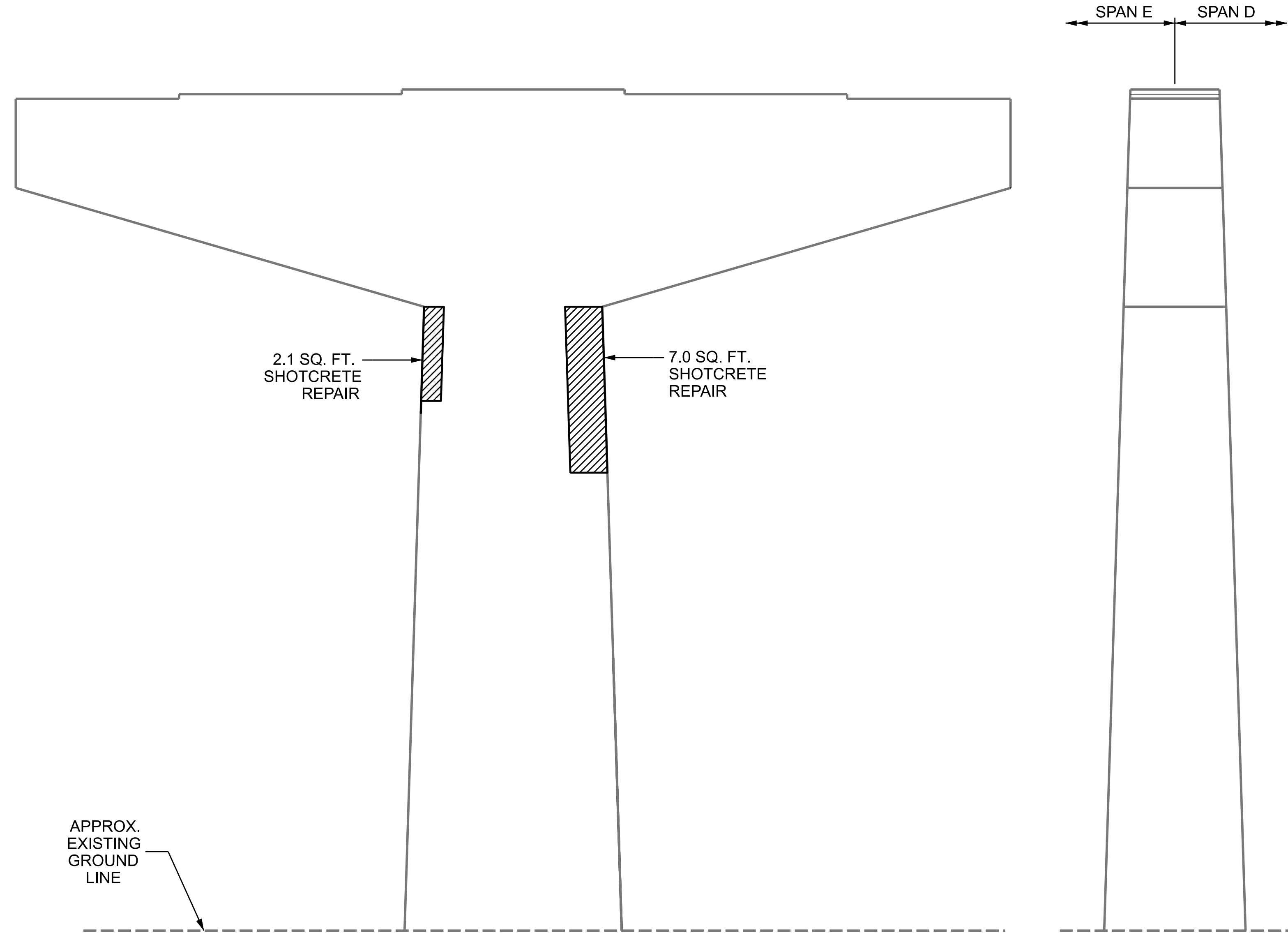




SPAN E
SPAN D

PLAN - BOTTOM OF CAP



2.1 SQ. FT.
SHOTCRETE
REPAIR

7.0 SQ. FT.
SHOTCRETE
REPAIR

APPROX.
EXISTING
GROUND
LINE

ELEVATION - SPAN E VIEW

END VIEW
(RIGHT SIDE)

AS-BUILT REPAIR QUANTITY TABLE

BENT 4 SPAN E FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
COLUMN	9.1	4.6		
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.
CAP		0.0		
COLUMN		0.0		

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

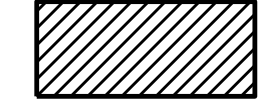
NOTES:

REPAIR LOCATIONS AND ESTIMATE OF 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CAP AND COLUMN REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.



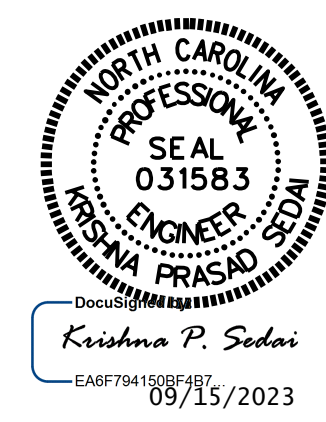
SHOTCRETE REPAIR AREA



EPOXY RESIN INJECTION (ERI)

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
BRIDGE NO. 190009

SHEET 2 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BENT 4
SPAN E FACE**

DRAWN BY : A. SORSENGINH DATE : 6/2022
CHECKED BY : S. AGUILA HERNANDEZ DATE : 6/2022

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1			3			S1-23
2			4			25

AS-BUILT REPAIR QUANTITY TABLE

END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	36.2	18.1		
CURTAIN WALL	0.0	0.0		
WING	0.0	0.0		
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	0.0	0.0		
EPOXY RESIN INJECTION		LIN. FT.	LIN. FT.	
CURTAIN WALL		0.0		
CAP		1.5		
EPOXY COATING		SQ. FT.	SQ. FT.	
TOP OF BENT CAP		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. FOR REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

NOTES

REPAIR LOCATIONS AND ESTIMATE OF 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 SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

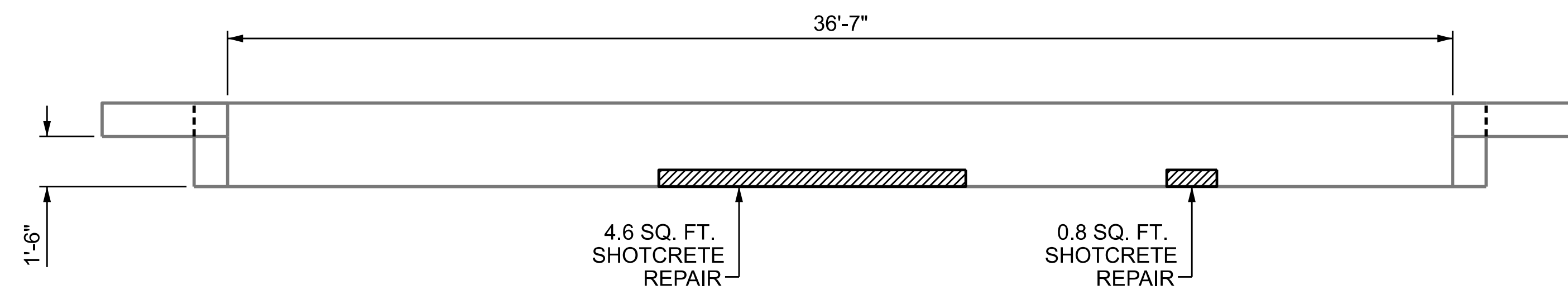
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

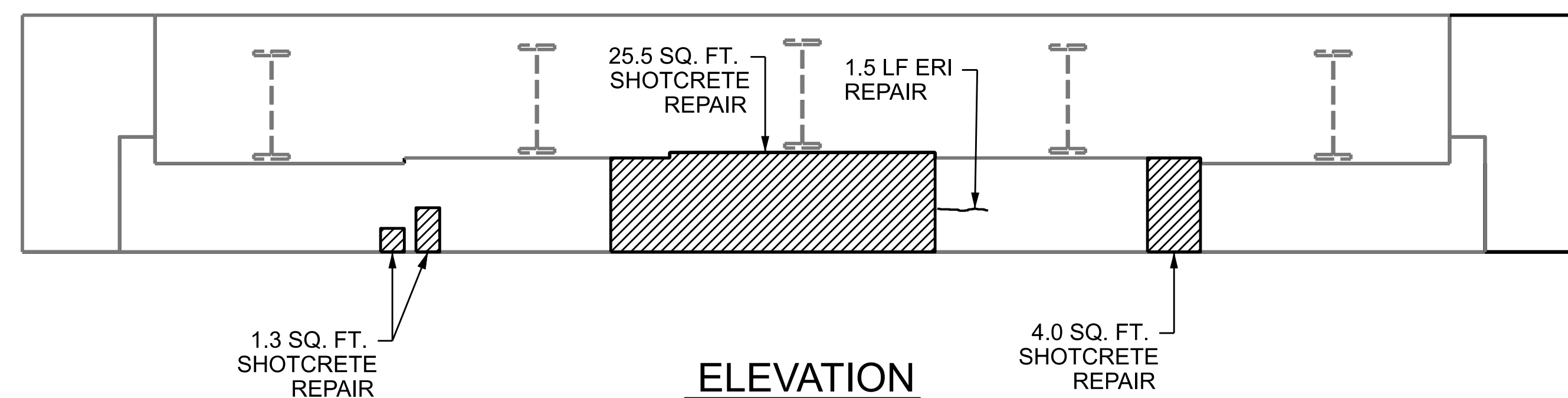
SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

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.

-  CONCRETE REPAIR AREA
-  SHOTCRETE REPAIR AREA
-  EPOXY RESIN INJECTION (ERI)

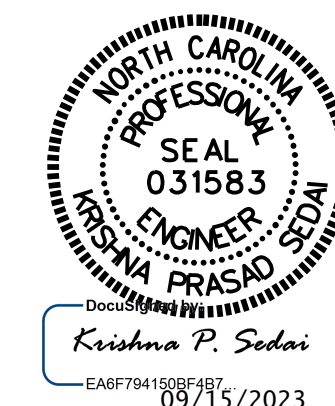


PLAN



ELEVATION

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190009



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

END BENT 2

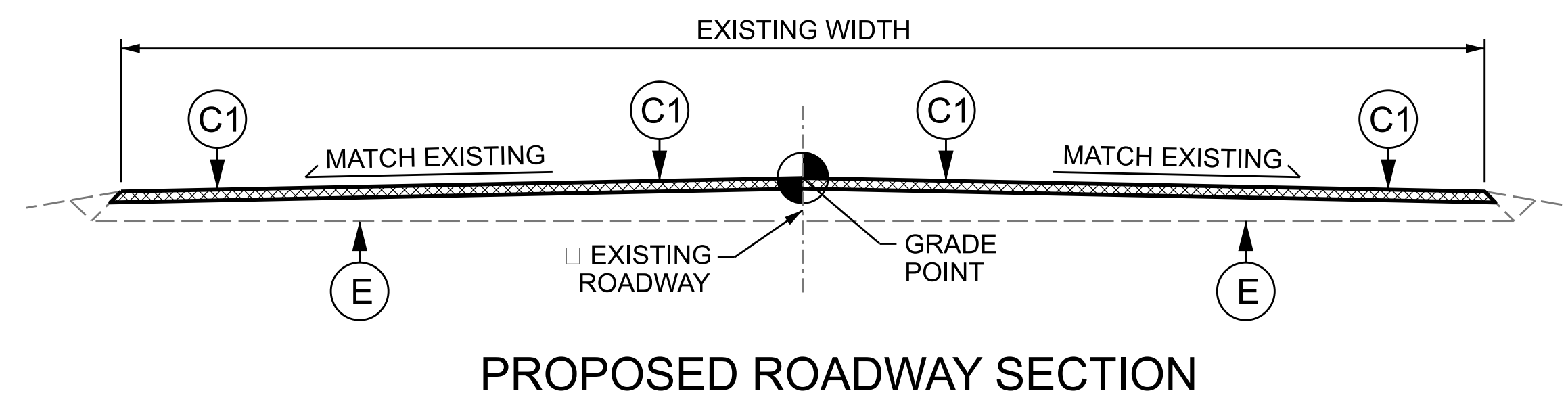
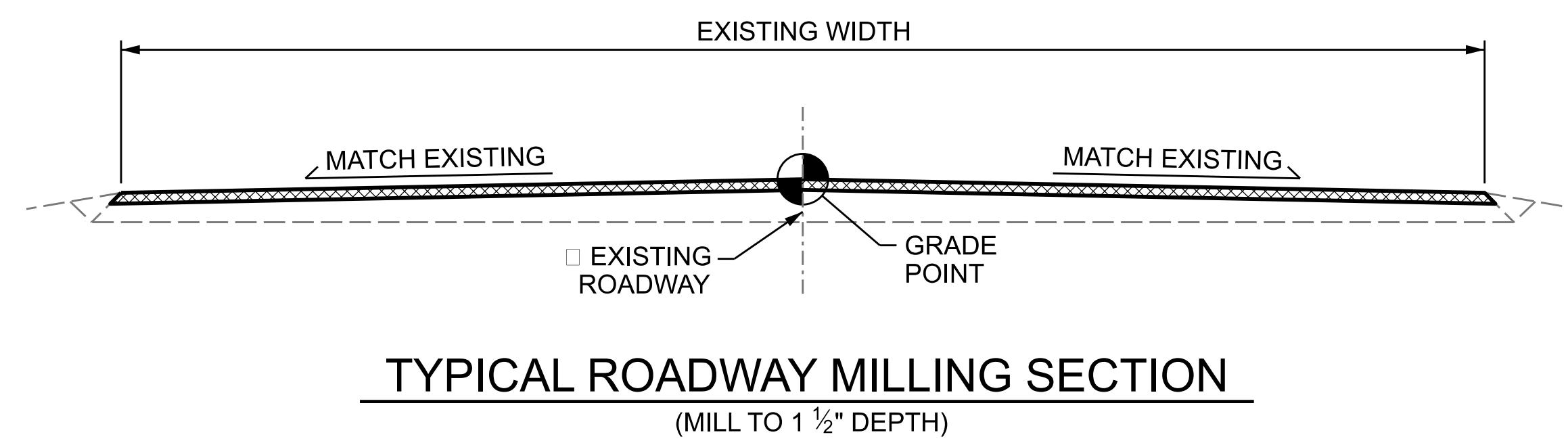
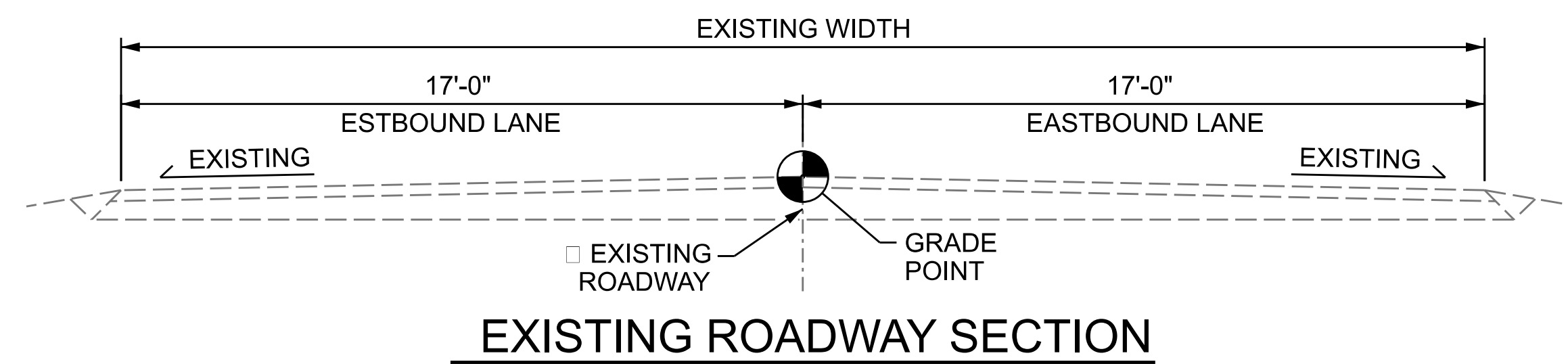
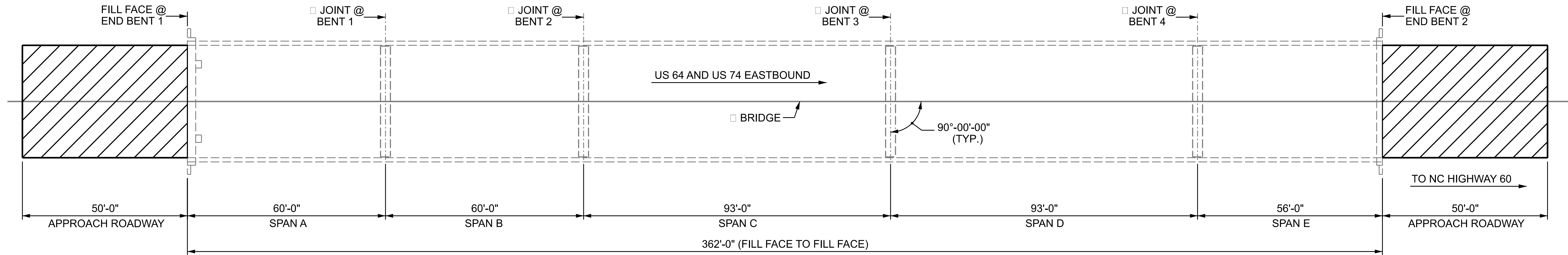
DRAWN BY : A. SORSENGINH DATE : 6/2022
 CHECKED BY : S. AGUILA HERNANDEZ DATE : 6/2022

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			25

NOTES

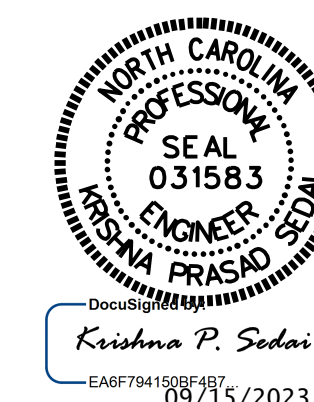
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.



SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	378.0 SQ. YD.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	40.0 TONS	
ASPHALT BINDER FOR PLANT MIX	5.0 TONS	

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E	EXISTING PAVEMENT

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 STATION: 190009



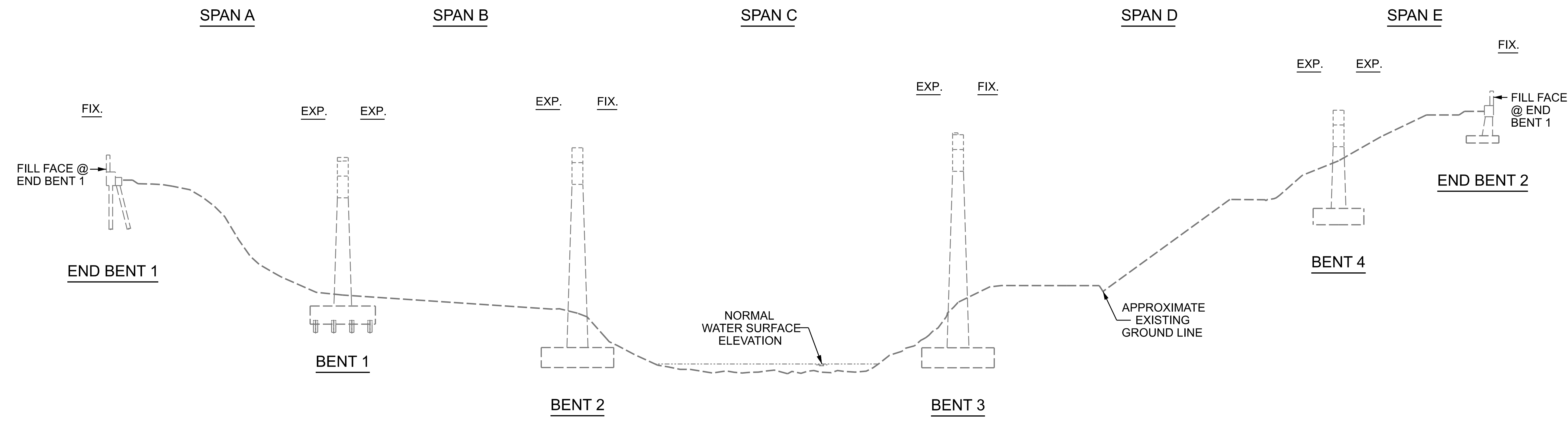
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

INCIDENTAL MILLING AND TYPICAL ROADWAY SECTIONS

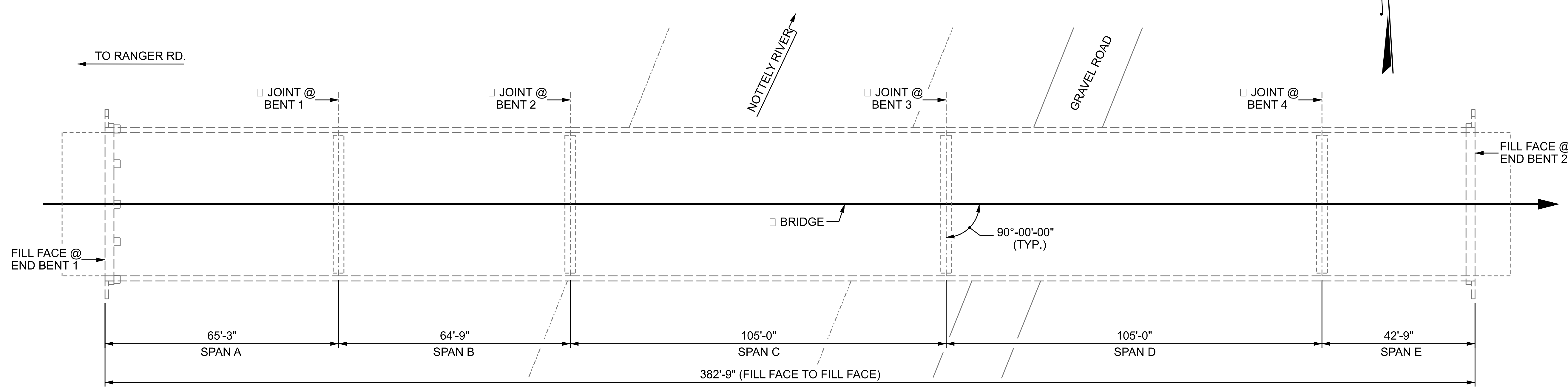
DRAWN BY : A. SORSENGINH DATE : 5/2022
 CHECKED BY : S. AGUILAR HERNANDEZ DATE : 6/2022

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1			3			TOTAL SHEETS
2			4			25



SECTION ALONG BRIDGE



PLAN

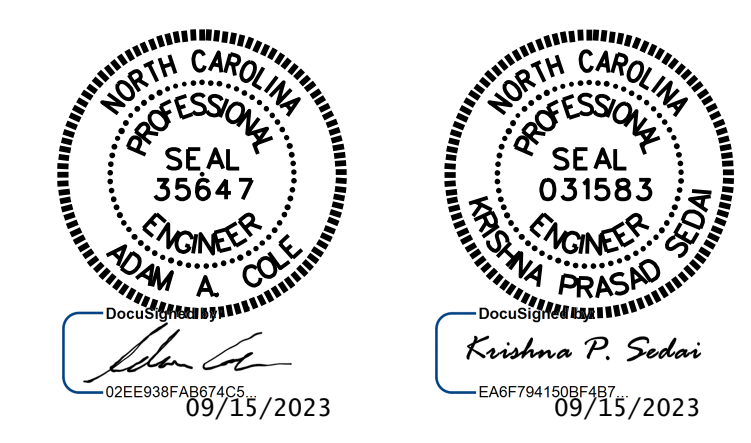
NOTES
 GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 4/5/2022.
 BRIDGE ORIENTATION CONFORMS TO THE EXISTING BRIDGE PLANS/ROUTINE INSPECTION.

- SCOPE OF WORK**
- PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION.
 - OVERLAY PREPARED TOP OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE - EARLY STRENGTH (LMC-ES).
 - REMOVE EXISTING JOINT MATERIAL AND INSTALL LINK SLABS AT BENTS 1 & 3
 - REMOVE EXISTING JOINT MATERIAL AND INSTALL FOAM JOINTS AT END BENTS AND BENTS 2 & 4.
 - GROOVE LMC BRIDGE DECK.
 - CLEAN AND PAINT EXISTING WEATHERING STEEL GIRDER ENDS AND BEARINGS.
 - REMOVE DEBRIS FROM TOP OF EXISTING END BENT AND BENT CAPS AND APPLY EPOXY COATING.
 - EPOXY RESIN INJECTION OF CONCRETE CRACKS.
 - REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.
 - PROPERLY PREPARE SPALLED AREAS IN EXISTING END BENT AND BENTS AND PERFORM SHOTCRETE AND CONCRETE REPAIRS.
 - CLEAN AND EPOXY COAT EXISTING PRESTRESSED CONCRETE GIRDER ENDS.

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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GENERAL DRAWING
 FOR BRIDGE ON
 US 64 & US 74 WBL
 OVER NOTTELY RIVER AND
 GRAVEL RD.



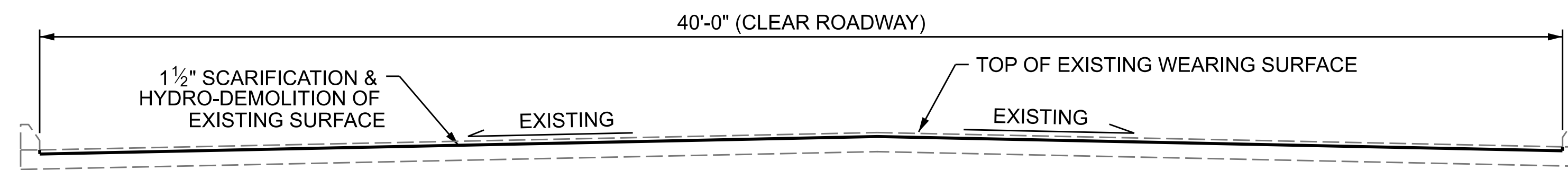
I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER _____ DATE _____

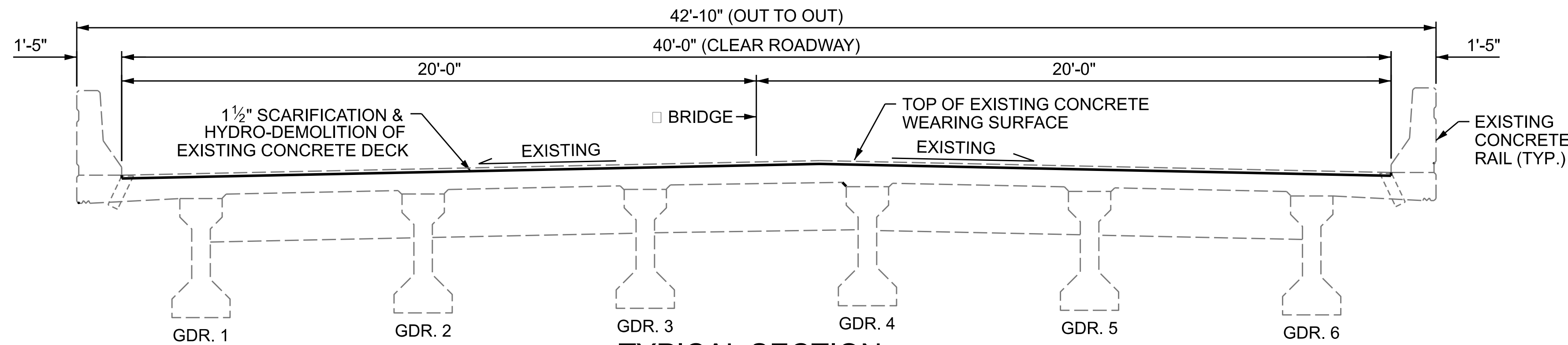
DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022

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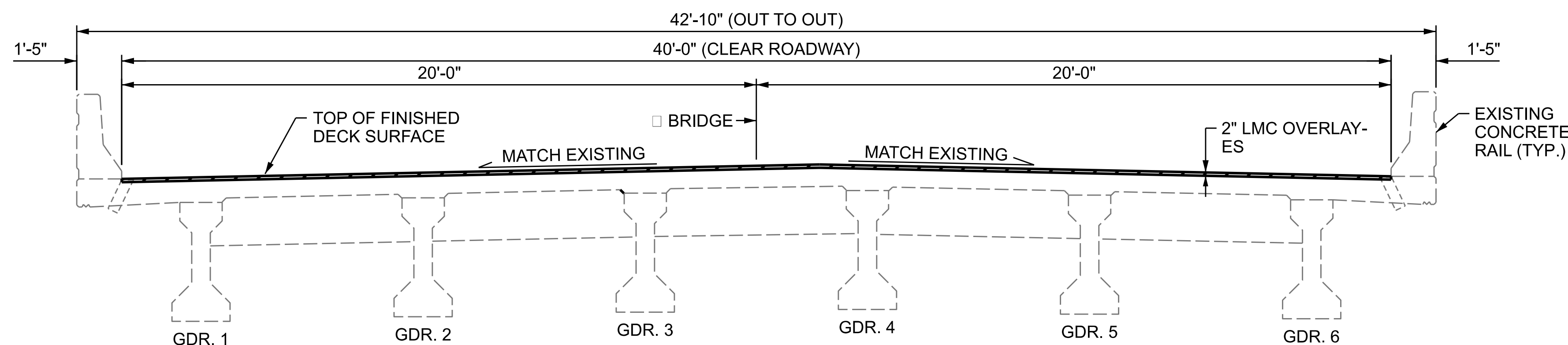
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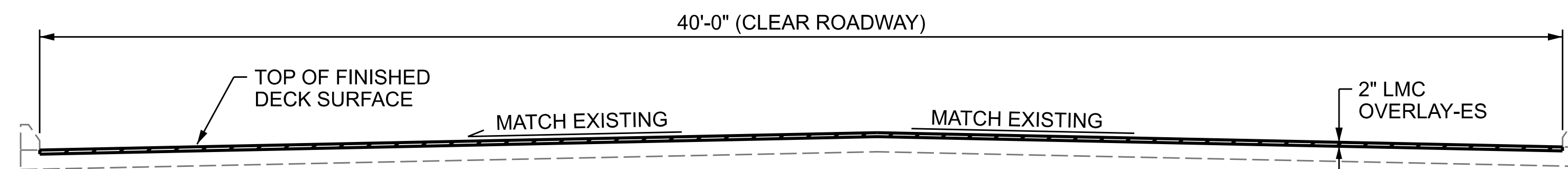
TYPICAL SECTION - APPROACH SLAB 1
(EXISTING)



TYPICAL SECTION
(EXISTING)



TYPICAL SECTION
(PROPOSED)

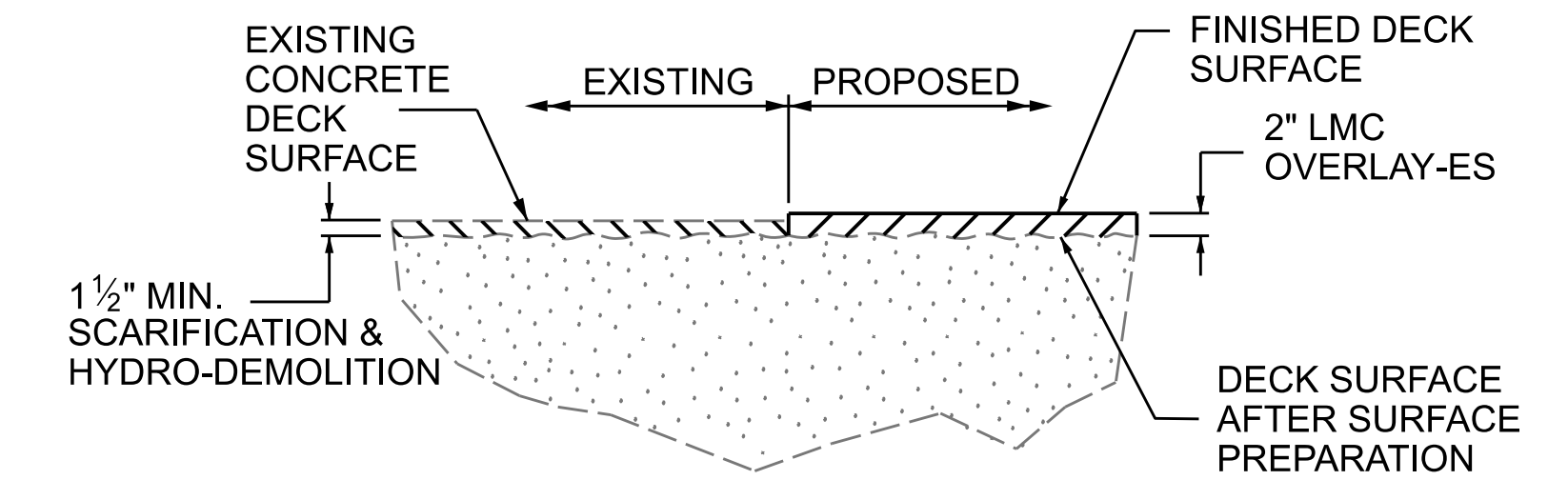


TYPICAL SECTION - APPROACH SLAB 1
(PROPOSED)

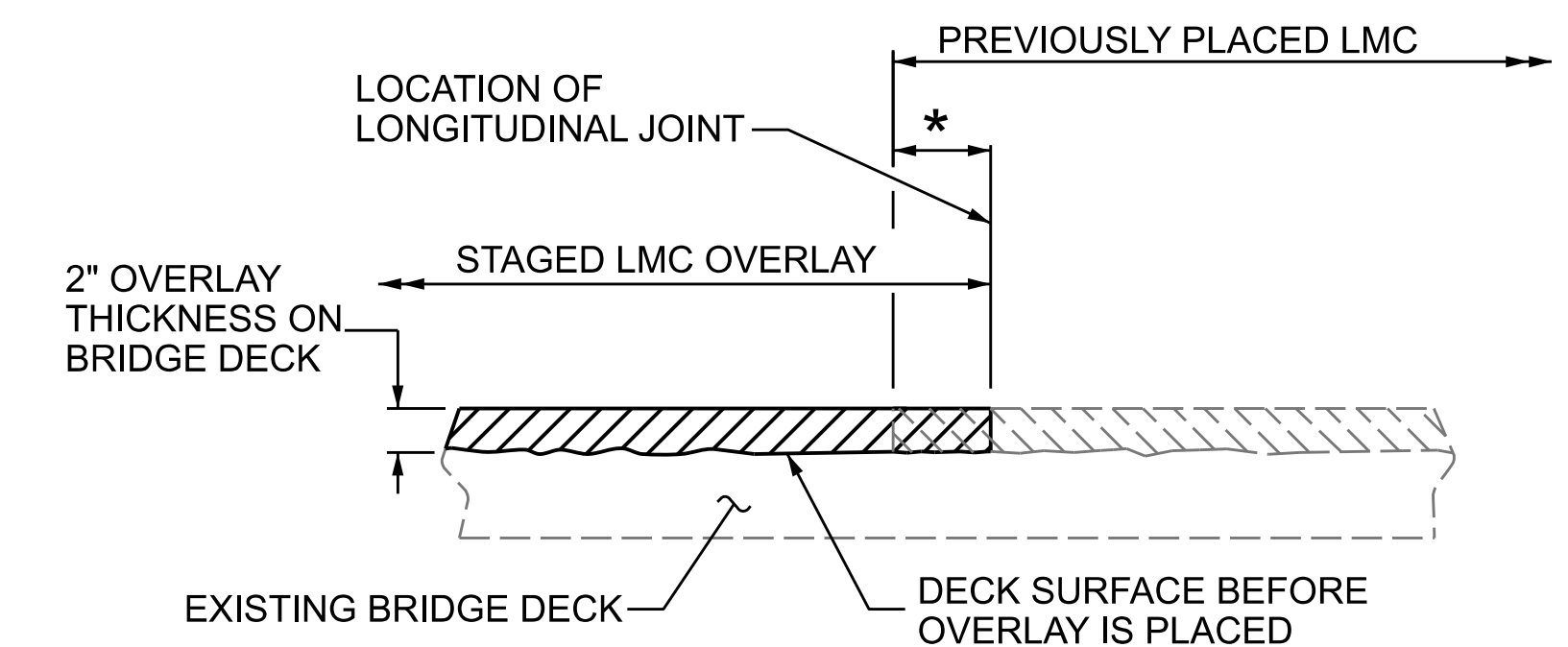
NOTES:

WHEN PREPARING THE SURFACE FOR LMC OVERLAY - ES ADJACENT TO A PREVIOUSLY PLACED LMC STAGE, THE PREVIOUSLY PLACED LMC SHALL BE REMOVED FOR A DISTANCE OF 4 INCHES FROM THE LMC EDGE. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISIONS. NEW LMC SHALL BE PLACED IN THE 4 INCH OVER LAP, AS PART OF NEW LMC STAGE PLACEMENT.

SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LMC PLACEMENT.



DETAIL OF LMC OVERLAY-ES

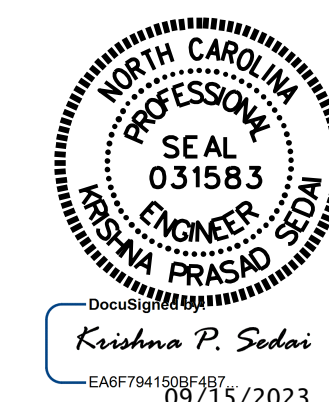


SECTION THRU DECK
STAGED LMC OVERLAY-ES JOINT

* 4" OVERLAP BETWEEN OVERLAYS

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
BRIDGE NO. 190010

SHEET 1 OF 2



**TYPICAL SECTIONS
SPANS A, B, & E
& SURFACE
PREPARATION DETAILS**

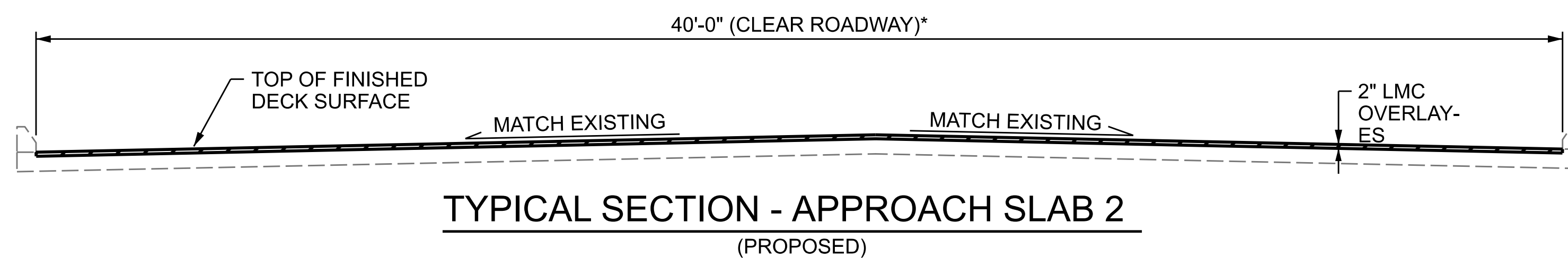
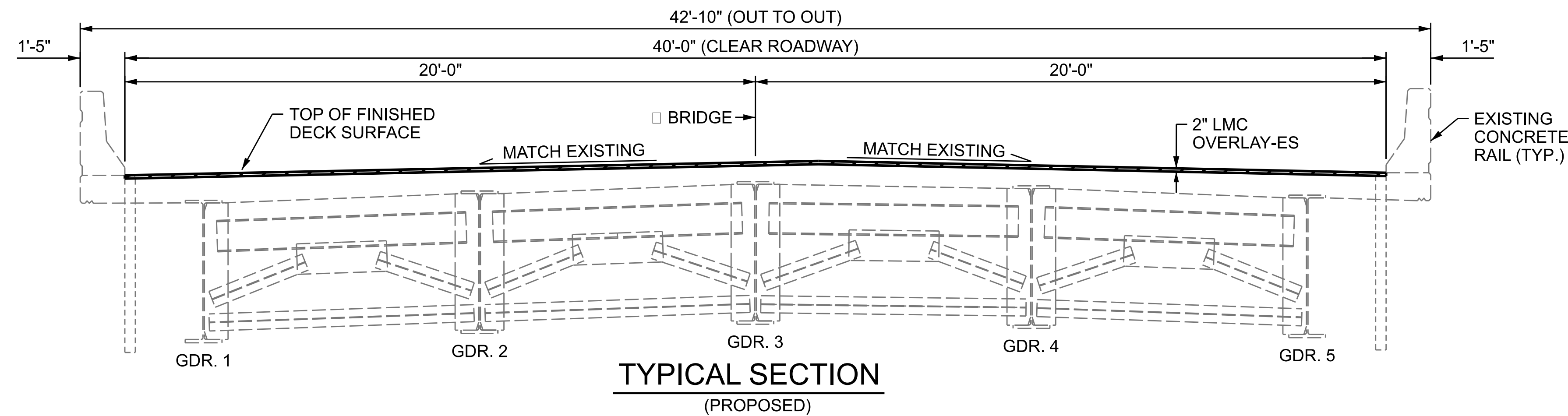
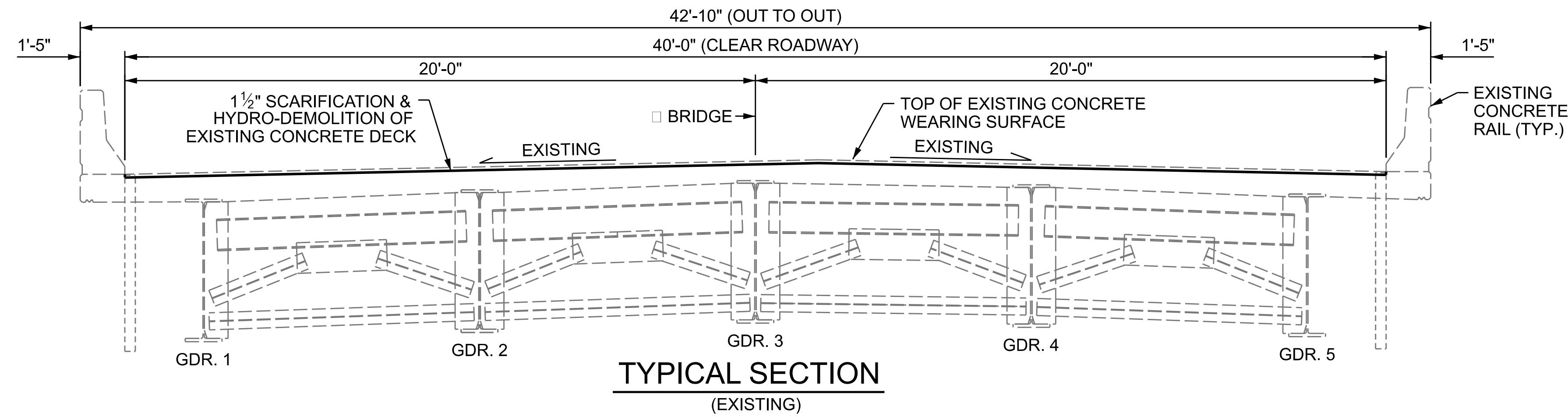
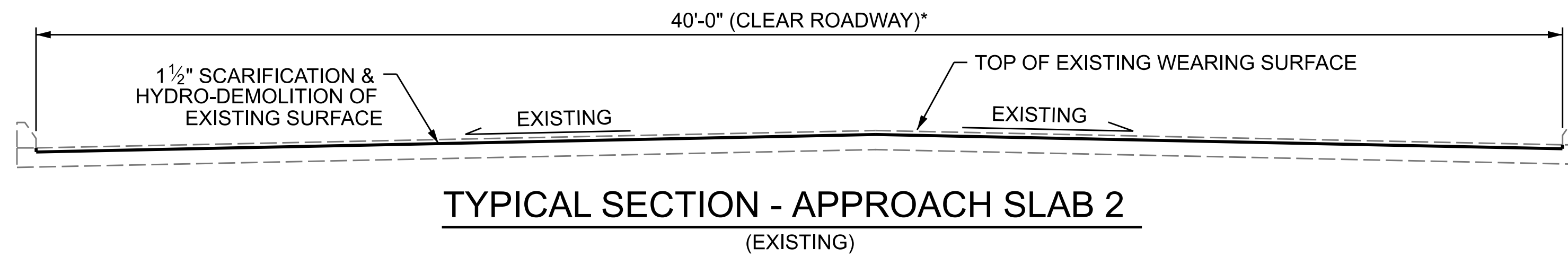
DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
CHECKED BY : A. SORSENGINH DATE : 6/2022
DESIGN ENGINEER OF RECORD: _____ DATE : _____

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kseda

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2			4			28

NOTES:
 FOR NOTES AND STAGED LMC OVERLAY-ES JOINT DETAILS, SEE SHEET S2-02



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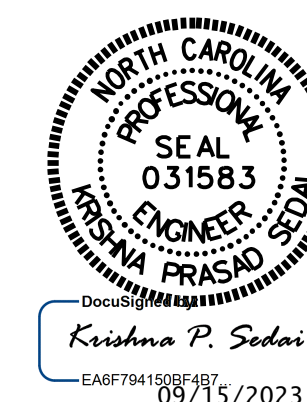
CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**TYPICAL SECTIONS
 SPANS C & D
 & SURFACE
 PREPARATION DETAILS**

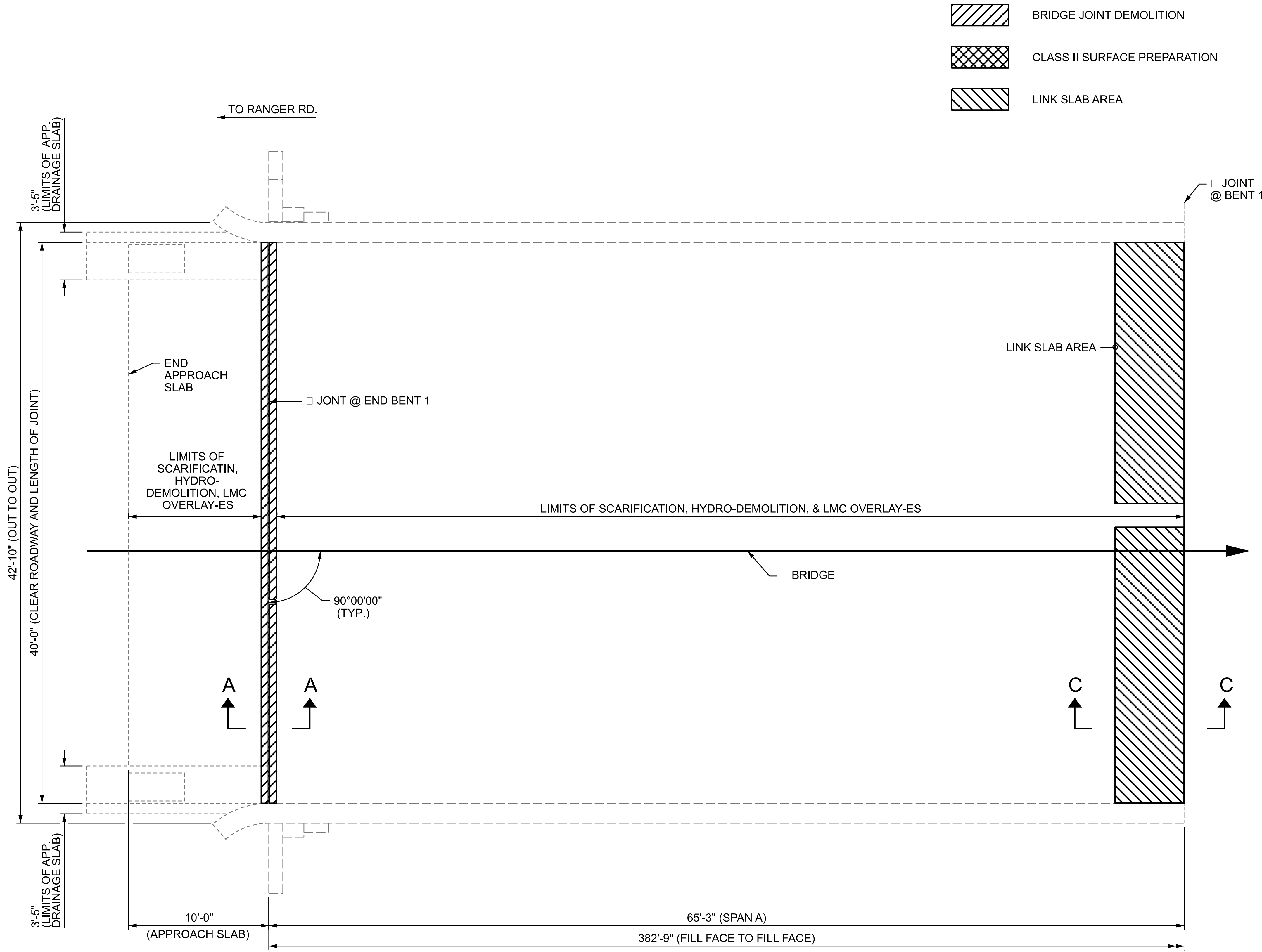


DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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 ksedai

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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-03
1			3			TOTAL SHEETS
2			4			28



AS-BUILT REPAIR QUANTITY TABLE

DECK SURFACE REPAIR - SPAN A		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	288.0 SQ. YDS.	
CLASS II SURFACE PREPARATION	0.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	288.0 SQ. YDS.	
LATEX MODIFIED CONCRETE OVERLAY-ES	18.0 CU. YDS.	
PLACING & FINISHING OF LATEX MOD. CON. OVERLAY-ES	288.0 SQ. YDS.	
GROOVING BRIDGE FLOORS	2374.0 SQ. FT.	
LINK SLAB FOR PRESERVATION	197.0 SQ. FT.	
APPROACH SLAB		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	43.0 SQ. YDS.	
CLASS II SURFACE PREPARATION	0.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	43.0 SQ. YDS.	
LATEX MODIFIED CONCRETE OVERLAY-ES	2.7 CU. YDS.	
PLACING & FINISHING OF LATEX MOD. CON. OVERLAY-ES	43.0 SQ. YDS.	
GROOVING BRIDGE FLOORS	278.0 SQ. FT.	

