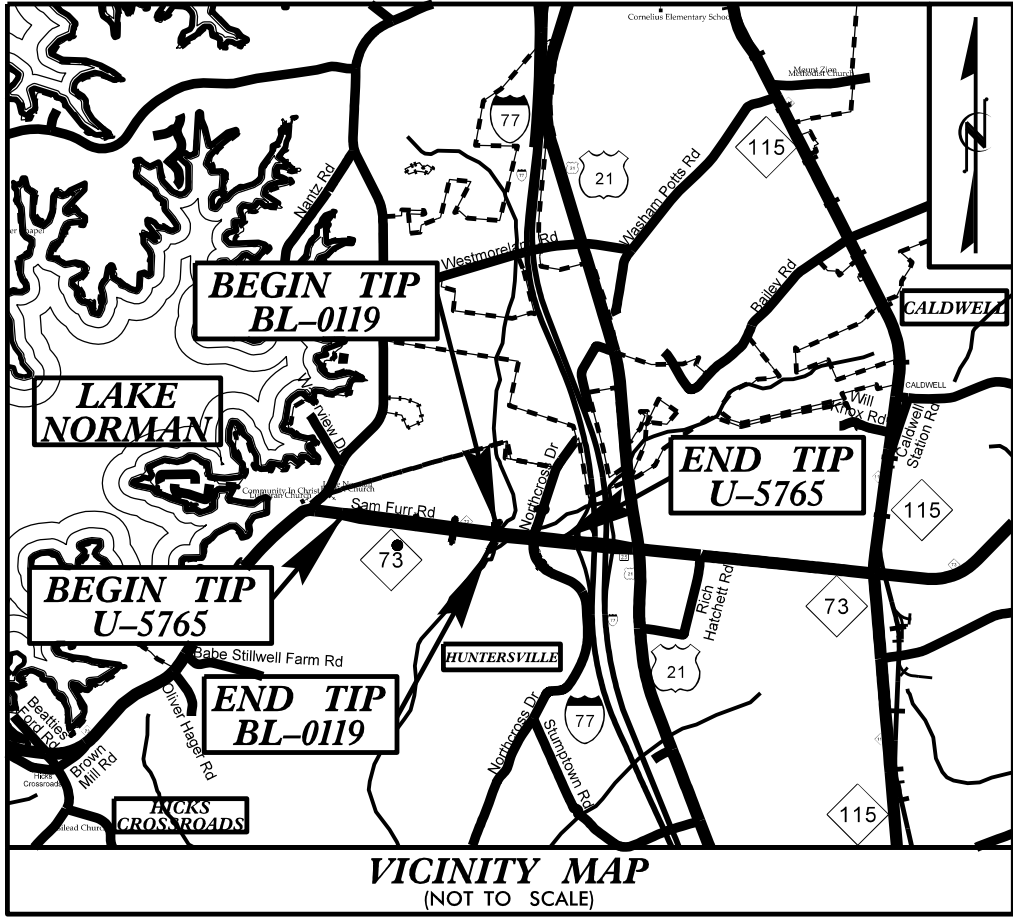


09/08/99

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TIME: 9:53:18 AM

CONTRACT: C205223 TIP PROJECT: U-5765/BL-0119



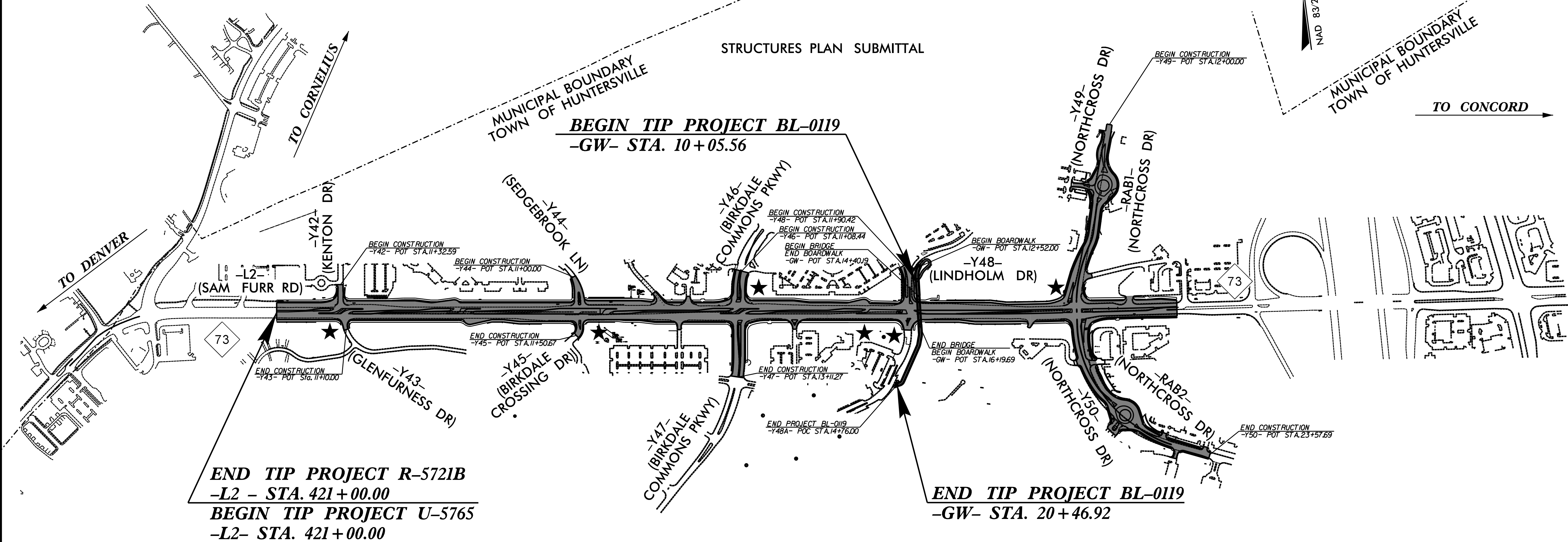
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

LOCATION: NC 73 – SR 5544 (WEST CATAWBA AVENUE) TO
SR 2316 (NORTHCROSS DRIVE)

TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING, RETAINING WALLS,
SIGNALS, SIGNING, STRUCTURES AND CULVERTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5765/BL-0119	S01	61
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
50178.1.1	N/A	PE	
50178.2.1	N/A	ROW	
50178.2.2	N/A	UTIL	
50178.3.1	N/A	CONST.	
501704.3.1	5170401	CONST. (BL-0119)	



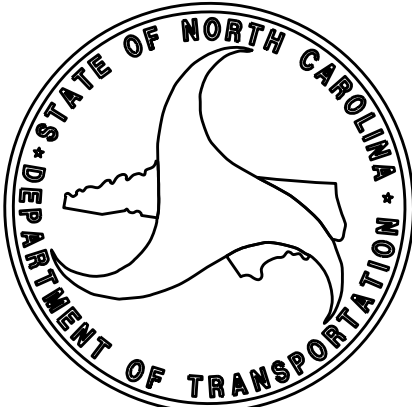
STRUCTURES



HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES		DESIGN DATA		PROJECT LENGTH		DIVISION OF HIGHWAYS		ENGINEER	
ADT 2026 = 63,350 ADT 2045 = 76,100 K = 8 % D = 55 % T = 4 % * V = 50 MPH *TTST = 1% DUAL = 3% FUNC CLASS = REGIONAL TIER		LENGTH ROADWAY TIP PROJECT U-5765 = 1.067 MILES LENGTH STRUCTURE TIP PROJECT U-5765 = 0.011 MILES TOTAL LENGTH TIP PROJECT U-5765 = 1.078 MILES LENGTH ROADWAY TIP PROJECT BL-0119 = 0.046 MILES LENGTH STRUCTURE TIP PROJECT BL-0119 = 0.151 MILES TOTAL LENGTH TIP PROJECT BL-0119 = 0.197 MILES		NCDOT CONTACT: RADHA ATTALURI, PE PROJECT MANAGER		Prepared In the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610 2018 STANDARD SPECIFICATIONS RIGHT OF WAY DATE: SEPTEMBER 16, 2022 LETTING DATE: OCTOBER 20, 2026 PAUL ROBBINS, PE PROJECT ENGINEER JORDAN BOND, PE PROJECT DESIGN ENGINEER		8/14/2026 Durrell J. Mast P.E.	



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S01	TITLE SHEET
S02	INDEX OF SHEETS
S03	GENERAL DRAWING - PEDESTRIAN BRIDGE OVER NC 73 (SAM FURR RD.) HUNTERSVILLE NC
S04	GENERAL DRAWING - PEDESTRIAN BRIDGE OVER NC 73 (SAM FURR RD.) HUNTERSVILLE NC
S05	GENERAL DRAWING - PEDESTRIAN BRIDGE OVER NC 73 (SAM FURR RD.) HUNTERSVILLE NC
S06	GENERAL DRAWING - PEDESTRIAN BRIDGE OVER NC 73 (SAM FURR RD.) HUNTERSVILLE NC
S07	GENERAL DRAWING - PEDESTRIAN BRIDGE OVER NC 73 (SAM FURR RD.) HUNTERSVILLE NC
S08	GENERAL DRAWING - FOUNDATION LAYOUT
S09	GENERAL DRAWING - FOUNDATION LAYOUT
S10	GENERAL DRAWING - PILE FOUNDATION TABLES
S11	GENERAL DRAWING - DRILLED PIER FOUNDATION TABLES
S12	GENERAL DRAWING - LONG CHORD LAYOUT
S13	GENERAL DRAWING - LONG CHORD LAYOUT
S14	GENERAL DRAWING - LONG CHORD LAYOUT
S15	GENERAL DRAWING - LOCATION SKETCH
S16	GENERAL DRAWING - TOTAL BILL OF MATERIAL
S17	SUPERSTRUCTURE - CIP FLAT SLAB SECTIONS AND DETAILS
S18	SUPERSTRUCTURE - CIP FLAT SLAB PLAN OF SPANS UNIT 1
S19	SUPERSTRUCTURE - CIP FLAT SLAB PLAN OF SPANS UNIT 1
S20	SUPERSTRUCTURE - CIP FLAT SLAB PLAN OF SPANS UNIT 7
S21	SUPERSTRUCTURE - CIP FLAT SLAB PLAN OF SPANS UNIT 7
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S25	SUPERSTRUCTURE - BOX BEAM UNIT PLAN OF SPANS (SPANS F & H)
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S29	SUPERSTRUCTURE - 3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAM UNIT (SPAN G)
S30	SUPERSTRUCTURE - 3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAM SECTIONS AND DETAILS
S31	SUPERSTRUCTURE - 3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAM UNIT DETAILS
S32	SUPERSTRUCTURE - SPAN E DETAILS
S33	SUPERSTRUCTURE - CONCRETE OVERLAY DETAILS
S34	SUPERSTRUCTURE - CONCRETE PARAPET & LIGHTING DETAILS
S35	SUPERSTRUCTURE - CONCRETE PARAPET & LIGHTING DETAILS
S36	SUPERSTRUCTURE - CONCRETE PARAPET & LIGHTING DETAILS
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S46	SUBSTRUCTURE - BENTS 4 & 5 - PLAN AND ELEVATION
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S48	SUBSTRUCTURE - BENTS 6-9 - PLAN AND ELEVATION
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SN	STANDARD NOTES

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PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-



Durrell J. Mast
8/14/2026

DES BY: <u>D. MAST</u>	DATE : <u>05/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE : <u>05/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE : <u>05/26</u>	CHK BY: <u>D. MAST</u>	DATE : <u>05/26</u>

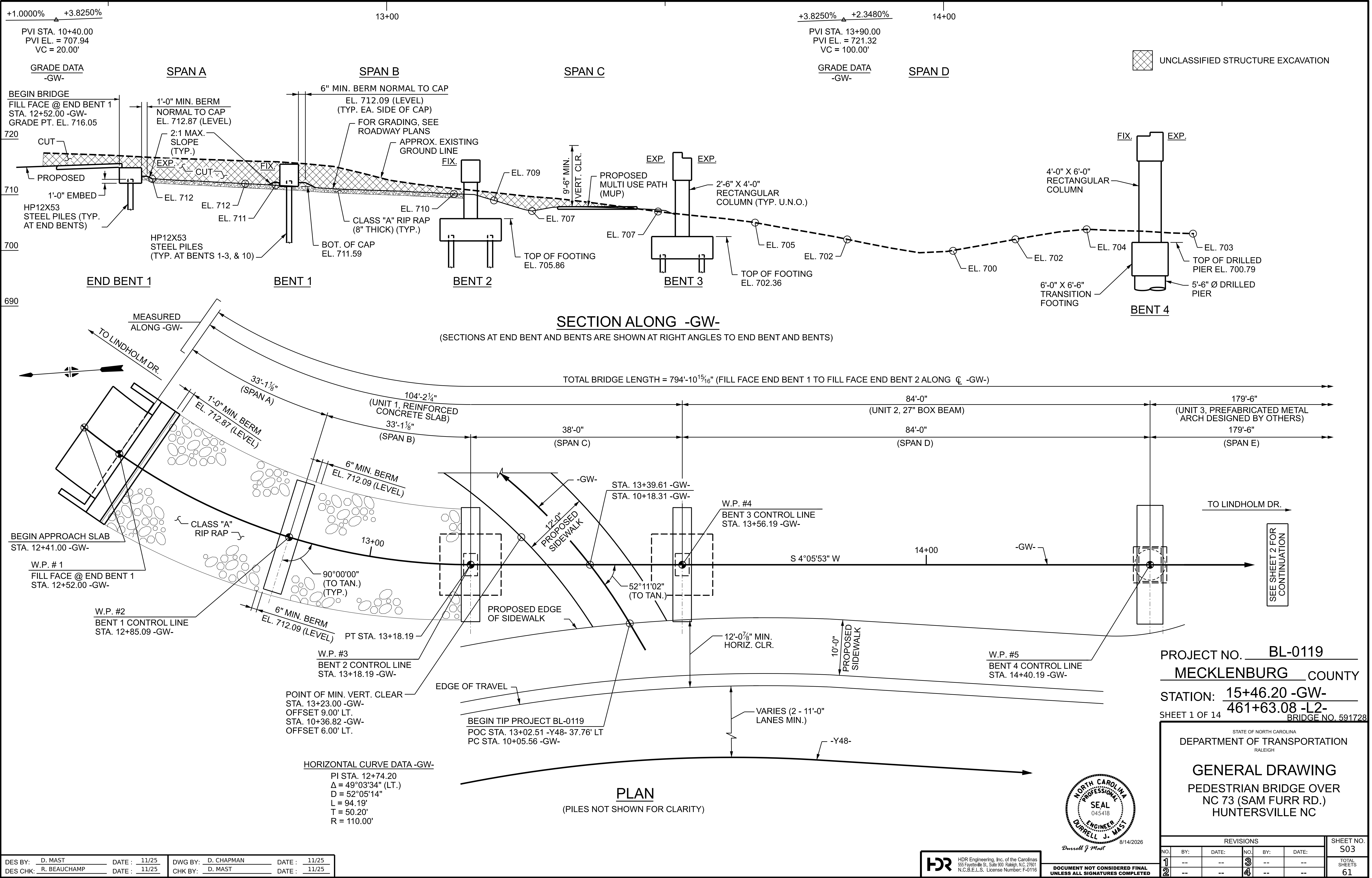
HDR Engineering, Inc. of the Carolinas

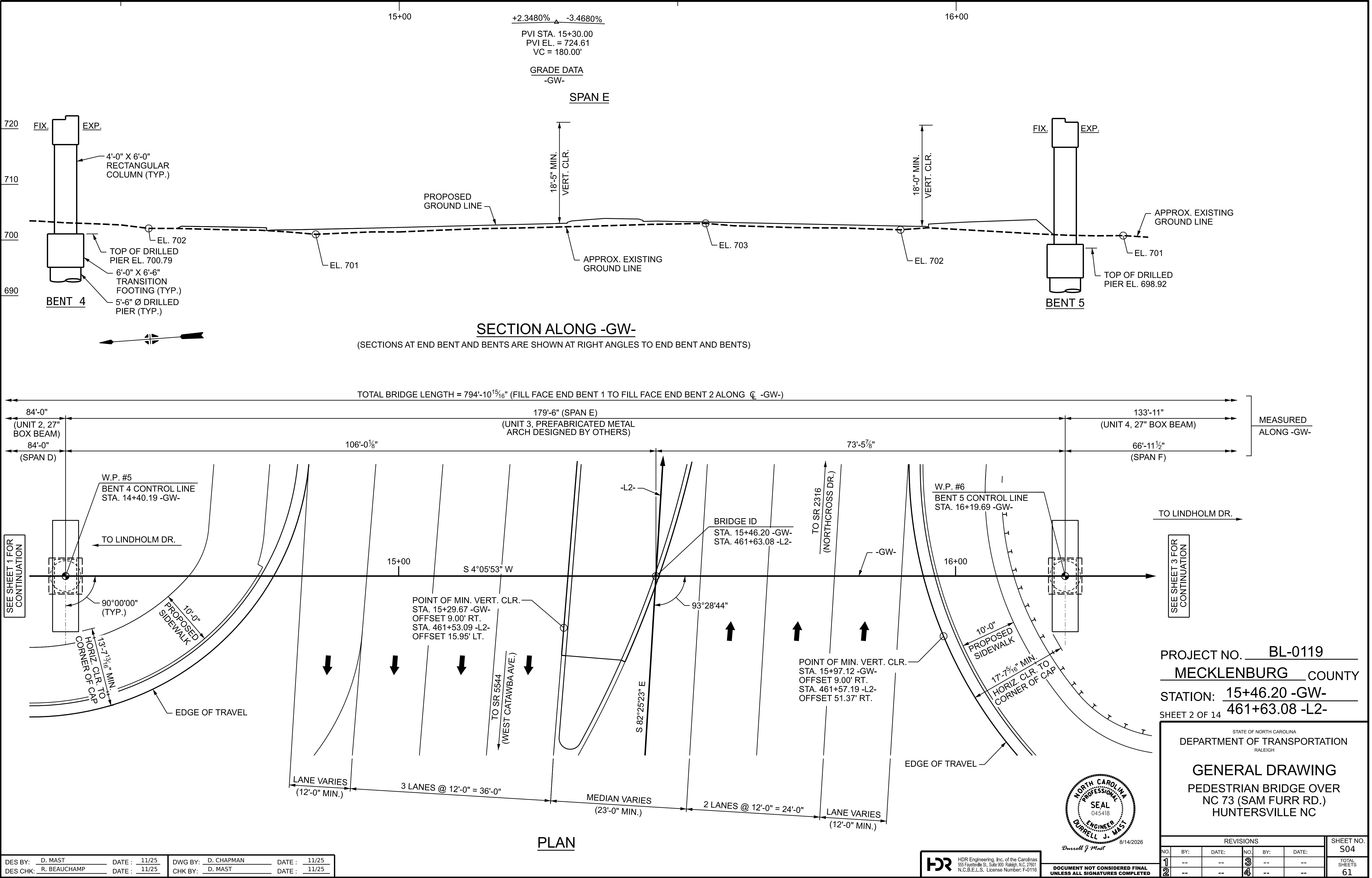
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601

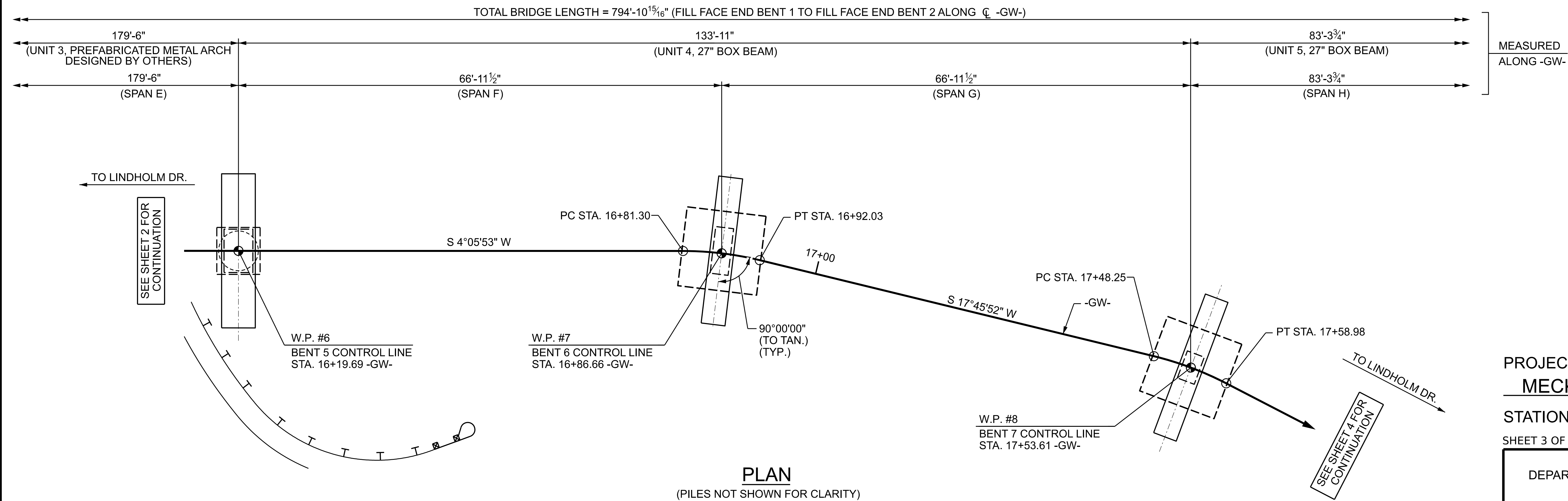
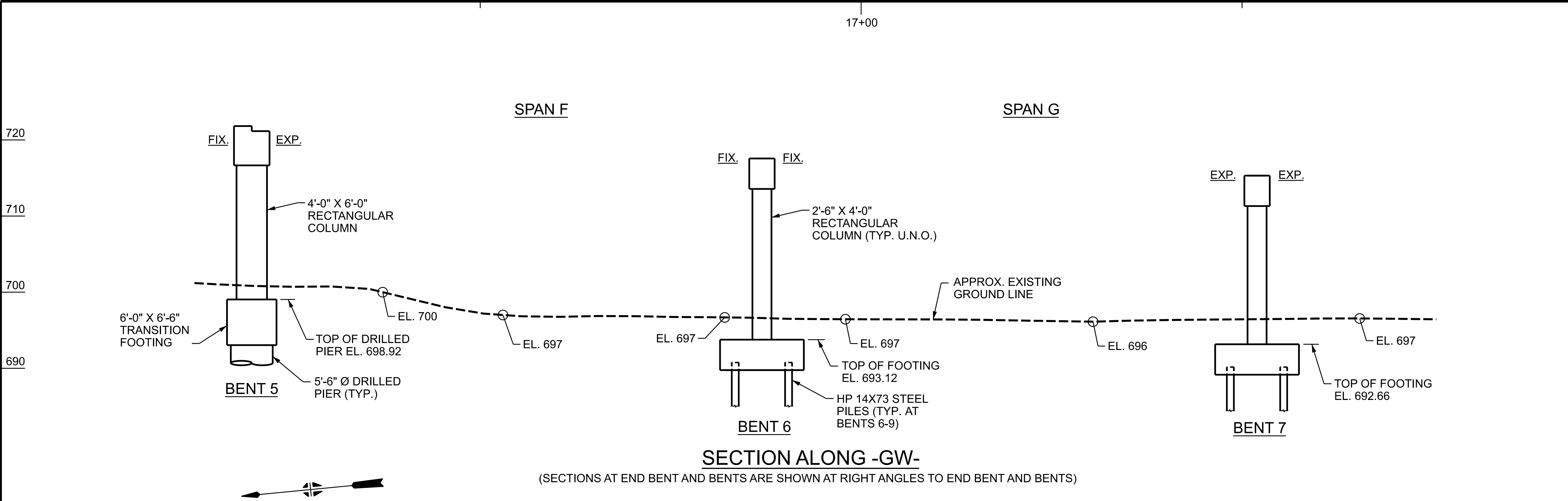
N.C.B.E.L.S. License Number: F-0116

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
INDEX OF SHEETS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
					TOTAL SHEETS
					61







HORIZONTAL CURVE DATA -GW-

PI STA. 16+86.69
Δ = 13°39'59" (RT.)
D = 127°19'26"
L = 10.73'
T = 5.39'
R = 45.00'

HORIZONTAL CURVE DATA -GW-

PI STA. 17+53.64
Δ = 13°39'59" (RT.)
D = 127°19'26"
L = 10.73'
T = 5.39'
R = 45.00'

DES BY: D. MAST	DATE: 11/25	DWG BY: D. CHAPMAN	DATE: 11/25
DES CHK: R. BEAUCHAMP	DATE: 11/25	CHK BY: D. MAST	DATE: 11/25

HDR	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
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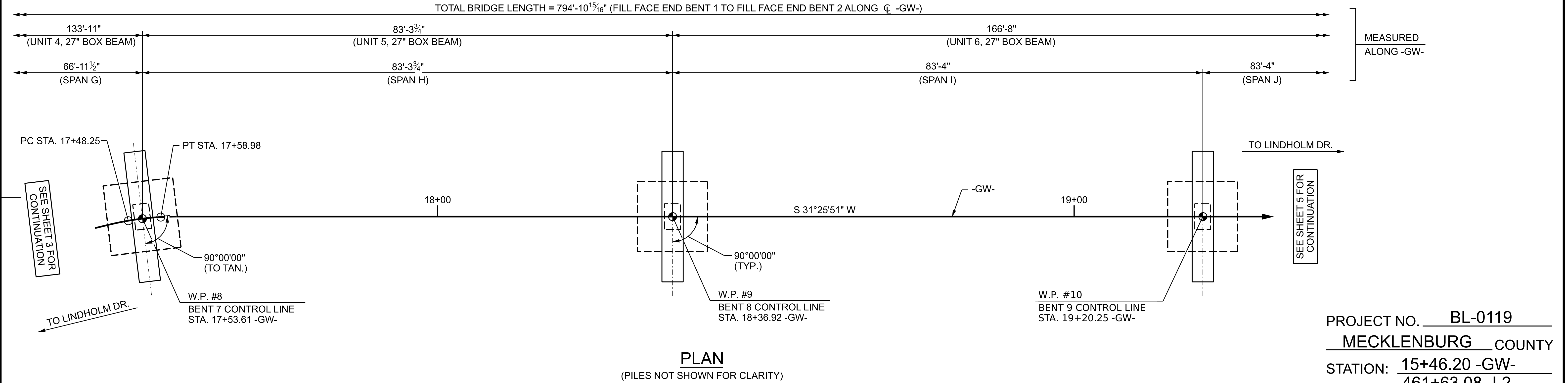
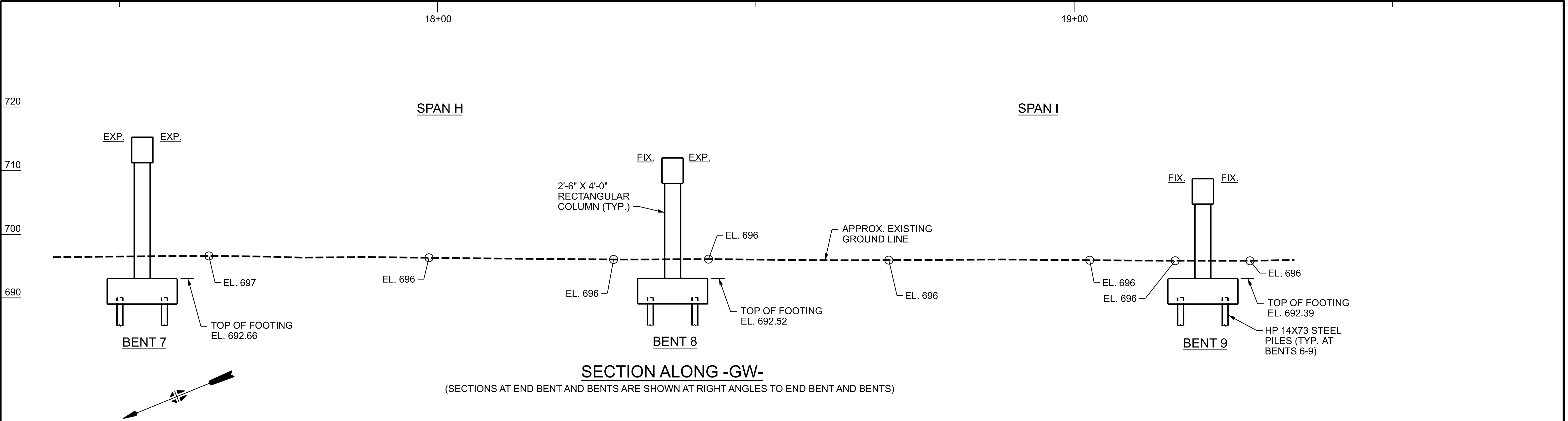
Durrell J. Mast
8/14/2026

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PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-
SHEET 3 OF 14 461+63.08 -L2-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
PEDESTRIAN BRIDGE OVER
NC 73 (SAM FURR RD.)
HUNTERSVILLE NC

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S05	
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2	--	--	4	--	--		



PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-
SHEET 4 OF 14 461+63.08 -L2-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
PEDESTRIAN BRIDGE OVER
NC 73 (SAM FURR RD.)
HUNTERSVILLE NC



Durrell J. Mast
8/14/2026

DES BY: <u>D. MAST</u>	DATE: <u>11/25</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>11/25</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>11/25</u>	CHK BY: <u>D. MAST</u>	DATE: <u>11/25</u>

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555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S06	
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<u>2</u>	--	--	<u>4</u>	--	--		

61



SECTION ALONG -GW-



PLAN

EXISTING PLANTER

Dunell I Mast

8/14/202

SHEET 5 OF 14 461+63.08 -L2-

REVISIONS						SHEET NO. S07
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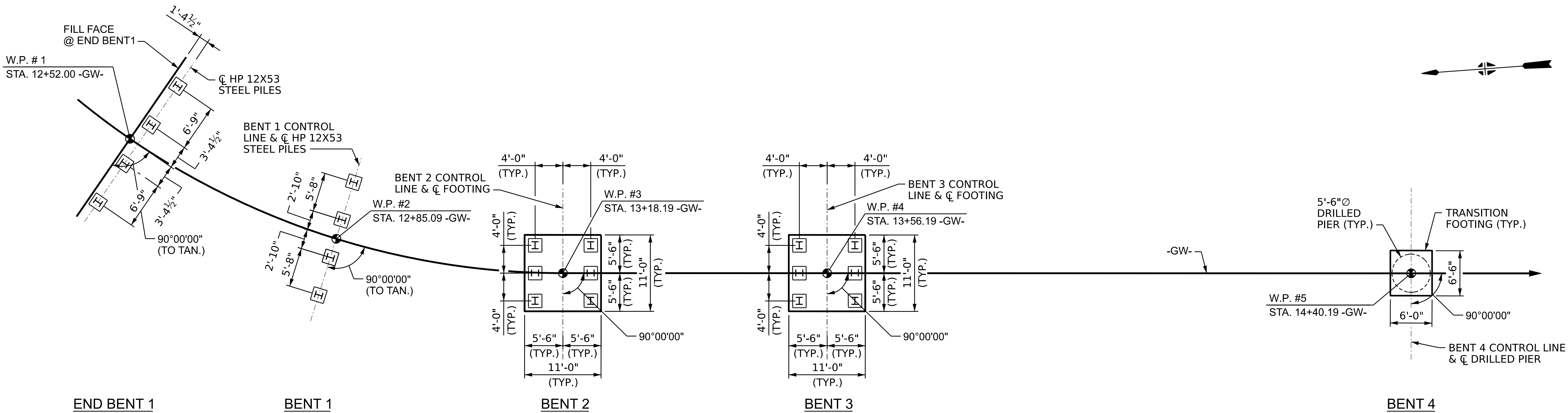
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DATE : 11/25

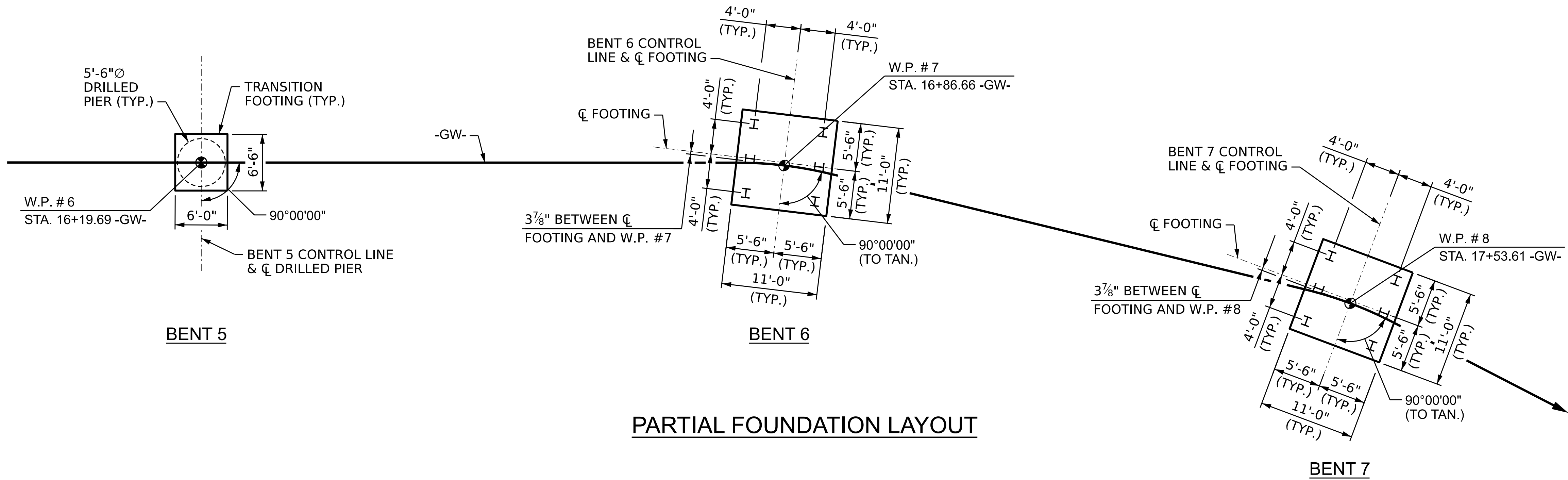
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N.C.B.E.L.S. License Number: F-011

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PARTIAL FOUNDATION LAYOUT



PARTIAL FOUNDATION LAYOUT

- LEGEND**
- HP12X53 VERTICAL PILE
 - HP14X73 VERTICAL PILE

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 6 OF 14



8/14/2026
Durrell J. Mast

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

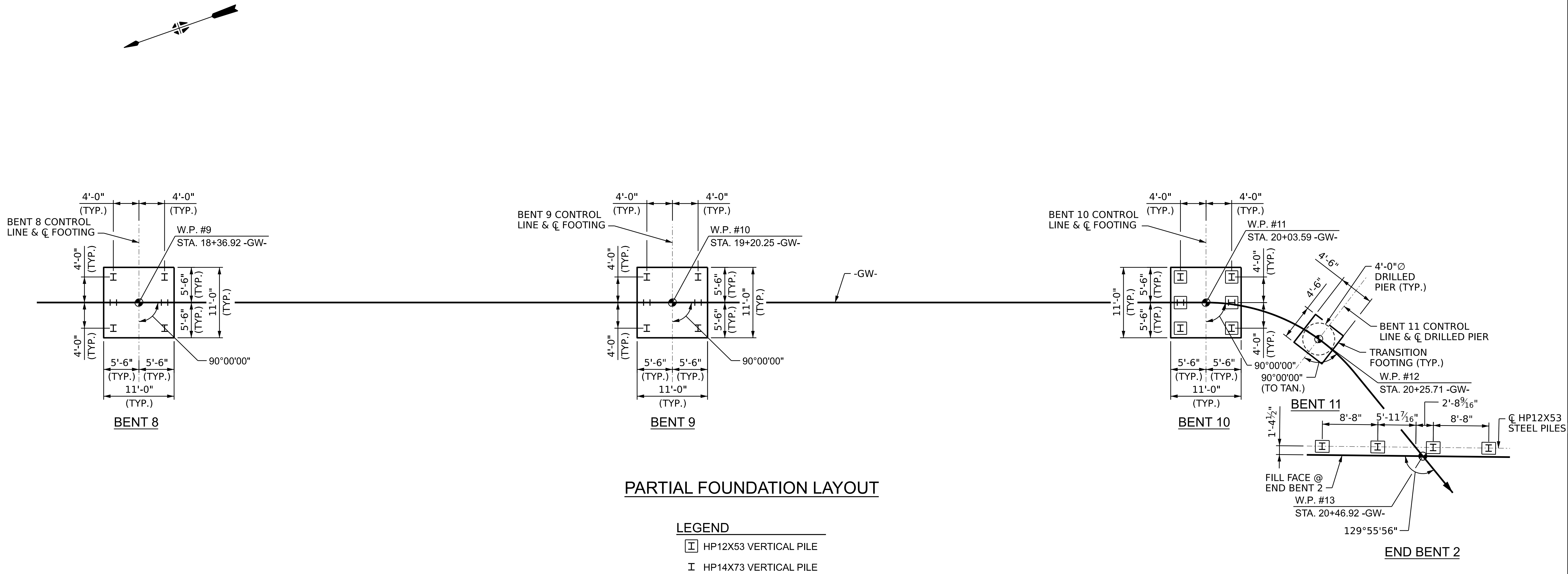
GENERAL DRAWING
FOUNDATION LAYOUT

REVISIONS						SHEET NO. S08
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

DES BY: D. MAST DATE: 01/26 DWG BY: D. CHAPMAN DATE: 01/26
DES CHK: R. BEAUCHAMP DATE: 01/26 CHK BY: D. MAST DATE: 01/26

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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NOTES

FOR PILES, SEE PILES PROVISION AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

FILL HOLES FOR PILE EXCAVATION AT BENTS 2, 3, AND END BENT 2 WITH CONCRETE.

SLURRY CONSTRUCTION IS REQUIRED FOR DRILLED PIERS AT BENTS 4, 5, AND 11.

POLYMER SLURRY IS REQUIRED FOR DRILLED PIERS AT BENTS 4, 5, AND 11.

INSTALL PERMANENT STEEL CASING AT BENTS 4, 5, AND 11 BY VIBRATING, SCREWING, OR DRIVING PERMANENT CASING BEFORE EXCAVATING, OR DISTURBING ANY MATERIAL BELOW ELEVATION 681, 684, 687 FT. RESPECTIVELY.

DO NOT USE MULTIPLE TEMPORARY STEEL CASINGS IN A TELESOPED ARRANGEMENT TO STABILIZE DRILLED PIER EXCAVATIONS AT BENTS 4, 5, AND 11.

DO NOT DEWATER DRILLED PIER EXCAVATIONS AT BENTS 4, 5, AND 11. CLEAN THE BOTTOM OF EXCAVATIONS WITH A SUBMERSIBLE PUMP, OR AN AIRLIFT. WET PLACEMENT OF CONCRETE IS REQUIRED.

IN LIEU OF POLYMER SLURRY CONSTRUCTION, A COMBINATION OF A PERMANENT CASING AND TEMPORARY CASING MAY BE USED TO FINISH THE BENT EXCAVATION. SUBMIT THE INSTALLATION APPROACH TO WESTERN REGION OPERATIONS GROUP PRIOR TO SCHEDULING THE PRE-DRILL.

PROJECT NO. BL-0119
MECKLENBURG COUNTY
 STATION: 15+46.20 -GW-

SHEET 7 OF 14

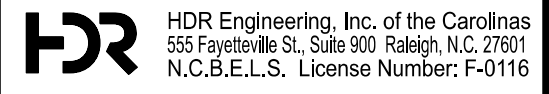
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING FOUNDATION LAYOUT

REVISIONS						SHEET NO. 509
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS 61
1	--	--	3	--	--	
2	--	--	4	--	--	



DES BY: <u>D. MAST</u>	DATE : <u>01/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE : <u>01/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE : <u>01/26</u>	CHK BY: <u>D. MAST</u>	DATE : <u>01/26</u>



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

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")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles **			Drilled-In Piles		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent 1 (Piles 1-4)	4	90	See Substructure Plans	15			150							
Bent 1 (Piles 1-4)	4	120		15			200							
Bent 2 (Piles 1-6)	6	193		15			322					692.00	2	8
Bent 3 (Piles 1-6)	6	193		15			322					689.00	5	5
Bent 6 (Piles 1-6)	6	250		30			417							
Bent 7 (Piles 1-6)	6	250		30			417							
Bent 8 (Piles 1-6)	6	250		30			417							
Bent 9 (Piles 1-6)	6	250		30			417							
Bent 10 (Piles 1-6)	6	193		20			322							
End Bent 2 (Piles 1-4)	4	86		20			143					674.00	0	22
TOTAL QUANTITY:														42

* $RDR = \frac{\text{Factored Resistance} + \text{Factored Drag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Drag Load Resistance} + \text{Nominal Resistance from Scourable Material}$

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

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent 1 (Piles 1-4)	90			0.60		
Bent 1 (Piles 1-6)	120			0.60		
Bent 2 (Piles 1-6)	193			0.60		
Bent 3 (Piles 1-6)	193			0.60		
Bent 6 (Piles 1-6)	250			0.60		
Bent 7 (Piles 1-6)	250			0.60		
Bent 8 (Piles 1-6)	250			0.60		
Bent 9 (Piles 1-6)	250			0.60		
Bent 10 (Piles 1-6)	193			0.60		
End Bent 2 (Piles 1-4)	86			0.60		

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

PROJECT NO. U-5765/BL-0119

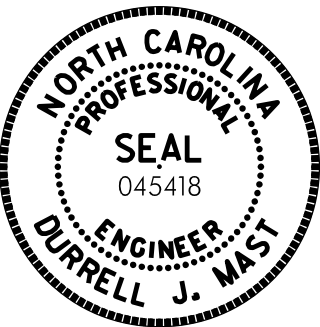
MECKLENBURG COUNTY

STATION: 15+46.20 -GW-, 461+63.08 -L2-

PEDESTRIAN BRIDGE

NOTES:

- The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Daniel P. Gallo, #052028) on 05-13-2026.
- 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 may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

 <i>Durrell J. Mast</i> SIGNATURE 9/17/2026 DATE	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
	PILE FOUNDATION TABLES					
	REVISIONS					
	SHEET NO. S10					
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	NO. 1	BY:	DATE:	NO. 3	BY:	DATE:
	2			4		
TOTAL SHEETS 61						

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")	Number of Piers per Line	Factored Resistance per Pier KIPS	Required Drilled Pier Tip Elevation FT	Required Tip Resistance per Pier KSF	Scour Critical Elevation FT	Minimum Drilled Pier Penetration Into Rock/Weathered 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	Permanent Steel Casing Tip Elevation (Elevation Not To Extend Casing Below) FT	Permanent Steel Casing Length** per Pier LIN FT
Bent 4 (Pier 1)	1	1185	637.00	10		23.00		11.5	52.5	NO	681.00	22.00
Bent 5 (Pier 1)	1	1185	650.00	150		7.00		5.0	44.0	NO	684.00	17.00
Bent 11 (Pier 1)	1	260	666.00	10		8.00		8.0	21.0	NO	687.00	9.00
TOTAL QUANTITY:								24.5	117.5			48

* Drilled Pier Length, Drilled Pier Length Not in Soil and Drilled Pier Length in Soil represent estimated drilled pier quantities and are measured and paid for as either "____ Dia. Drilled Piers" or "____ Dia. Drilled Piers Not in Soil" and "____ Dia. Drilled Piers in Soil" in accordance with Article 411-7 of the NCDOT Standard Specifications. For bents with a not in soil pay item, drilled piers through air or water will be paid at the contract unit price for "____Dia. Drilled Piers in Soil."
** Permanent Steel Casing Length equals the difference between the ground line or top of drilled pier elevation, whichever is higher, and the permanent casing tip elevation and is measured and paid for as "Permanent Steel Casing for ____ Dia. Drilled Pier" in accordance with Article 411-7 of the NCDOT Standard Specifications.

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) EACH	Crosshole Sonic Logging (CSL) EACH	Thermal Profile Logging (TPL) EACH	Shaft Inspection Device (SID) EACH
Bent 4 (Pier 1)		1	1	1
Bent 5 (Pier 1)		1	1	1
Bent 11 (Pier 1)				
TOTAL QUANTITY:		2	2	2

NOTES:

1. The Drilled Pier Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Daniel P. Gallo, #052028) on 05-13-2026.
2. The Engineer may adjust the quantity for Permanent Steel Casing, SPTs, TPLs, CSL Testing, and SID Inspections.

PROJECT NO. U-5765/BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-, 461+63.08 -L2-
PEDESTRIAN BRIDGE



Durrell J. Mast
SIGNATURE

9/17/2026
DATE

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DRILLED PIER
FOUNDATION
TABLES

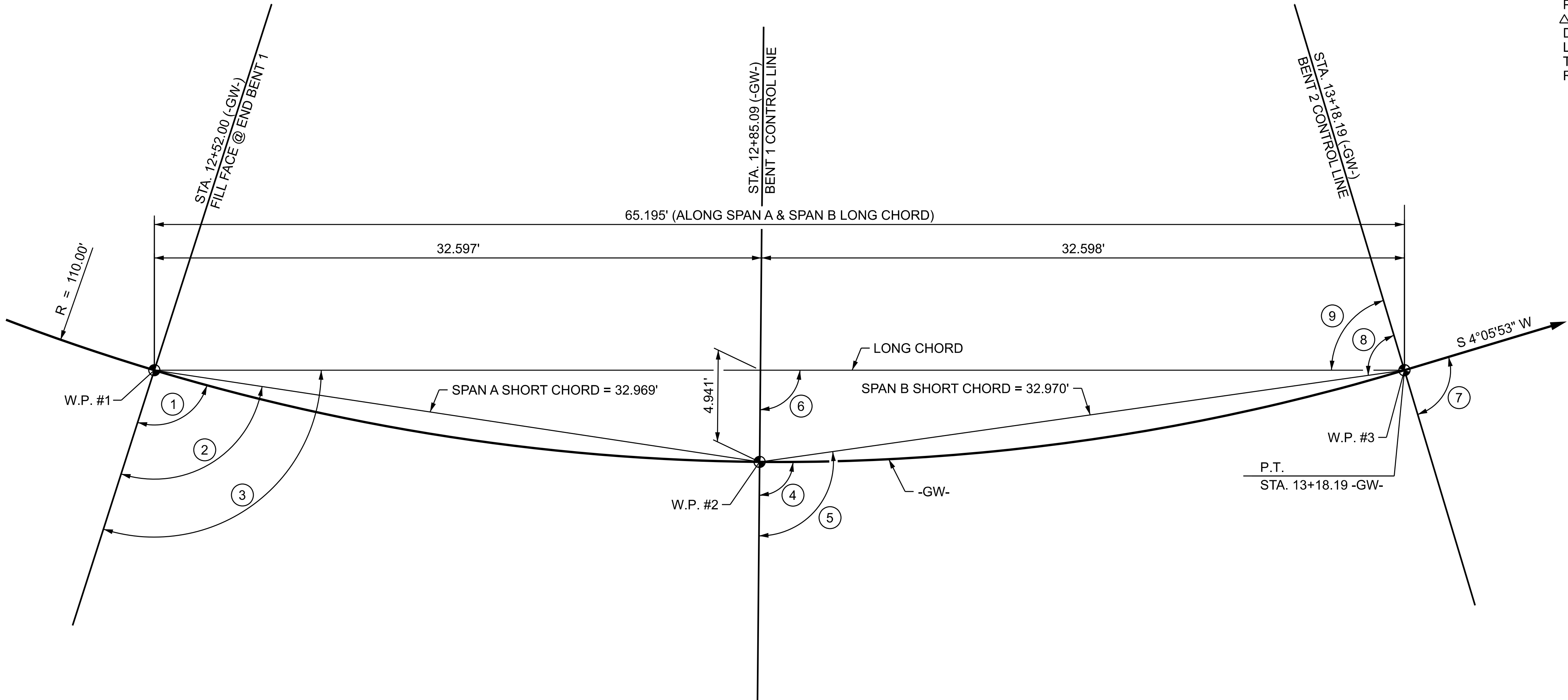
REVISIONS

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

SHEET NO.
S11
TOTAL
SHEETS
61

HORIZONTAL CURVE DATA -GW-

PI STA. 12+74.20
 $\Delta = 49^{\circ}03'34''$ (LT.)
D = 52°05'14"
L = 94.19'
T = 50.20'
R = 110.00'



ANGLES

- ① 90°00'00" (TO TAN.)
- ② 98°37'08"
- ③ 107°14'17"
- ④ 90°00'00" (TO TAN.)
- ⑤ 98°37'09"
- ⑥ 90°00'01"
- ⑦ 90°00'00" (TO TAN.)
- ⑧ 81°22'51"
- ⑨ 72°45'43"

LONG CHORD LAYOUT

(SPANS A AND B)
(ALL CHORDS BEGIN AND END ON -GW-)
(END BENT FILL FACE AND BENT CONTROL LINES ARE RADIAL)

PROJECT NO. BL-0119

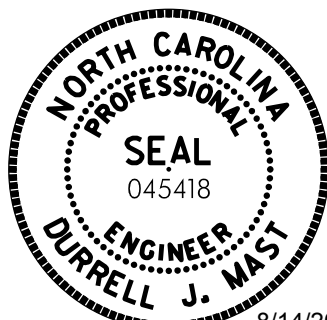
MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 10 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
LONG CHORD LAYOUT



Durrell J. Mast
8/14/2026

DES BY: <u>G. MARTINEZ</u>	DATE: <u>03/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>03/26</u>
DES CHK: <u>B. BUSH</u>	DATE: <u>03/26</u>	CHK BY: <u>G. MARTINEZ</u>	DATE: <u>03/26</u>

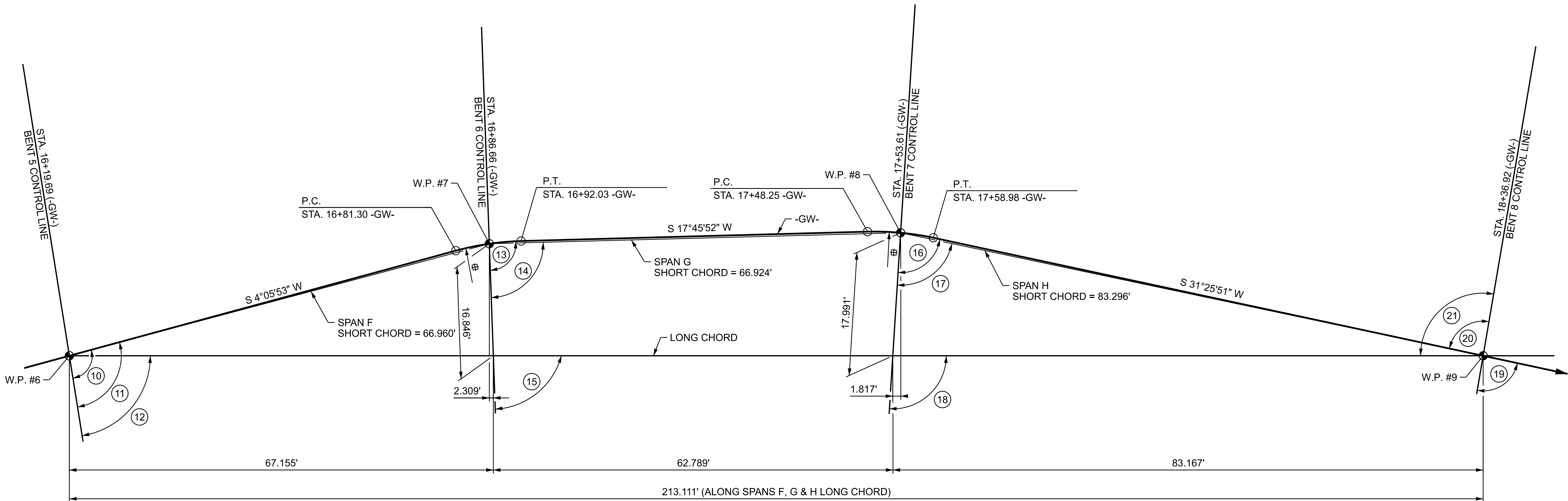
HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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REVISIONS						SHEET NO. S12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

HORIZONTAL CURVE DATA -GW-

PI STA. 16+86.69	PI STA. 17+53.64
$\Delta = 13^{\circ}39'59"$ (RT.)	$\Delta = 13^{\circ}39'59"$ (RT.)
D = 127°19'26"	D = 127°19'26"
L = 10.73'	L = 10.73'
T = 5.39'	T = 5.39'
R = 45.00'	R = 45.00'



ANGLES

- 10 90°00'00" (TO TAN.)
- 11 89°43'36"
- 12 75°17'45"
- 13 90°00'00" (TO TAN.)
- 14 83°09'59"
- 15 82°07'43"
- 16 90°00'00" (TO TAN.)
- 17 83°23'11"
- 18 95°47'43"
- 19 90°00'00" (TO TAN.)
- 20 90°13'12"
- 21 102°37'43"

LONG CHORD LAYOUT

(SPANS F THRU H)
(ALL CHORDS BEGIN AND END ON -GW-)
(BENT CONTROL LINES ARE RADIAL)

R = 45.00'

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 11 OF 14



Durrell J. Mast

8/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
LONG CHORD LAYOUT

REVISIONS

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

SHEET NO.

S13

TOTAL SHEETS

61

DES BY: G. MARTINEZ	DATE: 03/26	DWG BY: D. CHAPMAN	DATE: 03/26
DES CHK: B. BUSH	DATE: 03/26	CHK BY: G. MARTINEZ	DATE: 03/26

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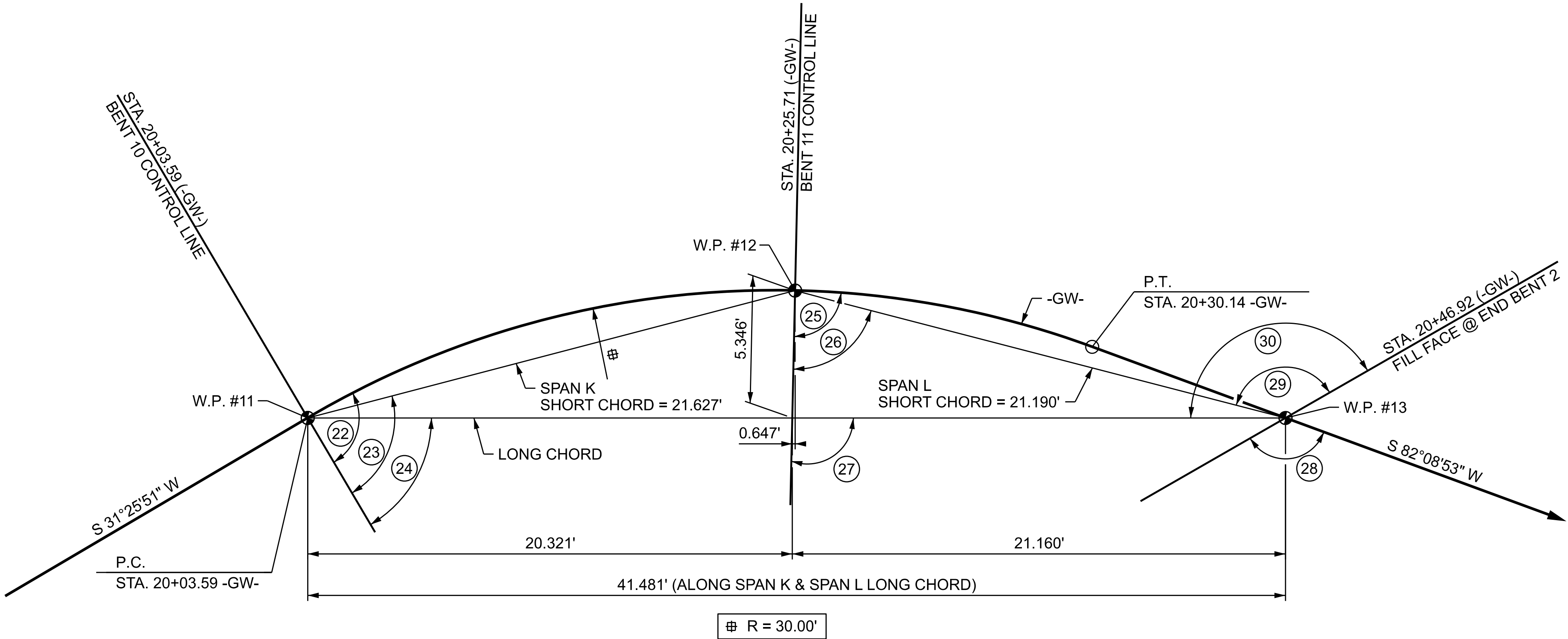
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

HORIZONTAL CURVE DATA -GW-

PI STA. 20+17.81
 Δ = 50°43'02" (RT.)
D = 190°59'09"
L = 26.56'
T = 14.22'
R = 30.00'

LEGEND

- 22 90°00'00" (TO TAN.)
- 23 68°52'22"
- 24 54°40'08"
- 25 90°00'00" (TO TAN.)
- 26 82°25'16"
- 27 96°55'26"
- 28 129°55'56"
- 29 130°48'55"
- 30 145°19'06"



LONG CHORD LAYOUT

(SPANS K AND L)
(ALL CHORDS BEGIN AND END ON -GW-)
(BENT CONTROL LINES ARE RADIAL)

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 12 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
LONG CHORD LAYOUT



Durrell J. Mast
8/14/2026

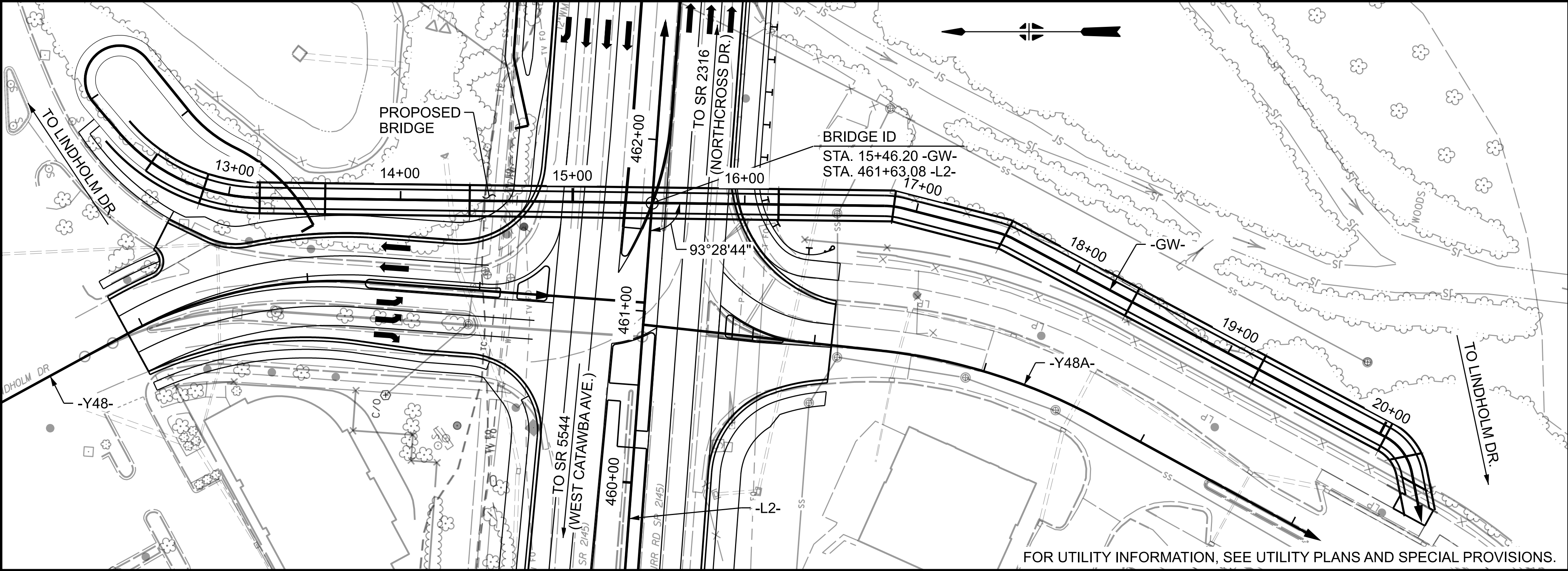
DES BY: G. MARTINEZ	DATE: 03/26	DWG BY: D. CHAPMAN	DATE: 03/26
DES CHK: B. BUSH	DATE: 03/26	CHK BY: G. MARTINEZ	DATE: 03/26

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REVISIONS						SHEET NO. S14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

BENCHMARK: BM#17 - TIE SPIKE SET IN 14" BEECH, 326.14 LT OF STA. 461+33.65 -L2- EL. 715.75, DATUM NAVD 88



LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = 90 PSF PEDESTRIAN LOADING OR H10 DESIGN VEHICLE.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD GUIDE SPECIFICATIONS FOR PEDESTRIAN BRIDGES AND 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.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

ELEVATIONS ARE IN FEET.

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

THE INFORMATION REGARDING THE EXISTING RETAINING WALL 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 OWNER FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING RETAINING WALL INFORMATION SHOWN ON PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

THESE PLANS SHALL BE USED IN CONJUNCTION AND COORDINATE WITH THE PREFABRICATED BRIDGE MANUFACTURER'S PLANS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WITH CONSTRUCTION.

FOR PREFABRICATED FULL-THROUGH ARCH TRUSS PEDESTRIAN BRIDGE, SEE SPECIAL PROVISIONS.

FOR TOWN OF HUNTERSVILLE "H" LOGO WITH BACKLIGHTING, SEE SPECIAL PROVISIONS.

FOR THERMAL INTEGRITY PROFILER, SEE GEO-TECHNICAL SPECIAL PROVISIONS.

FOR ILLUMINATED PEDESTRIAN RAILING SYSTEM, SEE ROADWAY SPECIAL PROVISIONS.

