

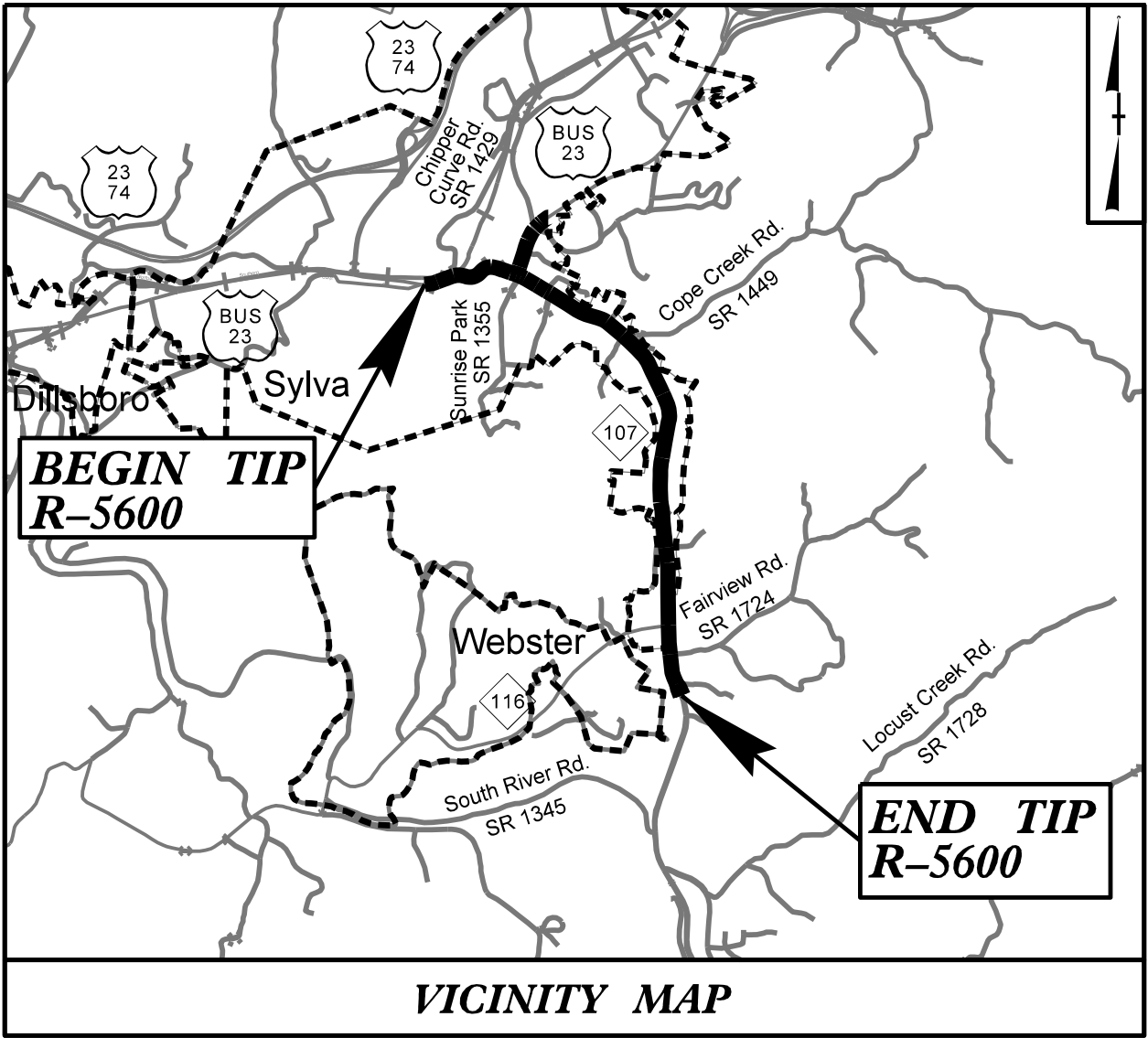
PLOT DRIVER: \$PLTDVRS\$
USER: \$USER\$
FILE: \$PWVARVAULTPATHDESC\$

DATE: 9/16/2025

PENTABLE: \$PENTBL\$
TIME: 9:00:58 AM

CONTRACT: C205086

TIP PROJECT: R-5600



VICINITY MAP

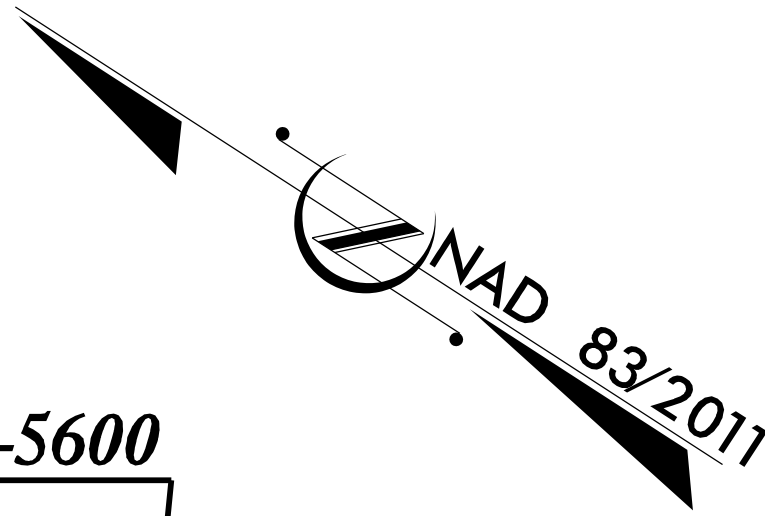
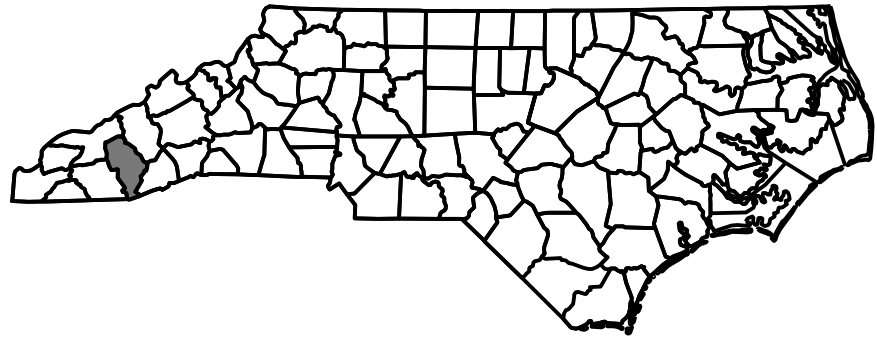
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

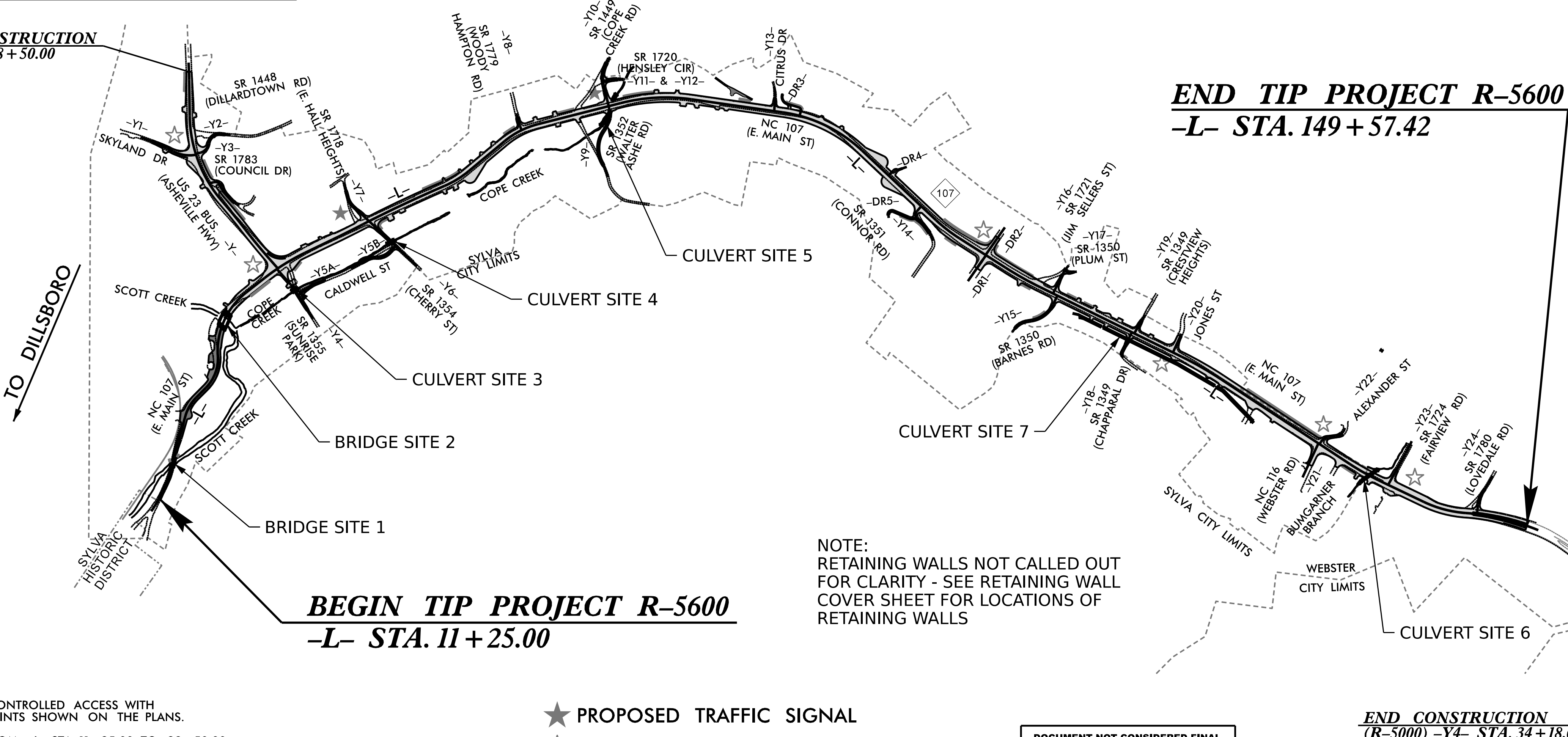
LOCATION: SYLVA - N.C. 107 FROM WEST OF U.S. 23 BUSINESS (ASHEVILLE HIGHWAY) TO SOUTH OF N.C. 116 (WEBSTER ROAD) AND U.S. 23 BUS. FROM SKYLAND DRIVE TO WEST OF MUNICIPAL DRIVE

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5600		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
45818.1.FR1	STP-0107(13)	PE	
45818.2.1	STP-0107(13)	ROW	
45818.2.2		UTILITIES	
45818.3.1	STP-0107(13)	CONSTRUCTION	



END CONSTRUCTION
-Y- STA. 28 + 50.00



END TIP PROJECT R-5600
-L- STA. 149 + 57.42

BEGIN TIP PROJECT R-5600
-L- STA. 11 + 25.00

NOTES:
THIS PROJECT HAS PARTIALLY CONTROLLED ACCESS WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS.

DESIGN SPEED = 30 MPH FROM -L- STA. 11+25.00 TO 29+50.00
DESIGN SPEED = 40 MPH FROM -L- STA. 29+50.00 TO 123+00.00
DESIGN SPEED = 50 MPH FROM -L- STA. 123+00.00 TO 149+57.42

- ★ PROPOSED TRAFFIC SIGNAL
- ☆ UPGRADED TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

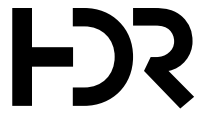
END CONSTRUCTION
(R-5000) -Y4- STA. 34 + 18.05

DESIGN DATA

ADT 2025 = 37,340
ADT 2045 = 42,420
K = 9 %
D = 55 %
T = 5 % *
V = 30 MPH TO 50 MPH
* TTST = 4% DUAL = 3%
FUNC CLASS = ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5600 = 2.603 MILES
LENGTH STRUCTURES TIP PROJECT R-5600 = 0.017 MILES
TOTAL LENGTH TIP PROJECT R-5600 = 2.620 MILES



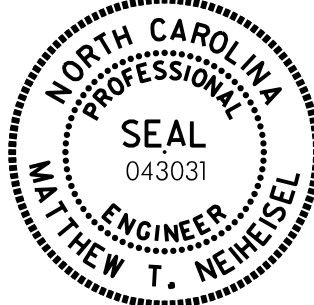
Prepared In the Office of:
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

2024 STANDARD SPECIFICATIONS

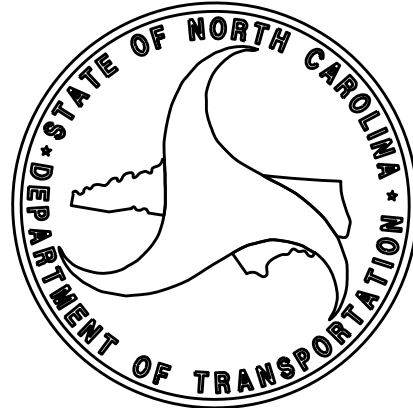
RIGHT OF WAY DATE:
JULY 16, 2021

LETTING DATE:
NOVEMBER 18, 2025

PHILLIP E. ROGERS, PE
PROJECT ENGINEER
ALEXANDER D. SNIDER, PE
PROJECT DESIGN ENGINEER
JEANETTE L. WHITE, PE
NCDOT CONTACT



9/16/2025



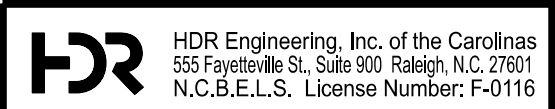
INDEX OF SHEETS			
SITE NO.	STATION	STRUCTURE DESCRIPTION	SHEET NOS.
1	-	BRIDGE 490050 PRESERVATION ON NC107 (-L-) OVER SCOTT CREEK	S01-1 THRU S01-18
2	27+24.00 -L-	REPLACE BRIDGE 490077 ON NC107 (-L-) OVER SCOTT CREEK	S02-1 THRU S02-41
3	12+33.00 -Y4-	TRIPLE BARREL 8 FT. X 5 FT. RCBC SR1355 (-Y4-) OVER COPE CREEK	S03-1 THRU S03-8
4	12+94.00 -Y6-	TRIPLE BARREL 7 FT. X 8 FT. RCBC SR1354 (-Y6-) OVER COPE CREEK	S04-1 THRU S04-8
5	64+35.31 -L-	TRIPLE BARREL 6 FT. X 7 FT. RCBC EXTENSIONS NC107 (-L-) OVER COPE CREEK	S05-1 THRU S05-14
6	135+82.00 -L-	DOUBLE BARREL 7 FT. X 8 FT. RCBC NC107 (-L-) OVER BUMGARNER BRANCH	S06-1 THRU S06-12
7	11+63.55 -Y18-	SINGLE BARREL 10 FT. X 5 FT. RCBC SR1349 (-Y18-) OVER MILL CREEK	S07-1 THRU S07-10

PROJECT NO. R-5600
JACKSON COUNTY
STATION: - -



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

DES BY: --	DATE : --	DWG BY: B. PETERSON	DATE : 05/25
DES CHK: --	DATE : --	CHK BY: K. DICKENS	DATE : 06/25

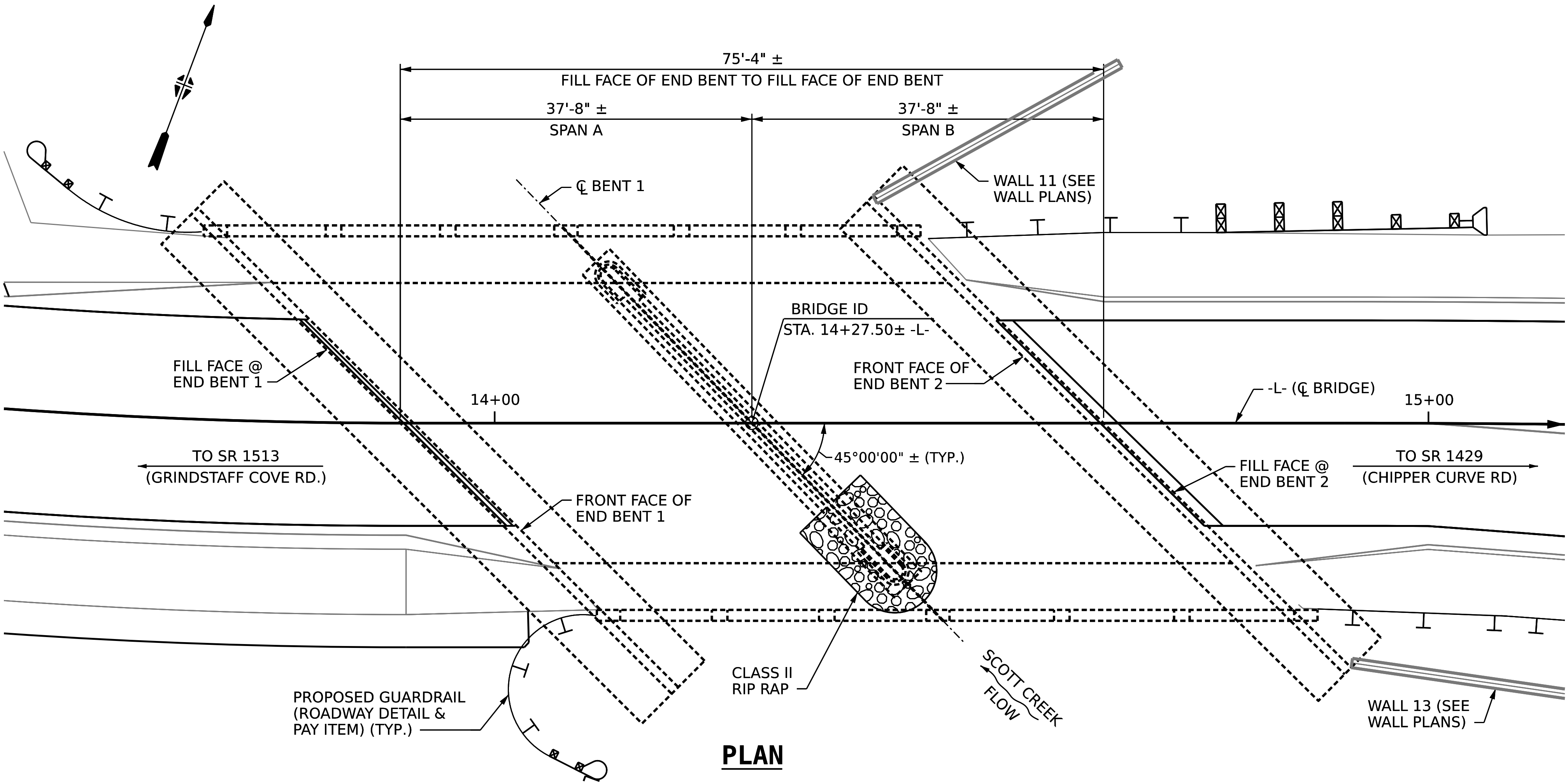
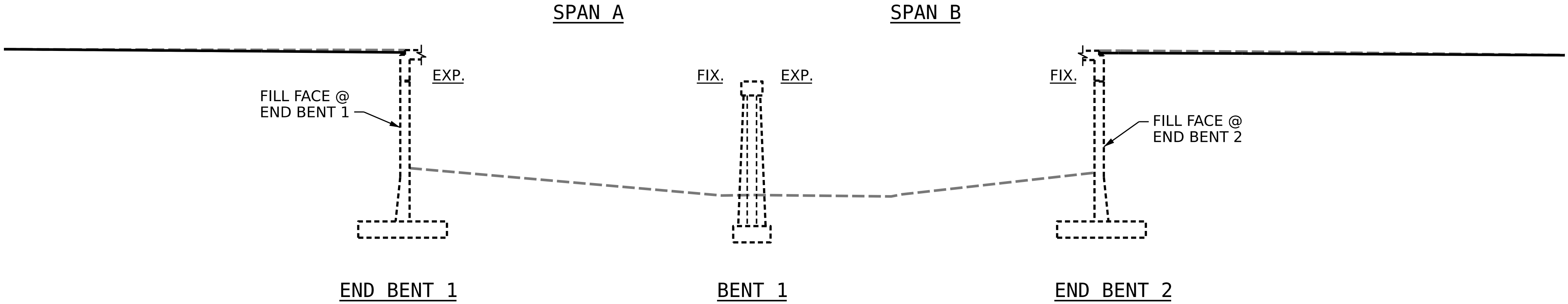


9/16/2025
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NOTES

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 05/28/2024.

BRIDGE ORIENTATION IS REVERSED FROM THE ORIGINAL PLANS.



SCOPE OF WORK

- REMOVE ASPHALT OVERLAY AND CONCRETE WEARING SURFACE ON BRIDGE DECK.
- PARTIALLY REMOVE BRIDGE DECK CONCRETE BY SCARIFICATION AND SHOT BLASTING METHODS.
- PLACE REINFORCED CONCRETE WEARING SURFACE.
- GROOVE REINFORCED CONCRETE WEARING SURFACE.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE SHOTCRETE AND CONCRETE REPAIR AREAS.
- HAND CHIP SURFACE OF SIDEWALKS AND PLACE CONCRETE OVERLAY.
- INSTALL POURABLE SILICONE JOINT SEAL AT INTERIOR BENT JOINT.
- PERFORM SHOTCRETE AND CONCRETE REPAIRS IN PREPARED AREAS.
- EPOXY INJECTION OF CONCRETE CRACKS.
- APPLY EPOXY COATING TO THE TOP OF CAPS.
- PLACE RIP RAP AT INTERIOR BENT.

I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER

DATE

PROJECT NO. **R-5600**

JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON NC 107 (-L-) (US BUS. 23) OVER SCOTT CREEK BETWEEN SR 1513 (GRINDSTAFF COVE ROAD) & SR 1429 (CHIPPER CURVE ROAD)

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1	--	--	3	--	--	S01-01
2	--	--	4	--	--	TOTAL SHEETS 18



9/16/2025

Matthew T. Neiheisel

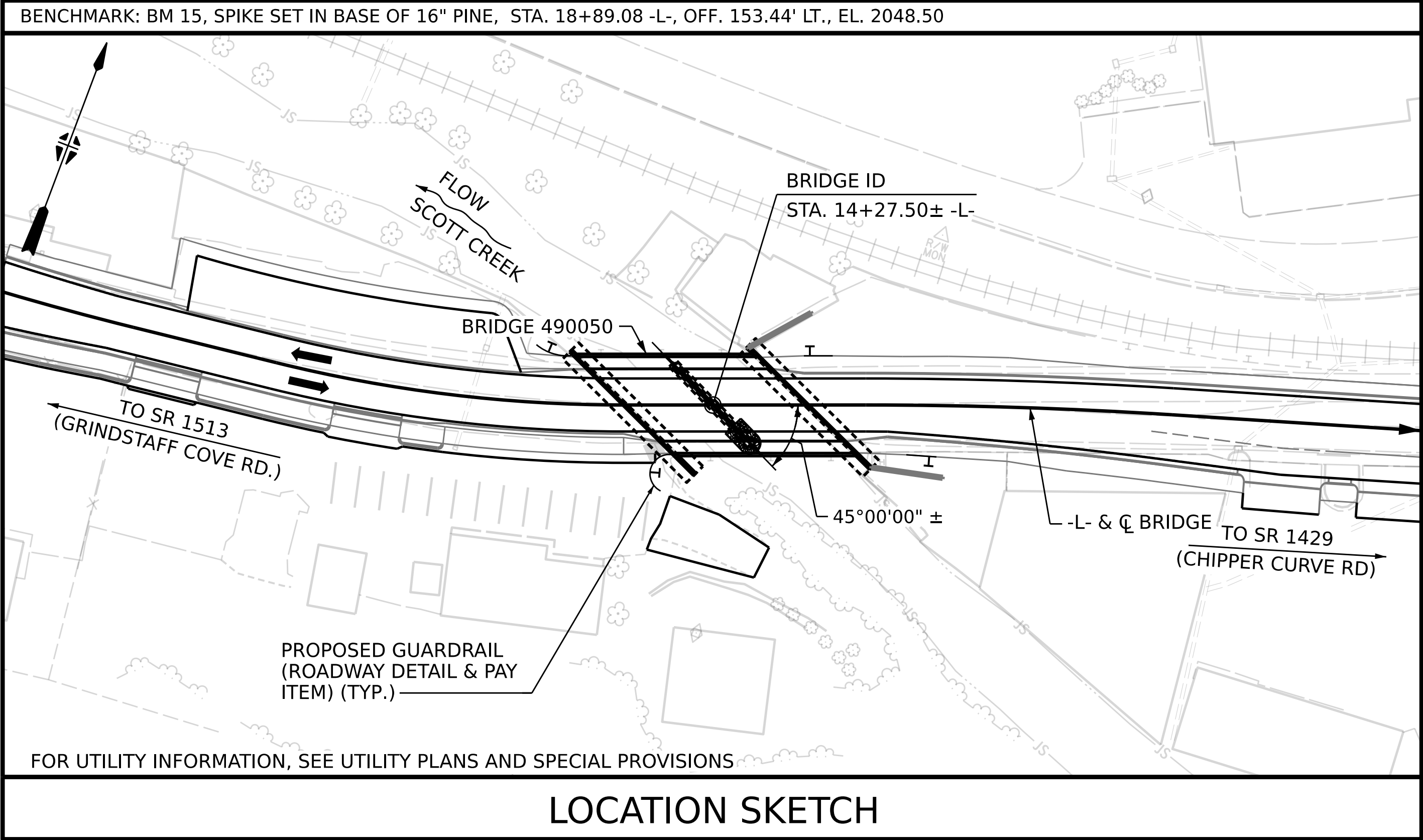
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555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

DES BY: J. PATT DATE : 03/25
DES CHK: M. NEIHEISEL DATE : 05/25

DWG BY: B. PETERSON DATE : 03/25
CHK BY: J. PATT DATE : 06/25



LOCATION SKETCH

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

BRIDGE COORDINATES

LATITUDE: 35°22'26.4"
LONGITUDE: 83°13'10.2"

NOTES

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT DUE TO THE NATURE OF PRESERVATION PROJECTS, THE EXTENT OF WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO COMMENCEMENT OF WORK. REPAIR LOCATIONS AND ESTIMATES OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS.

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THAT SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

WORK ON THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR'S PLAN USE PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES TO CATCH THE MATERIAL. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY PART OF THE EXISTING STRUCTURE WHICH IS TO REMAIN IN PLACE, THE DAMAGED AREA SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER AT NO ADDITIONAL COST TO THE DEPARTMENT.

ANY DAMAGE TO EXISTING REINFORCING STEEL, DURING CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST TO THE DEPARTMENT.

FOR TRAFFIC CONTROL AND LIMITS OF PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLANS.

PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL A COMPLETE SEQUENCE OF TASKS FOR EACH OPERATION AFFECTING THE BRIDGE SURFACE AND/OR TRAFFIC.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

ALL PAVEMENT MARKING WILL BE IN ACCORDANCE WITH THE PAVEMENT MARKING PLANS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

EXISTING JOINTS SHALL BE SEALED AND DECK DRAINS SHALL BE CUT AND PLUGGED PRIOR TO BEGINNING SURFACE PREPARATIONS OF THE BRIDGE DECK.

LONGITUDINAL CONSTRUCTION JOINTS OF CONCRETE WEARING SURFACE SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE ARE STREAM MONITORING DEVICES ATTACHED TO STRUCTURE 490050 THAT SHOULD NOT BE DISTURBED WITHOUT APPROVAL FROM THE ENGINEER.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

WEARING SURFACE CONSTRUCTION JOINTS WILL BE SEALED WITH HMWM. SEE SPECIAL PROVISION FOR CONCRETE BRIDGE DECK CRACK SEALING.

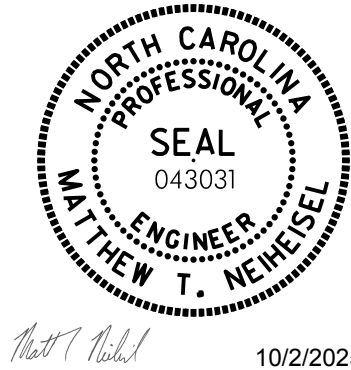
FOR SIDEWALK CONCRETE OVERLAY, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL											
BRIDGE NO. 490050	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOORS	RIP RAP CLASS II	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	POURABLE SILICONE JOINT SEALANT	SIDEWALK CONCRETE OVERLAY	EPOXY COATING	SCARIFYING BRIDGE DECK	SHOTBLASTING BRIDGE DECK
TOTALS	SQ. FT. 2217.6	SQ. FT. 1984	TON 20	CU. FT. 14.9	CU. FT. 23.6	LIN. FT. 159.5	LIN. FT. 57.6	SQ. FT. 753.5	SQ. FT. 10.9	SQ. YDS. 246.4	SQ. YDS. 246.4

PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**

SHEET 2 OF 2



10/2/2025

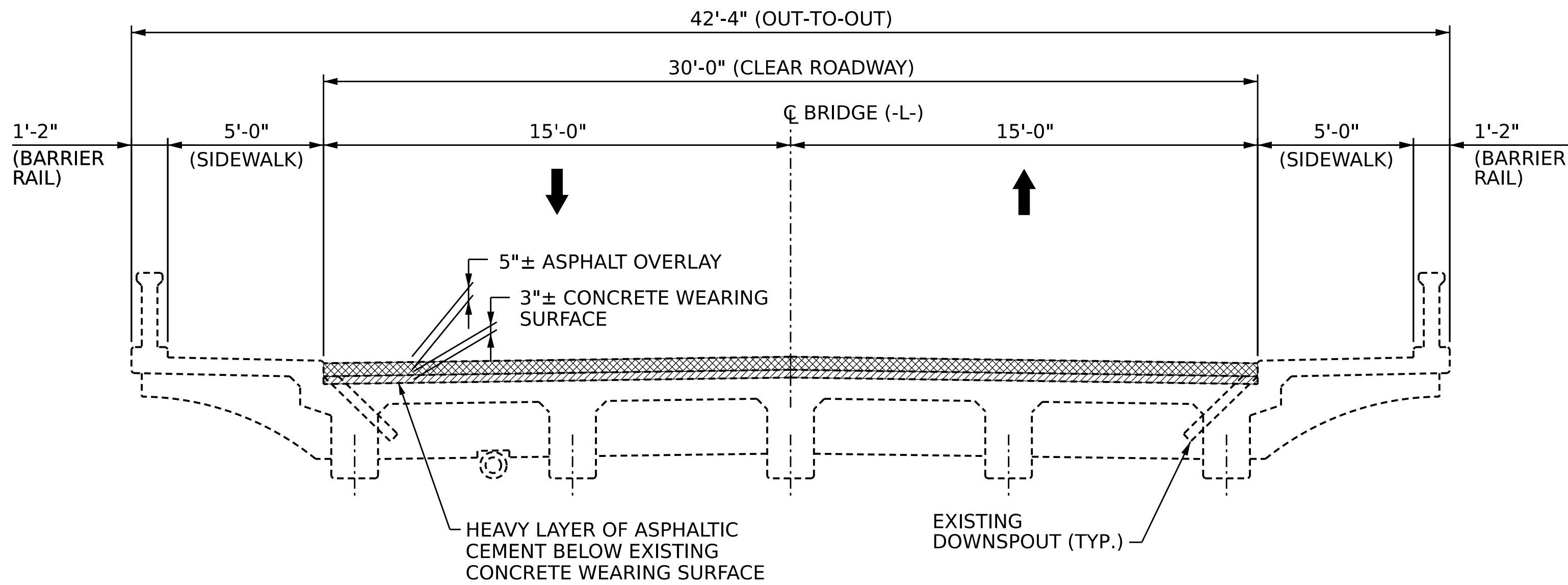
DES BY: J. PATT	DATE : 05/25	DWG BY: B. PETERSON	DATE : 02/25
DES CHK: M. NEIHEISEL	DATE : 05/25	CHK BY: J. PATT	DATE : 06/25



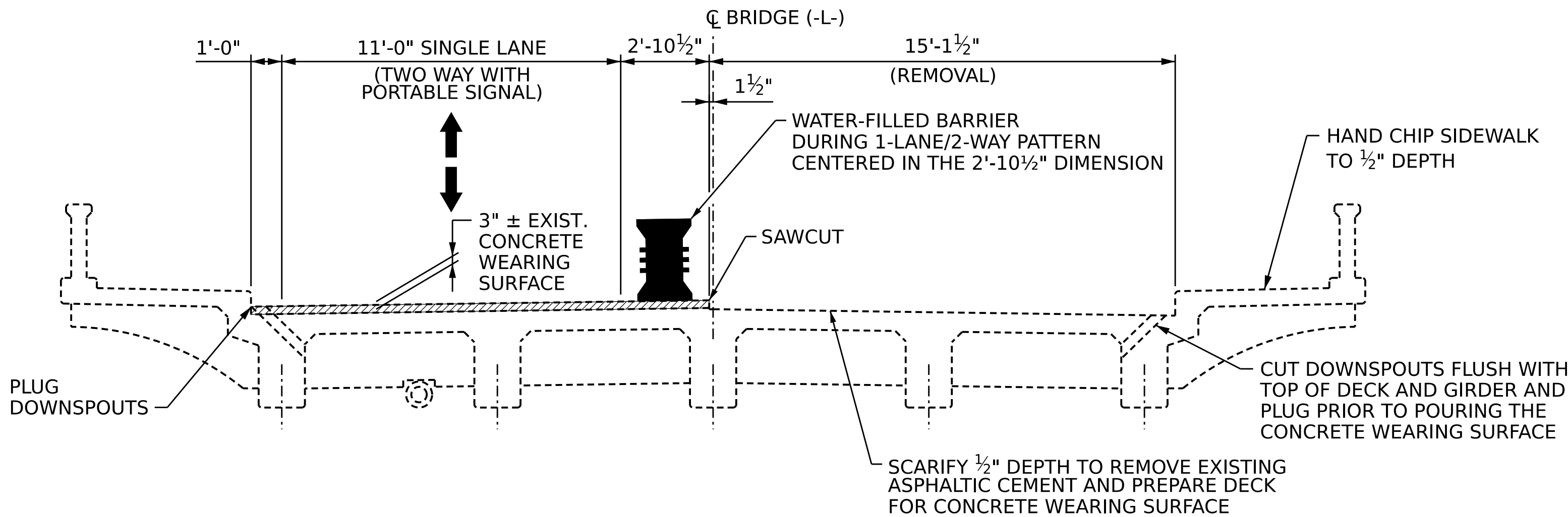
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555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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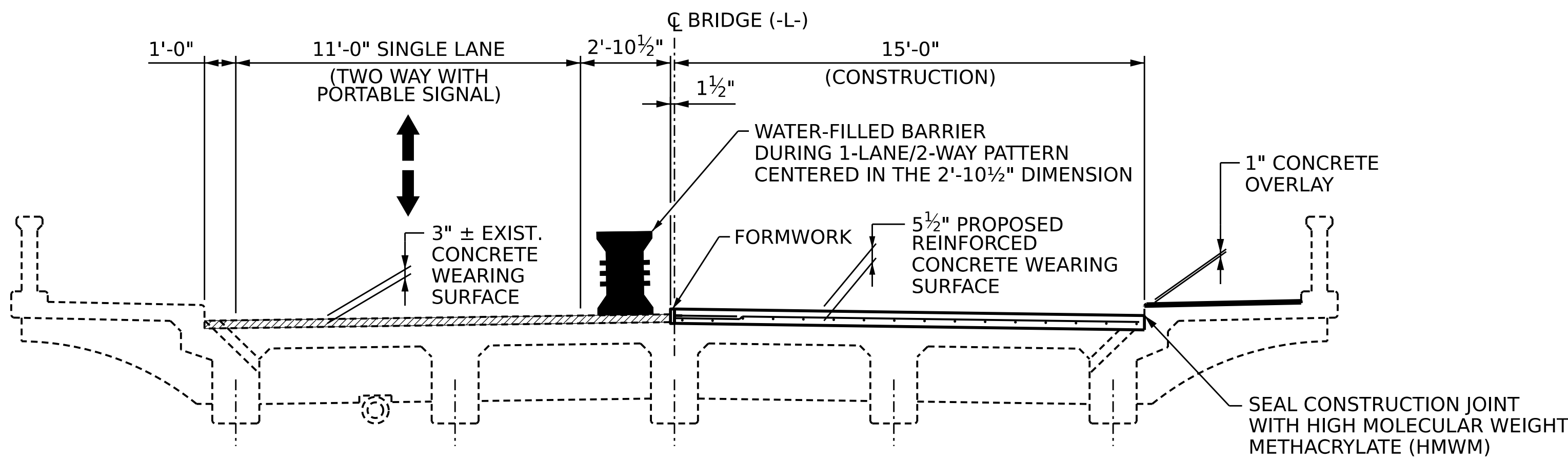
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING					
FOR BRIDGE ON NC 107 (-L-) (US BUS. 23) OVER SCOTT CREEK BETWEEN SR 1513 (GRINDSTAFF COVE ROAD) & SR 1429 (CHIPPER CURVE ROAD)					
REVISIONS					SHEET NO. S01-02
NO.	BY:	DATE:	NO.	BY:	
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					18



EXISTING BRIDGE



STAGE 1 REMOVAL



STAGE 1 CONSTRUCTION

NOTES

STAGE 1 REMOVAL

1. REMOVE ENTIRE 5" ASPHALT OVERLAY OVERNIGHT USING FLAGGING. MILL THE ASPHALT APPROACHES AND WEDGE BACK IN EACH DIRECTION PER THE ROADWAY DETAILS. RETURN TRAFFIC BACK TO EXISTING PATTERN THE NEXT MORNING. PAYMENT FOR APPROACH PAVEMENT WORK TO BE INCLUDED WITH THE ROADWAY WORK.
2. PLACE TRAFFIC BARRIER FOR ONE LANE/TWO WAY PATTERN.
3. REMOVE THE EXISTING 3" CONCRETE WEARING SURFACE ON THE STAGE 1 SIDE.
4. CUT THE EXISTING DECK DRAINS FLUSH WITH THE TOP OF DECK AND PLUG ON BOTH SIDES OF THE BRIDGE.
5. SCARIFY DECK ½" WITH MILLING AND PREPARE THE SURFACE WITH SHOT BLASTING.
6. HAND CHIP SIDEWALK TO A DEPTH OF ½" AND REMOVE AREAS OF DELAMINATION.

STAGE 1 CONSTRUCTION

1. PLACE 1" CONCRETE OVERLAY ON SIDEWALK AND PLACE THE 5½" REINFORCED CONCRETE WEARING SURFACE ON HALF OF THE BRIDGE.
2. INSTALL POURABLE SILICONE JOINT AT THE INTERIOR BENT.
3. SEAL THE CONSTRUCTION JOINT AT THE CURB WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM). PLACE HMWM ON THE JOINT AND AT LEAST 6" FROM THE CURB. SEE SPECIAL PROVISION FOR CONCRETE BRIDGE DECK CRACK SEALING. PAYMENT FOR HMWM WILL BE INCIDENTAL TO THE CONCRETE WEARING SURFACE.
4. PLACE THE APPROACH PAVEMENT BEFORE AND AFTER THE BRIDGE TO MEET THE NEW CONCRETE WEARING SURFACE ON THE BRIDGE. PAYMENT FOR PAVEMENT WORK TO BE INCLUDED AS PART OF THE ROADWAY WORK.
5. THE REINFORCED CONCRETE WEARING SURFACE MUST REACH A STRENGTH OF 2,500 PSI AND THE APPROACH PAVEMENT MUST BE PLACED PRIOR TO SWITCHING TRAFFIC TO THE OTHER SIDE.

PROJECT NO. **R-5600**

JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**STAGED CONSTRUCTION
DETAILS**

REVISIONS						SHEET NO. S01-03
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 18
2	--	--	4	--	--	



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DES BY: M. NEIHEISEL DATE : 05/25
DES CHK: J. PATT DATE : 05/25
DWG BY: D. CARTER DATE : 05/25
CHK BY: J. PATT DATE : 06/25

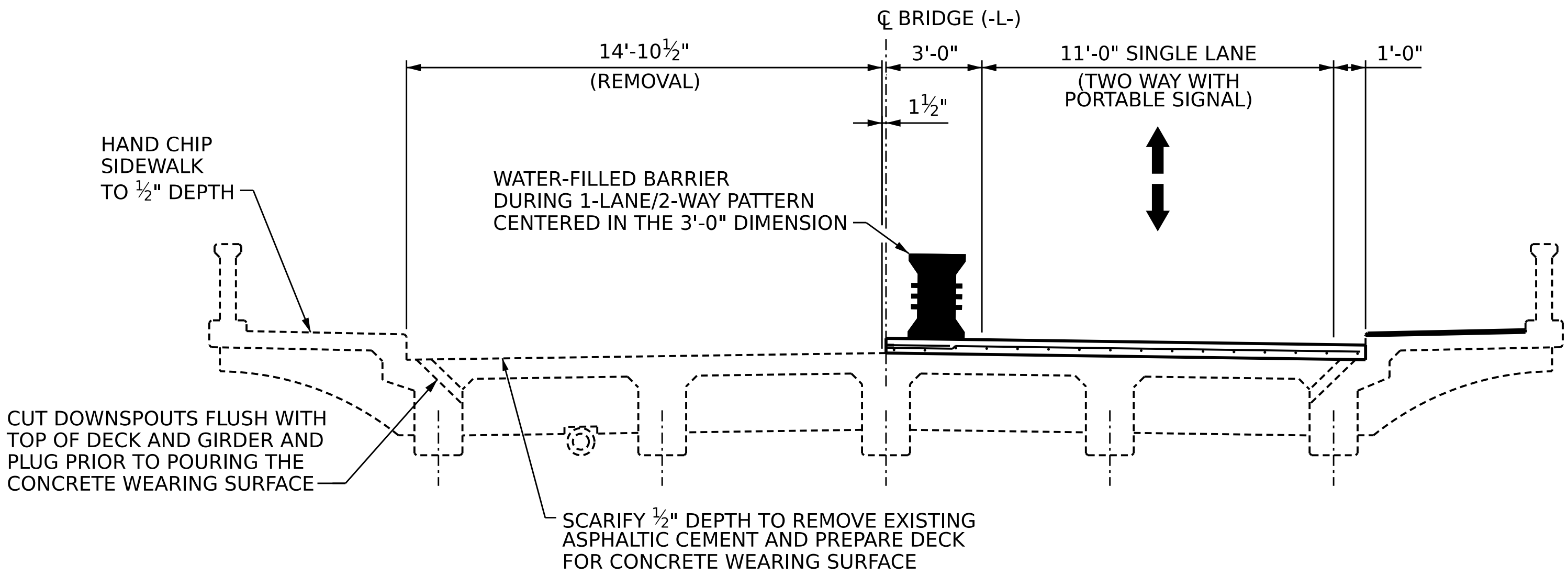
NOTES

STAGE 2 REMOVAL

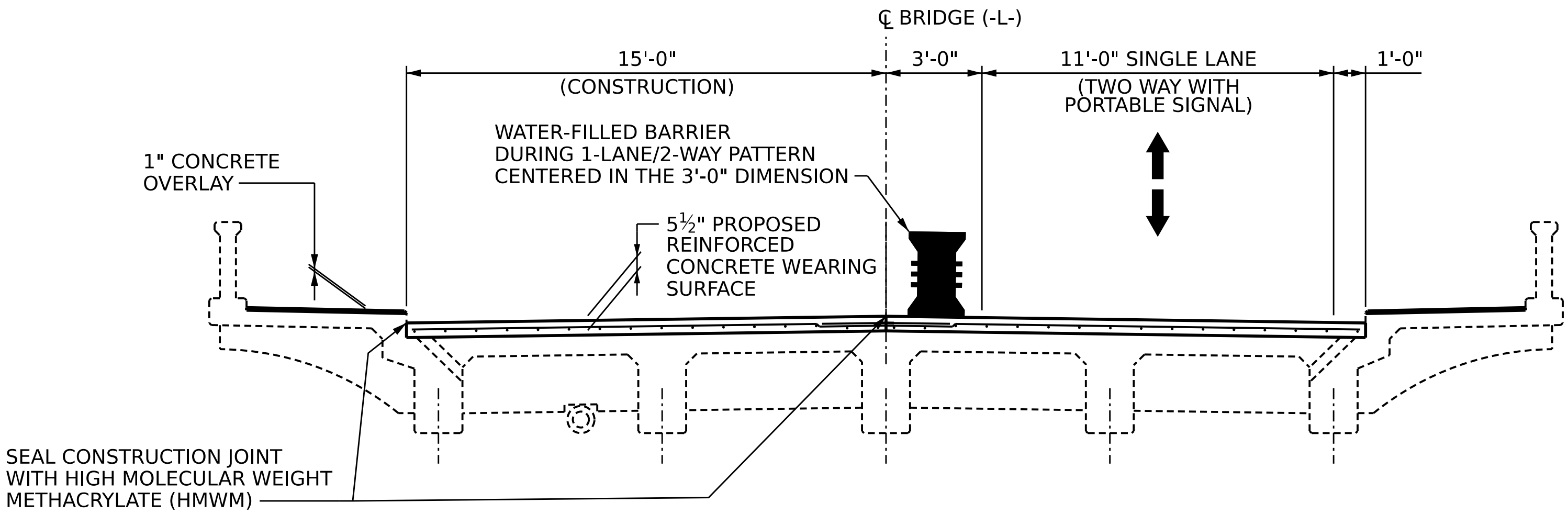
1. PLACE TRAFFIC BARRIER FOR THE STAGE 2, ONE LANE/TWO WAY PATTERN.
2. REMOVE THE REMAINING EXISTING 3" CONCRETE WEARING SURFACE
3. CUT THE EXISTING DECK DRAINS FLUSH WITH THE TOP OF DECK AND GIRDER AND PLUG.
4. SCARIFY DECK $\frac{1}{2}$ " WITH MILLING AND PREPARE THE SURFACE WITH BEAD BLASTING.
5. HAND CHIP SIDEWALK TO A DEPTH OF $\frac{1}{2}$ " AND REMOVE AREAS OF DELAMINATION.

STAGE 2 CONSTRUCTION

1. PLACE 1" CONCRETE OVERLAY ON SIDEWALK AND PLACE THE $5\frac{1}{2}$ " REINFORCED CONCRETE WEARING SURFACE ON THE REMAINING HALF OF THE BRIDGE.
2. INSTALL POURABLE SILICONE JOINT AT THE INTERIOR BENT.
3. SEAL THE CONSTRUCTION JOINTS AT THE CURB AND CROWN WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM). PLACE HMWM ON THE JOINT AND AT LEAST 6" FROM THE CURB AND AT LEAST 6" ON EACH SIDE OF THE CROWN. SEE SPECIAL PROVISION FOR CONCRETE BRIDGE DECK CRACK SEALING. PAYMENT FOR HMWM WILL BE INCIDENTAL TO THE CONCRETE WEARING SURFACE.
4. GROOVE THE CONCRETE WEARING SURFACE PER THE STANDARD SPECIFICATIONS.
5. PLACE THE APPROACH PAVEMENT BEFORE AND AFTER THE BRIDGE TO MEET THE NEW CONCRETE WEARING SURFACE ON THE BRIDGE. PAYMENT FOR PAVEMENT WORK TO BE INCLUDED AS PART OF THE ROADWAY WORK.
6. THE REINFORCED CONCRETE WEARING SURFACE MUST REACH A STRENGTH OF 2,500 PSI AND THE APPROACH PAVEMENT MUST BE PLACED PRIOR TO REOPENING TO TRAFFIC.



STAGE 2 REMOVAL



STAGE 2 CONSTRUCTION

PROJECT NO. **R-5600**

JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STAGED CONSTRUCTION
DETAILS

REVISIONS						SHEET NO. S01-04
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 18
2	--	--	4	--	--	



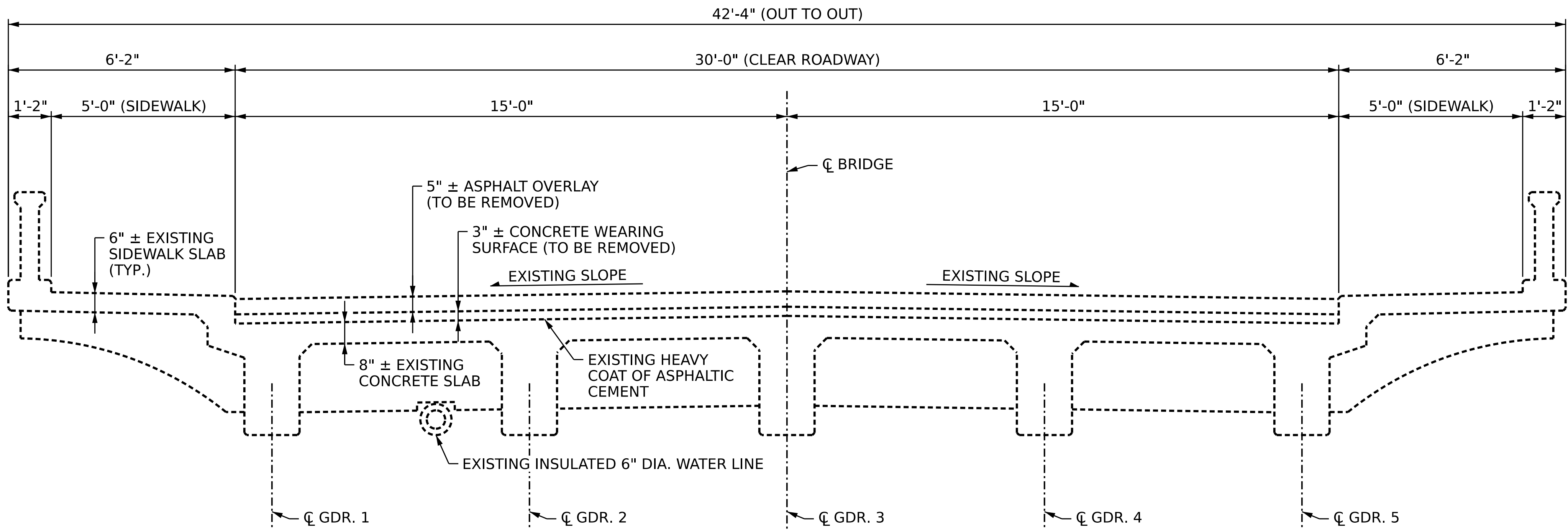
9/16/2025



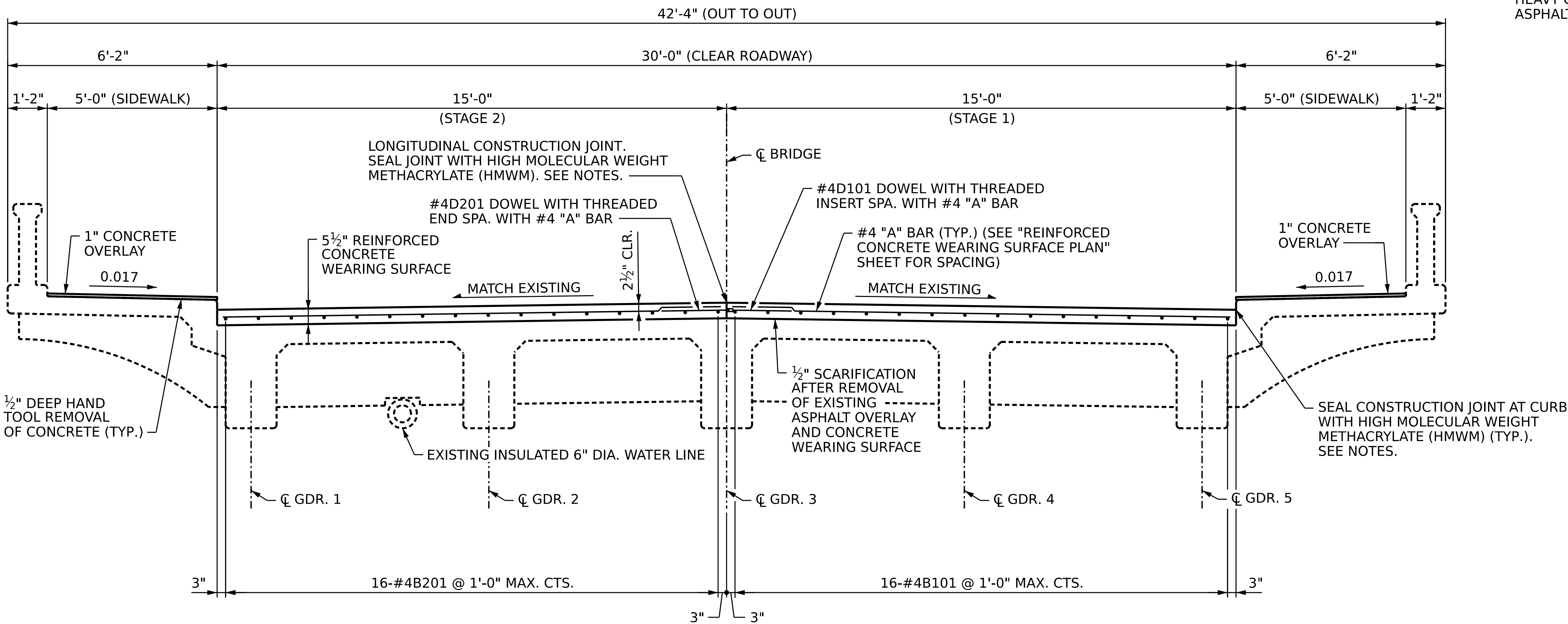
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DES BY: M. NEIHEISEL DATE : 05/25
DES CHK: J. PATT DATE : 05/25
DWG BY: D. CARTER DATE : 05/25
CHK BY: J. PATT DATE : 06/25



TYPICAL SECTION - EXISTING



TYPICAL SECTION - PROPOSED

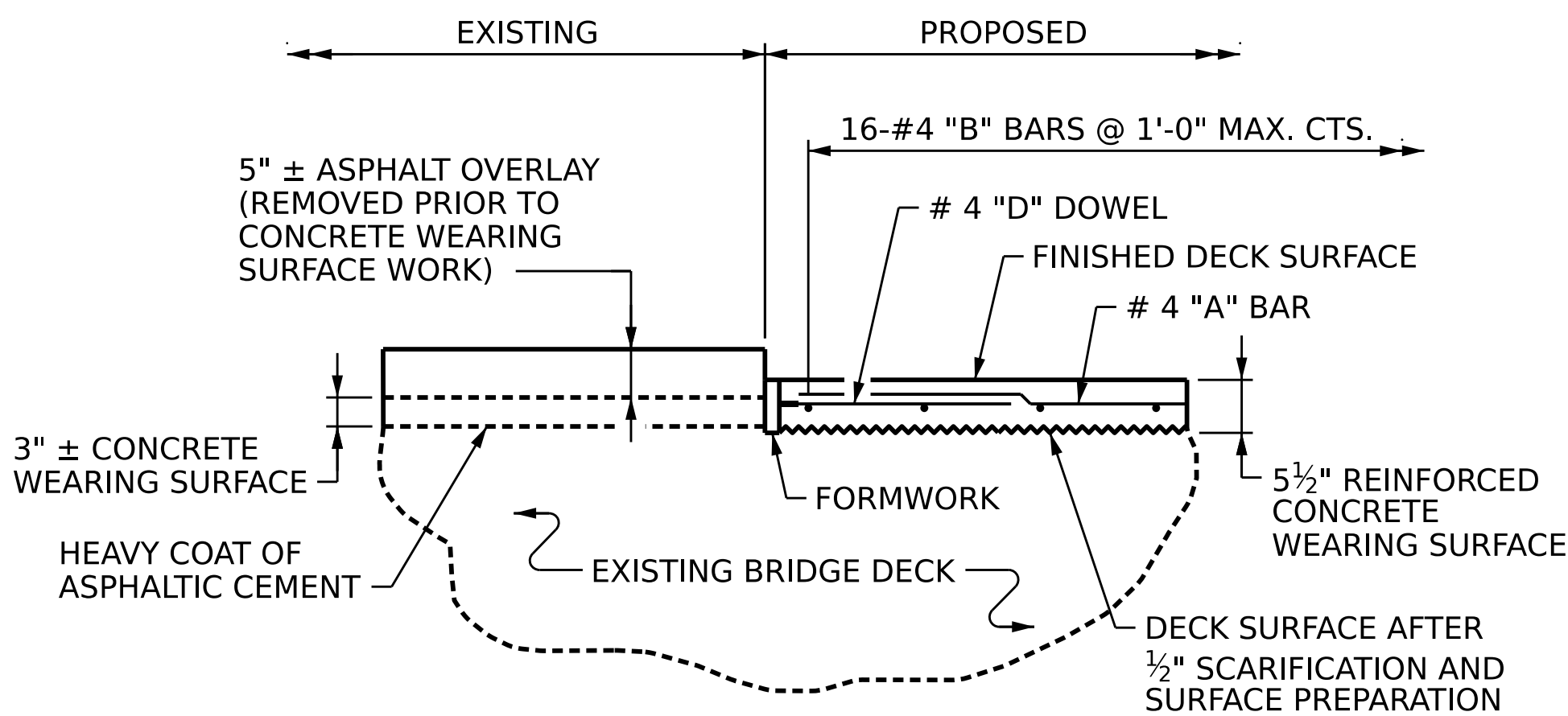
NOTES

SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTH, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF CONCRETE WEARING SURFACE PREPARATION AND CONCRETE PLACEMENT.

FOR SIDEWALK OVERLAY DETAILS, SEE "PLAN OF SPANS SPAN B" SHEET.

FOR REINFORCED CONCRETE WEARING SURFACE DETAILS, SEE "REINFORCED CONCRETE WEARING SURFACE PLAN" SHEET.

SEAL LONGITUDINAL CONSTRUCTION JOINTS AT CROWN AND CURBS WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM). THE SEALANT SHALL COAT THE JOINT AND AT LEAST 6" FROM THE CURB OR CROWN. PAYMENT FOR SEALING WILL BE INCIDENTAL TO THE CONCRETE WEARING SURFACE. SEE SPECIAL PROVISION FOR CONCRETE BRIDGE DECK CRACK SEALING.



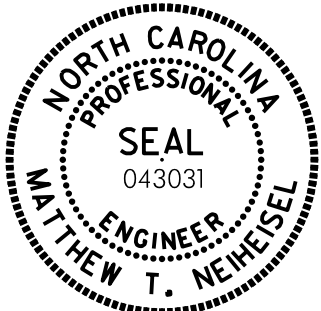
DETAIL OF REINFORCED CONCRETE WEARING SURFACE

PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION

REVISIONS						SHEET NO. S01-05
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	18



9/16/2025

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DES BY: J. PATT DATE: 05/25
DES CHK: M. NEIHEISEL DATE: 06/25
DWG BY: D. CARTER DATE: 05/25
CHK BY: M. NEIHEISEL DATE: 06/25

AS-BUILT REPAIR QUANTITY TABLE		
TOP OF DECK REPAIRS		
	ESTIMATE	AS-BUILT
SCARIFYING BRIDGE DECK	123.2 SQ. YDS.	
SHOTBLASTING BRIDGE DECK	123.2 SQ. YDS.	
GROOVING BRIDGE FLOOR	991.6 SQ. FT.	

UNDERSIDE OF DECK REPAIRS				
	ESTIMATE		AS-BUILT	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
SHOTCRETE REPAIRS				
UNDERSIDE OF DECK	1.6	0.6		

SIDEWALK REPAIRS				
	ESTIMATE		AS-BUILT	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CONCRETE REPAIRS				
SIDEWALK	7.6	2.6		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE "SUPERSTRUCTURE REPAIR DETAILS" SHEET.

NOTES

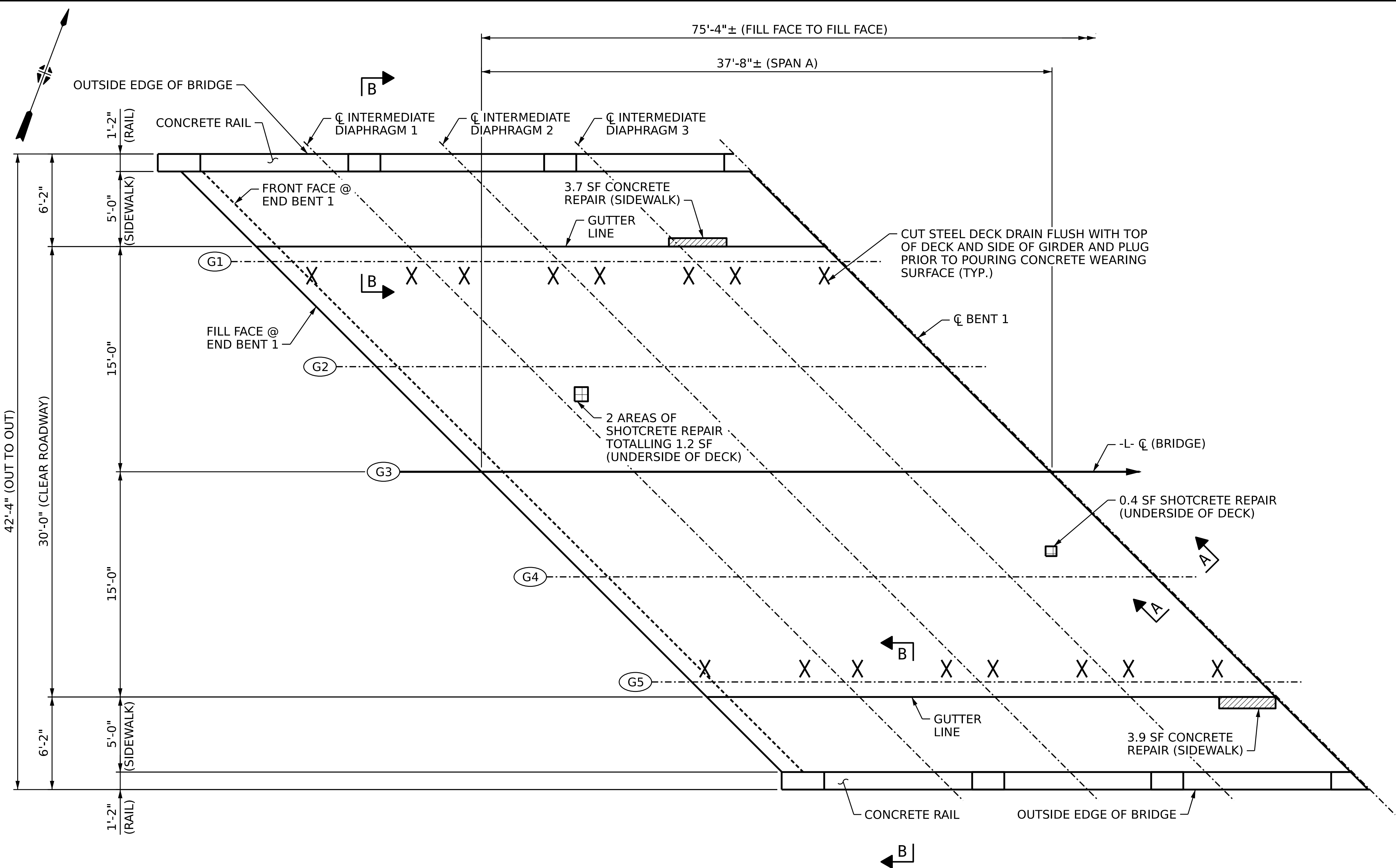
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

FOR SECTION A-A, SEE "JOINT DETAILS" SHEET.

FOR SECTION B-B AND SIDEWALK CONCRETE OVERLAY DETAILS AND NOTES, SEE SHEET 2 OF 2.