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.

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

FOR "CONCRETE FOR DECK REPAIR", SEE SPECIAL PROVISIONS.

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

FOR SECTION C-C, SEE "LINK SLAB FOR PRESERVATION DETAILS" SHEET.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE-ES, SEE SPECIAL PROVISIONS.

FOR LMC OVERLAY-ES SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

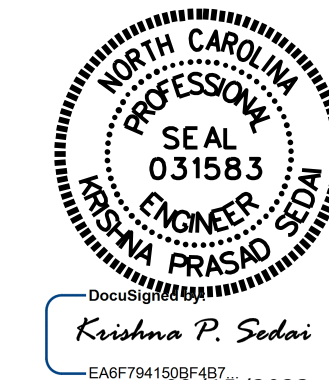
THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

PREVIOUSLY PLACED LMC OVERLAY AT STAGED EDGES SHALL BE DEMOLISHED BACK A MINIMUM OF 4 INCHES AND RECAST WITH LMC. SEE STAGED LMC OVERLAY-ES JOINT DETAIL.

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010
 SHEET 1 OF 5



**DECK SURFACE REPAIRS
 APPROACH SLAB & SPAN A**

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: DATE :

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2			4			

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AS-BUILT REPAIR QUANTITY TABLE

DECK SURFACE REPAIR - SPAN C

	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	465.0 SQ. YD.	
CLASS II SURFACE PREPARATION	0.0 SQ. YD.	
HYDRO-DEMOLITION OF BRIDGE DECK	465.0 SQ. YD.	
LATEX MODIFIED CONCRETE OVERLAY-ES	29.1 CU. YD.	
PLACING & FINISHING OF LATEX MOD. CON. OVERLAY-ES	465.0 SQ. YD.	
GROOVING BRIDGE FLOORS	3836.0 SQ. FT.	
LINK SLAB FOR PRESERVATION	317.0 SQ. FT.	

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.

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

FOR "CONCRETE FOR DECK REPAIR", SEE SPECIAL PROVISIONS.

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

FOR SECTION D-D, SEE "LINK SLAB FOR PRESERVATION DETAILS" SHEET.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE-ES, SEE SPECIAL PROVISIONS.

FOR LMC OVERLAY-ES SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

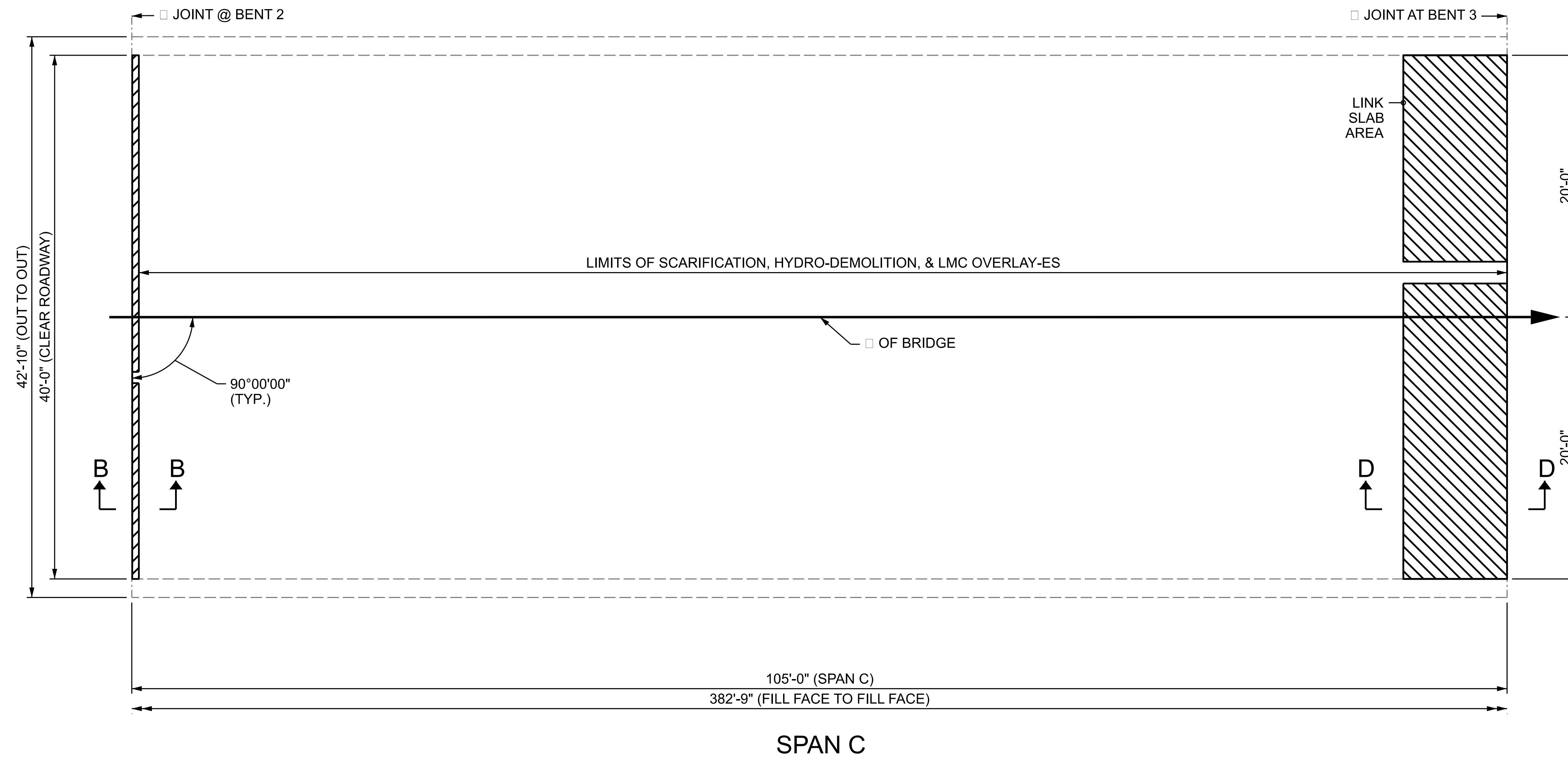
PREVIOUSLY PLACED LMC OVERLAY AT STAGED EDGES SHALL BE DEMOLISHED BACK A MINIMUM OF 4 INCHES AND RECAST WITH LMC. SEE STAGED LMC OVERLAY-ES JOINT DETAIL.

 BRIDGE JOINT DEMOLITION

 CLASS II SURFACE PREPARATION

 LINK SLAB AREA

← TO RANGER RD.

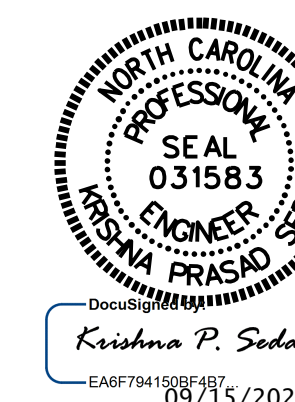


PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 3 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

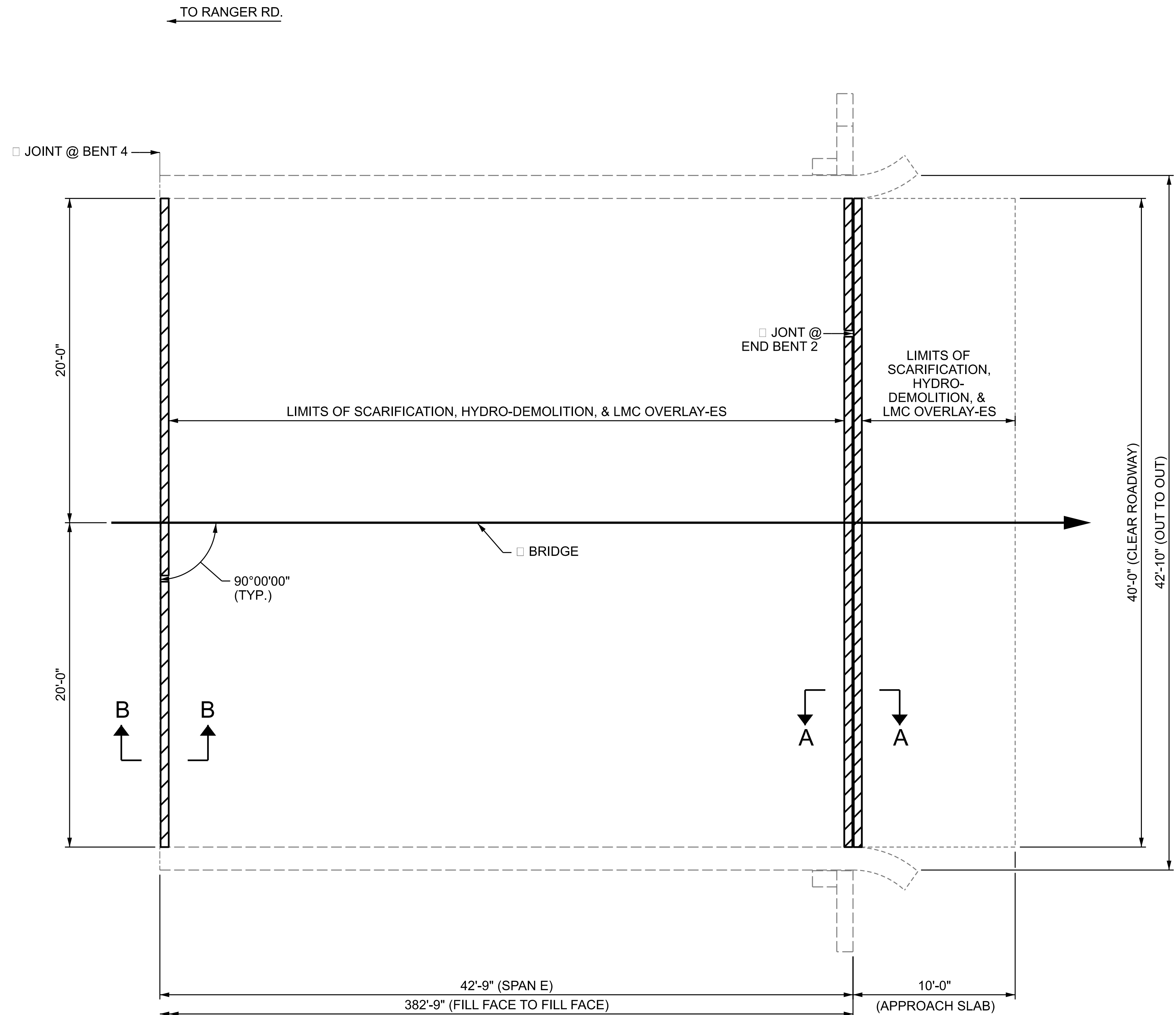
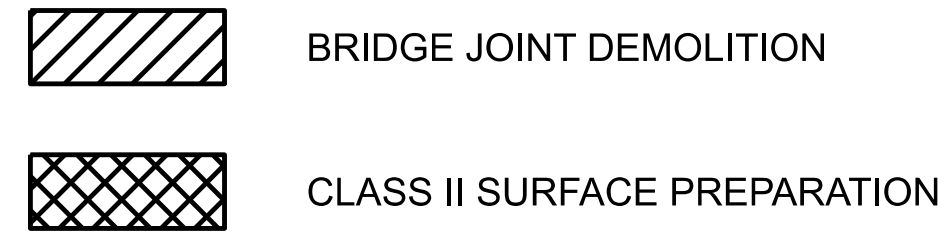
DECK SURFACE REPAIRS
SPAN C

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
CHECKED BY : A. SORSENGINH DATE : 6/2022
DESIGN ENGINEER OF RECORD: DATE :

9/15/2023
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-06
1			3			TOTAL SHEETS
2			4			28



SPAN E

AS-BUILT REPAIR QUANTITY TABLE

DECK SURFACE REPAIR - SPAN E		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	186.0 SQ. YDS.	
CLASS II SURFACE PREPARATION	0.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	186.0 SQ. YDS.	
LATEX MODIFIED CONCRETE OVERLAY-ES	11.6 CU. YDS.	
PLACING & FINISHING OF LATEX MOD. CON. OVERLAY-ES	186.0 SQ. YDS.	
GROOVING BRIDGE FLOORS	1539.0 SQ. FT.	
APPROACH SLAB		
	ESTIMATE	ACTUAL
SCARIFYING BRIDGE DECK	43.0 SQ. YDS.	
CLASS II SURFACE PREPARATION	0.0 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	43.0 SQ. YDS.	
LATEX MODIFIED CONCRETE OVERLAY-ES	2.7 CU. YDS.	
PLACING & FINISHING OF LATEX MOD. CON. OVERLAY-ES	43.0 SQ. YDS.	
GROOVING BRIDGE FLOORS	324.0 SQ. FT.	

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.

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

FOR "CONCRETE FOR DECK REPAIR", SEE SPECIAL PROVISIONS.

FOR SECTIONS A-A AND B-B, SEE "JOINT DETAILS" SHEET.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED CONCRETE-ES, SEE SPECIAL PROVISIONS.

FOR LMC OVERLAY-ES SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

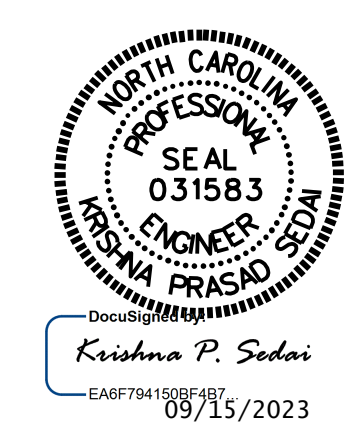
THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II (PARTIAL DEPTH) SURFACE PREPARATION ARE APPROXIMATE AND MAY NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED AT THE PROJECT SITE.

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

PREVIOUSLY PLACED LMC OVERLAY AT STAGED EDGES SHALL BE DEMOLISHED BACK A MINIMUM OF 4 INCHES AND RECAST WITH LMC. SEE STAGED LMC OVERLAY-ES JOINT DETAIL.

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010
 SHEET 5 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

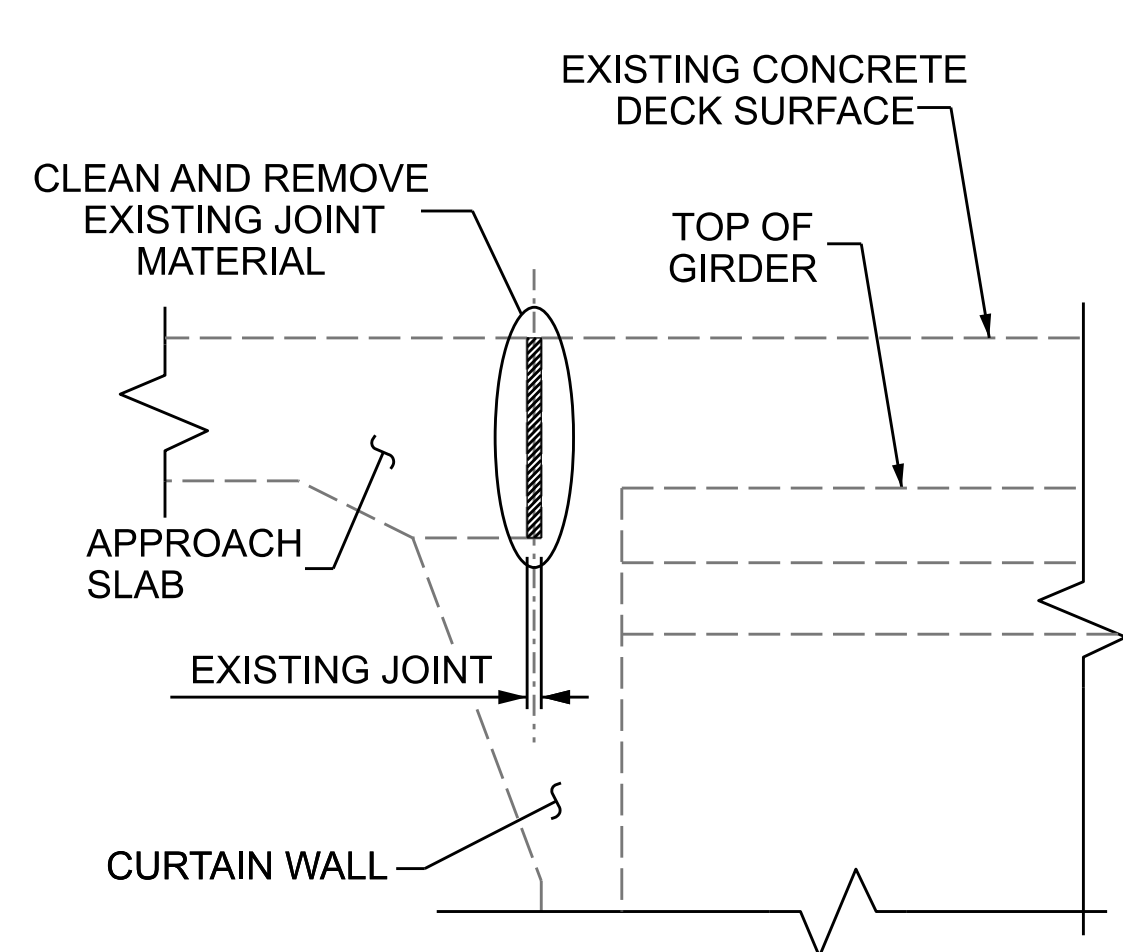
**DECK SURFACE REPAIRS
 SPAN E & APPROACH SLAB**

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

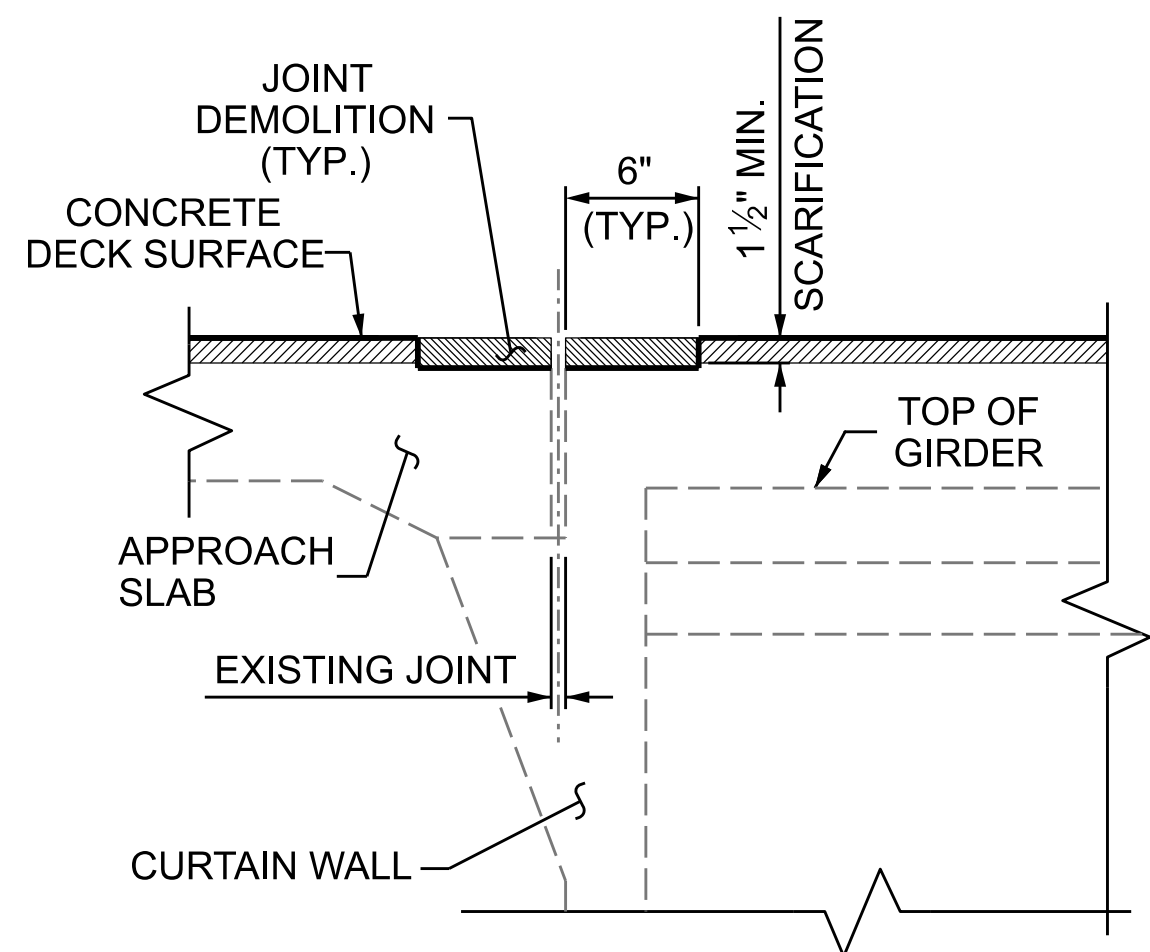
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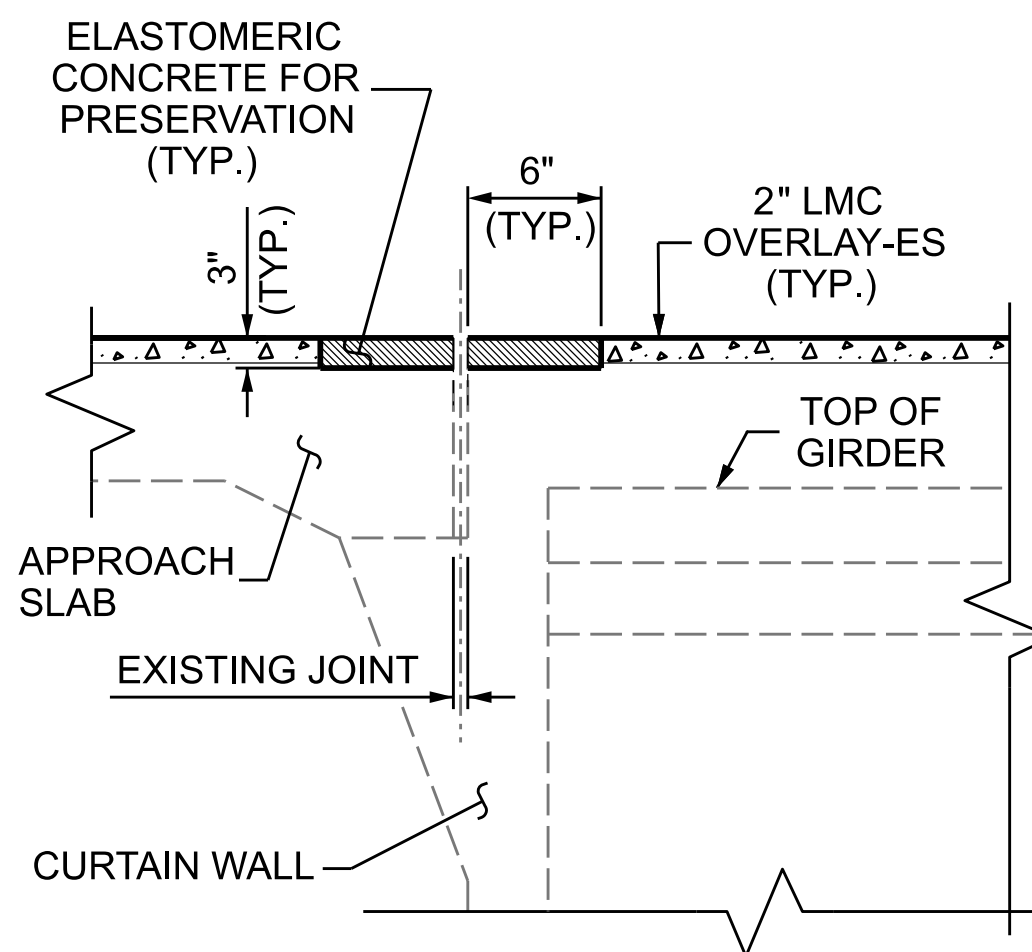
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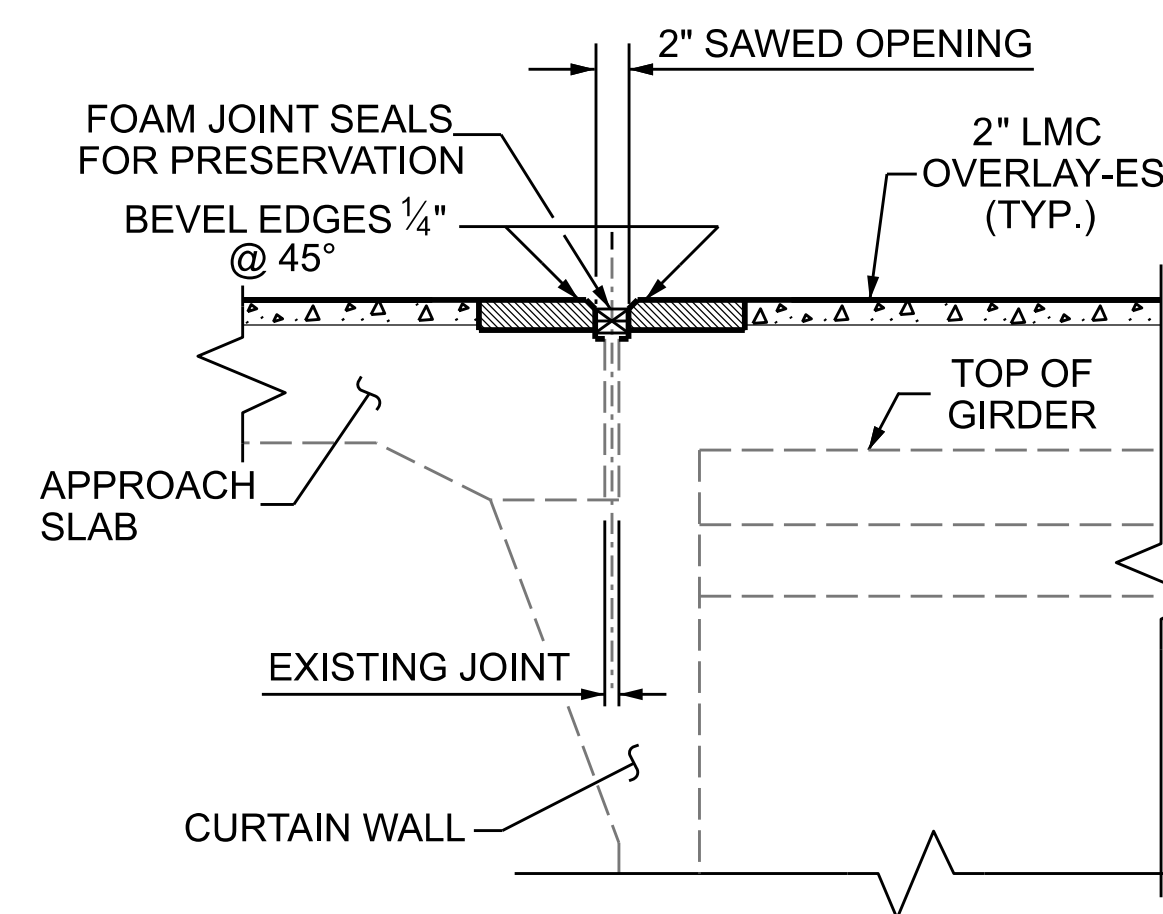
EXISTING JOINT
(END BENT 1 SHOWN, END BENT 2 SIMILAR)



MINIMUM EXISTING JOINT DEMOLITION & SCARIFICATION



PROPOSED JOINT WITH PRE-SAWED DIMENSION

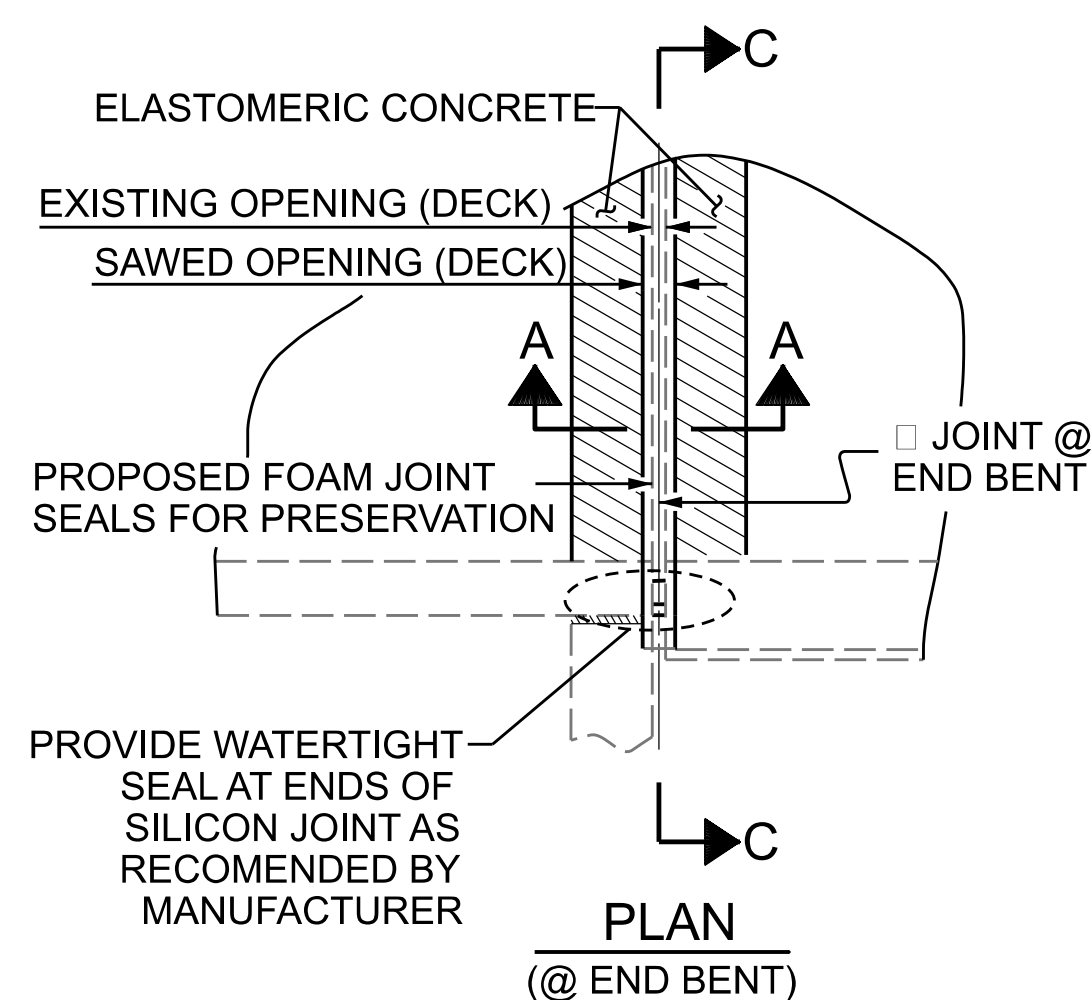


PROPOSED FOAM JOINT

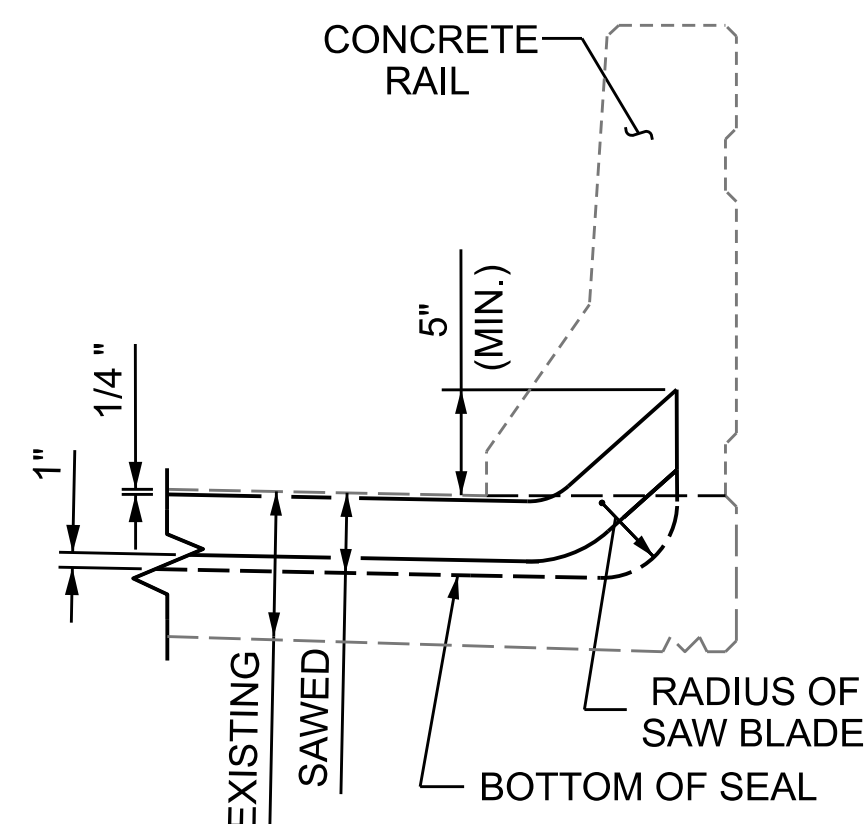
SECTION A-A

JOINT REPAIR QUANTITY TABLE			
	BRIDGE JOINT DEMOLITION	FOAM JOINT SEALS FOR PRESERVATION	ELASTOMERIC CONCRETE FOR PRESERVATION
END BENT 1	40.0 SQ. FT.	40.0 LF	10.0 CU. FT.
END BENT 2	40.0 SQ. FT.	40.0 LF	10.0 CU. FT.
* TOTAL	80.0 SQ. FT.	80.0 LF	20.0 CU. FT.

* BASED ON THE MINIMUM BLOCKOUT SHOWN.



PLAN
(@ END BENT)



SECTION C-C

JOINT SEAL DETAILS

NOTE

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN DETAIL BY MORE THAN 1/4", NOTIFY ENGINEER. REVISION TO THE JOINT SEAL SIZE MIGHT BE NECESSARY.

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

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 OF THE JOINT SEAL SHALL BE WATERTIGHT.

DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND THAT ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

A MANUFACTURER'S CERTIFIED TRAINED REPRESENTATIVE SHALL BE PRESENT DURING THE INSTALLATION OF THE FIRST JOINT OF THE PROJECT, OR UNTIL THE ENGINEER IS SATISFIED WITH THE INSTALLATION PROCESS.

FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL OR ELASTOMERIC CONCRETE SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRET.

FOAM JOINT SEALS FOR PRESERVATION SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

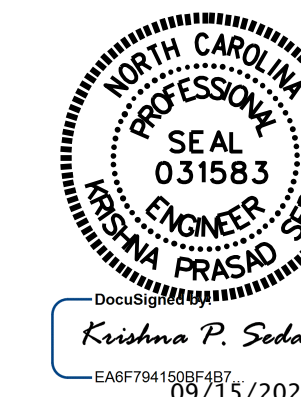
FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
BRIDGE NO. 190010

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS

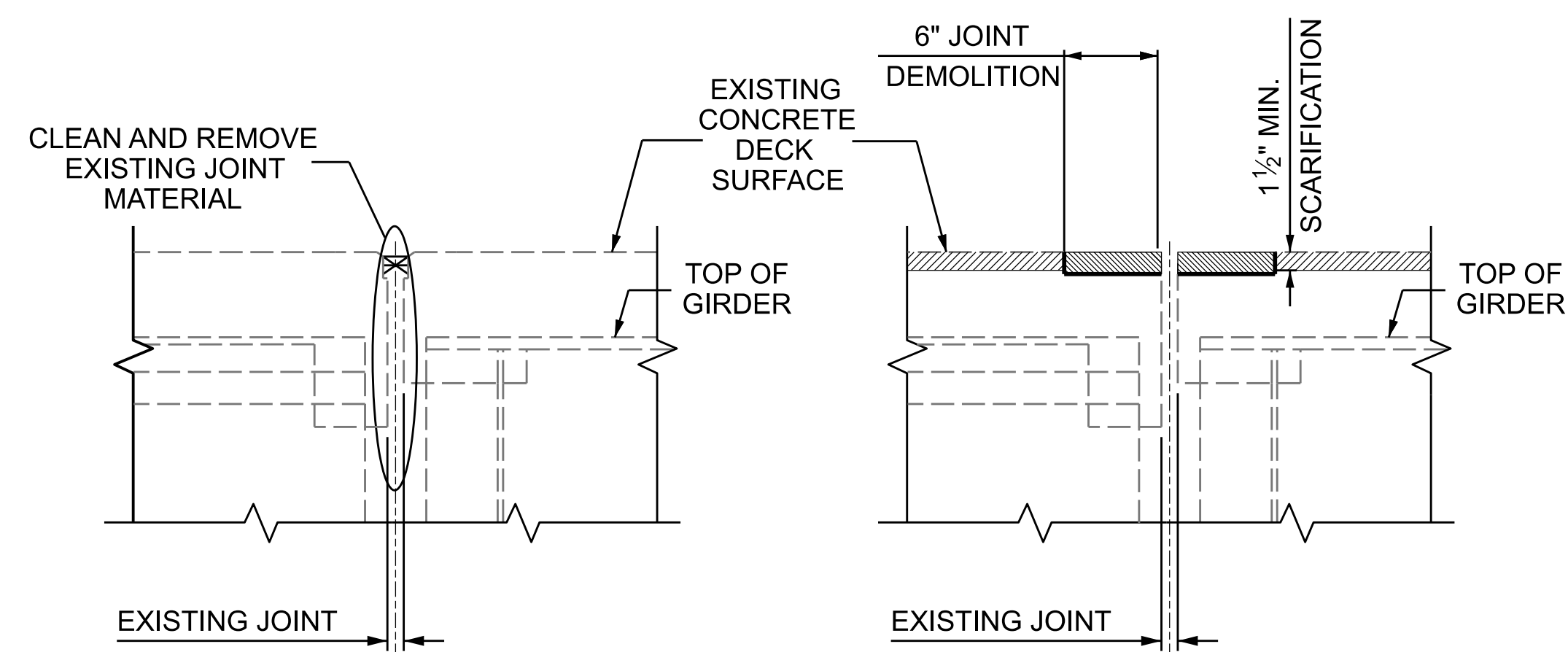


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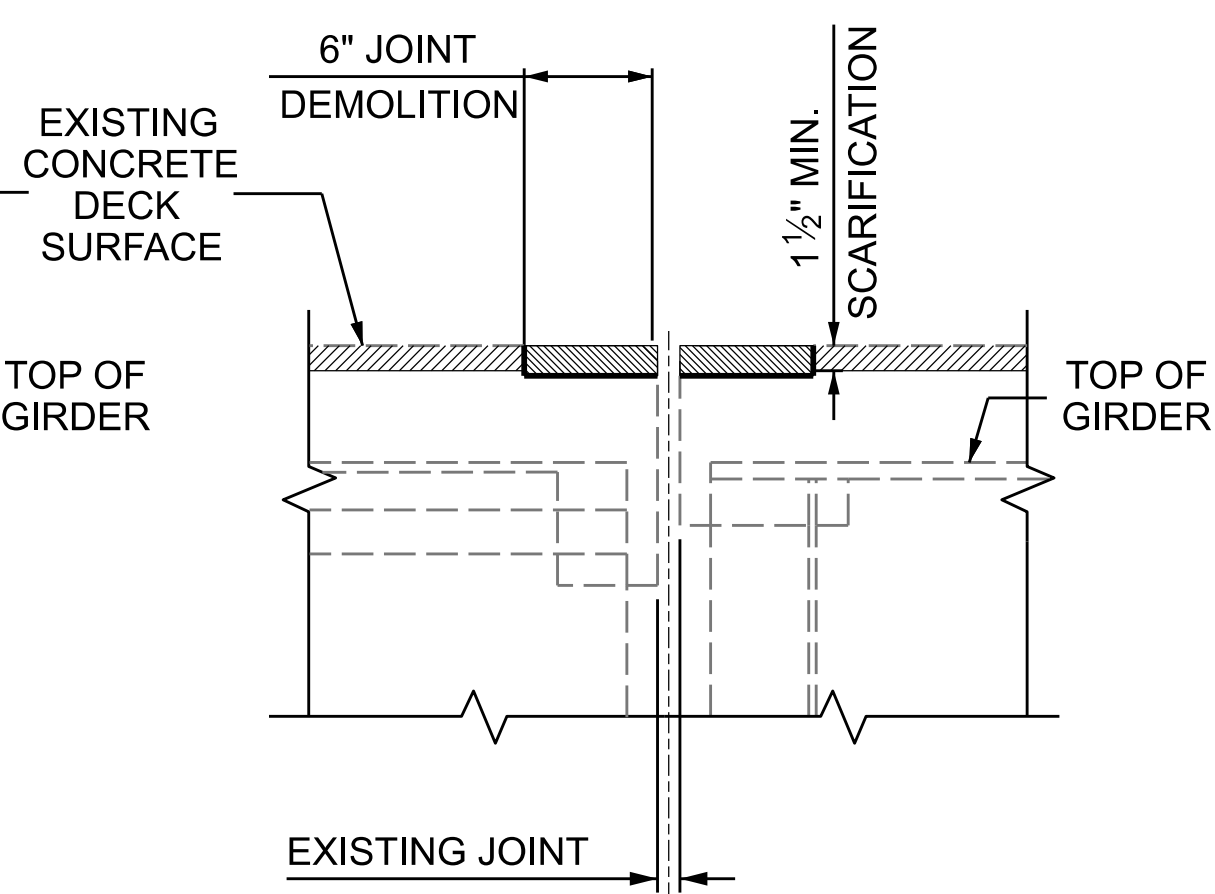
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TOTAL SHEETS 28

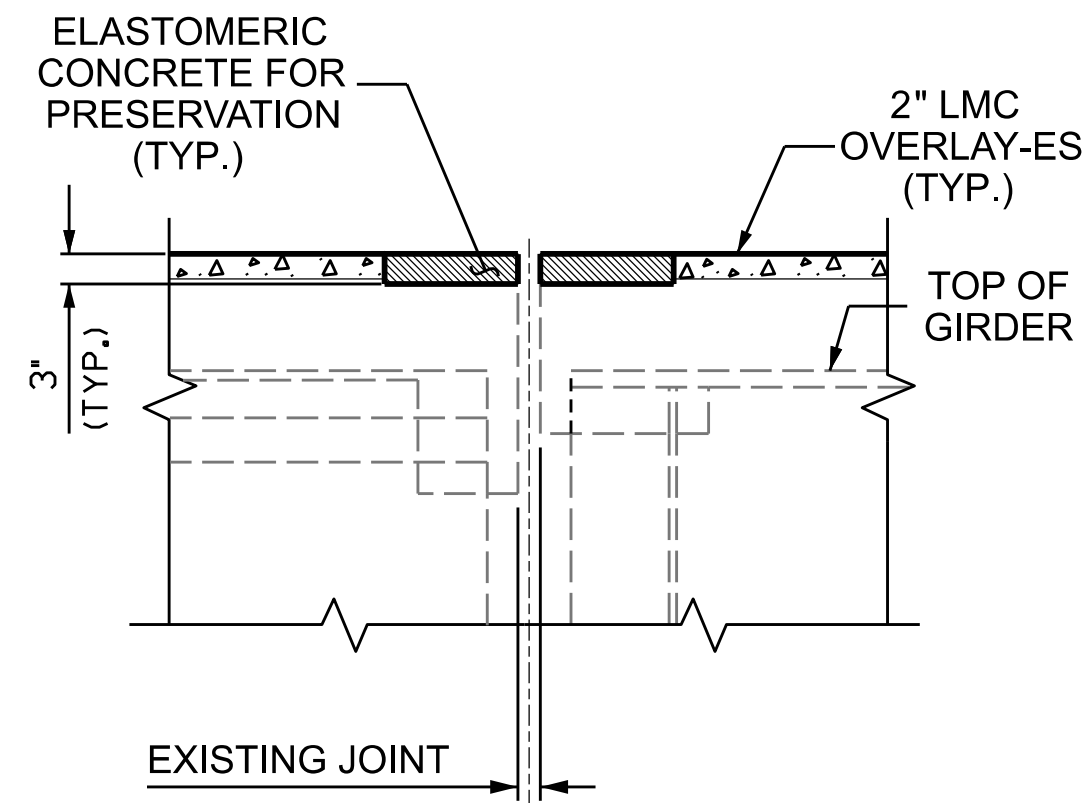
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CHECKED BY : A. SORSENGINH DATE : 6/2022
DESIGN ENGINEER OF RECORD: DATE :



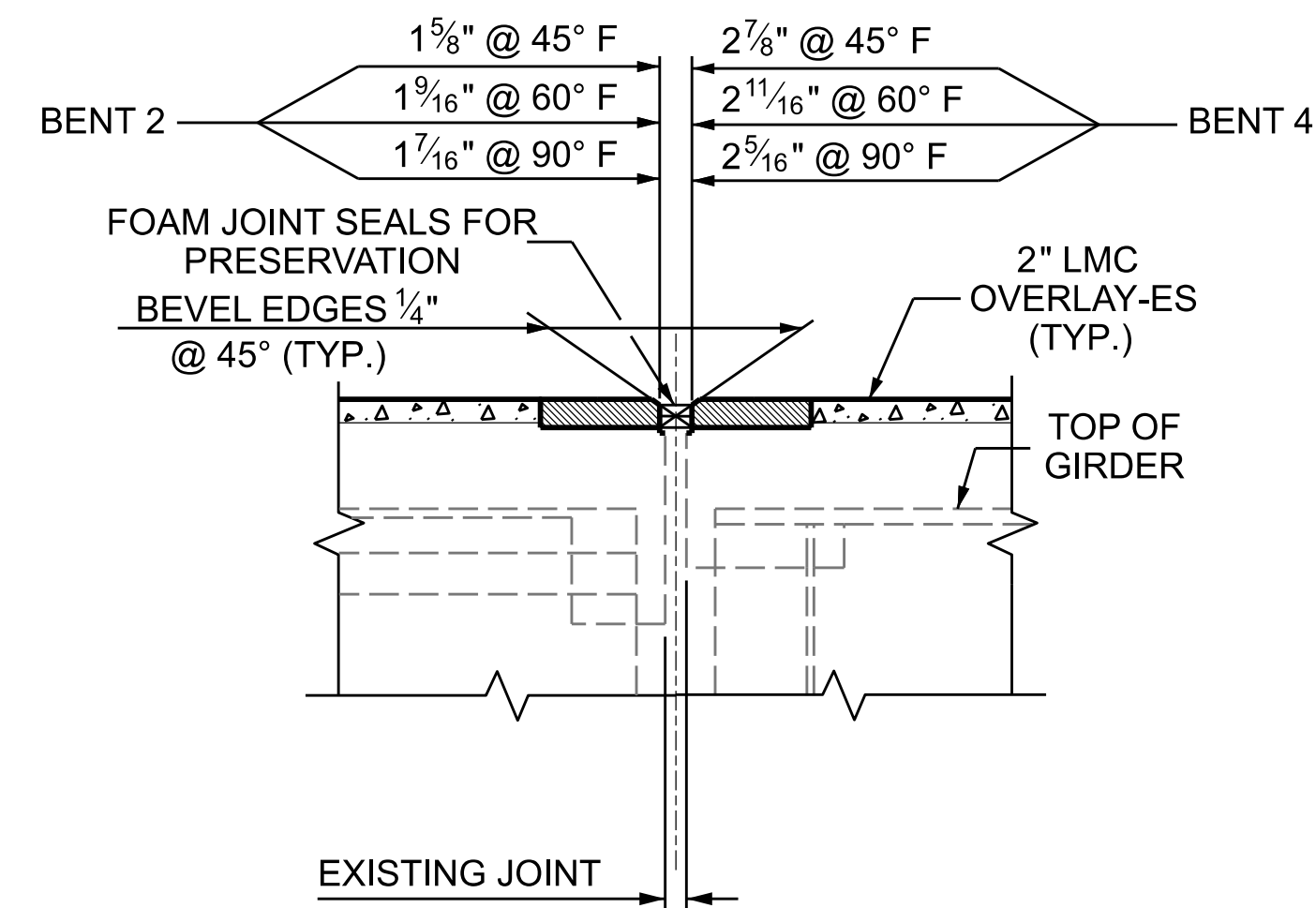
EXISTING JOINT
(BENT 2 SHOWN, BENT 4 SIMILAR)



MINIMUM EXISTING JOINT DEMOLITION & SCARIFICATION



PROPOSED JOINT WITH PRE-SAWED DIMENSION



PROPOSED FOAM JOINT

SECTION B-B

JOINT REPAIR QUANTITY TABLE			
	BRIDGE JOINT DEMOLITION	FOAM JOINT SEALS FOR PRESERVATION	ELASTOMERIC CONCRETE FOR PRESERVATION
BENT 2	40.0 SQ. FT.	40.0 LF	10.0 CU. FT.
BENT 4	40.0 SQ. FT.	40.0 LF	10.0 CU. FT.
* TOTAL	80.0 SQ. FT.	80.0 LF	20.0 CU. FT.

