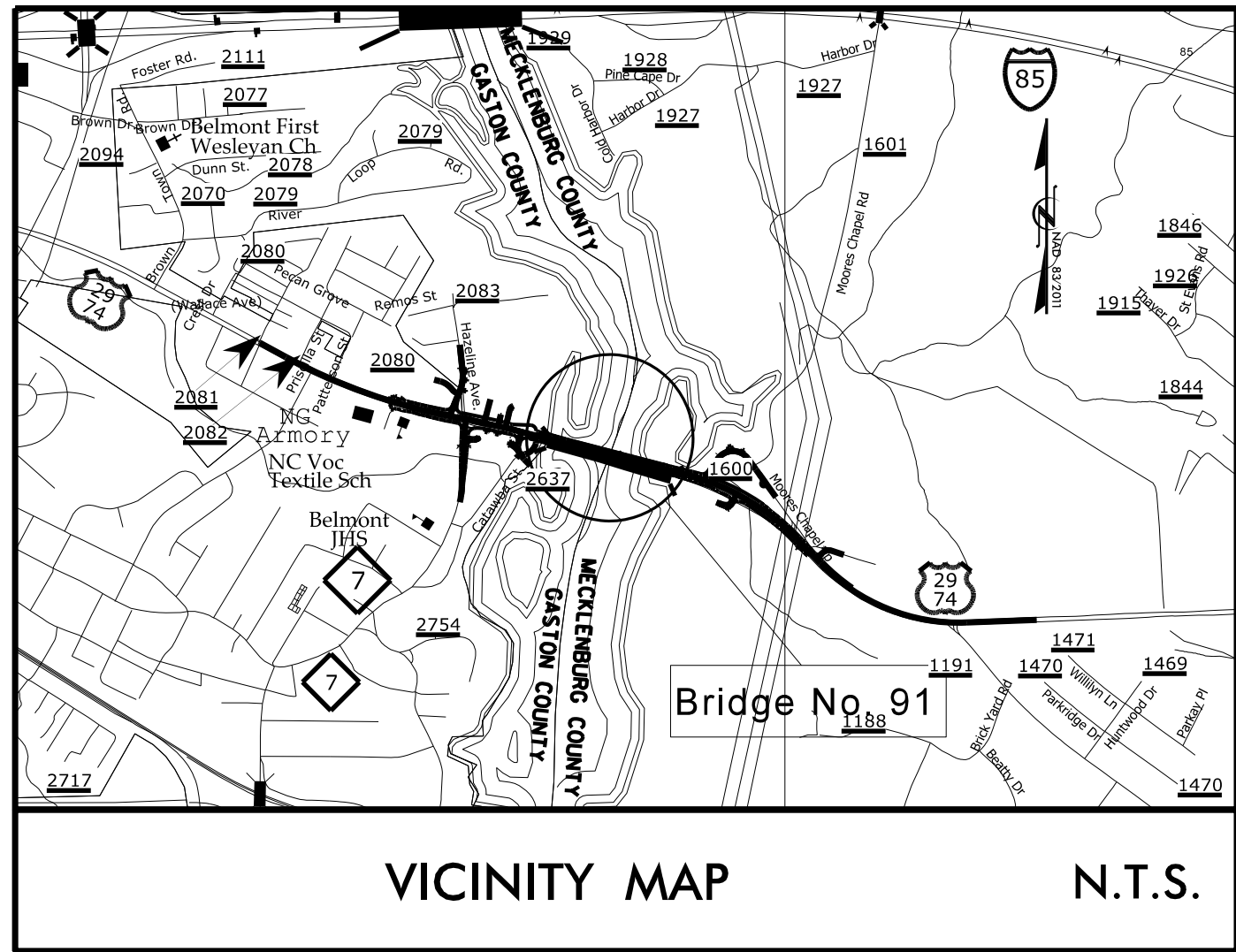


bgonfa 2/10/2026 \\ad\rkk.com\fs\Cloud\Projects\2017\17248_StrOnCall\0300_Gaston_91_BR-0020\Design\Structures\GDGN\350091\FINAL\B6051_1s_17350091.dgn

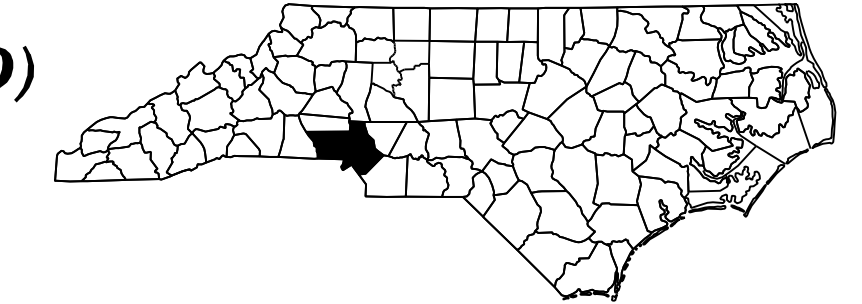
CONTRACT NO: C204773 TIP PROJECT: B-6051 / U-6143



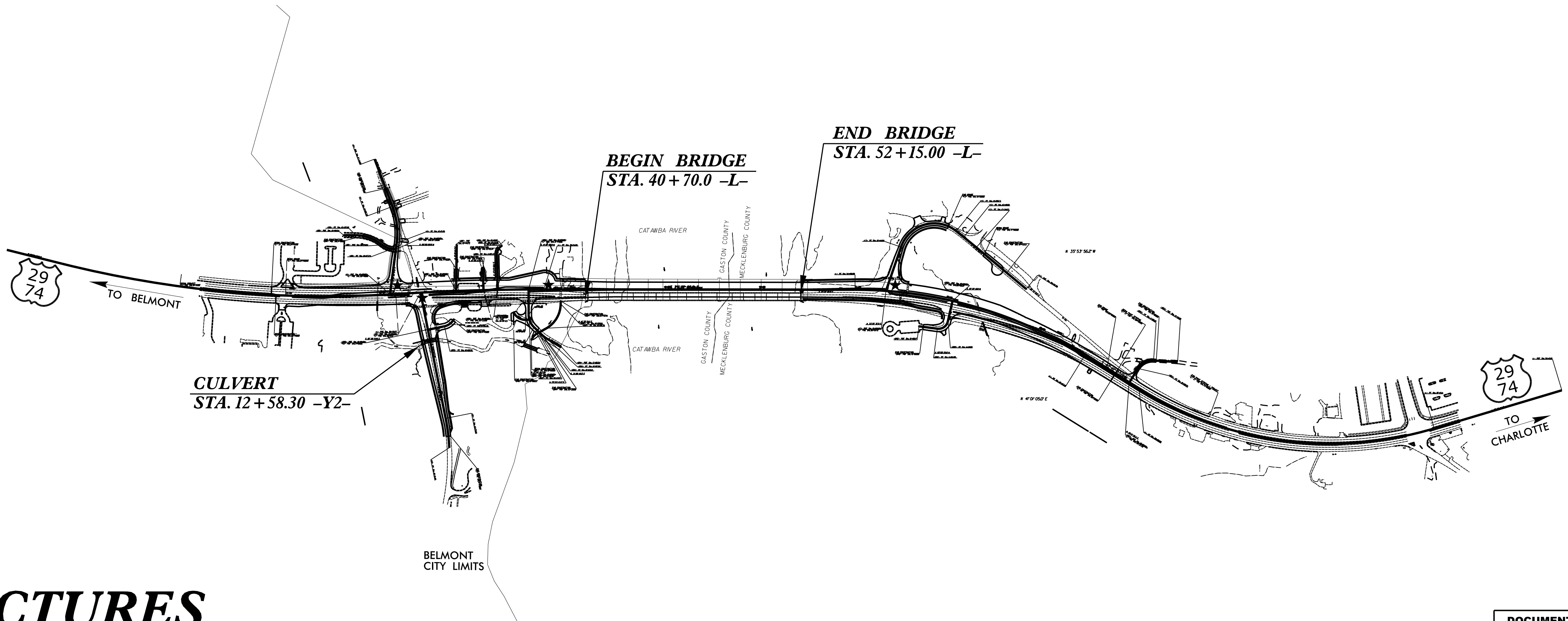
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
GASTON/MECKLENBURG COUNTIES

LOCATION: US 29/US74 REPLACE BRIDGE 350091 OVER CATAWBA RIVER & NC 7 (EAST CATAWBA STREET) AT US 74 (WILKINSON BOULEVARD) INTERSECTION. CONSTRUCT NORTHBOUND RIGHT-TURN LANE ON NC 7 (EAST CATAWBA STREET) AND EXTEND EXISTING WESTBOUND LEFT-TURN LANE ON US 74 (WILKINSON BLVD)

TYPE OF WORK: GRADING, PAVING, RESURFACING,
DRAINAGE, STRUCTURES, & SIGNALS

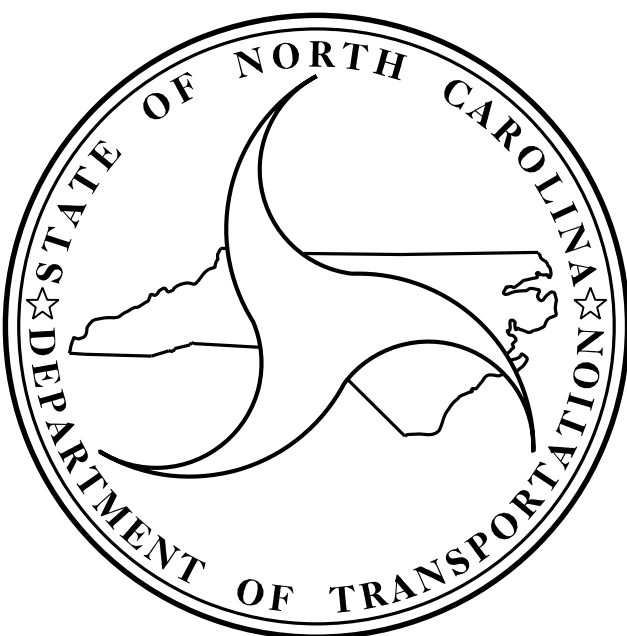


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6051U-6143	1	129
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48708.1.1		PE	
48326.1.1		PE	
48708.2.1		RW & UTIL.	
48708.3.1		CONST.	



STRUCTURES

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2024 = 29,848
ADT 2044 = 36,088
DHV = 11%
DIR = 80%
T = 6%*
V = 50 MPH
(* TTST = 2% / DUAL 4%)
FUNC CLASS = MAJOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-6051 /U-6143 = 0.642 mi
LENGTH STRUCTURE TIP PROJECT B-6051 /U-6143 = 0.217 mi
TOTAL LENGTH TIP PROJECT B-6051 /U-6143 = 0.859 mi

Prepared for the Office of:
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

2024 STANDARD SPECIFICATIONS

LETTING DATE :
May 19, 2026

Scott D. Blevins, P.E.
PROJECT ENGINEER
Joshua W. Gentry, P.E.
PROJECT STRUCTURE ENGINEER

PLANS PREPARED BY:

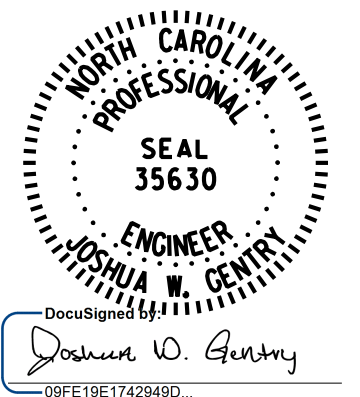
RK&K

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8601 Six Forks Road, Forum 1 Suite 700
Raleigh, North Carolina 27615 | NC License No. F-0112

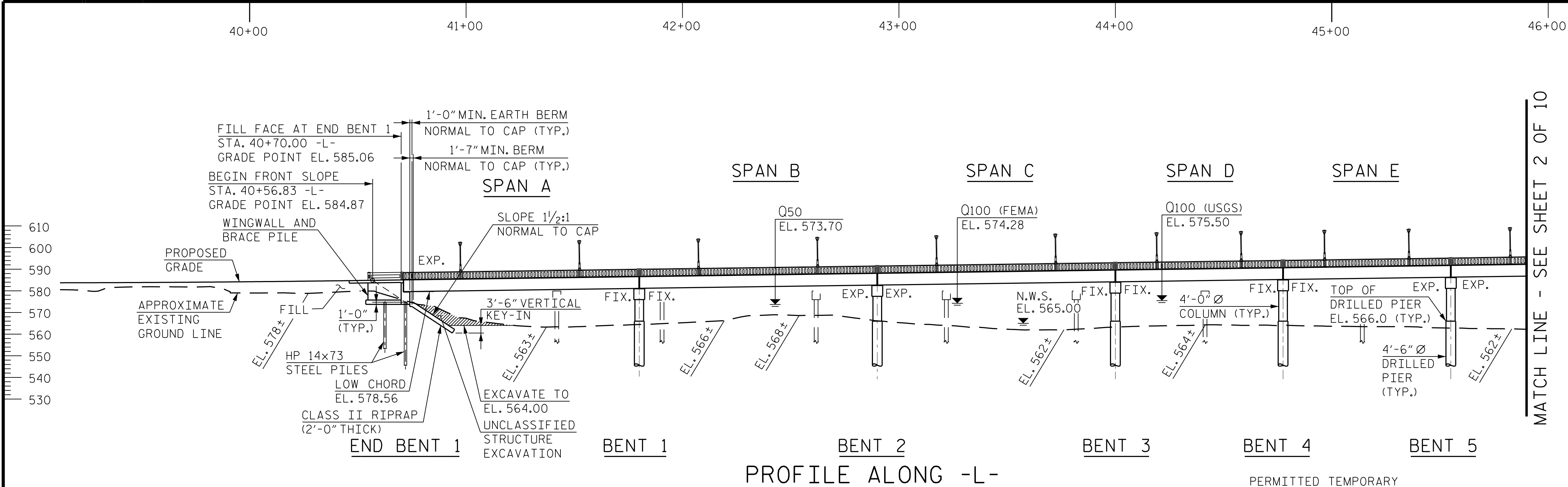
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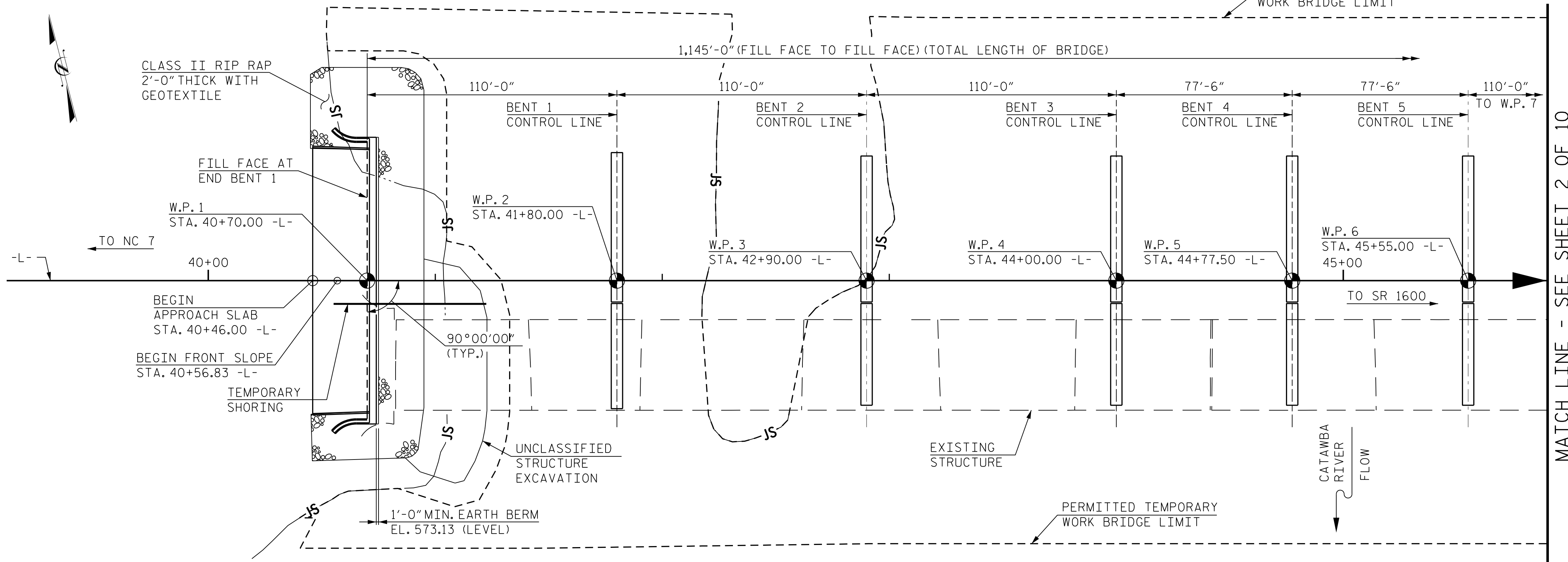
4/9/2026



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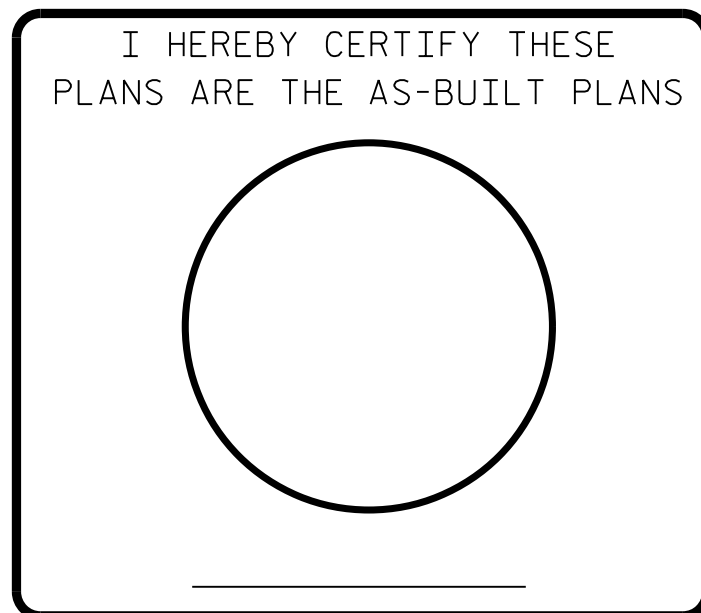


PROFILE ALONG -L-



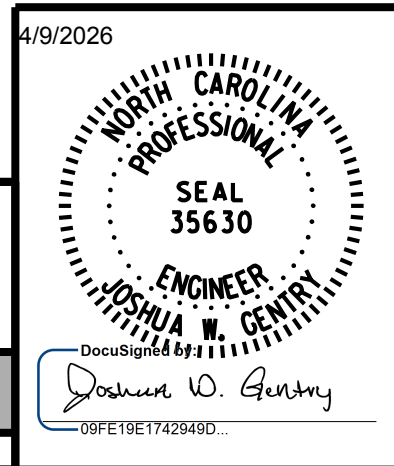
PLAN

(PILES AND DRILLED PIERS NOT SHOWN FOR CLARITY)
(CONTRACTOR MAY DETERMINE THE ACTUAL LOCATION OF THE WORK
BRIDGE WITHIN PERMITTED LIMITS AND BASED ON BOATER SAFETY PLAN,
SEE BOATER SAFETY PLAN)



DRAWN BY : T. K. BOYD
CHECKED BY : J. W. GENTRY
DESIGN ENGINEER OF RECORD : J. W. GENTRY
DATE : FEB 2025
DATE : FEB 2025
DATE : FEB 2025

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PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 10 REPLACES BRIDGE NO. 350091

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-1
2			4			
TOTAL SHEETS						118

P.V.I. STA. = 39+55.00 -L-
EL. = 583.47
V.C. = 200 FT.
(-)0.3000% (+)1.3788%

-L- GRADE DATA

P.V.I. STA. = 47+55.00 -L-
EL. = 594.50
V.C. = 300 FT.
(+)1.3788% (-)1.0053%

-L- GRADE DATA

HYDRAULIC DATA

DESIGN DISCHARGE..... 79,100 C.F.S.
FREQUENCY OF DESIGN FLOOD..... 50 YRS.
DESIGN HIGH WATER ELEVATION..... 573.7
DRAINAGE AREA..... 2,060 SQ. MI.
BASE DISCHARGE (Q100)..... 89,700 C.F.S.
BASE HIGH WATER ELEVATION..... 575.5

OVERTOPPING FLOOD DATA

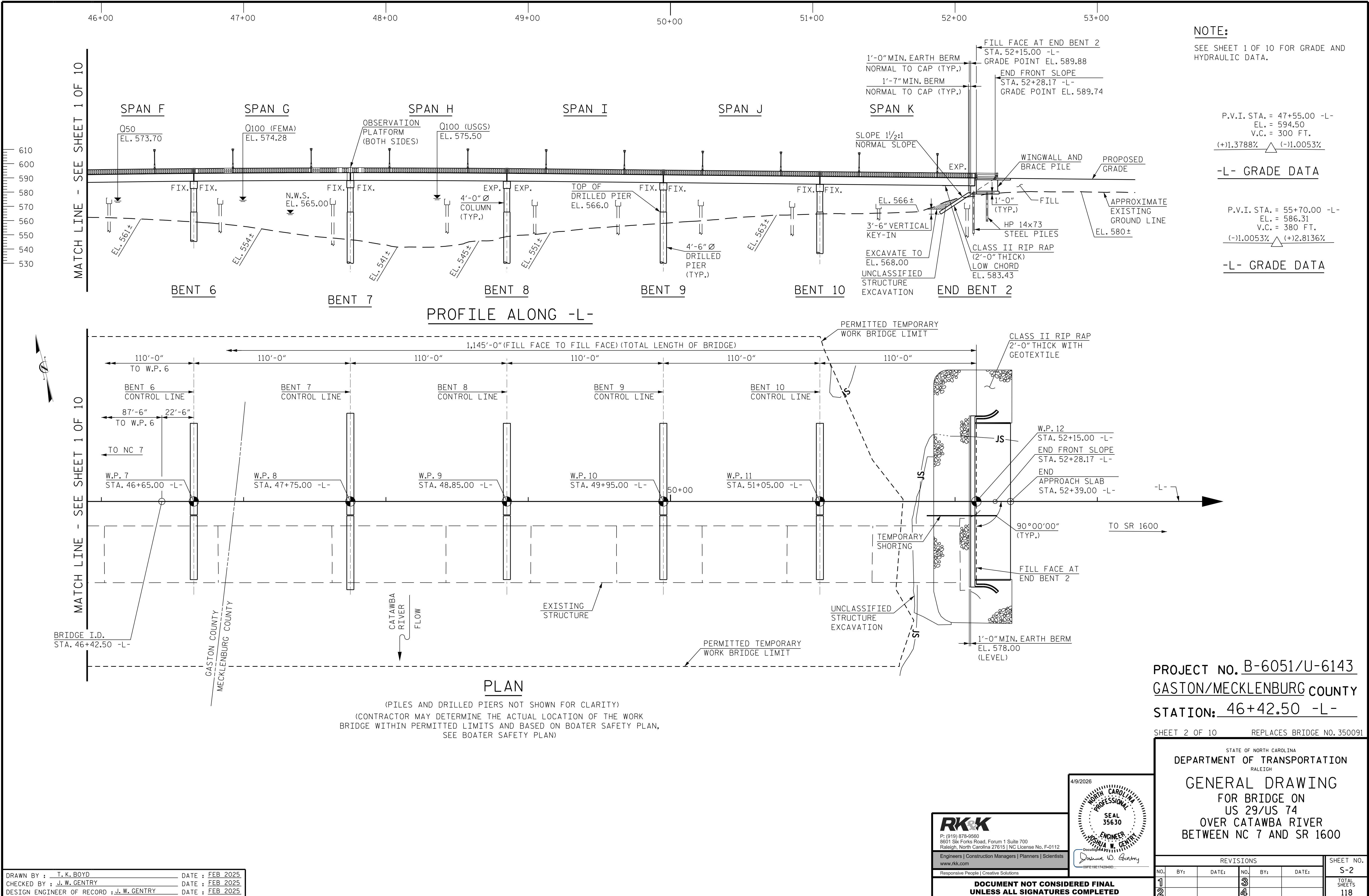
OVERTOPPING DISCHARGE..... 150,000 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD..... 500+ YRS.
OVERTOPPING FLOOD ELEVATION..... 587.3 *
* STA. 43+12 -L-



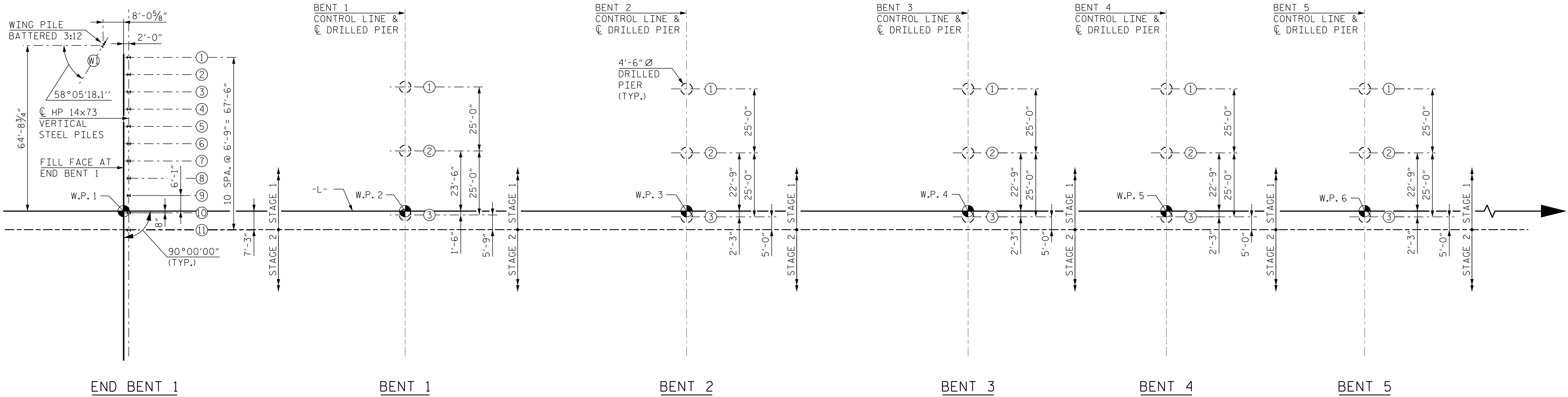
SUBMITTAL NO.: S-054
DATE: 12-02-25

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE ON
US 29/US 74
OVER CATAWBA RIVER
BETWEEN NC 7 AND SR 1600

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FOUNDATION LAYOUT - STAGE 1

ALL PILES AT END BENT 1 ARE HP 14x73 STEEL PILES.
ALL BENT DRILLED PIERS ARE 4'-6" DIA.
DIMENSIONS LOCATING PILES AND DRILLED PIERS ARE AT CENTERLINES.

FOUNDATION NOTES:

1. 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.
2. THE ENGINEER WILL DETERMINE THE NEED FOR DYNAMIC PILE TESTING, SPTs, AND CSL TESTING, WHEN THESE ITEMS MAY BE REQUIRED.
3. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
4. FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
5. PILOT BORINGS ARE REQUIRED TO DETERMINE THE TIP NO HIGHER THAN ELEVATION AT THE SELECTED DRILLED PIER LOCATIONS. THE PILOT BORING LOCATION AT THE BENT SHALL BE APPROVED BY THE ENGINEER. EACH PILOT BORING SHALL BE ADVANCED TO ELEVATION 480 FEET. THE ENGINEER WILL REVIEW THE RESULTS INCLUDING ROCK CORES TO DETERMINE THE TIP ELEVATION FOR EACH DRILLED PIER. SEE GEOTECHNICAL SPECIAL PROVISION FOR PILOT BORINGS.
6. POLYMER SLURRY IS REQUIRED FOR DRILLED PIERS AT BENT NO. 1 TO BENT NO. 10.
7. OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 1. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
8. OBSERVE A TWO MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 3 OF 10

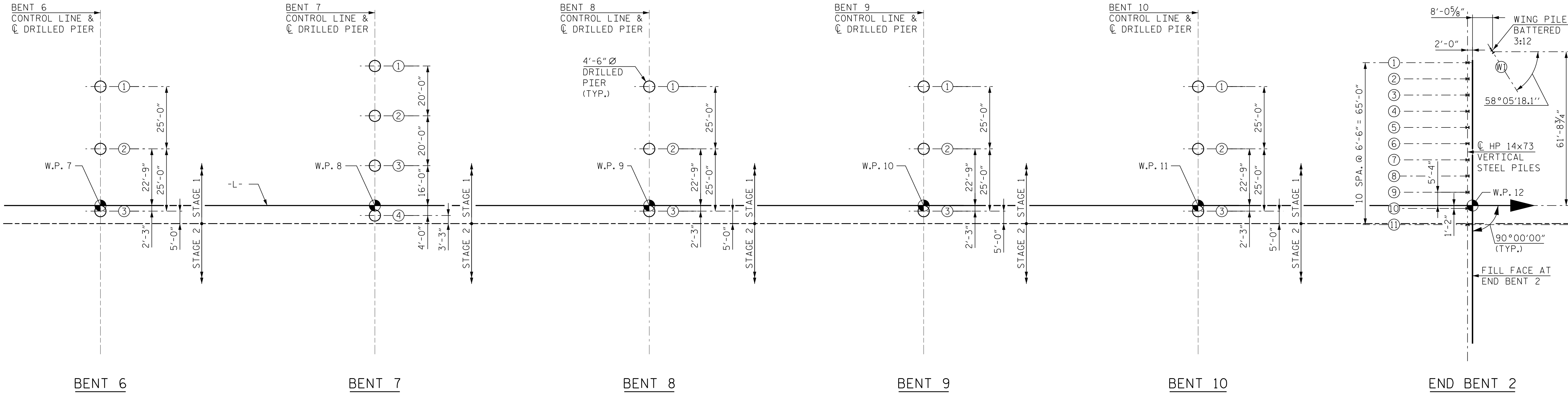
DRAWN BY : <u>E. THOMPSON</u>	DATE : <u>FEB 2025</u>
CHECKED BY : <u>B. D. KLAPPENBACH</u>	DATE : <u>FEB 2025</u>
DESIGN ENGINEER OF RECORD : <u>M. SHARMA</u>	DATE : <u>FEB 2025</u>

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NORTH CAROLINA
PROFESSIONAL
SEAL
050844
ENGINEER
MAYUR SHARMA
DocuSign
680872F7021C4BD...

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING FOUNDATION LAYOUT STAGE 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-3					TOTAL SHEETS 118

2/10/2026 R:\Structures\DCN\350091\FINAL\B6051_SWU_FLJB.17350091.dgn bgonfa



FOUNDATION LAYOUT - STAGE 1

ALL PILES AT END BENT 2 ARE HP 14x73 STEEL PILES.
ALL BENT DRILLED PIERS ARE 4'-6" DIA.
DIMENSIONS LOCATING PILES AND DRILLED PIERS ARE AT CENTERLINES.

FOUNDATION NOTES:

1. 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.
2. THE ENGINEER WILL DETERMINE THE NEED FOR DYNAMIC PILE TESTING, SPTs, AND CSL TESTING, WHEN THESE ITEMS MAY BE REQUIRED.
3. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
4. FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
5. PILOT BORINGS ARE REQUIRED TO DETERMINE THE TIP NO HIGHER THAN ELEVATION AT THE SELECTED DRILLED PIER LOCATIONS. THE PILOT BORING LOCATION AT THE BENT SHALL BE APPROVED BY THE ENGINEER. EACH PILOT BORING SHALL BE ADVANCED TO ELEVATION 480 FEET, THE ENGINEER WILL REVIEW THE RESULTS INCLUDING ROCK CORES TO DETERMINE THE TIP ELEVATION FOR EACH DRILLED PIER. SEE GEOTECHNICAL SPECIAL PROVISION FOR PILOT BORINGS.
6. POLYMER SLURRY IS REQUIRED FOR DRILLED PIERS AT BENT NO. 1 TO BENT NO. 10.
7. OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 1. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
8. OBSERVE A TWO MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
9. STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT 2, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

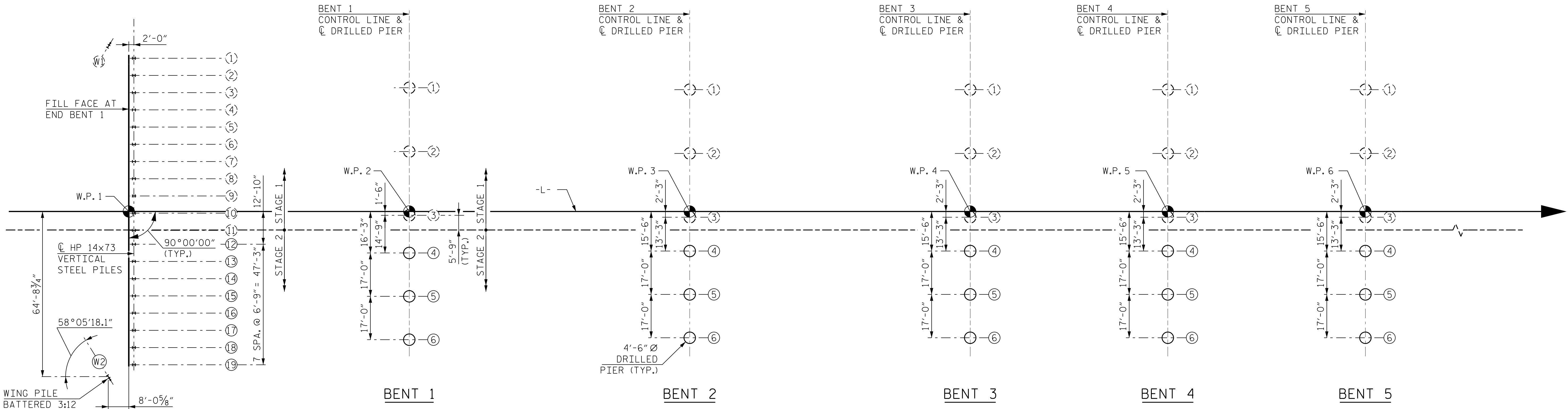
SHEET 4 OF 10

DRAWN BY : <u>E. THOMPSON</u>	DATE : <u>FEB 2025</u>
CHECKED BY : <u>BRUCE D. KLAPPENBACH</u>	DATE : <u>FEB 2025</u>
DESIGN ENGINEER OF RECORD : <u>M. SHARMA</u>	DATE : <u>FEB 2025</u>

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PROFESSIONAL
SEAL
050844
ENGINEER
MAYUR SHARMA
DocuSign Envelope ID: 680B72F7921C48D...

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING FOUNDATION LAYOUT STAGE 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 118



END BENT 1

FOUNDATION LAYOUT - STAGE 2

ALL PILES AT END BENT 1 ARE HP 14x73 STEEL PILES.
ALL BENT DRILLED PIERS ARE 4'-6" DIA.
DIMENSIONS LOCATING PILES AND DRILLED PIERS ARE AT CENTERLINES.

FOUNDATION NOTES:

1. 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.
2. THE ENGINEER WILL DETERMINE THE NEED FOR DYNAMIC PILE TESTING, SPTs, AND CSL TESTING, WHEN THESE ITEMS MAY BE REQUIRED.
3. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
4. FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
5. PILOT BORINGS ARE REQUIRED TO DETERMINE THE TIP NO HIGHER THAN ELEVATION AT THE SELECTED DRILLED PIER LOCATIONS. THE PILOT BORING LOCATION AT THE BENT SHALL BE APPROVED BY THE ENGINEER. EACH PILOT BORING SHALL BE ADVANCED TO ELEVATION 480 FEET. THE ENGINEER WILL REVIEW THE RESULTS INCLUDING ROCK CORES TO DETERMINE THE TIP ELEVATION FOR EACH DRILLED PIER. SEE GEOTECHNICAL SPECIAL PROVISION FOR PILOT BORINGS.
6. POLYMER SLURRY IS REQUIRED FOR DRILLED PIERS AT BENT NO. 1 TO BENT NO. 10.
7. OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 1. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
8. OBSERVE A TWO MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 5 OF 10

DRAWN BY : E. THOMPSON DATE : FEB 2025
CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025

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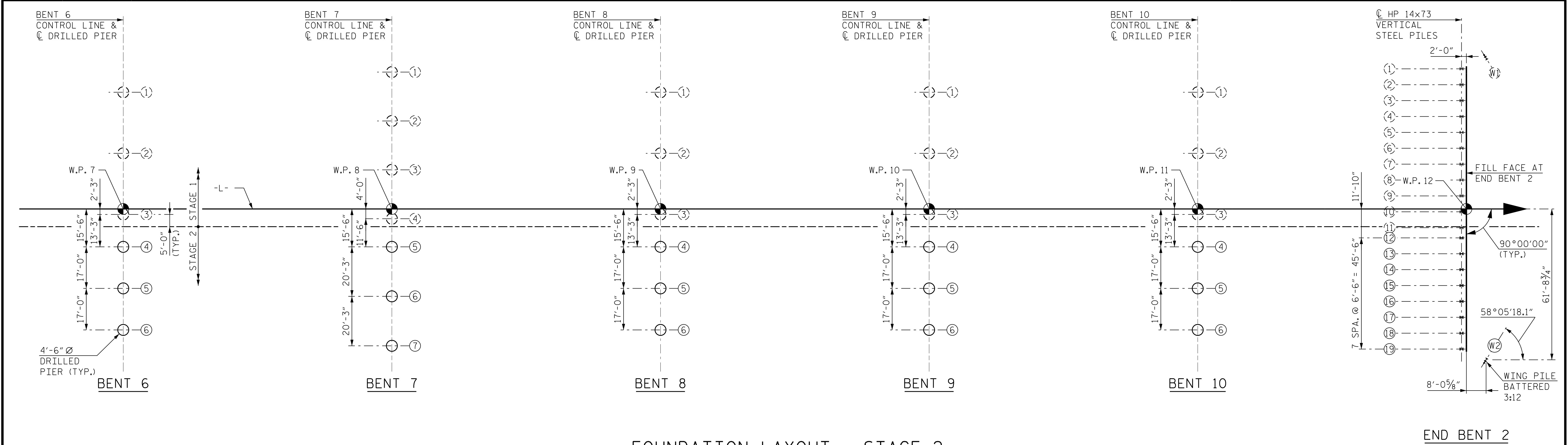
4/9/2026
SEAL
050844
ENGINEER
MAYUR SHARMA
16804727792YCA8D...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOUNDATION LAYOUT
STAGE 2

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

SHEET NO. S-5	
TOTAL SHEETS 118	

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2/10/2026 R:\Structures\DCN\350091\FINAL\B6051_SWU_FL2B_17350091.dgn



FOUNDATION LAYOUT - STAGE 2

ALL PILES AT END BENT 2 ARE HP 14x73 STEEL PILES.
ALL BENT DRILLED PIERS ARE 4'-6"DIA.
DIMENSIONS LOCATING PILES AND DRILLED PIERS ARE AT CENTERLINES.

FOUNDATION NOTES:

- TOTAL PILE DRIVING EQUIPMENT SETUP QUANTITY (NOT SHOWN IN PILE FOUNDATION TABLES) EQUALS THE NUMBER OF DRIVEN PILES, I.E., THE NUMBER OF PILES WITH A REQUIRED DRIVING RESISTANCE.
- THE ENGINEER WILL DETERMINE THE NEED FOR DYNAMIC PILE TESTING, SPTs, AND CSL TESTING, WHEN THESE ITEMS MAY BE REQUIRED.
- FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
- FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.
- PILOT BORINGS ARE REQUIRED TO DETERMINE THE TIP NO HIGHER THAN ELEVATION AT THE SELECTED DRILLED PIER LOCATIONS. THE PILOT BORING LOCATION AT THE BENT SHALL BE APPROVED BY THE ENGINEER. EACH PILOT BORING SHALL BE ADVANCED TO ELEVATION 480 FEET. THE ENGINEER WILL REVIEW THE RESULTS INCLUDING ROCK CORES TO DETERMINE THE TIP ELEVATION FOR EACH DRILLED PIER. SEE GEOTECHNICAL SPECIAL PROVISION FOR PILOT BORINGS.
- POLYMER SLURRY IS REQUIRED FOR DRILLED PIERS AT BENT NO.1 TO BENT NO.10.
- OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO.1. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
- OBSERVE A TWO MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO.2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.
- STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT 2, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 6 OF 10

DRAWN BY : <u>E. THOMPSON</u>	DATE : <u>FEB 2025</u>
CHECKED BY : <u>B. D. KLAPPENBACH</u>	DATE : <u>FEB 2025</u>
DESIGN ENGINEER OF RECORD : <u>M. SHARMA</u>	DATE : <u>FEB 2025</u>

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050844
ENGINEER
MAYUR SHARMA
Decus86444711
68D672F7921C4BD...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOUNDATION LAYOUT
STAGE 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			118

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SUMMARY OF PILE INFORMATION/INSTALLATION													
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)													
END BENT/BENT NO.	FACTORED RESISTANCE PER PILE	PILE CUT-OFF (TOP OF PILE) ELEVATION	ESTIMATED PILE LENGTH PER PILE	SCOUR CRITICAL ELEVATION	DRIVEN PILES			PREDRILLING FOR PILES *			DRILLED-IN PILES		
					MIN. PILE TIP (TIP NO HIGHER THAN) EL	REQUIRED DRIVING RESISTANCE (RDR) ** PER PILE	TOTAL PILE REDRIVES	PREDRILLING LENGTH PER PILE	PREDRILLING ELEVATION (ELEV NOT TO PREDRILL BELOW)	MAXIMUM PREDRILLING Ø	PILE EXCAVATION (BOTTOM OF HOLE) ELEV	PILE EXC. NOT IN SOIL PER PILE	PILE EXC. IN SOIL PER PILE
END BENT/BENT NO.	TONS	FT.	FT.	FT.	FT.	TONS	EACH	LIN. FT.	FT.	INCHES	FT.	LIN. FT.	LIN. FT.
END BENT 1, PILES 1-9, W1	130	576.13	35	-	-	245	-	-	-	-	-	-	-
END BENT 1, PILES 10-19, W2	130	576.13	50	-	-	245	-	-	-	-	-	-	-
END BENT 2, PILES 1-19, W1, W2	130	581.00	70	-	-	255	-	-	-	-	-	-	-

* PREDRILLING FOR PILES IS REQ'D FOR END BENTS/BENTS WITH A PREDRILLING LENGTH & AT THE CONTRACTOR'S OPTION FOR END BENTS/BENTS WITH PREDRILLING INFORMATION BUT NO PREDRILLING LENGTH.
** RDR =
$$\frac{\text{FACTORED RESISTANCE} + \text{FACTORED DOWNDRAG LOAD} + \text{FACTORED DEAD LOAD}}{\text{DYNAMIC RESISTANCE FACTOR}} + \frac{\text{NOMINAL DOWNDRAG RESISTANCE}}{\text{SCOUR RESISTANCE FACTOR}} + \frac{\text{NOMINAL SCOUR RESISTANCE}}{\text{SCOUR RESISTANCE FACTOR}}$$

SUMMARY OF DRILLED PIER INFORMATION/INSTALLATION											
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)											
END BENT/BENT NO.	FACTORED RESISTANCE PER PIER	MIN. PIER TIP (TIP NO HIGHER THAN) ELEVATION	REQUIRED TIP RESISTANCE PER PIER	SCOUR CRITICAL ELEVATION	MIN. DRILLED PIER PENETRATION INTO WEATHERED ROCK PER PIER	MIN. DRILLED PIER PENETRATION INTO ROCK PER PIER	DRILLED PIER LENGTH * NOT IN SOIL PER PIER	DRILLED PIER LENGTH IN SOIL PER PIER	PERMANENT STEEL CASING REQUIRED?	PERMANENT STEEL CASING TIP EL. (EL. NOT TO EXTEND CASING BELOW)	PERMANENT STEEL CASING LENGTH ** PER PIER
END BENT/BENT NO.	TONS	FT.	TSF	FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	YES OR MAYBE	FT.	LIN. FT.
BENT 1, PIERS 1-2 ***	975	493.5	50	531.0	TBD	TBD	25.0	48.0	YES	536.0	25.0
BENT 1, PIERS 3-6	975	503.5	50	531.0	15.0	1.0	16.0	47.0	YES	536.0	25.0
BENT 2, PIERS 1-3	950	507.0	50	529.0	16.0	1.0	12.0	47.0	YES	534.0	25.0
BENT 2, PIERS 4-6	950	505.0	20	529.0	16.0	3.0	19.0	42.0	YES	534.0	25.0
BENT 3, PIERS 1-6	890	507.5	45	528.0	16.5	1.0	17.5	41.0	YES	533.0	30.0
BENT 4, PIERS 1-2 ***	800	499.0	20	530.0	TBD	TBD	25.0	42.0	YES	535.0	31.0
BENT 4, PIERS 3-5	800	509.0	20	530.0	3.0	13.0	15.0	42.0	YES	535.0	31.0
BENT 4, PIER 6	800	503.0	20	530.0	3.0	13.0	15.0	48.0	YES	535.0	31.0
BENT 5, PIERS 1-2 ***	850	506.0	50	535.0	TBD	TBD	19.0	41.0	YES	540.0	26.0
BENT 5, PIERS 3-5	850	516.0	50	535.0	-	9.0	9.0	41.0	YES	540.0	26.0
BENT 5, PIER 6	850	519.0	45	535.0	15.0	3.0	14.0	33.0	YES	540.0	26.0
BENT 6, PIER 1	1,000	519.5	50	531.0	-	10.5	13.5	33.0	YES	536.0	30.0
BENT 6, PIERS 2-3	1,000	525.5	50	531.0	-	10.5	14.0	26.5	YES	536.0	30.0
BENT 6, PIERS 4-6	1,000	504.0	20	531.0	-	13.5	14.0	48.0	YES	536.0	30.0
BENT 7, PIERS 1-3	830	498.0	50	527.0	5.0	6.5	11.0	57.0	YES	532.0	30.0
BENT 7, PIERS 4-5	830	505.0	50	527.0	-	13.0	13.0	48.0	YES	532.0	30.0
BENT 7, PIERS 6-7	830	501.5	25	527.0	20.5	-	10.5	54.0	YES	532.0	34.0
BENT 8, PIERS 1-6	935	493.0	20	528.0	21.0	-	10.0	63.0	YES	533.0	33.0
BENT 9, PIER 1	1,000	476.0	20	537.0	9.0	6.0	11.0	79.0	YES	542.0	24.0
BENT 9, PIER 2	1,000	490.0	20	537.0	17.0	-	8.0	68.0	YES	542.0	24.0
BENT 9, PIERS 3-5 ***	1,000	480.0	20	537.0	TBD	TBD	13.0	73.0	YES	542.0	24.0
BENT 9, PIER 6	1,000	493.0	20	537.0	17.0	-	13.0	60.0	YES	542.0	24.0
BENT 10, PIER 1	1,000	495.0	20	536.0	19.0	-	10.0	61.0	YES	541.0	25.0
BENT 10, PIERS 2-4	1,000	499.0	20	536.0	21.0	-	15.0	52.0	YES	541.0	25.0
BENT 10, PIERS 5-6	1,000	495.0	35	536.0	10.0	1.0	8.0	63.0	YES	541.0	25.0

* DRILLED PIER LENGTH NOT IN SOIL AND DRILLED PIER LENGTH IN SOIL REPRESENT ESTIMATED DRILLED PIER QUANTITIES AND ARE MEASURED AND PAID FOR AS "54"Ø DRILLED PIERS NOT IN SOIL" AND "54"Ø DRILLED PIERS IN SOIL" IN ACCORDANCE WITH ARTICLE 411-7 OF THE NCDOT STANDARD SPECIFICATIONS.
** 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 CASTING FOR 54"Ø DRILLED PIER" IN ACCORDANCE WITH ARTICLE 411-7 OF THE NCDOT STANDARD SPECIFICATIONS.
*** FOR BID PURPOSES ONLY. PILOT BORINGS ARE REQUIRED TO DETERMINE TIP NO HIGHER THAN ELEVATION. SEE NOTE NO.5 ON SHEETS S-3 THROUGH S-6. (T.B.D. = TO BE DETERMINED)

SUMMARY OF DPT/PILE ORDER LENGTHS					
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)					
DYNAMIC PILE TESTING (DPT)				PILE ORDER LENGTHS	
END BENT/BENT NO.	DPT TESTING REQUIRED?	DPT TEST PILE LENGTH	TOTAL DPT TESTING QUANTITY	END BENT/BENT NO.	PILE ORDER LENGTH BASIS *
END BENT 1, PILES 1-9, W1	MAYBE	35	2	-	-
END BENT 1, PILES 10-19, W2	MAYBE	50		-	-
END BENT 2, PILES 1-19, W1, W2	MAYBE	70		-	-

* EST = PILE ORDER LENGTHS FROM ESTIMATED PILE LENGTHS; DPT = PILE ORDER LENGTHS BASED ON DPT TESTING. FOR GROUPS OF END BENTS/BENTS WITH PILE ORDER LENGTHS BASED ON DPT TESTING, THE FIRST END BENT/BENT NO. LISTED FOR EACH GROUP IS THE REPRESENTATIVE END BENT/BENT WITH THE DPT.

NOTES:

1. THE PILE AND DRILLED PIER FOUNDATION TABLES ARE BASED ON THE BRIDGE SUBSTRUCTURE DESIGN AND FOUNDATION RECOMMENDATIONS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER (MARGARET SWEITZER, PE #024955) ON 6-2-2023.

2. FOR FOUNDATION NOTES, SEE FOUNDATION LAYOUT SHEETS S-3 THROUGH S-6.

PILE DESIGN INFORMATION							
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)							
END BENT/BENT NO.	FACTORED AXIAL LOAD PER PILE	FACTORED DOWNDRAG LOAD PER PILE	FACTORED DEAD LOAD PER PILE *	DYNAMIC RESISTANCE FACTOR	NOMINAL DOWNDRAG RESISTANCE PER PILE	NOMINAL SCOUR RESISTANCE PER PILE	SCOUR RESISTANCE FACTOR (DEFAULT = 1.00)
END BENT/BENT NO.	TONS	TONS	TONS		TONS	TONS	
End Bent 1, Piles 1-19, W1, W2	130	10	-	0.6	8	-	-
End Bent 2, Piles 1-19, W1, W2	130	17	-	0.6	13	-	-

* FACTORED DEAD LOAD IS FACTORED WEIGHT OF PILE ABOVE THE GROUND LINE.

SUMMARY OF PILE ACCESSORIES					
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)					
END BENT/BENT NO.	PIPE PILE PLATES REQUIRED?	STEEL PILE POINTS			STEEL PILE TIPS REQUIRED?
		PIPE PILE CUTTING SHOES REQUIRED?	PIPE PILE CONICAL POINTS REQUIRED?	H-PILE POINTS REQUIRED?	
END BENT/BENT NO.	YES OR MAYBE	YES	YES	YES	YES
END BENT 1, PILES 1-19, W1, W2	-	-	-	NO	-
END BENT 2, PILES 1-19, W1, W2	-	-	-	YES	-
TOTAL QTY.	-	-	-	21	-

SUMMARY OF DRILLED PIER TESTING					
(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)					
END BENT/BENT NO.	STANDARD PENETRATION TEST (SPT) REQUIRED?	CROSSHOLE SONIC LOGGING (CSL) REQUIRED?	TOTAL CSL TUBE LENGTH (FOR ALL TUBES) PER PIER	SHAFT INSPECTION DEVICE (SID) REQUIRED?	PILE INTEGRITY TEST (PIT) REQUIRED?
END BENT/BENT NO.	YES OR MAYBE	YES OR MAYBE	LIN. FT.	YES OR MAYBE	MAYBE
BENT 1, PIERS 1-2 **	-	MAYBE	370.0	YES	-
BENT 1, PIERS 3-6	-	MAYBE	320.0	YES	-
BENT 2, PIERS 1-3	-	MAYBE	302.5	YES	-
BENT 2, PIERS 4-6	MAYBE	MAYBE	312.5	YES	-
BENT 3, PIERS 1-6	-	MAYBE	300.0	YES	-
BENT 4, PIERS 1-2 **	-	MAYBE	342.5	YES	-
BENT 4, PIERS 3-5	MAYBE	MAYBE	292.5	YES	-
BENT 4, PIER 6	MAYBE	MAYBE	322.5	YES	-
BENT 5, PIERS 1-2 **	-	MAYBE	307.5	YES	-
BENT 5, PIERS 3-5	MAYBE	MAYBE	257.5	YES	-
BENT 5, PIER 6	MAYBE	MAYBE	242.5	YES	-
BENT 6, PIER 1	-	MAYBE	240.0	YES	-
BENT 6, PIERS 2-3	-	MAYBE	210.0	YES	-
BENT 6, PIERS 4-6	MAYBE	MAYBE	317.5	YES	-
BENT 7, PIERS 1-3	MAYBE	MAYBE	347.5	YES	-
BENT 7, PIERS 4-5	MAYBE	MAYBE	312.5	YES	-
BENT 7, PIERS 6-7	MAYBE	MAYBE	330.0	YES	-
BENT 8, PIERS 1-6	MAYBE	MAYBE	372.5	YES	-
BENT 9, PIER 1	MAYBE	MAYBE	457.5	YES	-
BENT 9, PIER 2	MAYBE	MAYBE	387.5	YES	-
BENT 9, PIERS 3-5 **	-	MAYBE	437.5	YES	-
BENT 9, PIER 6	MAYBE	MAYBE	372.5	YES	-
BENT 10, PIERS 1	MAYBE	MAYBE	362.5	YES	-
BENT 10, PIERS 2-4	MAYBE	MAYBE	342.5	YES	-
BENT 10, PIERS 5-6	-	MAYBE	362.5	YES	-
TOTAL QTY.	15	20	20,000	61	-

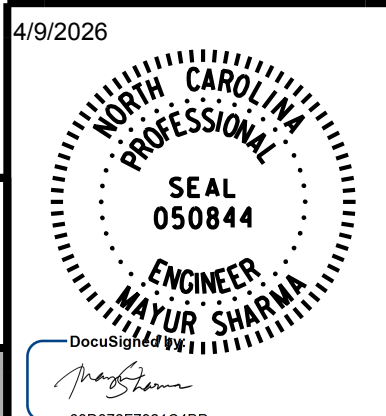
* CSL TUBES ARE REQUIRED IF CSL TESTING IS OR MAY BE REQUIRED. THE NUMBER OF CSL TUBES PER DRILLED PIER IS EQUAL TO ONE TUBE PER FOOT OF DESIGN PIER DIAMETER WITH AT LEAST 4 TUBES PER PIER. THE LENGTH OF EACH CSL TUBE IS EQUAL TO THE DRILLED PIER LENGTH PLUS 1.5 FT.
** FOR BID PURPOSES ONLY. PILOT BORINGS ARE REQUIRED. SEE NOTE NO.5 ON SHEETS S-3 THROUGH S-6.

PROJECT NO. B-6051/U-6143

GASTON/MECKLENBURG COUNTY

STATION: 46+42.50 -L-

SHEET 7 OF 10



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING PILE AND DRILLED PIER FOUNDATION TABLES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					118

GENERAL NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES,SEE SHEET S-117.

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.

FOR EXPANSION JOINT SEALS,SEE SPECIAL PROVISIONS.

FOR SECURING OF VESSELS,SEE SPECIAL PROVISIONS.

FOR BRIDGE DECK RIDEABILITY AND GROOVING,SEE SPECIAL PROVISIONS.

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

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

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

AT THE CONTRACTOR'S OPTION,AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION.SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 46+42.50 -L-.

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

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD,THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS.ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 46+42.50 -L-".

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

TEMPORARY SHORING WILL BE REQUIRED IN THE AREAS INDICATED IN THE PLAN VIEW ON SHEETS 1 AND 2 OF 10.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC,SEE TRAFFIC CONTROL PLANS.FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC,SEE ROADWAY PLANS.

AFTER SERVING AS A TEMPORARY STRUCTURE,THE EXISTING STRUCTURE, CONSISTING OF SEVENTEEN SPANS,FROM 60 TO 80 FT.LONG,MADE UP OF STEEL GIRDERS;WITH A 40 FT.CLEAR ROADWAY AND CONCRETE DECK ON REINFORCED CONCRETE PILE BENTS,AND LOCATED AT STAGE 2 OF THE PROPOSED STRUCTURE SHALL BE REMOVED.THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT.SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE,A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

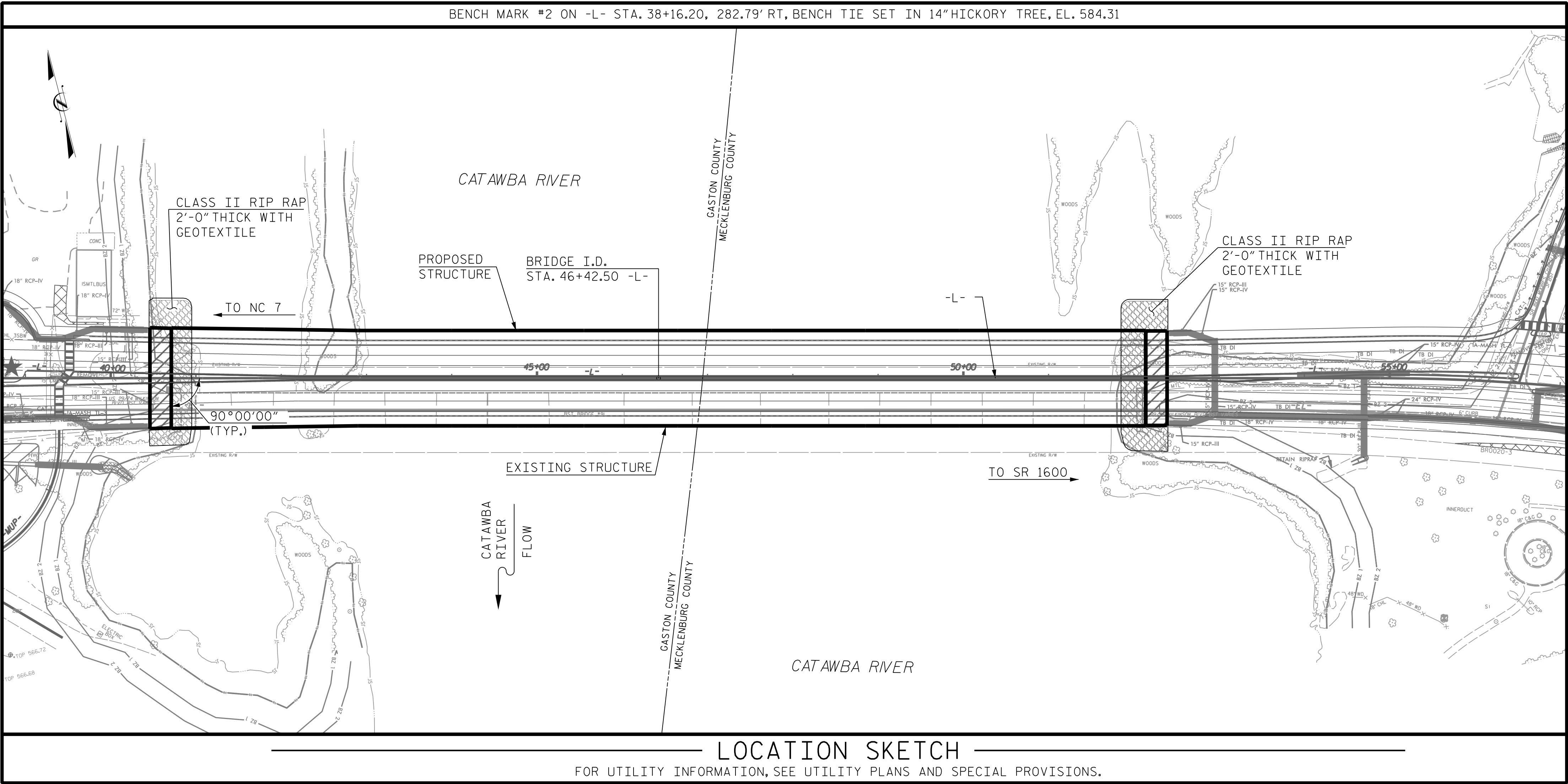
THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE.THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR.THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED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

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER.THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES."

FOR EROSION CONTROL MEASURES,SEE EROSION CONTROL PLANS.

FOR ASBESTOS ASSESSMENT,SEE SPECIAL PROVISIONS.



PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 8 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
LOCATION SKETCH
AND GENERAL NOTES

REVISIONS

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

SHEET NO.

S-8

TOTAL SHEETS
118

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4/9/2026

SEAL
35630
ENGINEER
JOSHUA W. GENTRY
108FE19E1742949D...

DRAWN BY : T. BOYD	DATE : FEB 2025
CHECKED BY : J. W. GENTRY	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J. W. GENTRY	DATE : FEB 2025

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bgonfa
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DRAWN BY : J. W. COOK	DATE : FEB 2025
CHECKED BY : B. D. KLAPPENBACH	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : M. SHARMA	DATE : FEB 2025

TOTAL BILL OF MATERIAL																			
	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS AT STATION 46+42.50 -L-	REMOVAL OF EXISTING STRUCTURE AT STA. 46+42.50 -L-	ASBESTOS ASSESSMENT	4'-6"Ø DRILLED PIER IN SOIL	4'-6"Ø DRILLED PIER NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-6"Ø DRILLED PIER	SID INSPECTIONS	SPT TESTING	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STA. 46+42.50 -L-	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS AA CONCRETE	CLASS A CONCRETE	BRIDGE APPROACH SLABS AT STA. 46+42.50 -L-	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	54" PRESTRESSED CONCRETE GIRDERS
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	CU. YDS.	LUMP SUM	LBS.	LBS.	LBS.	NO. LIN. FT.
SUPERSTRUCTURE		LUMP SUM								LUMP SUM	128,468	127,572	12.6		LUMP SUM	1,060	1,292		187 19,365
END BENT 1														126.0		18,462			
BENT 1				284	114	150								148.2		67,720		12,863	
BENT 2				267	93	150								148.9		64,396		12,148	
BENT 3				246	105	180								153.3		64,324		12,170	
BENT 4				258	110	186								156.3		66,145		12,856	
BENT 5				238	79	156								159.3		62,821		11,605	
BENT 6				230	83.5	180								163.1		63,134		11,750	
BENT 7				375	80	218								194.5		81,654		16,259	
BENT 8				378	60	198								163.3		72,470		15,300	
BENT 9				426	71	144								160.1		74,290		16,778	
BENT 10				343	71	150								157.1		69,716		14,216	
END BENT 2										LUMP SUM				120.9		17,882			
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	3,045	867	1,712	61	15	20	LUMP SUM	128,468	127,572	12.6	1,851.0	LUMP SUM	724,074	1,292	135,945	187 19,365

TOTAL BILL OF MATERIAL																	
	PILE DRIVING EQUIPMENT SETUP FOR HP 14x73 STEEL PILES	HP 14x73 STEEL PILES		STEEL PILE POINTS	DYNAMIC PILE TESTING	VERTICAL CONCRETE BARRIER RAIL	CLASSIC CONCRETE BRIDGE RAIL	RIP RAP CLASS II 2'-0" THICK	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	EXPANSION JOINT SEALS	ELECTRICAL CONDUIT SYSTEM FOR SIGNALS AT STA. 46+42.50 -L-	ELECTRICAL CONDUIT SYSTEM FOR LIGHTING AT STA. 46+42.50 -L-	CONDUIT SYSTEM FOR UTILITIES AT STA. 46+42.50 -L-	ARCHITECTURAL CONCRETE SURFACE TREATMENT	APPLICATION OF BRIDGE COATING	BRIDGE PLAQUES
	EA.	NO.	LIN. FT.	EA.	EA.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	LUMP SUM
SUPERSTRUCTURE						2,385.5	2,314			LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	2,500	106,500	
END BENT 1	21	21	900					610	650						730	770	
BENT 1																3,220	
BENT 2																3,270	
BENT 3																3,390	
BENT 4																3,470	
BENT 5																3,550	
BENT 6																3,650	
BENT 7																4,240	
BENT 8																3,660	
BENT 9																3,570	
BENT 10																3,490	
END BENT 2	21	21	1,470	21				780	830						730	770	
TOTAL	42	42	2,370	21	2	2,385.5	2,314	1,390	1,480	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	3,960	143,550	LUMP SUM

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 9 OF 10

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4/9/2026

STATE OF NORTH CAROLINA

PROFESSIONAL

SEAL

050844

ENGINEER

MAYUR SHARMA

DocuSign
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REVISIONS

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

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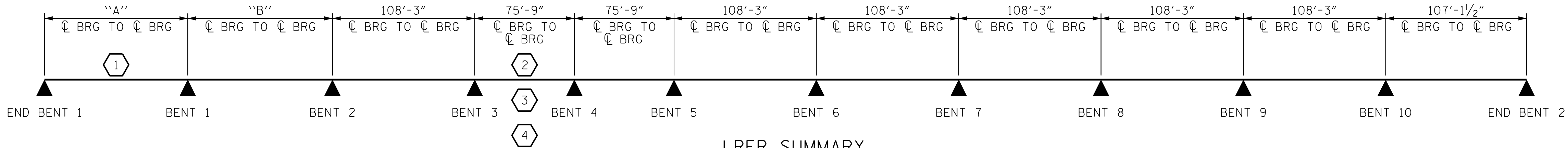
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
TOTAL BILL OF MATERIALS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			118

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LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LEVEL	VEHICLE	WEIGHT (W) (TONS)	⬡ CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W × RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER	
						LIVE-LOAD FACTORS (γ _{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ _{LL})	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.32	-	1.75	0.650	1.39	D	G15	37.9	0.770	1.86	A	G15	97.0	0.80	0.620	1.32	A	G15	53.6	-	
	HL-93 (OPERATING)	N/A		1.80	-	1.35	0.650	1.80	D	G15	37.9	0.770	2.46	A	G15	97.0	N/A -	-	-	-	-	-	-	
	HS-20 (INVENTORY)	36.000	2	1.83	65.880	1.75	0.650	1.83	D	G15	37.9	0.770	2.58	A	G15	97.0	0.80	0.650	1.87	D	G15	37.9	-	
	HS-20 (OPERATING)	36.000		2.37	85.320	1.35	0.650	2.37	D	G15	37.9	0.770	3.39	A	G15	97.0	N/A -	-	-	-	-	-	-	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.26	57.510	1.40	0.650	5.20	D	G15	37.9	0.770	8.31	A	G15	97.0	0.80	0.650	4.26	D	G15	37.9	-
		SNGARBS2	20.000		3.16	63.200	1.40	0.650	3.86	D	G15	37.9	0.770	5.76	A	G15	97.0	0.80	0.650	3.16	D	G15	37.9	-
		SNAGRIS2	22.000		2.99	65.780	1.40	0.650	3.65	D	G15	37.9	0.770	5.29	A	G15	97.0	0.80	0.650	2.99	D	G15	37.9	-
		SNCOTTS3	27.250		2.12	57.770	1.40	0.650	2.59	D	G15	37.9	0.770	4.06	A	G15	97.0	0.80	0.650	2.12	D	G15	37.9	-
		SNAGGRS4	34.925		1.76	61.468	1.40	0.650	2.16	D	G15	37.9	0.770	3.27	A	G15	97.0	0.80	0.650	1.76	D	G15	37.9	-
		SNS5A	35.550		1.73	61.502	1.40	0.650	2.11	D	G15	37.9	0.770	3.28	A	G15	97.0	0.80	0.650	1.73	D	G15	37.9	-
		SNS6A	39.950		1.58	63.121	1.40	0.650	1.93	D	G15	37.9	0.770	2.95	A	G15	97.0	0.80	0.650	1.58	D	G15	37.9	-
		SNS7B	42.000		1.51	63.420	1.40	0.650	1.84	D	G15	37.9	0.770	2.86	A	G15	97.0	0.80	0.650	1.51	D	G15	37.9	-
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.93	63.690	1.40	0.650	2.35	D	G15	37.9	0.770	3.56	A	G15	97.0	0.80	0.650	1.93	D	G15	37.9	-
		TNT4A	33.075		1.94	64.166	1.40	0.650	2.36	D	G15	37.9	0.770	3.50	A	G15	97.0	0.80	0.650	1.94	D	G15	37.9	-
		TNT6A	41.600		1.58	65.728	1.40	0.650	1.93	D	G15	37.9	0.770	2.99	A	G15	97.0	0.80	0.650	1.58	D	G15	37.9	-
		TNT7A	42.000		1.59	66.780	1.40	0.650	1.94	D	G15	37.9	0.770	2.94	A	G15	97.0	0.80	0.650	1.59	D	G15	37.9	-
		TNT7B	42.000		1.63	66.460	1.40	0.650	2.00	D	G15	37.9	0.770	2.82	A	G15	97.0	0.80	0.620	1.63	A	G15	53.6	-
		TNAGRIT4	43.000		1.56	67.080	1.40	0.650	1.91	D	G15	37.9	0.770	2.73	A	G15	97.0	0.80	0.650	1.56	D	G15	37.9	-
		TNAGT5A	45.000		1.47	66.150	1.40	0.650	1.80	D	G15	37.9	0.770	2.67	A	G15	97.0	0.80	0.650	1.47	D	G15	37.9	-
TNAGT5B	45.000	3	1.46	65.700	1.40	0.650	1.78	D	G15	37.9	0.770	2.59	A	G15	97.0	0.80	0.650	1.46	D	G15	37.9	-		
EMERGENCY VEHICLE (EV)	EV2	28.750		2.23	64.113	1.30	0.650	2.94	D	G15	37.9	0.770	4.30	A	G15	97.0	0.80	0.650	2.23	D	G15	37.9	-	
	EV3	43.000	4	1.46	62.780	1.30	0.650	1.92	D	G15	37.9	0.770	2.84	A	G15	97.0	0.80	0.650	1.46	D	G15	37.9	-	



LRFR SUMMARY

GIRDER	“A”	GIRDER	“B”
1,2, 17	107'-15/8"	1,2, 17	108'-3/8"
3-5, 15, 16	107'-19/16"	3-5, 15, 16	108'-3/16"
6-14	107'-1 1/2"	6-14	108'-3"

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

- PRESTRESSED GIRDERS WERE DESIGNED USING SIMPLE SPAN ANALYSIS.
- ALL DISTANCES ARE MEASURED FROM CENTERLINE OF BEARING TO CENTERLINE OF BEARING.

⬡ CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

4 EMERGENCY VEHICLE LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

PROJECT NO. B-6051/U-6143
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STATION: 46+42.50 -L-

SHEET 10 OF 10

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DESIGN ENGINEER OF RECORD : P. OARE DATE : JAN 2024

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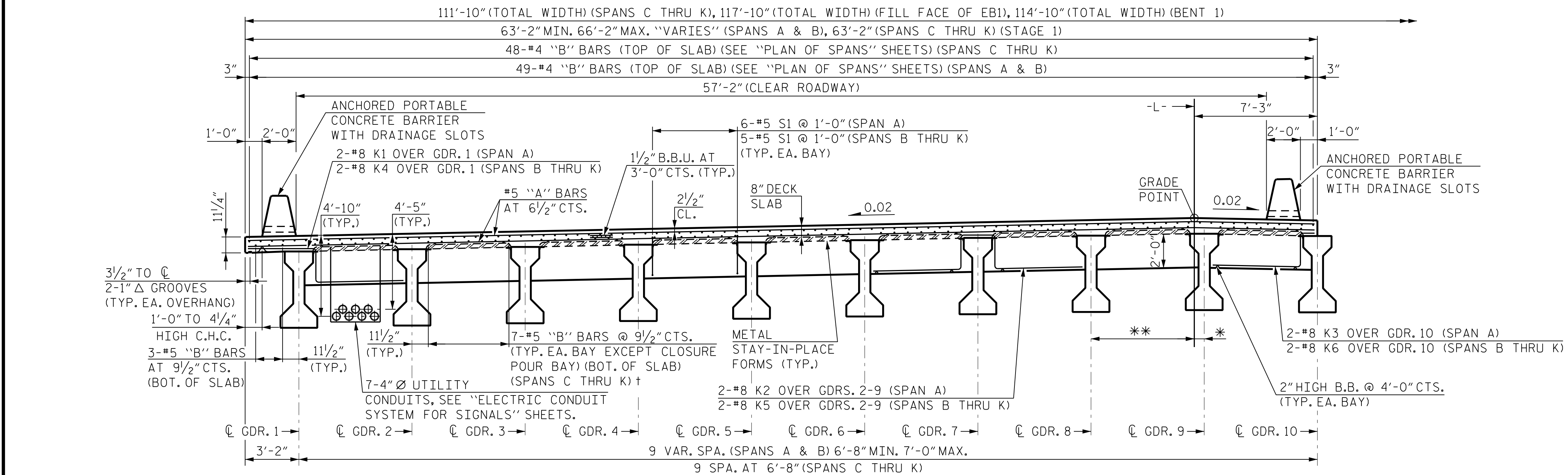
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054077
ENGINEER
PETER L. OARE
Signed
APP305128AD0462

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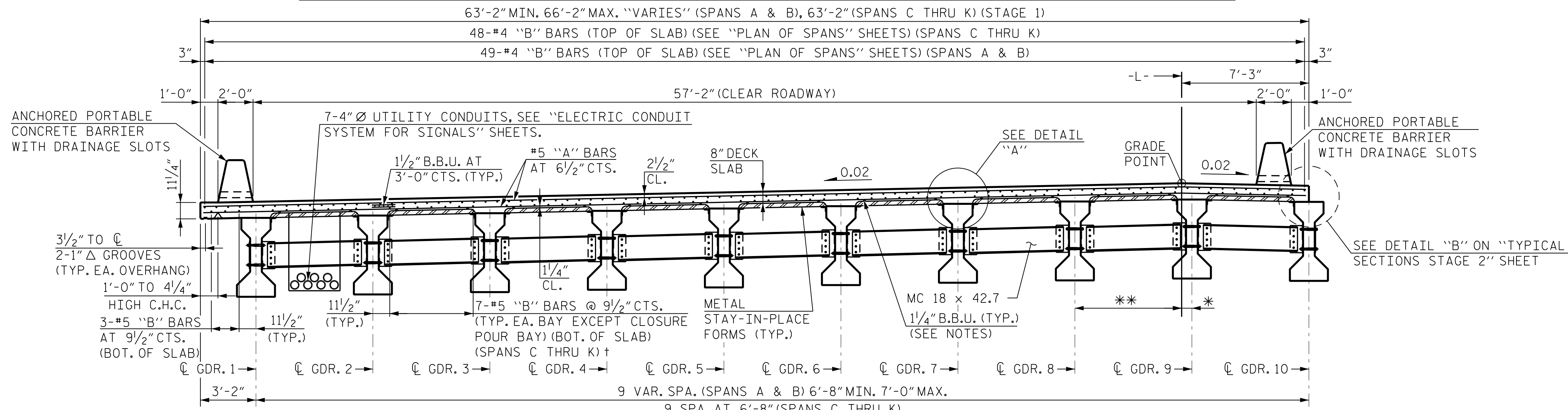
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
LRFR SUMMARY FOR
PRESTRESSED
CONCRETE GIRDERS
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

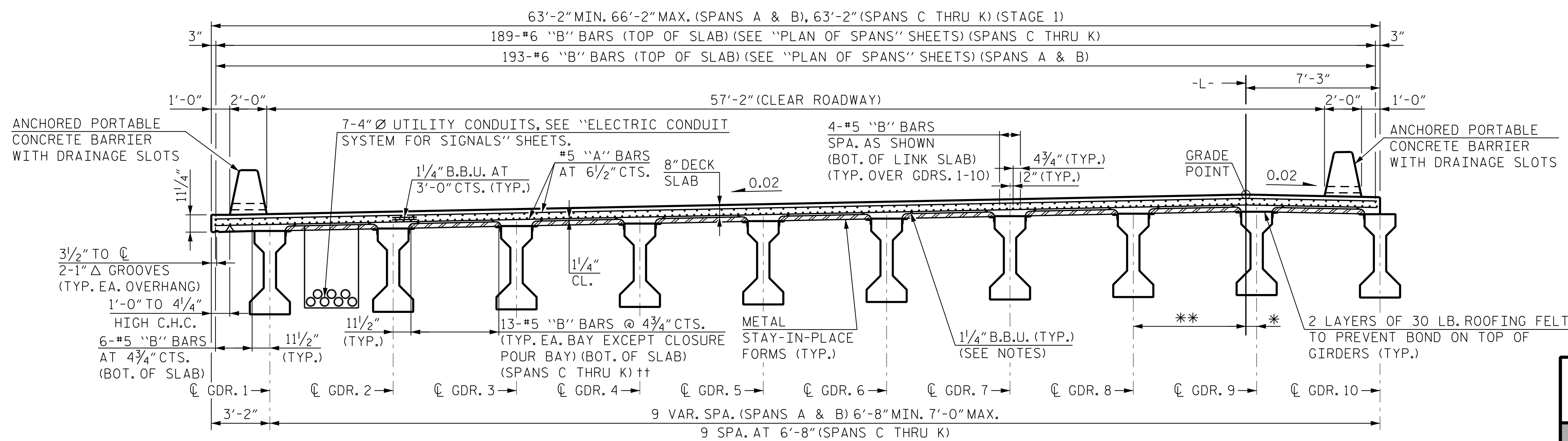
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TYPICAL SECTION AT END BENT AND EXPANSION BENT DIAPHRAGM



TYPICAL SECTION AT INTERMEDIATE DIAPHRAGM



TYPICAL SECTION AT FIXED BENT

(SHOWING LINK SLAB REGION)

NOTES:

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF "A" BARS.

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

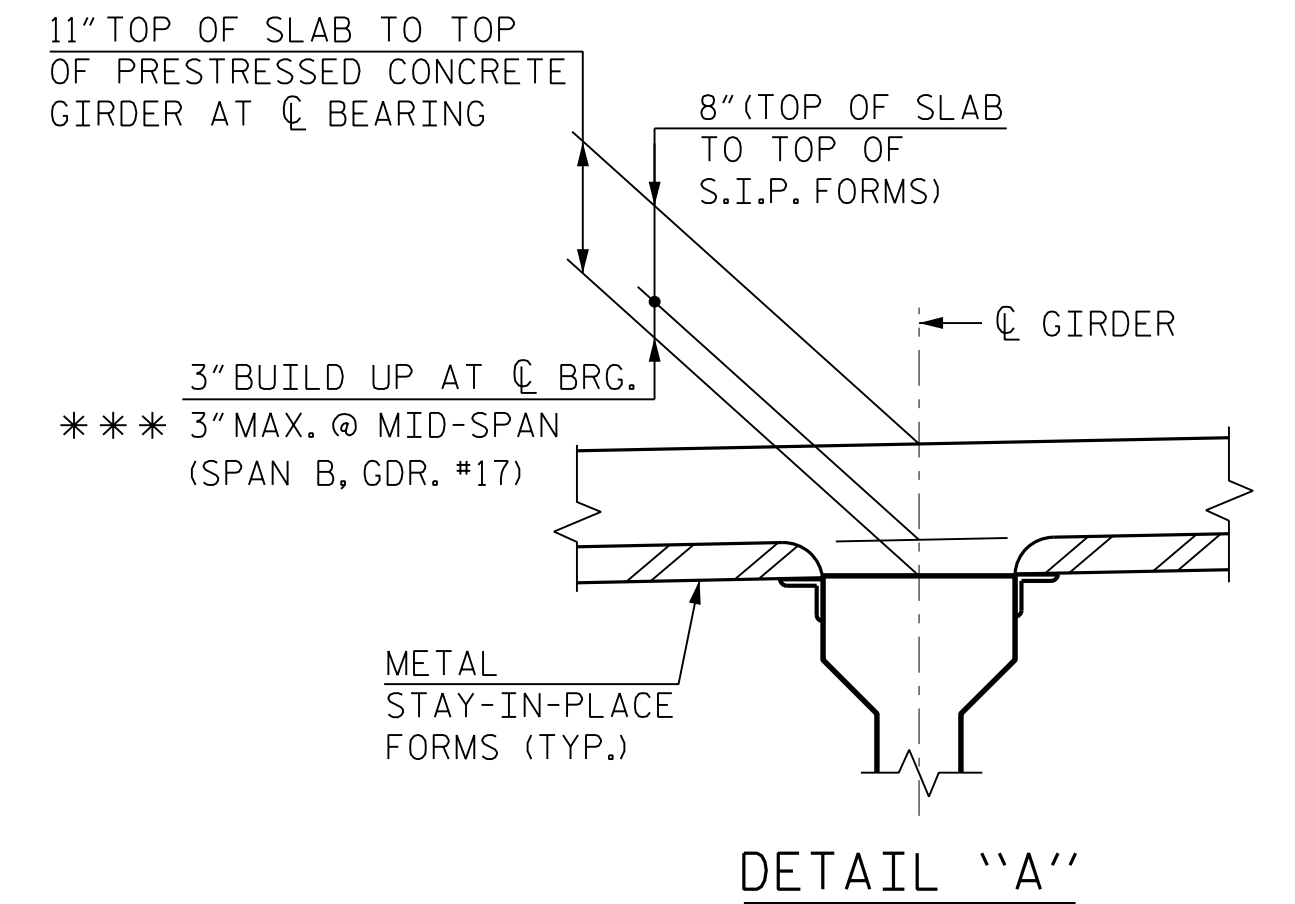
PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

CONCRETE DIAPHRAGMS IN CLOSURE POUR BAYS SHALL BE POURED WITH THE CLOSURE POUR OF THE DECK.

SEE TRAFFIC CONTROL PLANS FOR LOCATION OF THE ANCHORED PORTABLE CONCRETE BARRIER.

FOR J1 BARS, SEE "PLAN OF SPANS" SHEETS.

SEE "PLAN OF SPANS" SHEETS FOR MORE DETAILED "B" BAR SPACING.



* VARIES (SPANS A & B) 7" (SPANS C THRU K)

** VARIES (SPANS A & B) 6'-1" (SPANS C THRU K)

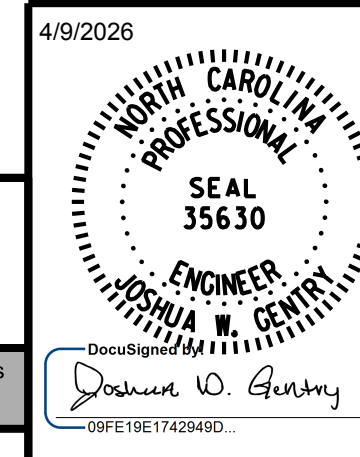
*** BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS.

† 8-#5 "B" BARS EVENLY SPA. (SPANS A & B)

†† 15-#5 "B" BARS EVENLY SPA. (SPANS A & B)

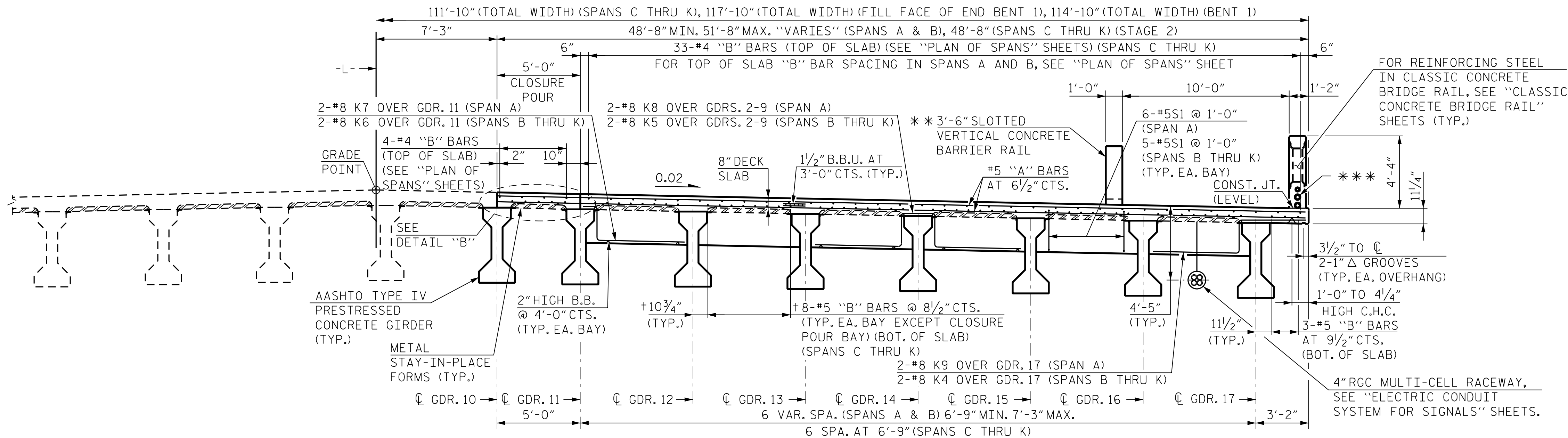
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 6

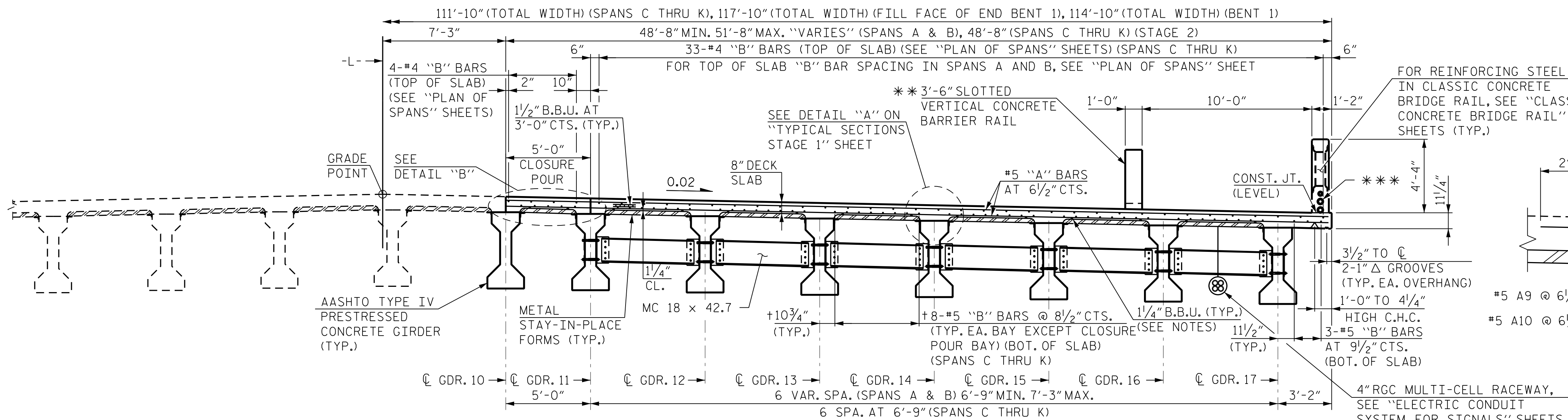


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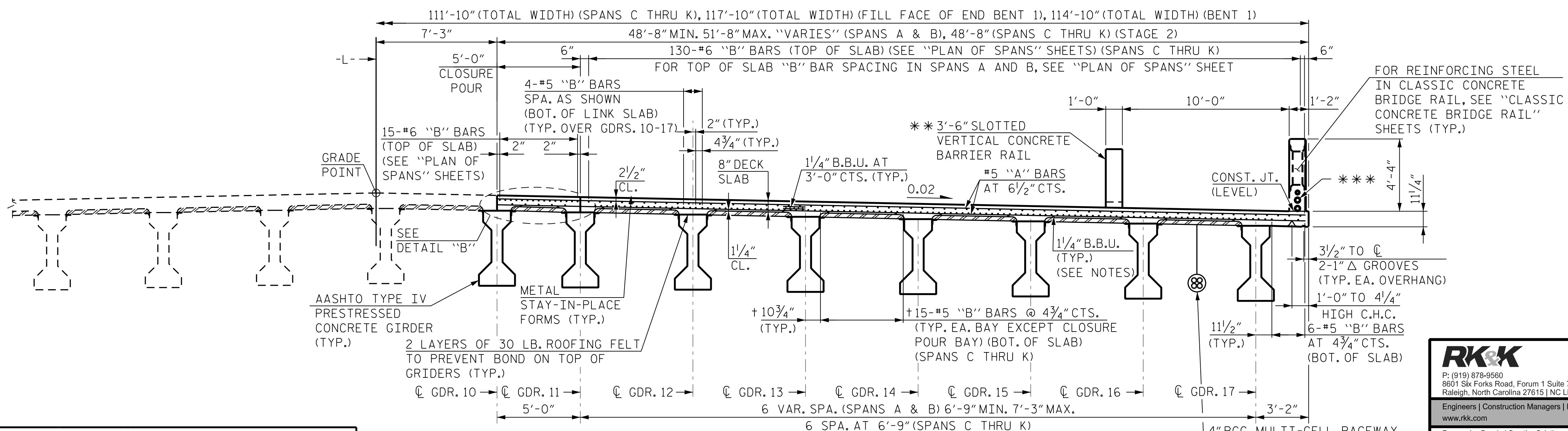
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-12
2			4			
TOTAL SHEETS						118



TYPICAL SECTION AT END BENT AND EXPANSION BENT DIAPHRAGM



TYPICAL SECTION AT INTERMEDIATE DIAPHRAGM



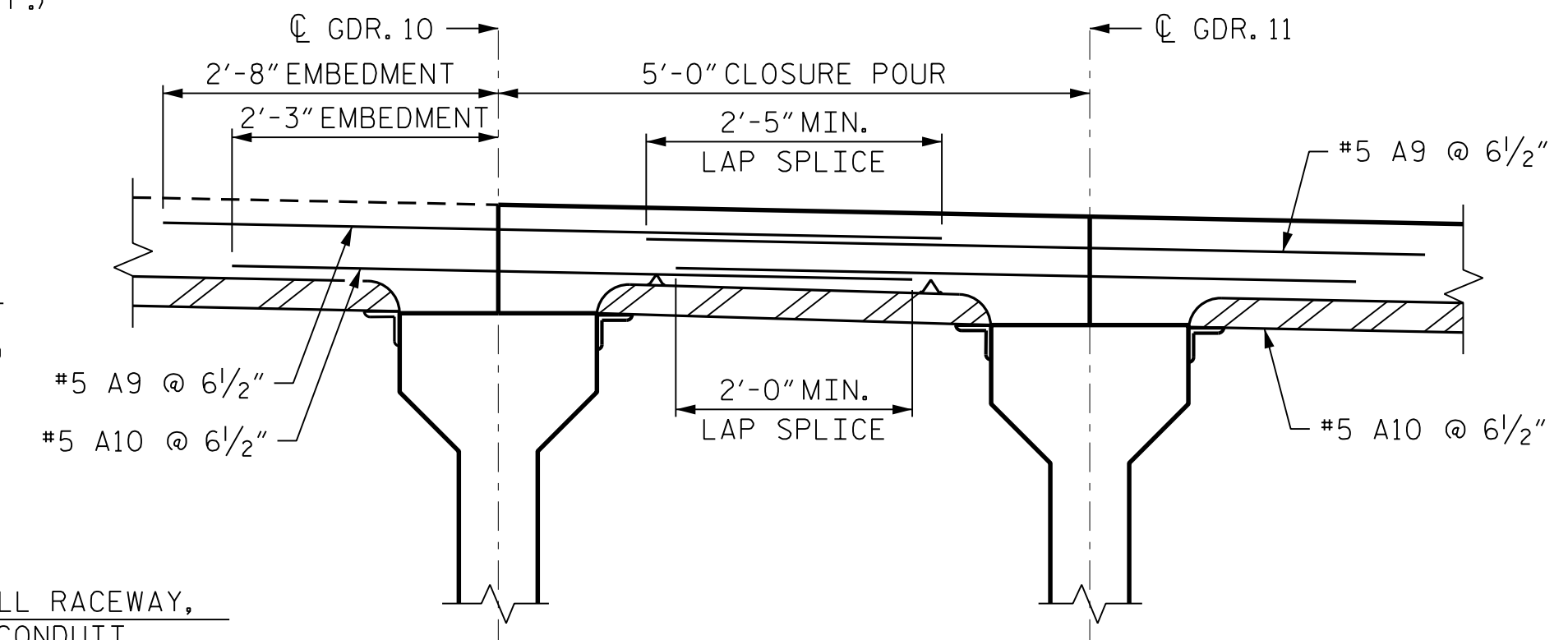
TYPICAL SECTION AT FIXED BENT

**FOR REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAIL, SEE "VERTICAL CONCRETE BARRIER RAIL" SHEETS (TYP.).

***FOR LIGHTING CONDUIT, SEE "ELECTRICAL CONDUIT SYSTEM FOR LIGHTING" SHEETS (TYP.).

†FOR SPACING OF "B" BARS IN BOTTOM OF SLAB, SEE "PLAN OF SPANS" SHEETS.

FOR NOTES, SEE SHEET 1 OF 6.



DETAIL "B"
CLOSURE POUR DETAIL

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GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

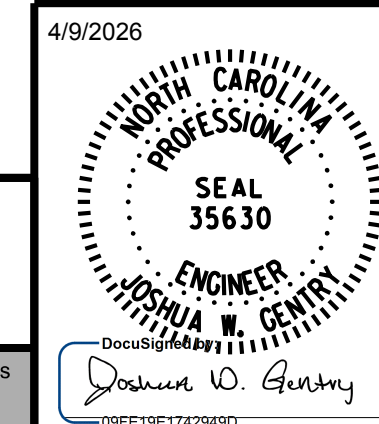
SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
TYPICAL SECTIONS
STAGE 2

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

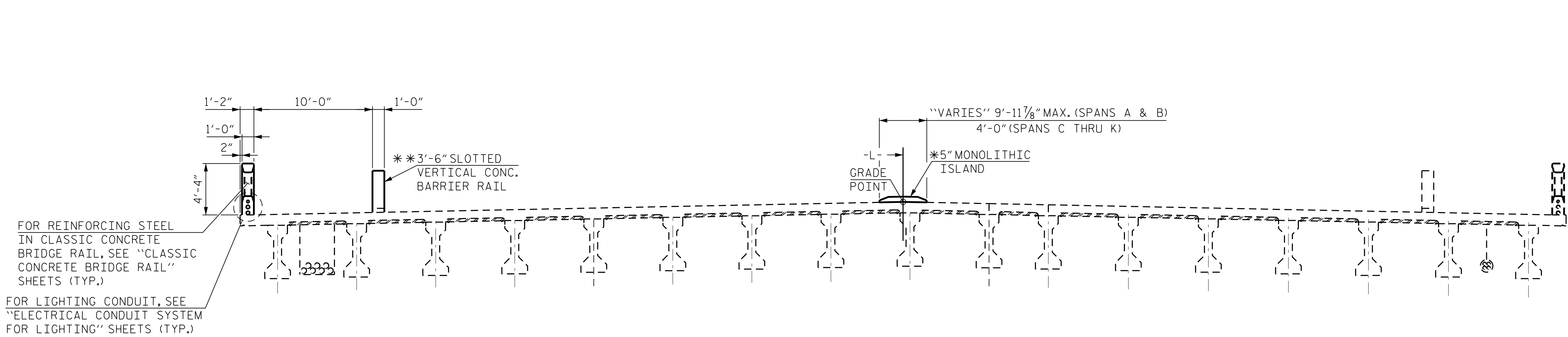
TOTAL
SHEETS
118



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PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTIONS STAGE 3					
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2			4		
TOTAL SHEETS					118

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JOSHUA W. GENTRY
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PLAN DETAIL OF END BENT 1

(DECK SLAB NOT SHOWN FOR CLARITY)

PLAN OF GIRDERS AT LINK SLAB - BENT 1

(BENT 1 SHOWN, BENTS 6, 7, 9 AND 10 SIMILAR)

*** MEASURED ALONG CL GIRDER
◇◇ THE TOP OF THE GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS, AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.

SECTION A-A

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

SECTION B-B

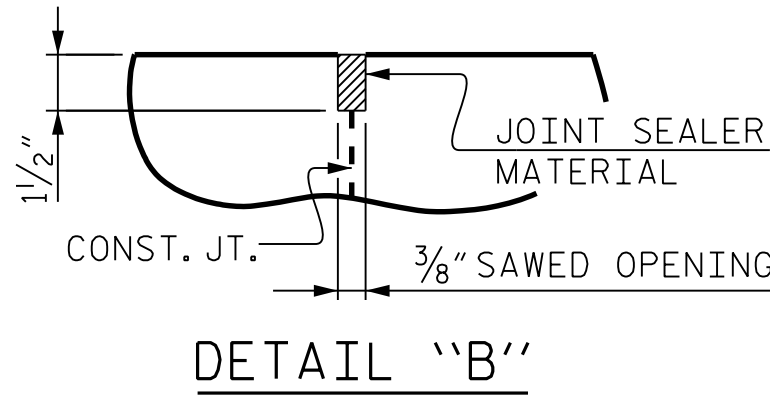
*** MEASURED ALONG CL GIRDER

LINK SLAB DETAILS - BENT 1

(BENT 1 SHOWN, BENTS 6, 7, 9 AND 10 SIMILAR)

** AT $1\frac{1}{2}$ " DEEP, $\frac{3}{8}$ " WIDE CONTRACTION JOINT AT BENT CONTROL LINE SHALL BE SAWN WITHIN 24 HOURS OF POURING THE DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

† METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO THE GIRDER FLANGES IN THE REGION OF THE LINK SLAB.



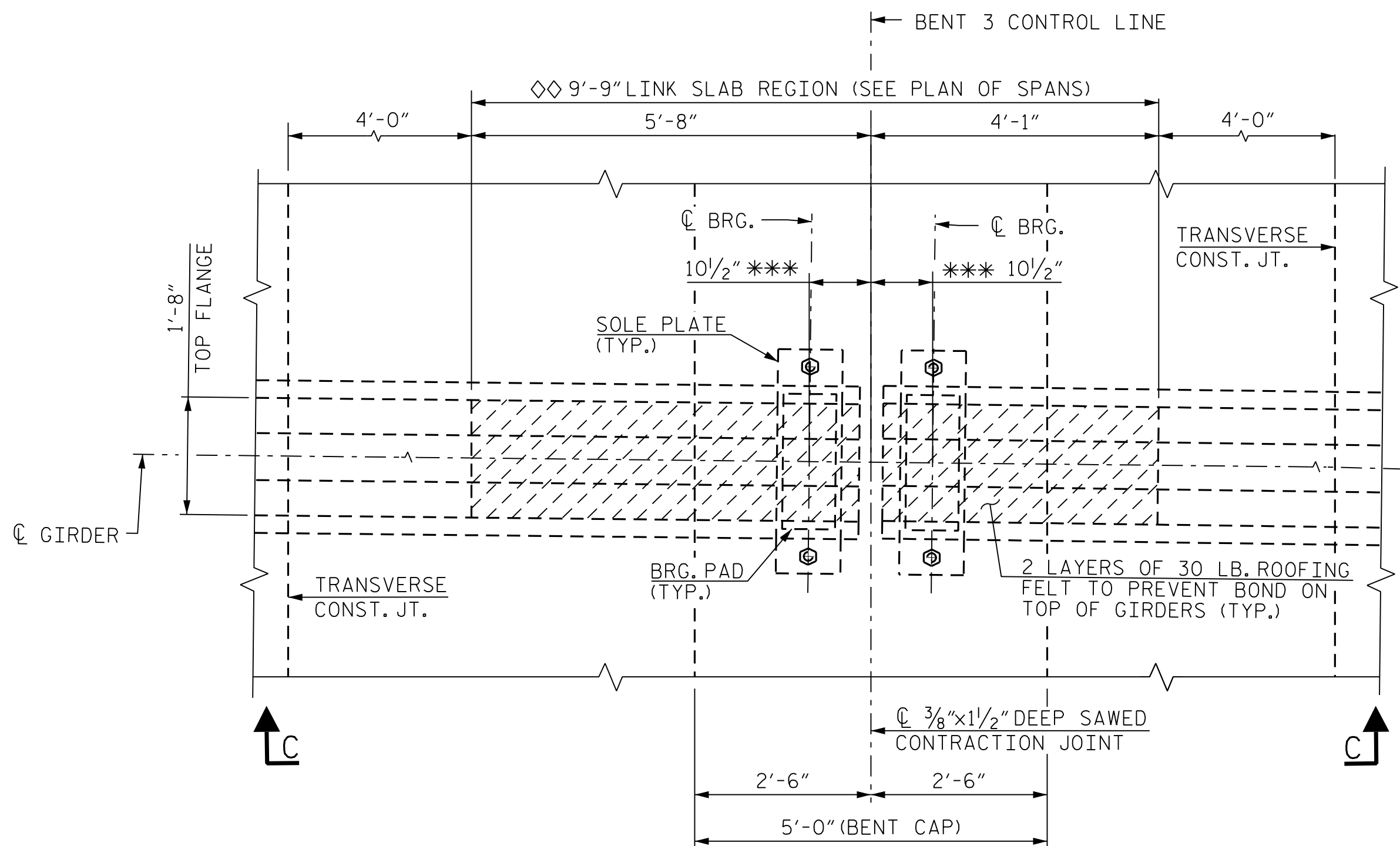
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE TYPICAL SECTION DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
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2			4		
SHEET NO.					S-15
TOTAL SHEETS					118

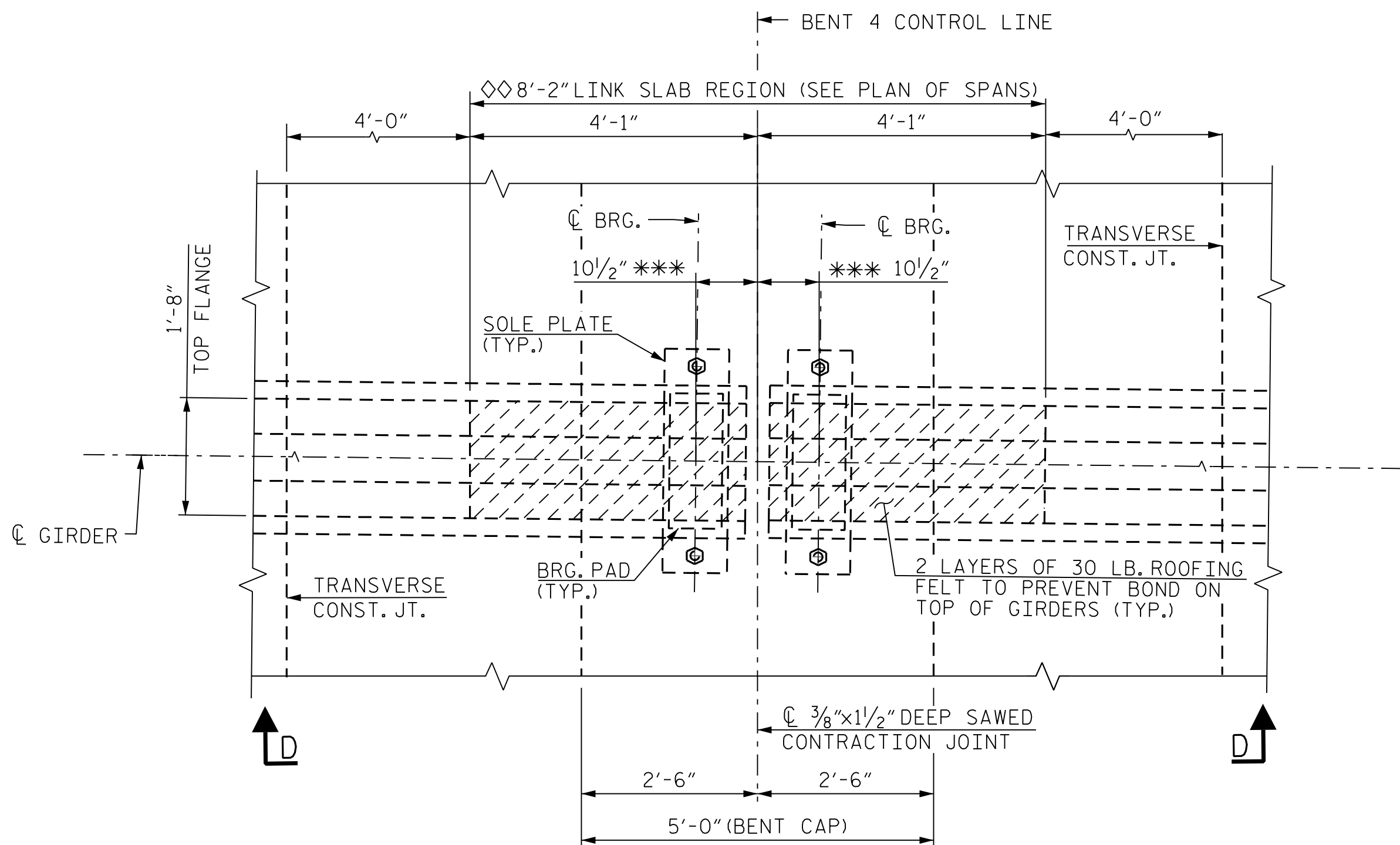


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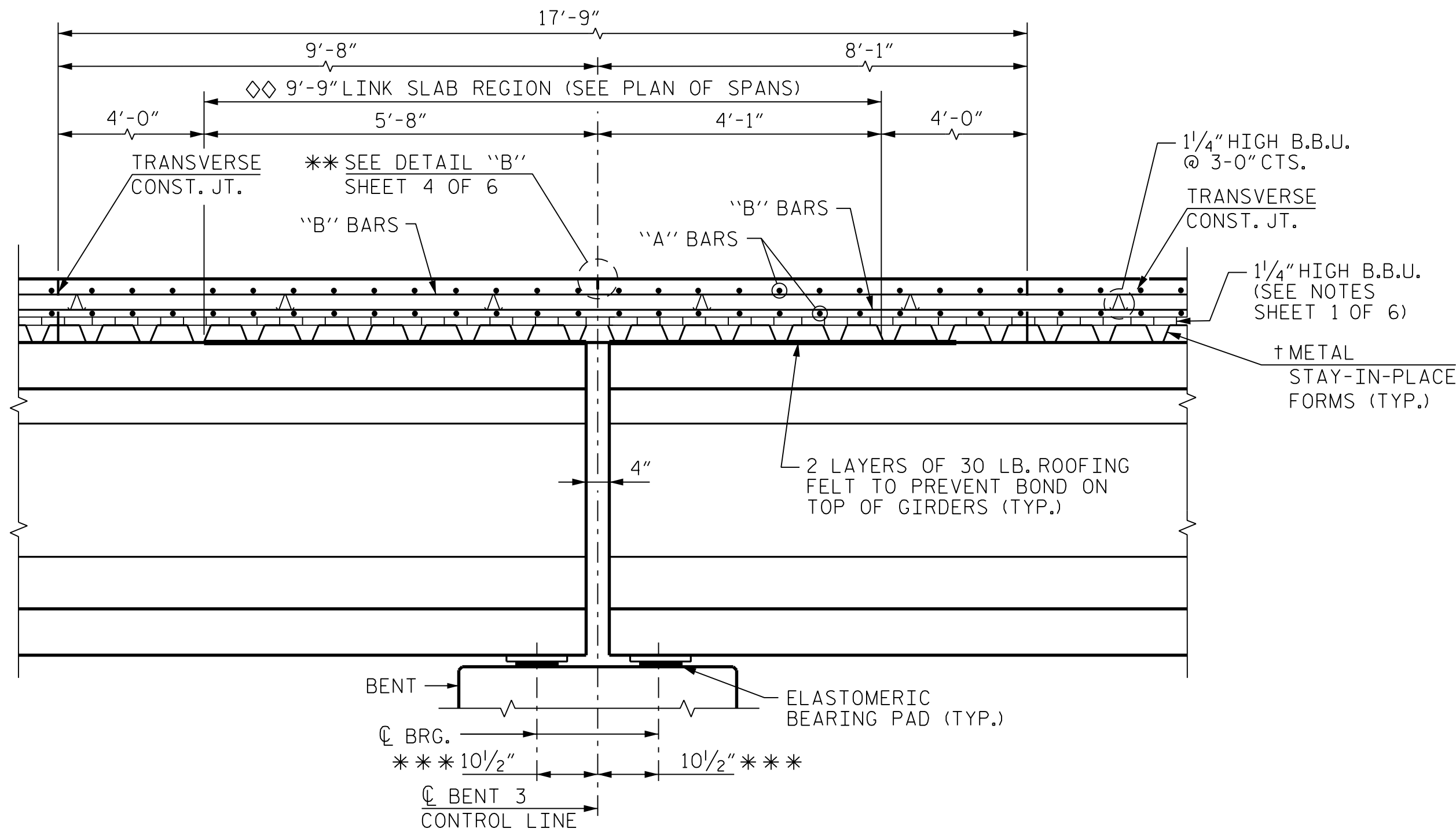
PLAN OF GIRDERS AT LINK SLAB - BENT 3

*** MEASURED ALONG C GIRDER
◇◇ THE TOP OF THE GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS, AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.



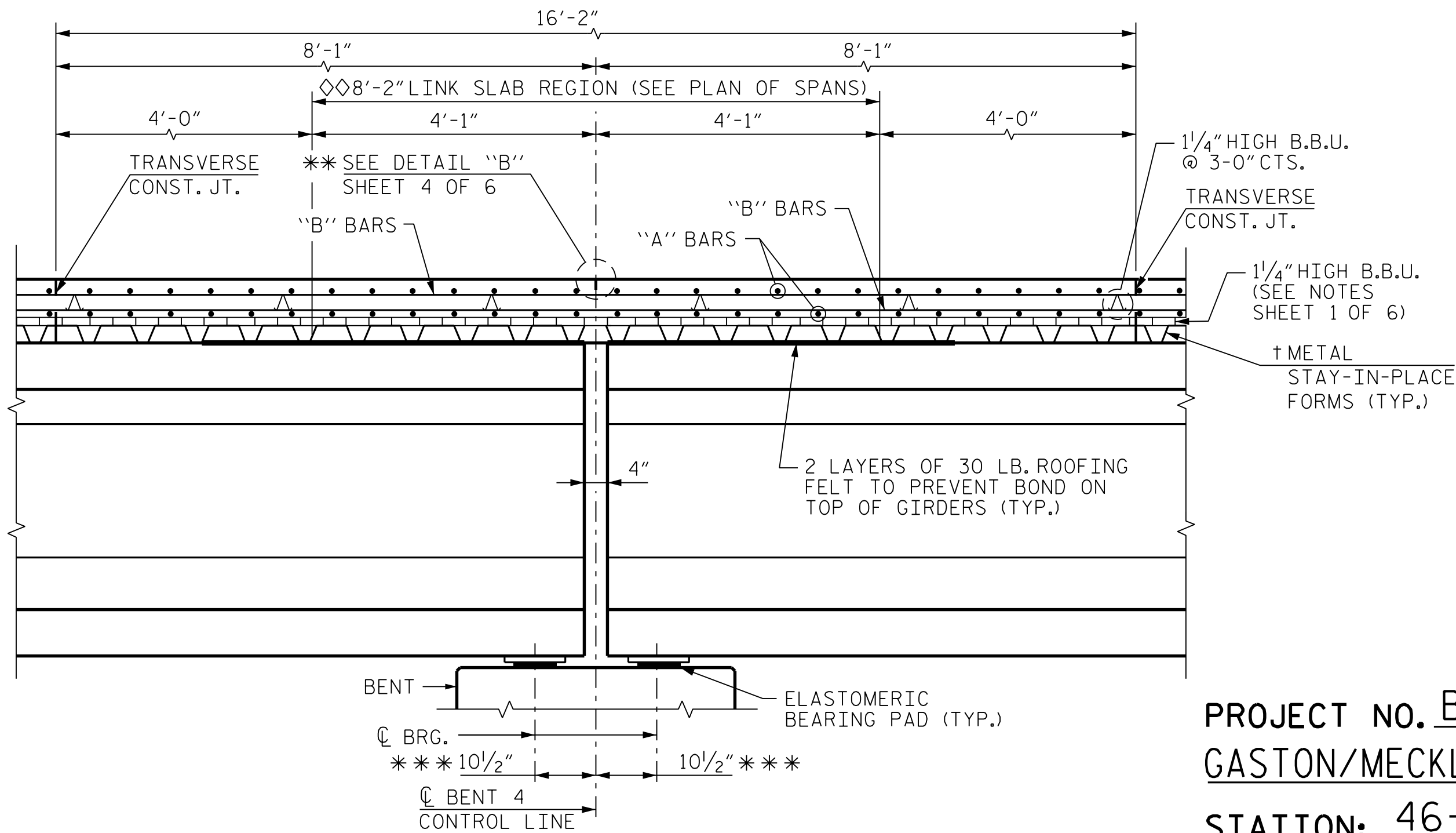
PLAN OF GIRDERS AT LINK SLAB - BENT 4

*** MEASURED ALONG C GIRDER
◇◇ THE TOP OF THE GIRDER IN THE REGION OF THE LINK SLAB SHALL BE SMOOTH (NOT RAKED) AND FREE OF STIRRUPS, ANCHOR STUDS, DECK FORMWORK ATTACHMENTS, AND OVERHANG FALSEWORK/FORMWORK ATTACHMENTS.



SECTION C-C

*** MEASURED ALONG C GIRDER
† METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO THE GIRDER FLANGES IN THE REGION OF THE LINK SLAB.
LINK SLAB DETAILS - BENT 3



SECTION D-D

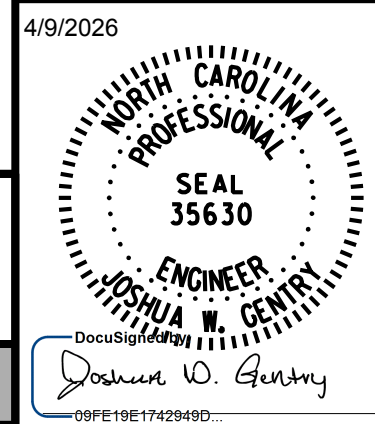
*** MEASURED ALONG C GIRDER
† METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO THE GIRDER FLANGES IN THE REGION OF THE LINK SLAB.
LINK SLAB DETAILS - BENT 4

*** A 1 1/2" DEEP, 3/8" WIDE CONTRACTION JOINT AT BENT CONTROL LINE SHALL BE SAWN WITHIN 24 HOURS OF POURING THE LINK SLAB DECK. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

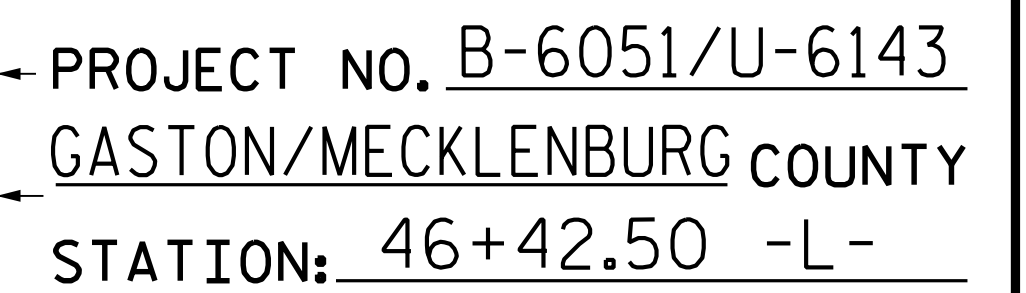
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 5 OF 6

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DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025



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SUPERSTRUCTURE TYPICAL SECTIONS DETAILS					
REVISIONS					
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1			3		
2			4		
SHEET NO. S-16					TOTAL SHEETS 118



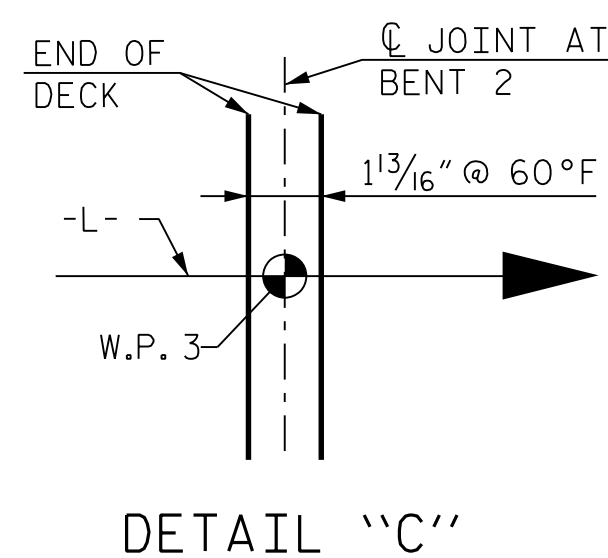
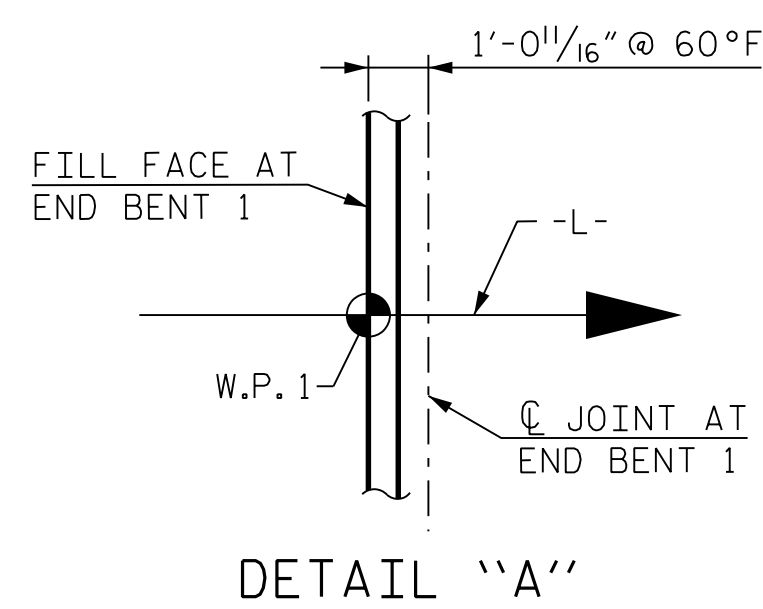
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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SUPERSTRUCTURE

PLAN OF SPANS

SPANS A AND B

FOR "B" BARS IN BOTTOM OF SLAB,
SEE PLAN OF SPAN BOTTOM BAR
SHEETS.



