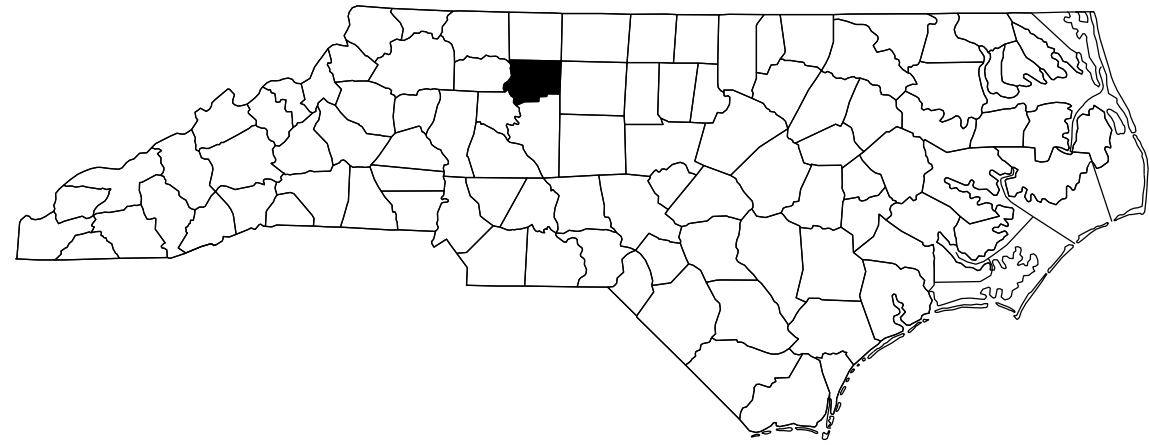


CONTRACT NO.: C205152 PROJECT: 15BPR.148



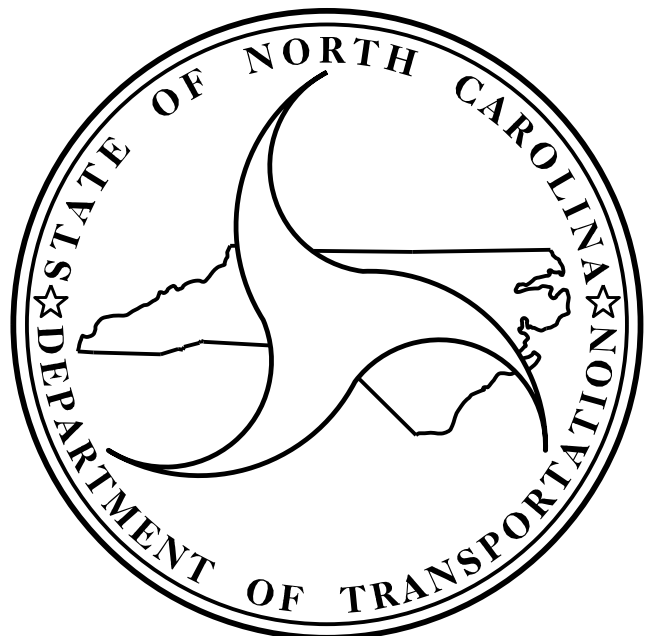
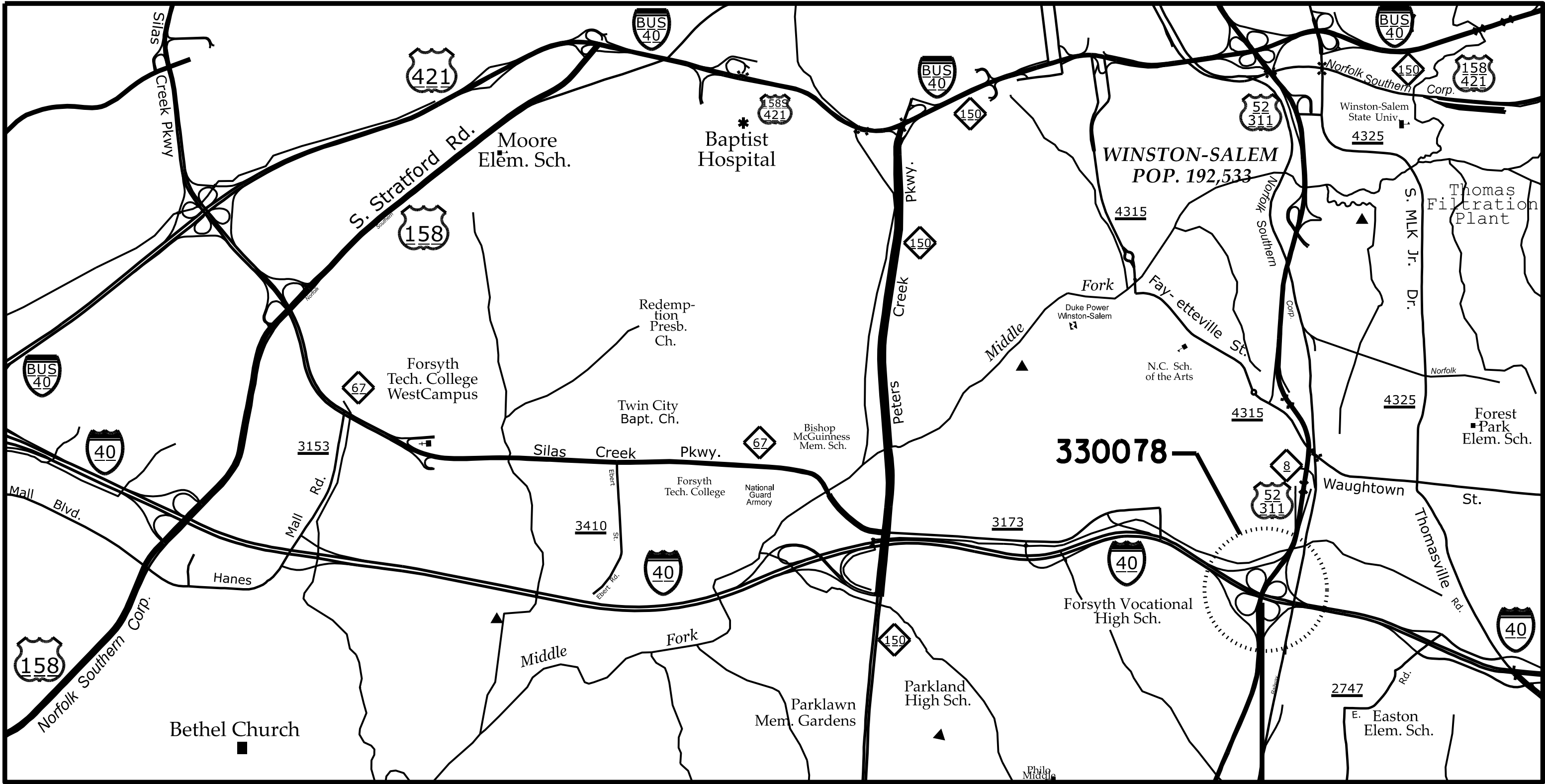
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

LOCATION: BRIDGE No. 330078 OVER I-40 ON US-52 / US-311 / NC-8

TYPE OF WORK: BRIDGE PRESERVATION: REPLACE ALL INTERIOR BENT BEARINGS
AND FOAM JOINT SEALS.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.148	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15BPR.148.1		P.E.	
15BPR.148.3		CONST.	



DESIGN DATA

FORSYTH COUNTY
BRIDGE No. 330078 ADT 2019 =72,000

PROJECT LENGTH

FORSYTH COUNTY
BRIDGE No. 330078 =0.043 MILE

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

2024 STANDARD SPECIFICATIONS

LETTING DATE :

FEBRUARY 17, 2026

ADAM A. COLE, P.E.
PROJECT ENGINEER

K. P. SEDAI, P.E.
PROJECT DESIGN ENGINEER

PROJECT: 15BPR.148

CONTRACT NO.: C205152

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

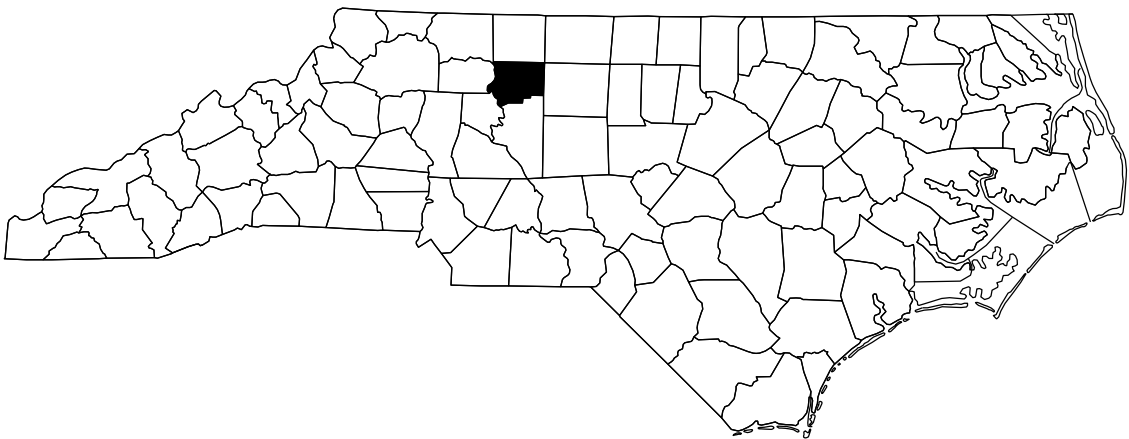
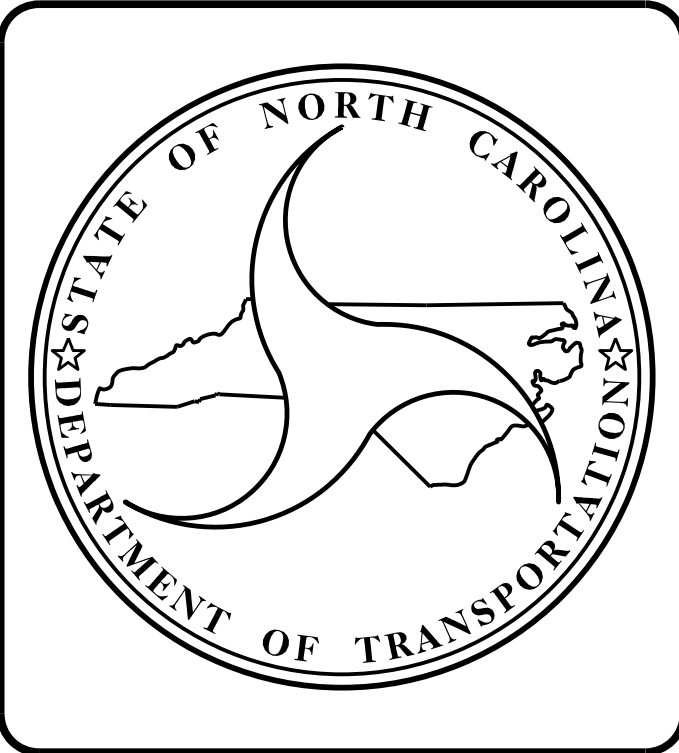
LOCATIONBRIDGE No. 330078 OVER I-40 ON US-52 / US-311 / NC-8

INDEX OF SHEETS

STRUCTURE No. 330078

<u>SHEET No.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
1A	INDEX OF SHEETS
S-01	GENERAL DRAWING
S-02	GENERAL DRAWING
S-03	TYPICAL SECTION
S-04 THRU S-07	DECK SURFACE
S-08	JOINT DETAILS
S-09	BENT 1
S-10	BENT 2
S-11	BENT 3
S-12	ELASTOMERIC BEARING DETAILS
S-13	BRIDGE JACKING DETAILS
SN	STANDARD NOTES

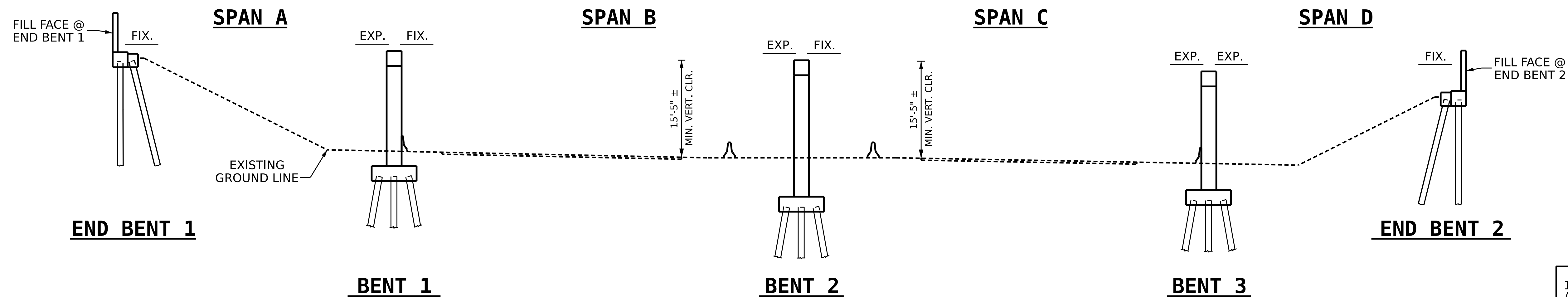
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15BPR.148	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15BPR.148.1		P.E.	
15BPR.148.3		CONST.	