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

NOTE

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN DETAIL BY MORE THAN 1/4", NOTIFY ENGINEER. REVISION TO THE JOINT SEAL SIZE MIGHT BE NECESSARY.

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

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 OF THE JOINT SEAL SHALL BE WATERTIGHT.

DURING THE JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

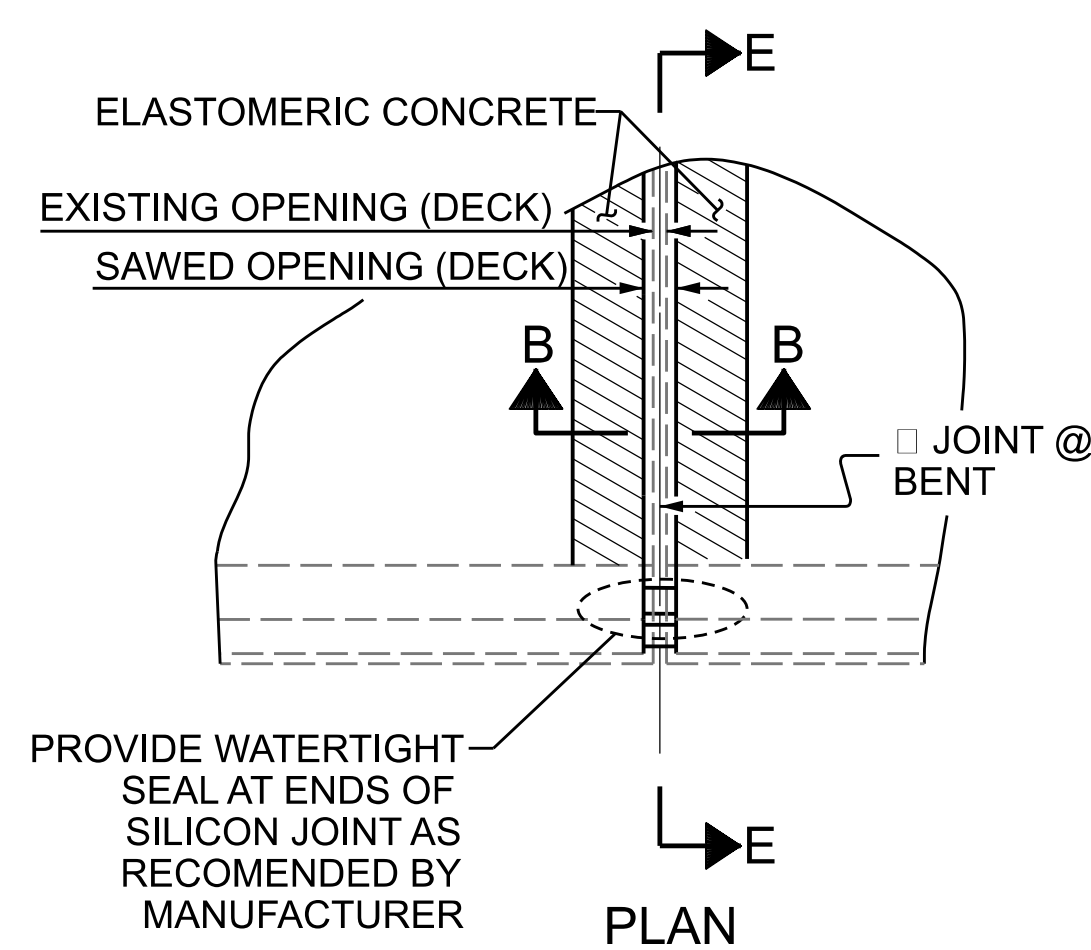
THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL FOR THE SIZE OF THE OPENING ON THE PLANS AND THAT ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

A MANUFACTURER'S CERTIFIED TRAINED REPRESENTATIVE SHALL BE PRESENT DURING THE INSTALLATION OF THE FIRST JOINT OF THE PROJECT, OR UNTIL THE ENGINEER IS SATISFIED WITH THE INSTALLATION PROCESS.

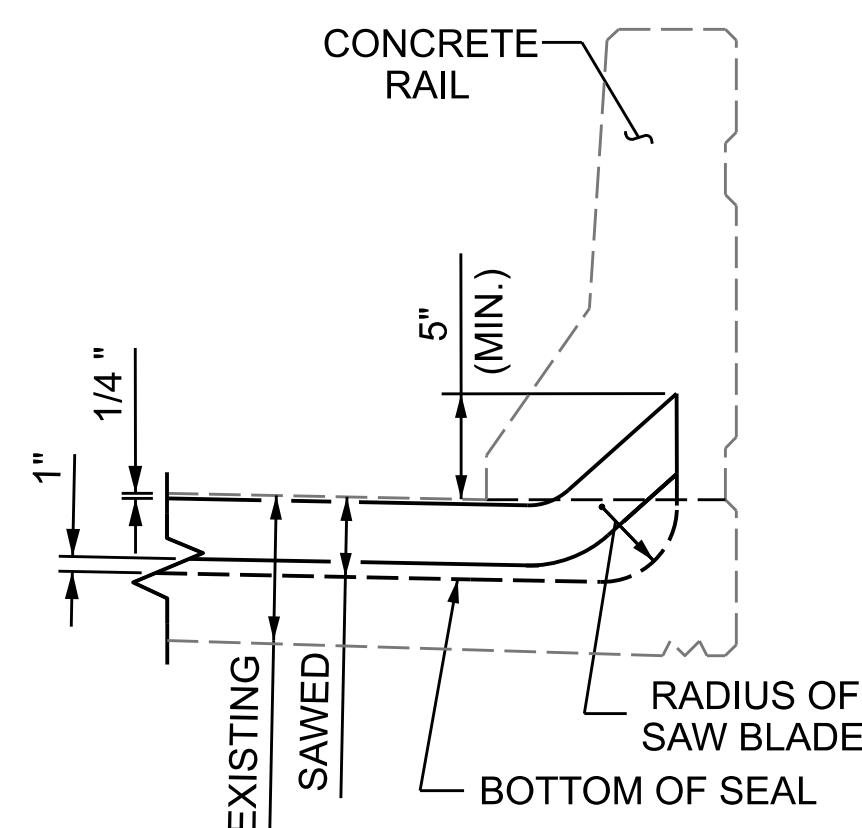
FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL OR ELASTOMERIC CONCRETE SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE.

FOAM JOINT SEALS FOR PRESERVATION SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.



PLAN



SECTION E-E

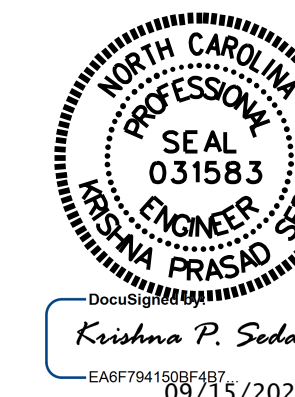
JOINT SEAL DETAILS

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT DETAILS

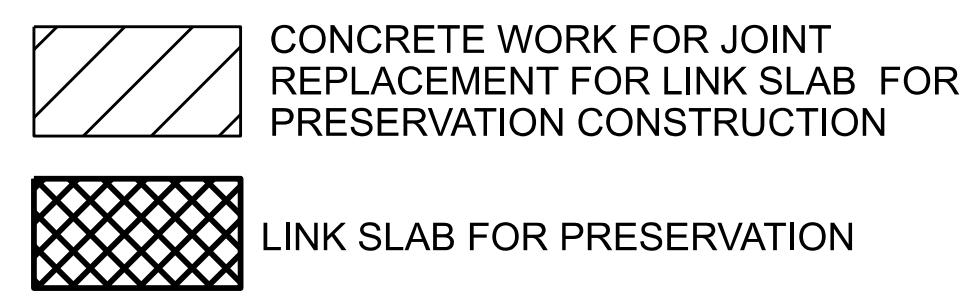
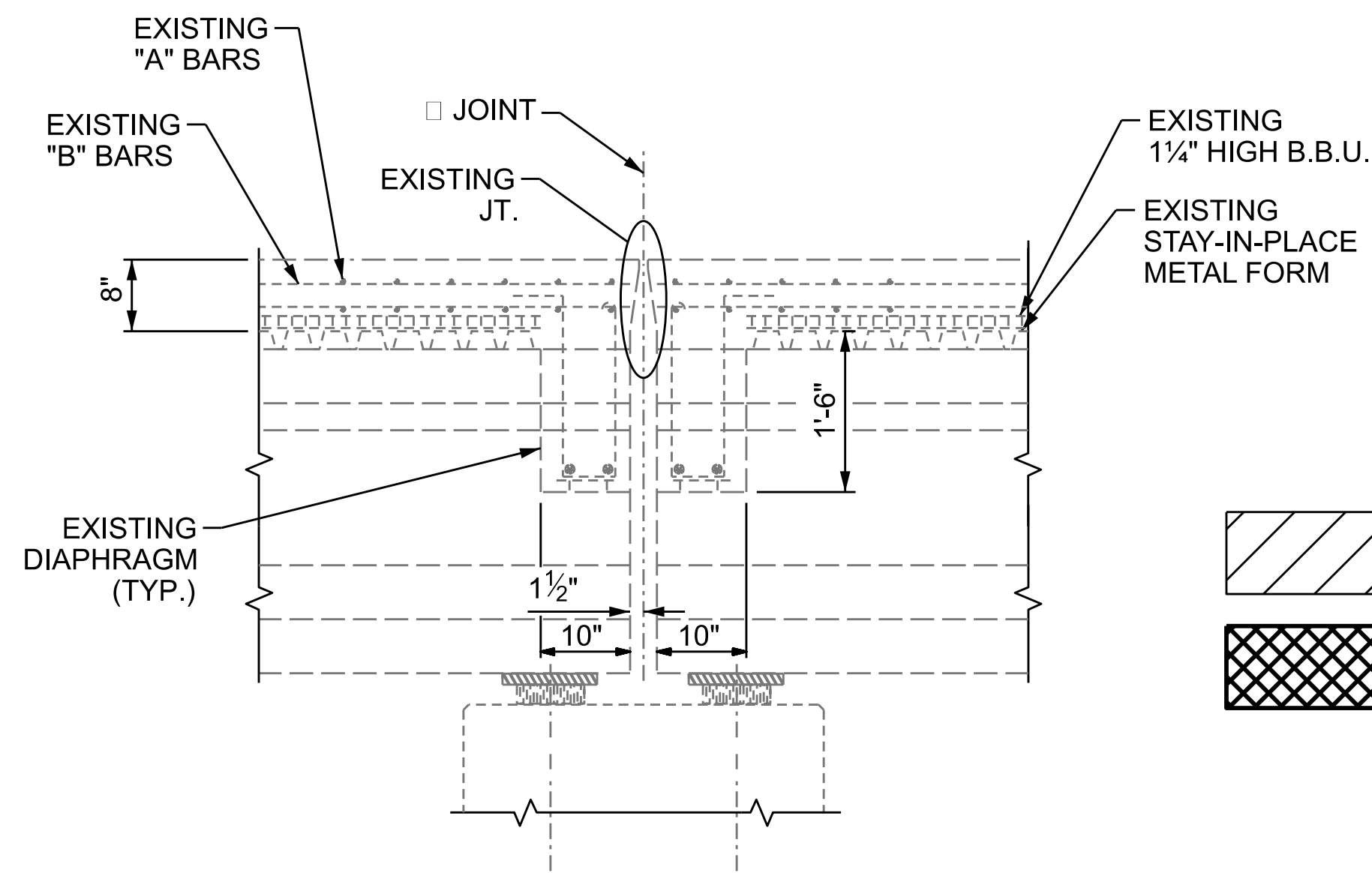


DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
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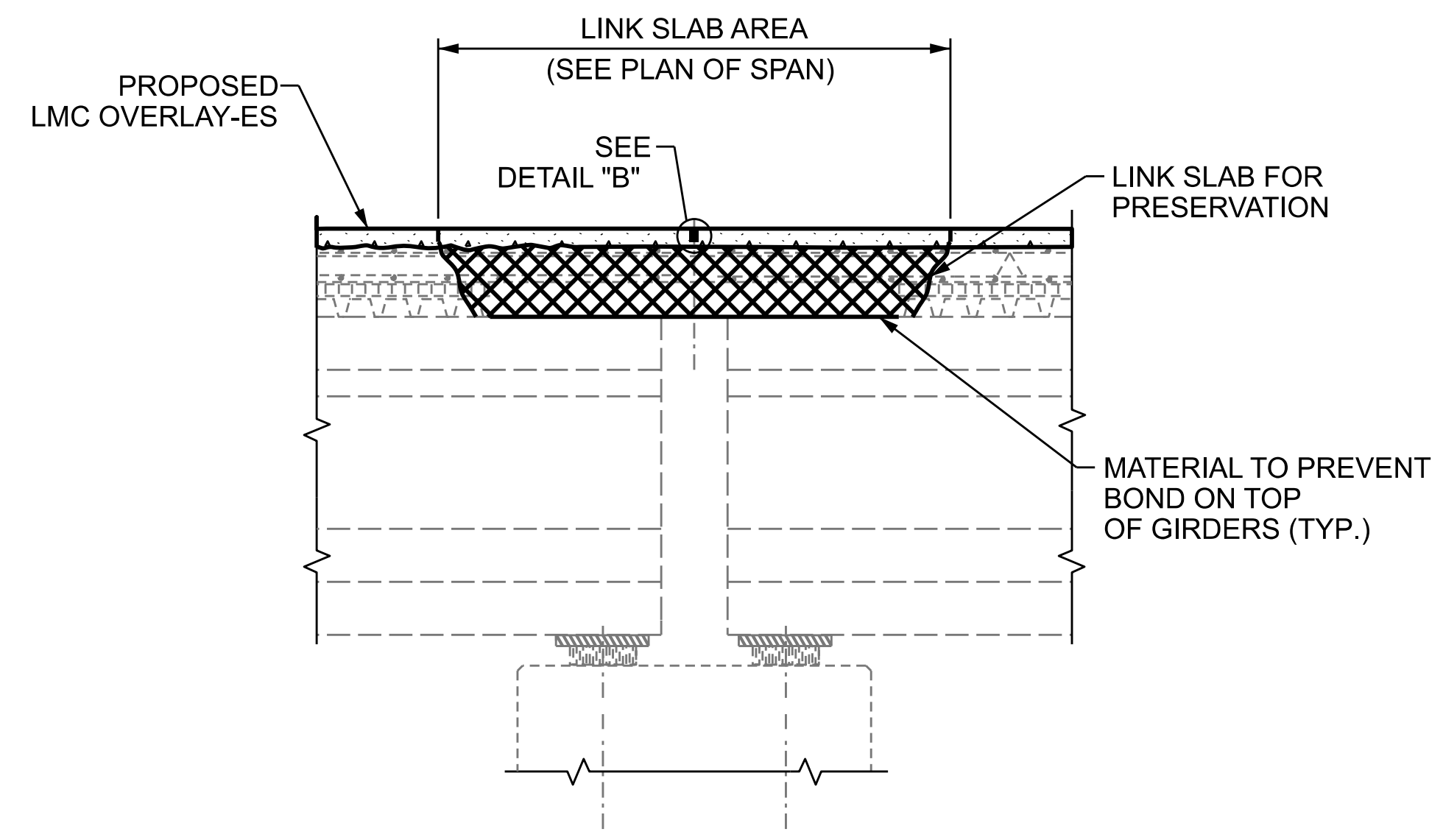
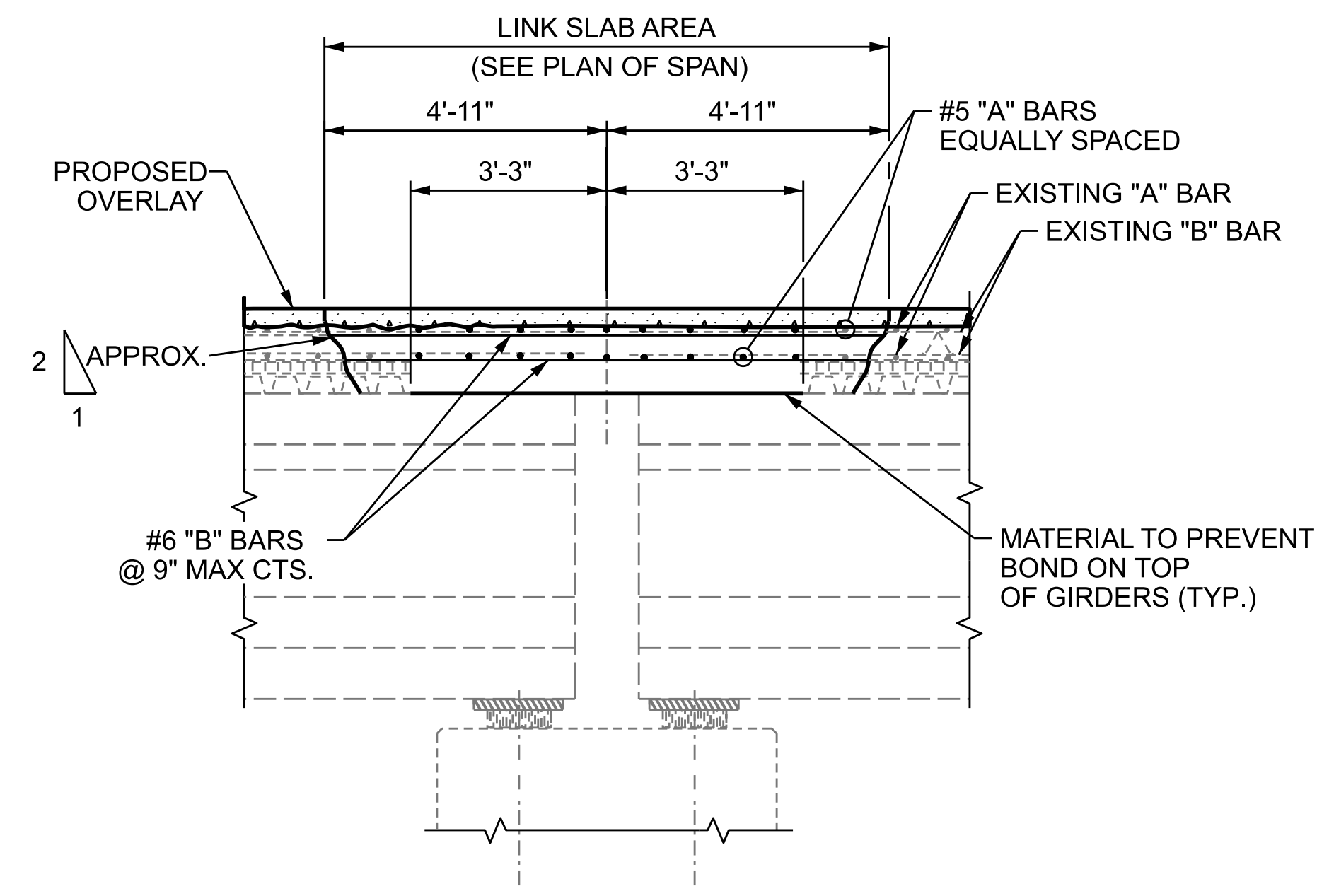
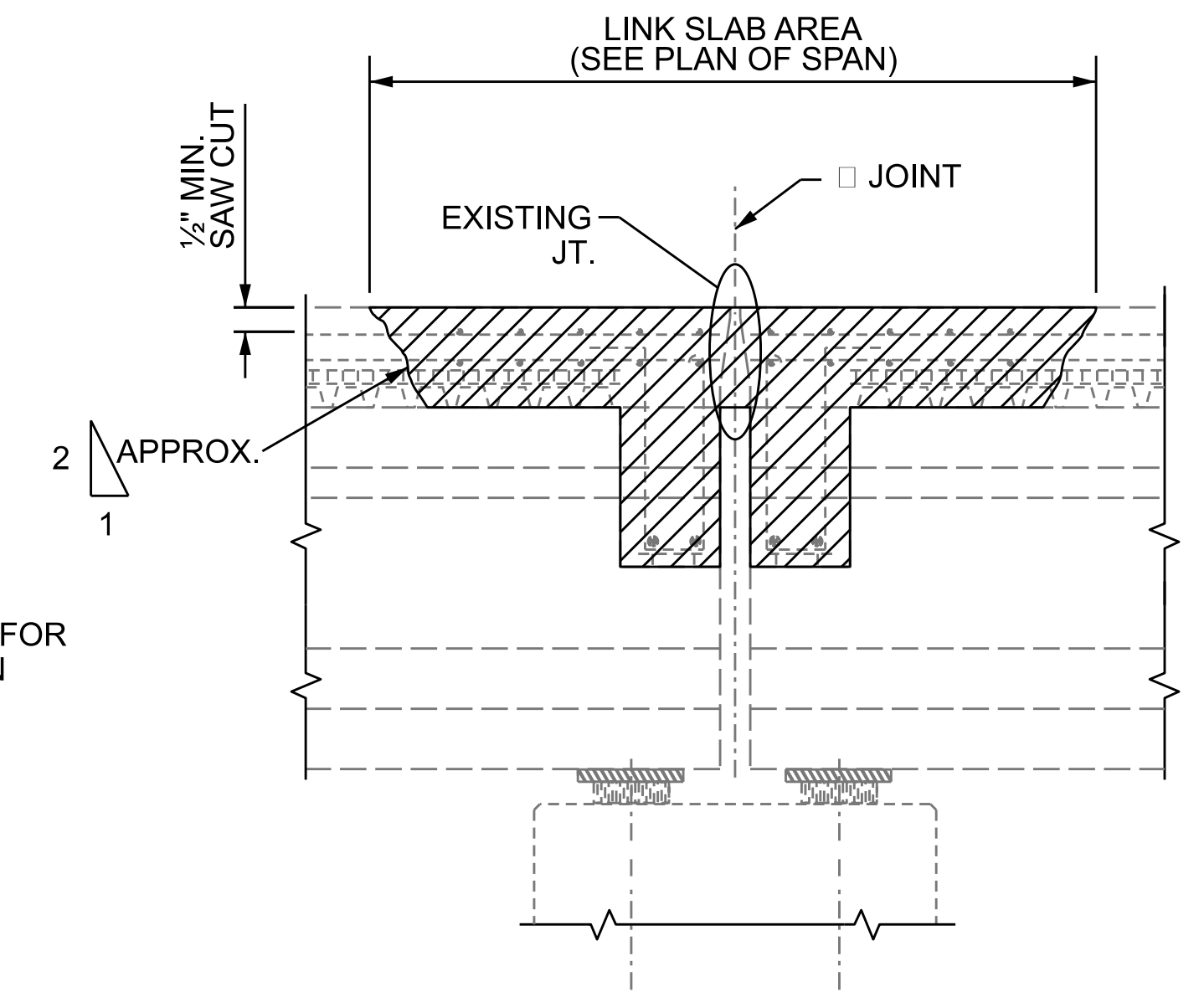
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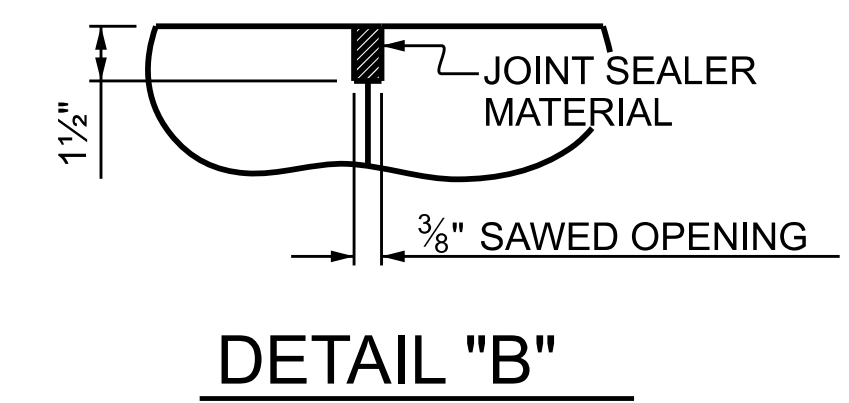
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2			4			28



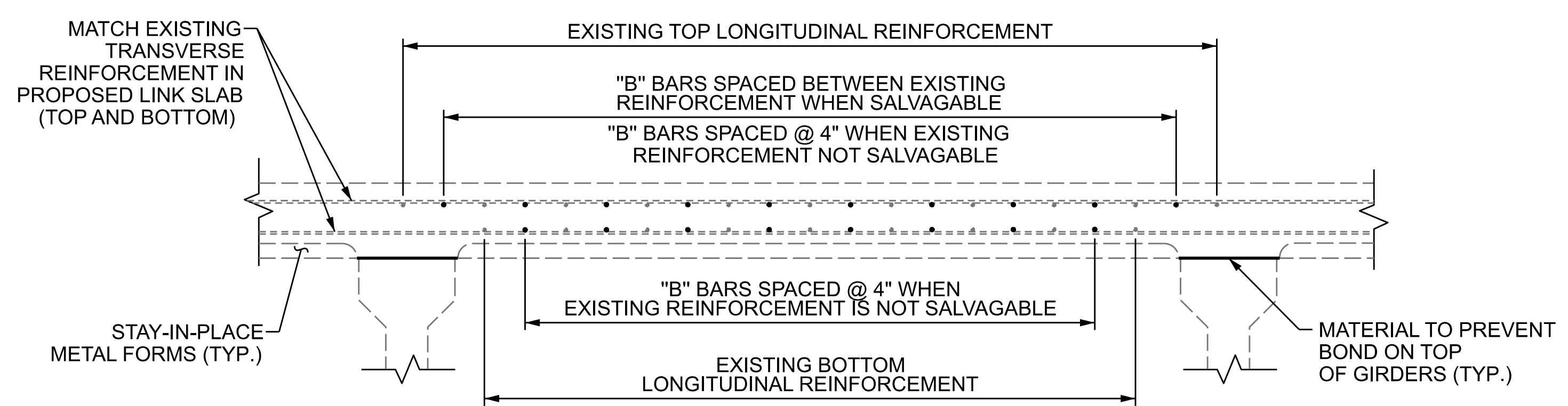
EXISTING SECTION AT BENT
SECTION C-C



PROPOSED SECTION AT BENT
SECTION C-C



A 1 1/2" DEEP CONTRACTION JOINT AT BENT CONTROL LINE SHALL BE SAWN WITHIN 24 HOURS OF POURING THE LINK SLAB AND OVERLAY. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE B LOW MODULUS SILICONE SEALANT. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.



REINFORCEMENT DETAILS

SPLICE LENGTHS			
BAR SIZE	EPOXY COATED	UNCOATED	
#4	2'-0"	1'-9"	
#5	2'-6"	2'-2"	
#6	3'-0"	2'-7"	

BILL OF MATERIAL					
LINK SLAB AT BENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A	17	#5	STR	39'-8"	703 LBS.
A	17	#5	STR	39'-8"	703 LBS.
B	70	#6	STR	9'-6"	999 LBS.
B	70	#6	STR	9'-6"	999 LBS.
REINFORCING STEEL				1702 LBS.	
EPOXY COATED REINFORCING STEEL				1702 LBS.	
CLASS AA CONCRETE				C.Y.	9.7

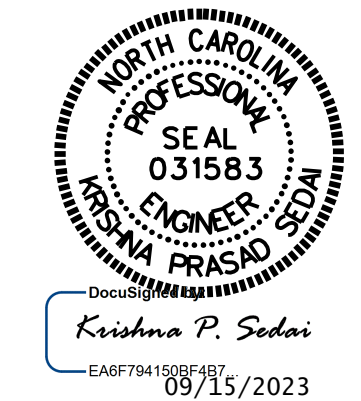
NOTES

- SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF JOINT REPAIR.
- FOR ESTIMATED LINK SLAB FOR PRESERVATION QUANTITIES, SEE PLAN OF SPAN SHEETS.
- FOR LINK SLAB FOR PRESERVATION, SEE SPECIAL PROVISIONS.

CONSTRUCTION SEQUENCE

- CLOSE WORK AREA ACCORDING TO TRAFFIC MANAGEMENT PLANS.
- MARK OUT PROPOSED LINK SLAB AREA AND REMOVE EXISTING JOINT MATERIAL.
- SAW CUT 1/2" DEEP PERIMETER OF PROPOSED LINK SLAB AREA.
- BEGIN FULL DEPTH DEMOLITION OF PROPOSED LINK SLAB AREA, BEING CAREFUL NOT TO DAMAGE EXISTING REINFORCING STEEL, BEAM FLANGES, OR STAY-IN-PLACE FORMS. DEMOLISH EDGES OF LINK SLAB AREA AT A 2:1 RATIO, AS SHOWN.
- REMOVE DEMOLITIONED MATERIALS AND CLEAN LINK SLAB AREA.
- REMOVE SHEAR STUDS/STIRRUPS WITHIN THE LINK SLAB AREA.
- REPAIR EXISTING REINFORCING STEEL THAT WAS DAMAGED DURING DEMOLITION.
- PLACE BOND BREAKER MATERIAL WITHIN THE LINK SLAB AREA.
- PLACE ADDITIONAL REINFORCING STEEL AS SHOWN.
- PLACE NEW CONCRETE FOLLOWING THE LINK SLAB FOR PRESERVATION SPECIAL PROVISION. AS AN ALTERNATIVE, THE CONTRACTOR CAN USE LMC MATERIAL FOR THE LINK SLAB, FOLLOWING THE LATEX MODIFIED CONCRETE-EARLY STRENGTH BRIDGE DECK OVERLAY SPECIAL PROVISIONS.
- AFTER PROPOSED DECK OVERLAY WORK HAS CURED, SAW CUT CONTROL LINES AND FILL WITH SEALER MATERIAL.

PROJECT NO. 15BPR.125.3
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BRIDGE NO. 190010

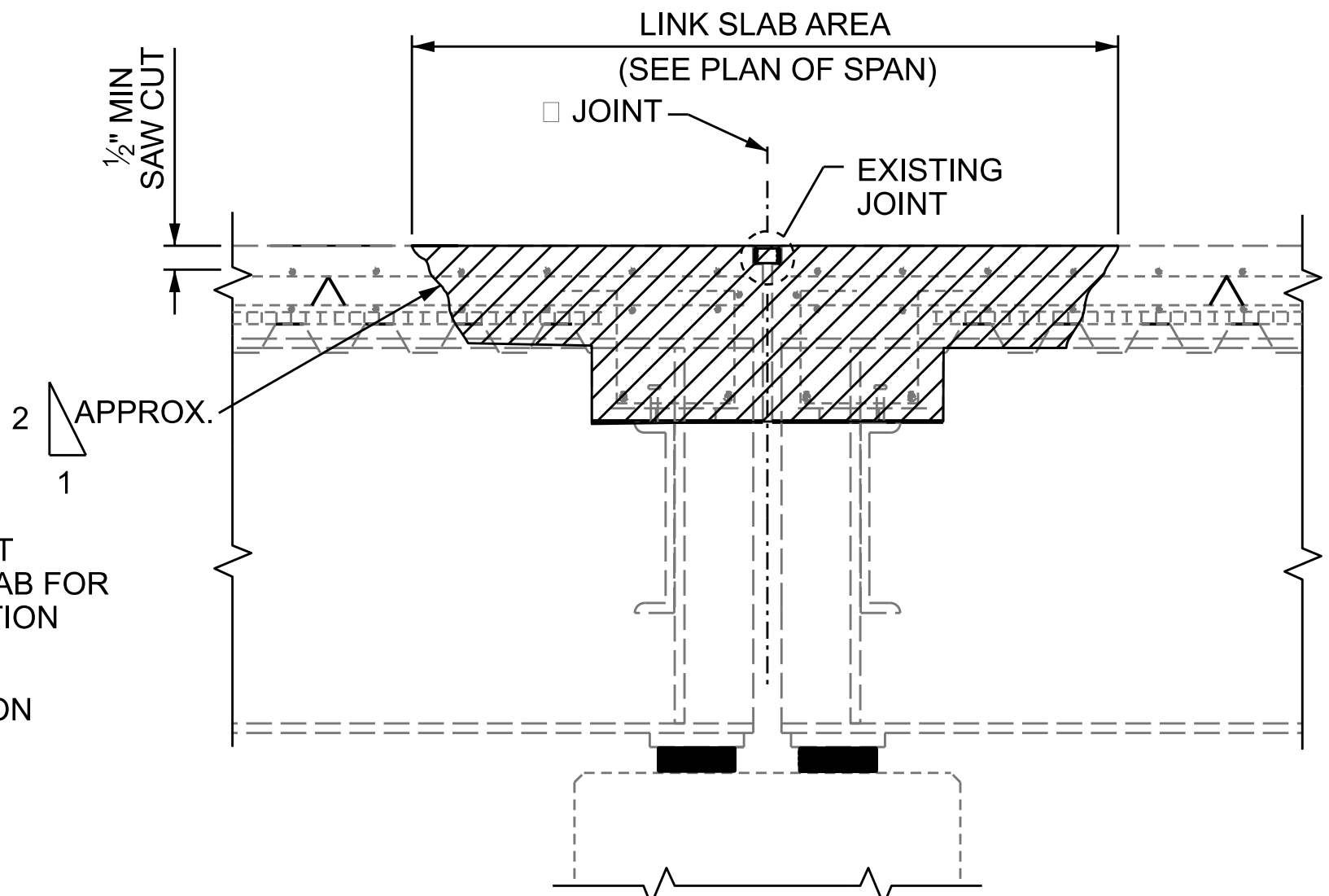
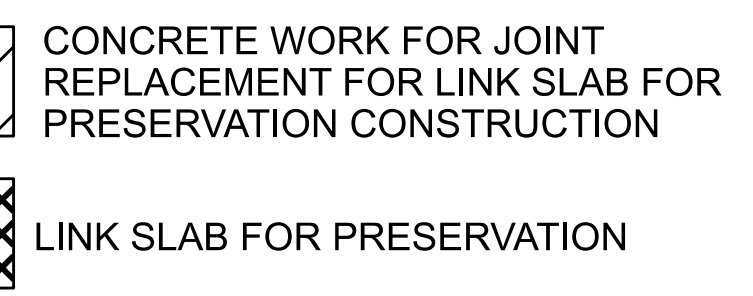
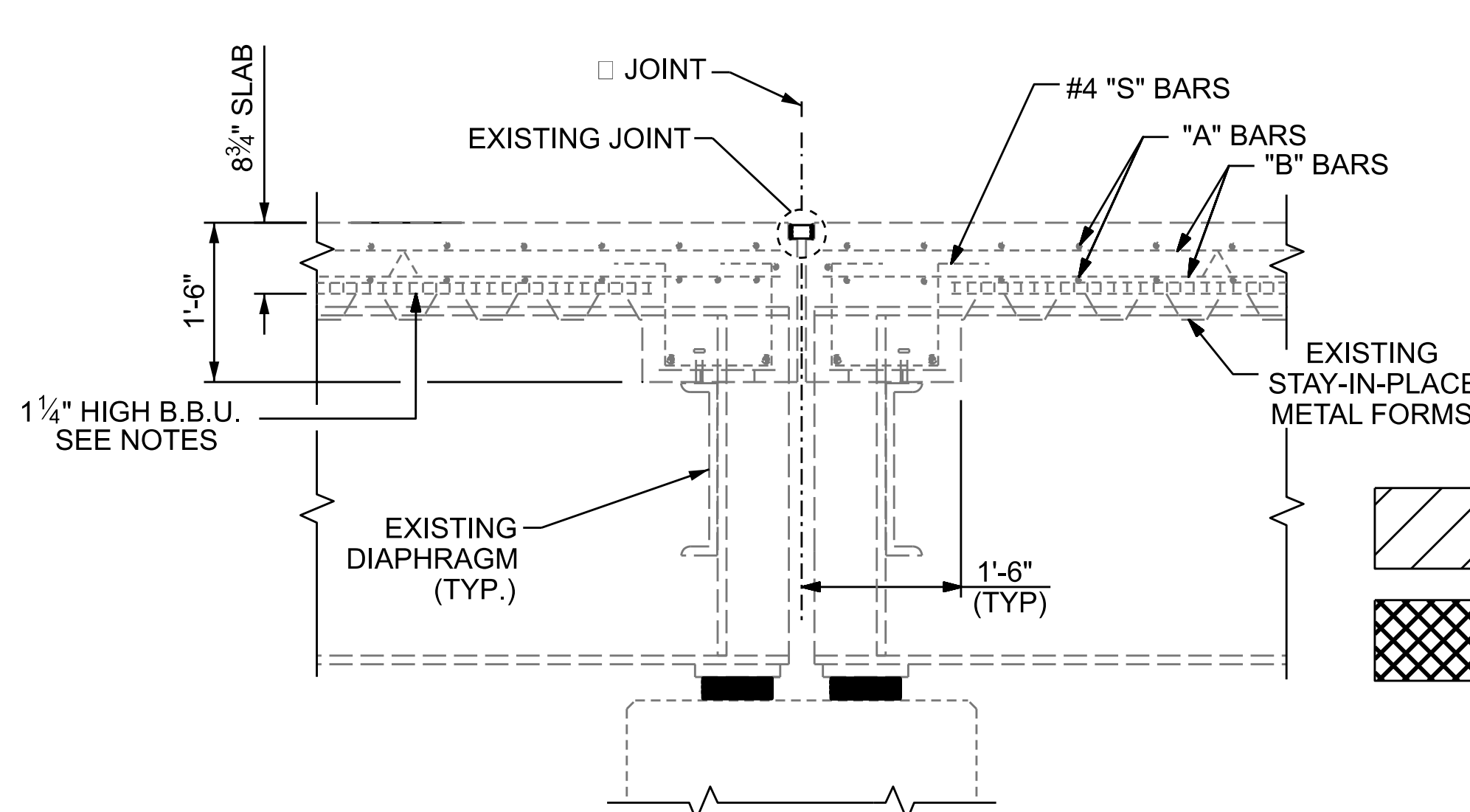


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
LINK SLAB FOR PRESERVATION DETAILS @ BENT 1

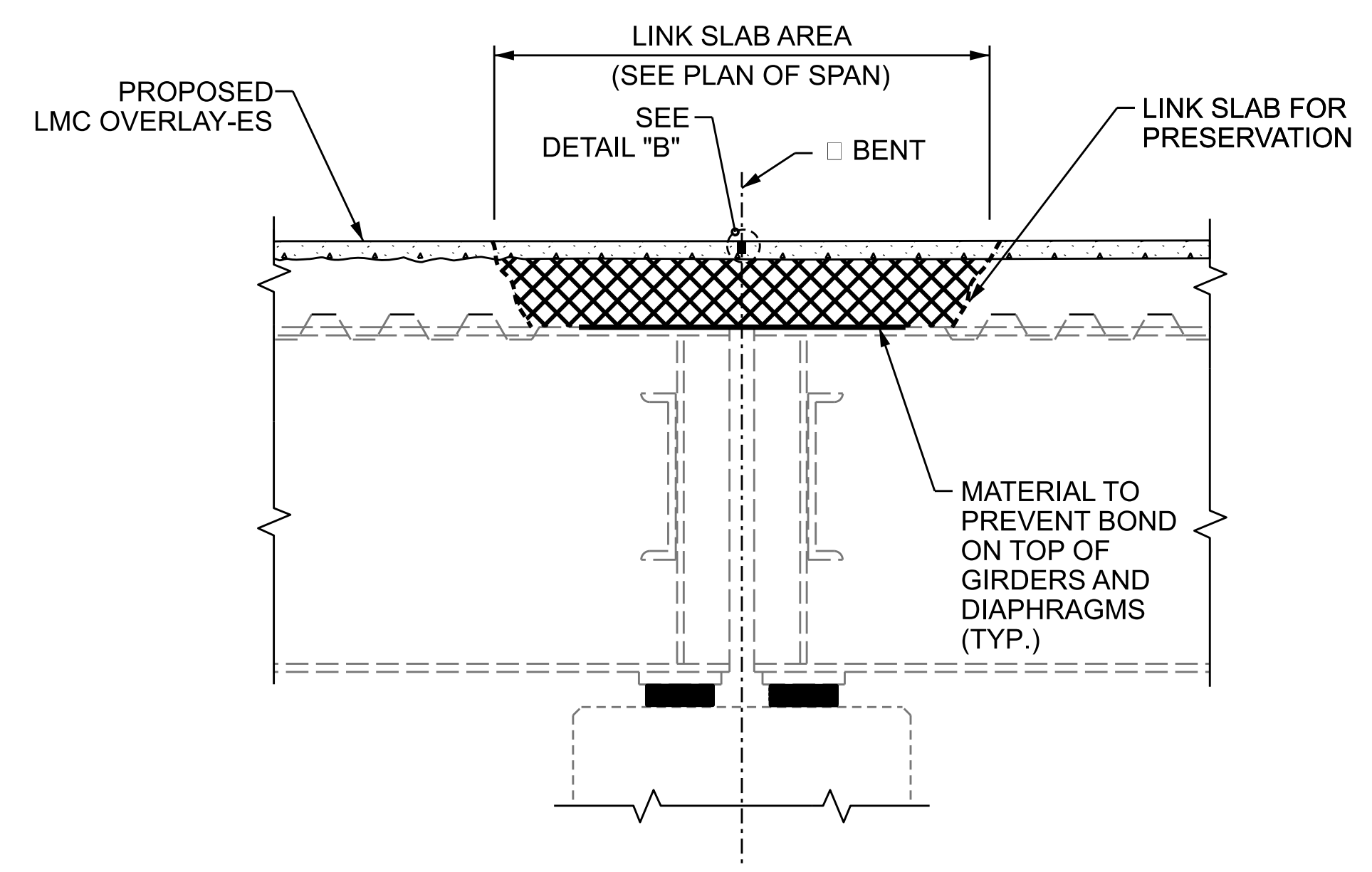
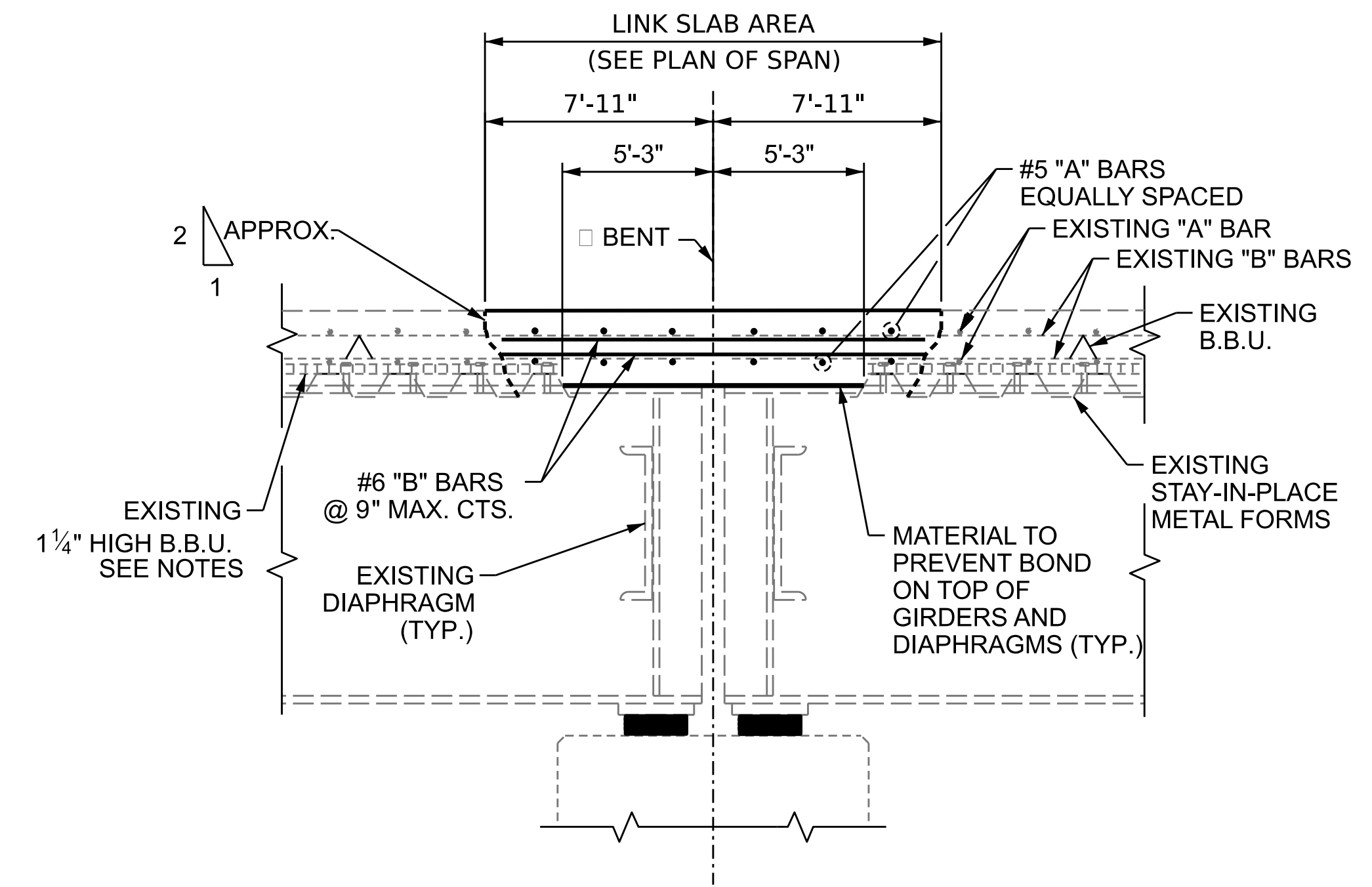
DRAWN BY : S. A. HERNANDEZ DATE : 6/2020
CHECKED BY : A. SORSENGINH DATE : 6/2020
DESIGN ENGINEER OF RECORD : S. A. HERNANDEZ DATE : 6/2020

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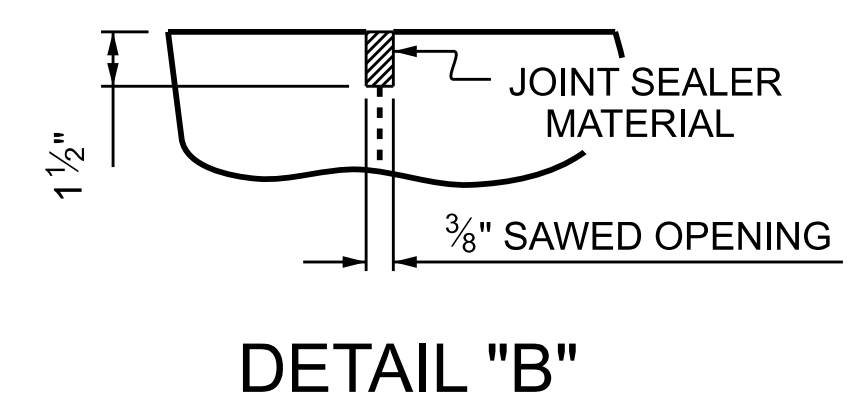
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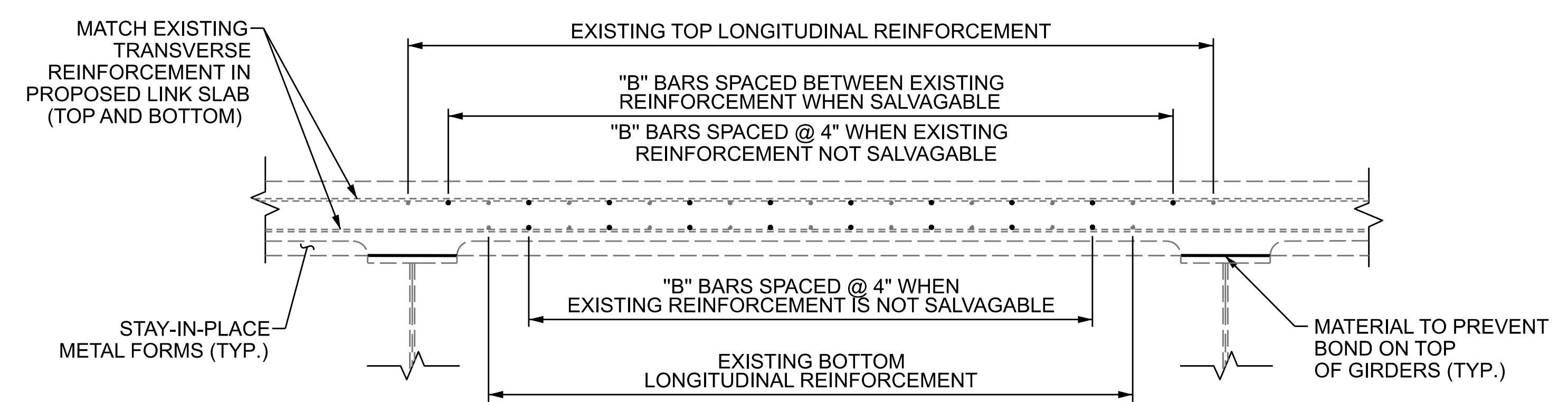
**EXISTING SECTION AT BENT
SECTION D-D**



**PROPOSED SECTION AT BENT
SECTION D-D**



A 1 1/2" DEEP CONTRACTION JOINT AT BENT CONTROL LINE SHALL BE SAWN WITHIN 24 HOURS OF POURING THE LINK SLAB AND OVERLAY. THE JOINT SHALL BE FILLED WITH JOINT SEALER MATERIAL. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE B LOW MODULUS SILICONE SEALANT. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.



