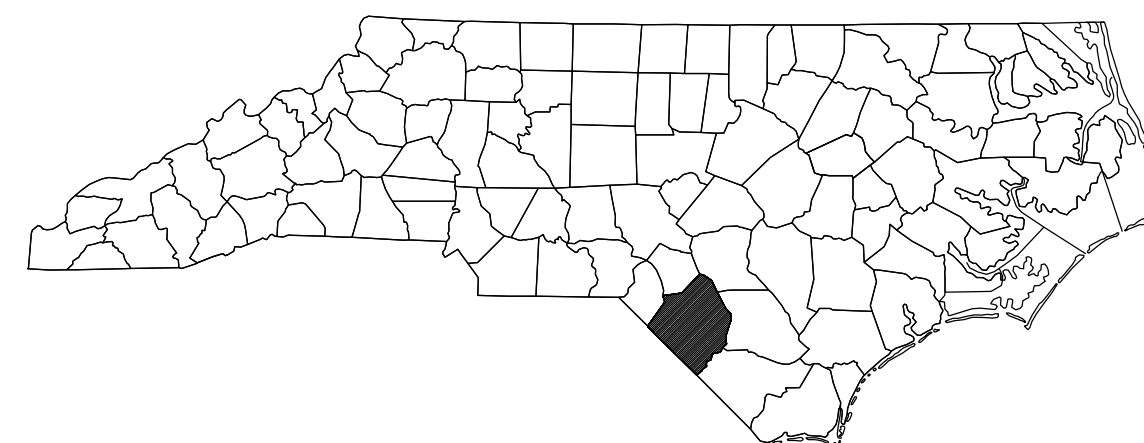


CONTRACT NO: C204845 TIP PROJECT: HI-0017



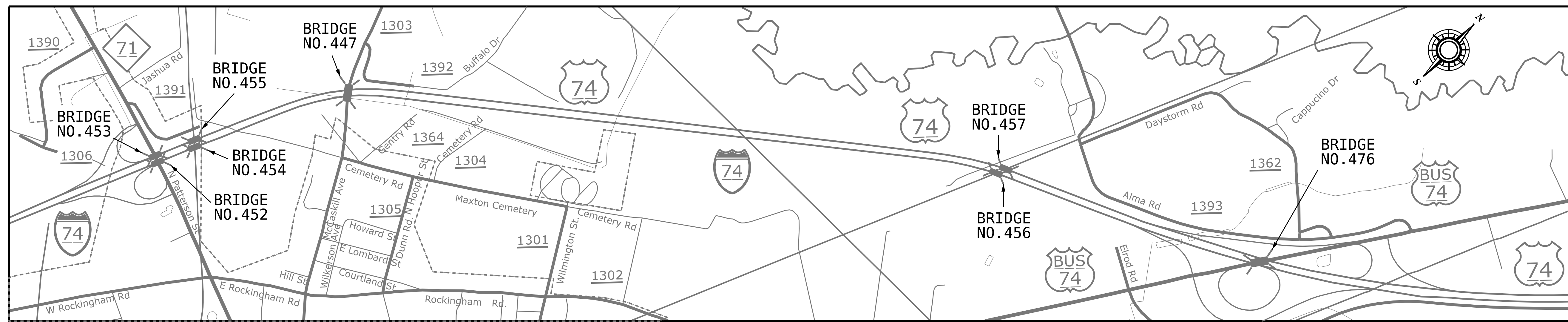
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

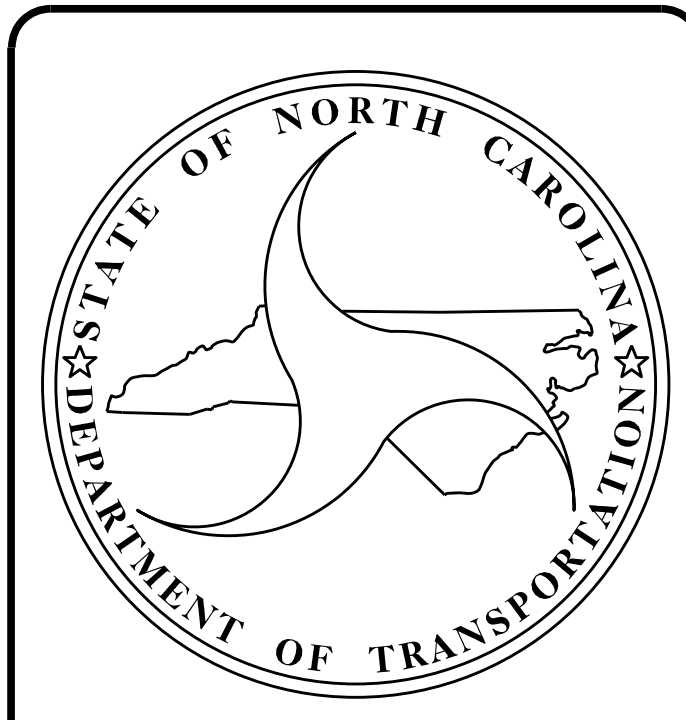
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HI-0017	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
49988.1.1	4998831	P.E.	
49988.3.1	4998831	CONST.	
49988.2.2	4998831	UTILITIES	
49988.3.1	4998831	CONST.	

LOCATION: BRIDGE #770447 ON SR 1303 OVER US 74.
 BRIDGE #770452 & #770453 ON US 74 BYP OVER NC 71.
 BRIDGE #770454 & #770455 ON US 74 BYP OVER CSX. (MP SE-274.6, DOT CROSSING #973585N & #973584G)
 BRIDGE #770456 & #970457 ON US 74 BYP OVER CSX. (MP AG-245.94 & AG-245.92, DOT CROSSING #938183P & #938182H)
 BRIDGE #770476 ON US 74 BUS OVER US 74.

TYPE OF WORK: BRIDGE PRESERVATION - BRIDGE DECK & BARRIER RAIL SURFACE PREPARATION FOR SILANE TREATMENT, RECONSTRUCTION OF BRIDGE DECK JOINTS & SEALS, AND SUBSTRUCTURE REPAIR USING SHOTCRETE, CONCRETE, AND EPOXY RESIN INJECTION; PRESTRESSED CONCRETE CORED SLAB (PCCS) BRIDGE DECK SURFACE PREPARATION AND PLACING ASPHALT WEARING SURFACE, BENT JOINT RECONSTRUCTION, REPLACEMENT OF PCCS POST-TENSIONING STRANDS, AND PCCS BEAM REPAIRS.



VICINITY MAP



DESIGN DATA

BRIDGE #770447 ADT (2019) =	2,500
BRIDGE #770452 ADT (2018) =	9,750
BRIDGE #770453 ADT (2019) =	10,250
BRIDGE #770454 ADT (2018) =	9,750
BRIDGE #770455 ADT (2019) =	10,250
BRIDGE #770456 ADT (2019) =	8,750
BRIDGE #770457 ADT (2019) =	8,750
BRIDGE #770476 ADT (2018) =	3,700

PROJECT LENGTH

BRIDGE # 770447 =	0.046 MILES
BRIDGE # 770452 =	0.031 MILES
BRIDGE # 770453 =	0.031 MILES
BRIDGE # 770454 =	0.024 MILES
BRIDGE # 770455 =	0.024 MILES
BRIDGE # 770456 =	0.035 MILES
BRIDGE # 770457 =	0.036 MILES
BRIDGE # 770476 =	0.092 MILES

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

2018 STANDARD SPECIFICATIONS

LETTING DATE: DECEMBER 19, 2023	Kristy W. Alford, P.E., CPM PROJECT ENGINEER Aster G. Abraha, P.E. PROJECT DESIGN ENGINEER
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CONTRACT NO: C204845 TIP PROJECT: HI-0017

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

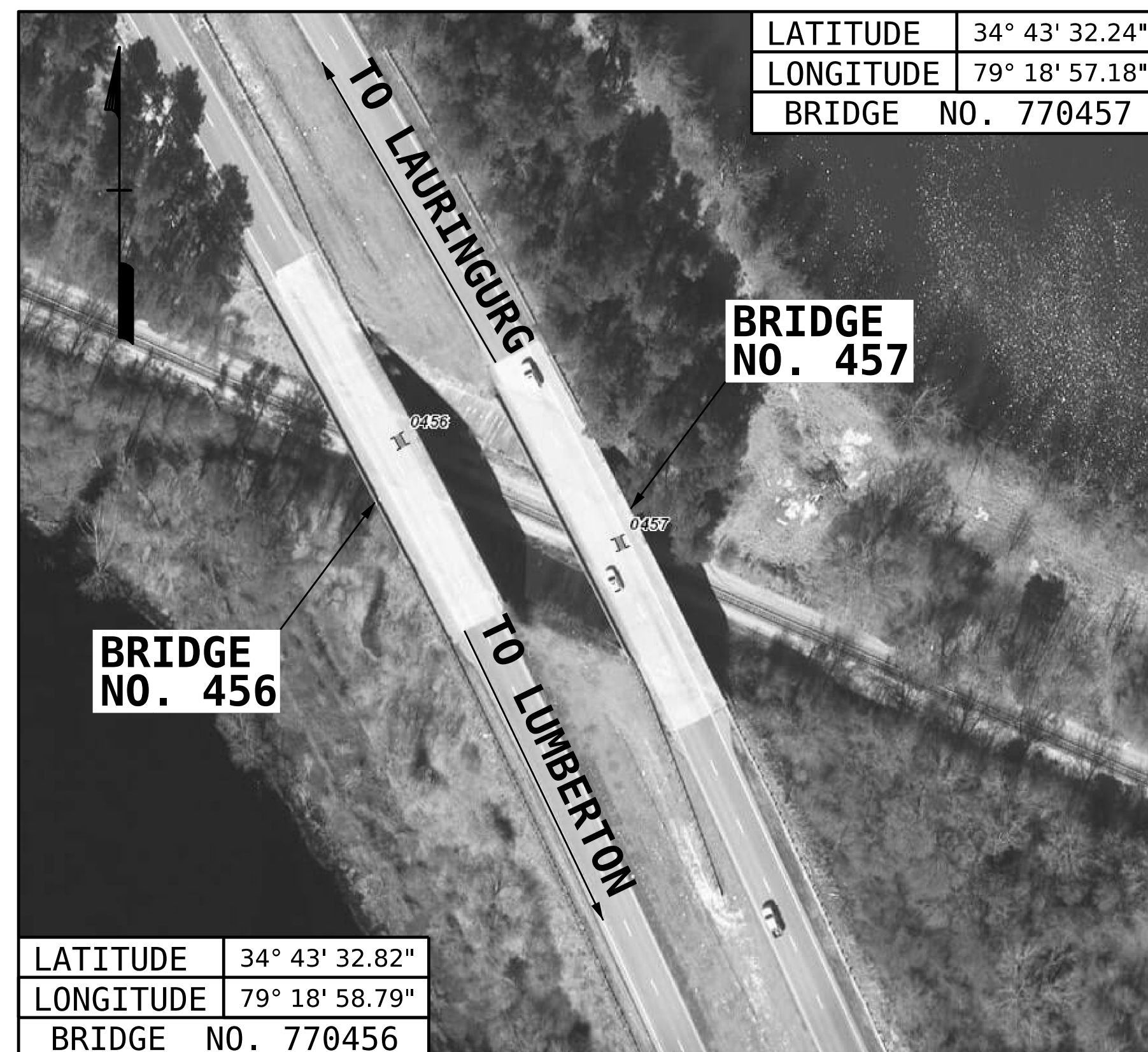
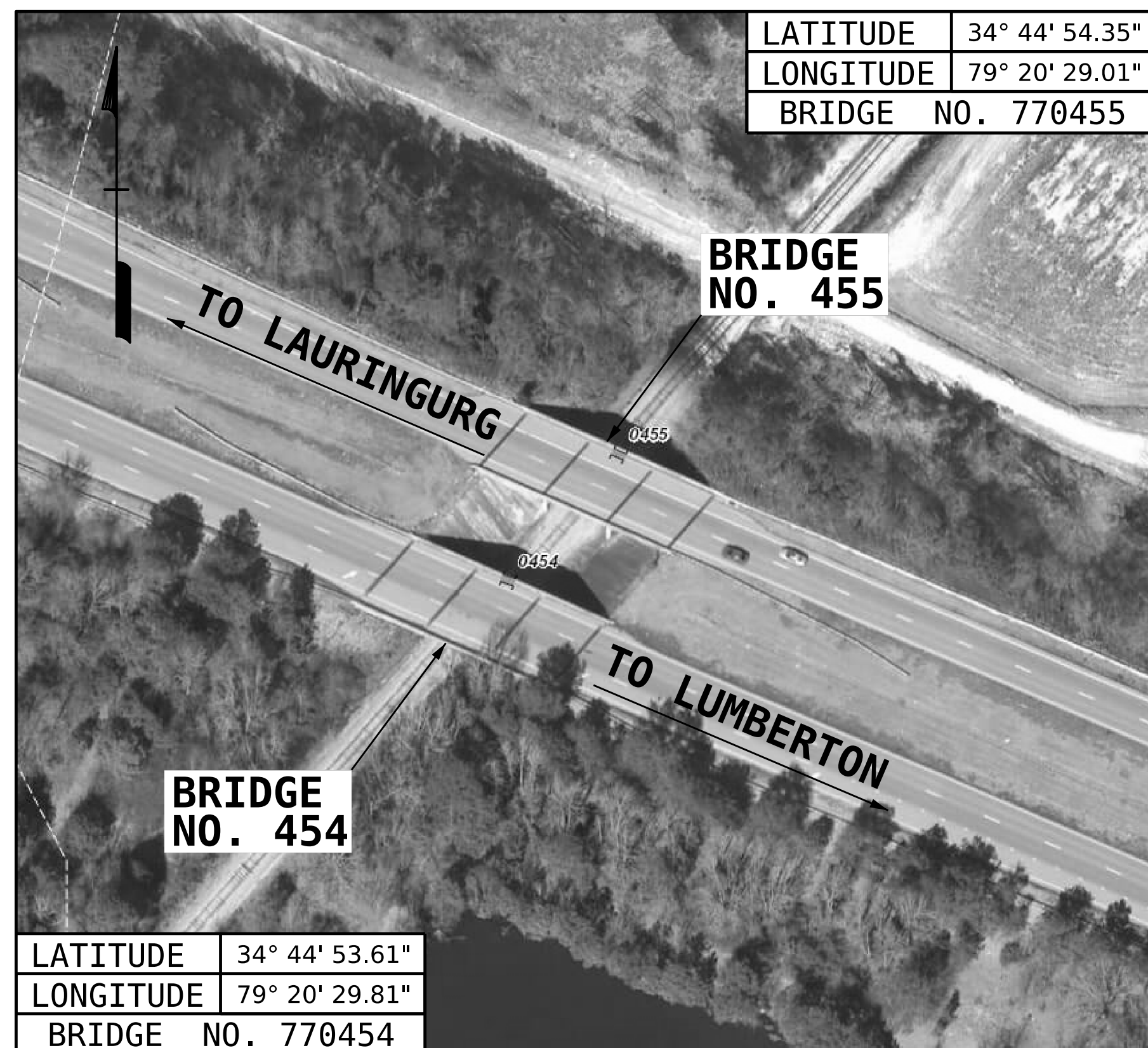
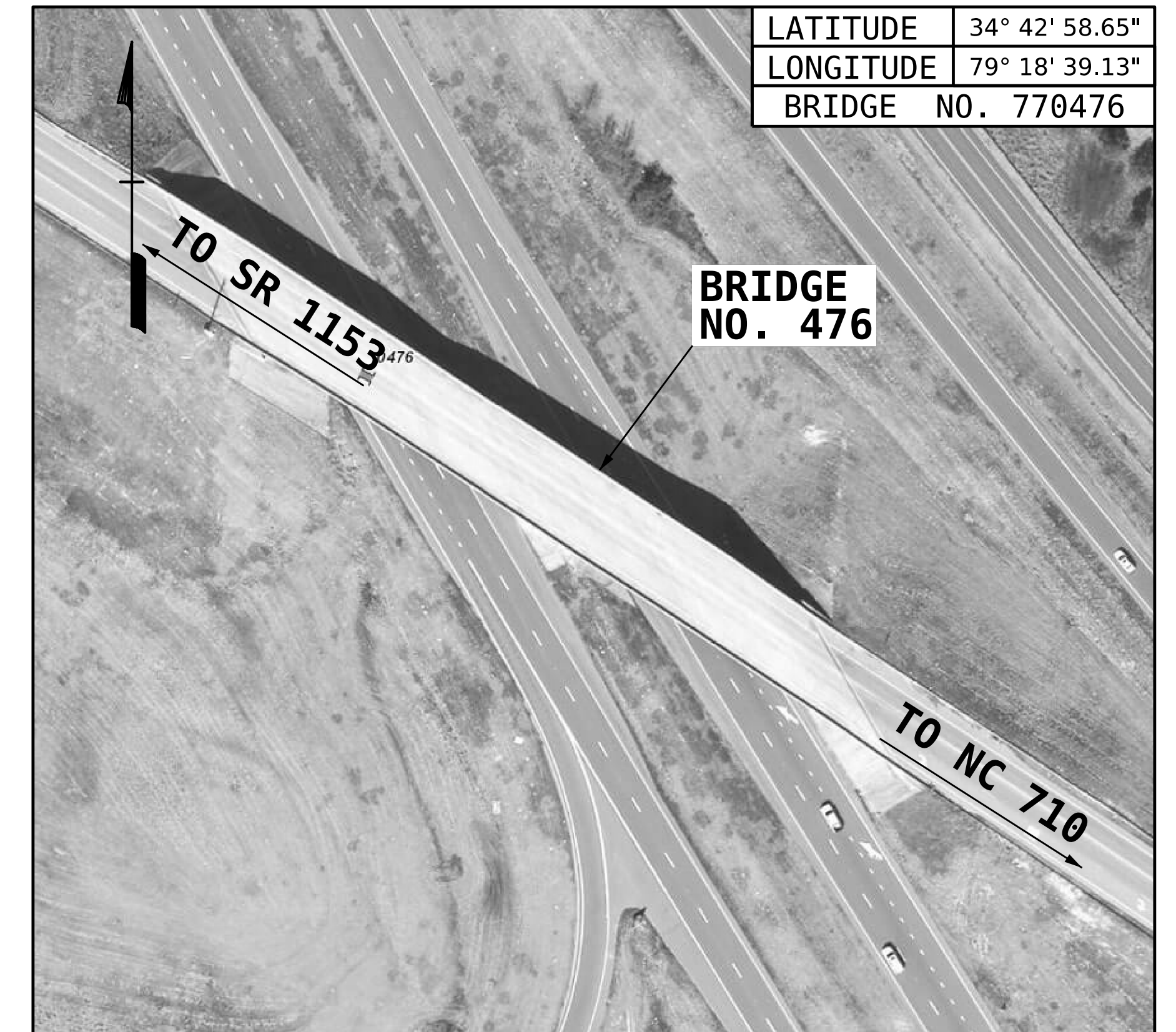
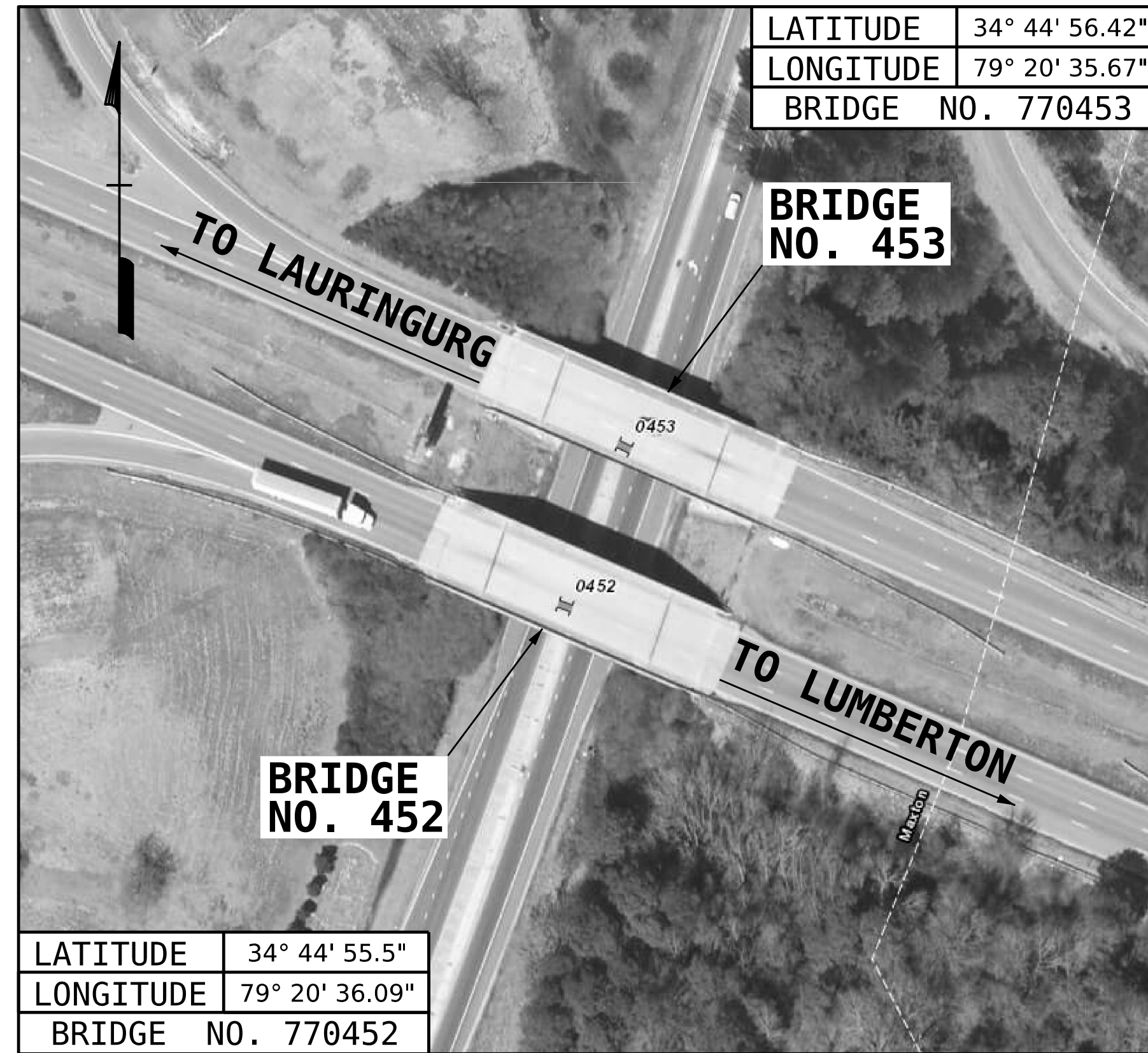
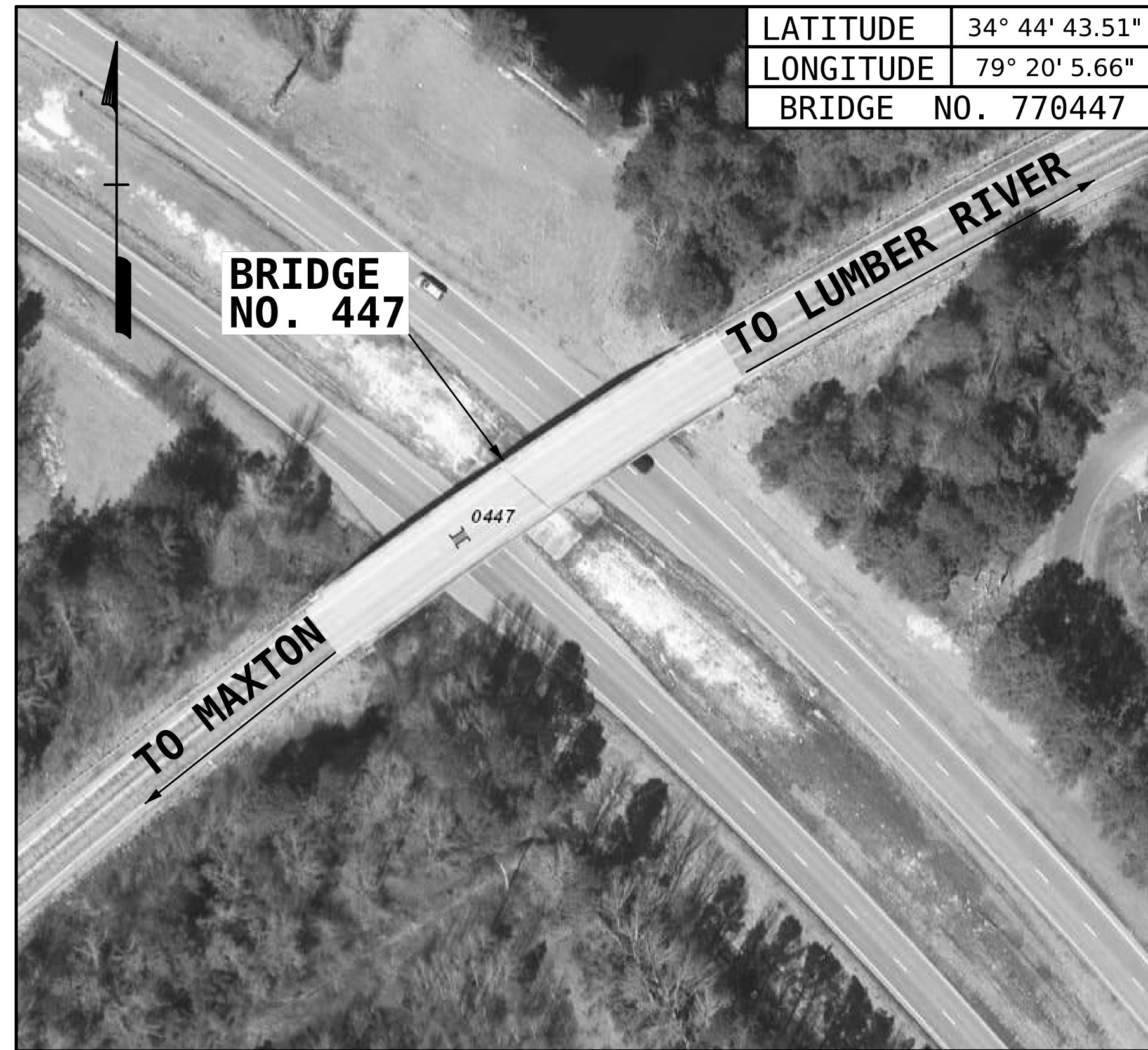
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HI-0017	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49988.1.1	4998831	P.E.	
49988.2.1	4998831	R.O.W.	
49988.2.2	4998831	UTILITIES	
49988.3.1	4998831	CONST.	

LOCATION: BRIDGE #770447 ON SR 1303 OVER US 74.
 BRIDGE #770452 & #770453 ON US 74 BYP OVER NC 71.
 BRIDGE #770454 & #770455 ON US 74 BYP OVER CSX. (MP SE-274.6, DOT CROSSING #973585N & #973584G)
 BRIDGE #770456 & #970457 ON US 74 BYP OVER CSX. (MP AG-245.94 & AG-245.92, DOT CROSSING #938183P & #938182H)
 BRIDGE #770476 ON US 74 BUS OVER US 74.

TYPE OF WORK: BRIDGE PRESERVATION - BRIDGE DECK & BARRIER RAIL SURFACE PREPARATION FOR SILANE TREATMENT, RECONSTRUCTION OF BRIDGE DECK JOINTS & SEALS, AND SUBSTRUCTURE REPAIR USING SHOTCRETE, CONCRETE, AND EPOXY RESIN INJECTION; PRESTRESSED CONCRETE CORED SLAB (PCCS) BRIDGE DECK SURFACE PREPARATION AND PLACING ASPHALT WEARING SURFACE, BENT JOINT RECONSTRUCTION, REPLACEMENT OF PCCS POST-TENSIONING STRANDS, AND PCCS BEAM REPAIRS.

INDEX OF STRUCTURES SHEETS

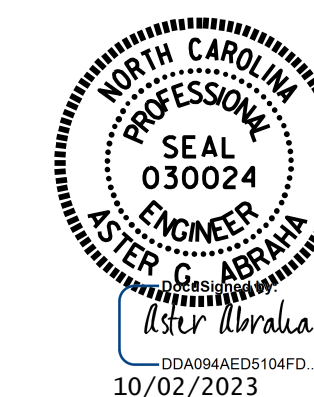
<u>SHEET No.</u>	<u>DESCRIPTION</u>	<u>SHEET No.</u>	<u>DESCRIPTION</u>	<u>SHEET No.</u>	<u>DESCRIPTION</u>
I	TITLE SHEET	STRUCTURE No. 770454		STRUCTURE No. 770456	
IA	INDEX OF SHEETS	S4-1	GENERAL DRAWING	S6-1	GENERAL DRAWING
S-1	LOCATION SKETCHES	S4-2	TYPICAL SECTION	S6-2	TYPICAL SECTION
S-2	TOTAL BILL OF MATERIAL & GENERAL NOTES	S4-3	SURFACE PREPARATION	S6-3	SURFACE PREPARATION
		S4-4	POST-TENSIONING STRAND REPAIR DETAILS	S6-4	JOINT REPAIR
		S4-5	JOINT REPAIR	S6-5	END BENTS
STRUCTURE No. 770447		S4-6	SUPERSTRUCTURE REPAIR	S6-6 & S6-7	BENTS
SI-1	GENERAL DRAWING	S4-7	PCCS REPAIR DETAILS		
SI-2	TYPICAL SECTION	STRUCTURE No. 770455		STRUCTURE No. 770457	
SI-3	SURFACE PREPARATION	S5-1	GENERAL DRAWING	S7-1	GENERAL DRAWING
SI-4	JOINT REPAIR	S5-2	TYPICAL SECTION	S7-2	TYPICAL SECTION
SI-5	END BENTS	S5-3	SURFACE PREPARATION	S7-3	SURFACE PREPARATION
SI-6	BENT	S5-4	POST-TENSIONING STRAND REPAIR DETAILS	S7-4	JOINT REPAIR
STRUCTURE No. 770452		S5-5	JOINT REPAIR	STRUCTURE No. 770476	
S2-1	GENERAL DRAWING	S5-6	SUPERSTRUCTURE REPAIR	S8-1	GENERAL DRAWING
S2-2	TYPICAL SECTION	S5-7	PCCS REPAIR DETAILS	S8-2	TYPICAL SECTION
S2-3	SURFACE PREPARATION			S8-3	SURFACE PREPARATION
S2-4	JOINT REPAIR			S8-4	JOINT REPAIR
STRUCTURE No. 770453				STANDARD SHEETS	
S3-1	GENERAL DRAWING			SN	STANDARD NOTES
S3-2	TYPICAL SECTION			CSXN	CSX NOTES
S3-3	SURFACE PREPARATION				
S3-4	JOINT REPAIR				



LOCATION SKETCH

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

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770447, 770452, 770453, 770454, 770455, 770456, 770457 & 770476**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

LOCATION SKETCHES

DRAWN BY : G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

TOTAL BILL OF MATERIAL																
BRIDGE NO.	INCIDENTAL MILLING	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	ASPHALT BINDER FOR PLANT MIX	EPOXY RESIN INJECTION	SHOTCRETE REPAIRS	VOLUMETRIC MIXER	ASPHALT PLUG JOINTS FOR PRESERVATION	FOAM JOINT SEALS FOR PRESERVATION	ELASTOMERIC CONCRETE FOR PRESERVATION	REPAIRS TO PRESTRESSED CONCRETE CORED SLABS	BRIDGE JOINT DEMOLITION	SILANE BARRIER RAIL TREATMENT	SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	SHOTBLASTING BRIDGE DECK	SILANE DECK TREATMENT	POST TENSIONING STRAND REPLACEMENT
	SQ. YDS.	TONS	TONS	LIN. FT.	CU. FT.	LUMP SUM	LIN. FT.	LIN. FT.	CU. FT.	CU. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.	EA.
770447				5.5	4.0	LUMP SUM		113.1	12.9		68.5	1,782.0	1782.0	1,079.6	1,079.6	
770452						LUMP SUM		194.6	16.6		88.3	1,194.3	1,194.3	985.0	985.0	
770453				19.1		LUMP SUM		194.6	16.6		88.3	1,294.2	1,294.2	917.6	917.6	
770454	864.3	145.2	8.7			LUMP SUM	202.2			4.2						6
770455	742.8	123.3	7.4			LUMP SUM	176.8			3.2						6
770456						LUMP SUM		257.3	43.9		234.0	1,310.0	1,310.0	1,089.2	1,089.2	
770457						LUMP SUM		253.1	42.8		228.4	1,319.4	1,319.4	1,104.1	1,104.1	
770476						LUMP SUM		222.0				3,666.6	3,666.6	2,676.4	2,676.4	
TOTAL	1,607.1	268.5	16.1	24.6	4.0	LUMP SUM	379.0	1,234.7	132.8	7.4	707.5	10,566.5	10,566.5	7,851.9	7,851.9	12

GENERAL NOTES:

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

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

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

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

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

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

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

FOR 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.

ALL PAVEMENT MARKINGS WILL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL 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 LANE(S) SHALL BE KEPT FREE AND CLEAR OF DEBRIS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ASPHALT PLUG JOINTS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

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

FOR CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT, SEE SPECIAL PROVISIONS.

FOR REPAIRS TO PRESTRESSED CONCRETE CORED SLABS OR SPLICING OF PRESTRESSED STRANDS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR POST-TENSIONING STRAND REPLACEMENT, SEE SPECIAL PROVISIONS.

FOR SURFACE PREPARATION FOR CONCRETE BARRIER AND SILANE BARRIER RAIL TREATMENT, SEE SILANE BARRIER RAIL TREATMENT SPECIAL PROVISION.

FOR RAILROAD GENERAL SPECIAL PROVISIONS - CSX TRANSPORTATION, INC., SEE SPECIAL PROVISIONS.

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

ITEM	DESCRIPTION	UNIT
1	CONCRETE REPAIRS	CU. FT.
2	SPLICING OF PRESTRESSED STRAND	EA.
3	CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	SQ. FT.

PROJECT NO. HI-0017
ROBESON COUNTY
 BRIDGE NO. : 770452, 770453
770454, 770455, 770447
770456, 770457, 770476



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**BILL OF MATERIAL
 AND GENERAL NOTES**

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

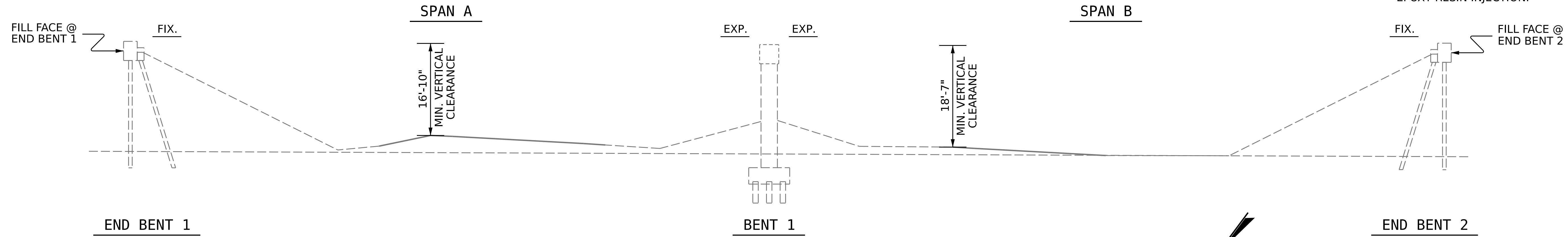
DRAWN BY : G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022

NOTES

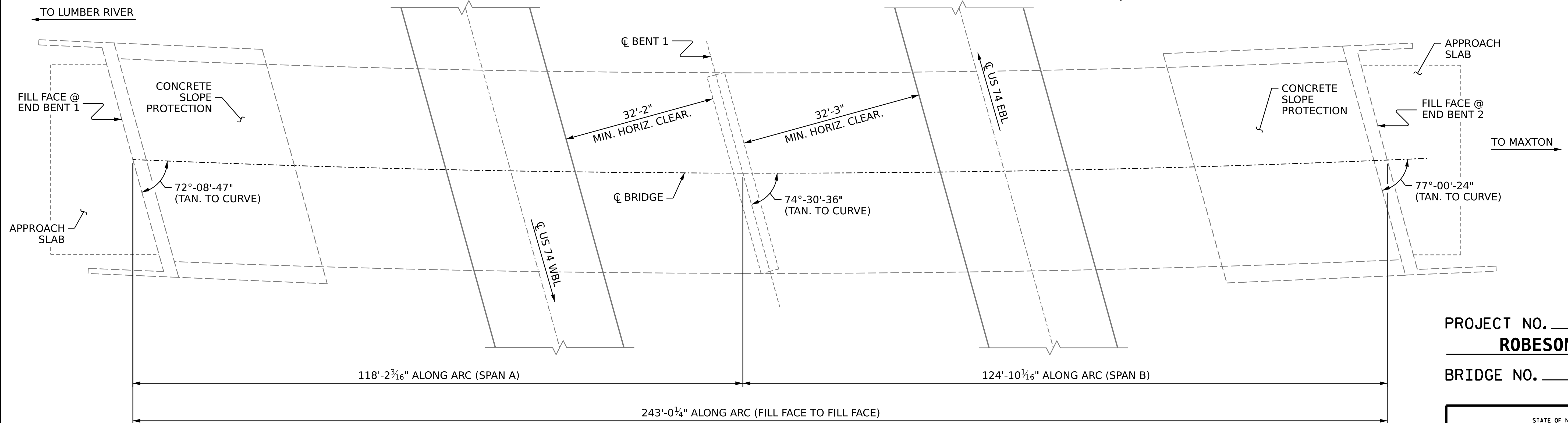
- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 05/24/2021.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CONCRETE RAIL SURFACE PREPARATION.
- PREPARE BRIDGE DECK BY SHOTBLASTING METHODS.
- PLACE SILANE TREATMENT ON DECK AND BARRIER RAILS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS WITH ELASTOMERIC CONCRETE, AND INSTALL FOAM JOINT SEALS.
- SUBSTRUCTURE REPAIR USING SHOTCRETE, CONCRETE, AND EPOXY RESIN INJECTION.



SECTION ALONG Q ROADWAY

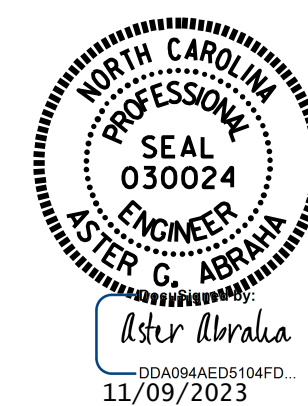
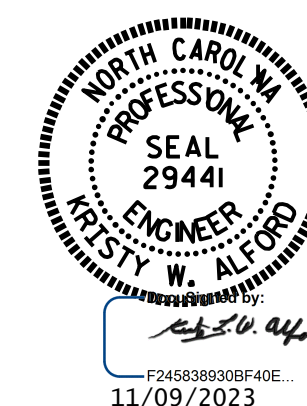


PLAN

(FOOTINGS, COLUMNS & PILES NOT SHOWN FOR CLARITY)

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770447**

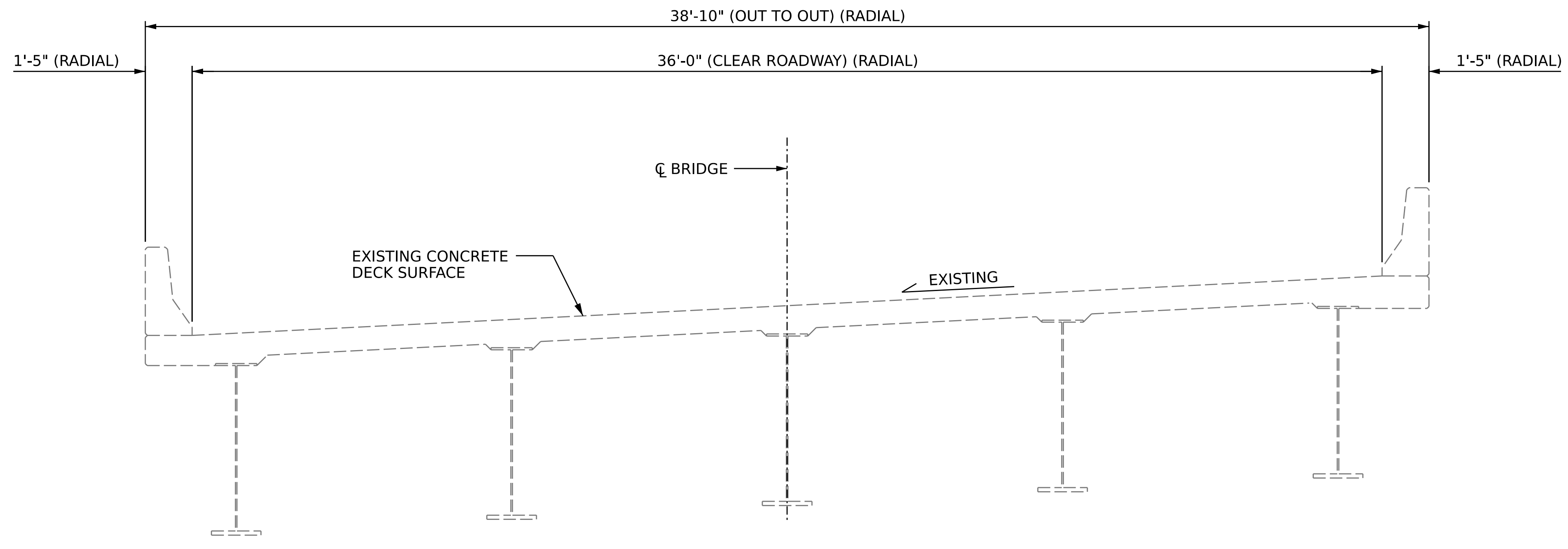
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1303
 OVER US 74 BETWEEN
 NC 71 AND US 74 ALT



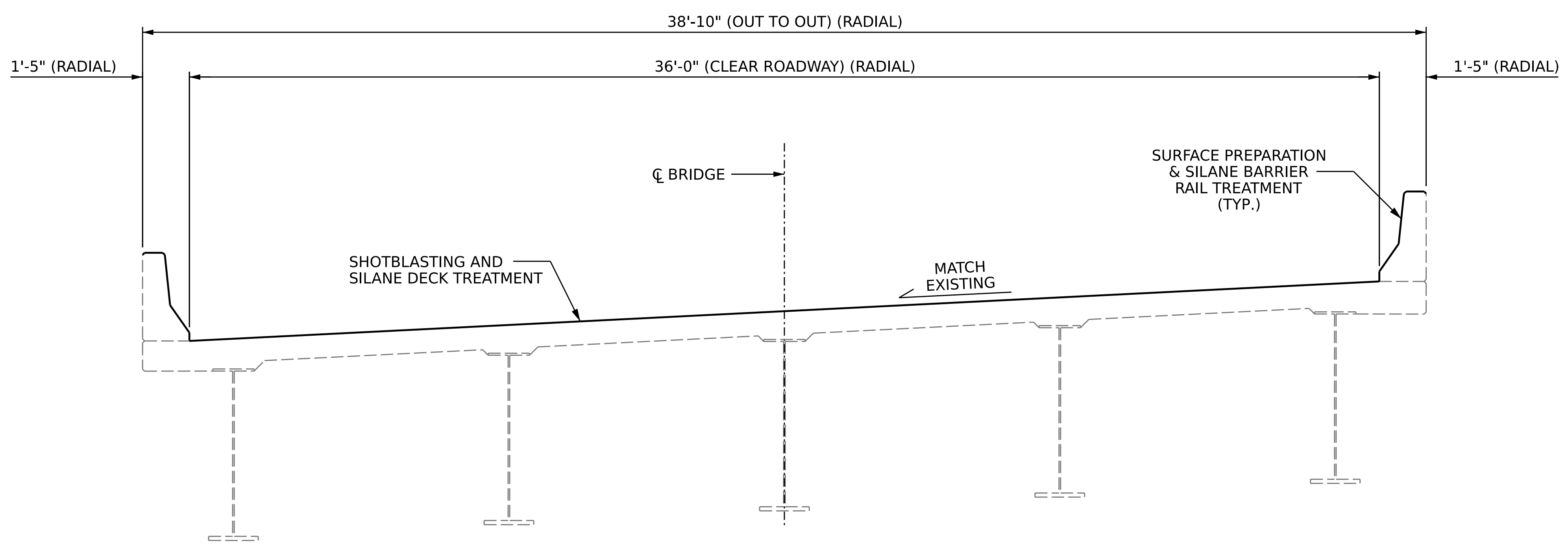
DRAWN BY : **N. VANDERMARK / J. BALDWIN** DATE : **6/2022**
 CHECKED BY : **G. AYES** DATE : **11/2022**
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-1
1			3			TOTAL SHEETS
2			4			6



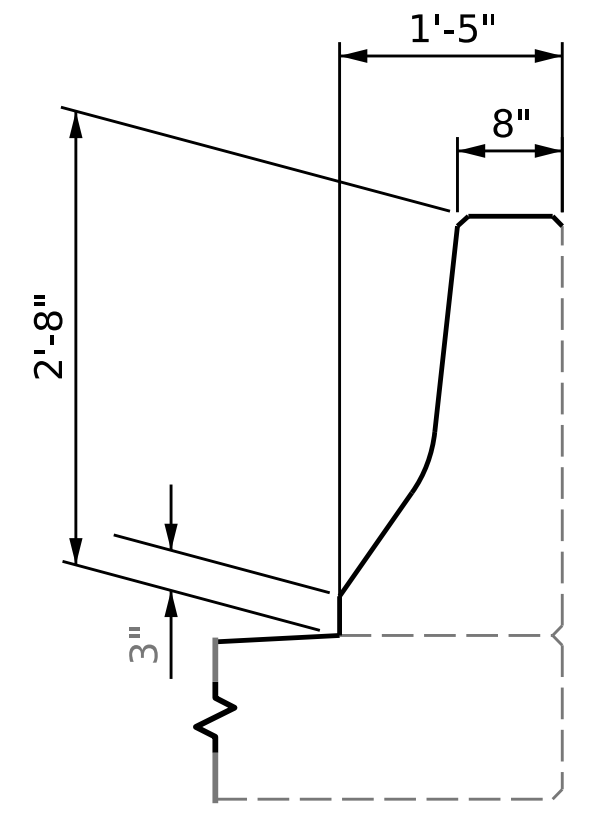
TYPICAL SECTION
(EXISTING)



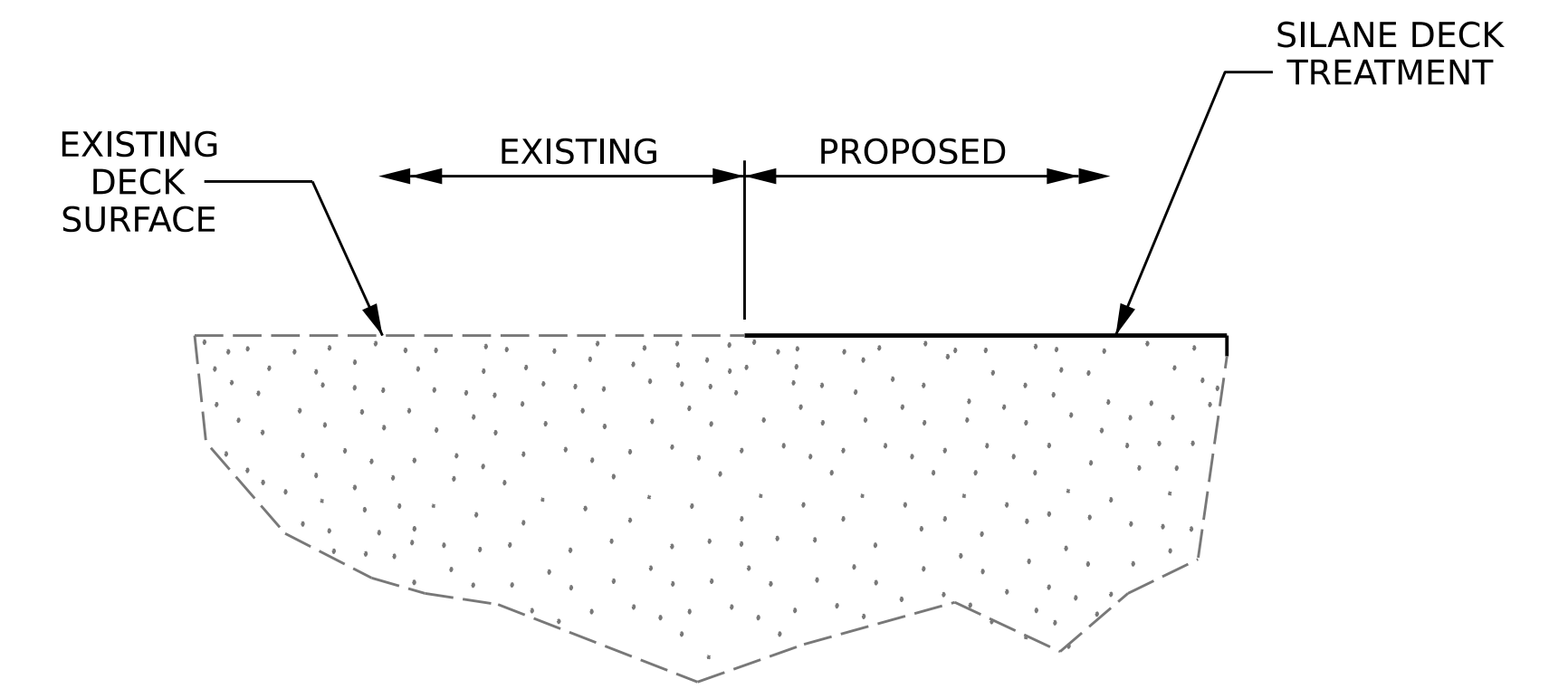
TYPICAL SECTION
(PROPOSED)

NOTES

SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.
 PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.

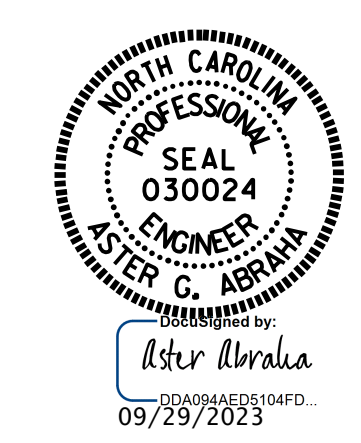


LIMIT OF BARRIER RAIL SILANE APPLICATION



SILANE DECK TREATMENT DETAIL

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770447**




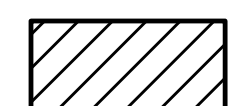
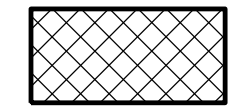


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 TYPICAL SECTION
 AND SILANE DECK
 TREATMENT DETAILS

DRAWN BY : **N. VANDERMARK / J. BALDWIN** DATE : **6/2022**
 CHECKED BY : **G. AYES** DATE : **11/2022**
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

REVISIONS						SHEET NO. S1-2 TOTAL SHEETS 6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
2			4			

REPAIR KEY

-  - SHOTBLASTING AND SILANE DECK TREATMENT
-  - CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT
-  - BRIDGE JOINT DEMOLITION
-  - EPOXY RESIN INJECTION
-  - EXISTING ELASTOMERIC CONCRETE

NOTES

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

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE SILANE DECK TREATMENT IS COMPLETE.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

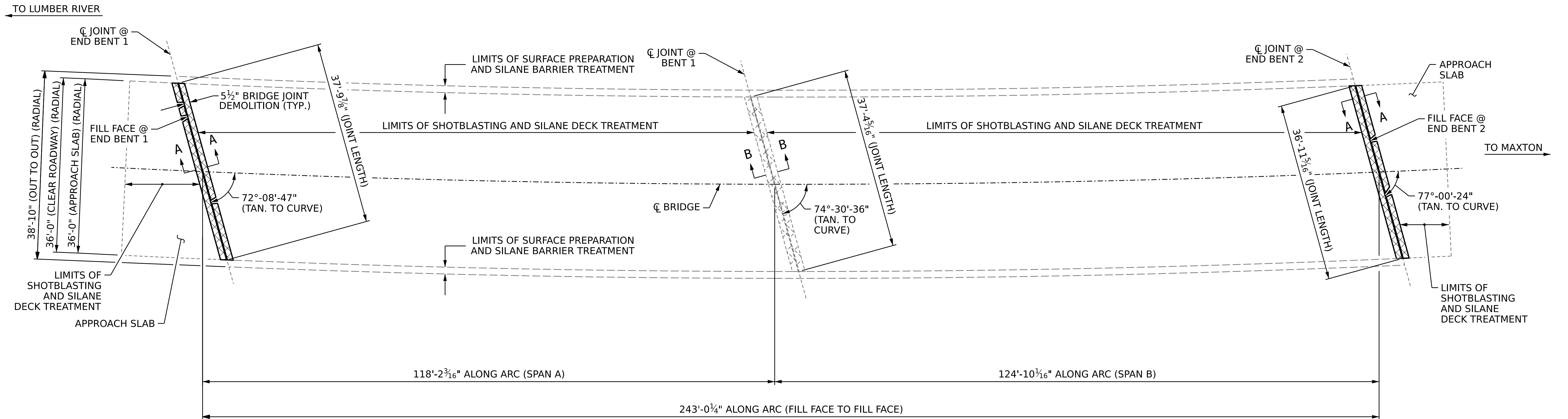
FOR SECTION A-A AND B-B, SEE JOINT REPAIR DETAILS SHEET S1-4.

