

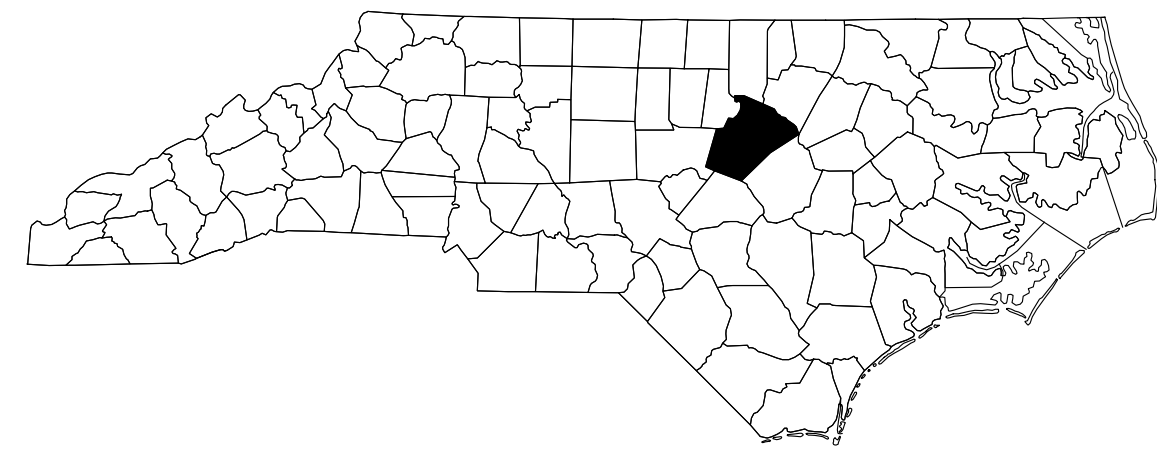
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**PROJECT: I-5997**

**CONTRACT NO: C204655**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

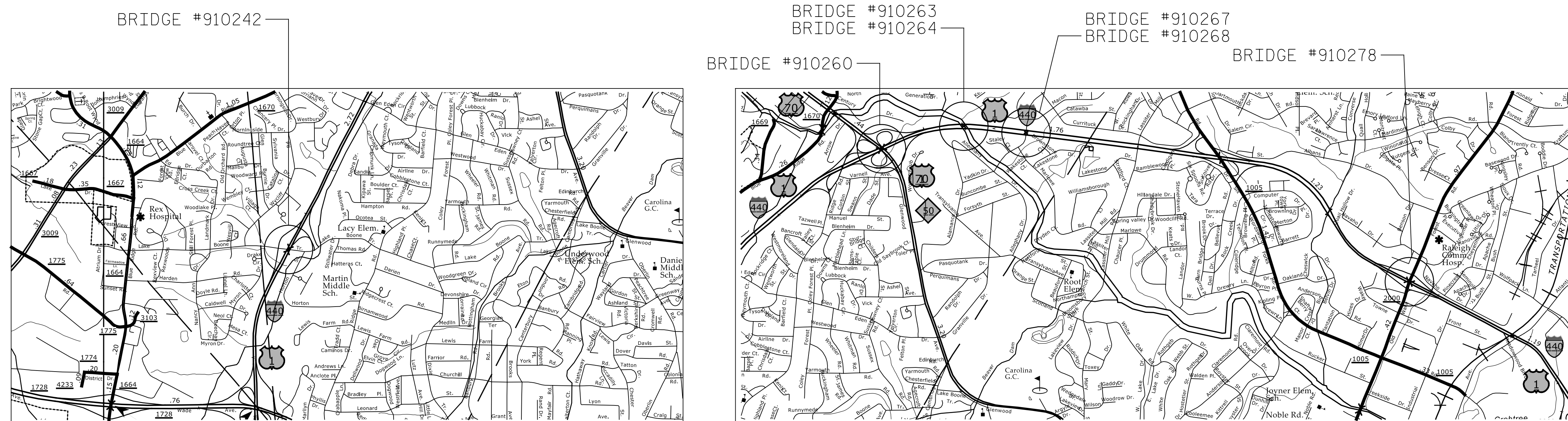
**WAKE COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5997	1	82
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47952.1.1	-	P.E.	
47952.3.1	0440024	CONST.	

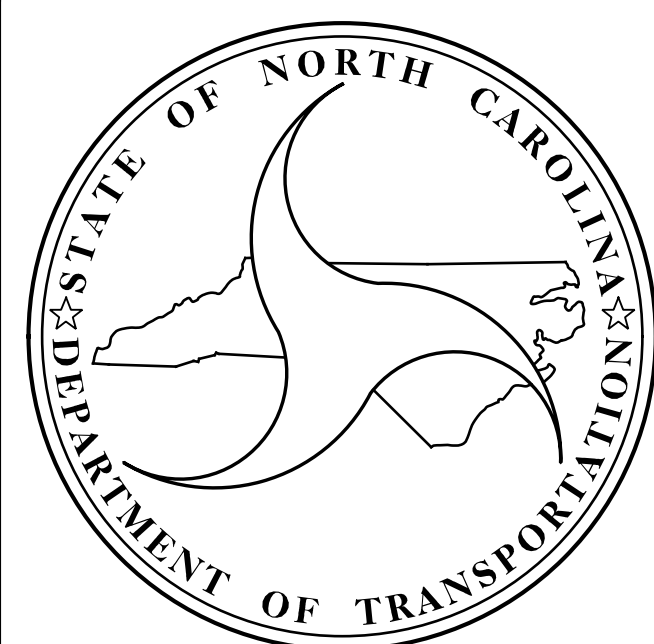
**LOCATION: WAKE COUNTY**

- BRIDGE #910242 ON I-440 (CLIFF BENSON BELTLINE) OVER SR 1676 (LAKE BOONE TRAIL)**
- BRIDGE #910260 ON I-440 (CLIFF BENSON BELTLINE) OVER US 70 (GLENWOOD AVENUE)**
- BRIDGE #910263 ON I-440 EBL (CLIFF BENSON BELTLINE) OVER CRABTREE CREEK**
- BRIDGE #910264 ON I-440 WBL (CLIFF BENSON BELTLINE) OVER CRABTREE CREEK**
- BRIDGE #910267 ON I-440 EBL (CLIFF BENSON BELTLINE) OVER YADKIN DRIVE**
- BRIDGE #910268 ON I-440 WBL (CLIFF BENSON BELTLINE) OVER YADKIN DRIVE**
- BRIDGE #910278 ON I-440 (CLIFF BENSON BELTLINE) OVER SR 2000 (WAKE FOREST ROAD)**

**TYPE OF WORK: BRIDGE REHABILITATION - FINE MILLING OF DECK CONCRETE, DECK REPAIRS, SILANE DECK TREATMENT, LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH OVERLAY, POLYMER CONCRETE OVERLAY, DIAMOND GRINDING OF LATEX MODIFIED CONCRETE OVERLAY, BEARING RETROFIT, EPOXY COATING ENDS OF PRESTRESSED GIRDERS AND BENT CAPS, REPAIR DECK DRAINS, REPAIR SAFETY FENCE, STEEL BEAM REPAIR, SUBSTRUCTURE REPAIR, CLEANING AND PAINTING OF EXISTING STEEL BRIDGE STRUCTURES AND WEATHERING STEEL BRIDGE STRUCTURE**



**VICINITY MAP - WAKE COUNTY**



**DESIGN DATA  
WAKE COUNTY**

#910242	ADT 2015	=	56,000
#910260	ADT 2013	=	134,000
#910263	ADT 2015	=	69,000
#910264	ADT 2019	=	74,500
#910267	ADT 2018	=	73,000
#910268	ADT 2018	=	73,000
#910278	ADT 2019	=	67,000

**PROJECT LENGTH  
WAKE COUNTY**

#910242	=	0.027	MILE
#910260	=	0.047	MILE
#910263	=	0.051	MILE
#910264	=	0.051	MILE
#910267	=	0.023	MILE
#910268	=	0.023	MILE
#910278	=	0.039	MILE

PLANS PREPARED BY:

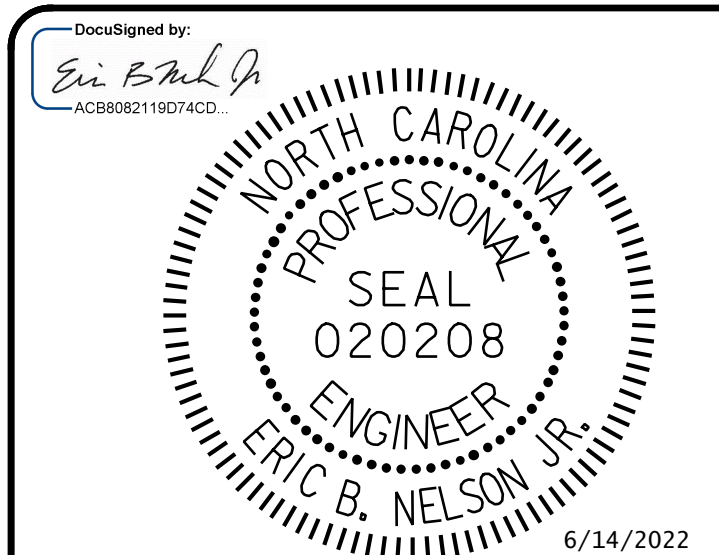


2610 Wycliff Road  
Suite 102  
Raleigh NC 27607-3073  
(919) 420-7660  
NC Lic. No. F-0270

**RICK NELSON, P.E.**  
PROJECT DESIGN ENGINEER

2018 STANDARD SPECIFICATIONS

LETTING DATE:  
JULY 19, 2022

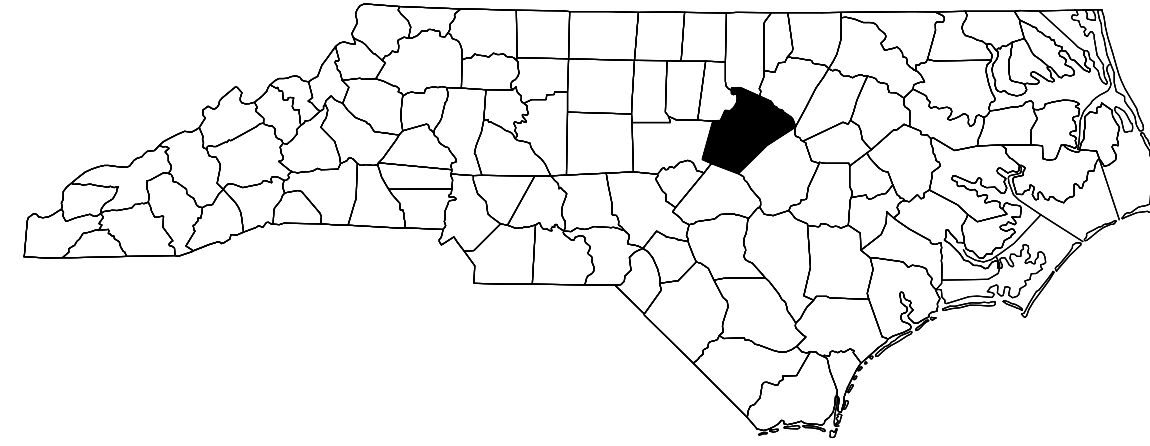


**RICK NELSON, P.E.**  
PROJECT DESIGN ENGINEER

6/14/2022

**PROJECT: I-5997**

**CONTRACT NO: C204655**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**WAKE COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5997	1A	82
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47952.1.1	-	P.E.	
47952.3.1	0440024	CONST.	

**LOCATION: WAKE COUNTY:**

- BRIDGE #910242 ON I-440 (CLIFF BENSON BELTLINE) OVER SR 1676 (LAKE BOONE TRAIL)**
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**TYPE OF WORK: BRIDGE REHABILITATION - FINE MILLING OF DECK CONCRETE, DECK REPAIRS, SILANE DECK TREATMENT, LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH OVERLAY, POLYMER CONCRETE OVERLAY, DIAMOND GRINDING OF LATEX MODIFIED CONCRETE OVERLAY, BEARING RETROFIT, EPOXY COATING ENDS OF PRESTRESSED GIRDERS AND BENT CAPS, REPAIR DECK DRAINS, REPAIR SAFETY FENCE, STEEL BEAM REPAIR, SUBSTRUCTURE REPAIR, CLEANING AND PAINTING OF EXISTING STEEL BRIDGE STRUCTURES AND WEATHERING STEEL BRIDGE STRUCTURE**

INDEX OF DRAWINGS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
1A	INDEX OF DRAWINGS
S-1	TOTAL BILL OF MATERIAL
S-2 TO S-15	STRUCTURAL PLANS - BRIDGE NO. 910242
S-16 TO S-32	STRUCTURAL PLANS - BRIDGE NO. 910260
S-33 TO S-52	STRUCTURAL PLANS - BRIDGE NO. 910263 & 910264
S-53 TO S-65	STRUCTURAL PLANS - BRIDGE NO. 910267 & 910268
S-66 TO S-75	STRUCTURAL PLANS - BRIDGE NO. 910278
S-76	BEAM REPAIR CUT-OUT DETAILS
S-77	PRESTRESSED CONCRETE GIRDER BEAM REPAIR DETAILS
S-78	TYPICAL CAP AND COLUMN REPAIR DETAILS
S-79	OVERHANG AND DIAPHRAGM REPAIR DETAILS
S-80	CONCRETE BARRIER RAIL REPAIR
S-81	MISCELLANEOUS DETAILS
S-82	JACKING DETAILS
SN	STANDARD NOTES

TOTAL BILL OF MATERIAL

BRIDGE NO.	FLOWABLE FILL	GROOVING BRIDGE FLOORS	CLASS II SURFACE PREPARATION	LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	FIELD MEASURING	CLEANING AND REPAINTING OF BRIDGE #__	CLEANING AND PAINTING EXISTING WEATHERING STEEL FOR BRIDGE #__	PAINTING CONTAINMENT FOR BRIDGE #__	POLLUTION CONTROL	PEDESTRIAN FENCE REPAIR	REPAIR OF EXISTING DECK DRAINS	FOAM JOINTS SEALS FOR PRESERVATION
	CU. YDS.	SQ. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. FT.	CU. FT.	LIN. FT.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.
910242	-	-	-	-	-	4.2	65.5	3.5	-	-	-	-	-	-	-	528.0
910260	-	-	6.7	279.6	4,047	31.5	61.5	9.5	-	LUMP SUM	-	LUMP SUM	LUMP SUM	-	-	765.0
910263	0.8	-	-	135.5	2,448	1.8	25.1	-	LUMP SUM	LUMP SUM	-	LUMP SUM	LUMP SUM	-	LUMP SUM	541.5
910264	0.7	-	2.4	132.8	2,398	4.0	13.2	3.0	LUMP SUM	LUMP SUM	-	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	537.5
910267	-	-	-	72.3	1,113	-	14.4	-	-	-	-	-	-	-	-	288.0
910268	-	-	-	72.3	1,113	1.6	28.9	6.0	-	-	-	-	-	-	-	288.0
910278	-	24,916	26.0	-	-	4.8	8.1	82.0	-	-	LUMP SUM	LUMP SUM	LUMP SUM	-	LUMP SUM	241.0
TOTAL	1.5	24,916	35.1	692.5	11,119	47.9	216.7	104.0	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	3,189.0

TOTAL BILL OF MATERIAL

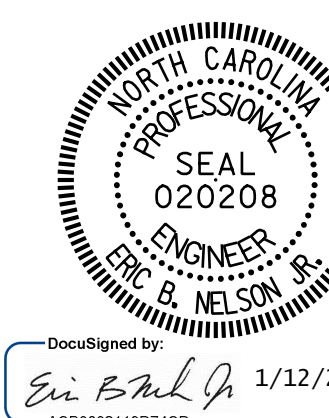
BRIDGE NO.	POLYESTER POLYMER CONCRETE MATERIALS	EPOXY POLYMER CONCRETE MATERIALS (ALTERNATE)	ELASTOMERIC CONCRETE FOR PRESERVATION	REPAIRS TO PRESTRESSED CONCRETE GIRDERS	BEAM REPAIR CUT-OUT	BRIDGE JOINT DEMOLITION	EPOXY COATING CONCRETE GIRDER ENDS	EPOXY COATING	SHOTBLASTING BRIDGE DECK	SILANE DECK TREATMENT	FINE MILLING	HYDRO-DEMOLITION OF BRIDGE DECK	CONCRETE DECK REPAIR FOR PC OVERLAY	PLACING & FINISHING PC OVERLAY	DIAMOND GRINDING	TYPE I BRIDGE JACKING BRIDGE #__	CLEANING AND PAINTING EXISTING BEARING PLATES	RESET BEARINGS	BEARING KEEPER PLATE
	CU. YDS.	CU. YDS.	CU. FT.	CU. FT.	LBS.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	EA.	EA.	EA.	EA.
910242	-	-	64.0	1.3	-	256	-	932	2,209	2,209	-	-	-	-	-	25	-	25	-
910260	-	-	202.0	-	-	748	-	1,179	-	4,130	8,668	4,130	-	-	4,130	9	-	-	2
910263	-	-	143.4	-	1,895	529	-	1,028	-	2,507	5,037	2,507	-	-	2,507	18	-	-	-
910264	-	-	142.2	-	1,499	525	-	1,028	-	2,456	4,989	2,456	-	-	2,456	12	-	-	-
910267	-	-	75.8	0.9	-	280	210	442	-	1,144	3,478	1,144	-	-	1,144	-	16	-	-
910268	-	-	75.8	2.4	-	280	210	446	-	1,144	3,478	1,144	-	-	1,144	2	16	-	-
910278	92.6	92.6	-	-	-	-	-	510	2,962	-	4,872	-	26.0	2,962	-	5	-	-	-
TOTAL	92.6	92.6	703.2	4.6	3,394	2,618	420	5,565	5,171	13,590	30,522	11,381	26.0	2,962	11,381	71	32	25	2

NOTE:

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

UNANTICIPATED ITEMS:  
 CLASS III SURFACE PREPARATION  
 VOLUMETRIC MIXER  
 CONCRETE FOR DECK REPAIR  
 SPLICING OF PRESTRESSING STRAND

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242, 910260, 910263, 910264,  
910267, 910268, 910268 & 910278



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TOTAL BILL OF MATERIAL

DRAWN BY : J. MYA DATE : 09/2021  
 CHECKED BY : J. YANNAKONE DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

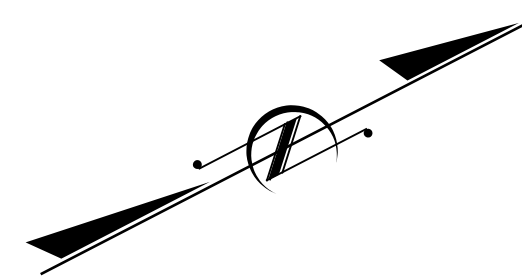
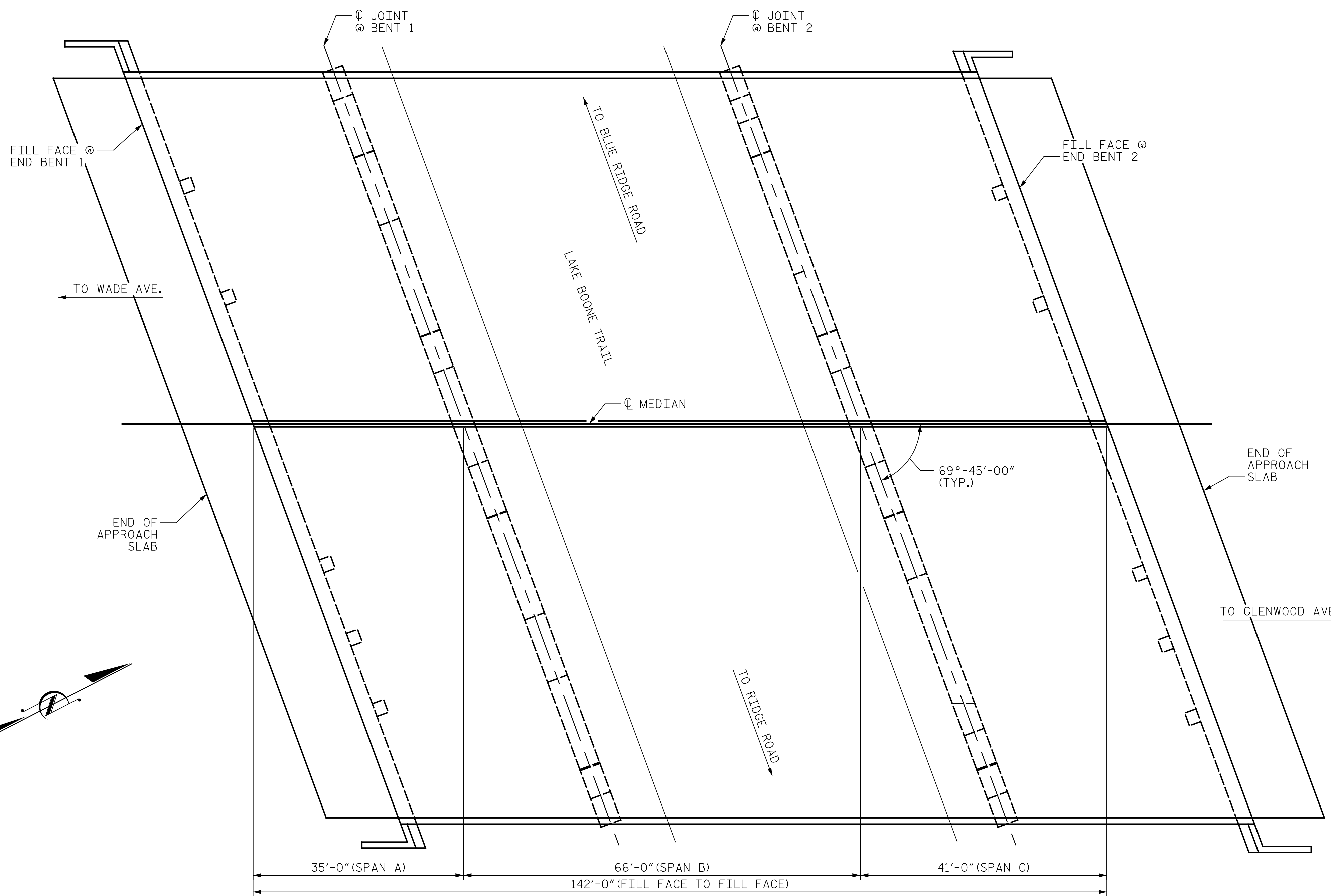
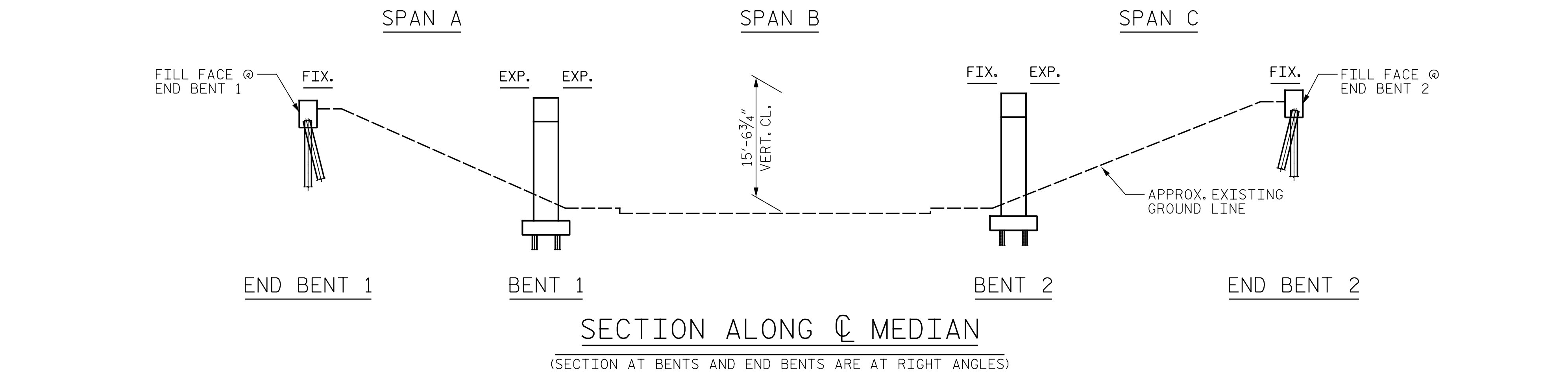
PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

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**NOTES:**

- GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 1/24/2021.
- BRIDGE ORIENTATION CONFORMS TO THE EXISTING BRIDGE PLANS AND ROUTINE INSPECTION REPORT.
- SCOPE OF WORK**
- APPLY DECK SEALANT TO PREPARED TOP OF BRIDGE DECK.
  - REMOVE EXISTING JOINT MATERIAL AND INSTALL FOAM JOINTS.
  - RESET EXISTING BEARINGS.
  - REPAIR PRESTRESSED CONCRETE GIRDERS.
  - CLEAN AND EPOXY COAT EXISTING PRESTRESSED CONCRETE GIRDER ENDS.
  - REMOVE DEBRIS FROM TOP OF EXISTING END BENTS AND BENT CAPS AND APPLY EPOXY COATING.
  - EPOXY RESIN INJECTION OF CONCRETE CRACKS.
  - REMOVE UNSOUND AND SPALLED CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.
  - REPAIR CONCRETE BARRIER RAIL.

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

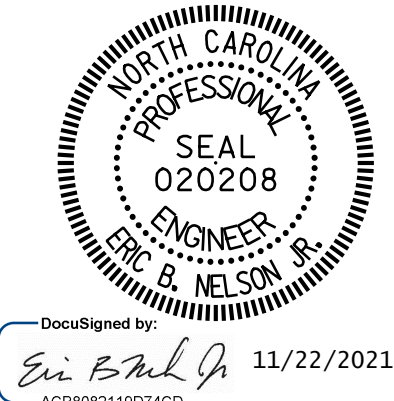
RESIDENT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING  
 FOR BRIDGE ON I-440  
 (CLIFF BENSON BELTLINE)  
 OVER SR 1676 (LAKE  
 BOONE TRAIL)**



DRAWN BY : T. HARTLEY DATE : 09/2021  
 CHECKED BY : J. YANNAACONE DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

**PLAN**  
 (PILES NOT SHOWN FOR CLARITY)

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised

One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED  
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 SIGNATURES COMPLETED

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

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**LOCATION SKETCH**

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

**GENERAL NOTES**

UNLESS OTHERWISE INDICATED IN THE PLANS, SEE TRAFFIC MANAGEMENT PLANS FOR TYPICAL LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

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

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

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

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

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

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

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

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE IS UNDER BRIDGE LIGHTING ATTACHED TO THE STRUCTURE.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR SHOTBLASTING BRIDGE DECK AND SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

FOR REPAIRS TO PRESTRESSED CONCRETE GIRDERS, SEE SPECIAL PROVISIONS.