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 13 OF 14



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
LOCATION SKETCH

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

SHEET NO. S15
TOTAL SHEETS 61

DES BY: <u>D. MAST</u>	DATE: <u>11/25</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>11/25</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>11/25</u>	CHK BY: <u>D. MAST</u>	DATE: <u>11/25</u>

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N.C.B.E.L.S. License Number: F-0116

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	TOTAL BILL OF MATERIAL																			
	RIP RAP CLASS "A" (8" THICK)	GEOTEXTILE FOR DRAINAGE	FOUNDATION EXCAVATION FOR BENT AT STATION 15+46.20 -GW-	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	4'-0" DIA. DRILLED PIERS IN SOIL	4'-0" DIA. DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-0" DIA. DRILLED PIER	5'-6" DIA. DRILLED PIERS IN SOIL	5'-6" DIA. DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 5'-6" DIA. DRILLED PIER	SID INSPECTIONS	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION 15+46.20 -GW-	REINFORCED CONCRETE DECK SLAB	REINFORCED CONCRETE WEARING SURFACE	CLASS A CONCRETE	BRIDGE APPROACH SLAB AT STATION 15+46.20 -GW-	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL
	TONS	SQ.YDS.	LUMP SUM	LIN.FT.	LIN.FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	LUMP SUM	SQ. FT.	SQ. FT.	CU.YDS.	LUMP SUM	LBS.	LBS.
SUPERSTRUCTURE															2608	7069				
END BENT NO. 1	39	130.00												LUMP SUM			9.1		1395	
BENT NO. 1																	10.8		1517	
BENT NO. 2			LUMP SUM	48.0	12.0												30.6		6758	
BENT NO. 3			LUMP SUM	30.0	30.0												34.0		9239	
BENT NO. 4									52.5	11.5	22.0	1	1				37.3		7985	2345
BENT NO. 5									44.0	5.0	17.0	1	1				38.0		8144	1801
BENT NO. 6			LUMP SUM														35.6		8160	
BENT NO. 7			LUMP SUM														34.9		8056	
BENT NO. 8			LUMP SUM														33.8		7529	
BENT NO. 9			LUMP SUM														32.8		7277	
BENT NO. 10			LUMP SUM														32.6		8809	
BENT NO. 11						21.0	8.0	9.0									15.5		3574	742
END BENT NO. 2				88.0	0.0									LUMP SUM			11.6		1945	
TOTAL	39	130.00	LUMP SUM	166	42	21.0	8.0	9.0	96.5	16.5	39.0	2	2	LUMP SUM	2608	7069	356.6	LUMP SUM	80,388	4888

	TOTAL BILL OF MATERIAL															
	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES		PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES	HP 14 X 73 STEEL PILES		1'-5" x 1'-0" CONCRETE PARAPET	4" SLOPE PROTECTION	ELASTOMERIC BEARINGS	FOAM JOINT SEALS	3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAMS		PREFABRICATED FULL-THROUGH ARCH TRUSS PEDESTRIAN BRIDGE	TOWN OF HUNTERSVILLE "H" LOGO WITH BACKLIGHTING	120" POLYCARBONATE BARRIER	THERMAL PROFILE LOGGING
	EA.	NO.	LIN.FT.	EA.	NO.	LIN.FT.	LIN.FT.	SQ.YDS.	LUMP SUM	LUMP SUM	NO.	LIN. FT.	LUMP SUM	LUMP SUM	LIN. FT.	EA.
SUPERSTRUCTURE							1250.2		LUMP SUM	LUMP SUM	36	2,799	LUMP SUM	LUMP SUM	360.0	
END BENT NO. 1	4	4	60													
BENT NO. 1	4	4	60													
BENT NO. 2	6	6	90													
BENT NO. 3	6	6	90													
BENT NO. 4																1
BENT NO. 5																1
BENT NO. 6				6	6	180										
BENT NO. 7				6	6	180										
BENT NO. 8				6	6	180										
BENT NO. 9				6	6	180										
BENT NO. 10	6	6	120													
BENT NO. 11																
END BENT NO. 2	4	4	80					9.8								
TOTAL	30	30	500	24	24	720	1250.2	9.8	LUMP SUM	LUMP SUM	36	2,799	LUMP SUM	LUMP SUM	360.0	2

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 14 OF 14

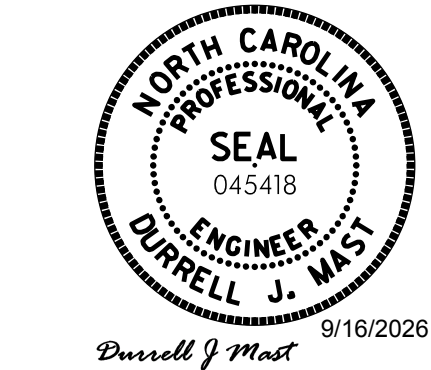
DES BY: <u>G. MARTINEZ</u>	DATE : <u>05/26</u>	DWG BY: <u>D. CARTER</u>	DATE : <u>05/26</u>
DES CHK: <u>D. MAST</u>	DATE : <u>05/26</u>	CHK BY: <u>D. MAST</u>	DATE : <u>05/26</u>



HDR Engineering, Inc. of the Carolinas

555 Fayetteville St., Suite 900 Raleigh, N.C. 27601

N.C.B.E.L.S. License Number: F-0116



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STATE OF NORTH CAROLINA

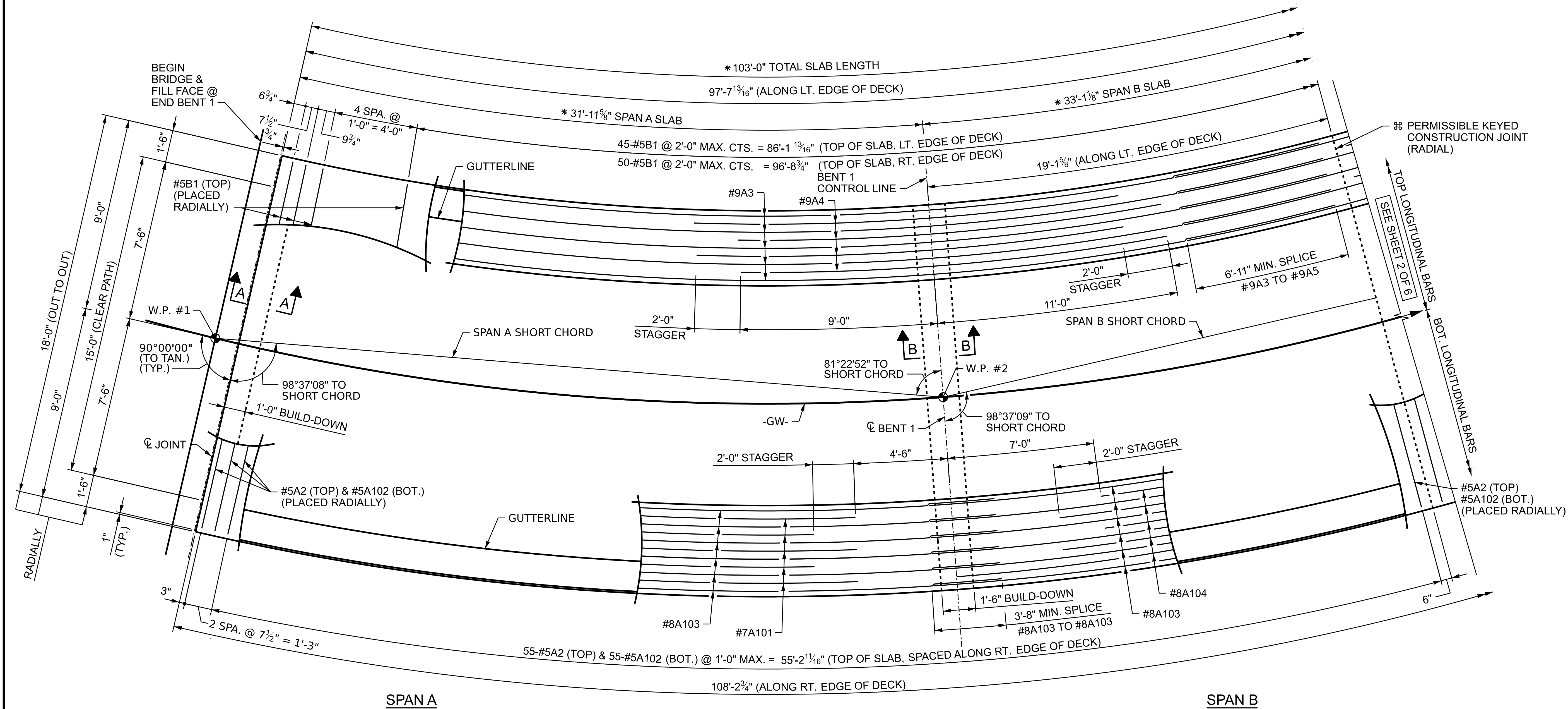
DEPARTMENT OF TRANSPORTATION

RALEIGH

GENERAL DRAWING

TOTAL BILL OF MATERIAL

REVISIONS						SHEET NO. S16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



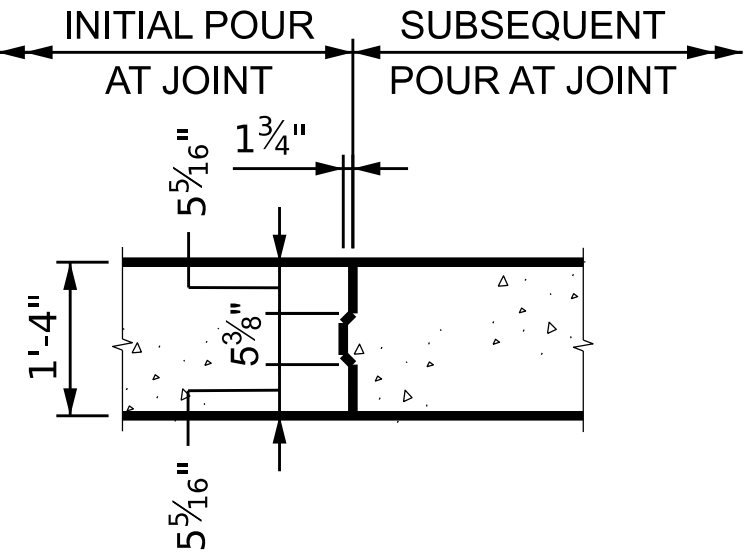
SPAN A

SPAN B

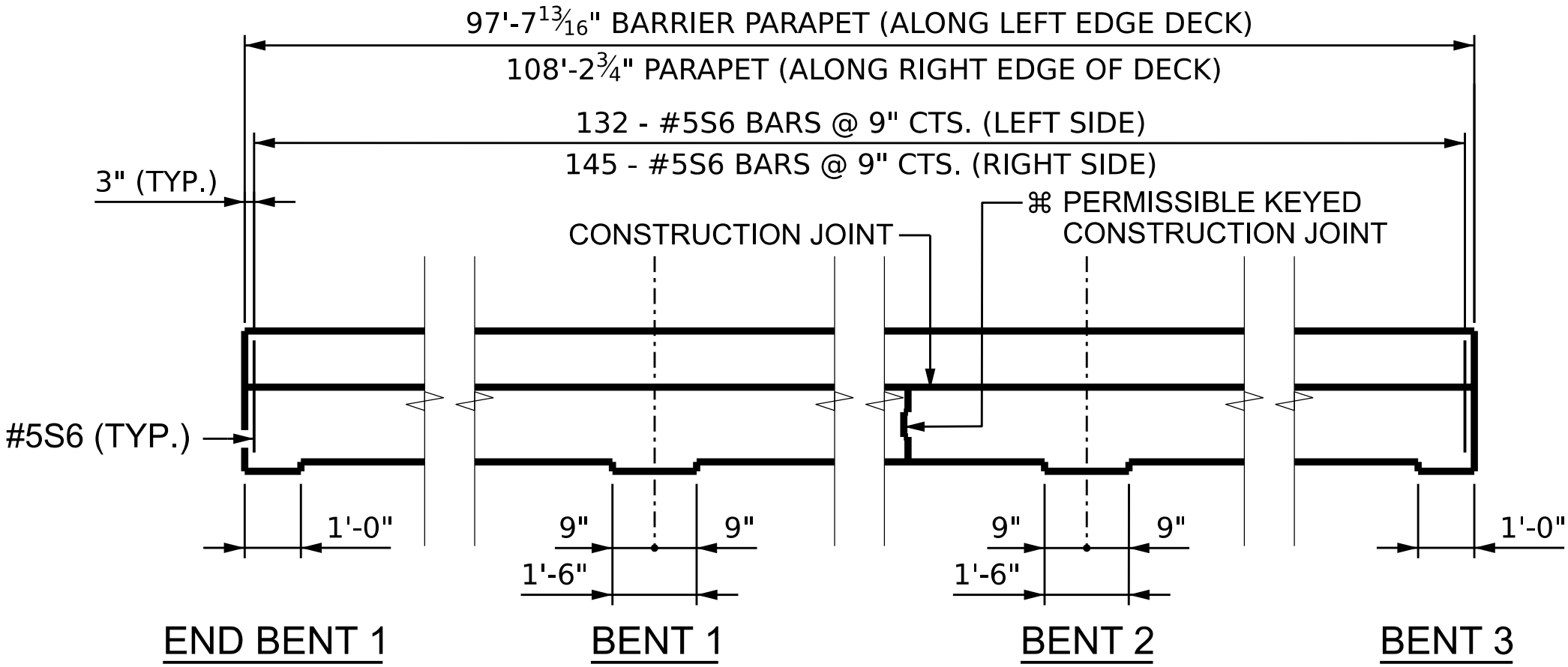
PARTIAL PLAN OF SPANS - UNIT 1

#4A1, #4K1 (END BENT) AND #4K2 (INT. BENTS) IN BUILD-DOWNS NOT SHOWN FOR CLARITY.

* = DIMESNIIONS MEASURED ALONG -GW-



KEYED CONSTRUCTION JOINT DETAIL



PARAPET ELEVATION

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
CIP FLAT SLAB
PLAN OF SPANS
UNIT 1

REVISIONS						SHEET NO. S18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



8/14/2026

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DES BY: D. MAST	DATE: 05/26	DWG BY: D. CHAPMAN	DATE: 05/26
DES CHK: R. BEAUCHAMP	DATE: 05/26	CHK BY: D. MAST	DATE: 05/26

SUMMARY OF QUANTITIES	
REINFORCING STEEL	LBS.: 12,480
EPOXY COATED REINFORCING STEEL	LBS.: 15,317
CLASS AA CONCRETE	YDS. 92.8
REINFORCED CONCRETE DECK SLAB AREA	S.F. 1855

[illegible]

* = DIMESNIONS MEASURED ALONG -GW-

Professional Engineer Seal for North Carolina, Durrell J. Mast, No. 045418, expires 8/14/2026.

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	519
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	
						61

DES BY: <u>D. MAST</u>	DATE: <u>05/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>05/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>05/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>05/26</u>

57'-3⁹/₁₆" BARRIER PARAPET (ALONG LT. EDGE OF DECK)
 26'-3⁹/₁₆" BARRIER PARAPET (ALONG RT. EDGE OF DECK)
 77 - #5S6 BARS @ 9" MAX. CTS. (LT. SIDE)
 36 - #5S6 BARS @ 9" MAX. CTS. (RT. SIDE)

3" (TYP.)

CONSTRUCTION JOINT

#5S6 (TYP.)

1'-0"

9" 9"

1'-6"

1'-0"

BENT 10 BENT 11 END BENT 2

PARAPET ELEVATION

Professional Engineer Seal for North Carolina, Durrell J. Mast, License No. 045418, expires 8/14/2022.

PROJECT NO. _____	BL-0119
MECKLENBURG	COUNTY
STATION: 15+46.20 -GW-	
SHEET 2 OF 6	

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUPERSTRUCTURE

CIP FLAT SLAB

PLAN OF SPANS

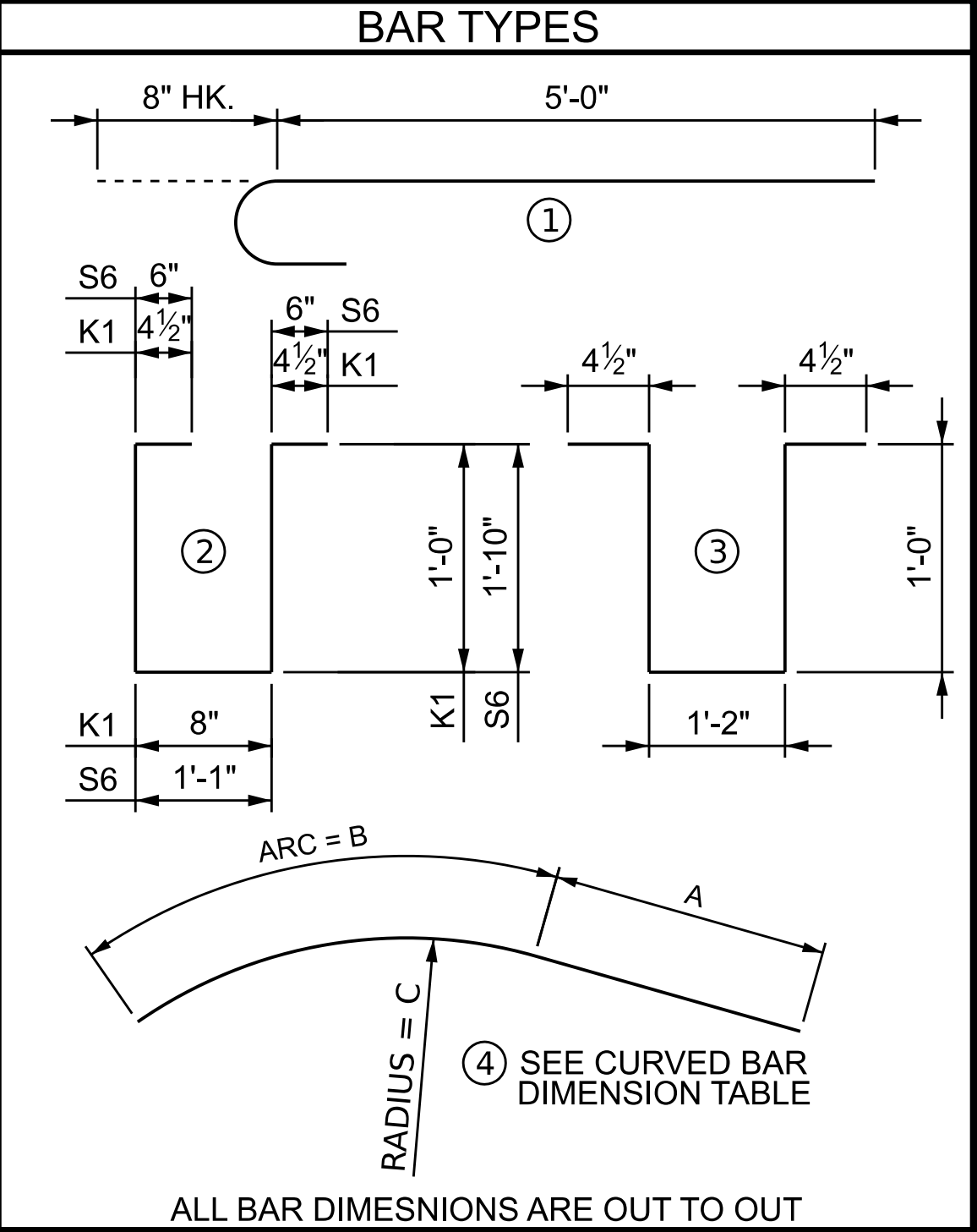
UNIT 7

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1	--	--	3	--	--	61
2	--	--	4	--	--	61

BILL OF MATERIAL											
SUPERSTRUCTURE - UNIT 7											
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	4	#4	STR	17'-7"	47	A107	1	#5	STR	12'-3"	13
*A2	2	#4	STR	23'-0"	31	A108	1	#5	STR	11'-1"	12
*A3	43	#5	STR	17'-7"	789	A109	1	#5	STR	9'-10"	11
*A4	3	#5	STR	23'-0"	72	A110	1	#5	STR	8'-8"	10
*A5	1	#5	STR	17'-0"	18	A111	1	#5	STR	7'-6"	8
*A6	1	#5	STR	15'-9"	17	A112	1	#5	STR	6'-3"	7
*A7	1	#5	STR	14'-7"	16	A113	1	#5	STR	5'-1"	6
*A8	1	#5	STR	13'-5"	14	A114	1	#5	STR	3'-11"	5
*A9	1	#5	STR	12'-2"	13	A115	1	#5	STR	2'-8"	3
*A10	1	#5	STR	11'-0"	12	A116	1	#5	STR	1'-6"	2
*A11	1	#5	STR	9'-10"	11	A117	1	#8	4	56'-4"	151
*A12	1	#5	STR	8'-7"	9	A118	1	#8	4	55'-1"	148
*A13	1	#5	STR	7'-5"	8	A119	1	#8	4	53'-9"	144
*A14	1	#5	STR	6'-3"	7	A120	1	#8	4	52'-6"	141
*A15	1	#5	STR	5'-0"	6	A121	1	#8	4	51'-2"	137
*A16	1	#5	STR	3'-10"	4	A122	1	#8	4	49'-11"	134
*A17	1	#5	STR	2'-8"	3	A123	1	#8	4	48'-3"	129
*A18	1	#5	STR	1'-5"	2	A124	1	#8	4	46'-6"	125
*A19	1	#9	4	55'-4"	189	A125	1	#8	4	44'-9"	120
*A20	1	#9	4	54'-1"	184	A126	1	#8	4	43'-1"	116
*A21	1	#9	4	52'-9"	180	A127	1	#8	4	41'-6"	111
*A22	1	#9	4	51'-6"	176	A128	1	#8	4	39'-7"	106
*A23	1	#9	4	50'-1"	171	A129	1	#8	4	37'-10"	102
*A24	1	#9	4	48'-11"	167	A130	1	#8	4	36'-1"	97
*A25	1	#9	4	47'-2"	161	A131	1	#8	4	34'-4"	92
*A26	1	#9	4	45'-6"	155	A132	1	#8	4	32'-8"	88
*A27	1	#9	4	43'-9"	149	A133	1	#8	4	31'-5"	84
*A28	1	#9	4	41'-11"	143	A134	1	#8	4	30'-1"	81
*A29	1	#9	4	40'-3"	137	A135	1	#8	4	28'-10"	77
*A30	1	#9	4	38'-6"	131	A136	1	#8	4	27'-6"	74
*A31	1	#9	4	36'-9"	125	A137	1	#8	4	26'-3"	71
*A32	1	#9	4	35'-1"	120	A138	1	#7	4	55'-9"	114
*A33	1	#9	4	33'-4"	114	A139	1	#7	4	54'-5"	112
*A34	1	#9	4	31'-7"	108	A140	1	#7	4	53'-2"	109
*A35	1	#9	4	30'-4"	104	A141	1	#7	4	52'-5"	108
*A36	1	#9	4	29'-0"	99	A142	1	#7	4	50'-8"	104
*A37	1	#9	4	27'-9"	95	A143	1	#7	4	49'-1"	101
*A38	1	#9	4	26'-5"	90	A144	1	#7	4	47'-5"	97
*A39	1	#9	4	25'-2"	86	A145	1	#7	4	45'-8"	94
*A40	1	#9	4	19'-3"	66	A146	1	#7	4	43'-11"	90
*A41	1	#9	4	19'-3"	66	A147	1	#7	4	42'-3"	87
*A42	1	#9	4	19'-4"	66	A148	1	#7	4	40'-6"	83
*A43	1	#9	4	19'-2"	66	A149	1	#7	4	38'-8"	80
*A44	1	#9	4	19'-3"	66	A150	1	#7	4	37'-0"	76
*A45	1	#9	4	19'-3"	66	A151	1	#7	4	35'-3"	73
*A46	1	#9	4	19'-4"	66	A152	1	#7	4	33'-7"	69
*A47	1	#9	4	19'-3"	66	A153	1	#7	4	32'-1"	66
*A48	1	#9	4	19'-4"	66	A154	1	#7	4	30'-9"	63
*A49	1	#9	4	19'-3"	66	A155	1	#7	4	29'-5"	61
*A50	1	#9	4	19'-5"	67	A156	1	#7	4	28'-2"	58
*A51	1	#9	4	19'-4"	66	A157	1	#7	4	26'-10"	55
*A52	1	#9	4	19'-6"	67						
*A53	1	#9	4	19'-4"	66	*B1	57	#6	1	5'-8"	486
*A54	1	#9	4	19'-6"	67						
*A55	1	#9	4	19'-4"	66	K1	42	#4	2	3'-5"	96
*A56	1	#9	4	19'-6"	67	K2	18	#4	3	3'-11"	48
*A57	1	#9	4	19'-5"	67						
*A58	1	#9	4	19'-7"	67	*S6	113	#5	2	5'-9"	678
*A59	1	#9	4	19'-5"	67	SUMMARY OF QUANTITIES					
						REINFORCING STEEL LBS: 5,222					
A101	43	#5	STR	17'-7"	789	EPOXY COATED REINFORCING STEEL LBS: 6,407					
A102	3	#5	STR	23'-0"	72						
A103	1	#5	STR	17'-0"	18						
A104	1	#5	STR	15'-10"	17	CLASS AA CONCRETE YDS: 38.1					
A105	1	#5	STR	14'-8"	16	REINFORCED CONCRETE DECK SLAB SF: 753.0					
A106	1	#5	STR	13'-5"	14						

DES BY: <u>D. MAST</u>	DATE: <u>05/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>05/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>05/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>05/26</u>

CURVED BAR DIMENSION TABLE							
BAR	A	B	C	BAR	A	B	C
*A19	21'-9"	33'-7"	38'-9"	A141	20'-9"	31'-8"	36'-1½"
*A20	21'-2"	32'-11"	38'-0"	A142	19'-7"	31'-1"	35'-4½"
*A21	20'-6"	32'-3"	37'-3"	A143	18'-10"	30'-3"	34'-6"
*A22	19'-11"	31'-7"	36'-6"	A144	18'-0"	29'-5"	33'-6"
*A23	19'-3"	30'-10"	35'-9"	A145	17'-2"	28'-6"	32'-6"
*A24	18'-8"	30'-3"	35'-0"	A146	16'-4"	27'-7"	31'-6"
*A25	17'-10"	29'-4"	34'-0"	A147	15'-6"	26'-9"	30'-6"
*A26	17'-0"	28'-6"	33'-0"	A148	14'-8"	25'-10"	29'-6"
*A27	16'-2"	27'-7"	32'-0"	A149	13'-9"	24'-11"	28'-6"
*A28	15'-3"	26'-8"	31'-0"	A150	12'-11"	24'-1"	27'-6"
*A29	14'-5"	25'-10"	30'-0"	A151	12'-1"	23'-2"	26'-6"
*A30	13'-7"	24'-11"	29'-0"	A152	11'-3"	22'-4"	25'-6"
*A31	12'-9"	24'-0"	28'-0"	A153	10'-7"	21'-6"	24'-7½"
*A32	11'-11"	23'-2"	27'-0"	A154	9'-11"	20'-10"	23'-10½"
*A33	11'-1"	22'-3"	26'-0"	A155	9'-3"	20'-2"	23'-1½"
*A34	10'-3"	21'-4"	25'-0"	A156	8'-8"	19'-6"	22'-4½"
*A35	9'-8"	20'-8"	24'-3"	A157	8'-0"	18'-10"	21'-7½"
*A36	9'-0"	20'-0"	23'-6"				
*A37	8'-5"	19'-4"	22'-9"				
*A38	7'-9"	18'-8"	22'-0"				
*A39	7'-2"	18'-0"	21'-3"				
*A40	2'-11"	16'-4"	38'-4½"				
*A41	5'-1"	14'-2"	37'-7½"				
*A42	3'-2"	16'-2"	36'-10½"				
*A43	5'-3"	13'-11"	35'-4½"				
*A44	3'-4"	15'-11"	34'-7½"				
*A45	5'-6"	13'-9"	34'-7½"				
*A46	3'-8"	15'-8"	33'-7½"				
*A47	5'-10"	13'-5"	32'-7½"				
*A48	3'-11"	15'-5"	31'-7½"				
*A49	6'-1"	13'-2"	30'-7½"				
*A50	4'-3"	15'-2"	29'-7½"				
*A51	6'-5"	12'-11"	28'-7½"				
*A52	4'-7"	14'-11"	27'-7½"				
*A53	6'-9"	12'-7"	26'-7½"				
*A54	4'-10"	14'-8"	25'-7½"				
*A55	7'-0"	12'-4"	24'-7½"				
*A56	5'-1"	14'-5"	23'-10½"				
*A57	7'-3"	12'-2"	23'-1½"				
*A58	5'-4"	14'-3"	22'-4½"				
*A59	7'-5"	12'-0"	21'-7½"				
A117	22'-4"	34'-0"	38'-9"				
A118	21'-9"	33'-4"	38'-0"				
A119	21'-1"	32'-8"	37'-3"				
A120	20'-6"	32'-0"	36'-6"				
A121	19'-10"	31'-4"	35'-9"				
A122	19'-3"	30'-8"	35'-0"				
A123	18'-5"	29'-10"	34'-0"				
A124	17'-7"	28'-11"	33'-0"				
A125	16'-9"	28'-0"	32'-0"				
A126	15'-11"	27'-2"	31'-0"				
A127	15'-1"	26'-5"	30'-0"				
A128	14'-3"	25'-4"	29'-0"				
A129	13'-4"	24'-6"	28'-0"				
A130	12'-6"	23'-7"	27'-0"				
A131	11'-8"	22'-8"	26'-0"				
A132	10'-10"	21'-10"	25'-0"				
A133	10'-3"	21'-2"	24'-3"				
A134	9'-7"	20'-6"	23'-6"				
A135	9'-0"	19'-10"	22'-9"				
A136	8'-4"	19'-2"	22'-0"				
A137	7'-9"	18'-6"	21'-3"				
A138	22'-1"	33'-8"	38'-4½"				
A139	21'-5"	33'-0"	37'-7½"				
A140	20'-10"	32'-4"	36'-10½"				



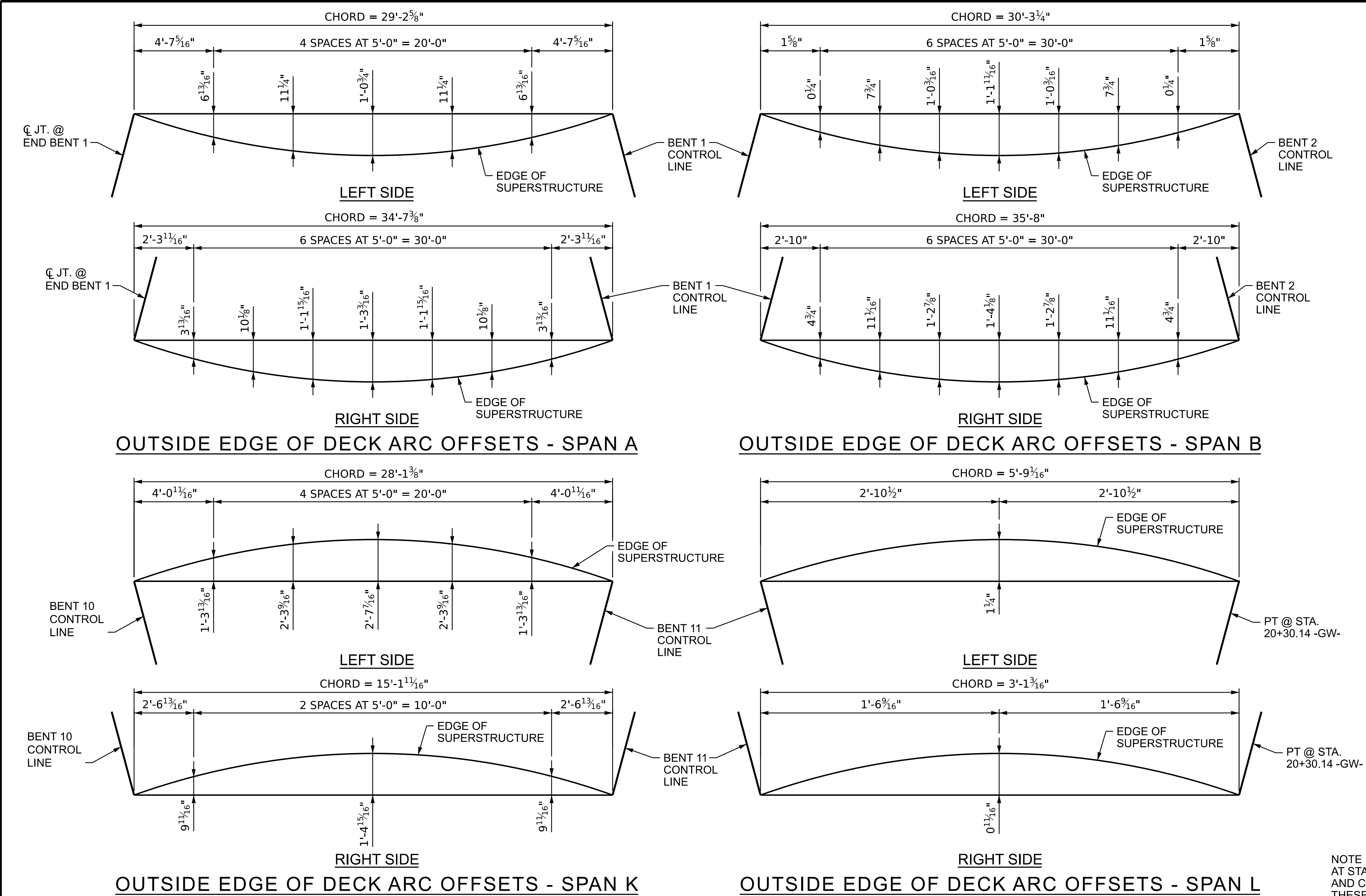
PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 5 OF 6



8/14/2026

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE CIP FLAT SLAB PLAN OF SPANS UNIT 7					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
					TOTAL SHEETS
					61



		TOP OF SLAB ELEVATIONS: SPANS A-C				
	STATION	LOCATION				
		A	B	C	D	E
BEG. SLAB	12+53.13	716.269	716.239	716.089	715.939	715.909
	12+55.00	716.341	716.311	716.161	716.011	715.981
	12+60.00	716.532	716.502	716.352	716.202	716.172
	12+65.00	716.723	716.693	716.543	716.393	716.363
	12+70.00	716.914	716.884	716.734	716.584	716.554
	12+75.00	717.106	717.076	716.926	716.776	716.746
	12+80.00	717.297	717.267	717.117	716.967	716.937
BENT 1	12+85.09	717.492	717.462	717.312	717.162	717.132
	12+90.00	717.679	717.649	717.499	717.349	717.319
	12+95.00	717.871	717.841	717.691	717.541	717.511
	13+00.00	718.062	718.032	717.882	717.732	717.702
	13+05.00	718.253	718.223	718.073	717.923	717.893
	13+10.00	718.444	718.414	718.264	718.114	718.084
	13+15.00	718.636	718.606	718.456	718.306	718.276
BENT 2	13+18.19	718.758	718.728	718.578	718.428	718.398
	13+20.00	718.827	718.797	718.647	718.497	718.467
	13+25.00	719.018	718.988	718.838	718.688	718.658
	13+30.00	719.209	719.179	719.029	718.879	718.849
	13+35.00	719.401	719.371	719.221	719.071	719.041
	13+40.00	719.592	719.562	719.412	719.262	719.232
	13+45.00	719.781	719.751	719.601	719.451	719.421
END SLAB	13+50.00	719.967	719.937	719.787	719.637	719.607
	13+56.13	720.190	720.160	720.010	719.860	719.830

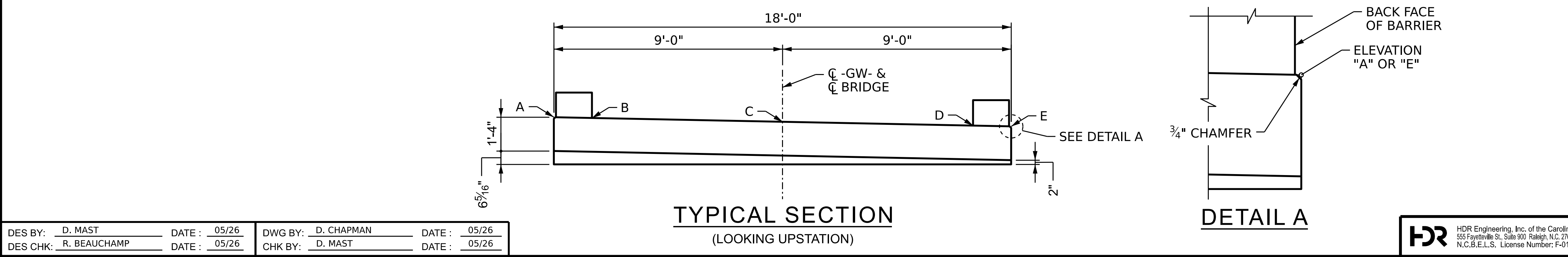
		TOP OF SLAB ELEVATIONS: SPANS K-L				
	STATION	LOCATION				
		A	B	C	D	E
BEG. SLAB	20+03.65	708.365	708.335	708.185	708.035	708.005
	20+05.00	708.318	708.288	708.138	707.988	707.958
	20+10.00	708.145	708.115	707.965	707.815	707.785
	20+15.00	707.972	707.942	707.792	707.642	707.612
	20+20.00	707.798	707.768	707.618	707.468	707.438
BENT 11	20+25.71	707.600	707.570	707.420	707.270	707.240
	20+30.00	707.451	707.421	707.271	707.121	707.091
	20+34.00	707.313	707.283	707.133	706.983	706.953
NOTE 1	20+35.00	707.283	707.252	707.094	706.915	706.556
	20+40.00	707.135	707.099	706.898	N/A	N/A
	20+45.00	706.987	706.946	706.703	N/A	N/A

		TOP OF SLAB ELEVATIONS: ALONG CENTERLINE OF JOINT @ END BENT 2				
	STATION	LOCATION				
		A	B	C	D	E
END SLAB	20+53.06	706.748	-	-	-	-
	20+51.81	-	706.737	-	-	-
	20+45.53	-	-	706.683	-	-
	20+39.25	-	-	-	706.628	-
	20+38.00	-	-	-	-	706.617

NOTE 1: 2% CROSS SLOPE ENDS AT STA. 20+34.00. PROFILE AND CROSS-SLOPE ADJUSTED AT THESE LOCATIONS TO MATCH EXISTING CONDITIONS AT END BENT 2.

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 6 OF 6



8/14/2026

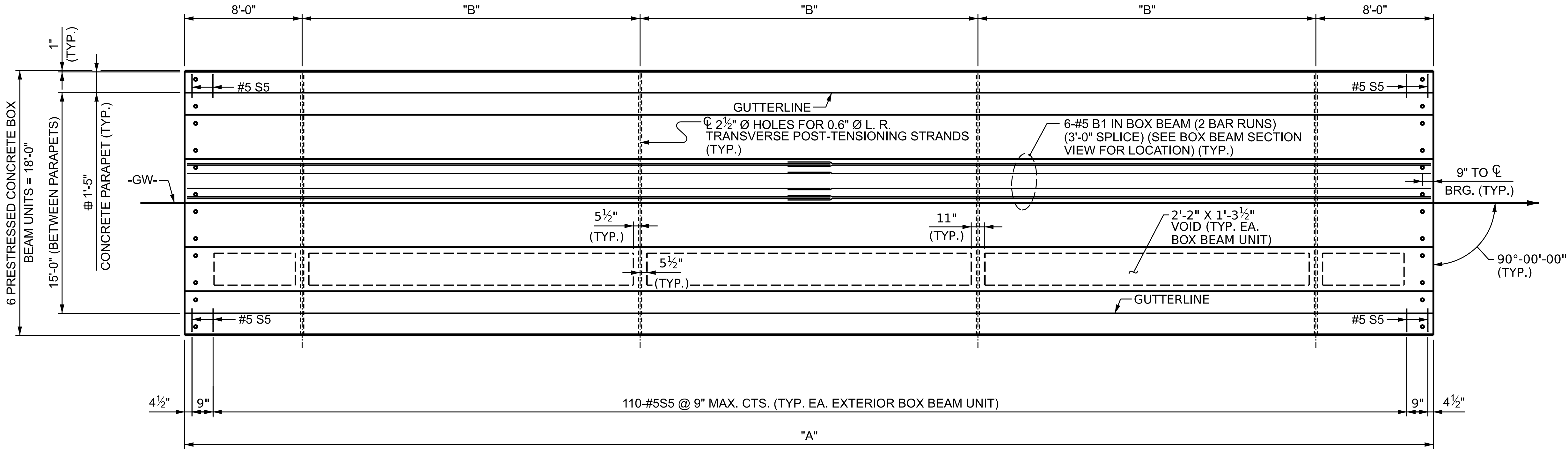
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE ARC OFFSETS					
REVISIONS					SHEET NO. S22
NO.	BY:	DATE:	NO.	BY:	
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					61

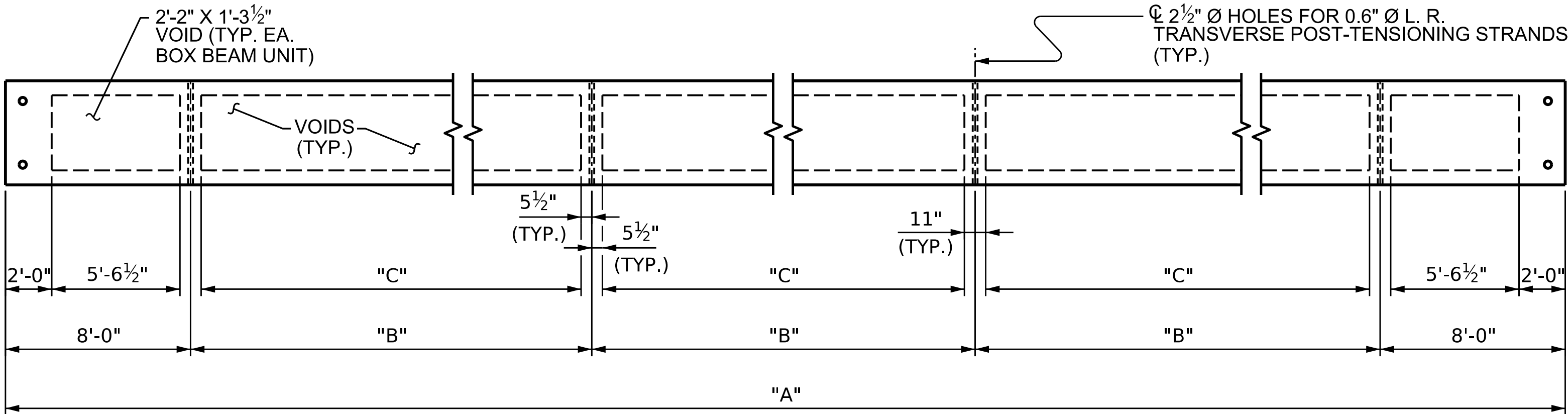
DES BY: <u>D. MAST</u>	DATE: <u>05/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>05/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>05/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>05/26</u>

HR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

NOTES
FOR TABLE OF DIMENSIONS, SEE SHEET 5 OF 9.



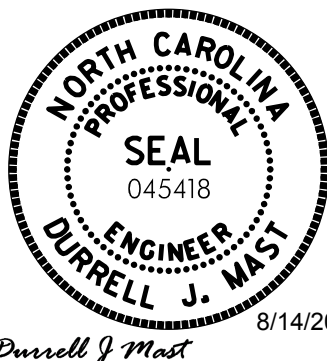
PLAN OF SPANS D, I, & J
⊕ FOR DETAILS AND REINFORCING STEEL IN CONCRETE
PARAPET, SEE "CONCRETE PARAPET & LIGHTING DETAILS" SHEETS.



DIAPHRAGM AND VOID LAYOUT

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 2 OF 9



8/14/2026

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

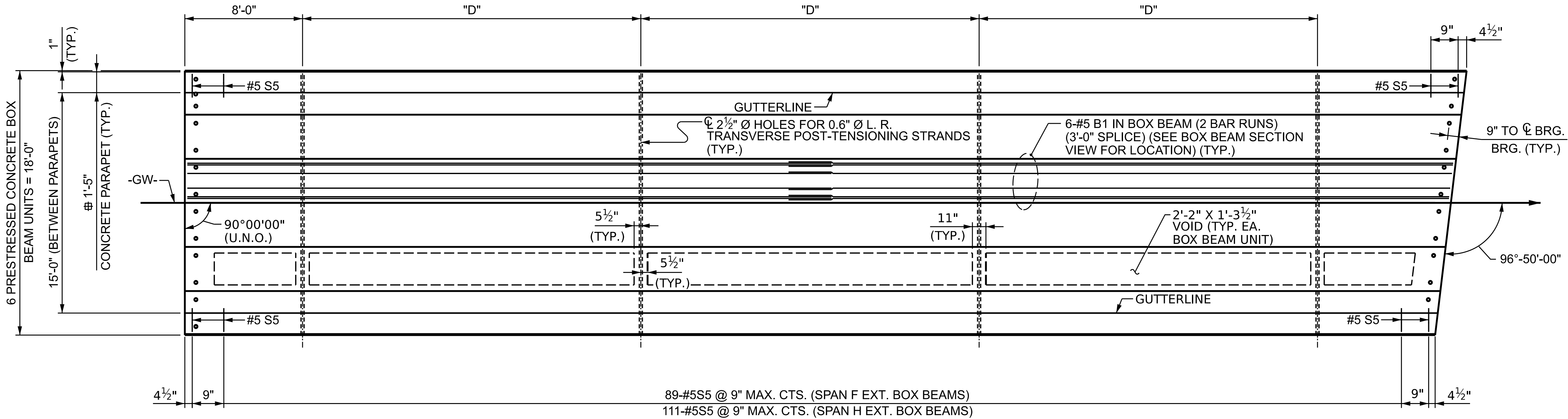
SUPERSTRUCTURE
BOX BEAM UNIT
PLAN OF SPANS
(SPANS D, I, & J)

REVISIONS						SHEET NO. S24
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

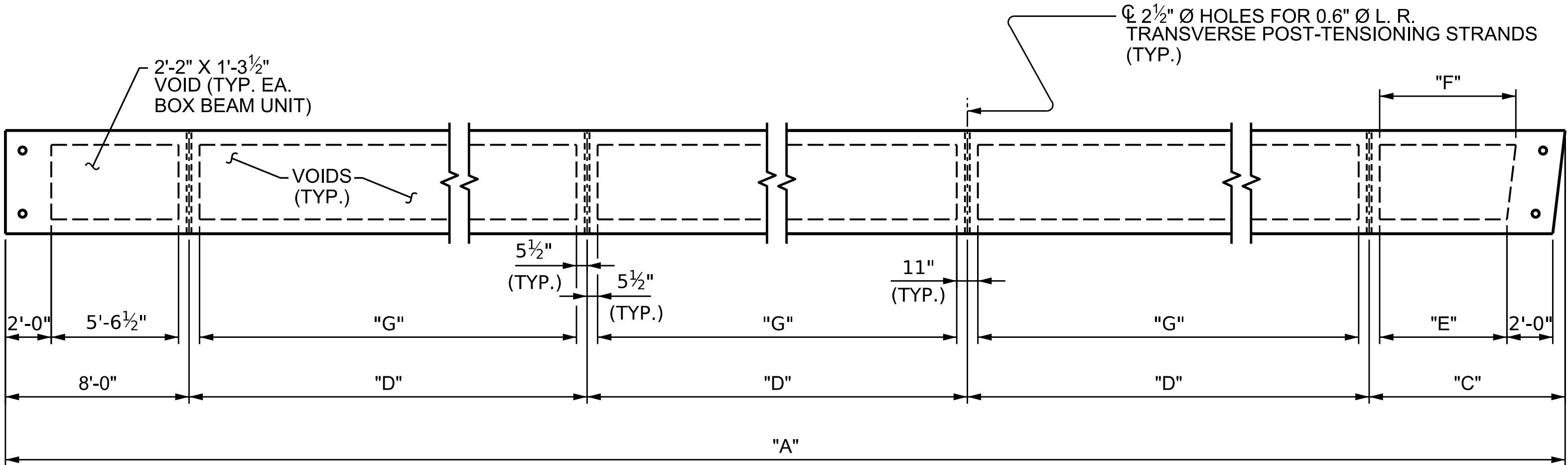
DES BY: D. MAST DATE: 12/25 DWG BY: D. CHAPMAN DATE: 12/25
DES CHK: R. BEAUCHAMP DATE: 12/25 CHK BY: D. MAST DATE: 12/25

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

NOTES
FOR TABLE OF DIMENSIONS, SEE SHEET 6 OF 9.



PLAN OF SPANS F & H
SPAN F SHOWN, SPAN H MIRRORED ABOUT VERTICAL
⊕ FOR DETAILS AND REINFORCING STEEL IN CONCRETE PARAPET, SEE "CONCRETE PARAPET & LIGHTING DETAILS" SHEETS.



DIAPHRAGM AND VOID LAYOUT
SPAN F SHOWN, SPAN H MIRRORED ABOUT VERTICAL

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 3 OF 9



8/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
BOX BEAM UNIT
PLAN OF SPANS
(SPANS F & H)

REVISIONS						SHEET NO. S25
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

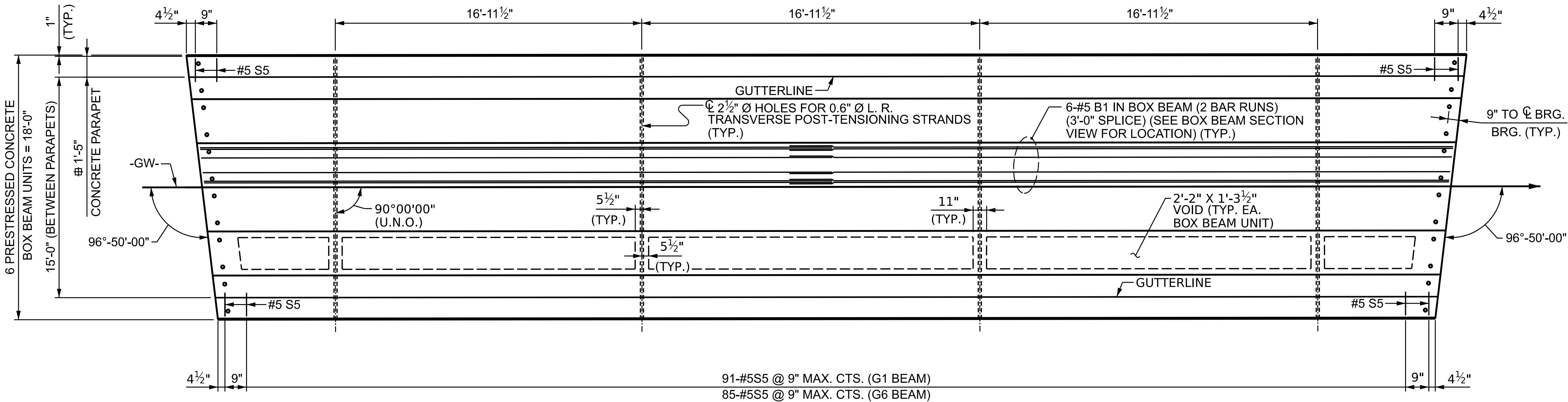
DES BY: <u>G. MARTINEZ</u>	DATE: <u>03/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>03/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>03/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>03/26</u>

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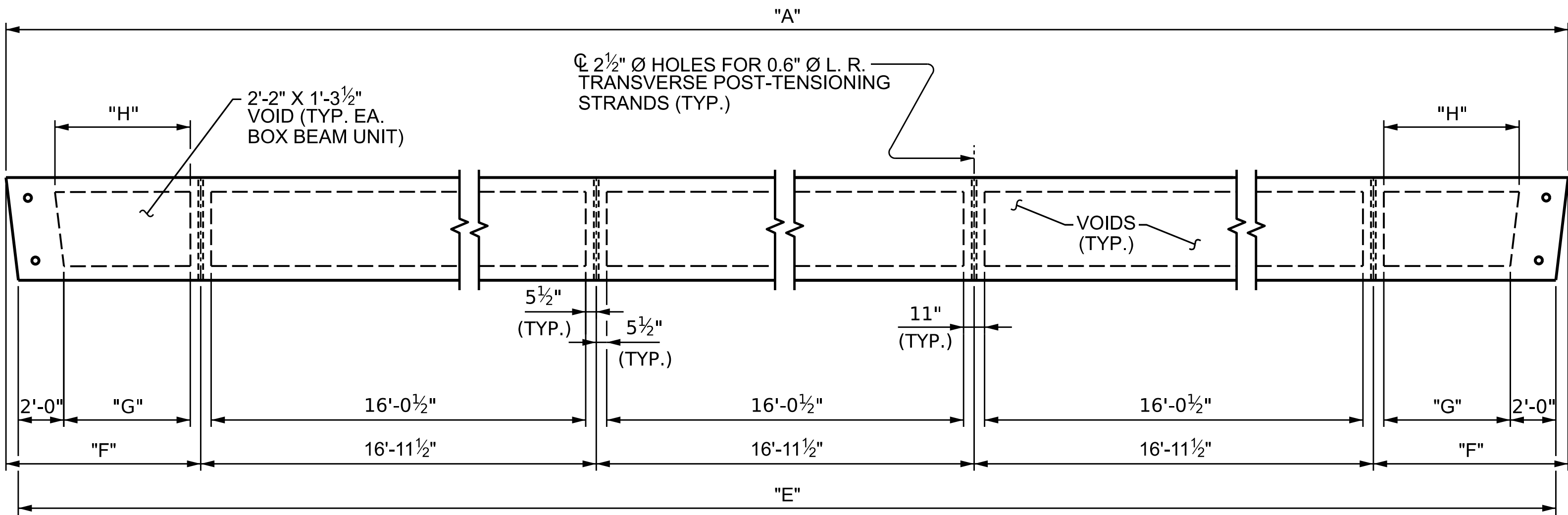
NOTES

FOR TABLE OF DIMENSIONS, SEE SHEET 7 OF 9.



PLAN OF SPAN G

⊕ FOR DETAILS AND REINFORCING STEEL IN CONCRETE PARAPET, SEE "CONCRETE PARAPET & LIGHTING DETAILS" SHEETS.



DIAPHRAGM AND VOID LAYOUT

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 4 OF 9



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
BOX BEAM UNIT
PLAN OF SPAN
(SPAN G)

REVISIONS						SHEET NO. S26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

DES BY: D. MAST DATE: 03/26
DES CHK: R. BEAUCHAMP DATE: 03/26
DWG BY: D. CHAPMAN DATE: 03/26
CHK BY: D. MAST DATE: 03/26

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NOTES

FOR LOCATION OF DIAPHRAGMS, SEE SHEET 2 OF 9.

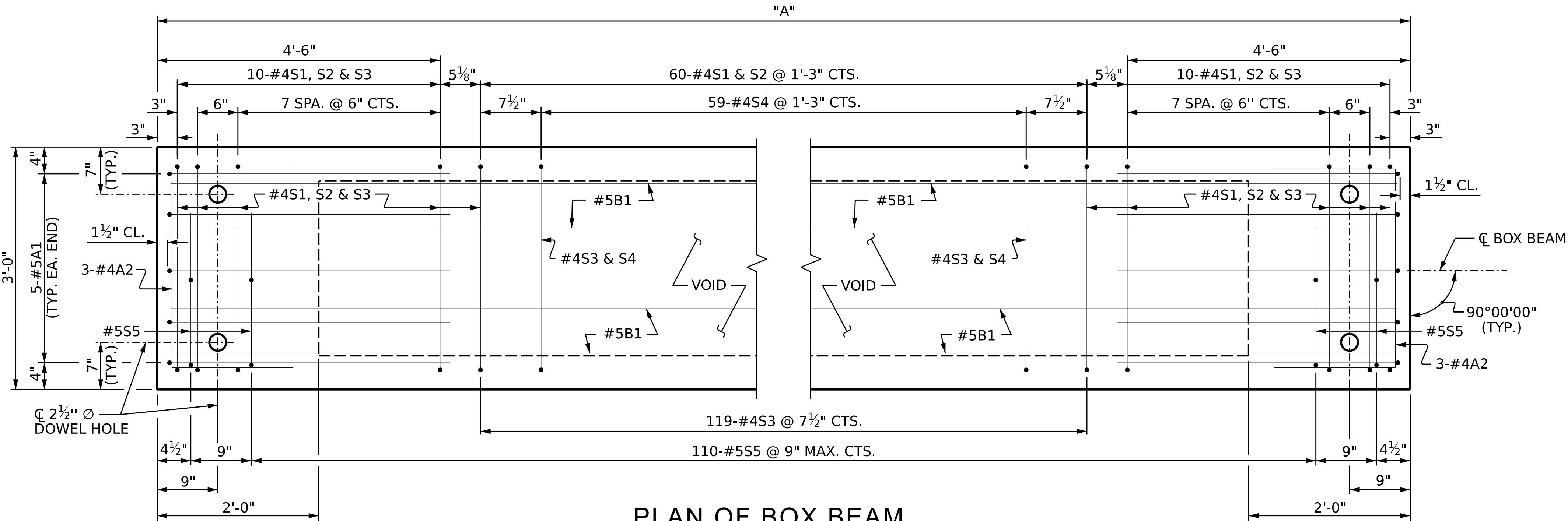
FOR THREADED INSERTS, SEE SHEET 8 OF 9.

FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS" ON SHEET 9 OF 9.

FOR SHEAR KEY DIMENSIONS, SEE SHEET 8 OF 9.

FOR BEAM SECTIONS AND DETAILS, AND TYPICAL STRAND LOCATIONS, SEE SHEET 8 OF 9.

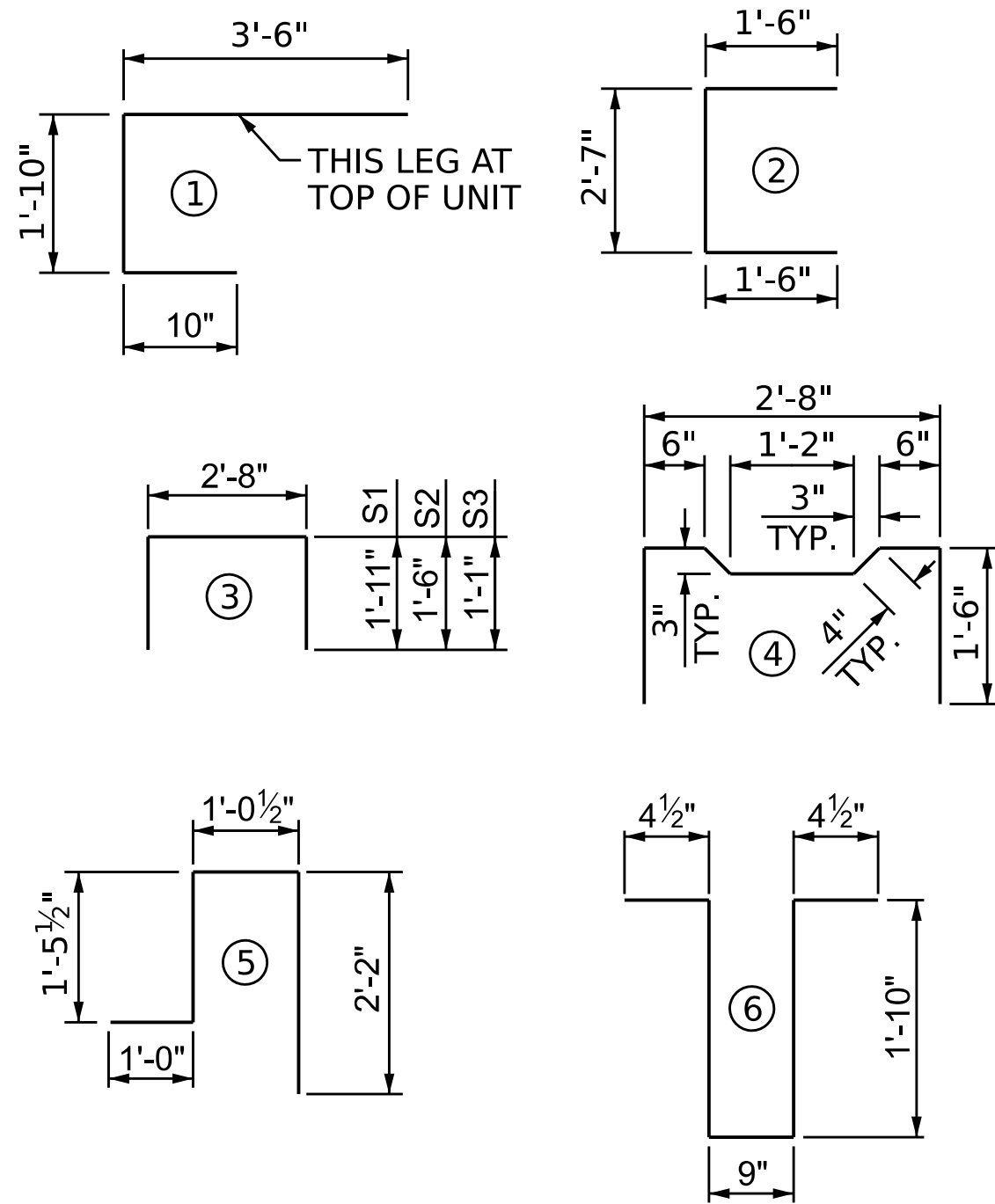
DIMENSIONS			
	"A"	"B"	"C"
SPAN D	83'-7 $\frac{1}{4}$ "	22'-6 $\frac{7}{16}$ "	21'-7 $\frac{7}{16}$ "
SPAN I & J	83'-2 $\frac{1}{2}$ "	22'-4 $\frac{13}{16}$ "	21'-5 $\frac{13}{16}$ "



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
FOR LOCATION OF DIAPHRAGMS, SEE PLAN OF SPANS.
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE DIAPHRAGM DETAILS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
A1	10	5	1	6'-2"	64
A2	22	4	2	5'-7"	82
B1	12	5	STR	43'-4"	542
K1	12	4	6	5'-2"	41
K2	8	4	STR	2'-7"	14
S1	80	4	3	6'-6"	347
S2	80	4	3	5'-8"	303
S3	139	4	3	4'-10"	449
S4	59	4	4	5'-10"	230

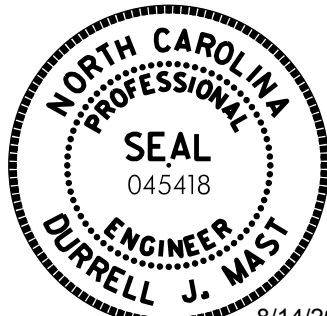
EXTERIOR BBU	*S5	112	5	5	5'-8"	662
REINFORCING STEEL						2072 LBS.
* EPOXY COATED REINF. STEEL						662 LBS.
7000 P.S.I. CONCRETE						12.3 CU. YDS.
0.6" Ø L.R. STRANDS						No. 28

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 5 OF 9



8/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
3'-0" X 2'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT
(SPANS D, I, & J)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S27
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

DES BY: D. MAST	DATE: 12/25	DWG BY: D. CHAPMAN	DATE: 12/25
DES CHK: R. BEAUCHAMP	DATE: 12/25	CHK BY: D. MAST	DATE: 12/25

HDR	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
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NOTES

FOR LOCATION OF DIAPHRAGMS, SEE SHEET 3 OF 9.

FOR THREADED INSERTS, SEE SHEET 8 OF 9.

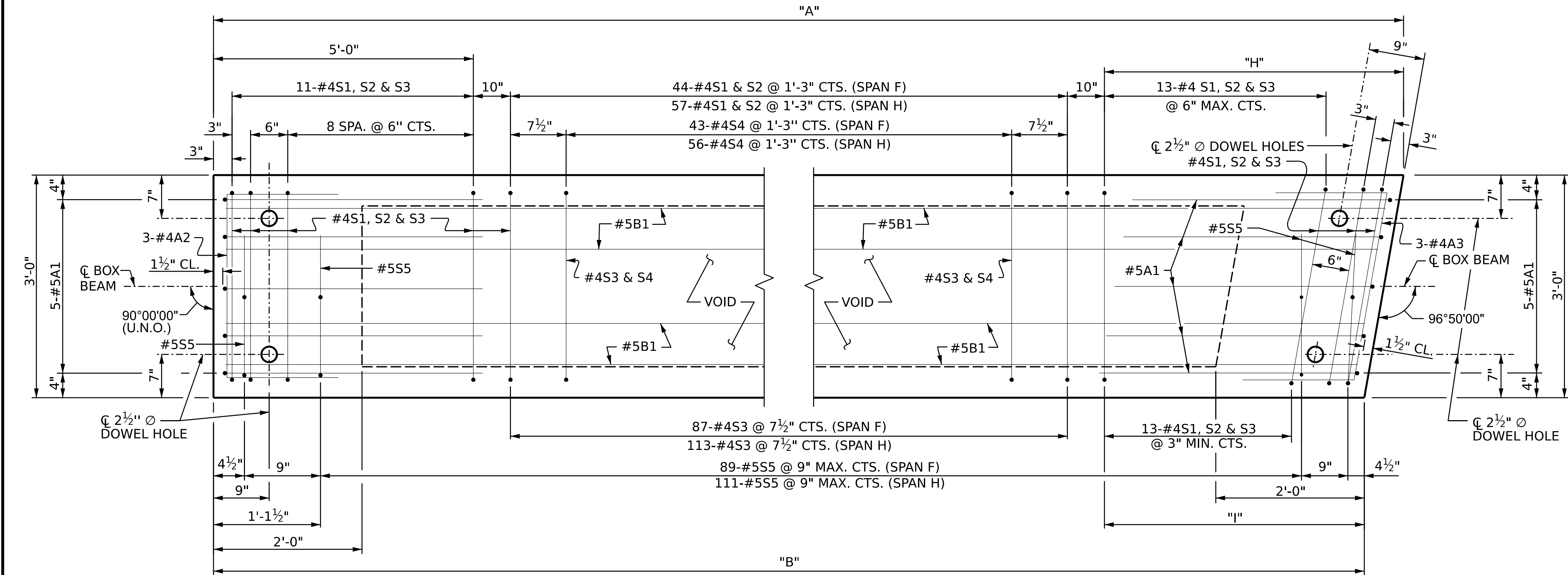
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS" ON SHEET 9 OF 9.

FOR SHEAR KEY DIMENSIONS, SEE SHEET 8 OF 9.

FOR BEAM SECTIONS AND DETAILS, AND TYPICAL STRAND LOCATIONS, SEE SHEET 8 OF 9.