LEGEND

- X
- DECK DRAIN TO BE CUT AND PLUGGED
-
- CONCRETE REPAIR AREA
-
- SHOTCRETE REPAIR AREA



PLAN OF DECK SURFACE

PROJECT NO. **R-5600**

JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN A



9/16/2025

DES BY: J. PATT	DATE : 05/25	DWG BY: D. CARTER	DATE : 05/25
DES CHK: M. NEIHEISEL	DATE : 05/25	CHK BY: M. NEIHEISEL	DATE : 06/25

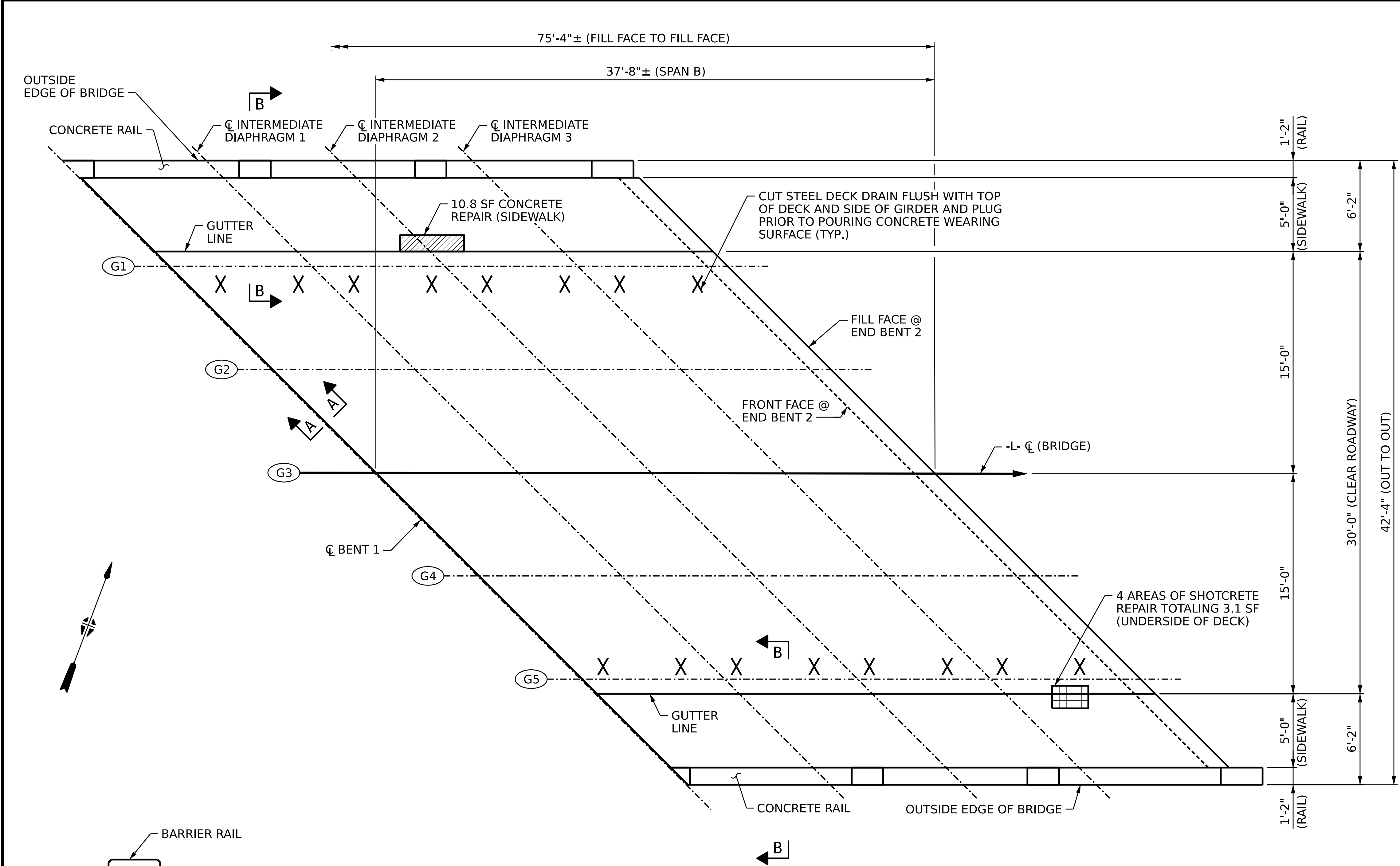
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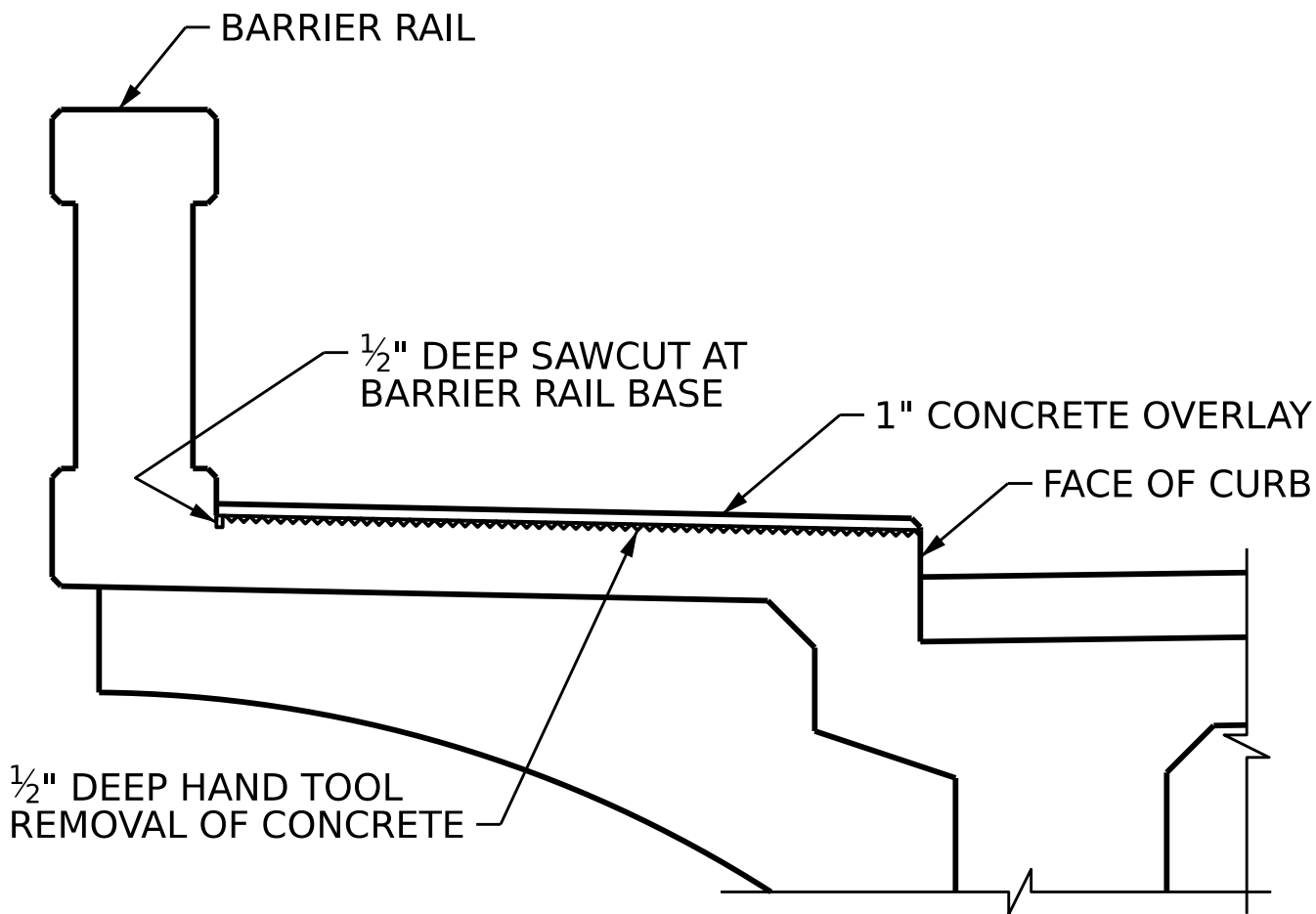
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REVISIONS						SHEET NO. S01-06
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1	--	--	3	--	--	TOTAL SHEETS 18
2	--	--	4	--	--	



PLAN OF DECK SURFACE



SECTION B-B

AS-BUILT REPAIR QUANTITY TABLE

TOP OF DECK REPAIRS				
	ESTIMATE		AS-BUILT	
SCARIFYING BRIDGE DECK	123.2	SQ. YDS.		
SHOTBLASTING BRIDGE DECK	123.2	SQ. YDS.		
GROOVING BRIDGE FLOOR	991.6	SQ. FT.		

UNDERSIDE OF DECK REPAIRS

	ESTIMATE		AS-BUILT	
SHOTCRETE REPAIRS	AREA	VOLUME	AREA	VOLUME
	SQ. FT.	CU. FT.	SQ. FT.	CU. FT.
UNDERSIDE OF DECK	3.1	1.1		

SIDEWALK REPAIRS

	ESTIMATE		AS-BUILT	
CONCRETE REPAIRS	AREA	VOLUME	AREA	VOLUME
	SQ. FT.	CU. FT.	SQ. FT.	CU. FT.
SIDEWALK	10.8	4.6		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEARANCE TO SAWCUT. SEE "SUPERSTRUCTURE REPAIR DETAILS" SHEET.

NOTES

SIDEWALK CONCRETE SHALL BE CLASS AA FINE AGGREGATE MIX THAT WILL REACH A STRENGTH OF 2,500 PSI WITHIN 3 DAYS.

THE SIDEWALK REPAIRS MAY BE POURED SIMULTANEOUSLY WITH THE SIDEWALK CONCRETE OVERLAY.

SURFACE OF THE SIDEWALK CONCRETE OVERLAY SHALL BE FINISHED PER THE STANDARD SPECIFICATIONS.

SIDEWALK SURFACE SHALL BE BLASTED CLEAN FREE OF OIL, GREASE, AND LAITANCE PRIOR TO POURING SIDEWALK CONCRETE OVERLAY.

ALL WORK AND MATERIALS TO SAWCUT, REMOVE 1/2" OF THE EXISTING CONCRETE SIDEWALK, SURFACE PREPARATION, PLACEMENT OF THE CONCRETE OVERLAY, AND FINISHING THE SIDEWALK SHALL BE INCLUDED IN THE PAY ITEM SIDEWALK CONCRETE OVERLAY.

FOR SIDEWALK CONCRETE OVERLAY, SEE SPECIAL PROVISIONS.

FOR ADDITIONAL NOTES, SEE "PLAN OF SPANS, SPAN A" SHEET.

LEGEND

- X DECK DRAIN TO BE CUT AND PLUGGED
- CONCRETE REPAIR AREA
- SHOTCRETE REPAIR AREA

PROJECT NO. **R-5600**

JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF SPANS
SPAN B



9/16/2025
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DES BY: J. PATT	DATE: 05/25	DWG BY: D. CARTER	DATE: 05/25
DES CHK: M. NEIHEISEL	DATE: 05/25	CHK BY: M. NEIHEISEL	DATE: 06/25

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(SPAN A SHOWN, SPAN B SIMILAR)
(SQ. FEET = 2,217.6 TOTAL)

GROOVING BRIDGE FLOORS	
WEARING SURFACE	1,984 SQ. FT.

* EPOXY COATED REINFORCING STEEL	1,723 LBS.	* EPOXY COATED REINFORCING STEEL	1,723 LBS.
* DENOTES EPOXY COATED REINFORCING STEEL		* DENOTES EPOXY COATED REINFORCING STEEL	
CLASS AA CONCRETE	18.9 CU. YDS.	CLASS AA CONCRETE	18.9 CU. YDS.

Diagram 1: THREADED INSERT

Diagram 2: THREADED END

FOR CONSTRUCTION JOINT DETAILS, SEE "TYPICAL SECTION".

FOR CONSTRUCTION STAGING DETAILS, SEE "STAGED CONSTRUCTION
DETAILS" SHEETS.

SECTION A-A, SEE "JOINT DETAILS" SHEET.

THE CONTRACTOR MUST SUBMIT THE TYPE OF #4 "D" DOWELS TO BE USED TO THE ENGINEER FOR APPROVAL.

CONCRETE WEARING SURFACE WILL BE CLASS AA CONCRETE THAT WILL REACH A STRENGTH OF 2500 PSI WITHIN 3 DAYS.

FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

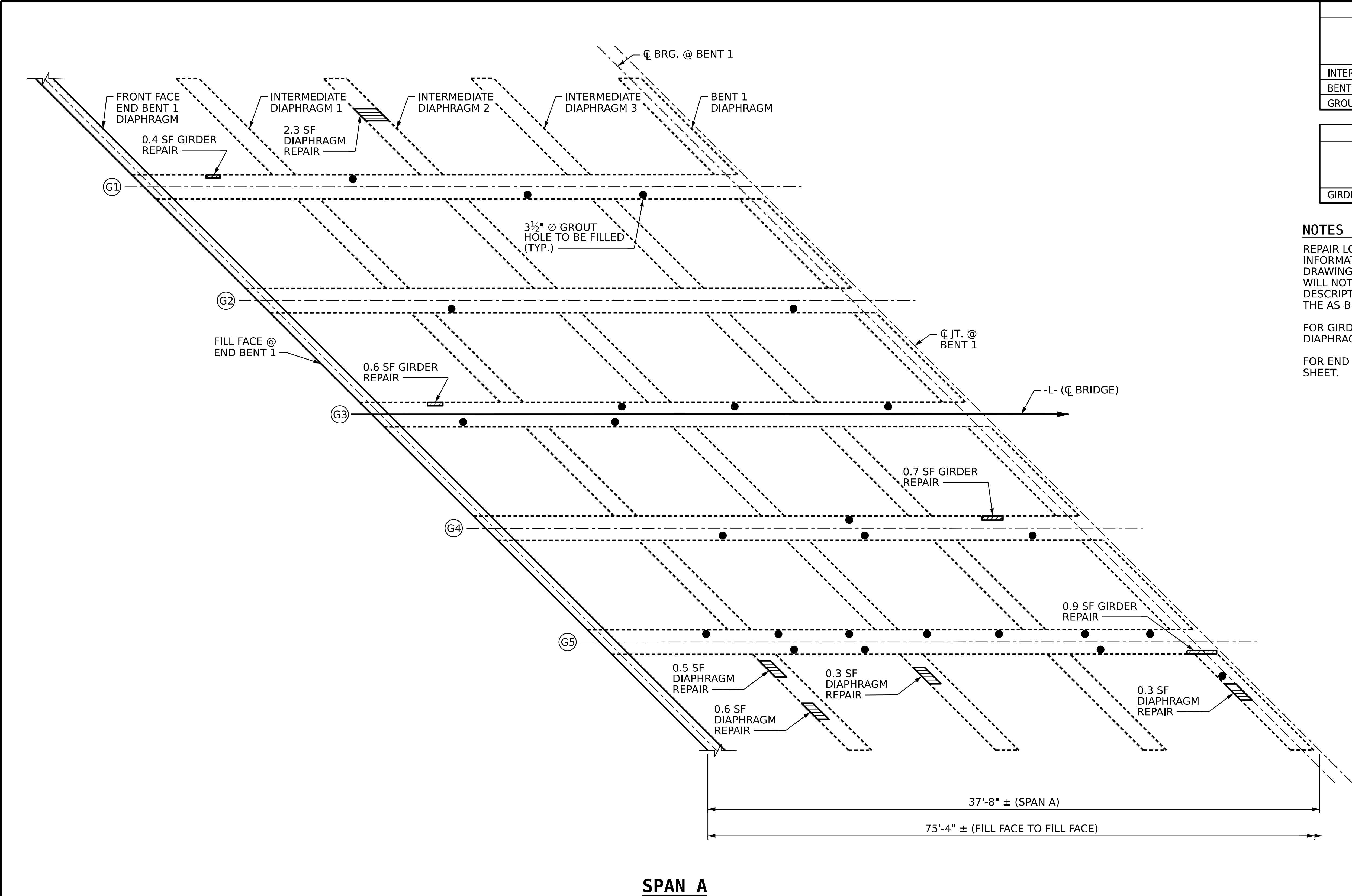
CLASS AA CONCRETE AND EPOXY COATED REINFORCING STEEL ARE INCLUDED WITH THE PAY ITEM FOR CONCRETE WEARING SURFACE.

PROJECT NO. **R-5600**
JACKSON COUNTY
 BRIDGE NO. **490050**

A circular professional engineer seal for the state of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "MATTHEW T. NEHEISEL" at the bottom. The inner circle contains the text "PROFESSIONAL" at the top, "SEAL" in the center, the license number "043031" below "SEAL", and "ENGINEER" at the bottom. The seal is surrounded by a decorative border of small dots.

9/16/2025

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SHOTCRETE REPAIRS				
LOCATION	ESTIMATE		AS-BUILT	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
INTERMEDIATE DIAPHRAGMS	3.7	1.3		
BENT 1 DIAPHRAGMS	0.3	0.1		
GROUT HOLES	1.8	0.3		

CONCRETE REPAIRS				
LOCATION	ESTIMATE		AS-BUILT	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
GIRDERS	2.6	1.0		

NOTES

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FOR GIRDER AND DIAPHRAGM REPAIRS, SEE DECK, GIRDER, AND DIAPHRAGM REPAIR SHEET DETAILS " SHEET.

FOR END BENT 1 DIAPHRAGM REPAIRS, SEE "SUBSTRUCTURE END BENT 1" SHEET.

- LEGEND
- DIAPHRAGM REPAIR AREA
 - GIRDER REPAIR AREA
 - GIRDER NUMBER
 - 3 1/2" Ø GROUT HOLE TO BE FILLED

PROJECT NO. **R-5600**

JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FRAMING PLAN
SPAN A

REVISIONS						SHEET NO. S01-09
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2	--	--	4	--	--	



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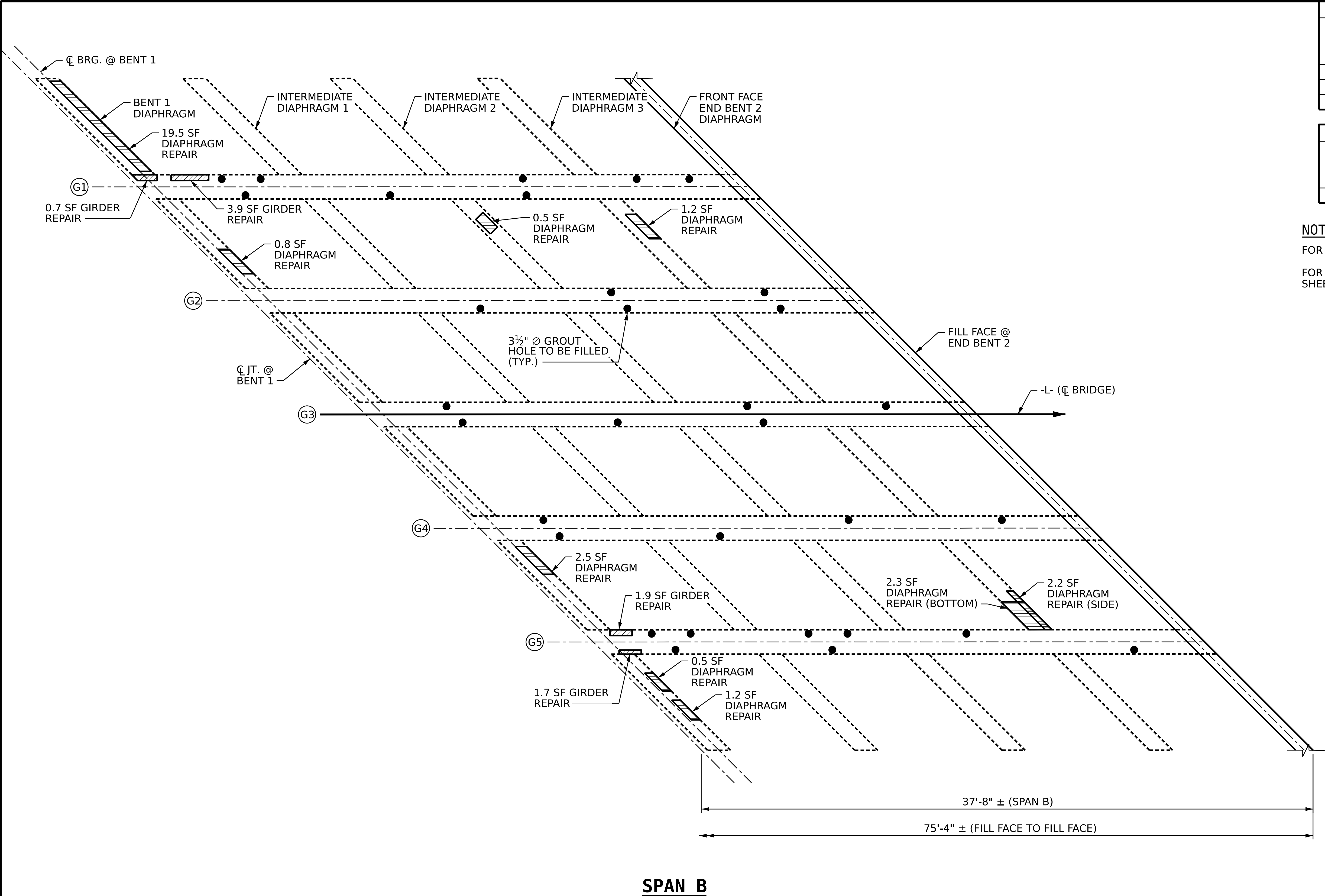
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DES BY: J. PATT	DATE : 05/25	DWG BY: D. CARTER	DATE : 03/25
DES CHK: M. NEIHEISEL	DATE : 05/25	CHK BY: M. NEIHEISEL	DATE : 05/25

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



SHOTCRETE REPAIRS				
LOCATION	ESTIMATE		AS-BUILT	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
BENT 1 DIAPHRAGM	24.5	8.3		
INTERMEDIATE DIAPHRAGMS	6.2	2.3		
GROUT HOLES	2.2	0.2		

CONCRETE REPAIRS				
LOCATION	ESTIMATE		AS-BUILT	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
GIRDERS	8.2	2.9		

NOTES

FOR NOTES, SEE "FRAMING PLAN SPAN A" SHEET.

FOR END BENT 2 DIAPHRAGM REPAIRS, SEE "SUBSTRUCTURE END BENT 2" SHEET.

- LEGEND**
- DIAPHRAGM REPAIR AREA
 - GIRDER REPAIR AREA
 - GIRDER NUMBER
 - 3 1/2" Ø GROUT HOLE TO BE FILLED

PROJECT NO. **R-5600**

JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**FRAMING PLAN
SPAN B**

REVISIONS						SHEET NO. S01-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	18

BARRIER RAIL REPAIRS

CONCRETE REPAIRS	ESTIMATE		AS-BUILT	
	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
BARRIER RAIL	3.1	1.1		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
	4.5			

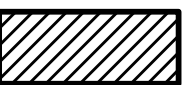
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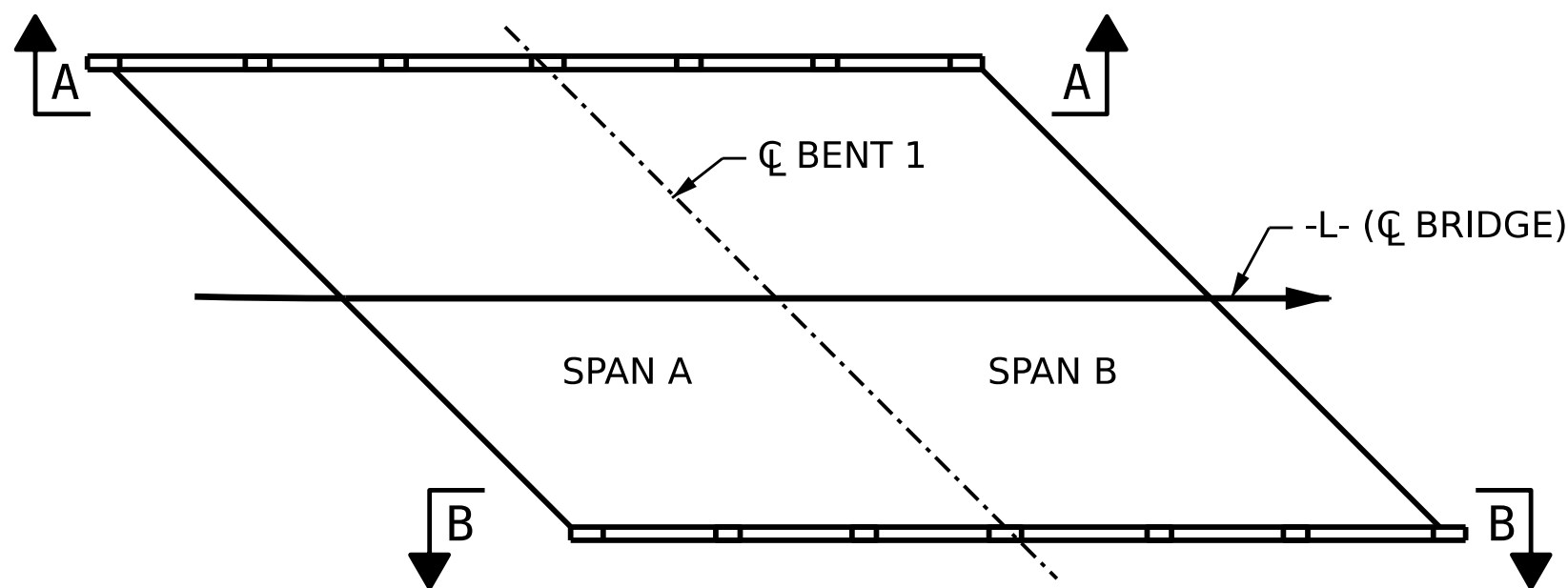
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BARRIER RAILS ARE TO BE PRESSURE WASHED CLEAN PRIOR TO ANY REPAIRS.

FOR ADDITIONAL DETAILS AND NOTES, SEE "SUPERSTRUCTURE REPAIR DETAILS" SHEET.

LEGEND

-  CONCRETE REPAIR AREA
-  ERI - EPOXY RESIN INJECTION



PLAN

PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARRIER RAIL REPAIR
DETAILS

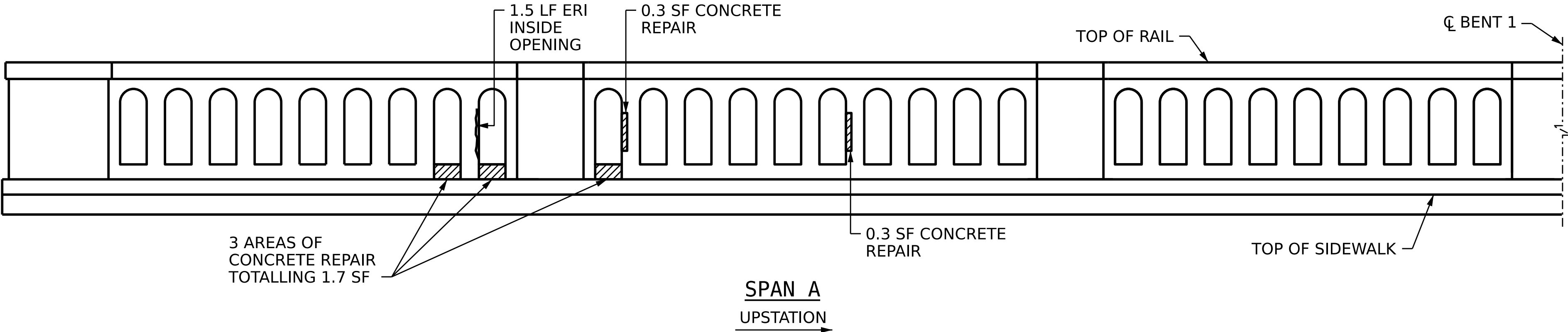
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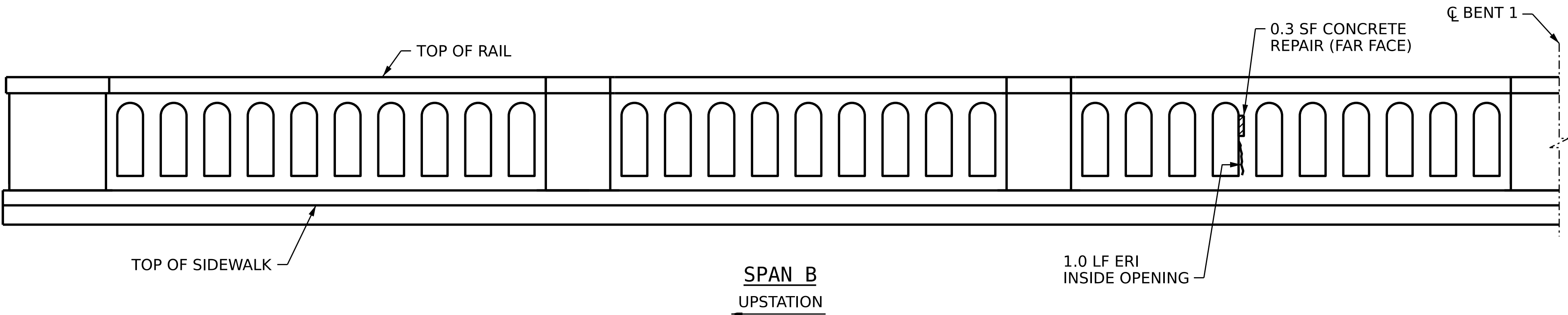
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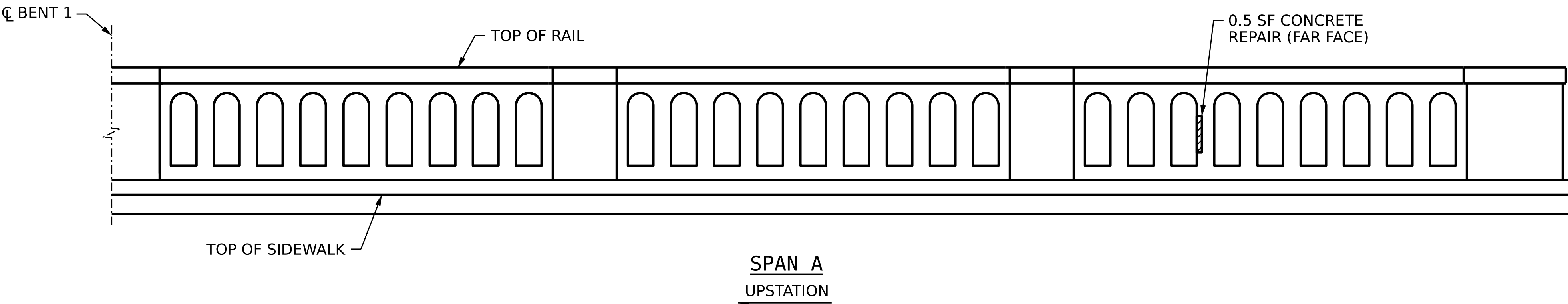
DES BY: J. PATT DATE : 05/25
DES CHK: M. NEIHEISEL DATE : 05/25
DWG BY: D. CARTER DATE : 05/25
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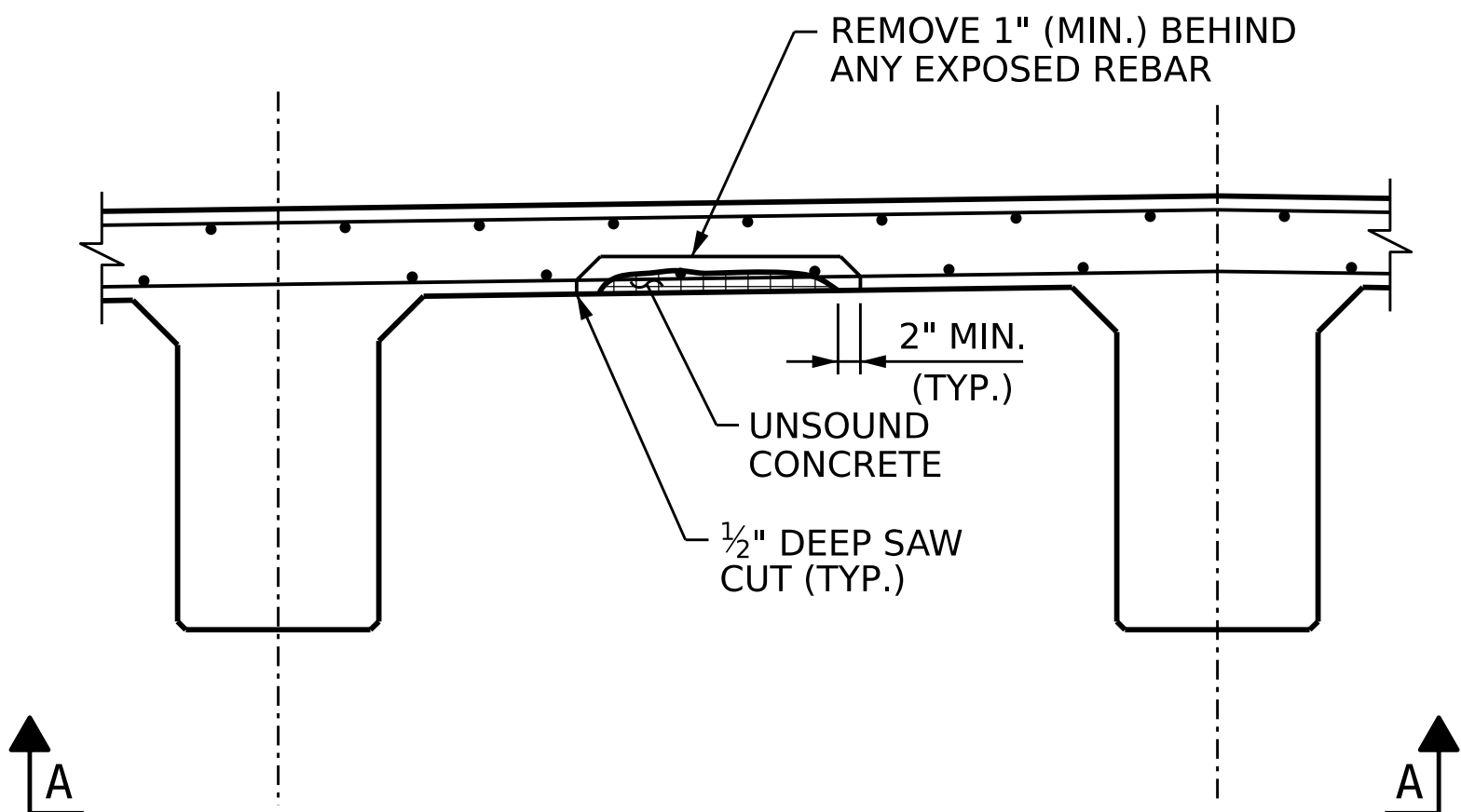


VIEW A-A
LEFT BARRIER RAIL ELEVATION

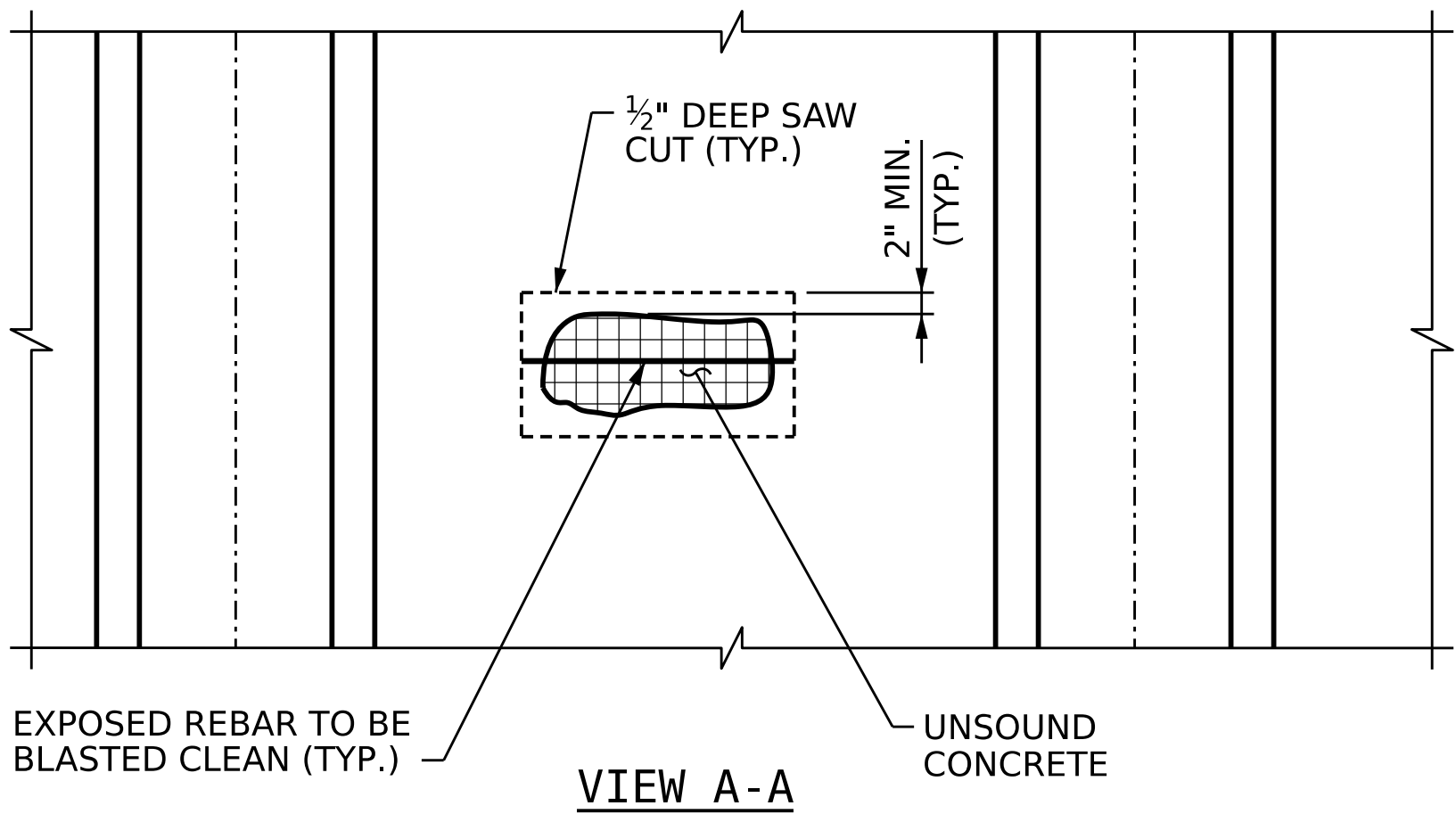


VIEW B-B
RIGHT BARRIER RAIL ELEVATION

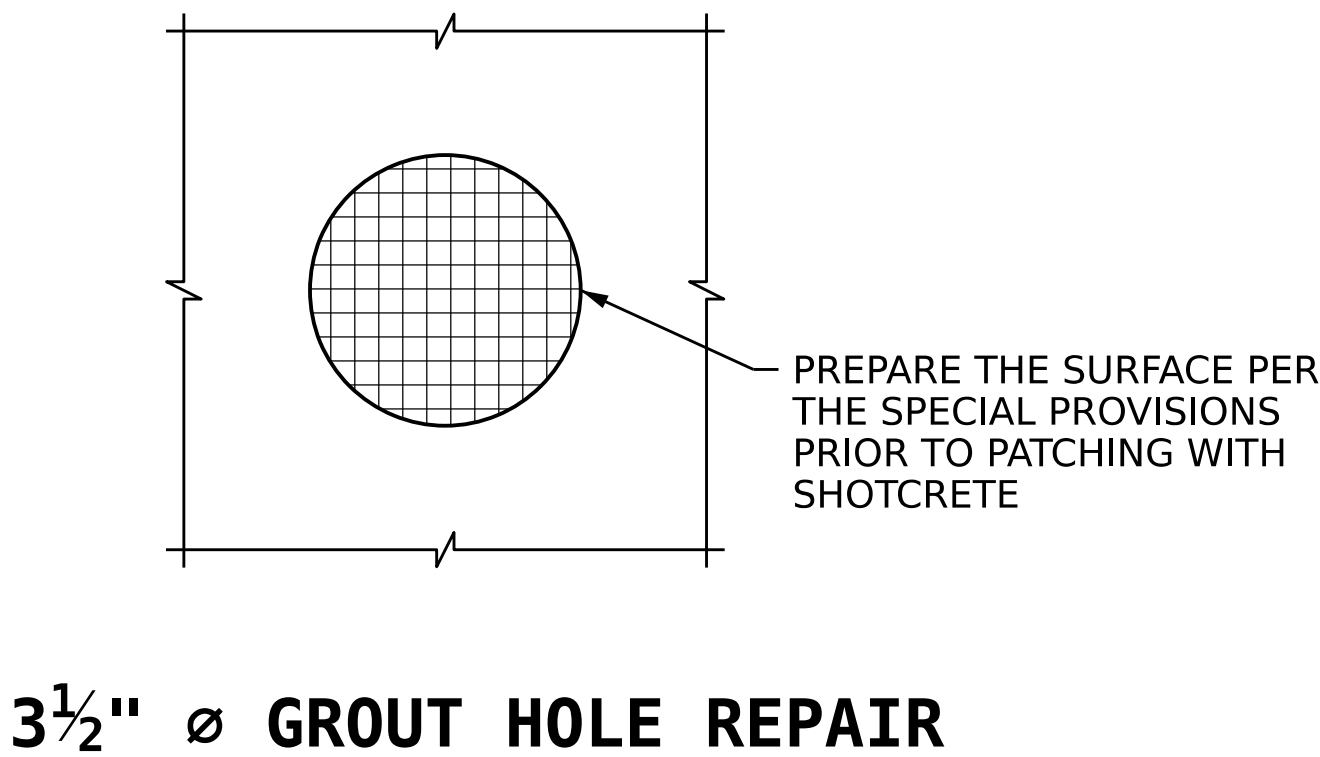




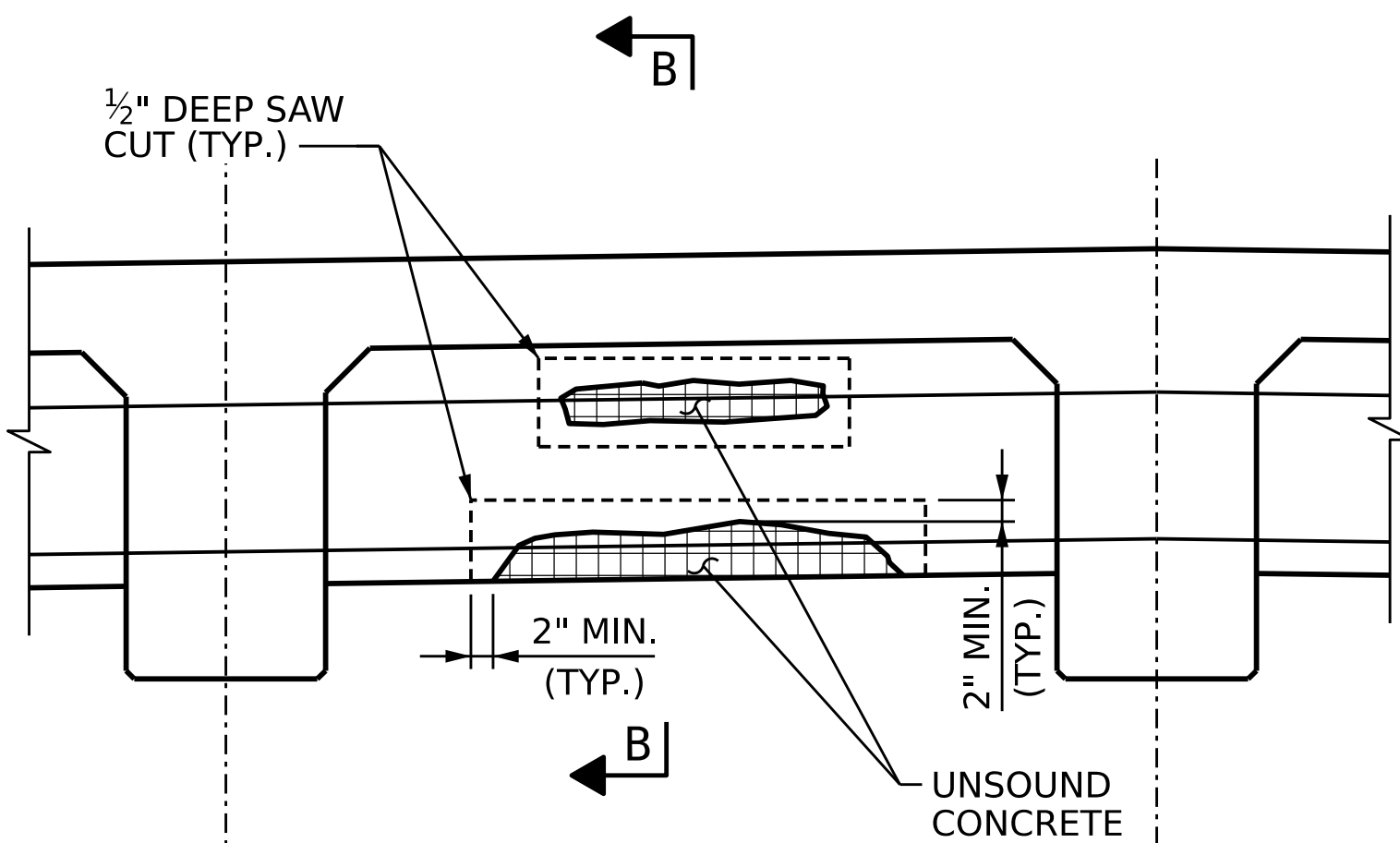
TYPICAL SECTION



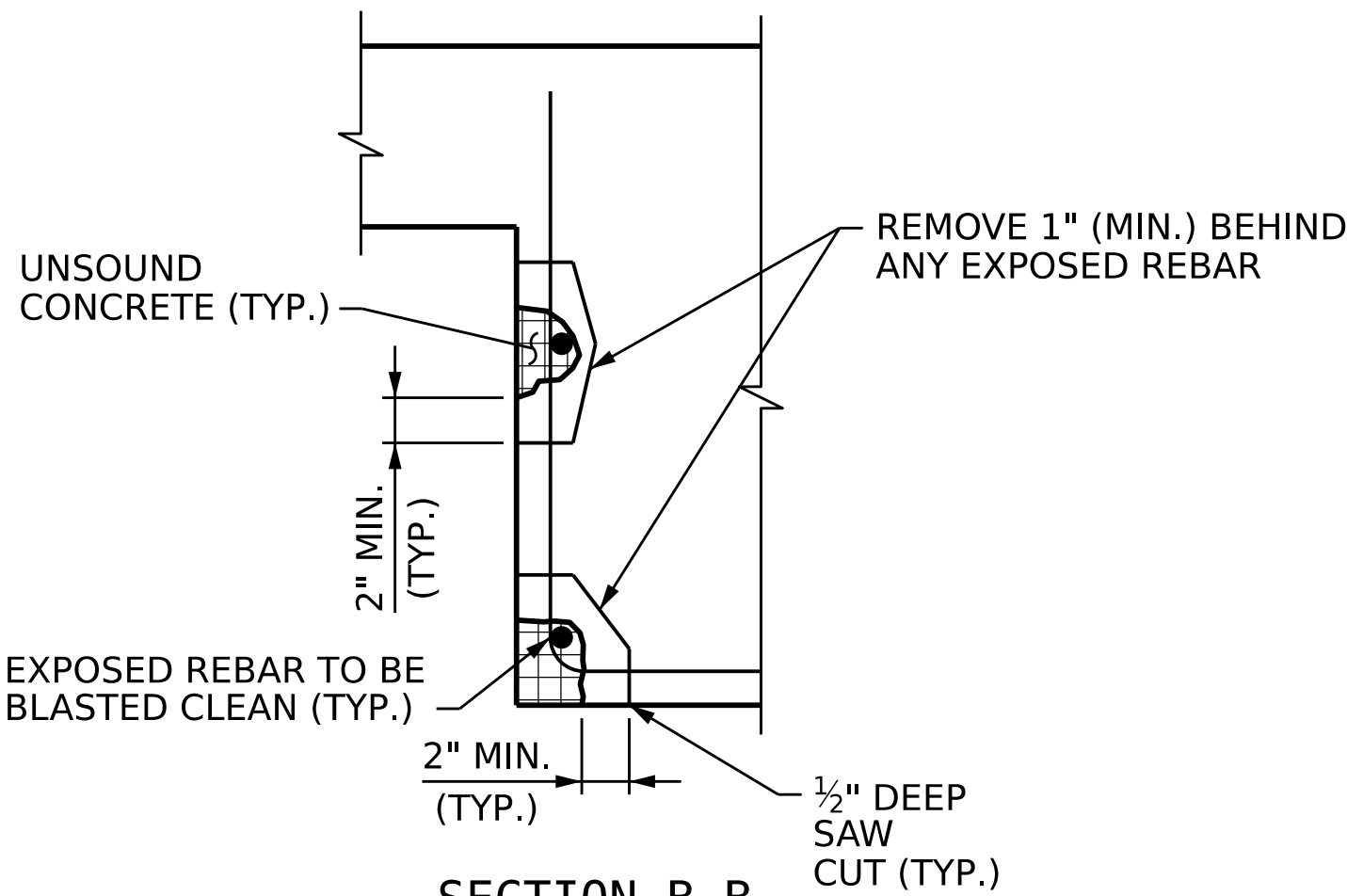
UNDERSIDE DECK REPAIR DETAILS



3 1/2" ø GROUT HOLE REPAIR



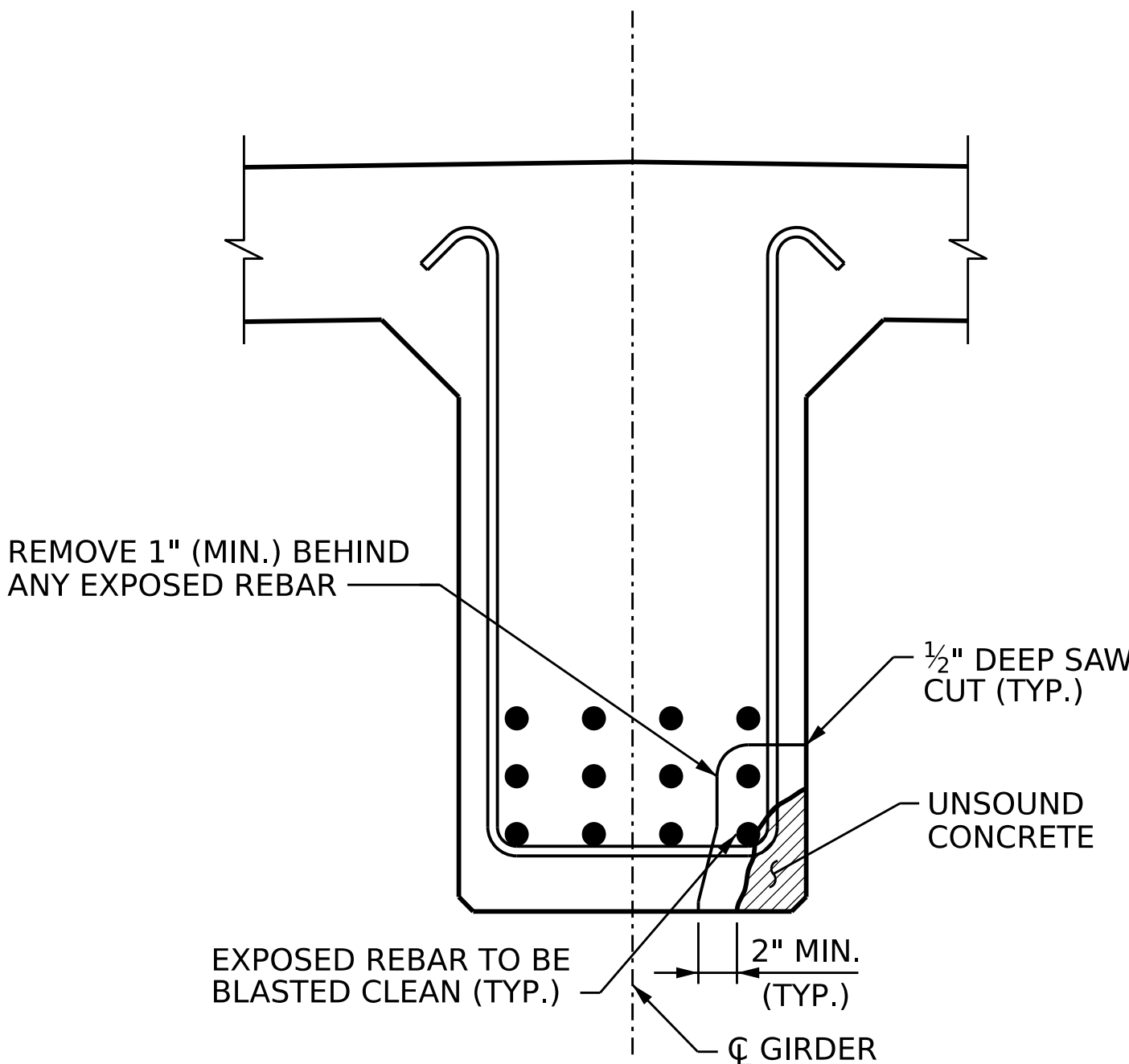
TYPICAL SECTION - DIAPHRAGM



SECTION B-B

DIAPHRAGM REPAIR DETAILS

INTERIOR DIAPHRAGM SHOWN, END DIAPHRAGMS AND OVERHANGS SIMILAR



CONCRETE GIRDER REPAIR DETAIL

SIDEWALK AND BARRIER RAIL REPAIRS SIMILAR

REPAIR SEQUENCE:

1. SOUND CONCRETE TO DETERMINE EXTENT OF REPAIR LOCATION.
2. REMOVE SURFACE CONCRETE TO VERIFY SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL. SAW CUT AROUND REPAIR AREA TO A NOMINAL DEPTH OF 1/2".
3. REMOVE CONCRETE WITHIN SAW CUT AREA TO A MINIMUM 1/2" DEPTH.
4. USE A WIRE BRUSH TO CLEAN ALL EXPOSED REINFORCING STEEL. FOR BARS WITH MORE THAN 10% SECTION LOSS, SPLICE AND SECURELY TIE SUPPLEMENTAL REINFORCING BARS AS NEEDED.
5. REMOVE ALL LOOSE OR WEAKENED MATERIAL THEN CLEAN THE REPAIR AREA OF DIRT, GREASE, OIL, AND FOREIGN MATTER.
6. PREPARE SURFACE AND PLACE APPROVED MATERIAL ACCORDING TO MANUFACTURERS SPECIFICATIONS.

NOTES

CONTRACTOR SHALL CUT THE REPAIR AREAS SO THAT THE CORNERS ARE SQUARE AS INDICATED IN THE DETAILS.

THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OR REQUIRE HARSH CHEMICALS TO REMOVE.

THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT.

REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

REPAIRS SHALL PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER TO ANY EXPOSED REINFORCING STEEL.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

LEGEND

- SHOTCRETE REPAIR AREA
- CONCRETE REPAIR AREA

SPLICE LENGTH TABLE	
BAR SIZE	MIN. SPLICE LENGTH
#4	1'-5"
#5	1'-11"
#6	2'-8"
#7	3'-8"
#8	4'-9"
#9	6'-0"
#10	7'-8"
#11	9'-5"

PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

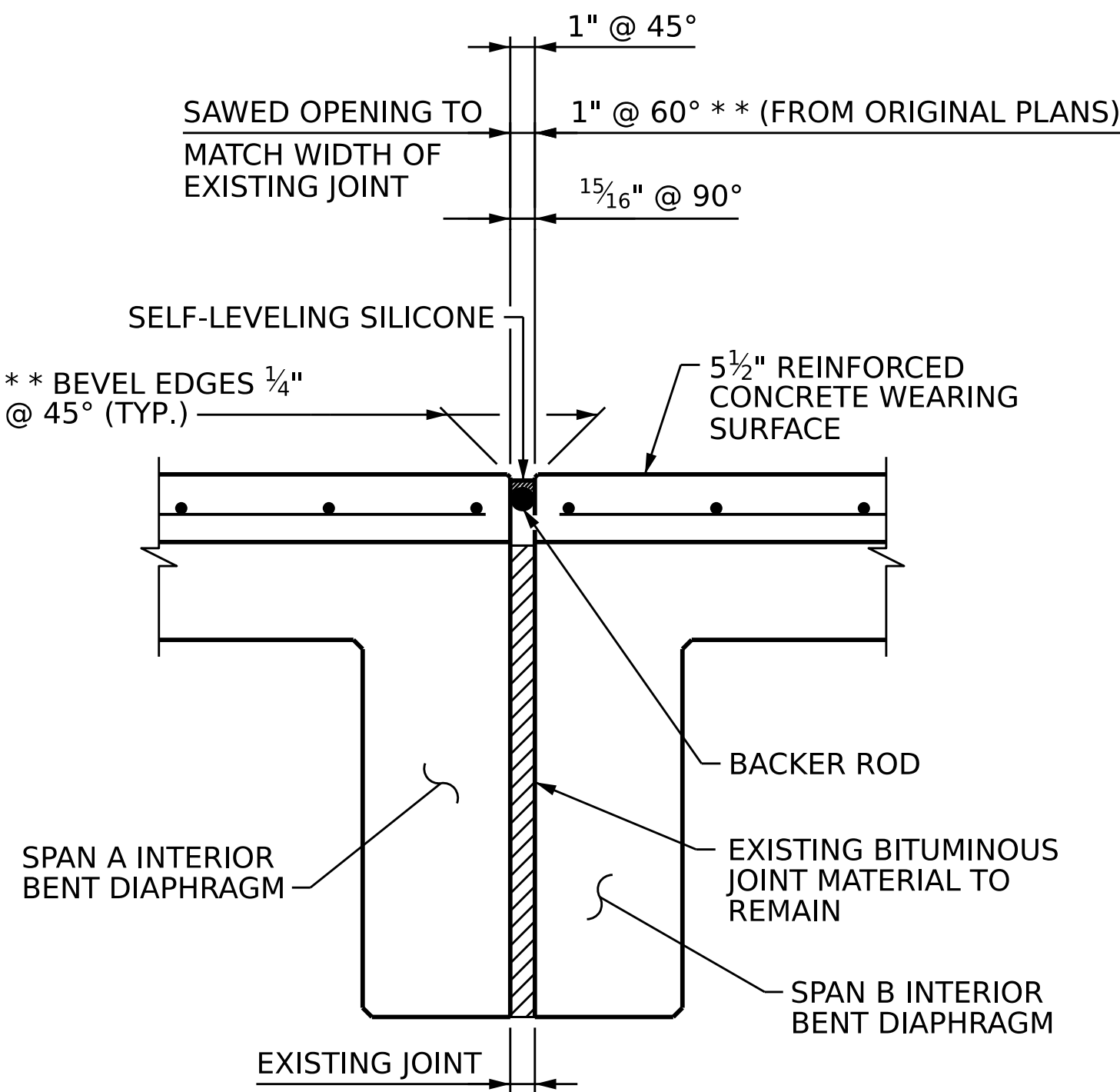
SUPERSTRUCTURE
REPAIR DETAILS

REVISIONS						SHEET NO. S01-12
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1	--	--	3	--	--	TOTAL SHEETS 18
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DES CHK: J. PATT DATE : 05/25
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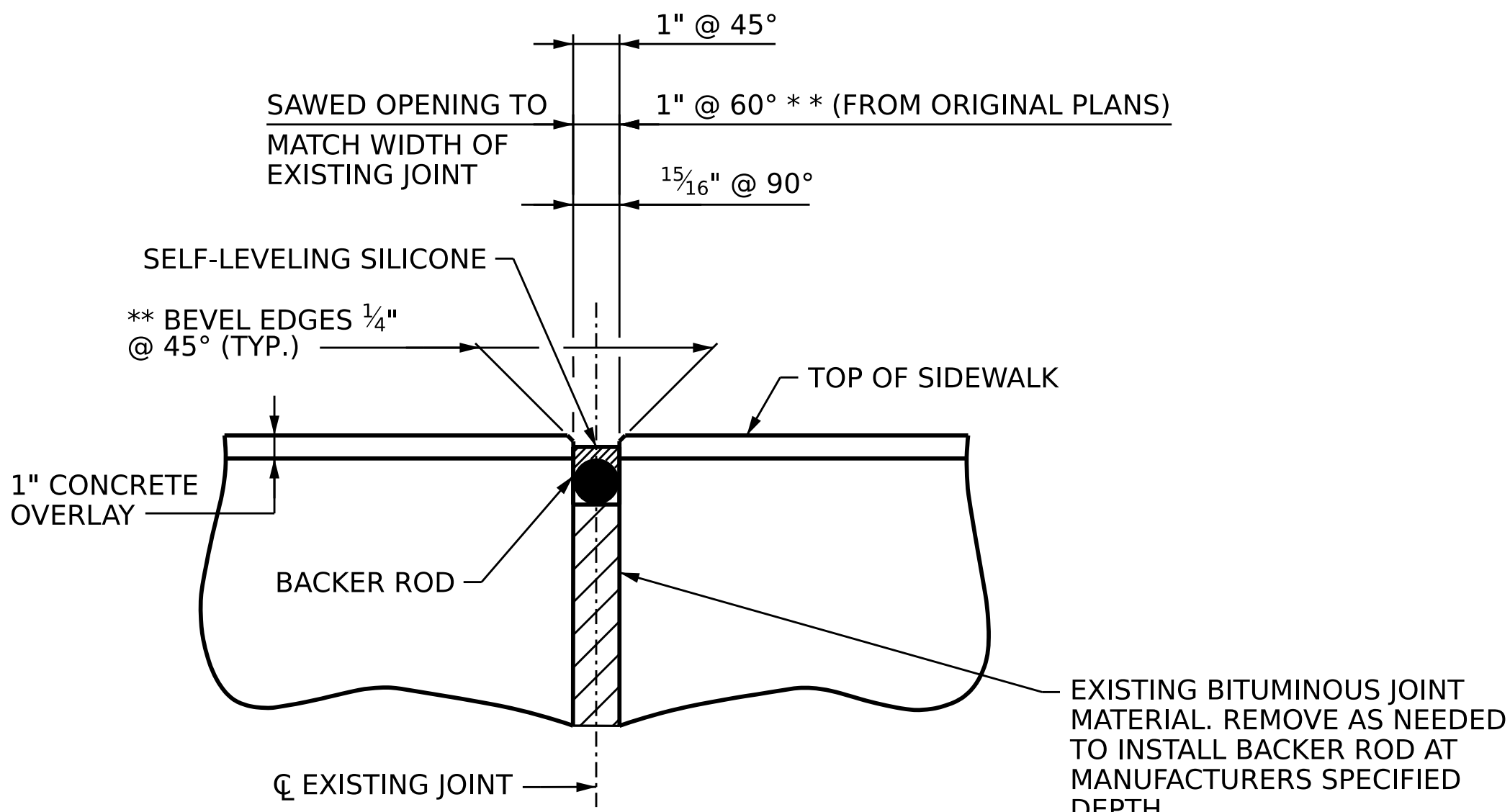
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SECTION A-A

(PROPOSED JOINT)

** DIMENSIONS ARE NORMAL TO JOINT.



SECTION B-B

(TYPICAL SECTION THRU SIDEWALK)

** DIMENSIONS ARE NORMAL TO JOINT.

NOTES

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING THE JOINT SEAL MATERIALS. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN THE DETAILS BY MORE THAN 1/4", NOTIFY THE ENGINEER.

THE BACKER ROD SHALL MEET THE MANUFACTURER'S RECOMMENDATION FOR THE SIZE OF THE JOINT.

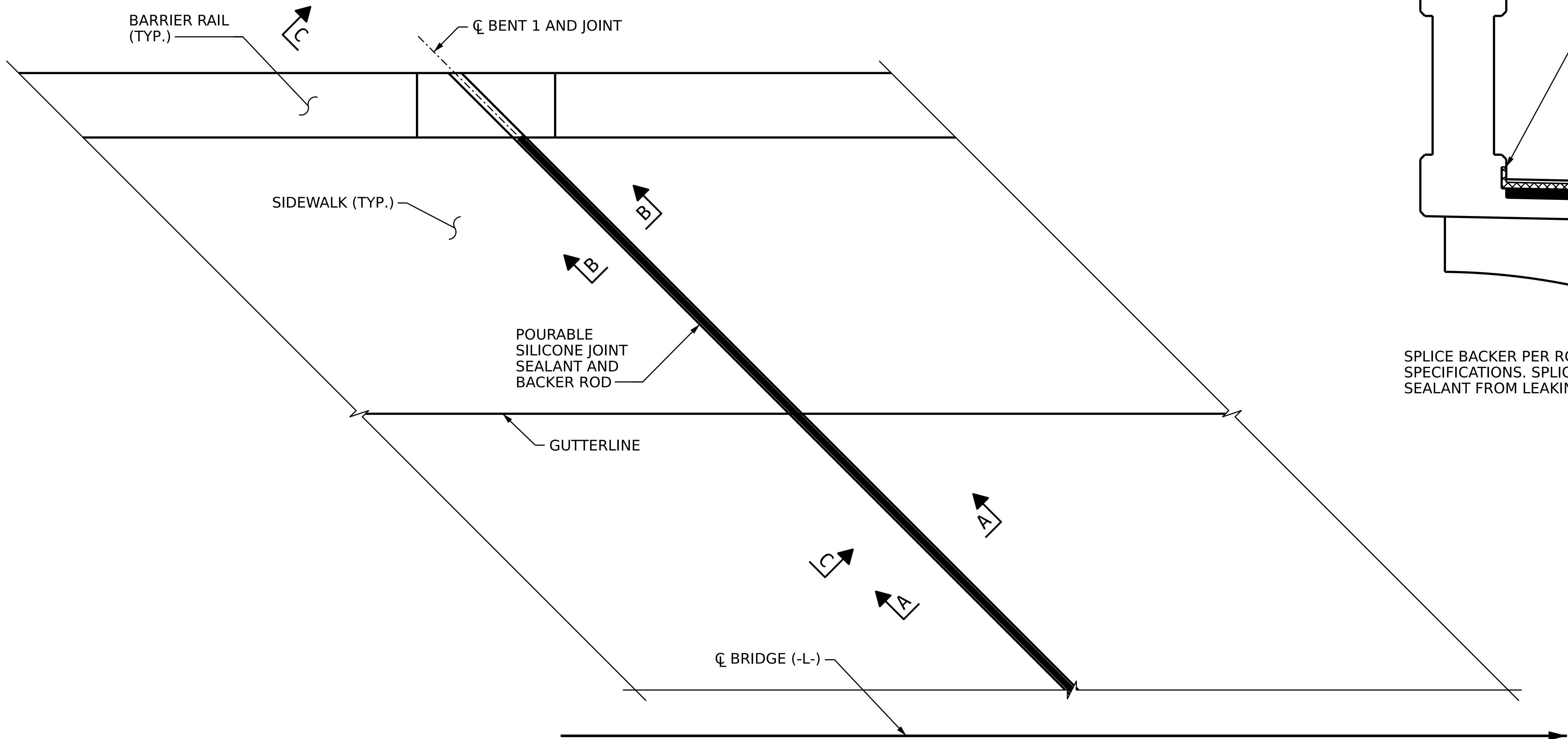
FINAL JOINT SEAL SHALL NOT BE INSTALLED UNTIL THE CONCRETE WEARING SURFACE AND SIDEWALK OVERLAY ARE COMPLETE IN THEIR RESPECTIVE STAGE OF CONSTRUCTION.

THE POURABLE SILICONE JOINT SEAL SHALL BE INSTALLED AS PER THE MANUFACTURERS RECOMMENDATIONS.

THE POURABLE SILICONE SEAL UP THE FACE OF CURB MUST BE POURED AT THE SAME TIME AS THE DECK SEAL. A CONSTRUCTION JOINT AT THE CURB LINE WILL NOT BE PERMITTED.

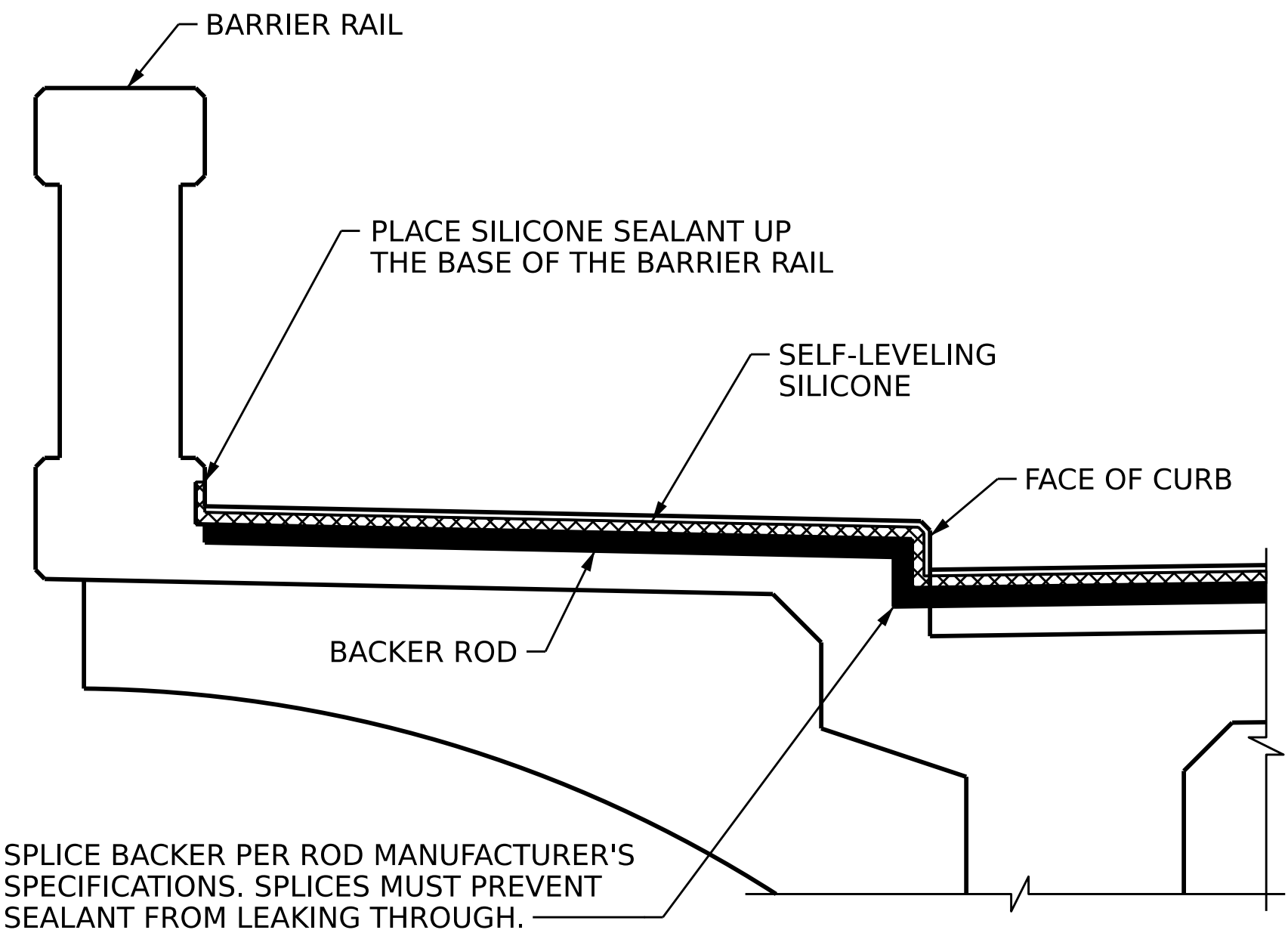
THE INSTALLED POURABLE SILICONE JOINT SEAL SHALL BE WATER TIGHT.