REINFORCEMENT DETAILS

BILL OF MATERIAL					
LINK SLAB AT BENT 3					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
A	27	#5	STR	39'-8"	1117 LBS.
A	27	#5	STR	39'-8"	1117 LBS.
B	74	#6	STR	15'-6"	1723 LBS.
B	74	#6	STR	15'-6"	1723 LBS.
REINFORCING STEEL				2840 LBS.	
EPOXY COATED REINFORCING STEEL				2840 LBS.	
CLASS AA CONCRETE				C.Y.	17.1

SPlice LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-0"	2'-7"

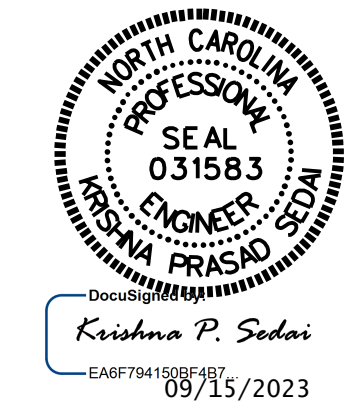
NOTES

- SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF JOINT REPAIR.
- FOR ESTIMATED LINK SLAB FOR PRESERVATION QUANTITIES, SEE PLAN OF SPAN SHEETS.
- FOR LINK SLAB FOR PRESERVATION, SEE SPECIAL PROVISIONS.

CONSTRUCTION SEQUENCE

- CLOSE WORK AREA ACCORDING TO TRAFFIC MANAGEMENT PLANS.
- MARK OUT PROPOSED LINK SLAB AREA AND REMOVE EXISTING JOINT MATERIAL.
- SAW CUT 1/2" DEEP PERIMETER OF PROPOSED LINK SLAB AREA.
- BEGIN FULL DEPTH DEMOLITION OF PROPOSED LINK SLAB AREA, BEING CAREFUL NOT TO DAMAGE EXISTING REINFORCING STEEL, BEAM FLANGES, OR STAY-IN-PLACE FORMS. DEMOLISH EDGES OF LINK SLAB AREA AT A 2:1 RATIO, AS SHOWN.
- REMOVE DEMOLITIONED MATERIALS AND CLEAN LINK SLAB AREA.
- REMOVE SHEAR STUDS/STIRRUPS WITHIN THE LINK SLAB AREA.
- REPAIR EXISTING REINFORCING STEEL THAT WAS DAMAGED DURING DEMOLITION.
- PLACE BOND BREAKER MATERIAL WITHIN THE LINK SLAB AREA.
- PLACE ADDITIONAL REINFORCING STEEL AS SHOWN.
- PLACE NEW CONCRETE FOLLOWING THE LINK SLAB FOR PRESERVATION SPECIAL PROVISION. AS AN ALTERNATIVE, THE CONTRACTOR CAN USE LMC MATERIAL FOR THE LINK SLAB, FOLLOWING THE LATEX MODIFIED CONCRETE-EARLY STRENGTH BRIDGE DECK OVERLAY SPECIAL PROVISIONS.
- AFTER PROPOSED DECK OVERLAY WORK HAS CURED, SAW CUT CONTROL LINES AND FILL WITH SEALER MATERIAL.

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
LINK SLAB FOR PRESERVATION DETAILS @ BENT 3

DRAWN BY : S. A. HERNANDEZ DATE : 6/2020
 CHECKED BY : A. SORSENGINH DATE : 6/2020
 DESIGN ENGINEER OF RECORD : S. A. HERNANDEZ DATE : 6/2020

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

TOTAL SHEETS: 28

AS - BUILT REPAIR QUANTITY TABLE

DECK UNDERSIDE REPAIRS SPAN A	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
SHOTCRETE REPAIRS				
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAM	1.9	1.0		
OVERHANG	0	0		
CONCRETE REPAIRS				
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAM	0	0		
OVERHANG	0	0		
GIRDER REPAIRS				
GIRDER	0.3	0.1		
EPOXY COATING				
GIRDER ENDS	245.0			

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.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING CONCRETE GIRDER ENDS, SEE SPECIAL PROVISIONS.

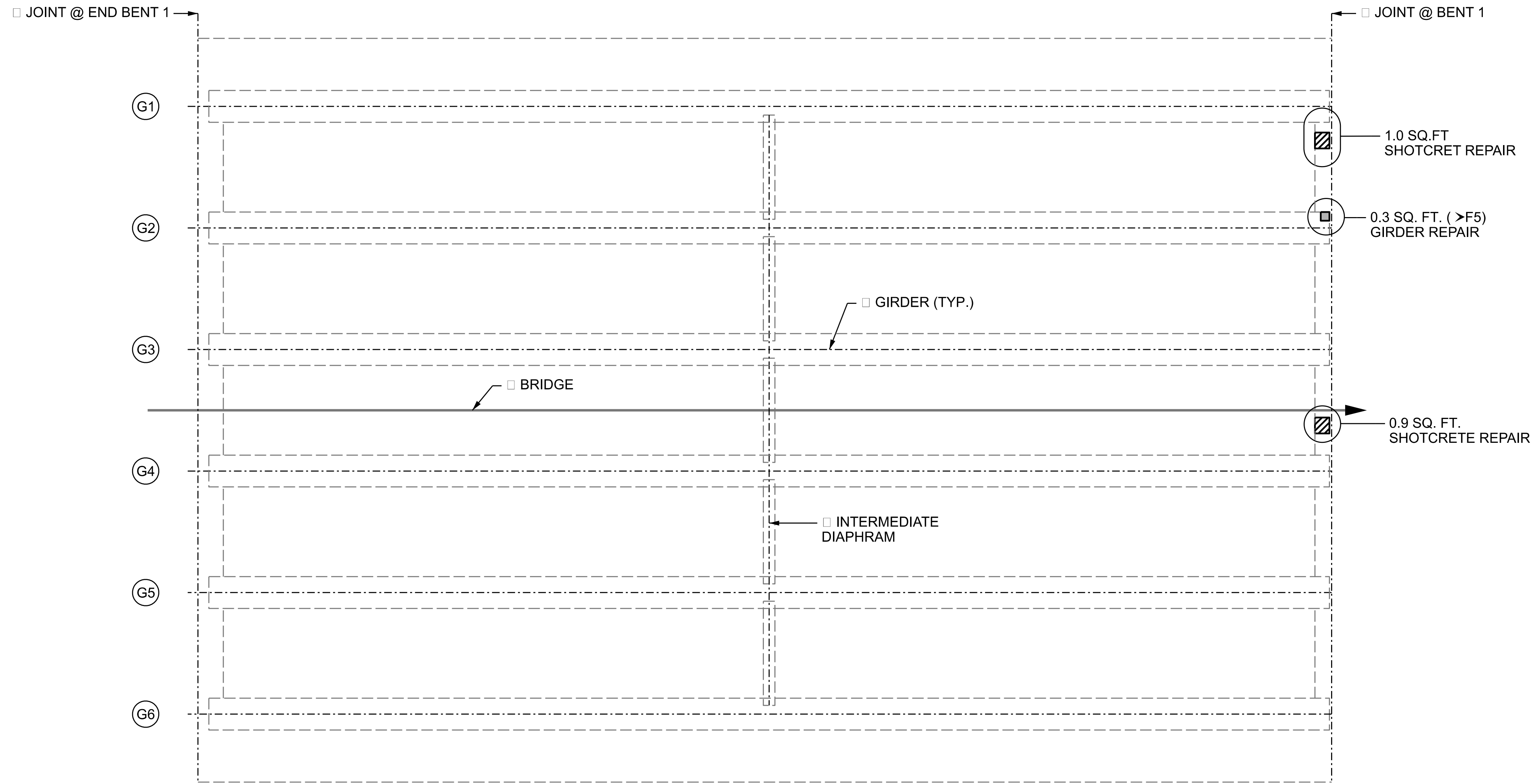
FOR PRESTRESSED CONCRETE GIRDER REPAIR DETAILS AND LIMITS OF EPOXY COATING CONCRETE GIRDER ENDS, SEE PRESTRESSED CONCRETE GIRDER REPAIRS DETAIL SHEET.

FOR UNDERSIDE OF DECK AND OVERHANG REPAIRS, SEE "OVERHANG AND DIAPHRAGM REPAIR DETAILS" SHEET.

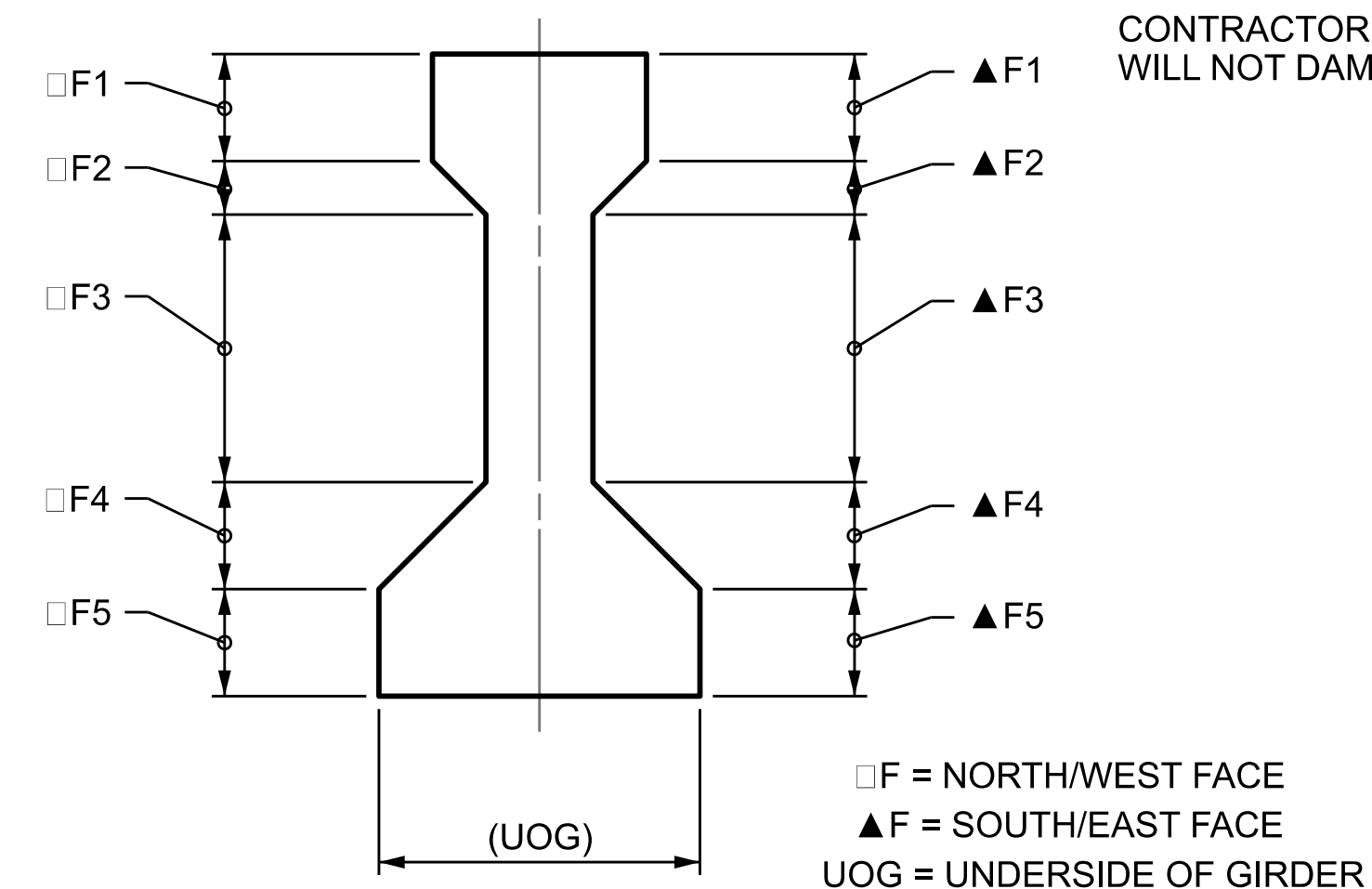
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL SAWCUT 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.



SPAN A



GIRDER SECTION

GIRDER DAMAGE LOCATIONS

- GIRDER REPAIR
- ▨ SHOTCRETE REPAIR AREA
- ~ EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK UNDERSIDE REPAIRS SPAN A



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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			28

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: DATE :

AS-BUILT 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	0		
OVERHANG	0.5	0.3		
CONCRETE GIRDER	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0	0		
CONCRETE DIAPHRAGM	0	0		
OVERHANG	0	0		
CONCRETE GIRDER	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.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL SAWCUT 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.

FOR UNDERSIDE OF DECK AND OVERHANG REPAIRS, SEE "OVERHANG, DIAPHRAGM AND BRIDGE RAIL REPAIR DETAILS" SHEET.

PRIOR TO CLEANING AND PAINTING, REPLACE AND/ OR TIGHTEN MISSING NUTS AND WASHER.

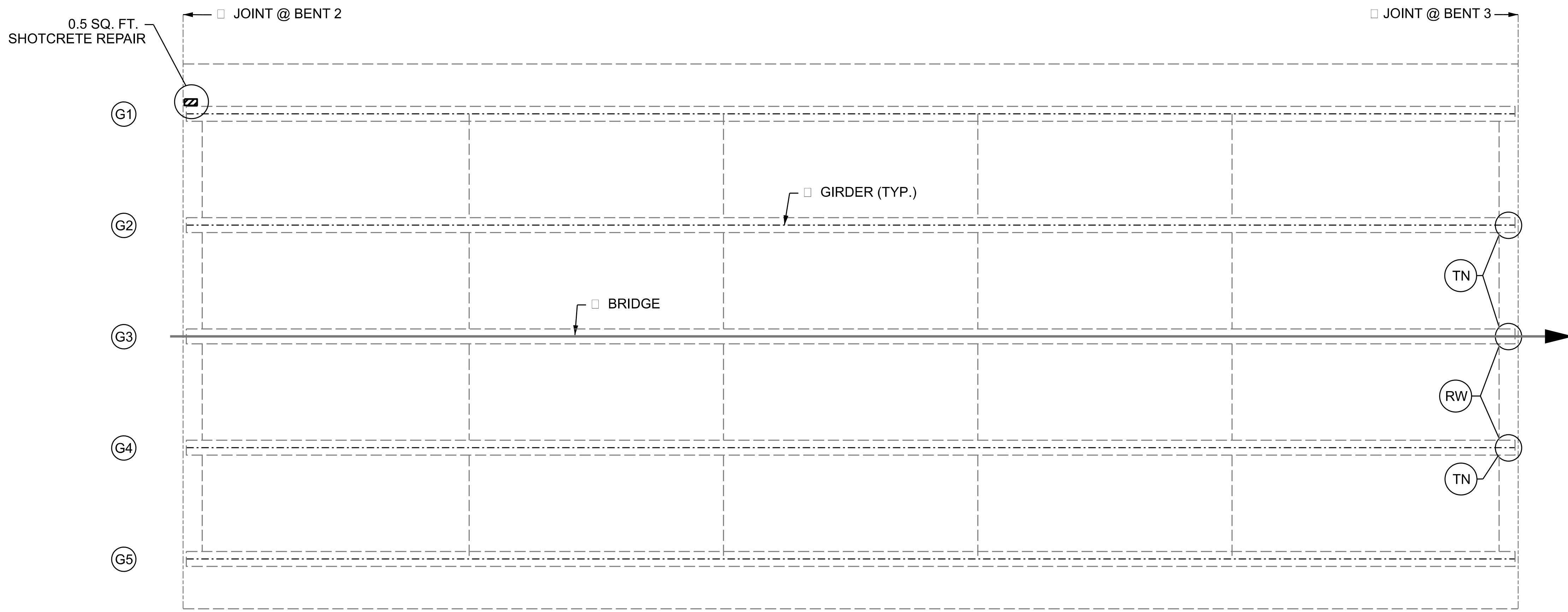
PAYMENT FOR REPLACING AND/ OR TIGHTENING WASHERS AND NUTS SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

 SHOTCRETE REPAIR AREA

 EPOXY RESIN INJECTION

 TIGHTEN NUT

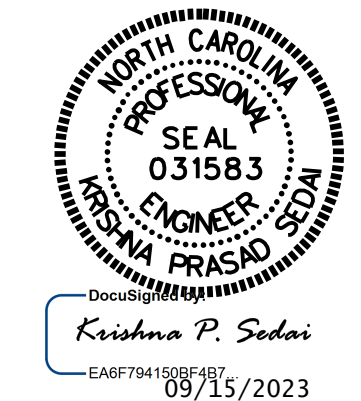
 REPLACE WASHER



SPAN C

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010

SHEET 3 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**DECK UNDERSIDE REPAIRS
 SPAN C**

NO.	BY:	DATE:	REVISIONS			SHEET NO. S2-15
			NO.	BY:	DATE:	
1			3			TOTAL SHEETS 28
2			4			

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DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

9/15/2023
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 ksedai

AS-BUILT REPAIR QUANTITY TABLE

DECK UNDERSIDE REPAIRS SPAN E	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		
GIRDER REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
GIRDER	0.8	0.3		
EPOXY COATING	AREA SF		AREA SF	
GIRDER END	185.3			

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.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING CONCRETE GIRDER ENDS, SEE SPECIAL PROVISIONS.

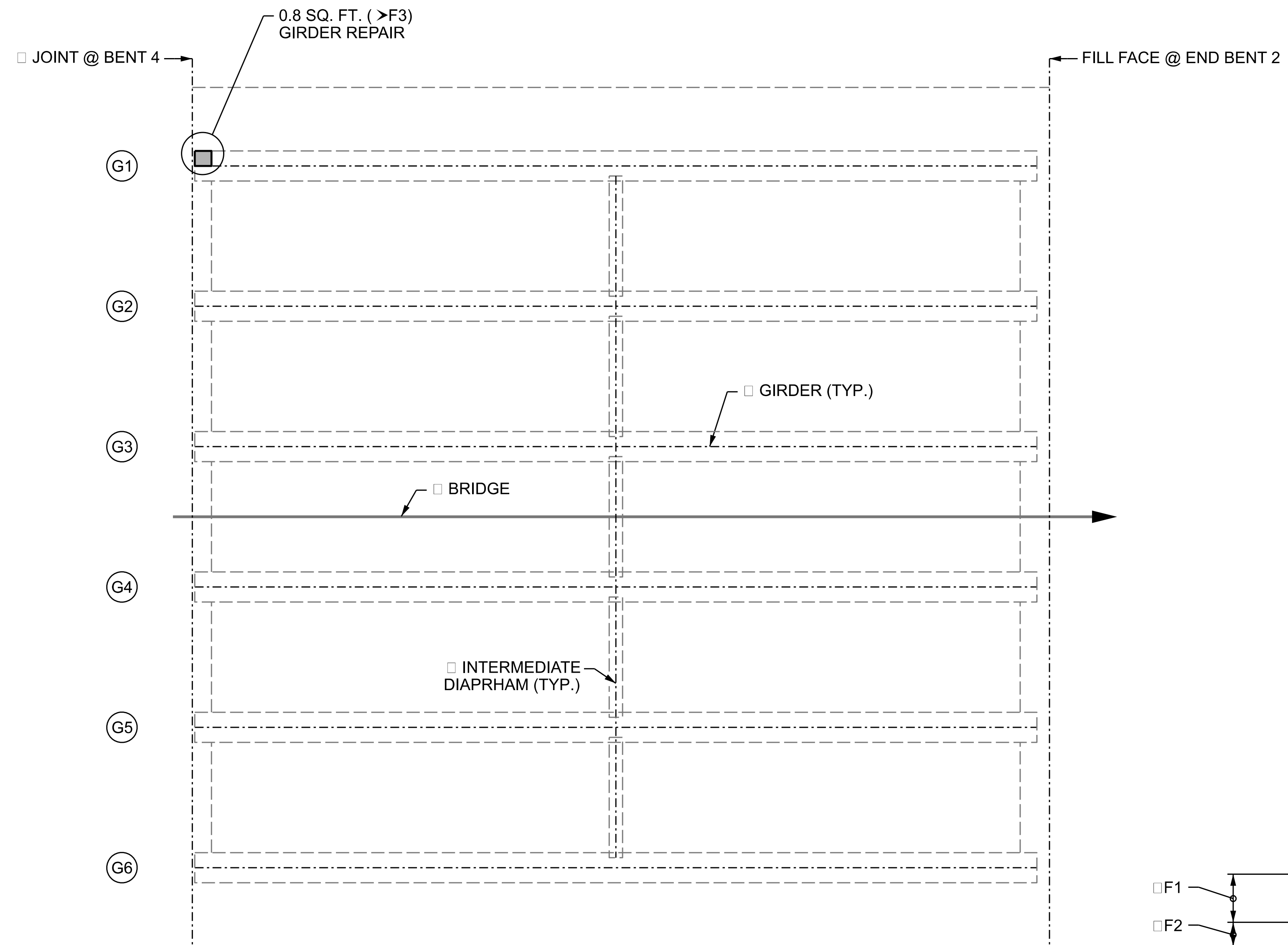
FOR PRESTRESSED CONCRETE GIRDER REPAIR DETAILS AND LIMITS OF EPOXY COATING CONCRETE GIRDER ENDS, SEE PRESTRESSED CONCRETE GIRDER REPAIRS DETAIL SHEET.

FOR UNDERSIDE OF DECK AND OVERHANG REPAIRS, SEE "OVERHANG AND DIAPHRAGM REPAIR DETAILS" SHEET.

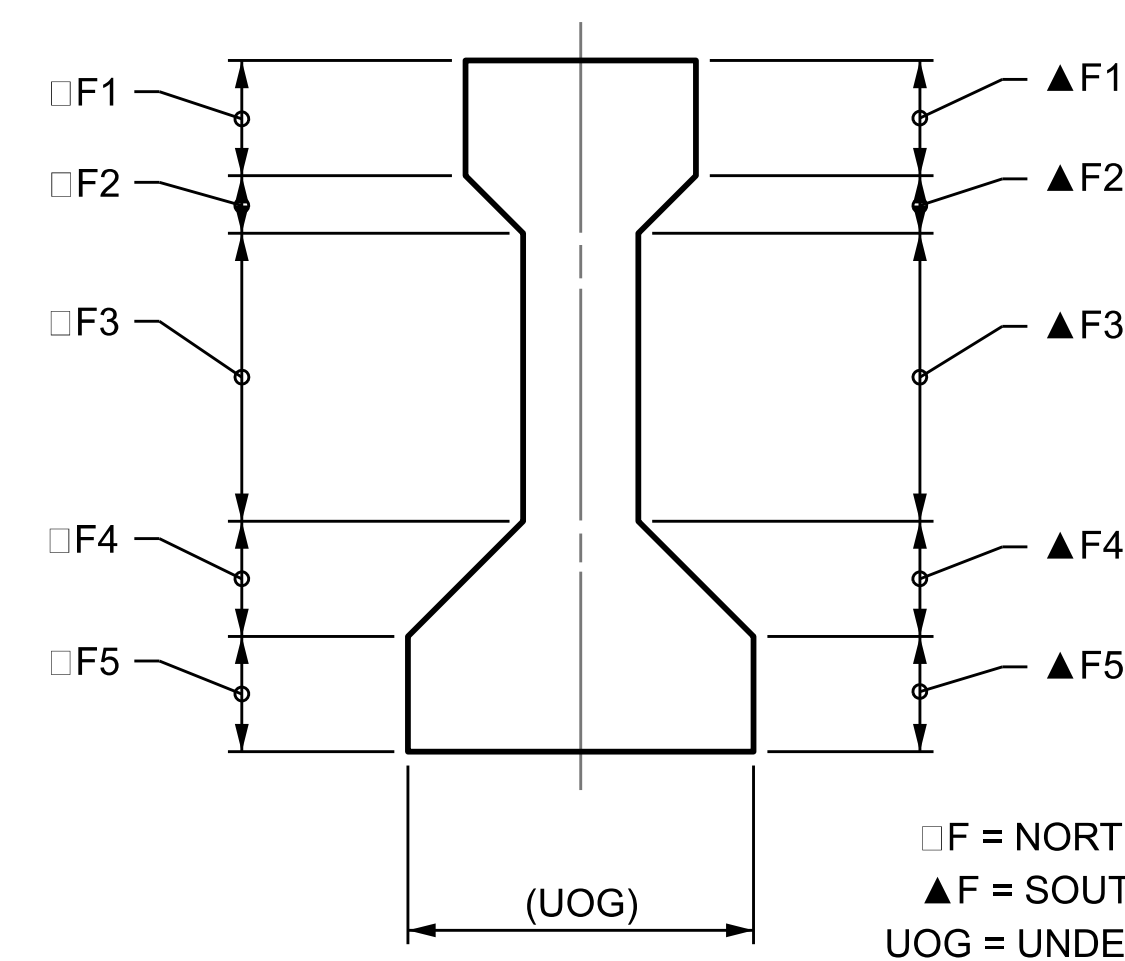
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL SAWCUT 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.



SPAN E



GIRDER SECTION

GIRDER DAMAGE LOCATIONS

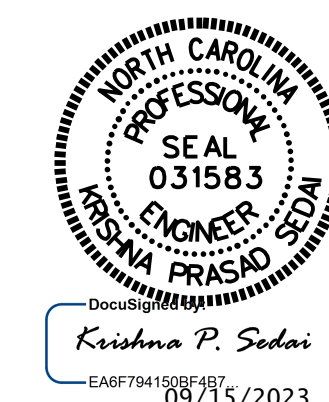
- GIRDER REPAIR
- SHOTCRETE REPAIR AREA
- EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 5 OF 5



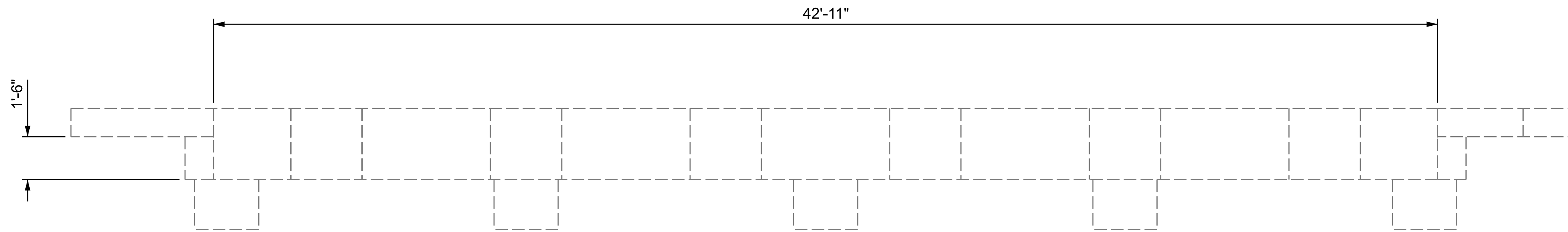
DECK UNDERSIDE REPAIRS SPAN E

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

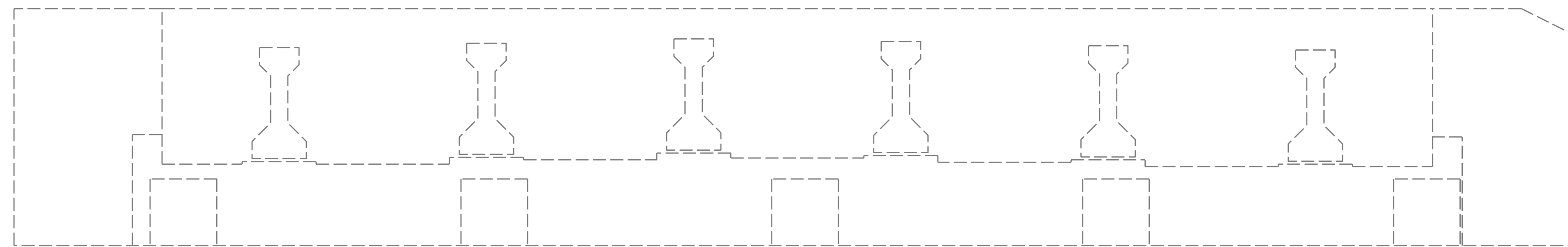
9/15/2023
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 kseda

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



TOP OF CAP



ELEVATION

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS - END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CURTAIN WALL	0	0		
WINGWALL				
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CURTAIN WALL	0	0		
WINGWALL				
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
CURTAIN WALL		0		
WINGWALL				
EPOXY COATING		AREA SF		AREA SF
TOP OF CAP		59.0		

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.

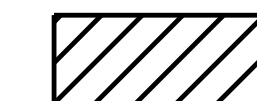
CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIRS MAYBE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.



SHOTCRETE REPAIR AREA



CONCRETE REPAIR AREA

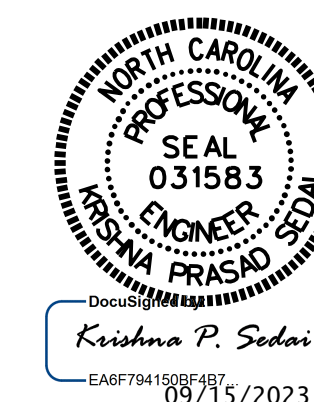


EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 1

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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1			3			TOTAL SHEETS
2			4			28

AS-BUILT REPAIR QUANTITY TABLE

BENT 1 - SPAN A FACE	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 BENT CAP		102.0		

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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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 MAYBE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CAP AND COLUMN REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA

 EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 1 OF 2

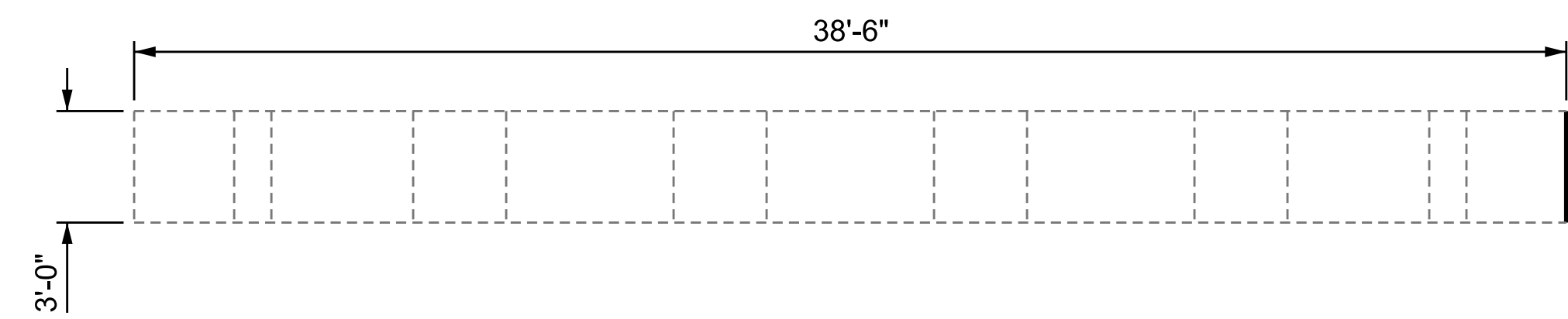
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BENT 1
SPAN A FACE**

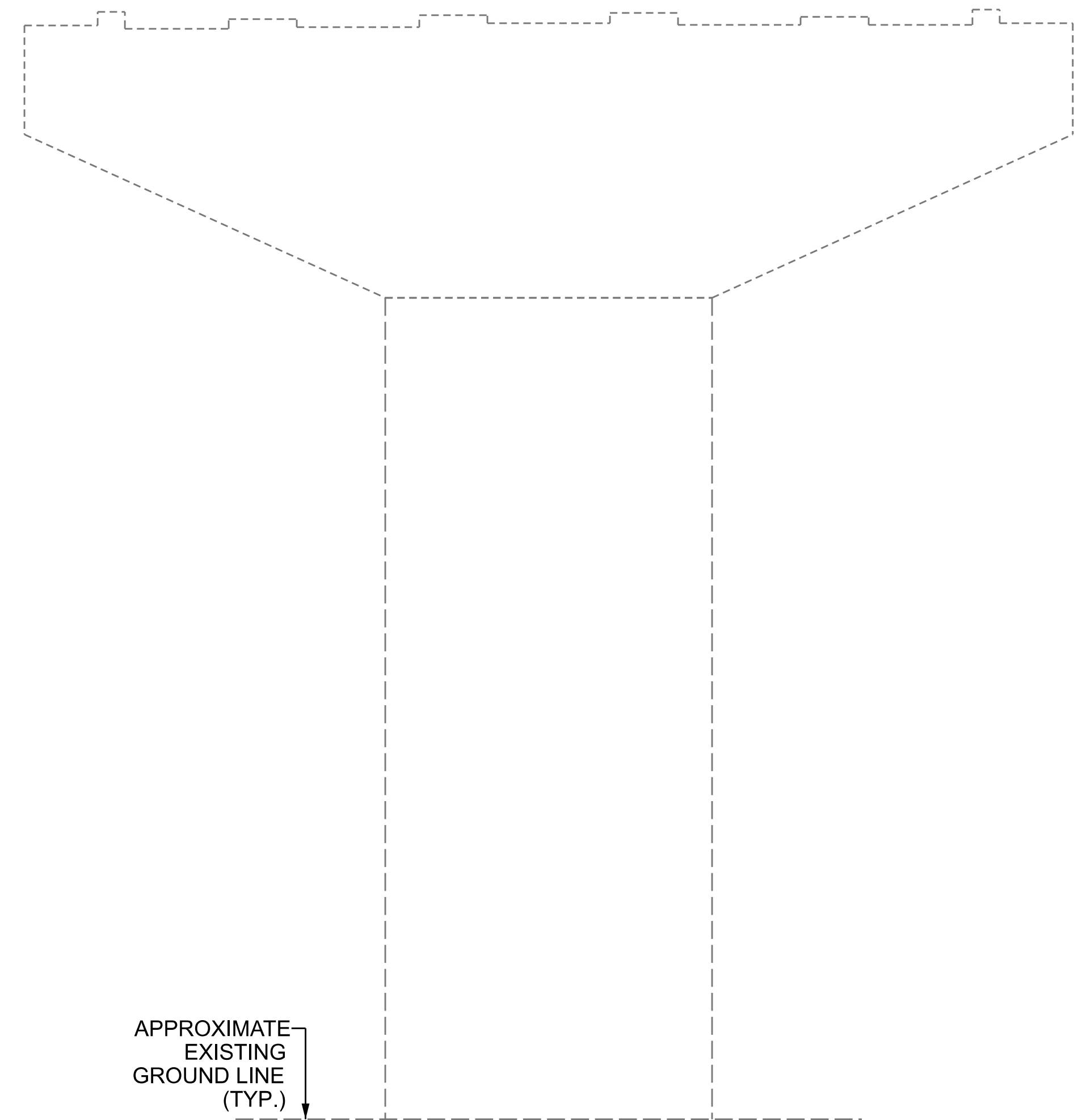


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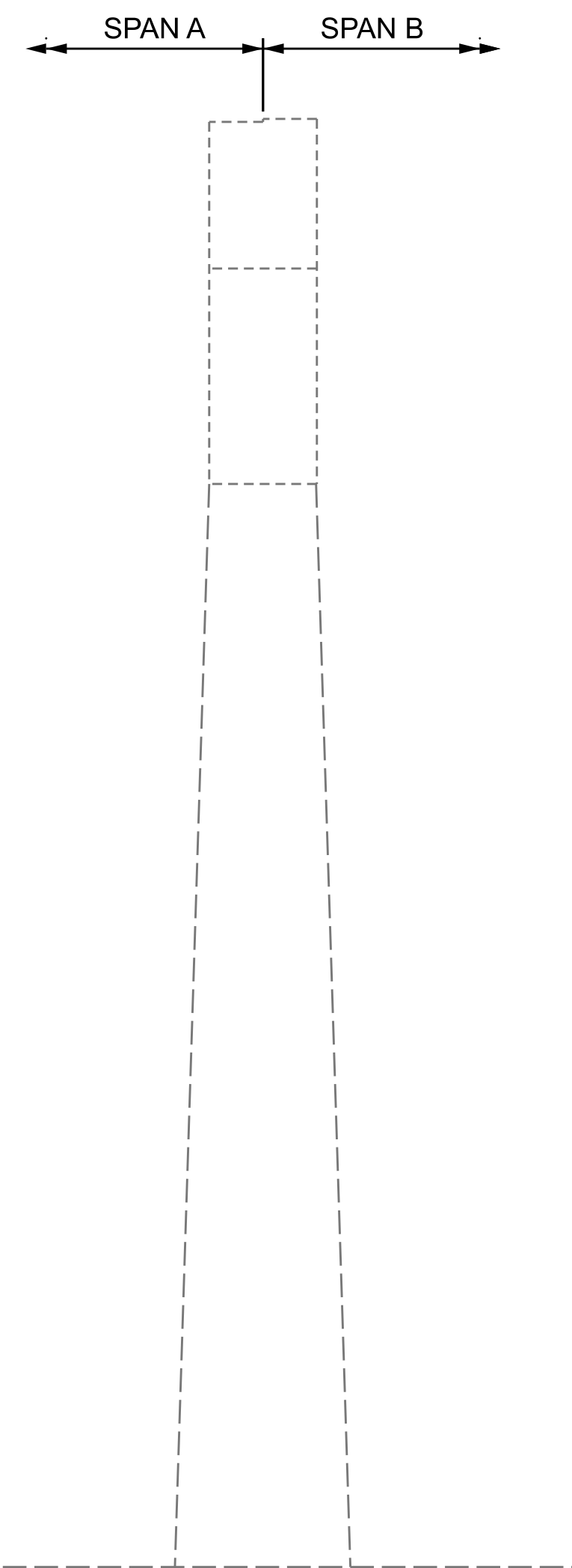
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			28
2			4			



PLAN VIEW
TOP OF CAP



ELEVATION
BENT 1 - SPAN A FACE



END VIEW

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
CHECKED BY : A. SORSENGINH DATE : 6/2022
DESIGN ENGINEER OF RECORD: _____ DATE : _____

AS-BUILT REPAIR QUANTITY TABLE

BENT 1 - SPAN B FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.1	1.6		
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.

NOTES

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CAP AND COLUMN REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA

 EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

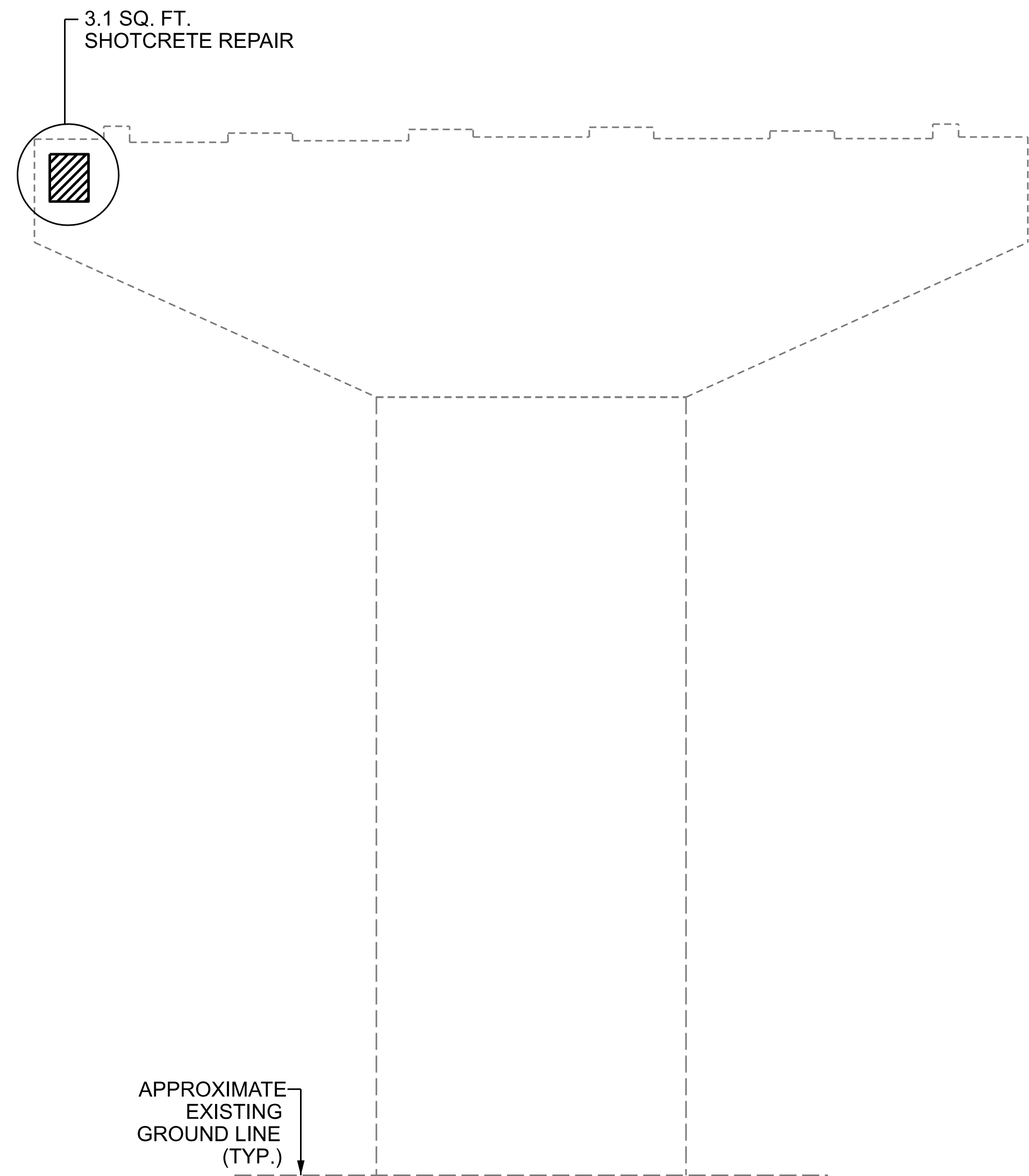
**BENT 1
SPAN B FACE**



SPAN B
SPAN A

PLAN VIEW

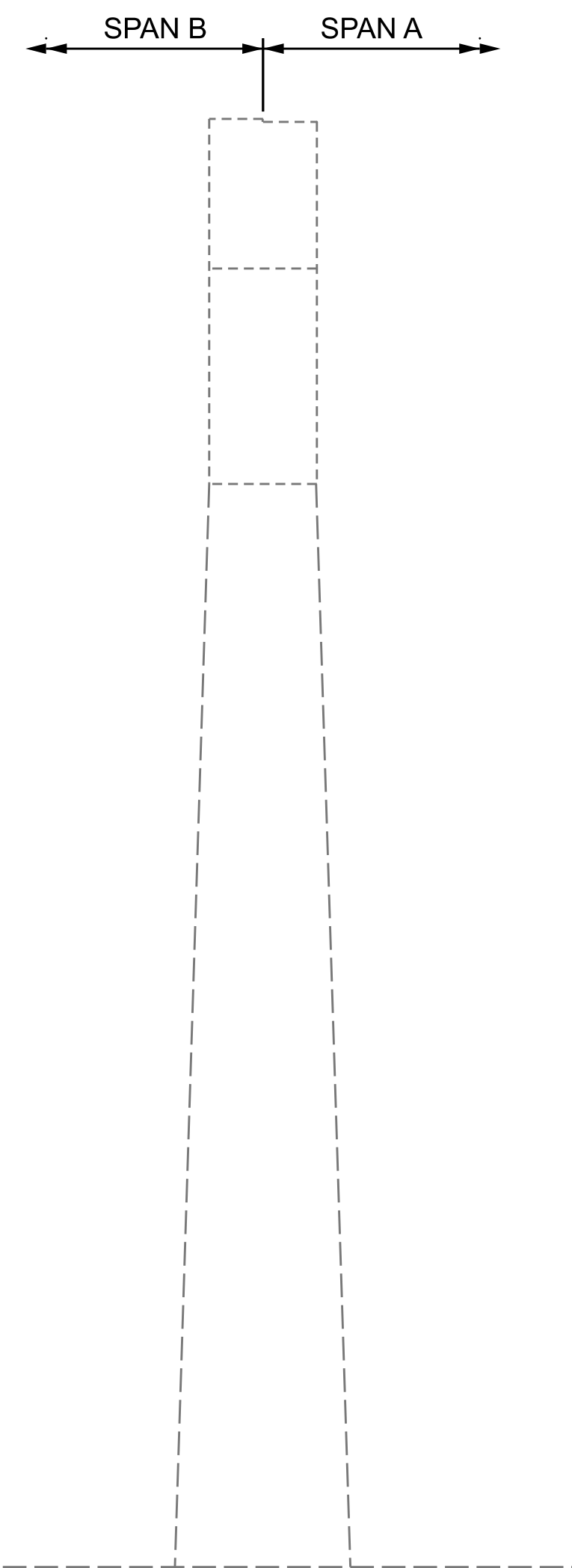
BOTTOM OF CAP



APPROXIMATE
EXISTING
GROUND LINE
(TYP.)

