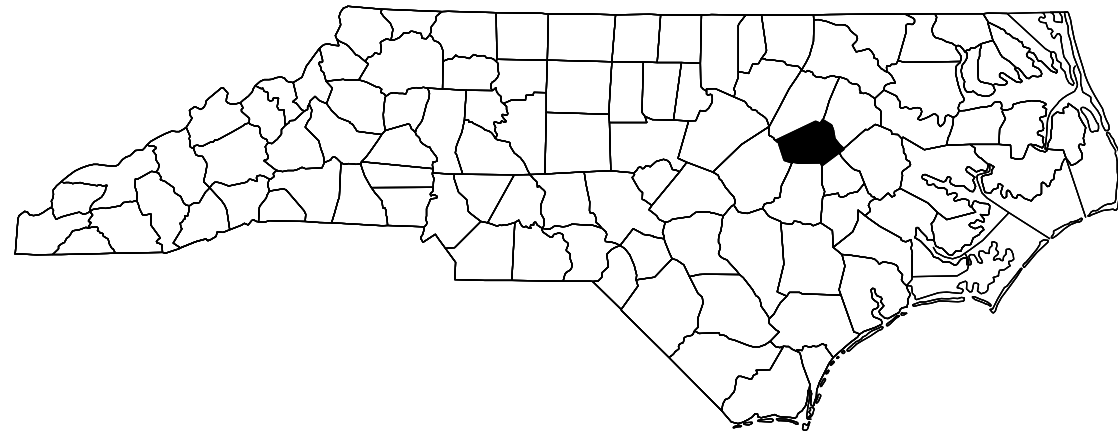


CONTRACT NO: C205090 PROJECT: 15BPR.143.3



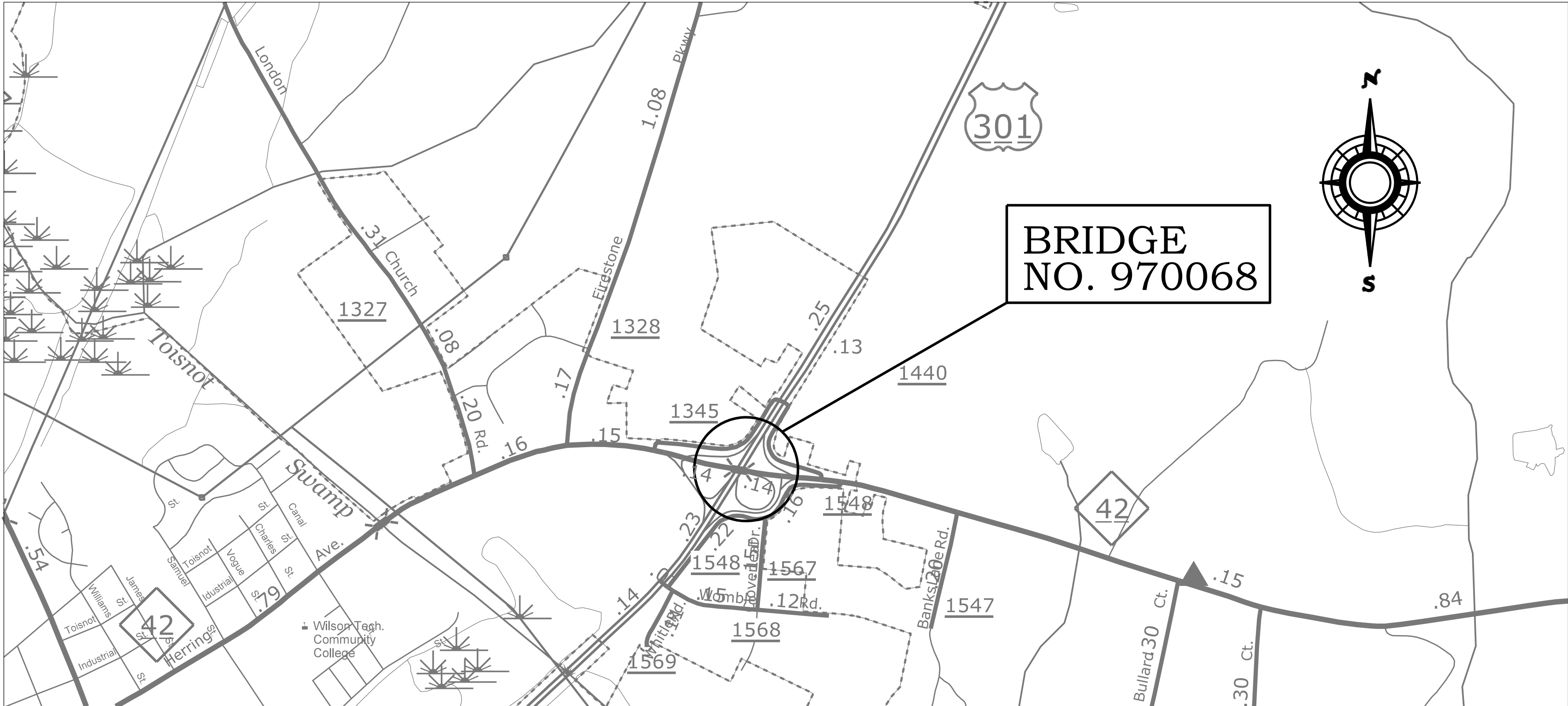
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WILSON COUNTY

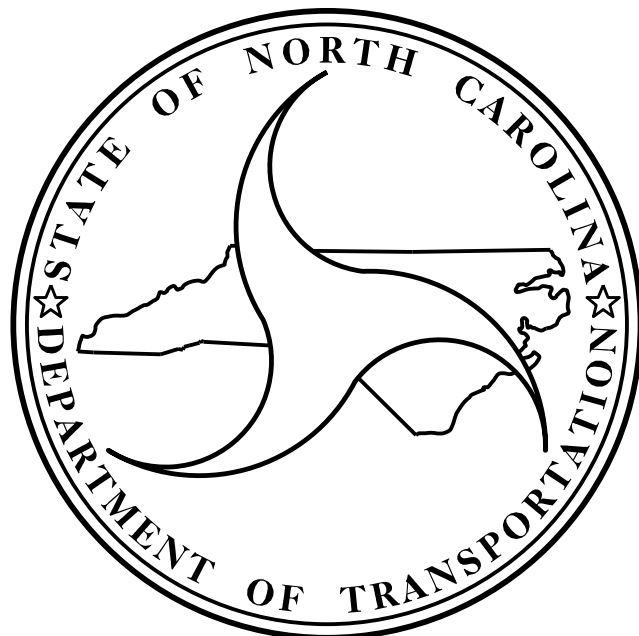
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.143.3	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15BPR.143.1	N/A	P.E.	
15BPR.143.3	N/A	CONST.	

LOCATION: WILSON CO. BRIDGE #970068 ON NC 42 OVER US 301.

TYPE OF WORK: CONCRETE BRIDGE DECK REHABILITATION BY SCARIFICATION, HYDRO-DEMOLITION, AND PLACEMENT OF LATEX MODIFIED CONCRETE; CLEANING AND PAINTING OF EXISTING STEEL BEAMS; MILLING OF DECK ASPHALT SURFACE; RECONSTRUCTION OF DECK JOINT AND SEALS; SUBSTRUCTURE REPAIRS AND MODIFICATIONS WITH CONCRETE AND SHOTCRETE; INSTALL STUB COLUMNS AT BENTS & END BENTS; BEARING REPLACEMENT AND EPOXY COATING CAPS; MILLING AND PAVING APPROACH ROADWAY.



VICINITY MAP



DESIGN DATA

BRIDGE #970068 ADT 2022 = 9,600

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 15BPR.143.3= 0.037 MILES
LENGTH OF STRUCTURE PROJECT 15BPR.143.3= 0.083 MILES
TOTAL LENGTH OF PROJECT 15BPR.143.3= 0.120 MILES

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

2024 STANDARD SPECIFICATIONS

LETTING DATE :
DECEMBER 16, 2025

Kristy W. Alford, P.E., CPM
PROJECT ENGINEER

Aster G. Abraha, P.E.
PROJECT DESIGN ENGINEER

TIP PROJECT: 15BPR.143.3

CONTRACT: C205090

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

WILSON COUNTY

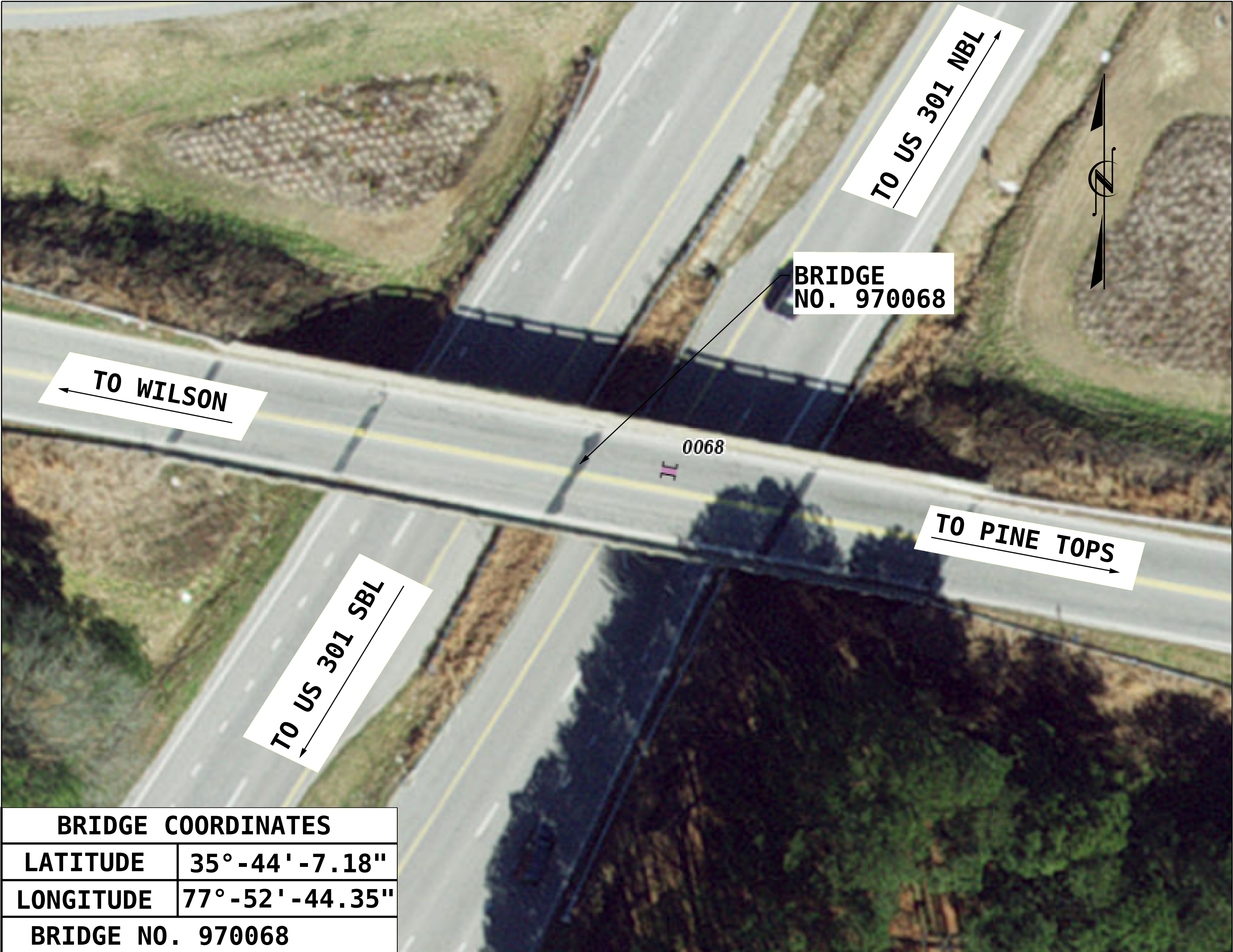
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.143.3	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15BPR.143.1	N/A	P.E.	
15BPR.143.3	N/A	CONST.	

LOCATION: BRIDGE #970068 ON NC 42 OVER US 301

TYPE OF WORK: CONCRETE BRIDGE DECK REHABILITATION BY SCARIFICATION, HYDRO-DEMOLITION, AND PLACEMENT OF LATEX MODIFIED CONCRETE; CLEANING AND PAINTING OF EXISTING STEEL BEAMS; MILLING OF DECK ASPHALT SURFACE; RECONSTRUCTION OF DECK JOINTS AND SEALS; SUBSTRUCTURE REPAIRS AND MODIFICATIONS WITH CONCRETE AND SHOTCRETE; INSTALL STUB COLUMNS AT BENTS & END BENTS; BEARING REPLACEMENT AND EPOXY COATING CAPS; REPLACE APPROACH PAVEMENT; MILLING AND PAVING APPROACH ROADWAY.

INDEX OF STRUCTURE SHEETS

SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION
1	TITLE SHEET	STRUCTURE	#970068
1A	INDEX OF SHEETS	S-01	GENERAL DRAWING
S1	LOCATION SKETCHES	S-02	TYPICAL SECTION
S2	TOTAL BILL OF MATERIALS	S-03 THRU S06	SURFACE PREPARATION
		S-07 THRU S-10	UNDERSIDE DECK REPAIRS
		S-11	JOINT REPAIR DETAILS
		S-12	DECK REPAIR DETAILS
		S-13	OVERHANG & DIAPHRAGM REPAIR DETAILS
		S-14	END BENT 1
		S-15 THRU S-20	BENTS
		S-21	END BENT 2
		S-22 THRU S-24	STUB COLUMN AND BEARING DETAILS
		S-25	BENT REPAIR DETAILS
		S-26	BRIDGE APPROACH FILL DETAIL
		S-27	BRIDGE JACKING DETAILS
		S-28	ASPHALT MILLING & TYPICAL ROADWAY SECTION
		S-28A THRU S-28D	ROADWAY STANDARD DRAWINGS
		SN	STANDARD NOTES



BRIDGE COORDINATES	
LATITUDE	35° -44 ' -7.18"
LONGITUDE	77° -52 ' -44.35"
BRIDGE NO. 970068	

LOCATION SKETCH

INFORMATION INDICATED IN THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. CONTRACTOR SHOULD CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING THE BRIDGE, ROADWAY, UTILITIES, THE SURROUNDING AREA AND ANY OTHER ASPECT THAT MAY BE NECESSARY TO PERFOEM AND COMPLETE THE PROJECT.

PROJECT NO. 15BPR.143.3
WILSON COUNTY
BRIDGE NO. 970068



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
LOCATION SKETCH					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					S1
					TOTAL SHEETS 2

DRAWN BY : KCADET	DATE : 05/2025
CHECKED BY : WCSMITH	DATE : 08/2025
DESIGN ENGINEER OF RECORD:	DATE :

GENERAL 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 WHAT IS 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(S) SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR'S PLAN USES 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 CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

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.

FOR PAVEMENT MARKING SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

THE ELEVATIONS AND CLEARANCES SHOWN ON THE PLANS AT THE POINT OF MINIMUM VERTICAL CLEARANCE ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE ELEVATION(S) ON THE EXISTING PAVEMENT AND CHECK THE CLEARANCE. REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM VERTICAL CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

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

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATIONS OF THE BRIDGE DECK. THE CONTRACTOR SHALL TAKE CARE THAT ANY CONSTRUCTION DEBRIS THAT COLLECTS IN THE DRAINS IS CONTAINED. DRAINS IN SHOULDERS OF ADJACENT TRAVEL LANES SHALL BE KEPT FREE AND CLEAR OF DEBRIS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

PRIOR TO CLEANING OR PAINTING OF THE EXISTING STRUCTURE, PERFORM HEAT STRAIGHTENING AND OTHER NECESSARY REPAIRS TO:

- SPAN 2, BEAM 1
- SPAN 3, BEAM 1
- SPAN 3, BEAM 2
- SPAN 3, BEAM 3
- SPAN 3, BEAM 4

CONTRACTOR AND ENGINEER SHALL REVIEW ALL PORTIONS OF THE BRIDGE STRUCTURAL STEEL TO IDENTIFY ADDITIONAL REPAIR LOCATIONS NOT LISTED ABOVE. SEE REPAIR OF DAMAGED BRIDGE STEEL SPECIAL PROVISION.

FOR PAINTING EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK, HYDRO-DEMOLITION OF BRIDGE DECK, CLASS II AND CLASS III SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

THE LMC CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK DURING HYDRO-DEMOLITION.

FOR LATEX MODIFIED CONCRETE OVERLAY. PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY AND GROOVING BRIDGE FLOORS, SEE LATEX MODIFIED CONCRETE OVERLAY SPECIAL PROVISIONS.

THE CONTRACTOR SHALL COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISIONS.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

FOR PAINT CONTAINMENT AND POLLUTION CONTROL, SEE PAINTING EXISTING STRUCTURE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR CURTAIN WALL REHABILITATION, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK, CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION, AND HYDRO-DEMOLITION OF DECK, SEE LMC OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

DURING CONSTRUCTION, APPROPRIATE MEASURES SHALL BE USED TO ENSURE THAT HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT THE FOLLOWING ITEM(S) LISTED WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT THE FOLLOWING ITEM(S) LISTED, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN THE PROJECT DOCUMENTS,BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED. UNANTICIPATED ITEMS:

ITEM	DESCRIPTION	UNIT
1.	CLASS III SURFACE PREPARATION	SQ. YD.
2.	CONCRETE REPAIR	CU. FT.
3.	EPOXY RESIN INJECTION	LN. FT.
4.	VOLUMETRIC MIXER	LS
5.	CLASS II SURFACE PREPARATION	SQ. YD.
6.	TYPE I BRIDGE JACKING BRIDGE NO__	EA.

TOTAL BILL OF MATERIAL														
BRIDGE NO.	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	ASPHALT BINDER FOR PLANT MIX	STEEL BEAM GUARDRAIL	GUARDRAIL END UNITS, TYPE TL-3	REMOVE EXISTING GUARDRAIL	GROOVING BRIDGE FLOORS	POLLUTION CONTROL	LATEX MODIFIED CONC OVERLAY	PLACING & FINISHING OF LATEX MODIFIED CONC OVERLAY	SHOTCRETE REPAIRS	CLEANING AND REPAINTING OF BRIDGE # ____	CURTAIN WALL REHABILITATION	PAINTING CONTAINMENT FOR BRIDGE # ____
	SQ. YDS.	TONS	TONS	LF	EA	LF	SQ. FT.	LUMP SUM	CU. YD.	SQ. YD.	CU. FT.	LUMP SUM	LUMP SUM	LUMP SUM
970068	610.8	60	5	875	4	875	4792.2	LUMP SUM	36.4	597.6	7.1	LUMP SUM	LUMP SUM	LUMP SUM
TOTAL	610.8	60	5	875	4	875	4792.2	LUMP SUM	36.4	597.6	7.1	LUMP SUM	LUMP SUM	LUMP SUM

TOTAL BILL OF MATERIAL CONT.											
BRIDGE NO.	POURABLE SILICONE JOINT SEALANT	REPAIRS TO DAMAGED STEEL OF BRIDGE NO. _	ELASTOMERIC CONCRETE FOR PRESERVATION	BRIDGE JOINT DEMOLITION	EPOXY COATING	HYDRO-DEMOLITION OF BRIDGE DECK	SCARIFYING BRIDGE DECK	ELASTOMERIC BEARING	GUARDRAIL ANCHOR UNITS, TYPE ***** (TYPE III MODIFIED)	STUB COLUMN	TYPE II BRIDGE JACKING BRIDGE NO. __
	LN. FT.	LUMP SUM	CU. FT.	SQ. FT.	SQ. FT.	SQ. YD.	SQ. YD.	EA	EA.	EA	EA.
970068	100	LUMP SUM	21	82.8	352	597.6	597.6	32	4	32	4
TOTAL	100	LUMP SUM	21	82.8	352	597.6	597.6	32	4	32	4

DRAWN BY : KCADET/AABRAHA DATE : 09/2025
CHECKED BY : WCSMITH DATE : 09/2025
DESIGN ENGINEER OF RECORD: DATE :

10/14/2025
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aabraha

PROJECT NO. 15BPR.143.3
WILSON COUNTY
BRIDGE NO. 970068



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BILL OF MATERIAL AND GENERAL NOTES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					TOTAL SHEETS 2

NOTES

- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 07/30/2024.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- REMOVE EXISTING GUARDRAIL, END UNITS, ANCHOR UNITS, AND OTHER ASSOCIATED ELEMENTS AND HARDWARE.
- MILL ASPHALT WEARING SURFACE AND PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- PERFORM CONCRETE DECK REPAIRS IN PREPARED AREA.
- OVERLAY PREPARED TOP OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE (LMC).
- RECONSTRUCT BRIDGE JOINTS AND INSTALL BACKER ROD AND POURABLE SILICONE JOINT SEALANT.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.
- CLEAN AND PAINT EXISTING STRUCTURAL STEEL.
- INSTALL ELASTOMERIC BEARING AND STUD COLUMNS AT INTERIOR BENTS AND END BENTS.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING END BENTS AND BENT AREAS. PERFORM SHOTCRETE AND CONCRETE REPAIRS.
- PERFORM END BENTS CAP MODIFICATION AND BEARINGS REPLACEMENT.
- MILL AND PAVE ASPHALT ROADWAY APPROACHES.
- INSTALL NEW GUARDRAIL, END UNITS, STRUCTURE ANCHOR UNITS, AND OTHER ASSOCIATED ELEMENTS AND HARDWARE.

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

RESIDENT ENGINEER

DATE

PROJECT NO. **15BPR.143.3**

WILSON COUNTY

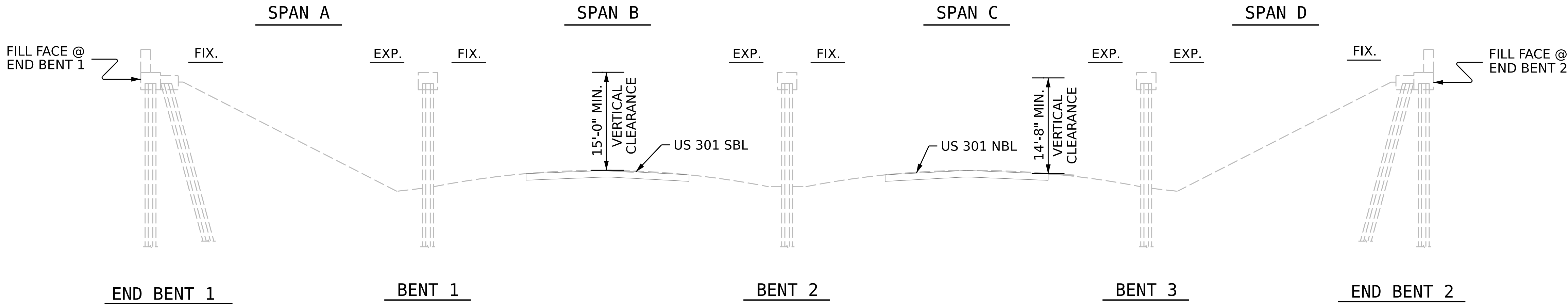
BRIDGE NO. **970068**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

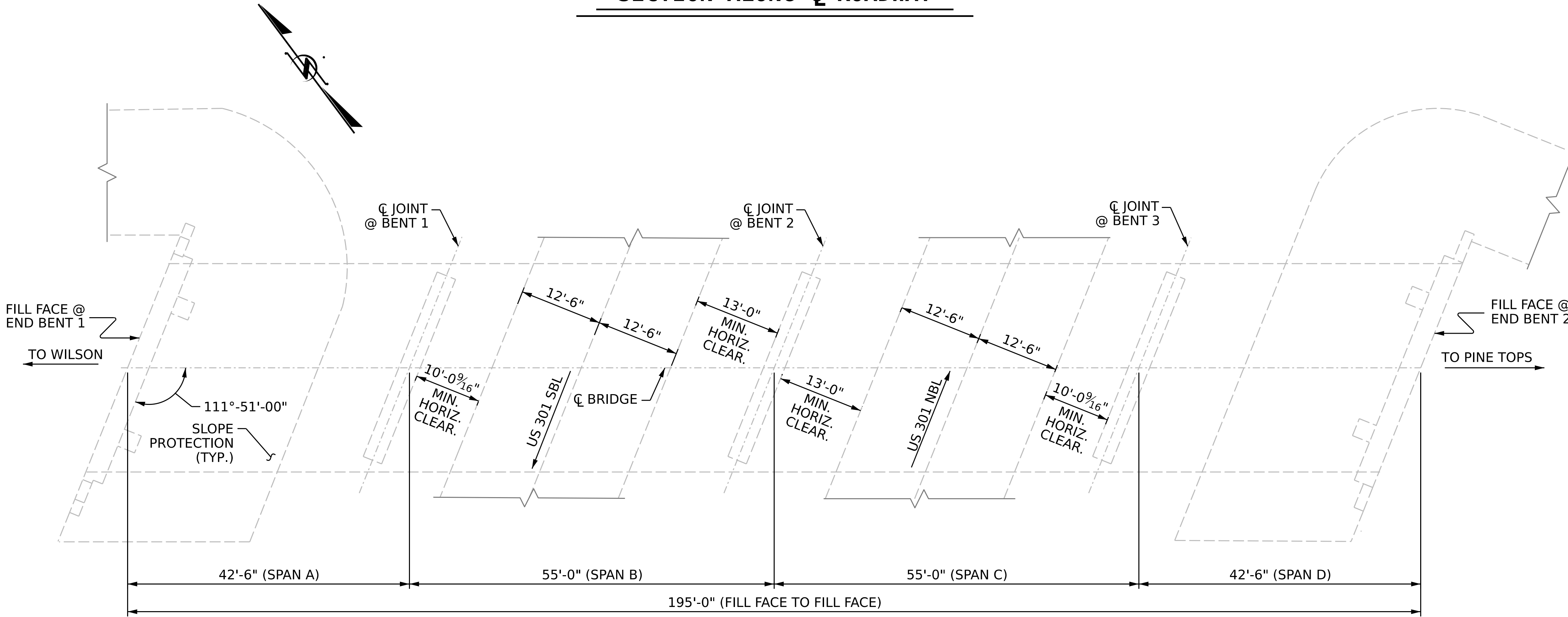
GENERAL DRAWING

FOR BRIDGE OVER
US 301 ON NC 42
BETWEEN WILSON AND PINE TOPS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-01
2			4			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						TOTAL SHEETS 28



SECTION ALONG ϕ ROADWAY

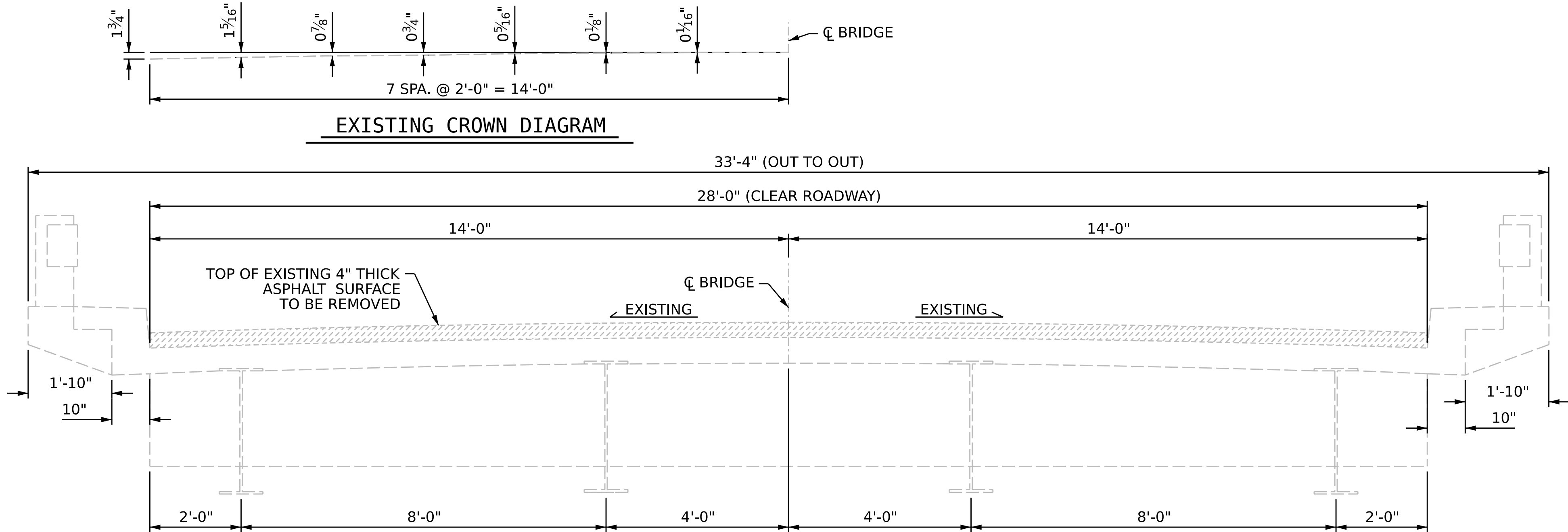


PLAN

(FOOTINGS, COLUMNS & PILES NOT SHOWN FOR CLARITY)

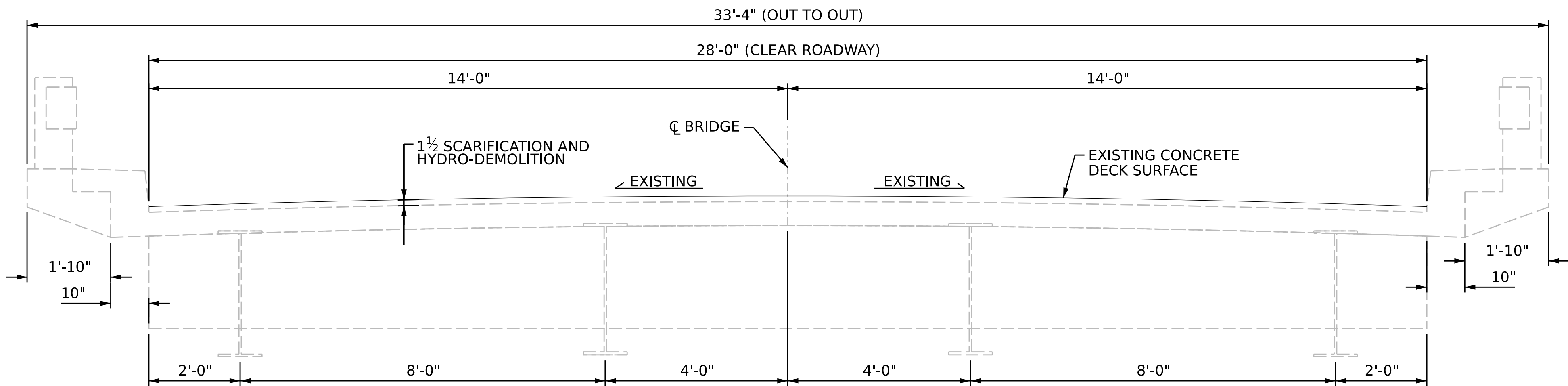
DRAWN BY : C. J. KRIETEMEYER/AGA DATE : 03/2025
CHECKED BY : WC SMITH DATE : 08/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

10/14/2025
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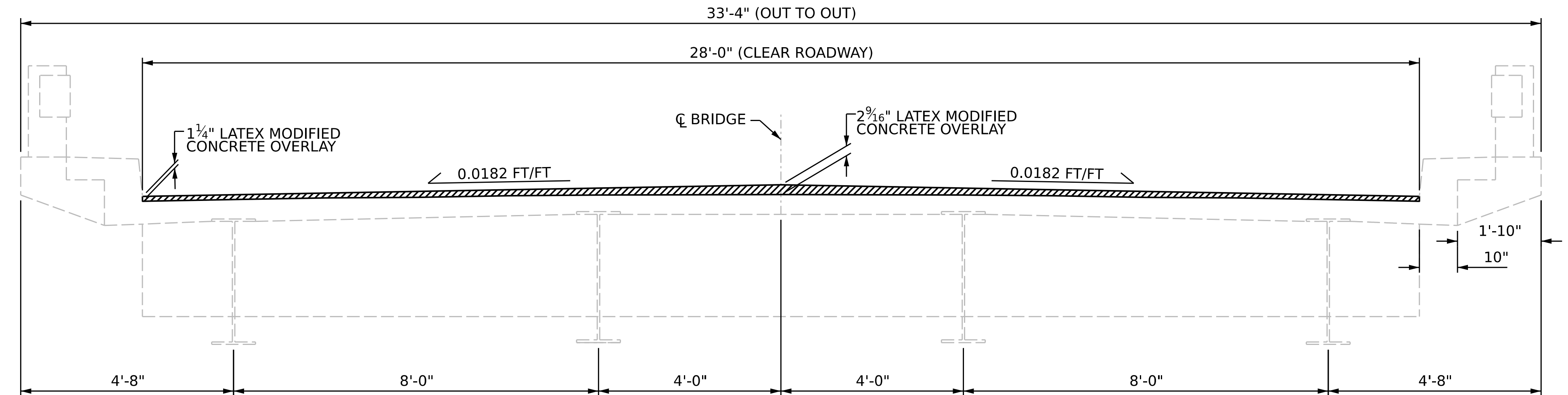
TYPICAL SECTION

(EXISTING)



TYPICAL SECTION

(DECK PREPARATION)



TYPICAL SECTION

(PROPOSED)

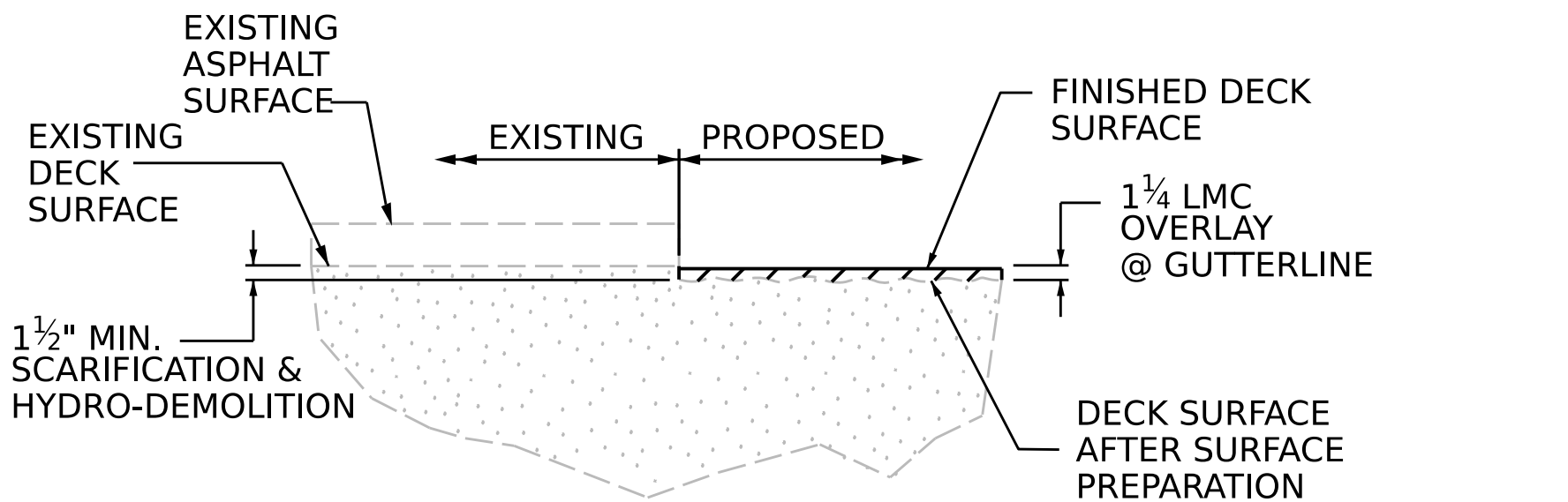
NOTES

WHEN PREPARING THE SURFACE FOR LMC OVERLAY ADJACENT TO THE PREVIOUSLY PLACED LMC STAGE, THE PREVIOUSLY PLACED LMC SHALL BE SAW-CUT TO THE FULL DEPTH OF THE LMC AT THE CENTERLINE OF THE BRIDGE AND ALL LMC IN THE IN THE 4" OVERLAP SHALL BE REMOVED WITH HANDS TOOL PRIOR TO PLACEMENT OF LMC IN THE SECOND STAGE.

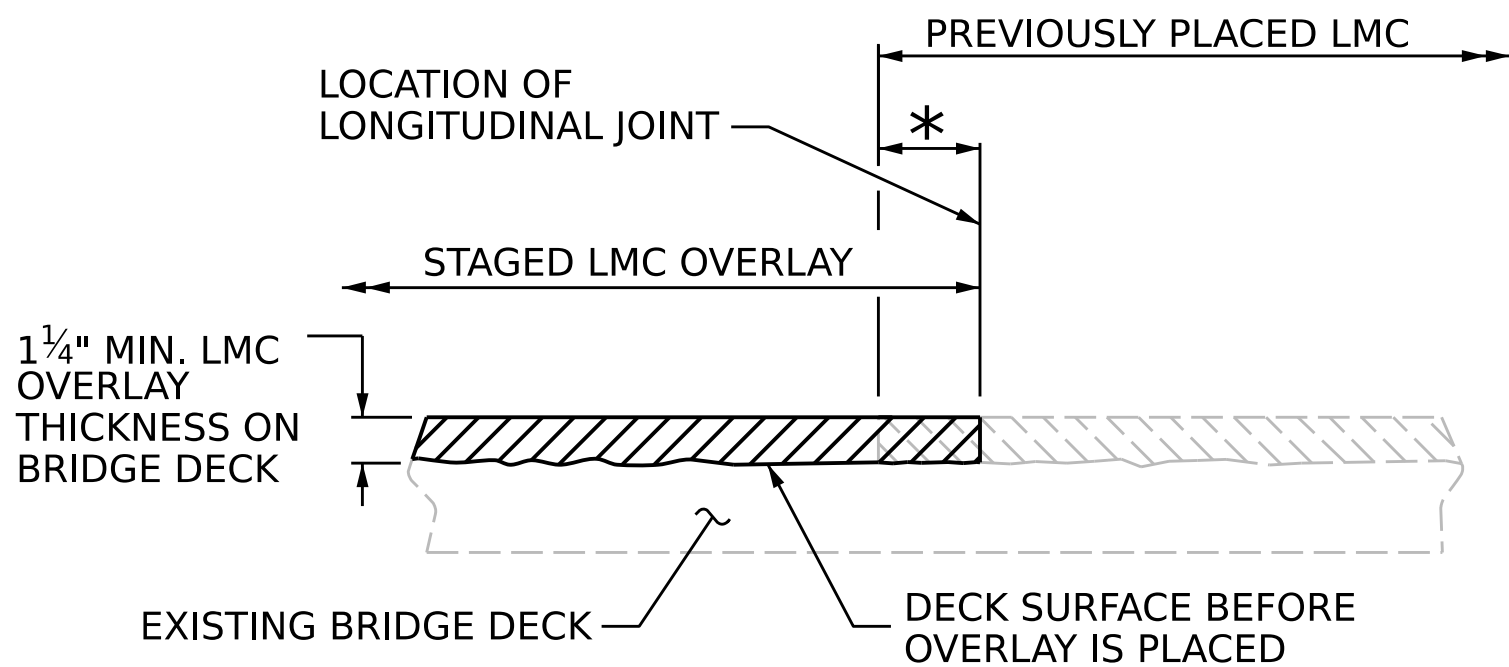
FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF LMC OVERLAY AND SURFACE PREPARATION SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

THE EXISTING TOP OF SLAB DOES NOT FOLLOW A STRAIGHT SLOPE FROM GUTTERLINE TO CL OF BRIDGE AND WILL REQUIRE ADJUSTMENTS OF THE LMC OVERLAY DEPTH ACCORDINGLY.

THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL A PLAN FOR SCARIFICATION, SURFACE PREPARATION AND LMC PLACEMENT AND FINISHING TO ATTAIN THE FINAL SURFACE SLOPE AS INDICATED.



DETAIL OF LMC OVERLAY



STAGED LMC OVERLAY JOINT

* 4" OVERLAP BETWEEN OVERLAYS

PROJECT NO. **15BPR.143.3**

WILSON COUNTY

BRIDGE NO. **970068**



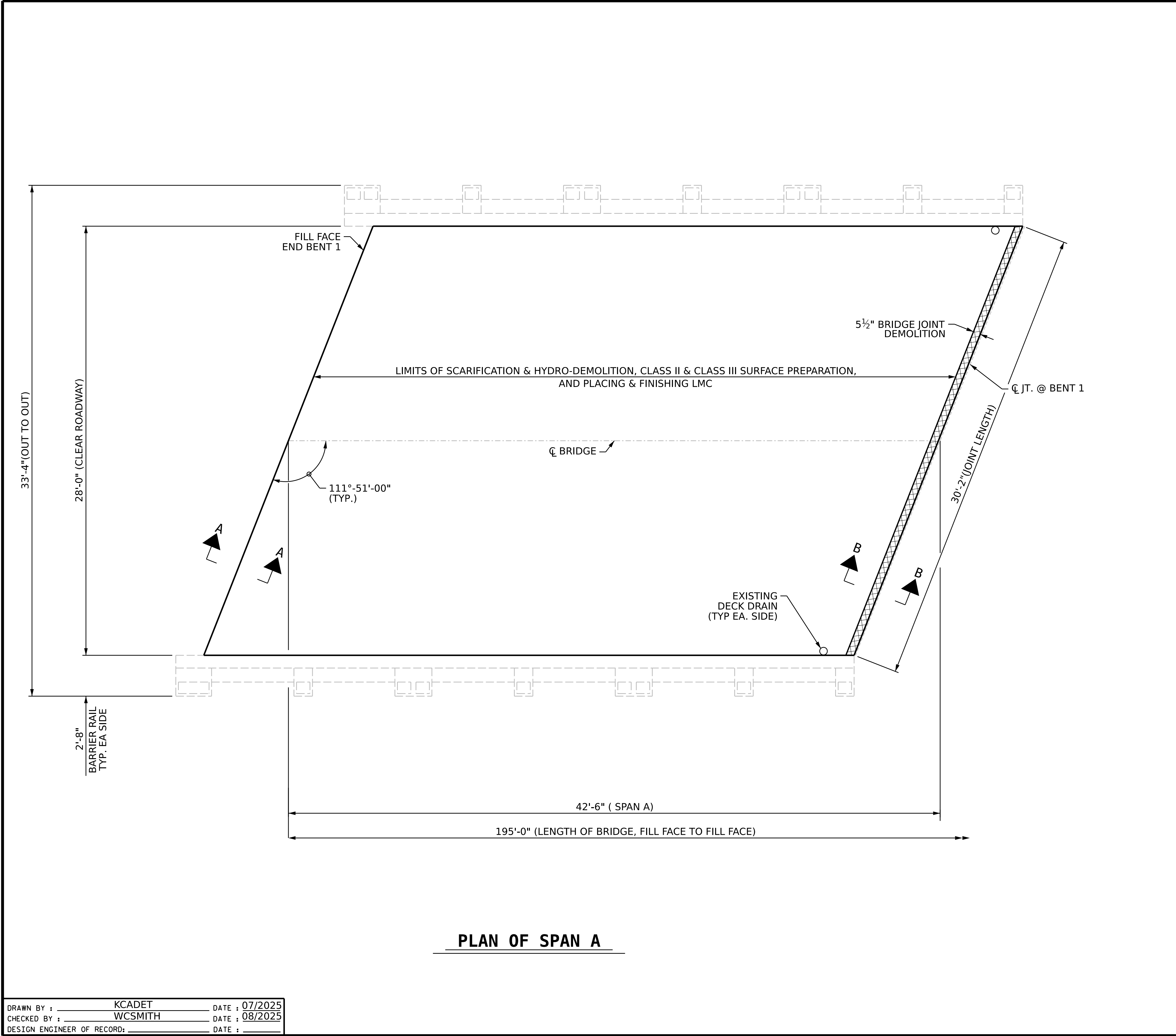
TYPICAL SECTION AND SURFACE PREPARATION DETAILS

DRAWN BY : CKRIETEMEYE/A. ABRAHA DATE : 03/2025
CHECKED BY : W.C. SMITH DATE : 05/2025
DESIGN ENGINEER OF RECORD: DATE :

9/5/2025
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FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-02
2			4			TOTAL SHEETS 28



PLAN OF SPAN A

DECK SURFACE REPAIR QUANTITY TABLE

DECK SURFACE REPAIR - SPAN A

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	130.7 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	130.7 SY	
CLASS II SURFACE PREPARATION	0 SY	
CLASS III SURFACE PREPARATION	0 SY	
LATEX MODIFIED CONCRETE OVERLAY	8.0 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY	130.7 SY	
GROOVING BRIDGE DECK	1,048.7 SF	
BRIDGE JOINT DEMOLITION	13.8 SF	

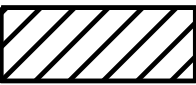
QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL ¼" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

NOTES

NO DECK DEFICIENCIES NOTED DURING FIELD INSPECTION, BECAUSE THE EXISTING DECK IS COVERED WITH 4" ASPHALT WEARING SURFACE. THE CONTRACTOR AND THE ENGINEER SHALL INSPECT THE DECK SURFACE AFTER SCARIFICATION. IF REPAIRS ARE DEEMED NECESSARY BY THE ENGINEER, HE WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

FOR SECTION A-A AND B-B, SEE "JOINT DETAILS" SHEET S1-11.