POURABLE SILICONE JOINT SEALANT		
	ESTIMATE	AS-BUILT
BENT 1	56.7 LIN. FT.	



PARTIAL PLAN OF SIDEWALK & DECK

(LEFT SIDEWALK SHOWN, RIGHT SIDEWALK SIMILAR)



SECTION C-C

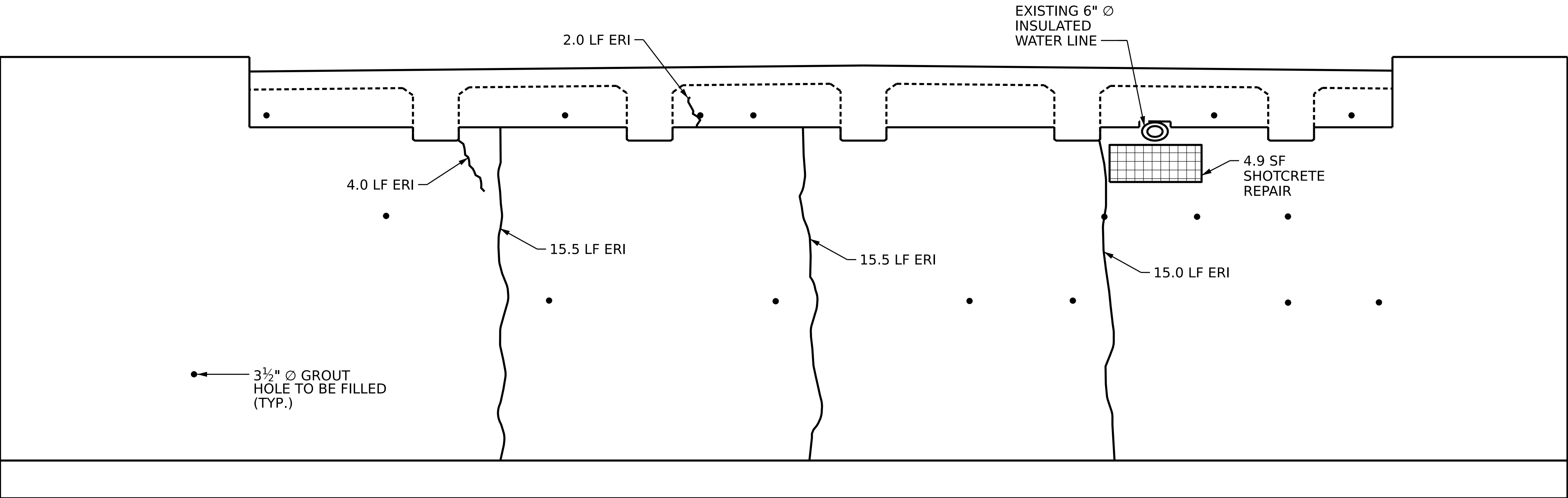
PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
JOINT DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					18

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DES CHK: M. NEIHEISEL	DATE: 05/25	CHK BY: M. NEIHEISEL	DATE: 05/25



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ELEVATION
(LOOKING DOWNSTATION)

AS-BUILT REPAIR QUANTITY TABLE				
REPAIRS	END	BENT	QUANTITIES	
			ESTIMATE	AS-BUILT
SHOTCRETE REPAIRS			AREA SQ. FT.	VOLUME CU. FT.
END BENT 1			4.9	2.1
GROUT HOLES			1.2	0.1
CONCRETE REPAIRS			AREA SQ. FT.	VOLUME CU. FT.
END BENT 1			0.0	0.0
EPOXY RESIN INJECTION			LIN. FT.	LIN. FT.
END BENT 1			52.0	

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. SEE "OVERHANG BEAM, AND DIAPHRAGM REPAIR DETAILS" SHEET.

NOTES
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL BENT CAP AND BREASTWALL REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

- LEGEND**
- SHOTCRETE REPAIR AREA
 - CONCRETE REPAIR AREA
 - ERI - EPOXY RESIN INJECTION
 - 3½"Ø GROUT HOLE TO BE FILLED

PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**



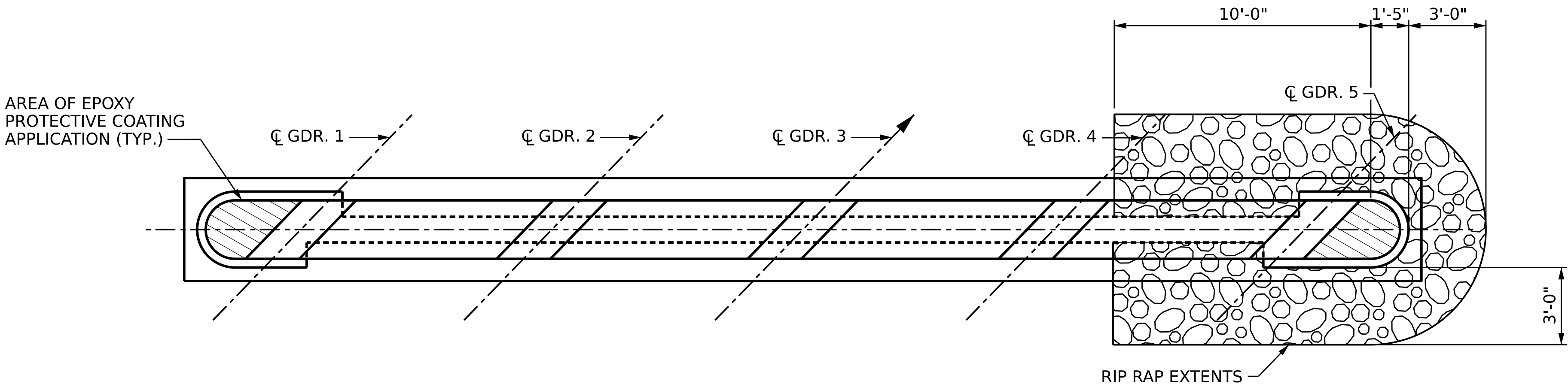
9/16/2025

DES BY: J. PATT	DATE : 03/25	DWG BY: D. CARTER	DATE : 05/25
DES CHK: M. NEIHEISEL	DATE : 03/25	CHK BY: M. NEIHEISEL	DATE : 05/25

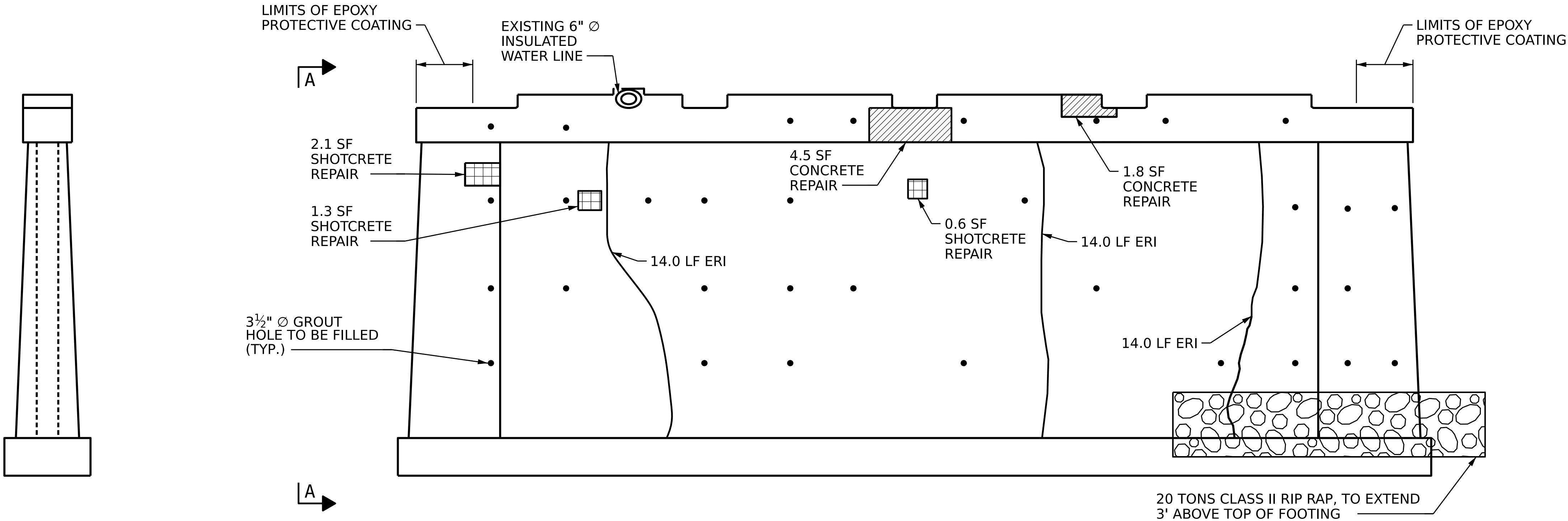
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
					TOTAL SHEETS
					18



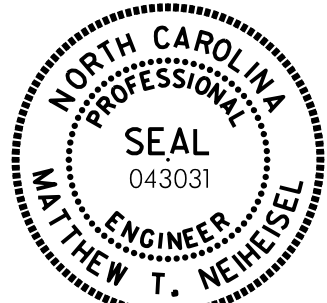
PLAN



SPAN A ELEVATION
(LOOKING UPSTATION)

LEGEND

- SHOTCRETE REPAIR AREA
- CONCRETE REPAIR AREA
- CLASS II RIP RAP
- EPOXY PROTECTIVE COATING
- ERI - EPOXY RESIN INJECTION
- 3 1/2" Ø GROUT HOLE TO BE FILLED



9/16/2025

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AS-BUILT REPAIR QUANTITY TABLE

BENT 1 SPAN A FACE	QUANTITIES			
	ESTIMATE		AS-BUILT	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
WALL	4.0	1.8		
GROUT HOLES	2.3	0.2		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	6.3	2.7		
WALL	0.0	0.0		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	0.0			
WALL	42.0			
EPOXY COATING	SQ. FT.		SQ. FT.	
TOP OF CAP	10.9			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. SEE "OVERHANG BEAM, AND DIAPHRAGM REPAIR DETAILS" SHEET.

NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. FOR REPAIR DETAILS, SEE "TYPICAL BENT CAP AND BREASTWALL REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

PROJECT NO. **R-5600**
JACKSON COUNTY

BRIDGE NO. **490050**

SHEET 1 OF 2

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RALEIGH

**SUBSTRUCTURE
BENT 1
SPAN A FACE**

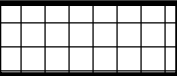
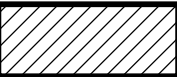
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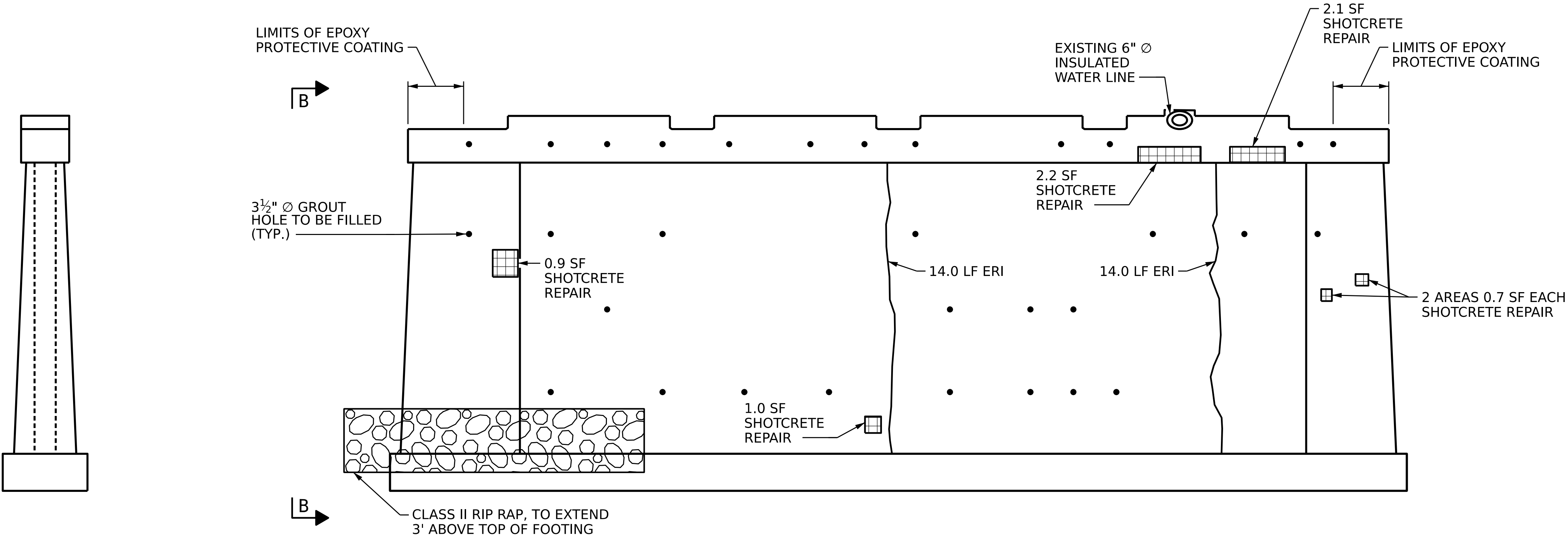
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2	--	--	4	--	--	

AS-BUILT REPAIR QUANTITY TABLE				
BENT 1 SPAN B FACE	QUANTITIES			
	ESTIMATE		AS-BUILT	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	4.3	1.9		
WALL	3.3	1.5		
GROUT HOLES	2.1	0.2		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
WALL	0.0	0.0		
EPOXY RESIN INJECTION	LIN. FT.		LIN. FT.	
CAP	0.0			
WALL	28.0			

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. SEE "OVERHANG BEAM, AND DIAPHRAGM REPAIR DETAILS" SHEET.

NOTES
FOR NOTES, SEE "SUBSTRUCTURE BENT 1 SPAN A FACE" SHEET.

- LEGEND
-  SHOTCRETE REPAIR AREA
 -  CONCRETE REPAIR AREA
 -  CLASS II RIP RAP
 -  ERI - EPOXY RESIN INJECTION
 -  3½"Ø GROUT HOLE TO BE FILLED



VIEW B-B
(RIGHT SIDE VIEW)

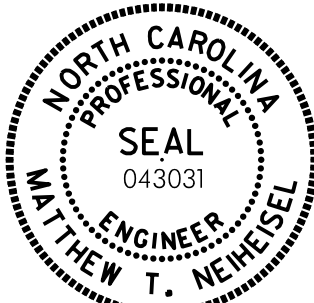
SPAN B ELEVATION
(LOOKING DOWNSTATION)

PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT 1
SPAN B FACE**

REVISIONS						SHEET NO. S01-16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 18
2	--	--	4	--	--	



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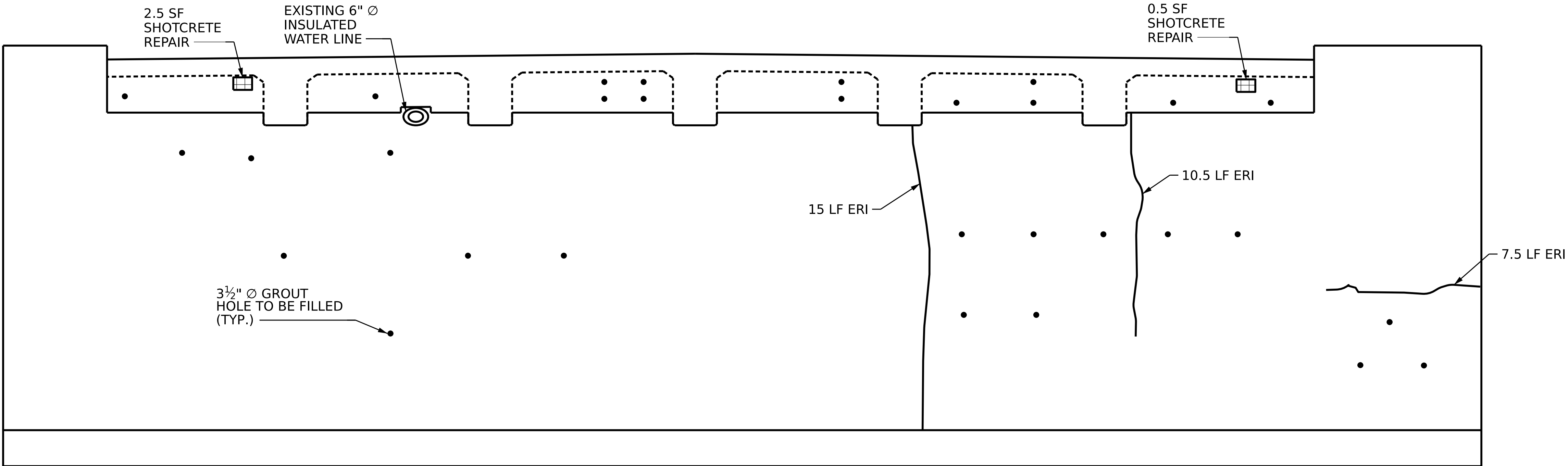
DES BY: J. PATT DATE : 03/25
DES CHK: M. NEIHEISEL DATE : 03/25
DWG BY: D. CARTER DATE : 05/25
CHK BY: M. NEIHEISEL DATE : 05/25

AS-BUILT REPAIR QUANTITY TABLE					
REPAIRS	END BENT 2	QUANTITIES			
		ESTIMATE		AS-BUILT	
SHOTCRETE REPAIRS		AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
END BENT 2		3.0	1.3		
GROUT HOLES		2.0	0.2		
CONCRETE REPAIRS		AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
END BENT 2		0.0	0.0		
EPOXY RESIN INJECTION			LIN. FT.	LIN. FT.	
END BENT 2			33.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT. SEE "OVERHANG BEAM, AND DIAPHRAGM REPAIR DETAILS" SHEET.

NOTES

FOR NOTES SEE, "SUBSTRUCTURE END BENT 1" SHEET.



ELEVATION
(LOOKING UPSTATION)

LEGEND

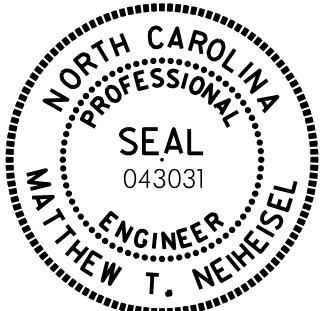
- SHOTCRETE REPAIR AREA
- CONCRETE REPAIR AREA
- ERI - EPOXY RESIN INJECTION
- 3 1/2"Ø GROUT HOLE TO BE FILLED

PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**

STATE OF NORTH CAROLINA
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SUBSTRUCTURE
END BENT 2

REVISIONS						SHEET NO. S01-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 18
2	--	--	4	--	--	

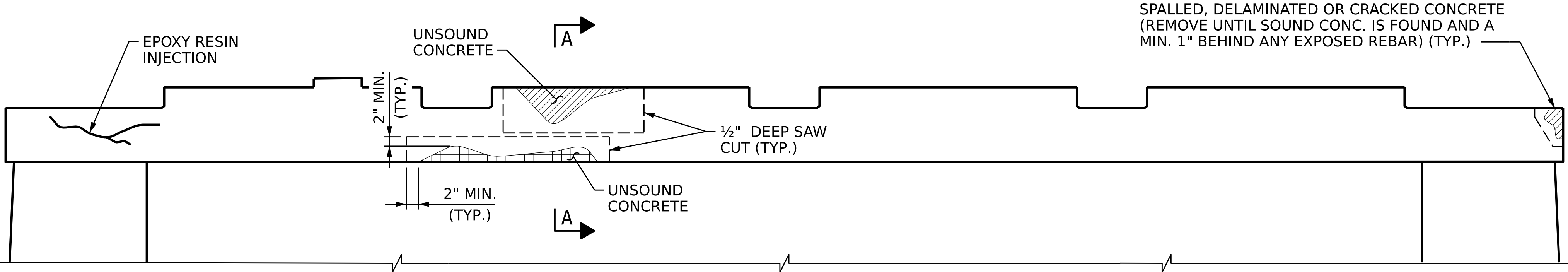


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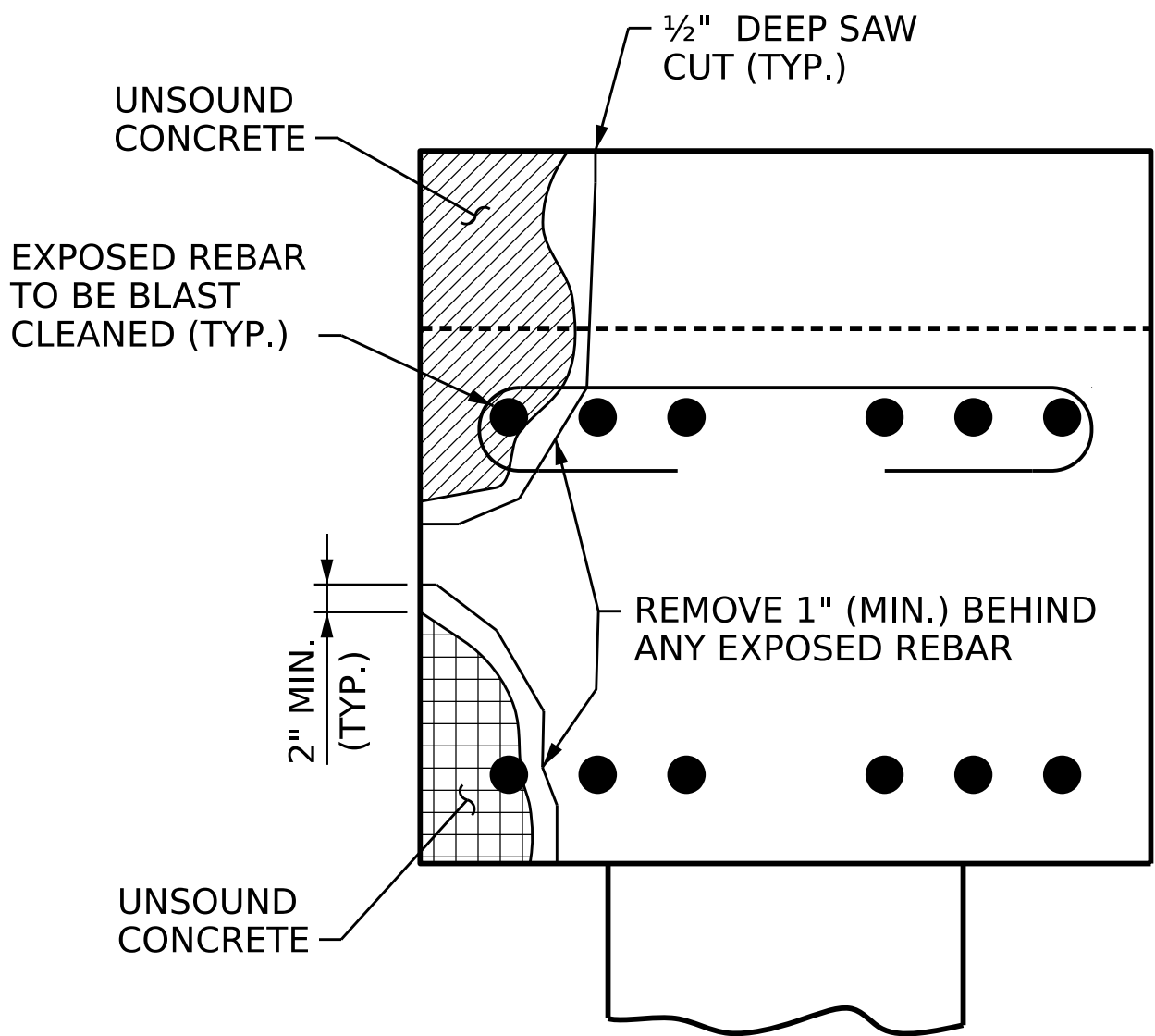
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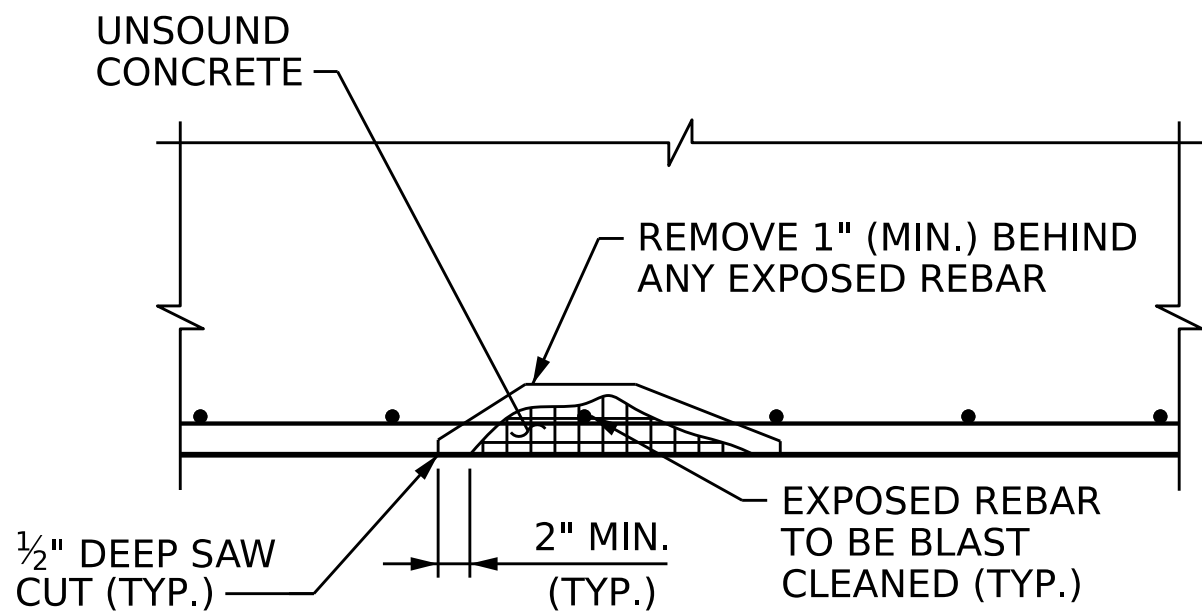
DES BY: J. PATT	DATE : 03/25	DWG BY: D. CARTER	DATE : 05/25
DES CHK: M. NEIHEISEL	DATE : 03/25	CHK BY: M. NEIHEISEL	DATE : 05/25



BENT CAP REPAIRS

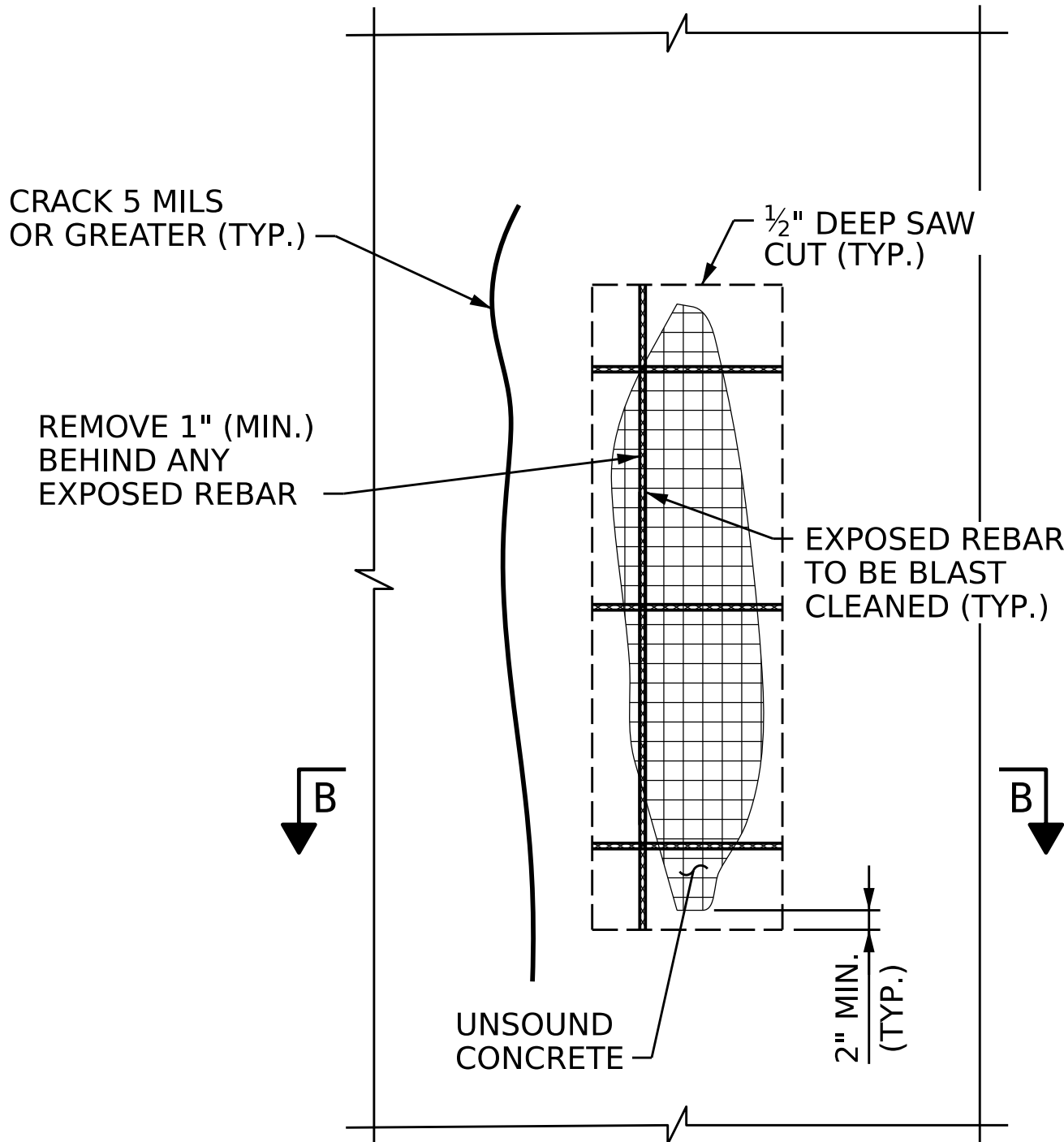


SECTION A-A



SECTION B-B

(TYPICAL FOR BENT AND END BENT REPAIR)



ELEVATION OF BREASTWALL

(TYPICAL FOR BENT AND END BENT REPAIR)

REPAIR SEQUENCE:

1. SOUND CONCRETE TO DETERMINE EXTENT OF REPAIR LOCATION.
2. REMOVE SURFACE CONCRETE TO VERIFY SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL. SAW CUT AROUND REPAIR AREA TO A NOMINAL DEPTH OF 1/2".
3. REMOVE CONCRETE WITHIN SAW CUT AREA TO A MINIMUM 1/2" DEPTH. (PICTURE REQUIRED)
4. USE A WIRE BRUSH TO CLEAN ALL EXPOSED REINFORCING STEEL. FOR BARS WITH MORE THAN 10% SECTION LOSS, SPLICE AND SECURELY TIE SUPPLEMENTAL REINFORCING BARS AS NEEDED.
5. REMOVE ALL LOOSE OR WEAKENED MATERIAL THEN CLEAN THE REPAIR AREA OF DIRT, GREASE, OIL, AND FOREIGN MATTER. (PICTURE REQUIRED)
6. PREPARE SURFACE AND PLACE APPROVED MATERIAL ACCORDING TO MANUFACTURERS SPECIFICATIONS. (PICTURE REQUIRED)

NOTES

TYPICAL BENT REPAIRS ARE SHOWN. REPAIR DETAILS SIMILAR FOR END BENTS.

CONTRACTOR SHALL SAW CUT THE REPAIR AREAS SO THAT THE CORNERS ARE SQUARE AS INDICATED ON THE DETAILS.

THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OR REQUIRE HARSH CHEMICALS TO REMOVE.

THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT.

NO MORE THAN ONE-THIRD OF THE CAP CROSS SECTIONAL AREA SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN ONE-THIRD OF THE CAP CROSS SECTIONAL AREA, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

SIMULTANEOUS REMOVAL OF UNSOUND CONCRETE MAY BE PERMITTED ON MORE THAN ONE FACE OF A CAP AND/OR BREASTWALL, IF THE AREAS OF REMOVAL ARE NOT ADJACENT TO OR DIRECTLY OPPOSITE ONE ANOTHER. IF REMOVAL EXTENDS MORE THAN 1 1/2" BEHIND THE MAIN REINFORCING BARS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THIS SHEET.

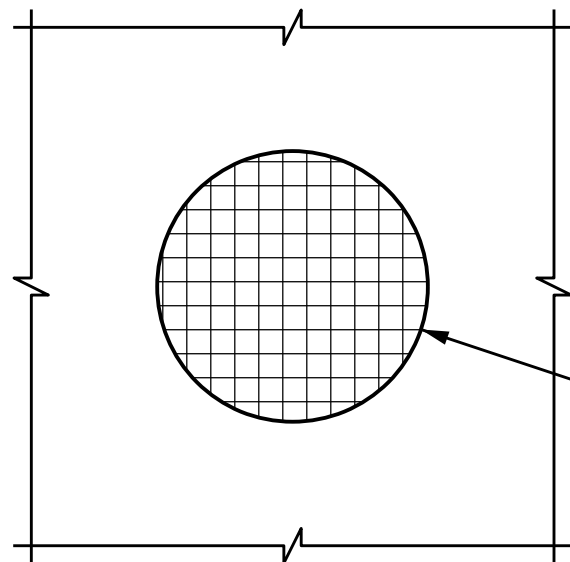
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

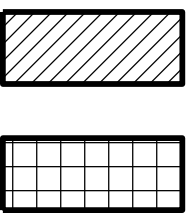
SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

REPAIRS SHALL PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER TO ANY EXPOSED REINFORCING STEEL.



3 1/2" Ø GROUT HOLE REPAIR

LEGEND



CONCRETE REPAIR AREA

SHOTCRETE REPAIR AREA

ERI - EPOXY RESIN INJECTION

SPLICE LENGTH TABLE	
BAR SIZE	MIN. SPLICE LENGTH
#4	1'-5"
#5	1'-11"
#6	2'-8"
#7	3'-8"
#8	4'-9"
#9	6'-0"
#10	7'-8"
#11	9'-5"



9/16/2025

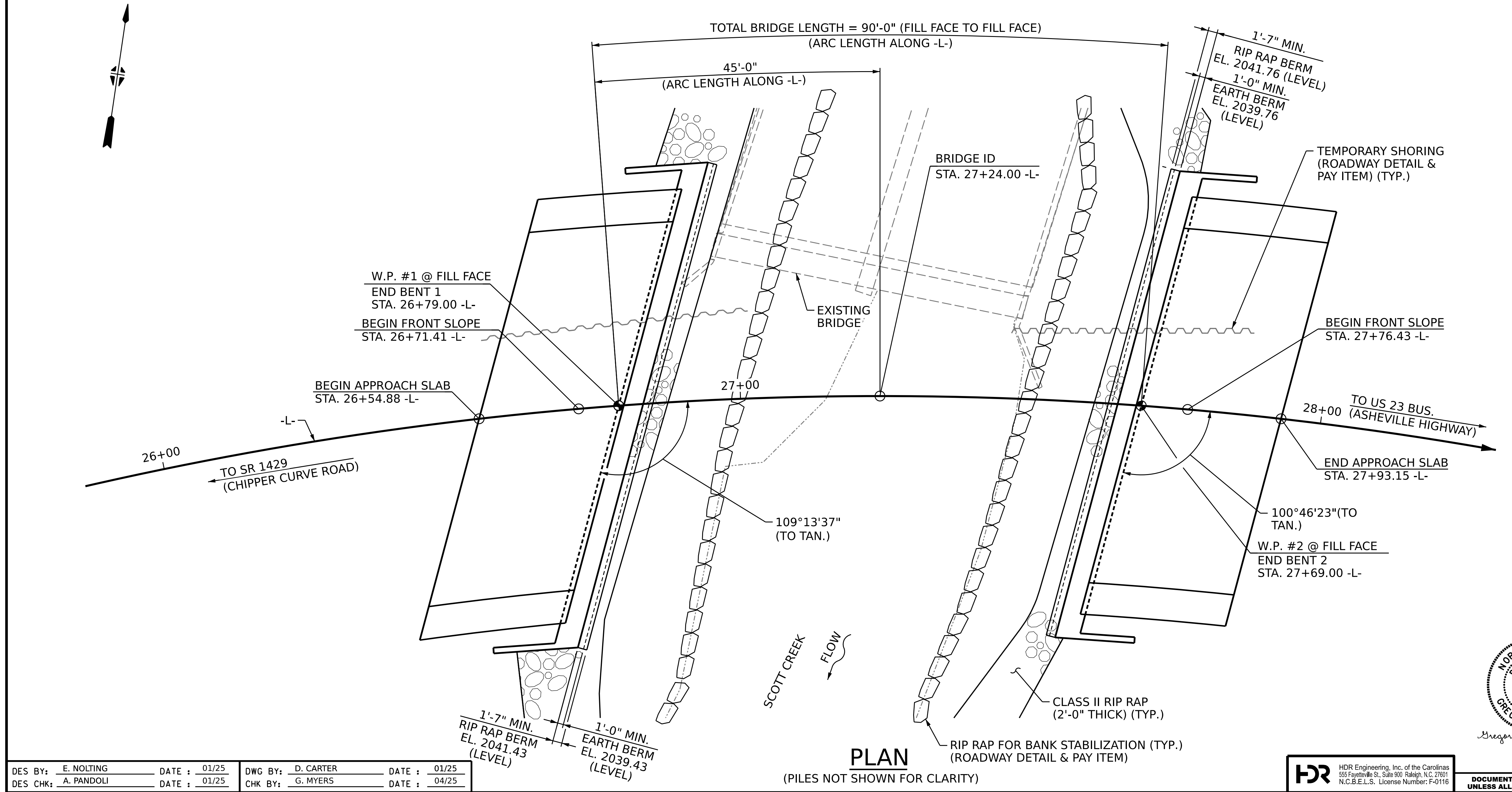
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PROJECT NO. **R-5600**
JACKSON COUNTY
BRIDGE NO. **490050**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**TYPICAL CAP
AND BREASTWALL
REPAIR DETAILS**

REVISIONS						SHEET NO. S01-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 18
2	--	--	4	--	--	



PI STA. = 27+43.07 -L-
 $\Delta = 55^{\circ}37'20.3''$ (RT.)
 $D = 09^{\circ}23'33.9''$
 $L = 592.18'$
 $T = 321.77'$
 $R = 610.00'$

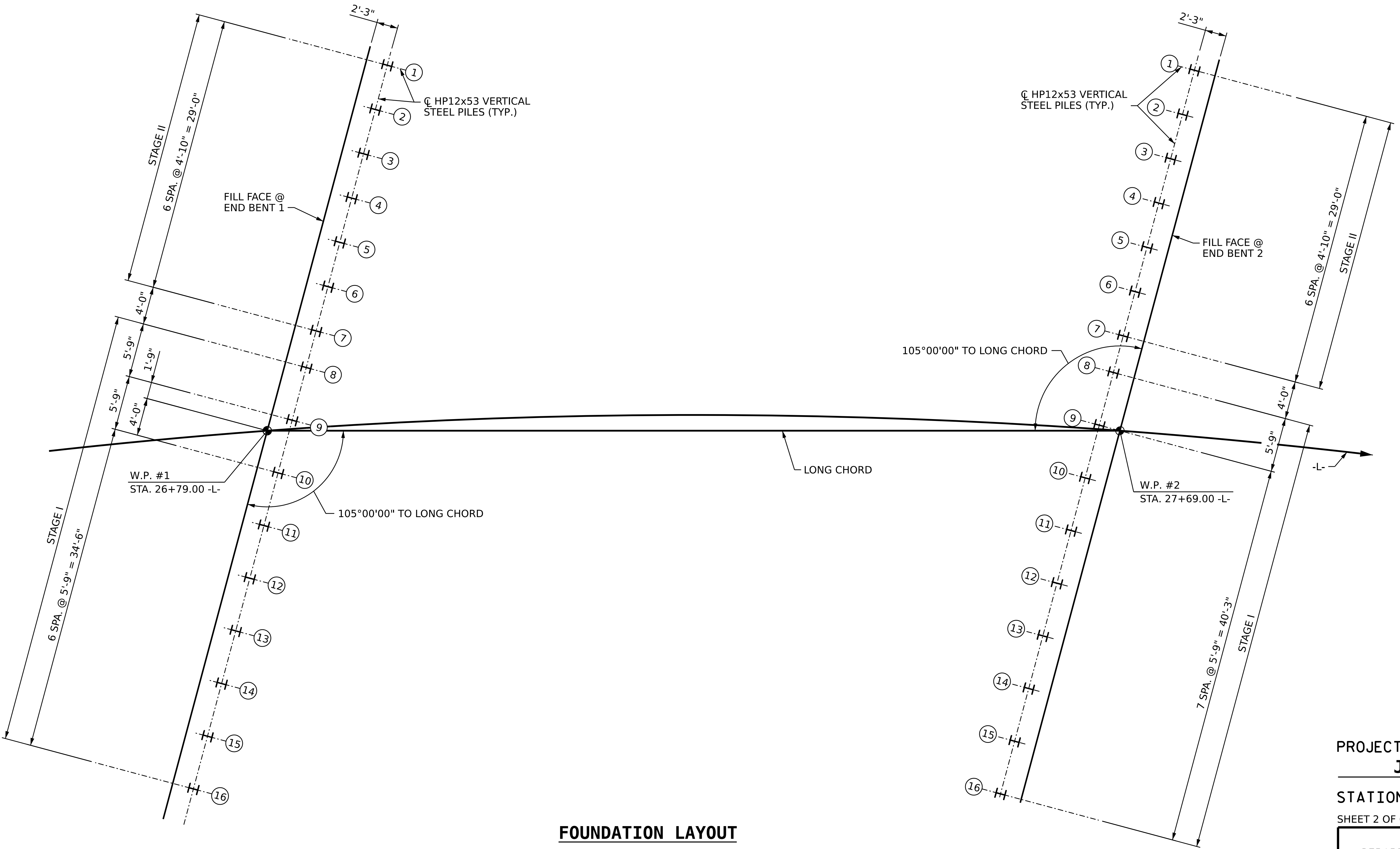
SHEET 1 OF 6 REPLACES BRIDGE NO. 490077

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON NC107 (-L-) (US 23 BUS.)
OVER SCOTT CREEK BETWEEN SR 1429
(CHIPPER CURVE ROAD) & US 23 BUS.
(ASHEVILLE HIGHWAY)

REVISIONS						SHEET NO. S02-01
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



FOUNDATION LAYOUT

NOTES

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

FOR GEOTECHNICAL FOUNDATION TABLES, SEE SHEET S02-03.

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 2 OF 6

STATE OF NORTH CAROLINA
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GENERAL DRAWING
FOUNDATION LAYOUT



Gregory E. Myers 2/25/2025

REVISIONS						SHEET NO. S02-02
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

DES BY: J. PATT	DATE : 02/25	DWG BY: B. PETERSON	DATE : 02/25
DES CHK: E. NOLTING	DATE : 02/25	CHK BY: J. PATT	DATE : 02/25

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SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles **			Drilled-In Piles		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent 1, Pile 1-16	16	215	2040.93	65			360							
End Bent 2, Pile 1-16	16	215	2041.26	50			360							
TOTAL QUANTITY:														

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

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

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent 1, Pile 1-16	215			0.60		
End Bent 2, Pile 1-16	215			0.60		

* 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, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
End Bent 1, Pile 1-16				16
End Bent 2, Pile 1-16				16
TOTAL QUANTITY:				32

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)		
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	DPT Test Pile Length FT	DPT Testing Quantity EACH
End Bent 1, Pile 1-16	65	
End Bent 2, Pile 1-16	50	1
TOTAL QUANTITY:		1

Pile Order Lengths for Concrete Piles	
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	Pile Order Length Basis* EST or DPT

* EST = Pile order lengths from estimated pile lengths; DPT = Pile order lengths based on Dynamic Pile 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:

- The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Saket Kabra, #053059) on 02-25-2025.
- Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
- The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

DES BY: S. KABRA	DATE : 02/25	DWG BY: B. PETERSON	DATE : 02/25
DES CHK: P. ZHANG	DATE : 02/25	CHK BY: G. MYERS	DATE : 04/25

HDR Engineering, Inc. of the Carolinas

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



Gregory E. Myers 2/25/2025

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PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 3 OF 6

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

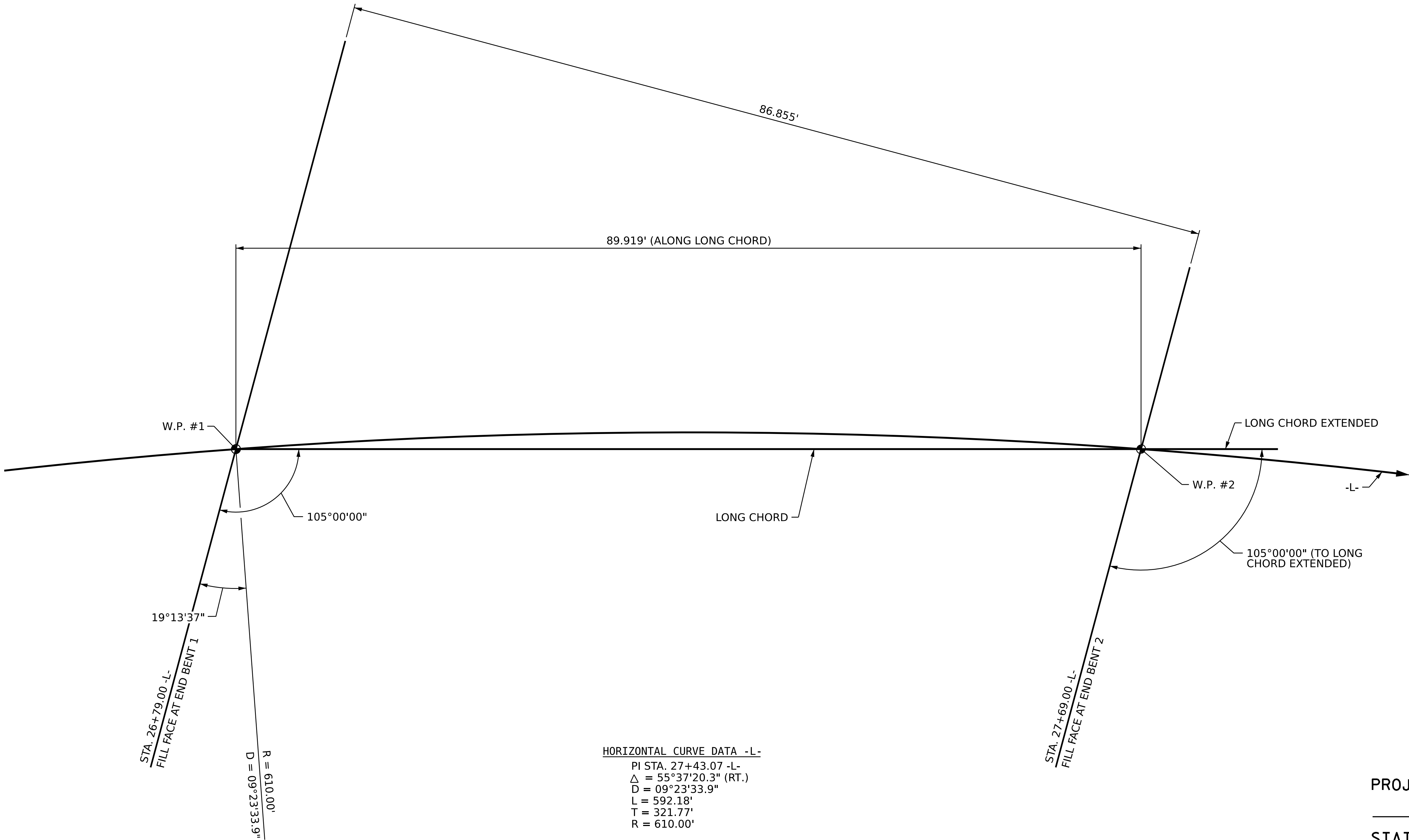
RALEIGH

GENERAL DRAWING

GEOTECHNICAL

FOUNDATION TABLES

REVISIONS						SHEET NO. S02-03
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



HORIZONTAL CURVE DATA -L-

PI STA. 27+43.07 -L-
 $\Delta = 55^\circ 37' 20.3''$ (RT.)
 $D = 09^\circ 23' 33.9''$
 $L = 592.18'$
 $T = 321.77'$
 $R = 610.00'$

LONG CHORD LAYOUT

NOTE: END BENTS ARE PARALLEL

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
LONG CHORD LAYOUT

REVISIONS						SHEET NO. S02-04
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



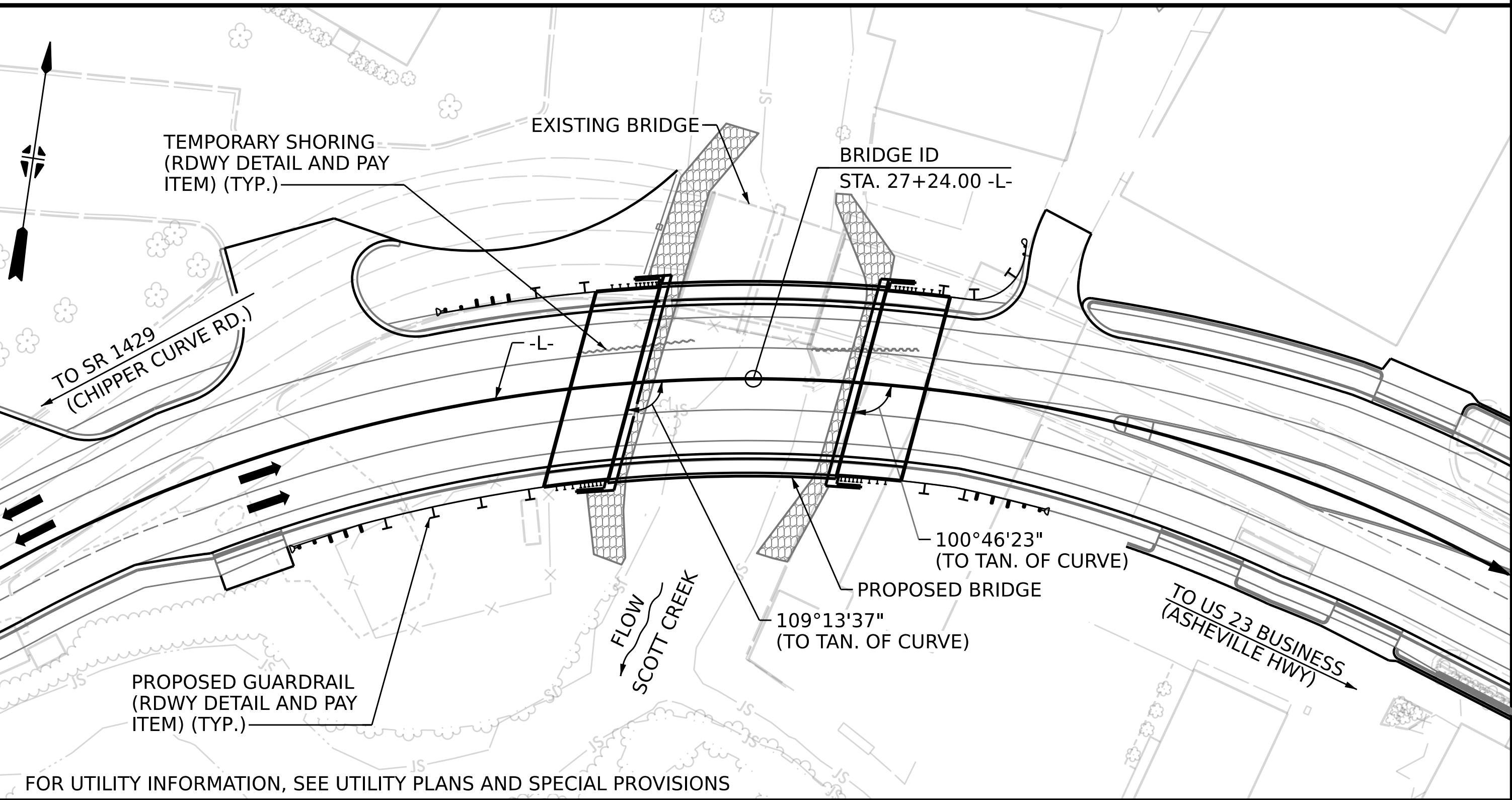
Gregory E. Myers 2/2/2025



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DES BY: J. PATT	DATE : 01/25	DWG BY: B. PETERSON	DATE : 01/25
DES CHK: A. PANDOLI	DATE : 02/25	CHK BY: E. NOLTING	DATE : 02/25

BENCHMARK: BM 14, NCGS MON "JAC 6" ON BRIDGE HW, STA. 26+96.16 -L-, OFF. 23.77' LT., EL. 2047.50



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE ----- = 3,480 CFS
FREQUENCY OF DESIGN FLOOD ----- = 25 YR.
DESIGN HIGH WATER ELEVATION ----- = 2046.7 FT.
DRAINAGE AREA ----- = 51.6 SQ. MI.
BASE DISCHARGE (Q100) ----- = 4,580 CFS
BASE HIGH WATER ELEVATION ----- = 2048.7 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE ----- = 3,600 CFS
FREQUENCY OF OVERTOPPING FLOOD ___ = > 25 YR.
OVERTOPPING FLOOD ELEVATION ----- = 2046.9 FT.

TOTAL BILL OF MATERIAL										
	REMOVAL OF EXISTING STRUCTURE AT STATION 27+24.00 -L-	ASBESTOS ASSESSMENT	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION 27+24.00 -L-	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE (BRIDGE)	BRIDGE APPROACH SLABS, STATION 27+24.00 -L-	REINFORCING STEEL (BRIDGE)	FIB 36" PRESTRESSED CONCRETE GIRDERS	
	LUMP SUM	LUMP SUM	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.
SUPERSTRUCTURE				6,672	8,097		LUMP SUM		10	866.8
END BENT 1						38.1		7,029		
END BENT 2						36.9		6,792		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	6,672	8,097	75.0	LUMP SUM	13,821	10	866.8

TOTAL BILL OF MATERIAL									
	PILE DRIVING EQUIPMENT SETUP FOR HP12x53 STEEL PILES	HP 12 X 53 STEEL PILES		STEEL PILE POINTS	DYNAMIC PILE TESTING (DPT)	THREE BAR METAL RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS
	EA.	NO.	LIN. FT.	EA.	EA.	LIN. FT.	TONS	SQ. YD.	LUMP SUM
SUPERSTRUCTURE						161.0			LUMP SUM
END BENT 1	16	16	1,040	16			245	270	
END BENT 2	16	16	800	16	1		190	210	
TOTAL	32	32	1,840	32	1	161.0	435	480	LUMP SUM

DES BY: J. PATT DATE : 02/25 DWG BY: B. PETERSON DATE : 02/25
DES CHK: E. NOLTING DATE : 02/25 CHK BY: E. NOLTING DATE : 03/25

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE "STANDARD NOTES" SHEET.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

ALL PAVEMENT MARKING WILL BE IN ACCORDANCE WITH THE PAVEMENT MARKING PLANS AND SHALL PROVIDE FOR BICYCLES.

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 27+24.00 -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 SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S02-01 SHALL BE EXCAVATED FOR A DISTANCE OF 95 FT LEFT AND 68 FT RIGHT OF CENTERLINE ROADWAY AT END BENT 1 AND 68 FT EACH SIDE OF CENTERLINE ROADWAY AT END BENT 2 AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

STEEL SHEET PILING REQUIRED FOR SHORING SHALL BE HOT ROLLED.

TEMPORARY SHORING WILL BE REQUIRED IN THE AREA INDICATED IN THE PLAN VIEW.