ELEVATION

BENT 1 - SPAN B FACE



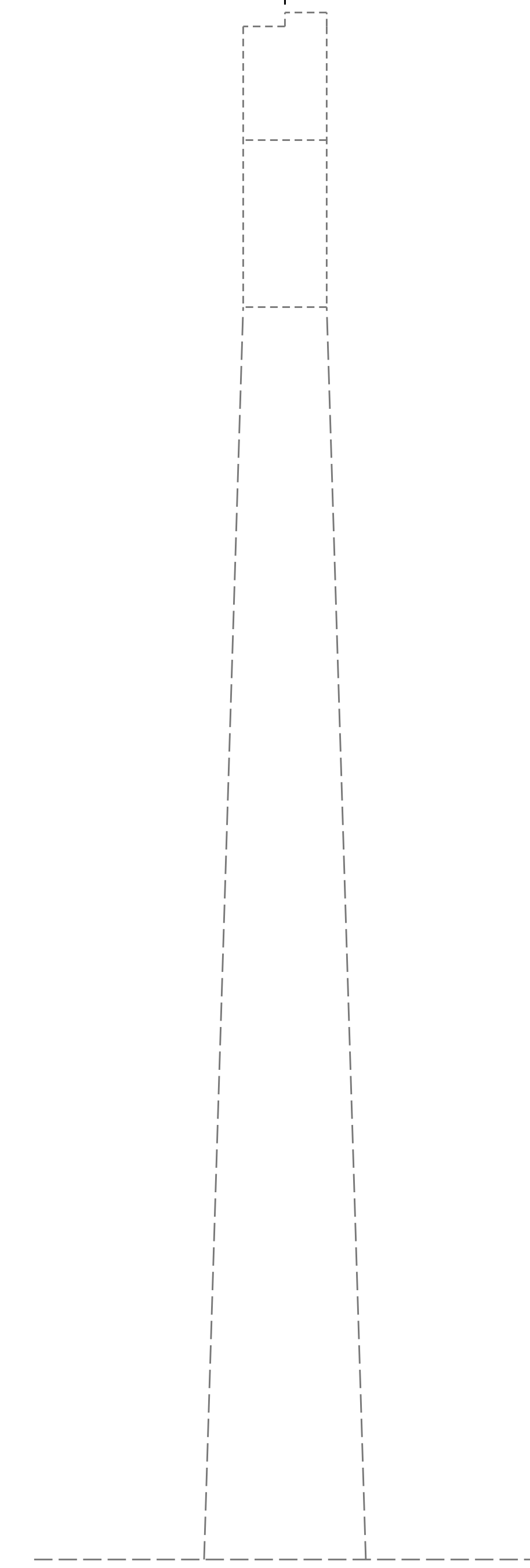
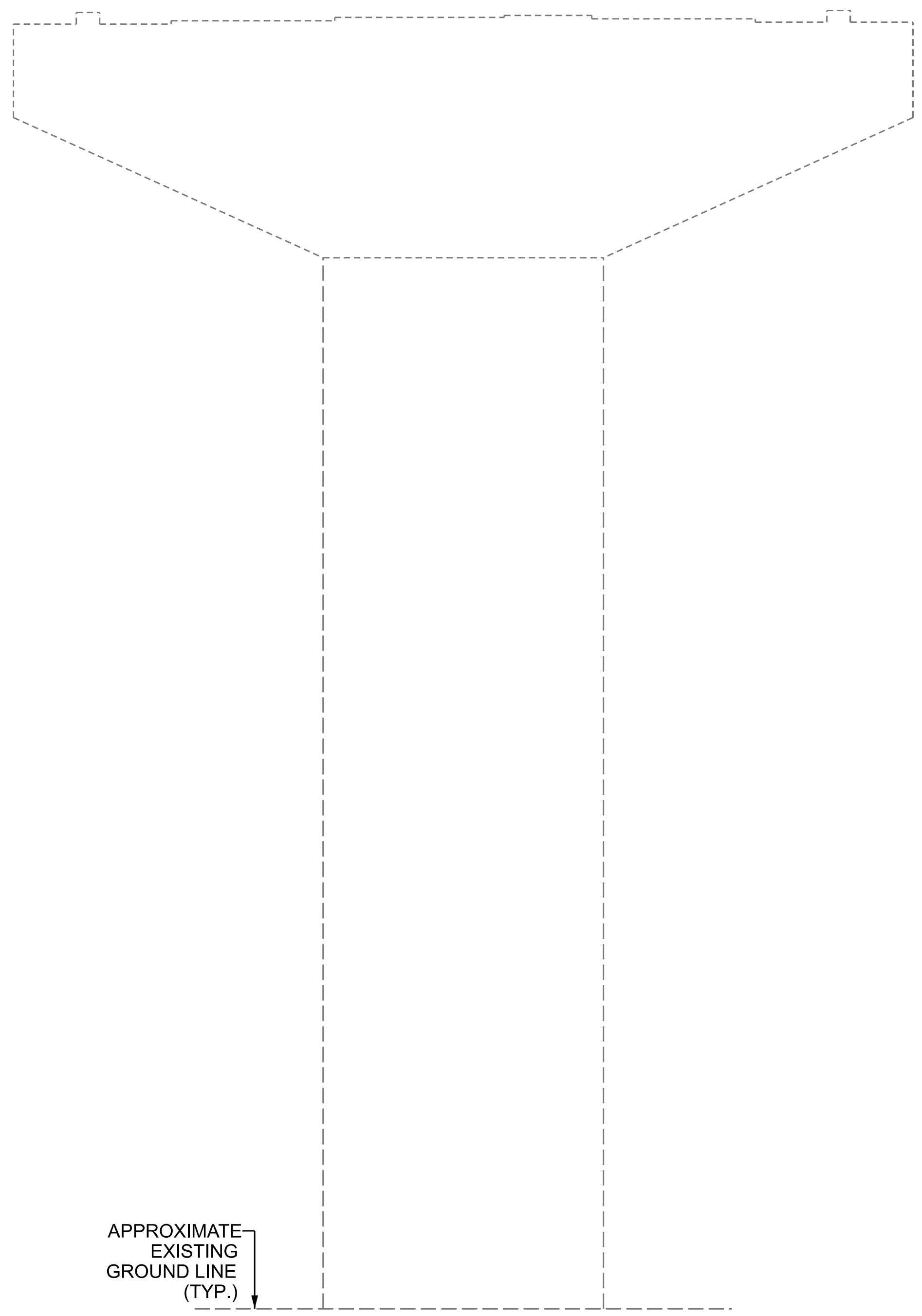
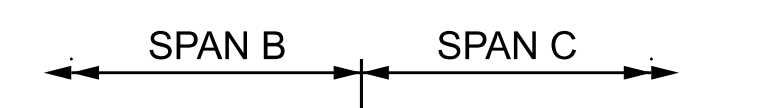
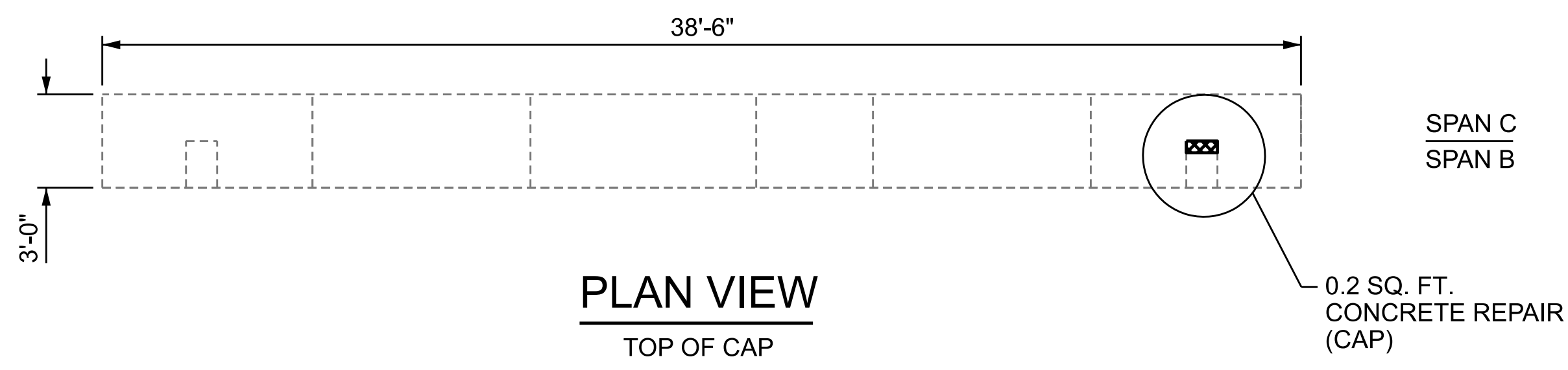
END VIEW

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
CHECKED BY : A. SORSENGINH DATE : 6/2022
DESIGN ENGINEER OF RECORD: _____ DATE : _____

9/15/2023
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-20
1			3			TOTAL SHEETS
2			4			28



AS-BUILT REPAIR QUANTITY TABLE

BENT 2 - SPAN B FACE	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	0.2	0.1		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
COLUMN		0		
EPOXY COATING		AREA SF		AREA SF
TOP OF BENT CAP		102.0		

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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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 MAYBE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

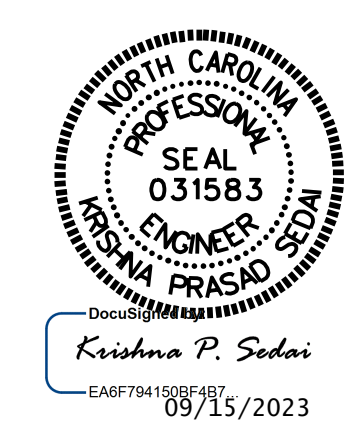
FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CAP AND COLUMN REPAIR DETAILS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  EPOXY RESIN INJECTION
- 

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010

SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 2
SPAN B FACE**

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			28
2			4			

9/15/2023
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AS-BUILT REPAIR QUANTITY TABLE

BENT 2 - SPAN C FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.3	0.2		
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		

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.

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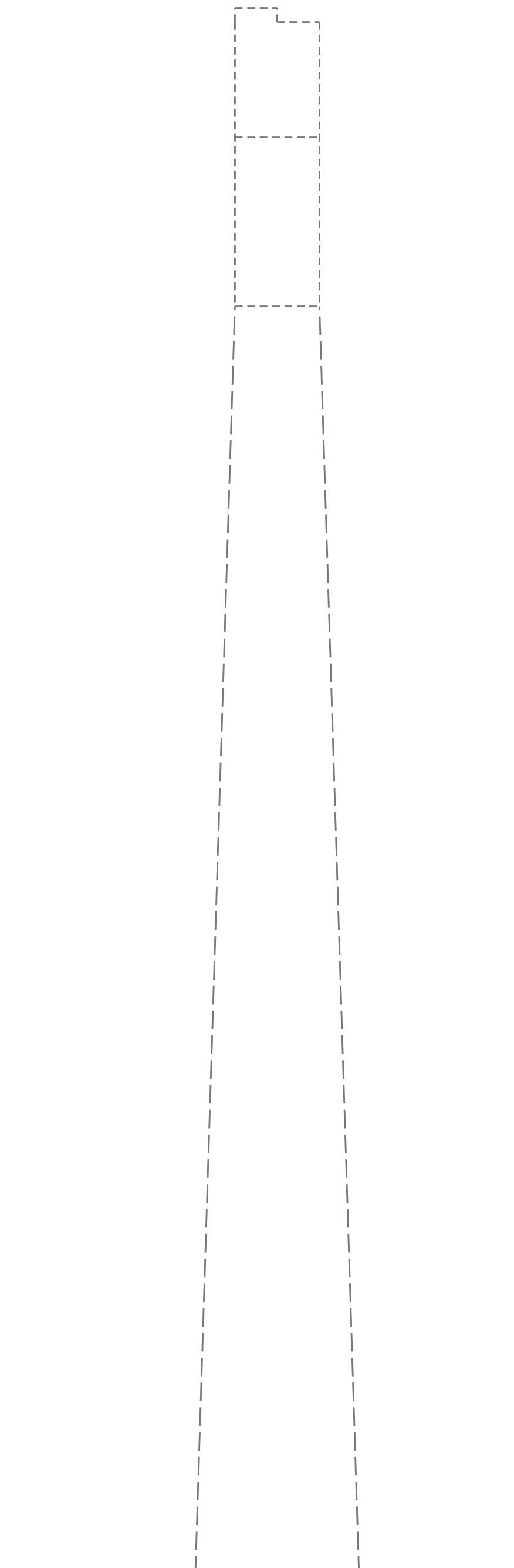
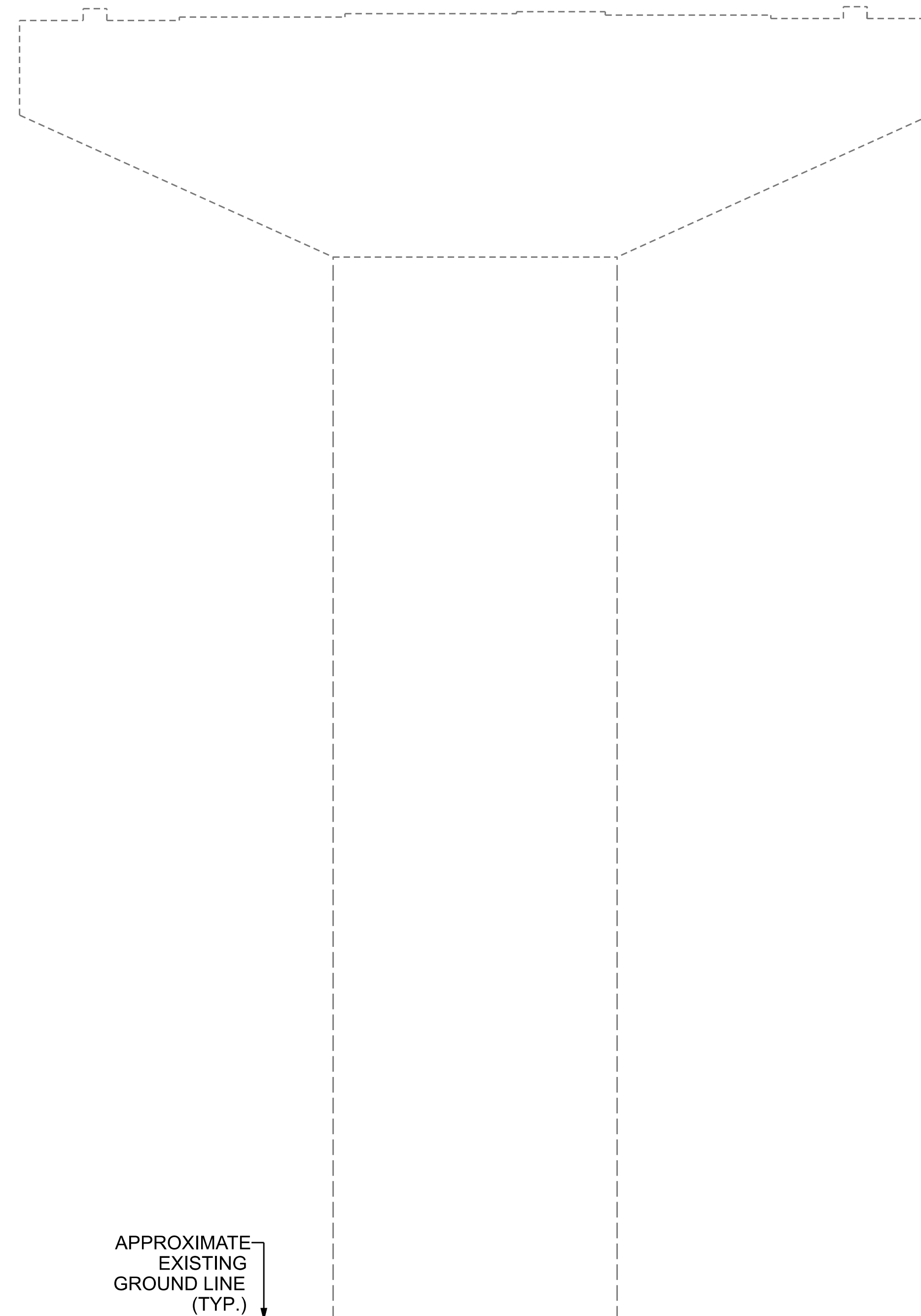
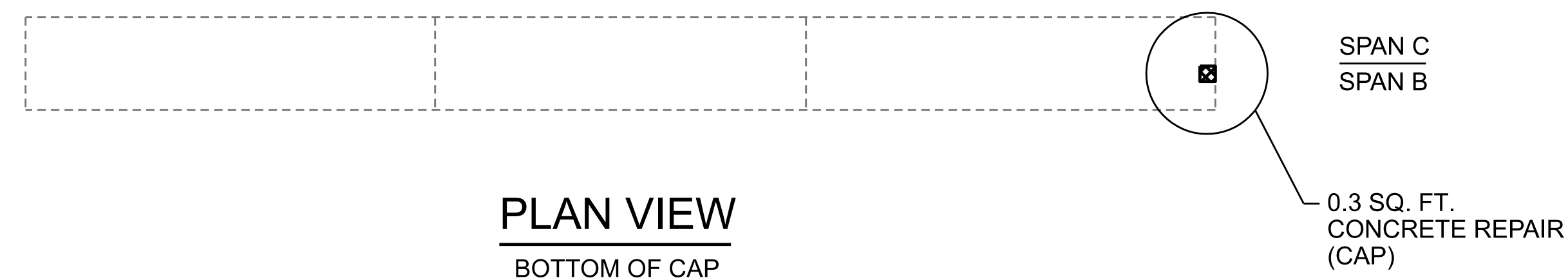
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 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA

 EPOXY RESIN INJECTION





ELEVATION
BENT 2 - SPAN C FACE

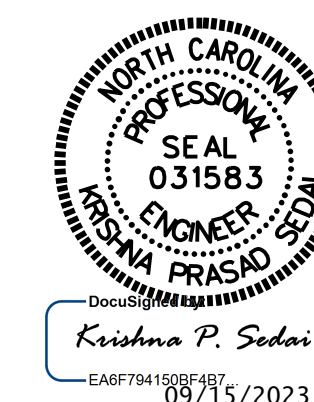
END VIEW

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

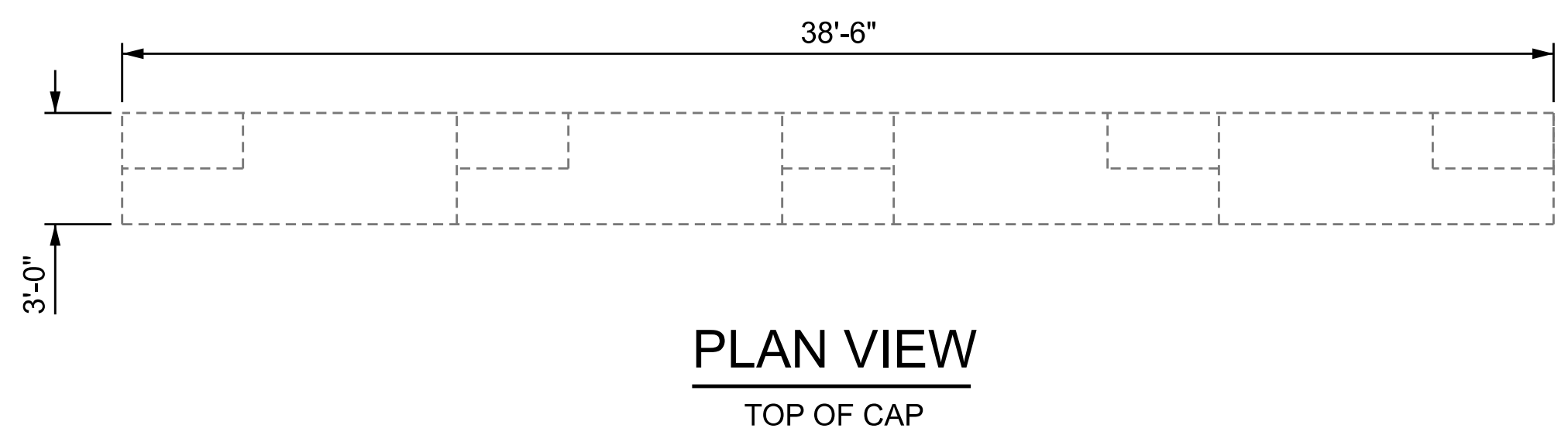
BENT 2
SPAN C FACE



REVISIONS					SHEET NO.
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1			3		
2			4		

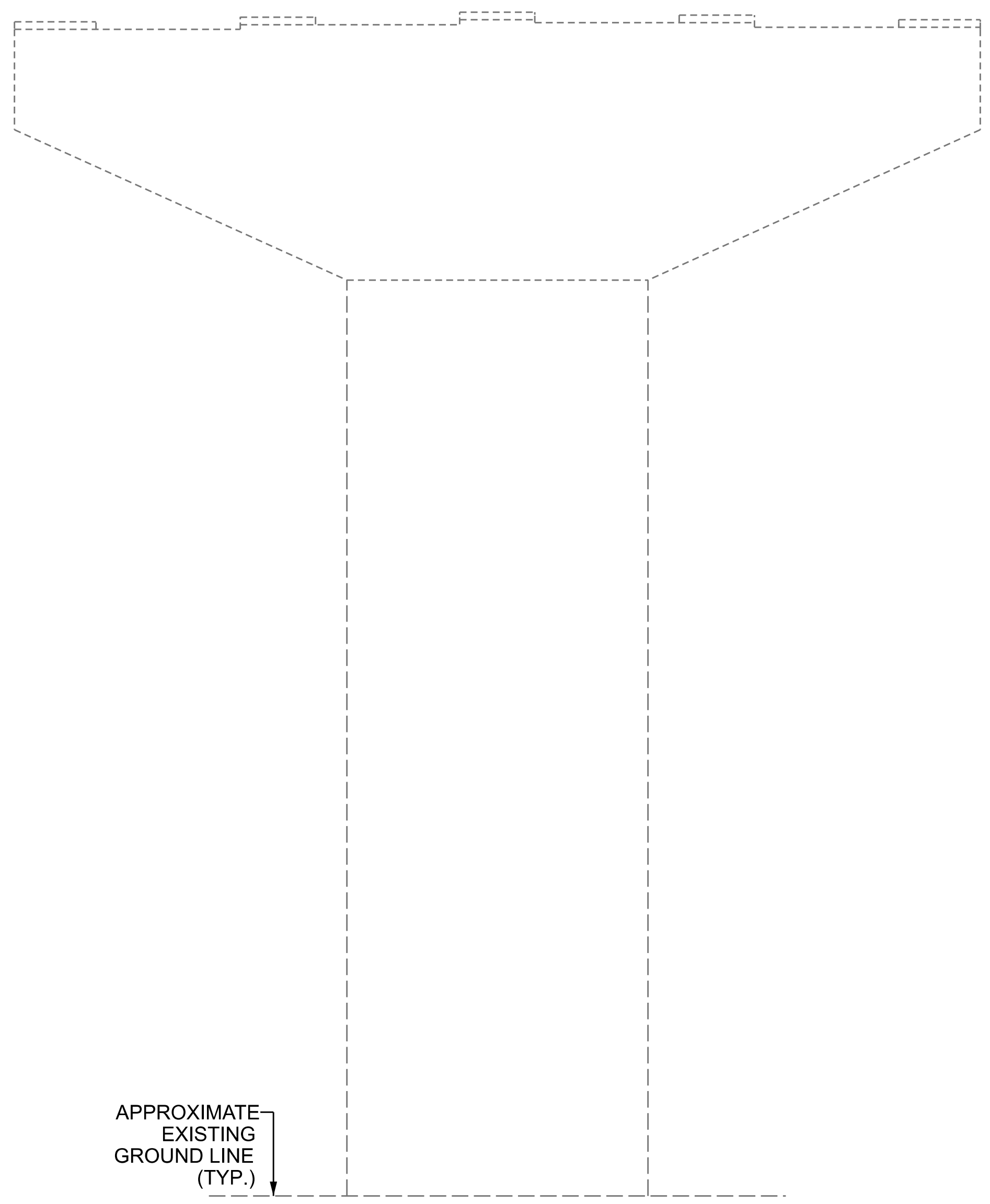
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SPAN D
SPAN C

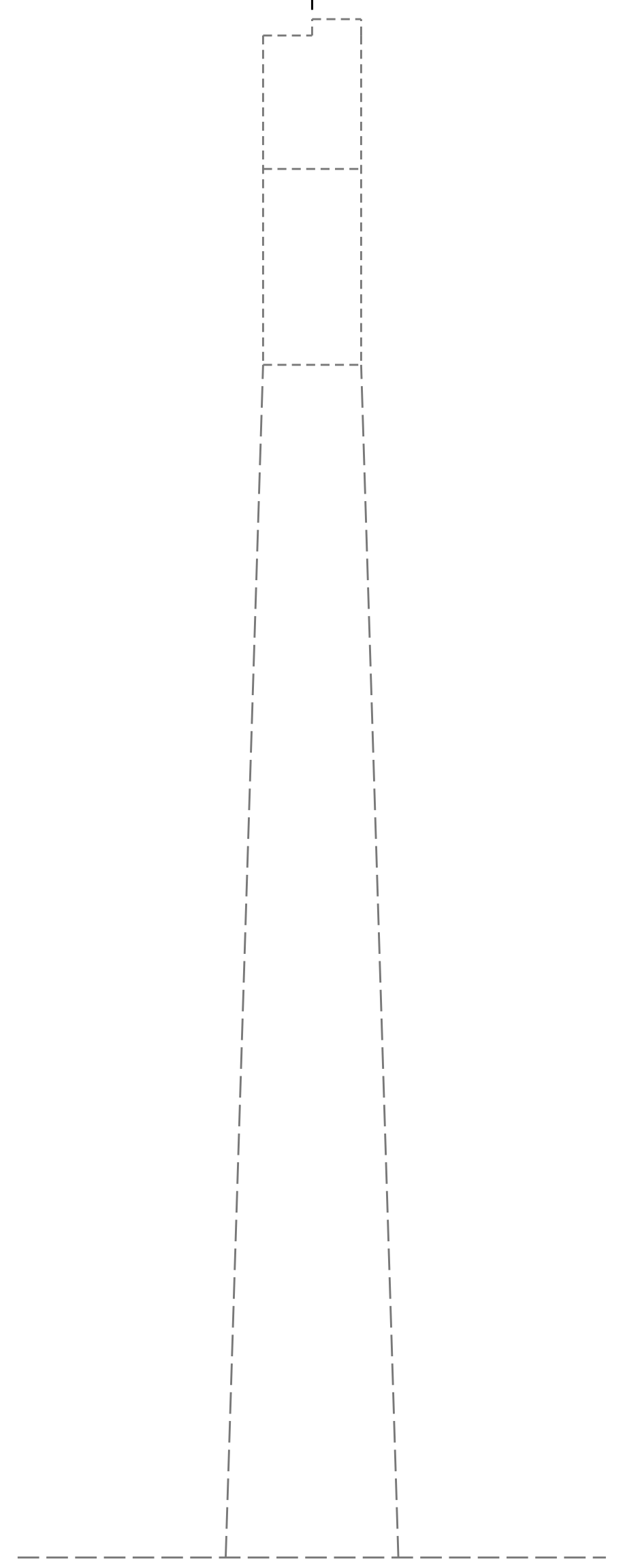
PLAN VIEW
TOP OF CAP



APPROXIMATE
EXISTING
GROUND LINE
(TYP.)

ELEVATION
BENT 3 - SPAN C FACE

SPAN C SPAN D



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 3 - SPAN C FACE	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 BENT CAP		87.0		
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.

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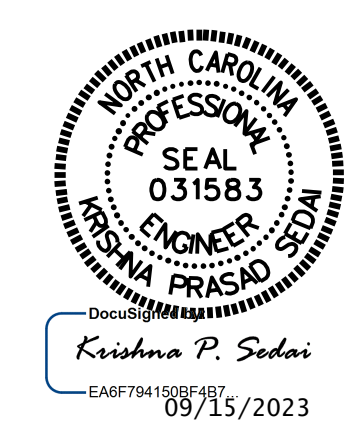
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-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010
 SHEET 1 OF 2



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BENT 3
SPAN C FACE**

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			28
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 3 - SPAN D FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.0	1.5		
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.

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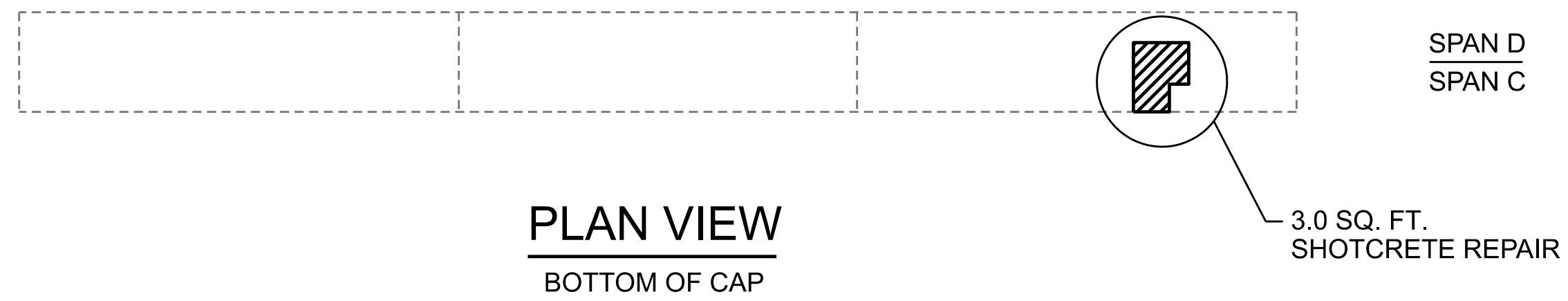
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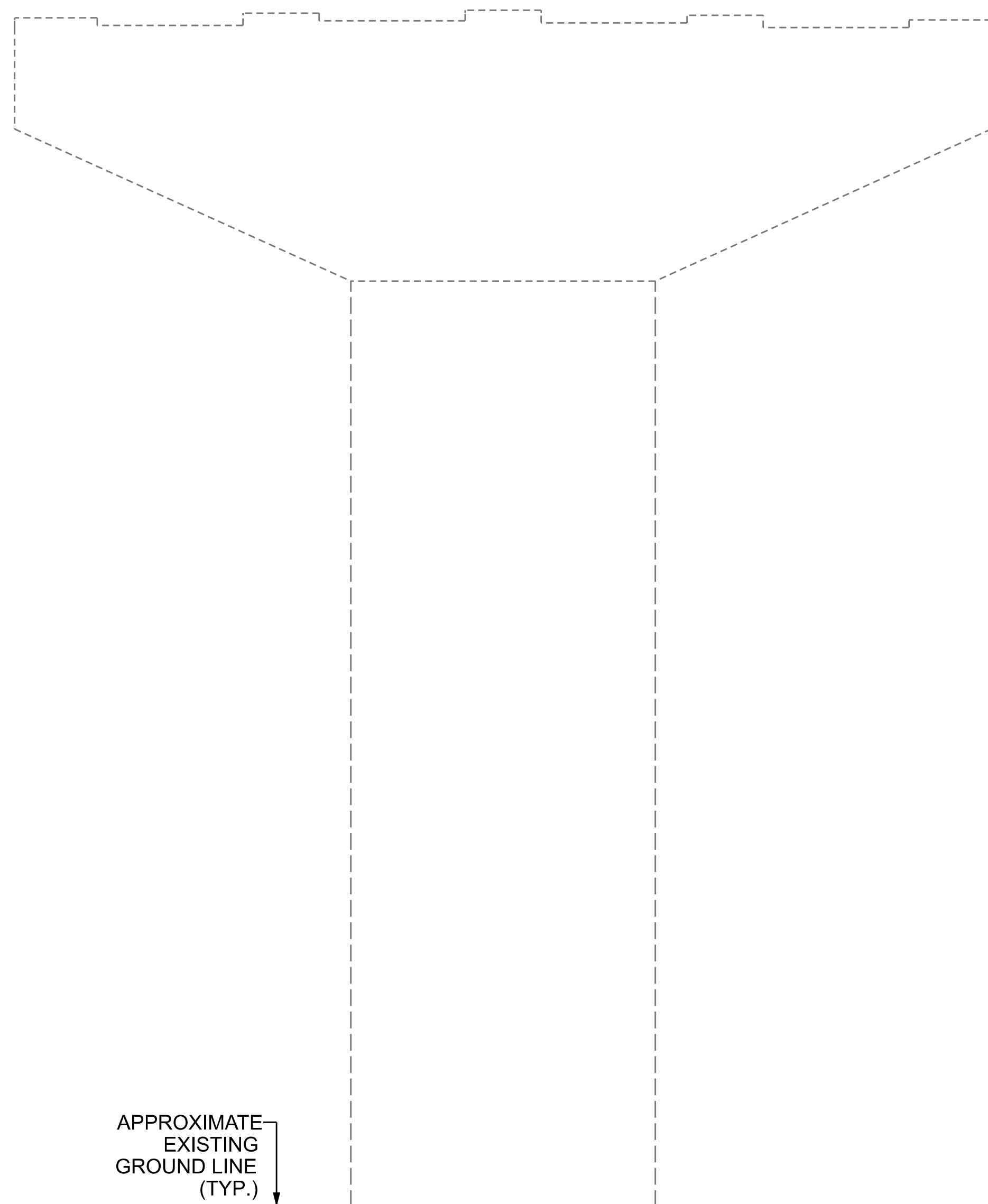
 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA

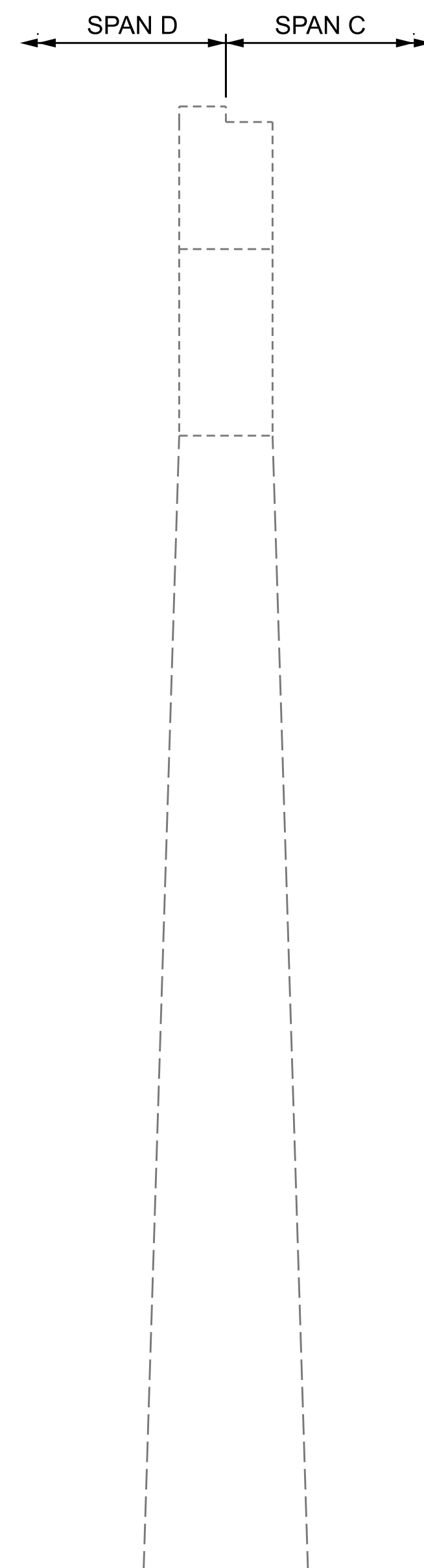
 EPOXY RESIN INJECTION



PLAN VIEW
BOTTOM OF CAP



ELEVATION
BENT 3 - SPAN D FACE



END VIEW

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
BRIDGE NO. 190010

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BENT 3
SPAN D FACE

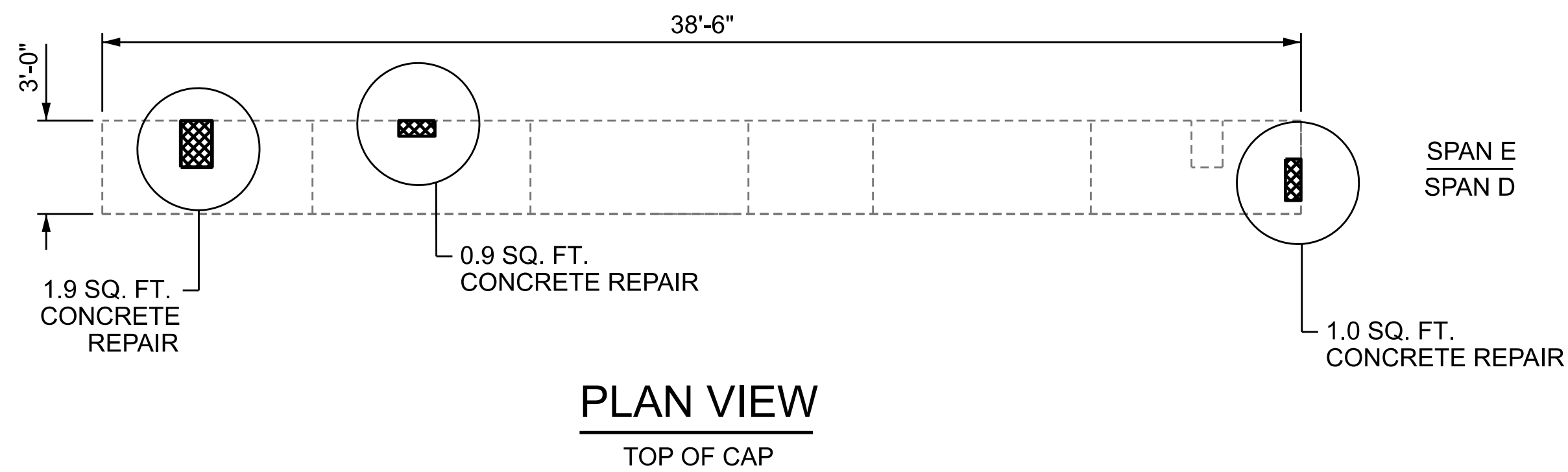


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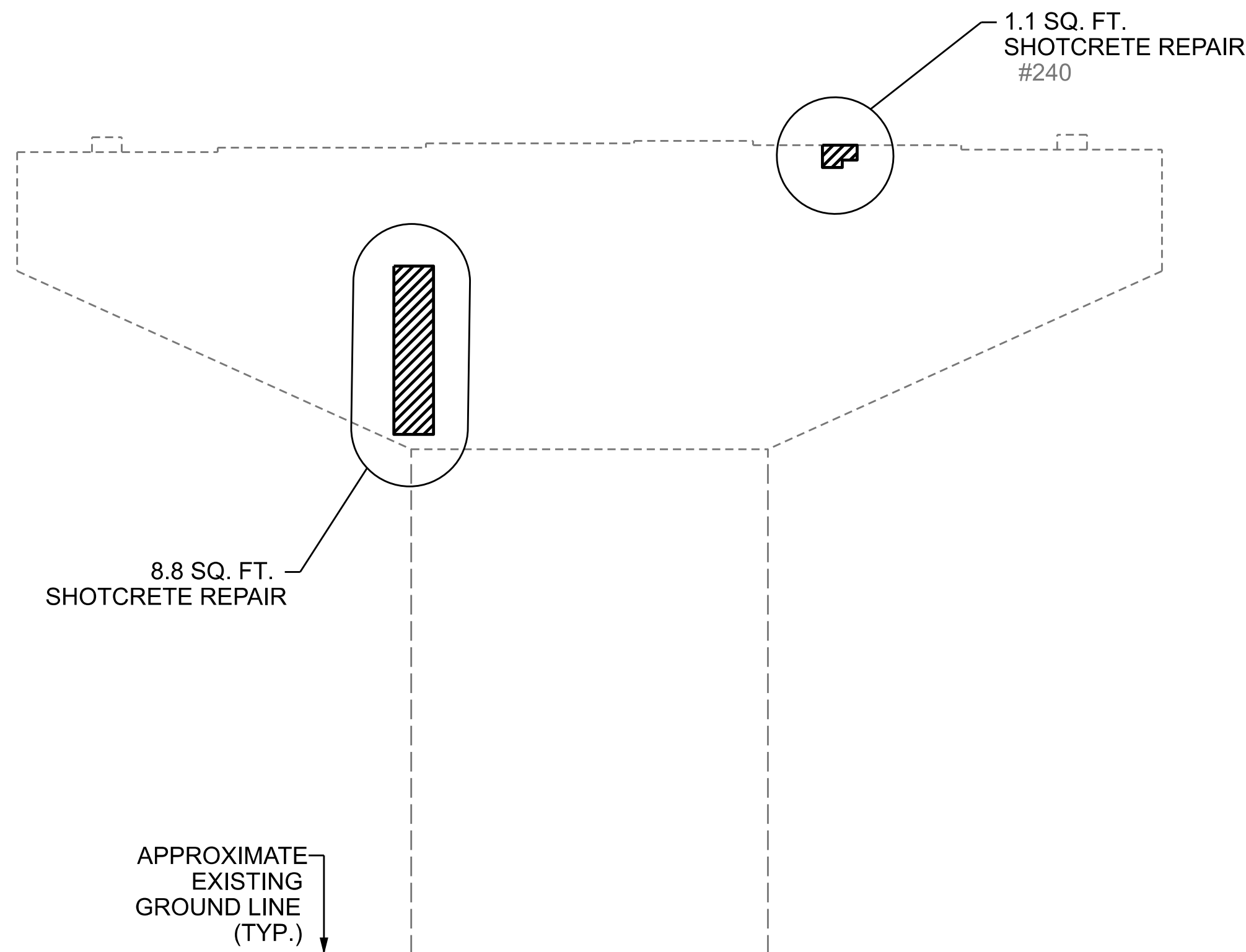
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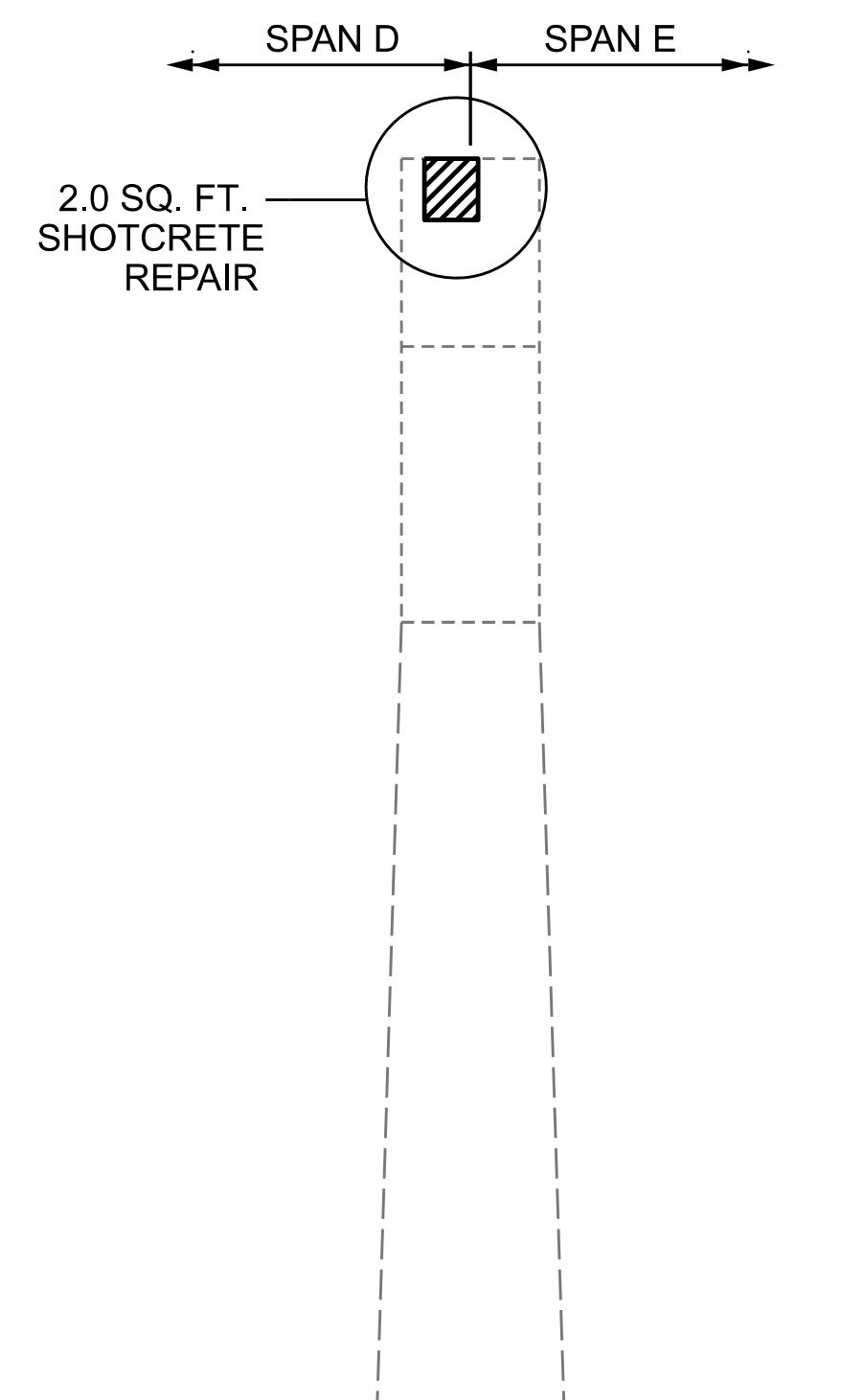
TOTAL SHEETS
28



PLAN VIEW
TOP OF CAP



ELEVATION
BENT 4 - SPAN D FACE



END VIEW

AS-BUILT REPAIR QUANTITY TABLE

BENT 4 - SPAN D FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	11.9	6.0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	3.8	1.9		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
COLUMN		0		
EPOXY COATING		AREA SF		AREA SF
TOP OF BENT CAP		87.0		
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.

