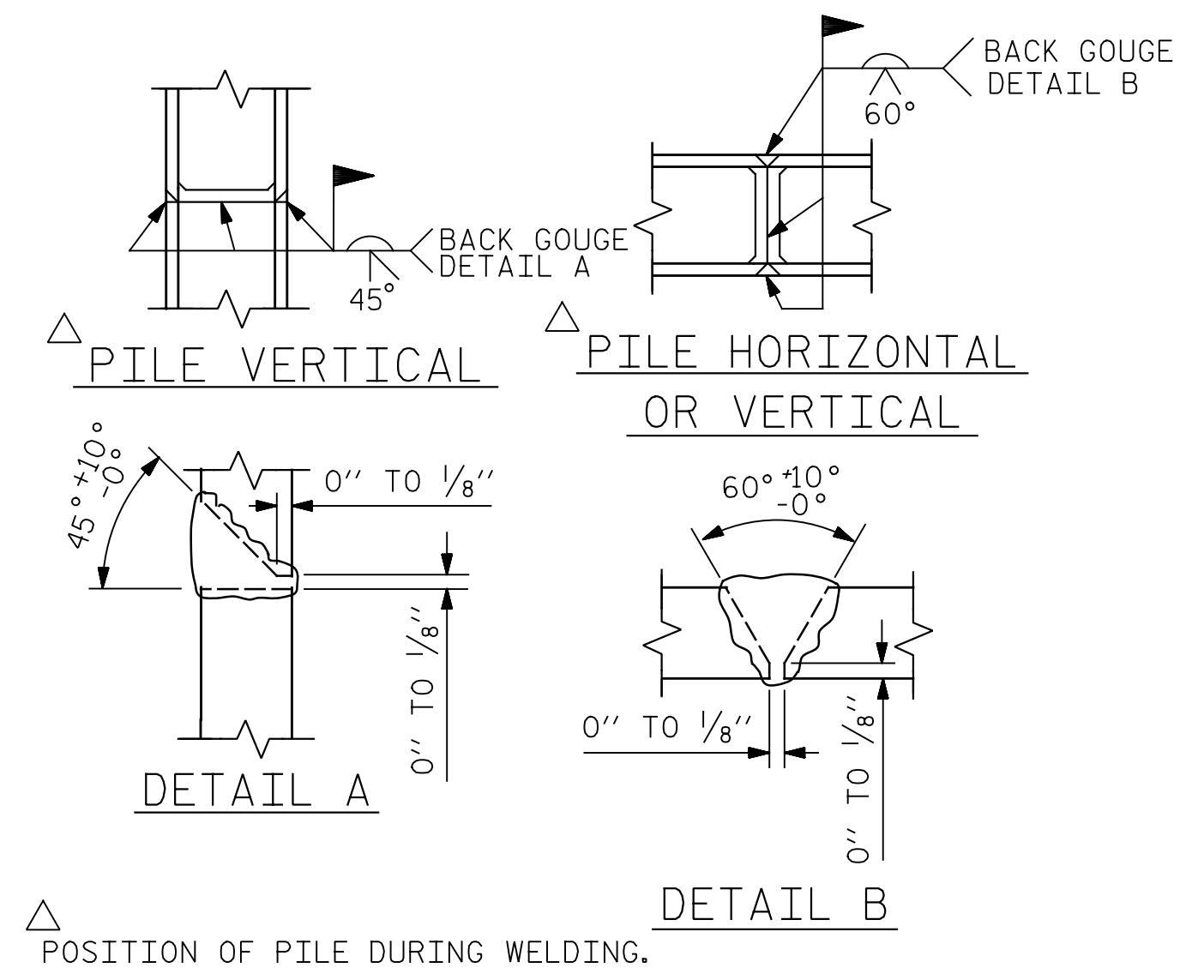


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

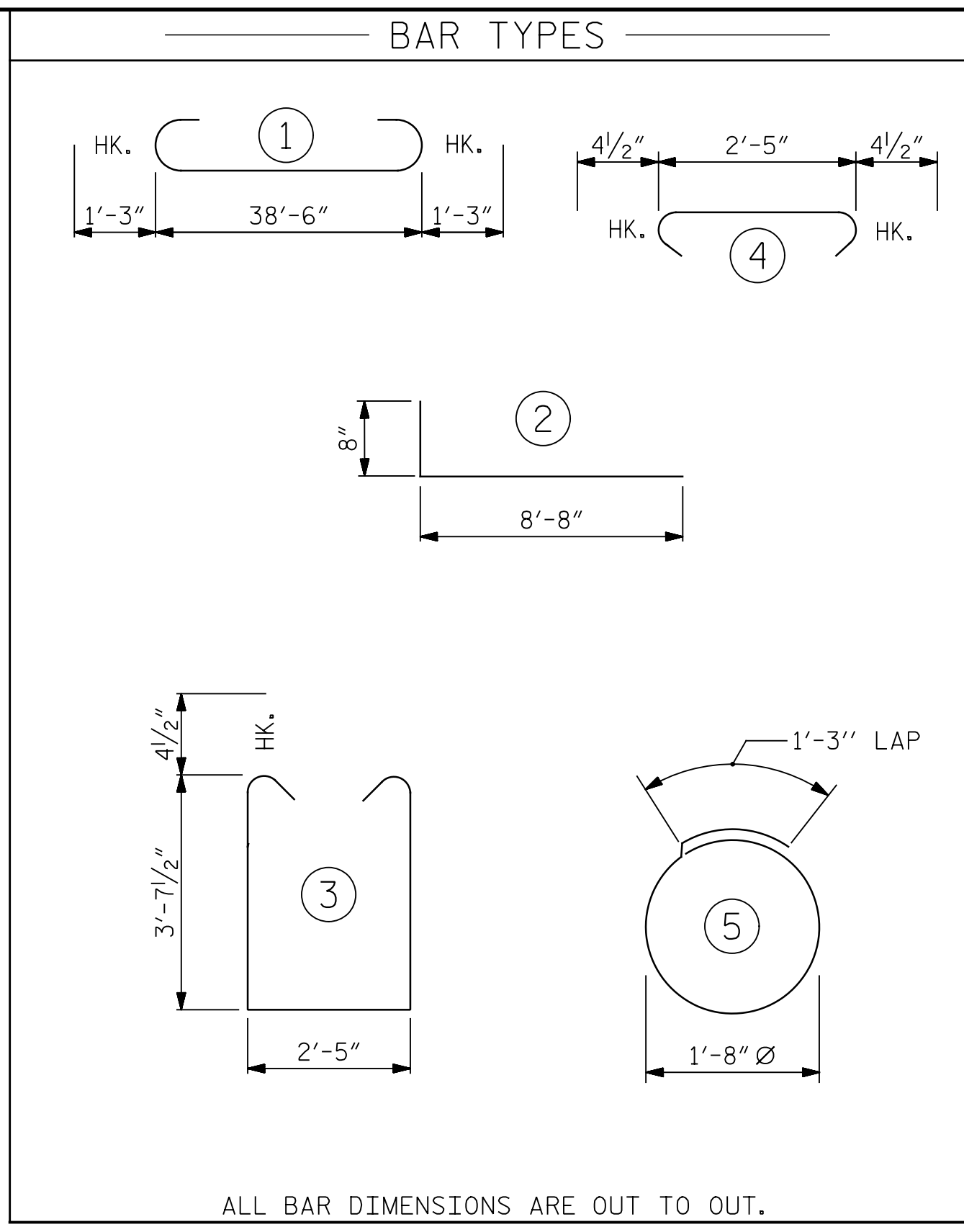
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

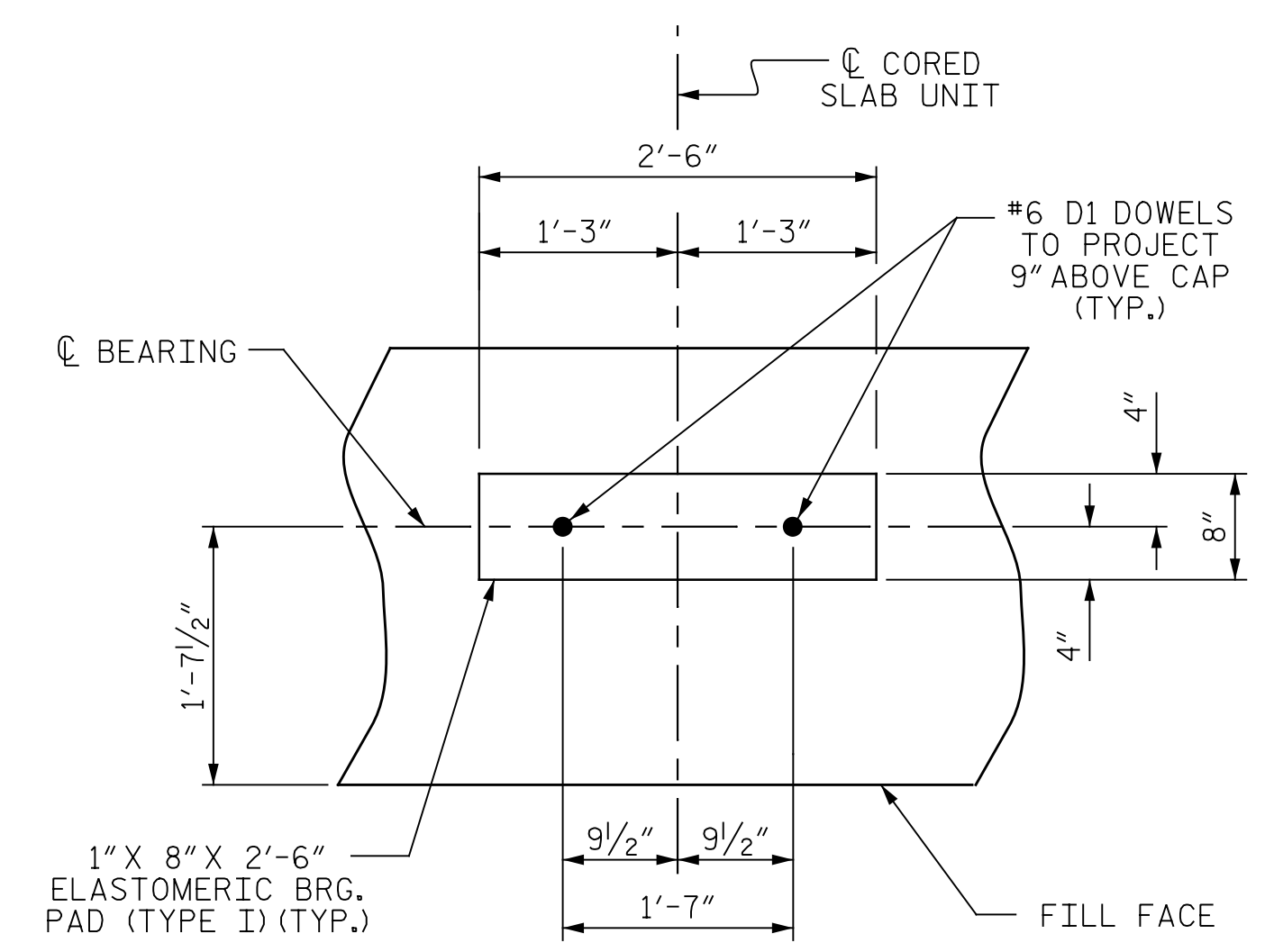
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

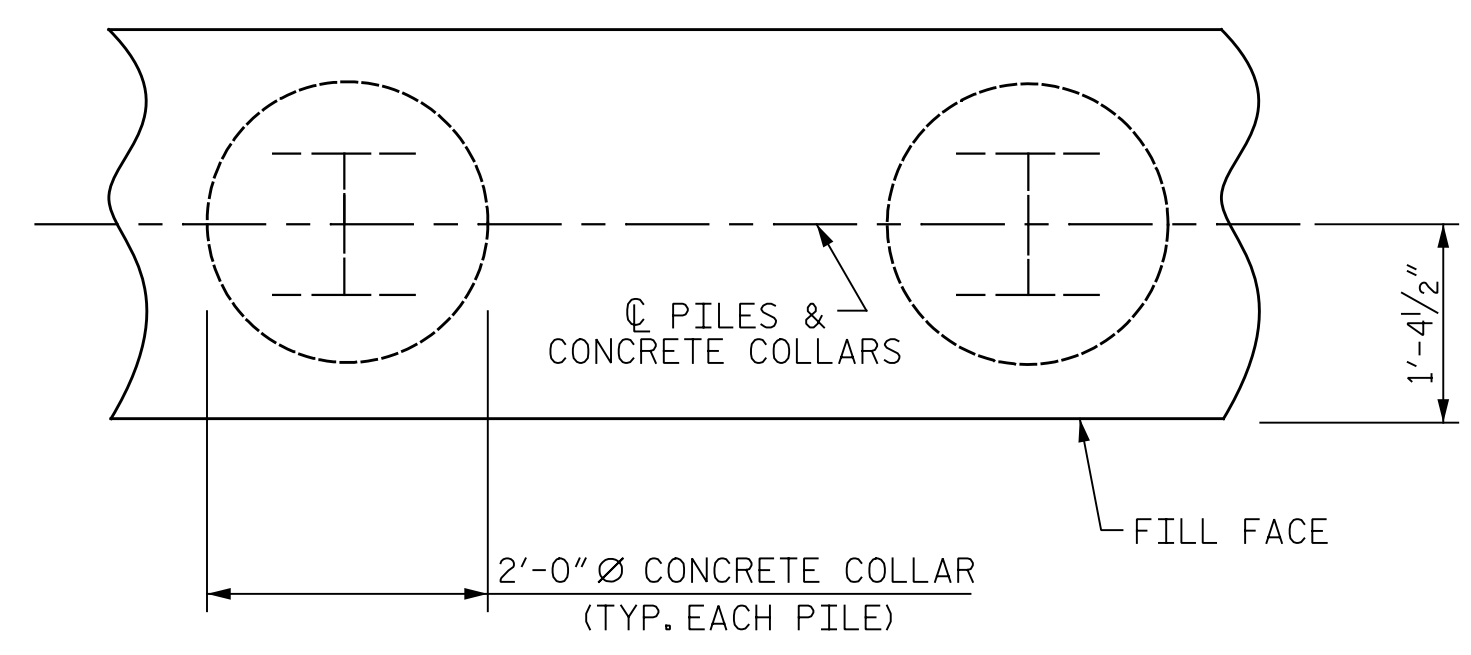


BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#10	1	41'-0"	1412
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-5"	223
REINFORCING STEEL (FOR ONE END BENT)					2942 LBS.
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)					
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					19.5 C.Y.
POUR #2 UPPER PART OF WINGS					2.3 C.Y.
TOTAL CLASS A CONCRETE					21.8 C.Y.

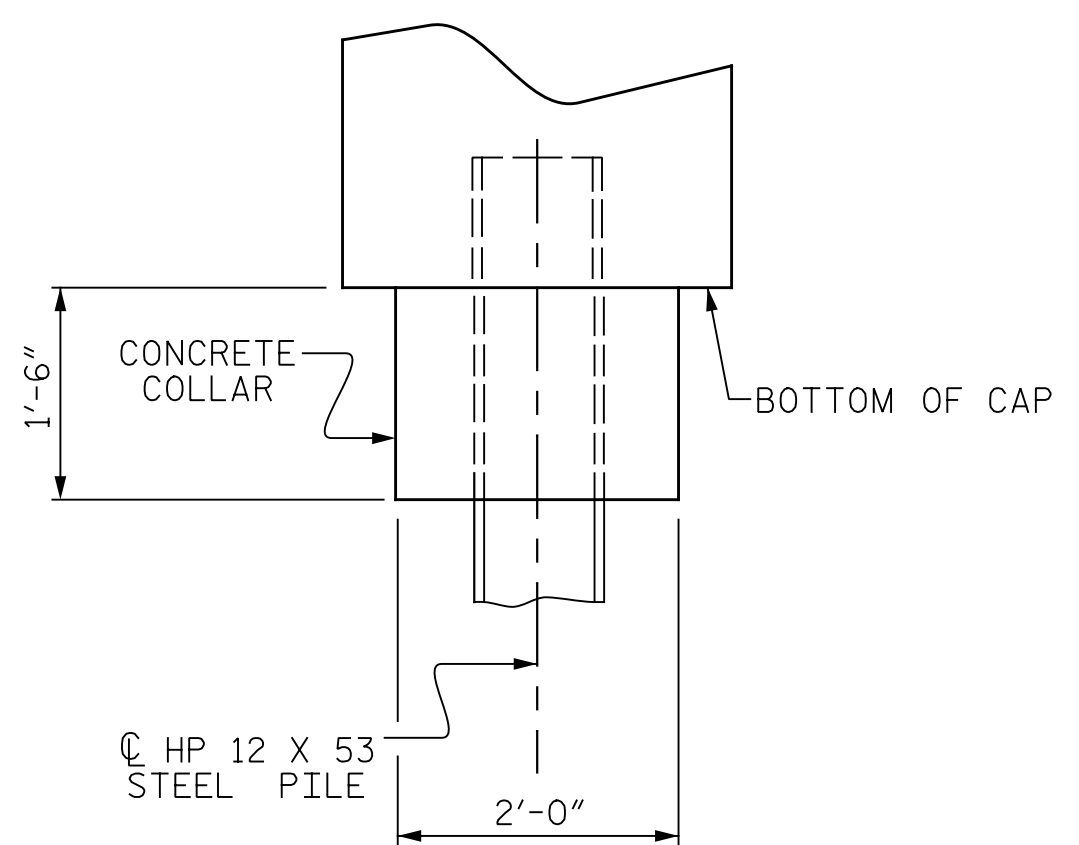


DETAIL "A"