FOR DECK REPAIRS, SEE "DECK REPAIRS DETAILS" SHEET S1-12.



-APPROX. AREA CLASS II SURFACE PREPARATION



-BRIDGE JOINT DEMOLITION



-SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY

PROJECT NO. 15BPR.143.3

WILSON COUNTY

BRIDGE NO. 970068



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

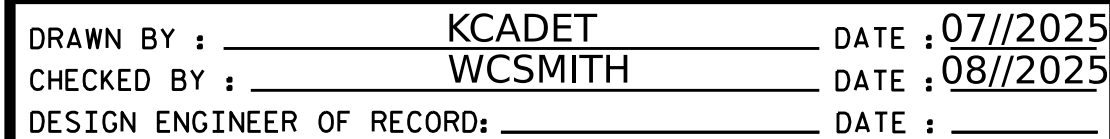
SURFACE PREPARATION
SPAN A

DRAWN BY : KCADET DATE : 07/2025
CHECKED BY : WCSMITH DATE : 08/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

9/12/2025
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aabrahm

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-03
1			3			TOTAL SHEETS
2			4			28

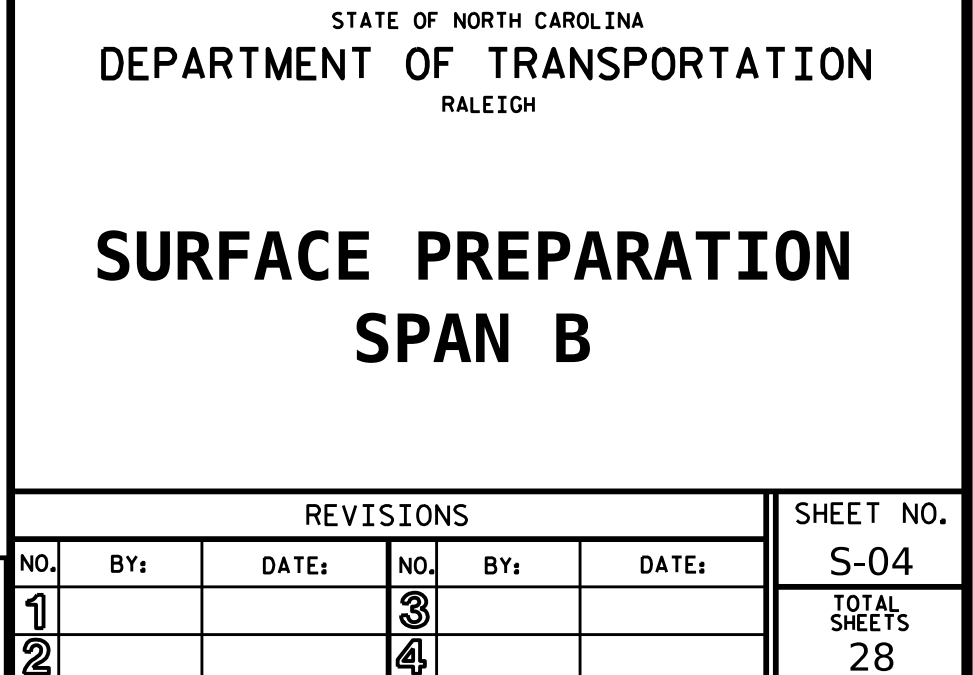


QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL $\frac{1}{4}$ " TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

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 REPAIR QUANTITY TABLE.

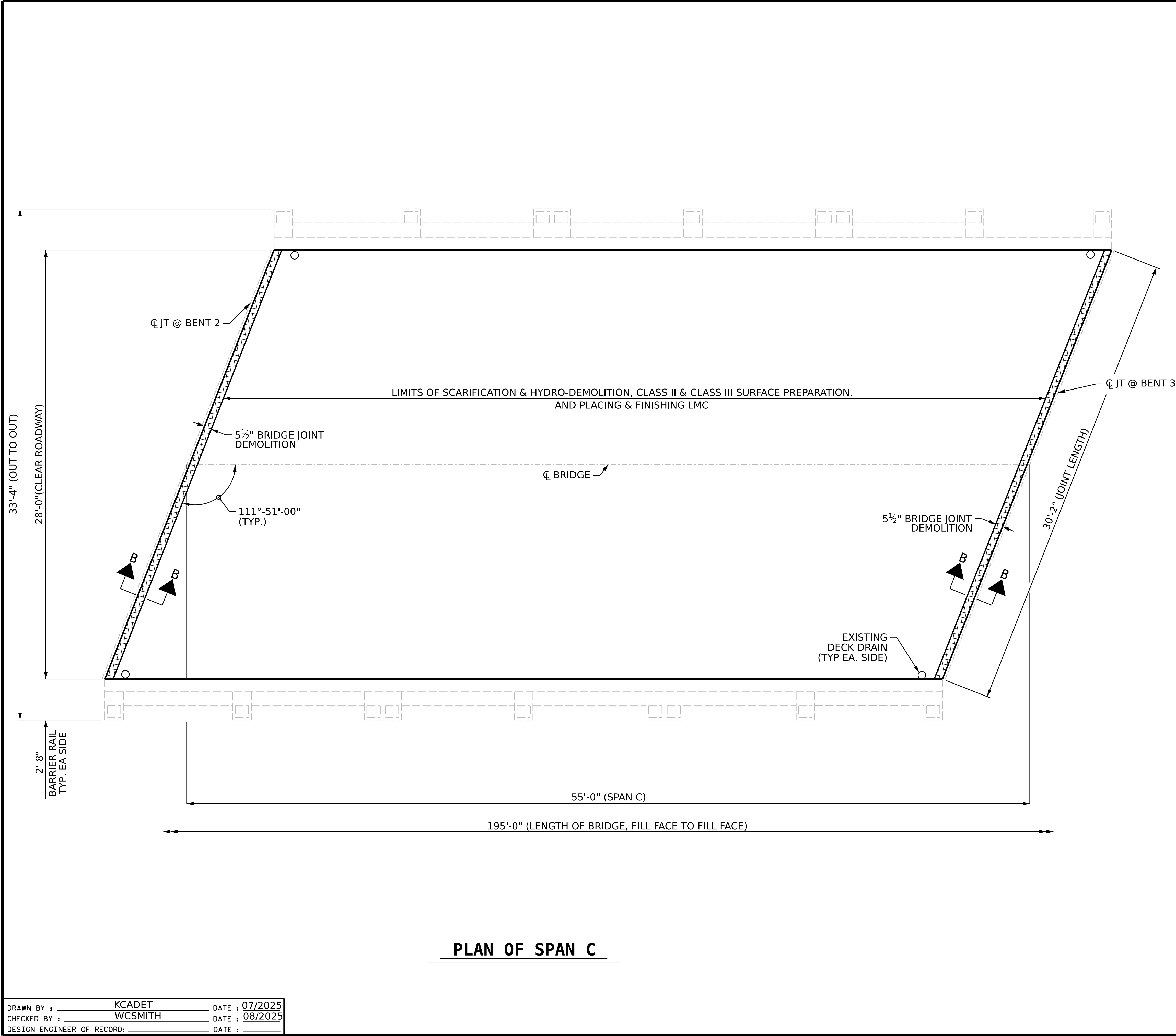
FOR SECTION B-B, SEE "JOINT DETAILS" SHEET S1-11.

- | | |
|---|--|
|  | -APPROX. AREA CLASS II
SURFACE PREPARATION |
|  | -BRIDGE JOINT DEMOLITION |
|  | -SCARIFYING AND HYDRO-DEMOLITION
OF BRIDGE DECK FOR LMC OVERLAY |

BRIDGE NO. 970068

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PLAN OF SPAN C

DECK SURFACE REPAIR QUANTITY TABLE

DECK SURFACE REPAIR - SPAN C

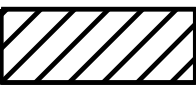
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	168.1 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	168.1 SY	
CLASS II SURFACE PREPARATION	0 SY	
CLASS III SURFACE PREPARATION	0 SY	
LATEX MODIFIED CONCRETE OVERLAY	10.2 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY	168.1 SY	
GROOVING BRIDGE DECK	1,347.4 SF	
BRIDGE JOINT DEMOLITION	27.6 SF	

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

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 REPAIR QUANTITY TABLE.

FOR SECTION B-B, SEE "JOINT DETAILS" SHEET S1-11.



-APPROX. AREA CLASS II SURFACE PREPARATION



-BRIDGE JOINT DEMOLITION



-SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY

PROJECT NO. **15BPR.143.3**

WILSON COUNTY

BRIDGE NO. **970068**



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DEPARTMENT OF TRANSPORTATION
RALEIGH

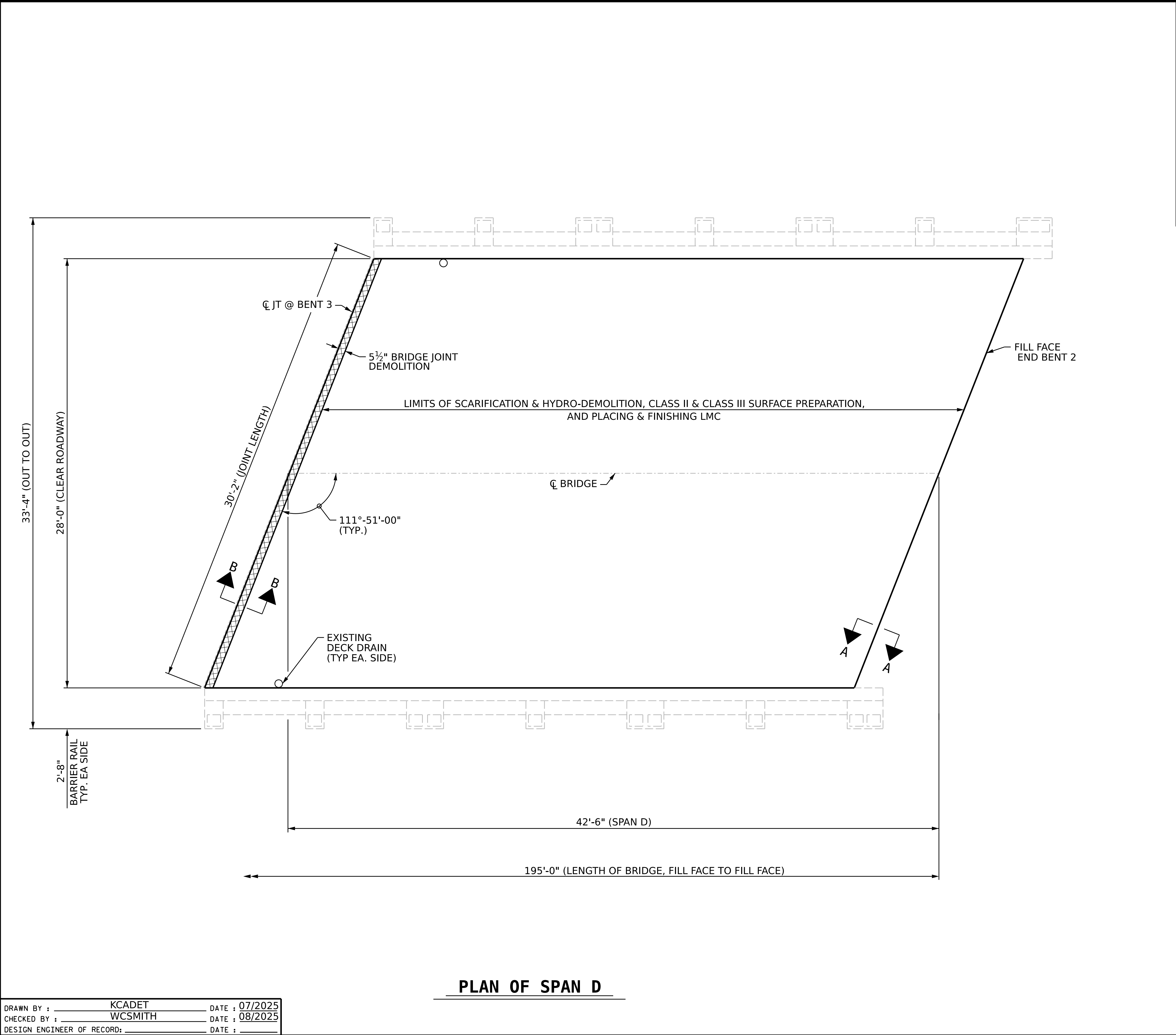
SURFACE PREPARATION
SPAN C

DRAWN BY : KCADET DATE : 07/2025
CHECKED BY : WCSMITH DATE : 08/2025
DESIGN ENGINEER OF RECORD: DATE :

9/26/2025
S:\DPG1\Division4\15BPR,143,3\PLANS\401.009.15BPR,143,3.SMU.DSR.C.S-05.970068.dgn
aabr@ha

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1			3			S-05
2			4			TOTAL SHEETS 28



DECK SURFACE REPAIR QUANTITY TABLE		
DECK SURFACE REPAIR - SPAN D		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	130.7 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	130.7 SY	
CLASS II SURFACE PREPARATION	0 SY	
CLASS III SURFACE PREPARATION	0 SY	
LATEX MODIFIED CONCRETE OVERLAY	8.0 CY	
PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY	130.7 SY	
GROOVING BRIDGE DECK	1,048.7 SF	
BRIDGE JOINT DEMOLITION	13.8 SF	

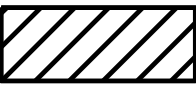
QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL ¼" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

NOTES

NO DECK DEFICIENCIES NOTED DURING FIELD INSPECTION, BECAUSE THE EXISTING DECK IS COVERED WITH 4" ASPHALT WEARING SURFACE. THE CONTRACTOR AND THE ENGINEER SHALL INSPECT THE DECK SURFACE AFTER SCARIFICATION. IF REPAIRS ARE DEEMED NECESSARY BY THE ENGINEER, HE WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

FOR SECTION A-A AND B-B, SEE "JOINT DETAILS" SHEET S1-11.

FOR DECK REPAIRS, SEE "DECK REPAIRS DETAILS" SHEET S1-12.

-  -APPROX. AREA CLASS II SURFACE PREPARATION
-  -BRIDGE JOINT DEMOLITION
-  -SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY

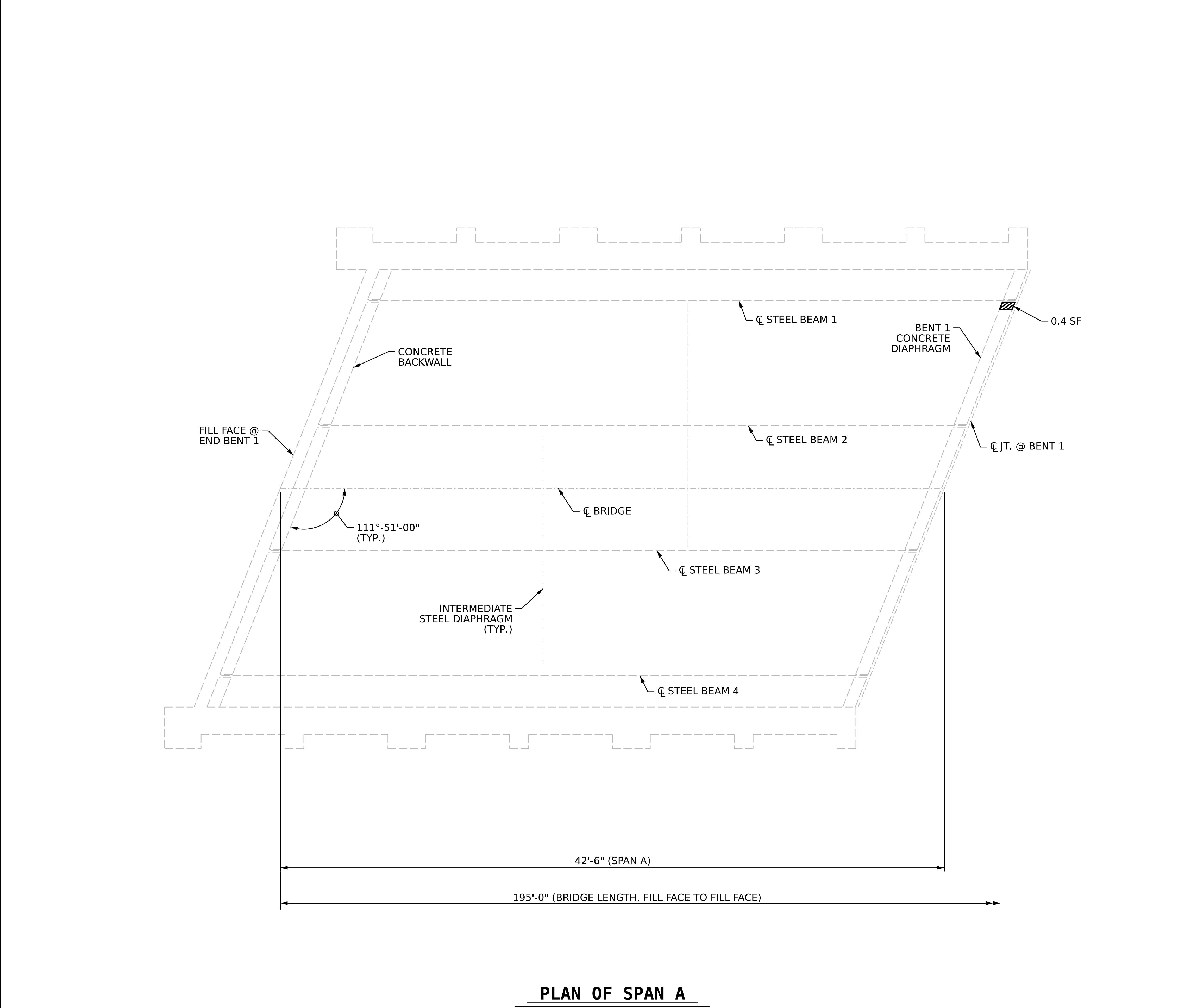
PROJECT NO. 15BPR.143.3
WILSON COUNTY
BRIDGE NO. 970068



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH									
SURFACE PREPARATION SPAN D									
REVISIONS									SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-06			
1			3			TOTAL SHEETS			
2			4			28			

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PLAN OF SPAN D



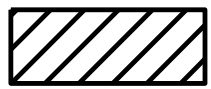
DECK UNDERSIDE REPAIR QUANTITY TABLE				
DECK UNDERSIDE REPAIRS SPAN A	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0.4	0.2		
OVERHANG	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0	0		
OVERHANG	0	0		

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

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON 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 AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA

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WILSON COUNTY
BRIDGE NO. **970068**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

UNDERSIDE
DECK REPAIRS
SPAN A

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1			3			TOTAL SHEETS
2			4			28

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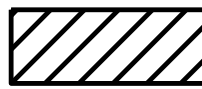
DECK UNDERSIDE REPAIR QUANTITY TABLE				
DECK UNDERSIDE REPAIRS SPAN B	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0	0		
OVERHANG	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0	0		
OVERHANG	0	0		

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

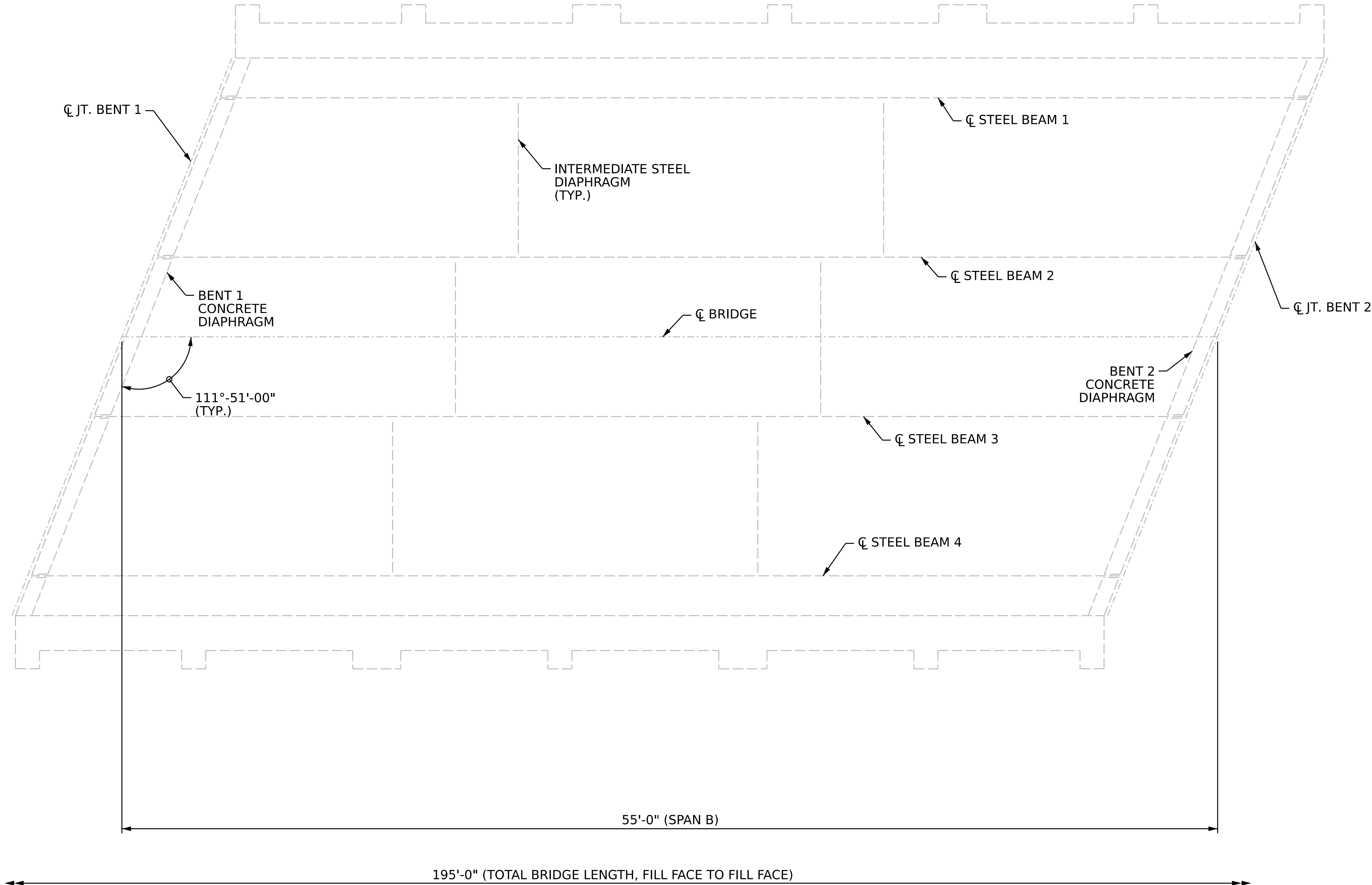
NOTES

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CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA



PLAN OF SPAN B

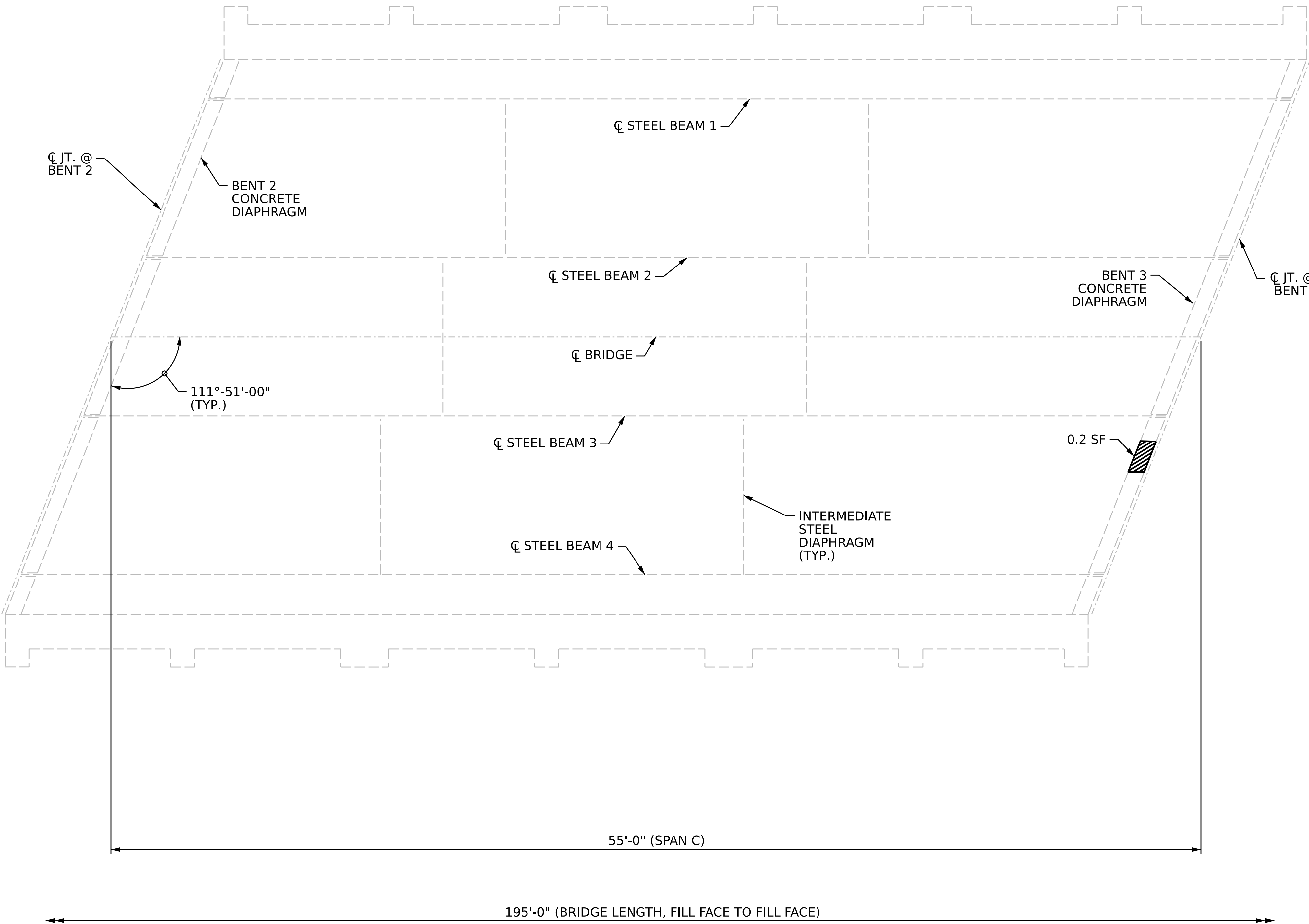
PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH											
UNDERSIDE DECK REPAIRS SPAN B											
REVISIONS										SHEET NO.	
NO.	BY:	DATE:			NO.	BY:	DATE:			S-08	
1					3					TOTAL SHEETS	
2					4					28	

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PLAN OF SPAN C

DECK UNDERSIDE REPAIR QUANTITY TABLE				
DECK UNDERSIDE REPAIRS SPAN C	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0.2	0.1		
OVERHANG	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0	0		
OVERHANG	0	0		

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

NOTES

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CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

SHOTCRETE REPAIR AREA

CONCRETE REPAIR AREA

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**

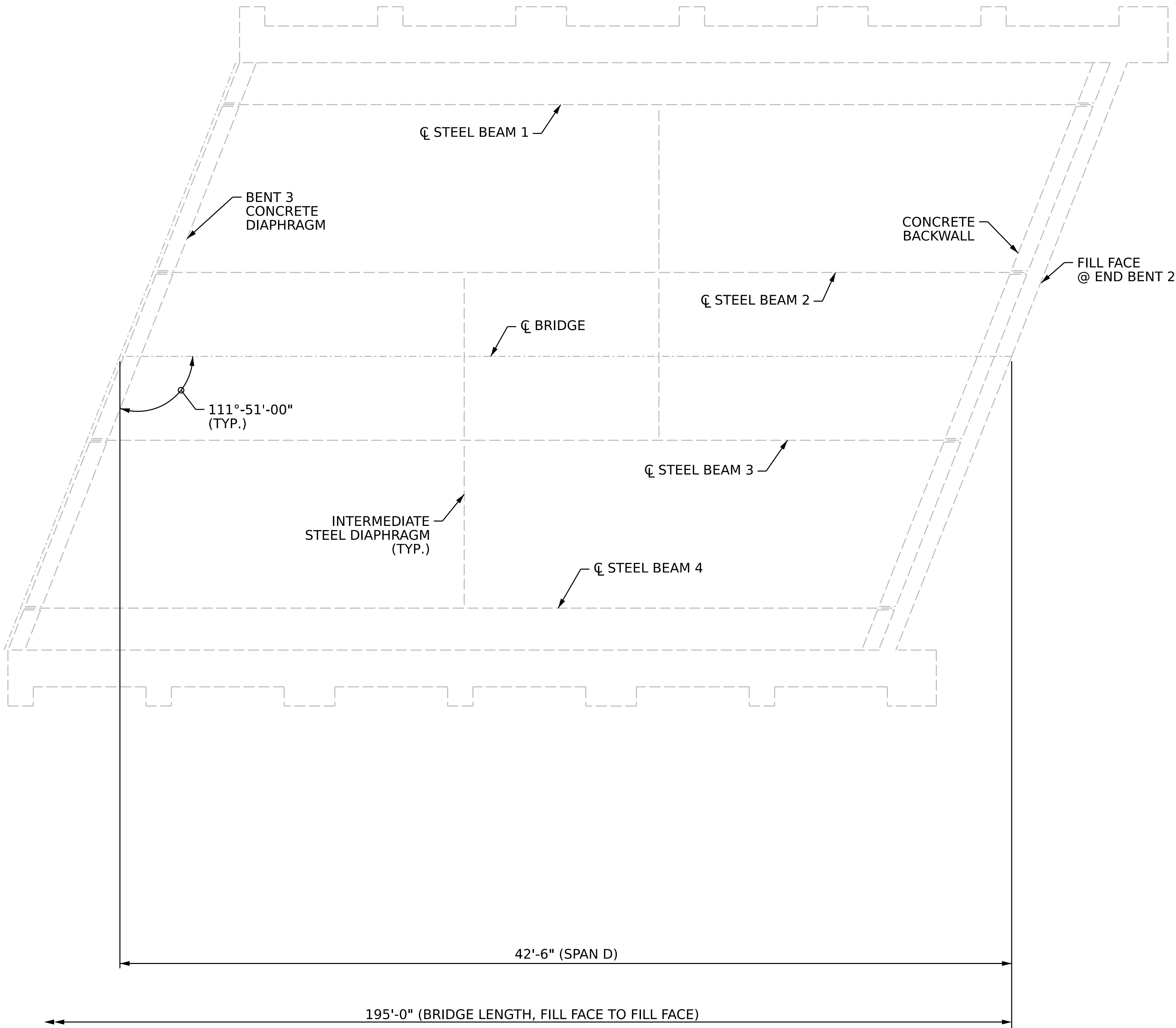


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						
UNDERSIDE DECK REPAIRS SPAN C						
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-09
1			3			TOTAL SHEETS
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PLAN OF SPAN D

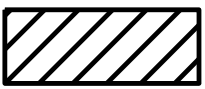
DECK UNDERSIDE REPAIR QUANTITY TABLE				
DECK UNDERSIDE REPAIRS SPAN D	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0	0		
OVERHANG	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0	0		
OVERHANG	0	0		

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

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON 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 AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

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 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**

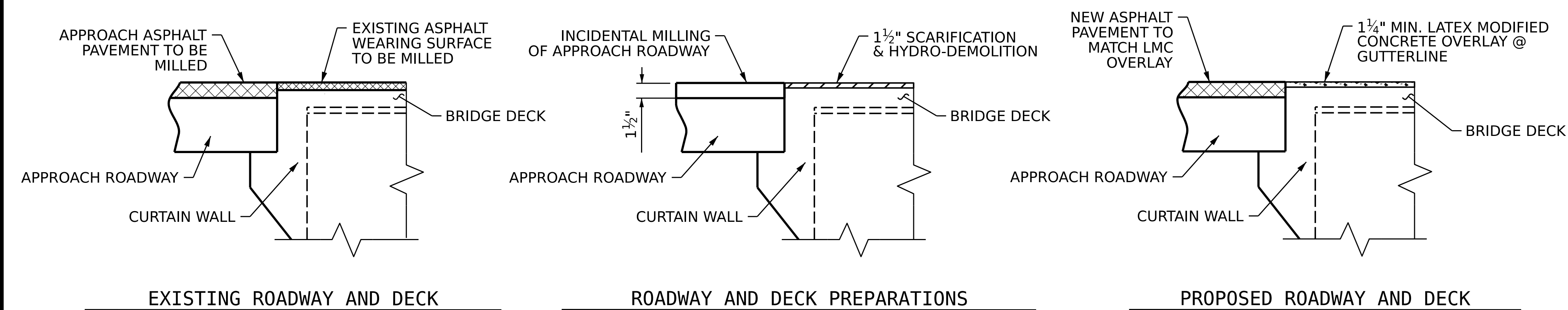


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DEPARTMENT OF TRANSPORTATION										
RALEIGH										
UNDERSIDE DECK REPAIRS SPAN D										
REVISIONS									SHEET NO.	
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1					3					TOTAL SHEETS
2					4					28

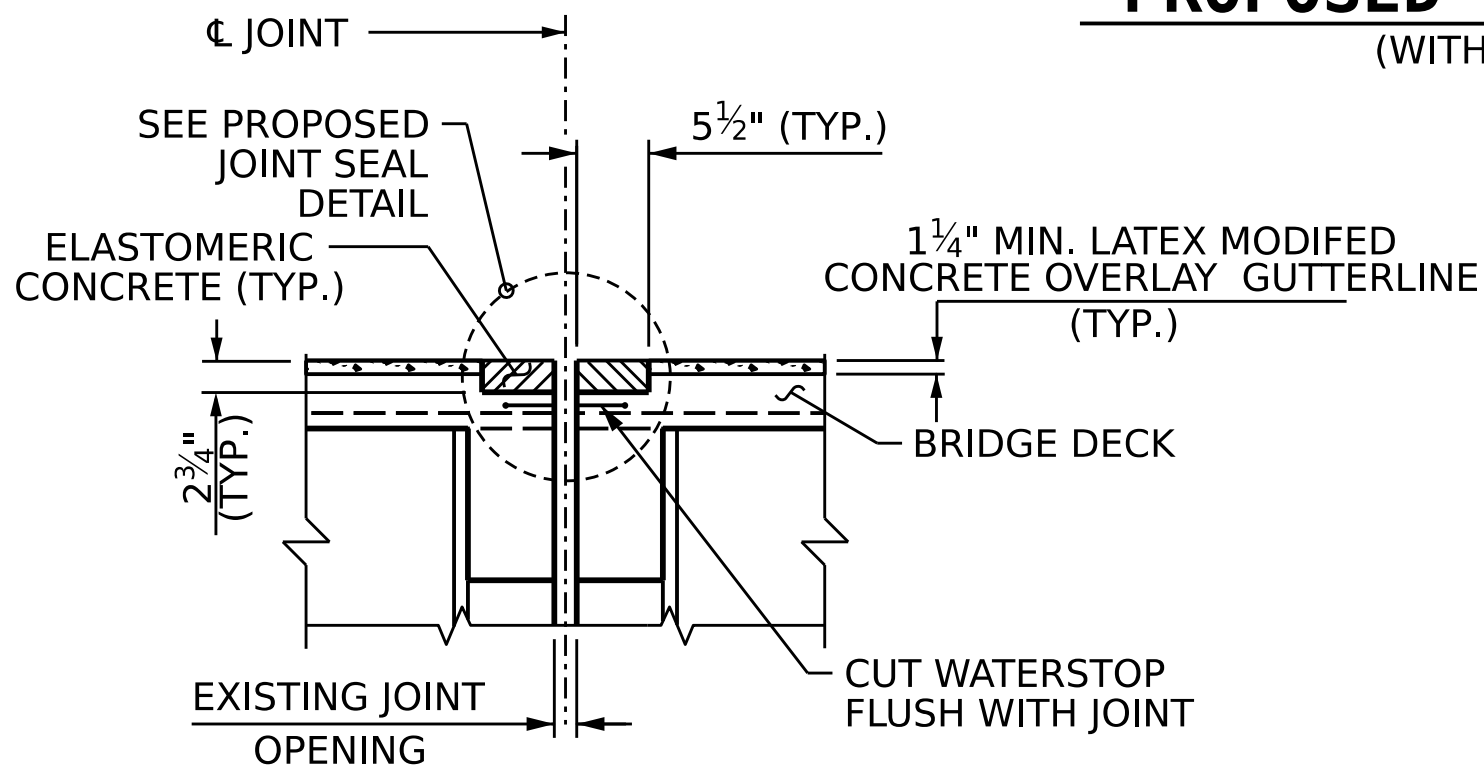
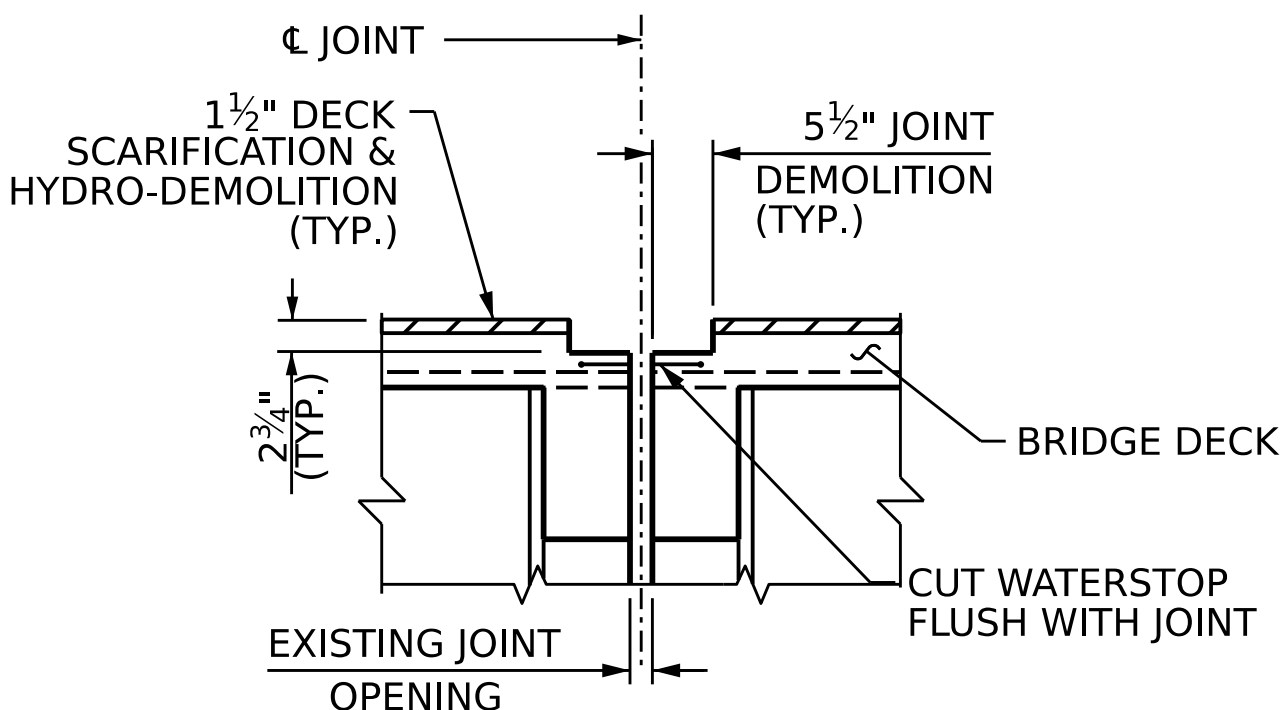
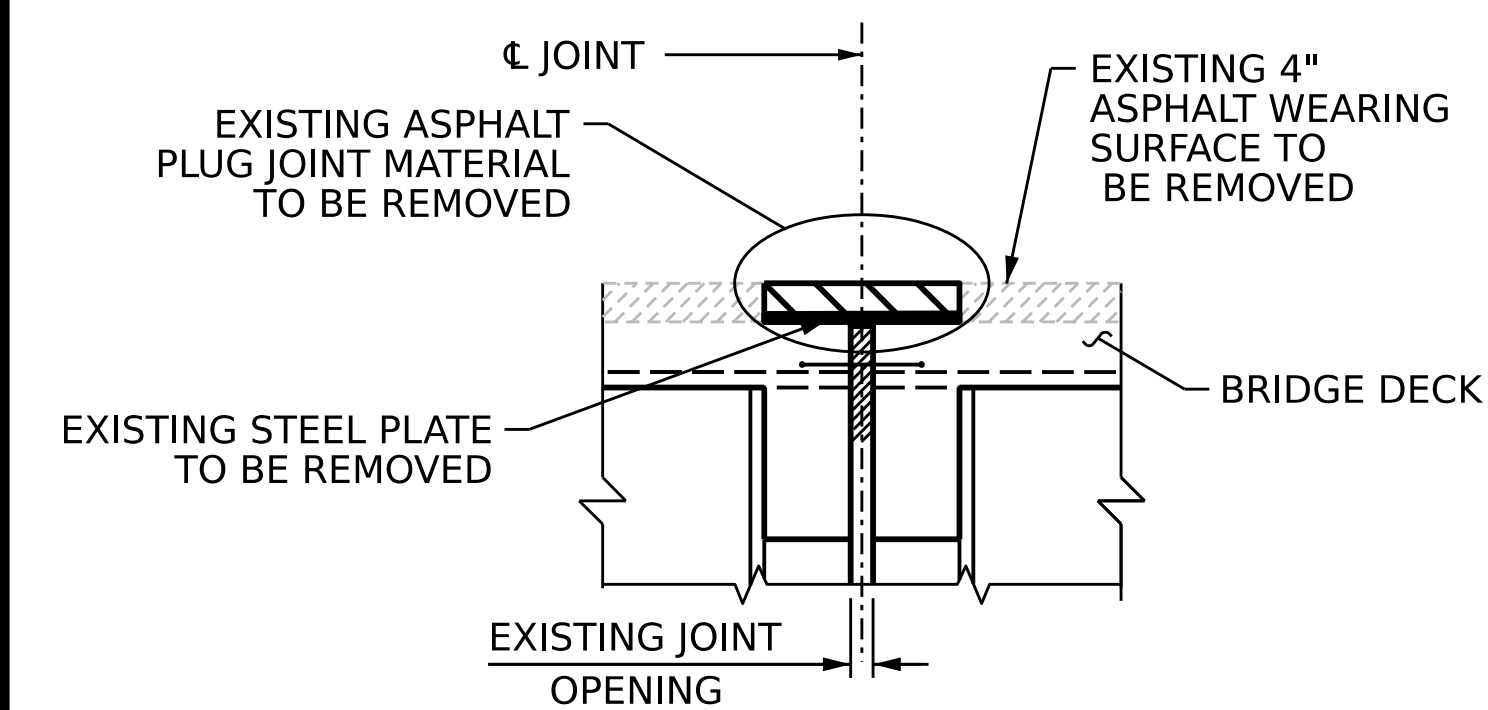
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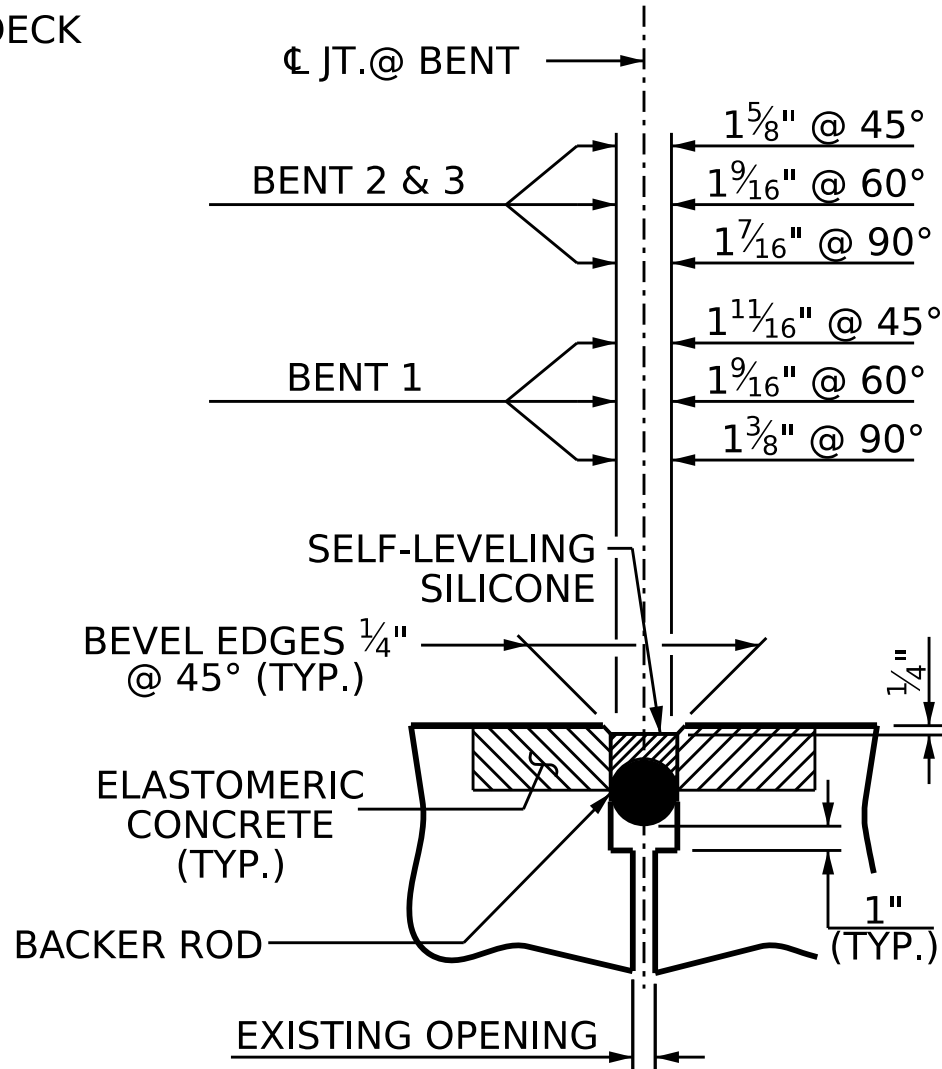
8/26/21



(ROADWAY AND BRIDGE DECK SEQUENCE AT END BENTS)
SECTION A-A



PROPOSED JOINT SEAL DETAIL
(WITH SAWED DIMENSIONS)



NOTES

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY OR SEALANT WORK IS COMPLETE.