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 (2) 27'-6" CONCRETE ARCH CULVERTS AND STEEL ROLLED BEAM SPANS, 39'-3" TO 45'-0" CLEAR ROADWAY WIDTH AND CONCRETE SLAB ON C.I.P. CONCRETE BENT CAPS SUPPORTED ON CONCRETE FOOTINGS AND LOCATED 44 FT UPSTREAM FROM PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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

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

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

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

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

SHEET 5 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
LOCATION SKETCH

REVISIONS						SHEET NO. S02-05
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

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LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING ⬡	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVE-LOAD FACTORS (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		HL-93 (INVENTORY)	N/A	⬡1	1.18	--	1.75	0.77	1.43	A	EL	42.63	0.85	1.42	A	I	7.96	0.80	0.77	1.18	A	EL	42.63	
		HL-93 (OPERATING)	N/A		1.86	--	1.35	0.77	1.86	A	EL	42.63	0.85	1.87	A	I	7.96	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	⬡2	1.59	57.24	1.75	0.77	1.93	A	EL	42.63	0.85	1.87	A	I	7.96	0.80	0.77	1.59	A	EL	42.63	
		HS-20 (OPERATING)	36.000		2.45	88.20	1.35	0.77	2.50	A	EL	42.63	0.85	2.45	A	I	7.96	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		3.69	49.82	1.40	0.77	5.60	A	EL	42.63	0.85	5.86	A	I	7.96	0.80	0.77	3.69	A	EL	42.63	
		SNGARBS2	20.000		2.71	54.20	1.40	0.77	4.11	A	EL	42.63	0.85	4.10	A	I	7.96	0.80	0.77	2.71	A	EL	42.63	
		SNAGRIS2	22.000		2.55	56.10	1.40	0.77	3.86	A	EL	42.63	0.85	3.79	A	I	7.96	0.80	0.77	2.55	A	EL	42.63	
		SNCOTTS3	27.250		1.84	50.14	1.40	0.77	2.79	A	EL	42.63	0.85	2.87	A	I	7.96	0.80	0.77	1.84	A	EL	42.63	
		SNAGGRS4	34.925		1.52	53.09	1.40	0.77	2.30	A	EL	42.63	0.85	2.34	A	I	7.96	0.80	0.77	1.52	A	EL	42.63	
		SNS5A	35.550		1.49	52.97	1.40	0.77	2.25	A	EL	42.63	0.85	2.36	A	I	7.96	0.80	0.77	1.49	A	EL	42.63	
		SNS6A	39.950		1.36	54.33	1.40	0.77	2.06	A	EL	42.63	0.85	2.13	A	I	7.96	0.80	0.77	1.36	A	EL	42.63	
		SNS7B	42.000		1.29	54.18	1.40	0.77	1.96	A	EL	42.63	0.85	2.08	A	I	7.96	0.80	0.77	1.29	A	EL	42.63	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.65	54.45	1.40	0.77	2.51	A	EL	42.63	0.85	2.57	A	I	7.96	0.80	0.77	1.65	A	EL	42.63	
		TNT4A	33.075		1.66	54.90	1.40	0.77	2.51	A	EL	42.63	0.85	2.51	A	I	7.96	0.80	0.77	1.66	A	EL	42.63	
		TNT6A	41.600		1.35	56.16	1.40	0.77	2.04	A	EL	42.63	0.85	2.20	A	I	7.96	0.80	0.77	1.35	A	EL	42.63	
		TNT7A	42.000		1.35	56.70	1.40	0.77	2.05	A	EL	42.63	0.85	2.16	A	I	7.96	0.80	0.77	1.35	A	EL	42.63	
		TNT7B	42.000		1.39	58.38	1.40	0.77	2.11	A	EL	42.63	0.85	2.04	A	I	7.96	0.80	0.77	1.39	A	EL	42.63	
		TNAGRIT4	43.000		1.33	57.19	1.40	0.77	2.01	A	EL	42.63	0.85	1.98	A	I	7.96	0.80	0.77	1.33	A	EL	42.63	
		TNAGT5A	45.000		1.26	56.70	1.40	0.77	1.90	A	EL	42.63	0.85	1.95	A	I	7.96	0.80	0.77	1.26	A	EL	42.63	
		TNAGT5B	45.000	⬡3	1.24	55.80	1.40	0.77	1.89	A	EL	42.63	0.85	1.88	A	I	7.96	0.80	0.77	1.24	A	EL	42.63	
EMERGENCY VEHICLE (EV)	EV2	28.750		1.91	54.91	1.30	0.77	3.12	A	EL	42.63	0.85	3.07	A	I	7.96	0.80	0.77	1.91	A	EL	42.63		
	EV3	43.000	⬡4	1.25	53.75	1.30	0.77	2.05	A	EL	42.63	0.85	2.03	A	I	7.96	0.80	0.77	1.25	A	EL	42.63		

LOAD FACTORS:

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

NOTES:

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

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

⬡

CONTROLLING LOAD RATING

⬡1

DESIGN LOAD RATING (HL-93)

⬡2

DESIGN LOAD RATING (HS-20)

⬡3

LEGAL LOAD RATING **

⬡4

EMERGENCY VEHICLE LOAD RATING **

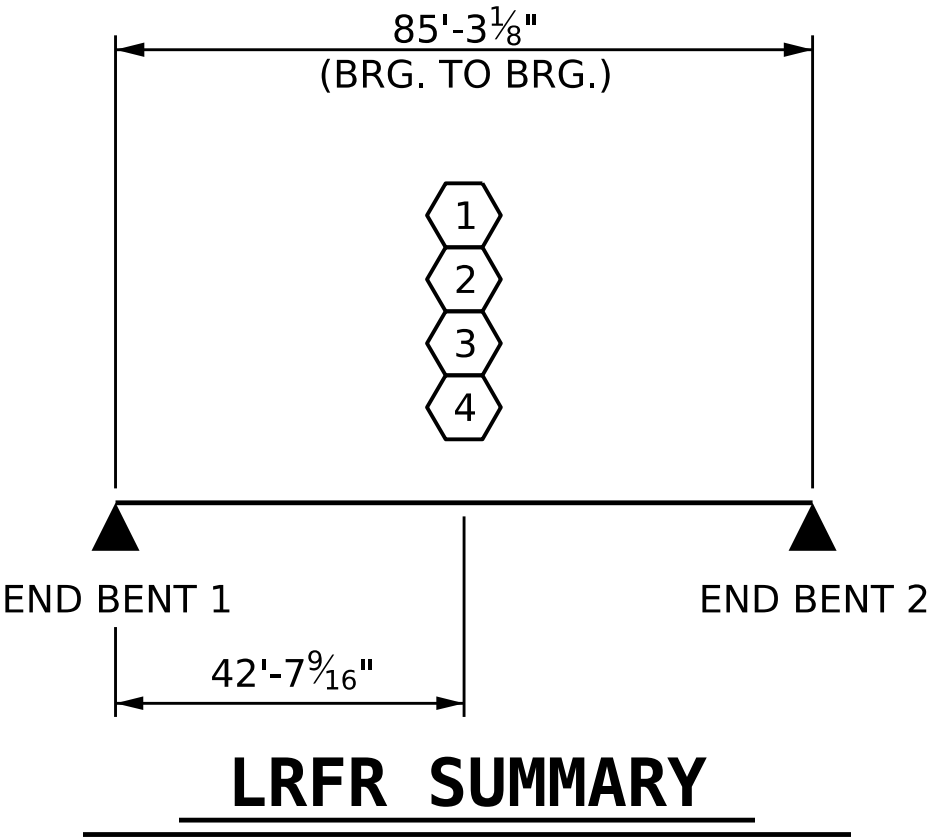
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER

EL - EXTERIOR LEFT GIRDER

ER - EXTERIOR RIGHT GIRDER



PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 6 OF 6

DES BY: <u>J. PATT</u>	DATE : <u>02/25</u>	DWG BY: <u>B. PETERSON</u>	DATE : <u>01/25</u>
DES CHK: <u>A. RANDOLI</u>	DATE : <u>03/25</u>	CHK BY: <u>E. NOLTING</u>	DATE : <u>02/25</u>

HDR

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

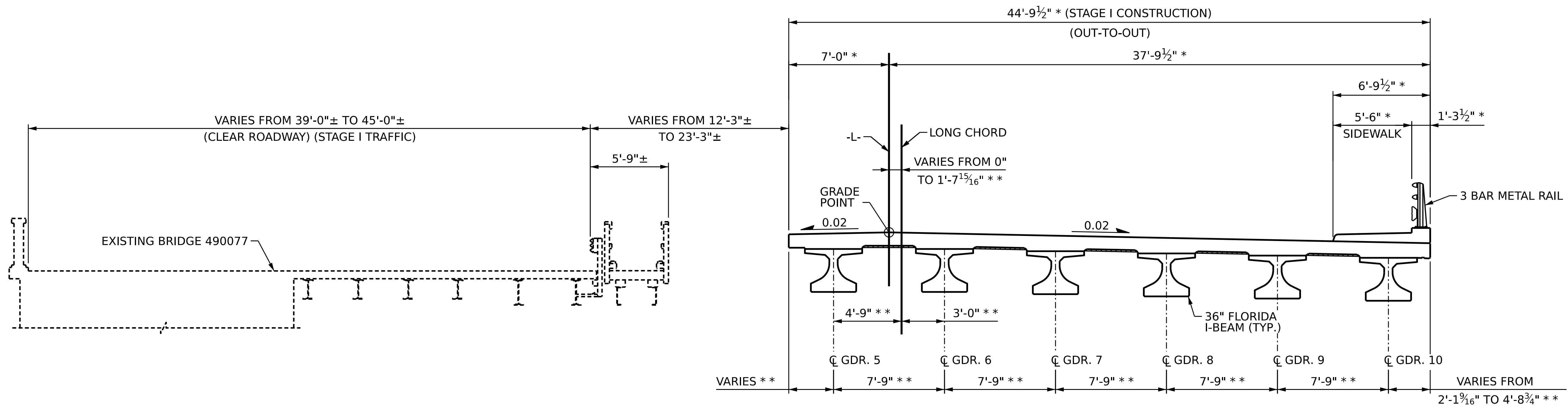


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DEPARTMENT OF TRANSPORTATION
RALEIGH

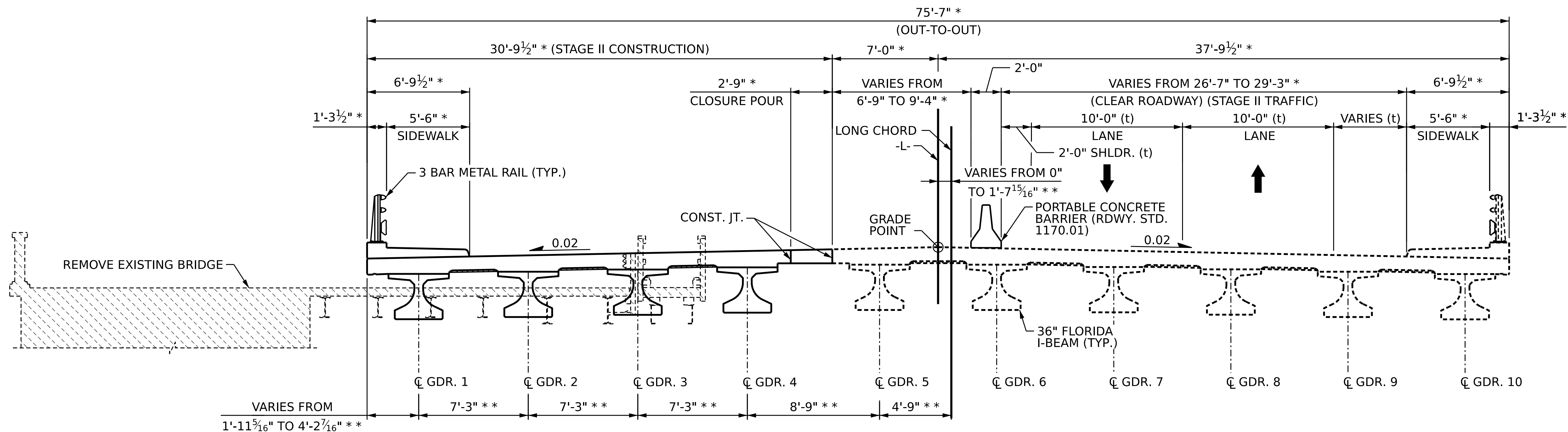
**LRFR SUMMARY FOR
PRESTRESSED
CONCRETE GIRDERS**
(NON- INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. S02-06
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



STAGE I

(CONSTRUCT STAGE I OF PROPOSED STRUCTURE WITH EXISTING STRUCTURE IN PLACE)



STAGE II

(SHIFT TRAFFIC, REMOVE EXISTING STRUCTURE AND CONSTRUCT REMAINDER OF PROPOSED STRUCTURE)

- * DIMENSION RADIAL TO -L-
- ** DIMENSION NORMAL TO LONG CHORD
- (t) DIMENSION RADIAL TO PORTABLE CONCRETE BARRIER

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**



DES BY: E. NOLTING DATE : 01/25 DWG BY: B. PETERSON DATE : 01/25
DES CHK: A. PANDOLI DATE : 01/25 CHK BY: E. NOLTING DATE : 02/25

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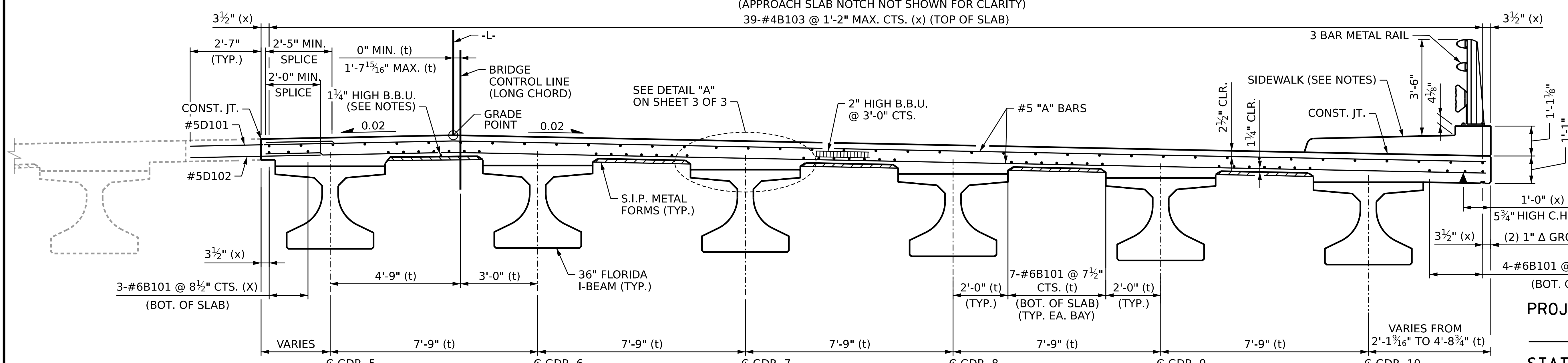
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE CONSTRUCTION SEQUENCE					
REVISIONS					SHEET NO. S02-07
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					41

VARIES FROM 4'-1 $\frac{1}{16}$ " TO 4'-8 $\frac{3}{4}$ " (t)

(SHOWING END BENT 1 DIAPHRAGM, END BENT 2 DIAPHRAGM SIMILAR)
(APPROACH SLAB NOTCH NOT SHOWN FOR CLARITY)
39-#4B103 @ 1'-2" MAX. CTS. (x) (TOP OF SLAB)

(SHOWING END BENT 1 DIAPHRAGM, END BENT 2 DIAPHRAGM SIMILAR)



(MIDSPAN)

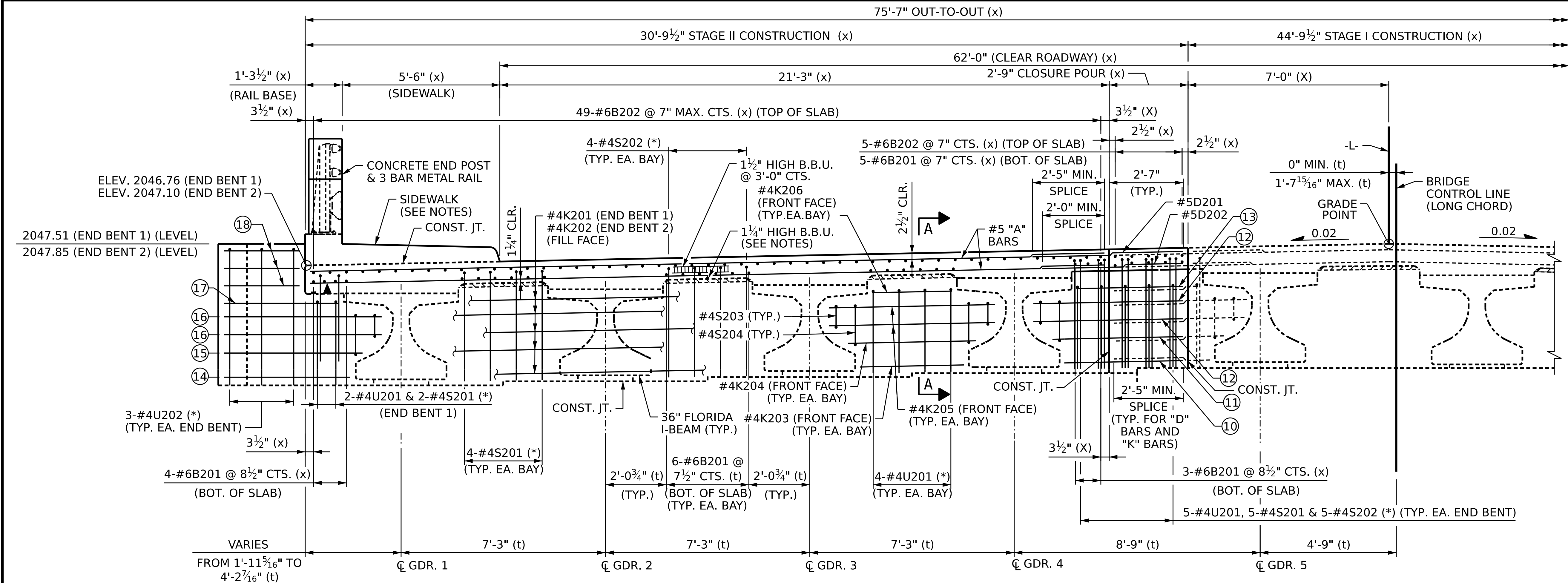
E.F. DENOTES EACH FACE

SHEET 1 OF 3

SUPERSTRUCTURE TYPICAL SECTION

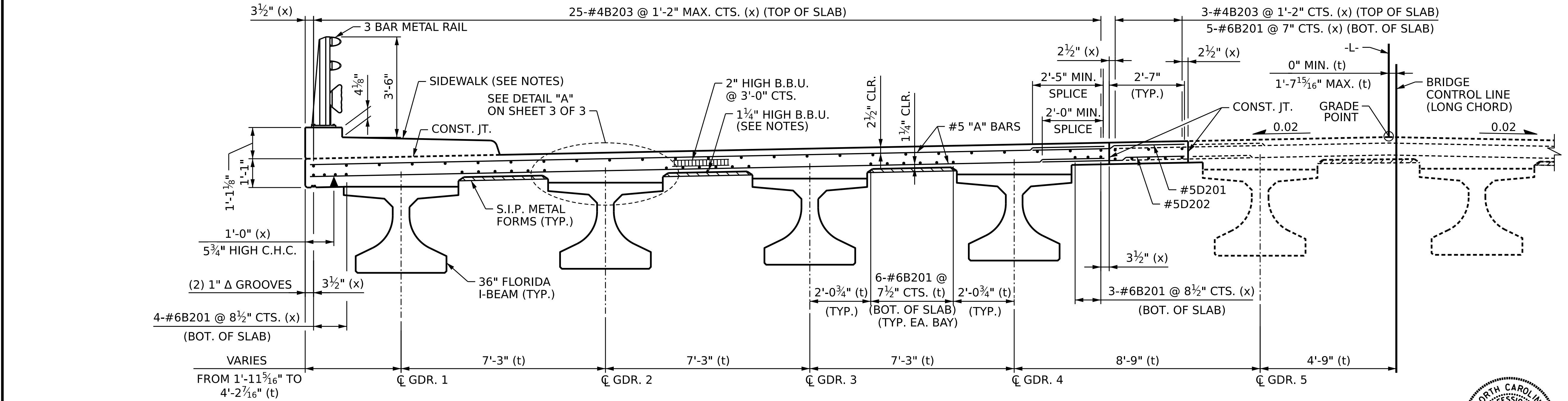
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

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TYPICAL SECTION - STAGE II

(SHOWING END BENT 1 DIAPHRAGM, END BENT 2 DIAPHRAGM SIMILAR)
(APPROACH SLAB NOTCH NOT SHOWN FOR CLARITY)



TYPICAL SECTION - STAGE II

(MIDSPAN)

NOTES

PROVIDE 1¼" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF "A" BARS A CLEAR DISTANCE OF 2½" ABOVE THE TOP OF THE REMOVABLE FORM.

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

DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP AND BOTTOM SLAB REINFORCING STEEL.

FOR SECTION A-A, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEET 3 OF 3.

FOR SIDEWALK DETAILS AND NOTES, SEE "SUPERSTRUCTURE CONCRETE SIDEWALK DETAILS" SHEET.

(x) DENOTES RADIAL DIMENSION

(t) DENOTES DIMENSION PERPENDICULAR TO GIRDER OR LONG CHORD.

(*) TO MATCH #4 "D" BARS IN INTEGRAL END BENT

#4 "K" BARS (FRONT FACE)		
MARK	END BENT	
	NO. 1	NO. 2
(10)	#K207	#K211
(11)	#K208	#K212
(12)	#K209	#K213
(13)	#K210	#K214
(14)	#K215	#K220
(15)	#K216	#K221
(16)	#K217	#K222
(17)	#K218	#K223
(18)	#4K219 E.F.	#4K224 E.F.

E.F. DENOTES EACH FACE

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
TYPICAL SECTION**

REVISIONS						SHEET NO. S02-09
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

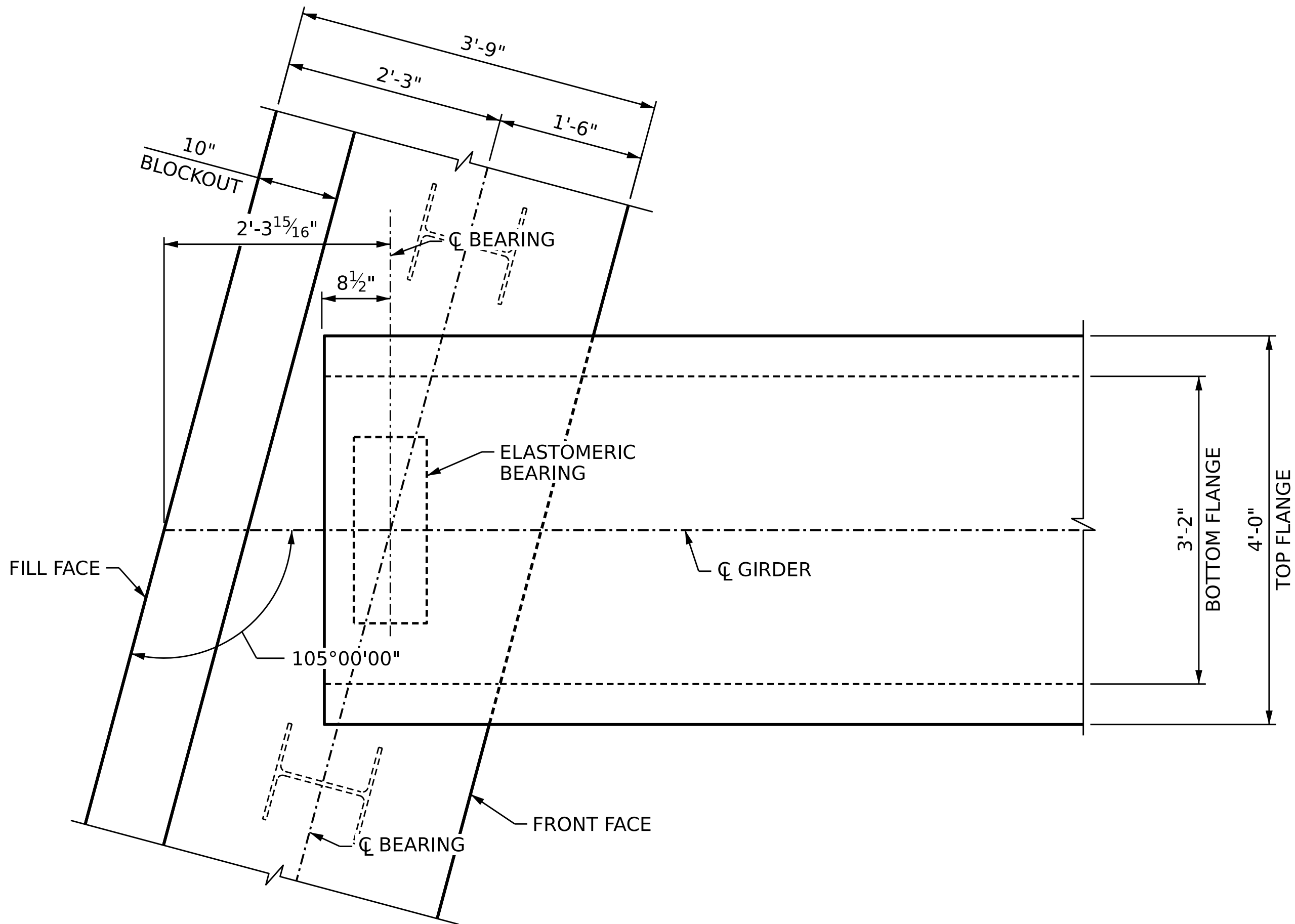


Gregory E. Myers 01/25/2025

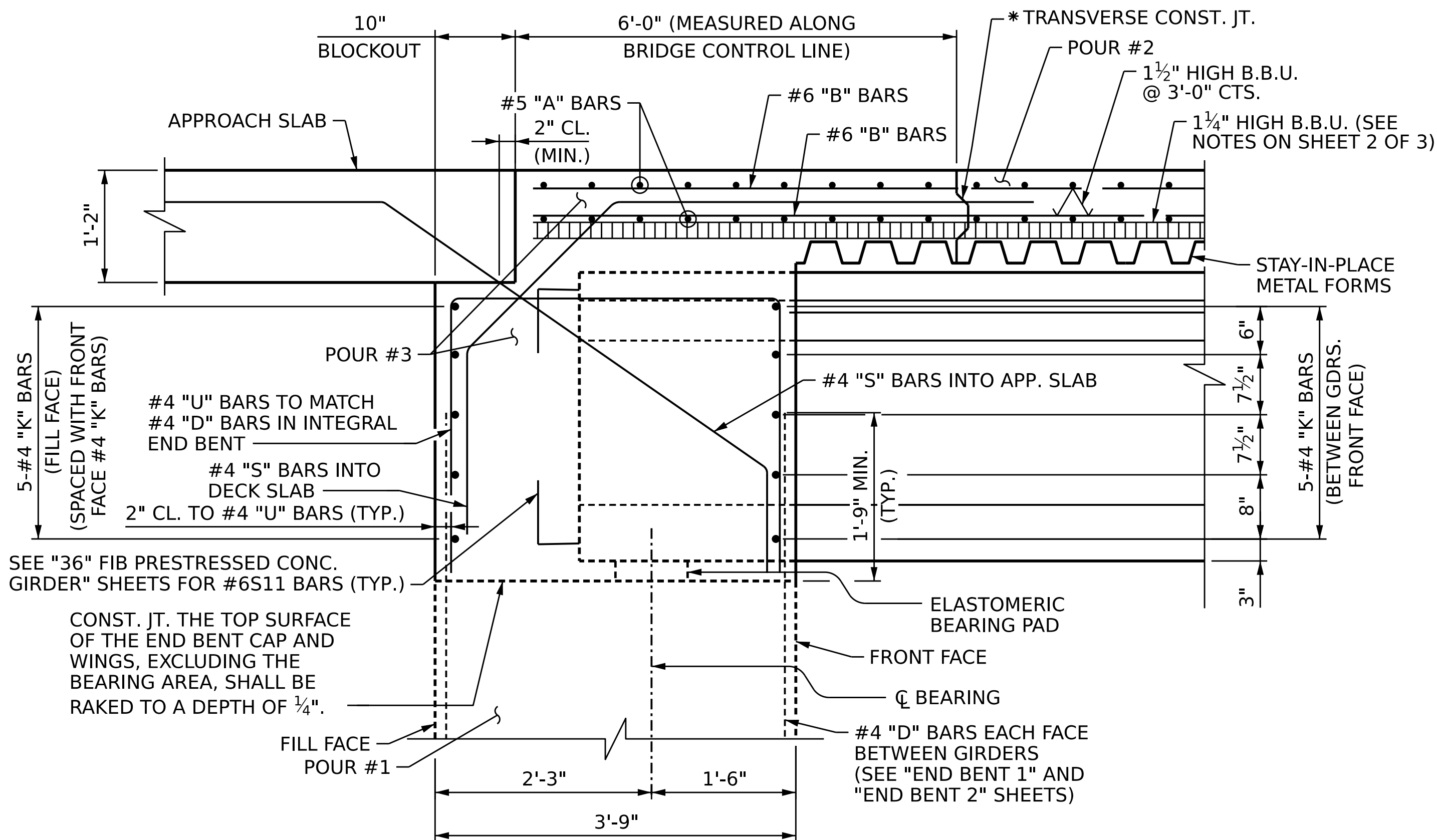
DES BY: J. PATT DATE : 12/24
DES CHK: A. PANDOLI DATE : 01/25
DWG BY: B. PETERSON DATE : 01/25
CHK BY: K. DICKENS DATE : 03/25

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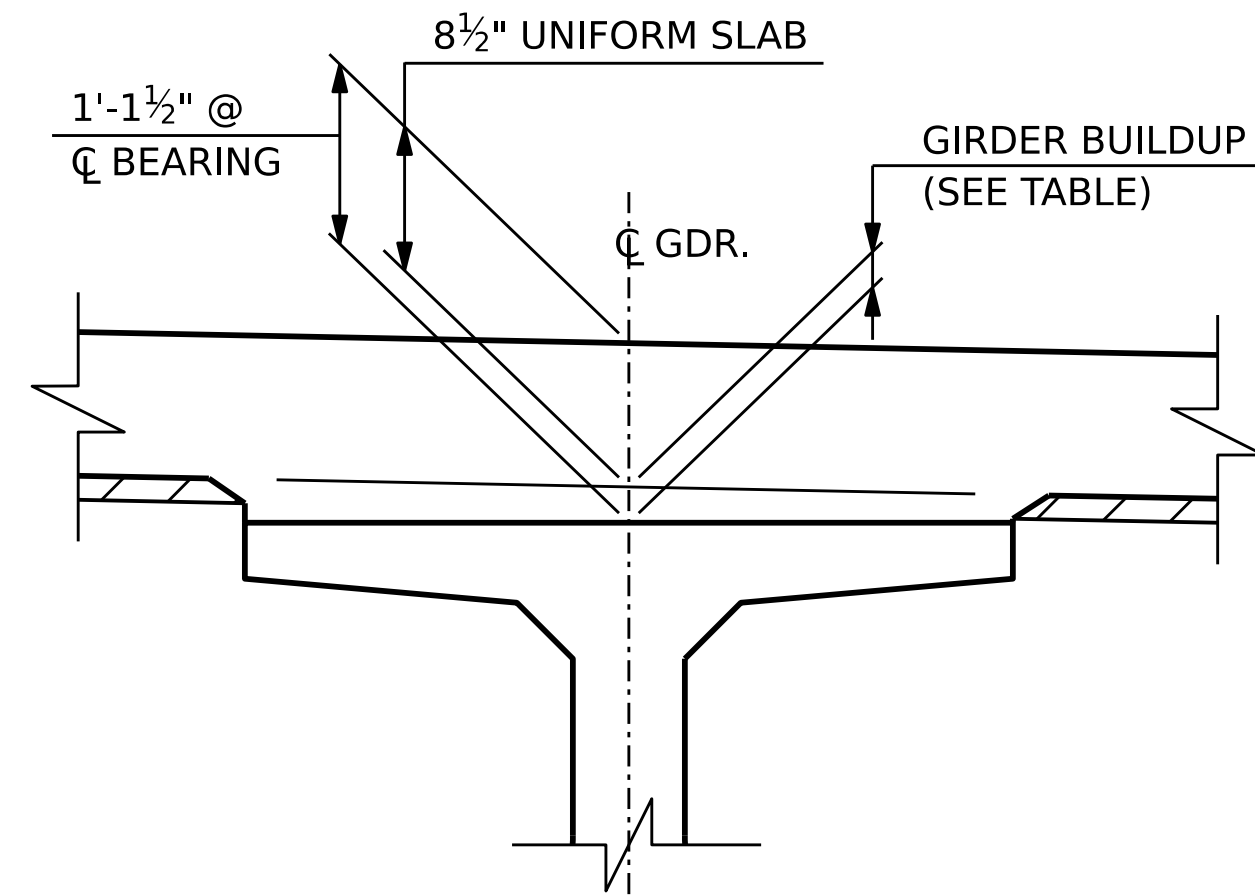


PLAN OF GIRDER AT END BENT



SECTION A-A

* FOR CONSTRUCTION JOINT DETAIL, SEE
"SUPERSTRUCTURE BILL OF MATERIALS"
SHEET 1 OF 2.



DETAIL "A"

GIRDER BUILDUP		
	SPAN A	
	☐ BRG.	MIDSPAN ▲
GIRDERS 1 & 9	5"	4 ¹ / ₄ "
GIRDERS 2, 3, 6, 7, 8 & 10	5"	4 ¹ / ₈ "
GIRDER 4	5"	4"
GIRDER 5	5"	4"

▲ = MAXIMUM BUILDUP BASED ON PREDICTED FINAL CAMBER
AND THEORETICAL GRADE LINE ELEVATIONS.

PROJECT NO. R-5600

JACKSON COUNTY

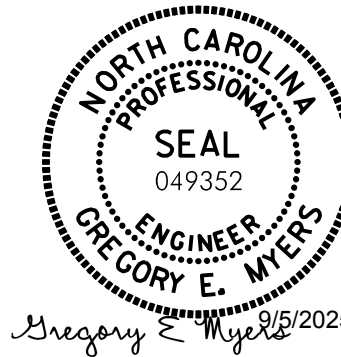
STATION: 27+24.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE TYPICAL SECTION DETAILS

REVISIONS						SHEET NO. S02-10
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

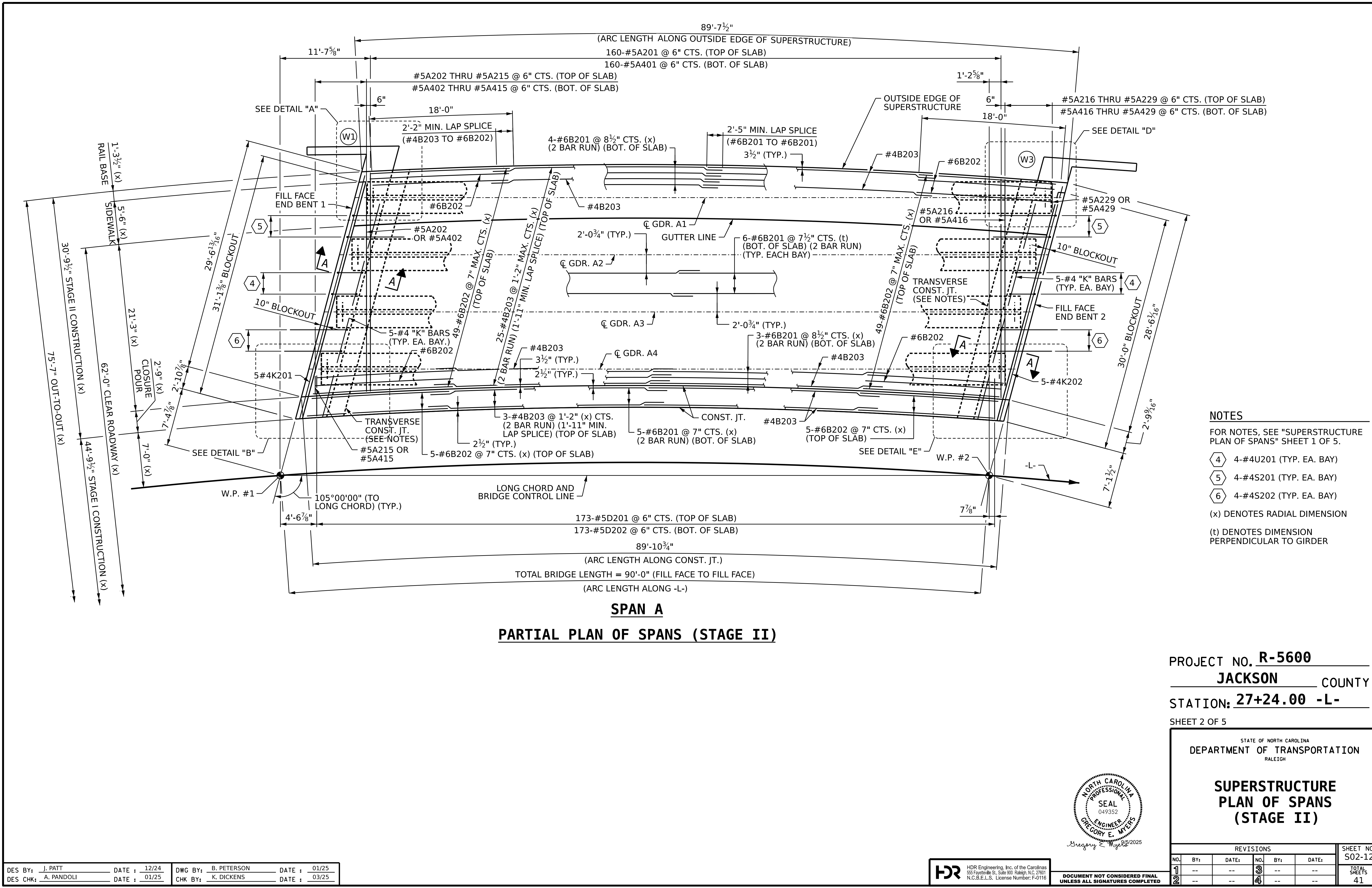


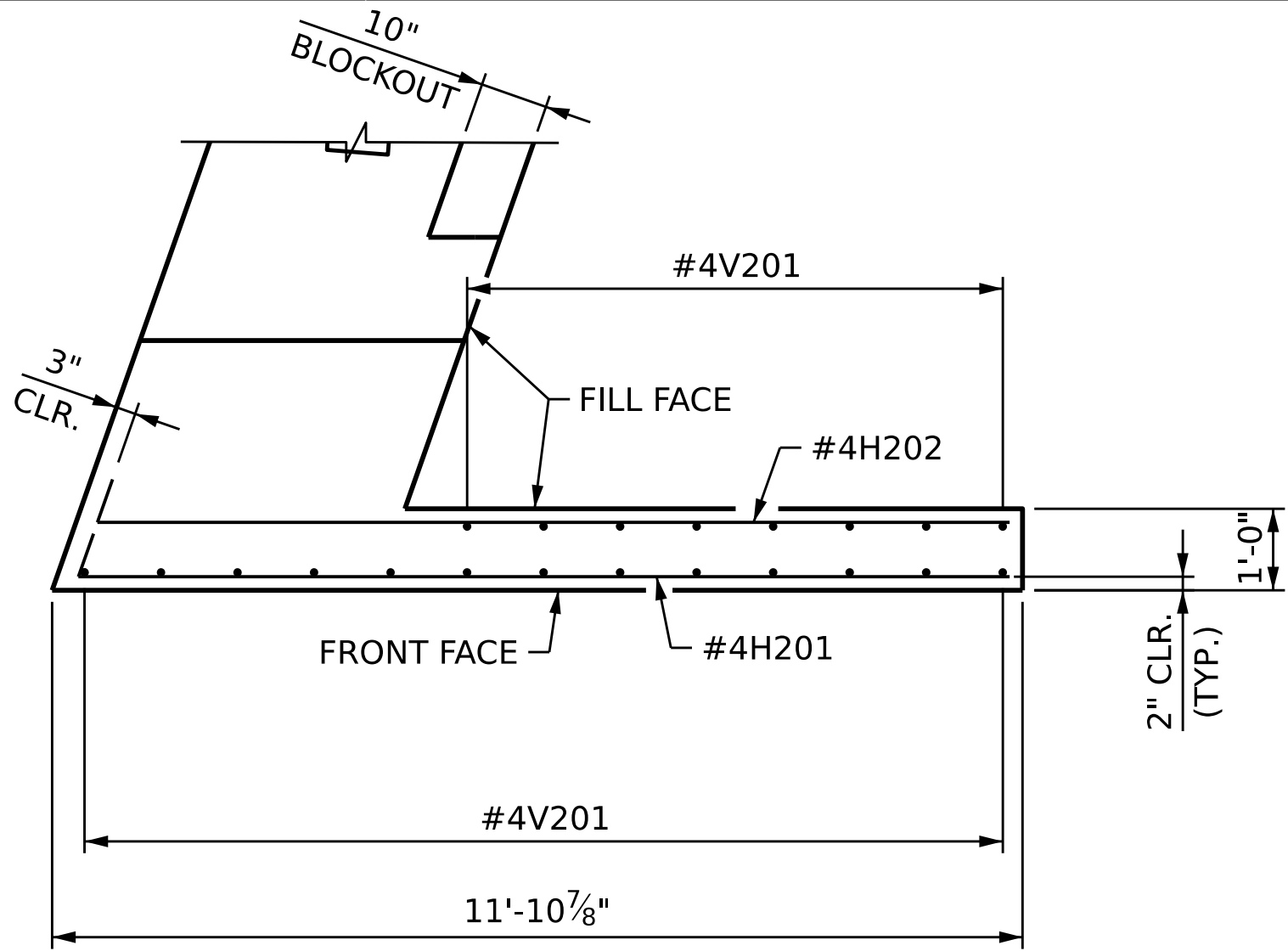
Gregory E Myers 9/5/202



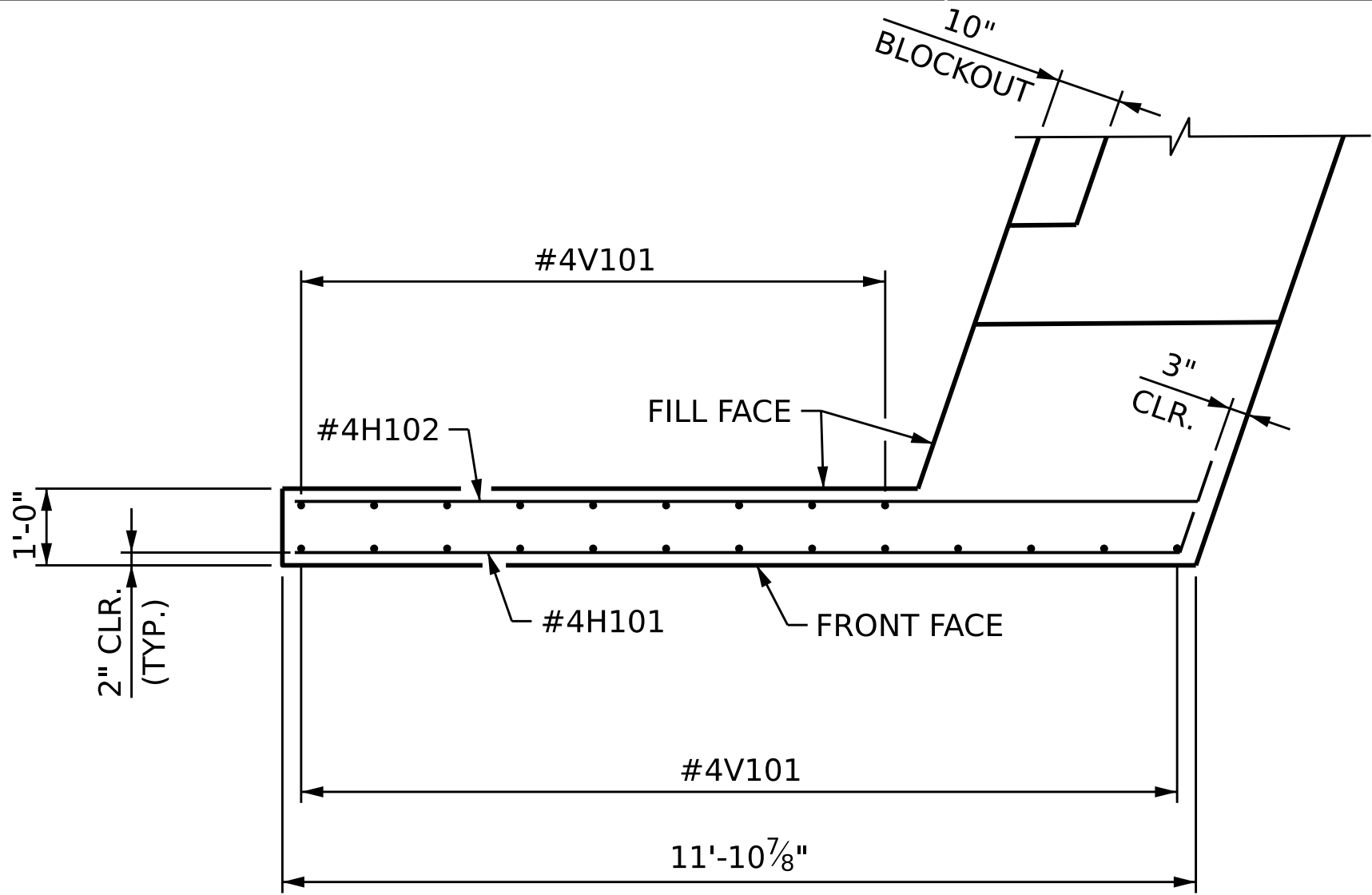
**DOCUMENT NOT CONSIDERED FINAL
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**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETE**

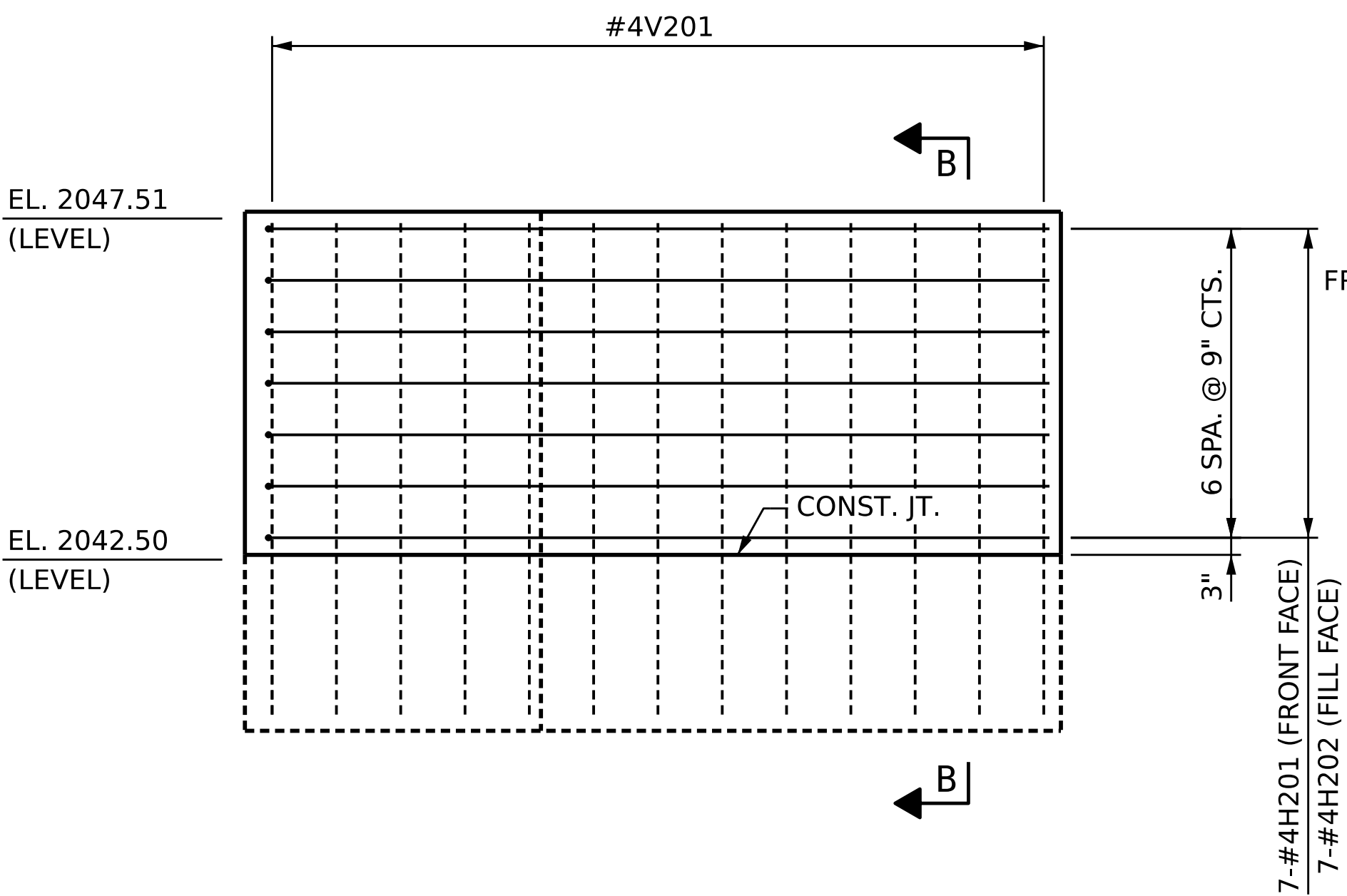




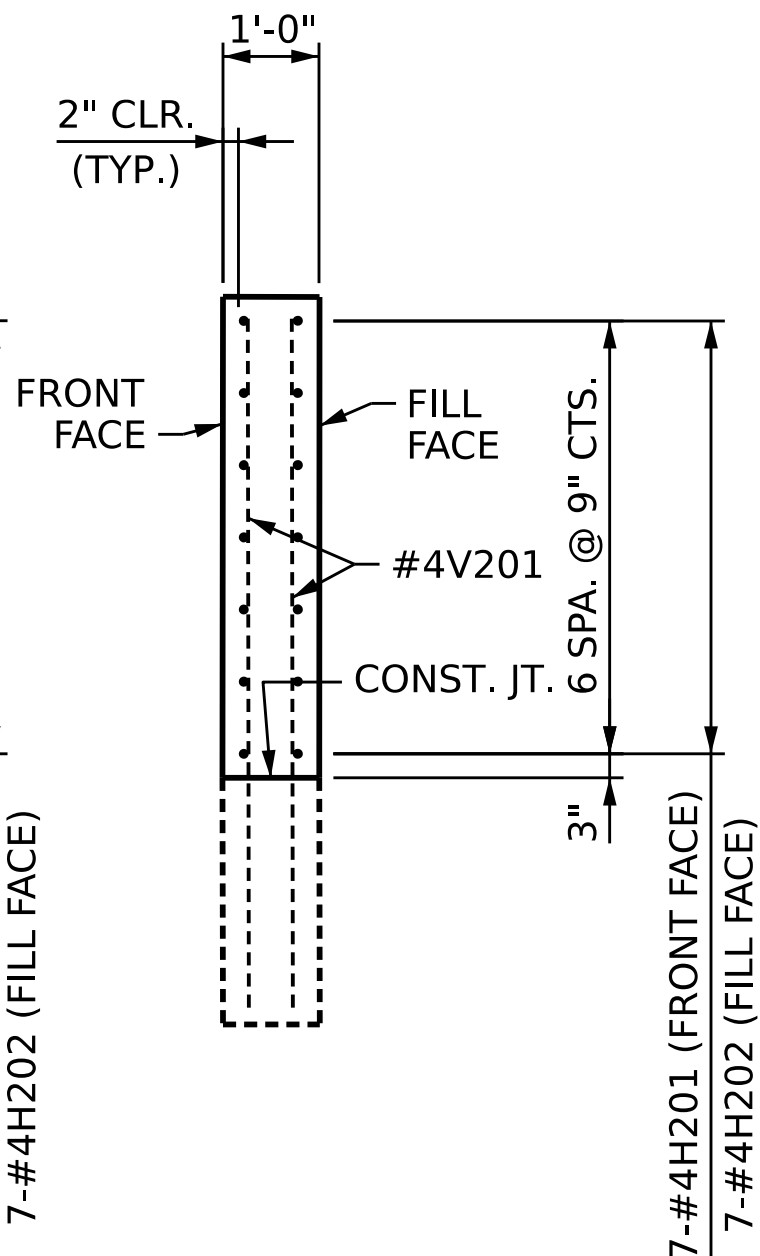
PLAN - WINGWALL "W1"
"D" BARS IN END BENT NOT SHOWN FOR CLARITY



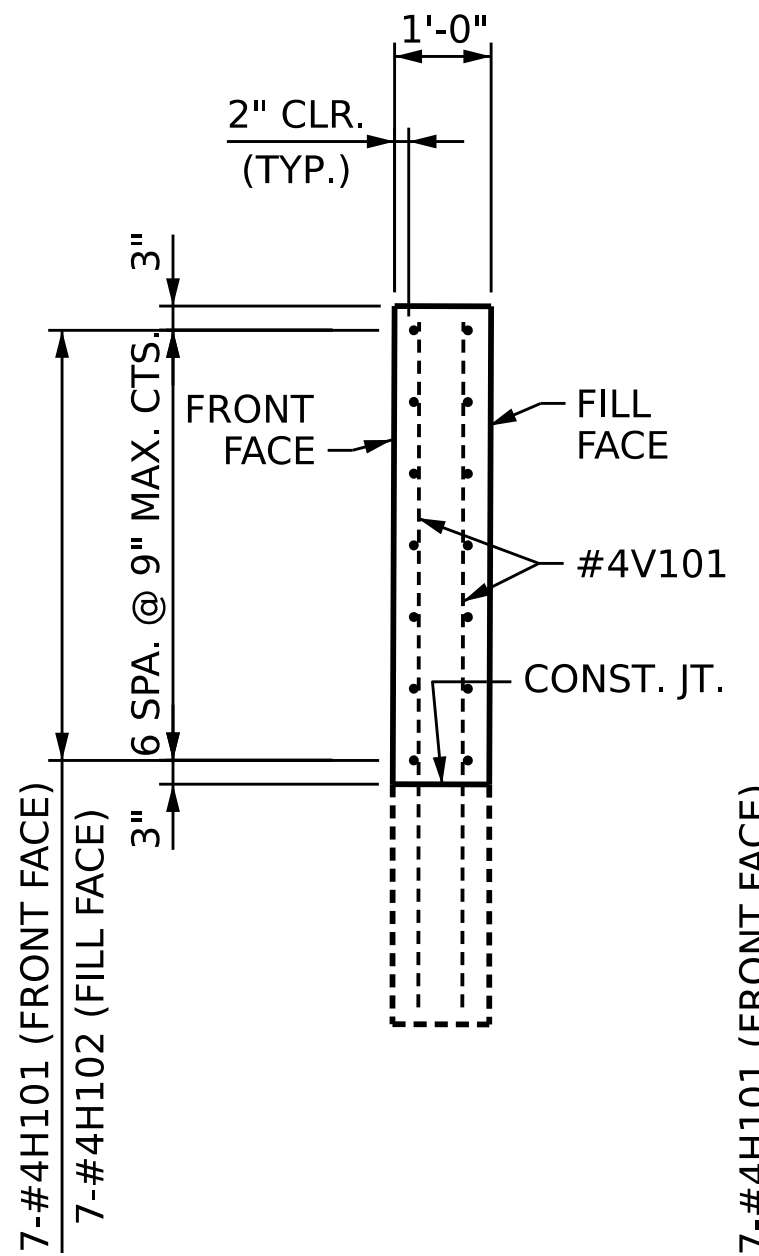
PLAN - WINGWALL "W2"
"D" BARS IN END BENT NOT SHOWN FOR CLARITY



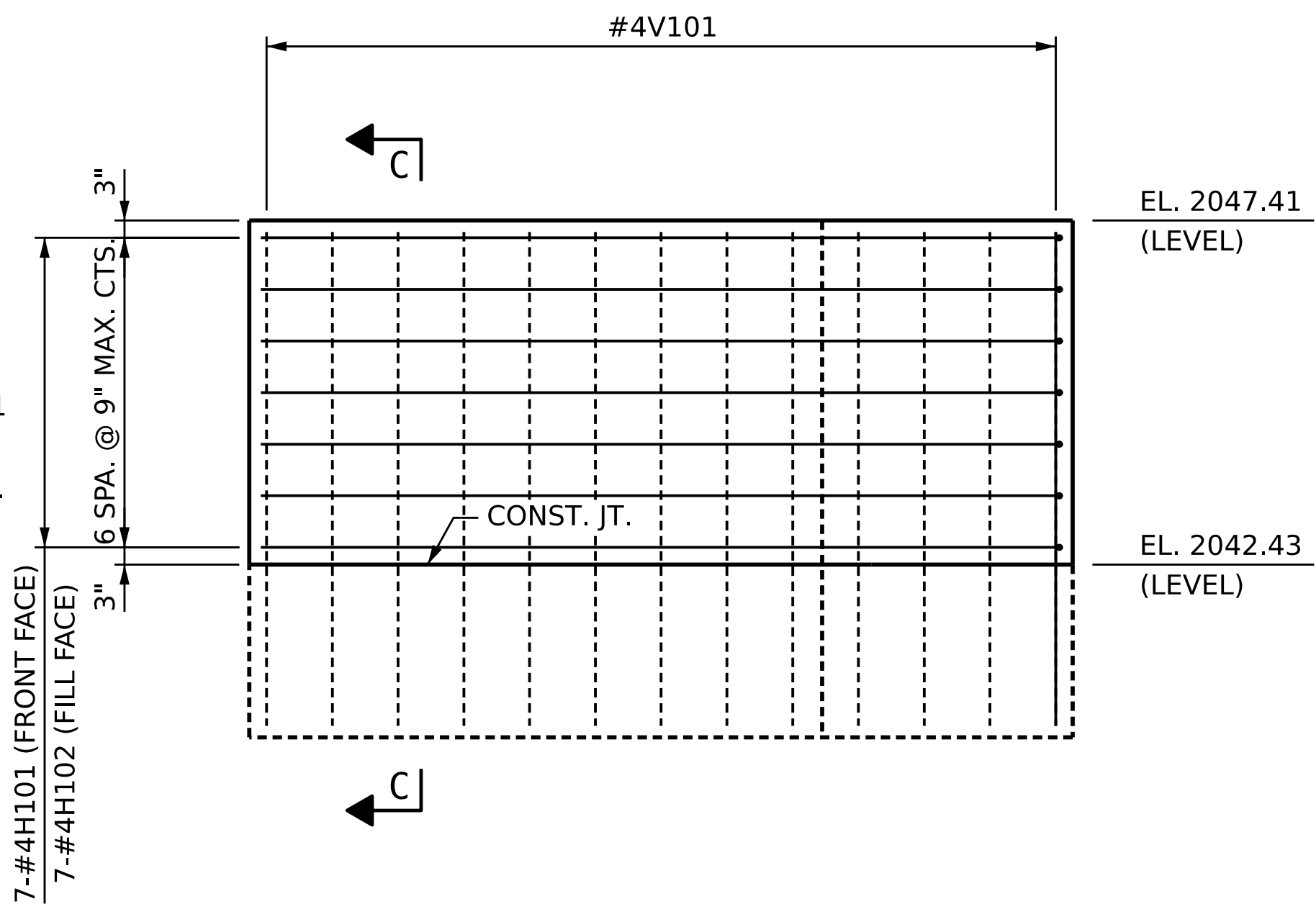
ELEVATION - WINGWALL "W1"



SECTION B-B



SECTION C-C



ELEVATION - WINGWALL "W2"

UPPER WINGWALLS AT END BENT 1

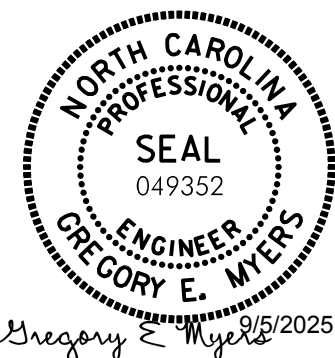
(FOR LOWER PART OF WINGWALL DETAILS AND REINFORCING STEEL, INCLUDING #4 "V" BARS, SEE "SUBSTRUCTURE END BENT 1 WINGWALLS" SHEET.)

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 4 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

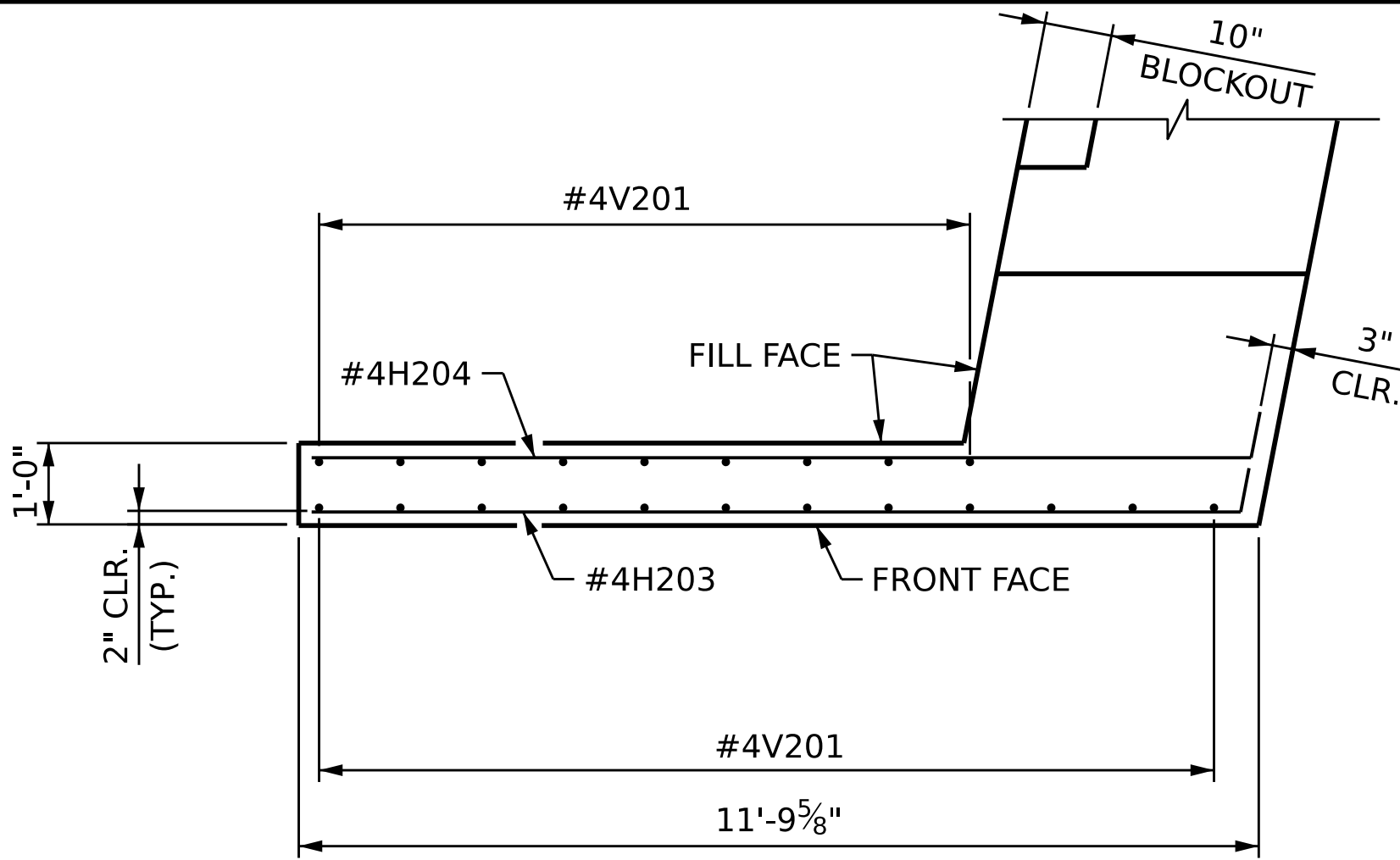
SUPERSTRUCTURE PLAN OF SPANS DETAILS

REVISIONS						SHEET NO. S02-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

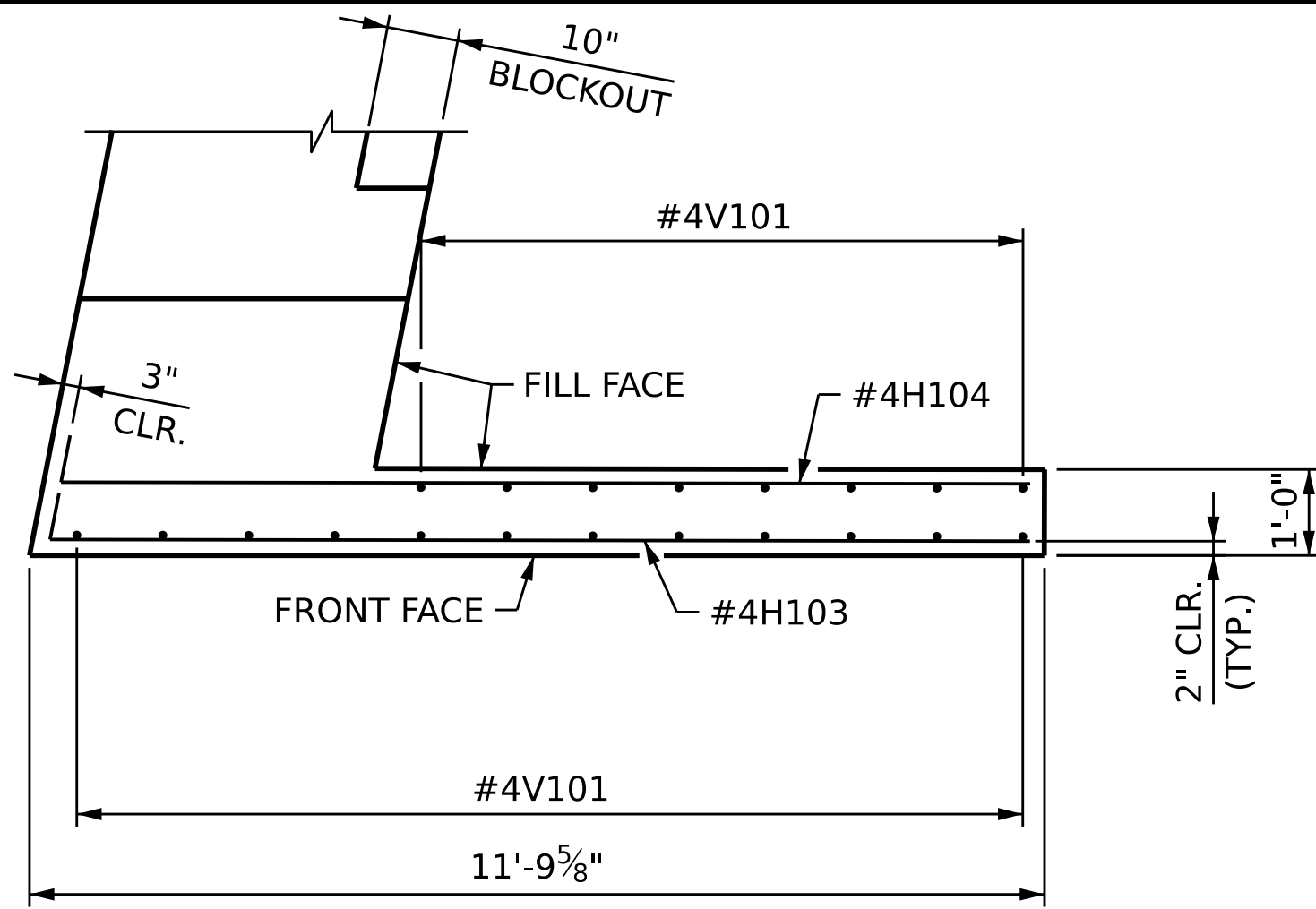
DES BY: J. PATT	DATE : 04/25	DWG BY: B. PETERSON	DATE : 03/25
DES CHK: K. DICKENS	DATE : 04/25	CHK BY: G. MYERS	DATE : 04/25

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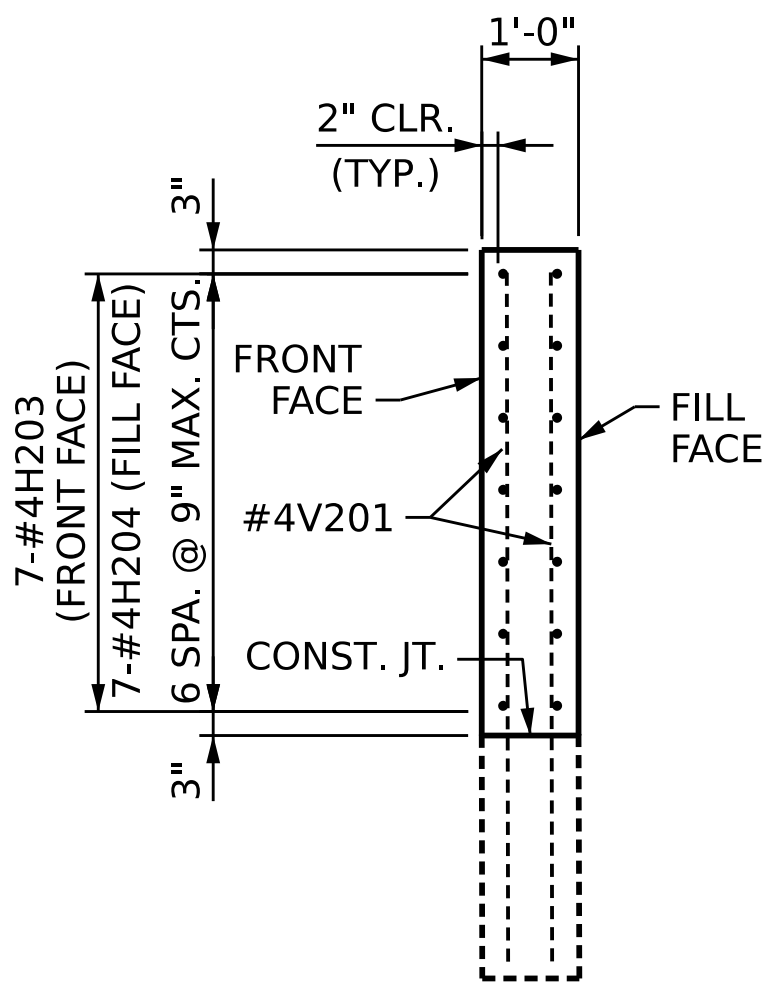
DOCUMENT NOT CONSIDERED FINAL
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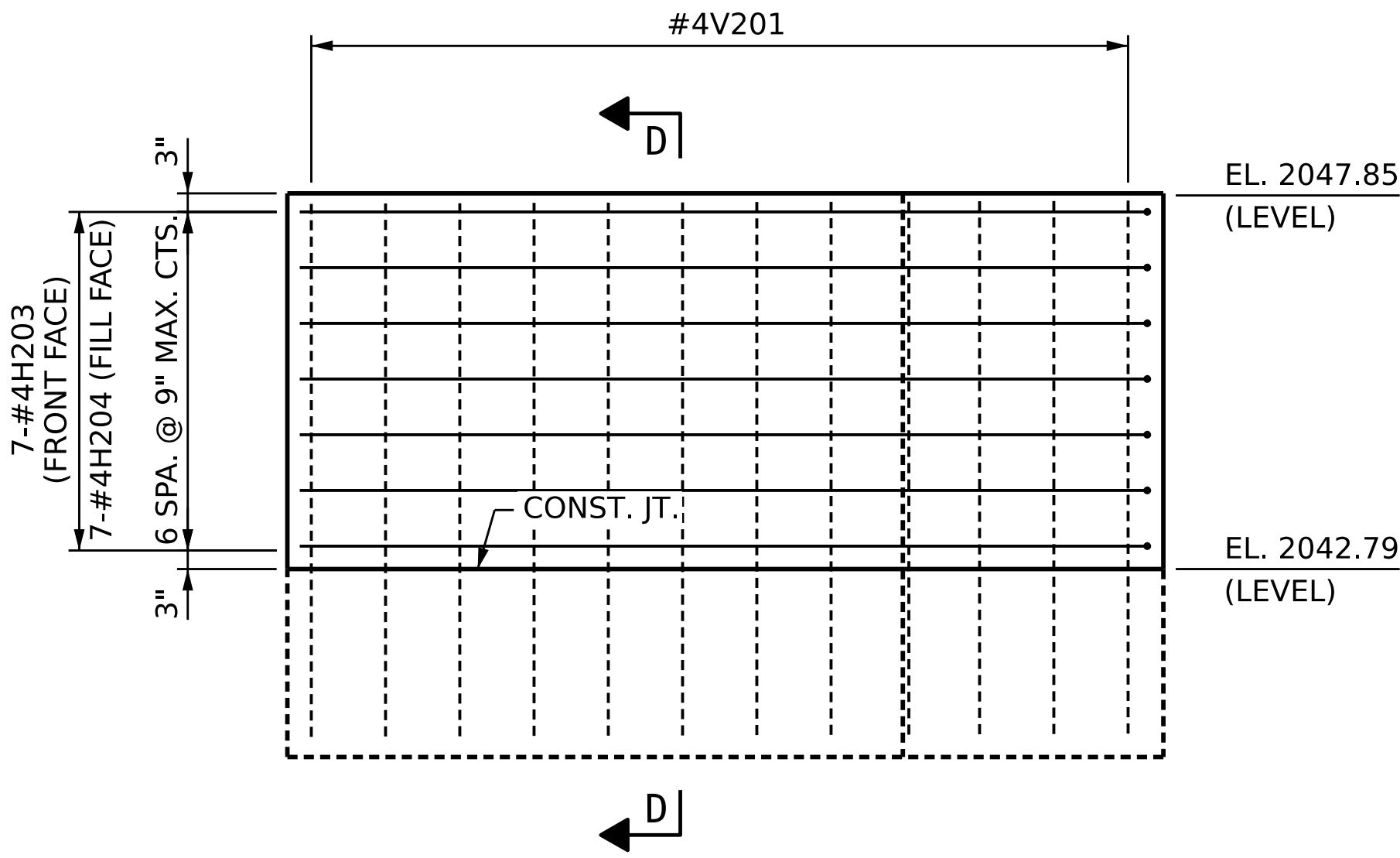
PLAN - WINGWALL "W3"
"D" BARS IN END BENT NOT SHOWN FOR CLARITY



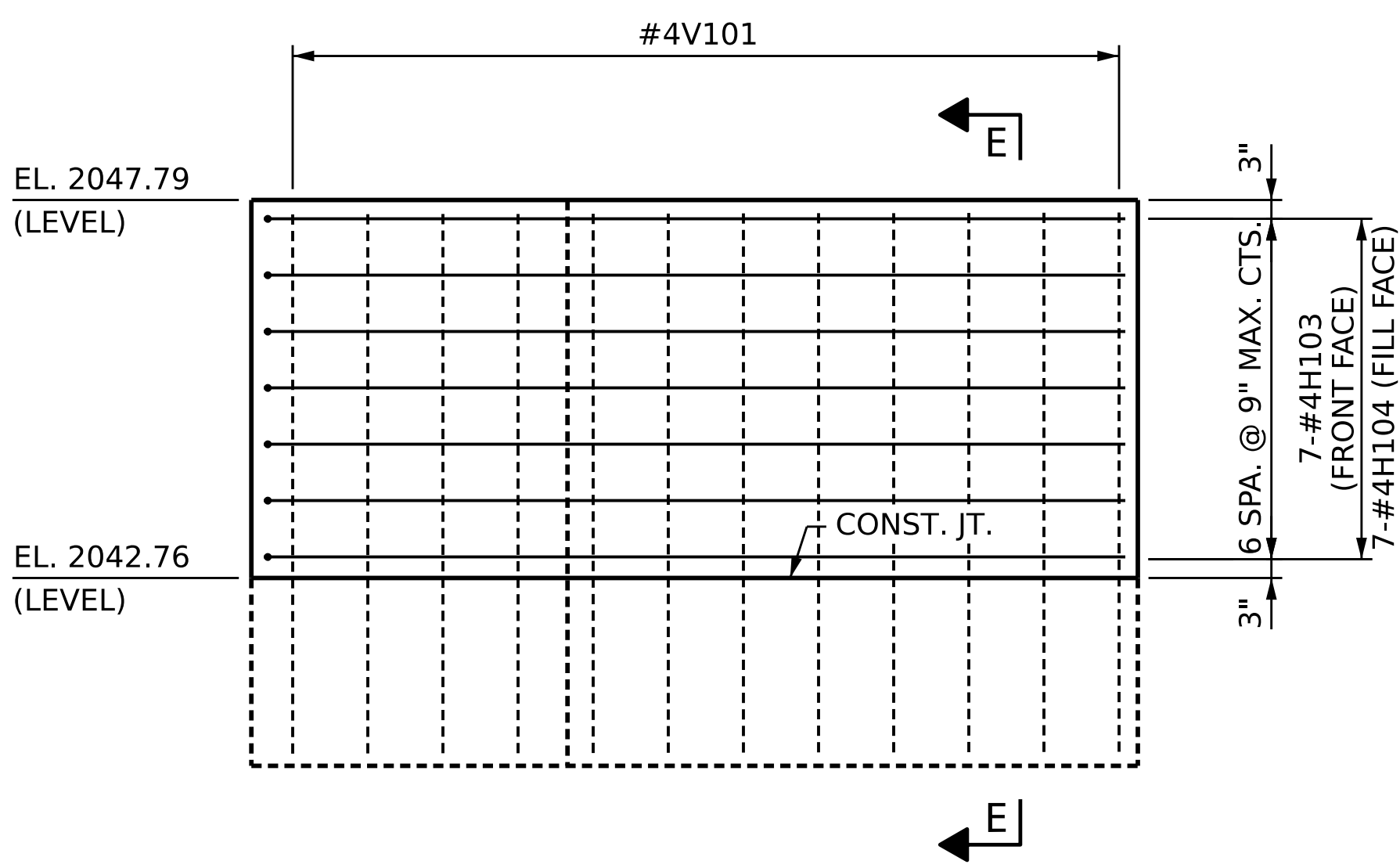
PLAN - WINGWALL "W4"
"D" BARS IN END BENT NOT SHOWN FOR CLARITY



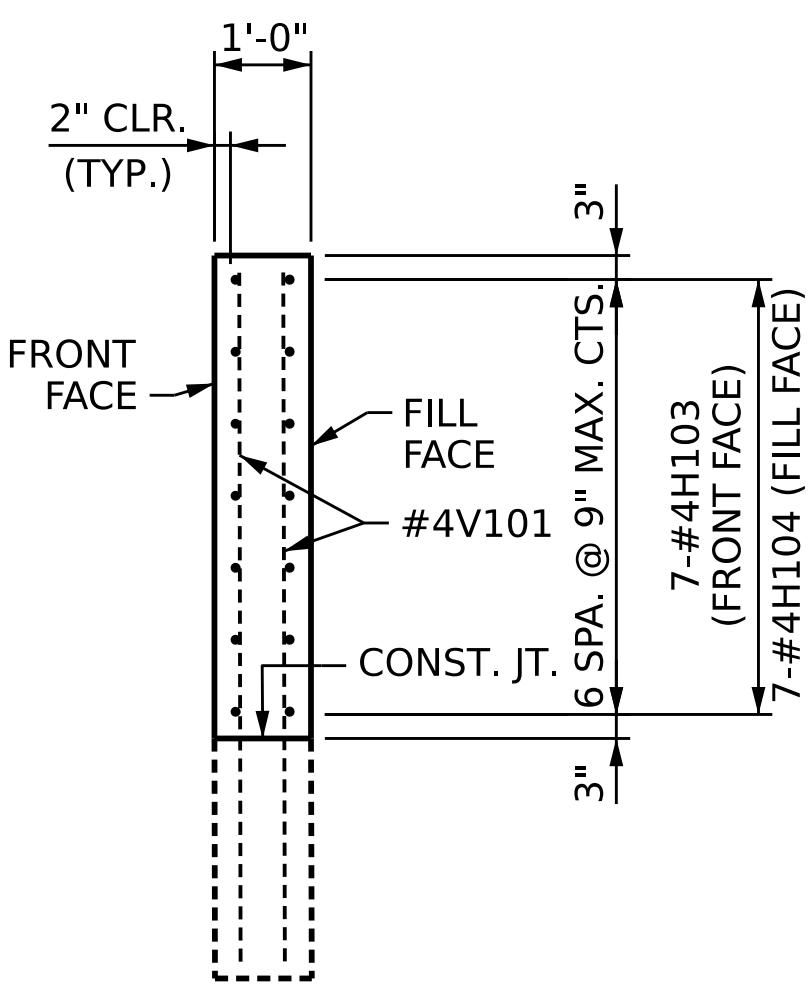
SECTION D-D



ELEVATION - WINGWALL "W3"



ELEVATION - WINGWALL "W4"



SECTION E-E

UPPER WINGWALLS AT END BENT 2

(FOR LOWER PART OF WINGWALL DETAILS AND
REINFORCING STEEL, INCLUDING #4 "V" BARS, SEE
"SUBSTRUCTURE END BENT 2 WINGWALLS" SHEET.)