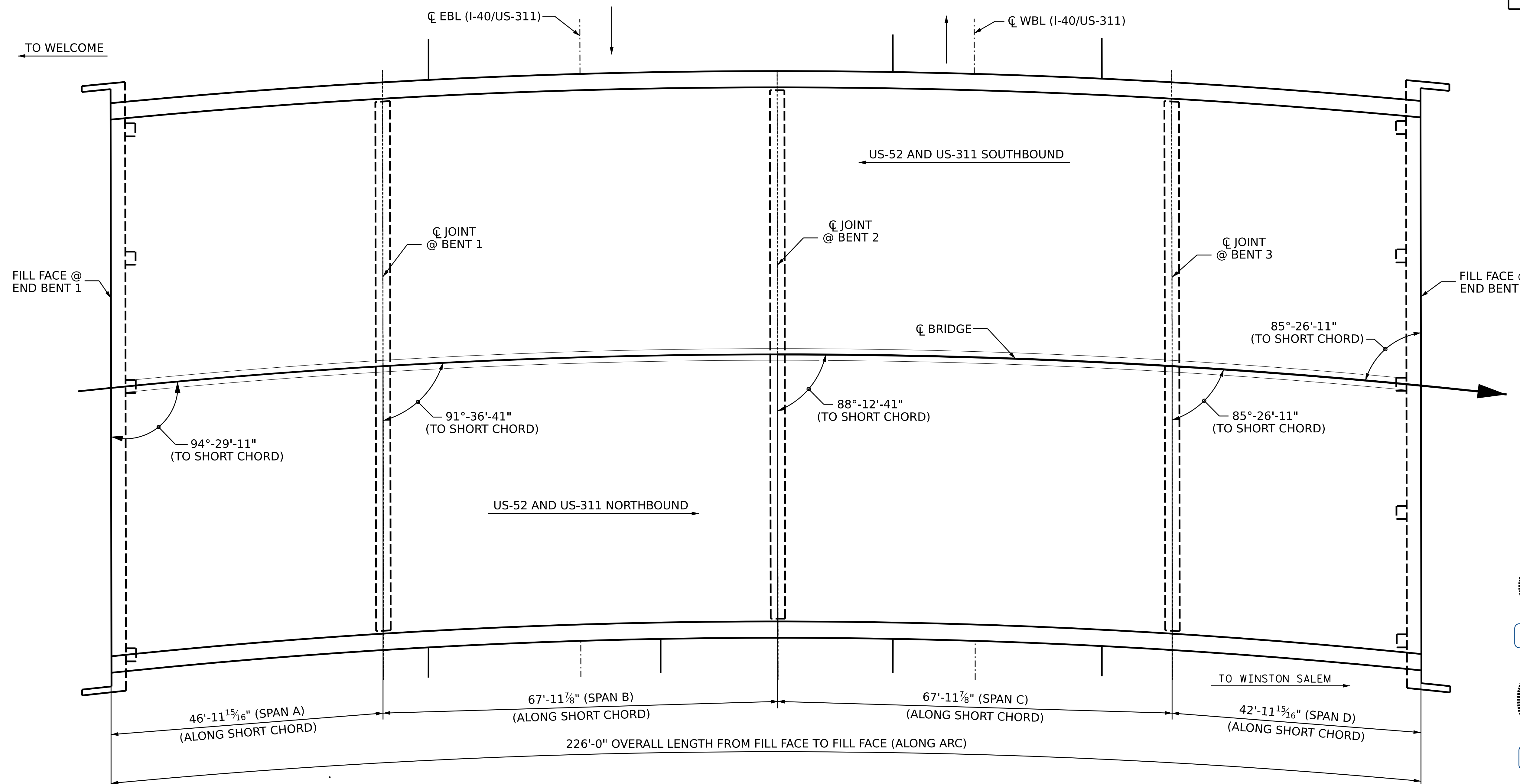
TYPE OF WORK:

BRIDGE PRESERVATION: REPLACE ALL INTERIOR BENT BEARINGS AND FOAM JOINT SEALS.

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



SECTION ALONG \mathcal{Q} BRIDGE



PLAN

NOTES

BRIDGE ORIENTATION CONFORMS TO THE EXISTING BRIDGE PLANS/ROUTINE INSPECTION.

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 12/06/2019.

SCOPE OF WORK

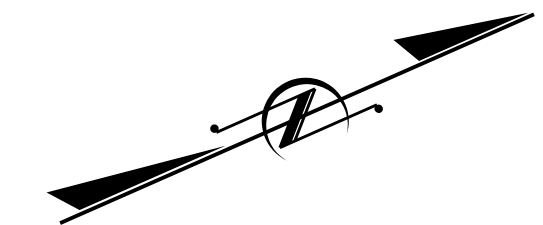
REPLACE ALL EXISTING INTERIOR BENT BEARINGS

REMOVE EXISTING JOINT MATERIAL AND INSTALL FOAM JOINT SEALS.

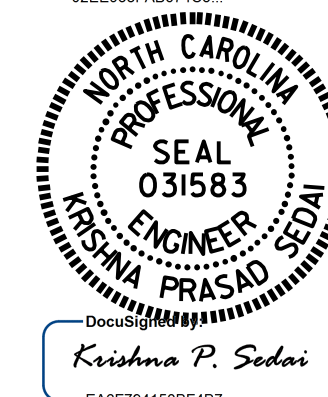
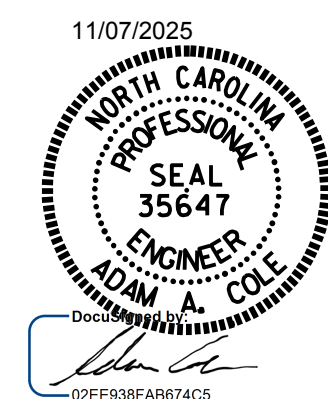
I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER

DATE



PROJECT NO. **15BPR.148**
FORSYTH COUNTY
 BRIDGE NO. **330078**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

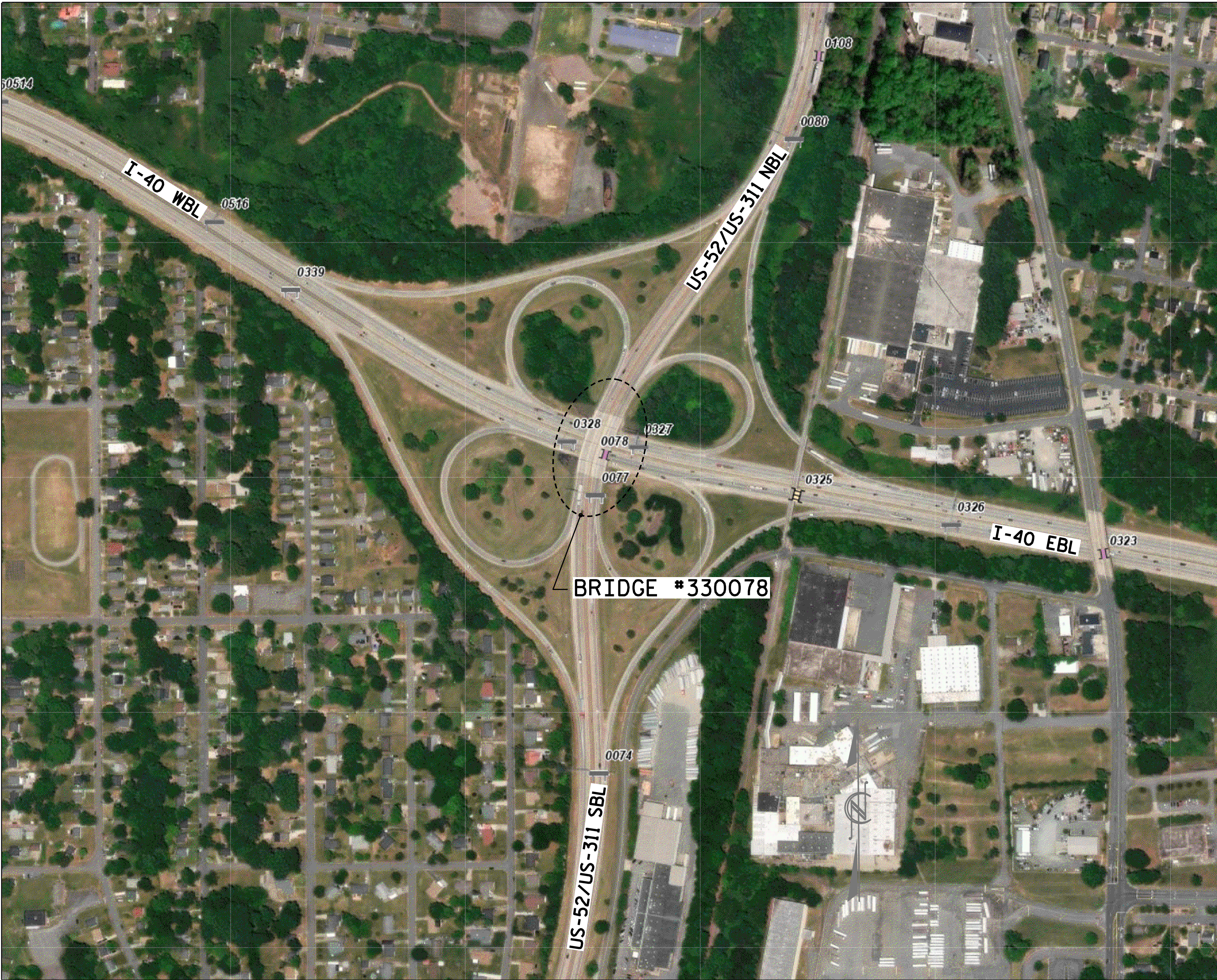
GENERAL DRAWING
 FOR BRIDGE ON US-52, US-311
 & NC-8 OVER US-311/I-40

REVISIONS						SHEET NO. S-01
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			

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 SIGNATURES COMPLETED

DRAWN BY : A. SORSENGINH DATE : 8/2025
 CHECKED BY : HRS DATE : 8/2025

8/26/21



BRIDGE 330078 LOCATION SKETCH

BRIDGE COORDINATES		
BRIDGE NO.	LATITUDE	LONGITUDE
330078	36°-03'-45.45"	80°-13'-53.45"

TOTAL BILL OF MATERIALS			
BRIDGE NO. 330078	REPLACEMENT OF FOAM JOINT SEALS	ELASTOMERIC BEARING	TYPE II BRIDGE JACKING
	LIN. FT.	EA.	EA.
BENT 1	90.0	28	2
BENT 2	90.0	28	2
BENT 3	90.0	28	2
TOTAL	270.0	84	6

DRAWN BY : A. SORSENGINH DATE : 8/2025
CHECKED BY : HRS DATE : 8/2025

NOTES

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

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

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 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.

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.

FOR REPLACEMENT OF FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC BEARING, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC JOINT HEADER REPAIR, SEE SPECIAL PROVISIONS.

AFTER ALL WORK HAS BEEN COMPLETED TO REMOVE AND REPLACE BEARINGS AND OTHER ASSOCIATED COMPONENTS AND BRIDGE HAS BEEN LOWERED INTO POSITION ON THE BENTS, REMOVE AND REPLACE EXISTING BRIDGE DECK JOINT SEALS. BRIDGE DECK SEALS SHALL NOT BE REPLACED UNTIL ALL BEARING REPLACEMENT WORK HAS BEEN COMPLETED.

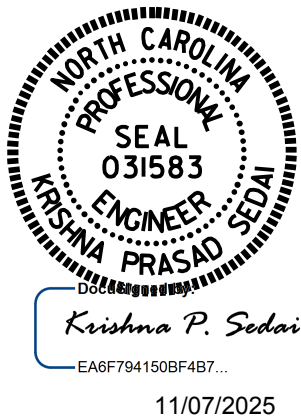
IT IS NOT ANTICIPATED THAT ELASTOMERIC JOINT HEADER REPAIR WILL BE NECESSARY. HOWEVER, BEFORE REPLACING THE BRIDGE DECK JOINT SEALS, ALL BRIDGE DECK JOINTS SHALL BE INSPECTED BY THE ENGINEER TO DETERMINE THE LOCATION AND QUANTITY OF BRIDGE JOINT DEMOLITION AND ELASTOMERIC JOINT HEADER REPAIR THAT MIGHT BE REQUIRED.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT ITEMS SHOWN WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FILED THAT THESE ITEMS, OR OTHER WORK WILL BE NECESSARY TO 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 SHALL BE ADDRESSED AS PER ARTICLE 104-7 PF THE STANDARD SPECIFICATIONS PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUNATITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

UNANTICIPATED ITEMS:

ITEM NO.	DESCRIPTION	UNIT
1	ELASTOMERIC JOINT HEADER REPAIR	SF
2	CONCRETE REPAIRS	CF
3	TYPE I BRIDGE JACKING	EA

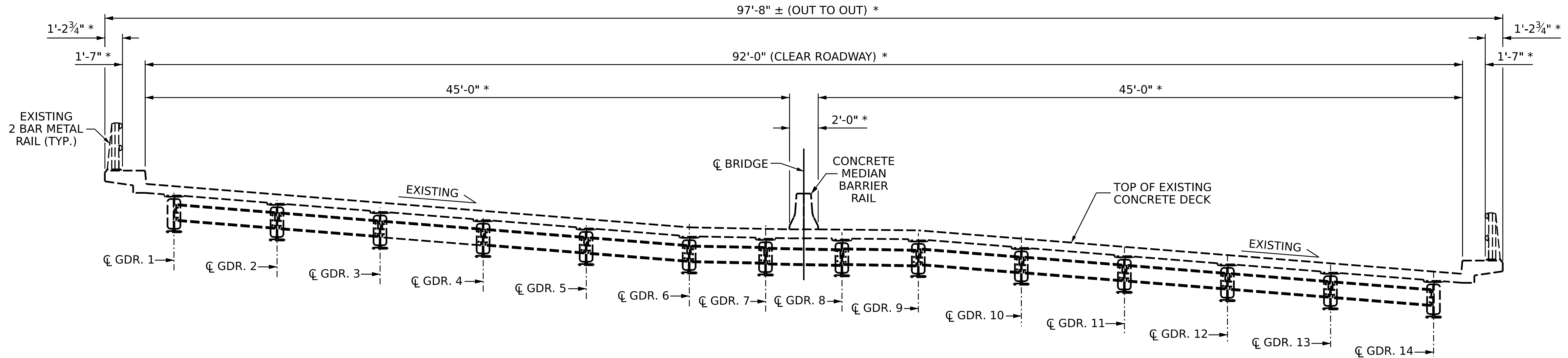
PROJECT NO. 15BPR.148
FORSYTH COUNTY
BRIDGE NO. 330078



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON US-52, US-311
AND NC-8 OVER US-311/I-40

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-02
1			3			TOTAL SHEETS
2			4			13



TYPICAL SECTION

(EXISTING)
* RADIAL DIMENSION

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**



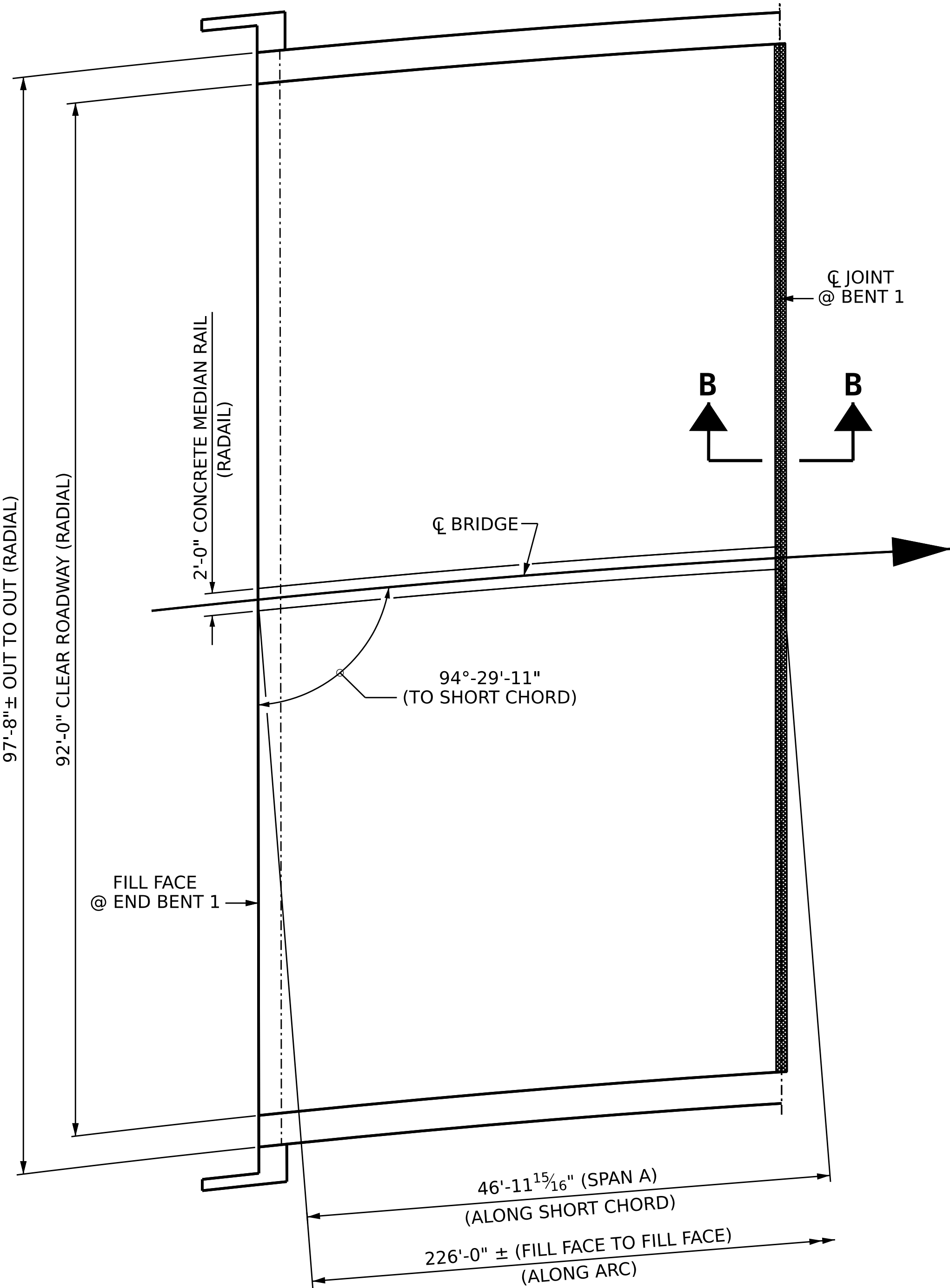
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION

DRAWN BY : **A. SORSENGINH** DATE : **8/2025**
CHECKED BY : **HRS** DATE : **8/2025**

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	
1			3		S-03
2			4		
TOTAL SHEETS					13

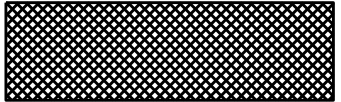


SPAN A

NOTES

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

IT IS NOT ANTICIPATED THAT ELASTOMERIC JOINT HEADER REPAIR WILL BE NECESSARY. HOWEVER, BEFORE REPLACING THE BRIDGE DECK JOINT SEALS, ALL BRIDGE DECK JOINTS SHALL BE INSPECTED BY THE ENGINEER TO DETERMINE THE LOCATION AND QUANTITY OF BRIDGE JOINT DEMOLITION AND ELASTOMERIC JOINT HEADER REPAIR THAT MIGHT BE REQUIRED.



ELASTOMERIC JOINT HEADER REPAIRS

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**

SHEET 1 OF 4



11/07/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

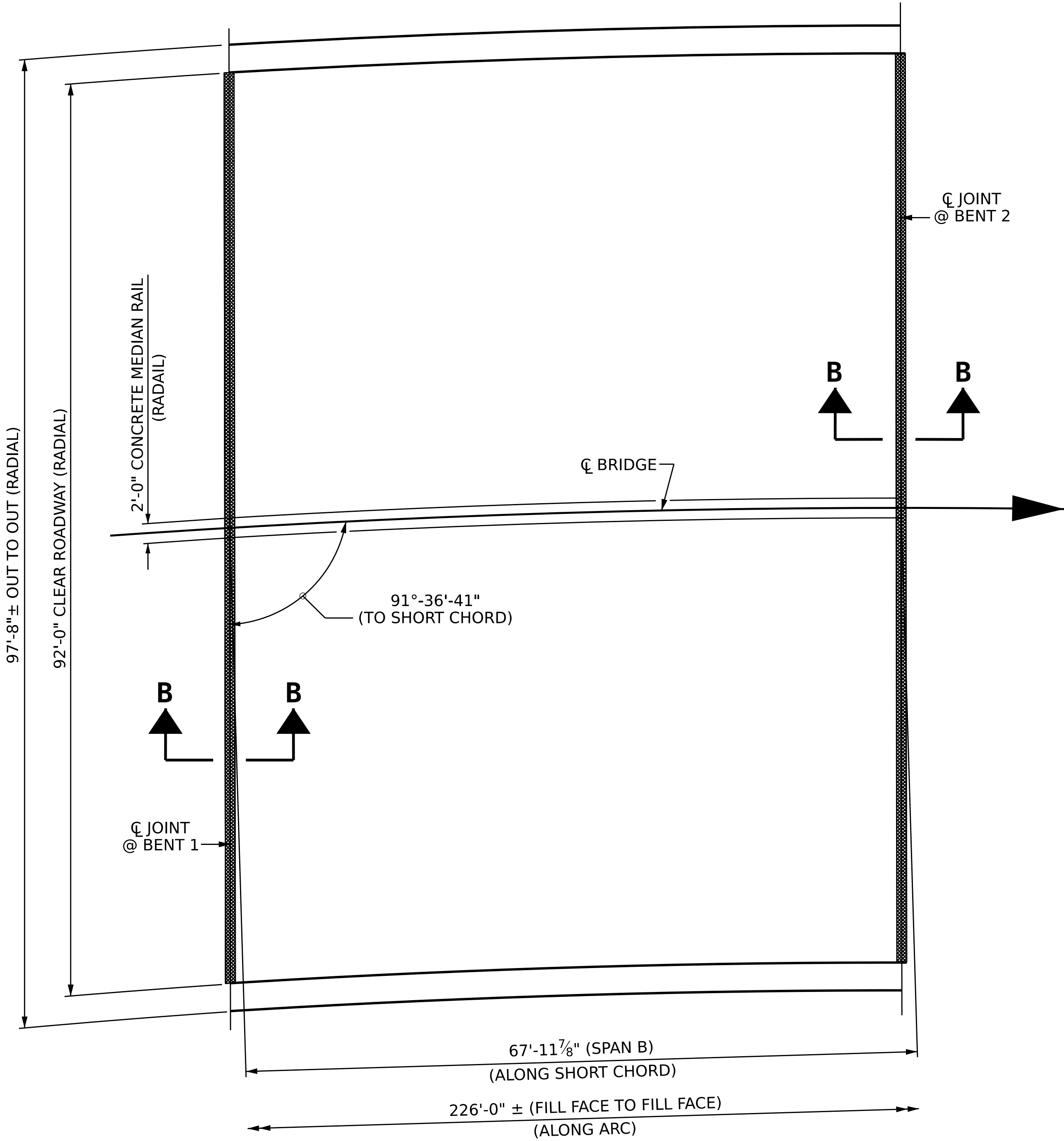
**DECK SURFACE
SPAN A**

DRAWN BY : **A. SORSENGINH** DATE : **8/2025**
CHECKED BY : **HRS** DATE : **8/2025**

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

SHEET NO.
S-04
TOTAL
SHEETS
13

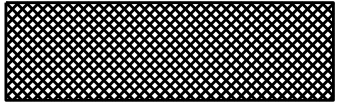


SPAN B

NOTES

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

IT IS NOT ANTICIPATED THAT ELASTOMERIC JOINT HEADER REPAIR WILL BE NECESSARY. HOWEVER, BEFORE REPLACING THE BRIDGE DECK JOINT SEALS, ALL BRIDGE DECK JOINTS SHALL BE INSPECTED BY THE ENGINEER TO DETERMINE THE LOCATION AND QUANTITY OF BRIDGE JOINT DEMOLITION AND ELASTOMERIC JOINT HEADER REPAIR THAT MIGHT BE REQUIRED.



ELASTOMERIC JOINT HEADER REPAIRS

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**

SHEET 2 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**DECK SURFACE
SPAN B**

DRAWN BY : **A. SORSENGINH** DATE : **8/2025**
CHECKED BY : **HRS** DATE : **8/2025**

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

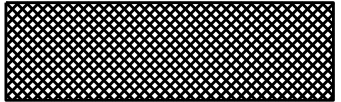
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TOTAL
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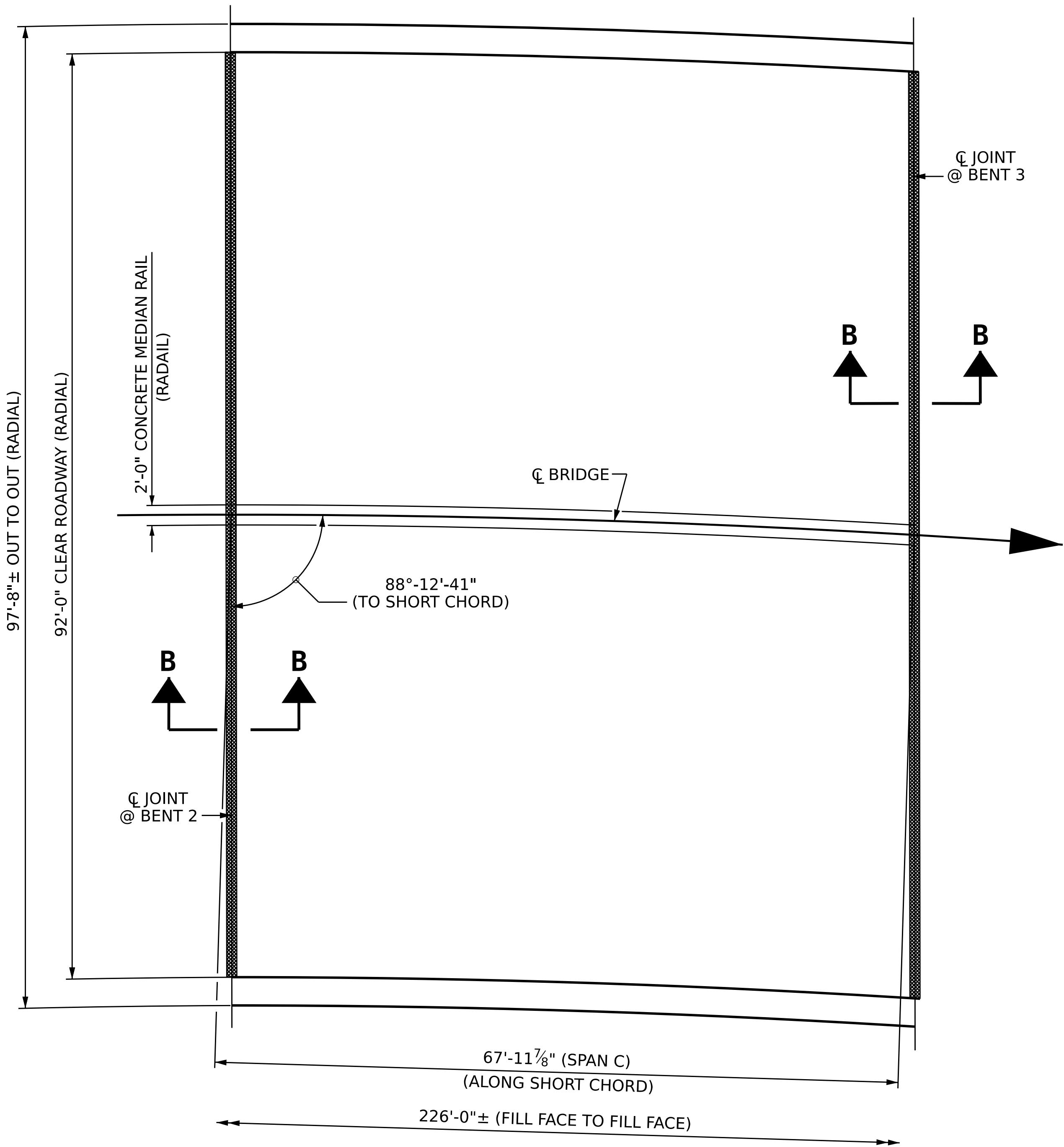
NOTES