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 SHOTCRETE REPAIR AREA

 CONCRETE REPAIR AREA

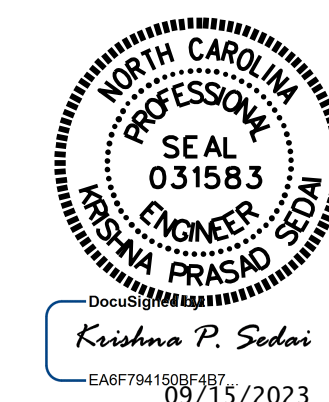
 EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 1 OF 2



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**BENT 4
SPAN D FACE**

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
CHECKED BY : A. SORSENGINH DATE : 6/2022
DESIGN ENGINEER OF RECORD: _____ DATE : _____

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1			3			28
2			4			

AS-BUILT REPAIR QUANTITY TABLE

BENT 4 - SPAN E FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	18.1	9.1		
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		

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

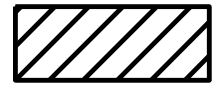


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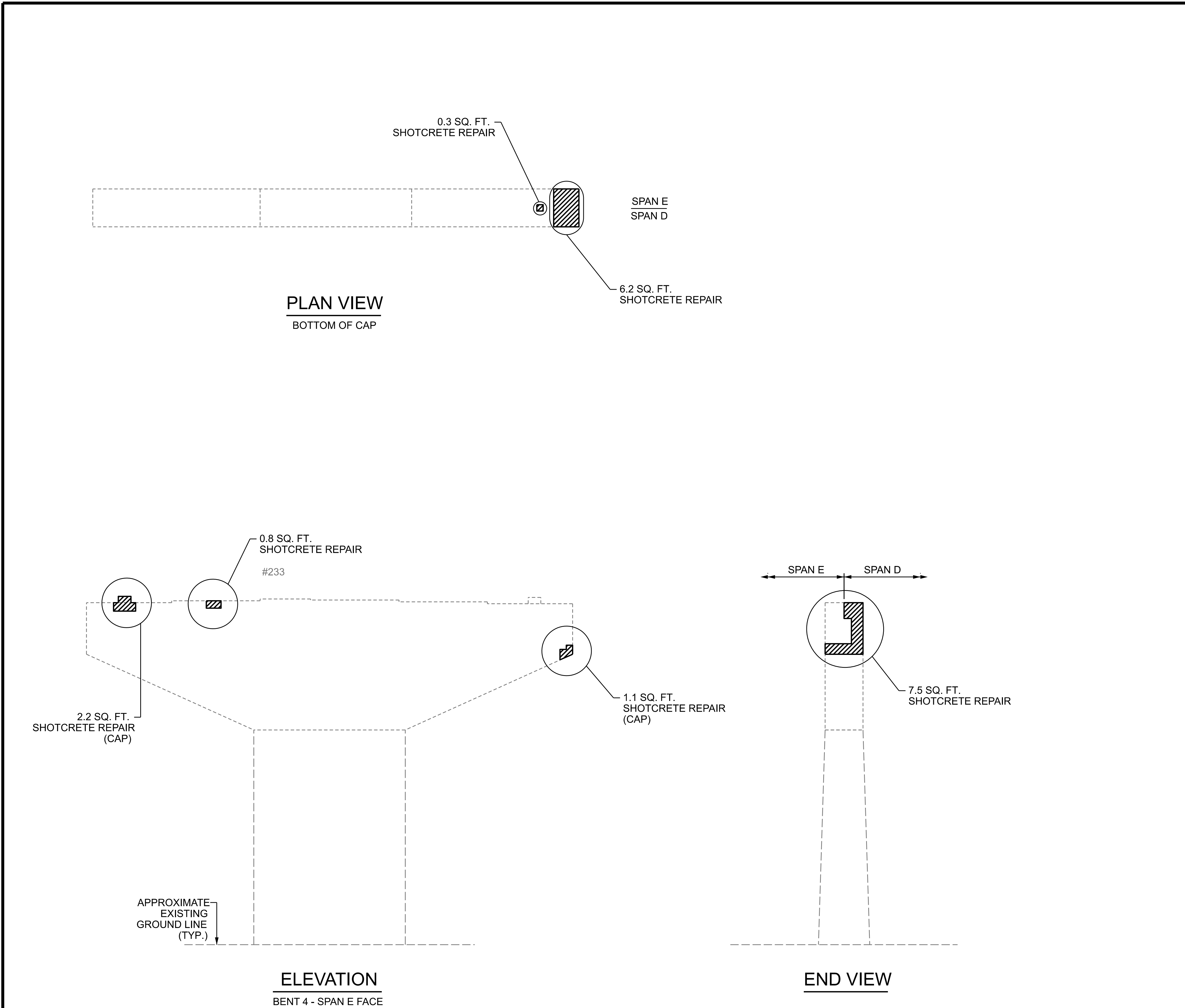
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-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  EPOXY RESIN INJECTION



PROJECT NO. 15BPR.125.3

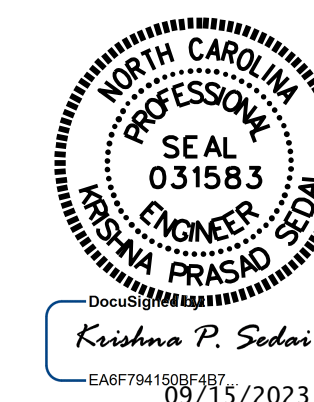
CHEROKEE COUNTY

BRIDGE NO. 190010

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

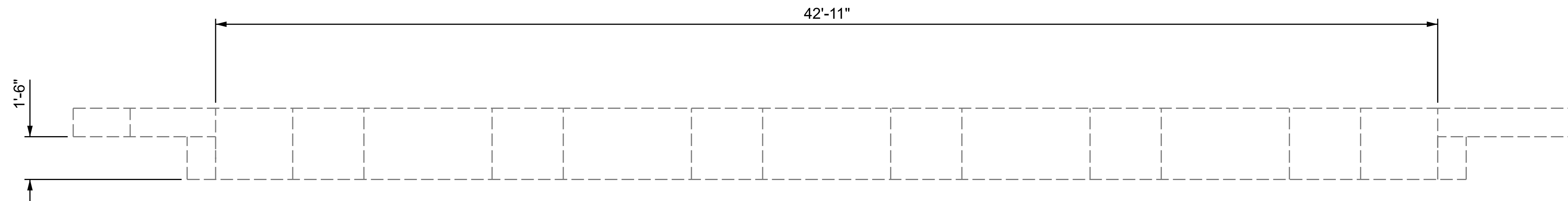
**BENT 4
SPAN E FACE**



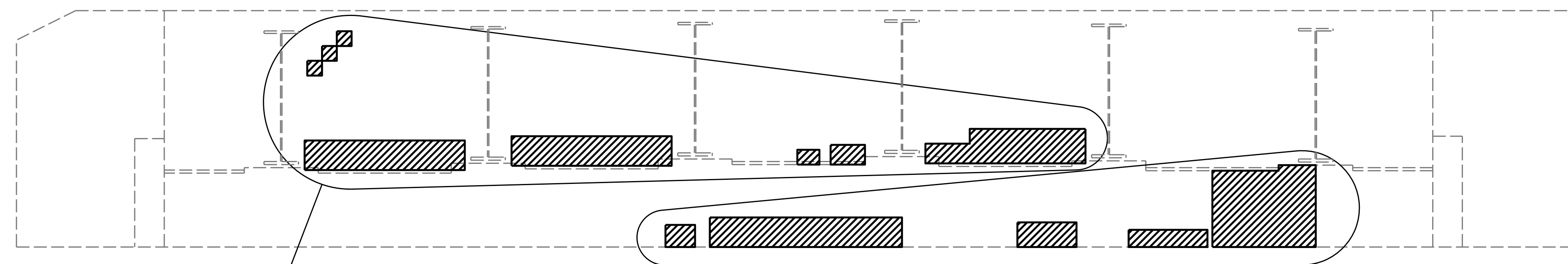
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-26
1			3			TOTAL SHEETS
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 CHECKED BY : A. SORSENGINH DATE : 6/2022
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TOP OF CAP



ELEVATION

20.4 SQ. FT.
SHOTCRETE REPAIR

20.7 SQ. FT.
SHOTCRETE REPAIR

AS-BUILT REPAIR QUANTITY TABLE

REPAIRS - END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	20.7	10.4		
CURTAIN WALL	20.4	10.2		
WINGWALL				
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CURTAIN WALL	0	0		
WINGWALL				
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
CURTAIN WALL		0		
WINGWALL				
EPOXY COATING		AREA SF		AREA SF
TOP OF CAP		63		

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.

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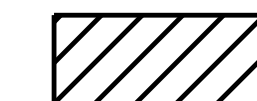
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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.



SHOTCRETE REPAIR AREA



CONCRETE REPAIR AREA

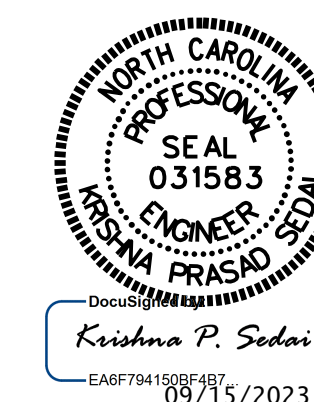


EPOXY RESIN INJECTION

PROJECT NO. 15BPR.125.3

CHEROKEE COUNTY

BRIDGE NO. 190010



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT 2

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
CHECKED BY : A. SORSENGINH DATE : 6/2022
DESIGN ENGINEER OF RECORD: DATE :

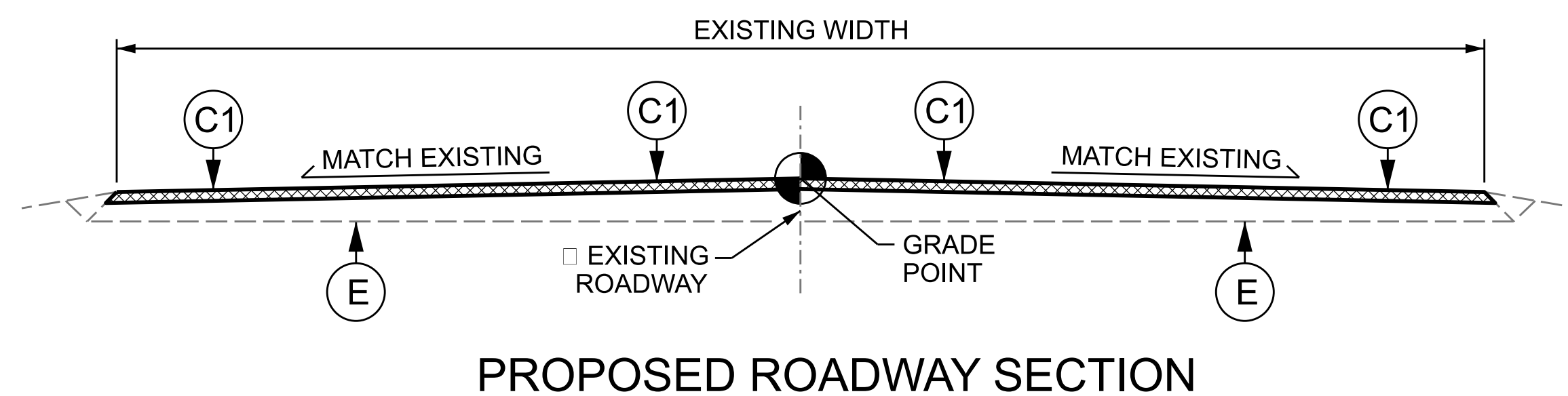
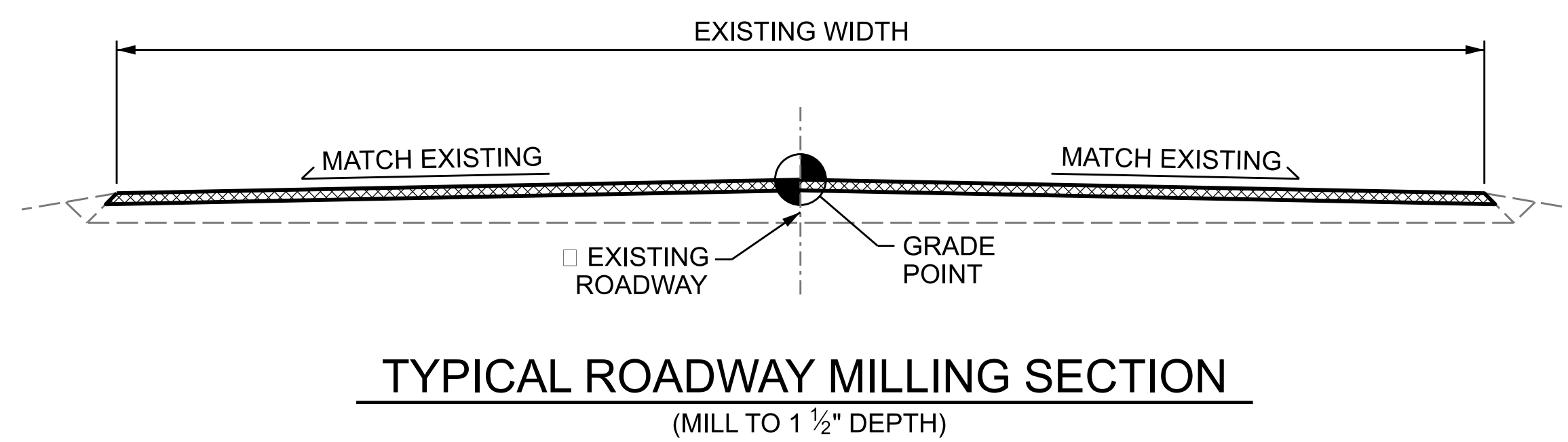
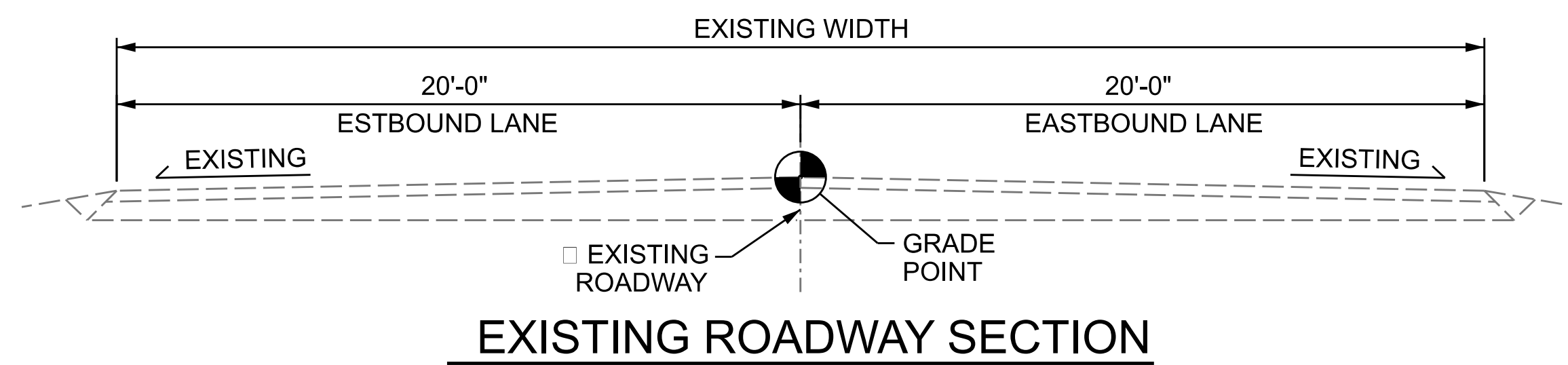
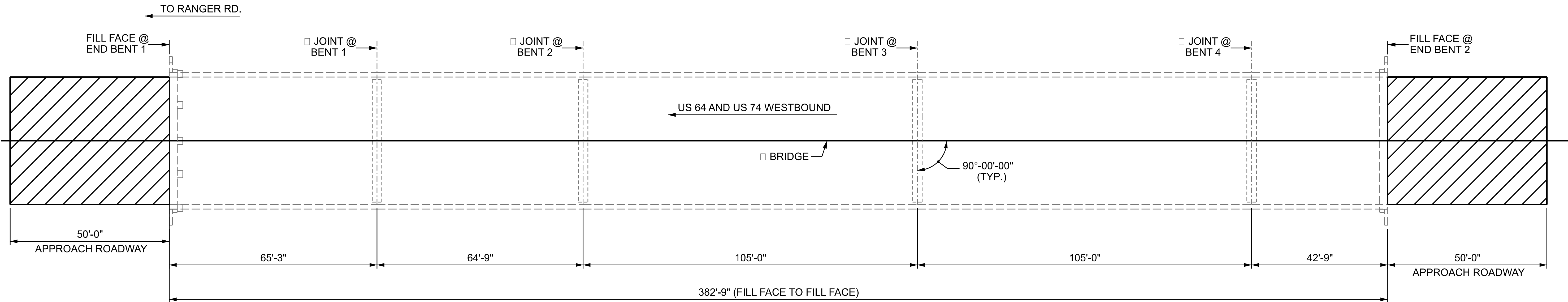
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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-27
1			3			TOTAL SHEETS
2			4			28

NOTES

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVEMENT TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1 1/2" DEPTH OF NEW ASPHALT PAVEMENT. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1 1/2" DUE TO SETTLEMENT OF THE EXISTING APPROACH.



SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	445.0 SQ. YD.	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B	40.0 TONS	
ASPHALT BINDER FOR PLANT MIX	5.0 TONS	

C1	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
E	EXISTING PAVEMENT

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 STATION: 190010



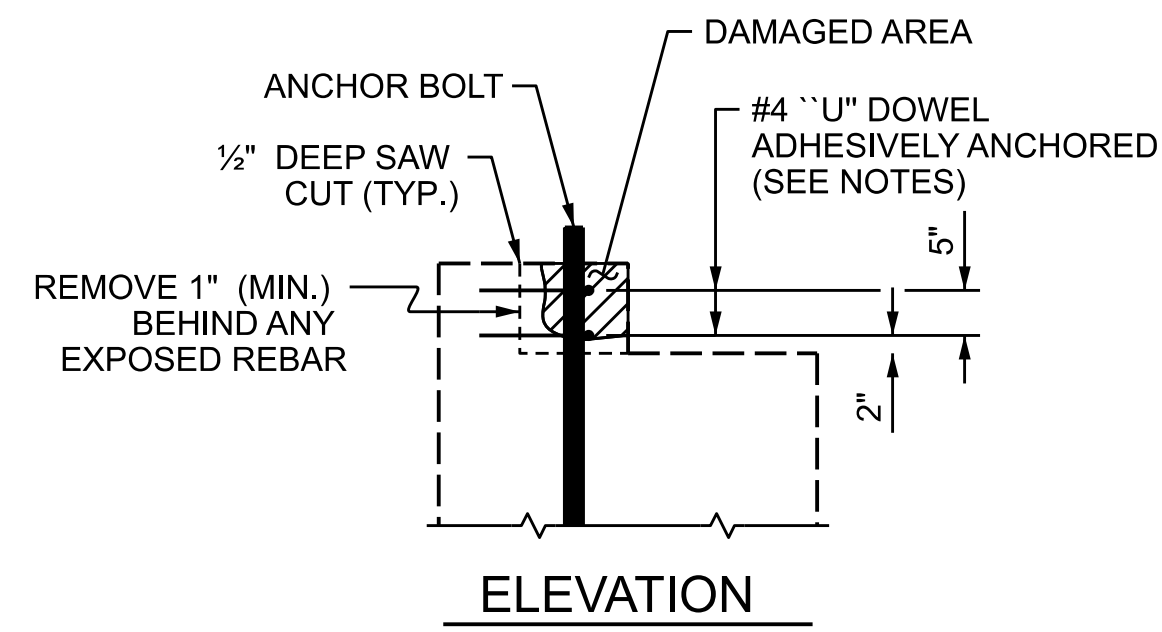
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**INCIDENTAL MILLING
 AND TYPICAL ROADWAY
 SECTIONS**

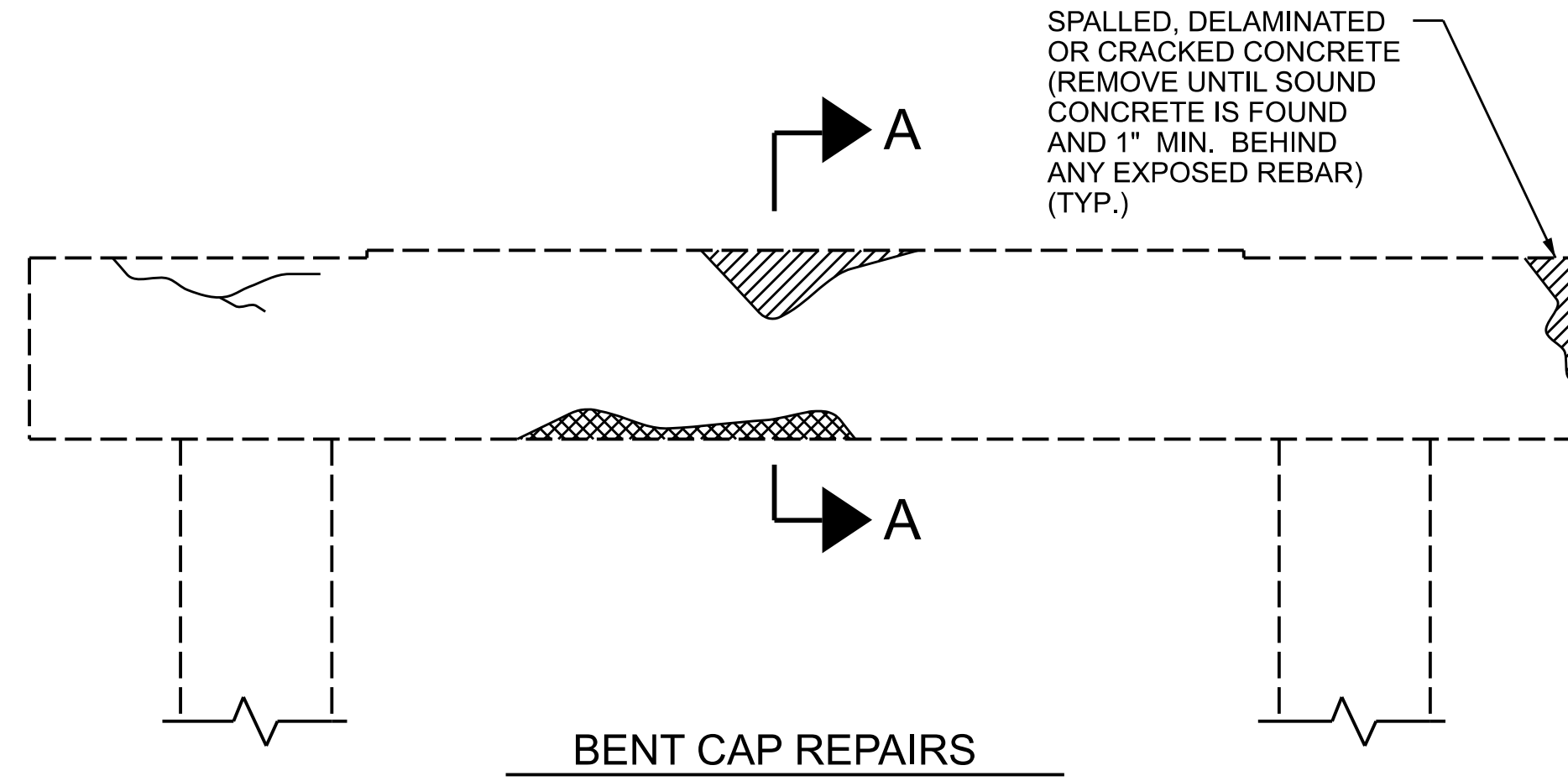
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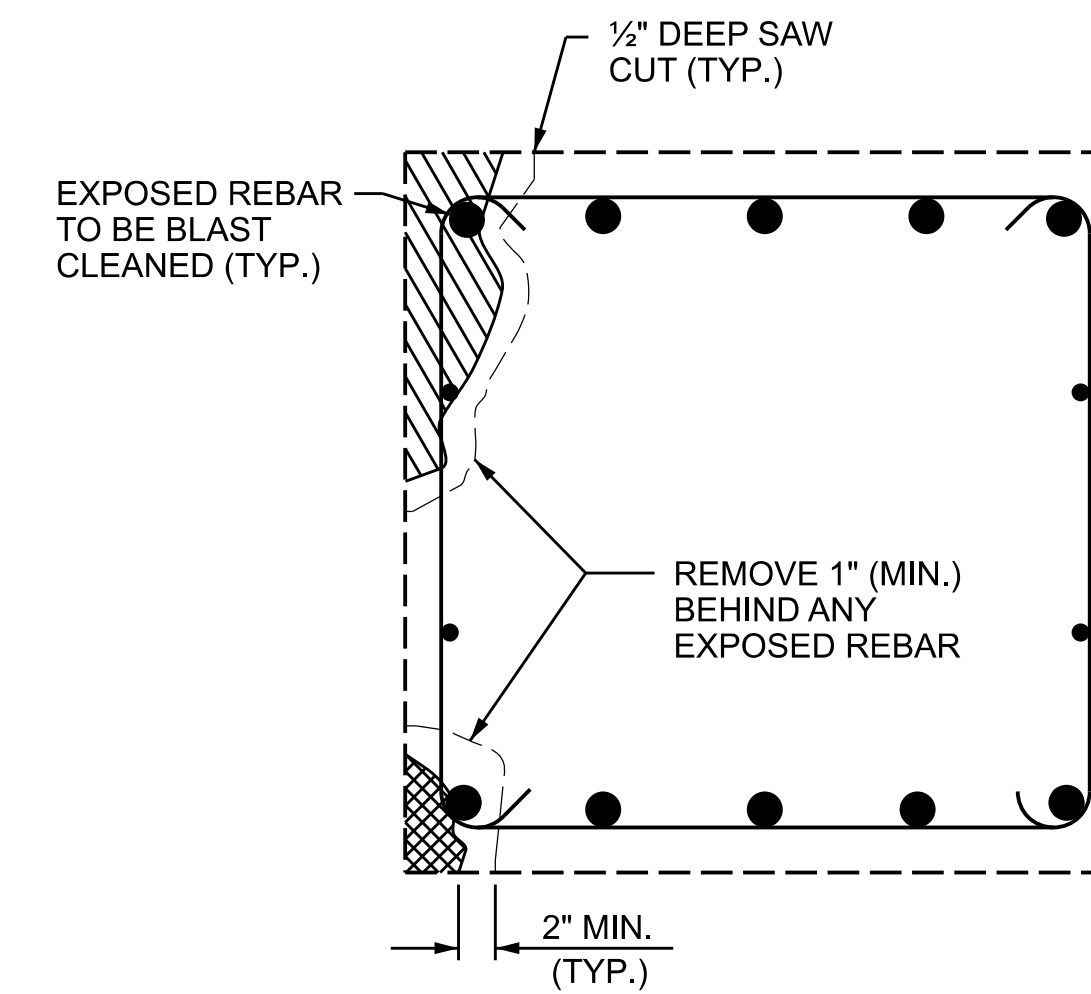
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-28
1			3			TOTAL SHEETS
2			4			28



PEDESTAL WALL REPAIR



BENT CAP REPAIRS



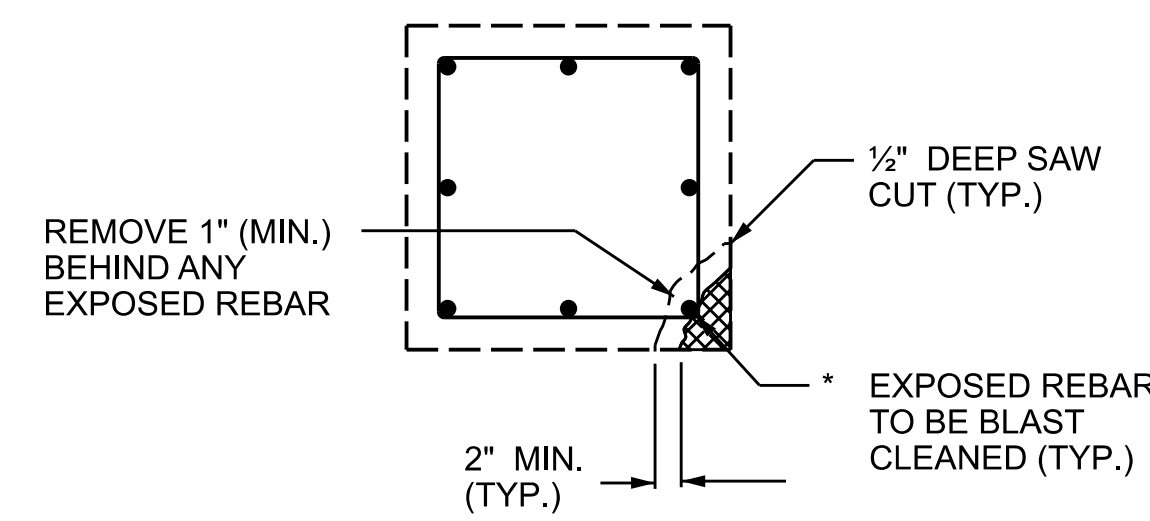
SECTION A-A

CAP REPAIR

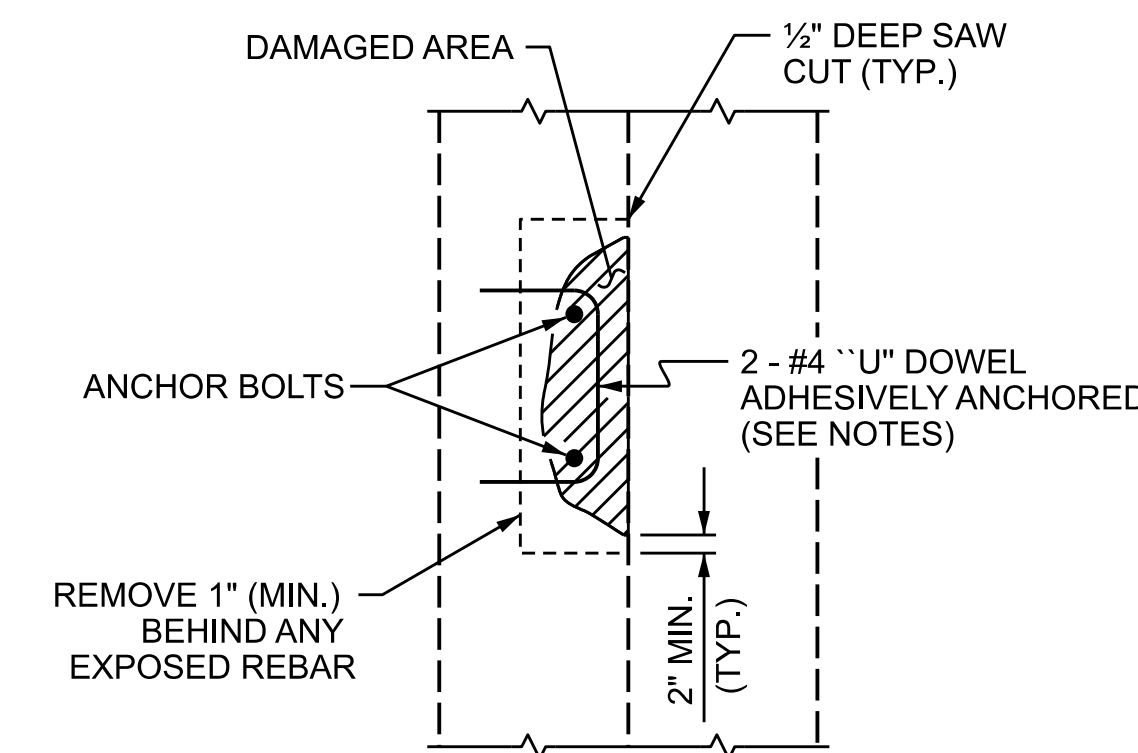
SPLICE LENGTH TABLE	
BAR SIZE	MIN. SPLICE LENGTH
#4	2'-4"
#5	2'-9"
#6	4'-0"
#7	5'-3"
#8	6'-9"
#9	8'-6"
#10	10'-11"
#11	13'-4"

REPAIR KEY

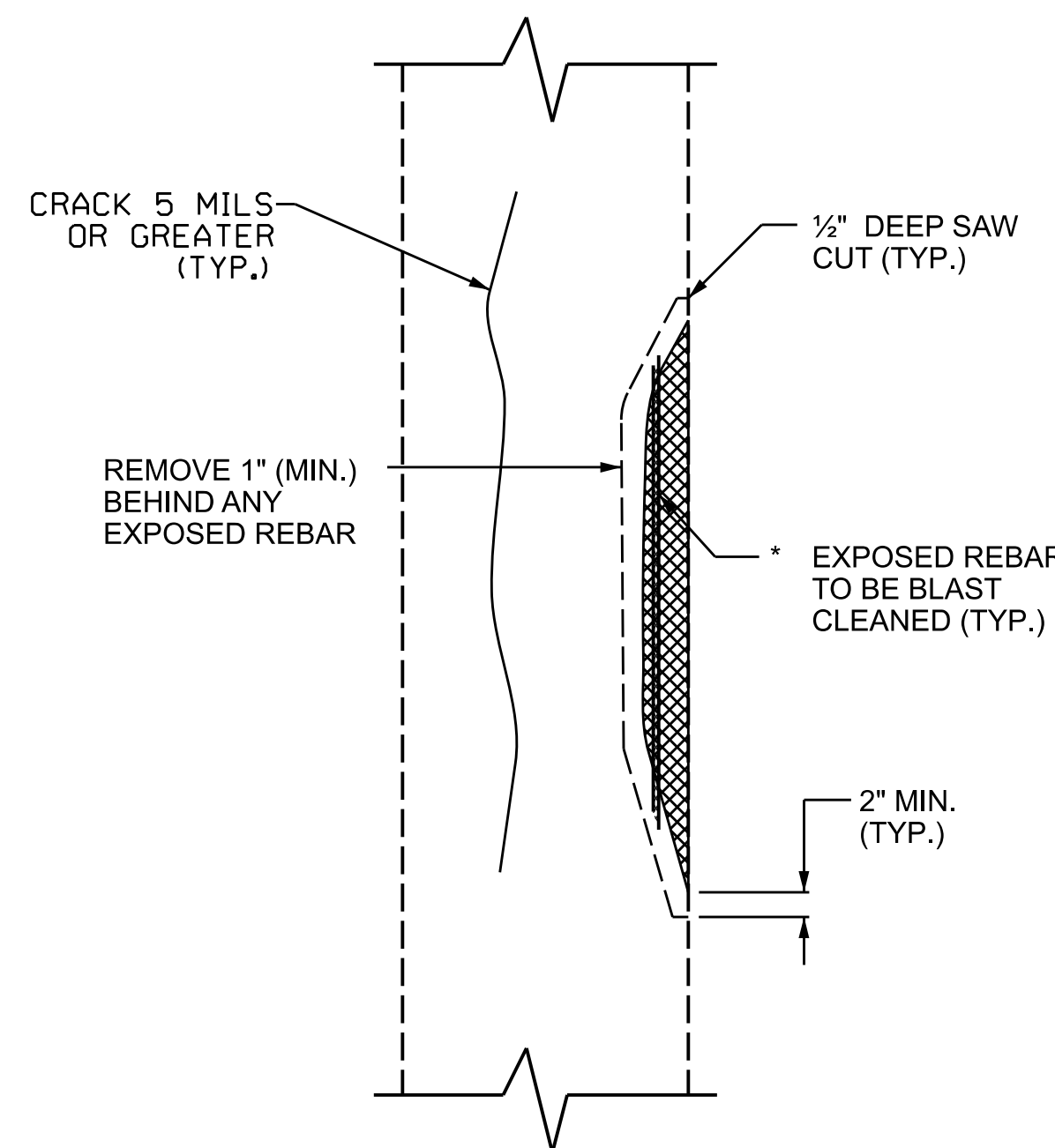
- CONCRETE REPAIR AREA (FORM AND POUR)
- SHOTCRETE REPAIR AREA
- EPOXY RESIN INJECTION (ERI)



PLAN OF COLUMN



PLAN



ELEVATION OF COLUMN

COLUMN REPAIR

* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.

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 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.

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.

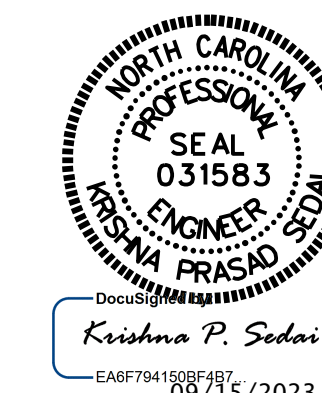
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

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

PROJECT NO. 15BPR.125.3
 CHEROKEE COUNTY
 BRIDGE NO. 190009, 190010



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

ASSEMBLED BY : A. SORSENGINH DATE : 8/2022
 CHECKED BY : S. A. HERNANDEZ DATE : 8/2022
 DRAWN BY : NAP 8/18
 CHECKED BY :

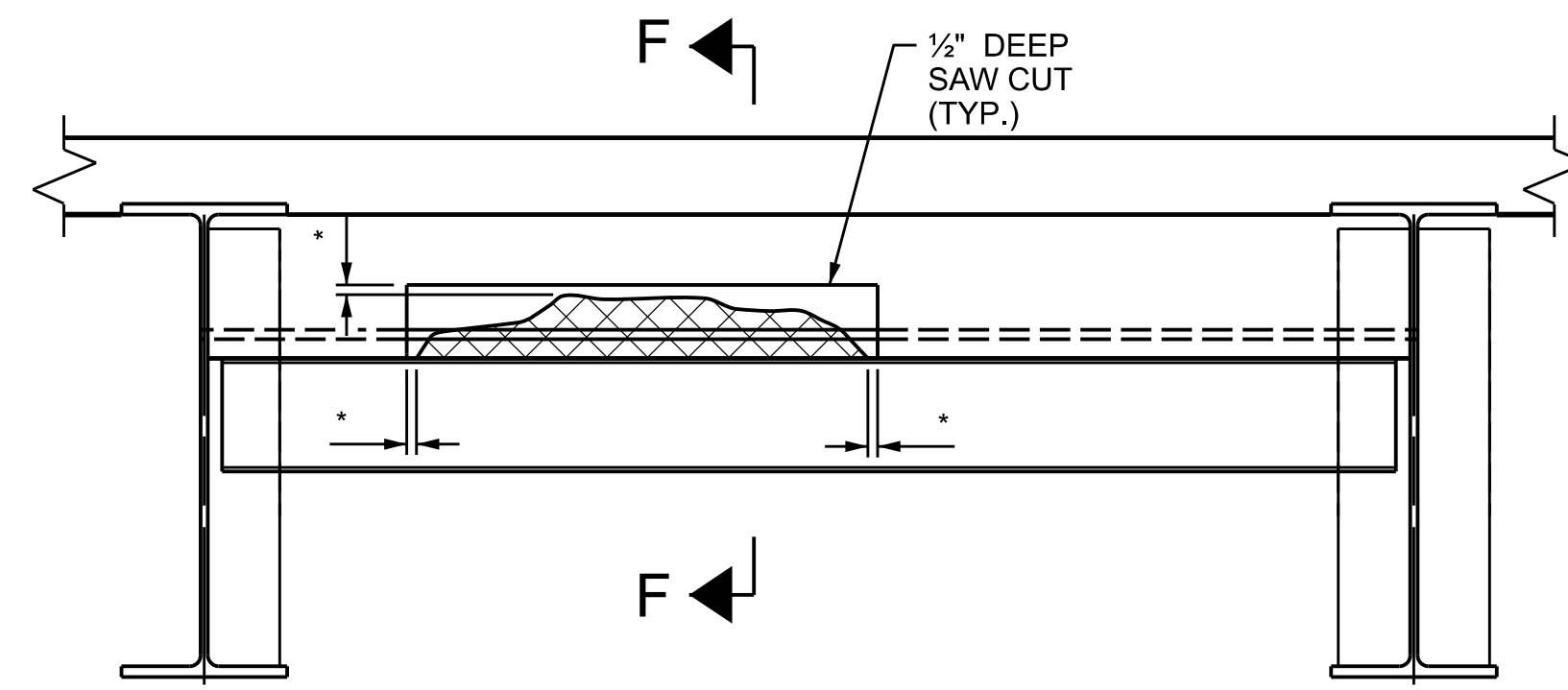
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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NO.	BY:	DATE:	NO.	BY:	DATE:	SD-1
1			3			101A
2			4			5

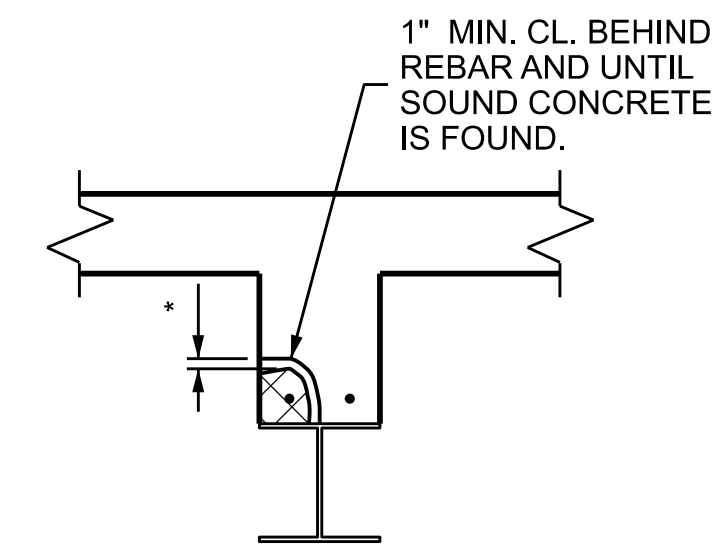
NOTE: OVERHANG DIAPHRAGMS TO BE REMOVED AND REPLACED, ARE SHOWN ON "PLAN OF SPAN" SHEET. OVERHANG DIAPHRAGMS SHALL BE REMOVED PRIOR TO CLEANING AND PAINTING OF BEAMS AND REPLACED AFTER BEAM REPAIRS AND PAINTING ARE COMPLETE.