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN THE DETAILS BY MORE THAN 3/4", NOTIFY THE ENGINEER.

SILICONE JOINT SEALANT AND BACKER ROD SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH. SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REHAB OPERATIONS NOT TO DROP ANY MATERIAL BELOW THE BRIDGE, WITHOUT PROTECTIVE DEVICES BELOW TO CATCH THE MATERIAL. ANY MATERIAL THAT FALLS BELOW THE BRIDGE SHALL BE CONTAINED, REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT. IF THE ENGINEER DETERMINES THAT THE PROTECTIVE DEVICES ARE NOT ADEQUATE OR NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

THE INSTALLATION JOINT SEAL SHALL BE WATERTIGHT.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL SAW CUT TO A NOMINAL DEPTH OF 1/2" BUT REINFORCING STEEL SHALL NOT BE DAMAGED. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

QUANTITIES SHOWN IN THE ELASTOMERIC CONCRETE FOR PRESERVATION TABLE ARE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

FOR EXCAVATION BELOW THE BOTTOM OF PLANNED JOINT DEMOLITION, CONCRETE FOR DECK REPAIR SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.

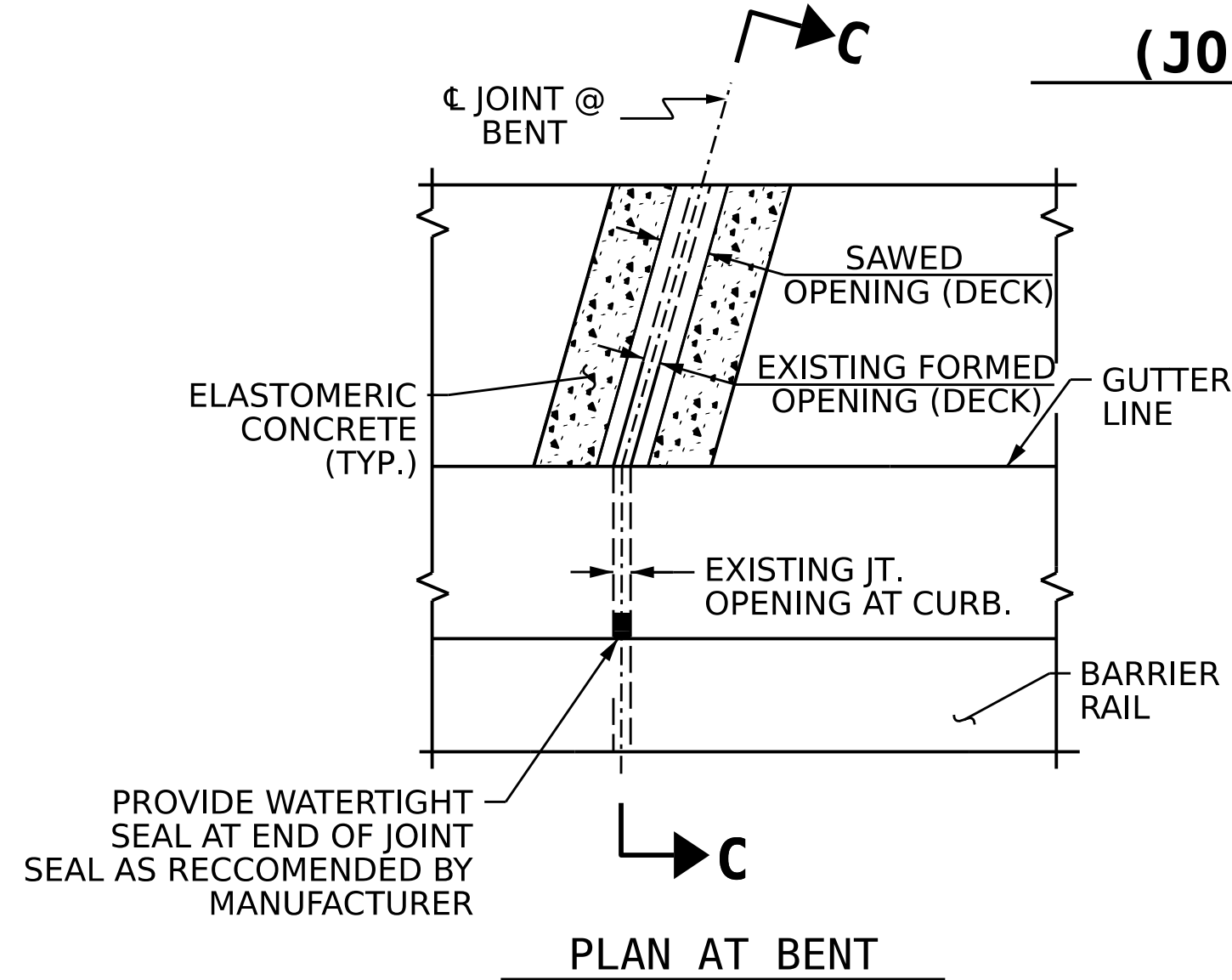
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

RETAIN ALL EXISTING SIDEWALK AND RAILING COVER PLATES AND HARDWARE. CLEAN AND REPAIR AS NEEDED. CONTRACTOR SHALL REPLACE DAMAGED COVER PLATES AND/OR HARDWARE AS NEEDED OR AS DIRECTED BY THE ENGINEER AT NO EXTRA COST TO THE DEPARTMENT.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	21 CF	
POURABLE SILICONE JOINT SEALANT	100 LF	

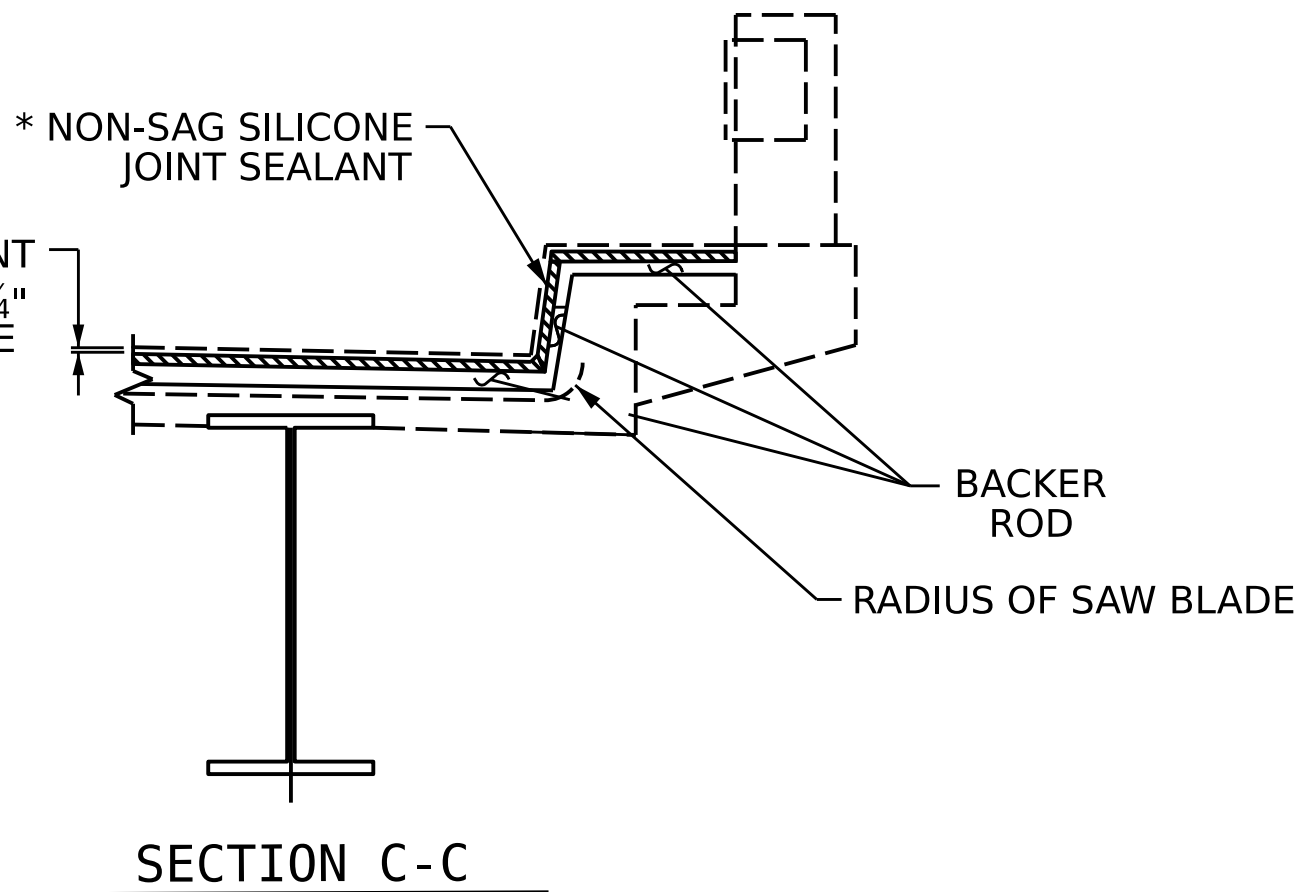
(JOINT INSTALLATION SEQUENCE AT BENT)
SECTION B-B



JOINT DETAILS AT CURB

* NON-SAG SILICONE JOINT SEALANT TO BE PLACED AND ALLOWED TO SET, PRIOR TO PLACEMENT OF SELF-LEVELING SILICONE JOINT SEALANT.

SILICONE JOINT SEALANT SHALL BE RECESSED 1/4" BELOW DECK SURFACE



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STATE OF NORTH CAROLINA
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JOINT REPAIR
DETAILS

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1			3			S-11
2			4			TOTAL SHEETS 28

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NOTES

FOR AREAS TO BE REPAIRED, SEE "PLAN OF SPAN" SHEETS.

ALL DECK REPAIRS SHALL BE COMPLETED PRIOR TO PLACEMENT OF OVERLAY.

FOR CLASS II AND CLASSIII SURFACE PRPARATION, SEE "OVERLAY SURFACE PREPARATIONS" SPECIAL PROVISION.

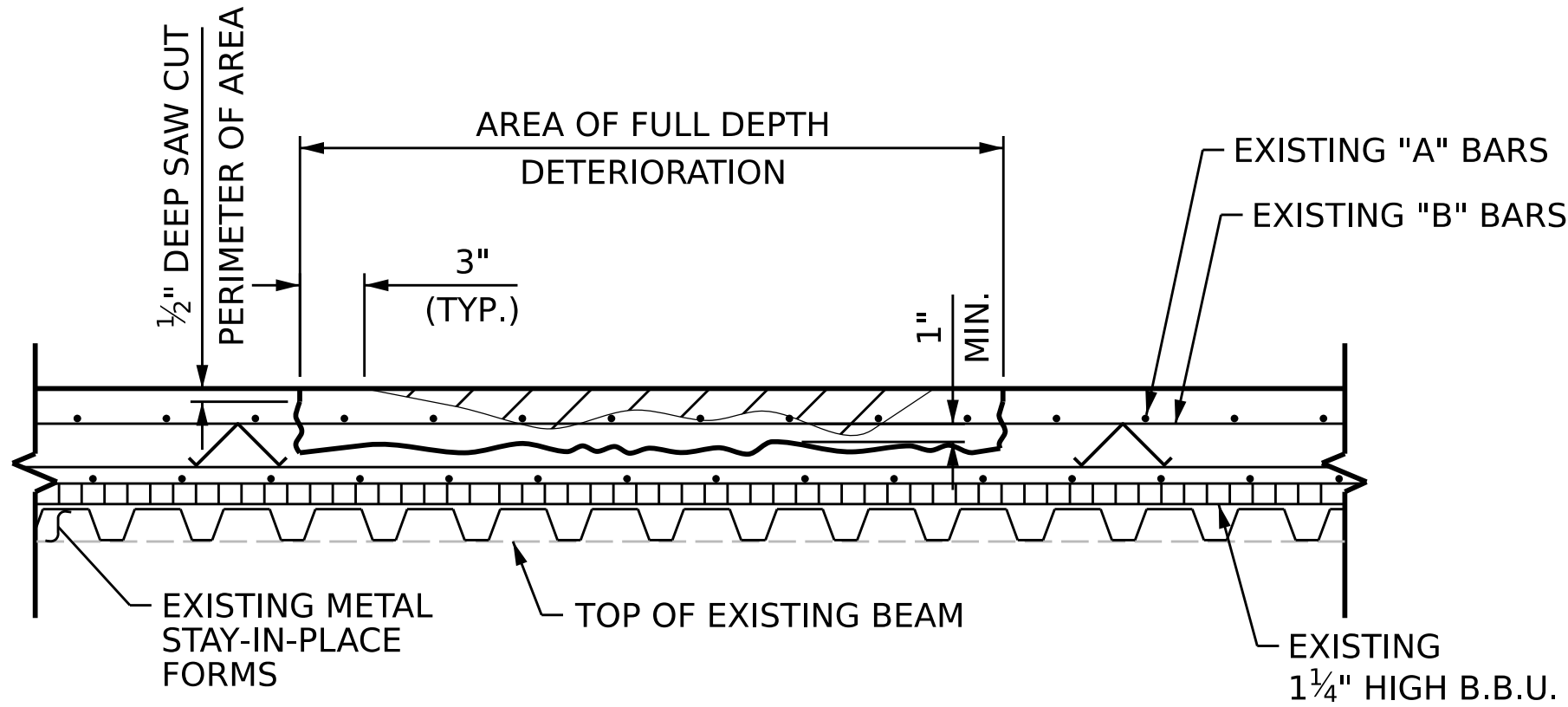
FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIR, SEE SPECIAL PROVISIONS.

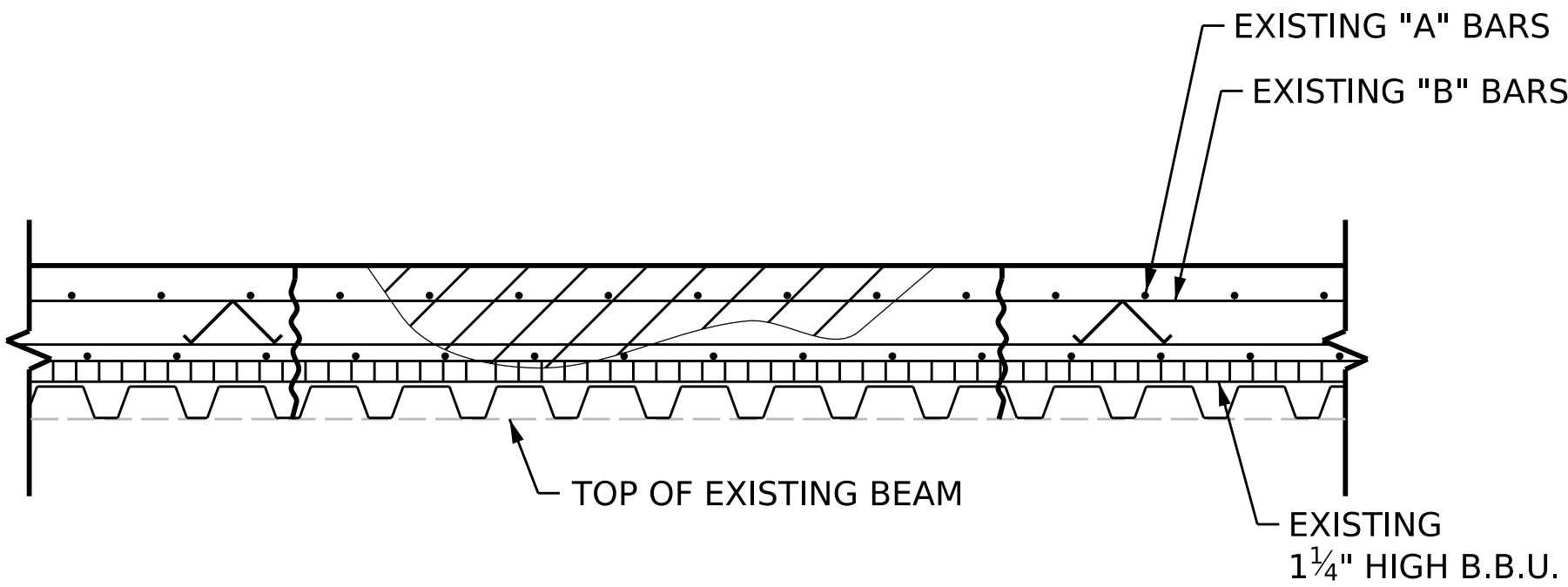
THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK , FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

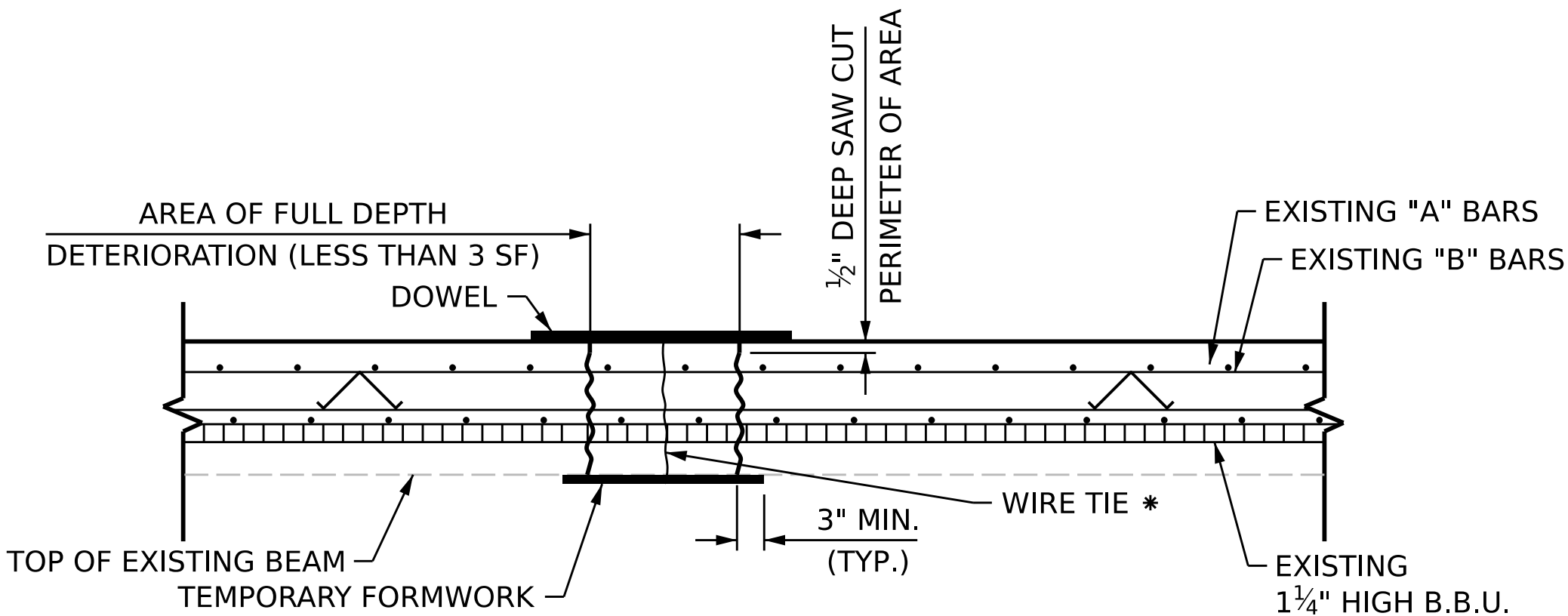
NO FORMWORK SHALL BE LEFT IN PLACE.



CLASS II (PARTIAL DEPTH) REPAIR



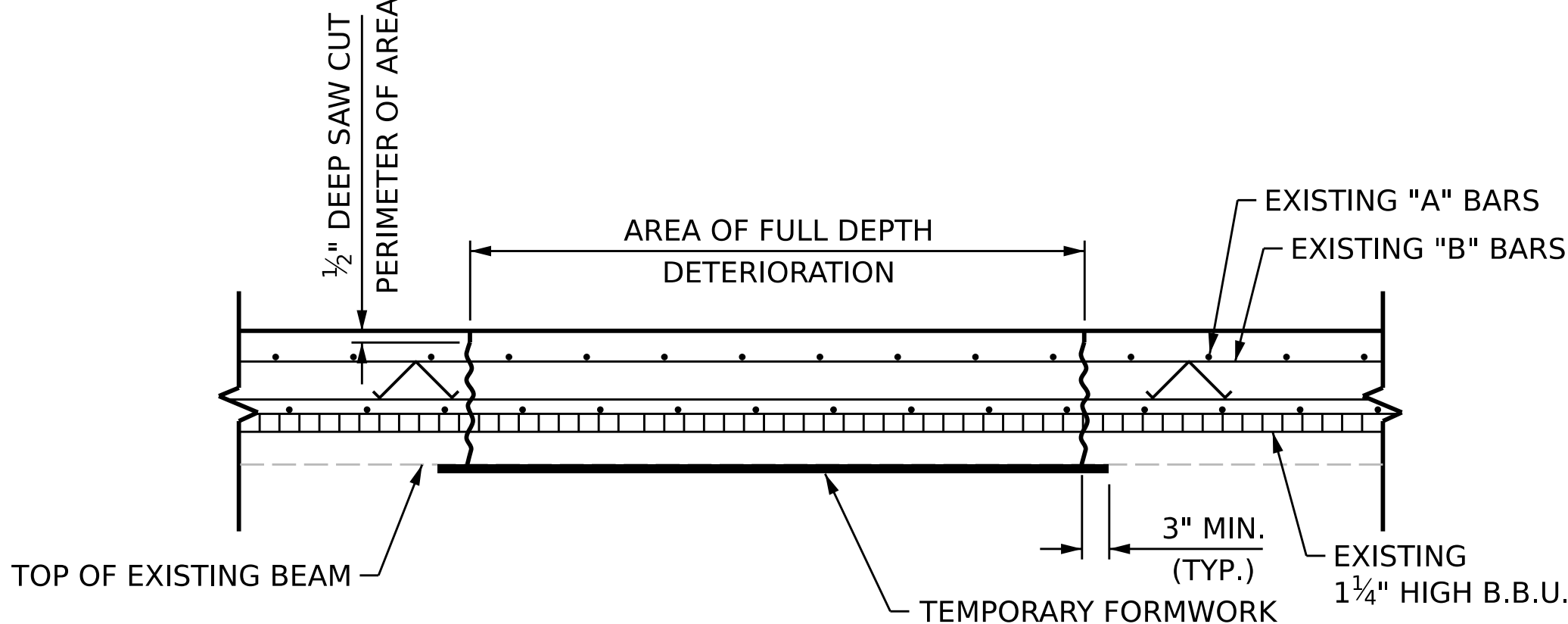
CLASS III (FULL DEPTH) REPAIR



FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

(FOR AREAS OF DETERIORATION LESS THAN OR EQUAL TO 3 SF)

* WIRE TIE TO BE KNOTTED BELOW TEMPORARY FORMWORK AND ATTACHED TO DOWEL THAT IS WIDER THAN FORMED FULL DEPTH HOLE. ROTATE DOWEL TO TIGHTEN FORMWORK AGAINST BOTTOM OF DECK.

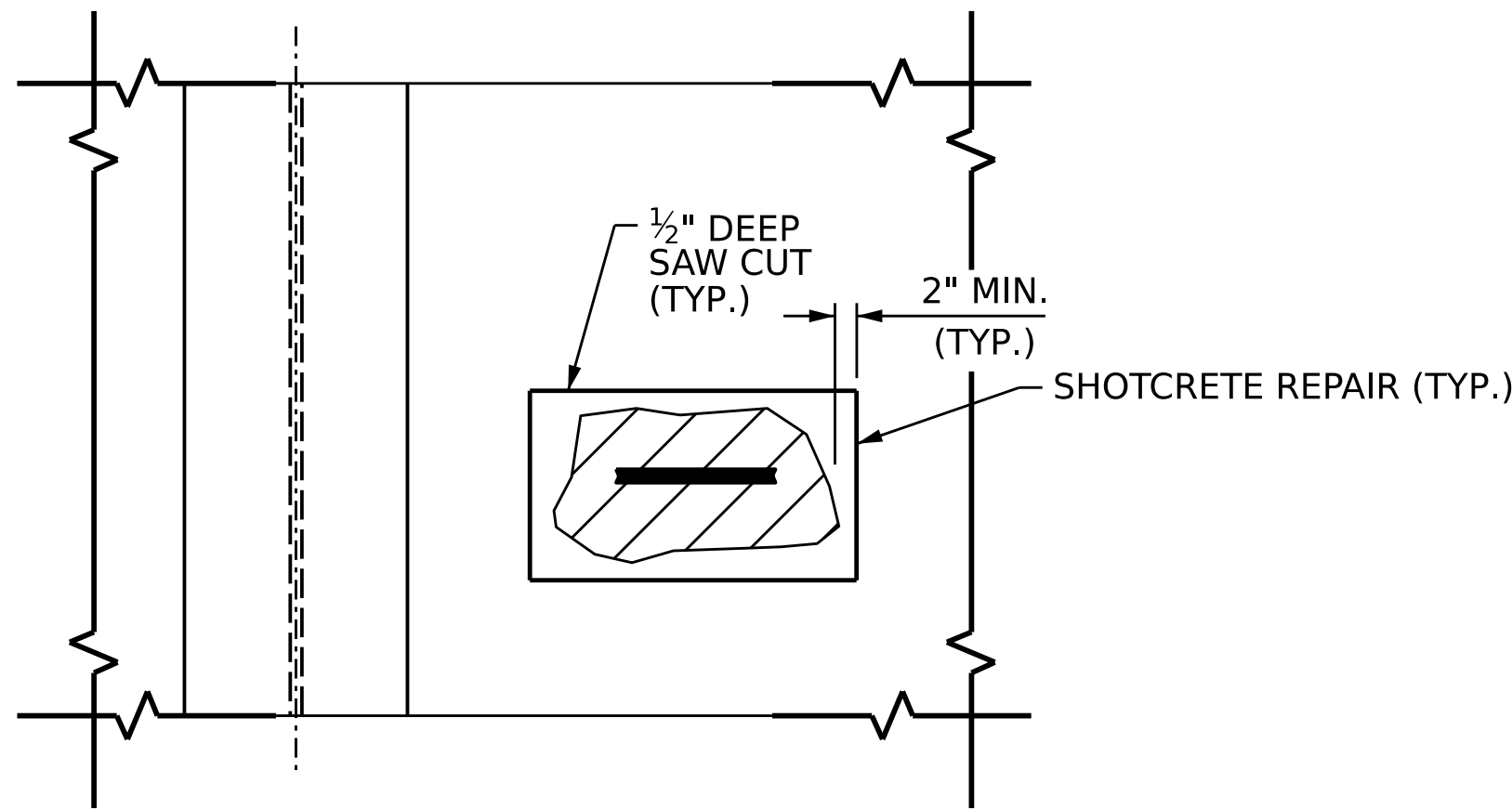


FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

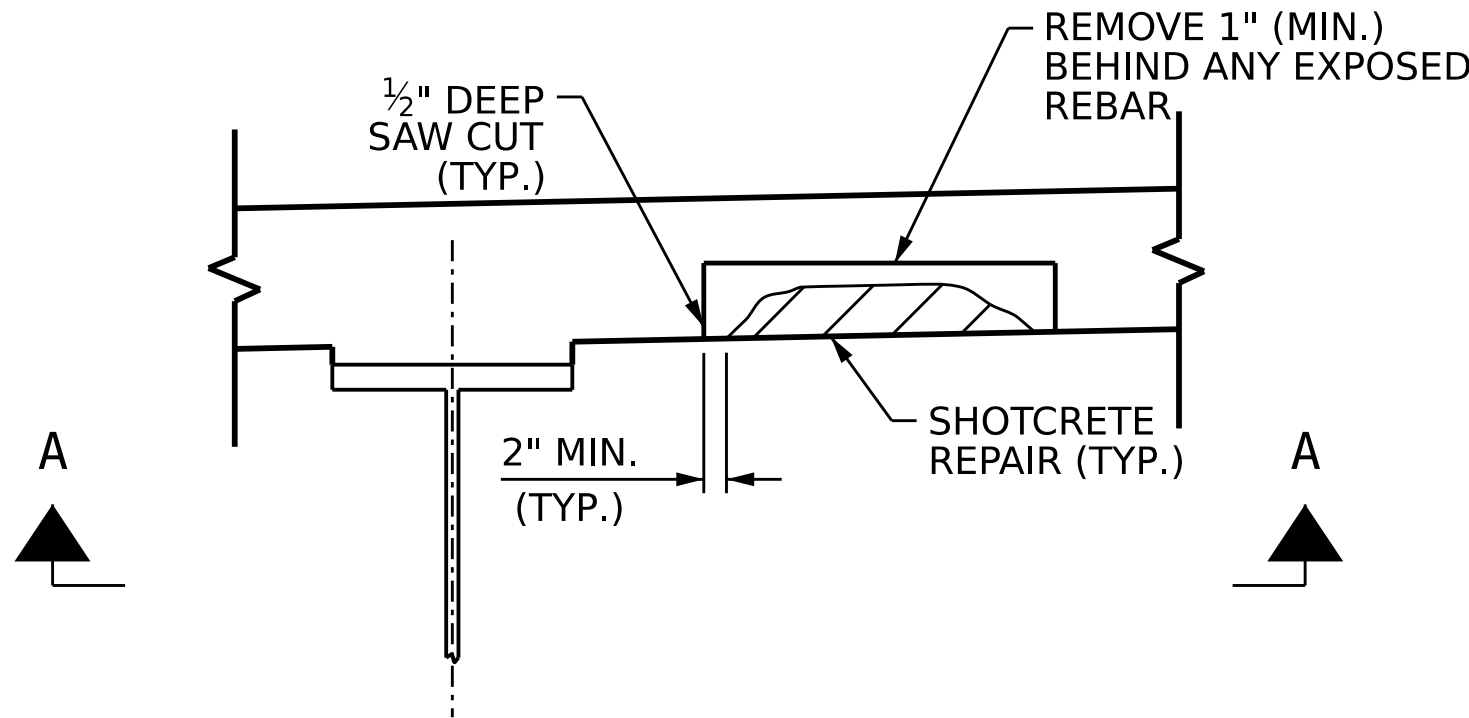
(FOR AREAS OF DETERIORATION LESS THAN OR EQUAL TO 3 SF)



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

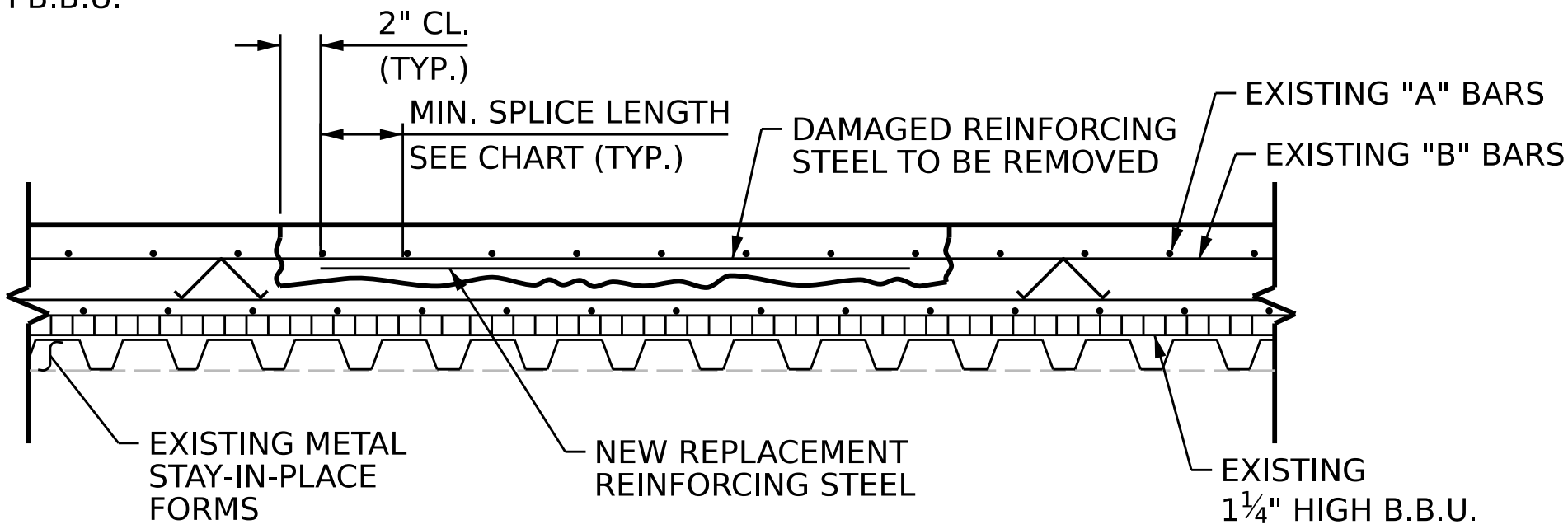


SECTION A-A



TYPICAL SECTION

UNDERSIDE OF DECK REPAIR



REINFORCING STEEL REPAIR

PROJECT NO. **15BPR.143.3**

WILSON COUNTY

BRIDGE NO. **970068**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

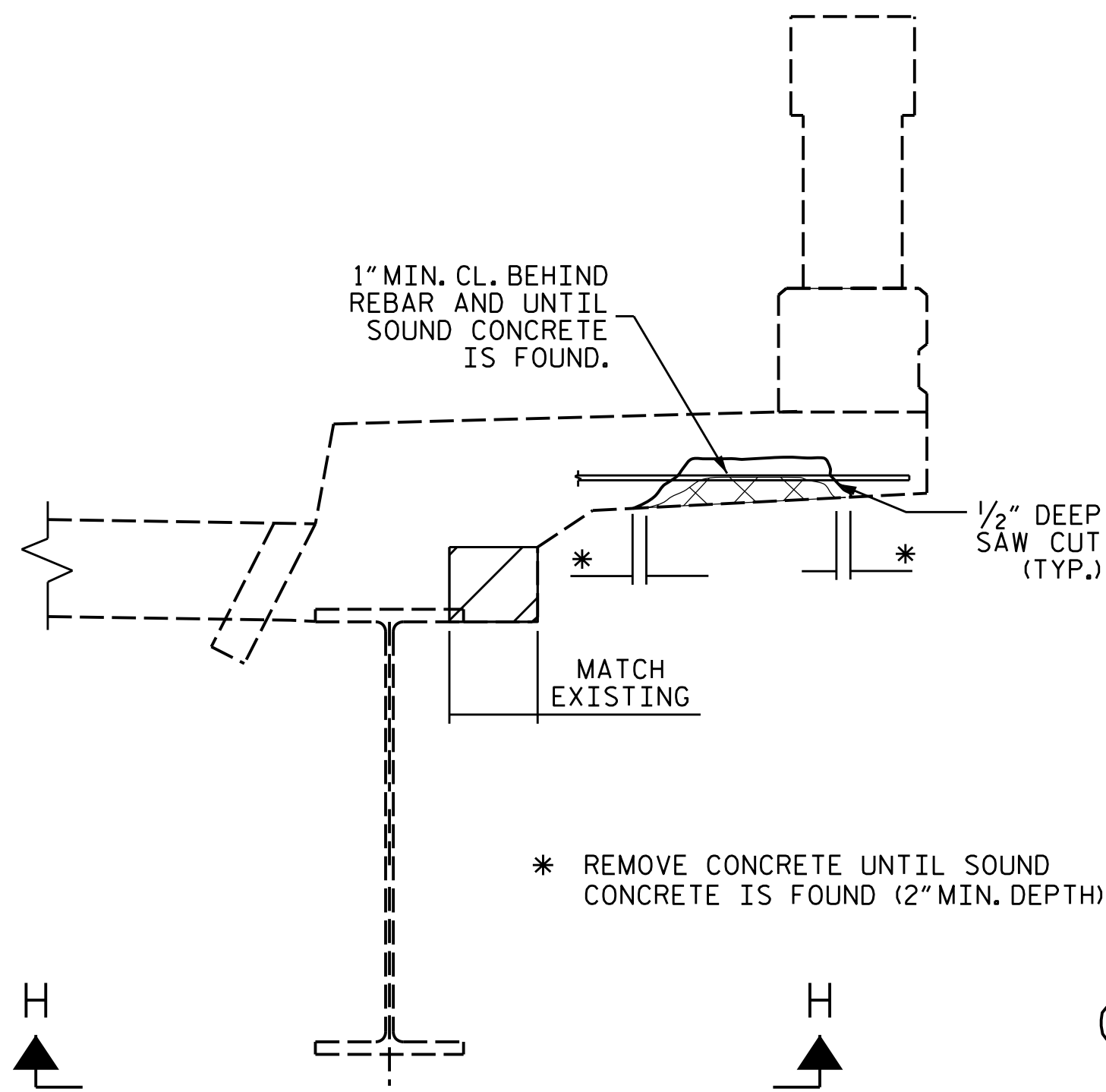
DECK REPAIR DETAILS

ASSEMBLED BY:	KCADET	DATE :	09/2025
CHECKED BY :	WC SMITH	DATE :	09/2025
DRAWN BY :	NAP 09/2018		
CHECKED BY :	DAC 09/2018		

9/25/2025
S:\DPG\Division4\15BPR,143,3\PLANS\401.023.15BPR,143,3.SMU.DECK_REPAIR.S-12.970068.dgn
kcadet