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

IT IS NOT ANTICIPATED THAT ELASTOMERIC JOINT HEADER REPAIR WILL BE NECESSARY. HOWEVER, BEFORE REPLACING THE BRIDGE DECK JOINT SEALS, ALL BRIDGE DECK JOINTS SHALL BE INSPECTED BY THE ENGINEER TO DETERMINE THE LOCATION AND QUANTITY OF BRIDGE JOINT DEMOLITION AND ELASTOMERIC JOINT HEADER REPAIR THAT MIGHT BE REQUIRED.



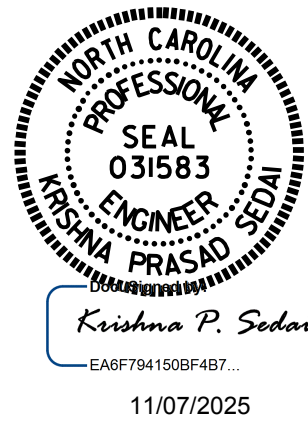
ELASTOMERIC JOINT HEADER REPAIRS



SPAN C

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**

SHEET 3 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK SURFACE
SPAN C

DRAWN BY : A. SORSENGINH DATE : 8/2025
CHECKED BY : HRS DATE : 8/2025

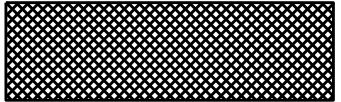
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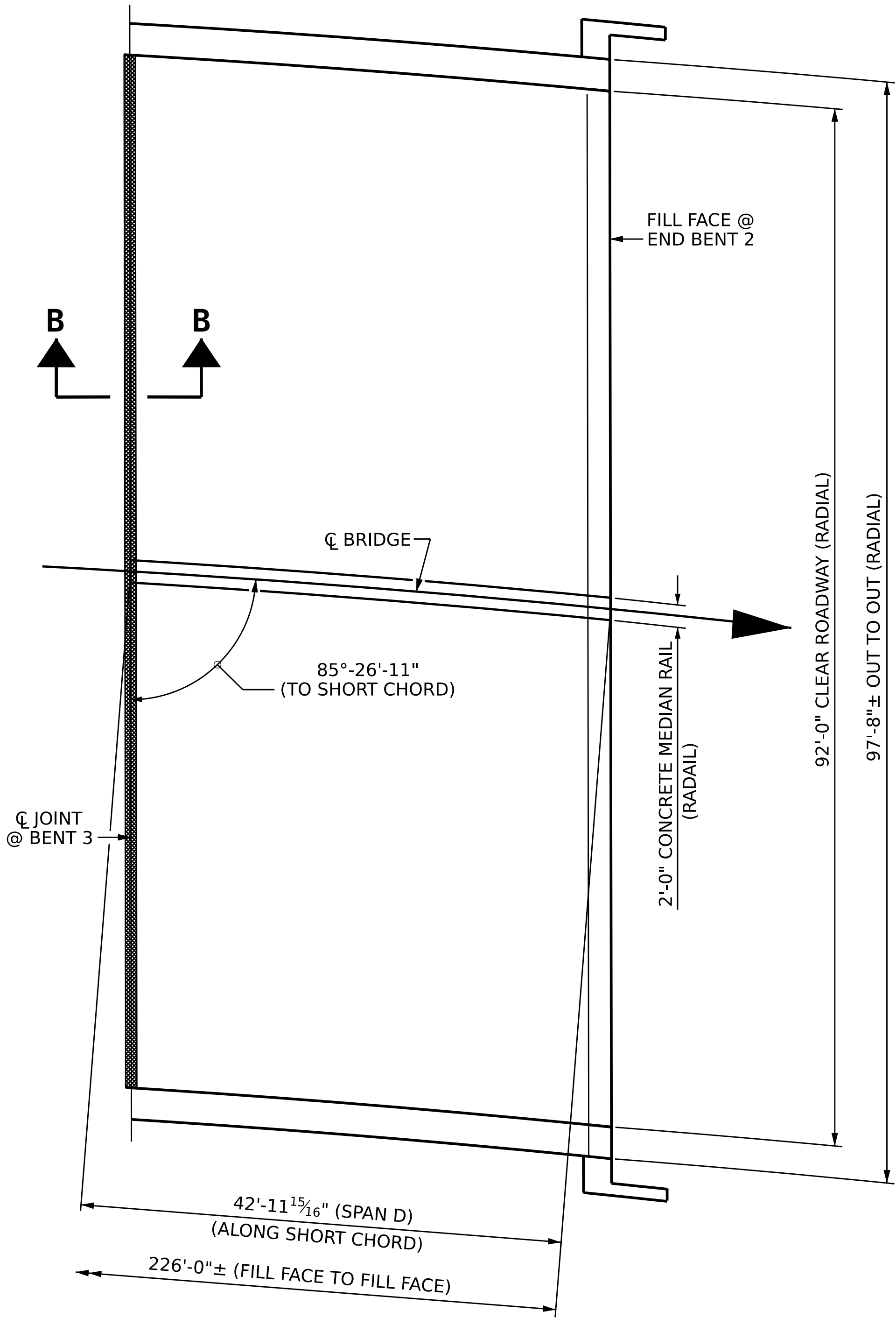
NOTES

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

IT IS NOT ANTICIPATED THAT ELASTOMERIC JOINT HEADER REPAIR WILL BE NECESSARY. HOWEVER, BEFORE REPLACING THE BRIDGE DECK JOINT SEALS, ALL BRIDGE DECK JOINTS SHALL BE INSPECTED BY THE ENGINEER TO DETERMINE THE LOCATION AND QUANTITY OF BRIDGE JOINT DEMOLITION AND ELASTOMERIC JOINT HEADER REPAIR THAT MIGHT BE REQUIRED.