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



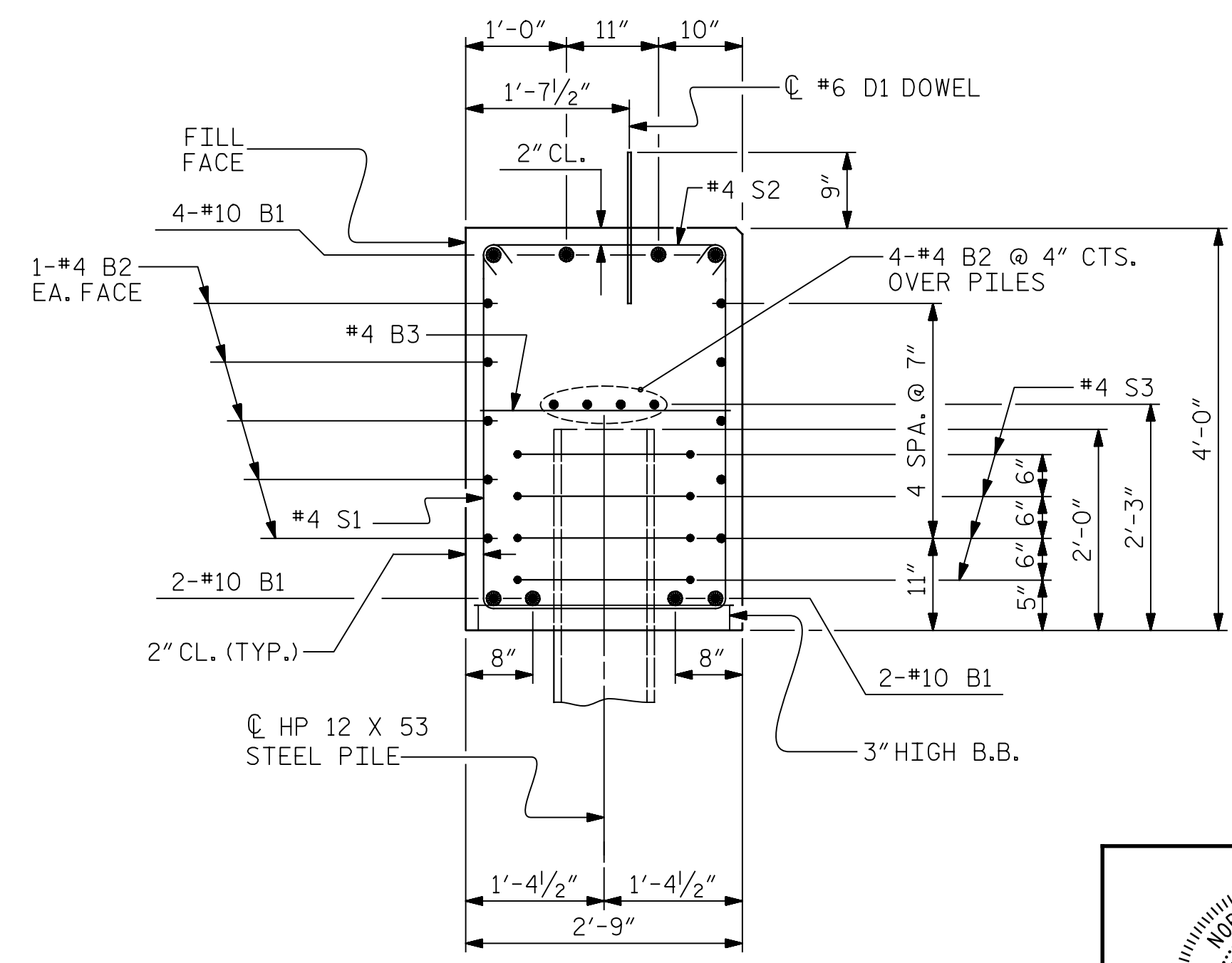
PLAN



ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

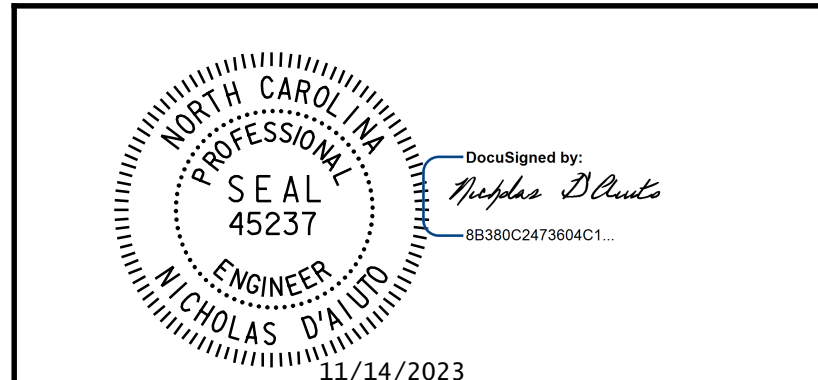
(END BENT NO. 1 SHOWN, END BENT NO. 2 SIMILAR BY ROTATION)



SECTION A-A

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

PROJECT NO. B-6046
 STANLY COUNTY
 STATION: 17+66.00 -L-
 SHEET 4 OF 4



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE

END BENT DETAILS

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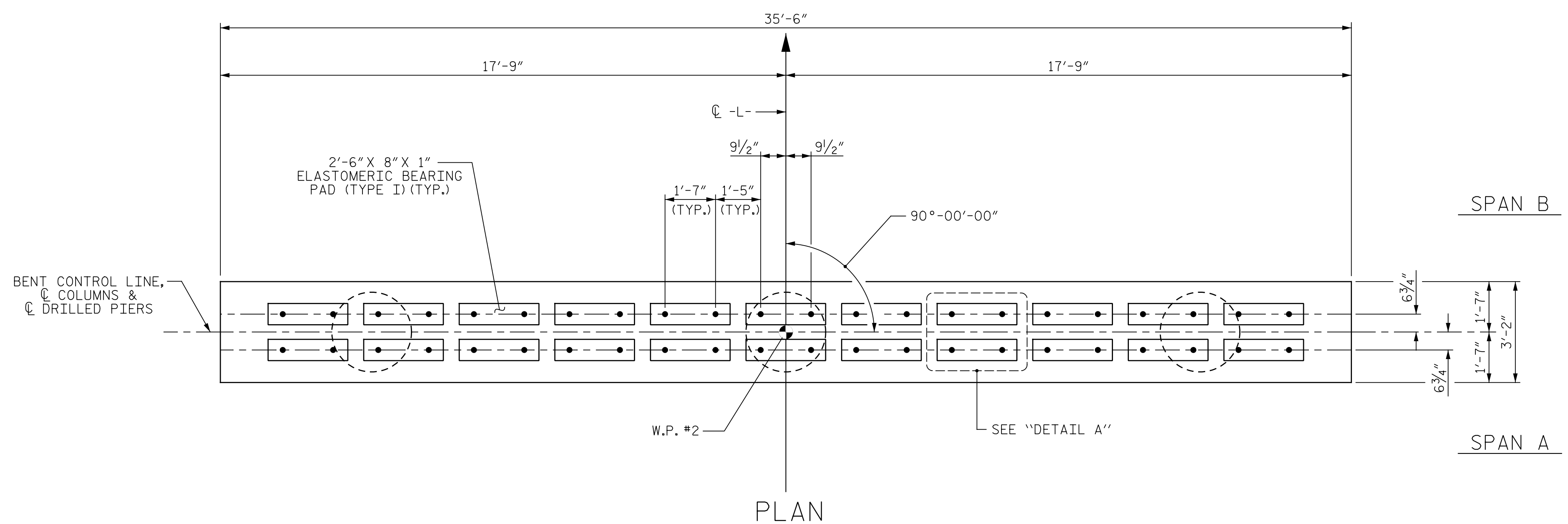
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DRAWN BY :	J. N. AUSTIN	DATE :	8-10-22
CHECKED BY :	N. D'AIUTO	DATE :	8-12-22
DESIGN E.O.R. :	N. D'AIUTO	DATE :	1-4-23

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NOTES

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

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

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

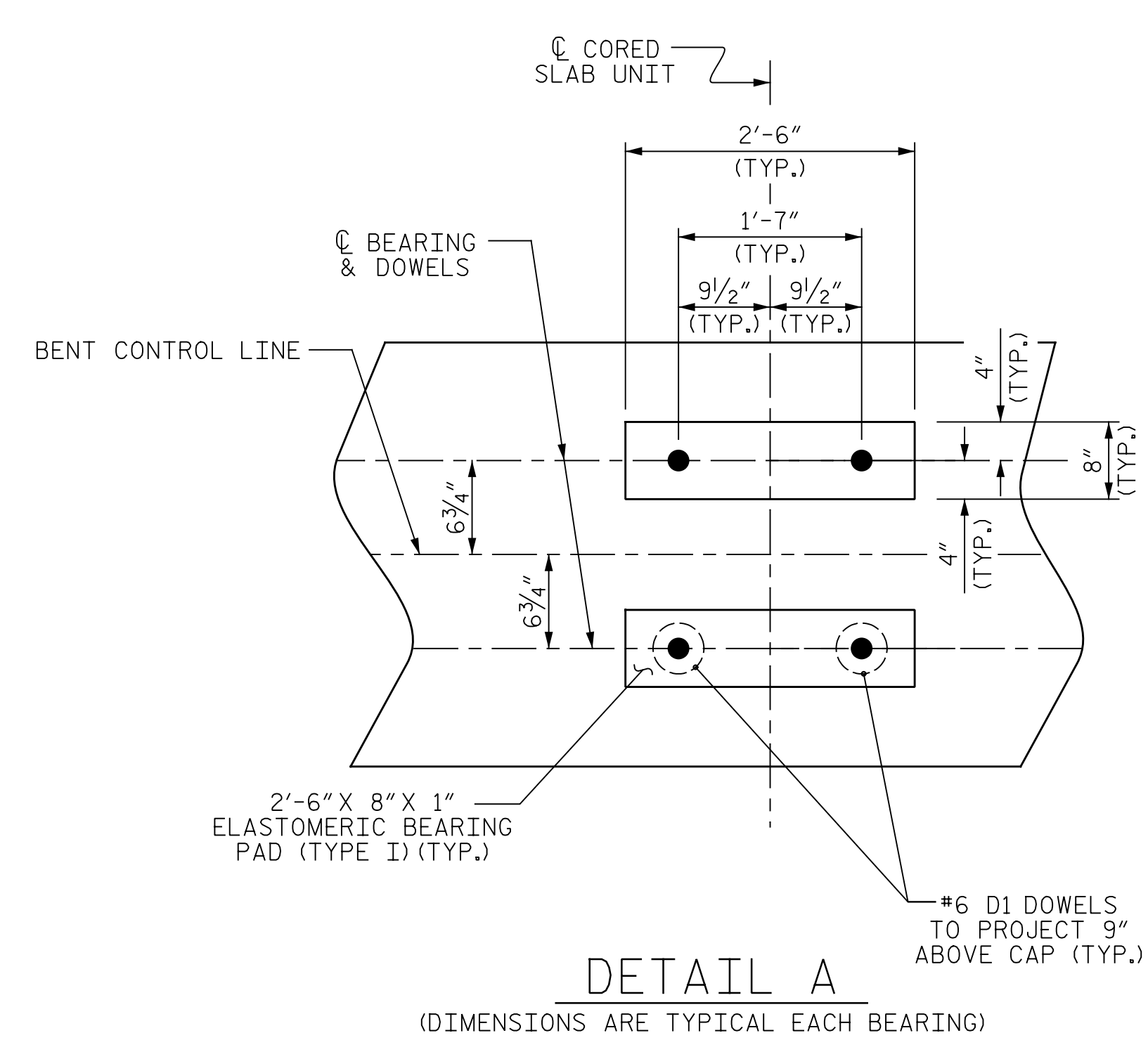
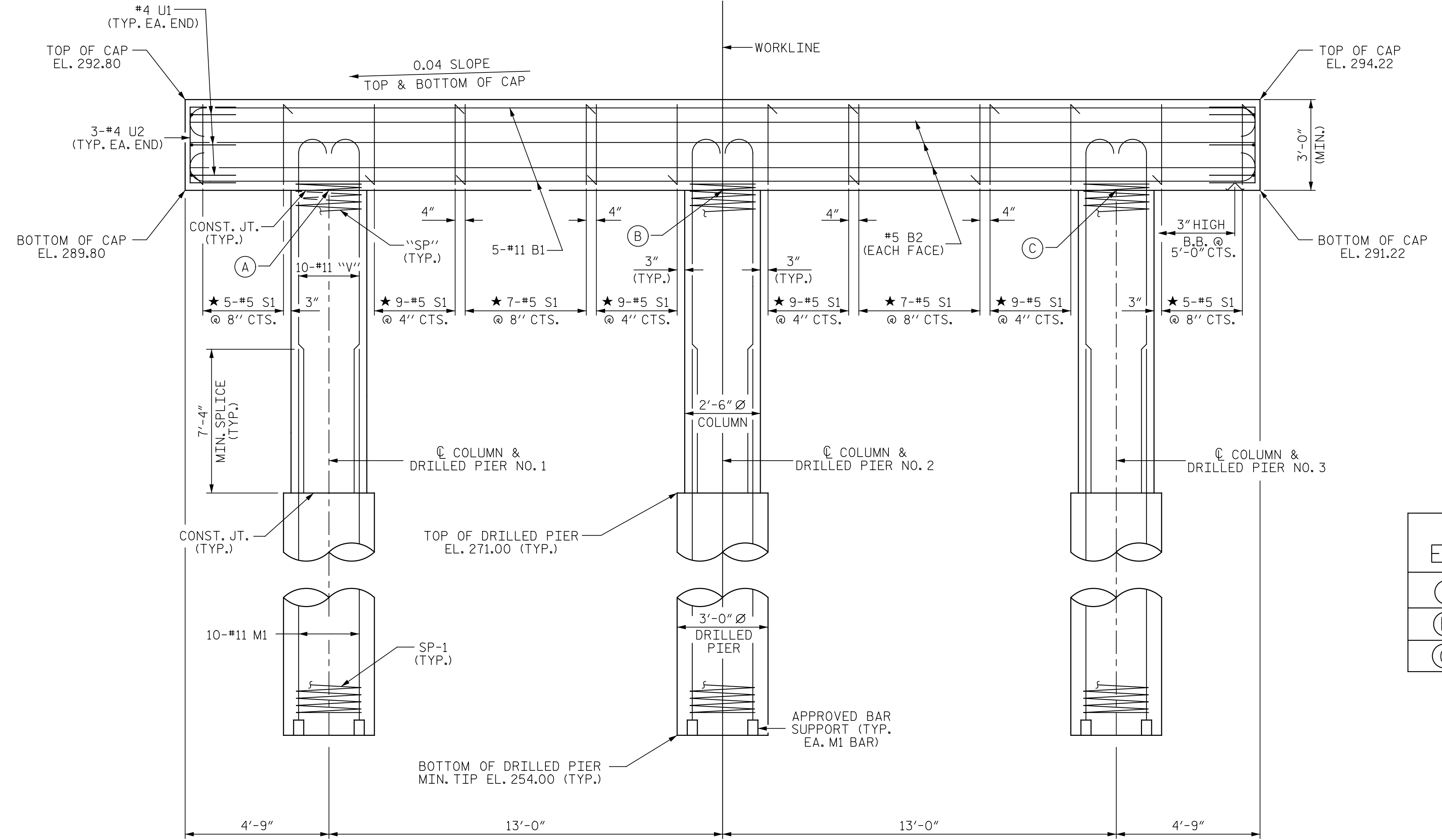
ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."

★ 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 ONE FOOT BELOW THE GROUND LINE.

DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE NORMAL WATER SURFACE ELEVATION 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.



BENT CAP ELEVATIONS	
(A)	289.99
(B)	290.51
(C)	291.03

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
BENT 1

Professional Engineer Seal for Nicholas D'Alauto, License # 45237, dated 11/14/2023.

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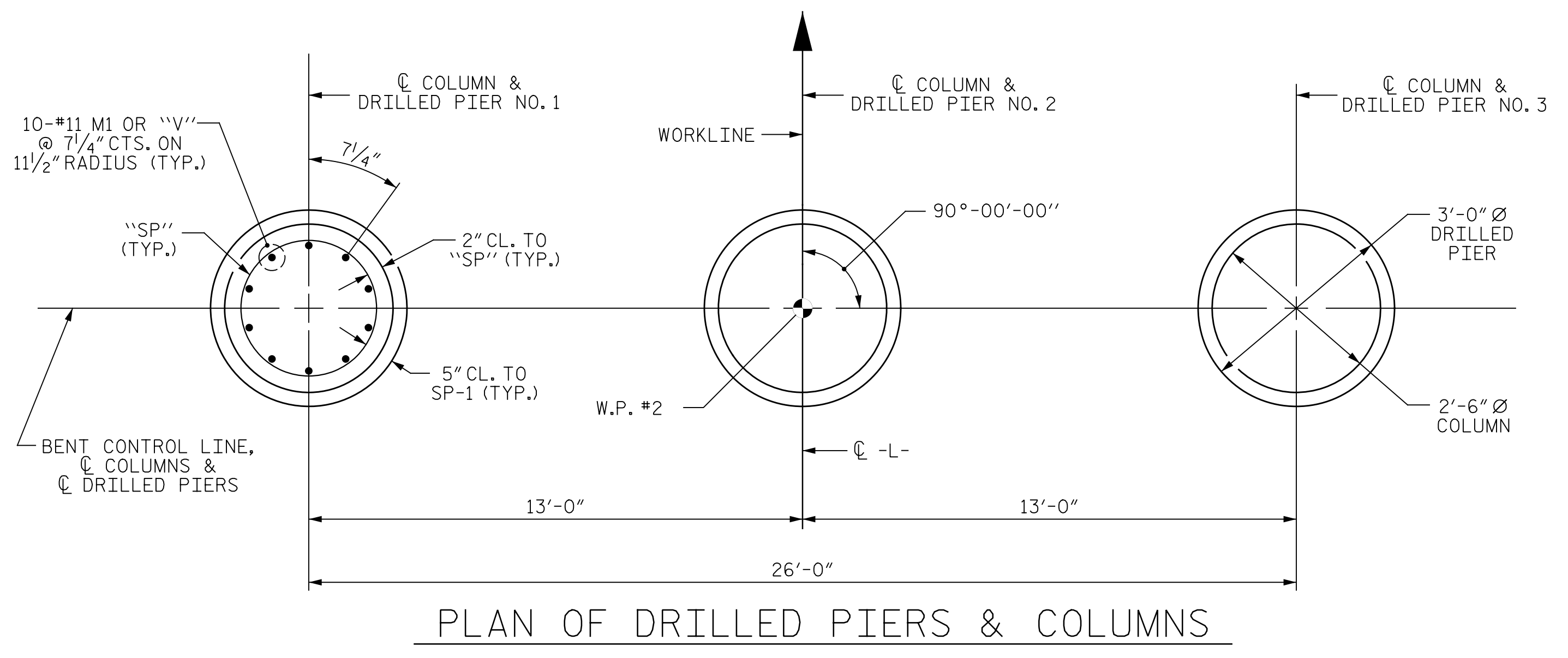
ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.