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

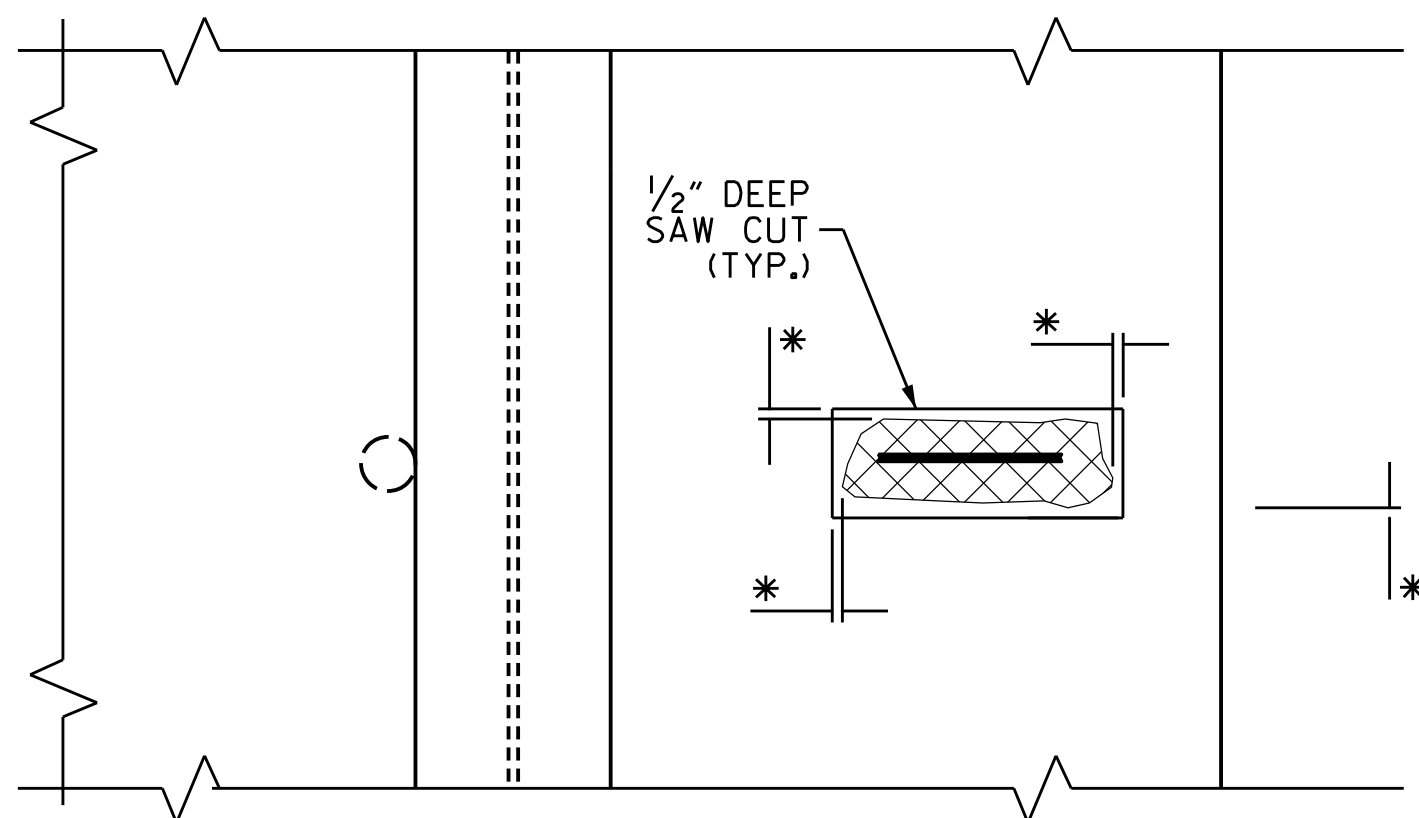
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	
1			3	S-12
2			4	TOTAL SHEETS 28



TYPICAL SECTION
(UTILITIES NOT SHOWN FOR CLARITY)

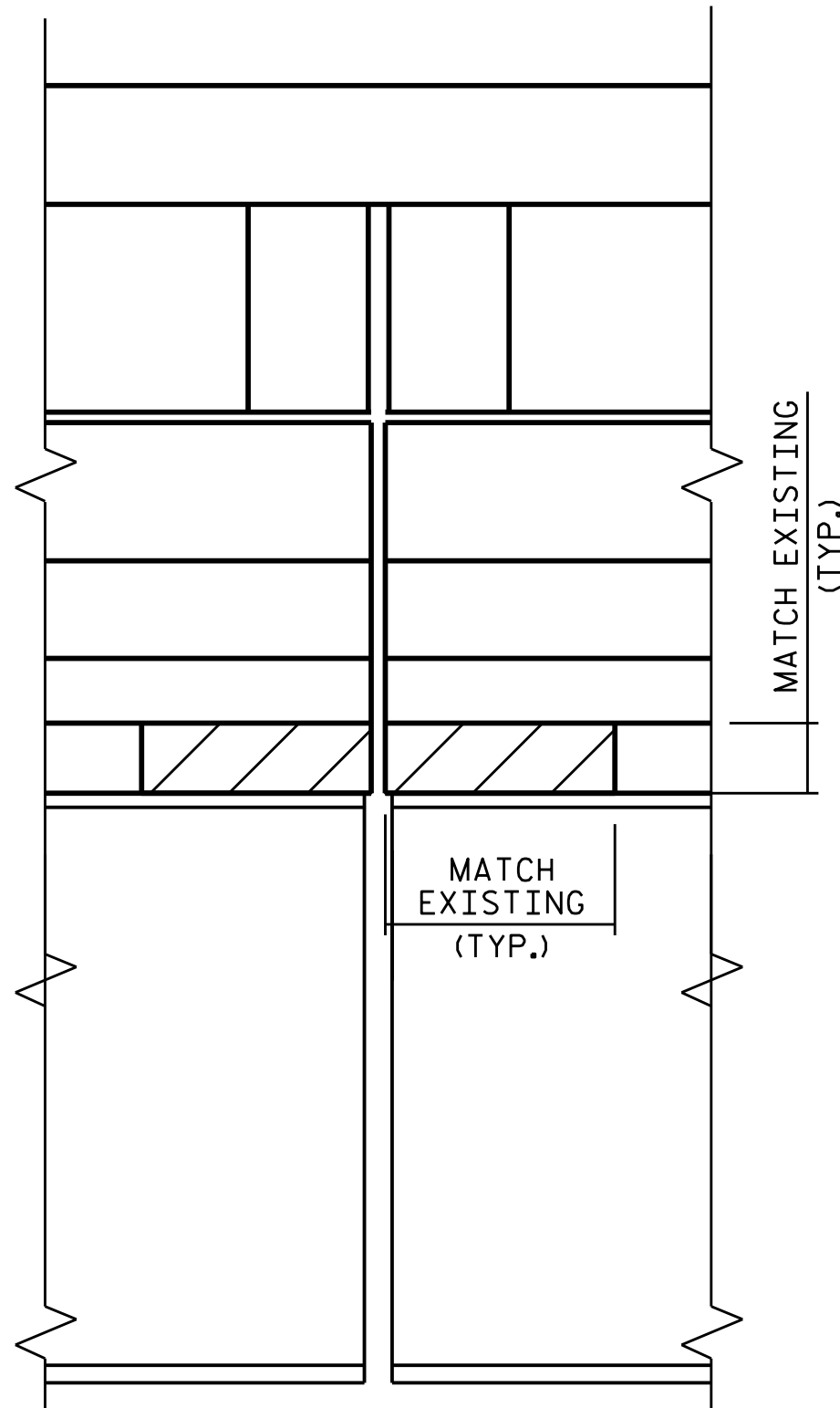
DAMAGED AREA

CONCRETE IN THIS AREA SHALL BE REPAIRED AND FORMED TO MATCH EXISTING.



SECTION H-H

OVERHANG DETAILS



SECTION G-G

NOTES

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 SHEET S1-25.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

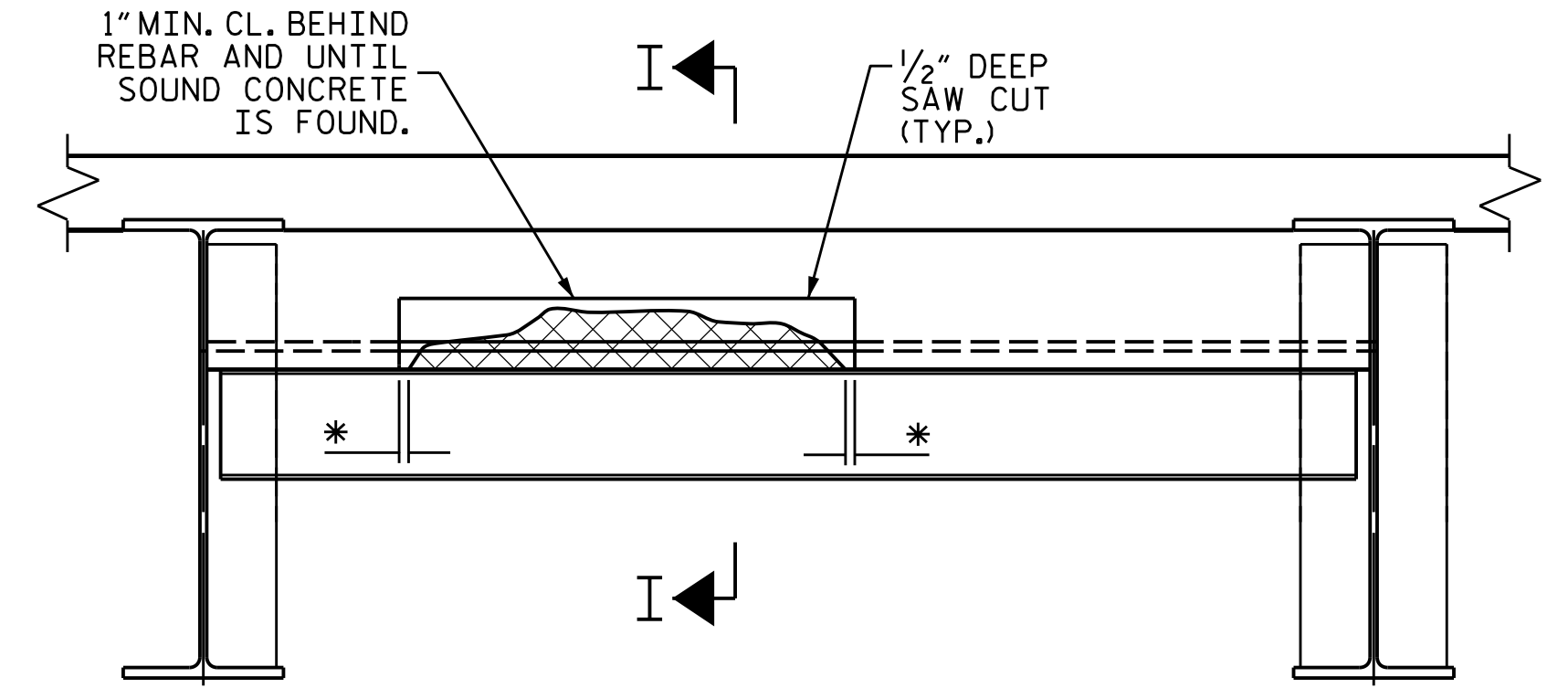
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR AREAS TO BE REPAIRED, SEE "UNDERSIDE DECK REPAIRS" SHEETS.

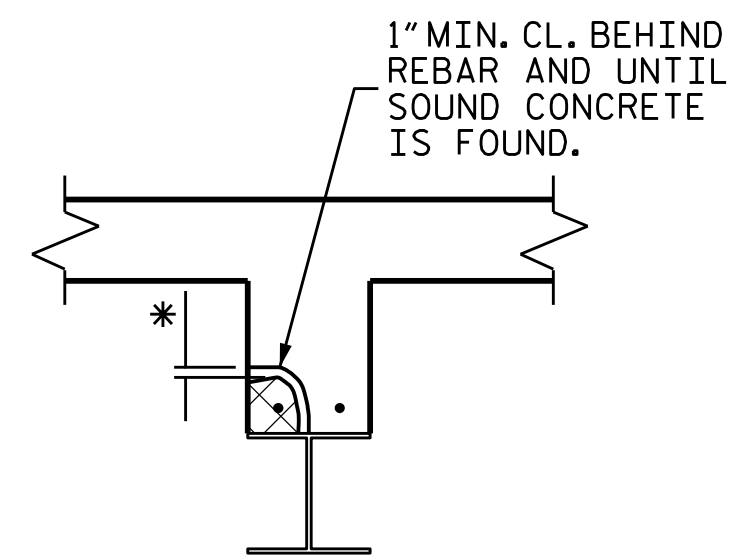
THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK, FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.



TYPICAL SECTION



SECTION I-I

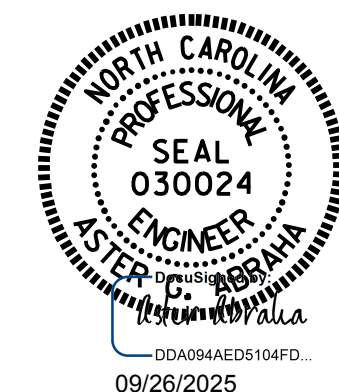
* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. DEPTH)

DAMAGED AREA

NOTE:
EXISTING REBAR TO REMAIN IN PLACE. CLEAN AND REPAIR AS NECESSARY.

INTERIOR DIAPHRAGM REPAIR DETAILS

PROJECT NO. 15BPR.143.3
WILSON COUNTY
BRIDGE NO. 970068



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.		
OVERHANG & DIAPHRAGM REPAIR DETAILS						S-13		
REVISIONS						TOTAL SHEETS		
NO.	BY:	DATE:	NO.	BY:	DATE:	28		
1			3					
2			4					

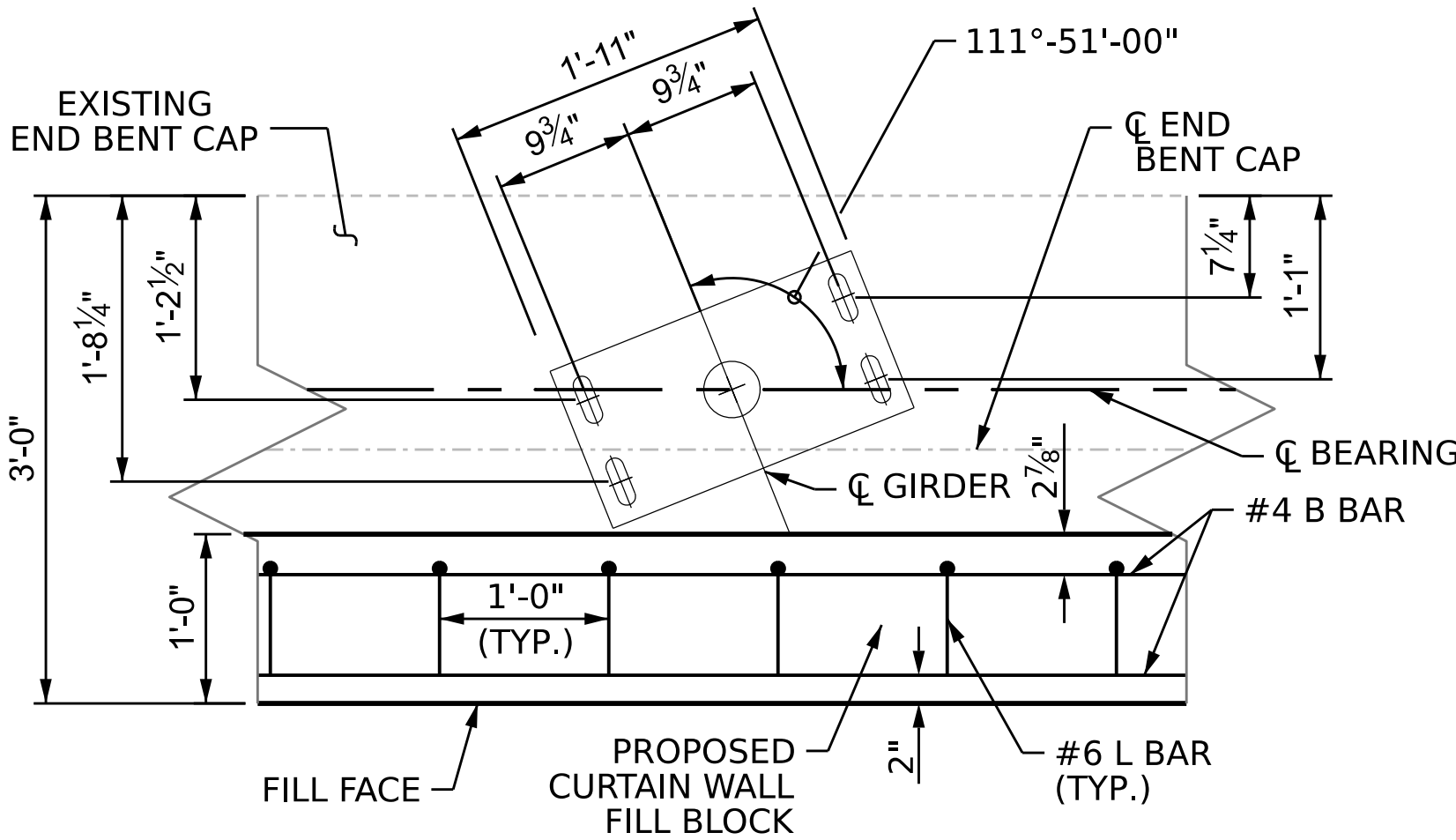
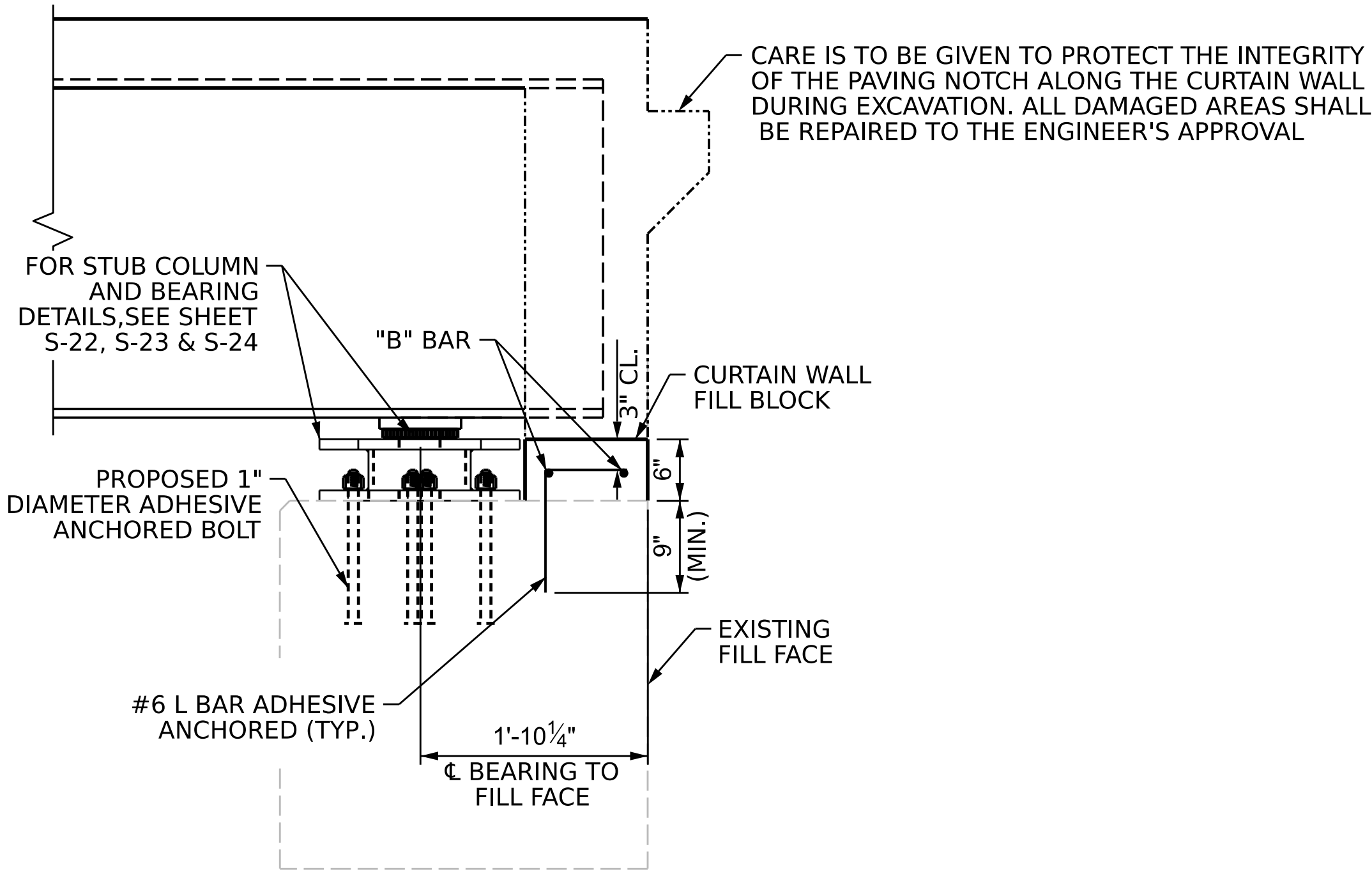
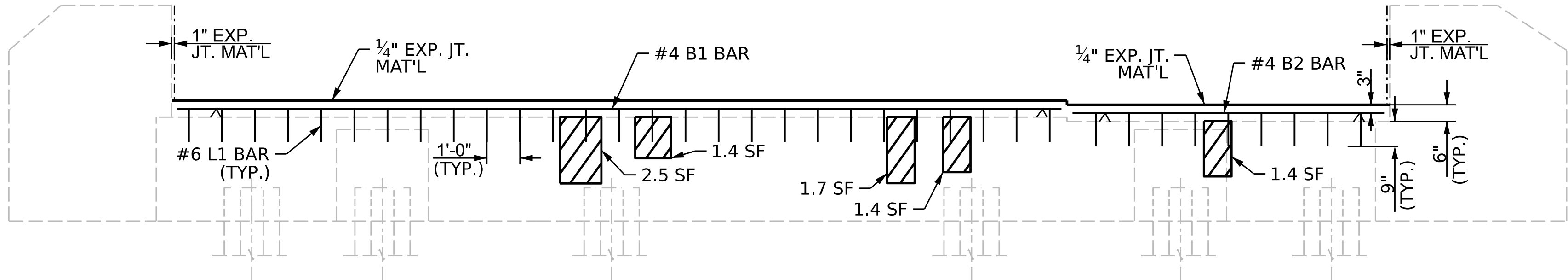
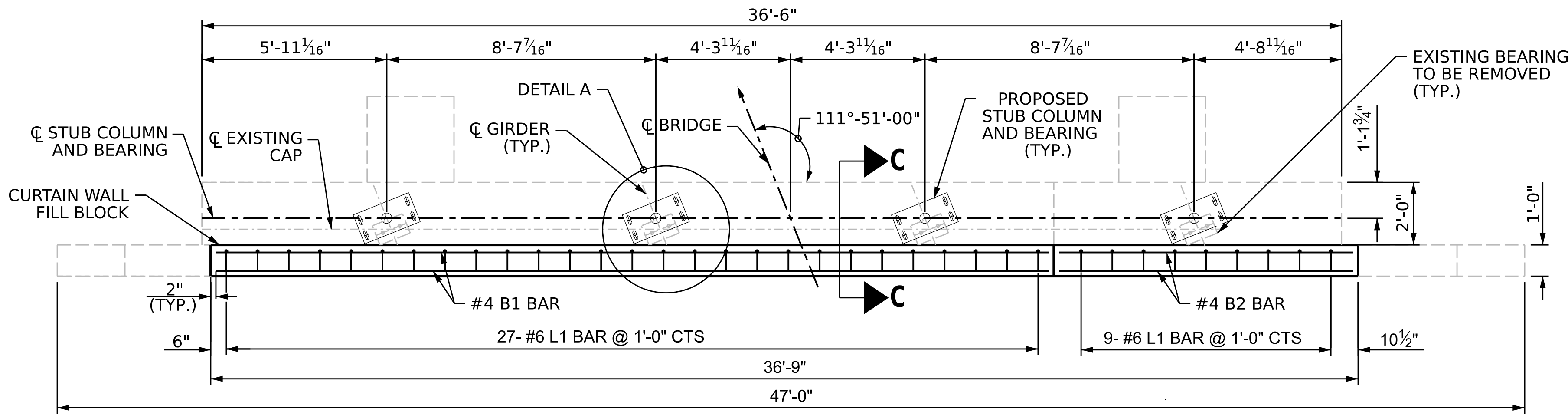
DRAWN BY : KCADET DATE : 06/2025
CHECKED BY : WCSMITH DATE : 08/2025

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

8/26/21

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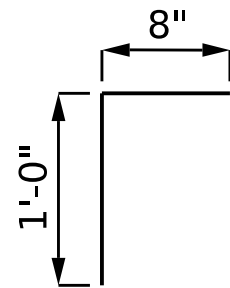


SUBSTRUCTURE REPAIR QUANTITY TABLE

REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	8.4	4.2		
CAP (HORIZONTAL, CORNER)	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0	0		
CAP (HORIZONTAL, CORNER)	0	0		
EPOXY COATING	AREA SF		AREA SF	
TOP OF CAP	65			

BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT



BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#4	STR	26'-8"	36
B2	2	#4	STR	9'-5"	13
L1	36	#6	STR	1'-8"	90

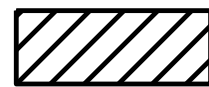
REINFORCING STEEL TOTAL = 139 LBS.
CLASS "A" CONCRETE 0.7 CU.YDS.

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

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON 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 AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

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 REPAIR AREA



CONCRETE REPAIR AREA

PROJECT NO. **15BPR.143.3**

WILSON COUNTY

BRIDGE NO. **970068**

SHEET 1 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE REPAIR END BENT 1

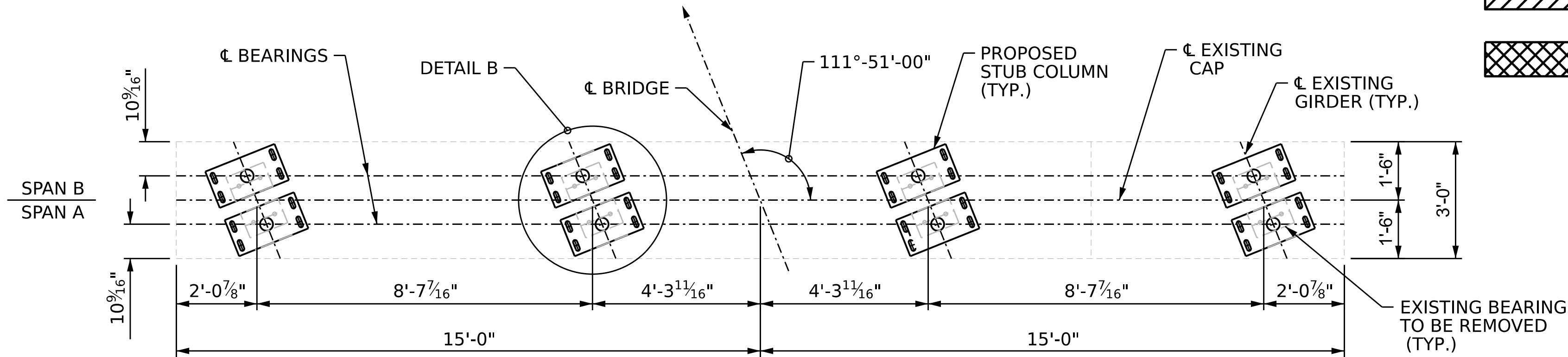
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-14
2			4			TOTAL SHEETS 28

DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

DRAWN BY : **KCADET** DATE : **06/2025**
CHECKED BY : **WCSMITH** DATE : **09/2025**
DESIGN ENGINEER OF RECORD: DATE :

9/26/2025
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caabrha

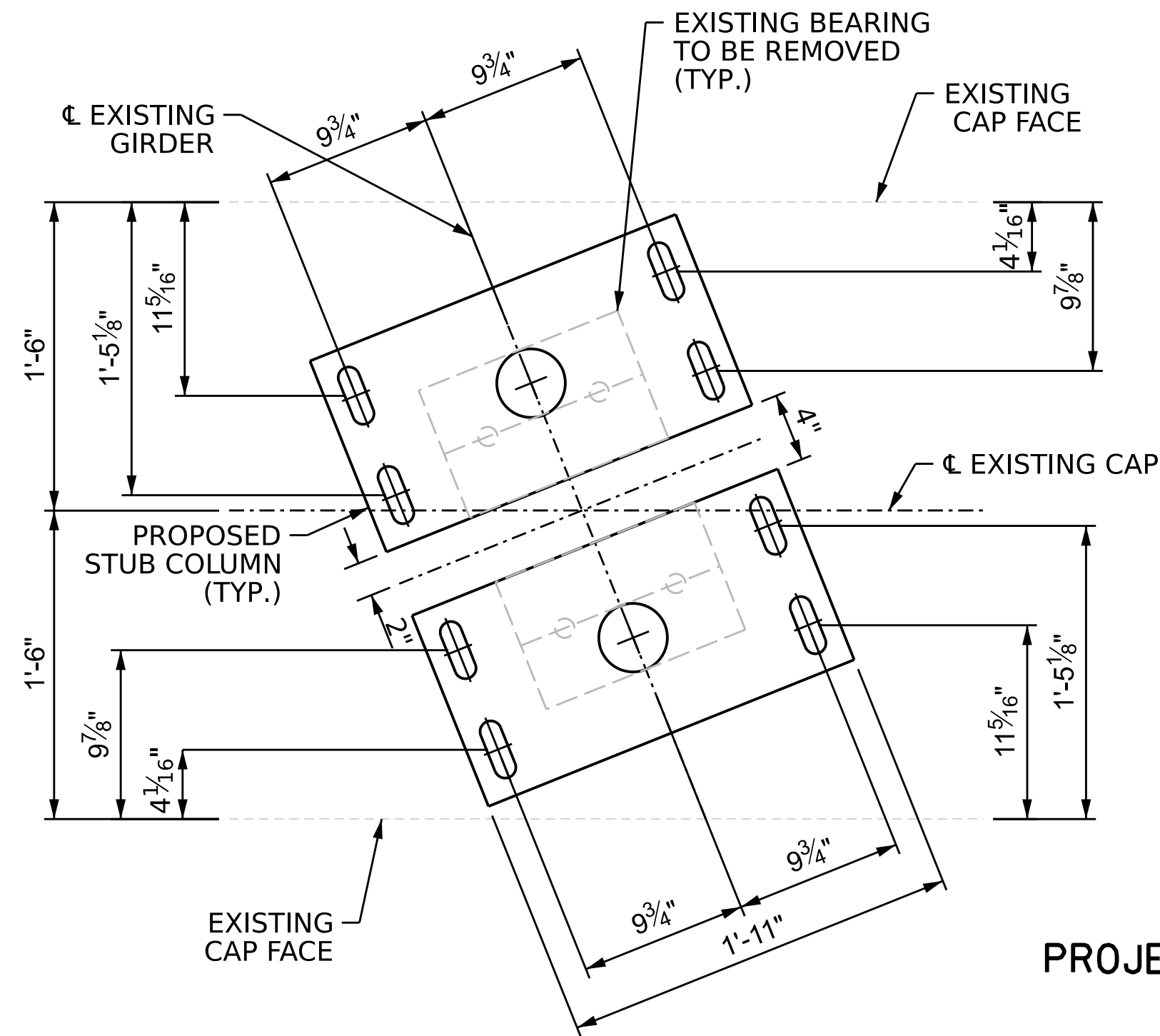
8/26/21



PLAN

(TOP OF CAP)

EXISTING CAP (TYP.)



DETAIL B

END VIEW

NORTH FACE

ELEVATION

WEST FACE

SUBSTRUCTURE REPAIR QUANTITY TABLE				
REPAIRS - BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
COLUMN		0		
EPOXY COATING		AREA SF		AREA SF
TOP OF CAP		74		

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

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO: **970068**

SHEET 2 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE BENT 1

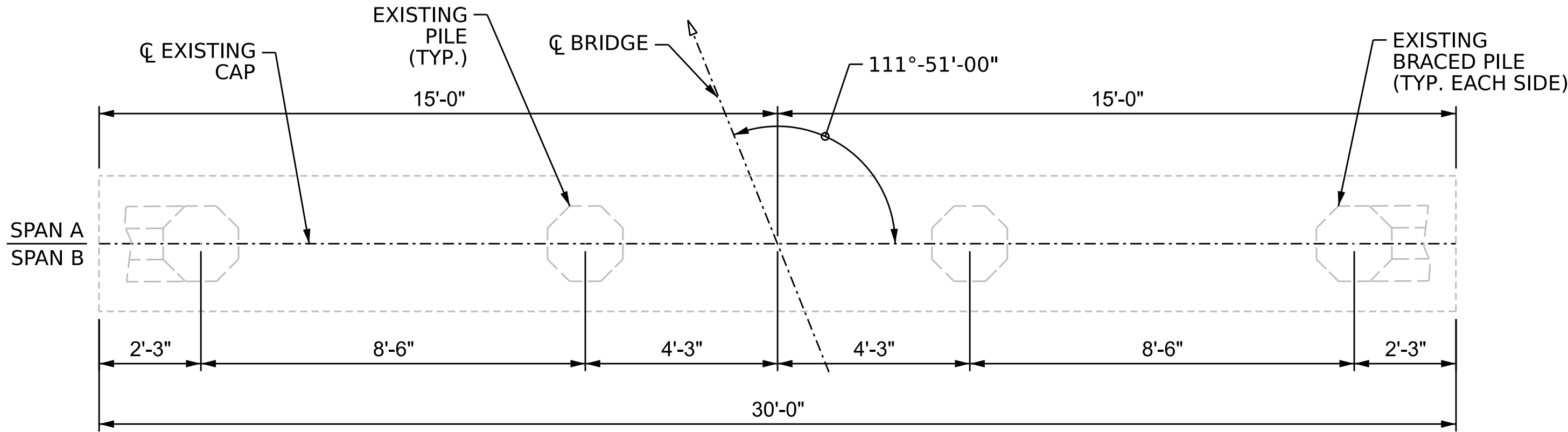


DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

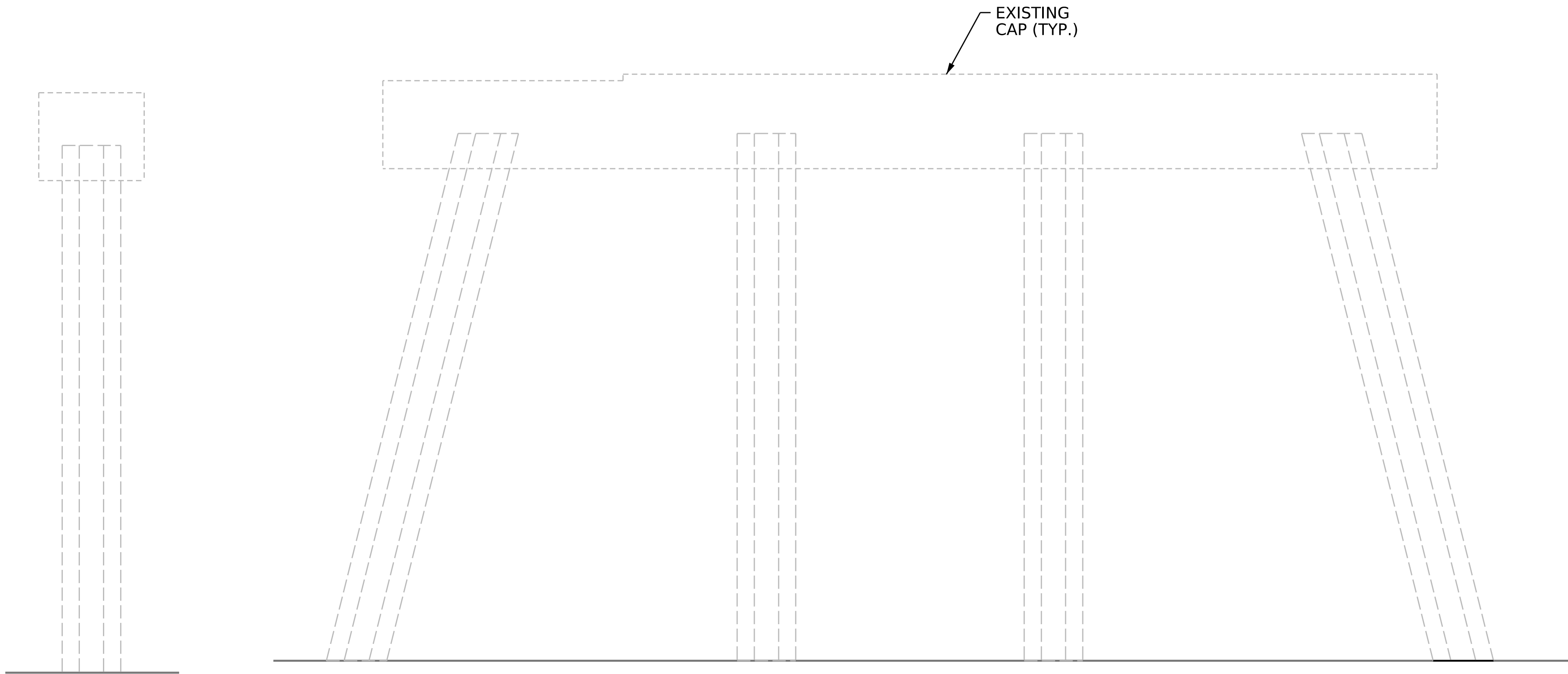
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NO.	BY:	DATE:	NO.	BY:	
1			3		S-15
2			4		TOTAL SHEETS 28

DRAWN BY : KCADET DATE : 07/2025
CHECKED BY : WCSMITH DATE : 08/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

9/26/2025
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kcadet



PLAN
(BOTTOM OF CAP)



END VIEW
SOUTH FACE

ELEVATION
EAST FACE

SUBSTRUCTURE REPAIR QUANTITY TABLE				
REPAIRS - BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
TOP OF CAP		0		
COLUMN		0		

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

- SHOTCRETE REPAIR AREA
- CONCRETE REPAIR AREA

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**

SHEET 3 OF 8



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					SUBSTRUCTURE BENT 1		
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16	
1			3			TOTAL SHEETS	
2			4			28	

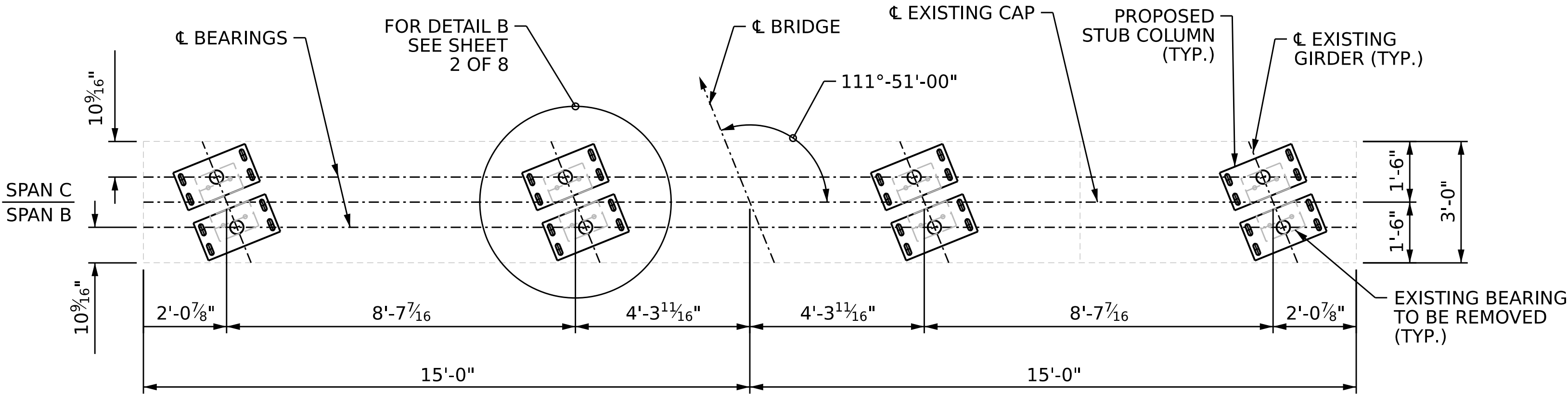
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CHECKED BY : WCSMITH DATE : 08/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

8/26/25

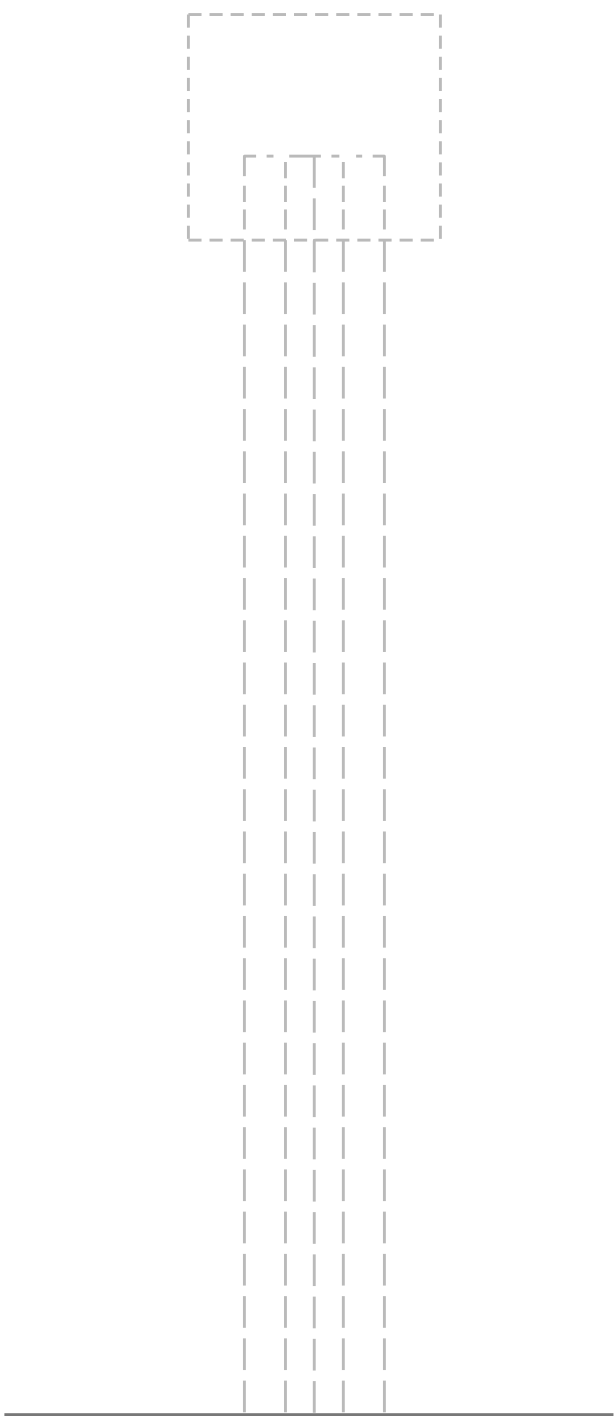
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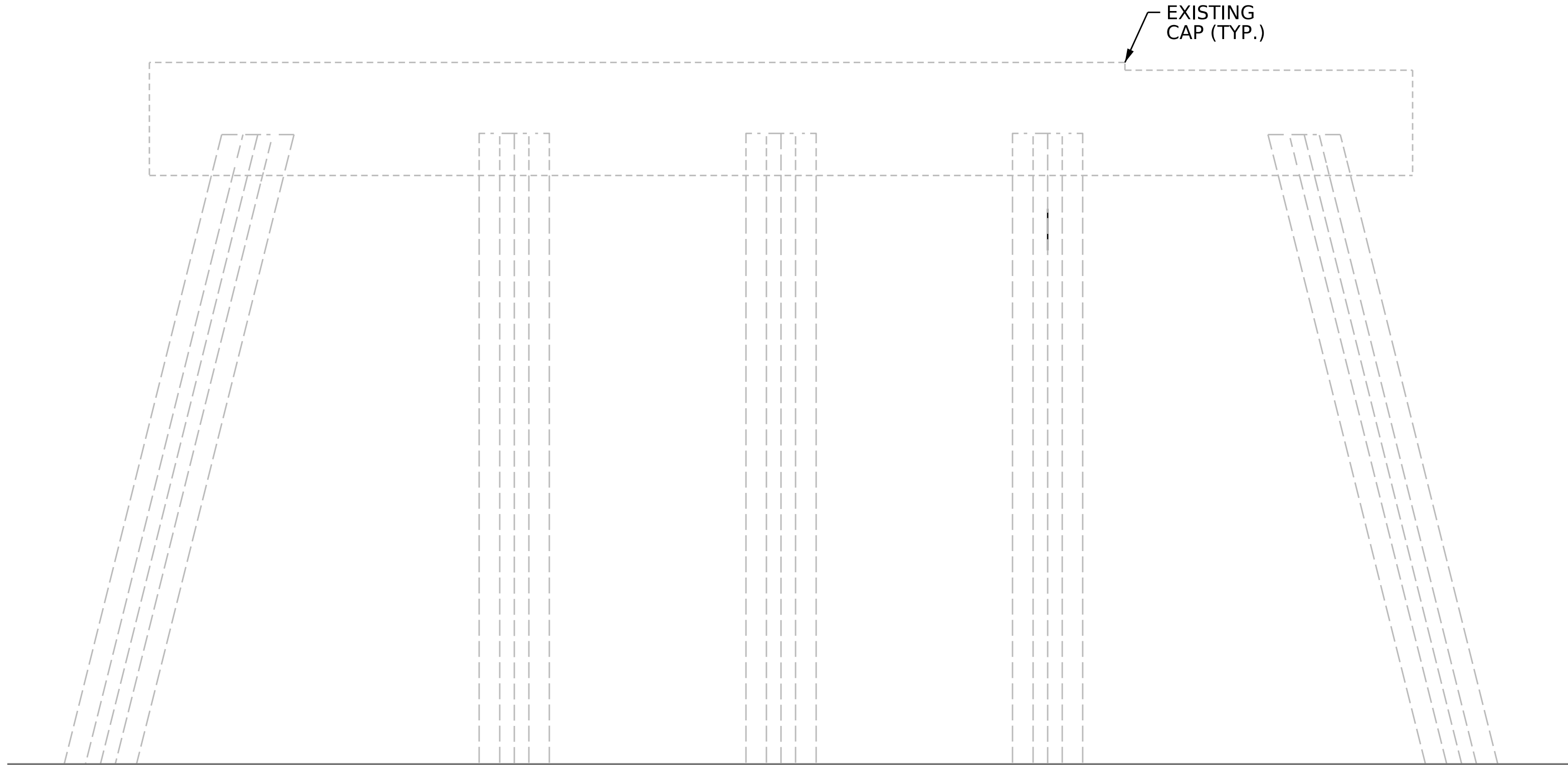
PLAN