SUMMARY OF QUANTITIES FOR DECK AND APPROACH SLABS

	ESTIMATE	ACTUAL
SHOTBLASTING BRIDGE DECK	1,079.6 SY	
SILANE DECK TREATMENT	1,079.6 SY	
CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	0 SF	
BRIDGE JOINT DEMOLITION	68.5 SF	

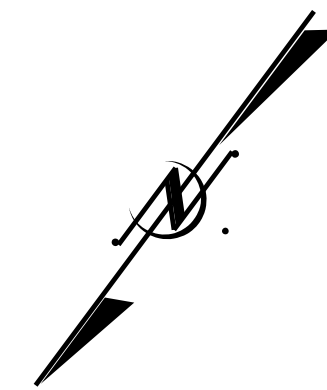
SUMMARY OF QUANTITIES FOR BARRIER RAIL TREATMENT

	ESTIMATE	ACTUAL
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	1,782.0 SF	
SILANE BARRIER RAIL TREATMENT	1,782.0 SF	



PLAN OF SPANS

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770447**



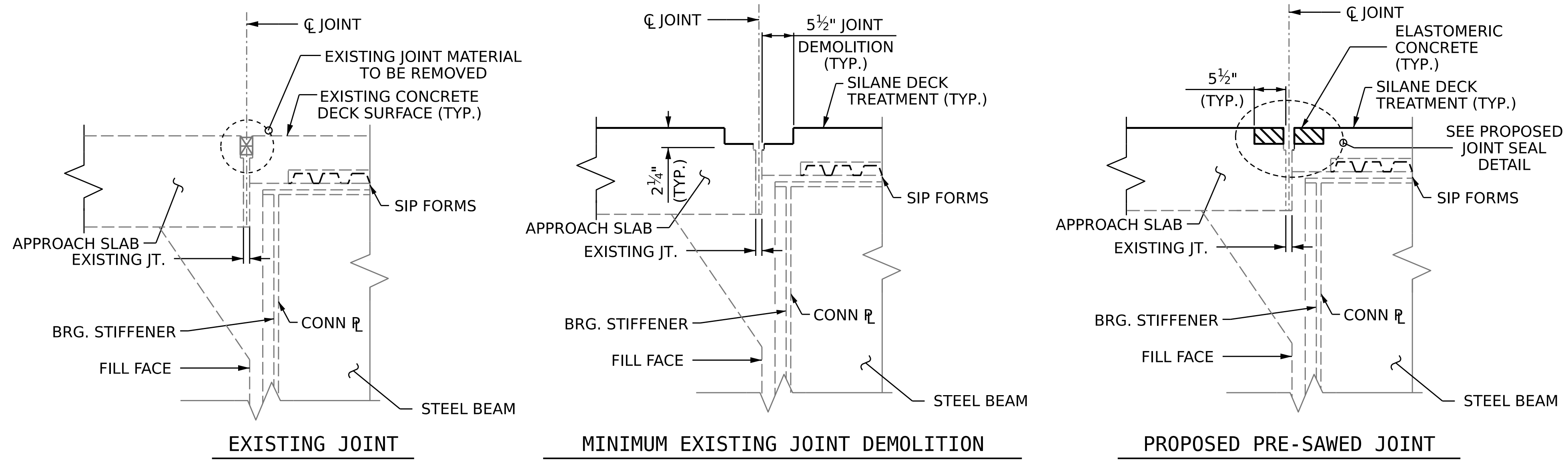
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SILANE DECK TREATMENT

DRAWN BY : J. BALDWIN DATE : 9/2022
 CHECKED BY : G. AYES DATE : 11/2022
 DESIGN ENGINEER OF RECORD: DATE :

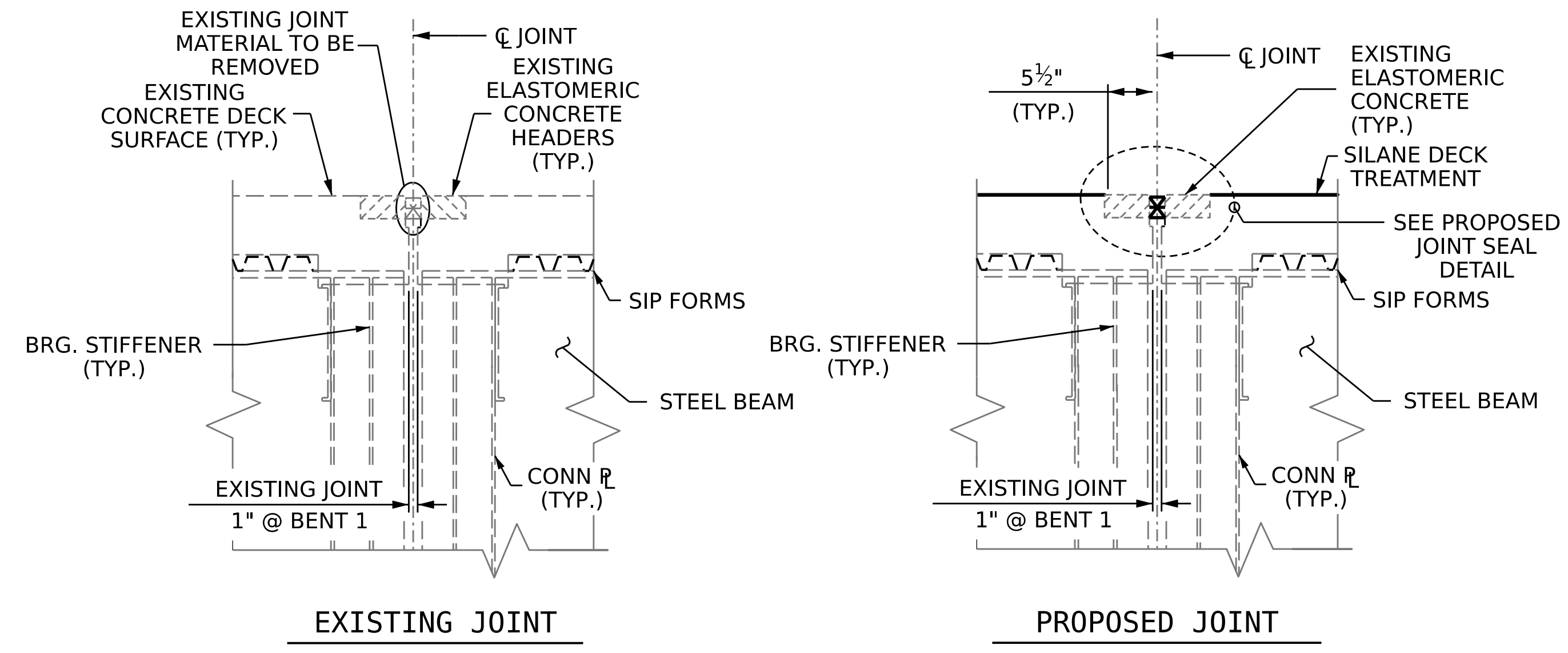
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S1-3
2			4			TOTAL SHEETS 6



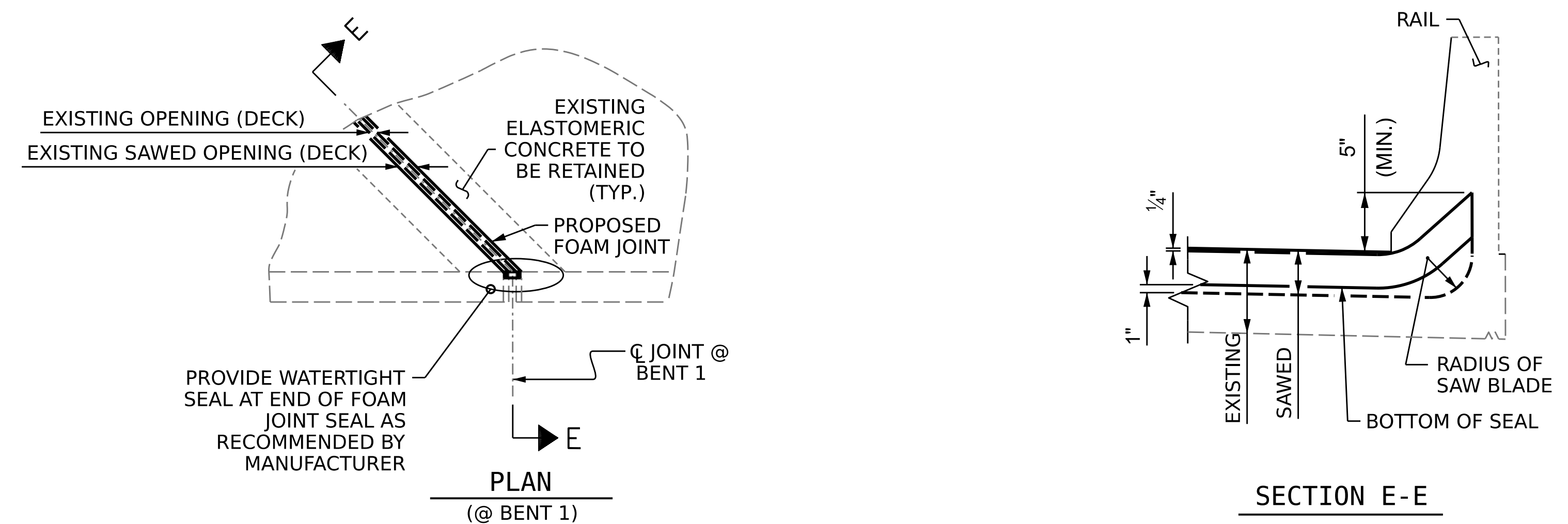
JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A



JOINT INSTALLATION SEQUENCE AT BENT

SECTION B-B



JOINT DETAIL AT BARRIER RAIL

NOTES

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

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

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.

UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.

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

THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.

FOR FOAM EXPANSION JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

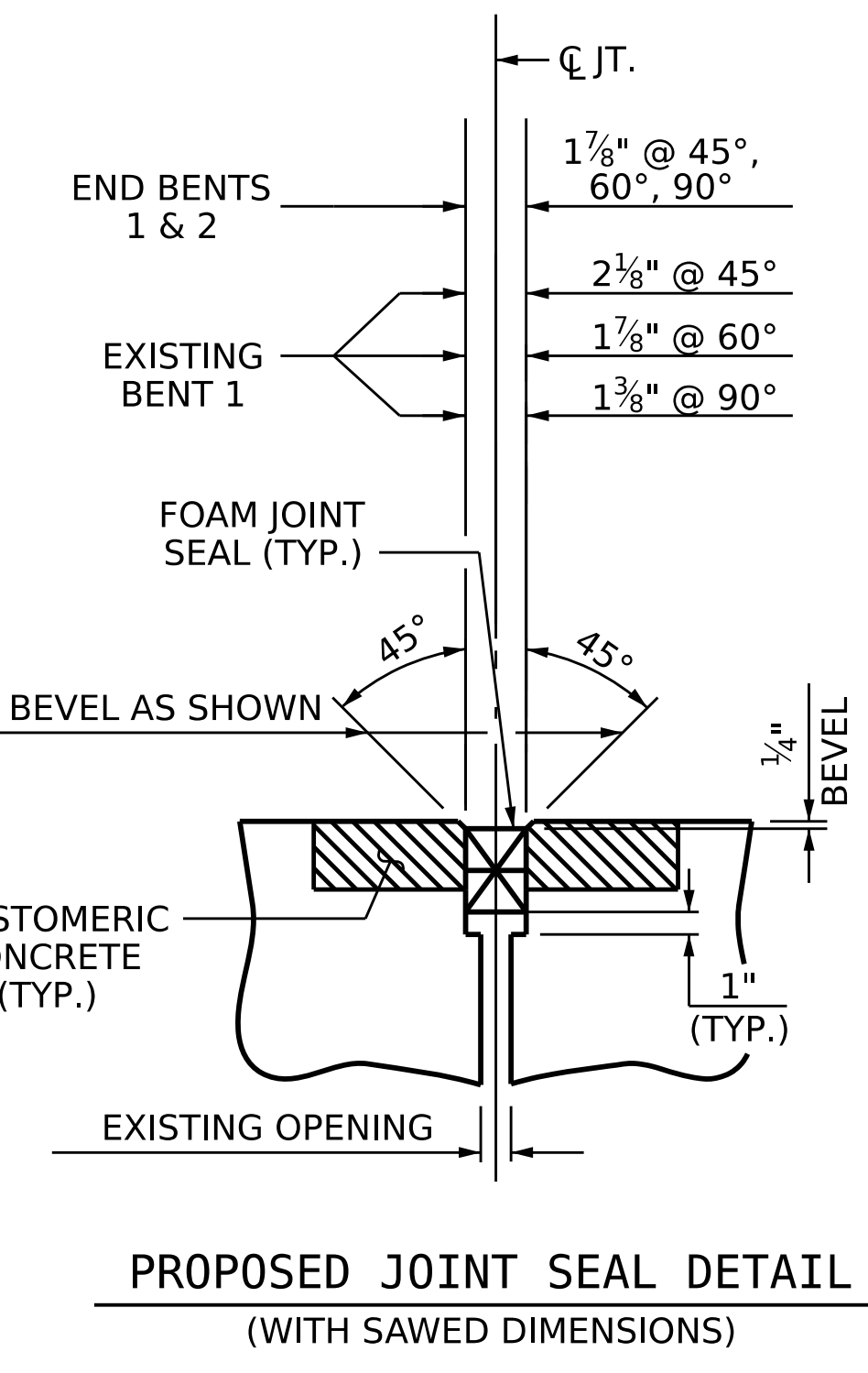
QUANTITIES SHOWN IN THE SUMMARY OF QUANTITIES TABLE ARE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

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

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

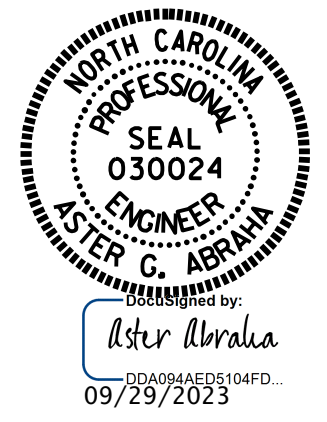
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.



SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	12.9 CF	
FOAM JOINT SEALS FOR PRESERVATION	113.1 LF	

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770447**



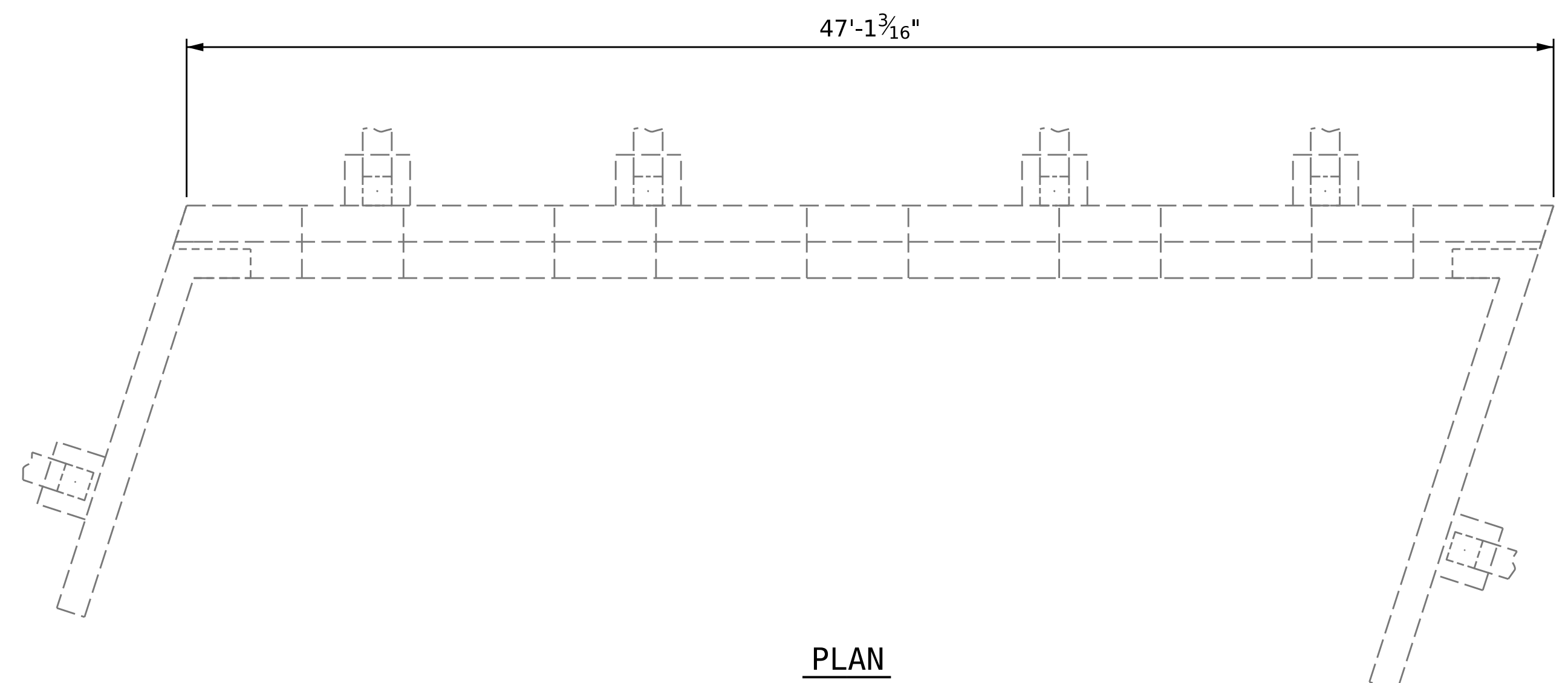
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

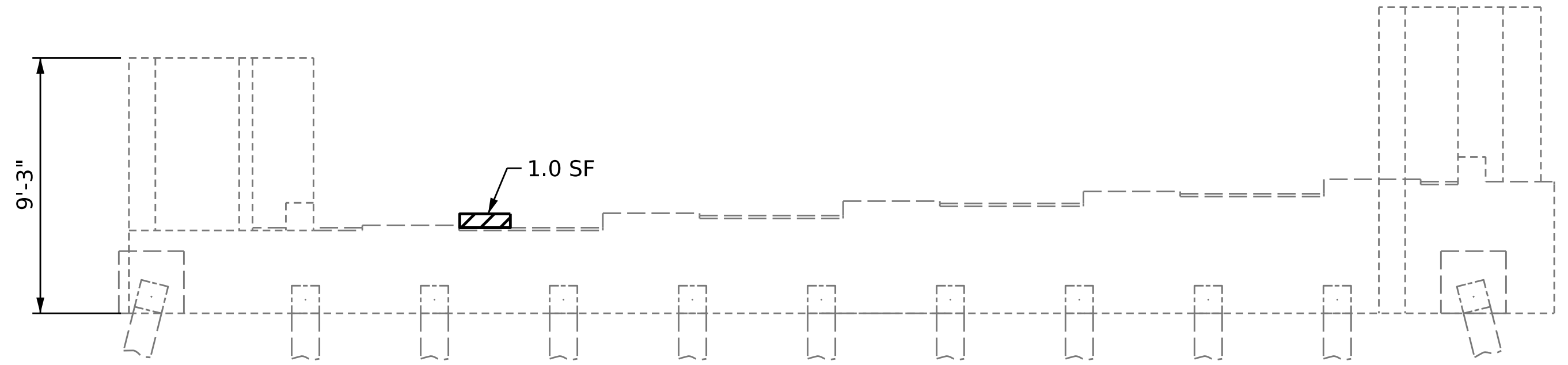
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S1-4
2			4			TOTAL SHEETS
						6

DRAWN BY : J. BALDWIN DATE : 9/2022
 CHECKED BY : G. AYES DATE : 11/2022
 DESIGN ENGINEER OF RECORD: DATE :

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

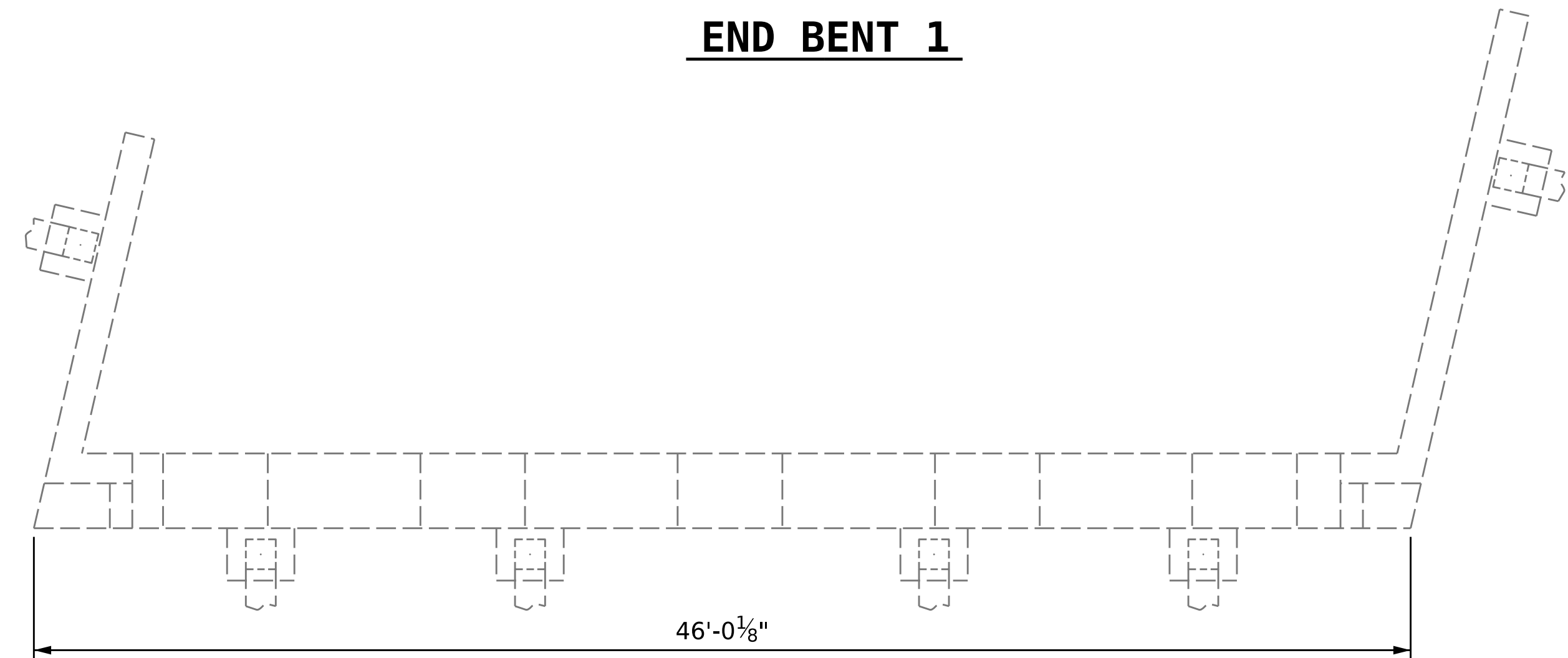


PLAN

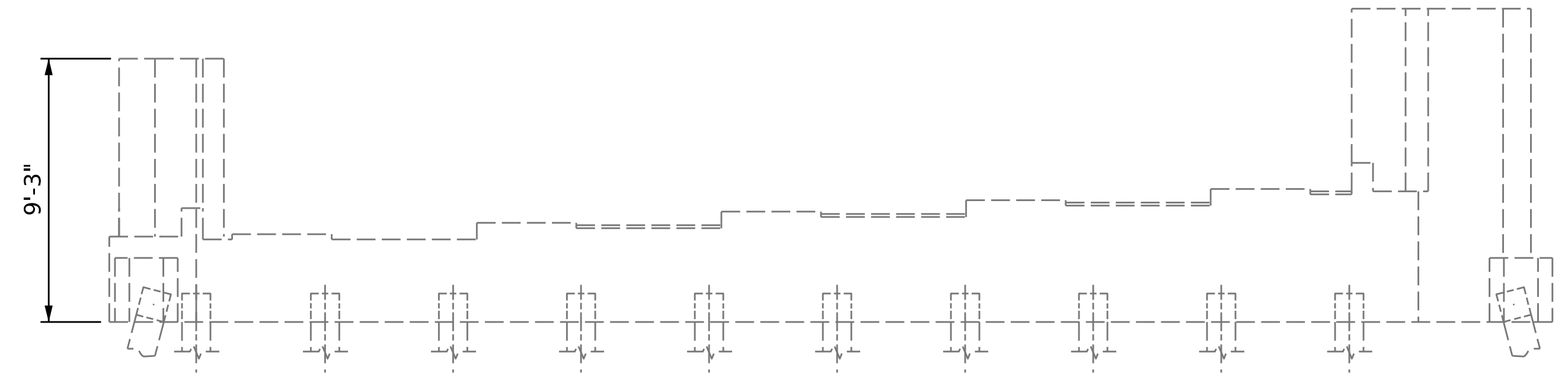


ELEVATION

END BENT 1



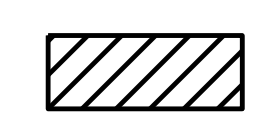
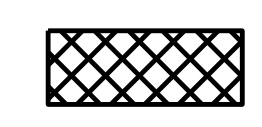
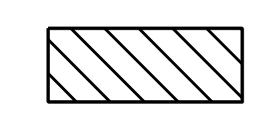

PLAN



ELEVATION

END BENT 2

REPAIR KEY

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  PREVIOUSLY ACCOUNTED FOR AREA
-  EPOXY RESIN INJECTION

SUBSTRUCTURE REPAIR QUANTITY TABLE

REPAIRS - END BENT 1 & 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CURTAIN WALL	1.0	0.5		
WINGWALL				
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CURTAIN WALL	0	0		
WINGWALL				
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
CURTAIN WALL		0		
WINGWALL				

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

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

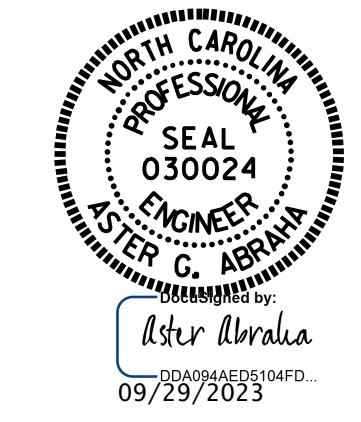
CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770447**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE
 END BENT 1 &
 END BENT 2**

NO.	REVISIONS			SHEET NO.
	BY:	DATE:	NO.	
1			3	S1-5
2			4	TOTAL SHEETS
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED				6

DRAWN BY : **J. BALDWIN** DATE : **08/2022**
 CHECKED BY : **G. AYES** DATE : **12/2022**
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

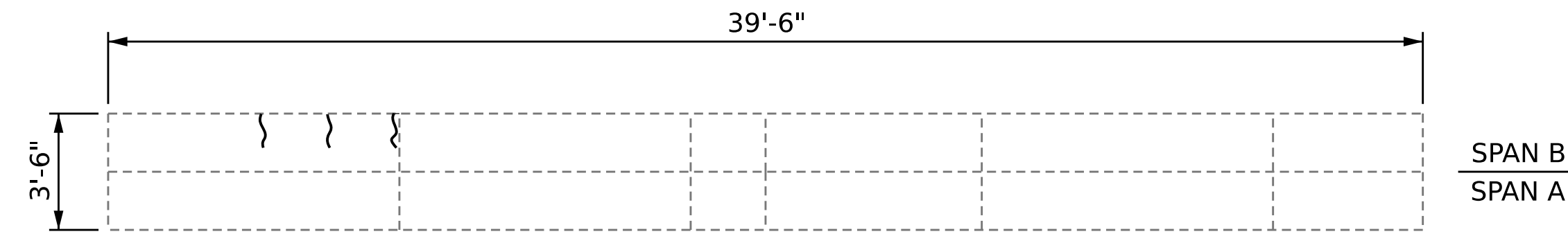
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

SUBSTRUCTURE REPAIR QUANTITY TABLE

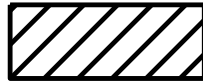

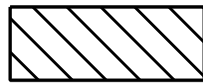

REPAIRS - BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	7.0	3.5		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		5.5		
COLUMN		0		

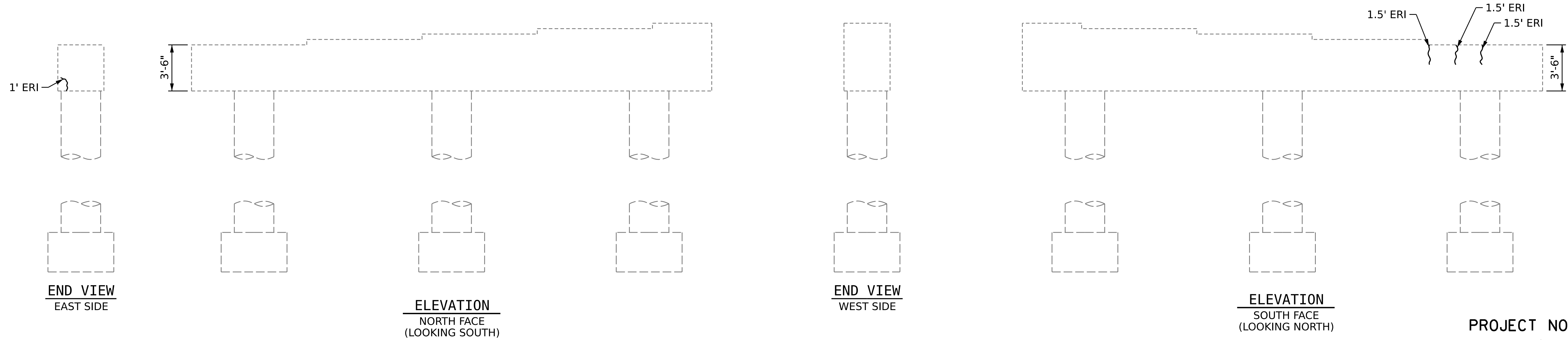
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CLEAR TO SAWCUT. SEE REPAIR DETAILS.



PLAN
TOP OF CAP

REPAIR KEY

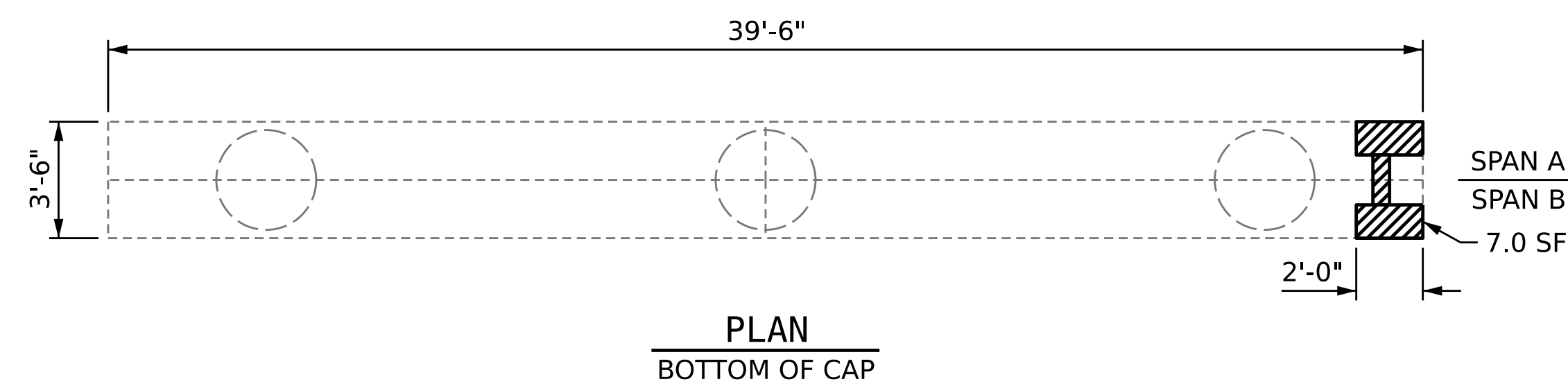
-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  PREVIOUSLY ACCOUNTED FOR AREA
-  EPOXY RESIN INJECTION



ELEVATION
NORTH FACE
(LOOKING SOUTH)

ELEVATION
SOUTH FACE
(LOOKING NORTH)

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770447**



PLAN
BOTTOM OF CAP



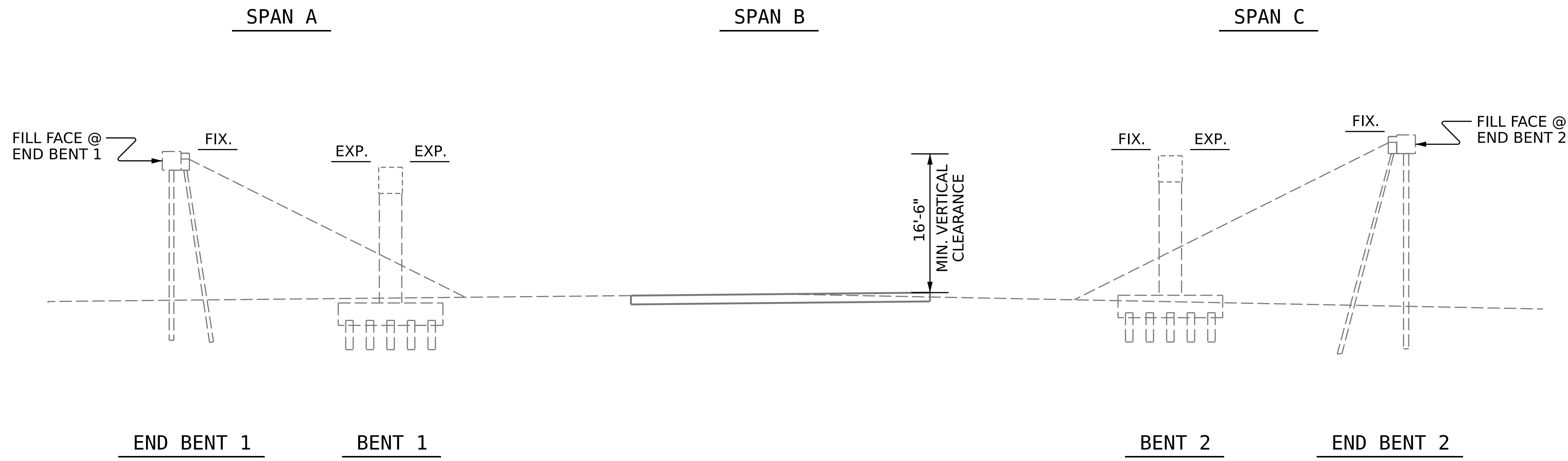
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE BENT 1

DRAWN BY : J. BALDWIN DATE : 8/2022
 CHECKED BY : G. AYES DATE : 12/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO. S1-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			6

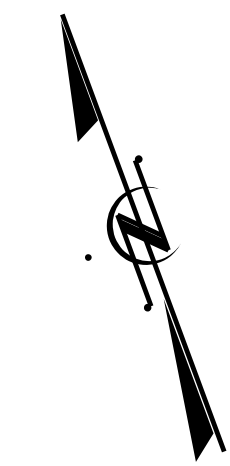
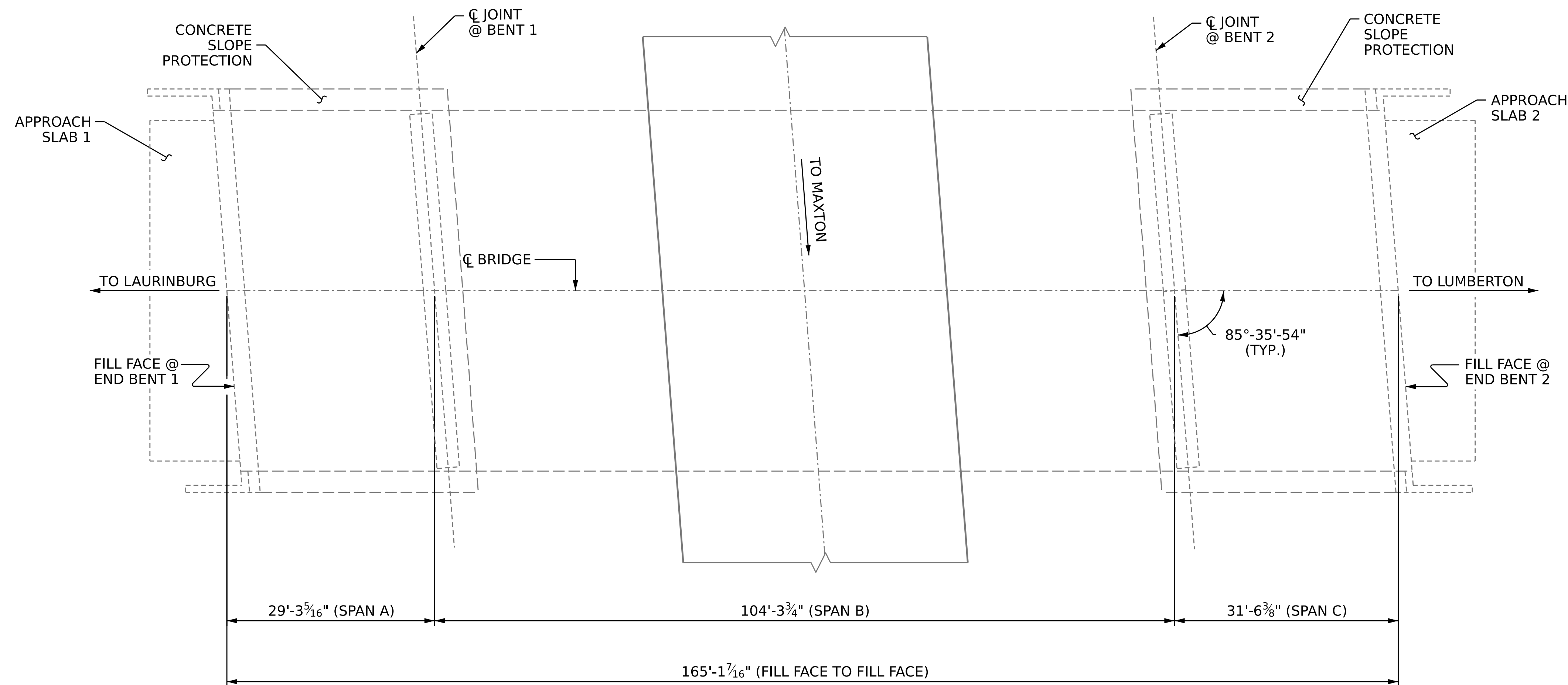


NOTES

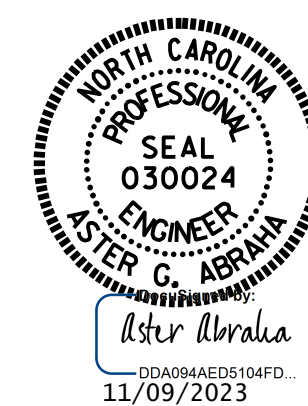
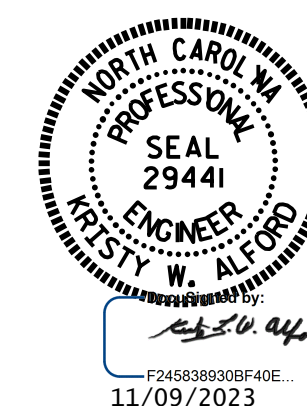
- GENERAL DRAWING AND PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 04/21/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CONCRETE RAIL SURFACE PREPARATION.
- PREPARE BRIDGE DECK BY SHOTBLASTING METHODS.
- PLACE SILANE TREATMENT ON DECK AND BARRIER RAILS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS WITH ELASTOMERIC CONCRETE, AND INSTALL FOAM JOINT SEALS.



PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770452**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE 452 ON US 74
 E BYP OVER NC 71,
 BETWEEN SR 1436 AND SR 1303

DRAWN BY : N. VANDERMARK / J. BALDWIN DATE : 6/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD: DATE :

PLAN
 (FOOTINGS, COLUMNS & PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

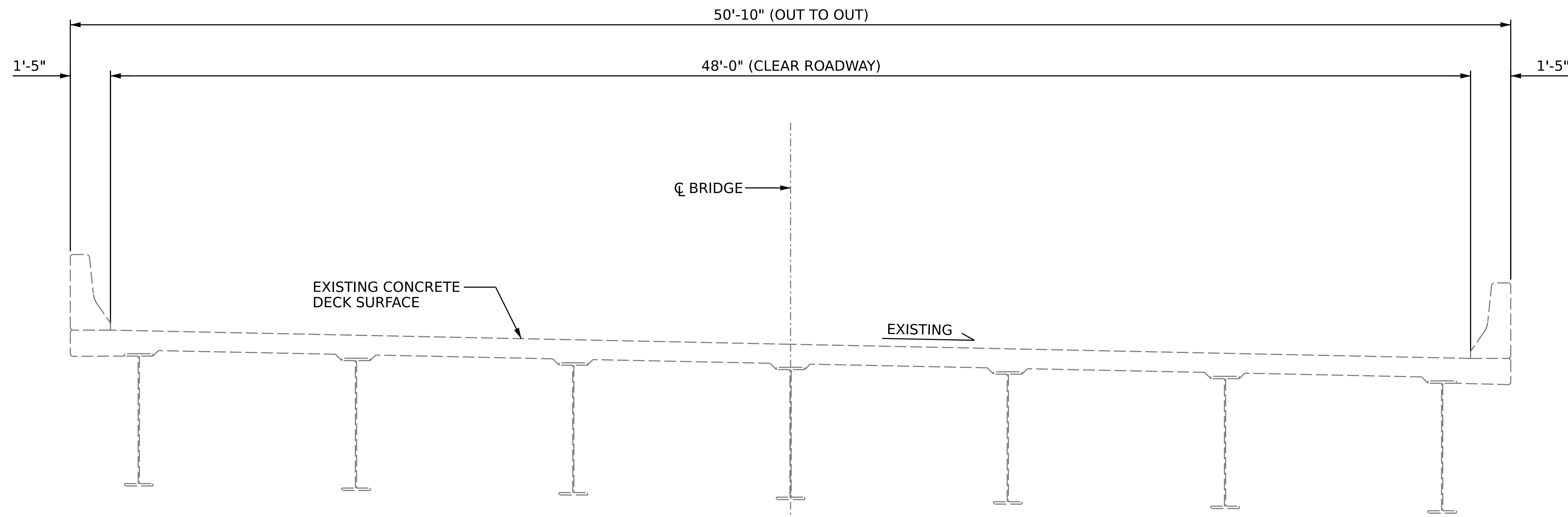
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

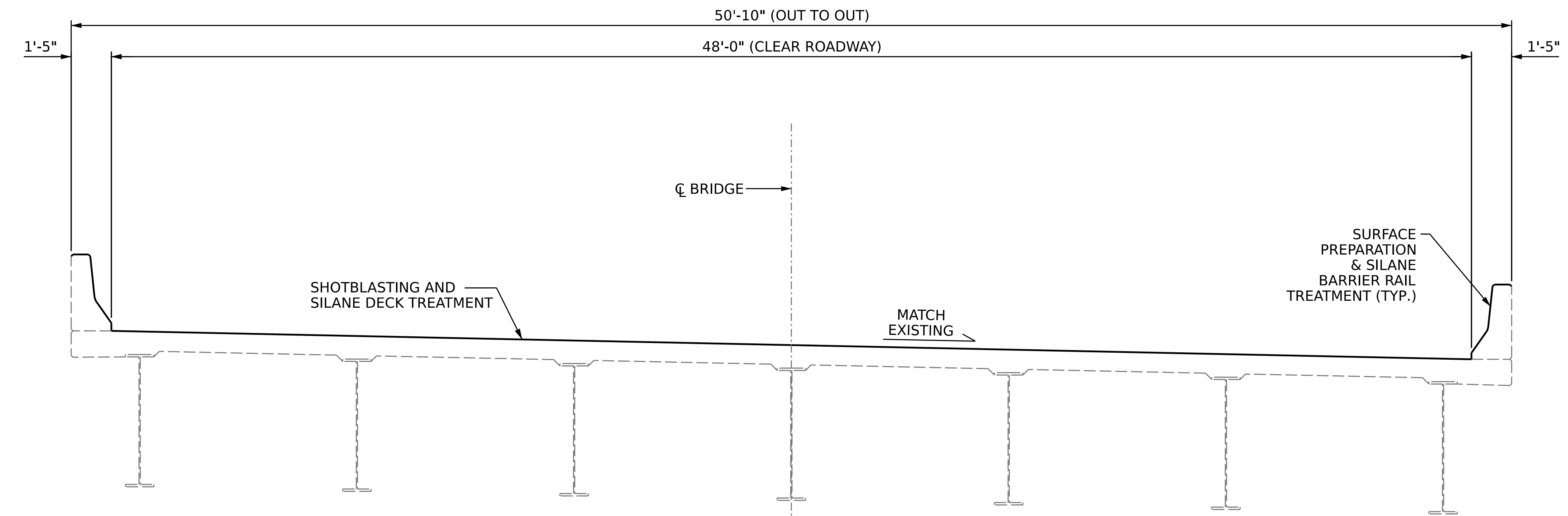
NOTES

SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

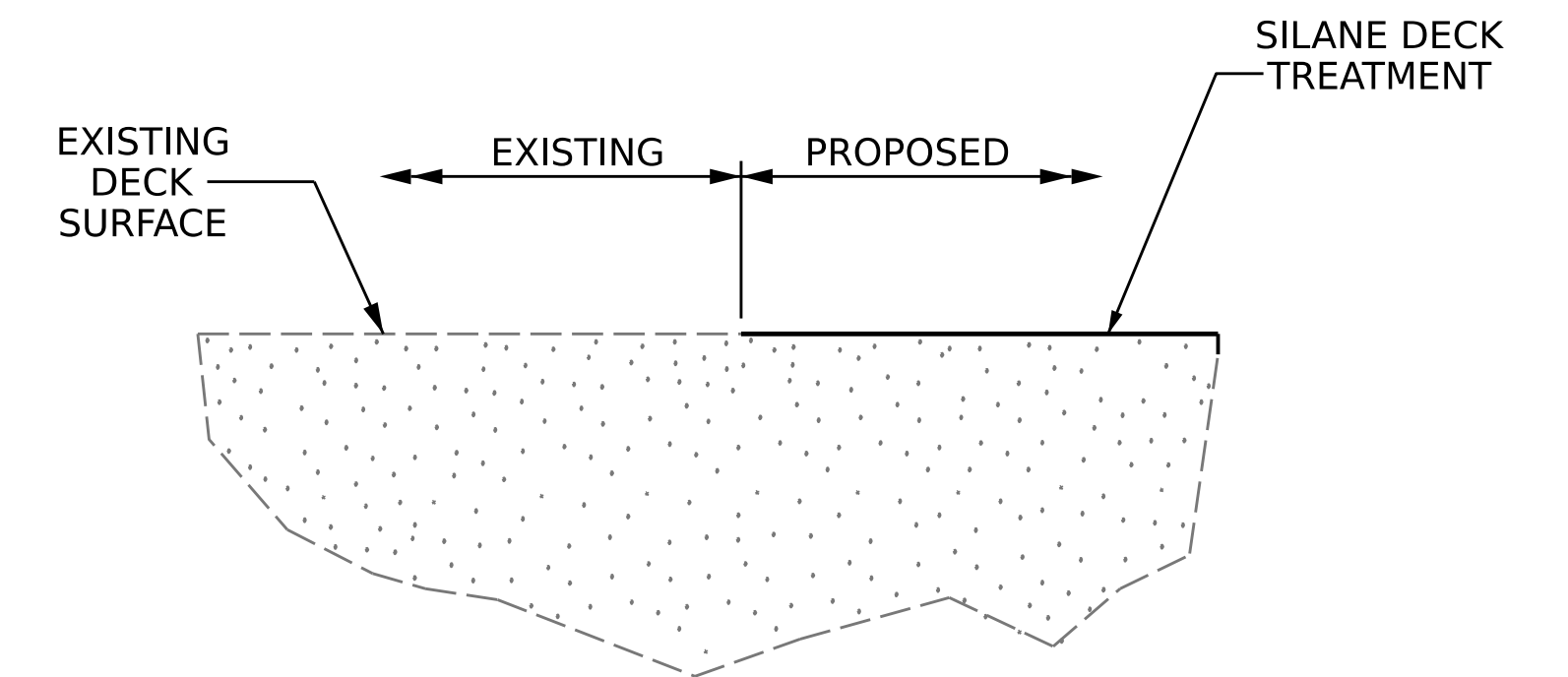
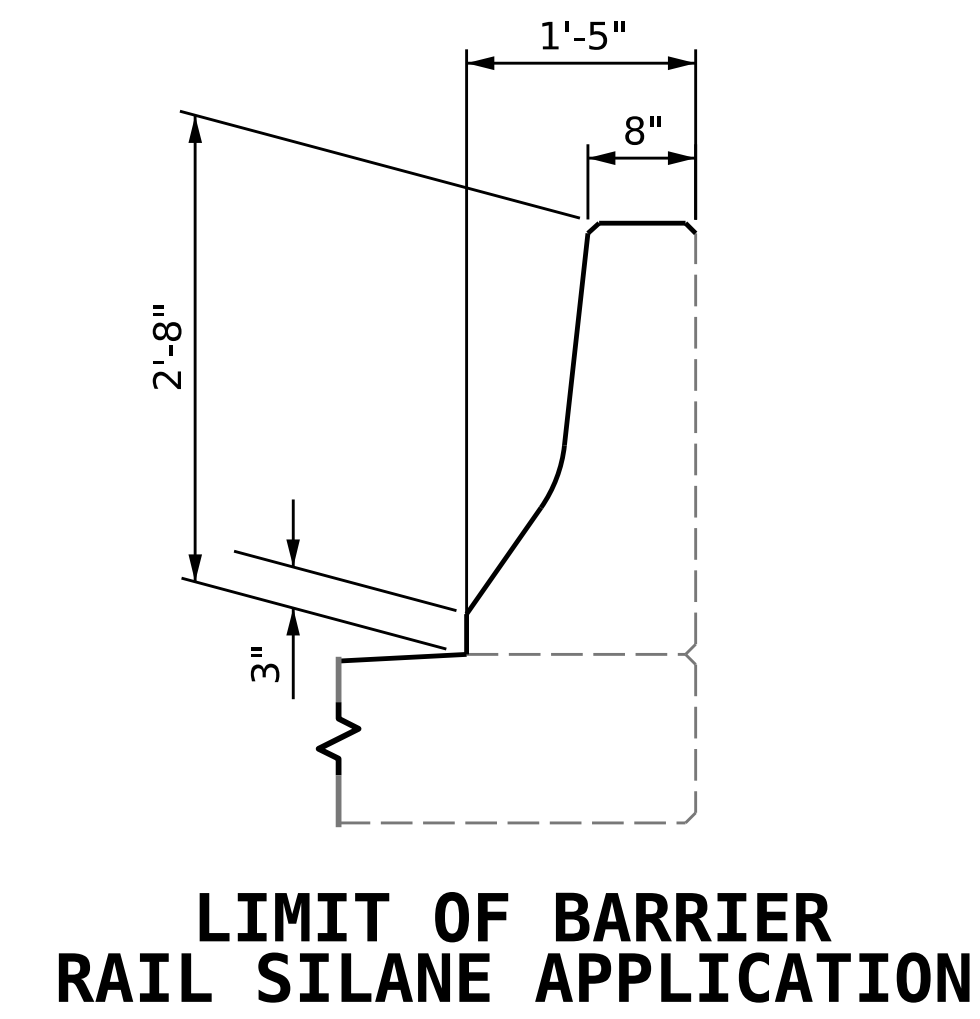
PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.