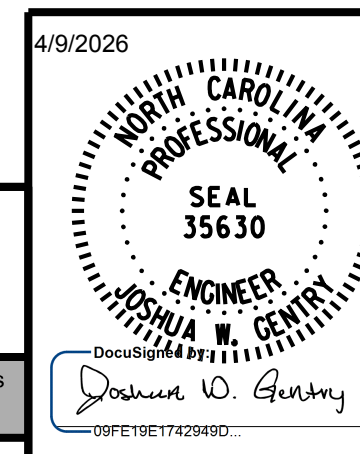
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DESIGN ENGINEER OF RECORD : J. W. GENTRY	DATE : FEB 2025

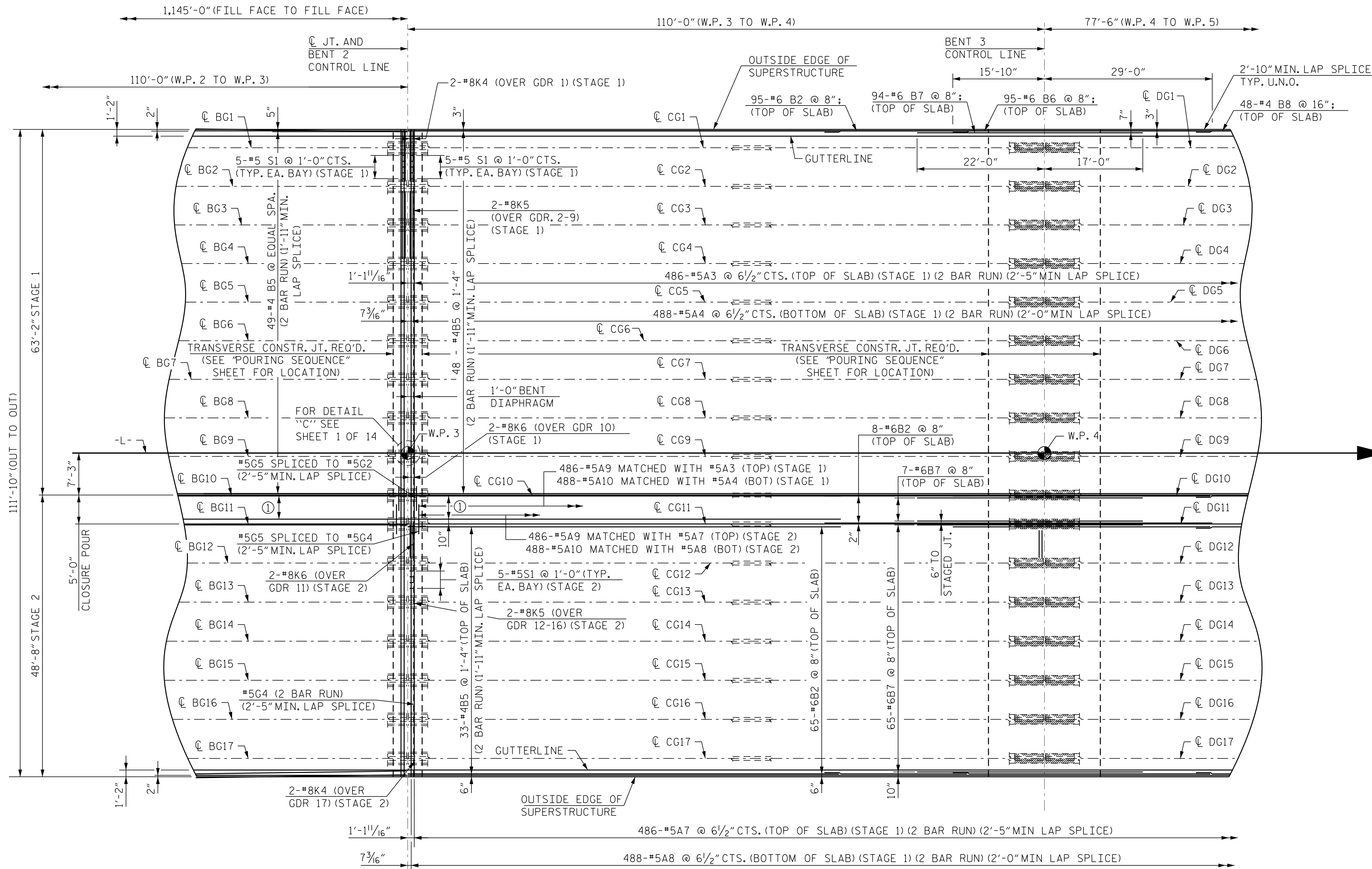
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SPAN C
PLAN OF SPANS

(CLASSIC CONCRETE BARRIER RAIL,
VERTICAL CONCRETE BARRIER RAIL
AND MONOLITHIC ISLAND NOT SHOWN
FOR CLARITY).

FOR "B" BARS IN BOTTOM OF SLAB,
SEE PLAN OF SPAN BOTTOM BAR
SHEETS.

① 4-#4B5 @ 1'-4" (TOP OF SLAB) (2 BAR RUN) (1'-11" MIN. LAP SPLICE)

PROJECT NO. B-6051/U-6143
CASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 2 OF 14

DRAWN BY : J. W. COOK DATE : FEB 2025
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1			3			S-19
2			4			
TOTAL SHEETS						118



PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 4 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS
SPANS F & I

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUPERSTRUCTURE

PLAN OF SPANS
SPANS F & I

REVISIONS						SHEET NO. S-21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

ET NO.

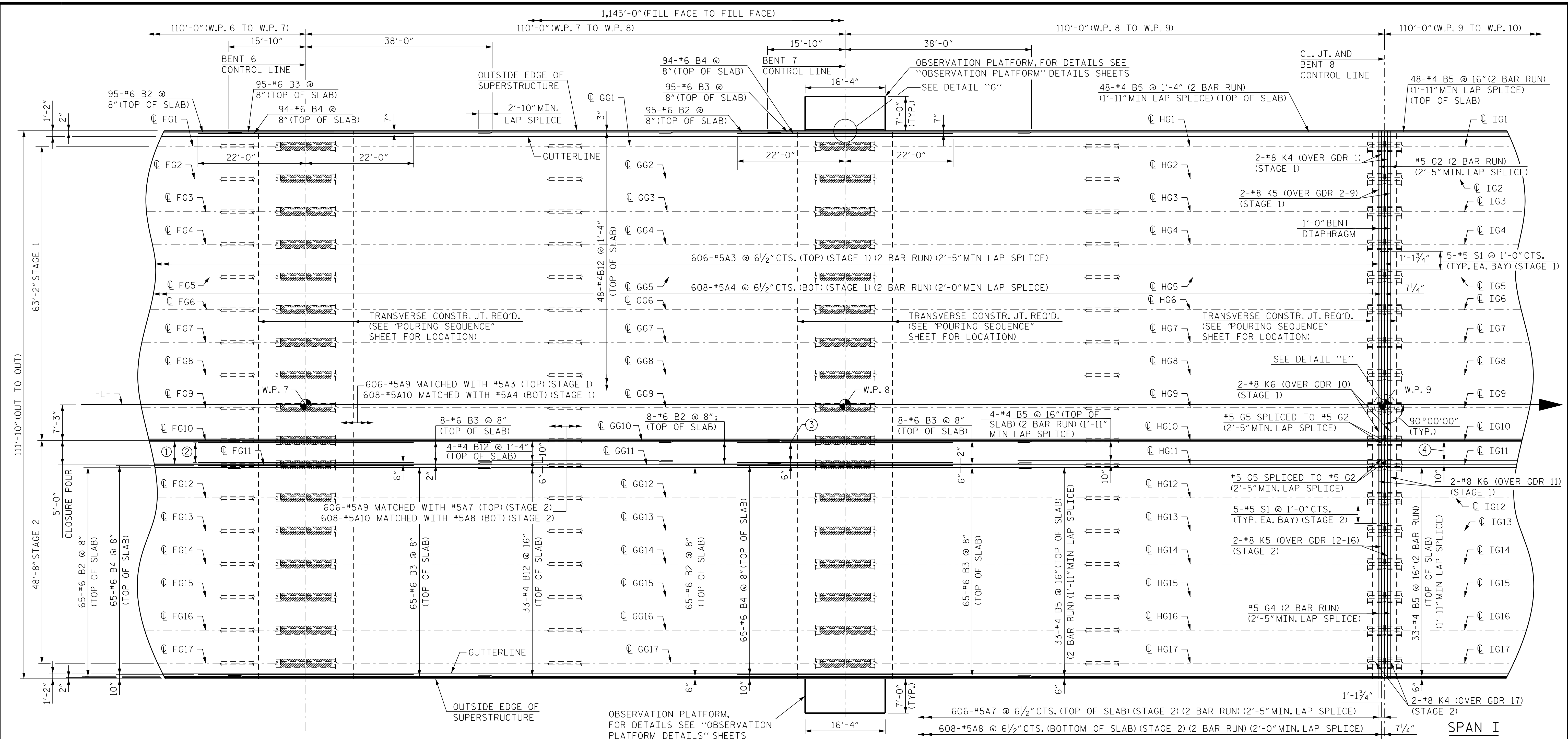
S-21

TOTAL

110

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SPAN F

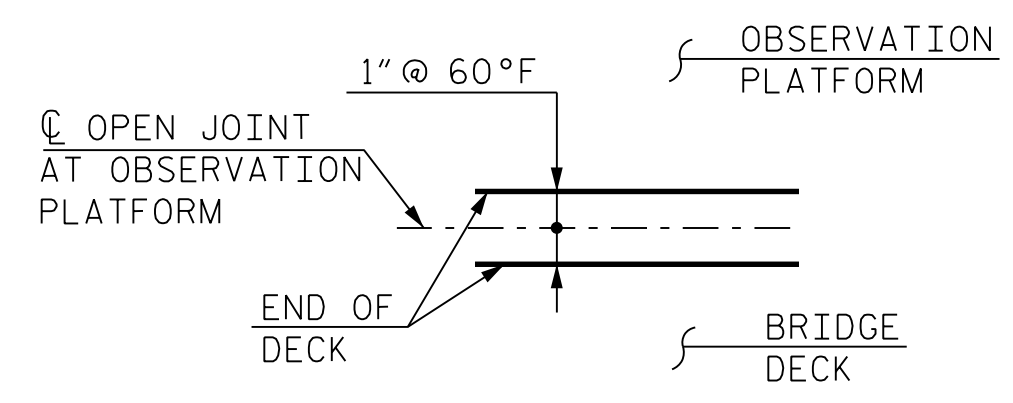
SPAN G

PLAN OF SPANS

(CLASSIC CONCRETE BARRIER RAIL, VERTICAL CONCRETE BARRIER RAIL AND MONOLITHIC ISLAND NOT SHOWN FOR CLARITY).

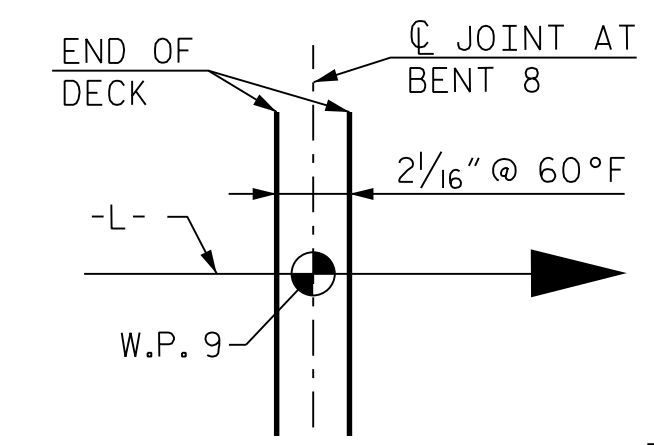
FOR "B" BARS IN BOTTOM OF SLAB, SEE PLAN OF SPAN BOTTOM BAR SHEETS.

- ① 8-#6 B2 @ 8" (TOP OF SLAB)
- ② 7-#6 B4 @ 8" (TOP OF SLAB)
- ③ 7-#6 B4 @ 8" (TOP OF SLAB)
- ④ 4-#4 B5 @ 16" (2 BAR RUN) (1'-11" MIN LAP SPLICE) (TOP OF SLAB)



DETAIL "G"

SPAN H



DETAIL "E"

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ENGINEER
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DocuSign Envelope ID: 08F19E17429490...

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GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 5 OF 14

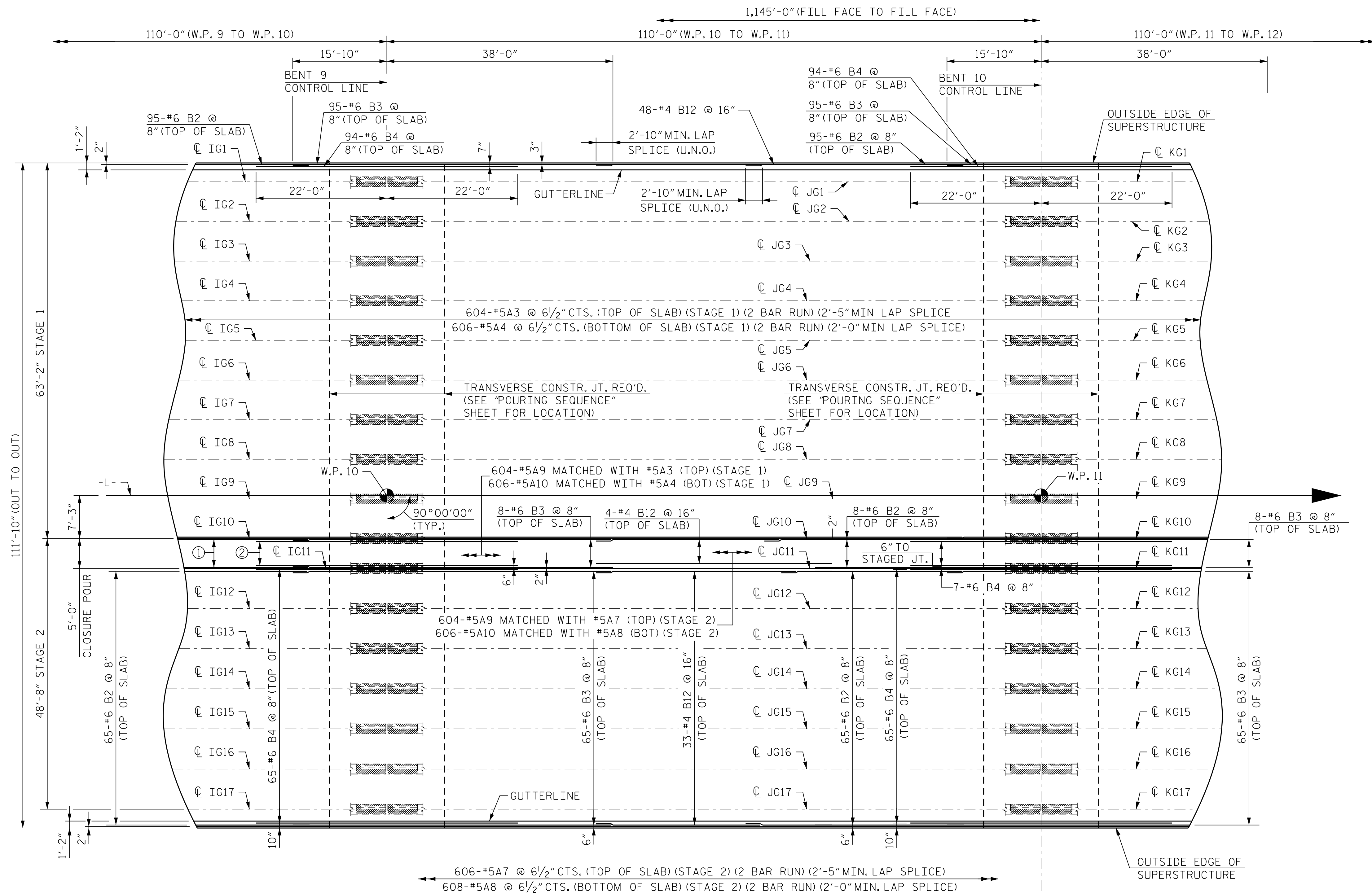
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS
SPANS G AND H

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

SHEET NO. S-22
TOTAL SHEETS 118

DRAWN BY : J. W. COOK DATE : FEB 2025
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DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025

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bgonfa



SPAN I
(SEE SPAN F)

SPAN J

SPAN K

PLAN OF SPANS

(CLASSIC CONCRETE BARRIER RAIL,
VERTICAL CONCRETE BARRIER RAIL
AND MONOLITHIC ISLAND NOT SHOWN
FOR CLARITY).

FOR "B" BARS IN BOTTOM OF SLAB,
SEE PLAN OF SPAN BOTTOM BAR
SHEETS.

- ① 8-#6 B2 @ 8" (TOP OF SLAB)
② 7-#6 B4 @ 8" (TOP OF SLAB)

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DESIGN ENGINEER OF RECORD : J. W. GENTRY
DATE : FEB 2025
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DATE : FEB 2025

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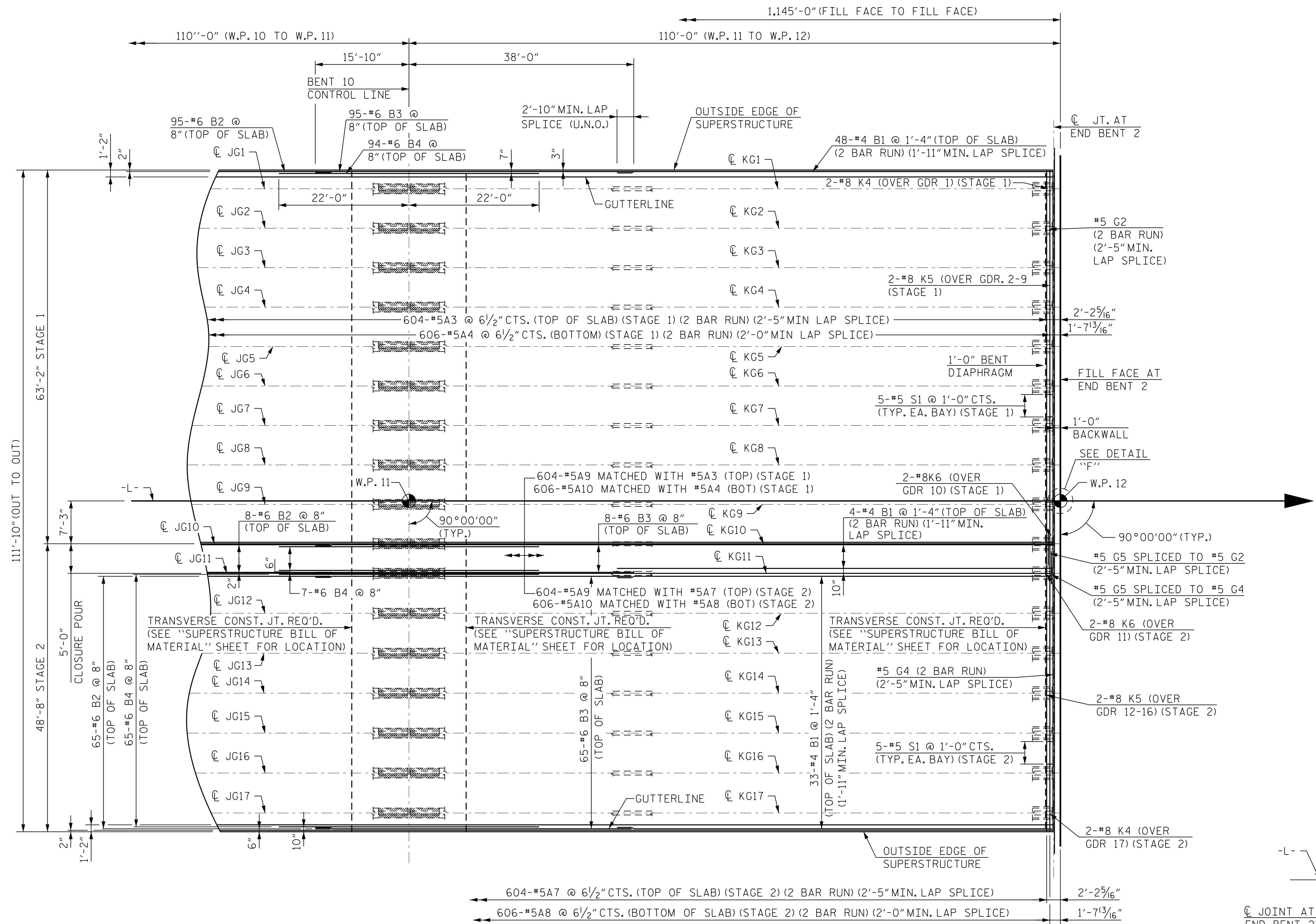
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10FET19ET7429490...

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GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 6 OF 14

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPANS SPAN J					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-23					TOTAL SHEETS 118

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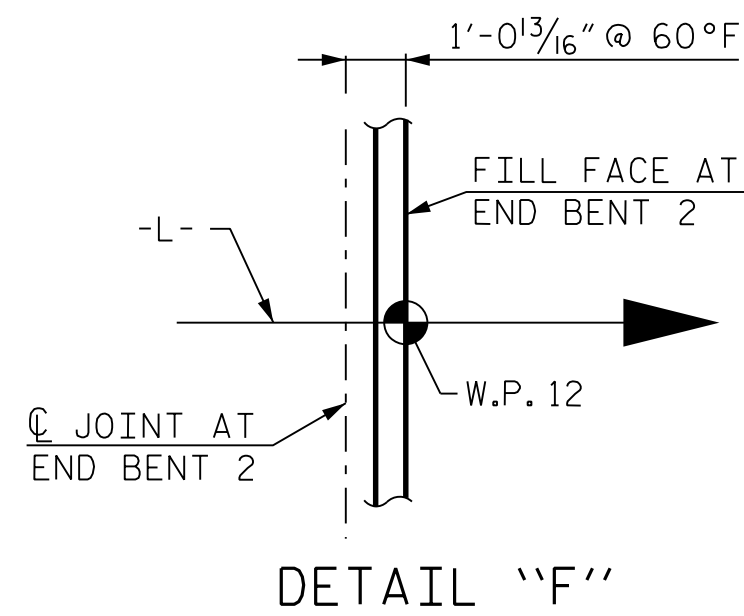
SPAN J

SPAN K

PLAN OF SPANS

(CLASSIC CONCRETE BARRIER RAIL, VERTICAL CONCRETE BARRIER RAIL AND MONOLITHIC ISLAND NOT SHOWN FOR CLARITY).

FOR "B" BARS IN BOTTOM OF SLAB, SEE PLAN OF SPAN BOTTOM BAR SHEETS.



PROJECT NO. B-6051/U-6143
CASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 7 OF 14

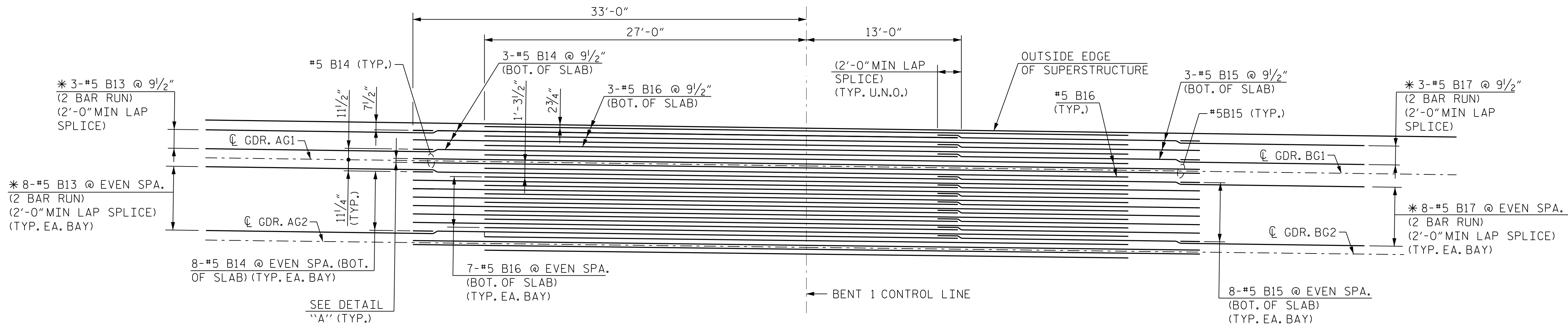
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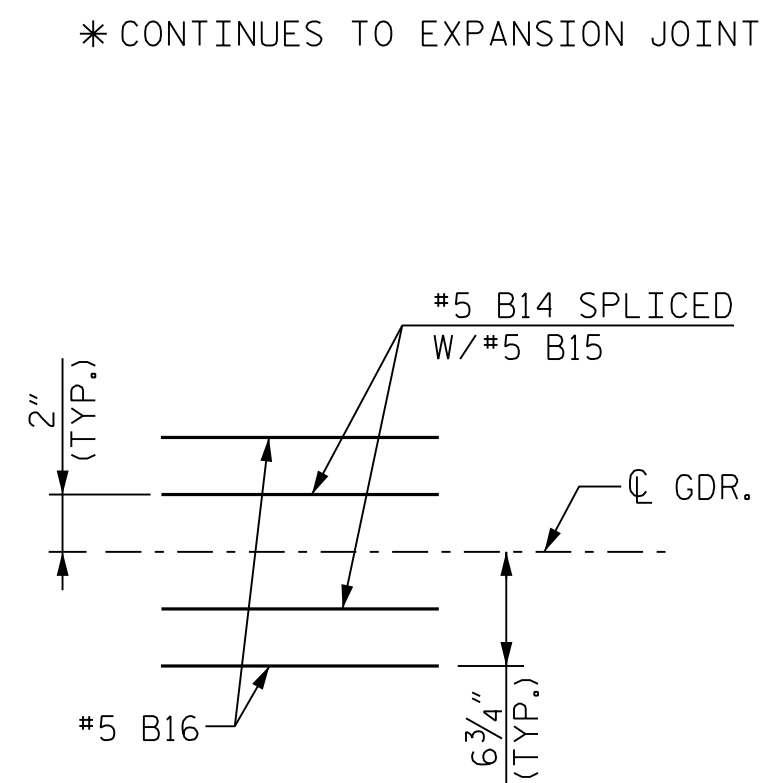
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PLAN OF SPANS
SPAN K

REVISIONS						SHEET NO.
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2			4			
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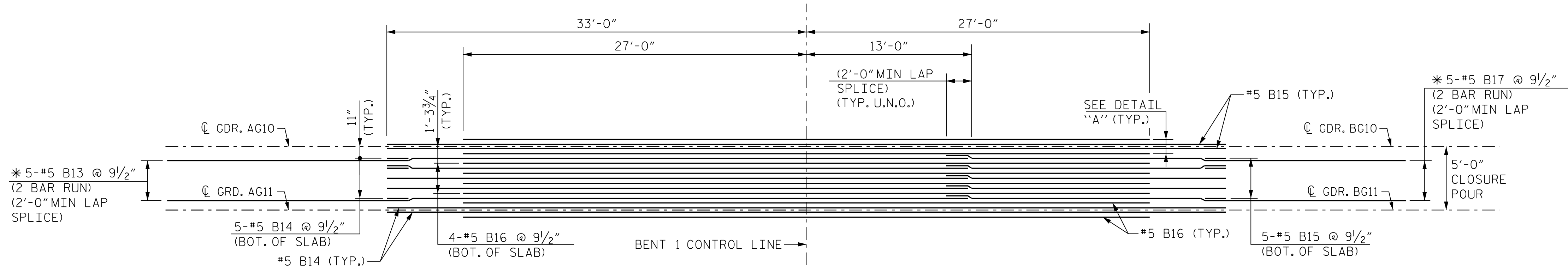
LEFT OVERHANG & BAYS 1-9 BOTTOM "B" BAR PLACEMENT

AT BENT 1



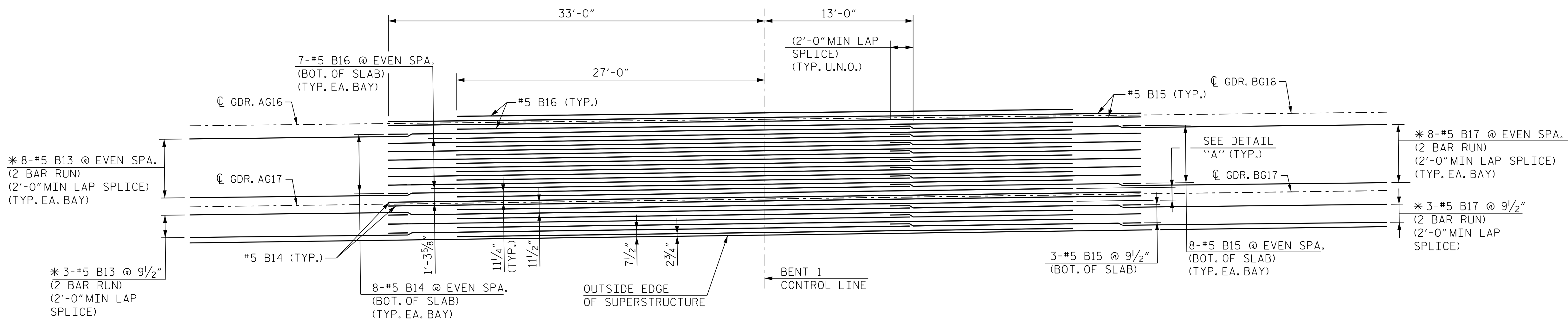
DETAIL "A"

TYPICAL "B" BARS OVER EACH GDR.



BAY 10 CLOSURE POUR BOTTOM "B" BAR PLACEMENT

AT BENT 1



RIGHT OVERHANG & BAYS 11-16 BOTTOM "B" BAR PLACEMENT

AT BENT 1

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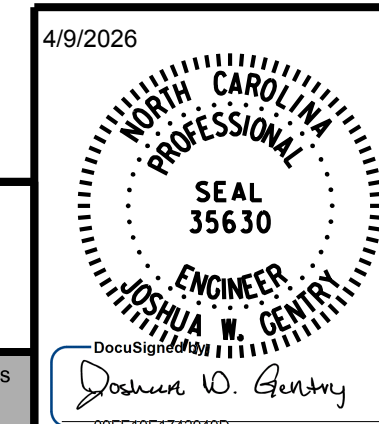
SHEET 8 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
PLAN OF SPANS
BOTTOM "B" BAR LAYOUT
SPANS A & B

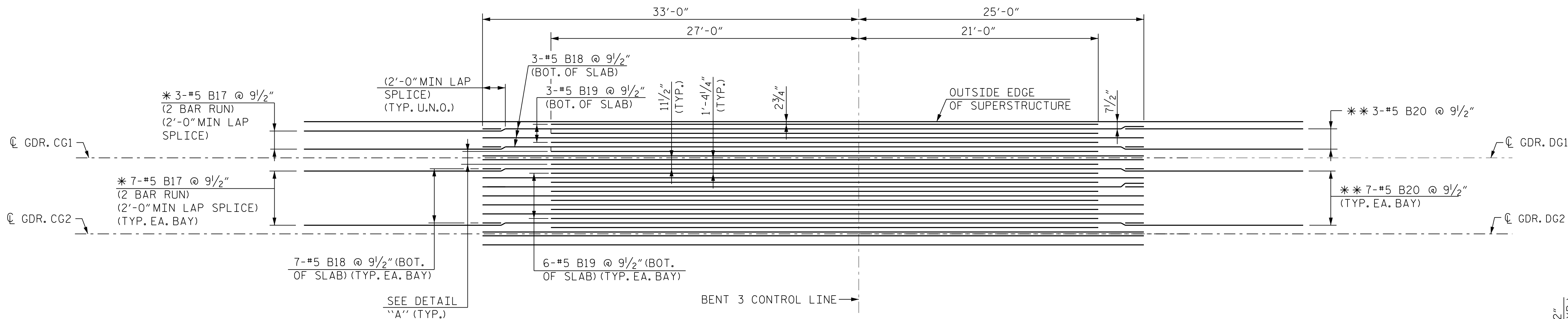
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2			4			

TOTAL SHEETS 118



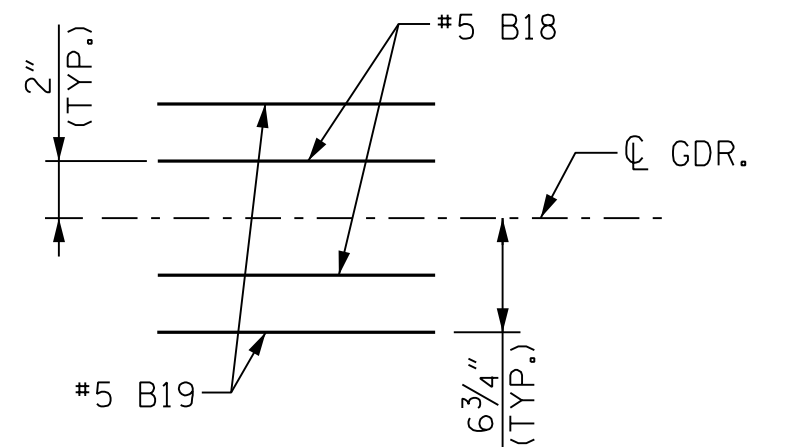
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CHECKED BY : J.W. GENTRY DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J.W. GENTRY DATE : FEB 2025

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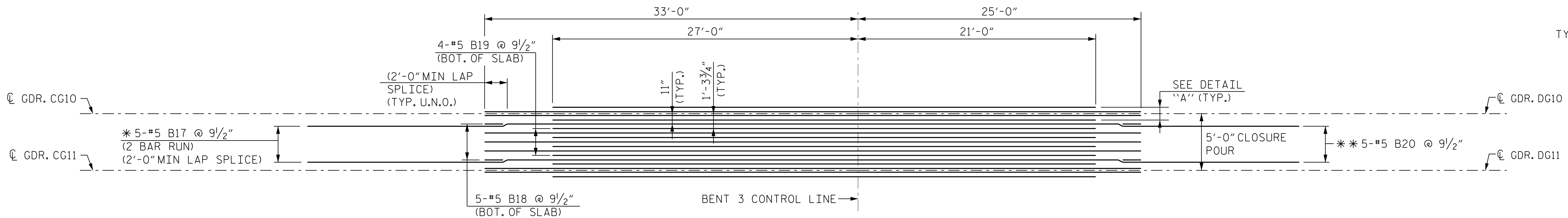
LEFT OVERHANG & BAYS 1-9 BOTTOM "B" BAR PLACEMENT

AT BENT 3



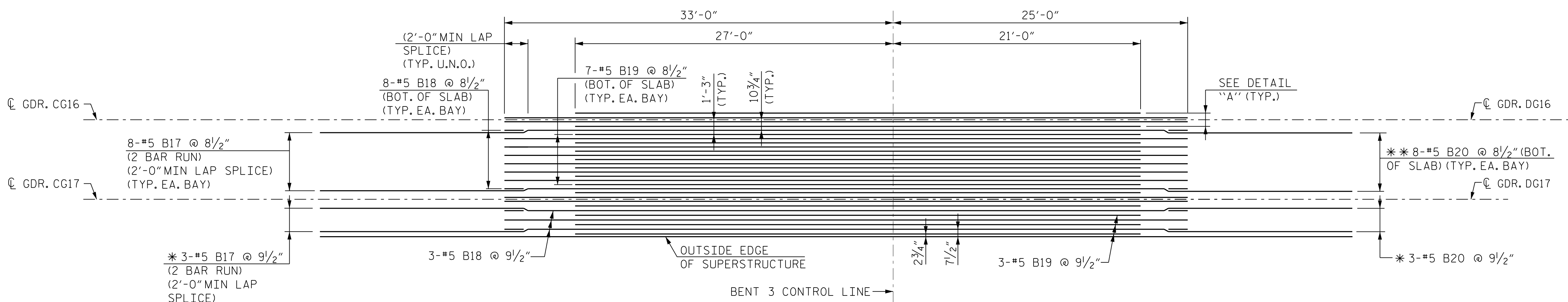
DETAIL "A"

TYPICAL "B" BARS OVER EACH GDR.



BAY 10 CLOSURE POUR BOTTOM "B" BAR PLACEMENT

AT BENT 3



RIGHT OVERHANG & BAYS 11-16 BOTTOM "B" BAR PLACEMENT

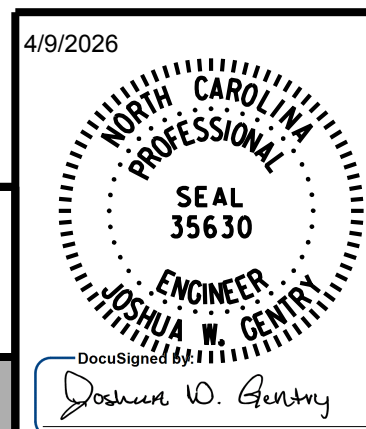
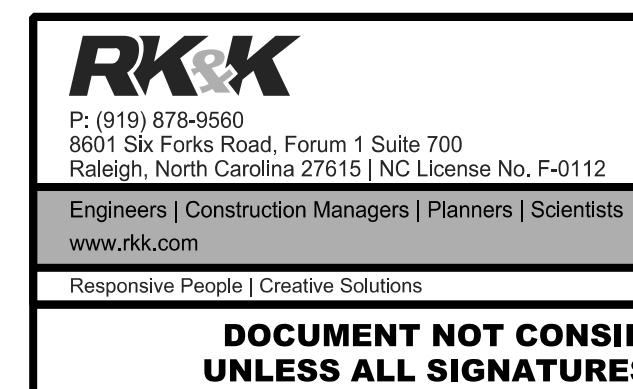
AT BENT 3

* CONTINUES TO EXPANSION JOINT
** CONTINUES TO BENT 4

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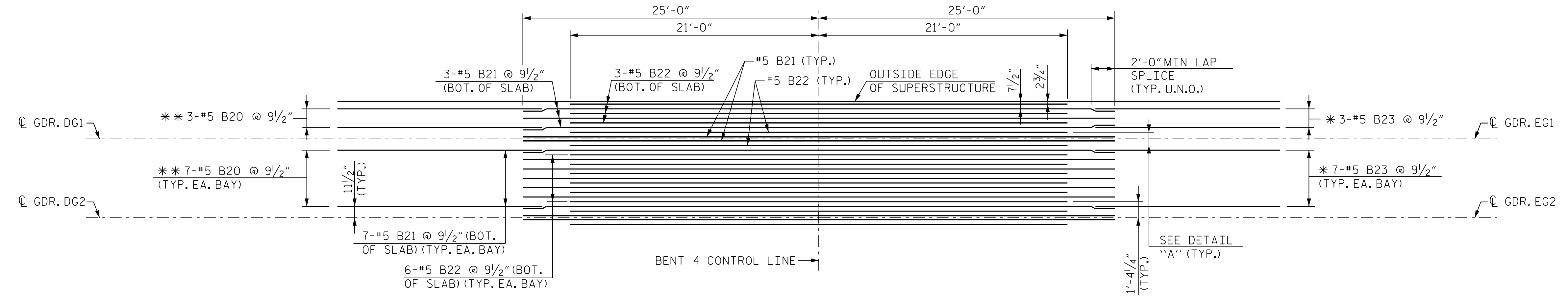
SHEET 9 OF 14

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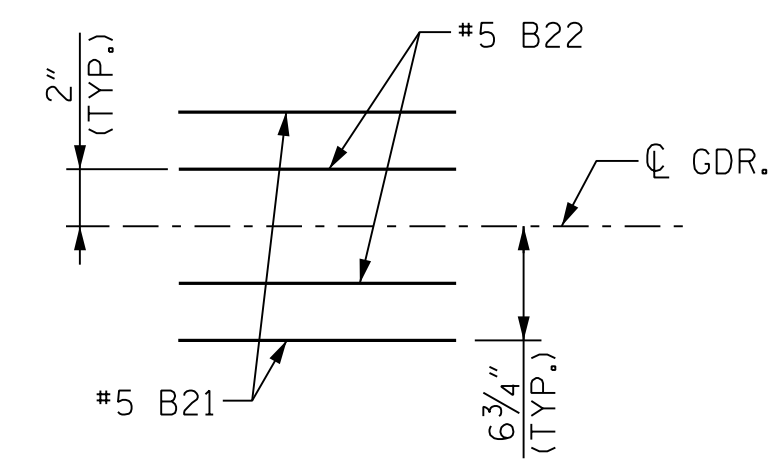


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NO.	BY:	DATE:	NO.	BY:	DATE:	
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TOTAL SHEETS						118

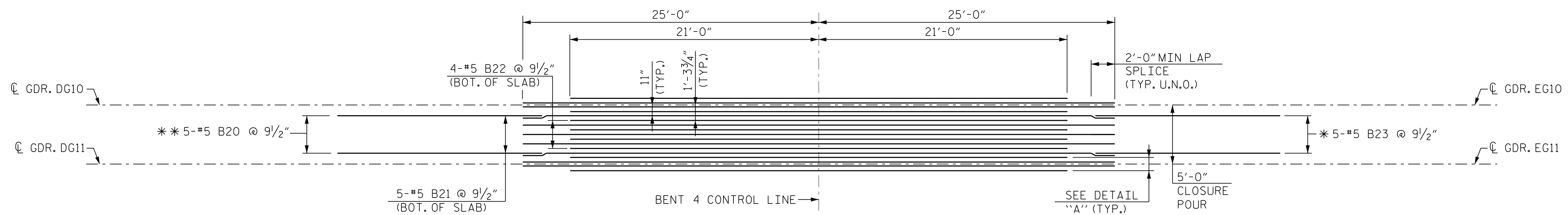
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** CONTINUES TO BENT 3



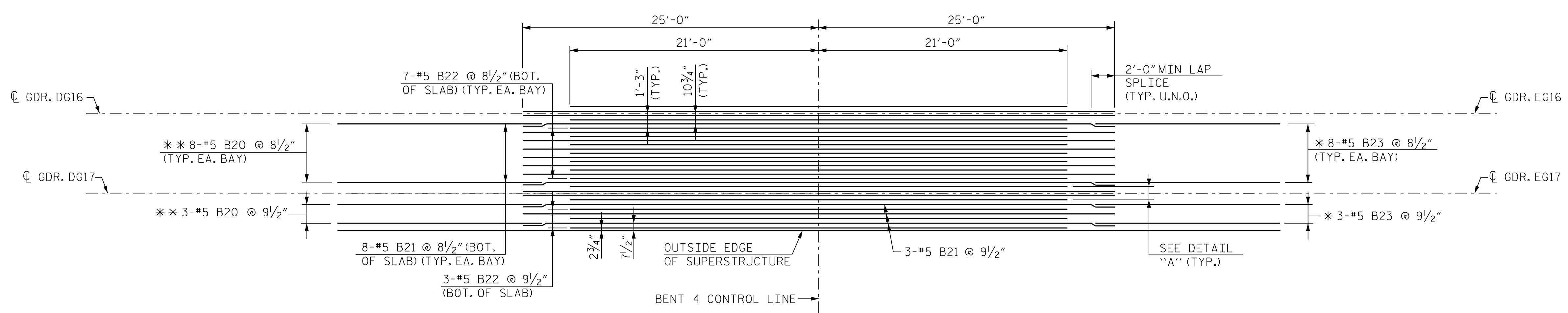
LEFT OVERHANG & BAYS 1-9 BOTTOM "B" BAR PLACEMENT
AT BENT 4



DETAIL "A"
TYPICAL "B" BARS OVER EACH GDR.



BAY 10 CLOSURE POUR BOTTOM "B" BAR PLACEMENT
AT BENT 4



RIGHT OVERHANG & BAYS 11-16 BOTTOM "B" BAR PLACEMENT
AT BENT 4

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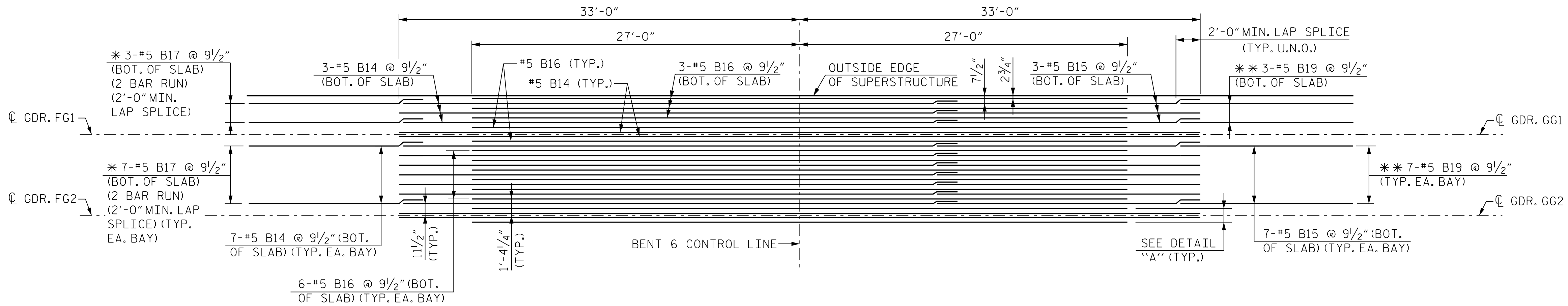
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RALEIGH
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PLAN OF SPANS
BOTTOM "B" BAR LAYOUT
SPANS D & E

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			118

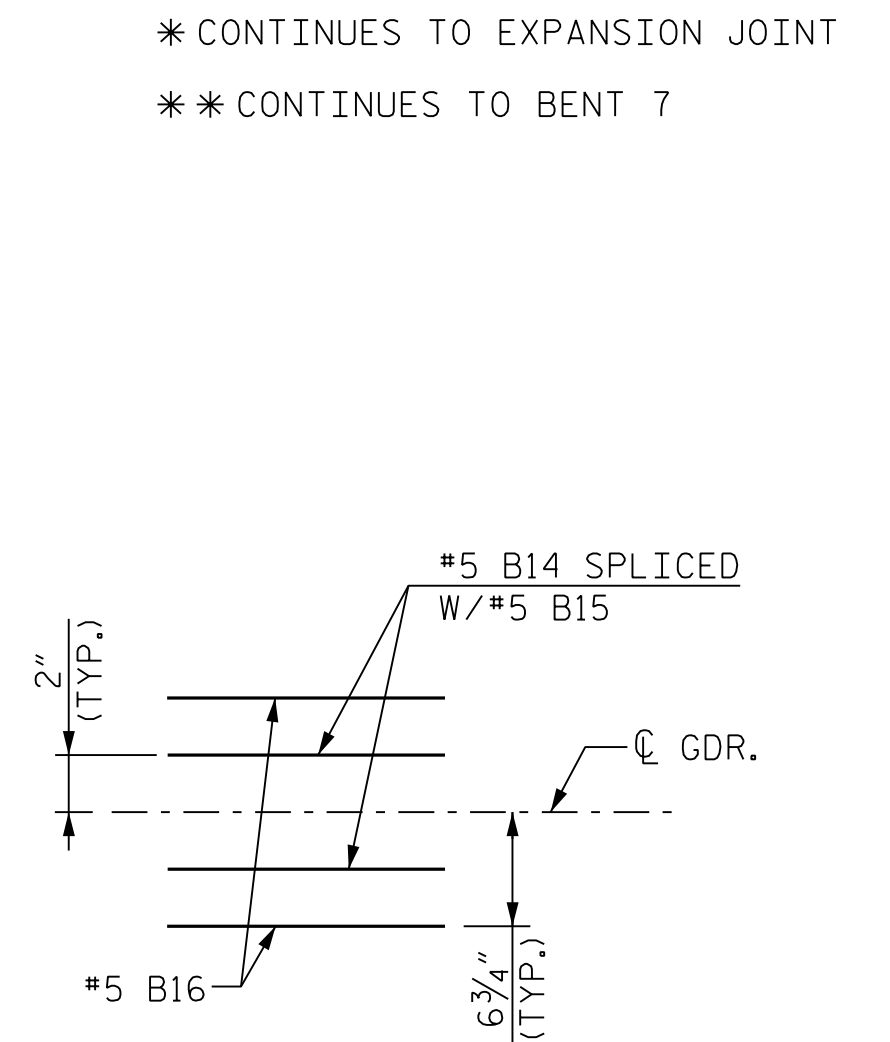
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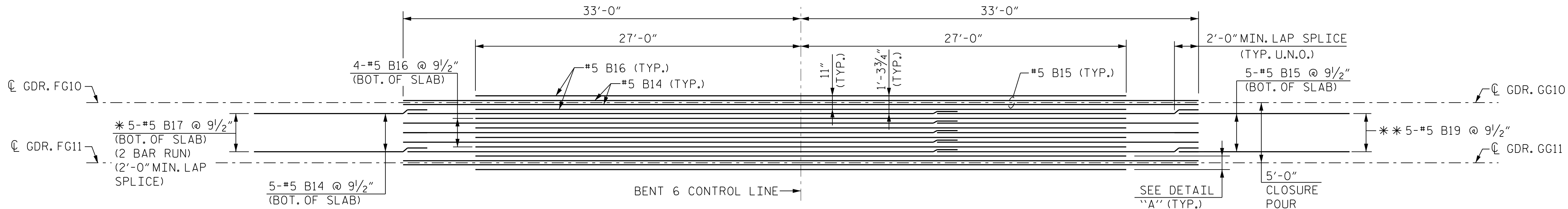
LEFT OVERHANG & BAYS 1-9 BOTTOM "B" BAR PLACEMENT

AT BENT 6



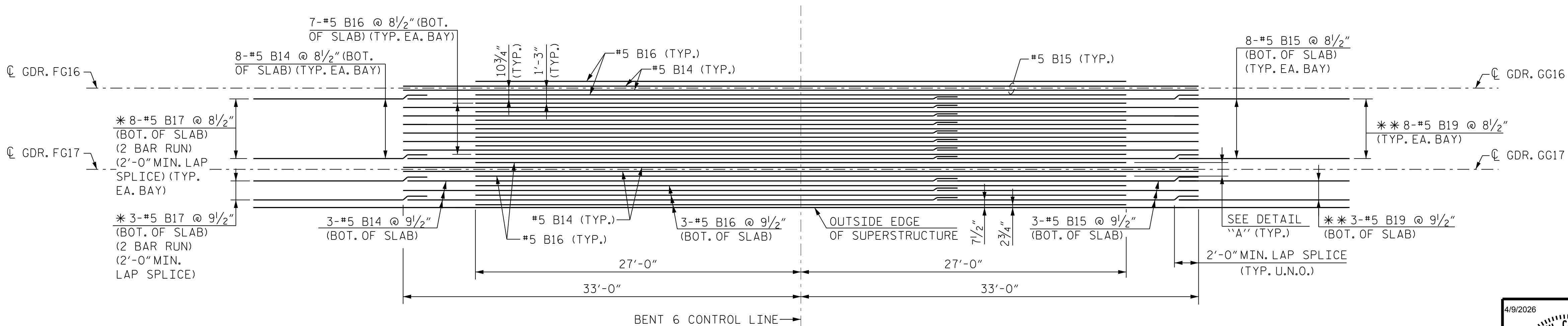
DETAIL "A"

TYPICAL "B" BARS OVER EACH GDR.



BAY 10 CLOSURE POUR BOTTOM "B" BAR PLACEMENT

AT BENT 6



RIGHT OVERHANG & BAYS 11-16 BOTTOM "B" BAR PLACEMENT

AT BENT 6

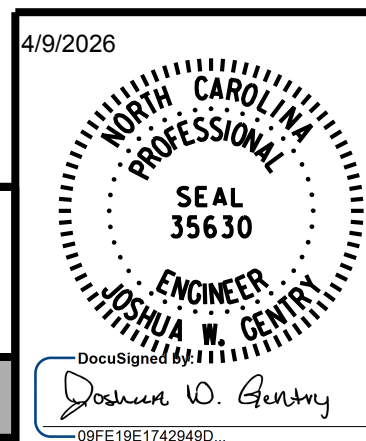
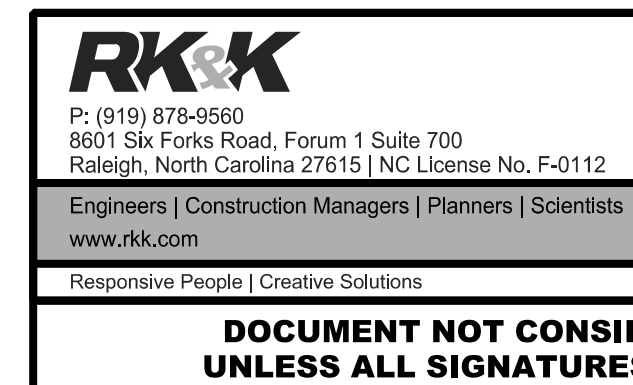
PROJECT NO. B-6051/U-6143
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SHEET 11 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

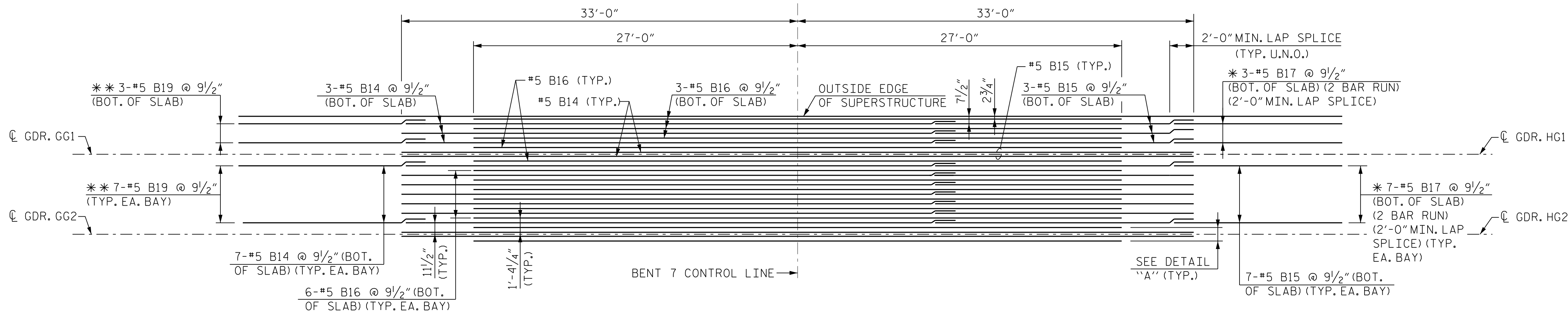
SUPERSTRUCTURE
PLAN OF SPANS
BOTTOM "B" BAR LAYOUT
SPANS F & I

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			
TOTAL SHEETS						118



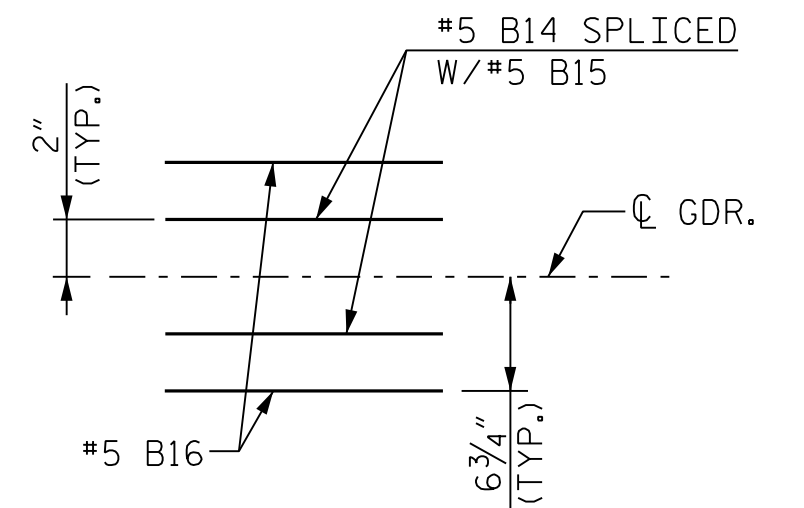
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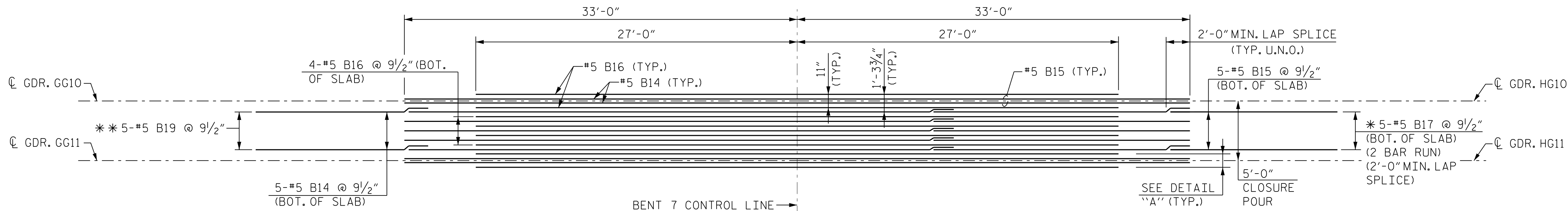
LEFT OVERHANG & BAYS 1-9 BOTTOM "B" BAR PLACEMENT

AT BENT 7



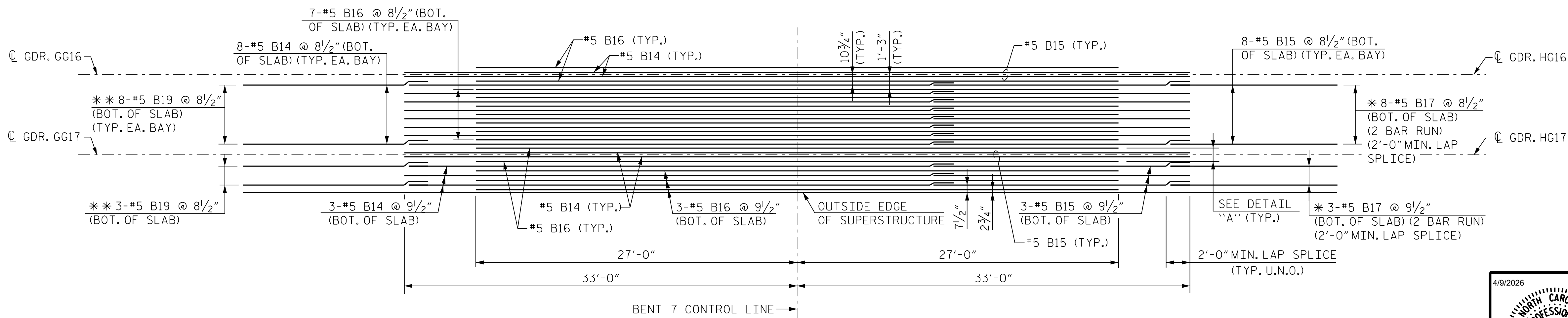
DETAIL "A"

TYPICAL "B" BARS OVER EACH GDR.



BAY 10 CLOSURE POUR BOTTOM "B" BAR PLACEMENT

AT BENT 7



RIGHT OVERHANG & BAYS 11-16 BOTTOM "B" BAR PLACEMENT

AT BENT 7

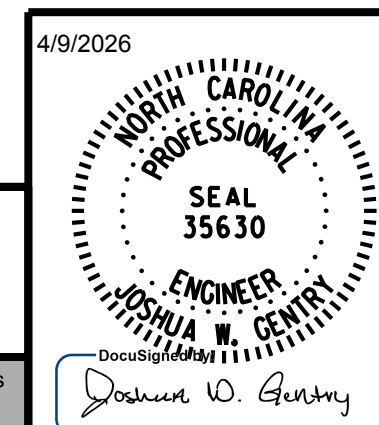
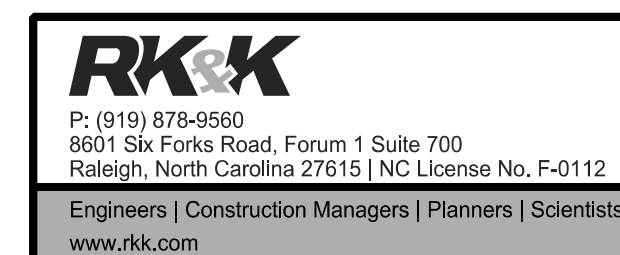
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 12 OF 14

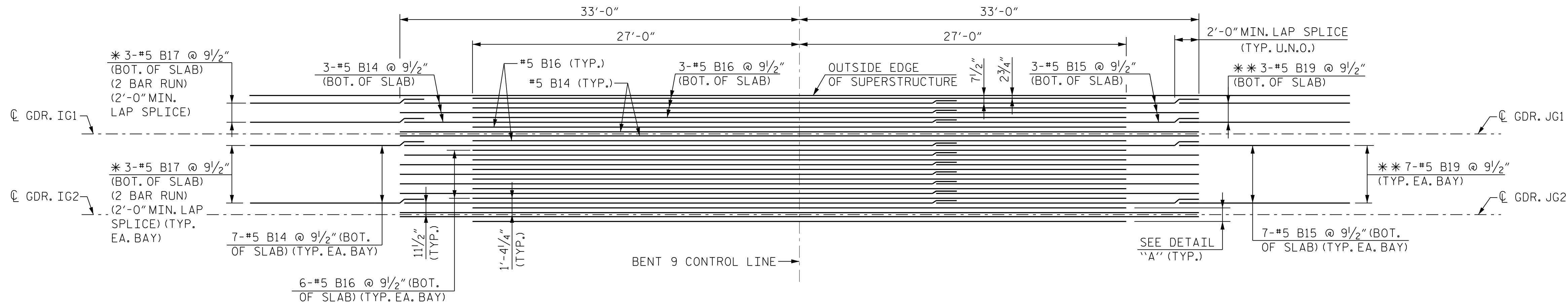
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RALEIGH

SUPERSTRUCTURE
PLAN OF SPANS
BOTTOM "B" BAR LAYOUT
SPANS G & H

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			
TOTAL SHEETS						118



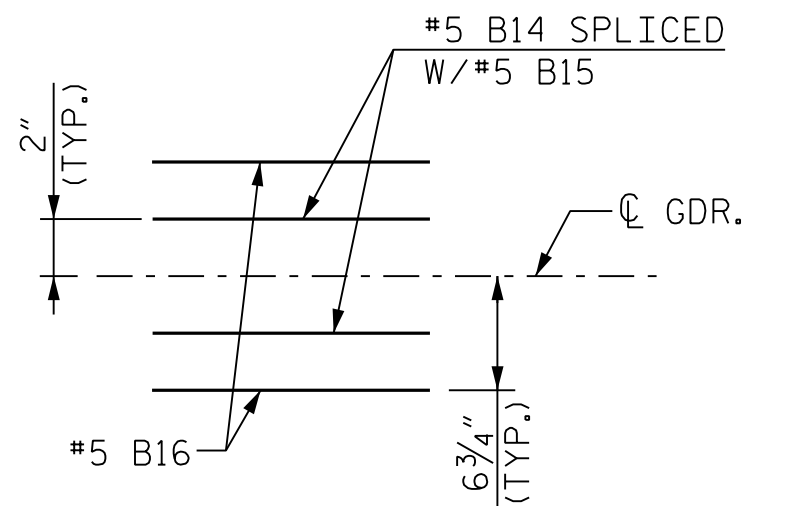
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LEFT OVERHANG & BAYS 1-9 BOTTOM "B" BAR PLACEMENT

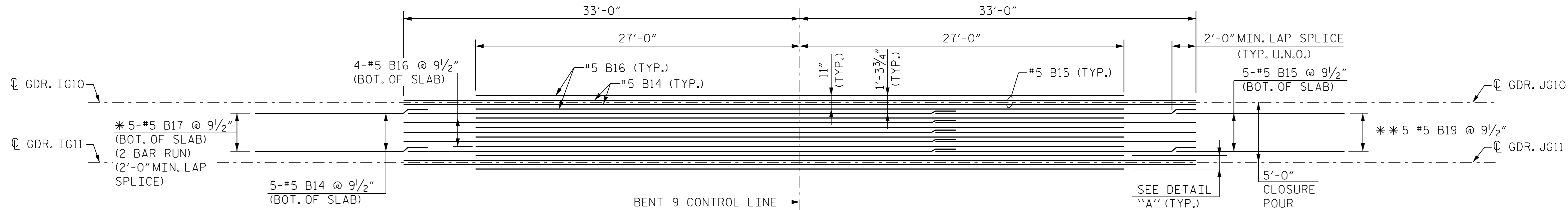
AT BENT 9

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** CONTINUES TO BENT 10



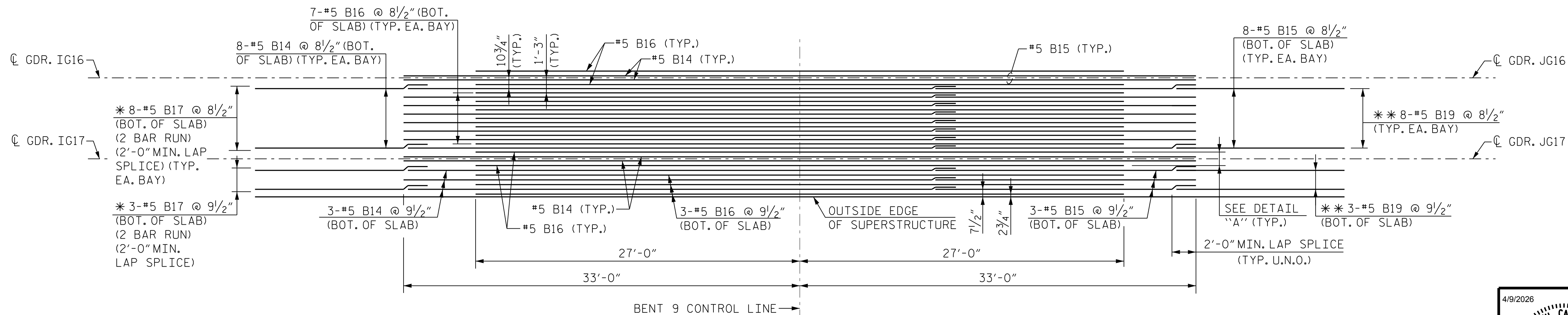
DETAIL "A"

TYPICAL "B" BARS OVER EACH GDR.



BAY 10 CLOSURE POUR BOTTOM "B" BAR PLACEMENT

AT BENT 9



RIGHT OVERHANG & BAYS 11-16 BOTTOM "B" BAR PLACEMENT

AT BENT 9

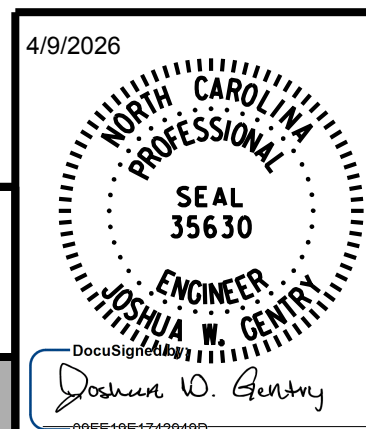
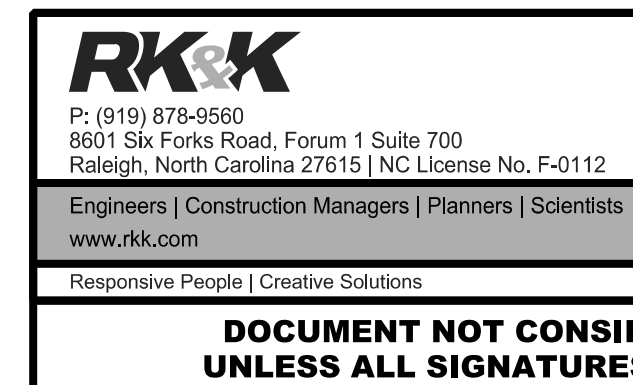
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 13 OF 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

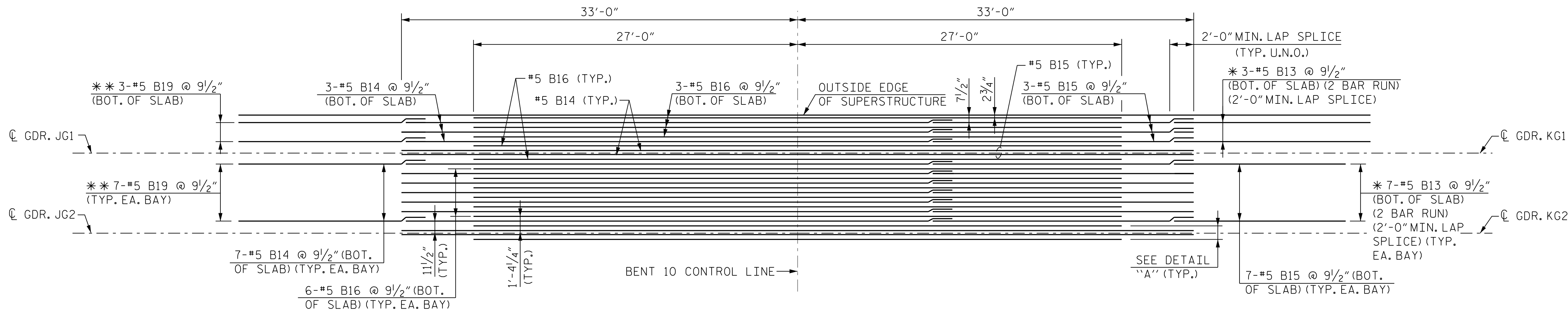
SUPERSTRUCTURE
PLAN OF SPANS
BOTTOM "B" BAR LAYOUT
SPAN J

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2			4			
TOTAL SHEETS						118



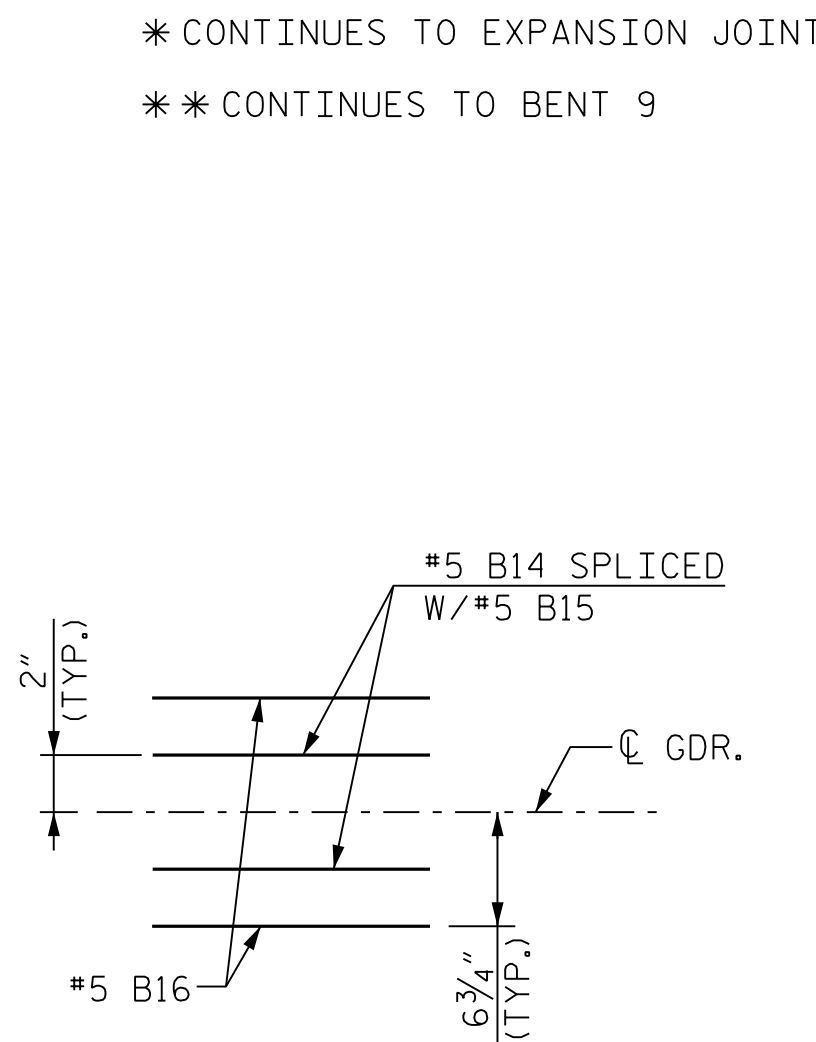
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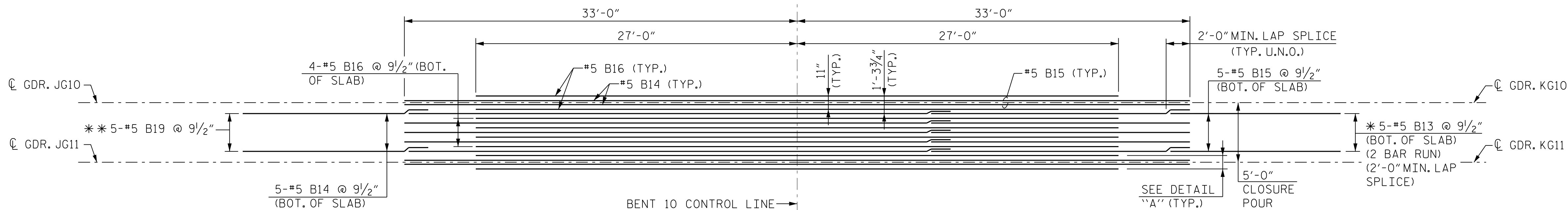
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AT BENT 10



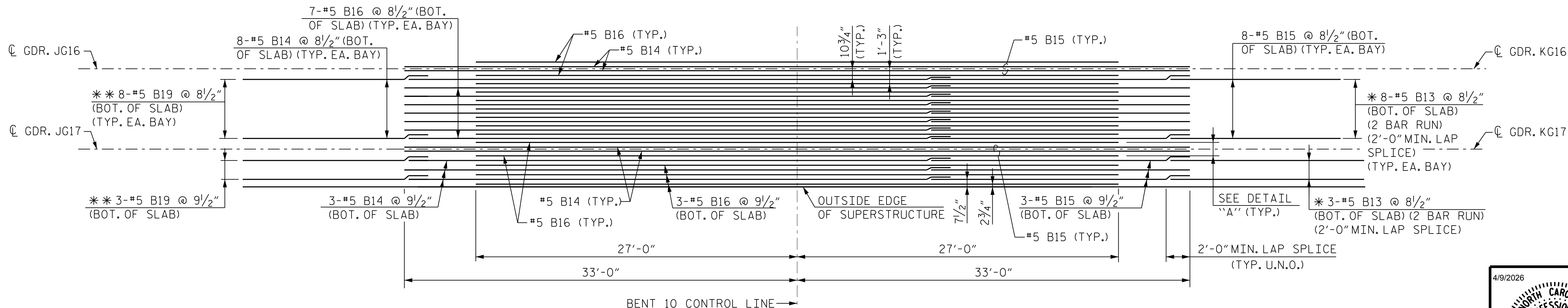
DETAIL "A"

TYPICAL "B" BARS OVER EACH GDR.



BAY 10 CLOSURE POUR BOTTOM "B" BAR PLACEMENT

AT BENT 10



RIGHT OVERHANG & BAYS 11-16 BOTTOM "B" BAR PLACEMENT

AT BENT 10

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 14 OF 14

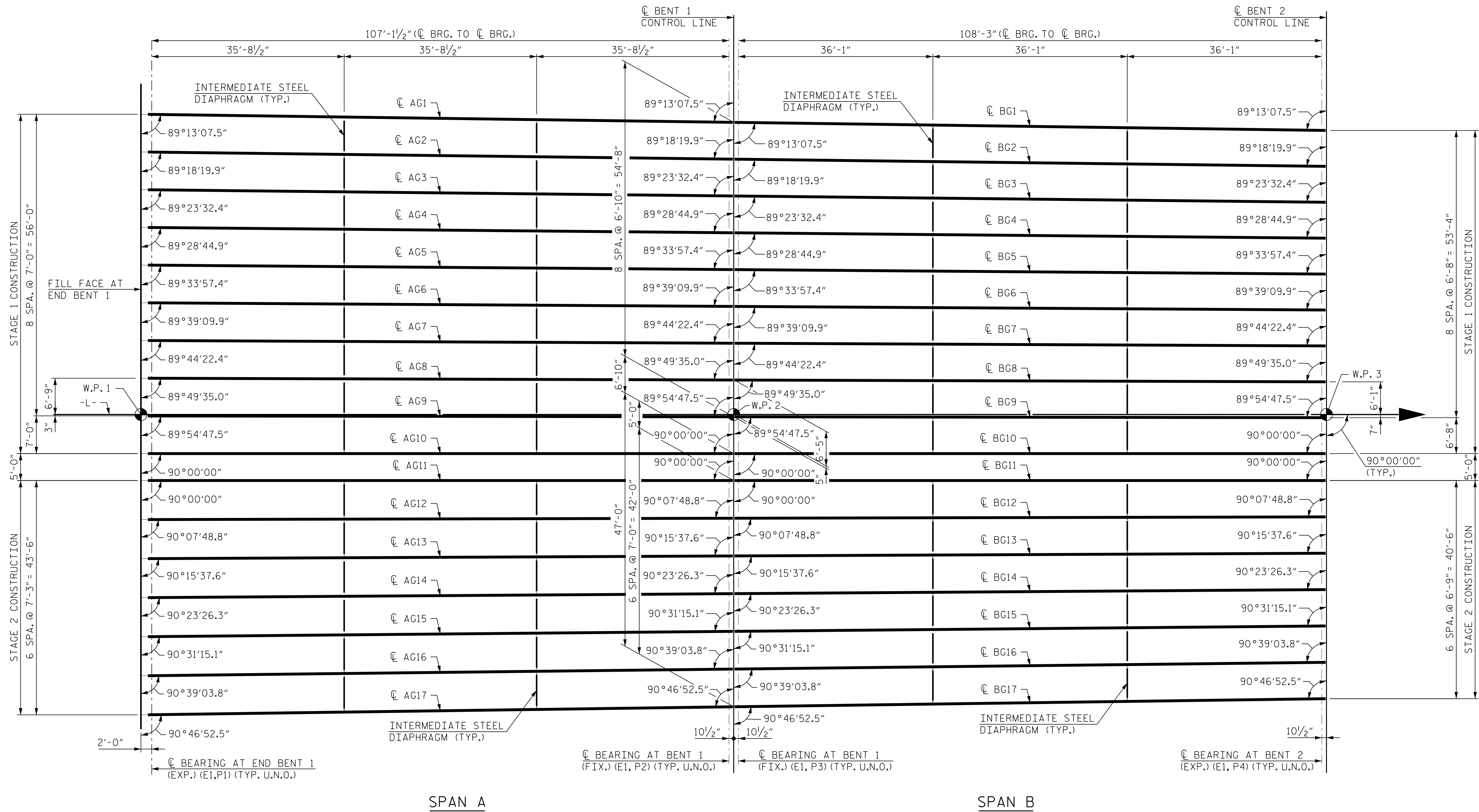
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE PLAN OF SPANS BOTTOM "B" BAR LAYOUT SPAN K					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-31					TOTAL SHEETS 118

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DESIGN ENGINEER OF RECORD : J. W. GENTRY	DATE : FEB 2025

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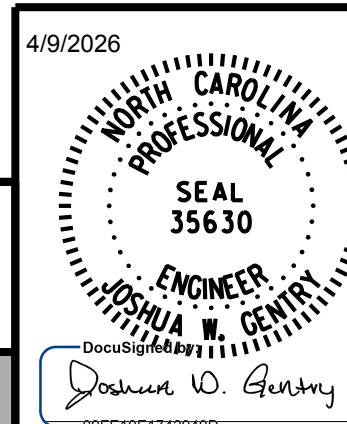
FRAMING PLAN

PROJECT NO. B-6051/U-6143
CASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 6

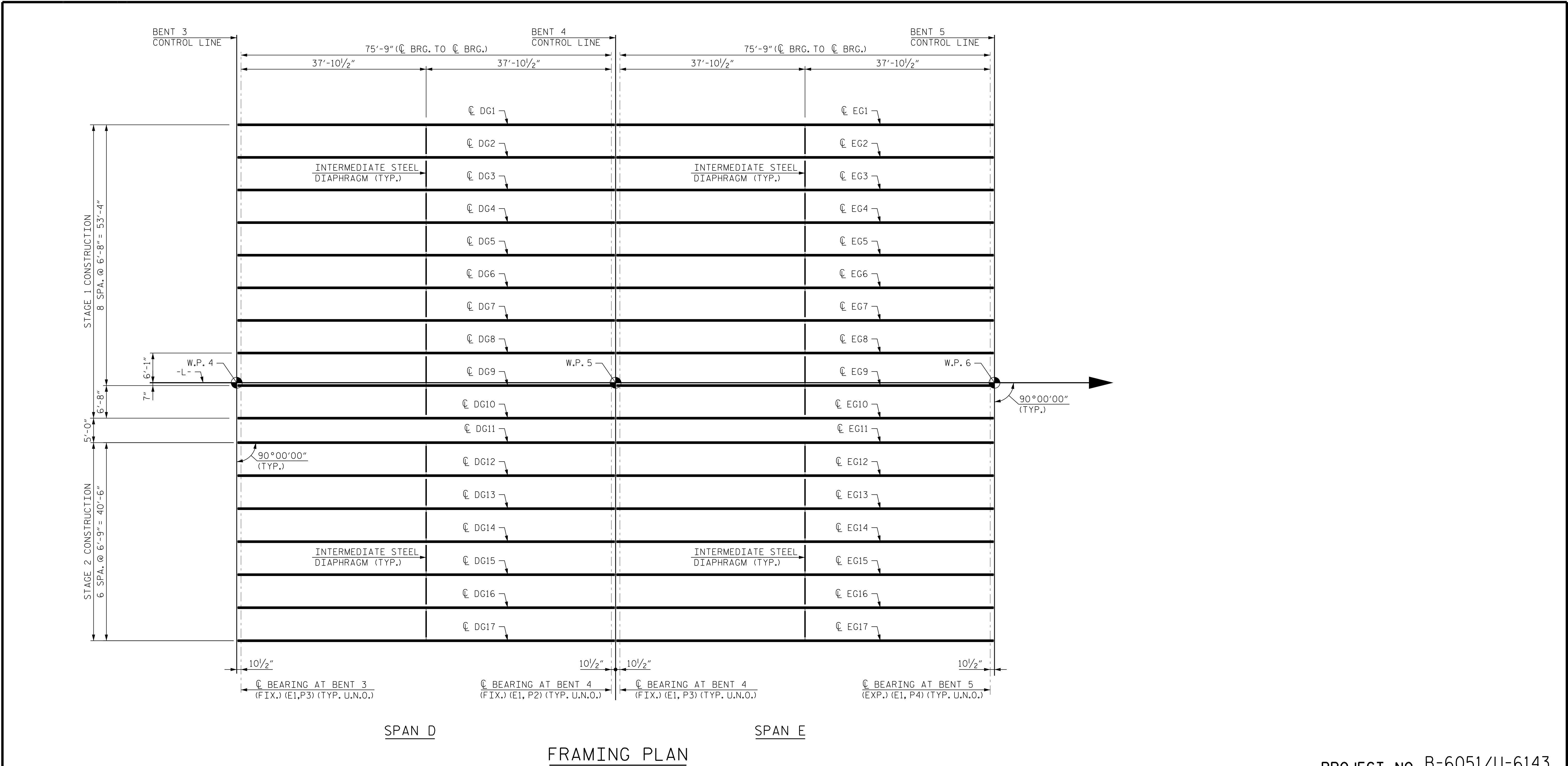
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CHECKED BY : J. W. GENTRY DATE : FEB 2025
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SUPERSTRUCTURE FRAMING PLAN SPANS A & B					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					SHEET NO. S-32 TOTAL SHEETS 118

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DRAWN BY : T. BOYD DATE : FEB 2025
CHECKED BY : J. W. GENTRY DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025

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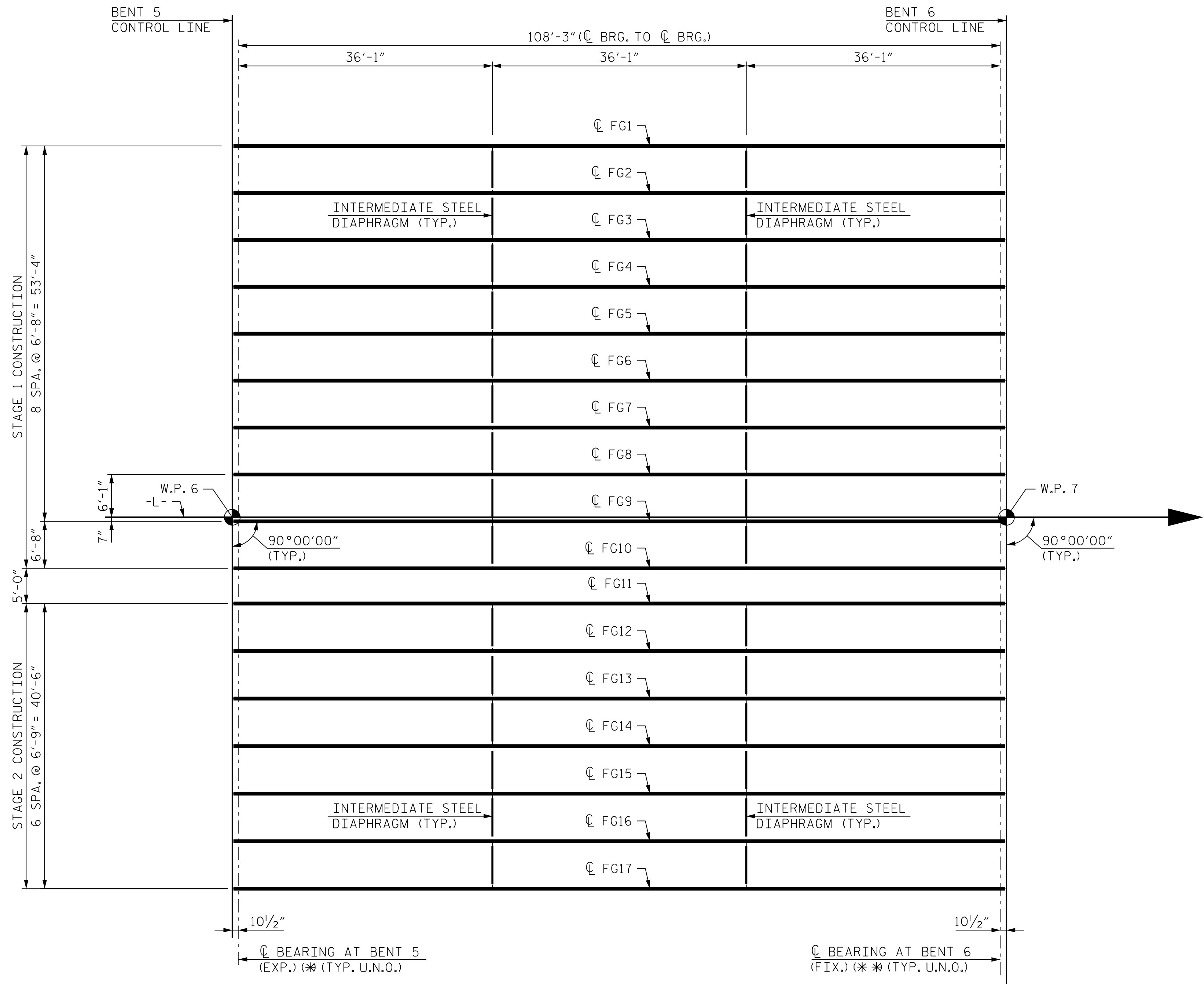
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SEAL
35630
JOSHUA W. GENTRY
ENGINEER
108FET19E1742949D...

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			118

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-
SHEET 2 OF 6

2/10/2026 R:\Structures\DCN\350091\FINAL\B6051_SML_FP3_17350091.dgn



SPAN F
(SPAN F SHOWN, SPANS C & I SIMILAR)

FRAMING PLAN

* BEARING AND SOLE PLATE TYPES

SPAN C: ALL GIRDERS - E1, P5

SPAN F:
FG1 THRU FG3 - E1, P6
FG4 THRU FG7 - E1, P5
FG8 THRU FG10 - E1, P6
FG11 THRU FG14 - E1, P5
FG15 THRU FG17 - E1, P6

SPAN I: ALL GIRDERS - E1, P8

** BEARING AND SOLE PLATE TYPES

SPAN C: ALL GIRDERS - E1, P2

SPAN F: ALL GIRDERS - E1, P2

SPAN I: ALL GIRDERS - E1, P9

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PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

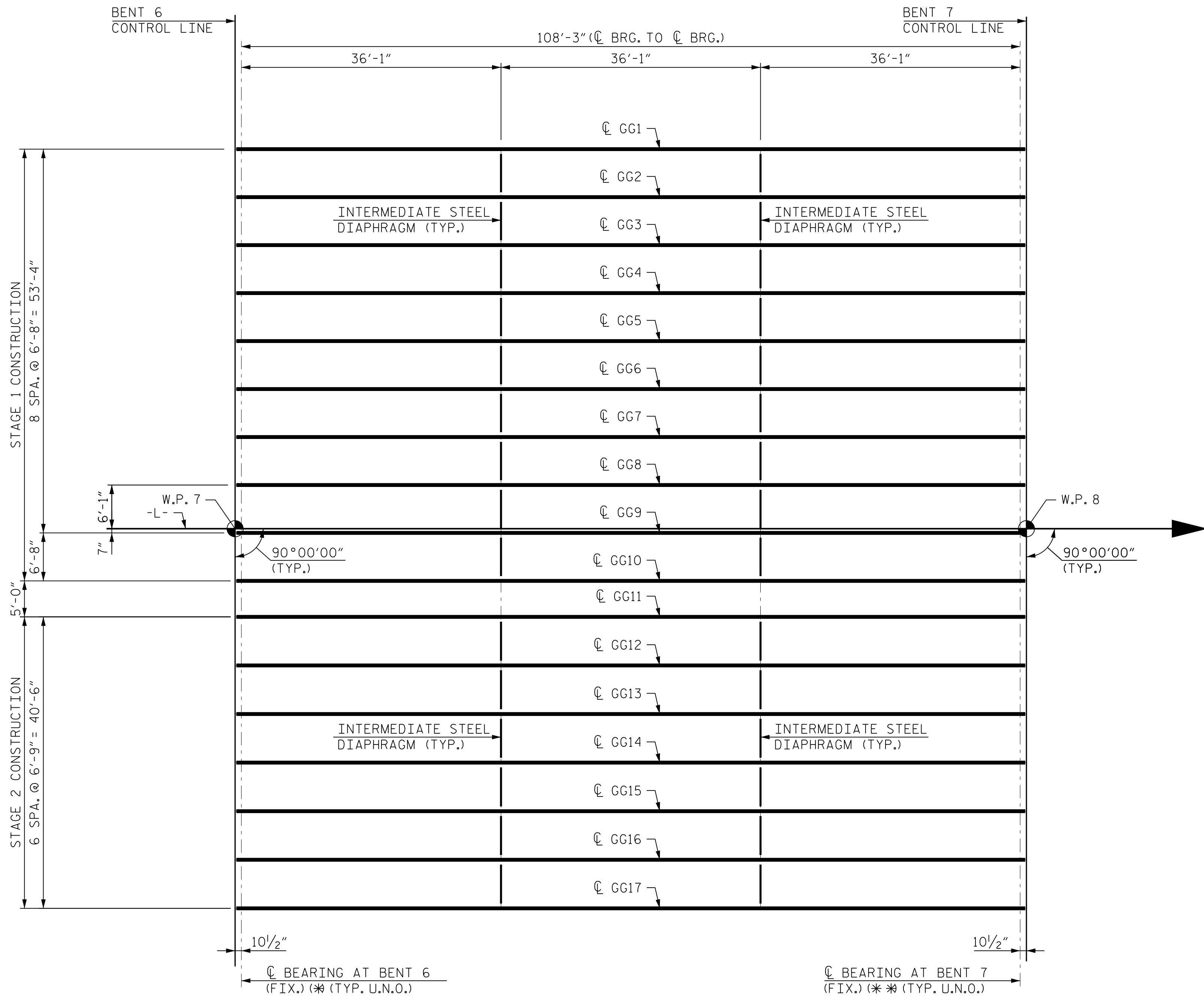
SHEET 3 OF 6

STATE OF NORTH CAROLINA
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RALEIGH
SUPERSTRUCTURE
FRAMING PLAN
SPANS C, F & I

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			118
2			4			

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SPAN G
(SPAN G SHOWN, SPAN J SIMILAR)
FRAMING PLAN

* BEARING AND SOLE PLATE TYPES

SPAN G: ALL GIRDERS - E1,P7
SPAN J: ALL GIRDERS - E1,P7

** BEARING AND SOLE PLATE TYPES

SPAN G: ALL GIRDERS - E1,P7
SPAN J: ALL GIRDERS - E1,P9

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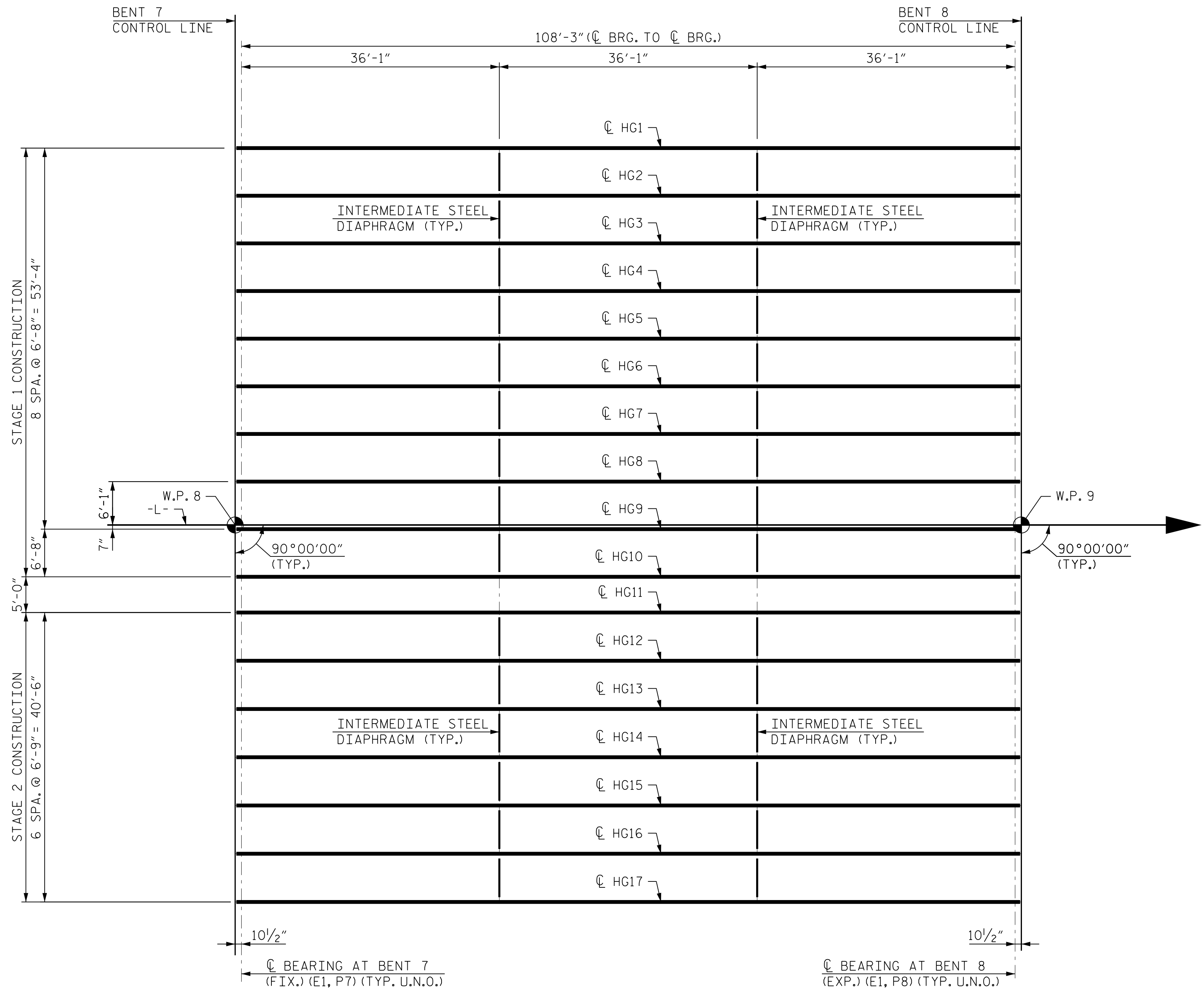
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE FRAMING PLAN SPANS G & J					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					118

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SPAN H
FRAMING PLAN

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 5 OF 6

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FRAMING PLAN
SPAN H

REVISIONS

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

SHEET NO. S-36
TOTAL SHEETS 118

4/9/2026

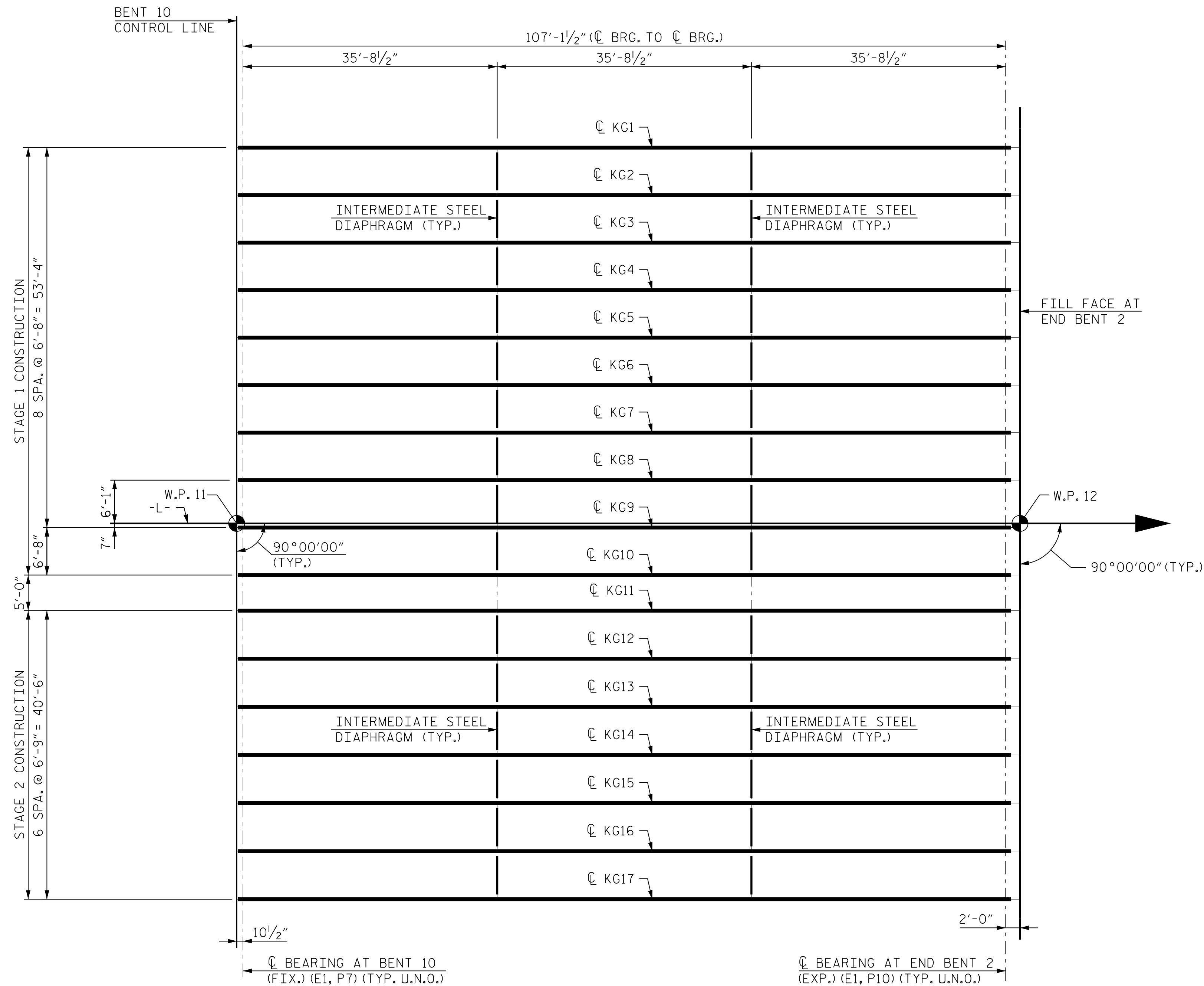
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RALEIGH
SUPERSTRUCTURE
FRAMING PLAN
SPAN H

REVISIONS

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

SHEET NO. S-36
TOTAL SHEETS 118

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SPAN K
FRAMING PLAN

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 6 OF 6

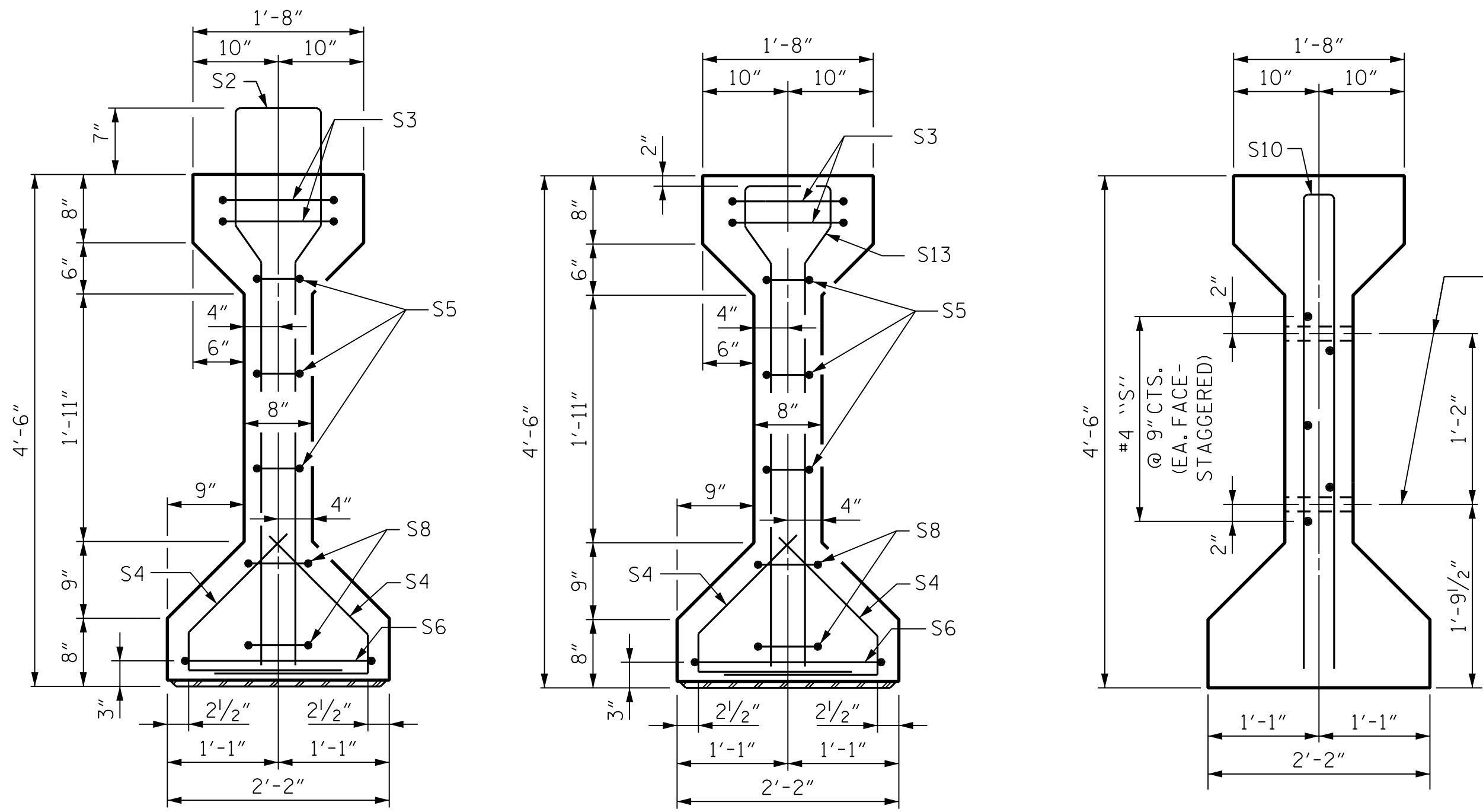
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CHECKED BY : J. W. GENTRY DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025

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FRAMING PLAN
SPAN K

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37	
1			3			TOTAL SHEETS	
2			4			118	



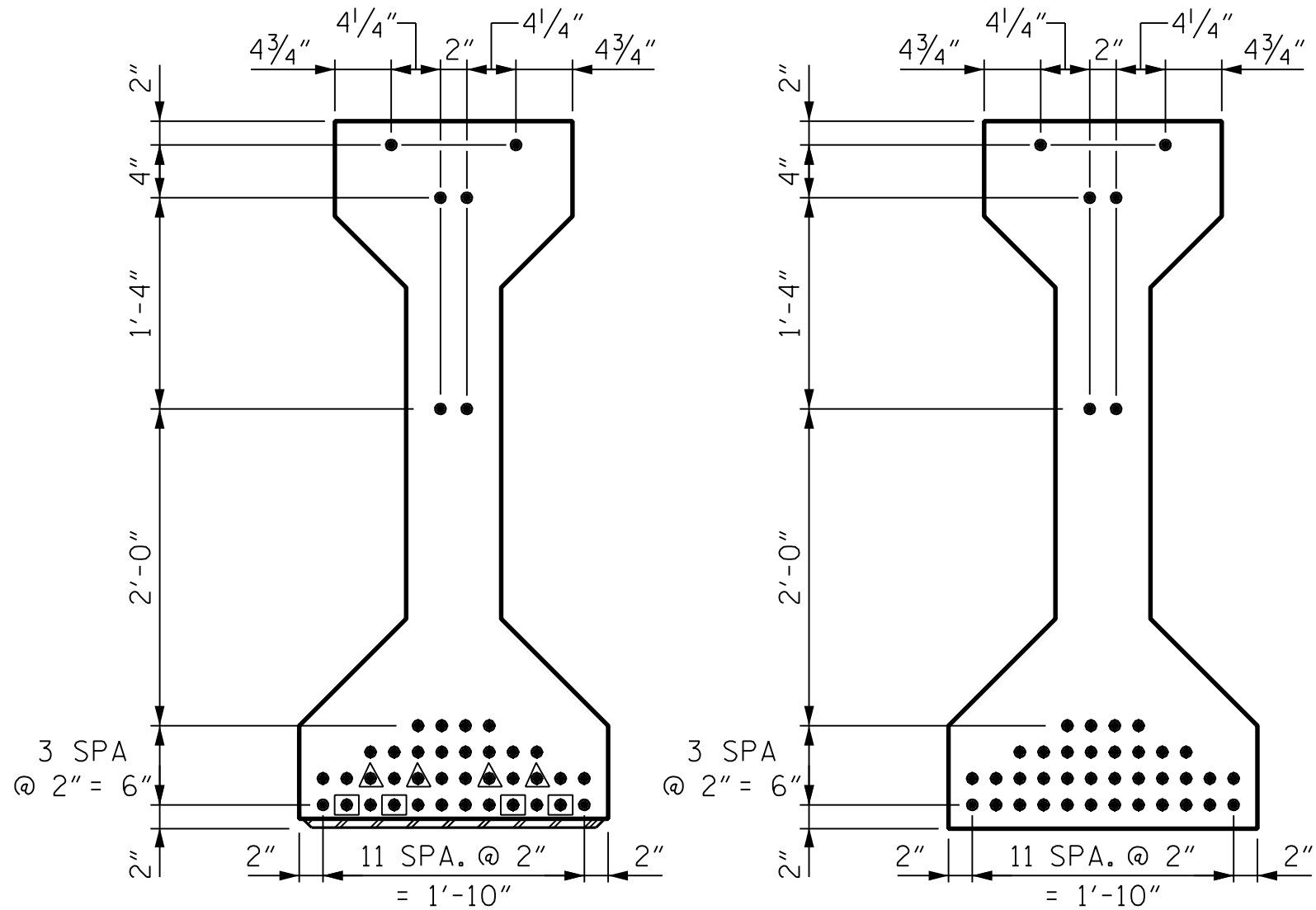
SECTION A-A

SECTION B-B

SECTION C-C
(S1 OR S7 BARS NOT SHOWN)

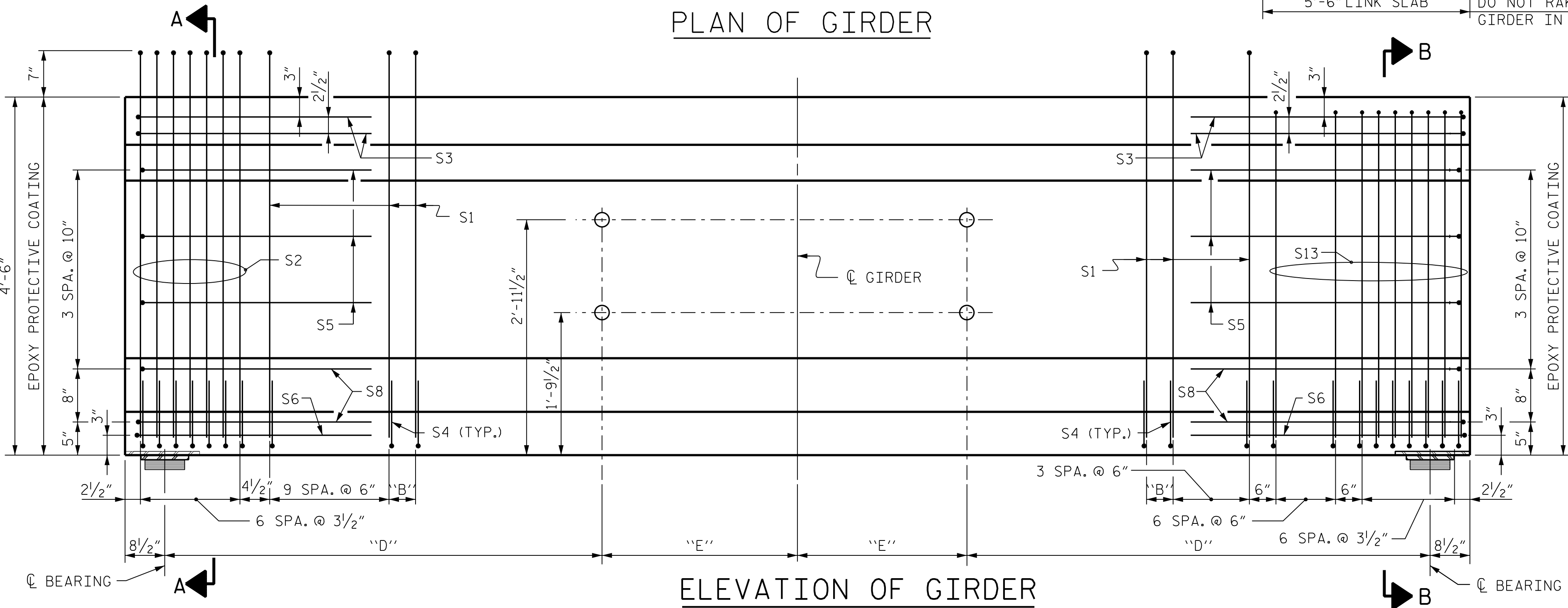
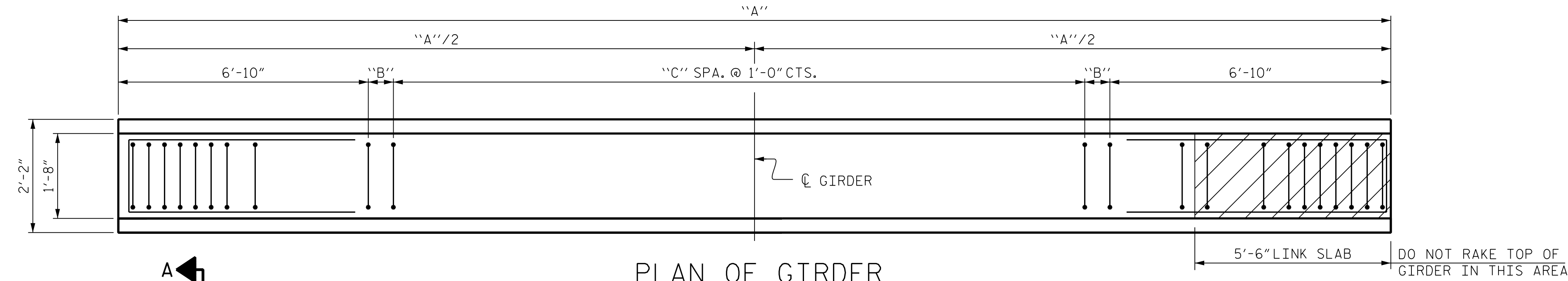
DEBONDING LEGEND:

- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 8'-0" FROM END OF GIRDER



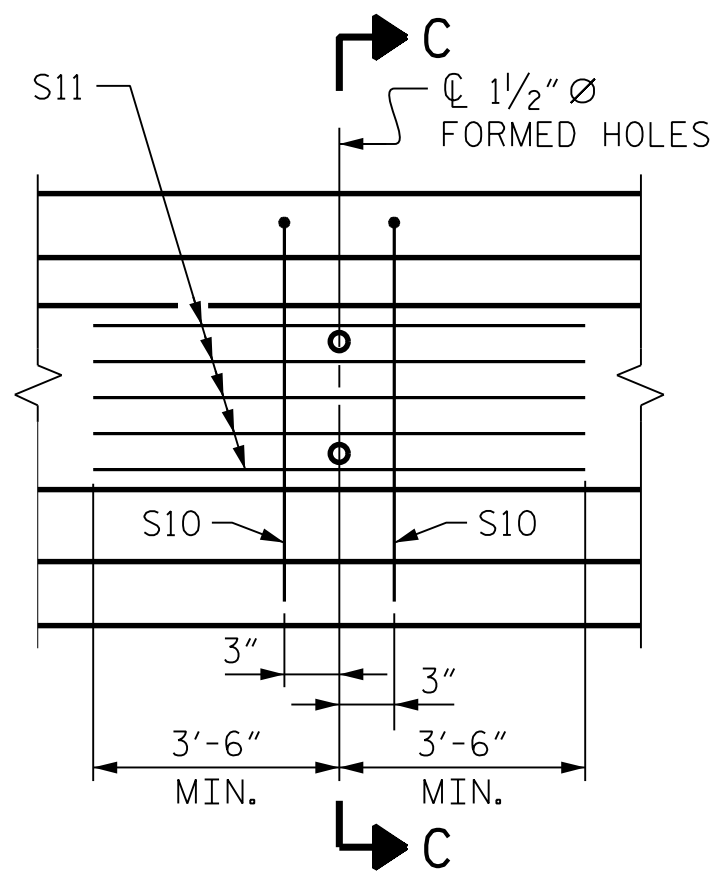
AT END OF GIRDER
AT @ GIRDER
0.6" Ø LOW RELAXATION STRAND LAYOUT

GIRDER VARIABLE TABLE							
SPAN	GIRDER	"A"	"A"/2	"B"	"C"	"D"	"E"
A	1, 2, 17	108'-6 5/8"	54'-3 5/16"	11 5/16"	93	35'-8 9/16"	17'-10 1/4"
	3-5, 15, 16	108'-6 9/16"	54'-3 9/16"	11 1/4"	93	35'-8 1/2"	17'-10 1/4"
	6-14	108'-6 1/2"	54'-3 1/4"	11 1/4"	93	35'-8 1/2"	17'-10 1/4"
C, F, & I	ALL	109'-8"	54'-10"	12"	94	36'-1"	18'-0 1/2"
GIRDERS REQUIRED		68					
TOTAL LENGTH		7,438'-3 3/16"					



ELEVATION OF GIRDER

* REINFORCING SHOWN IS TYPICAL FOR GIRDERS G1-G9 AND G11-G17. THEREFORE, S7 AND S9 BARS ARE NOT SHOWN. A PAIR OF S7 BARS SHALL BE USED IN LIEU OF S1 BARS AND A PAIR OF S9 BARS SHALL BE USED IN LIEU OF S2 BARS AT ALL LOCATIONS FOR GIRDERS G10 AND G11. ** NOT ALL S2, S4 & S13 SHOWN FOR CLARITY (SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS) FOR GIRDER QUANTITIES & REINFORCING STEEL, SEE SHEET 6 OF 7



PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM REINFORCING STEEL FOR ALL GIRDERS

PROJECT NO. B-6051/U-6143
CASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 7

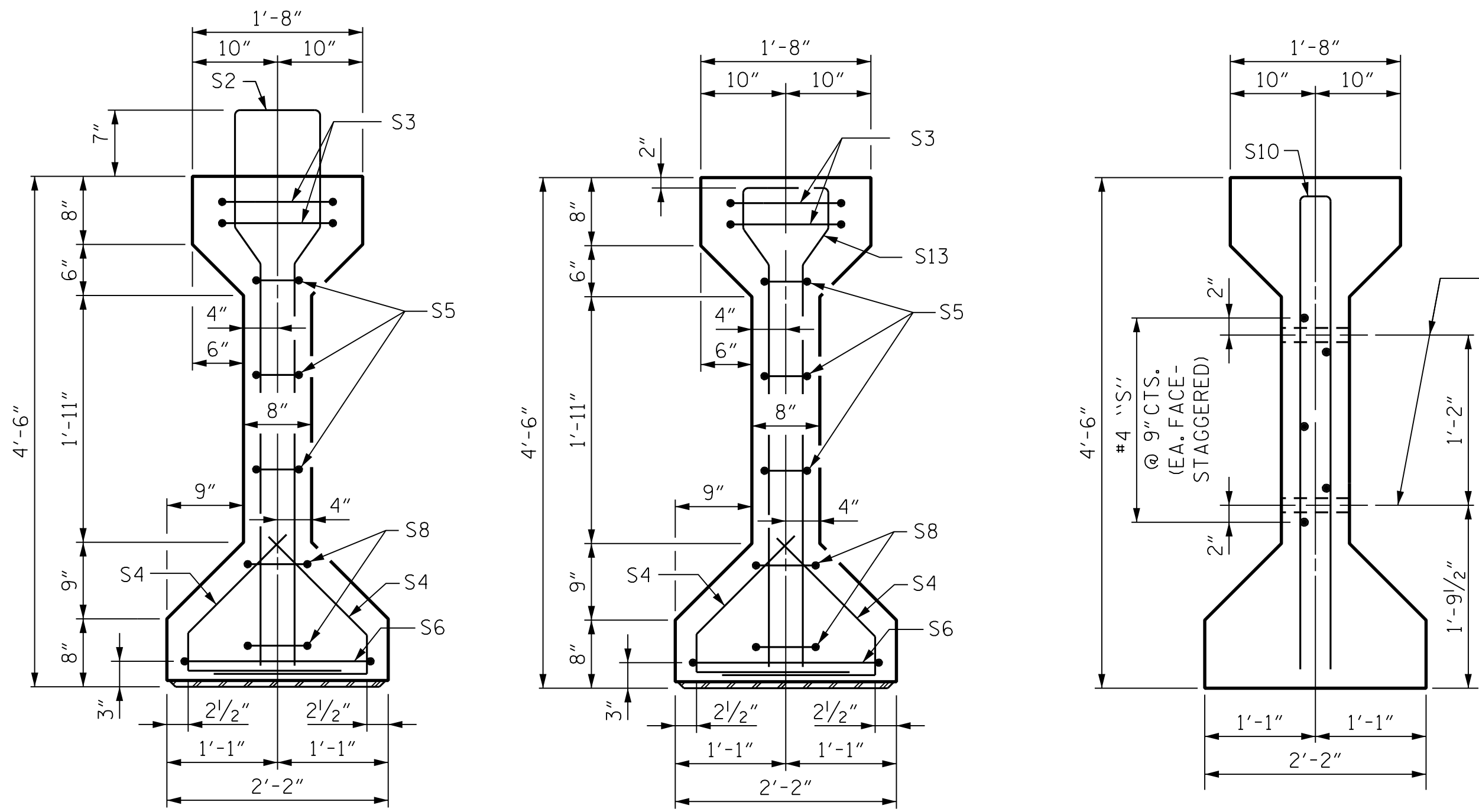
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054077
ENGINEER
PETER L. OARE
APP05128AD0452