(TOP OF CAP)



END VIEW

NORTH FACE



ELEVATION

WEST FACE

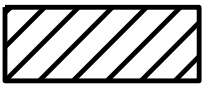
SUBSTRUCTURE REPAIR QUANTITY TABLE

REPAIRS - BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
COLUMN		0		
EPOXY COATING		AREA SF		AREA SF
TOP OF CAP		74		

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

NOTES

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 REPAIR AREA



CONCRETE REPAIR AREA

PROJECT NO. **15BPR.143.3**

WILSON COUNTY

BRIDGE NO. **970068**

SHEET 4 OF 8



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

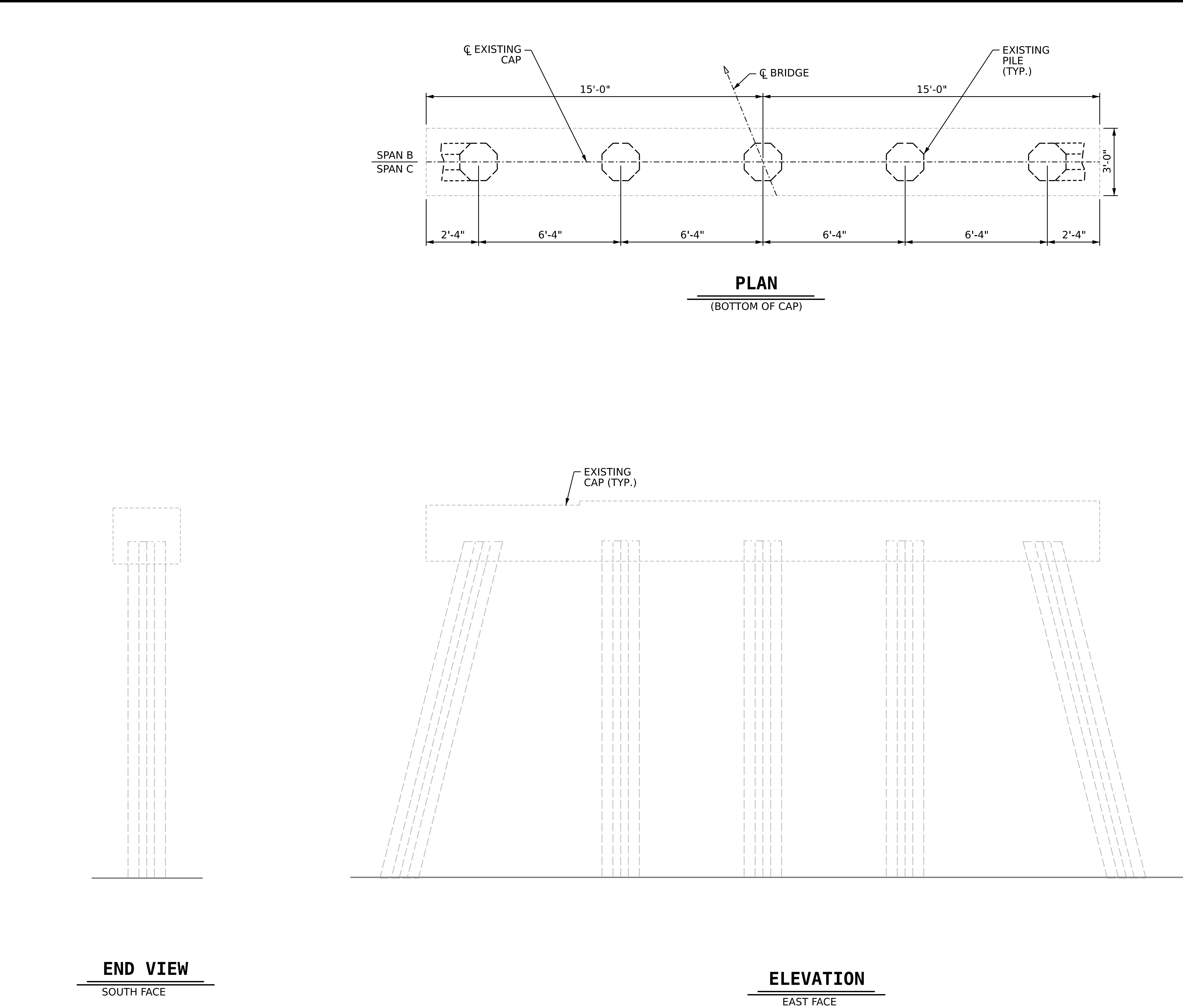
SUBSTRUCTURE
BENT 2

DRAWN BY : **KCADET** DATE : **06/2025**
CHECKED BY : **WCSMITH** DATE : **08/2025**
DESIGN ENGINEER OF RECORD: DATE :

9/26/2025
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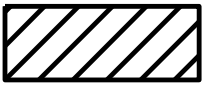
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			28



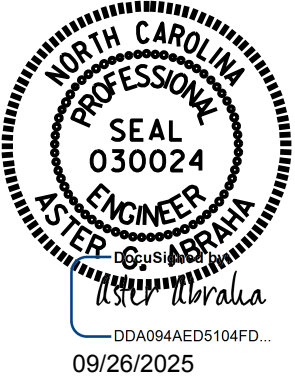
SUBSTRUCTURE REPAIR QUANTITY TABLE				
REPAIRS - BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
COLUMN		0		

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

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA

PROJECT NO. 15BPR.143.3
WILSON COUNTY
BRIDGE NO. 970068

SHEET 5 OF 8

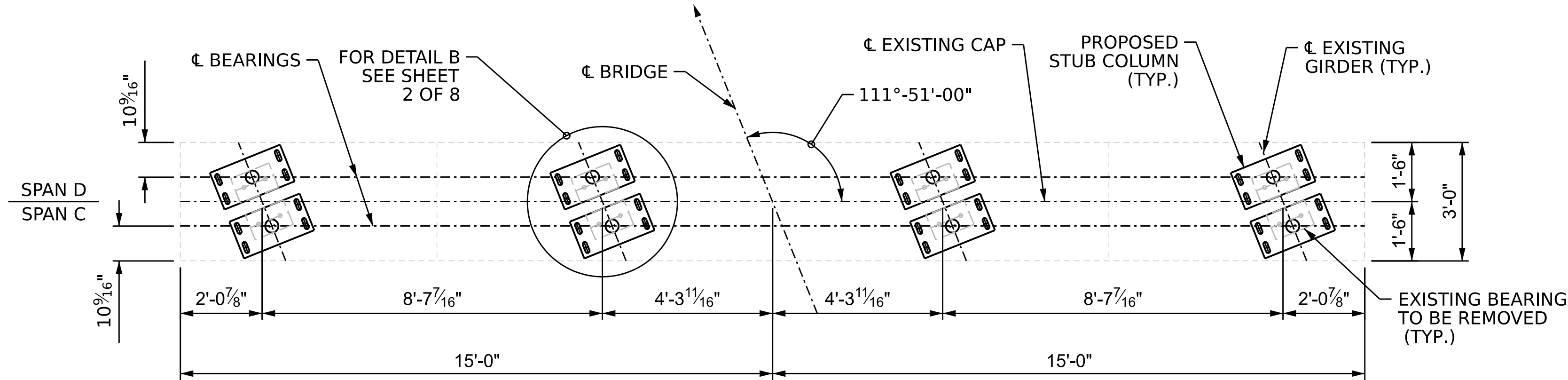


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					SUBSTRUCTURE BENT 2		
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18	
1			3			TOTAL SHEETS	
2			4			28	

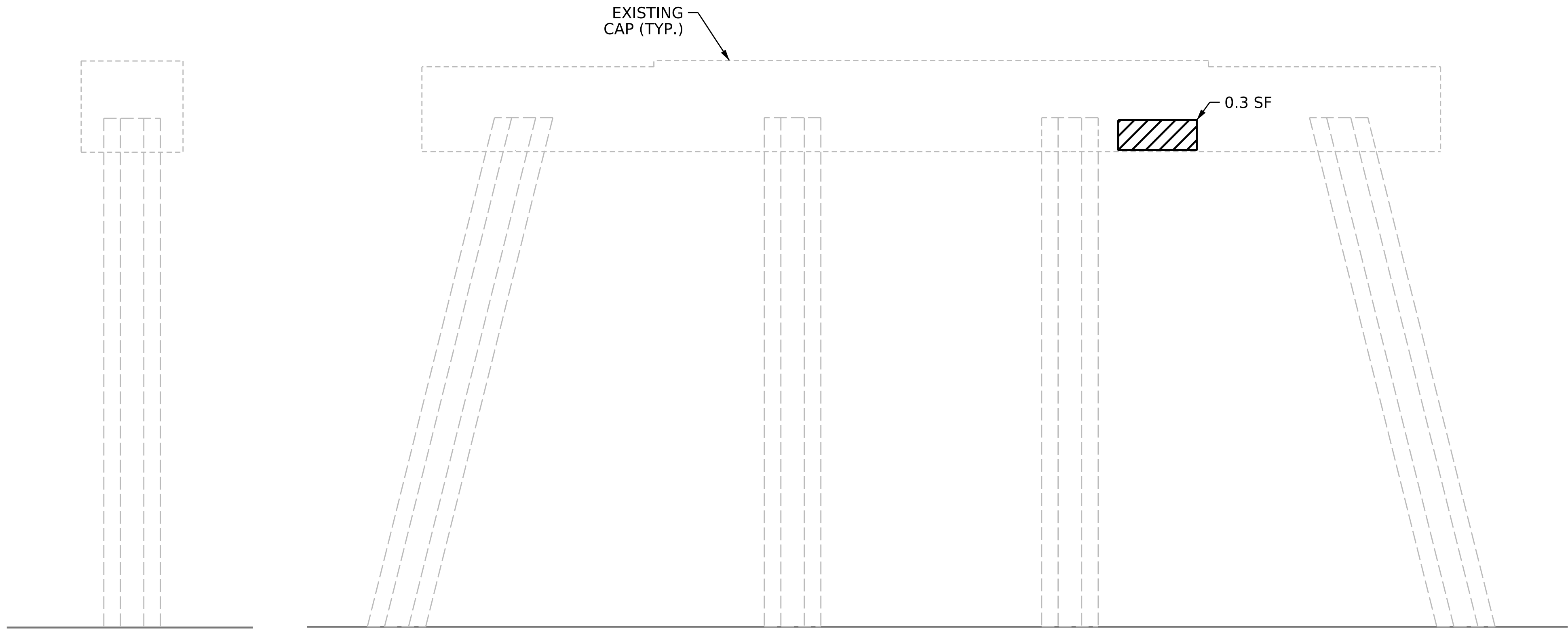
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : KCADET DATE : 06/2025
CHECKED BY : WC SMITH DATE : 08/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

8/26/25



PLAN
(TOP OF CAP)



END VIEW
NORTH FACE

ELEVATION
WEST FACE

SUBSTRUCTURE REPAIR QUANTITY TABLE

REPAIRS - BENT 3

QUANTITIES

ESTIMATE ACTUAL

SHOTCRETE REPAIRS

AREA SF	VOLUME CF	AREA SF	VOLUME CF
---------	-----------	---------	-----------

CAP

0.3

0.1

COLUMN

0

0

CONCRETE REPAIRS

AREA SF	VOLUME CF	AREA SF	VOLUME CF
---------	-----------	---------	-----------

CAP

0

0

COLUMN

0

0

EPOXY RESIN INJECTION

LINEAR FT	LINEAR FT
-----------	-----------

CAP

0

COLUMN

0

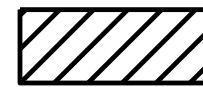
EPOXY COATING

AREA SF	AREA SF
---------	---------

TOP OF CAP

74

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



SHOTCRETE REPAIR AREA



CONCRETE REPAIR AREA

PROJECT NO. **15BPR.143.3**

WILSON COUNTY

BRIDGE NO: **970068**

SHEET 6 OF 8

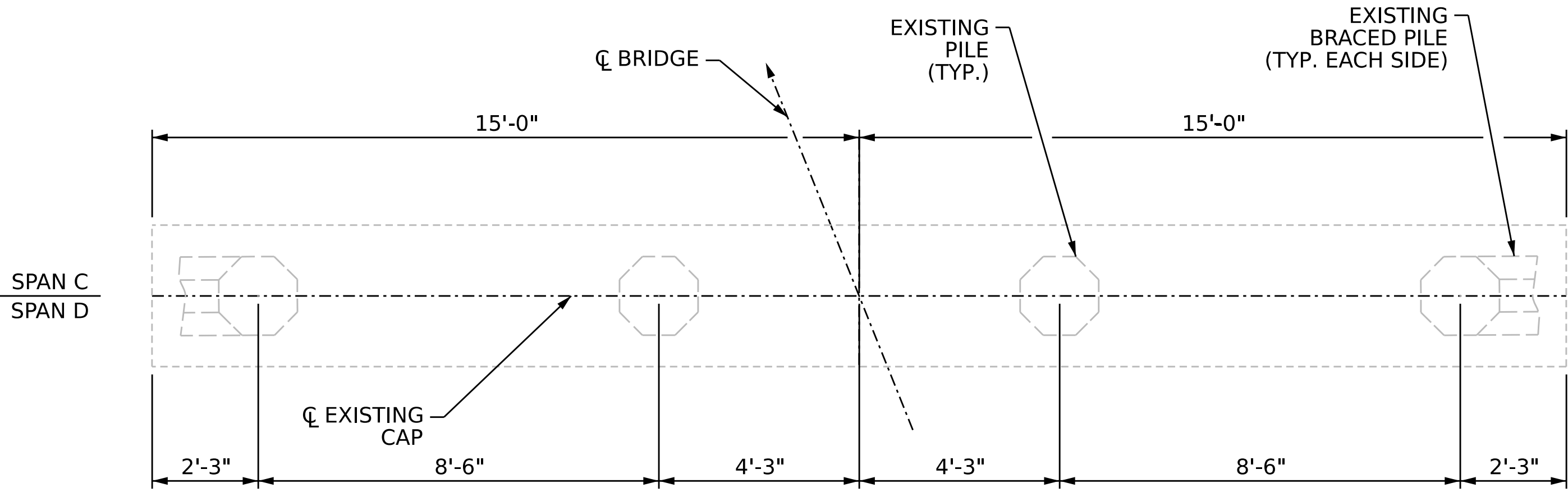
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE BENT 3

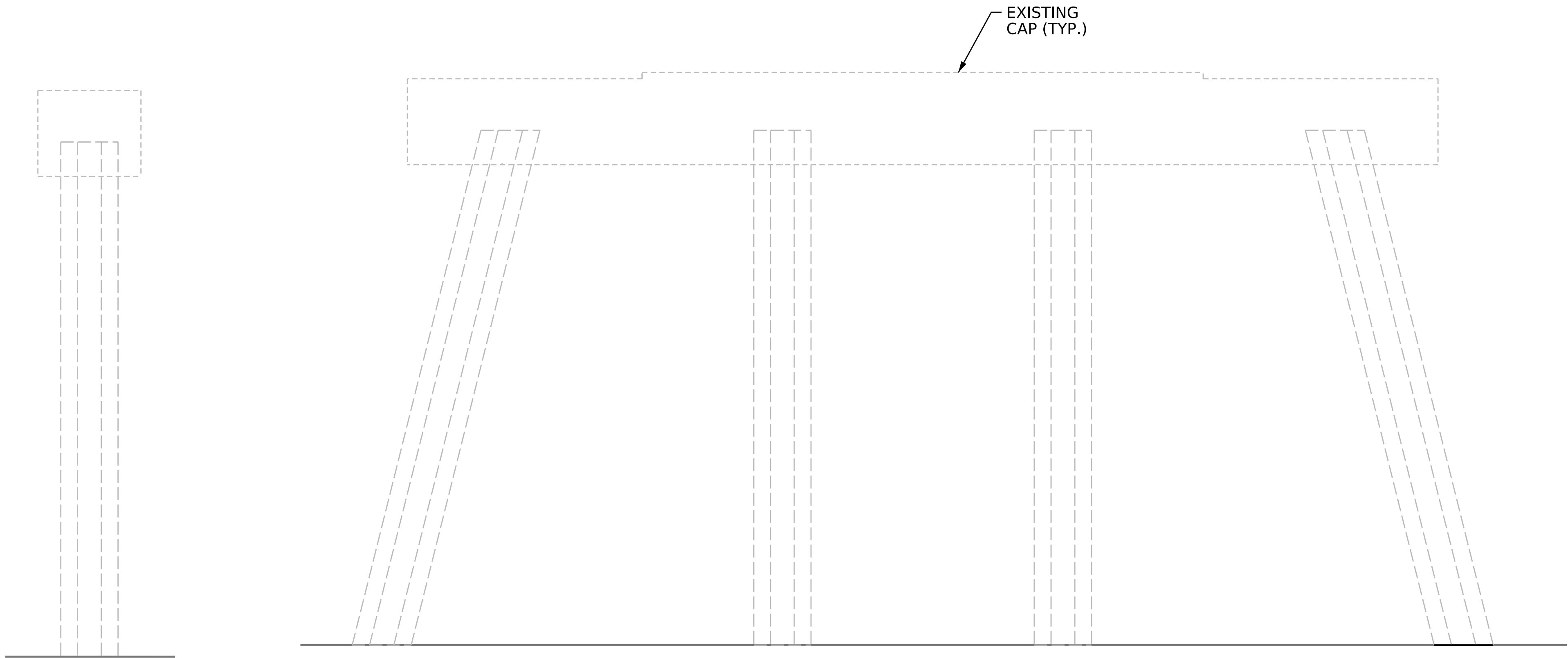
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-19
2			4			TOTAL SHEETS 28

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : KCADET DATE : 07/2025
CHECKED BY : WC SMITH DATE : 08/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____



PLAN
(BOTTOM OF CAP)



ELEVATION
EAST FACE

END VIEW
SOUTH FACE

SUBSTRUCTURE REPAIR QUANTITY TABLE				
REPAIRS - BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
COLUMN		0		

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

- SHOTCRETE REPAIR AREA
- CONCRETE REPAIR AREA

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**

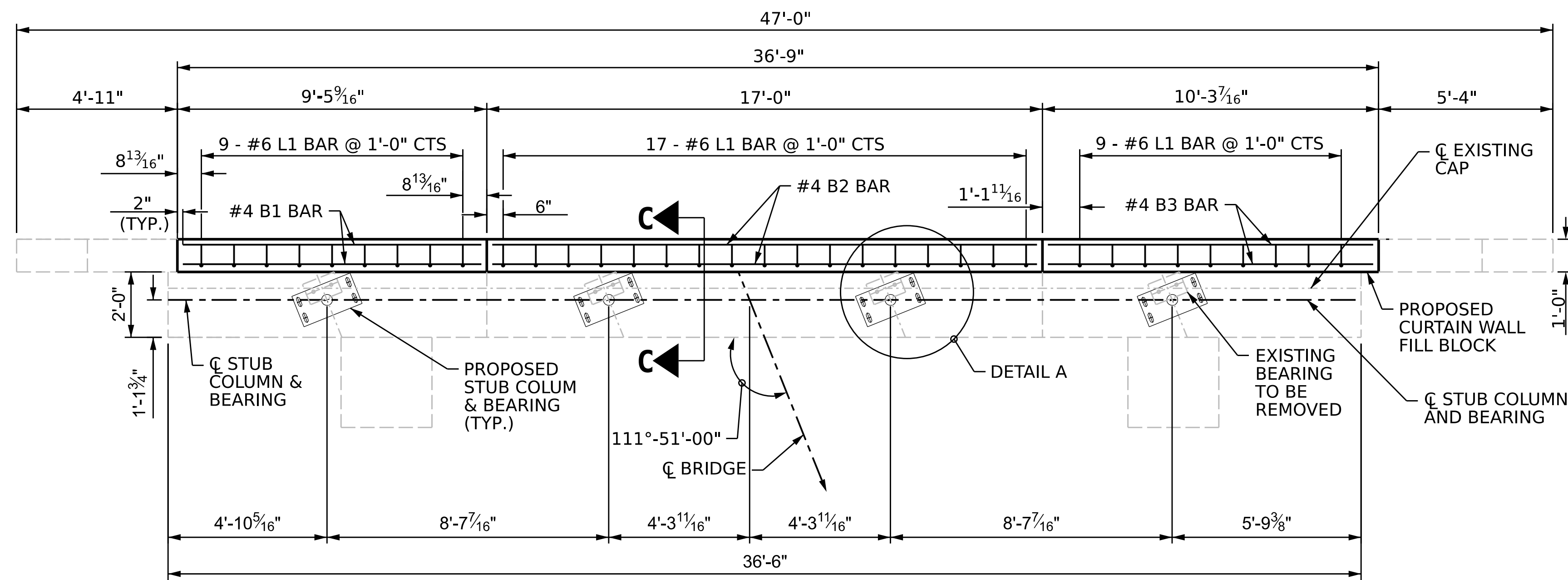
SHEET 7 OF 8

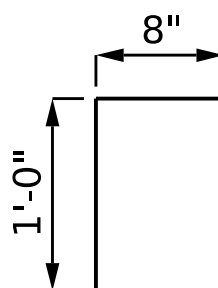


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			28

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : **KCADET** DATE : **06/2025**
CHECKED BY : **WCSMITH** DATE : **08/2025**
DESIGN ENGINEER OF RECORD: DATE :



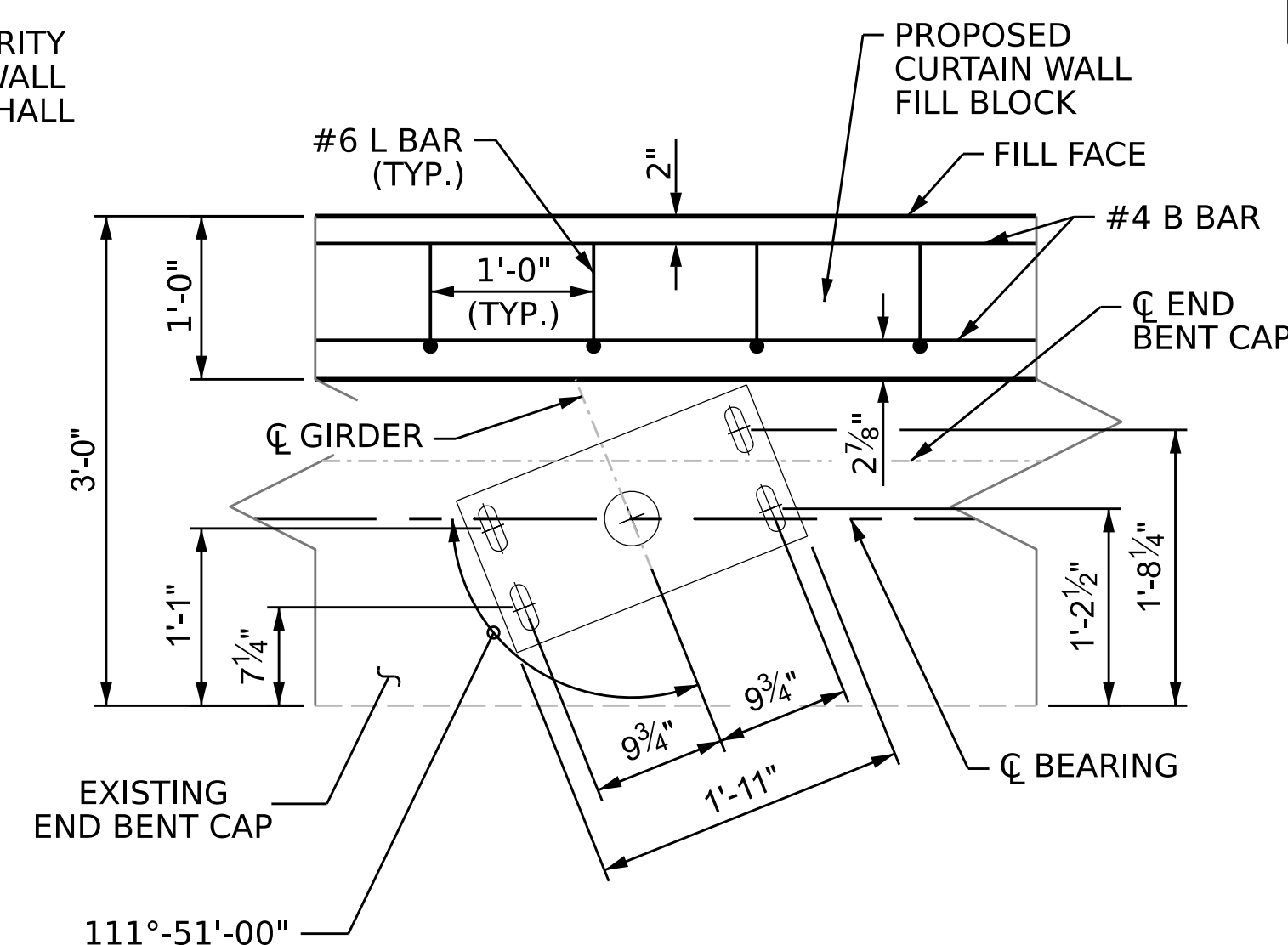
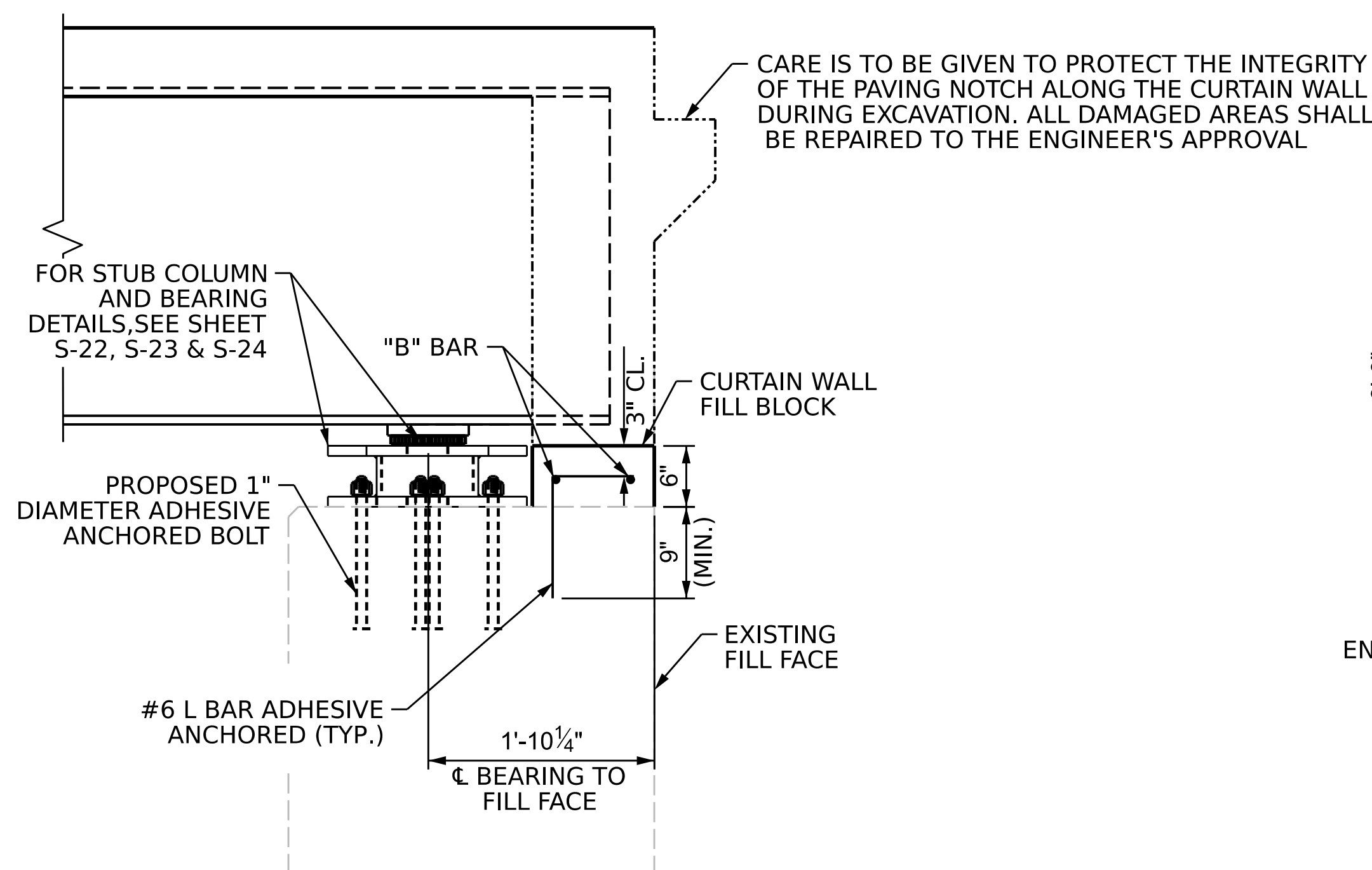
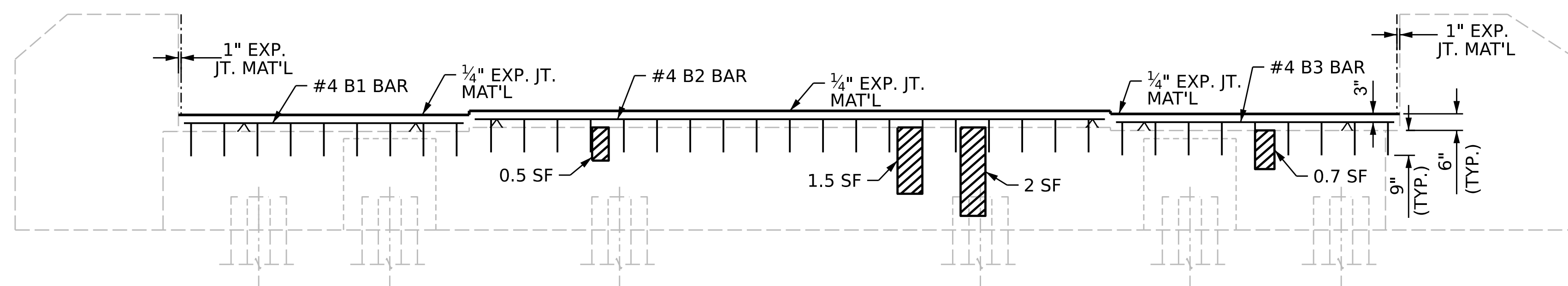
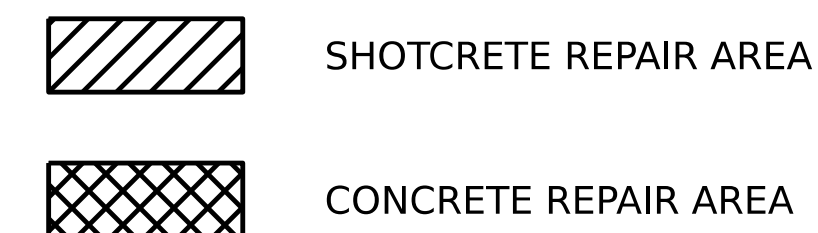
SUBSTRUCTURE REPAIR QUANTITY TABLE								
REPAIRS END BENT 2		QUANTITIES						
		ESTIMATE		ACTUAL				
SHOTCRETE REPAIRS		AREA SF	VOLUME CF	AREA SF	VOLUME CF			
CAP (VERTICAL FACE)		4.7	2.35					
CAP (HORIZONTAL, CORNER)		0	0					
CONCRETE REPAIRS		AREA SF	VOLUME CF	AREA SF	VOLUME CF			
CAP (VERTICAL FACE)		0	0					
CAP (HORIZONTAL, CORNER)		0	0					
EPOXY COATING		AREA SF		AREA SF				
TOP OF CAP		65		0				
BAR TYPES			BILL OF MATERIAL					
ALL BAR DIMENSIONS ARE OUT TO OUT 			BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
			B1	2	#4	STR	9'-1"	12
			B2	2	#4	STR	16'-8"	22
			B3	2	#4	STR	9'-11"	14
			L1	35	#6	STR	1'-8"	88
			REINFORCING STEEL TOTAL = 136 LBS.					
			CLASS "A" CONCRETE 0.7 CU.YDS.					

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

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON 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 AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

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.



PROJECT NO. **15BPR.143.3**
WILSON COUNTY
 BRIDGE NO. **970068**

SHEET 8 OF 8



SUBSTRUCTURE REPAIR END BENT 2

DRAWN BY : KCADET DATE : 06/2025
 CHECKED BY : WCSMITH DATE : 08/2025
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

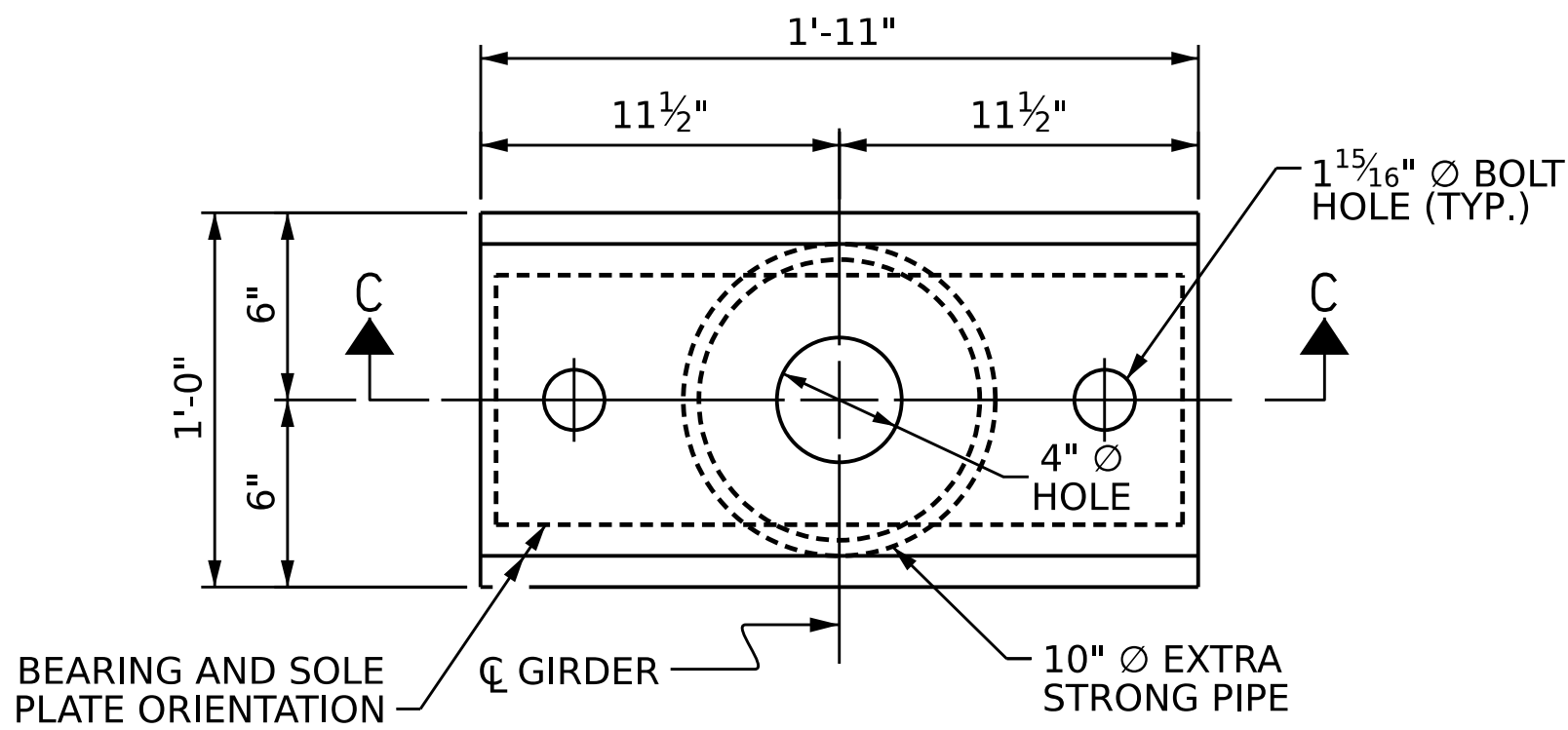
9/26/2025
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qabr.dhg

DETAIL A

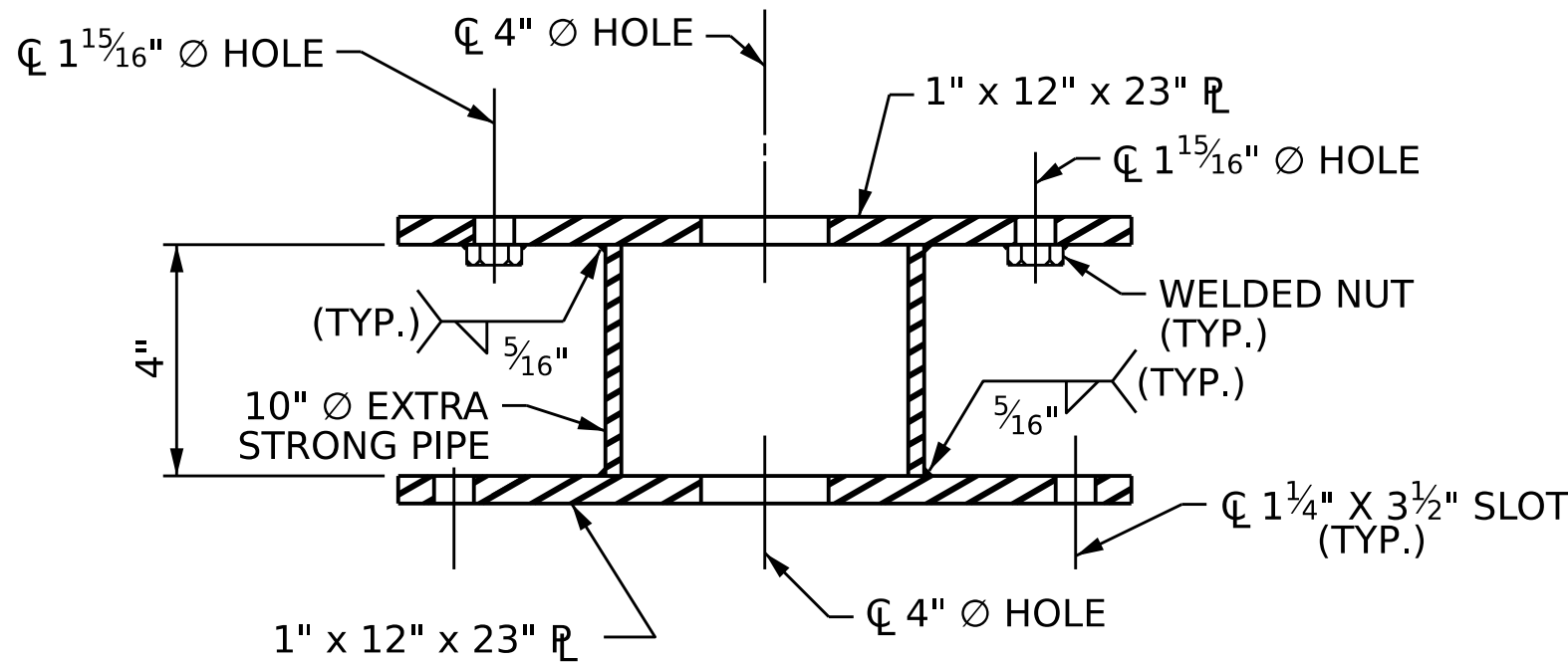
(EXISTING BEARING NOT SHOWN FOR CLARITY)