DIMENSIONS

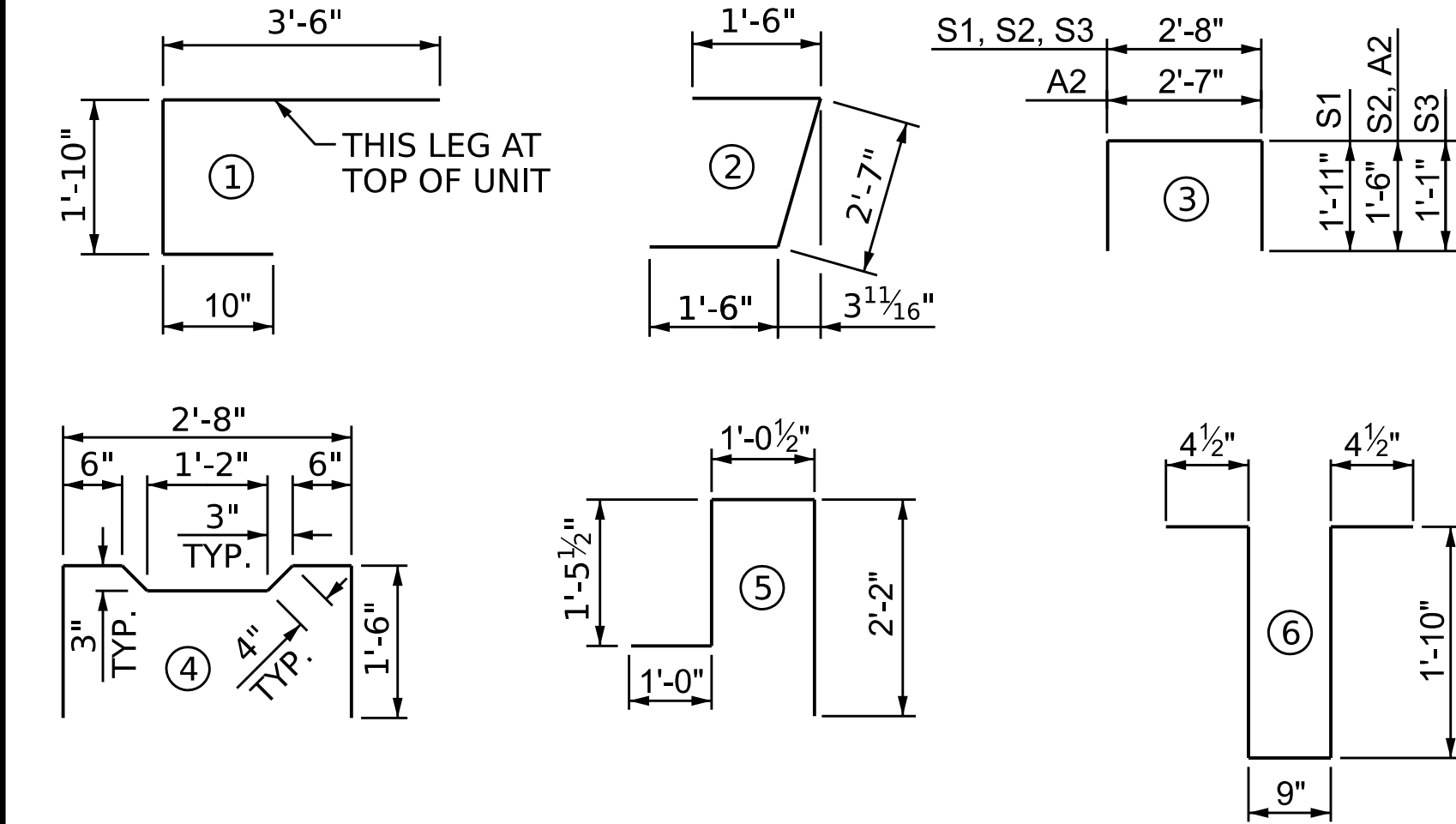
BEAM	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"
F1	67'-8 ³ / ₁₆ "	67'-3 ⁵ / ₁₆ "	9'-1 ¹ / ₁₆ "	16'-10 ³ / ₈ "	6'-3 ¹ / ₄ "	6'-6 ³ / ₈ "	15'-11 ³ / ₈ "	7'-3 ³ / ₁₆ "	6'-10 ¹ / ₈ "
F2	67'-3 ⁵ / ₁₆ "	66'-11 ⁹ / ₁₆ "	8'-8 ³ / ₄ "	16'-10 ³ / ₈ "	5'-10 ¹⁵ / ₁₆ "	6'-2 ¹ / ₁₆ "	15'-11 ³ / ₈ "	6'-10 ¹ / ₈ "	6'-6 ⁵ / ₁₆ "
F3	66'-11 ⁹ / ₁₆ "	66'-7 ¹ / ₄ "	8'-4 ¹ / ₁₆ "	16'-10 ³ / ₈ "	5'-6 ³ / ₈ "	5'-9 ³ / ₄ "	15'-11 ³ / ₈ "	6'-6 ⁹ / ₁₆ "	6'-2 ¹ / ₄ "
F4	66'-7 ¹ / ₄ "	66'-2 ¹⁵ / ₁₆ "	8'-0 ¹ / ₈ "	16'-10 ³ / ₈ "	5'-2 ⁵ / ₁₆ "	5'-5 ⁵ / ₁₆ "	15'-11 ³ / ₈ "	6'-2 ¹ / ₄ "	5'-9 ¹⁵ / ₁₆ "
F5	66'-2 ¹⁵ / ₁₆ "	65'-10 ⁵ / ₈ "	7'-7 ¹³ / ₁₆ "	16'-10 ³ / ₈ "	4'-10"	5'-1 ¹ / ₈ "	15'-11 ³ / ₈ "	5'-9 ¹⁵ / ₁₆ "	5'-5 ⁵ / ₈ "
F6	65'-10 ⁵ / ₈ "	65'-6 ⁵ / ₁₆ "	7'-3 ¹ / ₂ "	16'-10 ³ / ₈ "	4'-5 ¹ / ₁₆ "	4'-8 ¹³ / ₁₆ "	15'-11 ³ / ₈ "	5'-5 ⁵ / ₈ "	5'-1 ⁹ / ₁₆ "
H1	84'-3 ¹ / ₁₆ "	83'-11 ¹ / ₈ "	9'-1"	22'-4 ¹³ / ₁₆ "	6'-3 ¹ / ₄ "	6'-6 ³ / ₈ "	21'-5 ¹³ / ₁₆ "	7'-7 ⁷ / ₁₆ "	7'-3 ¹ / ₈ "
H2	83'-11 ¹ / ₈ "	83'-6 ¹³ / ₁₆ "	8'-8 ¹ / ₁₆ "	22'-4 ¹³ / ₁₆ "	5'-10 ¹⁵ / ₁₆ "	6'-2 ¹ / ₁₆ "	21'-5 ¹³ / ₁₆ "	7'-3 ¹ / ₈ "	6'-10 ¹³ / ₁₆ "
H3	83'-6 ¹³ / ₁₆ "	83'-2 ¹ / ₂ "	8'-4 ³ / ₈ "	22'-4 ¹³ / ₁₆ "	5'-6 ³ / ₈ "	5'-9 ³ / ₄ "	21'-5 ¹³ / ₁₆ "	6'-10 ¹³ / ₁₆ "	6'-6 ¹ / ₂ "
H4	83'-2 ¹ / ₂ "	82'-10 ³ / ₁₆ "	8'-0 ¹ / ₁₆ "	22'-4 ¹³ / ₁₆ "	5'-2 ⁵ / ₁₆ "	5'-5 ⁵ / ₁₆ "	21'-5 ¹³ / ₁₆ "	6'-6 ¹ / ₂ "	6'-2 ³ / ₁₆ "
H5	82'-10 ³ / ₁₆ "	82'-5 ⁵ / ₈ "	7'-7 ³ / ₄ "	22'-4 ¹³ / ₁₆ "	4'-10"	5'-1 ¹ / ₈ "	21'-5 ¹³ / ₁₆ "	6'-2 ¹ / ₁₆ "	5'-9 ¹ / ₈ "
H6	82'-5 ⁵ / ₈ "	82'-1 ⁹ / ₁₆ "	7'-3 ¹ / ₁₆ "	22'-4 ¹³ / ₁₆ "	4'-5 ¹ / ₁₆ "	4'-8 ¹³ / ₁₆ "	21'-5 ¹³ / ₁₆ "	5'-9 ¹ / ₈ "	5'-5 ⁹ / ₁₆ "



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
SPAN F GIRDER SHOWN, SPAN H MIRRORED ABOUT VERTICAL.
FOR LOCATION OF DIAPHRAGMS, SEE PLAN OF SPANS.
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE DIAPHRAGM DETAILS.
BEAM F6/H6 SHOWN, FOR BEAM F1/H1, S5 BARS LOCATED ALONG LENGTH OF BEAM ON OPPOSITE SIDE.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
	A1	10	5	1	6'-2"	64
	A2	19	4	3	5'-7"	71
	A3	3	4	2	5'-7"	11
SPAN F	B1	12	5	STR	35'-3"	441
SPAN H	B1	12	5	STR	43'-7"	545
	K1	12	4	6	5'-2"	41
	K2	8	4	STR	2'-7"	14
SPAN F	S1	68	4	3	6'-6"	295
SPAN F	S2	68	4	3	5'-8"	257
SPAN F	S3	111	4	3	4'-10"	358
SPAN F	S4	43	4	4	5'-10"	168
F1/F6	*S5	91	5	5	5'-8"	538
SPAN H	S1	81	4	3	6'-6"	352
SPAN H	S2	81	4	3	5'-8"	307
SPAN H	S3	137	4	3	4'-10"	442
SPAN H	S4	56	4	4	5'-10"	218
H1/H6	*S5	113	5	5	5'-8"	688
SPAN F	REINFORCING STEEL				LBS.	1720
	* EPOXY COATED REINF. STEEL				LBS.	538
	7000 P.S.I. CONCRETE				CU. YDS.	** 9.9
SPAN H	REINFORCING STEEL				LBS.	2065
	* EPOXY COATED REINF. STEEL				LBS.	668
	7000 P.S.I. CONCRETE				CU. YDS.	** 12.3
	0.6" Ø L.R. STRANDS (SPAN F)				No.	20
	0.6" Ø L.R. STRANDS (SPAN H)				No.	28
	** AVERAGE QUANTITY PER BEAM					

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 6 OF 9



Durrell J. Mast 8/14/2026

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
3'-0" X 2'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT
(SPANS F & H)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	
2	--	--	4	--	--	
						TOTAL SHEETS
						61

DES BY: D. MAST	DATE: 02/26	DWG BY: D. CHAPMAN	DATE: 02/26
DES CHK: R. BEAUCHAMP	DATE: 02/26	CHK BY: D. MAST	DATE: 02/26

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555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

NOTES

FOR LOCATION OF DIAPHRAGMS, SEE SHEET 4 OF 9.

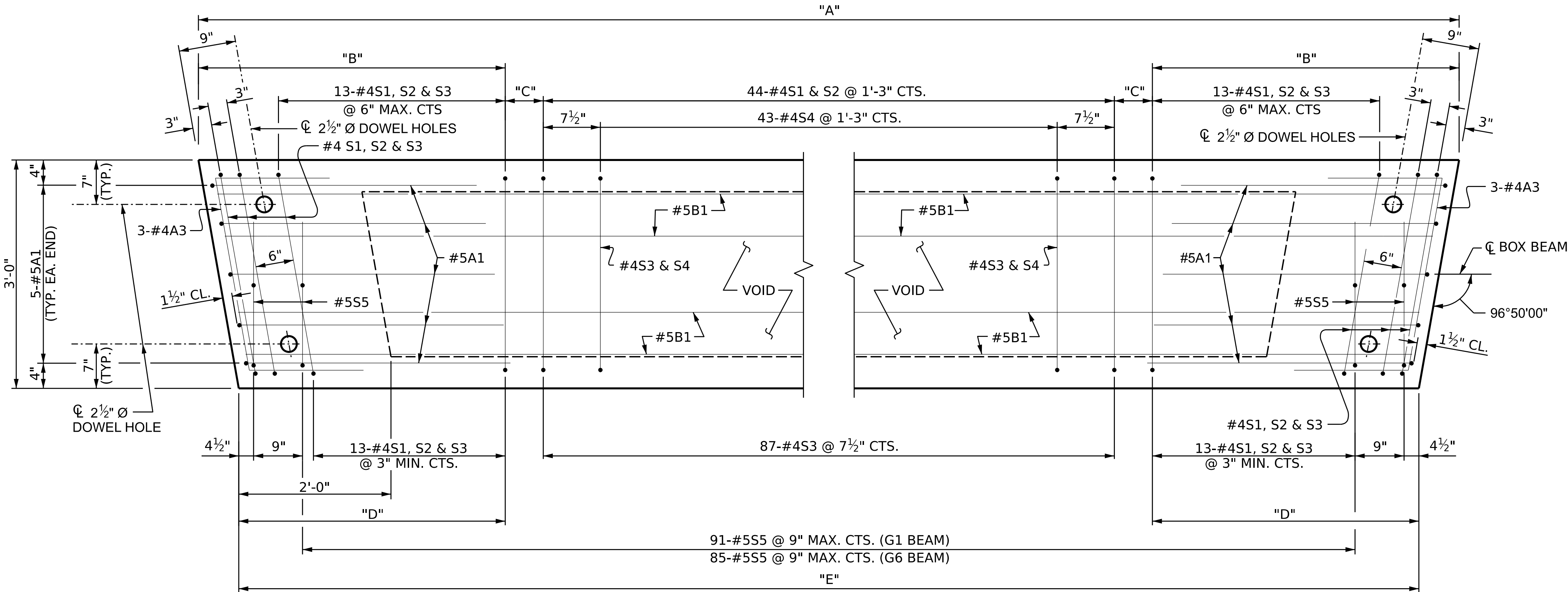
FOR THREADED INSERTS, SEE SHEET 8 OF 9.

FOR REINFORCING STEEL IN DIAPHRAGMS, SEE "DOUBLE DIAPHRAGM DETAILS" ON SHEET 9 OF 9.

FOR SHEAR KEY DIMENSIONS, SEE SHEET 8 OF 9.

FOR BEAM SECTIONS AND DETAILS, AND TYPICAL STRAND LOCATIONS, SEE SHEET 8 OF 9.

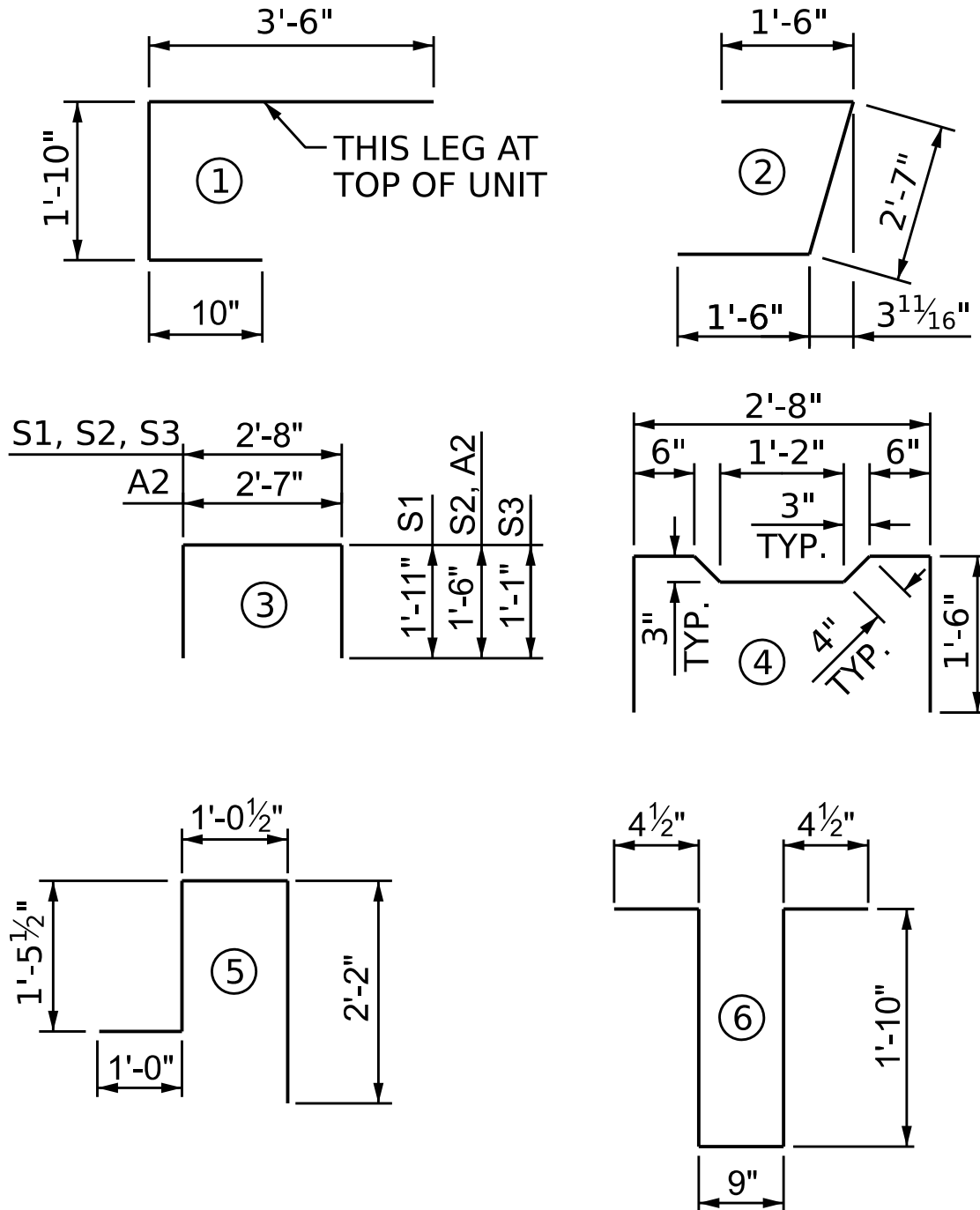
DIMENSIONS								
BEAM	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
G1	69'-0 ³ / ₈ "	6'-11 ¹¹ / ₁₆ "	8"	6'-7 ³ / ₈ "	68'-3 ³ / ₄ "	9'-0 ¹⁵ / ₁₆ "	7'-11 ¹⁵ / ₁₆ "	7'-7 ⁵ / ₈ "
G2	68'-3 ³ / ₄ "	6'-7 ³ / ₈ "	8"	6'-3 ¹ / ₁₆ "	67'-7 ¹ / ₈ "	8'-8 ⁵ / ₈ "	7'-7 ⁵ / ₈ "	7'-3 ⁵ / ₁₆ "
G3	67'-7 ¹ / ₈ "	6'-3 ¹ / ₁₆ "	8"	5'-10 ³ / ₄ "	66'-10 ¹ / ₂ "	8'-4 ³ / ₁₆ "	7'-3 ³ / ₁₆ "	6'-11"
G4	66'-10 ¹ / ₂ "	6'-1 ³ / ₄ "	5"	5'-9 ¹ / ₁₆ "	66'-1 ¹ / ₈ "	8'-0"	6'-11"	6'-6 ¹¹ / ₁₆ "
G5	66'-1 ¹ / ₈ "	5'-9 ¹ / ₁₆ "	5"	5'-5 ¹ / ₈ "	65'-5 ¹ / ₄ "	7'-7 ¹ / ₁₆ "	6'-6 ¹ / ₁₆ "	6'-2 ³ / ₈ "
G6	65'-5 ¹ / ₄ "	5'-5 ¹ / ₈ "	5"	5'-0 ¹³ / ₁₆ "	64'-8 ³ / ₈ "	7'-3 ³ / ₈ "	6'-2 ³ / ₈ "	5'-10 ¹ / ₁₆ "



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5S5 BARS.
FOR LOCATION OF DIAPHRAGMS, SEE PLAN OF SPANS.
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE DIAPHRAGM DETAILS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
A1	10	5	1	6'-2"	64
A2	16	4	3	5'-7"	60
A3	6	4	2	5'-7"	22
B1	12	5	STR	35'-11"	450
K1	12	4	6	5'-2"	41
K2	8	4	STR	2'-7"	14
S1	70	4	3	6'-6"	304
S2	70	4	3	5'-8"	265
S3	113	4	3	4'-10"	365
S4	43	4	4	5'-10"	167
G1	*S5	93	5	5'-8"	550
G6	*S5	87	5	5'-8"	514
REINFORCING STEEL				LBS.	1752
* EPOXY COATED REINF. STEEL				LBS.	550
* EPOXY COATED REINF. STEEL				LBS.	514
7000 P.S.I. CONCRETE				CU. YDS. **	9.9
0.6" Ø L.R. STRANDS				No.	20

** AVERAGE QUANTITY PER BEAM

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 7 OF 9



Durrell J. Mast 8/14/2026

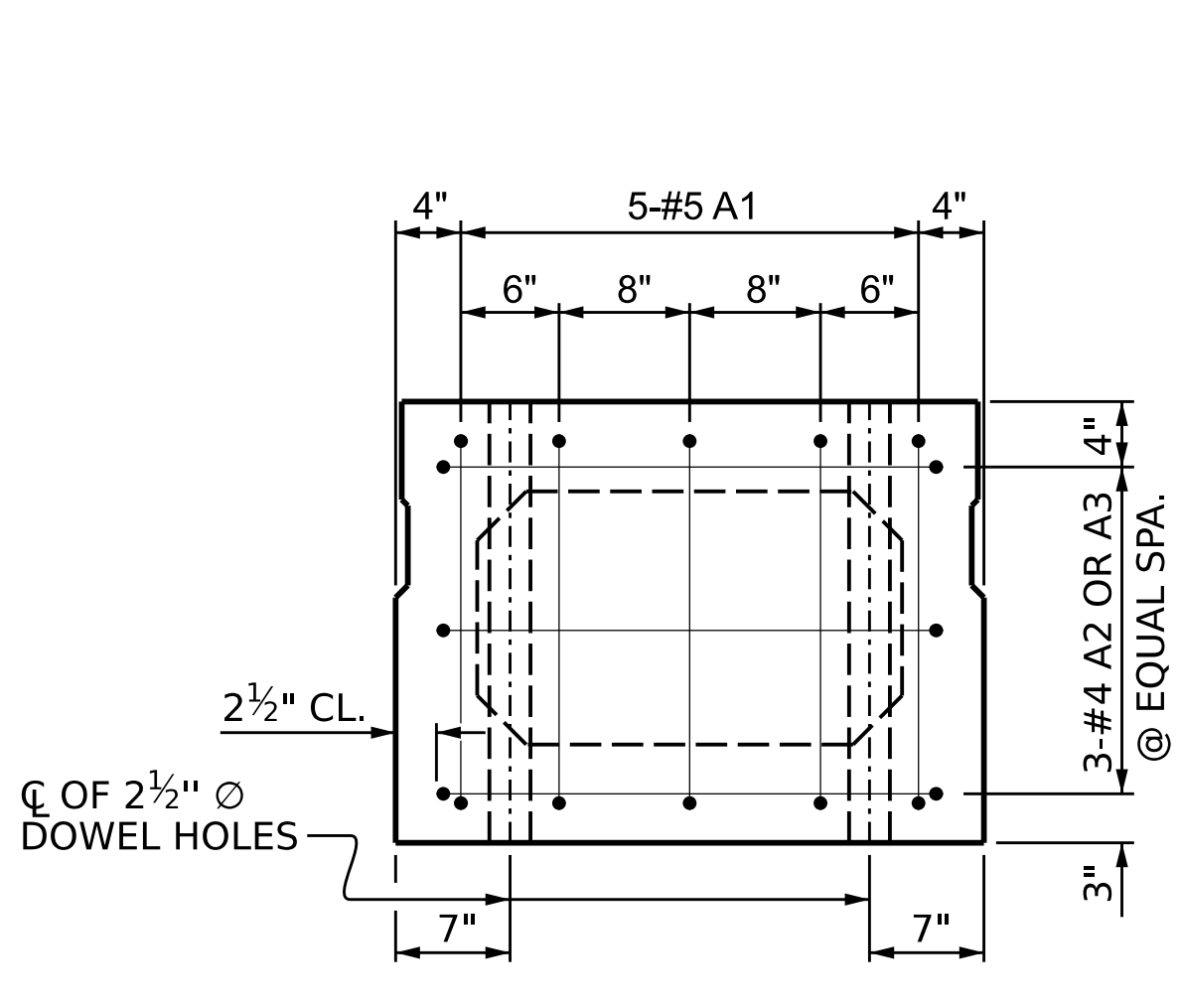
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
3'-0" X 2'-3"
PRESTRESSED CONCRETE
BOX BEAM UNIT
(SPAN G)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S29
1	--	--	3	--	--	
2	--	--	4	--	--	
						TOTAL SHEETS
						61

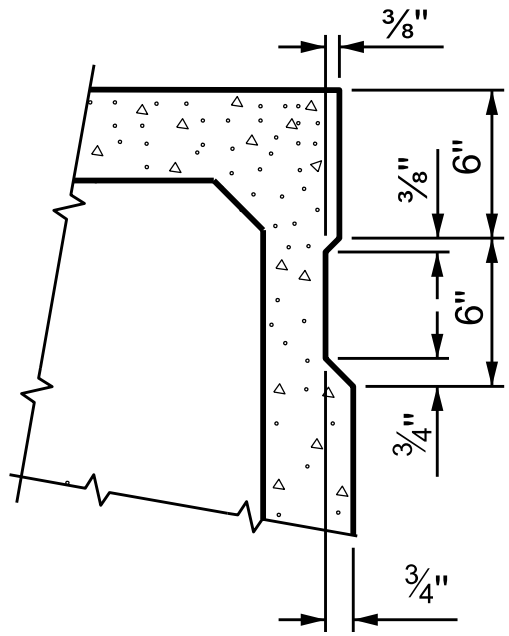
DES BY: D. MAST	DATE: 02/26	DWG BY: D. CHAPMAN	DATE: 02/26
DES CHK: R. BEAUCHAMP	DATE: 02/26	CHK BY: D. MAST	DATE: 02/26

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N.C.B.E.L.S. License Number: F-0116



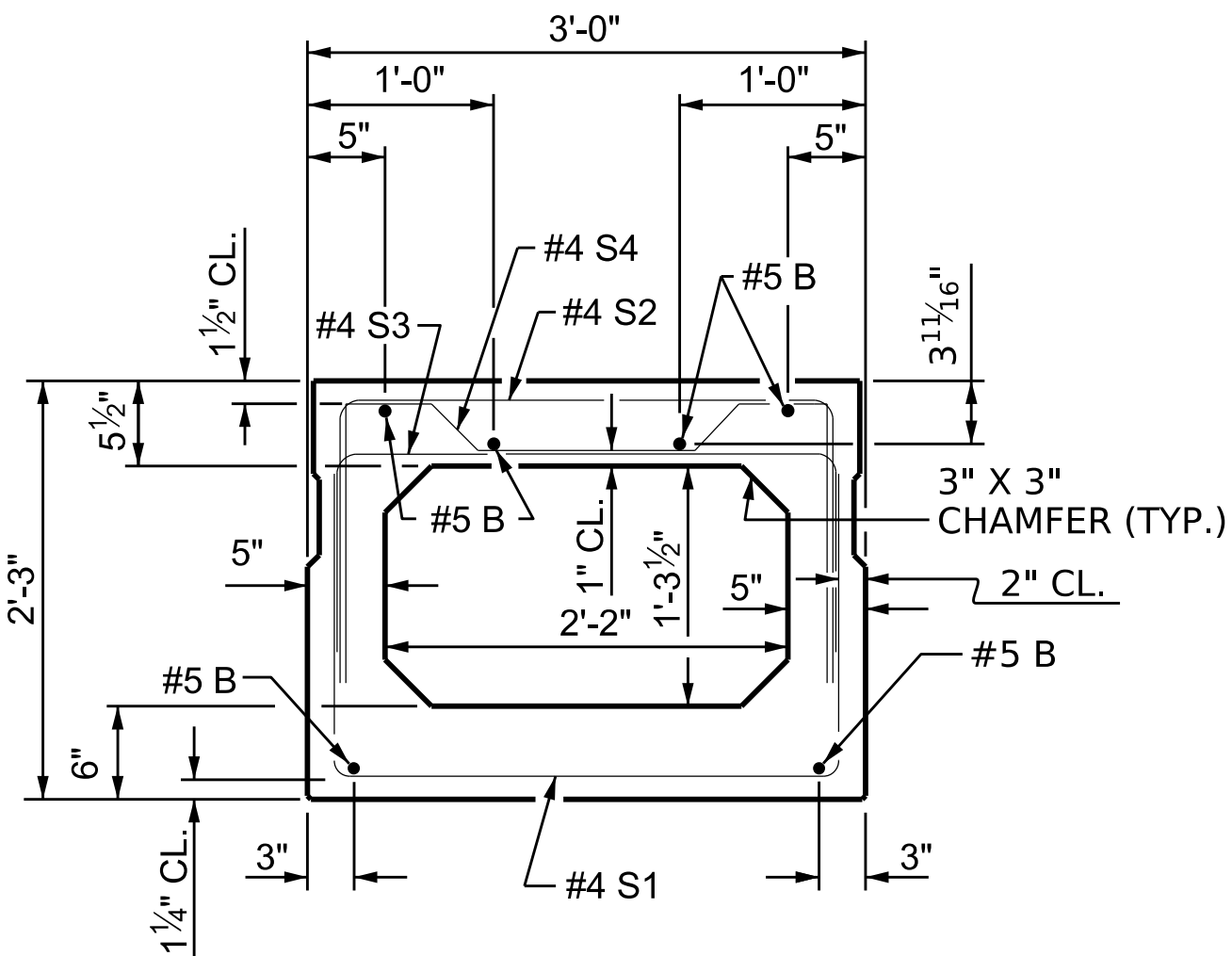
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES.
(INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



SHEAR KEY DETAIL

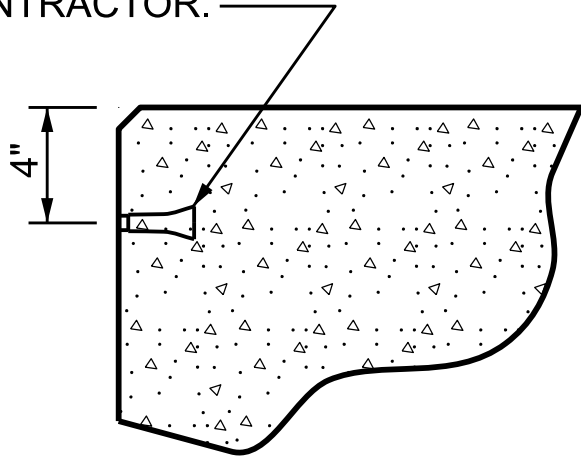
NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.



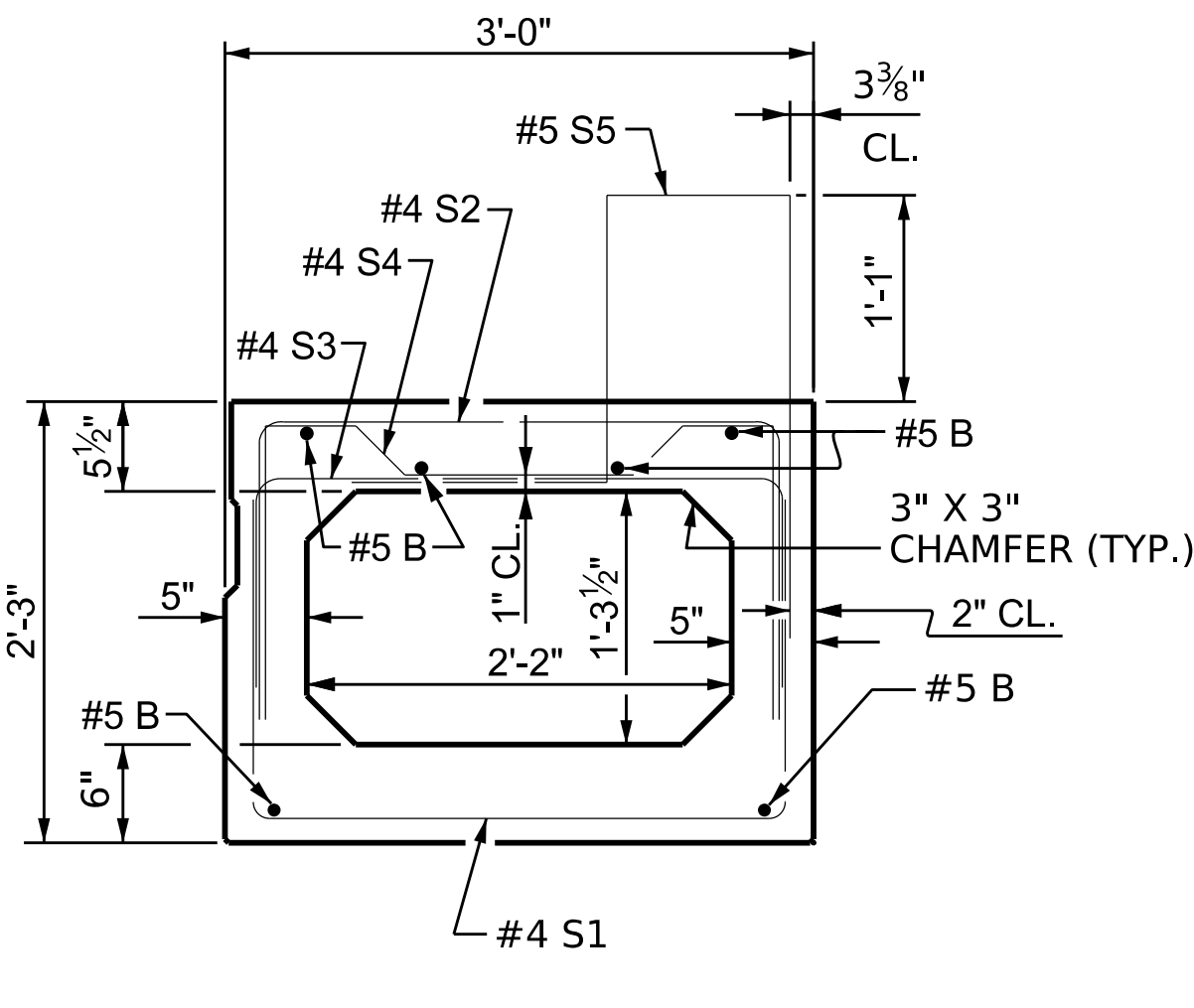
INTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)

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



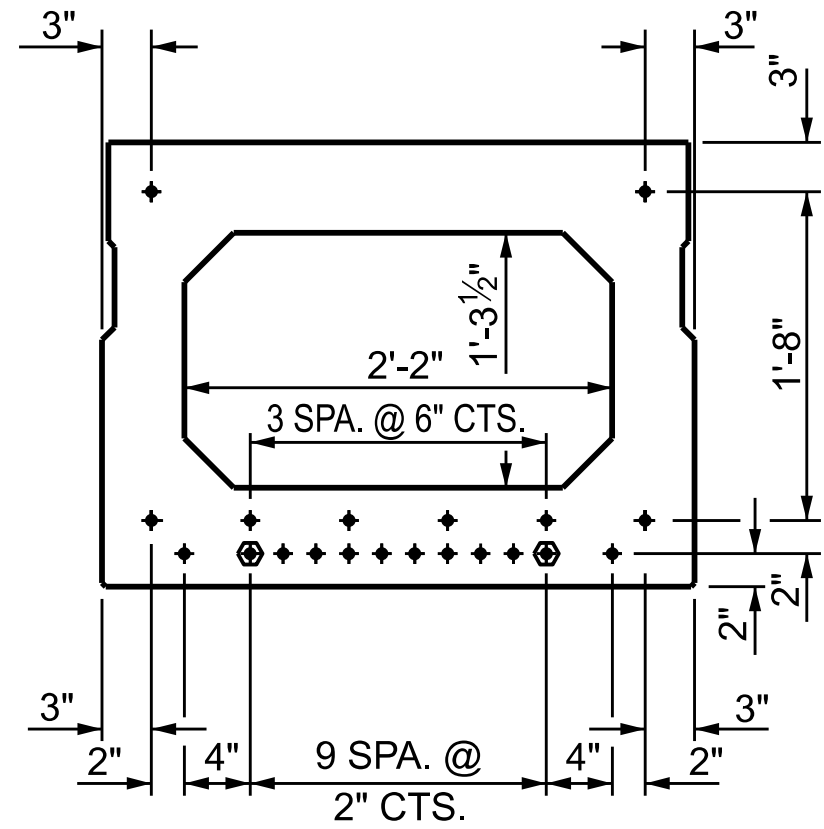
THREADED INSERT DETAIL



EXTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)

0.6" Ø LOW RELAXATION STRAND LAYOUT



SPAN F AND G TYPICAL STRAND LOCATION

(20 STRANDS REQUIRED)

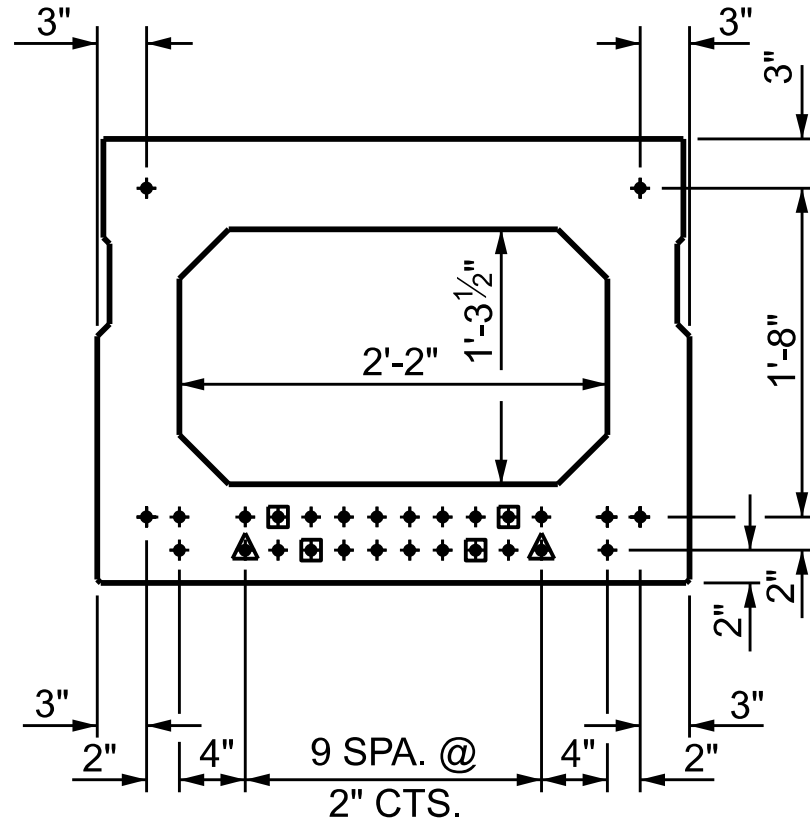
(INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION)

DEBONDING LEGEND

- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER

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

0.6" Ø LOW RELAXATION STRAND LAYOUT



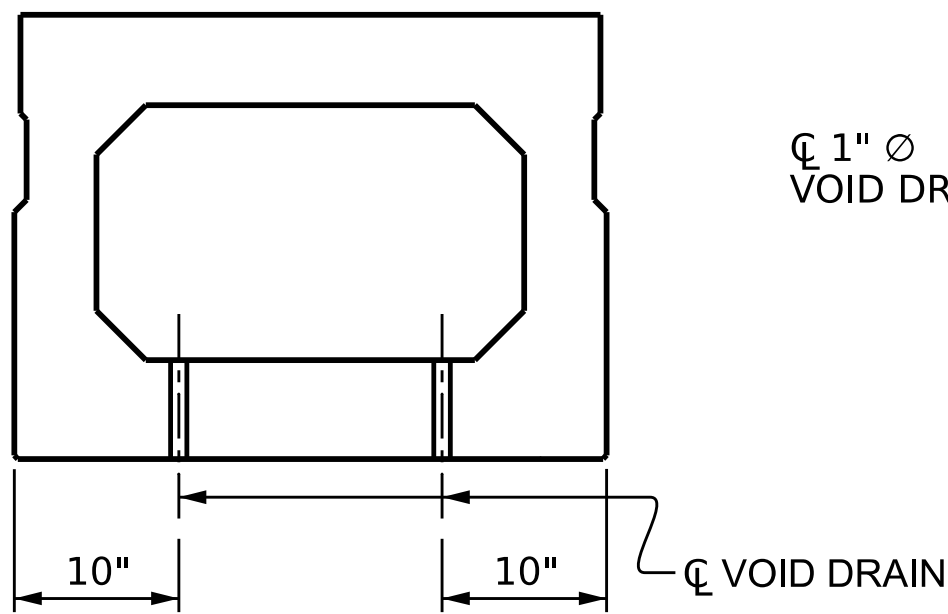
SPAN D, H, I, AND J TYPICAL STRAND LOCATION

(28 STRANDS REQUIRED)

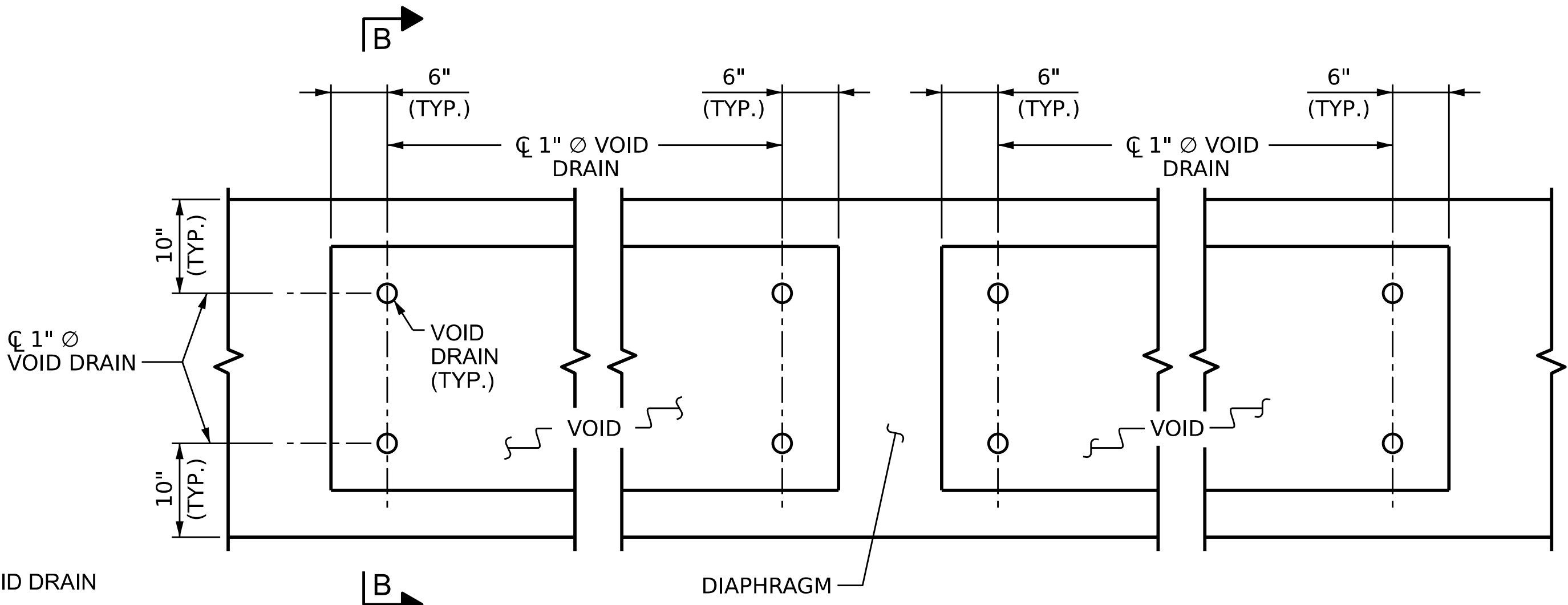
(INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION)

DEBONDING LEGEND

- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER



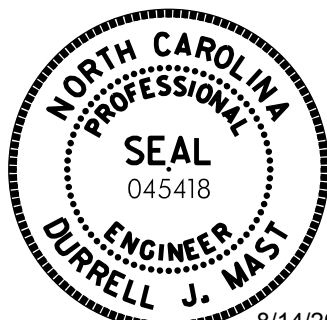
SECTION B-B



PART PLAN

VOID DRAIN DETAILS

(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)



8/14/2026

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PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

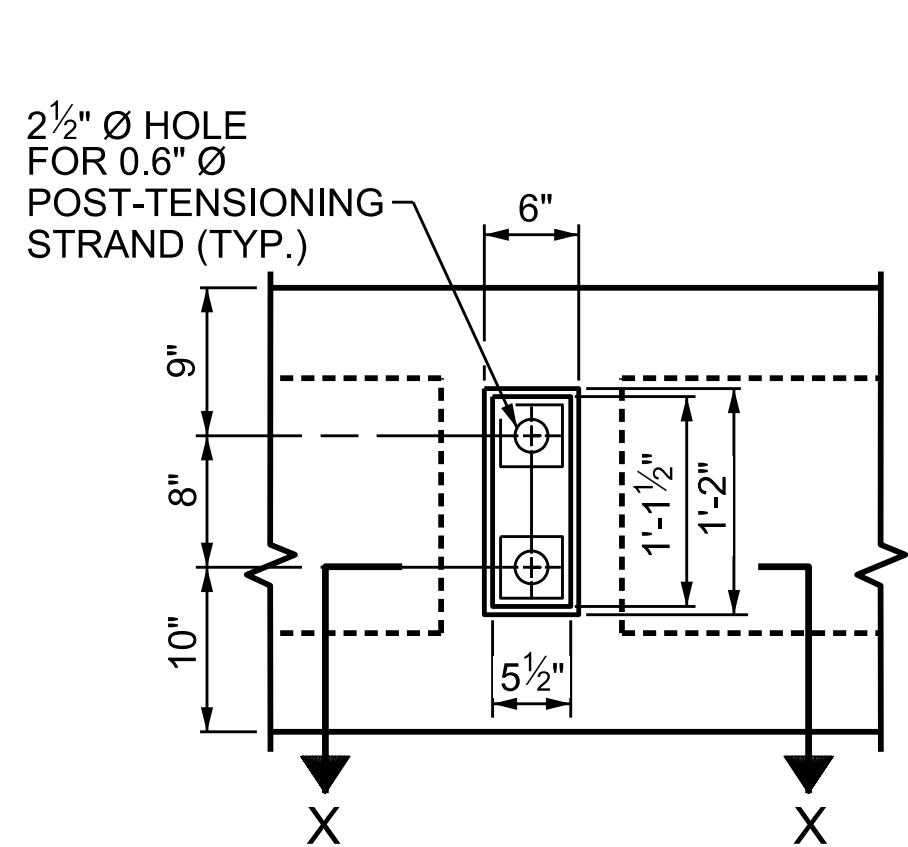
SHEET 8 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
3'-0" X 2'-3"
PRESTRESSED CONCRETE
BOX BEAM
SECTIONS AND DETAILS

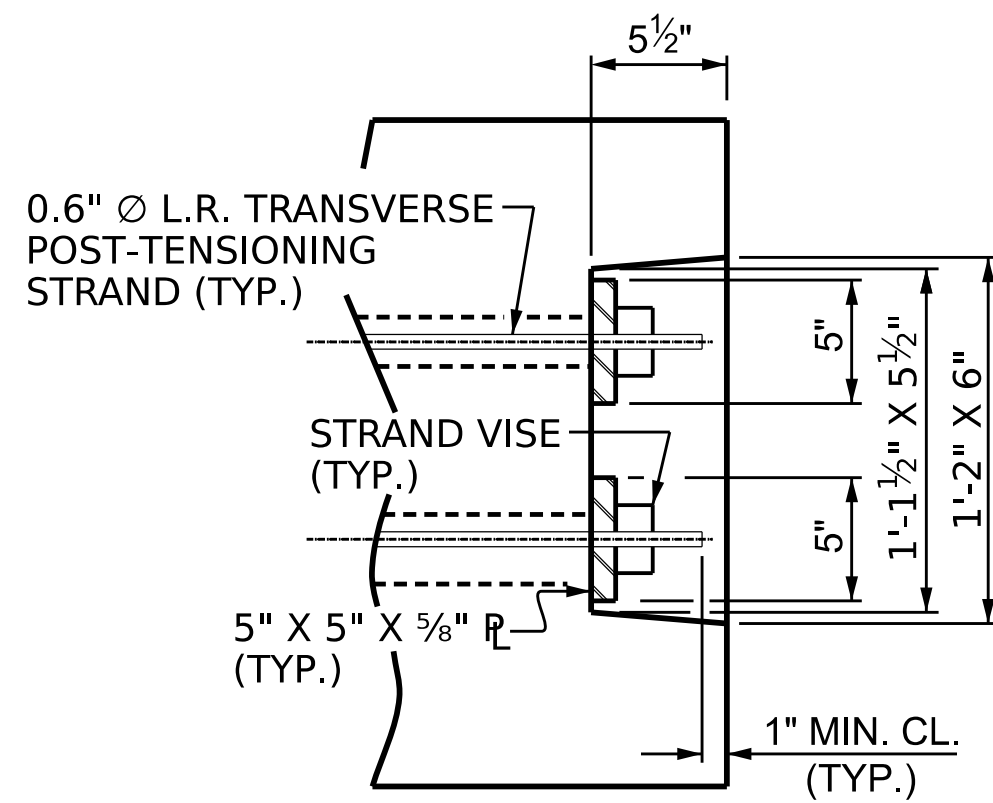
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S30
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	61

DES BY: G. MARTINEZ	DATE: 03/26	DWG BY: D. CHAPMAN	DATE: 03/26
DES CHK: R. BEAUCHAMP	DATE: 03/26	CHK BY: D. MAST	DATE: 03/26

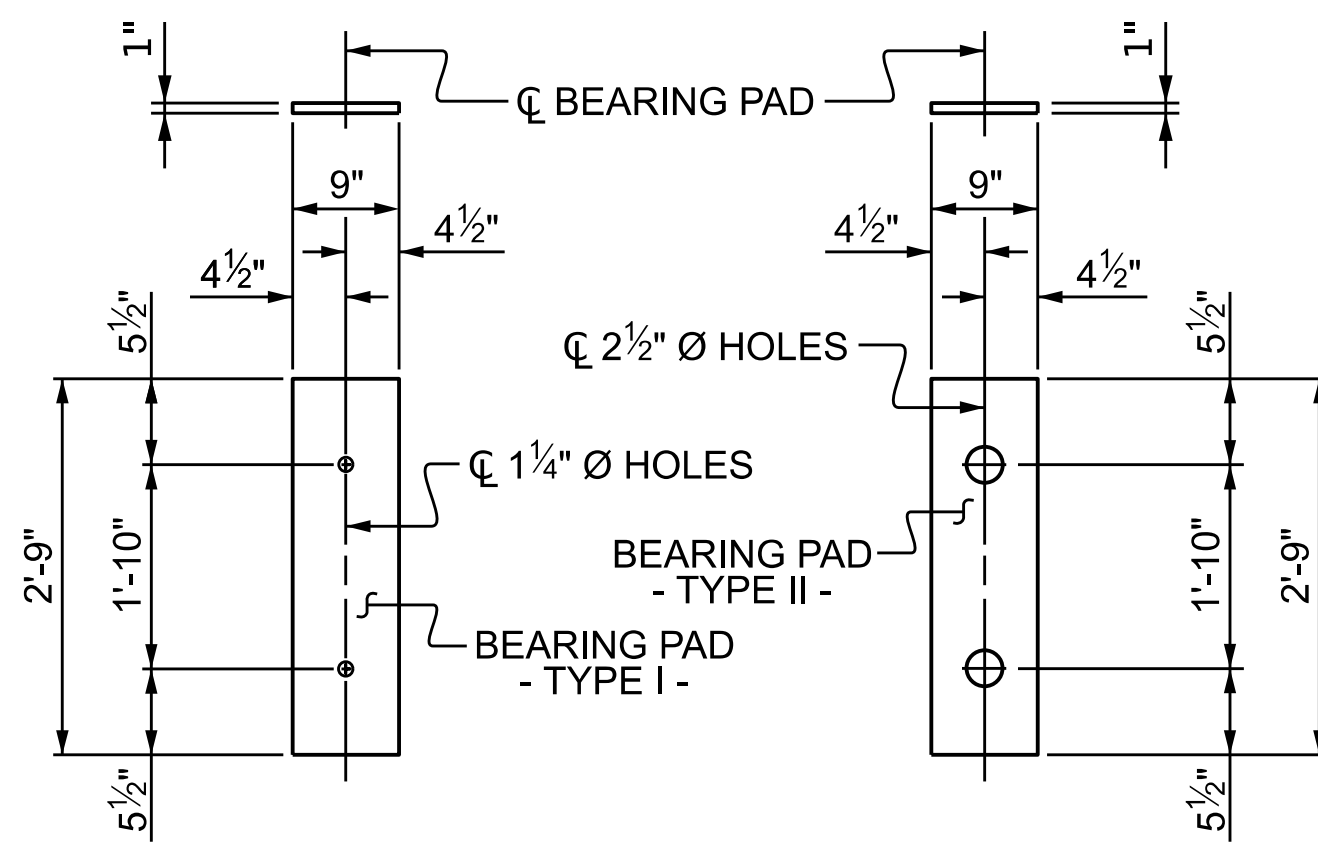
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VIEW Y-Y
SHOWING ELEVATION VIEW OF GROUTED RECESS



DETAIL ``C"



FIXED END

(TYPE I - 36 REQ' D)

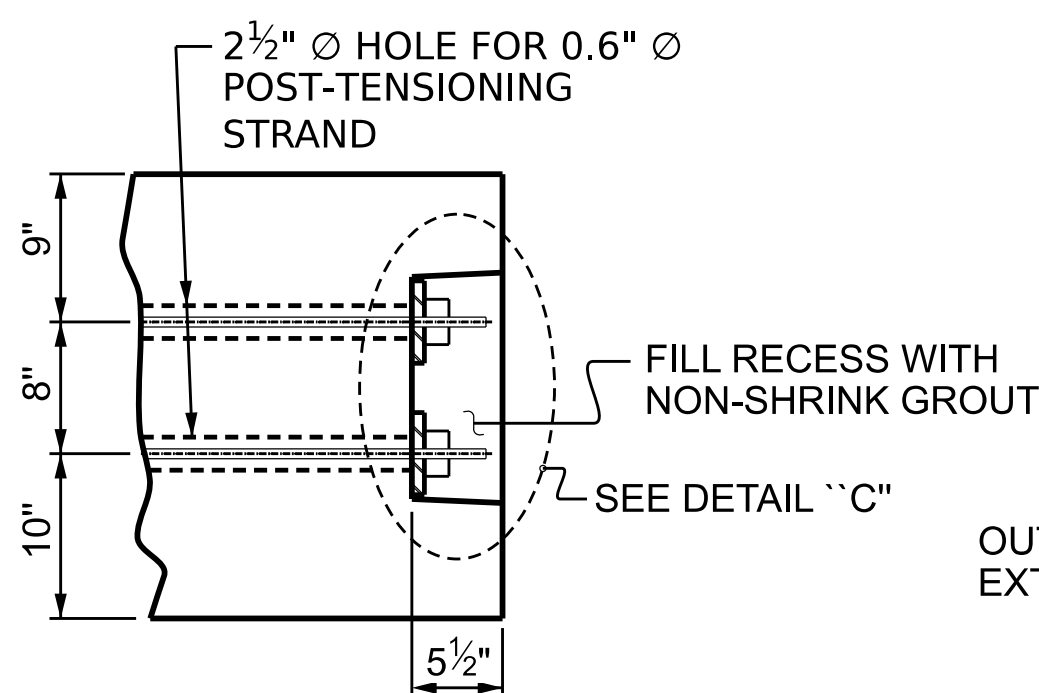
EXPANSION END

(TYPE II - 36 REQ' D)

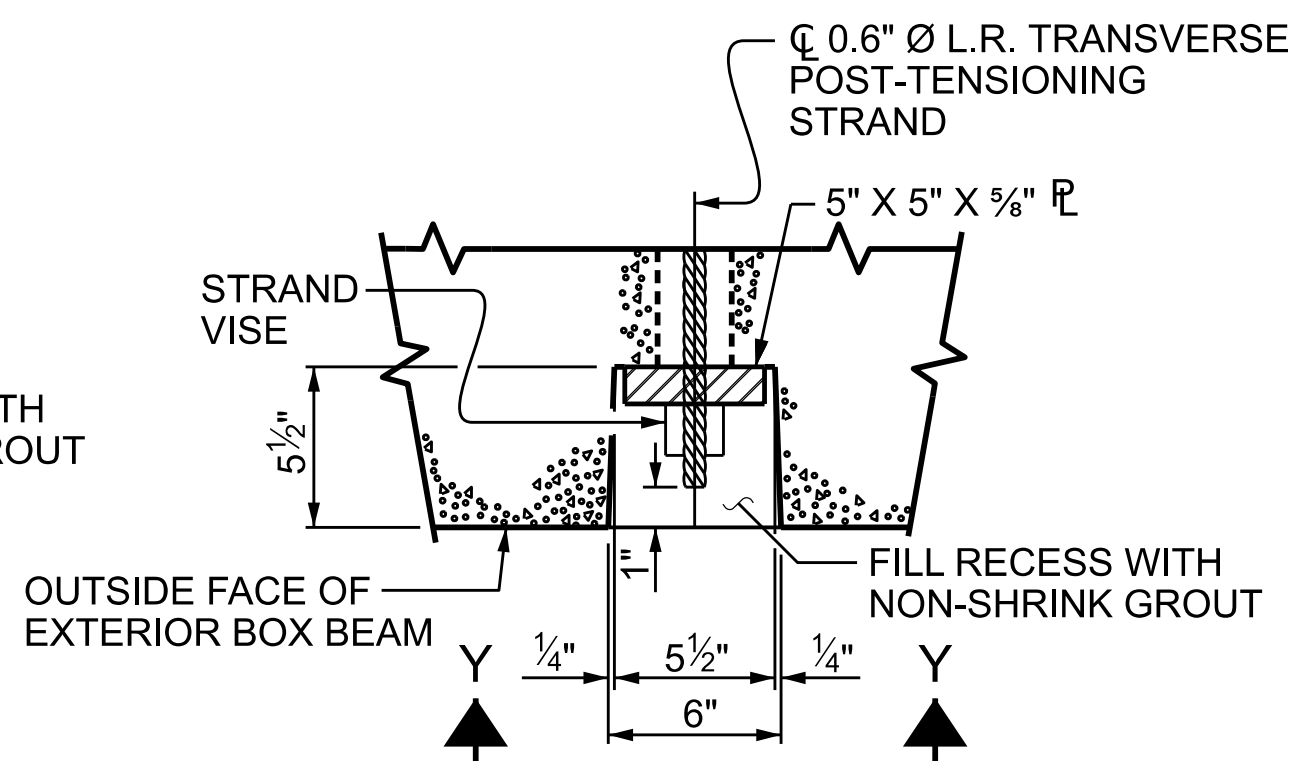
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
SPAN D	6	83'-7 $\frac{1}{4}$ "	501'-7 $\frac{1}{2}$ "
SPAN F	6	VARIES	399'-7 $\frac{1}{2}$ "
SPAN G	6	VARIES	401'-3"
SPAN H	6	VARIES	499'-3"
SPAN I	6	83'-2 $\frac{1}{2}$ "	499'-3"
SPAN J	6	83'-2 $\frac{1}{2}$ "	499'-3"
TOTAL	36	-	2798'-7 $\frac{1}{2}$ "



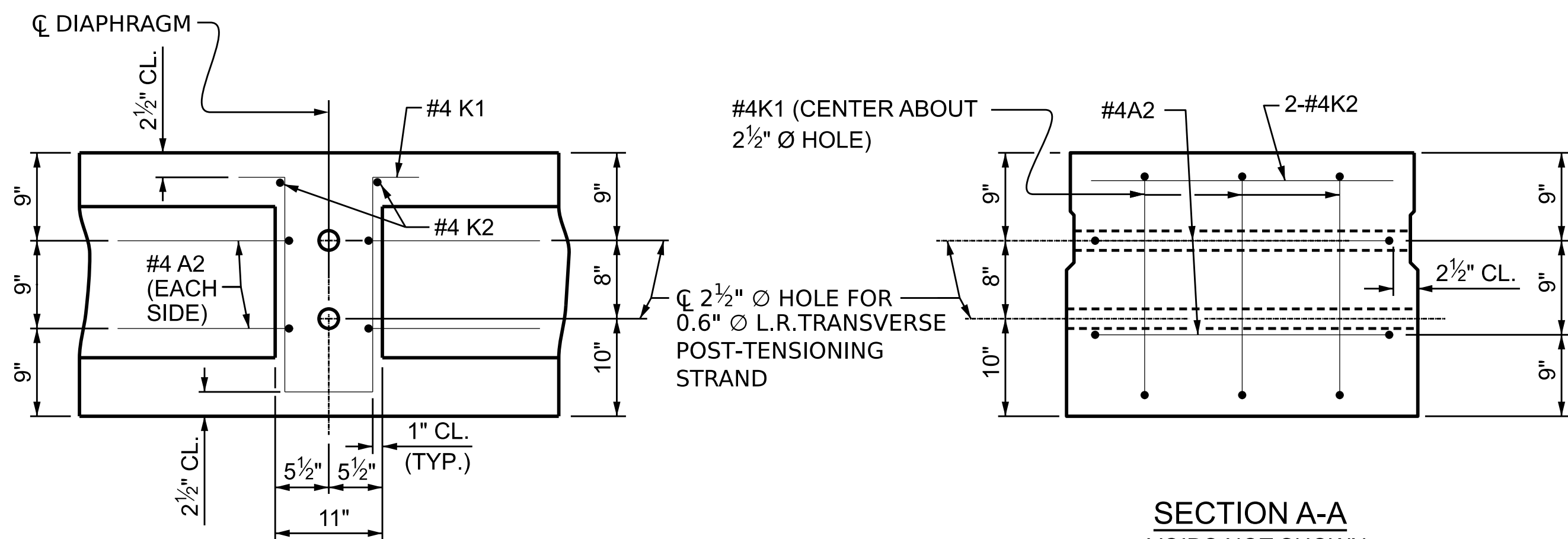
PART SECTION AT RECESS



SECTION X-X

SHOWING PLAN VIEW OF GROUTED RECESS

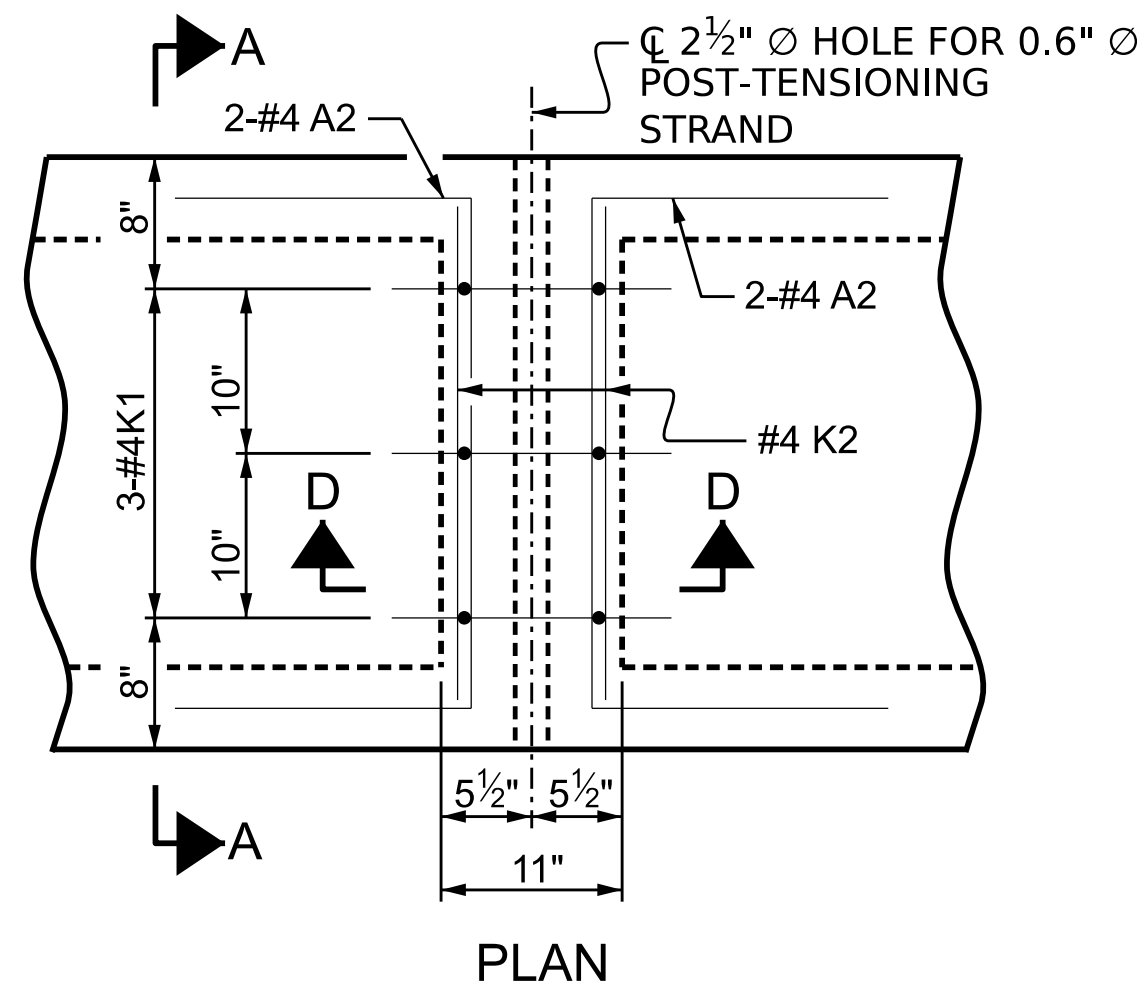
GROUTED RECESS DETAIL AT
END OF POST-TENSIONED STRANDS
OF EXTERIOR BOX BEAM



SECTION A-A
VOIDS NOT SHOWN

DOUBLE DIAPHRAGM DETAILS

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2½" Ø HOLE.