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 5 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

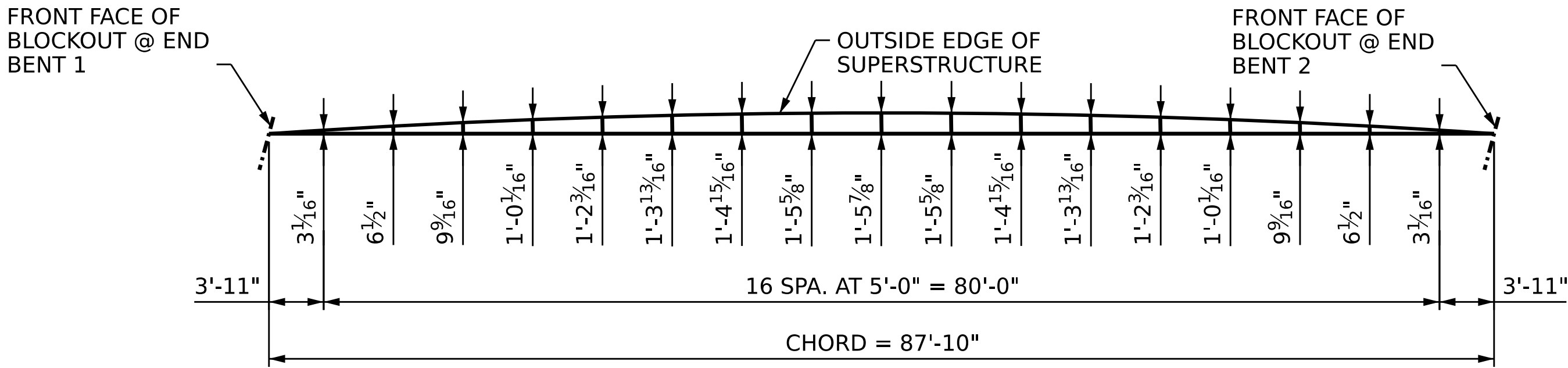
SUPERSTRUCTURE
PLAN OF SPANS
DETAILS

REVISIONS						SHEET NO. S02-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

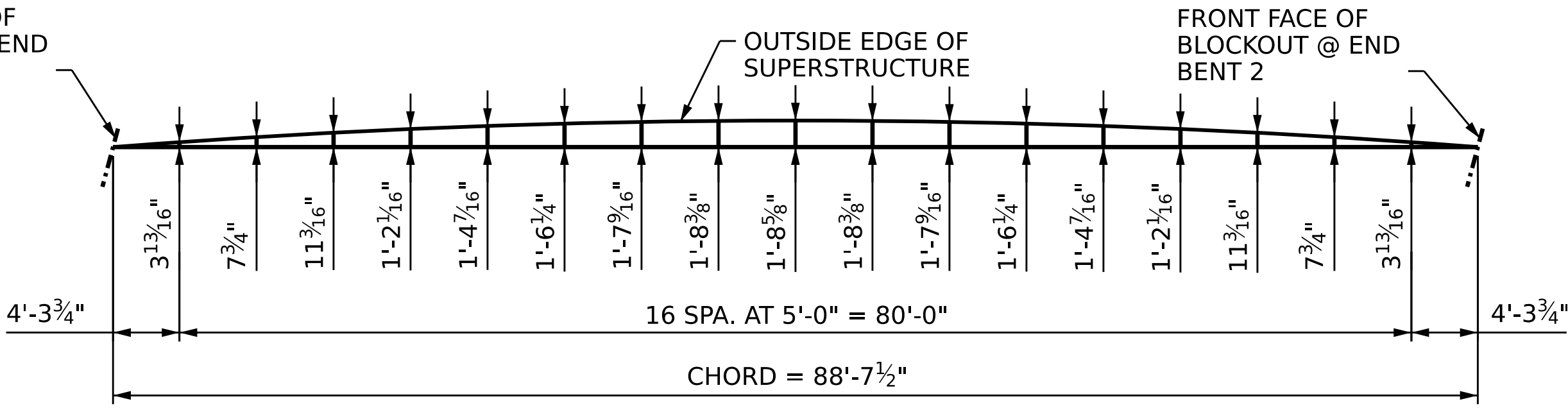
DES BY: J. PATT	DATE: 04/25	DWG BY: B. PETERSON	DATE: 03/25
DES CHK: K. DICKENS	DATE: 04/25	CHK BY: G. MYERS	DATE: 04/25



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

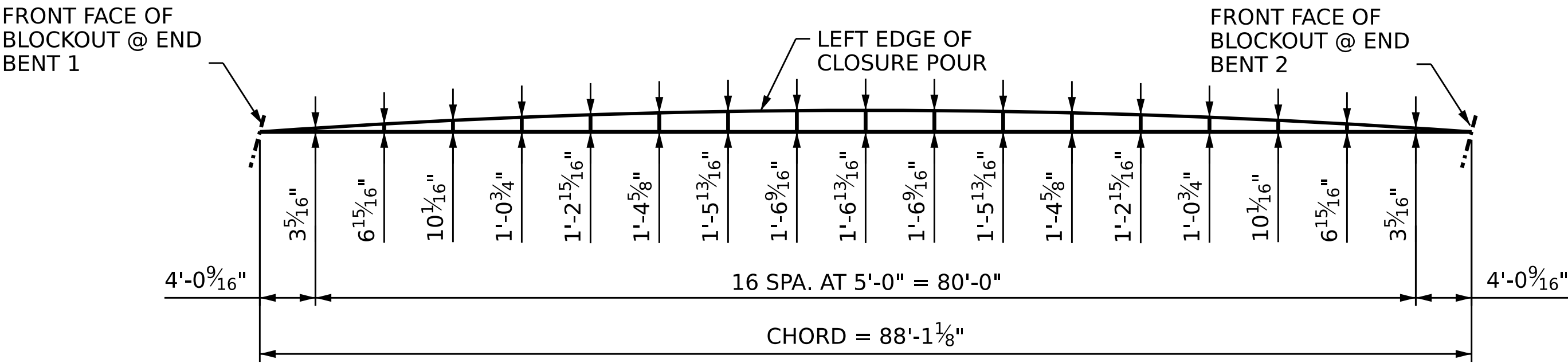


LEFT SIDE

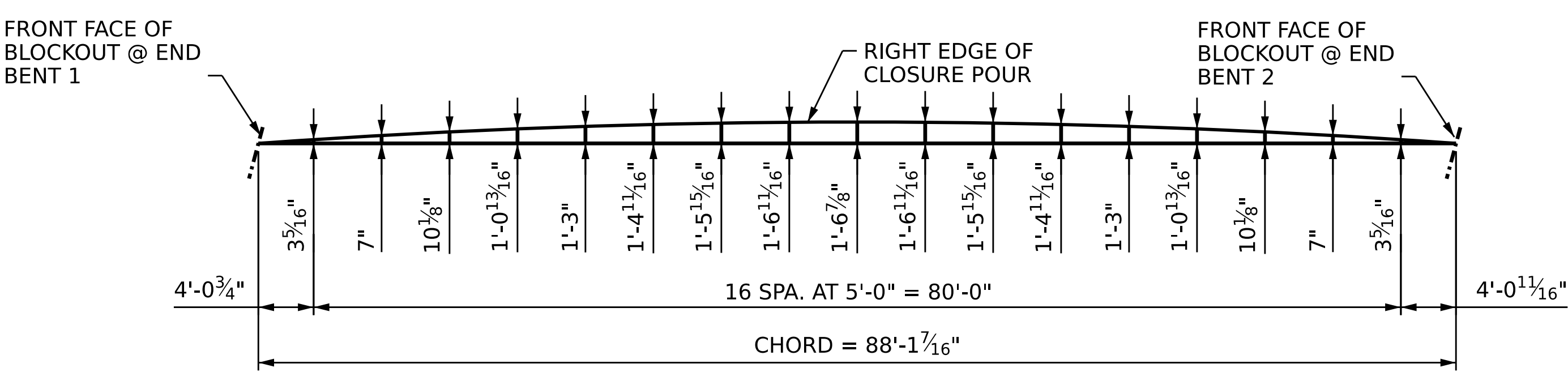


RIGHT SIDE

OUTSIDE OF DECK ARC OFFSETS



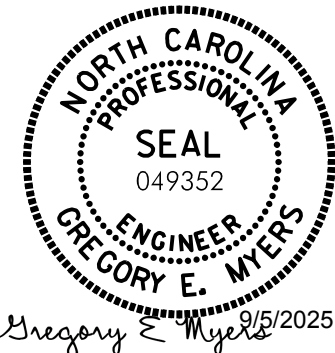
LEFT SIDE



RIGHT SIDE

OUTSIDE OF CLOSURE POUR ARC OFFSETS

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**



DES BY: <u>G. MYERS</u>	DATE : <u>04/25</u>	DWG BY: <u>D. CARTER</u>	DATE : <u>02/25</u>
DES CHK: <u>J. PATT</u>	DATE : <u>04/25</u>	CHK BY: <u>G. MYERS</u>	DATE : <u>04/25</u>

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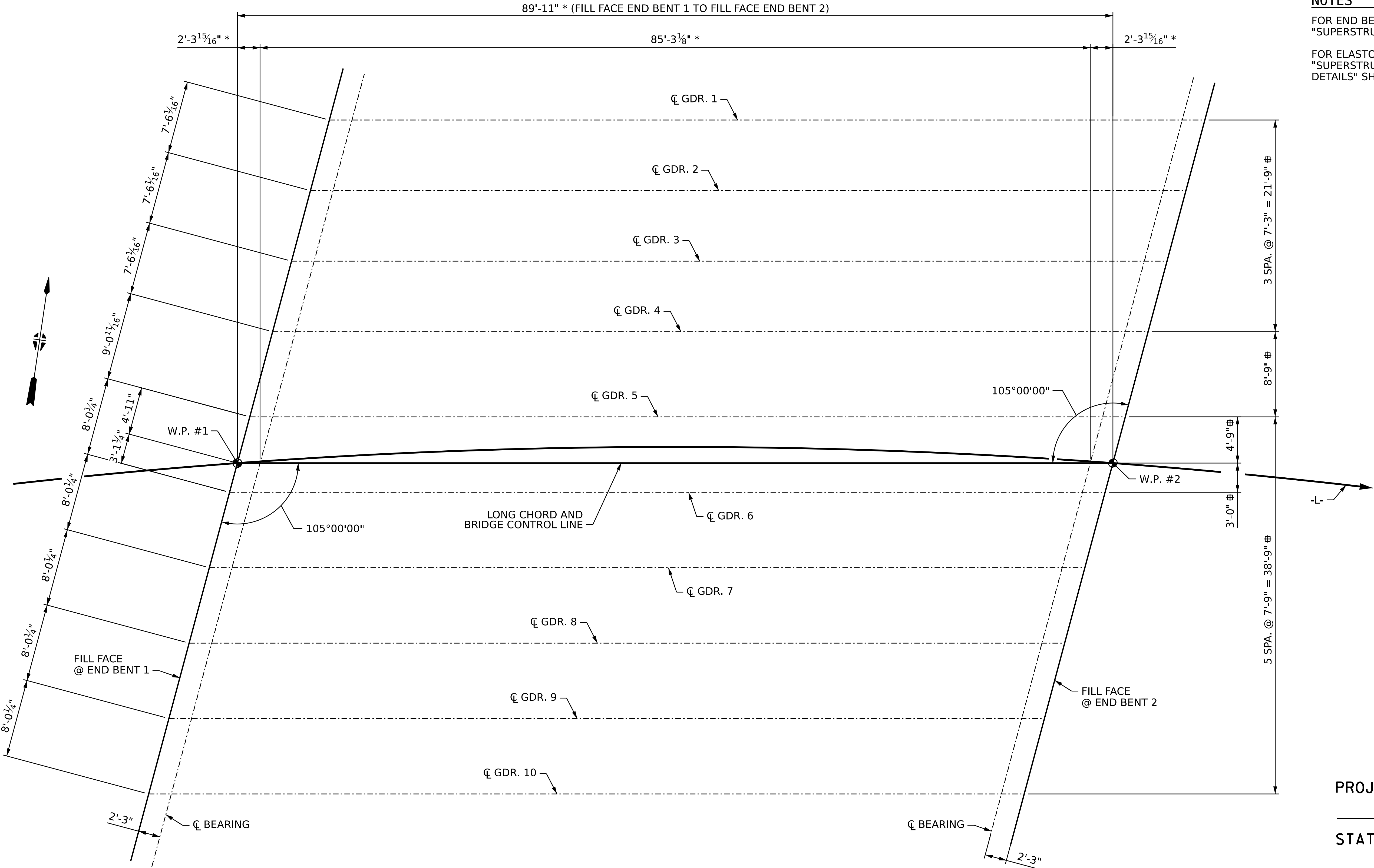
DOCUMENT NOT CONSIDERED FINAL
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REVISIONS						SHEET NO. S02-16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

NOTES

FOR END BENT DIAPHRAGM DETAILS, SEE "SUPERSTRUCTURE TYPICAL SECTION" SHEETS.

FOR ELASTOMERIC BEARING DETAILS, SEE "SUPERSTRUCTURE ELASTOMERIC BEARING DETAILS" SHEET.



FRAMING PLAN

(ALL GIRDERS ARE PARALLEL TO LONG CHORD)

- * MEASURED ALONG BRIDGE CONTROL LINE
- # MEASURED NORMAL TO BRIDGE CONTROL LINE

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
FRAMING PLAN

REVISIONS						SHEET NO. S02-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



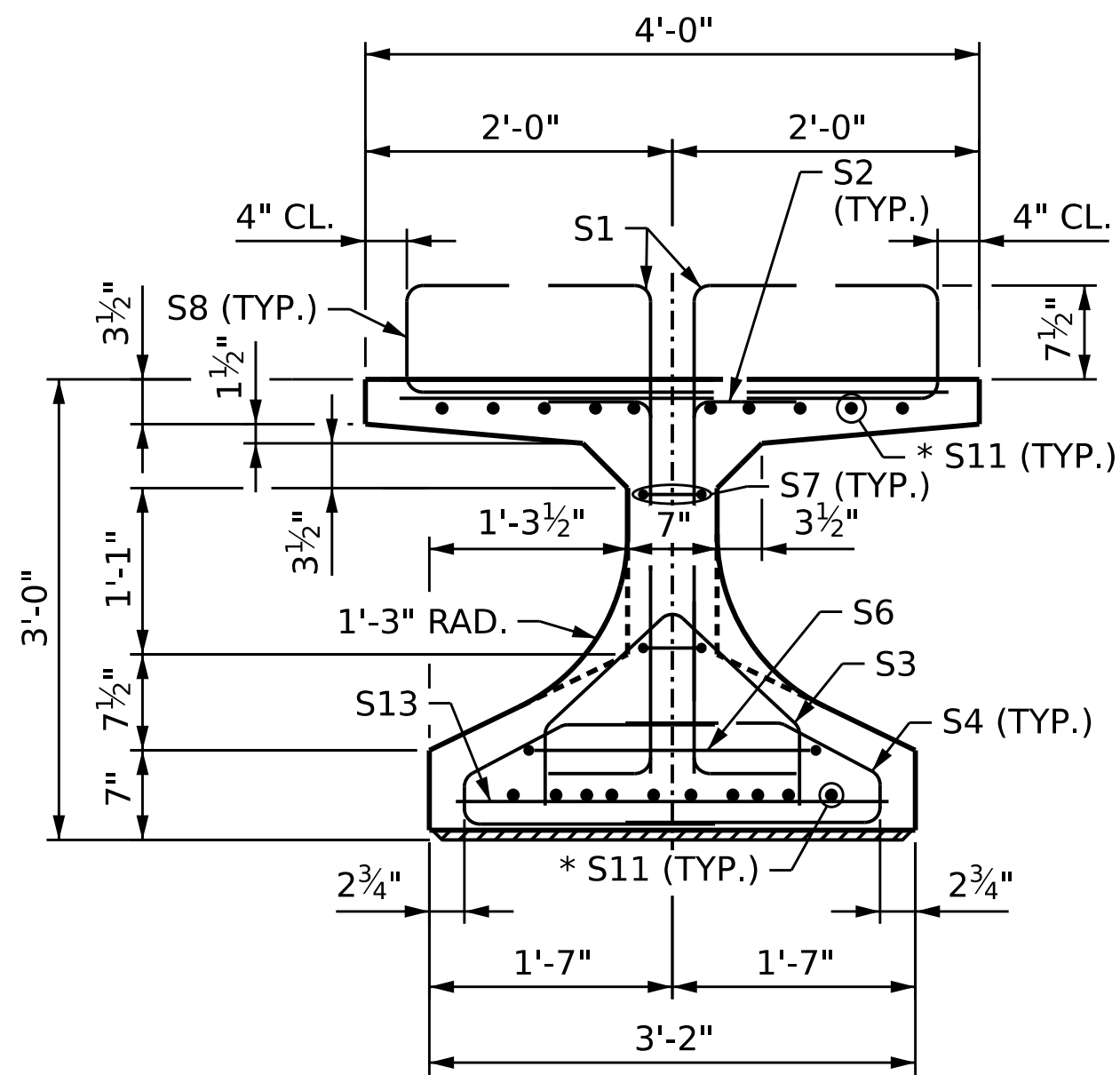
Gregory E. Myers 2/2025



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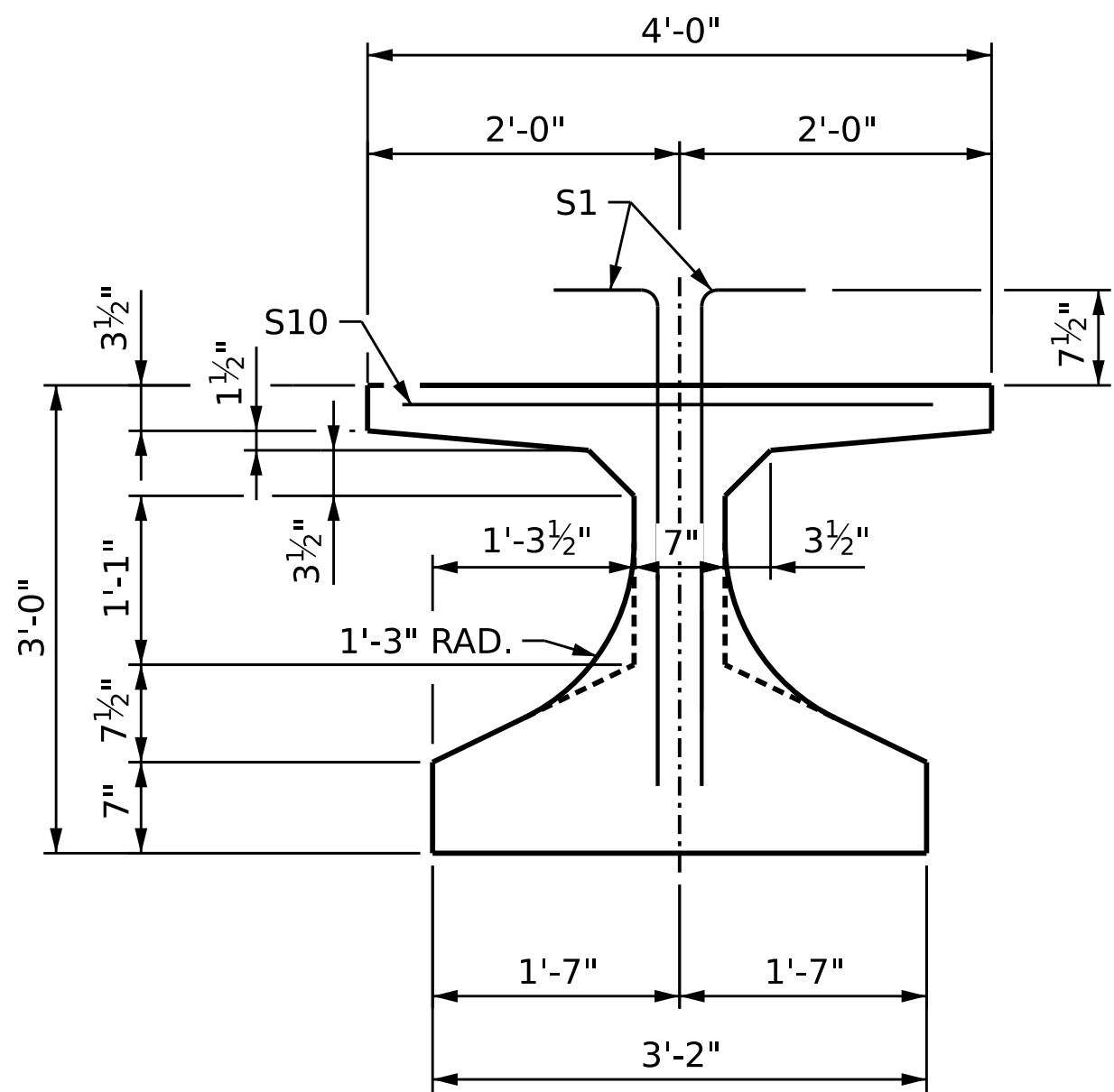
DOCUMENT NOT CONSIDERED FINAL
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DES BY: J. PATT	DATE : 01/25	DWG BY: B. PETERSON	DATE : 01/25
DES CHK: A. PANDOLI	DATE : 01/25	CHK BY: E. NOLTING	DATE : 02/25



SECTION A-A

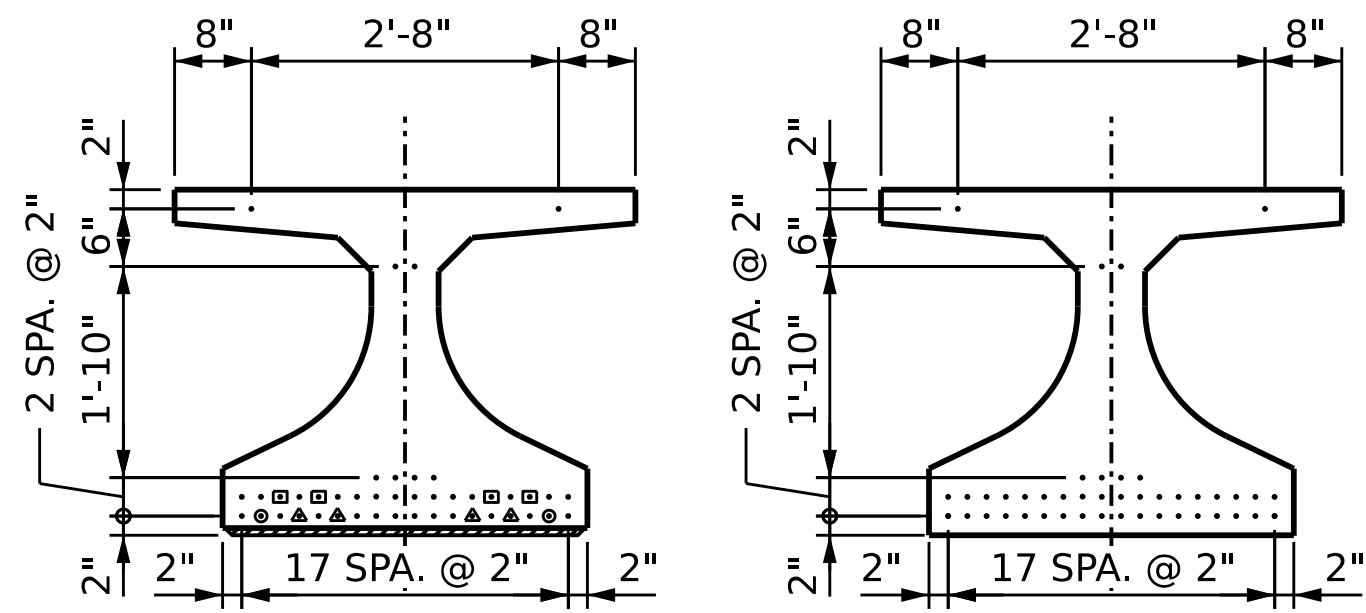
* FOR S11 BARS, SEE DETAIL "C" ON SHEET 2 OF 2.



SECTION B-B

DEBONDING LEGEND

- FULLY BONDED STRANDS
- STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 6'-0" FROM END OF GIRDER
- STRANDS DEBONDED FOR 10'-0" FROM END OF GIRDER



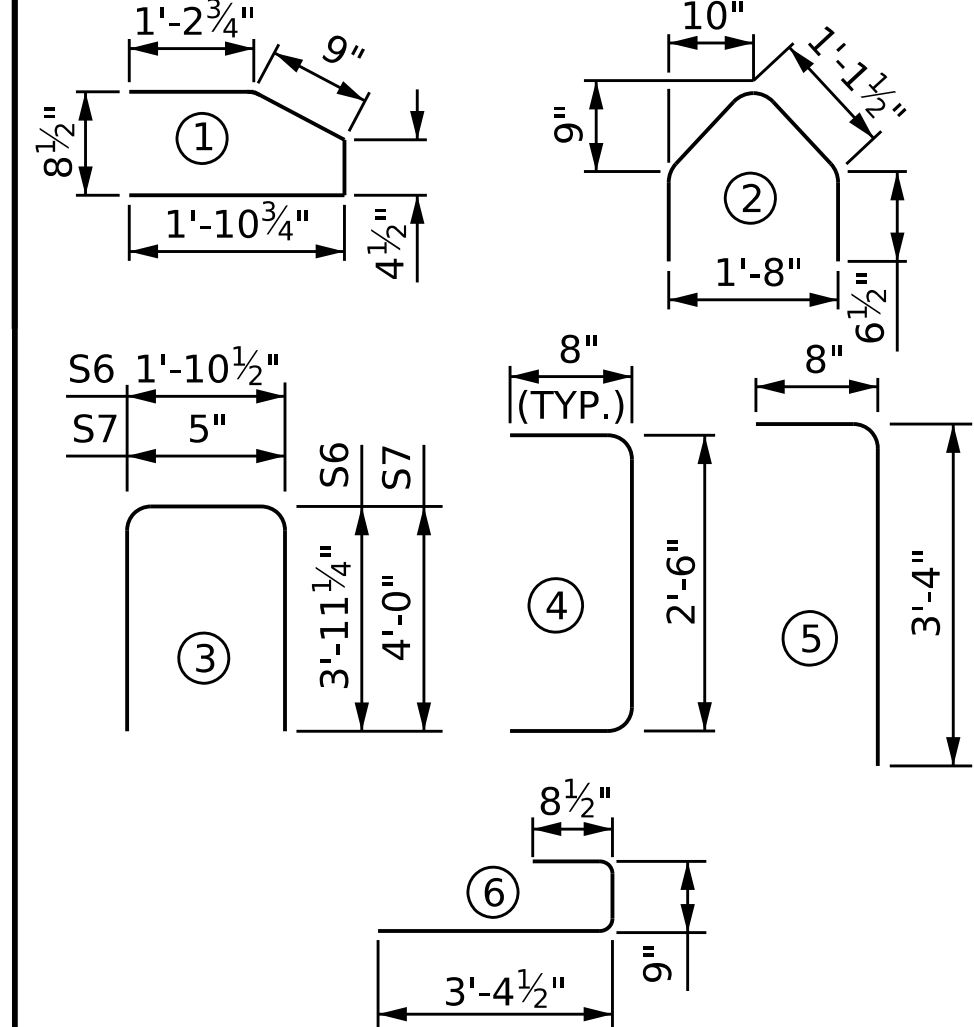
AT END OF GIRDER

AT C OF GIRDER

0.6" Ø LOW RELAXATION STRAND LAYOUT

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	186	#5	5	4'-0"	776
S2	32	#5	4	3'-10"	128
S3	26	#3	2	3'-4"	33
S4	52	#3	1	4'-3"	84
S6	2	#5	3	9'-9"	21
S7	4	#4	3	8'-5"	23
S8	186	#5	6	4'-10"	938
S10	20	#5	STR	3'-8"	77
* S11	40	#6	STR	4'-8"	281
S13	2	#3	STR	2'-10"	3

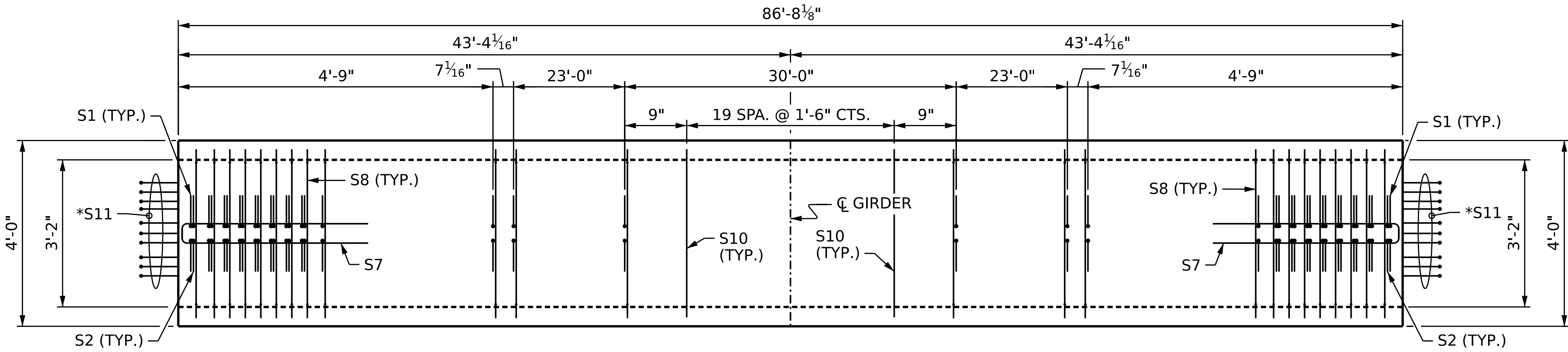
BAR TYPES



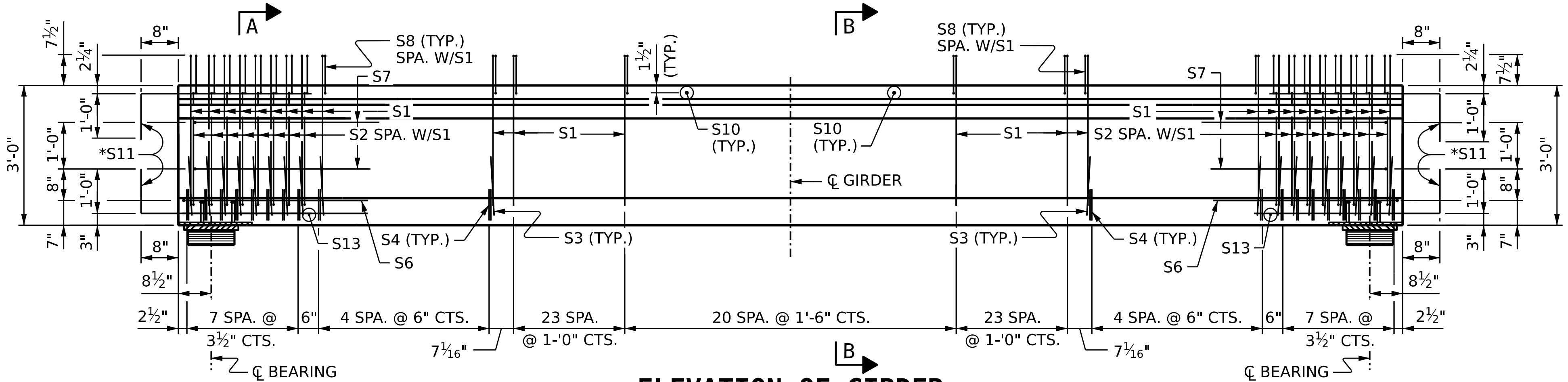
ALL BAR DIMENSIONS ARE OUT-TO-OUT

QUANTITIES FOR ONE GIRDER

REINFORCING STEEL	9,000 PSI CONCRETE	0.6" Ø L.R. STRANDS
LB.	C.Y.	No.
2,364	18.0	44
GIRDERS REQUIRED		
NUMBER	LENGTH	TOTAL LENGTH
10	86'-8 1/8"	866'-9 1/4"



PLAN OF GIRDER



ELEVATION OF GIRDER

* NOTE:

S11 BARS SHALL BE BENT BEFORE SHIPMENT. HEAT BENDING SHALL NOT BE ALLOWED.



DES BY: J. PATT	DATE: 01/25	DWG BY: B. PETERSON	DATE: 01/25
DES CHK: A. RANDOLI	DATE: 01/25	CHK BY: G. MYERS	DATE: 03/25



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PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**
SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

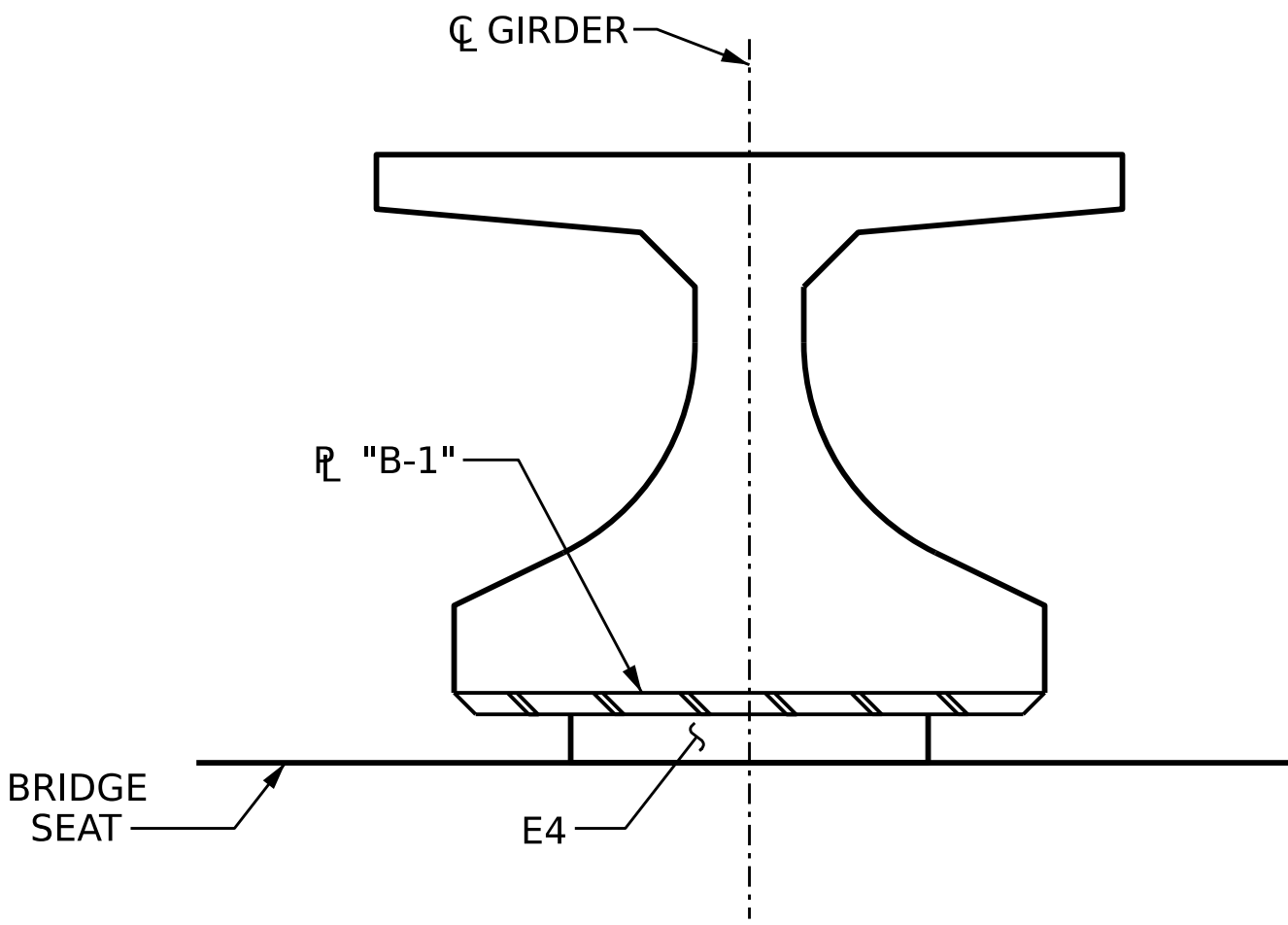
SUPERSTRUCTURE
36" FIB PRESTRESSED
CONC. GIRDER

REVISIONS						SHEET NO. S02-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	41

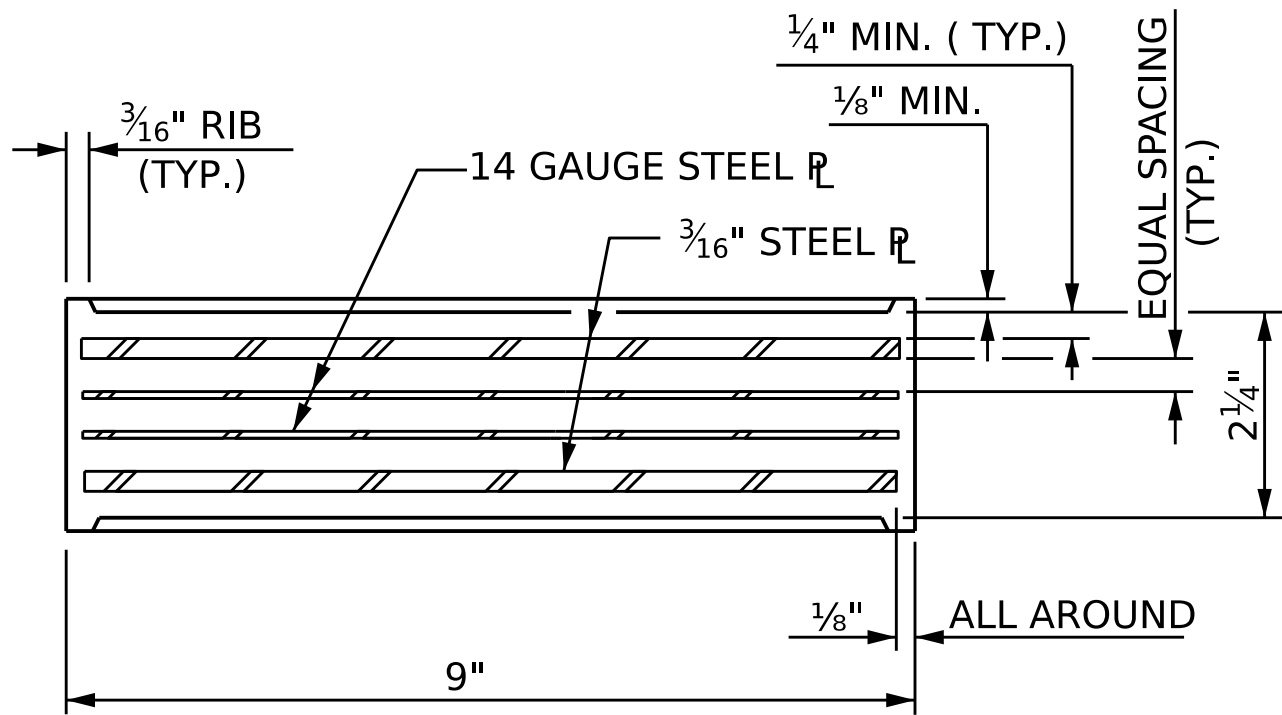
NOTES

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

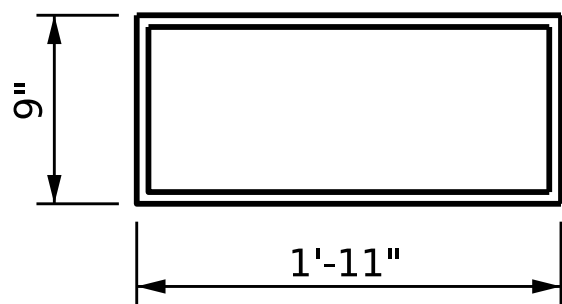
FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.



SECTION E-E



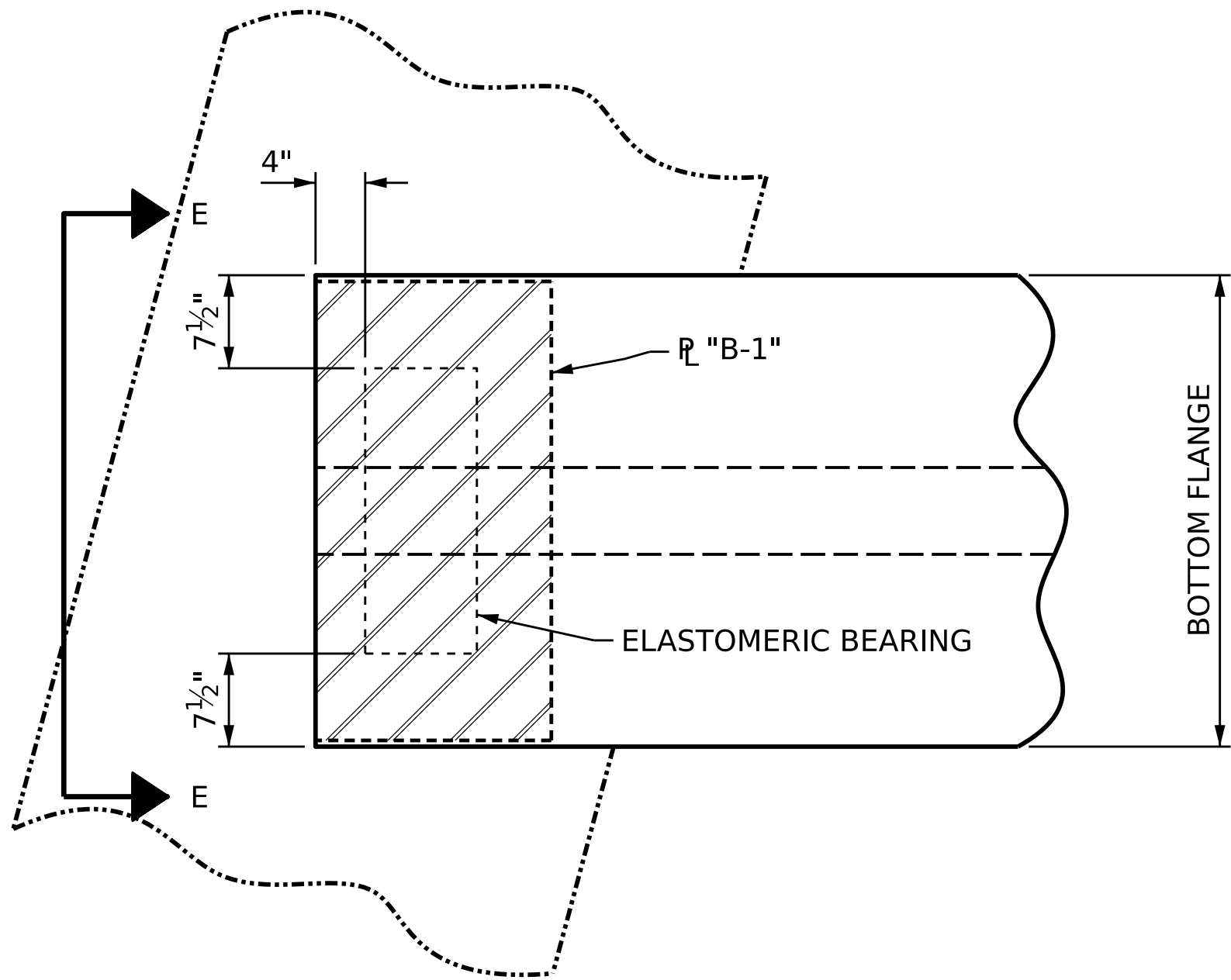
TYPICAL SECTION OF ELASTOMERIC BEARINGS



E4 (20 REQ'D)

PLAN VIEW OF ELASTOMERIC BEARING

TYPE V



TYPICAL PLAN AT END BENT

(END BENT 1 SHOWN, END BENT 2 SIMILAR)

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

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
ELASTOMERIC BEARING
DETAILS**

REVISIONS					SHEET NO. S02-20
NO.	BY:	DATE:	NO.	BY:	
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					41

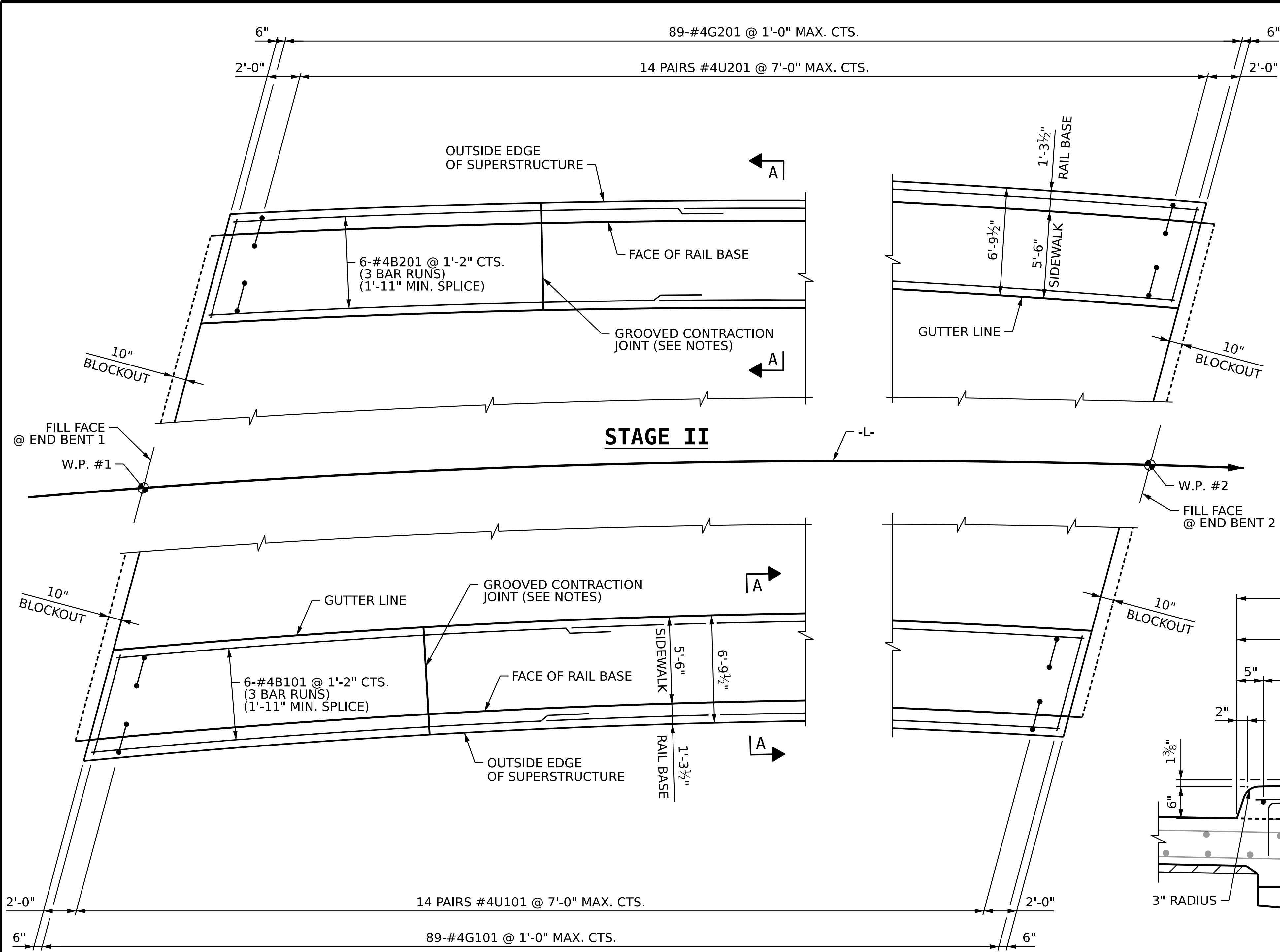


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DES BY: J. PATT	DATE : 01/25	DWG BY: B. PETERSON	DATE : 01/25
DES CHK: A. PANDOLI	DATE : 01/25	CHK BY: E. NOLTING	DATE : 02/25



STAGE I
PLAN OF SIDEWALKS

NOTES

GROOVED CONTRACTION JOINTS, ½" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK 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. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.

GROOVED CONTRACTION JOINTS SHALL BE LOCATED TO PROVIDE A MINIMUM 2" CLEAR TO THE EDGE OF 3 BAR METAL RAIL POSTS. FOR METAL RAIL POST SPACING, SEE "SUPERSTRUCTURE 3 BAR METAL RAIL POST SPACING" SHEET.

"U" BARS MAY BE PUSHED INTO GREEN CONCRETE AFTER SPAN HAS BEEN SCREEDED OFF.

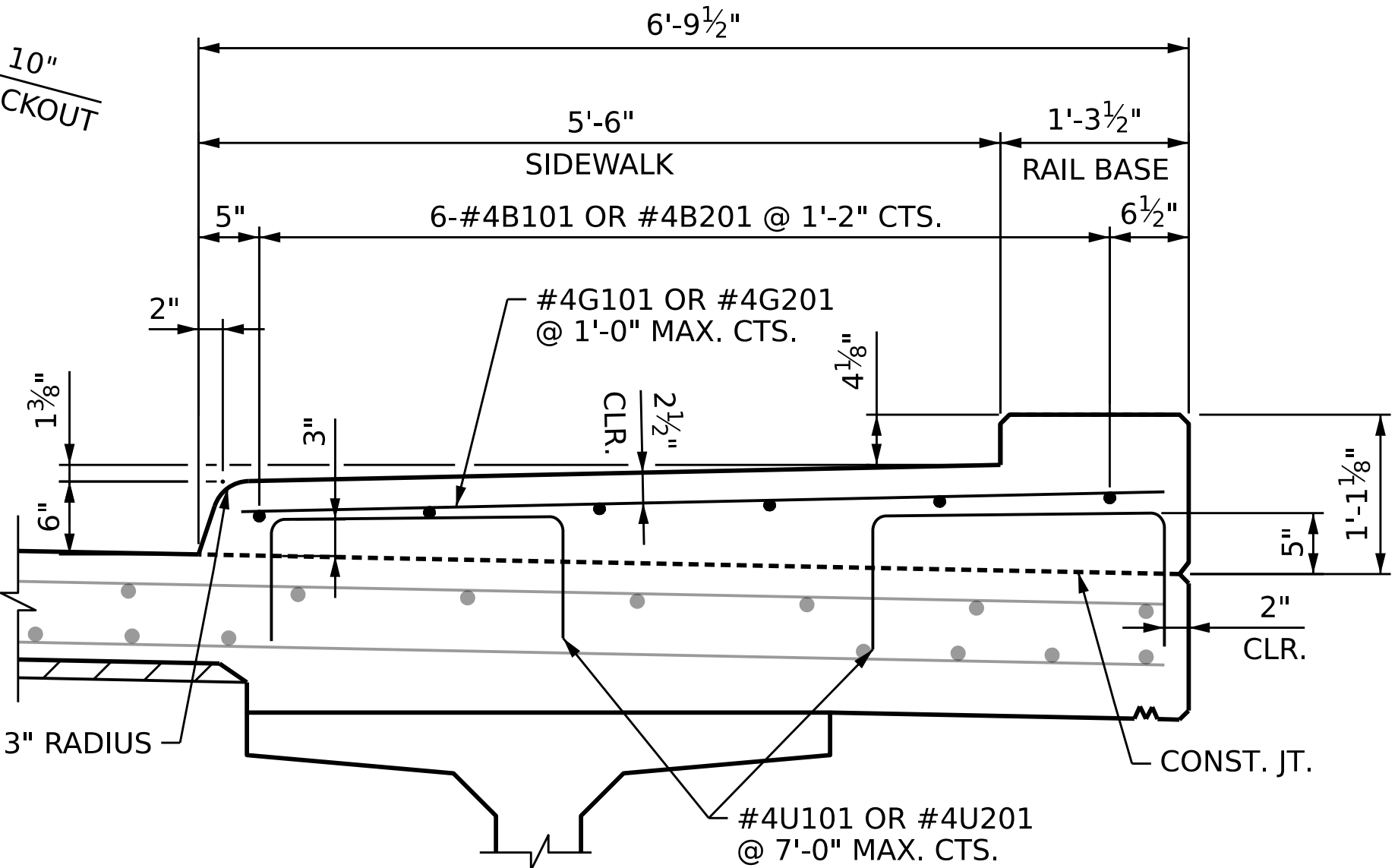
ALL REINFORCING STEEL IN THE SIDEWALKS SHALL BE EPOXY COATED.

THE SIDEWALK SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

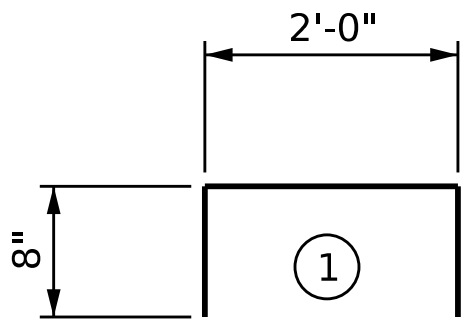
PAYMENT FOR SIDEWALK SHALL BE INCLUDED IN UNIT PRICE FOR "REINFORCED CONCRETE DECK SLAB".

ALL TRANSVERSE DIMENSIONS ARE RADIAL TO -L-.

ALL LONGITUDINAL DIMENSIONS ARE MEASURED ALONG THE LONG CHORD.



SECTION A-A

BILL OF MATERIAL FOR SIDEWALK (STAGE I)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS)
*B101	18	#4	STR	30'-9"	370
*G101	89	#4	STR	6'-4"	377
*U101	28	#4	1	3'-4"	62
*EPOXY COATED REINFORCING STEEL				809 LBS.	
CLASS AA CONCRETE				15.9 CU. YDS.	
BILL OF MATERIAL FOR SIDEWALK (STAGE II)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS)
*B201	18	#4	STR	30'-6"	367
*G201	89	#4	STR	6'-4"	377
*U201	28	#4	1	3'-4"	62
*EPOXY COATED REINFORCING STEEL				806 LBS.	
CLASS AA CONCRETE				15.7 CU. YDS.	
BAR TYPE					
					
ALL BAR DIMENSIONS ARE OUT TO OUT					

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

DES BY: <u>A. PANDOLI</u>	DATE : <u>02/25</u>	DWG BY: <u>B. PETERSON</u>	DATE : <u>01/25</u>
DES CHK: <u>G. MYERS</u>	DATE : <u>04/25</u>	CHK BY: <u>K. DICKENS</u>	DATE : <u>04/25</u>

HDR	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE CONCRETE SIDEWALK DETAILS					
REVISIONS					SHEET NO. S02-21
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					41



(SHOWN AT END BENT 1, END BENT 2 SIMILAR BY ROTATION)



NOTES

PAYMENT FOR END POSTS SHALL BE INCLUDED IN UNIT PRICE FOR "REINFORCED CONCRETE DECK SLAB".

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

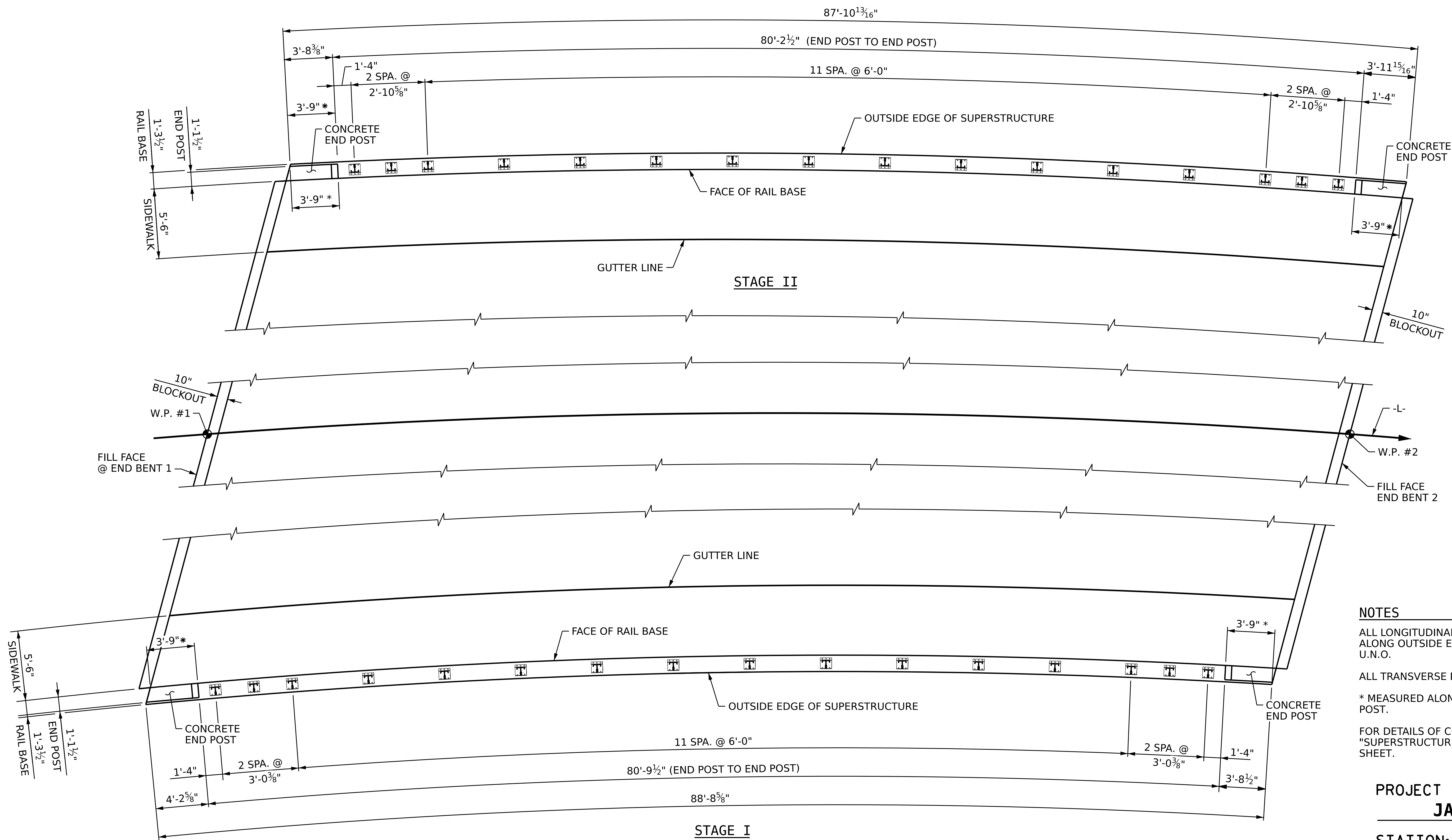


REVISIONS						SHEET NO. 502-22
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



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PLAN OF RAIL POST SPACINGS

NOTES

ALL LONGITUDINAL DIMENSIONS ARE MEASURED ALONG OUTSIDE EDGE OF SUPERSTRUCTURE, U.N.O.

ALL TRANSVERSE DIMENSIONS ARE RADIAL TO -L-.

* MEASURED ALONG FACE OF CONCRETE END POST.

FOR DETAILS OF CONCRETE END POST, SEE "SUPERSTRUCTURE CONCRETE END POST DETAILS" SHEET.