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH							
STANDARD AASHTO TYPE IV PRESTRESSED CONCRETE GIRDER - LINK SLAB SPANS A, C, F, & I							
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.	
1			3			S-38	
2			4			TOTAL SHEETS 118	

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SECTION A-A

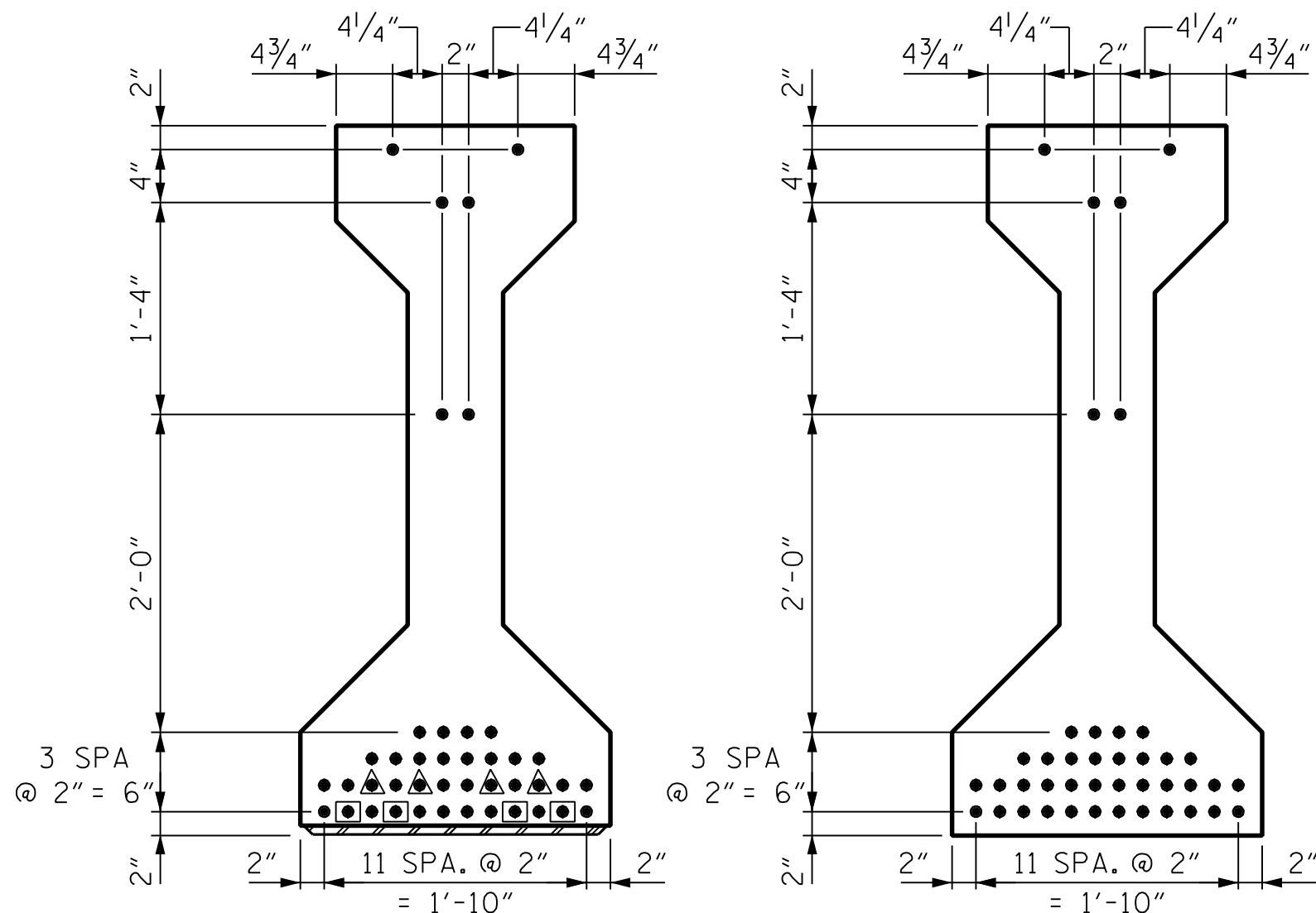
SECTION B-B

SECTION C-C

(S1 OR S7 BARS NOT SHOWN)

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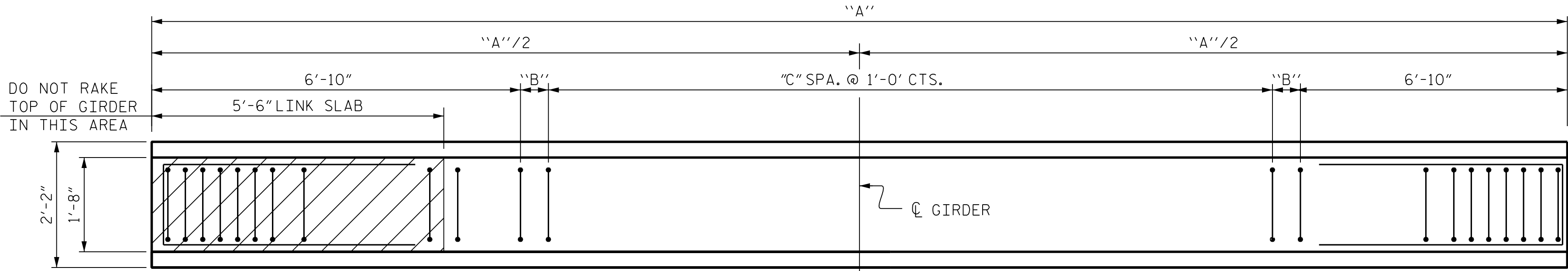
- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 8'-0" FROM END OF GIRDER



AT END OF GIRDER

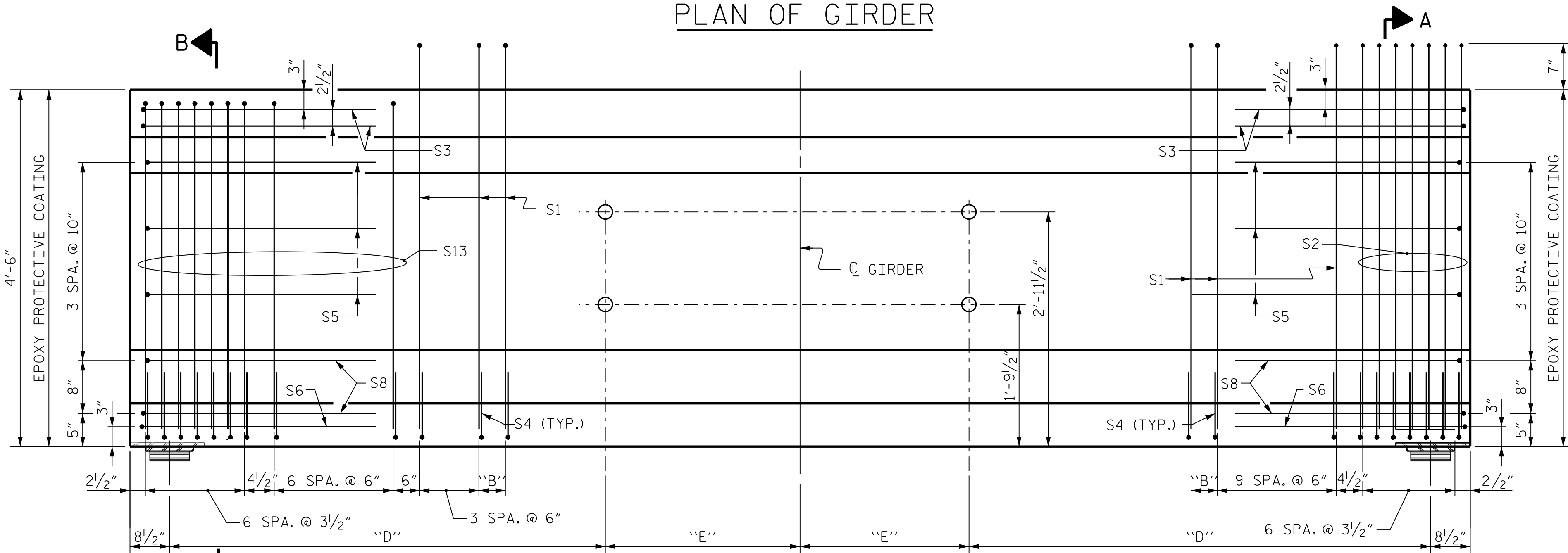
AT C GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

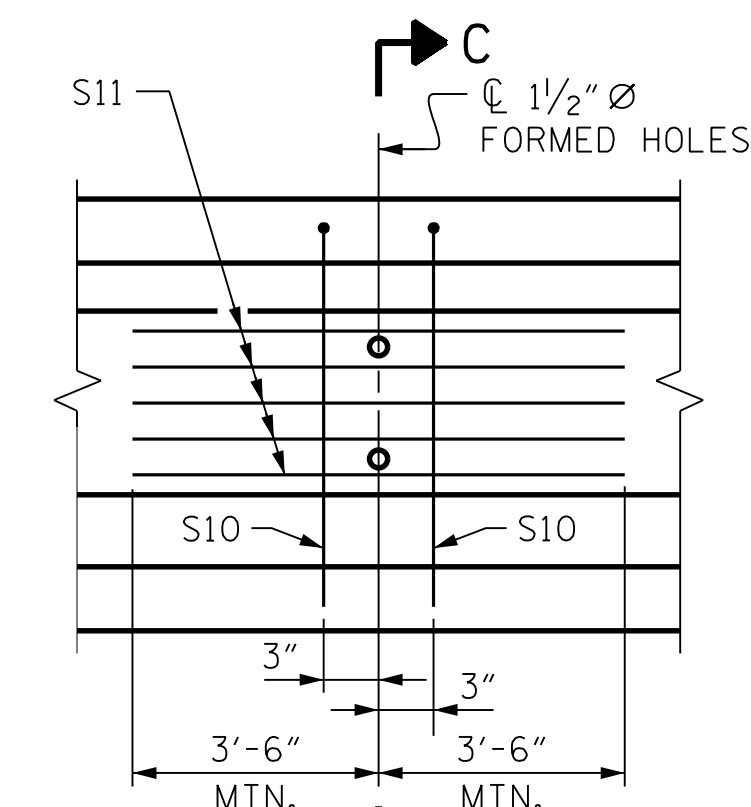


PLAN OF GIRDER

GIRDER VARIABLE TABLE							
SPAN	GIRDER	"A"	"A"/2	"B"	"C"	"D"	"E"
B	1, 2, 17	109'-8 7/8"	54'-10 7/16"	1'-0 7/16"	94	36'-1 1/16"	18'-0 1/2"
	3-5, 15, 16	109'-8 7/16"	54'-10 7/16"	1'-0"	94	36'-1"	18'-0 1/2"
	6-14	109'-8"	54'-10"	12"	94	36'-1"	18'-0 1/2"
H	ALL	109'-8"	54'-10"	12"	94	36'-1"	18'-0 1/2"
K	ALL	108'-6 1/2"	54'-3 1/4"	11 1/4"	93	35'-8 1/2"	17'-10 1/4"
GIRDERS REQUIRED		51					
TOTAL LENGTH		5,573'-11 3/16"					



ELEVATION OF GIRDER

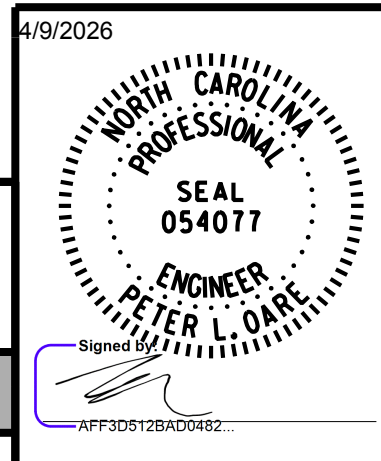
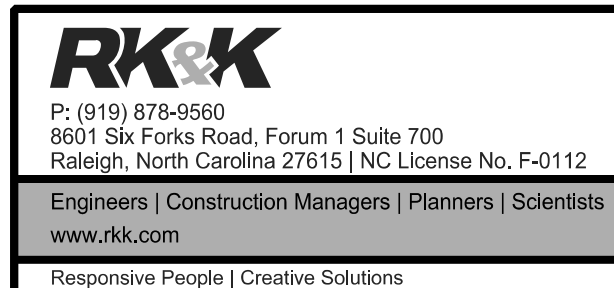


PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM
REINFORCING STEEL FOR ALL GIRDERS

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

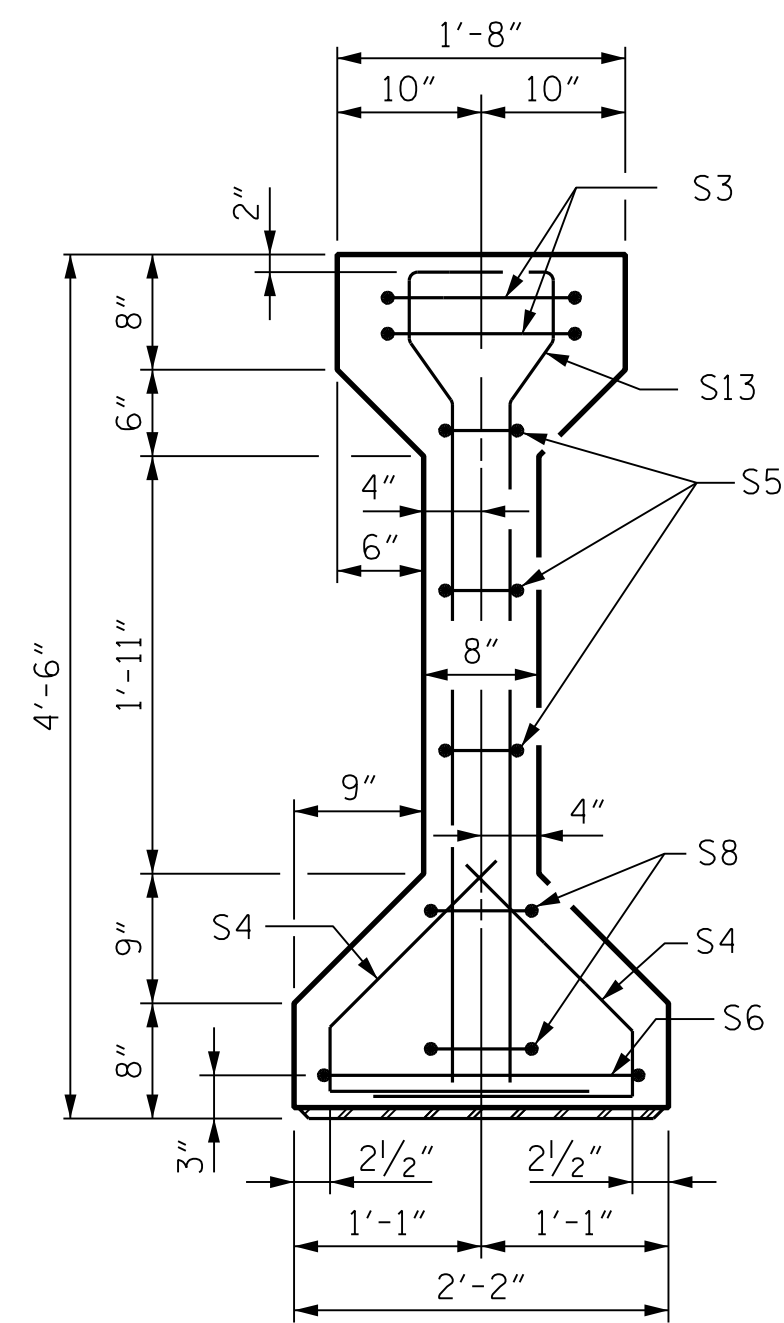
SHEET 2 OF 7



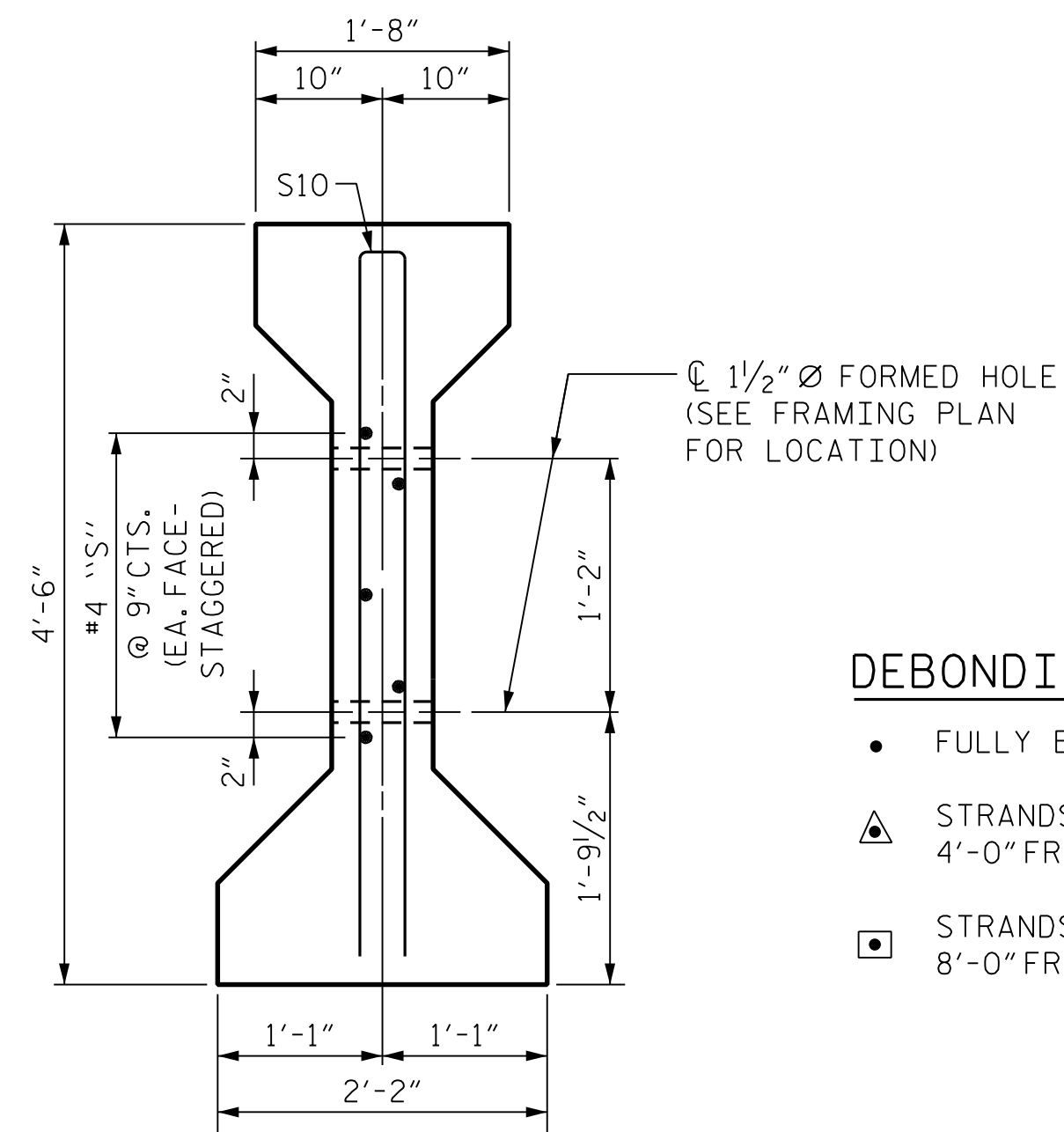
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH							
STANDARD AASHTO TYPE IV PRESTRESSED CONCRETE GIRDER - LINK SLAB SPANS B, H, & K							
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.	
1			3			S-39	
2			4			TOTAL SHEETS 118	

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CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

* REINFORCING SHOWN IS TYPICAL FOR GIRDERS G1-G9 AND G11-G17.
THEREFORE, S7 AND S9 BARS ARE NOT SHOWN. A PAIR OF S7 BARS
SHALL BE USED IN LIEU OF S1 BARS AND A PAIR OF S9 BARS SHALL BE
USED IN LIEU OF S2 BARS AT ALL LOCATIONS FOR GIRDERS G10 AND G11.
** NOT ALL S2, S4 & S13 SHOWN FOR CLARITY
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)
FOR GIRDER QUANTITIES & REINFORCING STEEL, SEE SHEET 6 OF 7



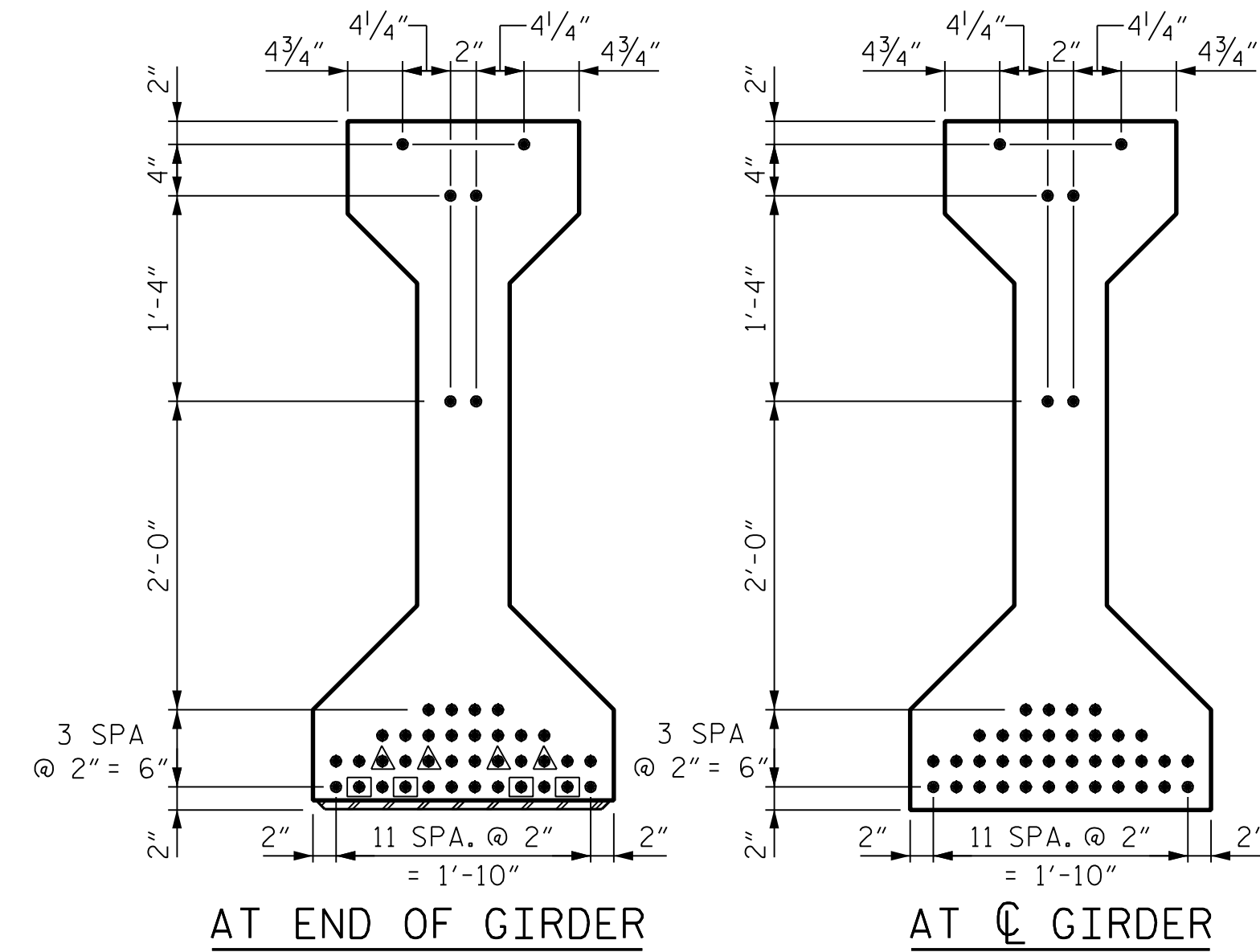
SECTION B-B



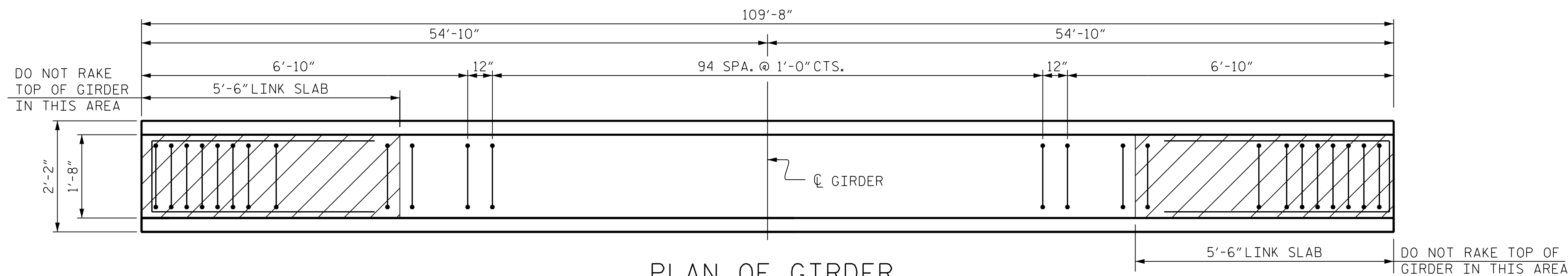
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(S1 OR S7 BARS NOT SHOWN)

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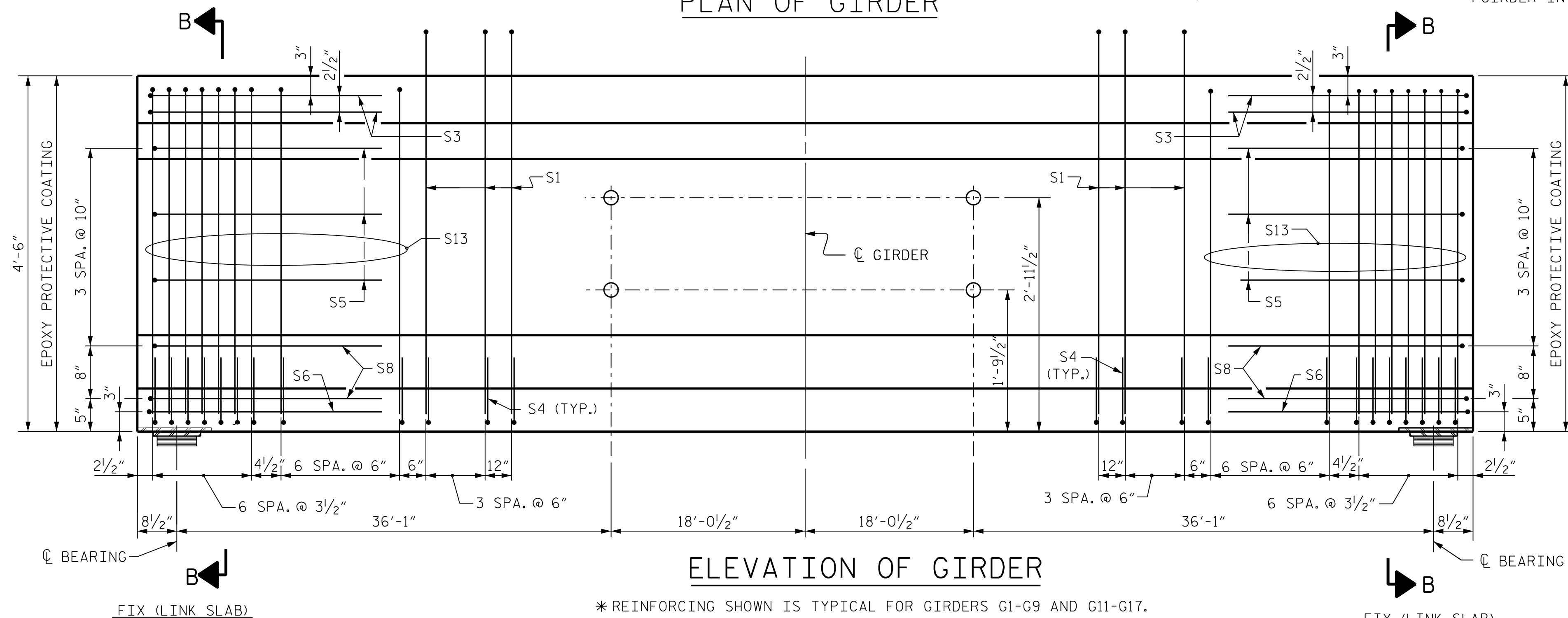
- FULLY BONDED STRANDS
- ▲ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- ◻ STRANDS DEBONDED FOR 8'-0" FROM END OF GIRDER



0.6" Ø LOW RELAXATION STRAND LAYOUT



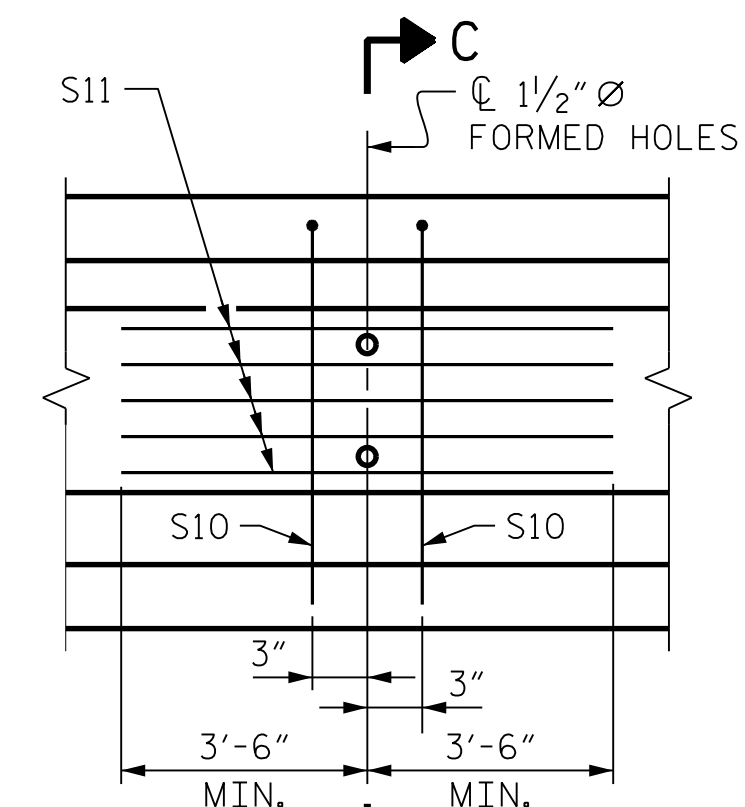
PLAN OF GIRDER



ELEVATION OF GIRDER

*REINFORCING SHOWN IS TYPICAL FOR GIRDERS G1-G9 AND G11-G17.
THEREFORE, S7 AND S9 BARS ARE NOT SHOWN. A PAIR OF S7 BARS
SHALL BE USED IN LIEU OF S1 BARS AND A PAIR OF S9 BARS SHALL BE
USED IN LIEU OF S2 BARS AT ALL LOCATIONS FOR GIRDERS G10 AND G11.

** NOT ALL S2, S4 & S13 SHOWN FOR CLARITY
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)



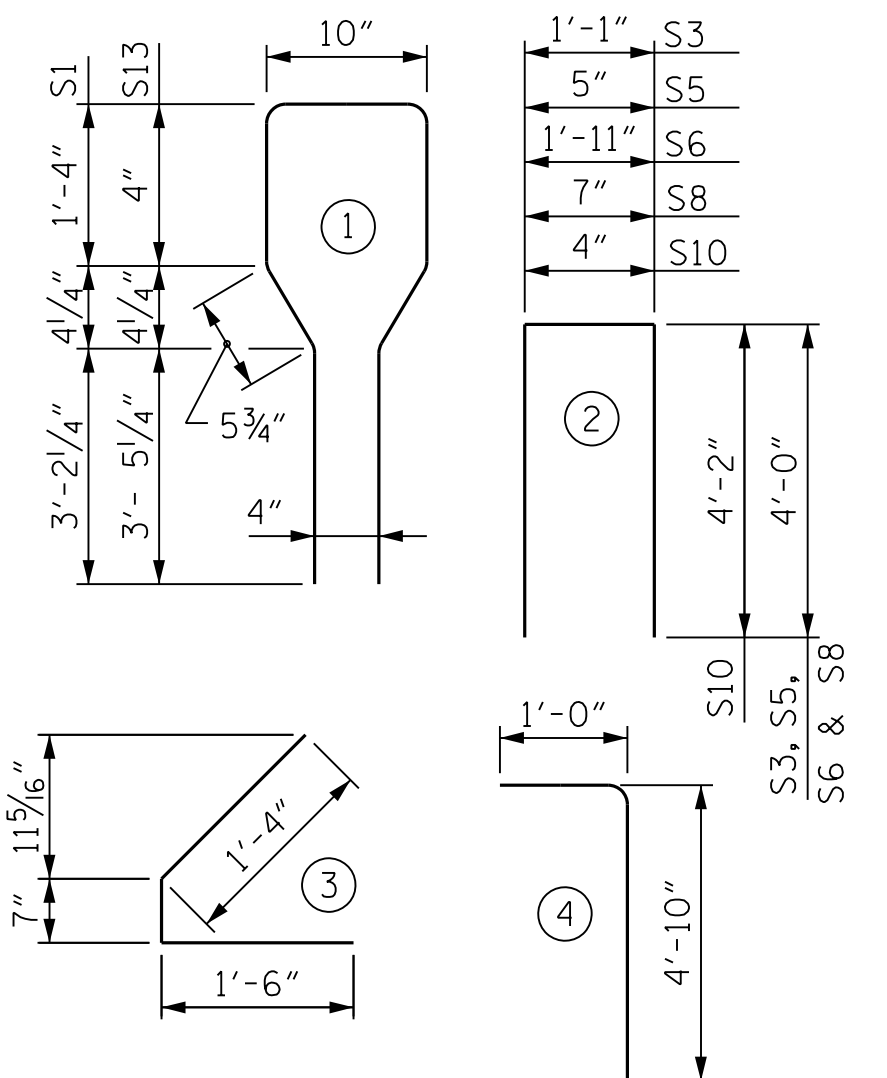
PARTIAL ELEVATION
SHOWING INTERMEDIATE DIAPHRAGM
REINFORCING STEEL FOR ALL GIRDERS

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

REINFORCING STEEL FOR ONE GIRDER

BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
S1	101	#4	1	10'-10"	731
S3	4	#4	2	9'-1"	24
S4	258	#4	3	3'-5"	589
S5	6	#4	2	8'-5"	34
S6	2	#4	2	9'-11"	13
S7	202	#4	4	5'-10"	787
S8	4	#4	2	8'-7"	23
S10	4	#5	2	8'-8"	36
S11	10	#4	STR.	7'-0"	47
S13	28	#6	1	9'-4"	393

BAR TYPES



ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	9,000 PSI CONCRETE	0.6"Ø L. R. STRANDS
	LB.	C.Y.	No.
G1-9 & G12-17	1,890	22.3	42
G10 & G11	1,946	22.3	42

GIRDERS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
SPAN G	17	109'-8"	1,864'-4"
SPAN J	17	109'-8"	1,864'-4"

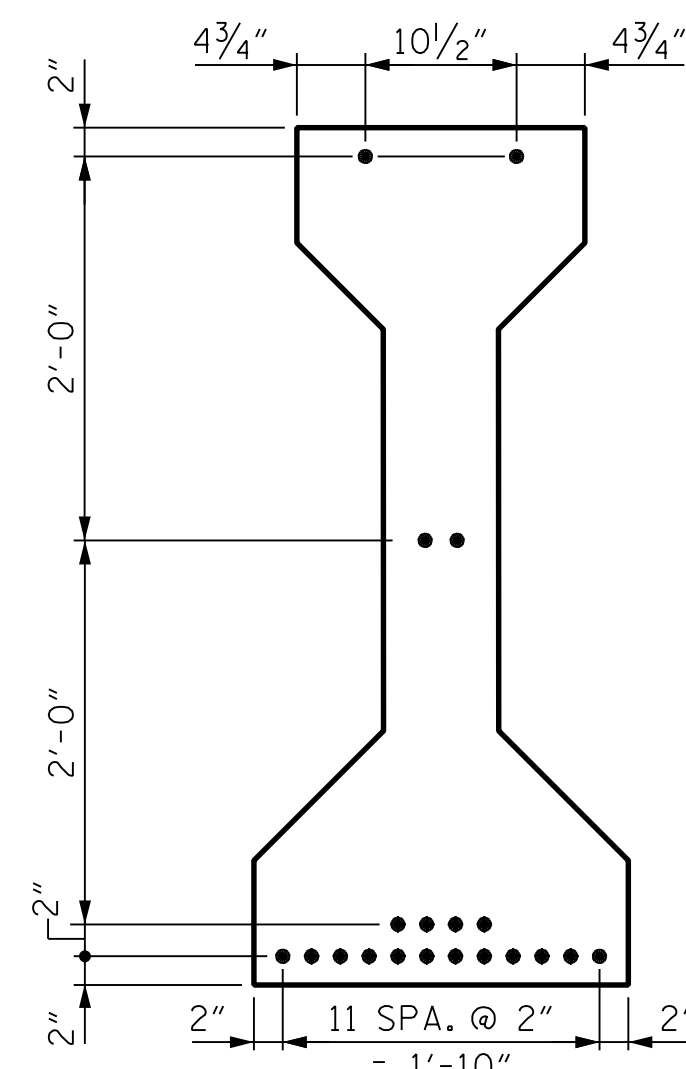
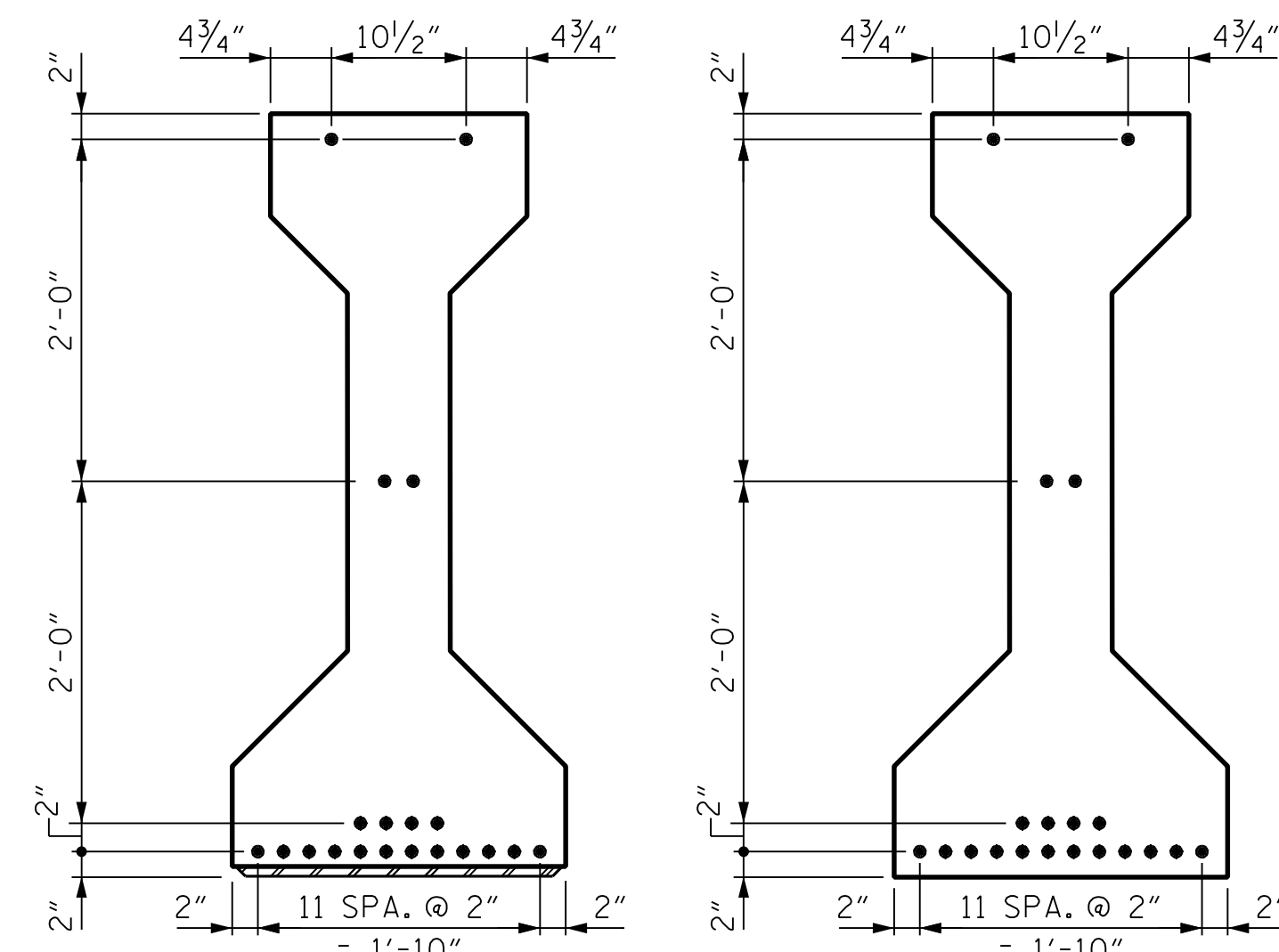
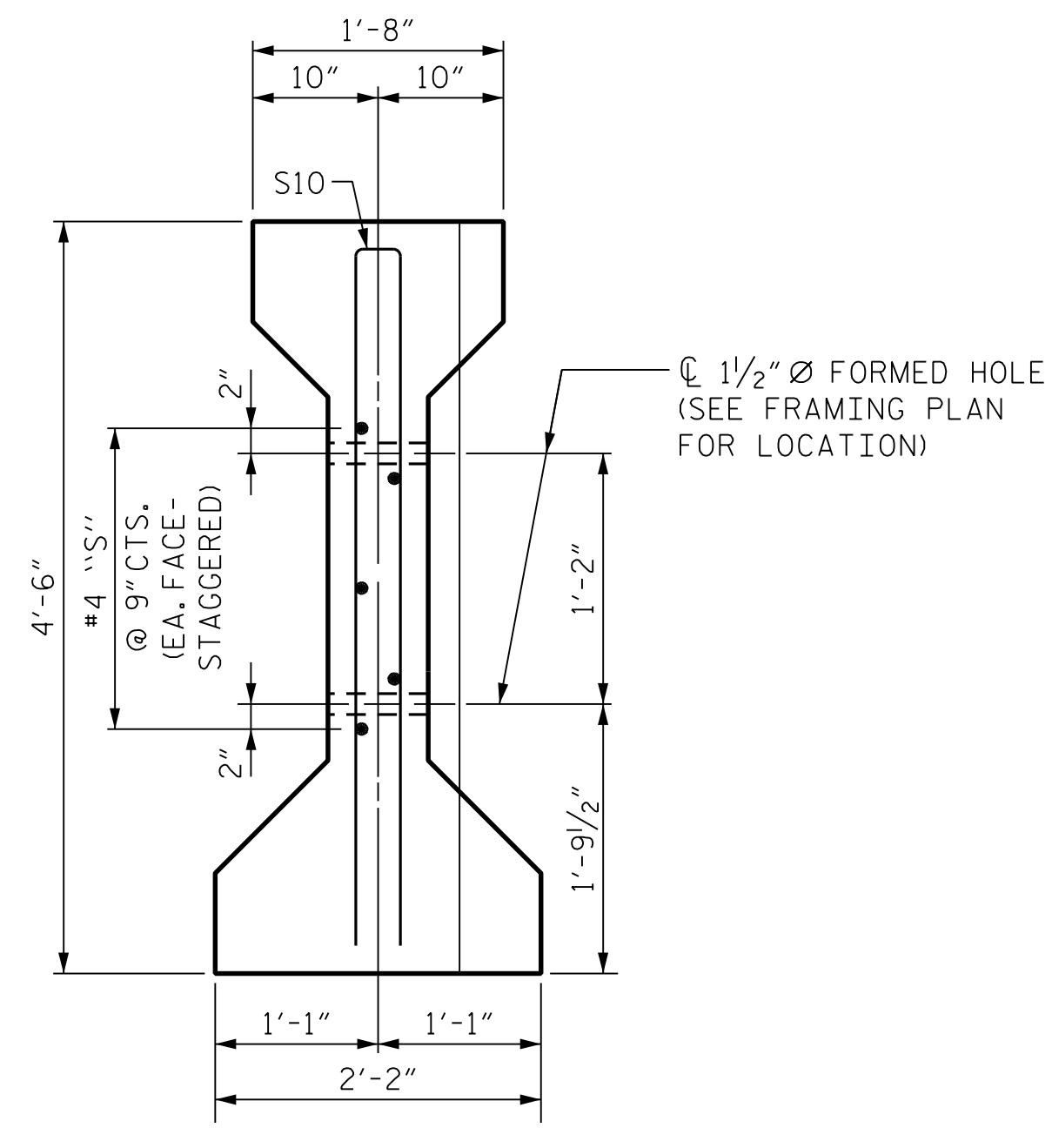
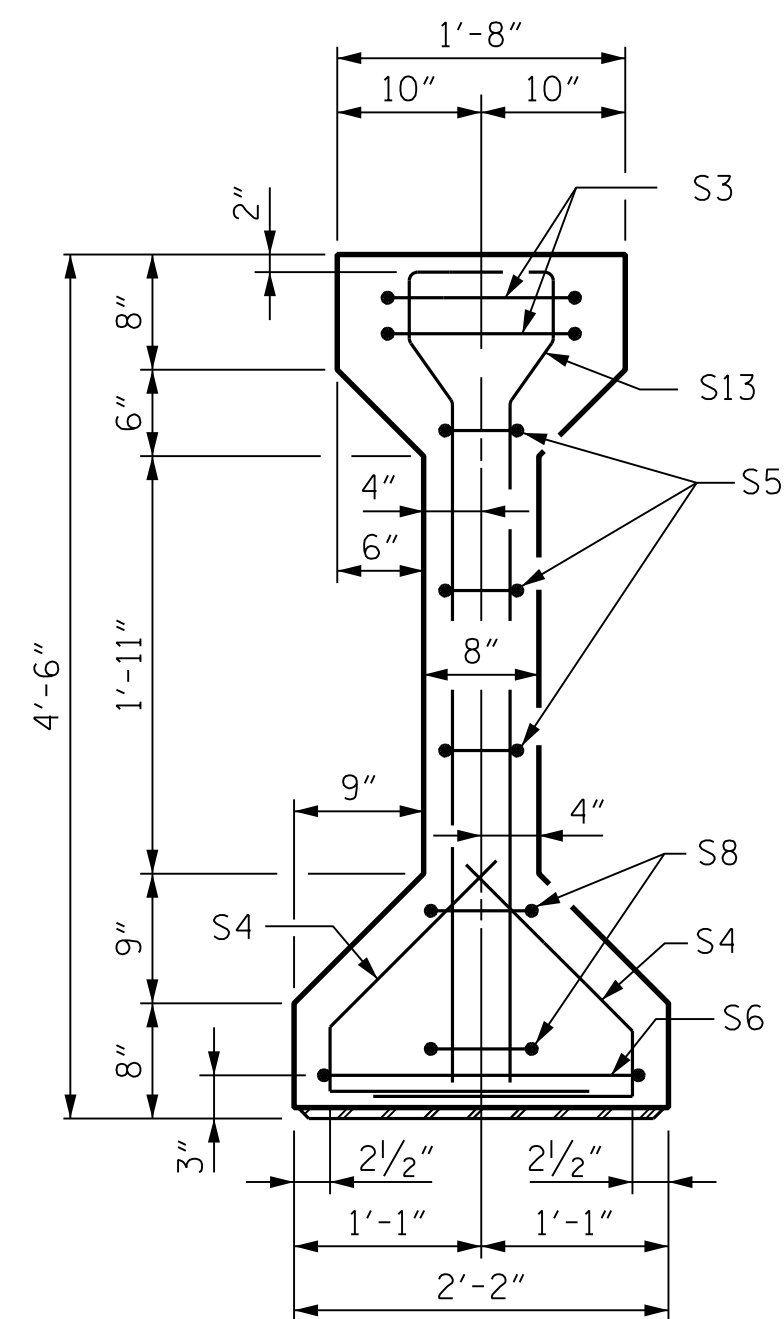
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 3 OF 7

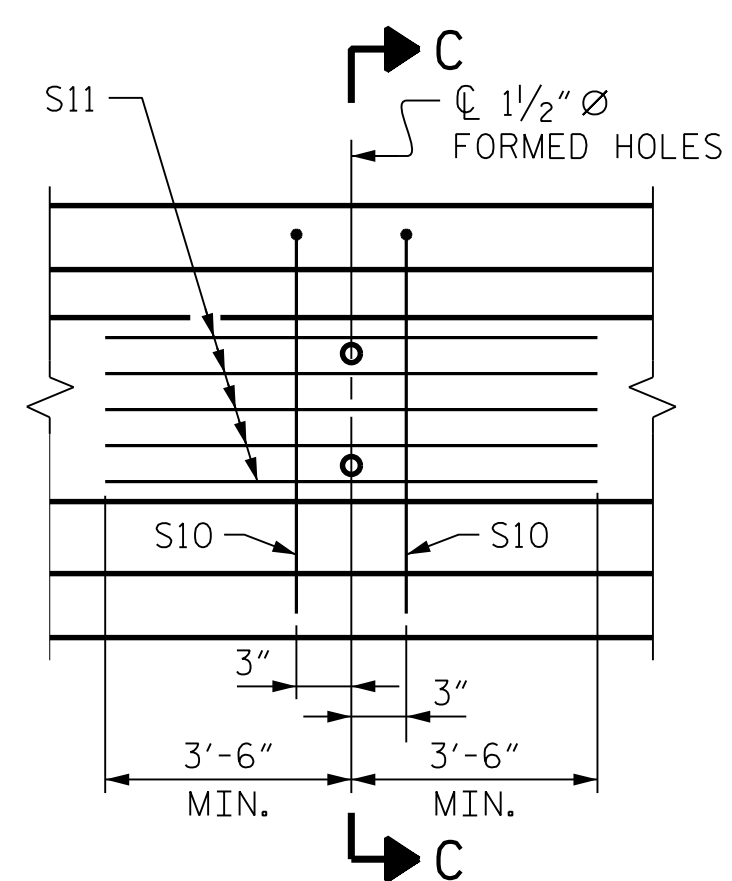
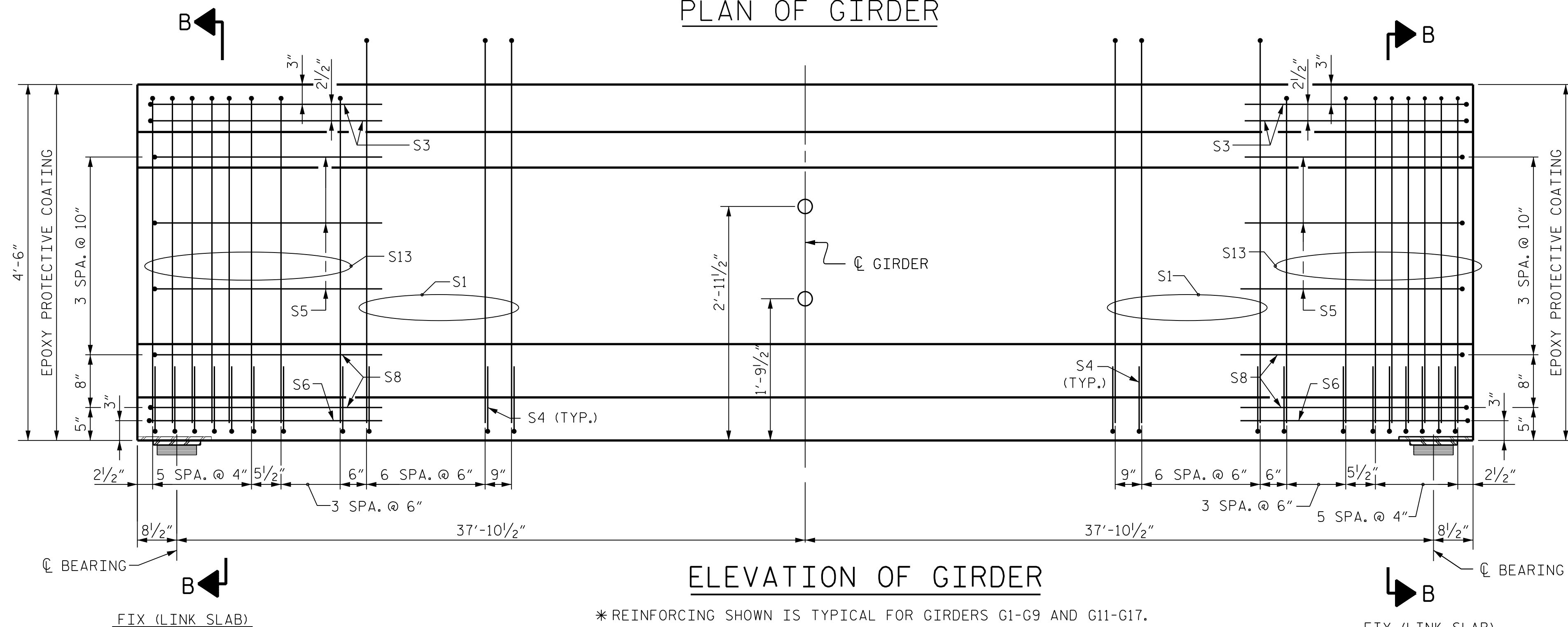
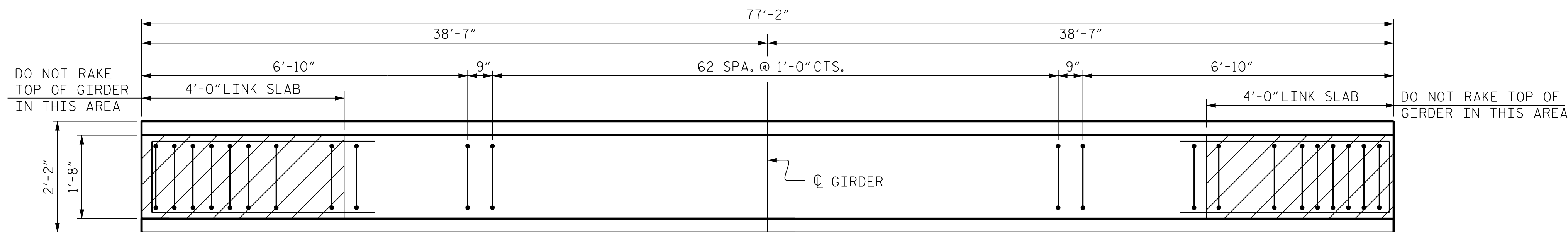
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
AASHTO TYPE IV
PRESTRESSED CONCRETE
GIRDER - LINK SLAB
SPANS G & J

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40 TOTAL SHEETS 118
1			3			
2			4			



0.6" Ø LOW RELAXATION STRAND LAYOUT

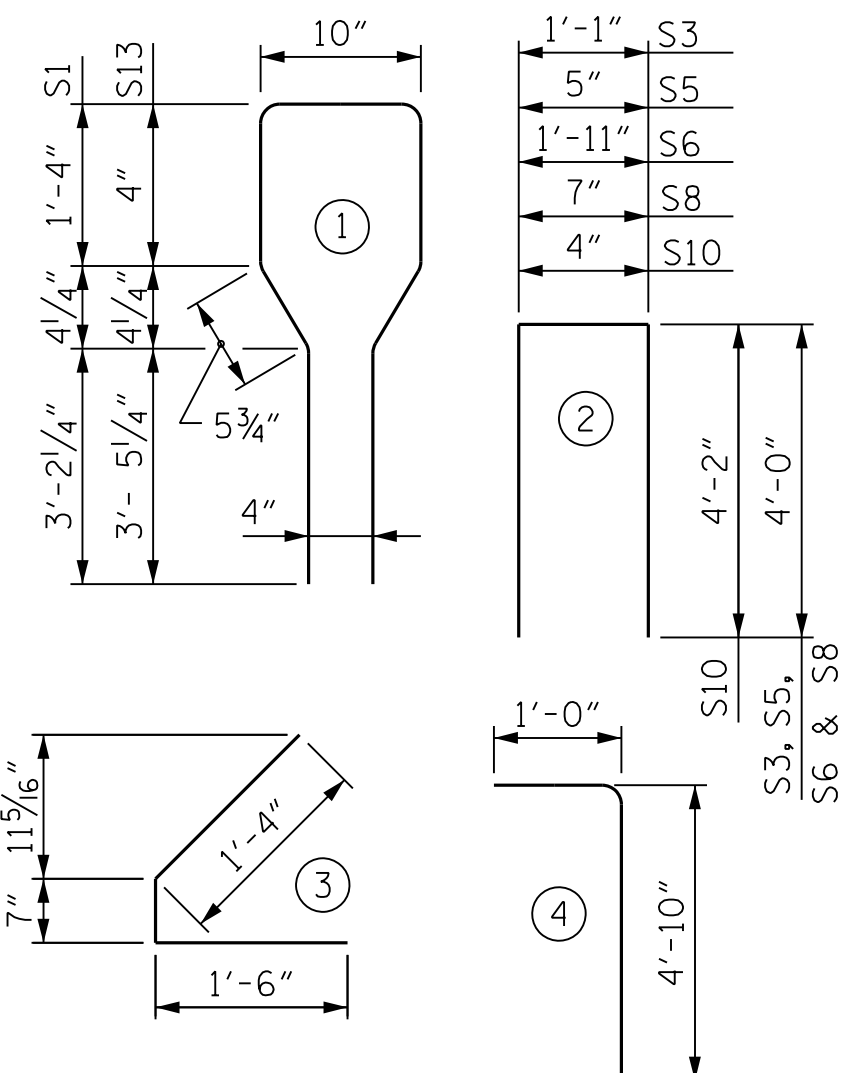


AREA (SQUARE INCHES)	ULTIMATE STRENGTH (LBS. PER STRAND)	APPLIED PRESTRESS (LBS. PER STRAND)
0.217	58,600	43,950

REINFORCING STEEL FOR ONE GIRDER

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
G1-9 & G12-17	S1	75	#4	1	10'-10"	543
	S3	4	#4	2	9'-1"	24
	S4	190	#4	3	3'-5"	434
	S5	6	#4	2	8'-5"	34
	S6	2	#4	2	9'-11"	13
G10 & G11	S7	150	#4	4	5'-10"	584
	S8	4	#4	2	8'-7"	23
	S10	2	#5	2	8'-8"	18
	S11	5	#4	STR.	7'-0"	23
	S13	20	#6	1	9'-4"	280

BAR TYPES	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
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100	100



ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	0.6"Ø L. R. STRANDS
	LB.	C.Y.	No.
G1-9 & G12-17	1,392	15.7	20
G10 & G11	1,433	15.7	20

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
17	77'-2"	1,311'-10"

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 4 OF 7

4/9/2026

NORTH CAROLINA
PROFESSIONAL
SEAL
054077
ENGINEER
PETER L. OARE

Signed by _____

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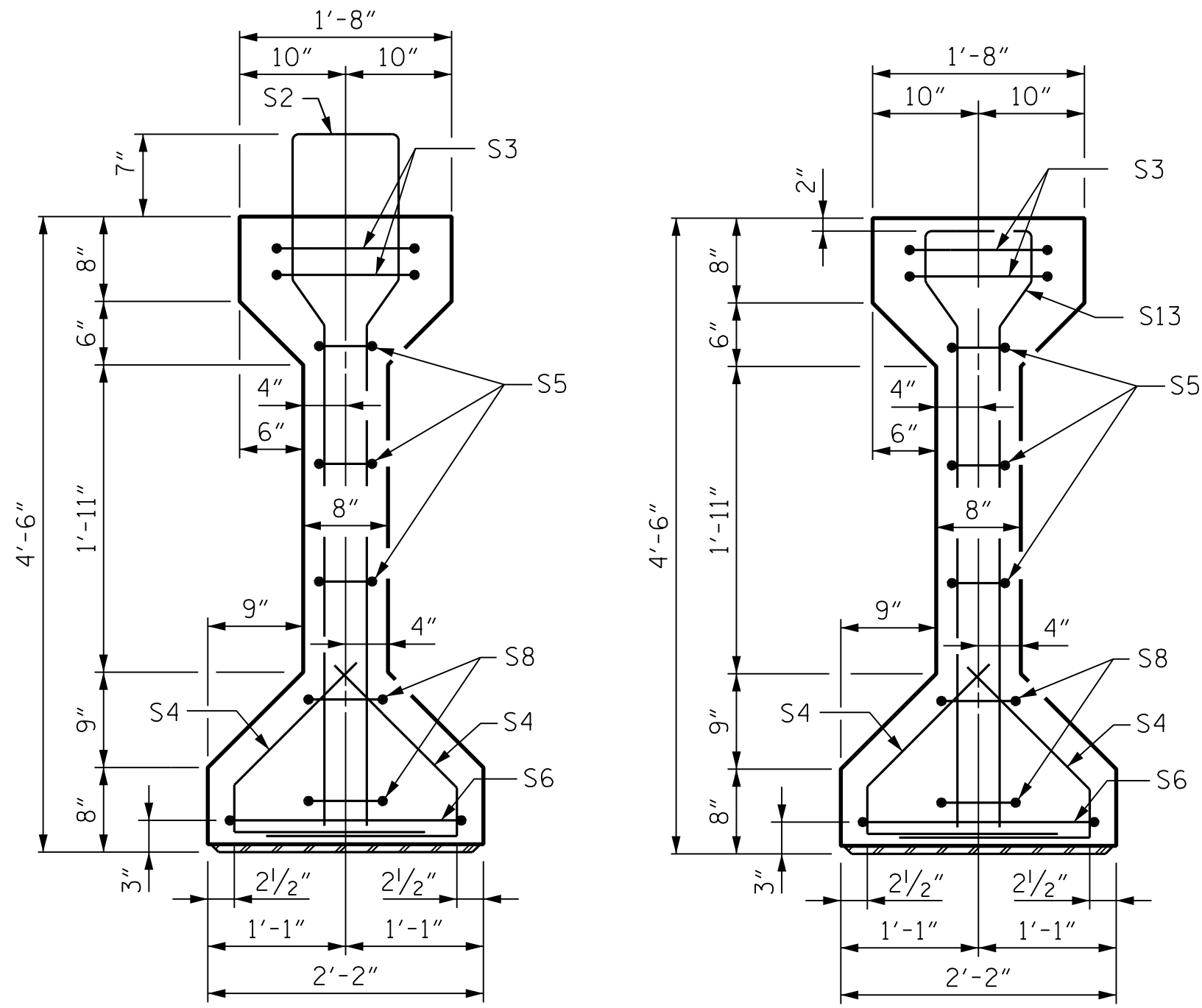
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 AASHTO TYPE IV
 PRESTRESSED CONCRETE
 GIRDER - LINK SLAB
 SPAN D

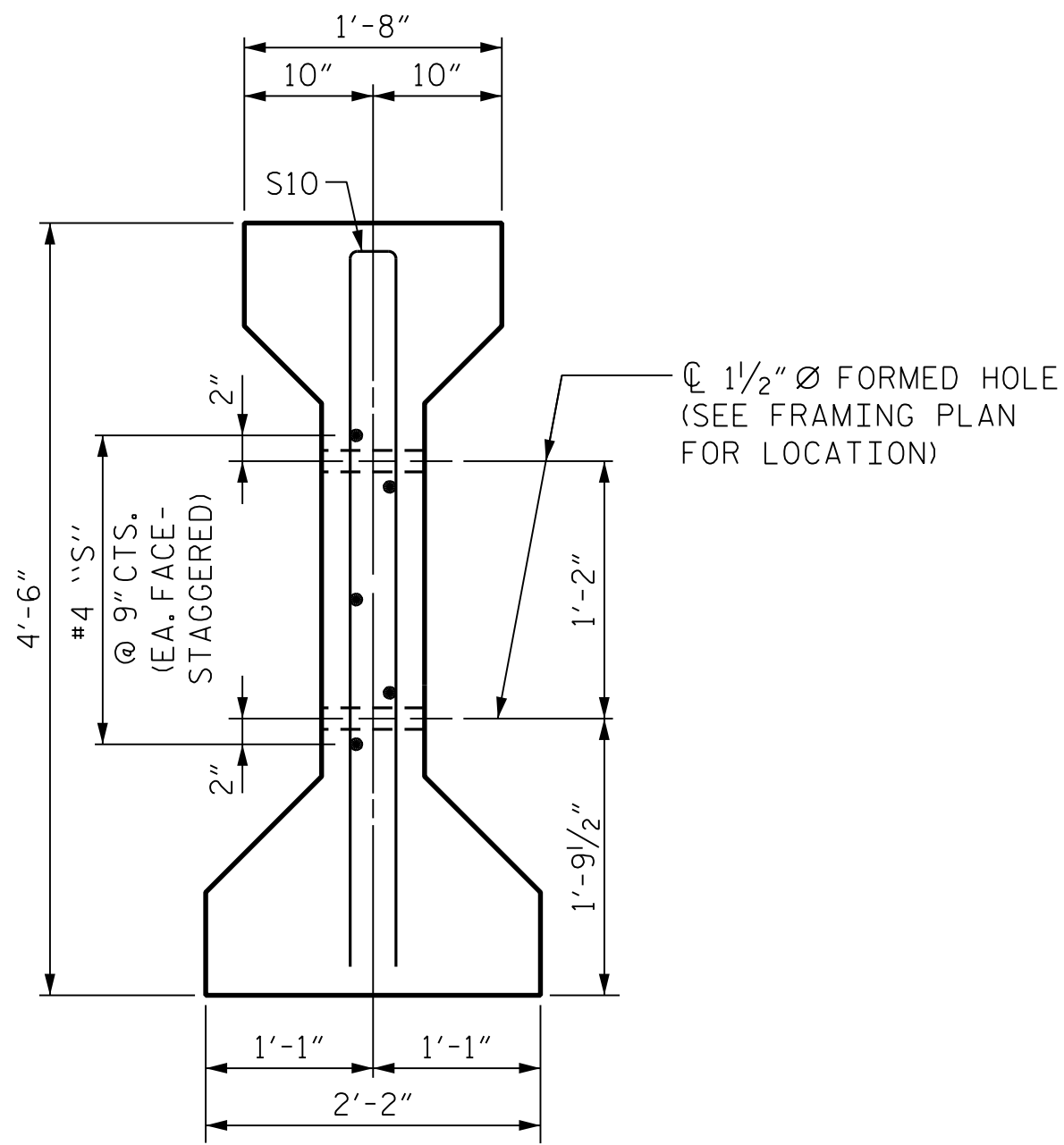
* REINFORCING SHOWN IS TYPICAL FOR GIRDERS G1-G9 AND G11-G17.
THEREFORE, S7 AND S9 BARS ARE NOT SHOWN. A PAIR OF S7 BARS
SHALL BE USED IN LIEU OF S1 BARS AND A PAIR OF S9 BARS SHALL BE
USED IN LIEU OF S2 BARS AT ALL LOCATIONS FOR GIRDERS G10 AND G11.
** NOT ALL S2, S4 & S13 SHOWN FOR CLARITY
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

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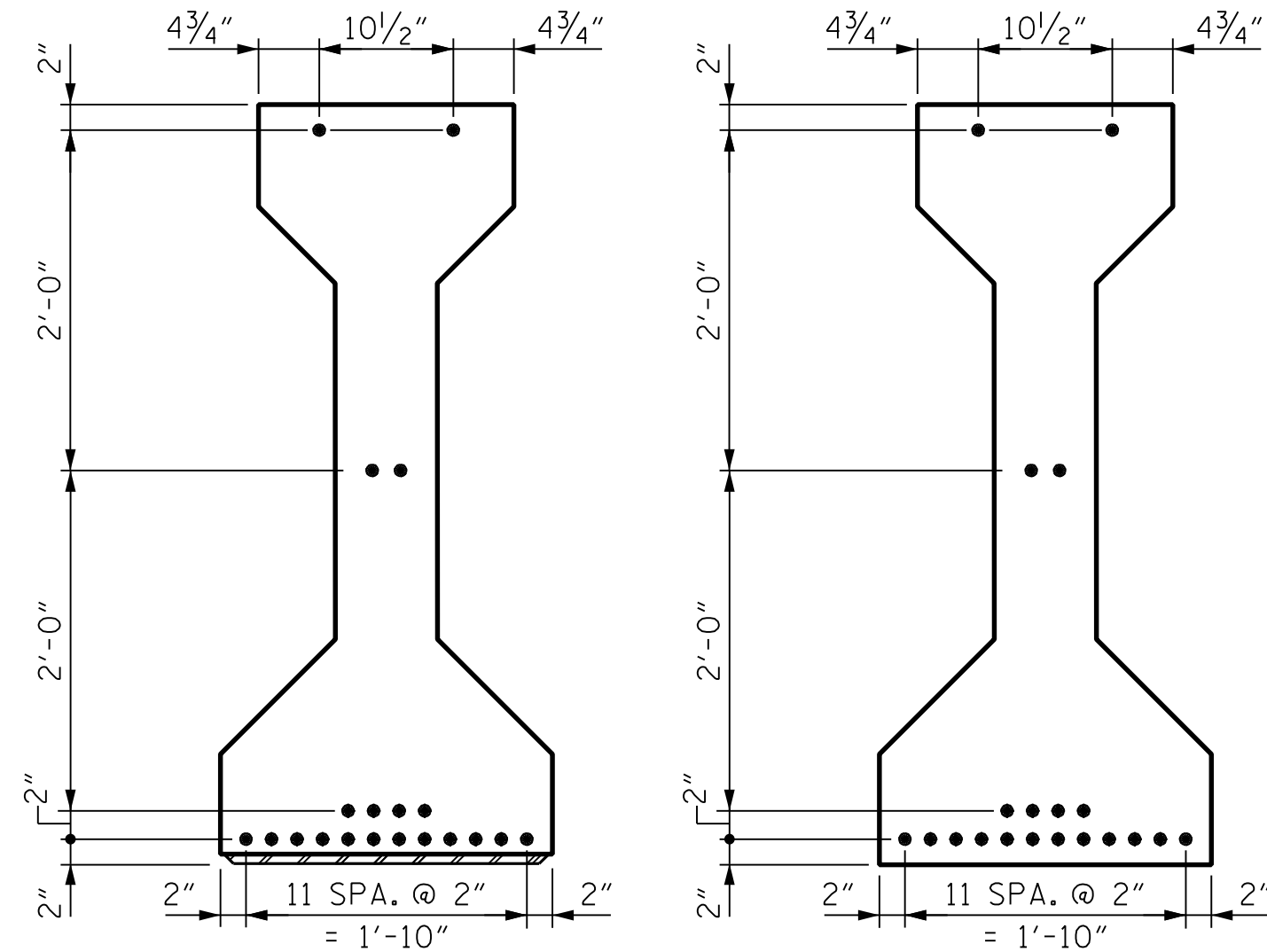
SECTION A-A

SECTION B-B



SECTION C-C

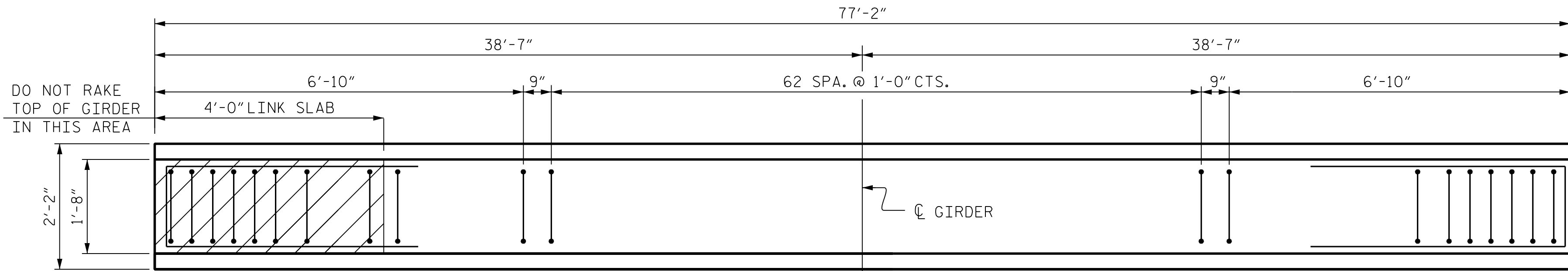
(S1 OR S7 BARS NOT SHOWN)



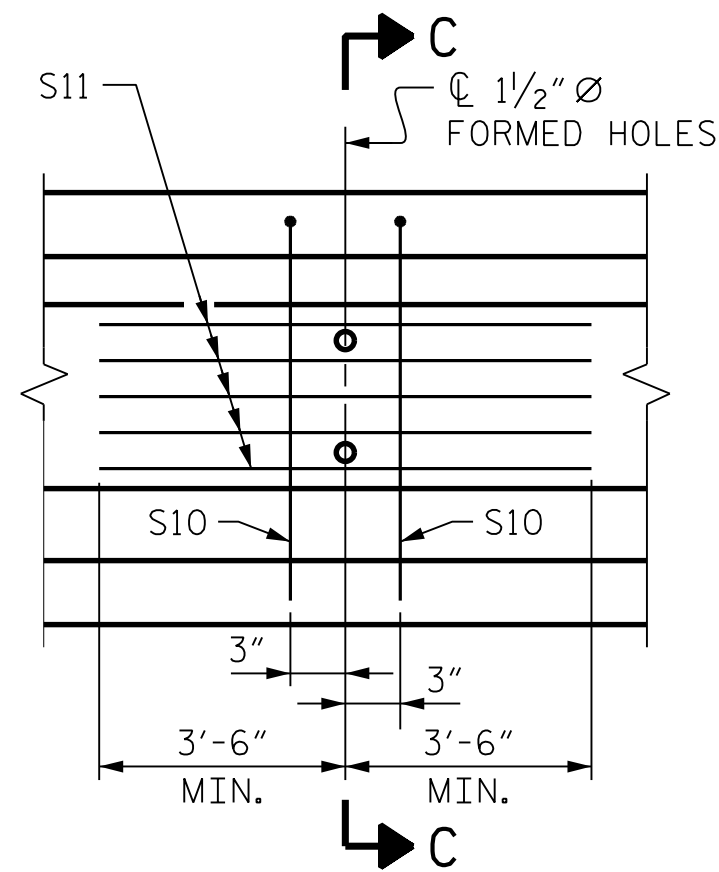
AT END OF GIRDER

AT C GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

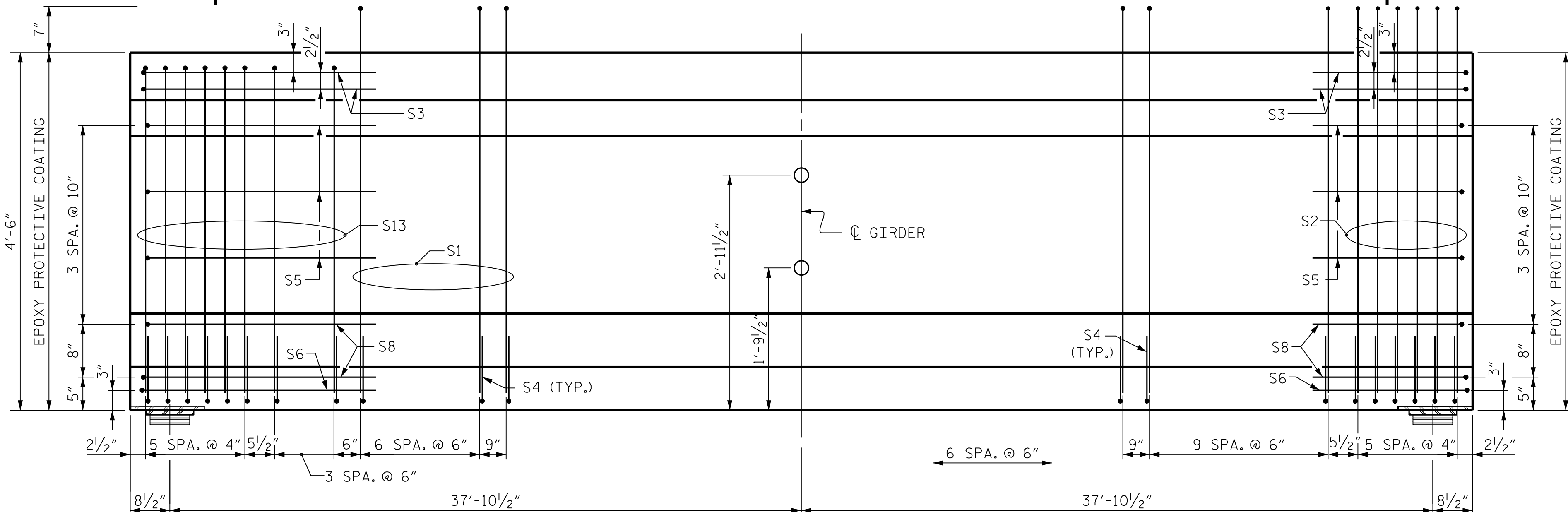


PLAN OF GIRDER



PARTIAL ELEVATION

SHOWING INTERMEDIATE DIAPHRAGM
REINFORCING STEEL FOR ALL GIRDERS



ELEVATION OF GIRDER

* REINFORCING SHOWN IS TYPICAL FOR GIRDERS G1-G9 AND G11-G17.
THEREFORE, S7 AND S9 BARS ARE NOT SHOWN. A PAIR OF S7 BARS
SHALL BE USED IN LIEU OF S1 BARS AND A PAIR OF S9 BARS SHALL BE
USED IN LIEU OF S2 BARS AT ALL LOCATIONS FOR GIRDERS G10 AND G11.
** NOT ALL S2, S4 & S13 SHOWN FOR CLARITY
(SEE PARTIAL ELEVATION FOR ADDITIONAL "S" BARS)

DRAWN BY : J.W. COOK	DATE : FEB 2025
CHECKED BY : P. OARE	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE	DATE : FEB 2025

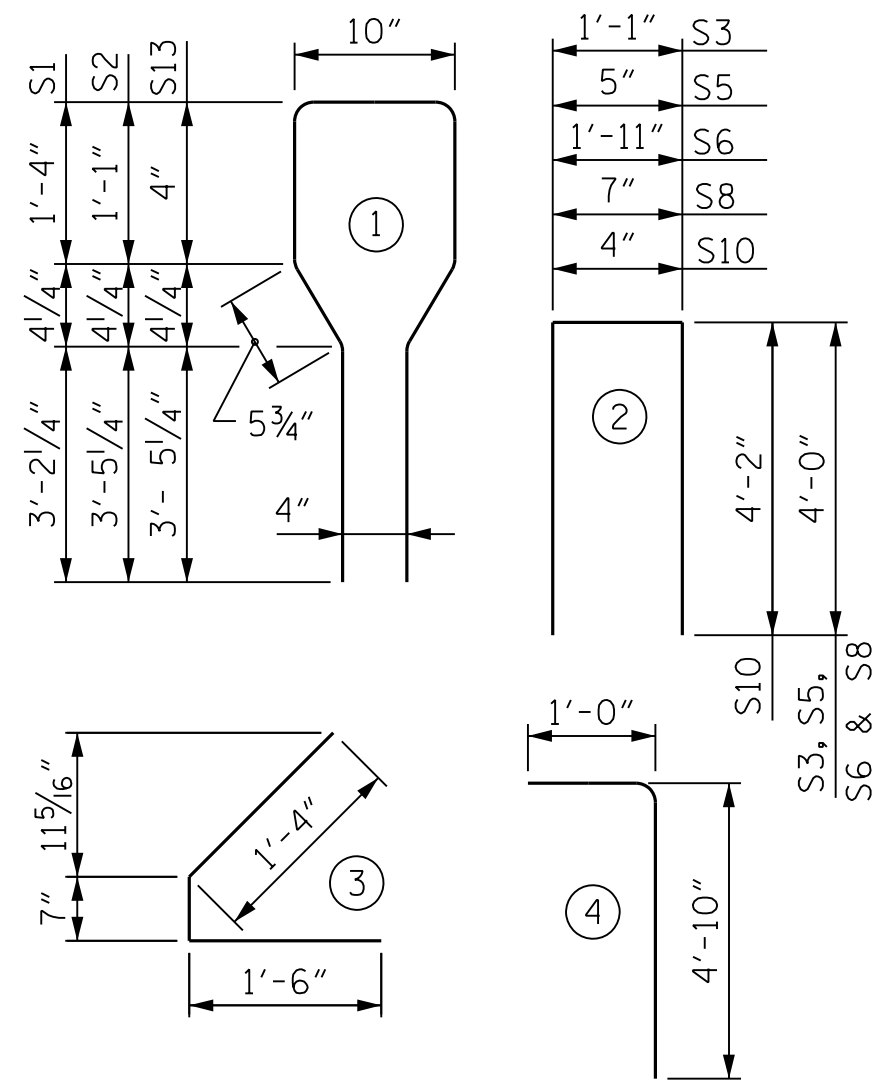
0.6" Ø L. R. GRADE 270 STRANDS

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

REINFORCING STEEL FOR ONE GIRDER

	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
G1-G9 & G12-17	S1	79	#4	1	10'-10"	572
G1-G9 & G12-17	S2	6	#6	1	10'-10"	98
	S3	4	#4	2	9'-1"	24
	S4	190	#4	3	3'-5"	434
	S5	6	#4	2	8'-5"	34
	S6	2	#4	2	9'-11"	13
G10 & G11	S7	158	#4	4	5'-10"	616
	S8	4	#4	2	8'-7"	23
G10 & G11	S9	12	#6	4	5'-10"	105
	S10	2	#5	2	8'-8"	18
	S11	5	#4	STR	7'-0"	23
	S13	10	#6	1	9'-4"	140

BAR TYPES



ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER

	REINFORCING STEEL	8,000 PSI CONCRETE	0.6" Ø L. R. STRANDS
	LB.	C.Y.	No.
G1-9 & G12-17	1,379	15.7	20
G10 & G11	1,430	15.7	20

GIRDERS REQUIRED

NUMBER	LENGTH	TOTAL LENGTH
17	77'-2"	1,311'-10"

PROJECT NO. B-6051/U-6143

GASTON/MECKLENBURG COUNTY

STATION: 46+42.50 -L-

SHEET 5 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
AASHTO TYPE IV
PRESTRESSED CONCRETE
GIRDER - LINK SLAB
SPAN E

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-42
2			4			TOTAL SHEETS 118



4/9/2026

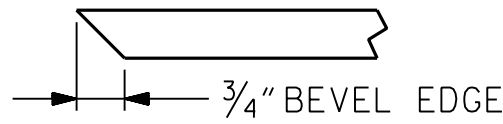
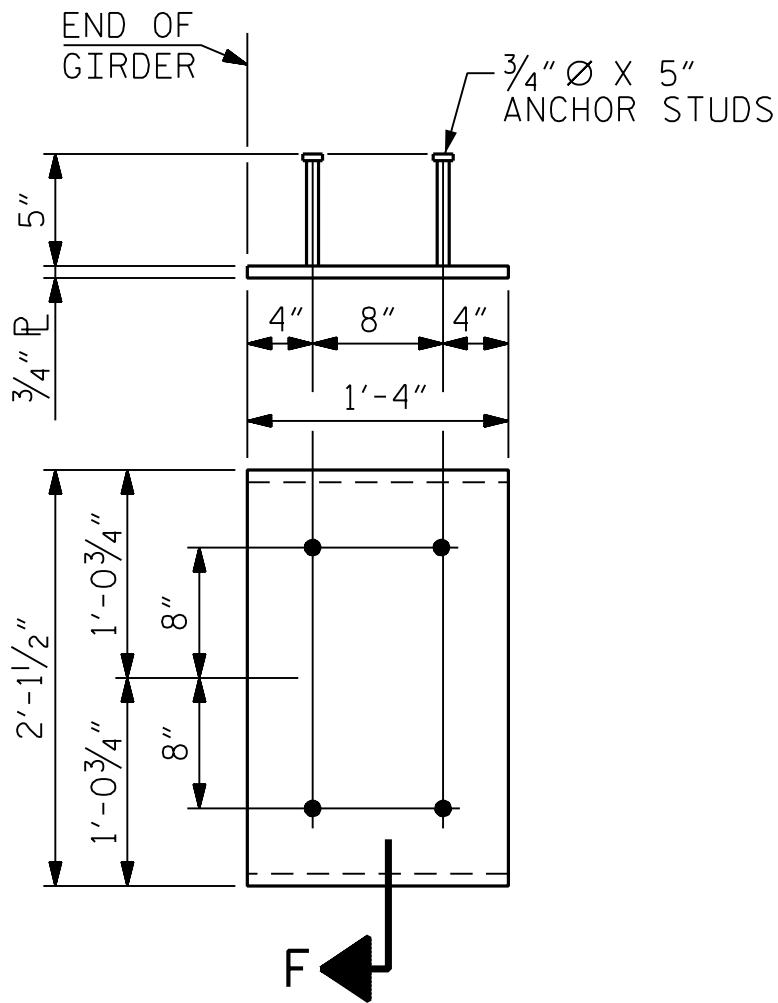
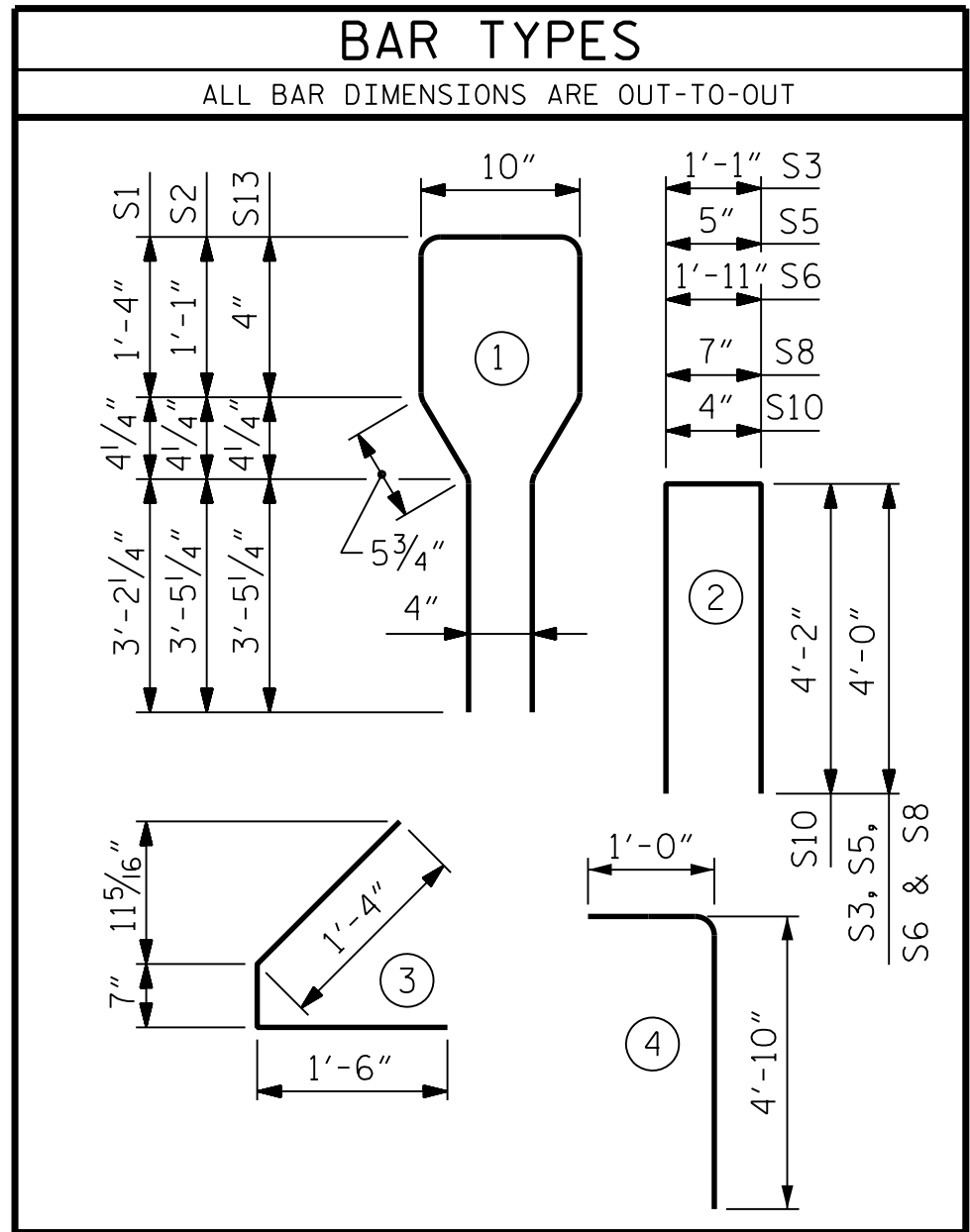
Signed by: PETER L. OARE

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GIRDERS AG1-AG17			GIRDERS BG1-BG17			GIRDERS SPANS C, F, H, & I			GIRDERS KG1-KG17		
0.6" Ø L. R. GRADE 270 STRANDS			0.6" Ø L. R. GRADE 270 STRANDS			0.6" Ø L. R. GRADE 270 STRANDS			0.6" Ø L. R. GRADE 270 STRANDS		
AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS	AREA	ULTIMATE STRENGTH	APPLIED PRESTRESS
(SQUARE INCHES)	(LBS. PER STRAND)	(LBS. PER STRAND)	(SQUARE INCHES)	(LBS. PER STRAND)	(LBS. PER STRAND)	(SQUARE INCHES)	(LBS. PER STRAND)	(LBS. PER STRAND)	(SQUARE INCHES)	(LBS. PER STRAND)	(LBS. PER STRAND)
0.217	58,600	43,950	0.217	58,600	43,950	0.217	58,600	43,950	0.217	58,600	43,950
REINFORCING STEEL FOR ONE GIRDER			REINFORCING STEEL FOR ONE GIRDER			REINFORCING STEEL FOR ONE GIRDER			REINFORCING STEEL FOR ONE GIRDER		
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
* S1	107	#4	1	10'-10"	774	* S1	108	#4	1	10'-10"	782
* S2	7	#6	1	10'-10"	114	* S2	7	#6	1	10'-10"	114
S3	4	#4	2	9'-1"	24	S3	4	#4	2	9'-1"	24
S4	256	#4	3	3'-5"	584	S4	258	#4	3	3'-5"	589
S5	6	#4	2	8'-5"	34	S5	6	#4	2	8'-5"	34
S6	2	#4	2	9'-11"	13	S6	2	#4	2	9'-11"	13
** S7	214	#4	4	5'-10"	834	** S7	216	#4	4	5'-10"	842
S8	4	#4	2	8'-7"	23	S8	4	#4	2	8'-7"	23
** S9	14	#6	4	5'-10"	123	** S9	14	#6	4	5'-10"	123
S10	2	#5	2	8'-8"	18	S10	2	#5	2	8'-8"	18
S11	5	#4	STR.	7'-0"	23	S11	5	#4	STR.	7'-0"	23
S13	14	#6	1	9'-4"	196	S13	14	#6	1	9'-4"	196
NOTE: * = G1-G9 & G12-17 ** = G10 & G11			NOTE: * = G1-G9 & G12-17 ** = G10 & G11			NOTE: * = G1-G9 & G12-17 ** = G10 & G11			NOTE: * = G1-G9 & G12-17 ** = G10 & G11		
QUANTITIES FOR ONE GIRDER			QUANTITIES FOR ONE GIRDER			QUANTITIES FOR ONE GIRDER			QUANTITIES FOR ONE GIRDER		
	REINFORCING STEEL	9,000 PSI CONCRETE	0.6" Ø L. R. STRANDS				REINFORCING STEEL	9,000 PSI CONCRETE	0.6" Ø L. R. STRANDS		
	LB.	C.Y.	No.				LB.	C.Y.	No.		
G1-9 & G12-17	1,803	22.0	42	G1-9 & G12-17	1,816	22.3	42	G1-9 & G12-17	1,816	22.3	42
G10 & G11	1,872	22.0	42	G10 & G11	1,885	22.3	42	G10 & G11	1,885	22.3	42
GIRDERS REQUIRED			GIRDERS REQUIRED			GIRDERS REQUIRED			GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH	NUMBER	LENGTH	TOTAL LENGTH	NUMBER	LENGTH	TOTAL LENGTH	NUMBER	LENGTH	TOTAL LENGTH
3	108'-6 ⁵ / ₈ "	325'-7 ⁷ / ₈ "	3	109'-8 ¹ / ₈ "	329'-0 ³ / ₈ "	68	109'-8"	7,457'-4"	17	108'-6 ¹ / ₂ "	1,845'-2 ¹ / ₂ "
5	108'-6 ⁹ / ₁₆ "	542'-8 ¹³ / ₁₆ "	5	109'-8 ⁹ / ₁₆ "	548'-4 ³ / ₁₆ "						
9	108'-6 ¹ / ₂ "	976'-10 ¹ / ₂ "	9	109'-8"	987'-0"						



SECTION "F"

(SEE NOTES)

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

(2 REQ'D PER GIRDER)

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 6 OF 7

DRAWN BY : J. W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

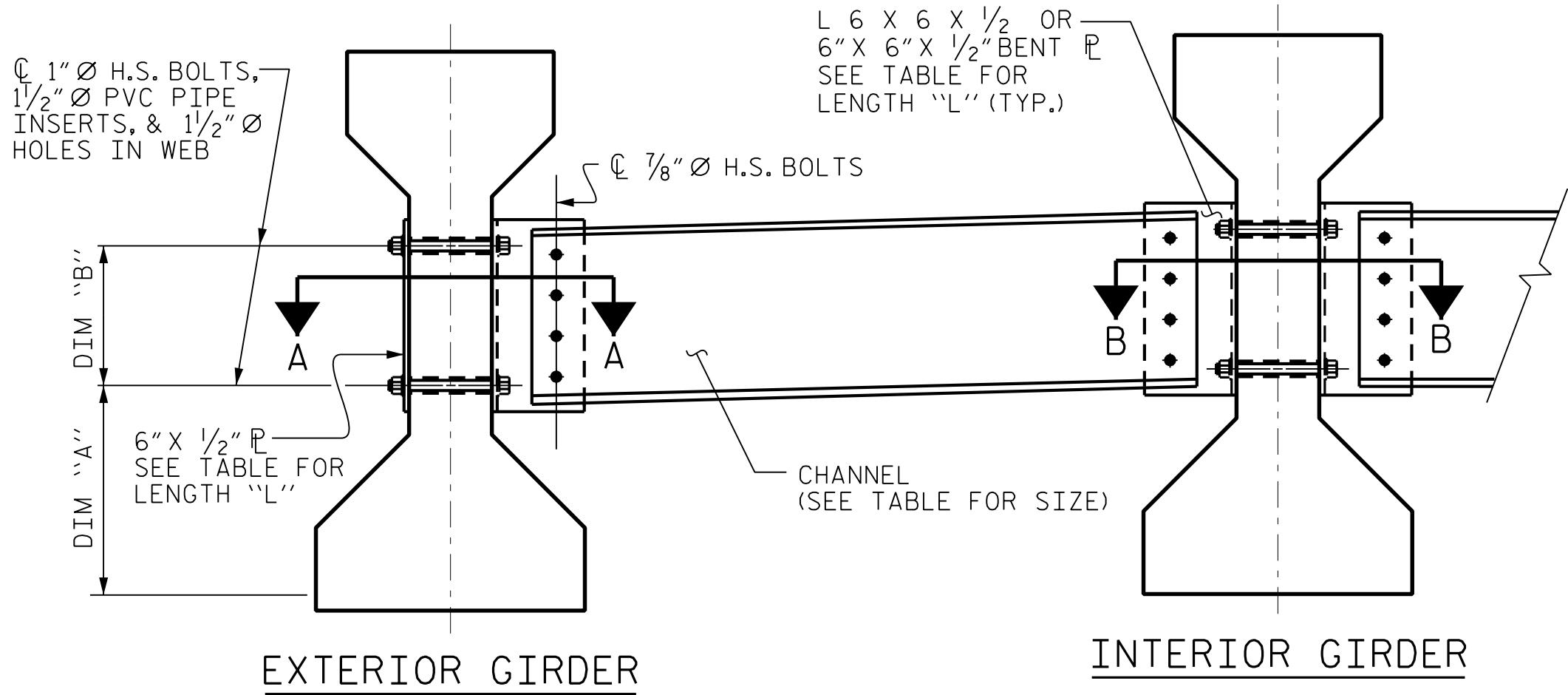
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054077
ENGINEER
PETER L. OARE
Signed By: APP30512BAC0482

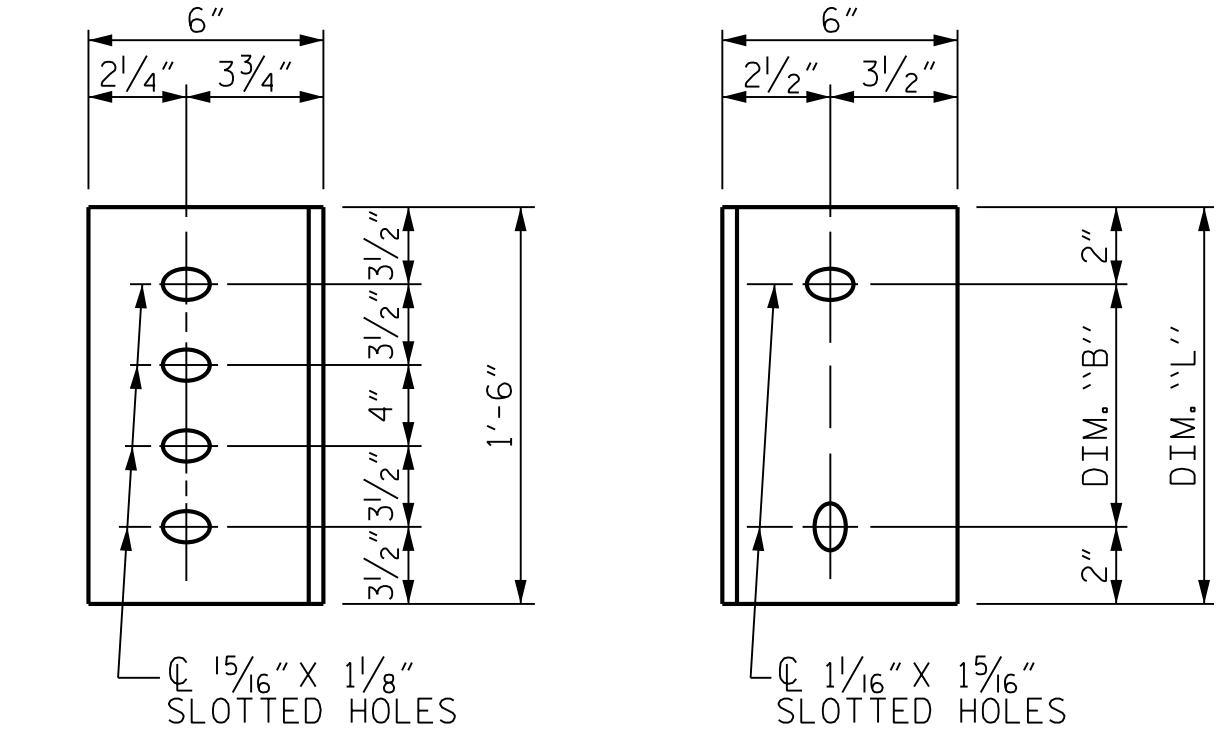
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
PRESTRESSED CONCRETE GIRDER
CONTINUOUS FOR LIVE LOAD
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-43
2			4			
TOTAL SHEETS						118

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PART SECTION AT INTERMEDIATE DIAPHRAGM
(TYPE IV GIRDER SHOWN)



DIAPHRAGM FACE WEB FACE

CONNECTOR PLATE DETAILS

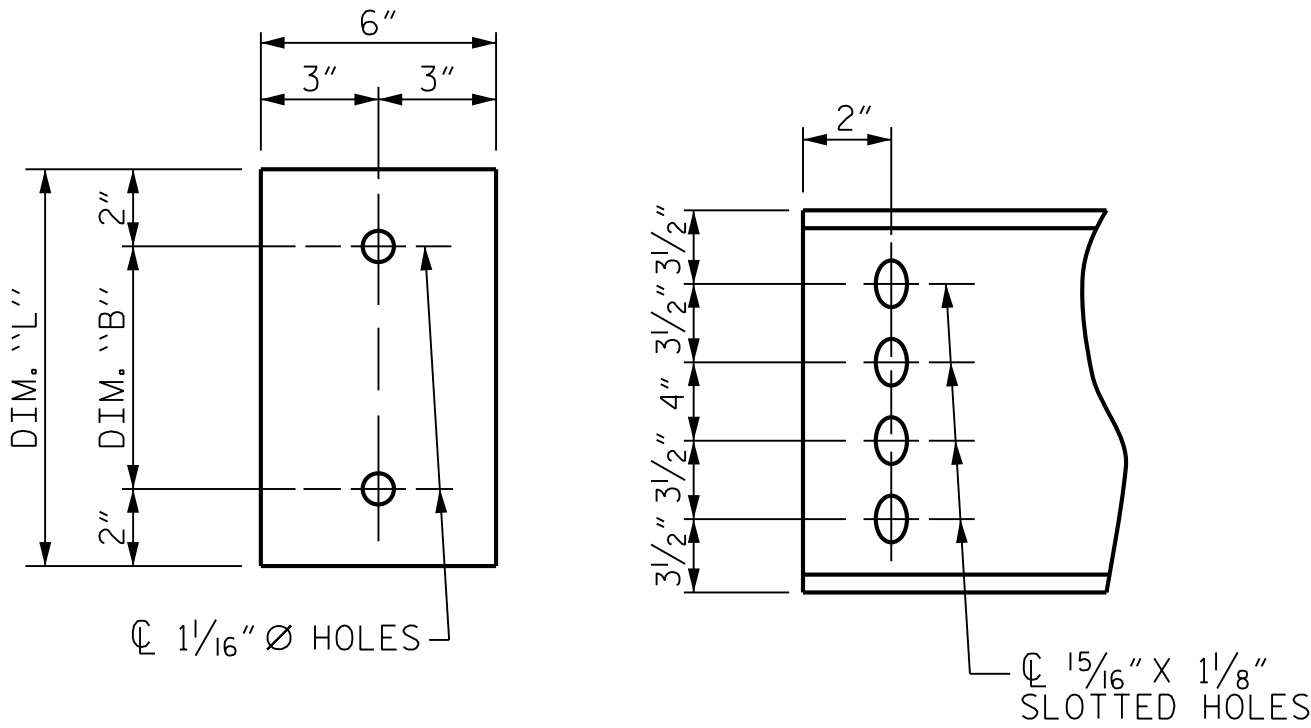
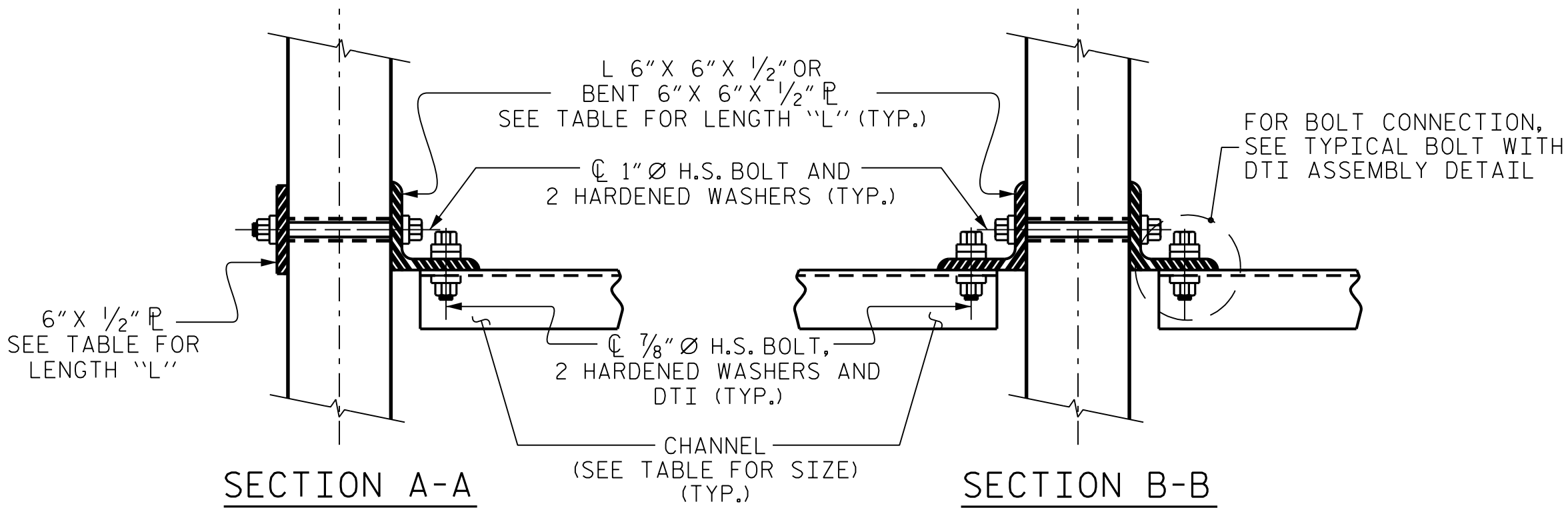
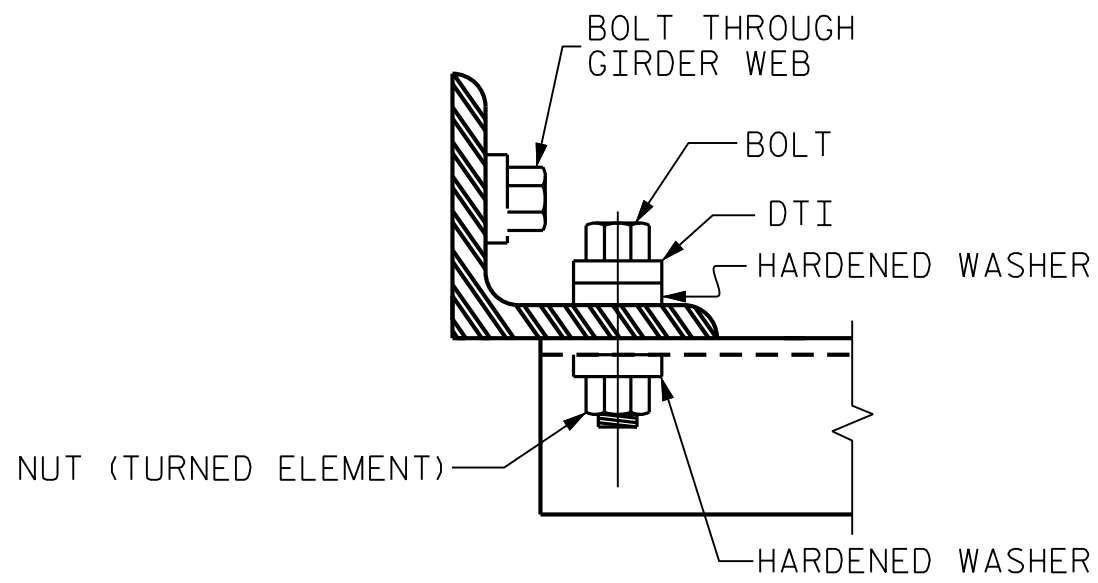


PLATE DETAILS CHANNEL END



CONNECTION DETAILS



BOLT WITH DTI ASSEMBLY DETAIL

STRUCTURAL STEEL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

TABLE

GIRDER TYPE	CHANNEL SIZE	DIM "A"	DIM "B"	DIM "L"
IV	MC 18 x 42.7	1'-9 1/2"	1'-2"	1'-6"

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 7 OF 7

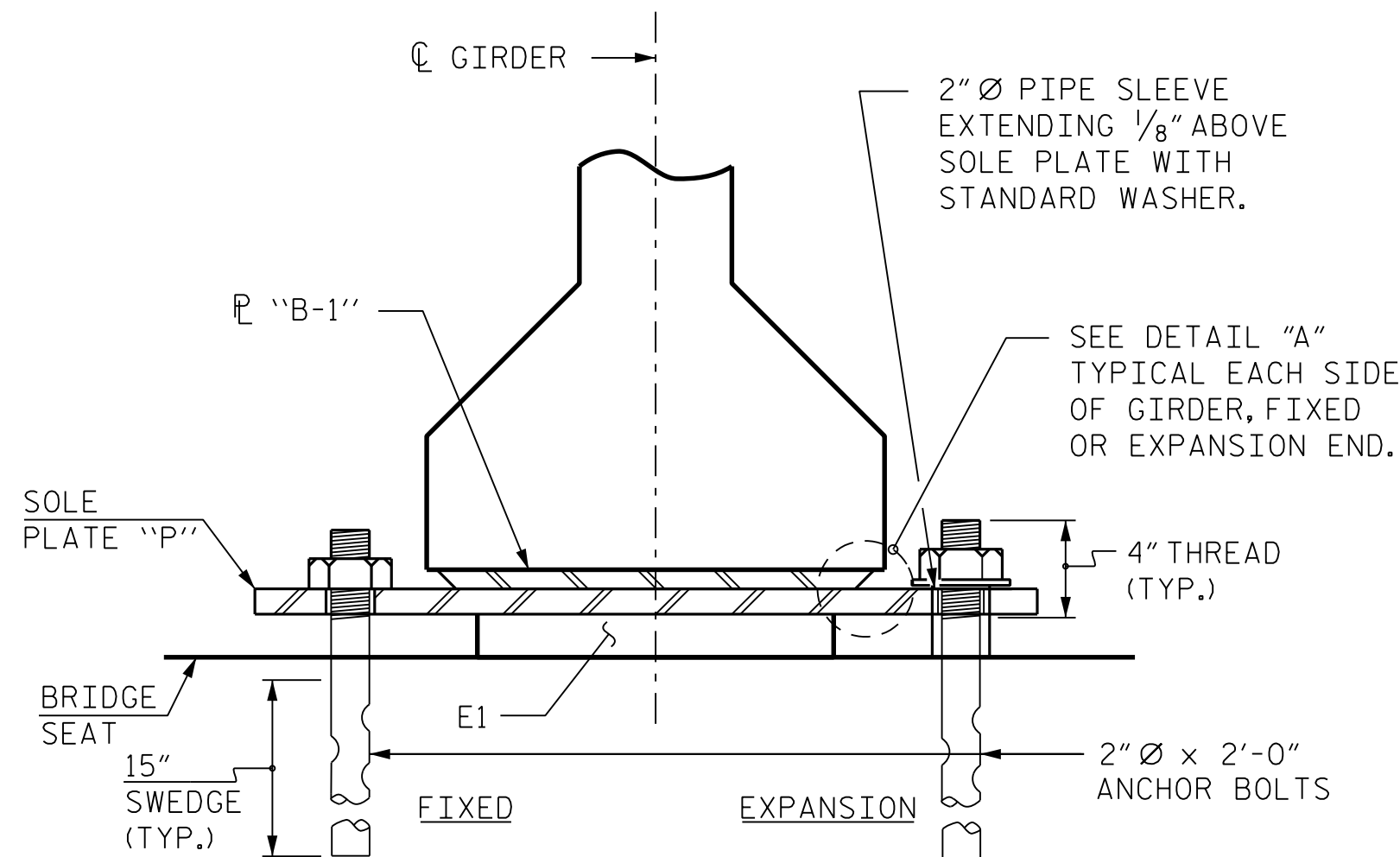
DRAWN BY : J.W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

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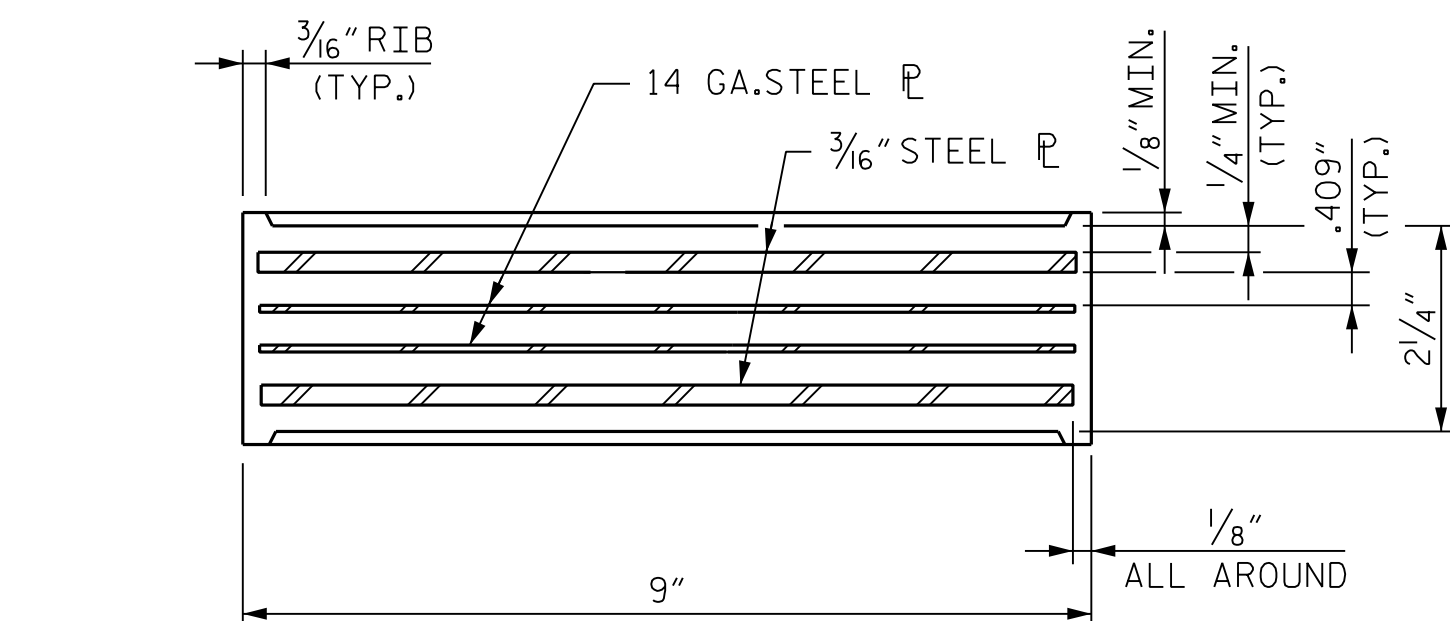
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NORTH CAROLINA
PROFESSIONAL
SEAL
054077
ENGINEER
PETER L. OARE
Signed By: AFF9D512B4D9462

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD INTERMEDIATE STEEL DIAPHRAGMS FOR TYPE IV PRESTRESSED CONCRETE GIRDERS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-44					TOTAL SHEETS 118

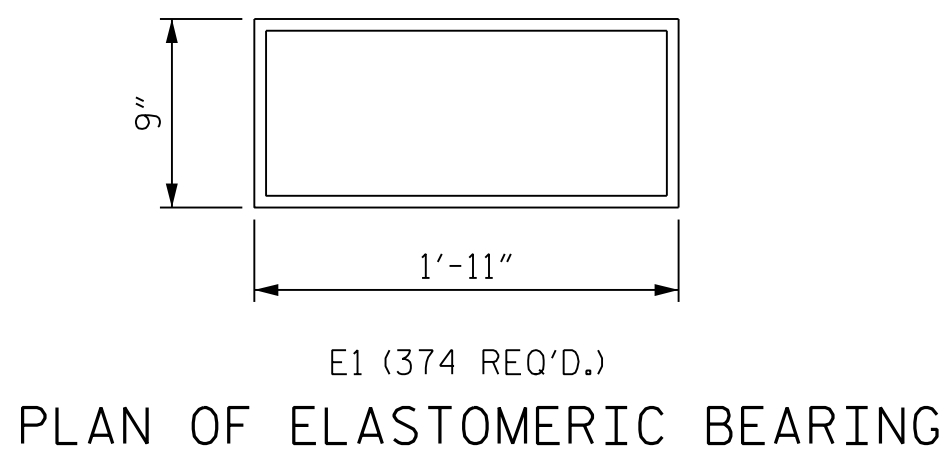
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SECTION E-E

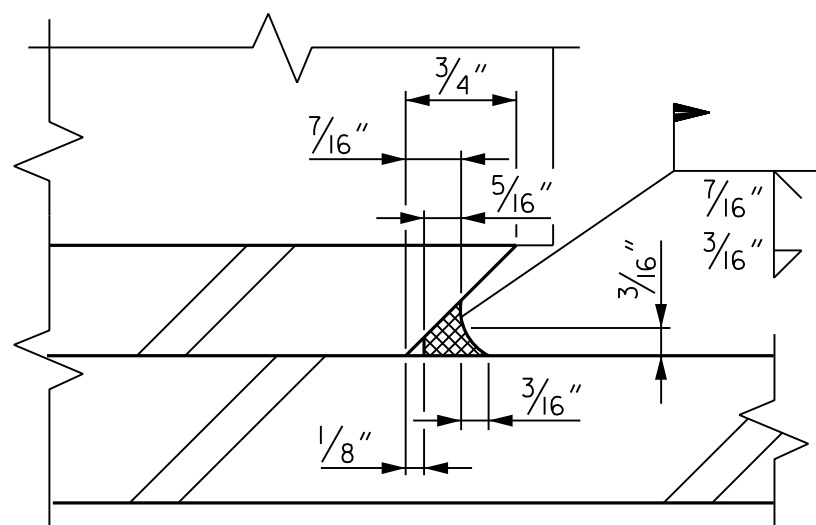


TYPICAL SECTION OF ELASTOMERIC BEARINGS

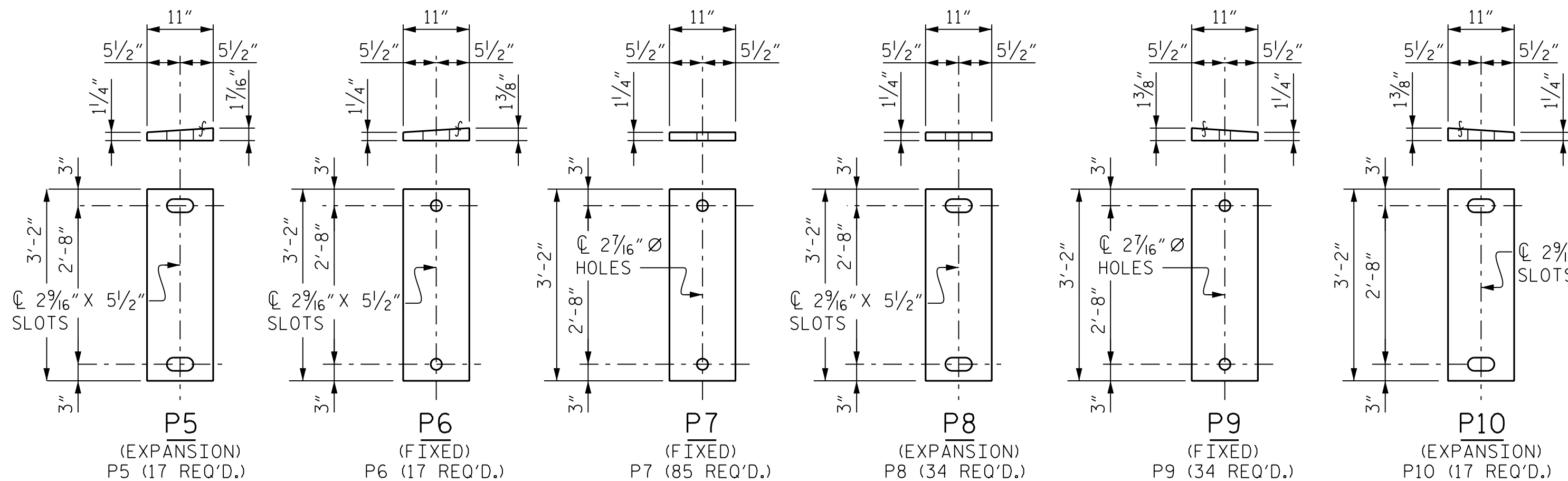


PLAN OF ELASTOMERIC BEARING

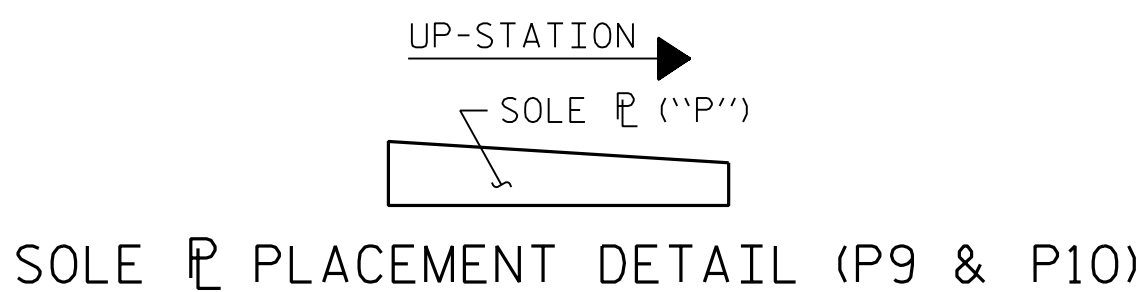
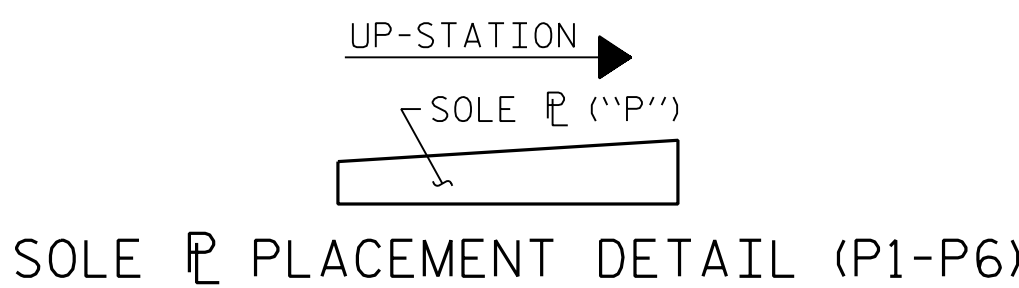
TYPE V



DETAIL "A"



SOLE PLATE DETAILS ("P")



NOTES:

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

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

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

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

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

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

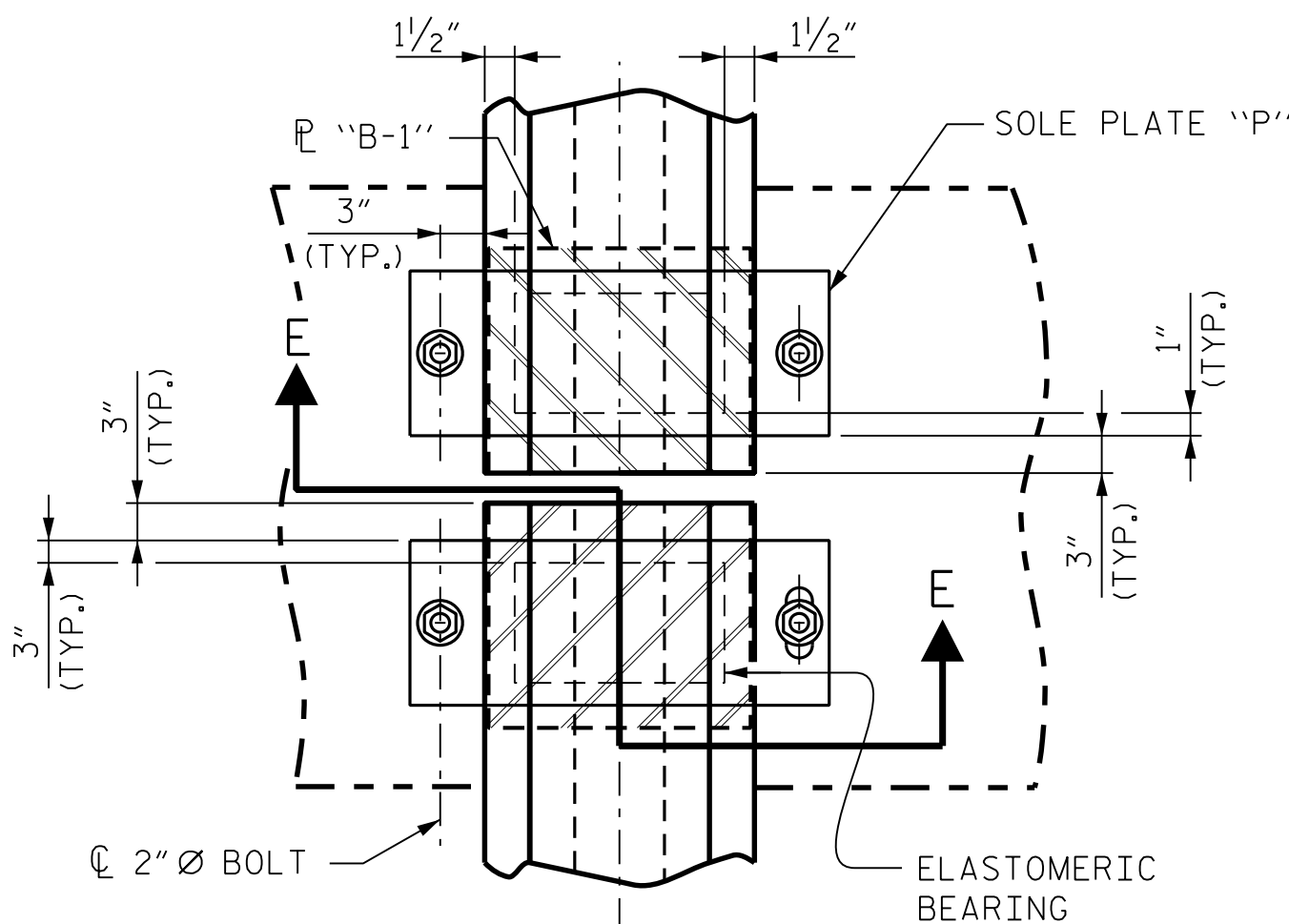
ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLT, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED. ALL SURFACES OF BEARING PLATES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

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

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.