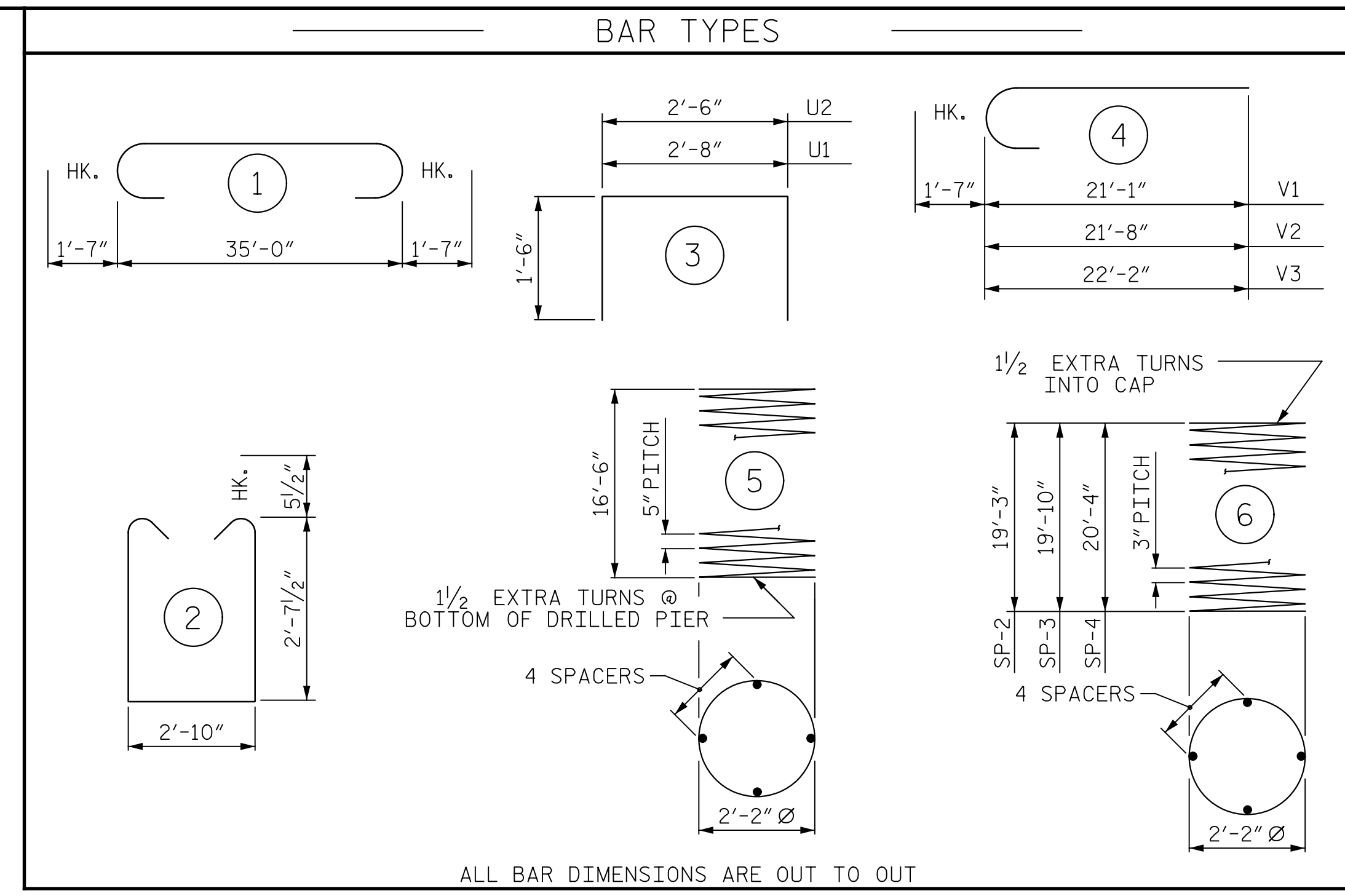
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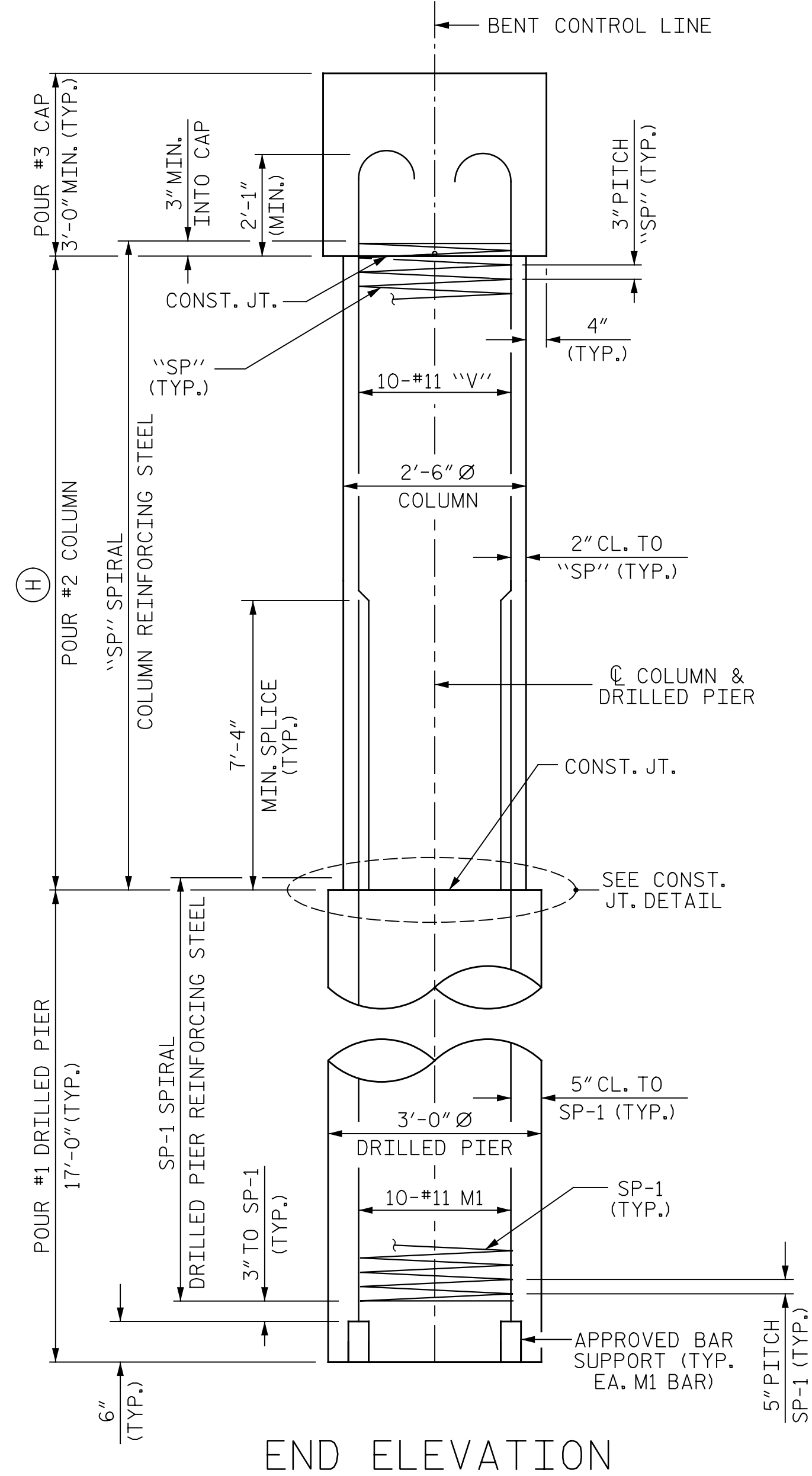


PLAN OF DRILLED PIERS & COLUMNS

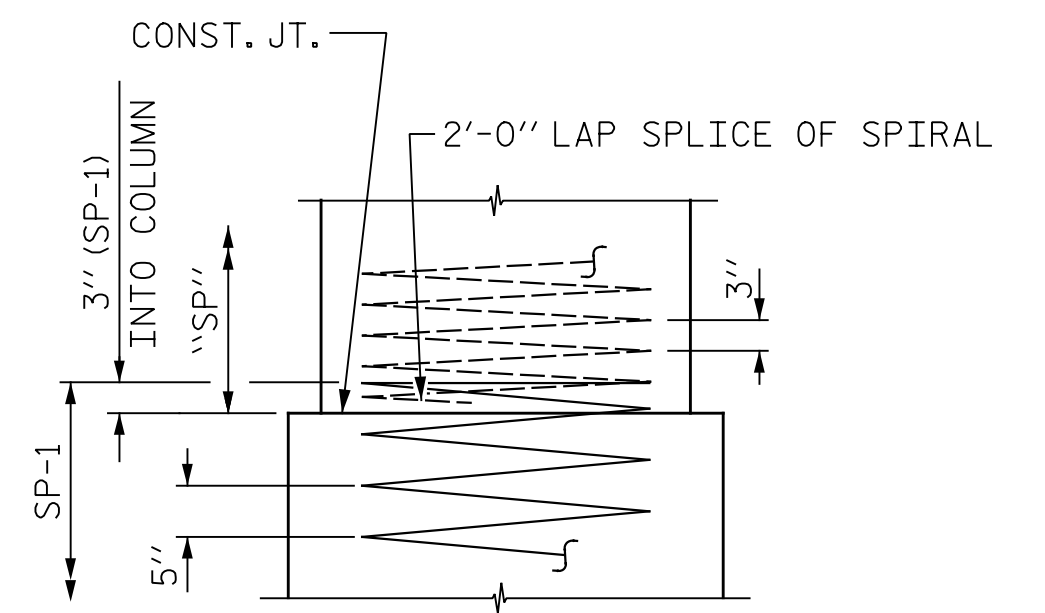


ALL BAR DIMENSIONS ARE OUT TO OUT

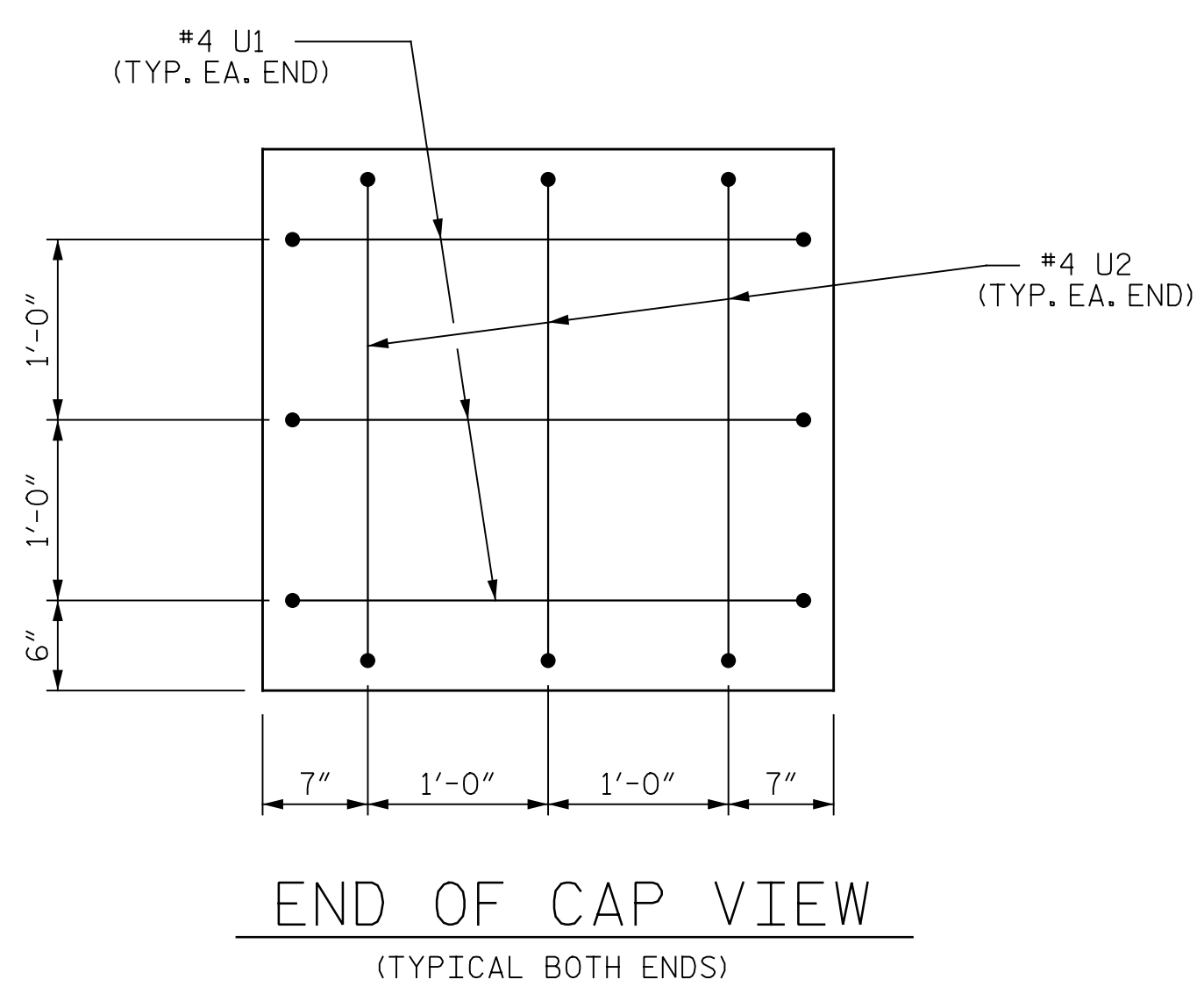
BILL OF MATERIAL					
BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11		38'-2"	2028
B2	6	#5	STR	35'-2"	220
D1	44	#6	STR	1'-6"	99
M1	30	#11	STR	23'-10"	3799
S1	60	#5	2	9'-0"	563
U1	6	#4	3	5'-8"	23
U2	6	#4	3	5'-6"	22
V1	10	#11	4	22'-8"	1204
V2	10	#11	4	23'-3"	1235
V3	10	#11	4	23'-9"	1262
REINFORCING STEEL					10455 LBS.
SP-1	3	*	5	276'-3"	864
SP-2	1	**	6	524'-5"	350
SP-3	1	**	6	544'-6"	364
SP-4	1	**	6	557'-10"	373
SPIRAL COLUMN REINFORCING STEEL					1951 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, SP-3 & SP-4 SPIRAL REINF. STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN (FOR BENT 1)					
POUR #2 (COLUMNS)					10.8 C.Y.
POUR #3 (CAP)					12.5 C.Y.
TOTAL CLASS A CONCRETE					23.3 C.Y.



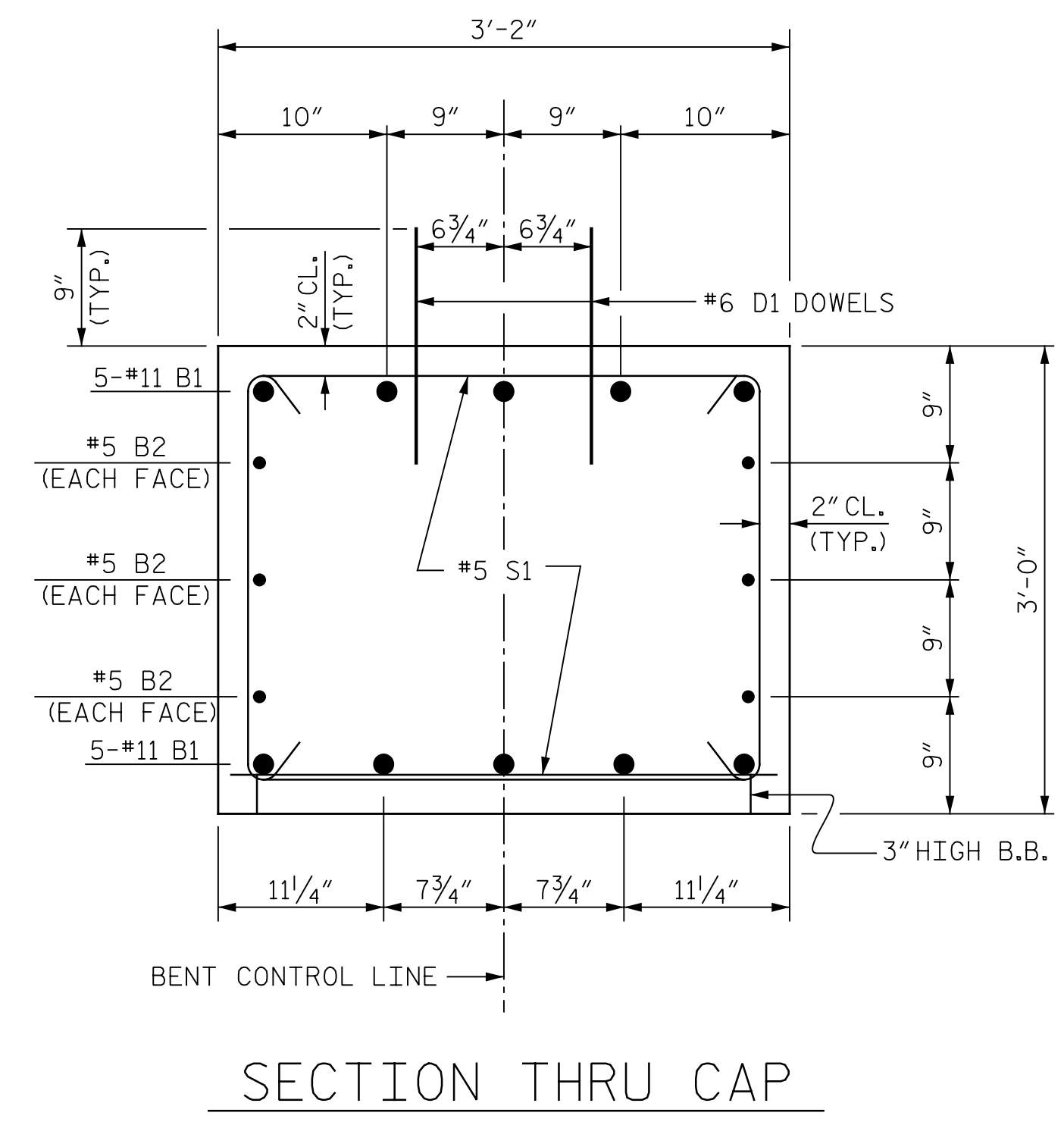
END ELEVATION



CONSTRUCTION JOINT DETAIL

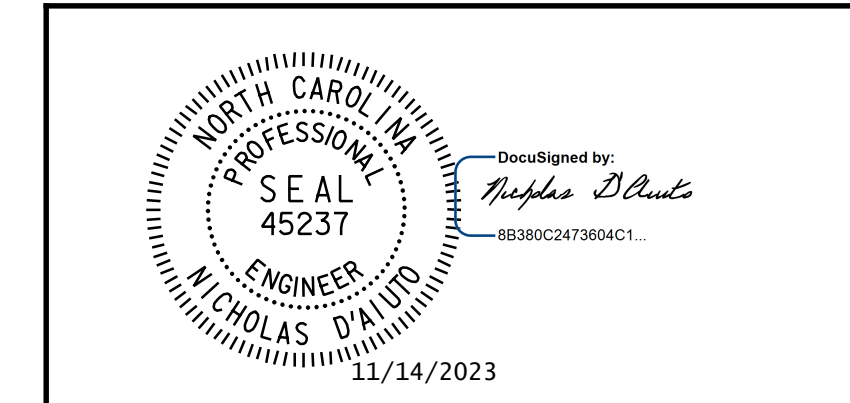


END OF CAP VIEW (TYPICAL BOTH ENDS)



SECTION THRU CAP

COLUMN HEIGHT (H)	
COL. 1	18'-11 7/8"
COL. 2	19'-6 1/8"
COL. 3	20'-0 3/8"



PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-
 SHEET 2 OF 2

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

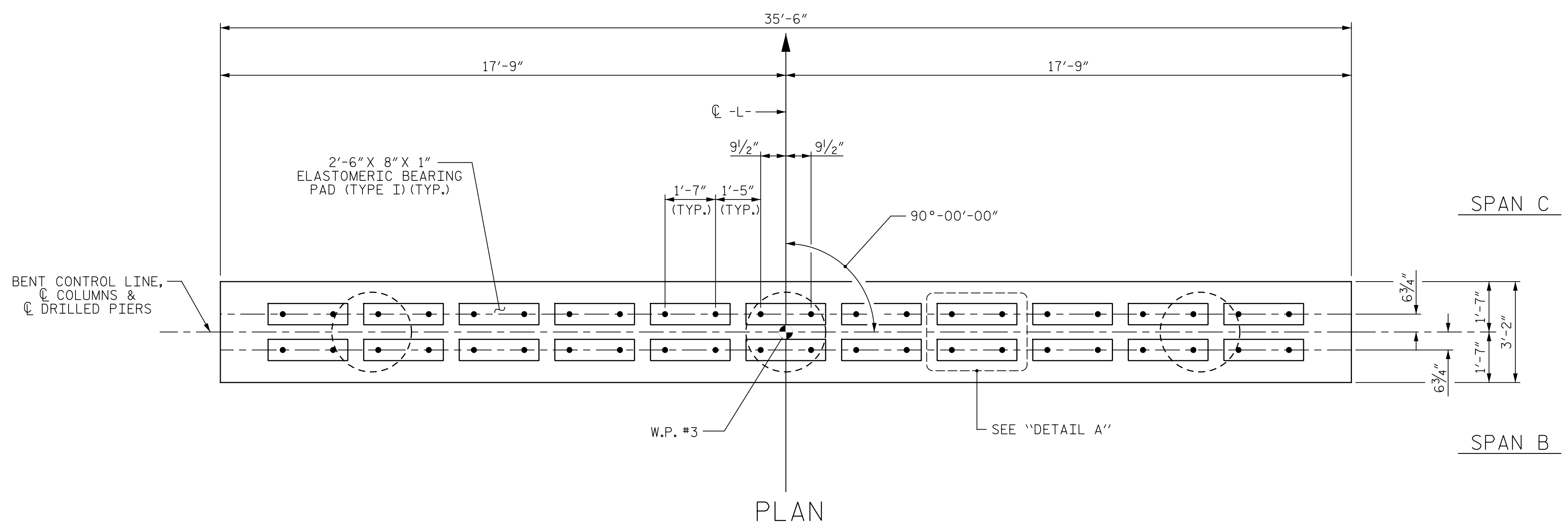
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SHEET NO. S-18
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NOTES