TYPICAL SECTION
(EXISTING)

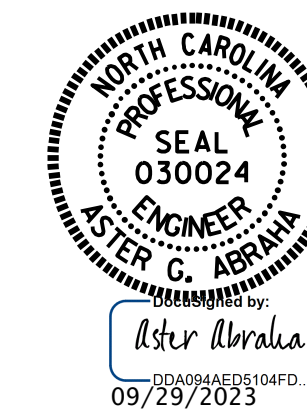


TYPICAL SECTION
(PROPOSED)



SILANE DECK TREATMENT DETAIL

PROJECT NO. **HI-0017**
ROBESON COUNTY
BRIDGE NO. **770452**

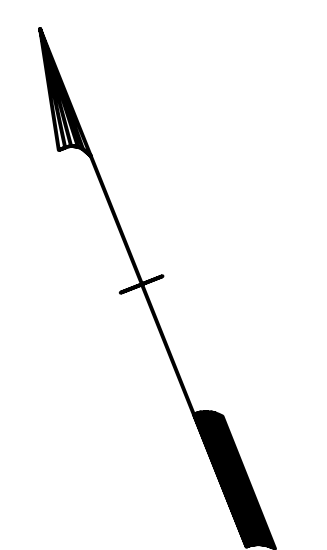


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION
AND SILANE DECK
TREATMENT DETAILS

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : N. VANDERMARK / J. BALDWIN DATE : 6/2022
CHECKED BY : A. G. ABRAHA DATE : 11/2022
DESIGN ENGINEER OF RECORD: _____ DATE : _____



NOTES

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

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE SILANE DECK TREATMENT IS COMPLETE.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR SECTION A-A AND B-B, SEE JOINT REPAIR DETAILS SHEET S2-4.


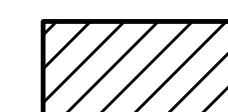
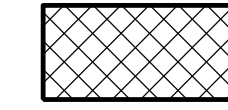


SUMMARY OF QUANTITIES FOR DECK AND APPROACH SLABS

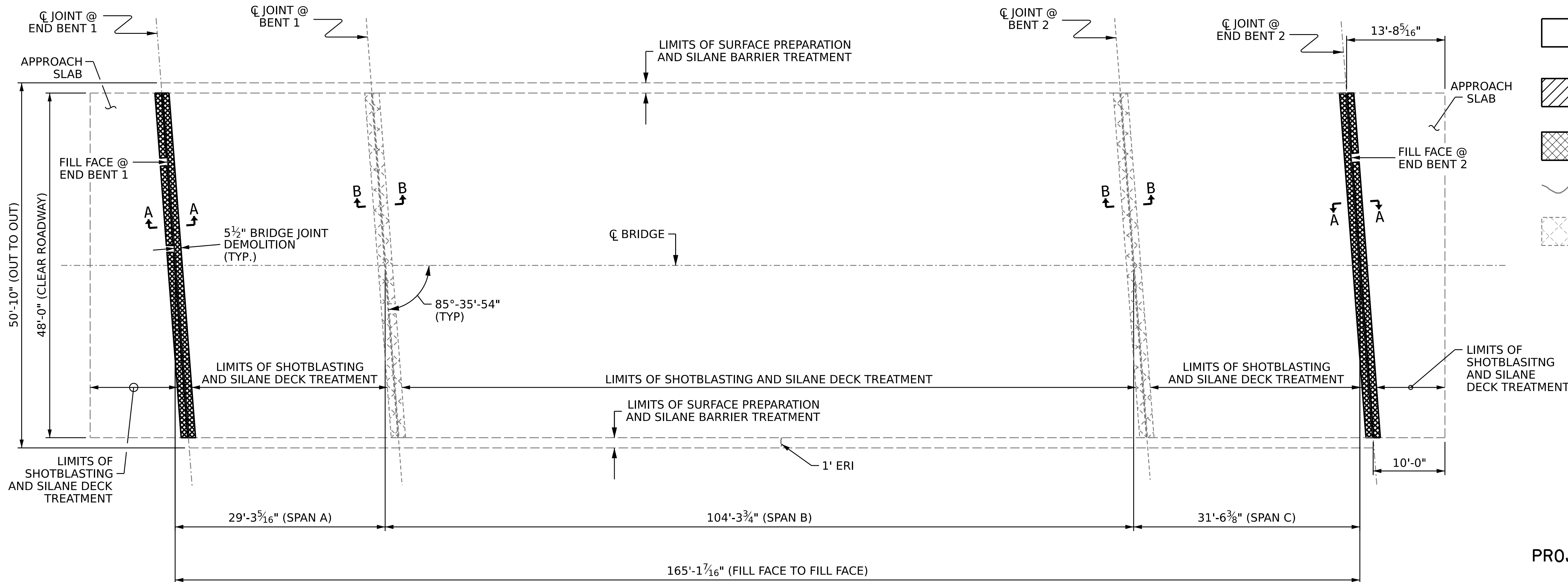
	ESTIMATE	ACTUAL
SHOTBLASTING BRIDGE DECK	985.0 SY	
SILANE DECK TREATMENT	985.0 SY	
CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	0 SY	
BRIDGE JOINT DEMOLITION	88.3 SF	

SUMMARY OF QUANTITIES FOR BARRIER RAIL TREATMENT

	ESTIMATE	ACTUAL
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	1,194.3 SF	
SILANE BARRIER RAIL TREATMENT	1,194.3 SF	

REPAIR KEY

-  - SHOTBLASTING AND SILANE DECK TREATMENT
-  - CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT
-  - BRIDGE JOINT DEMOLITION
-  - EPOXY RESIN INJECTION
-  - EXISTING ELASTOMERIC CONCRETE



PLAN OF SPANS

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770452**



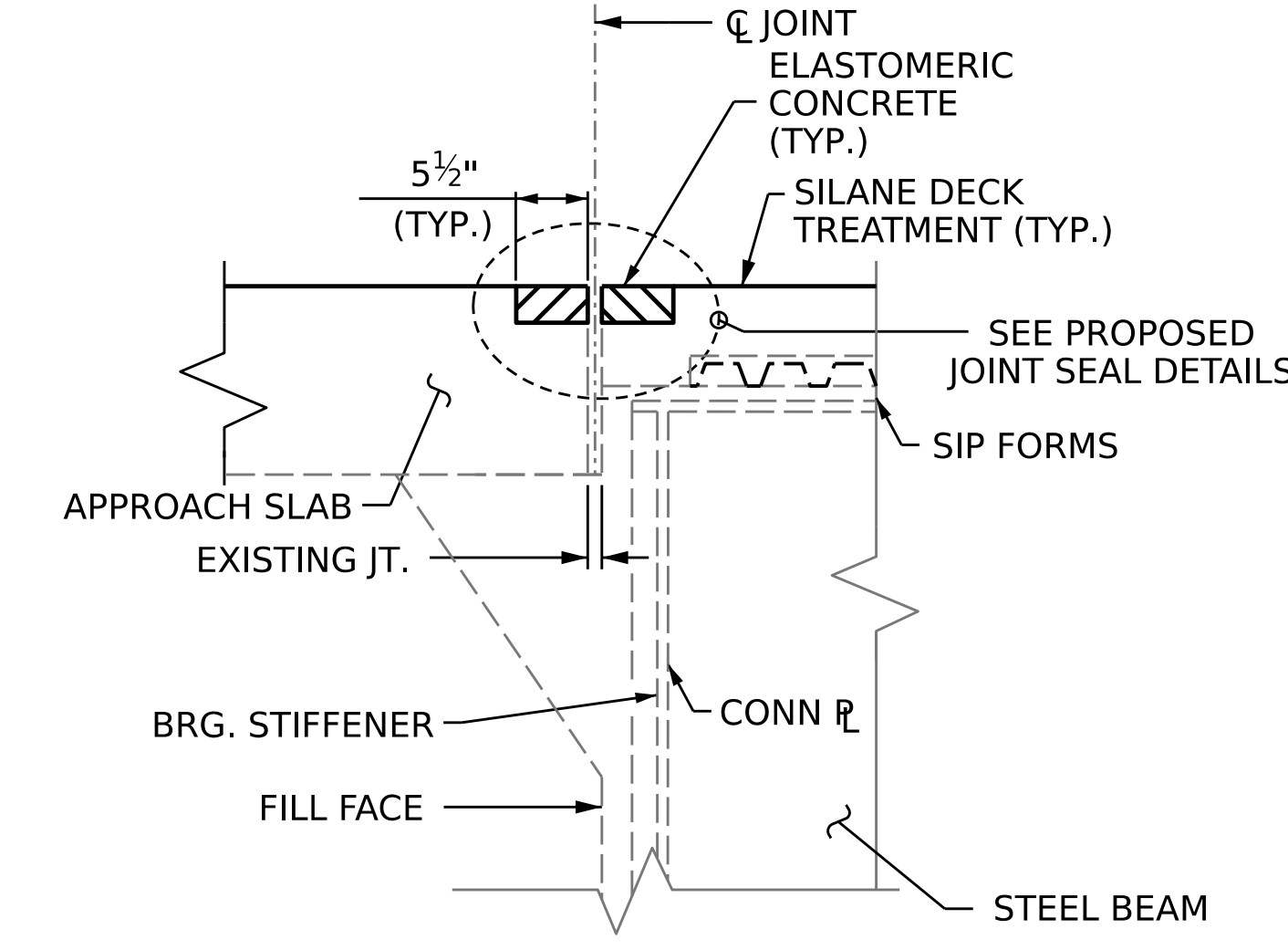
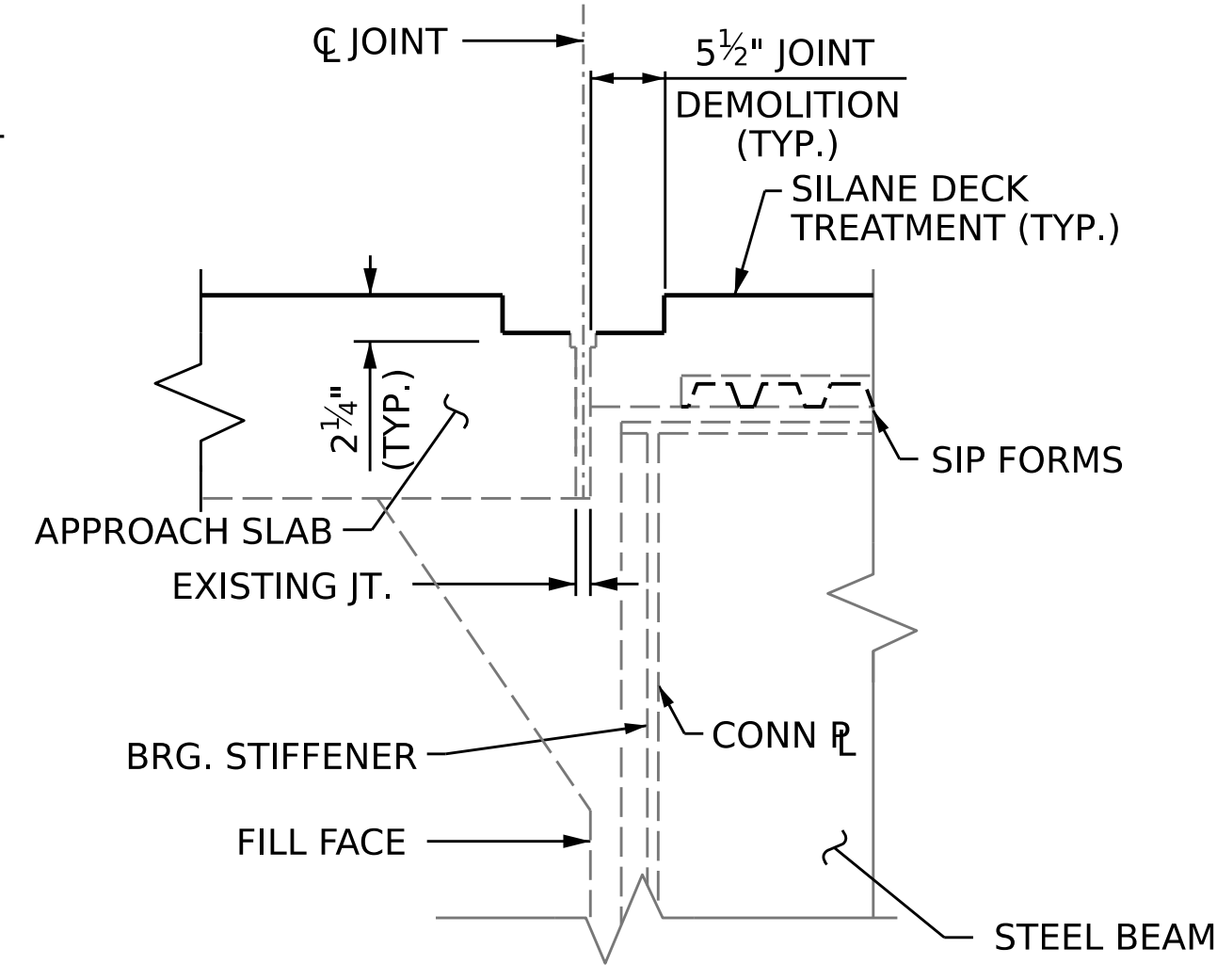
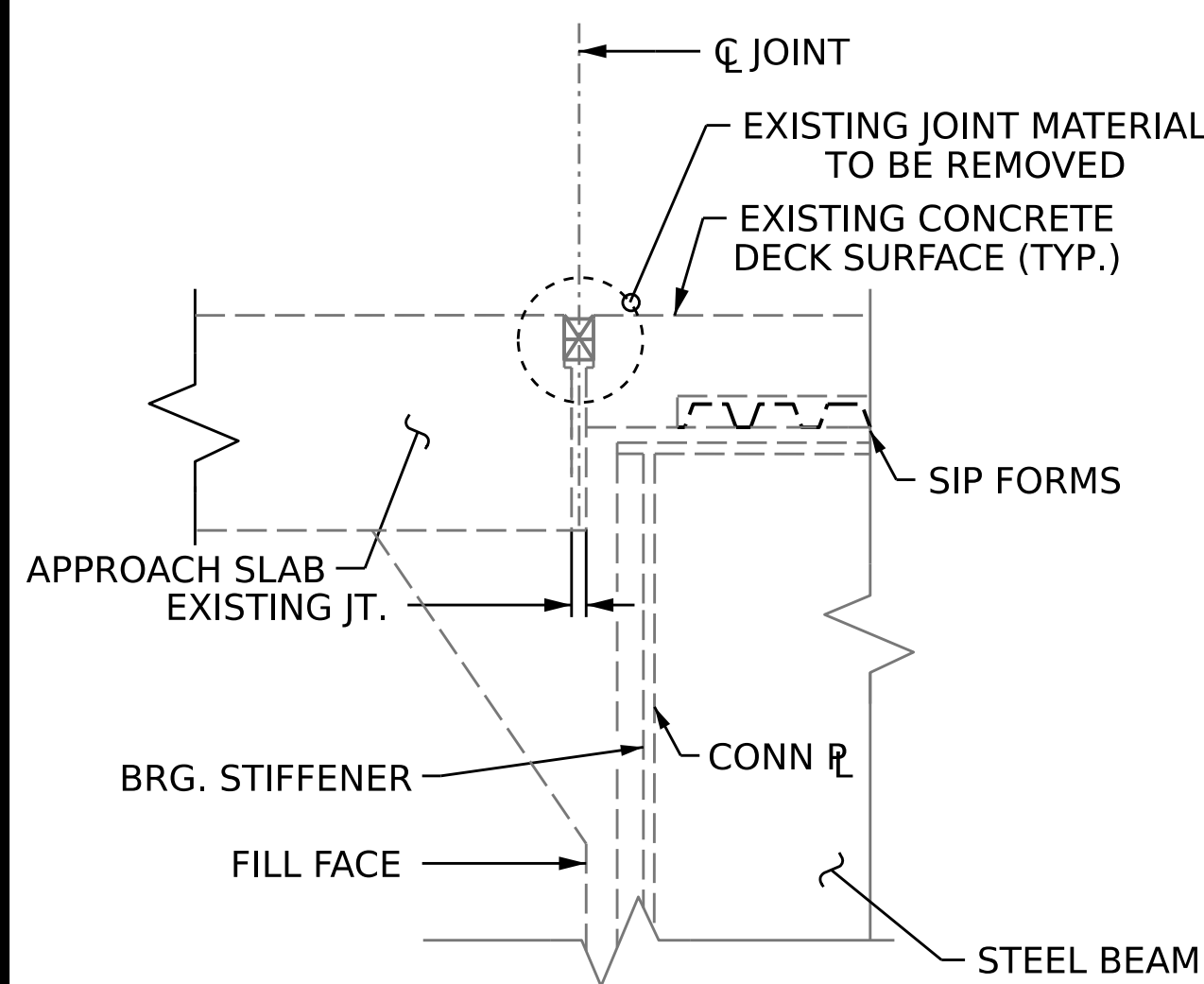
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SILANE DECK TREATMENT

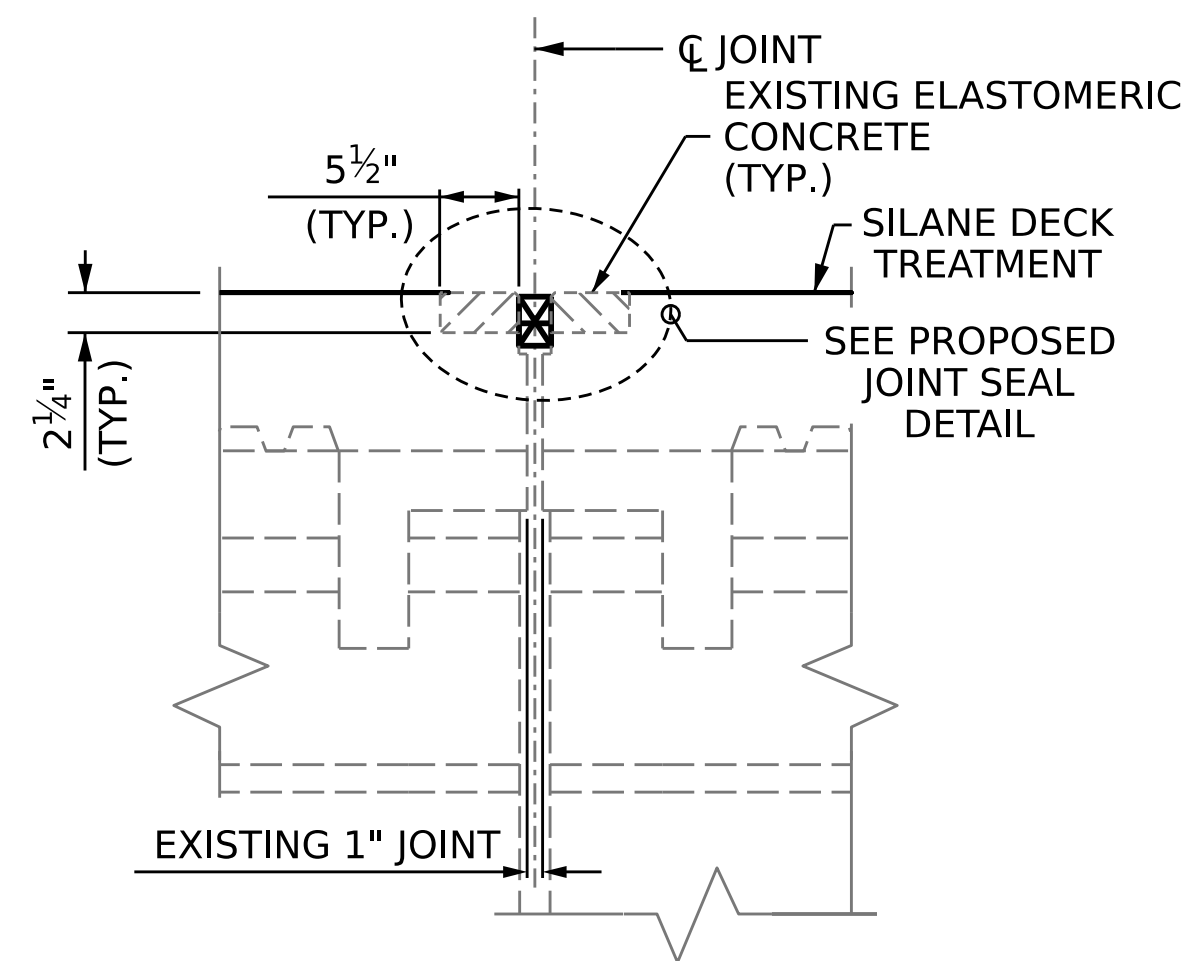
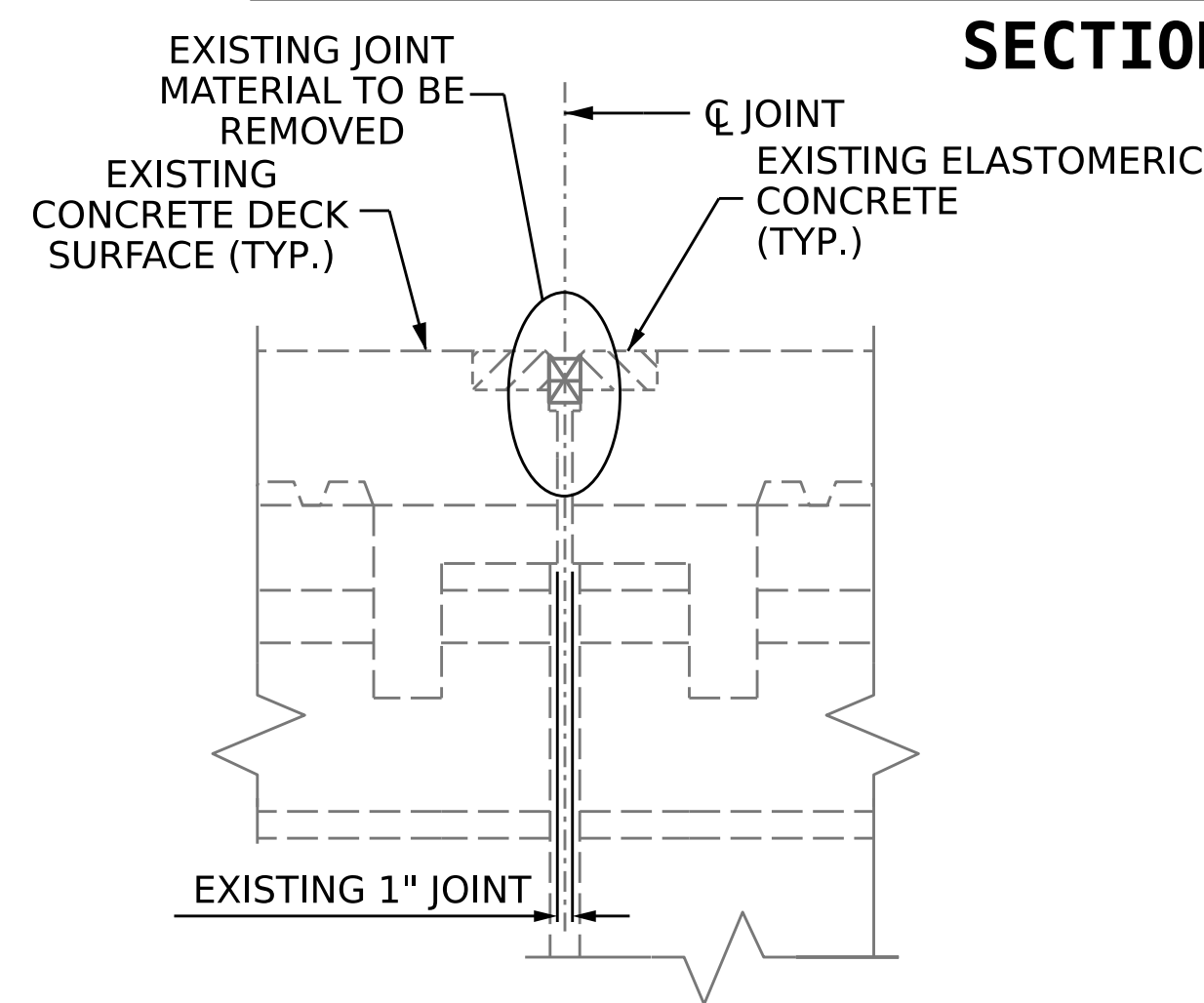
DRAWN BY : N. VANDERMARK / J. BALDWIN DATE : 6/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

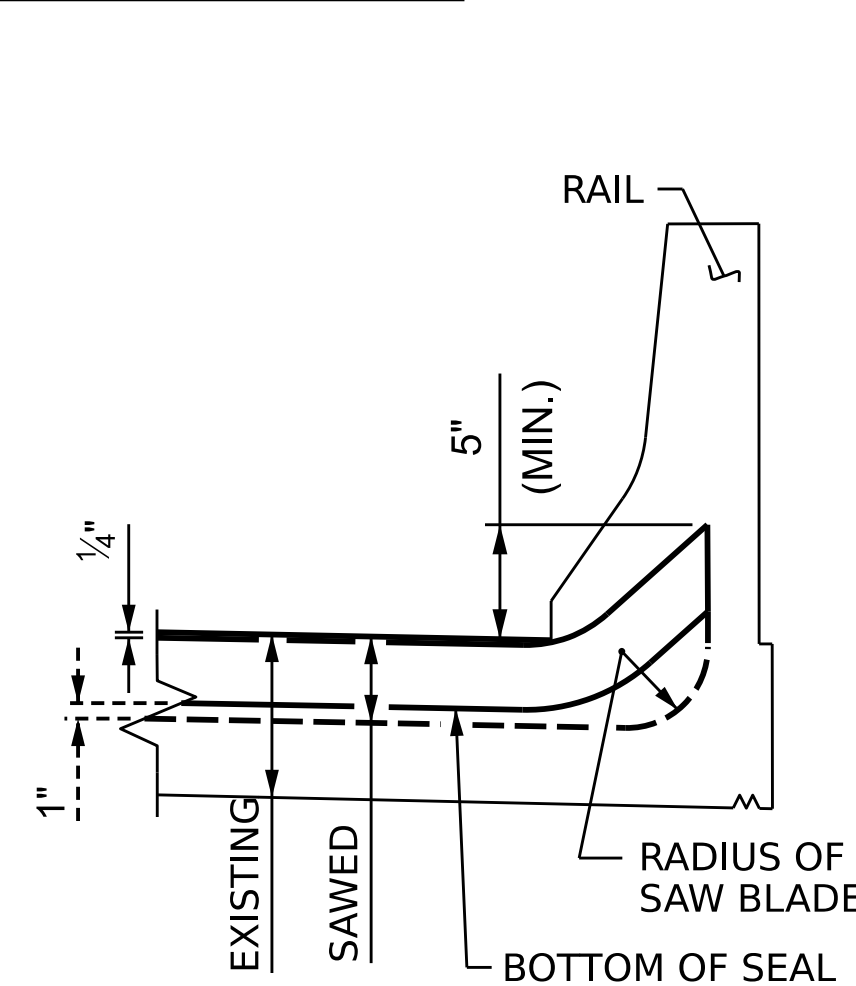
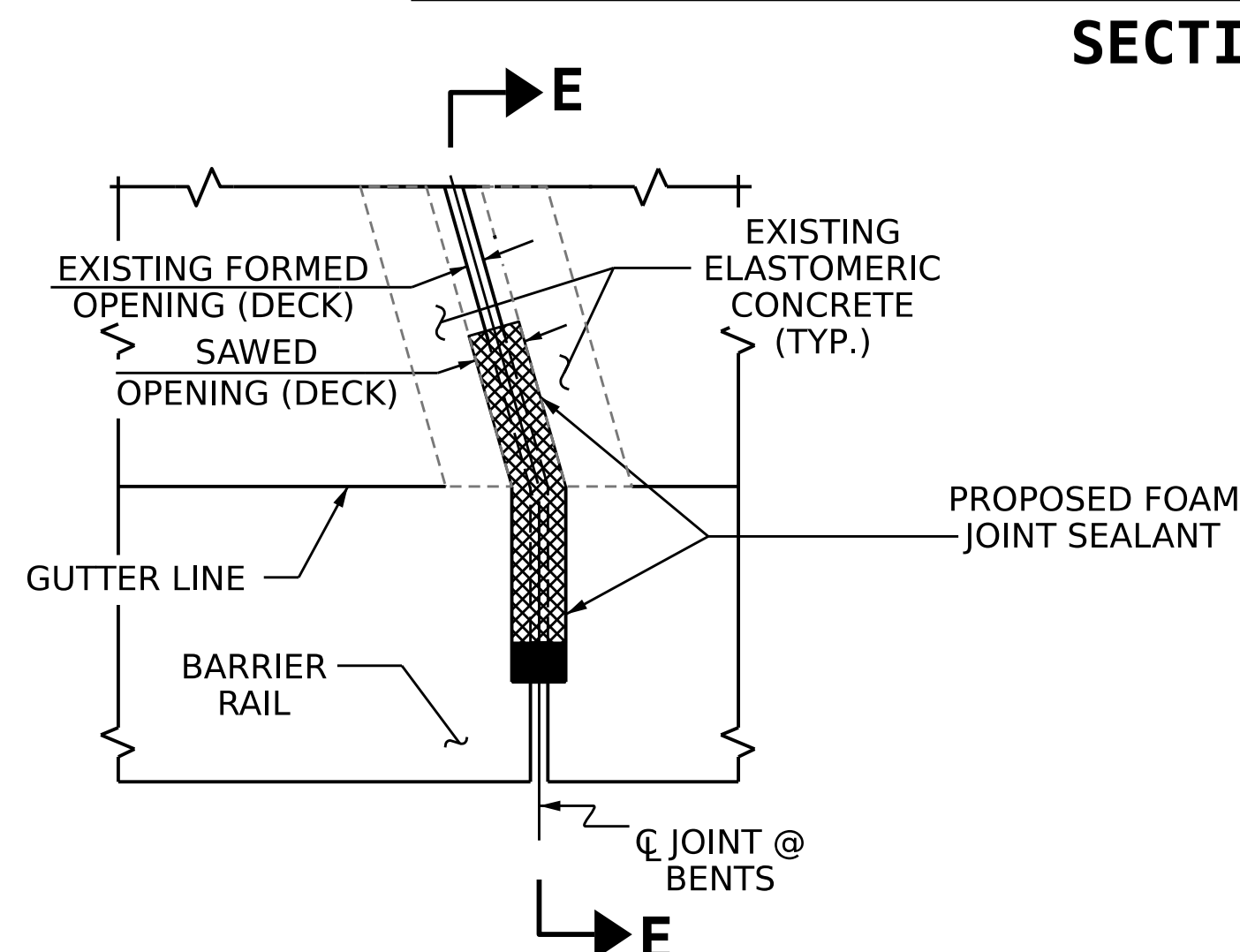
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-3
1			3			TOTAL SHEETS
2			4			4



JOINT INSTALLATION SEQUENCE AT END BENTS



JOINT INSTALLATION SEQUENCE AT BENTS



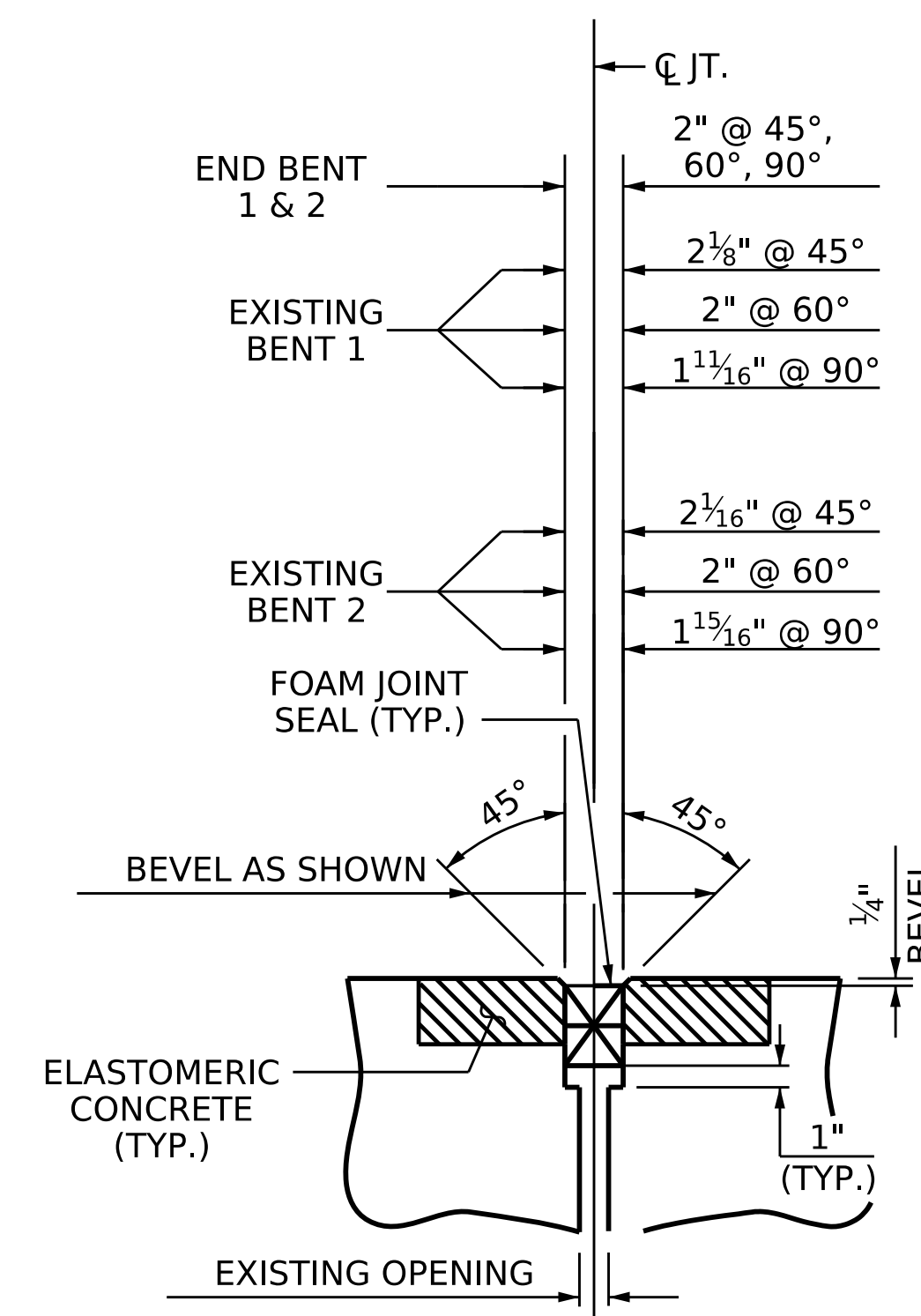
JOINT DETAIL AT BARRIER RAIL

NOTES

- FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY OR SEALANT WORK IS COMPLETE.
- CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL. IF ACTUAL JOINT OPENINGS VARIES FROM THE OPENING INDICATED IN DETAIL MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE MAY BE NECESSARY.
- 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.
- UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
- ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.
- THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.
- FOR FOAM EXPANSION JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- DURING JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.
- QUANTITIES SHOWN IN THE SUMMARY OF QUANTITIES TABLE ARE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.
- FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DEMOLITION, CONCRETE FOR DECK REPAIR SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL OR ELASTOMERIC CONCRETE SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE OR ELASTOMERIC CONCRETE.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	16.6 CF	
FOAM JOINT SEALS FOR PRESERVATION	194.6 LF	



PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770452**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

DRAWN BY : J. BALDWIN DATE : 9/2022
 CHECKED BY : A. ABRAHA DATE : 11/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

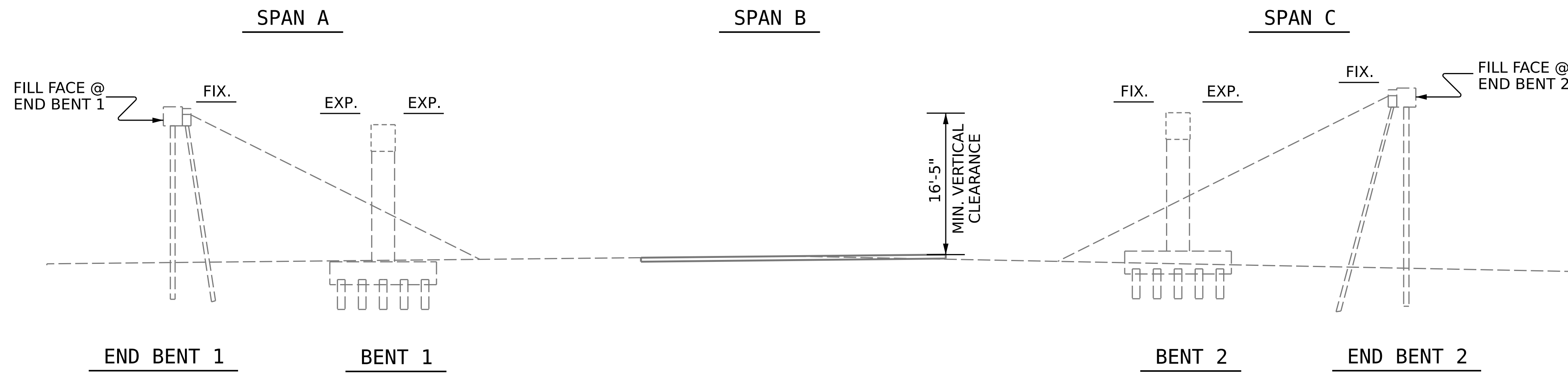
TOTAL SHEETS: 4

NOTES

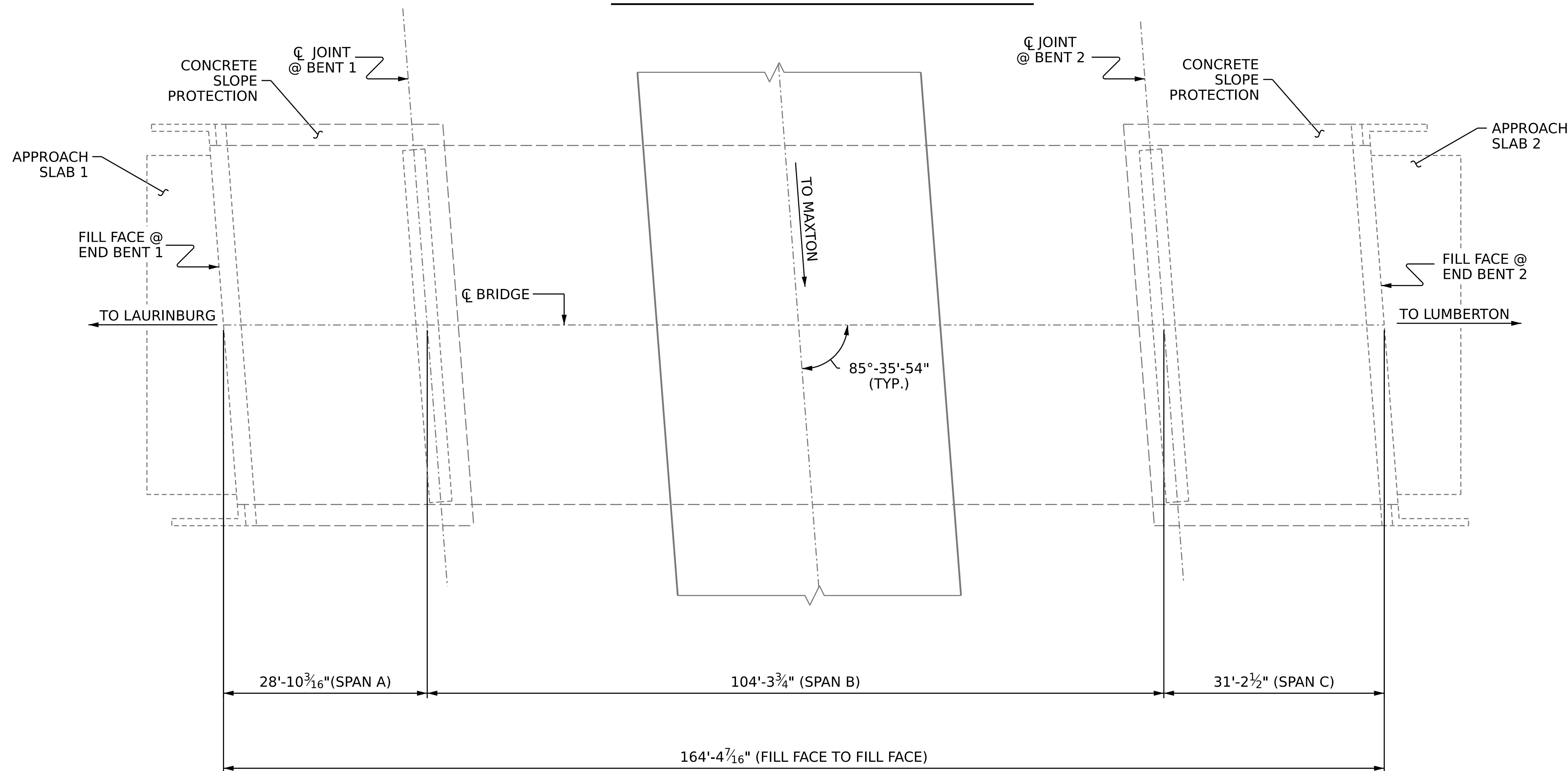
- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 04/21/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

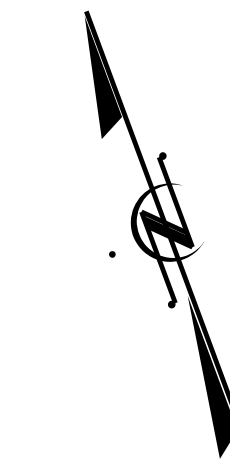
- CONCRETE RAIL SURFACE PREPARATION.
- PREPARE BRIDGE DECK BY SHOTBLASTING METHODS.
- PLACE SILANE TREATMENT ON DECK AND BARRIER RAILS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS WITH ELASTOMERIC CONCRETE AND INSTALL FOAM JOINT SEALS.



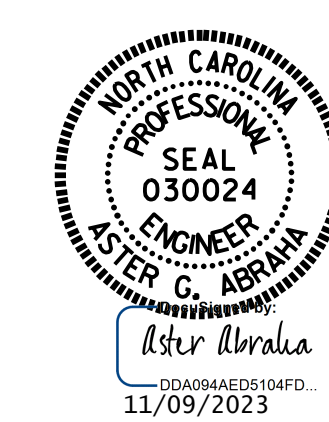
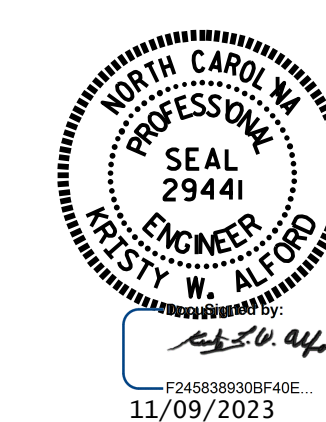
SECTION ALONG ϕ ROADWAY



PLAN
(FOOTINGS, COLUMNS & PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)



PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770453**

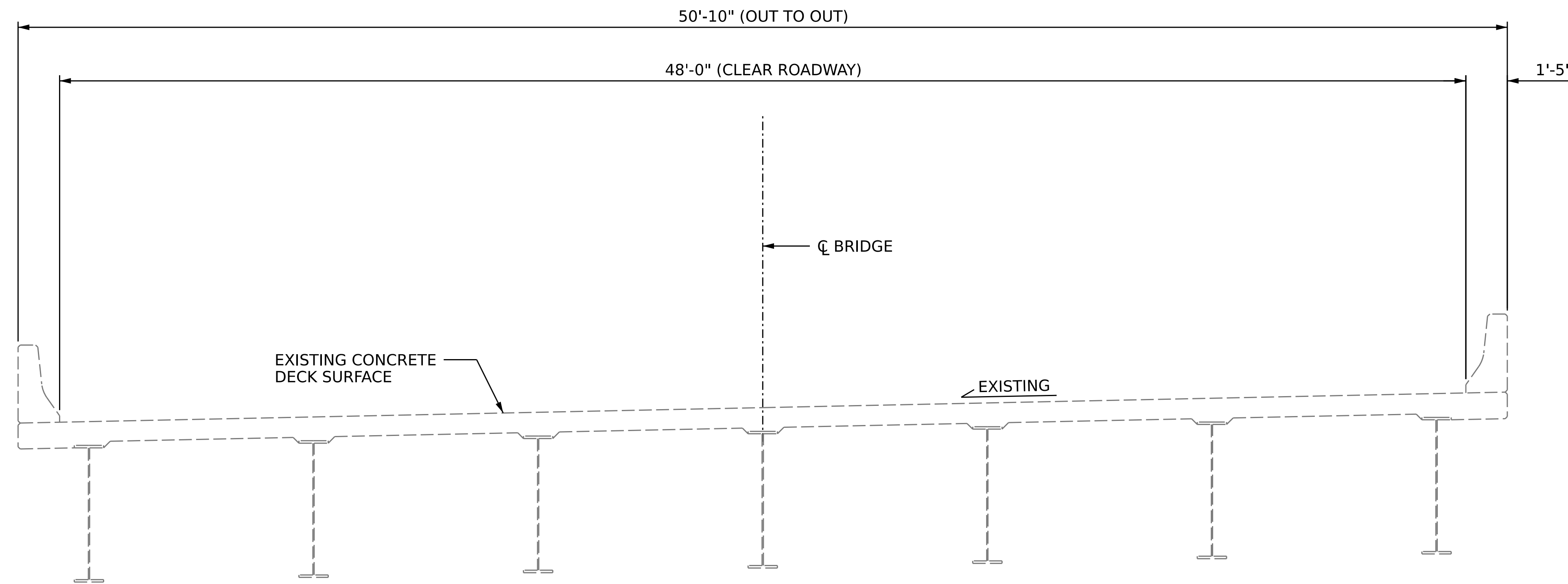


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON US 74
 W BYP OVER NC 71
 BETWEEN SR 1436 AND SR 1303

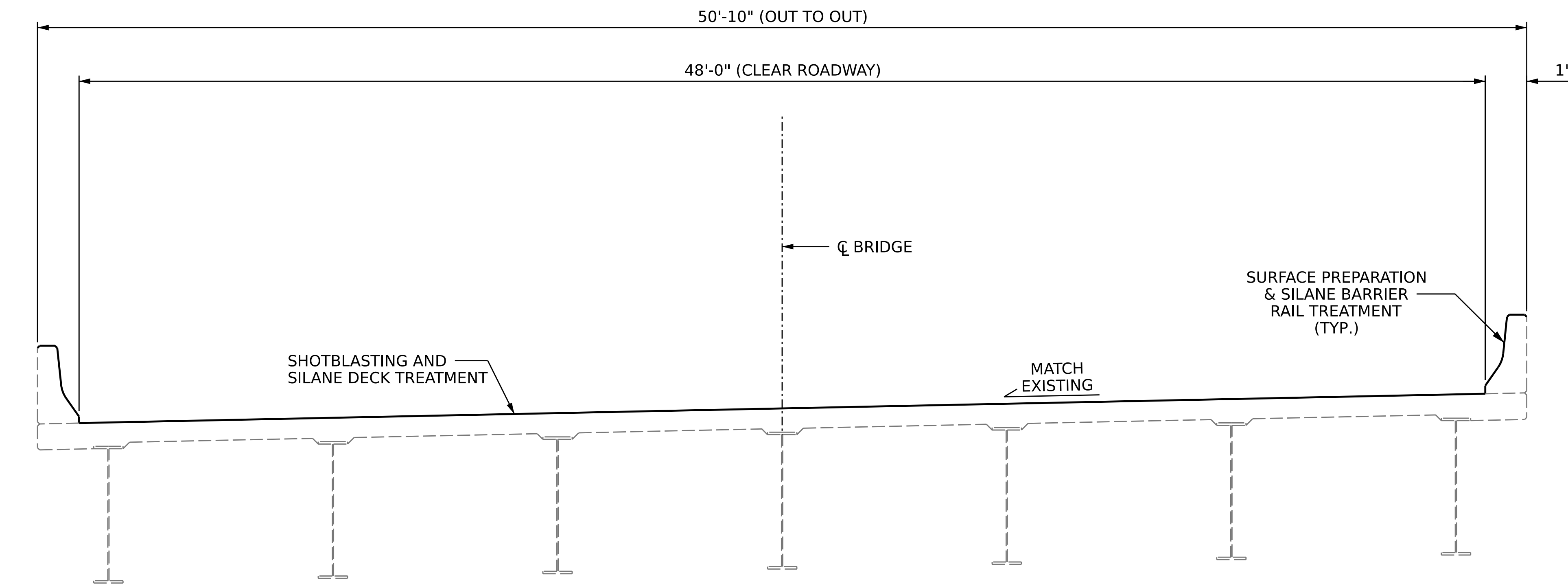
DRAWN BY : N. VANDERMARK / J. BALDWIN DATE : 6/2022
 CHECKED BY : A. G. ABRAHA / G. AYES DATE : 11/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S3-1
1			3			TOTAL SHEETS
2			4			4



TYPICAL SECTION
(EXISTING)

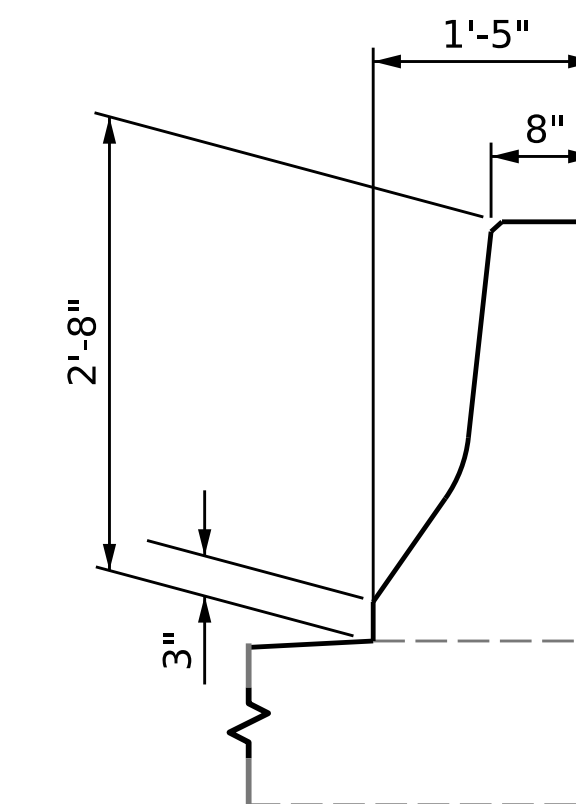


TYPICAL SECTION
(PROPOSED)

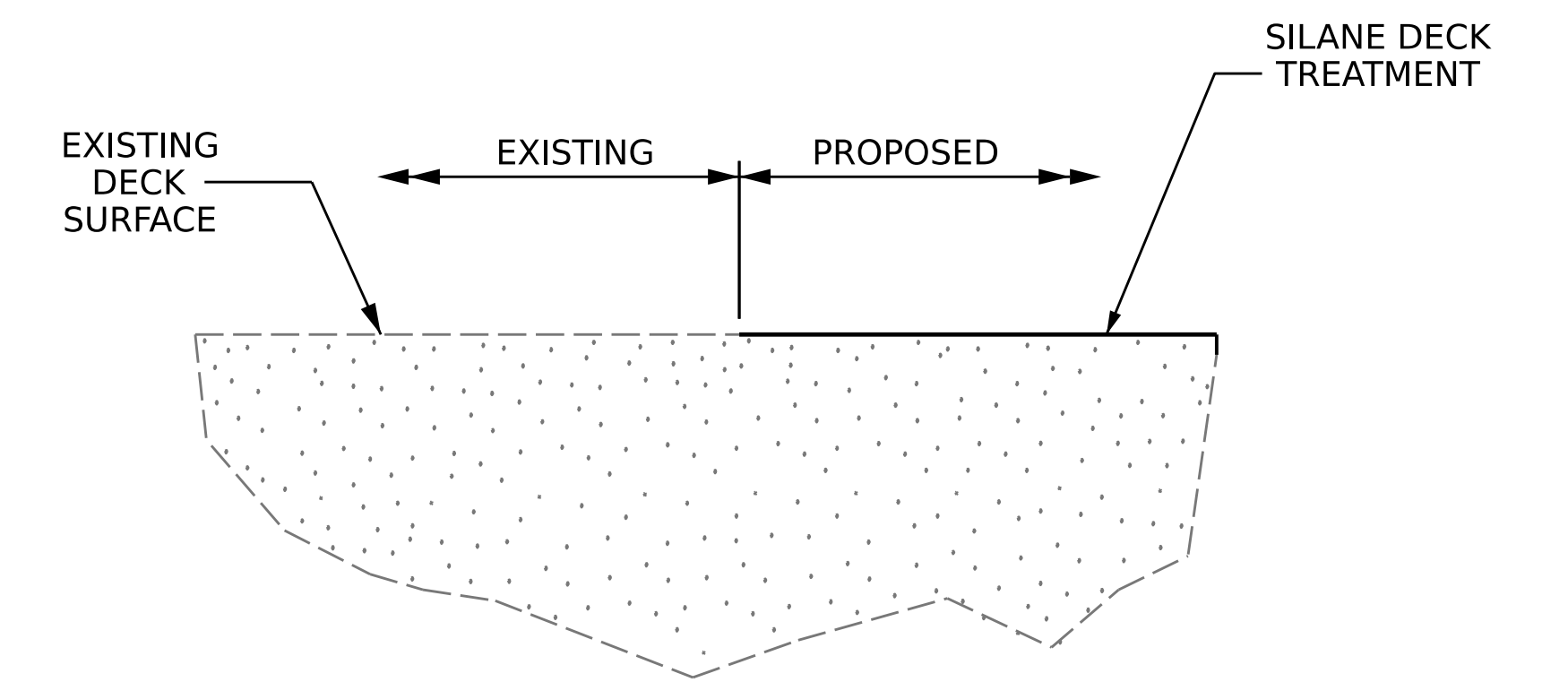
NOTES

SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.