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

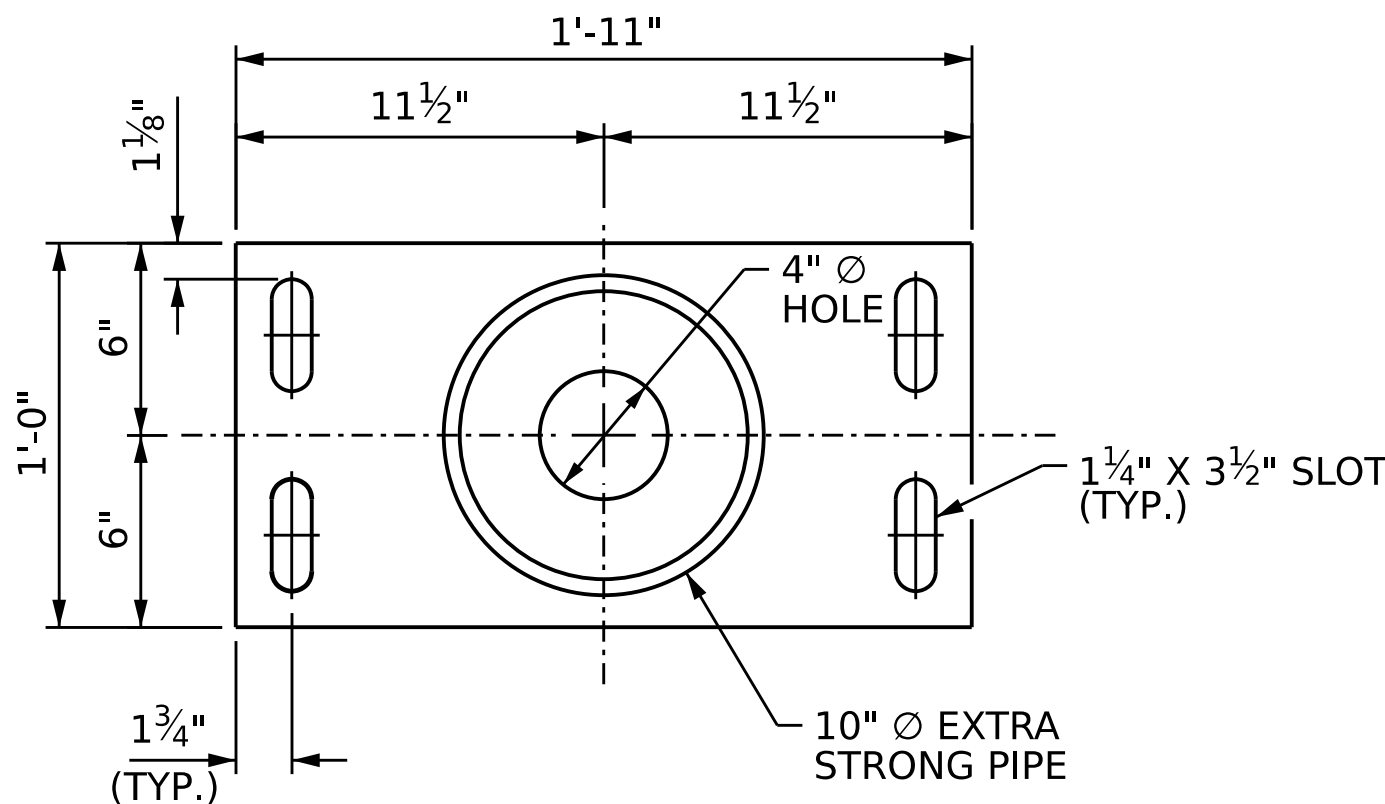
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			28



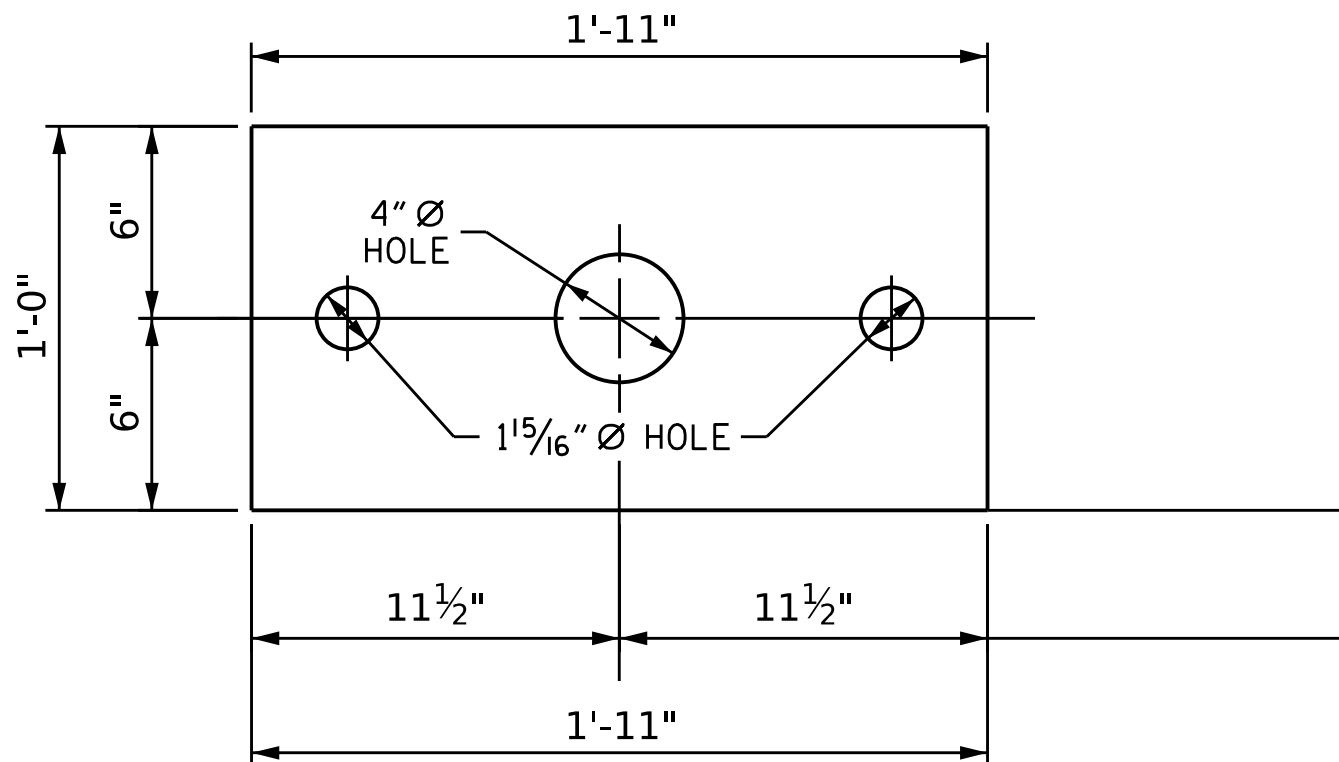
TOP PLATE PLAN



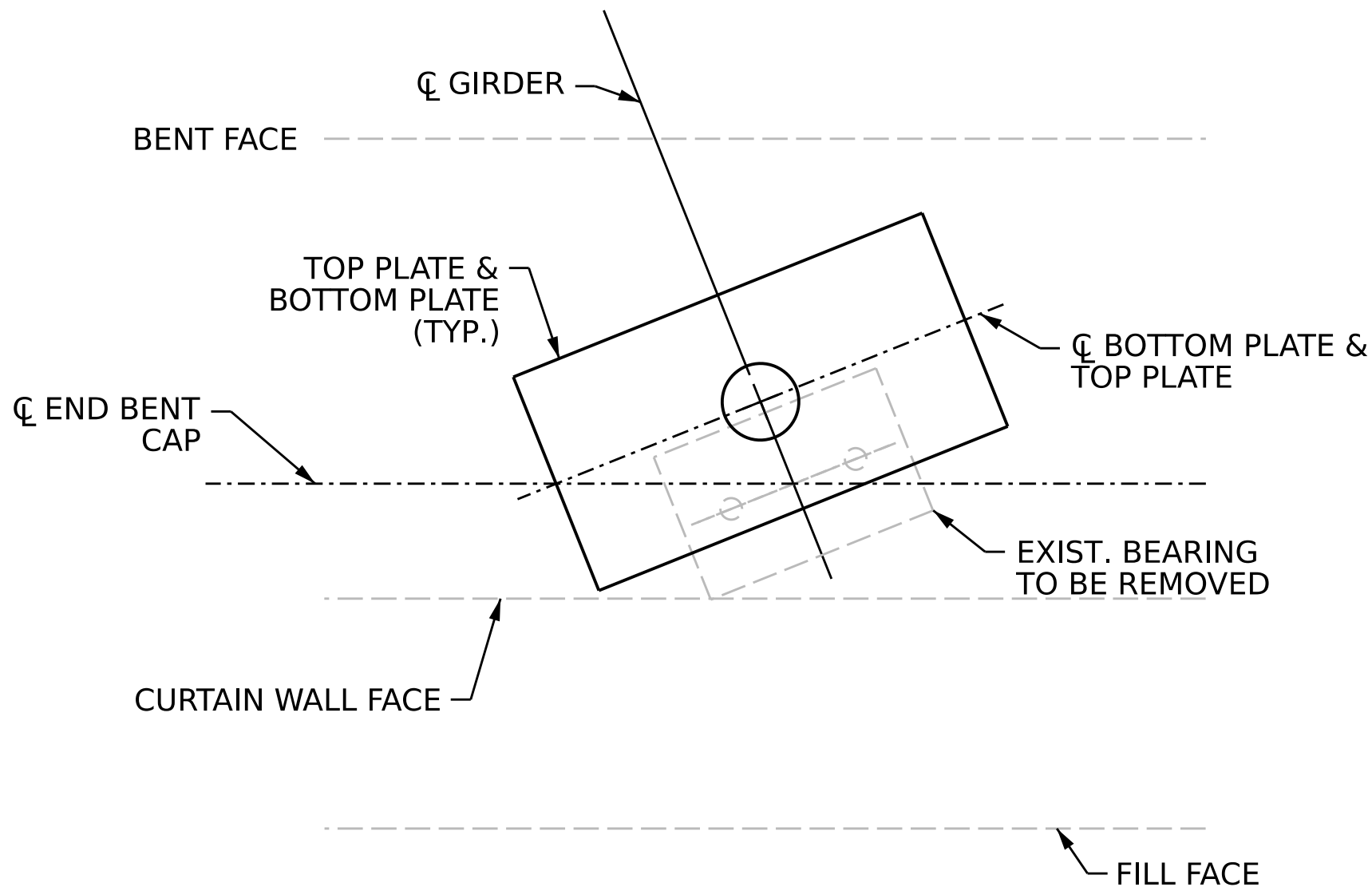
SECTION C-C



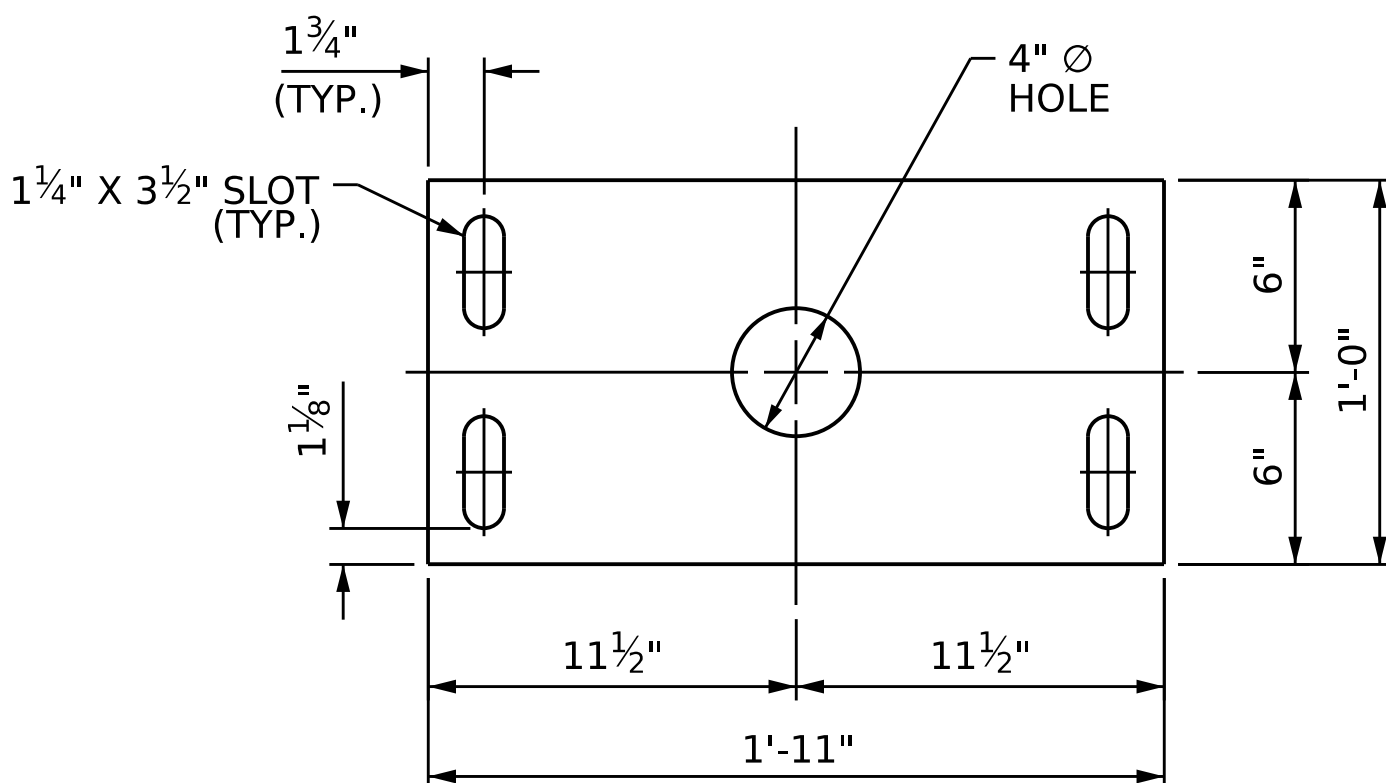
BOTTOM PLATE PLAN



TOP PLATE



TOP PLATE & BOTTOM PLATE ORIENTATION (TYP.)
(HOLES & SLOTS HAVE BEEN OMITTED FOR CLARITY)



BOTTOM PLATE

NOTE: THIS STUB COLUMN IS TO BE USED AT END BENT 1 & END BENT 2

NOTES

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

REMOVE EXISTING BEARINGS AND ASSOCIATED PLATES AND HARDWARE AT LOCATIONS INDICATED FOR BEARING REPLACEMENT ON THE PLANS. THERE WILL BE NO SEPARATE PAYMENT FOR REMOVAL OF EXISTING BEARINGS AND ASSOCIATED PLATES AND HARDWARE. SUCH COSTS SHALL BE INCIDENTAL TO OTHER PAY ITEMS.

ALL STRUCTURAL STEEL PLATES SHALL CONFORM TO AASHTO M270 GRADE 50 STEEL OR APPROVED EQUAL.

PROVIDE STUB COLUMN ASSEMBLY AT EACH BEARING REPLACEMENT LOCATION INDICATED ON THE PLANS AND IN ACCORDANCE WITH DETAILS INDICATED.

AFTER FABRICATION, STUB COLUMN ASSEMBLIES SHALL BE GALVANIZED AS PER SECTION 1076 OF THE STANDARD SPECIFICATIONS.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

AFTER LOWERING EACH SPAN ONTO THE STUB COLUMN ASSEMBLY, TIGHTEN THE ANCHOR BOLTS AT BOTTOM PLATE PER MANUFACTURERS RECOMMENDATIONS.

ALL PAINTED SURFACES DAMAGED DURING CONSTRUCTION SHALL BE REPAINTED, AS OUTLINED IN ARTICLE 442-11 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE BEAM PEDESTAL AND ALL OTHER STRUCTURAL STEEL PRIOR TO FABRICATION.

THE CONTRACTOR SHALL FIELD VERIFY THE STUB COLUMN ASSEMBLY HEIGHTS PRIOR TO FABRICATION.

CUT EXISTING ANCHOR BOLTS FLUSH TO THE TOP OF CONCRETE. BOLT ENDS SHALL BE COATED WITH AN APPROVED EPOXY PAINT.

THE CONTRACTOR SHALL CORE INTO EXISTING BENT CAP TO INSTALL 1" Ø AND ANCHOR BOLTS. BOLTS SHALL BE ADHESIVELY ANCHORED; SEE STANDARD SPECIFICATIONS. CONTRACTOR SHALL SUBMIT PROPOSED ADHESIVE FOR APPROVAL. ADHESIVE FOR NEW ANCHOR BOLTS SHALL BE ON THE NCDOT APPROVED PRODUCT LIST, FOR THE PROPOSED USE.

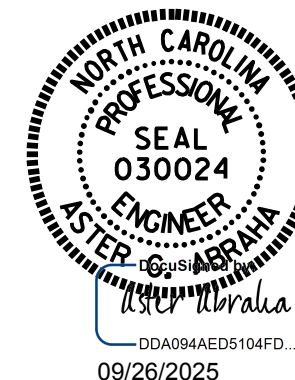
EMBEDMENT DEPTH OF ANCHOR BOLT SHALL BE 9", OR THE DEPTH RECOMMENDED BY THE ADHESIVE MANUFACTURER TO ATTAIN PULL-OUT STRENGTH OF THE TEST LOAD GIVEN BELOW, WHICHEVER DEPTH IS GREATER.

NEW ADHESIVELY ANCHORED BOLTS SHALL BE SUBJECT TO LEVEL 1 FIELD TESTING, IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 420-13 (C), EXCEPT THAT THE TEST LOAD SHALL BE 18,000 LBS. TENSION FOR 1" Ø BOLTS.

SEE SHEET S-14, S21 & S-23 FOR ADHESIVE ANCHORING DETAILS.

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SHEET 1 OF 2



STATE OF NORTH CAROLINA
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RALEIGH

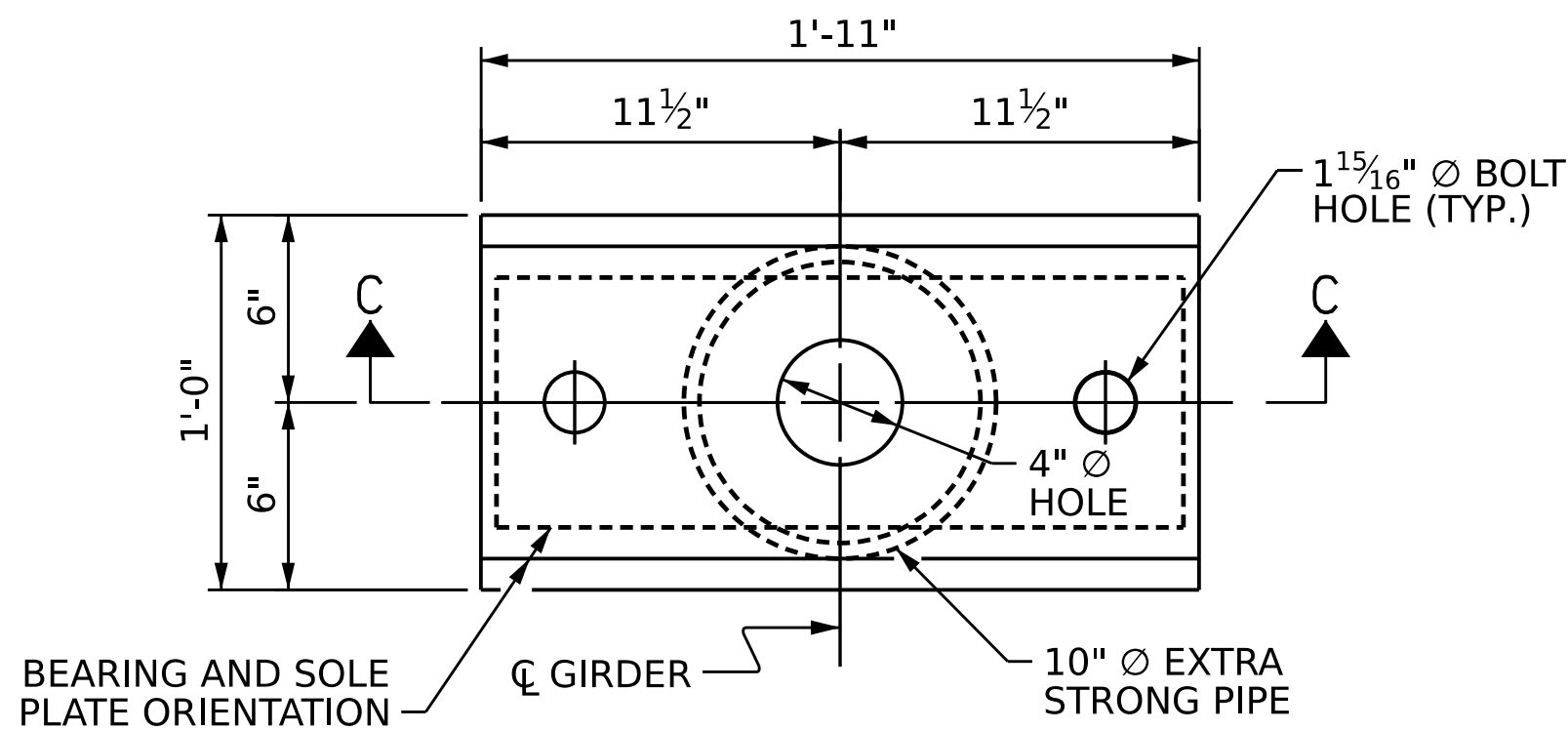
**STUB COLUMN AND
BEARING DETAILS
AT END BENTS**

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-22
2			4		TOTAL SHEETS 28

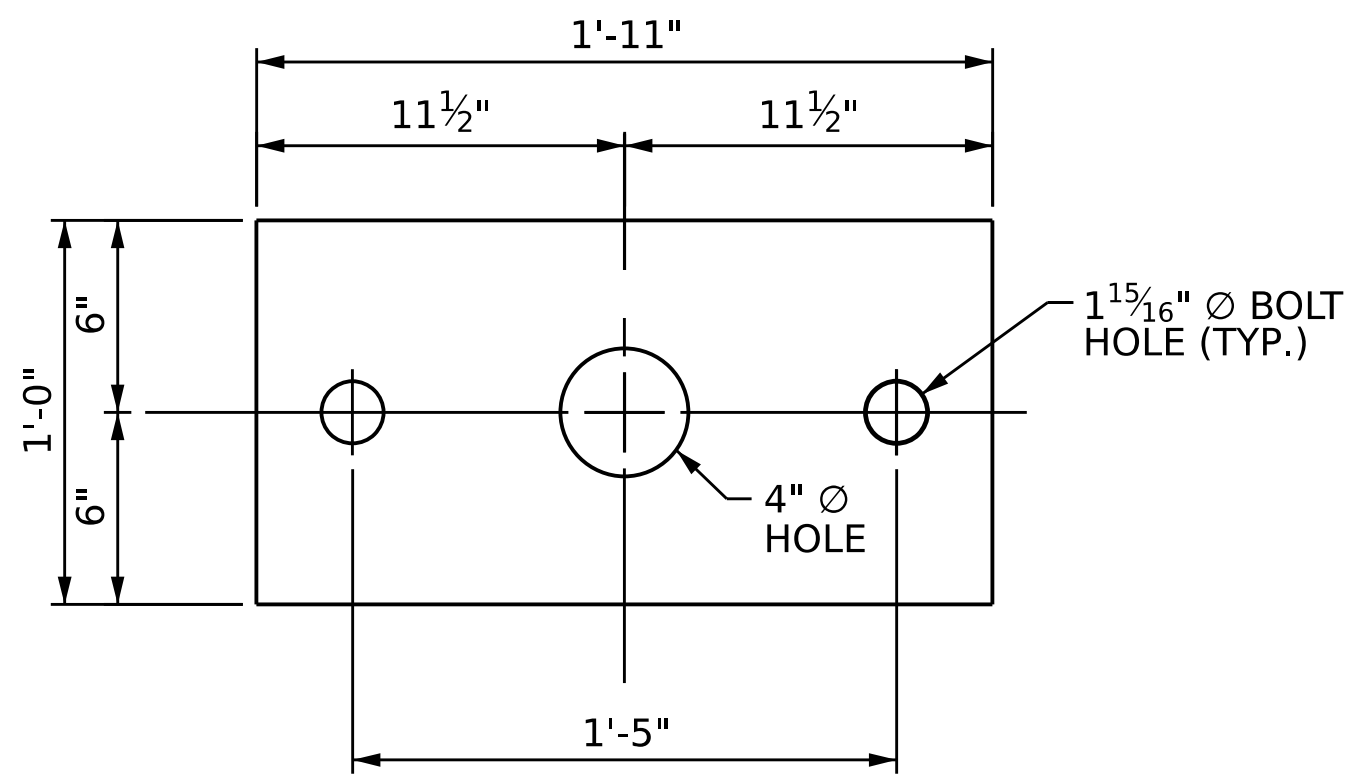
DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : A. ABRAHA DATE : 6/2025
CHECKED BY : W.C. SMITH DATE : 8/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

9/25/2025
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aabrah

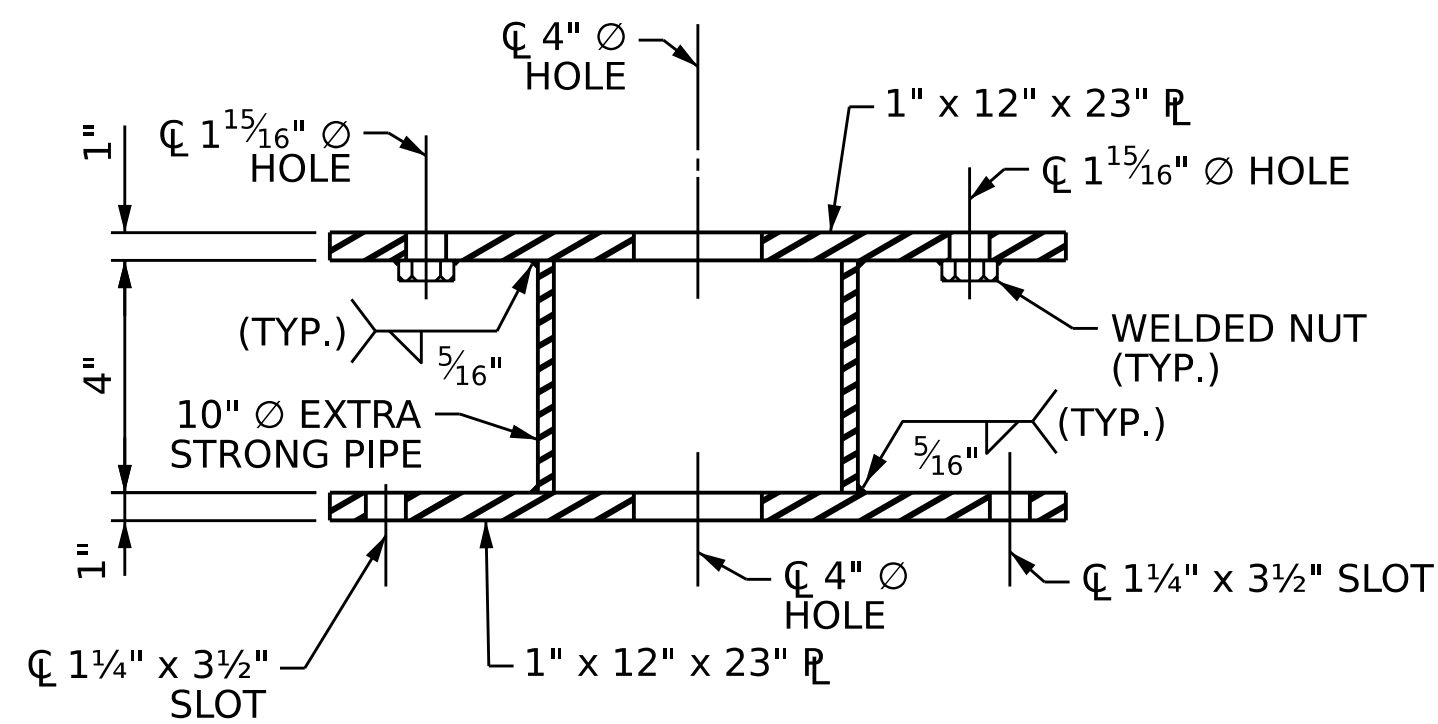


TOP PLATE PLAN

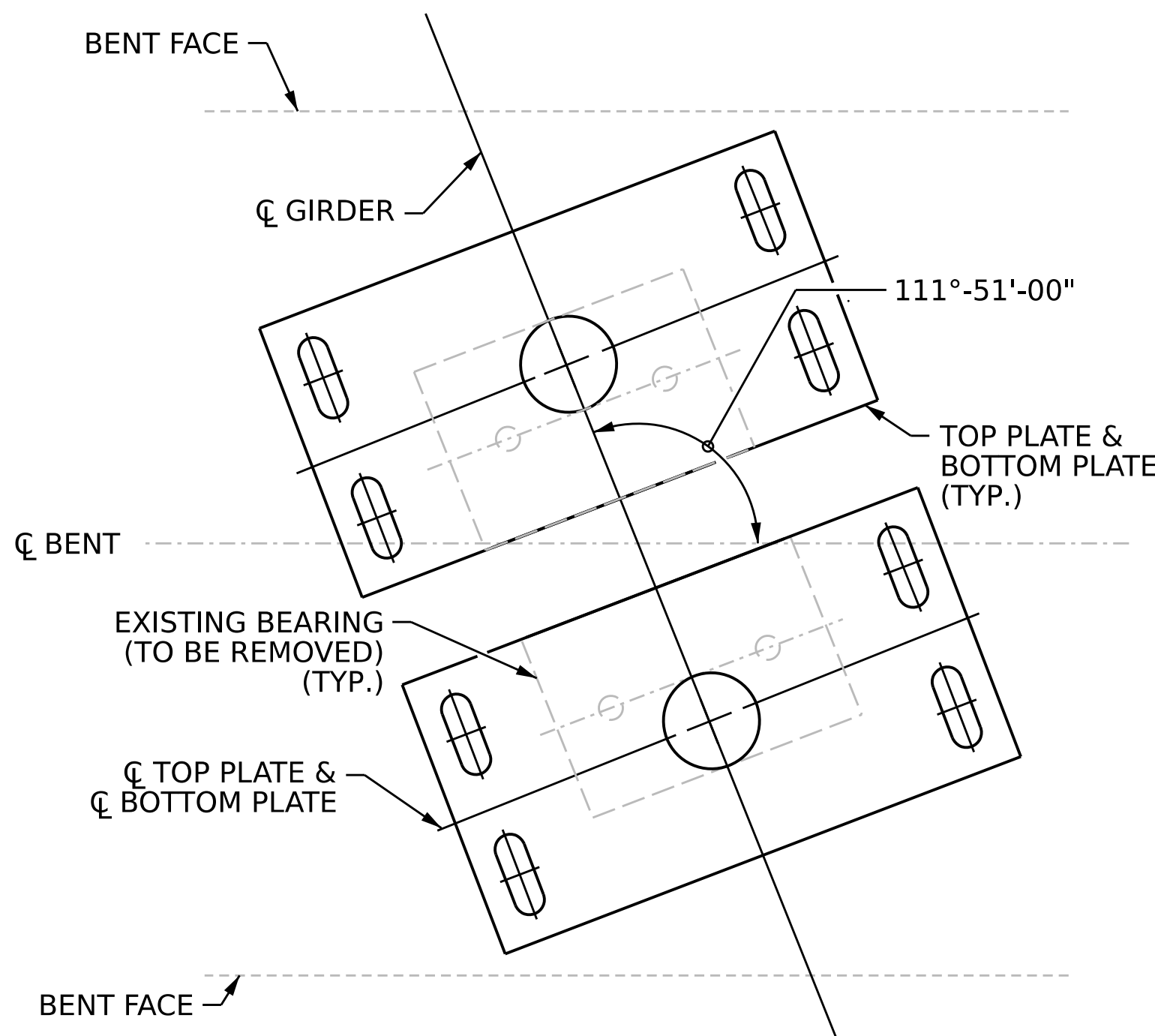


TOP PLATE

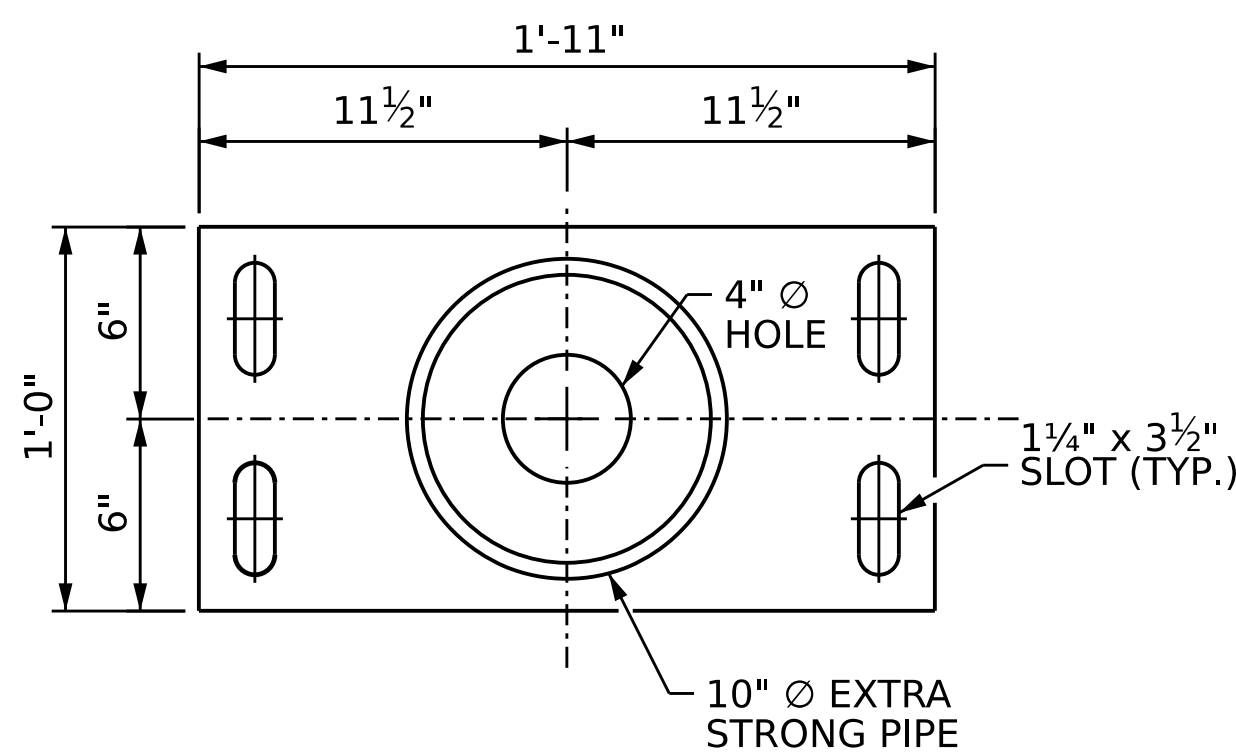
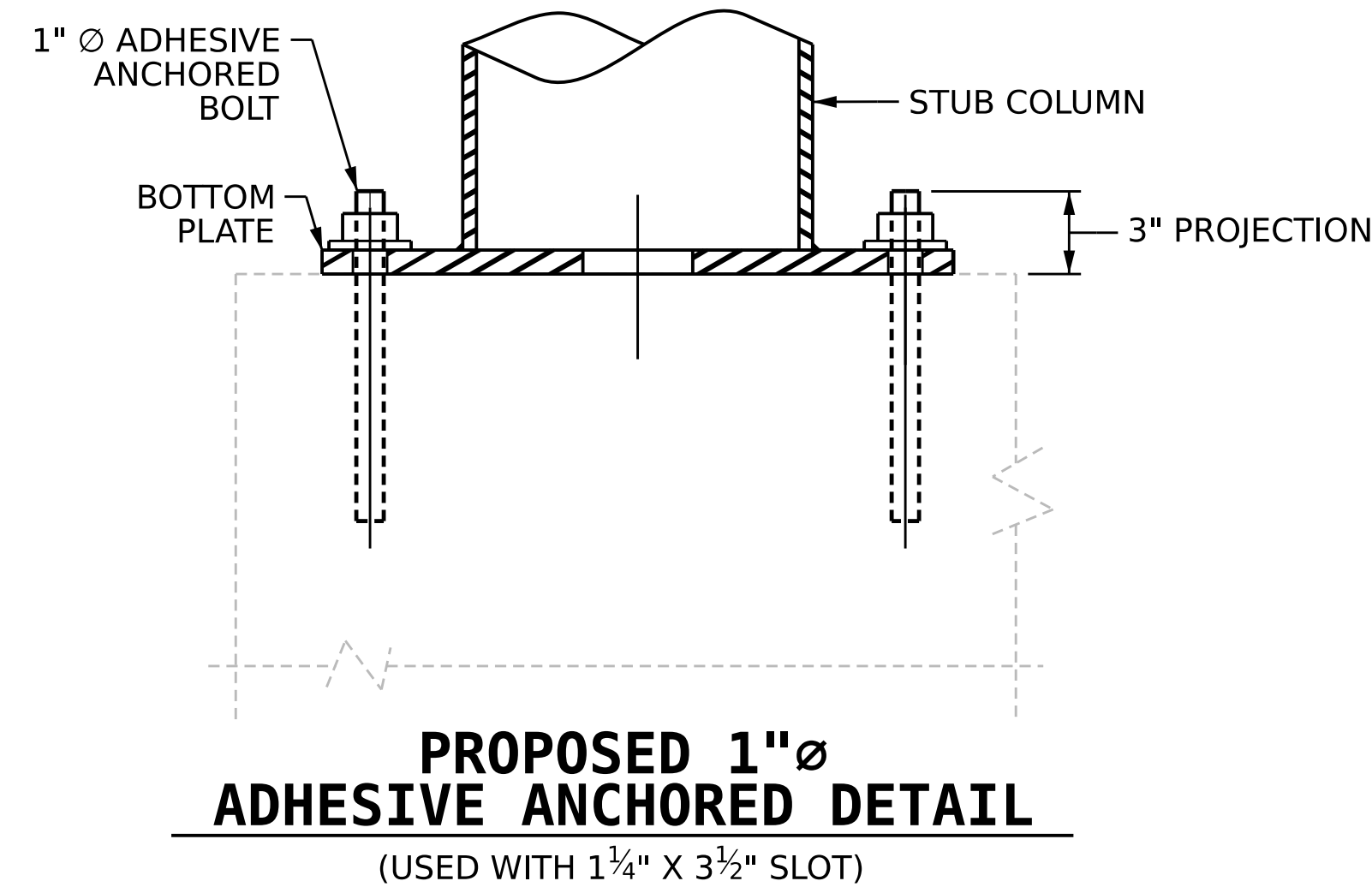
NOTE
SEE SHEET S-22 FOR NOTES.



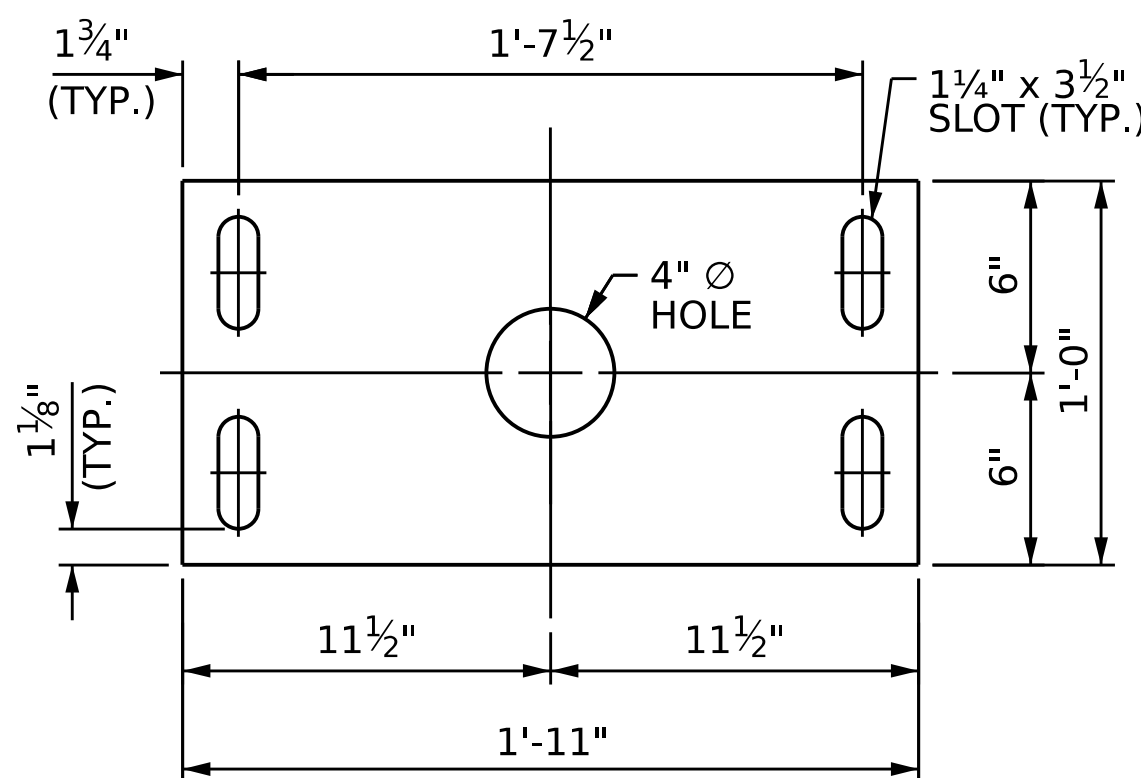
SECTION C-C
N.T.S.