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

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

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

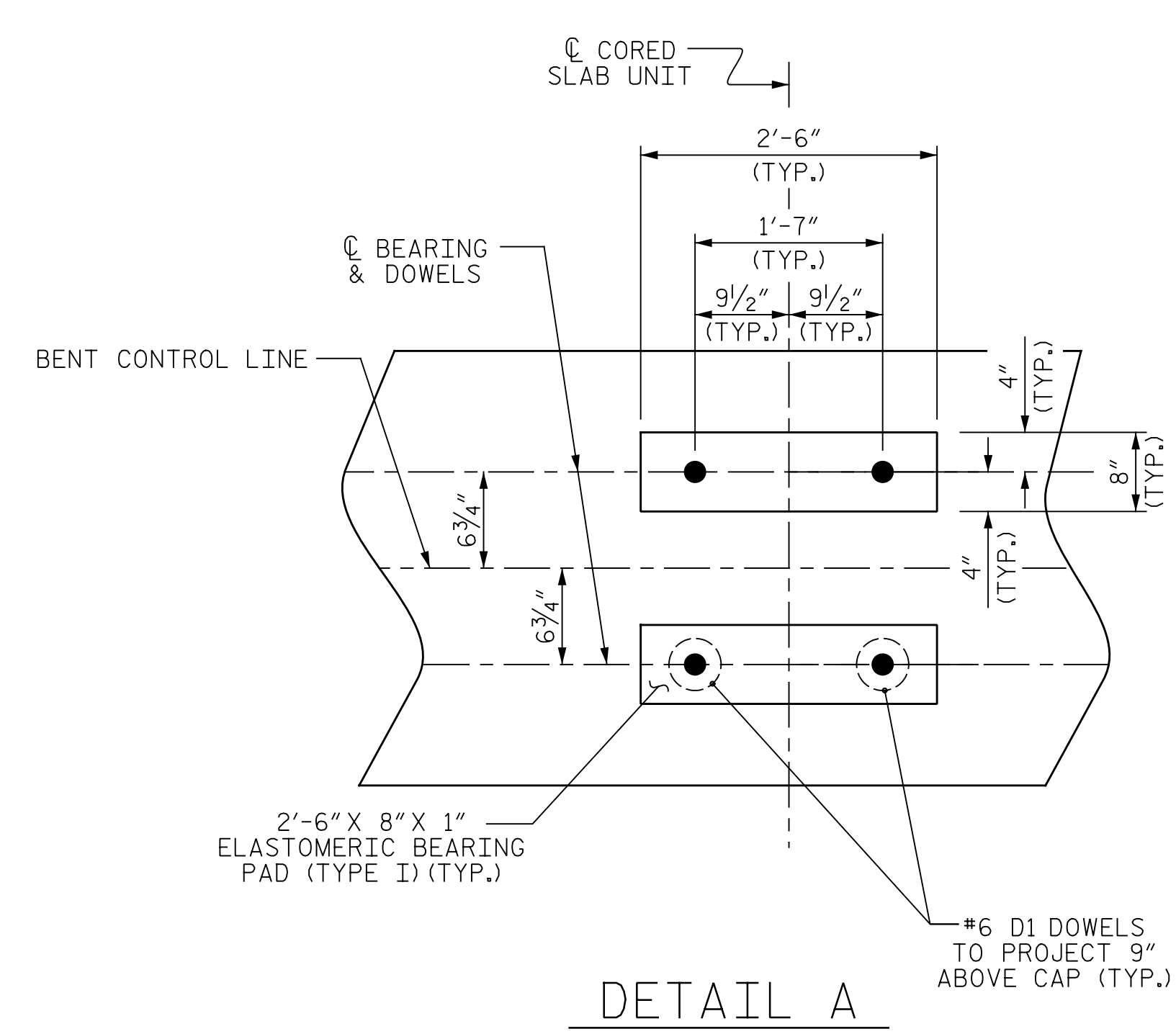
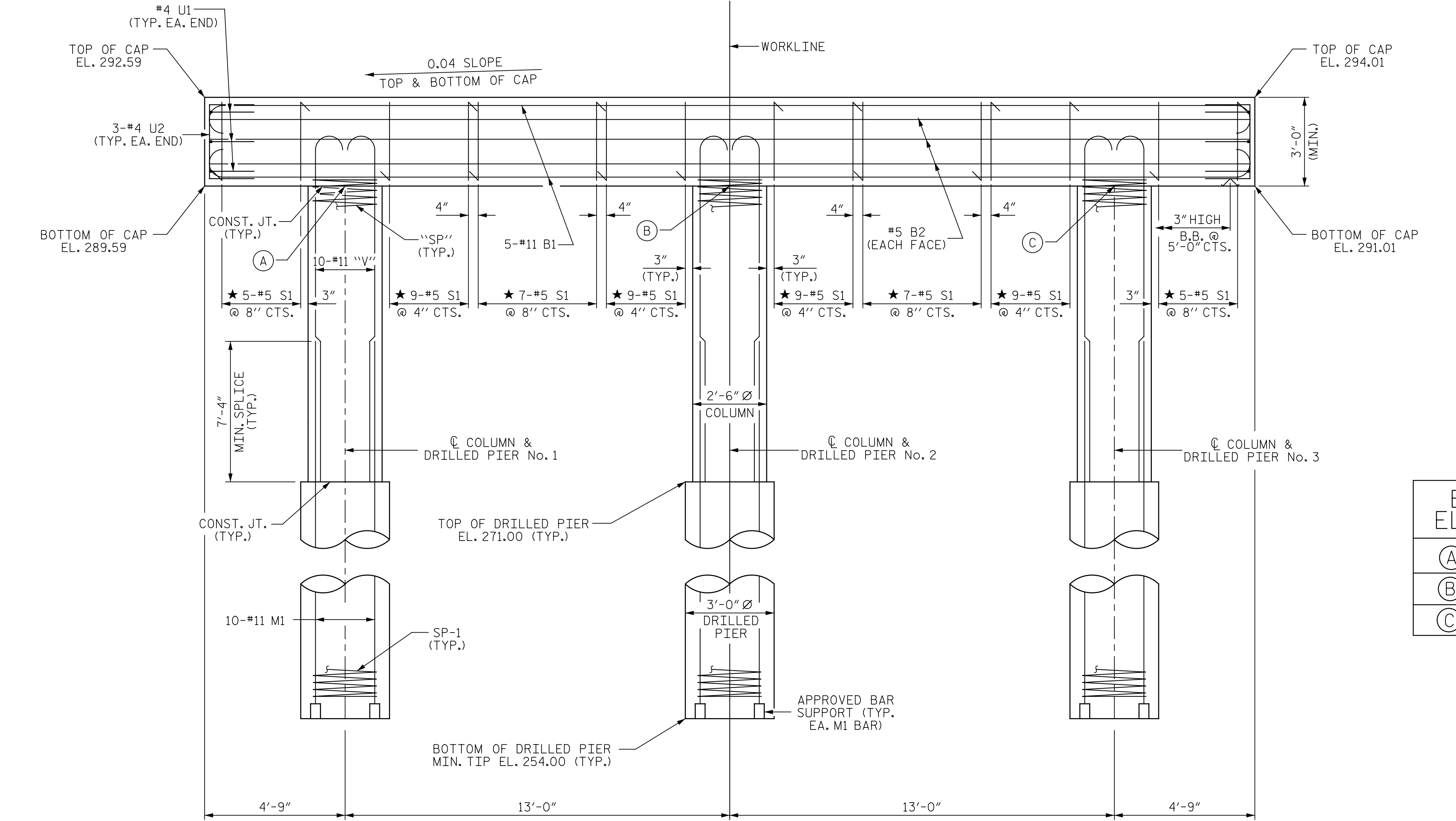
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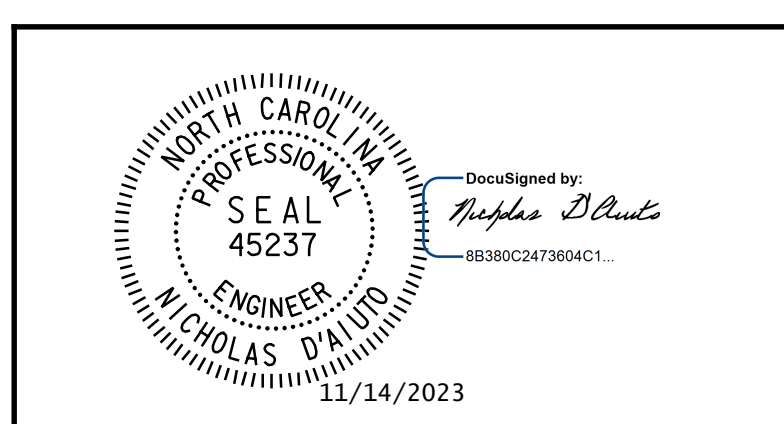
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



(A)	289.78
(B)	290.30
(C)	290.82

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
BENT 2

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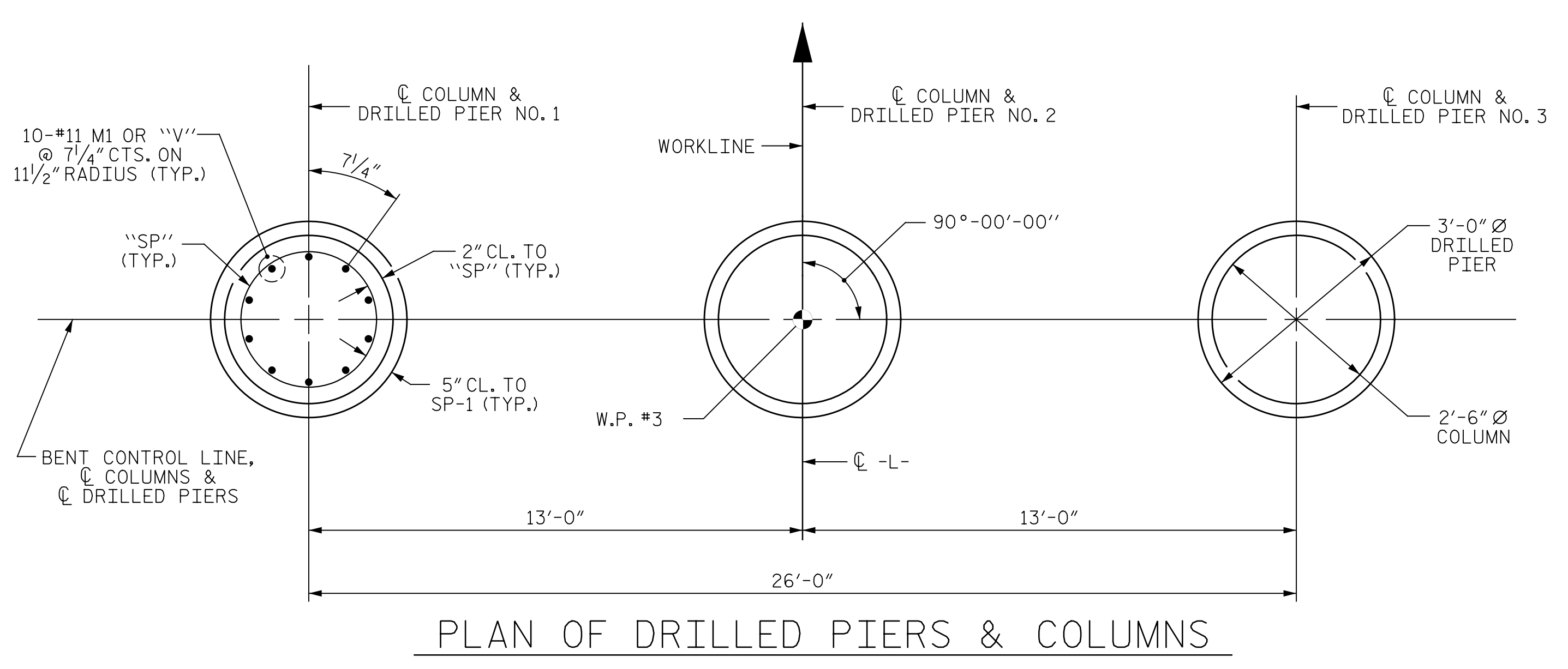
ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.

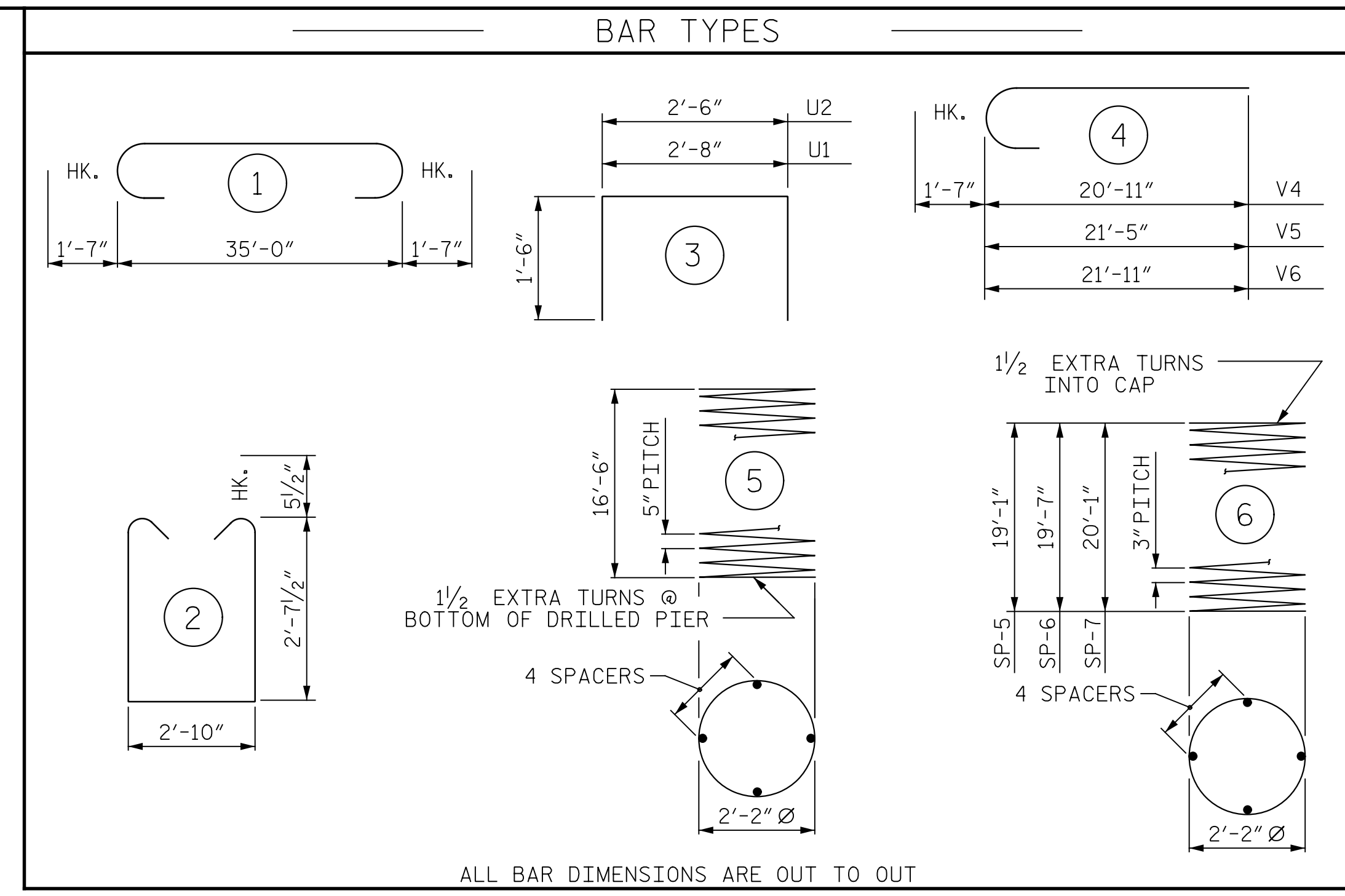
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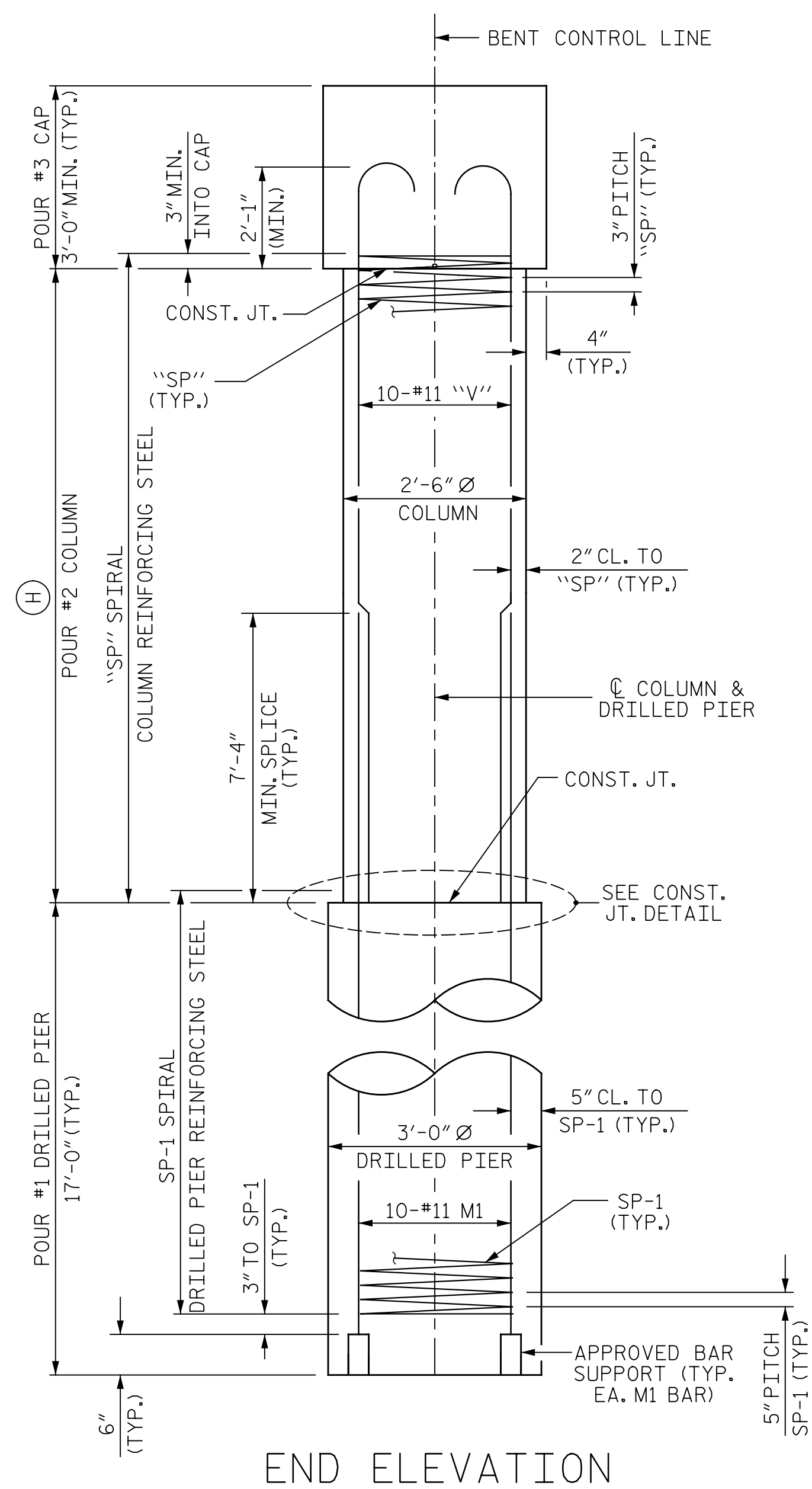