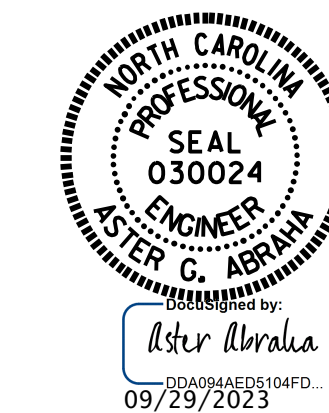


LIMIT OF BARRIER RAIL SILANE APPLICATION



SILANE DECK TREATMENT DETAIL

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770453**








STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
 TYPICAL SECTION
 AND SILANE DECK
 TREATMENT DETAILS

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : N. VANDERMARK / J. BALDWIN DATE : 6/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

REPAIR KEY

-  - SHOTBLASTING AND SILANE DECK TREATMENT
-  - CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT
-  - BRIDGE JOINT DEMOLITION
-  - EPOXY RESIN INJECTION
-  - EXISTING ELASTOMERIC CONCRETE

NOTES

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

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE SILANE DECK TREATMENT IS COMPLETE.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

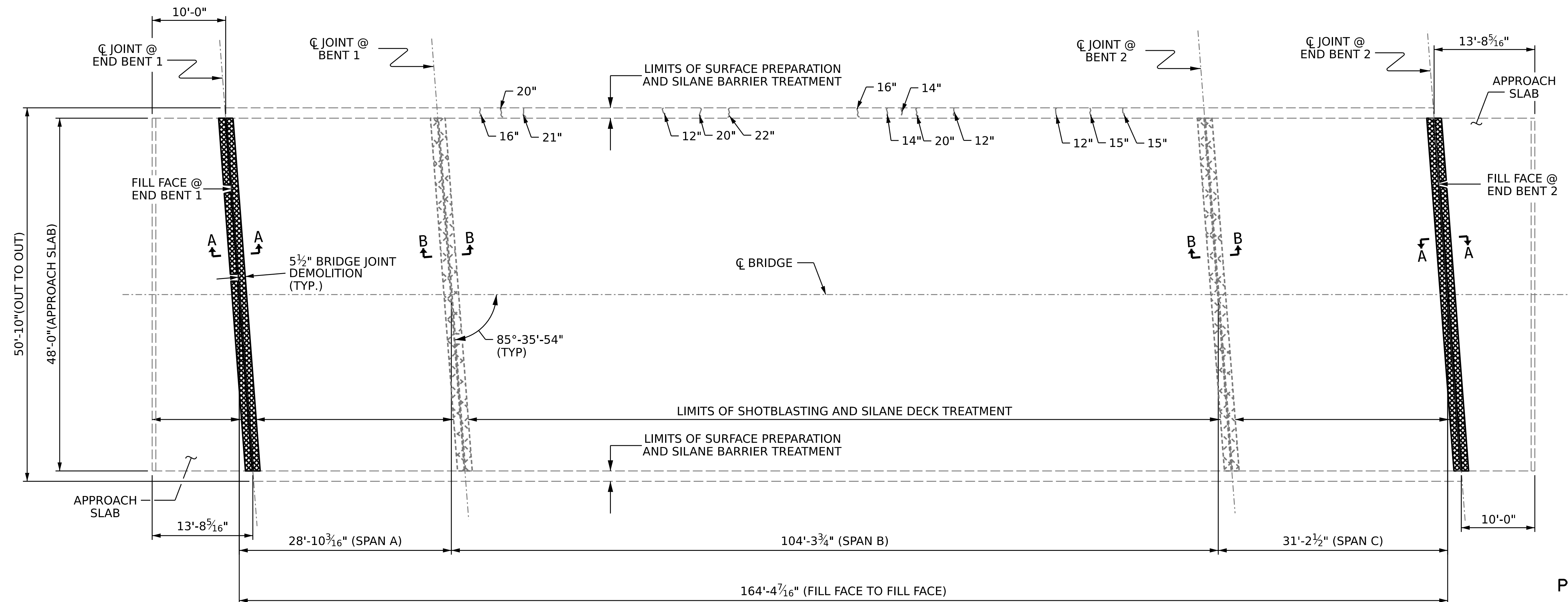
FOR SECTION A-A AND B-B, SEE JOINT REPAIR DETAILS SHEET S3-4.

SUMMARY OF QUANTITIES FOR DECK AND APPROACH SLABS

	ESTIMATE	ACTUAL
SHOTBLASTING BRIDGE DECK	917.6 SY	
SILANE DECK TREATMENT	917.6 SY	
CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	0 SF	
BRIDGE JOINT DEMOLITION	88.3 SF	

SUMMARY OF QUANTITIES FOR BARRIER RAIL TREATMENT

	ESTIMATE	ACTUAL
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	1,294.2 SF	
BARRIER RAIL SILANE TREATMENT	1,294.2 SF	
EPOXY RESIN INJECTION	19.1 LF	



PLAN OF SPANS

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770453**



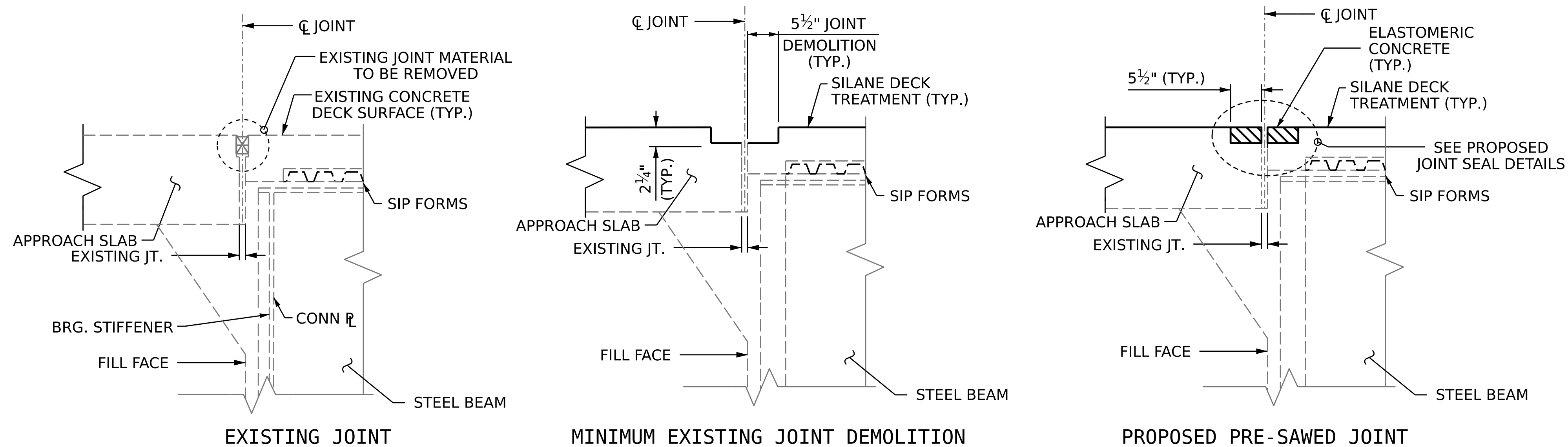
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SILANE DECK TREATMENT

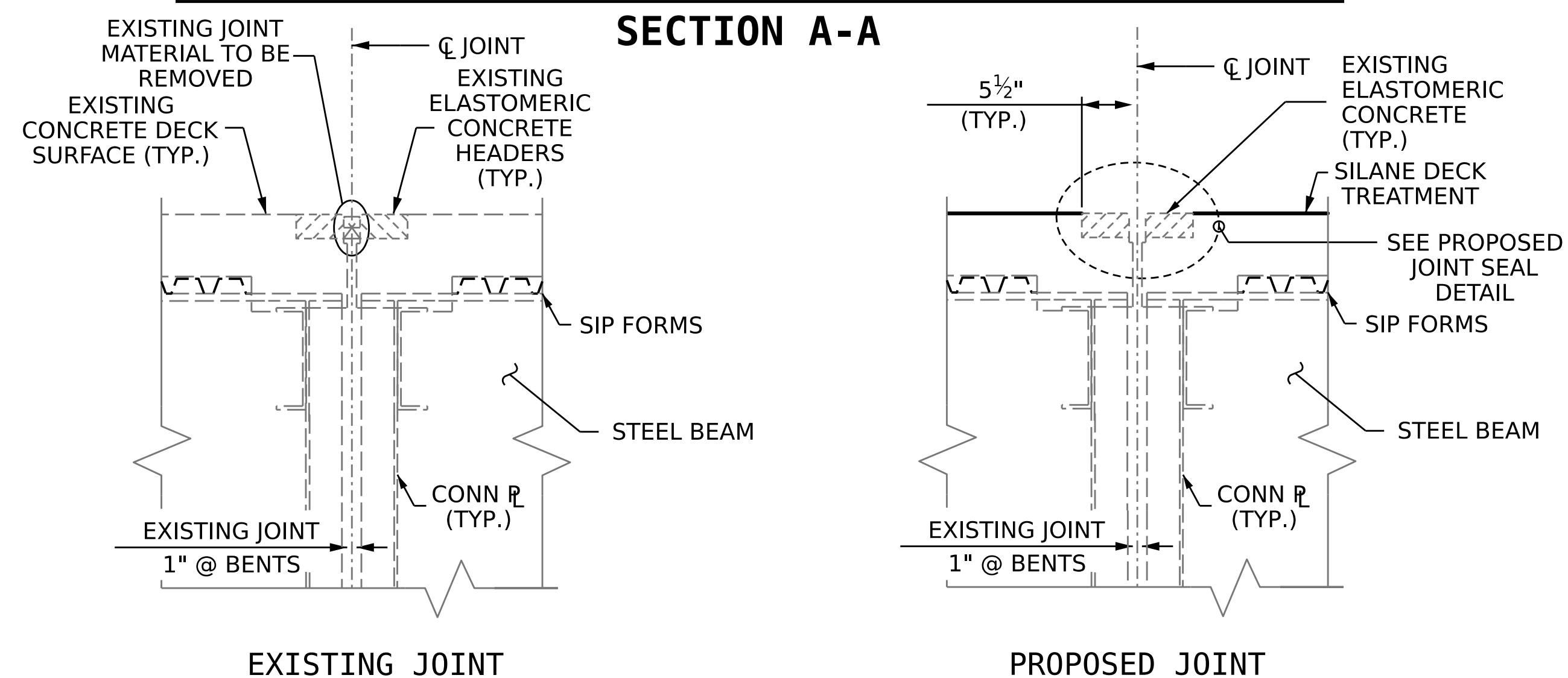
DRAWN BY : N. VANDERMARK / J. BALDWIN DATE : 6/2022
 CHECKED BY : A. G. ABRAHA / G. AYES DATE : 11/2022
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

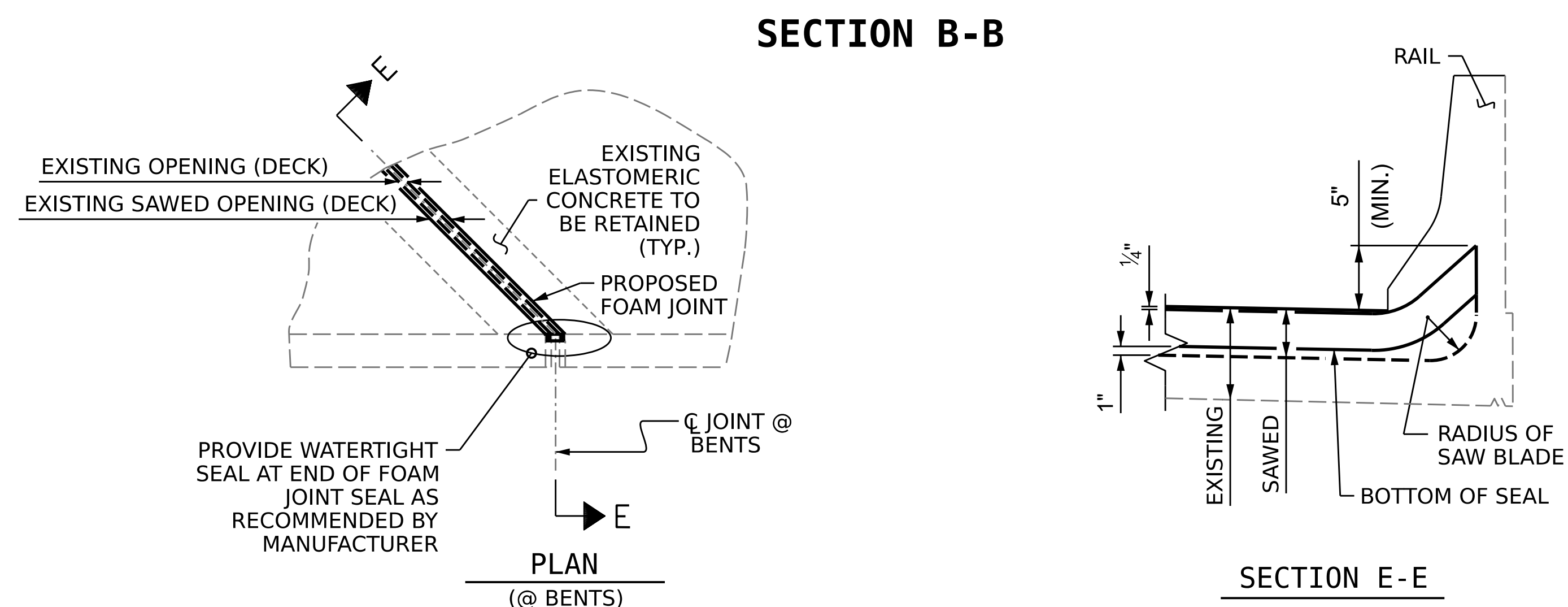
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S3-3
2			4			TOTAL SHEETS 4



JOINT INSTALLATION SEQUENCE AT END BENTS



JOINT INSTALLATION SEQUENCE AT BENTS



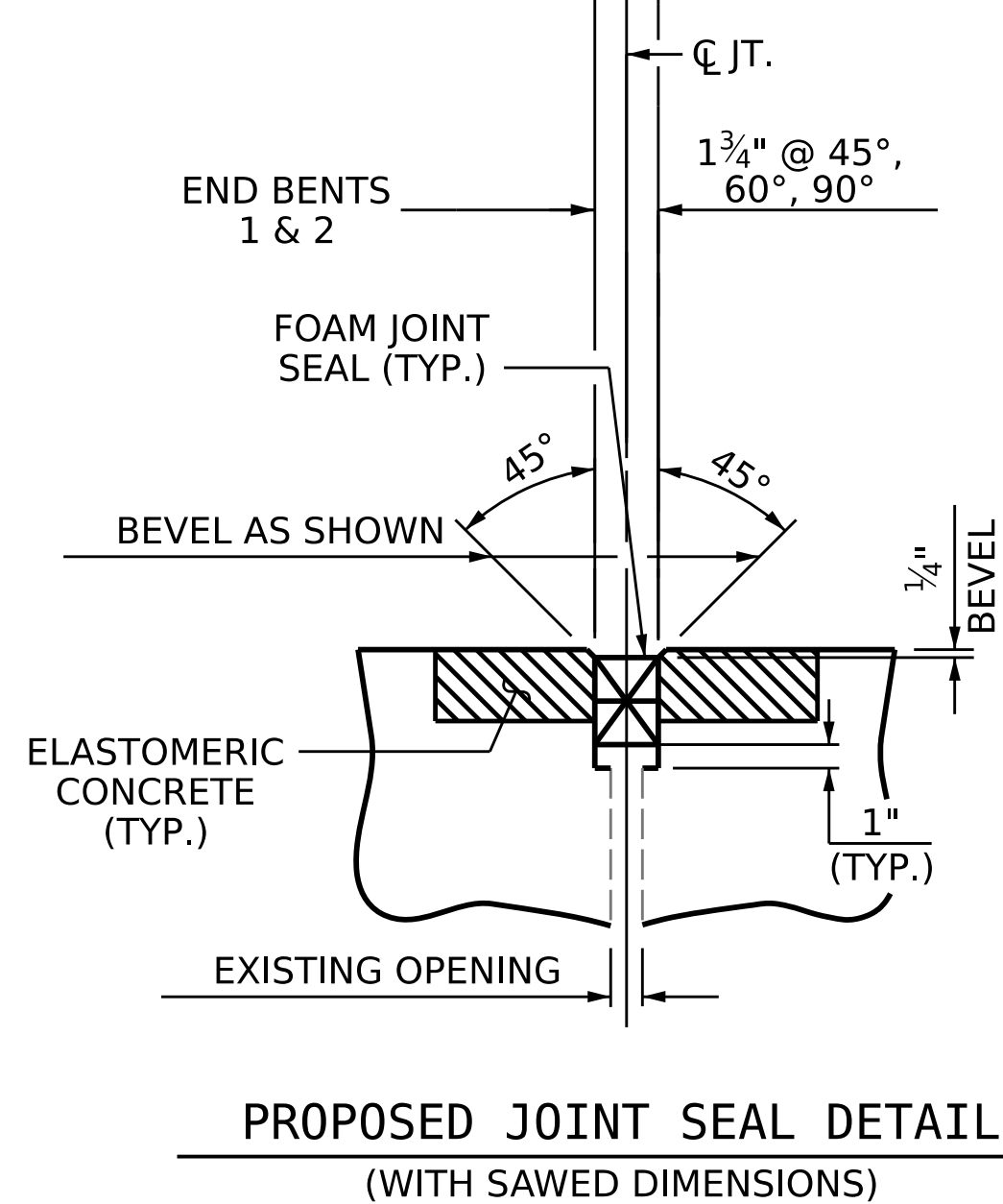
JOINT DETAIL AT BARRIER RAIL

NOTES

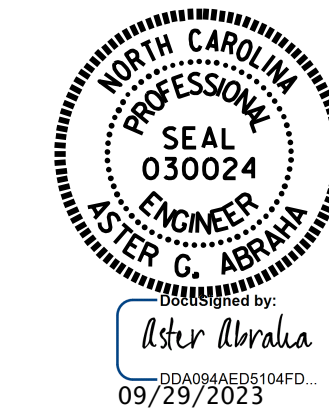
- FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY OR SEALANT WORK IS COMPLETE.
- CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL. IF ACTUAL JOINT OPENINGS VARIES FROM THE OPENING INDICATED IN DETAIL MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE MAY BE NECESSARY.
- 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.
- UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
- ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.
- THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.
- FOR FOAM EXPANSION JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- DURING JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.
- QUANTITIES SHOWN IN THE SUMMARY OF QUANTITIES TABLE ARE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.
- FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DEMOLITION, CONCRETE FOR DECK REPAIR SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL OR ELASTOMERIC CONCRETE SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE OR ELASTOMERIC CONCRETE.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

EXISTING BENT 1	2 5/8" @ 45°
	2 1/2" @ 60°
	2 3/16" @ 90°
EXISTING BENT 2	1 15/16" @ 45°
	1 7/8" @ 60°
	1 13/16" @ 90°

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	16.6 CF	
FOAM JOINT SEALS FOR PRESERVATION	194.6 LF	



PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770453**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

DRAWN BY : N. VANDERMARK / J. BALDWIN DATE : 6/2022
 CHECKED BY : A. G. ABRAHA / G. AYES DATE : 11/2022
 DESIGN ENGINEER OF RECORD : DATE :

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

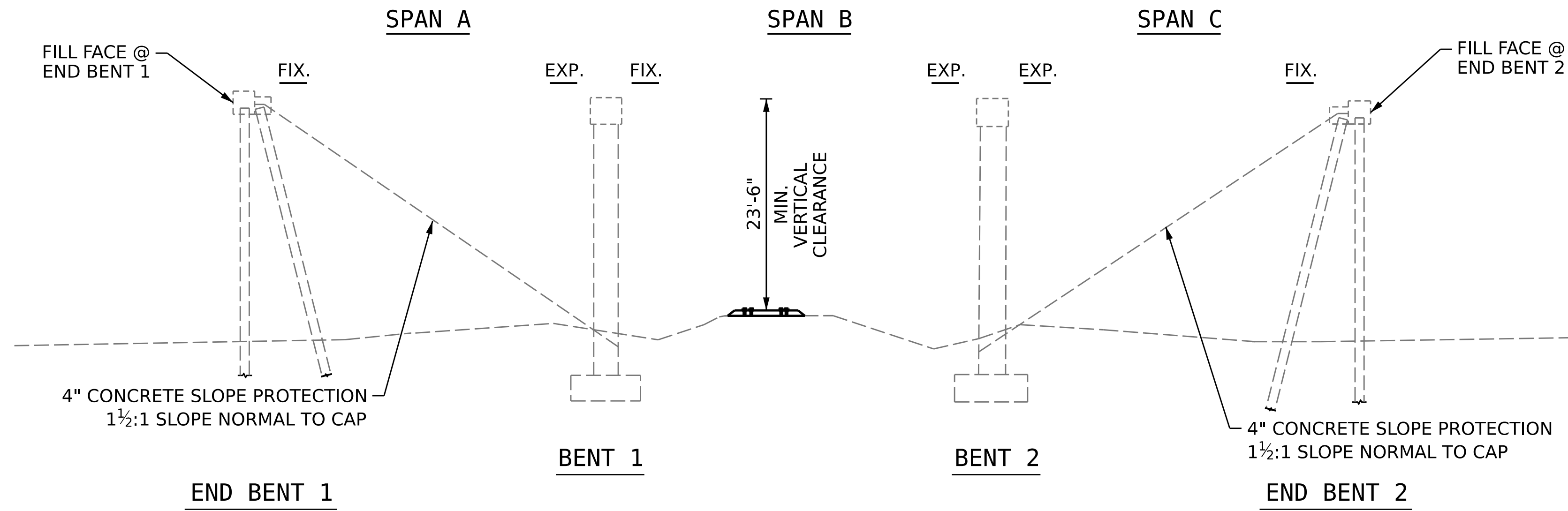
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S3-4
1			3			TOTAL SHEETS
2			4			4

NOTES

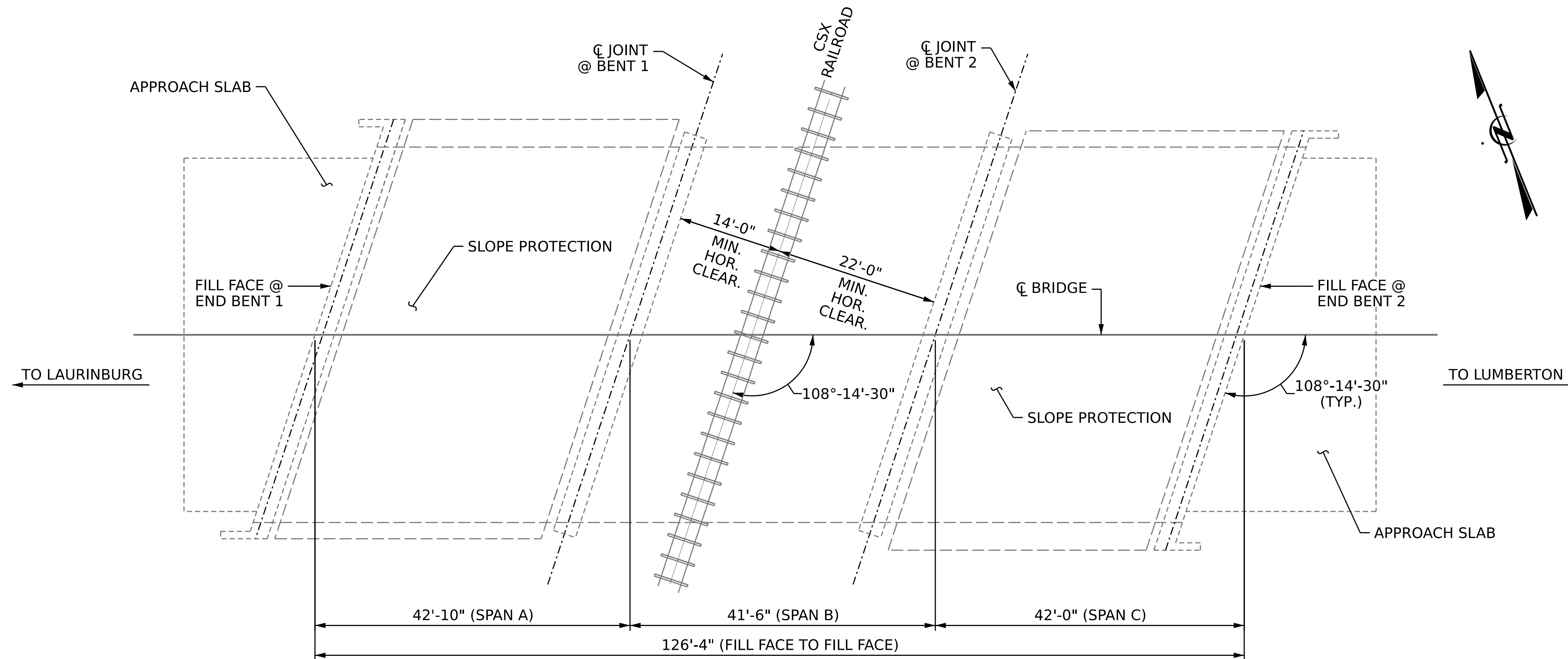
- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND ROUTINE INSPECTION REPORT DATED 04/04/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- REMOVE EXISTING ASPHALT WEARING SURFACE AND PLUG JOINTS.
- REPLACE TRANSVERSE POST-TENSIONING STRANDS.
- REPLACE BRIDGE PLUG JOINTS WITH BACKER ROD AND ASPHALT BINDER JOINT.
- REPLACE ASPHALT WEARING SURFACE.
- REPAIR DAMAGED UNDERSIDE OF CORED SLABS WITH SHOTCRETE OR CONCRETE REPAIR.



SECTION ALONG CL BRIDGE



PLAN

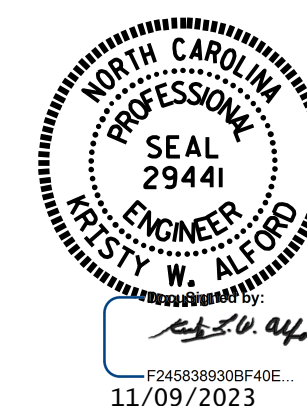
(FOOTINGS, COLUMNS & PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

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

RESIDENT ENGINEER _____ DATE _____

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770454**
 MILEPOST AG 245.94

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER SEABOARD
 COAST LINE RAILROAD
 ON US 74 EASTBOUND
 BETWEEN NC 71 & SR 1303



REVISIONS						SHEET NO. S4-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 7
2			4			

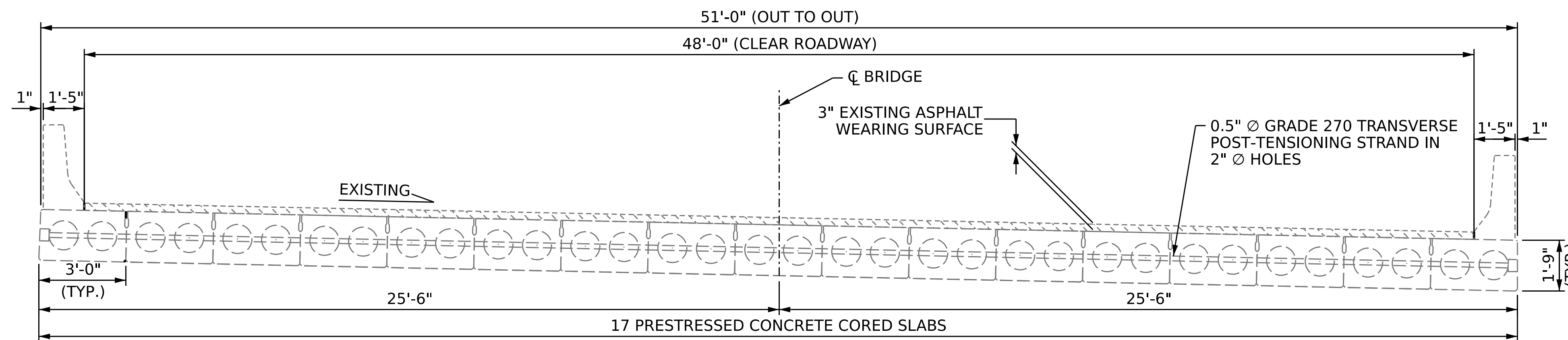
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : J. BALDWIN DATE : 06/2022
 CHECKED BY : S. WANCE DATE : 11/2022

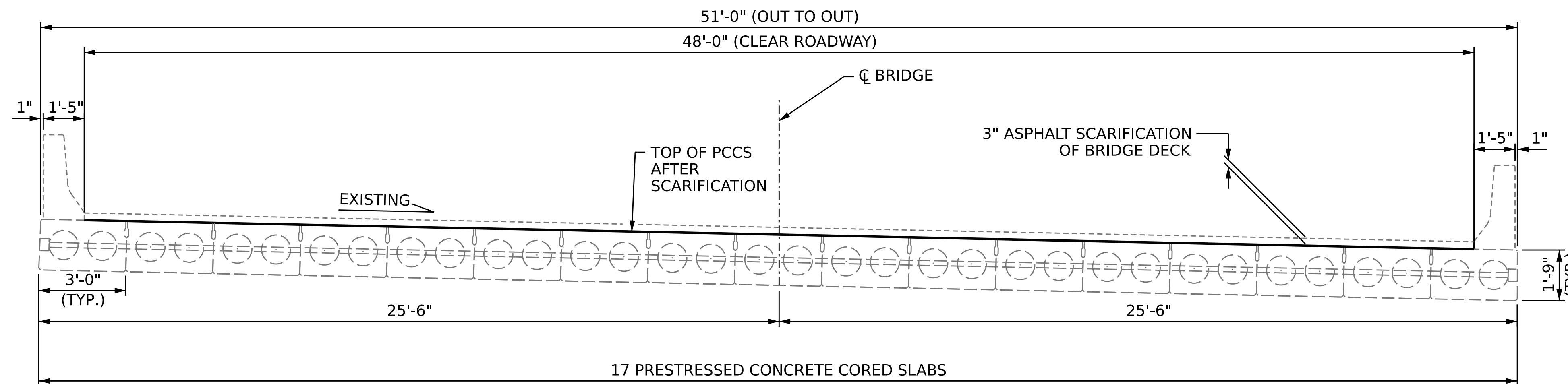
NOTES

SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

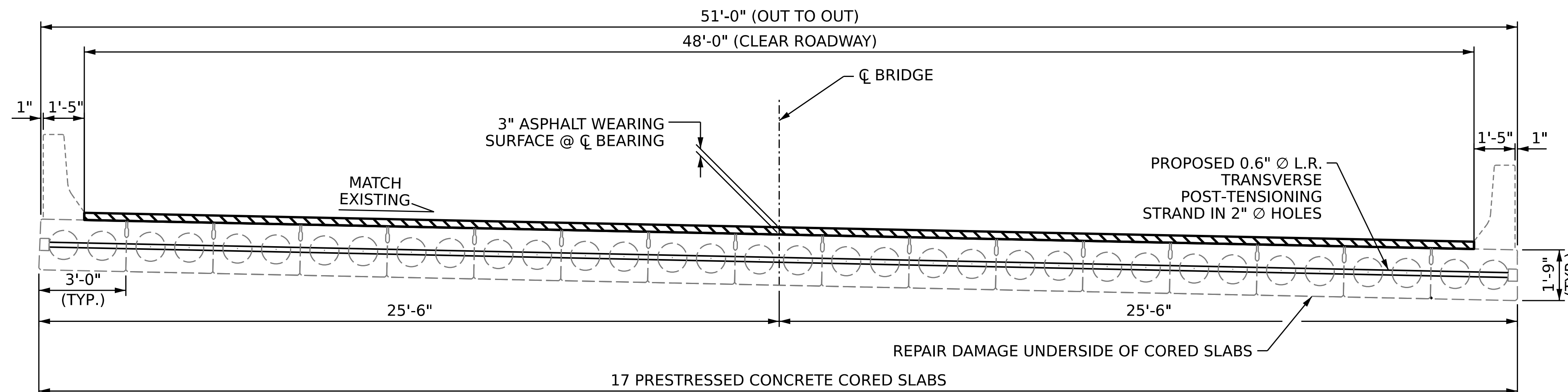
PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.



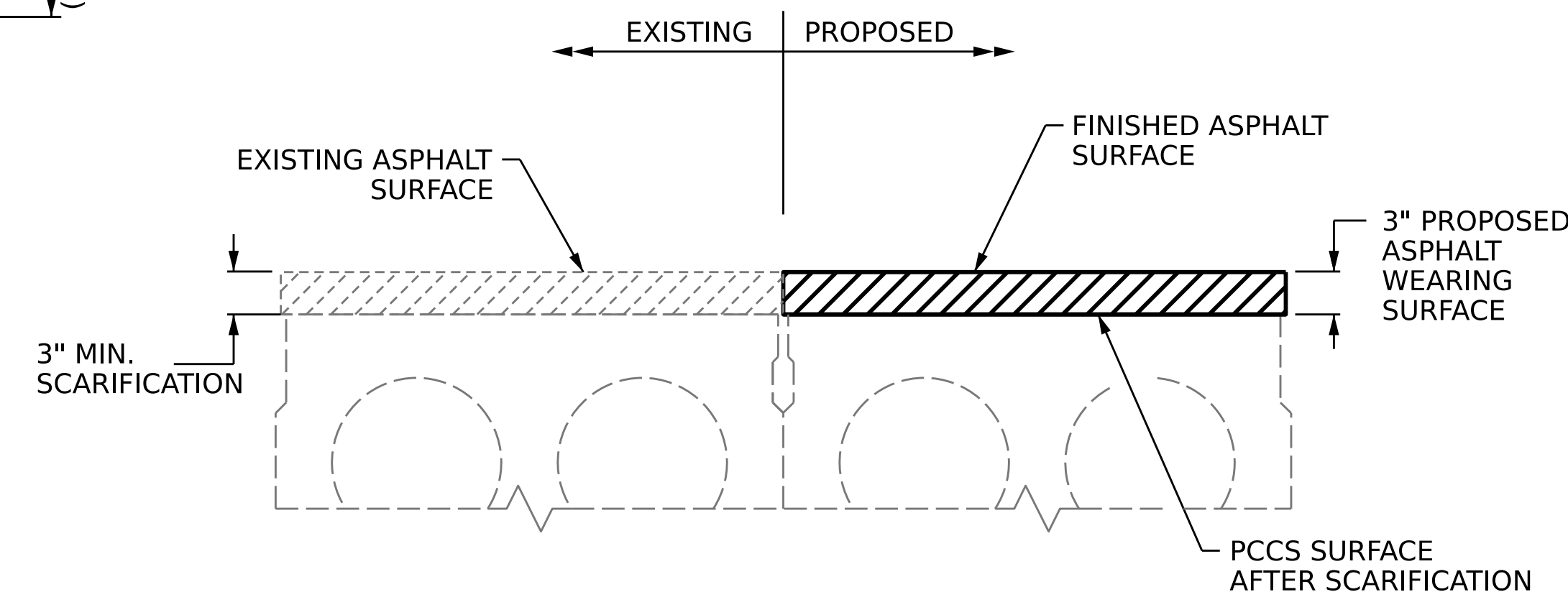
TYPICAL SECTION
(EXISTING)



TYPICAL SECTION
(DECK PREPARATION)



TYPICAL SECTION
(PROPOSED)



ASPHALT REPLACEMENT DETAIL

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770454**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
TYPICAL SECTION
 FOR BRIDGE OVER SEABOARD
 COAST LINE RAILROAD
 ON US 74 EASTBOUND
 BETWEEN NC 71 & SR 1303

DRAWN BY : J. BALDWIN DATE : 07/2022
 CHECKED BY : S. WANCE DATE : 11/2022

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-2
1			3			TOTAL SHEETS
2			4			7

SUMMARY OF REPAIR QUANTITIES FOR DECK SURFACE AND APPROACH SLAB

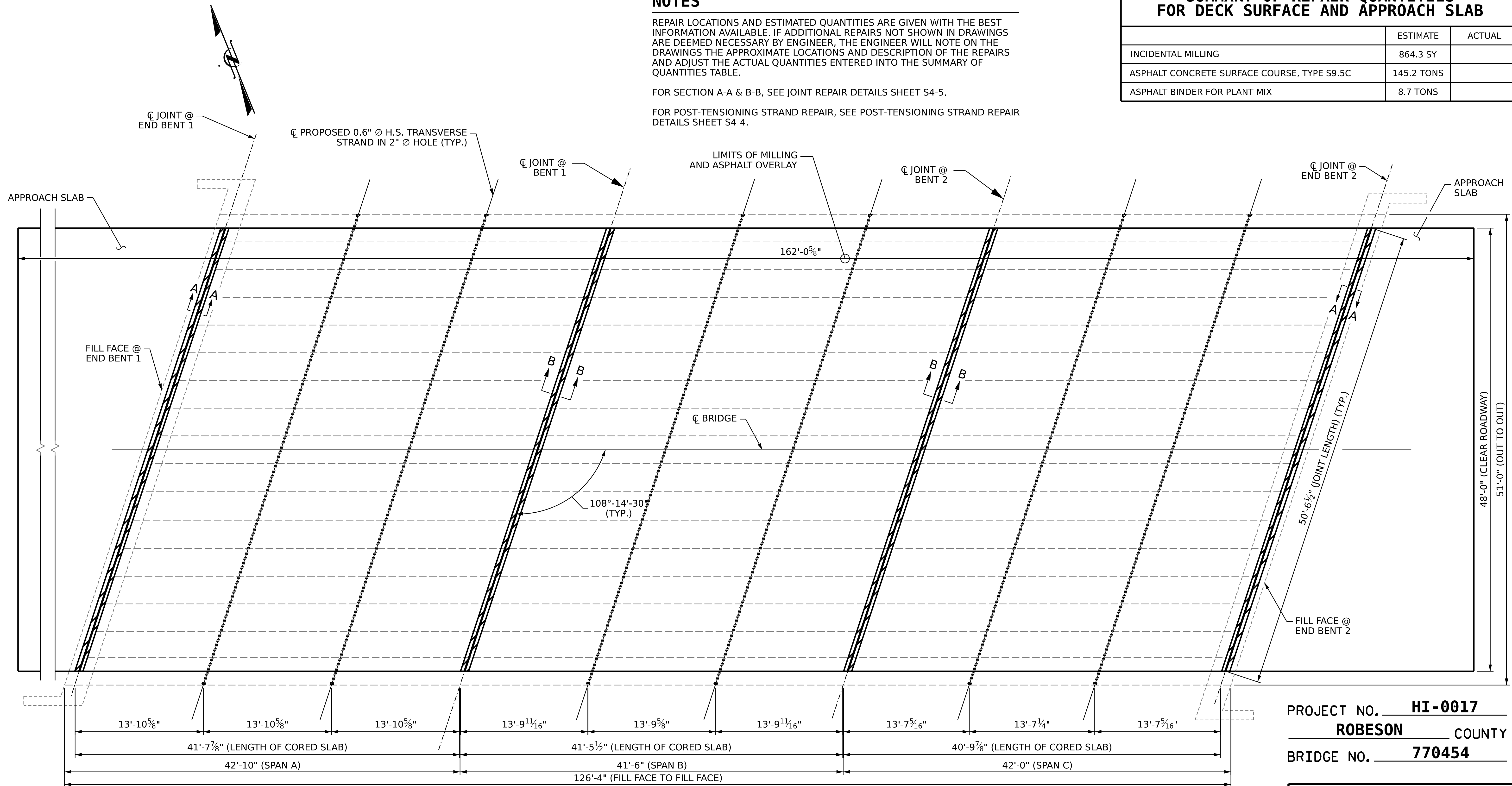
	ESTIMATE	ACTUAL
INCIDENTAL MILLING	864.3 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	145.2 TONS	
ASPHALT BINDER FOR PLANT MIX	8.7 TONS	

NOTES

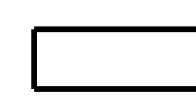

REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN IN DRAWINGS ARE DEEMED NECESSARY BY ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED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

FOR SECTION A-A & B-B, SEE JOINT REPAIR DETAILS SHEET S4-5.

FOR POST-TENSIONING STRAND REPAIR, SEE POST-TENSIONING STRAND REPAIR DETAILS SHEET S4-4.



REPAIR KEY

-  MILLING AND ASPHALT OVERLAY
-  JOINT REPAIR

PLAN OF SPANS

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770454**



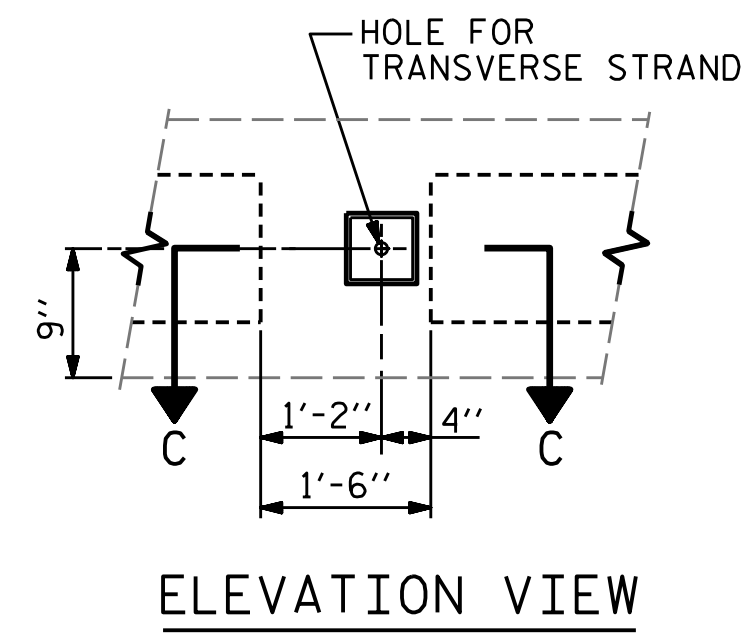
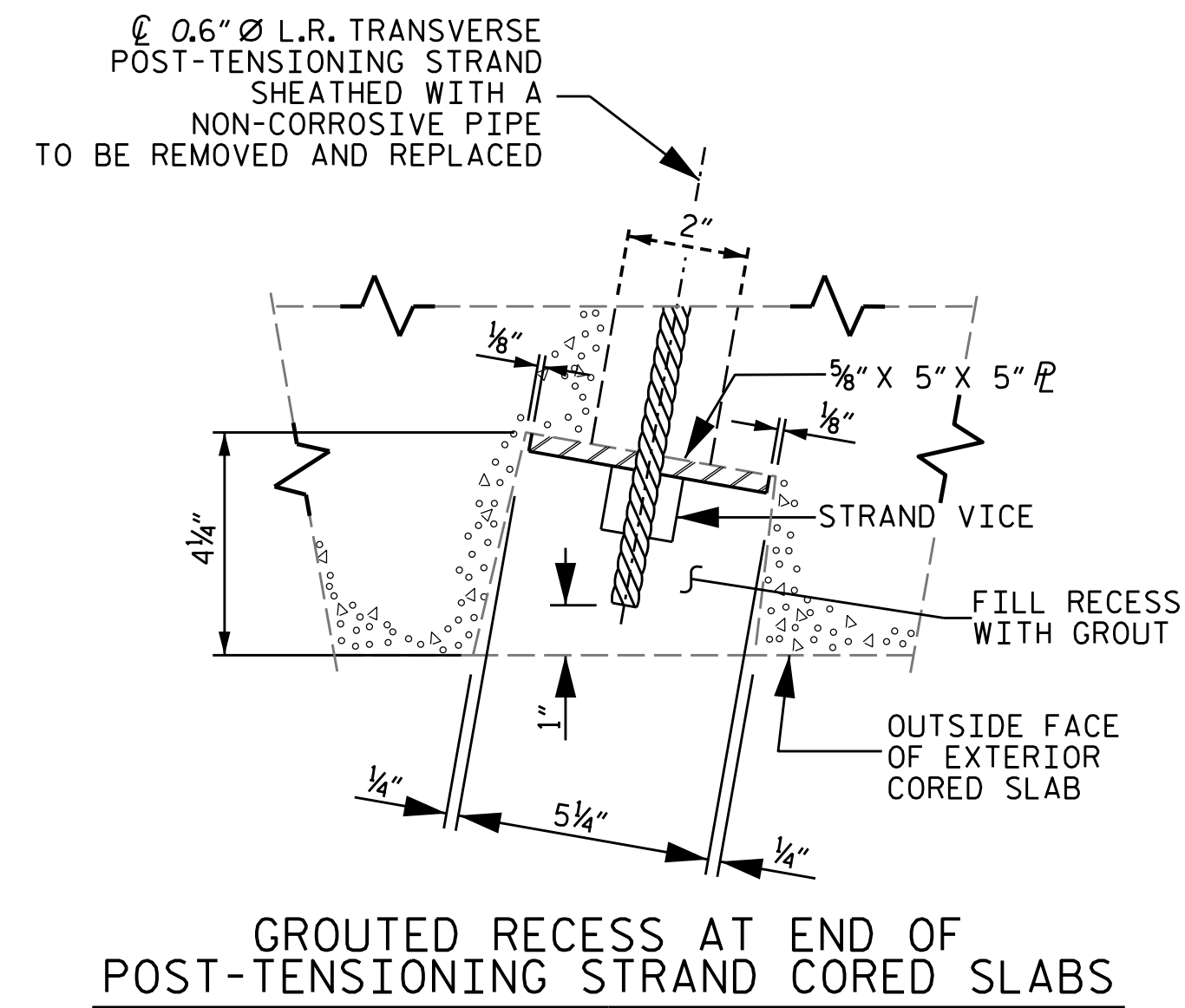
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION

DRAWN BY : J. BALDWIN DATE : 07/2022
 CHECKED BY : S. WANCE DATE : 11/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-3
1			3			TOTAL SHEETS
2			4			7



PCCS POST-TENSIONING SEQUENCE

PERFORM P/T IN STAGES AFTER DECK SURFACE PREPARATION IS COMPLETE.

REMOVE EXISTING P/T, INSTALL NEW P/T STRANDS, AND TENSION AND MAINTAIN AN INITIAL LOAD OF 10,000 LBS.

THE CONTRACTOR SHALL MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST-TENSIONING STRANDS IN THE SPAN.

APPLY THE FINAL P/T LOAD OF 43,950 LBS.

NOTES:

FOR POST-TENSIONING STRAND REPLACEMENT, SEE PCCS POST-TENSIONING STRAND REPLACEMENT SPECIAL PROVISION.

ALL POST-TENSIONING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO ASSHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE FINAL TENSIONING OF THE STRANDS.

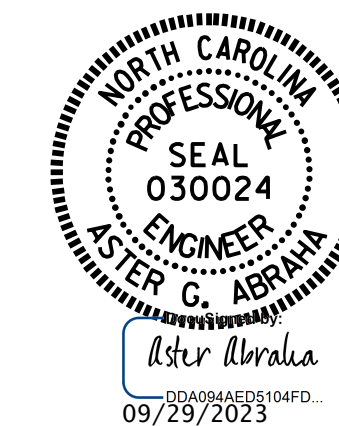
FOR "GROUT FOR STRUCTURES," SEE SPECIAL PROVISIONS.

FLAME CUTTING OF TRANSVERSE POST-TENSIONING STRANDS IS NOT ALLOWED.

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
POST-TENSIONING STRAND REPLACEMENT	6 EA.	