ALL SOLE PLATES SHALL BE AASHTO M270 GRADE 36.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.



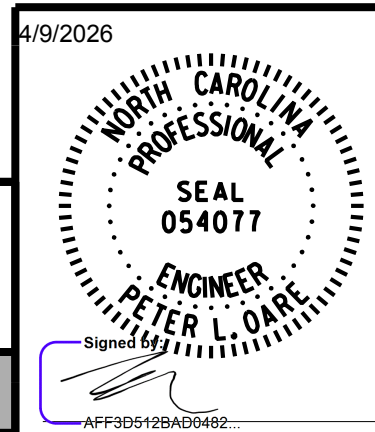
TYPICAL HALF-PLAN (SHOWING CONTINUOUS BENT) TYPICAL HALF-PLAN (SHOWING SIMPLE SPAN BENT)

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

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

DRAWN BY : J.W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

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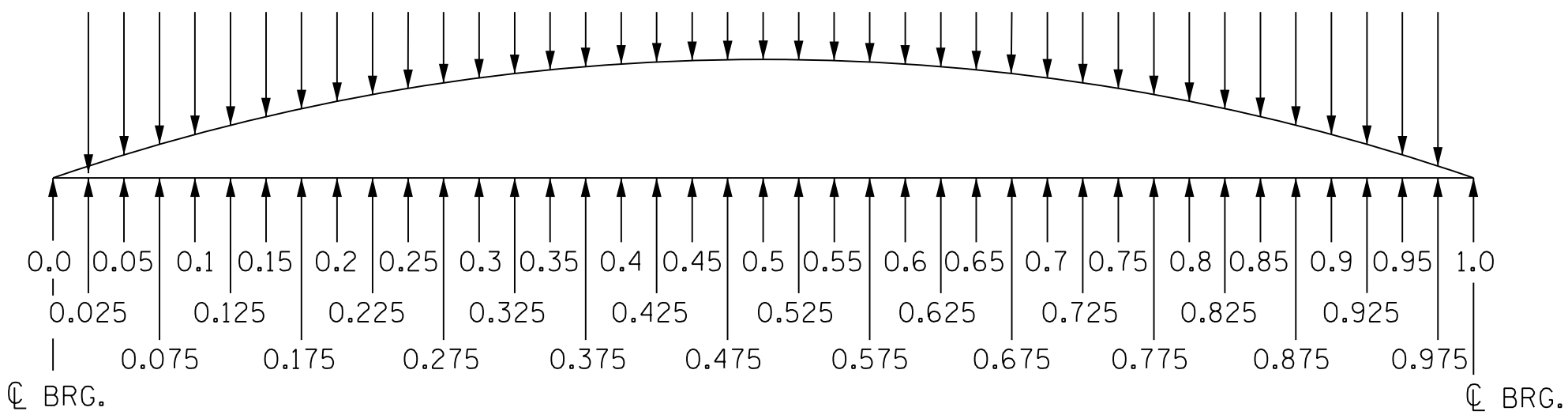


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH		SUPERSTRUCTURE ELASTOMERIC BEARING DETAILS PRESTRESSED CONCRETE GIRDER SUPERSTRUCTURE	
REVISIONS		SHEET NO. S-45	
NO.	BY:	DATE:	TOTAL SHEETS 118
1			
2			

STD. NO. EB4

bgonfa
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DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPAN A																							
GIRDER			FORTIETH POINTS																				
AG1			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.046	-0.061	-0.076	-0.090	-0.105	-0.119	-0.131	-0.142	-0.154	-0.165	-0.173	-0.180	-0.187	-0.195	-0.197	-0.199	-0.202	-0.204
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
AG2			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.029	-0.044	-0.058	-0.072	-0.086	-0.100	-0.114	-0.125	-0.136	-0.147	-0.158	-0.165	-0.172	-0.179	-0.186	-0.189	-0.191	-0.193	-0.196
	FINAL CAMBER	↑	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16
AG3			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.029	-0.043	-0.057	-0.071	-0.085	-0.098	-0.112	-0.123	-0.133	-0.144	-0.155	-0.162	-0.169	-0.175	-0.182	-0.185	-0.187	-0.189	-0.192
	FINAL CAMBER	↑	0	1/16	1/16	1/16	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
AG4-AG7			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.025	-0.038	-0.051	-0.063	-0.075	-0.087	-0.100	-0.109	-0.119	-0.128	-0.138	-0.144	-0.150	-0.156	-0.162	-0.164	-0.166	-0.168	-0.170
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	1/4	1/4	5/16	5/16	3/8	3/8	7/16	7/16	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
AG8, AG9			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.028	-0.042	-0.056	-0.069	-0.083	-0.096	-0.109	-0.120	-0.130	-0.141	-0.152	-0.158	-0.165	-0.171	-0.178	-0.180	-0.183	-0.185	-0.187
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4"	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
AG10			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.026	-0.039	-0.052	-0.064	-0.077	-0.089	-0.102	-0.112	-0.121	-0.131	-0.141	-0.147	-0.153	-0.160	-0.166	-0.168	-0.170	-0.172	-0.174
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	1/4	1/4	5/16	5/16	5/16	3/8	3/8	3/8	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16
AG11			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.012	-0.024	-0.035	-0.047	-0.059	-0.070	-0.081	-0.093	-0.102	-0.110	-0.119	-0.128	-0.134	-0.140	-0.145	-0.151	-0.153	-0.155	-0.157	-0.159
	FINAL CAMBER	↑	0	1/16	1/8	3/16	1/4	5/16	5/16	3/8	3/8	7/16	1/2	1/2	9/16	9/16	5/8	5/8	5/8	5/8	5/8	5/8	5/8
AG12-AG14			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.026	-0.039	-0.052	-0.065	-0.077	-0.090	-0.102	-0.112	-0.122	-0.132	-0.142	-0.148	-0.154	-0.160	-0.167	-0.169	-0.171	-0.173	-0.175
	FINAL CAMBER	↑	0	1/16	1/16	1/8	3/16	3/16	1/4	1/4	5/16	5/16	3/8	3/8	3/8	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16
AG15			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.029	-0.044	-0.059	-0.073	-0.087	-0.101	-0.115	-0.126	-0.137	-0.148	-0.159	-0.166	-0.173	-0.180	-0.187	-0.189	-0.192	-0.194	-0.196
	FINAL CAMBER	↑	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16
AG16			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.045	-0.060	-0.074	-0.088	-0.103	-0.117	-0.128	-0.140	-0.151	-0.162	-0.169	-0.176	-0.184	-0.191	-0.193	-0.196	-0.198	-0.201
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
AG17			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.031	-0.046	-0.062	-0.076	-0.091	-0.106	-0.121	-0.132	-0.144	-0.155	-0.167	-0.174	-0.182	-0.189	-0.197	-0.199	-0.202	-0.204	-0.207
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16



SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

DRAWN BY : J. W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

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4/9/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SEAL
054077
ENGINEER
PETER L. OARE
Signed By: [Signature]

AFF30512BAD0462...

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
GIRDER DEFLECTION AND
CAMBER DETAILS
SPAN A

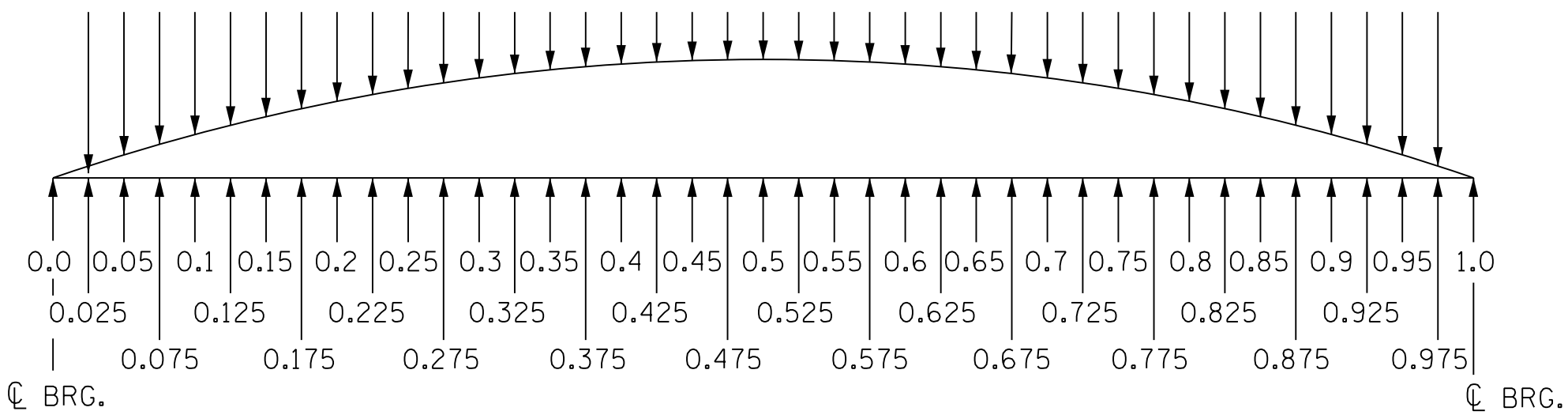
REVISIONS

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

SHEET NO.
S-46
TOTAL SHEETS
118

bgonfa
2/10/2026 R:\Structures\DN\350091\FINAL\B6051_SML_DL2.17350091.dgn

DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPAN A (CONT'D.)																						
GIRDER			FORTIETH POINTS																			
AG1			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.202	-0.199	-0.197	-0.195	-0.187	-0.180	-0.173	-0.165	-0.154	-0.142	-0.131	-0.119	-0.105	-0.090	-0.076	-0.061	-0.046	-0.030	-0.015	0.000
	FINAL CAMBER	↑	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	1/16	1/16	1/16	1/16	0	0
AG2																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.193	-0.191	-0.189	-0.186	-0.179	-0.172	-0.165	-0.158	-0.147	-0.136	-0.125	-0.114	-0.100	-0.086	-0.072	-0.058	-0.044	-0.029	-0.015	0.000
	FINAL CAMBER	↑	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/8	1/16	1/16	0
AG3																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.189	-0.187	-0.185	-0.182	-0.175	-0.169	-0.162	-0.155	-0.144	-0.133	-0.123	-0.112	-0.098	-0.085	-0.071	-0.057	-0.043	-0.029	-0.014	0.000
	FINAL CAMBER	↑	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	3/16	3/16	3/16	3/16	1/8	1/8	1/16	1/16	1/16
AG4-AG7																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.168	-0.166	-0.164	-0.162	-0.156	-0.150	-0.144	-0.138	-0.128	-0.119	-0.109	-0.100	-0.087	-0.075	-0.063	-0.051	-0.038	-0.025	-0.013	0.000
	FINAL CAMBER	↑	1/2	1/2	1/2	1/2	1/2	1/2	7/16	7/16	7/16	3/8	3/8	5/16	5/16	1/4	1/4	3/16	1/8	1/8	1/16	0
AG8, AG9																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.185	-0.183	-0.180	-0.178	-0.171	-0.165	-0.158	-0.152	-0.141	-0.130	-0.120	-0.109	-0.096	-0.083	-0.069	-0.056	-0.042	-0.028	-0.014	0.000
	FINAL CAMBER	↑	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	1/4	1/4	1/4	1/4	3/16	3/16	3/16	3/16	1/8	1/8	1/16	1/16
AG10																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.172	-0.170	-0.168	-0.166	-0.160	-0.153	-0.147	-0.141	-0.131	-0.121	-0.112	-0.102	-0.089	-0.077	-0.064	-0.052	-0.039	-0.026	-0.013	0.000
	FINAL CAMBER	↑	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	3/8	3/8	3/8	5/16	5/16	5/16	1/4	1/4	3/16	1/8	1/8	1/16
AG11																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.157	-0.155	-0.153	-0.151	-0.145	-0.140	-0.134	-0.128	-0.119	-0.110	-0.102	-0.093	-0.081	-0.070	-0.059	-0.047	-0.035	-0.024	-0.012	0.000
	FINAL CAMBER	↑	5/8	5/8	5/8	5/8	5/8	5/8	5/8	9/16	9/16	1/2	1/2	7/16	7/16	3/8	5/16	5/16	1/4	3/16	1/8	1/16
AG12-AG14																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.173	-0.171	-0.169	-0.167	-0.160	-0.154	-0.148	-0.142	-0.132	-0.122	-0.112	-0.102	-0.090	-0.077	-0.065	-0.052	-0.039	-0.026	-0.013	0.000
	FINAL CAMBER	↑	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16	3/8	3/8	3/8	5/16	5/16	1/4	1/4	3/16	3/16	1/8	1/16	1/16
AG15																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.194	-0.192	-0.189	-0.187	-0.180	-0.173	-0.166	-0.159	-0.148	-0.137	-0.126	-0.115	-0.101	-0.087	-0.073	-0.059	-0.044	-0.029	-0.015	0.000
	FINAL CAMBER	↑	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/8	1/16	1/16	0
AG16																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.198	-0.196	-0.193	-0.191	-0.184	-0.176	-0.169	-0.162	-0.151	-0.140	-0.128	-0.117	-0.103	-0.088	-0.074	-0.060	-0.045	-0.030	-0.015	0.000
	FINAL CAMBER	↑	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	1/16	0
AG17																						
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.204	-0.202	-0.199	-0.197	-0.189	-0.182	-0.174	-0.167	-0.155	-0.144	-0.132	-0.121	-0.106	-0.091	-0.076	-0.062	-0.046	-0.031	-0.015	0.000
	FINAL CAMBER	↑	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0



SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

DRAWN BY : J. W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

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4/9/2026
NORTH CAROLINA
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054077
ENGINEER
PETER L. OARE
Signed By: APP5012BAC09462

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

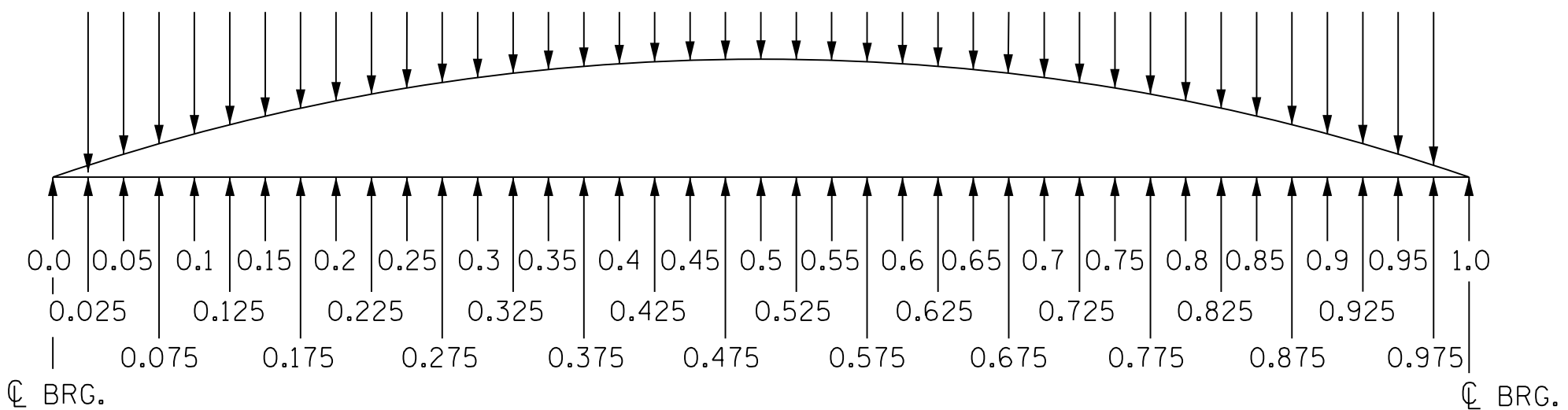
SHEET 2 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
GIRDER DEFLECTION AND
CAMBER DETAILS
SPAN A (CONT'D.)

REVISIONS						SHEET NO. S-47
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			118

2/10/2026 R:\Structures\DN\350091\FINAL\B6051-SMU_DL3-17350091.dgn bgonfa

DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPAN B																							
GIRDER			FORTIETH POINTS																				
BG1			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.016	-0.031	-0.047	-0.063	-0.078	-0.093	-0.108	-0.123	-0.135	-0.146	-0.158	-0.170	-0.178	-0.185	-0.193	-0.200	-0.203	-0.205	-0.208	-0.210
	FINAL CAMBER	↑	0	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16
BG2			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.045	-0.060	-0.074	-0.089	-0.103	-0.118	-0.129	-0.140	-0.152	-0.163	-0.170	-0.177	-0.185	-0.192	-0.194	-0.197	-0.199	-0.202
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
BG3			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.029	-0.044	-0.059	-0.073	-0.087	-0.101	-0.115	-0.126	-0.137	-0.148	-0.159	-0.166	-0.173	-0.181	-0.188	-0.190	-0.192	-0.195	-0.197
	FINAL CAMBER	↑	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16
BG4-BG7			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.026	-0.039	-0.052	-0.064	-0.077	-0.089	-0.102	-0.112	-0.121	-0.131	-0.141	-0.147	-0.153	-0.160	-0.166	-0.168	-0.170	-0.172	-0.174
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	1/4	1/4	1/4	5/16	5/16	3/8	3/8	3/8	7/16	7/16	7/16	7/16	7/16	7/16	7/16	7/16
BG8, BG9			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.028	-0.042	-0.055	-0.069	-0.082	-0.095	-0.109	-0.119	-0.129	-0.140	-0.150	-0.157	-0.164	-0.170	-0.177	-0.179	-0.181	-0.184	-0.186
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
BG10			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.026	-0.039	-0.052	-0.064	-0.077	-0.089	-0.101	-0.111	-0.121	-0.131	-0.140	-0.146	-0.153	-0.159	-0.165	-0.167	-0.169	-0.171	-0.173
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	1/4	1/4	5/16	5/16	5/16	3/8	3/8	3/8	7/16	7/16	7/16	7/16	1/2	1/2	1/2	1/2
BG11			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.012	-0.024	-0.036	-0.049	-0.060	-0.072	-0.084	-0.095	-0.104	-0.114	-0.123	-0.132	-0.138	-0.144	-0.149	-0.155	-0.157	-0.159	-0.161	-0.163
	FINAL CAMBER	↑	0	1/16	1/8	3/16	1/4	1/4	5/16	3/8	3/8	7/16	7/16	1/2	1/2	9/16	9/16	9/16	9/16	5/8	5/8	5/8	5/8
BG12-BG14			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.027	-0.040	-0.053	-0.066	-0.078	-0.091	-0.104	-0.114	-0.124	-0.134	-0.144	-0.150	-0.156	-0.163	-0.169	-0.171	-0.173	-0.176	-0.178
	FINAL CAMBER	↑	0	1/16	1/16	1/8	3/16	3/16	1/4	1/4	1/4	5/16	5/16	3/8	3/8	3/8	3/8	3/8	3/8	7/16	7/16	7/16	7/16
BG15			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.045	-0.060	-0.074	-0.088	-0.103	-0.117	-0.128	-0.140	-0.151	-0.162	-0.169	-0.176	-0.184	-0.191	-0.193	-0.196	-0.198	-0.200
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
BG16			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.031	-0.046	-0.061	-0.076	-0.090	-0.105	-0.120	-0.131	-0.143	-0.154	-0.166	-0.173	-0.180	-0.187	-0.195	-0.197	-0.200	-0.202	-0.205
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
BG17			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.016	-0.032	-0.048	-0.063	-0.079	-0.094	-0.109	-0.124	-0.136	-0.148	-0.160	-0.172	-0.179	-0.187	-0.195	-0.202	-0.205	-0.207	-0.210	-0.213
	FINAL CAMBER	↑	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

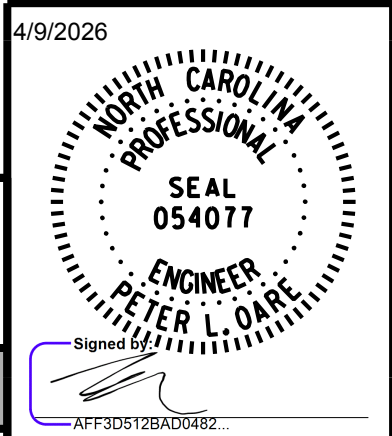
DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

DRAWN BY : J. W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

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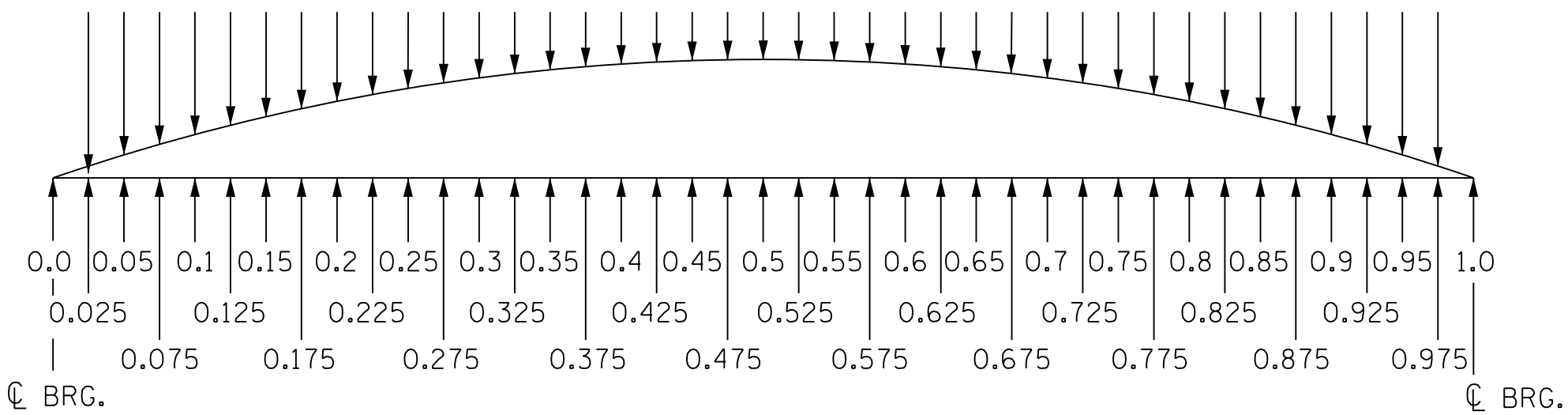
SHEET 3 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
GIRDER DEFLECTION AND
CAMBER DETAILS
SPAN B

REVISIONS
NO. BY: DATE: NO. BY: DATE:
1 2 3 4
SHEET NO. S-48
TOTAL SHEETS 118

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2/10/2026 R:\Structures\GON\350091\FINAL\B6051-SMU-DL 4-17350091.dgn

DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPAN B (CONT'D.)																						
GIRDER			FORTIETH POINTS																			
BG1			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.208	-0.205	-0.203	-0.200	-0.193	-0.185	-0.178	-0.170	-0.158	-0.146	-0.135	-0.123	-0.108	-0.093	-0.078	-0.063	-0.047	-0.031	-0.016	0.000
	FINAL CAMBER	↑	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0	0
BG2			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.199	-0.197	-0.194	-0.192	-0.185	-0.177	-0.170	-0.163	-0.152	-0.140	-0.129	-0.118	-0.103	-0.089	-0.074	-0.060	-0.045	-0.030	-0.015	0.000
	FINAL CAMBER	↑	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	1/16	0
BG3			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.195	-0.192	-0.190	-0.188	-0.181	-0.173	-0.166	-0.159	-0.148	-0.137	-0.126	-0.115	-0.101	-0.087	-0.073	-0.059	-0.044	-0.029	-0.015	0.000
	FINAL CAMBER	↑	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/8	1/16	1/16	0
BG4-BG7			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.172	-0.170	-0.168	-0.166	-0.160	-0.153	-0.147	-0.141	-0.131	-0.121	-0.112	-0.102	-0.089	-0.077	-0.064	-0.052	-0.039	-0.026	-0.013	0.000
	FINAL CAMBER	↑	1/16	1/16	1/16	1/16	1/16	1/16	1/16	3/8	3/8	3/8	5/16	5/16	1/4	1/4	1/4	3/16	1/8	1/8	1/16	0
BG8, BG9			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.184	-0.181	-0.179	-0.177	-0.170	-0.164	-0.157	-0.150	-0.140	-0.129	-0.119	-0.109	-0.095	-0.082	-0.069	-0.055	-0.042	-0.028	-0.014	0.000
	FINAL CAMBER	↑	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16	1/4	1/4	1/4	1/4	3/16	3/16	3/16	3/16	1/8	1/8	1/16	1/16
BG10			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.171	-0.169	-0.167	-0.165	-0.159	-0.153	-0.146	-0.140	-0.131	-0.121	-0.111	-0.101	-0.089	-0.077	-0.064	-0.052	-0.039	-0.026	-0.013	0.000
	FINAL CAMBER	↑	1/2	1/2	1/2	7/16	7/16	7/16	7/16	3/8	3/8	3/8	5/16	5/16	5/16	1/4	1/4	3/16	1/8	1/8	1/16	0
BG11			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.161	-0.159	-0.157	-0.155	-0.149	-0.144	-0.138	-0.132	-0.123	-0.114	-0.104	-0.095	-0.084	-0.072	-0.060	-0.049	-0.036	-0.024	-0.012	0.000
	FINAL CAMBER	↑	5/8	5/8	9/16	9/16	9/16	9/16	9/16	9/16	1/2	1/2	7/16	7/16	3/8	3/8	5/16	1/4	1/4	3/16	1/8	1/16
BG12-BG14			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.176	-0.173	-0.171	-0.169	-0.163	-0.156	-0.150	-0.144	-0.134	-0.124	-0.114	-0.104	-0.091	-0.078	-0.066	-0.053	-0.040	-0.027	-0.013	0.000
	FINAL CAMBER	↑	1/16	1/16	1/16	3/8	3/8	3/8	3/8	3/8	3/8	5/16	5/16	1/4	1/4	1/4	3/16	3/16	1/8	1/16	1/16	0
BG15			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.198	-0.196	-0.193	-0.191	-0.184	-0.176	-0.169	-0.162	-0.151	-0.140	-0.128	-0.117	-0.103	-0.088	-0.074	-0.060	-0.045	-0.030	-0.015	0.000
	FINAL CAMBER	↑	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	1/16	0
BG16			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.202	-0.200	-0.197	-0.195	-0.187	-0.180	-0.173	-0.166	-0.154	-0.143	-0.131	-0.120	-0.105	-0.090	-0.076	-0.061	-0.046	-0.031	-0.015	0.000
	FINAL CAMBER	↑	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0
BG17			0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.210	-0.207	-0.205	-0.202	-0.195	-0.187	-0.179	-0.172	-0.160	-0.148	-0.136	-0.124	-0.109	-0.094	-0.079	-0.063	-0.048	-0.032	-0.016	0.000
	FINAL CAMBER	↑	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



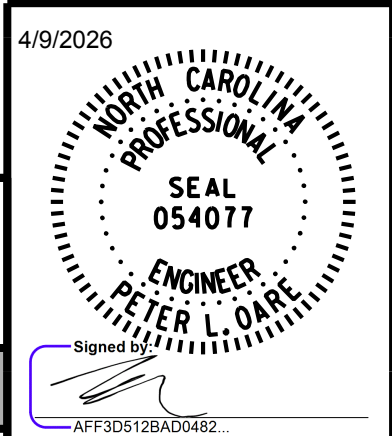
SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

DRAWN BY : J. W. COOK	DATE : FEB 2025
CHECKED BY : P. OARE	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE	DATE : FEB 2025

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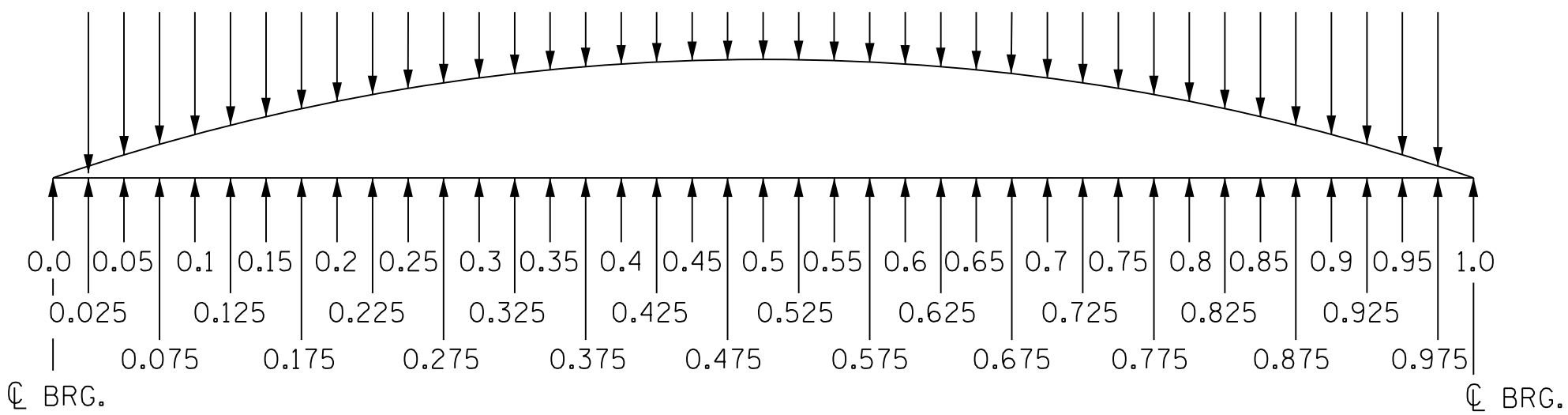


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
GIRDER DEFLECTION AND
CAMBER DETAILS
SPAN B (CONT'D.)

REVISIONS						SHEET NO. S-49
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			118

2/10/2026 2:10/2026 R:\Structures\DN\350091\FINAL\B6051_SML_DL5_17350091.dgn bgonfa

DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPANS C, F, G, H, I, & J																							
GIRDER			FORTIETH POINTS																				
G1			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.016	-0.031	-0.047	-0.062	-0.077	-0.092	-0.107	-0.122	-0.134	-0.145	-0.157	-0.169	-0.176	-0.184	-0.191	-0.199	-0.201	-0.204	-0.206	-0.209
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16
G2			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.044	-0.059	-0.073	-0.087	-0.101	-0.115	-0.127	-0.138	-0.149	-0.160	-0.167	-0.174	-0.181	-0.188	-0.190	-0.193	-0.195	-0.198
	FINAL CAMBER	↑	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16
G3			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.029	-0.043	-0.058	-0.072	-0.086	-0.099	-0.113	-0.124	-0.135	-0.146	-0.157	-0.164	-0.171	-0.177	-0.184	-0.187	-0.189	-0.191	-0.194
	FINAL CAMBER	↑	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4
G4-G7			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.026	-0.038	-0.051	-0.063	-0.075	-0.088	-0.100	-0.109	-0.119	-0.129	-0.138	-0.144	-0.150	-0.156	-0.162	-0.165	-0.167	-0.169	-0.171
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	1/4	1/4	5/16	5/16	3/8	3/8	7/16	7/16	7/16	1/2	1/2	1/2	1/2	1/2	1/2	1/2
G8, G9			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.027	-0.040	-0.053	-0.066	-0.078	-0.091	-0.104	-0.114	-0.124	-0.134	-0.144	-0.150	-0.156	-0.163	-0.169	-0.171	-0.173	-0.175	-0.178
	FINAL CAMBER	↑	0	1/16	1/16	1/8	3/16	3/16	1/4	1/4	1/4	5/16	5/16	3/8	3/8	3/8	7/16	7/16	7/16	7/16	7/16	7/16	7/16
G10			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.012	-0.025	-0.037	-0.050	-0.062	-0.074	-0.085	-0.097	-0.107	-0.116	-0.125	-0.135	-0.141	-0.147	-0.153	-0.159	-0.161	-0.163	-0.165	-0.167
	FINAL CAMBER	↑	0	1/16	1/8	3/16	3/16	1/4	5/16	5/16	5/16	3/8	7/16	7/16	7/16	1/2	1/2	1/2	1/2	9/16	9/16	9/16	9/16
G11			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.012	-0.024	-0.036	-0.048	-0.059	-0.071	-0.082	-0.094	-0.103	-0.112	-0.121	-0.130	-0.136	-0.141	-0.147	-0.153	-0.155	-0.157	-0.159	-0.161
	FINAL CAMBER	↑	0	1/16	1/8	3/16	1/4	1/4	5/16	3/8	3/8	7/16	1/2	1/2	1/2	9/16	9/16	5/8	5/8	5/8	5/8	5/8	5/8
G12-G14			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.026	-0.039	-0.051	-0.064	-0.076	-0.088	-0.101	-0.111	-0.120	-0.130	-0.140	-0.146	-0.152	-0.158	-0.164	-0.166	-0.168	-0.171	-0.173
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	1/4	1/4	5/16	5/16	3/8	3/8	3/8	3/8	7/16	7/16	7/16	7/16	1/2	1/2	1/2	1/2
G15			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.029	-0.044	-0.058	-0.072	-0.086	-0.100	-0.114	-0.125	-0.136	-0.147	-0.158	-0.165	-0.172	-0.179	-0.186	-0.189	-0.191	-0.193	-0.196
	FINAL CAMBER	↑	0	0	1/16	1/16	1/8	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16
G16			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.045	-0.060	-0.074	-0.088	-0.102	-0.117	-0.128	-0.139	-0.150	-0.162	-0.169	-0.176	-0.183	-0.190	-0.193	-0.195	-0.198	-0.200
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
G17			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.182	0.191	0.197	0.203	0.207	0.211	0.212	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.016	-0.031	-0.047	-0.063	-0.078	-0.093	-0.108	-0.123	-0.134	-0.146	-0.158	-0.170	-0.177	-0.185	-0.192	-0.200	-0.202	-0.205	-0.207	-0.210
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16



SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

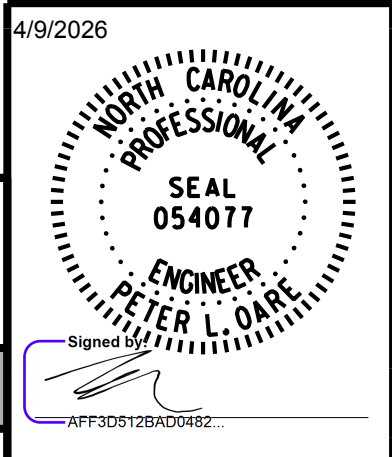
DRAWN BY : J. W. COOK	DATE : FEB 2025
CHECKED BY : P. OARE	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE	DATE : FEB 2025

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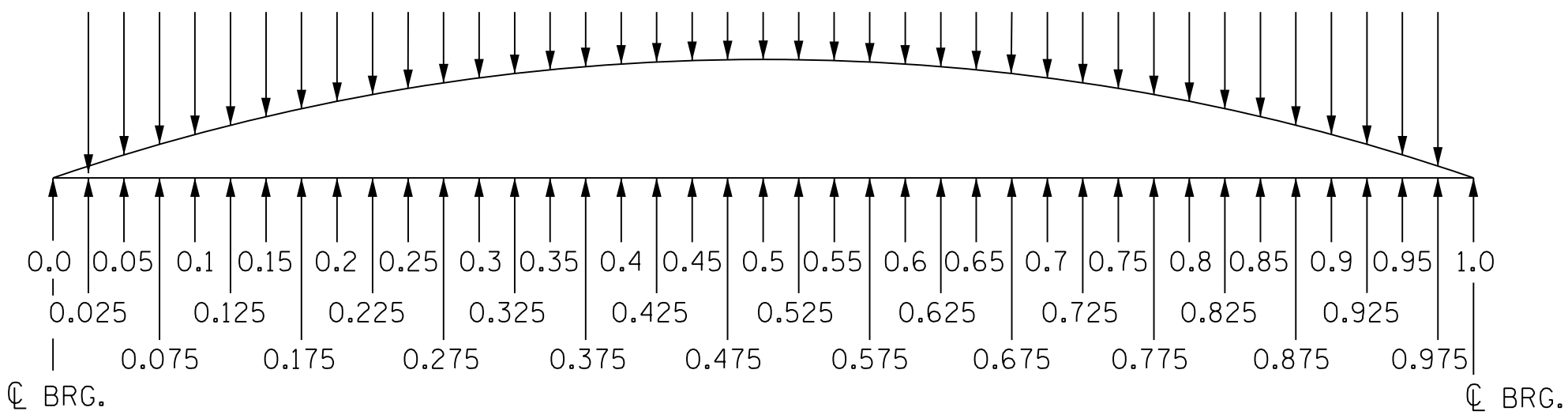
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 5 OF 9

STATE OF NORTH CAROLINA											
DEPARTMENT OF TRANSPORTATION											
RALEIGH											
SUPERSTRUCTURE											
GIRDER DEFLECTION AND											
CAMBER DETAILS											
SPANS C, F, G, H, I, & J											
REVISIONS										SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:					S-50	
1			3							TOTAL SHEETS	
2			4							118	

bgonfa
2/10/2026 R:\Structures\DN\350091\FINAL\B6051_SML_DL6_17350091.dgn

DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPANS C, F, G, H, I, & J (CONT'D.)																						
GIRDER		FORTIETH POINTS																				
G1			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.206	-0.204	-0.201	-0.199	-0.191	-0.184	-0.176	-0.169	-0.157	-0.145	-0.134	-0.122	-0.107	-0.092	-0.077	-0.062	-0.047	-0.031	-0.016	0.000
	FINAL CAMBER	↑	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0
G2			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.195	-0.193	-0.190	-0.188	-0.181	-0.174	-0.167	-0.160	-0.149	-0.138	-0.127	-0.115	-0.101	-0.087	-0.073	-0.059	-0.044	-0.030	-0.015	0.000
	FINAL CAMBER	↑	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/8	1/16	1/16	0	0
G3			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.191	-0.189	-0.187	-0.184	-0.177	-0.171	-0.164	-0.157	-0.146	-0.135	-0.124	-0.113	-0.099	-0.086	-0.072	-0.058	-0.043	-0.029	-0.014	0.000
	FINAL CAMBER	↑	1/4	1/4	1/4	1/4	1/4	1/4	1/4	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/16	1/16	0	0
G4-G7			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.169	-0.167	-0.165	-0.162	-0.156	-0.150	-0.144	-0.138	-0.129	-0.119	-0.109	-0.100	-0.088	-0.075	-0.063	-0.051	-0.038	-0.026	-0.013	0.000
	FINAL CAMBER	↑	1/2	1/2	1/2	1/2	1/2	1/2	7/16	7/16	7/16	3/8	3/8	5/16	5/16	1/4	1/4	3/16	1/8	1/8	1/16	0
G8, G9			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.175	-0.173	-0.171	-0.169	-0.163	-0.156	-0.150	-0.144	-0.134	-0.124	-0.114	-0.104	-0.091	-0.078	-0.066	-0.053	-0.040	-0.027	-0.013	0.000
	FINAL CAMBER	↑	7/16	7/16	7/16	7/16	7/16	7/16	3/8	3/8	3/8	5/16	5/16	1/4	1/4	1/4	3/16	3/16	1/8	1/16	1/16	0
G10			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.165	-0.163	-0.161	-0.159	-0.153	-0.147	-0.141	-0.135	-0.125	-0.116	-0.107	-0.097	-0.085	-0.074	-0.062	-0.050	-0.037	-0.025	-0.012	0.000
	FINAL CAMBER	↑	3/16	3/16	3/16	1/2	1/2	1/2	1/2	7/16	7/16	7/16	3/8	3/8	5/16	5/16	1/4	3/16	3/16	1/8	1/16	0
G11			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.159	-0.157	-0.155	-0.153	-0.147	-0.141	-0.136	-0.130	-0.121	-0.112	-0.103	-0.094	-0.082	-0.071	-0.059	-0.048	-0.036	-0.024	-0.012	0.000
	FINAL CAMBER	↑	5/8	5/8	5/8	5/8	5/8	9/16	9/16	1/2	1/2	1/2	7/16	3/8	3/8	5/16	1/4	1/4	3/16	1/8	1/16	0
G12-G14			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.171	-0.168	-0.166	-0.164	-0.158	-0.152	-0.146	-0.140	-0.130	-0.120	-0.111	-0.101	-0.088	-0.076	-0.064	-0.051	-0.039	-0.026	-0.013	0.000
	FINAL CAMBER	↑	1/2	1/2	1/2	7/16	7/16	7/16	7/16	3/8	3/8	3/8	3/8	5/16	5/16	1/4	1/4	3/16	1/8	1/8	1/16	0
G15			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.193	-0.191	-0.189	-0.186	-0.179	-0.172	-0.165	-0.158	-0.147	-0.136	-0.125	-0.114	-0.100	-0.086	-0.072	-0.058	-0.044	-0.029	-0.015	0.000
	FINAL CAMBER	↑	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/8	1/16	1/16	0	0
G16			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.198	-0.195	-0.193	-0.190	-0.183	-0.176	-0.169	-0.162	-0.150	-0.139	-0.128	-0.117	-0.102	-0.088	-0.074	-0.060	-0.045	-0.030	-0.015	0.000
	FINAL CAMBER	↑	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	1/16	0	0
G17			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.212	0.211	0.207	0.203	0.197	0.191	0.182	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	-0.207	-0.205	-0.202	-0.200	-0.192	-0.185	-0.177	-0.170	-0.158	-0.146	-0.134	-0.123	-0.108	-0.093	-0.078	-0.063	-0.047	-0.031	-0.016	0.000
	FINAL CAMBER	↑	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/16	0	0



SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

DRAWN BY : J. W. COOK	DATE : FEB 2025
CHECKED BY : P. OARE	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE	DATE : FEB 2025

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4/9/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SEAL
054077
ENGINEER
PETER L. OARE

Signed By: [Signature]
APP050128AD0462...

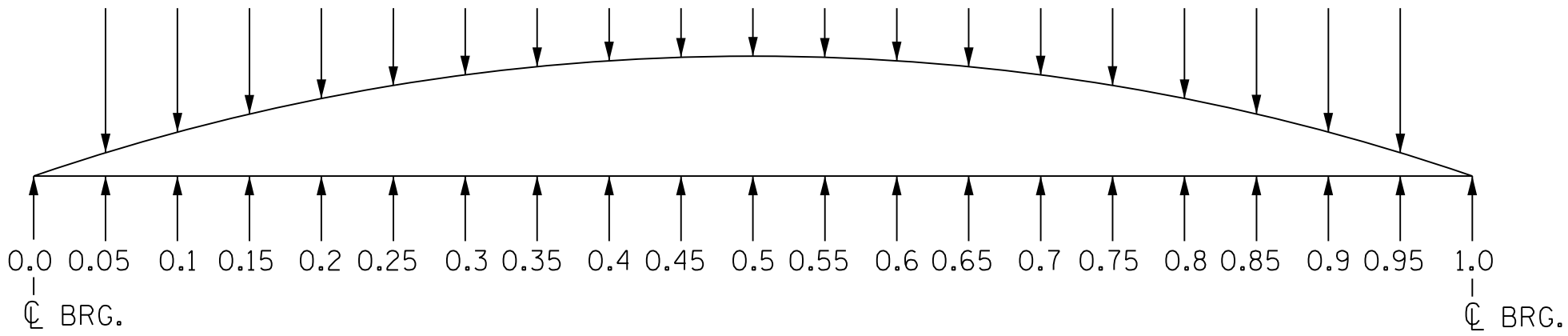
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 6 OF 9

REVISIONS						SHEET NO. S-51
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			118

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DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPANS D & E																							
GIRDER			TWENTIETH POINTS																				
G1			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.008	-0.015	-0.023	-0.030	-0.036	-0.042	-0.046	-0.050	-0.051	-0.053	-0.051	-0.050	-0.046	-0.042	-0.036	-0.030	-0.023	-0.015	-0.008	0.000
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	0	0
G2			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.007	-0.015	-0.022	-0.029	-0.034	-0.040	-0.044	-0.047	-0.048	-0.050	-0.048	-0.047	-0.044	-0.040	-0.034	-0.029	-0.022	-0.015	-0.007	0.000
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/16	1/16	0
G3			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.007	-0.014	-0.021	-0.028	-0.034	-0.039	-0.043	-0.046	-0.048	-0.049	-0.048	-0.046	-0.043	-0.039	-0.034	-0.028	-0.021	-0.014	-0.007	0.000
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/16	1/16	0
G4-G7			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.006	-0.013	-0.019	-0.025	-0.030	-0.035	-0.038	-0.041	-0.042	-0.043	-0.042	-0.041	-0.038	-0.035	-0.030	-0.025	-0.019	-0.013	-0.006	0.000
	FINAL CAMBER	↑	0	1/16	1/16	1/8	3/16	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	3/16	3/16	3/16	1/8	1/16	1/16	0
G8, G9			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.007	-0.013	-0.020	-0.026	-0.031	-0.036	-0.039	-0.043	-0.044	-0.045	-0.044	-0.043	-0.039	-0.036	-0.031	-0.026	-0.020	-0.013	-0.007	0.000
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	3/16	3/16	1/8	1/8	1/16	1/16	0
G10			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.006	-0.012	-0.018	-0.024	-0.029	-0.034	-0.037	-0.040	-0.041	-0.042	-0.041	-0.040	-0.037	-0.034	-0.029	-0.024	-0.018	-0.012	-0.006	0.000
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	3/16	3/16	1/8	1/8	1/16	0
G11			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.006	-0.012	-0.018	-0.023	-0.028	-0.033	-0.035	-0.038	-0.039	-0.040	-0.039	-0.038	-0.035	-0.033	-0.028	-0.023	-0.018	-0.012	-0.006	0.000
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	3/16	1/4	1/4	1/4	5/16	5/16	5/16	1/4	1/4	1/4	3/16	3/16	1/8	1/8	1/16	0
G12-G14			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.006	-0.013	-0.019	-0.025	-0.030	-0.035	-0.038	-0.041	-0.042	-0.043	-0.042	-0.041	-0.038	-0.035	-0.030	-0.025	-0.019	-0.013	-0.006	0.000
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	3/16	3/16	3/16	1/8	1/16	1/16	0
G15			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.007	-0.014	-0.021	-0.029	-0.034	-0.040	-0.043	-0.047	-0.048	-0.049	-0.048	-0.047	-0.043	-0.040	-0.034	-0.029	-0.021	-0.014	-0.007	0.000
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/8	1/16	1/16	0
G16			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.007	-0.015	-0.022	-0.029	-0.035	-0.040	-0.044	-0.048	-0.049	-0.050	-0.049	-0.048	-0.044	-0.040	-0.035	-0.029	-0.022	-0.015	-0.007	0.000
	FINAL CAMBER	↑	0	1/16	1/16	1/16	1/8	1/8	1/8	3/16	3/16	3/16	3/16	3/16	3/16	3/16	1/8	1/8	1/8	1/16	1/16	1/16	0
G17			0	0.05	0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.7	0.75	0.8	0.85	0.9	0.95	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.010	0.020	0.030	0.038	0.046	0.052	0.058	0.061	0.064	0.064	0.064	0.061	0.058	0.052	0.046	0.038	0.030	0.020	0.010	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.008	-0.015	-0.023	-0.031	-0.037	-0.043	-0.046	-0.050	-0.052	-0.053	-0.052	-0.050	-0.046	-0.043	-0.037	-0.031	-0.023	-0.015	-0.008	0.000
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/16	1/16	1/16	0	0



SCHEMATIC CAMBER ORDINATE AT GIRDER TWENTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT TWENTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 7 OF 9

DRAWN BY : J. W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

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4/9/2026

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DEPARTMENT OF TRANSPORTATION
RALEIGH
SEAL
054077
ENGINEER
PETER L. OARE
Signed By: [Signature]

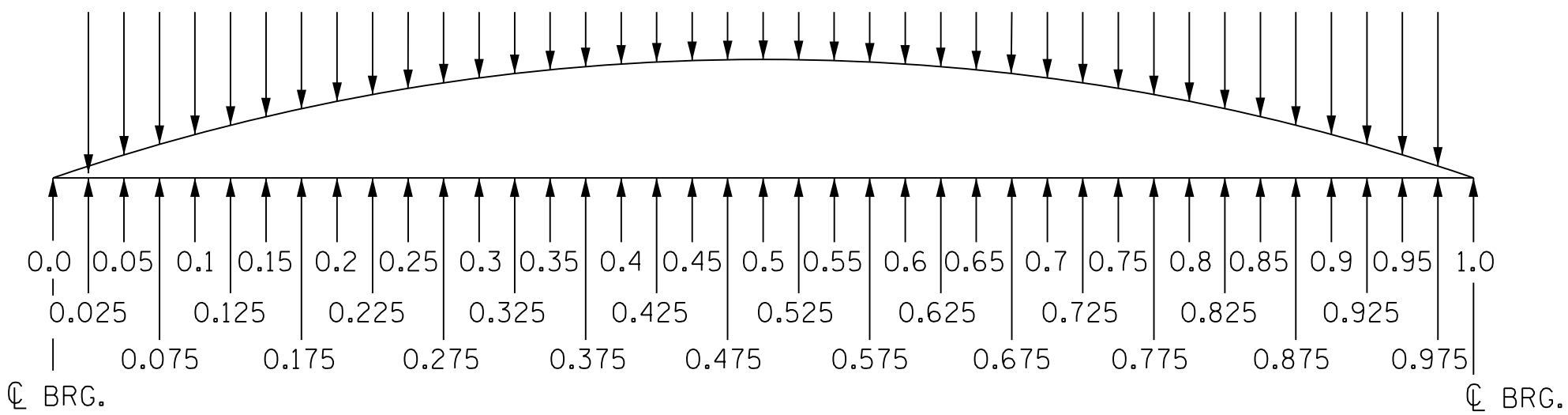
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
GIRDER DEFLECTION AND
CAMBER DETAILS
SPANS D & E

REVISIONS						SHEET NO. S-52
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

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2/10/2026 R:\Structures\DON\350091\FINAL\B6051-SMU_DL8-17350091.dgn

DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPAN K																							
GIRDER			FORTIETH POINTS																				
KG1			0	0.025	0.05	0.075	0.1	0.125	0.15	0.175	0.2	0.225	0.25	0.275	0.3	0.325	0.35	0.375	0.4	0.425	0.45	0.475	0.5
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.045	-0.060	-0.074	-0.089	-0.103	-0.117	-0.128	-0.140	-0.151	-0.162	-0.169	-0.177	-0.184	-0.191	-0.193	-0.196	-0.198	-0.201
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8
KG2			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.028	-0.042	-0.057	-0.070	-0.084	-0.097	-0.111	-0.122	-0.132	-0.143	-0.153	-0.160	-0.167	-0.174	-0.181	-0.183	-0.185	-0.188	-0.190
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
KG3			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.028	-0.042	-0.055	-0.069	-0.082	-0.095	-0.109	-0.119	-0.130	-0.140	-0.150	-0.157	-0.164	-0.170	-0.177	-0.179	-0.182	-0.184	-0.186
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	5/16	5/16	5/16	5/16	5/16	5/16	5/16	5/16
KG4-KG7			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.012	-0.024	-0.037	-0.049	-0.060	-0.072	-0.084	-0.096	-0.105	-0.114	-0.123	-0.132	-0.138	-0.144	-0.150	-0.156	-0.158	-0.160	-0.162	-0.164
	FINAL CAMBER	↑	0	1/16	1/8	3/16	3/16	1/4	5/16	3/8	3/8	7/16	7/16	1/2	1/2	9/16	9/16	9/16	9/16	9/16	9/16	9/16	9/16
KG8, KG9			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.013	-0.026	-0.038	-0.051	-0.063	-0.076	-0.088	-0.100	-0.110	-0.119	-0.129	-0.138	-0.144	-0.151	-0.157	-0.163	-0.165	-0.167	-0.169	-0.171
	FINAL CAMBER	↑	0	1/16	1/8	1/8	3/16	1/4	1/4	5/16	3/8	3/8	7/16	7/16	7/16	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
KG10			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.012	-0.024	-0.036	-0.048	-0.059	-0.071	-0.082	-0.094	-0.103	-0.112	-0.121	-0.130	-0.136	-0.142	-0.147	-0.153	-0.155	-0.157	-0.159	-0.161
	FINAL CAMBER	↑	0	1/16	1/8	3/16	1/4	1/4	5/16	3/8	3/8	7/16	1/2	1/2	1/2	9/16	9/16	5/8	5/8	5/8	5/8	5/8	5/8
KG11			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.011	-0.023	-0.034	-0.046	-0.057	-0.068	-0.079	-0.090	-0.098	-0.107	-0.116	-0.124	-0.130	-0.135	-0.141	-0.146	-0.148	-0.150	-0.152	-0.154
	FINAL CAMBER	↑	0	1/16	1/8	3/16	1/4	5/16	3/8	7/16	7/16	1/2	9/16	9/16	9/16	5/8	11/16	11/16	11/16	11/16	11/16	11/16	11/16
KG12-KG14			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.012	-0.025	-0.037	-0.049	-0.061	-0.073	-0.085	-0.097	-0.106	-0.115	-0.124	-0.134	-0.140	-0.146	-0.152	-0.157	-0.159	-0.161	-0.163	-0.166
	FINAL CAMBER	↑	0	1/16	1/8	3/16	3/16	1/4	5/16	5/16	3/8	3/8	7/16	7/16	1/2	1/2	9/16	9/16	9/16	9/16	9/16	9/16	9/16
KG15			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.028	-0.042	-0.056	-0.069	-0.083	-0.096	-0.110	-0.120	-0.131	-0.141	-0.152	-0.159	-0.165	-0.172	-0.179	-0.181	-0.183	-0.186	-0.188
	FINAL CAMBER	↑	0	1/16	1/16	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	5/16	9/16	5/16	5/16	5/16	5/16	5/16	5/16
KG16			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.014	-0.029	-0.043	-0.057	-0.071	-0.084	-0.098	-0.112	-0.123	-0.133	-0.144	-0.155	-0.162	-0.169	-0.175	-0.182	-0.185	-0.187	-0.189	-0.192
	FINAL CAMBER	↑	0	1/16	1/16	1/16	1/8	1/8	3/16	3/16	3/16	3/16	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
KG17			0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.000	0.017	0.034	0.051	0.067	0.083	0.098	0.113	0.126	0.140	0.152	0.163	0.173	0.183	0.191	0.197	0.203	0.207	0.211	0.213	0.213
	DEFLECTION DUE TO SUPERIMPOSED D.L.*	↓	0.000	-0.015	-0.030	-0.045	-0.060	-0.074	-0.089	-0.103	-0.118	-0.129	-0.140	-0.152	-0.163	-0.170	-0.177	-0.184	-0.192	-0.194	-0.197	-0.199	-0.202
	FINAL CAMBER	↑	0	0	1/16	1/16	1/16	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8



SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

DRAWN BY : J. W. COOK DATE : FEB 2025
CHECKED BY : P. OARE DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE DATE : FEB 2025

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ENGINEER
PETER L. OARE
Signed By:
APP30512BAC0962

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

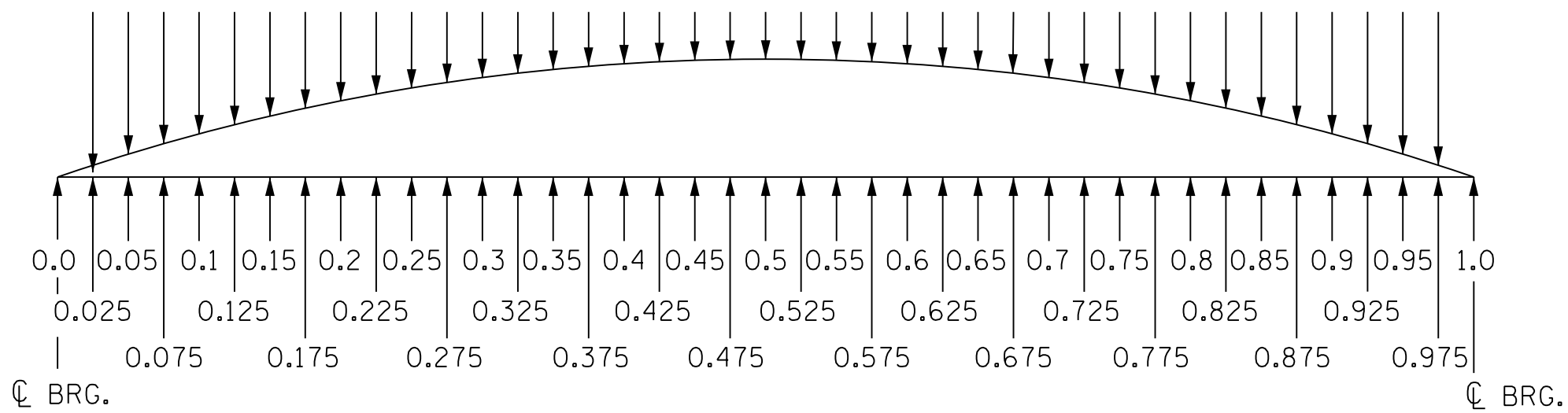
SHEET 8 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
GIRDER DEFLECTION AND
CAMBER DETAILS
SPAN K

REVISIONS						SHEET NO. S-53
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			118

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DEAD LOAD DEFLECTION AND CAMBER TABLE FOR GIRDERS - SPAN K (CONT'D.)																						
GIRDER			FORTIETH POINTS																			
KG1			0.525	0.55	0.575	0.6	0.625	0.65	0.675	0.7	0.725	0.75	0.775	0.8	0.825	0.85	0.875	0.9	0.925	0.95	0.975	1.0
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.198	-0.196	-0.193	-0.191	-0.184	-0.177	-0.169	-0.162	-0.151	-0.140	-0.128	-0.117	-0.103	-0.089	-0.074	-0.060	-0.045	-0.030	-0.015	0.000
	FINAL CAMBER	↑	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄16	1⁄16	1⁄16	0	0
KG2			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.188	-0.185	-0.183	-0.181	-0.174	-0.167	-0.160	-0.154	-0.143	-0.132	-0.122	-0.111	-0.097	-0.084	-0.070	-0.057	-0.042	-0.028	-0.014	0.000
	FINAL CAMBER	↑	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	3⁄16	3⁄16	3⁄16	3⁄16	1⁄8	1⁄8	1⁄8	1⁄16	1⁄16
KG3			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.184	-0.182	-0.179	-0.177	-0.170	-0.164	-0.157	-0.151	-0.140	-0.130	-0.119	-0.109	-0.095	-0.082	-0.069	-0.055	-0.042	-0.028	-0.014	0.000
	FINAL CAMBER	↑	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	1⁄4	1⁄4	1⁄4	1⁄4	3⁄16	3⁄16	3⁄16	3⁄16	1⁄8	1⁄8	1⁄16	1⁄16
KG4-KG7			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.162	-0.160	-0.158	-0.156	-0.150	-0.144	-0.138	-0.132	-0.123	-0.114	-0.105	-0.096	-0.084	-0.072	-0.060	-0.049	-0.037	-0.024	-0.012	0.000
	FINAL CAMBER	↑	9⁄16	9⁄16	9⁄16	9⁄16	9⁄16	9⁄16	9⁄16	9⁄16	1⁄2	1⁄2	7⁄16	7⁄16	3⁄8	3⁄8	5⁄16	1⁄4	3⁄16	3⁄16	1⁄8	1⁄16
KG8, KG9			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.169	-0.167	-0.165	-0.163	-0.157	-0.151	-0.145	-0.138	-0.129	-0.119	-0.110	-0.100	-0.088	-0.076	-0.063	-0.051	-0.038	-0.026	-0.013	0.000
	FINAL CAMBER	↑	1⁄2	1⁄2	1⁄2	1⁄2	1⁄2	1⁄2	1⁄2	7⁄16	7⁄16	7⁄16	3⁄8	3⁄8	5⁄16	5⁄16	1⁄4	1⁄4	3⁄16	1⁄8	1⁄8	1⁄16
KG10			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.159	-0.157	-0.155	-0.153	-0.147	-0.142	-0.136	-0.130	-0.121	-0.112	-0.103	-0.094	-0.082	-0.071	-0.059	-0.048	-0.036	-0.024	-0.012	0.000
	FINAL CAMBER	↑	5⁄8	5⁄8	5⁄8	5⁄8	5⁄8	9⁄16	9⁄16	9⁄16	1⁄2	1⁄2	1⁄2	7⁄16	3⁄8	3⁄8	5⁄16	1⁄4	1⁄4	3⁄16	1⁄8	1⁄16
KG11			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.152	-0.150	-0.148	-0.146	-0.141	-0.135	-0.130	-0.124	-0.116	-0.107	-0.098	-0.090	-0.079	-0.068	-0.057	-0.046	-0.034	-0.023	-0.011	0.000
	FINAL CAMBER	↑	11⁄16	11⁄16	11⁄16	11⁄16	11⁄16	11⁄16	11⁄16	5⁄8	9⁄16	9⁄16	9⁄16	1⁄2	7⁄16	7⁄16	3⁄8	5⁄16	1⁄4	3⁄16	1⁄8	1⁄16
KG12-KG14			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.163	-0.161	-0.159	-0.157	-0.152	-0.146	-0.140	-0.134	-0.124	-0.115	-0.106	-0.097	-0.085	-0.073	-0.061	-0.049	-0.037	-0.025	-0.012	0.000
	FINAL CAMBER	↑	9⁄16	9⁄16	9⁄16	9⁄16	9⁄16	9⁄16	9⁄16	1⁄2	1⁄2	7⁄16	7⁄16	3⁄8	3⁄8	5⁄16	5⁄16	1⁄4	3⁄16	3⁄16	1⁄8	1⁄16
KG15			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.186	-0.183	-0.181	-0.179	-0.172	-0.165	-0.159	-0.152	-0.141	-0.131	-0.120	-0.110	-0.096	-0.083	-0.069	-0.056	-0.042	-0.028	-0.014	0.000
	FINAL CAMBER	↑	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	5⁄16	1⁄4	1⁄4	1⁄4	1⁄4	3⁄16	3⁄16	3⁄16	3⁄16	1⁄8	1⁄8	1⁄16	1⁄16
KG16			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.189	-0.187	-0.185	-0.182	-0.175	-0.169	-0.162	-0.155	-0.144	-0.133	-0.123	-0.112	-0.098	-0.084	-0.071	-0.057	-0.043	-0.029	-0.014	0.000
	FINAL CAMBER	↑	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	1⁄4	3⁄16	3⁄16	3⁄16	3⁄16	1⁄8	1⁄8	1⁄16	1⁄16	1⁄16
KG17			0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	CAMBER (GIRDER ALONE IN PLACE)	↑	0.213	0.211	0.207	0.203	0.197	0.191	0.183	0.173	0.163	0.152	0.140	0.127	0.113	0.098	0.083	0.067	0.051	0.034	0.017	0.000
	DEFLECTION DUE TO SUPERIMPOSED D.L. *	↓	-0.199	-0.197	-0.194	-0.192	-0.184	-0.177	-0.170	-0.163	-0.152	-0.140	-0.129	-0.118	-0.103	-0.089	-0.074	-0.060	-0.045	-0.030	-0.015	0.000
	FINAL CAMBER	↑	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄8	1⁄16	1⁄16	1⁄16	0



SCHEMATIC CAMBER ORDINATE AT GIRDER FORTIETH POINTS

DEFLECTIONS ARE IN FEET (DECIMAL FORM) AT FORTIETH POINTS BETWEEN BEARINGS, REQUIRED CAMBER VALUES ARE IN INCHES (FRACTIONAL FORM).

* INCLUDES FUTURE WEARING SURFACE IN SUPERIMPOSED DEAD LOAD

DRAWN BY : J. W. COOK	DATE : FEB 2025
CHECKED BY : P. OARE	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : P. OARE	DATE : FEB 2025

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1 Suite 700
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4/9/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SEAL
054077
ENGINEER
PETER L. OARE
Signed
AFF30612BADD9462...

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 9 OF 23

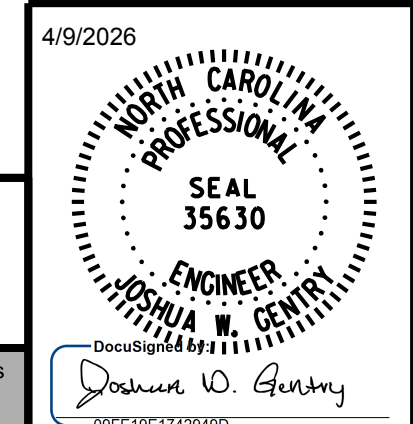
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-54
2			4			
TOTAL SHEETS						118

JOINTS IN BARRIER RAIL ARE PERPENDICULAR
TO THE -L- LINE AND DIMENSIONS SHOWN ARE
GIVEN PARALLEL TO -L-.



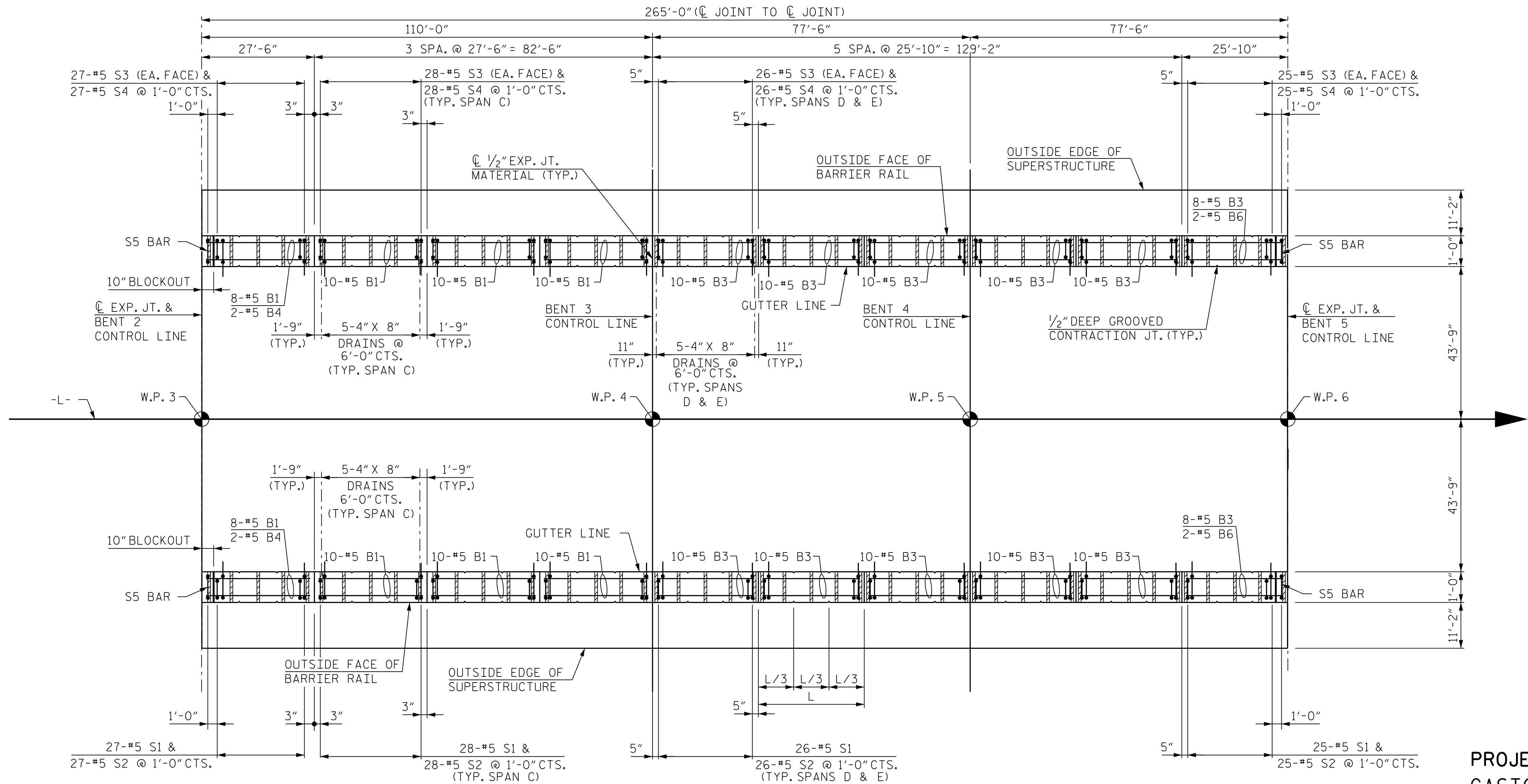
SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RAILEIGH
 SUPERSTRUCTURE
 VERTICAL CONCRETE
 BARRIER RAIL PLAN
 SPANS A & B



DRAWN BY : T. BOYD DATE : FEB 2025
 CHECKED BY : J. W. GENTRY DATE : FEB 2025
 DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025

2/10/2026 R:\Structures\DCN\350091\FINAL\B6051_SML_CP2_17350091.dgn bgonfa



SPAN C

SPAN D

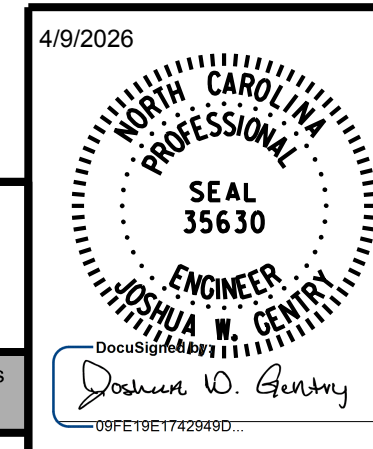
SPAN E

PLAN OF VERTICAL BARRIER RAIL

PROJECT NO. B-6051/U-6143
CASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

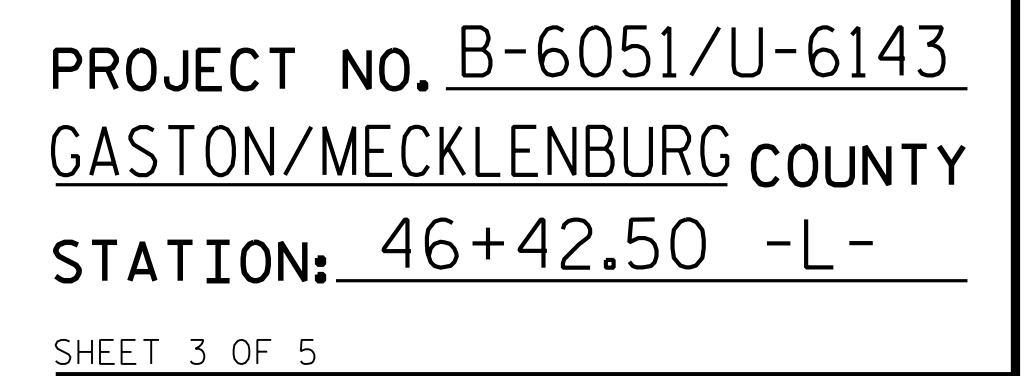
SHEET 2 OF 5

DRAWN BY : T. BOYD DATE : FEB 2025
CHECKED BY : J. W. GENTRY DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025



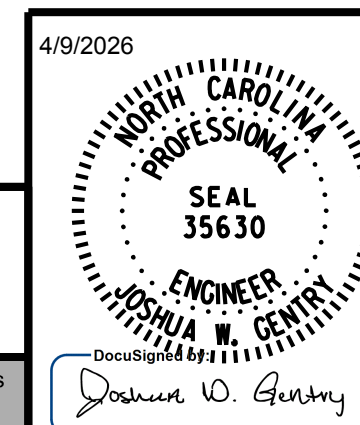
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
VERTICAL CONCRETE
BARRIER RAIL PLAN
SPANS C THRU E

REVISIONS						SHEET NO. S-56
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			118



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
VERTICAL CONCRETE
BARRIER RAIL PLAN
SPANS F THRU H

DRAWN BY : <u>T. BOYD</u>	DATE : <u>FEB 2025</u>
CHECKED BY : <u>J. W. GENTRY</u>	DATE : <u>FEB 2025</u>
DESIGN ENGINEER OF RECORD : <u>J. W. GENTRY</u>	DATE : <u>FEB 2025</u>



SPAN I

SPAN J

SPAN K

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

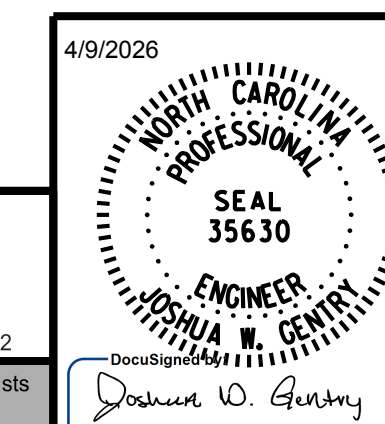
SHEET 4 OF 5

PLAN OF VERTICAL BARRIER RAIL

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

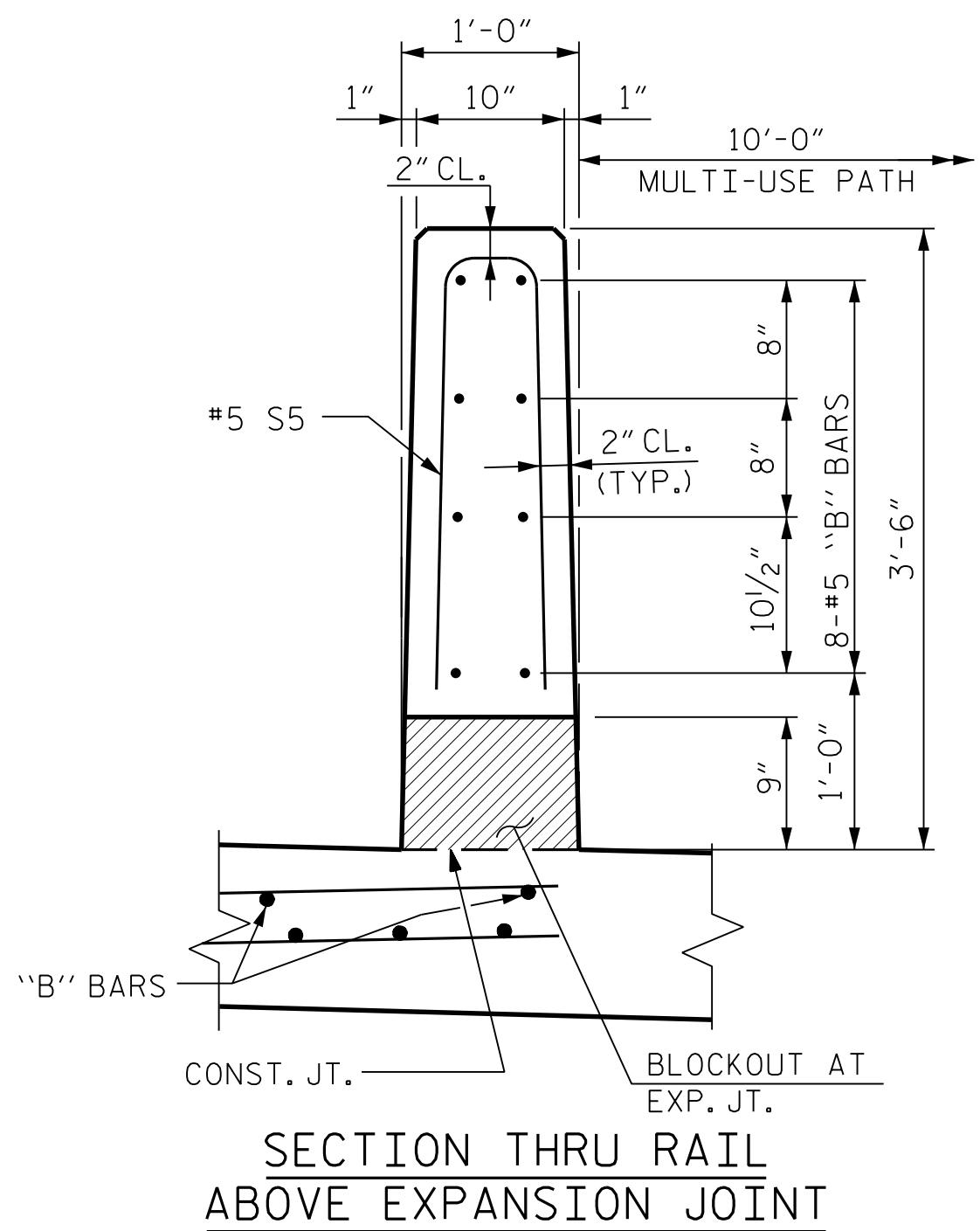
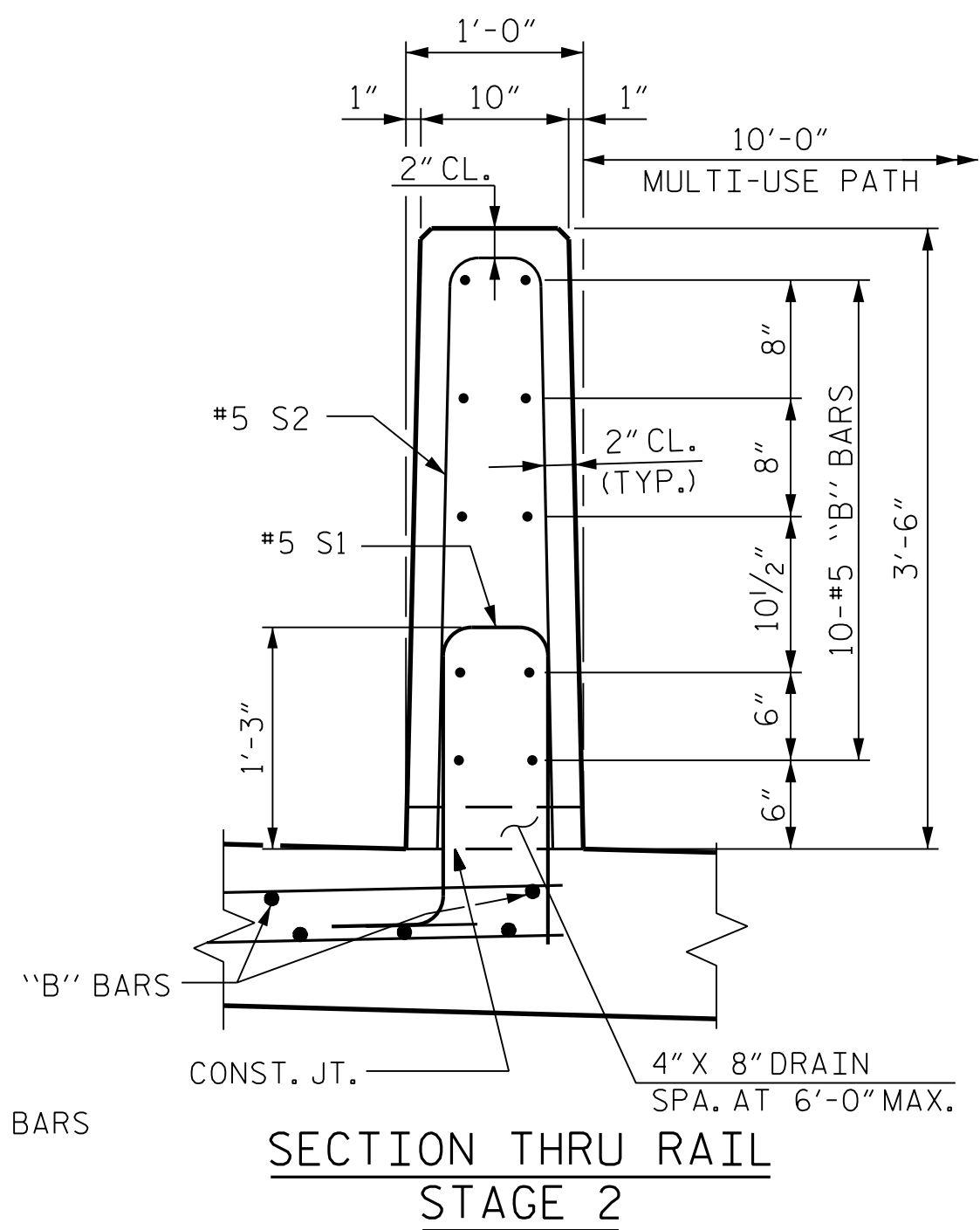
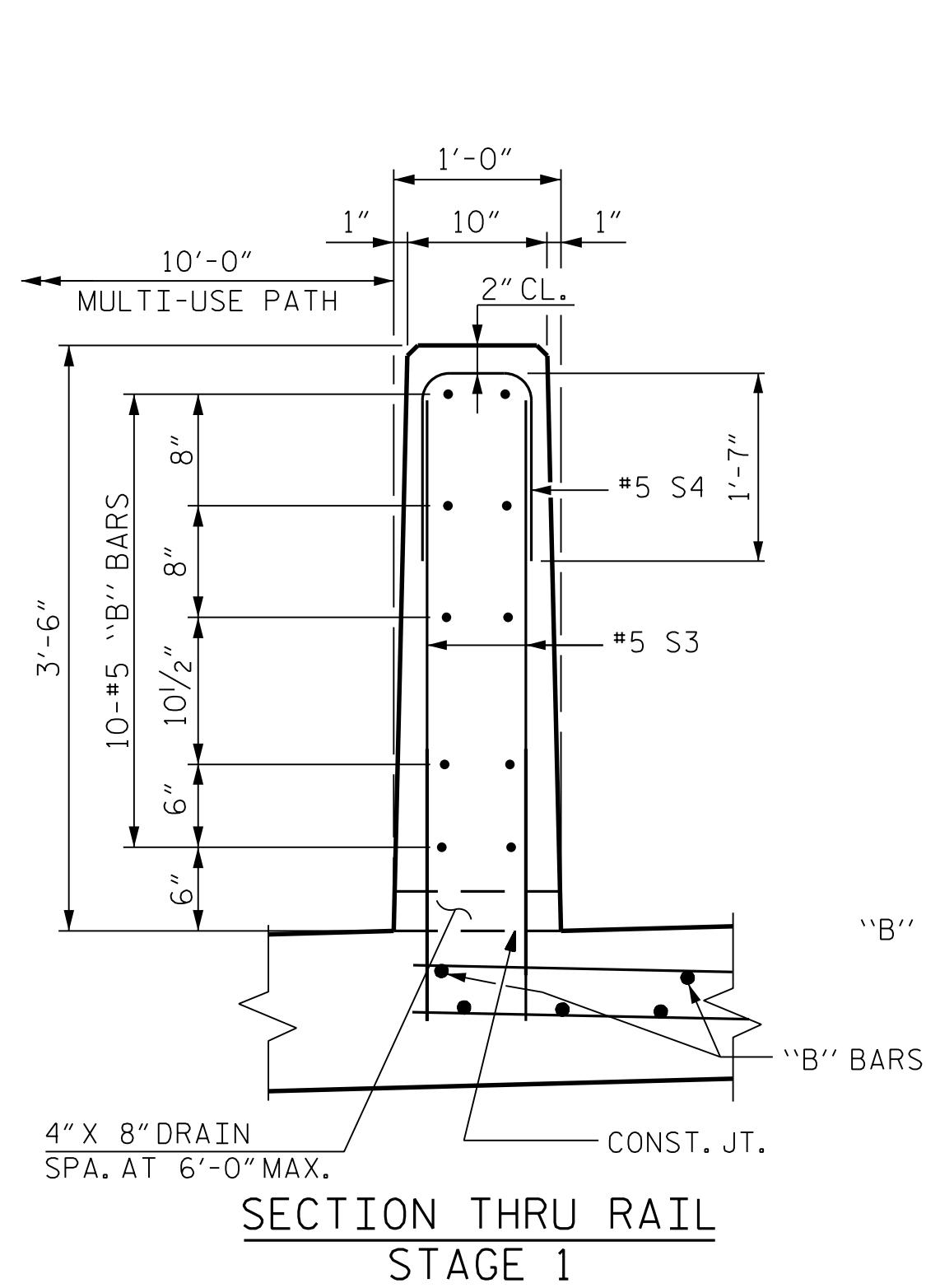
SUPERSTRUCTURE
VERTICAL CONCRETE
BARRIER RAIL PLAN
SPANS I THRU K

REVISIONS						SHEET NO. S-58
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			



DRAWN BY : T. BOYD DATE : FEB 2025
CHECKED BY : J. W. GENTRY DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025

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NOTES:

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

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

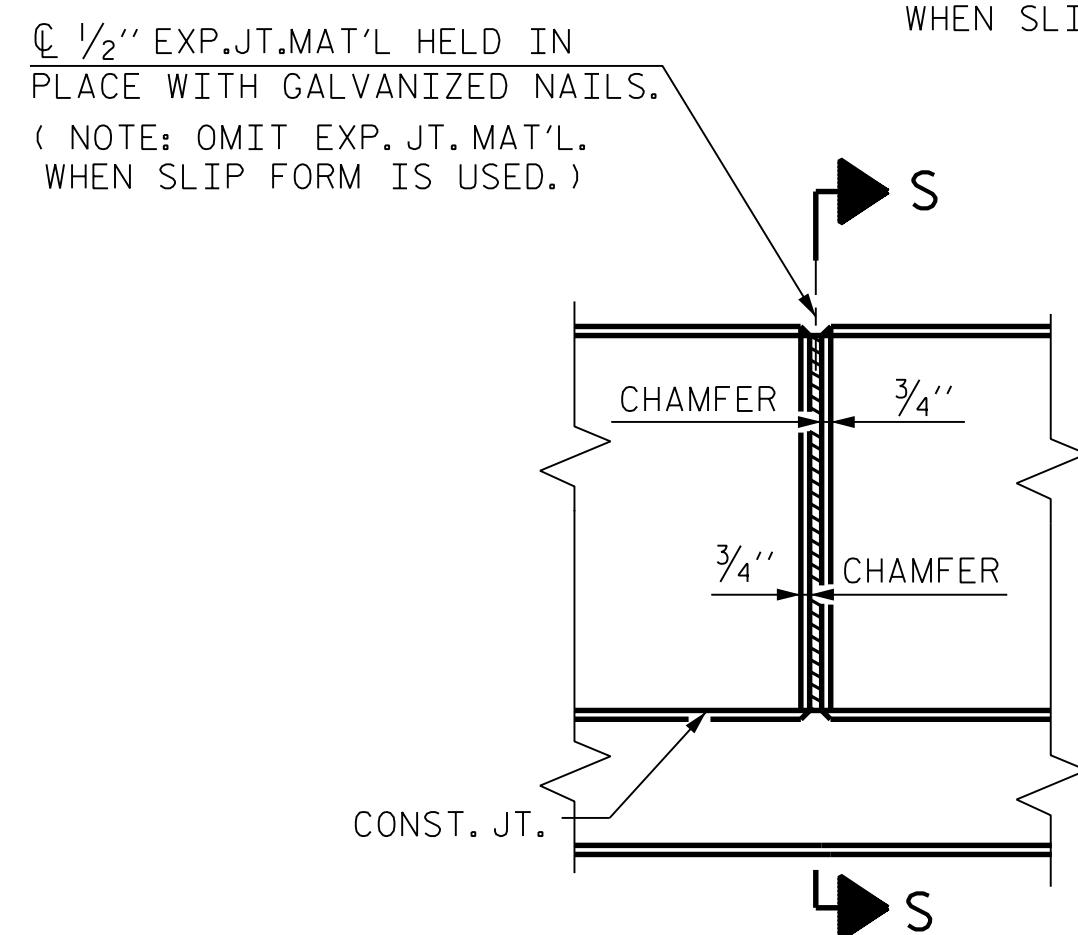
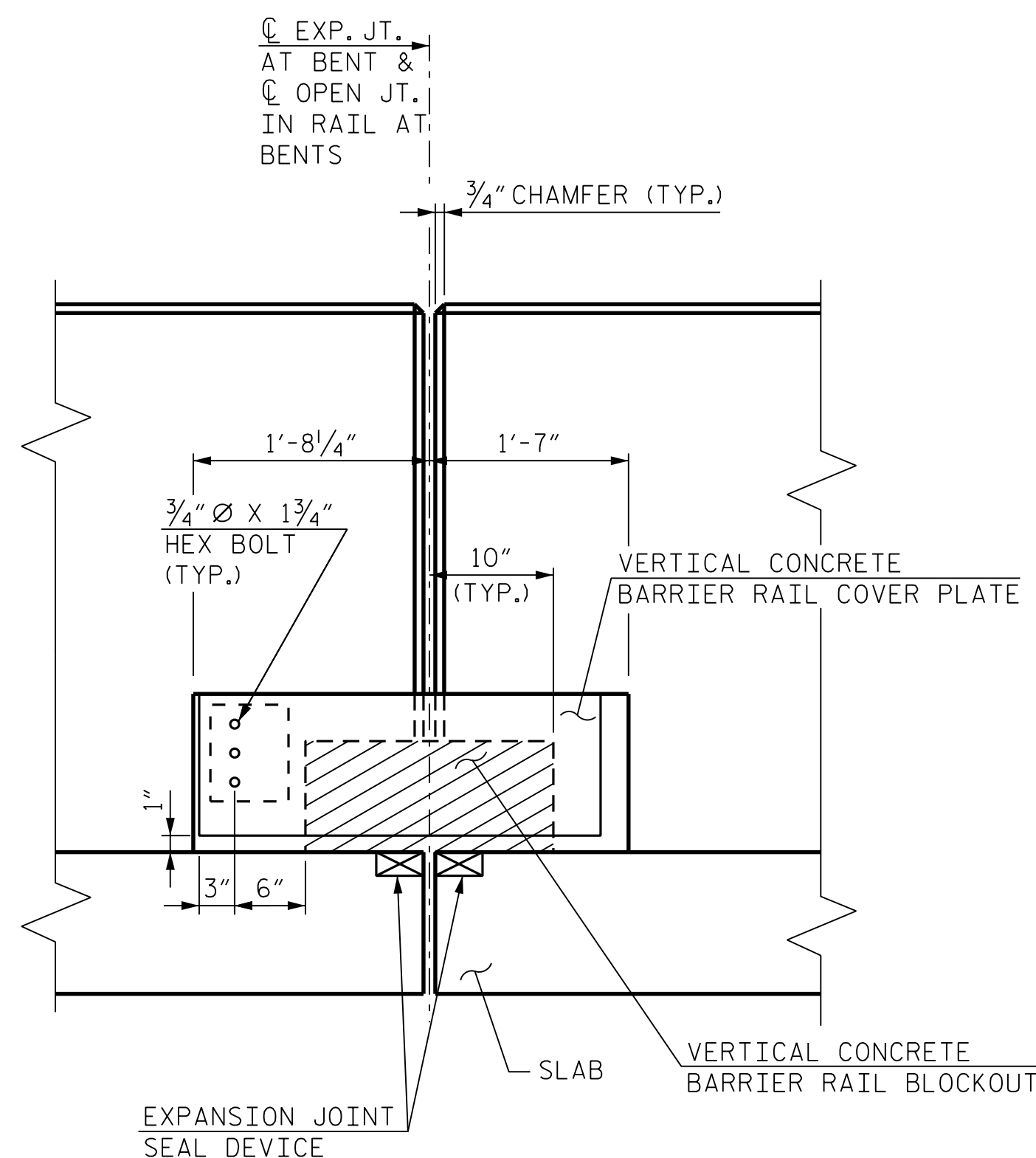
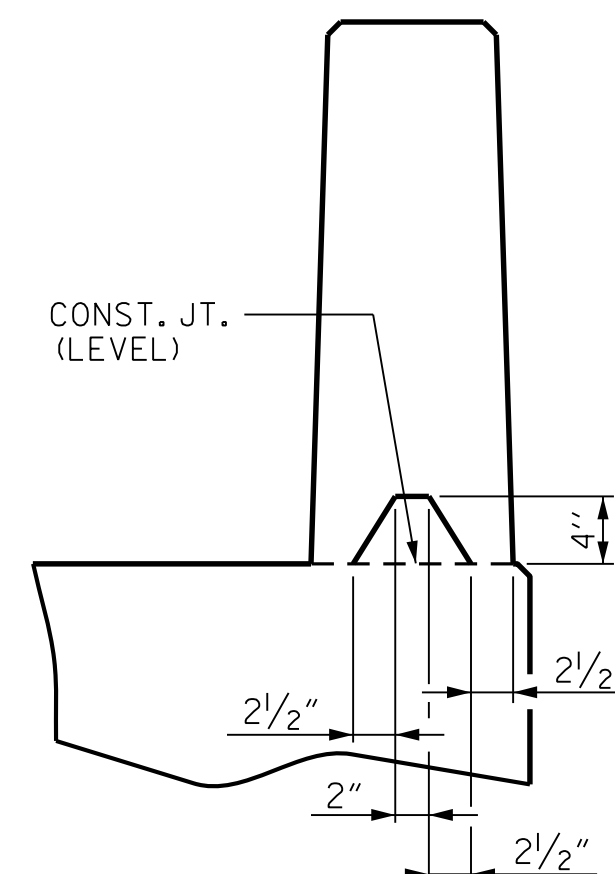
THE #5S3 BARS SHALL BE INSTALLED, USING AN ADHESIVE ANCHORING SYSTEM. LEVEL II FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE #5S3 BARS IS 18.6 KIPS. FOR ADHESIVELY ANCHORED BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL USE AN ADHESIVE ANCHORING SYSTEM AND SUFFICIENT EMBEDMENT DEPTH TO DEVELOP AT LEAST 125% OF THE YIELD LOAD OF THE #5S3 BARS WHILE MAINTAINING A 2" MINIMUM CLEAR DISTANCE TO THE DECK.

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

FOR ELEVATION OF VERTICAL BARRIER RAIL AT EXPANSION JOINTS, SEE SHEET S-76
"EXPANSION JOINT SEAL DETAILS FOR VERTICAL CONCRETE BARRIER RAIL".

FOR DETAILS OF VERTICAL BARRIER RAIL ON APPROACH SLAB, SEE SHEET S-115
"BRIDGE APPROACH SLAB DETAILS".



BAR TYPES

The diagram illustrates three types of reinforcement bars, labeled 1, 2, and 3, with their respective dimensions:

- Bar 1:** A U-shaped bar with an overall length of 1'-9", an overall width of 7", an end width of 1'-11", and an end thickness of 10".
- Bar 2:** A U-shaped bar with an overall length of 3'-4", an overall width of 6", an end width of 2'-5", and an end thickness of 2".
- Bar 3:** A U-shaped bar with an overall length of 1'-7", an overall width of 6", an end width of 1'-11", and an end thickness of 10".

ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL - STAGE 1					
FOR VERTICAL CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	330	#5	STR.	27'-1"	9,322
* B2	16	#5	STR.	25'-11"	432
* B3	58	#5	STR.	25'-5"	1,538
* B4	10	#5	STR.	26'-3"	274
* B5	4	#5	STR.	25'-1"	105
* B6	2	#5	STR.	24'-7"	51
* S3	2,304	#5	STR.	3'-10"	9,212
* S4	1,152	#5	3	3'-8"	4,406
* S5	8	#5	2	5'-4"	45

* EPOXY COATED REINFORCING STEEL	25,385 LBS.
-------------------------------------	-------------

VERTICAL CONCRETE BARRIER RAIL	1,142.75 LIN. FT.
-----------------------------------	-------------------

BILL OF MATERIAL - STAGE 2					
FOR VERTICAL CONCRETE BARRIER RAIL ONLY					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	330	#5	STR.	27'-1"	9,322
* B2	16	#5	STR.	25'-11"	432
* B3	58	#5	STR.	25'-5"	1,538
* B4	10	#5	STR.	26'-3"	274
* B5	4	#5	STR.	25'-1"	105
* B6	2	#5	STR.	24'-7"	51
* S1	1,152	#5	1	5'-1"	6,108
* S2	1,152	#5	2	7'-2"	8,611
* S5	8	#5	2	5'-4"	45

* EPOXY COATED REINFORCING STEEL	26,486 LBS.
-------------------------------------	-------------

VERTICAL CONCRETE BARRIER RAIL	1,142.75 LIN. FT.
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PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
VERTICAL
CONCRETE
BARRIER RAIL

REVISIONS						SHEET NO. S-59
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

DRAWN BY : T. BOYD	DATE : FEB 2025
CHECKED BY : J. W. GENTRY	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J. W. GENTRY	DATE : FEB 2025

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Raleigh, North Carolina 27615 | NC License No. F-0112
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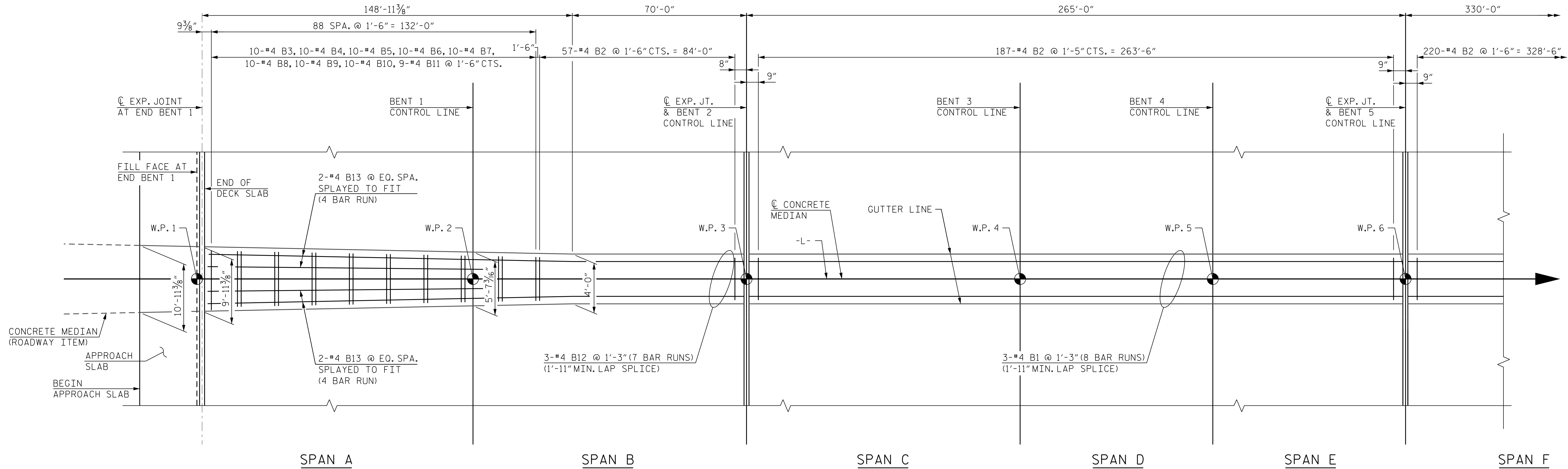
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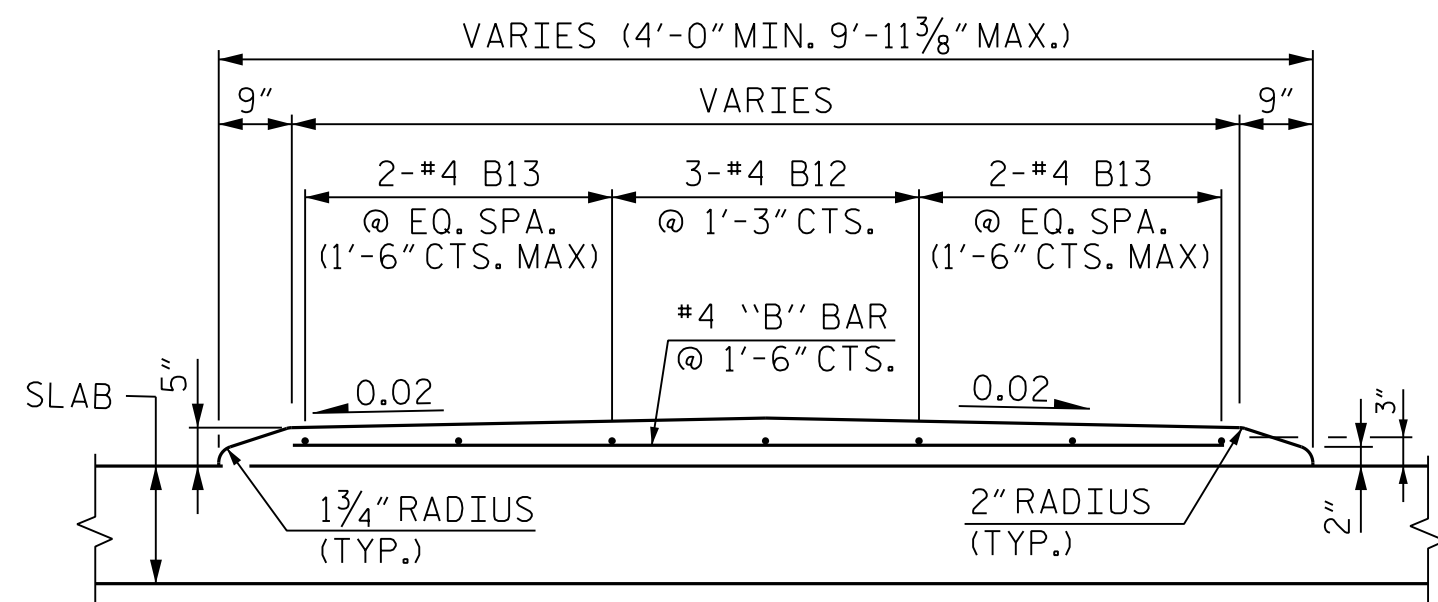


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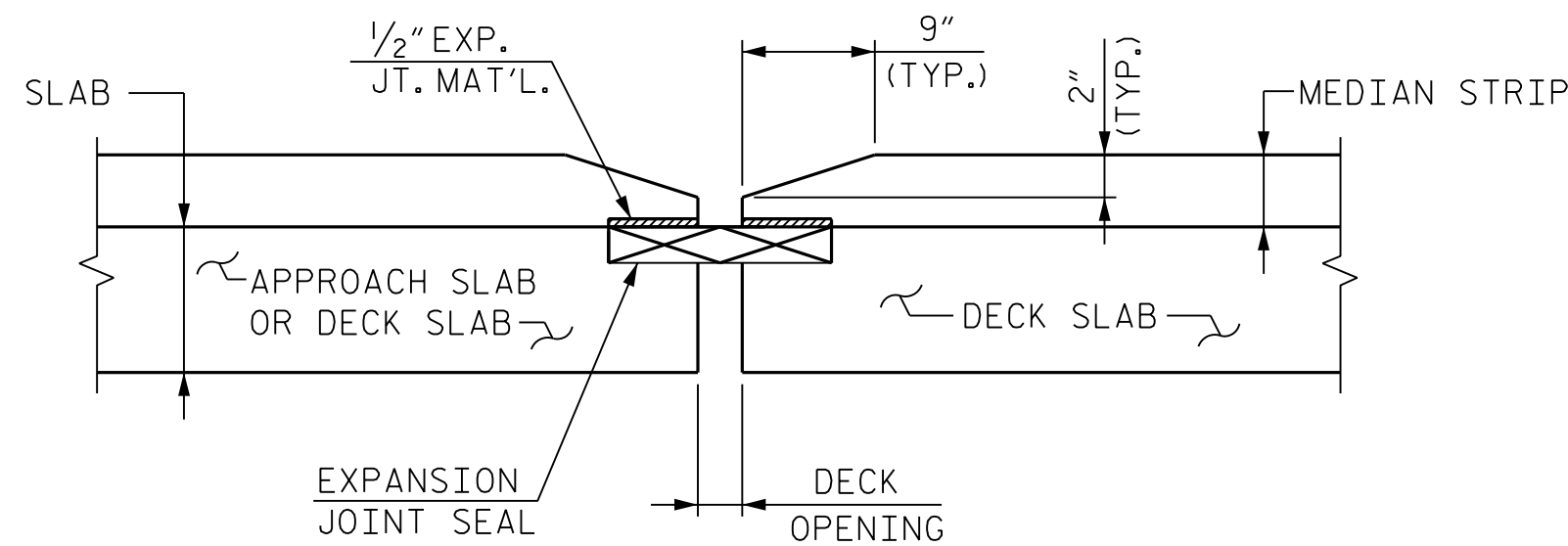


PLAN



REINFORCING STEEL DETAILS

SPANS A AND B.
FOR SPANS C THRU K, SEE SHEET 2 OF 2.



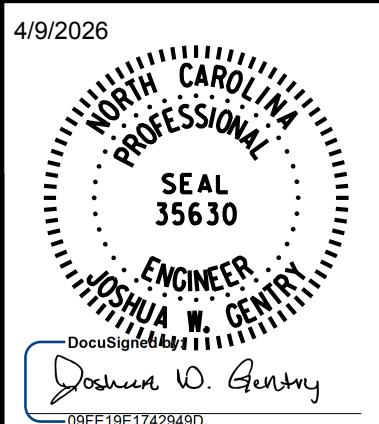
DETAILS AT EXPANSION JOINT

(END BENT 1, BENT 2, BENT 5, BENT 8 AND END BENT 2)

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE CONCRETE MEDIAN PARTIAL PLAN AND DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-60					TOTAL SHEETS 118



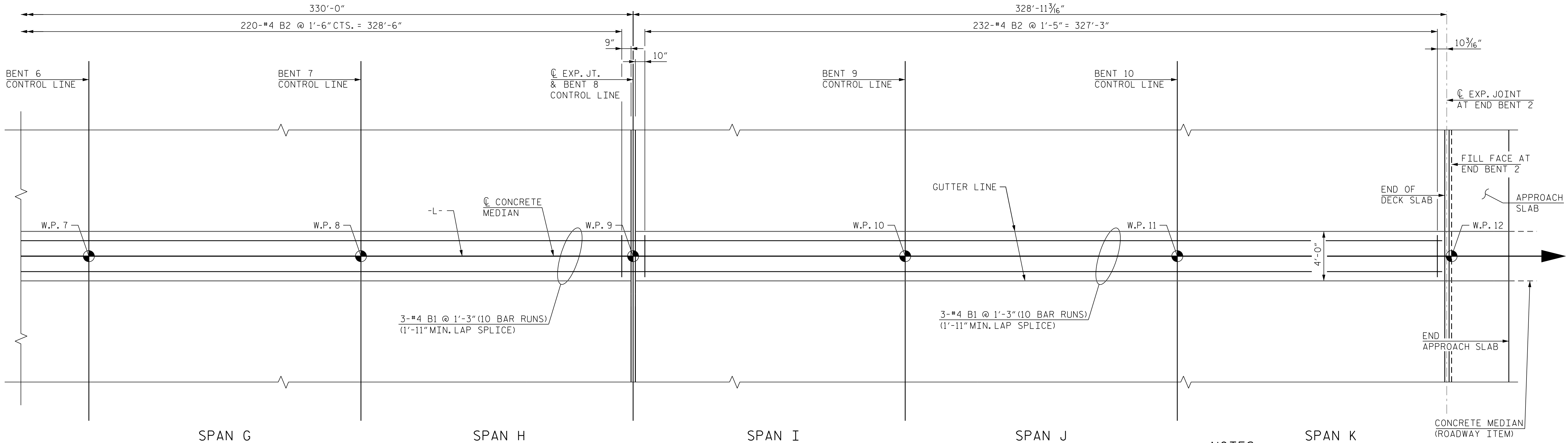
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PLAN

NOTES:

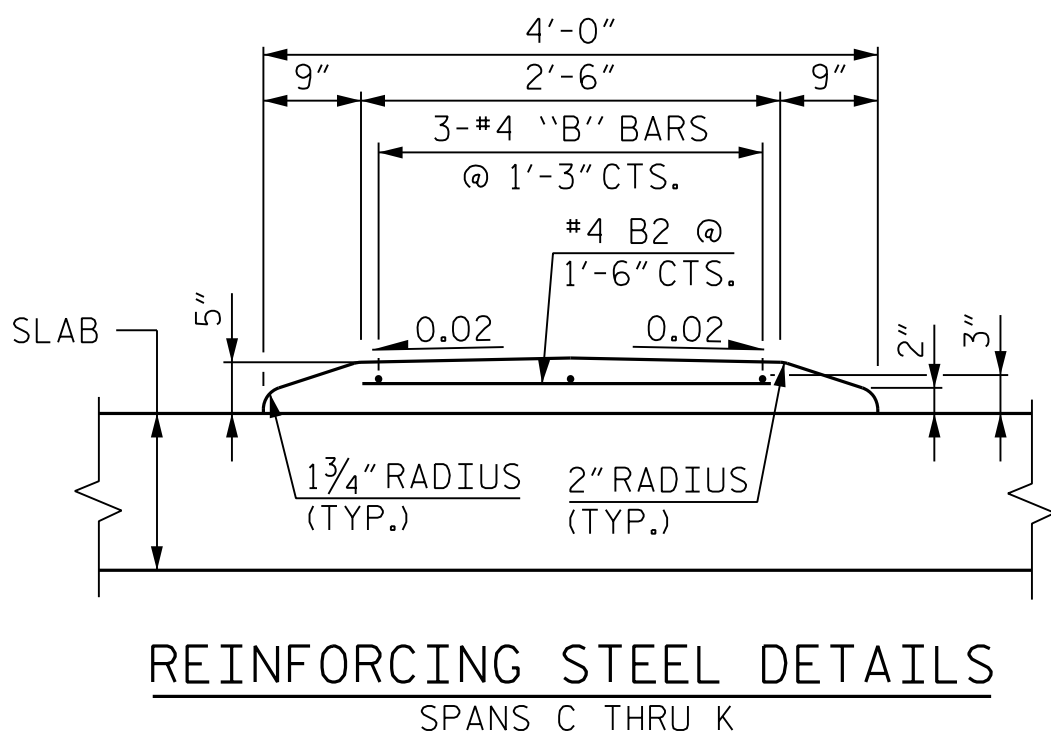
NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR MATERIALS OR LABOR TO CONSTRUCT THE CONCRETE MEDIAN. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE SQUARE FOOT PRICE BID FOR THE REINFORCED CONCRETE DECK SLAB.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE MEDIAN STRIP IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. THE CONTRACTION JOINTS SHALL BE LOCATED AT A SPACING OF 8 FT. TO 10 FT. BETWEEN EXPANSION JOINTS. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FT. IN LENGTH.