ELASTOMERIC JOINT HEADER REPAIRS



SPAN D

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**

SHEET 4 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

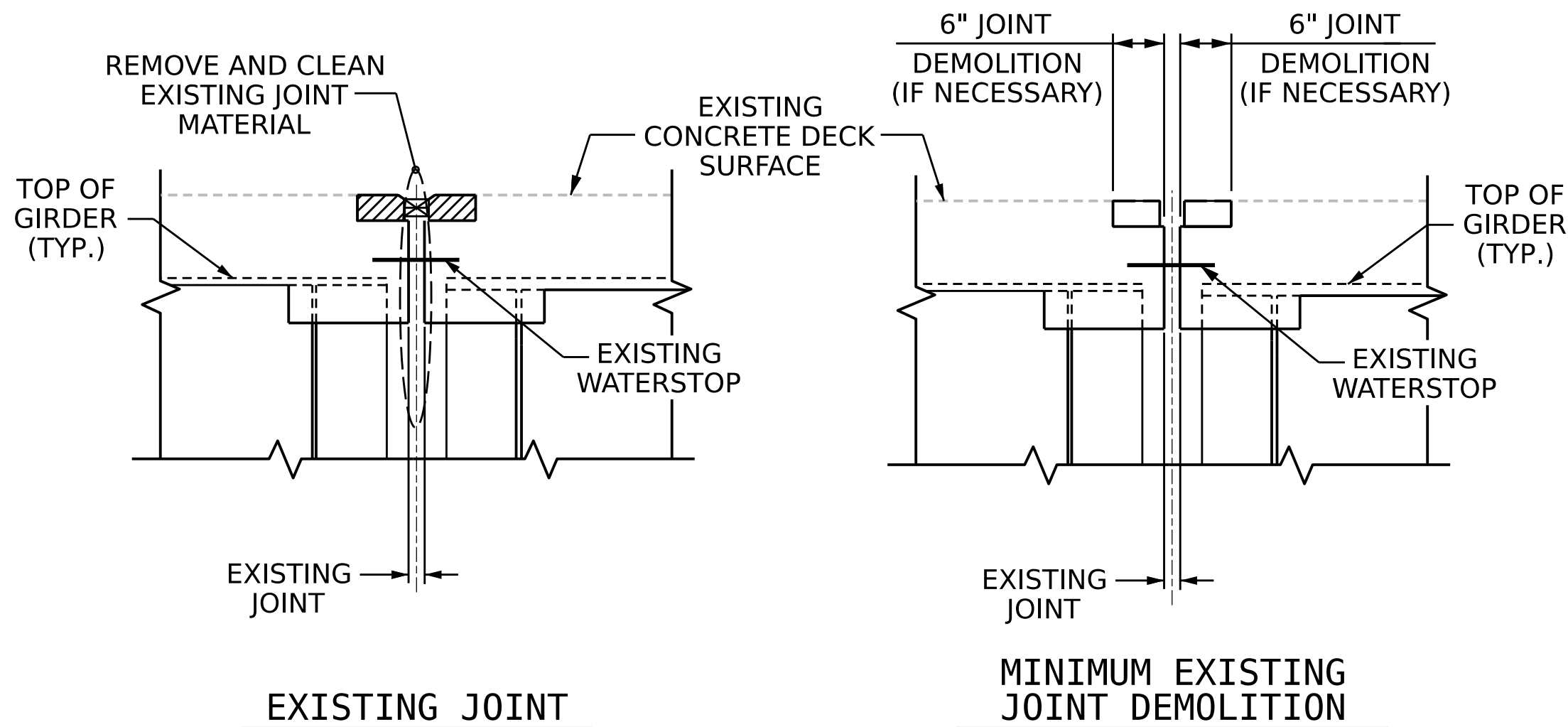
**DECK SURFACE
SPAN D**

DRAWN BY : **A. SORSENGINH** DATE : **8/2025**
CHECKED BY : **HRS** DATE : **8/2025**

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
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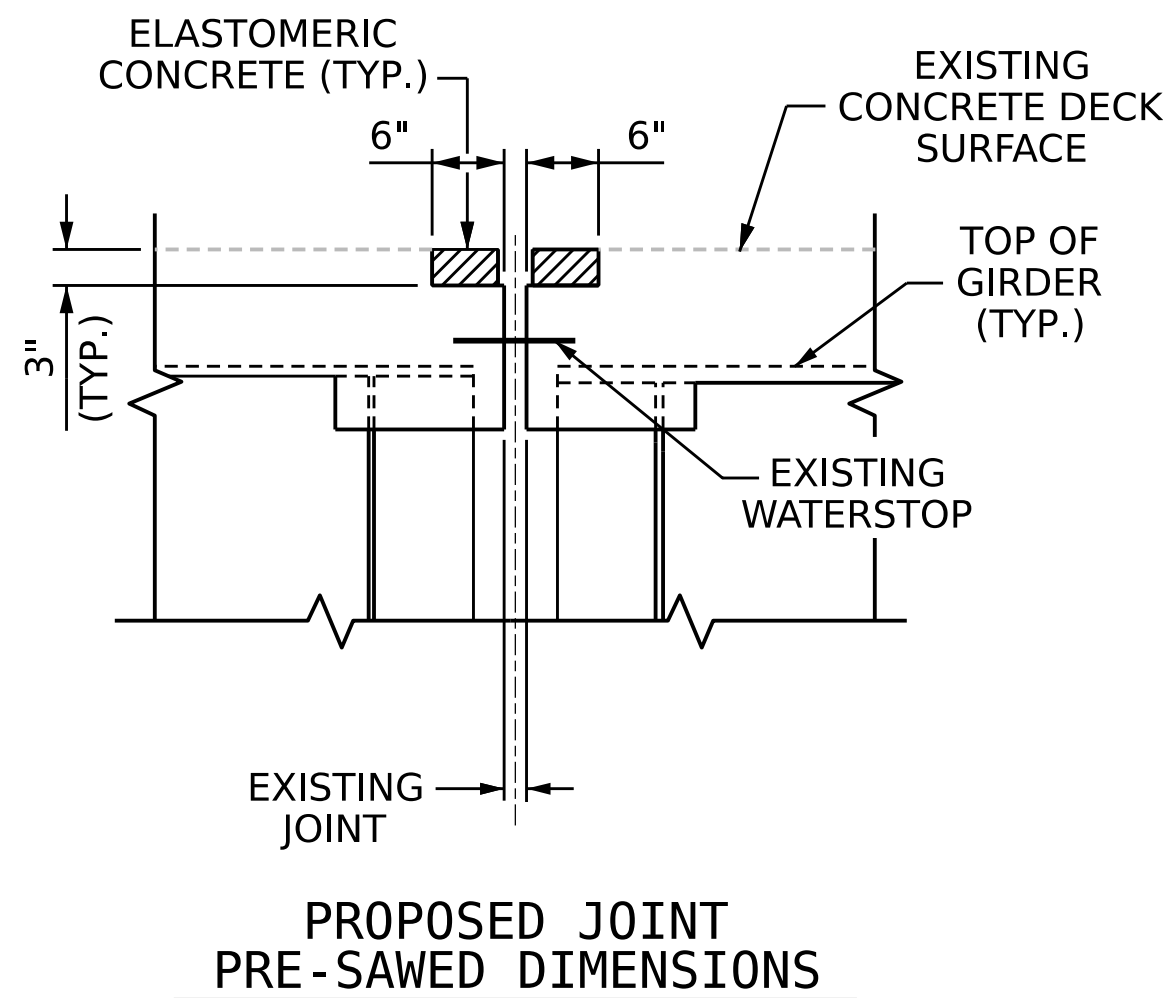
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SHEET NO.
S-07
TOTAL SHEETS
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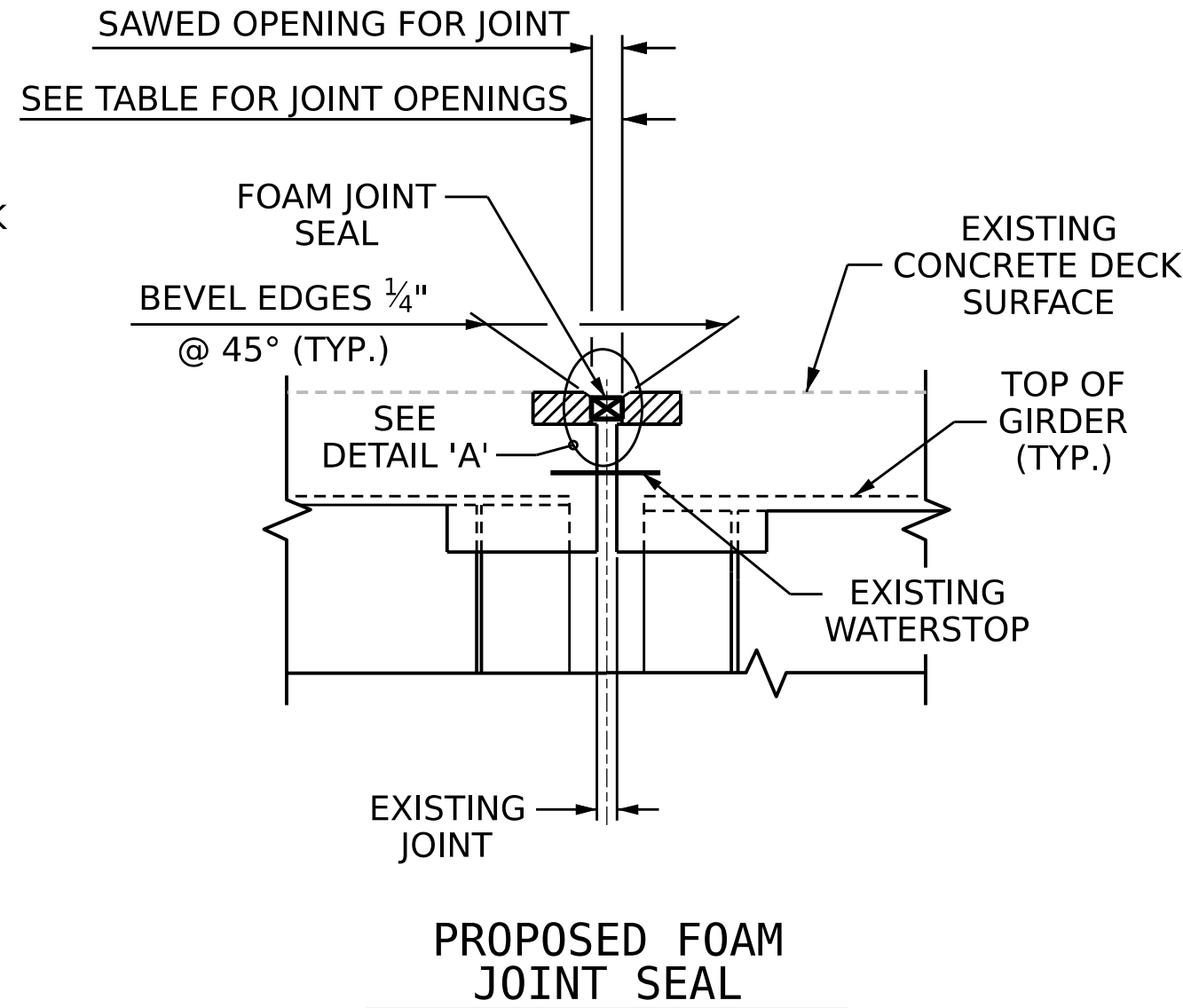
JOINT REPAIR QUANTITY TABLE

	REPLACEMENT OF FOAM JOINT SEALS
BENT 1	90.0 LF
BENT 2	90.0 LF
BENT 3	90.0 LF
TOTAL	270.0 LF



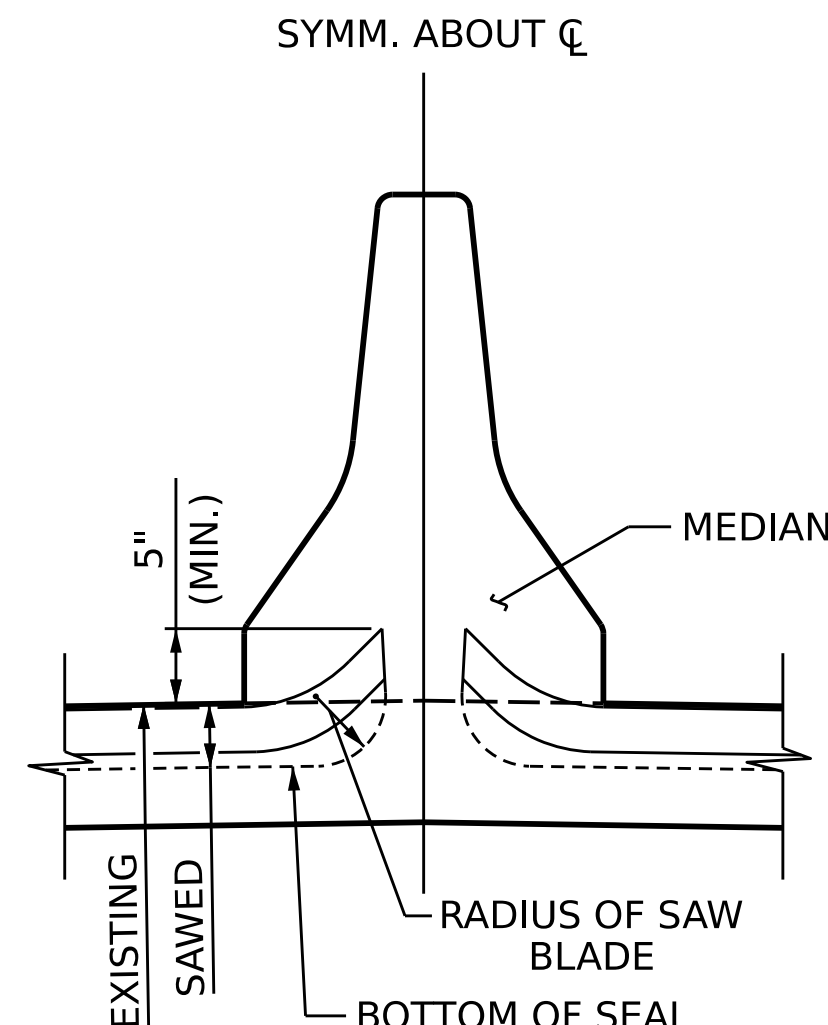
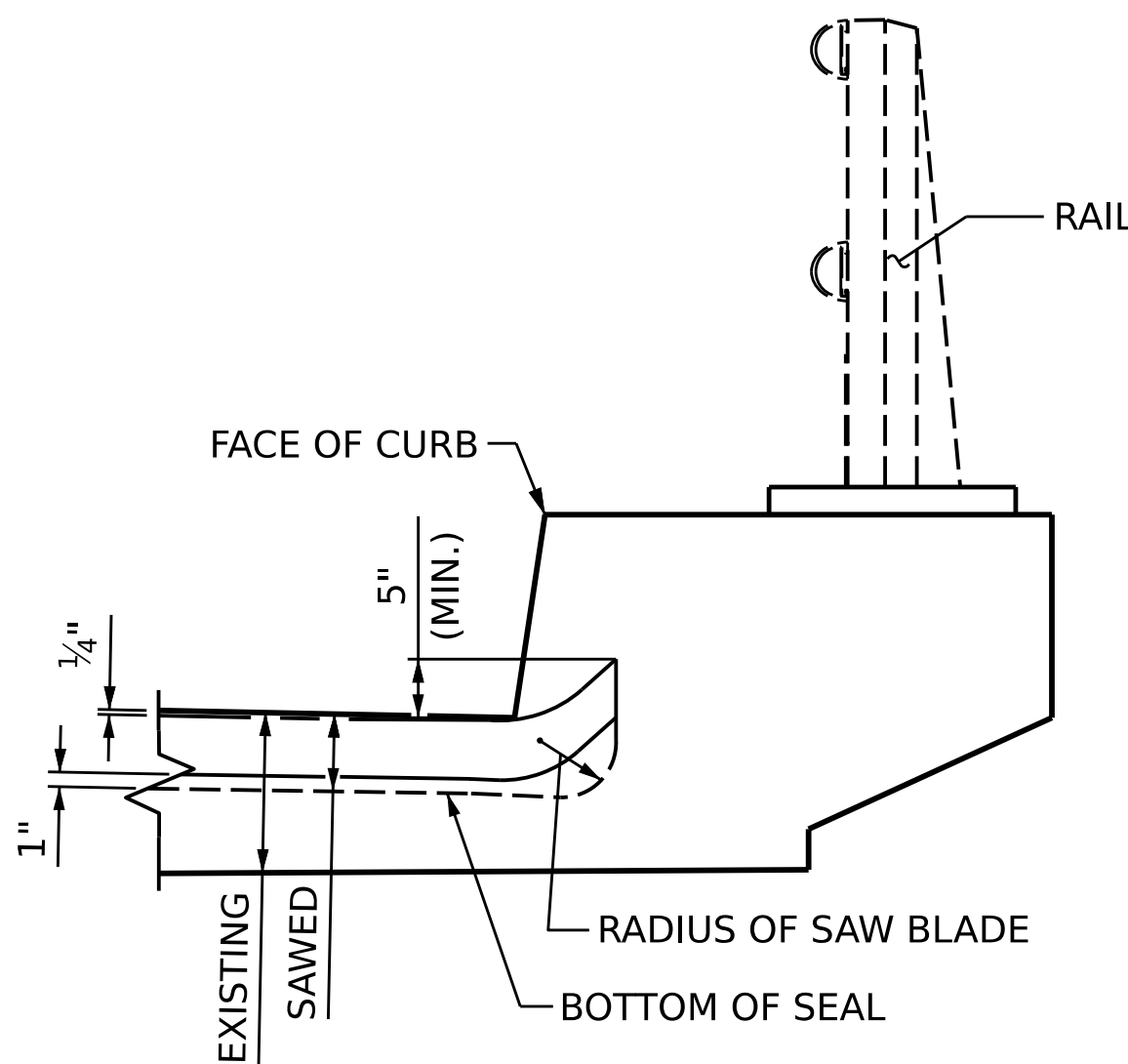
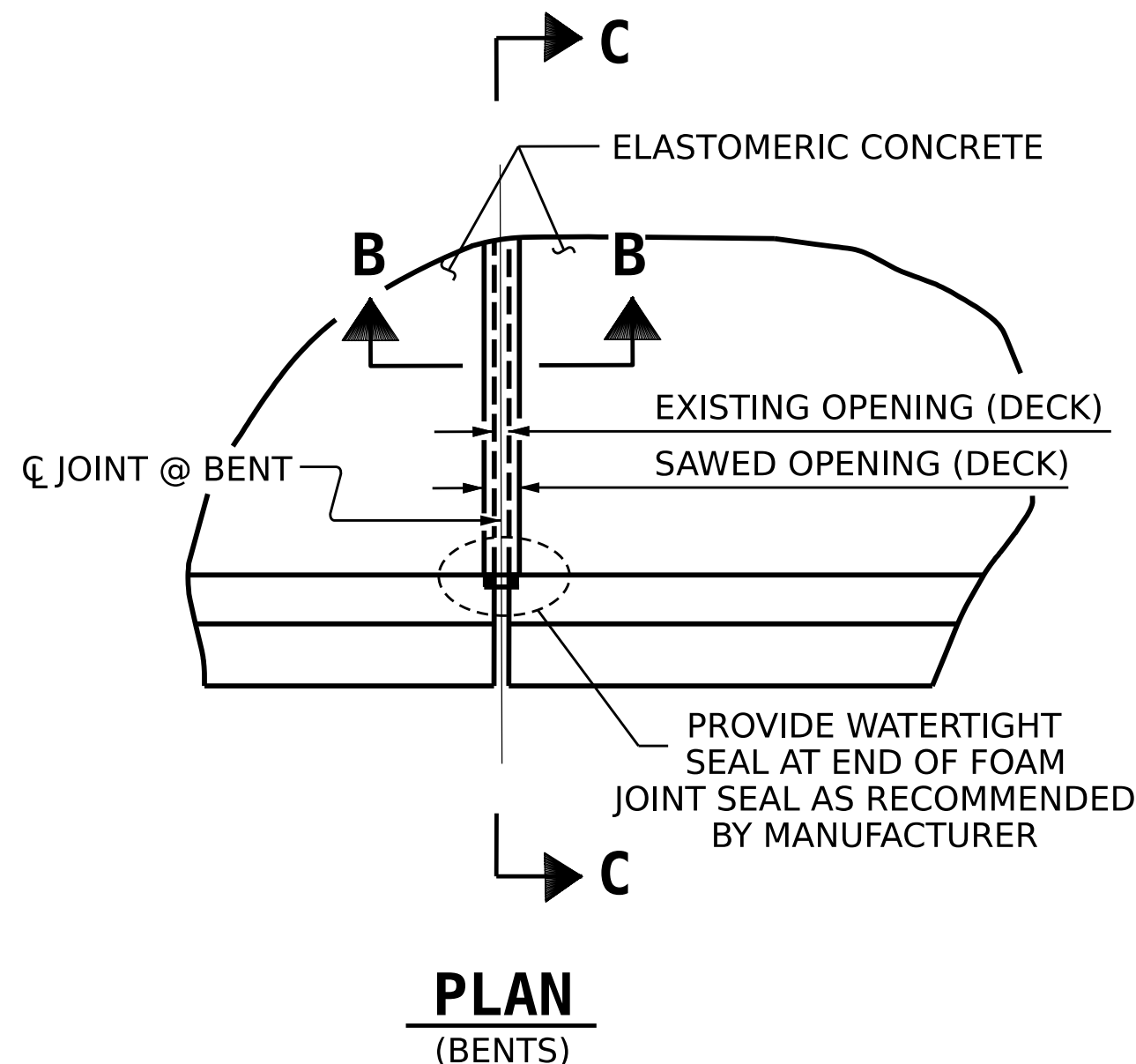
SECTION B-B