TOP PLATE TO BOTTOM PLATE ORIENTATION (TYP.)
(HOLES & SLOTS HAVE BEEN OMITTED FOR CLARITY)



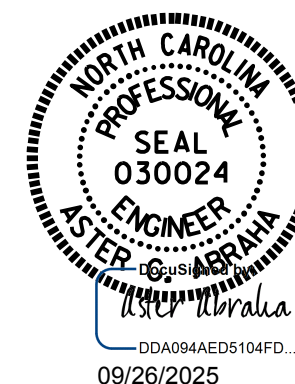
BOTTOM PLATE PLAN



BOTTOM PLATE

NOTE: THIS STUB COLUMN IS TO BE USED AT: BENT 1, BENT 2, AND BENT 3

STUB COLUMN DETAILS
(STUB COLUMN - 24 REQUIRED)



PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STUB COLUMN AND BEARING DETAILS AT INTERIOR BENTS

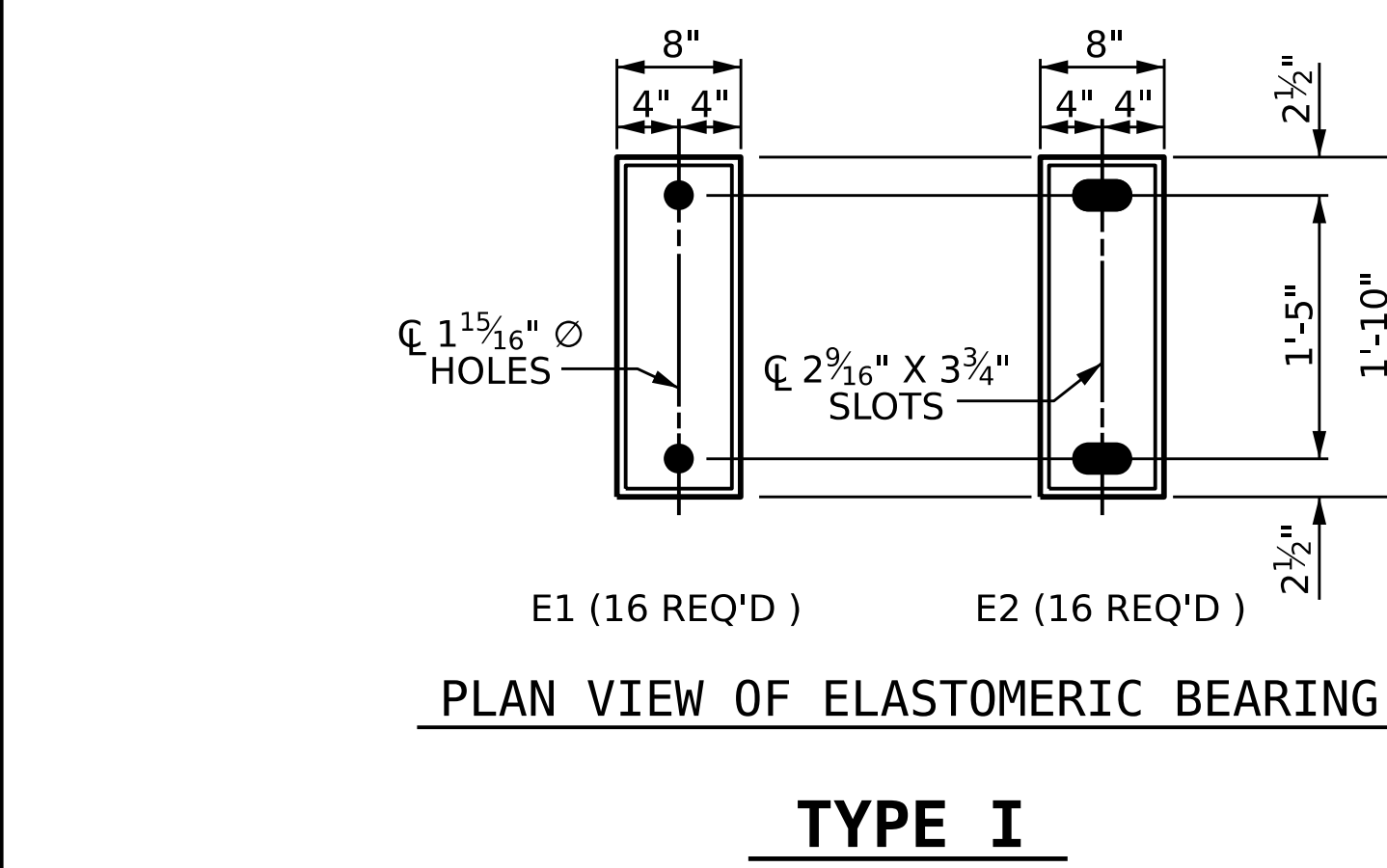
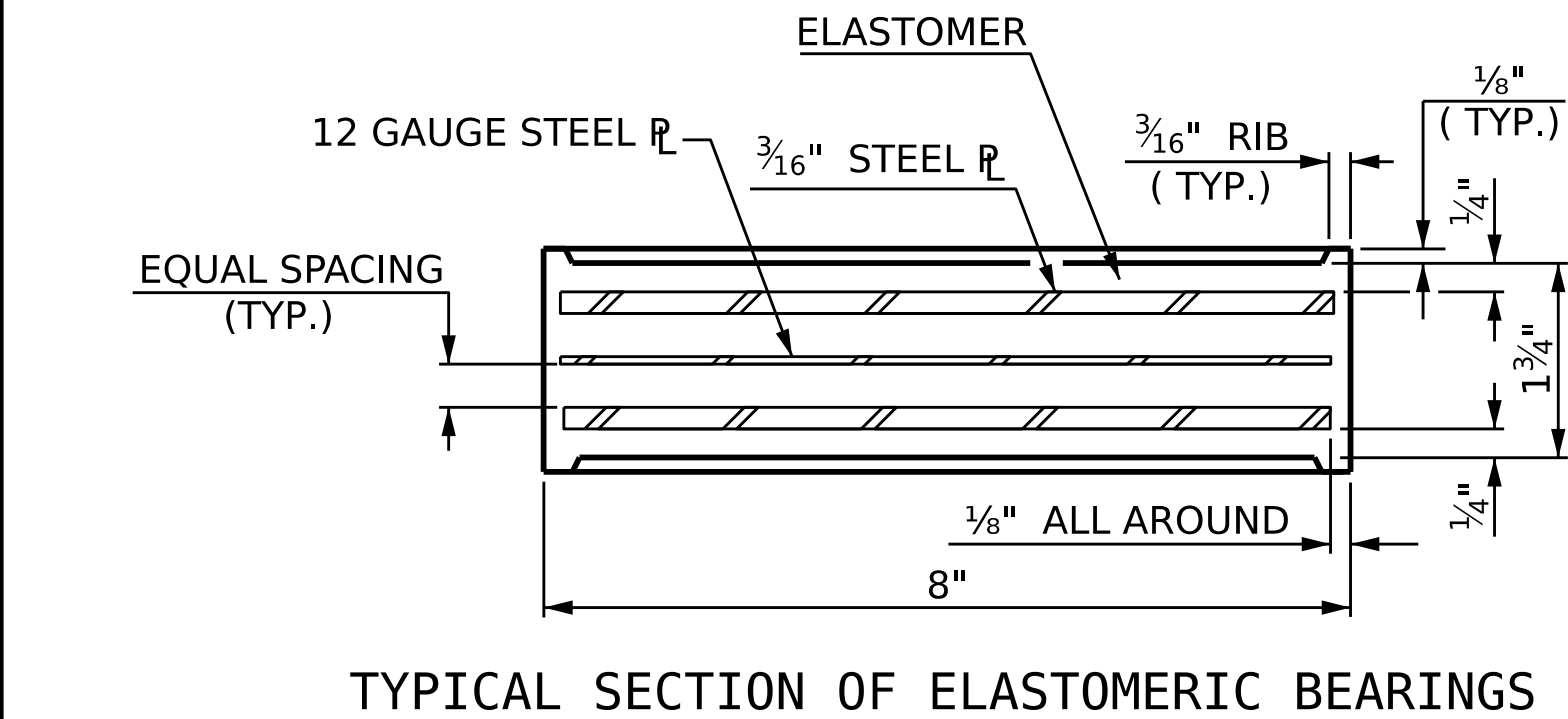
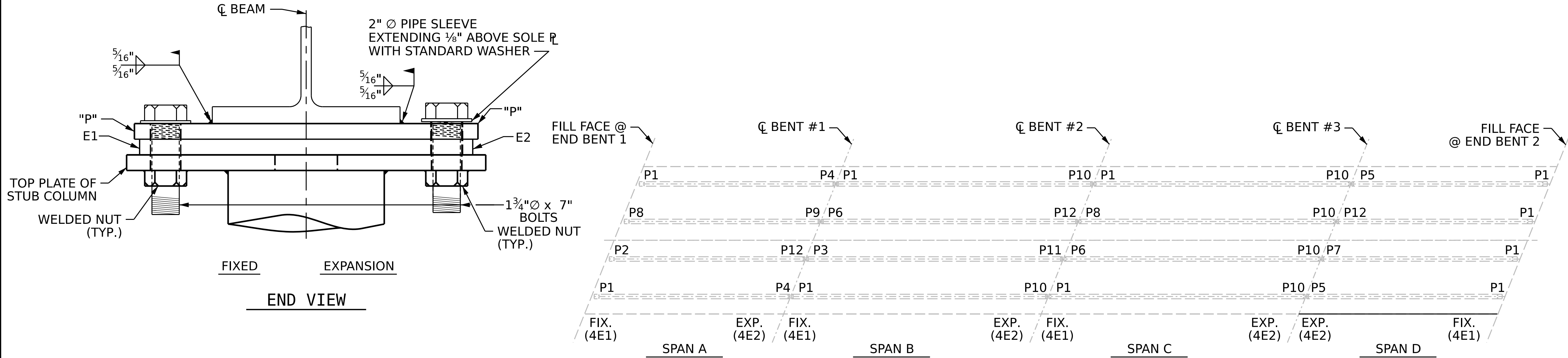
DRAWN BY : A. ABRAHA DATE : 5/2025
CHECKED BY : W.C. SMITH DATE : 8/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

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FINAL UNLESS ALL
SIGNATURES COMPLETED

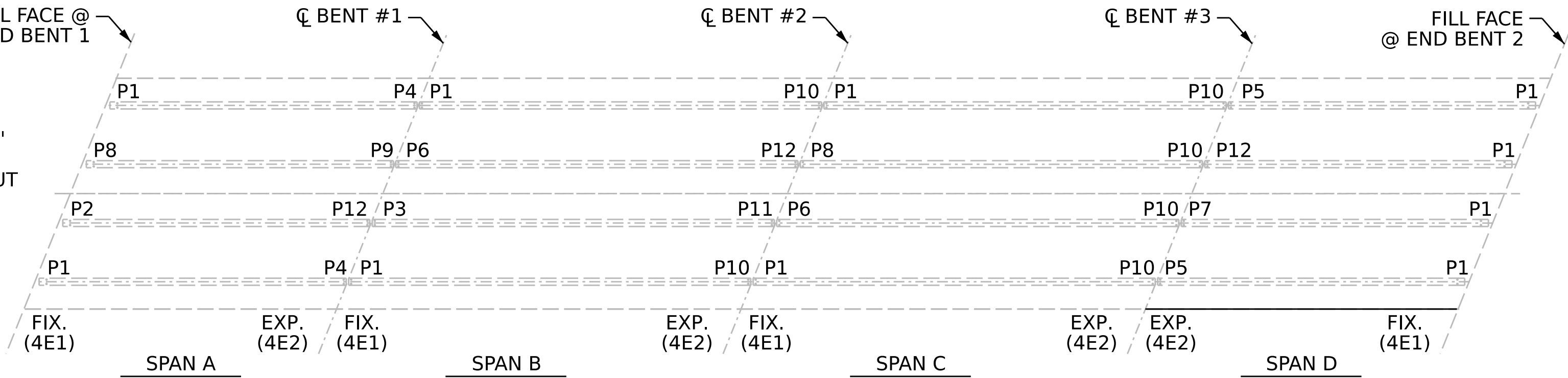
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-23
2			4		TOTAL SHEETS 28

NOTE: SEE SHEET 11 OF 14 FOR 1" ADHESIVE ANCHORED BOLT DETAIL (USED WITH 1 1/4" SLOTS)



DRAWN BY : A. ABRAHA DATE : 6/2025
CHECKED BY : W. C. SMITH DATE : 8/2025
DESIGN ENGINEER OF RECORD: DATE :

9/19/2025
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aabraham



SOLE PLATE LOCATION PLAN

* SEE PLATE THICKNESS TABLE

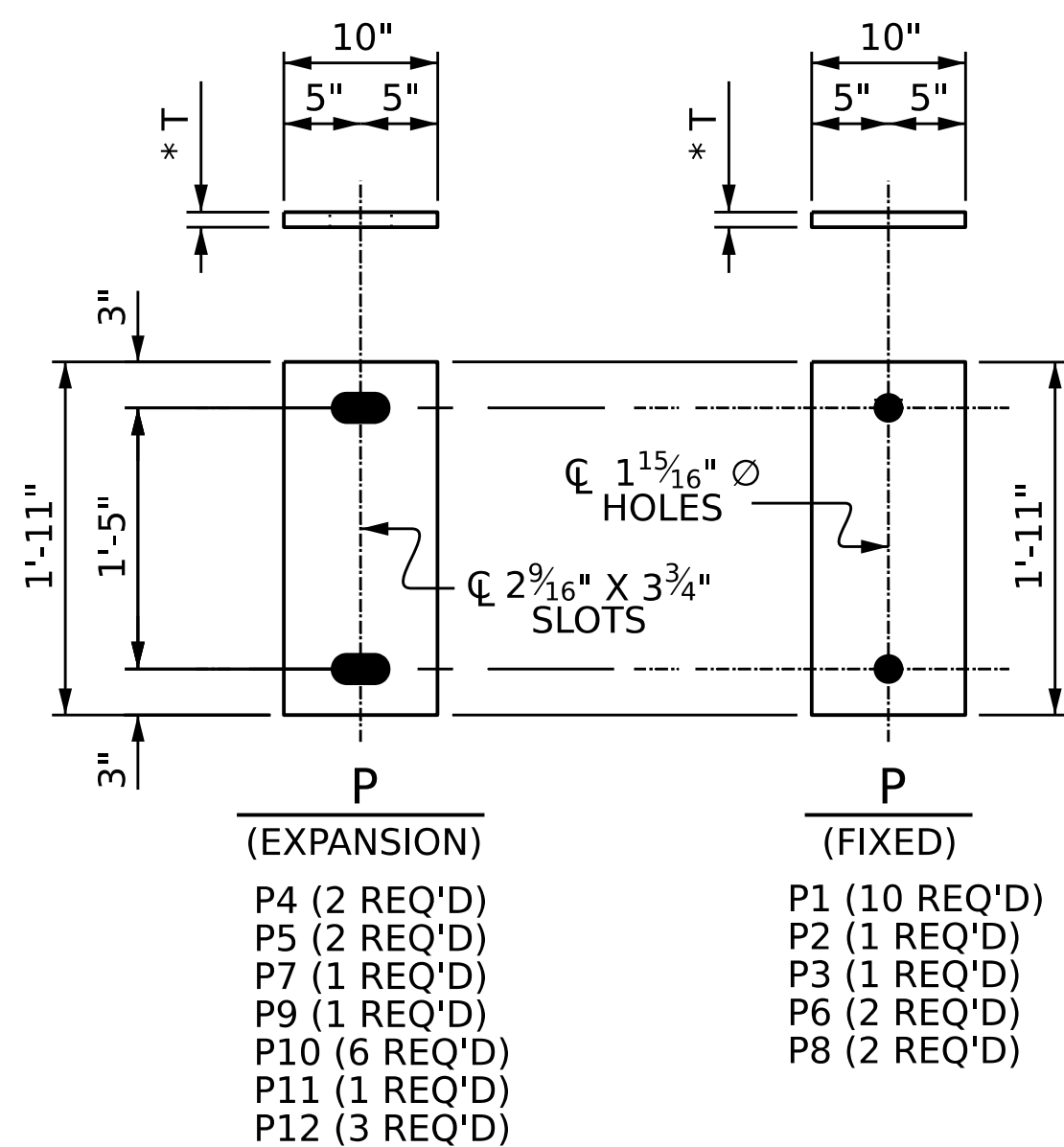


PLATE THICKNESS	
FIX. & EXP. (T)	
P1 & 10	3/4"
P2	7/8"
P3	1
P4	1 1/16"
P5	1 1/4"
P6 & P11	1 3/8"
P7	1 1/16"
P8 & P12	1 1/2"
P9	1 7/8"

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L. + L.L. (NO IMPACT)	
TYPE I	140 k
TYPE II	180 k
TYPE III	255 k

SOLE PLATE DETAILS ("P")

NOTES

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

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

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

ALL STRUCTURAL STEEL SOLE PLATES SHALL BE MINIMUM 36 KSI STEEL OR BETTER.

FOR PAINTED STRUCTURAL STEEL (EXCLUDING AASHTO M270 GRADE 50W), SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

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

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE SPECIAL PROVISION.

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEARING REPLACEMENT
DETAILS

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-24
2			4		TOTAL SHEETS 28

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FINAL UNLESS ALL
SIGNATURES COMPLETED

NOTES

TYPICAL BENT CAP REPAIRS ARE SHOWN. REPAIR DETAILS SIMILAR FOR END BENT CAPS AND STRUTS.

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 OR COLUMN CROSS SECTIONAL AREA SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN 30% OF A CAP OR COLUMN 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 COLUMN, IF THE AREAS OF REMOVAL ARE NOT ADJACENT TO OR DIRECTLY OPPOSITE ONE ANOTHER. IF REMOVAL EXTENDS MORE THAN 1½" BEHIND THE MAIN REINFORCING BARS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

NO MORE THAN 10 VERTICAL FEET OF A COLUMN MAY BE REMOVED AT ONE TIME, PRIOR TO REPAIR, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

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

THE #4 "U" DOWELS ARE REQUIRED ONLY AROUND THE ANCHOR BOLTS. THE EXISTING REINFORCING STEEL IN THE PEDESTAL WALL SHALL BE CLEANED, STRAIGHTENED AND REMAIN IN PLACE.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

COAT ALL REPAIR SURFACE AREAS ON THE TOP OF CAPS, INCLUDING CHAMFERS, WITH EPOXY PROTECTIVE COATING, OVERLAPPING THE REPAIR AREA BY A MINIMUM OF 3" ON ALL POSSIBLE SIDES.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

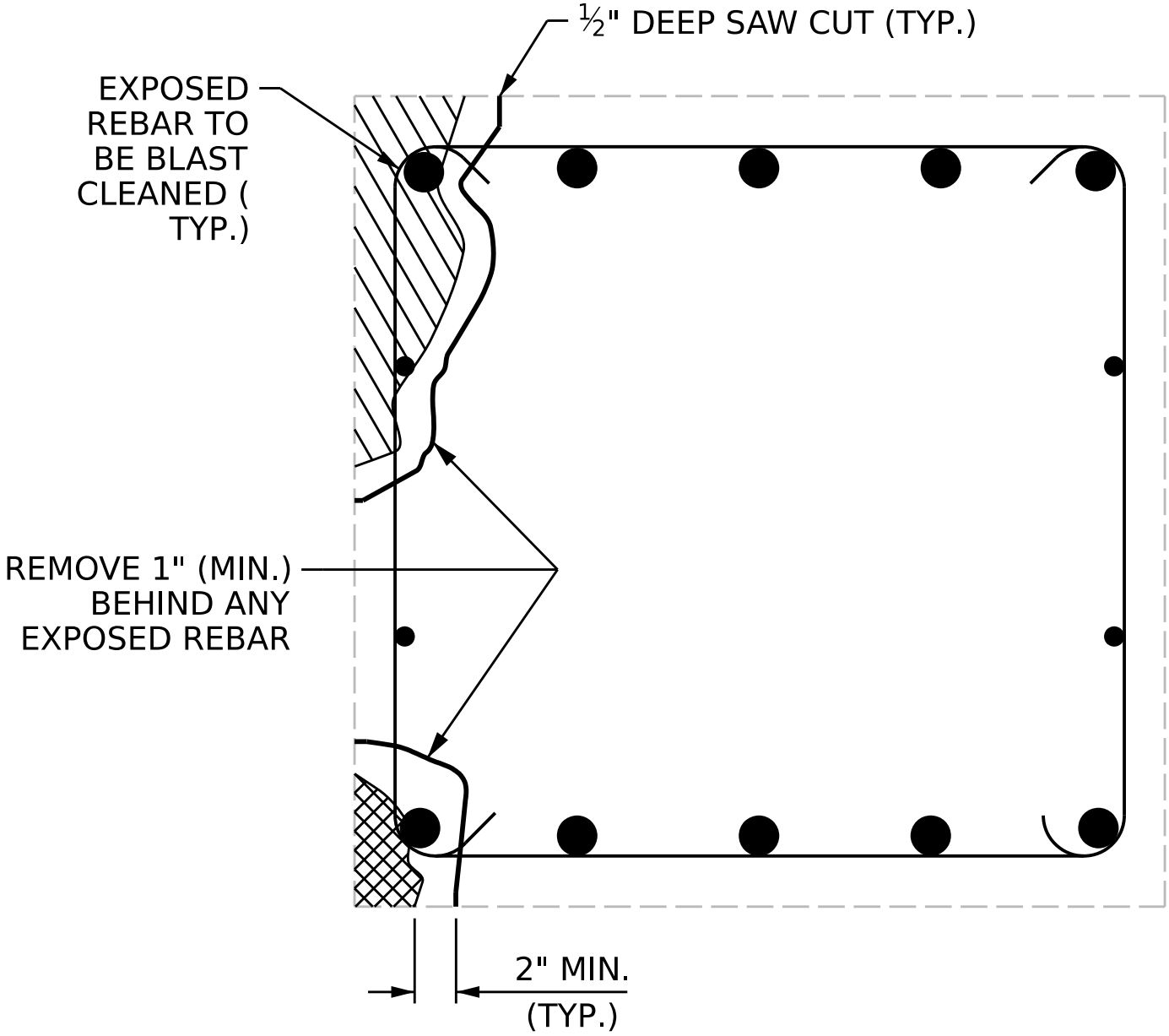
FOR EPOXY RESIN INJECTION (ERI), SEE SPECIAL PROVISIONS.

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
TYPICAL CAP AND COLUMN REPAIR DETAILS

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-25
2			4		TOTAL SHEETS 28

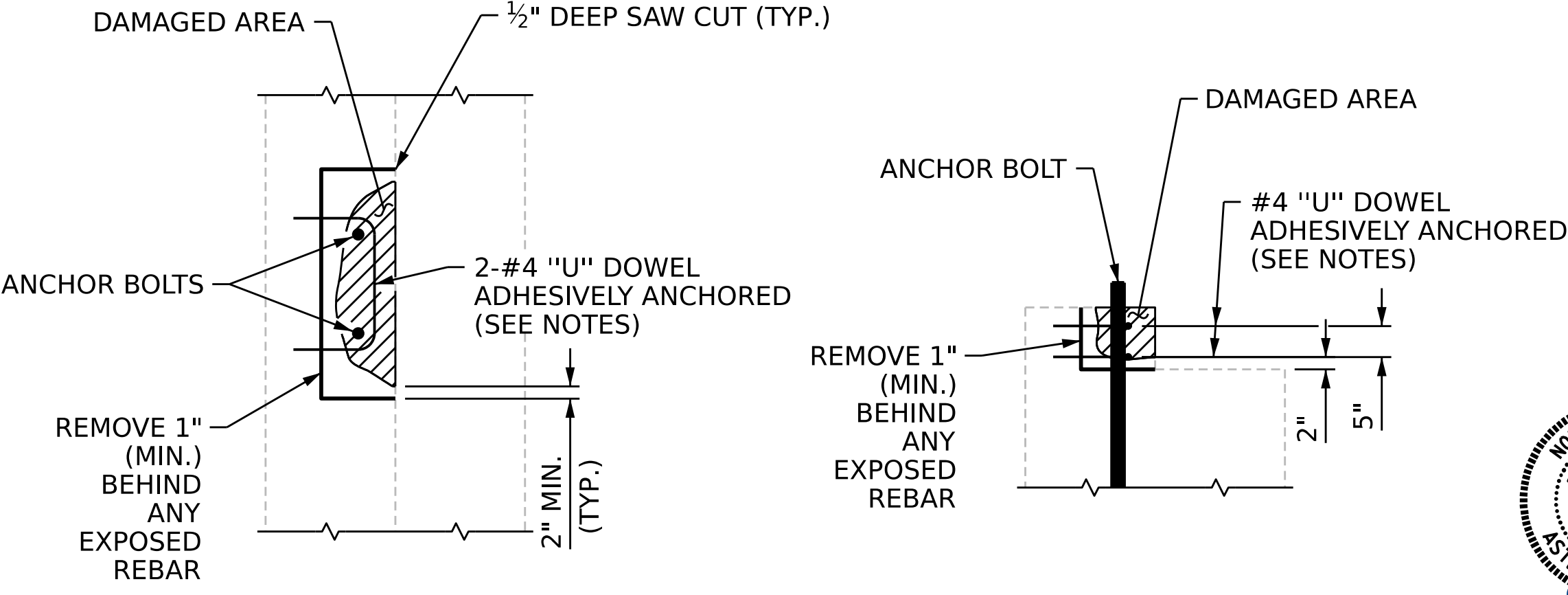
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SECTION A-A

REPAIR KEY

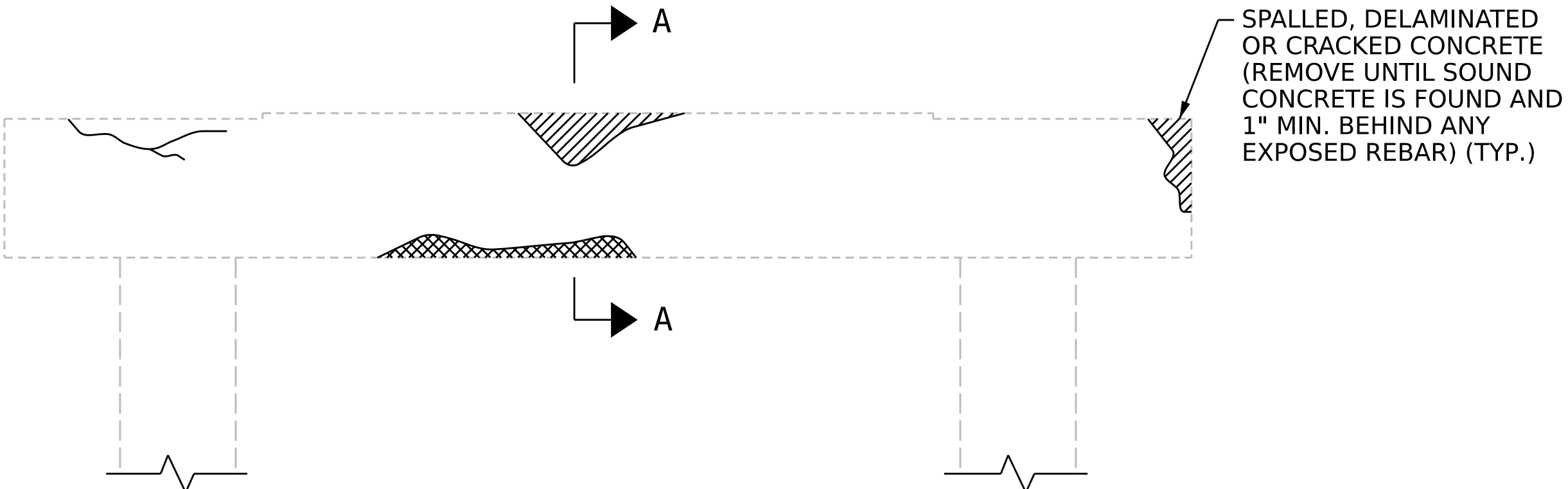
- CONCRETE REPAIR AREA (FORM AND POUR)
- SHOTCRETE REPAIR AREA
- EPOXY RESIN INJECTION (ERI)



PLAN

ELEVATION

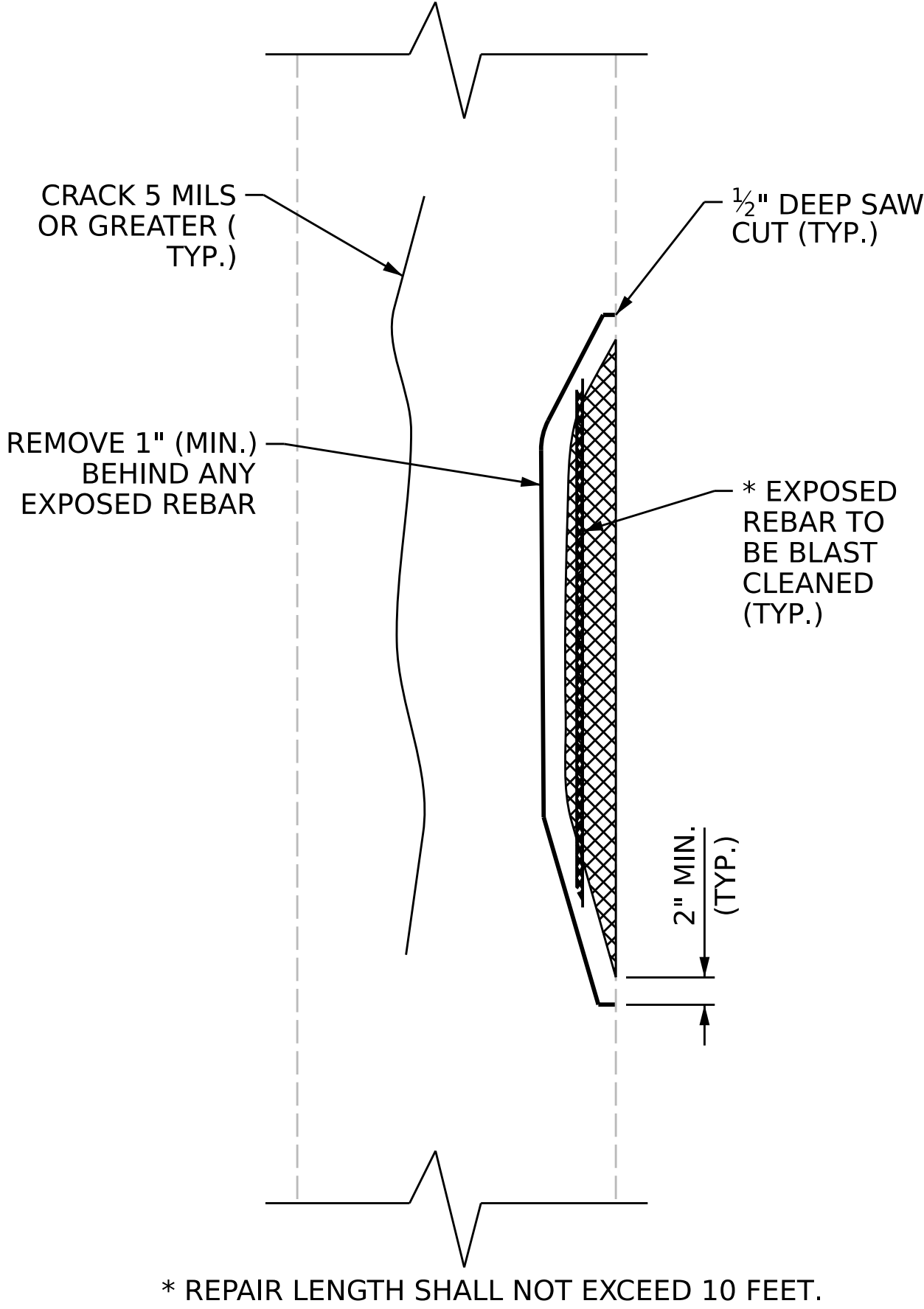
PEDESTAL WALL REPAIR



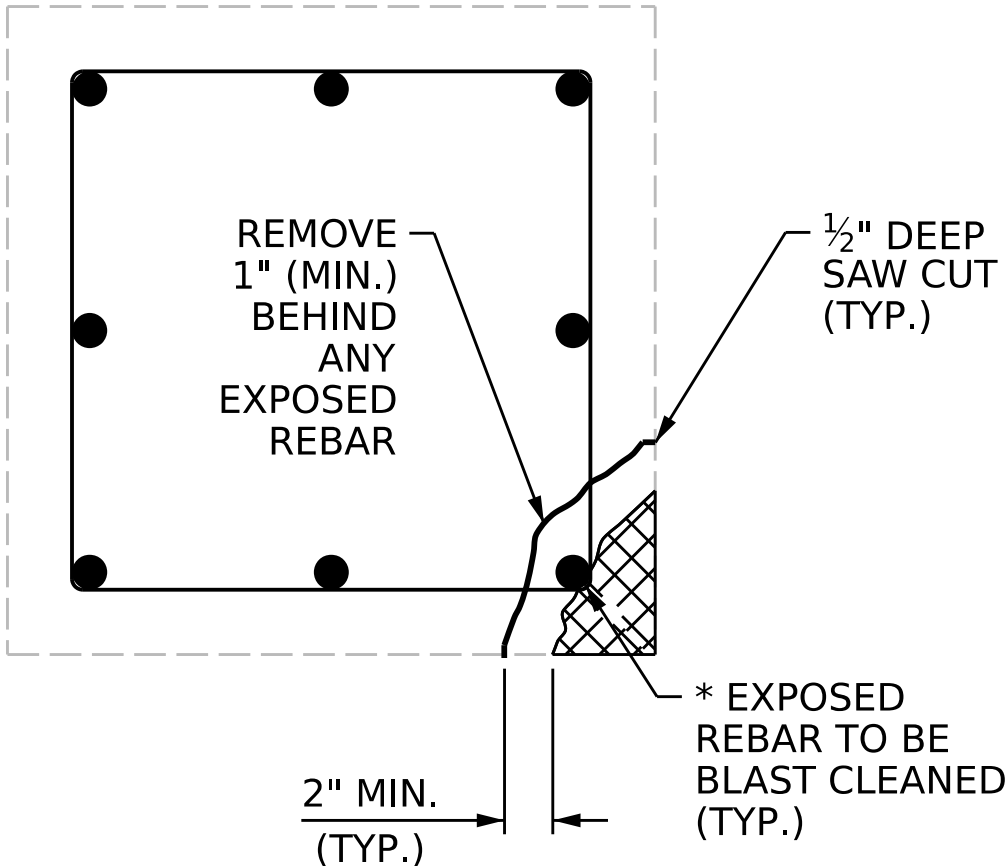
BENT CAP REPAIRS

CAP REPAIR

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



ELEVATION OF COLUMN



PLAN OF COLUMN

COLUMN REPAIR

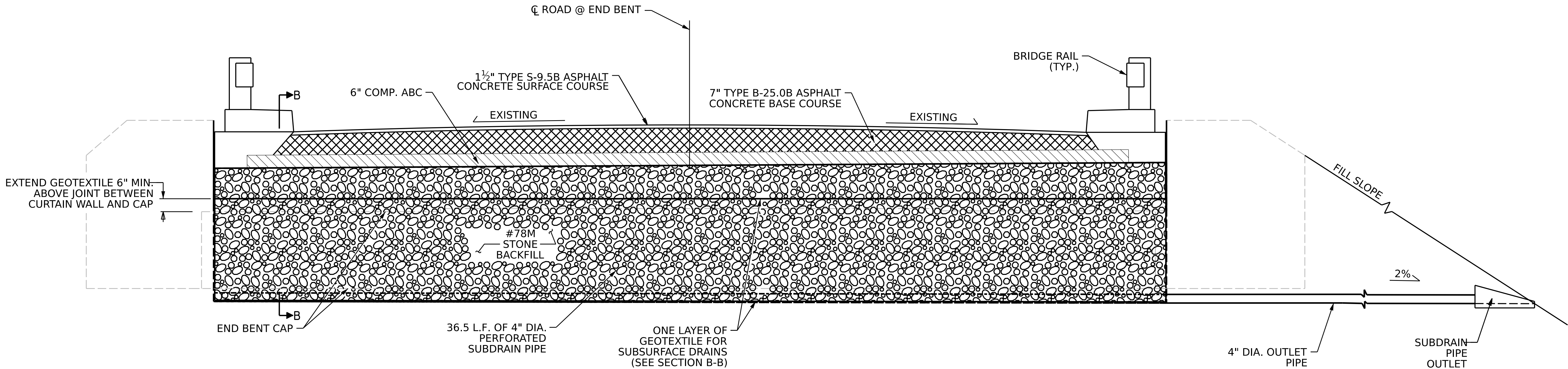
DRAWN BY : AABRAHA DATE : 9/2025
CHECKED BY : WCSMITH DATE : 9/2025
DESIGN ENGINEER OF RECORD: DATE :

9/12/2025
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aabraha

8/26/21

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SECTION AT END BENT 1

END BENT 2 SIMILAR

NOTES:

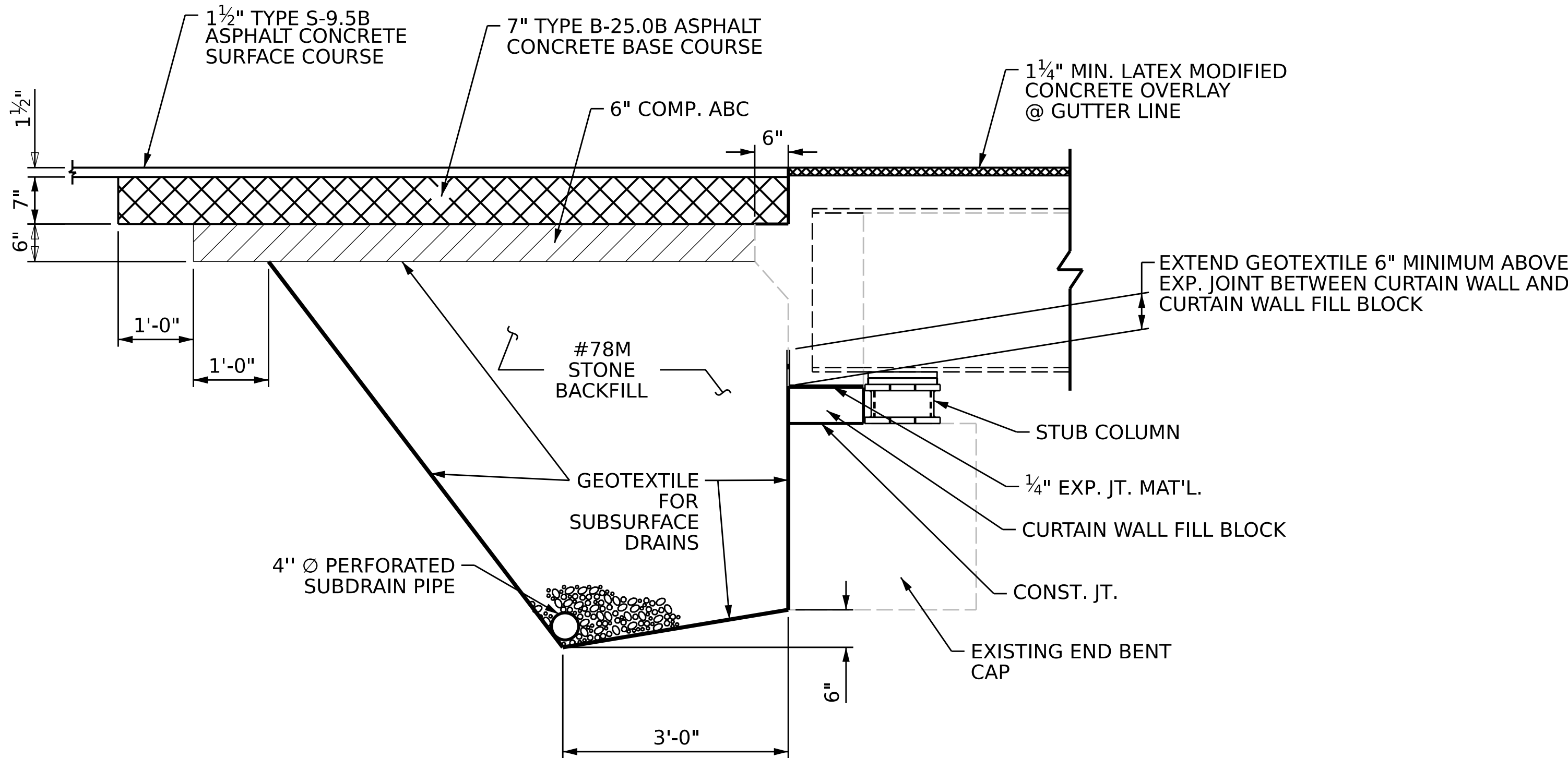
SEE TABLE FOR ESTIMATED QUANTITIES.

COORDINATE THE WORK AND DETAILS OF THIS SHEET WITH THE REQUIREMENTS FOR THE APPROACH MILLING AND ROADWAY APPROACH ASPHALT TO PROVIDE SMOOTH TRANSITION TO AND FROM THE BRIDGE DECK.

TOTAL BRIDGE APPROACH FILL ESTIMATES

EXCAVATION	* 93 CU. YDS.
GEOTEXTILES	* 182 SQ. YDS.
#78M STONE	* 67 CU. YDS.
4" PERFORATED PIPE	* 74 LIN. FT.
OUTLET PIPE	* 2 EA.
4" OUTLET PIPE	* 32 LIN. FT.

* QUANTITIES IN THIS TABLE ARE FOR INFORMATION PURPOSES ONLY.



SECTION B-B

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

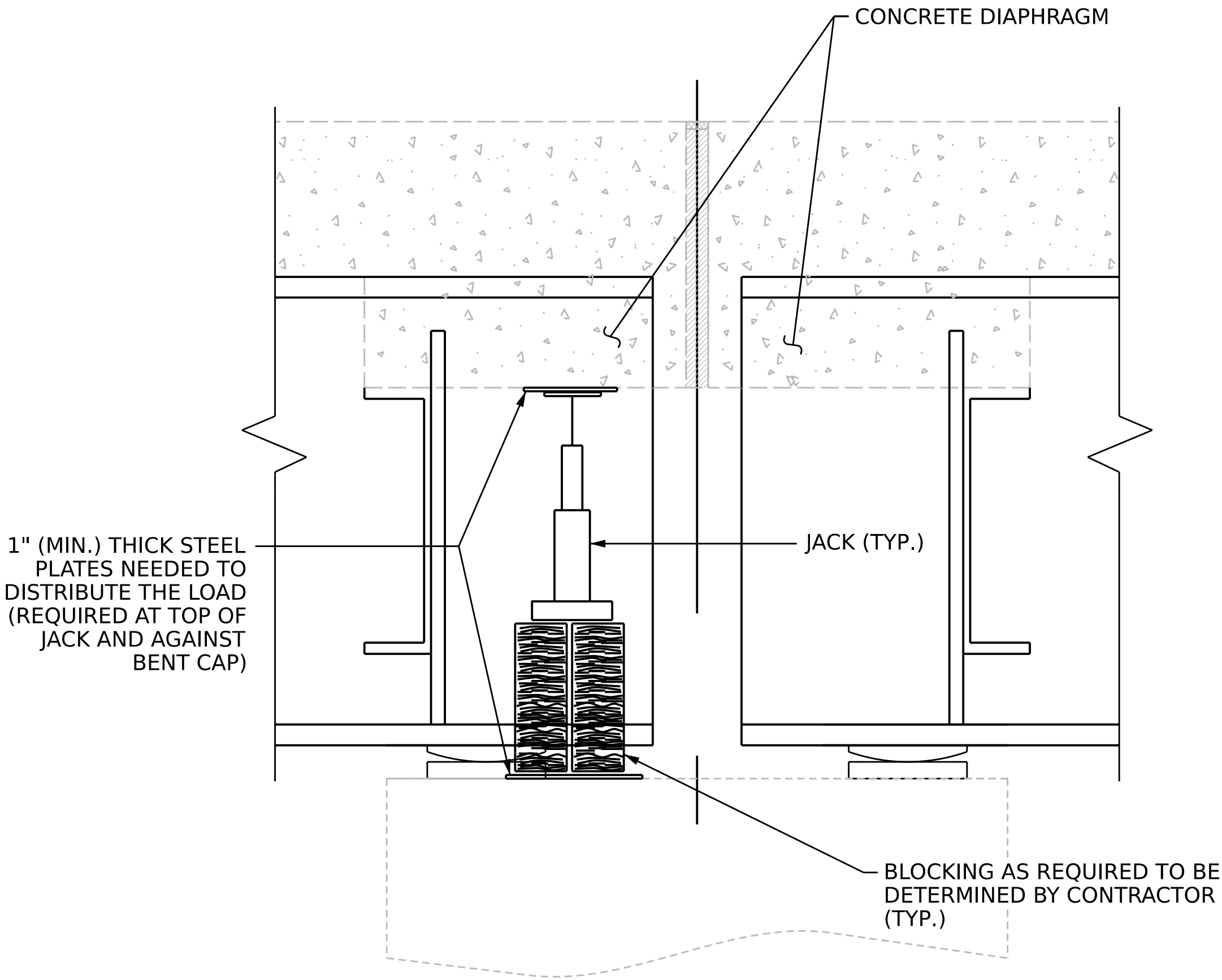
BRIDGE APPROACH FILL DETAIL AT END BENTS 1 AND 2

ASSEMBLED BY: KCADET/AABRAHA DATE : 08/2025
CHECKED BY : W.C. SMITH DATE : 08/2025

DRAWN BY :
CHECKED BY :

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-26
2			4			TOTAL SHEETS 28



SECTION THRU DIAPHRAGM

BRIDGE JACKING TABLE				
LOCATION	SPAN	BEAM(S)	BRIDGE JACKING TYPE	DEAD LOAD (DC+DW) (KIPS)
END BENT 1	A	1, 2, 3, 4	TYPE II	
BENT 1	A, B	1, 2, 3, 4	TYPE II	
BENT 2	B, C	1, 2, 3, 4	TYPE II	
BENT 3	C, D	1, 2, 3, 4	TYPE II	
END BENT 2	D	1, 2, 3, 4	TYPE II	

NOTES

THIS DETAIL IS A GENERIC EXAMPLE OF A JACKING SCHEME AND DOES NOT NECESSARILY REPRESENT SPECIFIC CONDITIONS AT A PARTICULAR BRIDGE. ACTUAL BRIDGE GEOMETRY, DIMENSIONS, AND CONDITIONS MAY DIFFER FROM THIS DETAIL. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL INVESTIGATE THE BRIDGES ON THE PROJECT AND DEVELOP A JACKING PLAN TO BE SUBMITTED FOR REVIEW AND APPROVAL. SEE BRIDGE JACKING SPECIAL PROVISION.