PLAN

DEAD LOAD DEFLECTION AND CAMBER		
	3'-0" x 2'-3"	3'-0" x 2'-3"
0.6" Ø L.R. STRAND	SPANS D, H, I, & J	SPANS F & G
CAMBER (BEAM ALONE IN PLACE)	4 ¹⁵ / ₁₆ " ↑	2 ³ / ₁₆ " ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	4 ¹ / ₄ " ↓	1 ³ / ₈ " ↓
FINAL CAMBER	1 ¹ / ₁₆ " ↑	1 ³ / ₁₆ " ↑

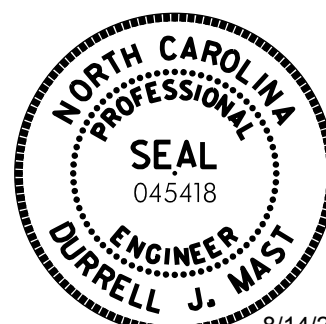
** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. BL-0119
MECKLENBURG COUNTY
 STATION: 15+46.20 -GW-

SHEET 9 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE 3'-0" X 2'-3" PRESTRESSED CONCRETE BOX BEAM UNIT DETAILS

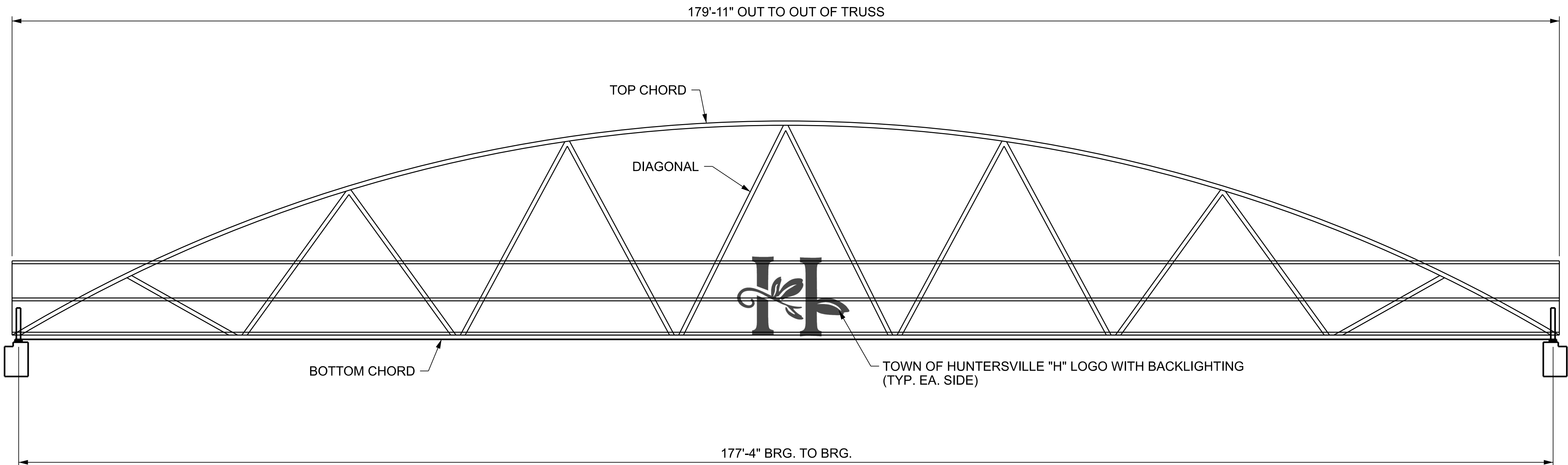


Durrell J Mast

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UNLESS ALL SIGNATURES COMPLETED**

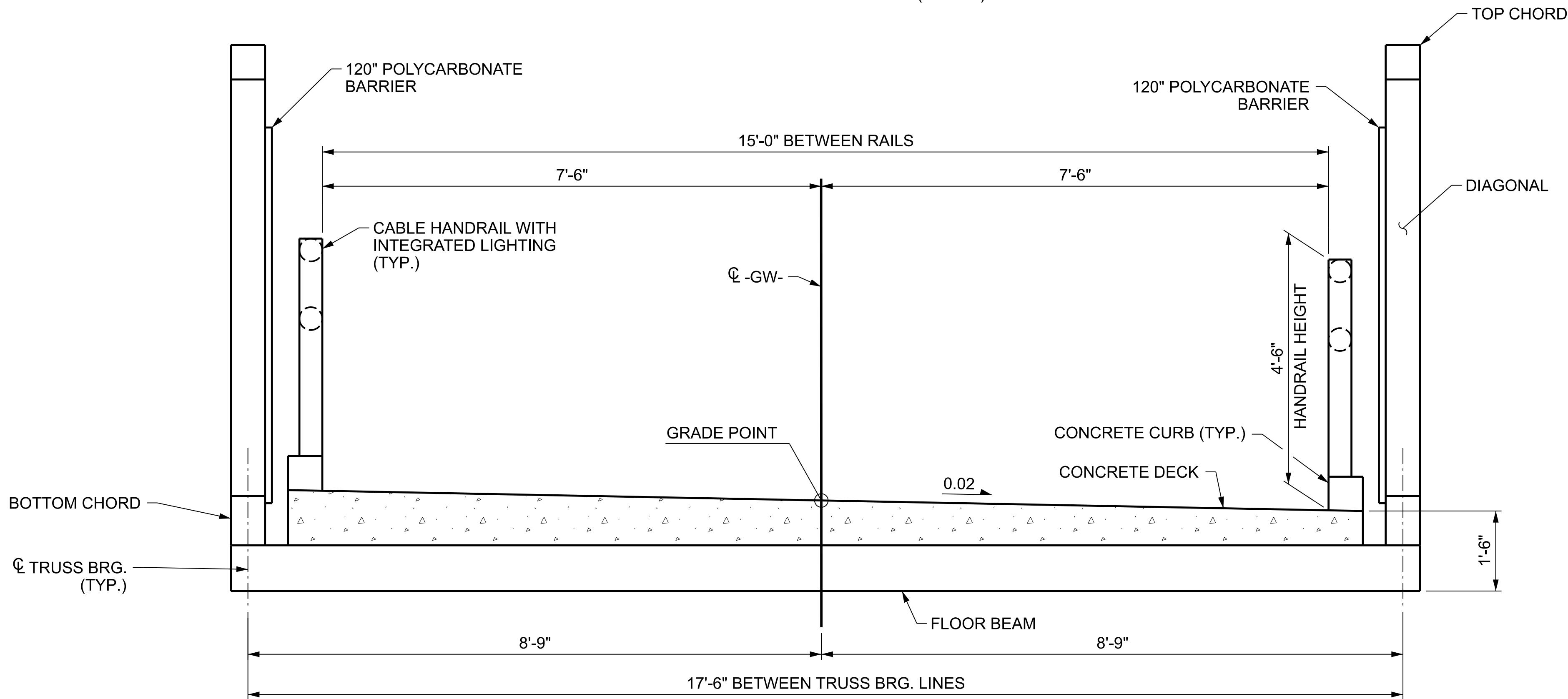


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N.C.B.E.L.S. License Number: F-0116



BRIDGE ELEVATION

BRIDGE ELEVATION IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
(BRIDGE PEDESTRIAN RAIL NOT SHOWN FOR CLARITY)
(SPAN E)



BRIDGE SECTION

TYPICAL SECTION IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
(ARCH TRUSS MEMBERS NOT SHOWN FOR CLARITY)

BENT DESIGN DATA:

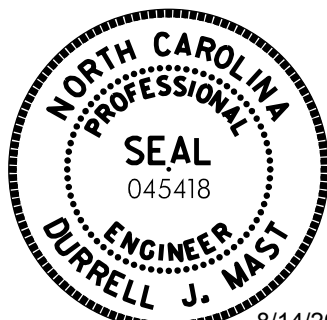
BENT DESIGN IS BASED ON THE FOLLOWING
SUPERSTRUCTURE REACTIONS:

DEAD LOAD = 124.3 K (PER BRG.)
PED LIVE LOAD = 61.0 K (PER BRG.)
H10 LIVE LOAD = 12.9 K (PER BRG.)
TRANSVERSE WIND LOAD = 59.2 K (PER BENT)
VERTICAL WIND LOAD = -16.8 K + / - 42.3 K (PER BRG.)

IF THE ACTUAL REACTIONS SHOWN ON THE
PREFABRICATED BRIDGE PROVIDER'S PLANS ARE
MORE THAN THOSE SHOWN, THE CONTRACTOR
SHALL VERIFY THE ADEQUACY OF THE PIER.

FOR 120" POLYCARBONATE BARRIER, SEE
SPECIAL PROVISIONS.

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-



Durrell J. Mast 8/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

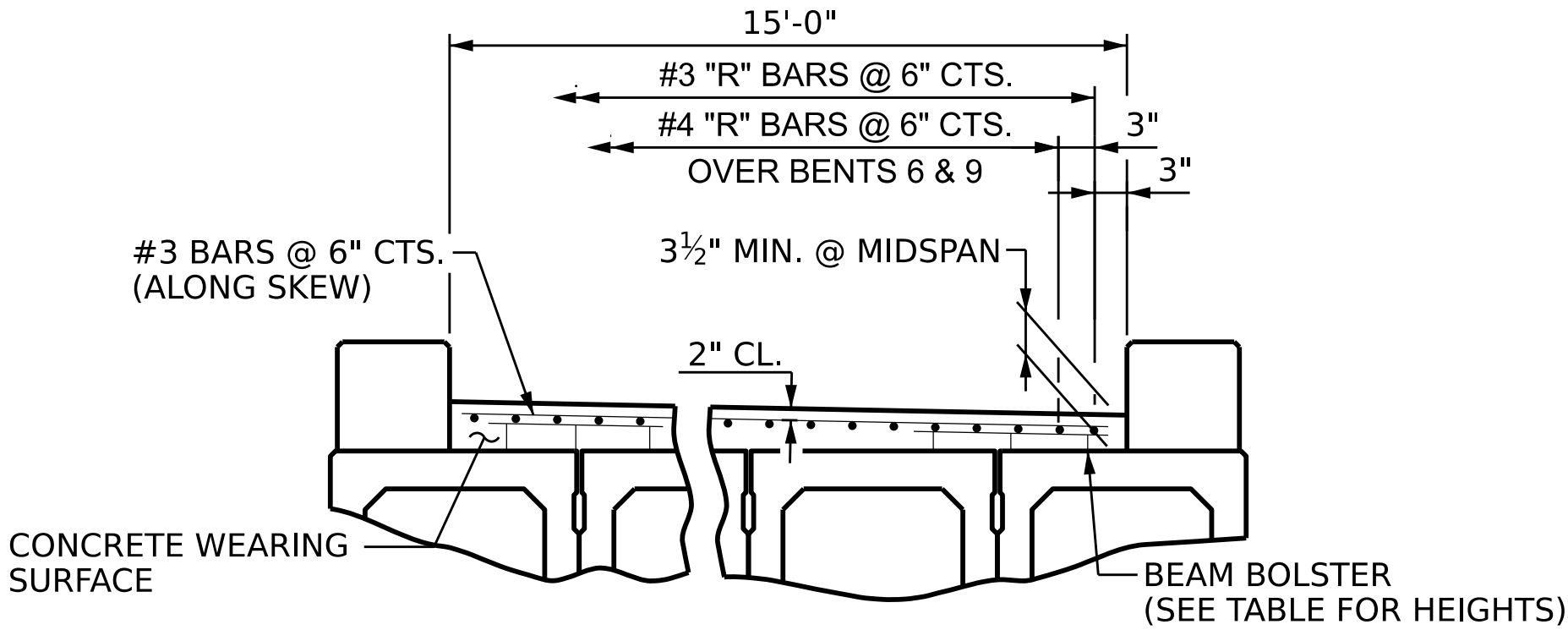
SUPERSTRUCTURE SPAN E DETAILS (UNIT 3)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S32
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

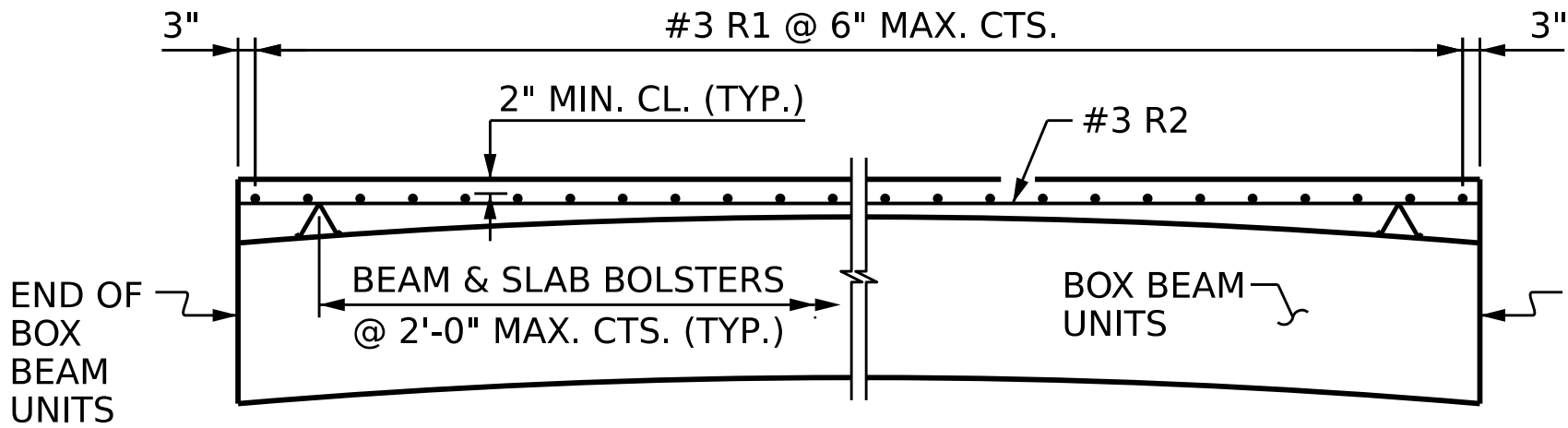
DES BY: <u>D. MAST</u>	DATE: <u>11/25</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>11/25</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>11/25</u>	CHK BY: <u>D. MAST</u>	DATE: <u>11/25</u>

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555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
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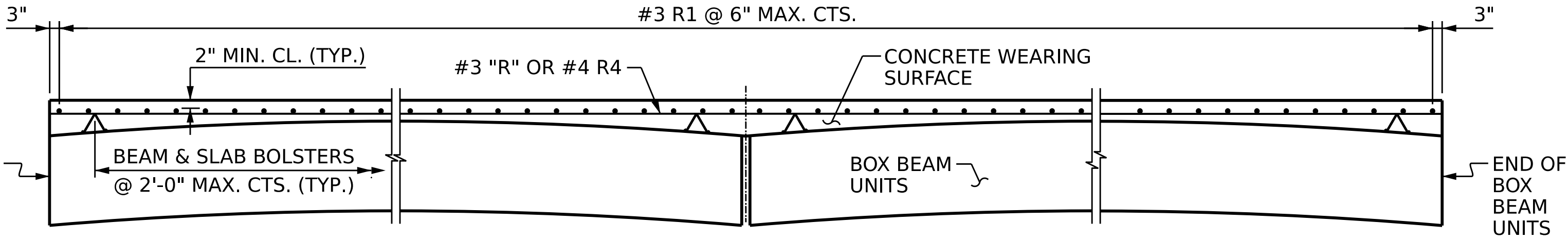
**DOCUMENT NOT CONSIDERED FINAL
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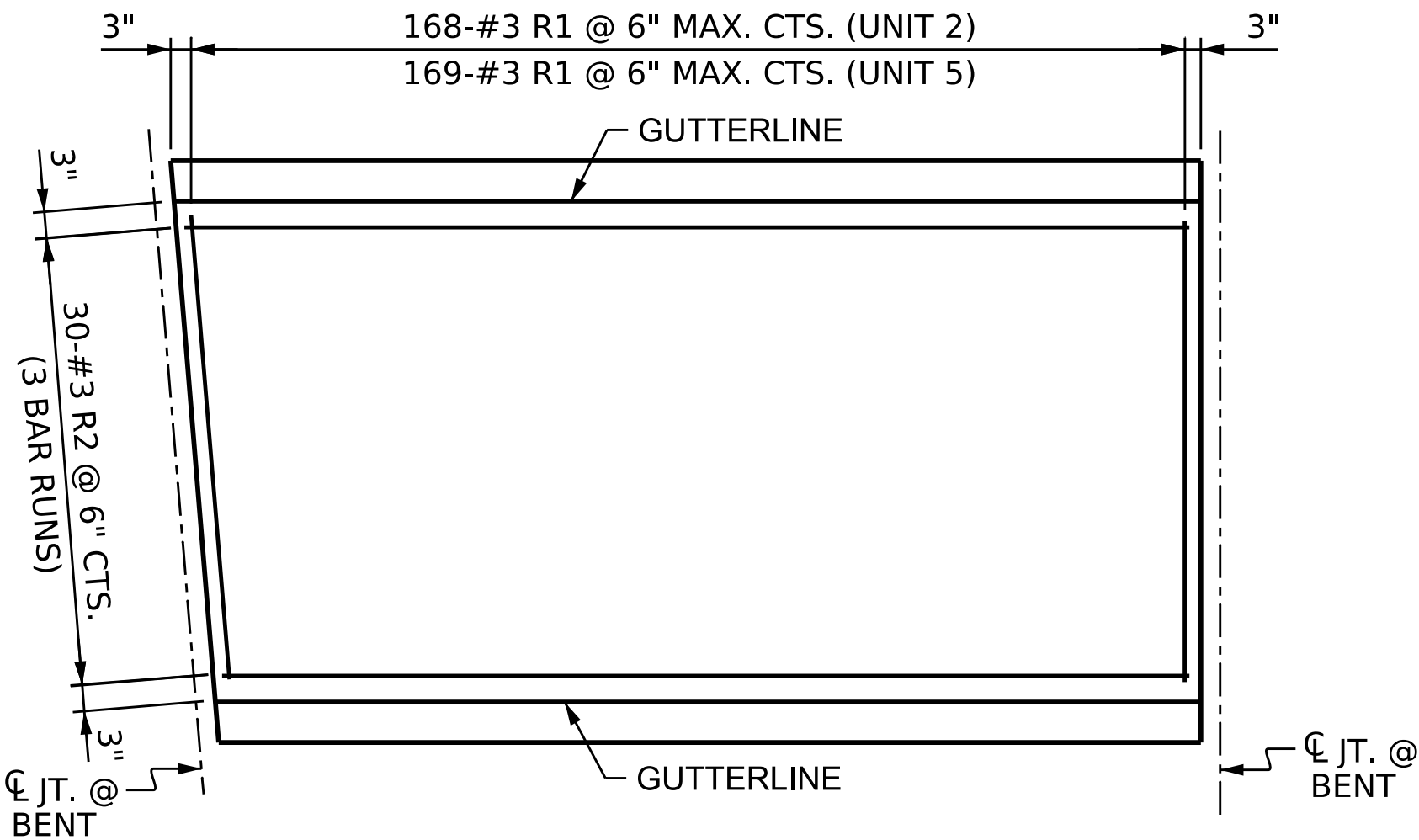
REINFORCING FOR CONCRETE WEARING SURFACE



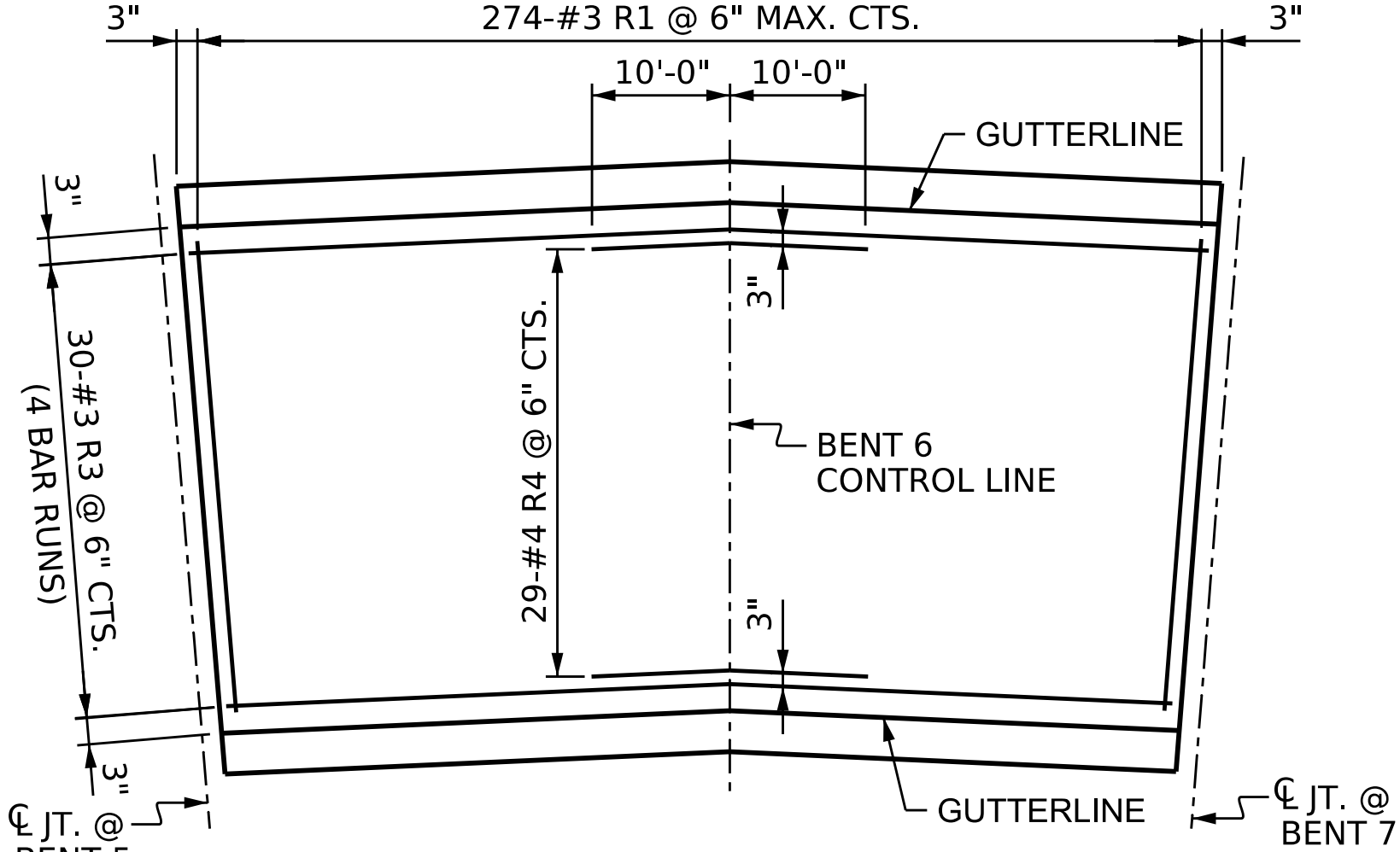
ELEVATION - UNITS 2 AND 5



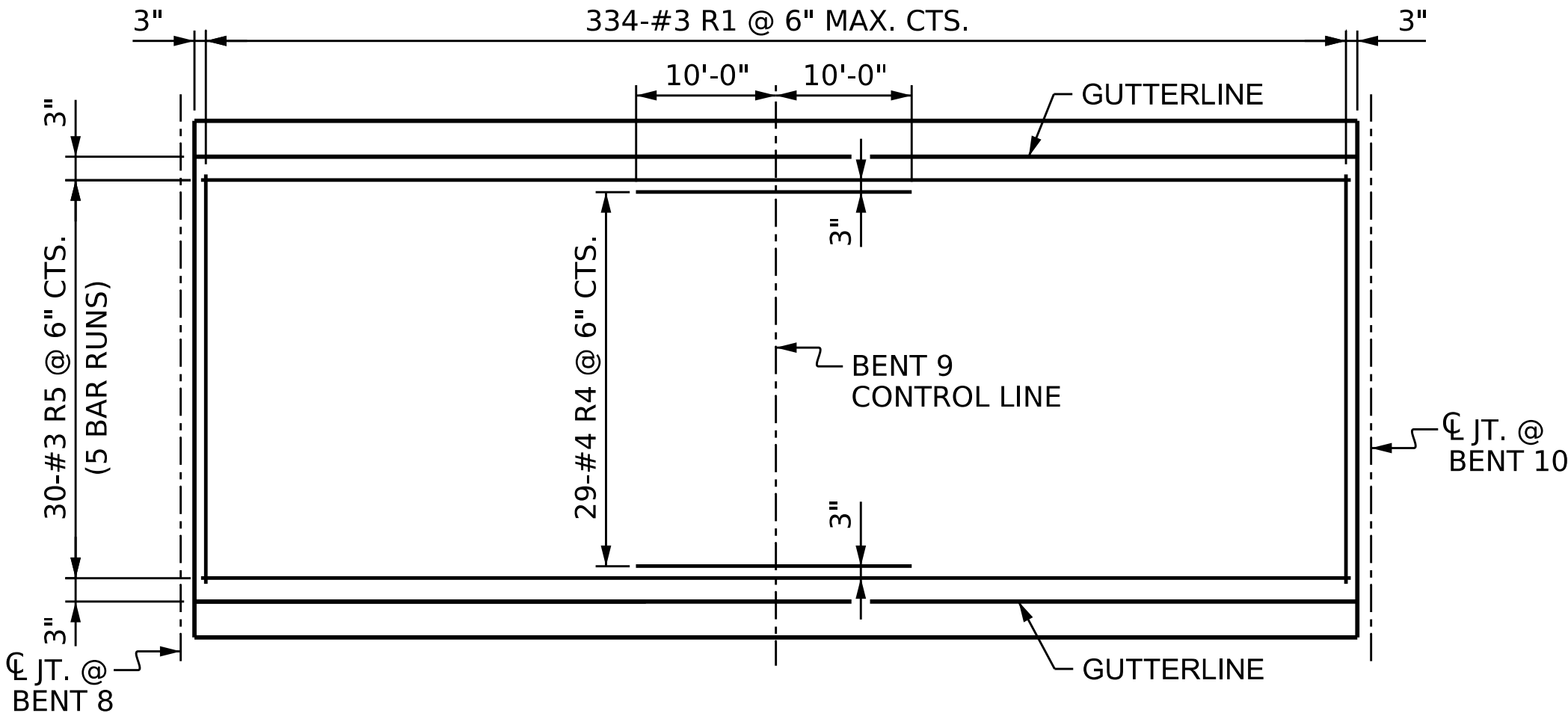
ELEVATION - UNITS 4 AND 6



PLAN - UNITS 2 AND 5
(UNIT 5 SHOWN, UNIT 2 SIMILAR)



PLAN - UNIT 4



PLAN - UNIT 6

SPLICE LENGTH CHART	
BAR SIZE	EPOXY COATED
#3	2'-2"

BILL OF MATERIAL					
CONCRETE WEARING SURFACE					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* R1	945	#3	STR	14'-8"	5212
* R2	180	#3	STR	29'-6"	1997
* R3	120	#3	STR	35'-10"	1617
* R4	58	#4	STR	20'-0"	775
* R5	150	#3	STR	35'-0"	1974
* EPOXY COATED REINFORCING STEEL = 11,575 LBS.					
CONCRETE WEARING SURFACE = 7,069 SQ. FT.					

NOTES
PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE PARAPET.

THE COST OF THE REINFORCING STEEL CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE.

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

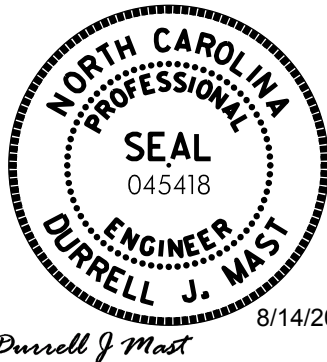
ALL REINFORCING STEEL FOR THE CONCRETE WEARING SURFACE SHALL BE EPOXY COATED.

CONCRETE WEARING SURFACE THICKNESS						
SPAN	CL BEARING BK STA		AT MID-SPAN		CL BEARING AH STA	
	LT. GUTTER	RT. GUTTER	LT. GUTTER	RT. GUTTER	LT. GUTTER	RT. GUTTER
D	7 ⁵ / ₁₆	7 ⁵ / ₁₆	** 8 ¹ / ₈ "	** 8 ¹ / ₈ "	7 ³ / ₈	7 ³ / ₈
F	5 ¹ / ₂ "	5 ¹ / ₂ "	** 5 ³ / ₁₆ "	** 4 ³ / ₄ "	6 ⁵ / ₁₆ "	5 ¹¹ / ₁₆ "
G	6 ⁷ / ₁₆ "	5 ⁹ / ₁₆	** 6 ³ / ₈ "	** 4 ³ / ₄ "	7 ¹³ / ₁₆ "	5 ⁵ / ₈
H	8 ¹ / ₄ "	7 ³ / ₈ "	** 7 ¹³ / ₁₆ "	** 6 ¹¹ / ₁₆ "	8 ¹⁵ / ₁₆ "	7 ¹ / ₂ "
I	8 ¹⁵ / ₁₆	7 ¹ / ₂ "	** 8 ³ / ₁₆ "	** 6 ³ / ₄ "	8 ¹³ / ₁₆ "	7 ³ / ₈ "
J	8 ¹³ / ₁₆	7 ³ / ₈ "	** 8 ¹ / ₈ "	** 6 ¹¹ / ₁₆ "	8 ¹³ / ₁₆ "	7 ³ / ₈ "

** = BASED ON THEORETICAL ANTICIPATED CAMBER. ADJUST AS NECESSARY BASED ON ACTUAL MEASURED CAMBER.

BEAM BOLSTER HEIGHT				
SPAN	AT CL BEARING		AT MID-SPAN	
	LT. GUTTER	RT. GUTTER	LT. GUTTER	RT. GUTTER
D	4 ¹ / ₄ "	4 ¹ / ₄ "	5 ¹ / ₄ "	5 ¹ / ₄ "
F	2 ¹ / ₂ "	2 ¹ / ₂ "	2 ¹ / ₄ "	1 ³ / ₄ "
G	3 ¹ / ₂ "	2 ¹ / ₂ "	3 ¹ / ₂ "	1 ³ / ₄ "
H	5 ¹ / ₄ "	4 ¹ / ₂ "	4 ³ / ₄ "	3 ³ / ₄ "
I	5 ³ / ₄ "	4 ¹ / ₂ "	5 ¹ / ₄ "	3 ³ / ₄ "
J	5 ³ / ₄ "	4 ¹ / ₂ "	5 ¹ / ₄ "	3 ³ / ₄ "

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-



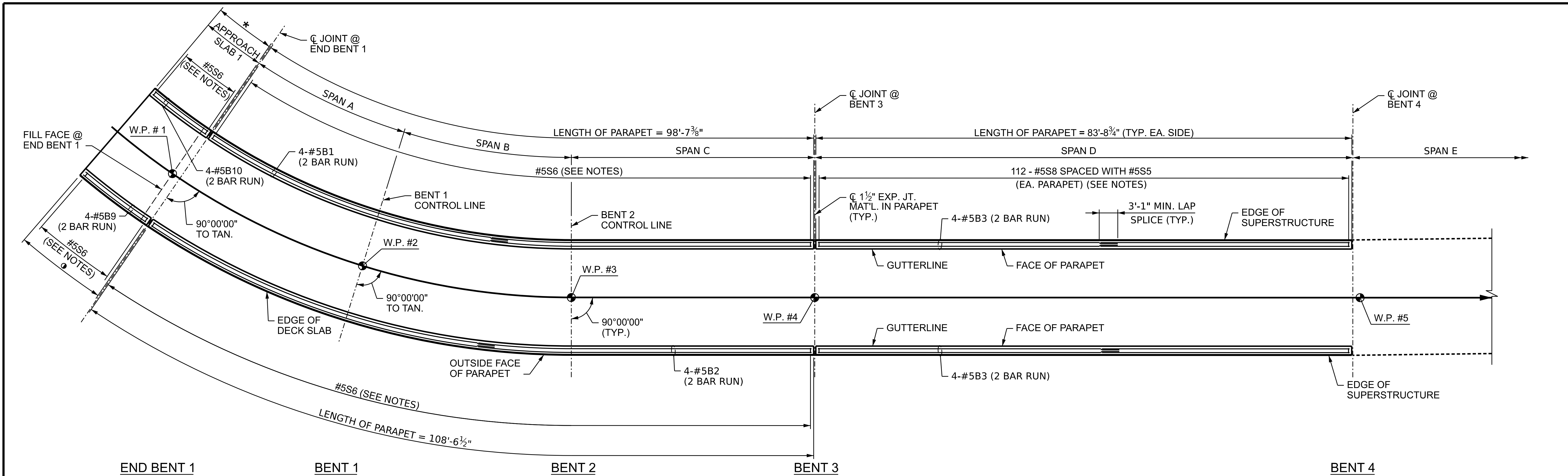
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUPERSTRUCTURE
CONCRETE OVERLAY
DETAILS**

REVISIONS						SHEET NO. S33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

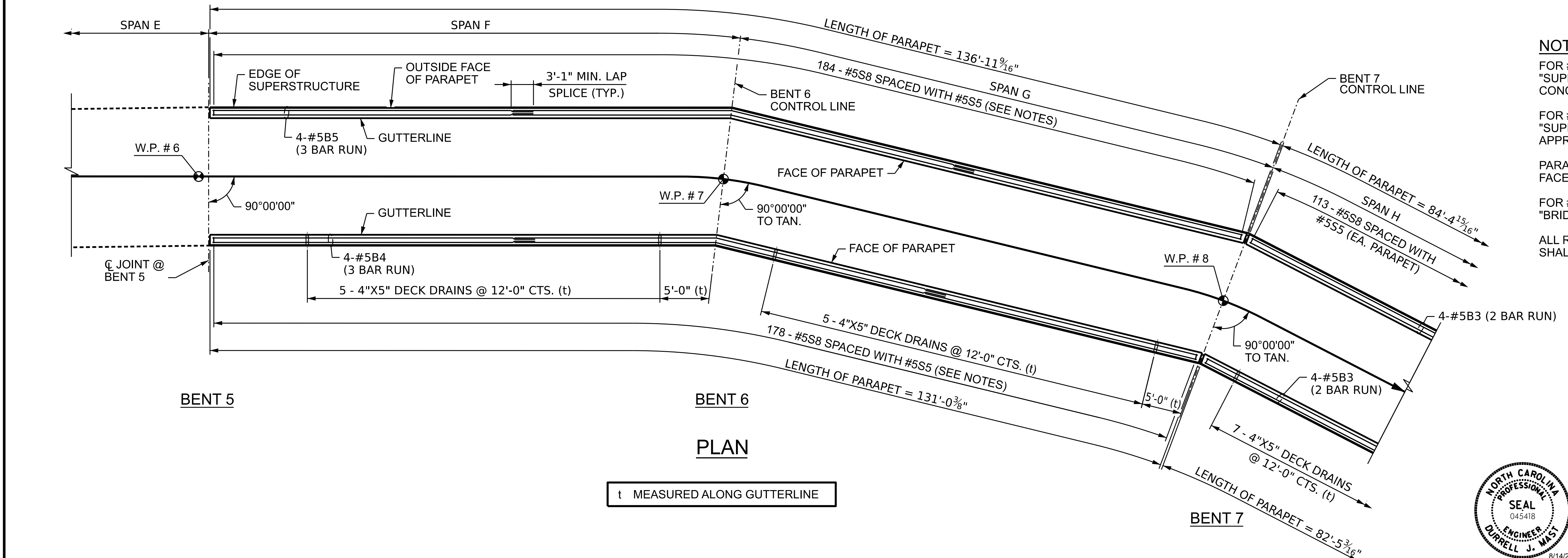
DES BY: <u>B. BUSH</u>	DATE: <u>04/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>04/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>05/26</u>	CHK BY: <u>R. BEAUCHAMP</u>	DATE: <u>05/26</u>

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PLAN



PLAN

t MEASURED ALONG GUTTERLINE

- * LENGTH OF PARAPET: 11'-3¹/₁₆"
- LENGTH OF PARAPET: 13'-0¹/₁₆"

NOTES

FOR #5S5 SPACING, DETAILS AND QUANTITIES, SEE "SUPERSTRUCTURE 3'-0"x2'-3" PRESTRESSED CONCRETE BOX BEAM UNIT" SHEETS.

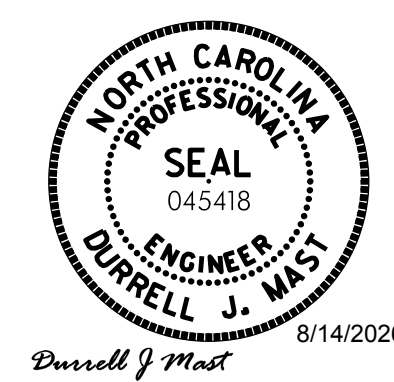
FOR #5S6 SPACING, DETAILS AND QUANTITIES, SEE "SUPERSTRUCTURE CIP FLAT SLAB" AND "BRIDGE APPROACH SLAB" SHEETS.

PARAPET LENGTHS MEASURED ALONG LONGEST FACE OF EACH PARAPET.

FOR #5S7 SPACING, DETAILS AND QUANTITIES, SEE "BRIDGE APPROACH SLAB" SHEETS.

ALL REINFORCING STEEL IN CONCRETE PARAPET SHALL BE EPOXY COATED.

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-
SHEET 1 OF 3

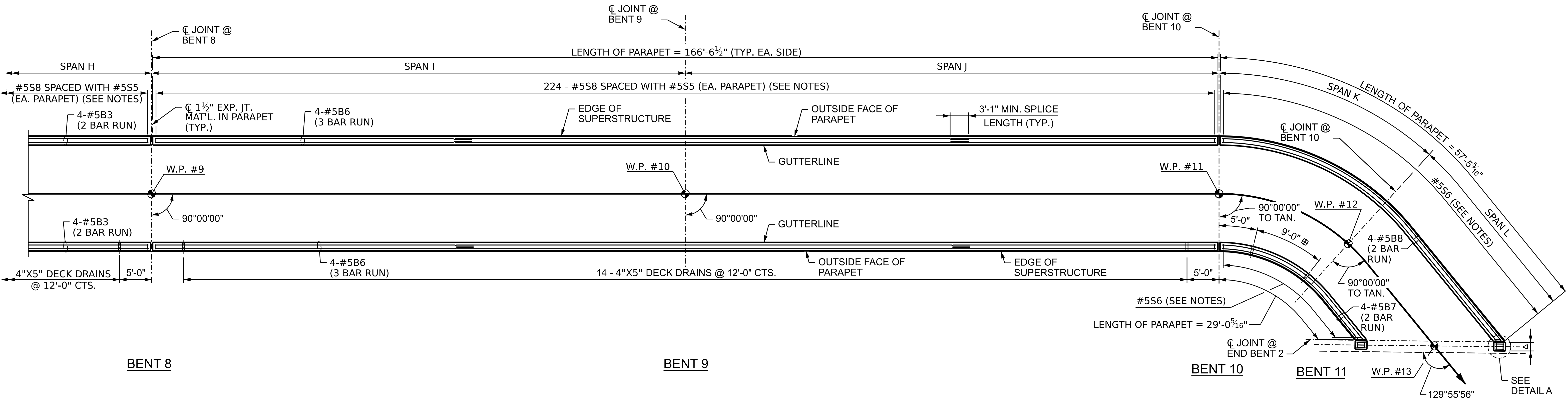


REVISIONS						SHEET NO. S34
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2	--	--	4	--	--	

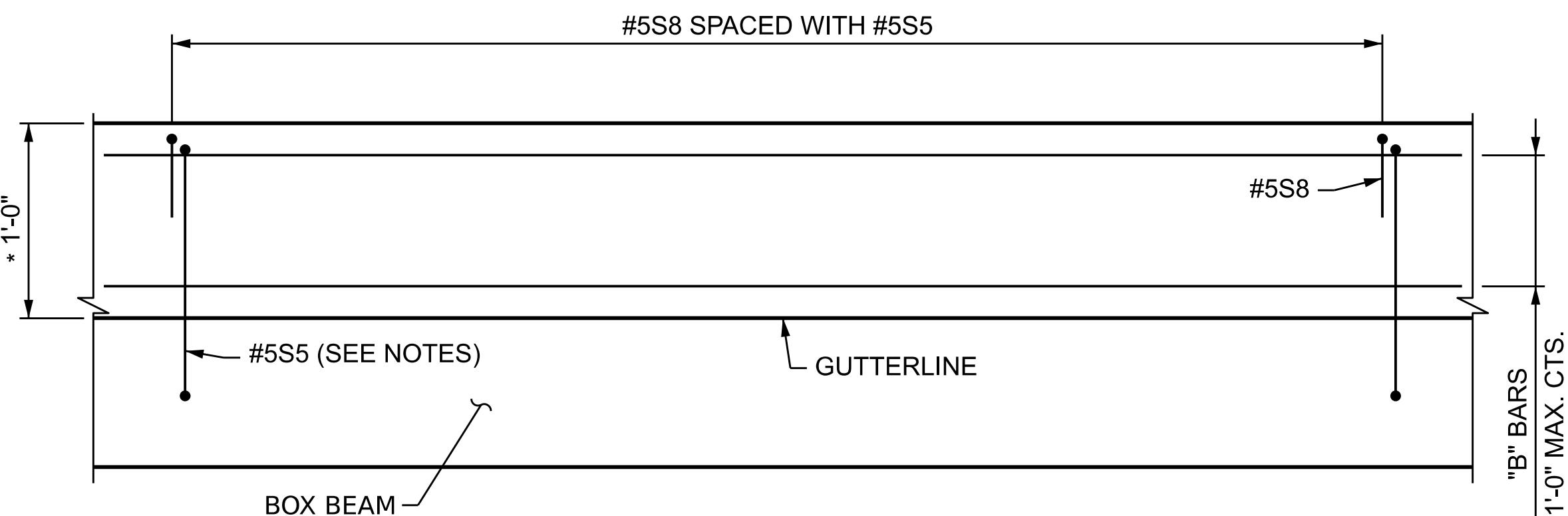
DES BY: <u>G. MARTINEZ</u>	DATE: <u>04/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>04/26</u>
DES CHK: <u>G. MYERS</u>	DATE: <u>05/26</u>	CHK BY: <u>G. MYERS</u>	DATE: <u>05/26</u>

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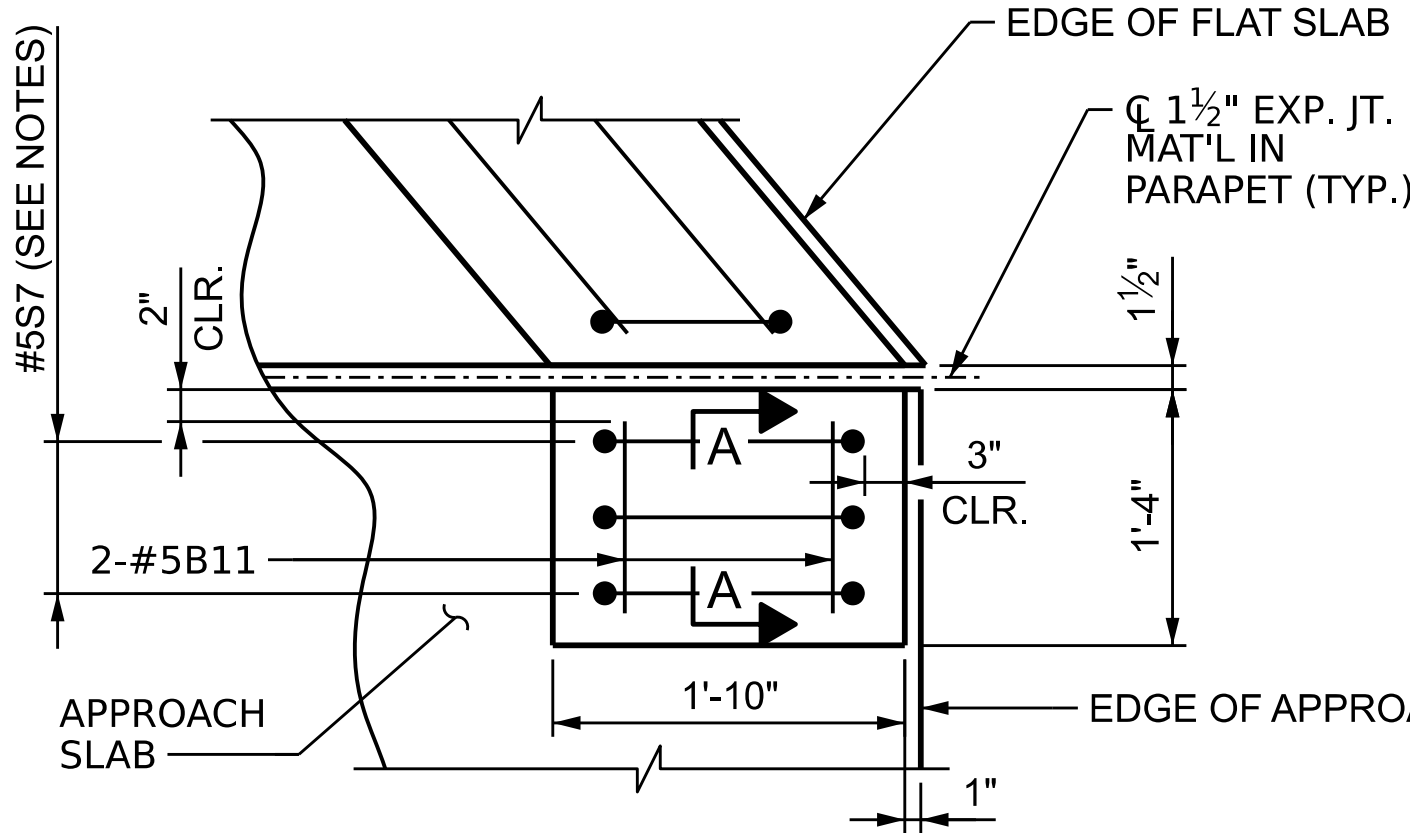


PLAN



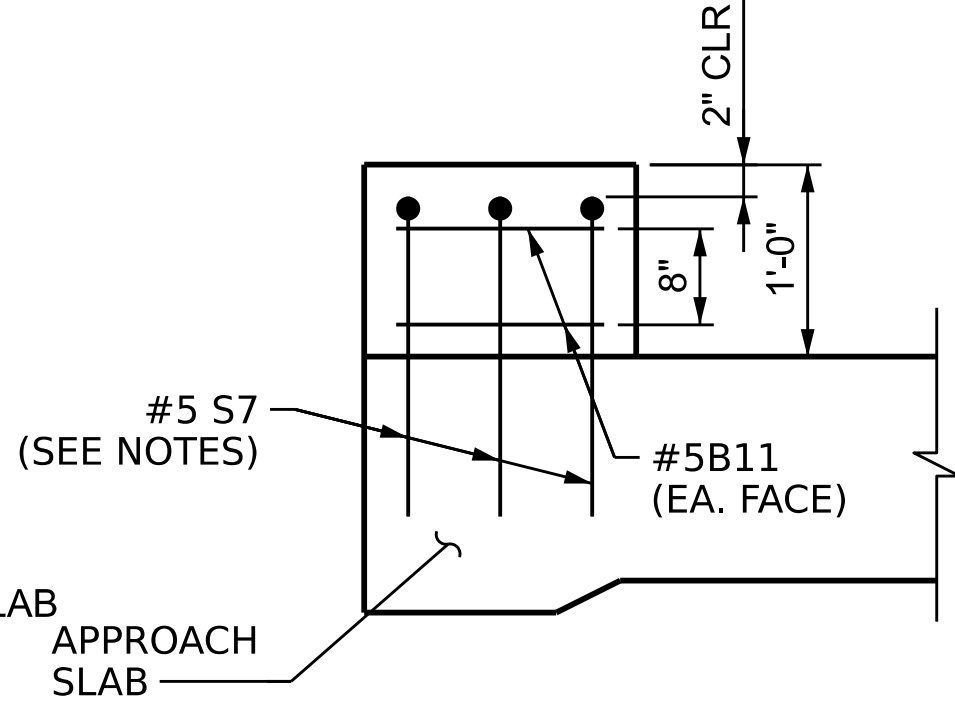
PARTIAL CONCRETE PARAPET ELEVATION

* THE HEIGHT OF THE CONCRETE PARAPET VARIES WHILE THE TOP OF THE CONCRETE PARAPET FOLLOWS THE PROFILE OF THE GUTTERLINE.



DETAIL A

LEFT SIDE SHOWN, RIGHT SIDE SIMILAR.



SECTION A-A

Δ LENGTH OF PARAPET = 1'-4"
2 - 4"X5" DECK DRAINS

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
CONCRETE
PARAPET & LIGHTING
DETAILS**

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S35	
1	--	--	3	--	--	TOTAL SHEETS	
2	--	--	4	--	--	61	

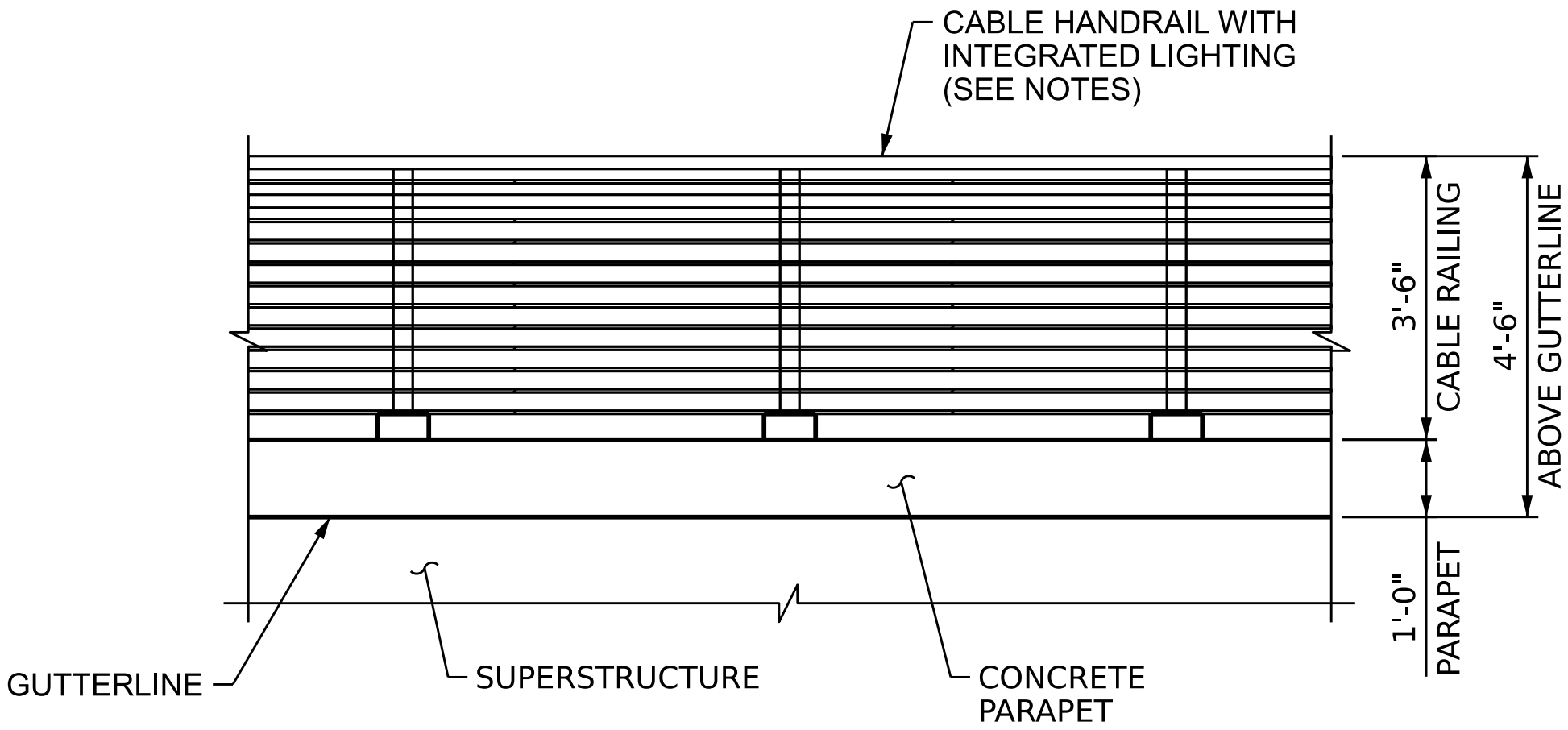
DES BY: <u>G. MARTINEZ</u>	DATE: <u>04/26</u>	DWG BY: <u>D.CHAPMAN</u>	DATE: <u>04/26</u>
DES CHK: <u>G. MYERS</u>	DATE: <u>05/26</u>	CHK BY: <u>G. MYERS</u>	DATE: <u>05/26</u>

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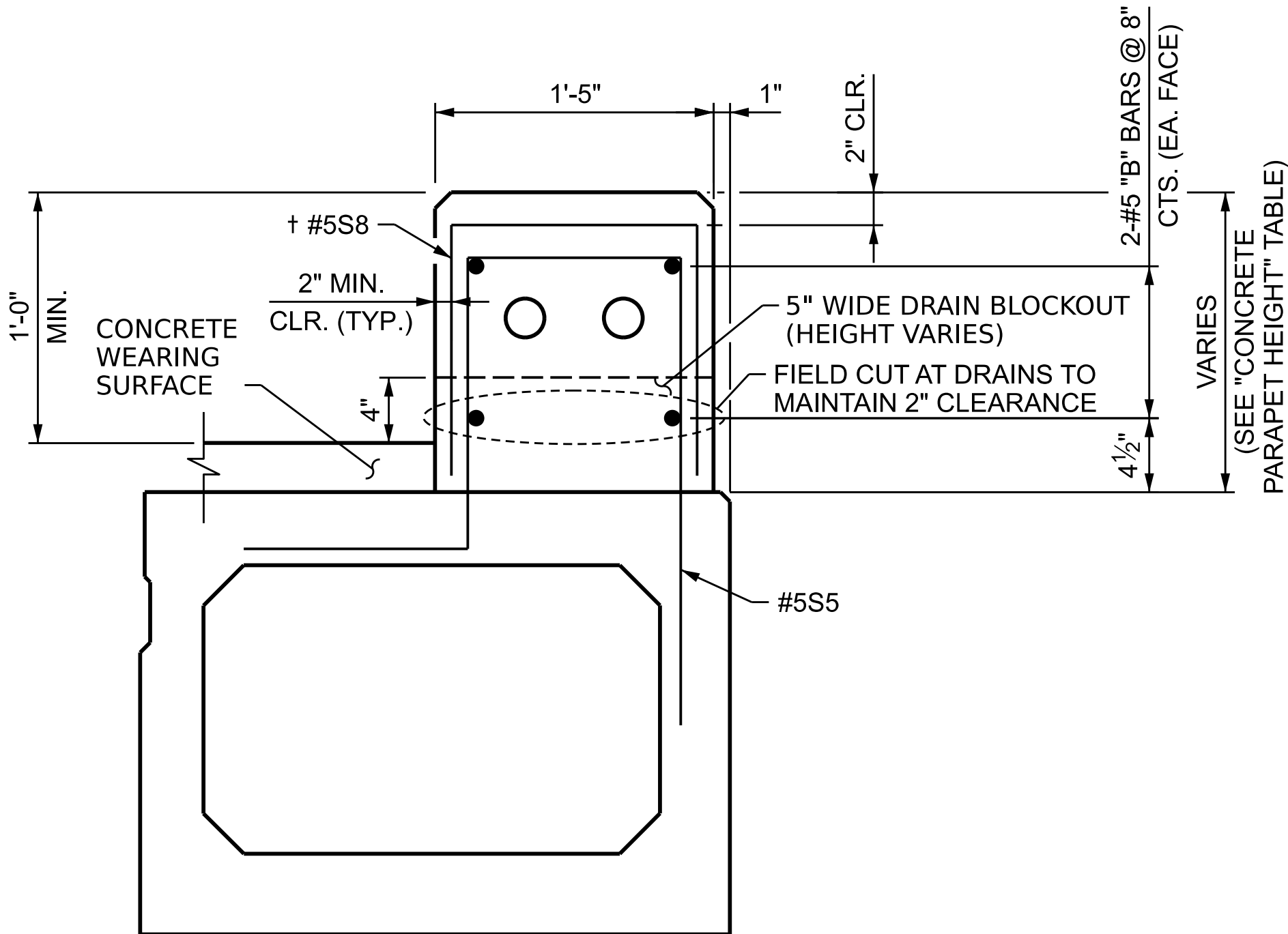


8/14/2026

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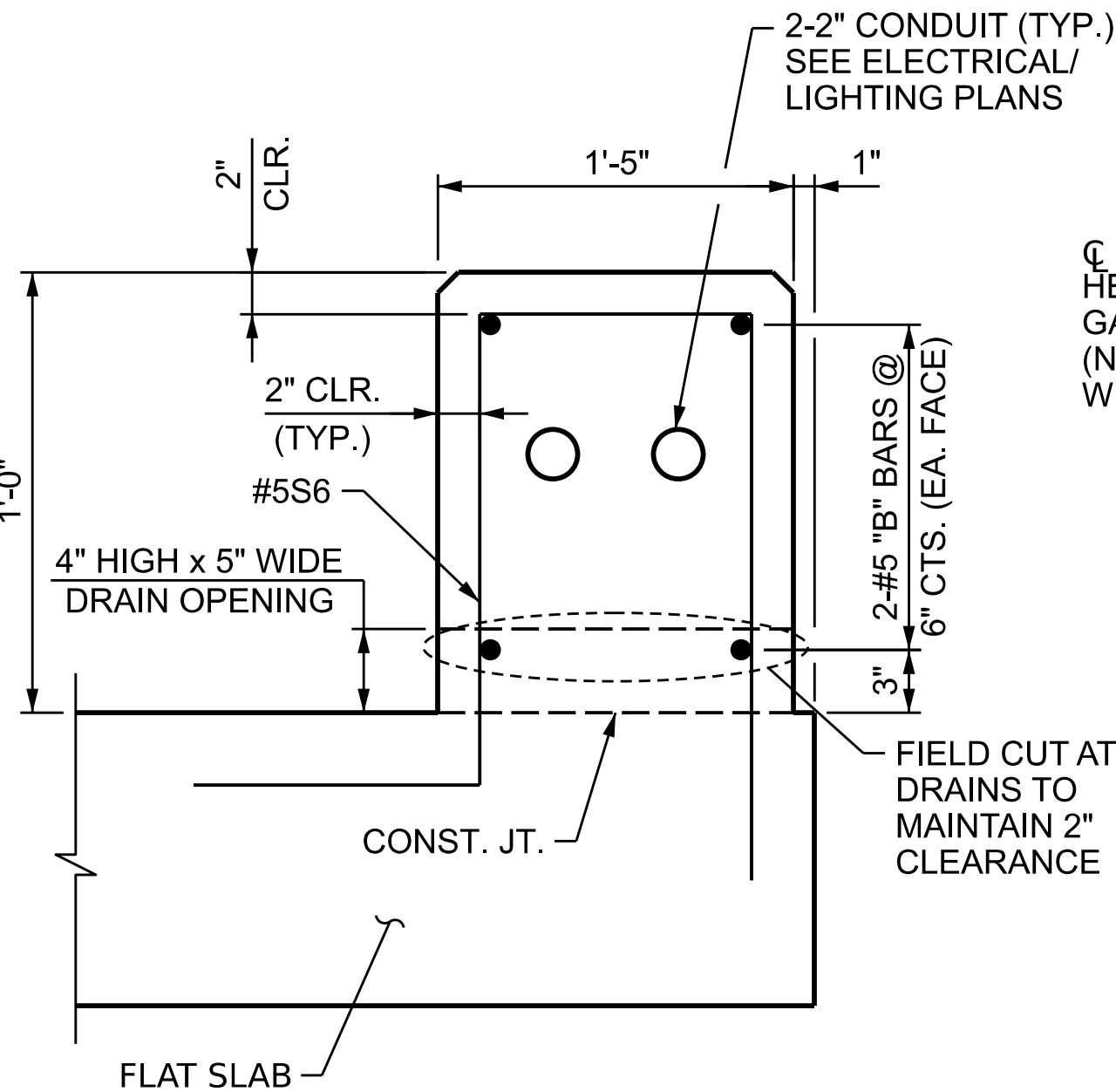


CABLE RAILING ELEVATION
ILLUMINATED PEDESTRIAN RAILING SYSTEM
LENGTH = 1610.0 LIN. FT.