FOR RESET BEARINGS, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

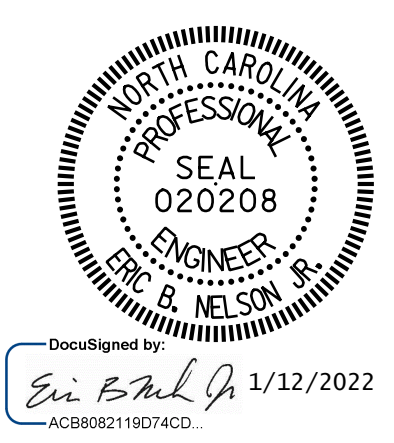
FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

BRIDGE COORDINATES	
LATITUDE	LONGITUDE
35°-48'-55.75"	78°-41'-26.27"

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON I-440  
 (CLIFF BENSON BELTLINE)  
 OVER SR 1676 (LAKE  
 BOONE TRAIL)

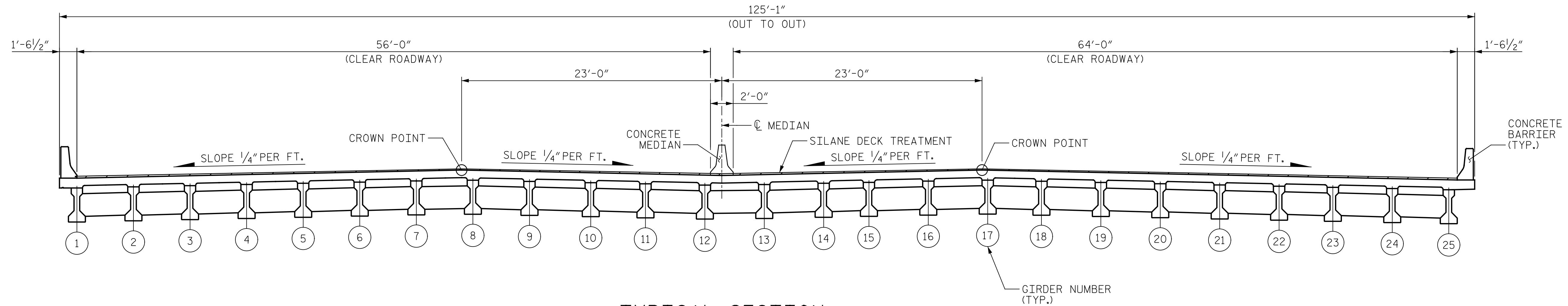
DRAWN BY : T. HARTLEY DATE : 09/2021  
 CHECKED BY : J. YANACCONO DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

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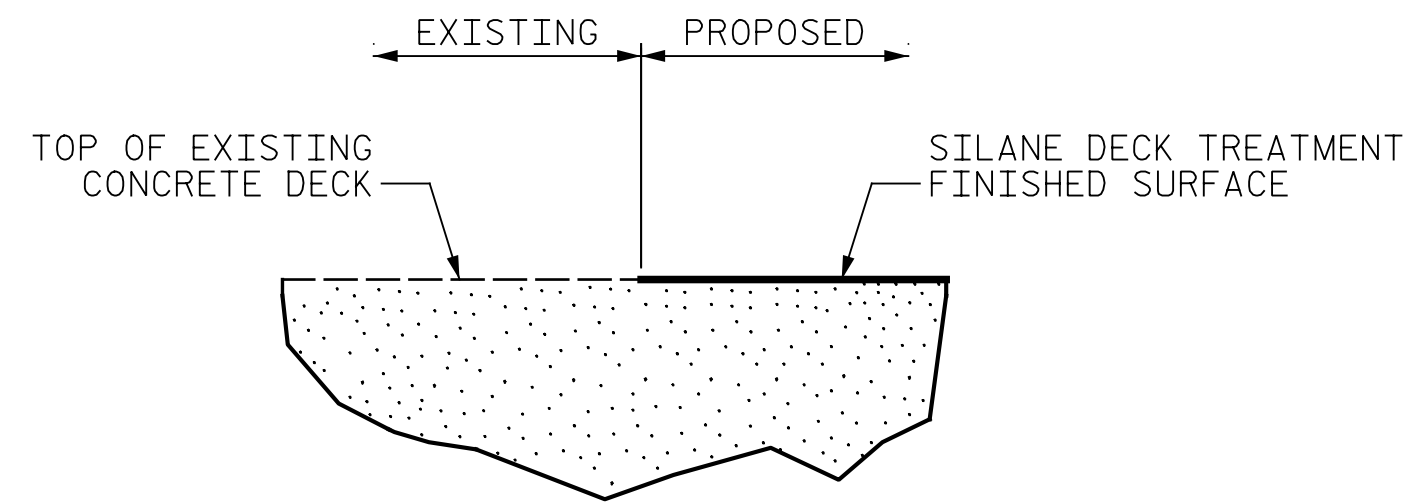
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			82

NOTES:  
 SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION SILANE DECK TREATMENT.

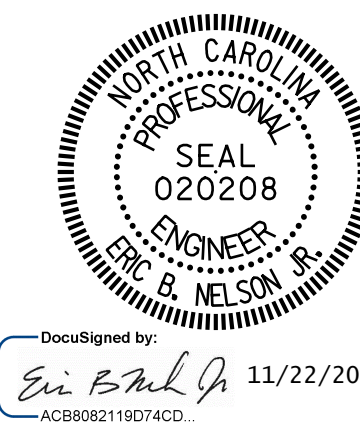


**TYPICAL SECTION**  
 (PROPOSED)  
 (GIRDER CONFIGURATION FOR SPAN B SHOWN, DECK DIMENSIONS AND CROSS SLOPES SIMILAR FOR SPAN A AND C)



**DETAIL OF SILANE DECK TREATMENT**

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242



DocuSigned by:  
 Eric B. Nelson  
 11/22/2021  
 AC8802119074CD

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**TYPICAL SECTION AND SURFACE PREPARATION DETAILS**

DRAWN BY : J. MYA DATE : 07/2021  
 CHECKED BY : J. YANACCONI DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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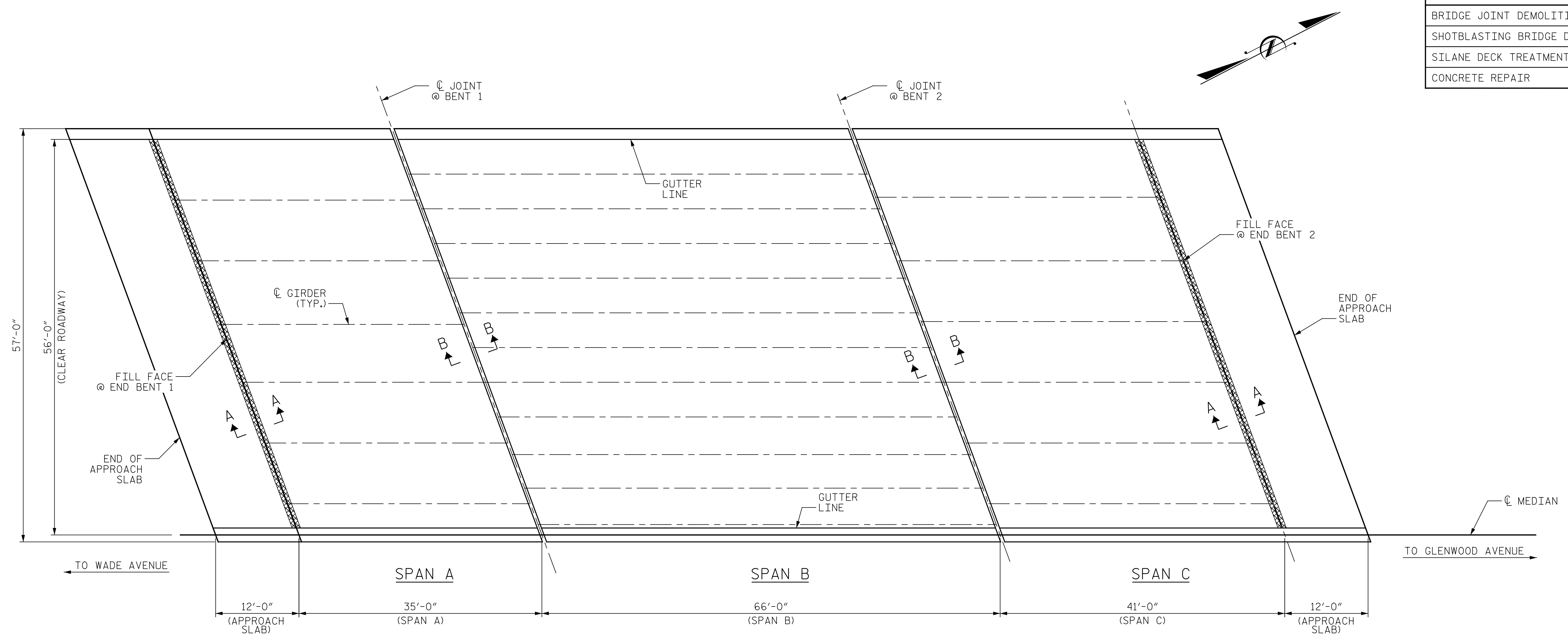
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SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
BRIDGE JOINT DEMOLITION	119 SQ. FT.	
SHOTBLASTING BRIDGE DECK	1031 SQ. YDS.	
SILANE DECK TREATMENT	1031 SQ. YDS.	
CONCRETE REPAIR	0.0 CU. FT.	



PLAN

- SHOTBLAST BRIDGE DECK & SILANE DECK TREATMENT
- BRIDGE JOINT DEMOLITION

**NOTES:**

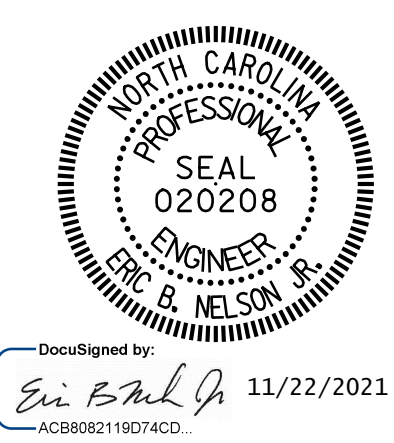
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CONCRETE COVER FOR TOP BARS IN THE DECK SLAB IS 2 1/2" PER THE EXISTING BRIDGE PLANS.

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

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 WEST BOUND

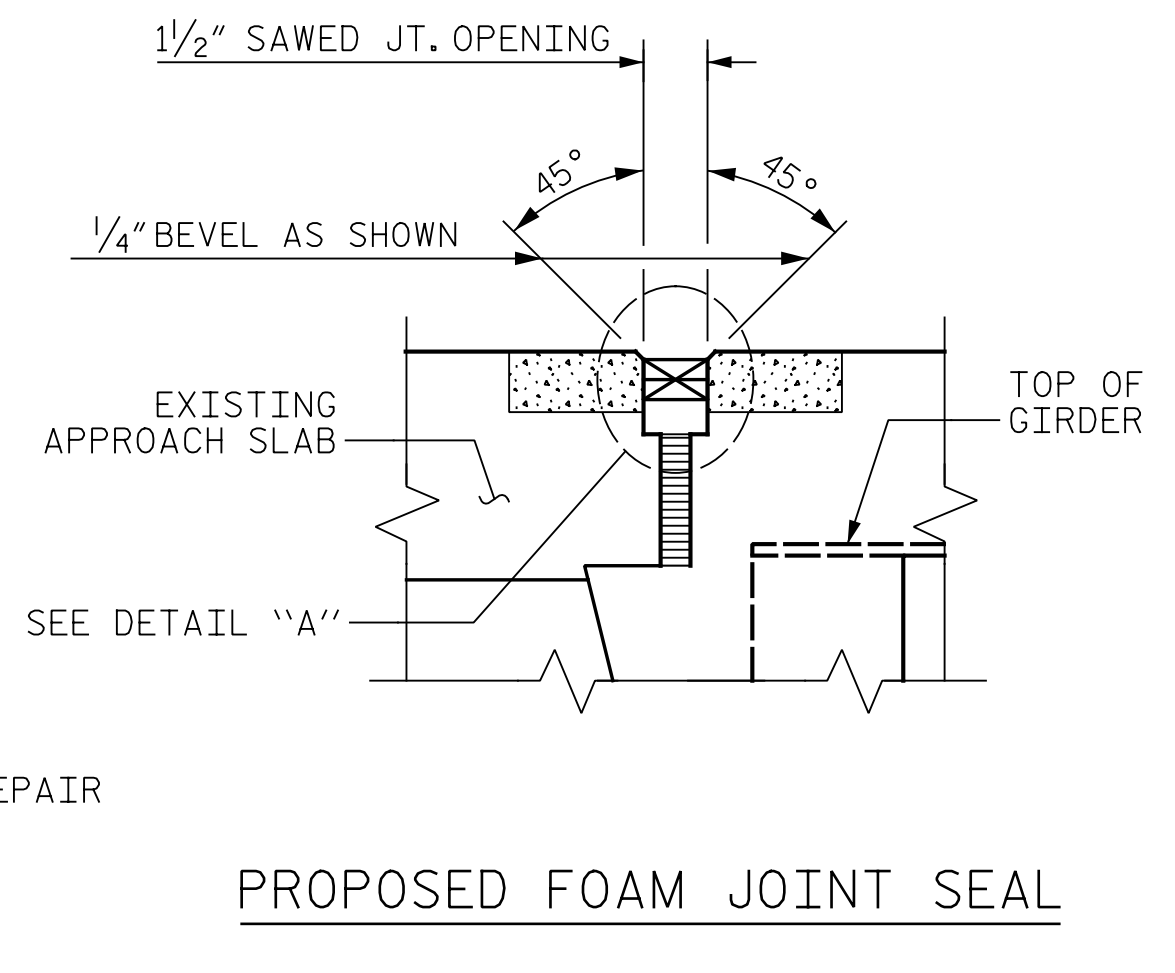
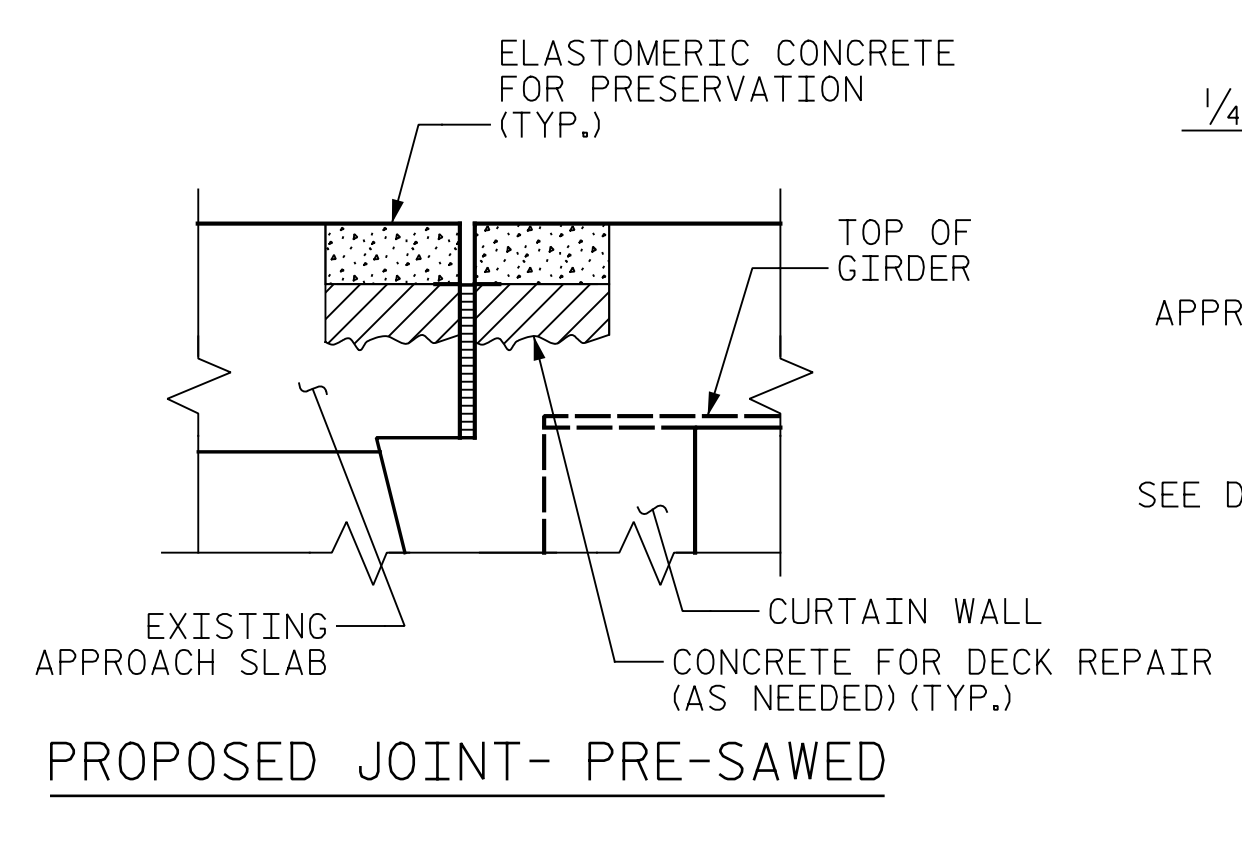
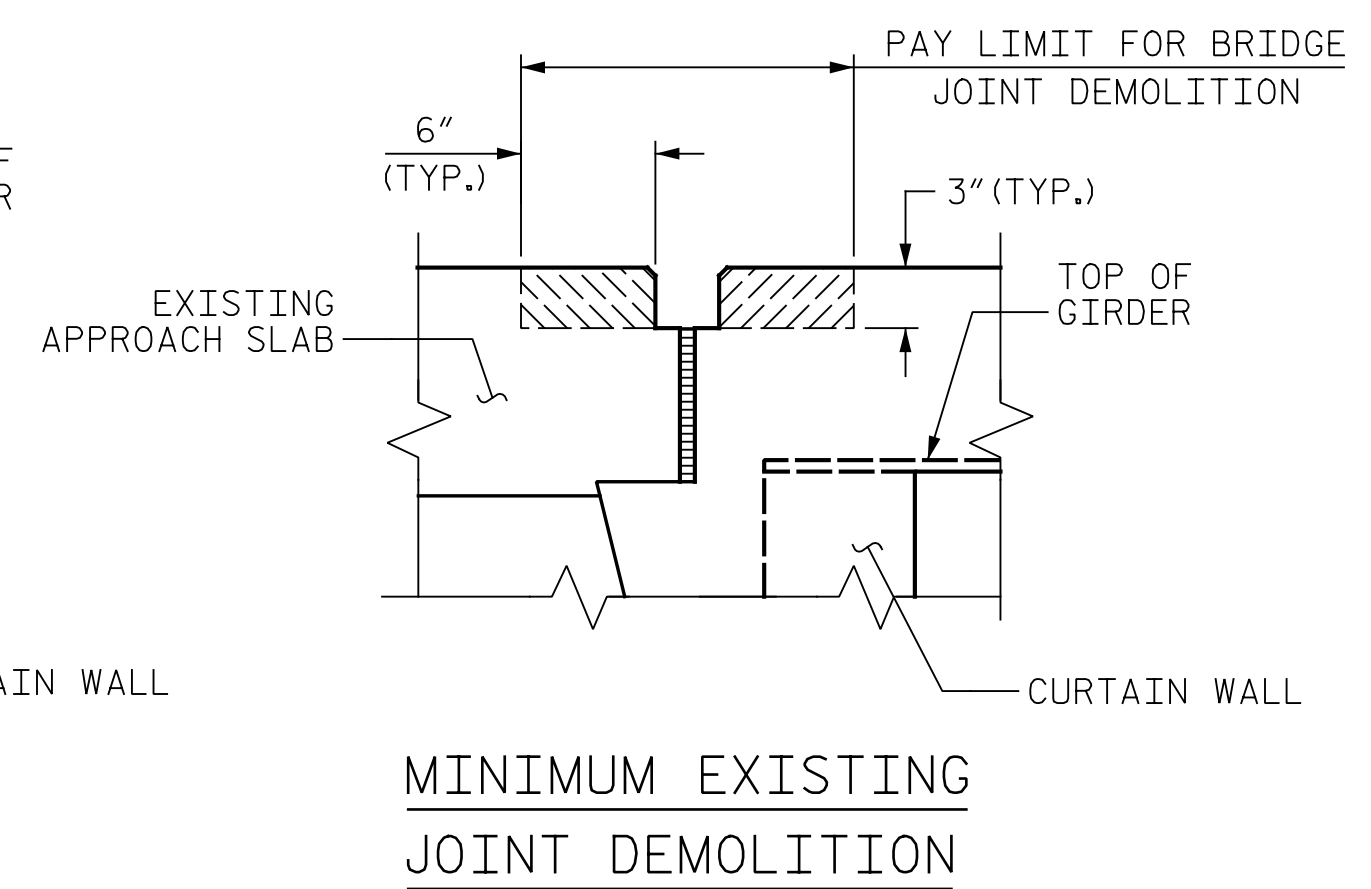
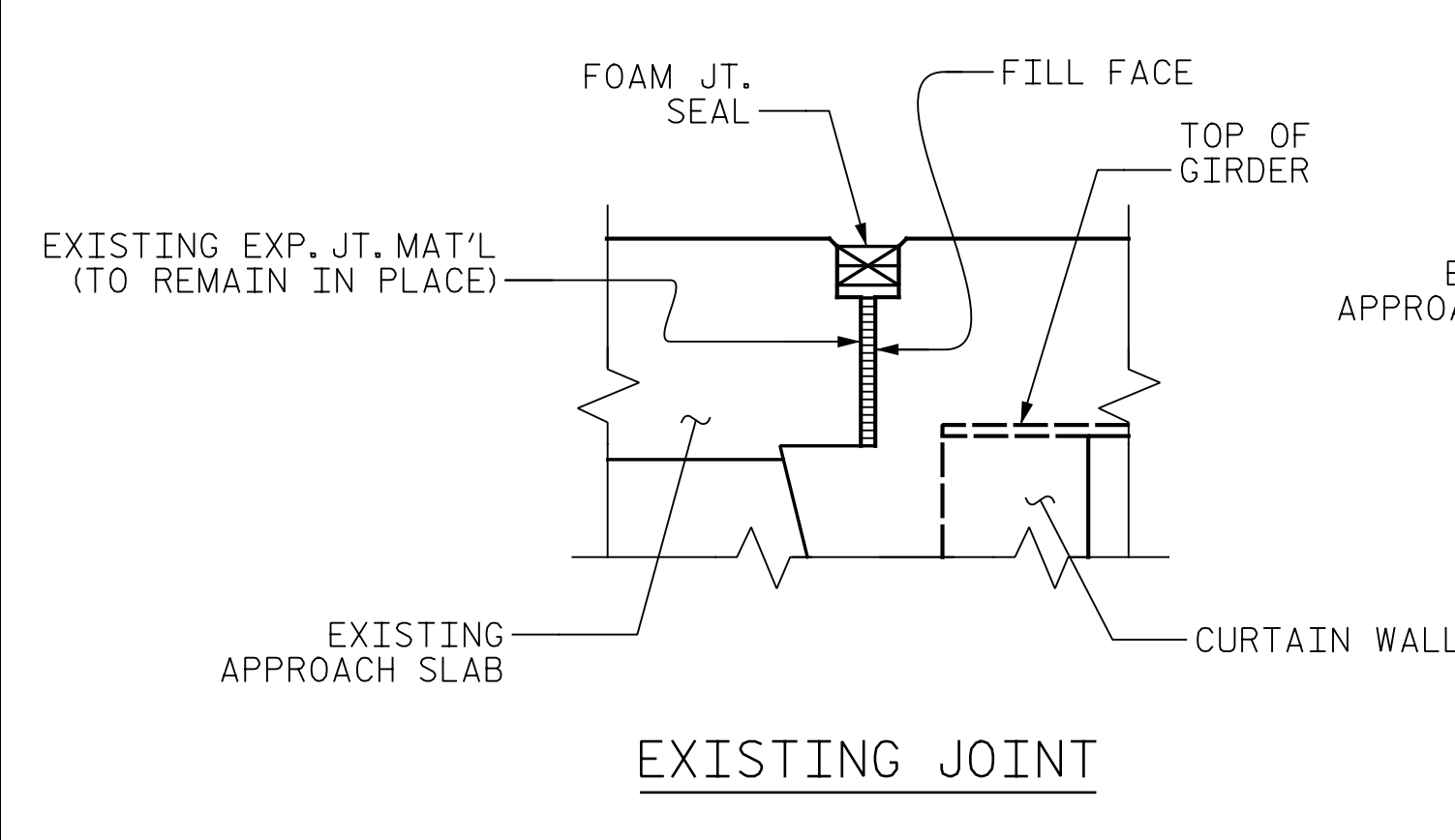
DRAWN BY :	J. MYA	DATE :	08/2021
CHECKED BY :	J. YANNACCONE	DATE :	09/2021
DESIGN ENGINEER OF RECORD:	R. NELSON	DATE :	09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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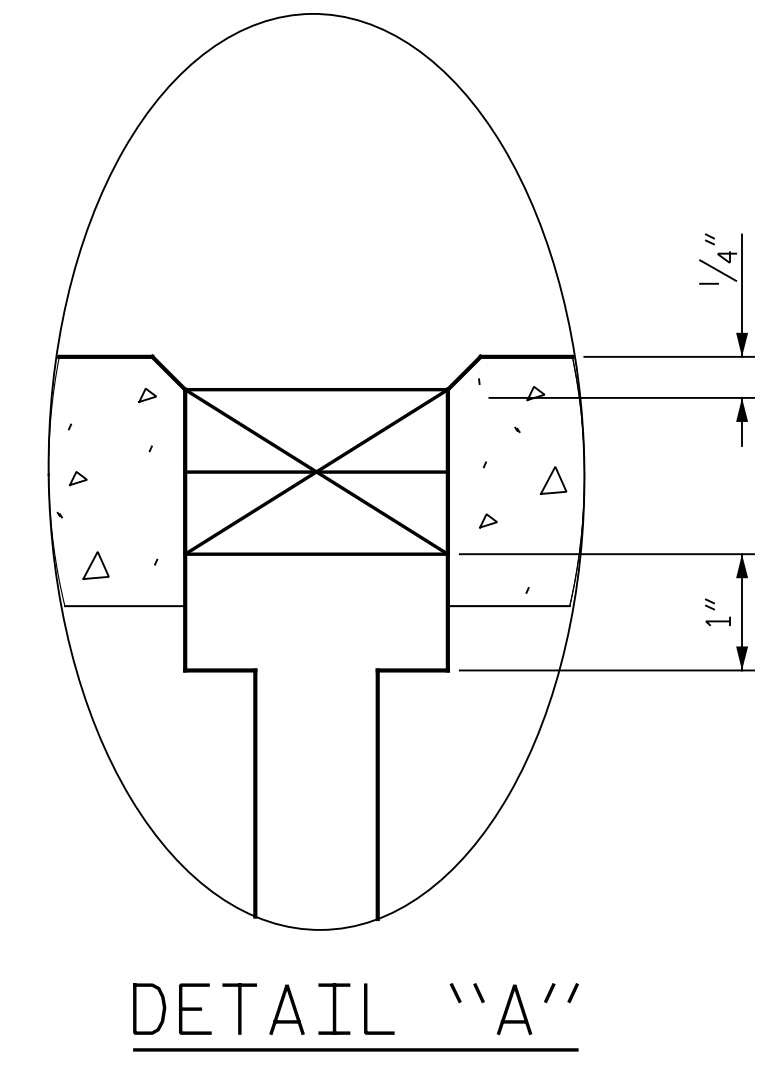
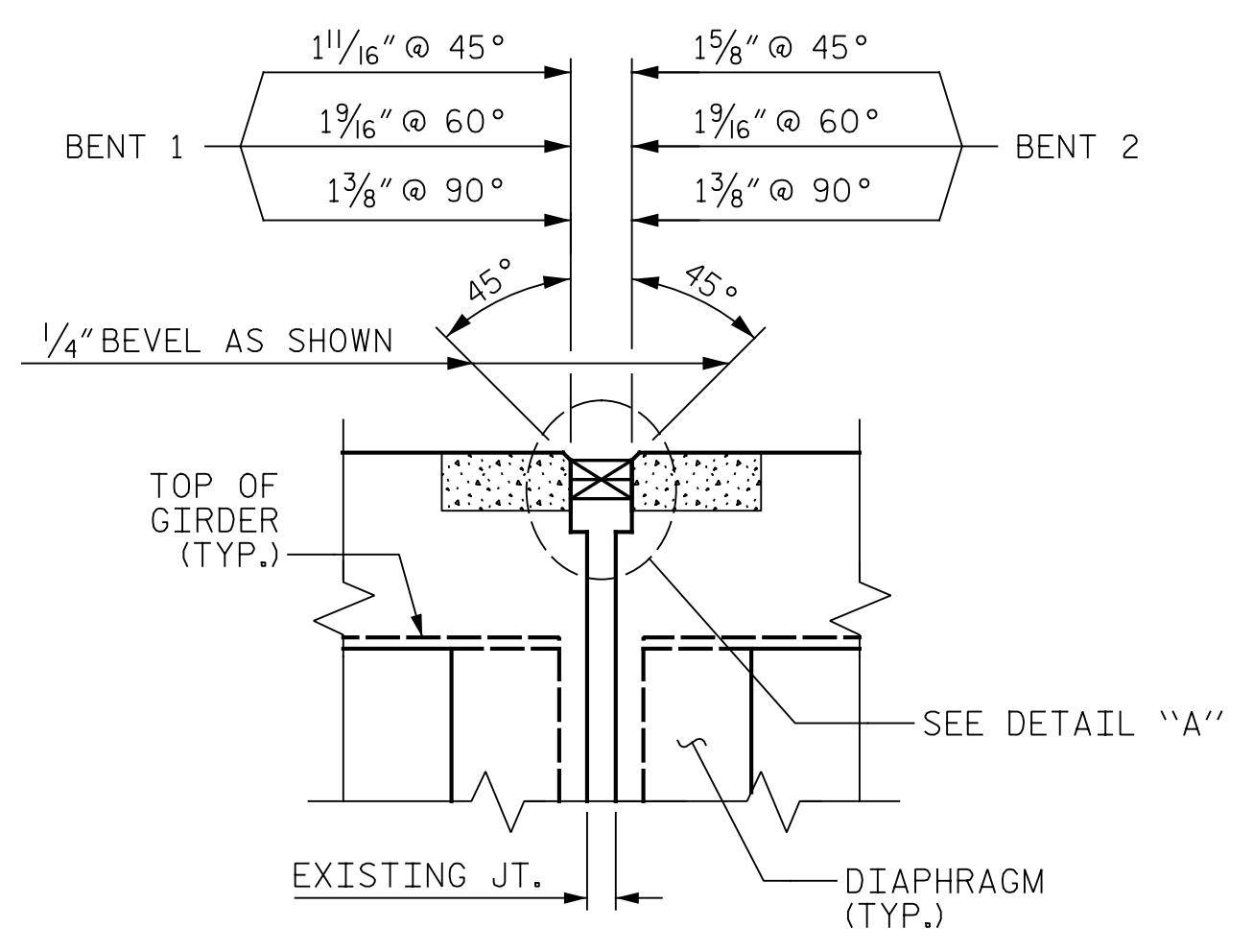
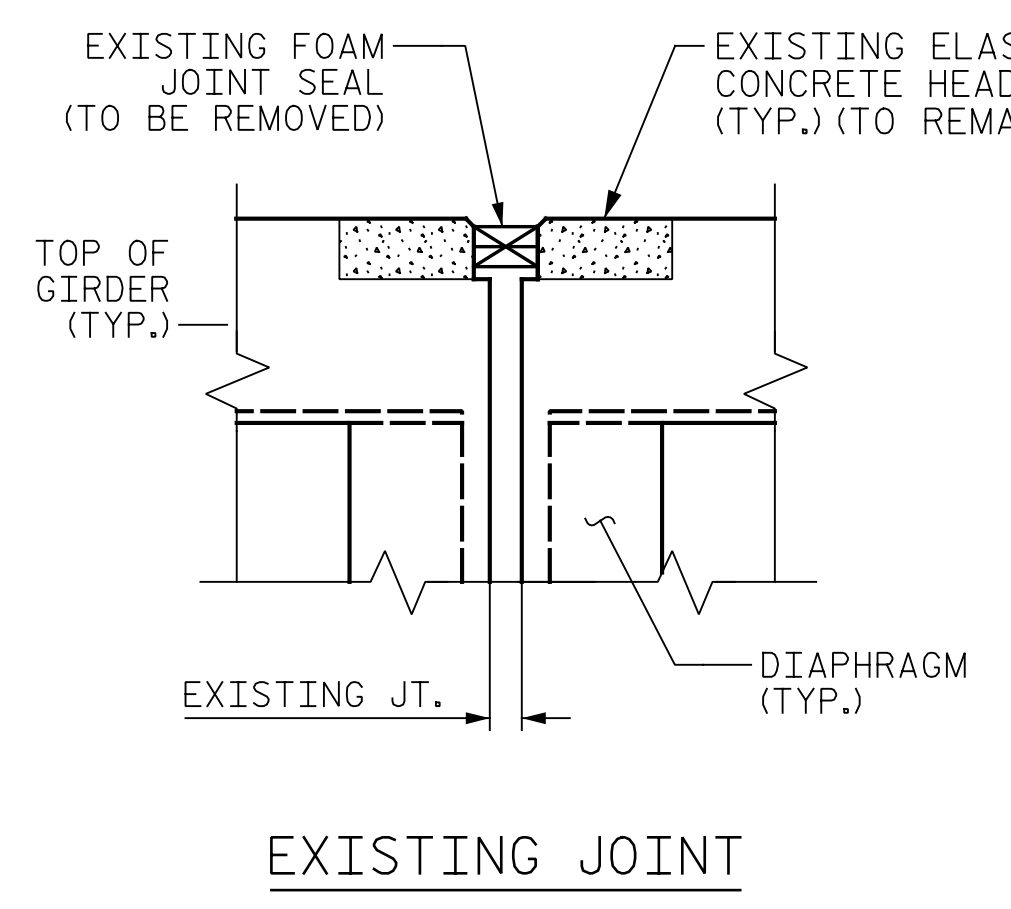
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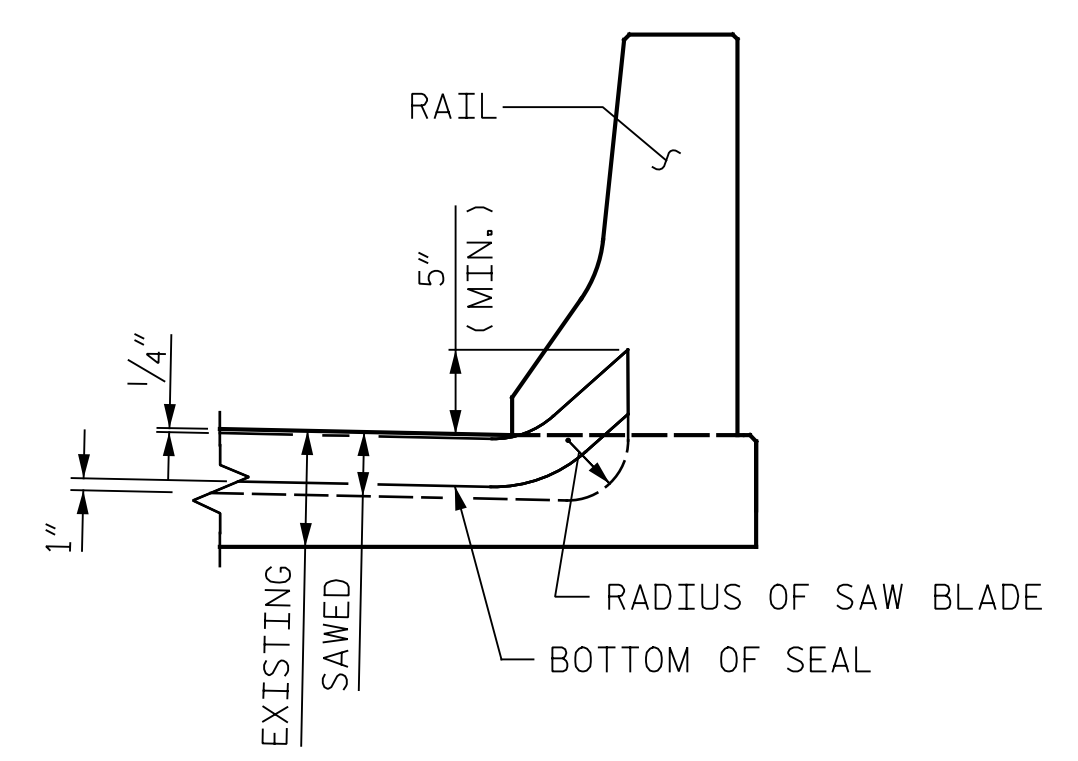