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

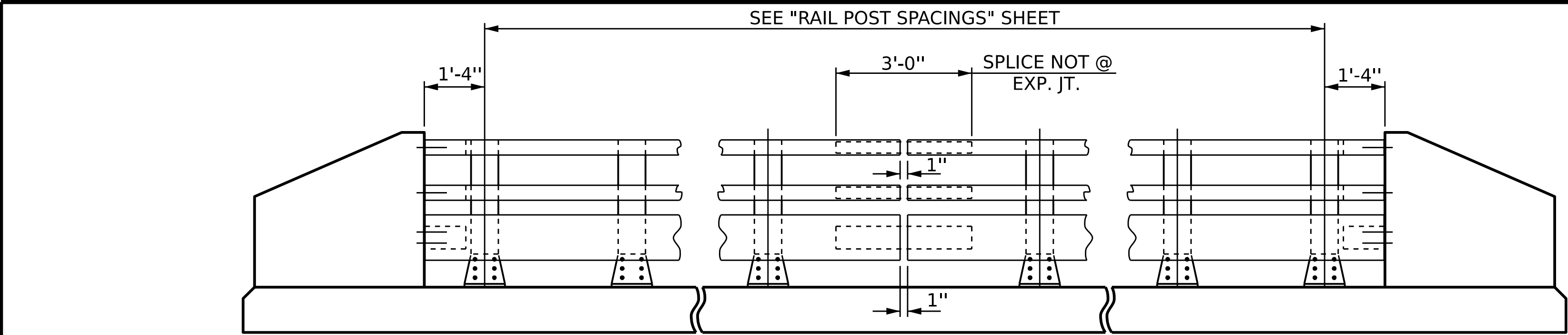


DES BY: A. PANDOLI	DATE : 02/25	DWG BY: B. PETERSON	DATE : 01/25
DES CHK: M. NEIHEISEL	DATE : 03/25	CHK BY: K. DICKENS	DATE : 04/25

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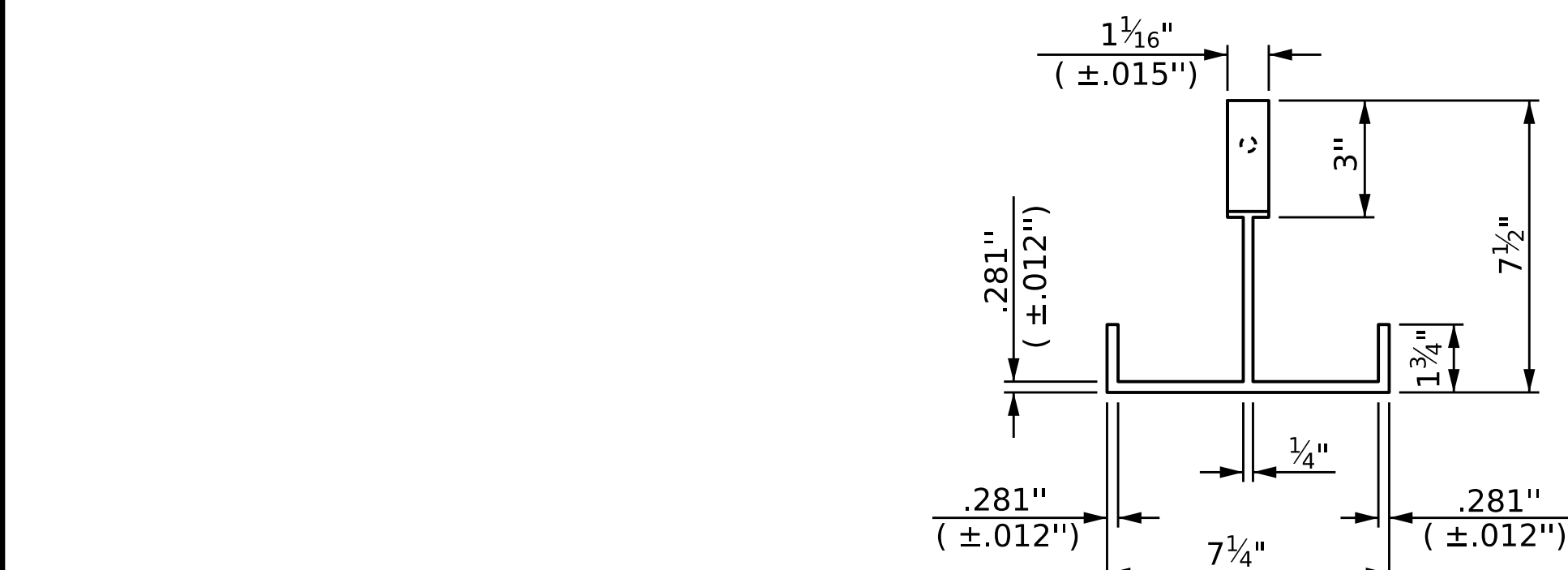
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REVISIONS						SHEET NO. S02-23
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

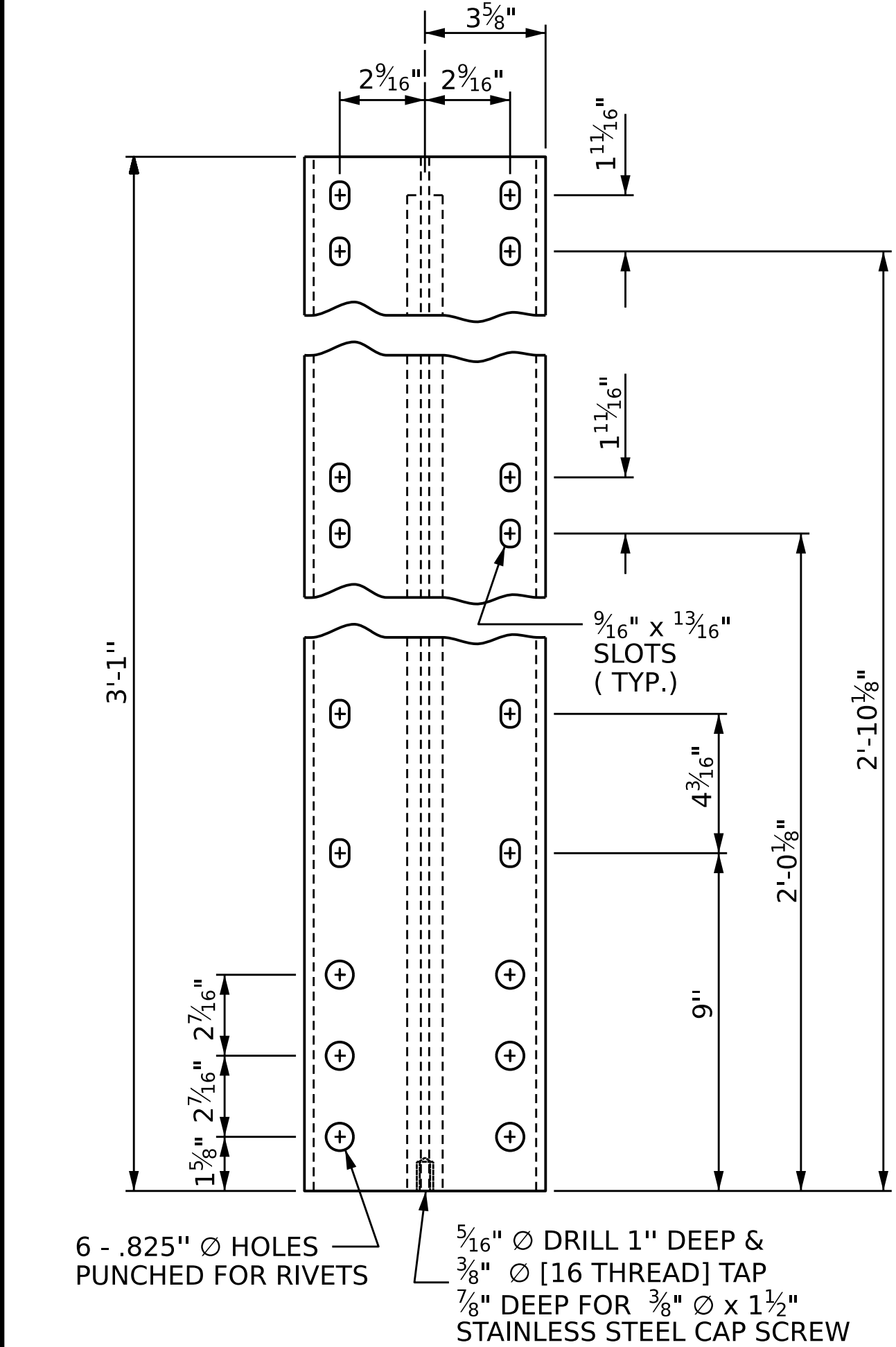


NOTE:
FOR ATTACHMENT OF METAL RAIL TO END
POST, SEE STANDARD NO. BMR7.

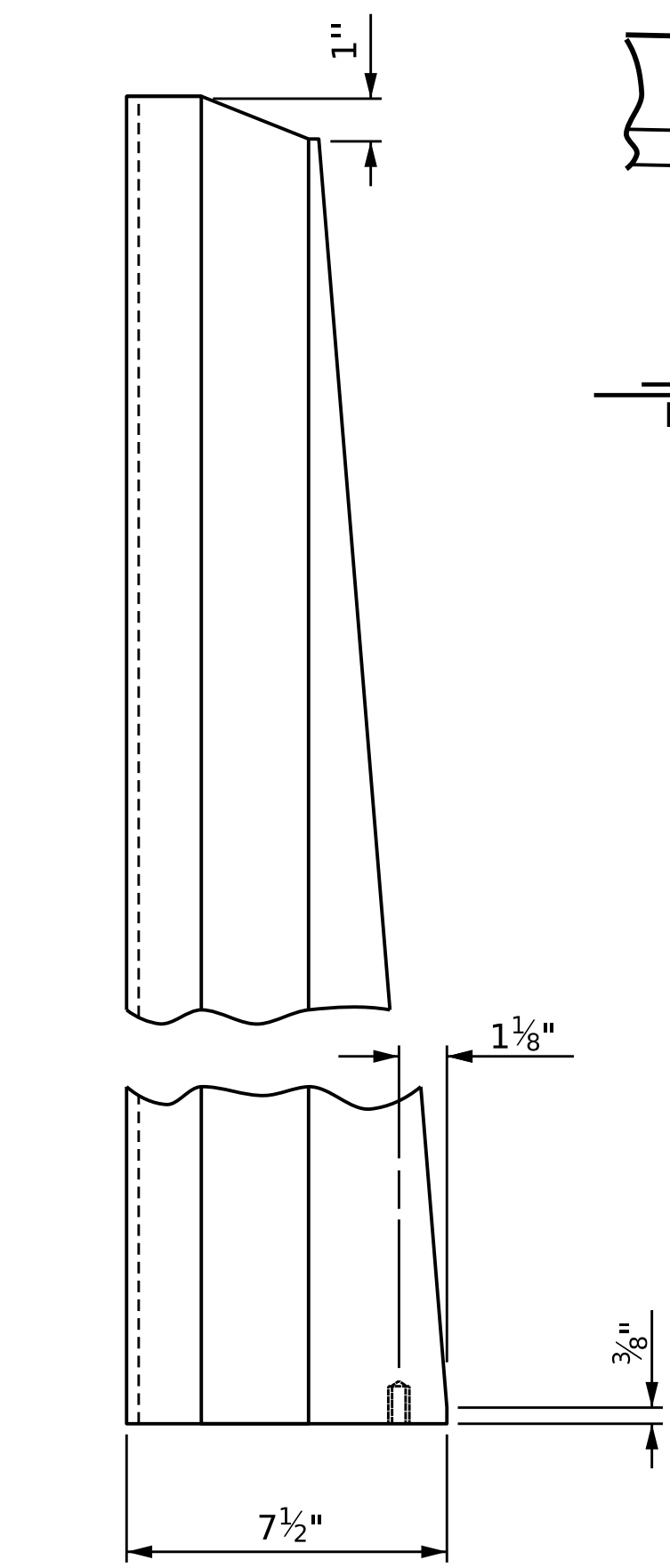
ELEVATION



PLAN

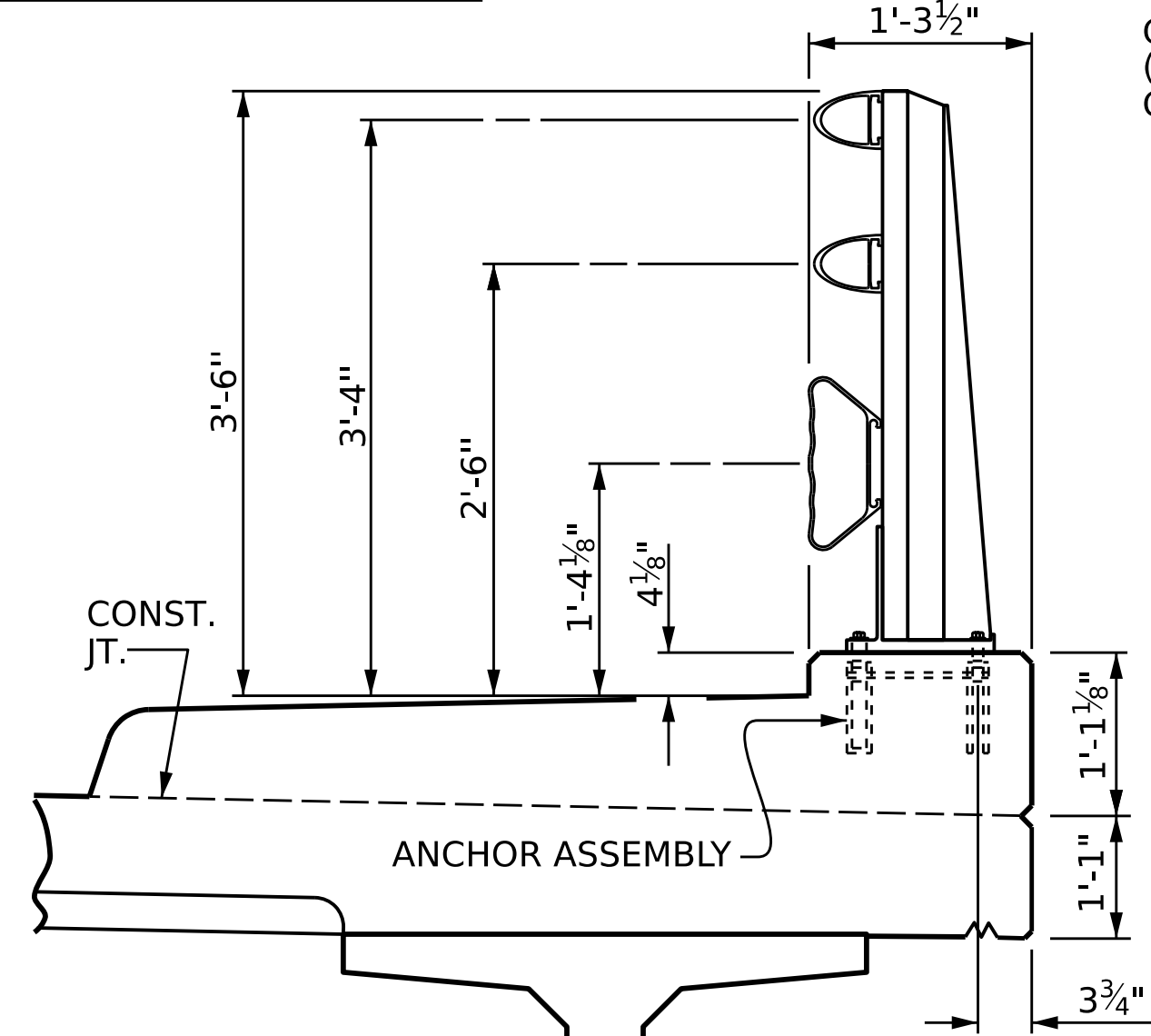


FRONT ELEVATION



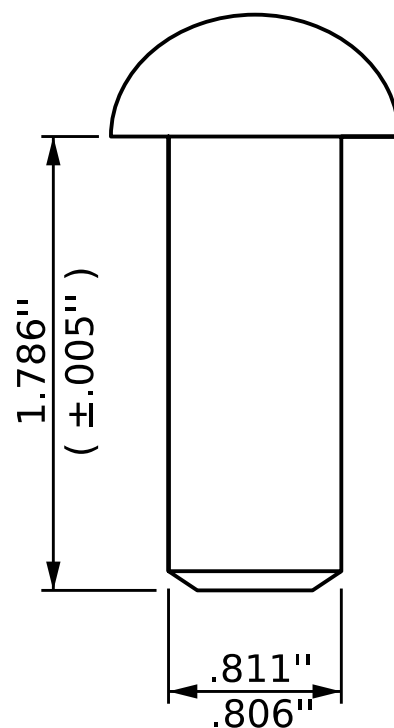
SIDE ELEVATION

DETAILS OF POST

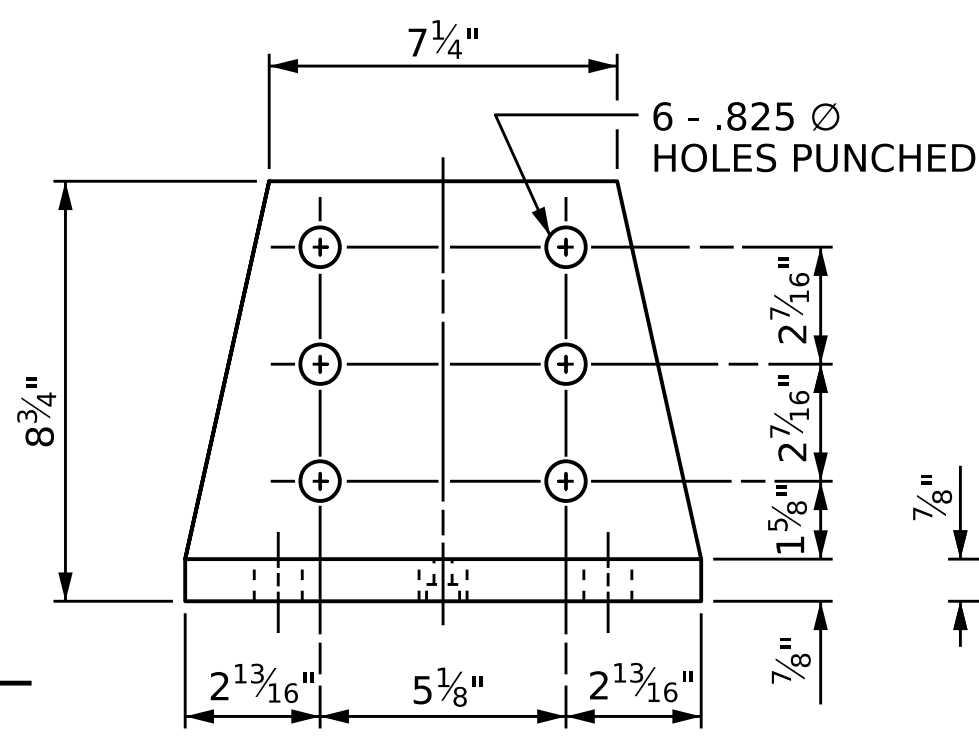


SECTION THRU RAIL

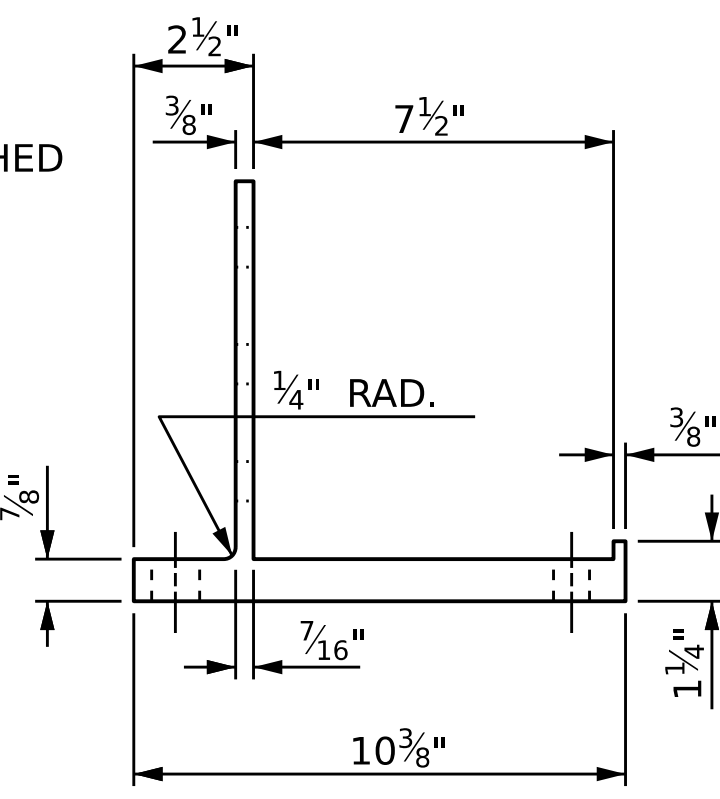
FOR ANCHOR ASSEMBLY, SEE "3 BAR METAL RAIL"
STD.No.BMR6



RIVET DETAIL

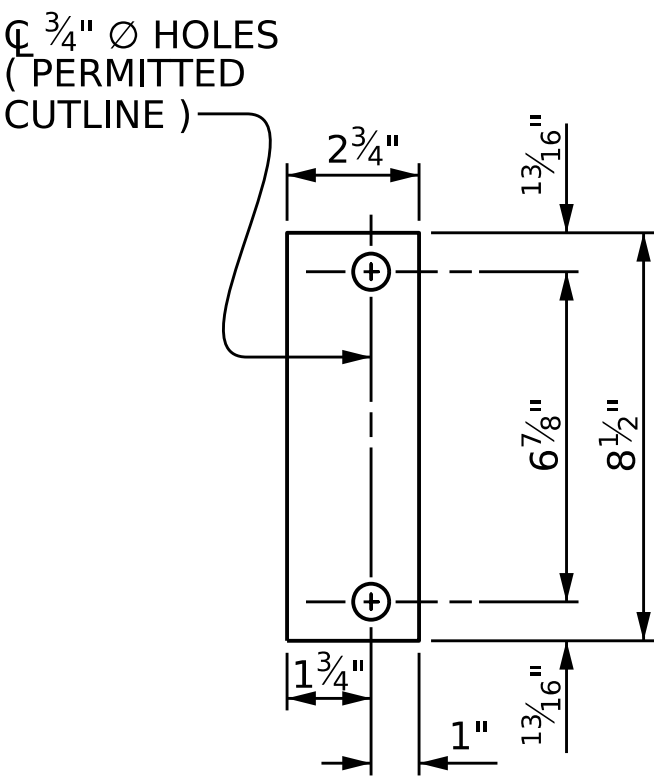


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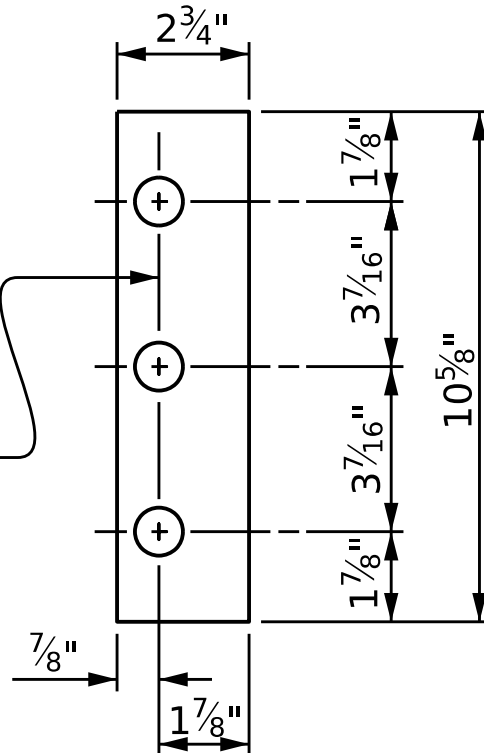


SIDE ELEVATION

POST BASE DETAILS



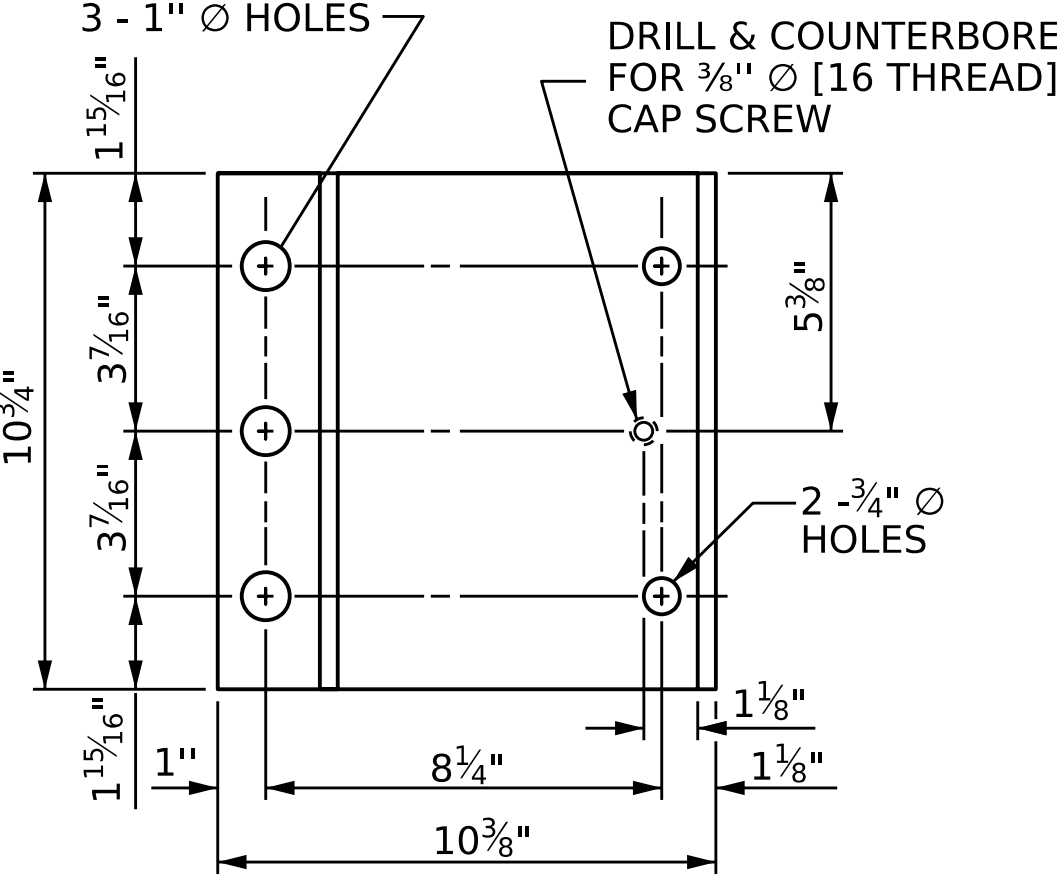
REAR PLATE



FRONT PLATE

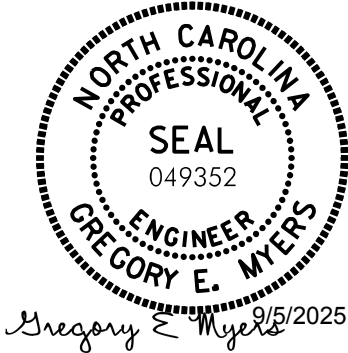
SHIM DETAILS

NOTE :
SHIMS MAY BE CUT ALONG PERMITTED CUTLINE OR
SLOTTED TO EDGE OF PLATE TO FACILITATE PLACEMENT.



PLAN

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



Gregory E. Myers 2/2025

NOTES

AT THE CONTRACTOR'S OPTION, METAL RAIL MAY BE EITHER ALUMINUM OR GALVANIZED STEEL IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL NOTES AND THE FOLLOWING SPECIFICATIONS FOR THE ALTERNATE MATERIALS; HOWEVER, THE CONTRACTOR WILL BE REQUIRED TO USE THE SAME RAIL MATERIAL ON ALL STRUCTURES ON THE PROJECT FOR WHICH METAL RAIL IS DESIGNATED.

ALUMINUM RAILS

MATERIAL FOR POSTS, BASES AND RAILS, EXPANSION BARS AND CLAMP BARS SHALL BE ASTM B221 ALLOY 6061-T6. MATERIAL FOR RIVETS SHALL BE ASTM B316 ALLOY 6061-T6. RIVETS SHALL BE STANDARD BUTTON HEAD AND CONE POINT COLD DRIVEN AS PER DRAWING.

THE BASE OF RAIL POSTS, OR ANY OTHER ALUMINUM SURFACE IN CONTACT WITH CONCRETE SHALL BE THOROUGHLY COATED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND OF APPROVED QUALITY.

MATERIAL FOR SHIMS TO BE ASTM B209 ALLOY 6061-T6.

GALVANIZED STEEL RAILS

MATERIALS AND GALVANIZING ARE TO CONFORM TO THE FOLLOWING SPECIFICATIONS:

POST, POST BASES, RAILS, EXPANSION BARS AND CLAMP BARS: ASTM A36 GRADE 36 STRUCTURAL STEEL - GALVANIZED TO ASTM A123.

RIVETS: RIVETS SHALL MEET THE REQUIREMENTS OF ASTM A502 FOR GRADE 1 RIVETS.

THE CUT ENDS OF GALVANIZED STEEL RAILING, AFTER GRINDING SMOOTH SHALL BE GIVEN TWO COATS OF ZINC RICH PAINT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION MIL-P-26915 USAF TYPE 1, OR OF FEDERAL SPECIFICATIONS TT-P-641.

SHIMS: SHIMS SHALL MEET THE REQUIREMENTS OF ASTM A1011 FOR GRADE 36, 40, 45 OR ASTM A1008 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.

RAIL CAPS: RAIL CAPS SHALL MEET THE REQUIREMENTS OF ASTM A1011 FOR GRADE 36, 40, 45 OR ASTM A1008 FOR GRADE C AND SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.

GENERAL NOTES

RAILING SHALL BE CONTINUOUS FROM END POST TO END POST OF BRIDGE. EACH JOINT IN RAIL LENGTH SHALL BE SPLICED AS DETAILED. PANEL LENGTHS OF RAIL SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS. PLACE ONE JOINT SPLICE JUST BEYOND THE 3RD RAIL POST FROM EACH END, TYPICALLY 14' FROM THE END. PLACE OTHER JOINTS AS NEEDED.

FOR END OF RAIL TO CLEAR FACE OF CONCRETE END POST DIMENSION, SEE STANDARD NO. BMR7.

CAP SCREWS SHALL BE ASTM F593 ALLOY 305 STAINLESS STEEL. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

CERTIFIED MILL REPORTS ARE REQUIRED FOR RAILS AND POSTS. SHOP INSPECTION IS NOT REQUIRED.

METAL RAIL POSTS SHALL BE SET NORMAL TO CURB GRADE.

METHOD OF MEASUREMENT FOR METAL RAILS: FOR LENGTH OF METAL RAILS TO BE PAID FOR, SEE THE STANDARD SPECIFICATIONS.

CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE THE CONTRACTOR MAY, AT THEIR OPTION, HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.

TO ENSURE FUTURE IDENTIFICATION OF THE FABRICATOR, A PERMANENT IDENTIFYING MARK SHALL BE PLACED ON EACH POST. THE METHOD OF MARKING AND LOCATION SHALL BE SUCH THAT IT DOES NOT DETRACT FROM THE APPEARANCE OF THE POST, BUT REMAIN VISIBLE AFTER RAIL PLACEMENT.

SHIMS SHALL BE USED AS NECESSARY FOR POST ALIGNMENT.

ALLOY 6351-T5 MAY BE SUBSTITUTED FOR ALLOY 6061-T6 WHERE APPLICABLE.

MINOR VARIATIONS IN DETAILS OF METAL RAIL WILL BE CONSIDERED. DETAILS OF SUCH VARIATIONS, IF DESIRED, SHALL BE SUBMITTED FOR APPROVAL.

PAY LENGTH = 161.00 LIN.FT.

PROJECT NO. R-5600

JACKSON COUNTY

STATION: 27+24.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
3 BAR METAL RAIL

REVISIONS

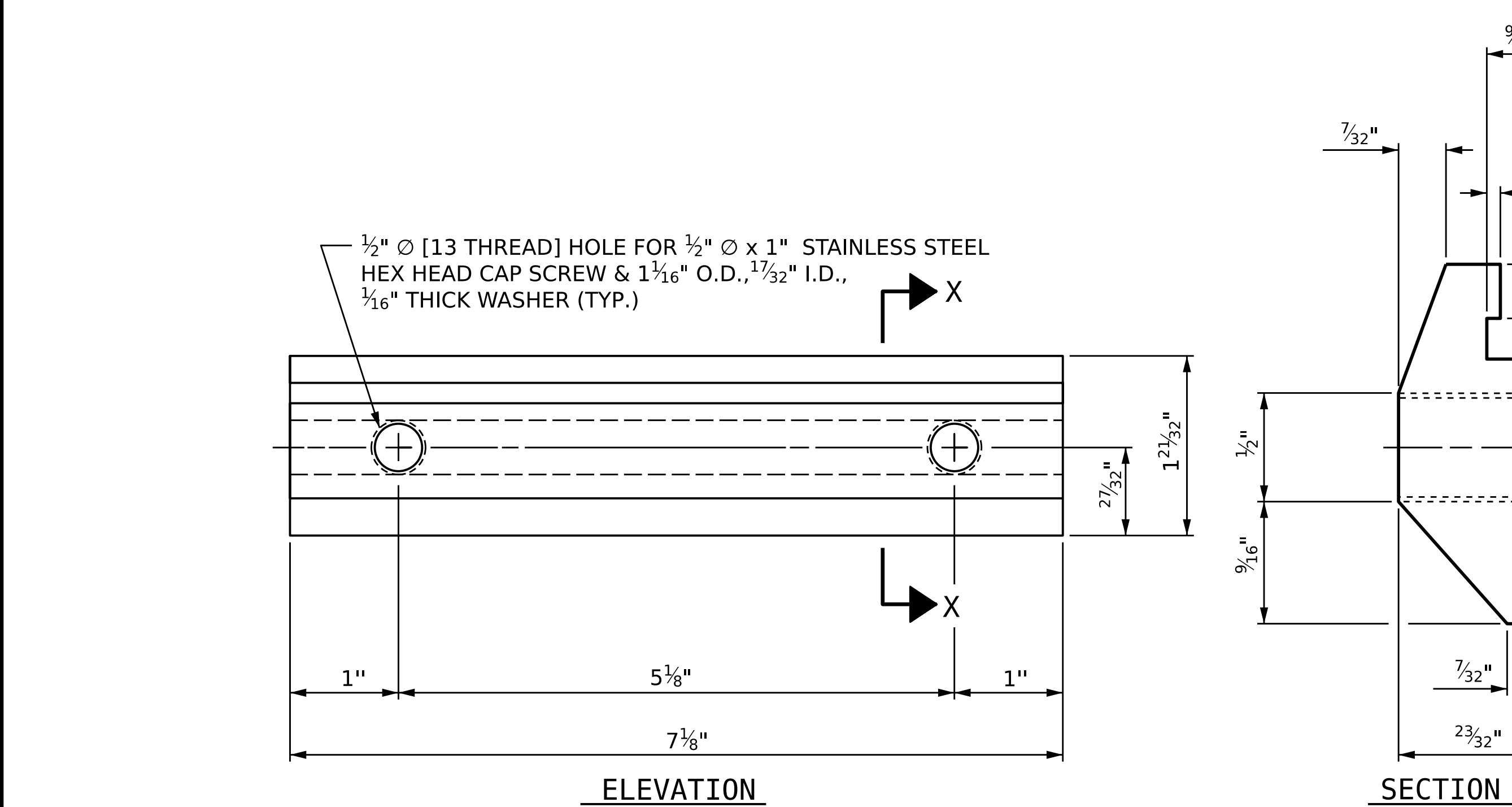
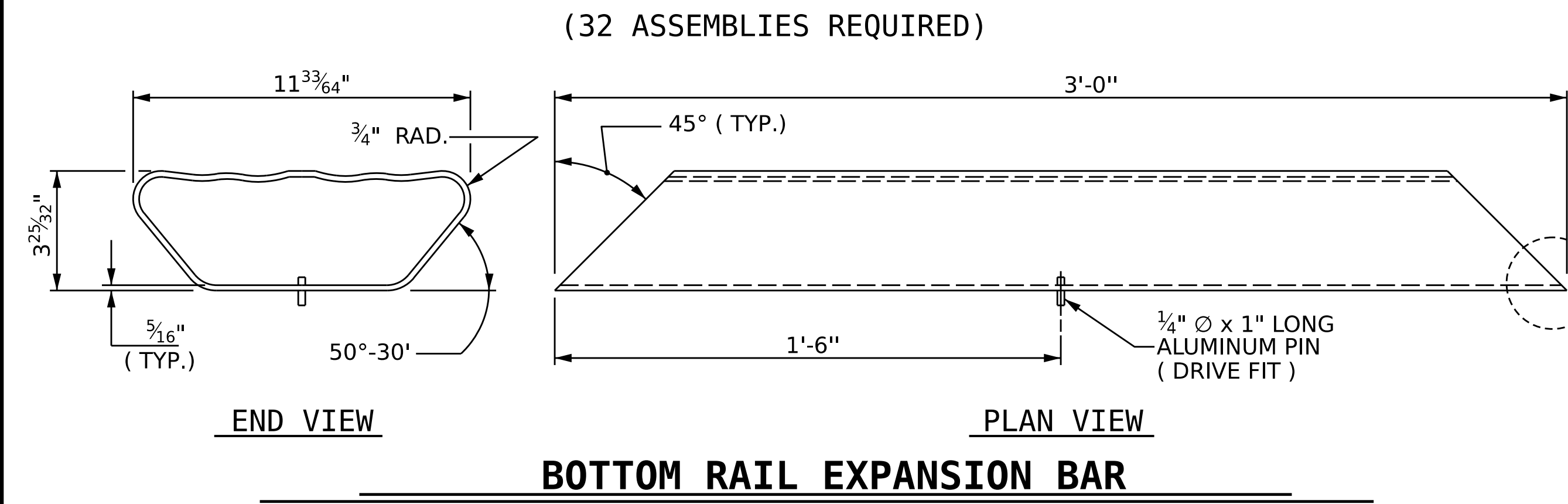
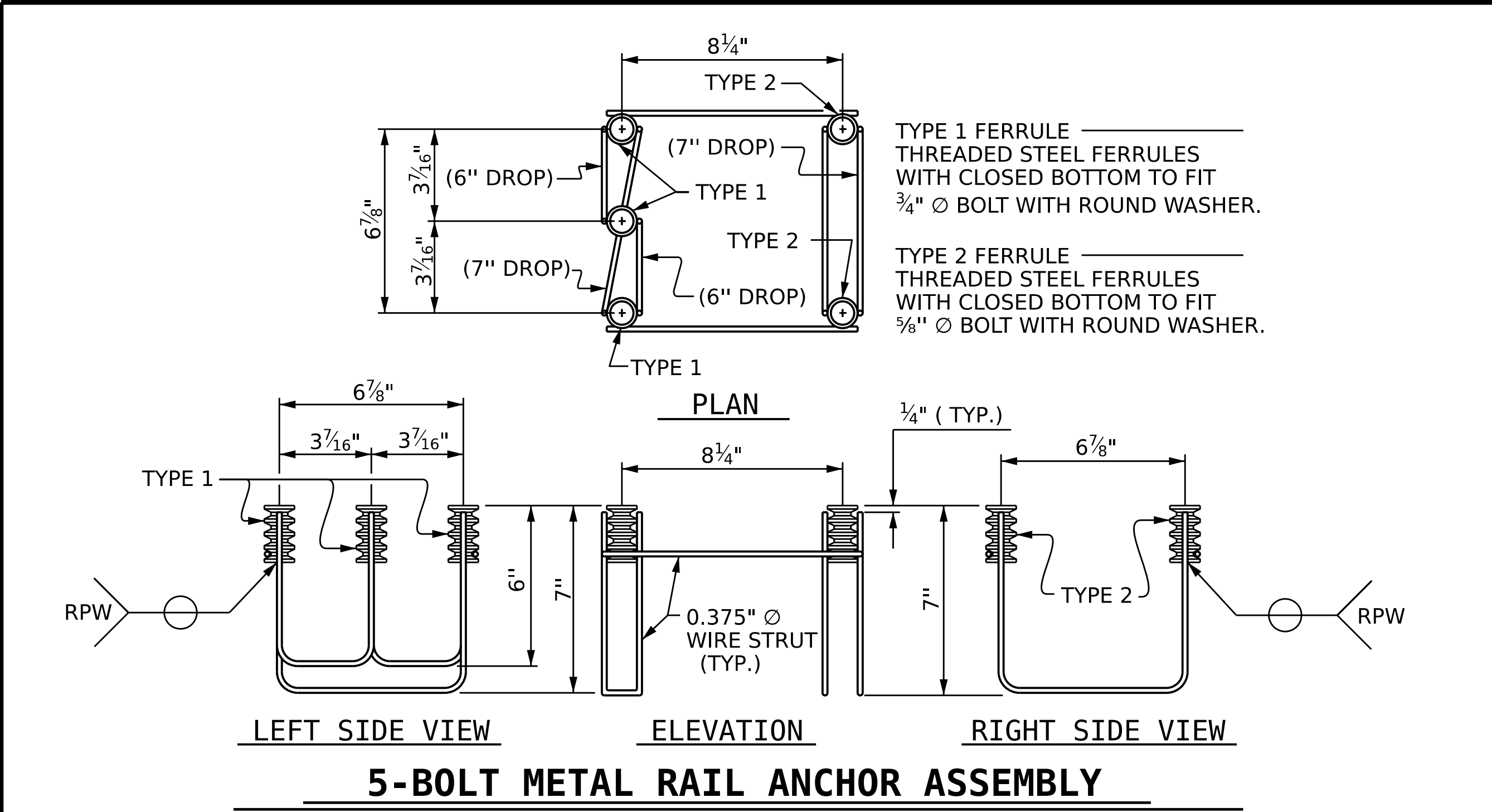
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SHEET NO.
S02-24

DES BY: A. PANDOLI	DATE: 02/25	DWG BY: B. PETERSON	DATE: 01/25
DES CHK: M. NEIHEISEL	DATE: 03/25	CHK BY: K. DICKENS	DATE: 04/25

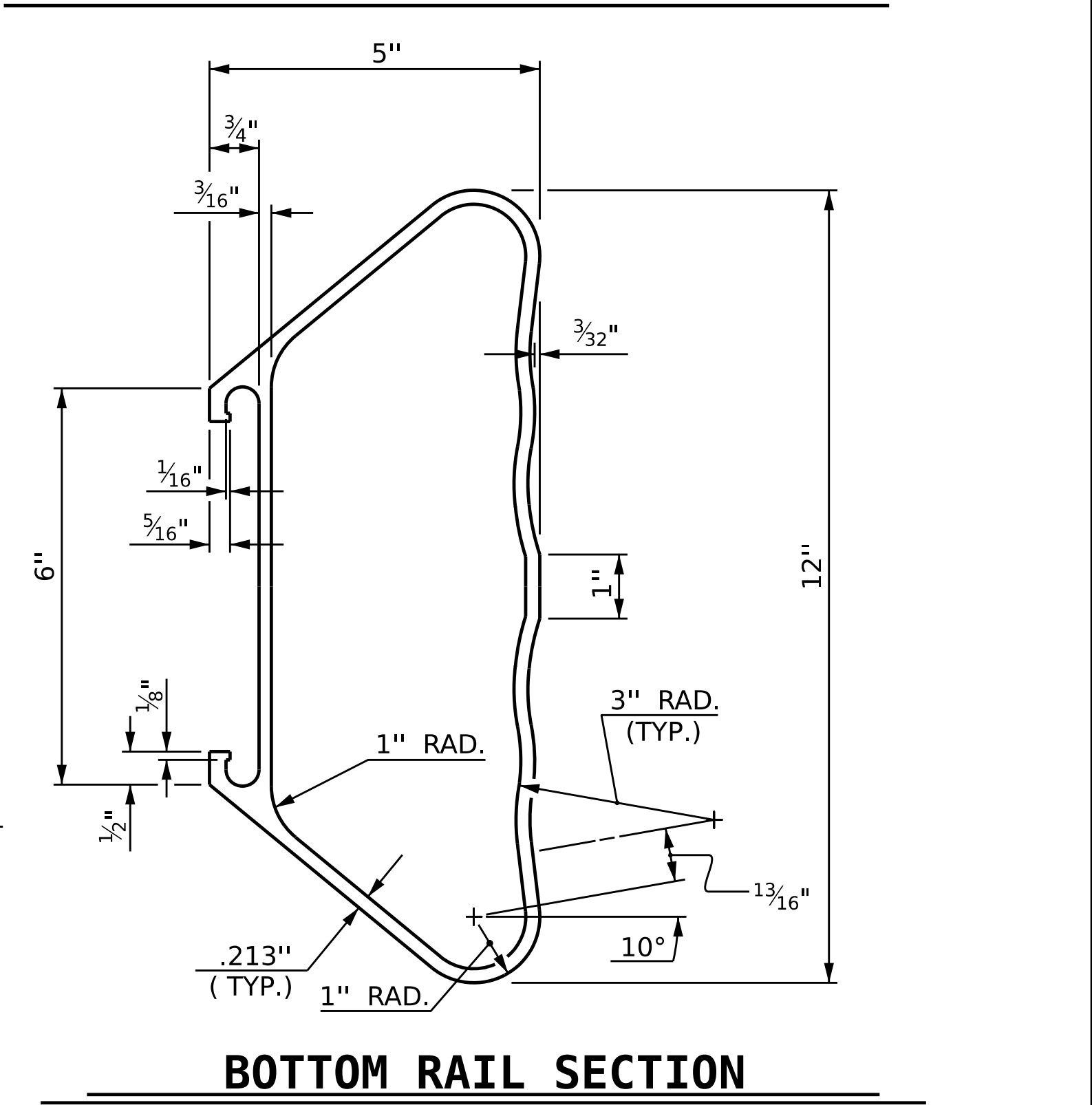
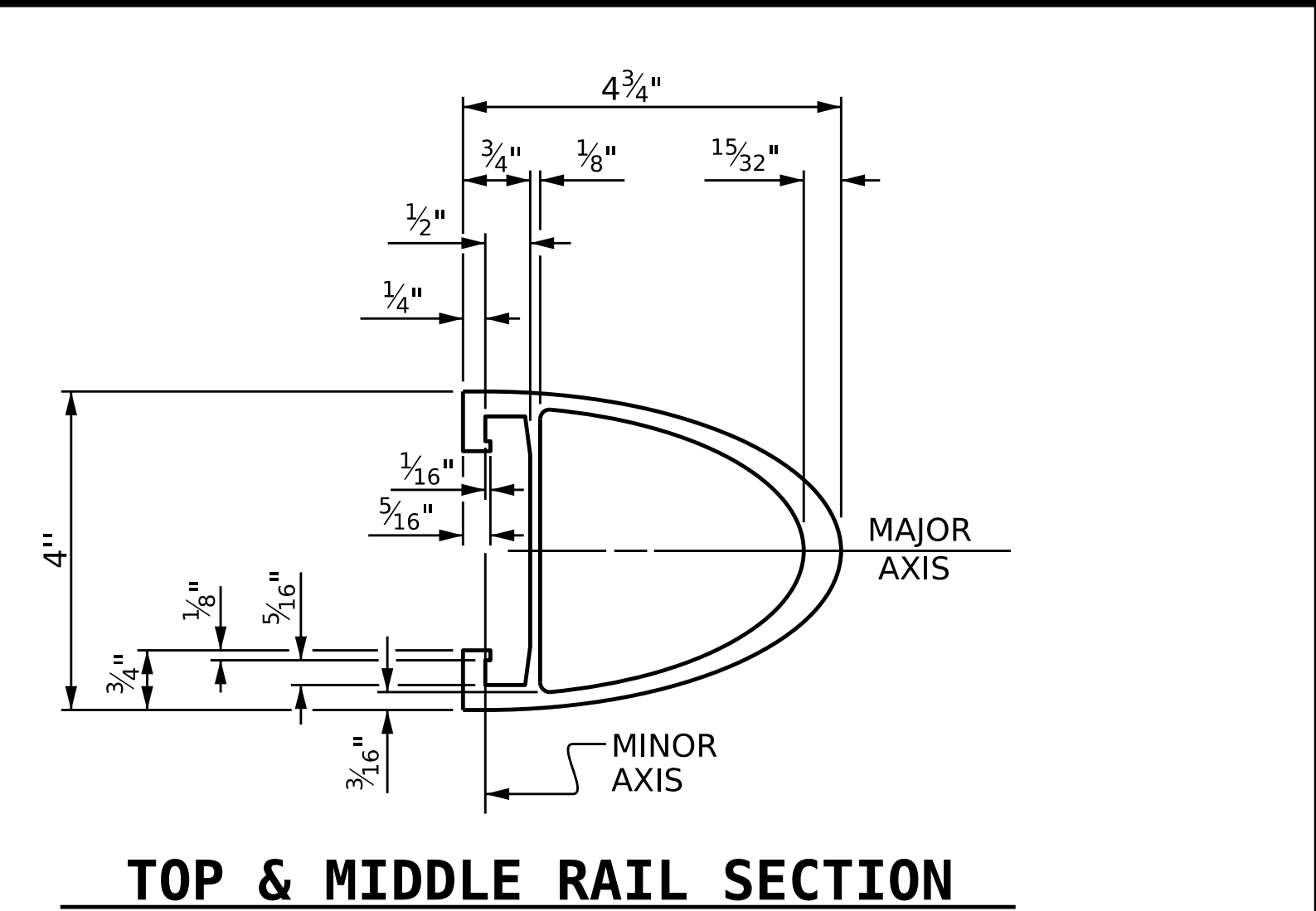
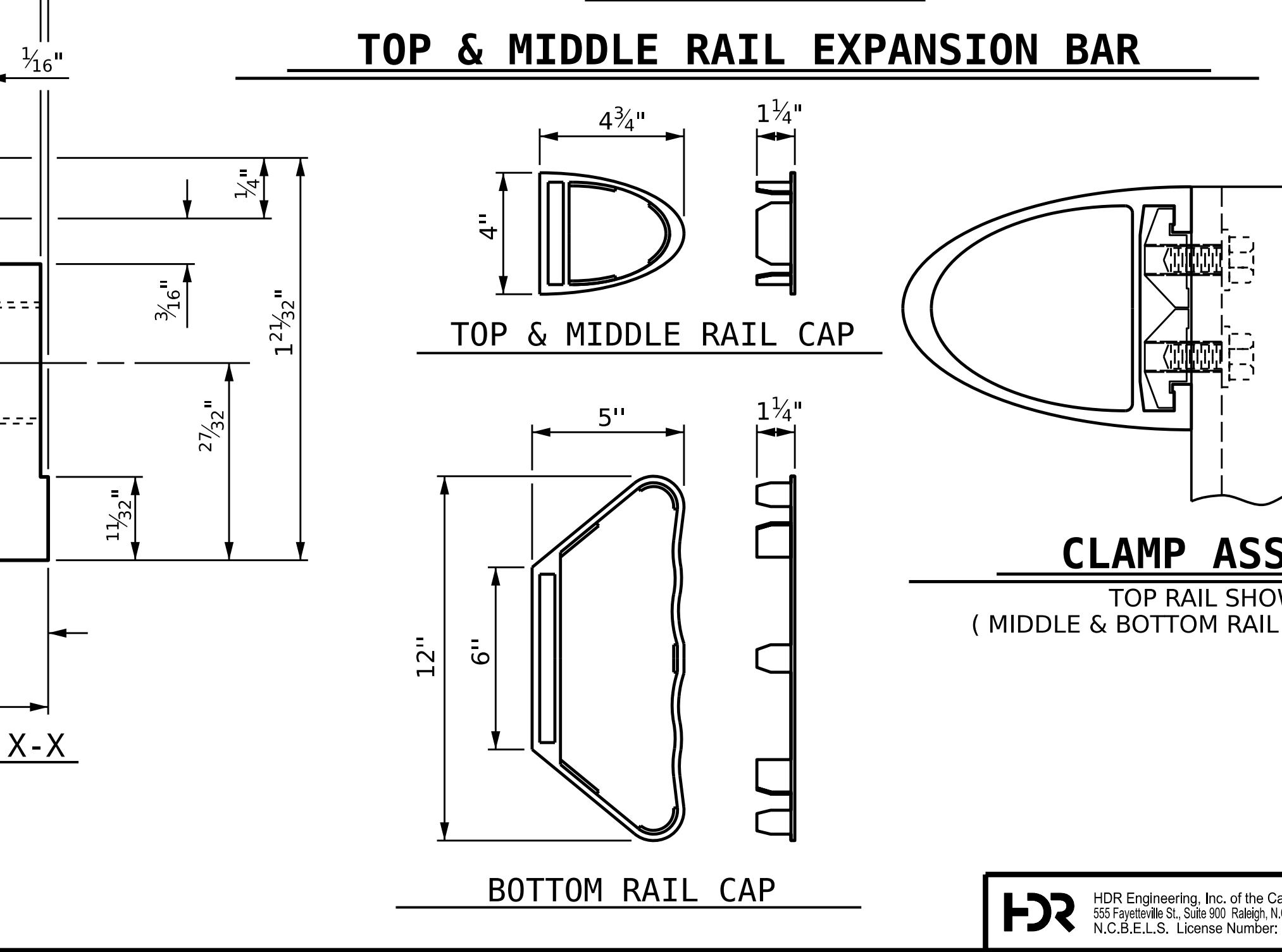
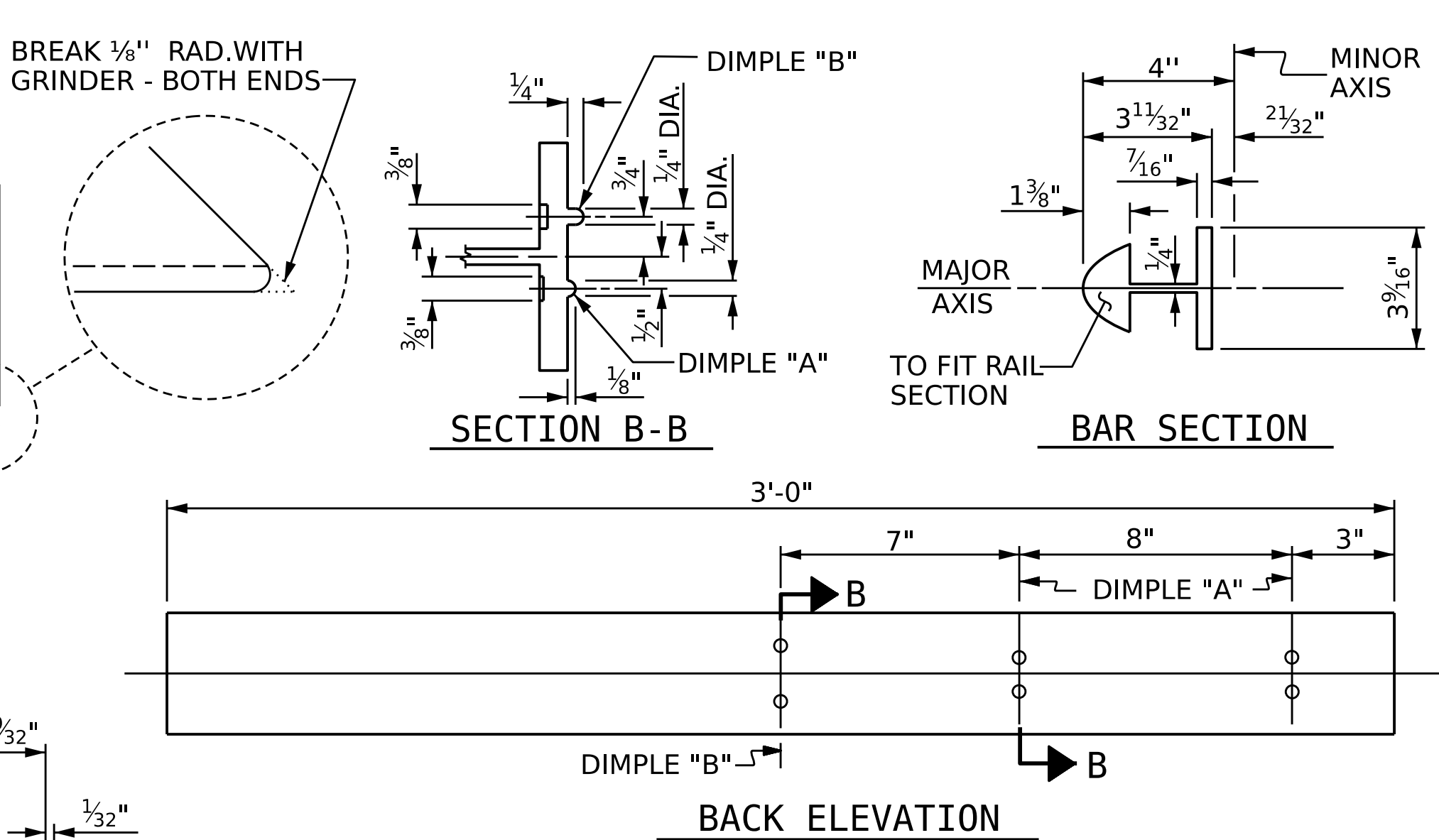
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

STD. NO. BMR5



DES BY: <u>A. PANDOLI</u> DATE : <u>02/25</u>				DWG BY: <u>B. PETERSON</u> DATE : <u>01/25</u>			
DES CHK: <u>M. NEIHEISEL</u> DATE : <u>03/25</u>				CHK BY: <u>K. DICKENS</u> DATE : <u>04/25</u>			

- NOTES**
- STRUCTURAL CONCRETE ANCHOR ASSEMBLY
- THE STRUCTURAL CONCRETE ANCHOR ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:
- FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 2" FOR 3/4" FERRULES AND 1 3/4" FOR 5/8" FERRULES.
 - 3 - 3/4" Ø x 2 1/2" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø x 2 1/2" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.
 - 2 - 5/8" Ø x 2 1/4" BOLTS WITH WASHERS. BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS AND WASHERS SHALL BE GALVANIZED. AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 5/8" Ø x 2 1/4" GALVANIZED BOLTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.
 - WIRE STRUT SHOWN IN THE CONCRETE ANCHOR ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 7/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.
 - THE METAL RAIL ANCHOR ASSEMBLIES TO BE HOT DIPPED GALVANIZED TO CONFORM TO REQUIREMENTS OF ASTM A123
 - THE COST OF THE METAL RAIL ANCHOR ASSEMBLY WITH BOLTS AND WASHERS COMPLETE IN PLACE SHALL BE INCLUDED IN THE PRICE BID FOR LINEAR FEET OF METAL RAIL.
 - BOLTS TO BE TIGHTENED ONE-HALF TURN WITH A WRENCH FROM A FINGER-TIGHT POSITION.



PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 2 OF 3

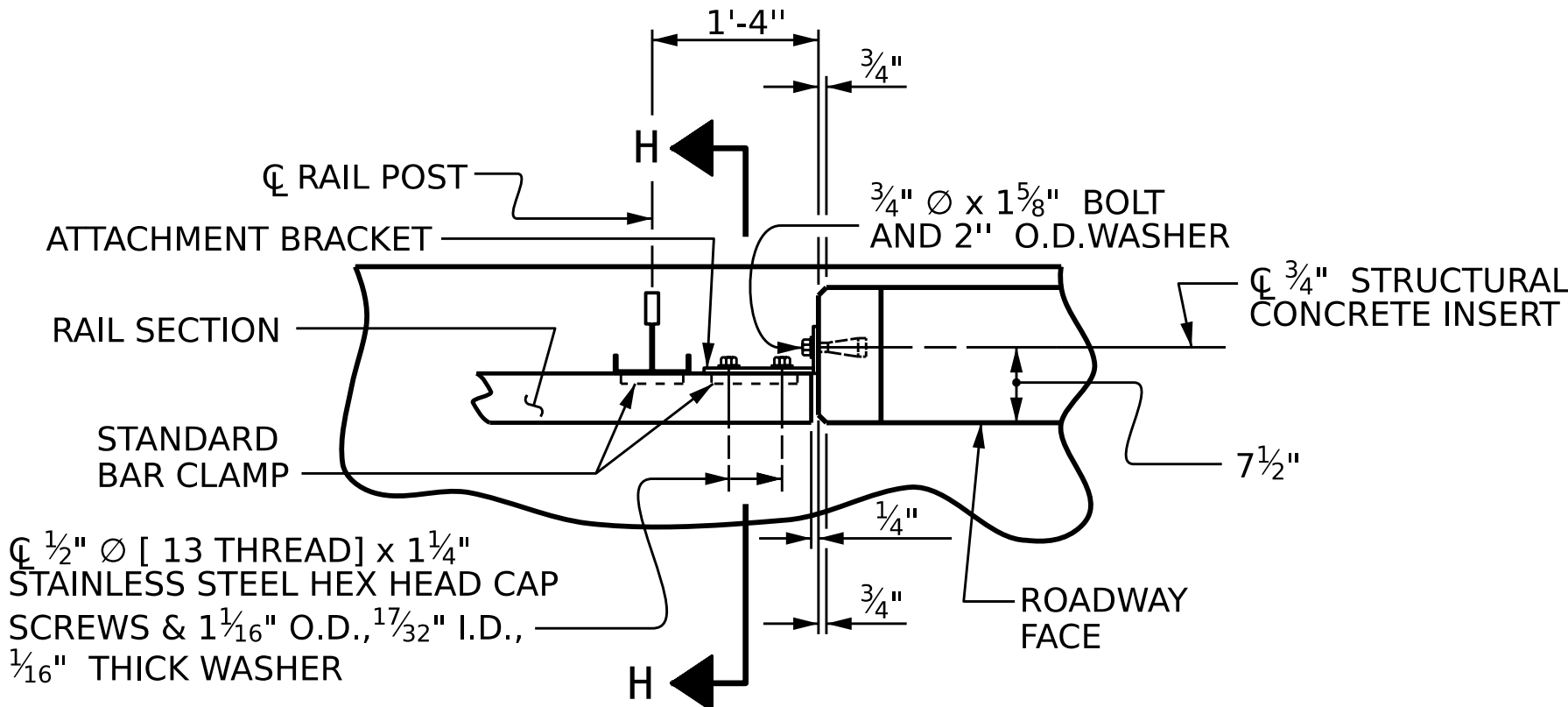
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
3 BAR METAL RAIL**

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

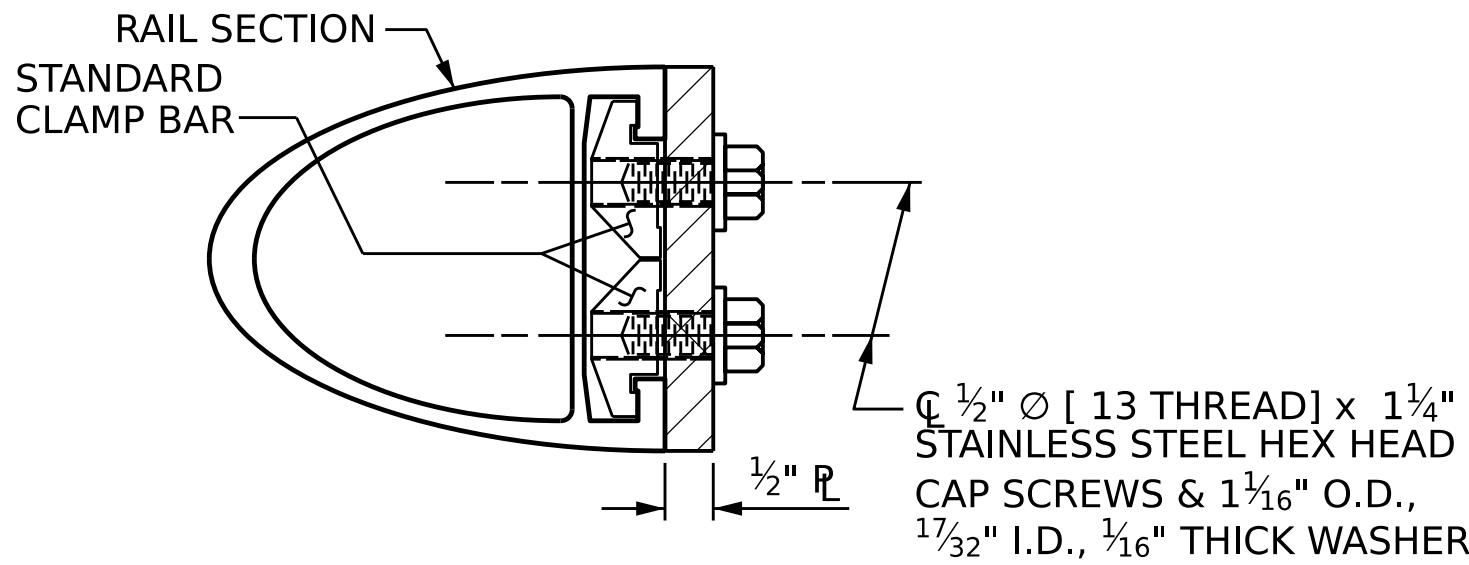
TOTAL SHEETS: 41

STD. NO. BMR6



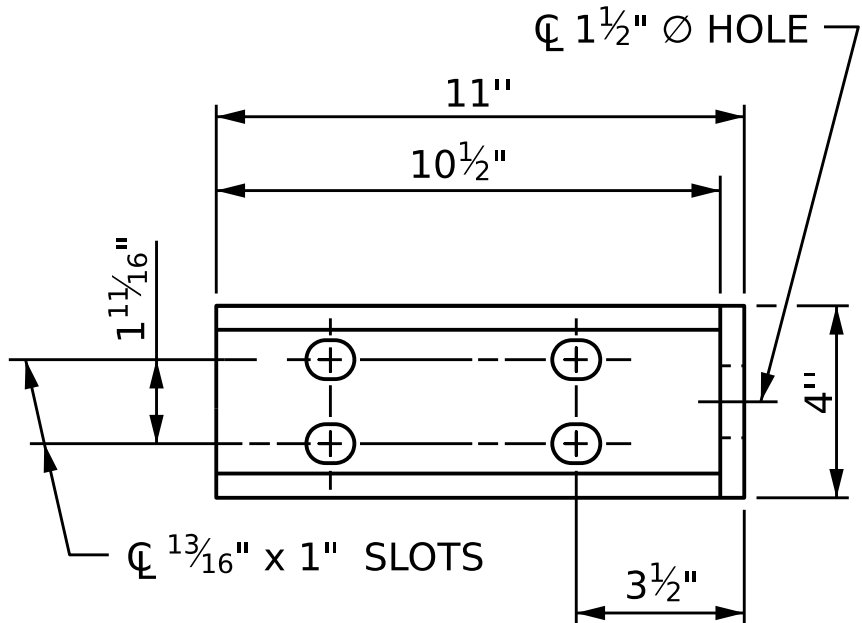
PLAN OF RAIL AND END POST

(STIFFENER ON 1/2" R NOT SHOWN FOR CLARITY)

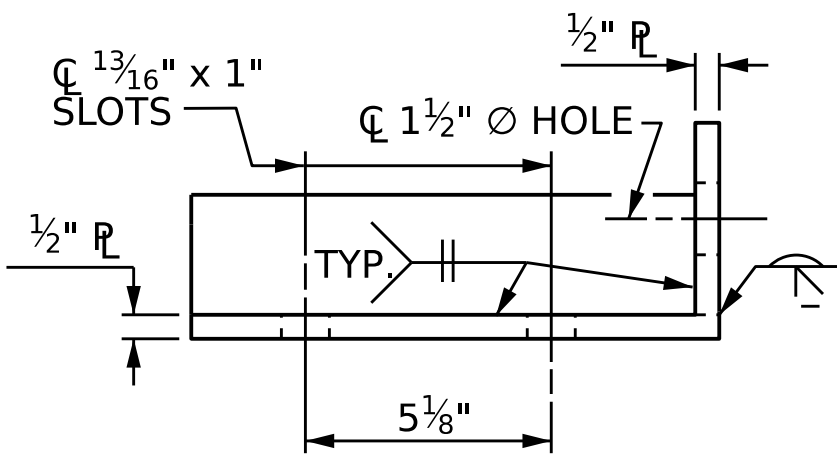


SECTION H-H

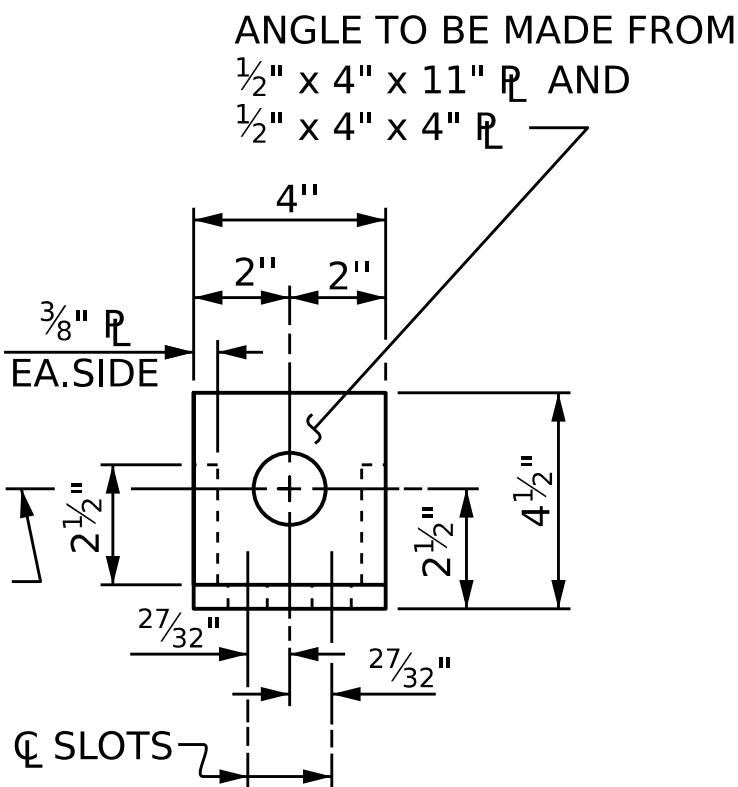
(FOR TOP & MIDDLE RAIL)



ELEVATION



PLAN

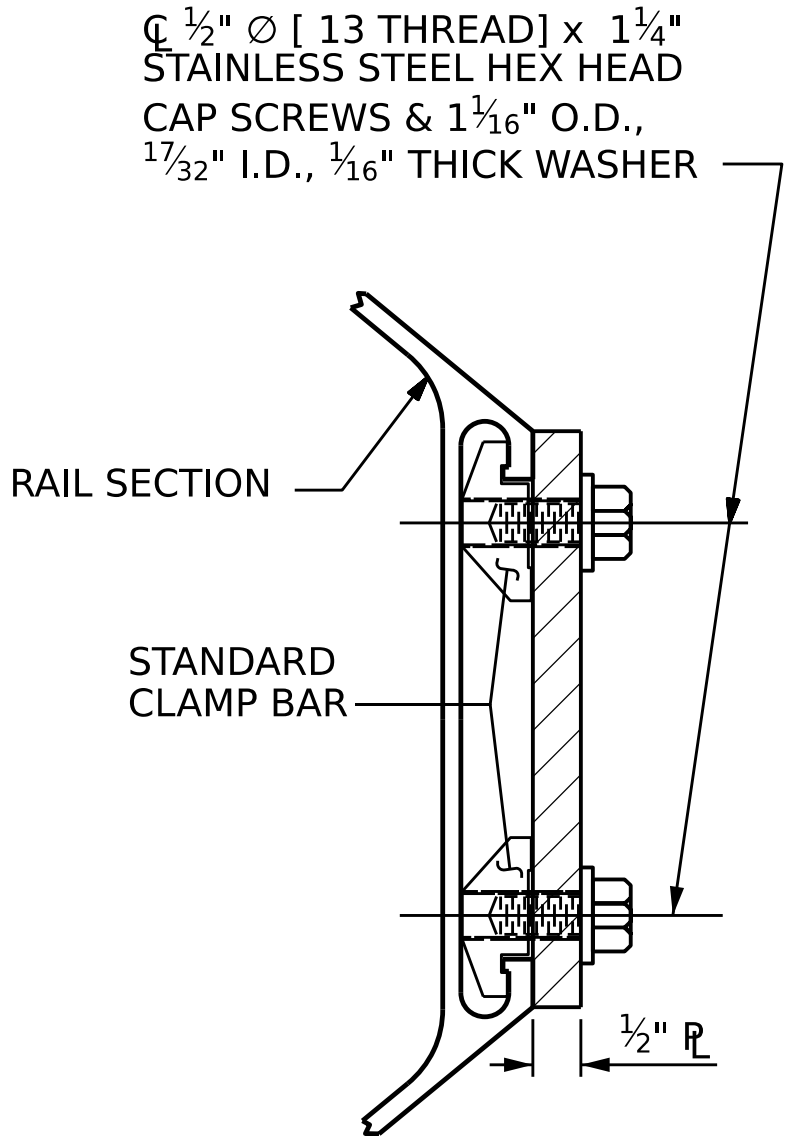


END VIEW

(FIX. AND EXP.)