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770454**



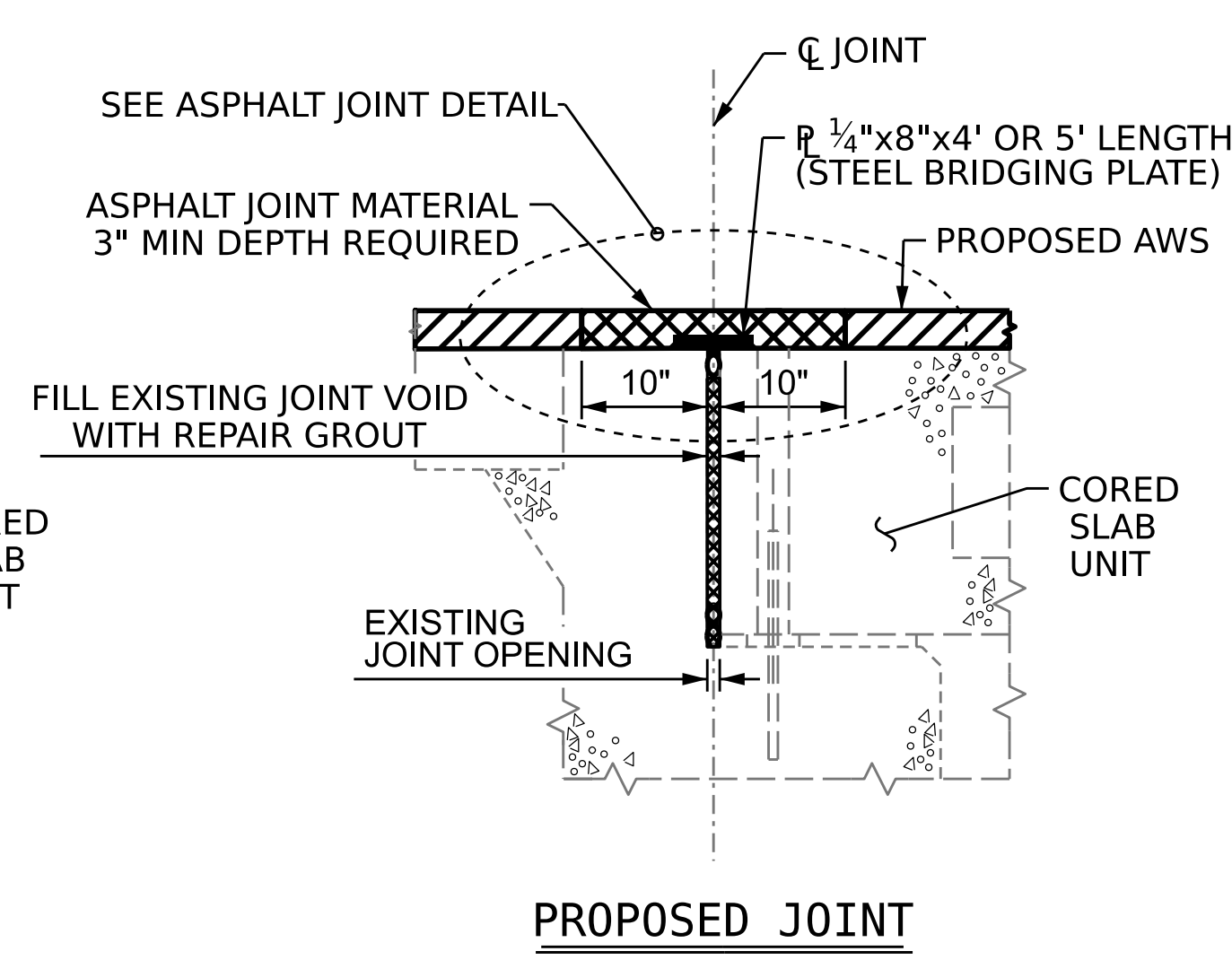
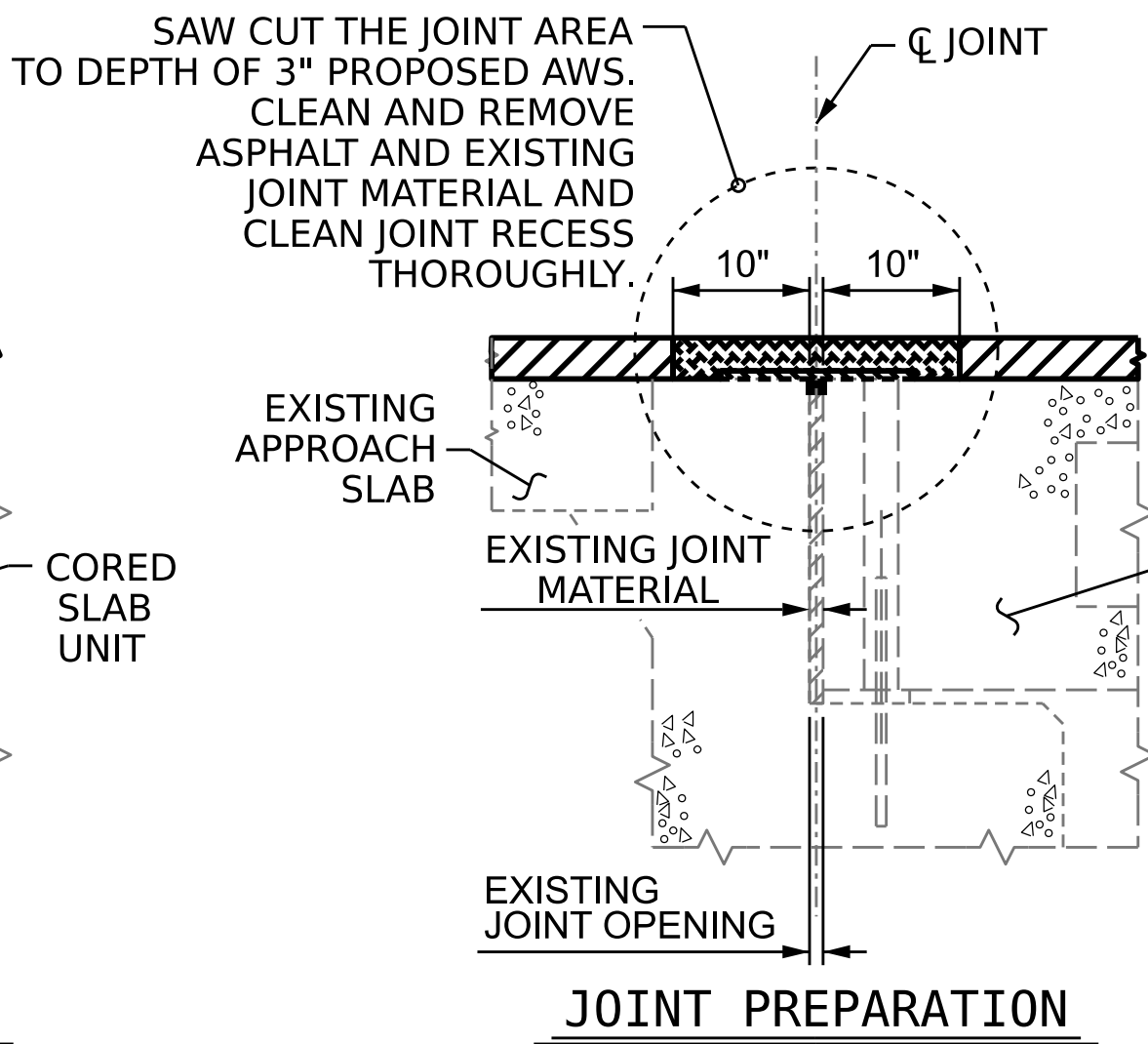
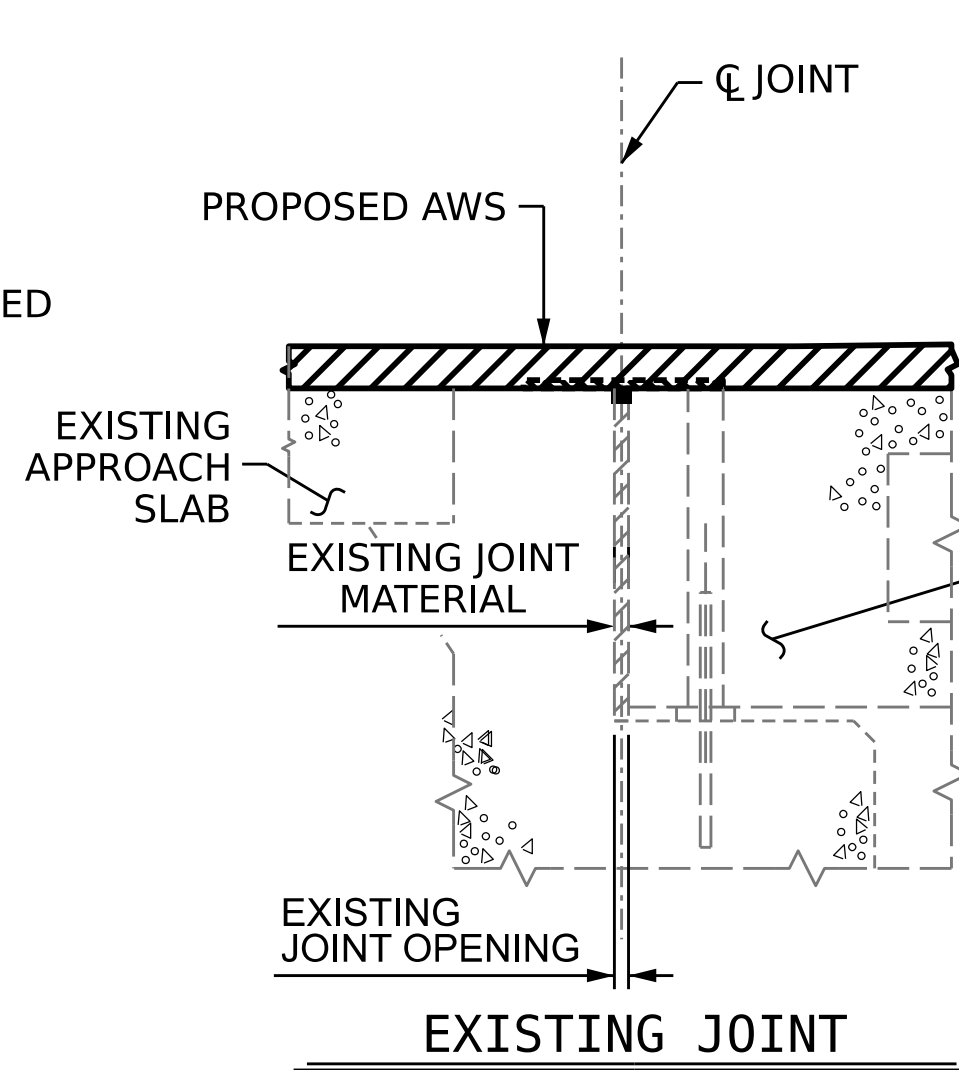
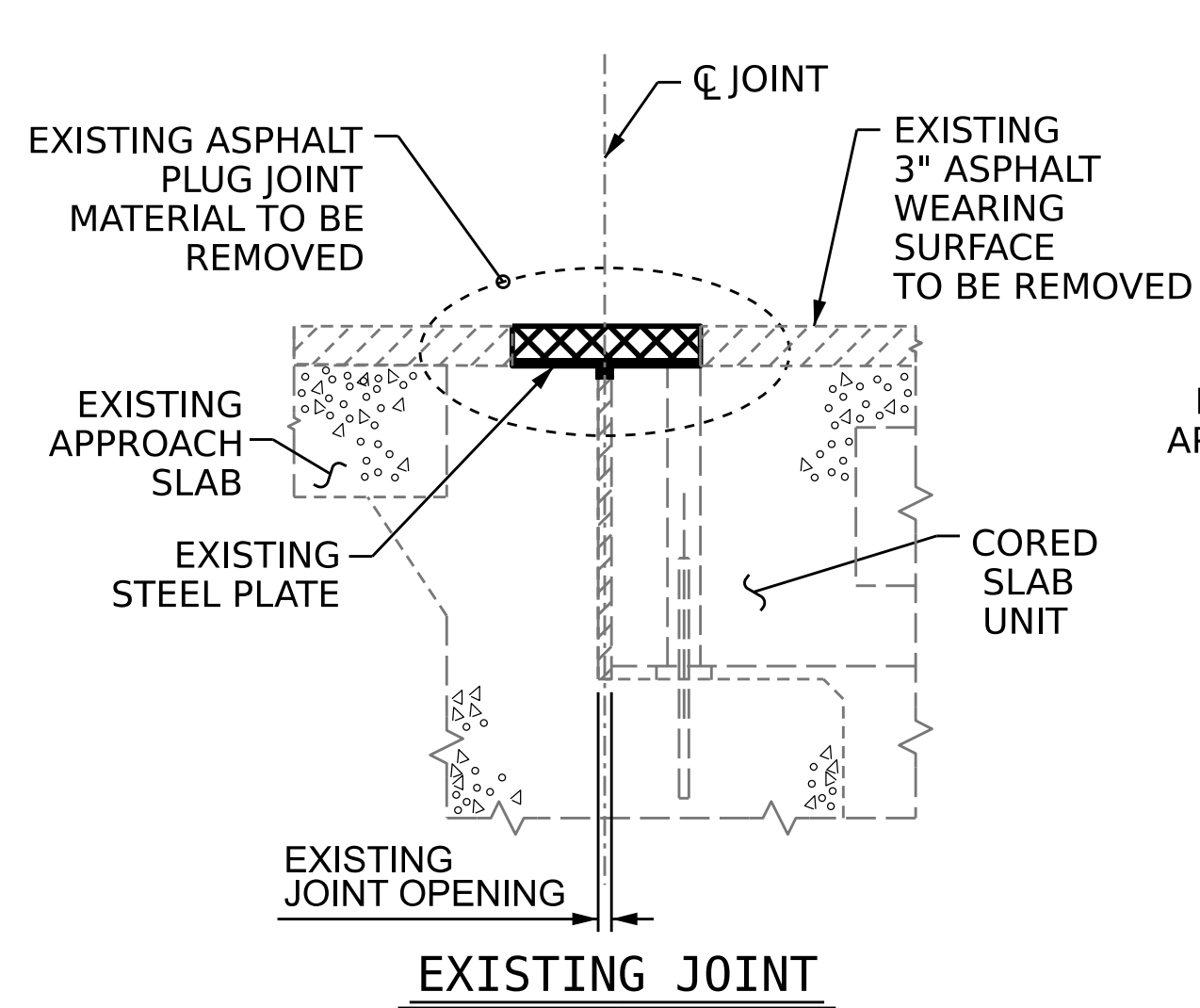
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

POST-TENSIONING STRAND REPAIR DETAILS

DRAWN BY : J. BALDWIN DATE : 11/2022
 CHECKED BY : S. WANCE DATE : 11/2022

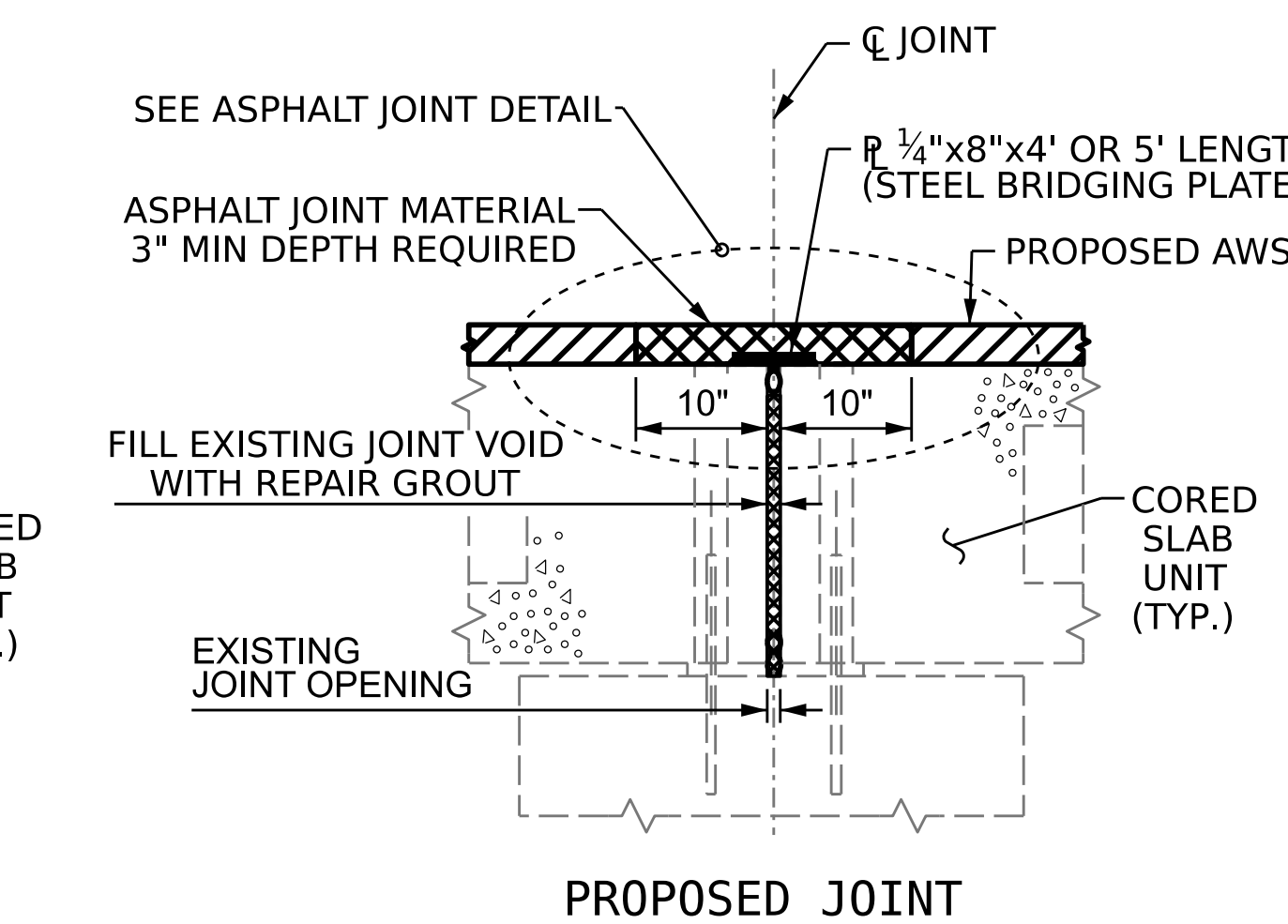
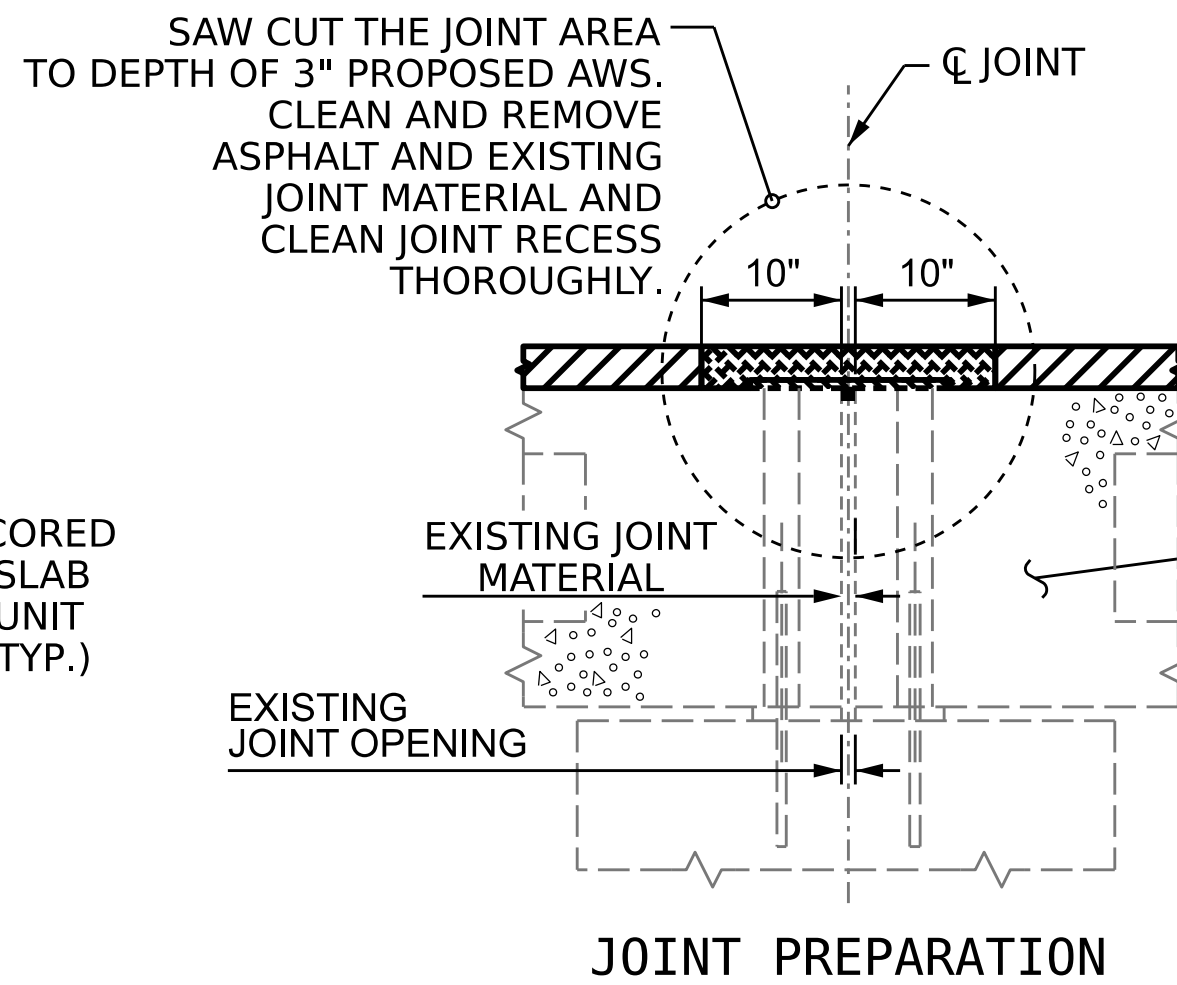
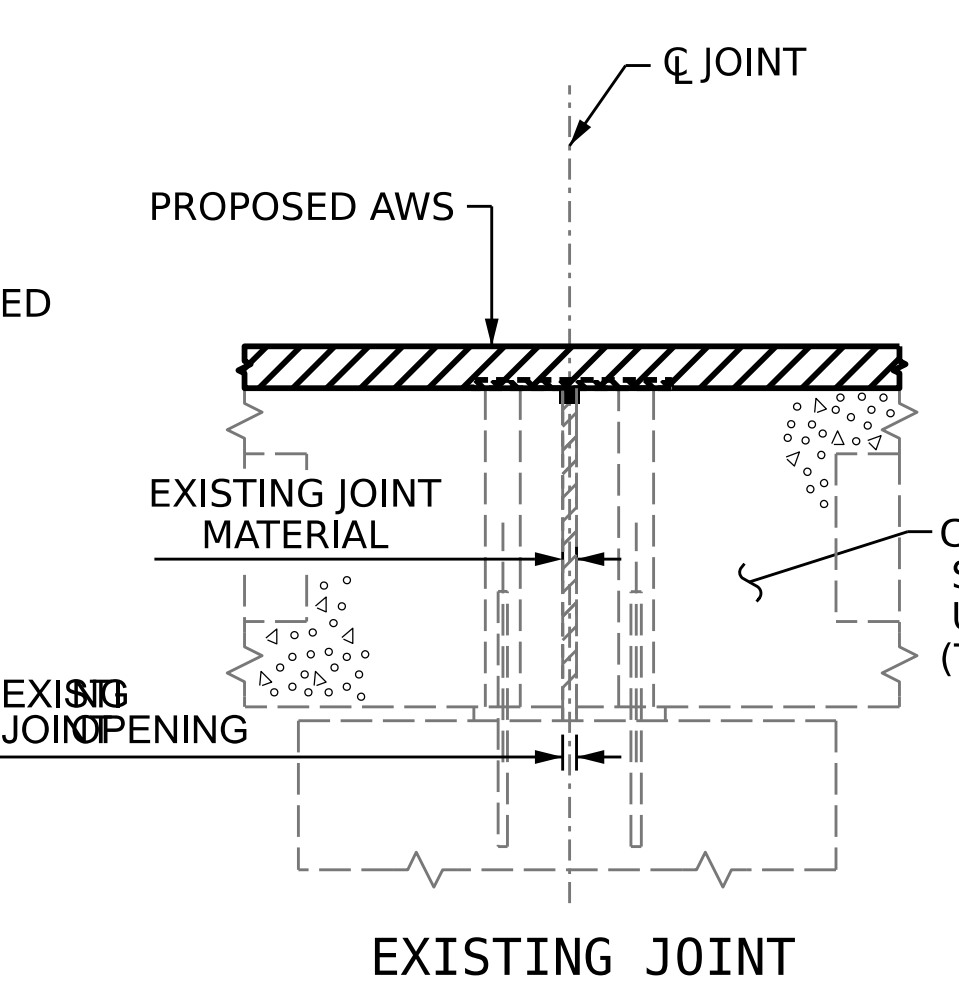
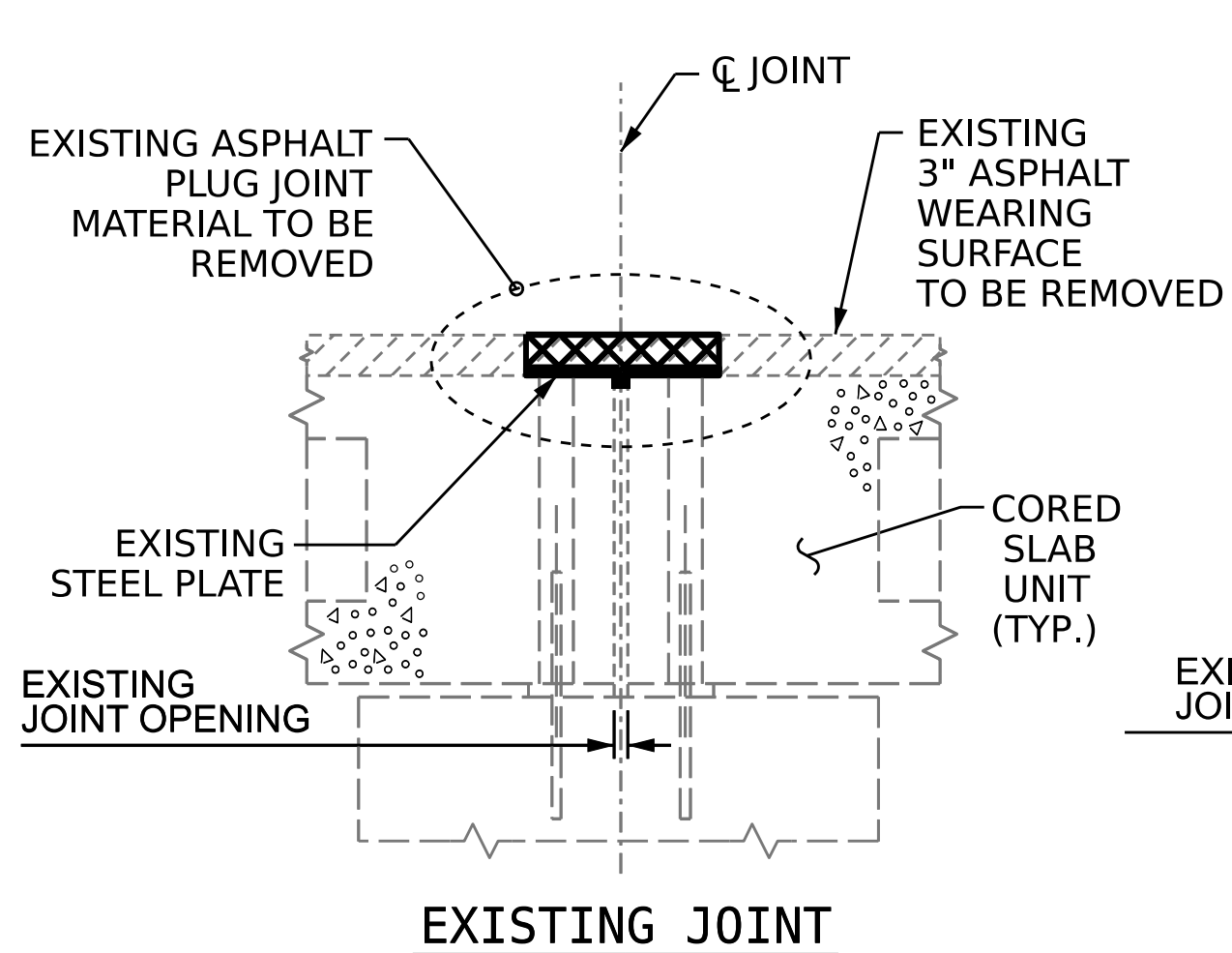
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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2			4			TOTAL SHEETS 7



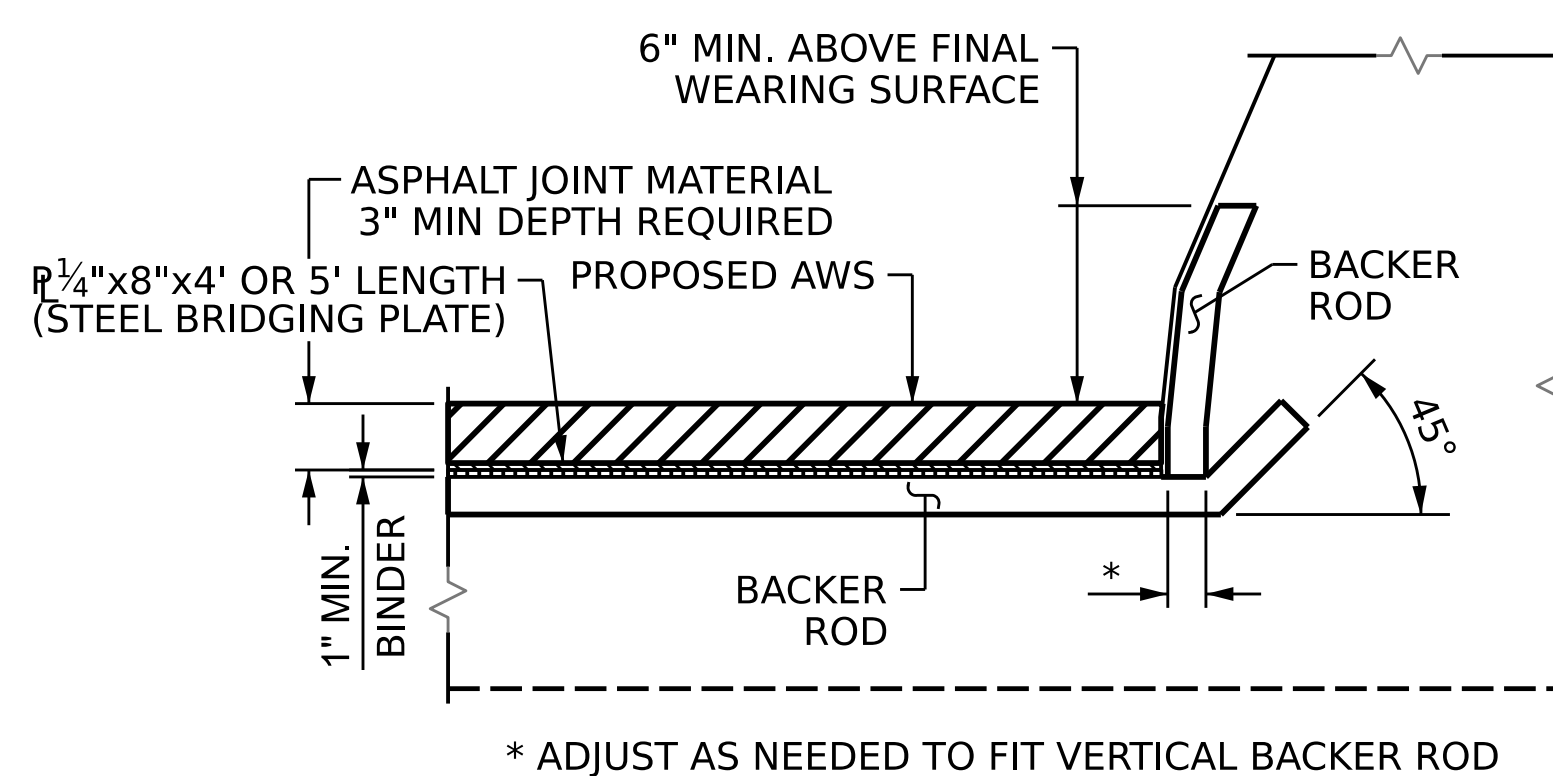
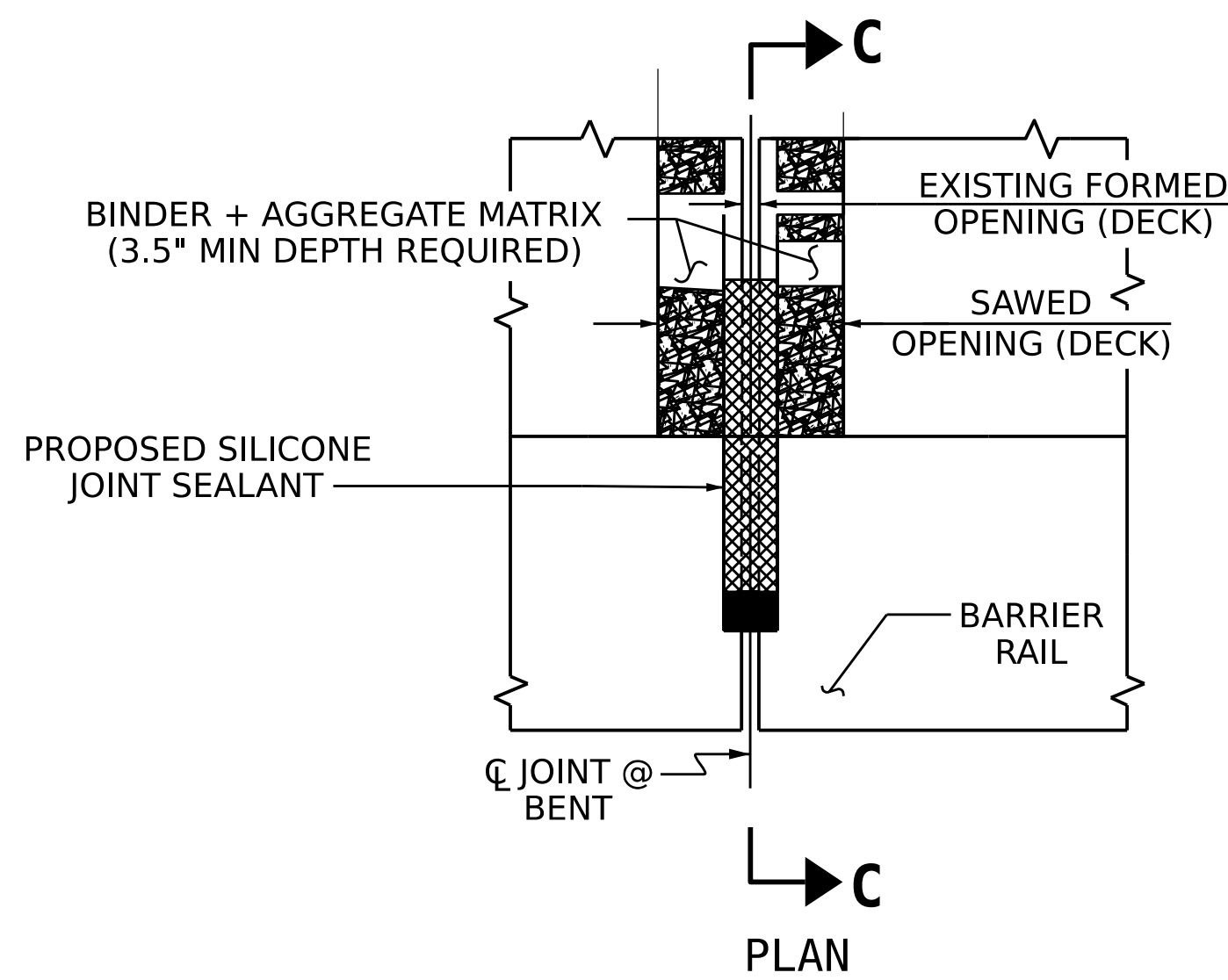
JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A

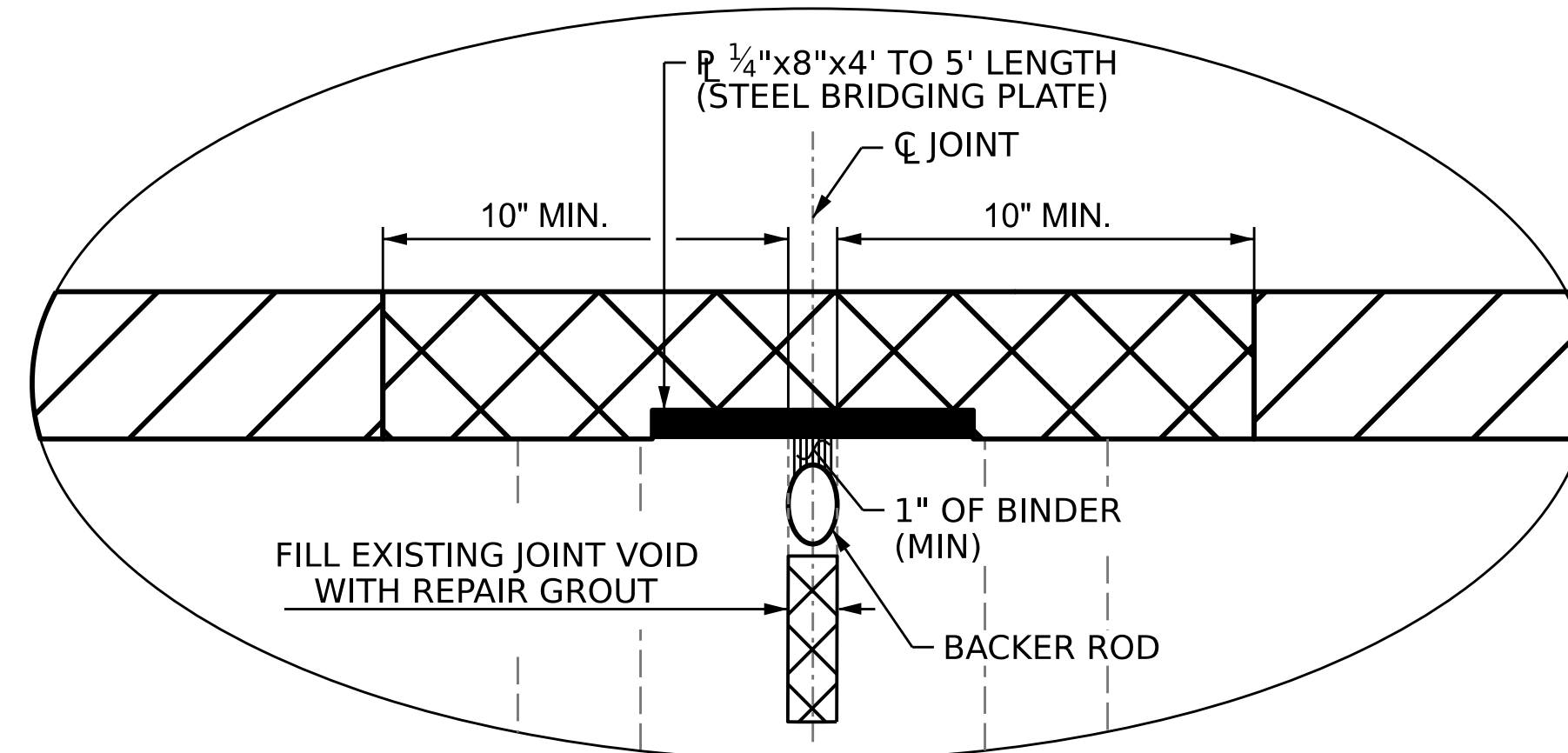


JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



SECTION C-C
(PROPOSED JOINT SEAL)



ASPHALT JOINT DETAIL

INSTALL (2) BACKER RODS AT THE BOTTOM OF THE CORED SLABS PRIOR TO GROUTING

NOTES

PRIOR TO ASPHALT JOINT INSTALLATION, PERFORM POST-TENSIONING STRAND REPLACEMENT. SEE PLAN OF SPAN SHEET AND POST-TENSIONING REPAIR DETAIL SHEET.

REMOVE ANY EXISTING ASPHALT JOINTS PRIOR TO INSTALLATION OF THE PROPOSED ASPHALT JOINTS. PAYMENT FOR REMOVAL OF EXISTING ASPHALT JOINTS SHALL BE CONSIDERED INCIDENTAL TO THE PROPOSED ASPHALT JOINTS.

FOR ASPHALT PLUG JOINTS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR 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 JOINTS.

BACKER ROD SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE INSTALLATION OF THE BACKER ROD AND ASPHALT JOINT SEAL SHALL BE WATERTIGHT.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

THE ASPHALT JOINT STEEL BRIDGING PLATE SHALL BE A MINIMUM OF 36 KSI STEEL.

THE ASPHALT JOINT STEEL BRIDGING PLATE THICKNESS SHALL BE A MINIMUM OF 1/4".

JOINT REPAIR QUANTITIES

	ESTIMATE	ACTUAL
ASPHALT PLUG JOINTS FOR PRESERVATION	202.2 LF	

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770454**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

DRAWN BY: J. BALDWIN DATE: 07/2022
 CHECKED BY: S. WANCE DATE: 11/2022

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S4-5
TOTAL SHEETS: 7

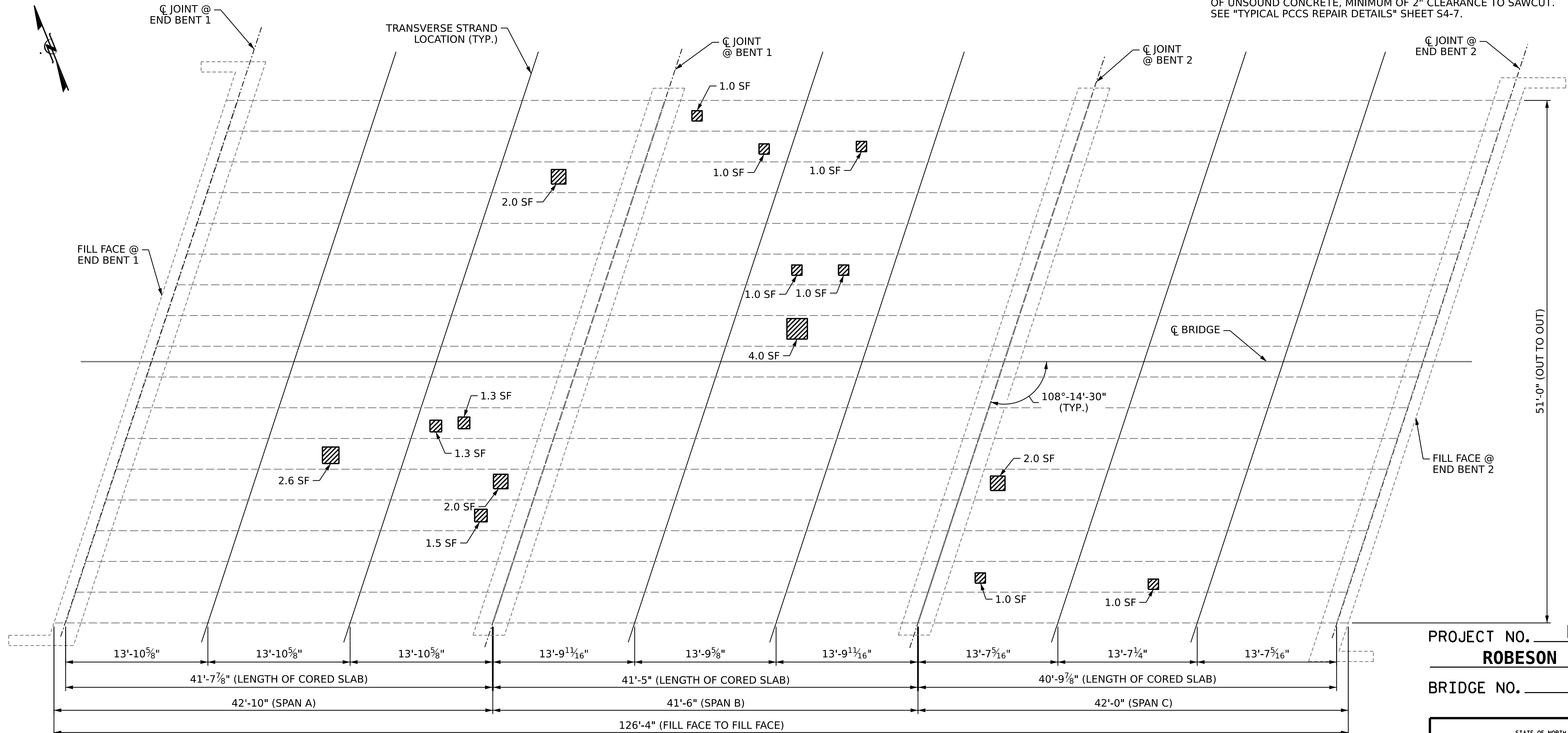
NOTES:

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 REPAIR QUANTITY TABLE.

DECK UNDERSIDE REPAIR QUANTITY TABLE

PCCS REPAIRS	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF	VOLUME CF	AREA SF	VOLUME CF
REPAIRS TO PRESTRESSED CONCRETE CORED SLABS	23.7	4.2		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 2" CLEARANCE TO SAWCUT. SEE "TYPICAL PCCS REPAIR DETAILS" SHEET S4-7.