(TYP. AT BENTS)

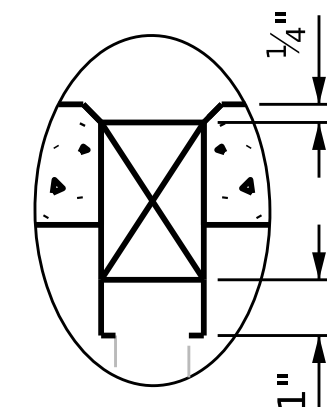


SAWED JOINT OPENING TABLE

	SAWED JT. OPENING (PERPENDICULAR TO JT.)		
LOCATION	AT 45°	AT 60°	AT 90°
BENT 1	1 5/8"	1 9/16"	1 7/16"
BENT 2	1 5/8"	1 9/16"	1 3/8"
BENT 3	1 1 1/16"	1 9/16"	1 5/16"



FOAM JOINT SEAL SHALL BE FACTORY FORMED OR CUT, HEAT WELDED AND TURNED UP PARRALLEL TO FACE OF MEDIAN.



NOTES

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

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING INDICATED IN THE DETAILS BY MORE THAN 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 ACCOMODATE 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 JOINTS IN LIEU OF SAWING THE JOINT.

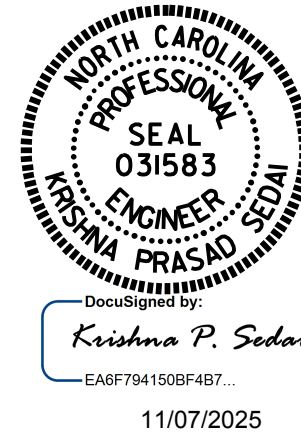
THE INSTALLED FOAM JOINTS SHALL BE WATER TIGHT.

FOR REPLACEMENT OF FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JOINT DETAILS



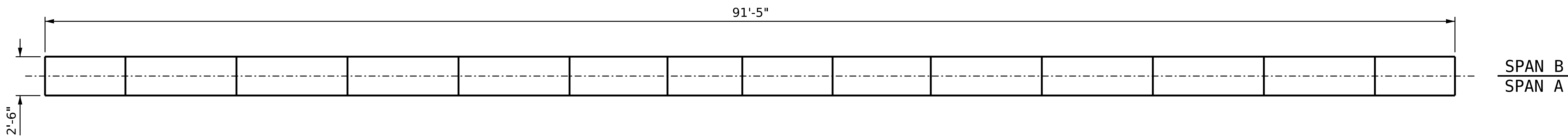
11/07/2025

DRAWN BY : A. SORSENGINH DATE : 8/2025
CHECKED BY : HRS DATE : 8/2025

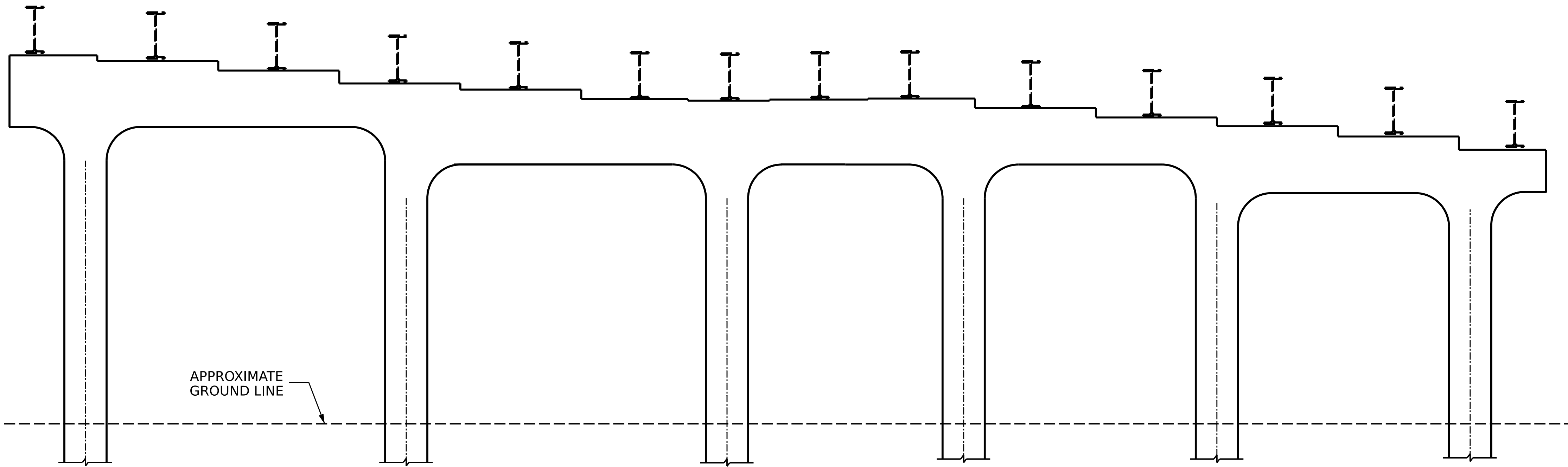
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SIGNATURES COMPLETED

REVISIONS						SHEET NO. S-08
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			13

8/26/21

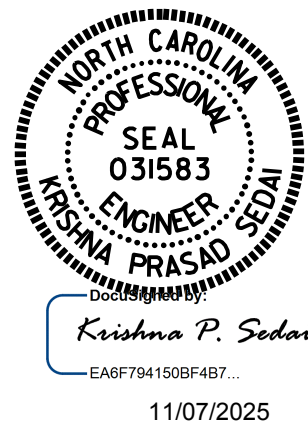


PLAN - TOP OF CAP



ELEVATION

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

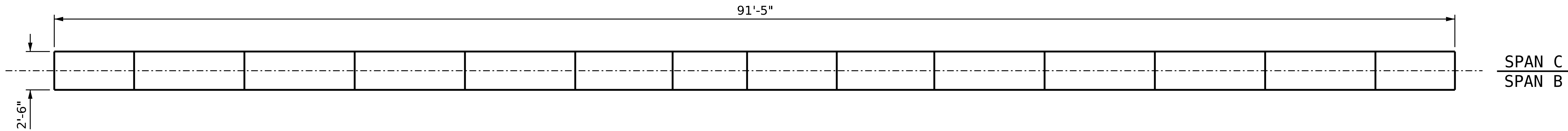
BENT 1
SPAN A FACE

DRAWN BY : **A. SORSENGINH** DATE : **8/2025**
CHECKED BY : **HRS** DATE : **8/2025**

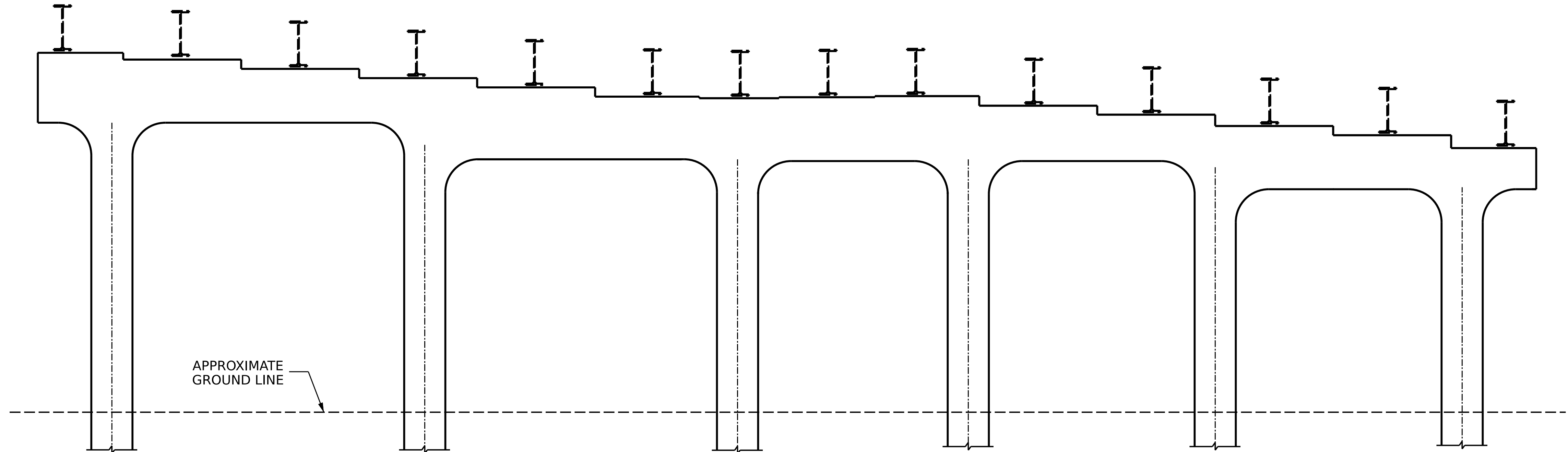
DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