ALL REINFORCING STEEL IN CONCRETE MEDIAN SHALL BE EPOXY COATED.

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

BILL OF MATERIAL						
CONCRETE MEDIAN						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
* B1	84	#4	STR.	34'-9"	1,950	
* B2	696	#4	STR.	2'-7"	1,201	
* B3	10	#4	STR.	3'-3"	22	
* B4	10	#4	STR.	3'-11"	26	
* B5	10	#4	STR.	4'-7"	31	
* B6	10	#4	STR.	5'-3"	35	
* B7	10	#4	STR.	5'-11"	40	
* B8	10	#4	STR.	6'-7"	44	
* B9	10	#4	STR.	7'-3"	48	
* B10	10	#4	STR.	7'-11"	53	
* B11	9	#4	STR.	8'-7"	52	
* B12	21	#4	STR.	32'-11"	462	
* B13	16	#4	STR.	30'-6"	326	
* EPOXY COATED REINFORCING STEEL				4,290	LBS.	
CLASS AA CONCRETE				71.7	C. Y.	



REINFORCING STEEL DETAILS
SPANS C THRU K

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GASTON/MECKLENBURG COUNTY
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SHEET 2 OF 2

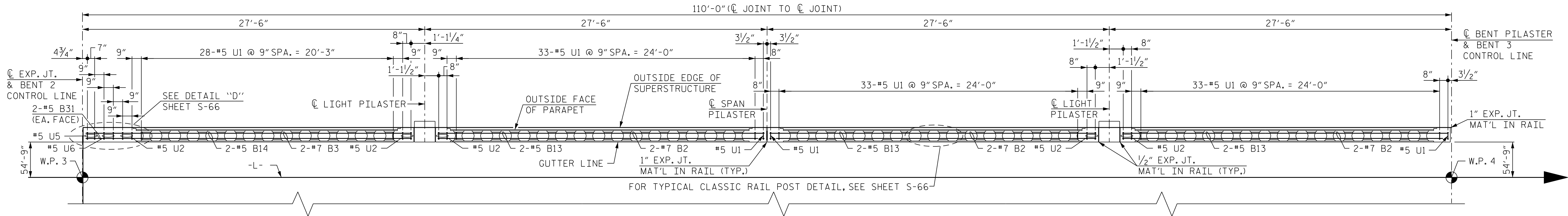
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RALEIGH
SUPERSTRUCTURE
CONCRETE MEDIAN
PARTIAL PLAN
AND DETAILS

REVISIONS						SHEET NO. S-61
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1			3			TOTAL SHEETS 118
2			4			

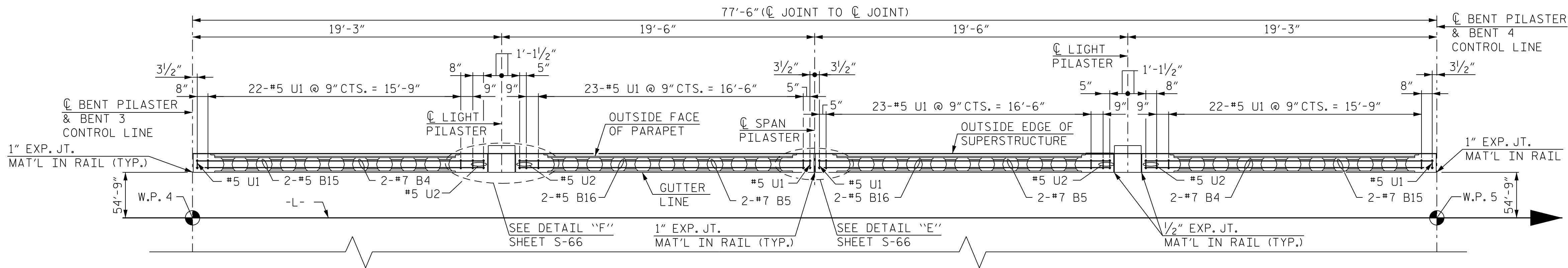
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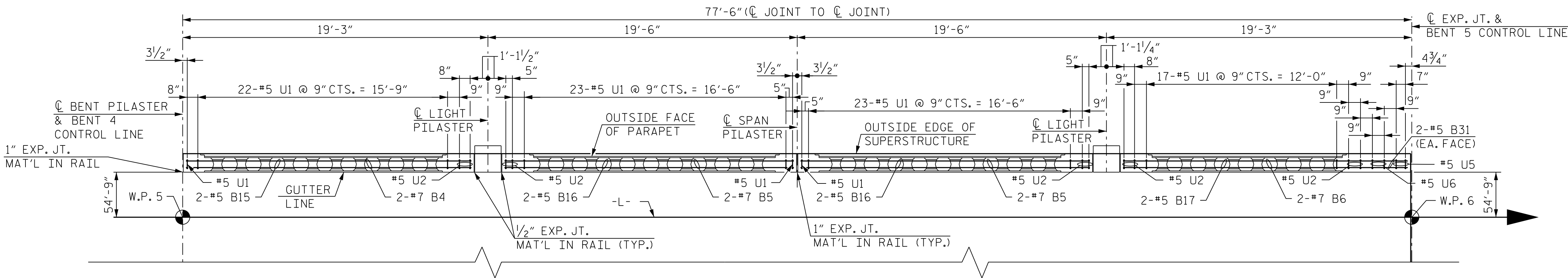
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PLAN OF CLASSIC BRIDGE RAIL AT SPAN C
(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)



PLAN OF CLASSIC BRIDGE RAIL AT SPAN D
(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)



PLAN OF CLASSIC BRIDGE RAIL AT SPAN E
(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)

NOTE:

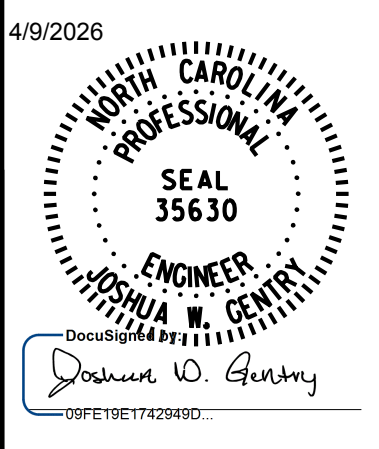
“S” BARS NOT SHOWN FOR CLARITY.

FOR CONDUIT AND FORMED OPENING DETAILS, SEE
SHEET S-111 AND S-112.

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GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 2 OF 6

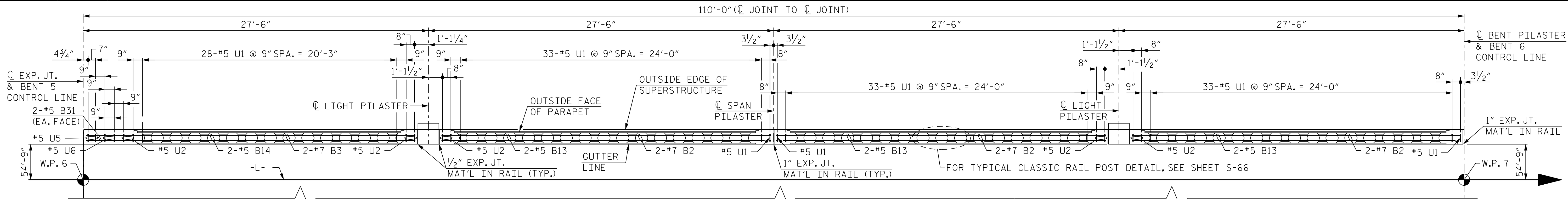
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SUPERSTRUCTURE CLASSIC BRIDGE RAIL PLAN SPANS C THRU E					
REVISIONS					
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SHEET NO. S-63			TOTAL SHEETS 118		



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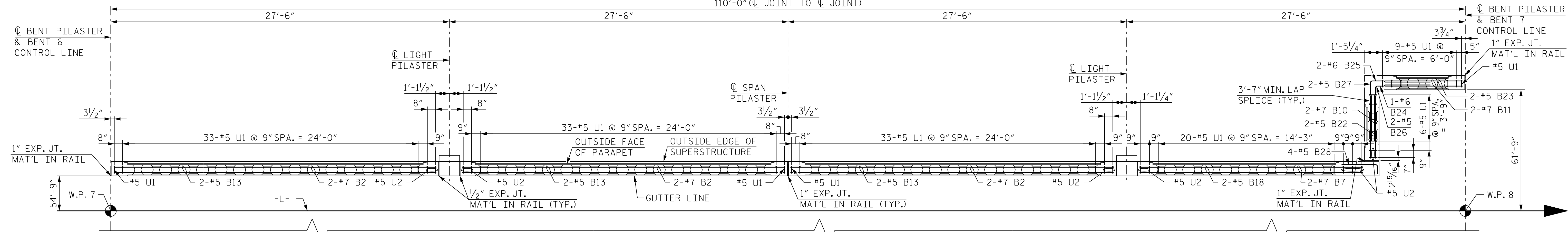
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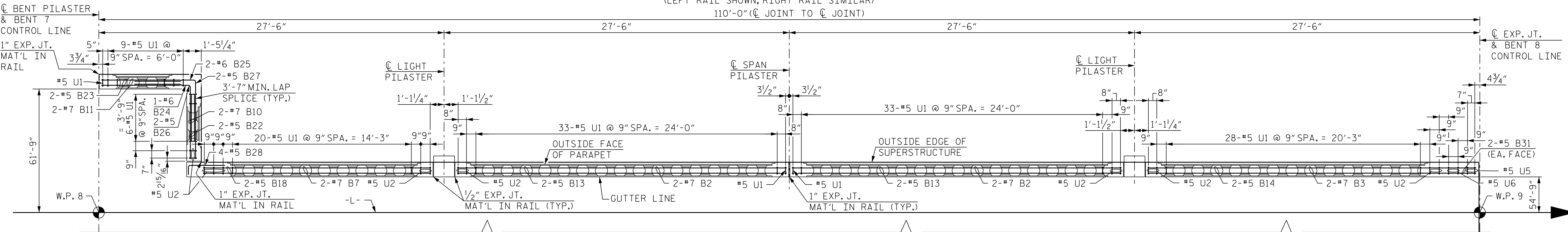
PLAN OF CLASSIC BRIDGE RAIL AT SPAN F

(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)



PLAN OF CLASSIC BRIDGE RAIL AT SPAN G

(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)



PLAN OF CLASSIC BRIDGE RAIL AT SPAN H

(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)

NOTE:

“S” BARS NOT SHOWN FOR CLARITY.

FOR CONDUIT AND FORMED OPENING DETAILS, SEE SHEET S-111 AND S-112.

FOR OBSERVATION PLATFORM BARRIER DETAILS, SEE SHEET S-67.

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 3 OF 6

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DATE : FEB 2025
DATE : FEB 2025

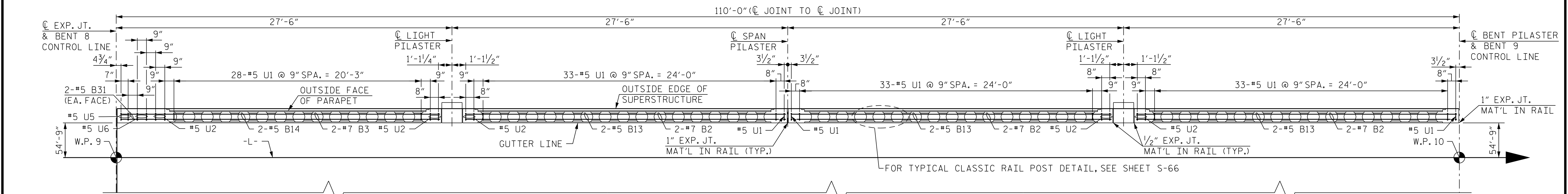
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2			4		

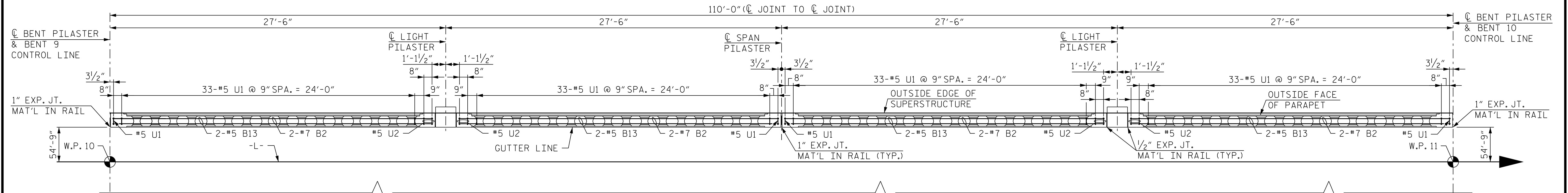
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TOTAL SHEETS		118

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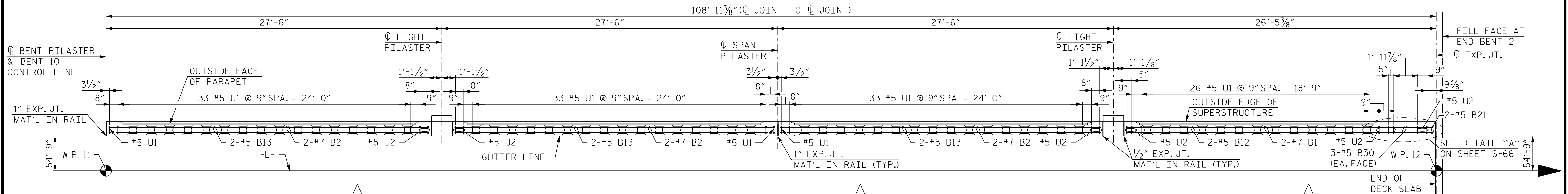
PLAN OF CLASSIC BRIDGE RAIL AT SPAN I

(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)



PLAN OF CLASSIC BRIDGE RAIL AT SPAN J

(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)



PLAN OF CLASSIC BRIDGE RAIL AT SPAN K

(LEFT RAIL SHOWN, RIGHT RAIL SIMILAR)

NOTE:

“S” BARS NOT SHOWN FOR CLARITY.

FOR CONDUIT AND FORMED OPENING DETAILS, SEE SHEET S-111 AND S-112.

PROJECT NO. B-6051/U-6143

GASTON/MECKLENBURG COUNTY

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SHEET 4 OF 6

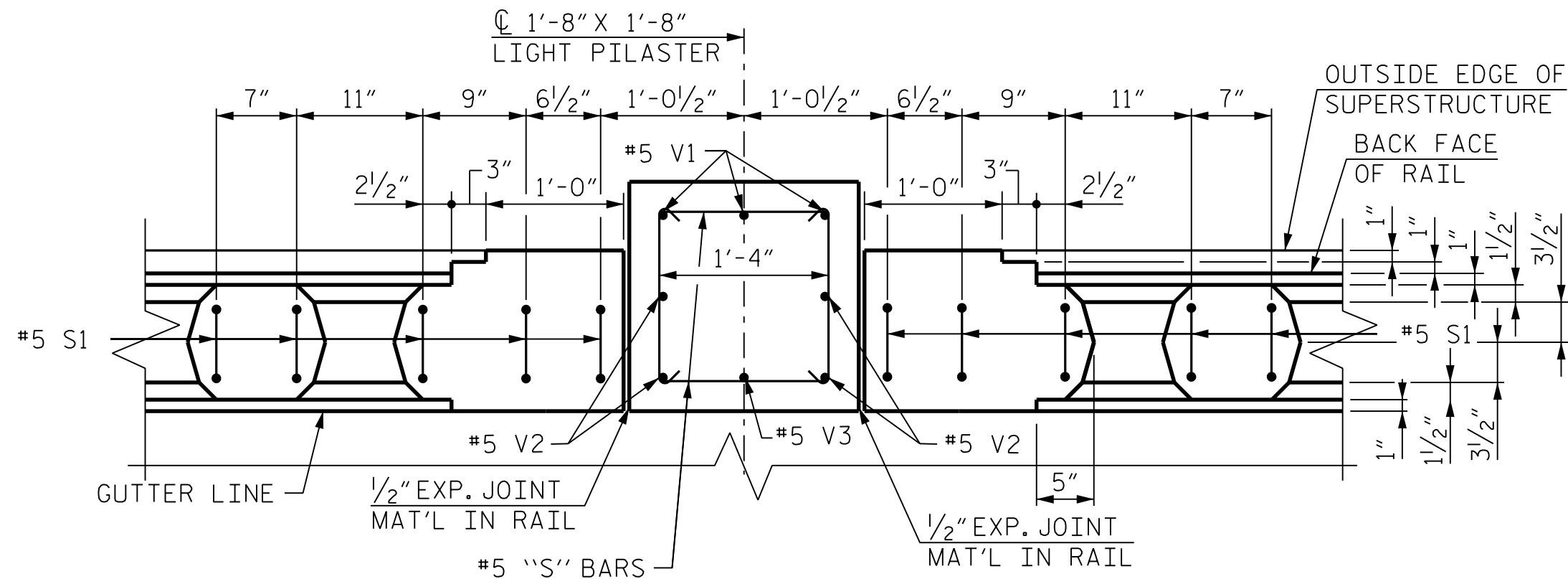
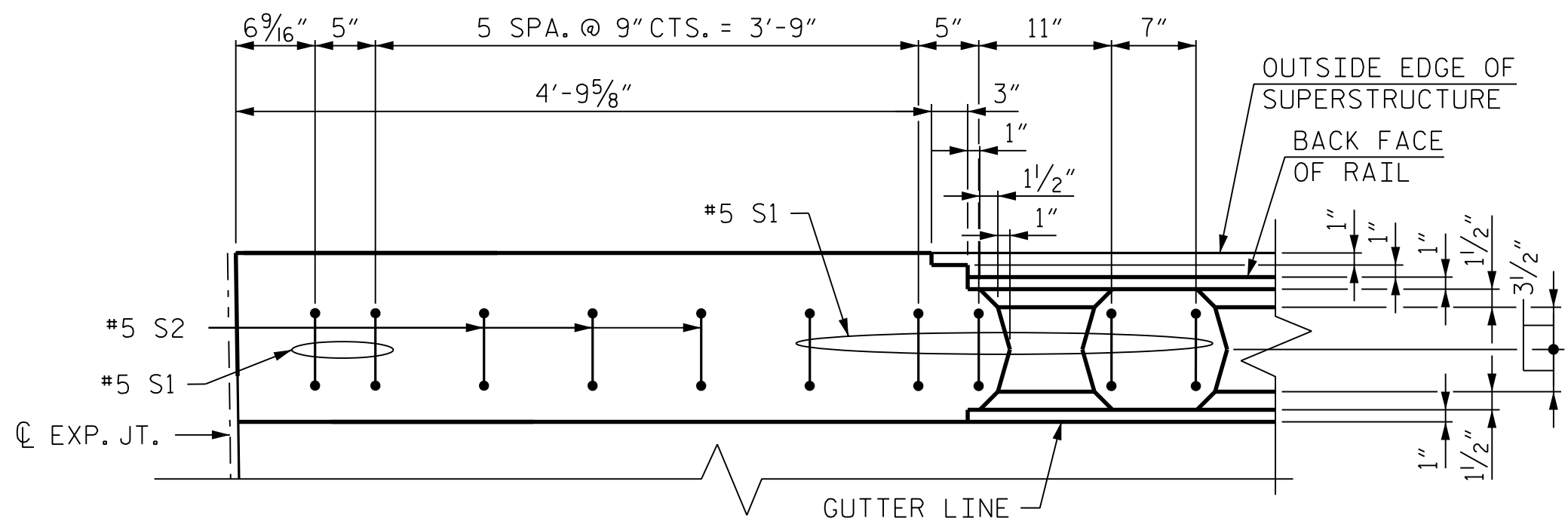
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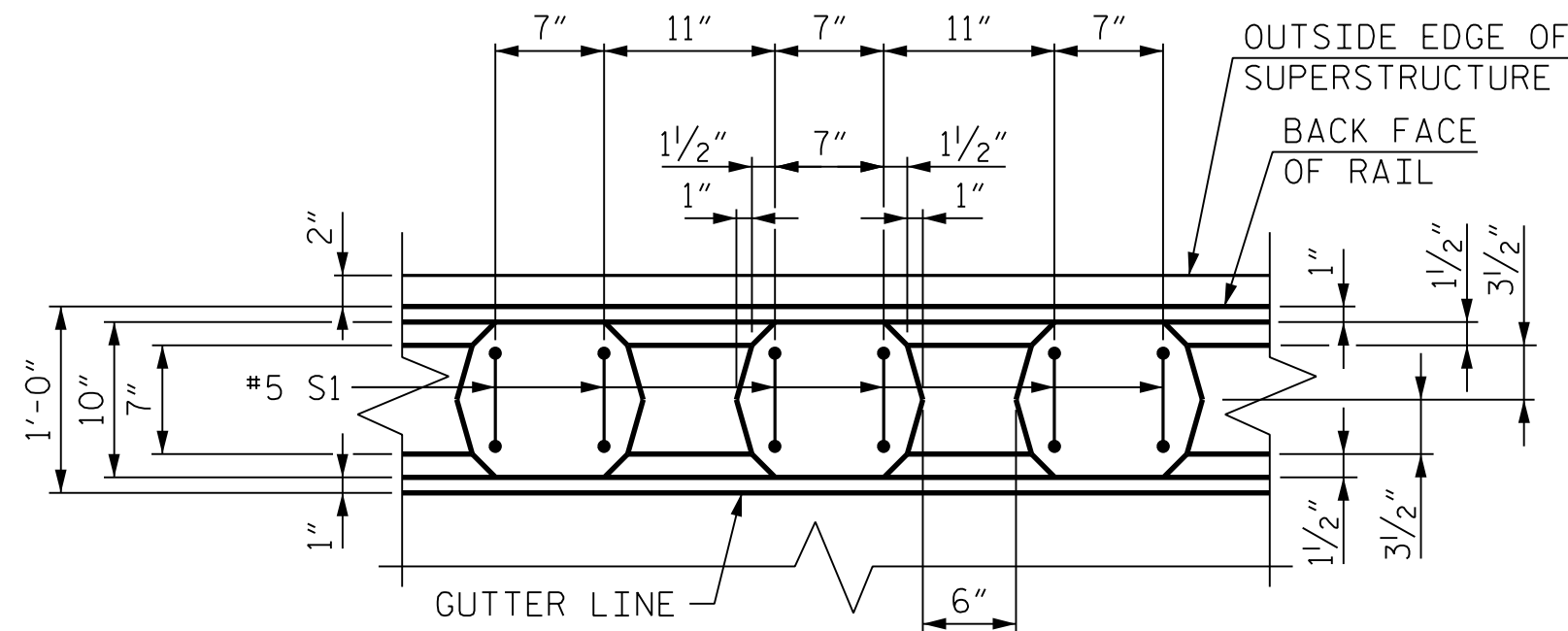
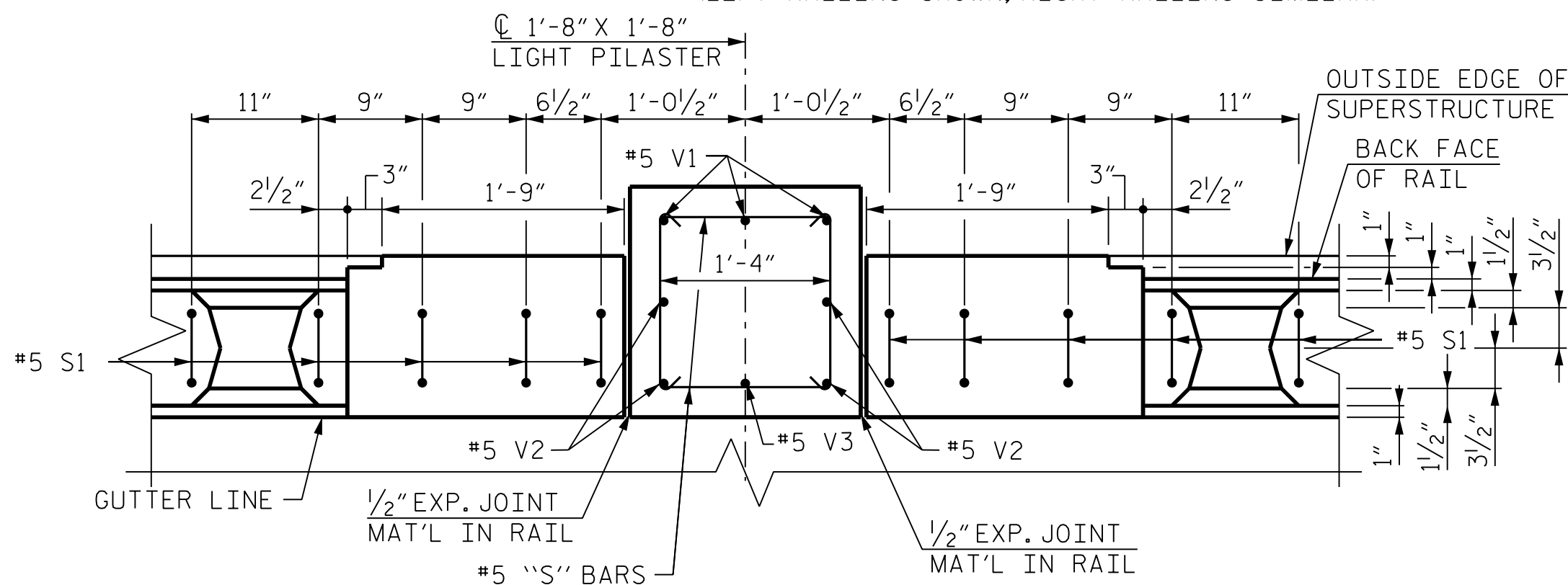
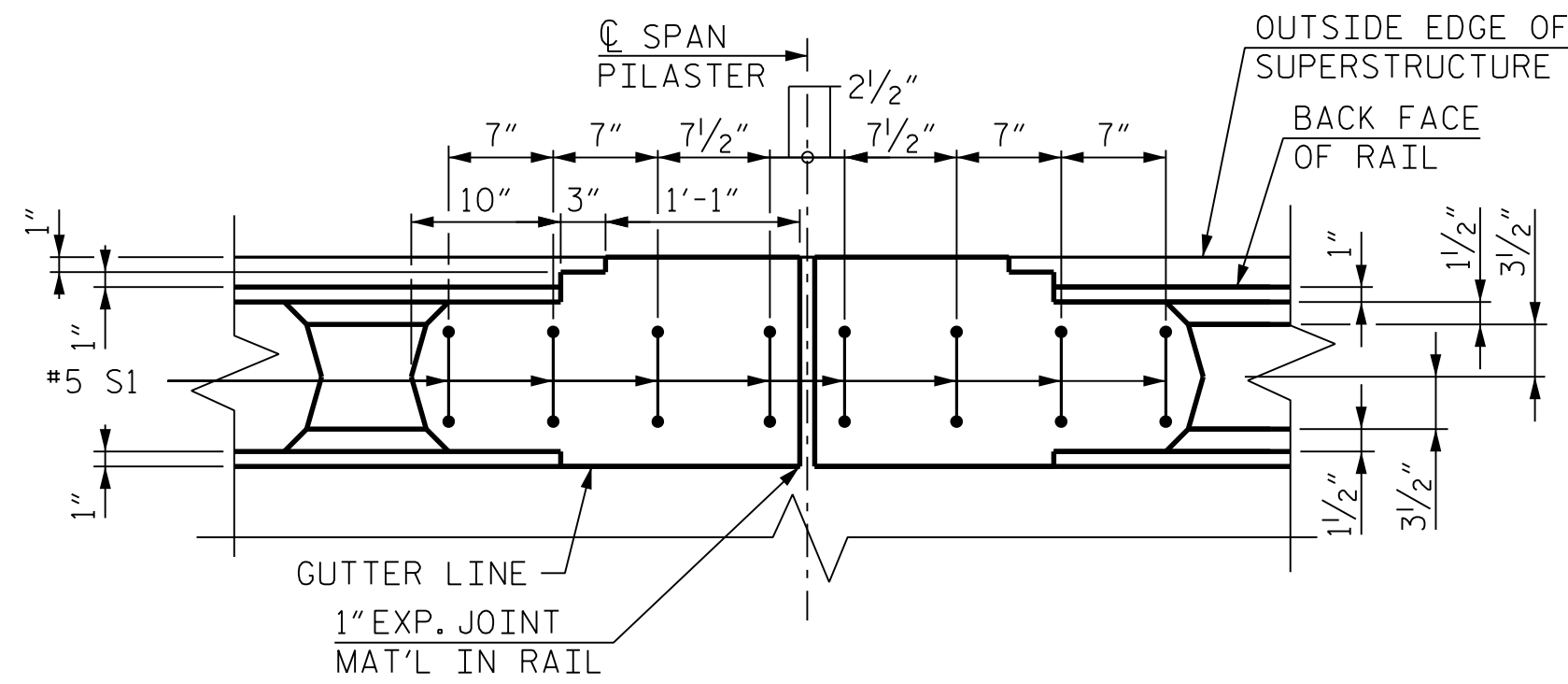
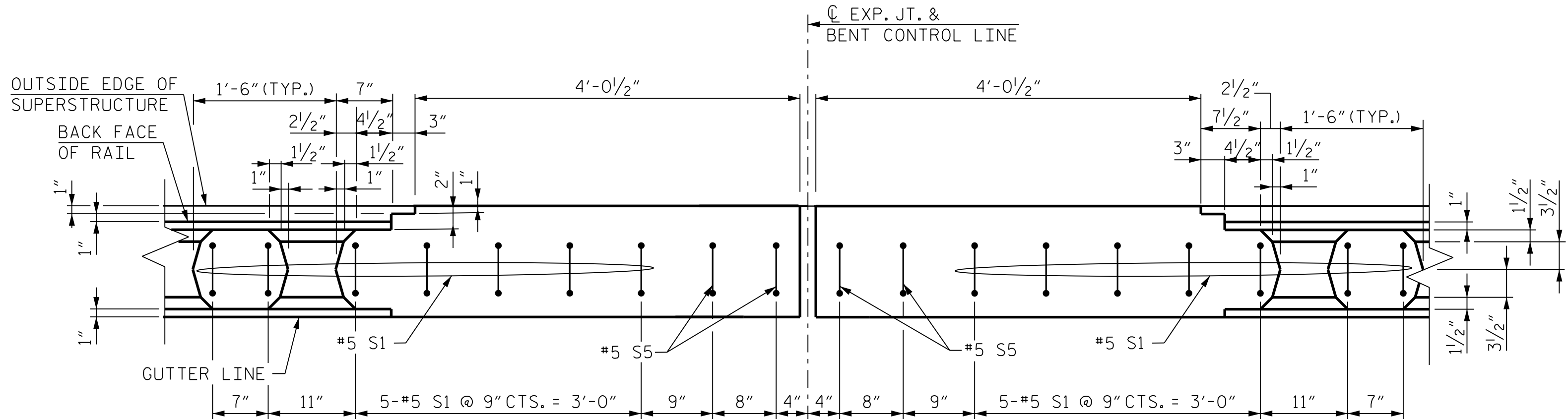
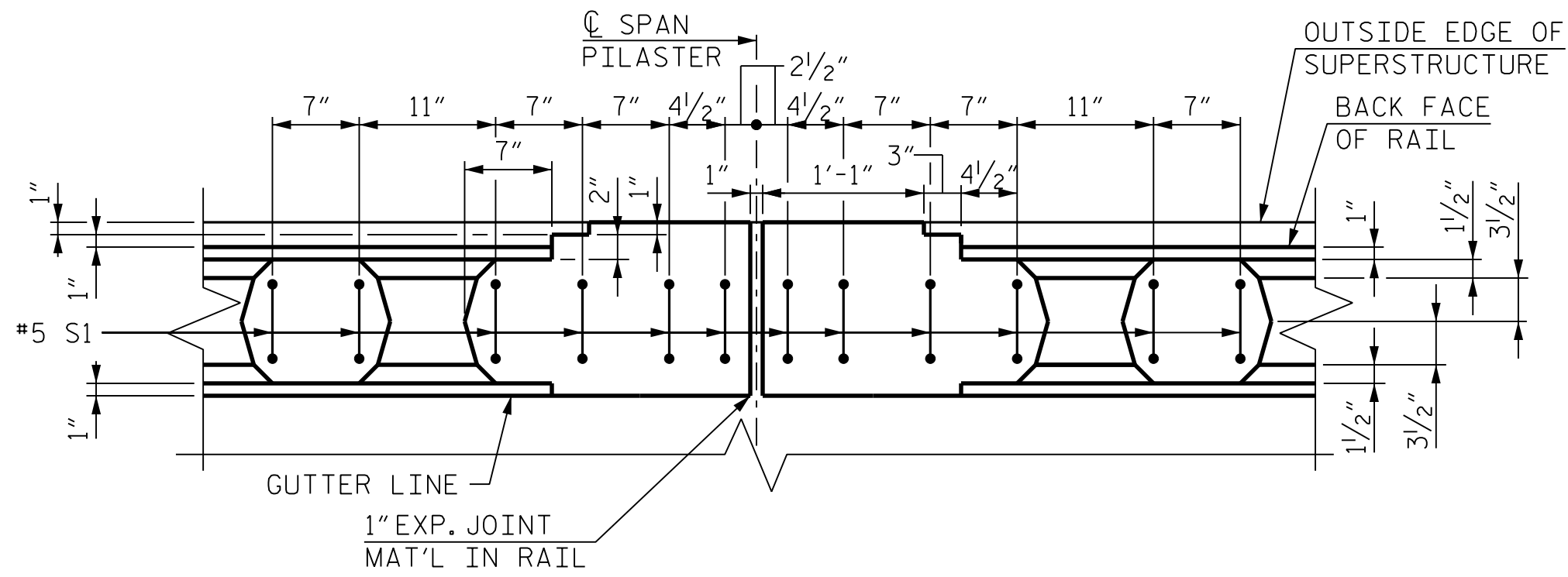
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CLASSIC BRIDGE RAIL
PLAN
SPANS I THRU K

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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			



NOTE:
"B" AND "U" BARS NOT SHOWN FOR CLARITY.
FOR CONDUIT AND FORMED OPENING DETAILS, SEE SHEETS S-111 AND S-112.



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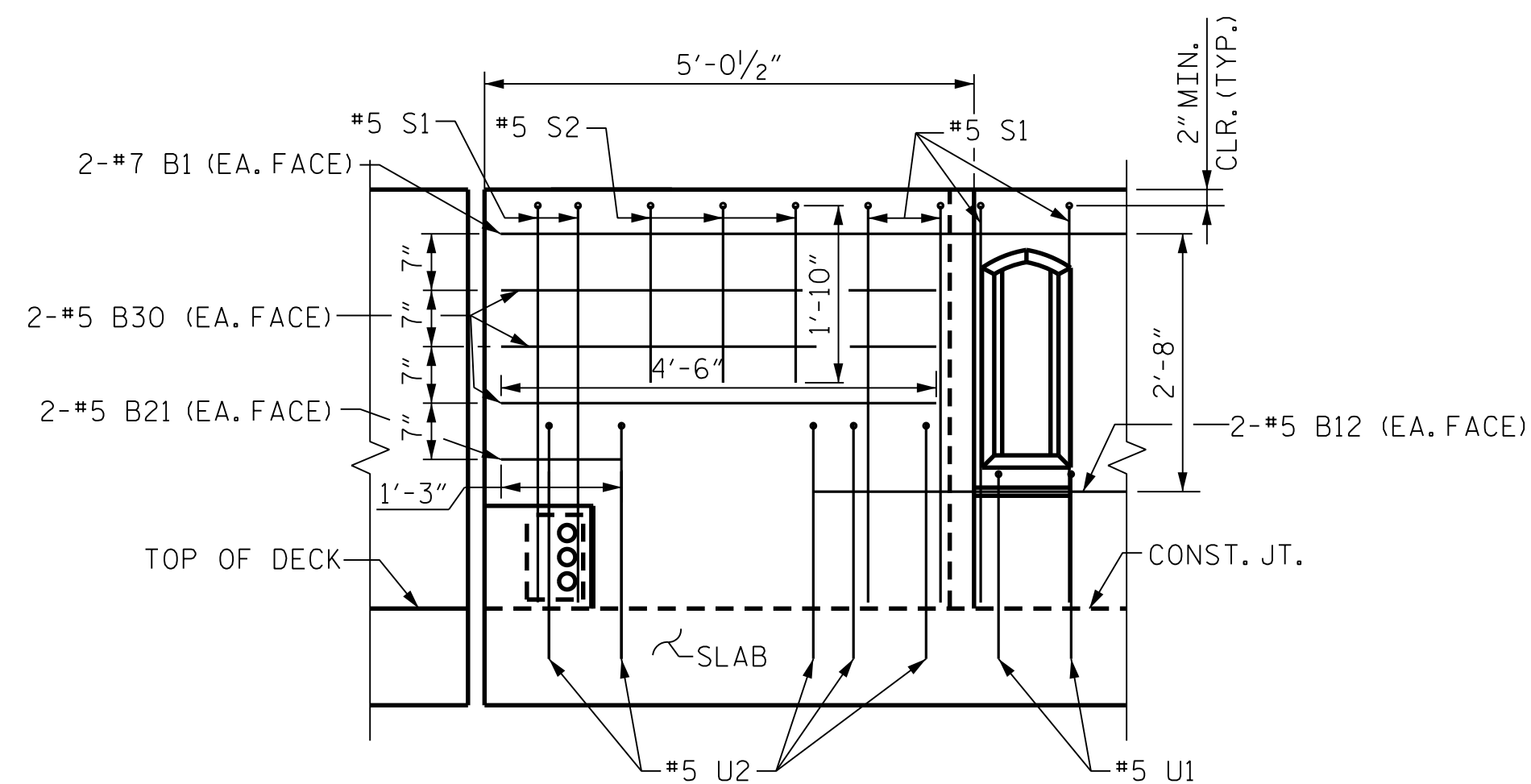
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GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

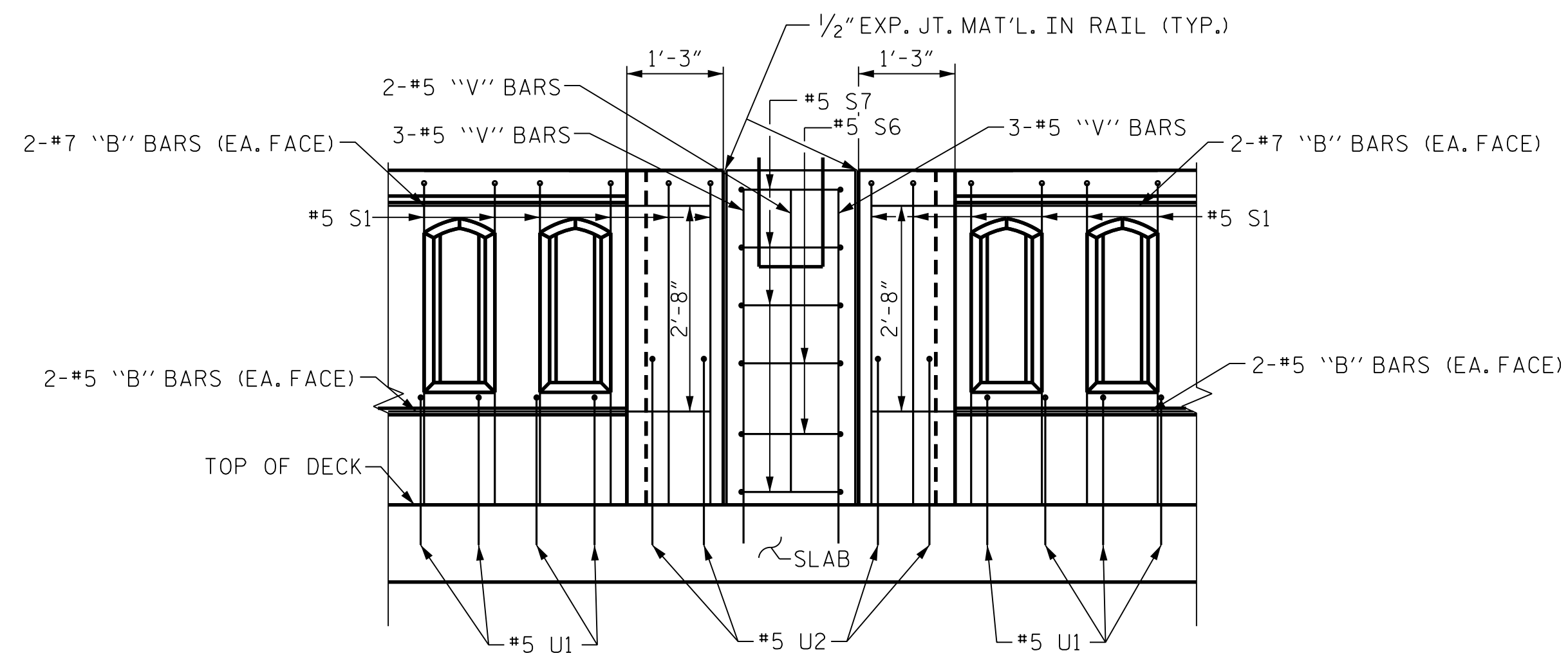
SHEET 5 OF 9

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SUPERSTRUCTURE CLASSIC BRIDGE RAIL PLAN DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-66					TOTAL SHEETS 118

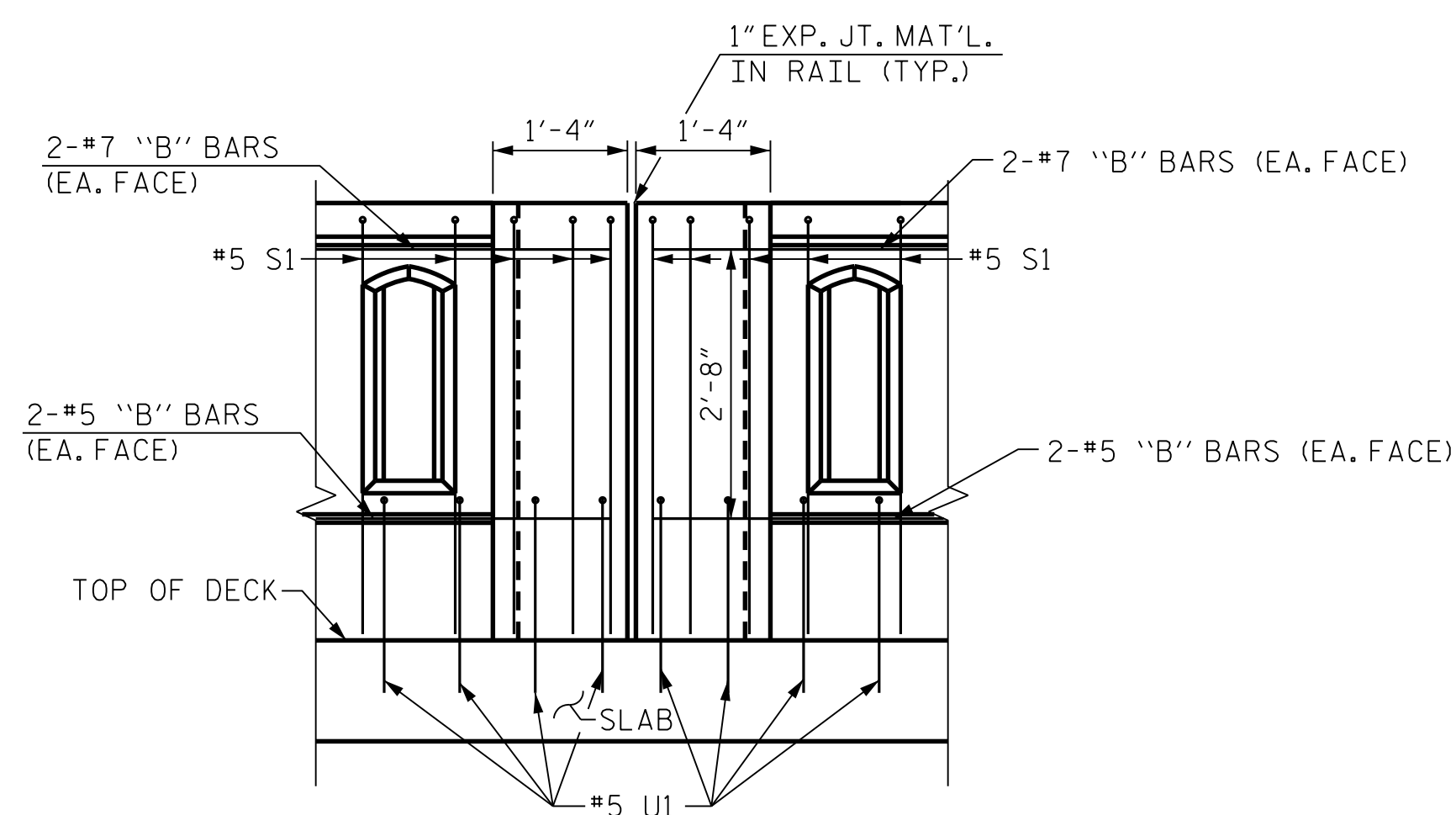


END BENT 1 ELEVATION DETAIL

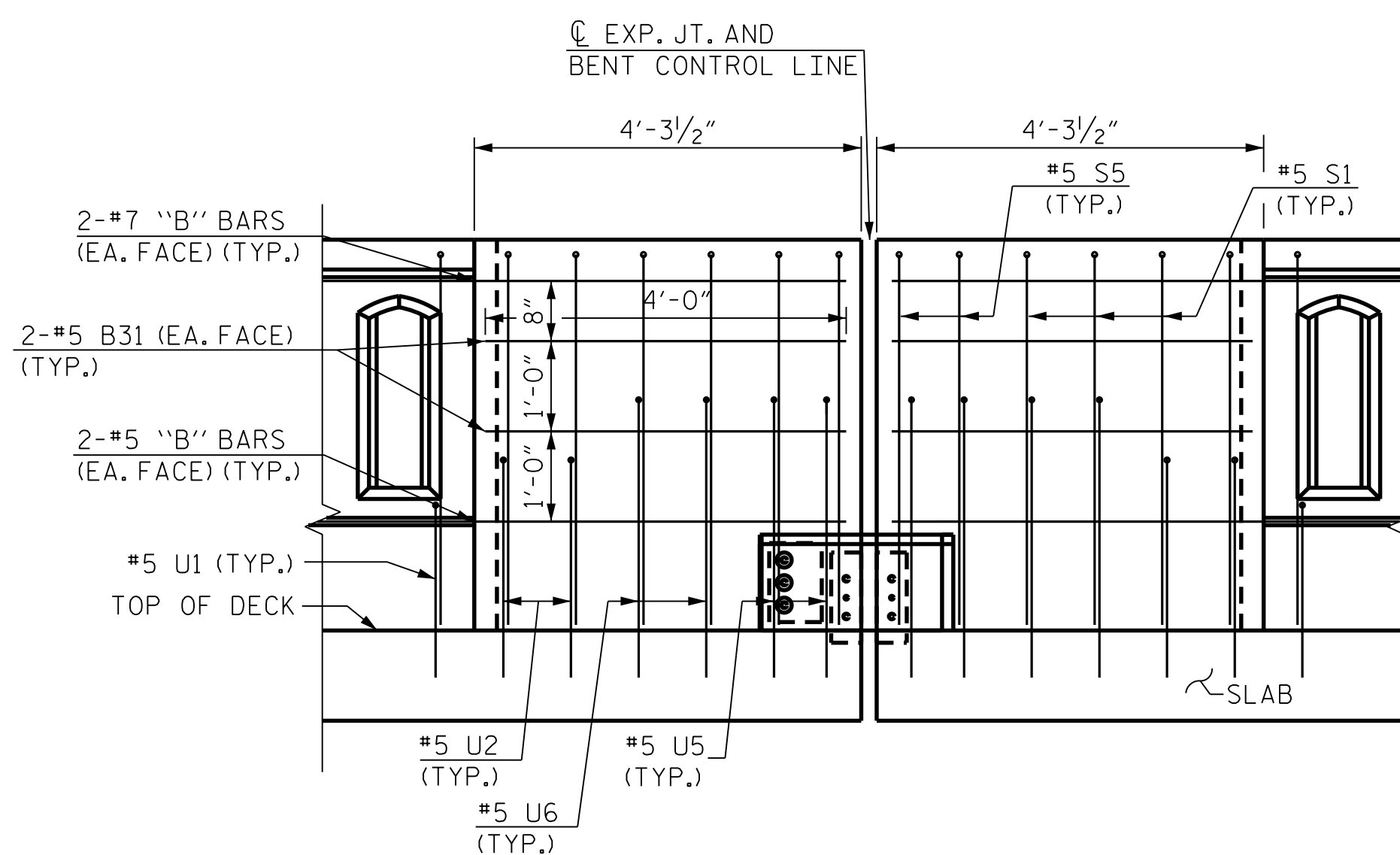
(END BENT 1 SHOWN, END BENT 2 SIMILAR)



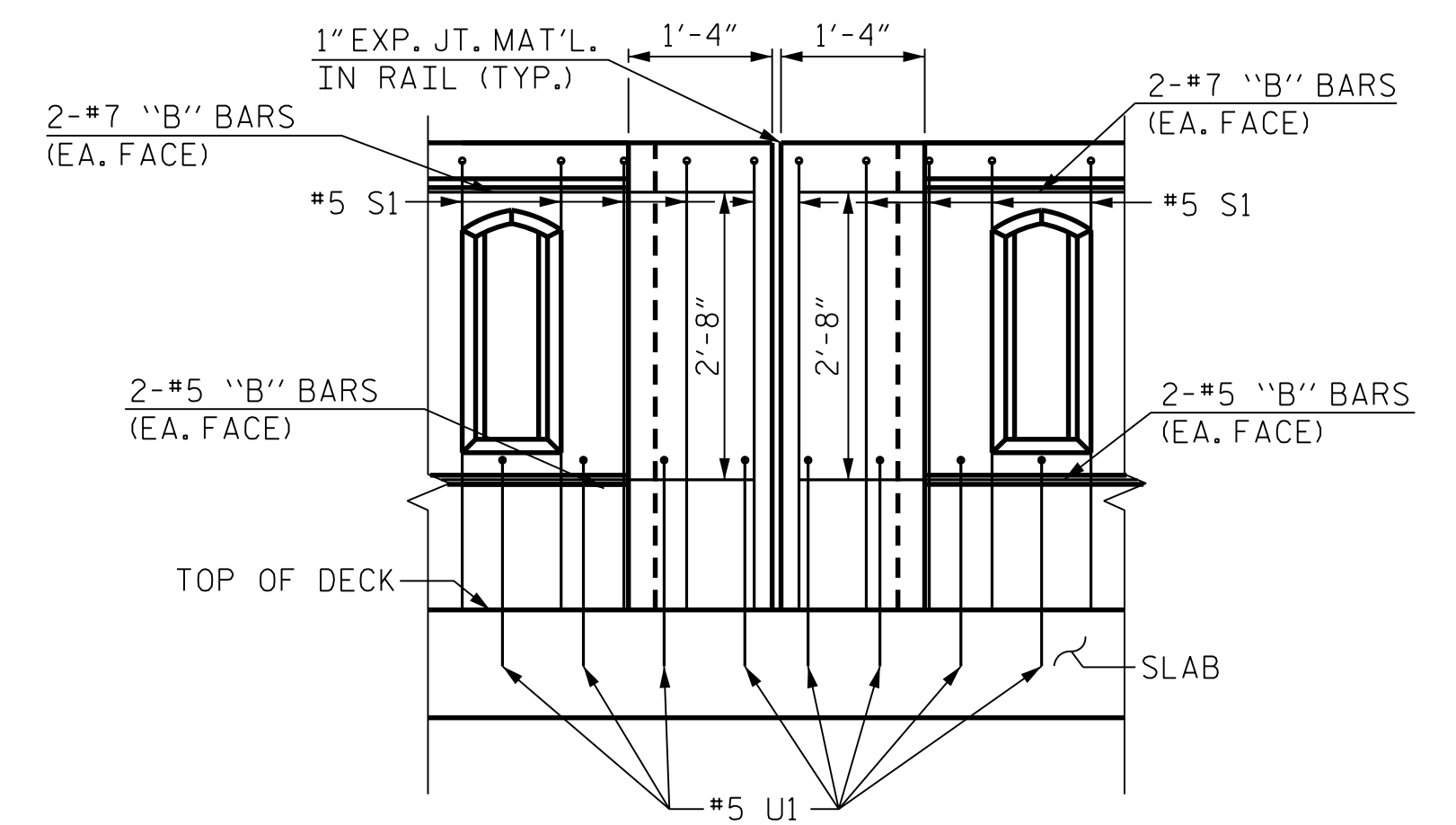
TYPICAL LIGHT PILASTER ELEVATION DETAIL



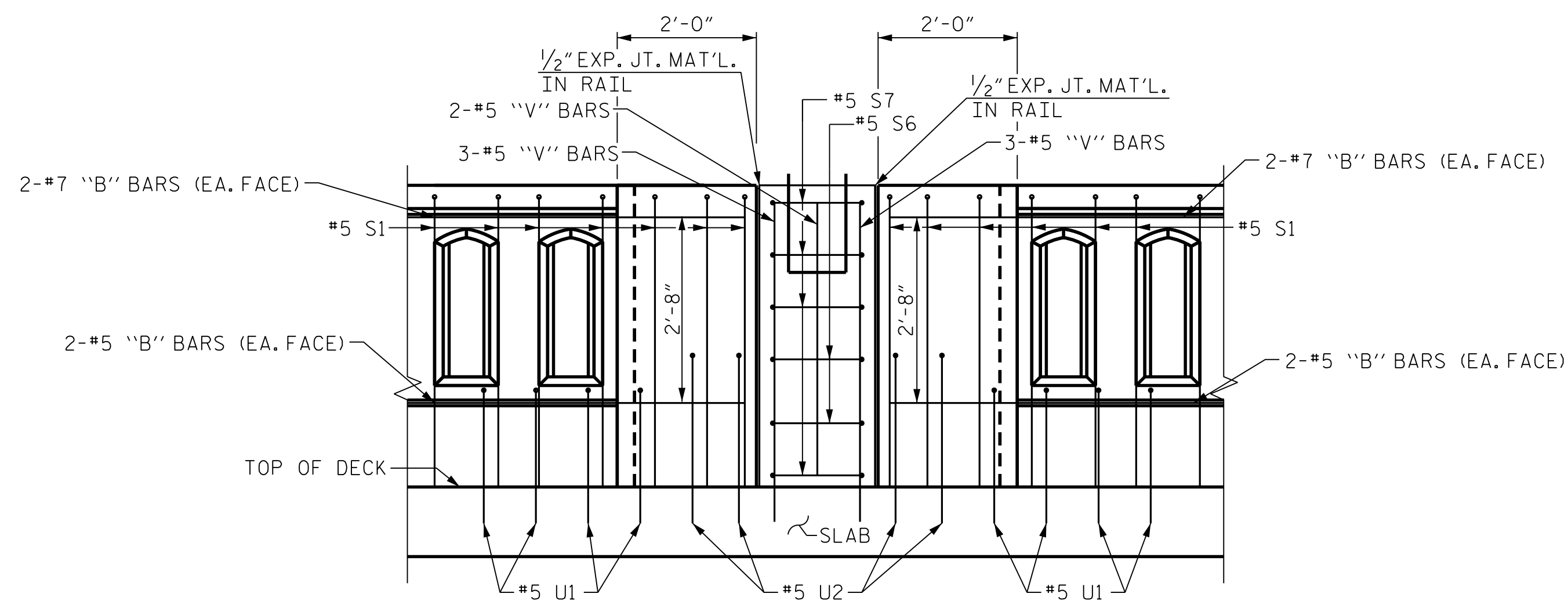
TYPICAL SPAN PILASTER AND FIXED
BENT ELEVATION DETAIL



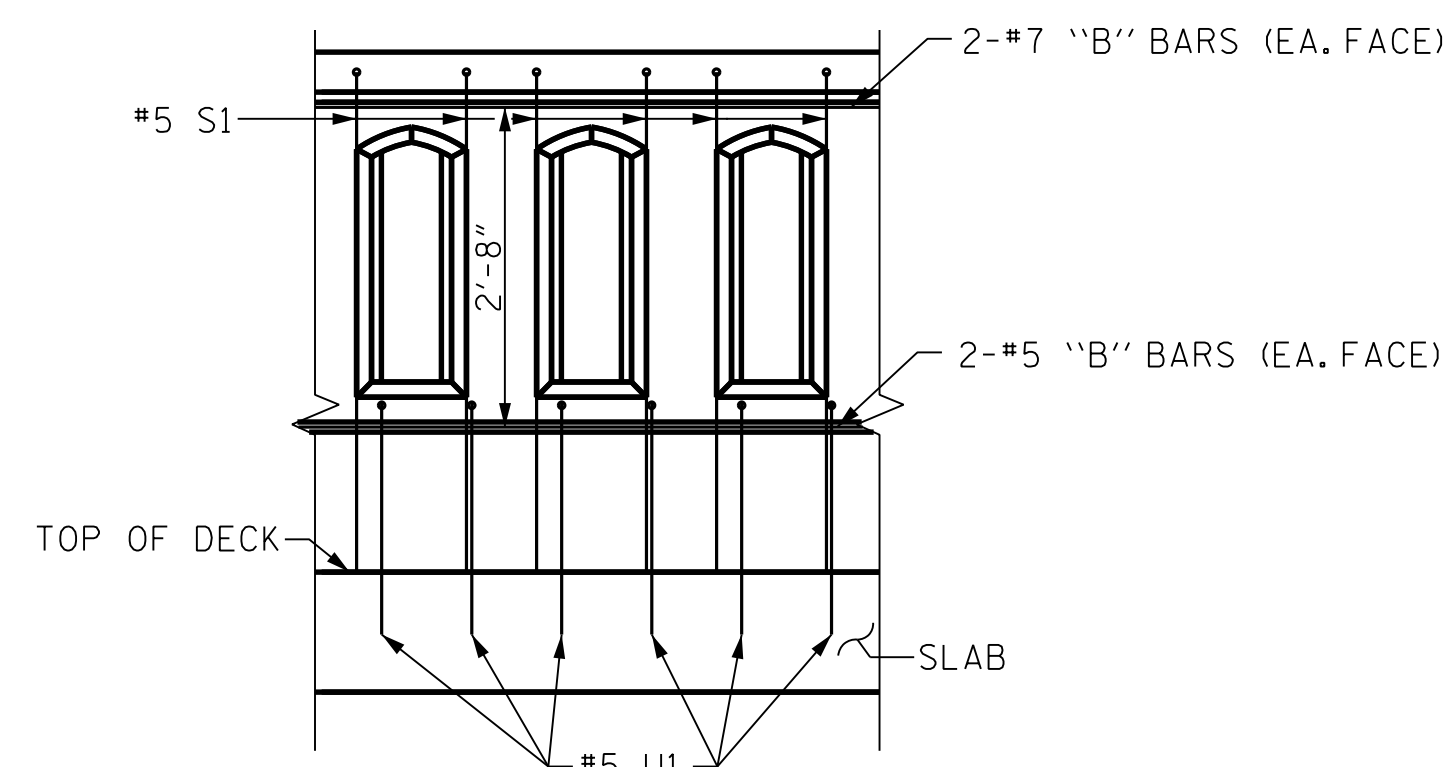
EXPANSION BENT ELEVATION DETAIL



SPAN D AND E SPAN
PILASTER ELEVATION DETAIL



SPAN D AND E LIGHT
PILASTER ELEVATION DETAIL



TYPICAL CLASSIC RAIL POST
ELEVATION DETAIL

NOTES:

FOR CONDUIT AND FORMED OPENING DETAILS, SEE
SHEETS S-111 AND S-112.

FOR EXPANSION JOINT SEAL DETAILS, SEE EXPANSION
JOINT DETAIL SHEETS.

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 7 OF 9

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE

CLASSIC BRIDGE RAIL

ELEVATION DETAILS

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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

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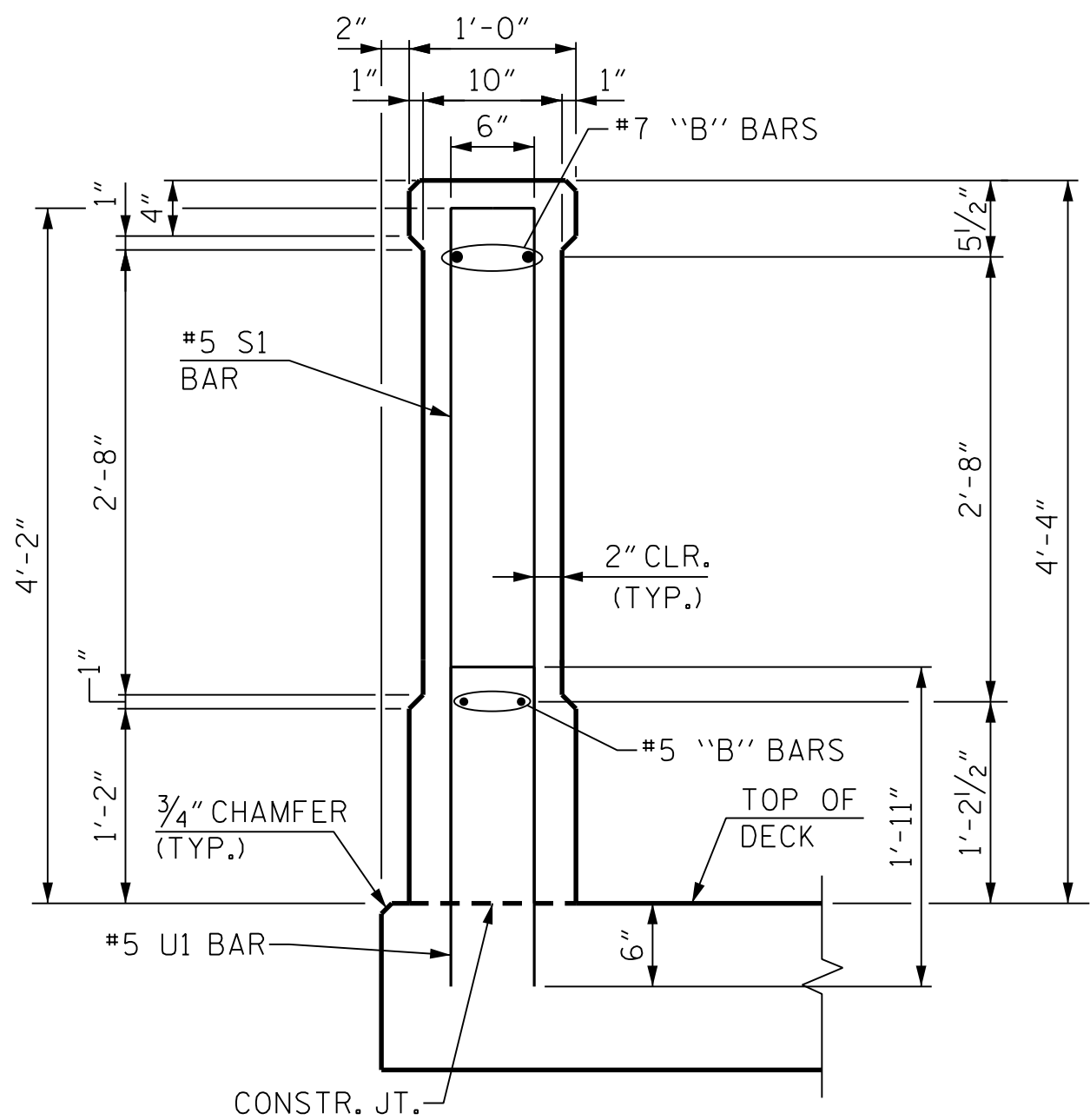
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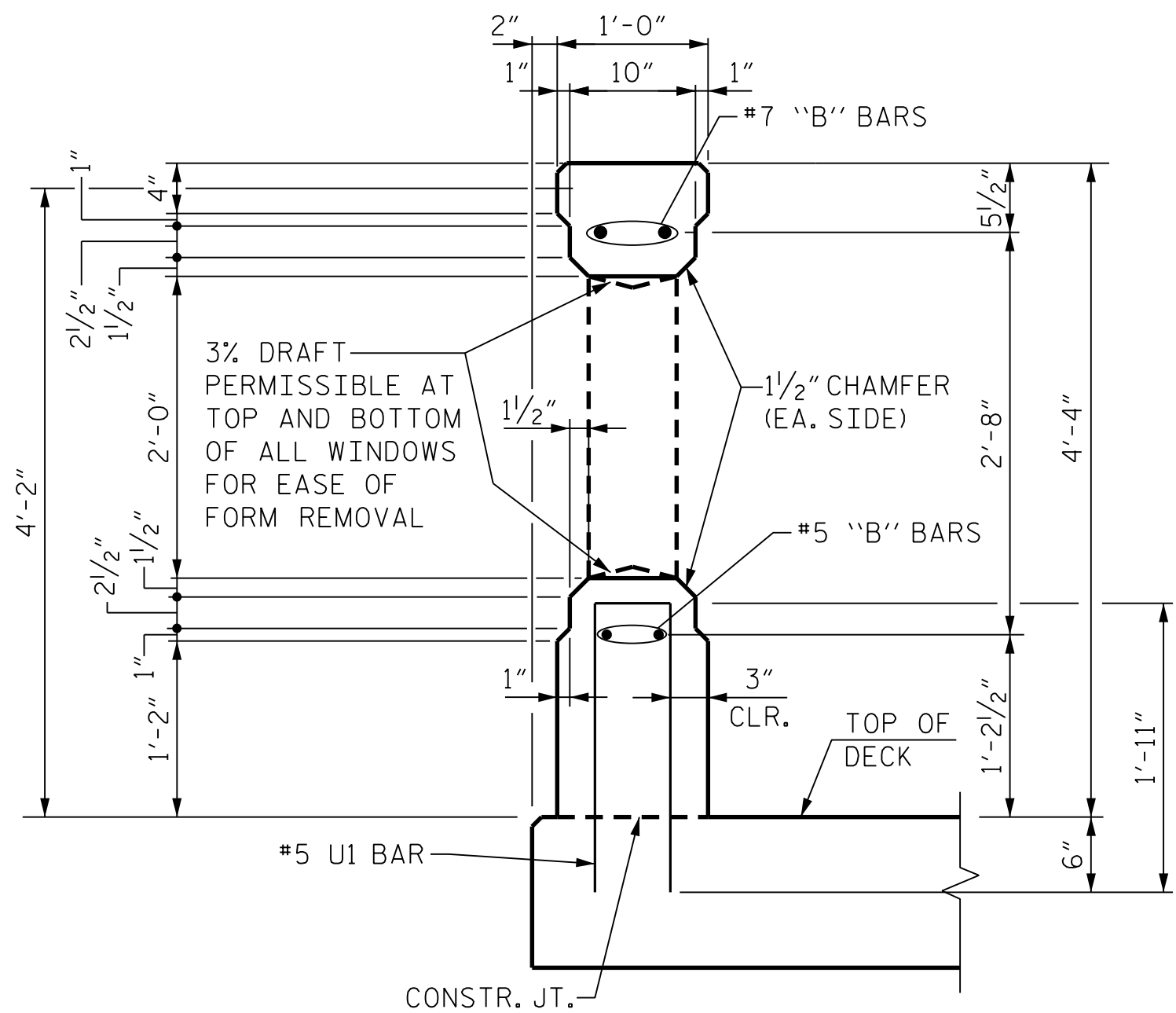
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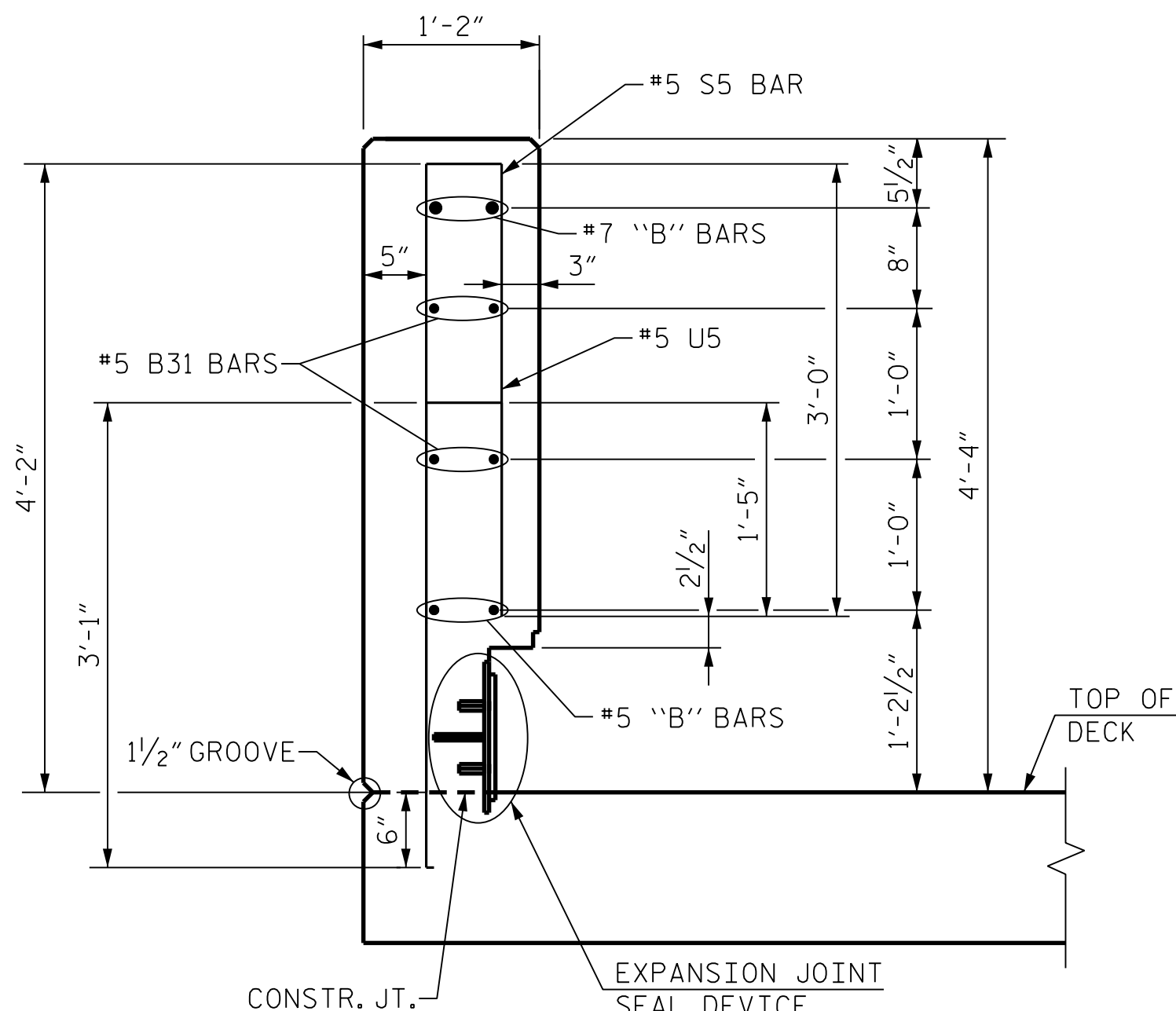
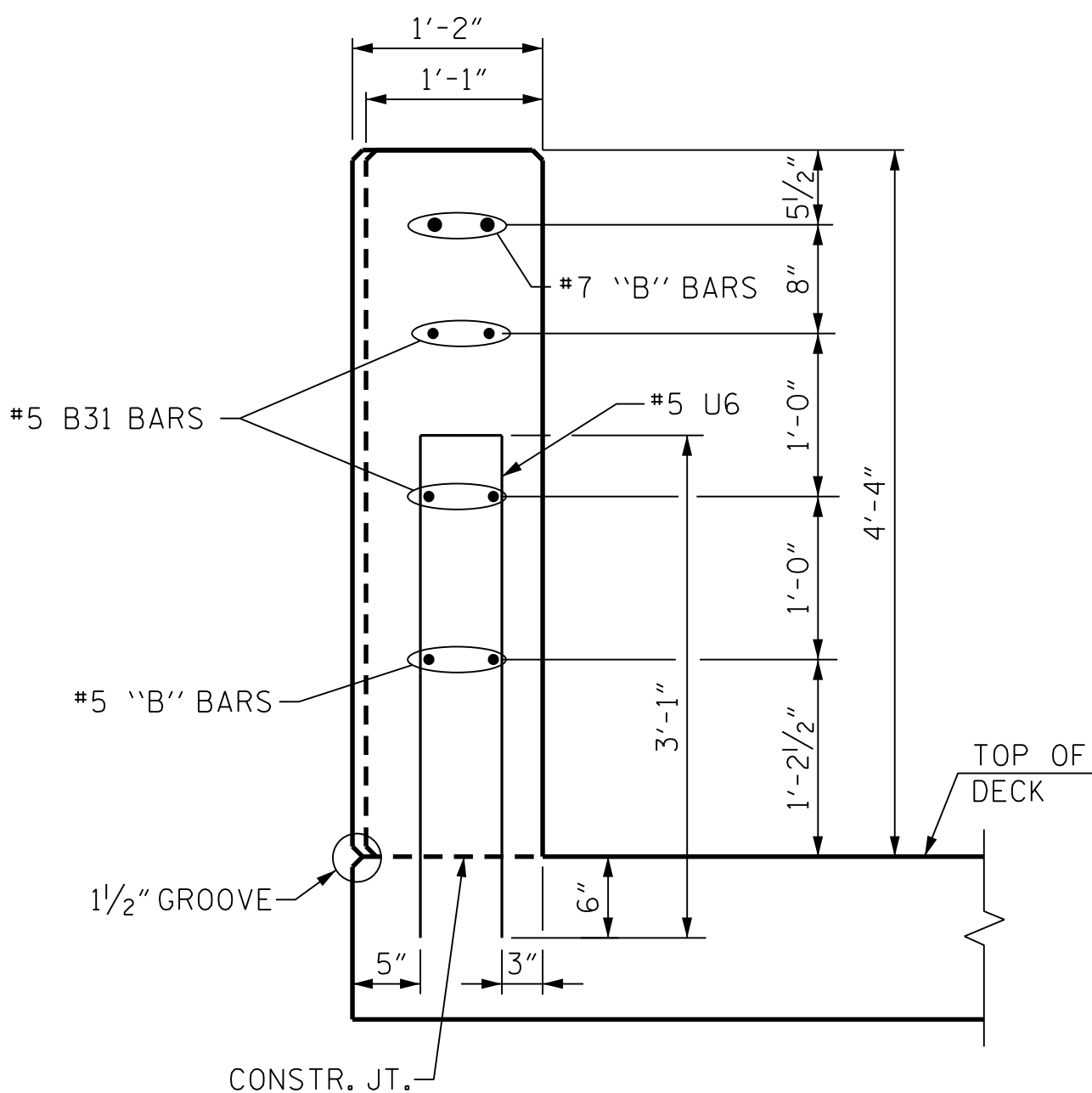
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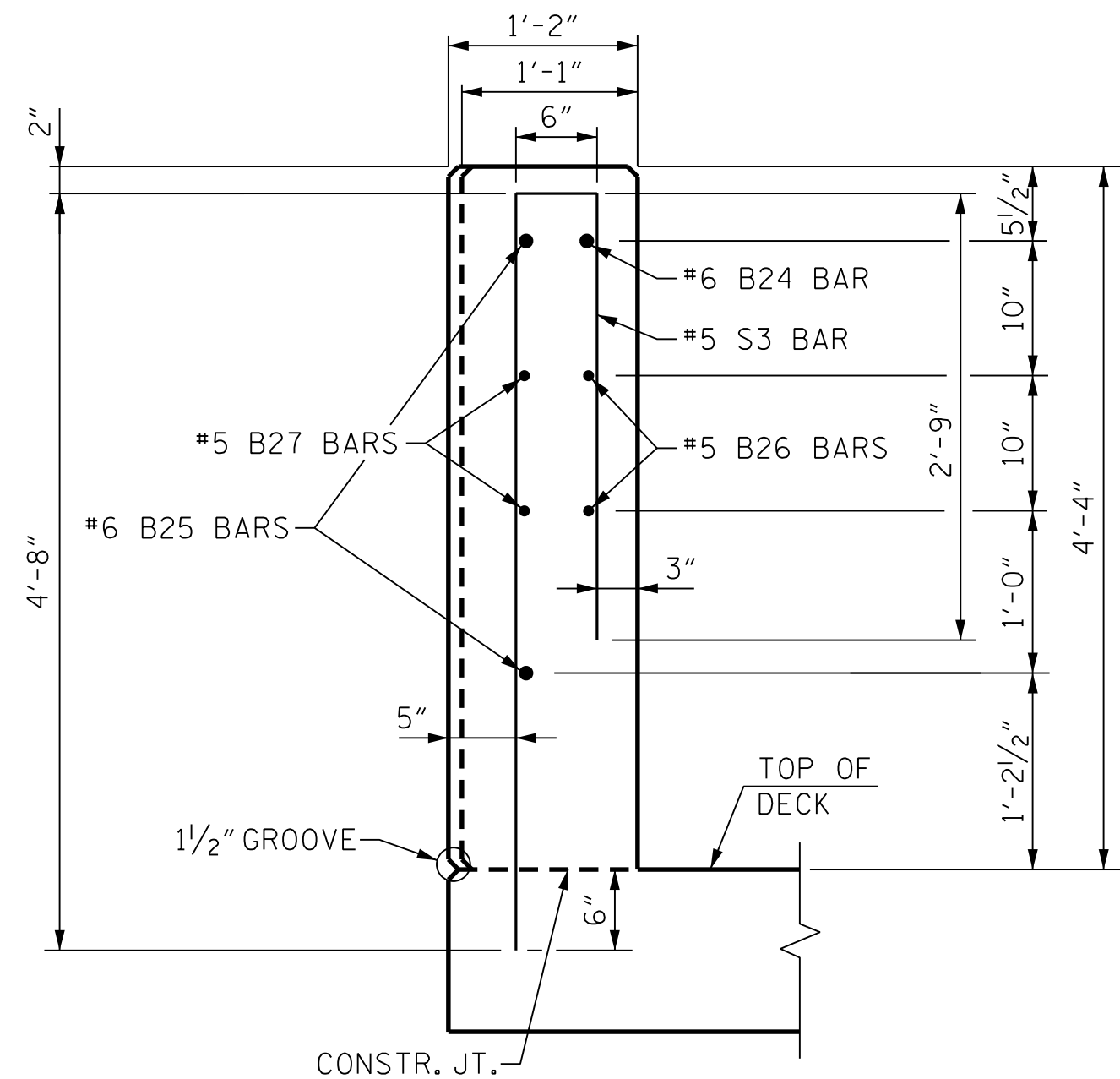
SECTION THRU POST OF RAIL



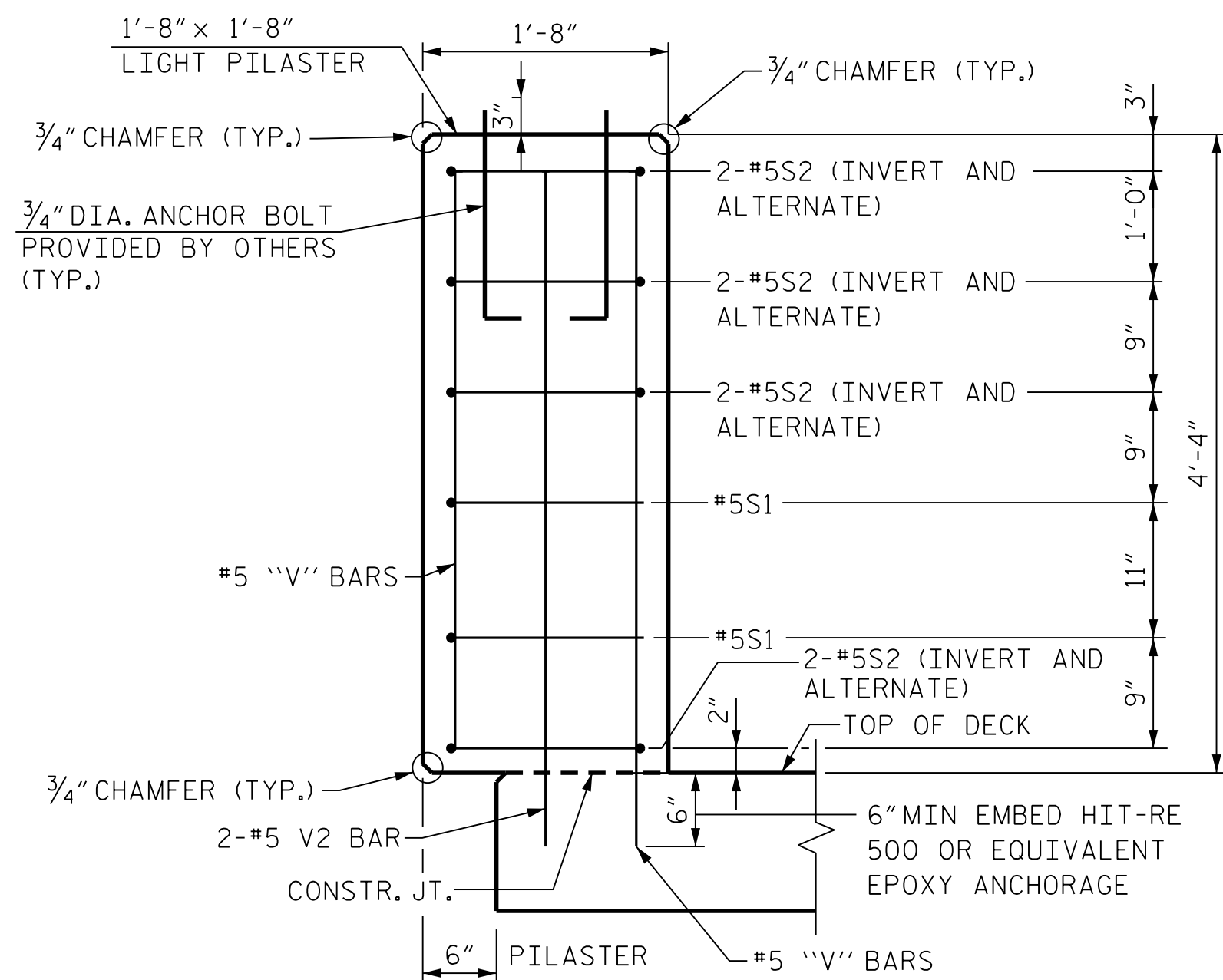
SECTION THRU WINDOW OF RAIL



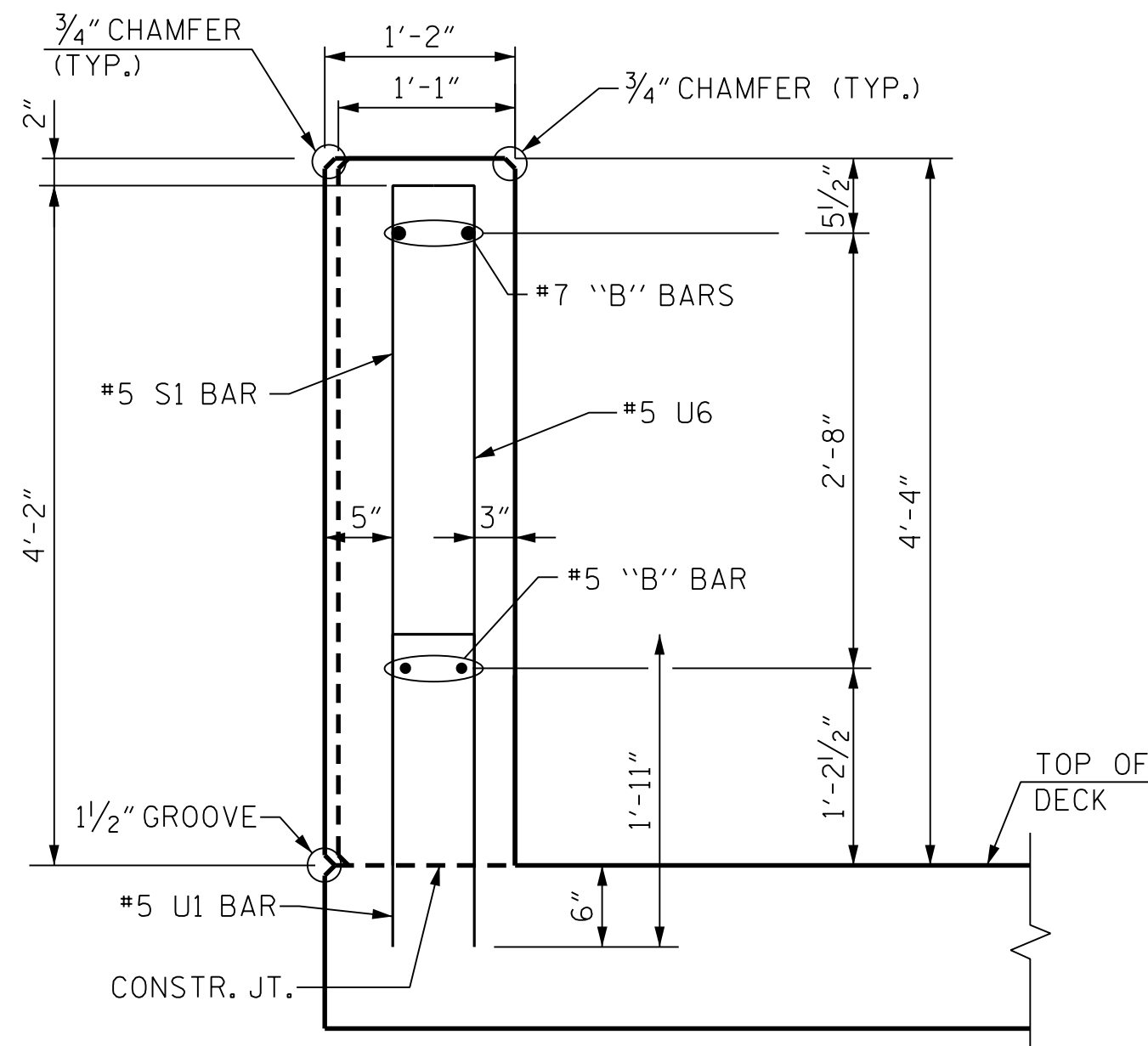
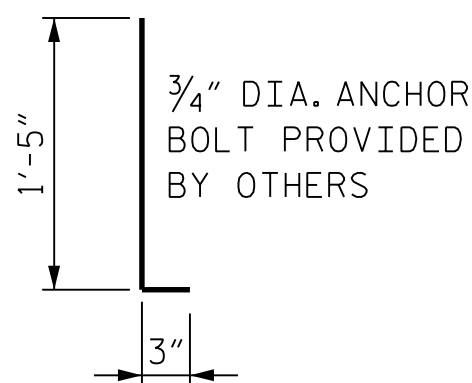
SECTIONS THRU EXPANSION JOINT



SECTION THRU RAIL AT OBSERVION PLATFORM



SECTION THRU RAIL AT LIGHT PILASTER



SECTION THRU RAIL AT SPAN AND BENT PILASTER

PROJECT NO. B-6051/U-6143
CASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 8 OF 9

NOTES:
REINFORCING IN DECK SLAB NOT SHOWN FOR CLARITY.
FOR CONDUIT AND FORMED OPENING DETAILS, SEE SHEET S-111 AND S-112.

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DESIGN ENGINEER OF RECORD : J. W. GENTRY

DATE : FEB 2025
DATE : FEB 2025
DATE : FEB 2025

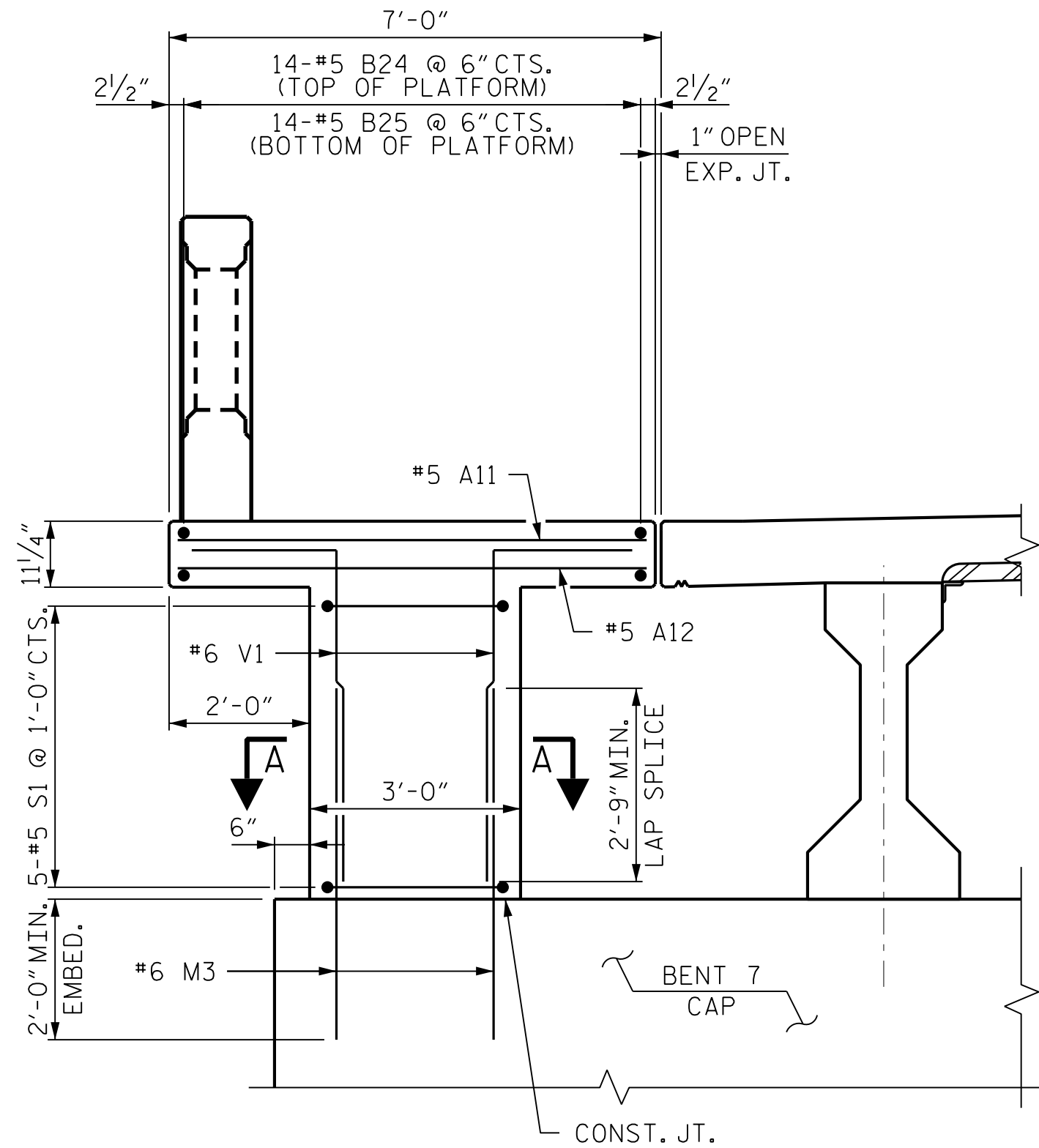
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2			4			
TOTAL SHEETS						118

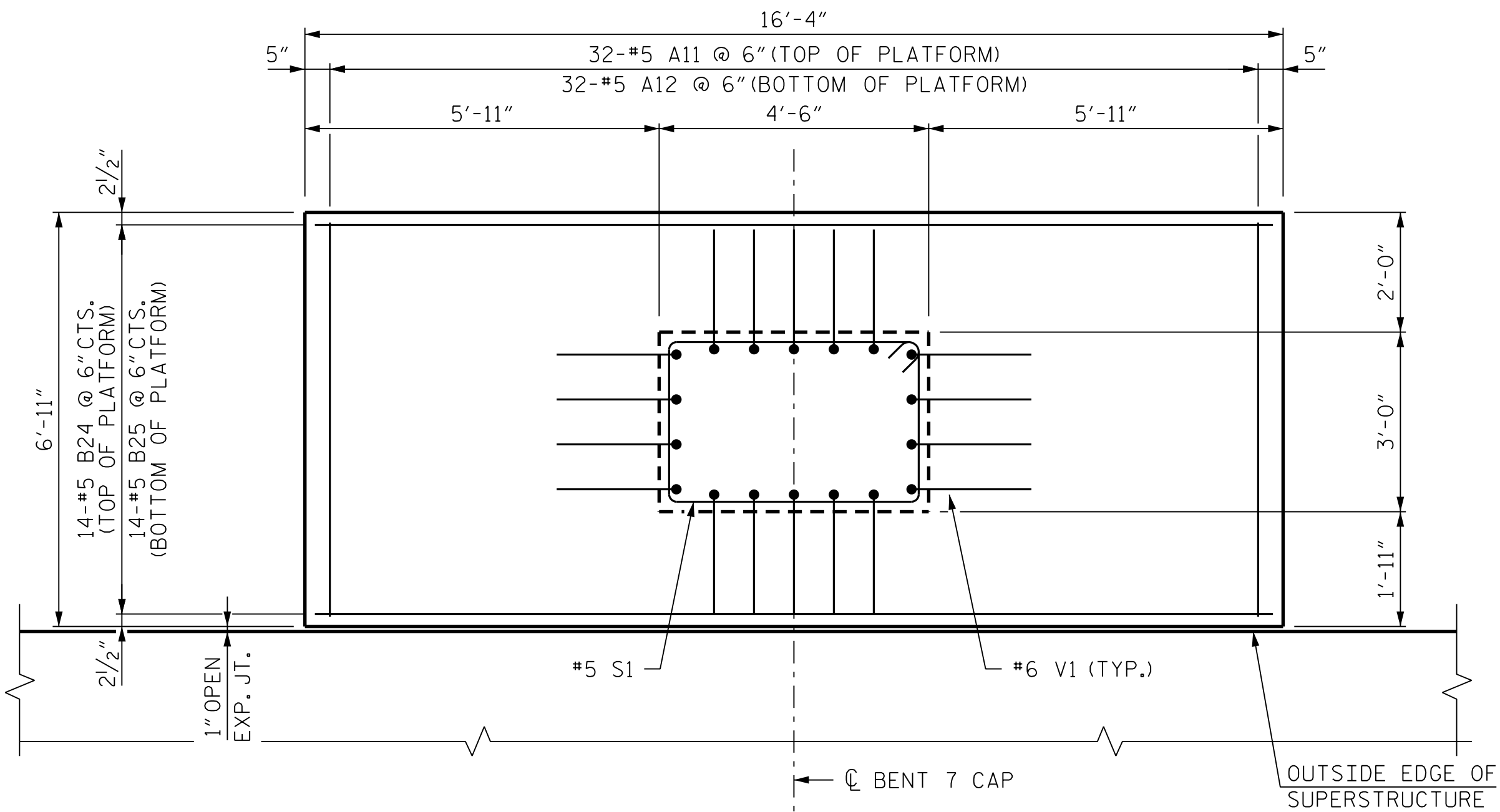
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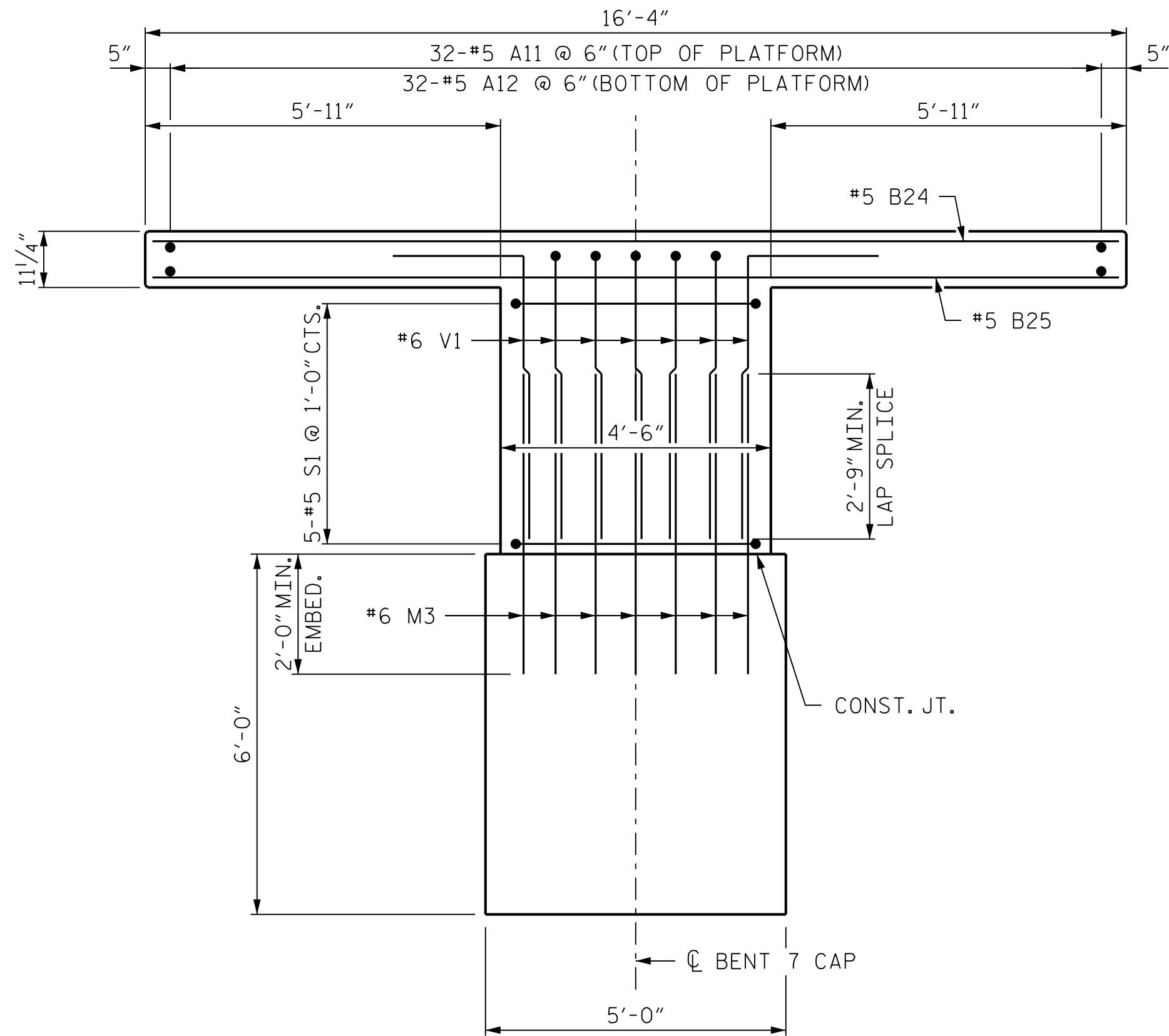


SECTION THRU OBSERVATION PLATFORM

NOTE: REINFORCING STEEL IN DECK AND BENT CAP NOT SHOWN
BEARING AND SOLE PLATES NOT SHOWN

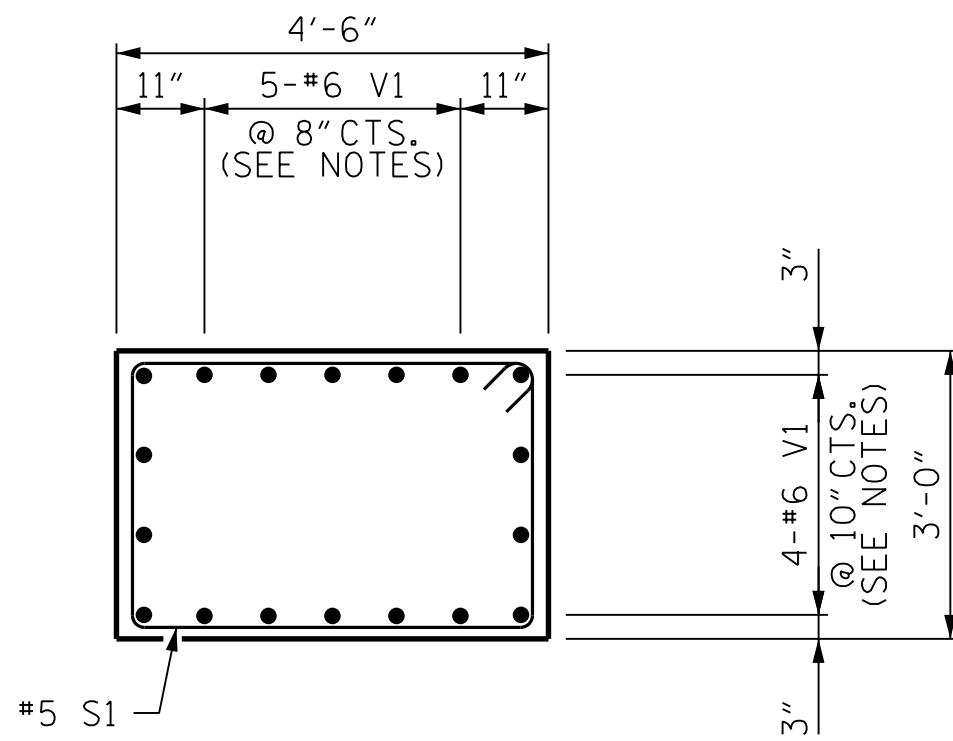


PLAN OF OBSERVATION PLATFORM - LEFT SIDE



END VIEW

NOTE: BARRIER NOT SHOWN FOR CLARITY



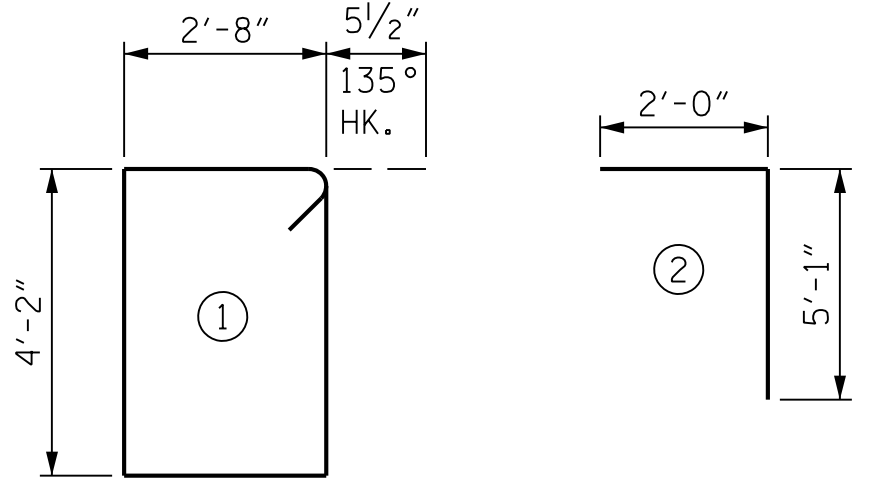
SECTION A-A

NOTES:

REINFORCING STEEL MAY BE SHIFTED SLIGHTLY
AS NECESSARY TO AVOID INTERFERENCE WITH
DECK SLAB AND BENT CAP REINFORCING.

FOR #6 M3 BARS, SEE SHEET S-97.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR ONE OBSERVATION PLATFORM

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A11	32	#5	STR.	6'-7"	220
A12	32	#5	STR.	6'-7"	220
*B24	14	#5	STR.	16'-0"	234
B25	14	#5	STR.	16'-0"	234
S1	5	#5	1	14'-7"	76
*V1	18	#6	2	7'-1"	192

REINFORCING STEEL	530 LBS
*EPOXY COATED REINFORCING STEEL	646 LBS
CLASS AA CONCRETE	6.3 C.Y.

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
OBSERVATION PLATFORM
DETAILS
(LEFT SIDE)

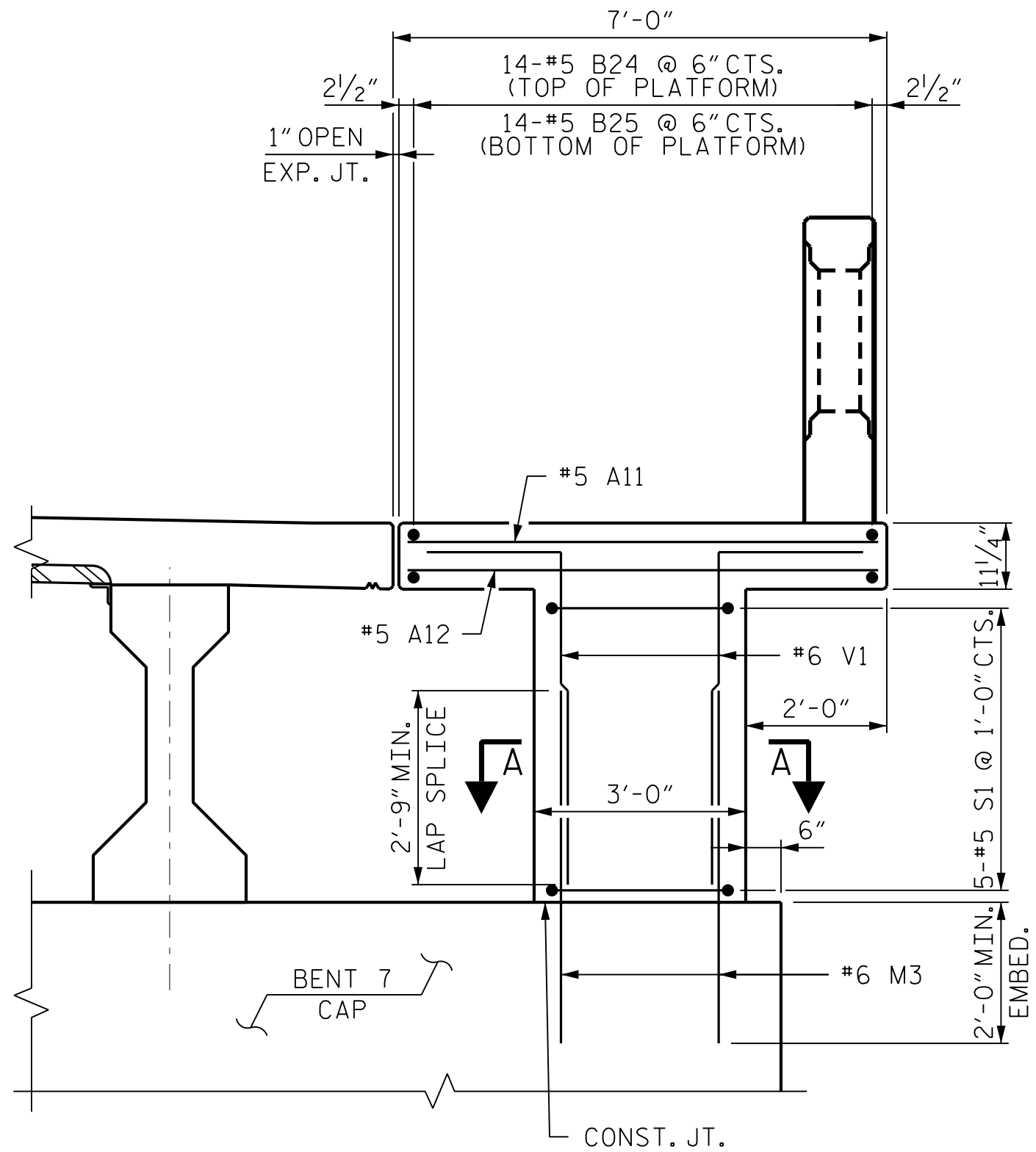
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NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-71
2			4			TOTAL SHEETS 118

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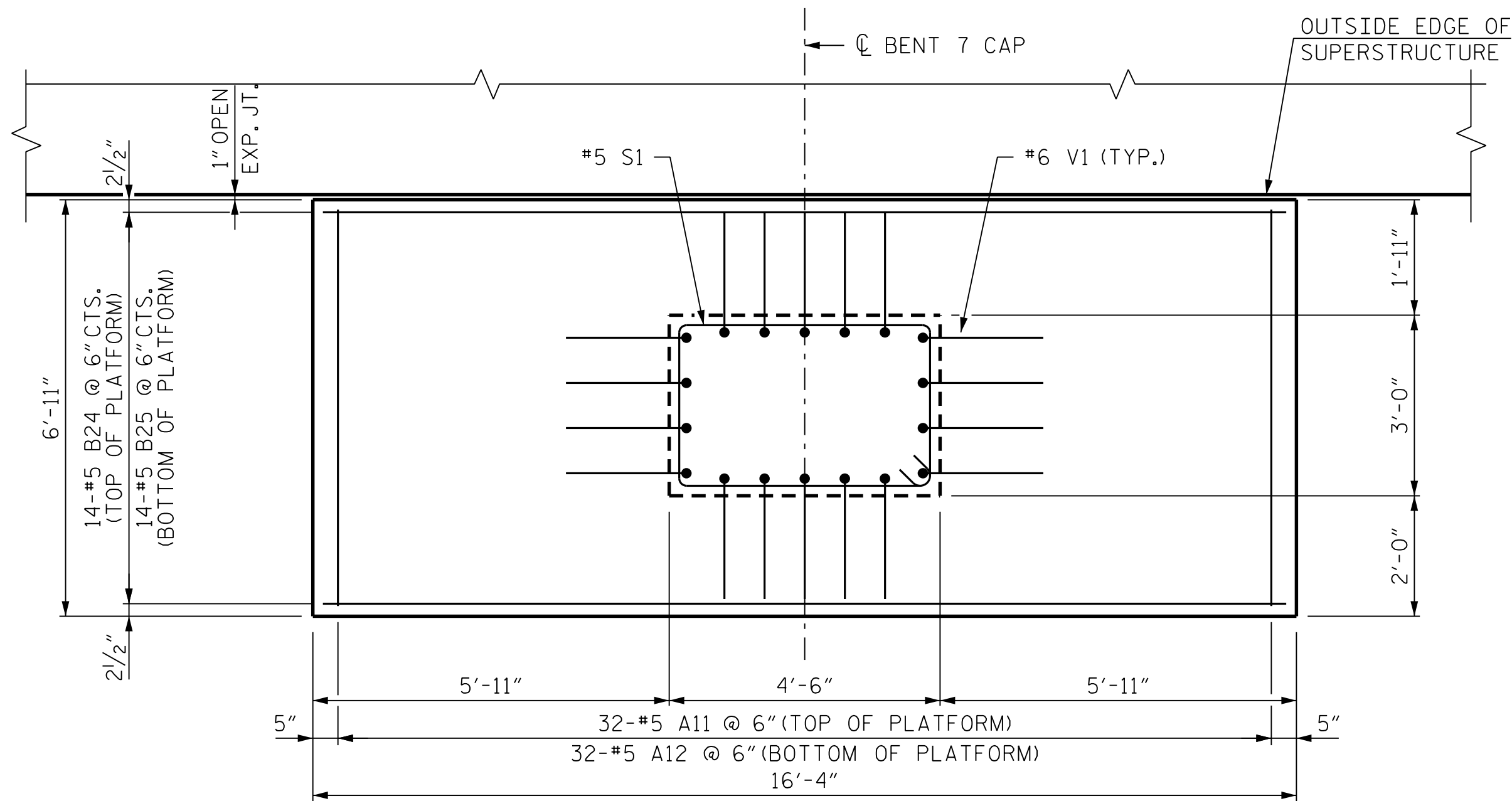
4/9/2026
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PROFESSIONAL
SEAL
35630
ENGINEER
JOSHUA W. GENTRY
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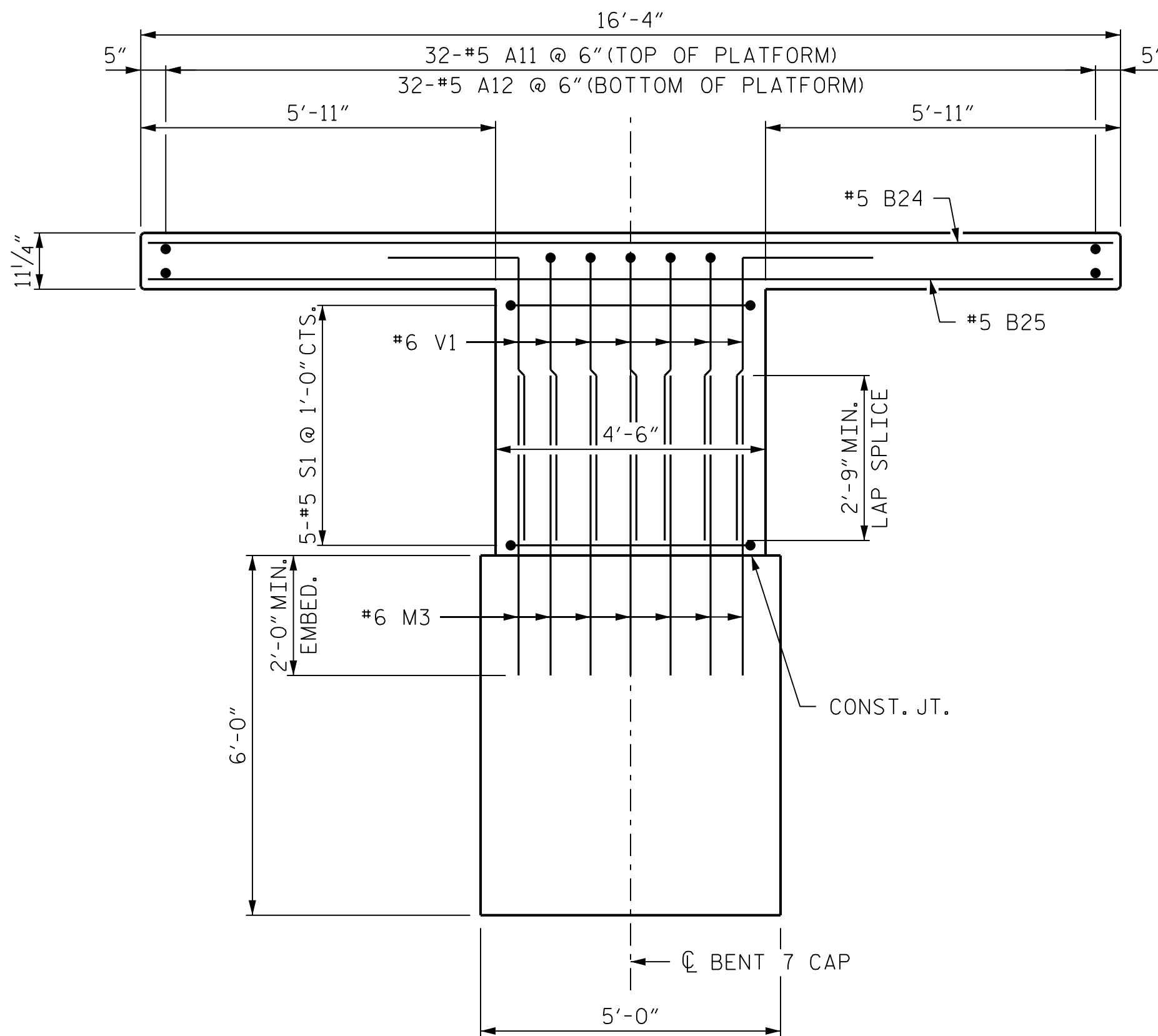


SECTION THRU OBSERVATION PLATFORM

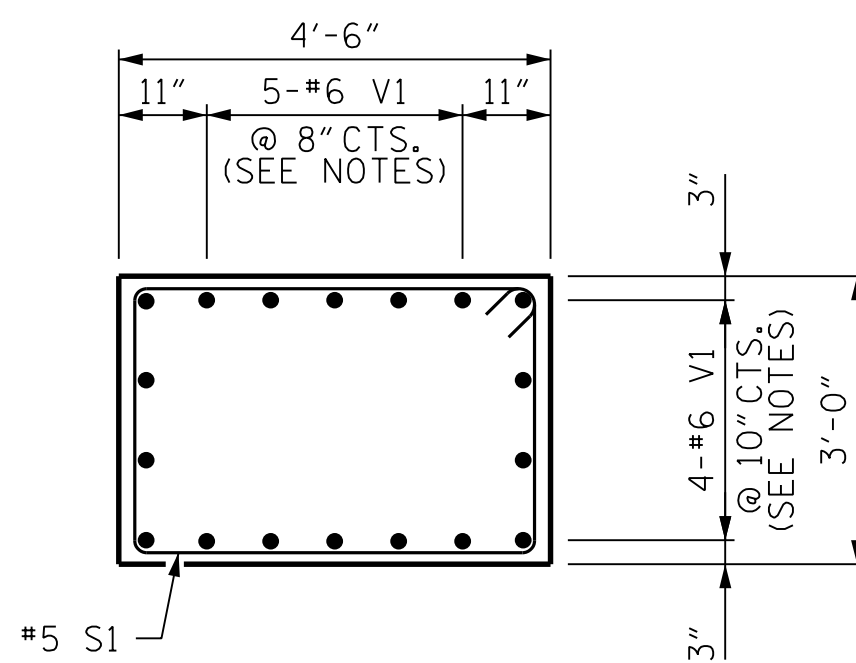
NOTE: REINFORCING STEEL IN DECK AND BENT CAP NOT SHOWN
BEARING AND SOLE PLATES NOT SHOWN



PLAN OF OBSERVATION PLATFORM - RIGHT SIDE



END VIEW



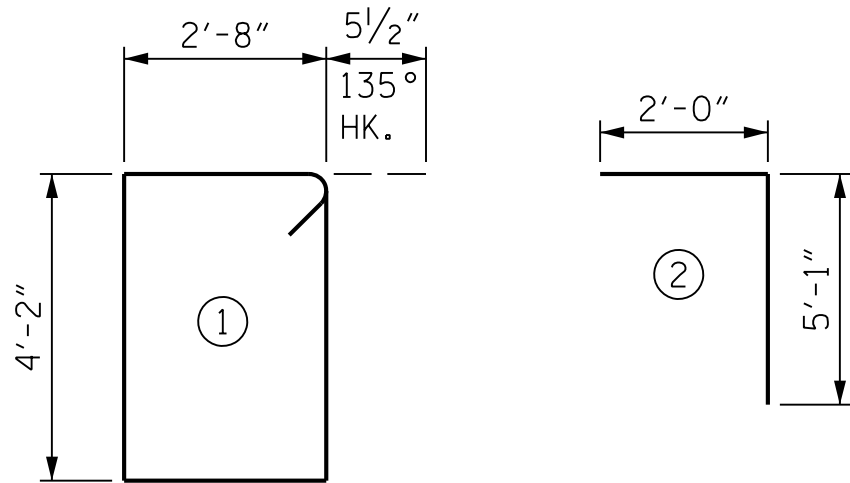
SECTION A-A

NOTES:

REINFORCING STEEL MAY BE SHIFTED SLIGHTLY
AS NECESSARY TO AVOID INTERFERENCE WITH
DECK SLAB AND BENT CAP REINFORCING.