PLAN OF DRILLED PIERS & COLUMNS

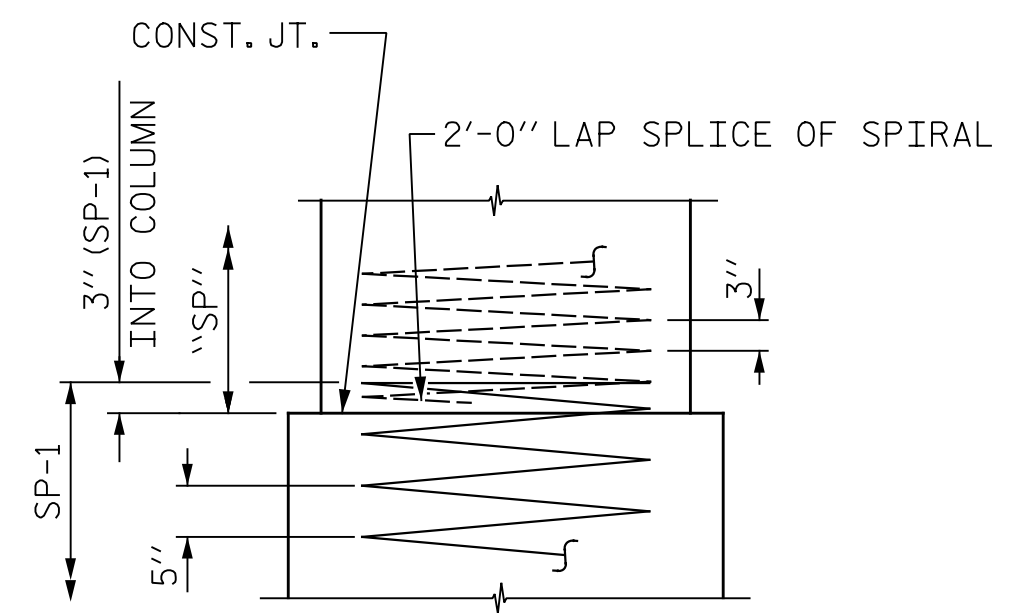


ALL BAR DIMENSIONS ARE OUT TO OUT

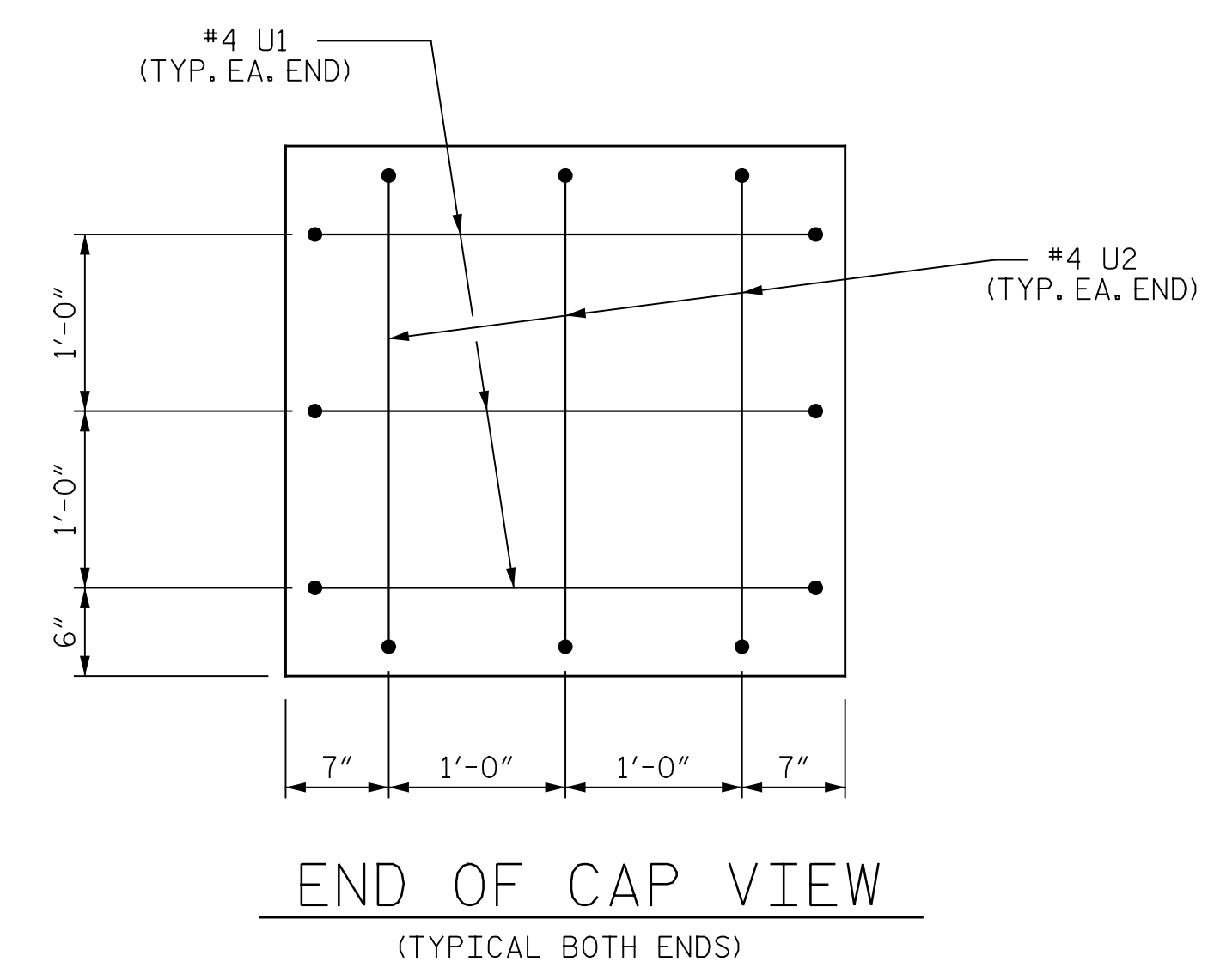
BILL OF MATERIAL					
BENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	38'-2"	2028
B2	6	#5	STR	35'-2"	220
D1	44	#6	STR	1'-6"	99
M1	30	#11	STR	23'-10"	3799
S1	60	#5	2	9'-0"	563
U1	6	#4	3	5'-8"	23
U2	6	#4	3	5'-6"	22
V4	10	#11	4	22'-6"	1195
V5	10	#11	4	23'-0"	1222
V6	10	#11	4	23'-6"	1249
REINFORCING STEEL					10420 LBS.
SP-1	3	*	5	276'-3"	864
SP-5	1	**	6	524'-5"	350
SP-6	1	**	6	537'-9"	359
SP-7	1	**	6	551'-2"	368
SPIRAL COLUMN REINFORCING STEEL					1941 LBS.
* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-5, SP-6 & SP-7 SPIRAL REINF. STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN (FOR BENT 2)					
POUR #2 (COLUMNS)					10.6 C.Y.
POUR #3 (CAP)					12.5 C.Y.
TOTAL CLASS A CONCRETE					23.1 C.Y.



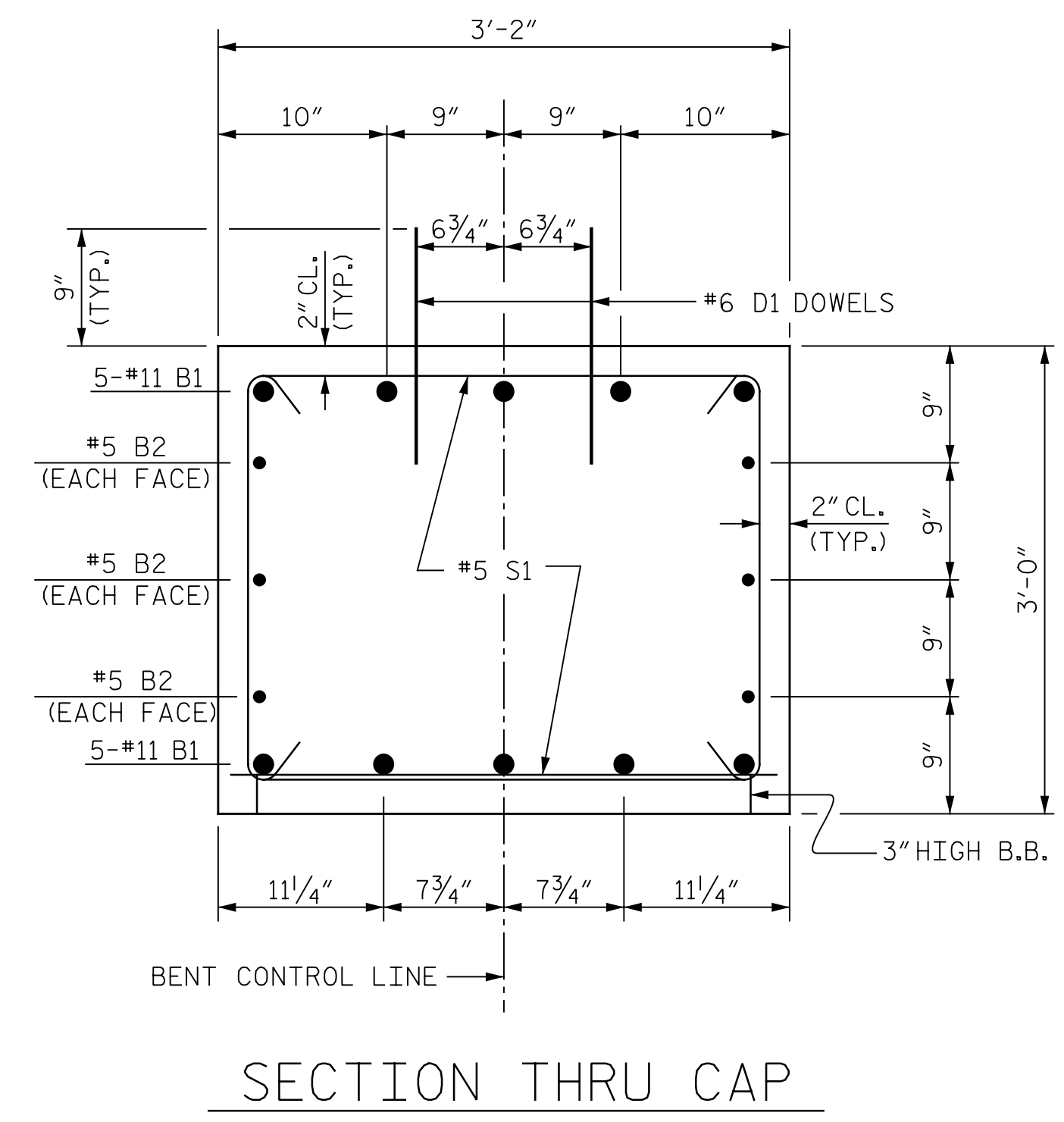
END ELEVATION



CONSTRUCTION JOINT DETAIL

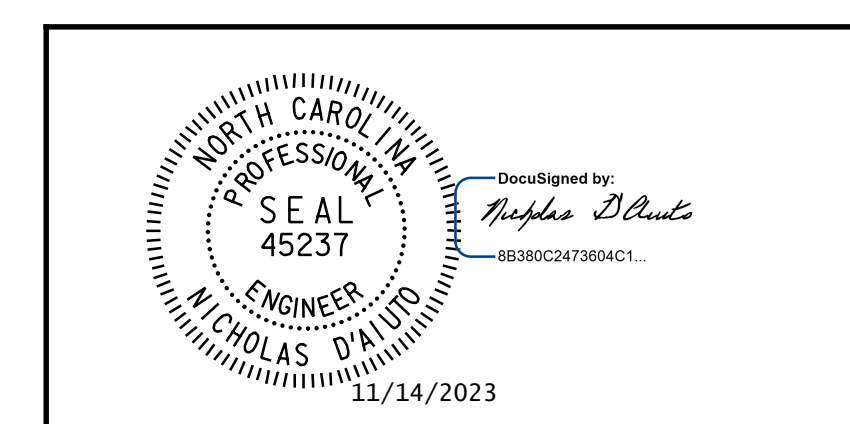


END OF CAP VIEW (TYPICAL BOTH ENDS)



SECTION THRU CAP

COLUMN HEIGHT (H)	
COL. 1	18'-9 3/8"
COL. 2	19'-3 5/8"
COL. 3	19'-9 13/16"



PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-
 SHEET 2 OF 2

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

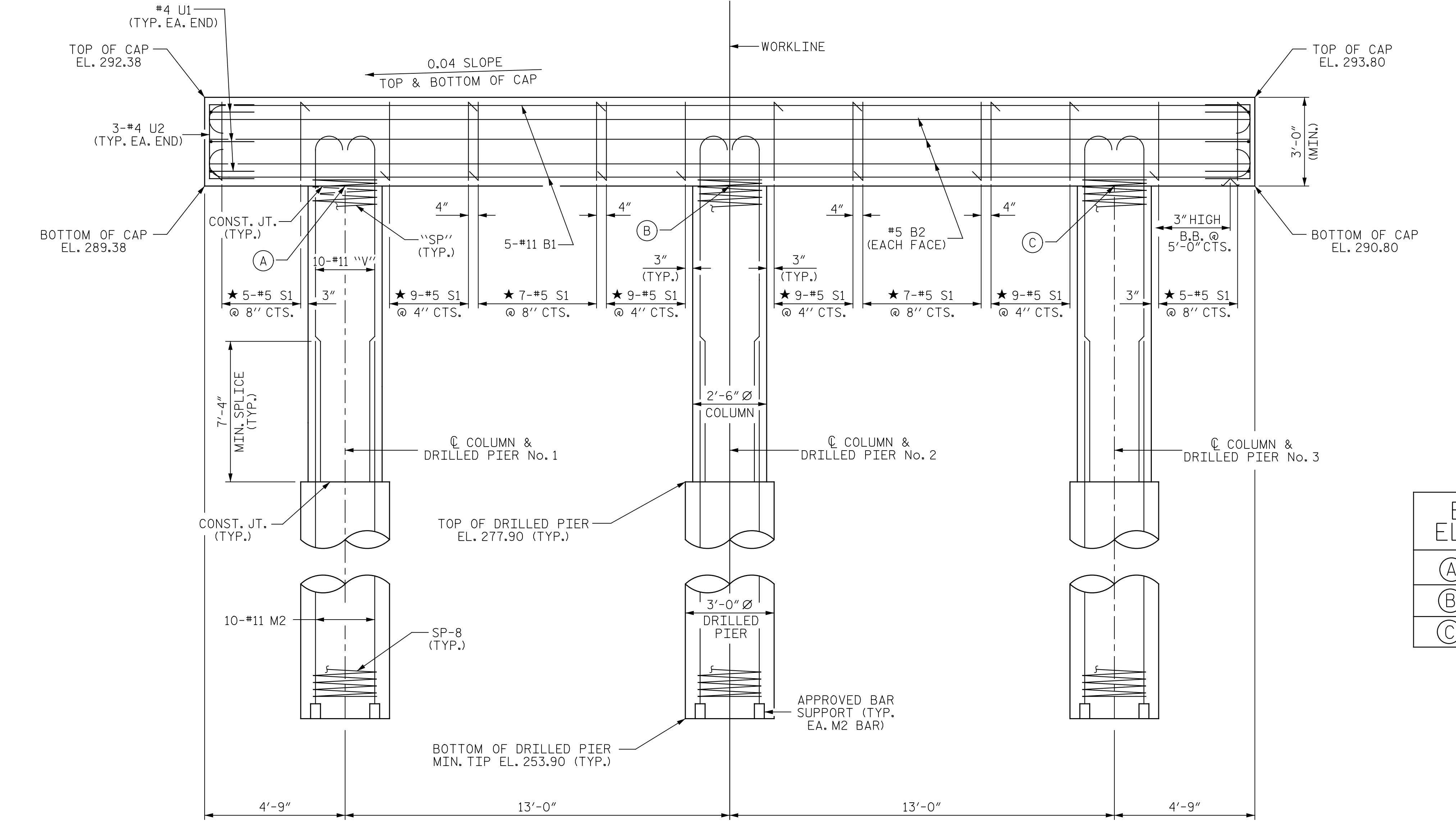
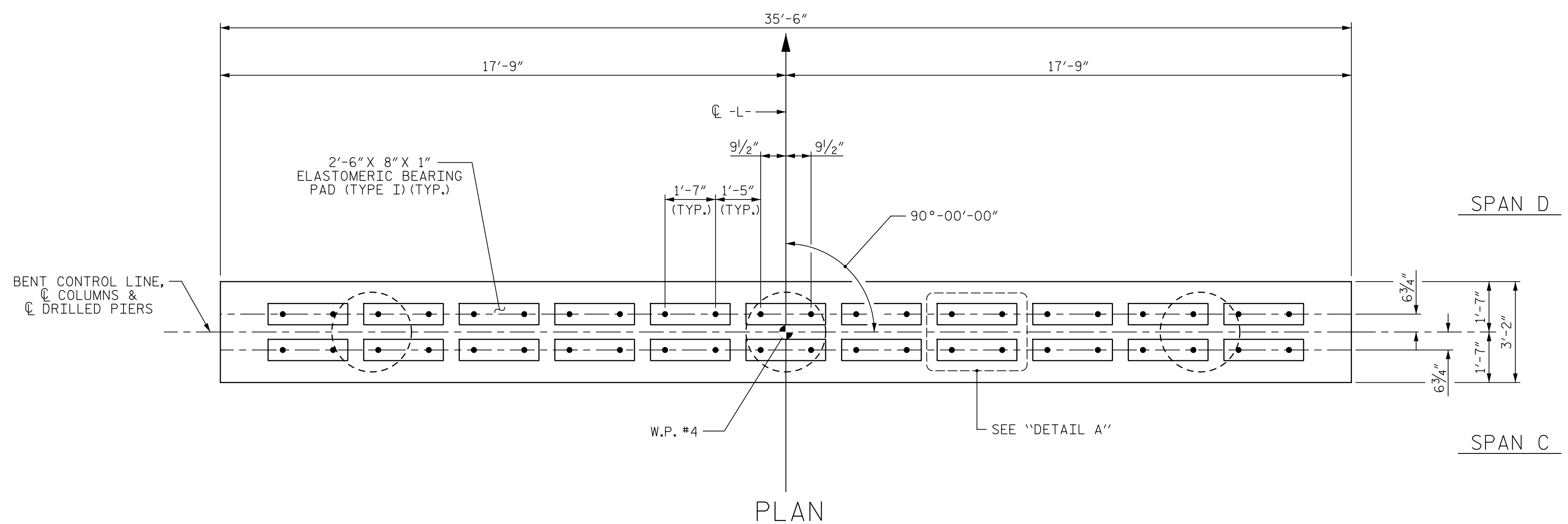
DRAWN BY :	J. N. AUSTIN	DATE :	8-10-22
CHECKED BY :	N. D'AIUTO	DATE :	8-12-22
DESIGN E.O.R. :	N. D'AIUTO	DATE :	1-4-23