PLAN OF SPANS
BOTTOM VIEW

PROJECT NO. **HI-0017**
ROBESON COUNTY
BRIDGE NO. **770454**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**UNDERSIDE OF
CORED SLAB
REPAIR LOCATIONS**

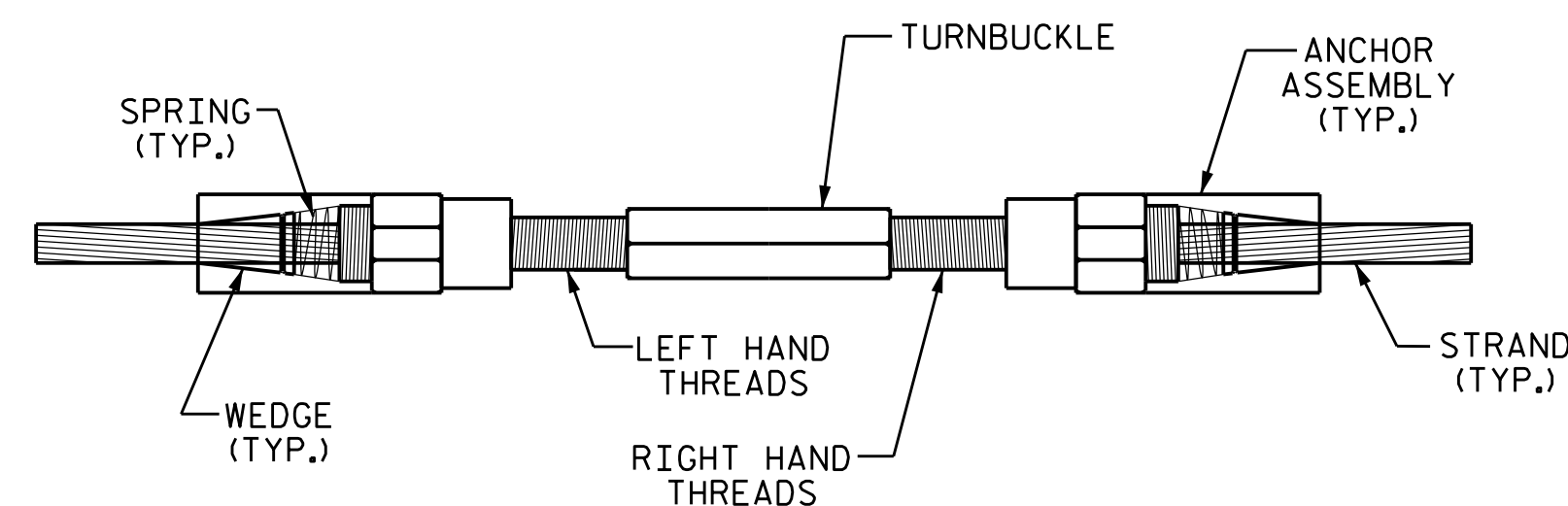
DRAWN BY : J. BALDWIN DATE : 07/2022
CHECKED BY : S. WANCE DATE : 11/2022

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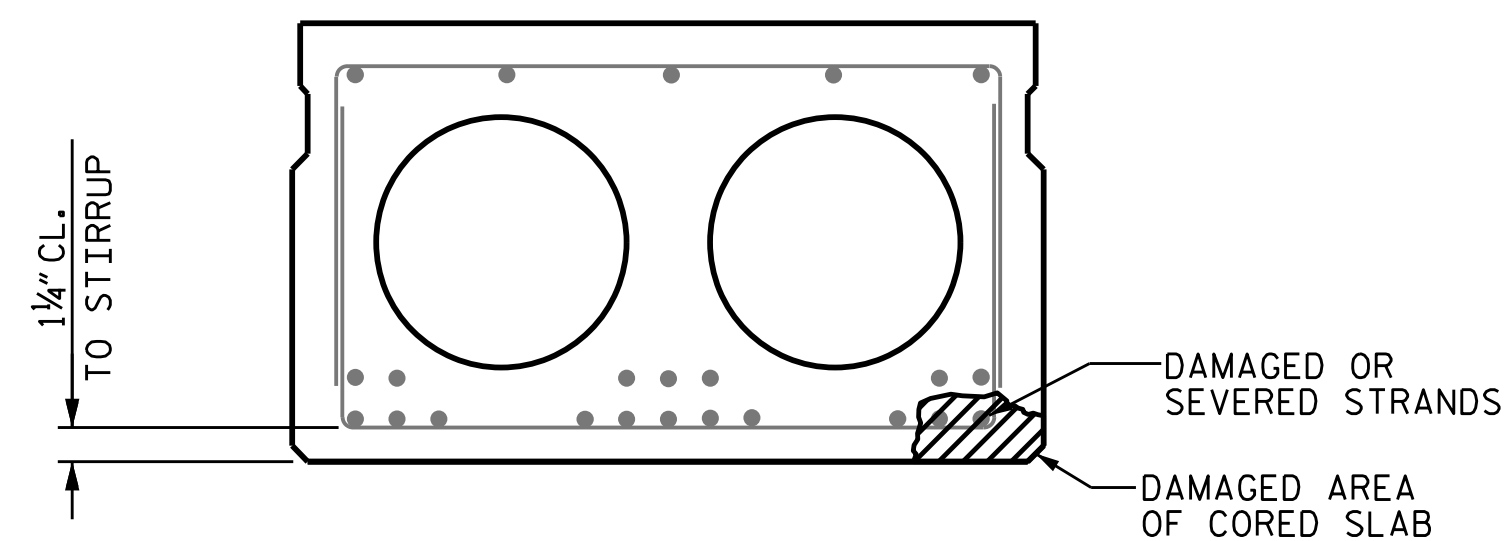
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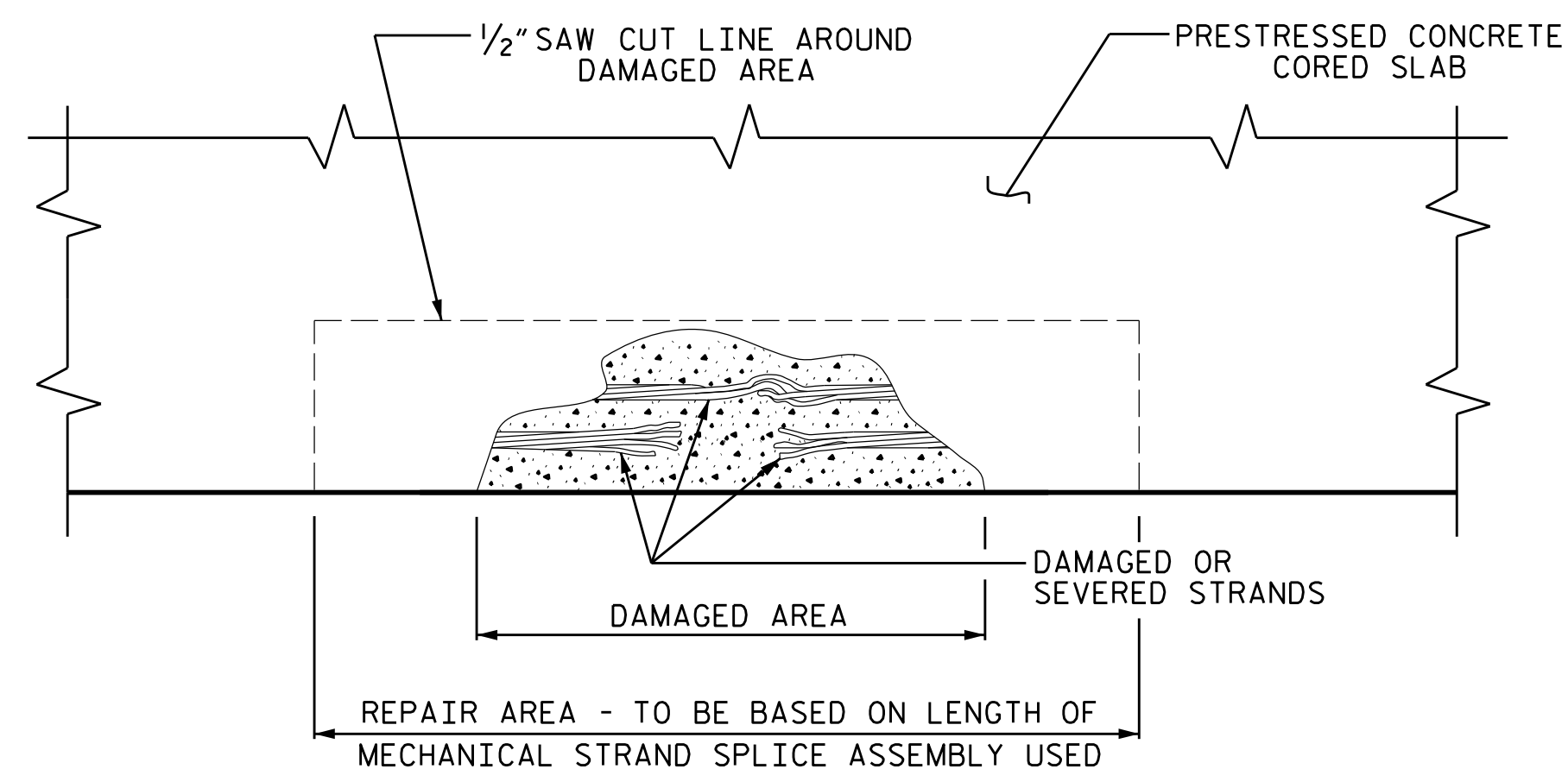
MECHANICAL STRAND SPLICE ASSEMBLY
(ASSEMBLIES MAY VARY DEPENDING ON MANUFACTURER)



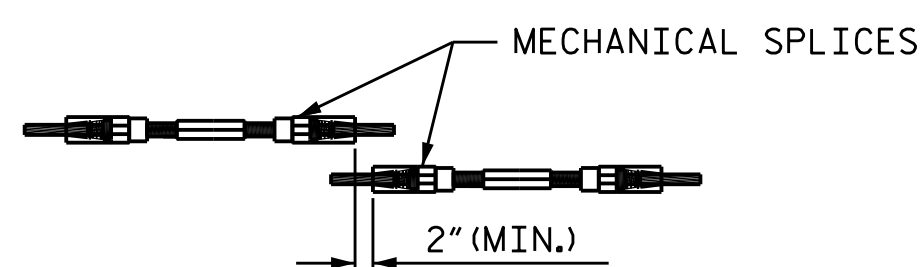
MECHANICAL STRAND SPLICE DETAIL



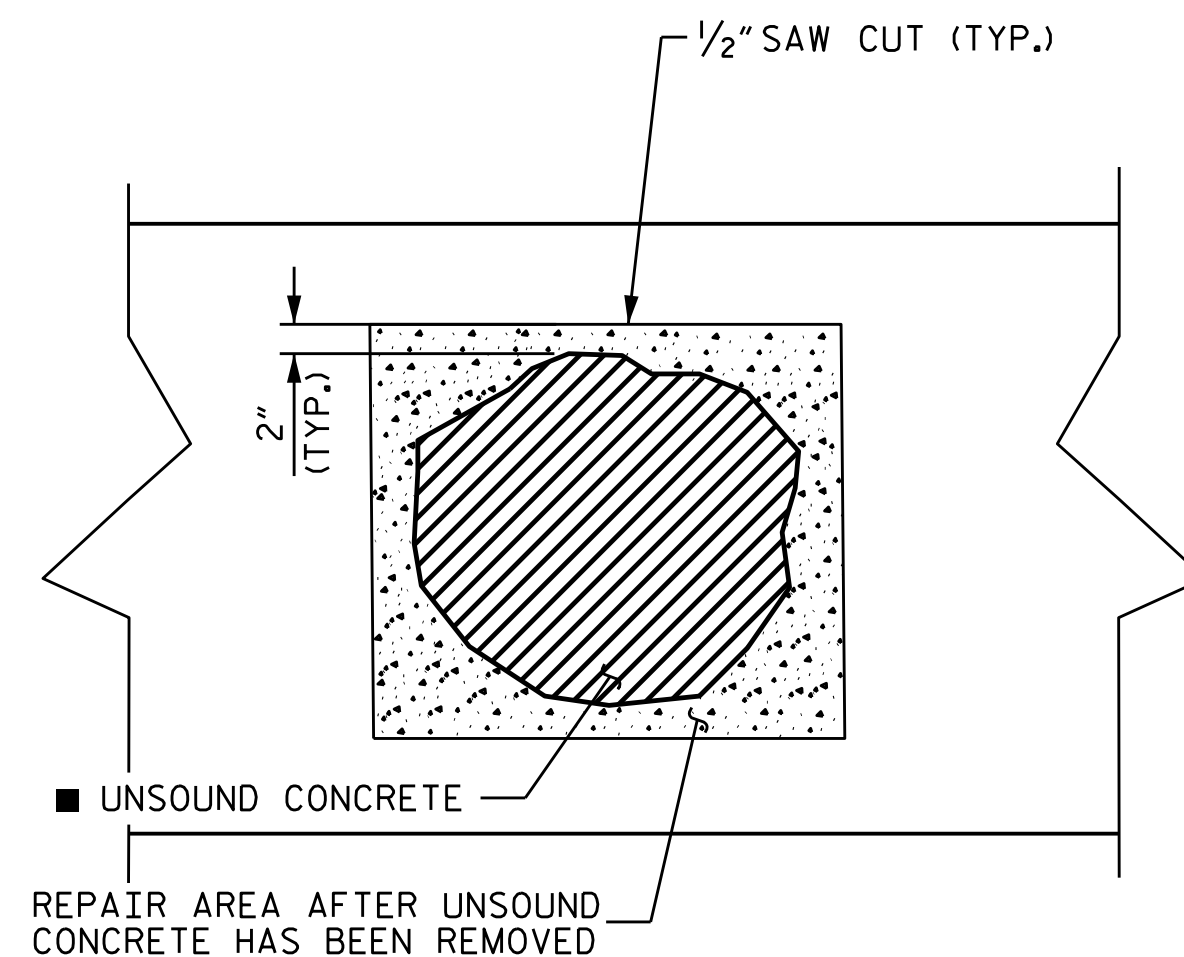
CORED SLAB SECTION WITH EXPOSED DAMAGED PRESTRESSED STRANDS



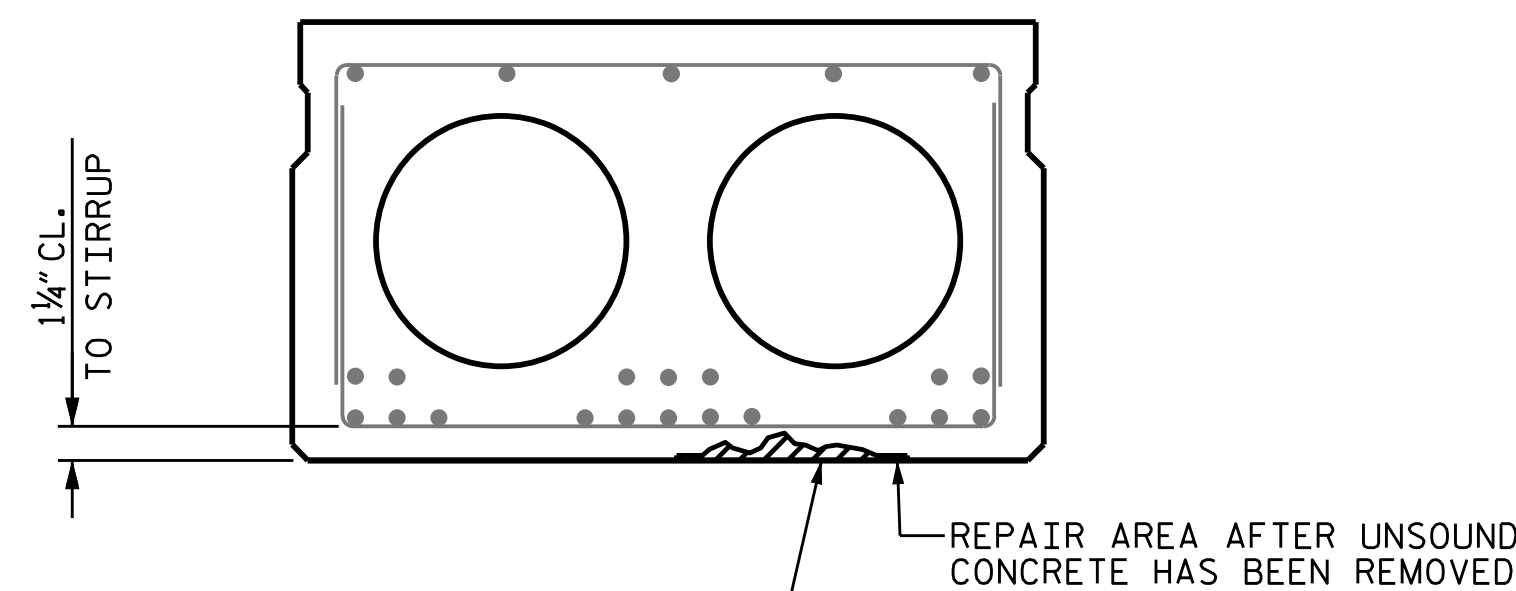
CORED SLAB ELEVATION VIEW WITH EXPOSED DAMAGED PRESTRESSED STRANDS



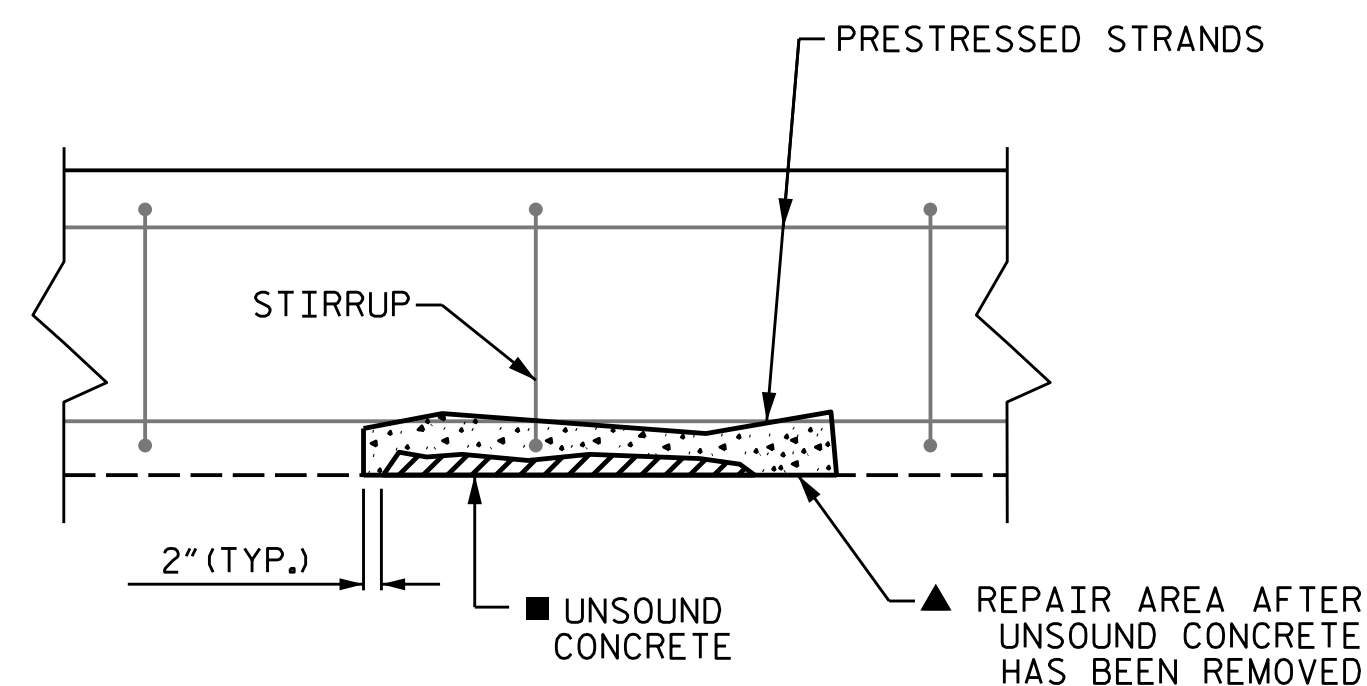
STRAND REPAIR DETAILS



BOTTOM OF CORED SLAB



CORED SLAB SECTION



ELEVATION

NOTES:

PREPACKAGED MATERIAL IS REQUIRED.

CONSULT WITH THE ENGINEER TO DETERMINE PRELOADING REQUIREMENTS WHEN REPAIR IS WITHIN THE CENTER REGION OF THE BEAM (0.25L TO 0.75L).

FOR REPAIRS OVER RAILROAD AND SHALLOW REPAIRS THAT DO NOT ENGAGE REINFORCEMENT, ANCHOR PATCH MATERIAL USING 1/4" GALVANIZED BOLTS, EPOXY ANCHORED WITH 2" EMBEDMENT. PLACE BOLTS IN A 6" GRID. USE A LATEX OR EPOXY PATCH MATERIAL FOR IMPROVED BOND. USE EXTREME CARE TO NOT DAMAGE STRANDS.

FOR REPAIRS TO PRESTRESSED CONCRETE CORED SLABS, SEE SPECIAL PROVISIONS.

PRESTRESSED CONCRETE CORED SLAB REPAIR SEQUENCE:

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

PRESTRESSED STRAND REPAIR SEQUENCE:

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

PROJECT NO. **HI-0017**
ROBESON COUNTY
BRIDGE NO. **770454**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

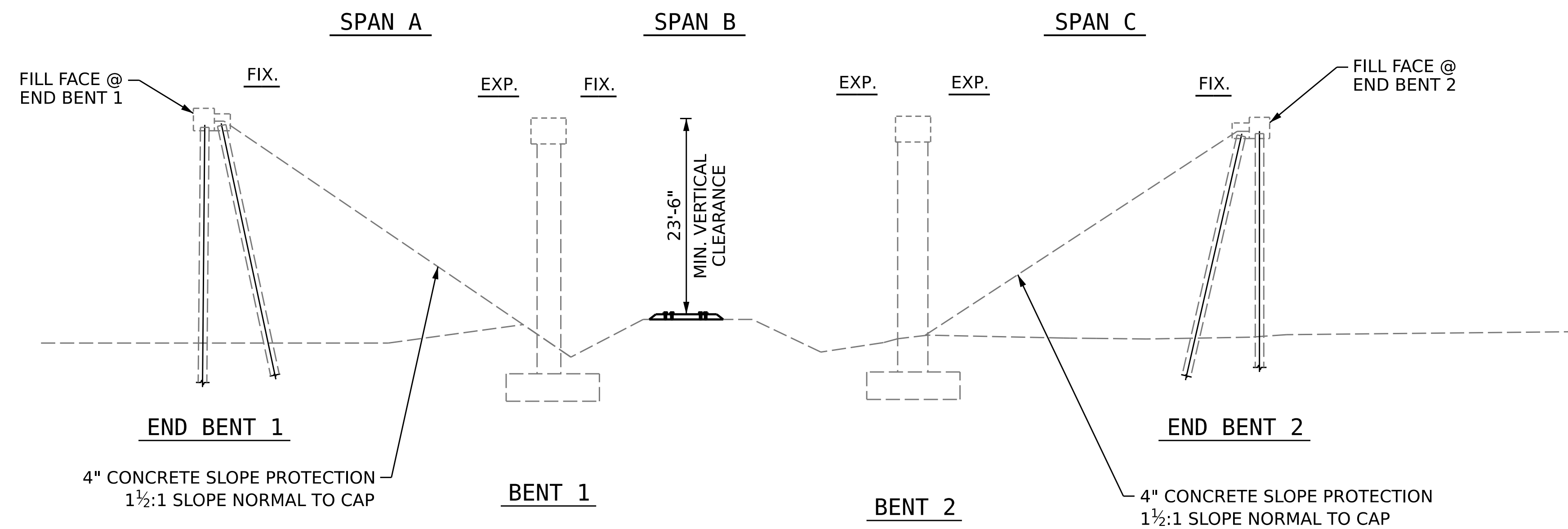
TYPICAL PCCS REPAIR DETAILS

ASSEMBLED BY : JGB	DATE : 11/2022
CHECKED BY : SW	DATE : 11/2022
DRAWN BY :	
CHECKED BY :	

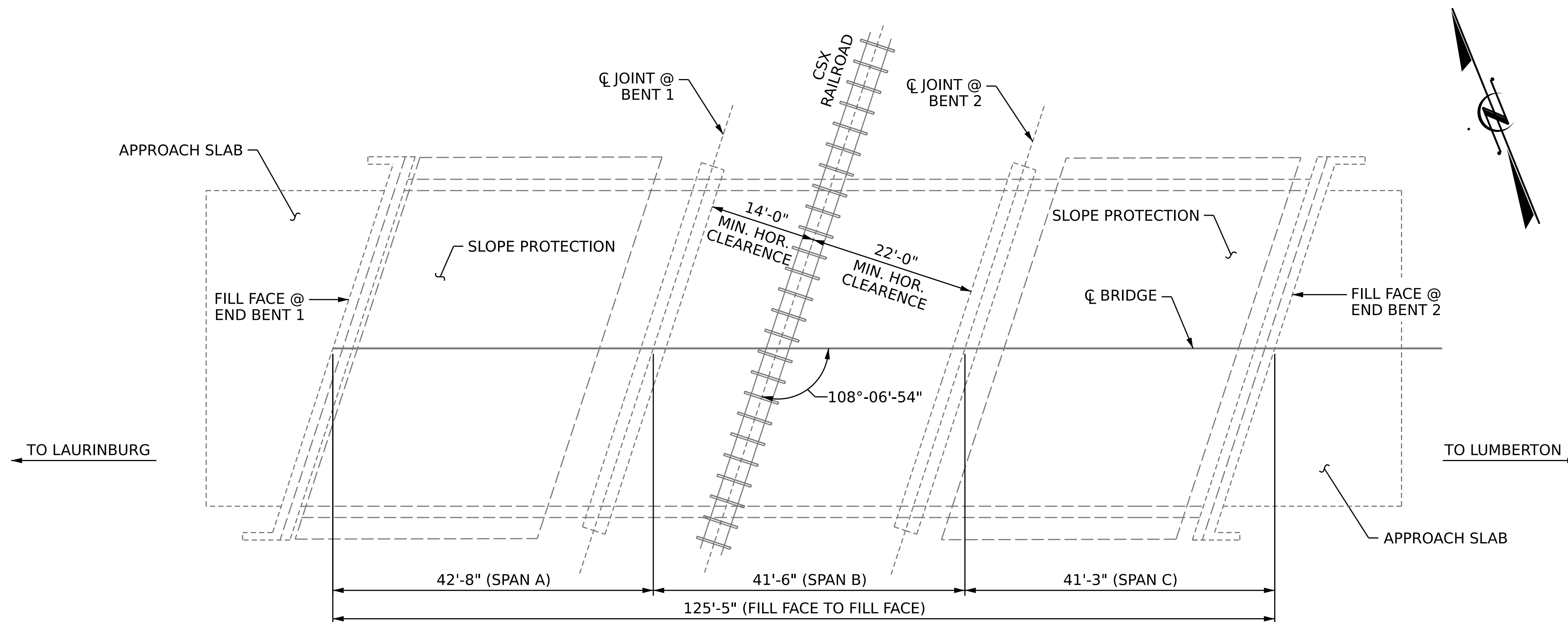
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SECTION ALONG CL BRIDGE



PLAN
(FOOTINGS, COLUMNS & PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

NOTES

- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND ROUTINE INSPECTION REPORT DATED 04/04/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

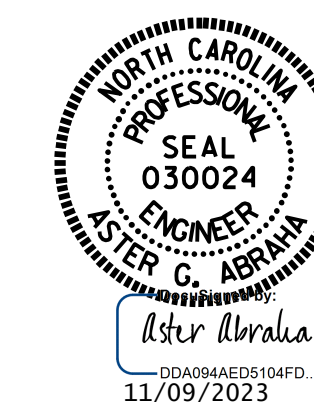
SCOPE OF WORK

- REMOVE EXISTING ASPHALT WEARING SURFACE AND PLUG JOINTS.
- REPLACE TRANSVERSE POST-TENSIONING STRANDS.
- REPLACE BRIDGE PLUG JOINTS WITH BACKER ROD AND ASPHALT BINDER JOINT.
- REPLACE ASPHALT WEARING SURFACE.
- REPAIR DAMAGED UNDERSIDE OF CORED SLABS WITH SHOTCRETE OR CONCRETE.

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

RESIDENT ENGINEER _____ DATE _____

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770455**
 MILEPOST AG 245.92



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE OVER CSX RAILROAD
 ON US 74 WESTBOUND
 BETWEEN NC 71 & SR 1303

DRAWN BY : J. BALDWIN DATE : 8/2022
 CHECKED BY : S. WANCE DATE : 11/2022

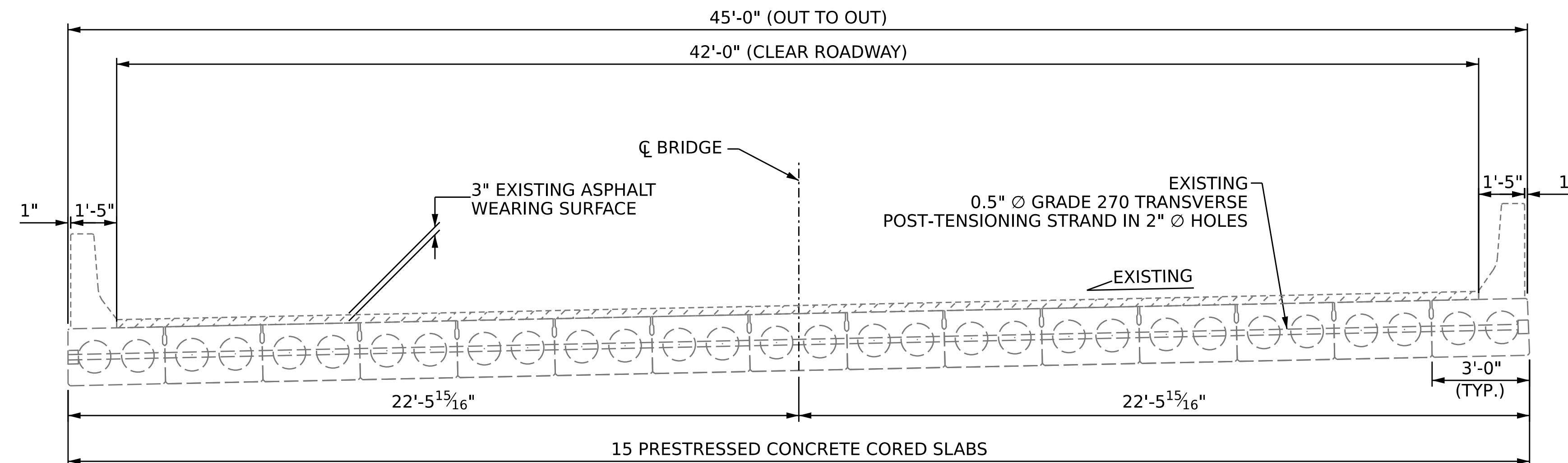
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1			3			TOTAL SHEETS
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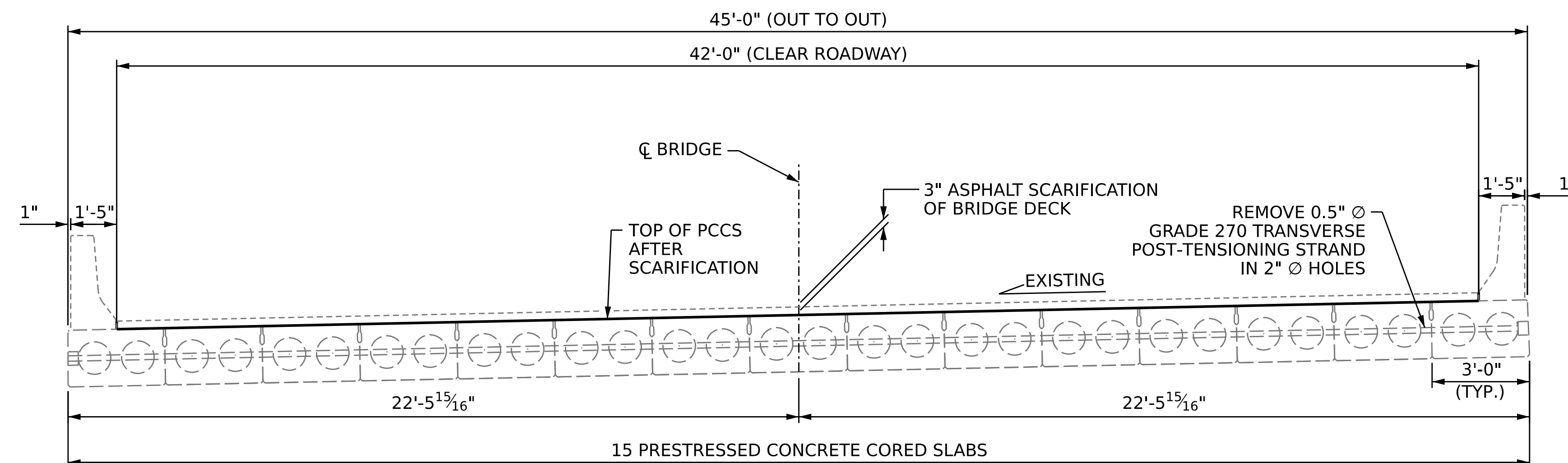
NOTES

SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

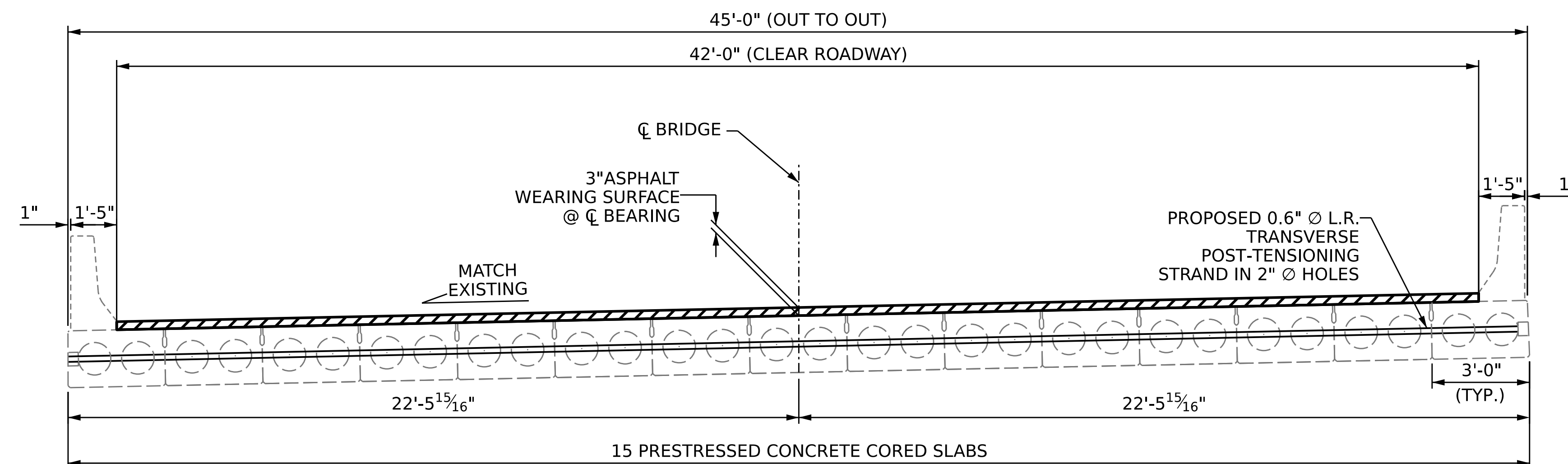
PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.



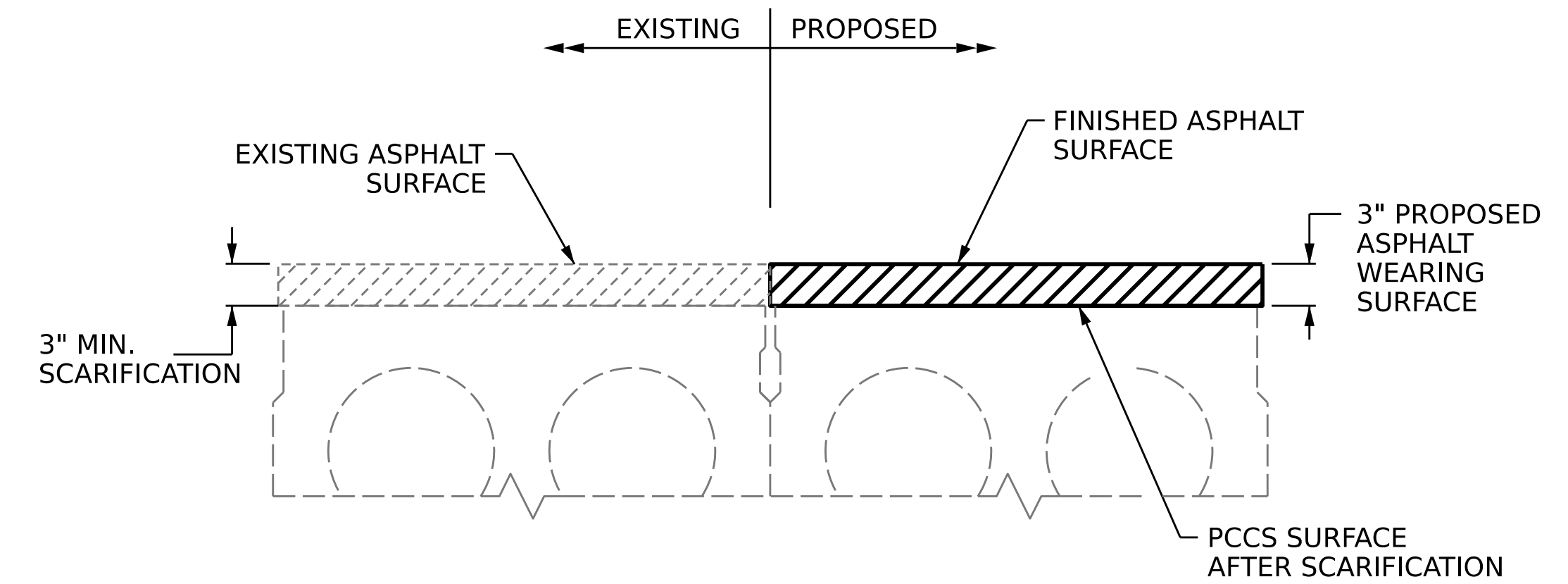
TYPICAL SECTION
(EXISTING) (AT INTERMEDIATE DIAPHRAGMS)



TYPICAL SECTION
(DECK PREPARATION) (AT INTERMEDIATE DIAPHRAGMS)



TYPICAL SECTION
(PROPOSED) (AT INTERMEDIATE DIAPHRAGMS)



ASPHALT REPLACEMENT DETAIL

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770455**

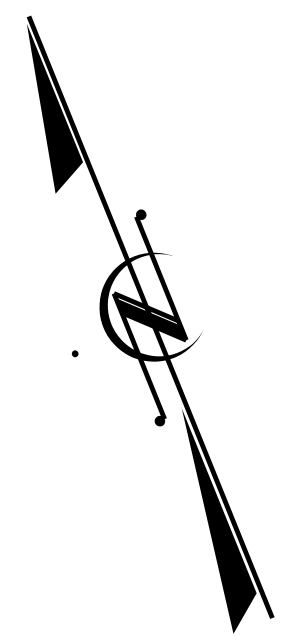


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
TYPICAL SECTION
 FOR BRIDGE OVER CSX RAILROAD
 ON US 74 WESTBOUND
 BETWEEN NC 71 & SR 1303

DRAWN BY : J. BALDWIN DATE : 08/2022
 CHECKED BY : S. WANCE DATE : 11/2022

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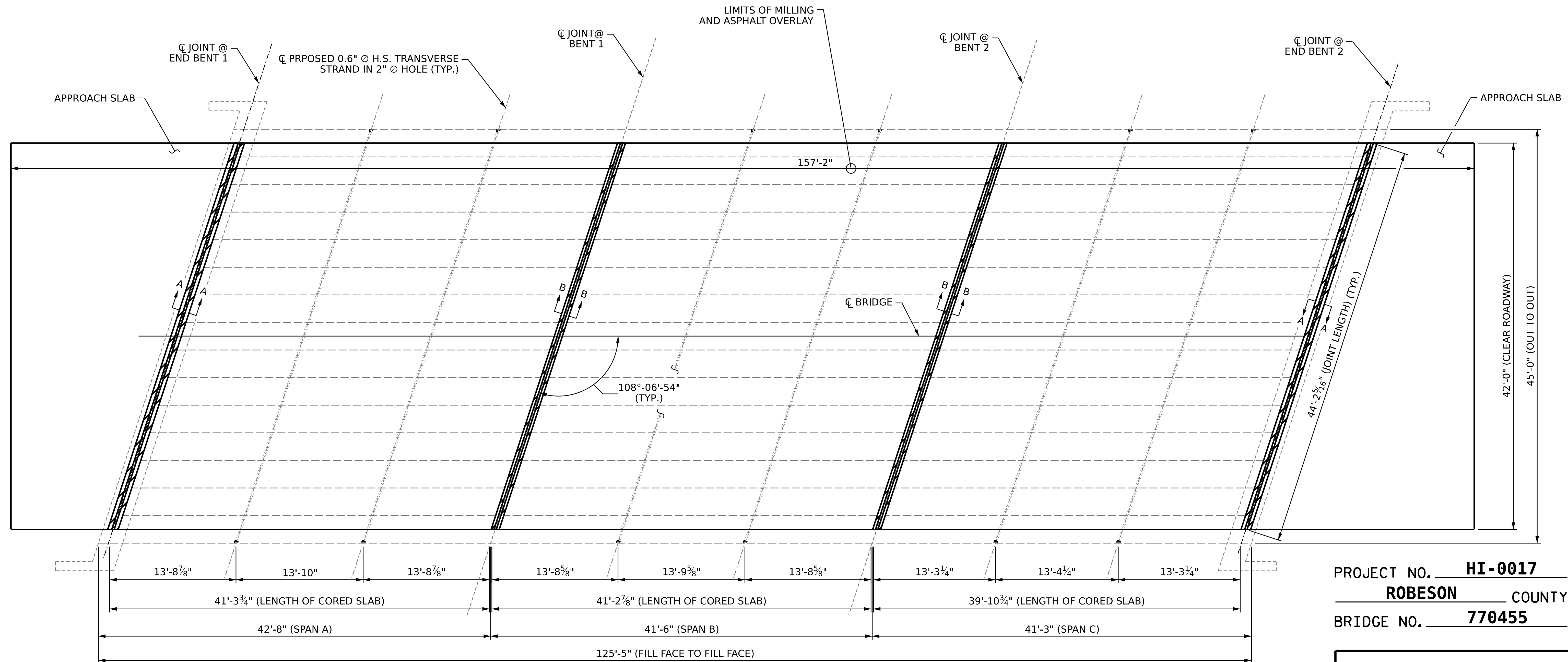


NOTES

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- FOR SECTION A-A AND B-B, SEE JOINT REPAIR DETAILS SHEET S5-5.
- FOR POST-TENSIONING STRAND REPAIR, SEE POST-TENSIONING STRAND REPAIR DETAILS SHEET S5-4.

SUMMARY OF REPAIR QUANTITIES FOR DECK SURFACE AND APPROACH SLAB

	ESTIMATE	ACTUAL
INCIDENTAL MILLING	742.8 SY	
ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C	123.3 TONS	
ASPHALT BINDER FOR PLANT MIX	7.4 TONS	



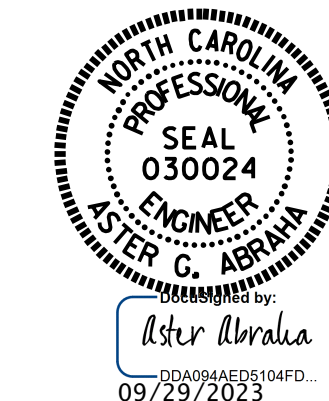
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41'-3 ³ / ₄ " (LENGTH OF CORED SLAB)			41'-2 ⁷ / ₈ " (LENGTH OF CORED SLAB)			39'-10 ³ / ₄ " (LENGTH OF CORED SLAB)		
42'-8" (SPAN A)			41'-6" (SPAN B)			41'-3" (SPAN C)		
125'-5" (FILL FACE TO FILL FACE)								

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770455**

REPAIR KEY

- MILLING AND ASPHALT OVERLAY
- JOINT REPAIR

PLAN OF SPANS



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION

DRAWN BY : J. BALDWIN DATE : 07/2022
 CHECKED BY : S. WANCE DATE : 11/2022

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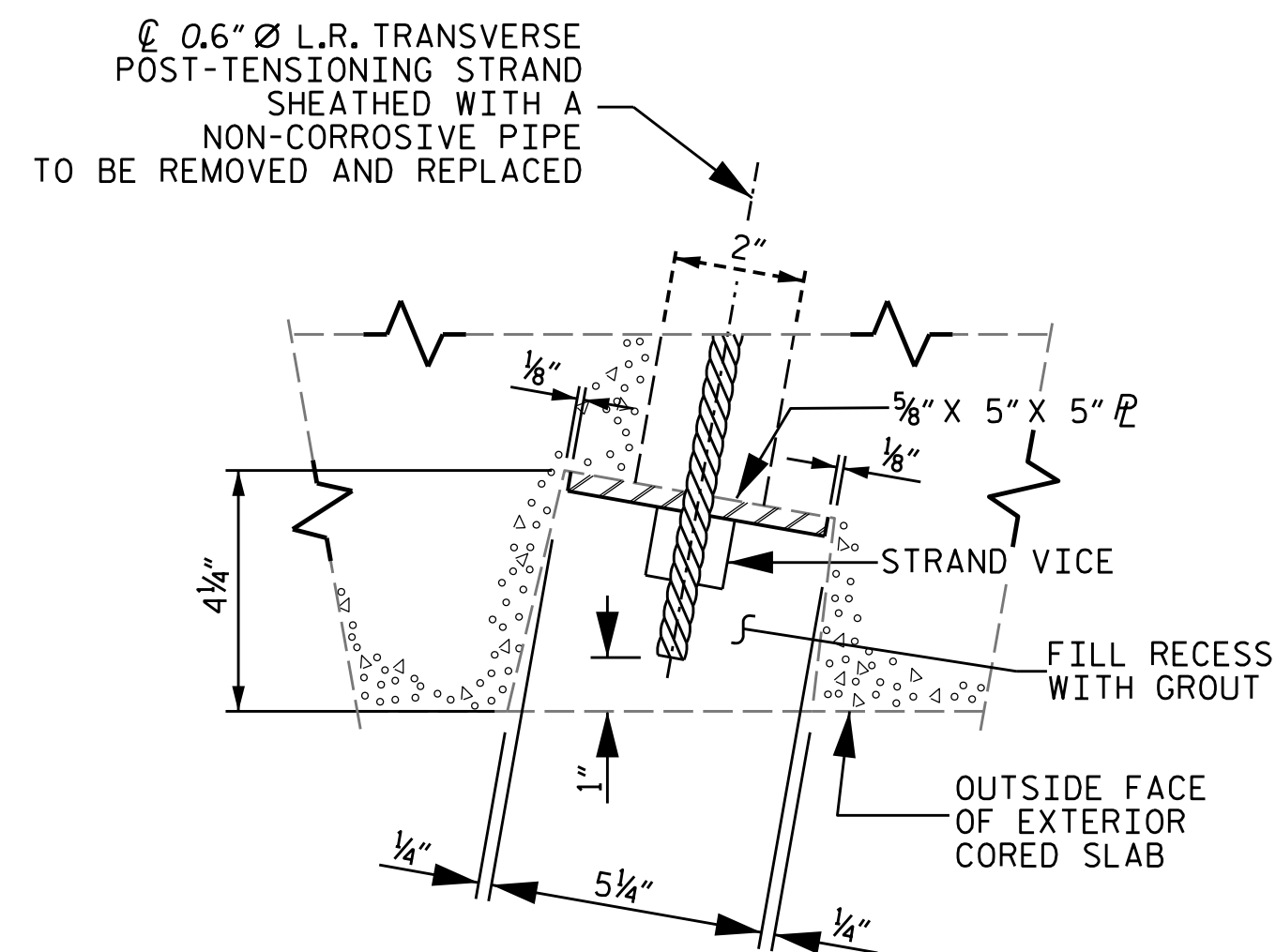
FOR POST-TENSIONING STRAND REPLACEMENT, SEE PCCS POST-TENSIONING STRAND REPLACEMENT SPECIAL PROVISION.

ALL POST-TENSIONING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO ASSHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

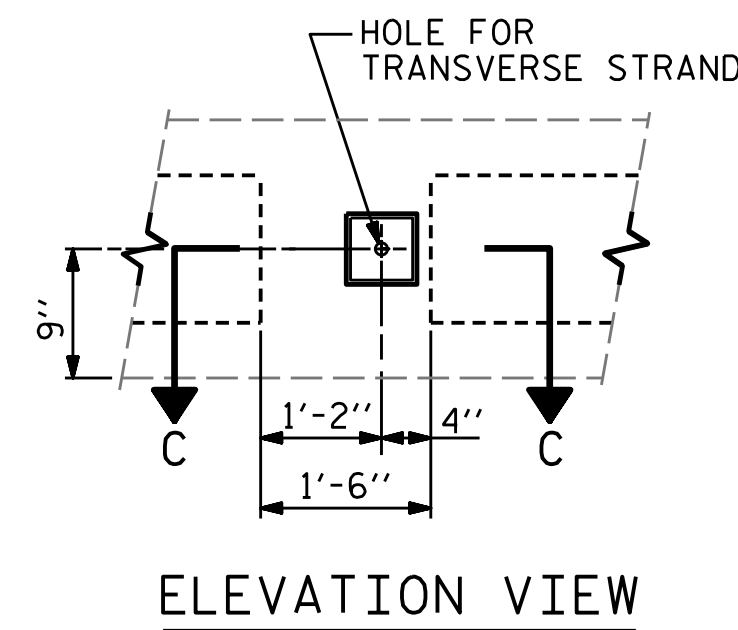
RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE FINAL TENSIONING OF THE STRANDS.

FOR "GROUT FOR STRUCTURES," SEE SPECIAL PROVISIONS.

FLAME CUTTING OF TRANSVERSE POST-TENSIONING STRANDS IS NOT ALLOWED.



GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



PCCS POST-TENSIONING SEQUENCE

PERFORM P/T IN STAGES AFTER DECK SURFACE PREPARATION IS COMPLETE.

REMOVE EXISTING P/T, INSTALL NEW P/T STRANDS, AND TENSION AND MAINTAIN AN INITIAL LOAD OF 10,000 LBS.

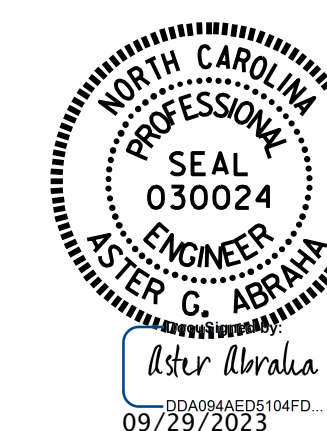
THE CONTRACTOR SHALL MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST-TENSIONING STRANDS IN THE SPAN.

APPLY THE FINAL P/T LOAD OF 43,950 LBS.

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
POST-TENSIONING STRAND REPLACEMENT	6 EA.	