SECTION A-A

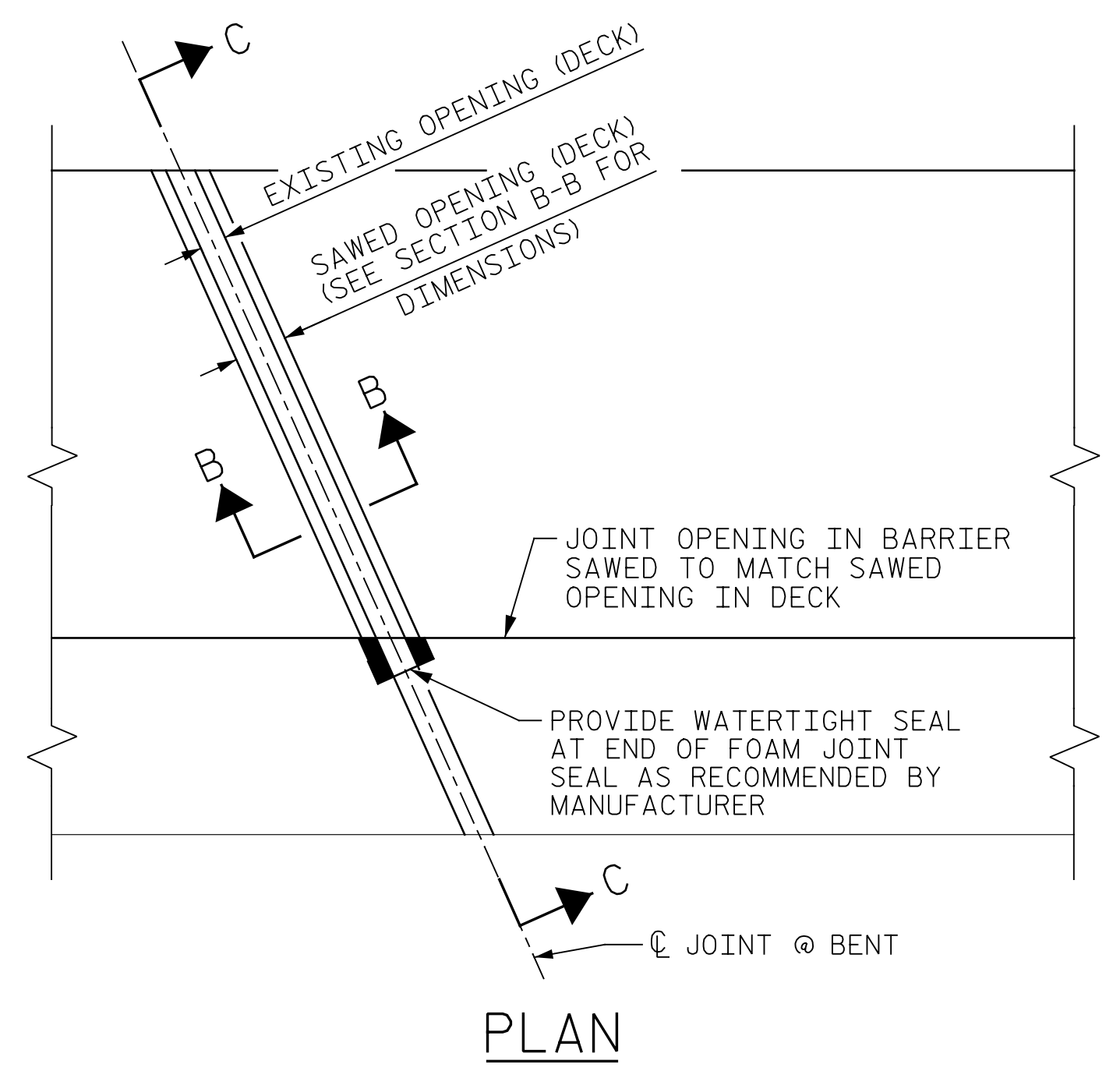
NOTE: RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS REQ'D.



SECTION B-B



FOAM JOINT SEAL SHALL BE FACTORY FORMED OR CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF CURB.



LOCATION	ELASTOMERIC CONCRETE FOR PRESERVATION	FOAM JOINT SEALS FOR PRESERVATION
	CU. FT.	LIN. FT.
END BENT 1	32.0	132.0
BENT 1	-	132.0
BENT 2	-	132.0
END BENT 2	32.0	132.0
* TOTAL	64.0	528.0

\* BASED ON MINIMUM BLOCKOUT SHOWN

**NOTES:**

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

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

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 ACCOMMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS.

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

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 JOINT IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.

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

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

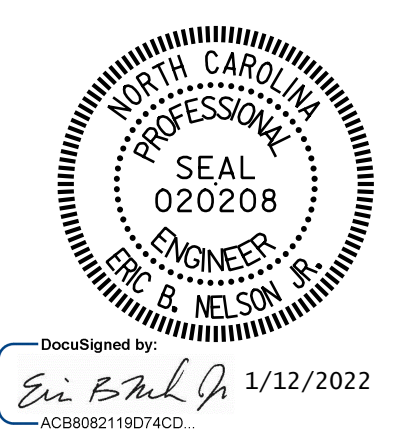
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

DRAWN BY : J. MYA DATE : 08/2021  
 CHECKED BY : J. YANACCONI DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised

One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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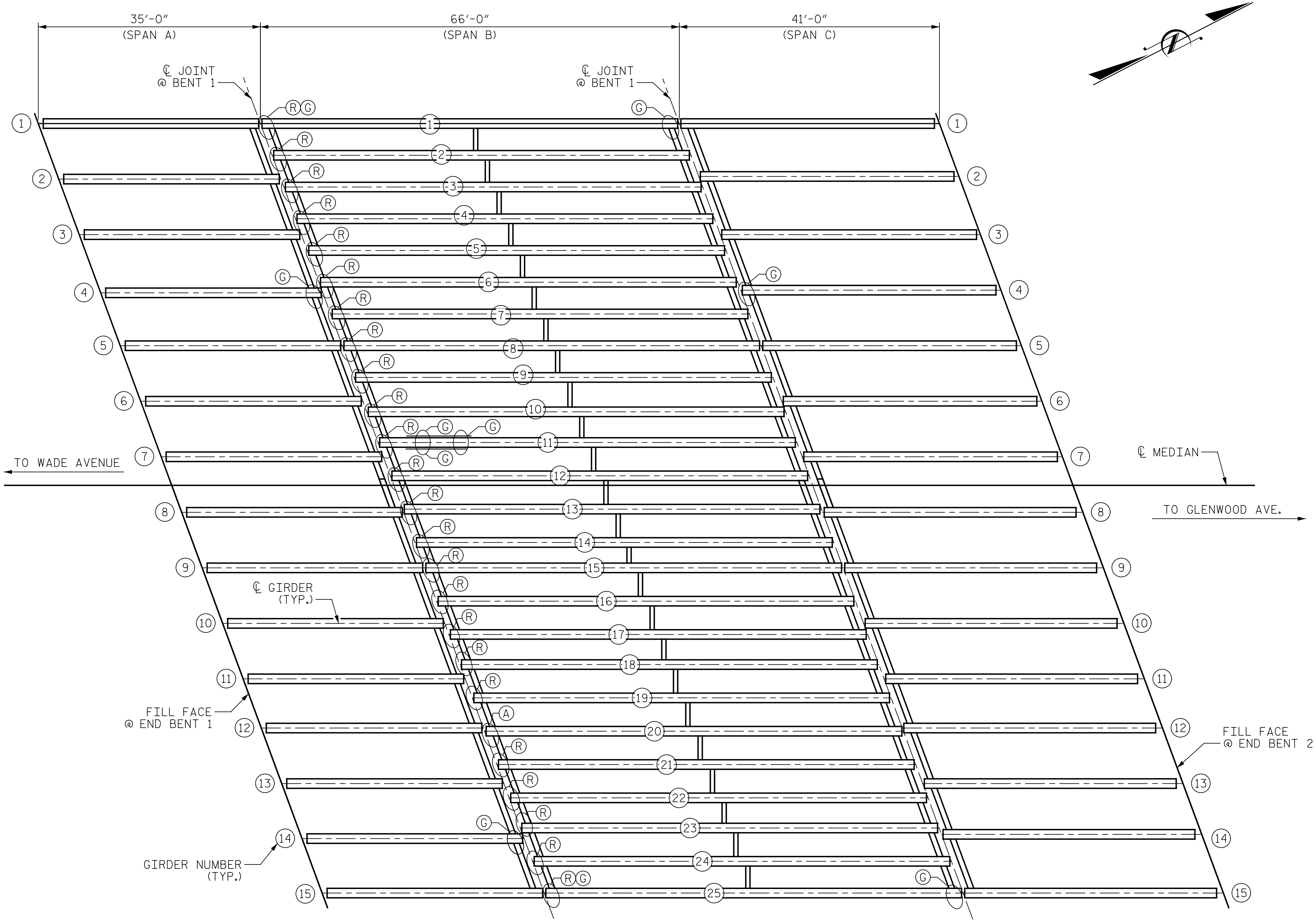
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REPAIR QUANTITY TABLE

GIRDER REPAIR		
	ESTIMATE	ACTUAL
REPAIR TO PRESTRESSED CONCRETE GIRDERS	1.3 CF	
RESET BEARINGS	25 EA	

- ⓐ PRESTRESSED CONCRETE GIRDER REPAIR
- Ⓡ RESET BEARINGS



NOTES

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

MINIMUM CONCRETE COVER FOR PRESTRESSING STRANDS IN THE GIRDERS IS 1 3/4" PER THE EXISTING BRIDGE PLANS.

FOR GIRDER REPAIRS, SEE "PRESTRESSED CONCRETE GIRDER REPAIR DETAILS" SHEET.

FOR PRESTRESSED GIRDER REPAIRS, SEE SPECIAL PROVISIONS.

ANTICIPATED REPAIR LOCATIONS

SPAN	GIRDER	LOCATION	DESCRIPTION
A	4	BENT 1	TOP FLANGE 9" X 4" DELAMINATION
A	14	BENT 1	TOP FLANGE 4" X 3" X 1" SPALL
B	1	BENT 1	WEB 11" X 8" DELAMINATION
B	11	MID-SPAN	LEFT TOP FLANGE 5" X 3" X 1/2" SPALL
B	11	MID-SPAN	RIGHT TOP FLANGE 5" X 3" X 1/2" SPALL
B	11	MID-SPAN	LEFT TOP FLANGE 5" X 3" X 1/2" SPALL
B	25	BENT 1	WEB 12" X 8" X 3/4" SPALL WITH EXPOSED REBAR
B	1-25	BENT 1	RESET SOLE PLATE (SEE RESET BEARING DETAILS)
B	1	BENT 2	WEB 1'-3" X 8" X 1" SPALL WITH EXPOSED REBAR
B	25	BENT 2	WEB 11" X 5" DELAMINATION
C	4	BENT 2	TOP FLANGE 3" X 3" DELAMINATION

GIRDER REPAIR LOCATIONS  
(OTHER LOCATIONS MAY EXIST, SEE NOTES)

PROJECT NO. I-5997  
 WAKE COUNTY  
 BRIDGE NO. 910242



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GIRDER REPAIR LOCATIONS

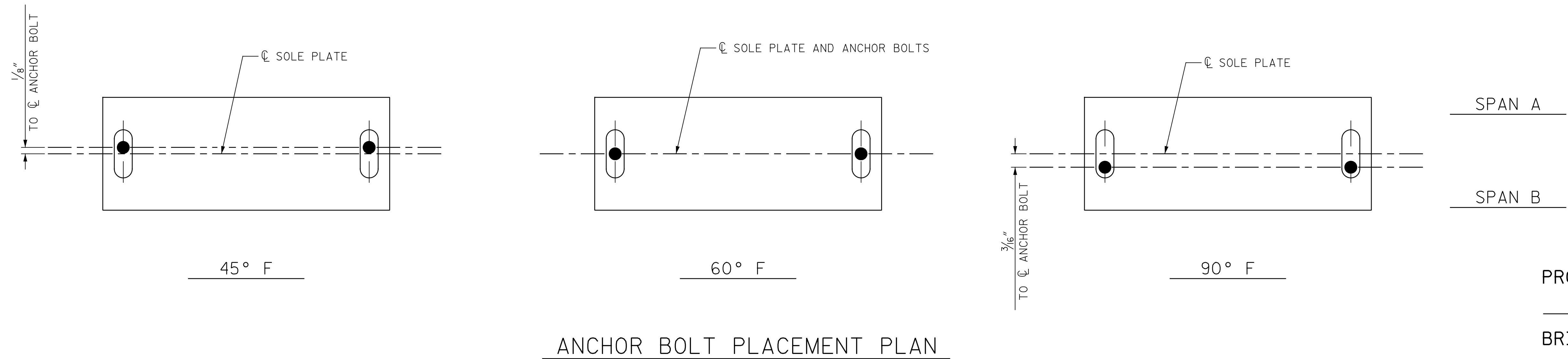
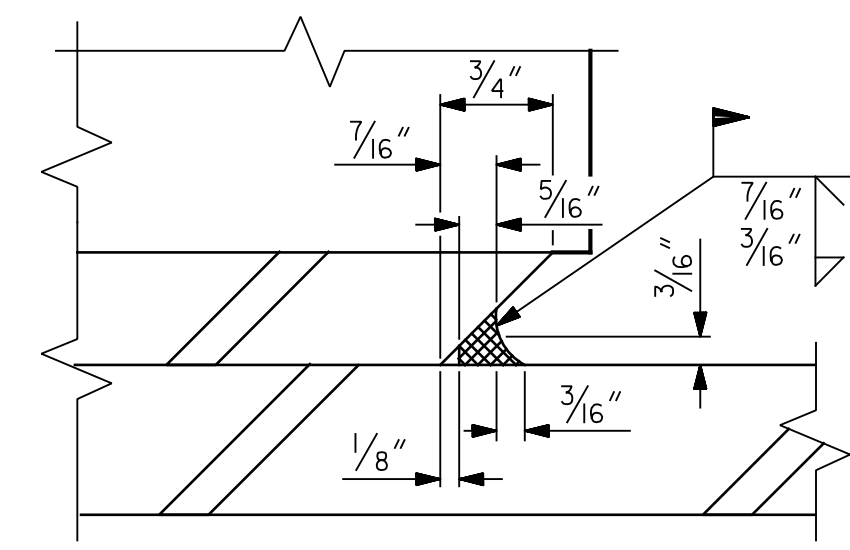
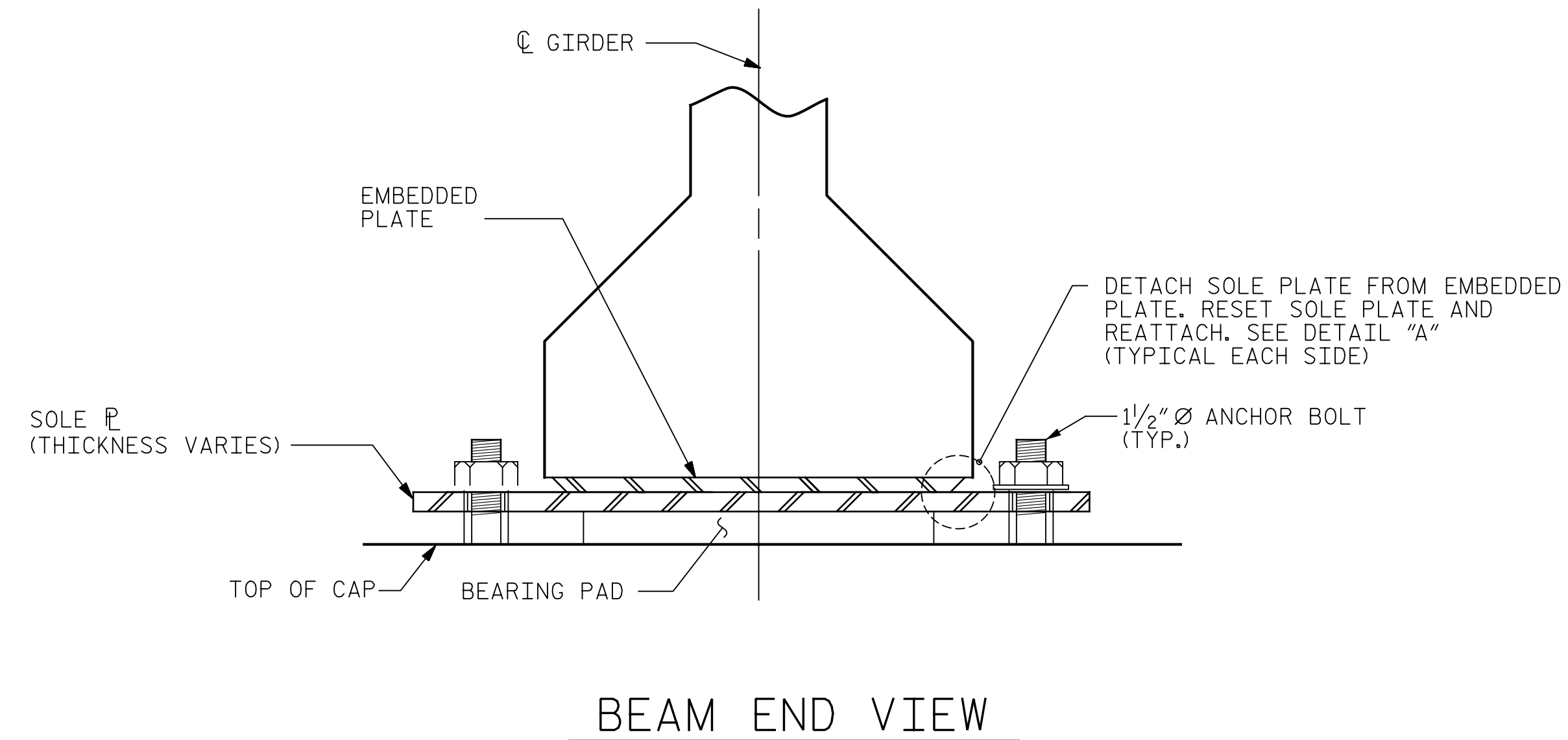
DRAWN BY : J. MYA DATE : 08/2021  
 CHECKED BY : J. YANNAACONE DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

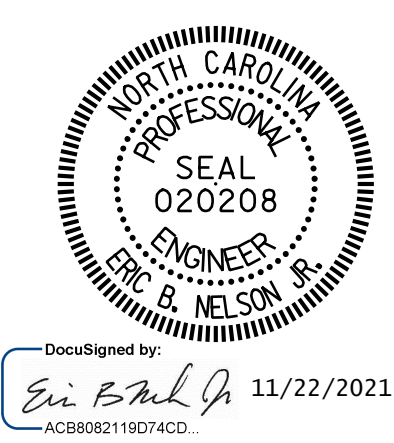
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**NOTES:**  
 THE EXISTING SOLE PLATES SHALL BE DETACHED AND RESET AS SHOWN.  
 LOOSEN OR REMOVE EXISTING ANCHOR BOLT NUTS AS REQUIRED TO ALLOW JACKING OF GIRDERS.  
 WITH GIRDERS IN A JACKED AND SUPPORTED CONDITION, DETACH EXISTING SOLE PLATES. FOR JACKING DETAILS, SEE "JACKING DETAILS" SHEET.  
 RESET SOLE PLATE AS SHOWN AND LOWER GIRDER ONTO THE EXISTING SOLE PLATE AND ELASTOMERIC BEARING.  
 WELD THE SOLE PLATE TO THE PLATE EMBEDDED INTO THE CONCRETE GIRDER.  
 PRIOR TO WELDING, GRIND THE GALVANIZED SURFACE OF THE PORTION OF THE EMBEDDED PLATE AND SOLE PLATE THAT ARE TO BE WELDED. AFTER WELDING, DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.  
 WHEN WELDING THE SOLE PLATE TO THE EMBEDDED PLATE IN THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.  
 TIGHTEN ANCHOR BOLT NUTS TO FINGER TIGHT AND THEN BACK THEM OFF 1/2 TURN.  
 FOR RESET BEARINGS, SEE SPECIAL PROVISIONS.  
 FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**RESET BEARING DETAILS**

DRAWN BY : M. LEE DATE : 09/2021  
 CHECKED BY : J. YANNACCONE DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

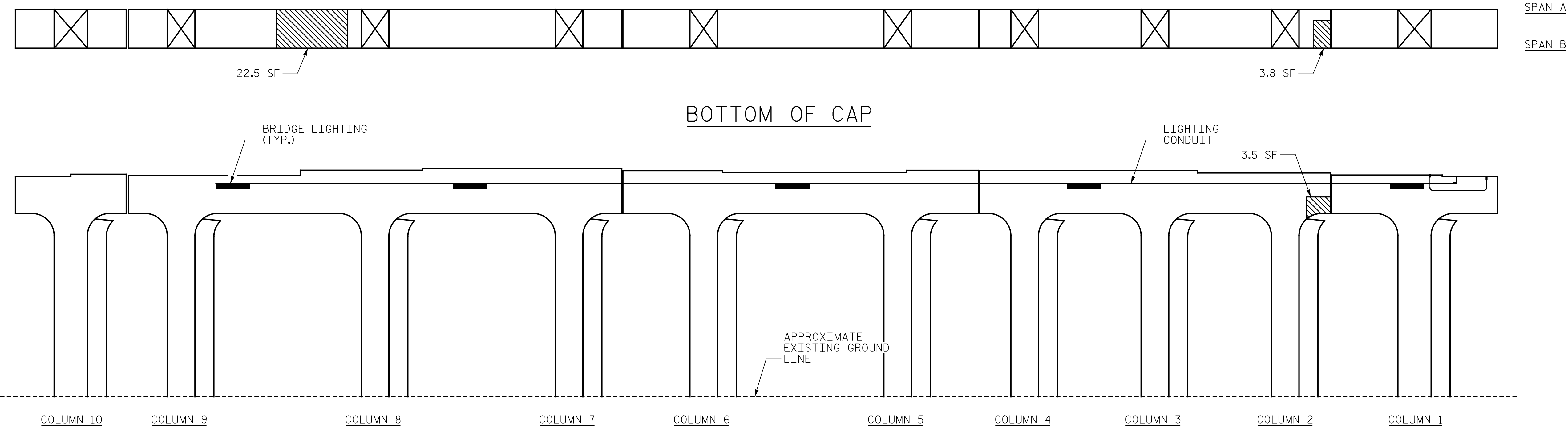
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**ELEVATION**

**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 REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

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 BEARING PADS. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR ONE (1) FOOT MIN. BELOW GROUND LINE.