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

 DAMAGED AREA

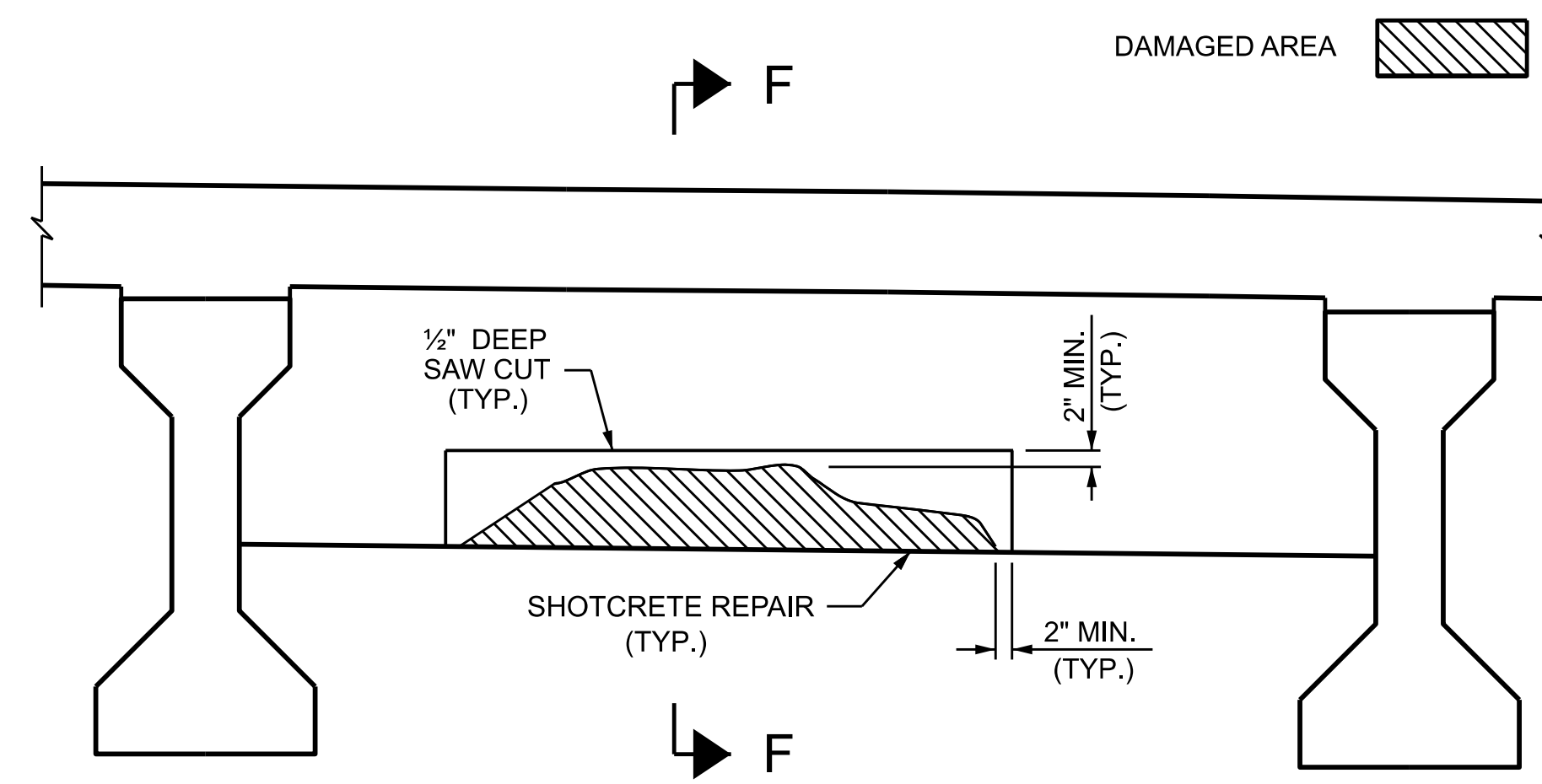


TYPICAL SECTION

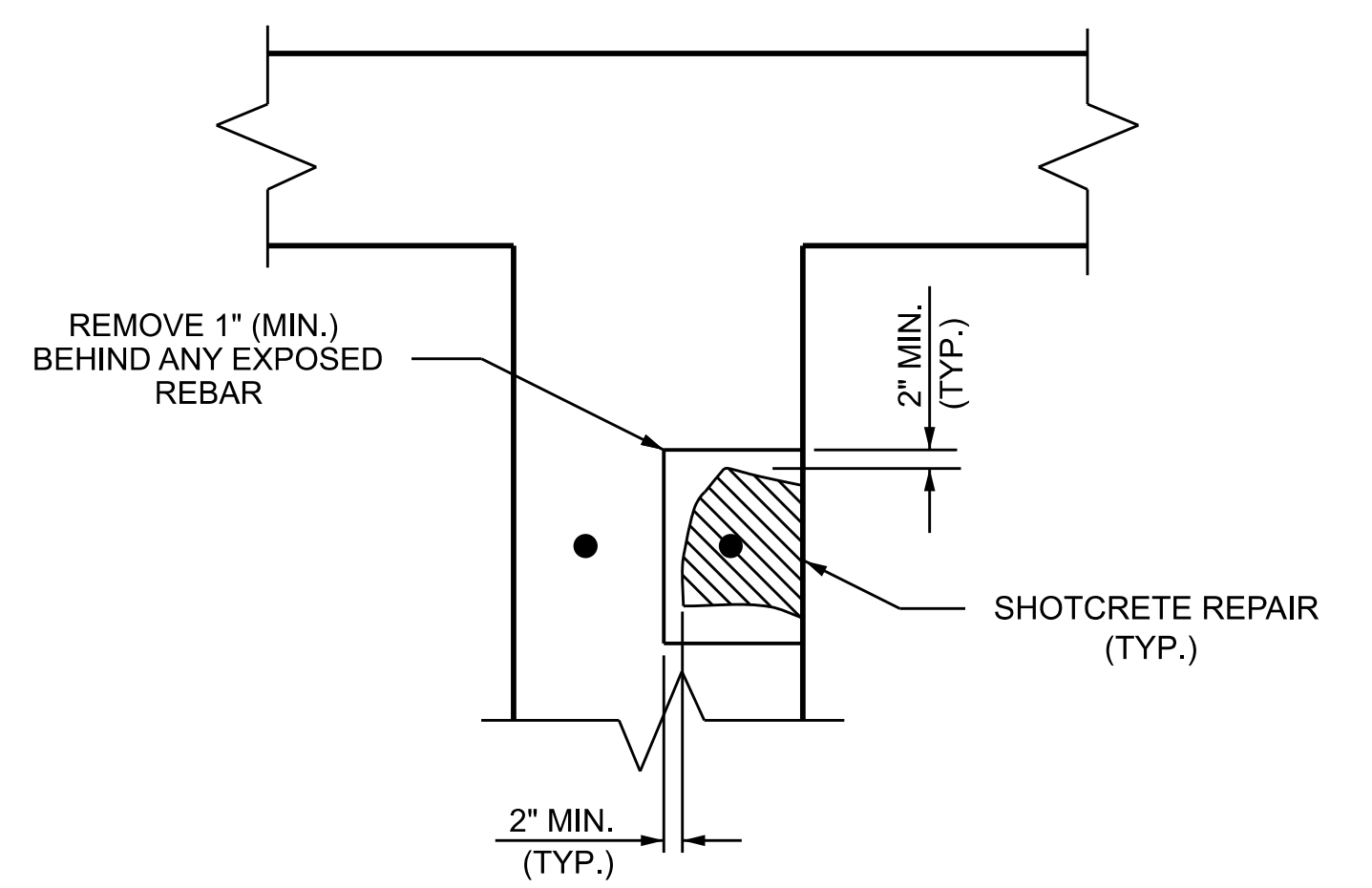


SECTION F-F

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



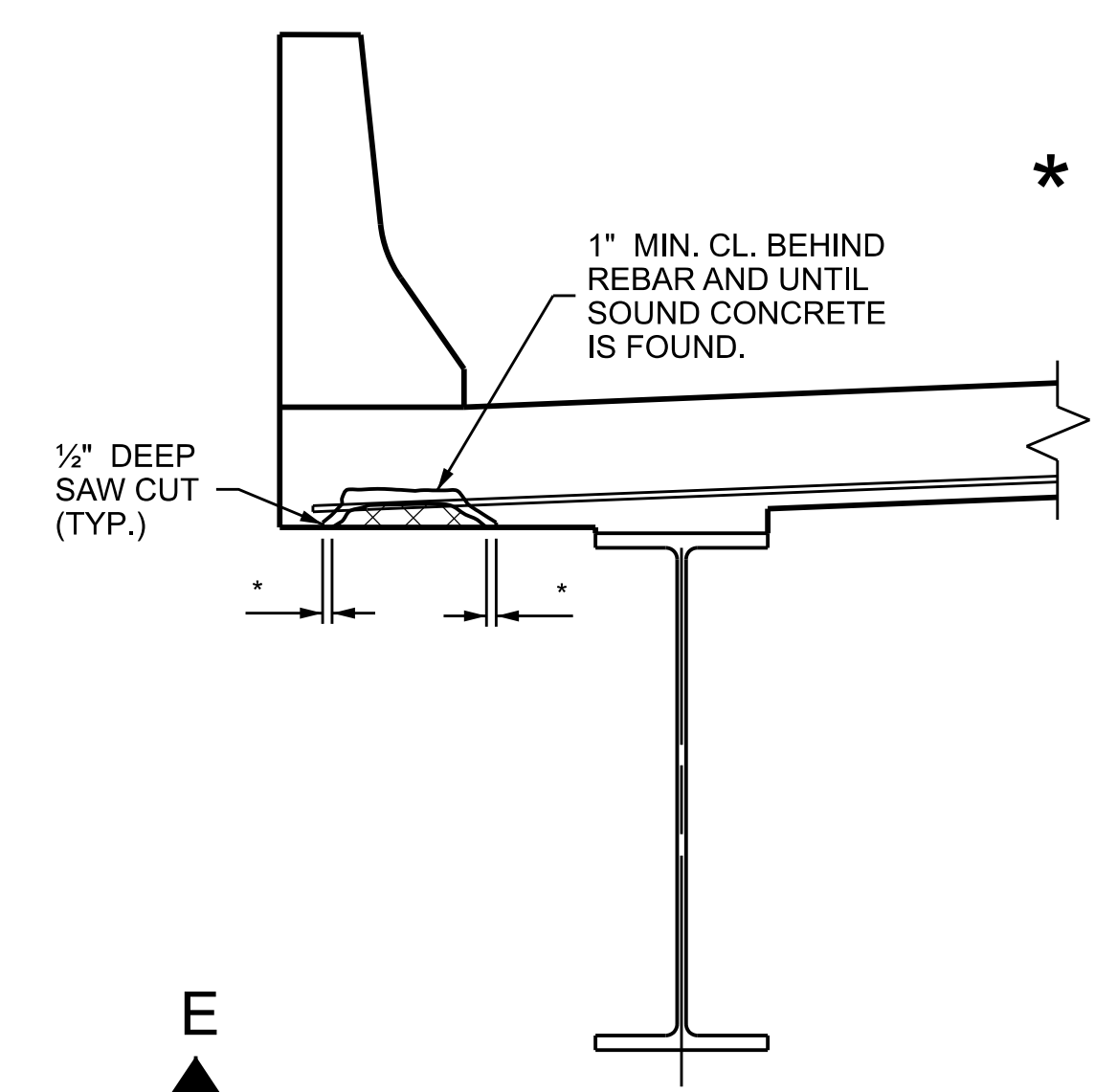
TYPICAL SECTION



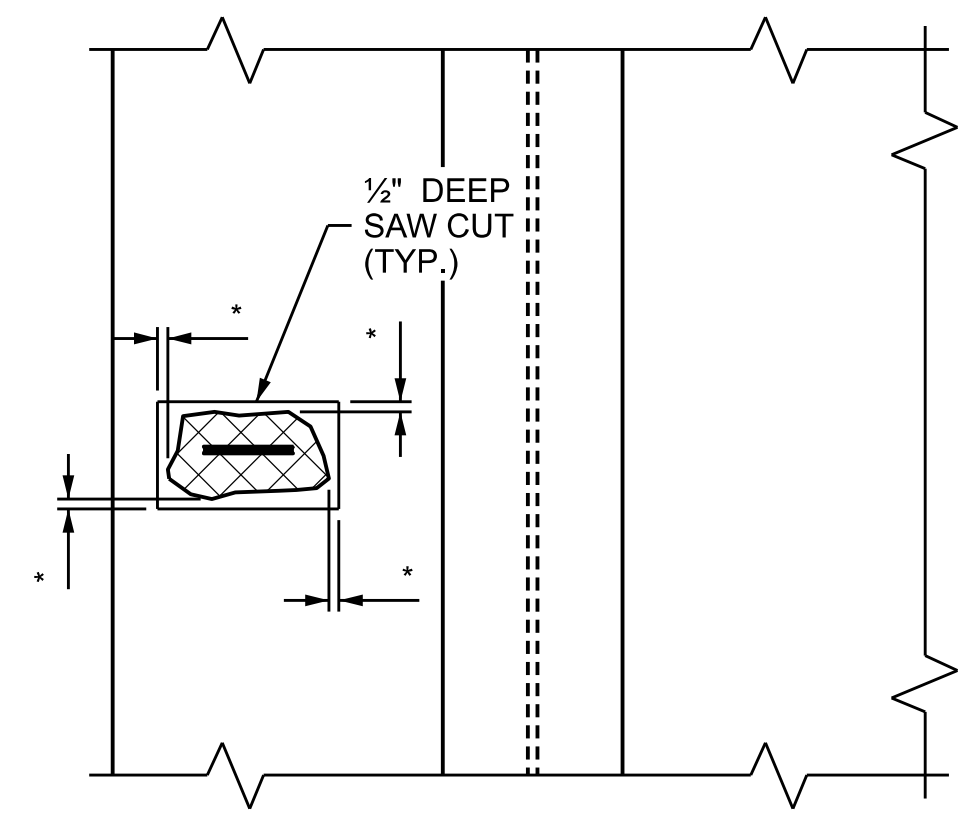
SECTION F-F

BENT DIAPHRAGM REPAIR DETAILS

INTERIOR DIAPHRAGM REPAIR DETAILS



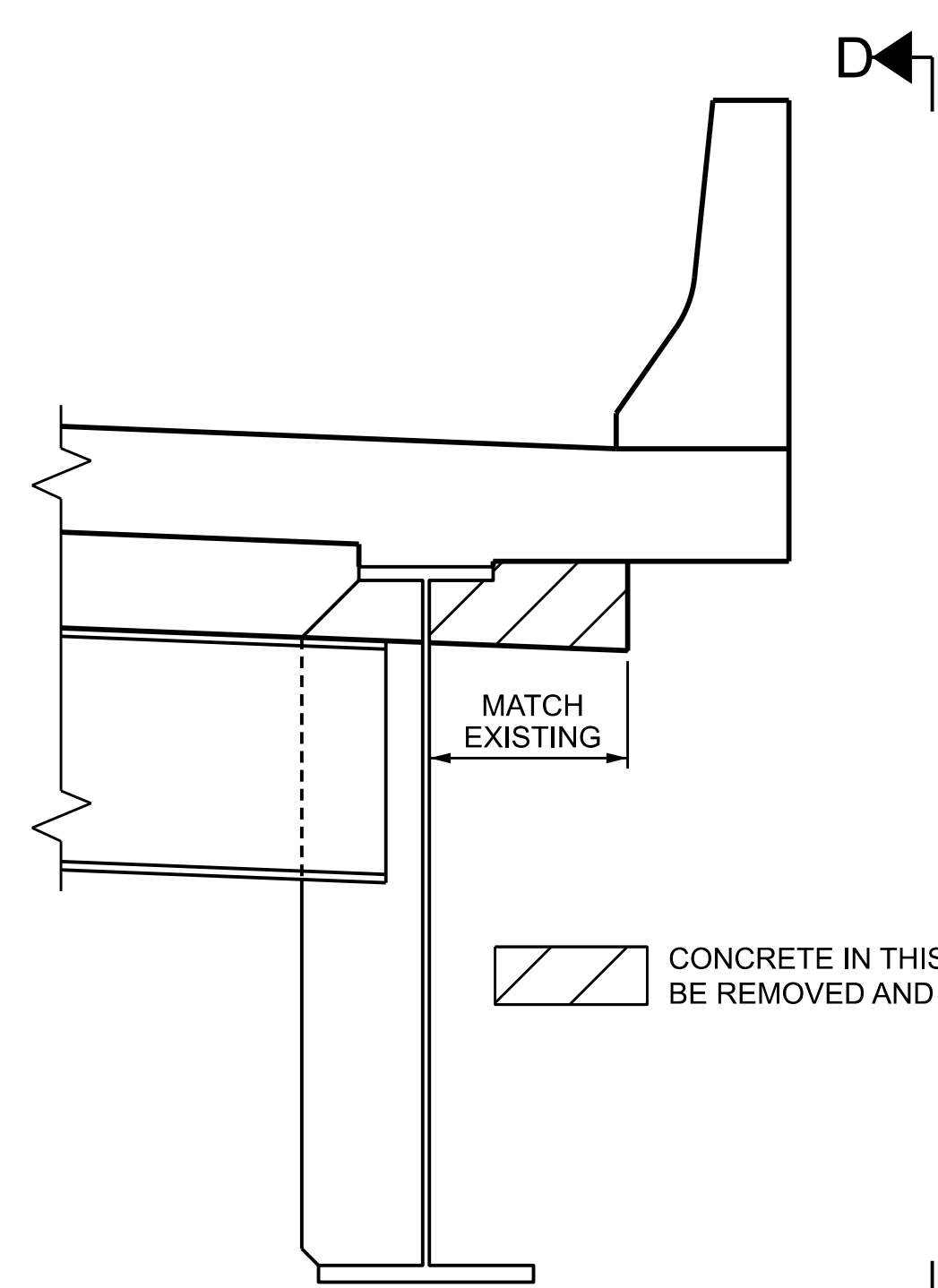
TYPICAL SECTION



SECTION E-E

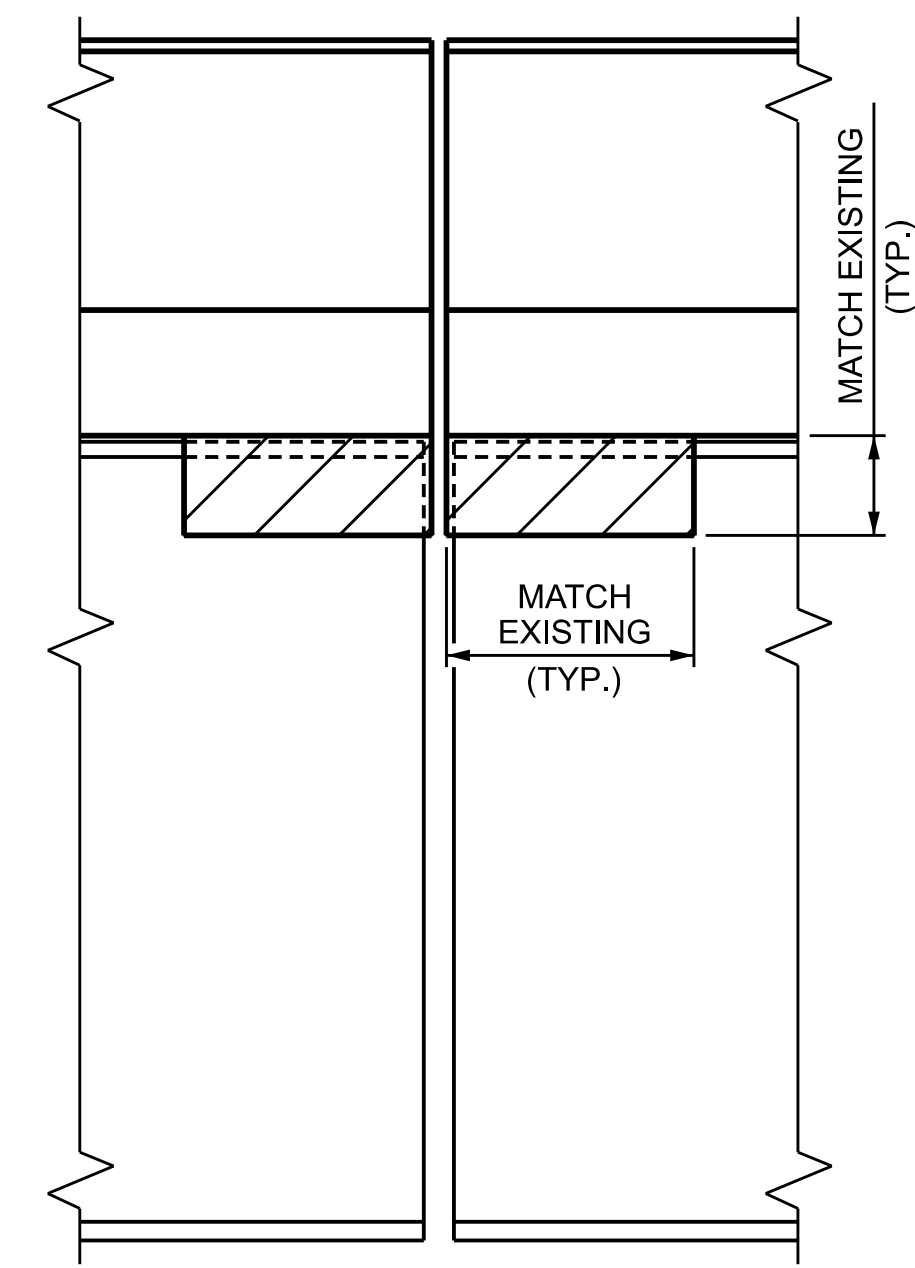
* AT DAMAGED AREA REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. CL.)

OVERHANG DETAILS



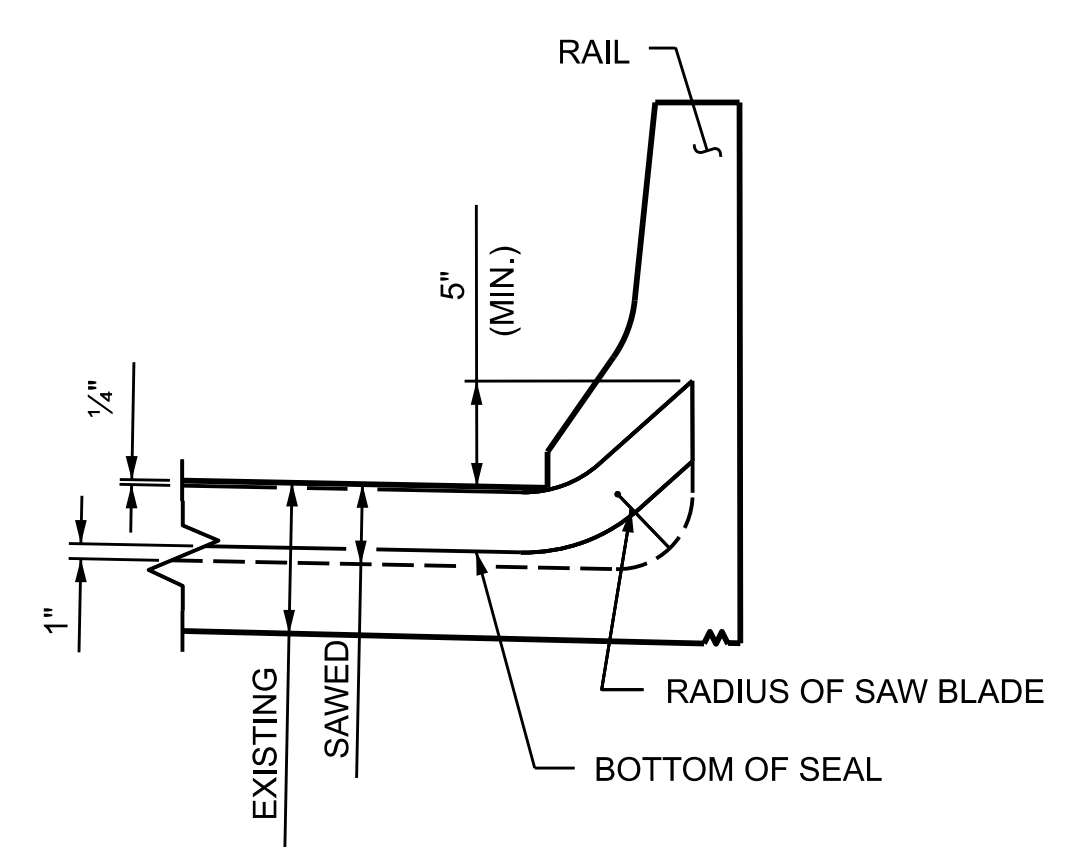
TYPICAL SECTION

CONCRETE IN THIS AREA SHALL BE REMOVED AND REPLACED



SECTION D-D

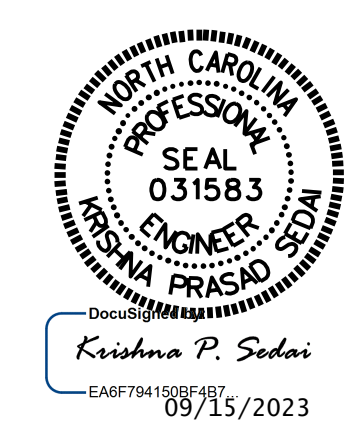
OVERHANG DIAPHRAGM REPLACEMENT DETAILS



TYPICAL SECTION

BRIDGE RAIL DETAILS

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190009,190010



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**OVERHANG, DIAPHRAGM,
 BRIDGE RAIL REPAIR
 DETAILS**

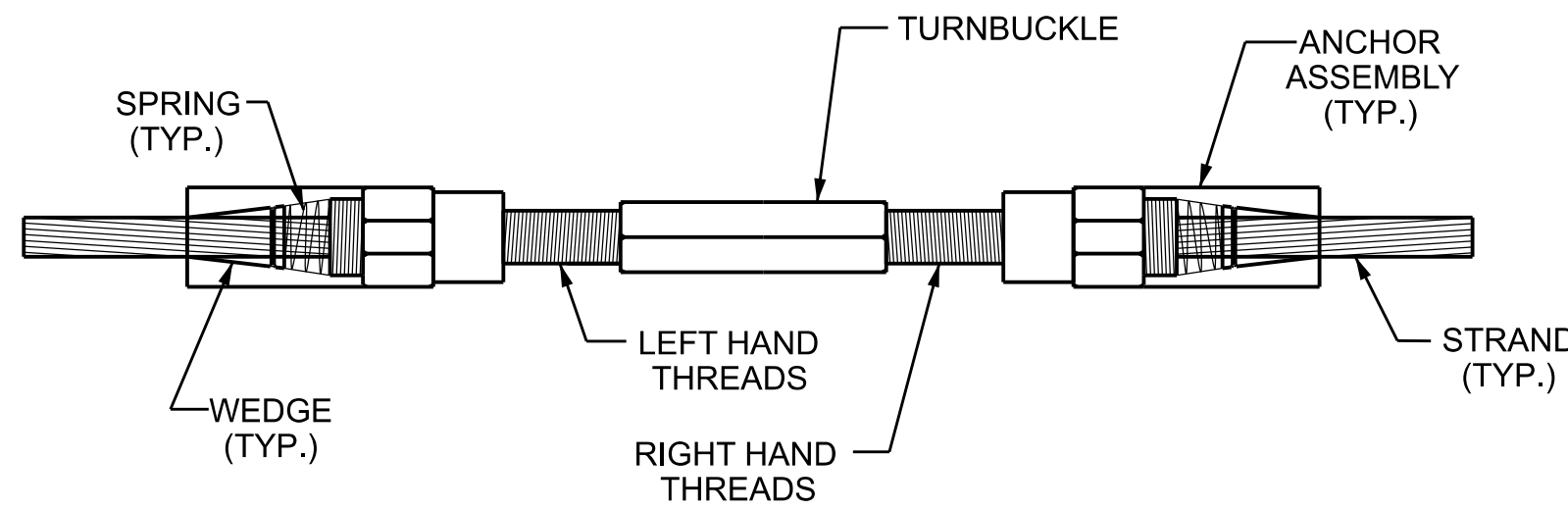
DRAWN BY : A. SORSENGINH DATE : 8/2022
 CHECKED BY : S. AGUILAR HERNANDEZ DATE : 8/2022
 DESIGN ENGINEER OF RECORD: _____ DATE: _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

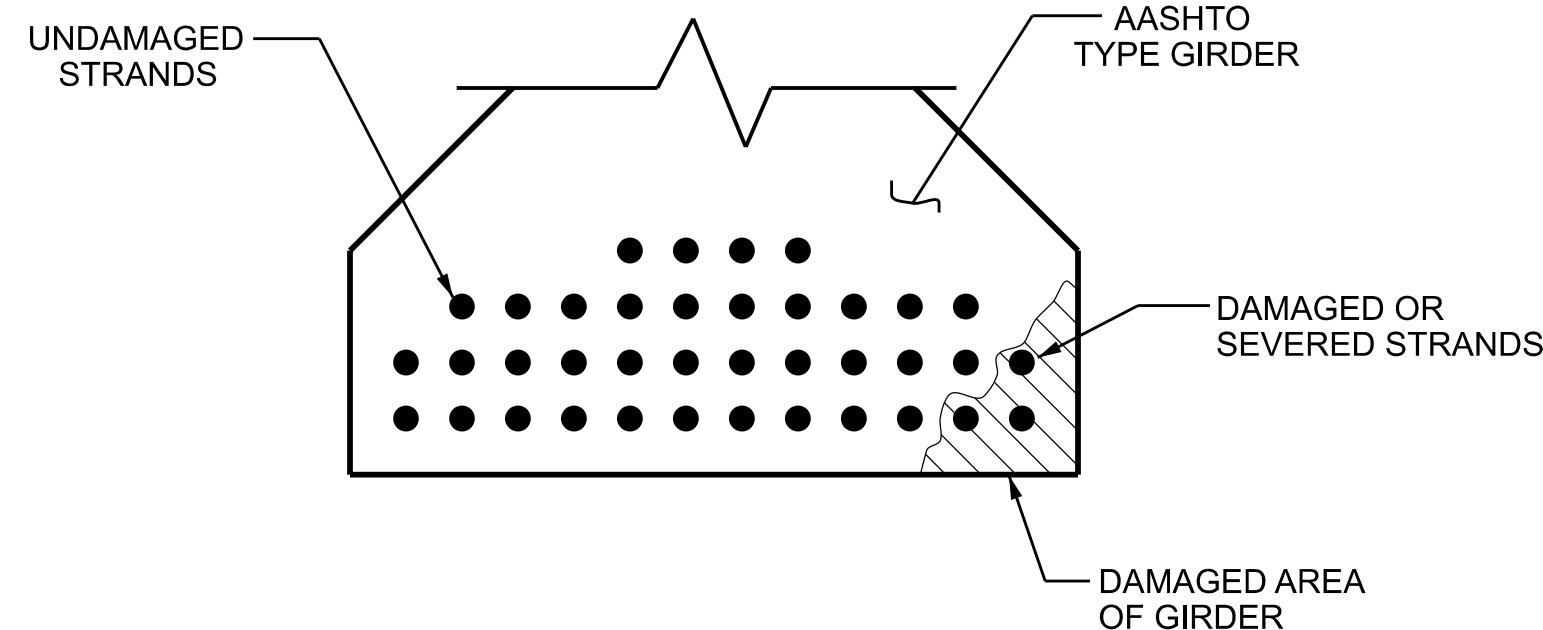
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NO.	BY:	DATE:	NO.	BY:	DATE:	SD-2
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2			4			5



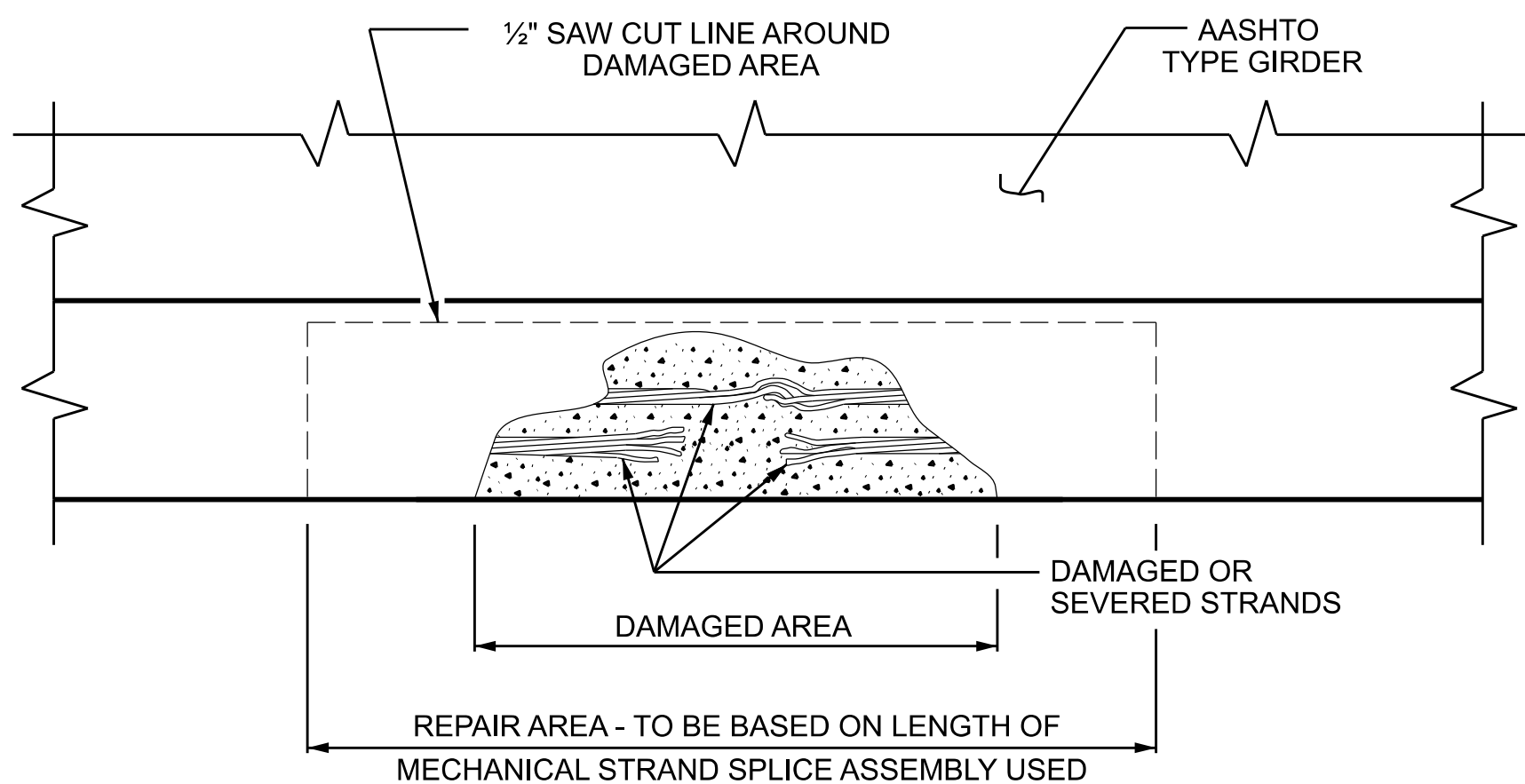
MECHANICAL STRAND SPLICE ASSEMBLY
(ASSEMBLIES MAY VARY DEPENDING ON MANUFACTURER)



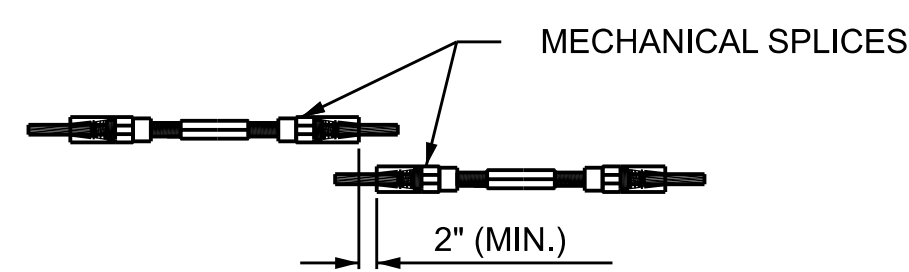
STRAND SPLICE DETAIL



SECTION VIEW OF DAMAGED GIRDER

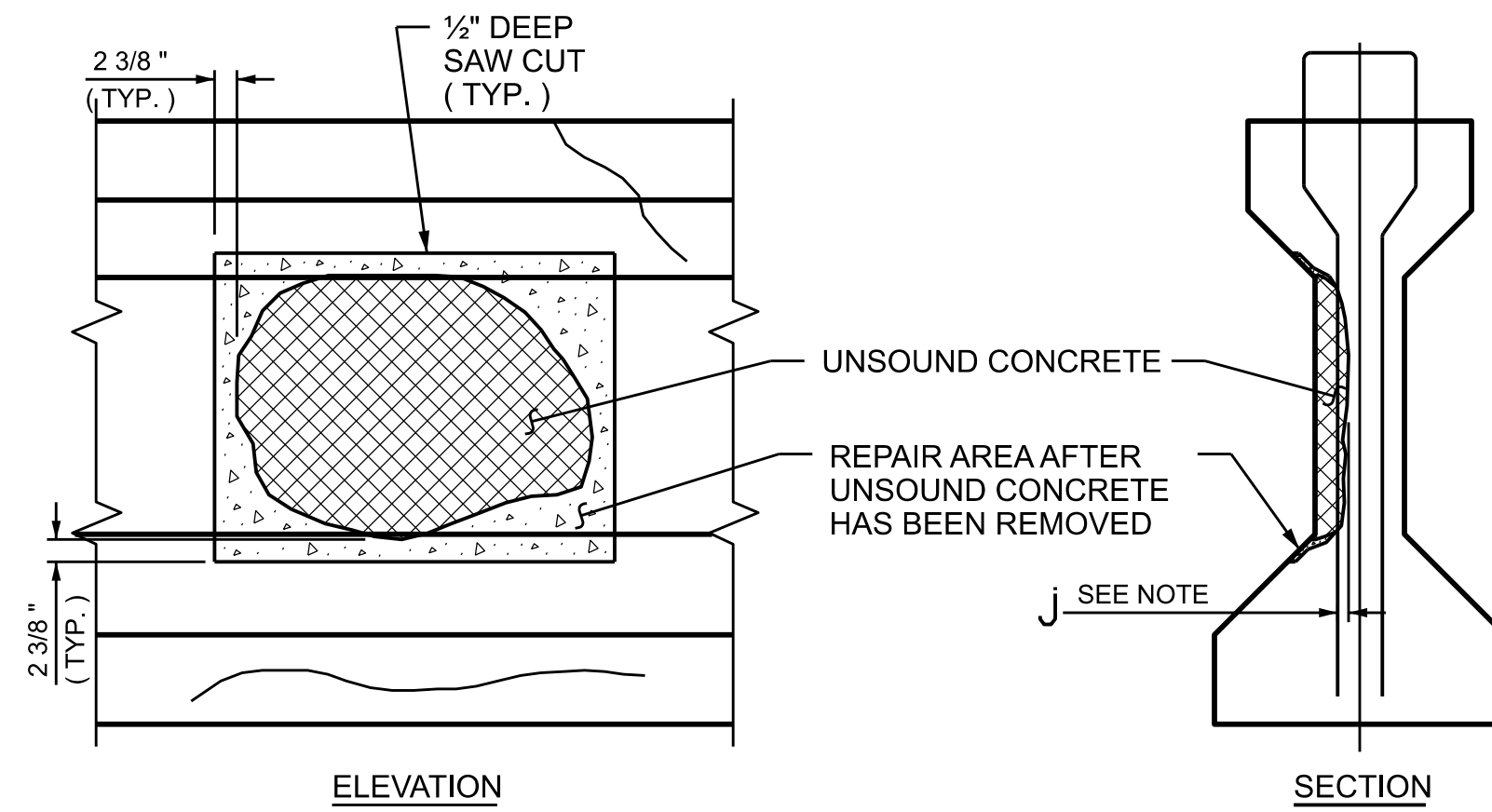


ELEVATION VIEW OF DAMAGED GIRDER

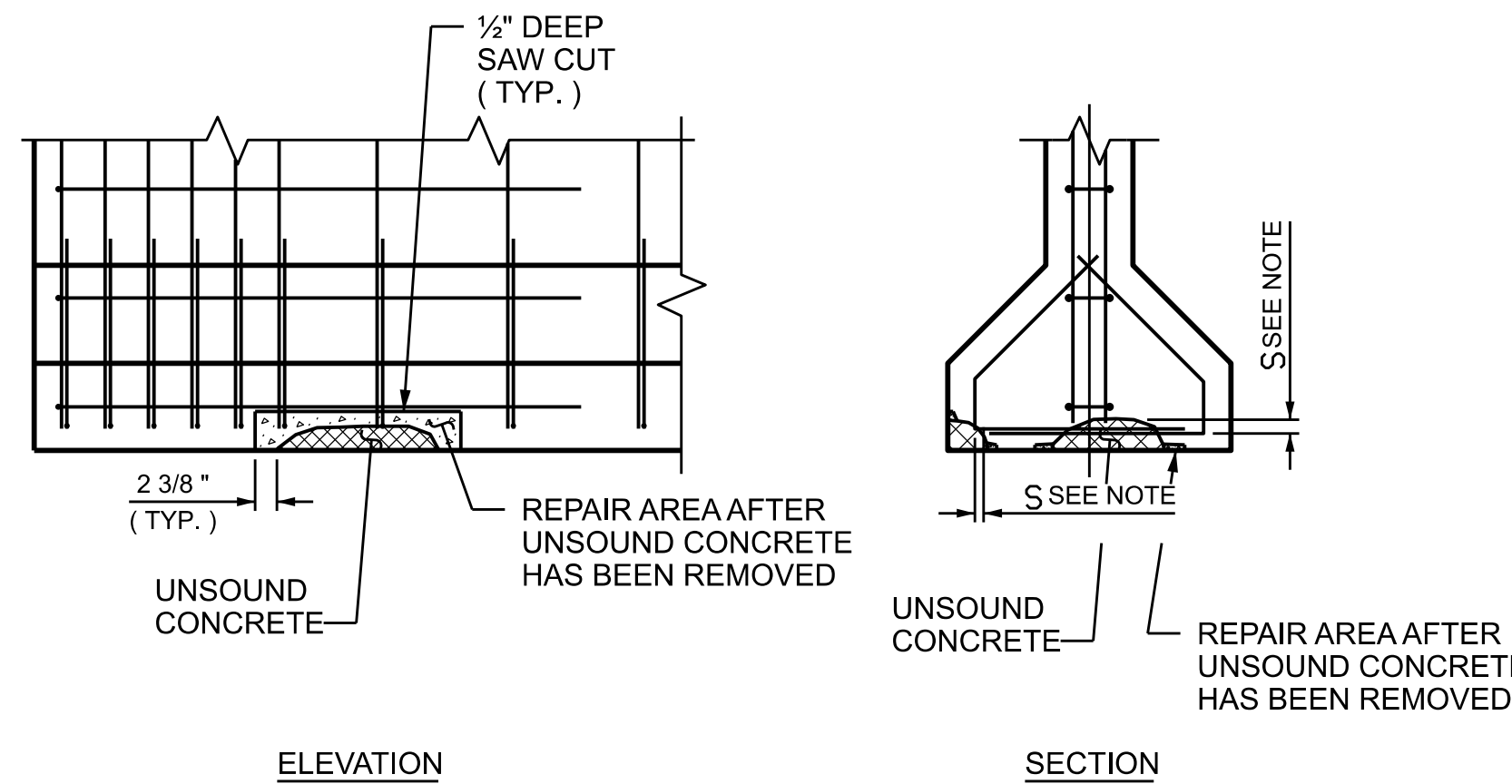


SPLICE OFFSET

STRAND REPAIR DETAILS

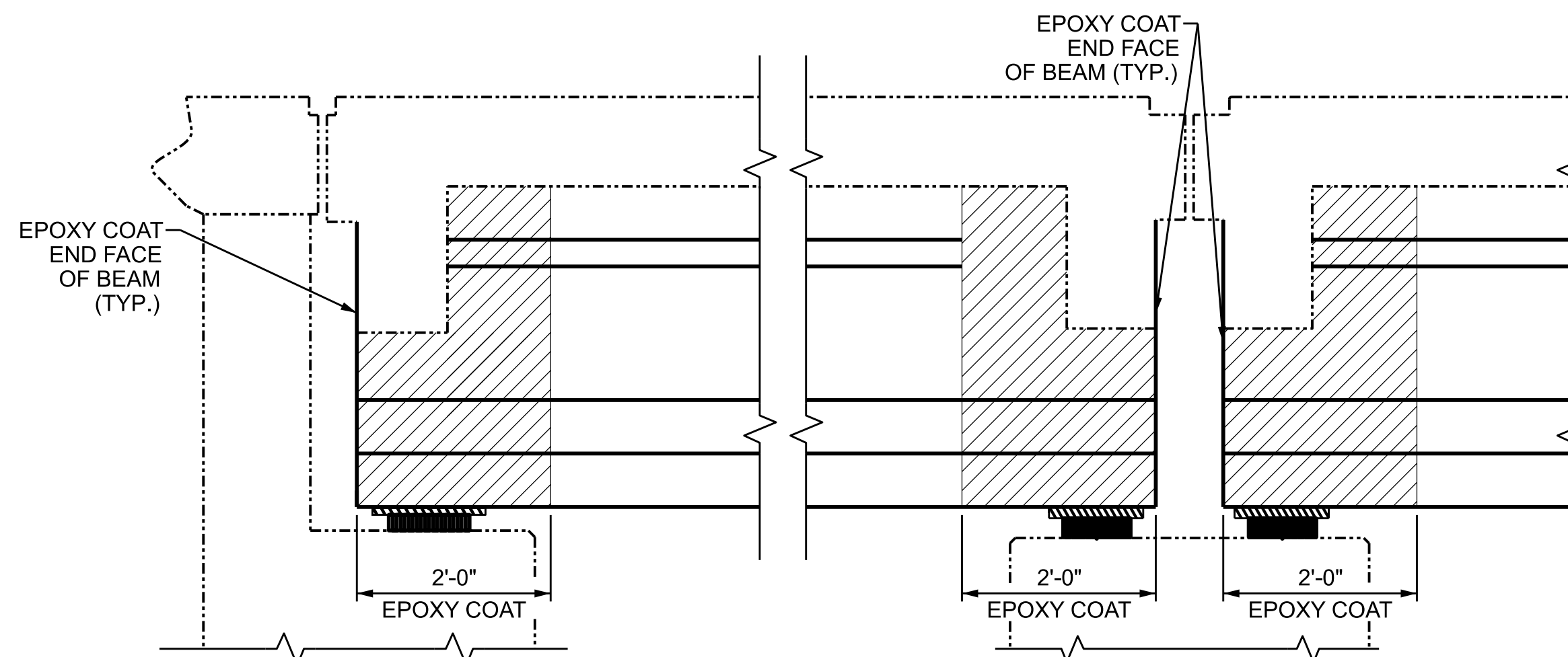
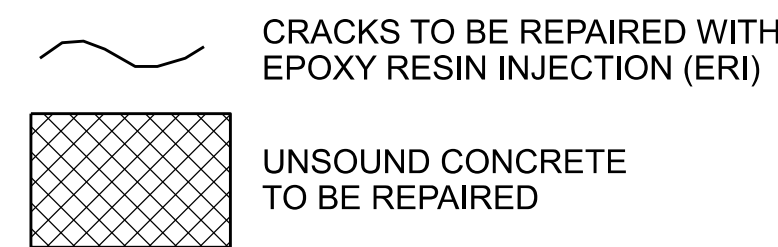


GIRDER WEB REPAIR



GIRDER FLANGE REPAIR

PRESTRESSED GIRDER REPAIR



END BENT

BENT

LIMITS OF EPOXY COATING

NOTES:

- PREPACKAGED MATERIAL IS REQUIRED.
- CONSULT WITH THE ENGINEER TO DETERMINE PRELOADING REQUIREMENTS WHEN REPAIR IS WITHIN THE CENTER REGION OF THE BEAM (0.25L TO 0.75L).
- FOR REPAIRS OVER TRAFFIC AND SHALLOW REPAIRS THAT DO NOT ENGAGE REINFORCEMENT, ANCHOR PATCH MATERIAL USING 1/2" GALVANIZED BOLTS, EPOXY ANCHORED WITH 2" EMBEDMENT. PLACE BOLTS IN A 6" GRID. USE A LATEX OR EPOXY PATCH MATERIAL FOR IMPROVED BOND. USE EXTREME CARE TO NOT DAMAGE STRANDS.
- FOR PRESTRESSED CONCRETE GIRDER REPAIRS, SEE SPECIAL PROVISIONS.
- FOR EPOXY RESIN INJECTION (ERI), SEE SPECIAL PROVISIONS.
- FOR EPOXY COATING CONCRETE GIRDER ENDS, SEE SPECIAL PROVISIONS.

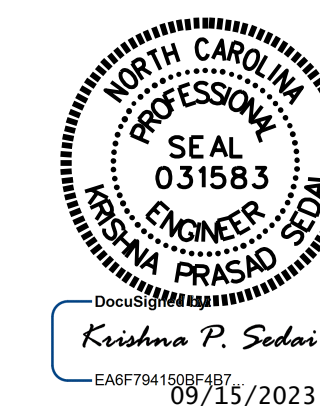
PRESTRESSED GIRDER STRAND REPAIR SEQUENCE:

- REMOVE LIVE LOAD FORM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.
- MEASURE OUT THE AREA NEEDED TO HAVE ADEQUATE ROOM TO SPLICE THE BROKEN OR DAMAGED STRAND. IF MULTIPLE STRANDS ARE BROKEN ADJACENT TO ONE ANOTHER THEN THE SPLICES SHALL BE STAGGERED, SEE "SPLICE OFFSET" ABOVE. AFTER YOU HAVE DETERMINED THE REPAIR AREA NEEDED, SAW CUT A MINIMUM OF 1/2" AT RIGHT ANGLES AROUND THE DAMAGED AREA. CHIP OUT REST OF CONCRETE TO A SUFFICIENT REPAIR DEPTH.
- SPLICE STRANDS USING THE MECHANICAL SPLICE STRAND ASSEMBLY AND TENSION TO REQUIRED FORCE PER THE MANUFACTURER'S GUIDELINES.
- PATCH REPAIR AREAS PER PRESTRESSED CONCRETE GIRDER REPAIRS SPECIAL PROVISIONS. PROFILE OF GIRDER MAY NEED TO BE INCREASED AROUND REPAIR AREA TO PROVIDE PROPER COVER.
- AFTER REPAIR MATERIAL HAS CURED PLACE TRAFFIC BACK ON BRIDGE OR REPAIRED AREA OF BRIDGE.

PRESTRESSED GIRDER REPAIR SEQUENCE:

- SOUND CONCRETE TO DETERMINE EXTENTS OF REPAIR LOCATION.
- REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL. SAW CUT AROUND REPAIR AREA TO A NOMINAL DEPTH OF 1/2".
- REMOVE CONCRETE WITHIN SAW CUT AREA TO MINIMUM 1/2" DEPTH. IF CONCRETE IS DAMAGED BEYOND THE ORIGINAL SAW CUT, A NEW SAW CUT IS REQUIRED.
- IF MORE THAN HALF THE CIRCUMFERENCE OF A REINFORCING BAR IS EXPOSED DURING THIS PROCESS, REMOVE ADDITIONAL CONCRETE TO 1" BEHIND THE BAR. THIS DOES NOT APPLY TO PRESTRESSED STRANDS.
- ALL UNSOUND CONCRETE MUST BE REMOVED, HOWEVER, PRESTRESSED STRANDS SHOULD NOT BE DISTURBED UNLESS ABSOLUTELY NECESSARY. USE EXTREME CARE TO NOT DAMAGE STRANDS.
- AS PER PRESTRESSED CONCRETE GIRDER REPAIRS SPECIAL PROVISIONS, CLEAN AND PREPARE ALL EXPOSED REINFORCING BARS AND PRESTRESSED STRANDS. FOR BARS WITH MORE THAN 10% SECTION LOSS, SPLICE AND SECURELY TIE SUPPLEMENTAL REINFORCING BARS AS NEEDED. NOTE AND PROVIDE DETAILED DOCUMENTATION, INCLUDING LOCATION AND SEVERITY, OF ALL DAMAGE TO PRESTRESSED STRANDS THAT EXCEEDS 10% SECTION LOSS. IF FIVE OR MORE STRANDS ARE DAMAGED, NOTIFY THE ENGINEER PRIOR TO PLACEMENT OF REPAIR MATERIAL.
- REMOVE ALL LOOSE OR WEAKENED MATERIAL THEN CLEAN THE REPAIR AREA OF DIRT, GREASE, OIL, AND FOREIGN MATTER.
- PREPARE SURFACE AND PLACE APPROVED REPAIR MATERIAL ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. MAXIMUM AGGREGATE SIZE FOR REPAIR MATERIAL SHALL NOT EXCEED 2/3 THE MINIMUM REPAIR DEPTH.