FOR #6 M3 BARS, SEE SHEET S-99.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR ONE OBSERVATION PLATFORM

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A11	32	#5	STR.	6'-7"	220
A12	32	#5	STR.	6'-7"	220
*B24	14	#5	STR.	16'-0"	234
B25	14	#5	STR.	16'-0"	234
S1	5	#5	1	14'-7"	76
*V1	18	#6	2	7'-1"	192

REINFORCING STEEL 530 LBS

*EPOXY COATED REINFORCING STEEL 646 LBS

CLASS AA CONCRETE 6.3 C.Y.

PROJECT NO. B-6051/U-6143
CASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

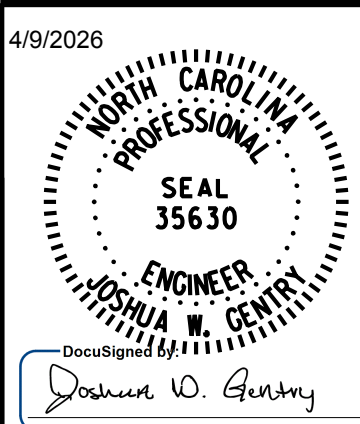
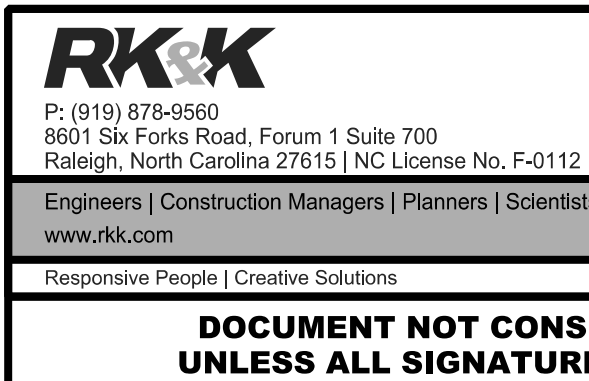
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

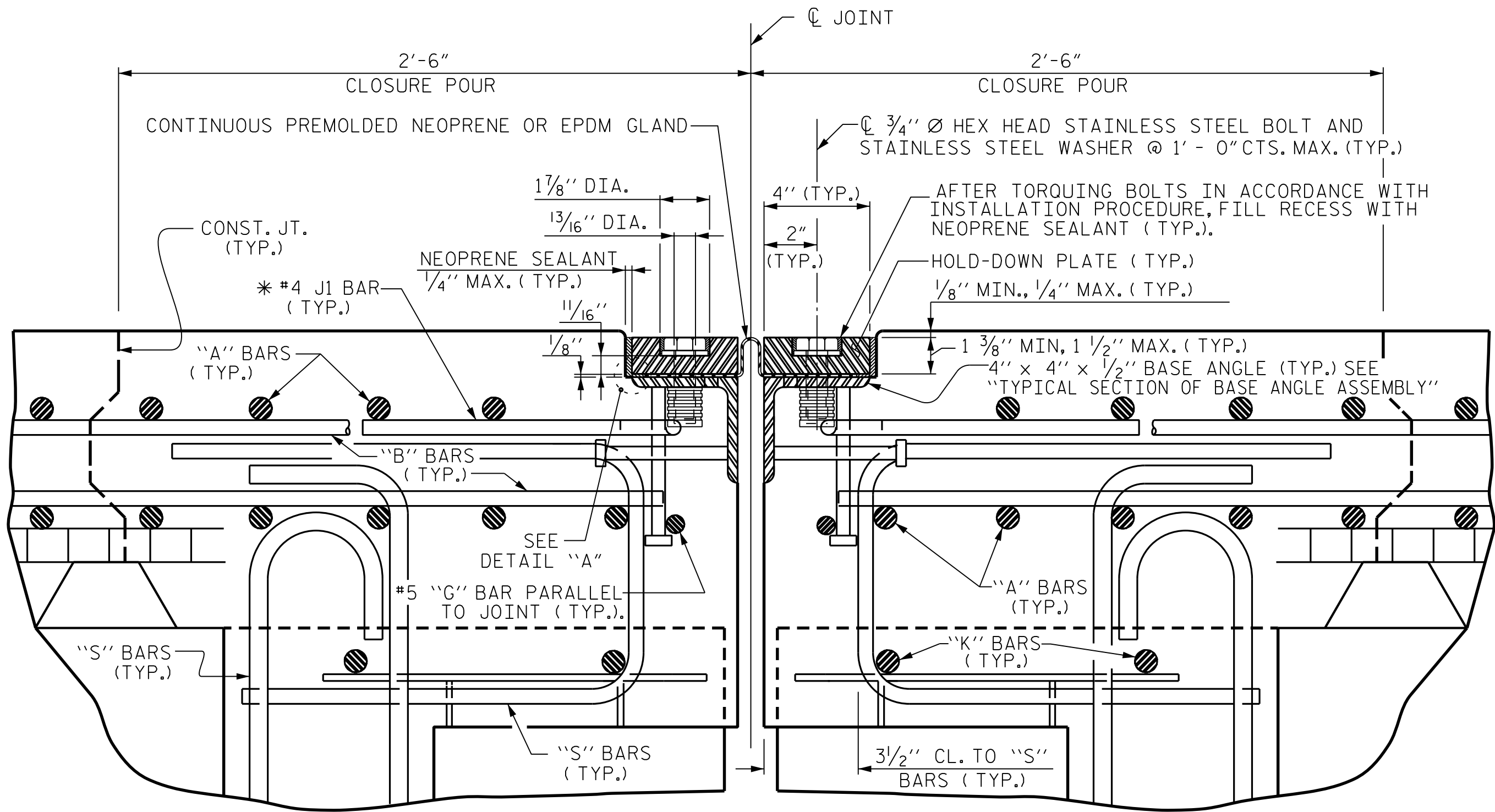
SUPERSTRUCTURE
OBSERVATION PLATFORM
DETAIL
(RIGHT SIDE)

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-72
2			4			TOTAL SHEETS 118



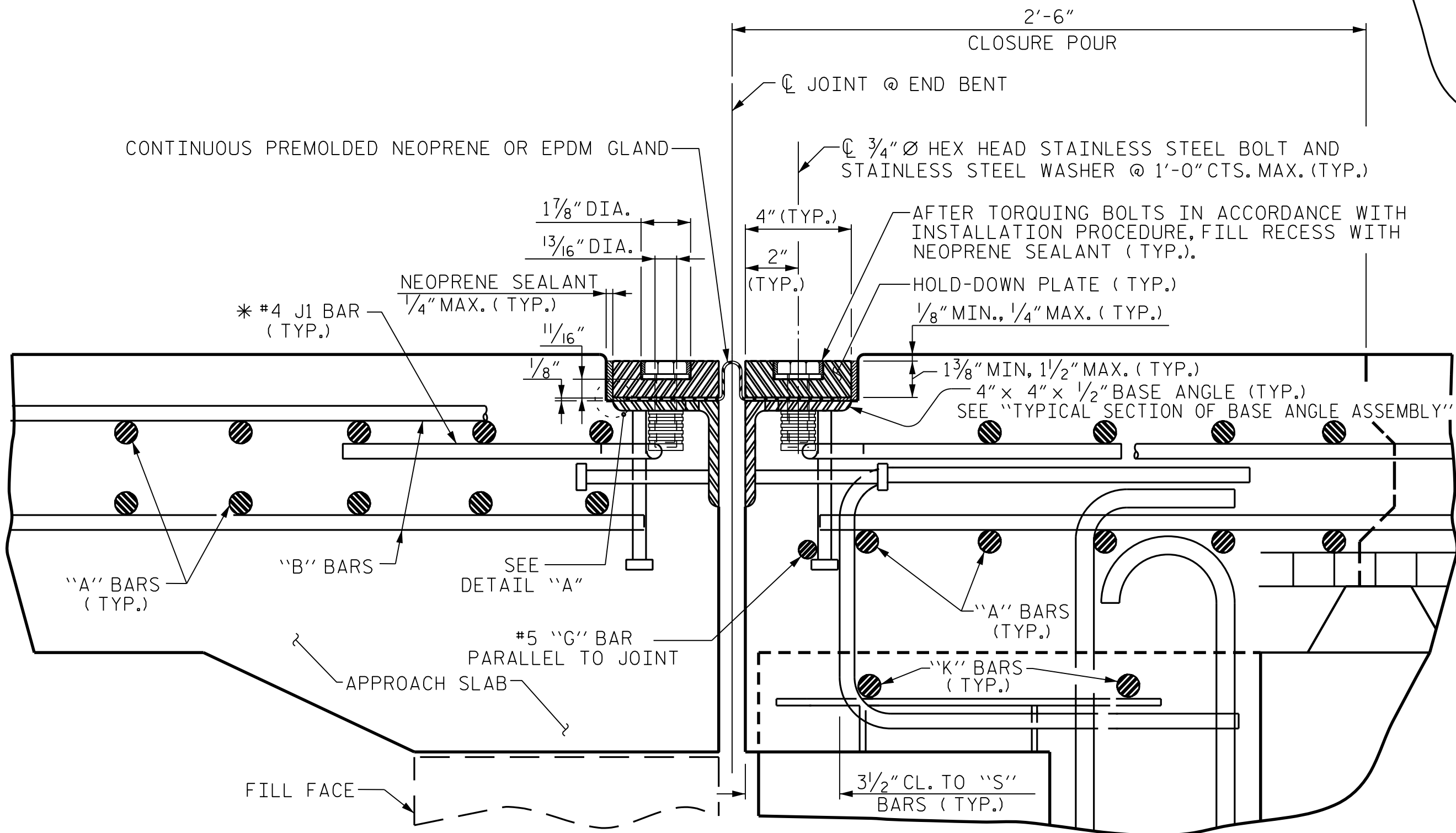
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EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

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



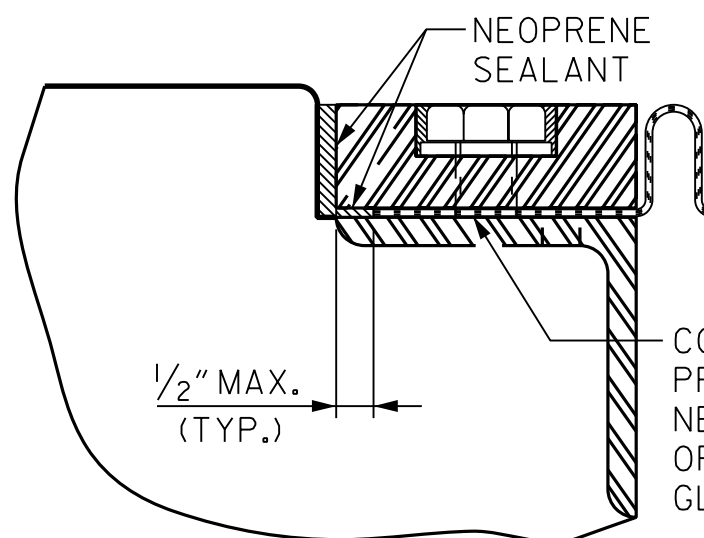
EXPANSION JOINT DETAILS

SECTION NORMAL TO JOINT -- PRESTRESSED GIRDER SUPERSTRUCTURE

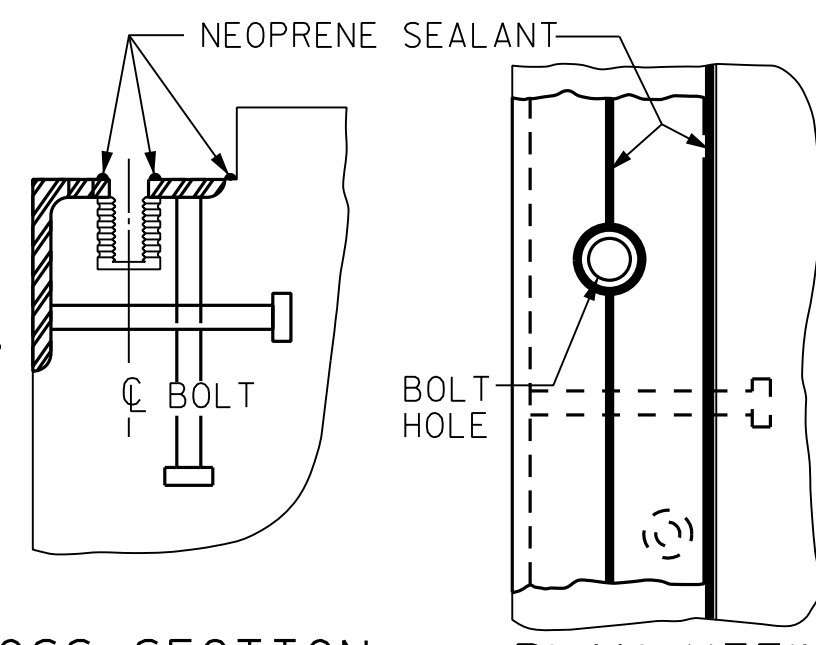
* THE QUANTITY OF #4 J1 BARS ON THE BILL OF MATERIAL IS BASED ON 1'-0" CENTERS. J1 BARS SHALL BE PLACED AT EACH VERTICAL STUD ANCHOR BOLT. IN THE EVENT THAT THE NUMBER OF VERTICAL STUD ANCHORS EXCEEDS THE NUMBER OF J1 BARS SPECIFIED, ADDITIONAL J1 BARS WILL NOT BE REQUIRED.

INSTALLATION PROCEDURE

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

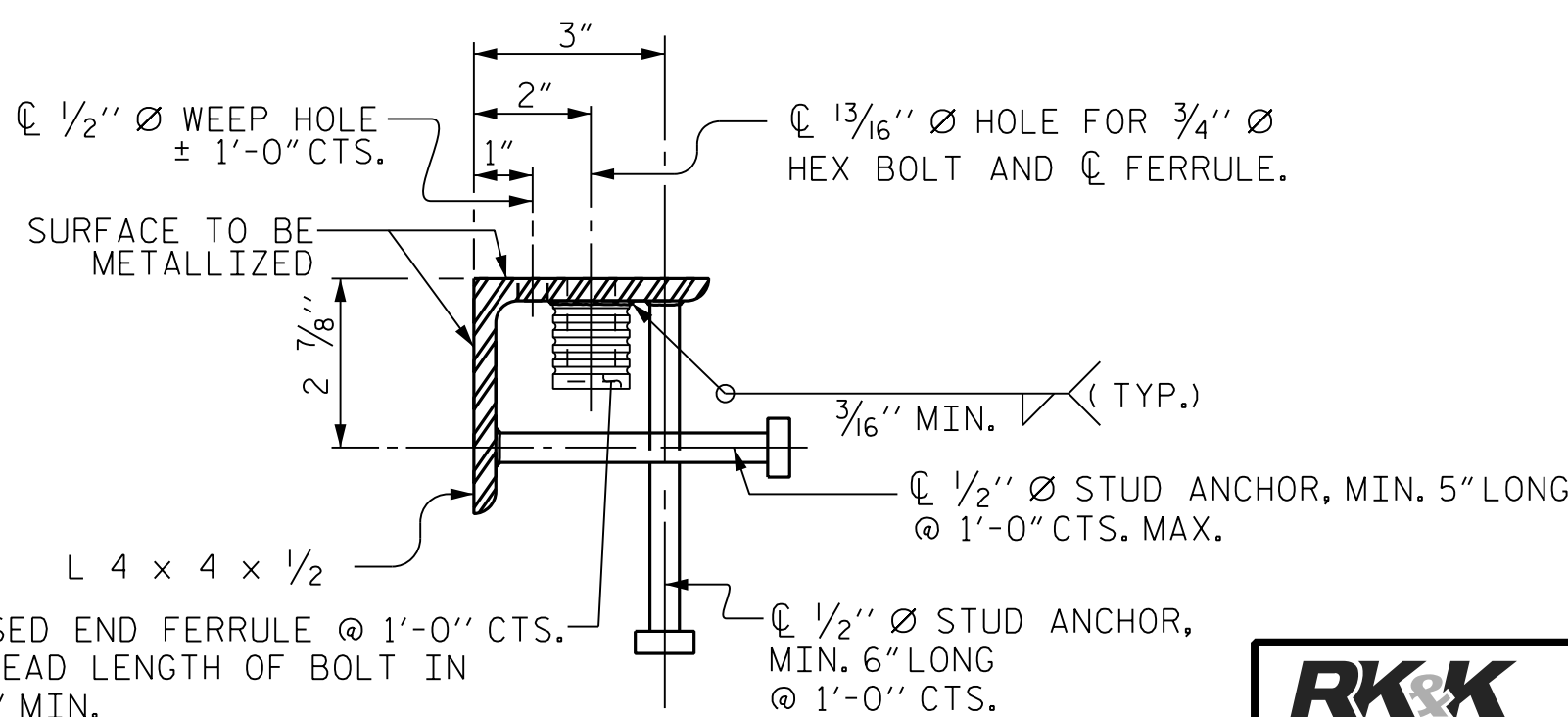


DETAIL "A"



CROSS SECTION INSTALLATION SKETCH

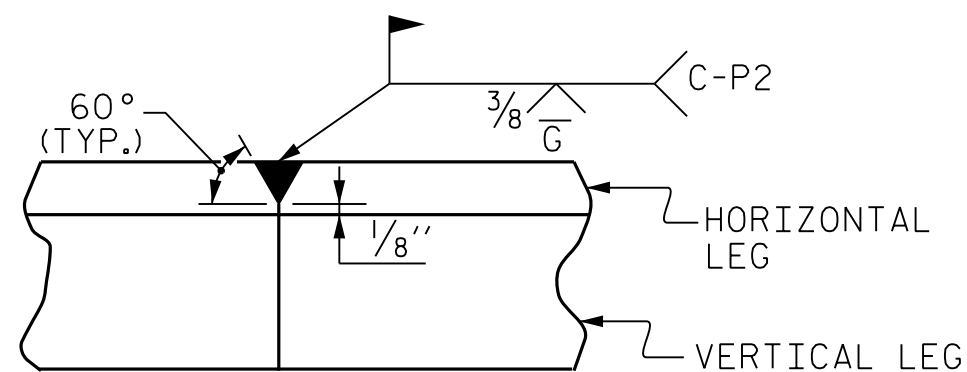
MOVEMENT AND SETTING AT JOINT					
BENT NO.	SKREW ANGLE	TOTAL MOVEMENT (ALONG CL RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
EB 1	90.0°	1 1/16"	1 1/2"	1 3/8"	1 7/8"
BENT 2	90.0°	1 1/16"	2 7/8"	1 13/16"	1 1/4"
BENT 5	90.0°	1 3/4"	2 3/16"	1 5/16"	1 5/16"
BENT 8	90.0°	2"	2 7/16"	2 1/16"	1 3/8"
EB 2	90.0°	1"	1 11/16"	1 9/16"	1 3/16"



TYPICAL SECTION OF BASE ANGLE ASSEMBLY

GENERAL NOTES

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



DETAIL - FIELD WELD SPlice OF BASE ANGLE

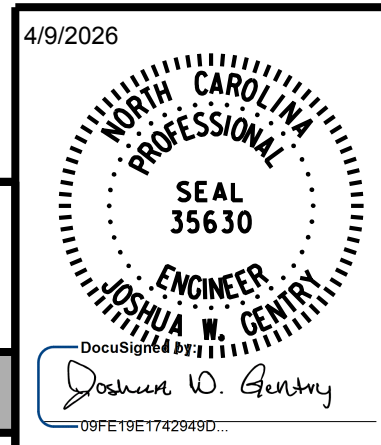
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD EXPANSION JOINT SEAL DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-73					TOTAL SHEETS 118

STD. NO. EJS1

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DESIGN ENGINEER OF RECORD: J. W. GENTRY	DATE: FEB 2025



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



PROJECT NO. B-6051/U-6143
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SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD EXPANSION JOINT SEAL DETAILS FOR CLASSIC CONCRETE BRIDGE RAIL

REVISIONS						SHEET NO. S-74
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

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DESIGN ENGINEER OF RECORD : J. W. GENTRY	DATE : FEB 2025

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4/9/2026



DocuSigned by:
Joshua W. Gentry
09FE19E1742949D

DocuSigned by:
Joshua W. Gent
08FE19E1742949D...

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



DETAIL "A"



VIEW D-D

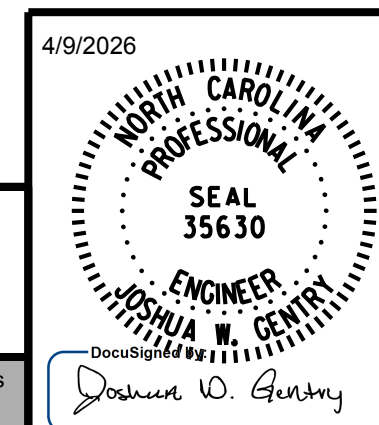
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CHECKED BY : J. W. GENTRY	DATE : FEB 2025
DESIGN ENGINEER OF RECORD : J. W. GENTRY	DATE : FEB 2025

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SHEET 3 OF 3

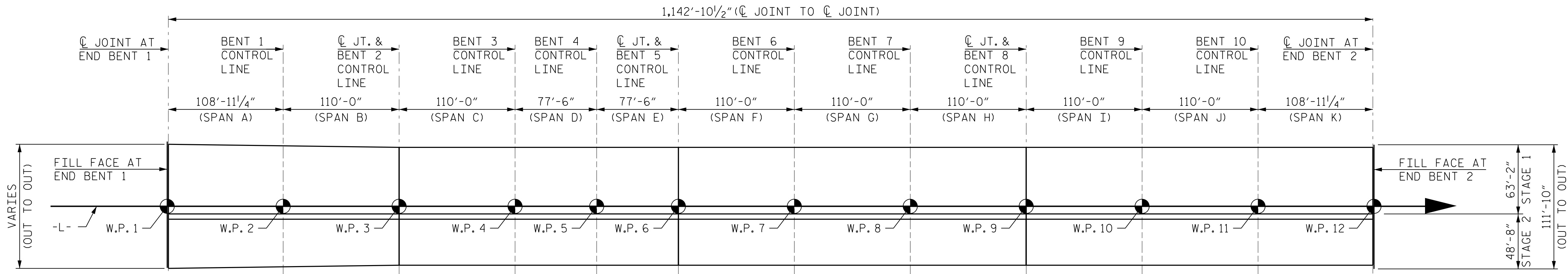
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXPANSION JOINT SEAL DETAILS FOR VERTICAL BARRIER DETAILS

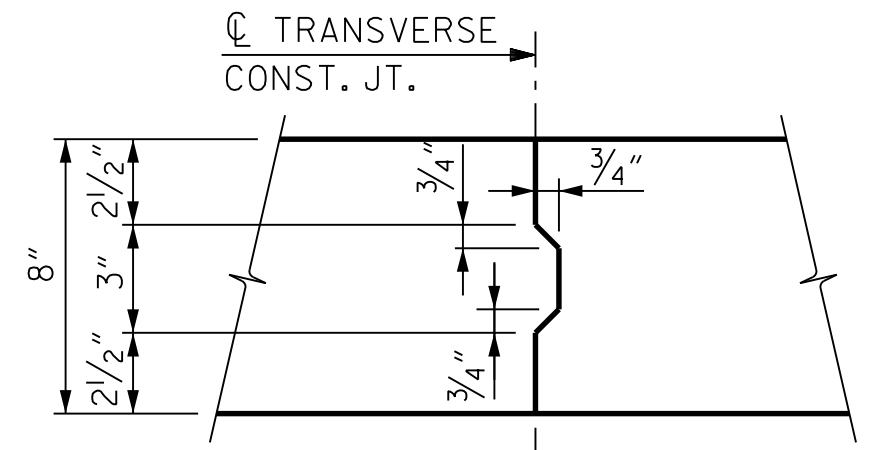
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2			4			

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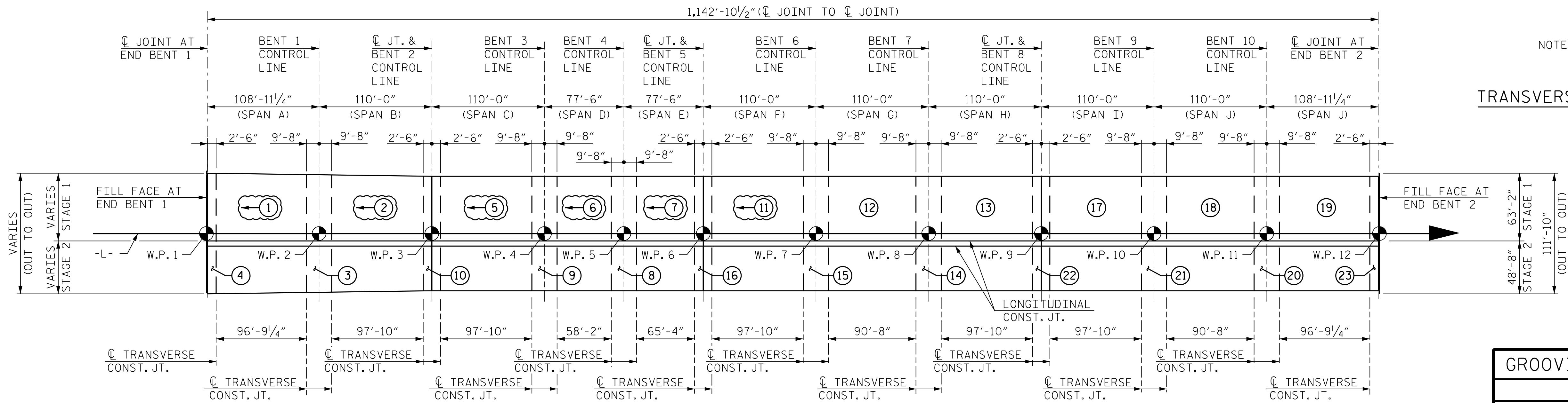


LAYOUT FOR COMPUTING AREA OF
REINFORCED CONCRETE DECK SLAB
(SQ. FT. = 128,468)



NOTE: REINFORCING STEEL IN SLAB NOT SHOWN.
LONGITUDINAL AND TRANSVERSE REINFORCING
STEEL SHALL BE CONTINUOUS THROUGH JOINT.

TRANSVERSE CONSTRUCTION JOINT IN DECK SLAB



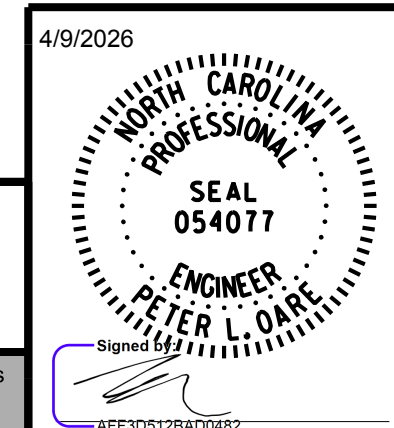
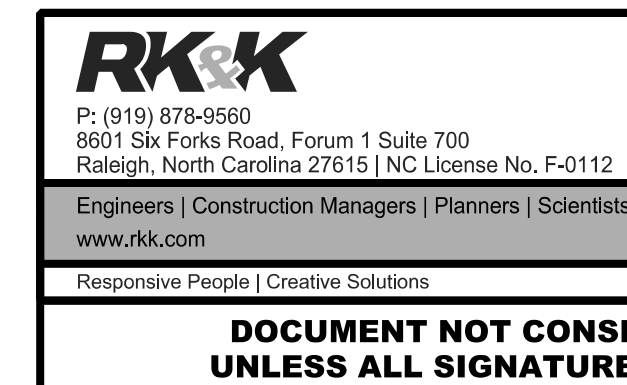
POURING SEQUENCE

GROOVING BRIDGE FLOORS		
	STAGE 1	STAGE 2
APPROACH SLABS (SQ.FT.)	3,023	2,317
BRIDGE DECK (SQ.FT.)	69,392	52,840
TOTAL PER STAGE (SQ.FT.)	72,415	55,157
BRIDGE TOTAL (SQ.FT.)	127,572	

SUPERSTRUCTURE BILL OF MATERIAL						SUPERSTRUCTURE BILL OF MATERIAL					
CLASS AA CONCRETE			REINFORCING STEEL	EPOXY COATED REINFORCING STEEL		CLASS AA CONCRETE			REINFORCING STEEL	EPOXY COATED REINFORCING STEEL	
(CU. YDS.)			(LBS.)	(LBS.)		(CU. YDS.)			(LBS.)	(LBS.)	
	STAGE 1	STAGE 2	CLOSURE POUR				STAGE 1	STAGE 2	CLOSURE POUR		
POUR 1	187.2	131.8	16.4			POUR 13	182.8	126.8	16.6		
POUR 2	185.0	128.9	16.6			POUR 14	36.1	25.1	3.3		
POUR 3	36.9	25.9	3.3			POUR 15	36.1	25.1	3.3		
POUR 4	9.3	6.3	0.4			POUR 16	17.8	12.2	0.8		
POUR 5	182.8	126.8	16.6			POUR 17	182.8	126.8	16.6		
POUR 6	108.7	75.4	9.9			POUR 18	169.4	117.5	15.4		
POUR 7	122.1	84.7	11.1			POUR 19	180.8	125.4	16.4		
POUR 8	36.1	25.1	3.3			POUR 20	36.1	25.1	3.3		
POUR 9	36.1	25.1	3.3			POUR 21	36.1	25.1	3.3		
POUR 10	17.8	12.2	0.8			POUR 22	17.8	12.2	0.8		
POUR 11	182.8	126.8	16.6			POUR 23	8.9	6.1	0.4		
POUR 12	169.4	117.5	15.4			STAGE TOTAL	2,179.1	1,513.6	194.0		
						** BRIDGE TOTAL	3,886.7		489,122	528,629	

**QUANTITIES FOR BARRIER RAIL ARE NOT INCLUDED

DRAWN BY : J.W. COOK
CHECKED BY : P. OARE
DESIGN ENGINEER OF RECORD : P. OARE
DATE : FEB 2025
DATE : FEB 2025
DATE : FEB 2025



PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

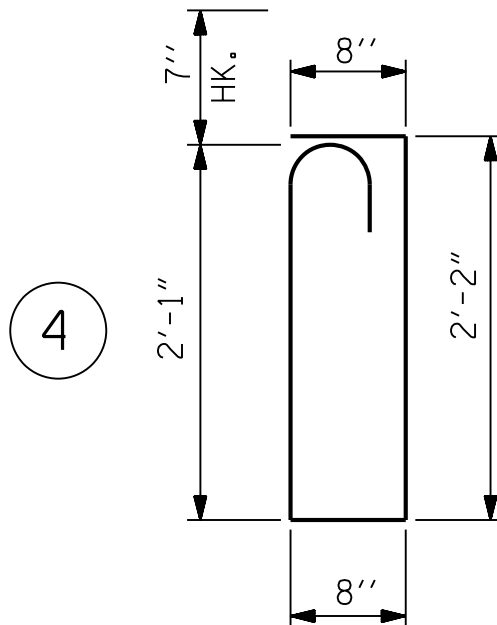
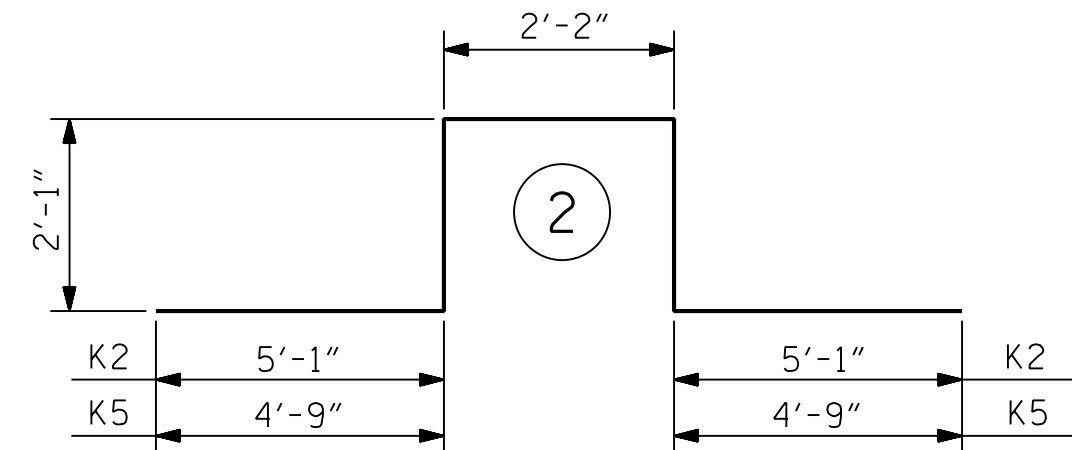
SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE POURING SEQUENCE						REVISIONS			SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:				S-76	
1			3						TOTAL SHEETS	
2			4						118	

[illegible]

The diagram illustrates a 135° HK corner joint. On the left, a horizontal component labeled '1' has a total length of 1'-0 1/2" and a flange width of 4 1/2". On the right, a vertical component labeled '3' has a total height of 5'-4" and a flange width of 11". The joint is formed by the intersection of these two components. The dimensions for the joint are as follows:

- Horizontal component (1): 1'-0 1/2" (total length), 4 1/2" (flange width).
- Vertical component (3): 5'-4" (total height), 11" (flange width).
- Joint dimensions: 5'-1" (horizontal distance from vertical centerline to horizontal flange edge), 4'-9" (horizontal distance from vertical centerline to vertical flange edge), and 5'-4" (vertical distance from horizontal centerline to vertical flange edge).
- Labels: K8, K3, K6, K7, K1, K4, K9 are listed on the left side of the joint. K1, K3, K4, K6, K7, K8, K9 are listed on the right side of the joint.



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS					
BAR SIZE	SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPETS, AND BARRIER RAILS		APPROACH SLABS		PARAPETS AND BARRIER RAILS
	EPOXY COATED	UNCOATED	EPOXY COATED	UNCOATED	
#4	1'-11"	1'-7"	1'-11"	1'-7"	2'-6"
#5	2'-5"	2'-0"	2'-5"	2'-0"	3'-1"
#6	2'-10"	2'-5"	3'-7"	2'-5"	3'-8"
#7	4'-2"	2'-9"			
#8	4'-9"	3'-2"			

SHEET 2 OF 2

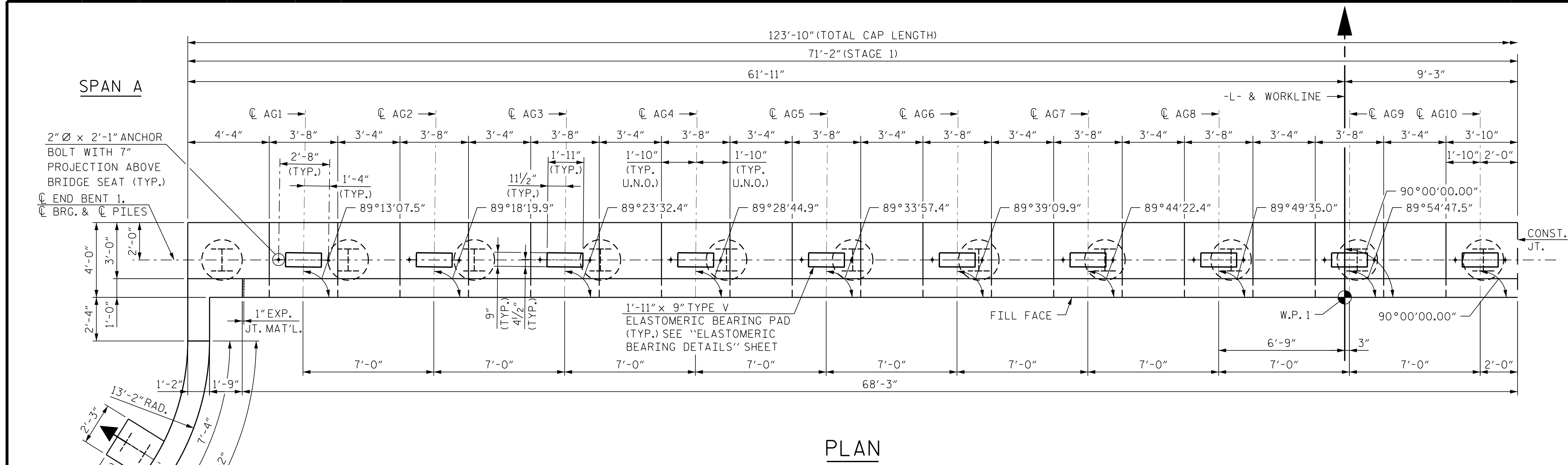
REVISIONS						SHEET NO. S-77
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

DRAWN BY : J. W. COOK DATE : FEB 2025
 CHECKED BY : J. W. GENTRY DATE : FEB 2025
 DESIGN ENGINEER OF RECORD : J. W. GENTRY DATE : FEB 2025

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2/10/2026 2:10/2026 bgonfa



NOTES:

FOR SECTIONS, SEE SHEET 3 OF 4.

FOR PILE SPlice DETAILS, SEE SHEET 3 OF 4.

FOR TEMPORARY DRAINAGE, SEE SHEET 3 OF 4.

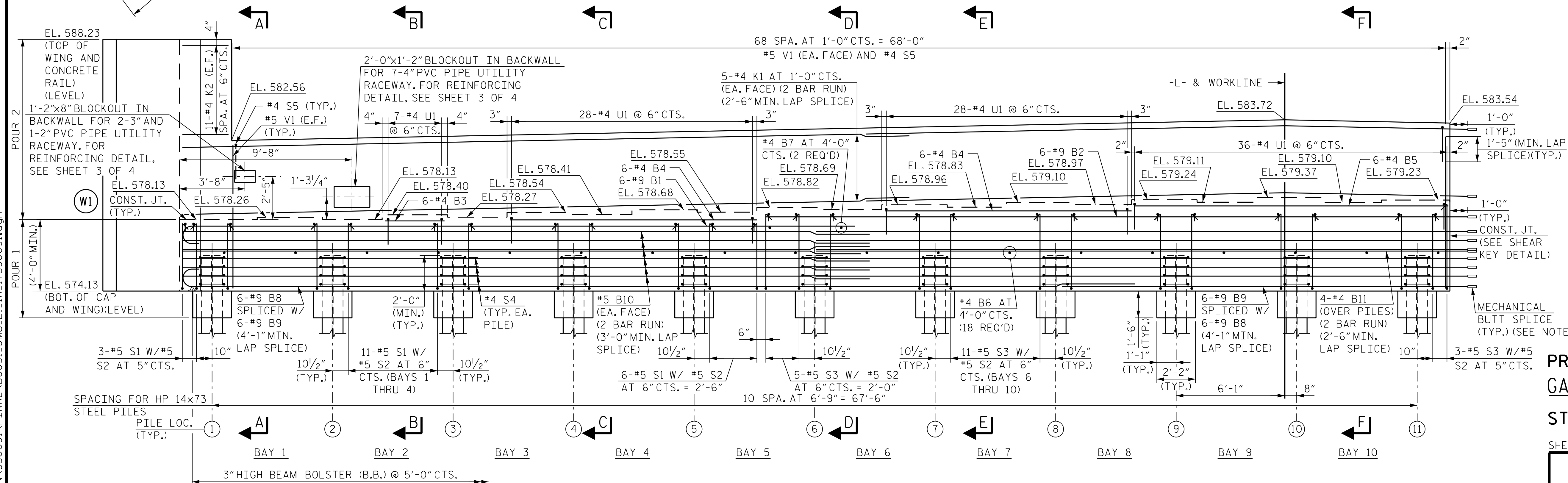
STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

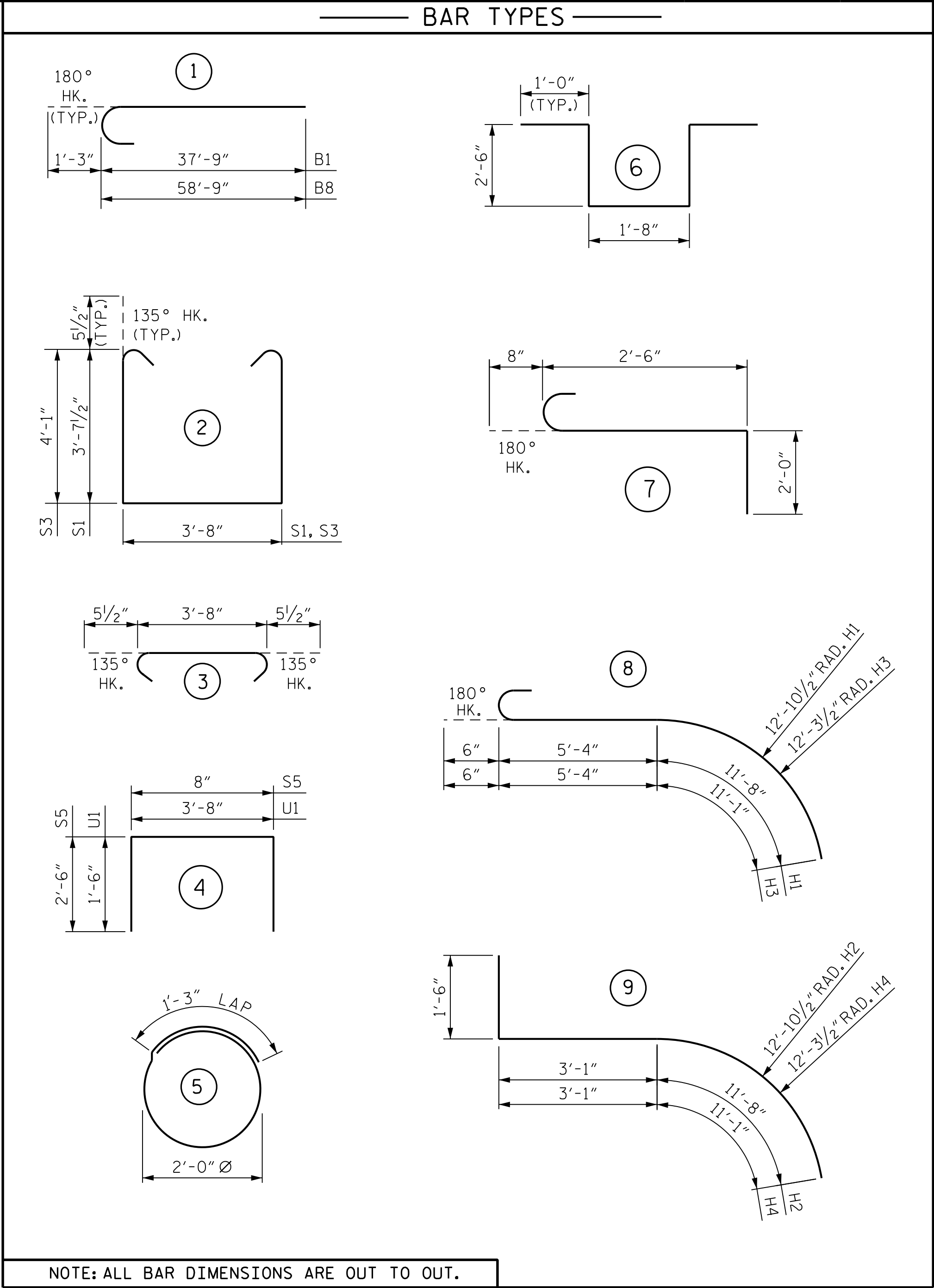
THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

FOR MECHANICAL BUTT SPLICES OR REINFORCING STEEL, SEE SECTION 425-5 OF THE STANDARD SPECIFICATIONS.



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DRAWN BY : <u>E. THOMPSON</u>	DATE : <u>FEB 2025</u>
CHECKED BY : <u>B. D. KLAPPENBACH</u>	DATE : <u>FEB 2025</u>
DESIGN ENGINEER OF RECORD : <u>M. SHARMA</u>	DATE : <u>FEB 2025</u>



BILL OF MATERIAL					
END BENT 1 - STAGE 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#9	1	39'-0"	796
B2	6	#9	STR.	39'-8"	809
B3	6	#4	STR.	3'-4"	13
B4	12	#4	STR.	13'-8"	110
B5	6	#4	STR.	17'-6"	70
B6	18	#4	STR.	3'-8"	44
B7	2	#4	STR.	3'-8"	5
B8	6	#9	1	60'-0"	1,224
B9	6	#9	STR.	17'-5"	355
B10	24	#5	STR.	37'-7"	941
B11	8	#4	STR.	37'-4"	200
E1	8	#5	STR.	4'-0"	33
E2	8	#5	STR.	3'-2"	26
E3	8	#5	STR.	3'-2"	26
E4	8	#5	STR.	2'-8"	22
H1	4	#4	8	17'-6"	47
H2	19	#4	9	16'-3"	206
H3	4	#4	8	16'-11"	45
H4	19	#4	9	15'-8"	199
K1	20	#4	STR.	37'-3"	498
K2	22	#4	STR.	2'-7"	38
S1	53	#5	2	11'-10"	654
S2	116	#5	3	4'-7"	555
S3	63	#5	2	12'-9"	838
S4	44	#4	5	7'-7"	223
S5	69	#4	4	5'-8"	261
S6	3	#6	7	5'-2"	23
S7	3	#6	6	8'-8"	39
U1	99	#4	4	6'-8"	441
V1	138	#5	STR.	8'-0"	1,151
V2	48	#5	STR.	13'-7"	680
REINFORCING STEEL				10,572 LBS.	
CLASS "A" CONCRETE					
POUR 1 (CAP, LOWER WINGS, WING PILE CAP AND COLLARS)				54.0 C.Y.	
POUR 2 (BACKWALL & UPPER WINGS)				17.8 C.Y.	
TOTAL				71.8 C.Y.	

PROJECT NO. B-6051/U-6143
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SHEET 4 OF 4

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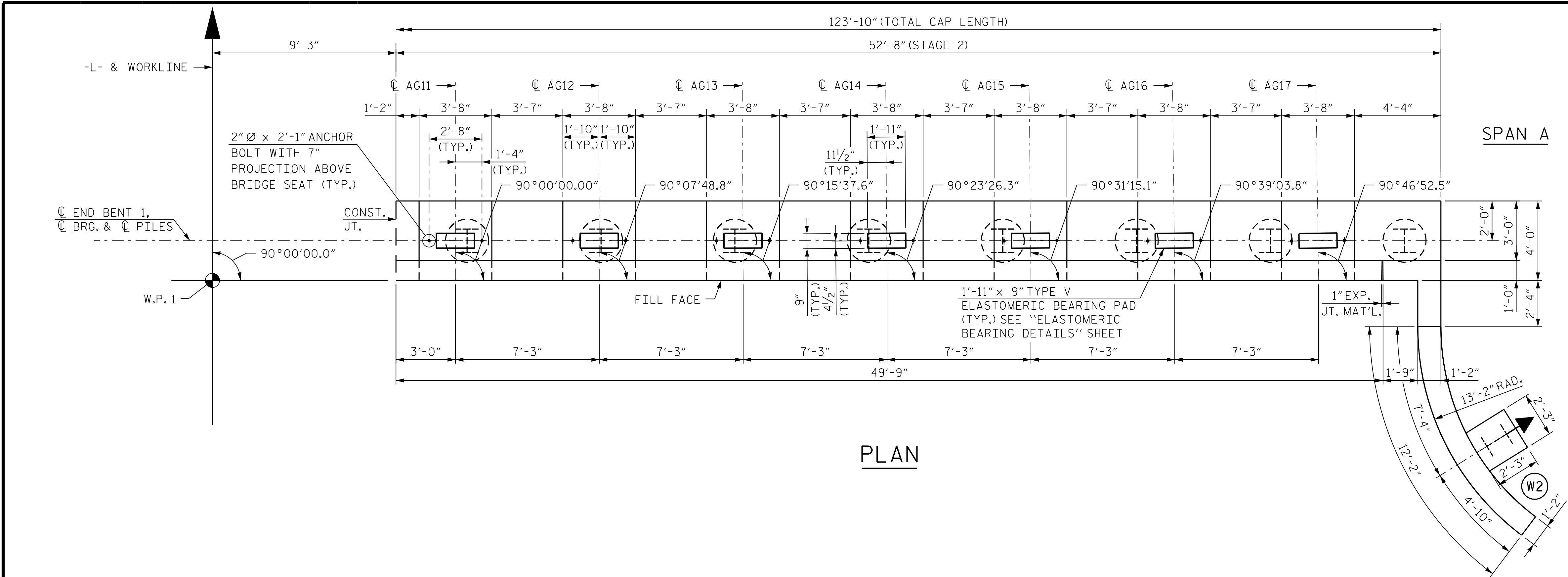
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SEAL
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ENGINEER
MAYUR SHARMA

6804727921C480...

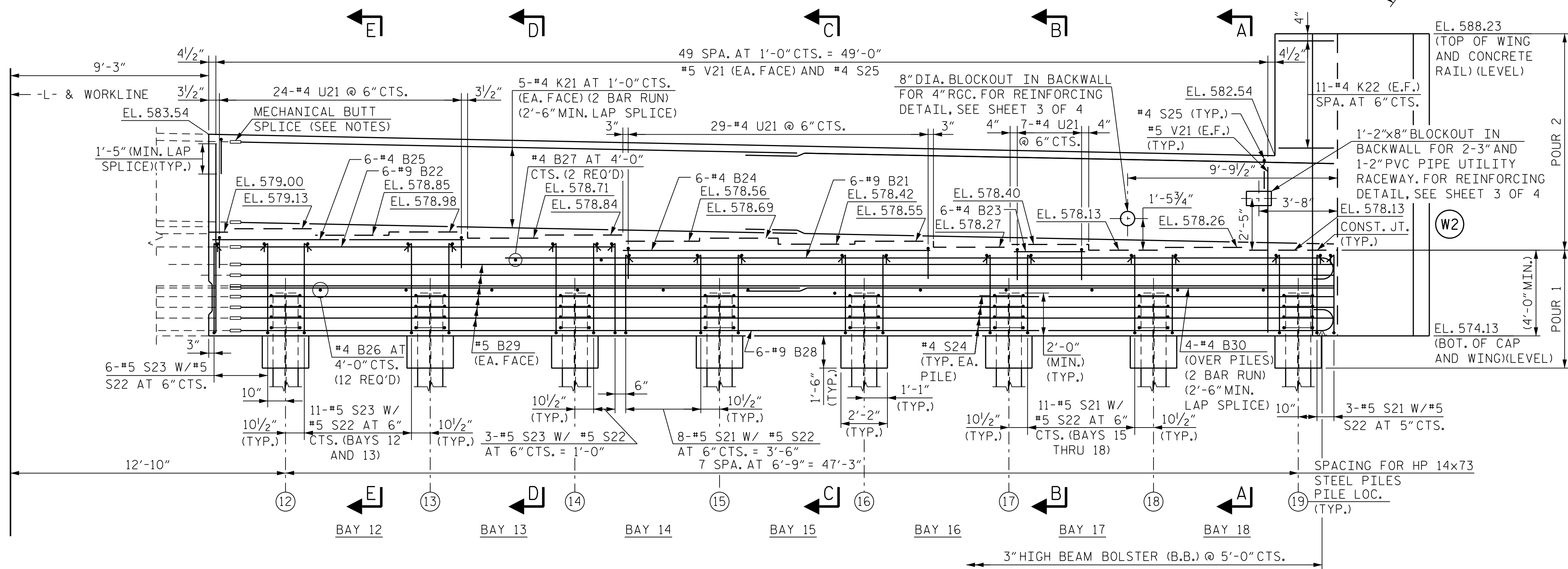
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DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
BILL OF MATERIAL
STAGE 1

REVISIONS						SHEET NO. S-81
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

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PLAN



ELEVATION

NOTES:

FOR SECTIONS, SEE SHEET 3 OF 4.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 4.

FOR TEMPORARY DRAINAGE, SEE SHEET 3 OF 4.

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

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

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

FOR MECHANICAL BUTT SPLICES OR REINFORCING STEEL, SEE SECTION 425-5 OF THE STANDARD SPECIFICATIONS.

LEGEND:

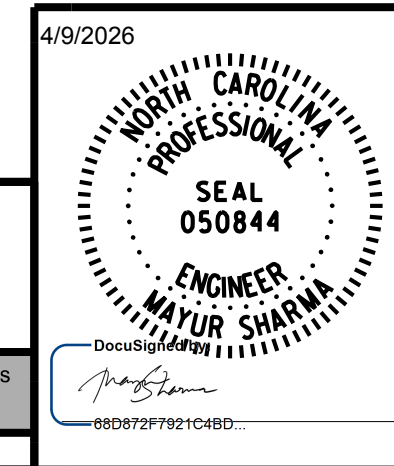
- HP 14x73 VERTICAL STEEL PILES
- HP 14x73 STEEL PILES BATTERED 3:12

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 4

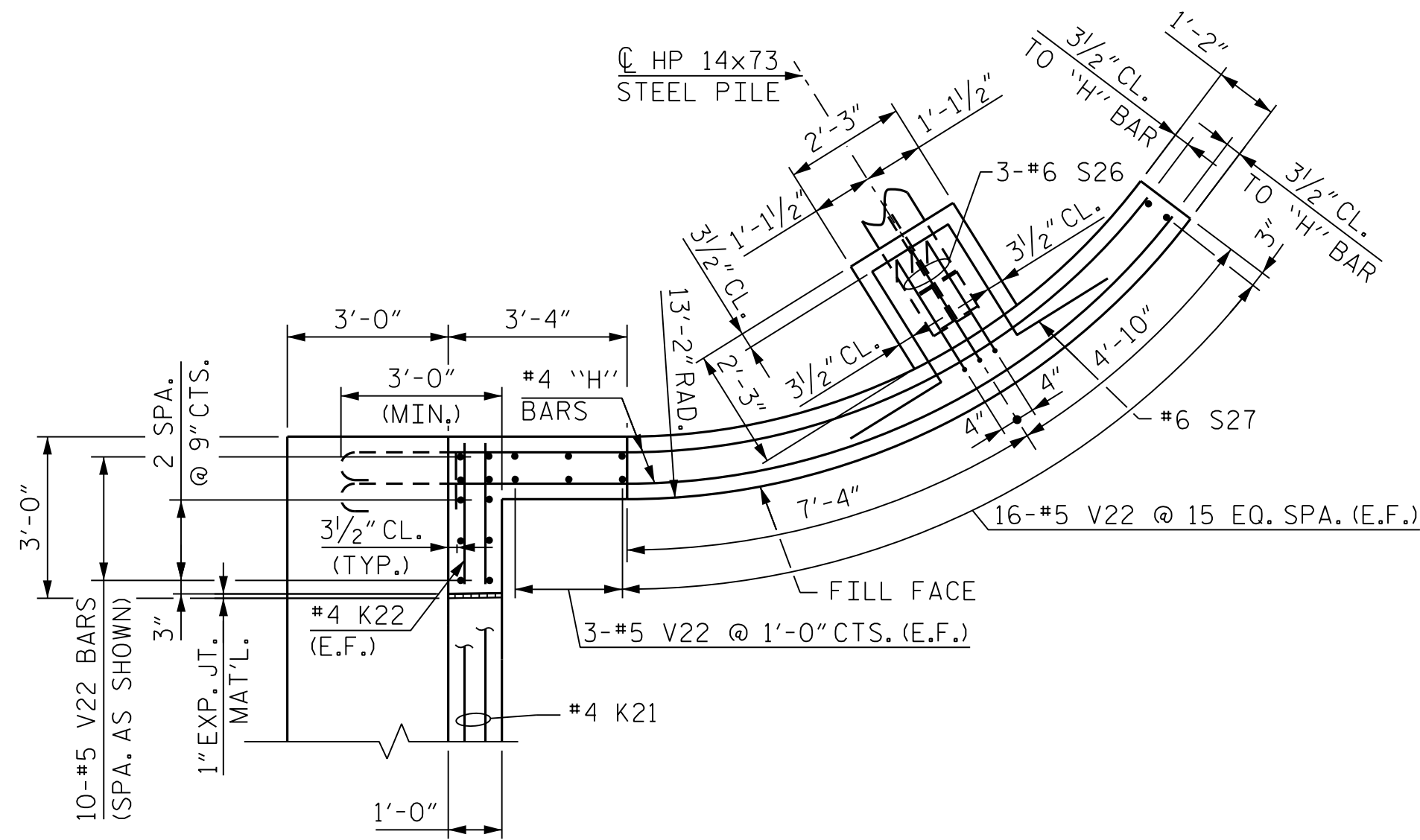
DRAWN BY : E. THOMPSON DATE : JUL 2025
CHECKED BY : B. D. KLAPPENBACH DATE : JUL 2025
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : JUL 2025

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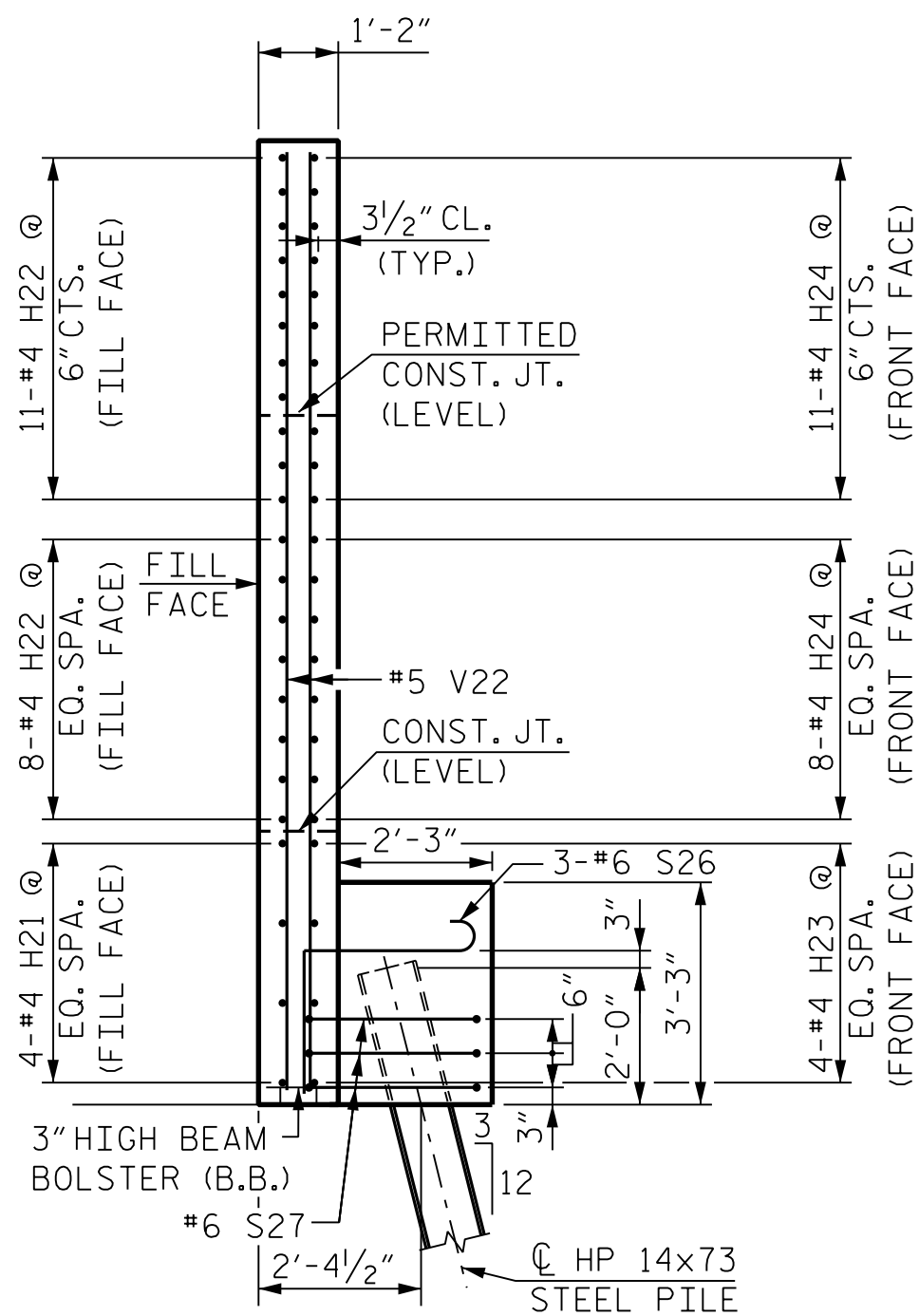


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
PLAN AND ELEVATION
STAGE 2

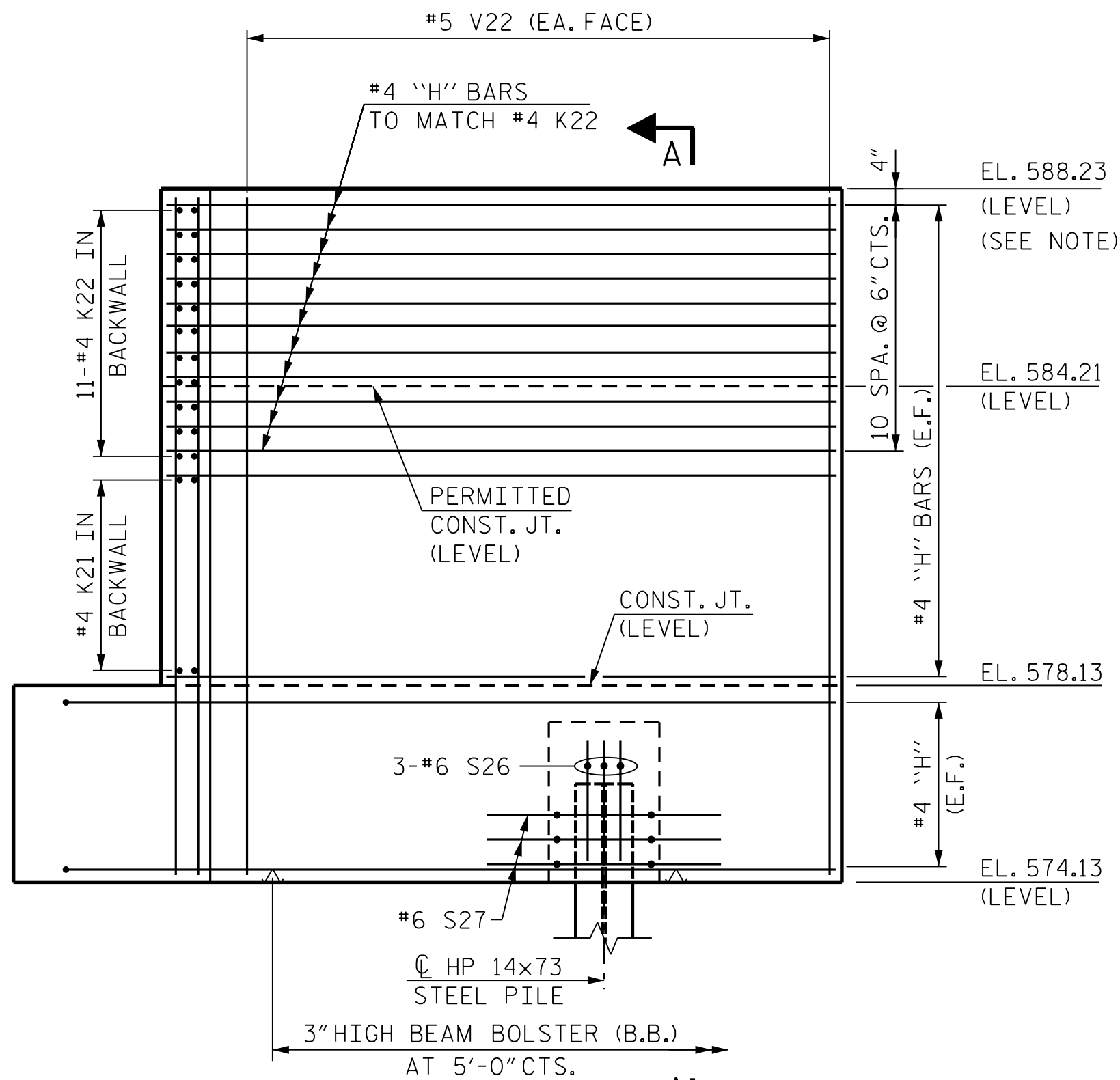
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-82
2			4			
TOTAL SHEETS						118



PLAN OF RIGHT WINGWALL



SECTION A-A



ELEVATION OF RIGHT WINGWALL

RIGHT WINGWALL DETAILS (W2)

NOTES:

THE ELEVATION AT THE TOP OF WING SHALL BE ADJUSTED TO MATCH THE TOP OF RAIL ELEVATION FROM THE BRIDGE.

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SHEET 2 OF 4

STATE OF NORTH CAROLINA
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RALEIGH

SUBSTRUCTURE
END BENT 1
WINGWALL DETAILS
STAGE 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-83
2			4			
TOTAL SHEETS						118

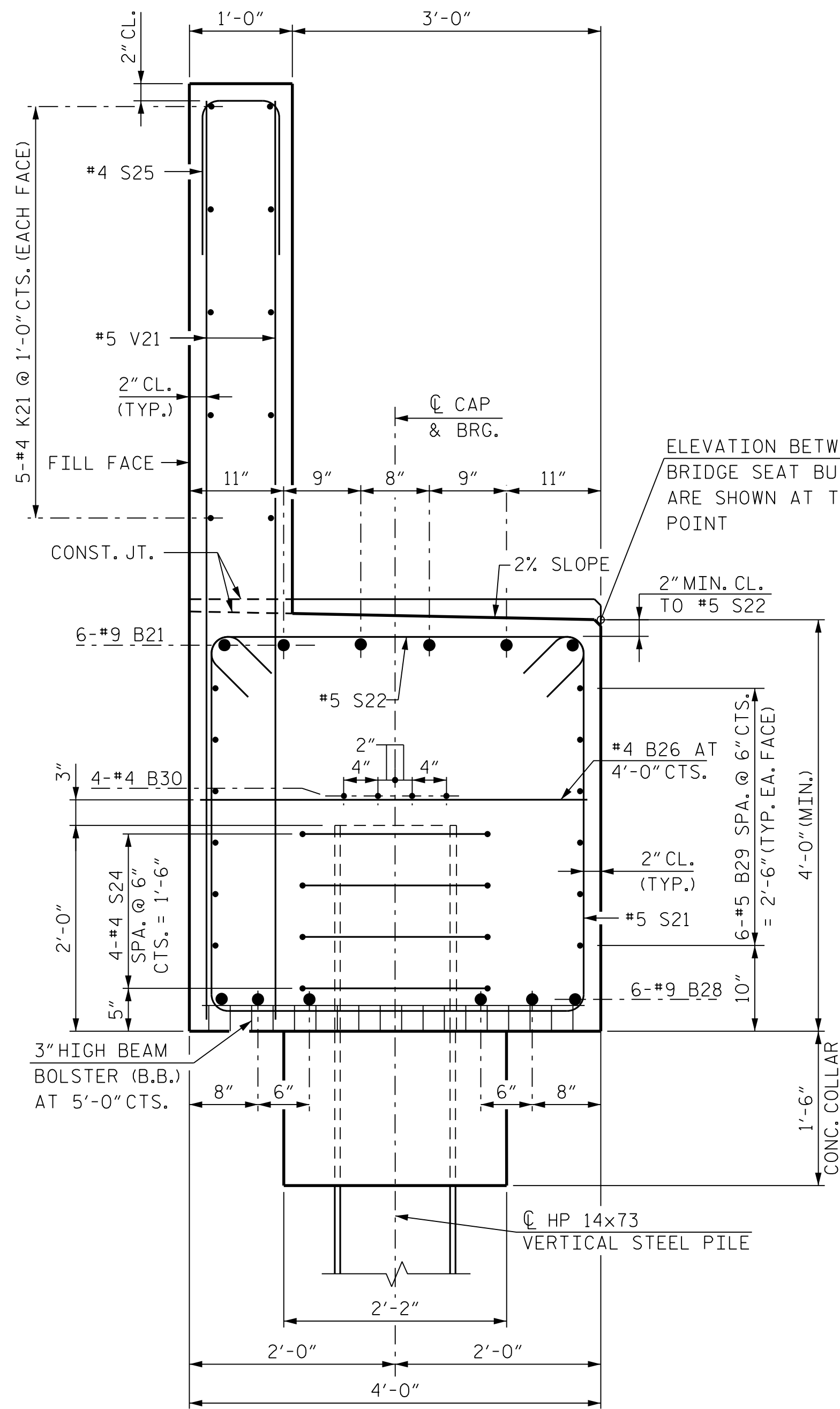
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CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025

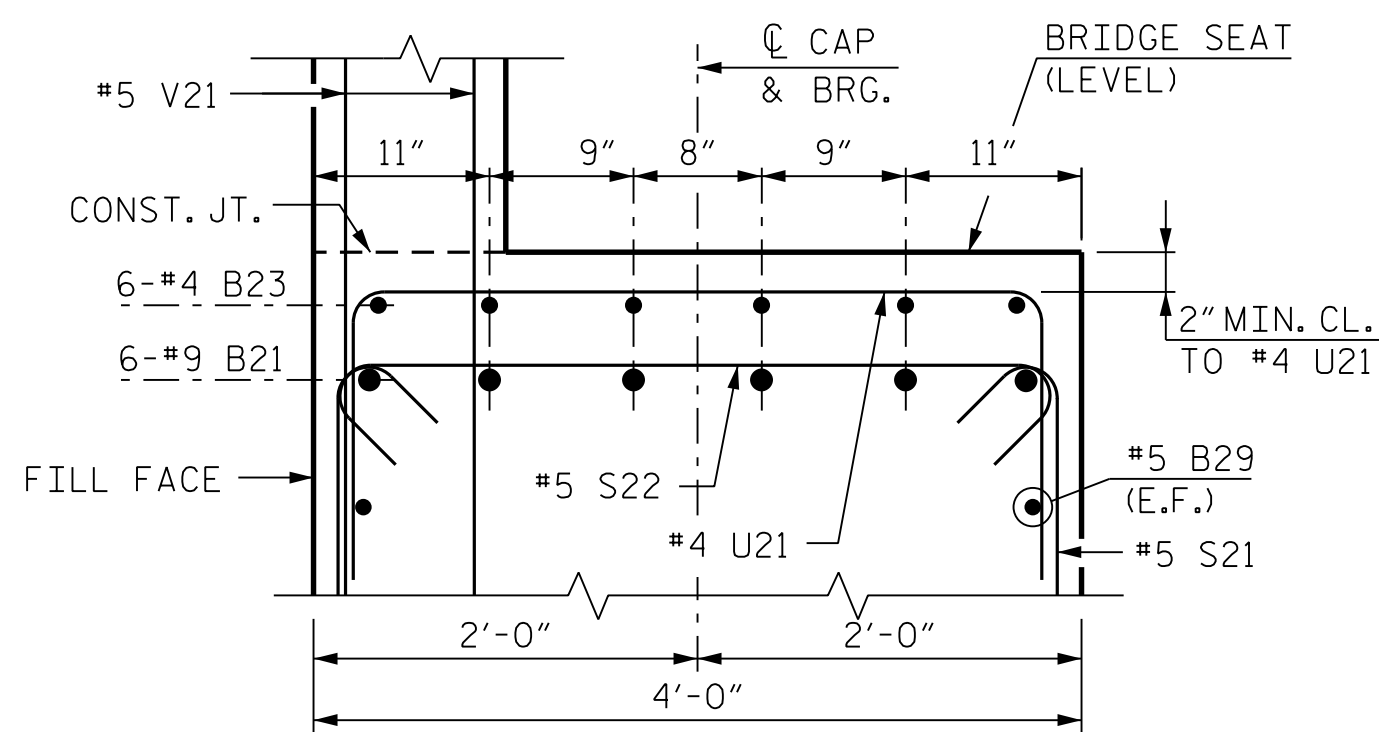
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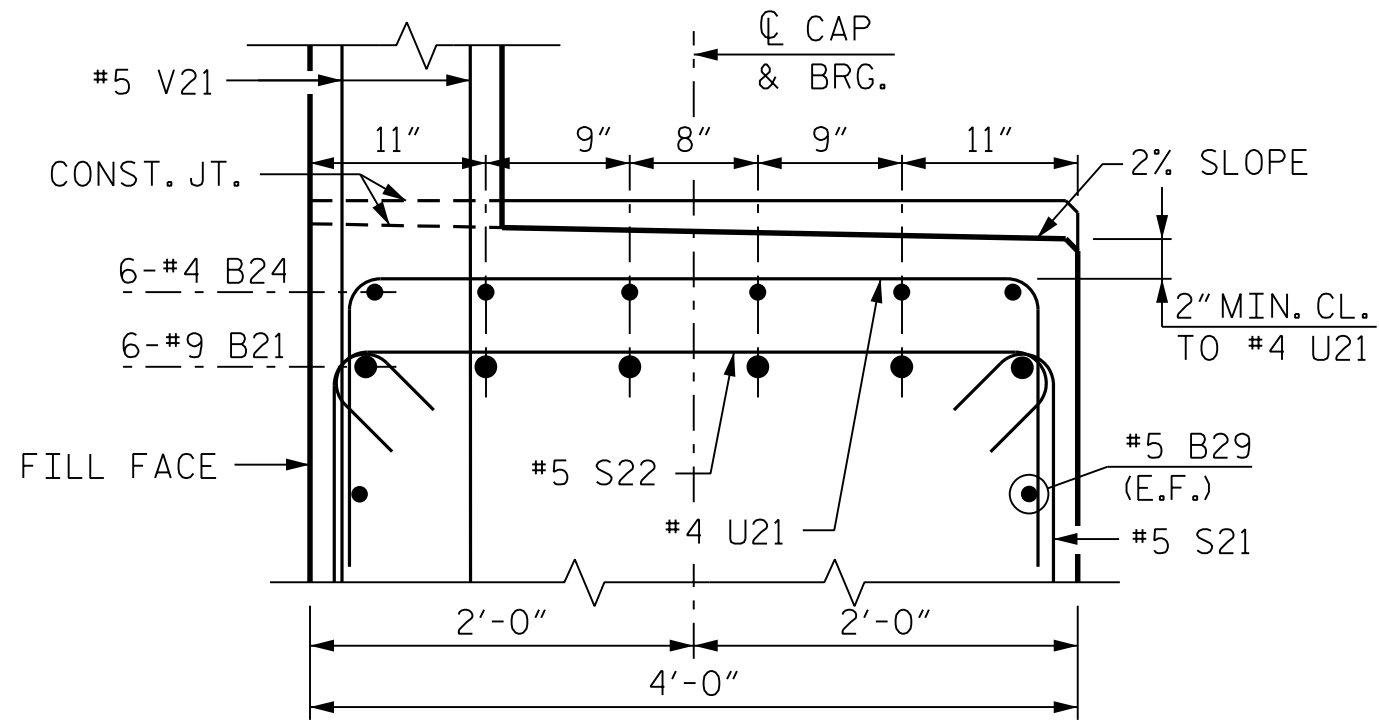


SECTION A-A

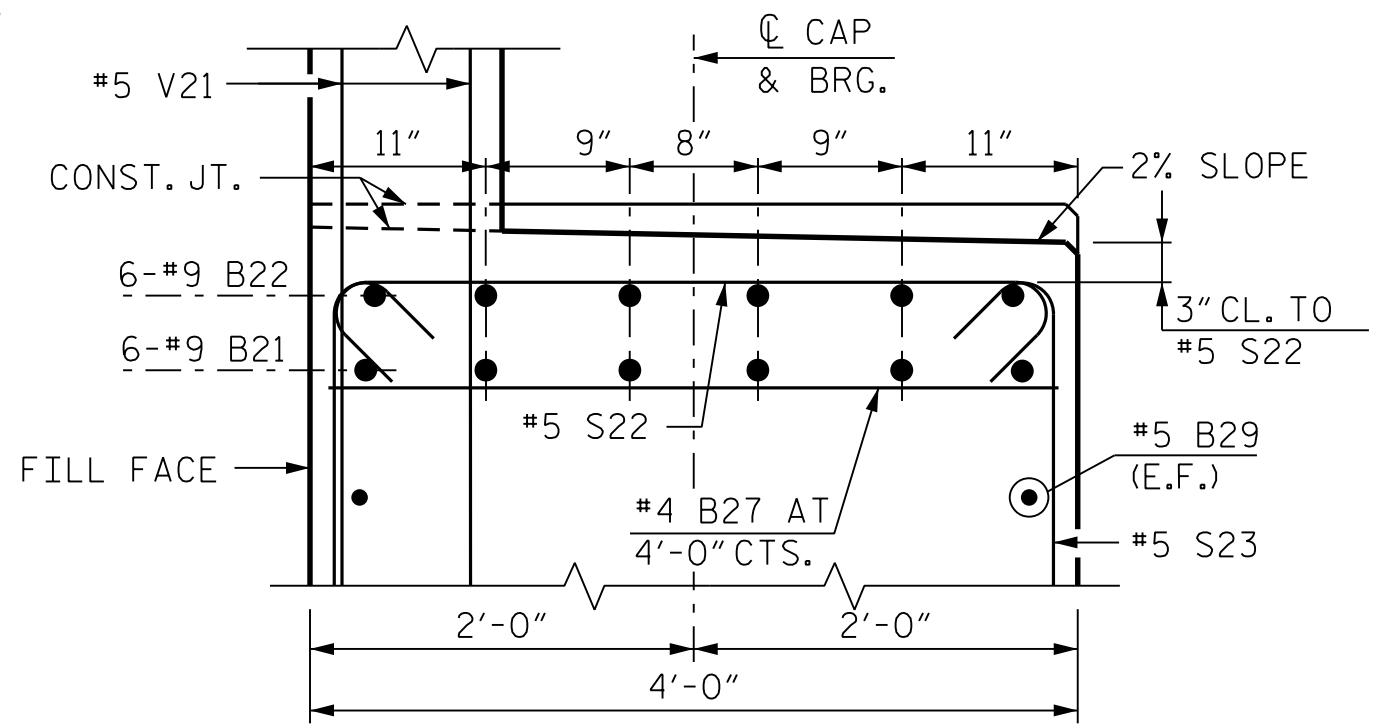
(DIMENSIONS SHOWN ARE NORMAL TO THE END BENT)



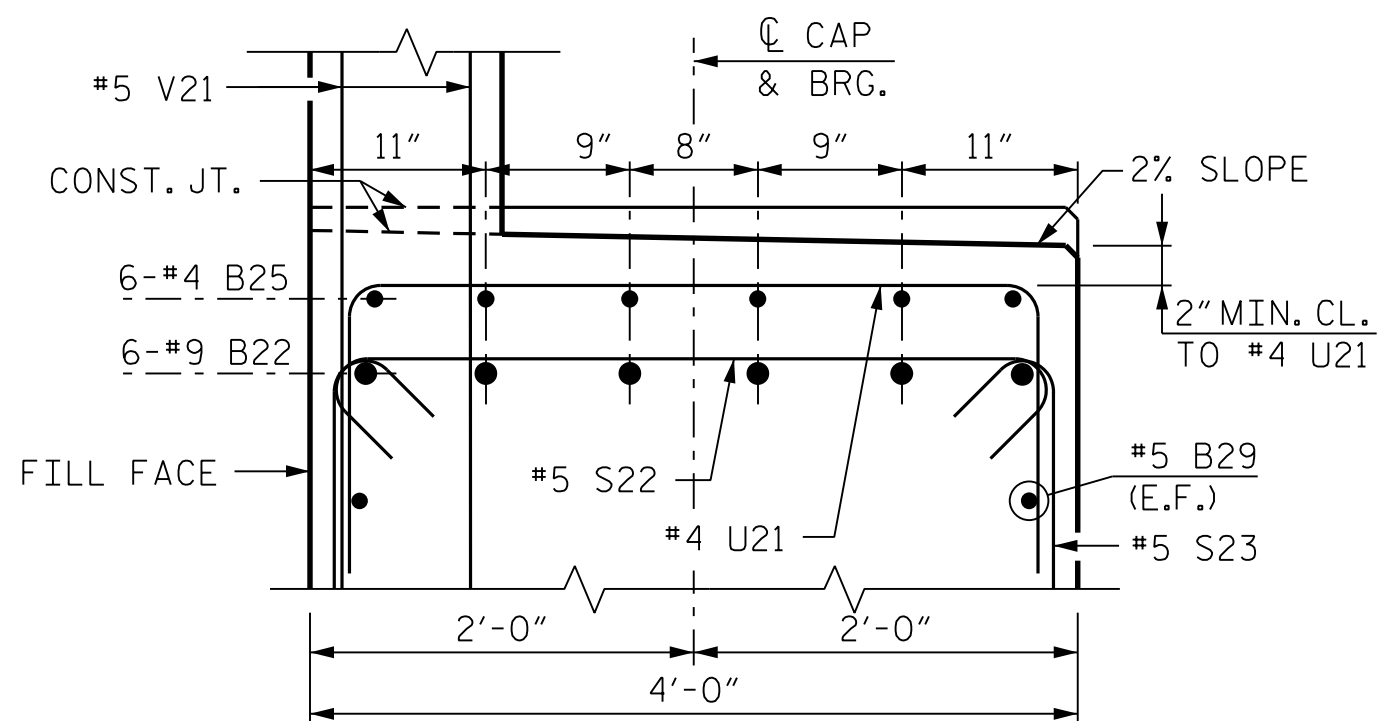
SECTION B-B



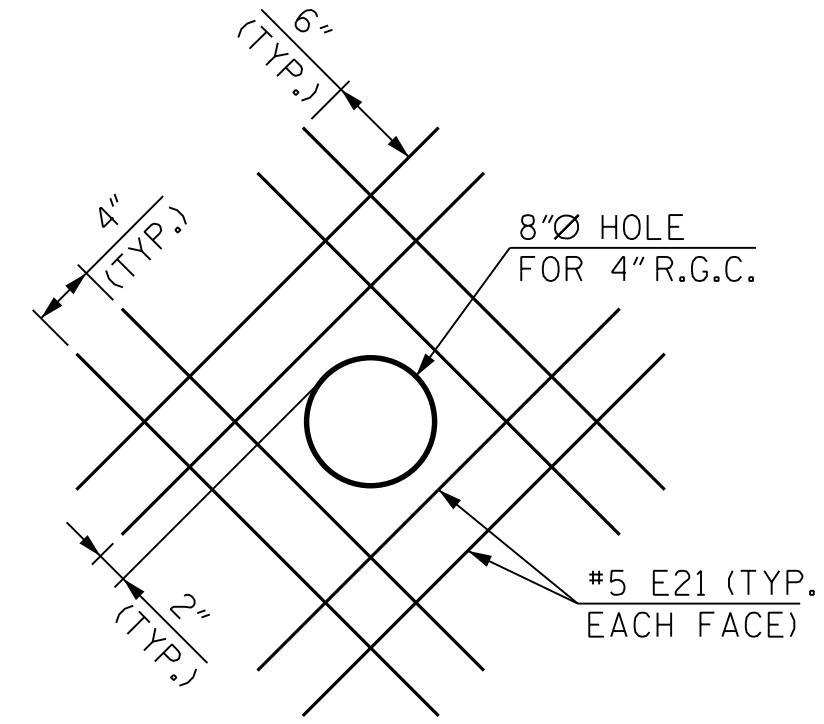
SECTION C-C



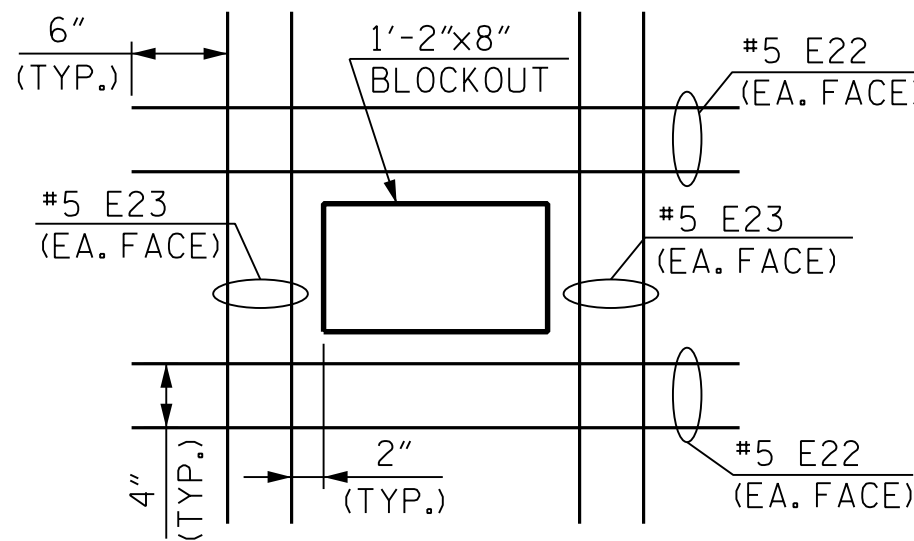
SECTION D-D



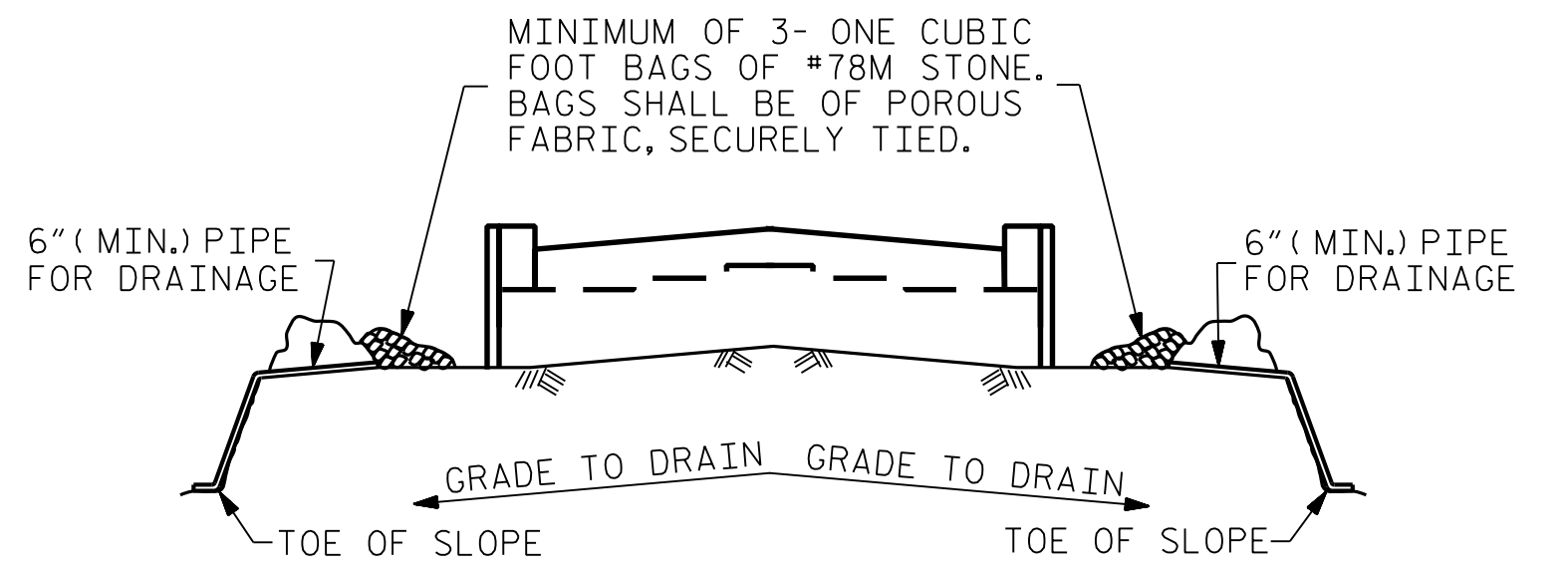
SECTION E-E



DETAIL OF REINFORCING AROUND 8"Ø BLOCKOUT



DETAIL OF REINFORCING AROUND 1'-2"x8" UTILITY RACEWAY BLOCKOUT

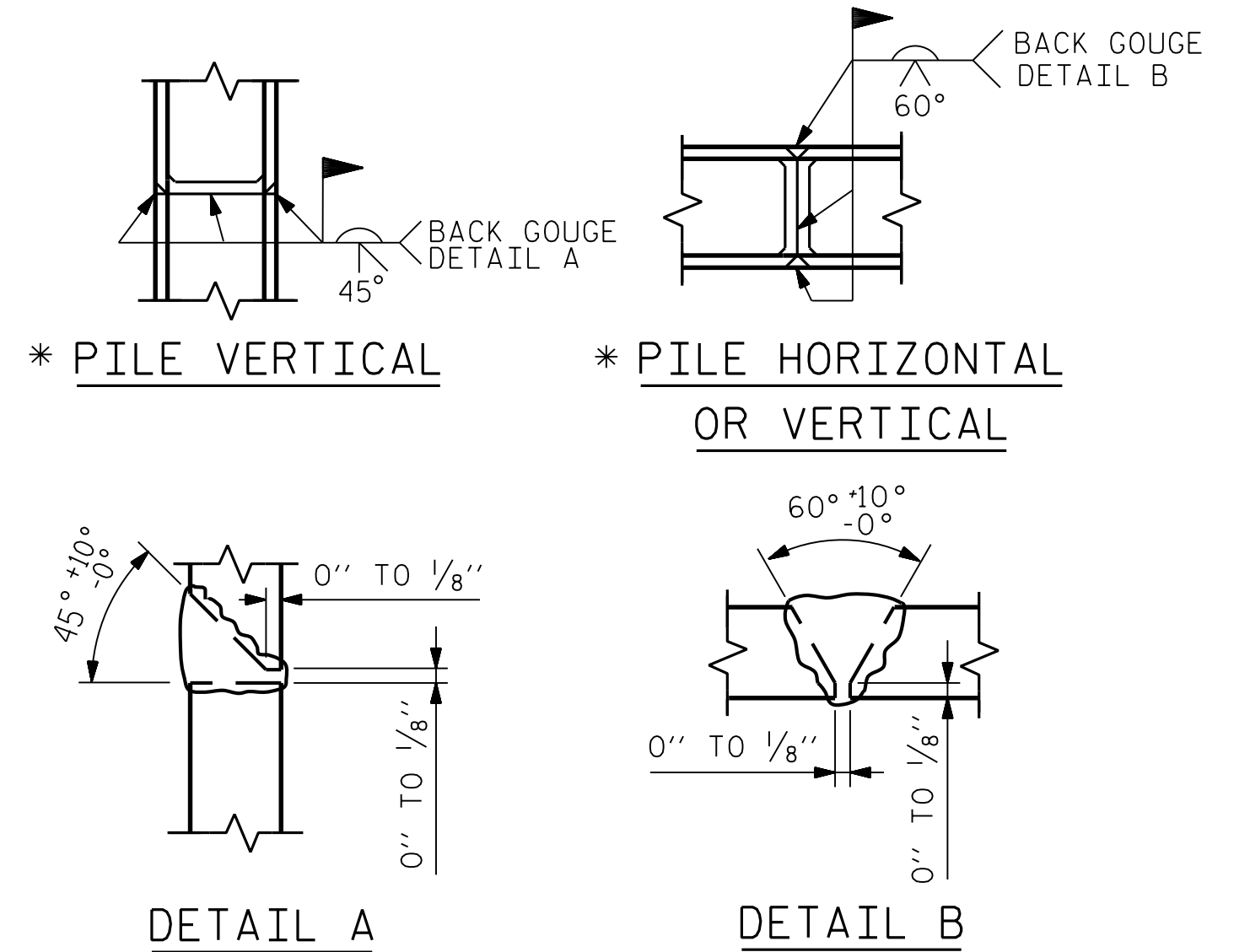


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

* POSITION OF PILE DURING WELDING.

PROJECT NO. B-6051/U-6143
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STATION: 46+42.50 -L-

SHEET 3 OF 4

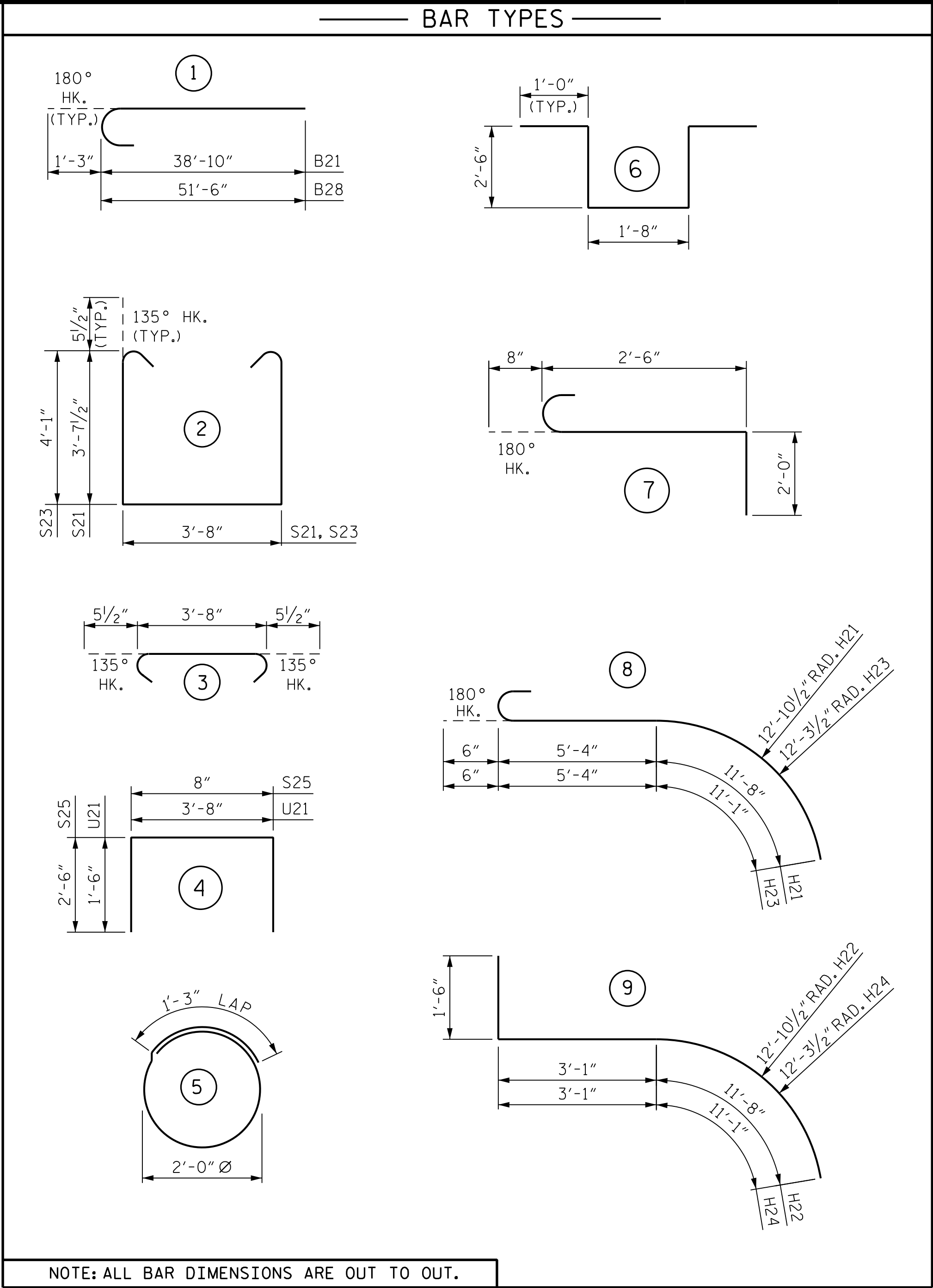
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-84
2			4			
TOTAL SHEETS						118

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DRAWN BY : <u>E. THOMPSON</u>	DATE : <u>FEB 2025</u>
CHECKED BY : <u>B. D. KLAPPENBACH</u>	DATE : <u>FEB 2025</u>
DESIGN ENGINEER OF RECORD : <u>M. SHARMA</u>	DATE : <u>FEB 2025</u>



BILL OF MATERIAL					
END BENT 1 - STAGE 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B21	6	#9	1	40'-1"	818
B22	6	#9	STR.	18'-2"	371
B23	6	#4	STR.	3'-4"	13
B24	6	#4	STR.	14'-2"	57
B25	6	#4	STR.	11'-9"	47
B26	12	#4	STR.	3'-8"	29
B27	2	#4	STR.	3'-8"	5
B28	6	#9	1	52'-9"	1,076
B29	12	#5	STR.	51'-6"	645
B30	8	#4	STR.	27'-0"	144
E21	16	#5	STR.	2'-8"	45
E22	8	#5	STR.	3'-2"	26
E23	8	#5	STR.	2'-8"	22
H21	4	#4	8	17'-6"	47
H22	19	#4	9	16'-3"	206
H23	4	#4	8	16'-11"	45
H24	19	#4	9	15'-8"	199
K21	20	#4	STR.	27'-0"	361
K22	22	#4	STR.	2'-7"	38
S21	55	#5	2	11'-10"	679
S22	86	#5	3	4'-7"	411
S23	31	#5	2	12'-9"	412
S24	32	#4	5	7'-7"	162
S25	50	#4	4	5'-8"	189
S26	3	#6	7	5'-2"	23
S27	3	#6	6	8'-8"	39
U21	60	#4	4	6'-8"	267
V21	100	#5	STR.	8'-0"	834
V22	48	#5	STR.	13'-7"	680
REINFORCING STEEL				7,890 LBS.	
CLASS "A" CONCRETE					
POUR 1 (CAP, LOWER WINGS, WING PILE CAP AND COLLARS)				39.4 C.Y.	
POUR 2 (BACKWALL & UPPER WINGS)				14.8 C.Y.	
TOTAL				54.2 C.Y.	

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 4 OF 4

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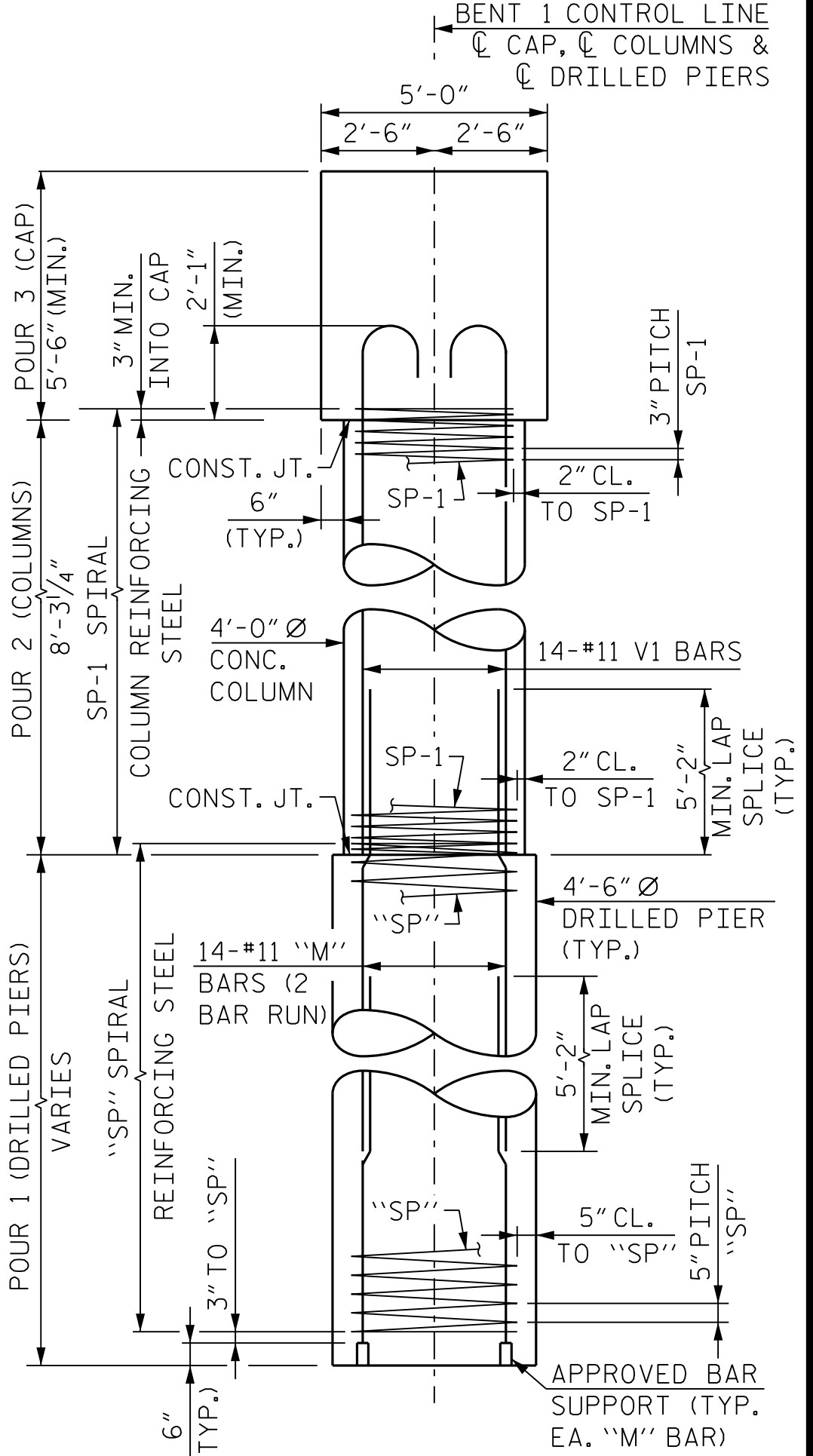
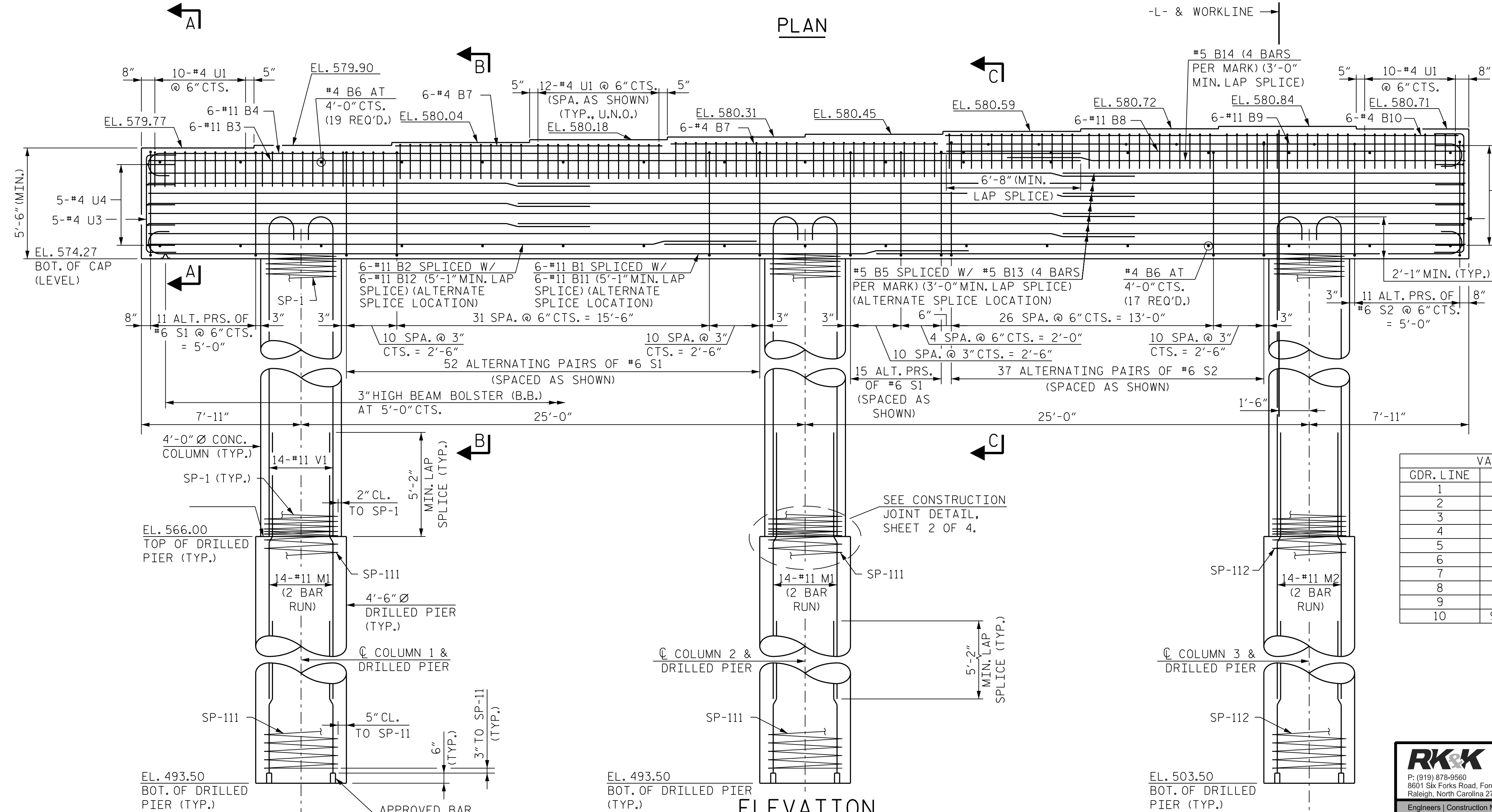
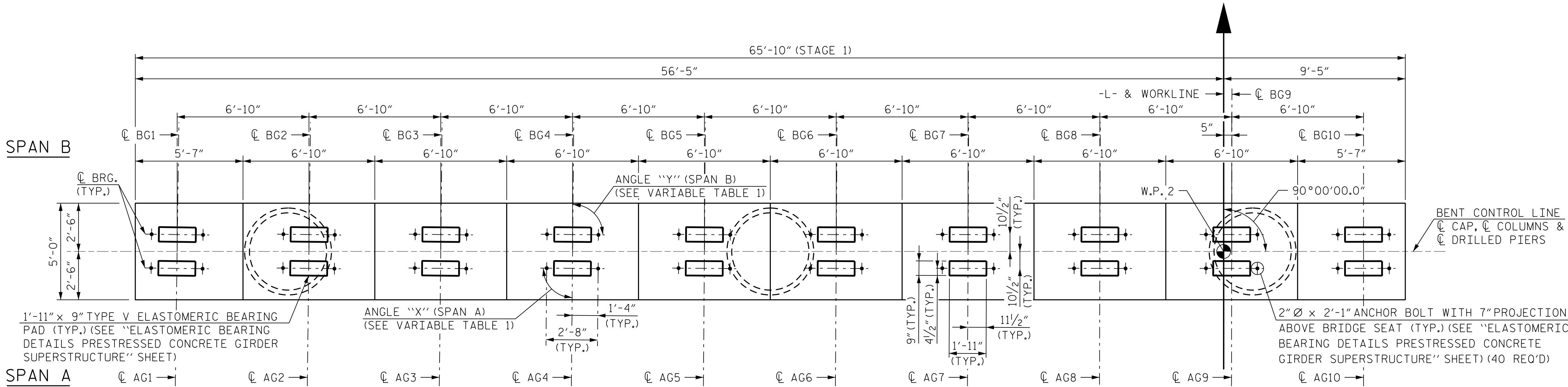
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DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1
BILL OF MATERIAL
STAGE 2

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS				S-85	
				118	

NOTES:
FOR SECTIONS A-A, B-B AND C-C, SEE SHEET 2 OF 4.
FOR "END OF CAP DETAIL", SEE SHEET 2 OF 4.
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS AND COLUMN STEEL.
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".