- SHOTCRETE REPAIR
- CONCRETE REPAIRS (FORM & POUR)
- ERI - EPOXY RESIN INJECTION

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 1**  
**SPAN "B" SIDE**

  
 DocuSigned by:  
*Eric B. Nelson*  
 11/22/2021  
ACB8002119074CD

DRAWN BY : J. MYA	DATE : 08/2021
CHECKED BY : J. YANACCONI	DATE : 09/2021
DESIGN ENGINEER OF RECORD: R. NELSON	DATE : 09/2021

PLANS PREPARED BY:



One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

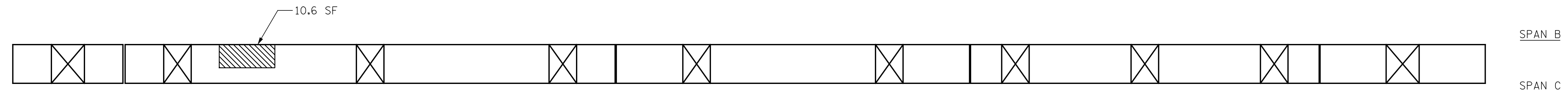
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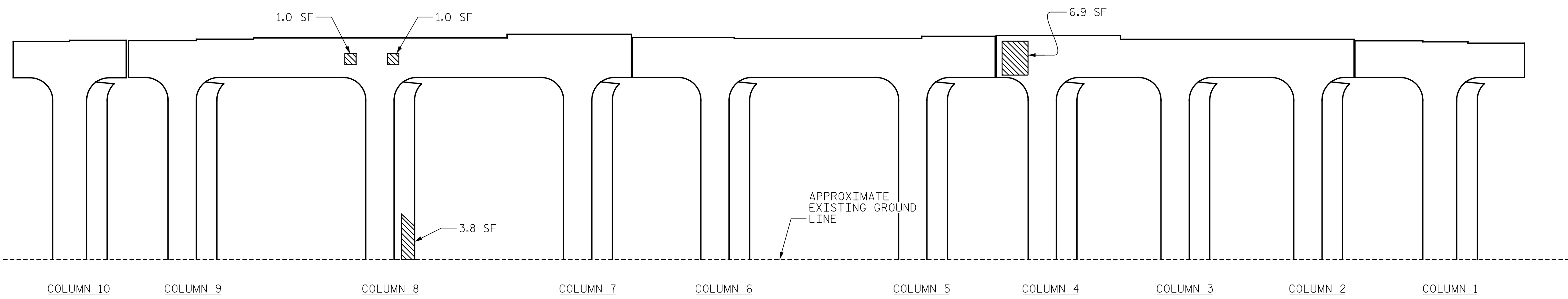




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BOTTOM OF CAP



ELEVATION

NOTES:

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

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 BEARING PADS. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR ONE (1) FOOT MIN. BELOW GROUND LINE.

- SHOTCRETE REPAIR
- CONCRETE REPAIRS (FORM & POUR)
- ERI - EPOXY RESIN INJECTION

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2**  
**SPAN "C" SIDE**

DRAWN BY : J. MYA	DATE : 08/2021	
CHECKED BY : J. YANNACCONE	DATE : 09/2021	
DESIGN ENGINEER OF RECORD: R. NELSON	DATE : 09/2021	

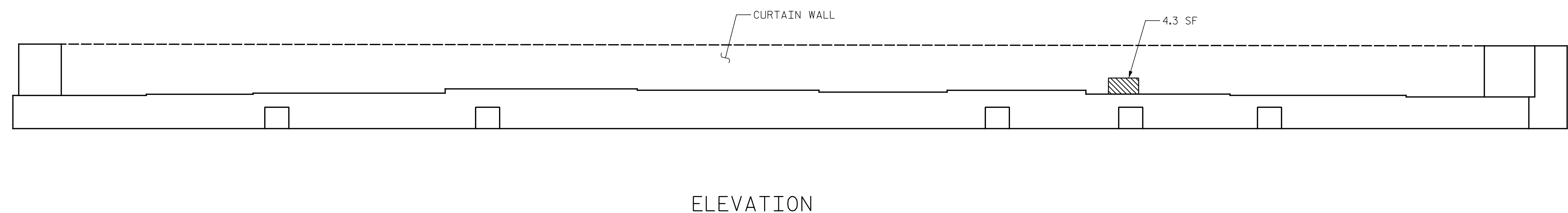
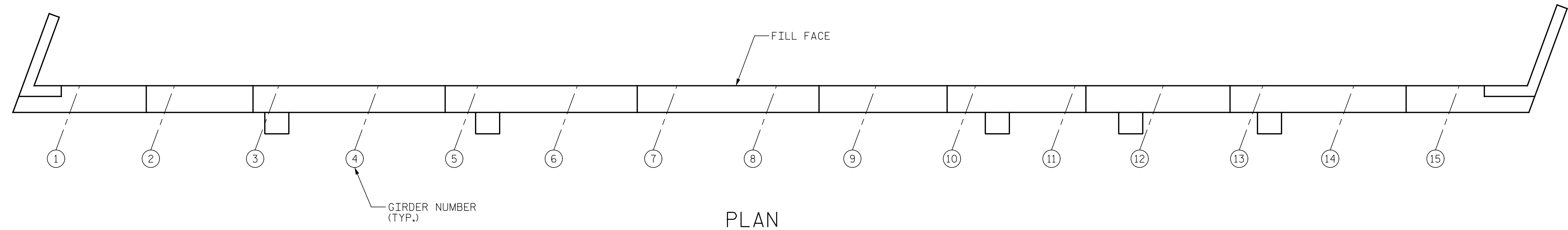
PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised

One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
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 NC Lic. No. F-0270

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REPAIR QUANTITY TABLE				
END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	4.3	1.5		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
EPOXY RESIN INJECTION	LN. FT		LN. FT	
CAP	0.0			
CURTAIN WALL	0.0			

VALUES IN CHARTS REPRESENT ESTIMATED REPAIRS TOTALS AFTER REMOVAL OF SOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

**NOTES:**

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIRS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

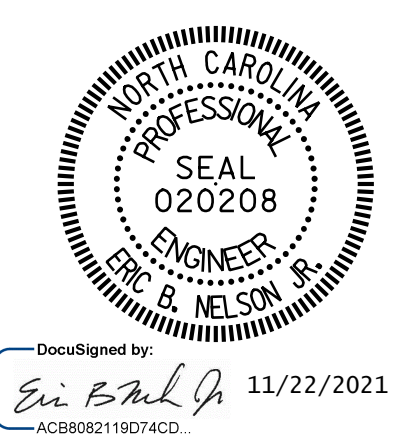
SHOTCRETE REPAIRS MAY BE REPLACED WITH CONCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

- SHOTCRETE REPAIR
- CONCRETE REPAIRS (FORM & POUR)
- ERI - EPOXY RESIN INJECTION

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910242



DocuSigned by:  
*Eric B. Nelson*  
 11/22/2021  
 ACB8092118074CD

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

END BENT 2

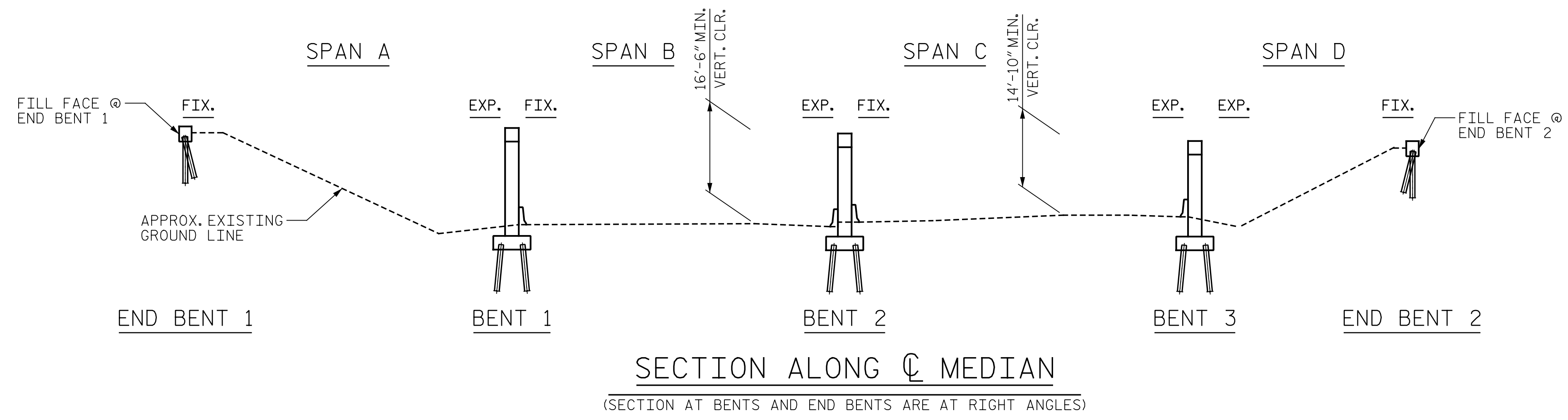
DRAWN BY : J. MYA DATE : 08/2021  
 CHECKED BY : J. YANACCONI DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

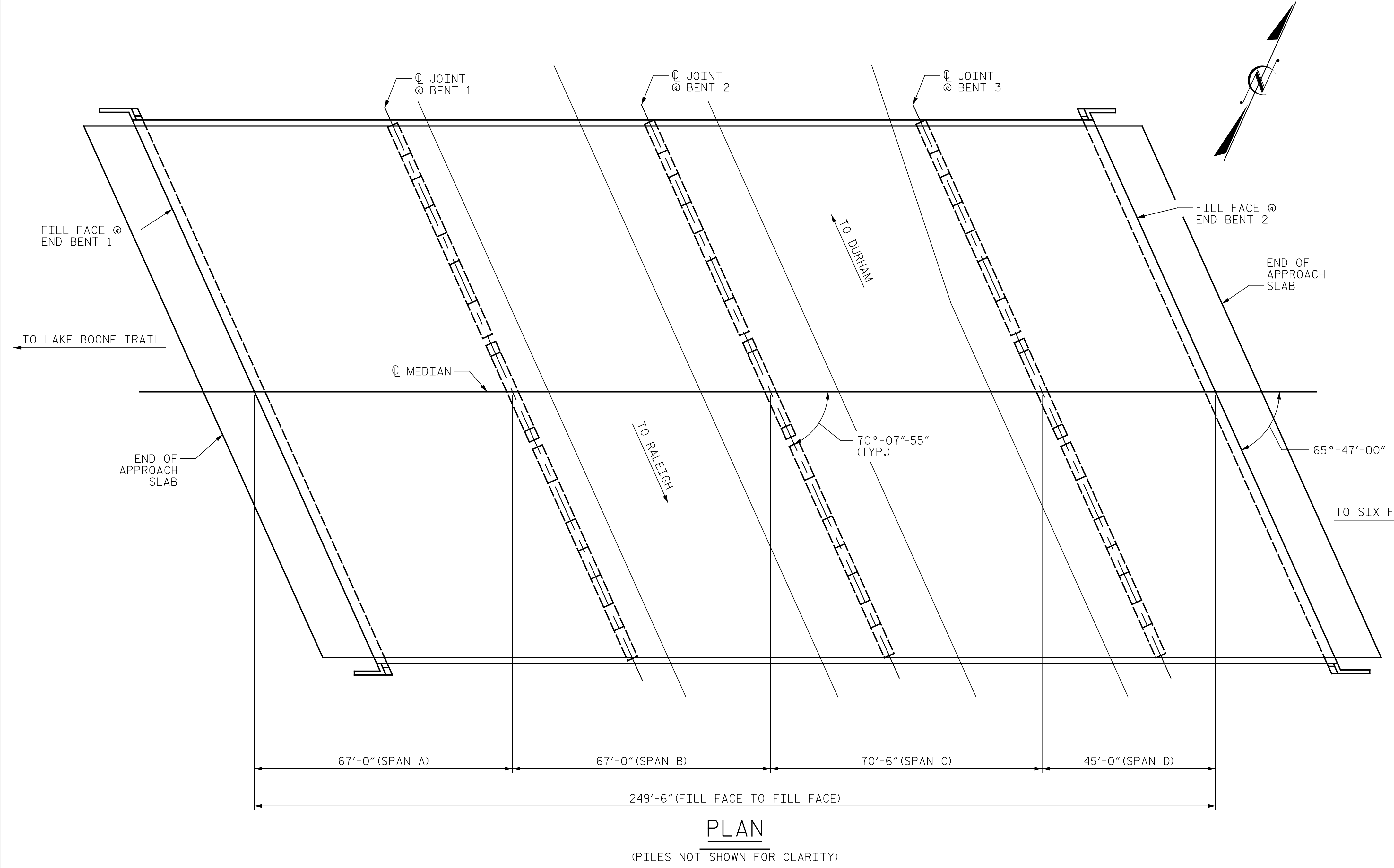
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**NOTES:**  
 GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 7/21/2020.  
 BRIDGE ORIENTATION CONFORMS TO THE EXISTING BRIDGE PLANS AND ROUTINE INSPECTION REPORT.

- SCOPE OF WORK**
- PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY FINE MILLING AND HYDRO-DEMOLITION.
  - OVERLAY PREPARED TOP OF BRIDGE DECK WITH VERY EARLY STRENGTH LATEX MODIFIED CONCRETE (LMC-VES).
  - REMOVE EXISTING JOINT MATERIAL AND INSTALL FOAM JOINTS.
  - DIAMOND GRIND AND APPLY SILANE DECK TREATMENT TO LMC-VES BRIDGE DECK.
  - CLEAN, REPAIR AND PAINT EXISTING STRUCTURAL STEEL BEAMS.
  - INSTALL BEARING KEEPER PLATES.
  - REMOVE DEBRIS FROM TOP OF EXISTING END BENTS AND BENT CAPS AND APPLY EPOXY COATING.
  - EPOXY RESIN INJECTION OF CONCRETE CRACKS.
  - REMOVE UNSOUND AND SPALLED CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.
  - REPAIR CONCRETE BARRIER RAIL.



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

RESIDENT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 FOR BRIDGE ON I-440  
 (CLIFF BENSON BELTLINE) OVER  
 US 70 (GLENWOOD AVENUE)



DRAWN BY : T. HARTLEY DATE : 09/2021  
 CHECKED BY : J. YANACCONO DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

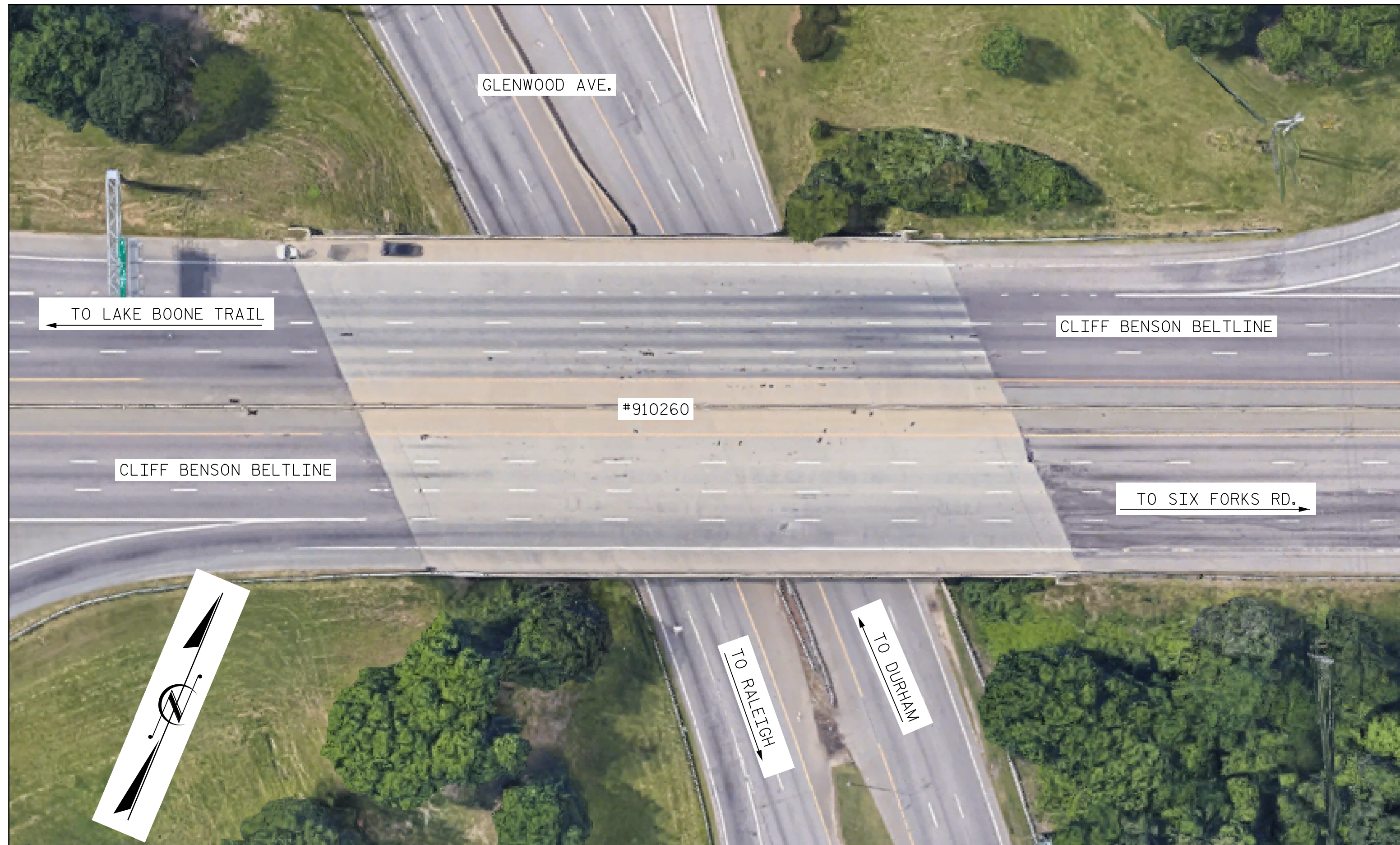
PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised

One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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**LOCATION SKETCH**

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

**GENERAL NOTES**

UNLESS INDICATED OTHERWISE IN THE PLANS, SEE TRANSPORTATION MANAGEMENT PLANS FOR TYPICAL LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH PLACEMENT.

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

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

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

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

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

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

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

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

- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

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

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

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

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR ITEMS ASSOCIATED WITH THE CLEANING AND REPAINTING OF BRIDGE.

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

FOR PAINTING EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR OVERLAY OF BRIDGE WITH LATEX MODIFIED-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

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

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

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR EPOXY COATING AND DEBRIS REMOVAL, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR BEARING KEEPER PLATE, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR FINE MILLING, SEE SPECIAL PROVISIONS.

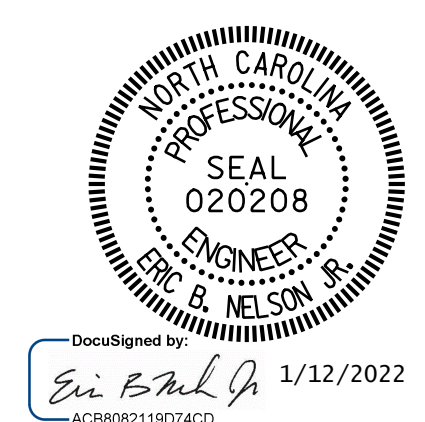
FOR DIAMOND GRINDING, SEE SPECIAL PROVISIONS.

FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.

BRIDGE COORDINATES	
LATITUDE	LONGITUDE
35°-50'-07.05"	78°-40'-10.10"

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON I-440  
 (CLIFF BENSON BELTLINE)  
 OVER US 70 (GLENWOOD AVENUE)

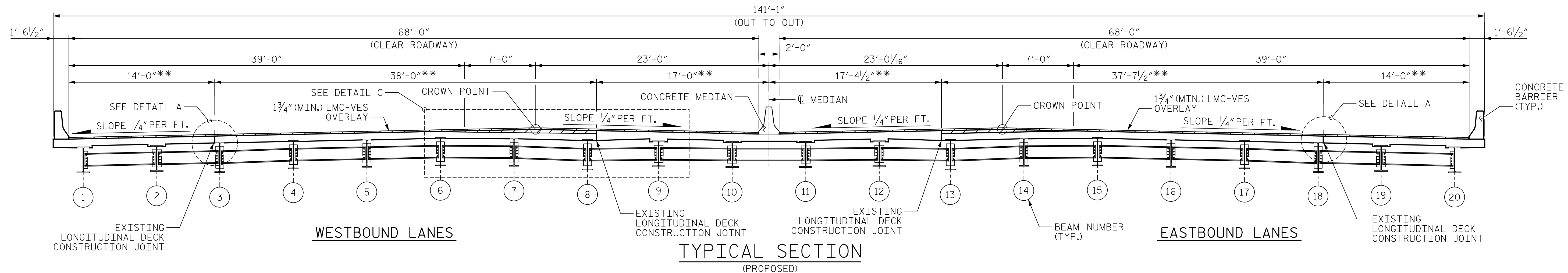
DRAWN BY : T. HARTLEY DATE : 09/2021  
 CHECKED BY : J. YANACCONO DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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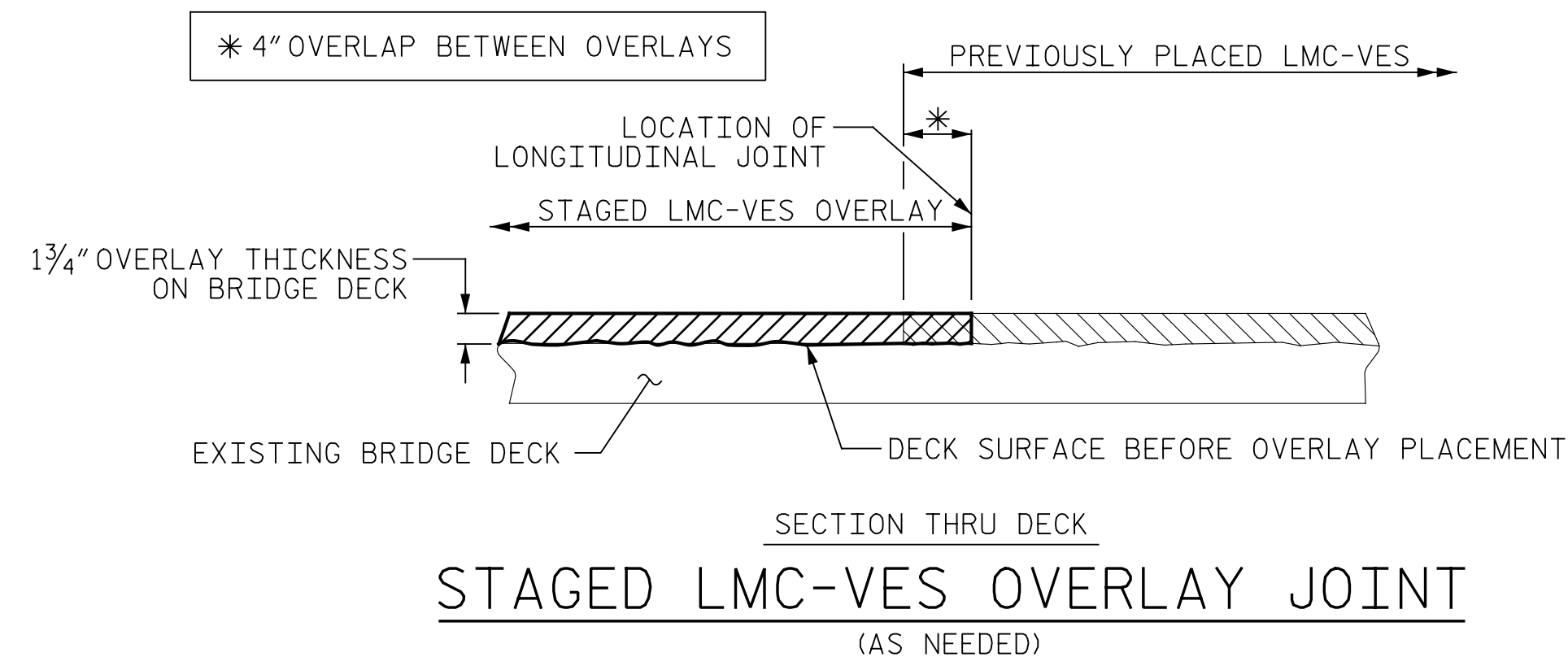
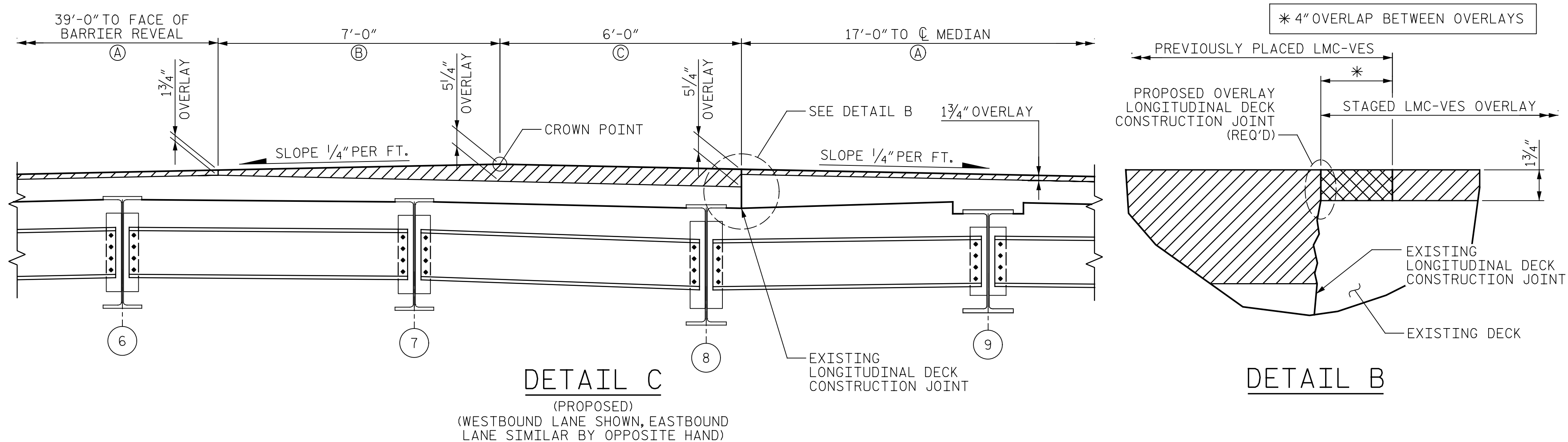
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\*\* FIELD VERIFY DIMENSION TO EXISTING LONGITUDINAL DECK CONSTRUCTION JOINT (SEE NOTES)

- Ⓐ 1/4" FINE MILLING  
1/4" MIN. DECK HYDRO-DEMOLITION  
1 3/4" LMC-VES OVERLAY
- Ⓑ FINE MILLING VARIES 1/4" TO 4 3/4"  
1/4" MIN. DECK HYDRO-DEMOLITION  
LMC-VES OVERLAY VARIES 1 3/4" TO 5 1/4"
- Ⓒ 4 3/4" FINE MILLING  
1/4" MIN. DECK HYDRO-DEMOLITION  
5 1/4" LMC-VES OVERLAY



**NOTES:**

UNLESS INDICATED OTHERWISE IN THE PLANS, SEE TRAFFIC MANAGEMENT PLANS FOR TYPICAL LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LMC-VES PLACEMENT.