PRIOR TO BRIDGE JACKING OPERATIONS, THE ENGINEER AND CONTRACTOR SHALL INSPECT THE STRUCTURE FOR ANY NOTABLE DEFECTS TO THE PRIMARY AND SECONDARY STRUCTURAL MEMBERS. ALL NOTABLE DEFECTS SHALL BE DOCUMENTED AND REPORTED TO THE AREA BRIDGE MAINTENANCE ENGINEER PRIOR TO COMMENCEMENT OF ANY BRIDGE JACKING. THE CONTRACTOR SHALL PROVIDE SAFE AND SUFFICIENT ACCESS TO ALL STRUCTURAL MEMBERS FOR THE ENGINEER TO ESTABLISH PROPER DOCUMENTATION.

PRIOR TO JACKING, THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE BEAM FROM BEING LIFTED.

THE BEAM SHALL BE LIFTED ENOUGH THAT THE BEAM CLEARS THE BEARINGS AND ALL LOAD IS SUPPORTED BY THE JACKS. AFTER JACKING IS COMPLETE, THE CONTRACTOR SHALL PROVIDE FOR A METHOD TO REMOVE THE JACKS AND SUPPORT THE BEAM FOR DEAD AND LIVE LOAD DURING THE REPAIR OPERATIONS. IF THE JACKS REMAIN IN PLACE DURING THE ENTIRE JACKING AND REPAIR OPERATION, THEY SHALL HAVE MECHANICAL LOCK OFF CAPABILITIES.

IF, DURING THE JACKING PROCESS, OR WHILE THE BEAM IS BEING SUPPORTED, THE BEAM SHIFTS FROM ITS ORIGINAL POSITION, ALL WORK SHALL CEASE AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

BEARINGS ADJACENT TO THE BEAM BEING JACKED MAY BE LOOSENEED TO DECREASE THE RESISTANCE OF THE DECK SLAB DURING JACKING. ALL BEARINGS LOOSENEED SHALL BE TIGHTENED BACK AFTER REPAIR OPERATIONS ARE COMPLETED AND THE JACKS AND BLOCKING HAVE BEEN REMOVED.

THE MAXIMUM DIFFERENTIAL BETWEEN ADJACENT BEAMS THAT ARE BEING JACKED IS 1/8".

LOADS PROVIDED IN THE "BRIDGE JACKING TABLE" ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY, THE CONTRACTOR'S ENGINEER SHALL DETERMINE THE EXPECTED LOADS TO BE LIFTED DURING THE BRIDGE JACKING OPERATIONS.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS OF THE JACKING PROCEDURE(S) SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF NORTH CAROLINA TO THE ENGINEER FOR APPROVAL PRIOR TO BRIDGE JACKING OPERATIONS.

FOR TYPE I OR TYPE II BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR WORKING DRAWING SUBMITTALS, SEE SPECIAL PROVISIONS.

ANY STEEL THAT HAS BEEN WELDED TO THE EXISTING STRUCTURE SHALL REMAIN IN PLACE.

TYPE II BRIDGE JACKING SHALL BE DONE WITH A HYDRAULIC JACKING SYSTEM THAT LIFTS EACH BEAM ALONG ENTIRE SPAN END WITH EQUAL FORCE AND AT AN EQUAL RATE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED TO THE EXISTING STRUCTURE BY BRIDGE JACKING OPERATIONS AT NO ADDITIONAL COST TO THE DEPARTMENT.

PROJECT NO. 15BPR.143.3
WILSON COUNTY
BRIDGE NO. 970068



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD BRIDGE JACKING DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					28

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

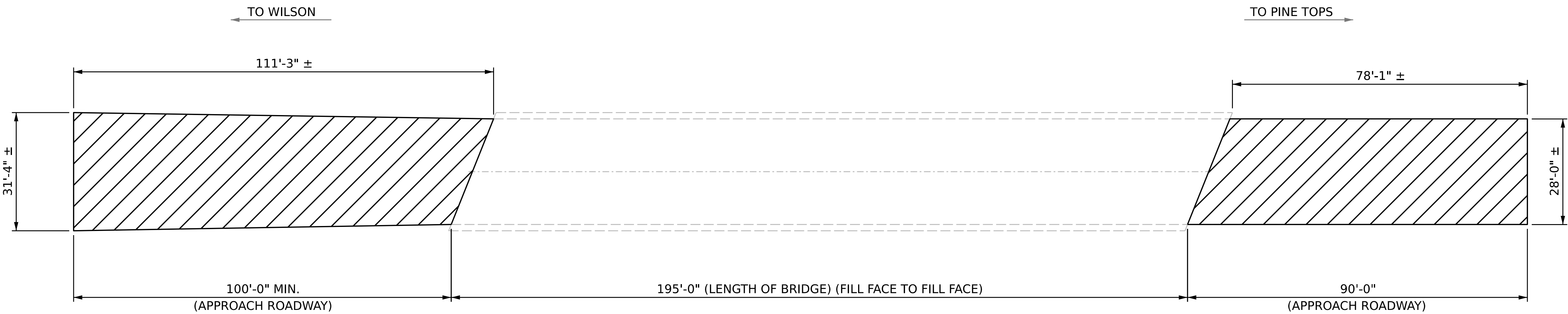
ASSEMBLED BY : AABRAHA	DATE : 09/2025
CHECKED BY : WCSMITH	DATE : 09/2025
DRAWN BY : NAP 08/18	
CHECKED BY :	

NOTES

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1½" DEPTH OF NEW ASPHALT PAVING. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE APPROACH SLAB. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1½" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

CONTRACTOR SHALL REMOVE EXISTING GUARDRAIL, END UNITS, AND ANCHOR UNITS AS PER SECTION 863 OF THE STANDARD SPECIFICATIONS.

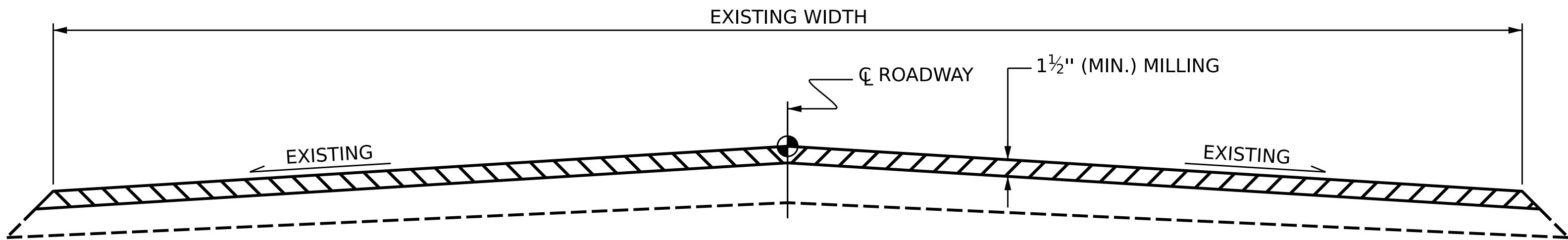
AFTER THE BRIDGE IS RAISED AND OVERLAY OPERATIONS COMPLETED, AND AFTER APPROACH MILLING AND PAVING IS COMPLETE, CONTRACTOR SHALL INSTALL NEW STEEL BEAM GUARDRAIL; GUARDRAIL END UNITS, TYPE TL-3; AND GUARDRAIL ANCHOR UNITS, TYPE III MODIFIED; AS PER PLAN SHEETS S-28A THROUGH S-28D AND THE STANDARD SPECIFICATIONS.



PLAN



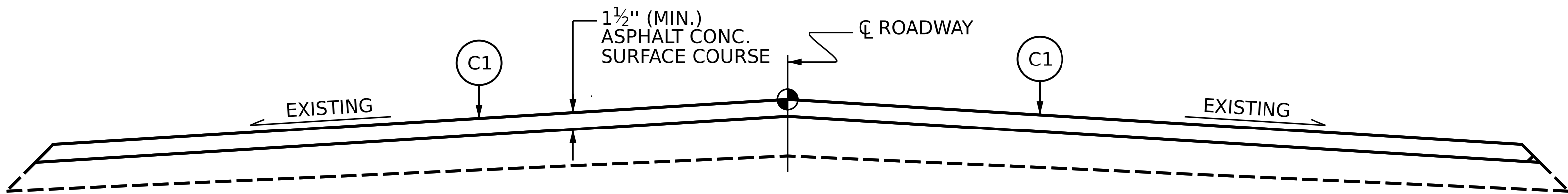
C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OF GREATER THAN 2" DEPTH.
----	--



TYPICAL ROADWAY MILLING SECTION

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	610.8 YDS	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	60.0 TONS	
ASPHALT BINDER FOR PLANT MIX	5.0 TONS	
REMOVE EXISTING GUARDRAIL	875* LF	
STEEL BEAM GUARDRAIL	875* LF	
GUARDRAIL END UNITS, TYPE TL-3	4 EA	
GUARDRAIL ANCHOR UNITS, TYPE III MODIFIED	4 EA	

* - FIELD VERIFY



TYPICAL PROPOSED ROADWAY SECTION

PROJECT NO. **15BPR.143.3**
WILSON COUNTY
BRIDGE NO. **970068**



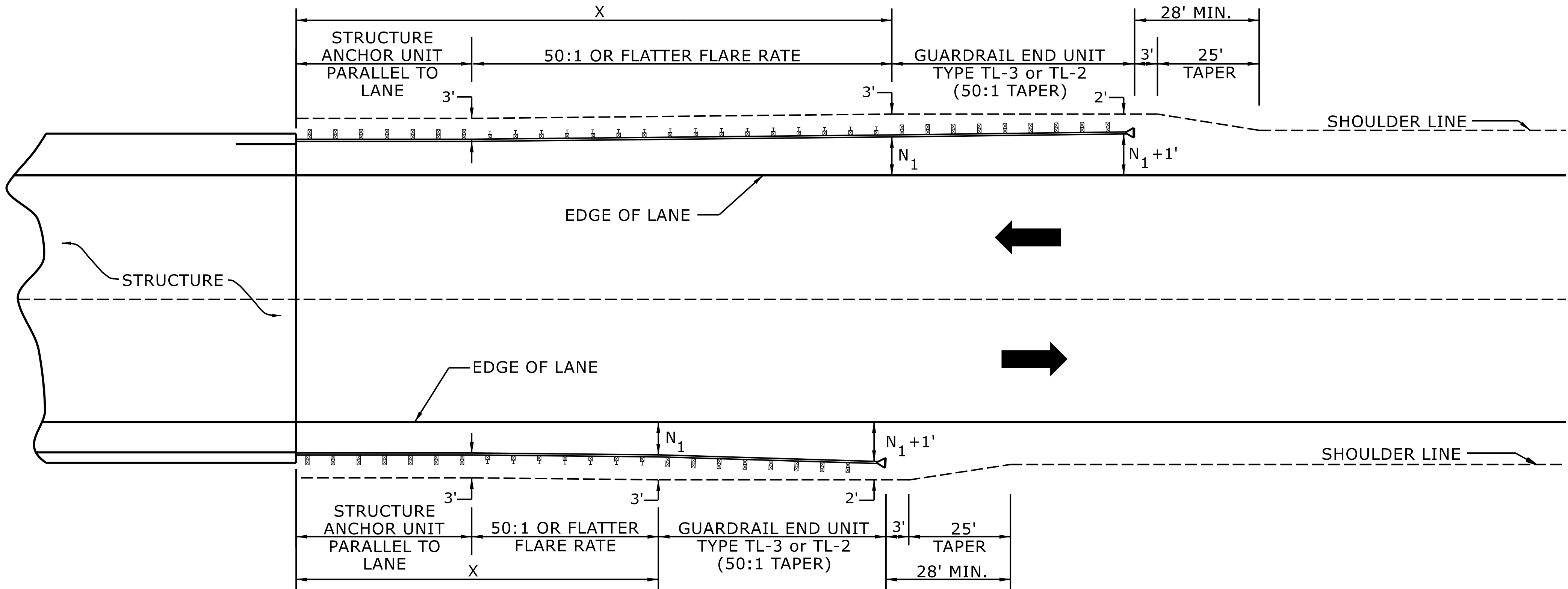
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**APPROACH MILLING
& TYPICAL ROADWAY
SECTION**

DRAWN BY : A. ABRAHA DATE : 8/2025
CHECKED BY : W.C.SMITH DATE : 8/2025
DESIGN ENGINEER OF RECORD: _____ DATE : _____

10/14/2025
S:\DPG1\Division4\15BPR,143,3\PLANS\401_055_15BPR,143,3_SMU.AM.S-28.970068.dgn
aabraha

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

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



USE FLARE RATE AS THE CONTROL IF THE " N_1 " DISTANCE IS NOT OBTAINED.
(" N_1 " IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS $\geq$ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS $<$ 45MPH USE GREU TYPE TL-2

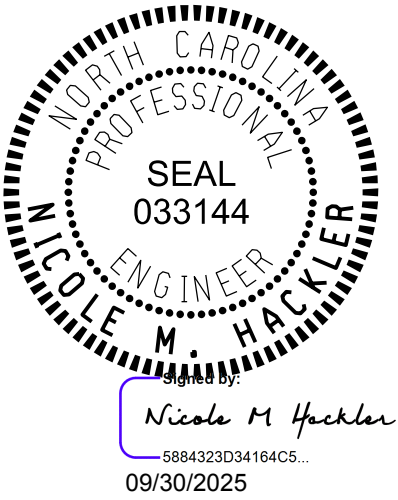
GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

STATE OF
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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15
862D01



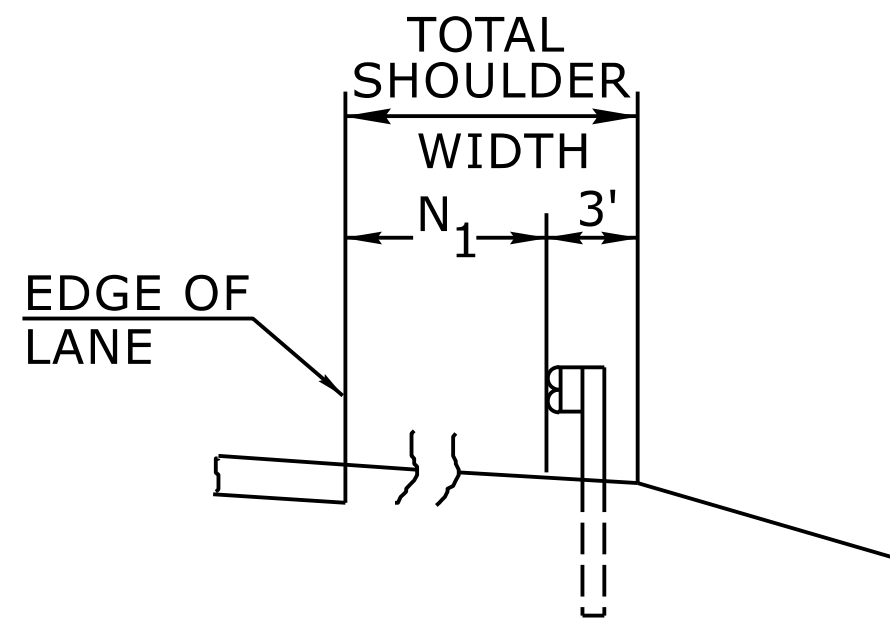
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

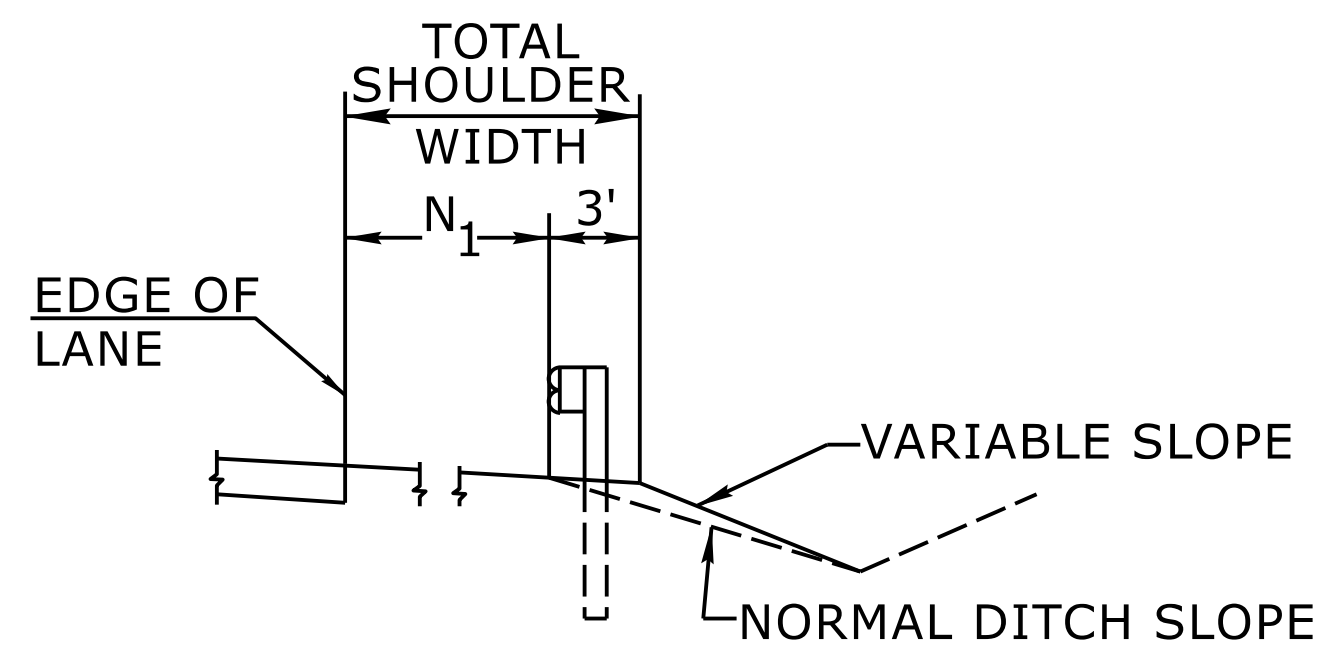
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

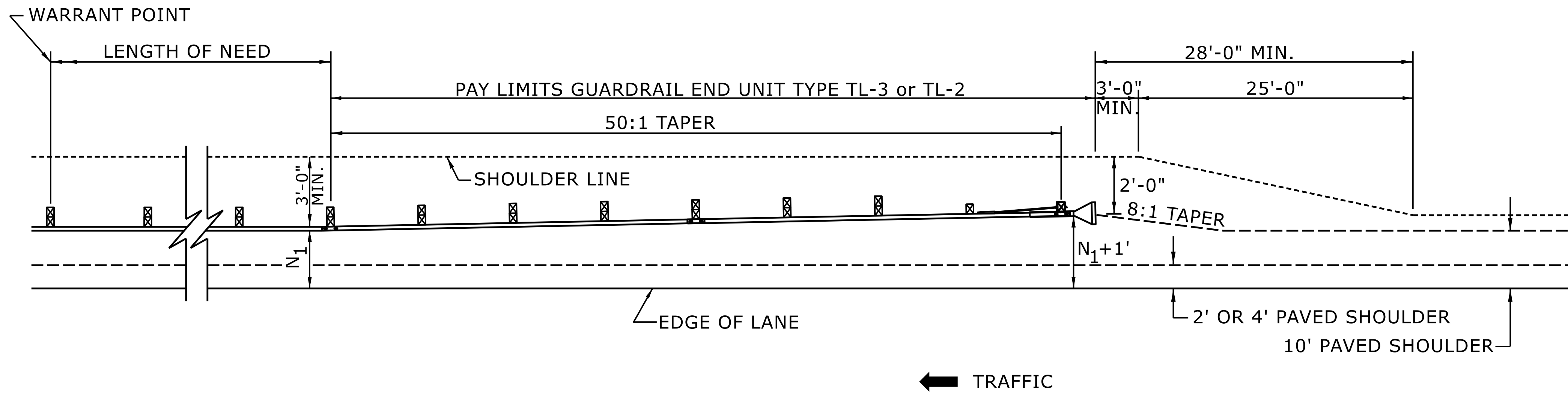


FILL SECTION



CUT SECTION

"N₁"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.

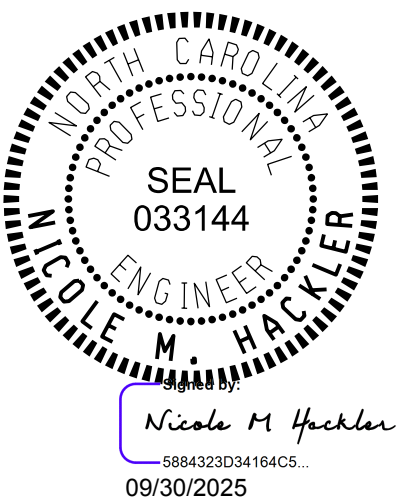


FOR POSTED SPEEDS $\geq$ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS $<$ 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 6 OF 15
862D01



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CONTRACTS STANDARDS
AND DEVELOPMENT UNIT
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SEE TITLE BLOCK

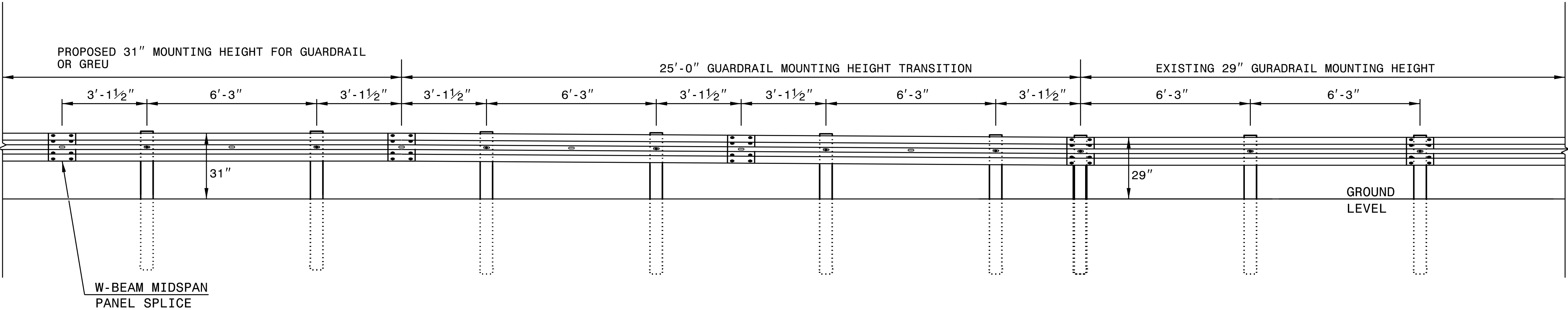
ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: DATE:

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

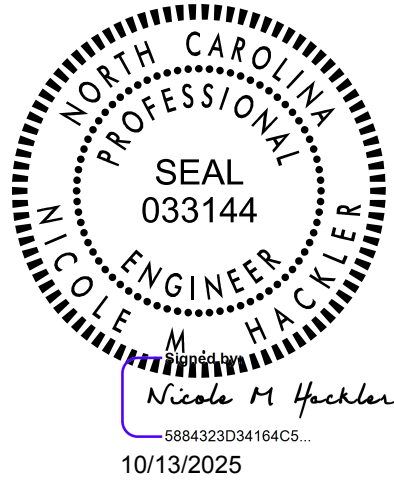
SHEET 5 OF 9
862D02

**NOTE: IF EXISTING GUARDRAIL IS LOWER THAN 29", USE AN ADDITIONAL 12'-6" LONG SECTION OF GUARDRAIL,
FOR EVERY 1" OF HEIGHT DIFFERENCE, TO TRANSITION FROM EXISTING GUARDRAIL TO PROPOSED 31" GUARDRAIL.**



ELEVATION VIEW

TRANSITION FROM 29" TO 31" W-BEAM GUARDRAIL MOUNTING HEIGHT

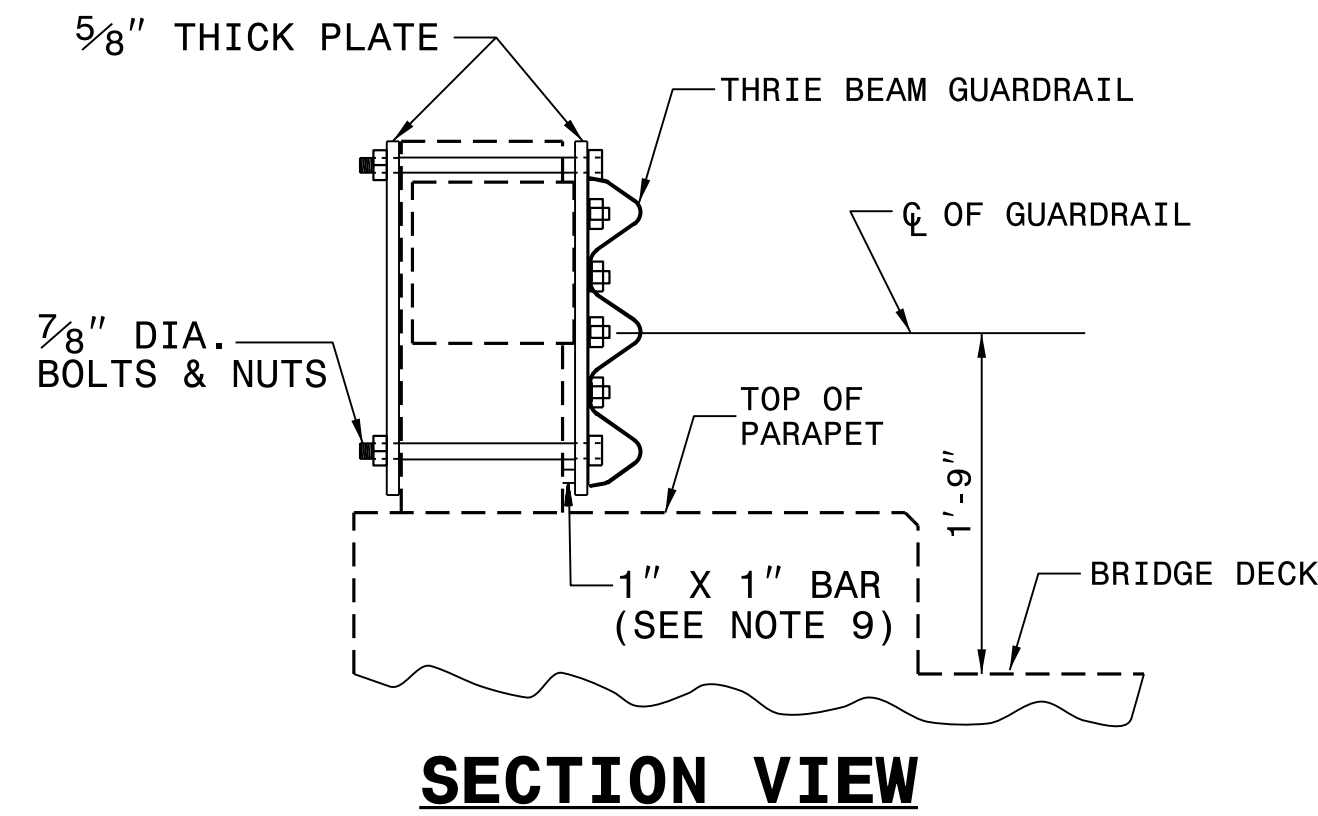
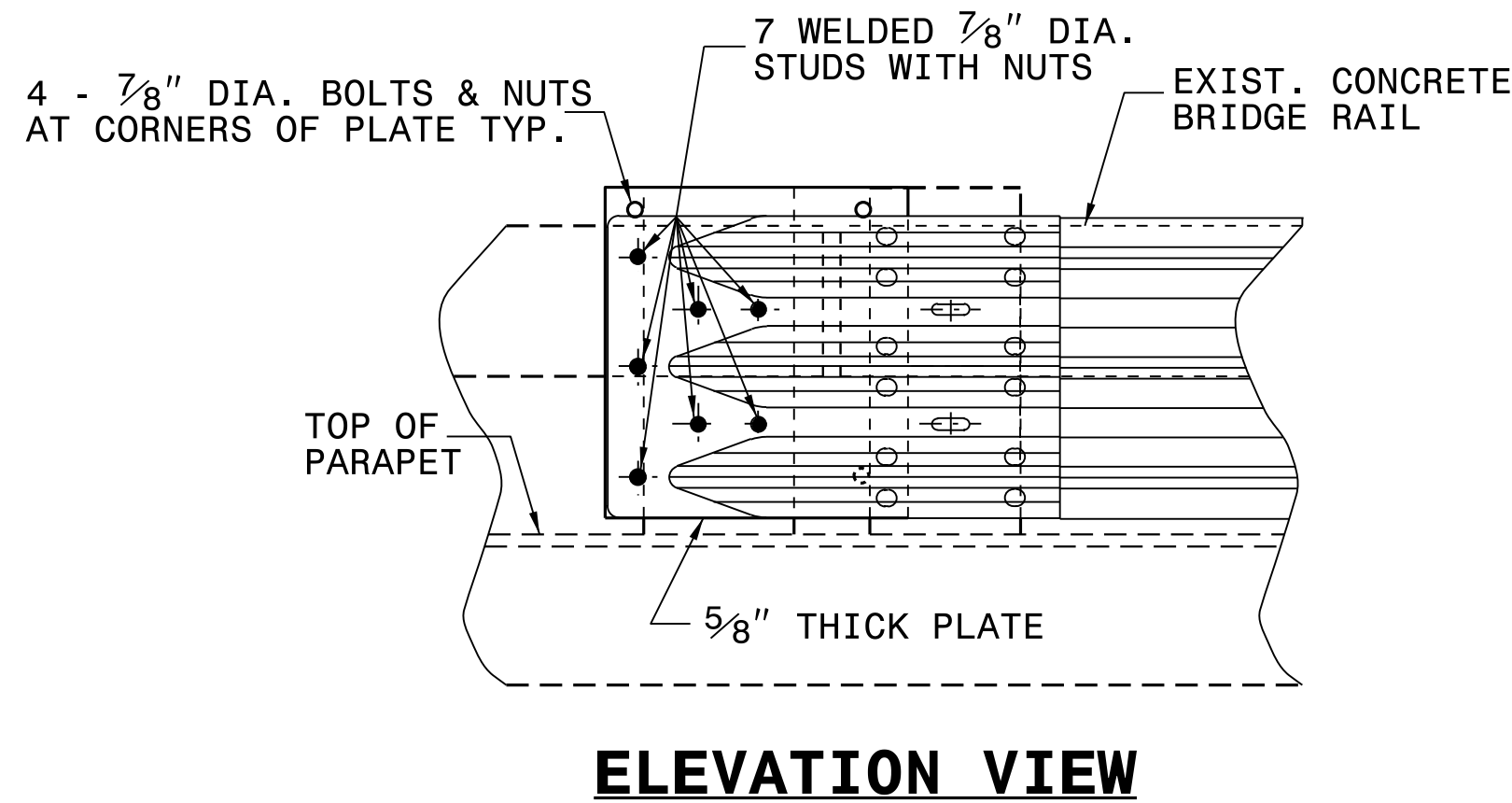
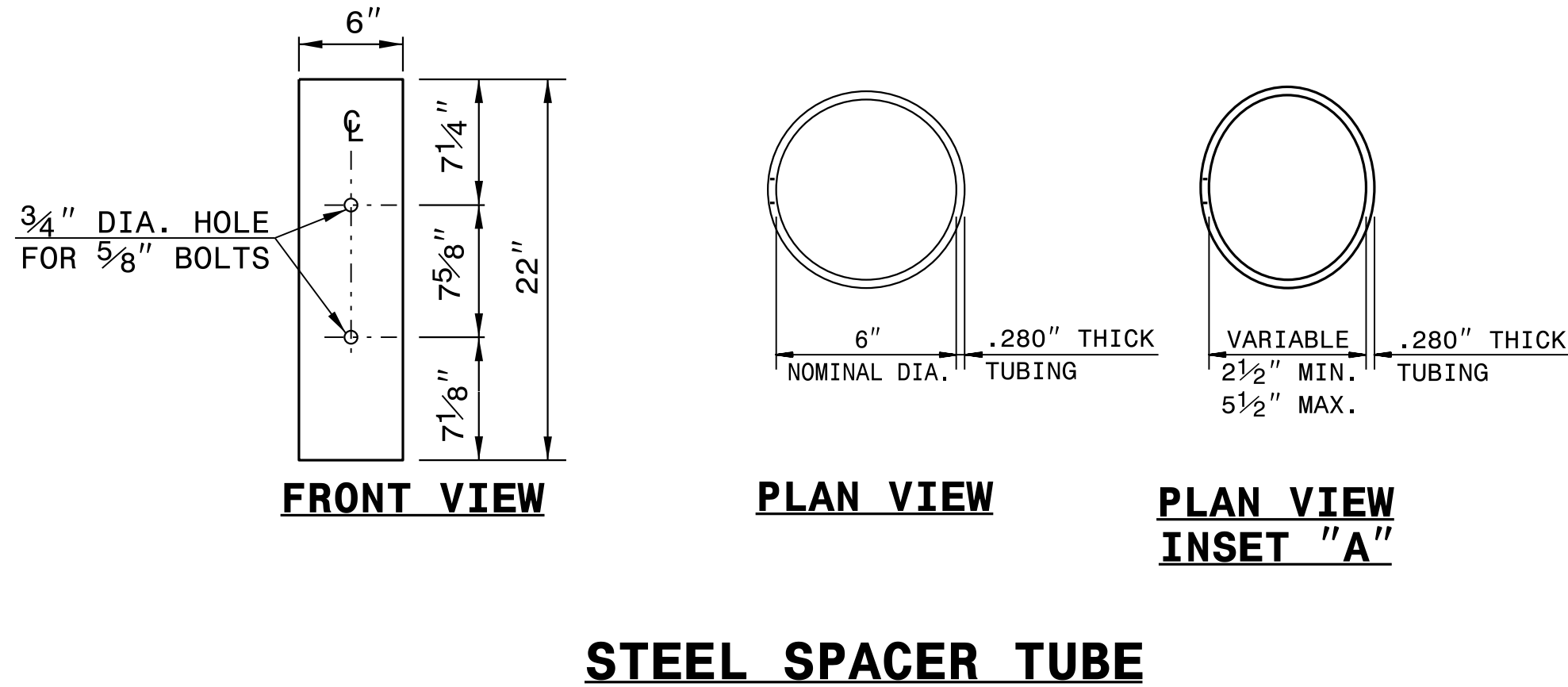
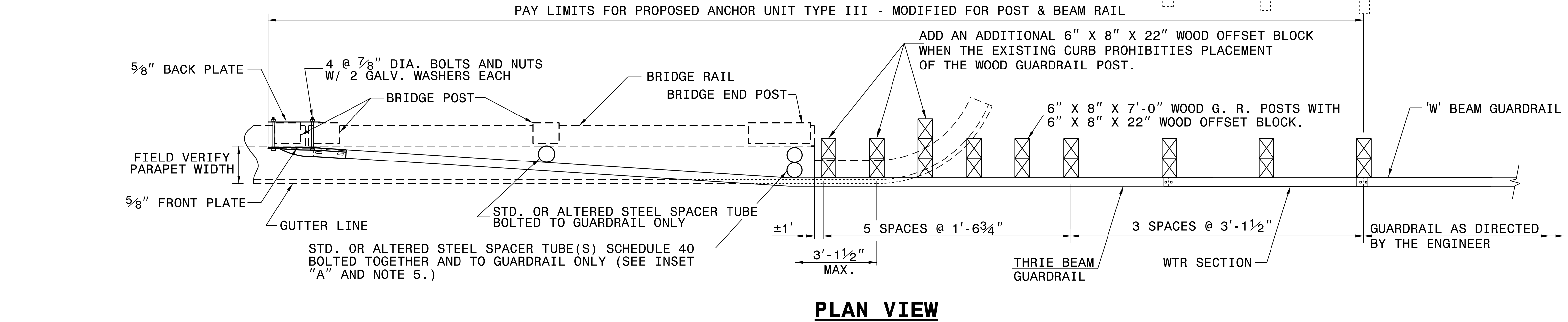
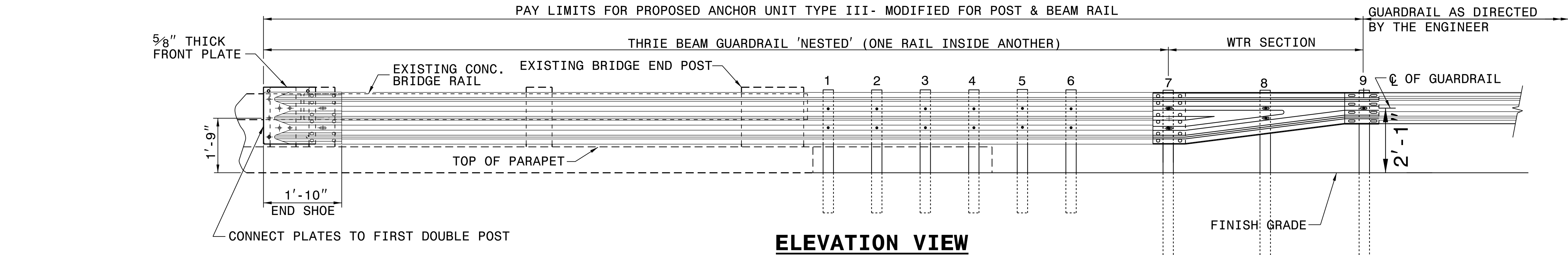


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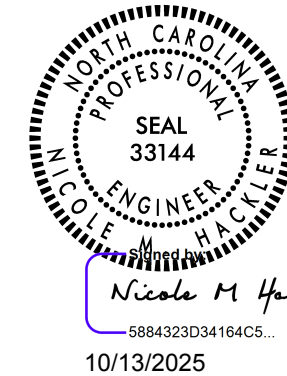
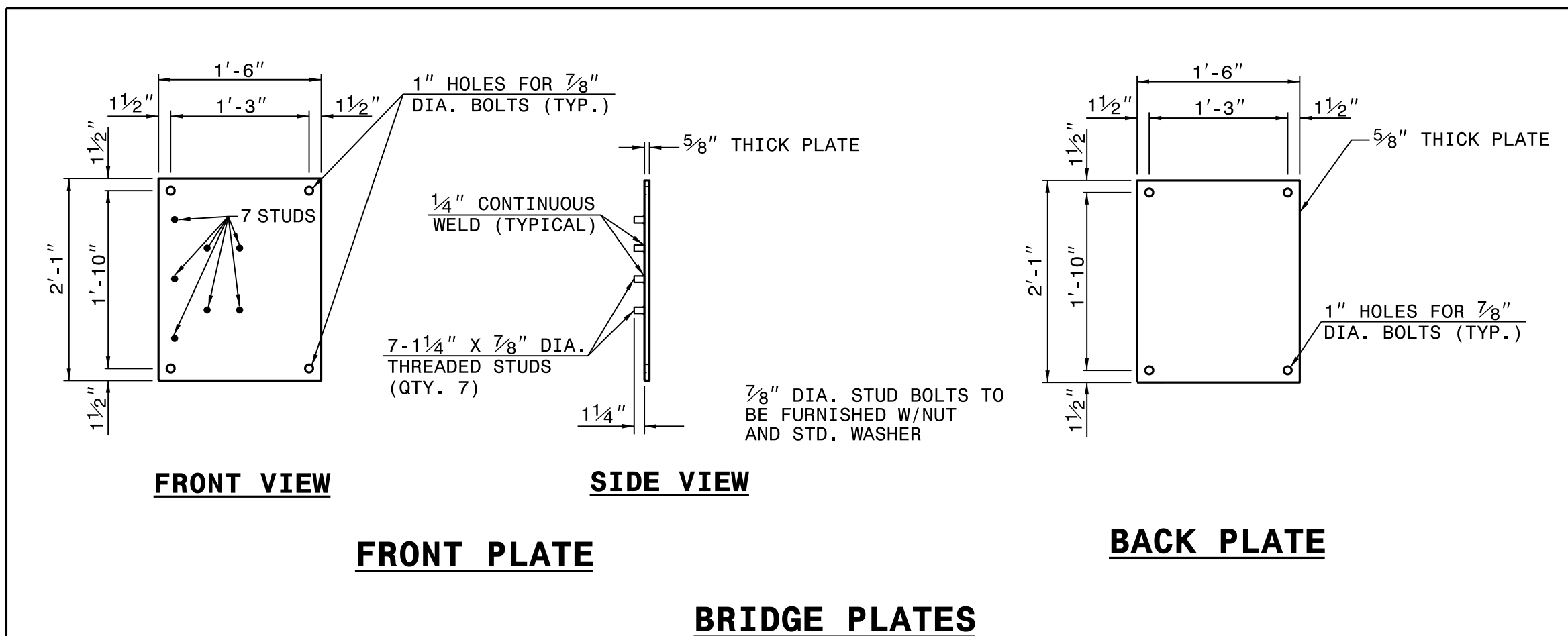
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: K. Aldridge	DATE: 02-25
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	



- GENERAL NOTES:
1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
 2. TAP NUTS FOR THE 7/8" DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
 3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
 4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
 5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
 6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
 7. USE THIS DETAIL ONLY FOR BRIGES WITH POST AND BEAM TYPE RAIL.
 8. ATTACH 1" X 1" BAR AND THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
 9. 1" X 1" BAR MAY NOT BE NEEDED ON BRIDGE RAILS WHERE FACE OF RAIL DOES NOT PROJECT BEYOND FACE OF POST.
 10. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
 11. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 12. SEE ROADWAY STANDARD DRAWING 862.03 SHEET 3 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT



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**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
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**TYPE III MODIFIED
FOR POST AND BEAM RAIL**

ORIGINAL BY: E.E. WARD DATE: 01-03
MODIFIED BY: JS Howerton DATE: 01-18
CHECKED BY: DATE:
FILE SPEC.: s:details\stand\bpii original.dgn

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞"Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST ⅝" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY ⅛" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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