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190010

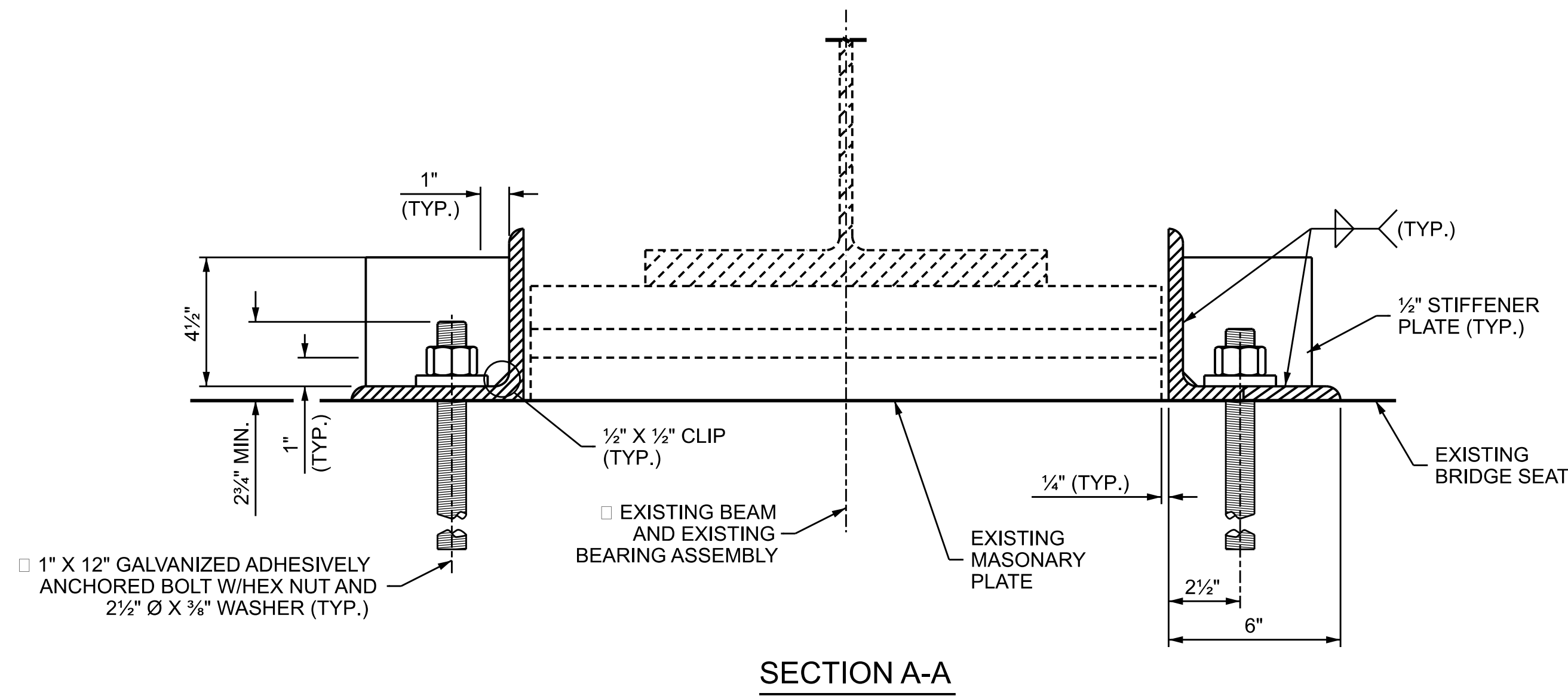
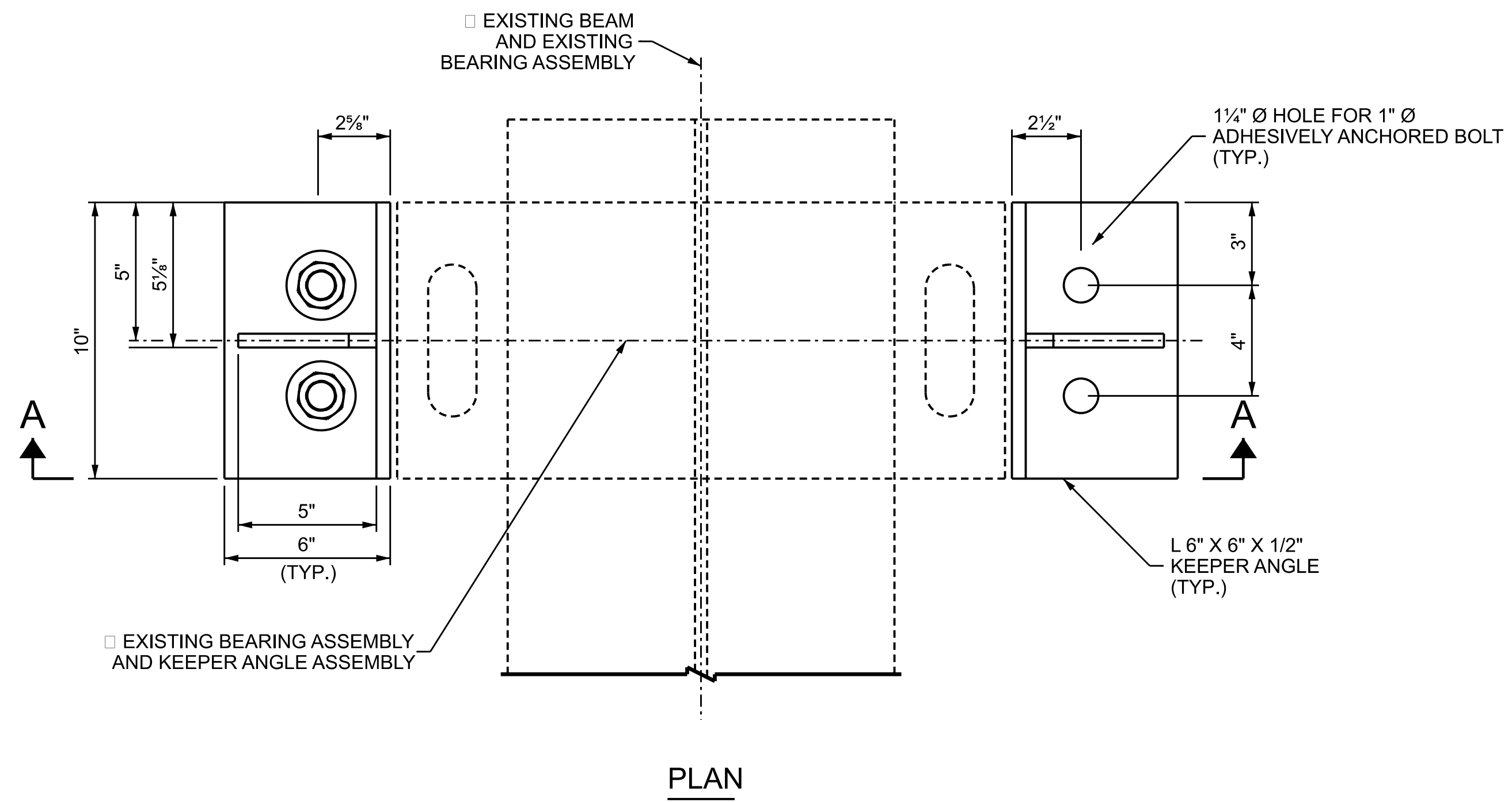


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PRESTRESSED CONCRETE
 GIRDER REPAIR
 DETAILS**

DRAWN BY : S. AGUILAR HERNANDEZ DATE : 6/2022
 CHECKED BY : A. SORSENGINH DATE : 6/2022
 DESIGN ENGINEER OF RECORD: _____ DATE: _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SD-3
1			3			TOTAL SHEETS
2			4			5



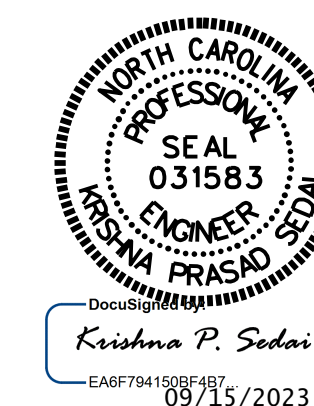
STEEL KEEPER ANGLE ASSEMBLY DETAILS

NOTES

- STRUCTURAL STEEL SHALL BE AASHTO GRADE 36 OR GREATER.
- STRUCTURAL STEEL, 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.
- ANCHOR BOLTS MAY BE ADHESIVELY ANCHORED, SEE STANDARD SPECIFICATIONS. NO FIELD TESTING REQUIRED.
- A SINGLE QUANTITY OF A STEEL KEEPER ANGLE ASSEMBLY SHALL INCLUDE BOTH INDIVIDUAL ANGLES INDICATED ON EACH SIDE OF THE BEAM/BEARING.
- CONTRACTOR SHALL FIELD VERIFY THAT THE ORIENTATION AND LOCATION OF THE ANCHOR BOLTS, AS INDICATED, ARE APPROPRIATE FOR THE SKEW OF THE BRIDGE AND THE GEOMETRY OF THE BEAMS AND BENT CAPS. ADJUST AND REVISE, AS NECESSARY.

BRIDGE NO	STEEL KEEPER ANGLE ASSEMBLY	
	EACH	
	ESTIMATE	ACTUAL
190009	5	
190010	-	

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
 BRIDGE NO. 190009



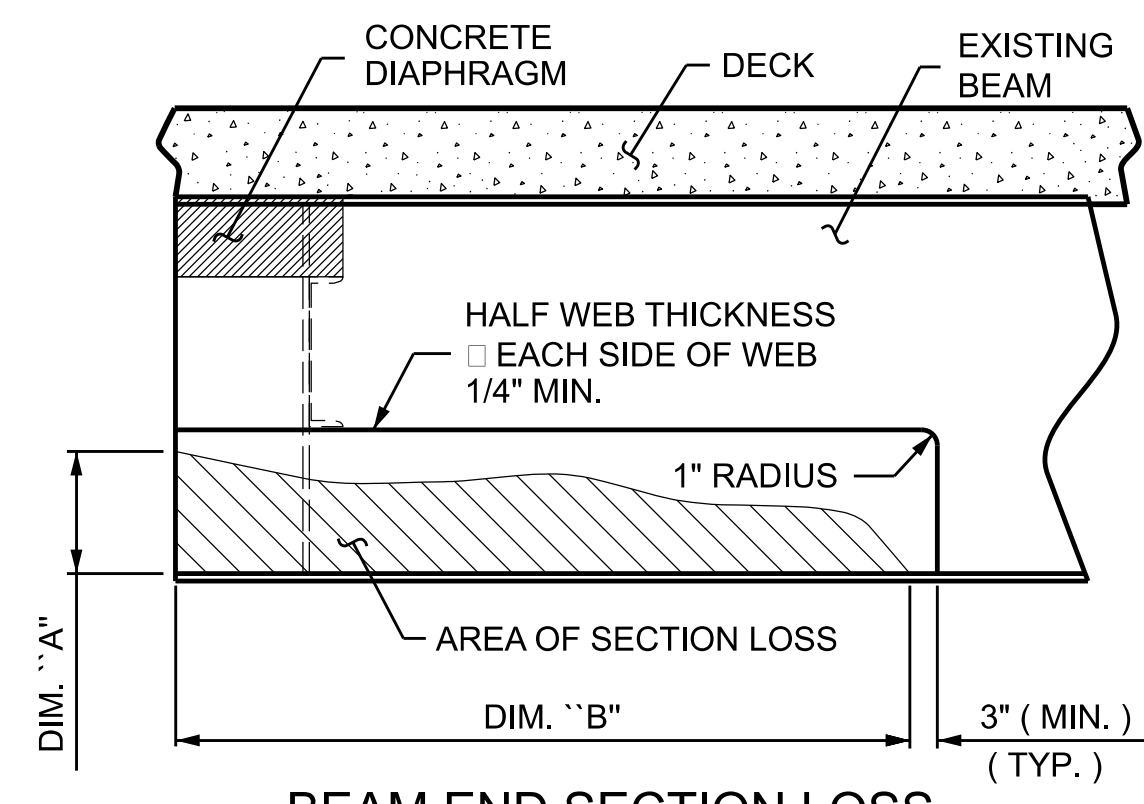
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STEEL BEARING KEEPER ANGLE ASSEMBLY

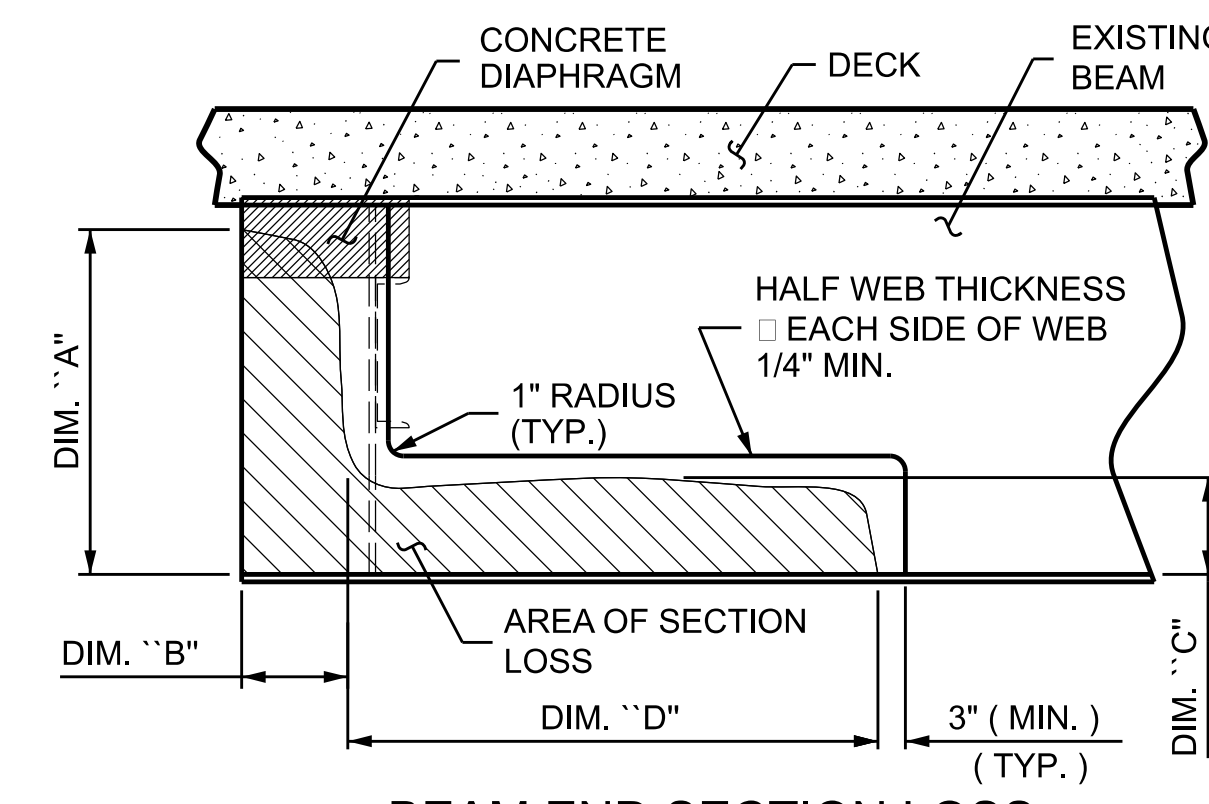
DRAWN BY : S.AGUILAR HERNANDEZ DATE : 10/2022
 CHECKED BY : A. SORSENGINH DATE : 10/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

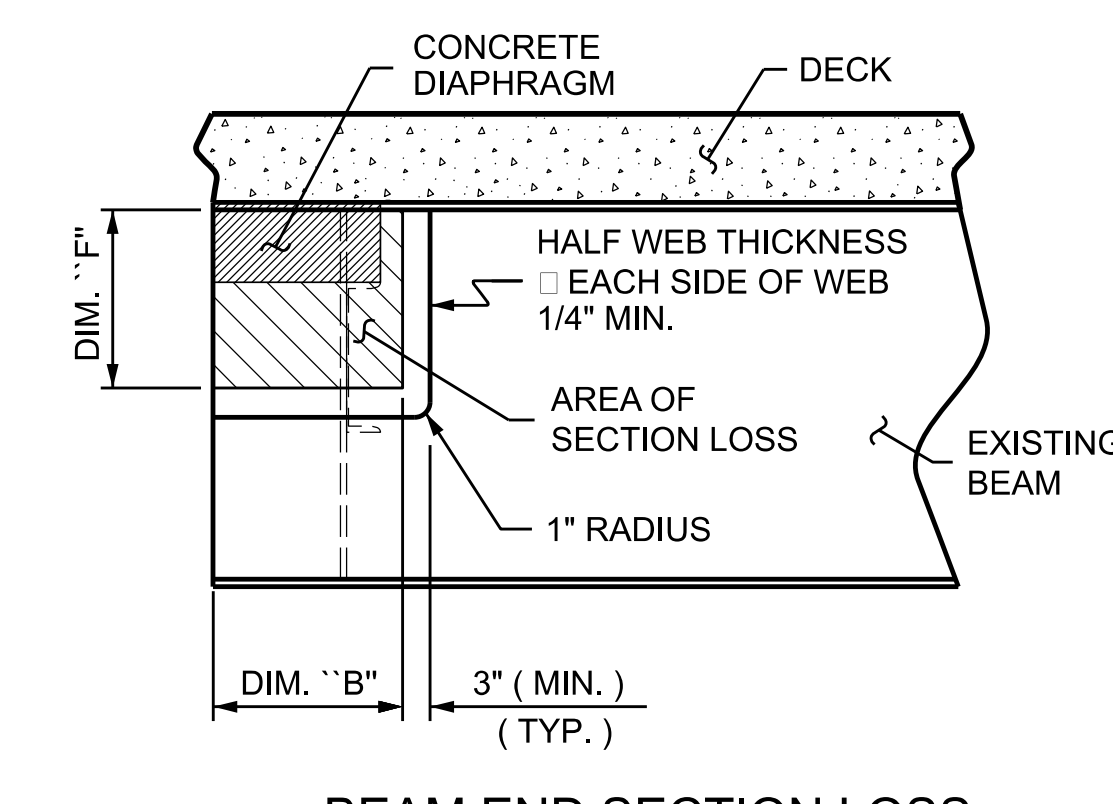
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NO.	BY:	DATE:	NO.	BY:	DATE:	SD-4
1			3			TOTAL SHEETS
2			4			5



BEAM END SECTION LOSS AND PLATING REPAIR



BEAM END SECTION LOSS AND PLATING REPAIR



BEAM END SECTION LOSS AND PLATING REPAIR

BEAM PLATING REPAIR NOTES

ALL CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OR INSTALLATION OF ANY COMPONENTS.

REPAIR PLATES SHALL BE NEW, AND SHALL BE THE SAME GRADE OF THE EXISTING STEEL MEMBER OR BETTER.

REPAIR SEQUENCE:

COORDINATE WITH MATERIALS AND TEST UNIT AT LEAST 4 DAYS PRIOR TO ANTICIPATED WORK.

REMOVE LIVE LOAD FROM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.

IF NECESSARY, REMOVE EXISTING STIFFENER TO INSTALL WELDED PLATE REPAIR. REPLACE WITH A NEW STIFFENER PLATE OF SIMILAR SIZE.

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM THEN CHIP AWAY CONCRETE TO DETERMINE THE EXTENT OF THE DAMAGE.

IF PAINTING THE STEEL, CLEAN AND BLAST STEEL AS REQUIRED, PRIOR TO PERFORMING STEEL REPAIRS. OTHERWISE, MECHANICALLY CLEAN RUST, SCALE, AND EXISTING PAINT TO AT LEAST 3\"/>

PRIME ENTIRE REPAIR AREA AND REPAIR PLATES WITH AN ORGANIC ZINC PRIMER PRIOR TO WELDING NEW PLATES. REMOVE PRIMER IN WELD AREA.

ONE PLATE SHALL BE PLACED, AS INDICATED ON EACH SIDE OF THE BEAM WEB.

EACH PLATE SHALL BE APPROXIMATELY ONE-HALF THE ORIGINAL THICKNESS OF THE BEAM WEB.

FULLY WELD ALONG TOP AND SIDES OF THE PLATES AS SHOWN.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE AWS AND NCDOT STANDARD SPECIFICATIONS.

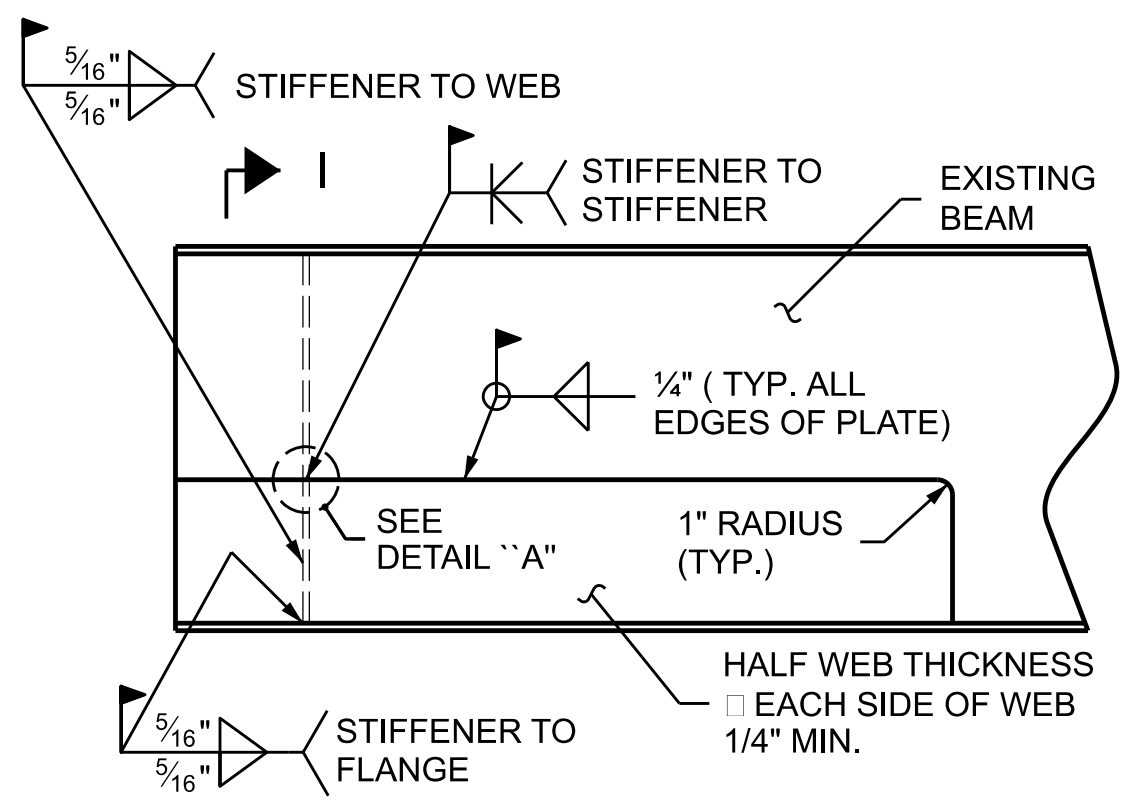
ALL WELDS SHALL BE INSPECTED AND TESTED BY THE NCDOT MATERIALS AND TEST UNIT IN ACCORDANCE WITH THE CURRENT AWS BRIDGE WELDING CODE AND STANDARD SPECIFICATIONS.

IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AFTER REPAIR, GRIND ALL WELDS FLUSH, AND THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM THE REPAIR PROCESS.

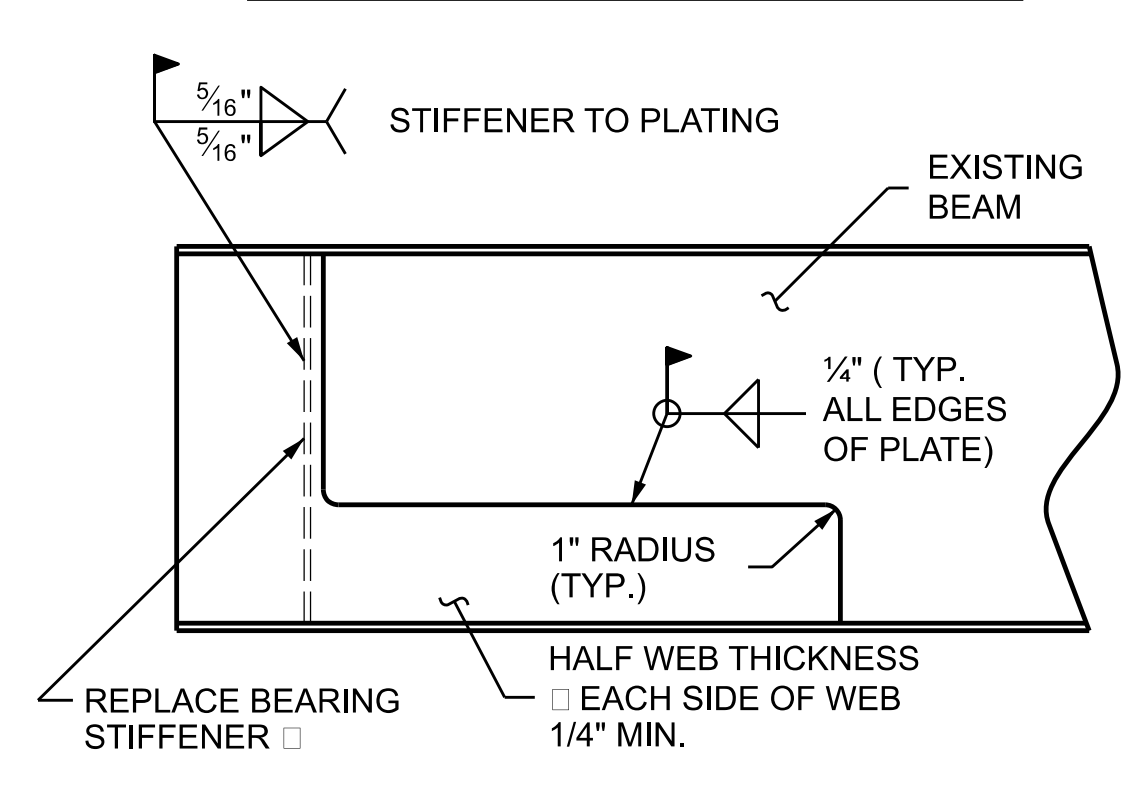
CLEANING AND PAINTING OF REPAIRED STRUCTURAL STEEL SHALL BE PERFORMED AS PART OF THE OVERALL CLEANING AND PAINTING CONTRACT.

AFTER BEAMS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE RECAST. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE SPLICED WITH A SIMILAR SIZE BAR WITH AT LEAST A ONE FOOT SPLICE TO THE EXISTING STEEL. NO SEPARATE PAYMENT SHALL BE MADE FOR CONCRETE AND REINFORCING STEEL AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM "BEAM REPAIR". FOR BEAM REPAIR, SEE SPECIAL PROVISIONS.

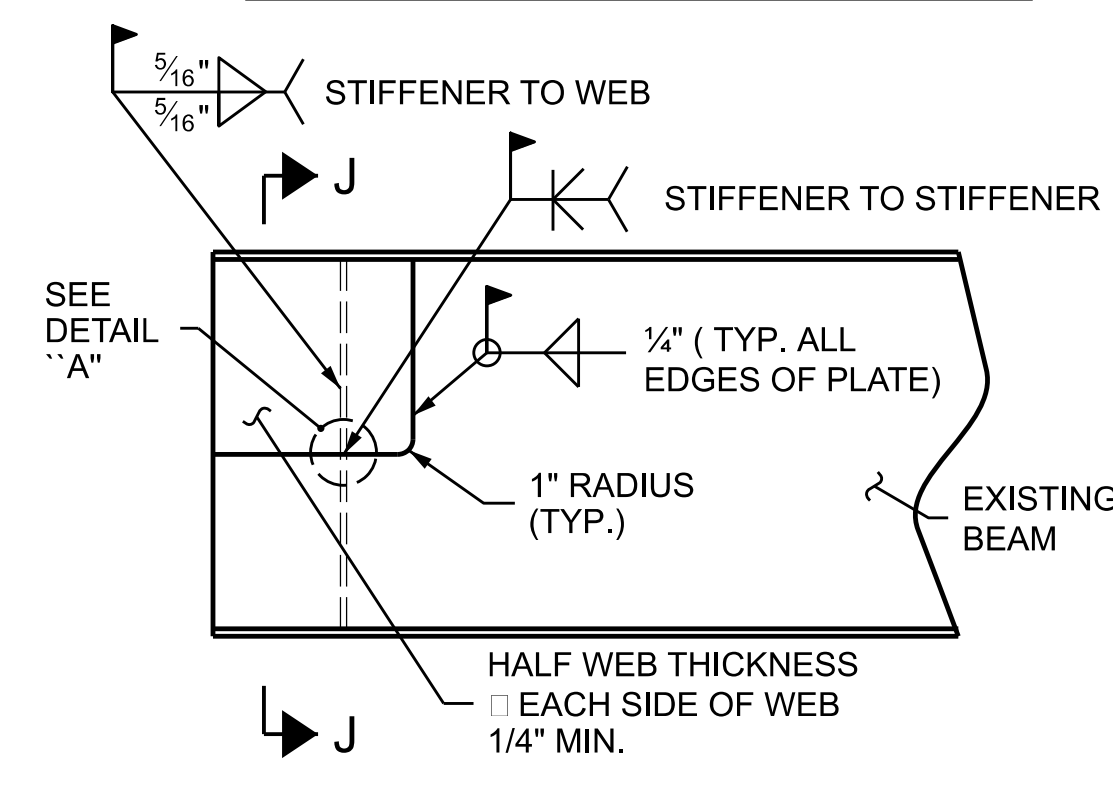
REMOVE ALL TRAFFIC CONTROL DEVICES.



BEAM END PLATING REPAIR

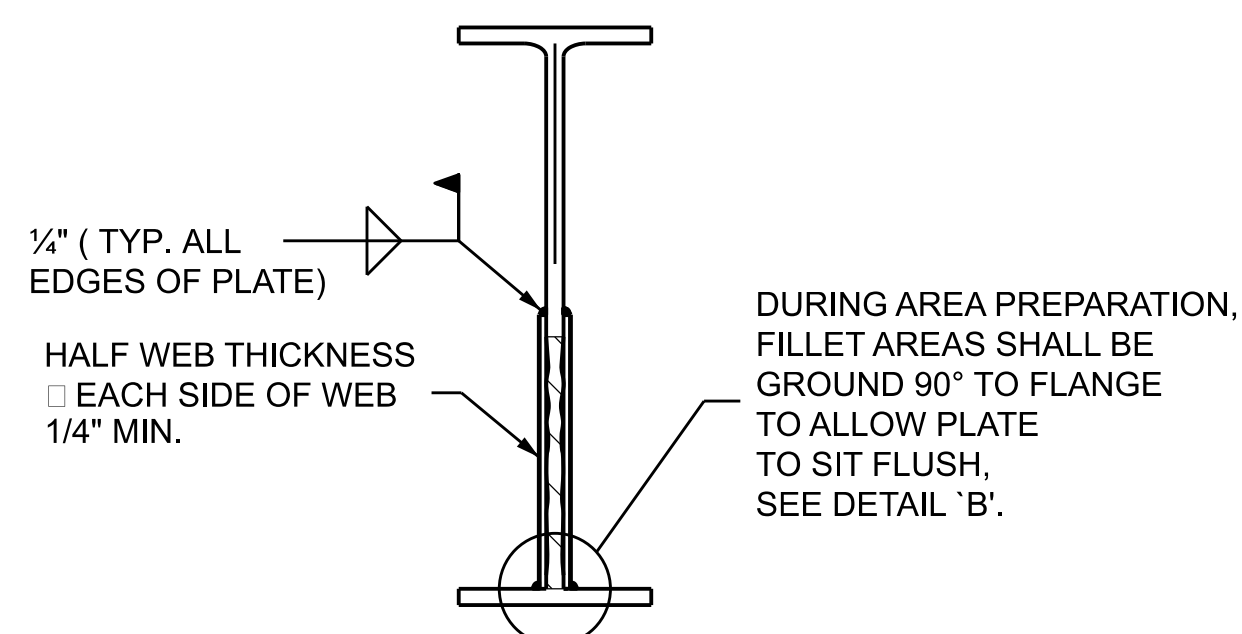


BEAM END PLATING REPAIR

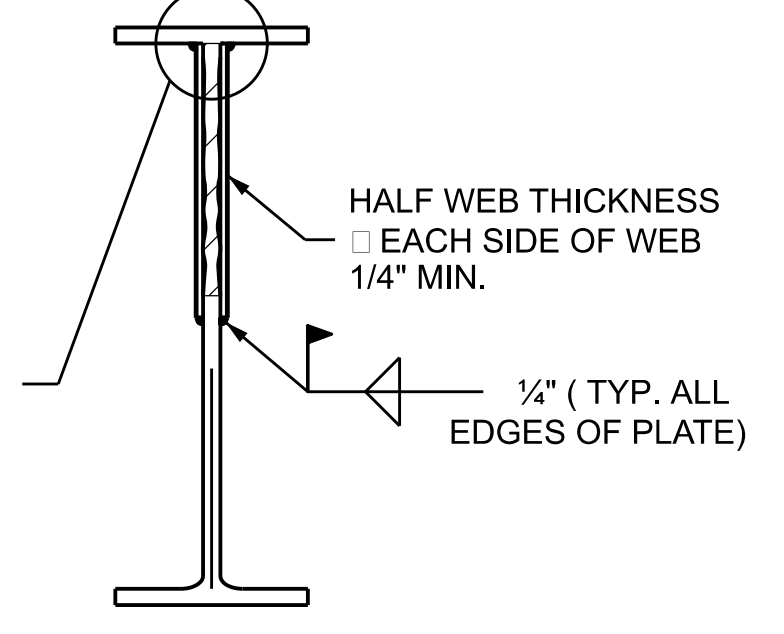


BEAM END PLATING REPAIR

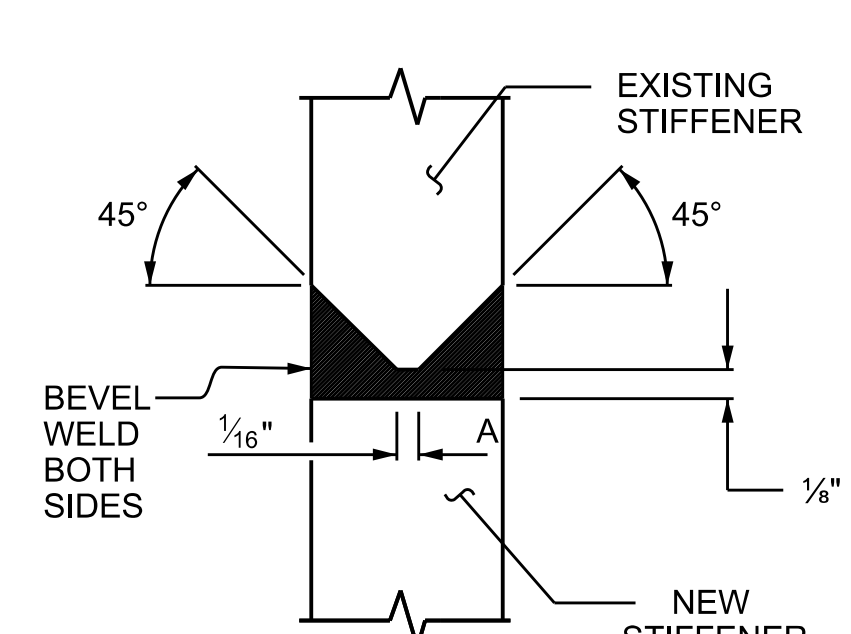
BEAM END PLATING REPAIR



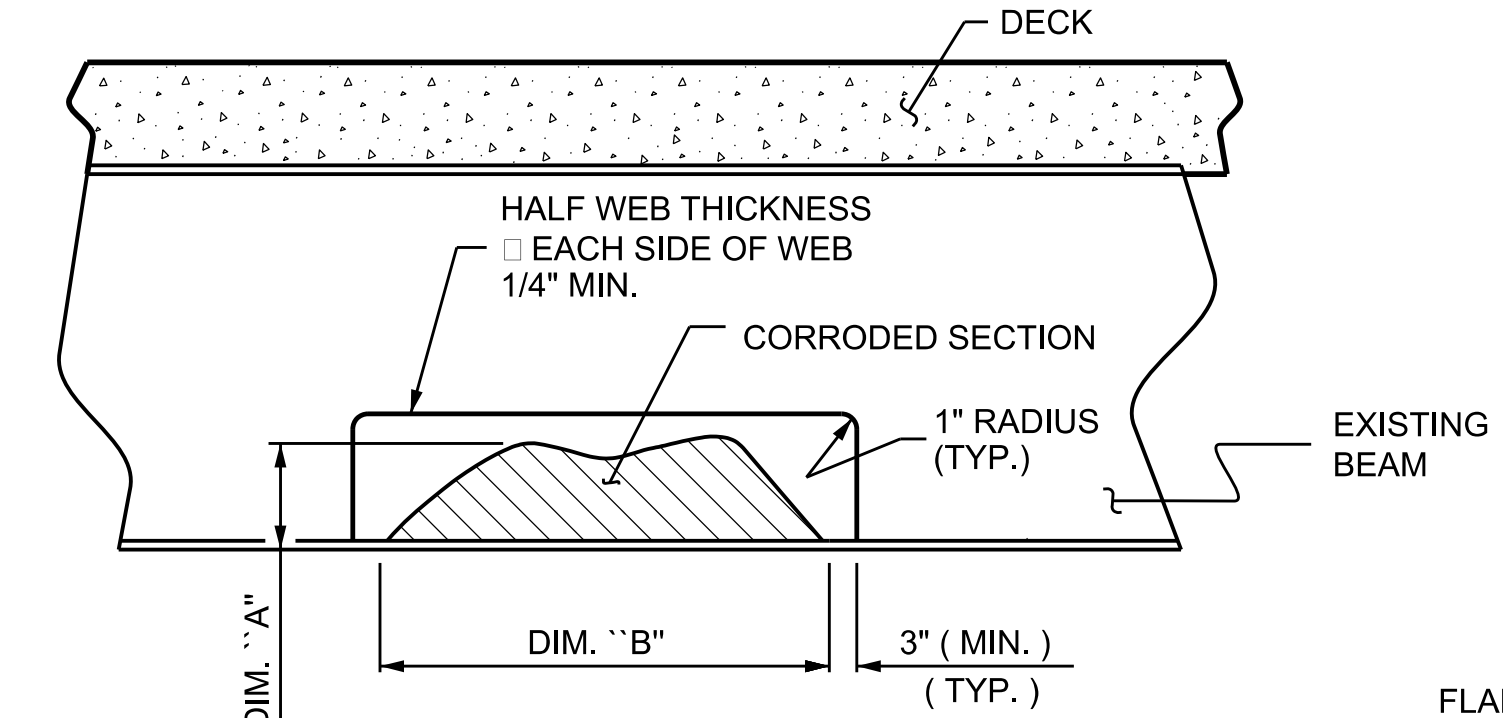
SECTION I-I



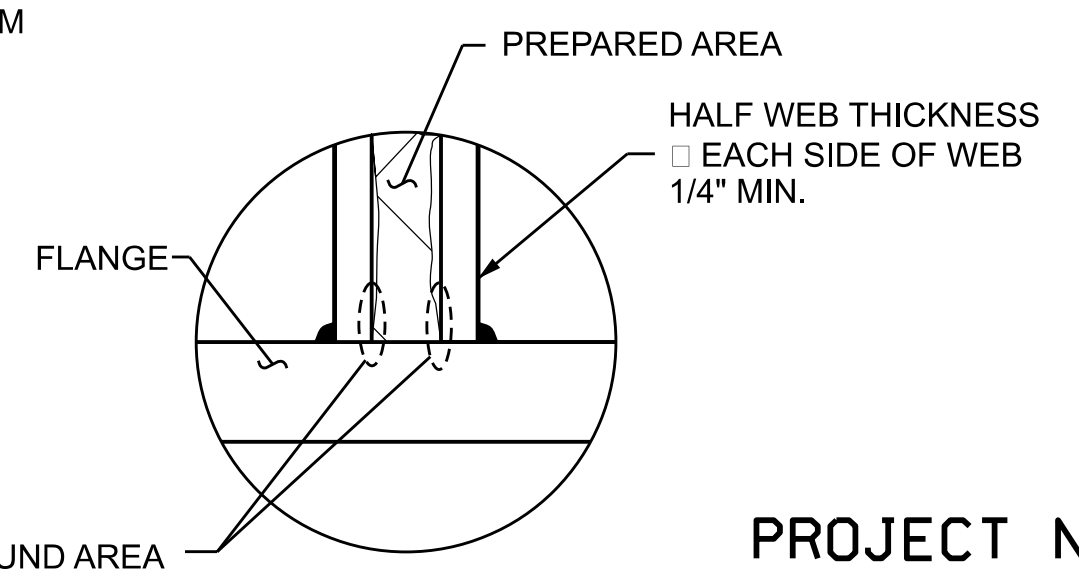
SECTION J-J



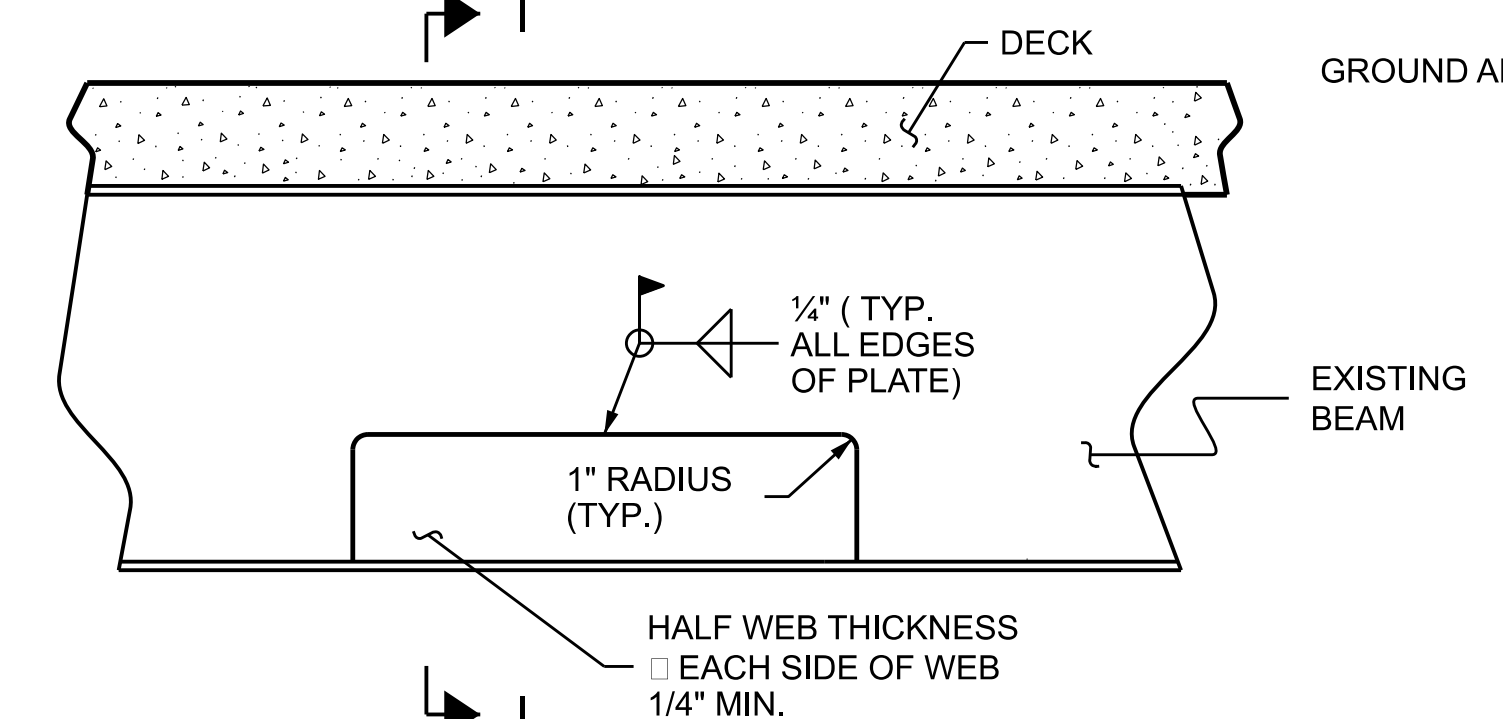
DETAIL 'A'



INTERMEDIATE SECTION LOSS BEAM PLATING REPAIR

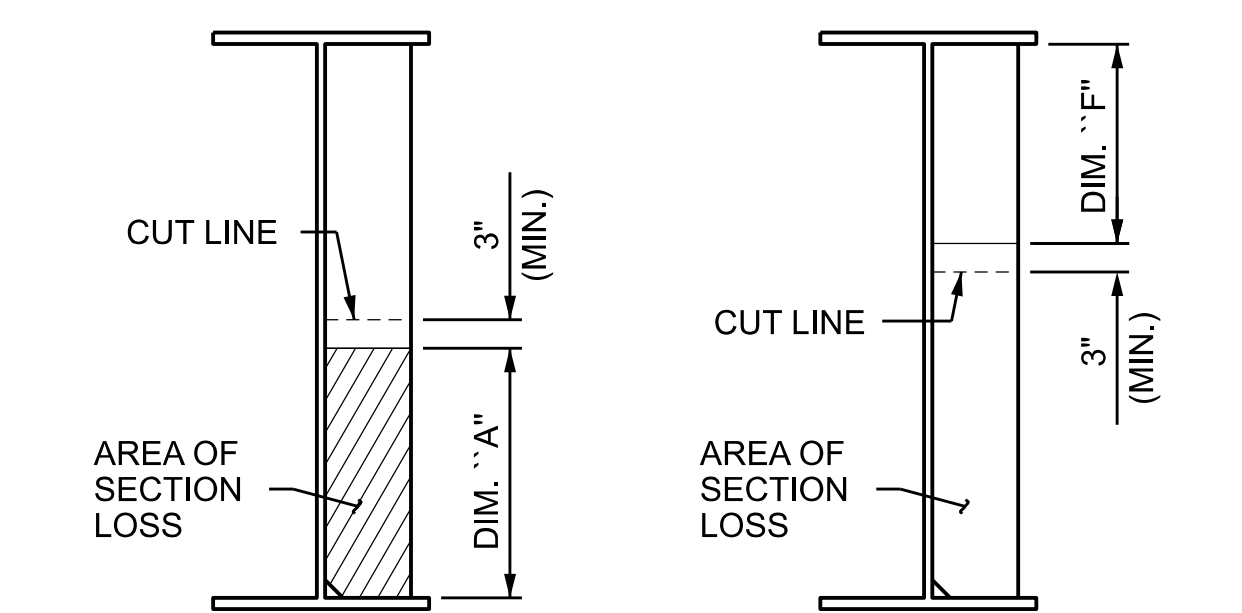


DETAIL 'B'

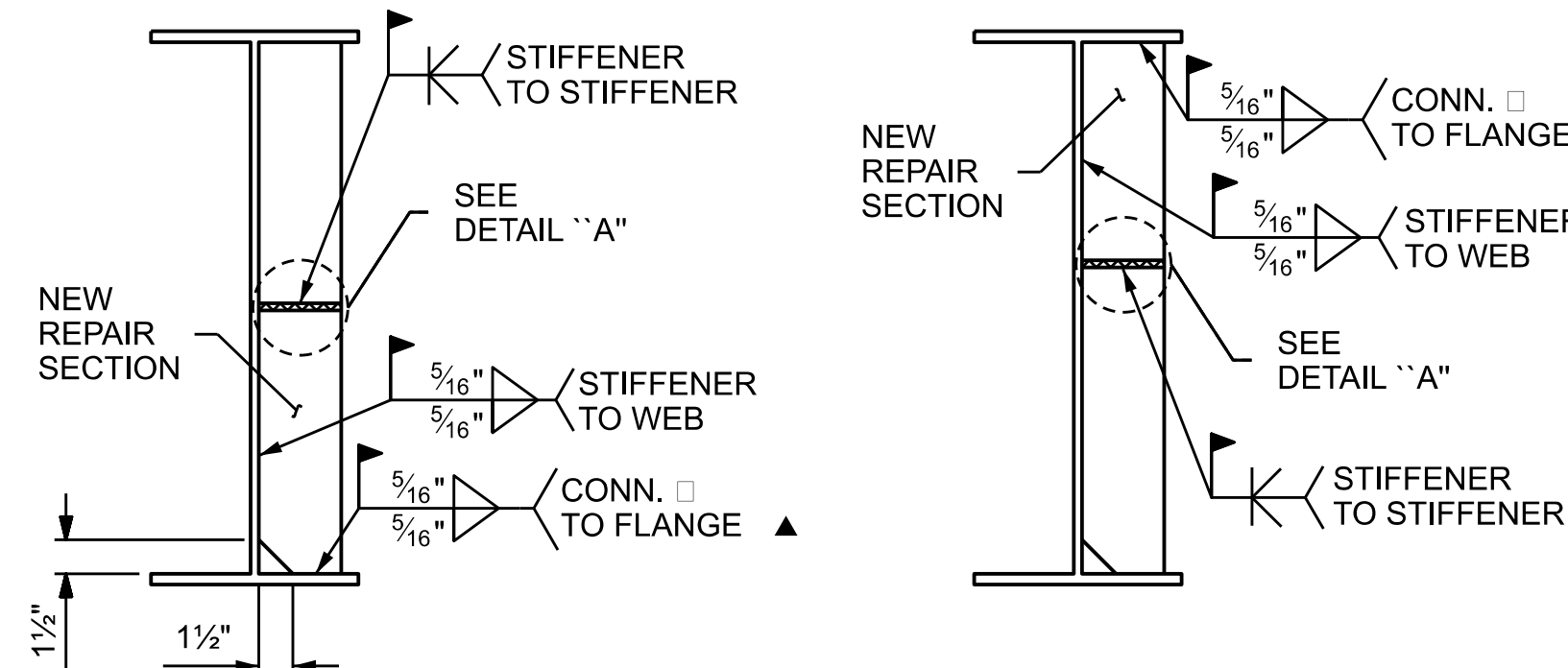


INTERMEDIATE SECTION LOSS BEAM PLATING REPAIR

INTERMEDIATE BEAM PLATING REPAIR



STIFFENER/CONN. SECTION LOSS

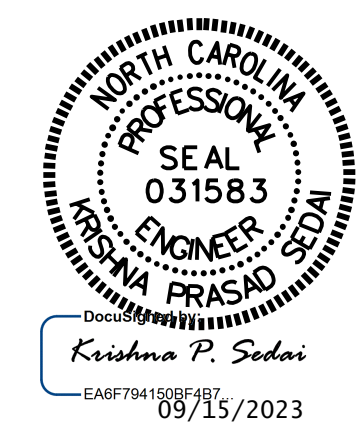


STIFFENER/CONN. SECTION REPAIR

FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD

STIFFENER/CONNECTOR PLATE REPAIR

PROJECT NO. 15BPR.125.3
CHEROKEE COUNTY
BRIDGE NO. 190009,190010



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM PLATING REPAIR DETAILS

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

SD-5
TOTAL SHEETS 5

DRAWN BY : S. A. HERNANDEZ DATE : 10/2022
CHECKED BY : A. SORSENGINH DATE : 10/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
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 A.A.S.H.T.O.
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 2018 "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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/2" 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 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 3/8" ~ SHEAR STUDS FOR THE 1/2" ~ STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 3/8" ~ STUDS FOR 4 - 1/2" ~ STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 3/8" ~ STUDS ALONG THE BEAM AS SHOWN FOR 1/2" ~ STUDS BASED ON THE RATIO OF 3 - 3/8" ~ STUDS FOR 4 - 1/2" ~ 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 1/4" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/8" INCH 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. FINISHES 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.

ENGLISH

JANUARY, 1990

STD. NO. SN