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 4505 Falls of Neuse Road, Suite 110
 Raleigh, North Carolina 27609
 Phone: 919-822-0333
 License #: P-9999

SHEET NO.	
S-20	
TOTAL SHEETS	
24	

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NOTES

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

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

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

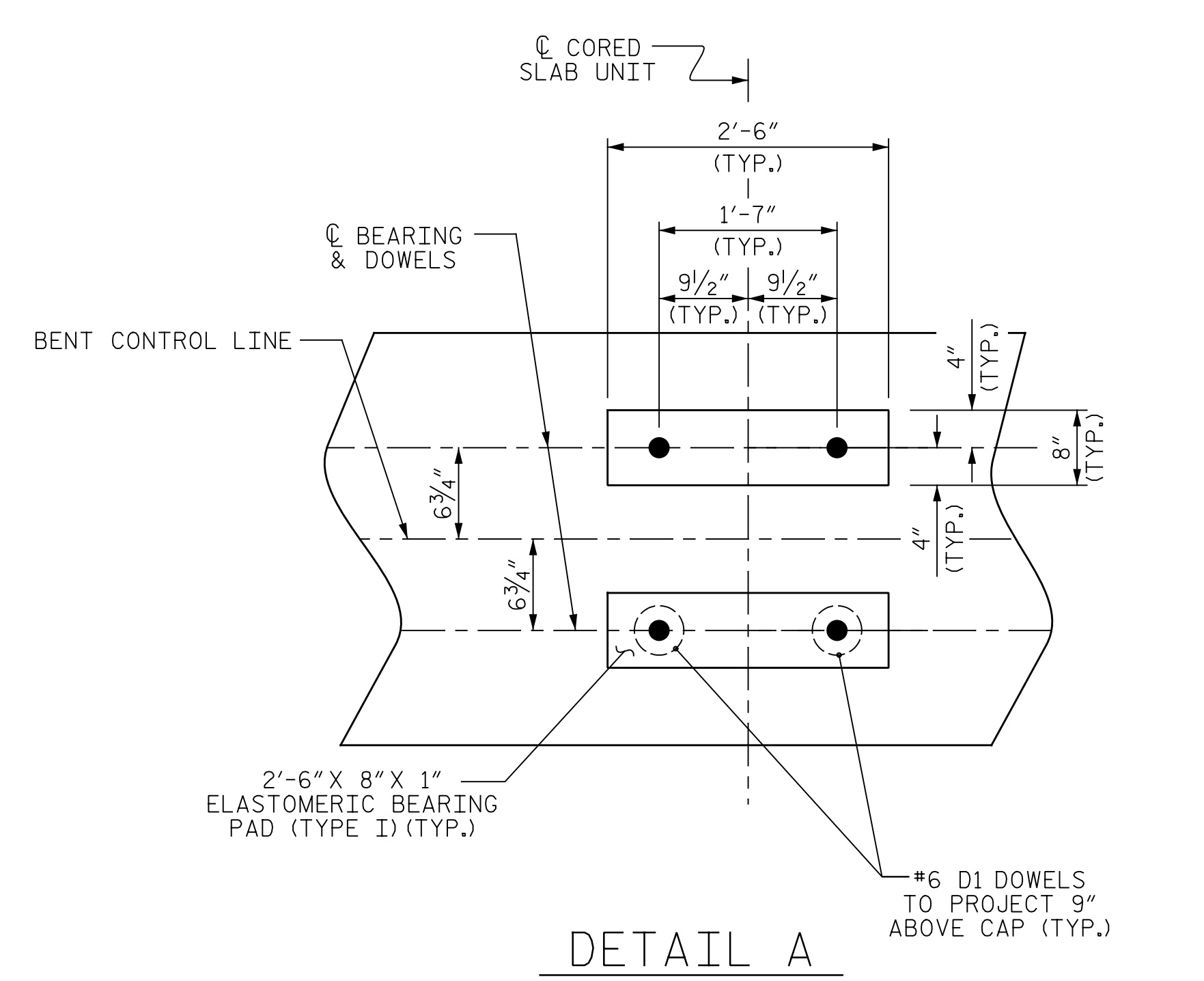
ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."

★ 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 ONE FOOT BELOW THE GROUND LINE.

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

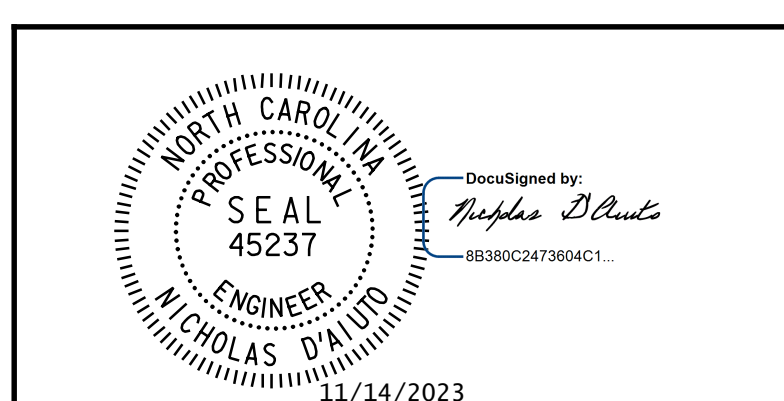
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



BENT CAP ELEVATIONS	
(A)	289.57
(B)	290.09
(C)	290.61

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
BENT 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			24

DRAWN BY: J. N. AUSTIN DATE: 8-10-22
 CHECKED BY: N. D'AIUTO DATE: 8-12-22
 DESIGN E.O.R.: N. D'AIUTO DATE: 1-4-23

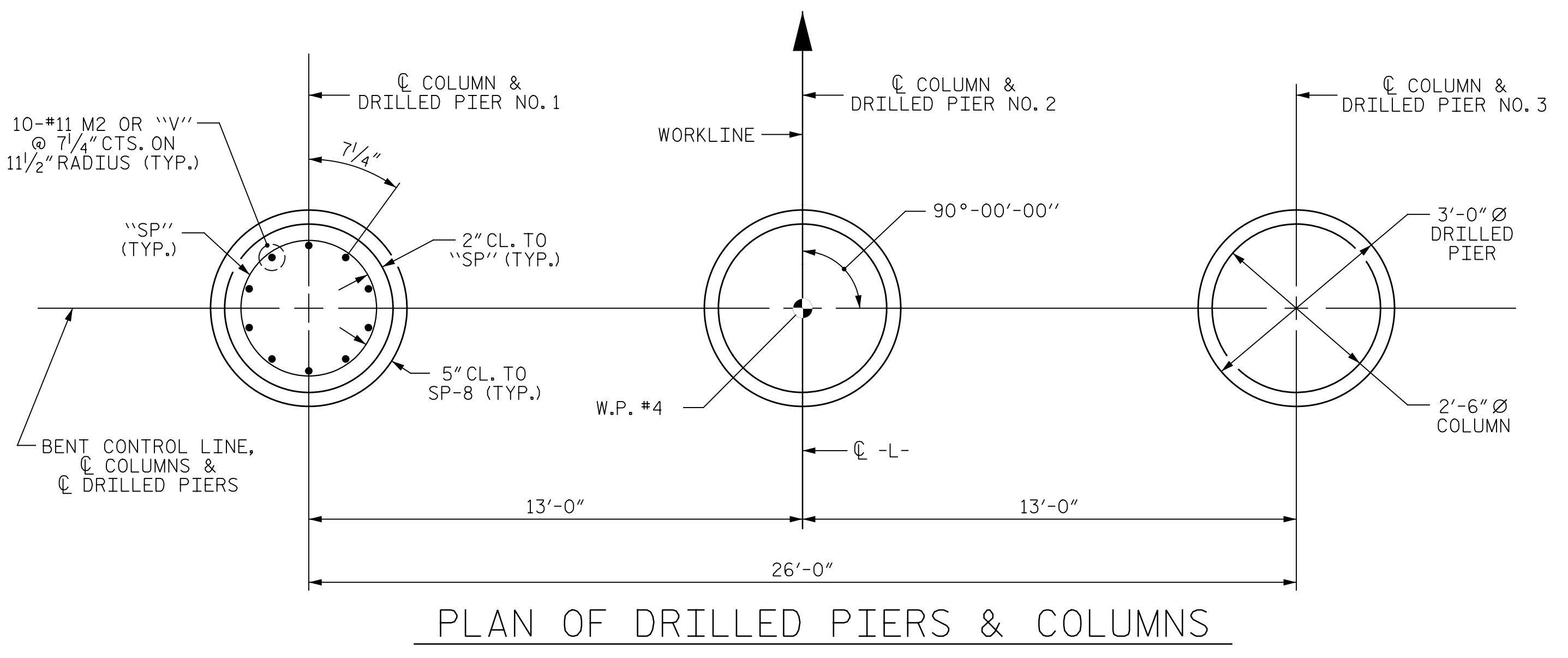
ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.

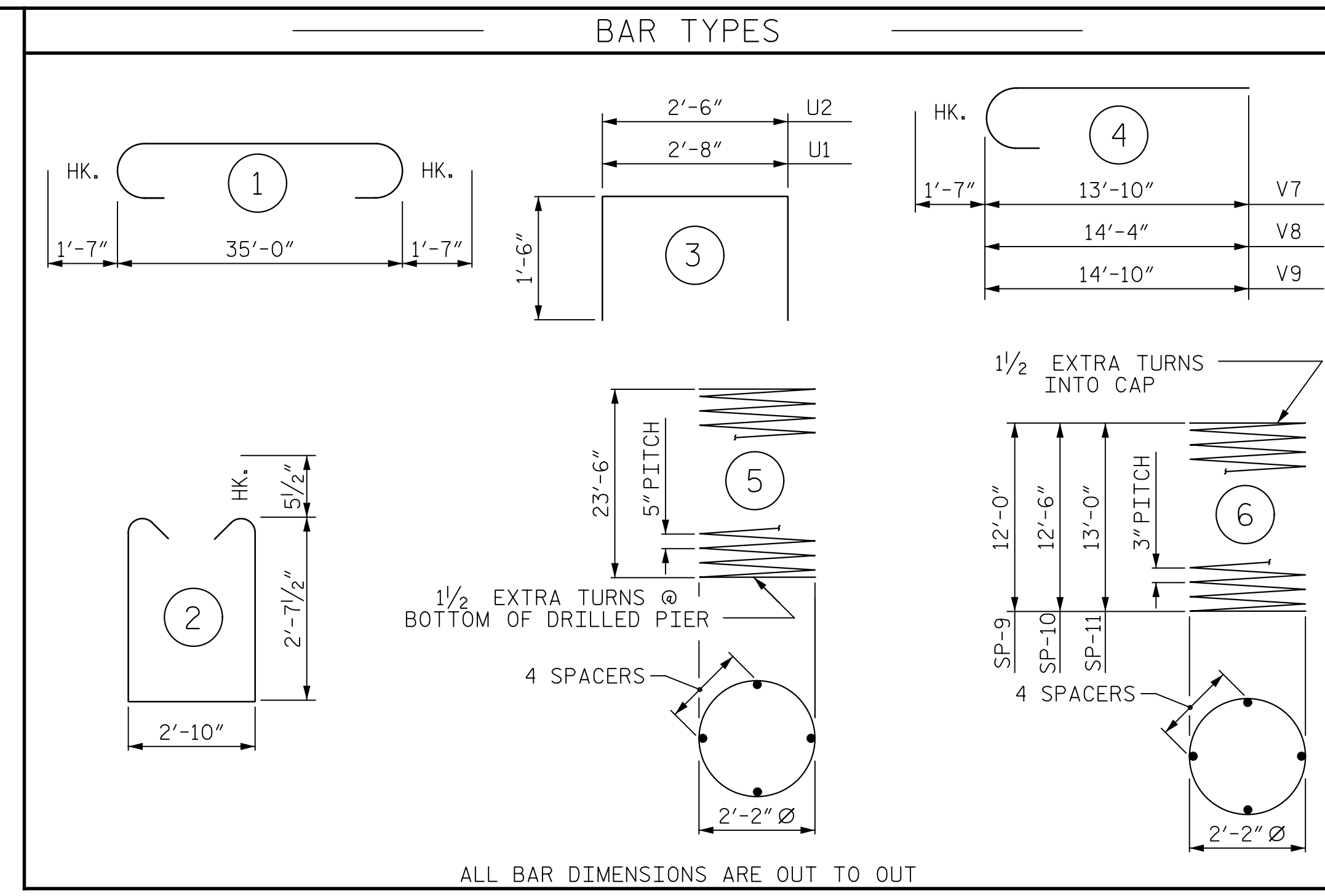
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 4505 Falls of Neuse Road, Suite 110
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 License #: P-9999

Usernames: jlm.austin
 File names: R:\Projects\19-55.01_SML.B.6046_SRI917_Over_Long_Creek\NC DOT Structures\Drawings\Find\401_023.B6046_SML.B3_02.830102.dgn
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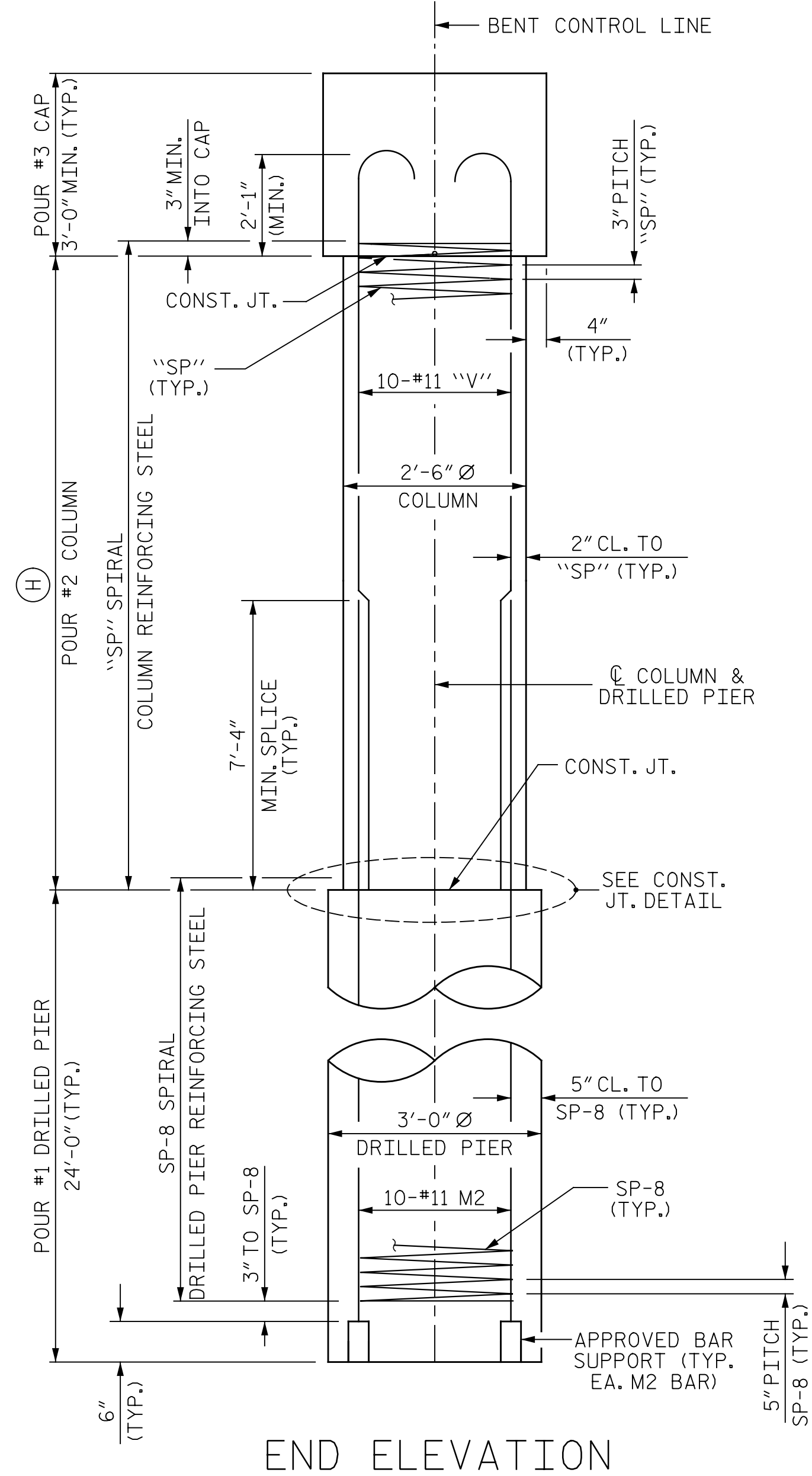