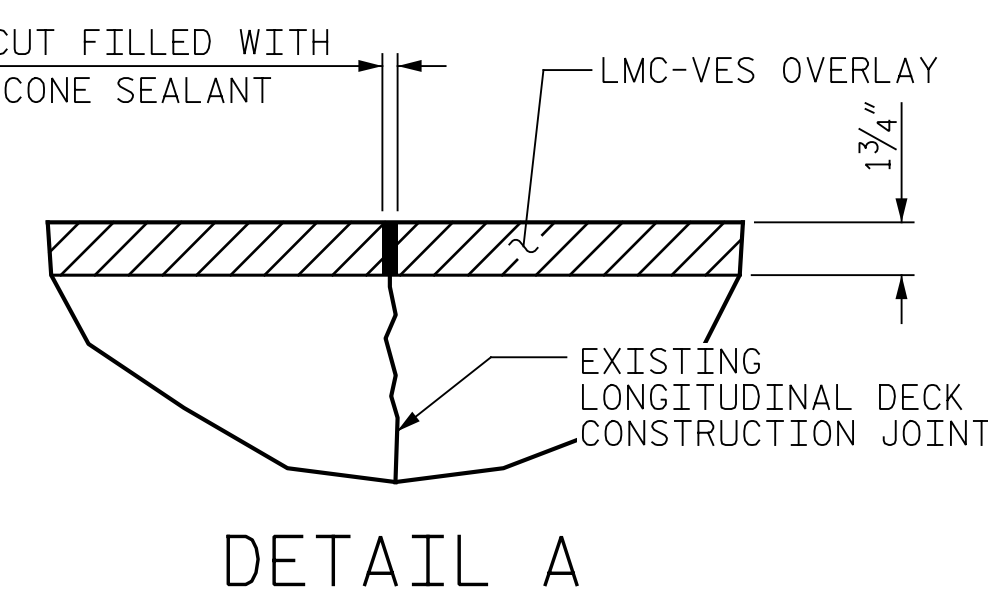
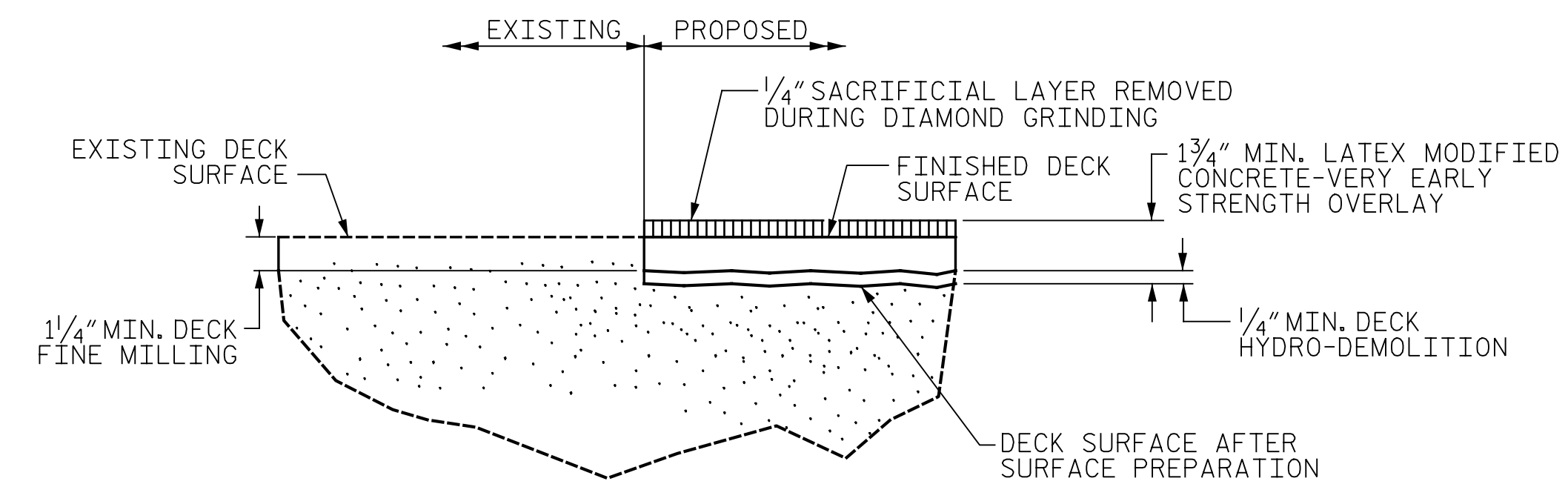
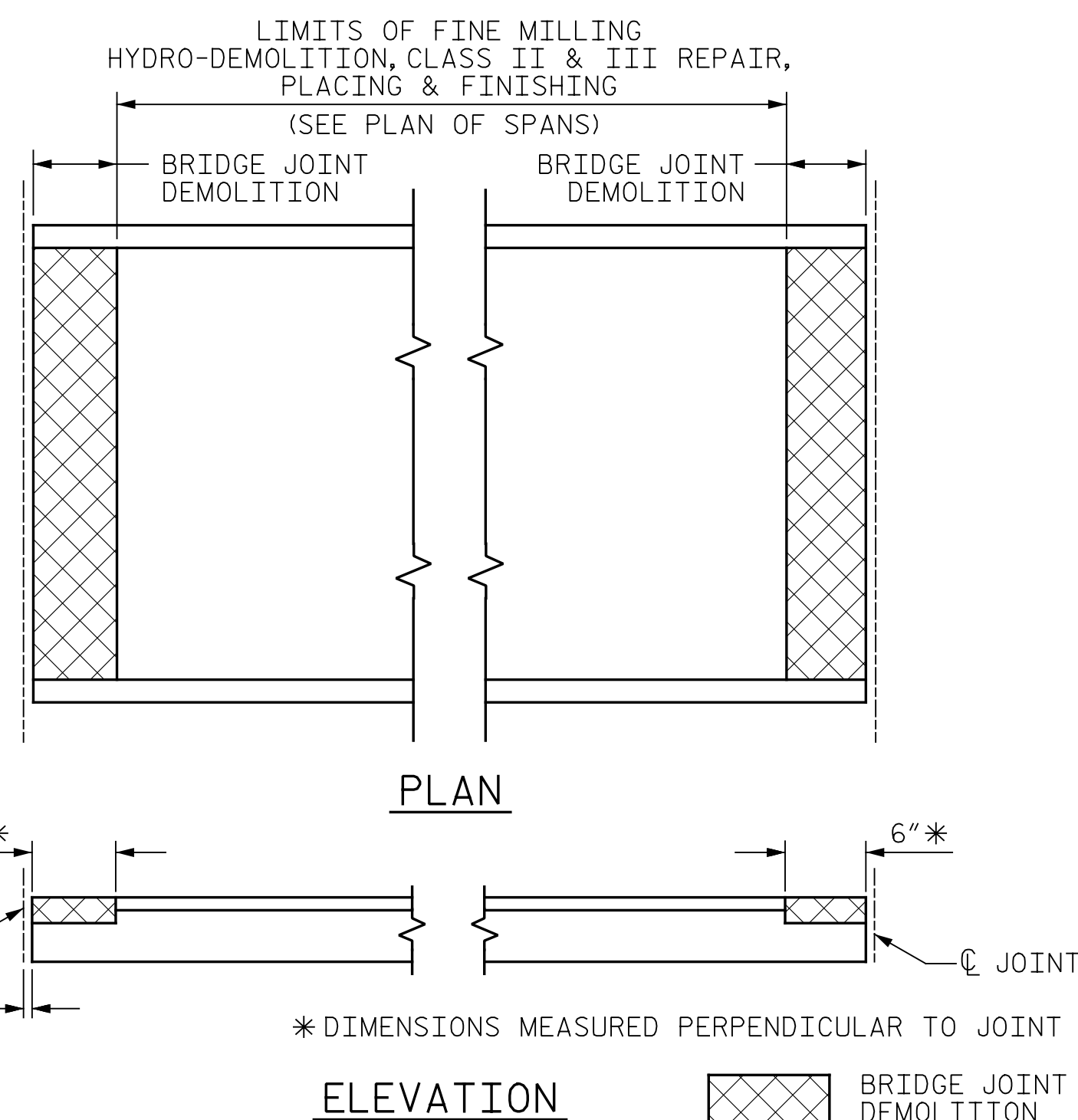
WHEN PREPARING THE SURFACE FOR LMC-VES OVERLAY ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4 INCHES FROM THE LMC-VES EDGE. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE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

CONTRACTOR SHALL VERIFY THE PLAN DIMENSIONS TO THE DECK CONSTRUCTION JOINT AND USE THIS VERIFIED DIMENSION FOR SAWING THE LONGITUDINAL JOINT AFTER PLACEMENT OF THE OVERLAY.

THE LONGITUDINAL JOINT IN THE NEWLY PLACED OVERLAY SHALL BE SAWED PRIOR TO TRAFFIC BEING PLACED ON THE OVERLAY. THE JOINT SHALL BE CLEANED OF ALL DEBRIS BEFORE THE SEALANT IS APPLIED. THE JOINT SEALER MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF TYPE SL LOW MODULUS SILICONE SEALANT.

VERIFY HORIZONTAL DIMENSION FROM C MEDIAN TO EXISTING LONGITUDINAL DECK CONSTRUCTION JOINT AT FILL FACE OF END BENTS AND C JOINT AT BENTS.

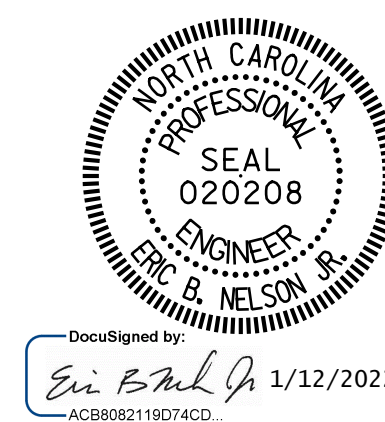
THE CONTRACTOR SHALL ENSURE THAT THE SAWCUT FOLLOWS THE LINE OF THE EXISTING LONGITUDINAL CONSTRUCTION JOINT.



**PAY LIMITS FOR OVERLAY BID ITEMS**

PLANS PREPARED BY:  
**Gannett Fleming**  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 Excellence Delivered As Promised  
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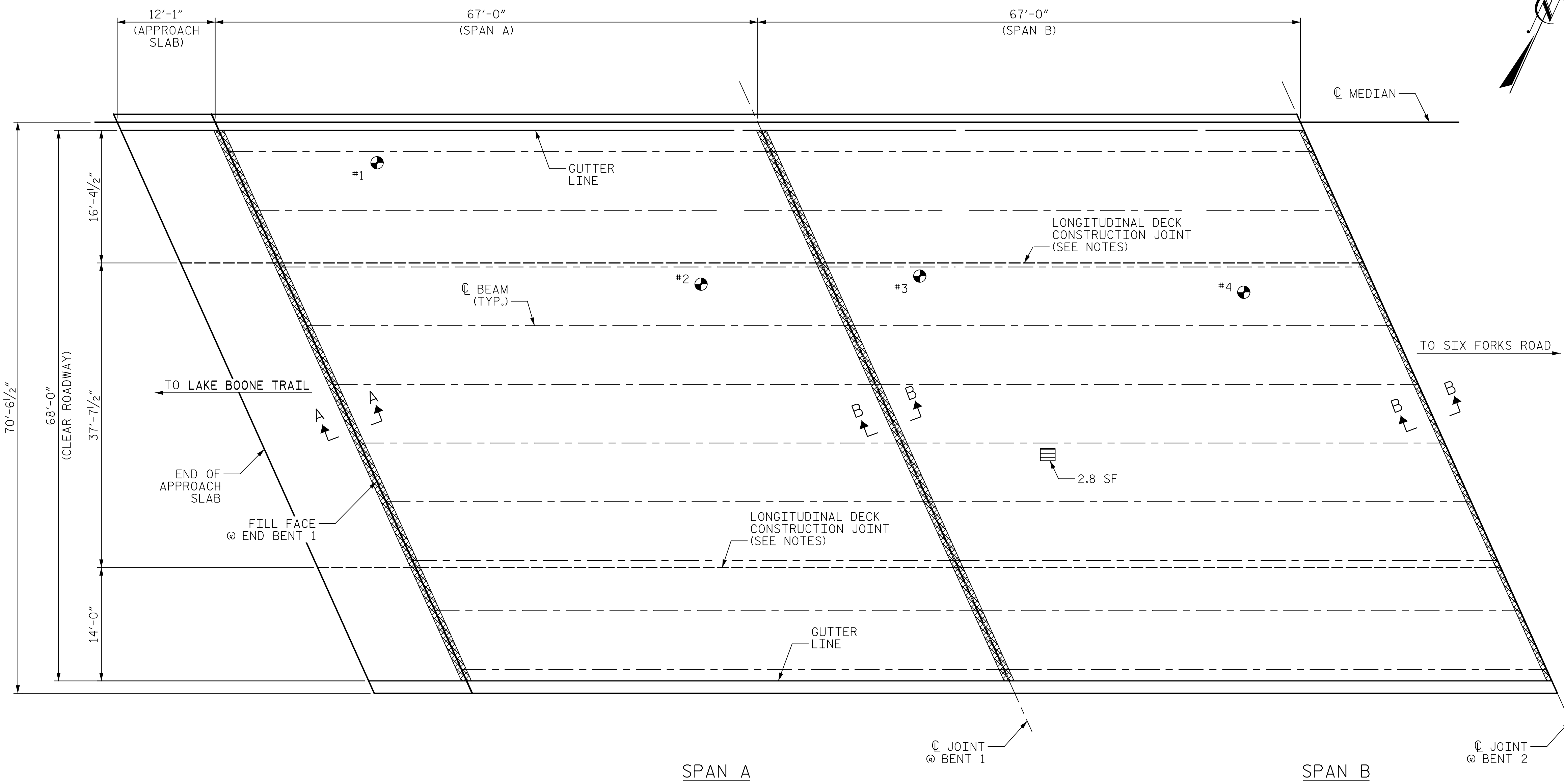
PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**TYPICAL SECTION AND SURFACE PREPARATION DETAILS**

DRAWN BY: J. MYA DATE: 08/2021  
 CHECKED BY: J. YANACCONI DATE: 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 09/2021

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REPAIR QUANTITY TABLE				
TOP OF DECK REPAIR				
	ESTIMATE		ACTUAL	
FINE MILLING *	2237	SY		
HYDRO-DEMOLITION OF BRIDGE DECK	1102	SY		
CLASS II SURFACE PREPARATION	0.0	SY		
CLASS III SURFACE PREPARATION	0.0	SY		
LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH	74.7	CY		
BRIDGE JOINT DEMOLITION	187	SF		
EPOXY RESIN INJECTION	0.0	LF		
CONCRETE FOR DECK REPAIR	0.0	CF		
DIAMOND GRINDING	1102	SY		
SILANE DECK TREATMENT	1102	SY		
UNDERSIDE OF DECK REPAIR				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	2.8	0.8		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
	ESTIMATE		ACTUAL	
UNDERSIDE EPOXY RESIN INJECTION	0.0	LF		

VALUES IN CHART REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

PAYMENT FOR CLASS II AND CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE YARDS OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE "OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

TEST LOCATION	CONCRETE STRENGTH (PSI)
#1	2,700
#2	3,500
#3	3,500
#4	4,100

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 8/29/2021.

**NOTES:**

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CONCRETE COVER FOR TOP BARS IN THE DECK SLAB IS 1 1/2" PER THE EXISTING BRIDGE PLANS.

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

FOR DETAILS ON LONGITUDINAL DECK CONSTRUCTION JOINT, SEE "TYPICAL SECTION AND SURFACE PREPARATION DETAILS" SHEET.

\* THE QUANTITY OF FINE MILLING INCLUDES THE CONCRETE BRIDGE DECK, CONCRETE APPROACH SLABS, AND 150 FEET OF THE ASPHALT APPROACH PAVEMENT AT EACH END OF THE BRIDGE.

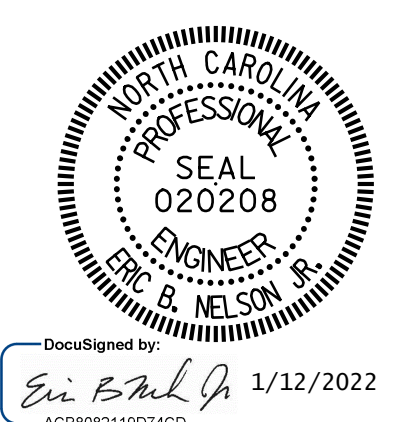
FOR FINE MILLING, SEE SPECIAL PROVISIONS.

IF THE SILANE DECK TREATMENT IS APPLIED WITHIN FIVE (5) DAYS AFTER DIAMOND GRINDING THE BRIDGE DECK AND APPROACH SLABS, SHOTBLASTING IS NOT REQUIRED. IF MORE THAN FIVE (5) DAYS HAVE ELAPSED SINCE DIAMOND GRINDING, THE CONTRACTOR SHALL SHOTBLAST THE BRIDGE DECK AND APPROACH SLABS AT NO ADDITIONAL COST TO THE DEPARTMENT.

FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.

- BRIDGE JOINT DEMOLITION
- APPROX. CLASS II SURFACE PREPARATION
- APPROX. CLASS III SURFACE PREPARATION
- UNDERSIDE OF DECK/OVERHANG REPAIR
- ERI EPOXY RESIN INJECTION
- #1 TEST LOCATION

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260  
 SHEET 1 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 EAST BOUND

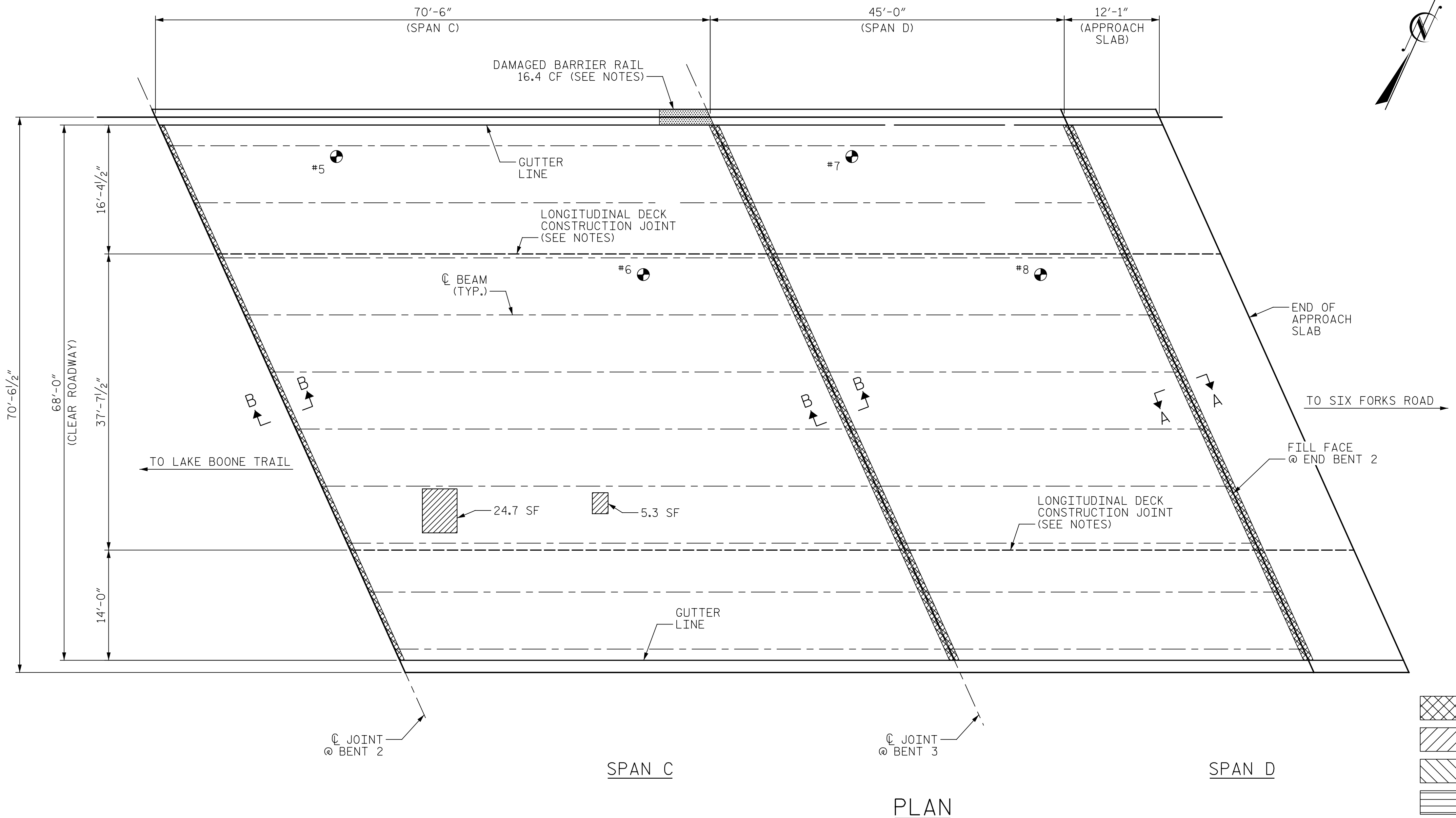
DRAWN BY : J. MYA DATE : 08/2021  
 CHECKED BY : J. YANACCONO DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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PLAN

REPAIR QUANTITY TABLE

TOP OF DECK REPAIR		
	ESTIMATE	ACTUAL
FINE MILLING *	2097 SY	
HYDRO-DEMOLITION OF BRIDGE DECK	963 SY	
CLASS II SURFACE PREPARATION	3.3 SY	
CLASS III SURFACE PREPARATION	0.0 SY	
LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH	65.1 CY	
BRIDGE JOINT DEMOLITION	187 SF	
EPOXY RESIN INJECTION	0.0 LF	
CONCRETE FOR DECK REPAIR	0.0 CF	
DIAMOND GRINDING	963 SY	
SILANE DECK TREATMENT	963 SY	
CONCRETE REPAIR	16.4 CF	
UNDERSIDE OF DECK REPAIR		
SHOTCRETE REPAIRS	ESTIMATE	ACTUAL
	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0
OVERHANG DIAPHRAGMS	0.0	0.0
UNDERSIDE OF OVERHANG	0.0	0.0
INTERIOR DIAPHRAGMS	0.0	0.0
	ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF	

VALUES IN CHART REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

PAYMENT FOR CLASS II AND CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE YARDS OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE "OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

- BRIDGE JOINT DEMOLITION
- APPROX. CLASS II SURFACE PREPARATION
- APPROX. CLASS III SURFACE PREPARATION
- UNDERSIDE OF DECK/OVERHANG REPAIR
- ERI EPOXY RESIN INJECTION
- #1 TEST LOCATION

NOTES:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CONCRETE COVER FOR TOP BARS IN THE DECK SLAB IS 1 1/2" PER THE EXISTING BRIDGE PLANS.

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

FOR DETAILS ON LONGITUDINAL DECK CONSTRUCTION JOINT, SEE "TYPICAL SECTION AND SURFACE PREPARATION DETAILS" SHEET.

REPAIR OF THE BARRIER RAIL WILL BE PAID FOR AS PART OF THE CONTRACT UNIT PRICE BID FOR CONCRETE REPAIR.

FOR REPAIR OF THE BARRIER RAIL, SEE "MISCELLANEOUS DETAILS" SHEET.

\* THE QUANTITY OF FINE MILLING INCLUDES THE CONCRETE BRIDGE DECK, CONCRETE APPROACH SLABS, AND 150 FEET OF THE ASPHALT APPROACH PAVEMENT AT EACH END OF THE BRIDGE.

FOR FINE MILLING, SEE SPECIAL PROVISIONS.