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770455**



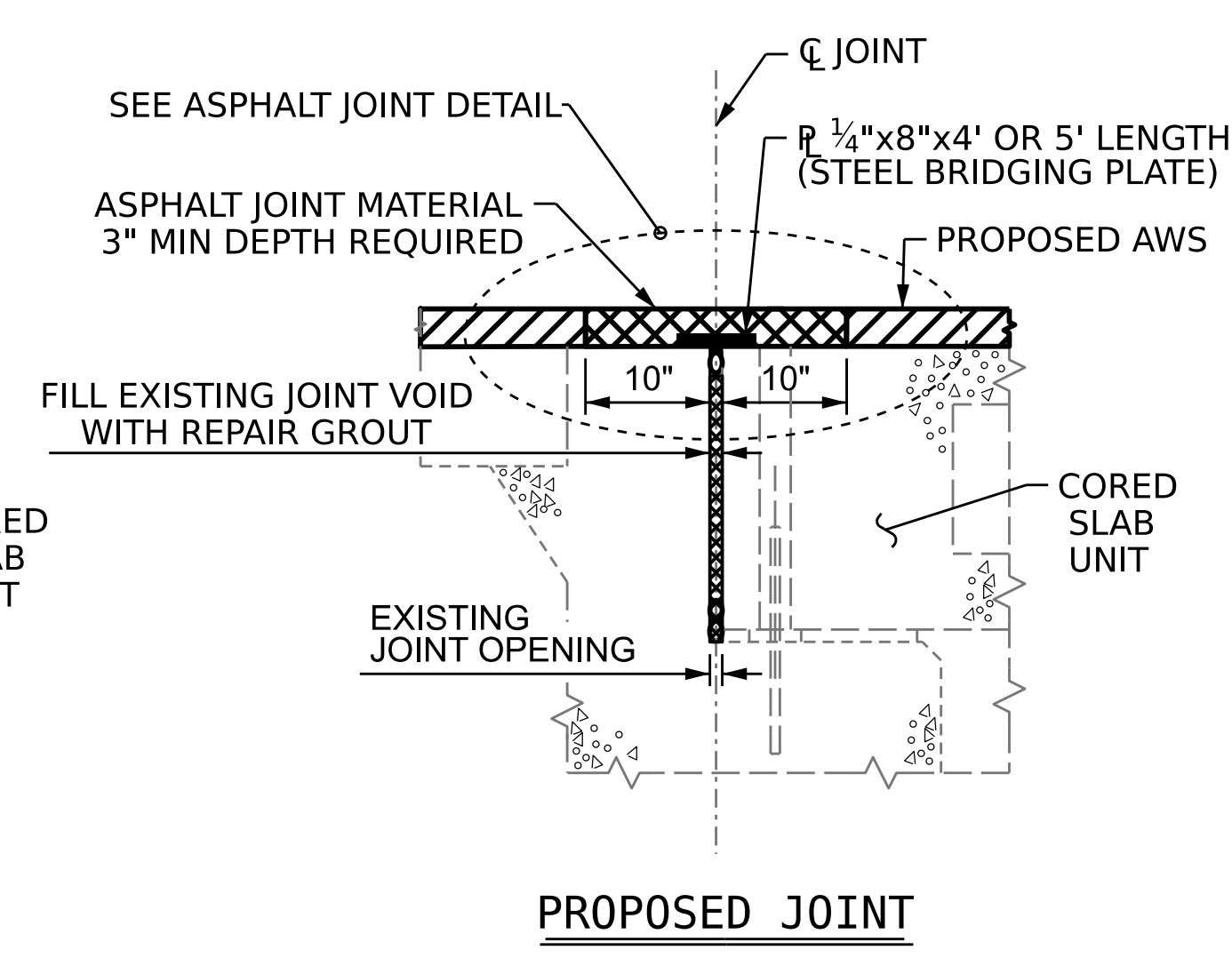
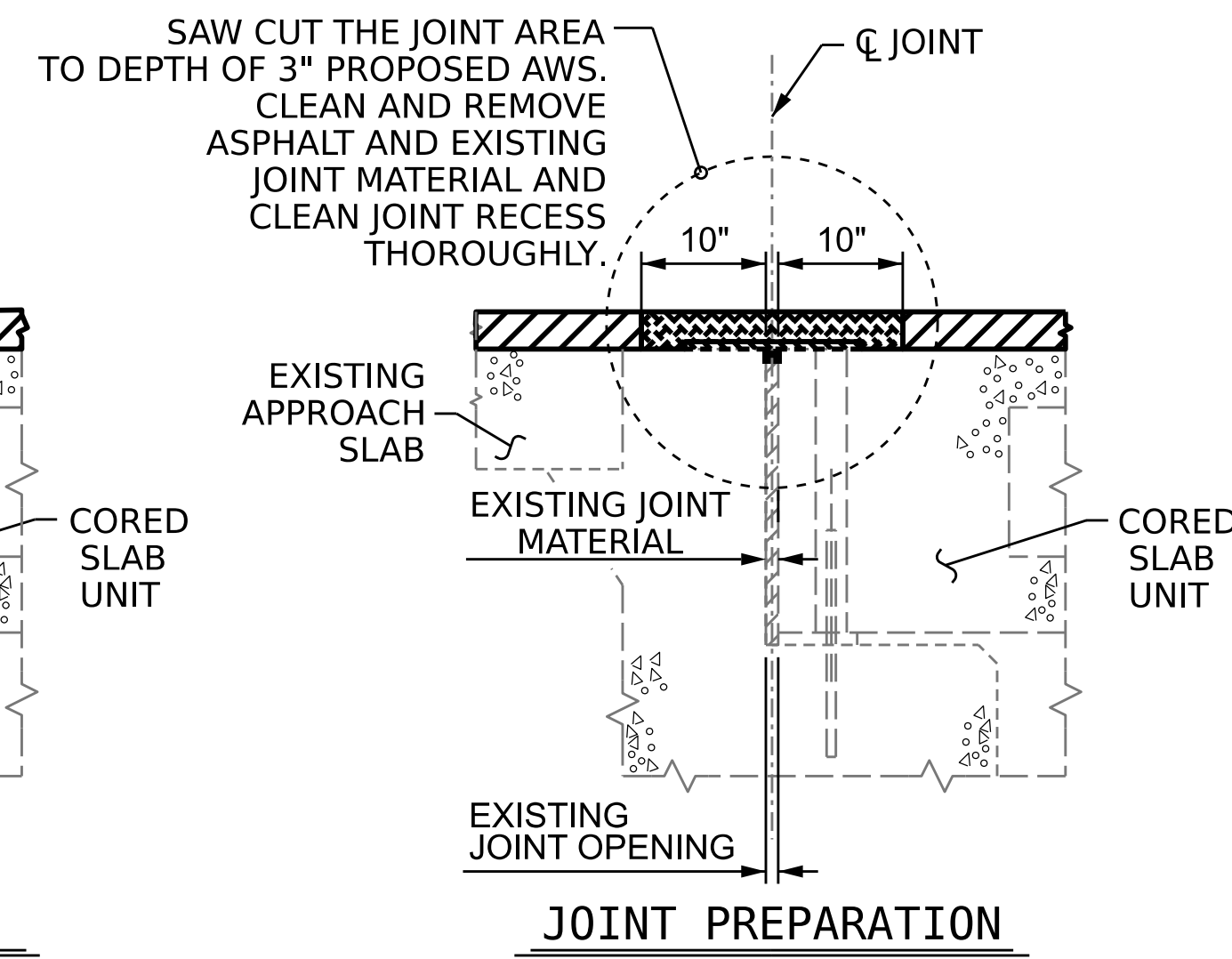
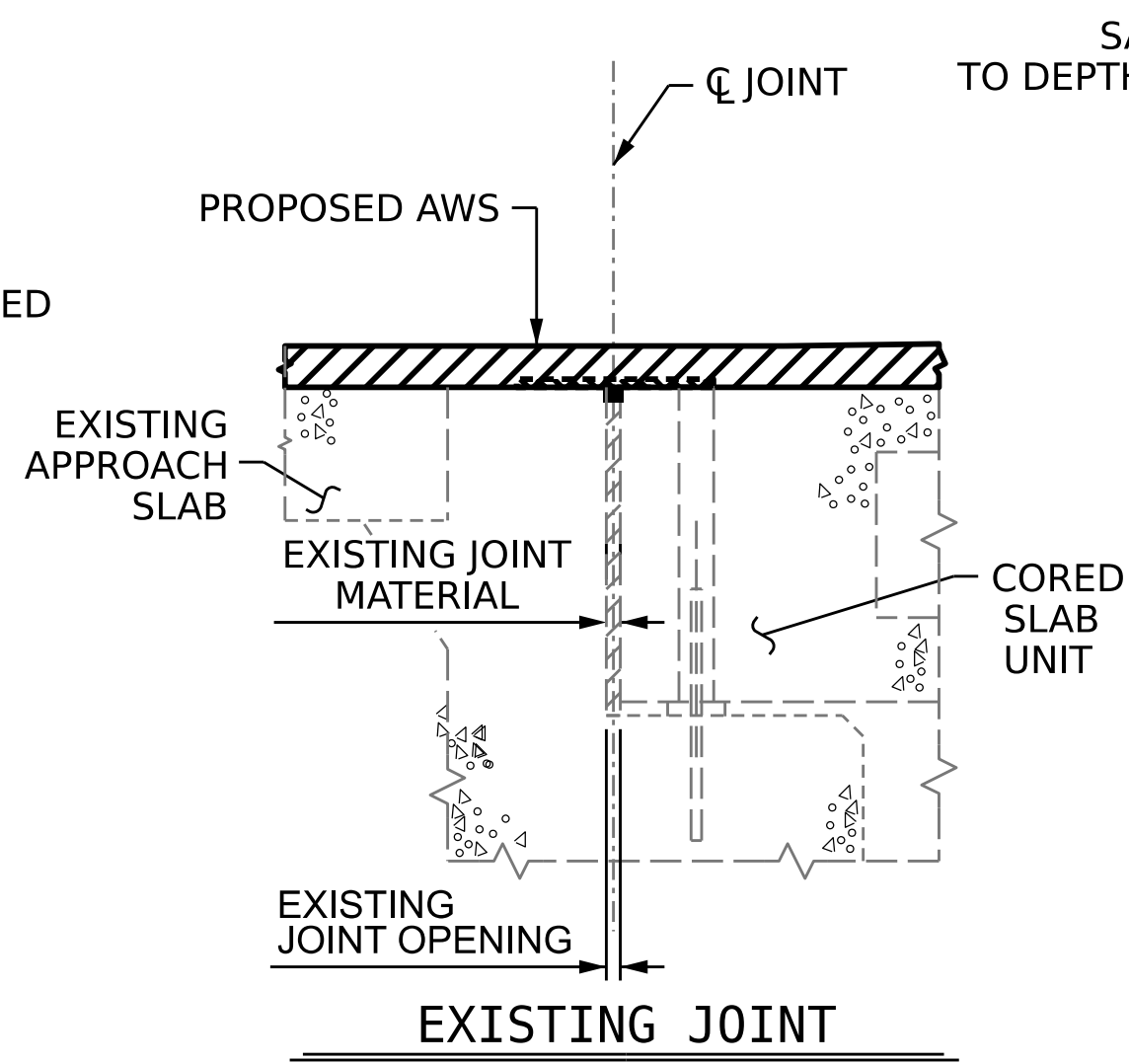
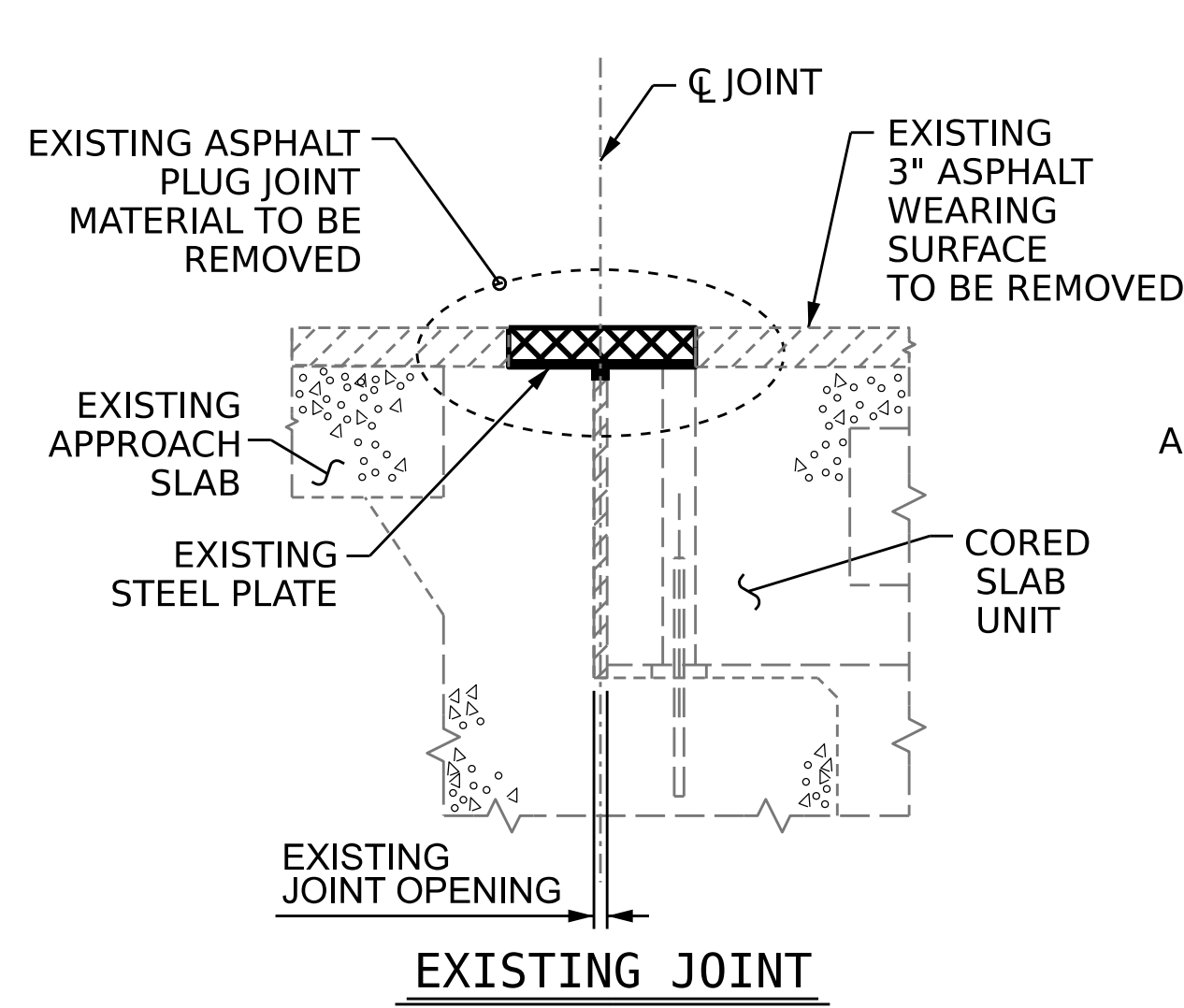
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

POST-TENSIONING STRAND REPAIR DETAILS

DRAWN BY : J. BALDWIN DATE : 11/2022
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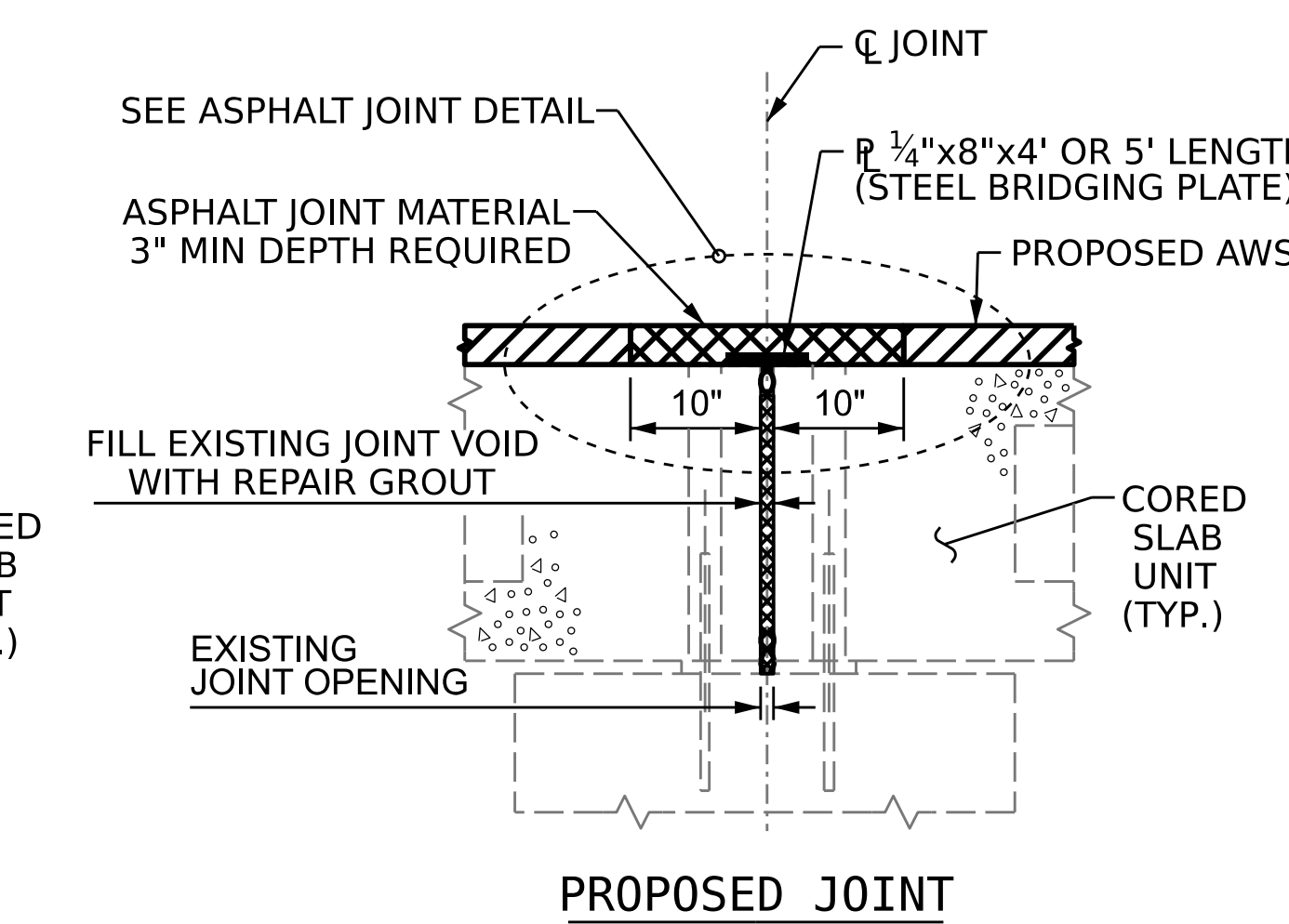
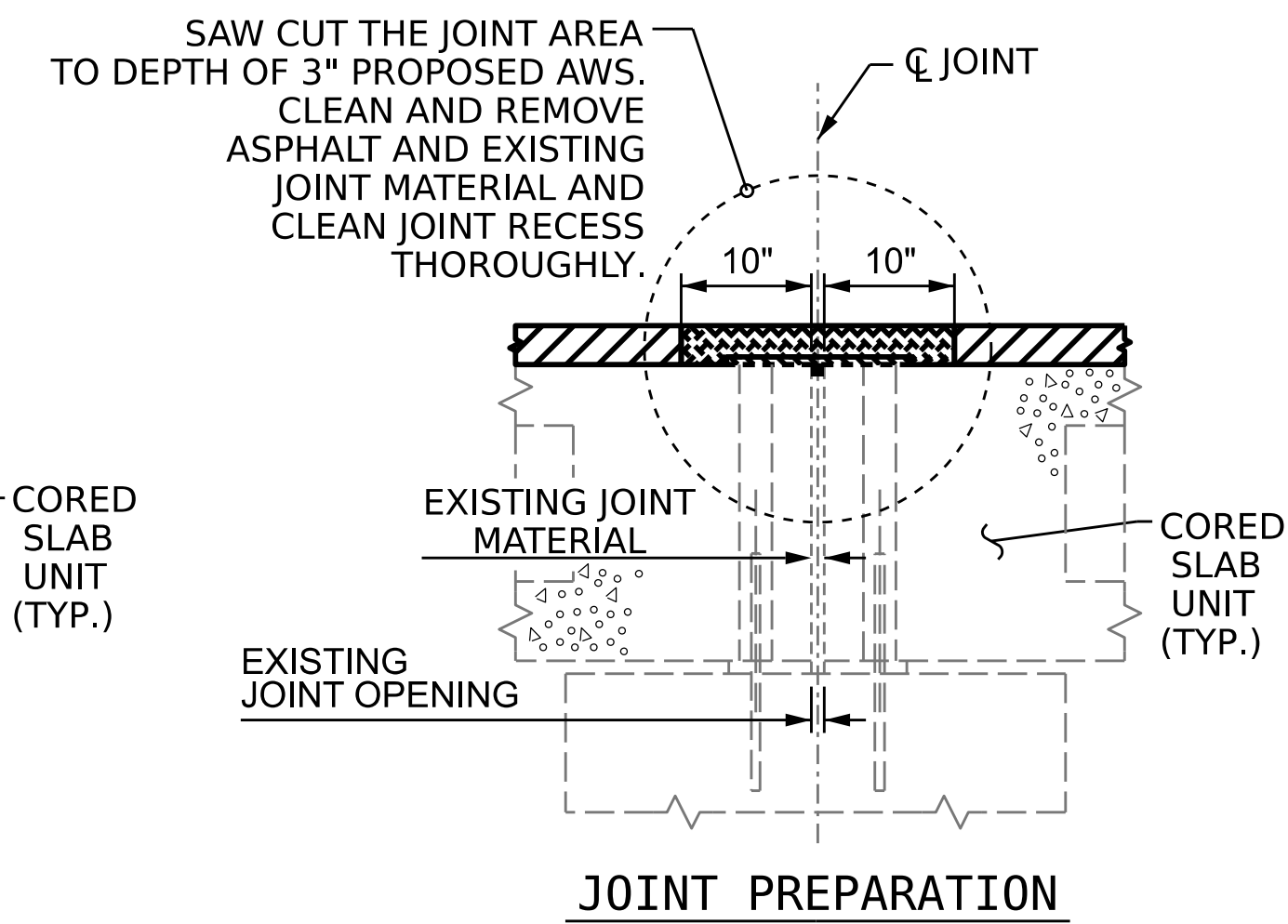
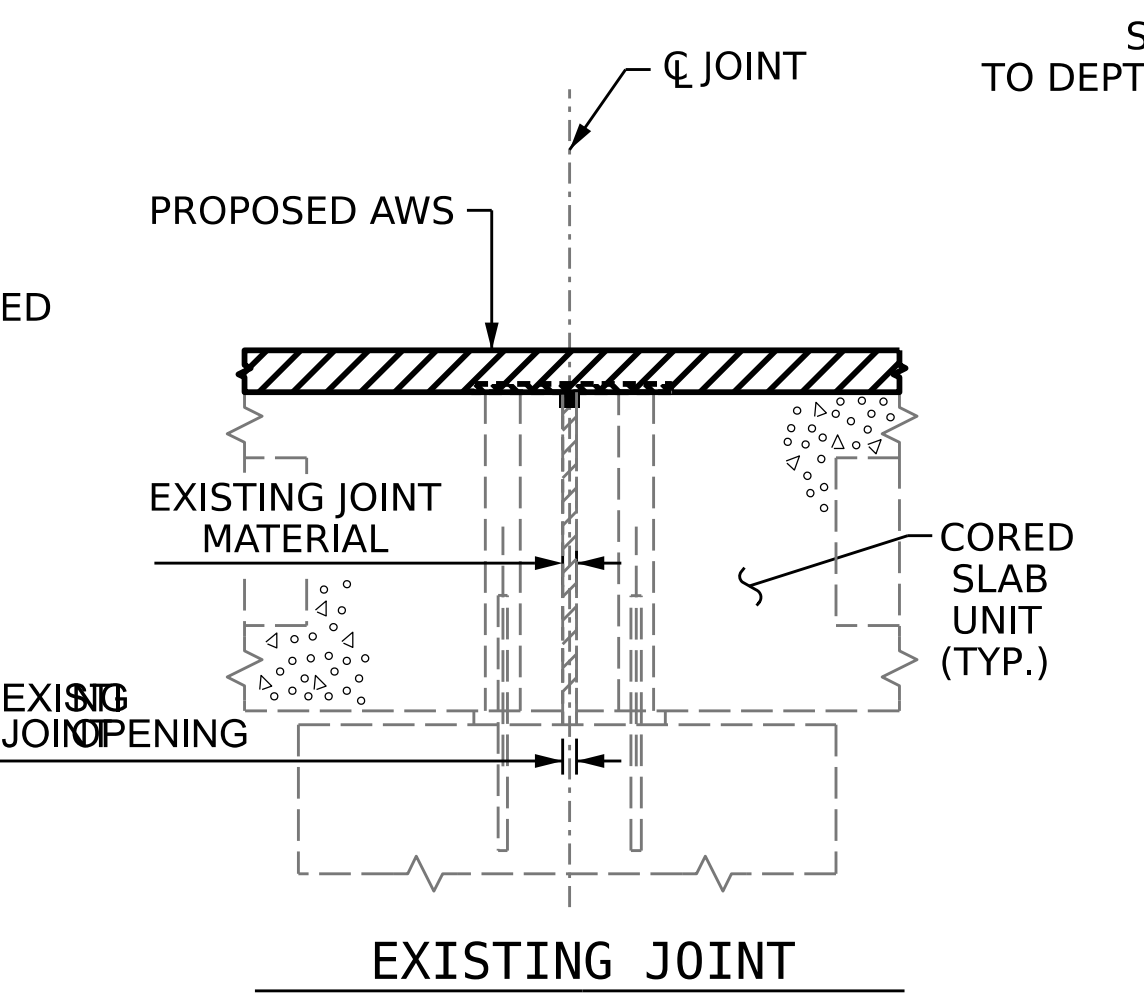
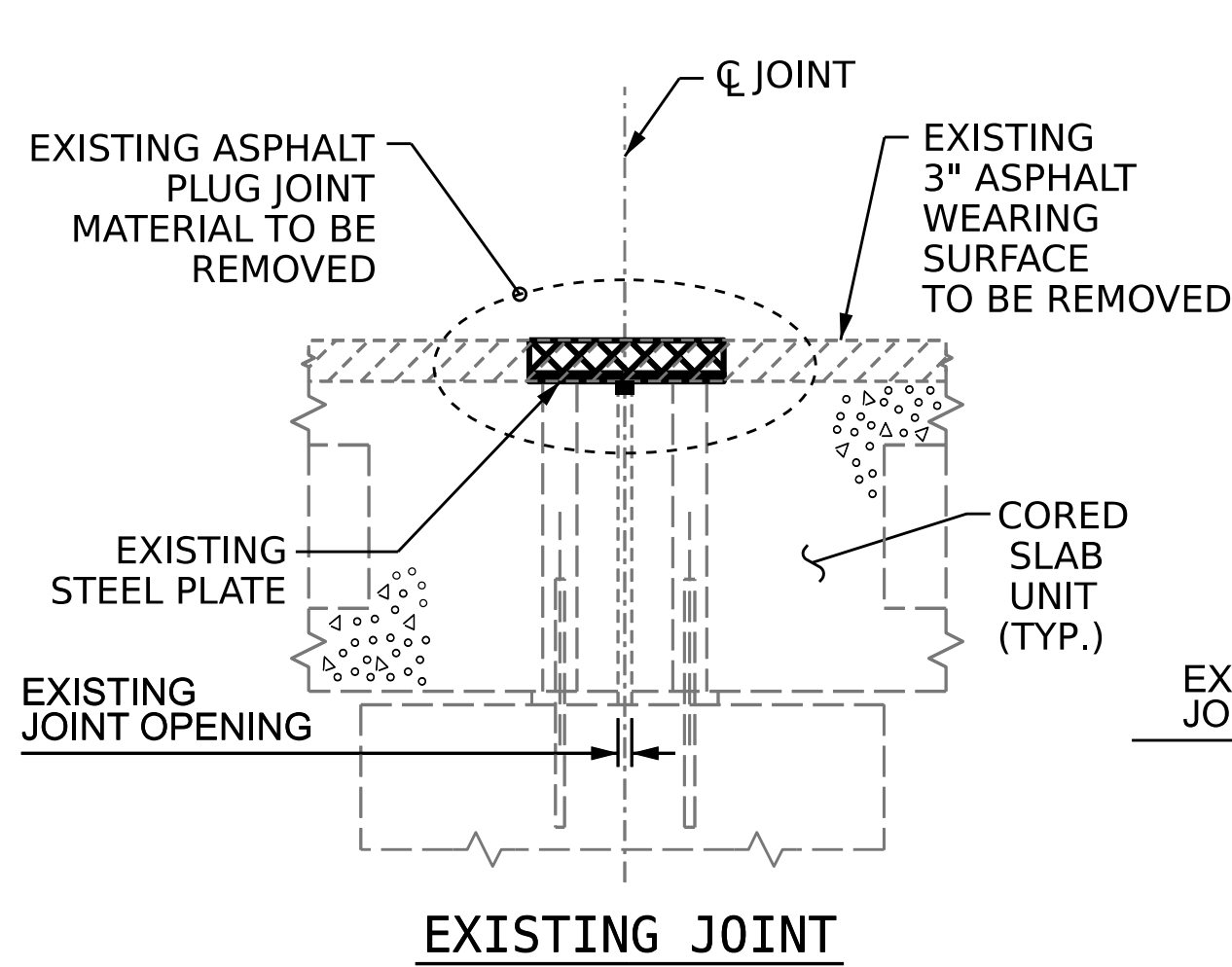
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1			3			S5-4
2			4			TOTAL SHEETS 7



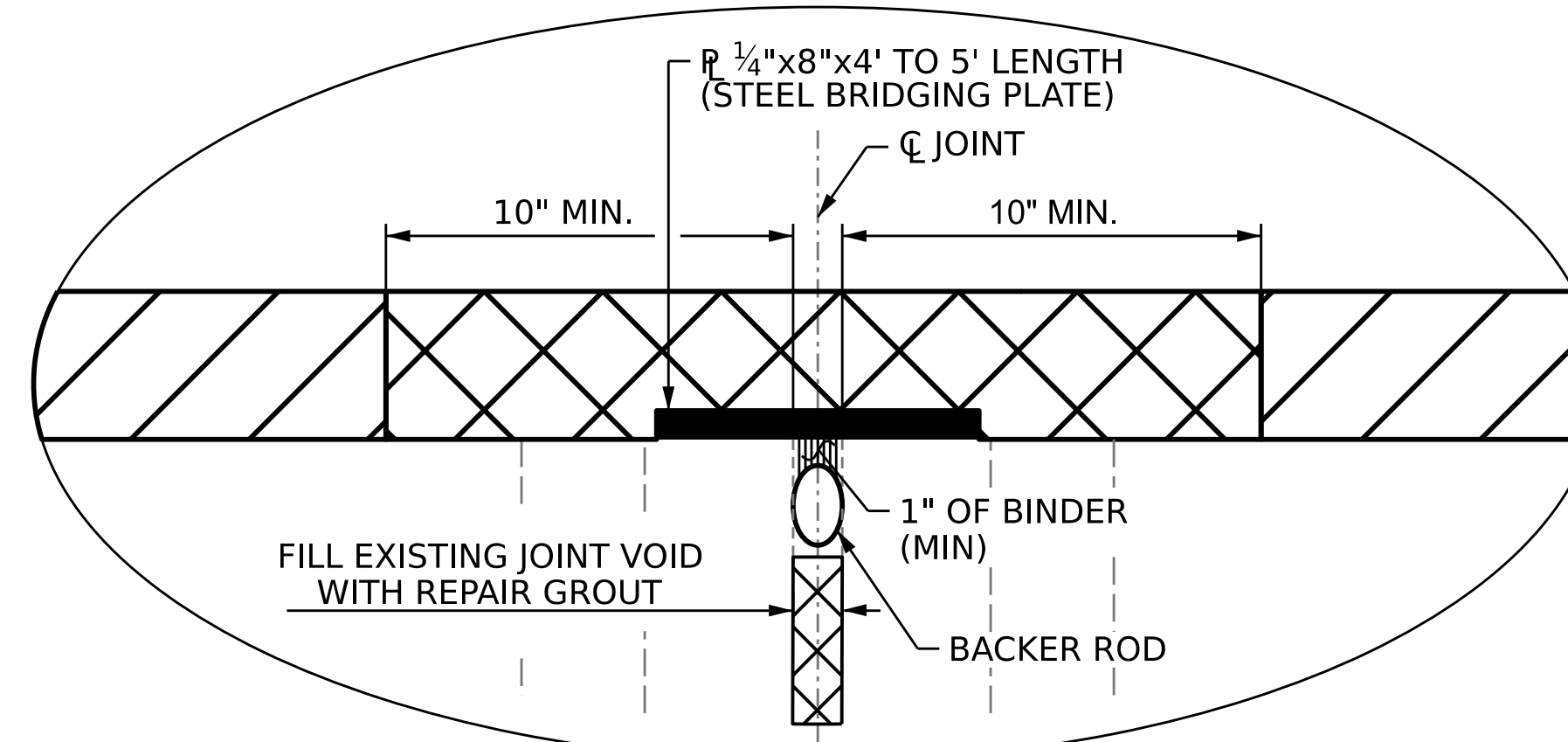
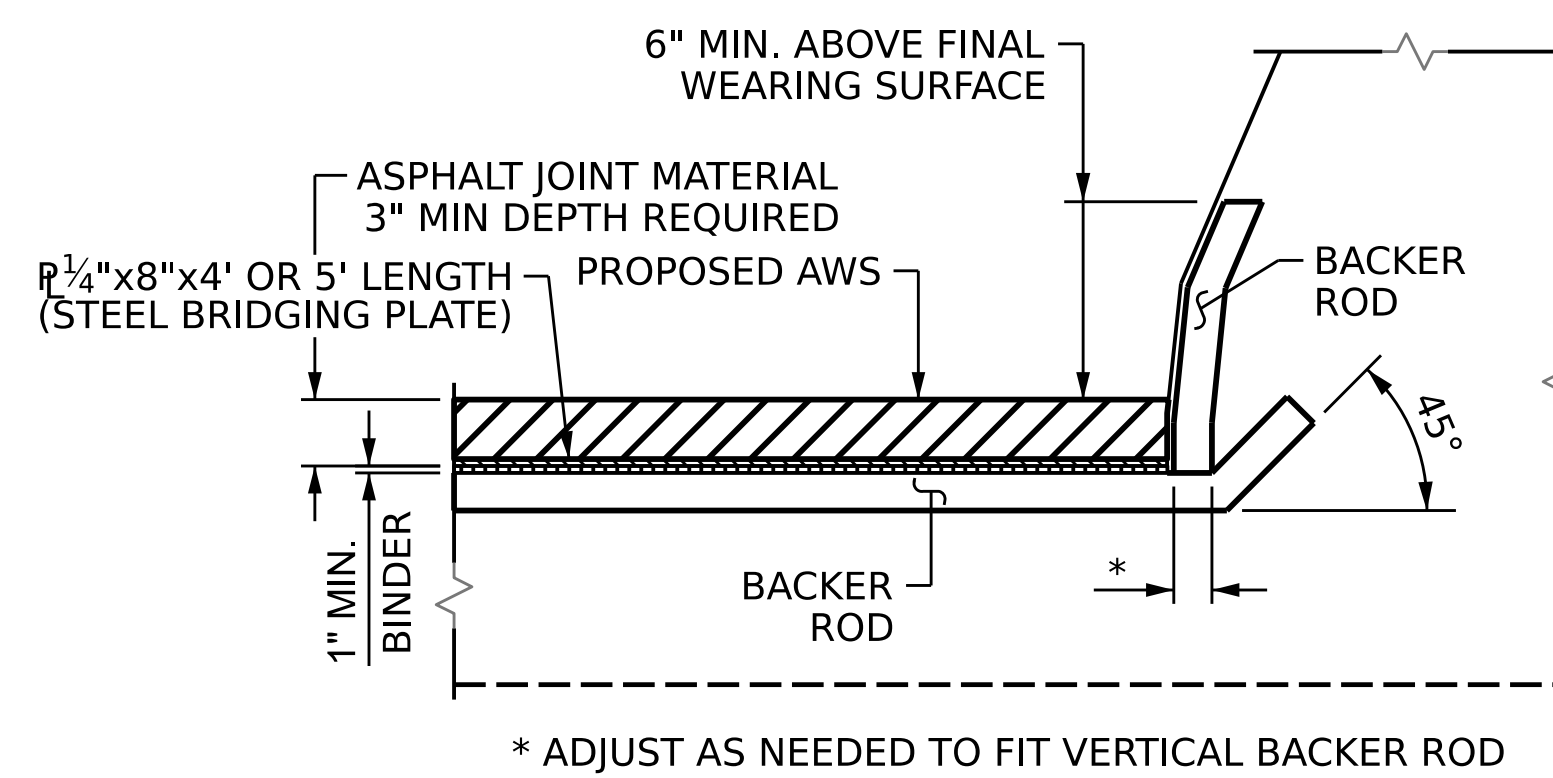
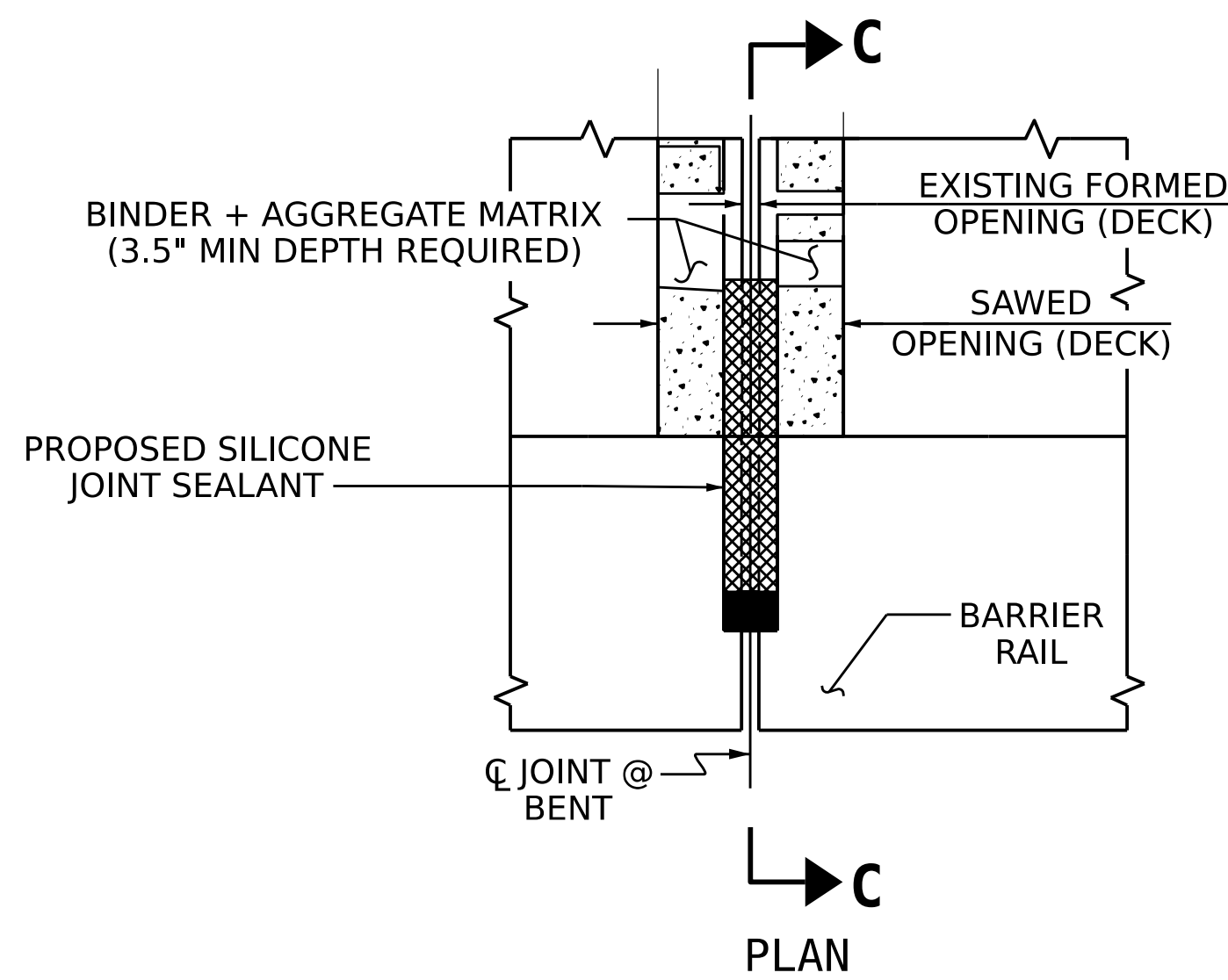
JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A



JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



INSTALL (2) BACKER RODS AT THE BOTTOM OF THE CORED SLABS PRIOR TO GROUTING

NOTES

PRIOR TO ASPHALT PLUG JOINT INSTALLATION, PERFORM POST-TENSIONING STRAND REPLACEMENT. SEE PLAN OF SPAN SHEET AND POST-TENSIONING REPAIR DETAIL SHEET.

REMOVE ANY EXISTING ASPHALT JOINTS PRIOR TO INSTALLATION OF THE PROPOSED ASPHALT PLUG JOINTS. PAYMENT FOR REMOVAL OF EXISTING ASPHALT JOINTS SHALL BE CONSIDERED INCIDENTAL TO THE PROPOSED ASPHALT PLUG JOINTS.

FOR ASPHALT PLUG JOINTS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

THE CONTRACTOR SHALL TAKE CARE DURING JOINT REPAIR 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 JOINTS.

BACKER ROD SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE INSTALLATION OF THE BACKER ROD AND ASPHALT PLUG JOINT SEAL SHALL BE WATERTIGHT.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISIONS.

THE ASPHALT PLUG JOINT STEEL BRIDGING PLATE SHALL BE A MINIMUM OF 36 KSI STEEL.

THE ASPHALT JOINT STEEL BRIDGING PLATE THICKNESS SHALL BE A MINIMUM OF 1/4".

JOINT REPAIR QUANTITIES

	ESTIMATE	ACTUAL
ASPHALT PLUG JOINTS FOR PRESERVATION	176.8 LF	

PROJECT NO. **HI-0017**
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 BRIDGE NO. **770455**



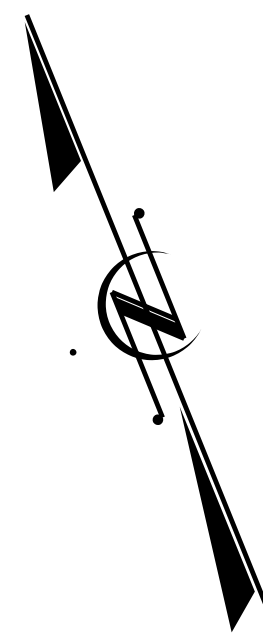
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

DRAWN BY: J. BALDWIN DATE: 07/2022
 CHECKED BY: S. WANCE DATE: 11/2022

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REVISIONS		SHEET NO.	
NO.	BY:	DATE:	NO.
1			3
2			4
			S5-5
			TOTAL SHEETS 7



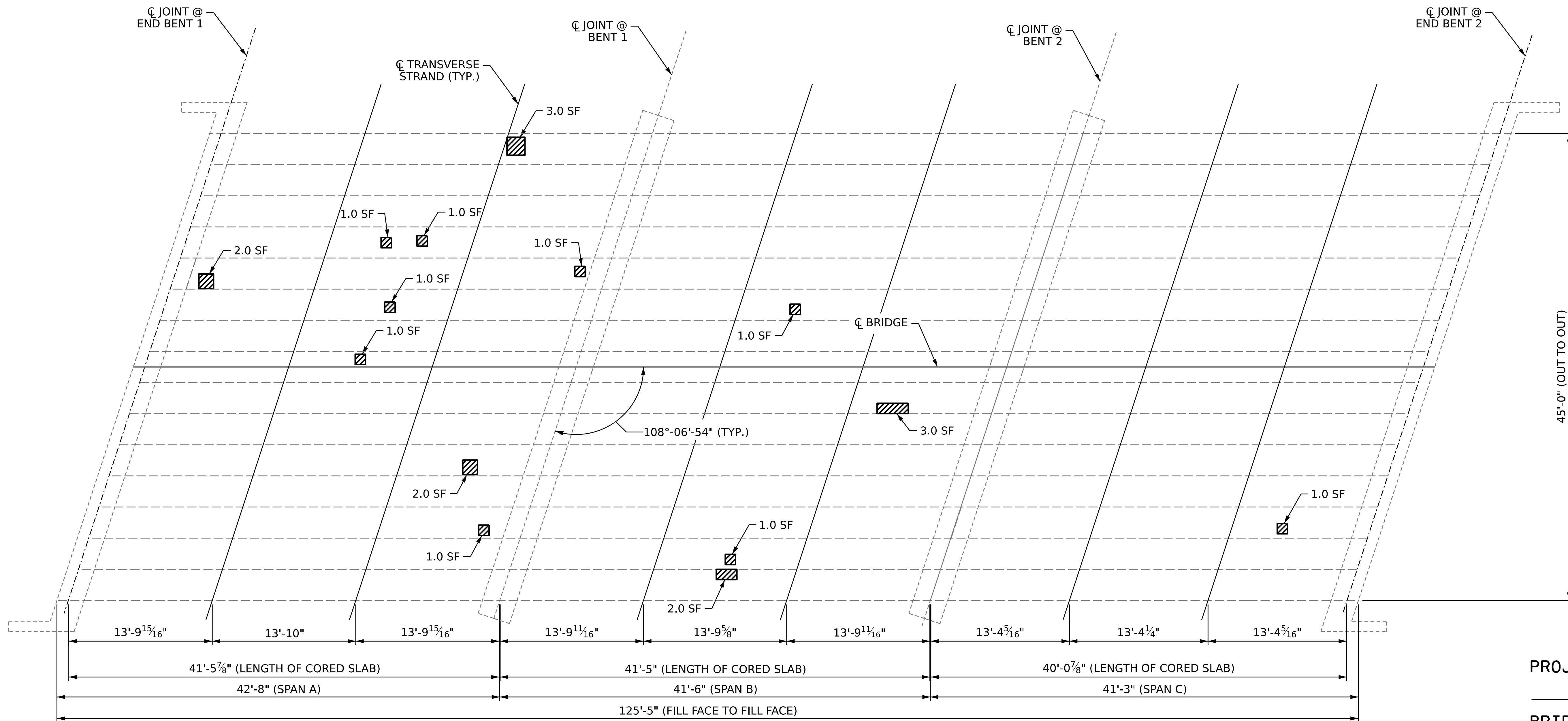
NOTES:

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 REPAIR QUANTITY TABLE.

UNDERSIDE OF DECK REPAIR QUANTITY TABLE

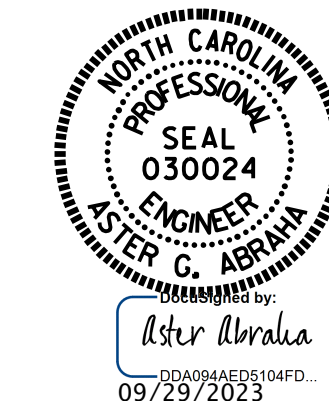
	QUANTITIES			
	ESTIMATE		ACTUAL	
PCCS REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
PRESTRESSED CONCRETE CORED SLAB REPAIRS	21.0	3.2		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 2" CLEARANCE TO SAWCUT. SEE "TYPICAL PCCS REPAIR DETAILS" SHEET S5-7.



PLAN OF SPANS
BOTTOM VIEW

PROJECT NO. **HI-0017**
ROBESON COUNTY
BRIDGE NO. **770455**



STATE OF NORTH CAROLINA
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UNDERSIDE OF CORED SLAB REPAIR LOCATIONS

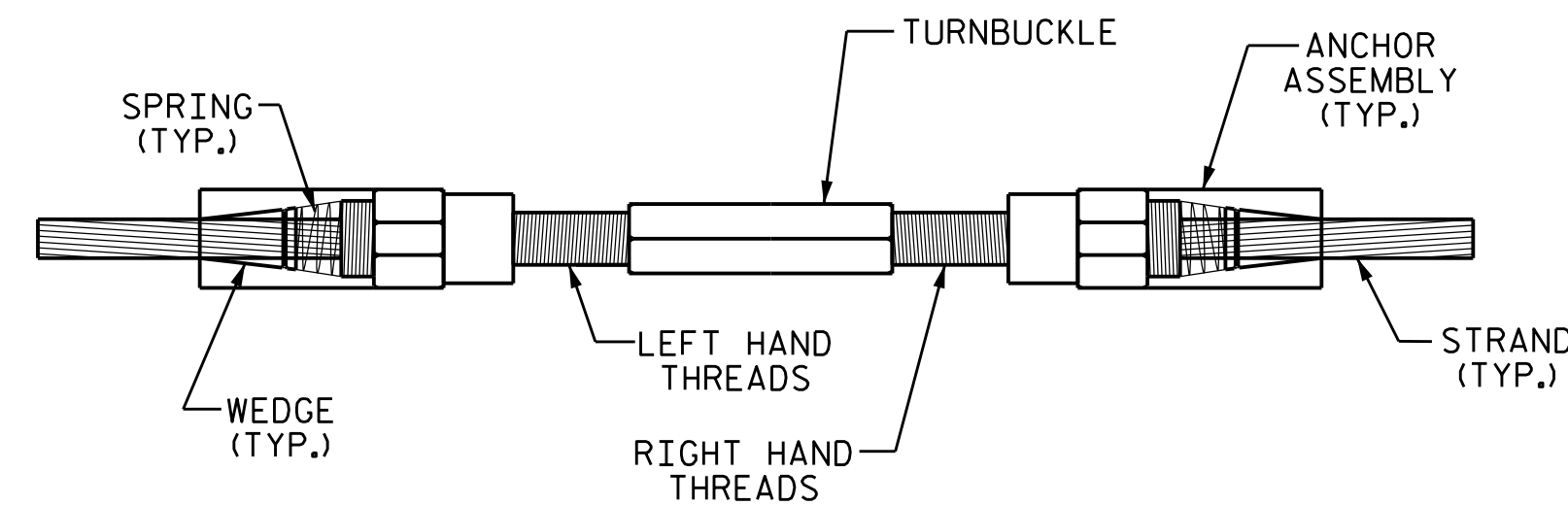
DRAWN BY : **J. BALDWIN** DATE : **08/2022**
CHECKED BY : **S. WANCE** DATE : **11/2022**

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

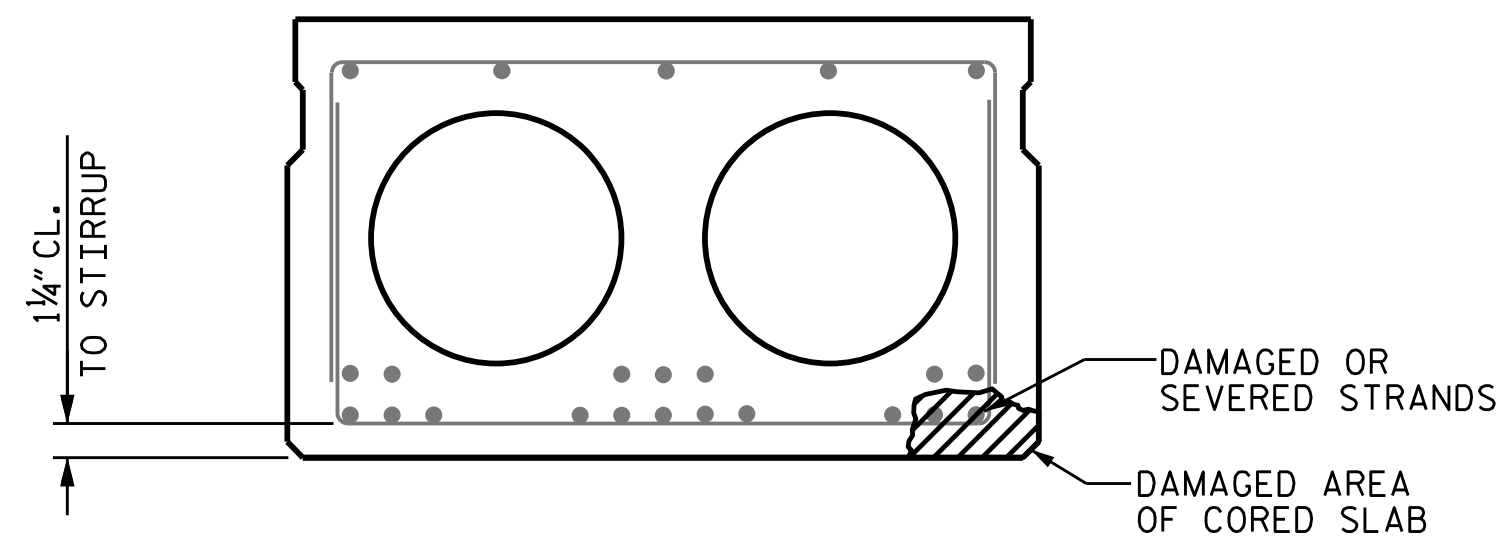
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S5-6
2			4			TOTAL SHEETS 7



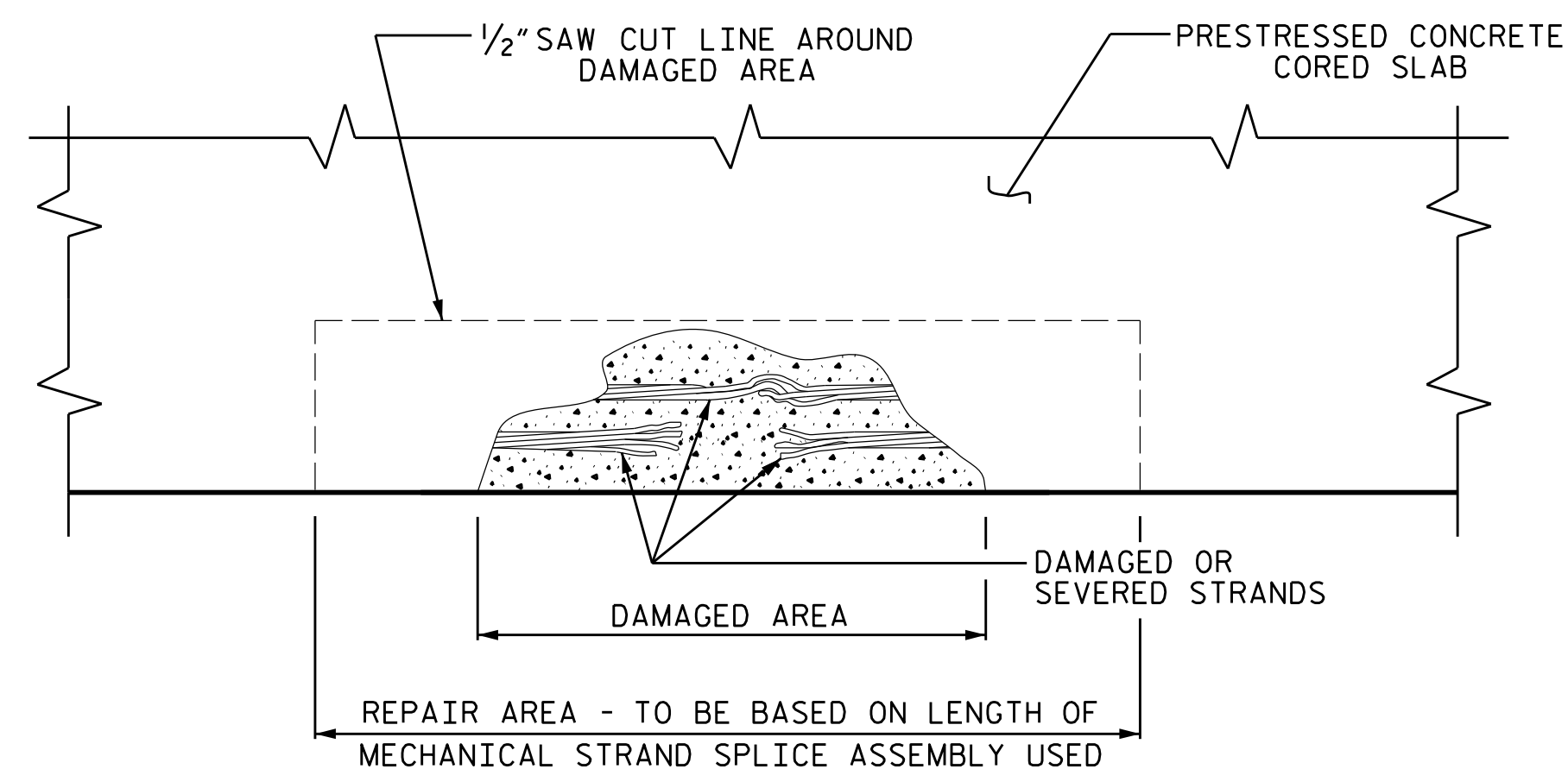
MECHANICAL STRAND SPLICE ASSEMBLY
(ASSEMBLIES MAY VARY DEPENDING ON MANUFACTURER)