PLAN OF DRILLED PIERS & COLUMNS

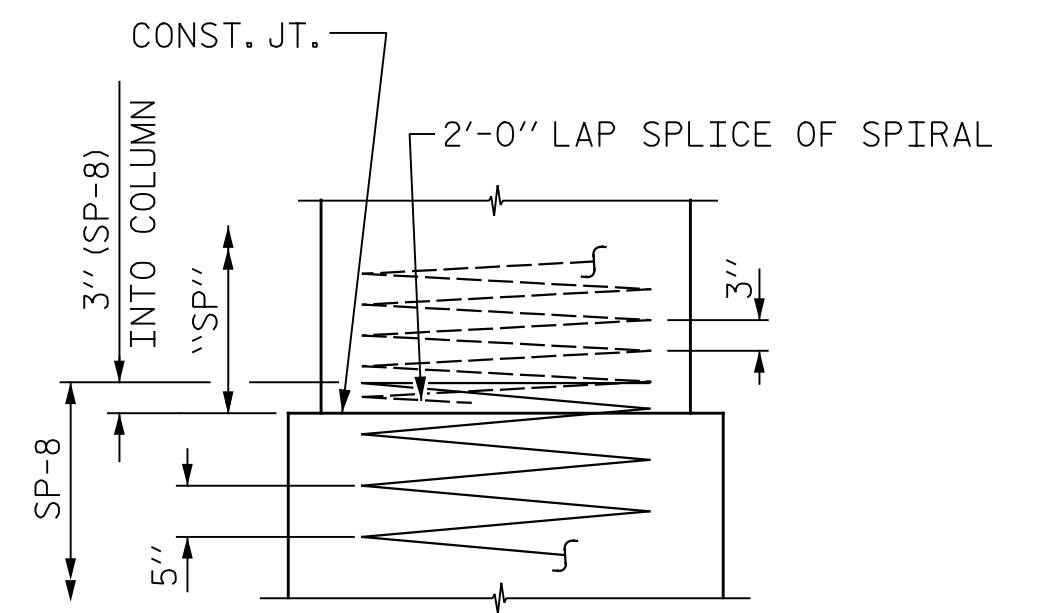


ALL BAR DIMENSIONS ARE OUT TO OUT

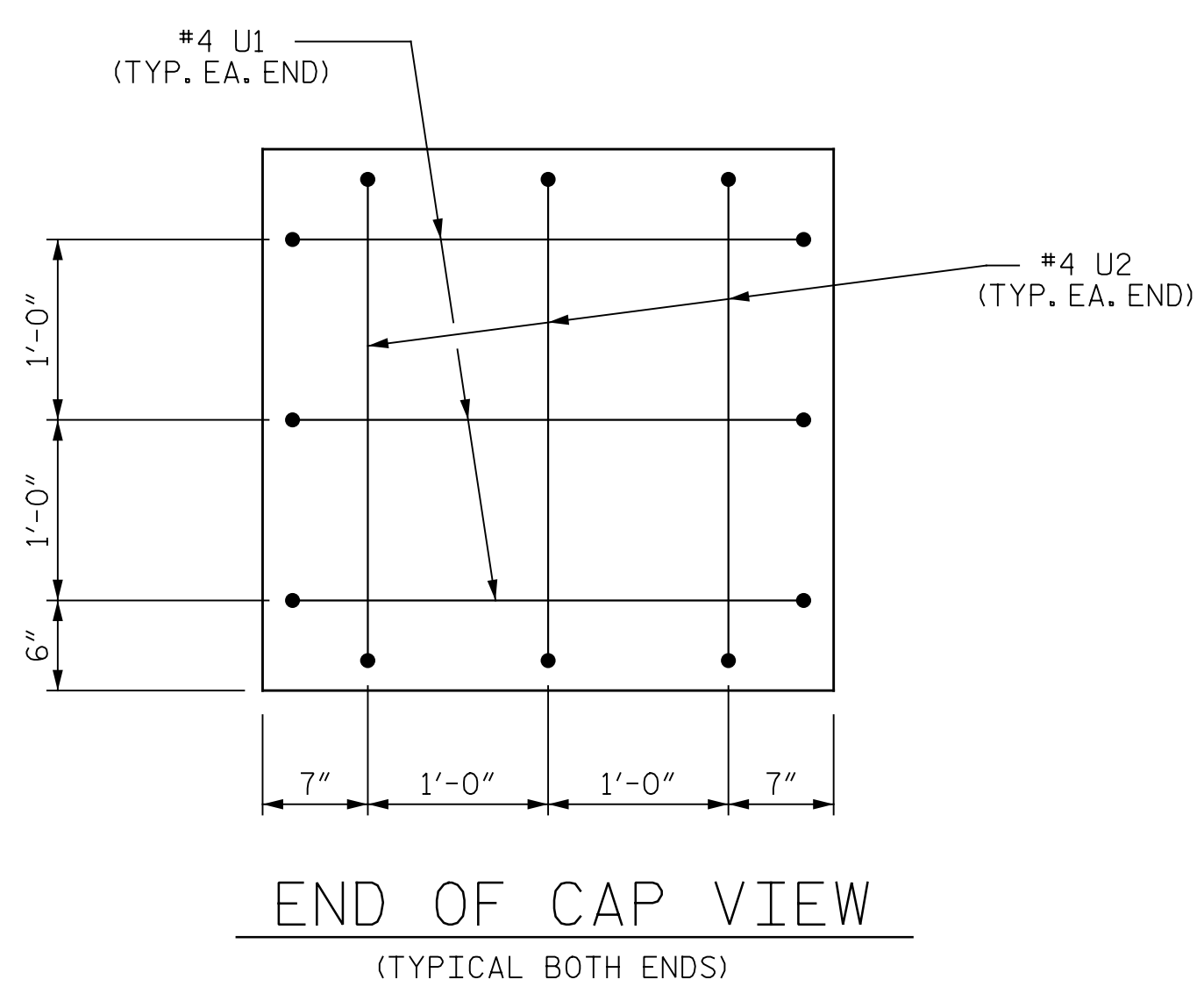
BILL OF MATERIAL					
BENT 3					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	38'-2"	2028
B2	6	#5	STR	35'-2"	220
D1	44	#6	STR	1'-6"	99
M2	30	#11	STR	30'-10"	4915
S1	60	#5	2	9'-0"	563
U1	6	#4	3	5'-8"	23
U2	6	#4	3	5'-6"	22
V7	10	#11	4	15'-5"	819
V8	10	#11	4	15'-11"	846
V9	10	#11	4	16'-5"	872
REINFORCING STEEL					10407 LBS.
SP-8	3	*	5	389'-5"	1218
SP-9	1	**	6	330'-8"	221
SP-10	1	**	6	344'-1"	230
SP-11	1	**	6	357'-5"	239
SPIRAL COLUMN REINFORCING STEEL					1908 LBS.
* THE SP-8 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					
** THE SP-9, SP-10 & SP-11 SPIRAL REINF. STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
CLASS A CONCRETE BREAKDOWN (FOR BENT 3)					
POUR #2 (COLUMNS)					6.7 C.Y.
POUR #3 (CAP)					12.5 C.Y.
TOTAL CLASS A CONCRETE					19.2 C.Y.



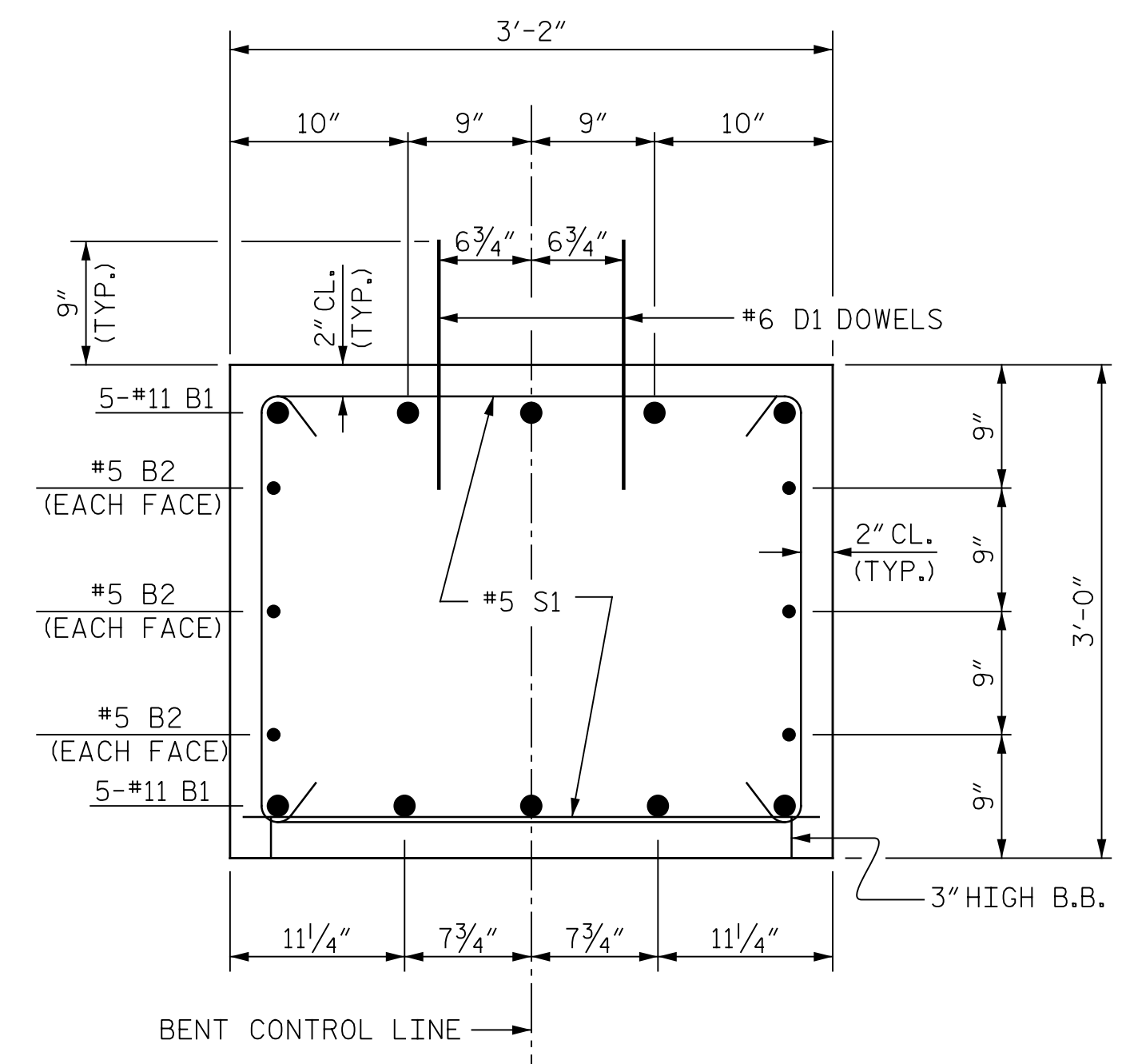
END ELEVATION



CONSTRUCTION JOINT DETAIL

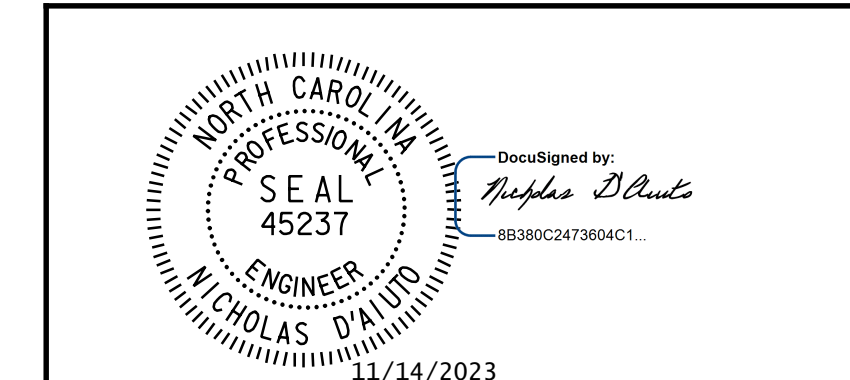


END OF CAP VIEW (TYPICAL BOTH ENDS)



SECTION THRU CAP

COLUMN HEIGHT (H)	
COL. 1	11'-8"
COL. 2	12'-2 1/4"
COL. 3	12'-8 1/2"



PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-
 SHEET 2 OF 2

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

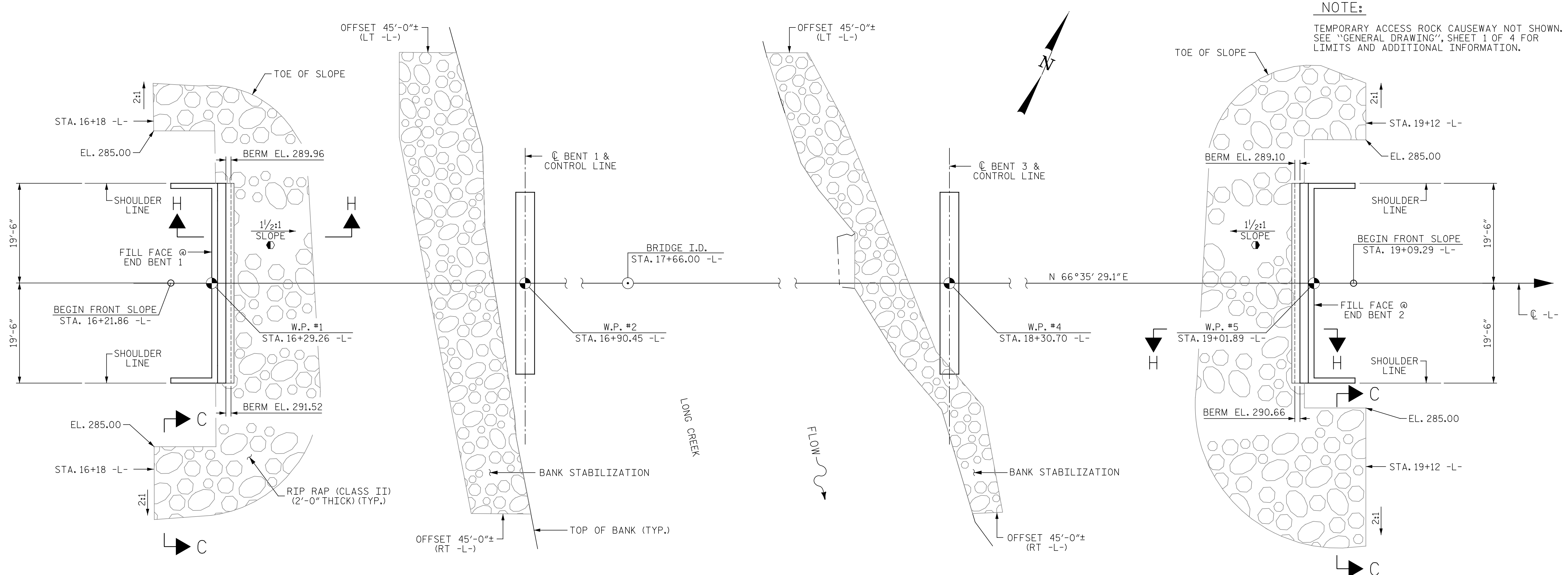
SHEET NO.	
S-22	TOTAL SHEETS 24

DRAWN BY :	J. N. AUSTIN	DATE :	8-10-22
CHECKED BY :	N. D'AIUTO	DATE :	8-12-22
DESIGN E.O.R. :	N. D'AIUTO	DATE :	1-4-23

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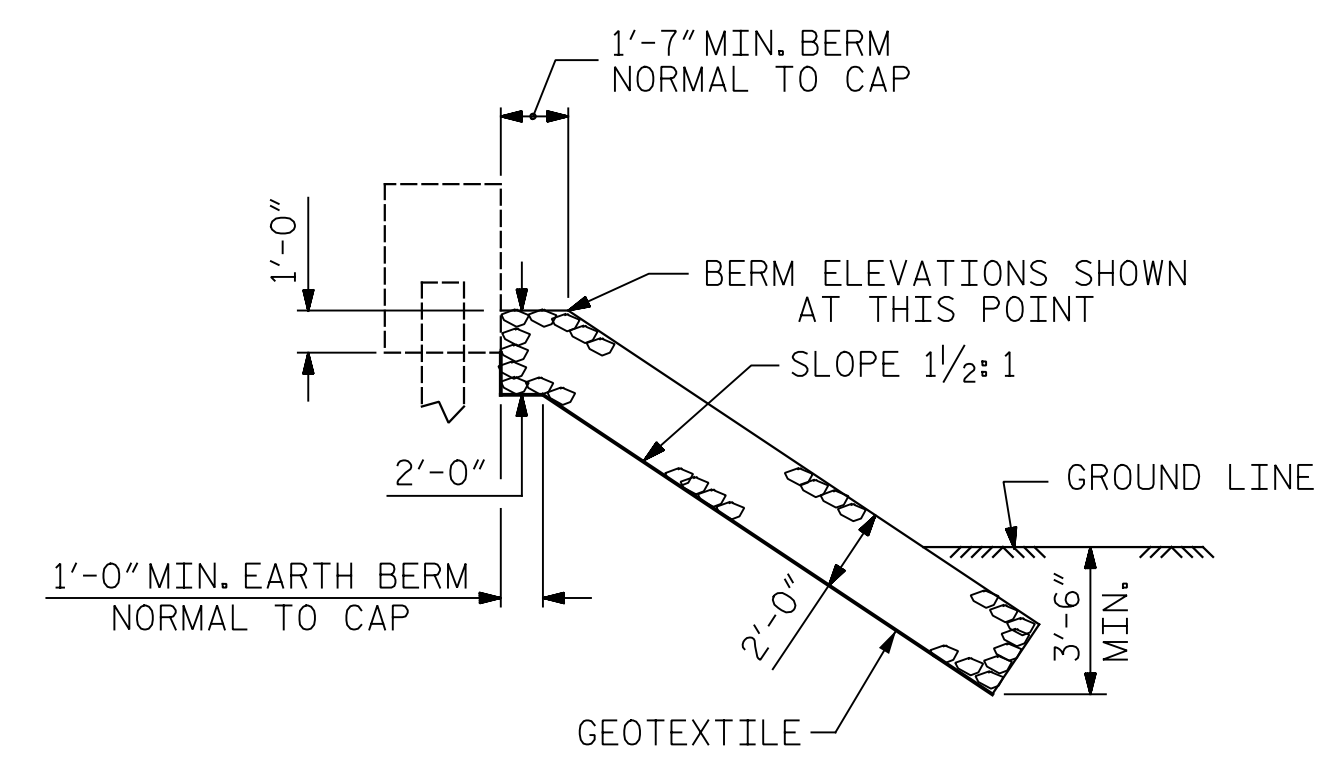
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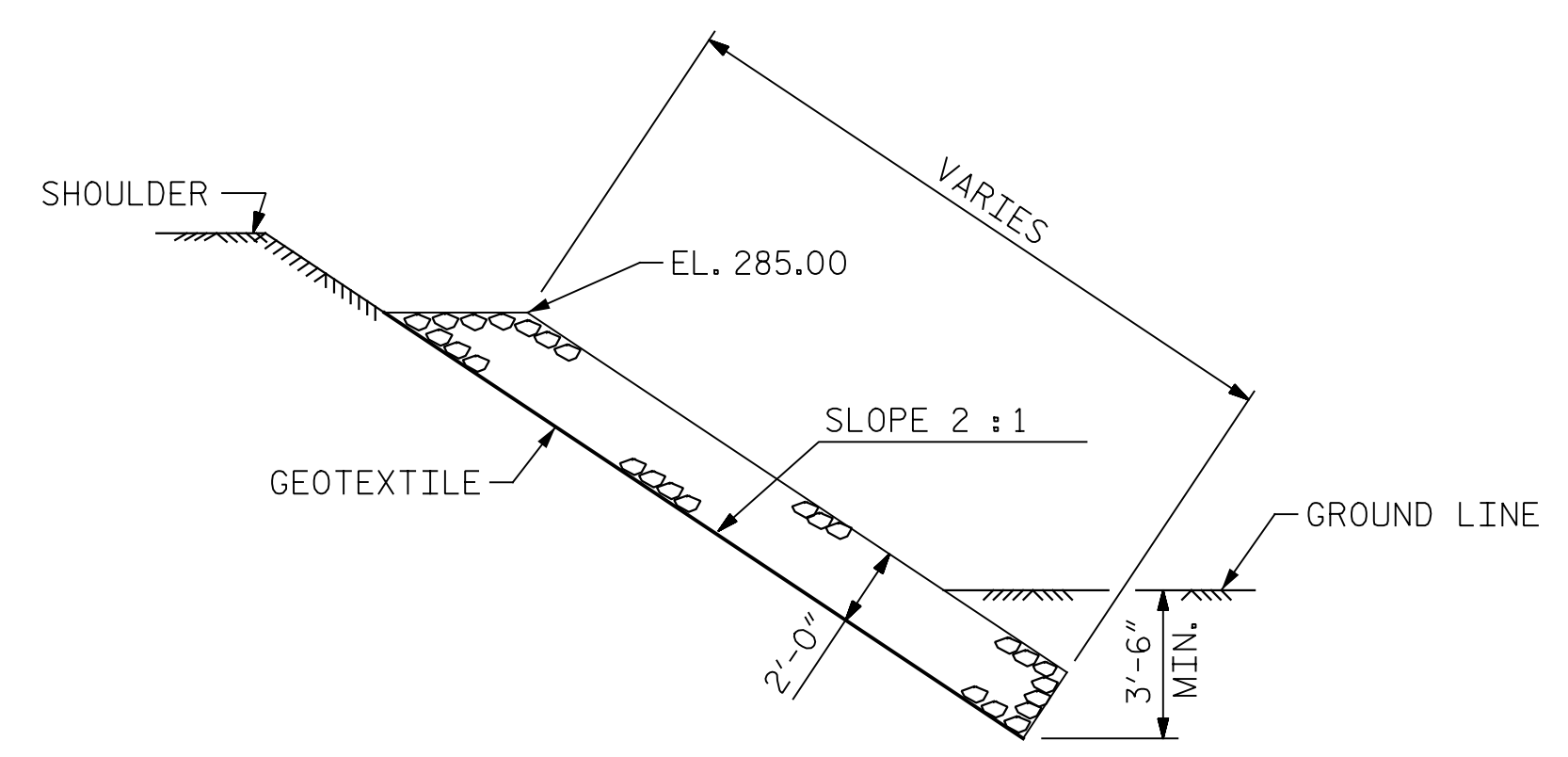
NOTE:
 TEMPORARY ACCESS ROCK CAUSEWAY NOT SHOWN.
 SEE "GENERAL DRAWING", SHEET 1 OF 4 FOR
 LIMITS AND ADDITIONAL INFORMATION.