VARIABLE TABLE 1		
GDR. LINE	"X"	"Y"
1	89°13'07.5"	89°13'07.5"
2	89°18'19.9"	89°18'19.9"
3	89°23'32.4"	89°23'32.4"
4	89°28'44.9"	89°28'44.9"
5	89°33'57.4"	89°33'57.4"
6	89°39'09.9"	89°39'09.9"
7	89°44'22.4"	89°44'22.4"
8	89°49'35.0"	89°49'35.0"
9	89°54'47.5"	89°54'47.5"
10	90°00'00.0"	90°00'00.0"

END ELEVATION
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA						
DEPARTMENT OF TRANSPORTATION						
RALEIGH						
SUBSTRUCTURE						
BENT TYPE 1						
BENT 1						
PLAN AND ELEVATION						
STAGE 1						
REVISIONS					SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-86
1			3			TOTAL SHEETS
2			4			118

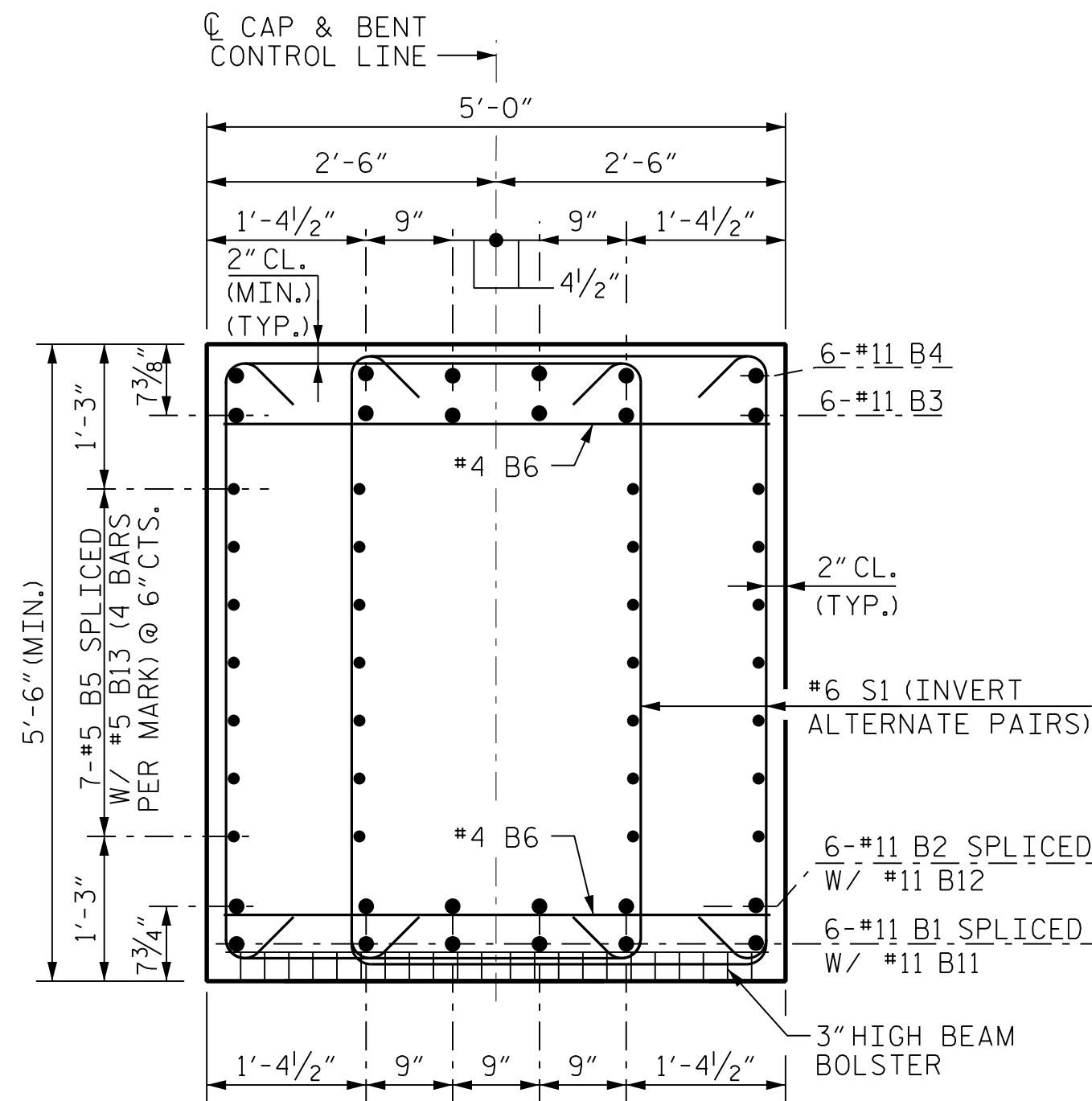
DRAWN BY : E. THOMPSON
CHECKED BY : B. D. KLAPPENBACH
DESIGN ENGINEER OF RECORD : M. SHARMA
DATE : FEB 2025
DATE : FEB 2025
DATE : FEB 2025

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

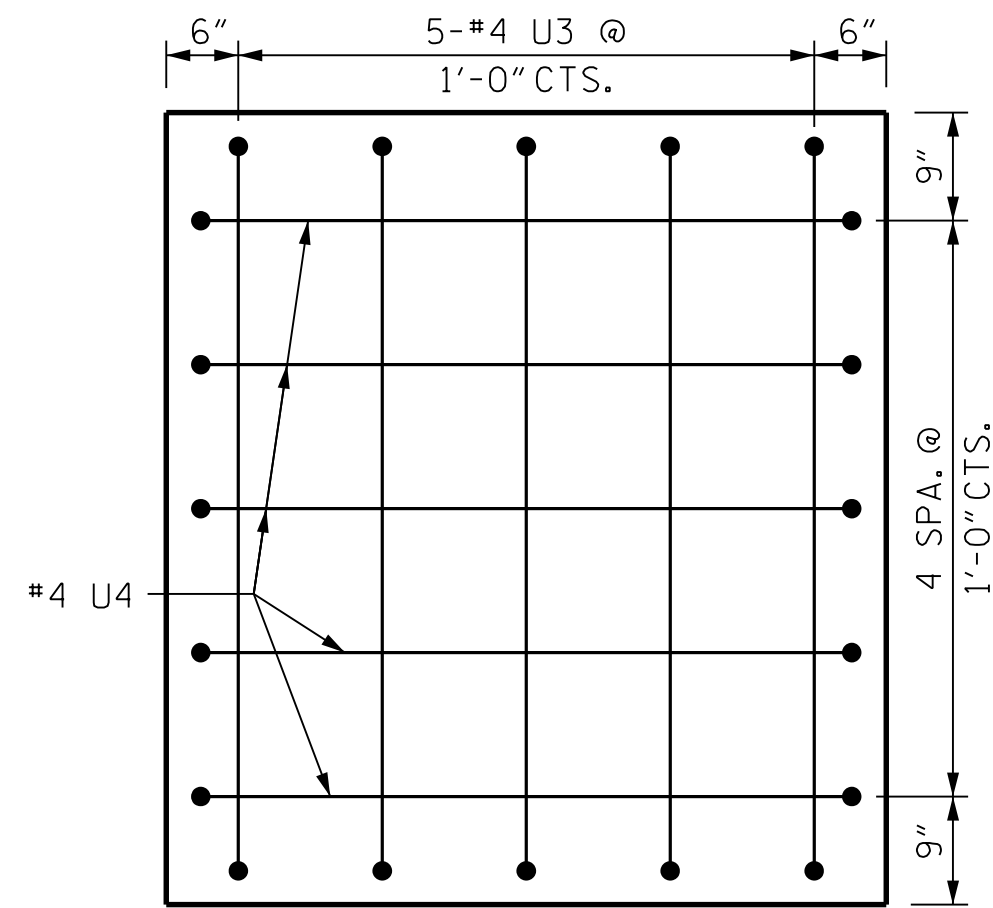
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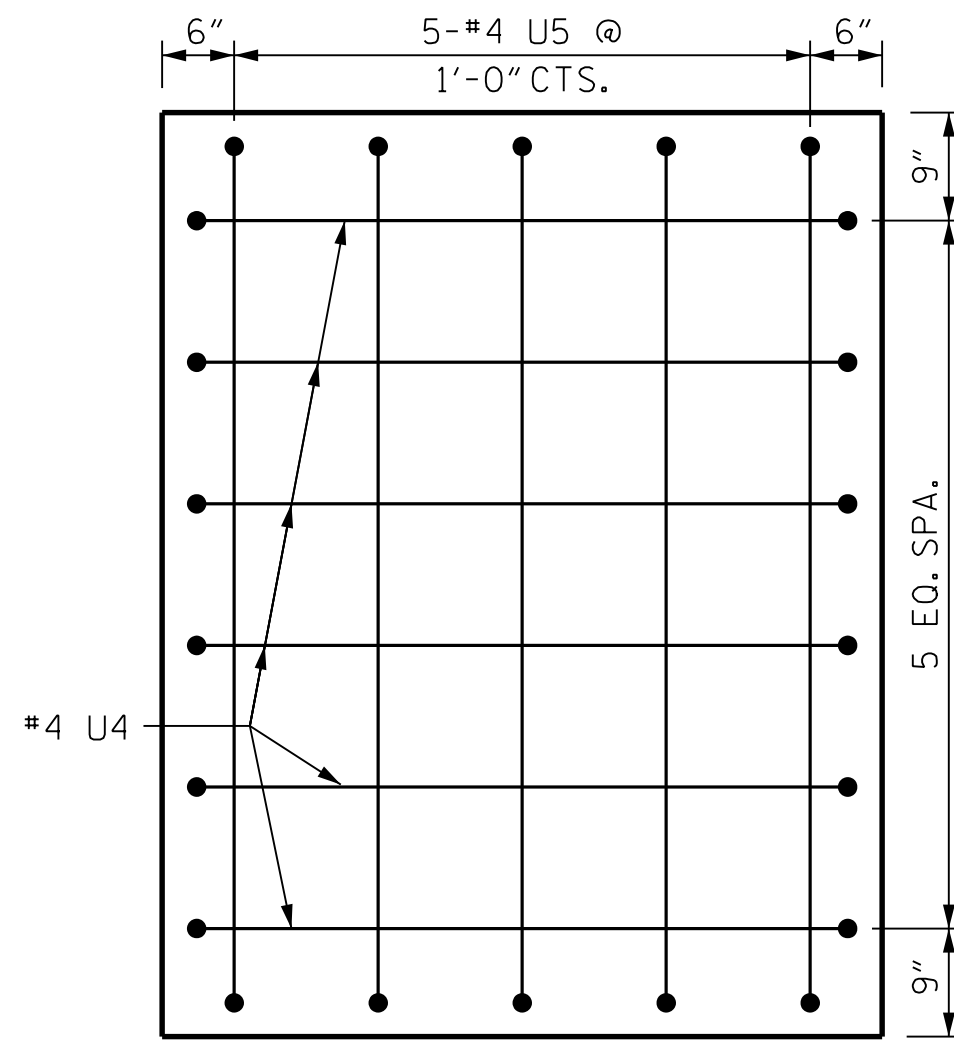
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2/10/2026 2:10
bgonfa



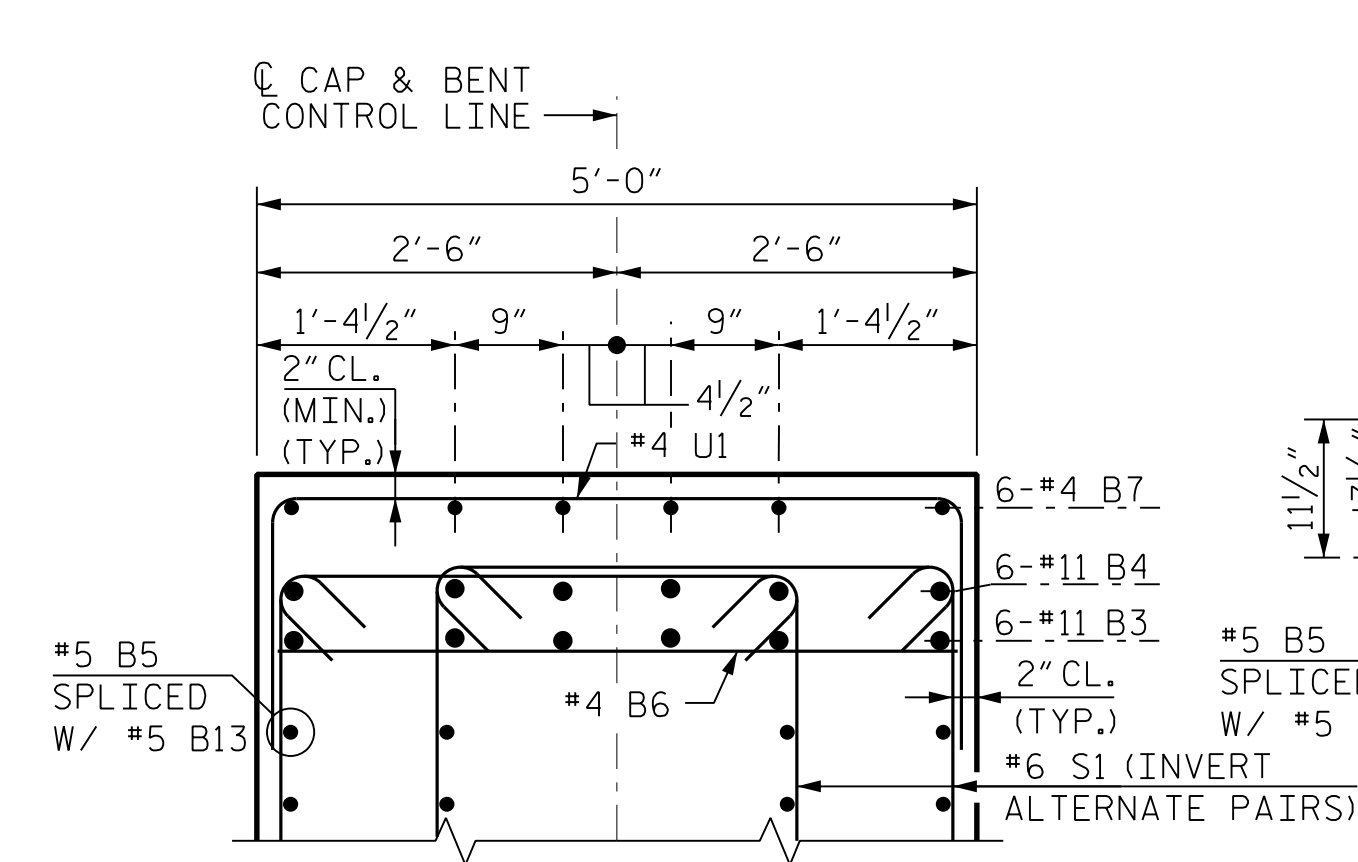
SECTION A-A



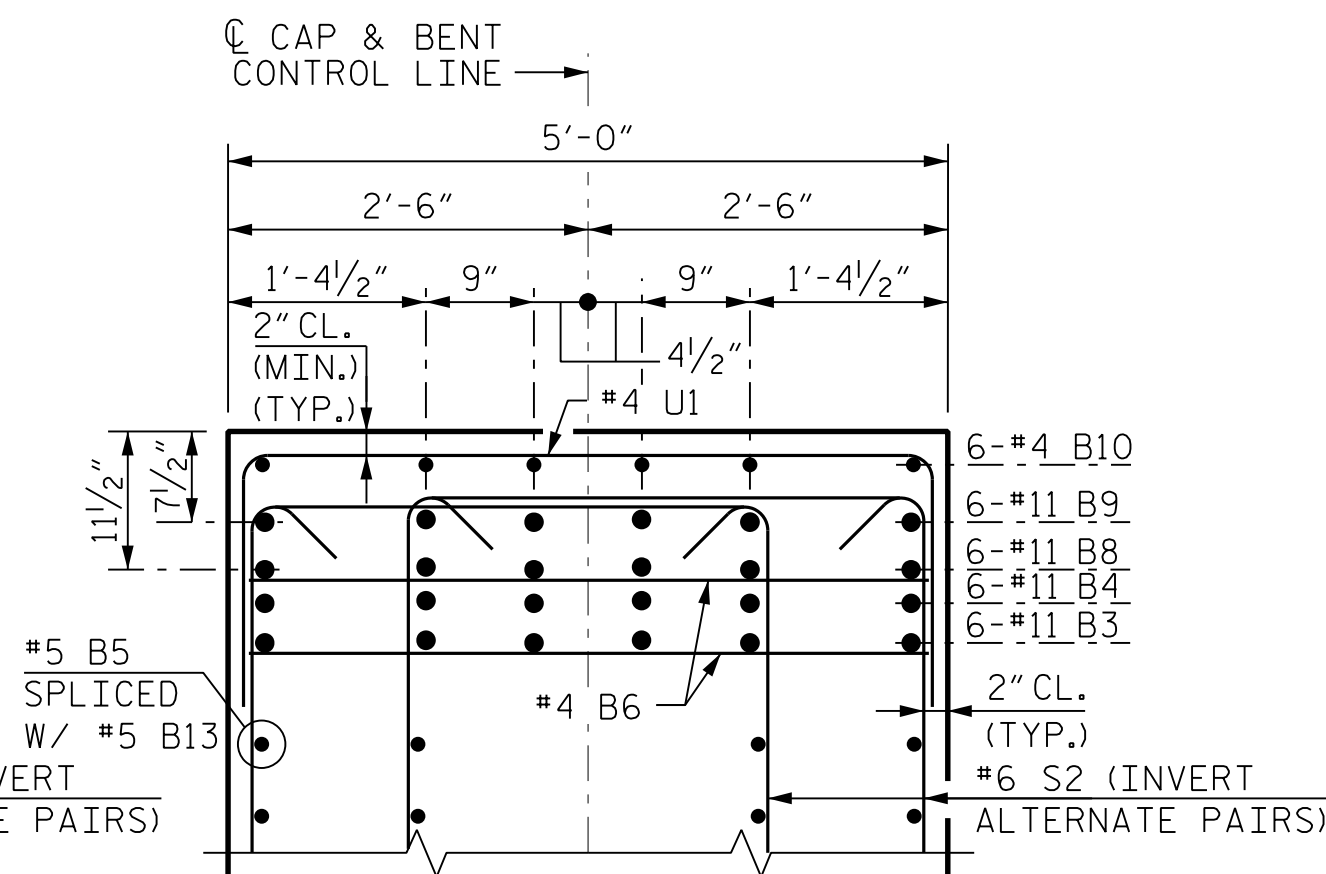
LEFT END OF CAP



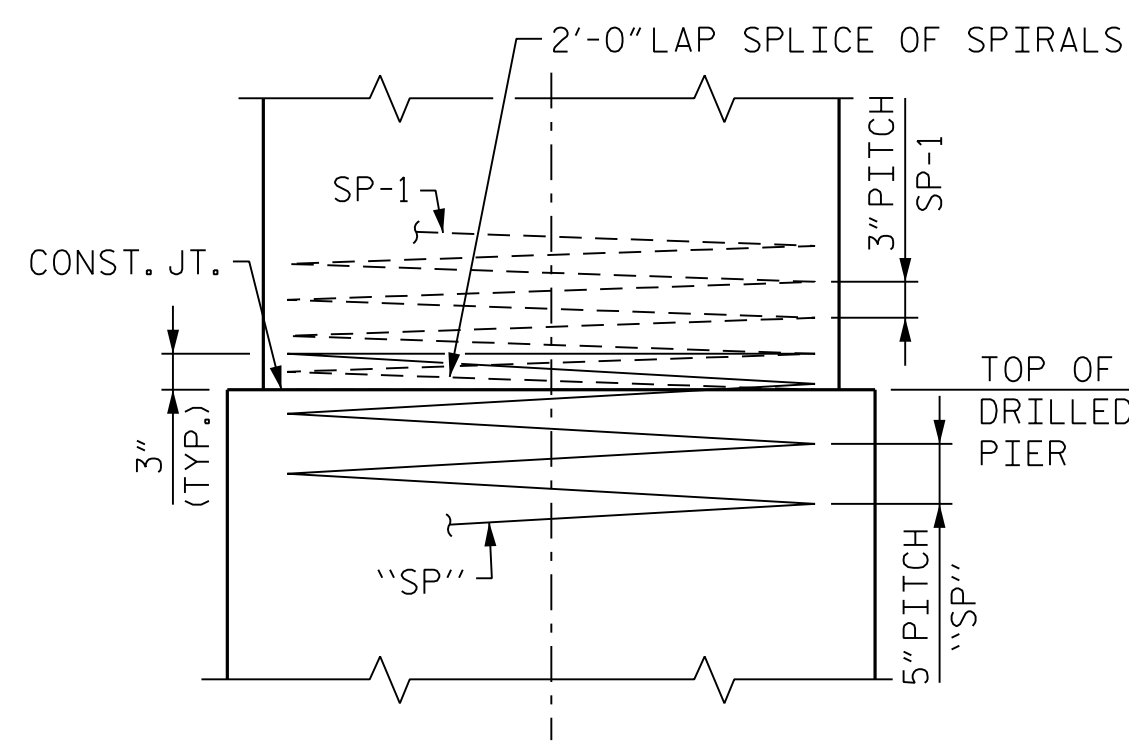
RIGHT END OF CAP



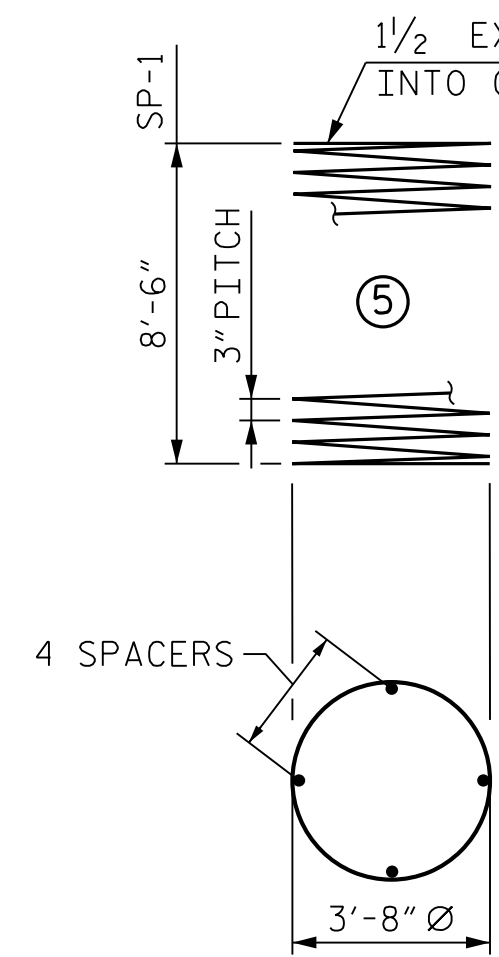
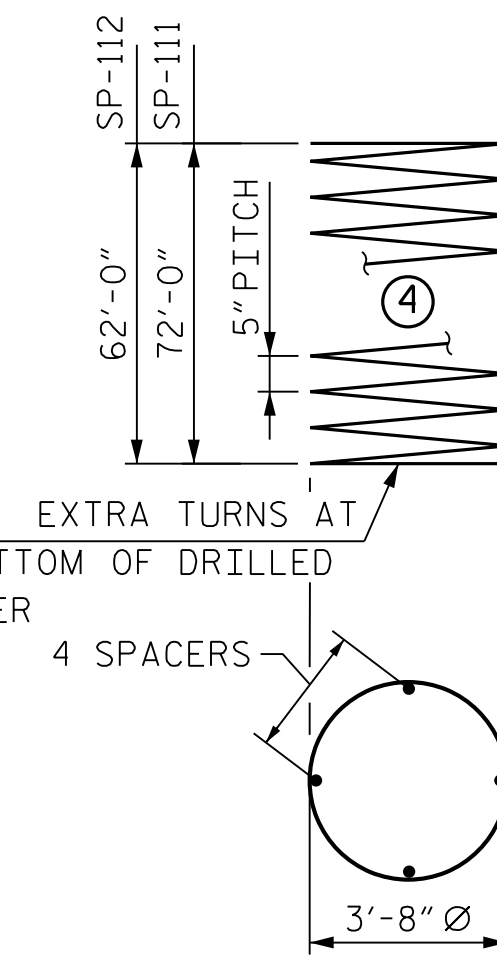
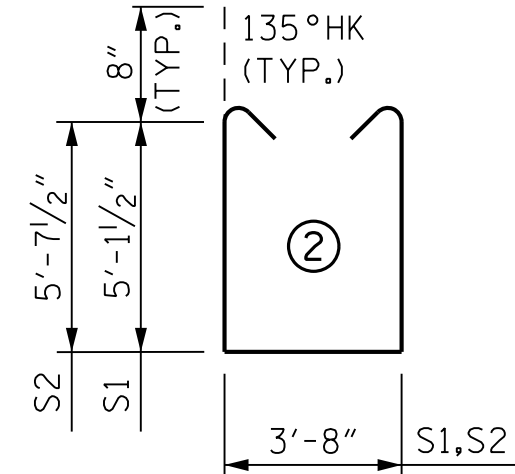
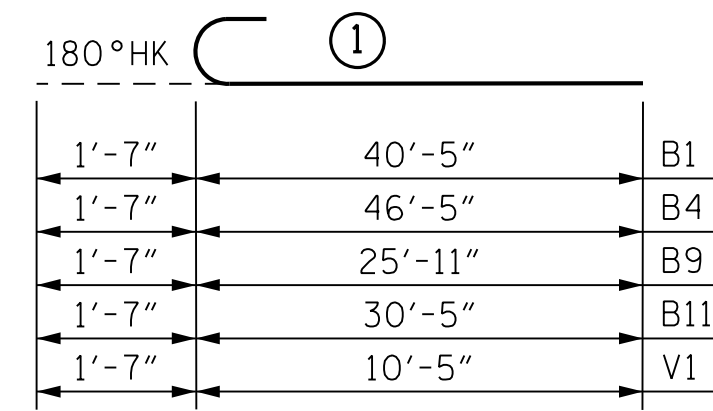
SECTION B-B



SECTION C-C



CONSTRUCTION JOINT DETAIL



NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1 (STAGE 1)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	1	42'-0"	1,339
B2	6	#11	STR.	30'-4"	967
B3	6	#11	STR.	46'-5"	1,480
B4	6	#11	1	48'-0"	1,530
B5	28	#5	STR.	46'-9"	1,365
B6	36	#4	STR.	4'-8"	112
B7	12	#4	STR.	13'-6"	108
B8	6	#11	STR.	25'-11"	826
B9	6	#11	1	27'-6"	877
B10	6	#4	STR.	25'-9"	103
B11	6	#11	1	32'-0"	1,020
B12	6	#11	STR.	40'-4"	1,286
B13	28	#5	STR.	21'-9"	635
B14	4	#5	STR.	30'-5"	127

M1	56	#11	STR.	42'-9"	12,719
M2	28	#11	STR.	37'-9"	5,616

S1	156	#6	2	15'-3"	3,573
S2	96	#6	2	16'-3"	2,343

U1	116	#4	3	7'-8"	594
U3	5	#4	3	7'-8"	26
U4	11	#4	3	7'-2"	53
U5	5	#4	3	8'-8"	29

V1	42	#11	1	12'-0"	2,678
----	----	-----	---	--------	-------

REINFORCING STEEL 39,510 LBS.

SP-1 3 * 5 404'-9" 811

SP-111 2 ** 4 1977'-9" 4,126

SP-112 1 ** 4 1705'-5" 1,779

SPIRAL COLUMN REINFORCING STEEL

6,716 LBS.

CLASS "A" CONCRETE

POUR 2 (COLUMNS) 11.6 C.Y.

POUR 3 (CAP) 74.2 C.Y.

TOTAL 85.8 C.Y.

DRILLED PIERS

POUR 1 (DRILLED PIER 122.3 C.Y. CONCRETE)

* SP-1 SPIRAL REINFORCING STEEL

SHALL BE W20 OR D-20 COLD

DRAWN WIRE OR #4 PLAIN OR

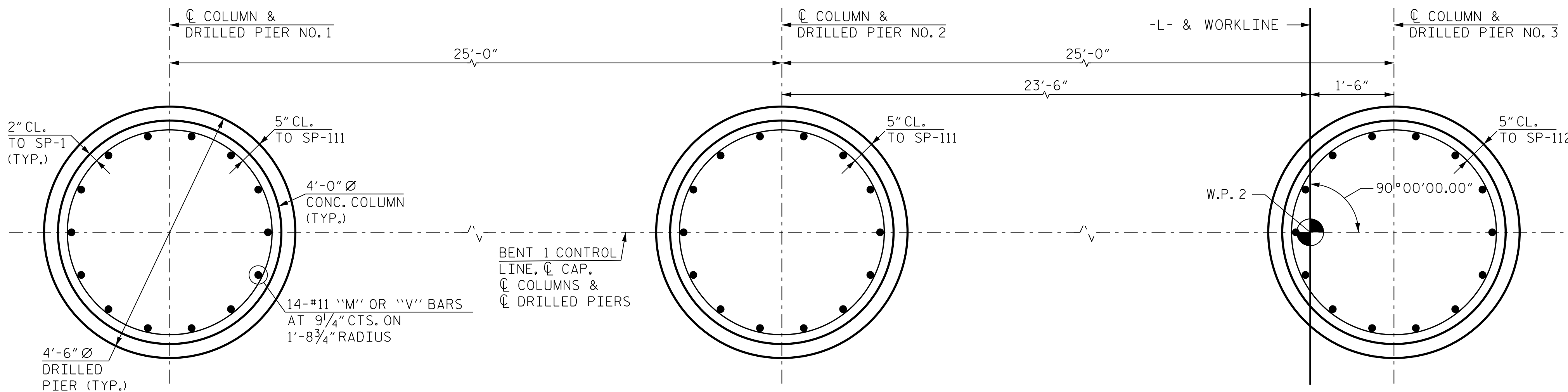
DEFORMED BAR

** "SP" SPIRAL REINFORCING STEEL

SHALL BE W31 OR D-31 COLD

DRAWN WIRE OR #5 PLAIN OR

DEFORMED BAR



PLAN OF DRILLED PIERS AND COLUMNS

(DETAILS ARE TYPICAL FOR DRILLED PIER AND COLUMN UNLESS OTHERWISE DETAILED)

DRAWN BY : E. THOMPSON
CHECKED BY : B. D. KLAPPENBACH
DESIGN ENGINEER OF RECORD : M. SHARMA
DATE : FEB 2025
DATE : FEB 2025
DATE : FEB 2025

SPAN B

SPAN A

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NORTH CAROLINA
PROFESSIONAL
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050844
ENGINEER
MAYUR SHARMA
1808127921CABD...

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT TYPE 1
BENT 1
DETAILS & BILL OF MATERIAL
STAGE 1

REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
				TOTAL SHEETS	
				118	

NOTES:
FOR SECTIONS A-A, B-B AND C-C, SEE SHEET 4 OF 4.

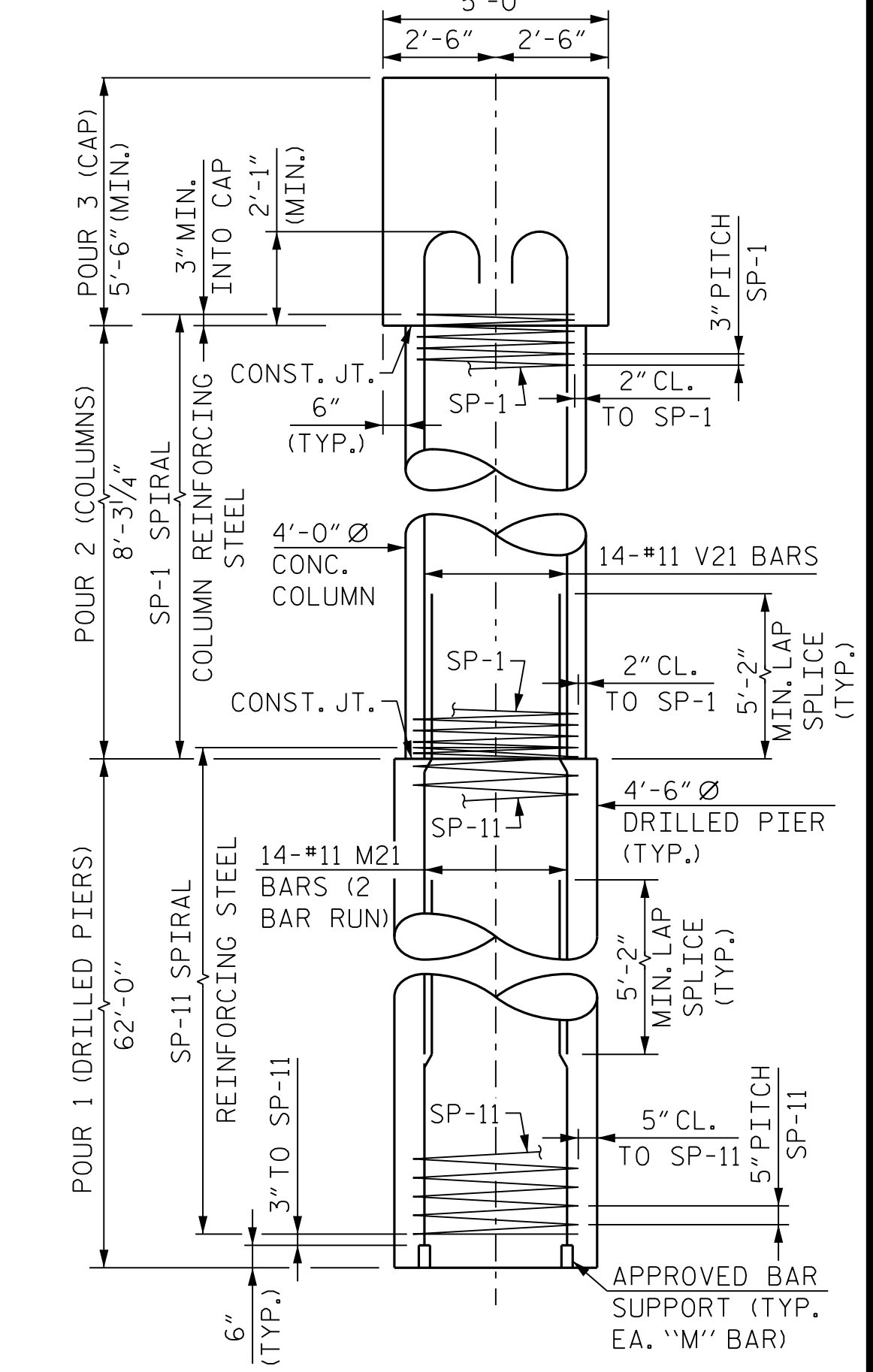
FOR "END OF CAP DETAIL", SEE SHEET 4 OF 4.

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

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

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".



END ELEVATION

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT TYPE 1
BENT 1
PLAN AND ELEVATION
STAGE 2

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

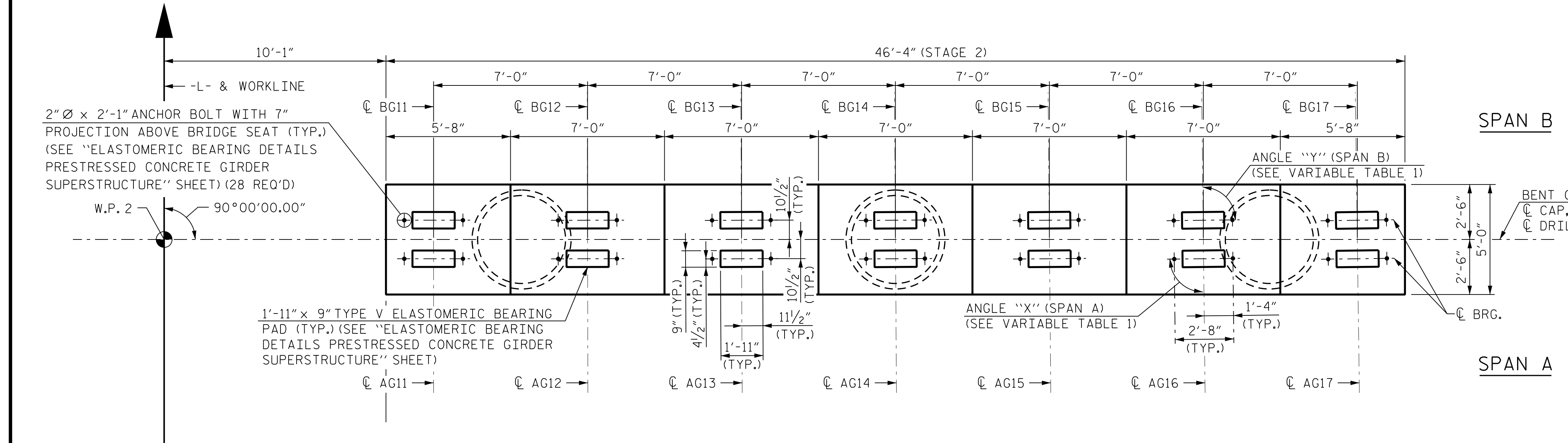
SHEET NO.
S-88
TOTAL SHEETS
118

GDR. LINE	"X"	"Y"
11	90°00'00.0"	90°00'00.0"
12	90°07'48.8"	90°07'48.8"
13	90°15'37.6"	90°15'37.6"
14	90°23'26.3"	90°23'26.3"
15	90°31'15.1"	90°31'15.1"
16	90°39'03.8"	90°39'03.8"
17	90°46'52.5"	90°46'52.5"

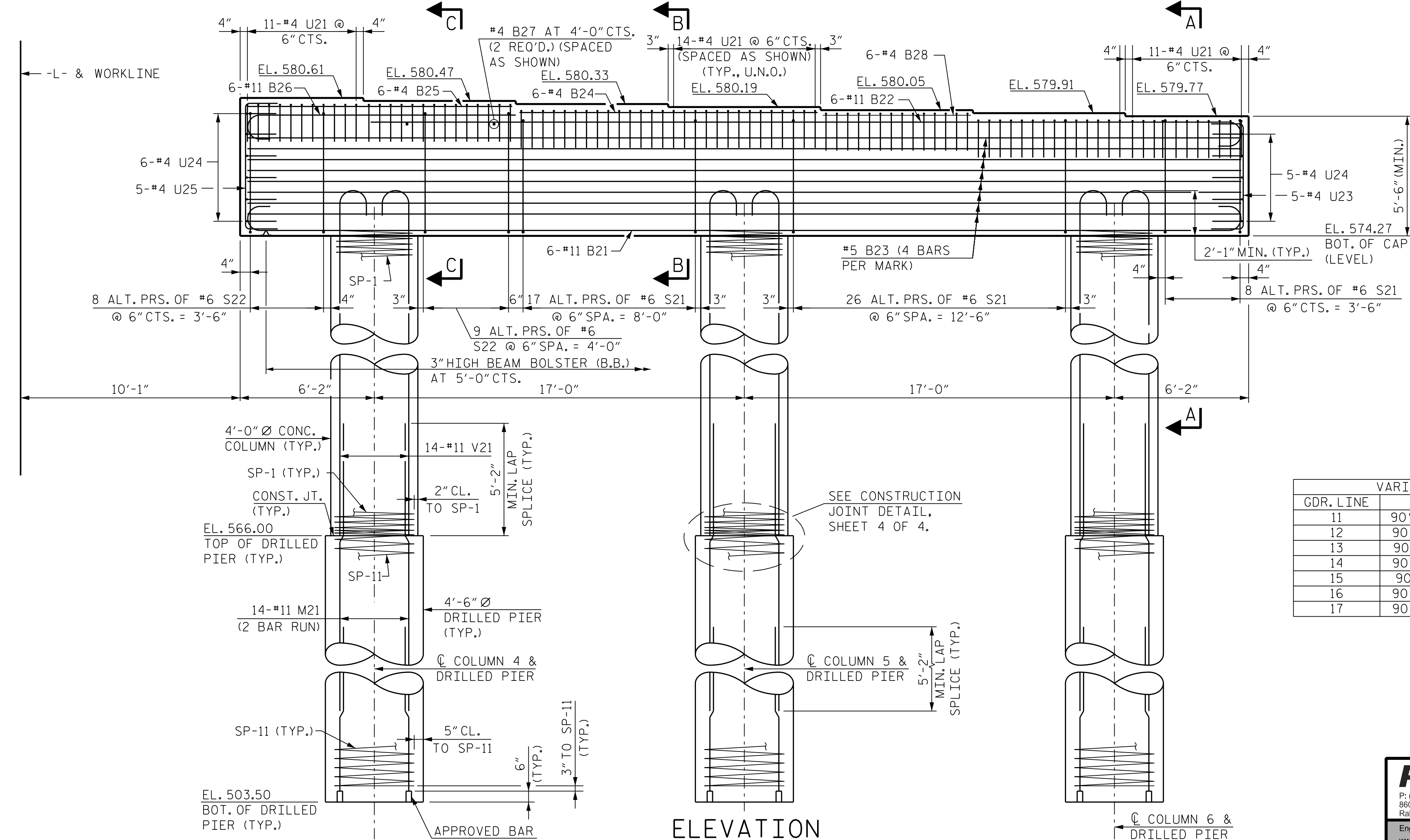
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ENGINEER
MAYUR SHARMA
880872F7921C8D...



PLAN



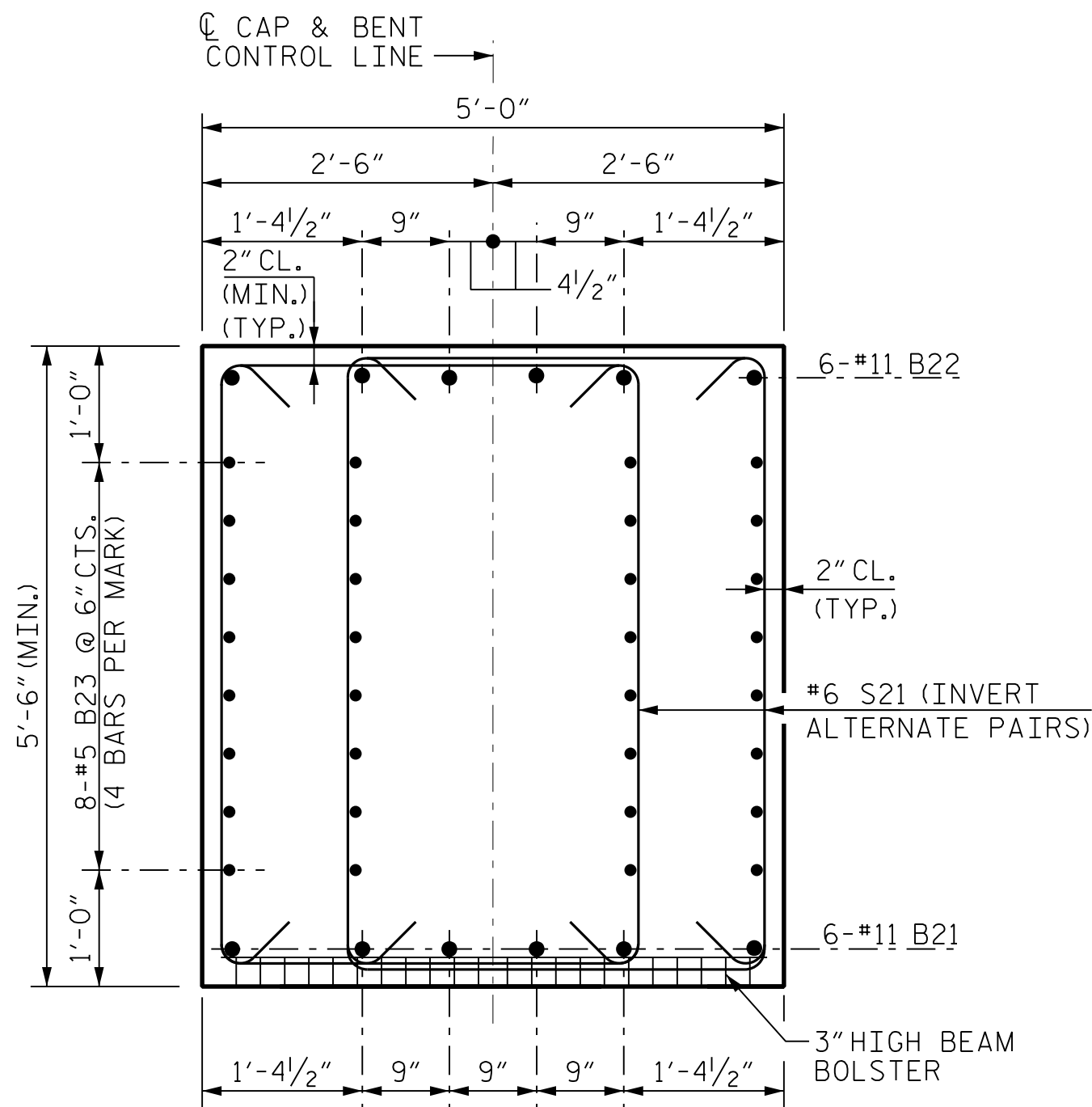
ELEVATION

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

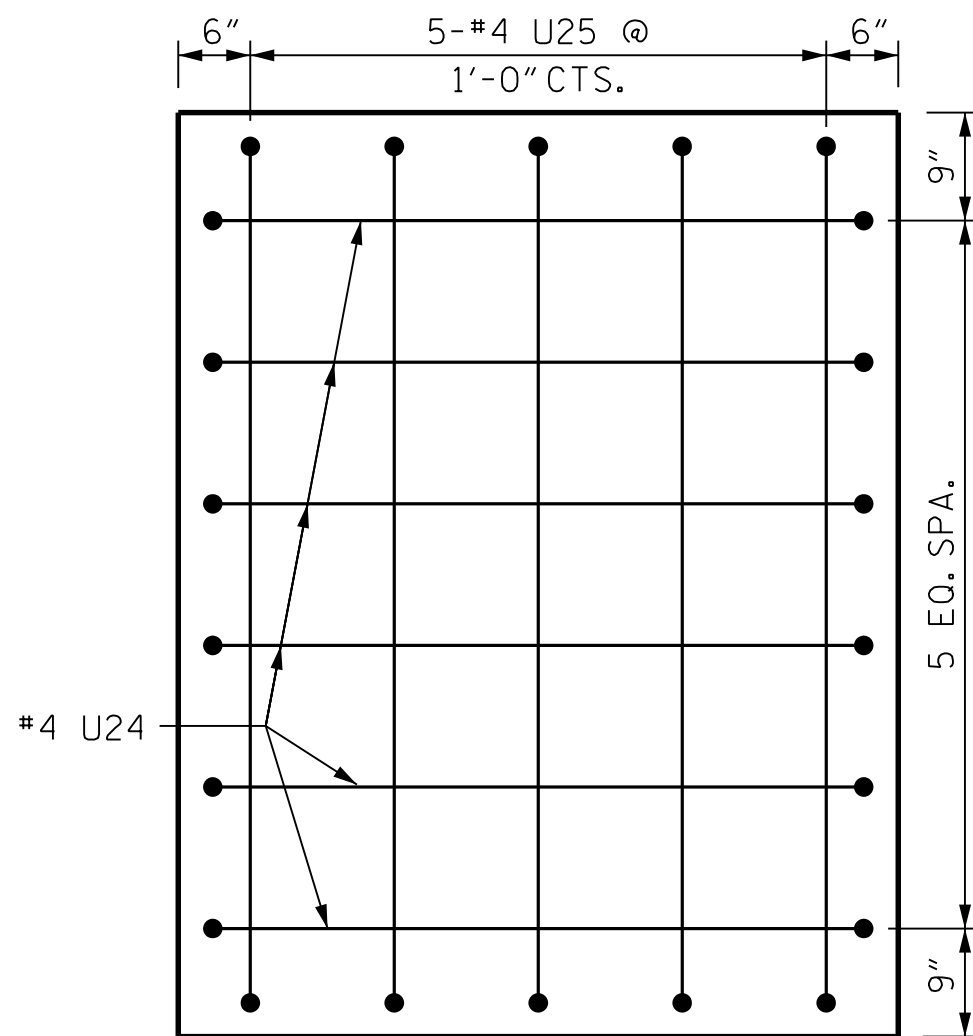
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CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025

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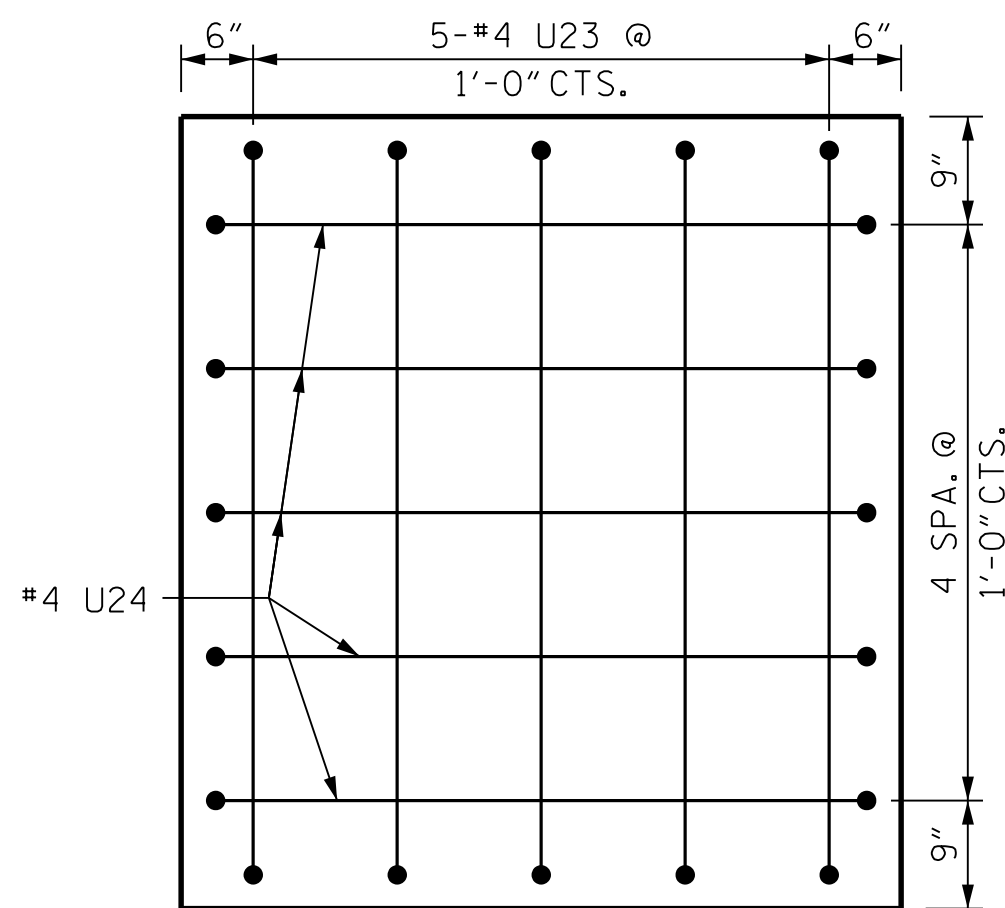
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bgonfa



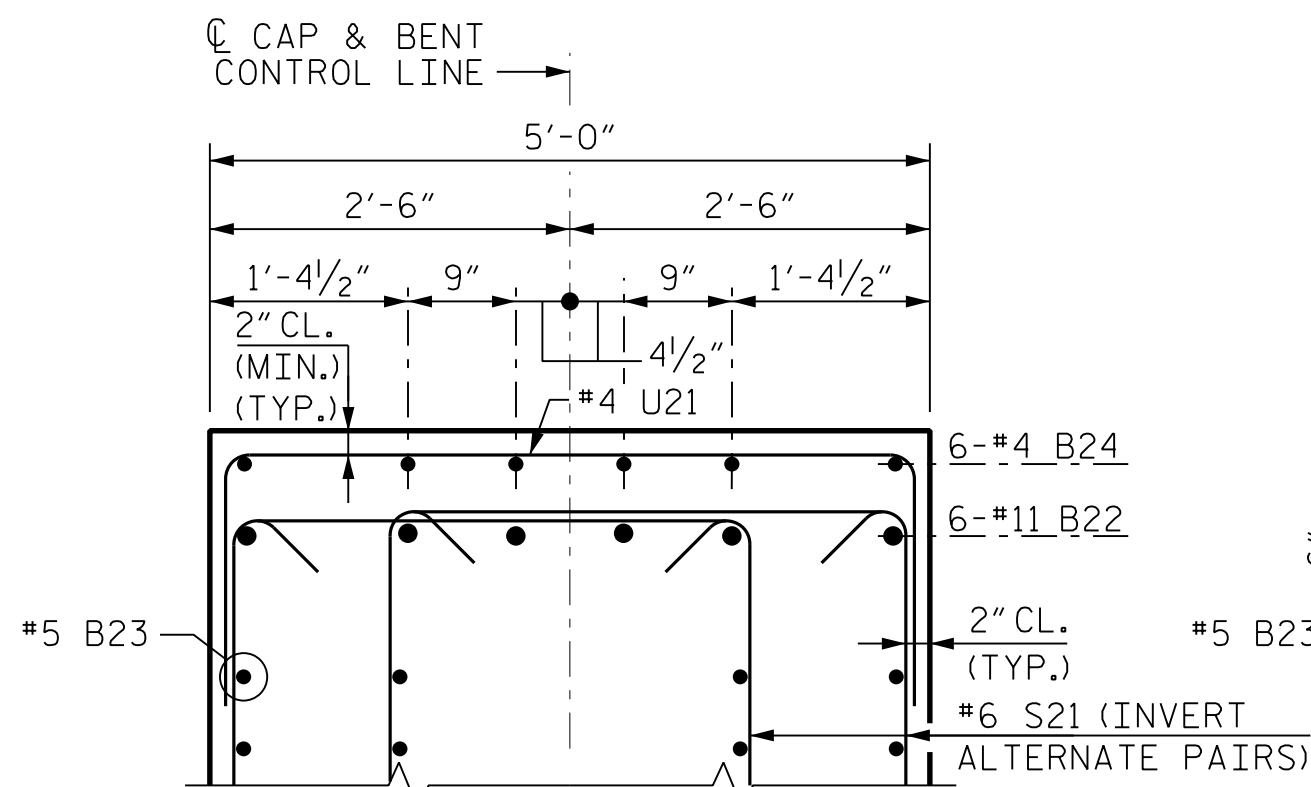
SECTION A-A



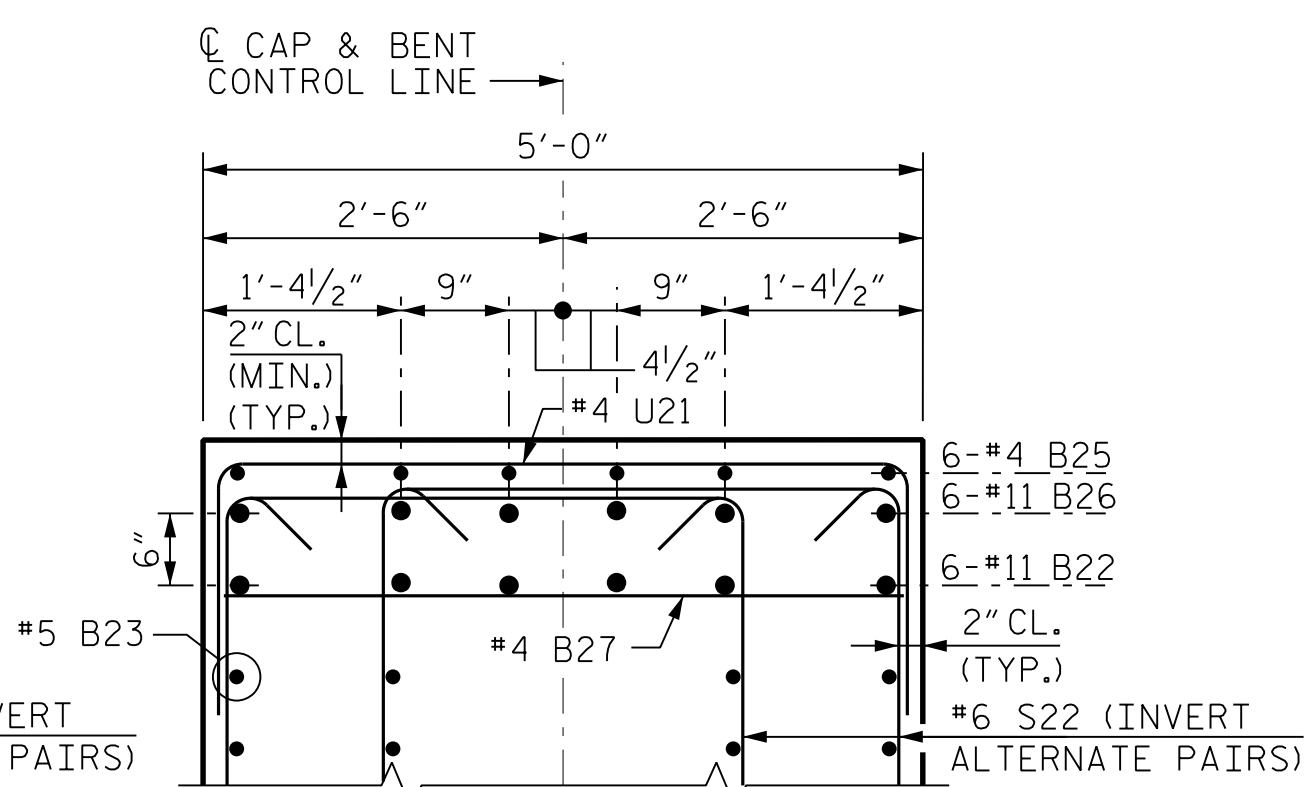
LEFT END OF CAP



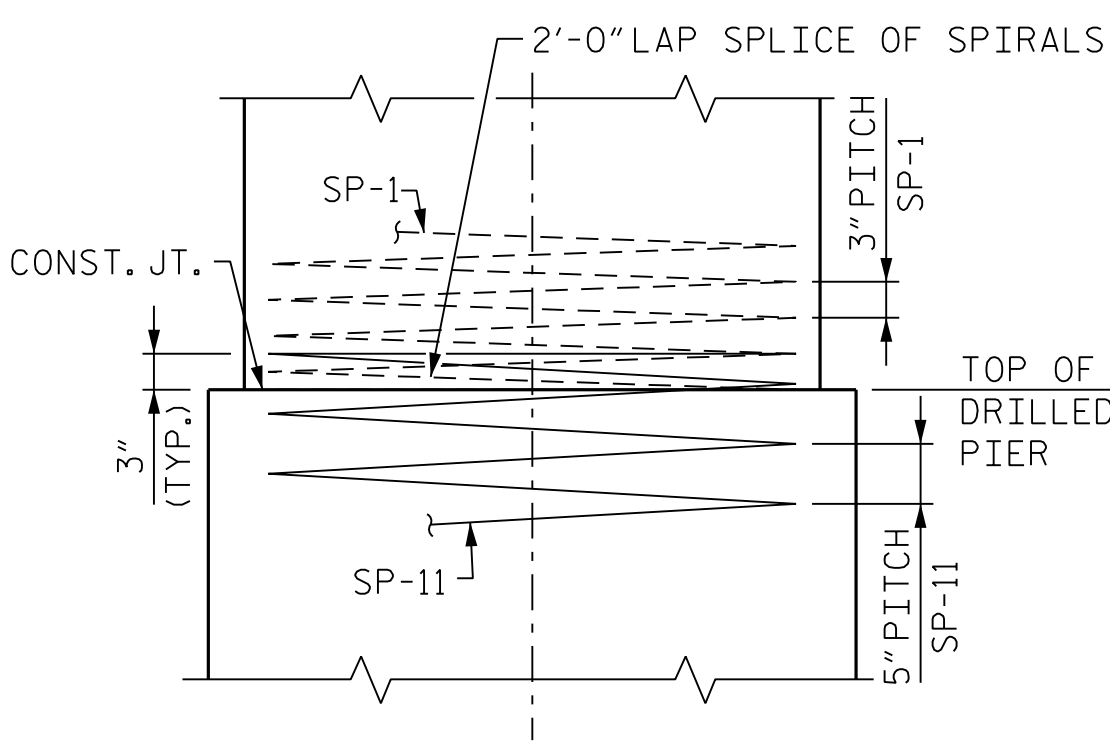
RIGHT END OF CAP



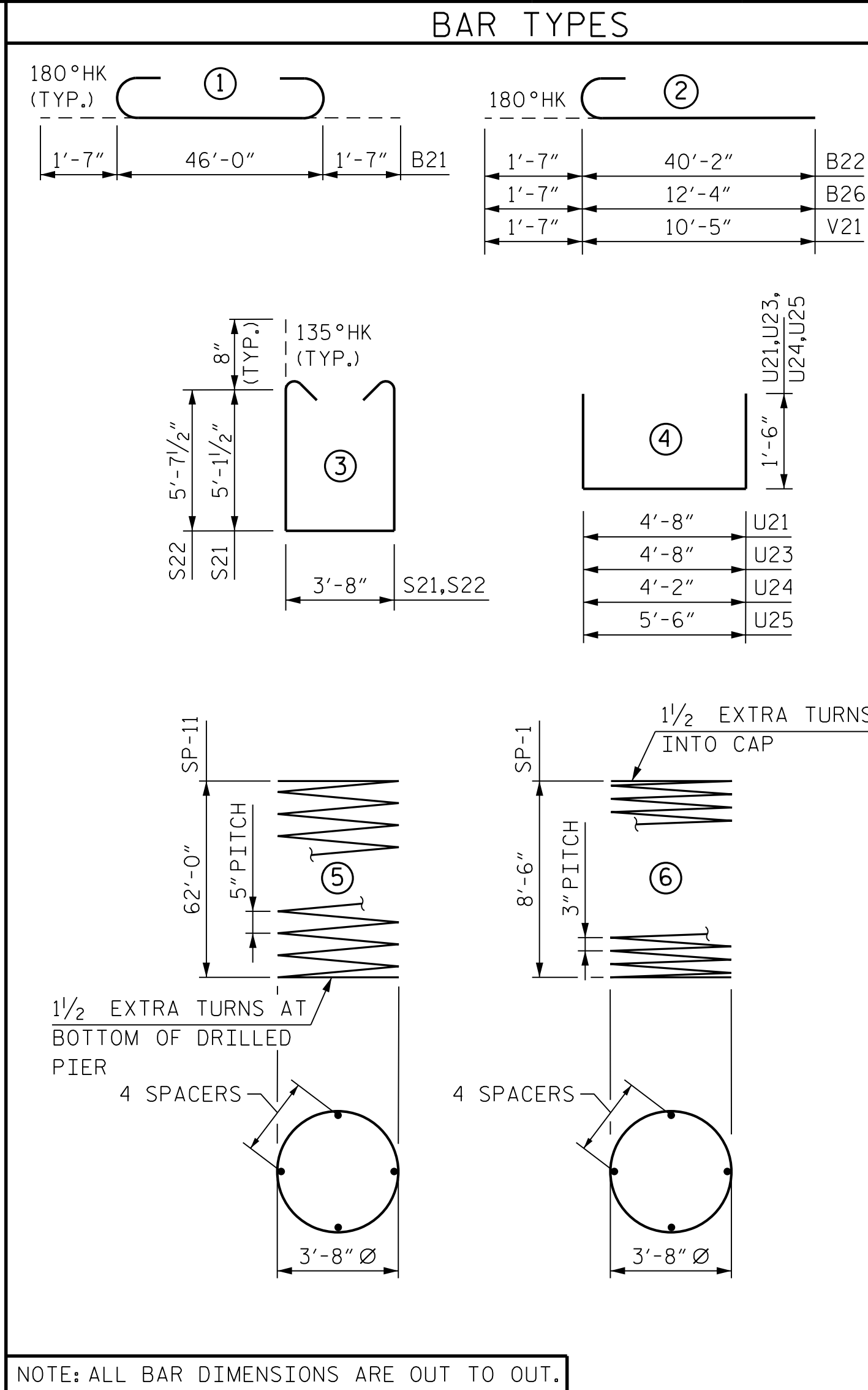
SECTION B-B



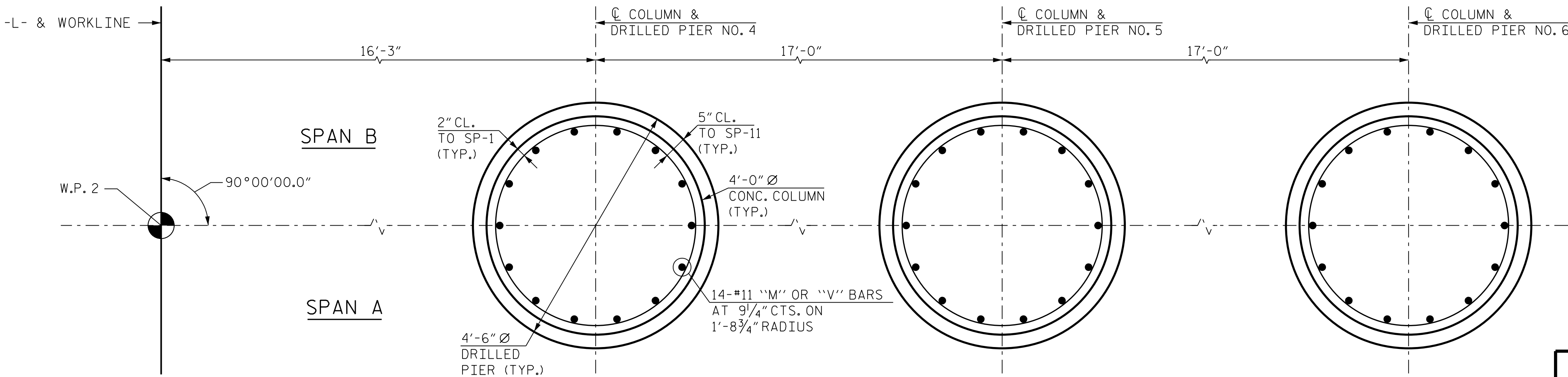
SECTION C-C



CONSTRUCTION JOINT DETAIL



BILL OF MATERIAL						
BENT 1 (STAGE 2)						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B21	6	#11	1	49'-2"	1,567	
B22	6	#11	2	41'-9"	1,331	
B23	32	#5	STR.	46'-0"	1,535	
B24	6	#4	STR.	13'-8"	55	
B25	6	#4	STR.	12'-4"	49	
B26	6	#11	2	13'-11"	444	
B27	2	#4	STR.	4'-8"	6	
B28	6	#4	STR.	6'-10"	27	
M21	84	#11	STR.	37'-9"	16,848	
S21	102	#6	3	15'-3"	2,336	
S22	34	#6	3	16'-3"	830	
U21	92	#4	4	7'-8"	471	
U23	5	#4	4	7'-8"	26	
U24	11	#4	4	7'-2"	53	
U25	5	#4	4	8'-6"	28	
V21	42	#11	2	12'-0"	2,678	
REINFORCING STEEL 28,210 LBS.						
SP-1	3	*	6	404'-9"	811	
SP-11	3	**	5	1705'-5"	5,336	
SPIRAL COLUMN REINFORCING STEEL						
6,147 LBS.						
CLASS "A" CONCRETE						
POUR 2 (COLUMNS) 11.6 C.Y.						
POUR 3 (CAP) 50.8 C.Y.						
TOTAL 62.4 C.Y.						
DRILLED PIERS						
POUR 1 (DRILLED PIER 110.5 C.Y. CONCRETE)						
* SP-1 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR						
** SP-11 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR						



PLAN OF DRILLED PIERS AND COLUMNS

(DETAILS ARE TYPICAL FOR DRILLED PIER AND COLUMN UNLESS OTHERWISE DETAILED)

DRAWN BY : E. THOMPSON
CHECKED BY : B. D. KLAPPENBACH
DESIGN ENGINEER OF RECORD : M. SHARMA
DATE : FEB 2025
DATE : FEB 2025
DATE : FEB 2025

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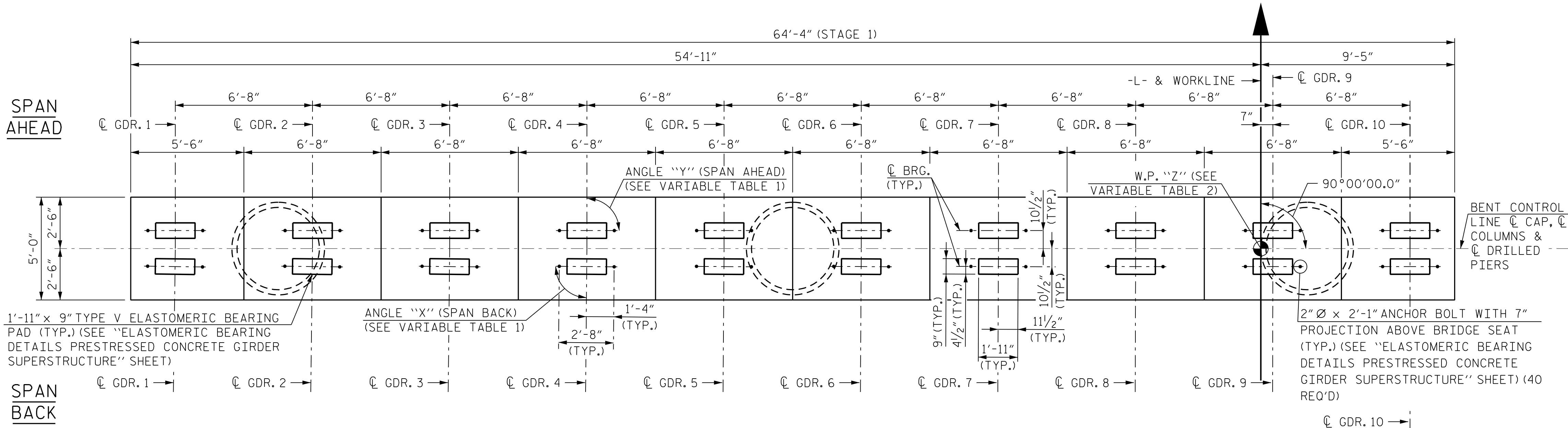
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ENGINEER
MAYUR SHARMA
680672F7921C48D...

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

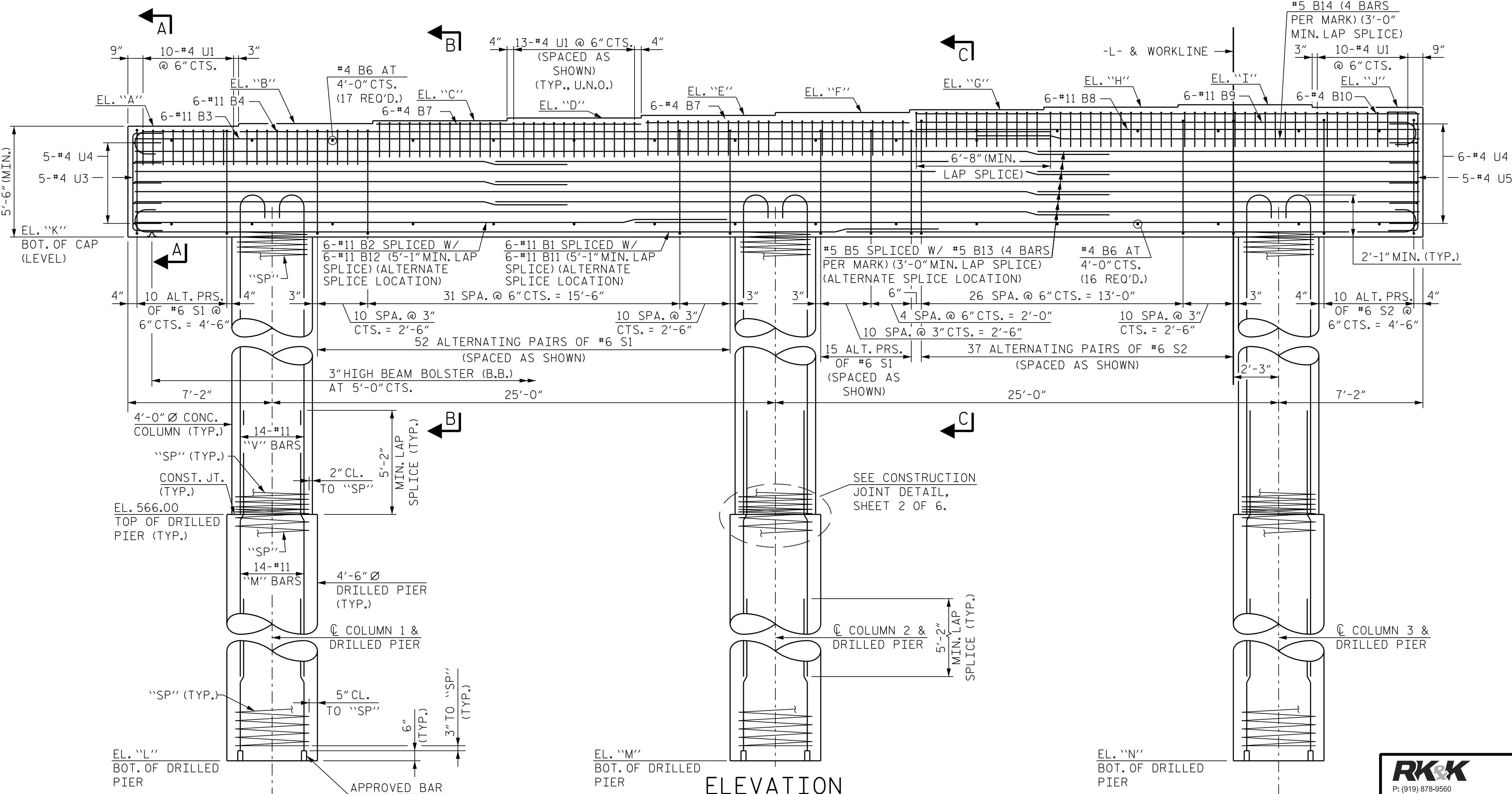
SHEET 4 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						
SUBSTRUCTURE BENT TYPE 1 BENT 1 DETAILS & BILL OF MATERIAL STAGE 2						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-89
2			4			TOTAL SHEETS 118

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PLAN



ELEVATION

(FOR ELEVATIONS, SEE VARIABLE TABLE 2)
DIMENSIONS & REINFORCING STEEL ARE TYPICAL
FOR EACH COLUMN & DRILLED PIER (U.N.O.)

NOTES:

FOR SECTIONS A-A, B-B, C-C AND "END OF CAP DETAIL" SEE SHEET 2 OF 6.

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

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

FOR REINFORCING BILL OF MATERIAL, SEE SHEET 3 OF 6.

AT BENT 2, 5, AND 8, THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

FOR BAR DESIGNATIONS OF LONGITUDINAL REINFORCING STEEL IN DRILLED SHAFTS, SEE VARIABLE TABLE 3 ON SHEET 3 OF 6

FOR BAR DESIGNATIONS OF SPIRAL REINFORCING STEEL IN DRILLED SHAFTS, SEE VARIABLE TABLE 4 ON SHEET 3 OF 6

FOR BAR DESIGNATIONS OF LONGITUDINAL REINFORCING STEEL IN COLUMNS, SEE VARIABLE TABLE 5 ON SHEET 3 OF 6

FOR BAR DESIGNATIONS OF SPIRAL REINFORCING STEEL IN COLUMNS, SEE VARIABLE TABLE 6 ON SHEET 3 OF 6

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".

VARIABLE TABLE 1				
BENT 2		BENTS 3-6, 8-10		
GDR. LINE	"X"	"Y"	"X"	"Y"
1	89°13'07.5"	90°00'00.0"	90°00'00.0"	90°00'00.0"
2	89°18'19.9"	90°00'00.0"	90°00'00.0"	90°00'00.0"
3	89°23'32.4"	90°00'00.0"	90°00'00.0"	90°00'00.0"
4	89°28'44.9"	90°00'00.0"	90°00'00.0"	90°00'00.0"
5	89°33'57.4"	90°00'00.0"	90°00'00.0"	90°00'00.0"
6	89°39'09.9"	90°00'00.0"	90°00'00.0"	90°00'00.0"
7	89°44'22.4"	90°00'00.0"	90°00'00.0"	90°00'00.0"
8	89°49'35.0"	90°00'00.0"	90°00'00.0"	90°00'00.0"
9	89°54'47.5"	90°00'00.0"	90°00'00.0"	90°00'00.0"
10	90°00'00.0"	90°00'00.0"	90°00'00.0"	90°00'00.0"

VARIABLE TABLE 2							
BENT	"Z"	"A"	"B"	"C"	"D"	"E"	"F"
2	3	581.31	581.45	581.58	581.71	581.85	581.98
3	4	582.83	582.96	583.10	583.23	583.36	583.50
4	5	583.90	584.03	584.17	584.30	584.43	584.57
5	6	584.97	585.10	585.23	585.37	585.50	585.63
6	7	586.34	586.48	586.61	586.74	586.88	587.01
8	9	586.41	586.54	586.67	586.81	586.94	587.07
9	10	585.32	585.45	585.58	585.72	585.85	585.98
10	11	584.21	584.34	584.48	584.61	584.74	584.88

VARIABLE TABLE 2 (CONT'D)							
BENT	"Z"	"H"	"I"	"J"	"L"	"M"	"N"
2	3	582.25	582.36	582.22	575.81	507.00	507.00
3	4	583.76	583.87	583.74	577.33	507.50	507.50
4	5	584.83	584.94	584.81	578.40	499.00	499.00
5	6	585.90	586.01	585.88	579.47	506.00	516.00
6	7	587.28	587.39	587.25	580.84	519.50	525.50
8	9	587.34	587.45	587.32	580.91	493.00	493.00
9	10	586.25	586.36	586.23	579.82	476.00	480.00
10	11	585.14	585.25	585.12	578.71	495.00	499.00

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 6

DRAWN BY : E. THOMPSON
CHECKED BY : B. D. KLAPPENBACH
DESIGN ENGINEER OF RECORD : M. SHARMA

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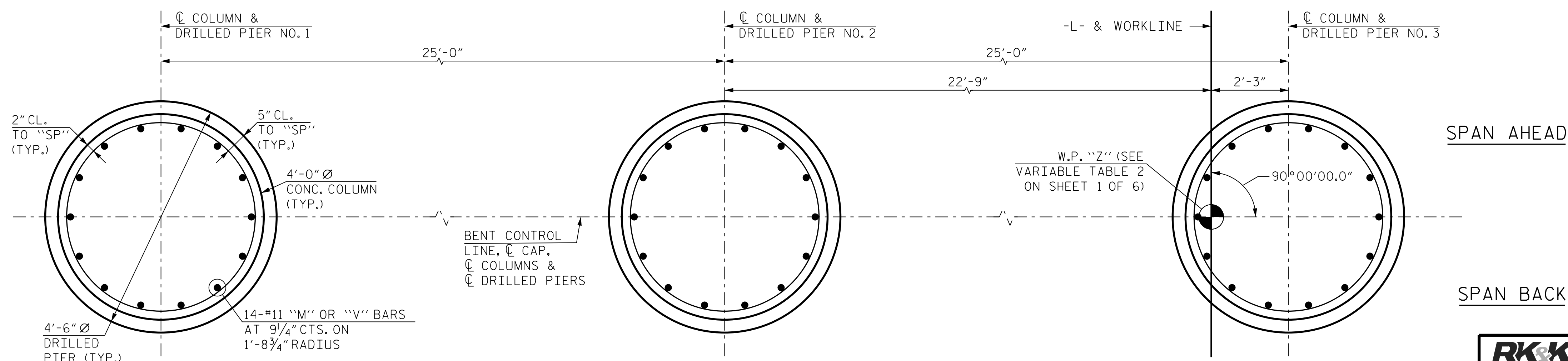
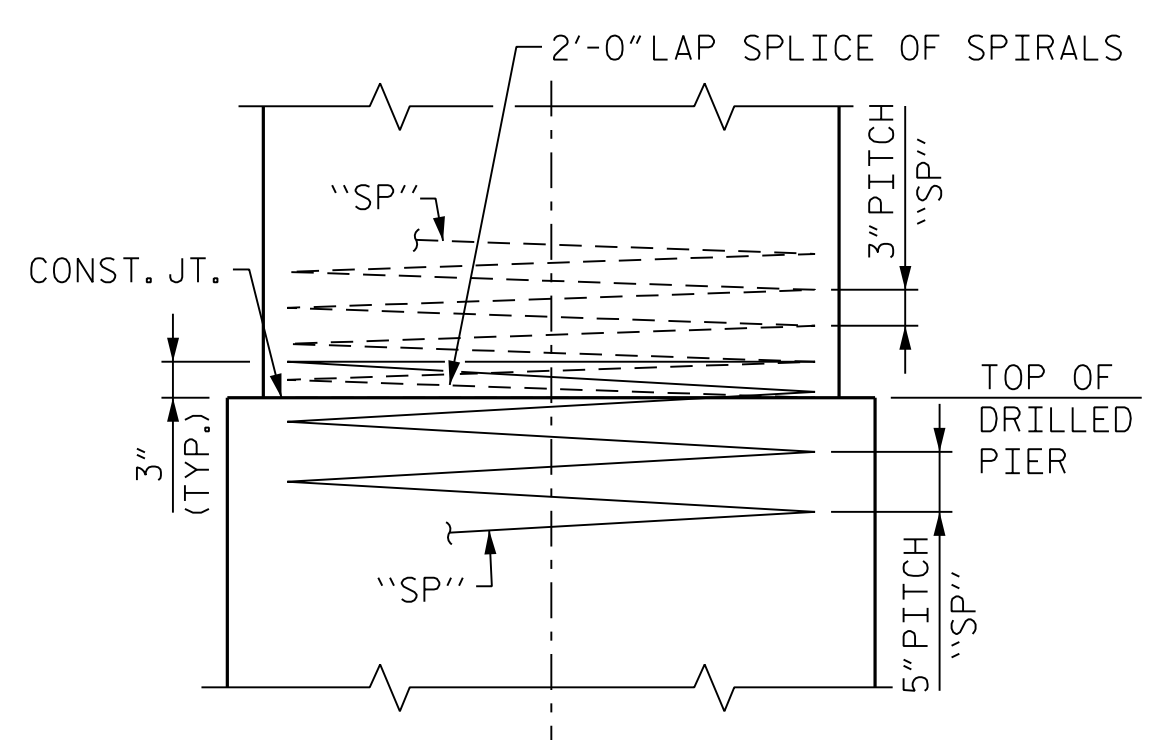
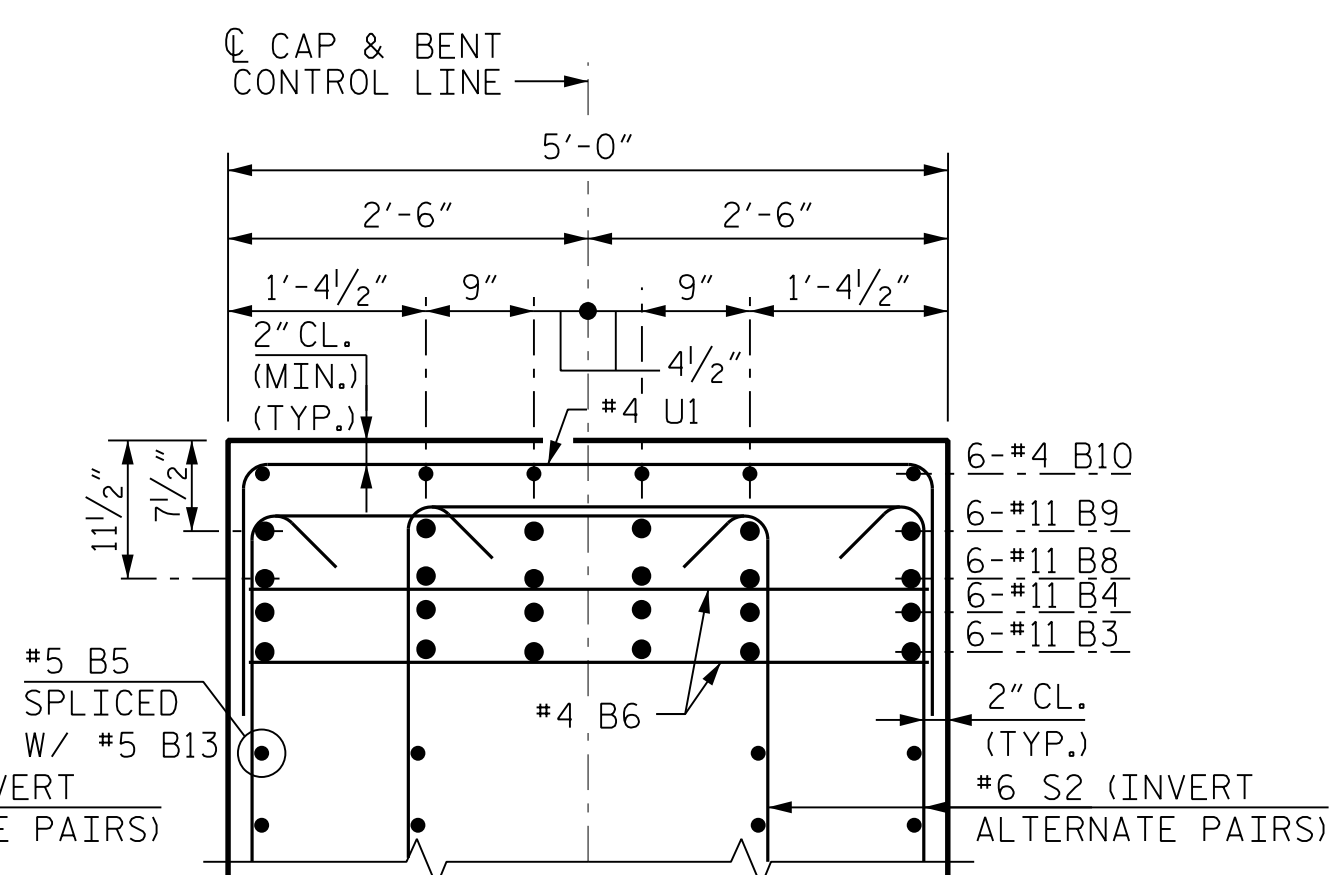
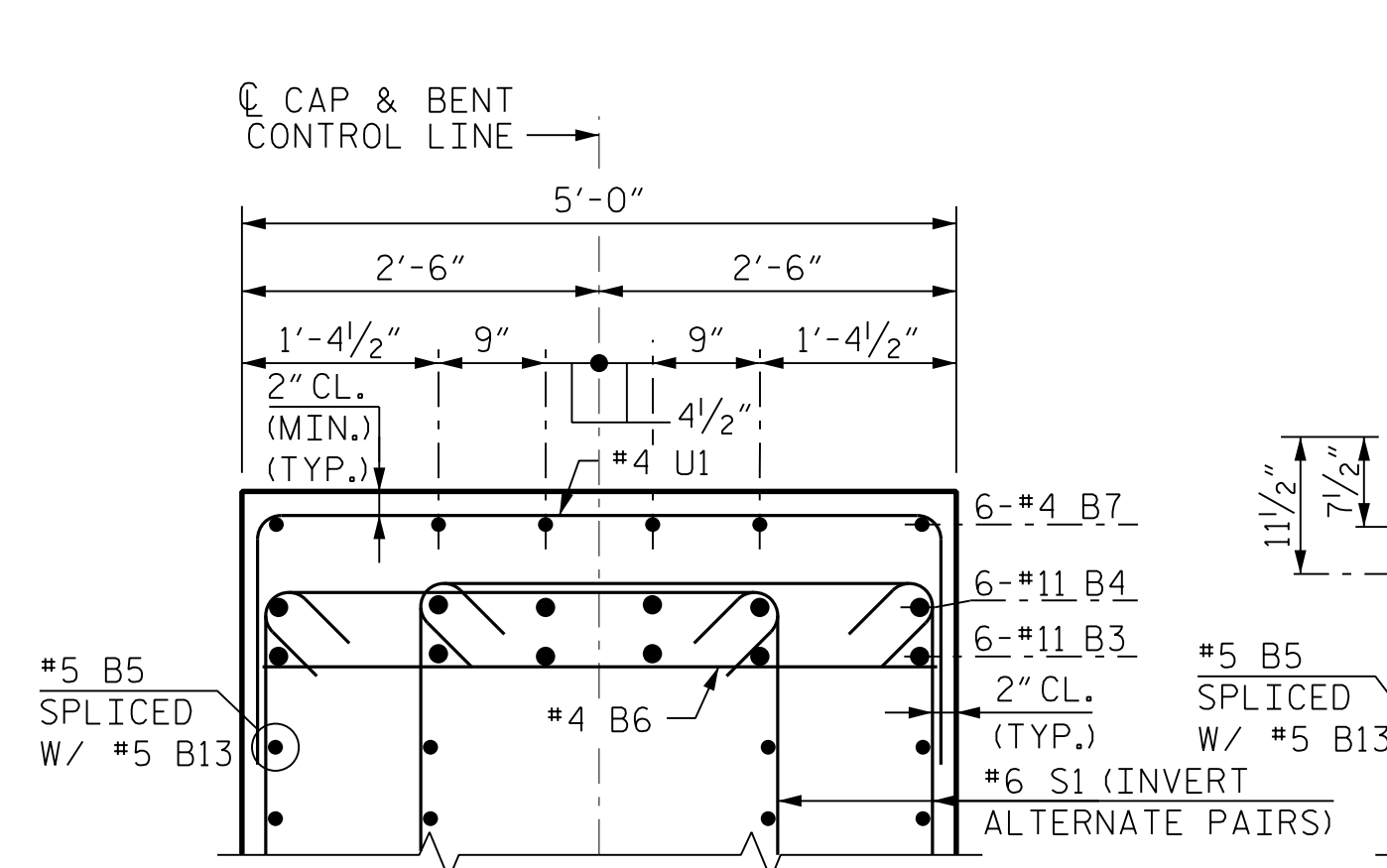
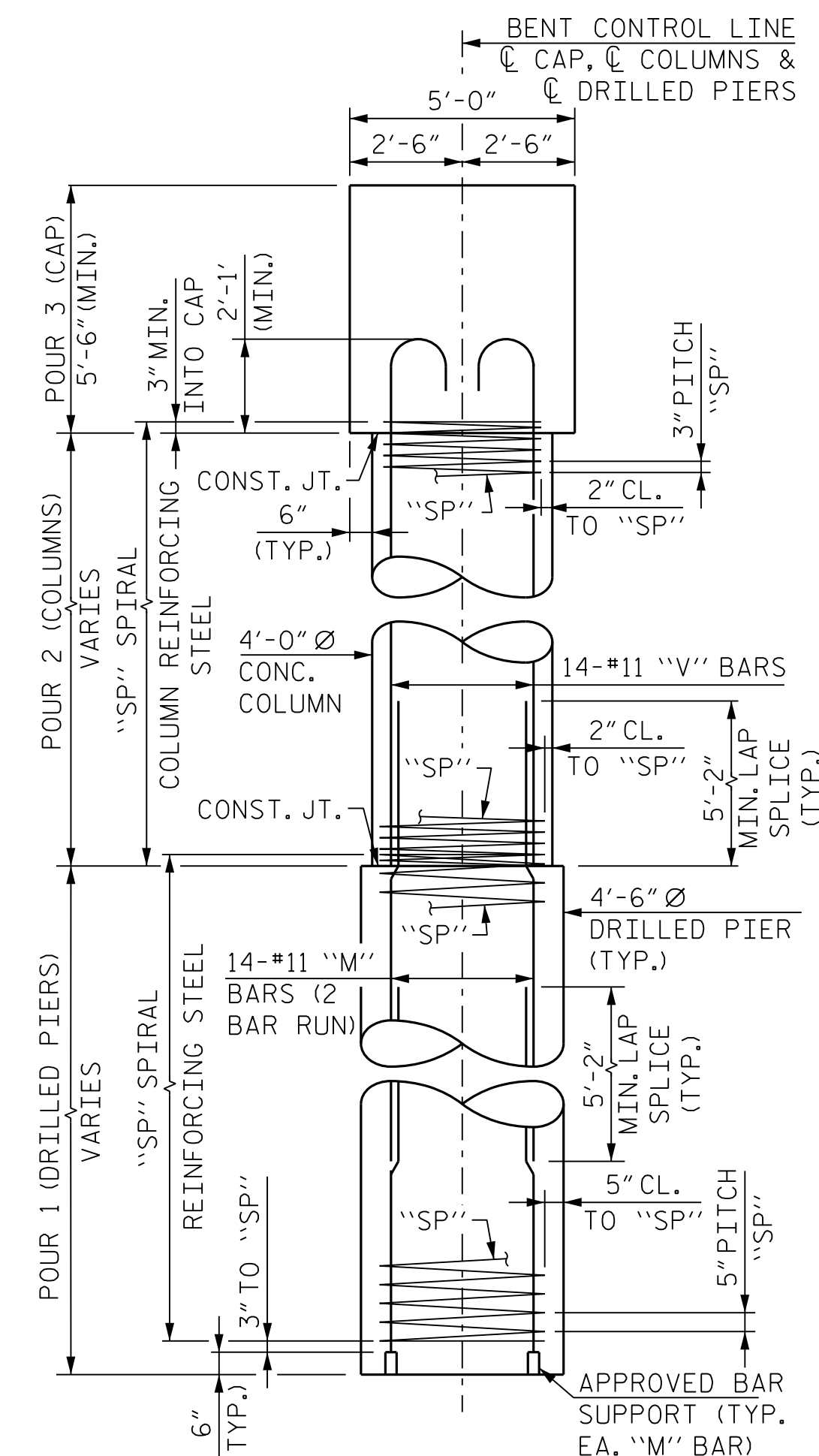
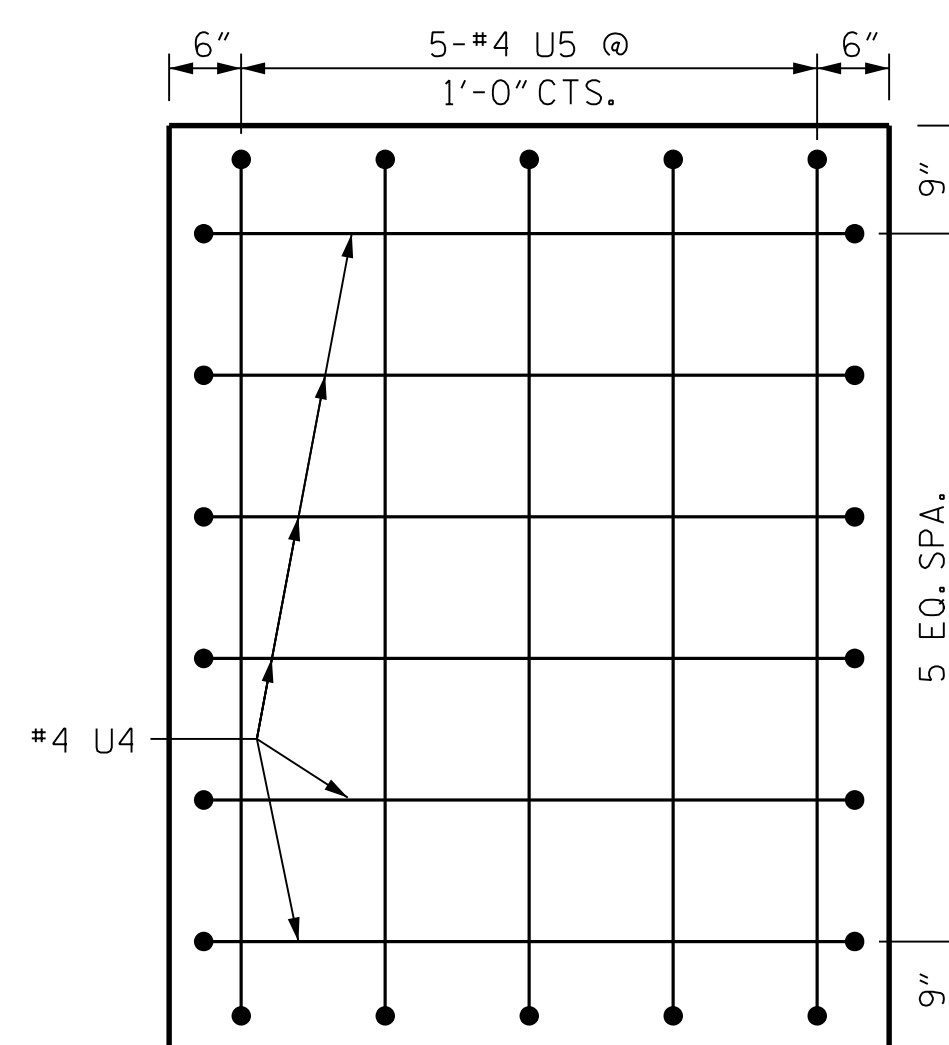
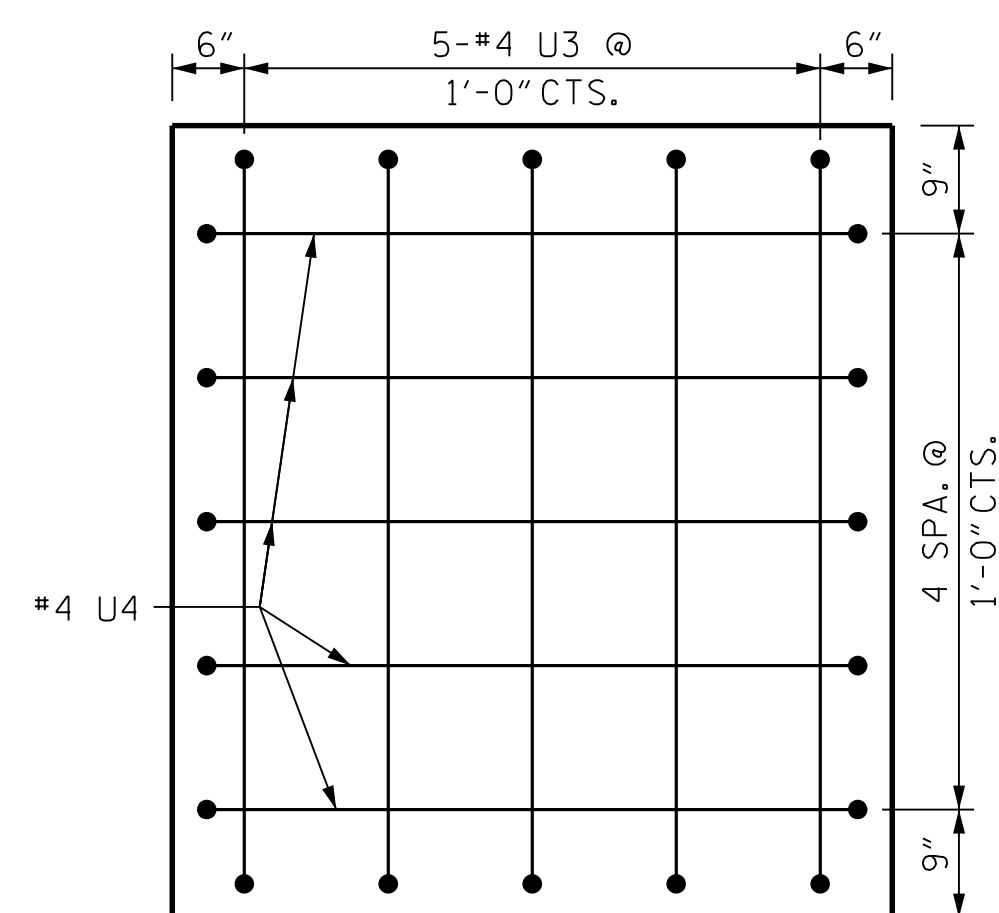
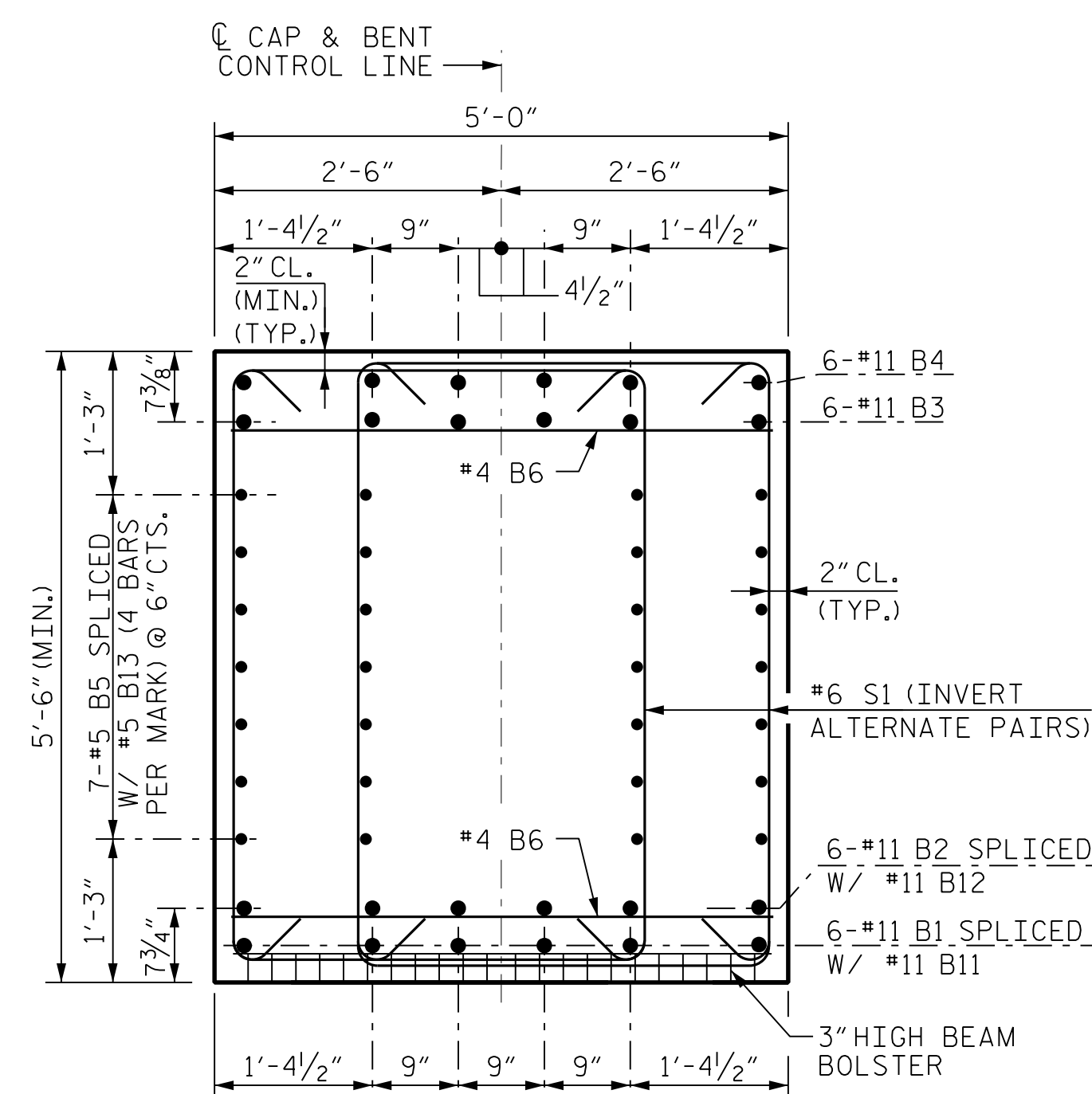
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT TYPE 2
BENTS 2-6, 8-10
PLAN AND ELEVATION
STAGE 1

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

TOTAL SHEETS
118

S-90



PLAN OF DRILLED PIERS AND COLUMNS

(DETAILS ARE TYPICAL FOR DRILLED PIER AND COLUMN UNLESS OTHERWISE DETAILED)

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT TYPE 2
BENTS 2-6, 8-10
DETAILS
STAGE 1

REVISIONS						SHEET NO. S-91
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			

SHEET NO.

S-91

TOTAL
QUESTIONS

118

DRAWN BY : E. THOMPSON DATE : FEB 2025
 CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
 DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025

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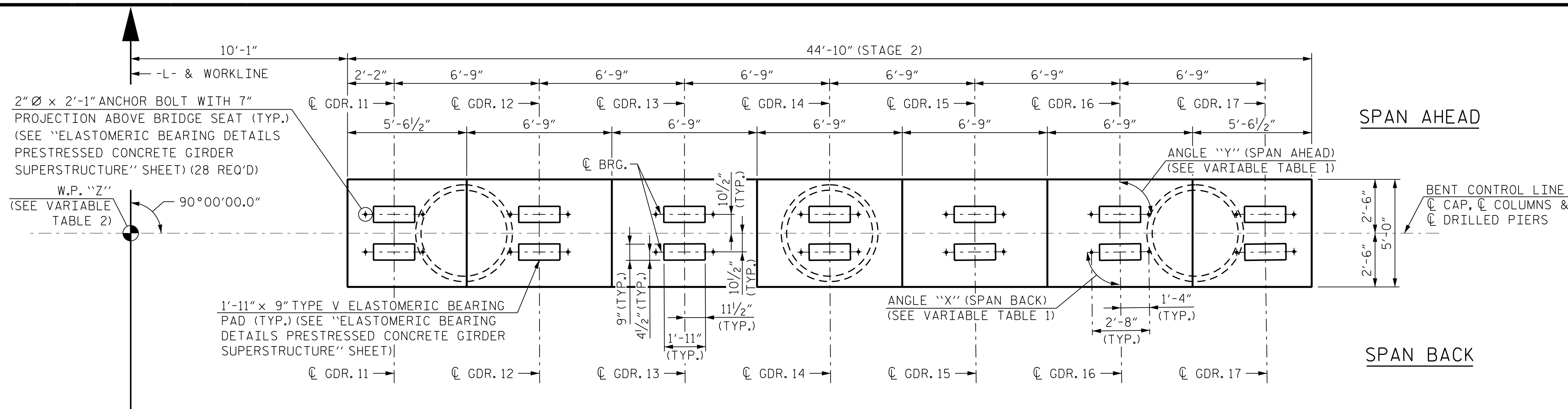
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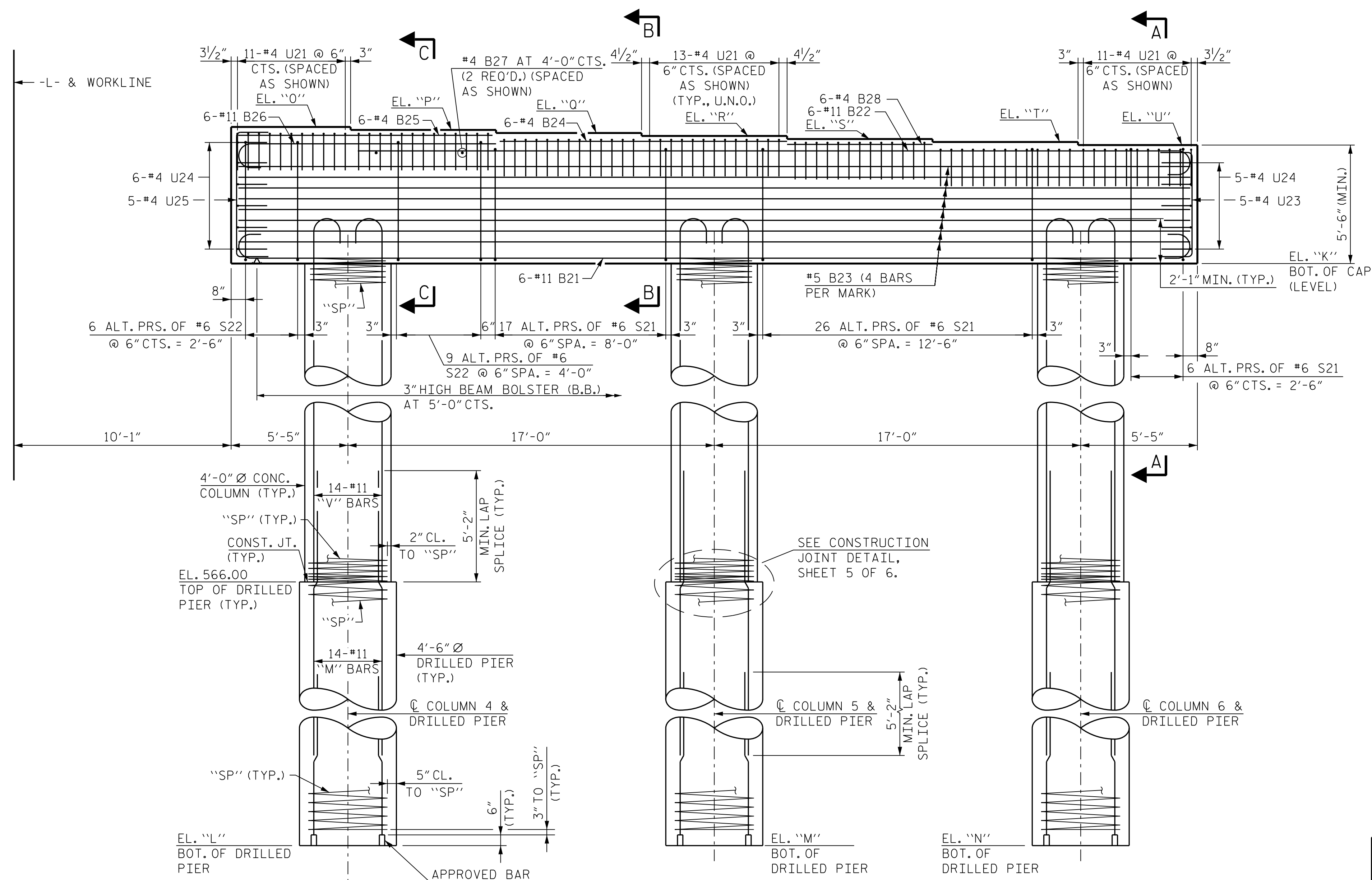
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Mayur Sharma
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PLAN



ELEVATION

(FOR ELEVATIONS, SEE VARIABLE TABLE 2)
DIMENSIONS & REINFORCING STEEL ARE TYPICAL
FOR EACH COLUMN & DRILLED PIER (U.N.O.)

NOTES:

FOR SECTIONS A-A, B-B, C-C AND "END OF CAP DETAIL" SEE SHEET 5 OF 6.

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

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

FOR REINFORCING BILL OF MATERIAL, SEE SHEET 6 OF 6.

AT BENT 2, 5, AND 8, THE TOP SURFACE AREAS OF THE BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

FOR BAR DESIGNATIONS OF LONGITUDINAL REINFORCING STEEL IN DRILLED SHAFTS, SEE VARIABLE TABLE 3 ON SHEET 6 OF 6.

FOR BAR DESIGNATIONS OF SPIRAL REINFORCING STEEL IN DRILLED SHAFTS, SEE VARIABLE TABLE 4 ON SHEET 6 OF 6.

FOR BAR DESIGNATIONS OF LONGITUDINAL REINFORCING STEEL IN COLUMNS, SEE VARIABLE TABLE 5 ON SHEET 6 OF 6.

FOR BAR DESIGNATIONS OF SPIRAL REINFORCING STEEL IN COLUMNS, SEE VARIABLE TABLE 6 ON SHEET 6 OF 6.

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".

VARIABLE TABLE 1				
BENT 2		BENTS 3-6, 8-10		
GDR. LINE	"X"	"Y"	"X"	"Y"
11	90°00'00.0"	90°00'00.0"	90°00'00.0"	90°00'00.0"
12	90°07'48.8"	90°00'00.0"	90°00'00.0"	90°00'00.0"
13	90°15'37.6"	90°00'00.0"	90°00'00.0"	90°00'00.0"
14	90°23'26.3"	90°00'00.0"	90°00'00.0"	90°00'00.0"
15	90°31'15.1"	90°00'00.0"	90°00'00.0"	90°00'00.0"
16	90°39'3.8"	90°00'00.0"	90°00'00.0"	90°00'00.0"
17	90°46'52.5"	90°00'00.0"	90°00'00.0"	90°00'00.0"

VARIABLE TABLE 2						
BENT	"Z"	"K"	"L"	"M"	"N"	"O"
2	3	575.81	505.00	505.00	505.00	582.12
3	4	577.33	507.50	507.50	507.50	583.64
4	5	578.4	509.00	509.00	503.00	584.71
5	6	579.47	516.00	516.00	519.00	585.78
6	7	580.84	504.00	504.00	504.00	587.15
8	9	580.91	493.00	493.00	493.00	587.22
9	10	579.82	480.00	480.00	493.00	586.13
10	11	578.71	499.00	495.00	495.00	585.02

VARIABLE TABLE 2 (CONT'D)						
BENT	"Z"	"Q"	"R"	"S"	"T"	"U"
2	3	581.85	581.72	581.58	581.45	581.31
3	4	583.37	583.23	583.10	582.96	582.83
4	5	584.44	584.30	584.17	584.03	583.90
5	6	585.51	585.37	585.24	585.10	584.97
6	7	586.88	586.75	586.61	586.48	586.34
8	9	586.95	586.81	586.68	586.54	586.41
9	10	585.86	585.72	585.59	585.45	585.32
10	11	584.75	584.61	584.48	584.34	584.21

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

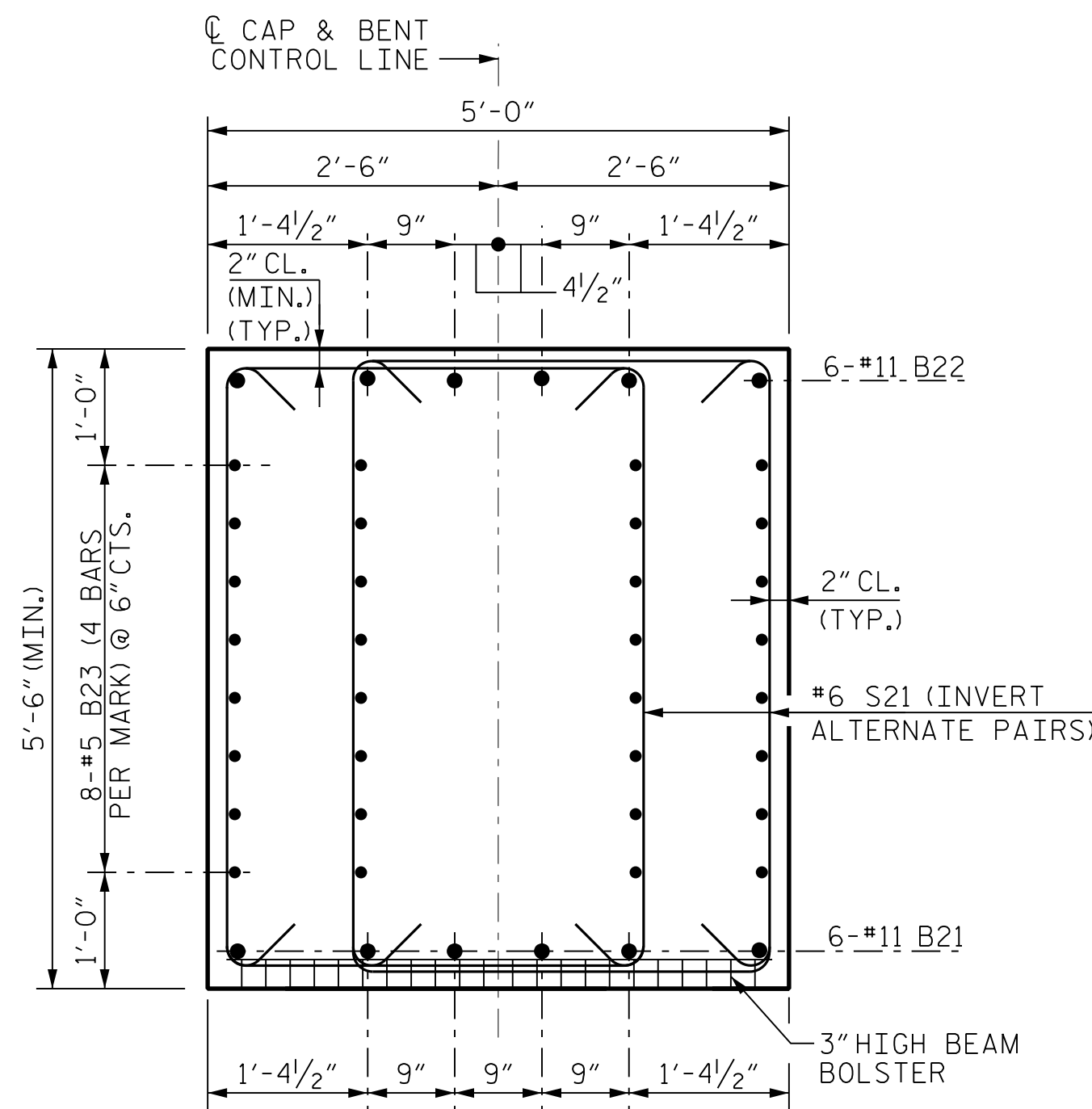
SHEET 4 OF 6

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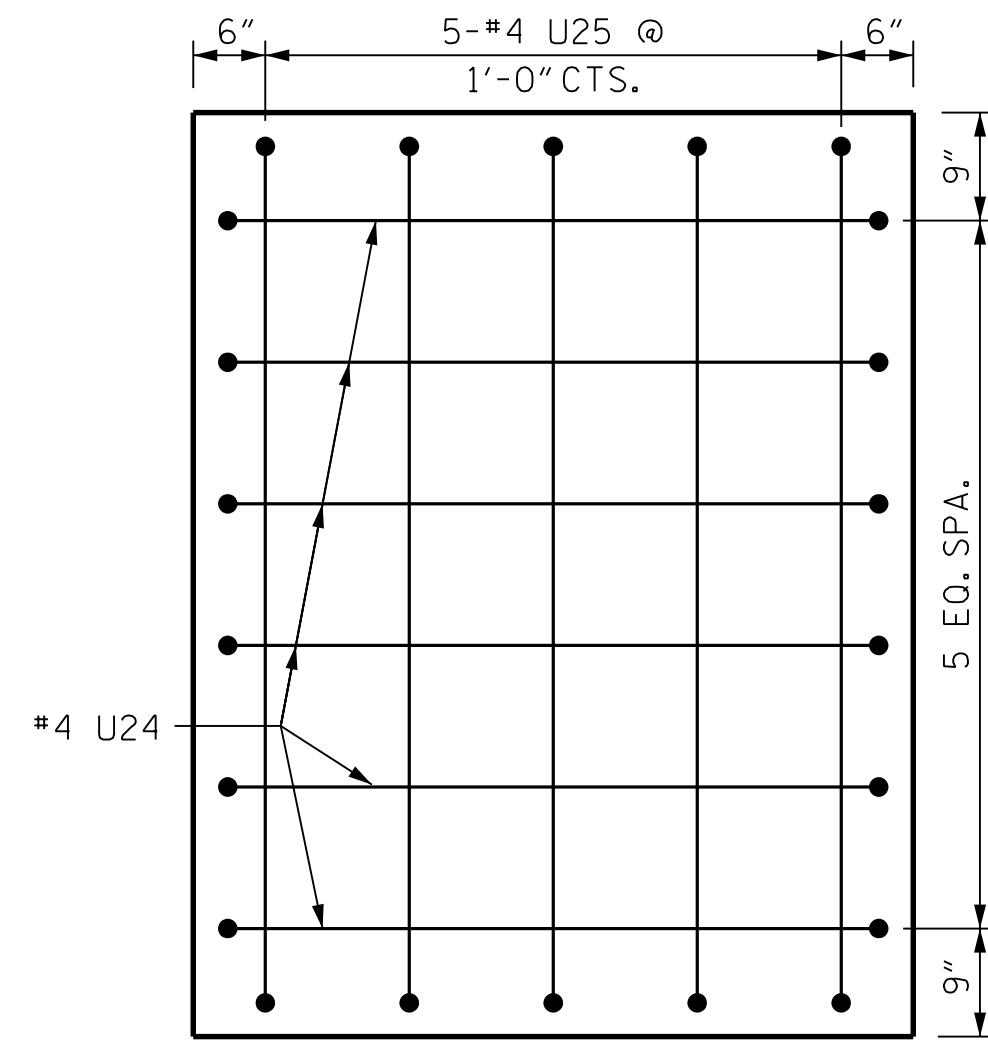
4/9/2026
NORTH CAROLINA
PROFESSIONAL
SEAL
050844
ENGINEER
MAYUR SHARMA
880672F7921C4BD...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT TYPE 2
BENTS 2-6, 8-10
PLAN AND ELEVATION
STAGE 2

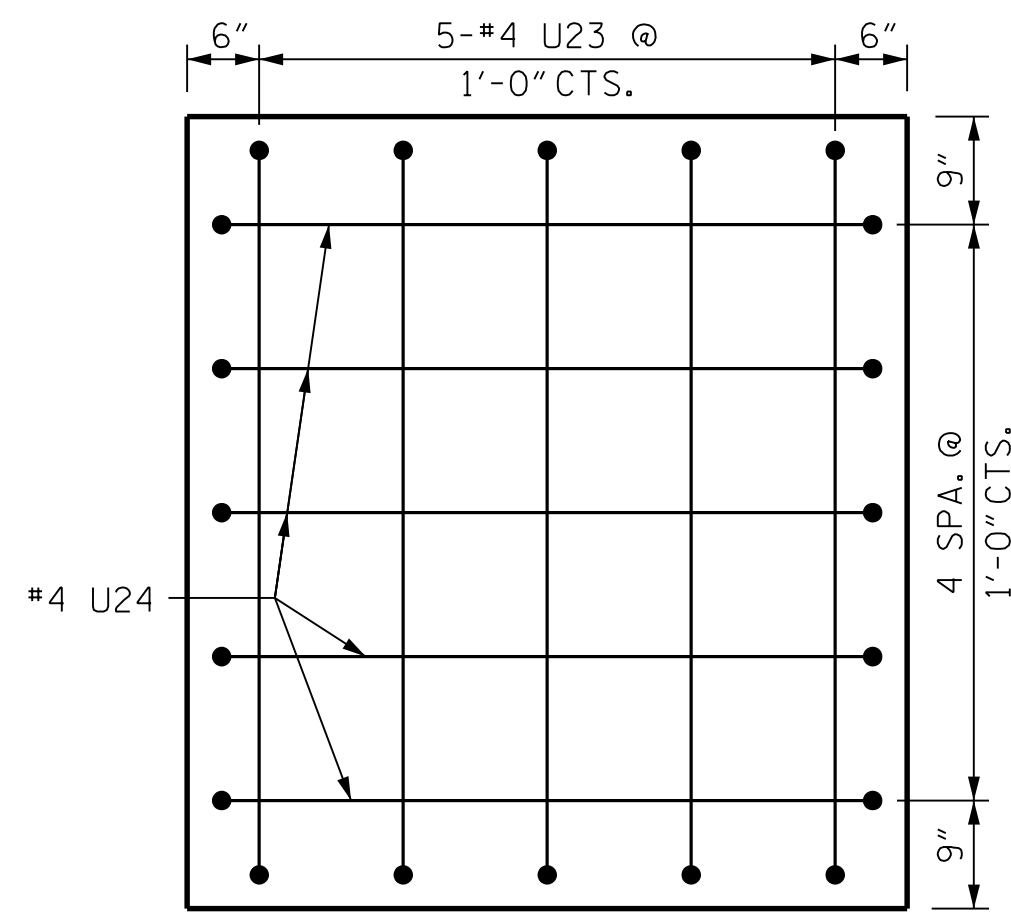
REVISIONS						SHEET NO. S-93
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 118
2			4			



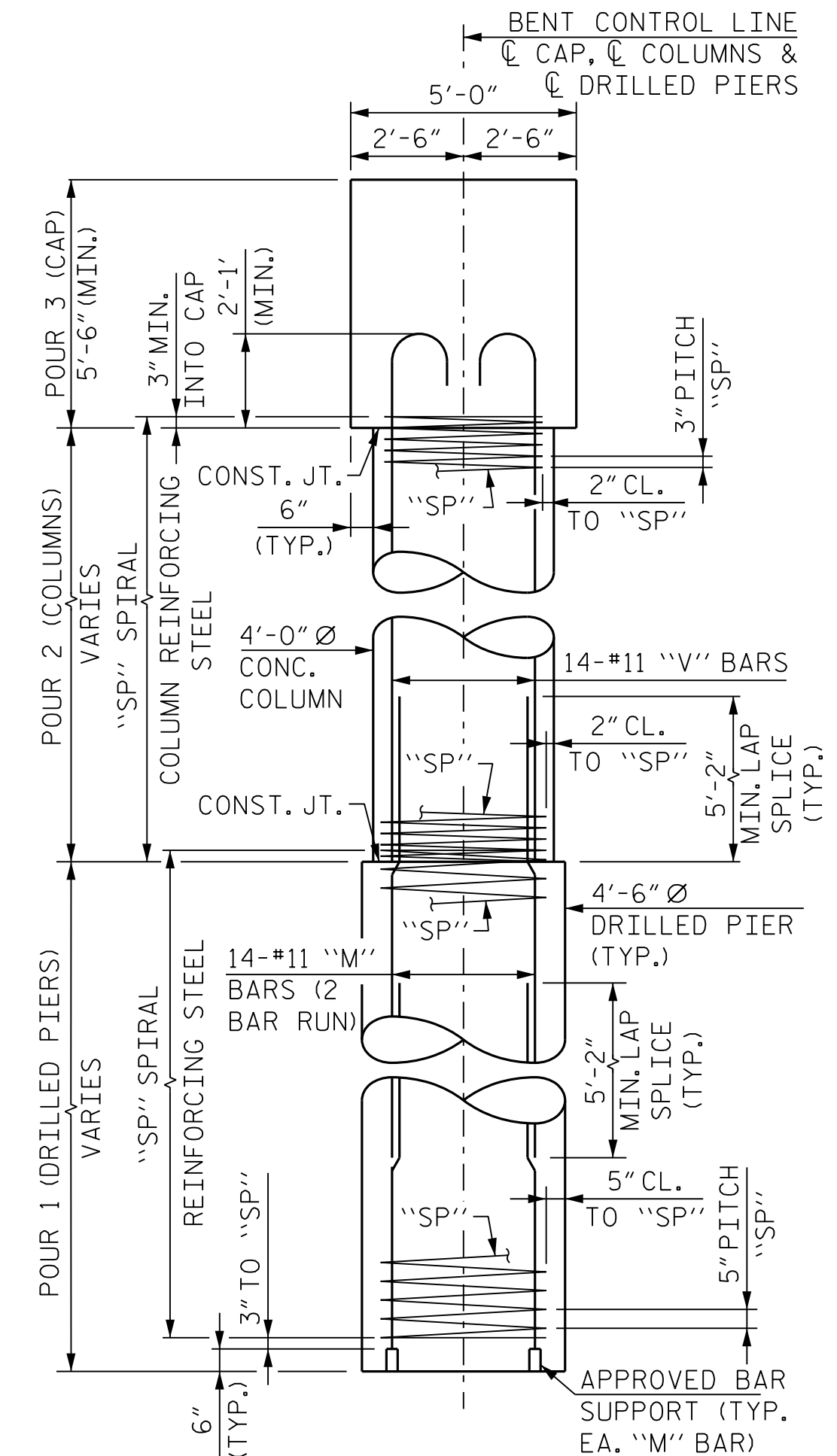
SECTION A-A



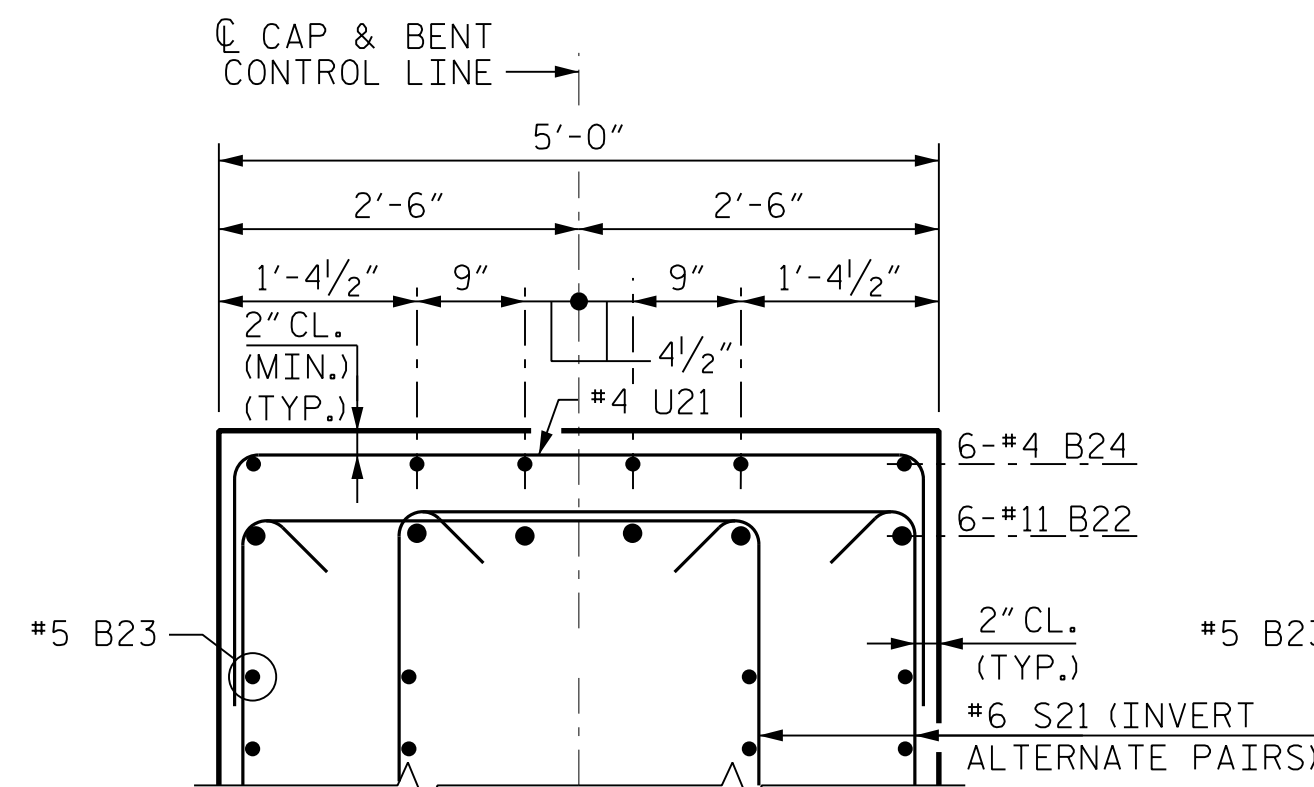
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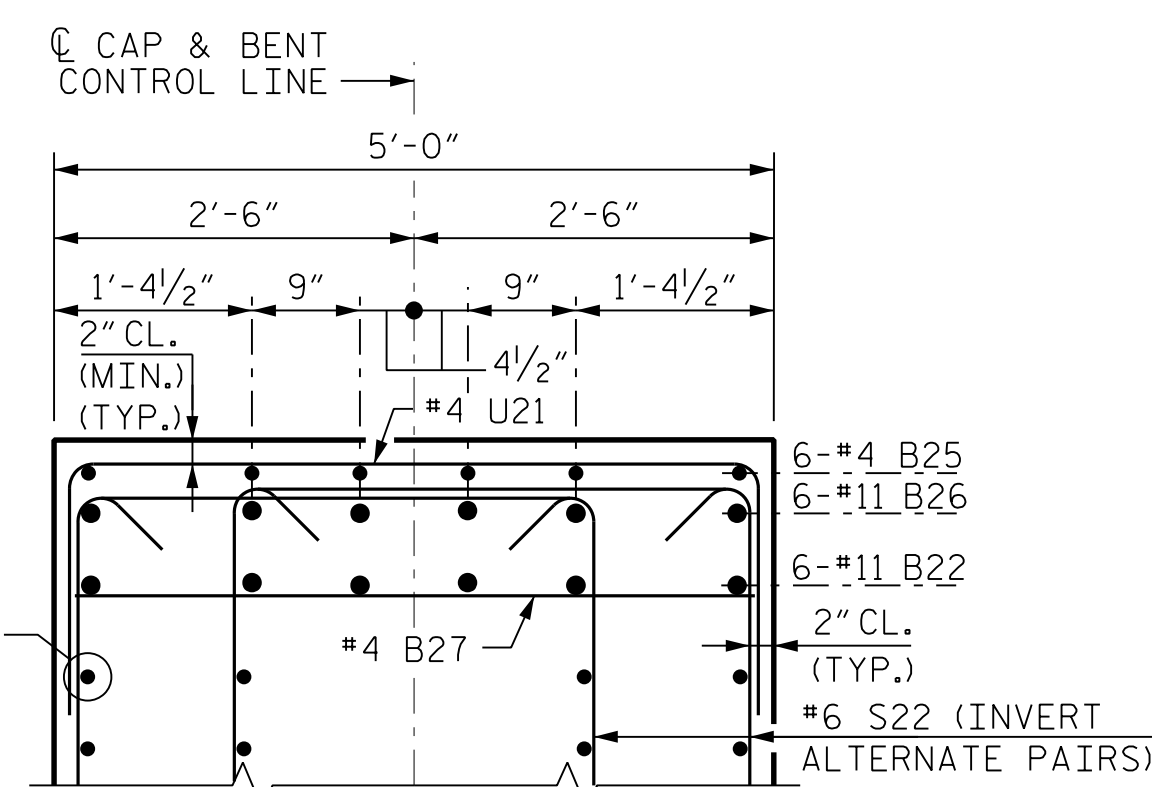
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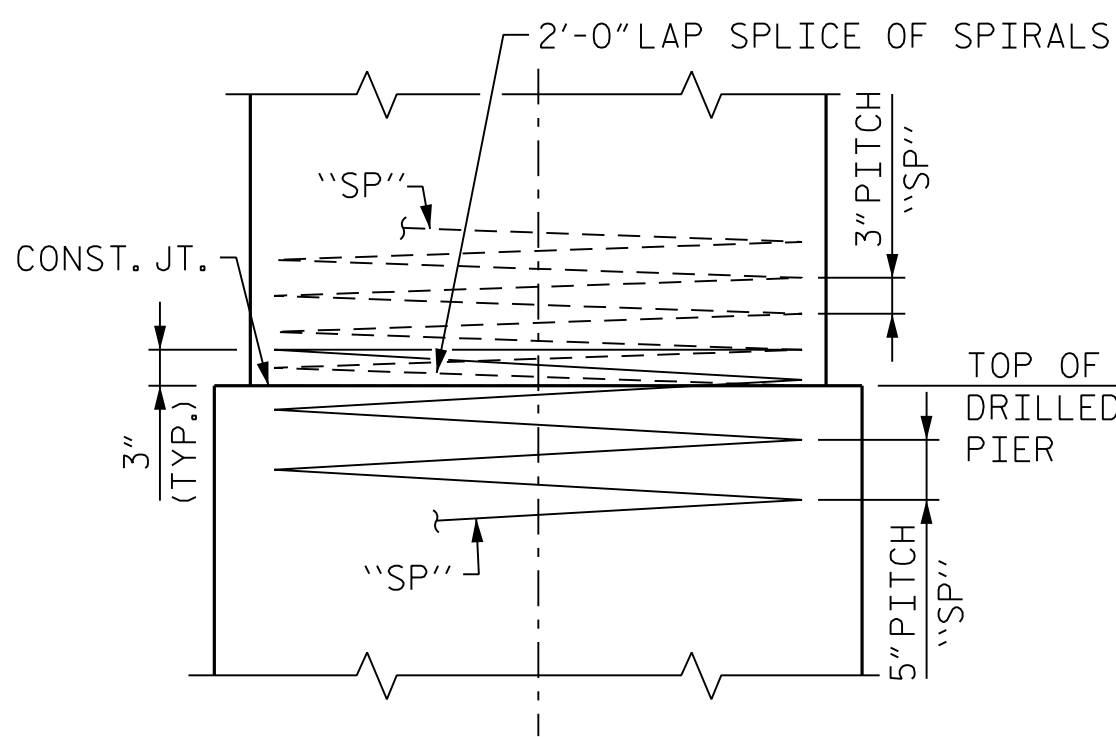
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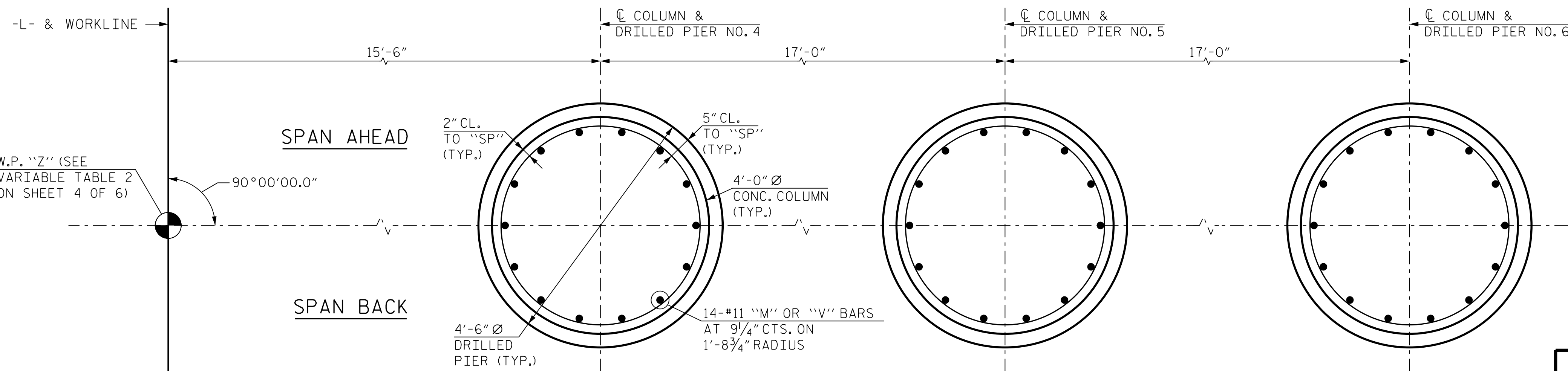
SECTION B-B



SECTION C-C



CONSTRUCTION JOINT DETAIL



PLAN OF DRILLED PIERS AND COLUMNS

(DETAILS ARE TYPICAL FOR DRILLED PIER AND COLUMN UNLESS OTHERWISE DETAILED)

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

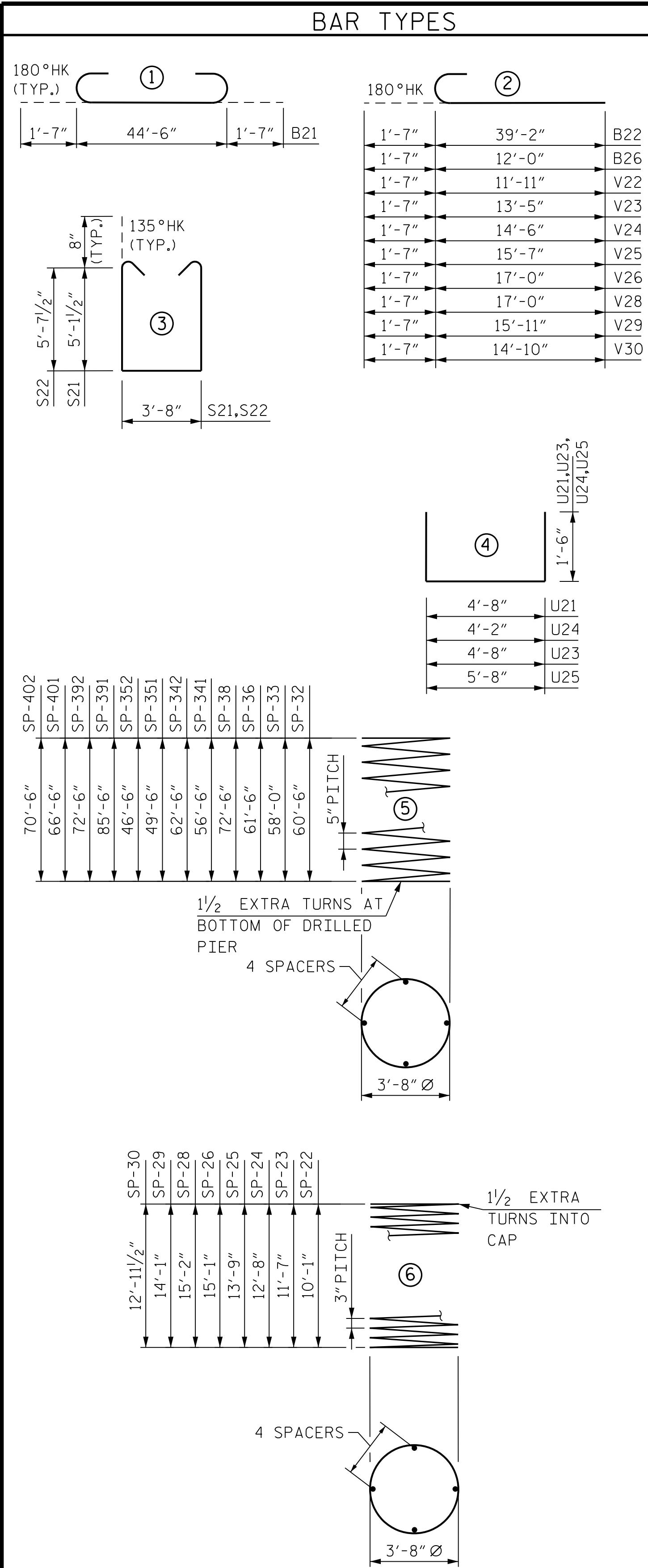
SUBSTRUCTURE
BENT TYPE 2
BENTS 2-6, 8-10
DETAILS
STAGE 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-94
2			4			
TOTAL SHEETS						118

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NORTH CAROLINA
PROFESSIONAL
SEAL
050844
ENGINEER
MAYUR SHARMA
6806727981C4BD...