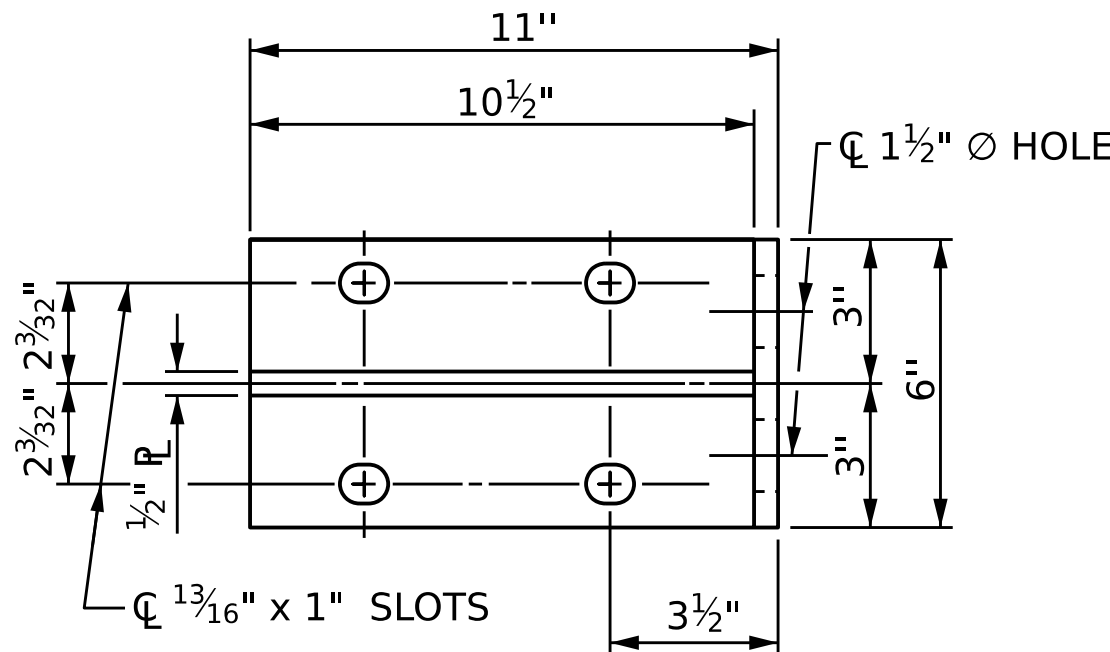
DETAILS FOR ATTACHMENT BRACKET

(TOP & MIDDLE RAIL ONLY)

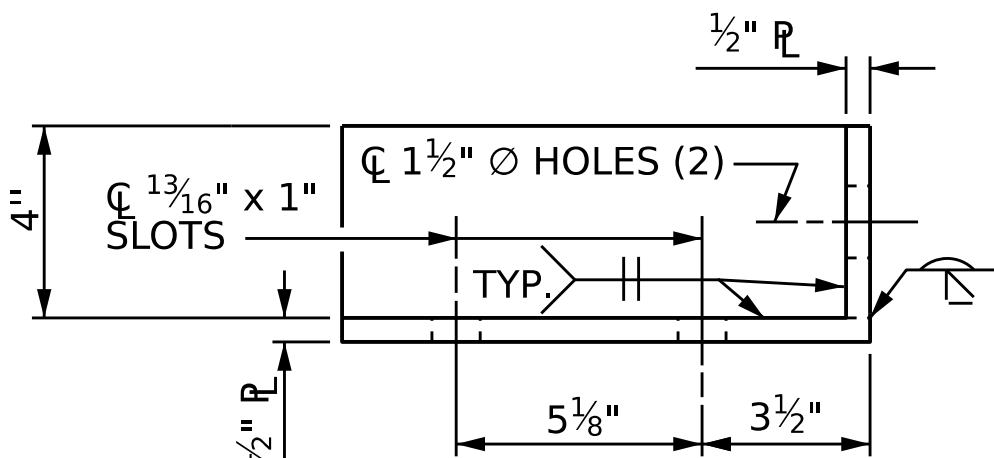


SECTION H-H

(FOR BOTTOM RAIL)



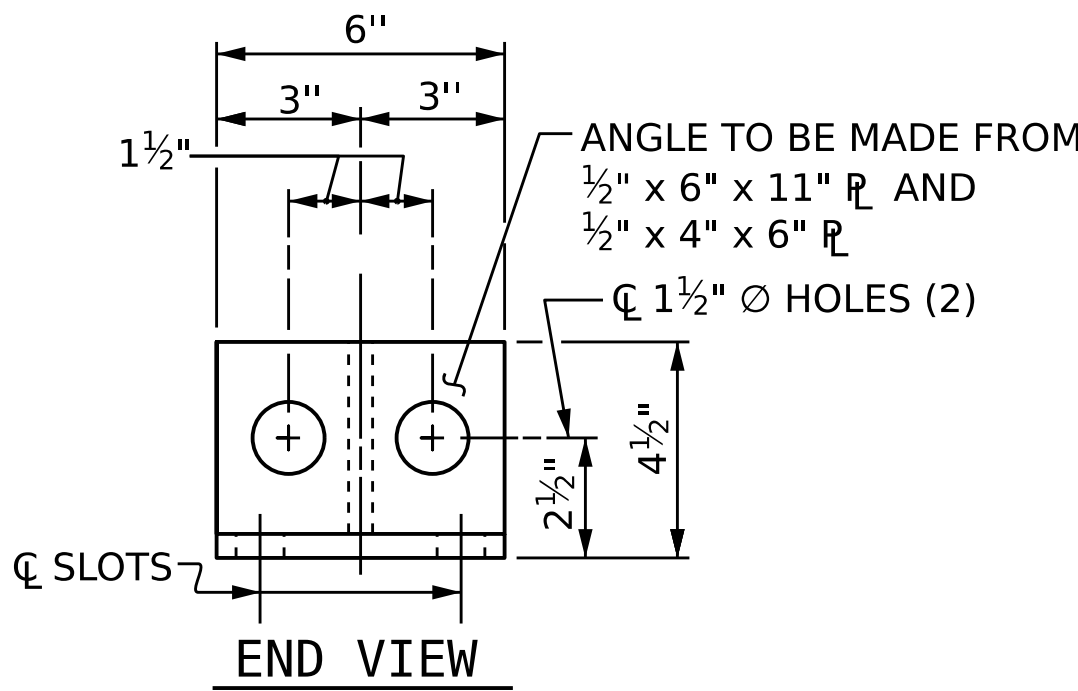
ELEVATION



PLAN

DETAILS FOR ATTACHMENT BRACKET

(BOTTOM RAIL ONLY)



END VIEW

NOTES

METAL RAIL TO END POST CONNECTION

THE METAL RAIL TO END POST CONNECTION SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. 1/2" PLATES SHALL CONFORM TO ASTM A36 GRADE 36 AND SHALL BE GALVANIZED AFTER FABRICATION.

B. 3/4" STRUCTURAL CONCRETE INSERT SHALL HAVE A WORKING LOAD SHEAR CAPACITY OF 4800 LBS. THE FERRULES SHALL ENGAGE A 3/4" Ø x 1 5/8" BOLT WITH 2" O.D. WASHER IN PLACE. THE 3/4" Ø x 1 5/8" BOLT SHALL HAVE N.C. THREADS.

C. CAP SCREWS FOR RAIL ATTACHMENT TO ANGLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F593 ALLOY 305 STAINLESS STEEL. CAP SCREWS TO BE CENTERED IN SLOTS AT 60°F. WASHERS FOR RAIL ATTACHMENT SHALL MEET THE REQUIREMENTS OF ASTM F844 EXCEPT THEY SHALL BE MADE FROM ALLOY 304 STAINLESS STEEL.

D. STANDARD CLAMP BARS (STD. No. BMR6).

THE COST OF THE STANDARD CLAMP BARS AND CAP SCREWS USED IN THE METAL RAIL TO END POST CONNECTION SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR LINEAR FEET OF 3 BAR METAL RAIL.

THE 3/4" STRUCTURAL CONCRETE INSERT WITH BOLT SHALL BE ASSEMBLED IN THE SHOP.

THE COST OF THE 3/4" STRUCTURAL CONCRETE INSERT ASSEMBLY, AND THE 1/2" PLATES COMPLETE IN PLACE SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS.

THE CONTRACTOR, AT THEIR OPTION, MAY USE AN ADHESIVE BONDING SYSTEM IN LIEU OF THE STRUCTURAL CONCRETE INSERT EMBEDDED IN THE END POST. IF THE ADHESIVE BONDING SYSTEM IS USED, THE 3/4" Ø x 1 5/8" BOLT WITH WASHER SHALL BE REPLACED WITH A 3/4" Ø x 6 1/2" BOLT AND 2" O.D. WASHER. ALL SPECIFICATIONS THAT APPLY TO THE 3/4" Ø x 1 5/8" BOLT SHALL APPLY TO THE 3/4" Ø x 6 1/2" BOLT. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

NOTES

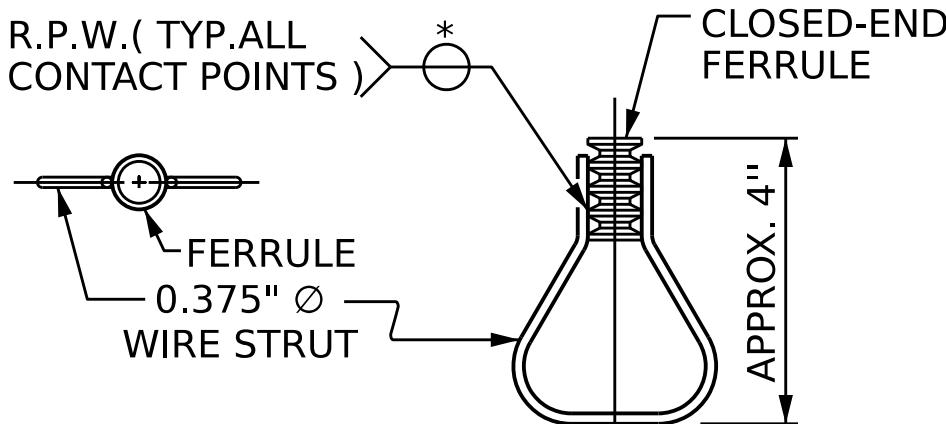
STRUCTURAL CONCRETE INSERT

THE STRUCTURAL CONCRETE INSERT ASSEMBLY SHALL CONSIST OF THE FOLLOWING COMPONENTS:

A. FERRULES SHALL BE MADE FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M169, GRADE 12L14 AND SHALL HAVE A MINIMUM LENGTH OF THREADS OF 1 1/2".

B. 1 - 3/4" Ø x 1 5/8" BOLT WITH WASHER. BOLT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLT AND WASHER SHALL BE GALVANIZED. AT THE CONTRACTORS OPTION, STAINLESS STEEL BOLT AND WASHER MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø x 1 5/8" GALVANIZED BOLT AND WASHER. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.

C. WIRE STRUT SHOWN IN THE CONCRETE INSERT ASSEMBLY DETAIL IS THE MINIMUM ALLOWABLE SIZE AND SHALL HAVE A MINIMUM TENSILE STRENGTH OF 100,000 PSI. AS AN OPTION, A 1/16" Ø WIRE STRUT WITH A MINIMUM TENSILE STRENGTH OF 90,000 PSI IS ACCEPTABLE.



PLAN

ELEVATION

STRUCTURAL CONCRETE INSERT

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

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
3 BAR METAL RAIL**

REVISIONS						SHEET NO. S02-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2	--	--	4	--	--	



Gregory E. Myers 2/2025

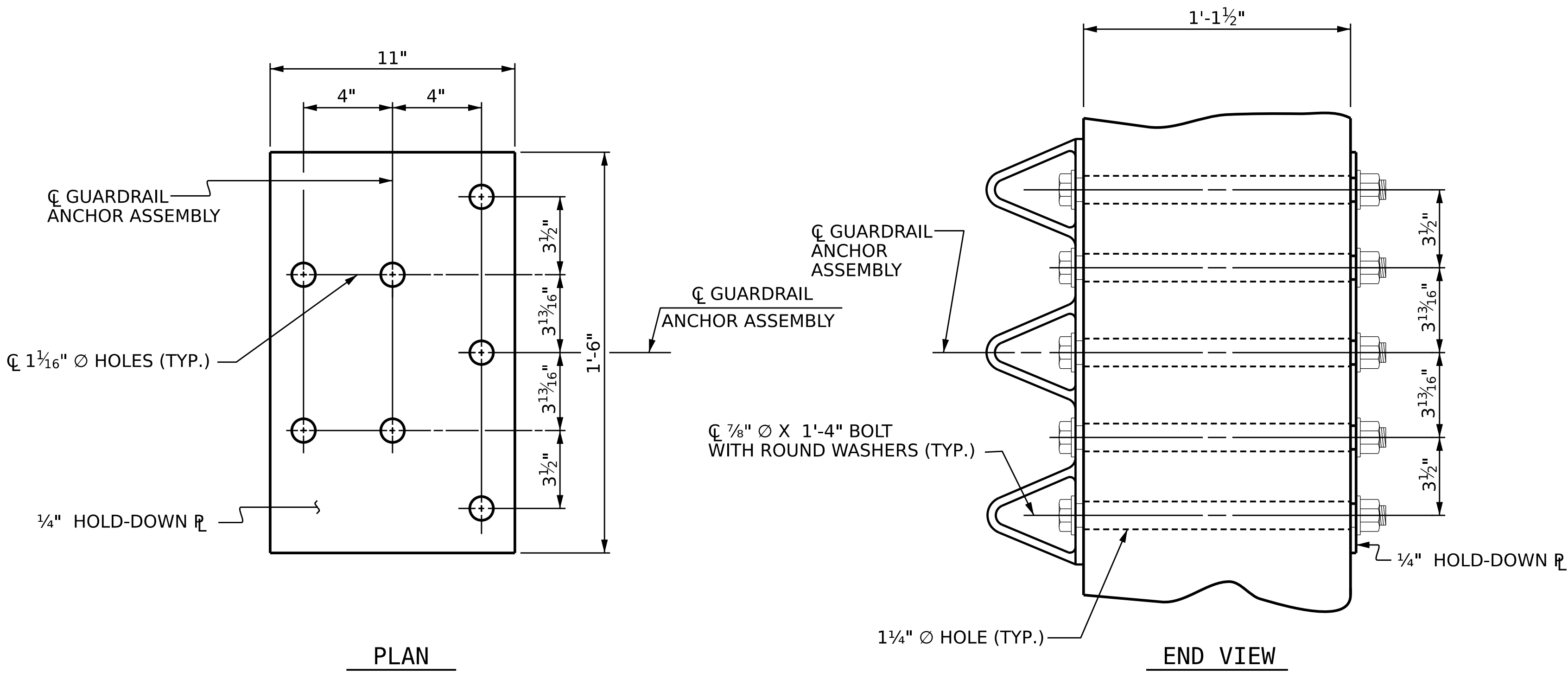


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555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

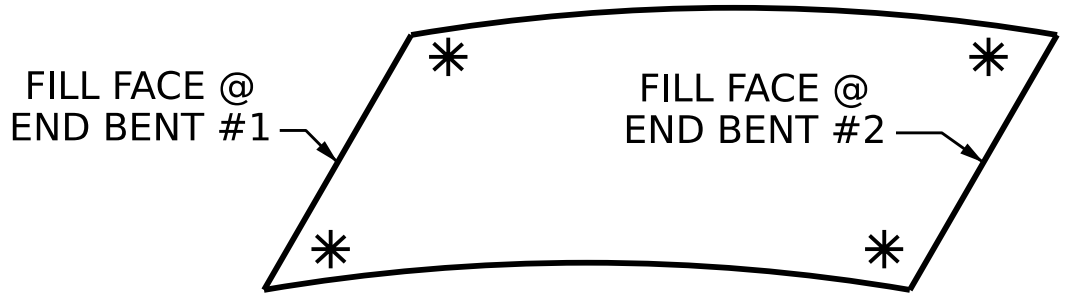
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UNLESS ALL SIGNATURES COMPLETED

STD. NO. BMR7

DES BY: A. PANDOLI	DATE: 02/25	DWG BY: B. PETERSON	DATE: 01/25
DES CHK: M. NEIHEISEL	DATE: 03/25	CHK BY: K. DICKENS	DATE: 04/25

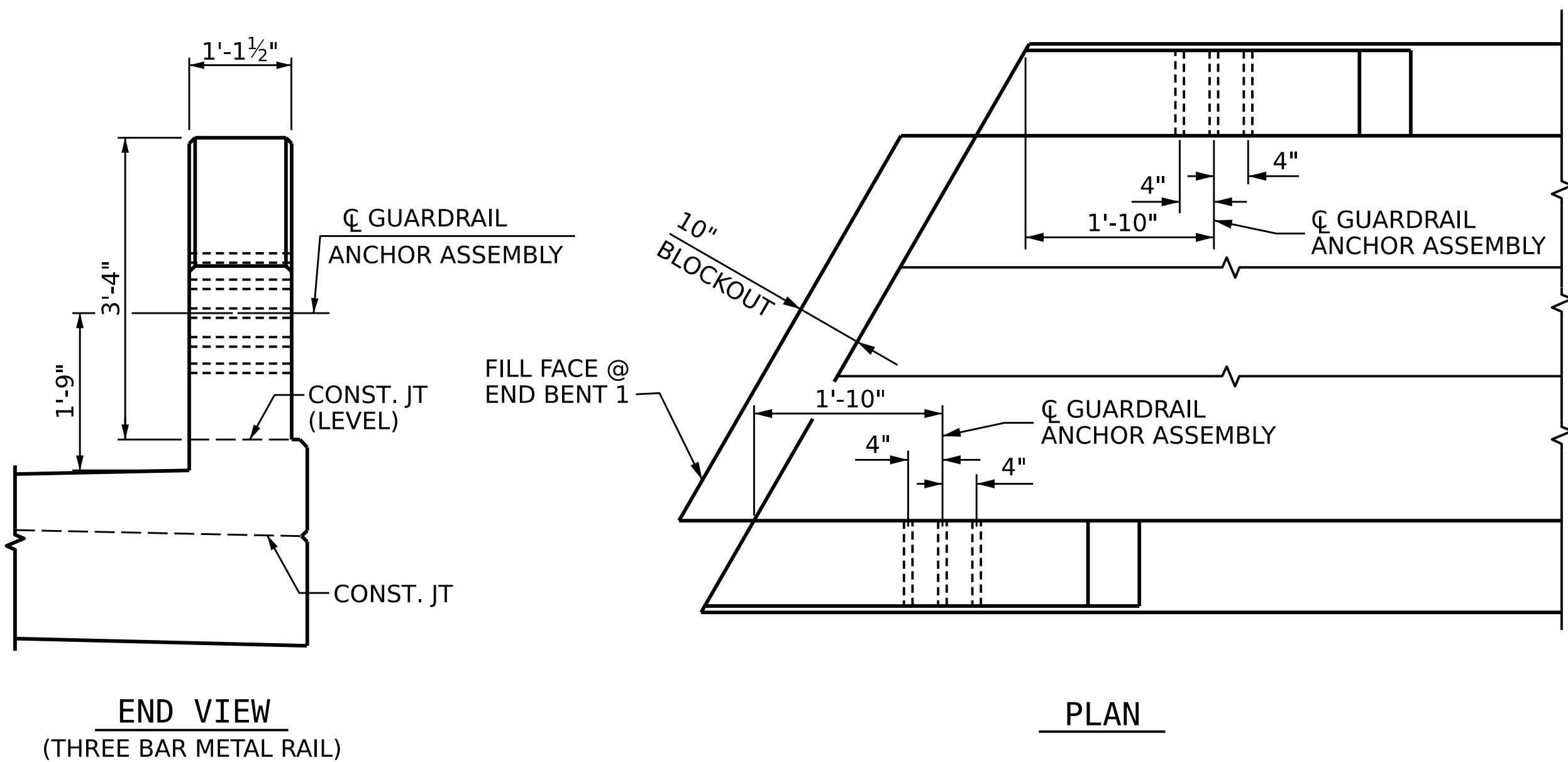


GUARDRAIL ANCHOR ASSEMBLY DETAILS



SKETCH SHOWING POINTS OF ATTACHMENT

* LOCATION OF GUARDRAIL ATTACHMENT



LOCATION OF GUARDRAIL ANCHOR AT END POST

END BENT 1 SHOWN, END BENT 2 SIMILAR

NOTES

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

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

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

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

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

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

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE END POST TO CLEAR ASSEMBLY BOLTS.

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

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE GUARDRAIL ANCHORAGE DETAILS



Gregory E. Myers 2/2025

DES BY: A. PANDOLI	DATE : 01/25	DWG BY: B. PETERSON	DATE : 01/25
DES CHK: E. NOLTING	DATE : 02/25	CHK BY: E. NOLTING	DATE : 02/25

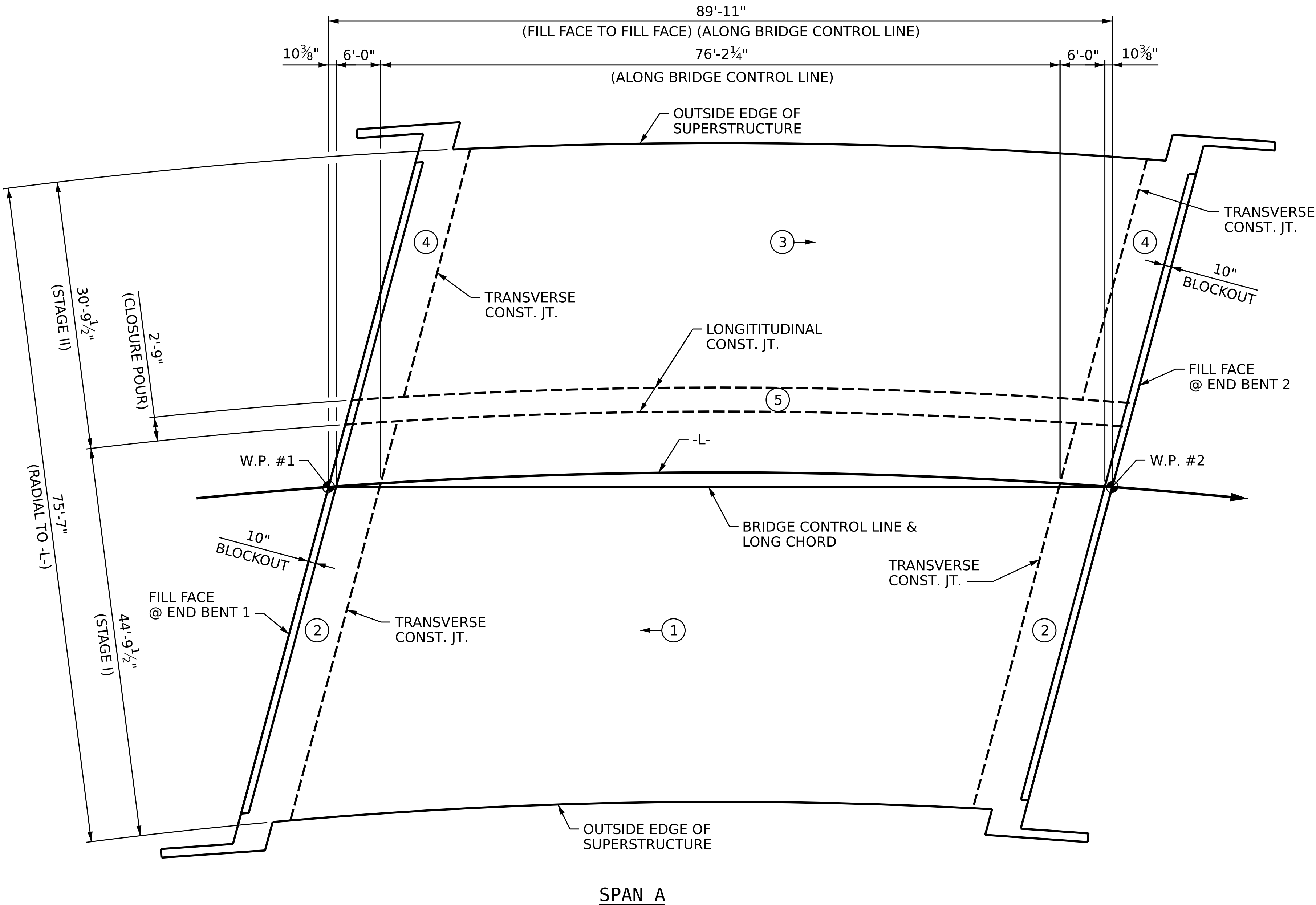
HDR	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
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REVISIONS						SHEET NO. S02-27
NO.	BY:	DATE:	NO.	BY:	DATE:	
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NOTES

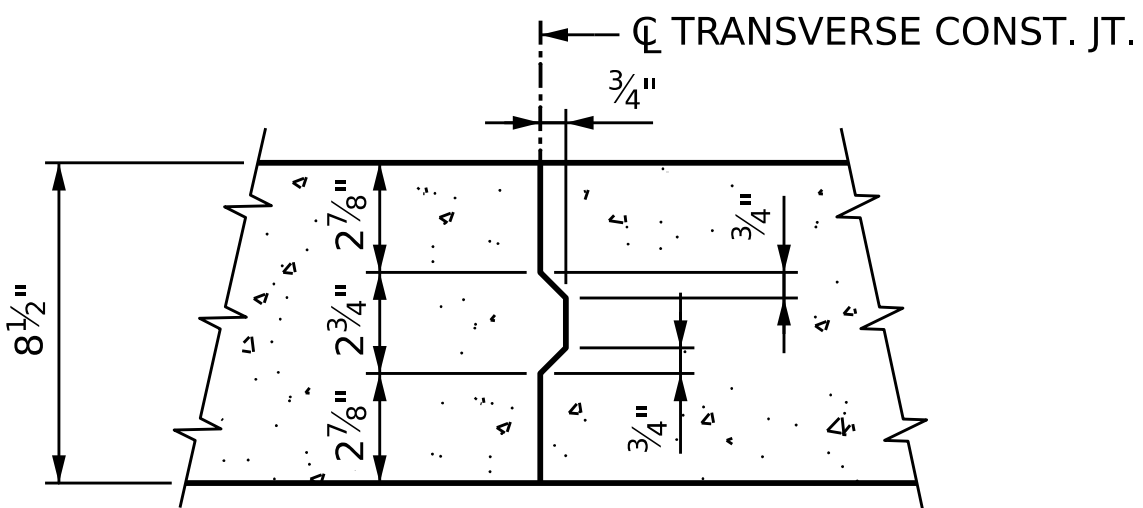
LONGITUDINAL DIMENSIONS ARE MEASURED ALONG THE LONG CHORD AND TRANSVERSE DIMENSIONS RADIAL TO -L-.



**CONCRETE POURING SEQUENCE AND LAYOUT FOR
COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB**

(REINFORCED CONCRETE DECK SLAB AREA = 6672 SQ. FT.)

→ = INDICATES POUR NUMBER AND DIRECTION OF POUR



TRANSVERSE CONSTRUCTION JOINT

(REINFORCING STEEL IN SLAB NOT SHOWN)
(LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH JOINT)

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
BILL OF
MATERIALS**

REVISIONS						SHEET NO. S02-28
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



Gregory E. Myers 2/2/2025



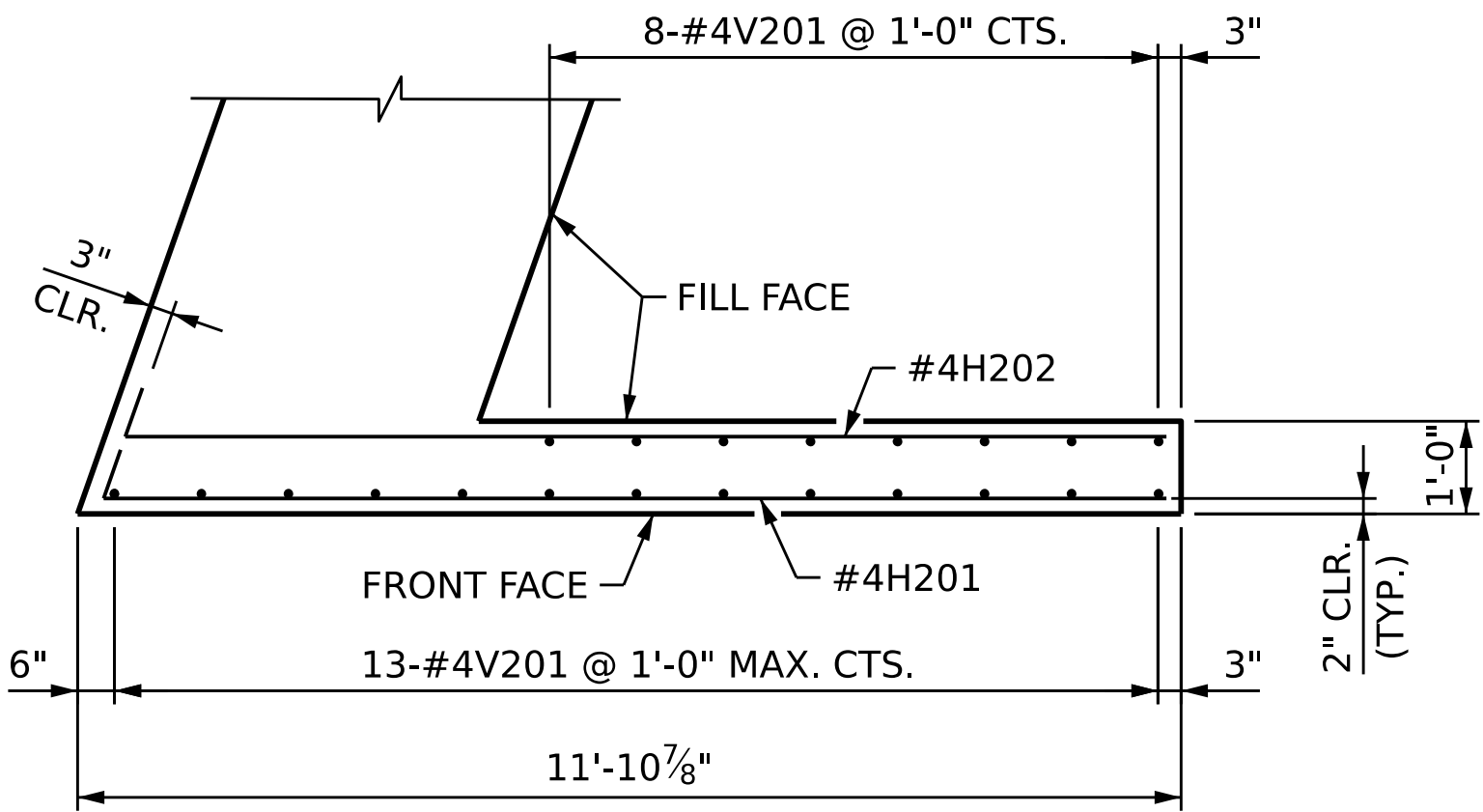
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N.C.B.E.L.S. License Number: F-0116

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UNLESS ALL SIGNATURES COMPLETED

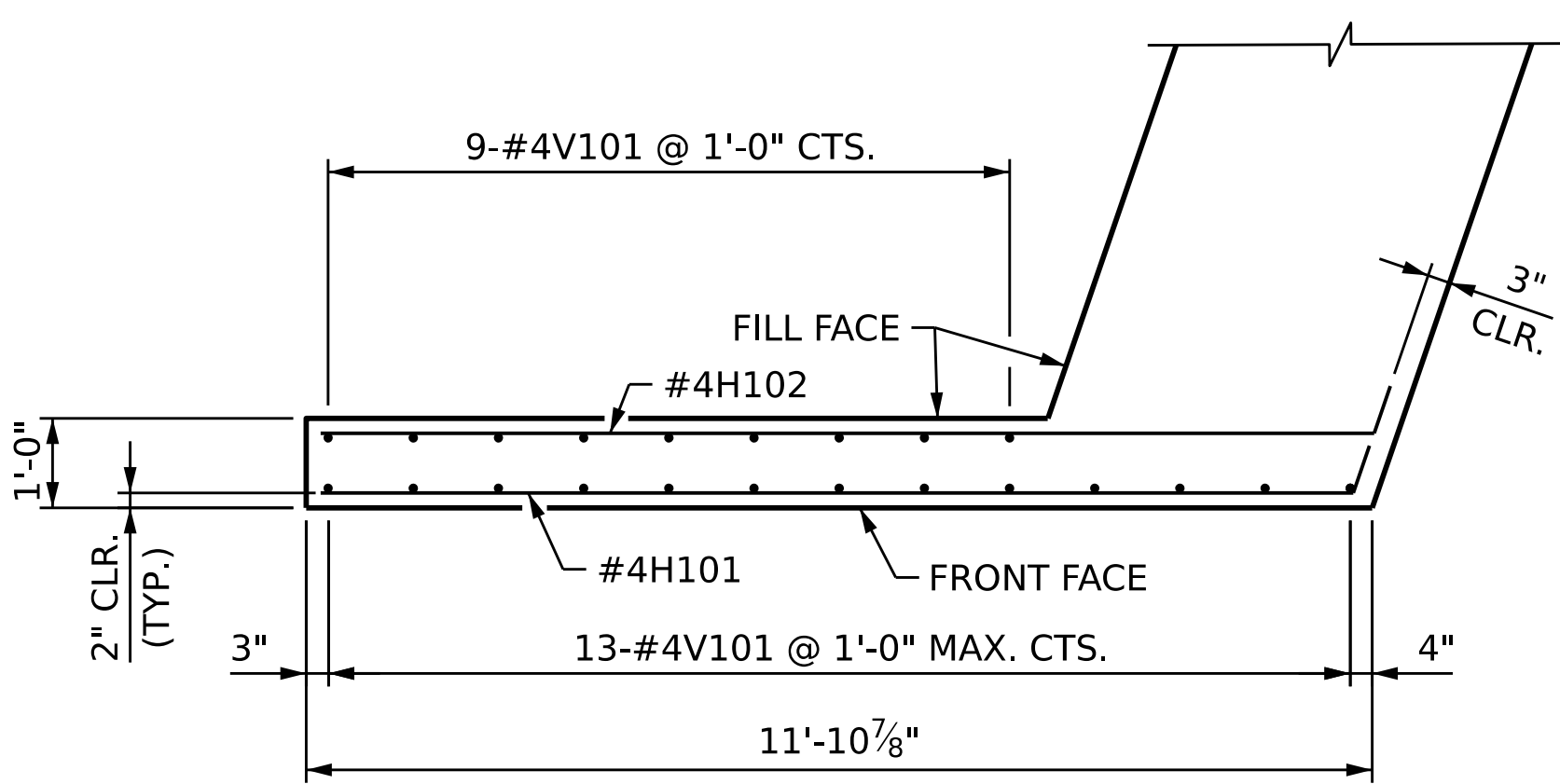
DES BY: J. PATT	DATE : 02/25	DWG BY: D. CARTER	DATE : 04/25
DES CHK: K. DICKENS	DATE : 04/25	CHK BY: K. DICKENS	DATE : 04/25

SUPERSTRUCTURE BILL OF MATERIAL																													
STAGE I DECK AND DIAPHRAGMS														STAGE II DECK AND DIAPHRAGMS															
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
*A101	153	#5	STR	44'-5"	7088	A308	1	#5	STR	31'-10"	33	K103	10	#4	STR	4'-4"	29	*A201	160	#5	STR	27'-8"	4617	B201	60	#6	STR	45'-2"	4070
*A102	1	#5	STR	42'-9"	45	A309	1	#5	STR	30'-0"	31	K104	10	#4	STR	5'-4"	36	*A202	1	#5	STR	27'-0"	28	*B202	108	#6	STR	18'-0"	2920
*A103	1	#5	STR	40'-11"	43	A310	1	#5	STR	28'-2"	29	K105	20	#4	STR	6'-10"	91	*A203	1	#5	STR	25'-2"	26	*B203	56	#4	STR	29'-6"	1104
*A104	1	#5	STR	39'-1"	41	A311	1	#5	STR	26'-4"	27	K106	10	#4	STR	3'-6"	23	*A204	1	#5	STR	23'-4"	24						
*A105	1	#5	STR	37'-3"	39	A312	1	#5	STR	24'-6"	26	K107	1	#4	STR	3'-8"	2	*A205	1	#5	STR	21'-6"	22	*D201	173	#5	STR	5'-3"	947
*A106	1	#5	STR	35'-6"	37	A313	1	#5	STR	22'-8"	24	K108	1	#4	STR	4'-1"	3	*A206	1	#5	STR	19'-8"	21	D202	173	#5	STR	4'-10"	872
*A107	1	#5	STR	33'-8"	35	A314	1	#5	STR	20'-10"	22	K109	2	#4	STR	4'-10"	6	*A207	1	#5	STR	17'-10"	19						
*A108	1	#5	STR	31'-10"	33	A315	1	#5	STR	19'-0"	20	K110	1	#4	STR	3'-2"	2	*A208	1	#5	STR	16'-0"	17	H201	7	#4	2	12'-5"	58
*A109	1	#5	STR	30'-0"	31	A316	1	#5	STR	17'-3"	18	K111	1	#4	STR	3'-3"	2	*A209	1	#5	STR	14'-2"	15	H202	7	#4	2	12'-2"	57
*A110	1	#5	STR	28'-2"	29	A317	1	#5	STR	15'-5"	16	K112	1	#4	STR	3'-9"	3	*A210	1	#5	STR	12'-4"	13	H203	7	#4	1	12'-4"	58
*A111	1	#5	STR	26'-4"	27	A318	1	#5	STR	13'-7"	14	K113	2	#4	STR	4'-6"	6	*A211	1	#5	STR	10'-6"	11	H204	7	#4	1	12'-7"	59
*A112	1	#5	STR	24'-6"	26	A319	1	#5	STR	11'-9"	12	K114	1	#4	STR	2'-10"	2	*A212	1	#5	STR	8'-8"	9						
*A113	1	#5	STR	22'-8"	24	A320	1	#5	STR	9'-11"	10	K115	1	#4	STR	6'-0"	4	*A213	1	#5	STR	6'-10"	7	K201	5	#4	STR	35'-3"	118
*A114	1	#5	STR	20'-10"	22	A321	1	#5	STR	8'-1"	8	K116	1	#4	STR	6'-5"	4	*A214	1	#5	STR	5'-0"	5	K202	5	#4	STR	34'-1"	114
*A115	1	#5	STR	19'-0"	20	A322	1	#5	STR	6'-3"	7	K117	2	#4	STR	7'-2"	10	*A215	1	#5	STR	3'-2"	3	K203	6	#4	STR	3'-10"	15
*A116	1	#5	STR	17'-3"	18	A323	1	#5	STR	4'-6"	5	K118	1	#4	STR	5'-6"	4	*A216	1	#5	STR	27'-3"	28	K204	6	#4	STR	4'-10"	19
*A117	1	#5	STR	15'-5"	16	A324	1	#5	STR	2'-8"	3	K119	6	#4	STR	2'-11"	12	*A217	1	#5	STR	25'-5"	27	K205	12	#4	STR	6'-4"	51
*A118	1	#5	STR	13'-7"	14	A325	1	#5	STR	42'-8"	45	K120	1	#4	STR	4'-1"	3	*A218	1	#5	STR	23'-6"	25	K206	6	#4	STR	3'-0"	12
*A119	1	#5	STR	11'-9"	12	A326	1	#5	STR	40'-10"	43	K121	1	#4	STR	4'-7"	3	*A219	1	#5	STR	21'-7"	23	K207	1	#4	STR	4'-3"	3
*A120	1	#5	STR	9'-11"	10	A327	1	#5	STR	38'-11"	41	K122	2	#4	STR	5'-4"	7	*A220	1	#5	STR	19'-8"	21	K208	1	#4	STR	4'-9"	3
*A121	1	#5	STR	8'-1"	8	A328	1	#5	STR	37'-0"	39	K123	1	#4	STR	3'-8"	2	*A221	1	#5	STR	17'-9"	19	K209	2	#4	STR	5'-6"	7
*A122	1	#5	STR	6'-3"	7	A329	1	#5	STR	35'-1"	37	K124	6	#4	STR	2'-8"	11	*A222	1	#5	STR	15'-10"	17	K210	1	#4	STR	3'-10"	3
*A123	1	#5	STR	4'-6"	5	A330	1	#5	STR	33'-3"	35							*A223	1	#5	STR	14'-0"	15	K211	1	#4	STR	4'-7"	3
*A124	1	#5	STR	2'-8"	3	A331	1	#5	STR	31'-4"	33	*S101	56	#4	3	11'-11"	446	*A224	1	#5	STR	12'-1"	13	K212	1	#4	STR	5'-1"	3
*A125	1	#5	STR	42'-8"	45	A332	1	#5	STR	29'-5"	31	*S102	52	#4	3	10'-4"	359	*A225	1	#5	STR	10'-2"	11	K213	2	#4	STR	5'-10"	8
*A126	1	#5	STR	40'-10"	43	A333	1	#5	STR	27'-6"	29	S103	24	#4	5	5'-8"	91	*A226	1	#5	STR	8'-3"	9	K214	1	#4	STR	4'-1"	3
*A127	1	#5	STR	38'-11"	41	A334	1	#5	STR	25'-8"	27	S104	24	#4	5	6'-11"	111	*A227	1	#5	STR	6'-4"	7	K215	1	#4	STR	4'-10"	3
*A128	1	#5	STR	37'-0"	39	A335	1	#5	STR	23'-9"	25							*A228	1	#5	STR	4'-5"	5	K216	1	#4	STR	5'-3"	4
*A129	1	#5	STR	35'-1"	37	A336	1	#5	STR	21'-10"	23	U101	57	#4	4	9'-2"	349	*A229	1	#5	STR	2'-6"	3	K217	2	#4	STR	6'-0"	8
*A130	1	#5	STR	33'-3"	35	A337	1	#5	STR	19'-11"	21	U102	3	#4	4	13'-1"	26						K218	1	#4	STR	4'-4"	3	
*A131	1	#5	STR	31'-4"	33	A338	1	#5	STR	18'-0"	19	U103	3	#4	4	13'-3"	27	A401	160	#5	STR	27'-8"	4617	K219	6	#4	STR	2'-9"	11
*A132	1	#5	STR	29'-5"	31	A339	1	#5	STR	16'-2"	17							A402	1	#5	STR	27'-0"	28	K220	1	#4	STR	3'-4"	2
*A133	1	#5	STR	27'-6"	29	A340	1	#5	STR	14'-3"	15							A403	1	#5	STR	25'-2"	26	K221	1	#4	STR	3'-10"	3
*A134	1	#5	STR	25'-8"	27	A341	1	#5	STR	12'-4"	13	* EPOXY COATED REINFORCING STEEL (⌘) 15,614 LBS.					A404	1	#5	STR	23'-4"	24	K222	2	#4	STR	4'-7"	6	
*A135	1	#5	STR	23'-9"	25	A342	1	#5	STR	10'-5"	11						A405	1	#5	STR	21'-6"	22	K223	1	#4	STR	2'-11"	2	
*A136	1	#5	STR	21'-10"	23	A343	1	#5	STR	8'-6"	9	REINFORCING STEEL (⌘) 16,230 LBS.					A406	1	#5	STR	19'-8"	21	K224	6	#4	STR	2'-9"	11	
*A137	1	#5	STR	19'-11"	21	A344	1	#5	STR	6'-8"	7	* DENOTES EPOXY COATED REINFORCING STEEL					A407	1	#5	STR	17'-10"	19							
*A138	1	#5	STR	18'-0"	19	A345	1	#5	STR	4'-9"	5						A408	1	#5	STR	16'-0"	17	*S201	36	#4	3	11'-11"	287	
*A139	1	#5	STR	16'-2"	17	A346	1	#5	STR	2'-10"	3	CLASS AA CONCRETE					A409	1	#5	STR	14'-2"	15	*S202	34	#4	3	10'-4"	235	
*A140	1	#5	STR	14'-3"	15												A410	1	#5	STR	12'-4"	13	S203	16	#4	5	5'-8"	61	
*A141	1	#5	STR	12'-4"	13	B101	84	#6	STR	45'-5"	5730	POUR NO.		CU. YDS.		A411	1	#5	STR	10'-6"	11	S204	16	#4	5	6'-11"	74		
*A142	1	#5	STR	10'-5"	11	*B102	154	#6	STR	18'-0"	4164	1		118.6		A412	1	#5	STR	8'-8"	9								
*A143	1	#5	STR	8'-6"	9	*B103	78	#4	STR	29'-6"	1537	2		64.0		A413	1	#5	STR	6'-10"	7	U201	36	#4	4	9'-2"	220		
*A144	1	#5	STR	6'-8"	7							TOTAL (⌘)		182.6		A414	1	#5	STR	5'-0"	5	U202	6	#4	4	13'-2"	53		
*A145	1	#5	STR	4'-9"	5	*D101	173	#5	STR	5'-3"	947	(⌘) QUANTITIES FOR PARAPETS AND SIDEWALK ARE NOT INCLUDED					A415	1	#5	STR	3'-2"	3							
*A146	1	#5	STR	2'-10"	3	D102	173	#5	STR	4'-10"	872						A416	1	#5	STR	27'-3"	28	* EPOXY COATED REINFORCING STEEL (⌘) 10,553 LBS. REINFORCING STEEL (⌘) 11,057 LBS.						
																	A417	1	#5	STR	25'-5"	27							
A301	153	#5	STR	44'-5"	7088	H101	7	#4	1	12'-5"	58						A418	1	#5	STR	23'-6"	25	* DENOTES EPOXY COATED REINFORCING STEEL						
A302	1	#5	STR	42'-9"	45	H102	7	#4	1	12'-8"	59						A419	1	#5	STR	21'-7"	23							
A303	1	#5	STR	40'-11"	43	H103	7	#4	2	12'-4"	58						A420	1	#5	STR	19'-8"	21	CLASS AA CONCRETE						
A304	1	#5	STR	39'-1"	41	H104	7	#4	2	12'-3"	57						A421	1	#5	STR									

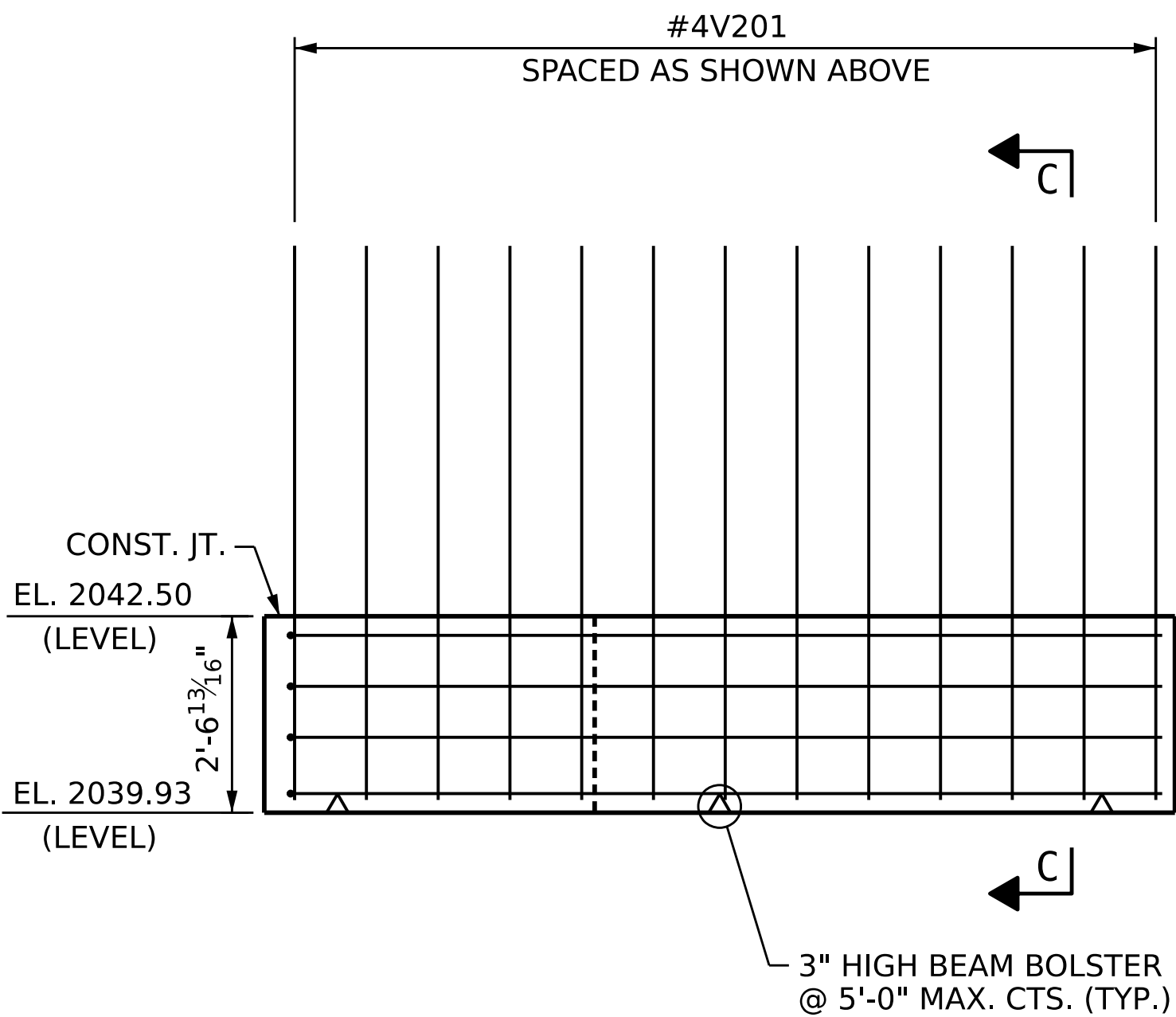
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETE**



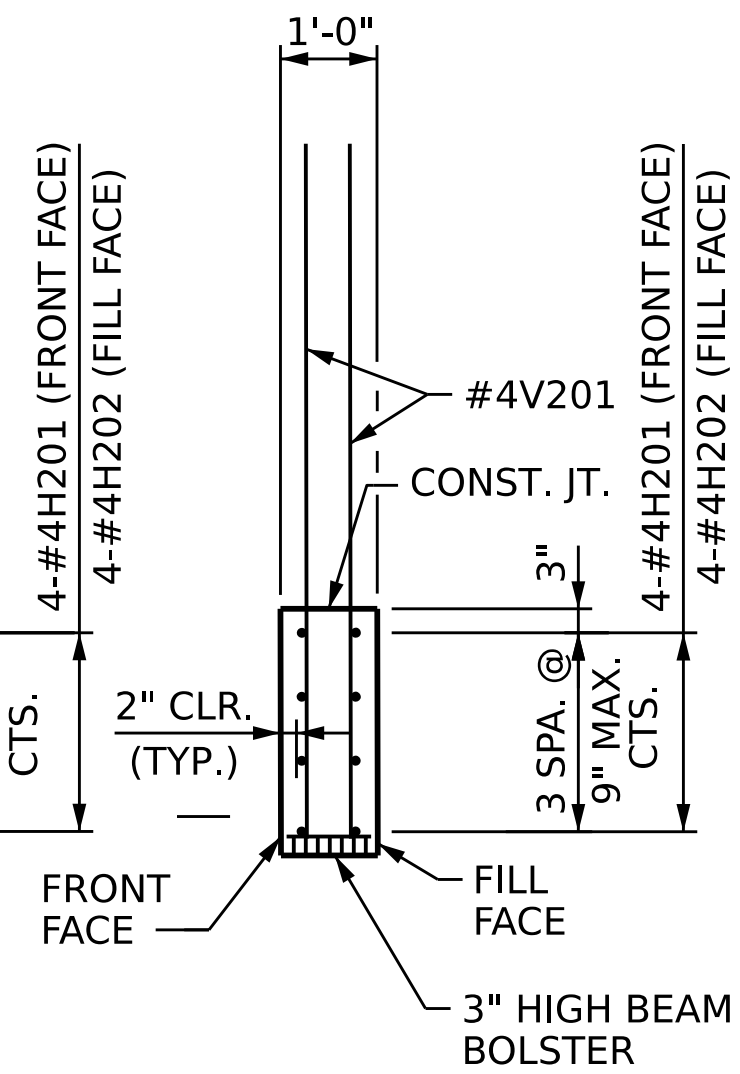
PLAN - WINGWALL "W1" (STAGE II)



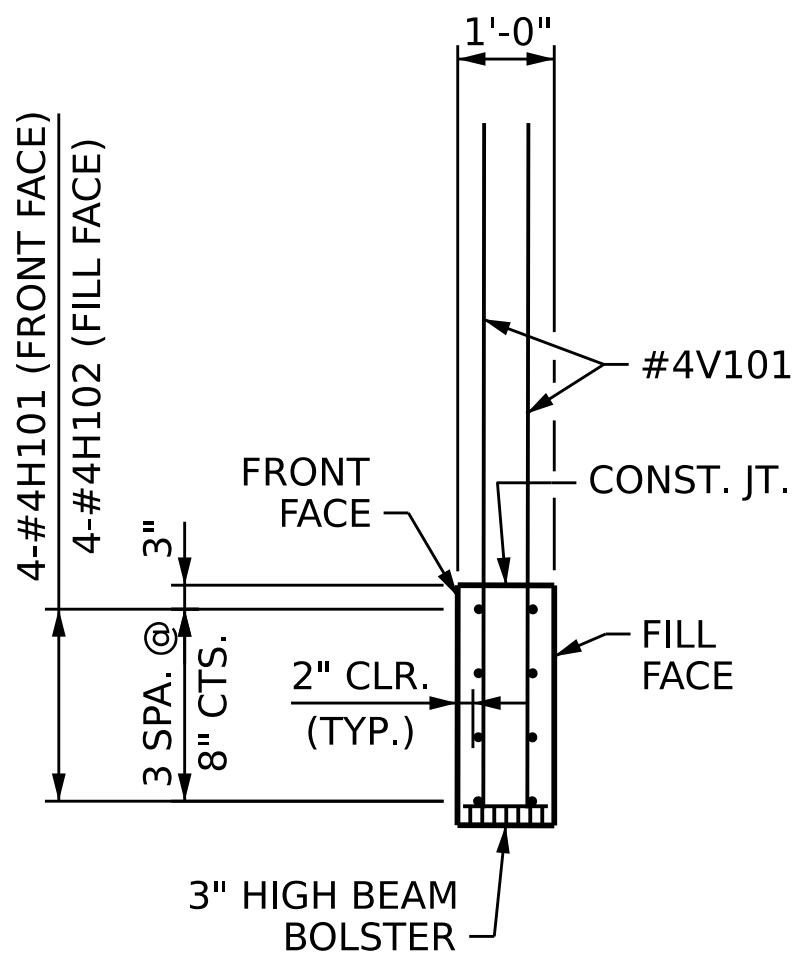
PLAN - WINGWALL "W2" (STAGE I)



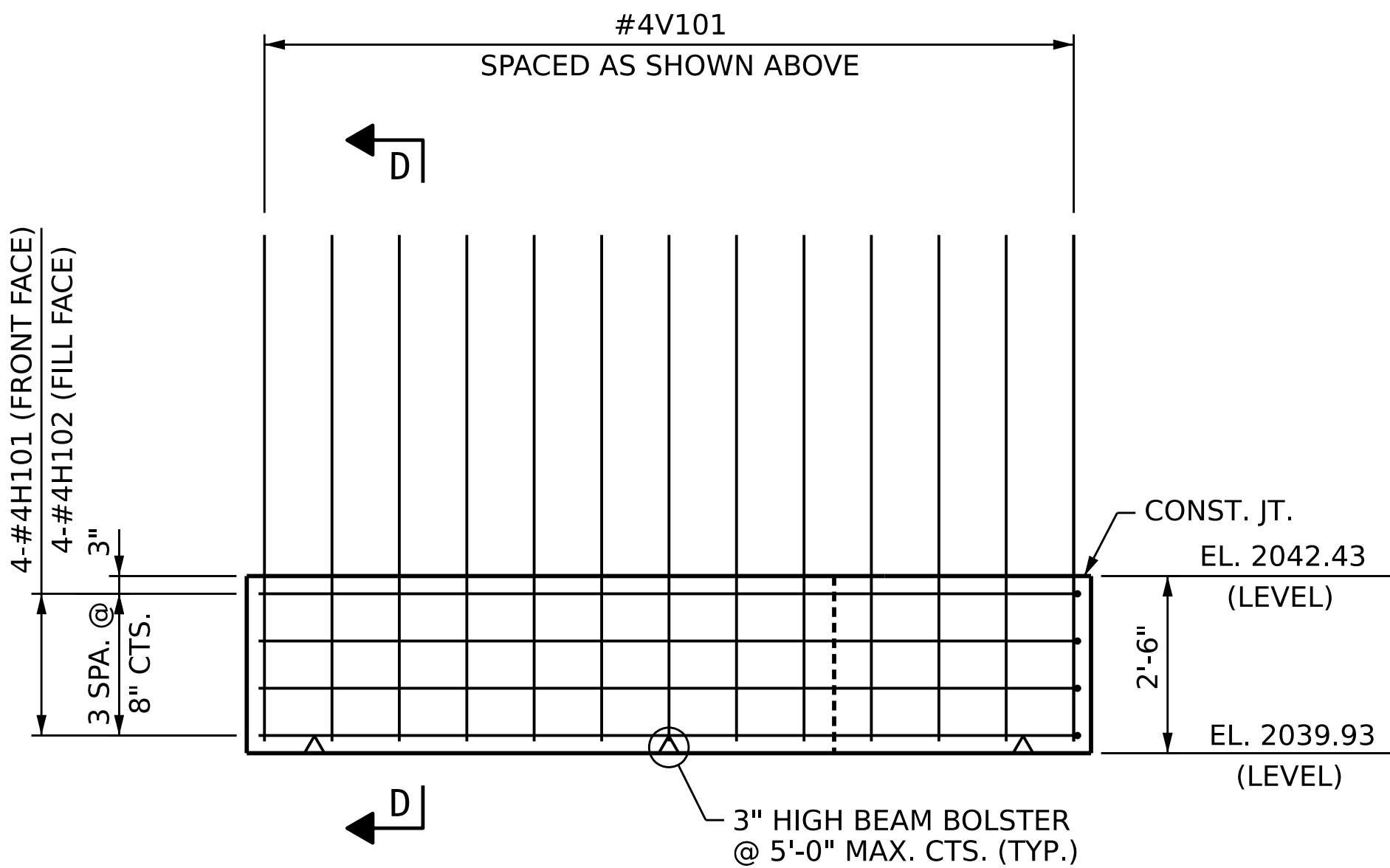
ELEVATION - WINGWALL "W1" (STAGE II)



SECTION C-C



SECTION D-D



ELEVATION - WINGWALL "W2" (STAGE I)

DES BY: J. PATT	DATE : 02/25	DWG BY: B. PETERSON	DATE : 01/25
DES CHK: E. NOLTING	DATE : 03/25	CHK BY: G. MYERS	DATE : 03/25

HDR	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
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Gregory E. Myers 2/2025

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UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 3 OF 4

REVISIONS						SHEET NO. S02-32
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

1'-9" (TYP.)

#4D101 OR #4D201

1'-1 1/4"

9 1/4"

9 1/4"

1'-1 1/4"

CL BRG.

2" CLR. (TYP.)

#5U101 OR #5U201

FILL FACE

#5S101 OR #5S201

5-#5B108, #5B109 OR #5B208

#5S102 OR #5S202

5-#9 "B" BARS

2" CLR. (TYP.)

Figure 1: Detail drawings of pile caps. The figure shows four detail drawings of pile caps. Detail 'A' shows a 45-degree angle with a tolerance of +10/-0 degrees and dimensions of 0 inches to 1/8 inch. Detail 'B' shows a 60-degree angle with a tolerance of +10/-0 degrees and dimensions of 0 inches to 1/8 inch. The drawings are labeled 'DETAIL A' and 'DETAIL B'. Below the drawings are two labels: '* PILE VERTICAL' and '* PILE HORIZONTAL OR VERTICAL'.

* POSITION OF PILE DURING WELDING

DES BY: <u>J. PATT</u>	DATE : <u>02/25</u>	DWG BY: <u>B. PETERSON</u>	DATE : <u>01/25</u>
DES CHK: <u>E. NOLTING</u>	DATE : <u>03/25</u>	CHK BY: <u>E. NOLTING</u>	DATE : <u>02/25</u>

BAR TYPES

Diagram 1 shows two horizontal bars. Bar B101 has a length of 33'-0" and a hook of 1'-3". Bar B201 has a length of 24'-0" and a hook of 1'-3". A circle with the number 1 is in the center.

Diagram 2 shows four horizontal bars. Bar S202 has a length of 3'-5" and a hook of 5 1/2". Bar S205 has a length of 3'-6". Bar S207 has a length of 3'-7". Bar S209 has a length of 3'-8" and a hook of 5 1/2". A circle with the number 2 is in the center.

Diagram 3 shows two horizontal bars. Bar H101 has a length of 11'-5" and a hook of 3 15/16". Bar H102 has a length of 11'-8" and a hook of 3 15/16". A circle with the number 3 is in the center.

Diagram 4 shows four horizontal bars. Bar S201 has a length of 3'-5" and a hook of 5 1/2". Bar S204 has a length of 3'-6". Bar S206 has a length of 3'-7". Bar S208 has a length of 3'-8" and a hook of 5 1/2". A circle with the number 4 is in the center.

Diagram 5 shows two horizontal bars. Bar H201 has a length of 11'-5" and a hook of 3 15/16". Bar H202 has a length of 11'-2" and a hook of 3 15/16". A circle with the number 5 is in the center.

Diagram 6 shows four horizontal bars. Bar S201 has a length of 3'-5" and a hook of 5 1/2". Bar S204 has a length of 3'-6". Bar S206 has a length of 3'-7". Bar S208 has a length of 3'-8" and a hook of 5 1/2". A circle with the number 6 is in the center.

Diagram 7 shows four horizontal bars. Bar S201 has a length of 3'-5" and a hook of 5 1/2". Bar S204 has a length of 3'-6". Bar S206 has a length of 3'-7". Bar S208 has a length of 3'-8" and a hook of 5 1/2". A circle with the number 7 is in the center.

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 FOR THE SEVERAL PAY ITEMS.