IF THE SILANE DECK TREATMENT IS APPLIED WITHIN FIVE (5) DAYS AFTER DIAMOND GRINDING THE BRIDGE DECK AND APPROACH SLABS, SHOTBLASTING IS NOT REQUIRED. IF MORE THAN FIVE (5) DAYS HAVE ELAPSED SINCE DIAMOND GRINDING, THE CONTRACTOR SHALL SHOTBLAST THE BRIDGE DECK AND APPROACH SLABS AT NO ADDITIONAL COST TO THE DEPARTMENT.

FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.

TEST LOCATION	CONCRETE STRENGTH (PSI)
#5	2,850
#6	4,000
#7	2,800
#8	4,450

INFORMATION IN CHART TAKEN FROM DECK EVALUATION DATED 8/29/2021.

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260  
 SHEET 2 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 EAST BOUND

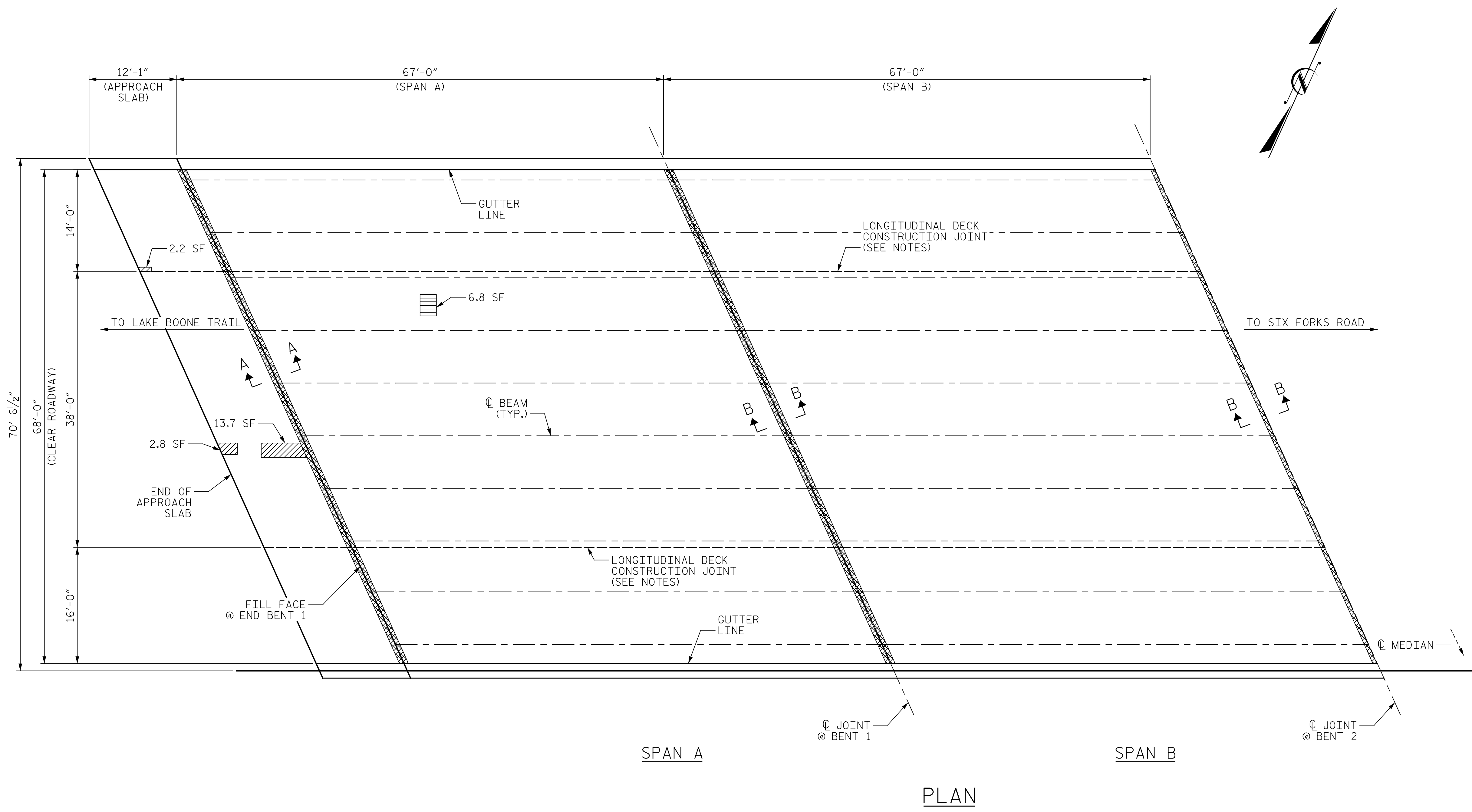
DRAWN BY : J. MYA DATE : 08/2021  
 CHECKED BY : J. YANACCONI DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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PLAN

**NOTES:**

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

CONCRETE COVER FOR TOP BARS IN THE DECK SLAB IS 1 1/2" PER THE EXISTING BRIDGE PLANS.

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FOR FINE MILLING, SEE SPECIAL PROVISIONS.

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FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.

**REPAIR QUANTITY TABLE**

TOP OF DECK REPAIR				
	ESTIMATE	ACTUAL		
FINE MILLING *	2237 SY			
HYDRO-DEMOLITION OF BRIDGE DECK	1102 SY			
CLASS II SURFACE PREPARATION	2.1 SY			
CLASS III SURFACE PREPARATION	0.0 SY			
LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH	74.1 CY			
BRIDGE JOINT DEMOLITION	187 SF			
EPOXY RESIN INJECTION	0.0 LF			
CONCRETE FOR DECK REPAIR	0.0 CF			
DIAMOND GRINDING	1102 SY			
SILANE DECK TREATMENT	1102 SY			
UNDERSIDE OF DECK REPAIR				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	6.8	2.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	0.0	0.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
			ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION			0.0 LF	

VALUES IN CHART REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

PAYMENT FOR CLASS II AND CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE YARDS OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE "OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

- BRIDGE JOINT DEMOLITION
- APPROX. CLASS II SURFACE PREPARATION
- APPROX. CLASS III SURFACE PREPARATION
- UNDERSIDE OF DECK/OVERHANG REPAIR
- ERI EPOXY RESIN INJECTION

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 3 OF 4



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS  
 WEST BOUND**

DRAWN BY : J. MYA DATE : 09/2021  
 CHECKED BY : J. YANACCONO DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised

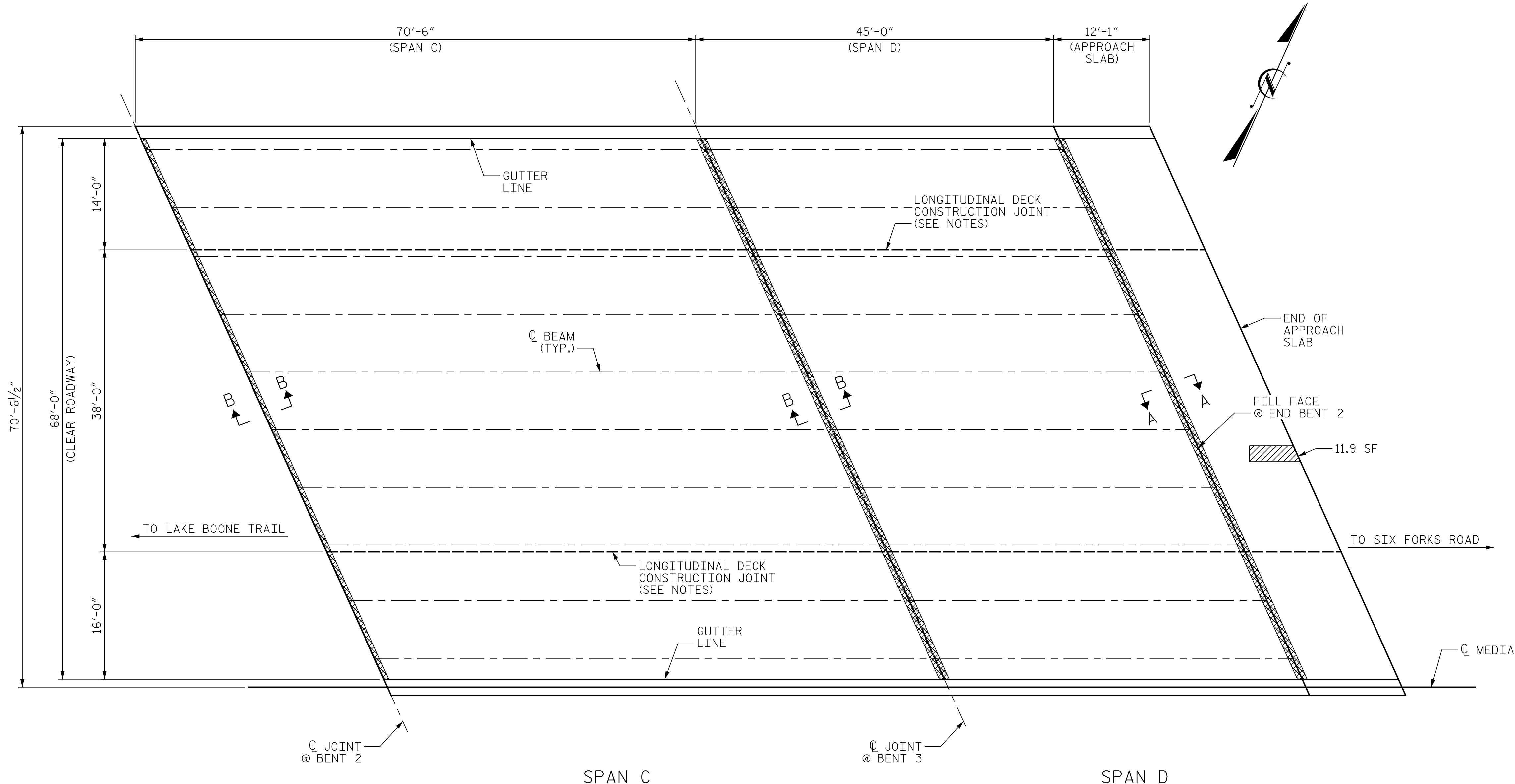
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 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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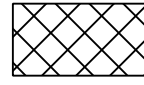


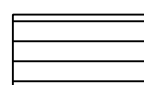

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REPAIR QUANTITY TABLE				
TOP OF DECK REPAIR				
	ESTIMATE	ACTUAL		
FINE MILLING *	2097 SY			
HYDRO-DEMOLITION OF BRIDGE DECK	963 SY			
CLASS II SURFACE PREPARATION	1.3 SY			
CLASS III SURFACE PREPARATION	0.0 SY			
LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH	65.1 CY			
BRIDGE JOINT DEMOLITION	187 SF			
EPOXY RESIN INJECTION	0.0 LF			
CONCRETE FOR DECK REPAIR	0.0 CF			
DIAMOND GRINDING	963 SY			
SILANE DECK TREATMENT	963 SY			
UNDERSIDE OF DECK REPAIR				
SHOTCRETE REPAIRS	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
UNDERSIDE OF DECK	0.0	0.0		
OVERHANG DIAPHRAGMS	0.0	0.0		
UNDERSIDE OF OVERHANG	2.0	1.0		
INTERIOR DIAPHRAGMS	0.0	0.0		
			ESTIMATE	ACTUAL
UNDERSIDE EPOXY RESIN INJECTION	0.0 LF			

VALUES IN CHART REPRESENT ESTIMATED UNDERSIDE OF DECK REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REBAR AND MINIMUM 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

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-  BRIDGE JOINT DEMOLITION
-  APPROX. CLASS II SURFACE PREPARATION
-  APPROX. CLASS III SURFACE PREPARATION
-  UNDERSIDE OF DECK/OVERHANG REPAIR
-  ERI EPOXY RESIN INJECTION

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 WEST BOUND

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FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.

DRAWN BY : J. MYA DATE : 08/2021  
 CHECKED BY : J. YANACCONI DATE : 09/2021  
 DESIGN ENGINEER OF RECORD : R. NELSON DATE : 09/2021

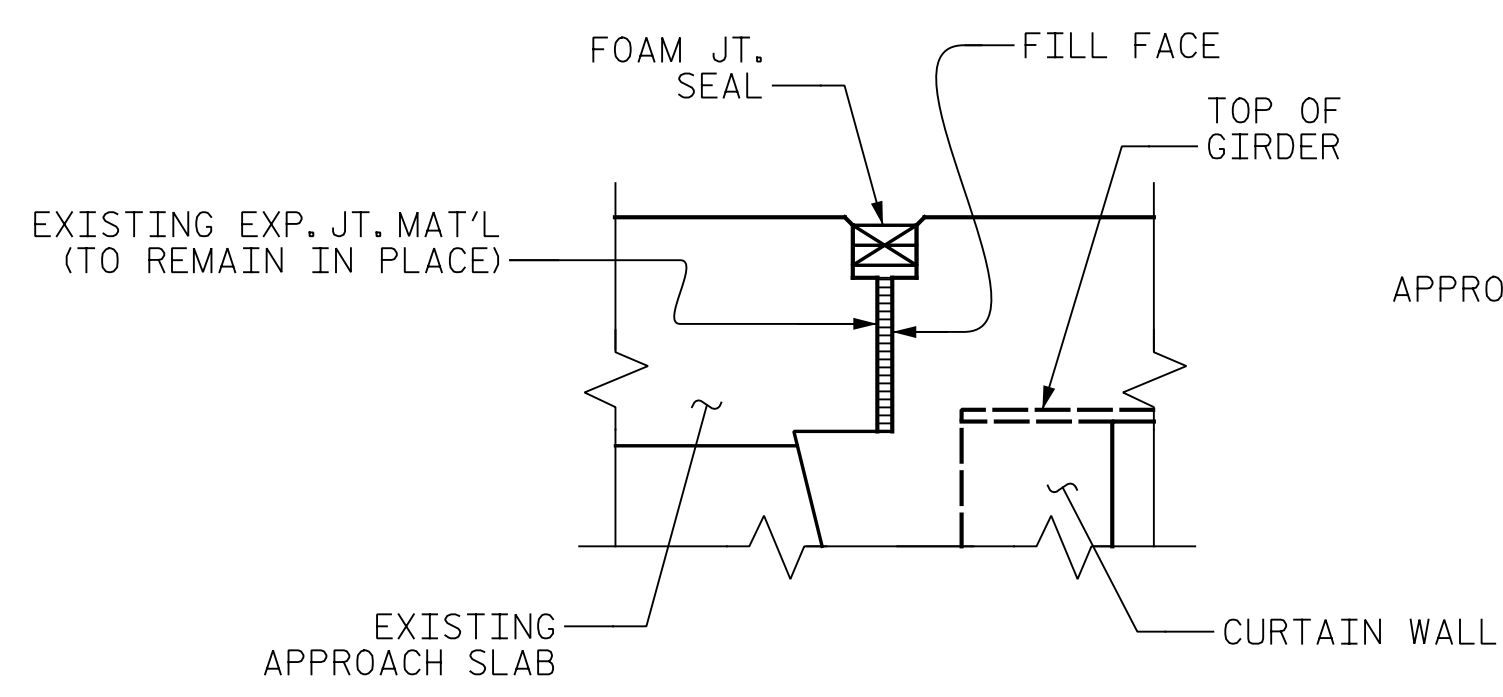
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 Excellence Delivered As Promised

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 Suite 900  
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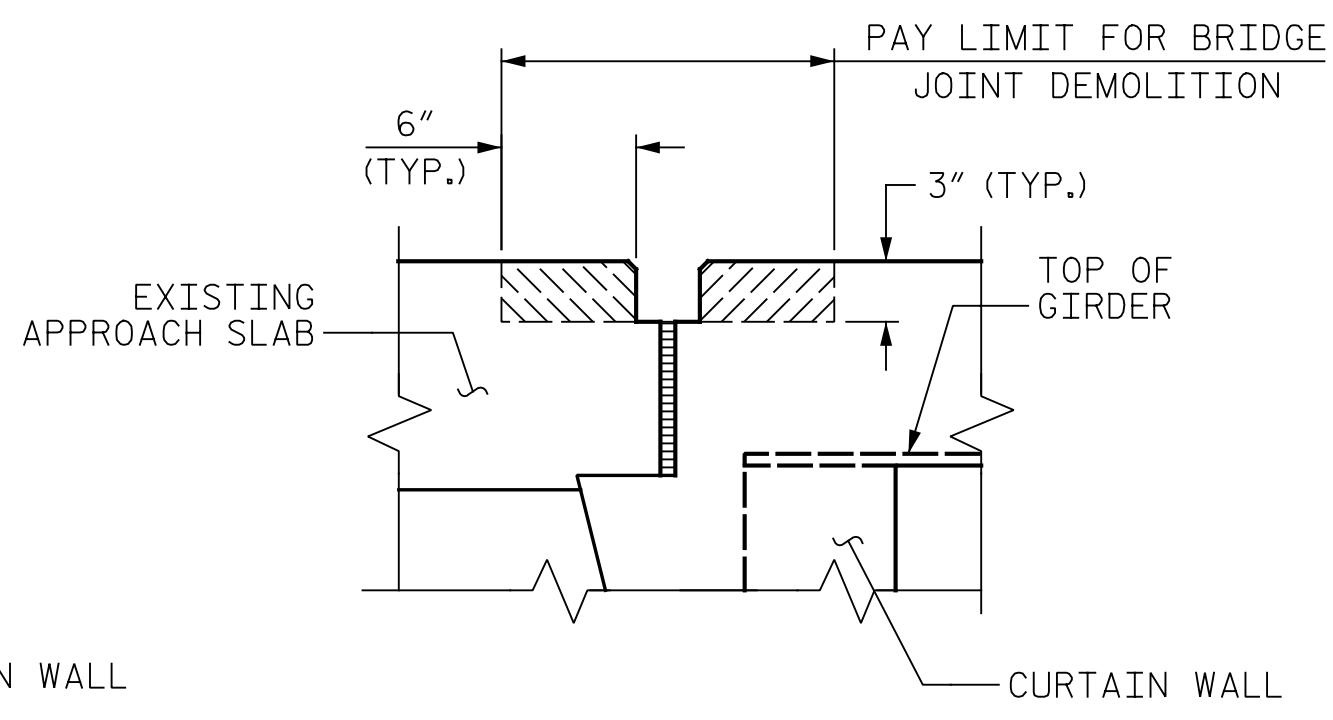
NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 020208  
 ENGINEER  
 ERIC B. NELSON  
 Documented by:  
 Eric B. Nelson 1/12/2022  
 ACB0821907400

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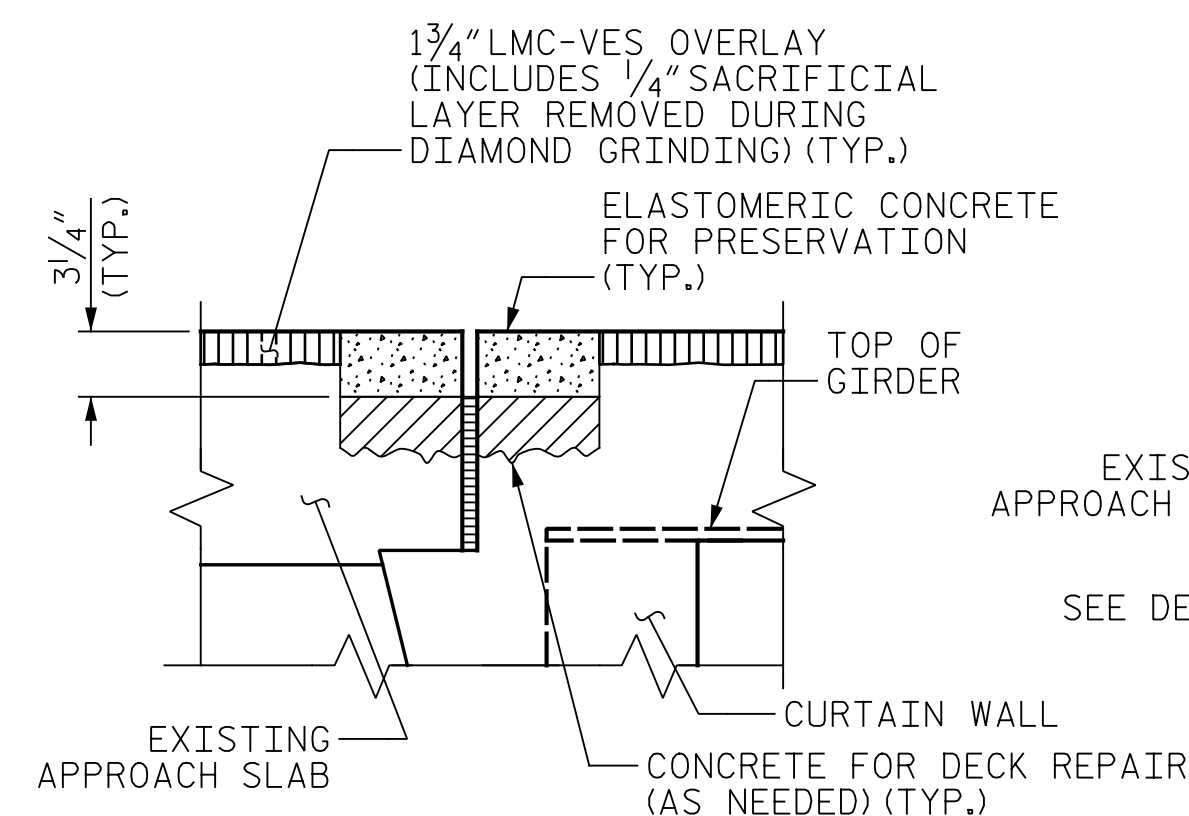
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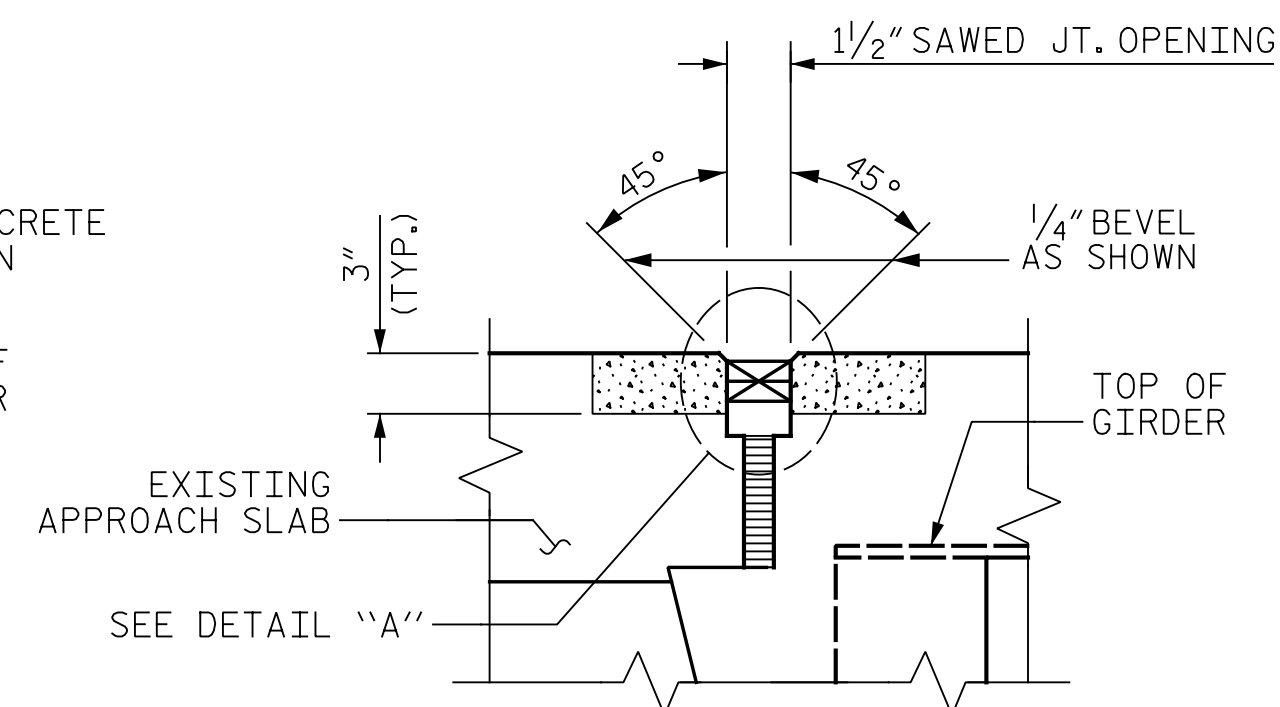
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



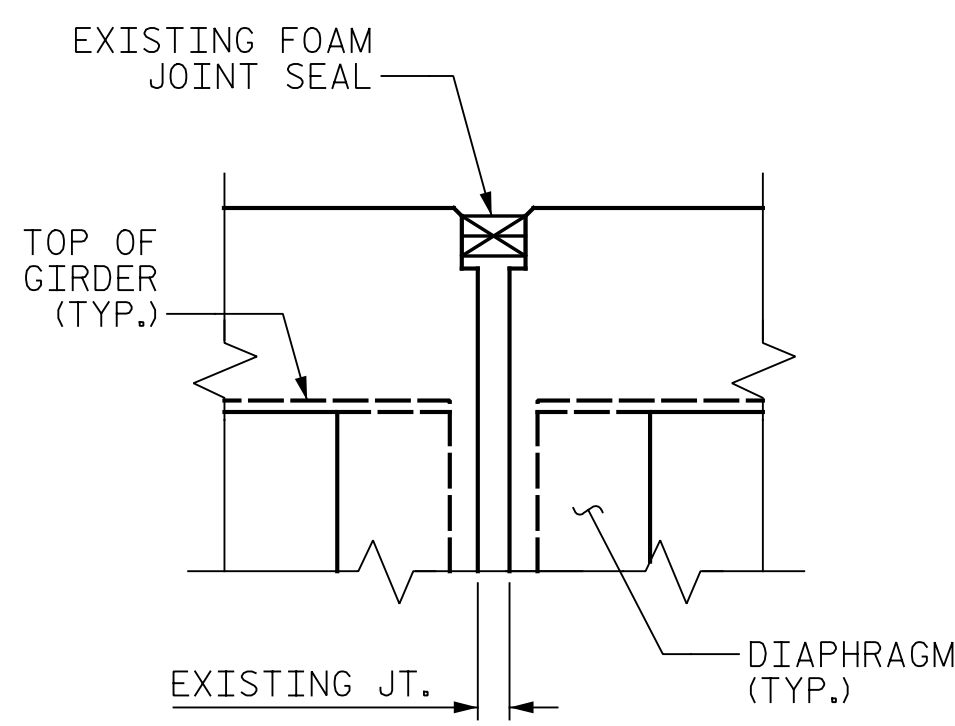
PROPOSED JOINT- PRE-SAWED



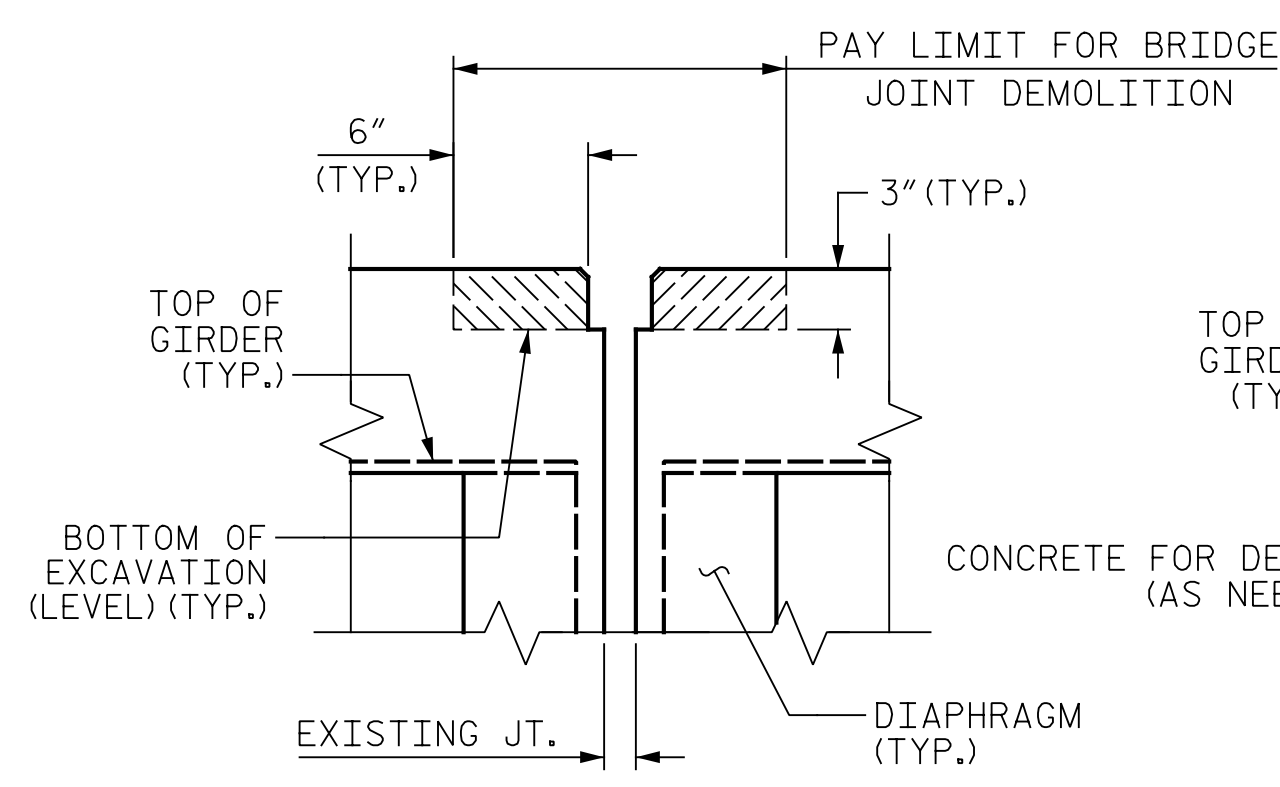
PROPOSED FOAM JOINT SEAL (AFTER 1/4" DIAMOND GRINDING)