DRAWN BY : E. THOMPSON DATE : FEB 2025
CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025



NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

DRAWN BY : E. THOMPSON DATE : FEB 2025
 CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
 DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025

BILL OF MATERIAL						BILL OF MATERIAL						BILL OF MATERIAL						BILL OF MATERIAL						BILL OF MATERIAL																						
BENT 2 (STAGE 2)						BENT 3 (STAGE 2)						BENT 4 (STAGE 2)						BENT 5 (STAGE 2)						BENT 6 (STAGE 2)																						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT																	
B21	6	#11	1	47'-8"	1,520	B21	6	#11	1	47'-8"	1,520	B21	6	#11	1	47'-8"	1,520	B21	6	#11	1	47'-8"	1,520	B21	6	#11	1	47'-8"	1,520																	
B22	6	#11	2	40'-9"	1,299	B22	6	#11	2	40'-9"	1,299	B22	6	#11	2	40'-9"	1,299	B22	6	#11	2	40'-9"	1,299	B22	6	#11	2	40'-9"	1,299																	
B23	32	#5	STR.	44'-6"	1,485	B23	32	#5	STR.	44'-6"	1,485	B23	32	#5	STR.	44'-6"	1,485	B23	32	#5	STR.	44'-6"	1,485	B23	32	#5	STR.	44'-6"	1,485																	
B24	6	#4	STR.	13'-2"	53	B24	6	#4	STR.	13'-2"	53	B24	6	#4	STR.	13'-2"	53	B24	6	#4	STR.	13'-2"	53	B24	6	#4	STR.	13'-2"	53																	
B25	6	#4	STR.	11'-11"	48	B25	6	#4	STR.	11'-11"	48	B25	6	#4	STR.	11'-11"	48	B25	6	#4	STR.	11'-11"	48	B25	6	#4	STR.	11'-11"	48																	
B26	6	#11	2	13'-7"	433	B26	6	#11	2	13'-7"	433	B26	6	#11	2	13'-7"	433	B26	6	#11	2	13'-7"	433	B26	6	#11	2	13'-7"	433																	
B27	2	#4	STR.	4'-8"	6	B27	2	#4	STR.	4'-8"	6	B27	2	#4	STR.	4'-8"	6	B27	2	#4	STR.	4'-8"	6	B27	2	#4	STR.	4'-8"	6																	
B28	6	#4	STR.	6'-5"	26	B28	6	#4	STR.	6'-5"	26	B28	6	#4	STR.	6'-5"	26	B28	6	#4	STR.	6'-5"	26	B28	6	#4	STR.	6'-5"	26																	
	M21	84	#11	STR.	37'-0"	16,513		M21	84	#11	STR.	35'-8"	15,918		M21	56	#11	STR.	35'-0"	10,413		M21	56	#11	STR.	31'-6"	9,372		M21	84	#11	STR.	37'-5"	16,699												
																	M22	28	#11	STR.	38'-0"	5,653		M22	28	#11	STR.	29'-11"	4,451																	
S21	68	#6	3	15'-3"	1,558	S21	68	#6	3	15'-3"	1,558	S21	68	#6	3	15'-3"	1,558	S21	68	#6	3	15'-3"	1,558	S21	68	#6	3	15'-3"	1,558	S21	68	#6	3	15'-3"	1,558											
S22	30	#6	3	16'-3"	732	S22	30	#6	3	16'-3"	732	S22	30	#6	3	16'-3"	732	S22	30	#6	3	16'-3"	732	S22	30	#6	3	16'-3"	732	S22	30	#6	3	16'-3"	732											
U21	87	#4	4	7'-8"	446	U21	87	#4	4	7'-8"	446	U21	87	#4	4	7'-8"	446	U21	87	#4	4	7'-8"	446	U21	87	#4	4	7'-8"	446	U21	87	#4	4	7'-8"	446											
U23	5	#4	4	7'-8"	26	U23	5	#4	4	7'-8"	26	U23	5	#4	4	7'-8"	26	U23	5	#4	4	7'-8"	26	U23	5	#4	4	7'-8"	26	U23	5	#4	4	7'-8"	26											
U24	11	#4	4	7'-2"	53	U24	11	#4	4	7'-2"	53	U24	11	#4	4	7'-2"	53	U24	11	#4	4	7'-2"	53	U24	11	#4	4	7'-2"	53	U24	11	#4	4	7'-2"	53											
U25	5	#4	4	8'-8"	29	U25	5	#4	4	8'-8"	29	U25	5	#4	4	8'-8"	29	U25	5	#4	4	8'-8"	29	U25	5	#4	4	8'-8"	29	U25	5	#4	4	8'-8"	29											
V22	42	#11	2	13'-6"	3,012	V23	42	#11	2	15'-0"	3,347	V24	42	#11	2	16'-1"	3,589	V25	42	#11	2	17'-2"	3,831	V26	42	#11	2	18'-7"	4,147																	
REINFORCING STEEL 27,237 LBS.						REINFORCING STEEL 26,979 LBS.						REINFORCING STEEL 27,369 LBS.						REINFORCING STEEL 25,365 LBS.						REINFORCING STEEL 28,560 LBS.																						
SP-22	3	*	6	474'-9"	951	SP-23	3	*	6	543'-11"	1,090	SP-24	3	*	6	594'-3"	1,191	SP-25	3	*	6	643'-8"	1,290	SP-26	3	*	6	704'-5"	1,412																	
SP-32	3	**	5	1664'-7"	5,208	SP-33	3	**	5	1596'-6"	4,995	SP-34	2	**	5	1555'-8"	3,245	SP-35	2	**	5	1365'-0"	2,847	SP-36	3	**	5	1691'-10"	5,294																	
												SP-342	1	**	5	1719'-1"	1,793	SP-352	1	**	5	1283'-4"	1,339																							
SPIRAL COLUMN REINFORCING STEEL 6,159 LBS.						SPIRAL COLUMN REINFORCING STEEL 6,085 LBS.						SPIRAL COLUMN REINFORCING STEEL 6,229 LBS.						SPIRAL COLUMN REINFORCING STEEL 5,476 LBS.						SPIRAL COLUMN REINFORCING STEEL 6,706 LBS.																						
CLASS "A" CONCRETE						CLASS "A" CONCRETE						CLASS "A" CONCRETE						CLASS "A" CONCRETE						CLASS "A" CONCRETE																						
POUR 2 (COLUMNS) 13.7 C.Y.						POUR 2 (COLUMNS) 15.9 C.Y.						POUR 2 (COLUMNS) 17.4 C.Y.						POUR 2 (COLUMNS) 18.9 C.Y.						POUR 2 (COLUMNS) 20.8 C.Y.																						
POUR 3 (CAP) 49.1 C.Y.						POUR 3 (CAP) 49.1 C.Y.						POUR 3 (CAP) 49.1 C.Y.						POUR 3 (CAP) 49.1 C.Y.						POUR 3 (CAP) 49.1 C.Y.																						
TOTAL 62.8 C.Y.						TOTAL 65.0 C.Y.						TOTAL 66.5 C.Y.						TOTAL 68.0 C.Y.						TOTAL 69.9 C.Y.																						
DRILLED PIER CONCRETE						DRILLED PIER CONCRETE						DRILLED PIER CONCRETE						DRILLED PIER CONCRETE						DRILLED PIER CONCRETE																						
POUR 1 (DRILLED PIER) 107.80 C.Y.						POUR 1 (DRILLED PIER) 103.4 C.Y.						POUR 1 (DRILLED PIER) 104.3 C.Y.						POUR 1 (DRILLED PIER) 86.6 C.Y.						POUR 1 (DRILLED PIER) 109.6 C.Y.																						
BENT 8 (STAGE 2)						BENT 9 (STAGE 2)						BENT 10 (STAGE 2)						* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR. ** THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.																												
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT																													
B21	6	#11	1	47'-8"	1,520	B21	6	#11	1	47'-8"	1,520	B21	6	#11	1	47'-8"	1,520																													
B22	6	#11	2	40'-9"	1,299	B22	6	#11	2	40'-9"	1,299	B22	6	#11	2	40'-9"	1,299																													
B23	32	#5	STR.	44'-6"	1,485	B23	32	#5	STR.	44'-6"	1,485	B23	32	#5	STR.	44'-6"	1,485																													
B24	6	#4	STR.	13'-2"	53	B24	6	#4	STR.	13'-2"	53	B24	6	#4	STR.	13'-2"	53																													
B25	6	#4	STR.	11'-11"	48	B25	6	#4	STR.	11'-11"	48	B25	6	#4	STR.	11'-11"	48																													
B26	6	#11	2	13'-7"	433	B26	6	#11	2	13'-7"	433	B26	6	#11	2	13'-7"	433																													
B27	2	#4	STR.	4'-8"	6	B27	2	#4	STR.	4'-8"	6	B27	2	#4	STR.	4'-8"	6																													
B28	6	#4	STR.	6'-5"	26	B28	6	#4	STR.	6'-5"	26	B28	6	#4	STR.	6'-5"	26																													
	M21	84	#11	STR.	43'-0"	19,191		M21	56	#11	STR.	49'-5"	14,703		M21	28	#11	STR.	40'-0"	5,951																										
S21	68	#6	3	15'-3"	1,558	S21	68	#6	3	15'-3"	1,558	S21	68	#6	3	15'-3"	1,558																													
S22	30	#6	3	16'-3"	732	S22	30	#6	3	16'-3"	732	S22	30	#6	3	16'-3"	732																													
U21	87	#4	4	7'-8"	446	U21	87	#4	4	7'-8"	446	U21	87	#4	4	7'-8"	446																													
U23	5	#4	4	7'-8"	26	U23	5	#4	4	7'-8"	26	U23	5	#4	4	7'-8"	26																													
U24	11	#4	4	7'-2"	53	U24	11	#4	4	7'-2"	53	U24	11	#4	4	7'-2"	53																													
U25	5	#4	4	8'-8"	29	U25	5	#4	4	8'-8"	29	U25	5	#4	4	8'-8"	29																													
V28	42	#11	2	18'-7"	4,147	V29	42	#11	2	17'-6"	3,905	V30	42	#11	2	16'-5"	3,663																													
REINFORCING STEEL 31,052 LBS.						REINFORCING STEEL 30,698 LBS.						REINFORCING STEEL 29,824 LBS.																																		
SP-28	3	*	6	708'-2"	1,419	SP-29	3	*	6	658'-10"	1,320	SP-30	3	*	6	607'-7"	1,218																													
SP-38	3	**	5	1991'-4"	6,231	SP-39	2	**	5	2345'-5"	4,893	SP-40	1	**	5	1828'-0"	1,907																													
						SP-392	1	**	5	1991'-4"	2,077	SP-402	2	**	5	1936'-11"	4,040																													
SPIRAL COLUMN REINFORCING STEEL 7,650 LBS.						SPIRAL COLUMN REINFORCING STEEL 8,290 LBS.						SPIRAL COLUMN REINFORCING STEEL 7,165 LBS.																																		
CLASS "A" CONCRETE						CLASS "A" CONCRETE						CLASS "A" CONCRETE																																		
POUR 2 (COLUMNS) 20.9 C.Y.						POUR 2 (COLUMNS) 19.3 C.Y.						POUR 2 (COLUMNS) 17.8 C.Y.																																		
POUR 3 (CAP) 49.1 C.Y.						POUR 3 (CAP) 49.1 C.Y.						POUR 3 (CAP) 49.1 C.Y.																																		
TOTAL 70.0 C.Y.						TOTAL 68.4 C.Y.						TOTAL 66.9 C.Y.																																		
DRILLED PIER CONCRETE						DRILLED PIER CONCRETE						DRILLED PIER CONCRETE																																		

BENT	SHAFT 4	SHAFT 5	SHAFT 6
2	M21	M21	M21
3	M21	M21	M21
4	M21	M21	M22
5	M21	M21	M22
6	M21	M21	M21
8	M21	M21	M21
9	M21	M21	M22
10	M21	M22	M22

BENT	SHAFT 4	SHAFT 5	SHAFT 6
2	SP-32	SP-32	SP-32
3	SP-33	SP-33	SP-33
4	SP-341	SP-341	SP-342
5	SP-351	SP-351	SP-352
6	SP-36	SP-36	SP-36
8	SP-38	SP-38	SP-38
9	SP-391	SP-391	SP-392
10	SP-401	SP-402	SP-402

BENT	COLUMN 4	COLUMN 5	COLUMN 6
2	V22	V22	V22
3	V23	V23	V23
4	V24	V24	V24
5	V25	V25	V25
6	V26	V26	V26
8	V28	V28	V28
9	V29	V29	V29
10	V30	V30	V30

BENT	COLUMN 4	COLUMN 5	COLUMN 6
2	SP-22	SP-22	SP-22
3	SP-23	SP-23	SP-23
4	SP-24	SP-24	SP-24
5	SP-25	SP-25	SP-25
6	SP-26	SP-26	SP-26
8	SP-28	SP-28	SP-28
9	SP-29	SP-29	SP-29
10	SP-30	SP-30	SP-30

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 6 OF 6

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4/9/2016



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STRUCTURE

BENT TYPE 2

BENTS 2-6, 8-10

BILL OF MATERIALS

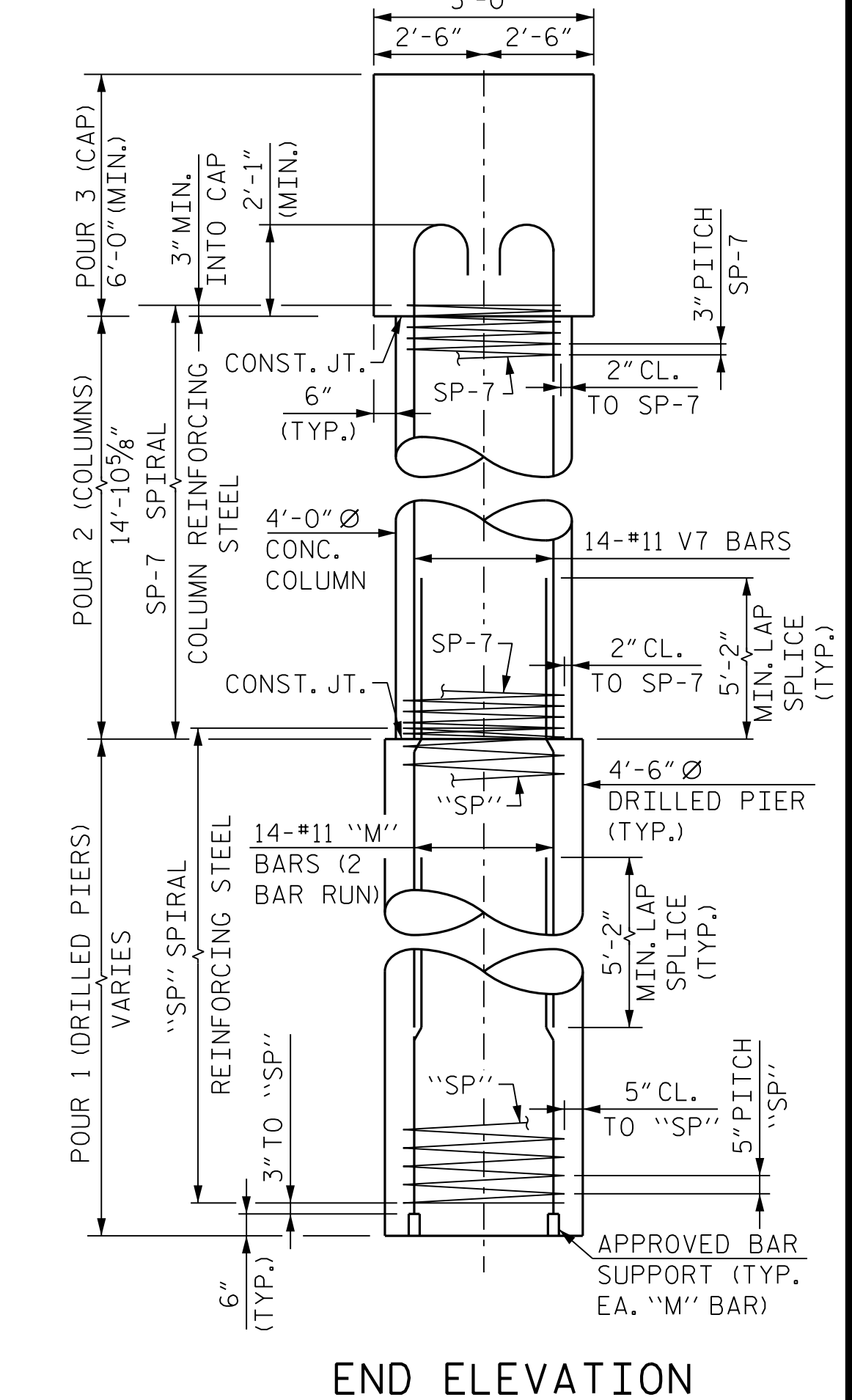
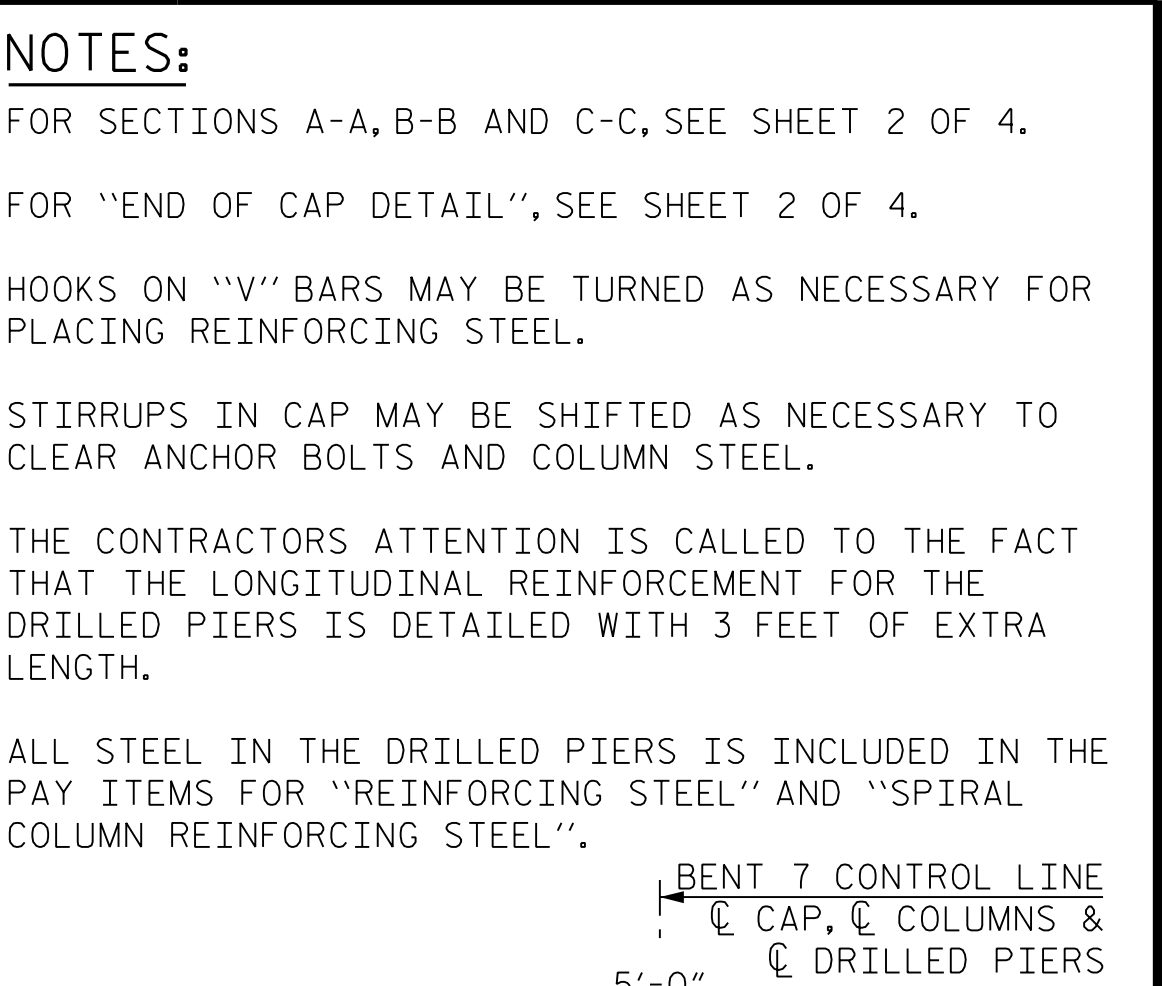
STAGE 2

REVISIONS		
NO.	BY:	DATE:
1		
2		

REVISIONS		
NO.	BY:	DATE:
3		
4		

SHEET NO.
S-95

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 1 OF 4

DRAWN BY : E. THOMPSON DATE : FEB 2025
 CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
 DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025

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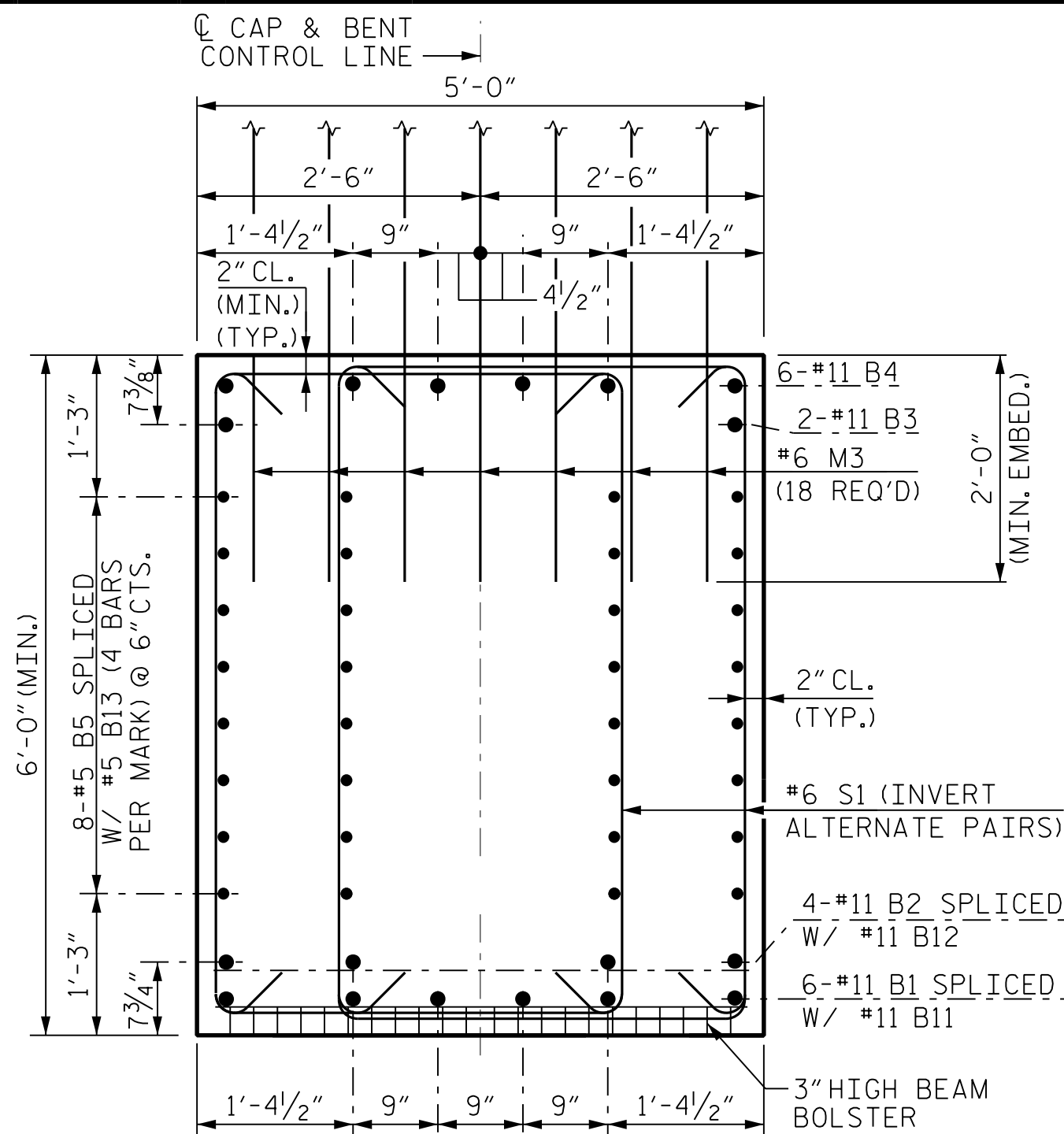
4/9/2026



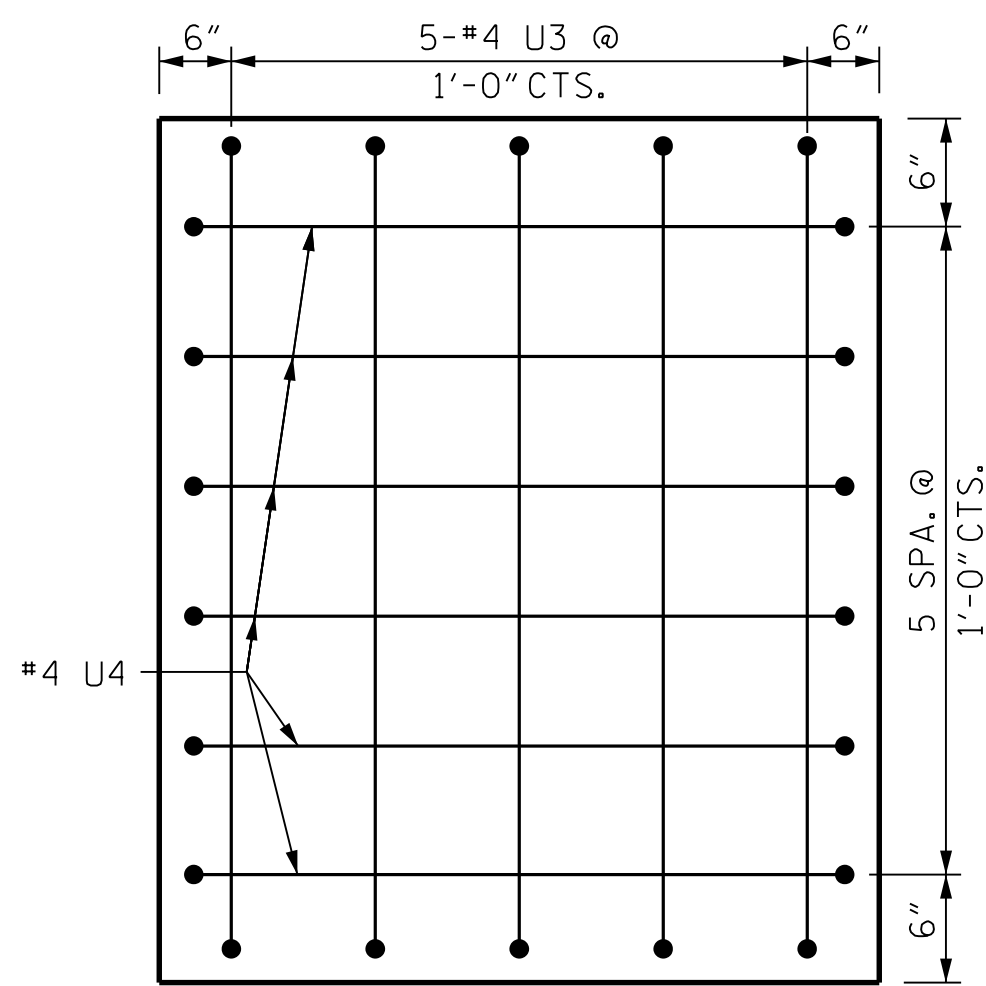
DocuSign Envelope for:
Mayur Sharma
058D72F7921C4BD...

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 BENT TYPE 3
 BENT 7
 PLAN AND ELEVATION
 STAGE 1

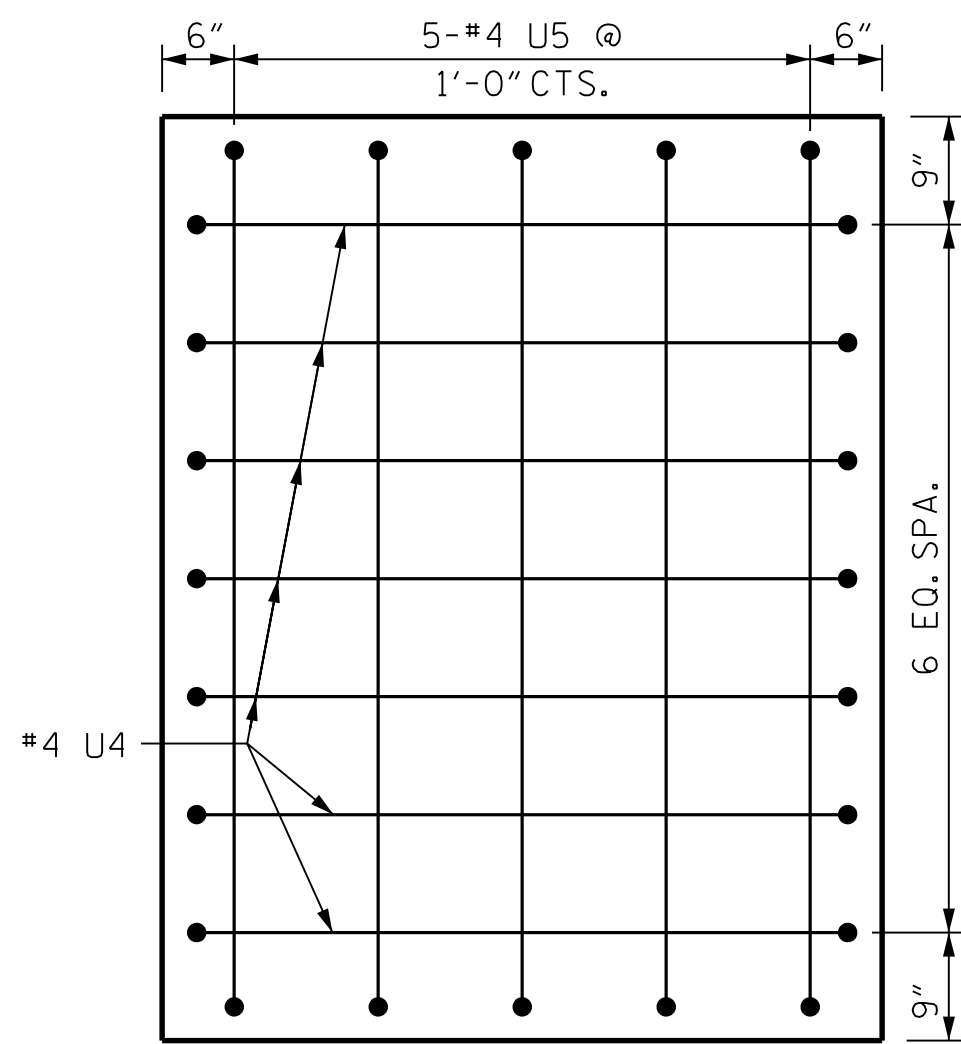
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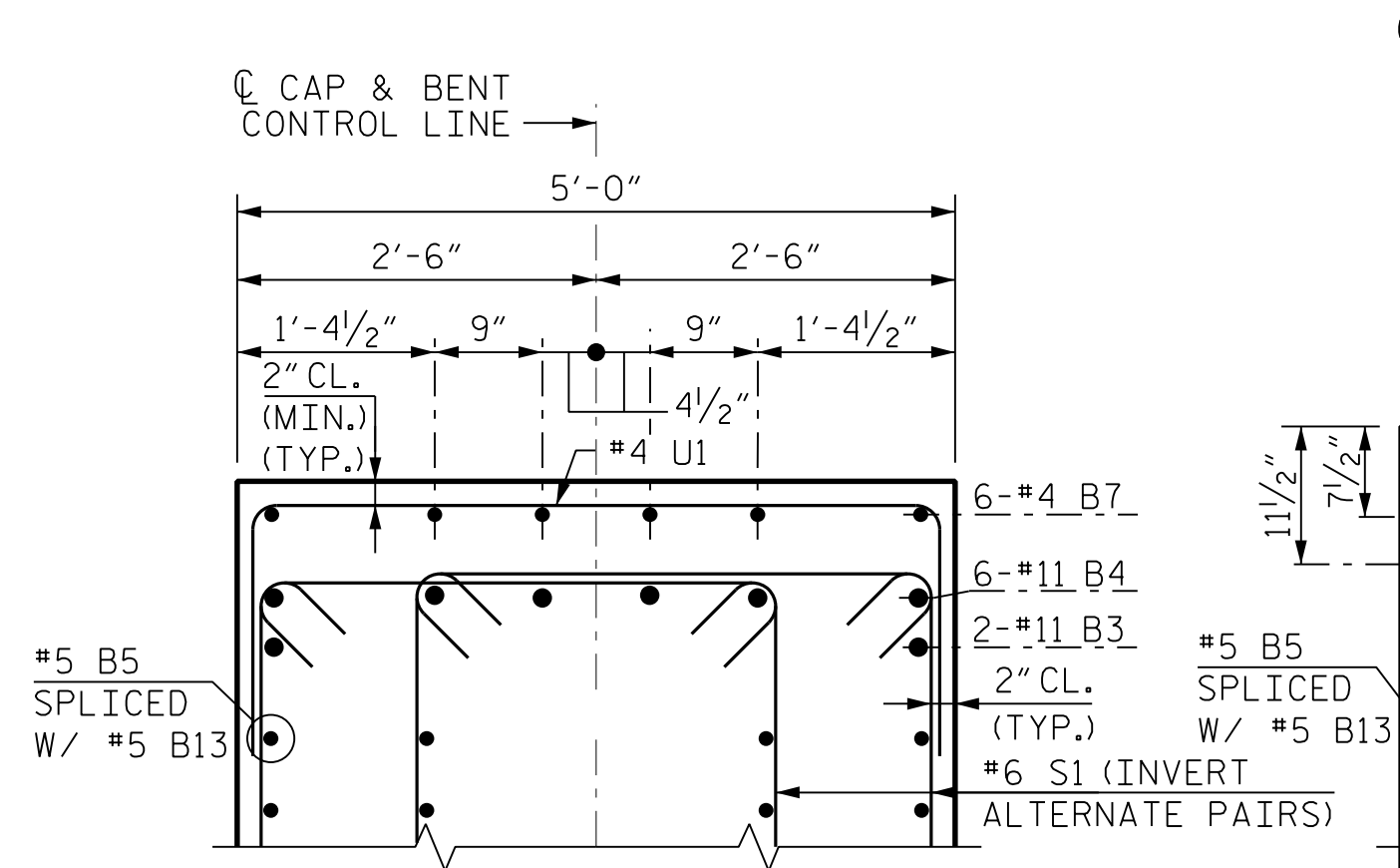
SECTION A-A



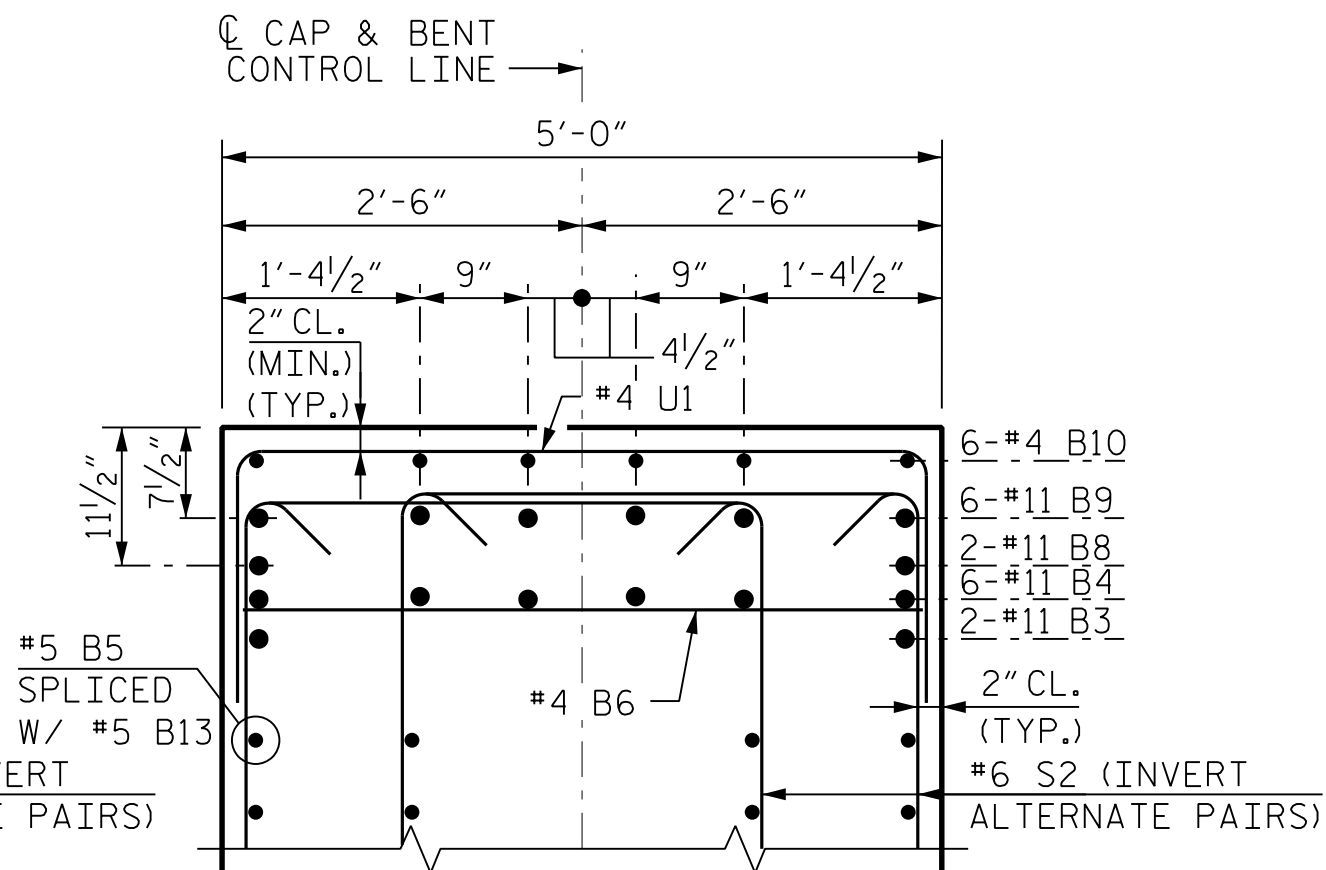
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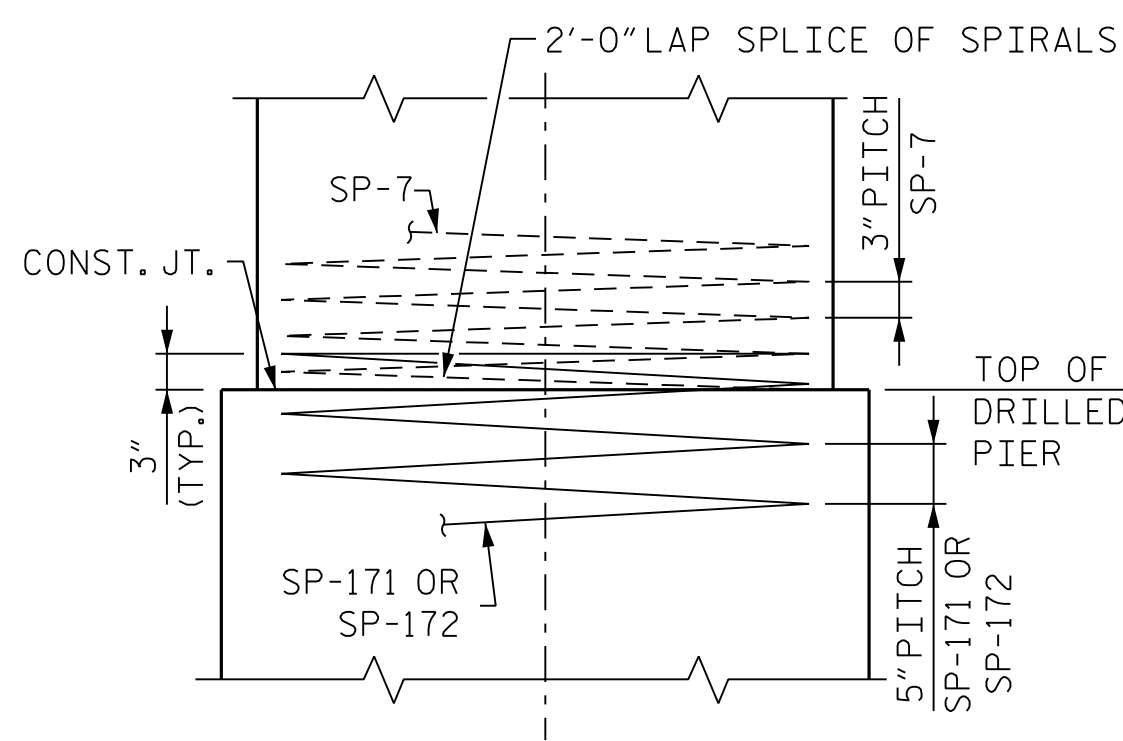
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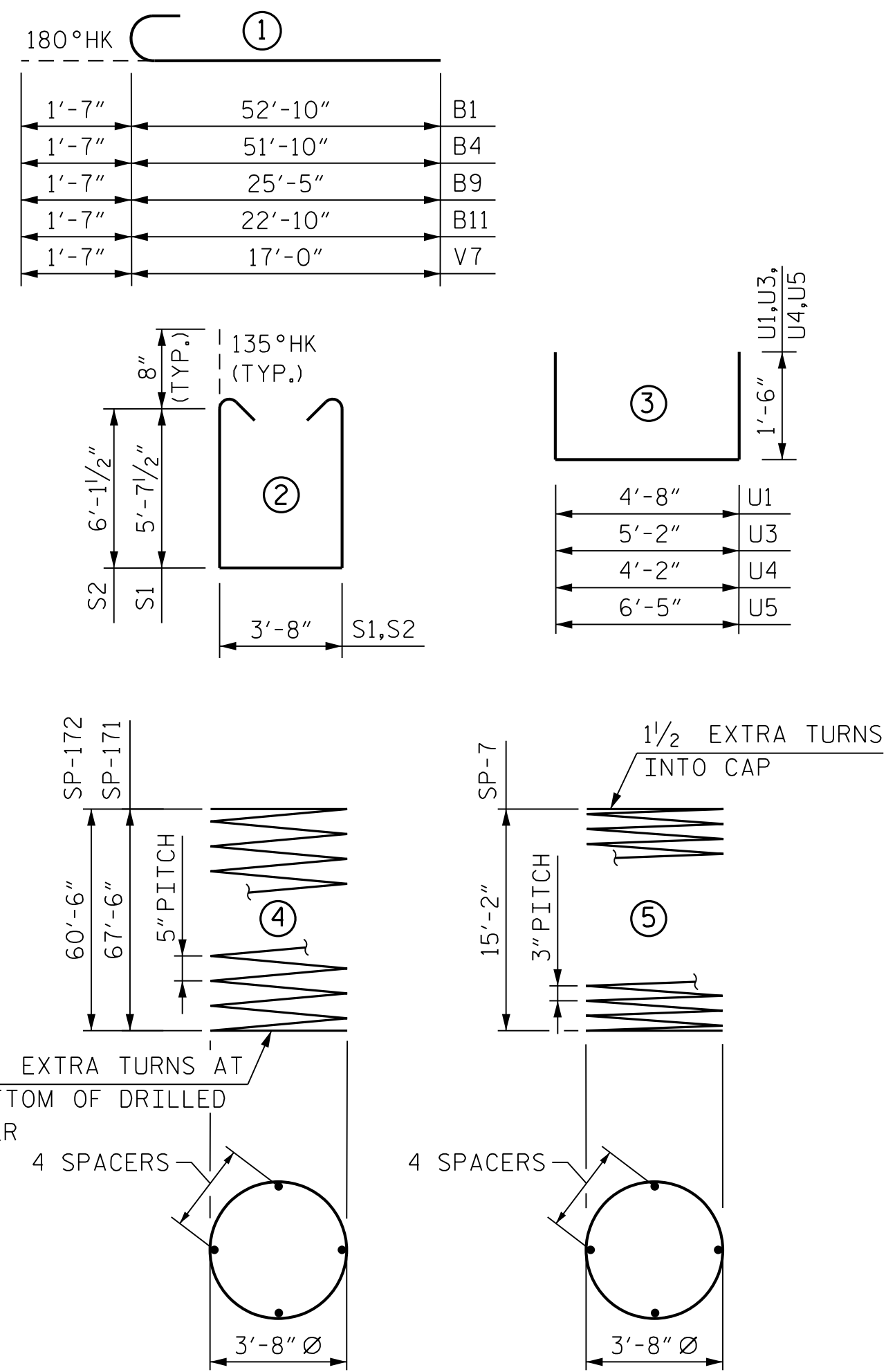
SECTION B-B



SECTION C-C



CONSTRUCTION JOINT DETAIL



NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 7 (STAGE 1)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#11	1	54'-5"	1,735
B2	4	#11	STR.	22'-10"	485
B3	2	#11	STR.	51'-10"	551
B4	6	#11	1	53'-5"	1,703
B5	32	#5	STR.	56'-9"	1,894
B6	2	#4	STR.	4'-8"	6
B7	12	#4	STR.	12'-10"	103
B8	2	#11	STR.	25'-5"	270
B9	6	#11	1	27'-0"	861
B10	6	#4	STR.	25'-0"	100
B11	6	#11	1	24'-5"	778
B12	4	#11	STR.	52'-10"	1,123
B13	32	#5	STR.	16'-9"	559
B14	4	#5	STR.	21'-8"	90

M1	84	#11	STR.	40'-5"	18,038
M2	28	#11	STR.	37'-0"	5,504
M3	18	#6	STR.	5'-0"	135

S1	180	#6	2	16'-3"	4,393
S2	96	#6	2	17'-3"	2,487

U1	127	#4	3	7'-8"	650
U3	5	#4	3	8'-2"	27
U4	13	#4	3	7'-2"	62
U5	5	#4	3	9'-5"	31

V7	56	#11	1	18'-7"	5,529
----	----	-----	---	--------	-------

REINFORCING STEEL 47,554 LBS.

SP-7 4 * 5 708'-2" 1,892

SP-171 3 ** 4 1855'-2" 5,805

SP-172 1 ** 4 1664'-7" 1,736

SPIRAL COLUMN REINFORCING STEEL 9,433 LBS.

CLASS "A" CONCRETE

POUR 2 (COLUMNS) 27.7 C.Y.

POUR 3 (CAP) 85.6 C.Y.

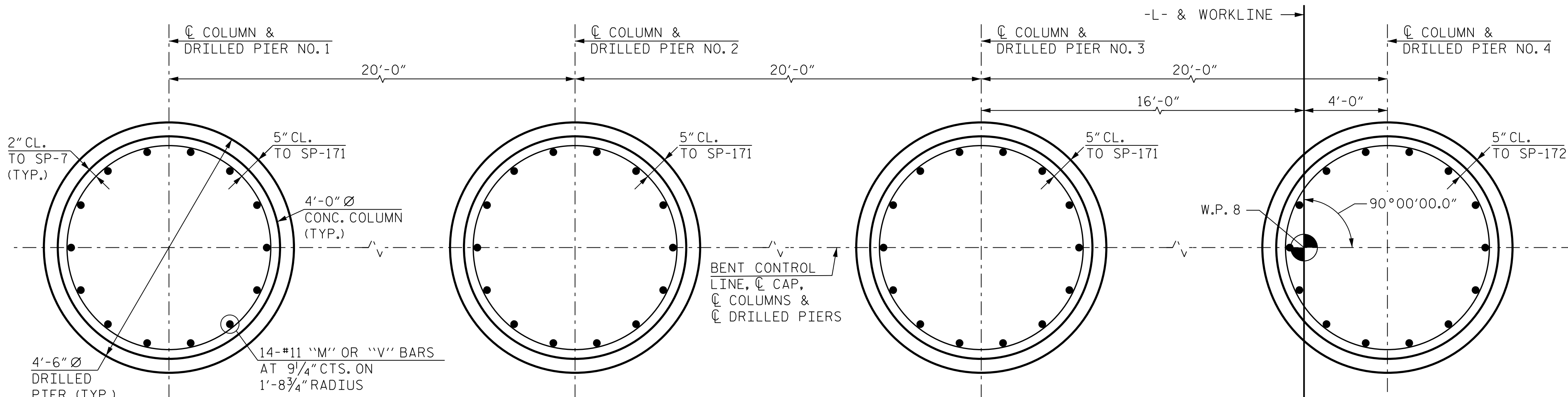
TOTAL 113.3 C.Y.

DRILLED PIERS

POUR 1 (DRILLED PIER CONCRETE) 156.10 C.Y.

* SP-7 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR

** SP-171 AND SP-172 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR



PLAN OF DRILLED PIERS AND COLUMNS

(DETAILS ARE TYPICAL FOR DRILLED PIER AND COLUMN UNLESS OTHERWISE DETAILED)

SPAN H

SPAN G

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT TYPE 3

BENT 7

DETAILS & BILL OF MATERIAL
STAGE 1

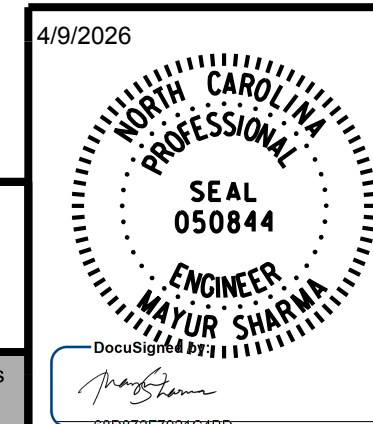
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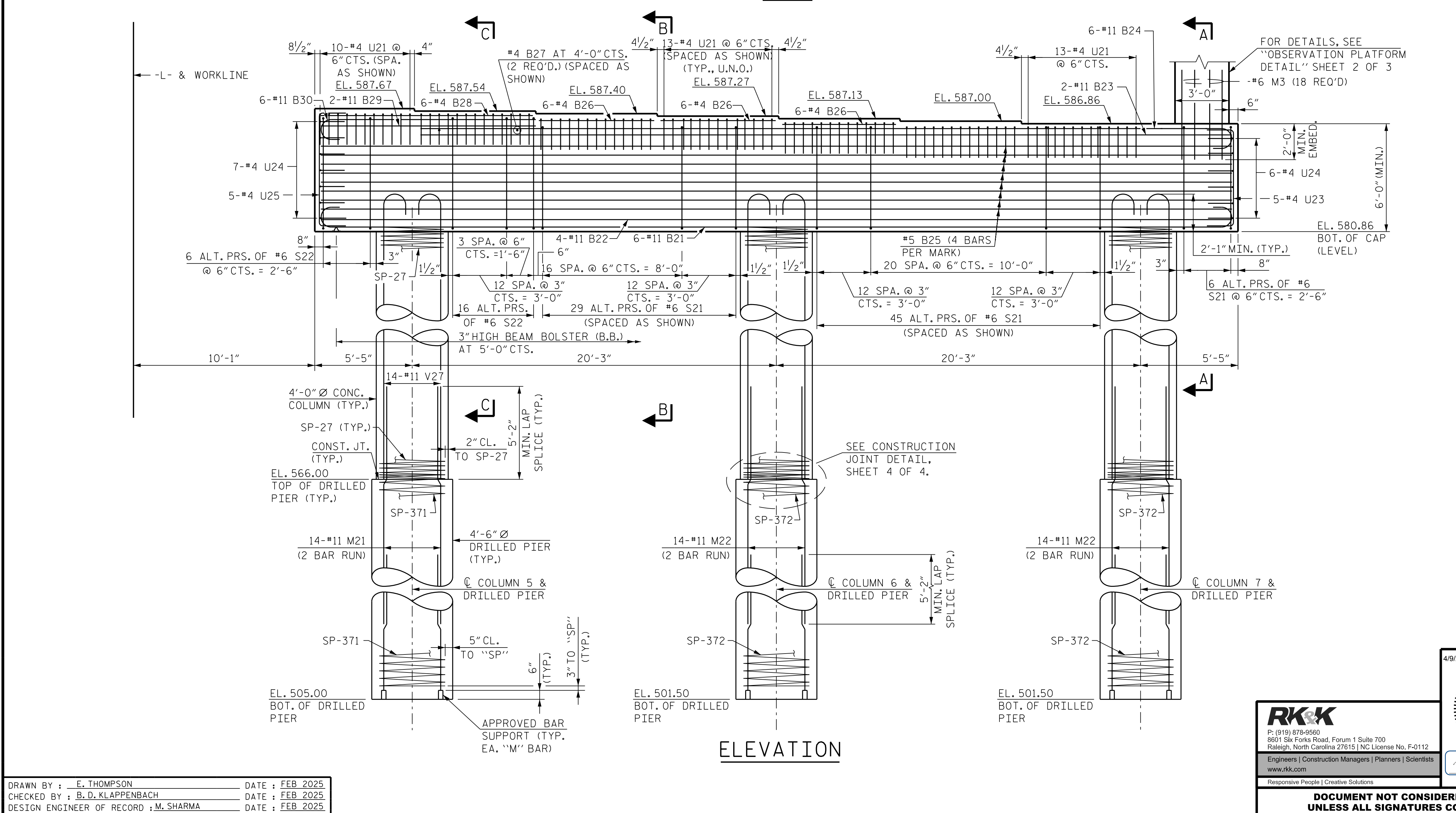
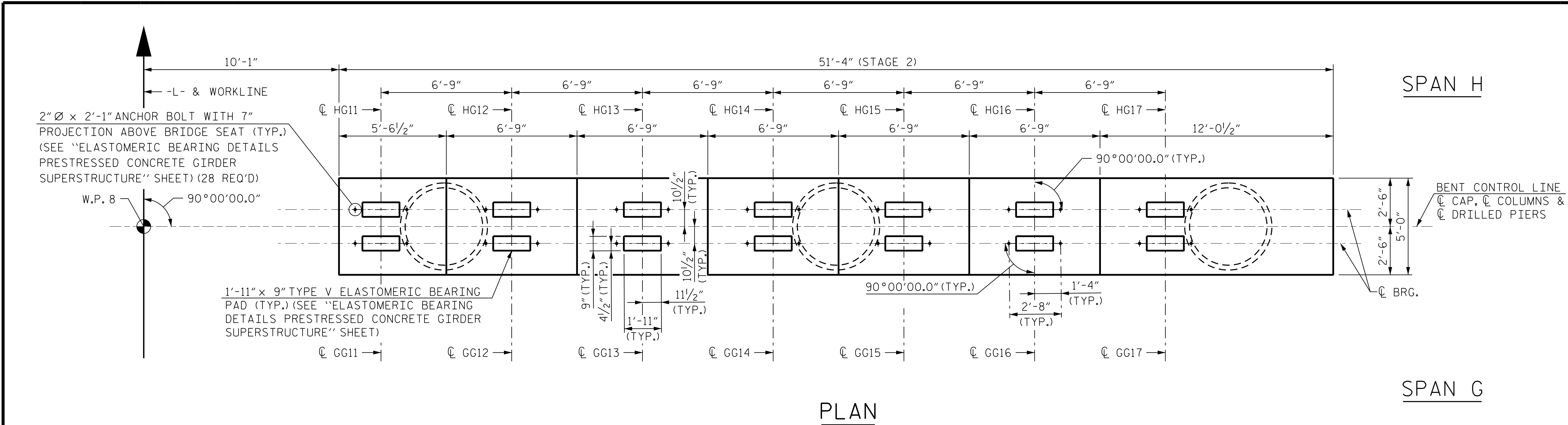
SHEET NO.

S-97

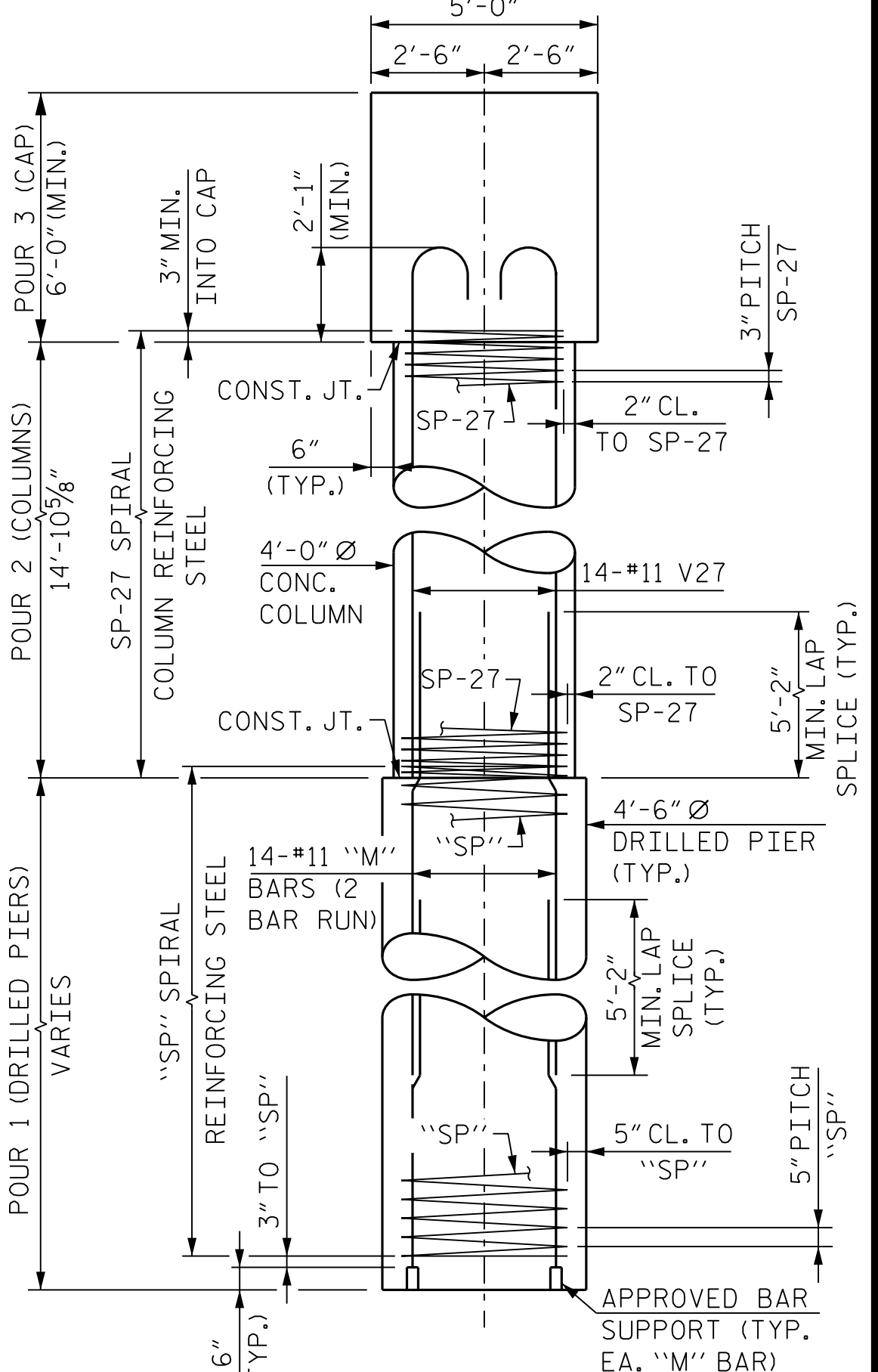
TOTAL SHEETS
118



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NOTES:
FOR SECTIONS A-A, B-B AND C-C, SEE SHEET 4 OF 4.
FOR "END OF CAP DETAIL", SEE SHEET 4 OF 4.
HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS AND COLUMN STEEL.
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".



END ELEVATION
PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 3 OF 4

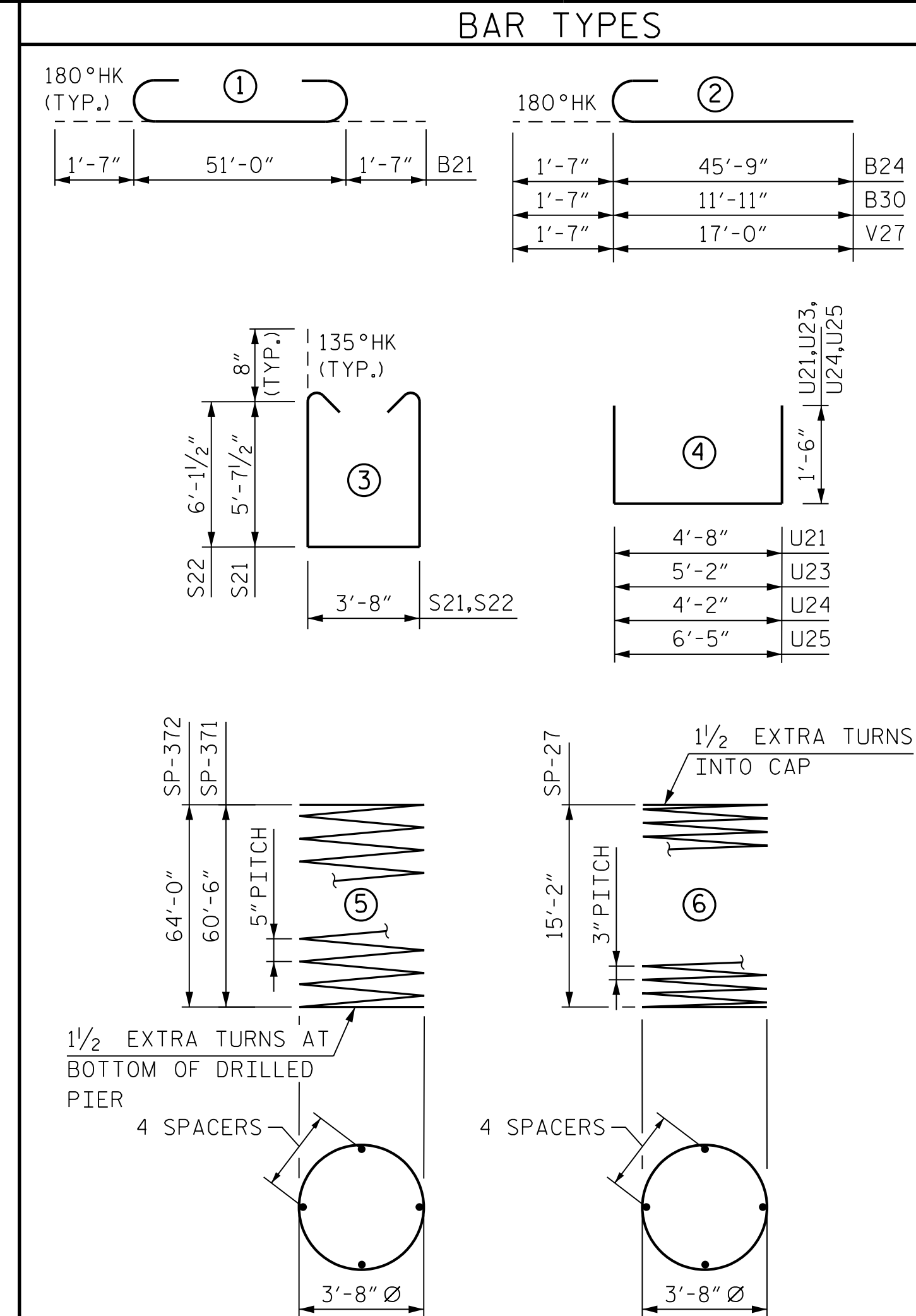
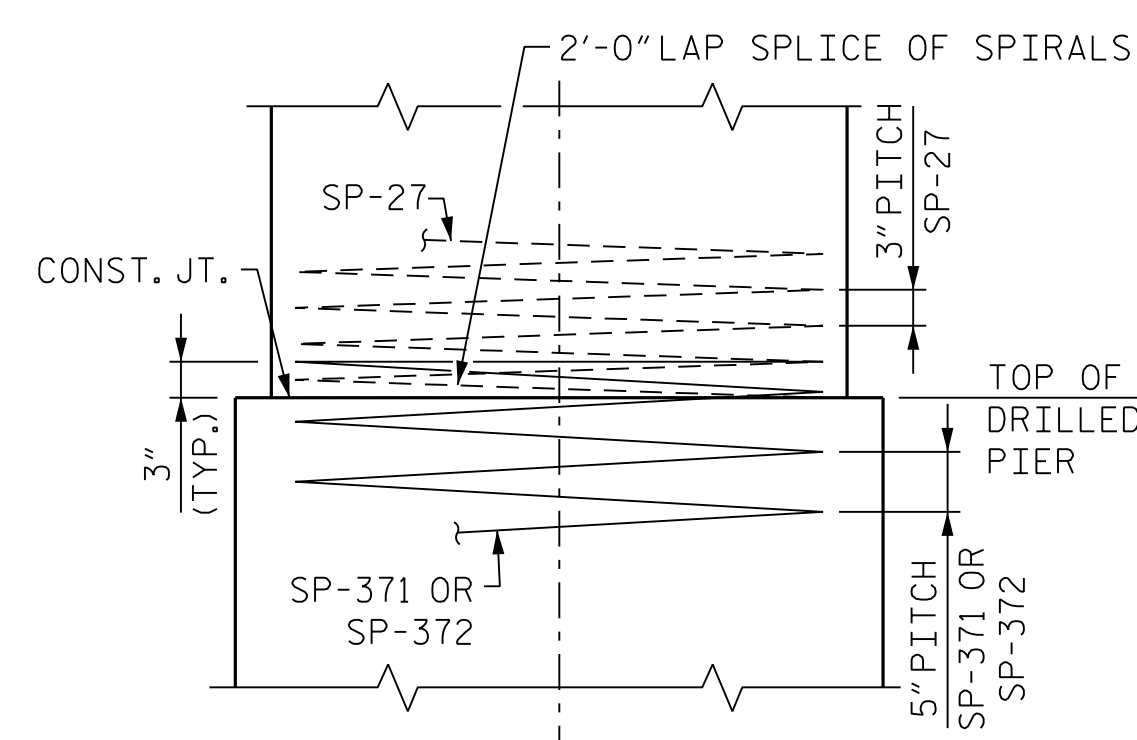
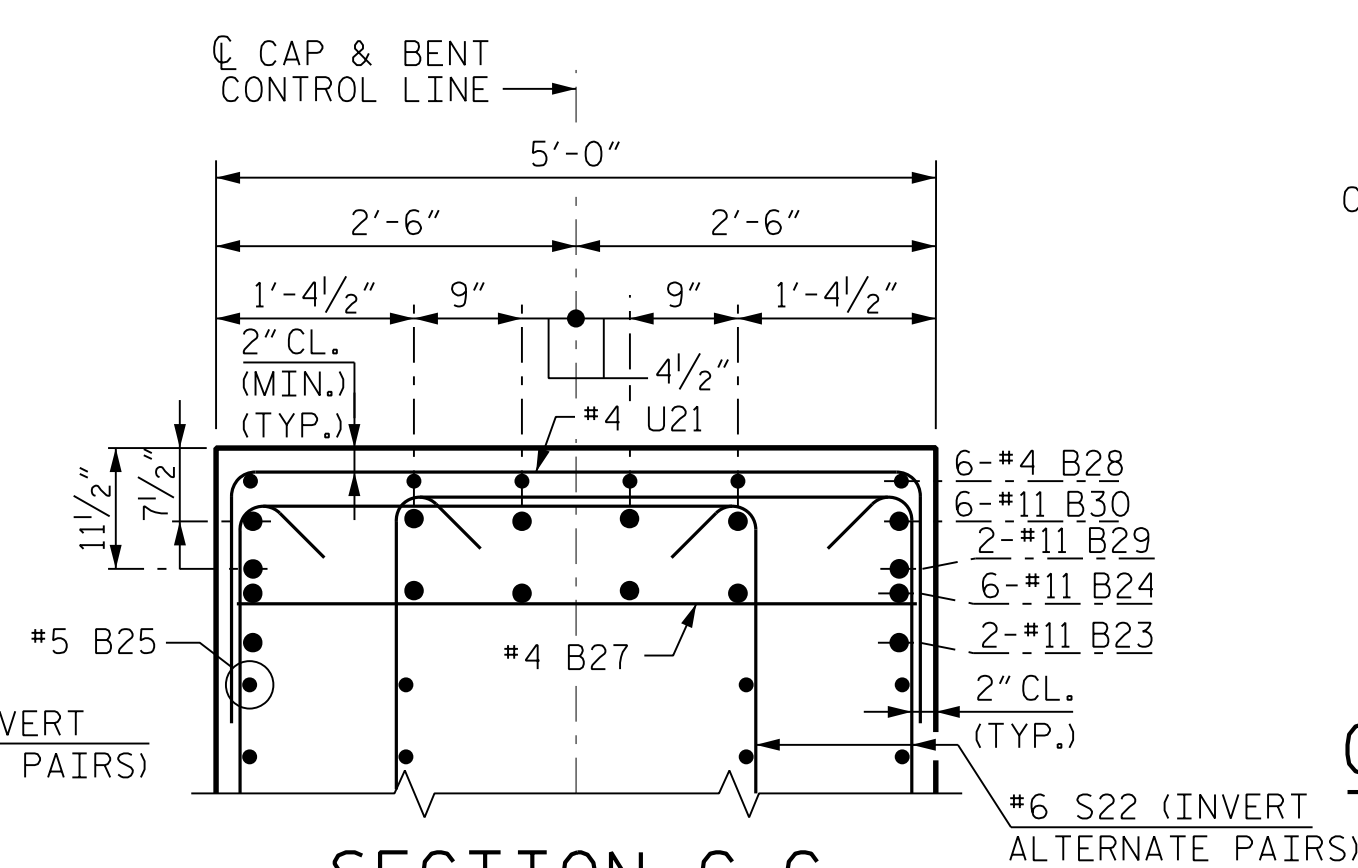
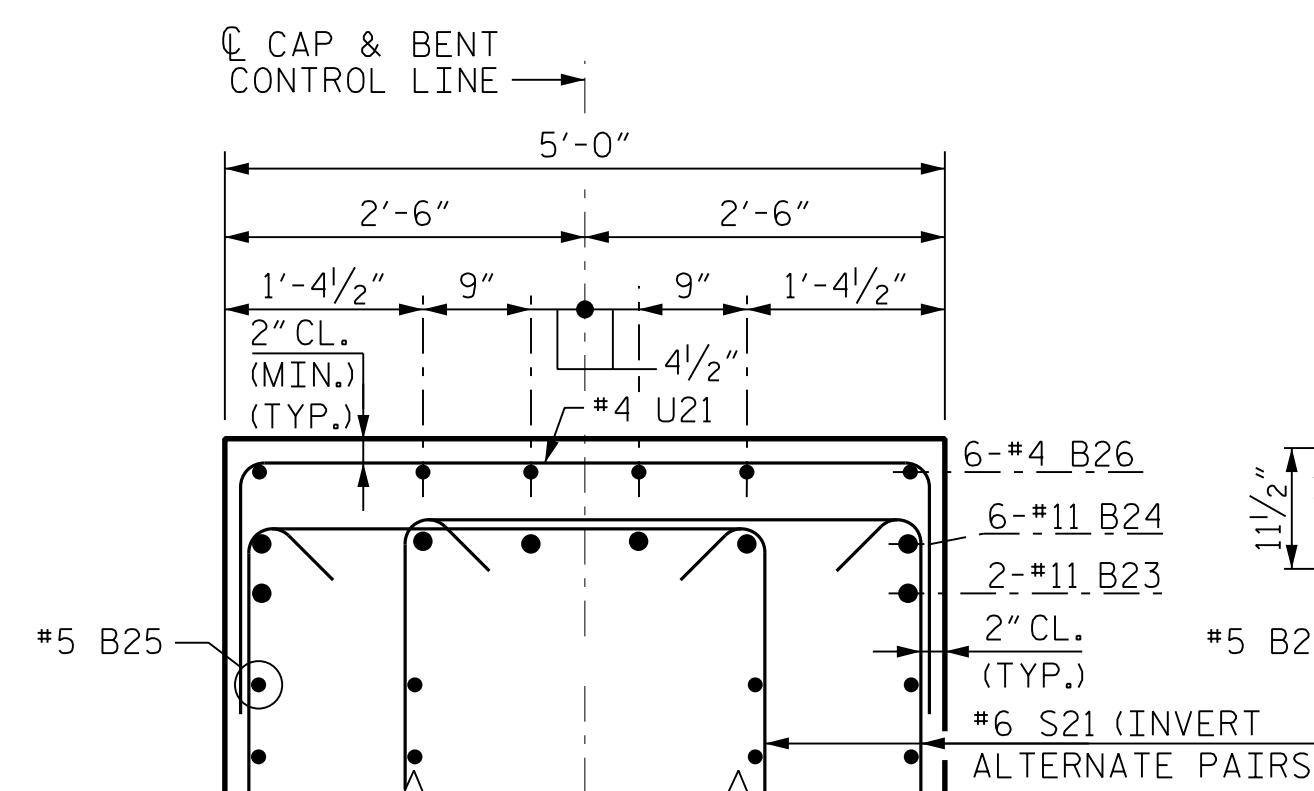
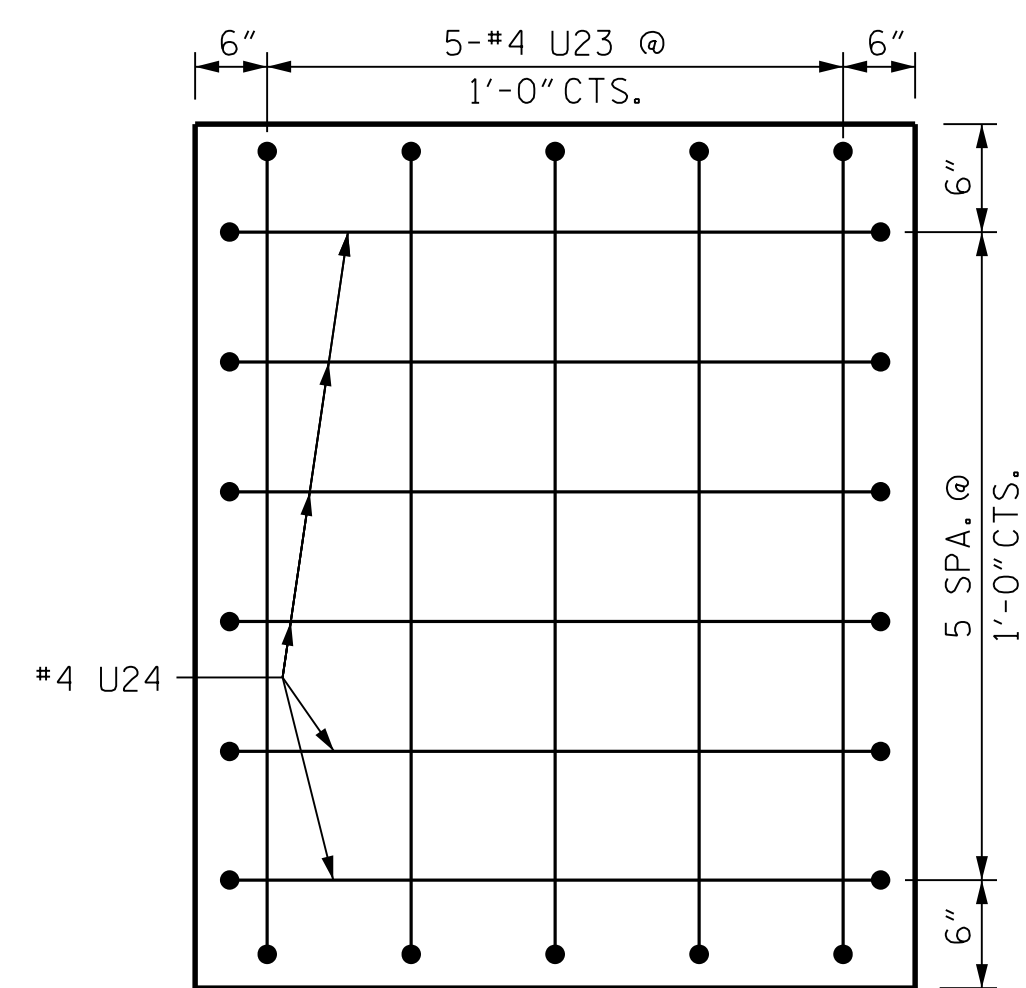
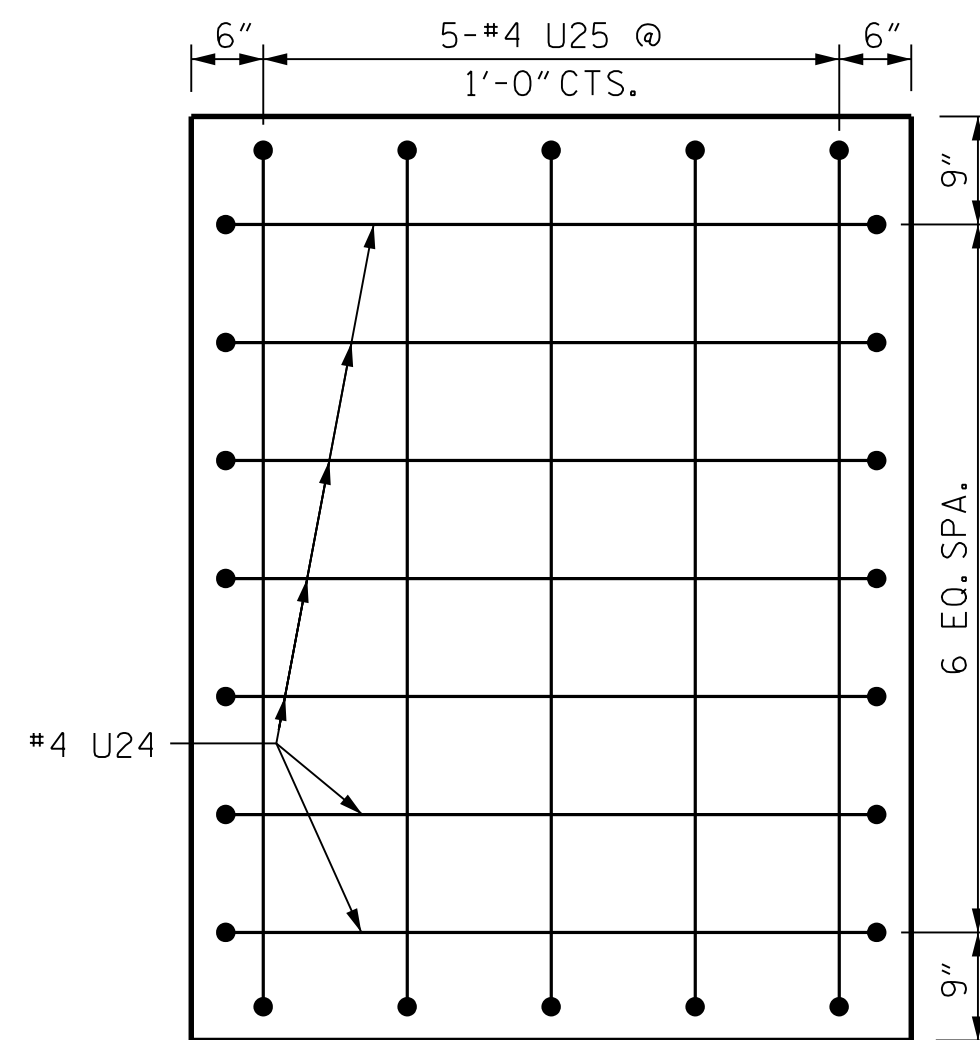
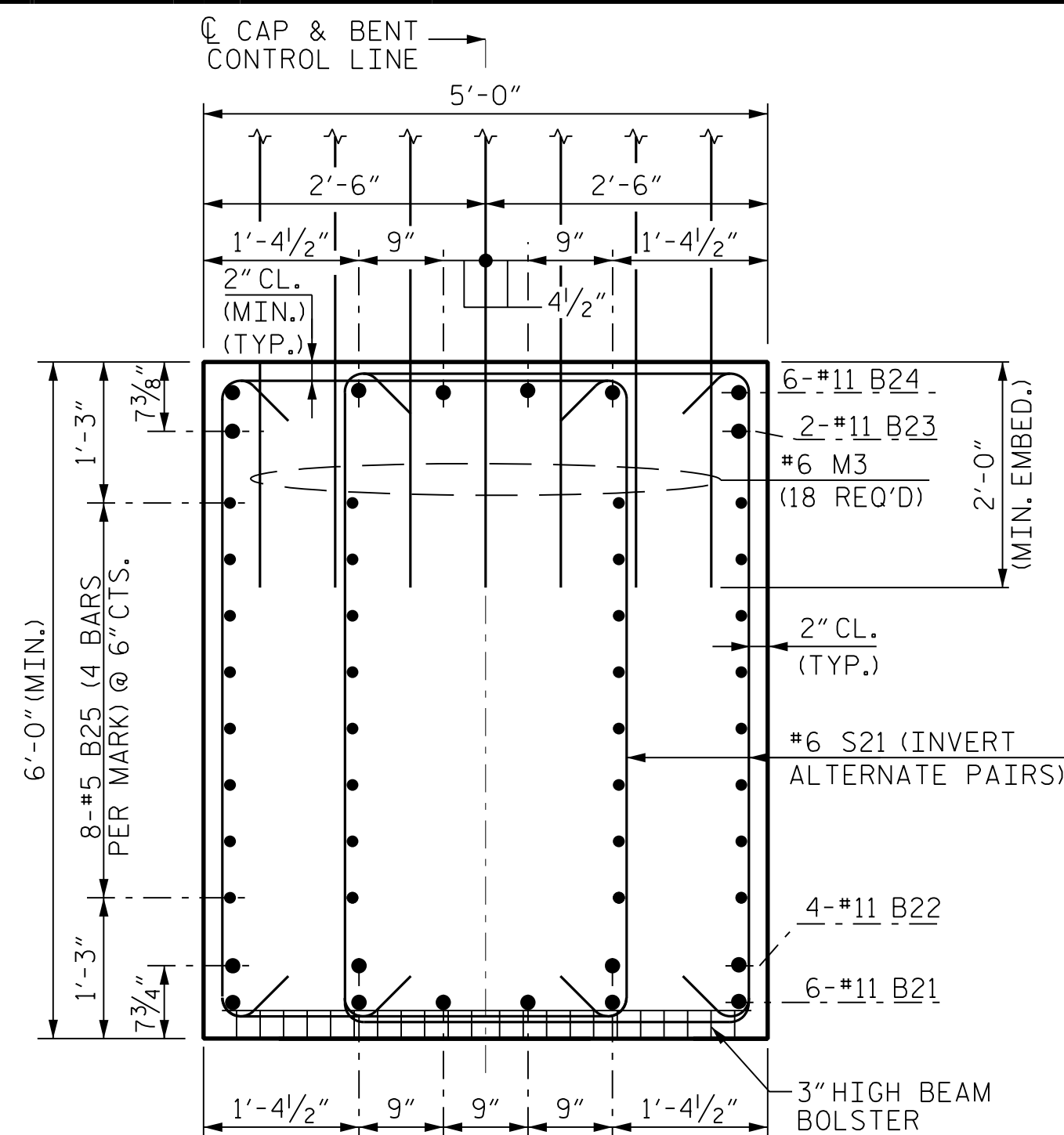
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT TYPE 3 BENT 7 PLAN AND ELEVATION STAGE 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-98
TOTAL SHEETS					118

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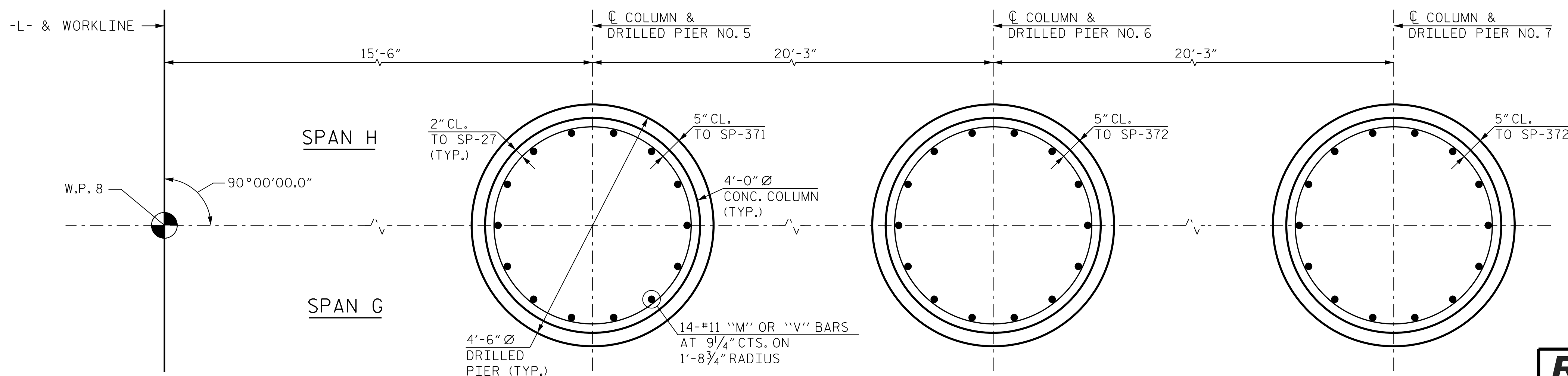
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ENGINEER
MAYUR SHARMA

DRAWN BY : E. THOMPSON DATE : FEB 2025
CHECKED BY : B. D. KLAPPENBACH DATE : FEB 2025
DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2025

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BILL OF MATERIAL					
BENT 7 (STAGE 2)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B21	6	#11	1	54'-2"	1,727
B22	4	#11	STR.	51'-0"	1,084
B23	2	#11	STR.	45'-9"	486
B24	6	#11	2	47'-4"	1,509
B25	32	#5	STR.	51'-0"	1,702
B26	18	#4	STR.	6'-3"	75
B27	2	#4	STR.	4'-8"	6
B28	6	#4	STR.	11'-9"	47
B29	2	#11	STR.	12'-0"	128
B30	6	#11	2	13'-6"	430
M3	18	#6	STR.	5'-0"	135
M21	28	#11	STR.	37'-0"	5,504
M22	56	#11	STR.	38'-8"	11,504
S21	160	#6	3	16'-3"	3,905
S22	44	#6	3	17'-3"	1,140
U21	88	#4	4	7'-8"	451
U23	5	#4	4	8'-2"	27
U24	13	#4	4	7'-2"	62
U25	5	#4	4	9'-5"	31
V27	42	#11	2	18'-7"	4,147
REINFORCING STEEL 34,100 LBS.					
SP-27	3	*	6	708'-2"	1,419
SP-371	1	**	5	1664'-7"	1,736
SP-372	2	**	5	1759'-11"	3,671
SPIRAL COLUMN REINFORCING STEEL					
6,826 LBS.					
CLASS "A" CONCRETE					
POUR 2 (COLUMNS)				20.8 C.Y.	
POUR 3 (CAP)				60.4 C.Y.	
TOTAL				81.2 C.Y.	
DRILLED PIERS					
POUR 1 (DRILLED PIER				112.0 C.Y.	
CONCRETE)					
* SP-27 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR					
** SP-371 OR SP-372 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					



PLAN OF DRILLED PIERS AND COLUMNS

(DETAILS ARE TYPICAL FOR DRILLED PIER AND COLUMN UNLESS OTHERWISE DETAILED)

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
 STATION: 46+42.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
BENT TYPE 3
BENT 7
DETAILS & BILL OF MATERIAL
STAGE 2

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1			3			TOTAL SHEETS 118
2			4			

ET NO.

-99

118

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DESIGN ENGINEER AT DESA : M. SHARMA DATE : FEB 2025

DESIGN ENGINEER OF RECORD : M. SHARMA DATE : FEB 2023

DATE : FEB 2025

DATE : FEB 2025

DATE : FEB 2023

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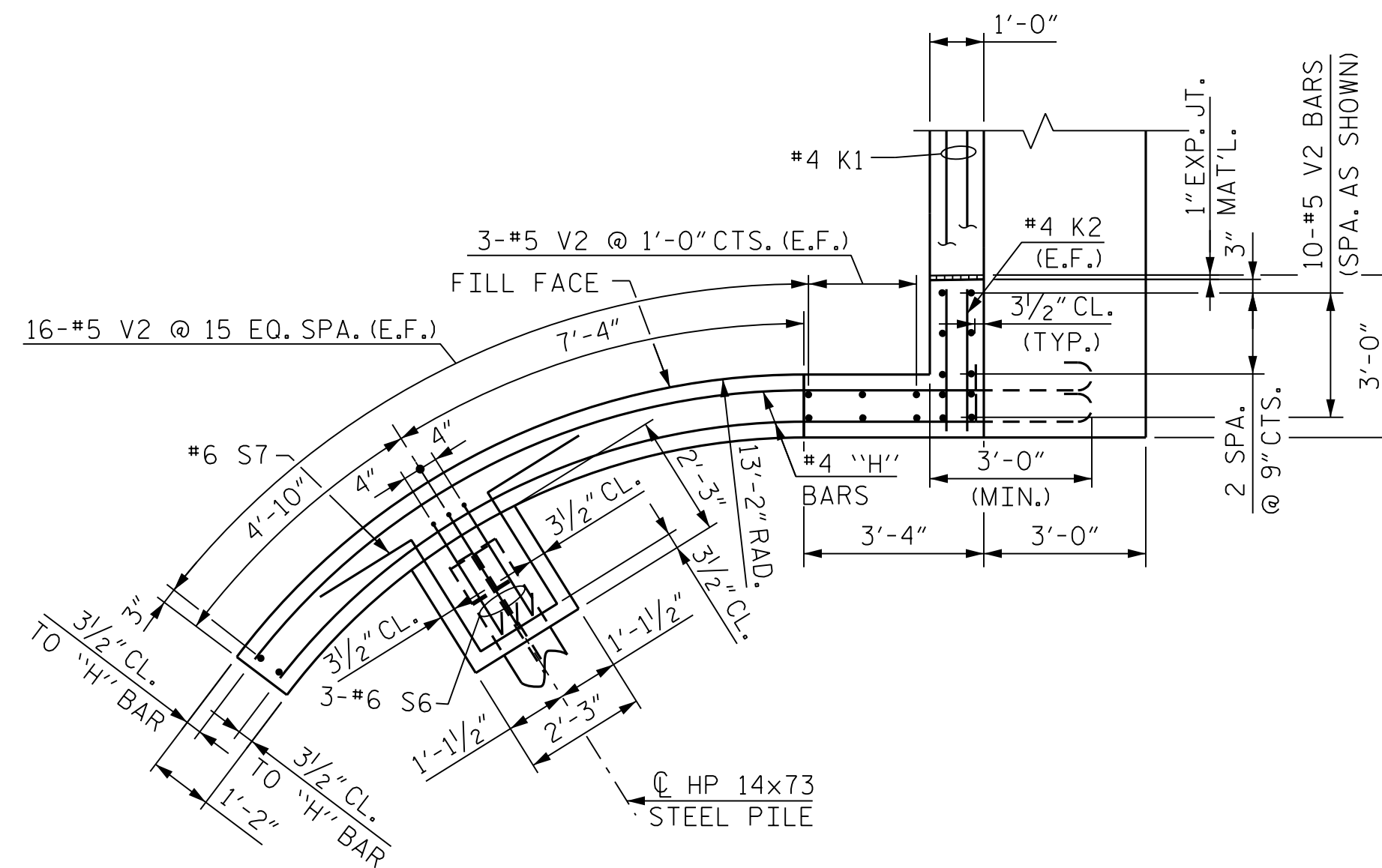
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MAYUR SHARMA

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Mayur Sharma
58629E23A1C4B0

THE ELEVATION AT THE TOP OF WING SHALL BE
ADJUSTED TO MATCH THE TOP OF RAIL ELEVATION
FROM THE BRIDGE.



Technical drawing of a pile cap cross-section showing reinforcement details and dimensions. The drawing includes the following elements:

- Reinforcement:**
 - Top: 11-#4 H4 @ 6" CTS. (FRONT FACE)
 - Bottom: 11-#4 H2 @ 6" CTS. (FILL FACE)
 - Left side (FRONT FACE): 8-#4 H4 @ EQ. SPA. and 4-#4 H3 @ EQ. SPA.
 - Left side (FILL FACE): 8-#4 H2 @ EQ. SPA. and 4-#4 H1 @ EQ. SPA.
 - Internal: #5 V2 (vertical), 3-#6 S6 (top horizontal), 3-#6 S7 (bottom horizontal), and 12 (diagonal).
- Dimensions:**
 - Overall width: 1'-2"
 - Overall height: 3'-0"
 - Internal height segments: 3'-3" (top), 2'-3" (middle), 2'-0" (bottom), and 3" (bottom-most).
 - Bottom reinforcement spacing: 2'-4 1/2"
- Labels and Notes:**
 - PERMITTED CONST. JT. (LEVEL)
 - CONST. JT. (LEVEL)
 - FILL FACE
 - 3" HIGH BEAM BOLSTER (B.B.)
 - HP 14x73 STEEL PILE

Diagram illustrating the cross-section of a bridge structure, showing various components and dimensions:

- Top Section:**
 - EL. 593.06 (LEVEL) (SEE NOTE)
 - 4" dimension
 - 10 SPA. @ 6" CTS.
 - 4" dimension
 - EL. 589.06 (LEVEL)
- Reinforcement:**
 - #5 V2 (EA. FACE)
 - #4 "H" BARS TO MATCH #4 K2
 - PERMITTED CONST. JT. (LEVEL)
 - CONST. JT. (LEVEL)
 - EL. 583.00
 - #4 "H" BARS (E.F.)
 - EL. 579.00 (LEVEL)
- Structural Components:**
 - 3-#6 S6
 - #6 S7
 - HP 14x73 STEEL PILE
 - 3" HIGH BEAM BOLSTER (B.B.) AT 5'-0" CTS.
- Dimensions:**
 - 11'-4" K2 IN BACKWALL
 - 4' K1 IN BACKWALL

LEFT WINGWALL DETAILS

(W1)

SHEET 2 OF 4

SUBSTRUCTURE
END BENT 2
WINGWALL DETAILS
STAGE 1

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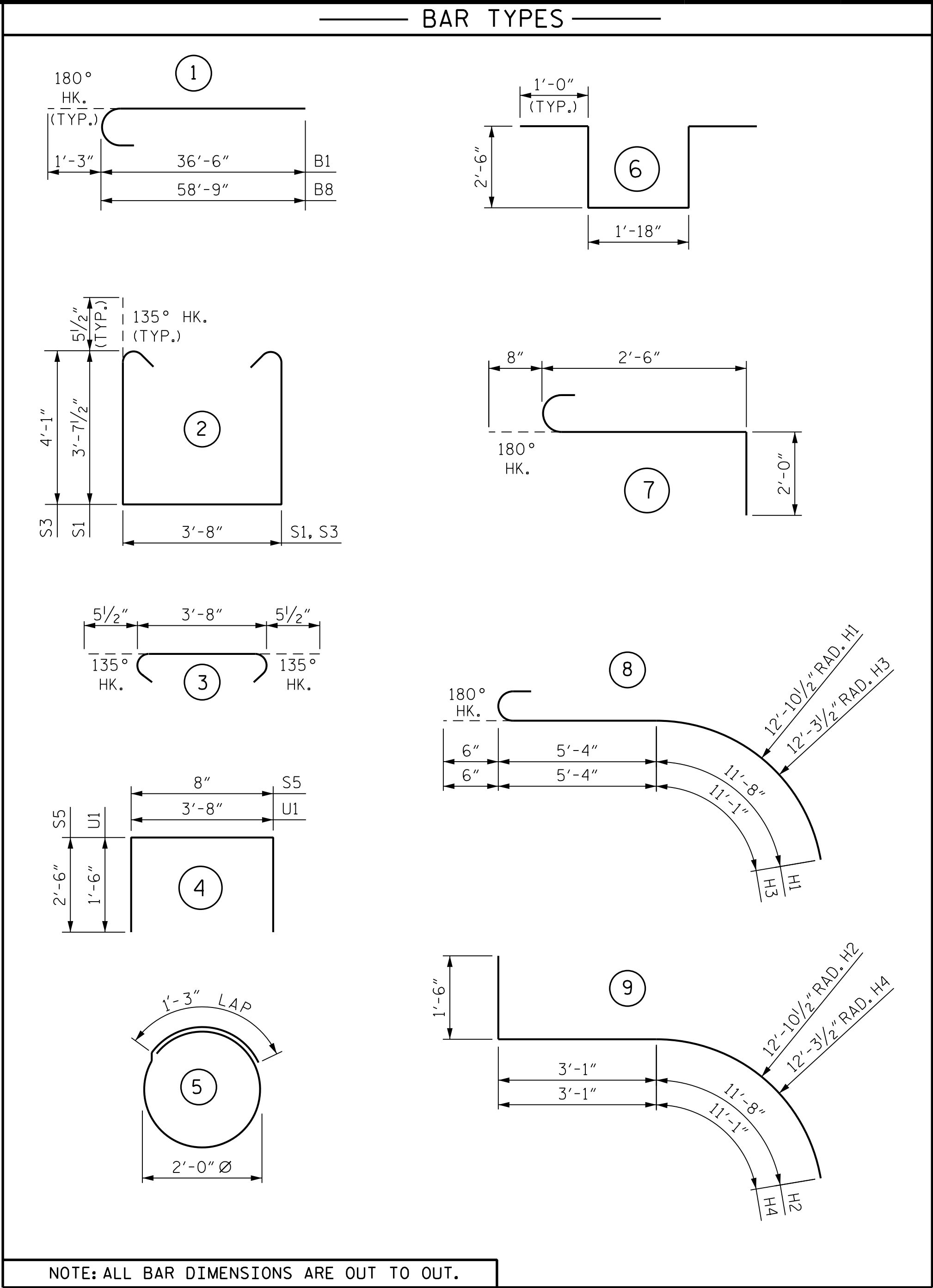
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BILL OF MATERIAL					
END BENT 2 - STAGE 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#9	1	37'-6"	770
B2	6	#9	STR.	38'-0"	775
B3	6	#4	STR.	3'-4"	13
B4	12	#4	STR.	13'-0"	104
B5	6	#4	STR.	16'-10"	67
B6	17	#4	STR.	3'-8"	42
B7	2	#4	STR.	3'-8"	5
B8	6	#9	1	60'-0"	1,224
B9	6	#9	STR.	14'-7"	298
B10	24	#5	STR.	36'-0"	901
B11	8	#4	STR.	35'-10"	191
E1	8	#5	STR.	4'-0"	33
E2	8	#5	STR.	3'-2"	26
E3	8	#5	STR.	3'-2"	26
E4	8	#5	STR.	2'-8"	22
H1	4	#4	8	17'-6"	47
H2	19	#4	9	16'-3"	206
H3	4	#4	8	16'-11"	45
H4	19	#4	9	15'-8"	199
K1	20	#4	STR.	35'-9"	478
K2	22	#4	STR.	2'-7"	38
S1	53	#5	2	11'-10"	654
S2	116	#5	3	4'-7"	555
S3	63	#5	2	12'-9"	838
S4	44	#4	5	7'-7"	223
S5	66	#4	4	5'-8"	250
S6	3	#6	7	5'-2"	23
S7	3	#6	6	8'-8"	39
U1	95	#4	4	6'-8"	423
V1	132	#5	STR.	8'-0"	1,101
V2	48	#5	STR.	13'-7"	680
REINFORCING STEEL				10,296 LBS.	
CLASS "A" CONCRETE					
POUR 1 (CAP, LOWER WINGS, WING PILE CAP AND COLLARS)				51.7 C.Y.	
POUR 2 (BACKWALL & UPPER WINGS)				17.5 C.Y.	
TOTAL				69.2 C.Y.	

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SHEET 4 OF 4

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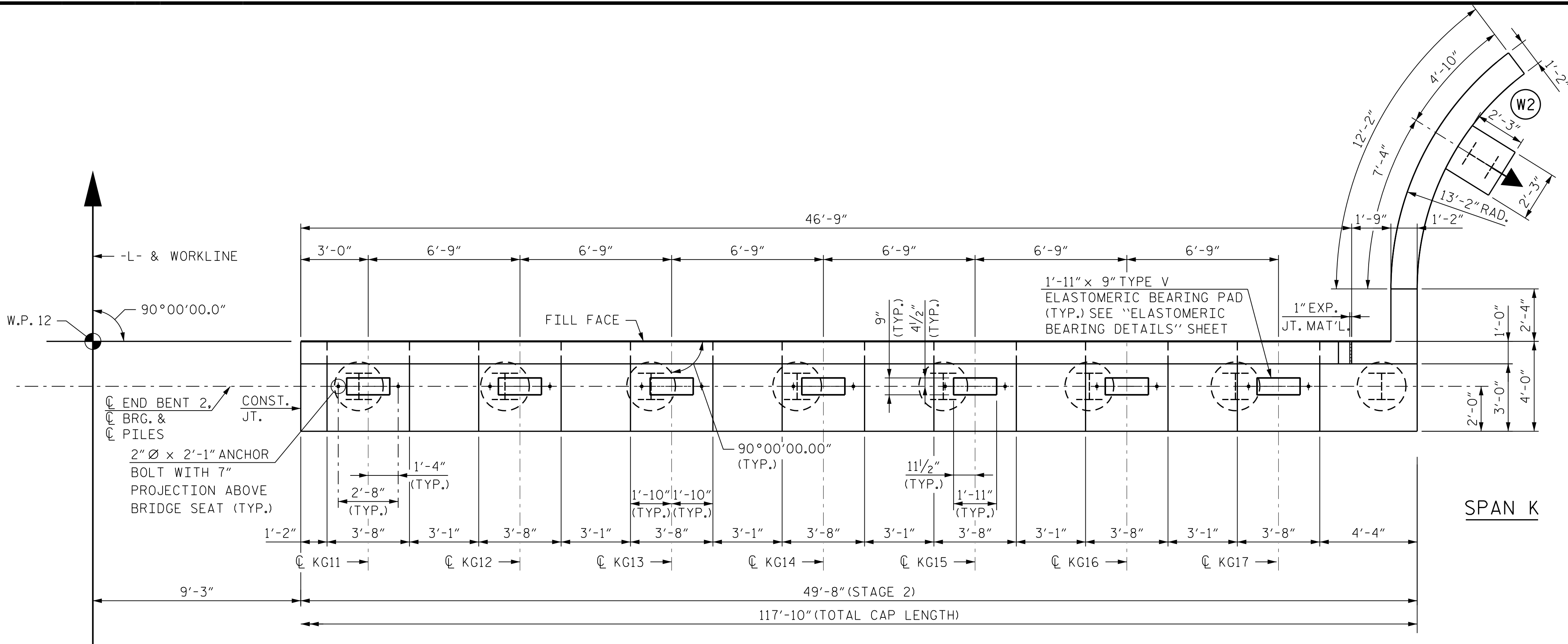
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 2
BILL OF MATERIAL
STAGE 1

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PLAN

NOTES:

FOR SECTIONS, SEE SHEET 3 OF 4.

FOR PILE SPLICE DETAILS, SEE SHEET 3 OF 4.

FOR TEMPORARY DRAINAGE, SEE SHEET 3 OF 4.

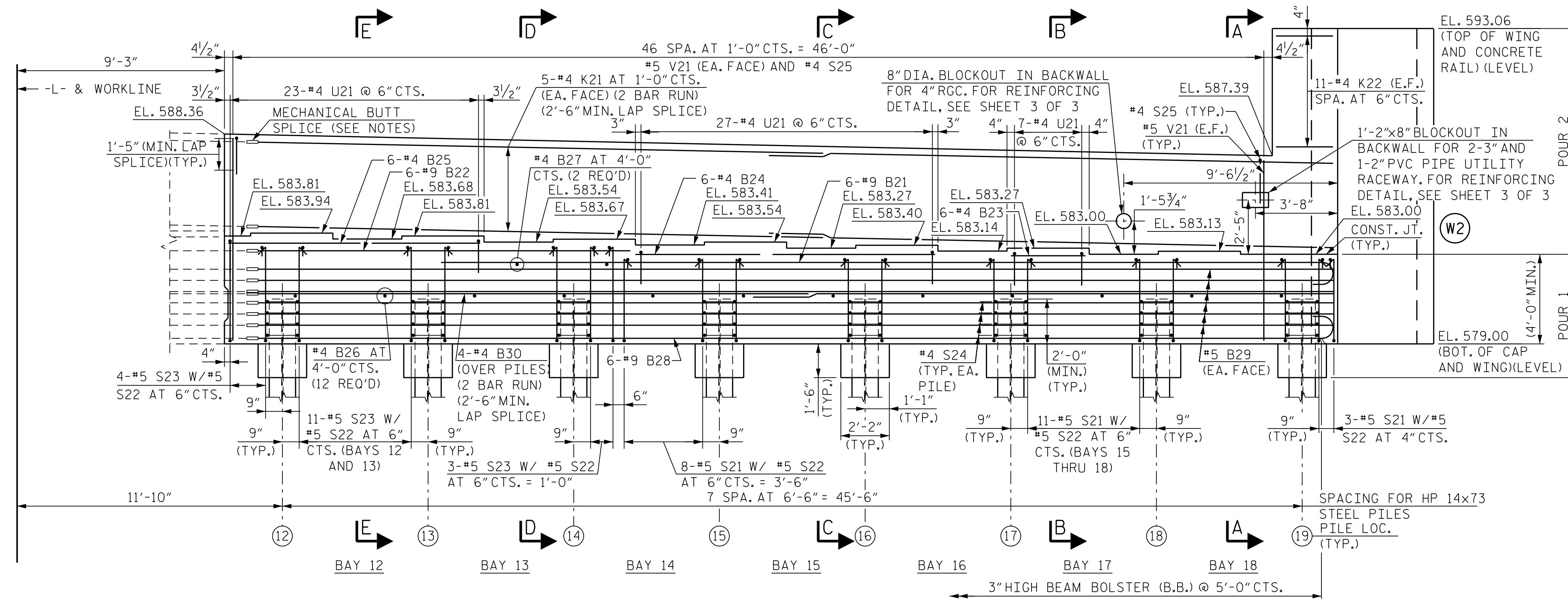
STIRRUPS IN THE CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

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

FOR MECHANICAL BUTT SPLICES OR REINFORCING STEEL, SEE SECTION 425-5 OF THE STANDARD SPECIFICATIONS.



ELEVATION

LEGEND:

- HP 14x73 VERTICAL STEEL PILES
- HP 14x73 STEEL PILES BATTERED 3:12

PROJECT NO. B-6051/U-6143
GASTON/MECKLENBURG COUNTY
STATION: 46+42.50 -L-

SHEET 1 OF 4

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1			3			S-104
2			4			
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