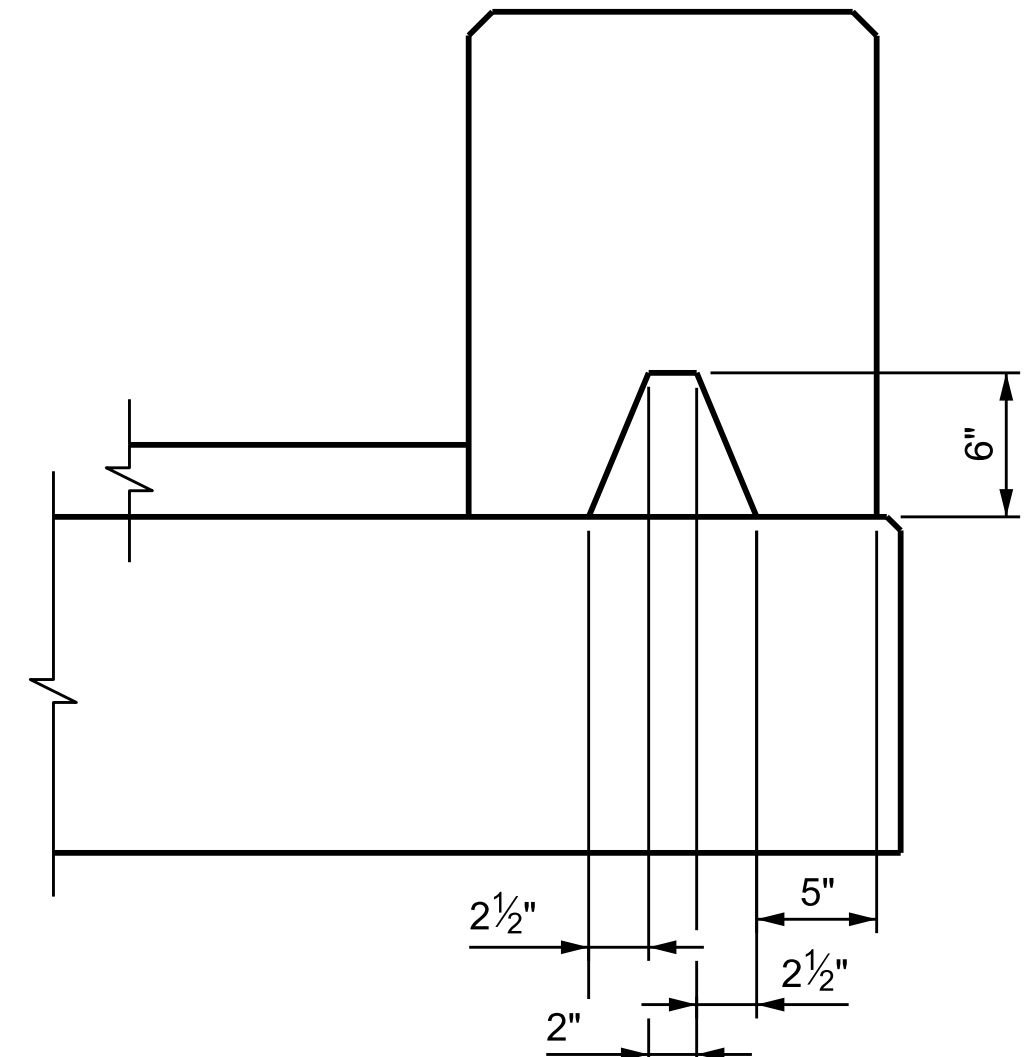


SECTION THROUGH EXTERIOR BOX BEAM

† #5S8 BARS SHALL BE PLACED TO MAINTAIN
A 2" CLEAR FROM TOP OF PARAPET



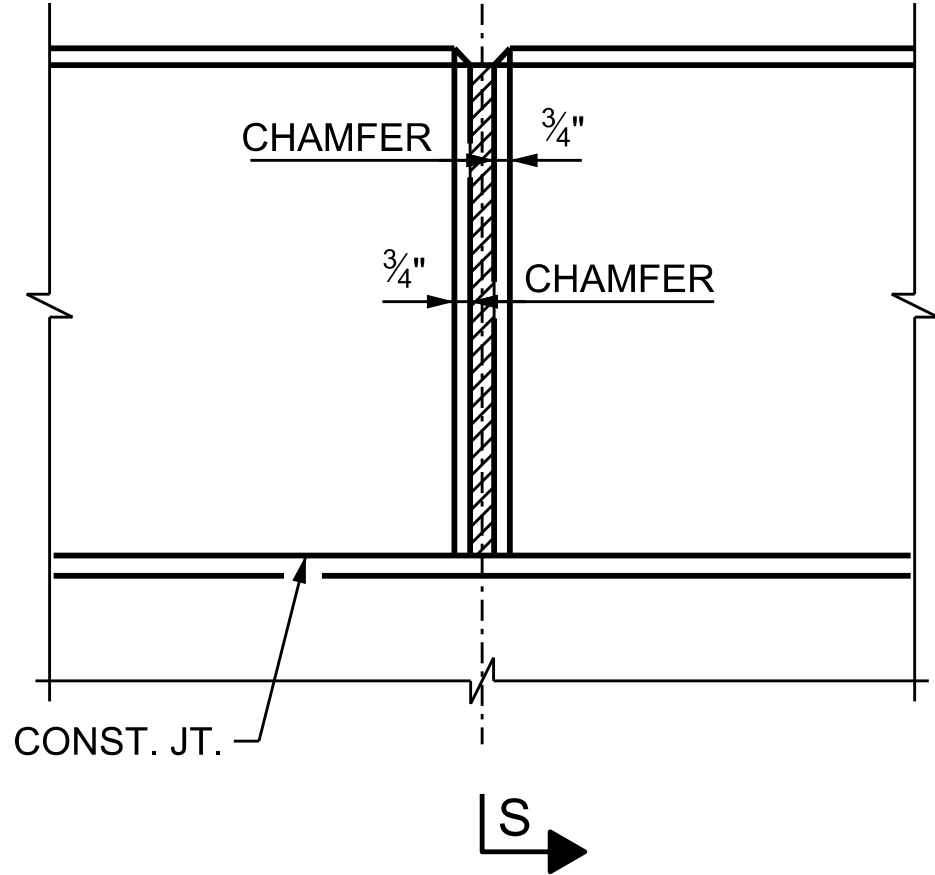
SECTION THROUGH FLAT SLAB



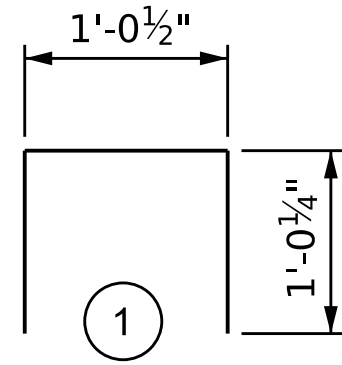
SECTION S-S

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

CL 1 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



BAR TYPE
BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR CONCRETE PARAPET					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	8	#5	STR	50'-8"	423
* B2	8	#5	STR	55'-7"	464
* B3	32	#5	STR	43'-7"	1455
* B4	12	#5	STR	45'-7"	571
* B5	12	#5	STR	47'-7"	596
* B6	24	#5	STR	57'-6"	1439
* B7	8	#5	STR	15'-10"	132
* B8	8	#5	STR	30'-1"	251
* B9	8	#5	STR	7'-11"	66
* B10	8	#5	STR	7'-0"	58
* B11	8	#5	STR	1'-0"	8
* S8	1260	#5	1	3'-1"	4052
* EPOXY COATED REINFORCING STEEL				LBS.	9,515
CLASS AA CONCRETE				CU.YDS.	94.5
TOTAL LIN. FT. OF CONCRETE PARAPET					1250.2

CONCRETE PARAPET DETAILS

SPAN	CONCRETE PARAPET HEIGHT					
	CL BEARING BACK STATION		MID-SPAN**		CL BEARING AHEAD STATION	
	LT. GUTTER	RT. GUTTER	LT. GUTTER	RT. GUTTER	LT. GUTTER	RT. GUTTER
D	1'-7 3/16"	1'-7 7/16"	1'-8 1/8"	1'-8 1/8"	1'-7 3/8"	1'-7 3/8"
F	1'-5 1/2"	1'-5 1/2"	1'-5 3/16"	1'-4 3/4"	1'-6 5/16"	1'-5 1 1/16"
G	1'-6 1/16"	1'-5 7/16"	1'-6 7/8"	1'-4 3/4"	1'-7 13/16"	1'-5 5/8"
H	1'-8 1/4"	1'-7 7/8"	1'-7 13/16"	1'-6 1 1/16"	1'-8 15/16"	1'-7 1/2"
I	1'-8 15/16"	1'-7 1/2"	1'-8 3/16"	1'-6 3/4"	1'-8 13/16"	1'-7 3/8"
J	1'-8 13/16"	1'-7 3/8"	1'-8 1/8"	1'-6 1 1/16"	1'-8 13/16"	1'-7 3/8"

** = BASED ON THEORETICAL ANTICIPATED CAMBER. ADJUST
AS NECESSARY BASED ON ACTUAL MEASURED CAMBER.

CABLE RAILING NOTES

FOR ILLUMINATED PEDESTRIAN RAILING SYSTEM, SEE ROADWAY SPECIAL
PROVISIONS.

CABLE HANDRAIL WITH INTEGRATED LIGHTING SHALL BE PROVIDED WITH
STAINLESS STEEL.

CABLE HANDRAIL WITH INTEGRATED LIGHTING SHALL MEET THE GEOMETRY
REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
SECTION 13.8.

CABLE HANDRAIL WITH INTEGRATED LIGHTING SHALL BE DESIGNED FOR
PEDESTRIAN LOADING IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE
DESIGN SPECIFICATIONS, 10TH EDITION, SECTION 13.8.

WORKING DRAWINGS AND SUPPORTING DESIGN CALCULATIONS SHALL BE
PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF
NORTH CAROLINA AND SUBMITTED FOR REVIEW BY THE ENGINEER PRIOR
TO FABRICATION OF CABLE HANDRAIL WITH INTEGRATED LIGHTING.

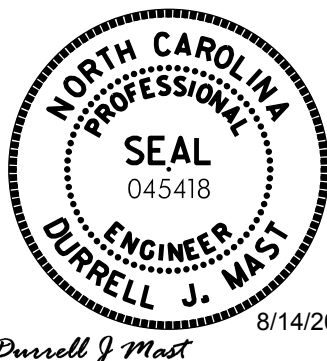
MEASUREMENT AND PAYMENT FOR 2" CONDUIT SHALL BE INCLUDED IN THE
UNIT PRICE BID FOR 1'-5" X 1'-0" CONCRETE PARAPET

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

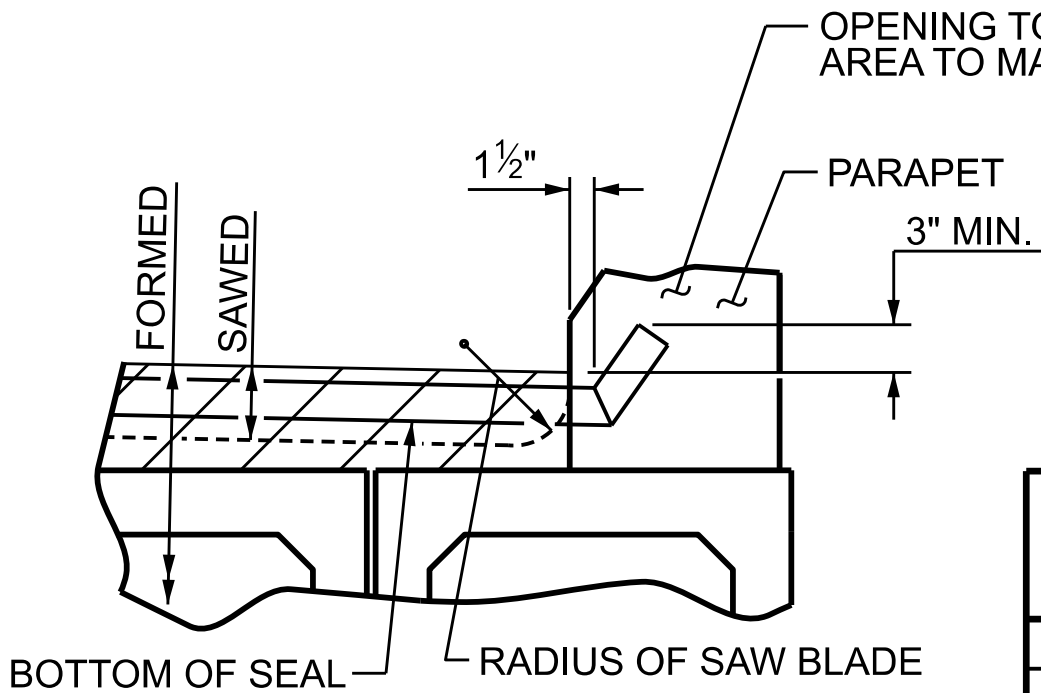
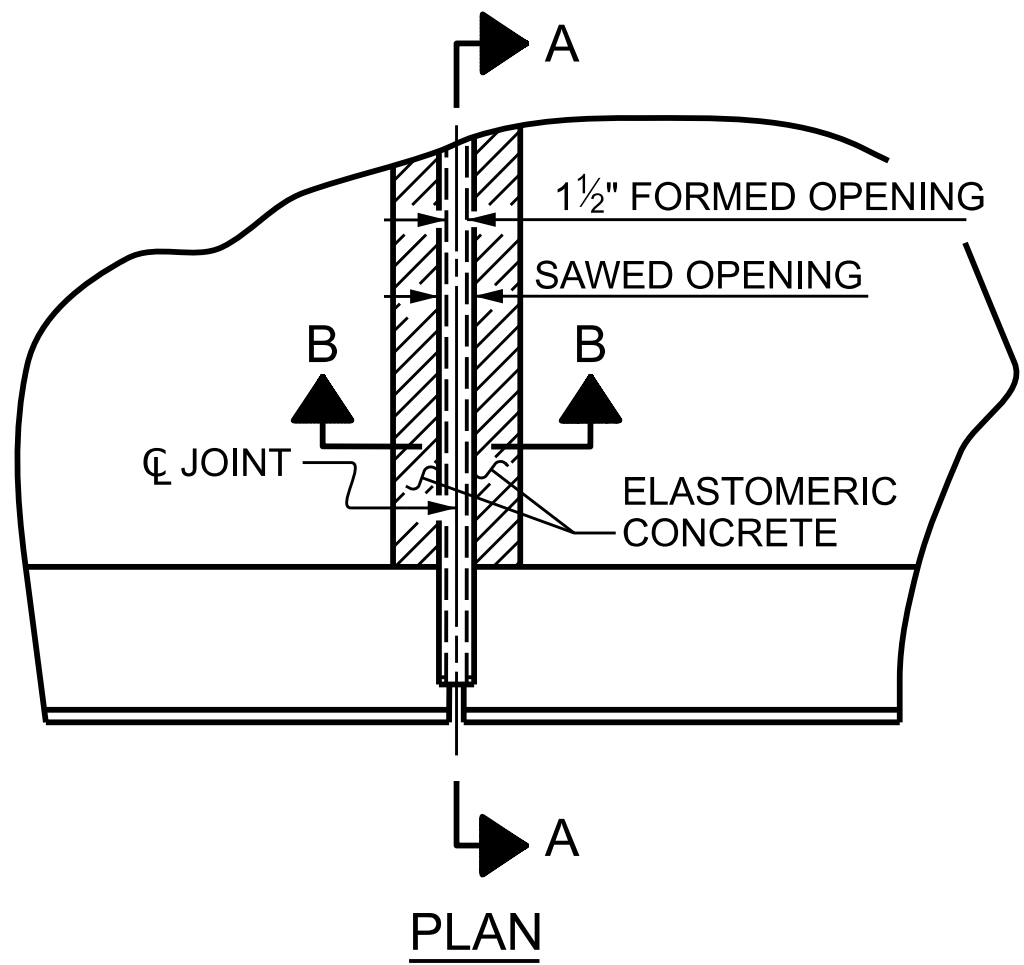
SUPERSTRUCTURE CONCRETE PARAPET & LIGHTING DETAILS

REVISIONS						SHEET NO. S36
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

DES BY: <u>D. MAST</u>	DATE: <u>05/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>05/26</u>
DES CHK: <u>G. MYERS</u>	DATE: <u>05/26</u>	CHK BY: <u>G. MYERS</u>	DATE: <u>05/26</u>

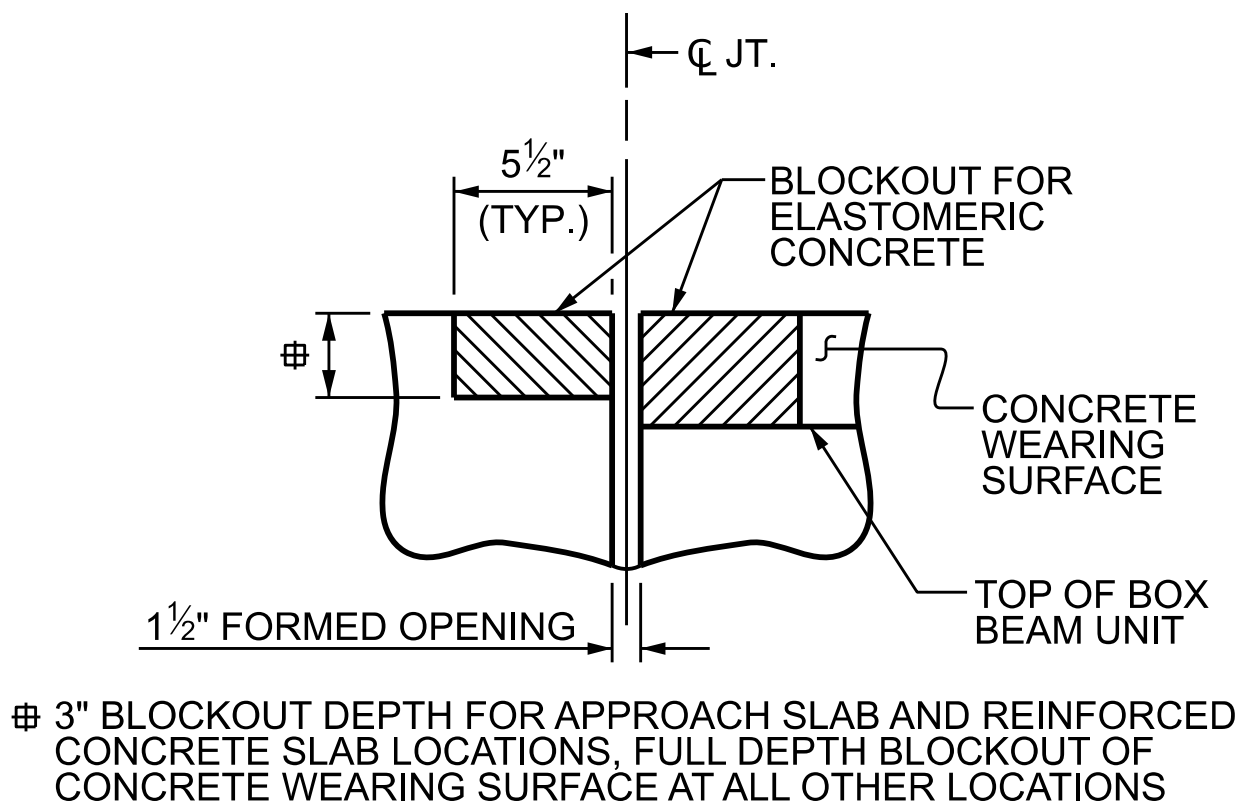
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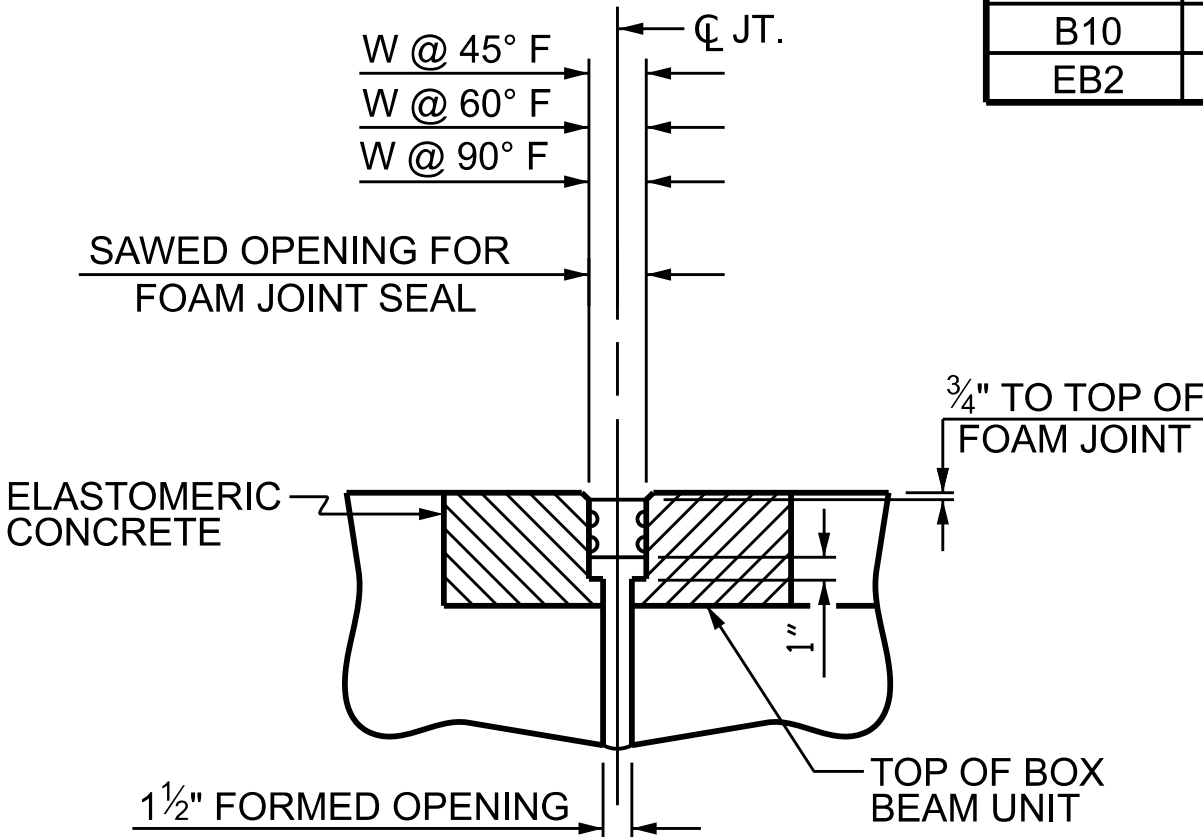


SECTION A-A
FOAM JOINT SEAL TO BE CUT, HEAT
WELDED AND TURNED UP AS SHOWN.

BENT NO.	SAWED JOINT OPENING (W)			WIDTH OF FORMED JOINT OPENING (J)
	W @ 90° F	W @ 60° F	W @ 45° F	
EB1	2 3/16"	2 5/16"	2 3/8"	1 1/2"
B3	2"	2 5/16"	2 7/16"	1 1/2"
B4	1 7/8"	2 5/16"	2 1/2"	1 1/2"
B5	2 3/16"	2 5/16"	2 3/8"	1 1/2"
B7	2"	2 5/16"	2 1/2"	1 1/2"
B8	2 1/8"	2 5/16"	2 3/8"	1 1/2"
B10	2 1/16"	2 5/16"	2 7/16"	1 1/2"
EB2	2 1/4"	2 5/16"	2 5/16"	1 1/2"



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



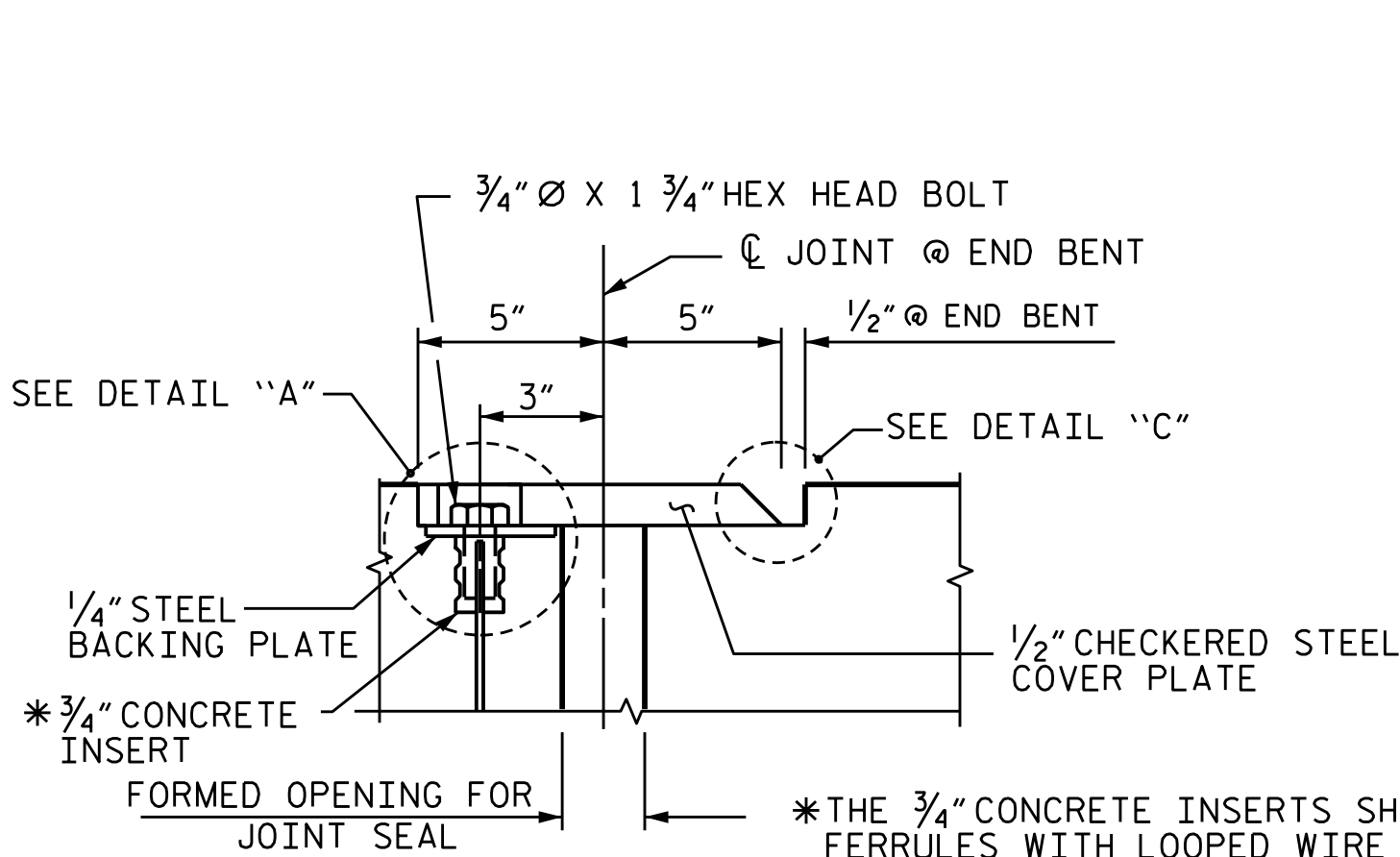
SECTION B-B
FOAM JOINT SEAL

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
EB1	3.4
B3	3.4
B4	3.4
B5	3.4
B7	3.5
B8	3.4
B10	3.4
EB2	4.5
TOTAL	28.4

* BASED ON THE MINIMUM BLOCKOUT
SHOWN

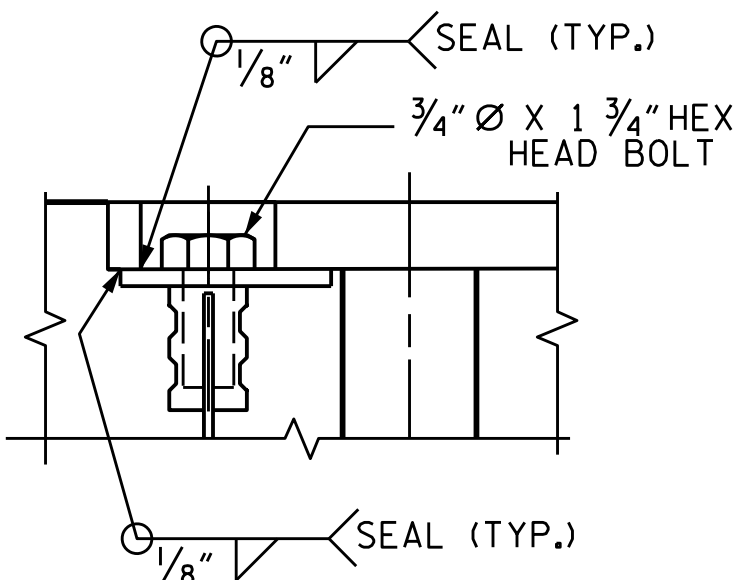
FOAM JOINT SEAL DETAILS

STEEL COVER PLATE NOT SHOWN, SEE "STEEL COVER PLATE DETAILS".

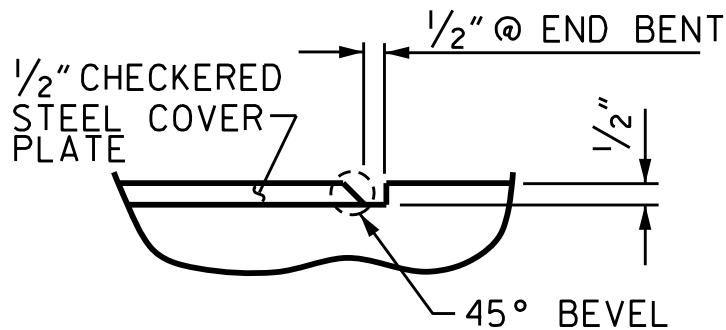


SECTION K-K

* THE 3/4" CONCRETE INSERTS SHALL BE CLOSED-END
FERRULES WITH LOOPED WIRE STRUTS ATTACHED TO
THEM. THE INSERTS SHALL CONFORM TO AASHTO M169,
GRADE 12L14 AND SHALL HAVE A TENSILE WORKING LOAD
CAPACITY OF 3000 LBS.



DETAIL "A"



DETAIL "C"

STEEL COVER PLATE DETAILS

NOTES

THE JOINT SHALL BE SAWED PRIOR TO CASTING OF THE PARAPET.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 3".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

THE STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 36 OR APPROVED
EQUAL. AFTER FABRICATION, THE PLATES SHALL BE COMMERCIALY BLAST CLEANED
AND EITHER COATED WITH A MINIMUM THICKNESS OF 4 MILS (DRY) OF ZINC-RICH
PAINT, GALVANIZED OR METALLIZED TO A MINIMUM THICKNESS OF 6 MILS IN
ACCORDANCE WITH THE STANDARD SPECIFICATIONS. FOR THERMAL SPRAYED
COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

THE 3/4" DIAMETER HEX HEAD BOLTS SHALL CONFORM TO ASTM F593 ALLOY 304
STAINLESS STEEL.

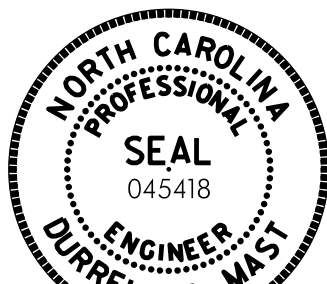
NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE COVER
PLATE. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE
FOR "FOAM JOINT SEALS".

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE EXPANSION JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S37
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	61

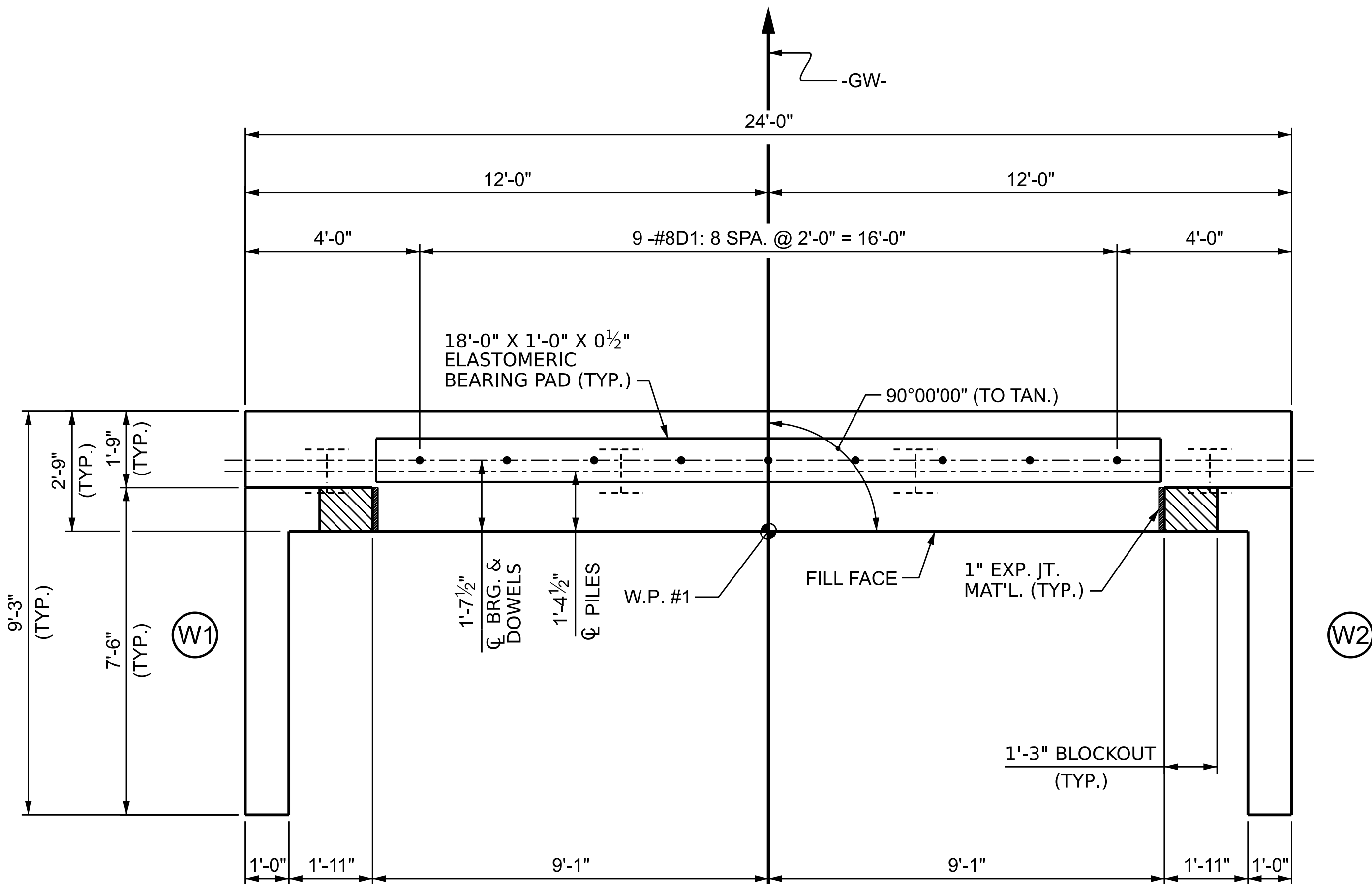


Durrell J. Mast
8/14/2026

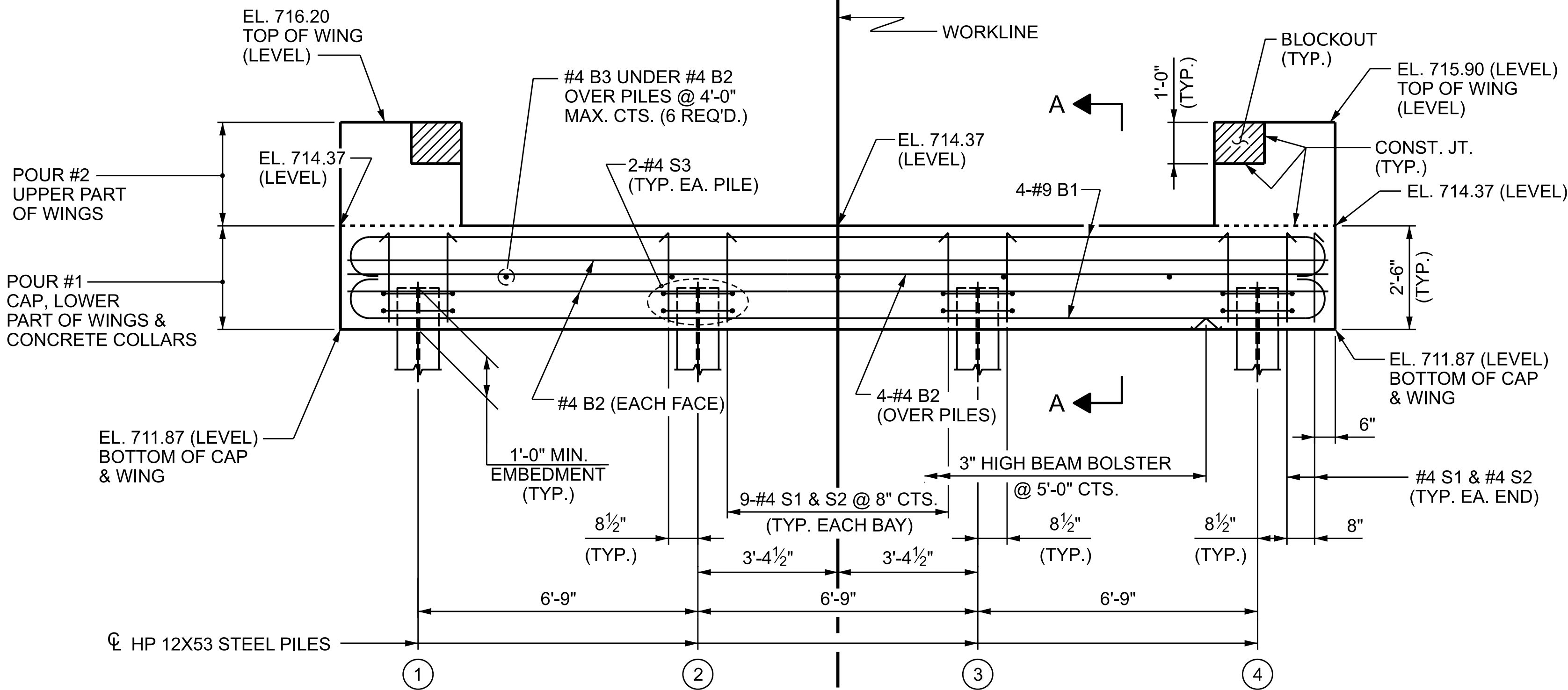
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DES BY: A. KHADKA DATE: 04/26 DWG BY: D. CHAPMAN DATE: 04/26
DES CHK: R. BEAUCHAMP DATE: 04/26 CHK BY: B. BUSH DATE: 04/26



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 3 OF 3.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 3 OF 3.

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 CONCRETE PARAPET IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 3.

FOR WING DETAILS, SEE SHEET 2 OF 3.

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1
PLAN AND ELEVATION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S38
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



8/14/2026

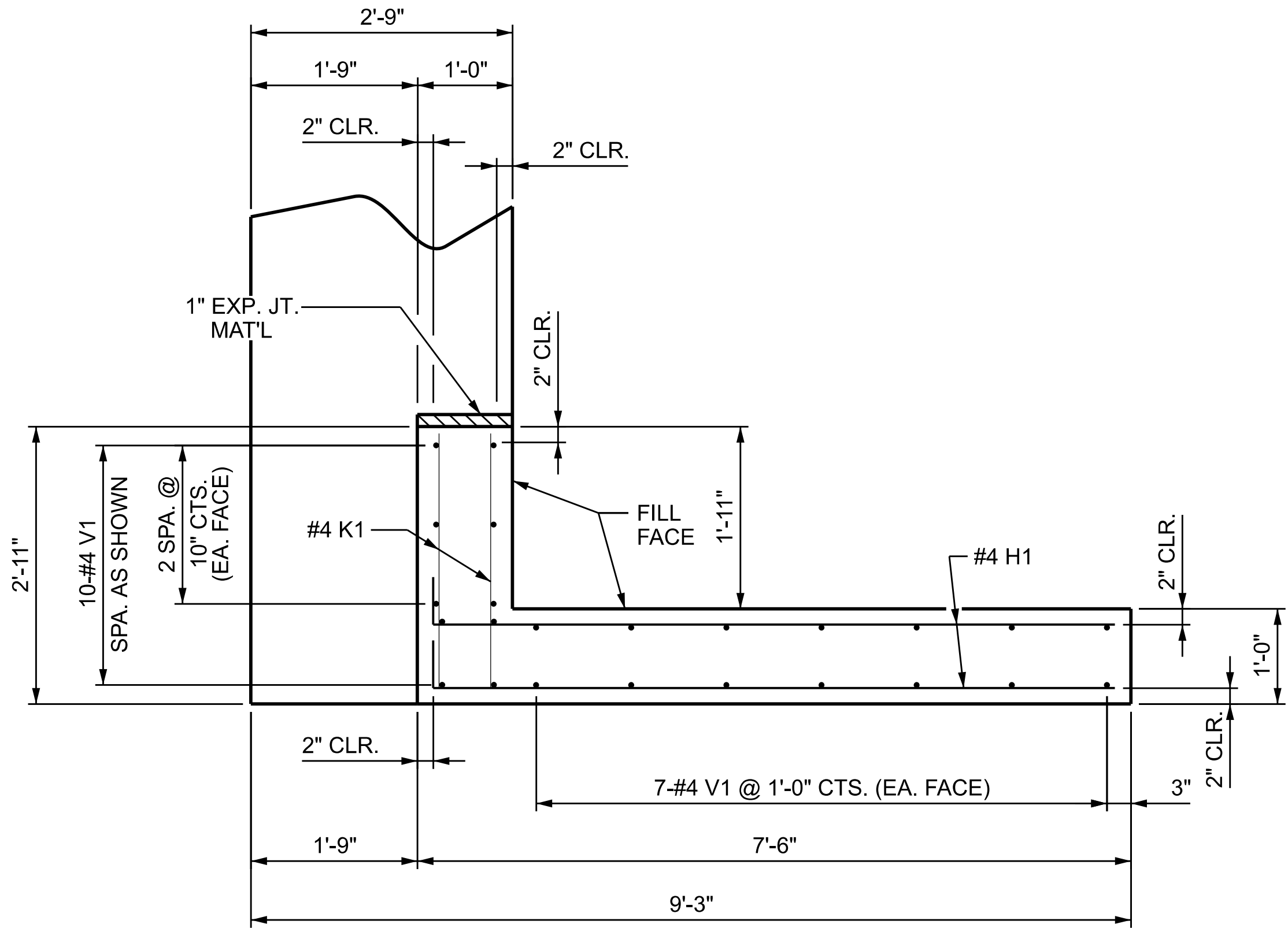
Durrell J. Mast

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UNLESS ALL SIGNATURES COMPLETED

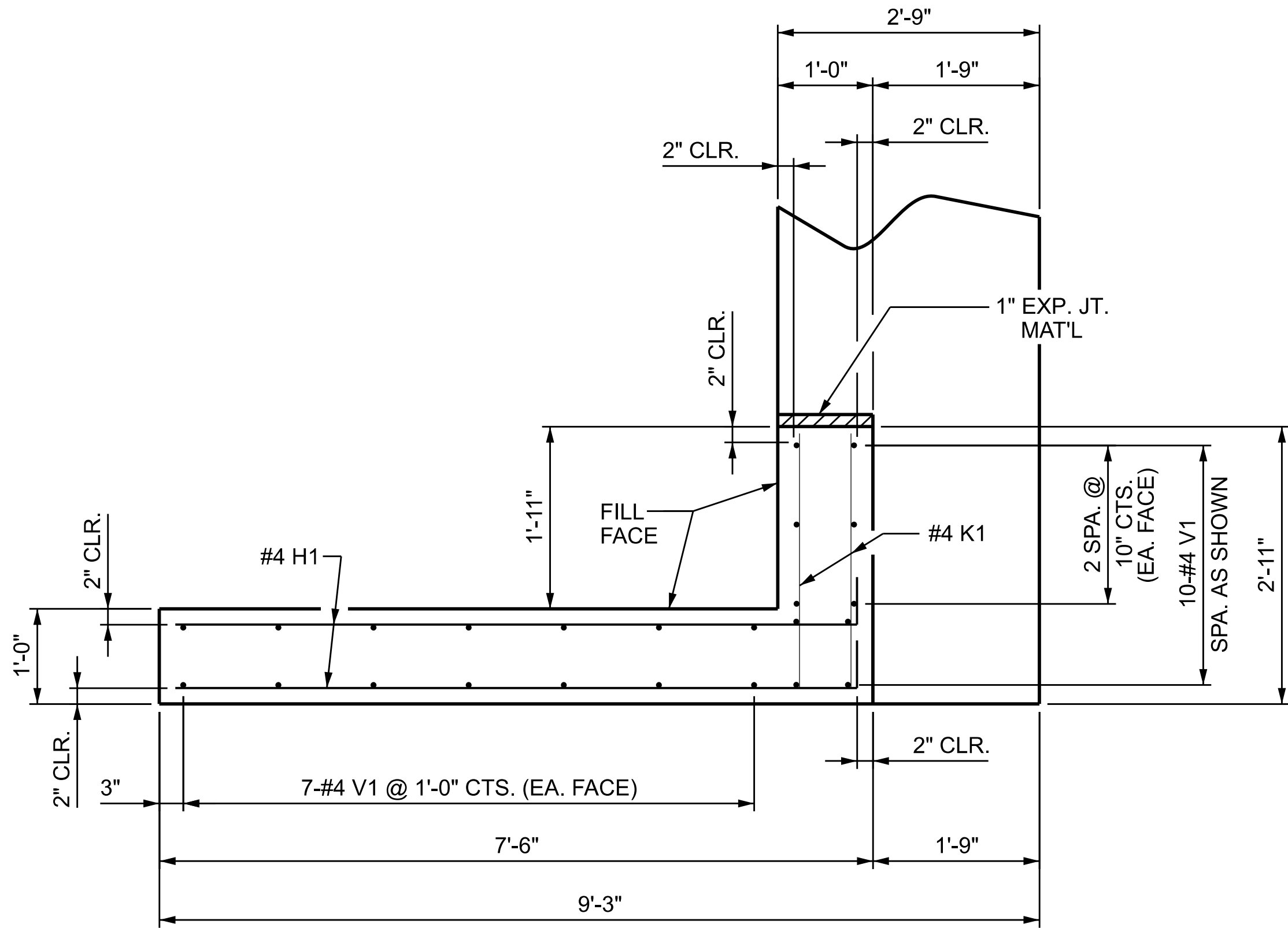


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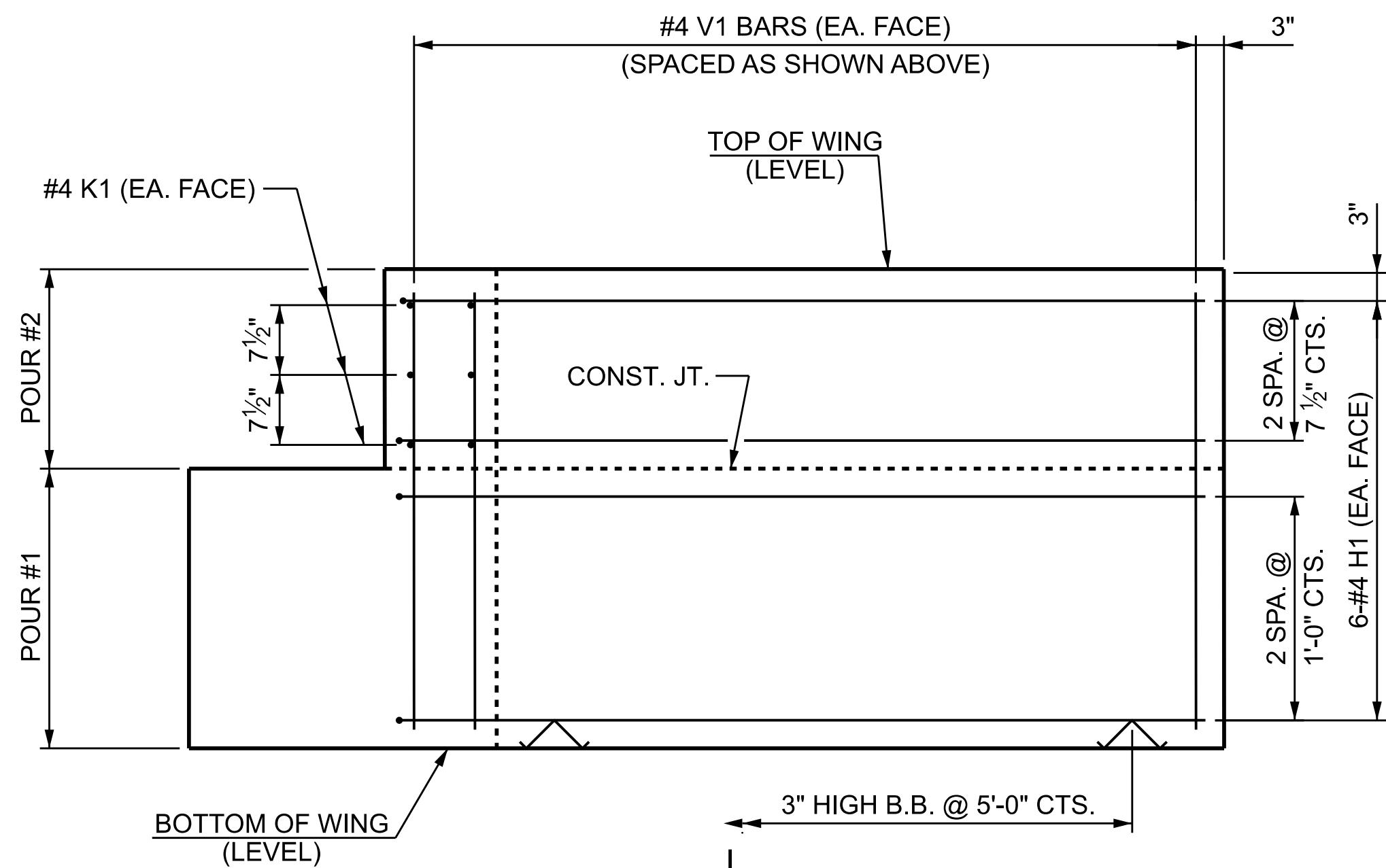
DES BY: D. MAST DATE: 01/26 DWG BY: D. CHAPMAN DATE: 01/26
DES CHK: G. MARTINEZ DATE: 01/26 CHK BY: D. MAST DATE: 01/26



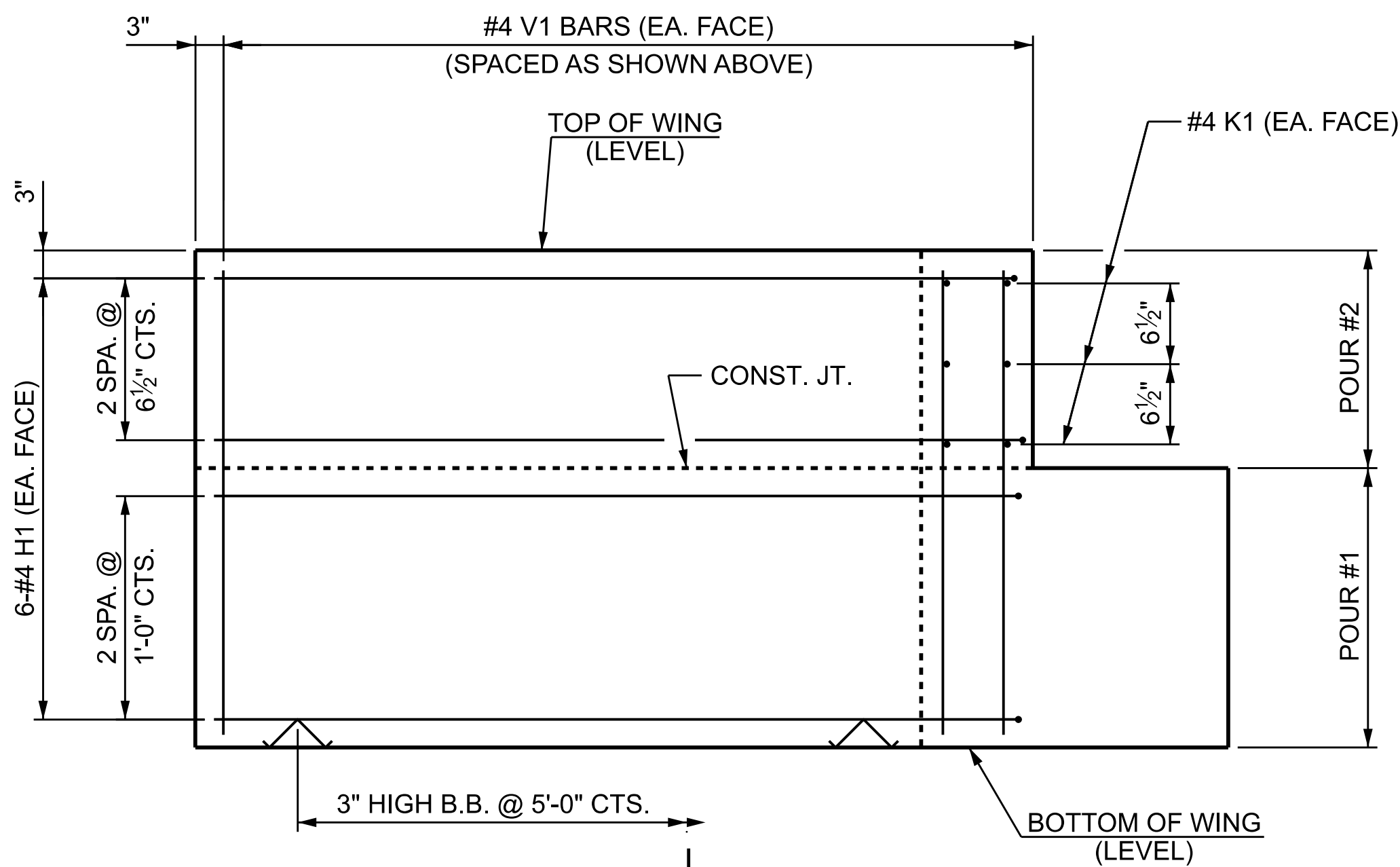
PLAN OF WING (W1)



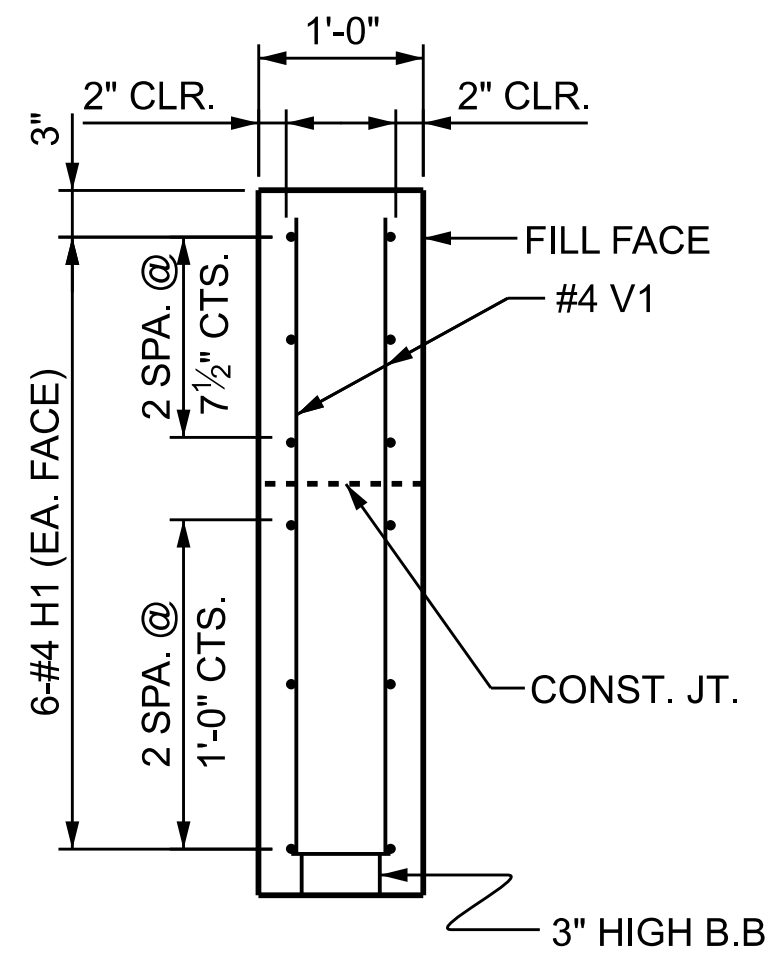
PLAN OF WING (W2)



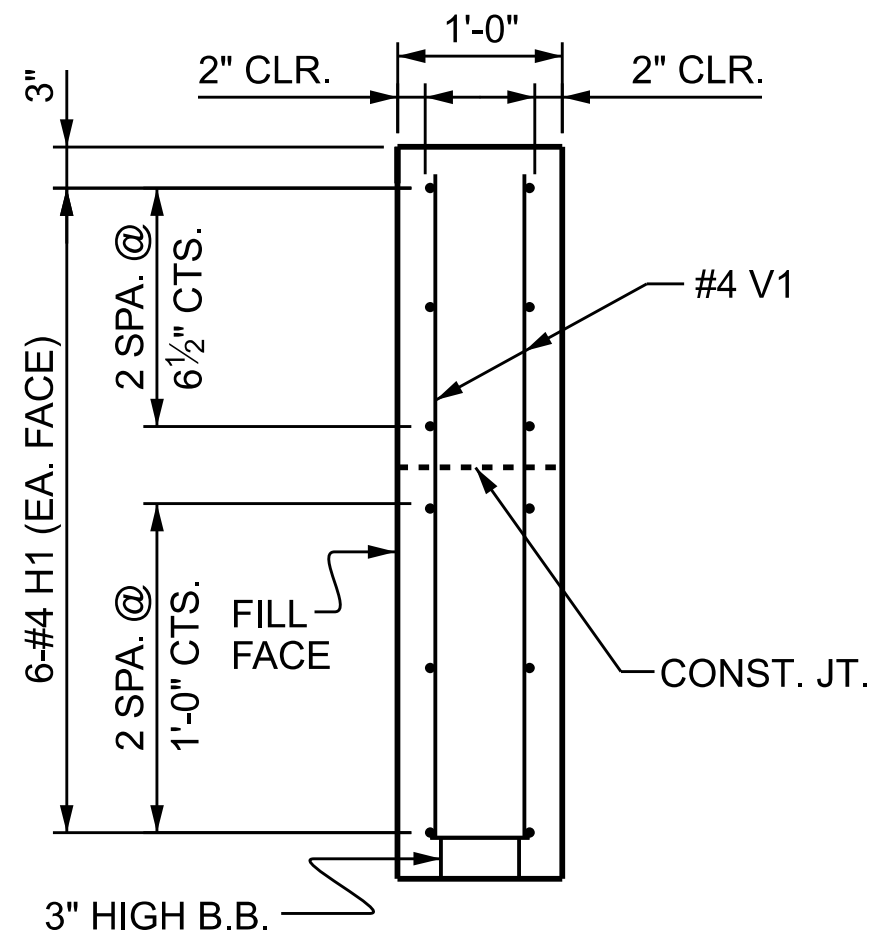
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 2 OF 3

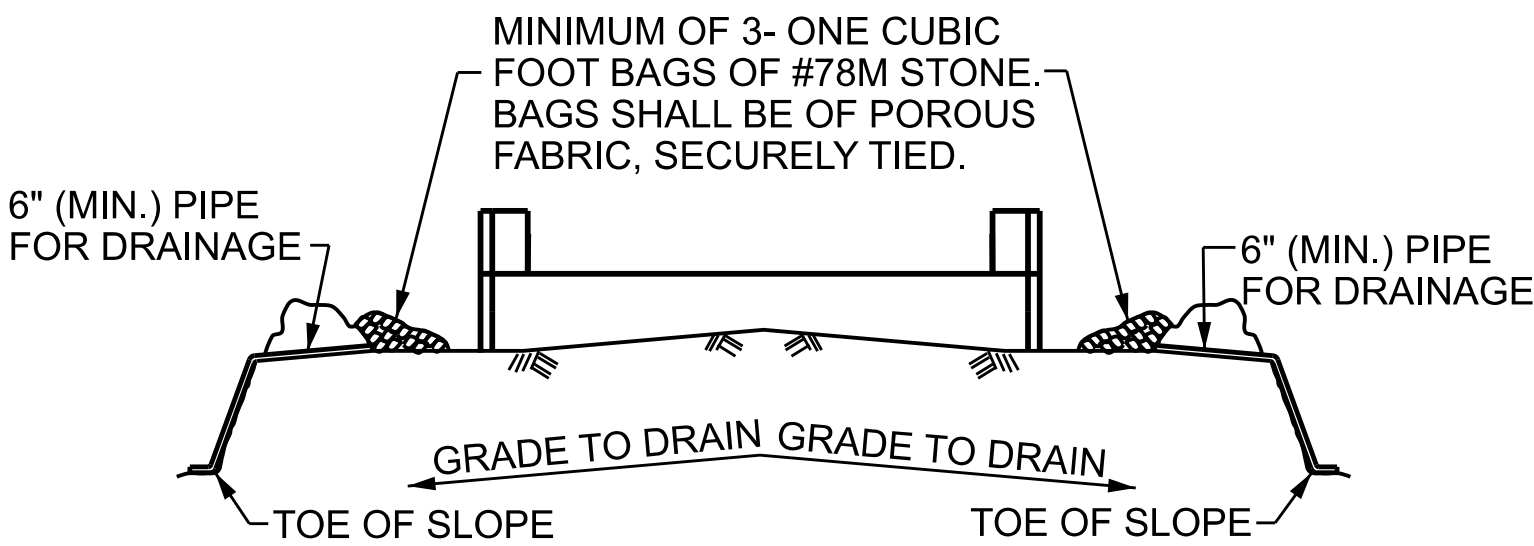


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	S39
2	--	--	4	--	--	
TOTAL SHEETS						61

DES BY: D. MAST DATE: 01/26 DWG BY: D. CHAPMAN DATE: 01/26
DES CHK: G. MARTINEZ DATE: 01/26 CHK BY: D. MAST DATE: 01/26

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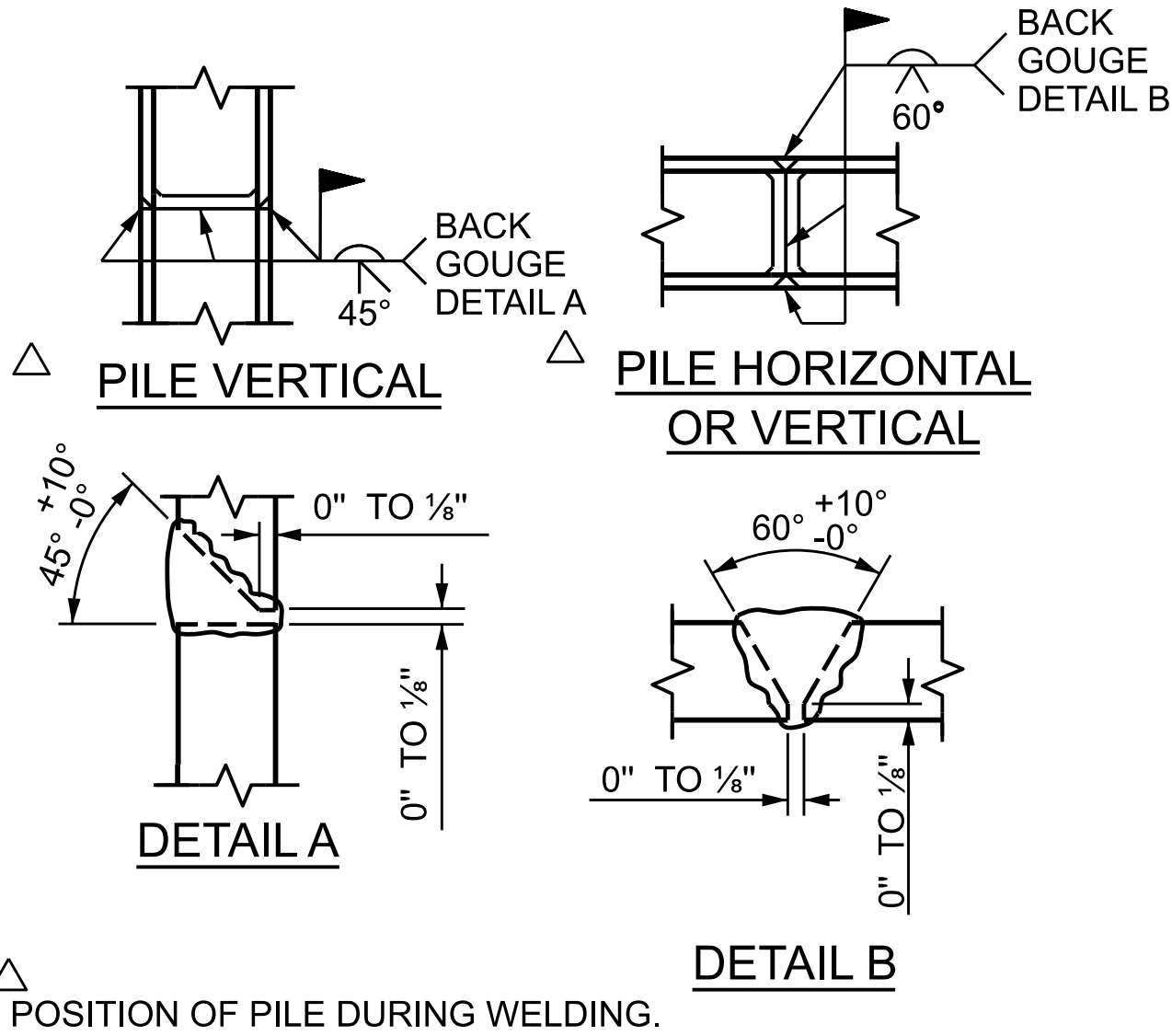


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

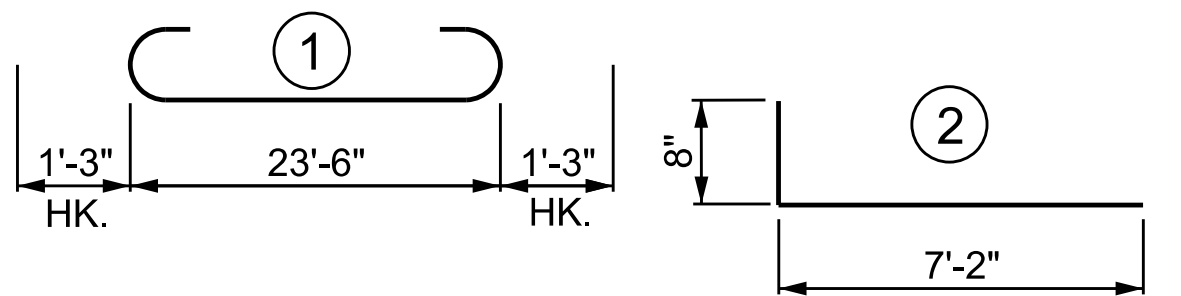
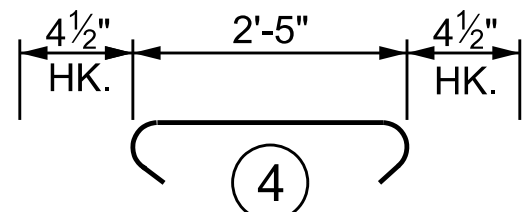
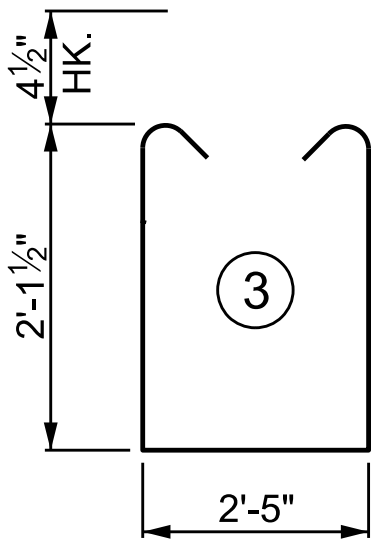
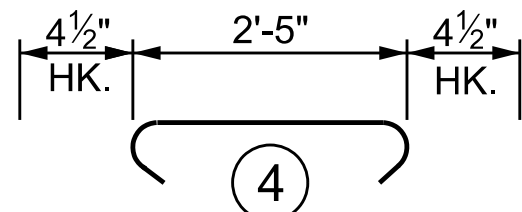
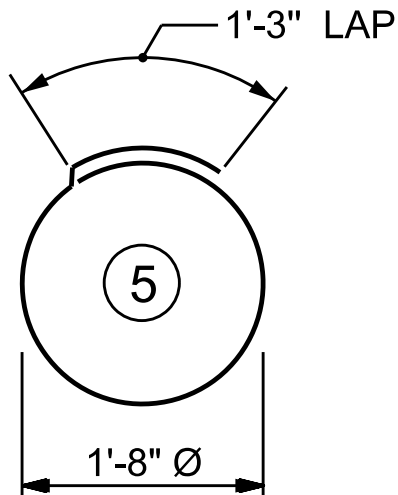
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

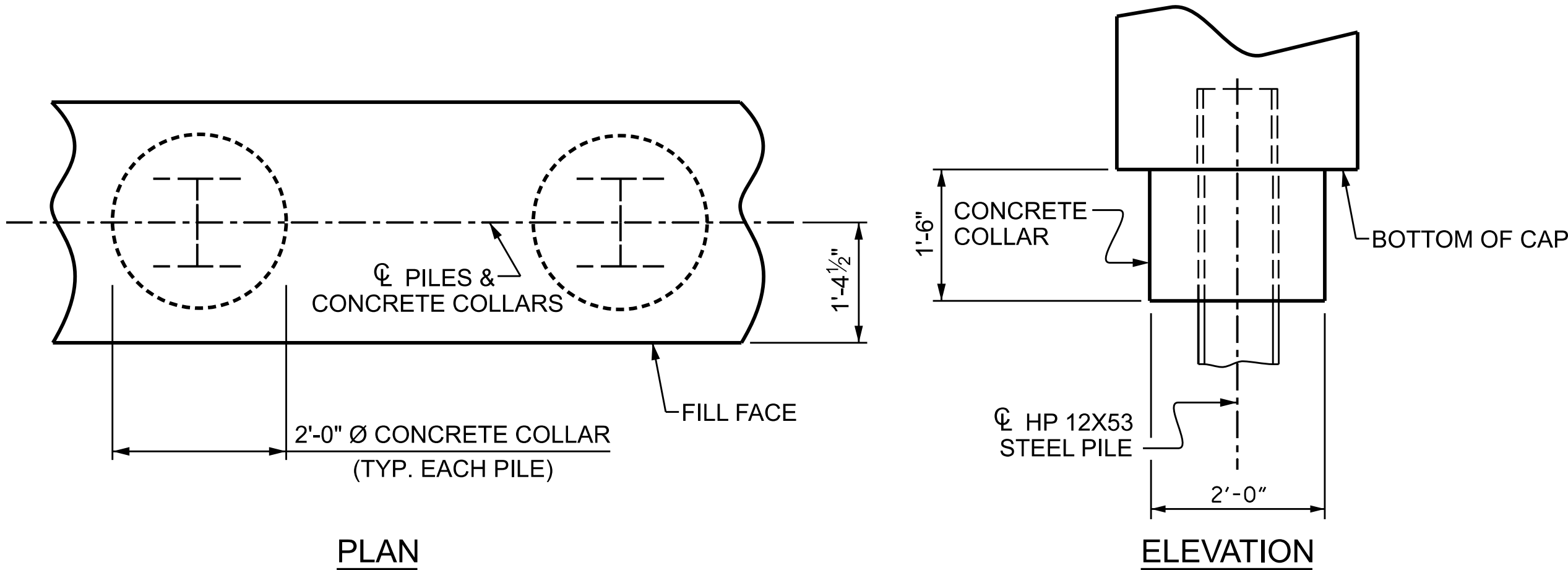
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

BAR TYPES			BILL OF MATERIAL					
    			END BENT 1					
			BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
			B1	8	#9	1	26'-0"	707
			B2	8	#4	STR	23'-8"	126
			B3	6	#4	STR	2'-5"	10
			D1	9	#8	STR	1'-6"	36
			H1	24	#4	2	7'-10"	126
K1	12	#4	STR	2'-7"	21			
S1	31	#4	3	7'-5"	154			
S2	31	#4	4	3'-2"	66			
S3	8	#4	5	6'-6"	35			
V1	48	#4	STR	3'-7"	115			
REINFORCING STEEL					1395 LBS.			
CLASS A CONCRETE BREAKDOWN								
POUR #1 CAP, LOWER PART OF WINGS & COLLARS					8.0 C.Y.			
POUR #2 UPPER PART OF WINGS					1.1 C.Y.			
TOTAL CLASS A CONCRETE					9.1 C.Y.			