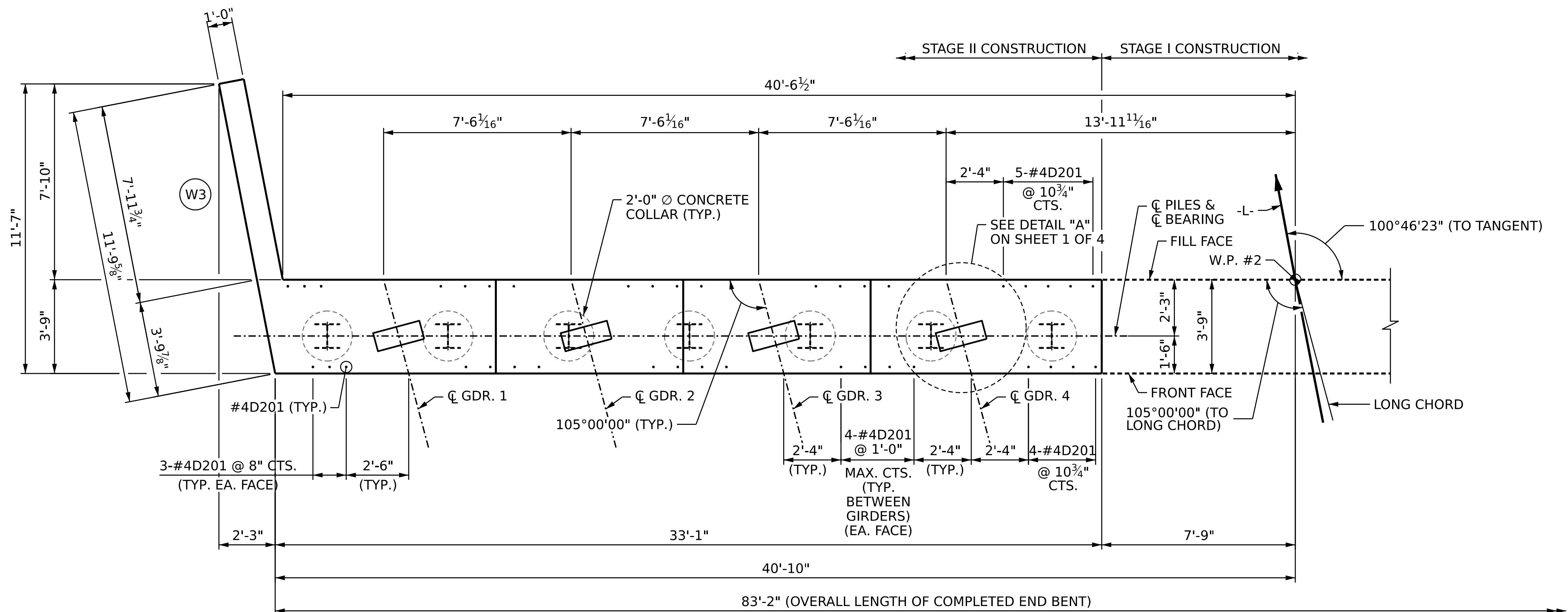
 HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

END BENT 1 STAGE I						END BENT 1 STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B101	10	#9	1	34'-3"	1165	B201	10	#9	1	25'-3"	859
B102	5	#9	STR	25'-0"	425	B202	5	#9	STR	14'-2"	241
B103	5	#9	STR	26'-3"	446	B203	5	#9	STR	15'-5"	262
B104	3	#5	STR	53'-8"	168	B204	3	#5	STR	32'-4"	101
B105	3	#5	STR	52'-6"	164	B205	3	#5	STR	33'-5"	105
B106	13	#4	STR	3'-5"	30	B206	9	#4	STR	3'-5"	21
B107	8	#4	STR	28'-2"	151	B207	4	#4	STR	32'-11"	88
B108	5	#5	STR	19'-0"	99	B208	5	#5	STR	15'-11"	83
B109	5	#5	STR	15'-8"	82						
						D201	41	#4	STR	4'-0"	110
D101	69	#4	STR	4'-0"	184						
						H201	4	#4	3	12'-5"	33
H101	4	#4	2	12'-5"	33	H202	4	#4	3	12'-2"	33
H102	4	#4	2	12'-8"	34						
						S201	40	#5	4	8'-7"	358
S101	64	#5	4	8'-7"	573	S202	40	#5	5	4'-4"	181
S102	64	#5	5	4'-4"	289	S203	14	#4	6	6'-6"	61
S103	18	#4	6	6'-6"	78	S204	1	#5	4	8'-8"	9
						S205	1	#5	5	4'-5"	5
U101	32	#5	7	6'-5"	214	S206	1	#5	4	8'-9"	9
						S207	1	#5	5	4'-6"	5
V101	22	#4	STR	7'-0"	103	S208	1	#5	4	8'-10"	9
						S209	1	#5	5	4'-7"	5
						U201	17	#5	7	6'-5"	114
						V201	21	#4	STR	7'-1"	99
REINFORCING STEEL 4238 LBS						REINFORCING STEEL 2791 LBS					
CLASS "A" CONCRETE 23.0 CU. YDS.						CLASS "A" CONCRETE 15.1 CU. YDS.					
HP12X53 STEEL PILES NO.						HP12X53 STEEL PILES NO.					
TOTAL 9						TOTAL 7					

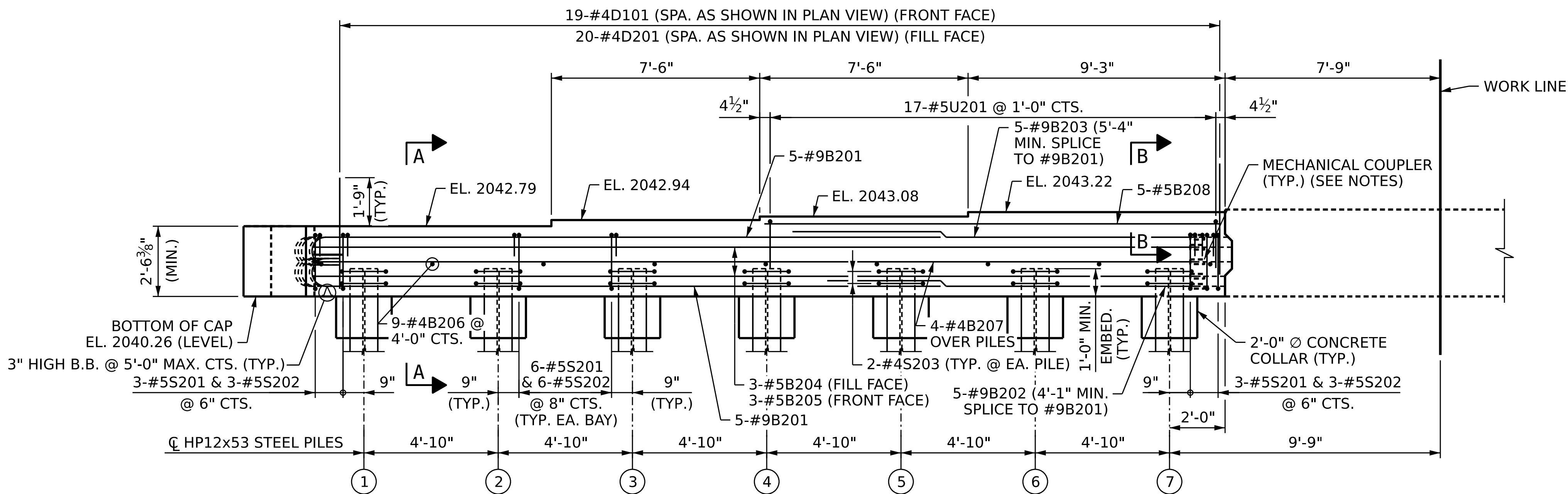
SHEET 4 OF 4

SUBSTRUCTURE END BENT 1 SECTIONS AND DETAILS

REVISIONS						SHEET NO. S02-33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	



PLAN



ELEVATION

STEEL H-PILE POINTS ARE REQUIRED FOR STEEL H-PILES AT END BENT 2, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

SHEET 2 OF 4

**SUBSTRUCTURE
END BENT 2
PLAN AND ELEVATION
(STAGE II)**

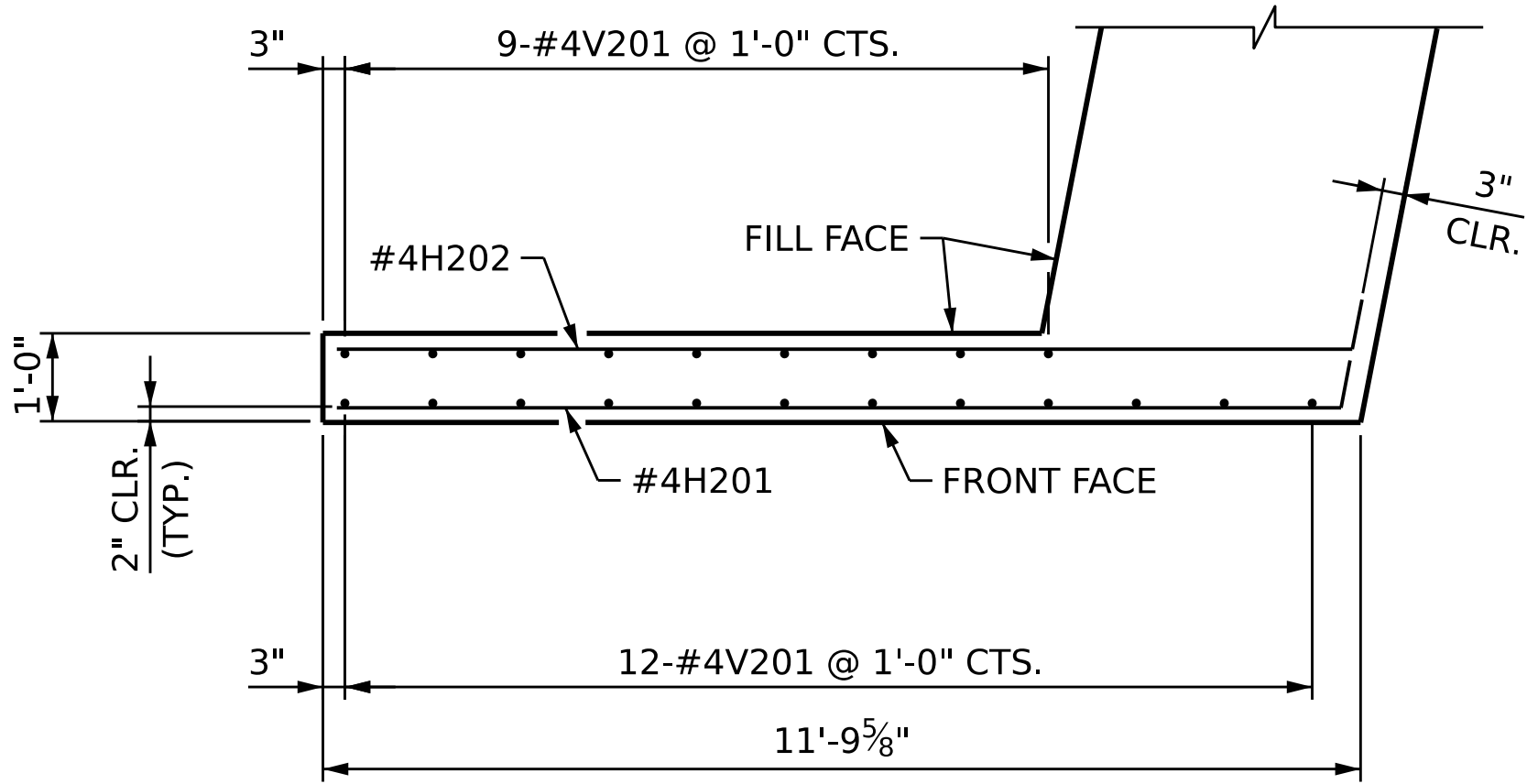
REVISIONS						SHEET NO. S02-35
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

DES BY: <u>J. PATT</u>	DATE : <u>02/25</u>	DWG BY: <u>B. PETERSON</u>	DATE : <u>01/25</u>
DES CHK: <u>E. NOLTING</u>	DATE : <u>03/25</u>	CHK BY: <u>G. MYERS</u>	DATE : <u>03/25</u>

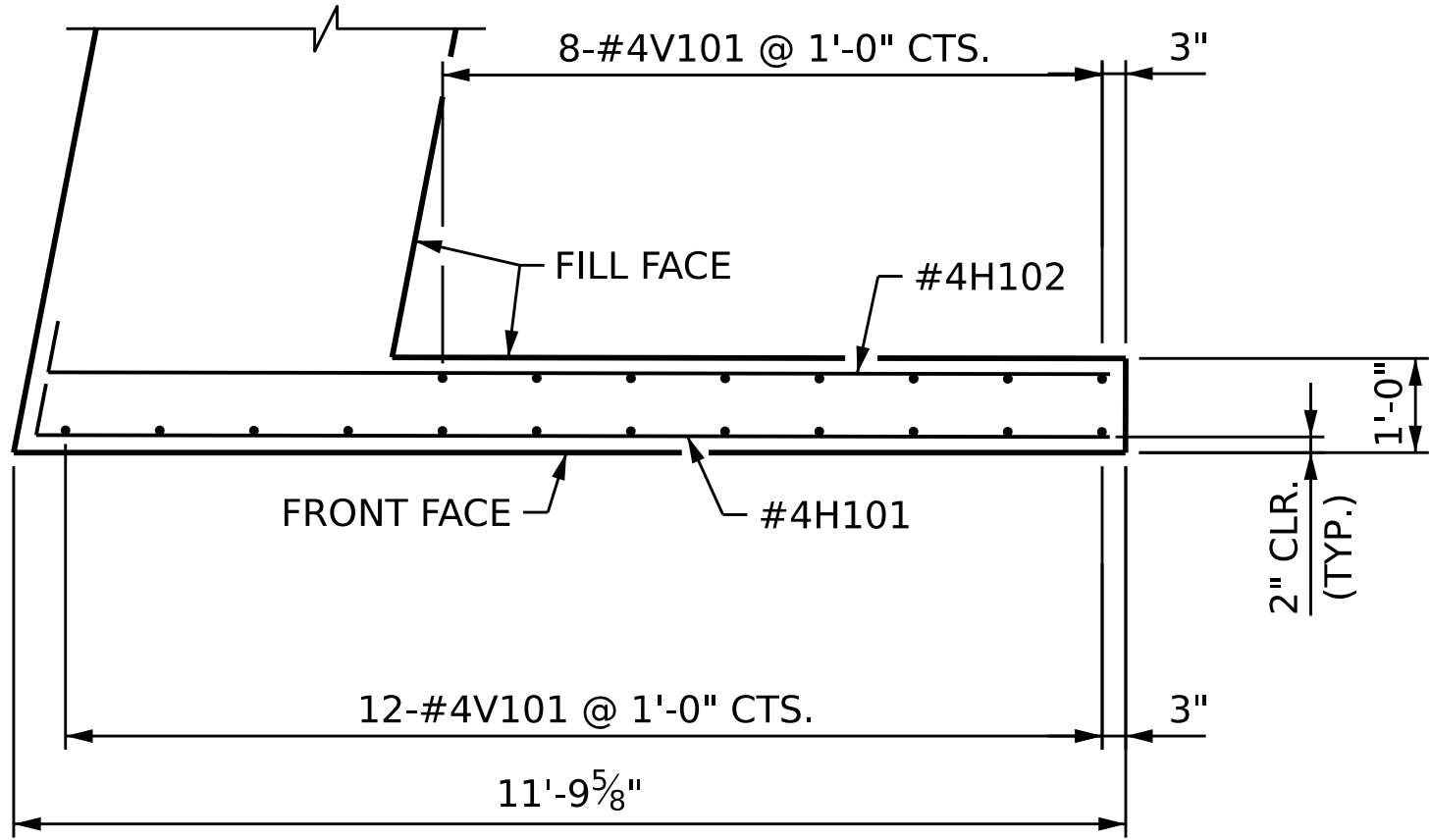


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N.C.B.E.L.S. License Number: F-0116

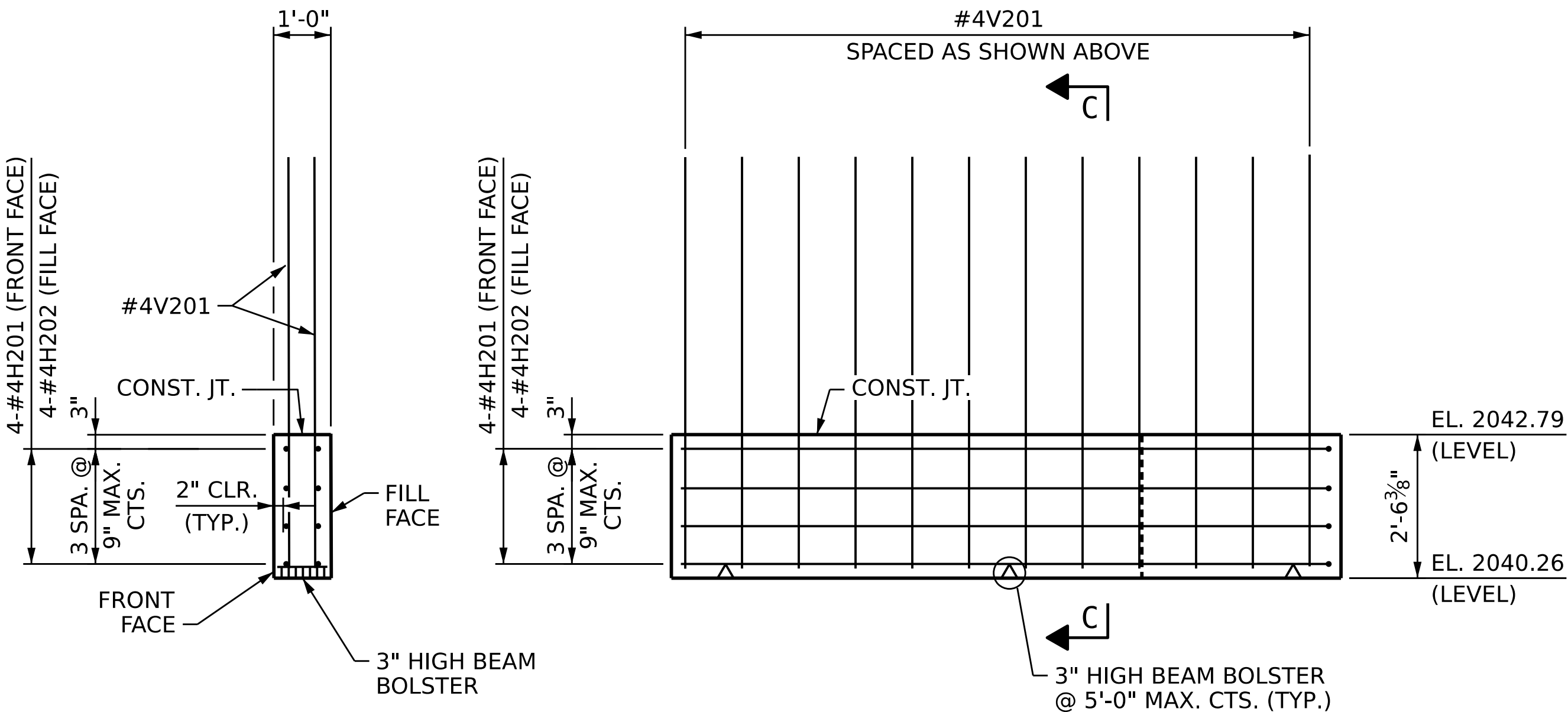
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PLAN - WINGWALL "W3" (STAGE II)

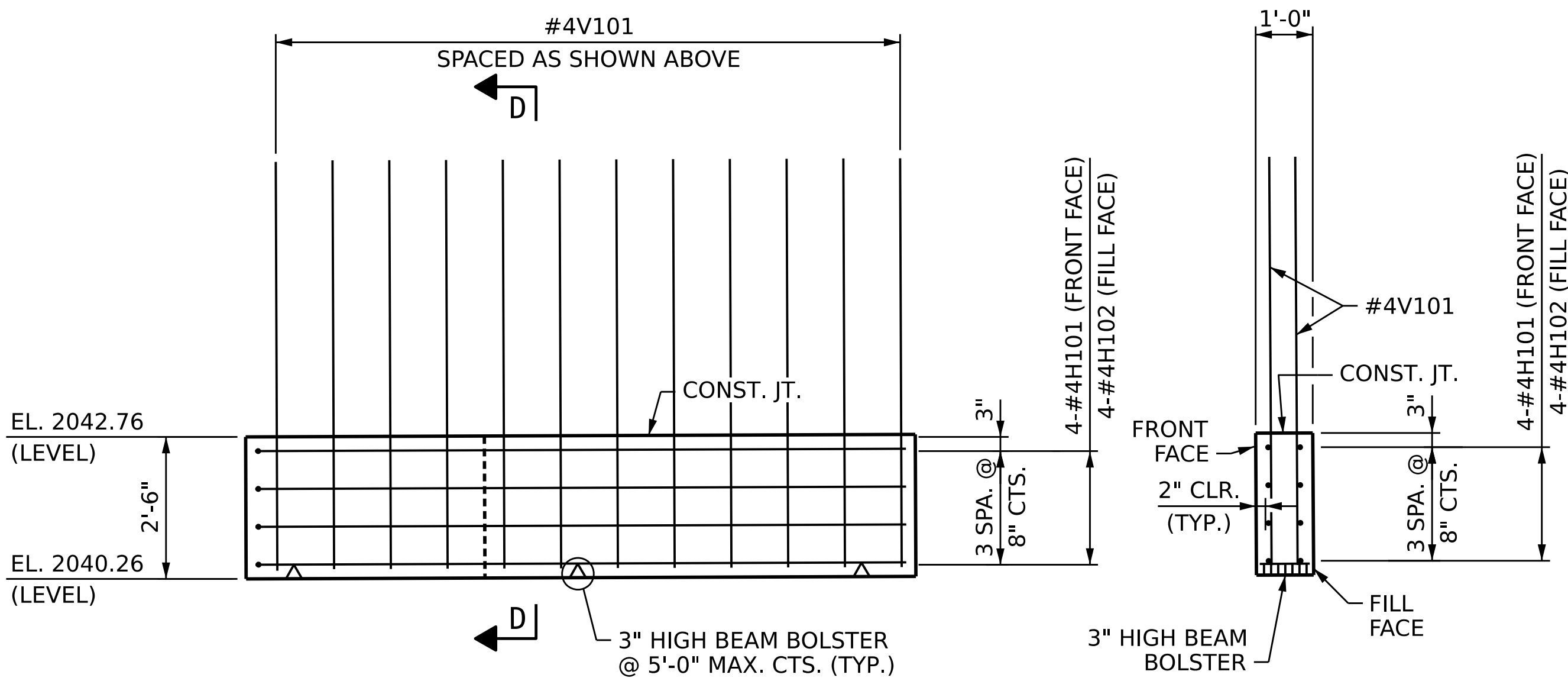


PLAN - WINGWALL "W4" (STAGE I)



SECTION C-C

ELEVATION - WINGWALL "W3" (STAGE II)



ELEVATION - WINGWALL "W4" (STAGE I)

SECTION D-D

PROJECT NO. **R-5600**

JACKSON COUNTY

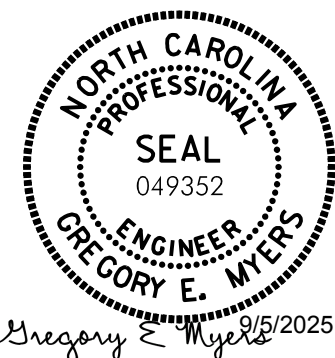
STATION: **27+24.00 -L-**

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
END BENT 2
WINGWALLS**

REVISIONS						SHEET NO. S02-36
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

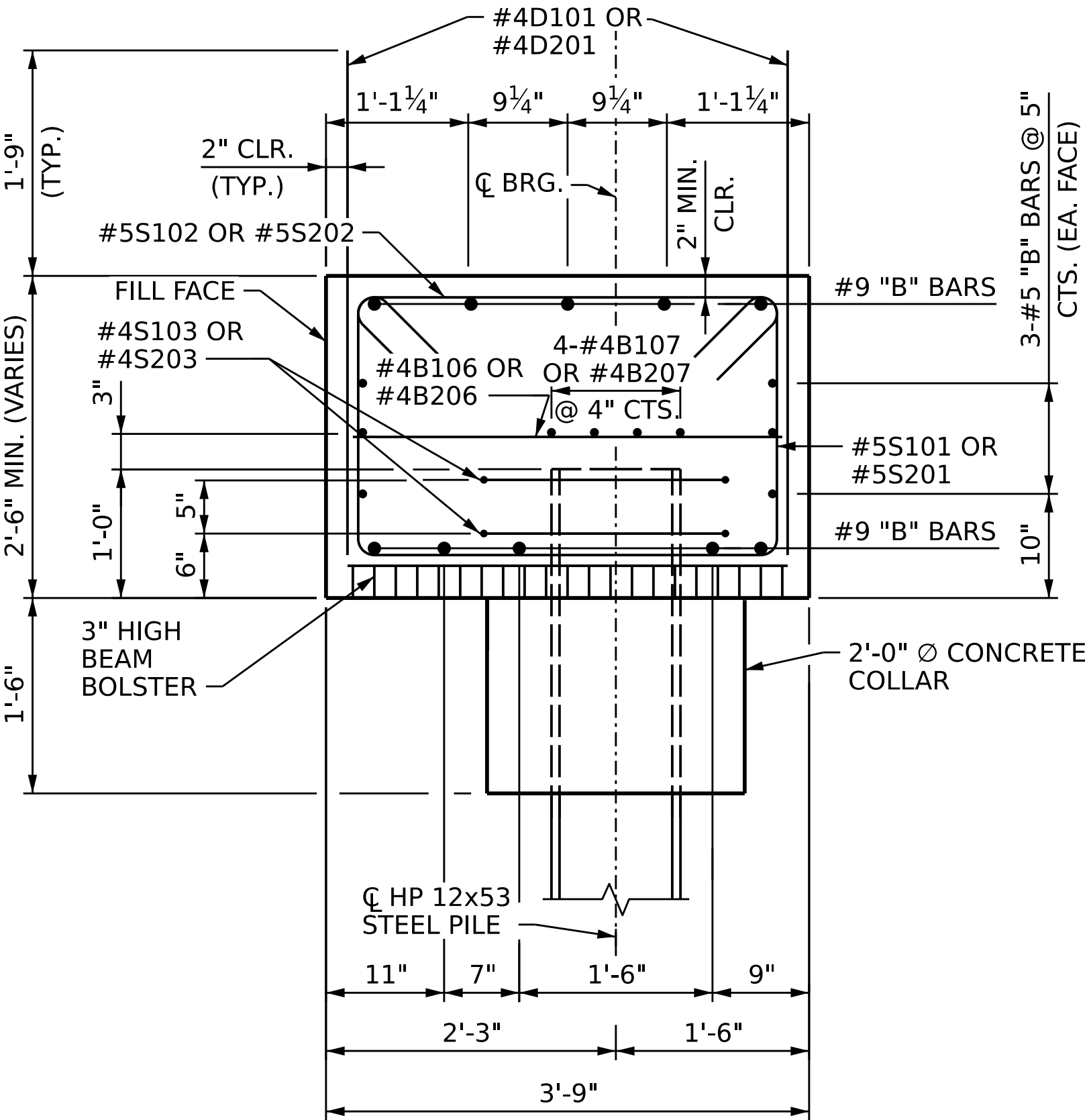


Gregory E. Myers 2/2025

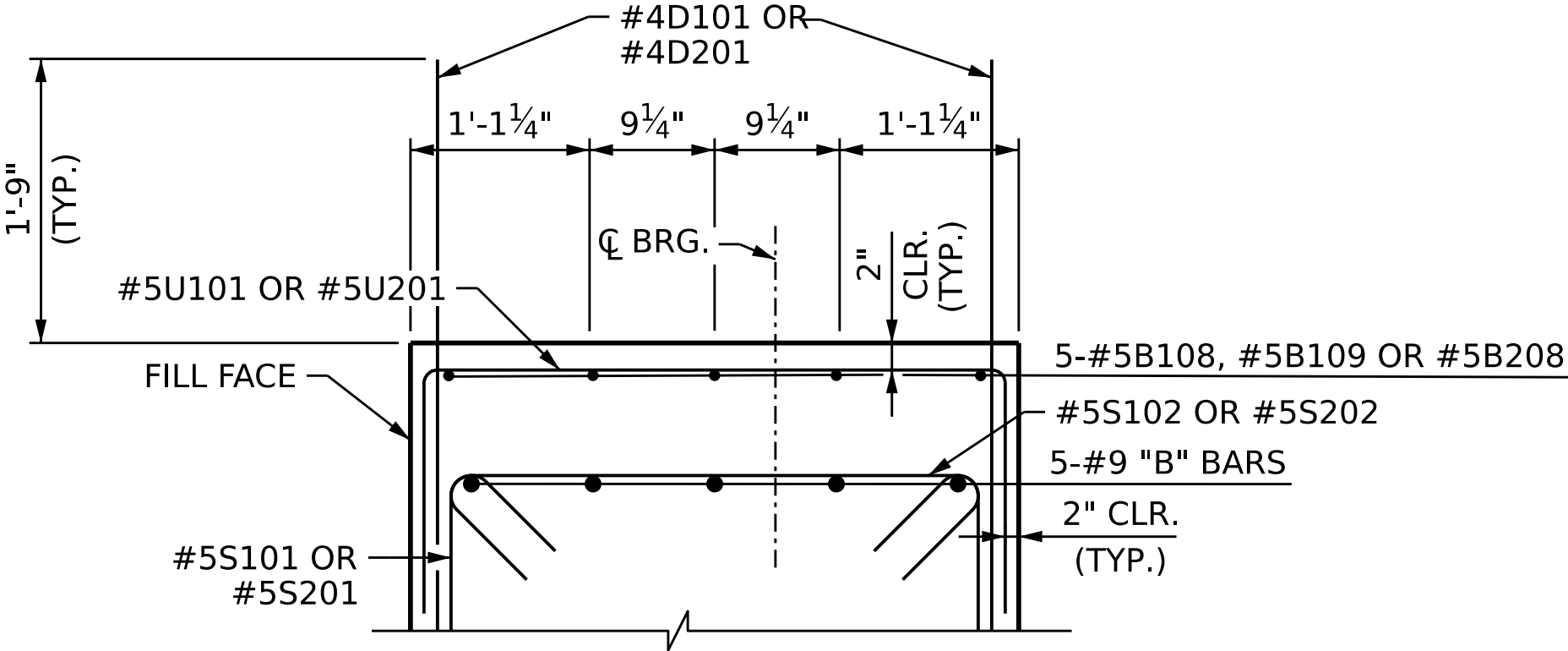
HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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DES BY: J. PATT	DATE: 02/25	DWG BY: B. PETERSON	DATE: 01/25
DES CHK: E. NOLTING	DATE: 03/25	CHK BY: G. MYERS	DATE: 03/25

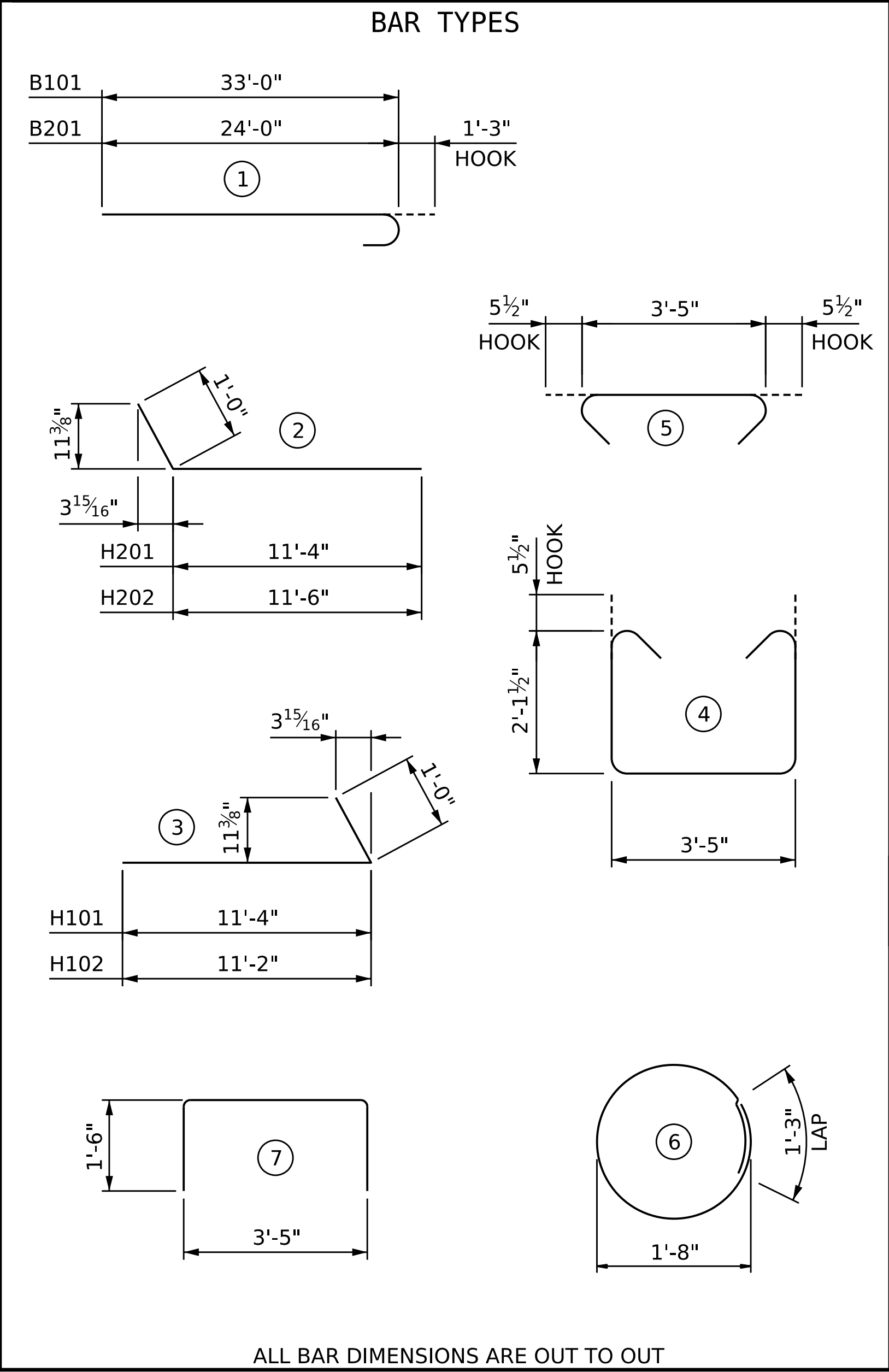


SECTION A-A



SECTION B-B

BILL OF MATERIAL



END BENT 2 STAGE I						END BENT 2 STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B101	10	# 9	1	34'-3"	1165	B201	10	# 9	1	25'-3"	859
B102	5	# 9	STR	22'-2"	377	B202	5	# 9	STR	13'-5"	228
B103	5	# 9	STR	23'-5"	398	B203	5	# 9	STR	14'-8"	249
B104	3	# 5	STR	50'-3"	157	B204	3	# 5	STR	32'-6"	102
B105	3	# 5	STR	50'-10"	159	B205	3	# 5	STR	31'-10"	100
B106	13	# 4	STR	3'-5"	30	B206	9	# 4	STR	3'-5"	21
B107	8	# 4	STR	26'-6"	142	B207	4	# 4	STR	32'-0"	86
B108	5	# 5	STR	19'-0"	99	B208	5	# 5	STR	16'-5"	86
B109	5	# 5	STR	15'-2"	79						
						D201	39	# 4	STR	4'-0"	104
						D101	63	# 4	STR	4'-0"	168
						H201	4	# 4	2	12'-4"	33
						H202	4	# 4	2	12'-6"	33
						S201	42	# 5	4	8'-7"	376
						S101	61	# 5	4	8'-7"	546
						S102	61	# 5	5	4'-4"	190
						S203	14	# 4	6	6'-6"	61
						S103	18	# 4	6	6'-6"	78
						U201	17	# 5	7	6'-5"	114
						U101	32	# 5	7	6'-5"	214
						V201	21	# 4	STR	7'-2"	101
						V101	20	# 4	STR	7'-1"	95
REINFORCING STEEL						REINFORCING STEEL					
4049						2743					
LBS						LBS					
CLASS "A" CONCRETE						CLASS "A" CONCRETE					
22.1						14.8					
CU. YDS.						CU. YDS.					
HP12X53 STEEL PILES						HP12X53 STEEL PILES					
NO.						NO.					
9						7					
TOTAL						TOTAL					



Gregory E. Myers 2/2025

PROJECT NO. **R-5600**

JACKSON COUNTY

STATION: **27+24.00 -L-**

SHEET 4 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 2 SECTIONS AND DETAILS					
REVISIONS					SHEET NO. S02-37
NO.	BY:	DATE:	NO.	BY:	DATE:
1	--	--	3	--	--
2	--	--	4	--	--
TOTAL SHEETS					41



ESTIMATED QUANTITIES		
BRIDGE @ STA. 27+24.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	245	270
END BENT 2	190	210

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

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

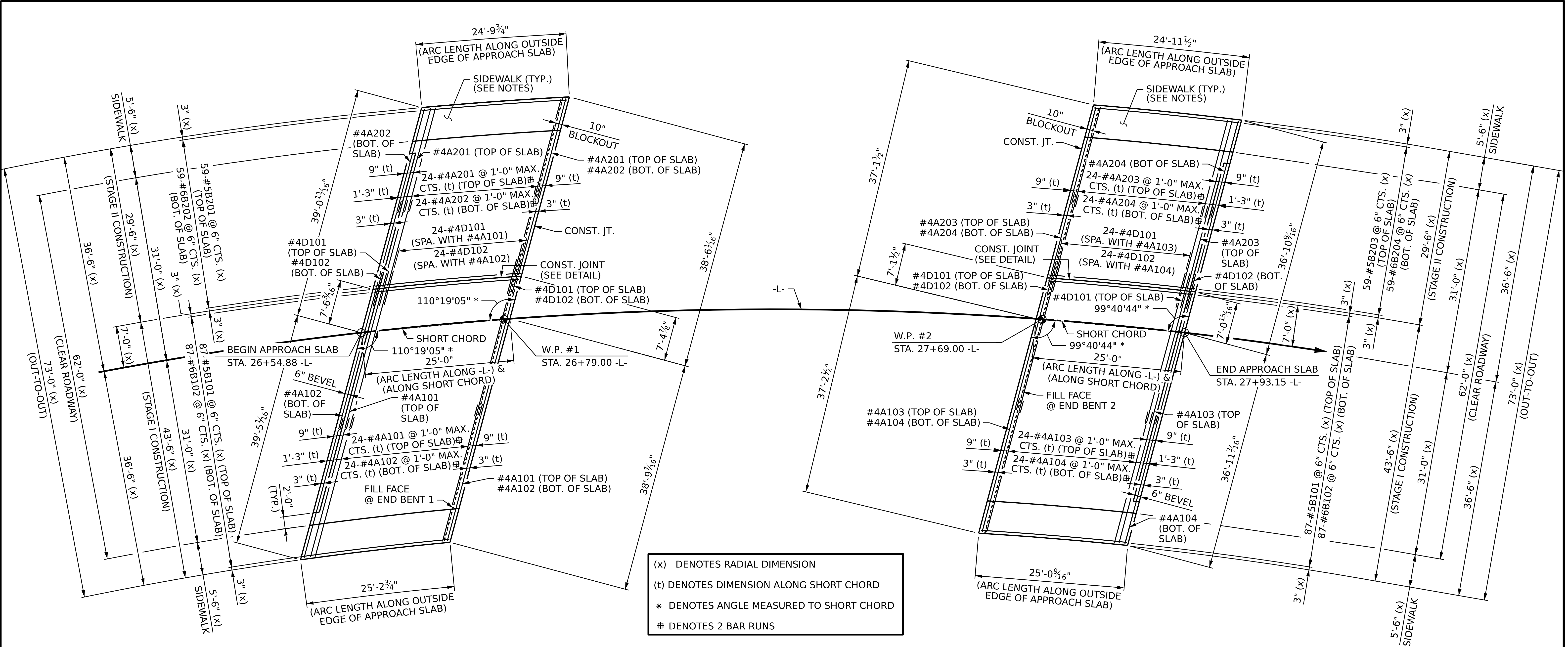
SHEET NO
S02-38

TOTAL
SHEETS
41



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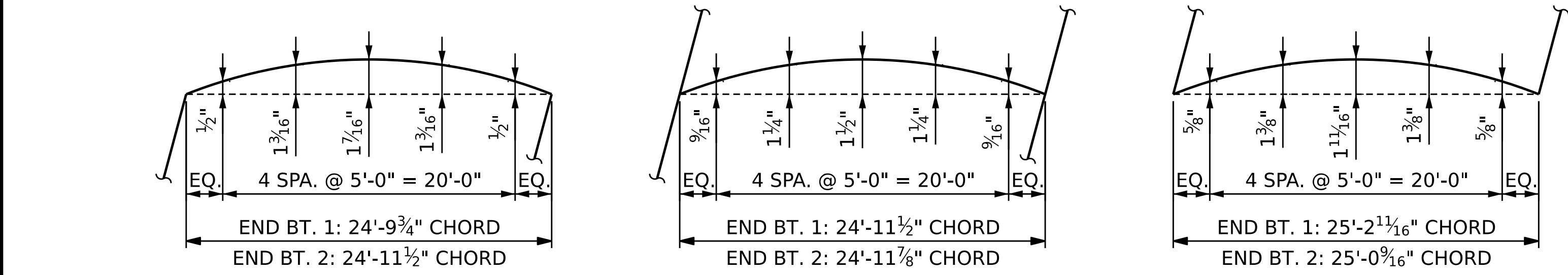
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AT END BENT 1

PLAN OF APPROACH SLABS

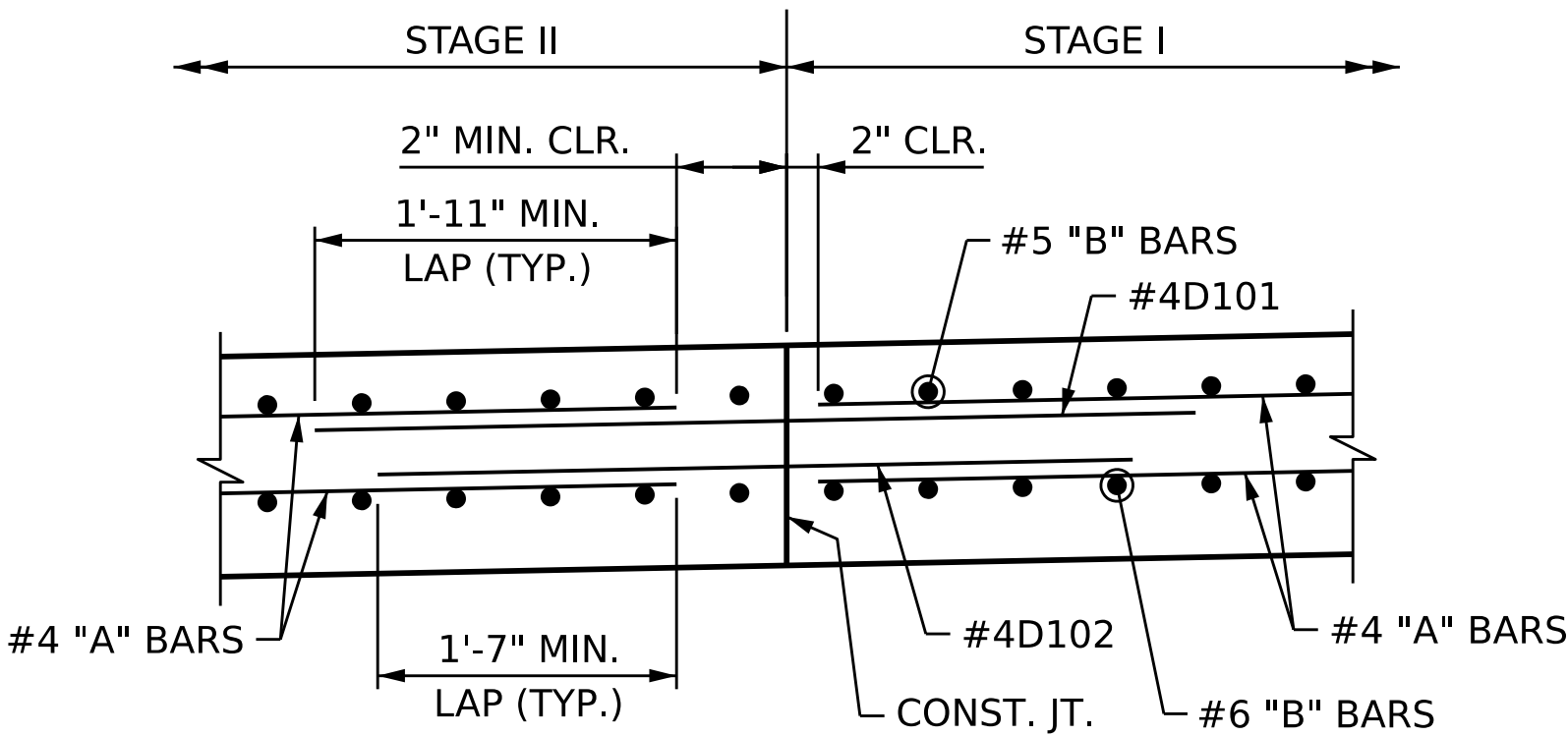
AT END BENT 2



LEFT SIDE

CONSTRUCTION JOINT
OUTSIDE EDGE ARC OFFSETS

RIGHT SIDE



CONSTRUCTION JOINT DETAIL

NOTES
FOR DETAILS AND REINFORCING STEEL IN
SIDEWALK, SEE SHEET 3 OF 3.

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

SHEET 1 OF 3



Gregory E. Myers 2/2025

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REVISIONS						SHEET NO. S02-39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

NOTES

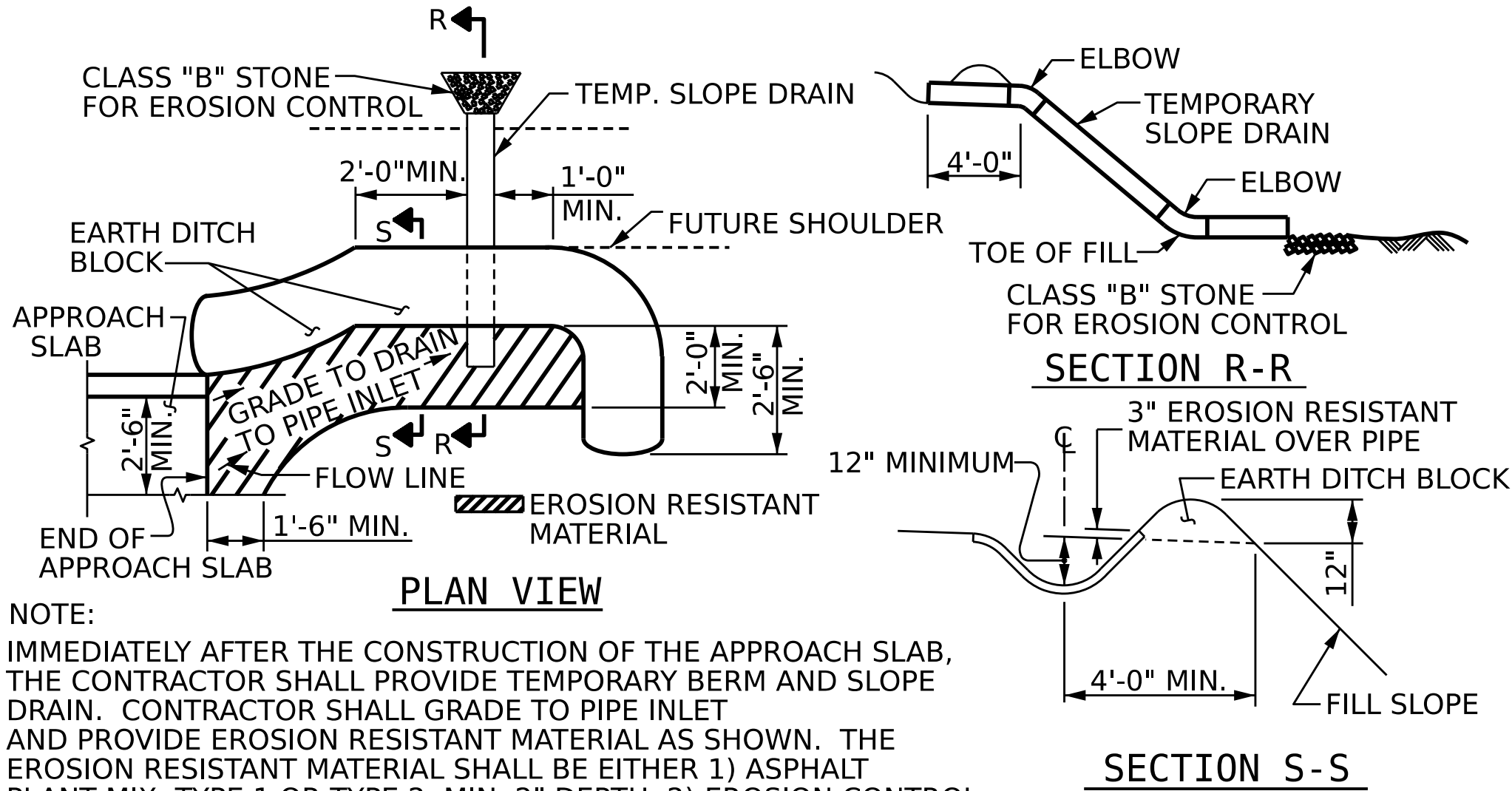
FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF THE BRIDGE DECK.

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

THE JOINT OPENING AT THE APPROACH SLAB/DECK INTERFACE SHALL BE SAWED NO MORE THAN 12 HOURS AFTER THE APPROACH SLAB IS CAST. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1028-3 OF THE STANDARD SPECIFICATIONS.

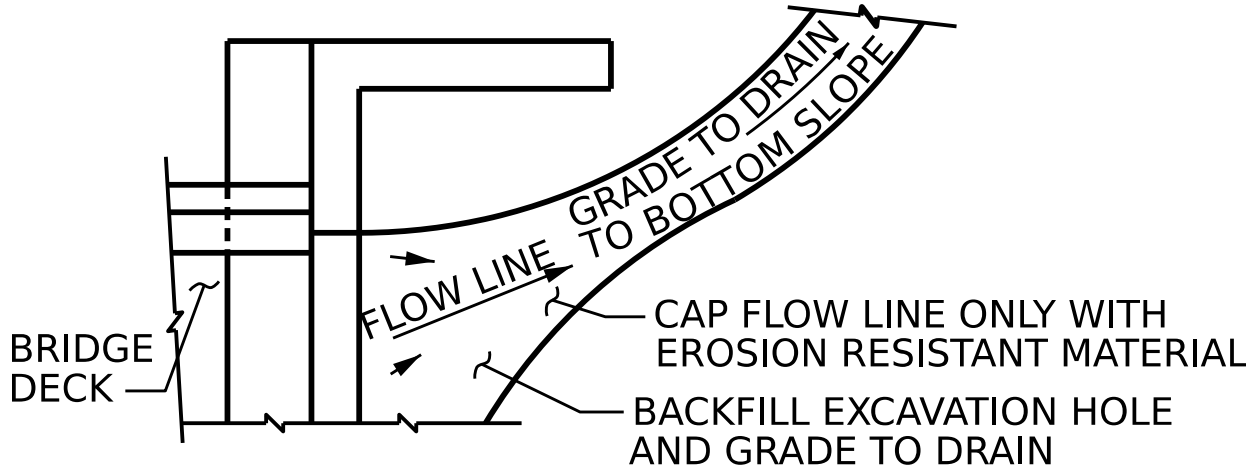
AT THE CONTRACTORS OPTION "TYPE 1A - ALTERNATE APPROACH FILL" (ROADWAY STD. 423.02) MAY BE CONSTRUCTED AT NO ADDITIONAL COST TO THE DEPARTMENT IN LIEU OF "TYPE 1 - APPROACH FILL".



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

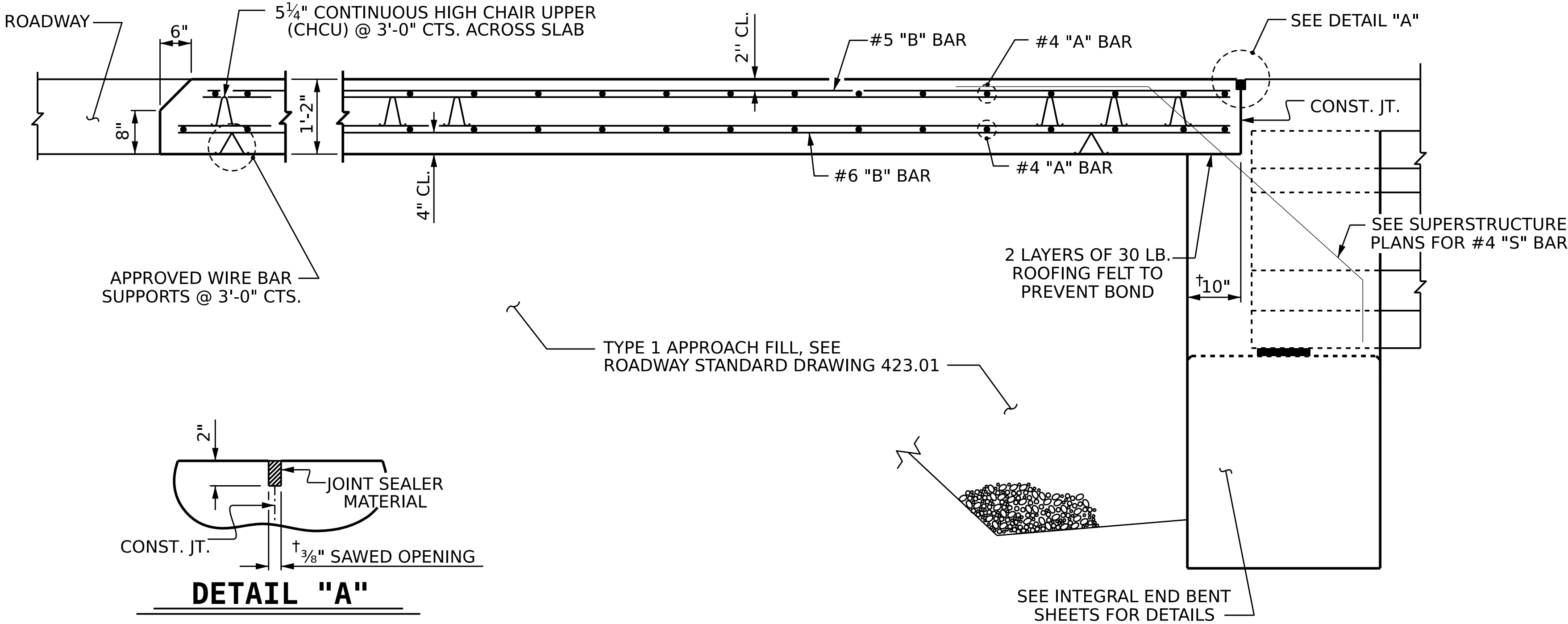
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



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

TEMPORARY DRAINAGE DETAIL



DETAIL "A"

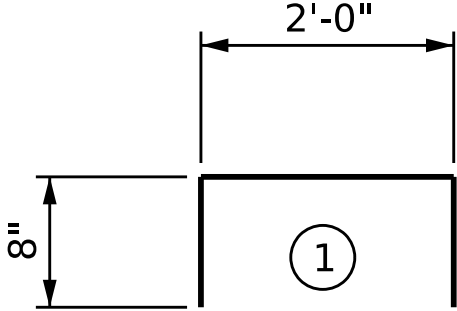
SECTION THRU SLAB

†NORMAL TO END BENT

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

BILL OF MATERIAL											
APPROACH SLAB AT END BENT 1											
STAGE I						STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A101	52	# 4	STR	24'-3"	842	*A201	52	# 4	STR	16'-7"	576
A102	52	# 4	STR	24'-1"	837	A202	52	# 4	STR	16'-5"	570
*B101	87	# 5	STR	24'-1"	2185	*B201	59	# 5	STR	23'-11"	1472
B102	87	# 6	STR	24'-6"	3202	B202	59	# 6	STR	24'-3"	2149
*B103	5	# 4	STR	24'-10"	83	*B205	5	# 4	STR	24'-5"	82
*D101	26	# 4	STR	4'-9"	82	*G201	24	# 4	STR	5'-3"	84
D102	26	# 4	STR	4'-1"	71	*G202	1	# 4	STR	6'-7"	4
*G101	24	# 4	STR	5'-4"	86	*U201	8	# 4	1	3'-4"	18
*G102	1	# 4	STR	6'-8"	4						
*U101	8	# 4	1	3'-4"	18						
REINFORCING STEEL LBS. 4110						REINFORCING STEEL LBS. 2719					
* EPOXY COATED REINFORCING STEEL LBS. 3300						* EPOXY COATED REINFORCING STEEL LBS. 2236					
CLASS "AA" CONCRETE APPROACH SLAB & SIDEWALK C. Y. 50.2						CLASS "AA" CONCRETE APPROACH SLAB & SIDEWALK C. Y. 34.8					
APPROACH SLAB AT END BENT 2											
STAGE I						STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A103	52	# 4	STR	22'-10"	793	*A203	52	# 4	STR	15'-10"	550
A104	52	# 4	STR	22'-8"	787	A204	52	# 4	STR	15'-8"	544
*B101	87	# 5	STR	24'-1"	2185	*B203	59	# 5	STR	24'-1"	1482
B102	87	# 6	STR	24'-6"	3202	B204	59	# 6	STR	24'-6"	2171
*B104	5	# 4	STR	24'-8"	82	*B206	5	# 4	STR	24'-7"	82
*D101	26	# 4	STR	4'-9"	82	*G203	24	# 4	STR	5'-0"	80
D102	26	# 4	STR	4'-1"	71	*G204	1	# 4	STR	6'-4"	4
*G103	24	# 4	STR	5'-0"	80	*U201	8	# 4	1	3'-4"	18
*G104	1	# 4	STR	6'-5"	4						
*U101	8	# 4	1	3'-4"	18						
REINFORCING STEEL LBS. 4060						REINFORCING STEEL LBS. 2715					
* EPOXY COATED REINFORCING STEEL LBS. 3244						* EPOXY COATED REINFORCING STEEL LBS. 2216					
CLASS "AA" CONCRETE APPROACH SLAB & SIDEWALK C. Y. 50.0						CLASS "AA" CONCRETE APPROACH SLAB & SIDEWALK C. Y. 34.9					

BAR TYPE



ALL BAR DIMENSIONS ARE OUT TO OUT

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

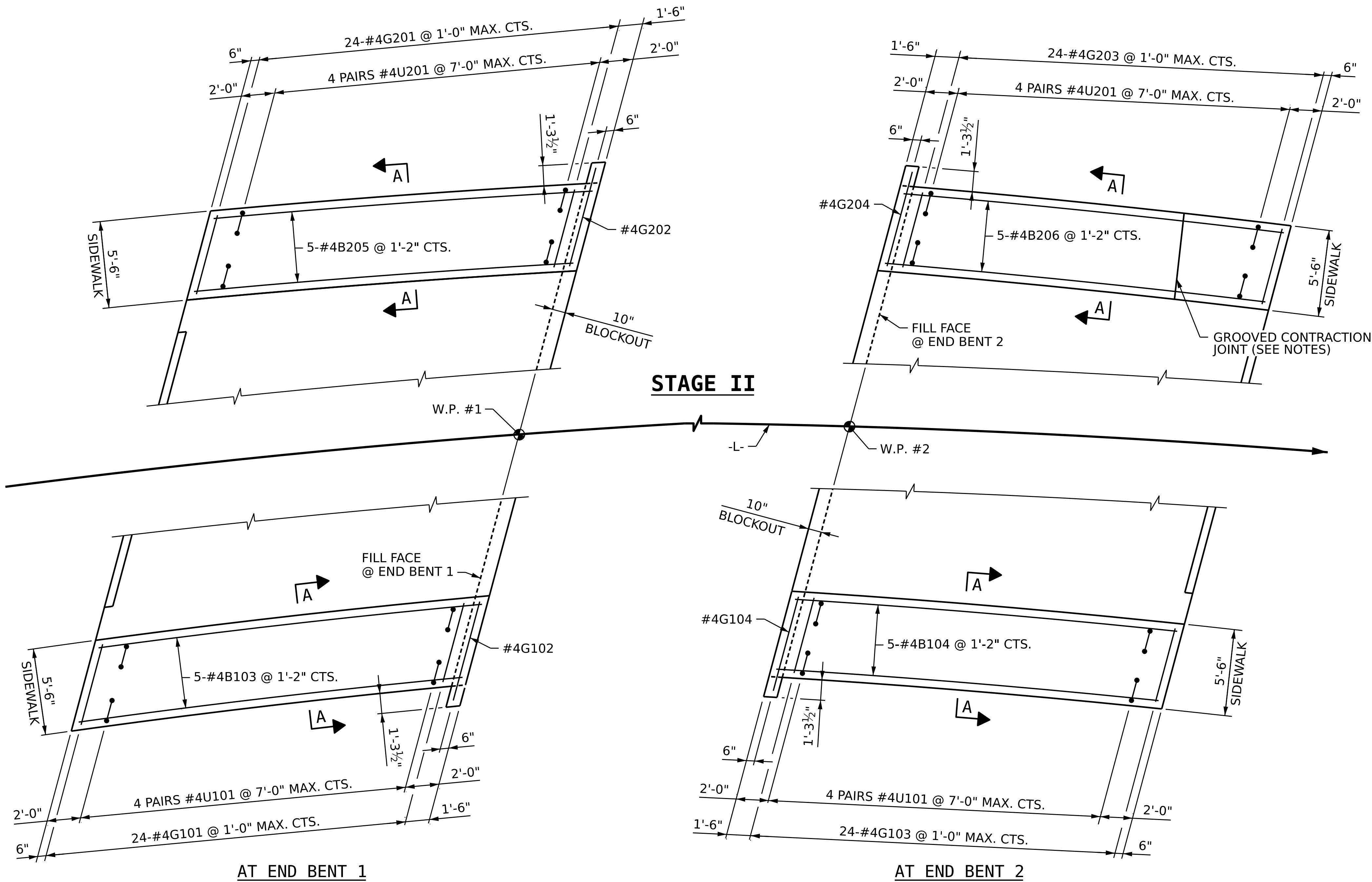
BRIDGE APPROACH
SLAB DETAILS

REVISIONS						SHEET NO. S02-40
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS
2	--	--	4	--	--	41



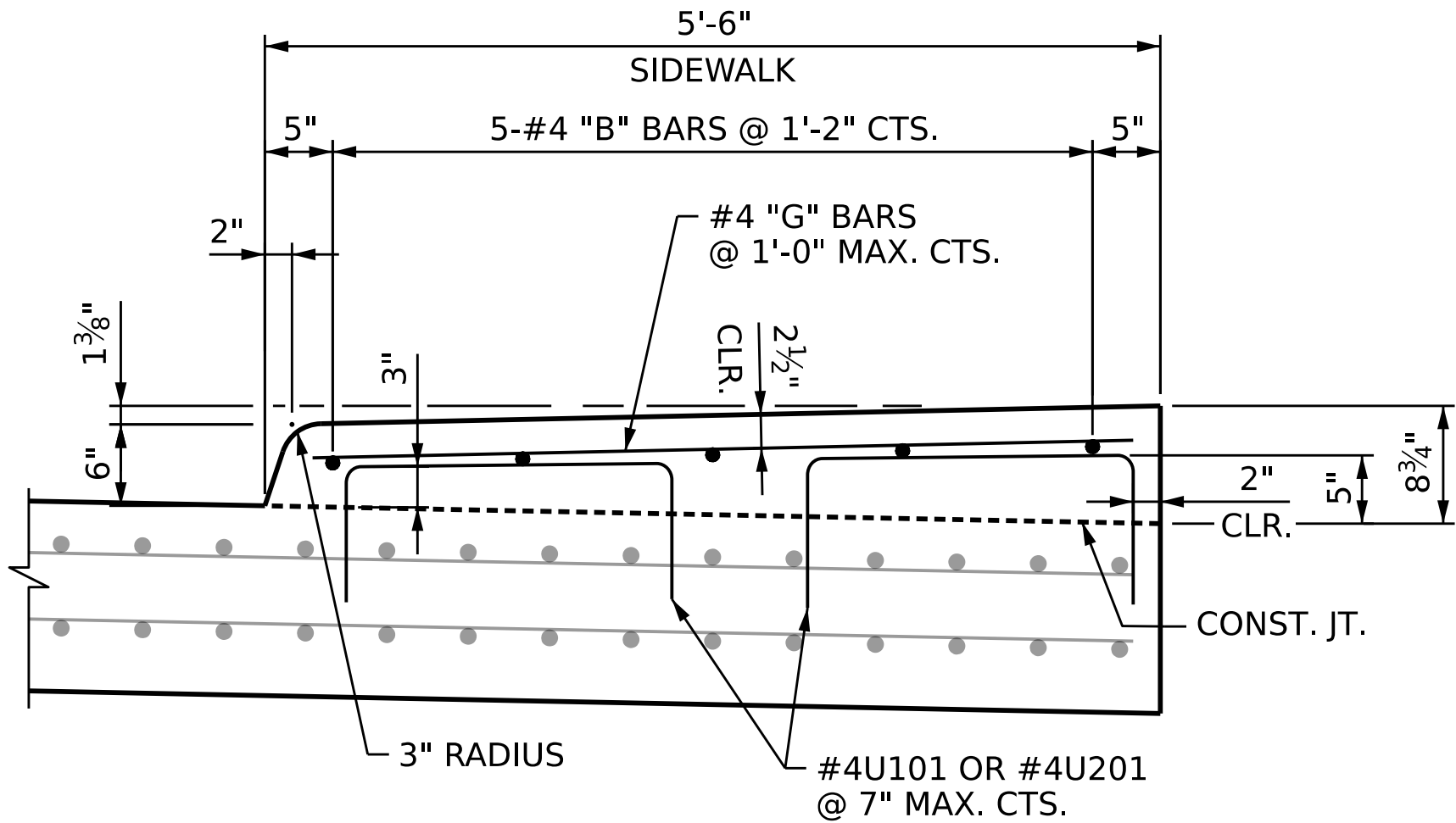
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DES BY: J. PATT	DATE: 01/25	DWG BY: B. PETERSON	DATE: 01/25
DES CHK: A. PANDOLI	DATE: 01/25	CHK BY: G. MYERS	DATE: 04/25



STAGE I
PLAN OF SIDEWALKS

- NOTES
- GROOVED CONTRACTION JOINTS, $\frac{1}{2}$ " IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE SIDEWALK 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. NO CONTRACTION JOINTS WILL BE REQUIRED FOR SEGMENTS LESS THAN 10 FEET IN LENGTH.
- "U" BARS MAY BE PUSHED INTO GREEN CONCRETE AFTER APPROACH SLAB HAS BEEN SCREEDED OFF.
- ALL REINFORCING STEEL IN THE SIDEWALKS SHALL BE EPOXY COATED.
- PAYMENT FOR SIDEWALK SHALL BE INCLUDED IN UNIT PRICE FOR "BRIDGE APPROACH SLABS".
- ALL TRANSVERSE DIMENSIONS ARE RADIAL TO -L-.
- ALL LONGITUDINAL DIMENSIONS ARE MEASURED ALONG SHORT CHORDS.



SECTION A-A

PROJECT NO. **R-5600**
JACKSON COUNTY
STATION: **27+24.00 -L-**

SHEET 3 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BRIDGE APPROACH SLAB
CONCRETE SIDEWALK
DETAILS**

REVISIONS						SHEET NO. S02-41
NO.	BY:	DATE:	NO.	BY:	DATE:	
1	--	--	3	--	--	TOTAL SHEETS 41
2	--	--	4	--	--	

DES BY: A. PANDOLI	DATE : 02/25	DWG BY: B. PETERSON	DATE : 01/25
DES CHK: G. MYERS	DATE : 04/25	CHK BY: K. DICKENS	DATE : 04/25

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