PLAN
 ○ NORMAL TO CAP

ESTIMATED QUANTITIES		
BRIDGE @ STA. 17+66.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	180	201
BANK STABILIZATION NEAR END BENT 1	100	150
END BENT 2	235	262
BANK STABILIZATION NEAR END BENT 2	122	175



SECTION H-H

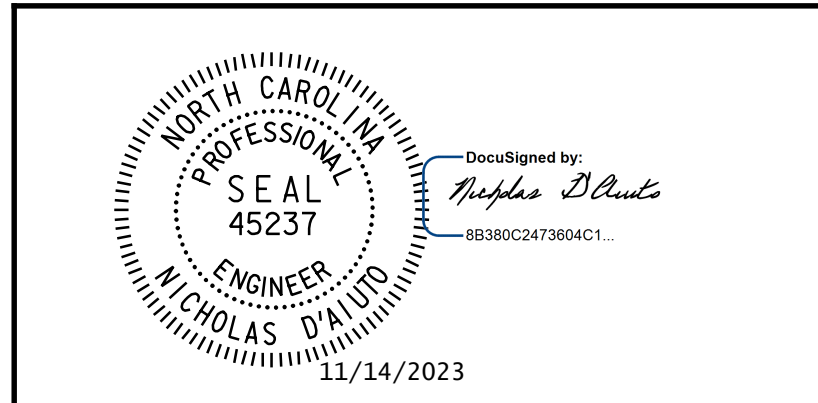


SECTION C-C

PROJECT NO. B-6046
STANLY COUNTY
 STATION: 17+66.00 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

RIP RAP DETAILS



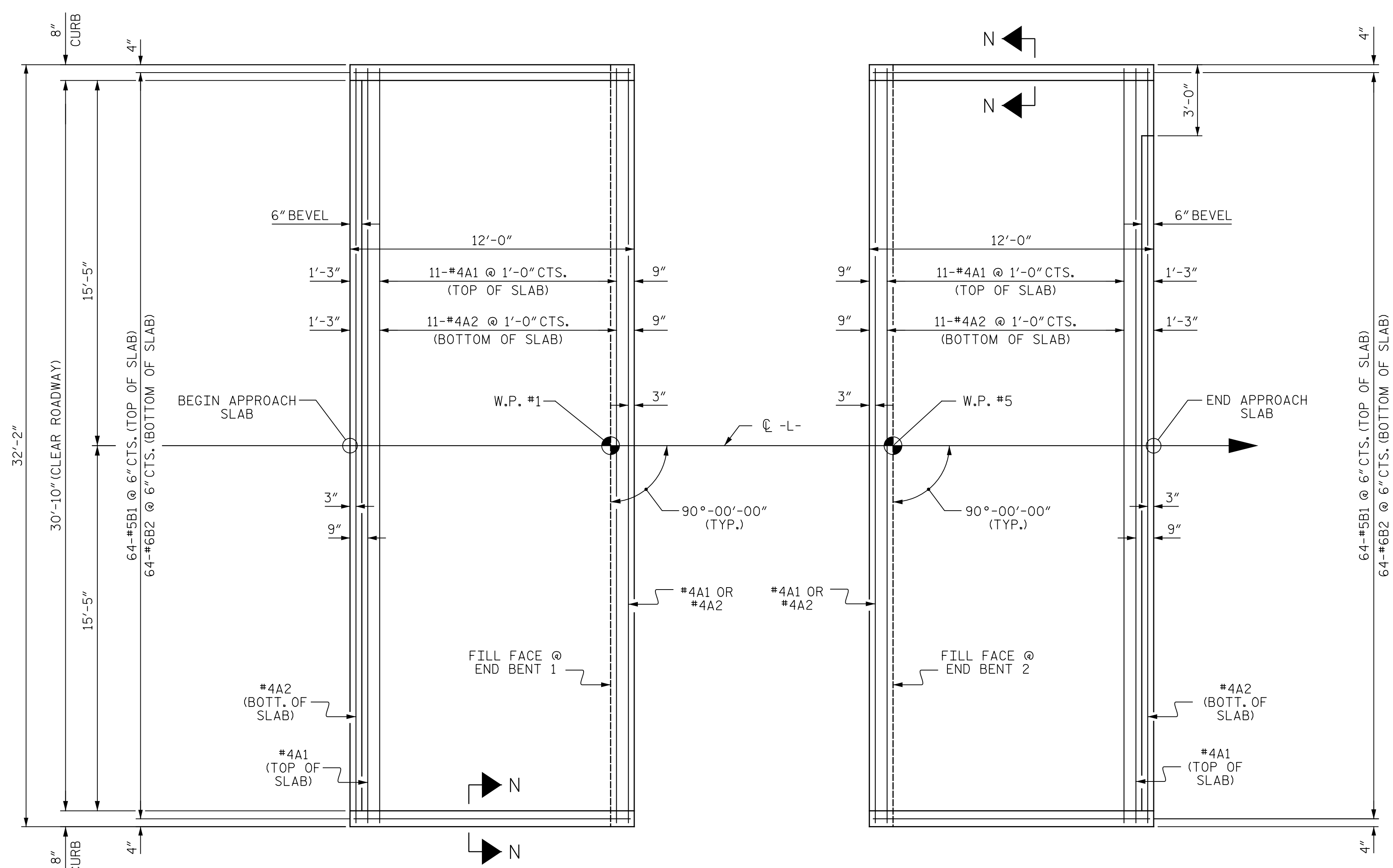
ICE of CAROLINAS, PLLC
 4505 Falls of Neuse Road, Suite 110
 Raleigh, North Carolina 27609
 Phone: 919-822-0333
 License #: P-9999

REVISIONS						SHEET NO. S-23
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 24
2			4			

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DRAWN BY : J. N. AUSTIN DATE : 8-10-22
 CHECKED BY : N. D'AIUTO DATE : 8-12-22
 DESIGN E.O.R. : N. D'AIUTO DATE : 1-4-23

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

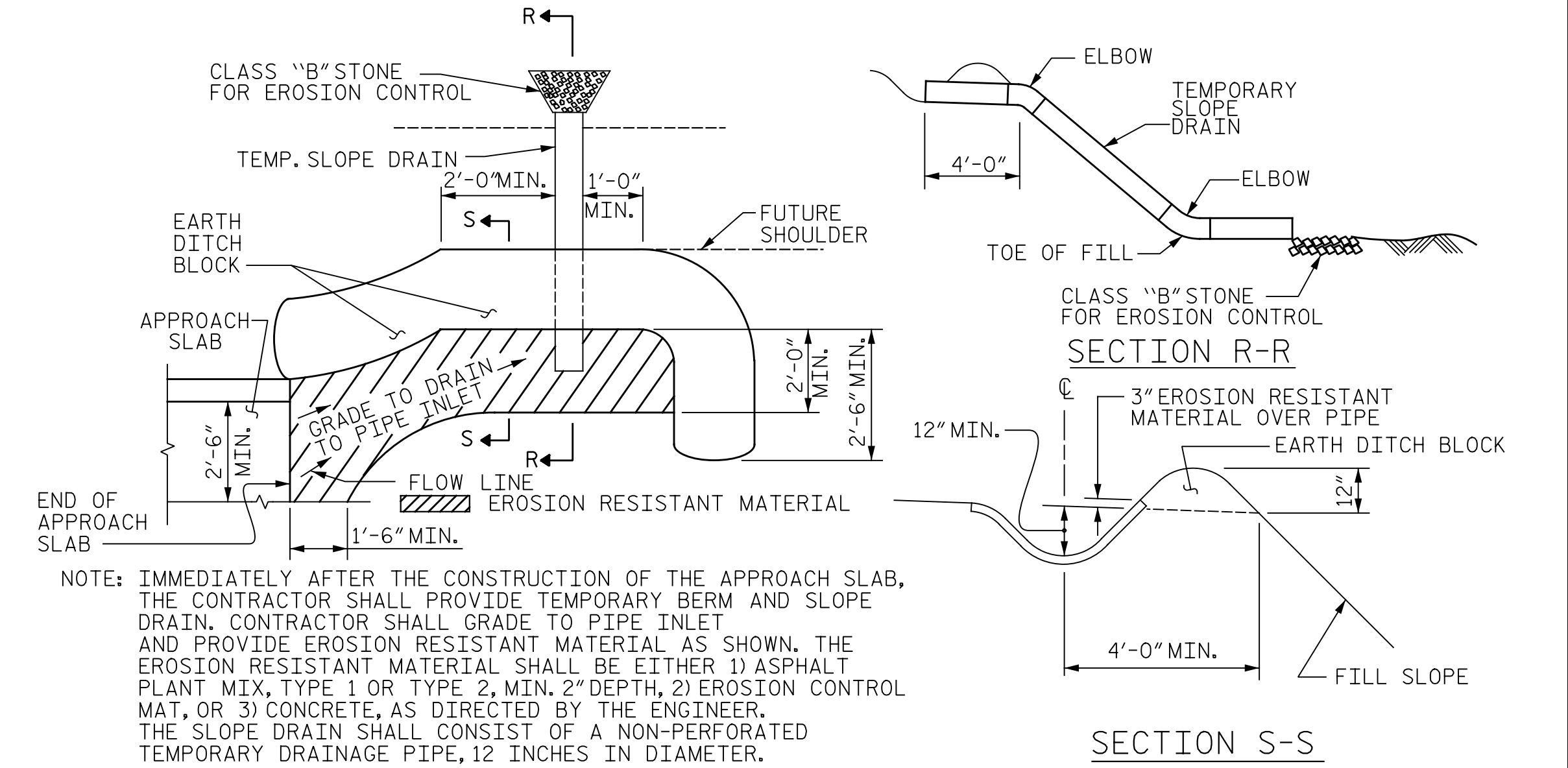
NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

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

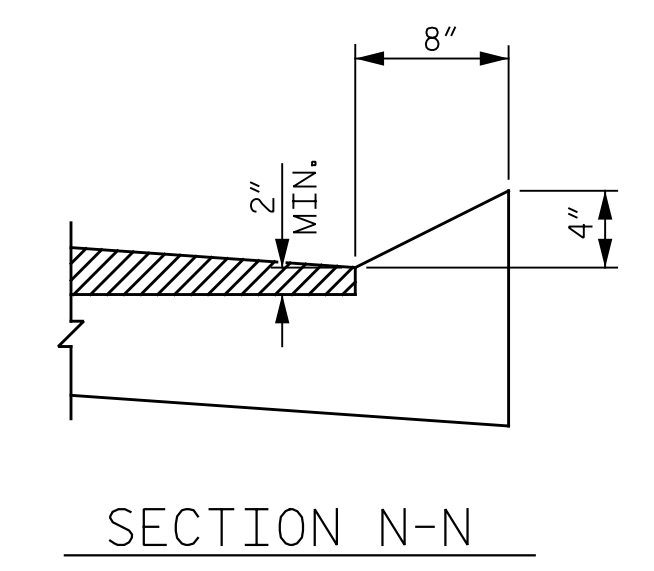
APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL					
APPROACH SLAB AT E.B. 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	31'-10"	276
A2	13	#4	STR	31'-10"	276
*B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1397
* EPOXY COATED REINFORCING STEEL				LBS.	1021
CLASS AA CONCRETE				C. Y.	19.5
APPROACH SLAB AT E.B. 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	31'-10"	276
A2	13	#4	STR	31'-10"	276
*B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1397
* EPOXY COATED REINFORCING STEEL				LBS.	1021
CLASS AA CONCRETE				C. Y.	19.5



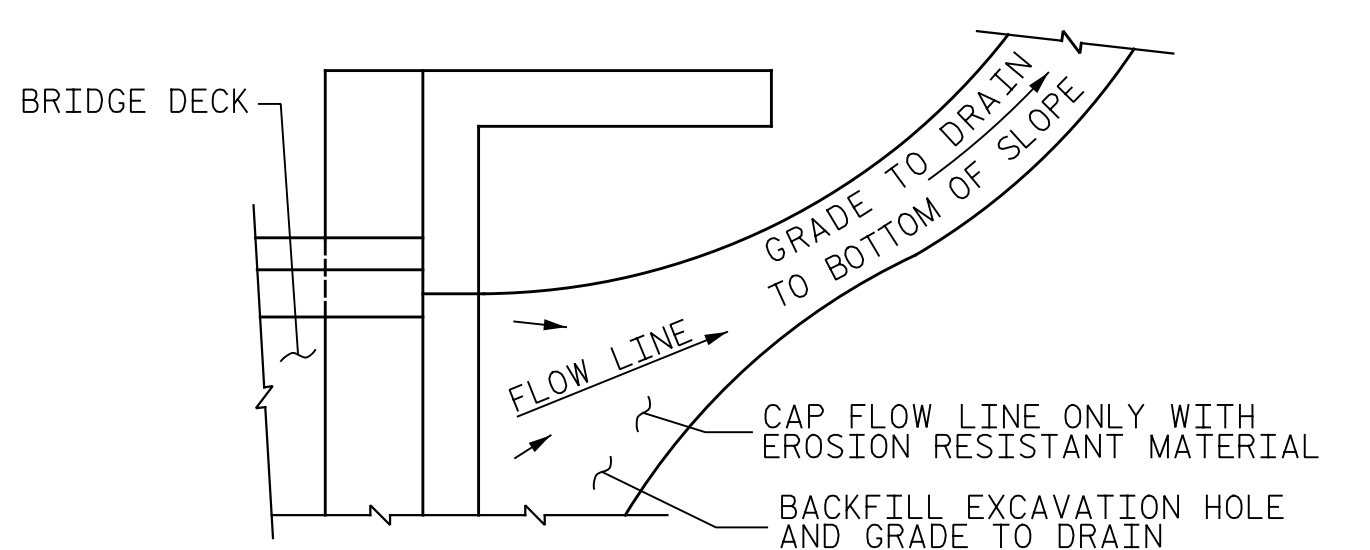
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

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



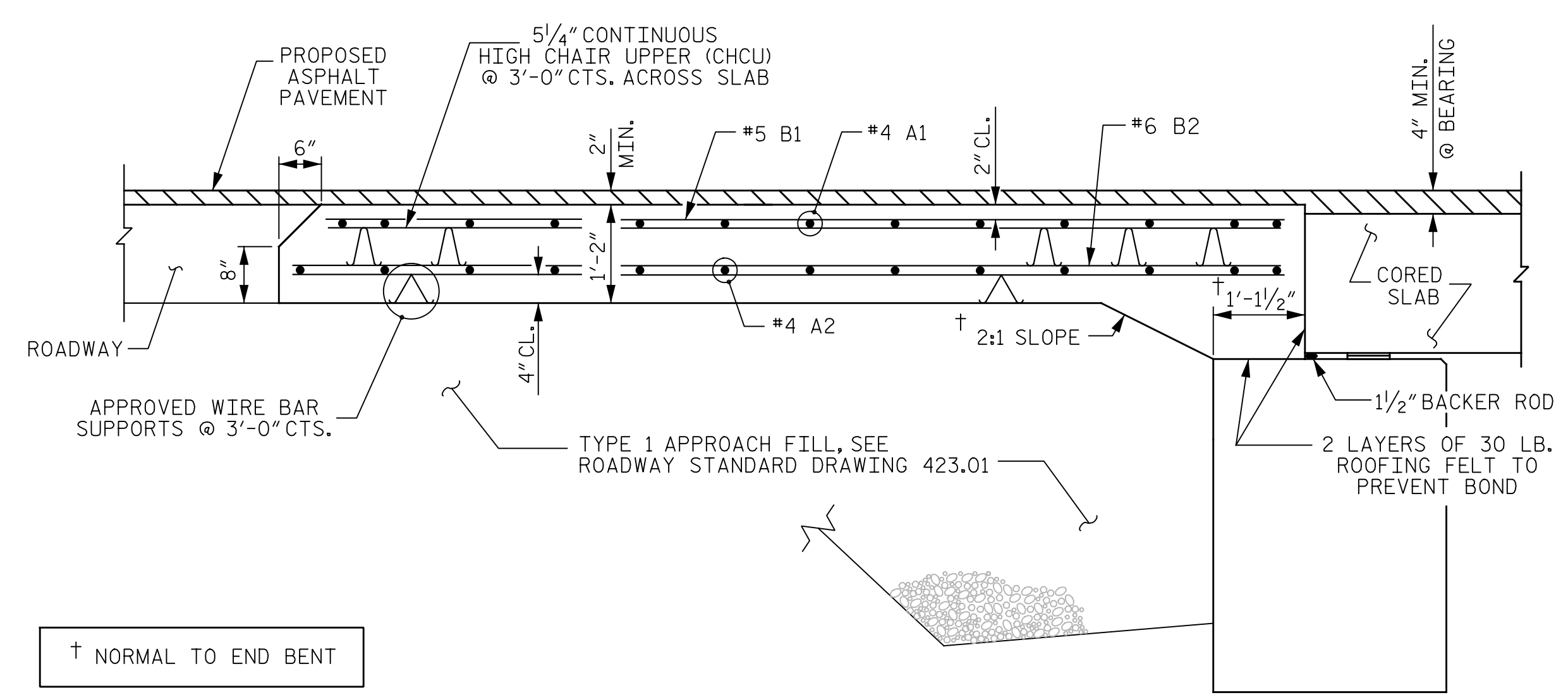
SECTION N-N

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



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

TEMPORARY DRAINAGE DETAIL



SECTION THRU SLAB

DRAWN BY: J. N. AUSTIN DATE: 8-10-22
 CHECKED BY: N. D'AIUTO DATE: 8-12-22
 DESIGN E.O.R.: N. D'AIUTO DATE: 1-4-23

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Professional Engineer Seal for ICE of Carolinas, PLLC, License # 45237, dated 11/14/2023.

ICE of Carolinas, PLLC
 4505 Falls of Neuse Road, Suite 110
 Raleigh, North Carolina 27609
 Phone: 919-822-0333
 License #: P-9999

PROJECT NO. B-6046
 STANLY COUNTY
 STATION: 17+66.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE					
CORED SLAB UNIT (SUB-REGIONAL TIER) 90° SKEW					
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					24

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $\frac{1}{16}$ " 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.