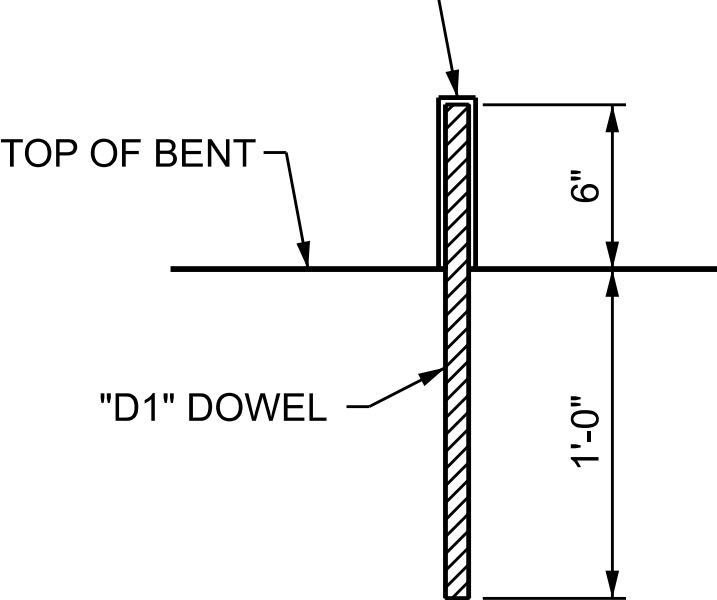
ALL BAR DIMENSIONS ARE OUT TO OUT.



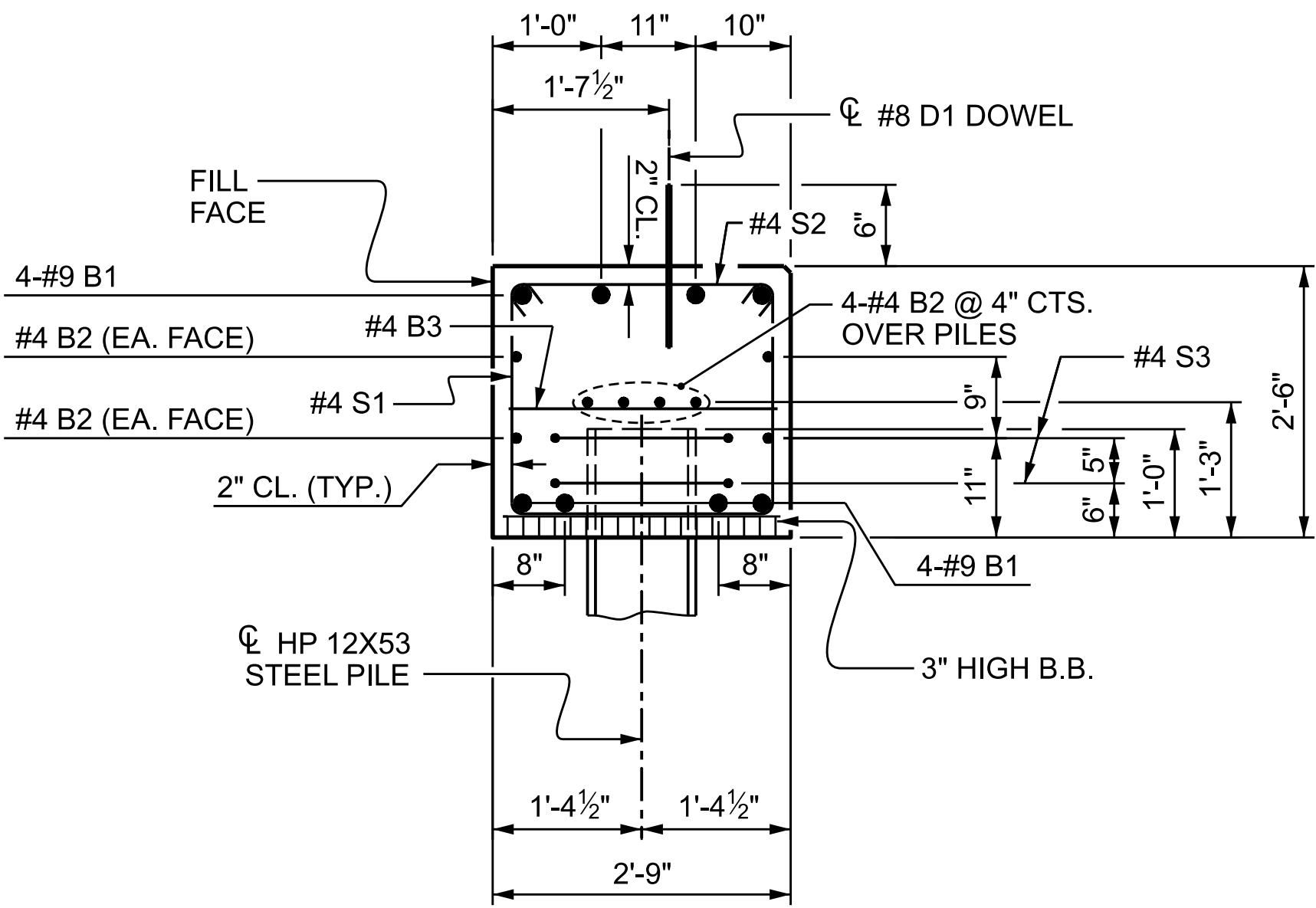
CORROSION PROTECTION FOR STEEL PILES DETAIL

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

WRAP DOWELS WITH ROOFING FELT, RUBBER, OR OTHER SEEPAGE-PROOFED COMPRESSIBLE MATERIAL TO ALLOW 1/4" OF COMPRESSIBLE MATERIAL BETWEEN CONCRETE AND "D1" DOWEL, BOTH ABOVE AND ALL AROUND.



"D1" DOWEL DETAIL



8/14/2026

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

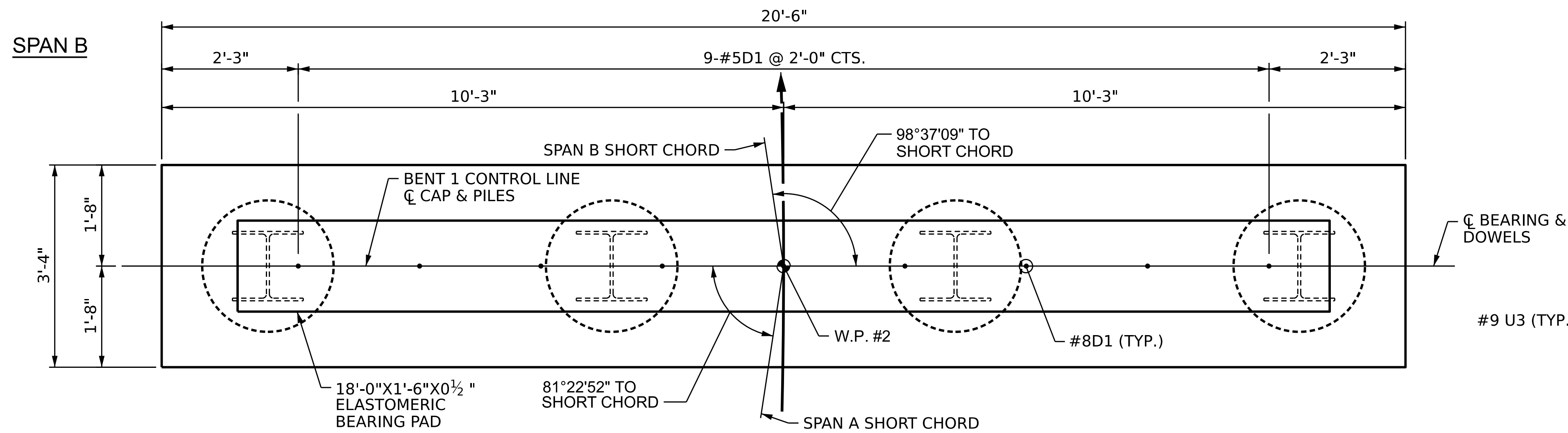
SUBSTRUCTURE
END BENT 1
SECTION AND DETAILS

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S40	
1	--	--	3	--	--	TOTAL SHEETS	
2	--	--	4	--	--	61	

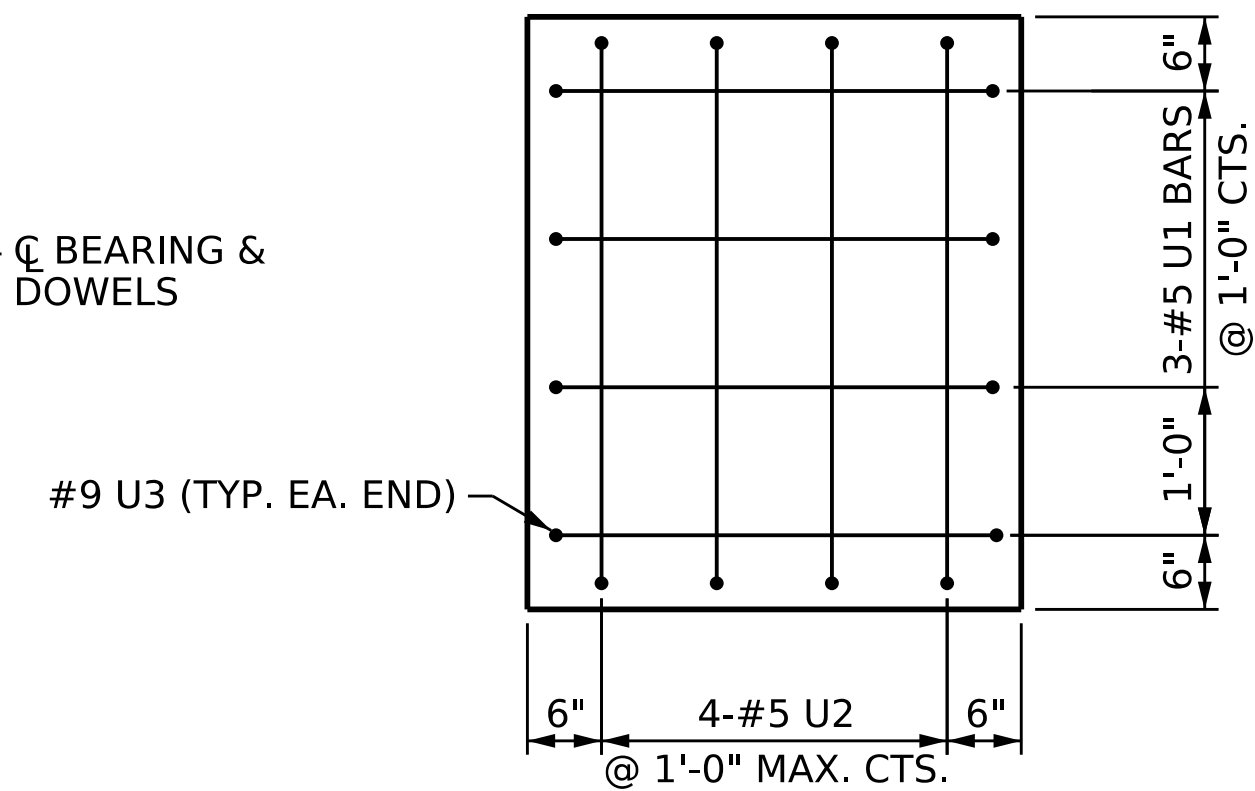
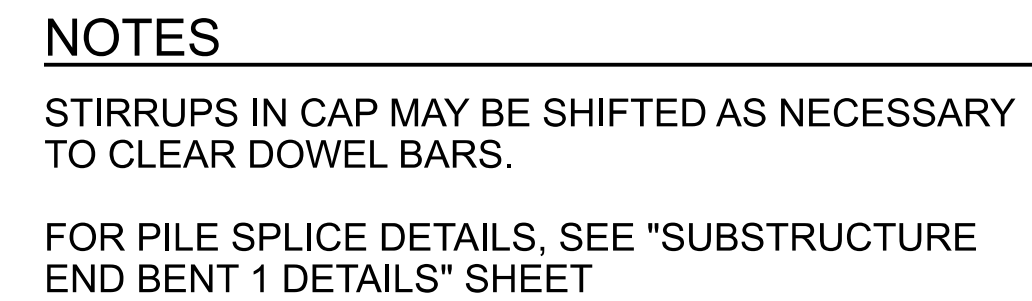
DES BY: <u>D. MAST</u>	DATE: <u>01/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>01/26</u>
DES CHK: <u>G. MARTINEZ</u>	DATE: <u>01/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>01/26</u>

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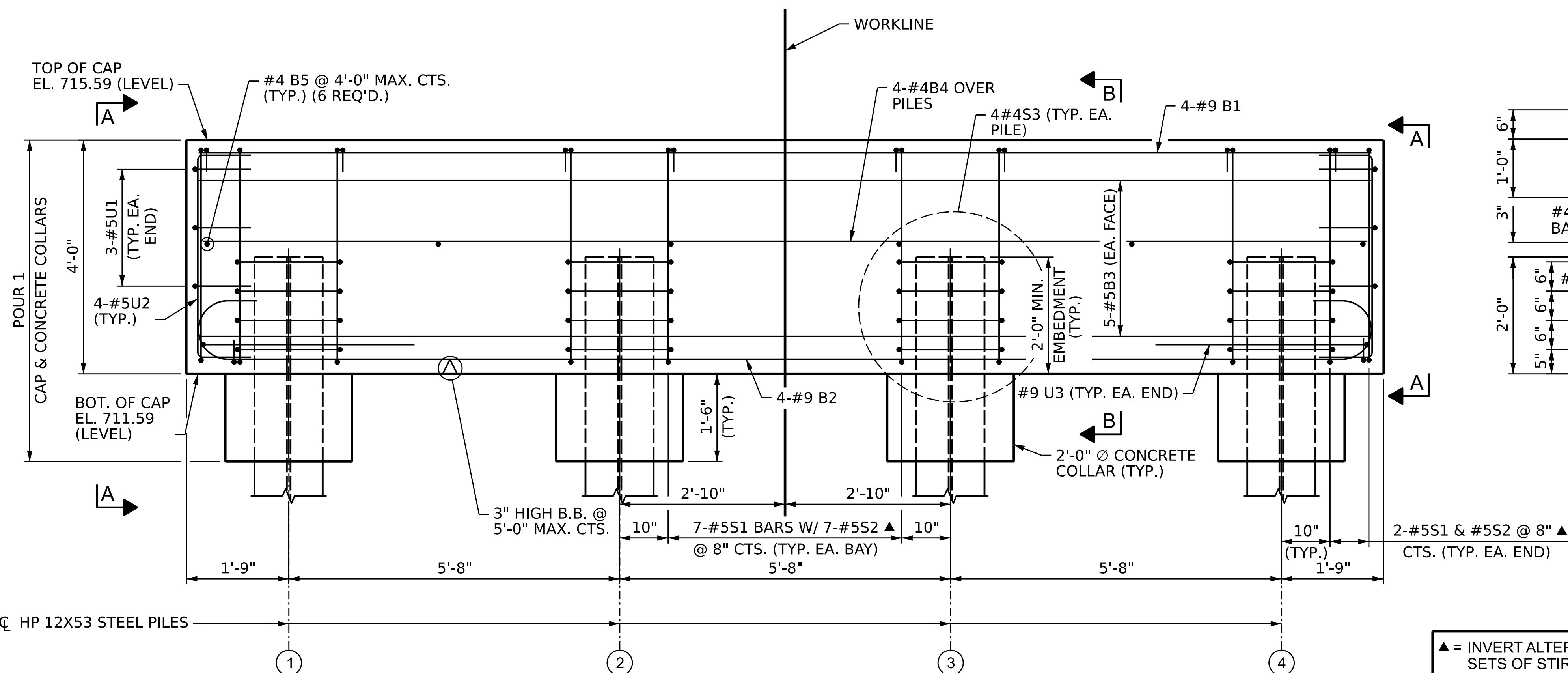
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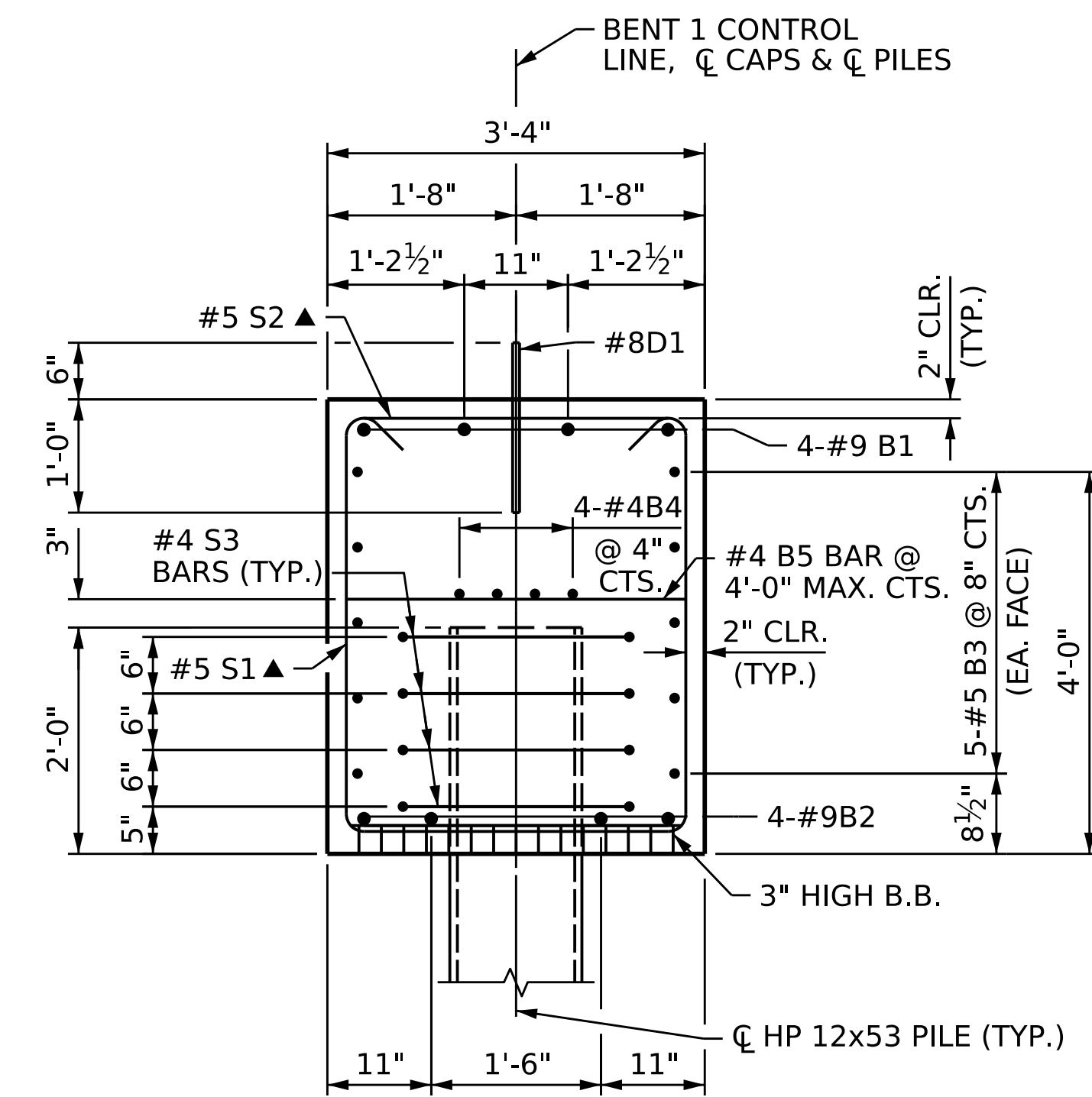
PLAN OF CAP



VIEW A-A
(TYP. EA. END OF CAP)

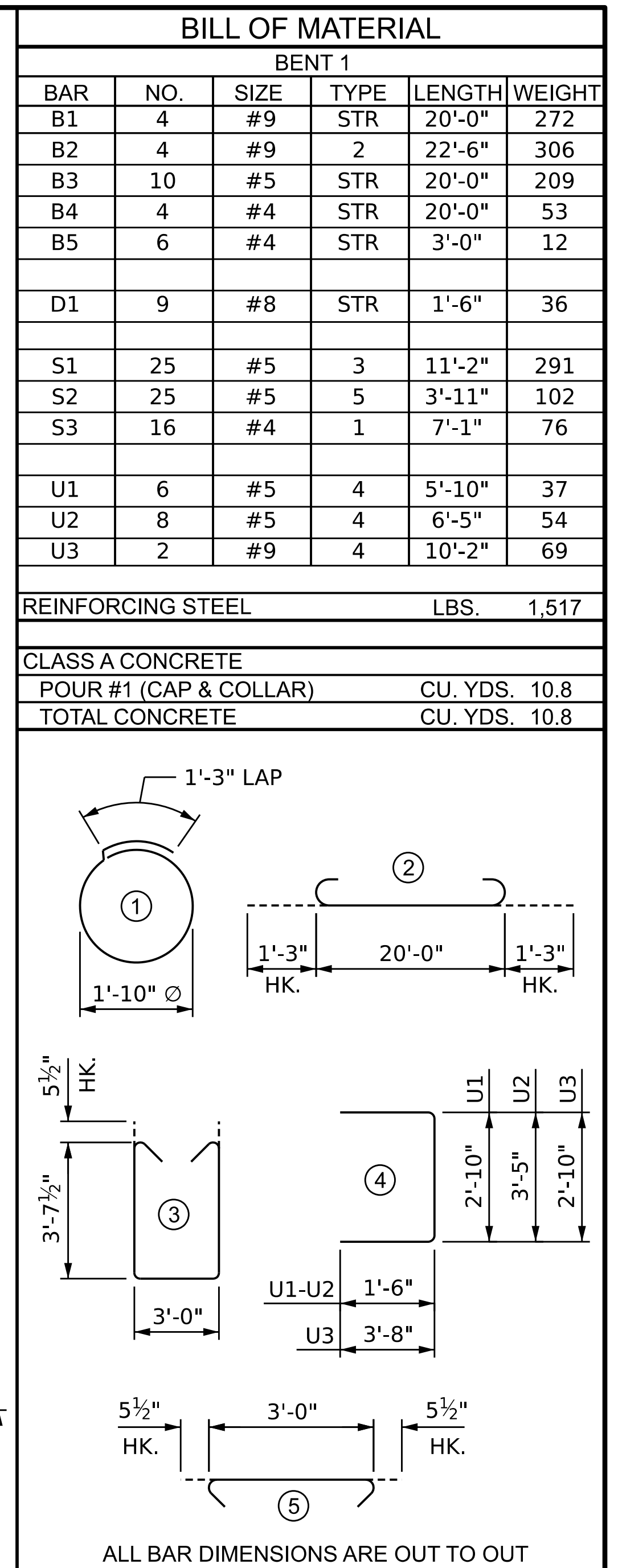


ELEVATION



SECTION B-B
(CONCRETE COLLARS NOT SHOWN
FOR CLARITY)

▲ = INVERT ALTERNATE SETS OF STIRRUPS

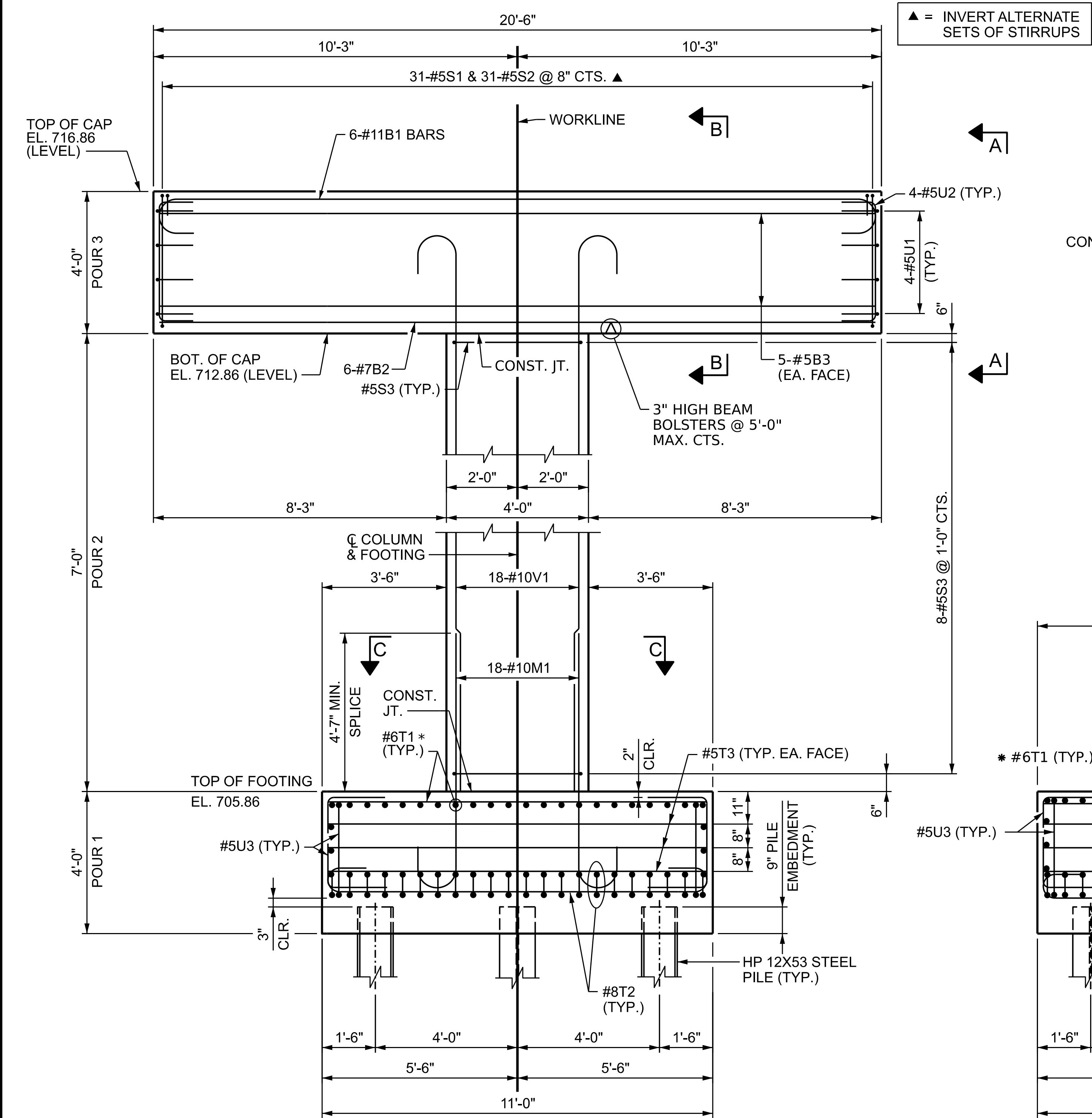


PROJECT NO. BL-0119
MECKLENBURG COUNTY
 STATION: 15+46.20 -GW-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

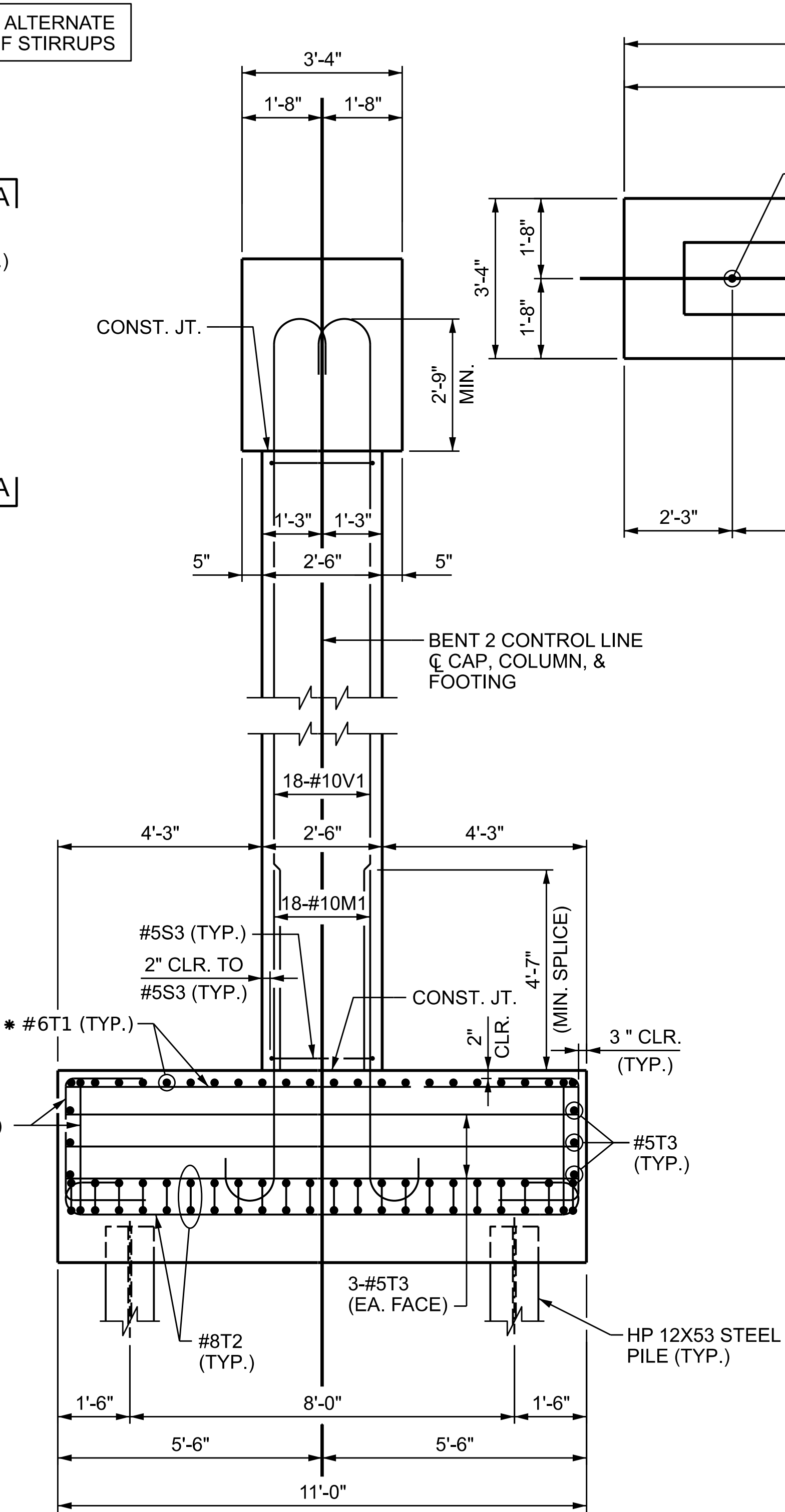
SUBSTRUCTURE
BENT 1
PLAN AND ELEVATION

REVISIONS						SHEET NO. S41
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

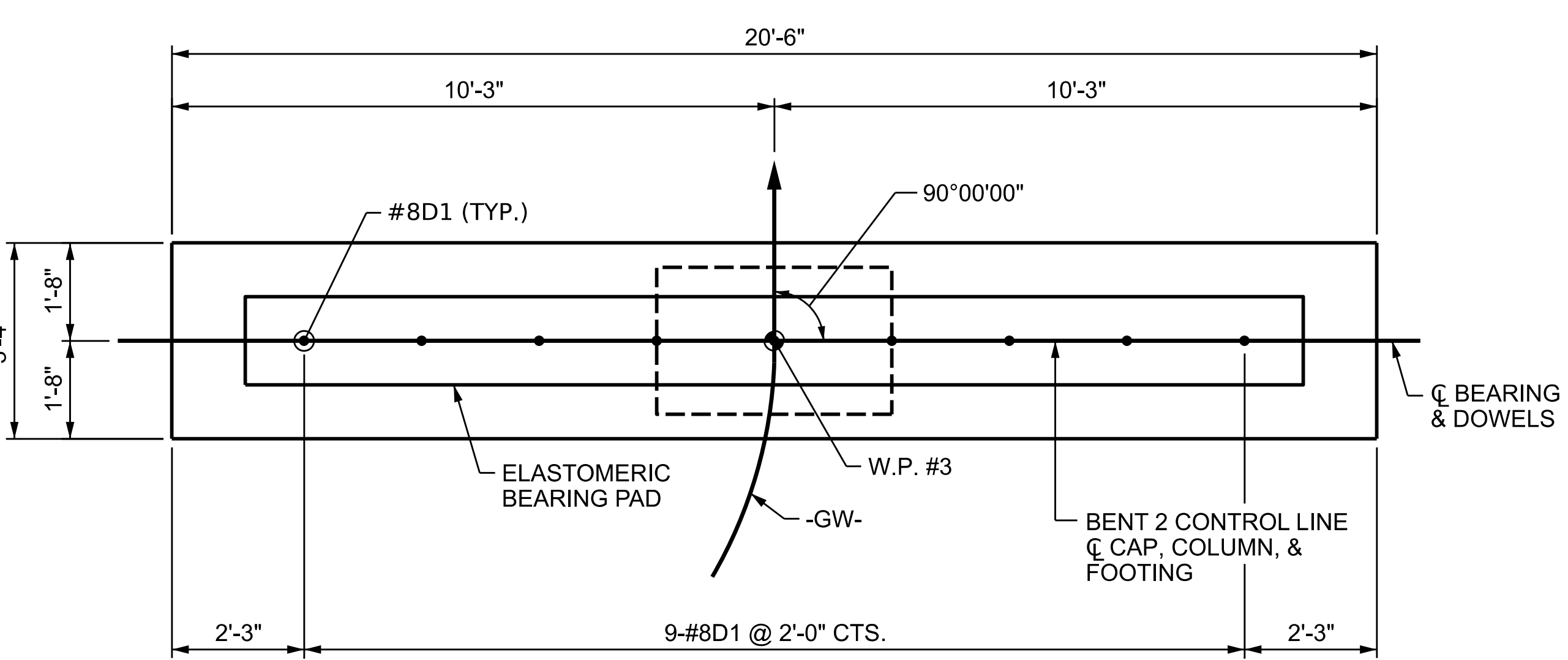


ELEVATION

* #6T1 BARS IN FOOTING MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR #10M1 COLUMN BARS.



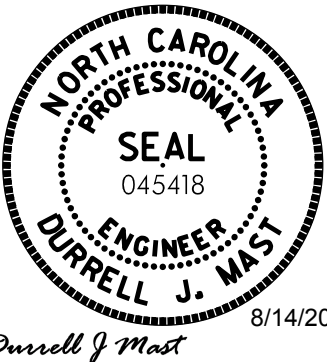
END VIEW



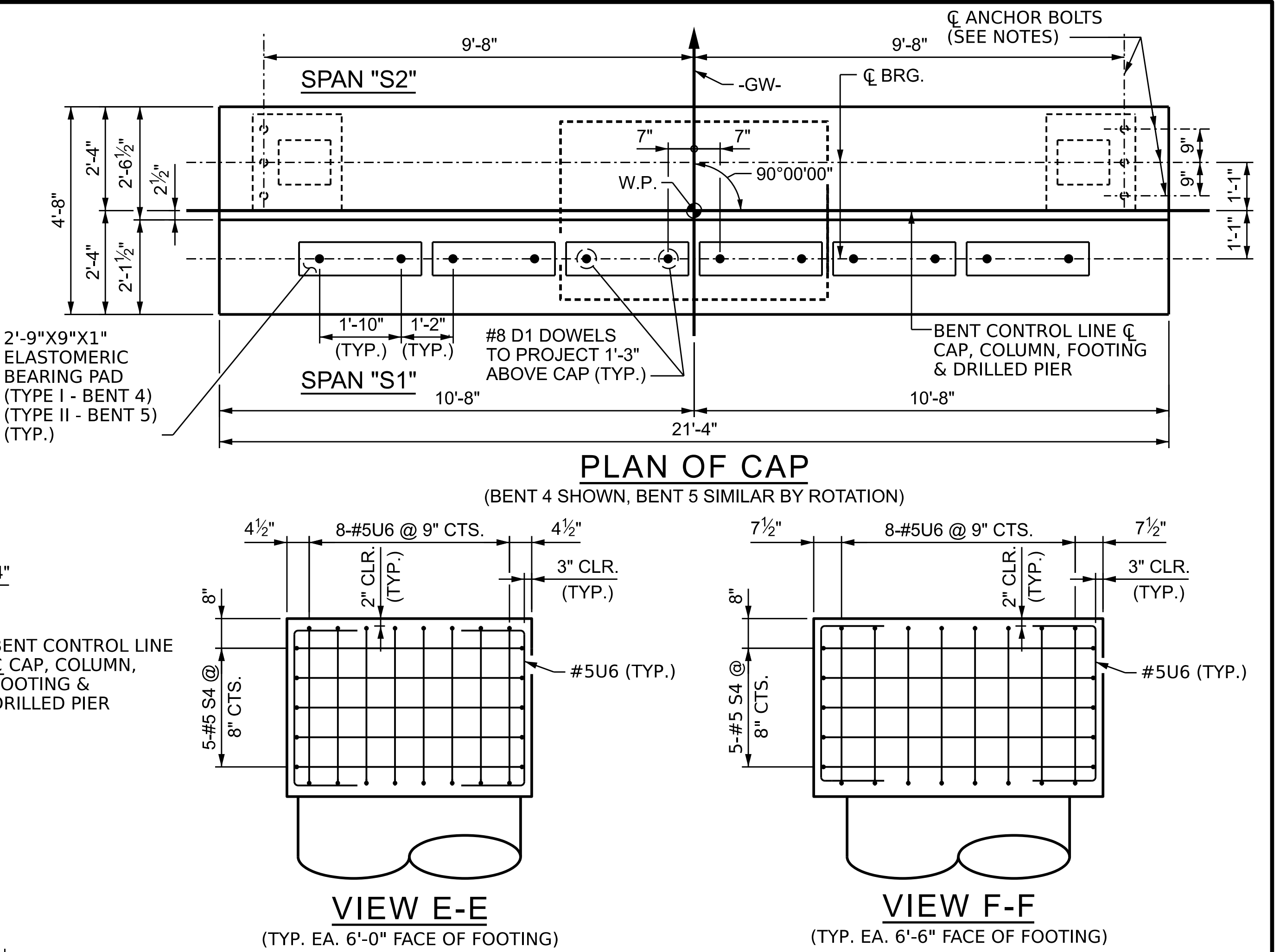
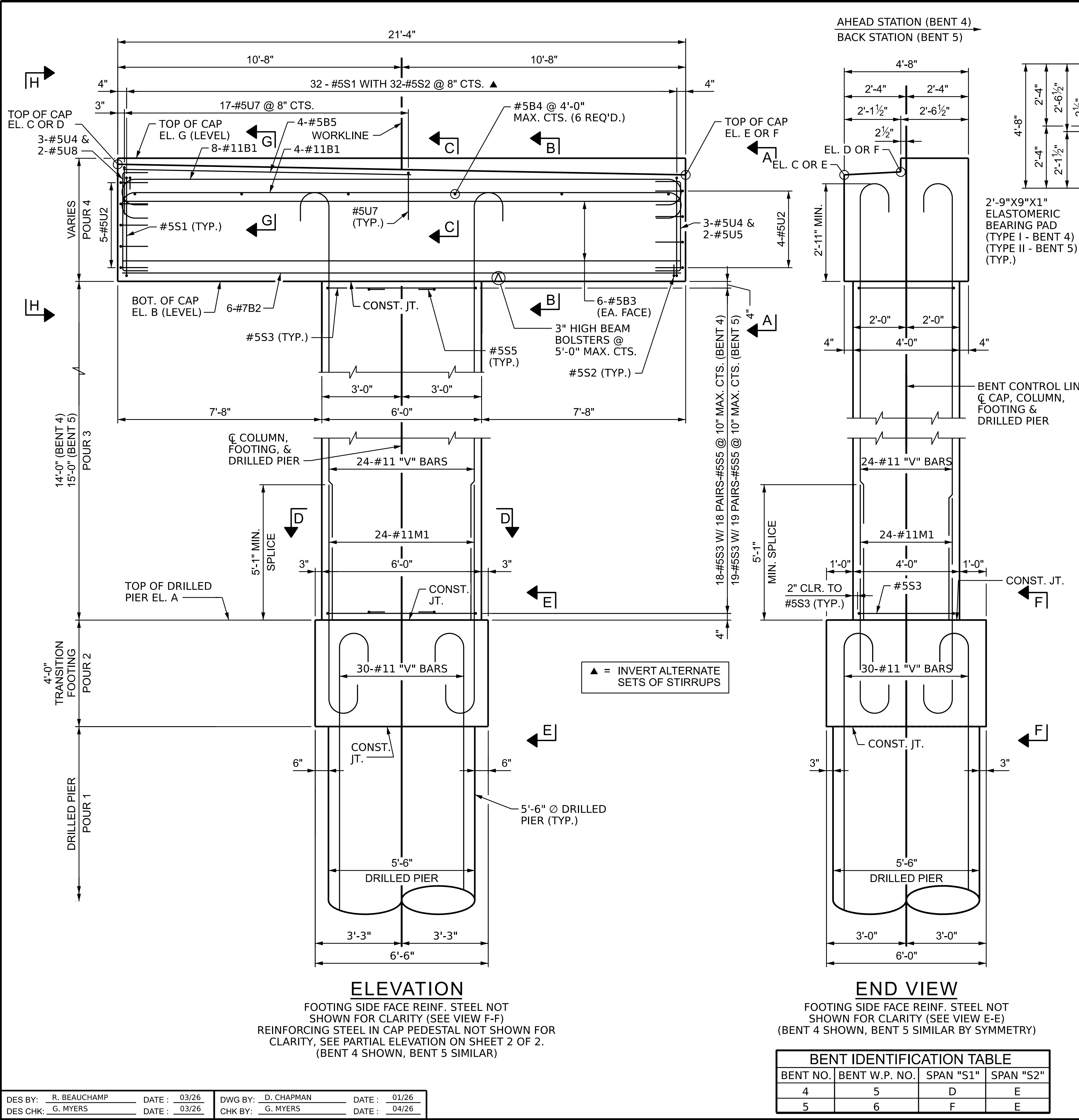
PLAN OF CAP

- NOTES**
- FOR VIEW A-A AND SECTIONS B-B & C-C, SEE SHEET 2 OF 2.
- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWEL BARS
- HOOKS ON "M" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
- FOR PILE SPLICE DETAILS, SEE "SUBSTRUCTURE END BENT 1 SECTION AND DETAILS" SHEET.

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-
SHEET 1 OF 2



REVISIONS						SHEET NO. S42
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



NOTES
FOR VIEW A-A & H-H AND SECTIONS B-B, C-C, D-D & G-G, SEE SHEET 2 OF 2.

SEE "SUBSTRUCTURE DRILLED PIER DETAILS" FOR DRILLED PIER DETAILS AND BILL OF MATERIAL.

SIZE AND LOCATION OF ANCHOR BOLTS SHALL BE COORDINATED WITH THE PREFABRICATED BRIDGE MANUFACTURER, PRIOR TO ORDERING MATERIALS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WITH CONSTRUCTION.

THE TOP OF CAP ELEVATIONS FOR SPAN "S2" ϕ BEARING SUPPORTING THE PREFABRICATED ARCH TRUSS ARE BASED ON AN ASSUMED SUPERSTRUCTURE DEPTH OF 2'-0". THE TOP OF THE CAP ELEVATIONS MAY BE ADJUSTED AS NECESSARY FOR THE ARCH TRUSS PLANS AS PROVIDED BY THE MANUFACTURER. A MINIMUM CAP DEPTH OF 4'-0" SHALL BE MAINTAINED. ANY ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY WORK BEING DONE ON THE BENTS.

THE CONTRACTOR SHALL CONFIRM BRIDGE SEAT ELEVATIONS PRIOR TO CONSTRUCTION OF THE END BENT CAP.

STIRRUPS & "U" BARS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWEL BARS AND ANCHOR BOLTS.

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

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-
SHEET 1 OF 2

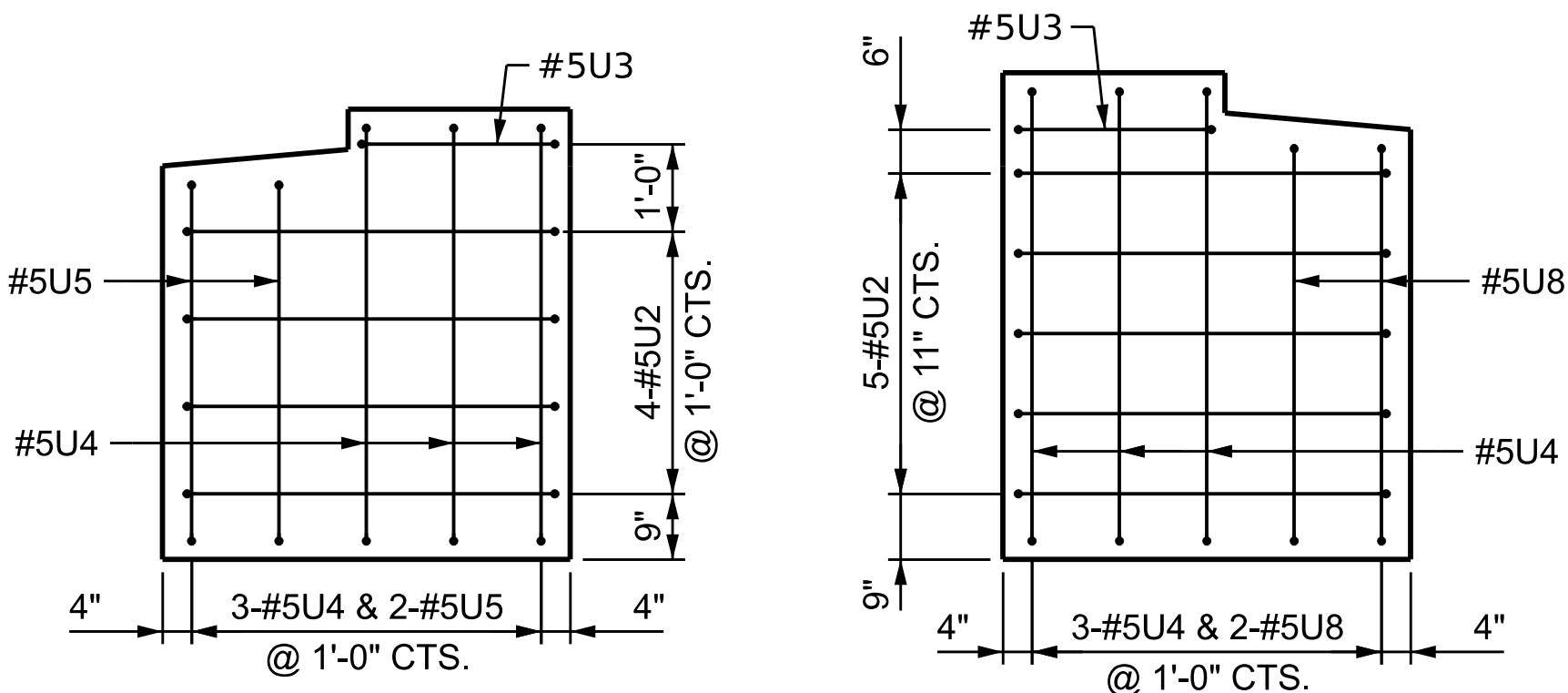


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENTS 4 & 5 PLAN AND ELEVATION					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					61

DES BY: <u>R. BEAUCHAMP</u>	DATE: <u>03/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>01/26</u>
DES CHK: <u>G. MYERS</u>	DATE: <u>03/26</u>	CHK BY: <u>G. MYERS</u>	DATE: <u>04/26</u>

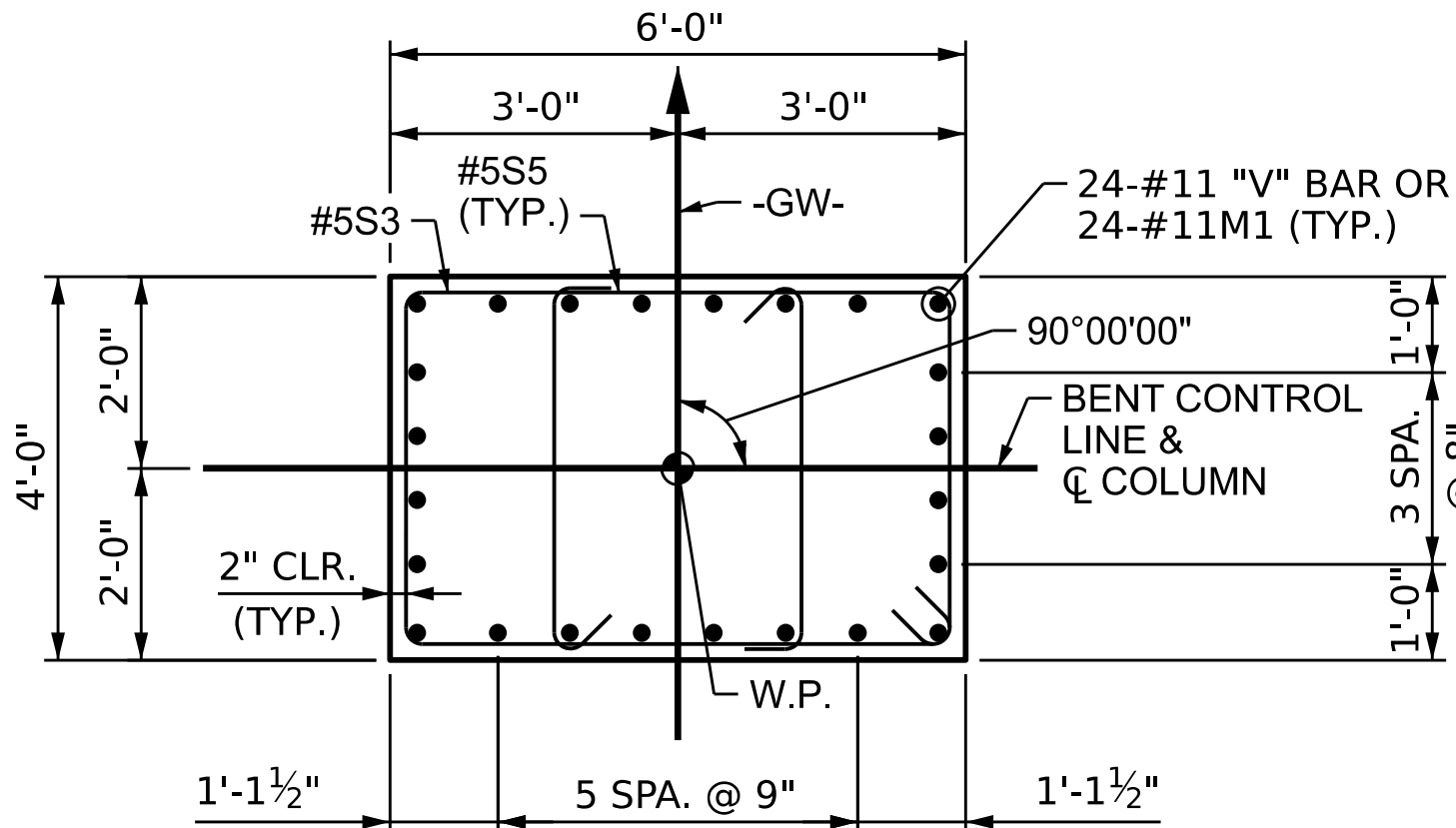
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8/14/2026
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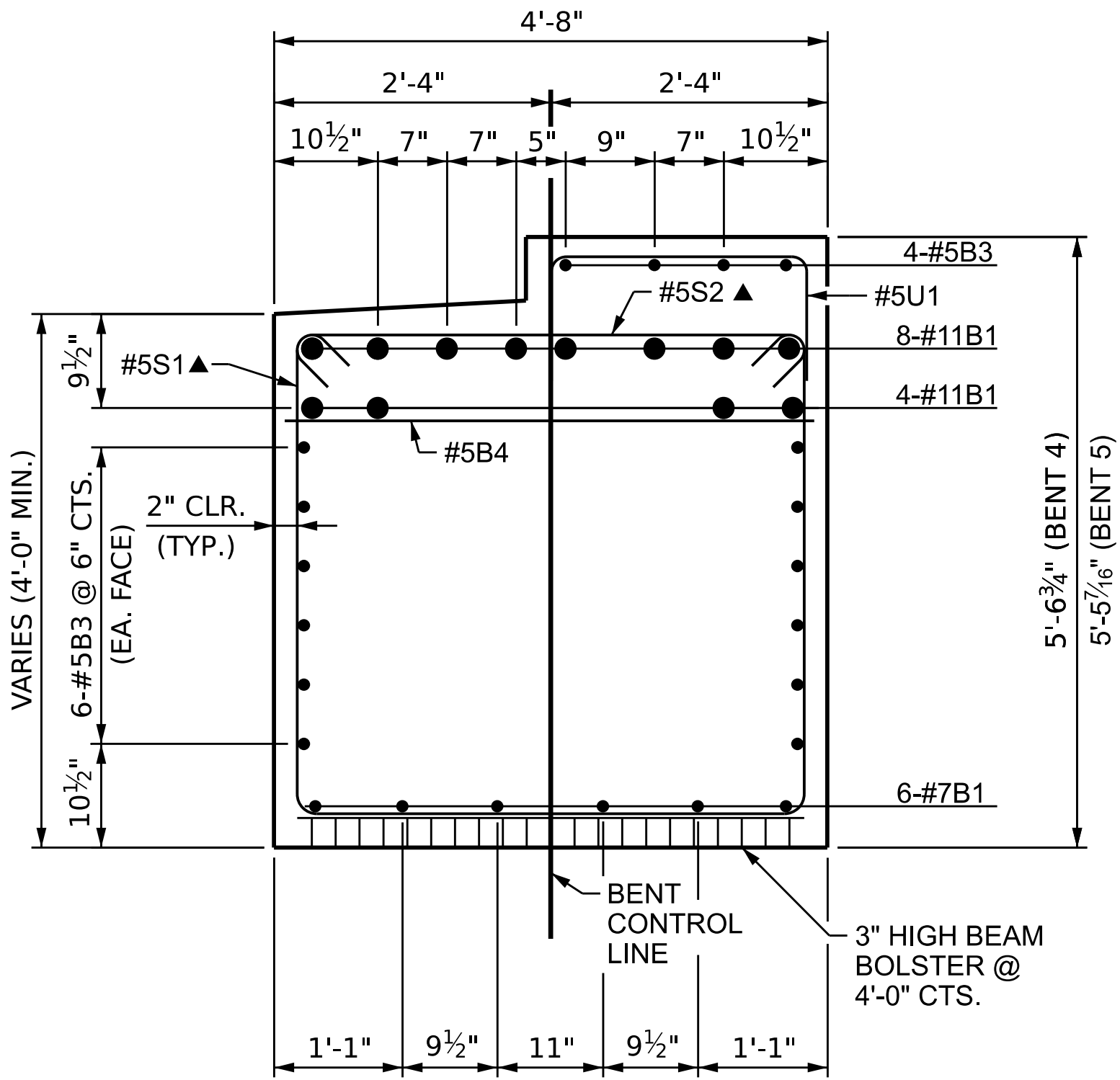


VIEW A-A
(TYP. EA. END OF CAP)

VIEW H-H



SECTION D-D

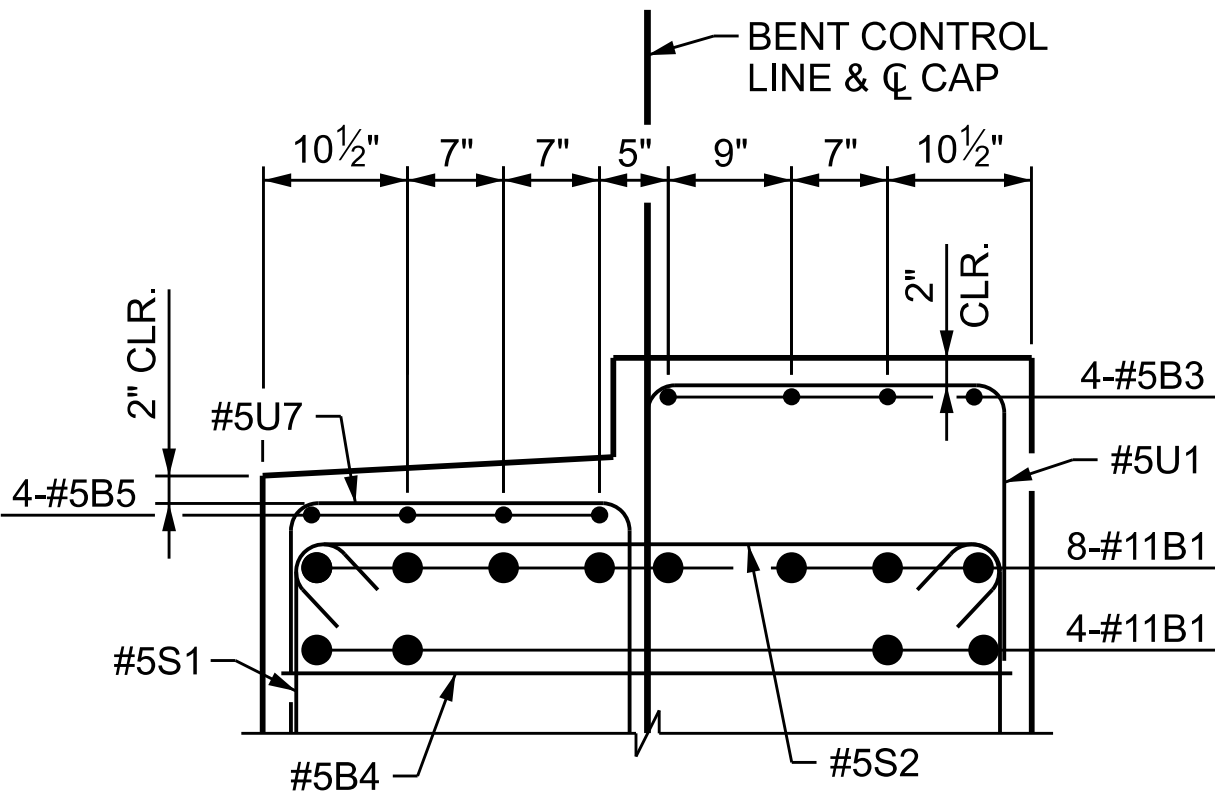


SECTION B-B

(BENT 4 SHOWN, BENT 5 SIMILAR BY SYMMETRY)