SECTION A-A

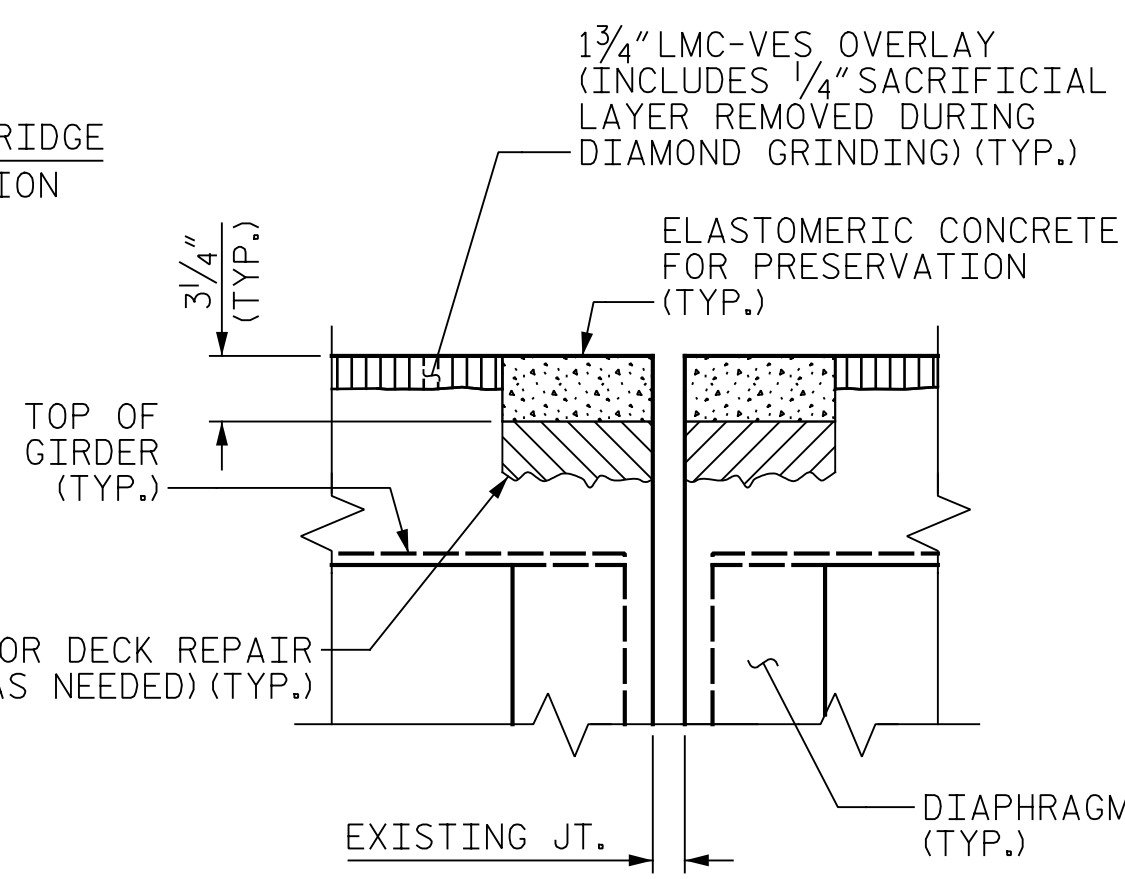
NOTE: RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS REQ'D.



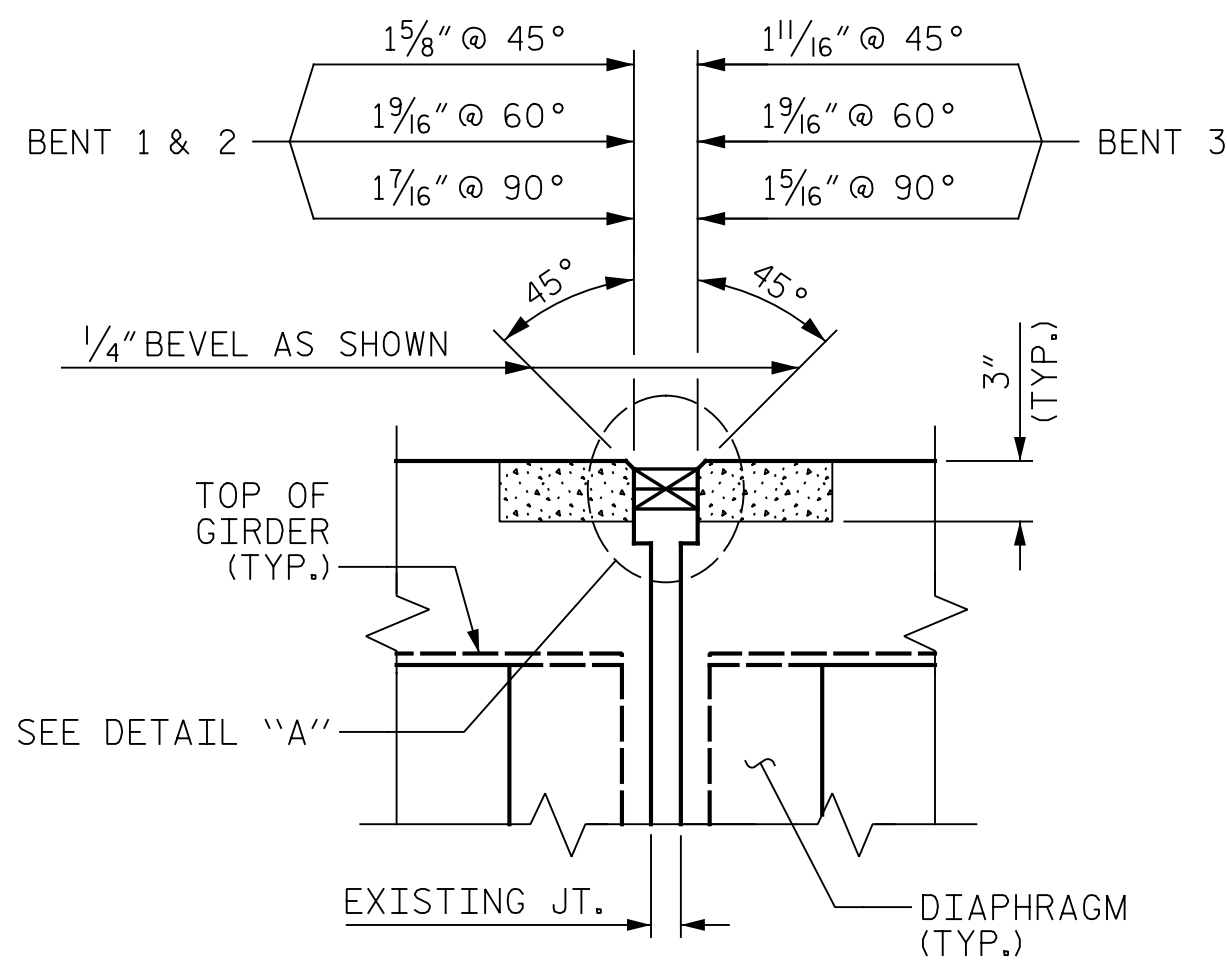
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION

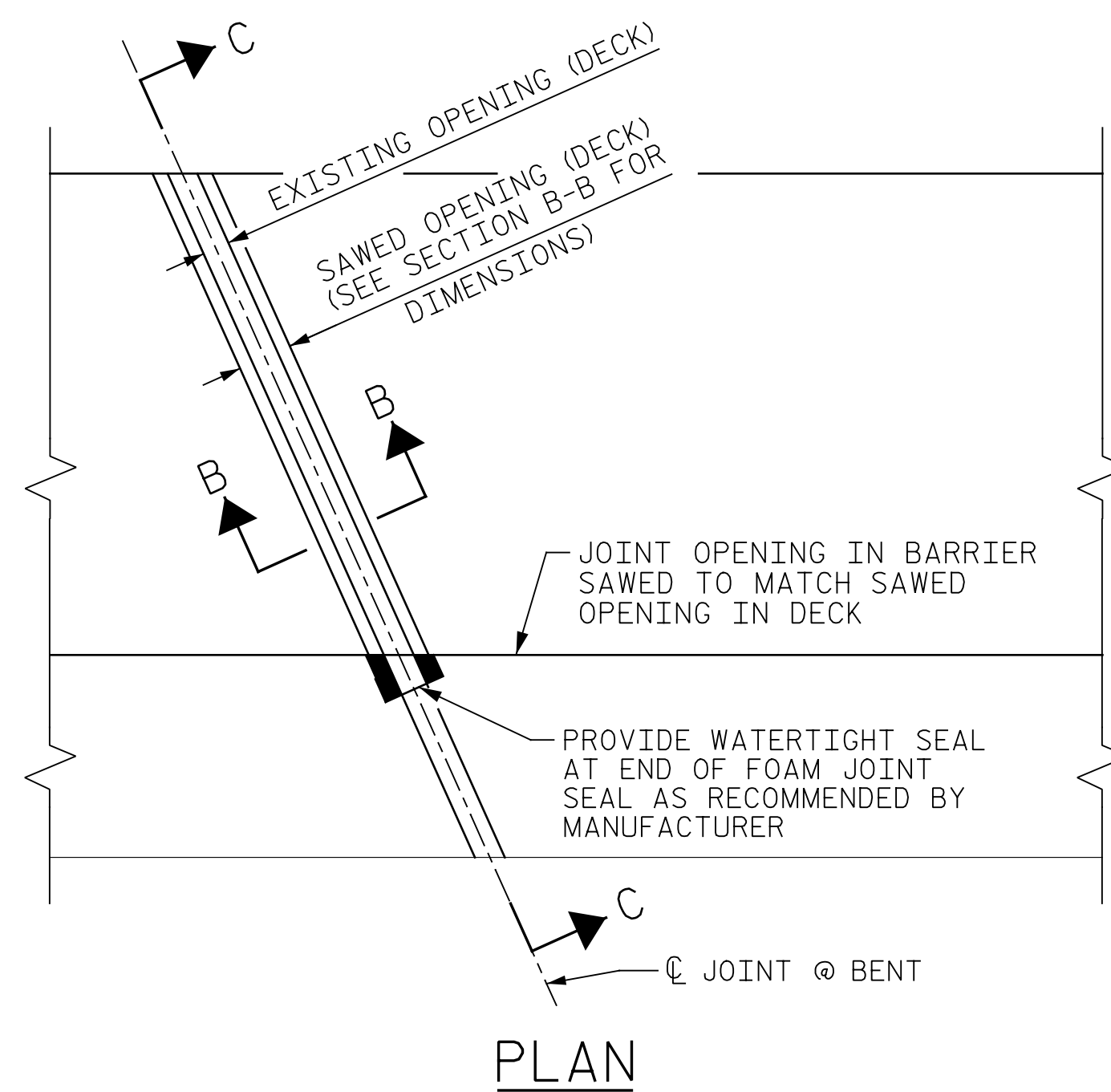


EXISTING JOINT

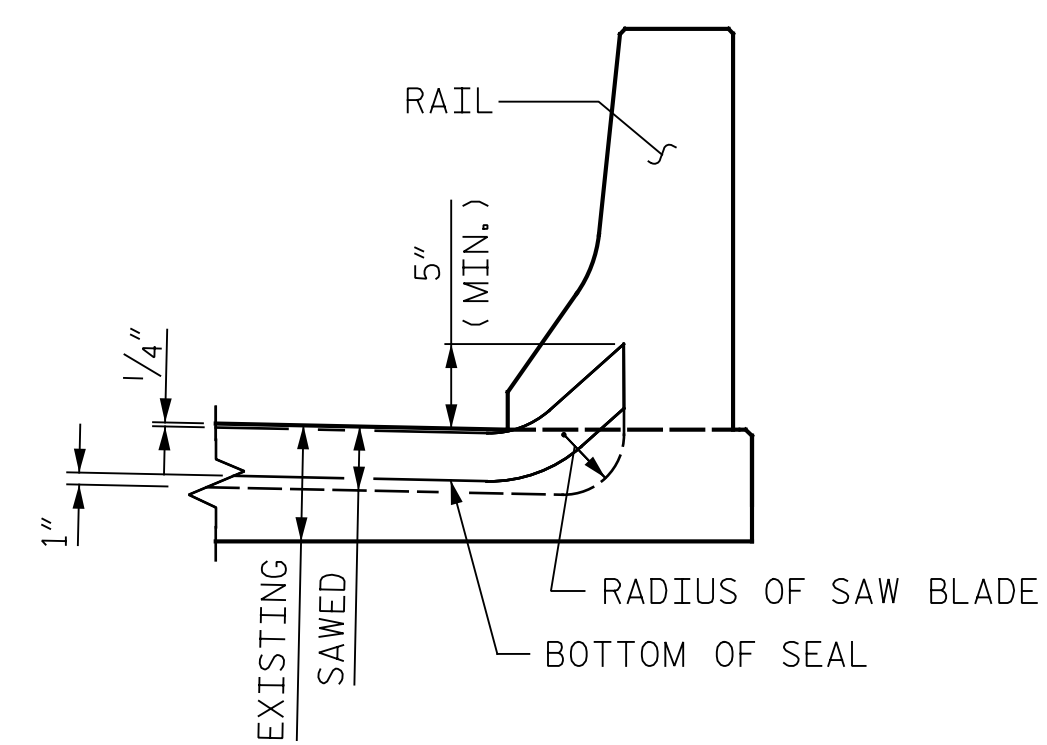


PROPOSED FOAM JOINT SEAL (AFTER 1/4" DIAMOND GRINDING)

SECTION B-B



PLAN

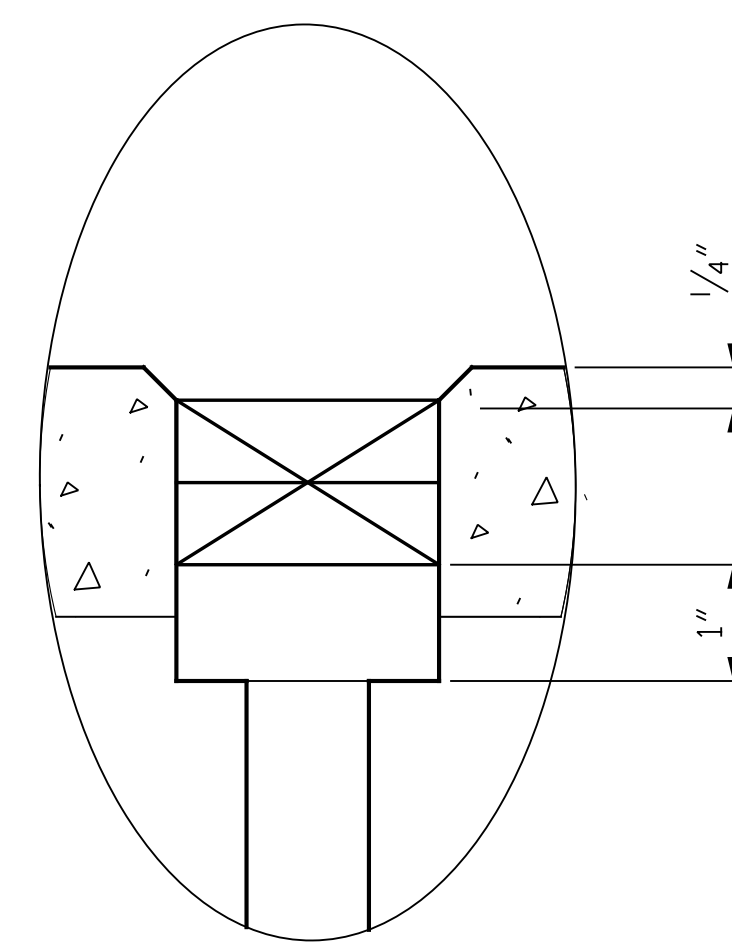


SECTION C-C

FOAM JOINT SEAL SHALL BE FACTORY FORMED OR CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF CURB.

LOCATION	ELASTOMERIC CONCRETE FOR PRESERVATION	FOAM JOINT SEALS FOR PRESERVATION
	CU. FT.	LIN. FT.
END BENT 1	40.4	153.0
BENT 1	40.4	153.0
BENT 2	40.4	153.0
BENT 3	40.4	153.0
END BENT 2	40.4	153.0
* TOTAL	202.0	765.0

\* BASED ON MINIMUM BLOCKOUT SHOWN



DETAIL "A"

NOTES:

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

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

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

FOAM JOINTS SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

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 JOINT IN LIEU OF SAWING THE JOINT.

THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.

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

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

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

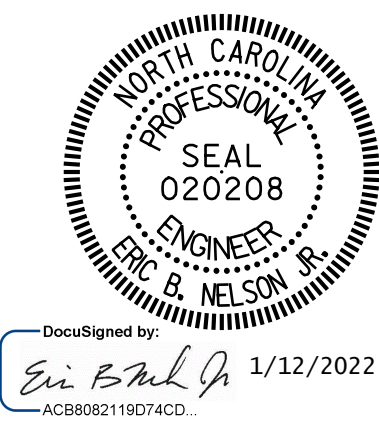
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260



DocuSigned by:  
 Eric B. Nelson  
 1/12/2022

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT DETAILS

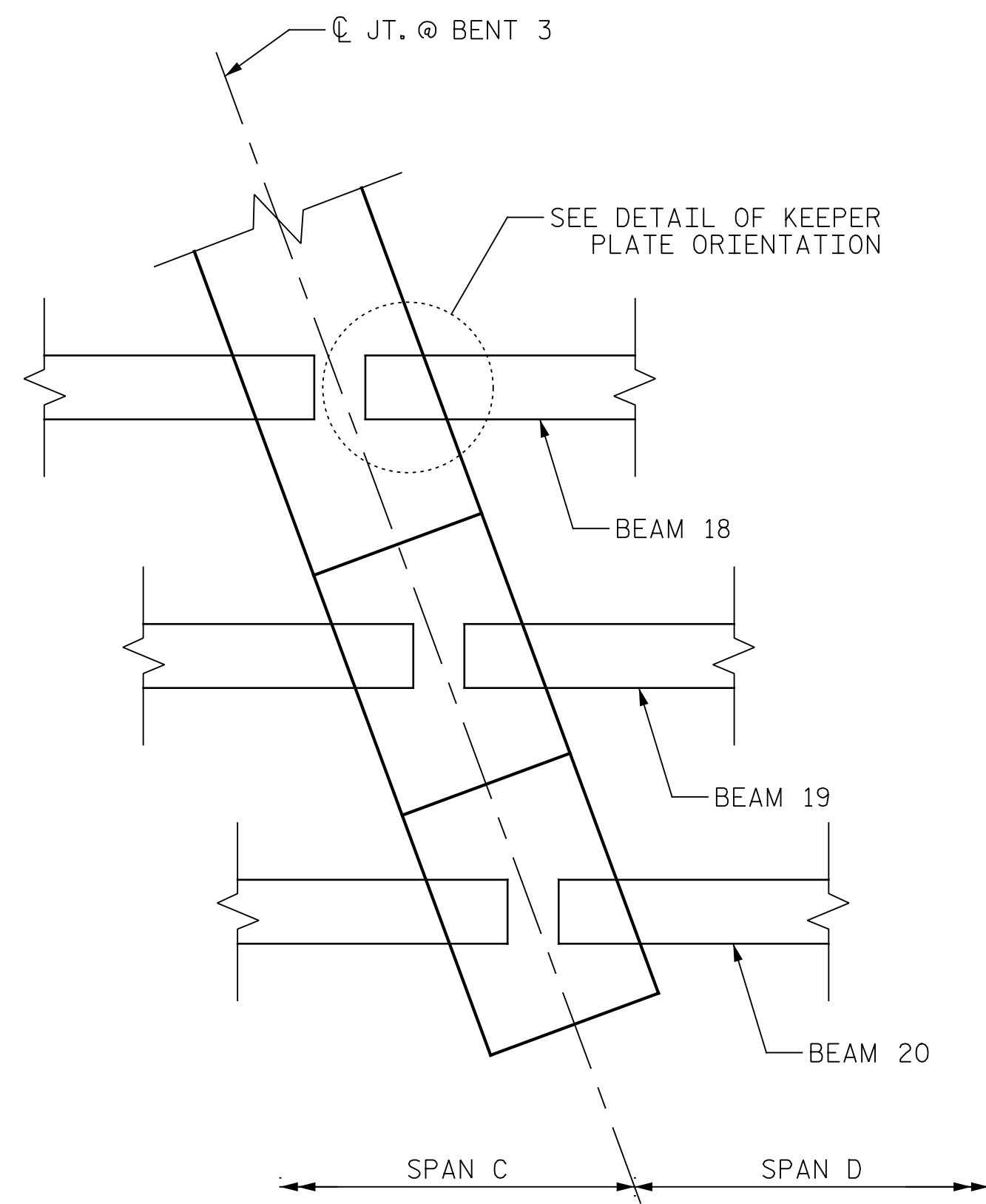
DRAWN BY: J. MYA DATE: 09/2021  
 CHECKED BY: J. YANACCONI DATE: 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE: 09/2021

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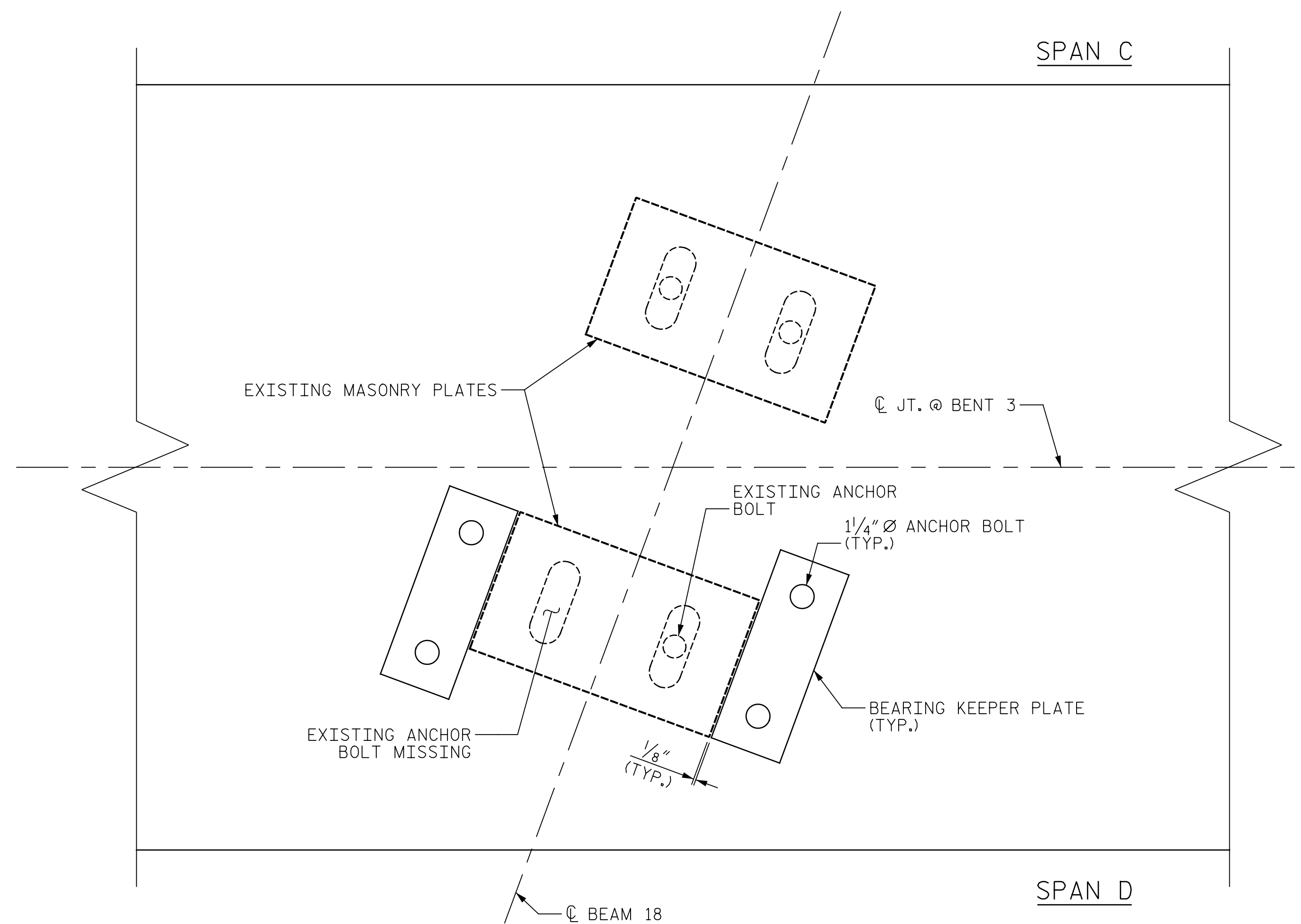
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BEARING LOCATION PLAN



DETAIL OF KEEPER PLATE ORIENTATION

**NOTE:**

WITH BEAM IN A JACKED AND SUPPORTED CONDITION, ROTATE THE EXISTING MASONRY BACK INTO A POSITION CENTERED UNDER THE SOLE PLATE. FOR JACKING DETAILS, SEE "JACKING DETAILS" SHEET.

INSTALL KEEPER PLATES AS SHOWN.

LOWER BEAM ONTO THE EXISTING BEARING.