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2			4			

TOTAL
SHEETS
13

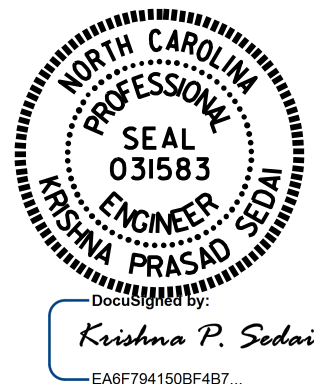


PLAN - TOP OF CAP



ELEVATION

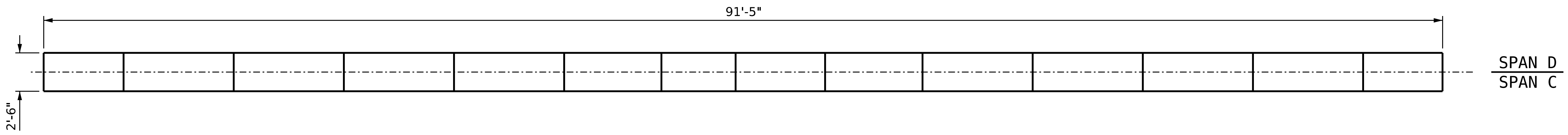
PROJECT NO. 15BPR.148
FORSYTH COUNTY
BRIDGE NO. 330078



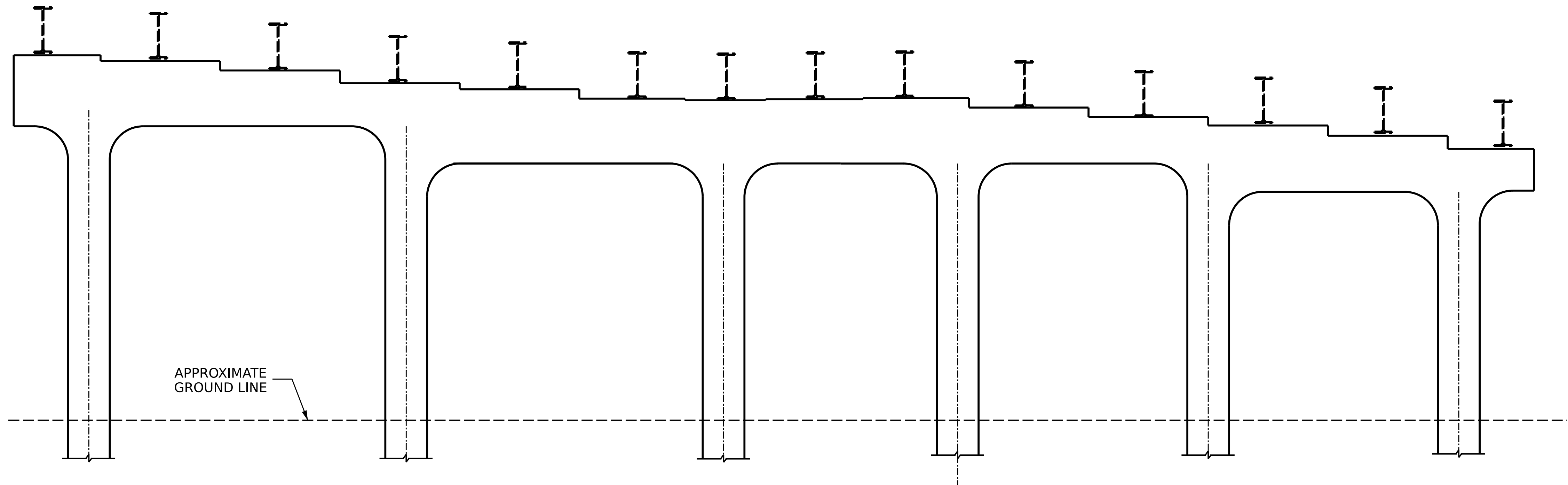
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			13

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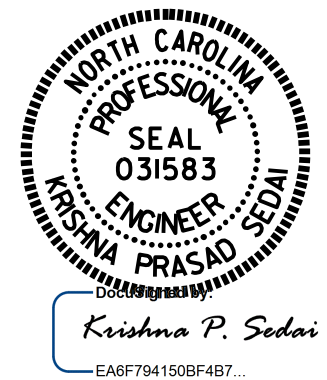


PLAN - TOP OF CAP



ELEVATION

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BRIDGE NO. **330078**



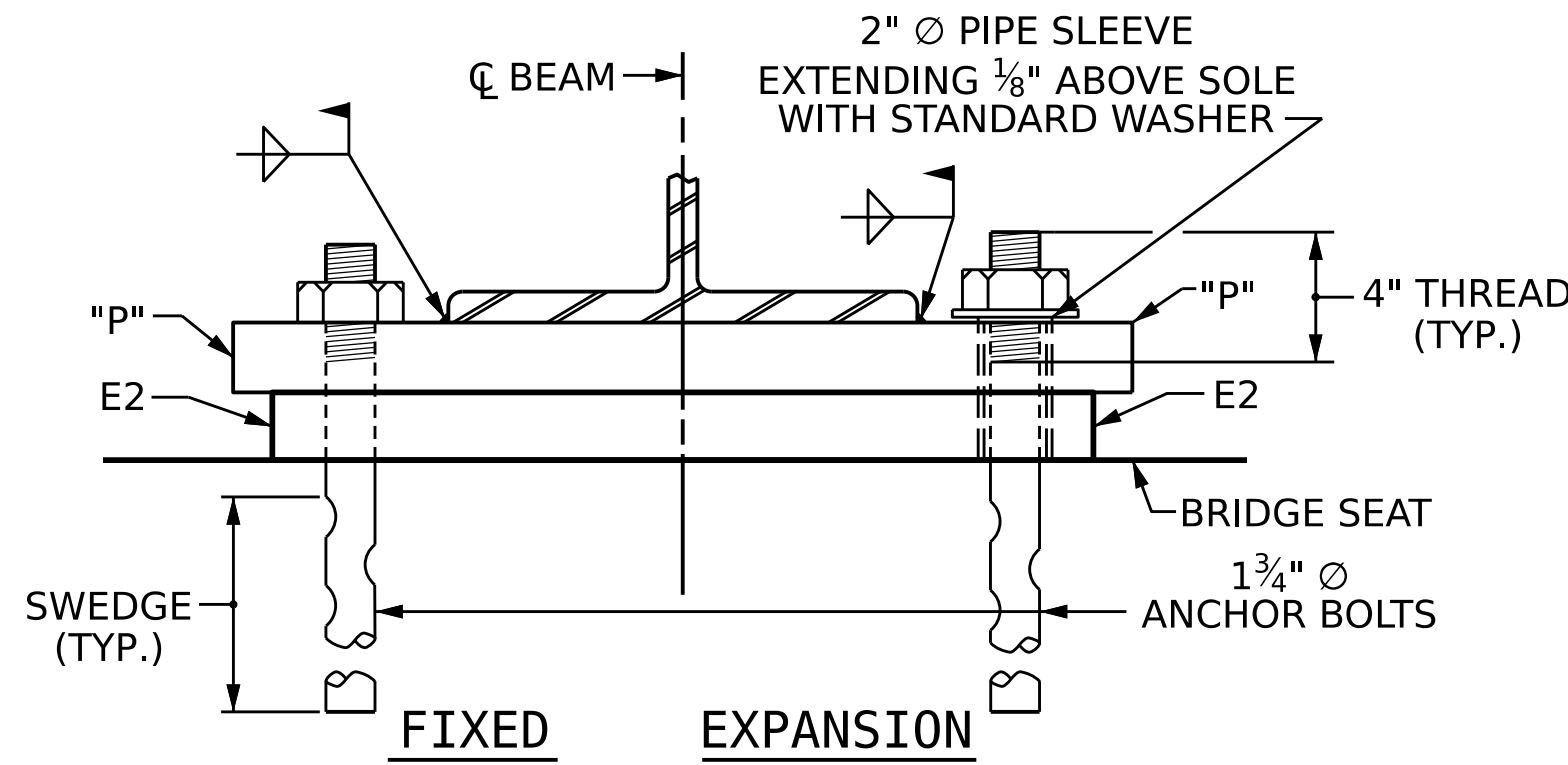
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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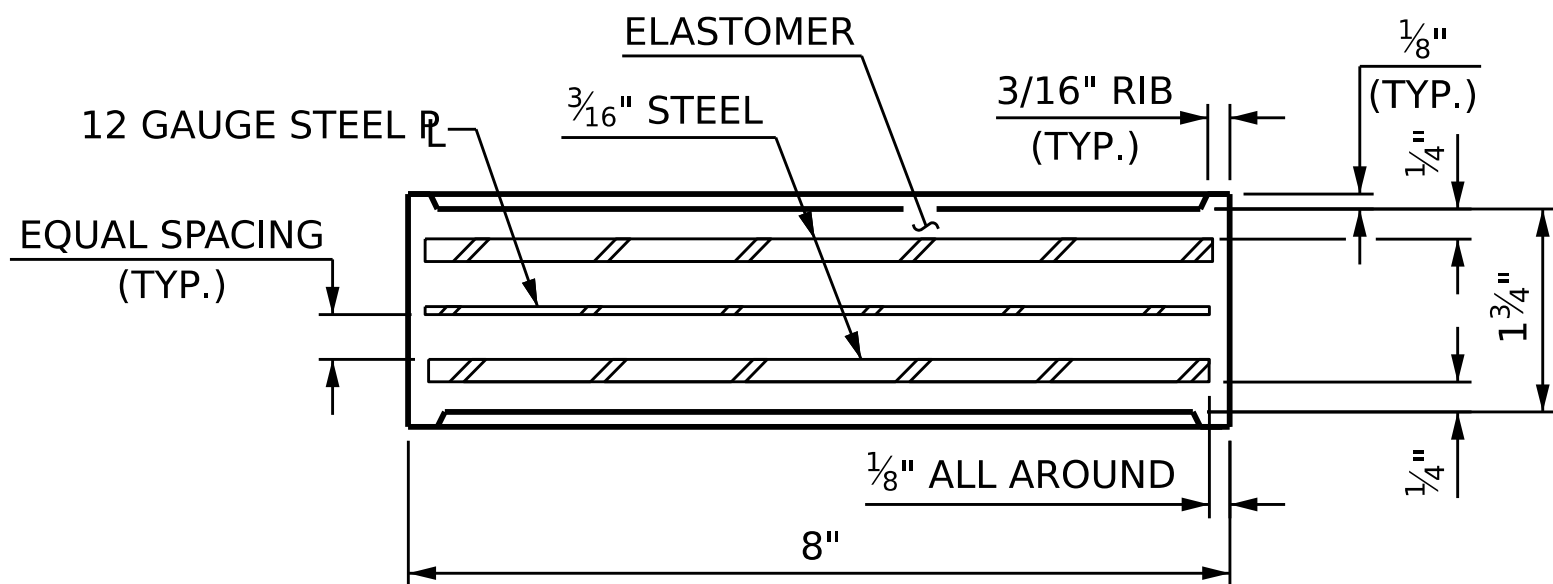
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NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

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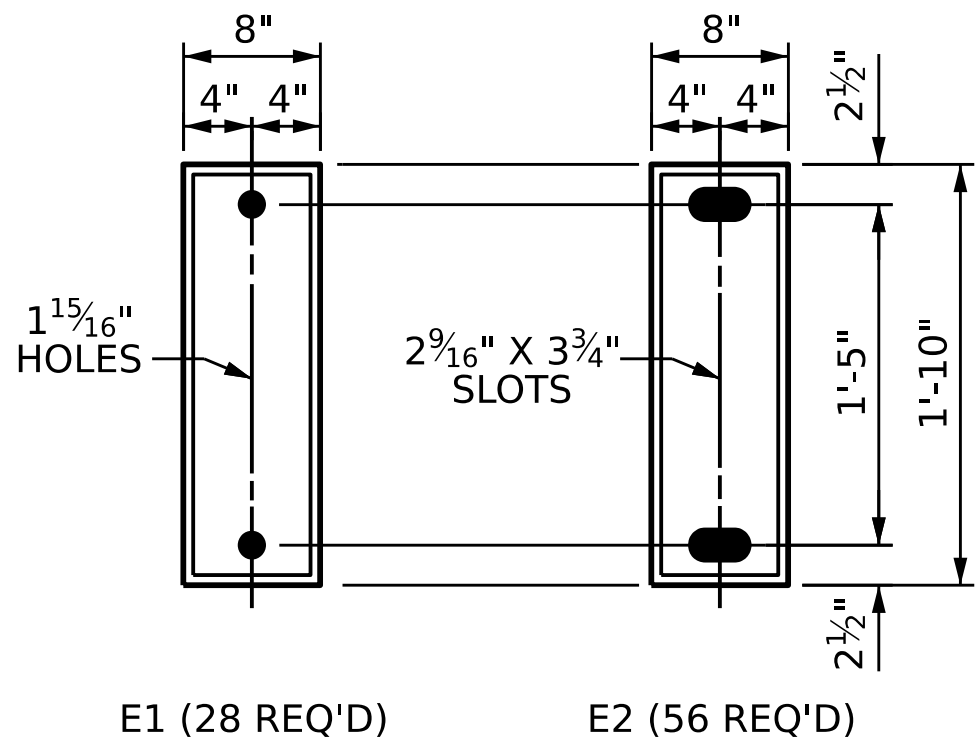
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END VIEW