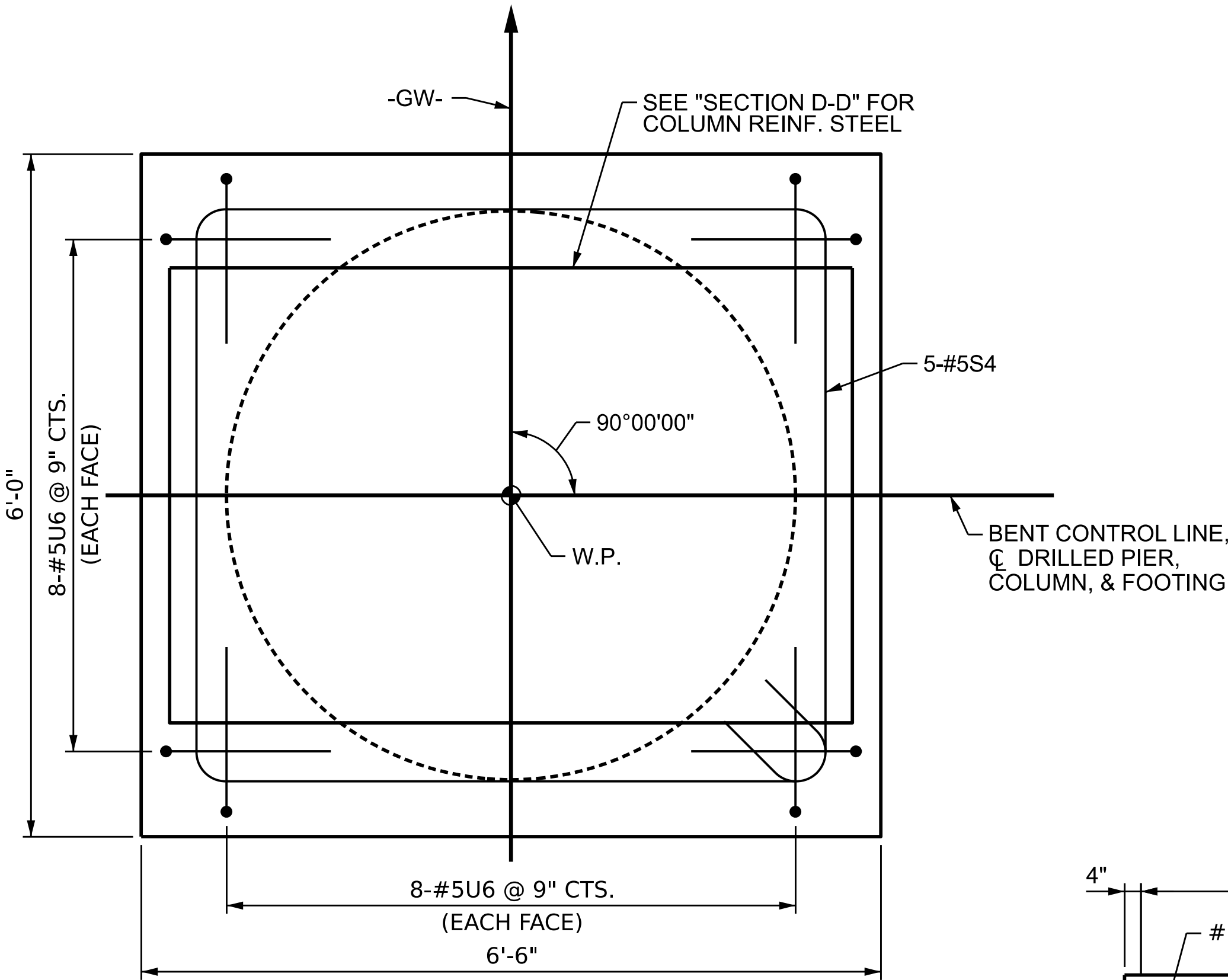
(▲) INVERT ALTERNATE SETS OF STIRRUPS

BENT ELEVATION TABLE							
	EL. A	EL. B	EL. C	EL. D	EL. E	EL. F	EL. G
BENT 4	700.79	714.79	719.70	719.77	719.29	719.36	720.35
BENT 5	698.92	713.92	718.83	718.91	718.42	718.50	719.36

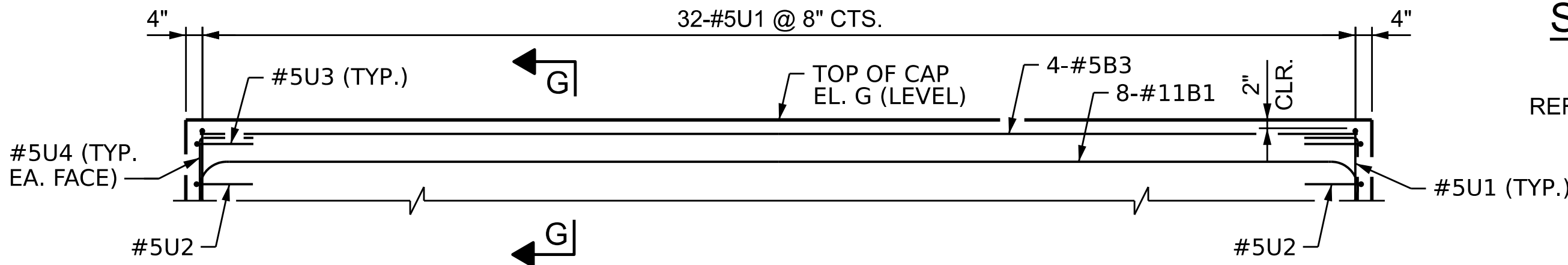


SECTION G-G

(BENT 4 SHOWN, BENT 5 SIMILAR BY SYMMETRY)

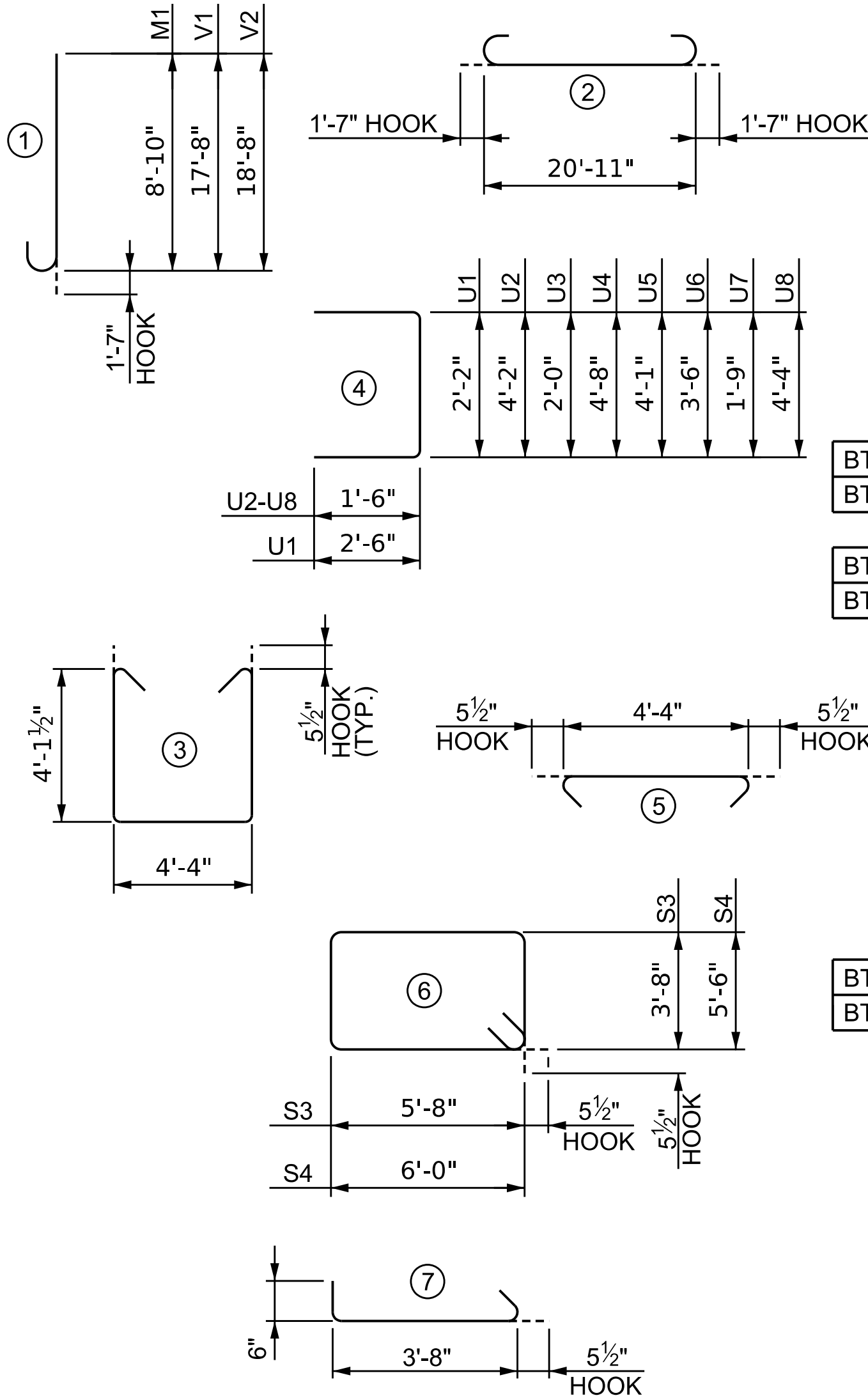


PLAN OF FOOTING

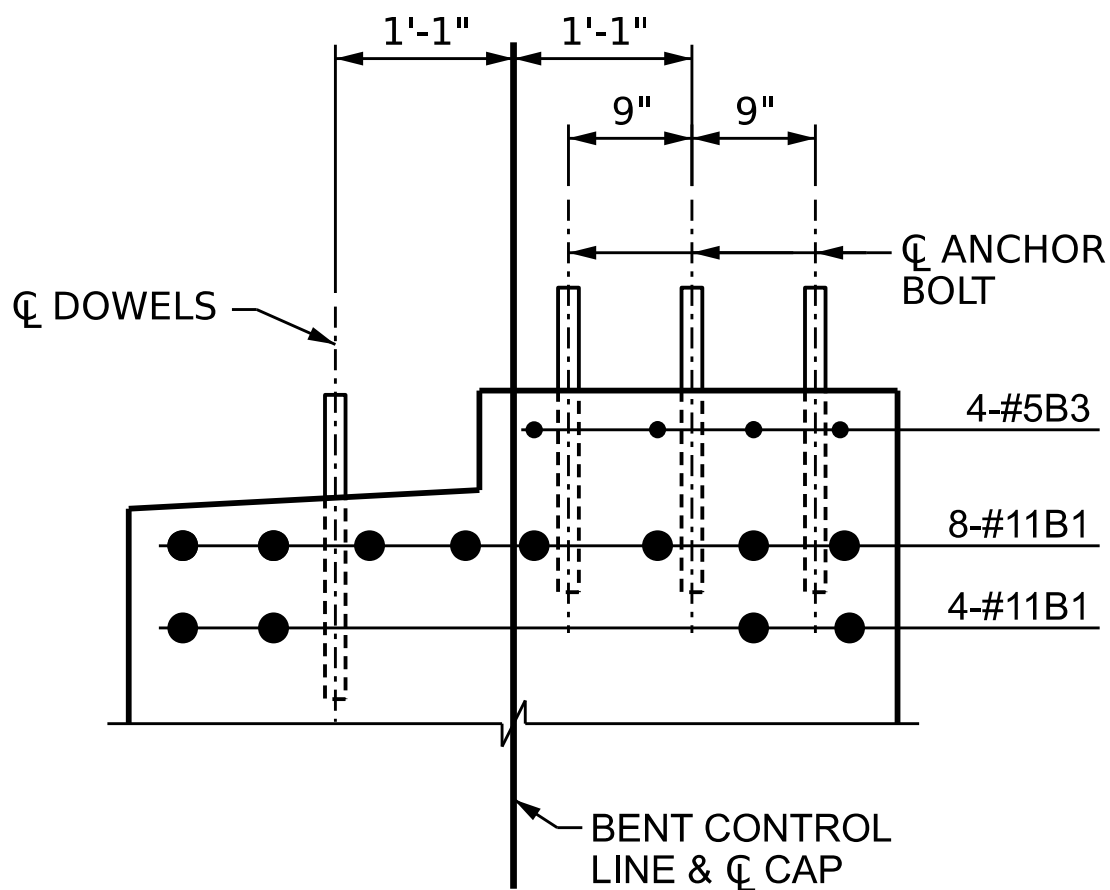


PARTIAL ELEVATION

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT



SECTION C-C

"S" AND U1 BARS NOT SHOWN FOR CLARITY REFER TO SECTION B-B FOR "B" BAR SPACING



BILL OF MATERIAL

OK	BENTS 4 & 5					
	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
	B1	12	#11	2	24'-1"	1,536
	B2	6	#7	STR	20'-11"	257
	B3	16	#5	STR	20'-11"	350
	B4	6	#5	STR	4'-4"	28
	B5	4	#5	STR	11'-0"	46
	D1	12	#8	STR	2'-3"	73
	M1	24	#11	1	10'-5"	1,329
	S1	32	#5	3	13'-6"	451
	S2	32	#5	5	5'-3"	176
BT. 4	S3	18	#5	6	19'-7"	368
BT. 5	S3	19	#5	6	19'-7"	389
	S4	5	#5	6	23'-11"	125
BT. 4	S5	36	#5	7	4'-8"	175
BT. 5	S5	38	#5	7	4'-8"	185
1/2" OK						
	U1	32	#5	4	7'-2"	240
	U2	9	#5	4	7'-2"	67
	U3	2	#5	4	5'-0"	11
	U4	6	#5	4	7'-8"	48
	U5	2	#5	4	6'-11"	14
	U6	32	#5	4	6'-6"	217
	U7	17	#5	4	4'-9"	85
	U8	2	#5	4	7'-4"	15
BT. 4	V1	24	#11	1	18'-6"	2,359
BT. 5	V2	24	#11	1	19'-6"	2,487
	REINFORCING STEEL - BT. 4					LBS. 7,985
	REINFORCING STEEL - BT. 5					LBS. 8,144
	CLASS "A" CONCRETE - BT. 4					
	POUR #2 (TRANS. FOOTING)					CU. YDS. 5.8
	POUR #3 (COLUMN)					CU. YDS. 12.4
	POUR #4 (CAP)					CU. YDS. 19.1
	TOTAL CONCRETE					CU. YDS. 37.3
	CLASS "A" CONCRETE - BT. 5					
	POUR #2 (TRANS. FOOTING)					CU. YDS. 5.8
	POUR #3 (COLUMN)					CU. YDS. 13.3
	POUR #4 (CAP)					CU. YDS. 18.9
	TOTAL CONCRETE					CU. YDS. 38.0

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

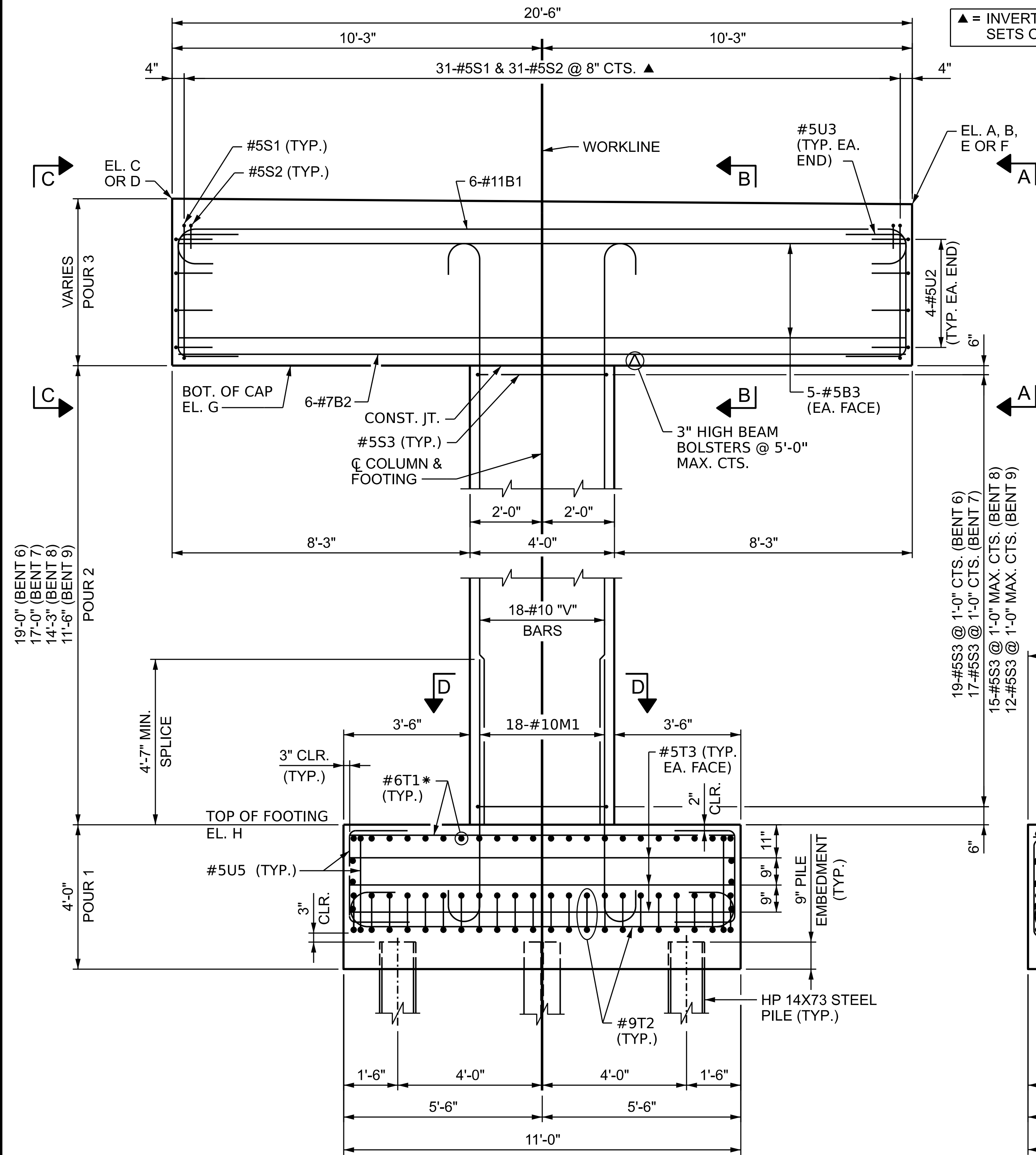
SUBSTRUCTURE
BENTS 4 & 5
SECTIONS AND DETAILS

REVISIONS						SHEET NO. S47
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	61

DES BY: <u>R. BEAUCHAMP</u>	DATE: <u>03/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>03/26</u>
DES CHK: <u>G. MYERS</u>	DATE: <u>03/26</u>	CHK BY: <u>G. MYERS</u>	DATE: <u>04/26</u>

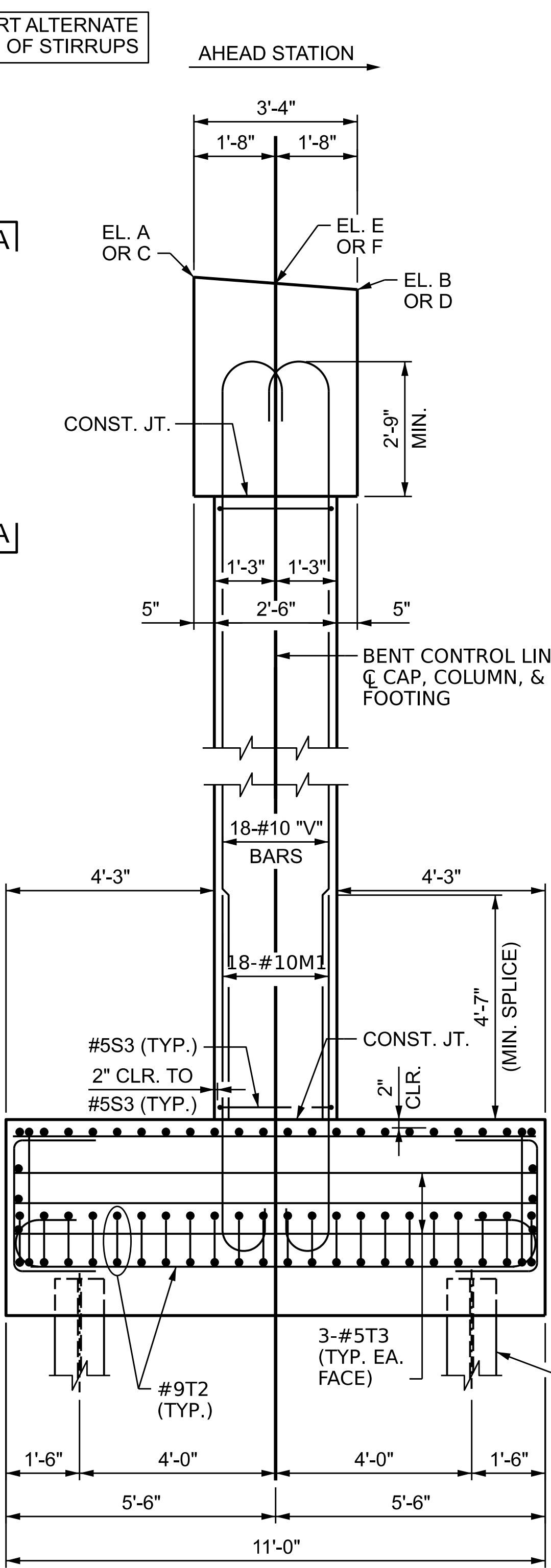
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ELEVATION

* #6T1 BARS IN FOOTING MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR #10M1 COLUMN BARS.

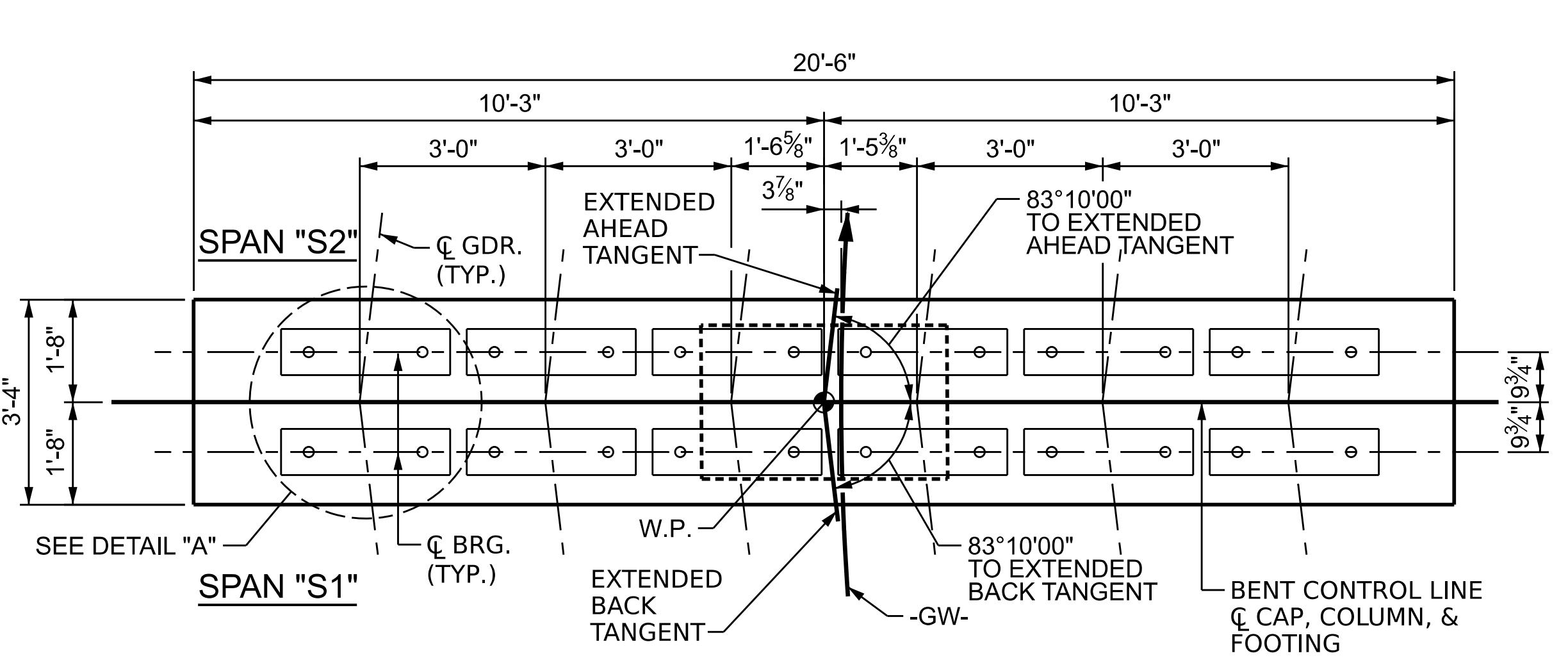


END VIEW

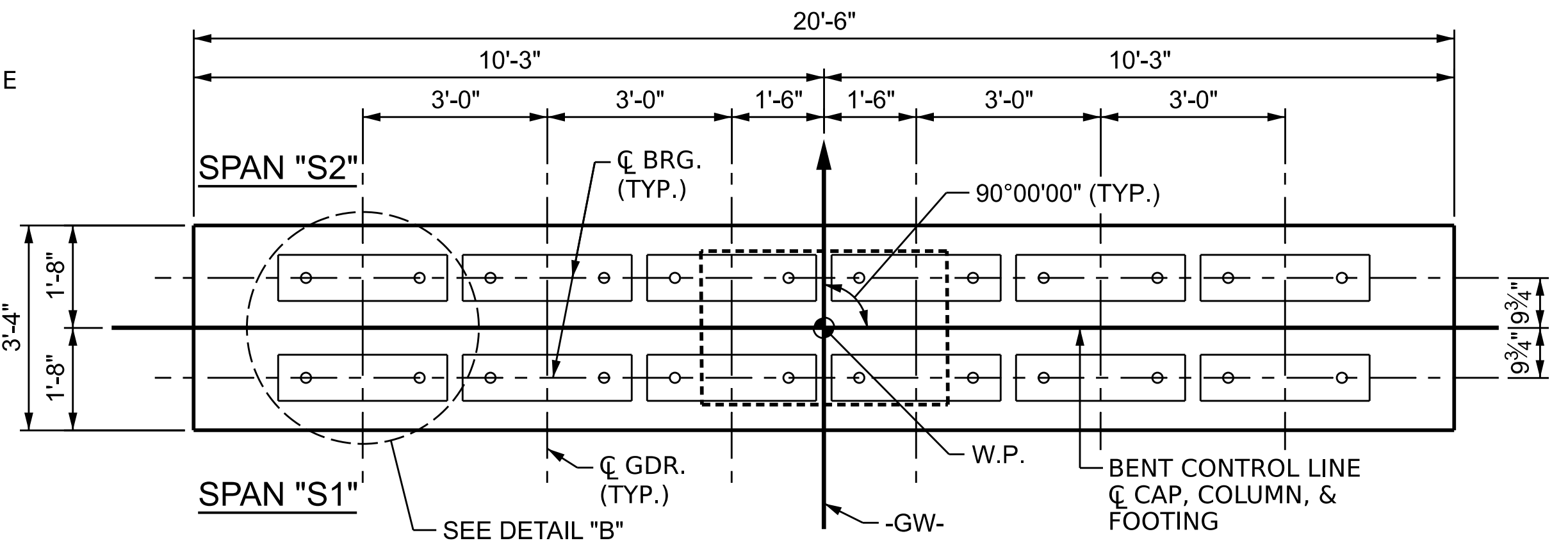
FOR ELEVATION E & F, SEE PARTIAL SECTION A-A ON SHEET 2 OF 3.

BENT ELEVATION TABLE								
BENT NO.	EL. A	EL. B	EL. C	EL. D	EL. E	EL. F	EL. G	EL. H
6	716.25	716.12	716.58	716.45	-	-	712.12	693.12
7	713.95	713.66	714.10	713.98	713.89	713.73	709.66	692.66
8	710.89	710.77	711.13	711.01	-	-	706.77	692.52
9	708.01	707.89	708.25	708.13	-	-	703.89	692.39

ELEVATIONS E AND F ARE OMITTED FOR BENTS WITHOUT A STEPPED CAP AT THE CENTERLINE. WHERE THE CAP IS NOT STEPPED, ONLY THE ELEVATIONS AT CAP CORNERS ARE PROVIDED.



PLAN OF CAP (BENT 6 & 7)



PLAN OF CAP (BENT 8 & 9)

BENT IDENTIFICATION TABLE			
BENT NO.	BENT W.P. NO.	SPAN "S1"	SPAN "S2"
6	7	F	G
7	8	G	H
8	9	H	I
9	10	I	J

NOTES

FOR VIEW A-A & C-C AND SECTIONS B-B & D-D, SEE SHEET 2 OF 3 & SHEET 3 OF 3.

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWEL BARS.

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

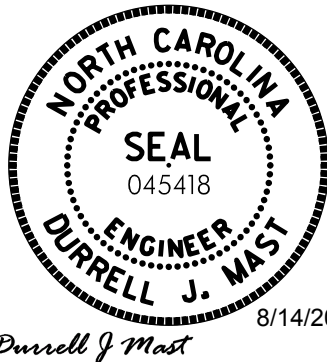
FOR PILE SPLICE DETAILS, SEE "SUBSTRUCTURE END BENT 1 SECTION AND DETAILS" SHEET.

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 1 OF 3



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	S48
2	--	--	4	--	--	
TOTAL SHEETS						61

DES BY: G. MYERS	DATE: 04/26	DWG BY: D. CHAPMAN	DATE: 03/26
DES CHK: R. BEAUCHAMP	DATE: 04/26	CHK BY: R. BEAUCHAMP	DATE: 04/26

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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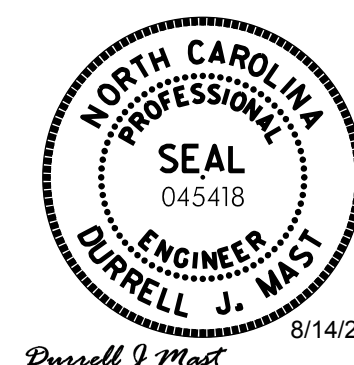
(#5S1 AND #5S2 NOT SHOWN FOR CLARITY)

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

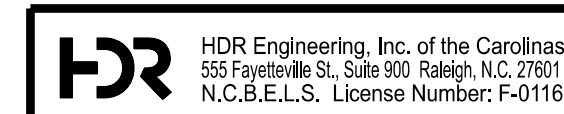
SUBSTRUCTURE
BENTS 6-9
SECTIONS AND DETAILS

REVISIONS						SHEET NO. S50
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

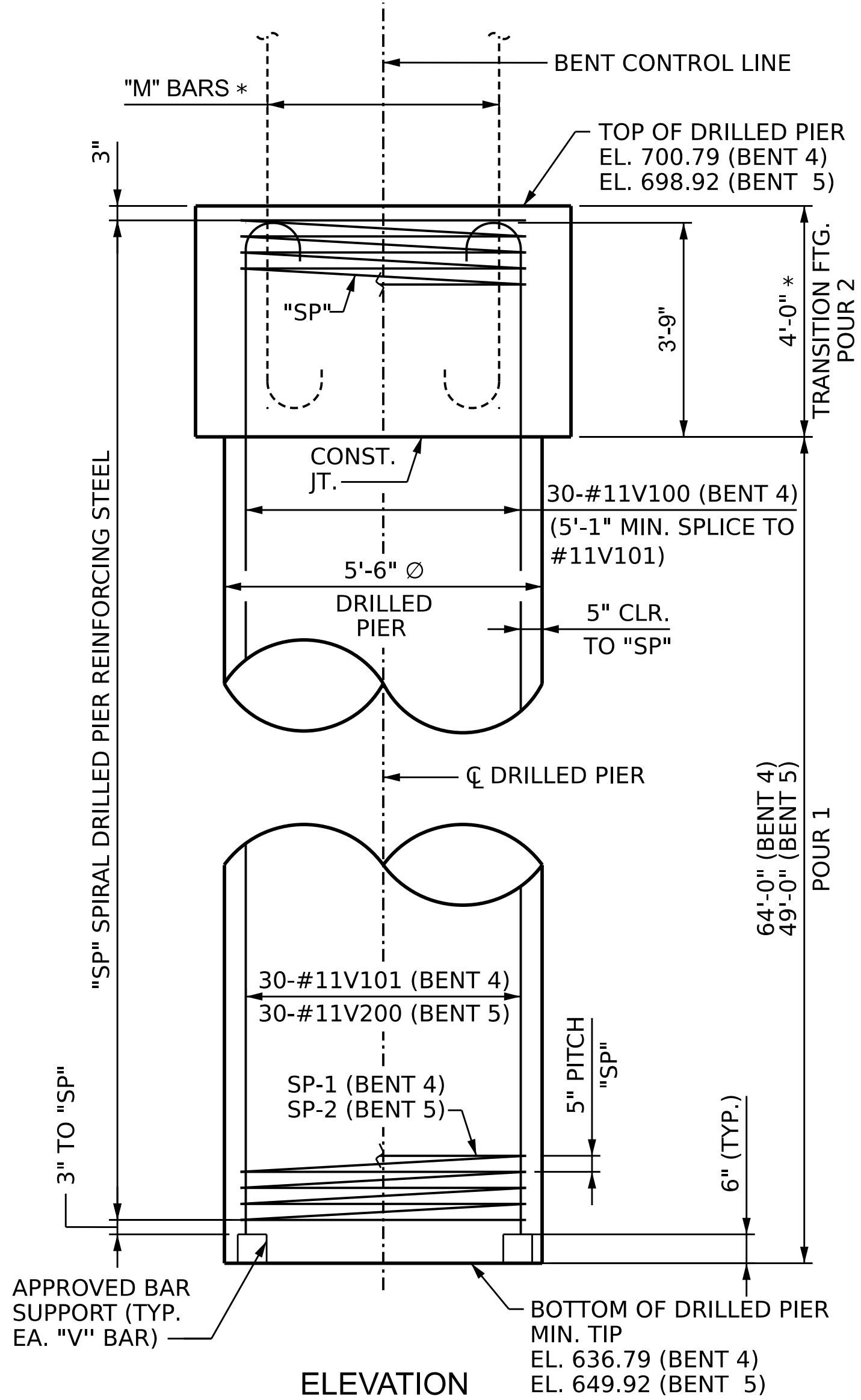


Dunell I Mast

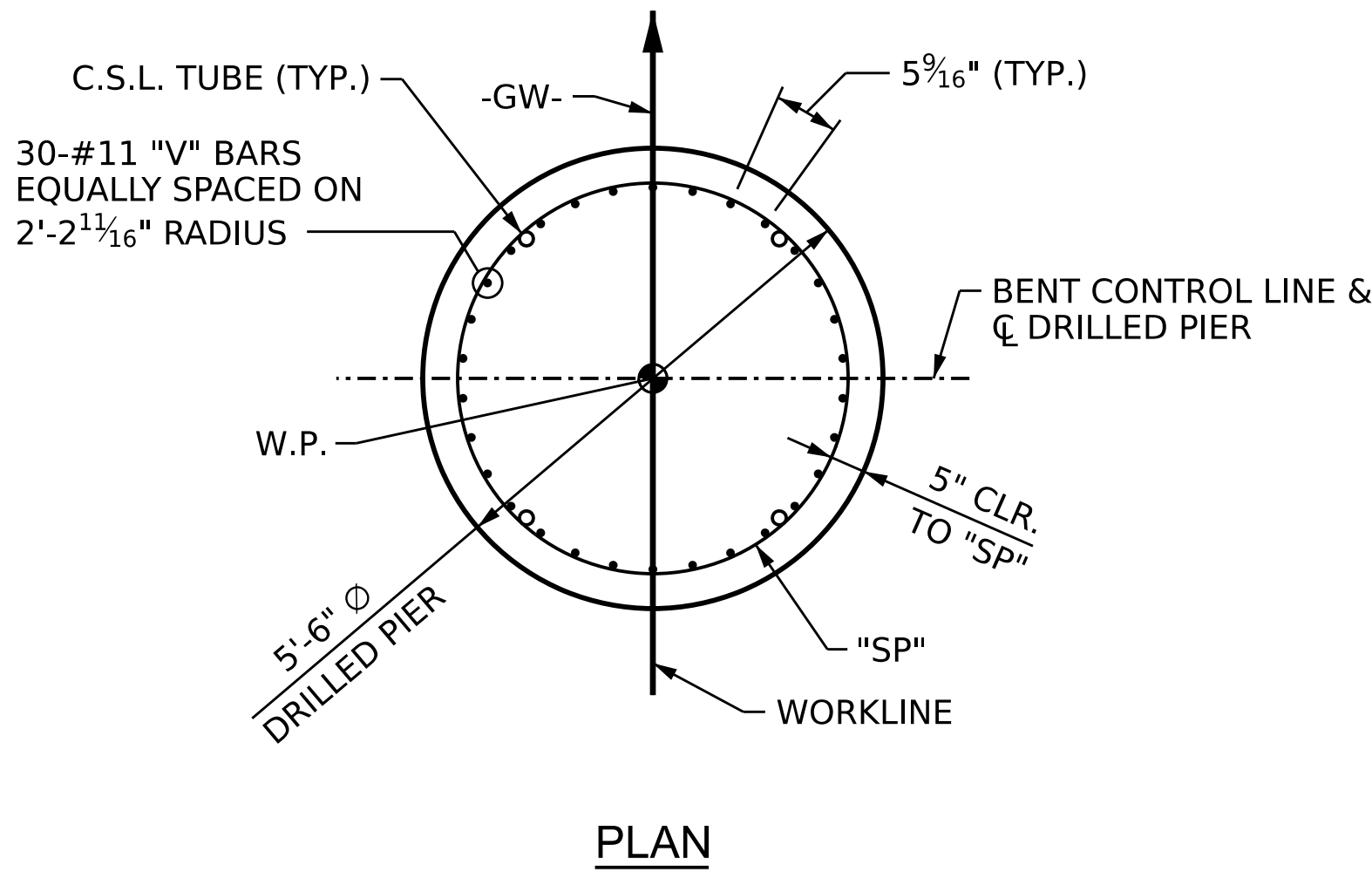
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



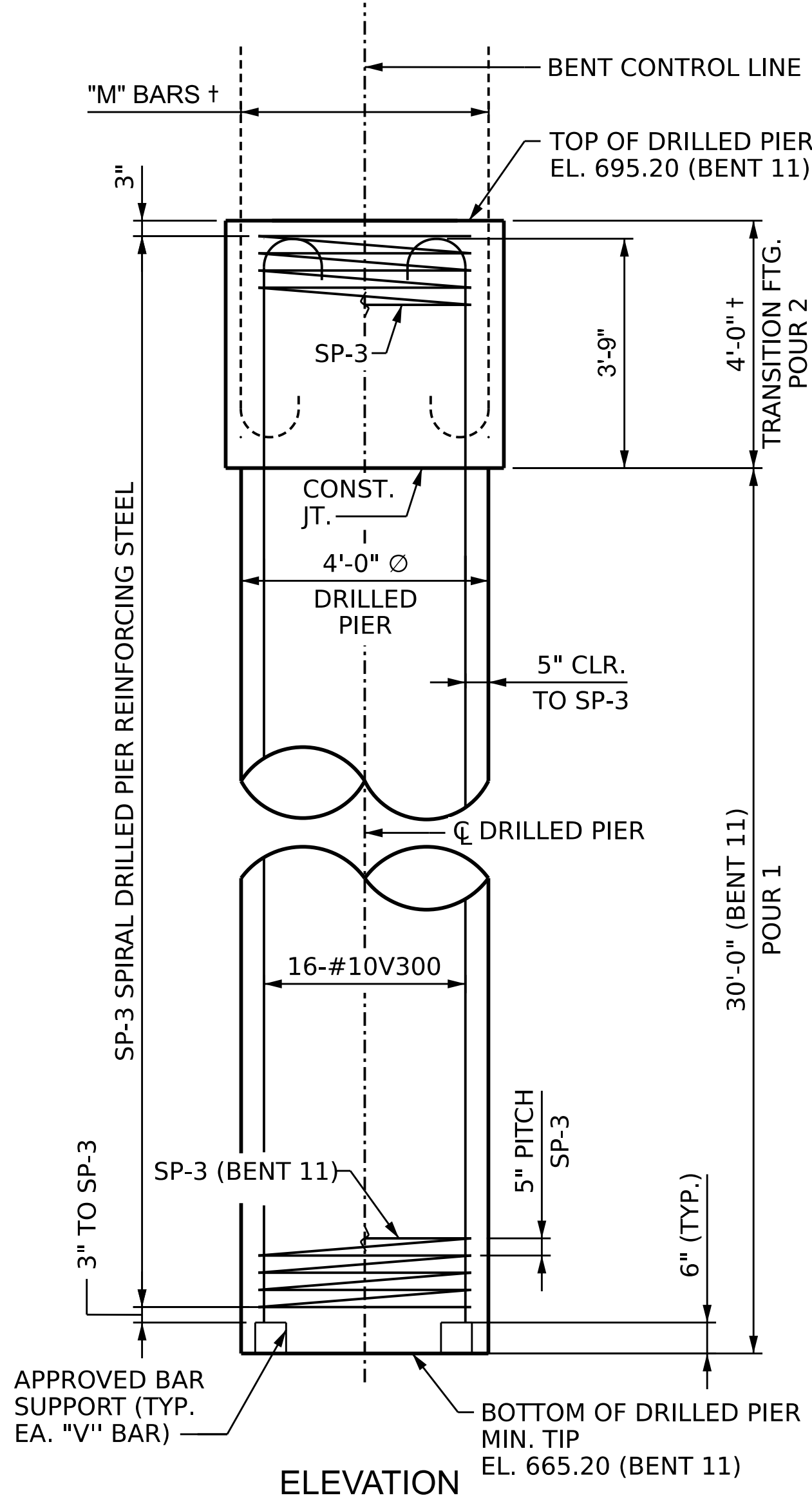
REVISIONS						SHEET NO. S51
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1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



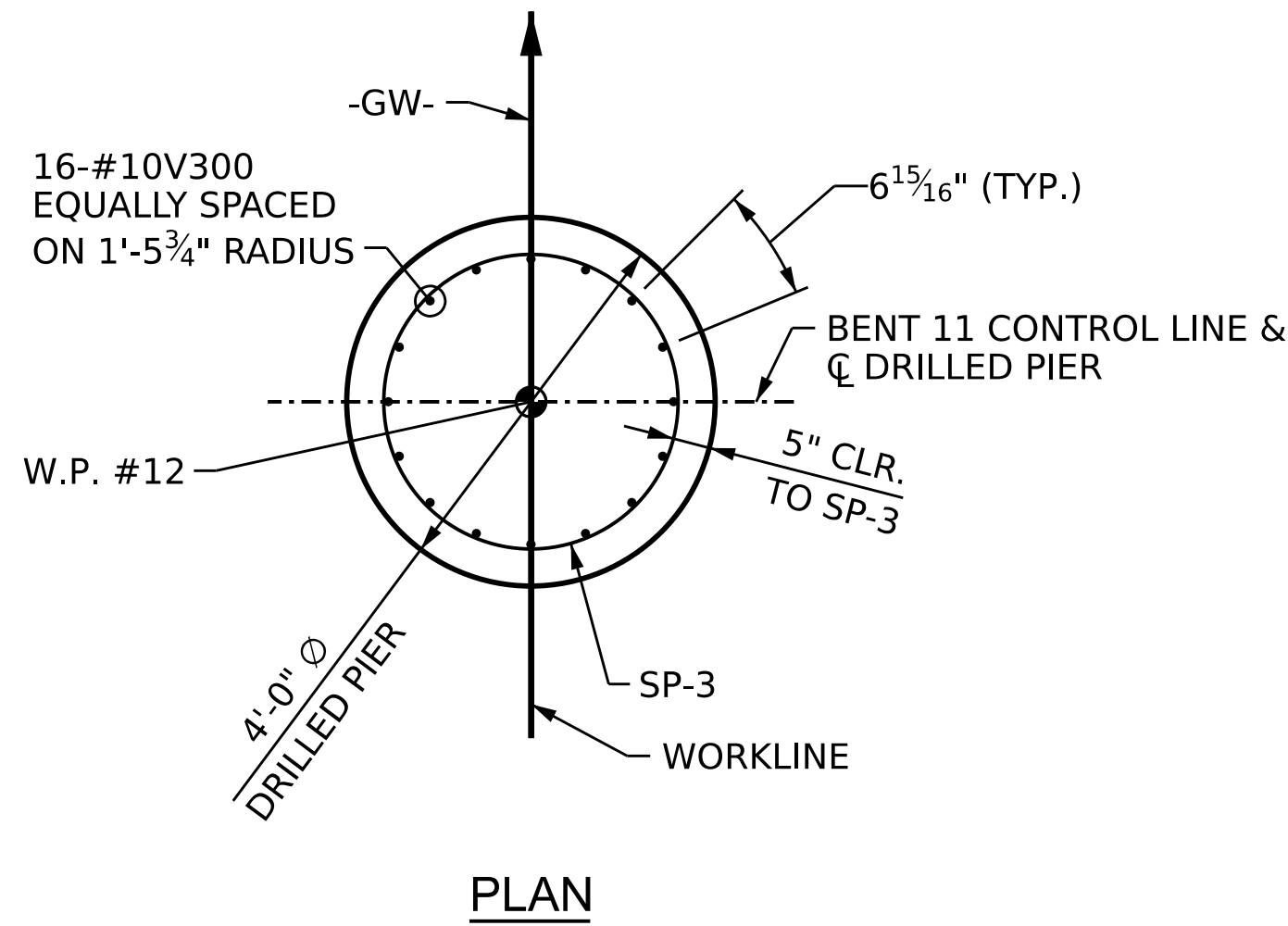
* FOR DIMENSIONS AND DETAILS OF REINFORCEMENT FOR COLUMN AND TRANSITION FOOTING, SEE "SUBSTRUCTURE BENTS 4 & 5" SHEETS.



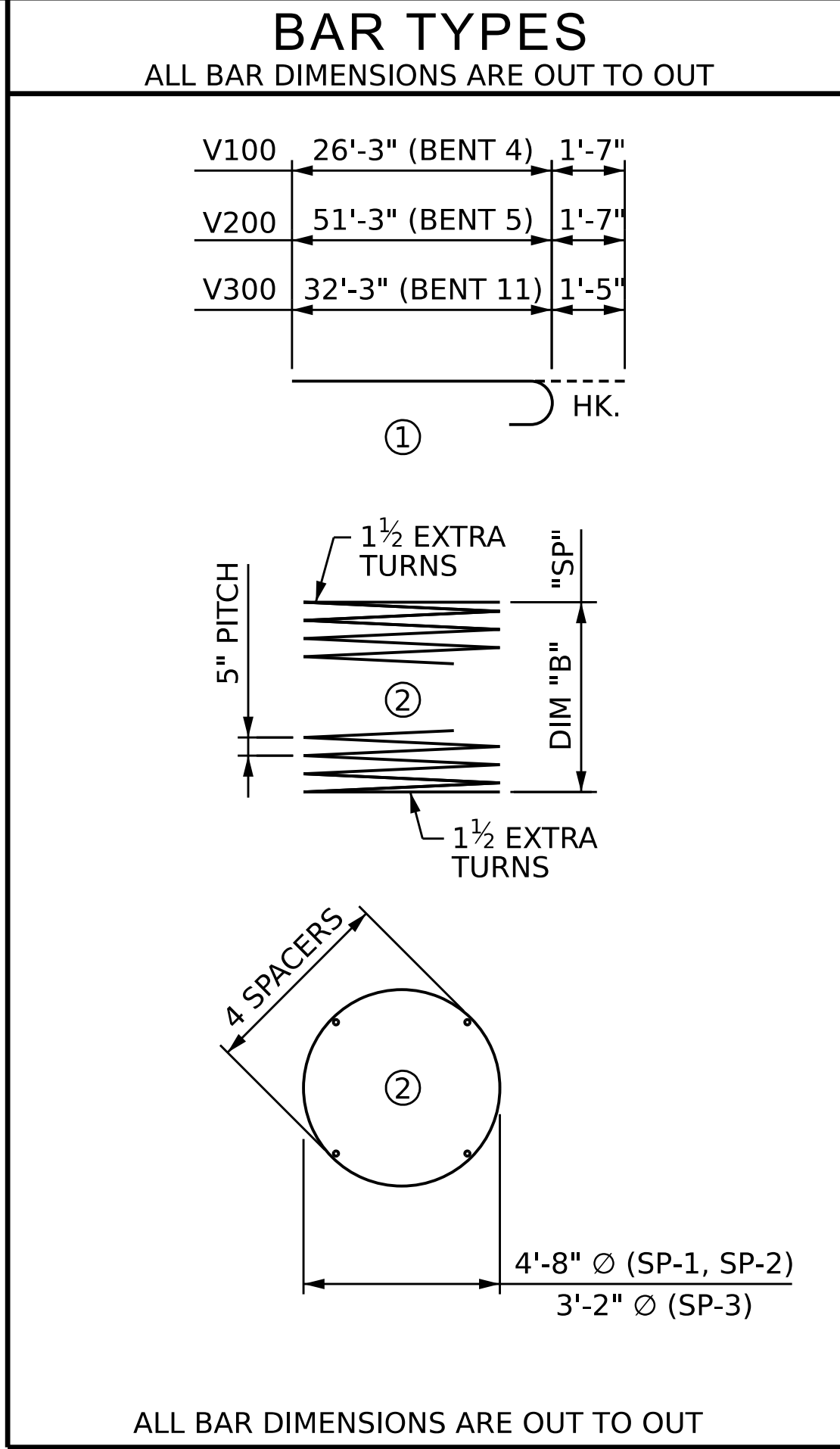
5'-6" DRILLED PIER DETAILS
(BENT 4 & 5)



† FOR DIMENSIONS AND DETAILS OF REINFORCEMENT FOR COLUMN AND TRANSITION FOOTING, SEE "SUBSTRUCTURE BENTS 11" SHEETS.



4'-0" DRILLED PIER DETAILS
(BENT 11)



** - THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

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

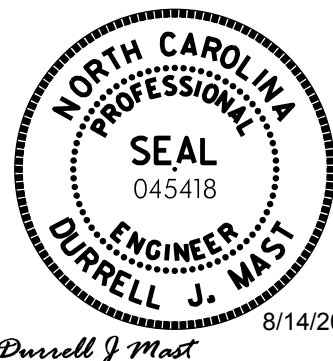
ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR ``REINFORCING STEEL" AND ``SPIRAL COLUMN REINFORCING STEEL".

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

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 FT. BELOW THE GROUND LINE.

BILL OF MATERIAL DRILLED PIERS						
BENT 4						
BAR	NO.	SIZE	TYPE	DIM "B"	LENGTH	WEIGHT
V100	30	#11	1	-	27'-10"	4,437
V101	30	#11	STR.	-	45'-1"	7,186
REINFORCING STEEL					LBS.	11,623
SP-1	1	**	2	63'-0"	2248'-0"	2,345
SPIRAL COLUMN REINFORCING STEEL					LBS.	2,345
DRILLED PIER CONCRETE						
POUR #1 - DRILLED PIERS					CU. YD.	56.3
BENT 5						
BAR	NO.	SIZE	TYPE	DIM "B"	LENGTH	WEIGHT
V200	30	#11	1	-	52'-10"	8,421
REINFORCING STEEL					LBS.	8,421
SP-2	1	**	2	48'-0"	1725'-11"	1,801
SPIRAL COLUMN REINFORCING STEEL					LBS.	1,801
DRILLED PIER CONCRETE						
POUR #1 - DRILLED PIER					CU. YD.	43.1
BENT 11						
BAR	NO.	SIZE	TYPE	DIM "B"	LENGTH	WEIGHT
V300	16	#10	1	-	33'-8"	2,318
REINFORCING STEEL					LBS.	2,318
SP-3	1	**	2	29'-0"	711'-1"	742
SPIRAL COLUMN REINFORCING STEEL					LBS.	742
DRILLED PIER CONCRETE						
POUR #1 - DRILLED PIERS					CU. YD.	13.5

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-



8/14/2026

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	61

DES BY: R. BEAUCHAMP	DATE: 03/26	DWG BY: D. CHAPMAN	DATE: 03/26
DES CHK: G. MYERS	DATE: 03/26	CHK BY: D. MAST	DATE: 03/26

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

NOTES

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

THE CONCRETE IN THE SHADED AREA OF THE WING AND LATERAL GUIDES SHALL BE POURED AFTER THE CONCRETE PARAPET IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE "SUBSTRUCTURE END
BENT 1 SECTIONS AND DETAILS" SHEET.

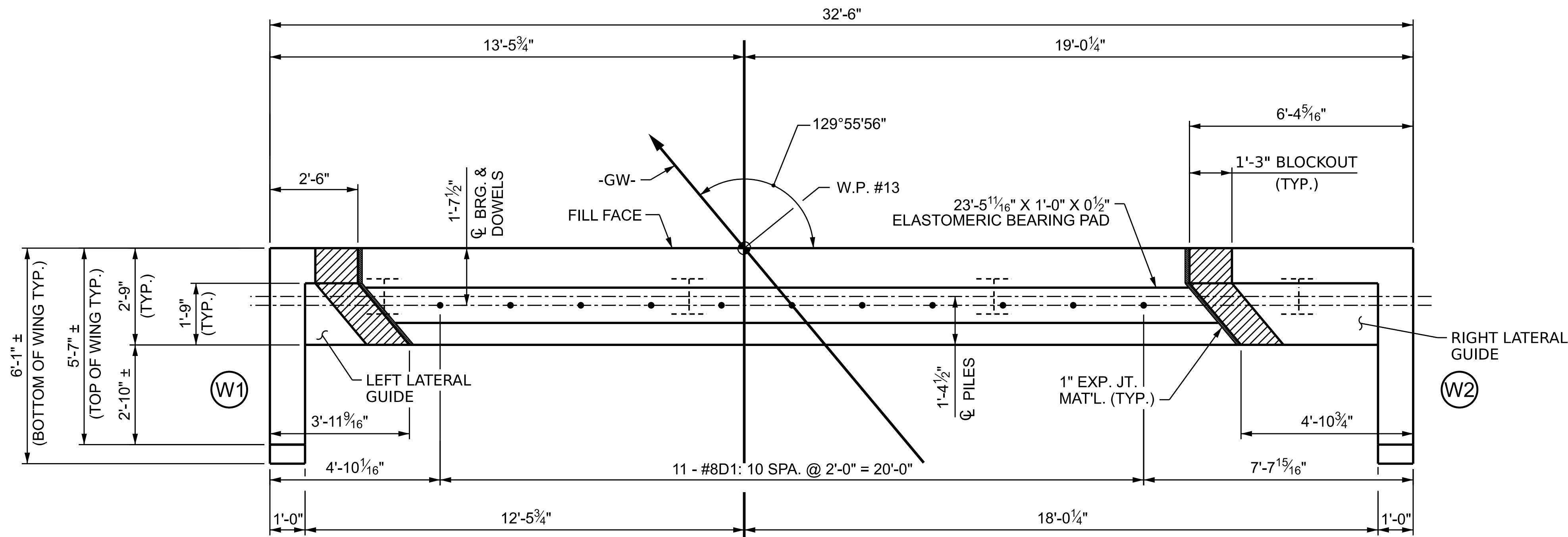
FOR WING DETAILS, SEE SHEET 2 OF 3.

FOR LATERAL GUIDE DETAILS, SHEET 3 OF 3.

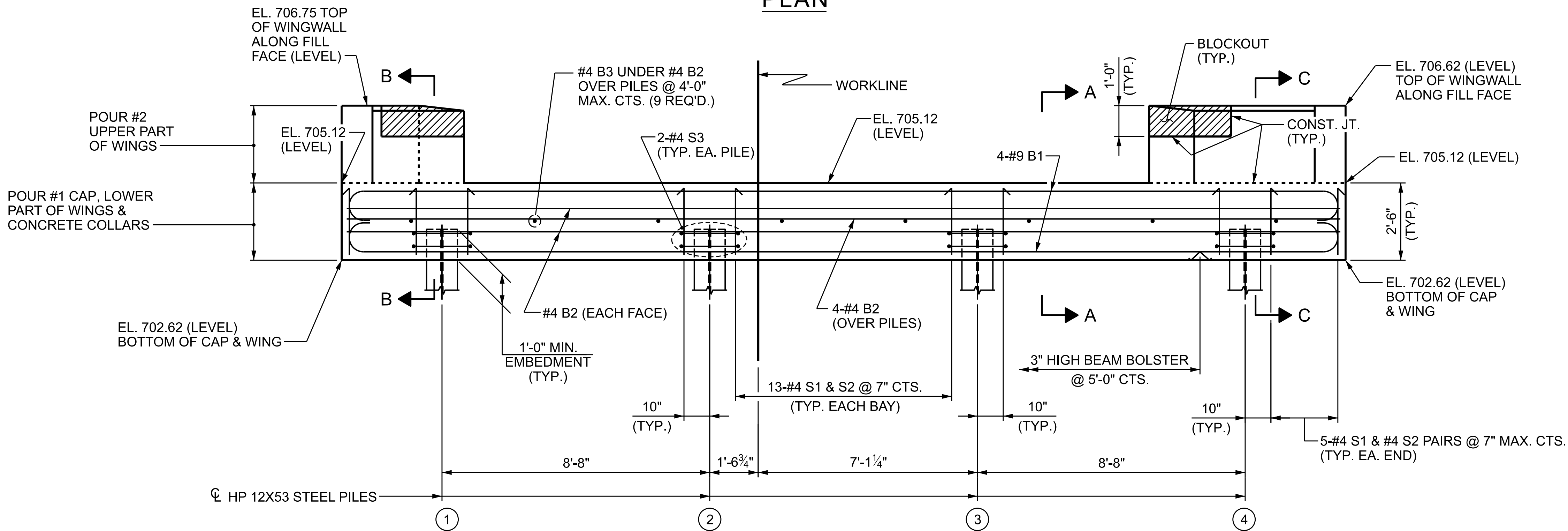
FOR CORROSION PROTECTION FOR STEEL PILES
DETAIL, SEE "SUBSTRUCTURE END BENT 1 SECTIONS
AND DETAILS" SHEET.

PILE DRIVING OPERATION SHALL NOT DAMAGE THE EXISTING RETAINING WALL AND CONTRACTOR SHALL REPAIR DAMAGE AT NO ADDITIONAL COST TO THE DEPARTMENT.

FOR TEMPORARY DRAINAGE DETAILS, SEE
"SUBSTRUCTURE END BENT 1 SECTION AND DETAILS"
SHEET.



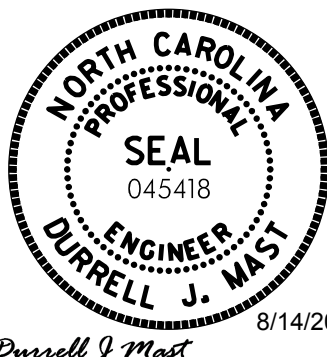
PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, B-B, AND C-C, SEE SHEET 3 OF 3.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL" ON SHEET "SUBSTRUCTURE END BENT 1 SECTIONS AND DETAILS".