KEEPER BARS, BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL BE 1/4" DIAMETER. ALL THREAD MEETING THE REQUIREMENTS OF ASTM F1554 GRADE 55.

NUTS SHALL MEET THE REQUIREMENTS OF ASTM A563-15 GRADE A.

WASHERS SHALL MEET THE REQUIREMENTS OF ASTM F436 TYPE 1 CIRCULAR.

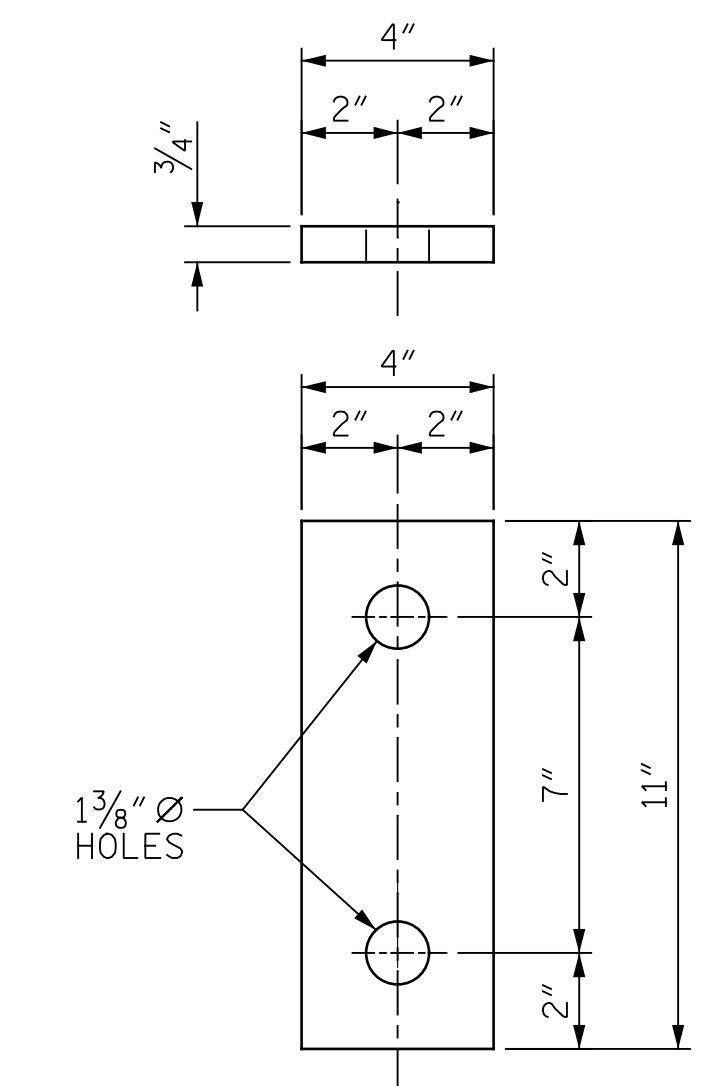
THE CONTRACTOR SHALL DRILL OR CORE INTO THE EXISTING BENT CAP TO INSTALL KEEPER PLATE ANCHORS. THE ANCHORS SHALL BE ADHESIVELY ANCHORED. ADHESIVE FOR ANCHORING SHALL BE ON THE NCDOT APPROVED PRODUCTS LIST.

EXISTING "S" BAR STIRRUPS MAY BE CUT TO INSTALL ANCHOR BOLTS.

THE EMBEDMENT DEPTH OF THE ANCHOR BOLTS SHALL BE 7" OR THE DEPTH RECOMMENDED BY THE ADHESIVE MANUFACTURER TO ATTAIN THE PULL-OUT STRENGTH OF THE DESIGN LOAD BELOW, WHICHEVER IS GREATER. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.

ANCHOR DESIGN YIELD LOAD: 15 KIPS.

FOR BEARING KEEPER PLATE, SEE SPECIAL PROVISIONS.

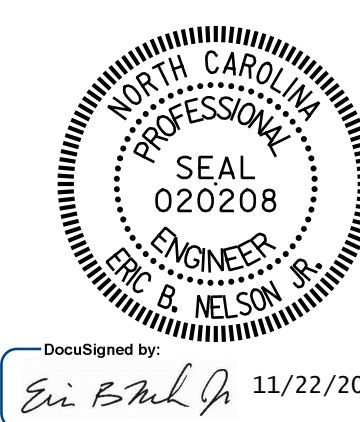


BEARING KEEPER PLATE DETAIL



EXISTING CONDITIONS

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**KEEPER PLATE LAYOUT  
 DETAILS**

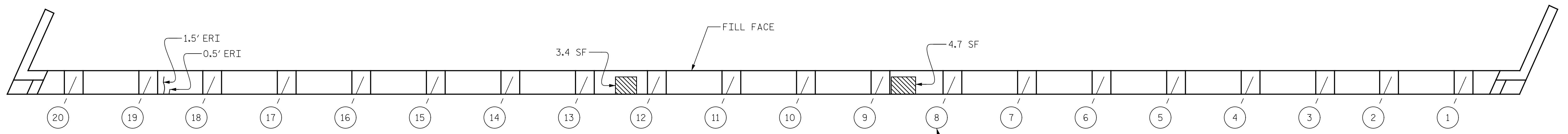
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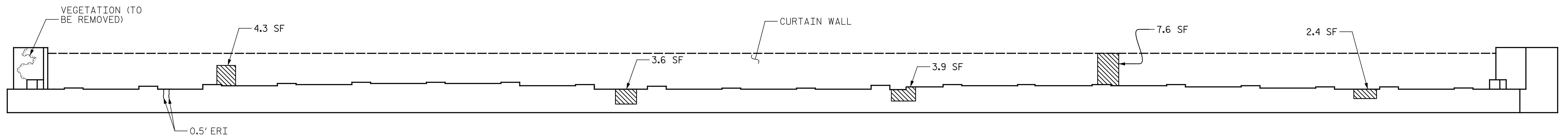
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PLAN



ELEVATION

REPAIR QUANTITY TABLE				
END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
<b>SHOTCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	18.0	7.1		
CURTAIN WALL	11.9	4.5		
<b>CONCRETE REPAIRS</b>	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0.0	0.0		
CURTAIN WALL	0.0	0.0		
<b>EPOXY RESIN INJECTION</b>		LN. FT		LN. FT
CAP		3.0		
CURTAIN WALL		0.0		

VALUES IN CHARTS REPRESENT ESTIMATED REPAIRS TOTALS AFTER REMOVAL OF SOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAW CUT. SEE REPAIR DETAILS.

**NOTES:**

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

FOR SHOTCRETE REPAIRS, 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.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

THE CONTRACTOR SHALL REMOVE VEGETATION GROWING ON THE END BENTS TO THE GROUND LINE. NO SEPARATE PAYMENT WILL BE MADE FOR REMOVAL OF VEGETATION, AS PAYMENT IS INCLUDED IN THE CONTRACT UNIT PRICE BID FOR "EPOXY COATING AND DEBRIS REMOVAL".

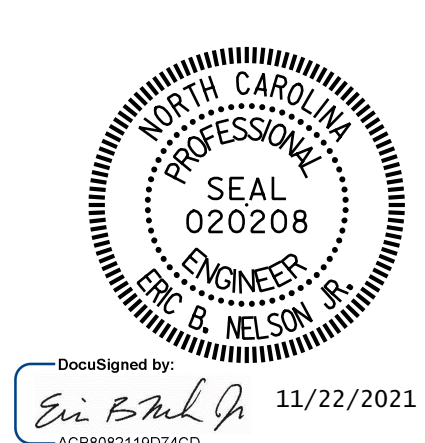
- SHOTCRETE REPAIR
- CONCRETE REPAIR (FORM & POUR)
- ERI - EPOXY RESIN INJECTION

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

END BENT 1

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2			4			82



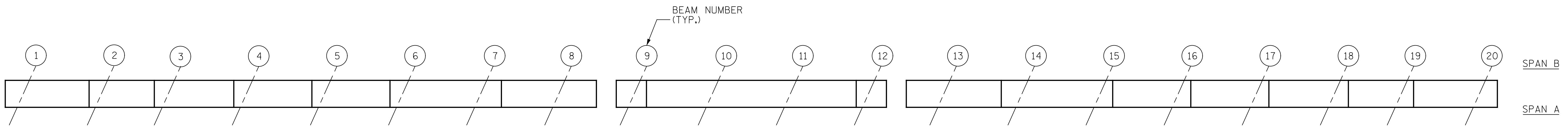
DocuSigned by:  
*Eric B. Nelson*  
 11/22/2021  
 AC88082119074CD

DRAWN BY : J. MYA DATE : 08/2021  
 CHECKED BY : J. YANACCONI DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

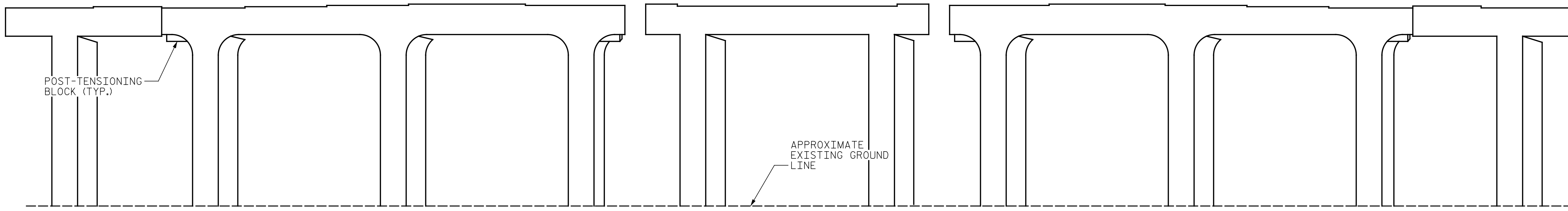
PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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TOP OF CAP



COLUMN 1      COLUMN 2      COLUMN 3      COLUMN 4      COLUMN 5      COLUMN 6      COLUMN 7      COLUMN 8      COLUMN 9      COLUMN 10

ELEVATION

AS BUILT REPAIR QUANTITY TABLE					
BENT 1 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL)	1.0	0.4			
CAP (HORIZONTAL)	40.9	15.8			
COLUMN	0.0	0.0			
CONCRETE REPAIRS	1.0	0.4			
EPOXY RESIN INJECTON		LENGTH LF		LENGTH LF	
CAP		0.0			
COLUMN		0.0			
EPOXY COATING		SQ. FT		SQ. FT	
TOP OF BENT CAP		393			

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

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.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR ONE (1) FOOT MIN. BELOW GROUND LINE.

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

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 1 OF 2



DocuSigned by:  
*Eric B. Nelson*  
 11/22/2021  
 ACB8082118074CD

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 1  
 SPAN "A" SIDE

DRAWN BY : J. MYA      DATE : 08/2021  
 CHECKED BY : J. YANACCONI      DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON      DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

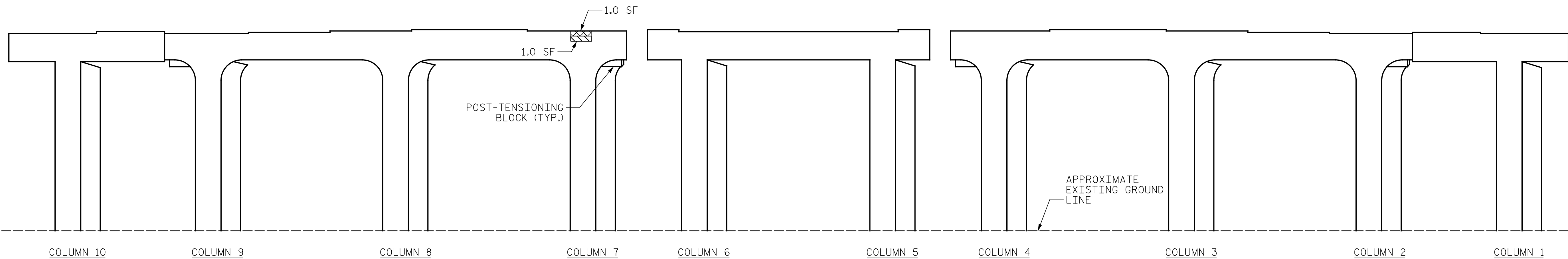
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2			4			82

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BOTTOM OF CAP



ELEVATION

**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 REPAIRS, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

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.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

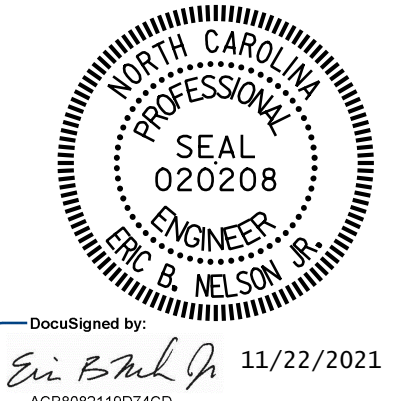
CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR ONE (1) FOOT MIN. BELOW GROUND LINE.

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

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 1  
 SPAN "B" SIDE**

DRAWN BY :	J. MYA	DATE :	08/2021
CHECKED BY :	J. YANACCONI	DATE :	09/2021
DESIGN ENGINEER OF RECORD:	R. NELSON	DATE :	09/2021

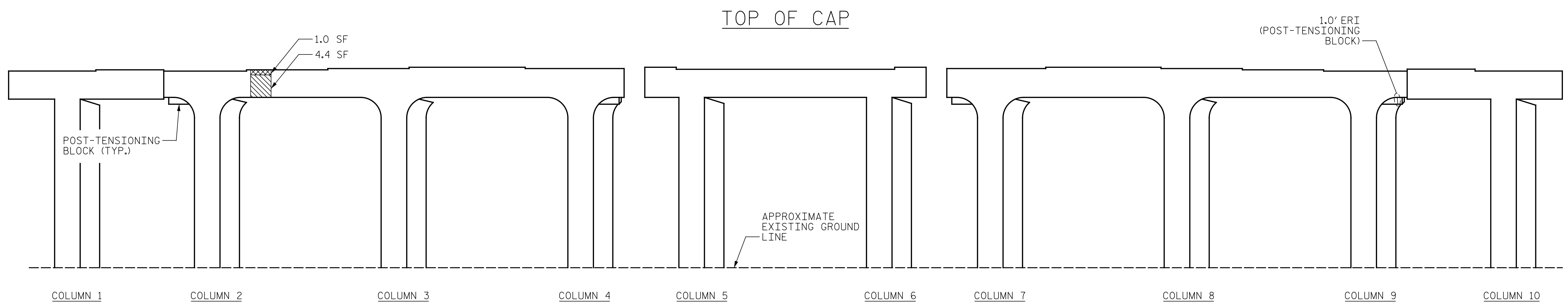
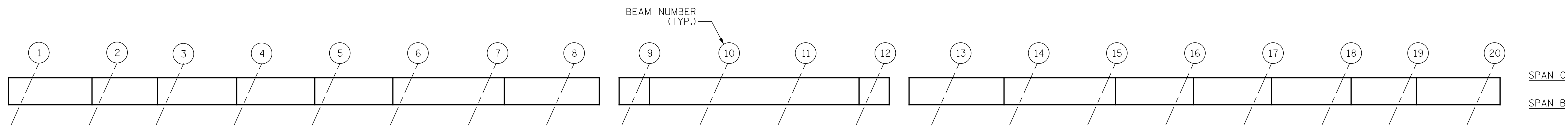
PLANS PREPARED BY:  
**Gannett Fleming**  
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One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			82

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TOP OF CAP

ELEVATION

AS BUILT REPAIR QUANTITY TABLE					
BENT 2 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL)	4.4	1.7			
CAP (HORIZONTAL)	0.0	0.0			
COLUMN	0.0	0.0			
CONCRETE REPAIRS	1.0	0.4			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
CAP	3.0				
COLUMN	0.0				
EPOXY COATING	SQ. FT		SQ. FT		
TOP OF BENT CAP	393				

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

**NOTES:**

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

FOR SHOTCRETE REPAIRS, 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.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

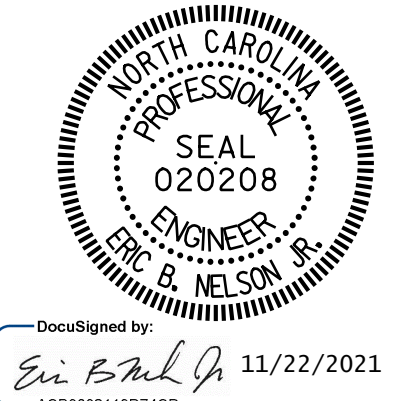
CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR ONE (1) FOOT MIN. BELOW GROUND LINE.

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

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 1 OF 2



DocuSigned by:  
 Eric B. Nelson  
 11/22/2021  
 ACB8082118074CD

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 2**  
**SPAN "B" SIDE**

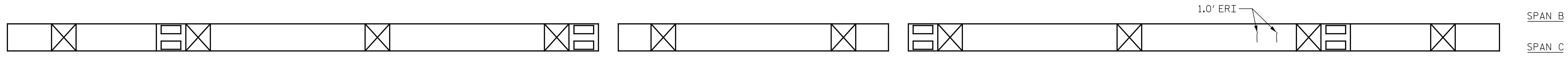
DRAWN BY : J. MYA/E. TODD DATE : 08/2021  
 CHECKED BY : J. YANNAACONE DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

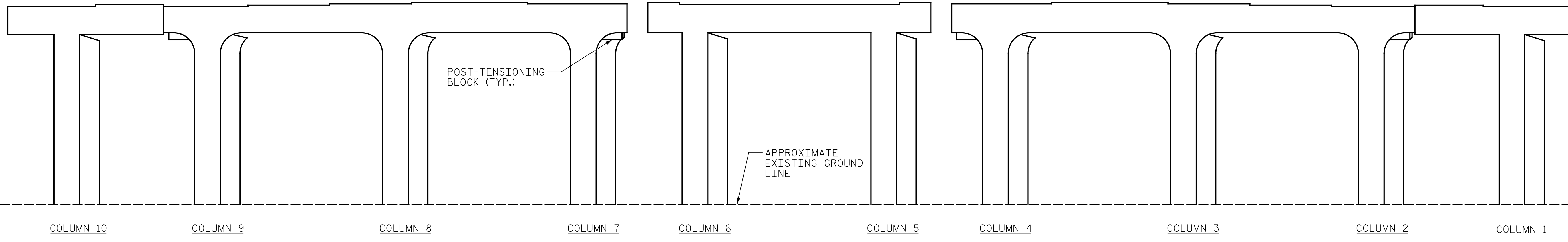
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2			4			82

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BOTTOM OF CAP



ELEVATION

NOTES:

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

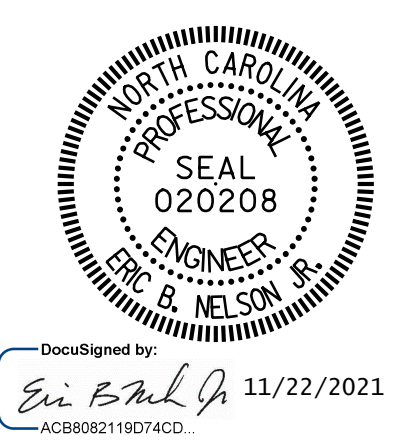
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WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR ONE (1) FOOT MIN. BELOW GROUND LINE.

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

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 2 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 2  
 SPAN "C" SIDE

DRAWN BY :	J. MYA/E. TODD	DATE :	08/2021
CHECKED BY :	J. YANACCONO	DATE :	09/2021
DESIGN ENGINEER OF RECORD:	R. NELSON	DATE :	09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised

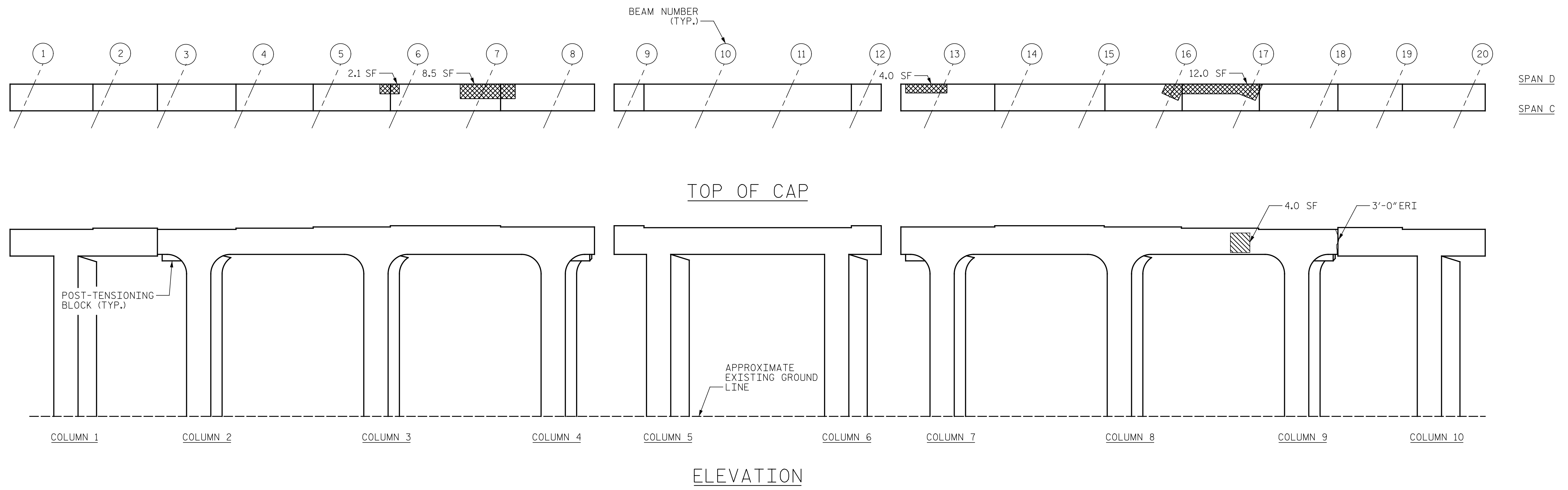
One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
 NC Lic. No. F-0270

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1			3			TOTAL SHEETS
2			4			82



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AS BUILT REPAIR QUANTITY TABLE					
BENT 3 REPAIRS	QUANTITIES				
	ESTIMATE		ACTUAL		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	DEPTH FT	VOLUME CF
CAP (VERTICAL)	45.4	17.5			
CAP (HORIZONTAL)	13.2	5.1			
COLUMN	0.0	0.0			
CONCRETE REPAIRS	37.0	14.3			
EPOXY RESIN INJECTION	LENGTH LF		LENGTH LF		
CAP	0.0				
COLUMN	0.0				
EPOXY COATING	SQ. FT		SQ. FT		
TOP OF BENT CAP	393				

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

**NOTES:**

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH 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 LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

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

FOR SHOTCRETE REPAIRS, 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.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

CONCRETE REPAIRS TO THE BENT CAP MAY REQUIRE BRIDGE JACKING. FOR BRIDGE JACKING, SEE "JACKING DETAILS" SHEET.

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

PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 1 OF 2



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 3  
 SPAN "C" SIDE**

DRAWN BY : J. MYA/E. TODD DATE : 08/2021  
 CHECKED BY : J. YANACCONO DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

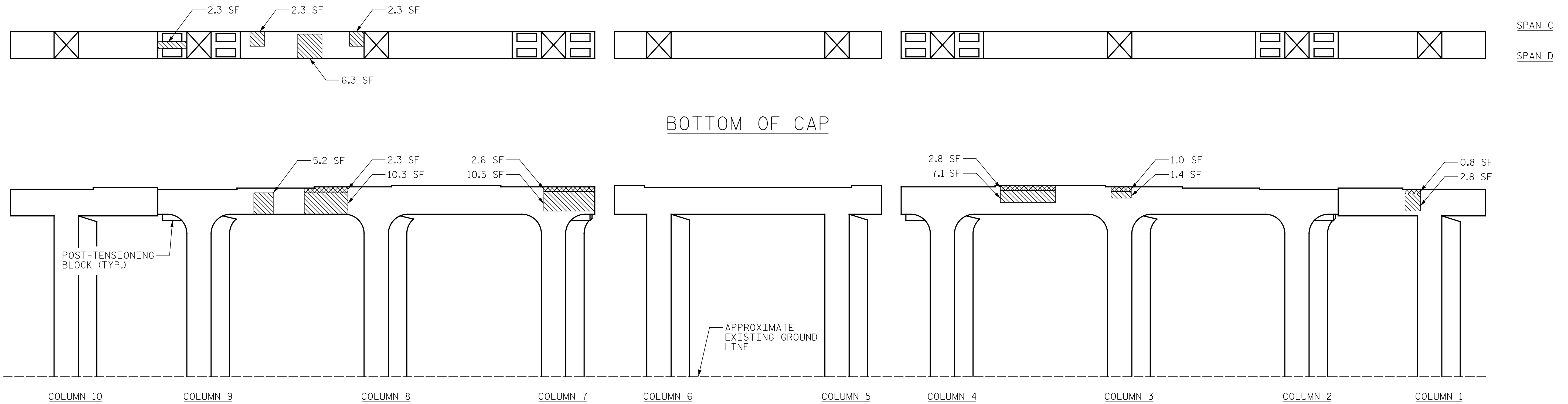
PLANS PREPARED BY:  
**Gannett Fleming**  
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One Glenwood Avenue  
 Suite 900  
 Raleigh, NC 27603  
 (919) 420-7660  
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			82

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 11/22/2021 9:19:54 AM pdf\_color\_gfclt\_FS.plt Rowan,pen.tbi



**NOTES:**

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FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

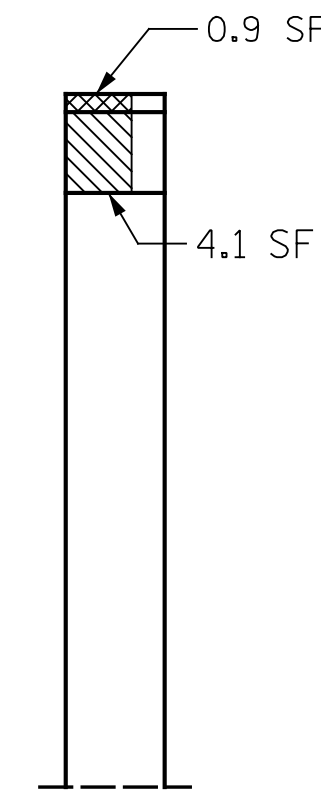
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FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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WHEN COLUMN REPAIRS ARE INDICATED TO GROUND LINE, EXTEND REPAIR ONE (1) FOOT MIN. BELOW GROUND LINE.

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

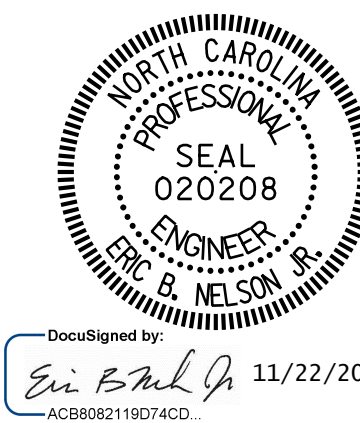


PROJECT NO. I-5997  
WAKE COUNTY  
 BRIDGE NO. 910260

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENT 3  
 SPAN "D" SIDE



DRAWN BY : J. MYA/E. TODD DATE : 08/2021  
 CHECKED BY : J. YANACCONO DATE : 09/2021  
 DESIGN ENGINEER OF RECORD: R. NELSON DATE : 09/2021

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered As Promised  
 One Glenwood Avenue  
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 NC Lic. No. F-0270

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1			3			TOTAL SHEETS
2			4			82