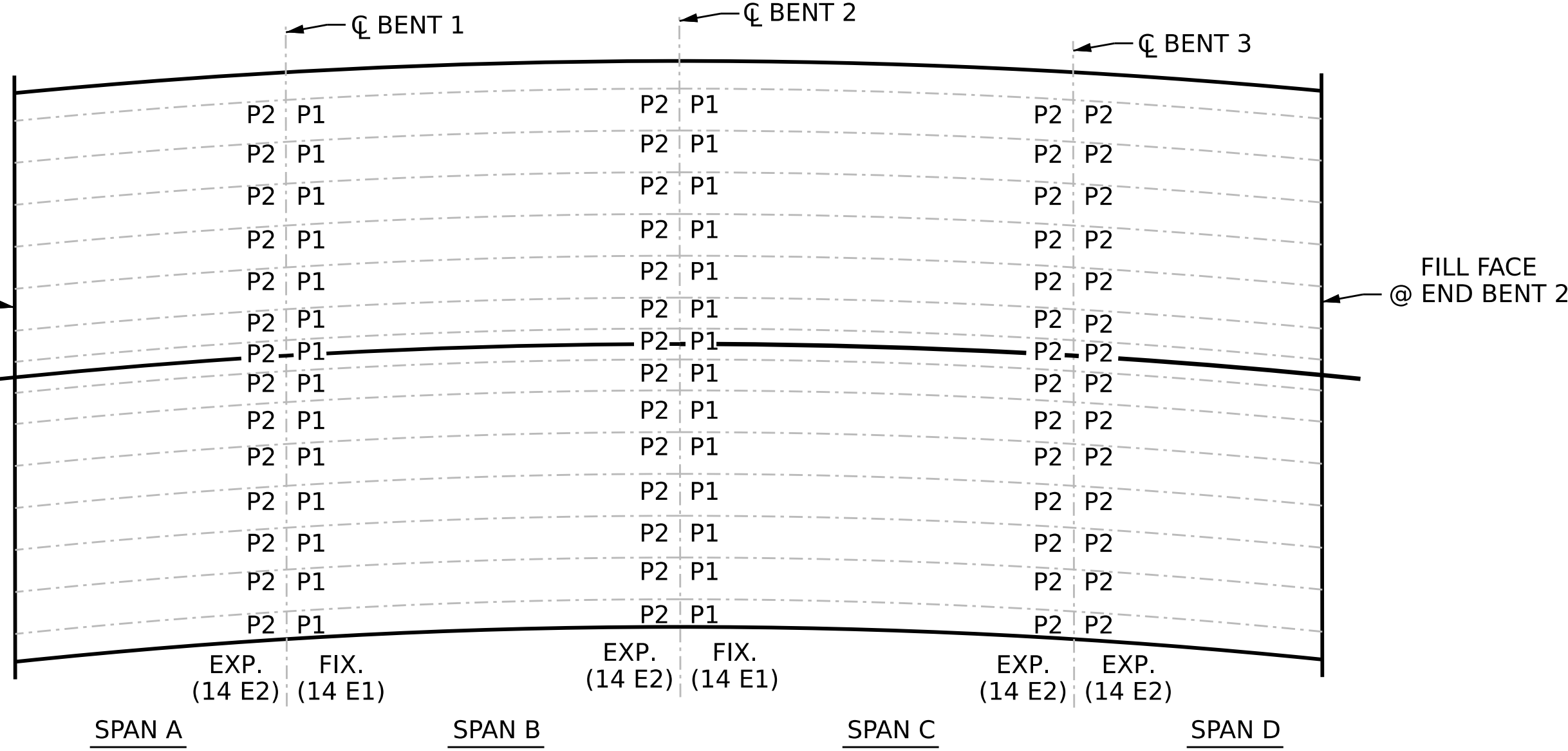


TYPICAL SECTION OF ELASTOMERIC BEARINGS

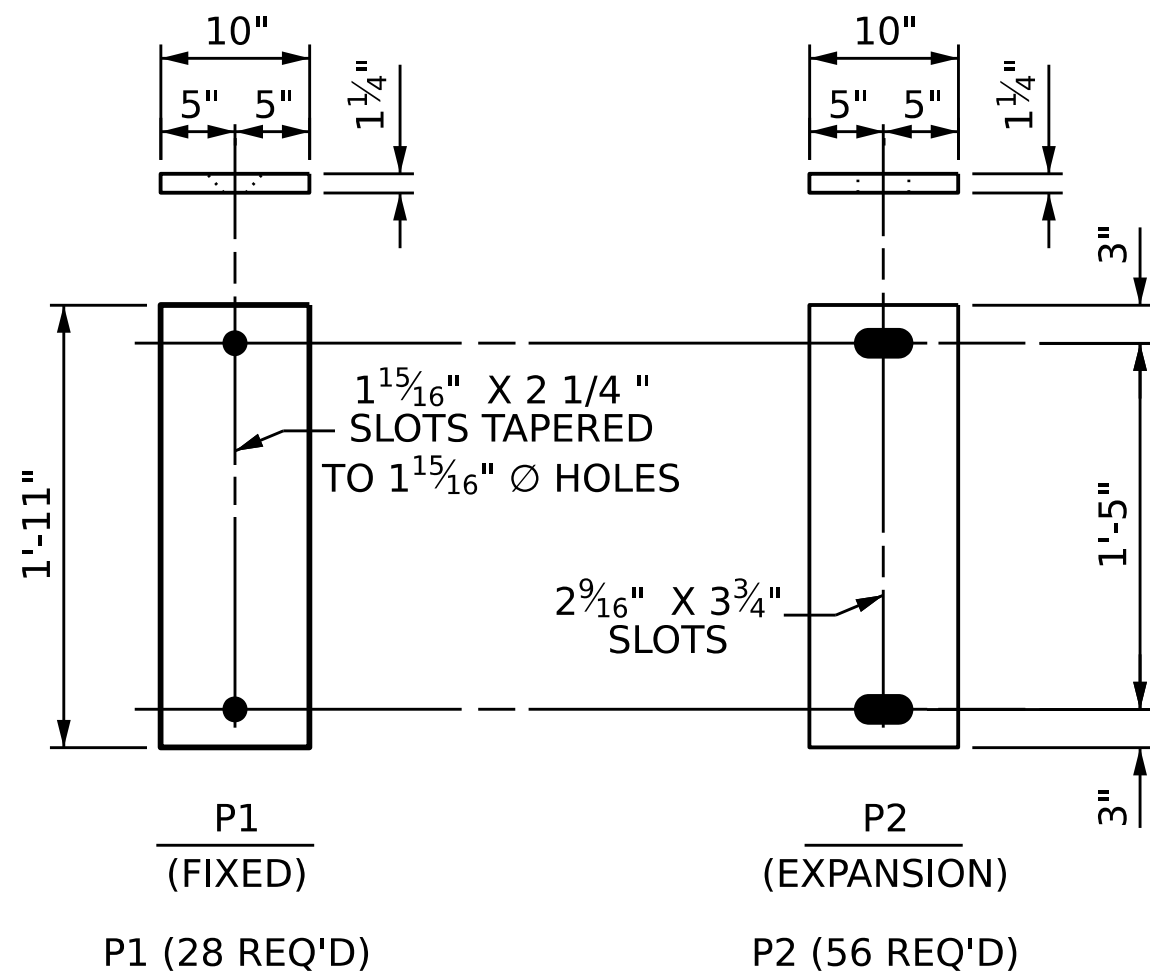


PLAN VIEW OF ELASTOMERIC BEARING

TYPE I



SOLE PLATE LOCATION PLAN



SOLE PLATE DETAILS ("P")

NOTES

THE EXISTING BEARING SHALL BE REMOVED AND REPLACED WITH BEARINGS AS SHOWN.

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

CONTRACTOR SHALL CORE INTO EXISTING BENT CAP TO INSTALL 1-3/4" ANCHOR BOLTS. BOLTS SHALL BE ADHESIVELY ANCHORED BOLTS. ADHESIVE FOR NEW ANCHOR BOLTS SHALL BE AN NCDOT-APPROVED PRODUCT.

EMBEDMENT DEPTH OF ANCHOR BOLT SHALL BE 12" OR THE DEPTH RECOMMENDED BY THE ADHESIVE MANUFACTURER TO ATTAIN PULL-OUT STRENGTH OF THE TEST LOAD GIVEN BELOW, WHICHEVER DEPTH IS GREATER. FIELD TESTING IS NOT REQUIRED.

DESIGN LOAD SHALL BE 20,000 LBS. TENSION FOR 1-3/4" ANCHOR BOLTS.

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

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

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

SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL BE GALVANIZED. 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.

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

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

FOR ELASTOMERIC BEARINGS, SEE SPECIAL PROVISIONS.

ALL AREAS OF PAINT OR GALVANIZING THAT ARE REMOVED FOR WELDING OR DAMAGED DURING INSTALLATION OF THE ELASTOMERIC BEARINGS AND OTHER ASSOCIATED COMPONENTS SHALL BE REPAIRED IN ACCORDANCE WITH STANDARD SPECIFICATIONS.

PROJECT NO. **15BPR.148**
FORSYTH COUNTY
BRIDGE NO. **330078**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ELASTOMERIC BEARING DETAILS (STEEL SUPERSTRUCTURE)

REVISIONS						SHEET NO. S-12
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 13
2			4			

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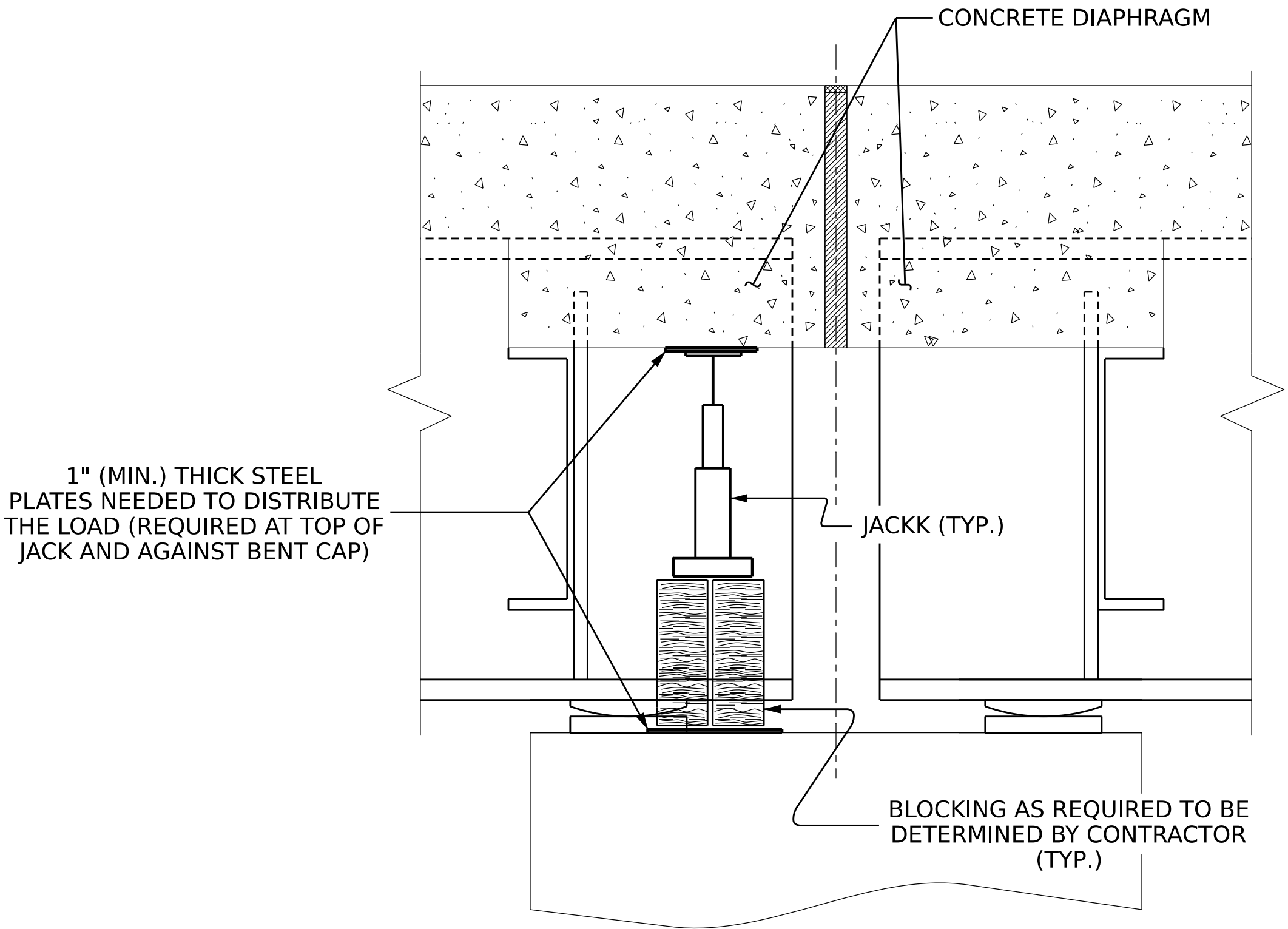
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SECTION THRU DIAPHRAGM

BRIDGE JACKING TABLE					
BRIDGE	LOCATION	SPAN	BEAM(S)	BRIDGE JACKIING TYPE	DEAD LOAD (DC+DW) (KIPS)
330078	BENT 1	A	1 - 14	II	90 KIPS
		B	1 - 14	II	130 KIPS
330078	BENT 2	B	1 - 14	II	130 KIPS
		C	1 - 14	II	130 KIPS
330078	BENT 3	C	1 - 14	II	130 KIPS
		D	1 - 14	II	83 KIPS

NOTES

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

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

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

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

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

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

THE MAXIMUM DIFFERENTIAL BETWEEN ADJACENT BEAMS THAT ARE BEING JACKED IS 3/8".

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

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

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

FOR WORKING DRAWING SUBMITTALS, SEE SPECIAL PROVISIONS.

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

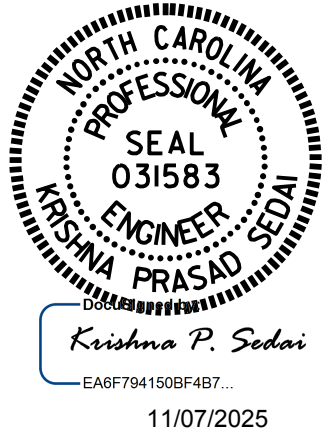
TYPE II BRIDGE JACKING SHALL BE DONE WITH A HYDRUALIC JACKING SYSTEM THAT LIFTS EACH BEAM ALONG ENTIRE SPAN END WITH EQUAL FORCE AND AT AN EQUAL RATE.

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

PROJECT NO. 15BPR.148

FORSYTH COUNTY

BRIDGE NO. 330078



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE JACKING
DETAILS
(STEEL SUPERSTRUCTURE)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS 13
2			4			

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " 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 $\frac{1}{2}$ " 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 $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset 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 $\frac{5}{16}$ " 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 $\frac{1}{16}$ " OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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