DES BY: <u>G. MARTINEZ</u>	DATE : <u>03/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE : <u>03/26</u>
DES CHK: <u>D. MAST</u>	DATE : <u>03/26</u>	CHK BY: <u>D. MAST</u>	DATE : <u>03/26</u>



Durrell J Mast

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PROJECT NO. BL-0119
MECKLENBURG COUNTY
 STATION: 15+46.20 -GW-

SHEET 1 OF 3

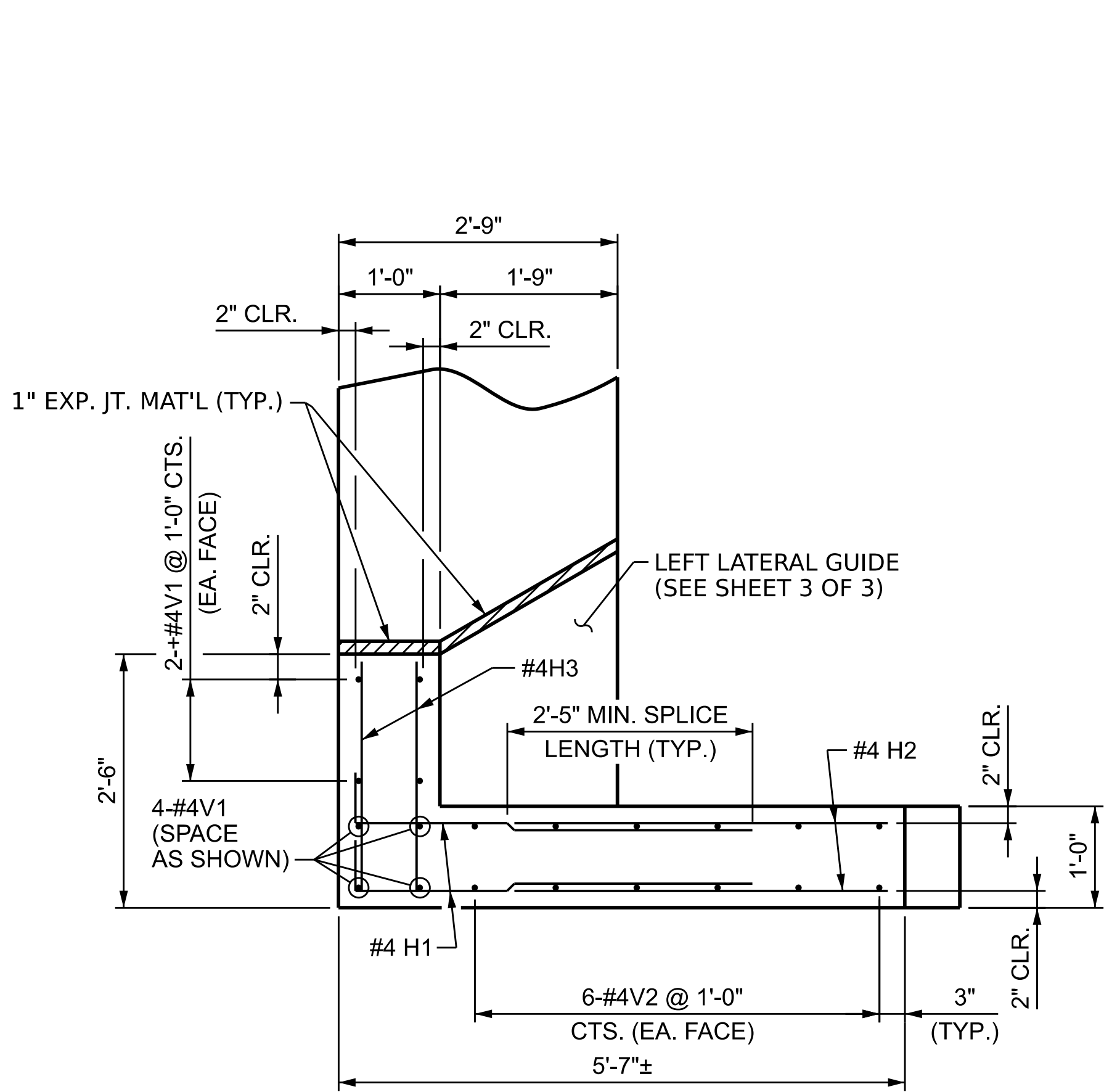
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 2
PLAN AND ELEVATION

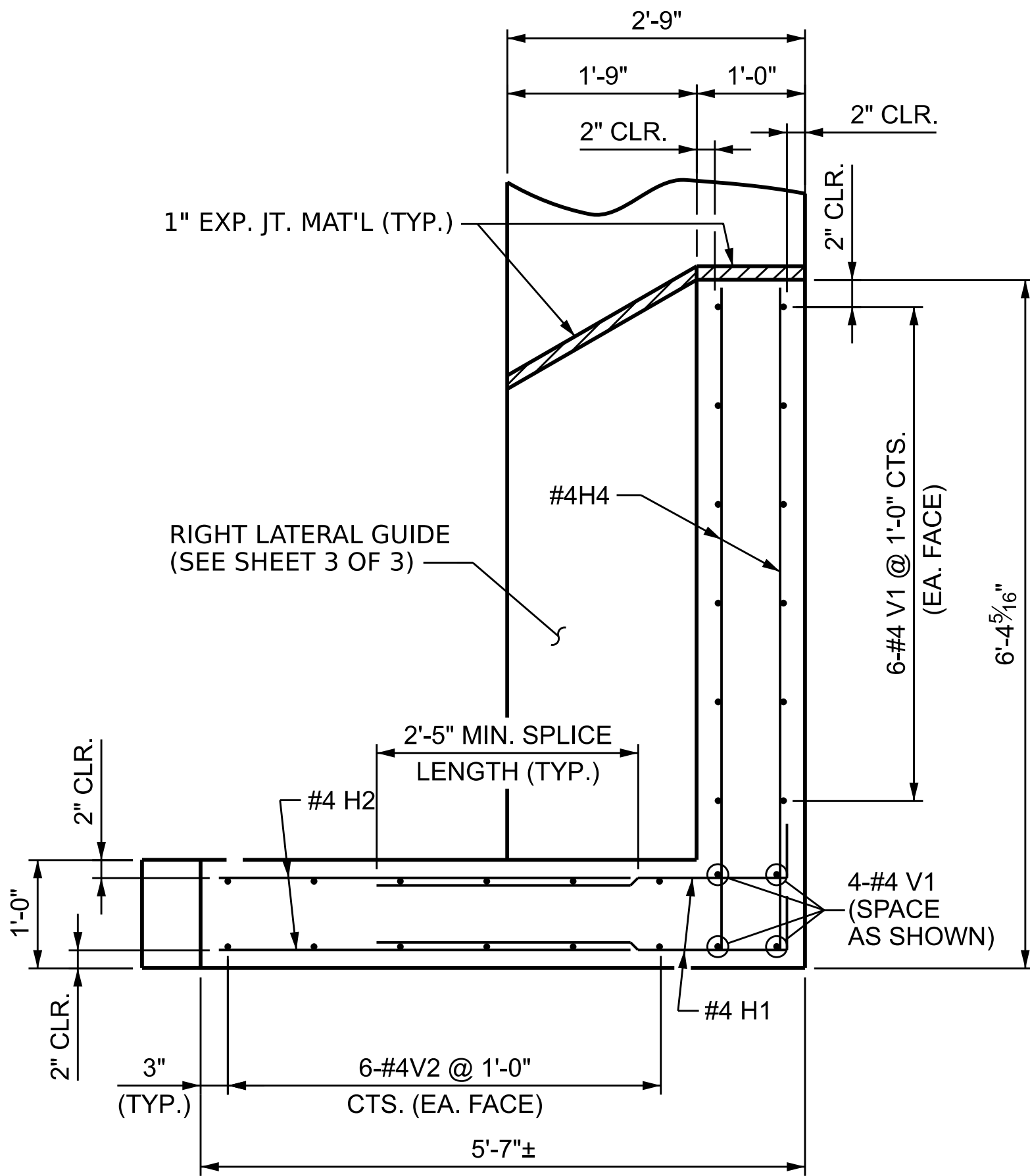
REVISIONS						SHEET N S54
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



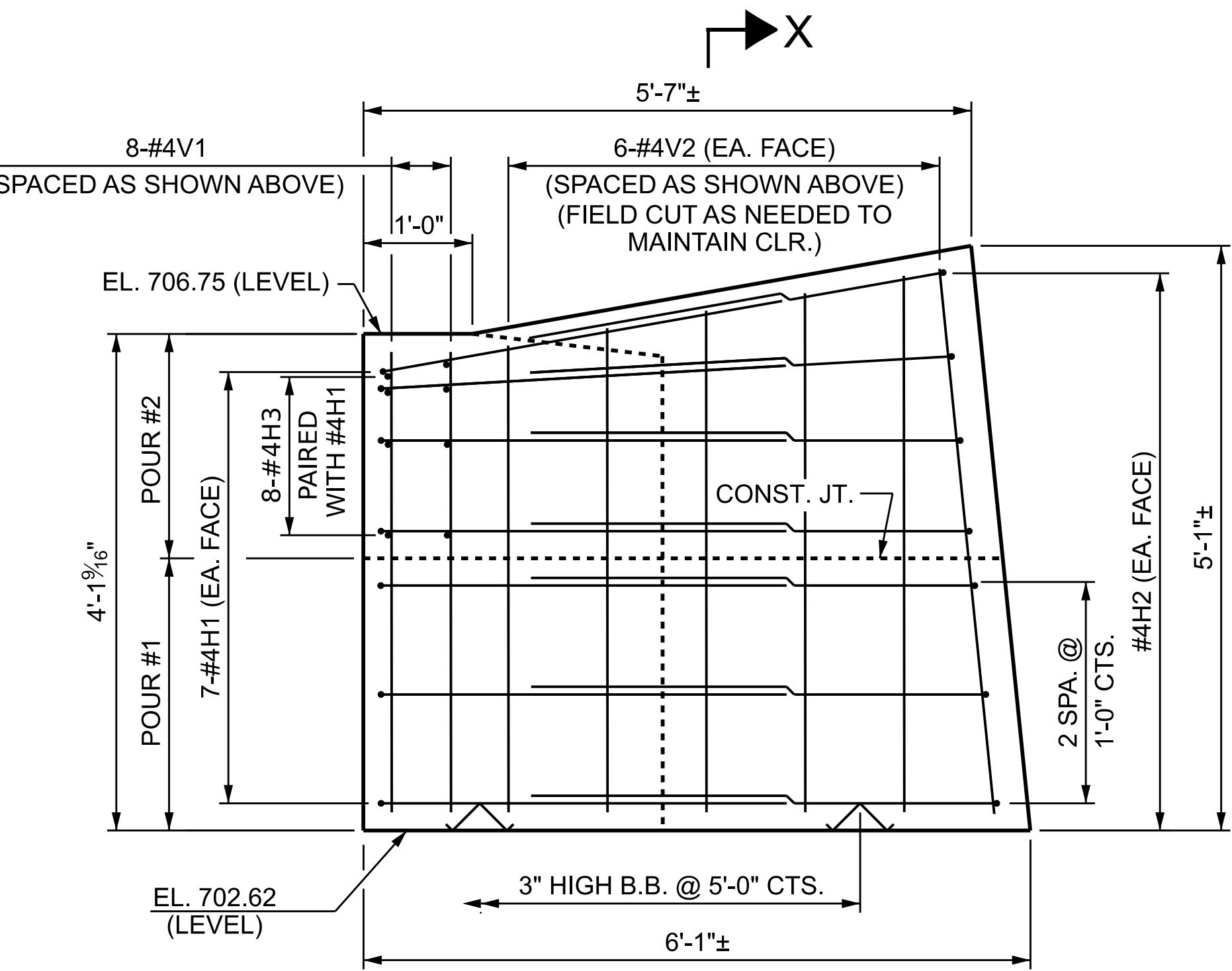
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116



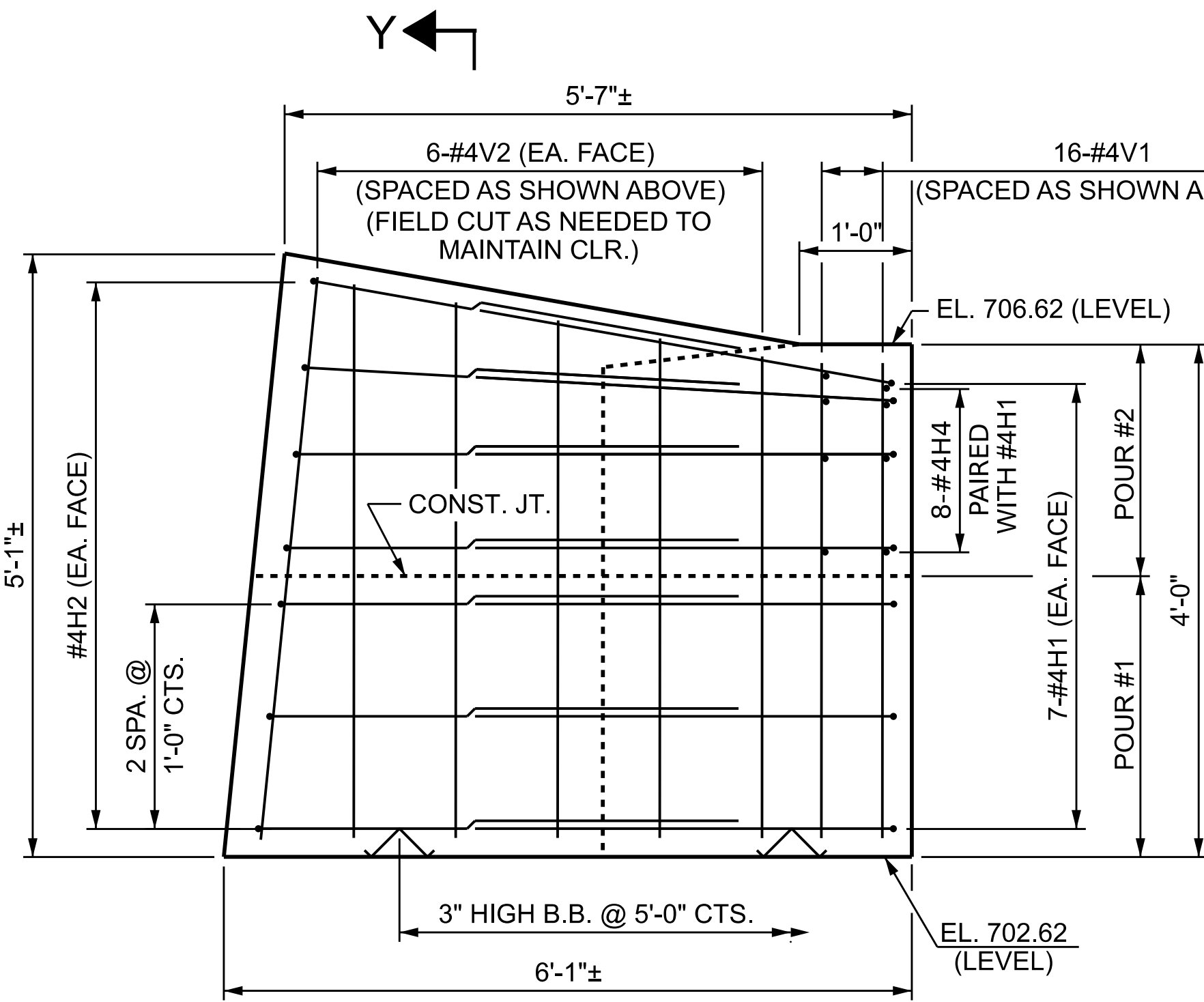
PLAN OF WING (W1)



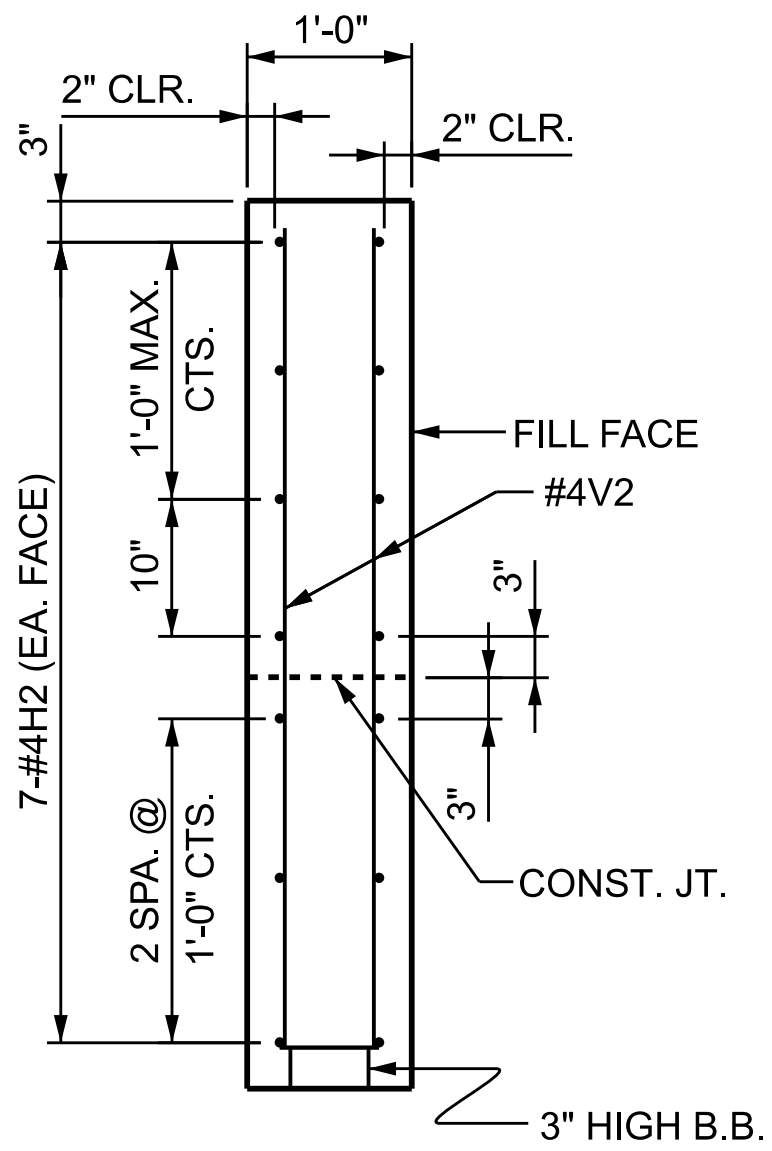
PLAN OF WING (W2)



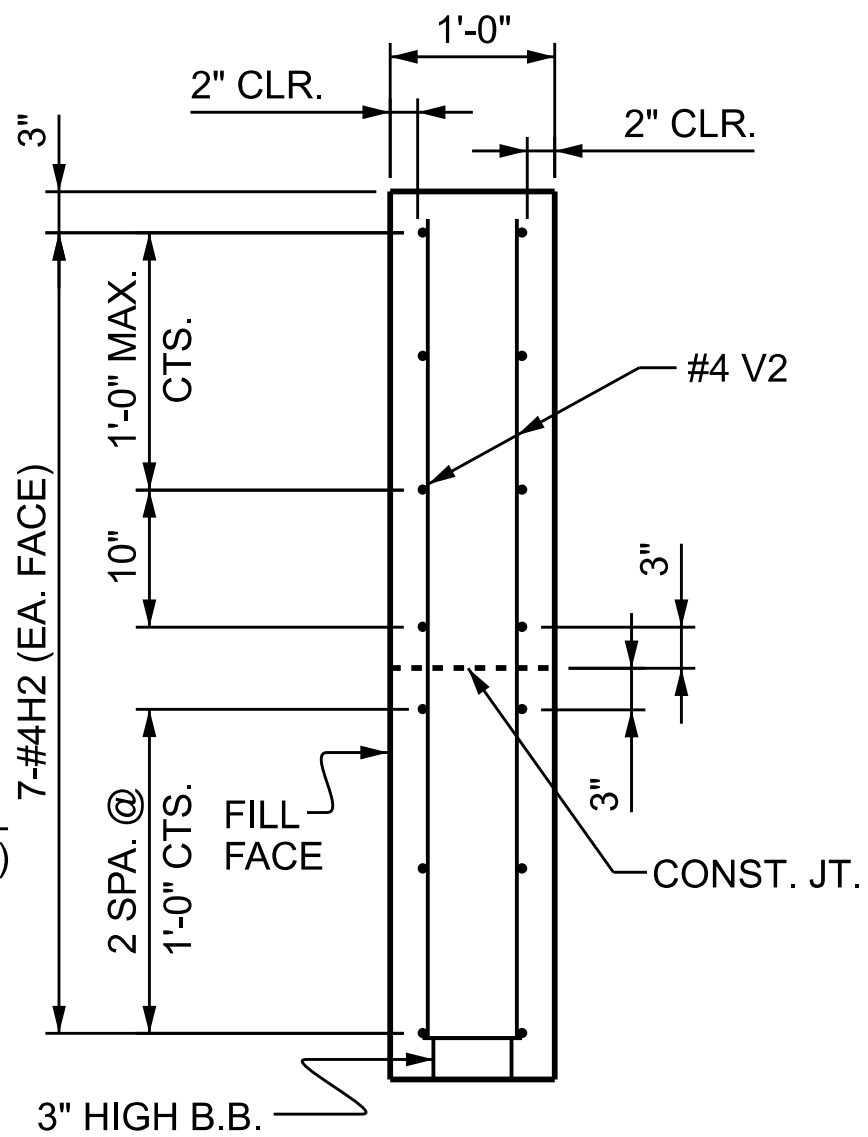
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

DES BY: G. MARTINEZ	DATE: 03/26	DWG BY: D. CHAPMAN	DATE: 03/26
DES CHK: D. MAST	DATE: 03/26	CHK BY: D. MAST	DATE: 03/26

WING DETAILS

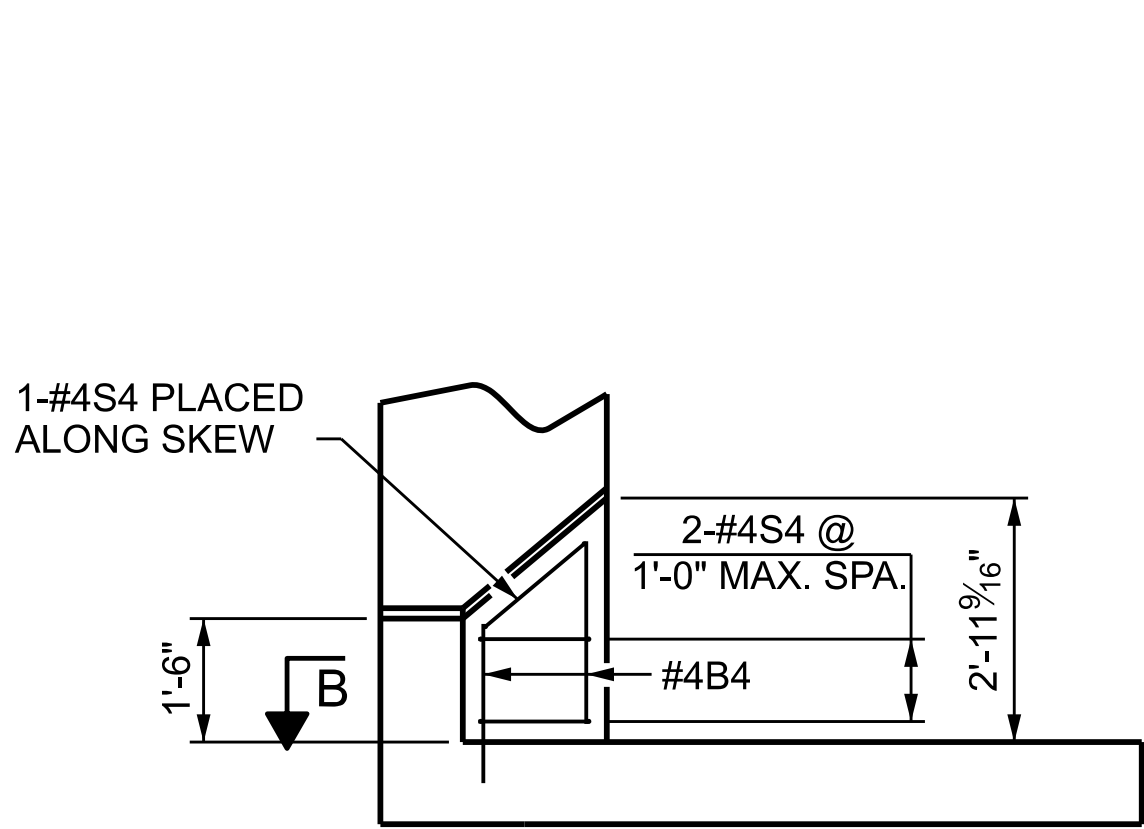
HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116



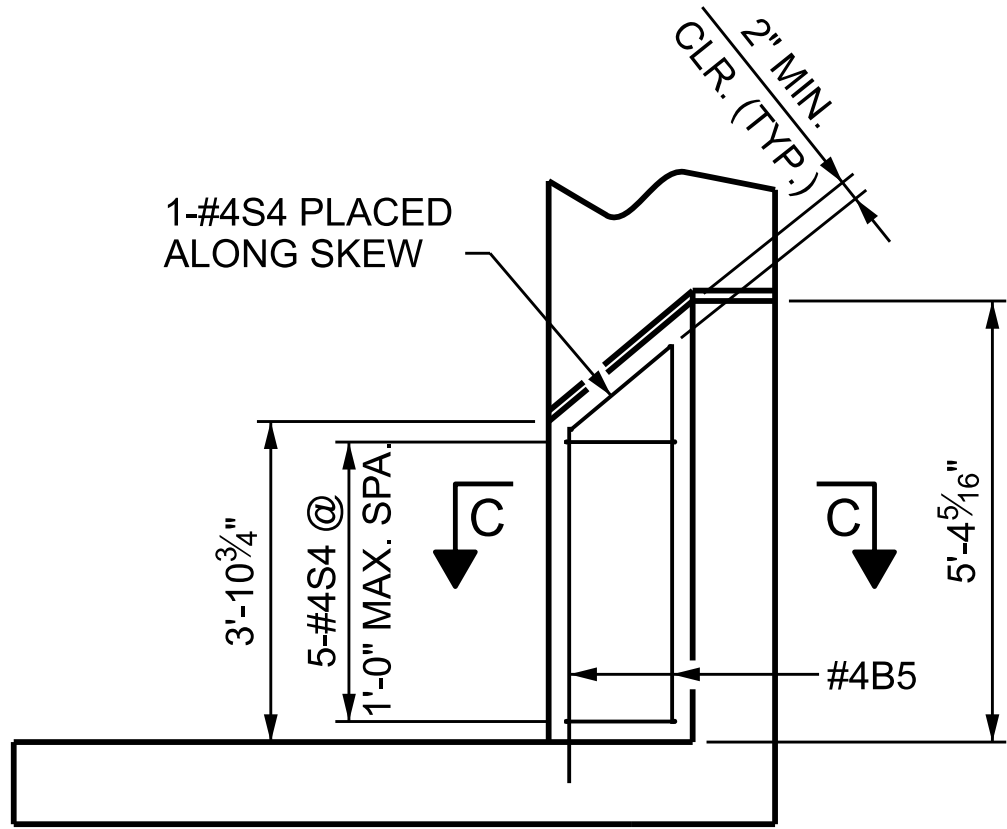
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UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-
SHEET 2 OF 3

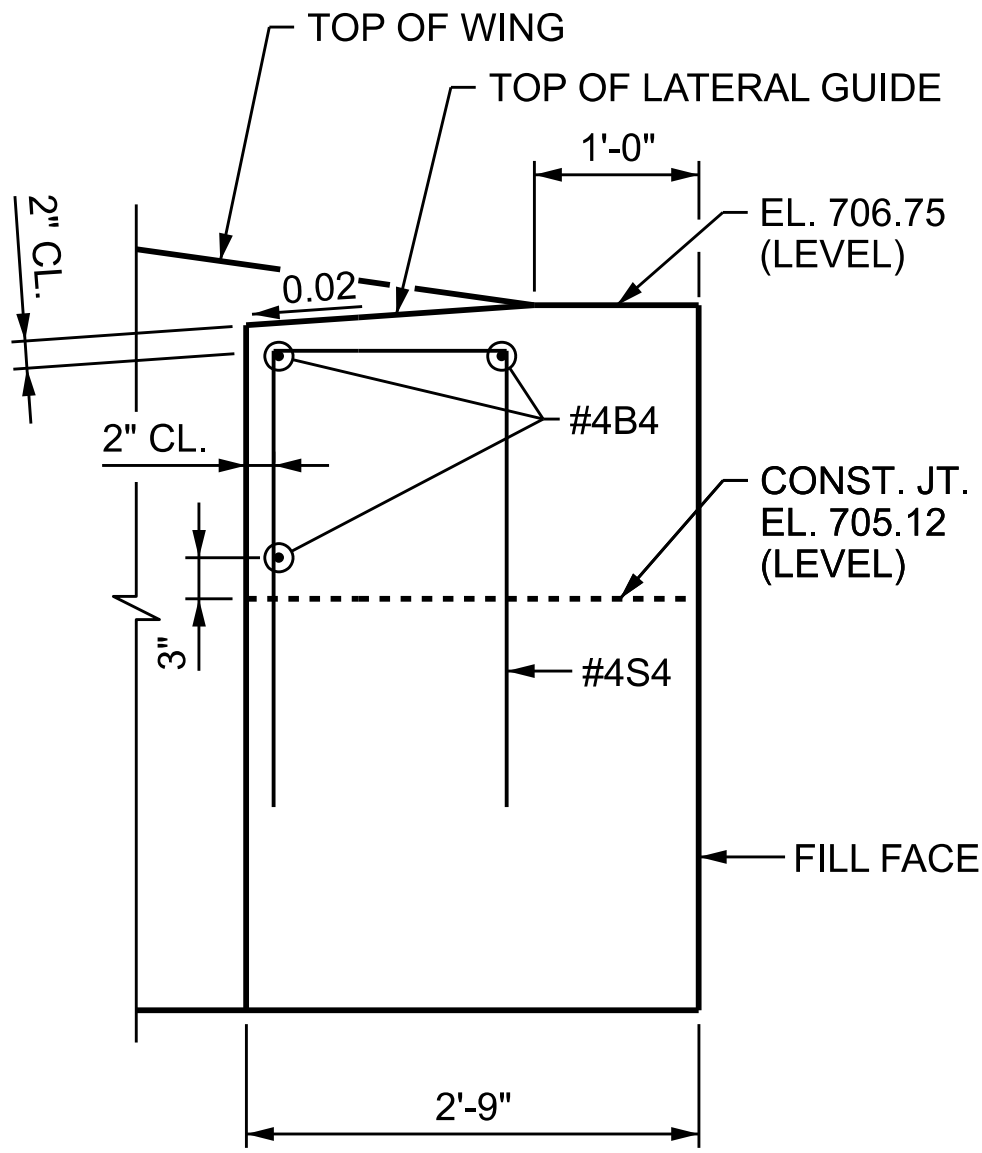
REVISIONS						SHEET NO. S55
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



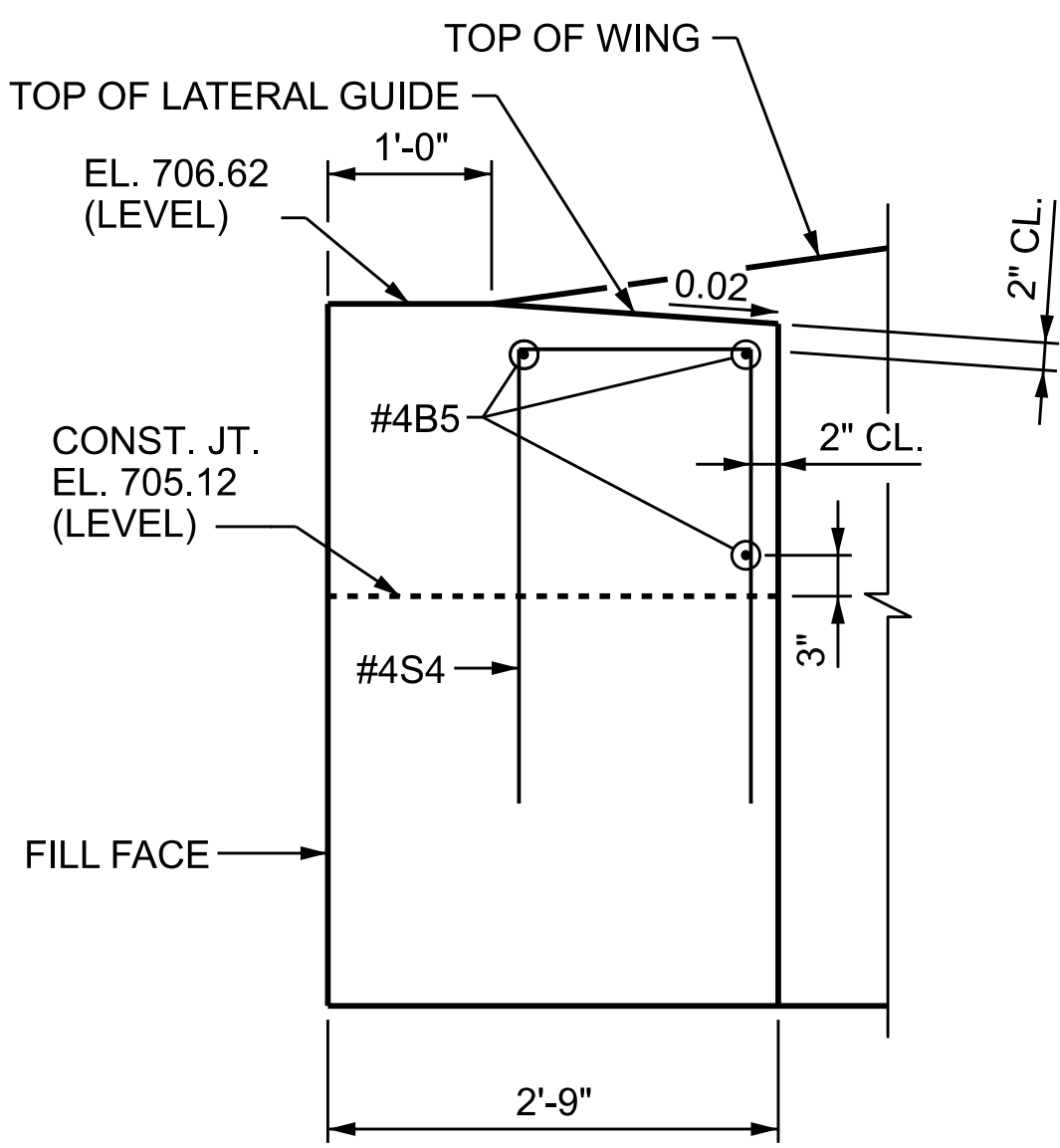
PLAN - LEFT LATERAL GUIDE
CAP AND WING REINFORCING NOT SHOWN FOR CLARITY



PLAN - RIGHT LATERAL GUIDE
CAP AND WING REINFORCING NOT SHOWN FOR CLARITY

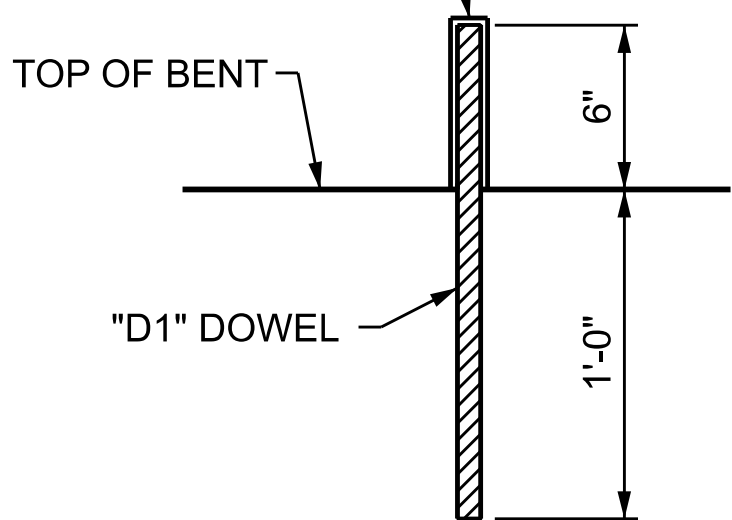


SECTION B-B
CAP REINFORCING AND WINGS NOT SHOWN FOR CLARITY

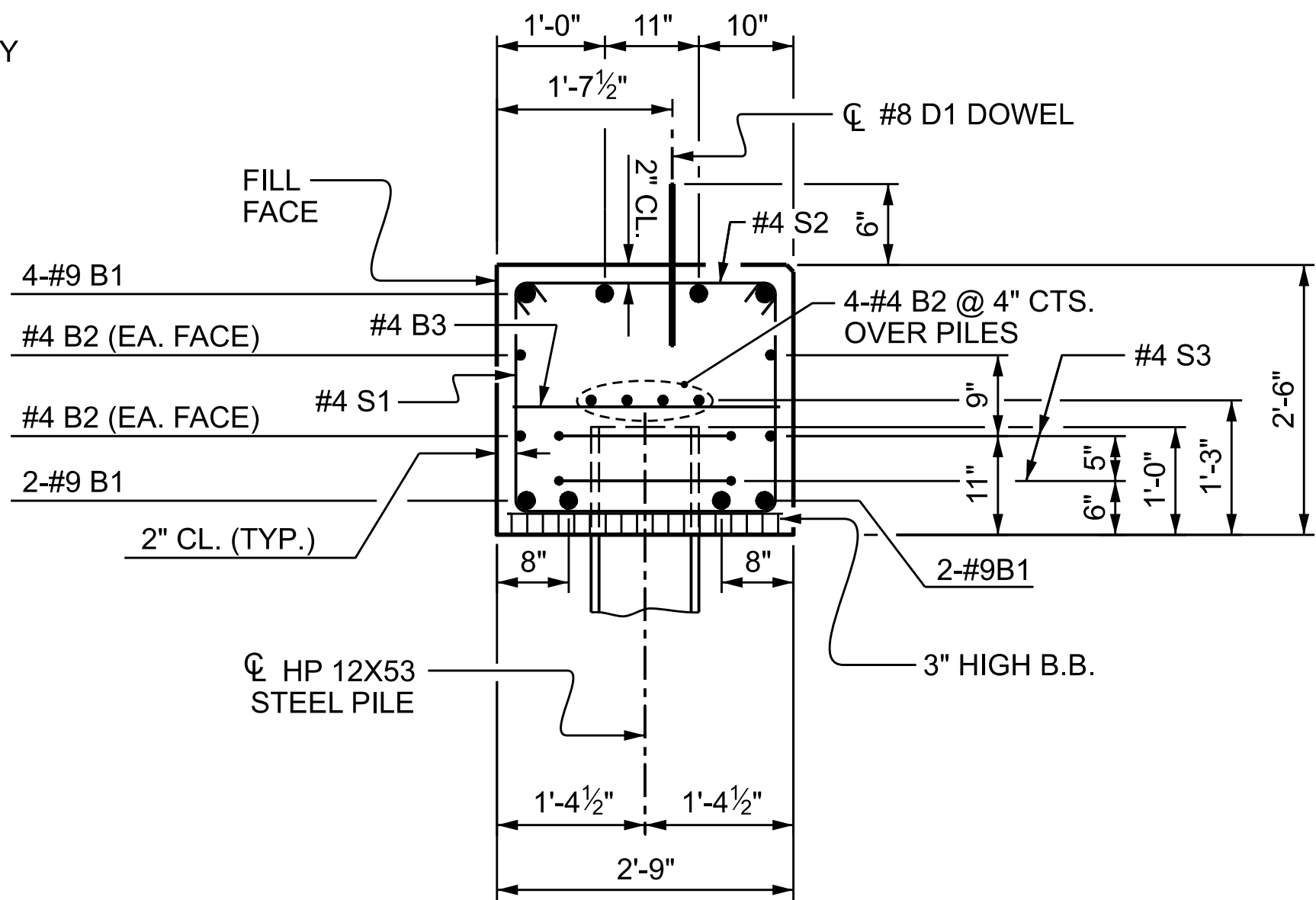


SECTION C-C
CAP REINFORCING AND WINGS NOT SHOWN FOR CLARITY

WRAP DOWELS WITH ROOFING FELT, RUBBER, OR OTHER SEEPAGE-PROOFED COMPRESSIBLE MATERIAL TO ALLOW 1/4" OF COMPRESSIBLE MATERIAL BETWEEN CONCRETE AND "D1" DOWEL, BOTH ABOVE AND ALL AROUND.



"D1" DOWEL DETAIL



SECTION A-A
(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES" DETAIL ON SHEET "SUBSTRUCTURE END BENT 1 SECTIONS AND DETAILS")

BAR TYPES				BILL OF MATERIAL					
				END BENT 2					
				BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
				B1	8	#9	1	34'-6"	938
				B2	8	#4	STR	32'-2"	172
				B3	9	#4	STR	2'-5"	15
				B4	3	#4	STR	2'-3"	5
				B5	3	#4	STR	4'-8"	9
				D1	11	#8	STR	1'-6"	44
				H1	28	#4	2	4'-9"	89
				H2	28	#4	STR	4'-1"	76
				H3	8	#4	STR	2'-2"	12
				H4	8	#4	STR	6'-0"	32
				S1	49	#4	3	7'-5"	243
				S2	49	#4	4	3'-2"	104
				S3	8	#4	5	6'-6"	35
				S4	9	#4	6	6'-5"	39
				V1	24	#4	STR	3'-7"	57
				V2	24	#4	STR	4'-8"	75
				REINFORCING STEEL					
				1945 LBS.					
				CLASS A CONCRETE BREAKDOWN					
				POUR #1 CAP, LOWER PART OF WINGS & COLLARS					
				9.6 C.Y.					
				POUR #2 UPPER PART OF WINGS					
				2.0 C.Y.					
				TOTAL CLASS A CONCRETE					
				11.6 C.Y.					

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SHEET 3 OF 3

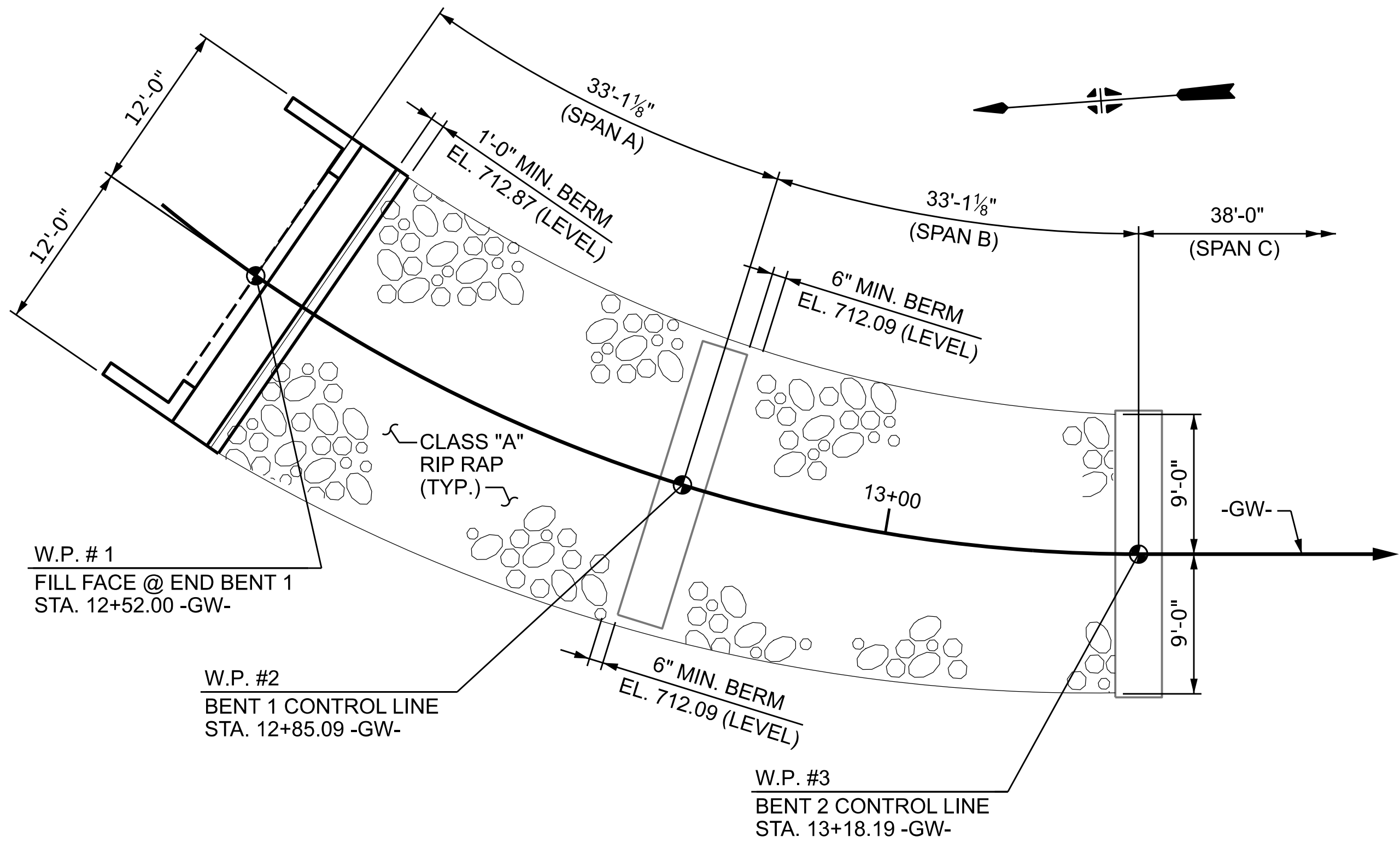
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH									
SUBSTRUCTURE END BENT 2 SECTION AND DETAILS									
REVISIONS									SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:				
1	--	--	3	--	--				
2	--	--	4	--	--				
TOTAL SHEETS									61

DES BY: <u>D. MAST</u>	DATE: <u>01/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>01/26</u>
DES CHK: <u>G. MARTINEZ</u>	DATE: <u>01/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>01/26</u>

HDR	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
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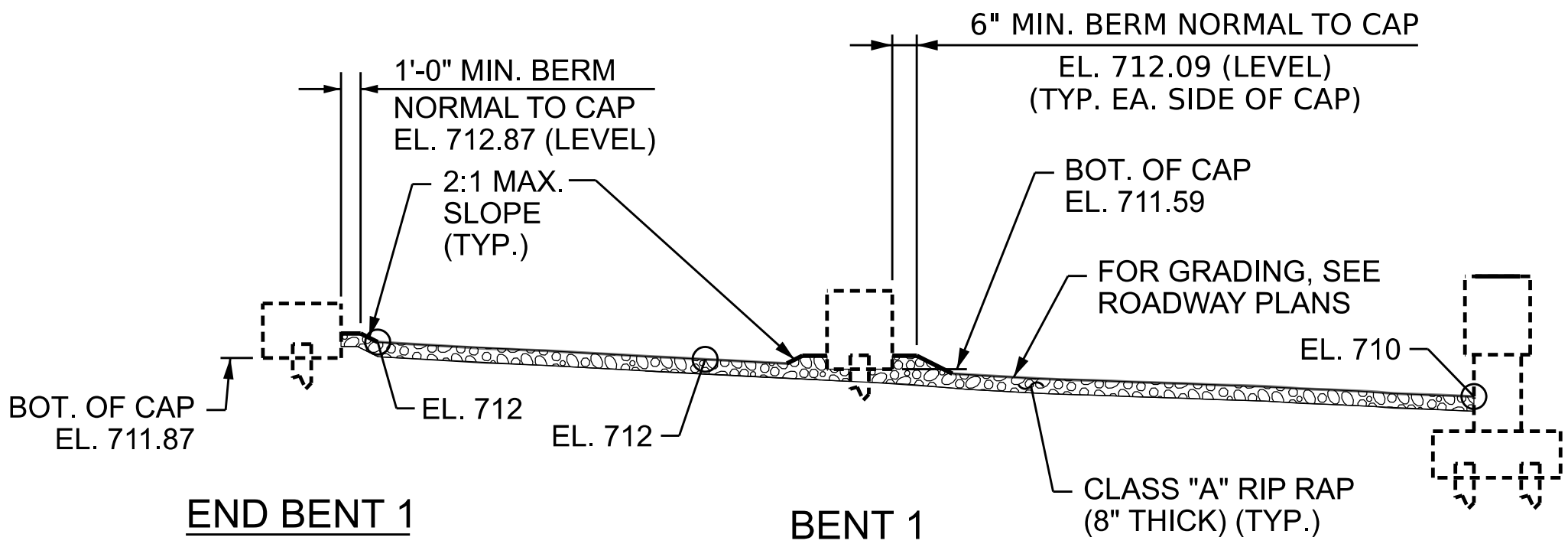
NORTH CAROLINA PROFESSIONAL SEAL 045418 ENGINEER DURRELL J. MAST	8/14/2026 <i>Durrell J. Mast</i>
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PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+46.20 -GW-	RIP RAP CLASS A (8" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	39	130



SECTION ALONG -GW-

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP
DETAILS AT
END BENT 1



Durrell J. Mast
8/14/2026

DES BY: R. BEAUCHAMP	DATE: 05/26	DWG BY: D. CHAPMAN	DATE: 05/26
DES CHK: B. BUSH	DATE: 05/26	CHK BY: R. BEAUCHAMP	DATE: 05/26

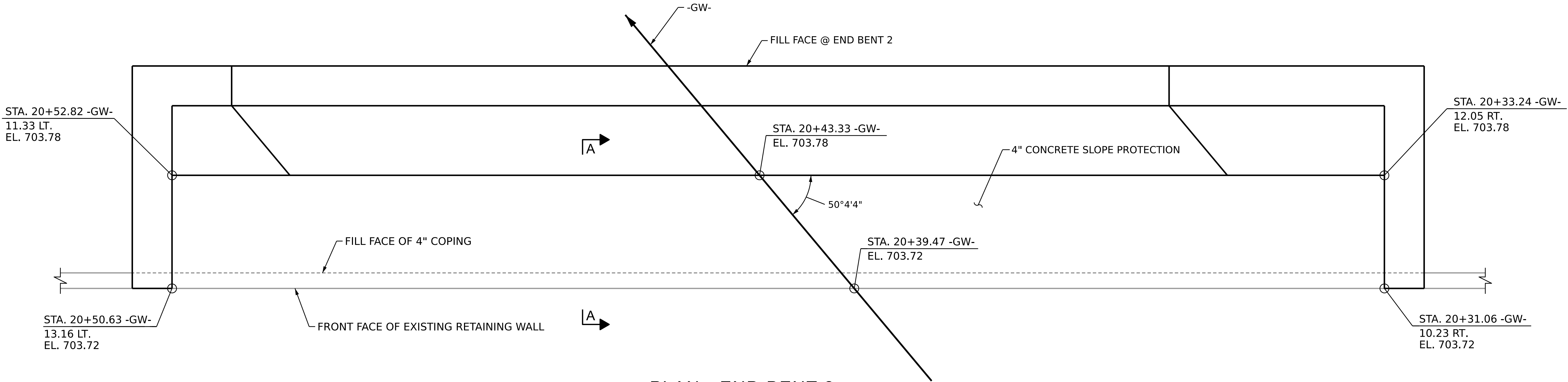
HDR Engineering, Inc. of the Carolinas

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REVISIONS						SHEET NO. S57
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	



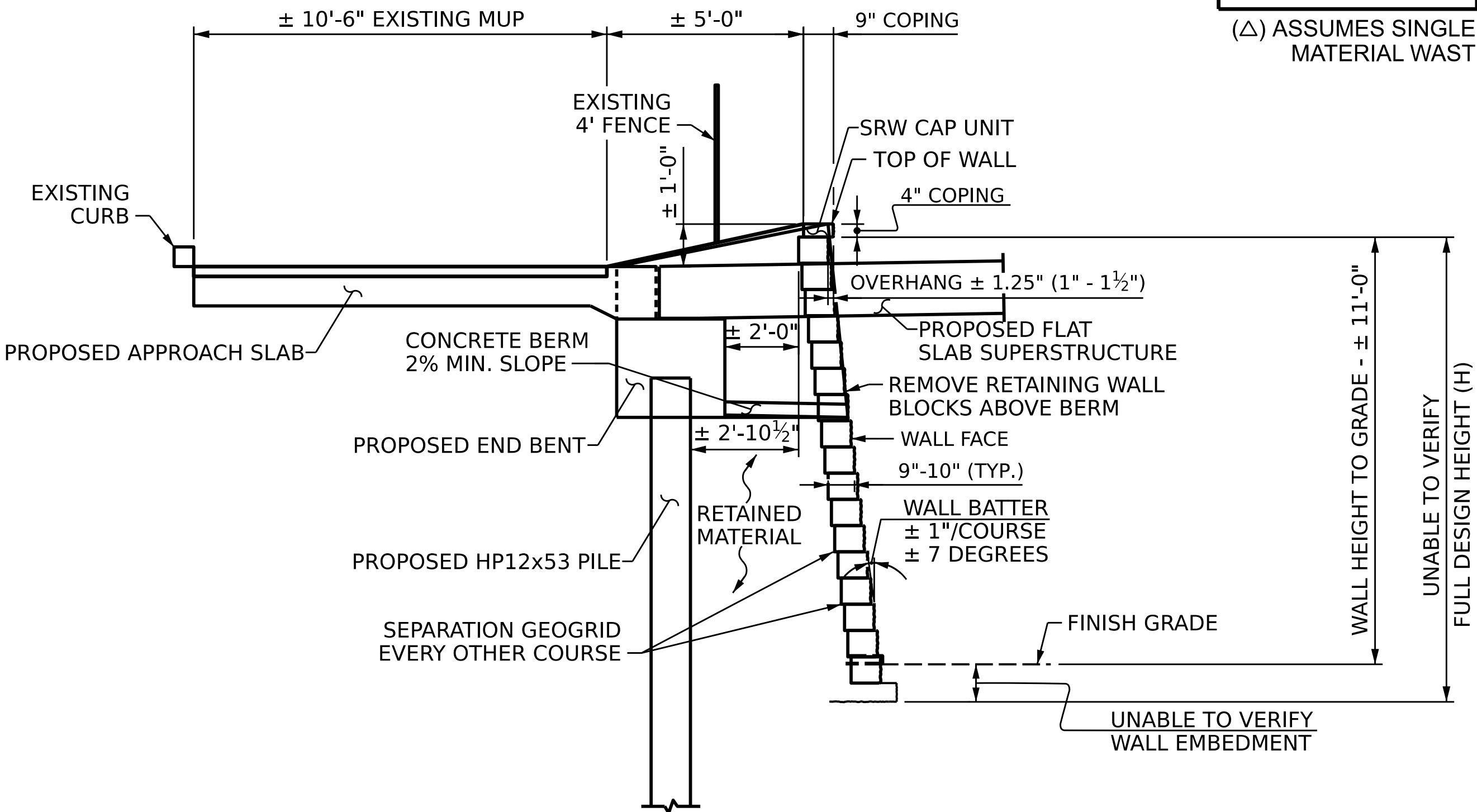
PLAN - END BENT 2

BRIDGE @ STA. 15+46.20 -GW-	4 INCH SLOPE PROTECTION	WELDED WIRE FABRIC 60" WIDE (Δ)
	SQUARE YARDS	APPROX. L.F.
END BENT 2	9.8	30.5

(Δ) ASSUMES SINGLE STRIP, CUT TO WIDTH WITH EXCESS MATERIAL WASTED.

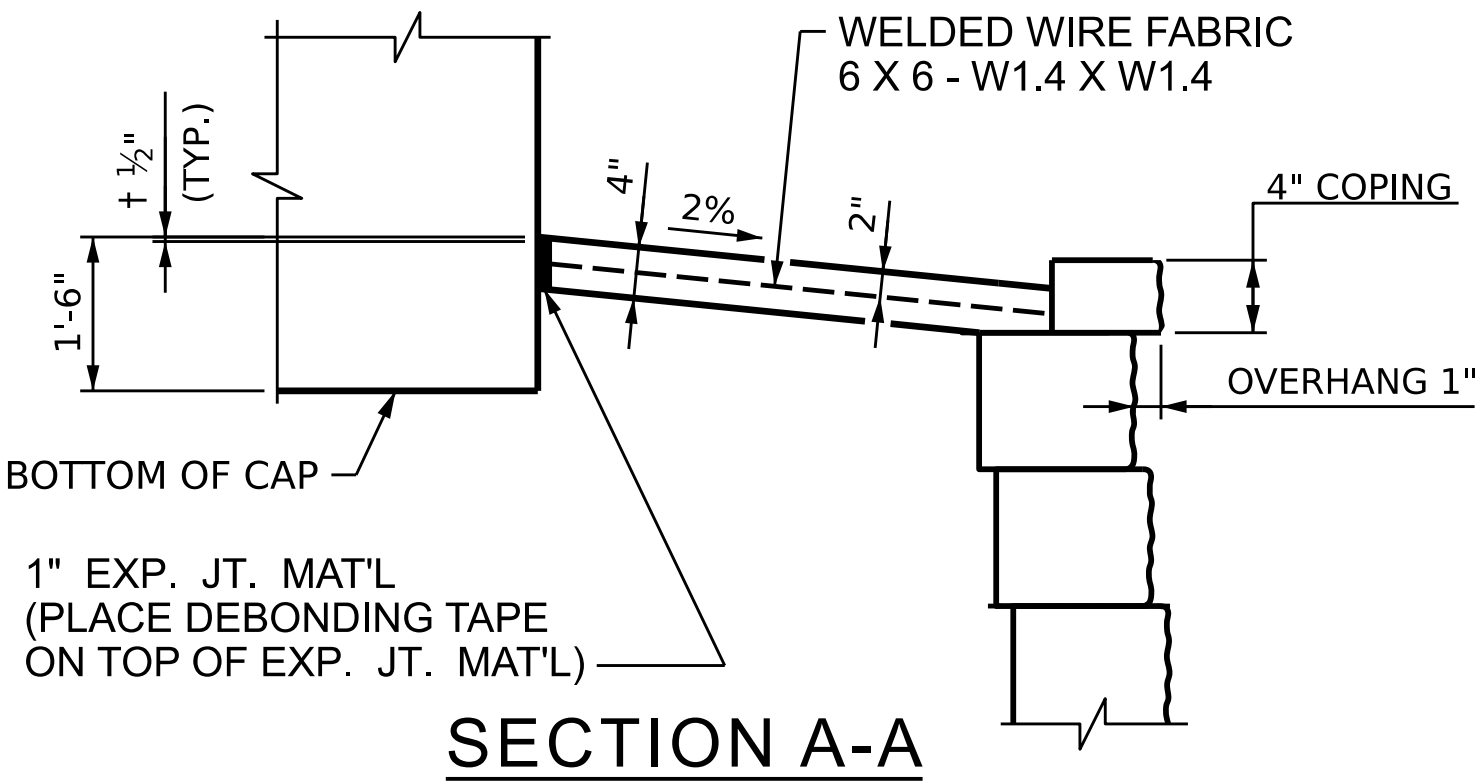
NOTES

SLOPE PROTECTION SHALL CONSIST OF 4" POURED-IN-PLACE CONCRETE PAVING AS SHOWN IN THE DETAILS ON THIS SHEET. CONCRETE SHALL BE CLASS ``B''. THE CONCRETE SURFACE SHALL BE FLOATED WITH A WOODEN FLOAT AND FINISHED. WELDED WIRE FABRIC REINFORCING SHALL BE 6 X 6 - W1.4 X W1.4, 60" WIDE.



SEGMENTAL GRAVITY WALL - TYPICAL SECTION

SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
ALL INFORMATION SHOWN IS BASED UPON THE BEST INFORMATION AVAILABLE AND IS PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL SURVEY THE EXISTING WALL AND NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS.



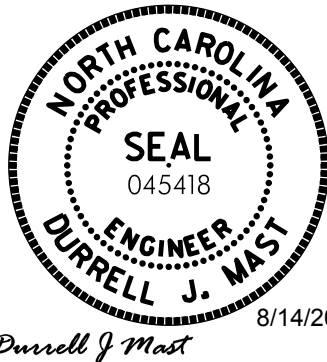
SECTION A-A

† KEEP FREE OF CONCRETE AND SEAL WITH JOINT SEALER OR GRAY LOW MODULUS SILICONE SEALER.

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

SLOPE PROTECTION
DETAILS
AT END BENT 2

REVISIONS						SHEET NO. S58
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 61
2	--	--	4	--	--	

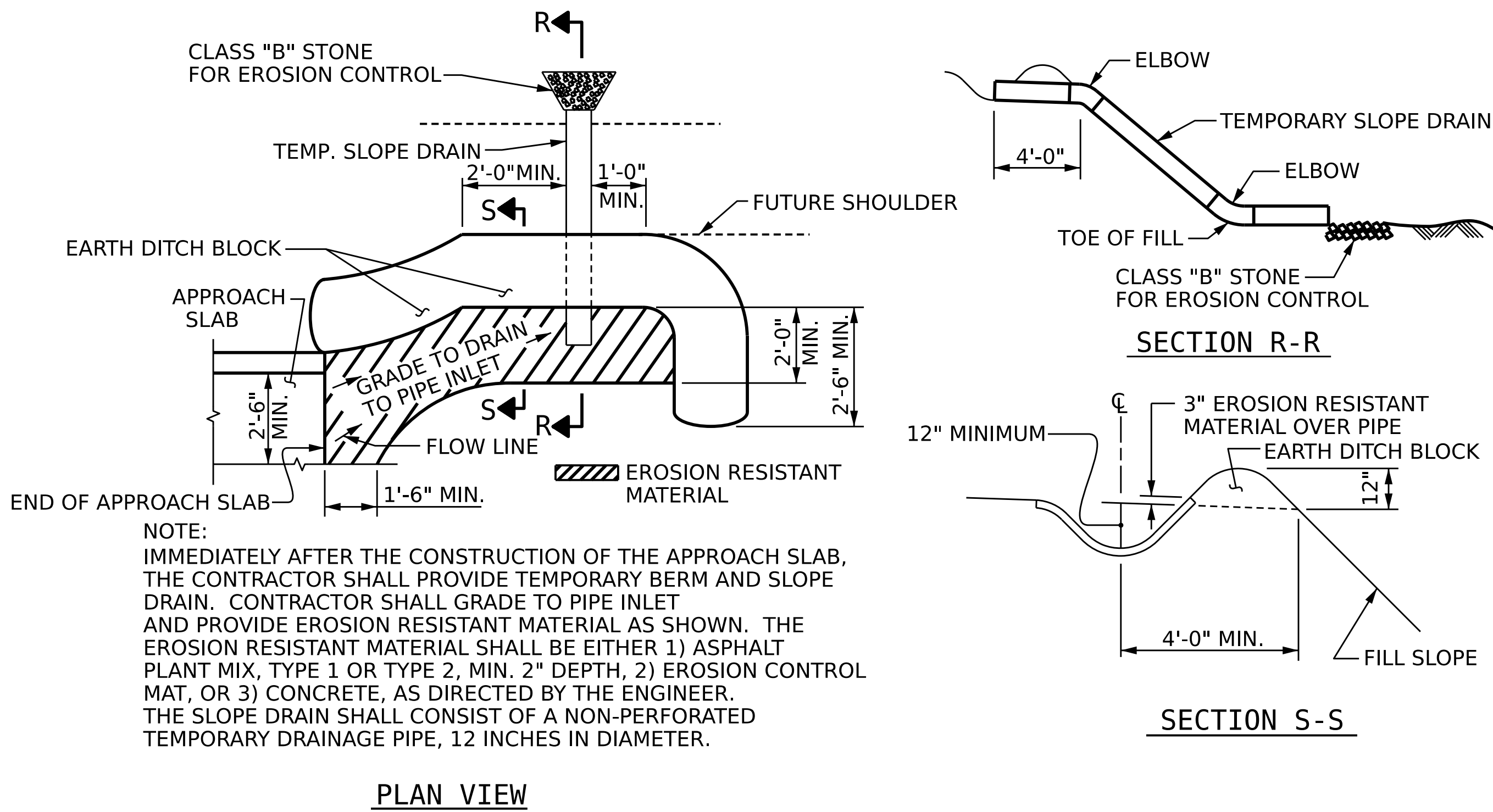


8/14/2026

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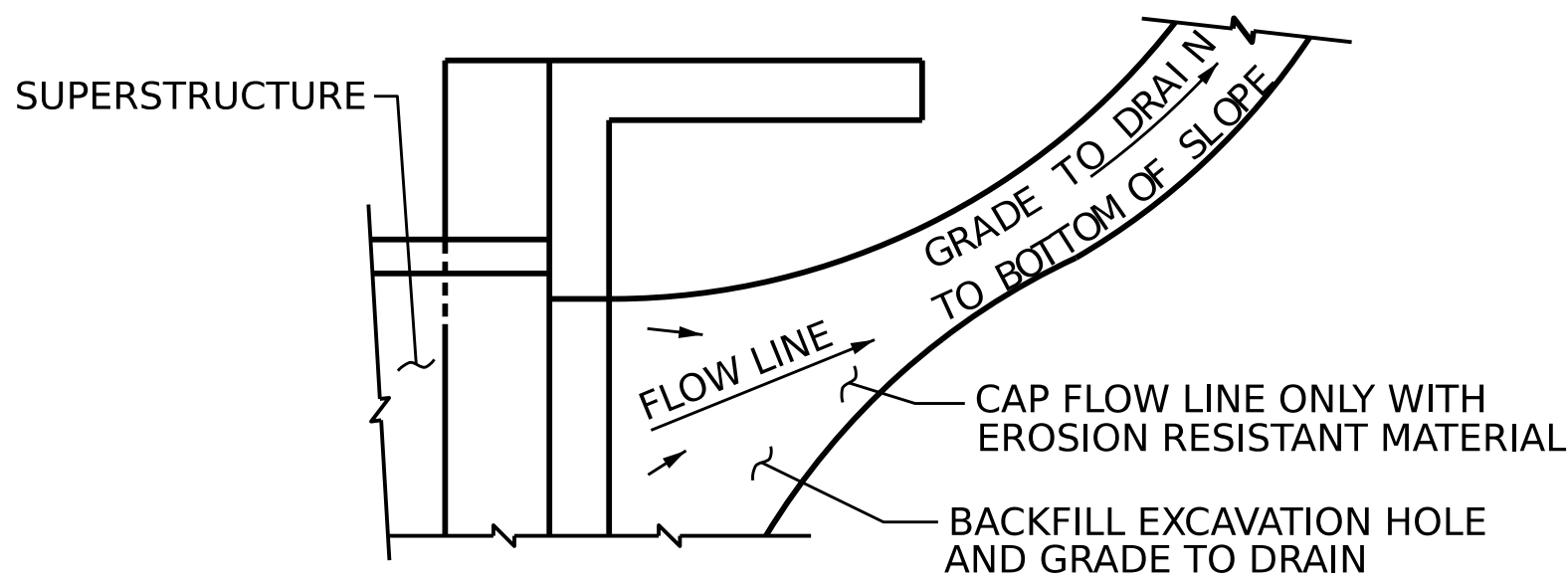
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

DES BY: R. BEAUCHAMP DATE: 04/26
DES CHK: B. BUSH DATE: 05/26
DWG BY: D. CARTER DATE: 04/26
CHK BY: B. BUSH DATE: 05/26



END BENT 1 - TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



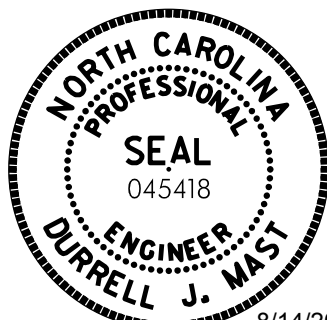
END BENT 1 - TEMPORARY DRAINAGE DETAIL

PROJECT NO. BL-0119

MECKLENBURG COUNTY

STATION: 15+46.20 -GW-

SHEET 2 OF 2



Durrell J. Mast

8/14/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB DETAILS

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S60	
1	--	--	3	--	--	TOTAL SHEETS	
2	--	--	4	--	--	61	

DES BY: <u>R. BEAUCHAMP</u>	DATE: <u>02/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>02/26</u>
DES CHK: <u>G. MARTINEZ</u>	DATE: <u>02/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>02/26</u>

HDR	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
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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 ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" 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 ¼" 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 7⁄8" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7⁄8" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7⁄8" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - 7⁄8"Ø STUDS FOR 4 - ¾" Ø 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 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 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.

PROJECT NO. BL-0119
MECKLENBURG COUNTY
STATION: 15+46.20 -GW-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD NOTES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					61

DES BY: <u>B. BUSH</u>	DATE: <u>03/26</u>	DWG BY: <u>D. CHAPMAN</u>	DATE: <u>03/26</u>
DES CHK: <u>R. BEAUCHAMP</u>	DATE: <u>03/26</u>	CHK BY: <u>D. MAST</u>	DATE: <u>03/26</u>

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N.C.B.E.L.S. License Number: F-0116

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