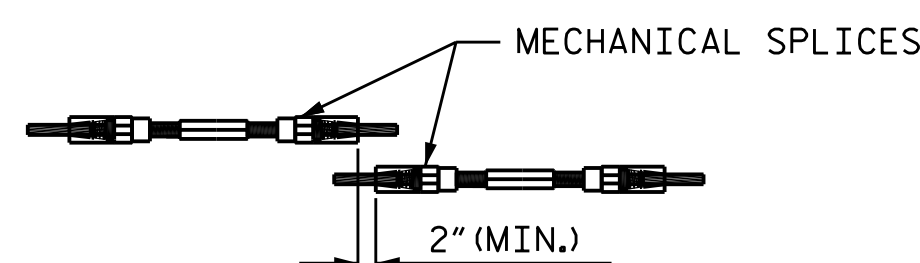
MECHANICAL STRAND SPLICE DETAIL



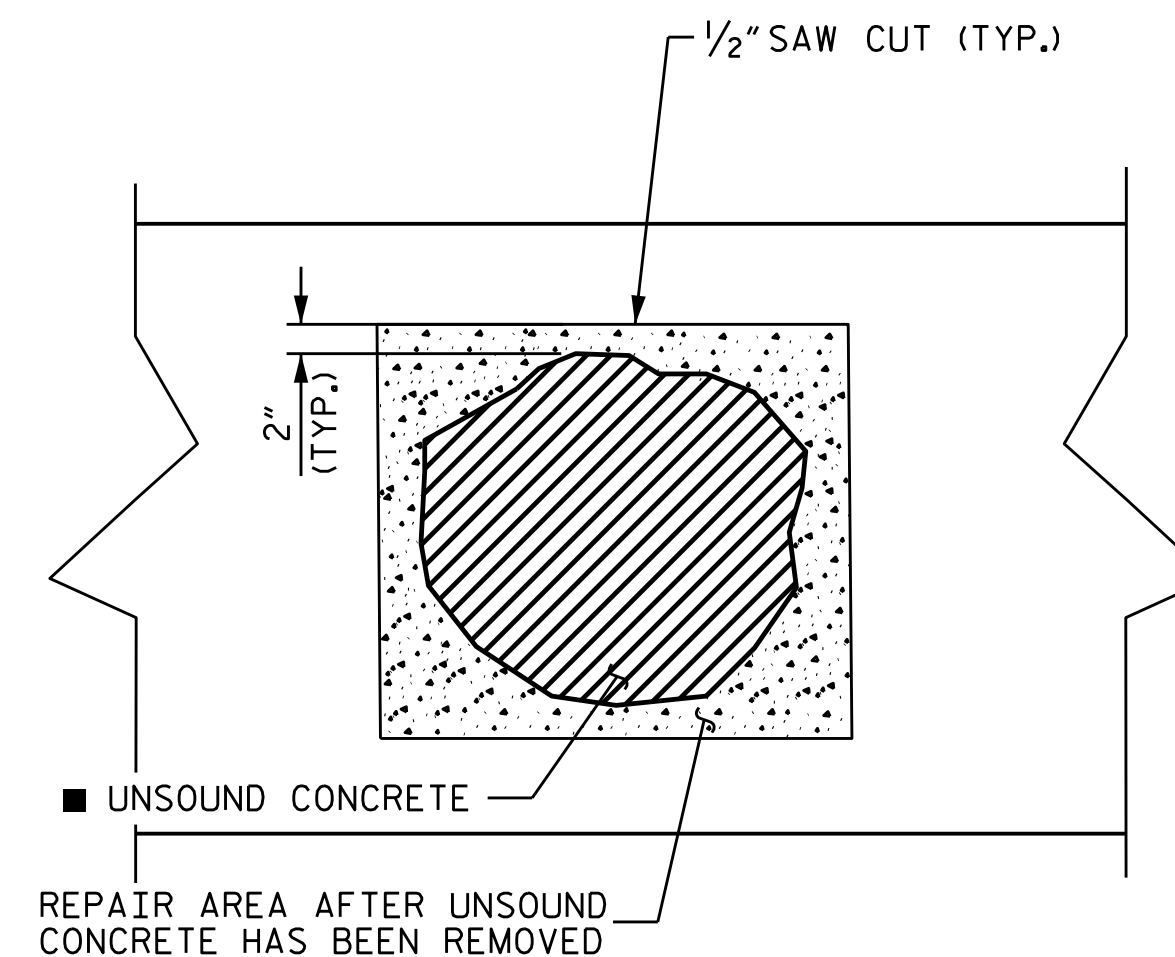
CORED SLAB SECTION WITH EXPOSED DAMAGED PRESTRESSED STRANDS



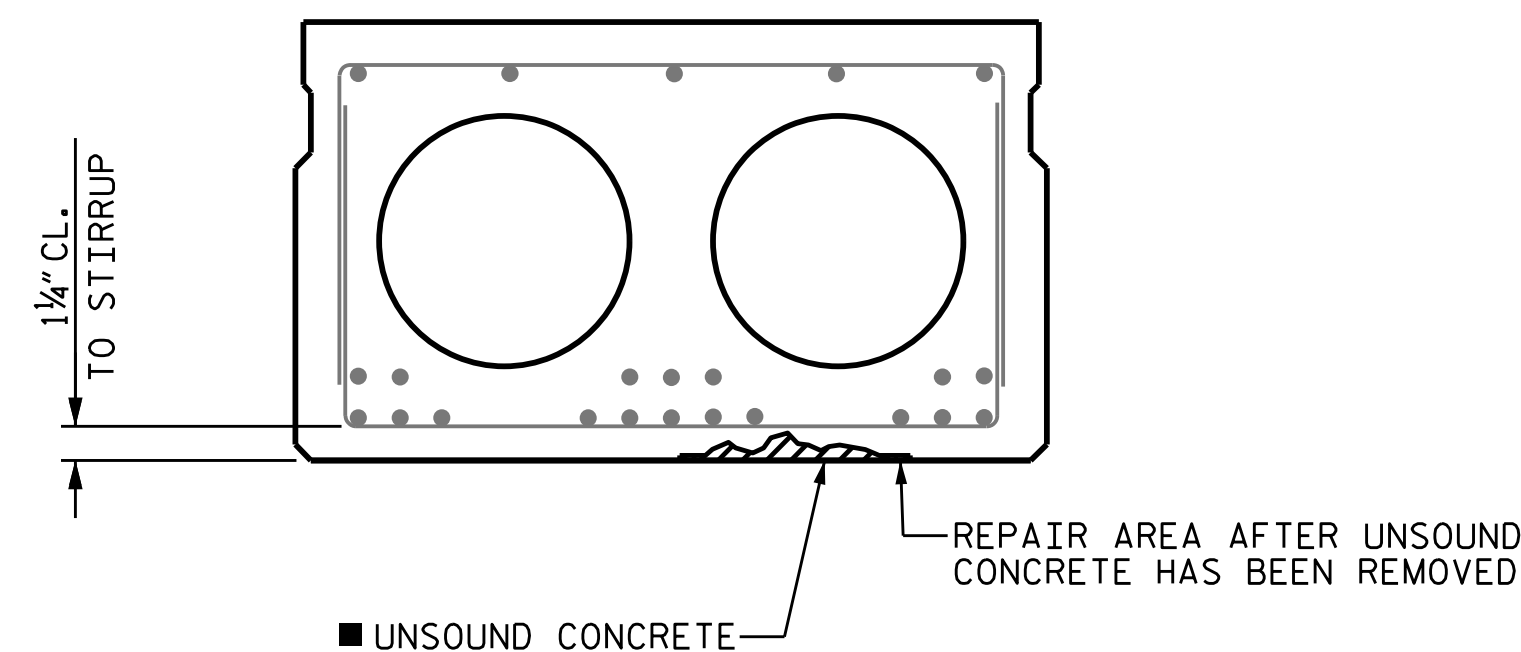
CORED SLAB ELEVATION VIEW WITH EXPOSED DAMAGED PRESTRESSED STRANDS



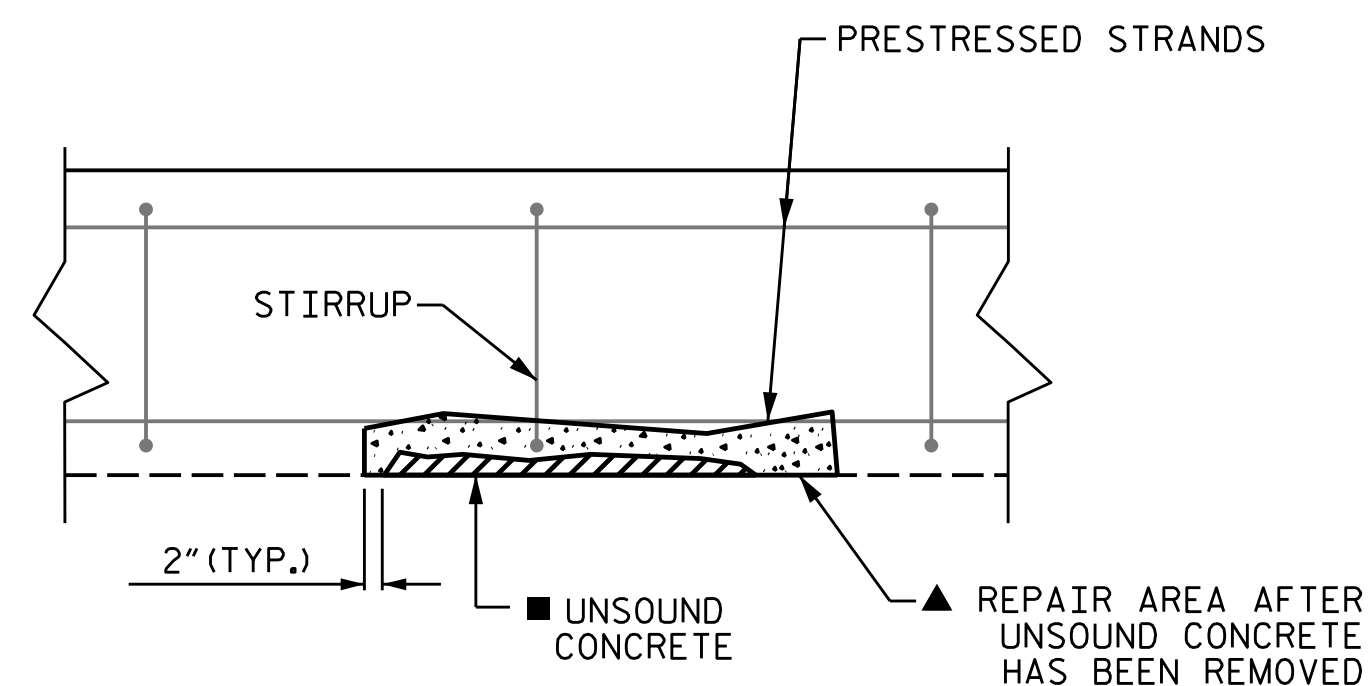
SPLICE OFFSET
STRAND REPAIR DETAILS



BOTTOM OF CORED SLAB



CORED SLAB SECTION



ELEVATION

NOTES:

PREPACKAGED MATERIAL IS REQUIRED.

CONSULT WITH THE ENGINEER TO DETERMINE PRELOADING REQUIREMENTS WHEN REPAIR IS WITHIN THE CENTER REGION OF THE BEAM (0.25L TO 0.75L).

FOR REPAIRS OVER RAILROAD AND SHALLOW REPAIRS THAT DO NOT ENGAGE REINFORCEMENT, ANCHOR PATCH MATERIAL USING 1/4\"/>

FOR REPAIRS TO PRESTRESSED CONCRETE CORED SLABS, SEE SPECIAL PROVISIONS.

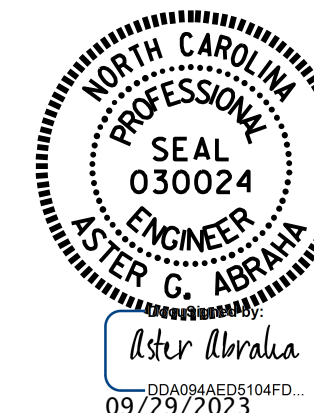
PRESTRESSED CONCRETE CORED SLAB REPAIR SEQUENCE:

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

PRESTRESSED STRAND REPAIR SEQUENCE:

1. REMOVE LIVE LOAD FROM REPAIR AREA BY EITHER CLOSING THE BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.
2. MEASURE OUT THE AREA NEEDED TO HAVE ADEQUATE ROOM TO SPLICE THE BROKEN OR DAMAGED STRAND. IF MULTIPLE STRANDS ARE BROKEN ADJACENT TO ONE ANOTHER THEN THE SPLICES SHALL BE STAGGERED. SEE "SPLICE OFFSET" DETAIL. AFTER YOU HAVE DETERMINED THE REPAIR AREA NEEDED, SAW CUT A MINIMUM OF 1/2\"/>
- 3. SPLICE STRANDS USING THE MECHANICAL SPLICE STRAND ASSEMBLY AND TENSION TO REQUIRED FORCE PER THE MANUFACTURER'S GUIDELINES.
- 4. PATCH REPAIR AREA USING NON-SHRINK GROUT. PROFILE OF GIRDER MAY NEED TO BE INCREASED AROUND REPAIR AREA TO PROVIDE PROPER COVER.
- 5. AFTER GROUT HAS CURED PLACE TRAFFIC BACK ON BRIDGE OR REPAIRED AREA OF BRIDGE.

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770455**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
**TYPICAL PCCS
 REPAIR DETAILS**

ASSEMBLED BY : JGB	DATE : II/2022
CHECKED BY : SW	DATE : II/2022
DRAWN BY :	
CHECKED BY :	

9/14/2023
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2			4			TOTAL SHEETS 7

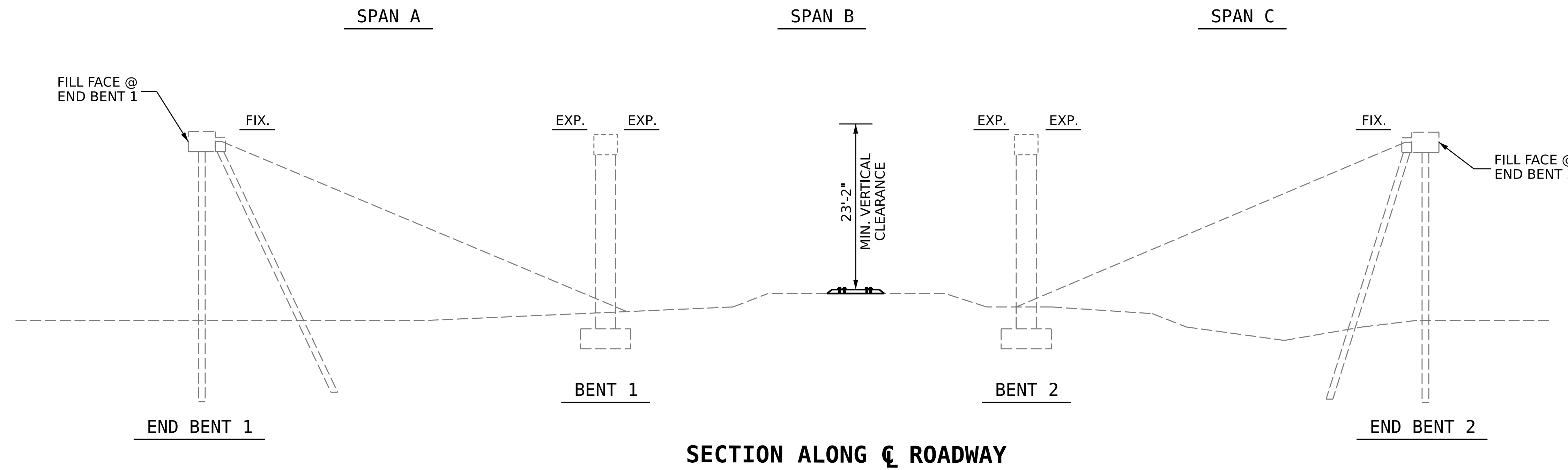
DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

NOTES

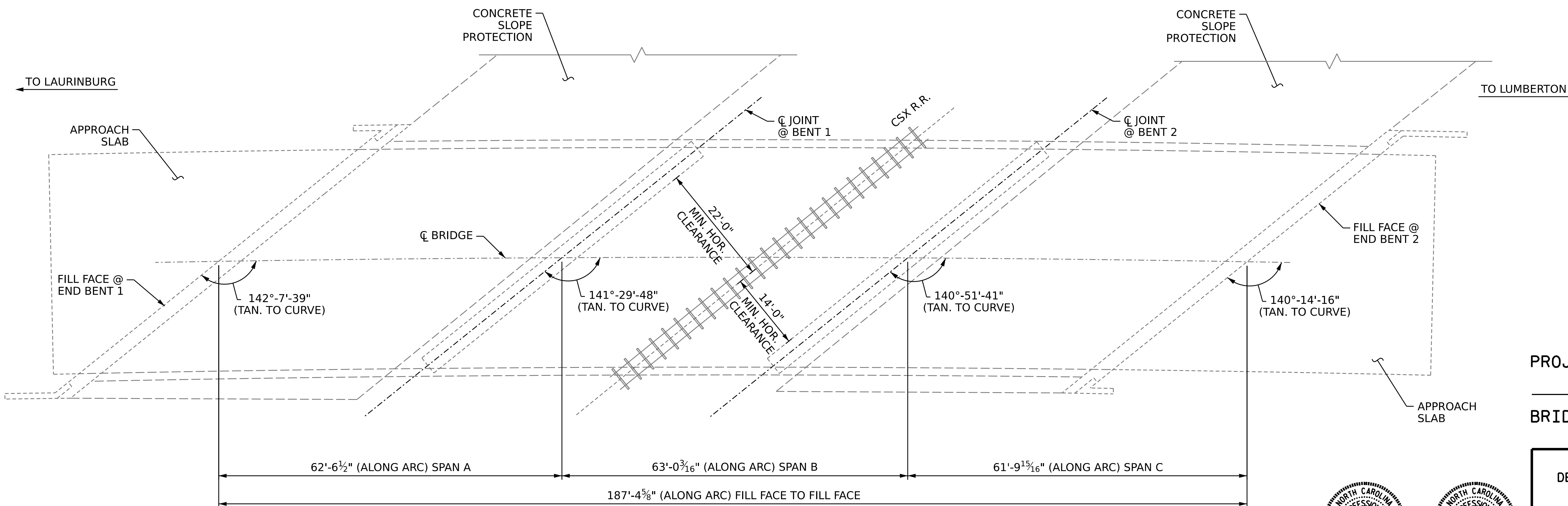
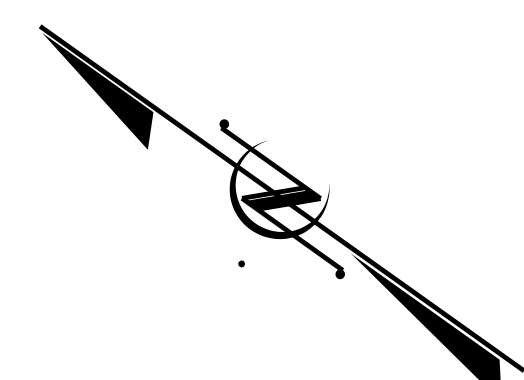
- GENERAL DRAWING AND PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 04/06/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- BRIDGE DECK AND BARRIER RAIL SURFACE PREPARATION.
- PLACE SILANE TREATMENT ON DECK AND BARRIER RAILS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS WITH ELASTOMERIC CONCRETE, INSTALL FOAM JOINT SEALS.
- SUBSTRUCTURE REPAIR USING SHOTCRETE, CONCRETE, AND EPOXY RESIN INJECTION.



SECTION ALONG Q ROADWAY



PLAN

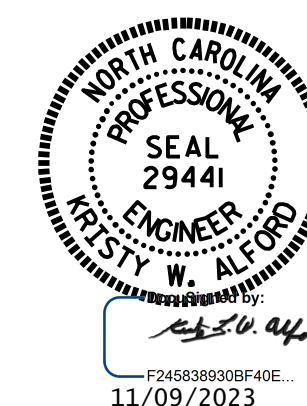
(FOOTINGS, COLUMNS & PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770456**
 MILEPOST SE 278.05

STATE OF NORTH CAROLINA
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GENERAL DRAWING

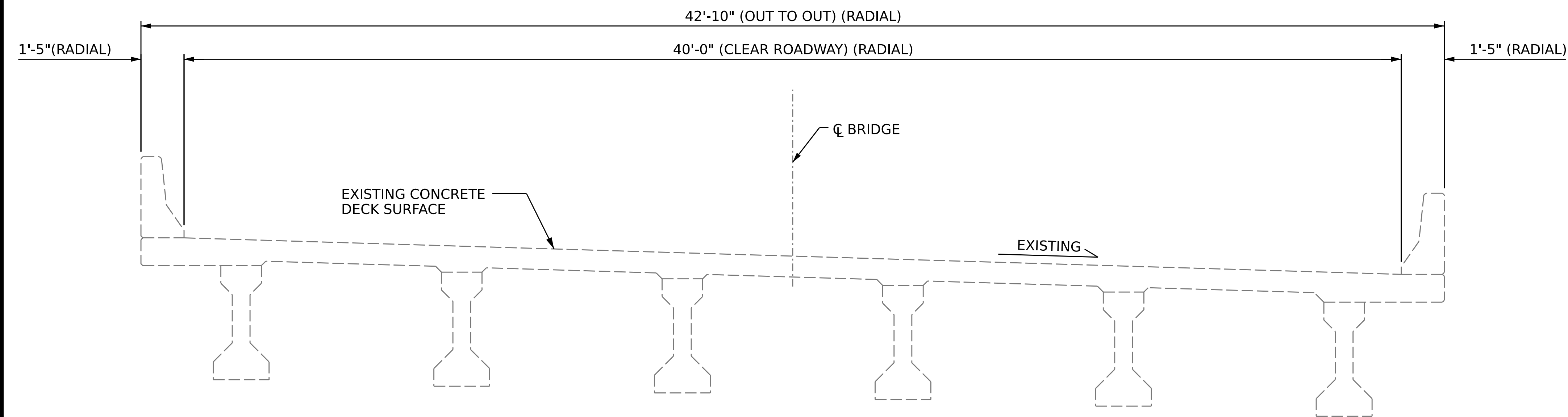
FOR BRIDGE 456 ON
 US 74 E BYP OVER CSX R/R
 BETWEEN SR 1303 & US 74 ALT



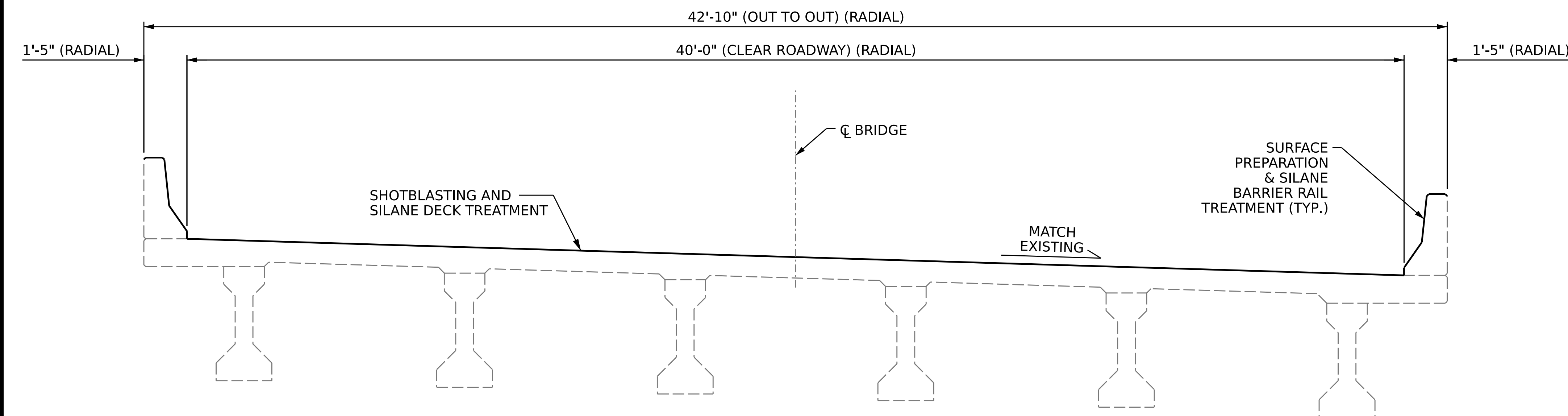
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NO.	BY:	DATE:	NO.	BY:	DATE:	S6-1
1			3			TOTAL SHEETS
2			4			7

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DRAWN BY : J. BALDWIN DATE : 11/2022
 CHECKED BY : G. AYES DATE : 11/2022



TYPICAL SECTION
(EXISTING)

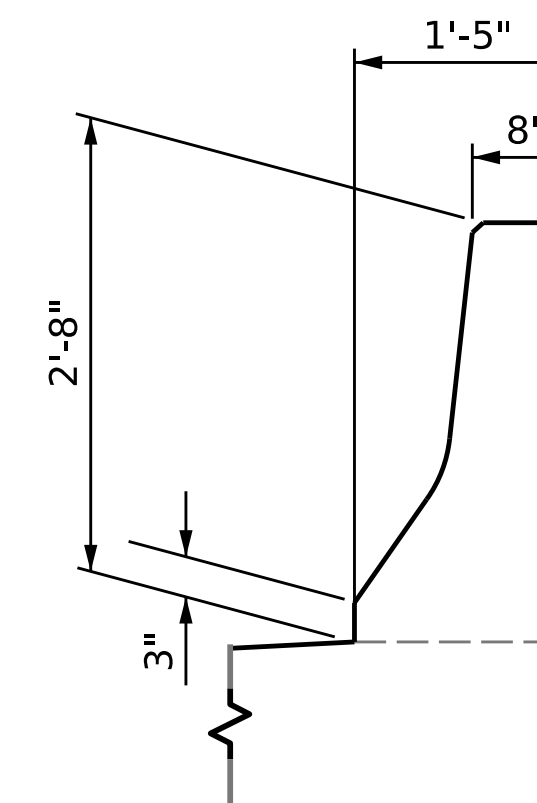


TYPICAL SECTION
(PROPOSED)

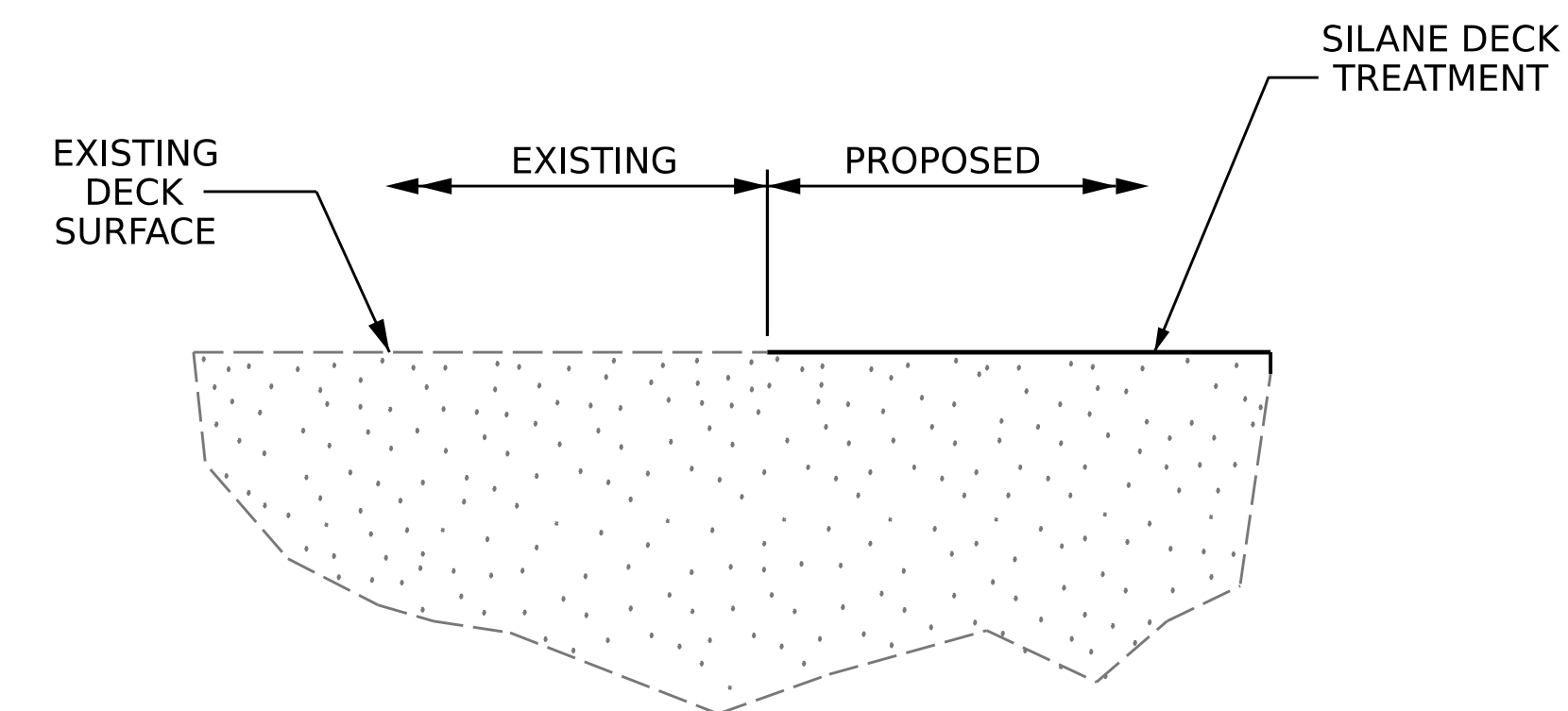
NOTES

SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.



LIMIT OF BARRIER RAIL SILANE APPLICATION



SILANE DECK TREATMENT DETAIL

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770456**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 TYPICAL SECTION
 AND SILANE DECK
 TREATMENT DETAILS

REVISIONS						SHEET NO. S6-2
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			7

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DRAWN BY : NVANDERMARK / J. BALDWIN DATE : 6/2022
 CHECKED BY : G. AYES DATE : 11/2022

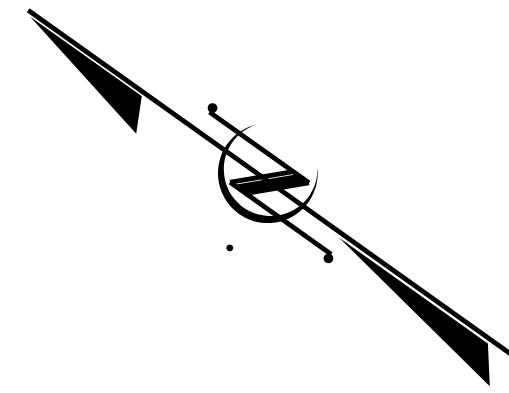
SUMMARY OF QUANTITIES FOR DECK AND APPROACH SLABS



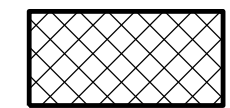
	ESTIMATE	ACTUAL
SHOTBLASTING BRIDGE DECK	1089.2 SY	
SILANE DECK TREATMENT	1089.2 SY	
CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	0 SY	
BRIDGE JOINT DEMOLITION	234.0 SF	

SUMMARY OF QUANTITIES FOR BARRIER RAIL TREATMENT

	ESTIMATE	ACTUAL
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	1,310.0 SF	
BARRIER RAIL SILANE TREATMENT	1,310.0 SF	

REPAIR KEY



-  - SHOTBLASTING AND SILANE DECK TREATMENT
-  - CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT
-  - BRIDGE JOINT DEMOLITION

NOTES

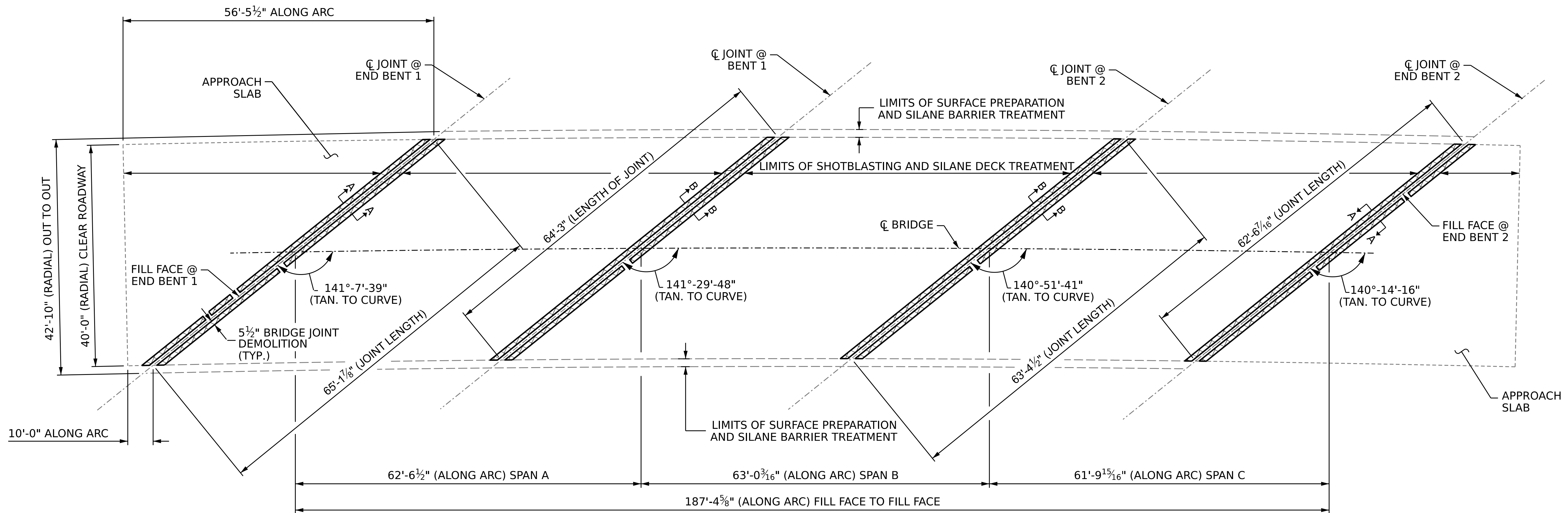
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN IN DRAWINGS ARE DEEMED NECESSARY BY ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED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

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE SILANE DECK TREATMENT IS COMPLETE.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

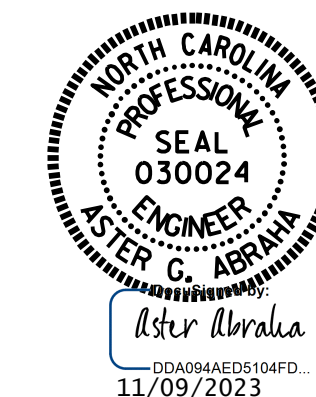
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR SECTION A-A AND B-B, SEE JOINT REPAIR DETAILS SHEET S6-4.



PLAN OF SPANS

PROJECT NO. HI-0017
ROBESON COUNTY
 BRIDGE NO. 770456



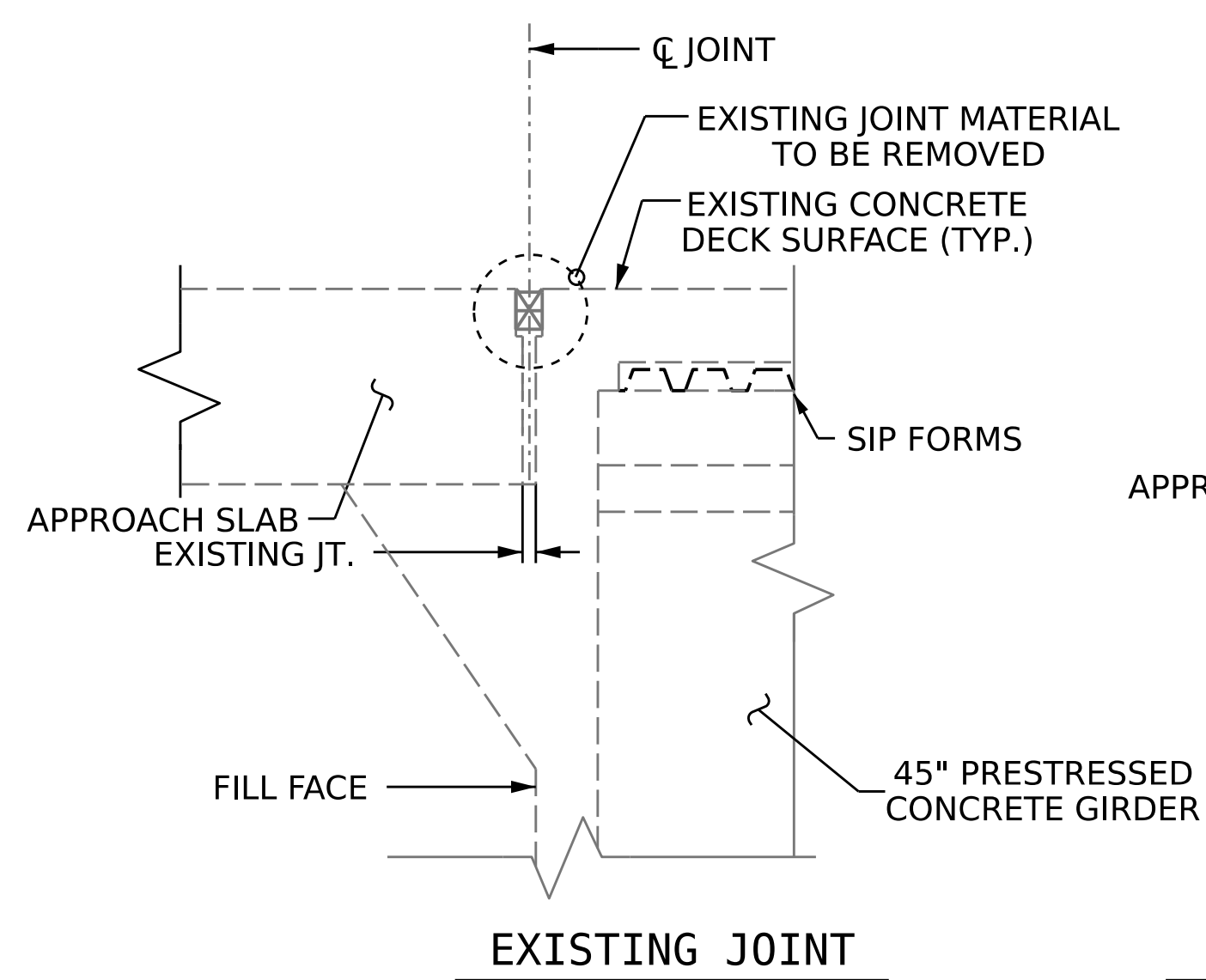
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SILANE DECK TREATMENT

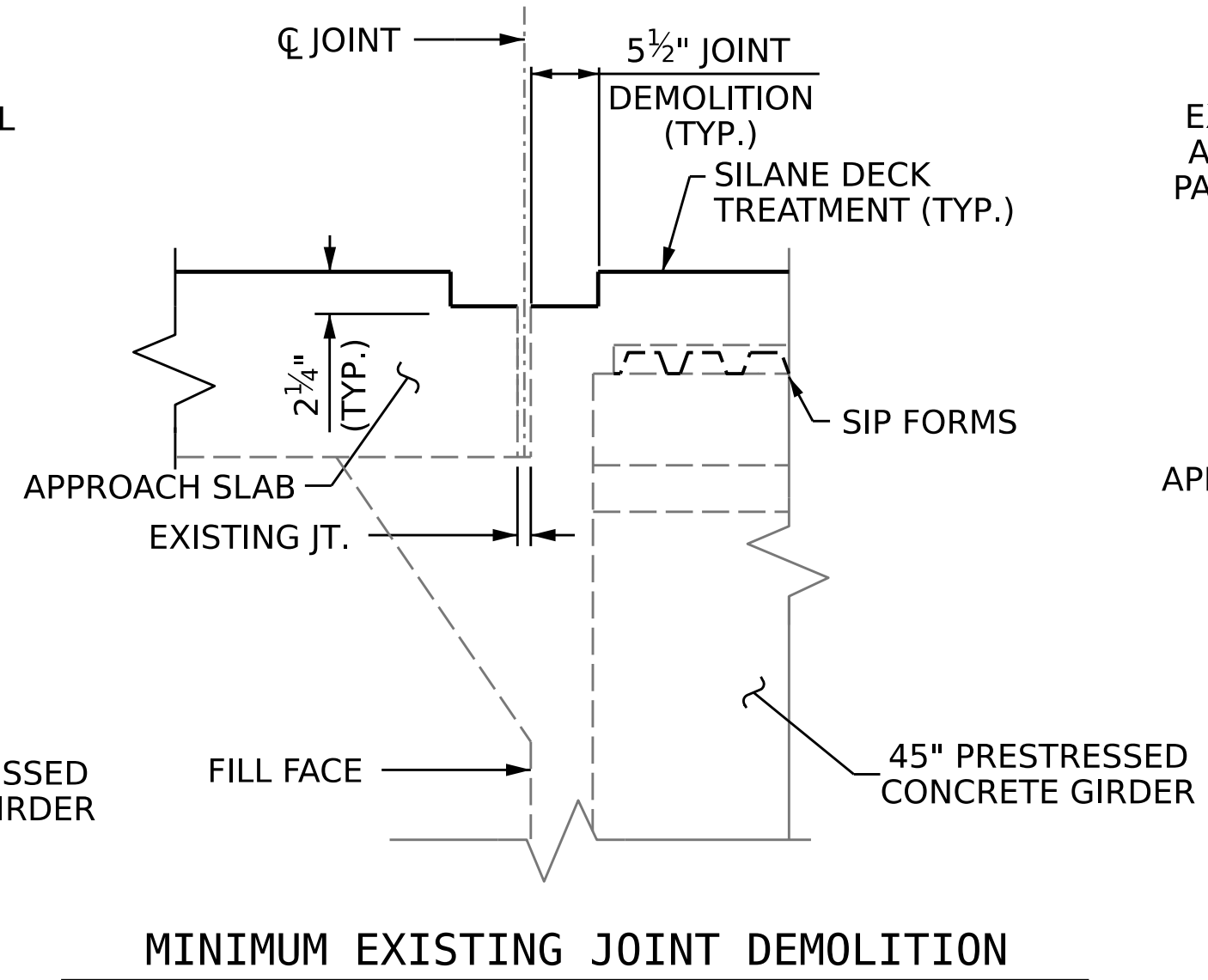
DRAWN BY : J. BALDWIN DATE : 11/2022
 CHECKED BY : G. AYES DATE : 11/2022

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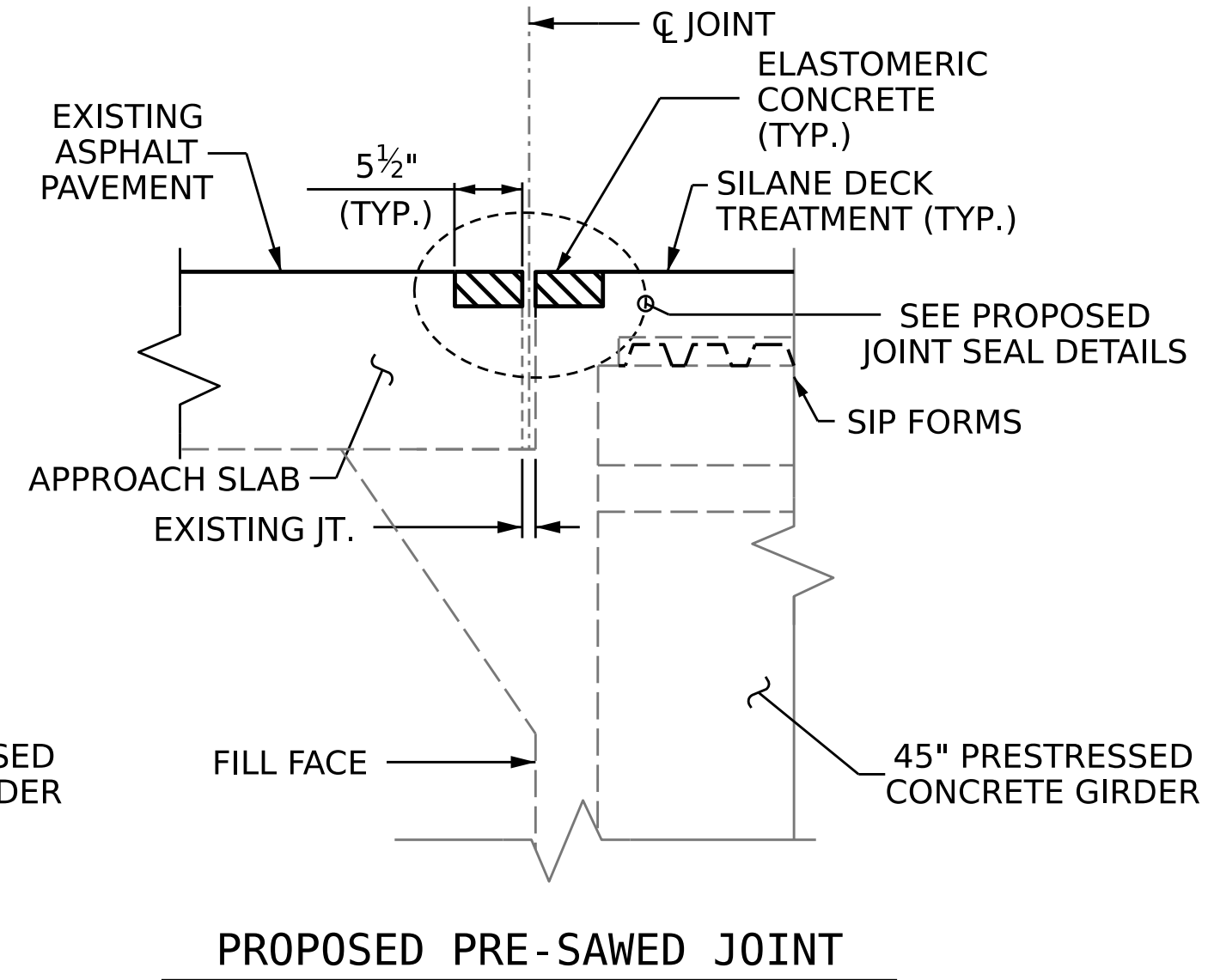
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2			4			7



EXISTING JOINT



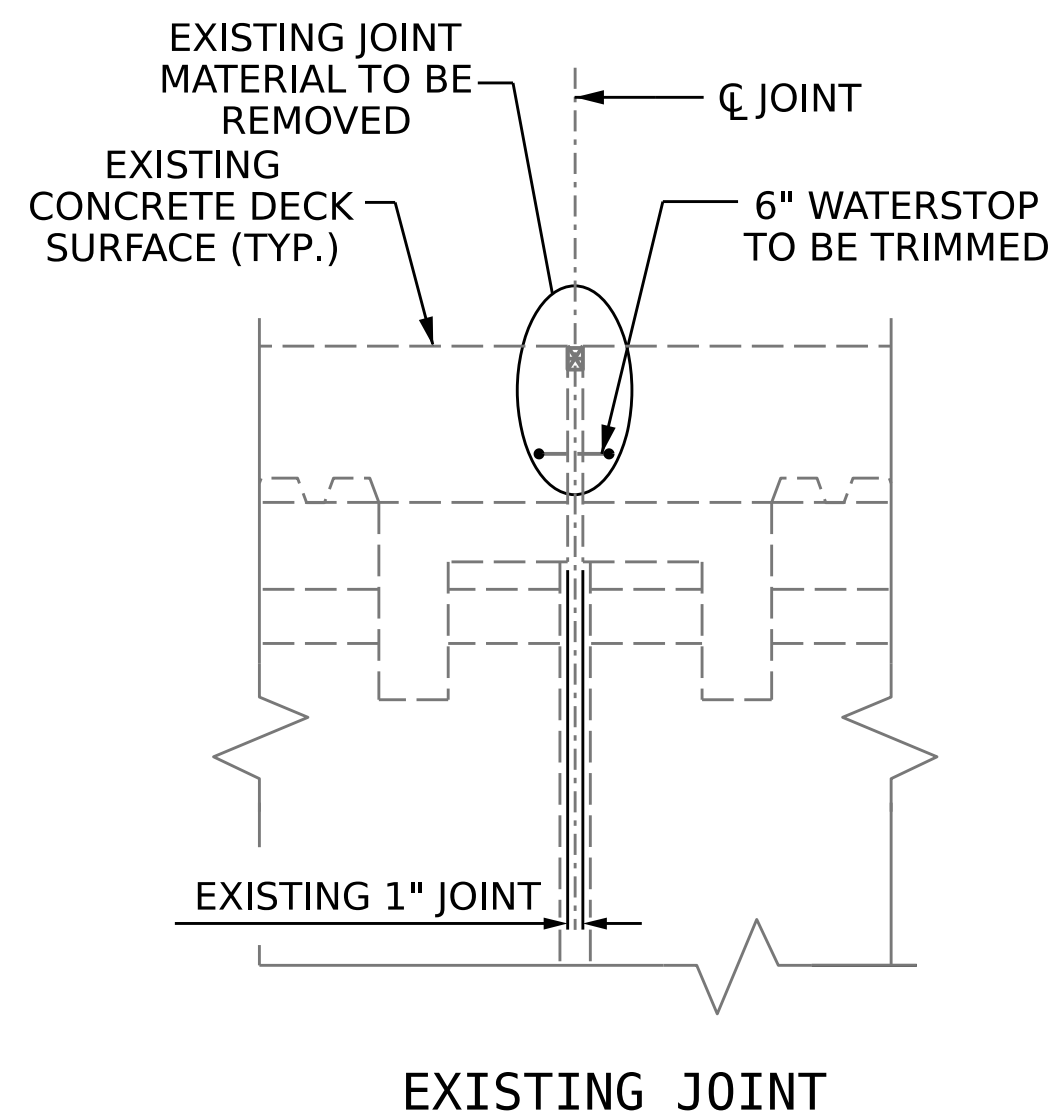
MINIMUM EXISTING JOINT DEMOLITION



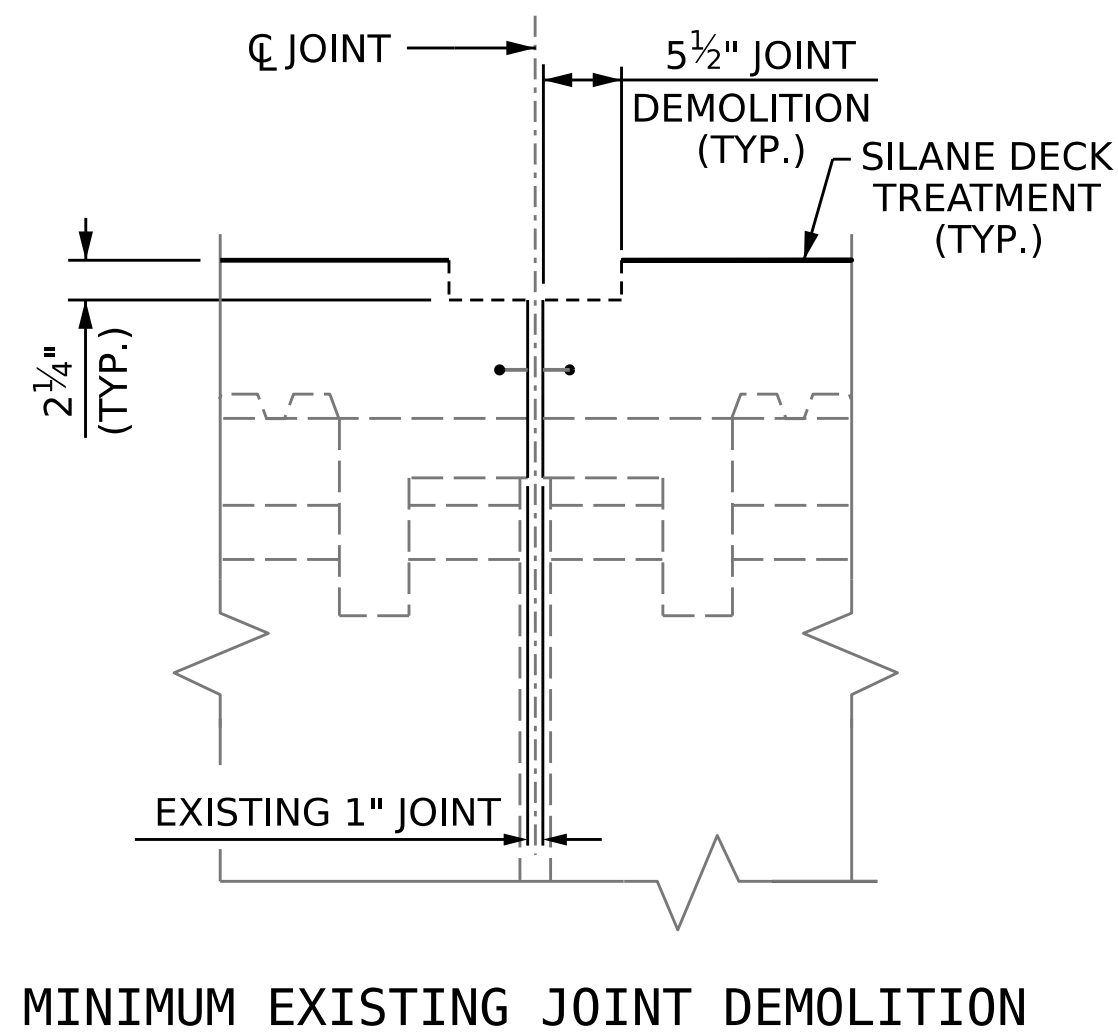
PROPOSED PRE-SAWED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

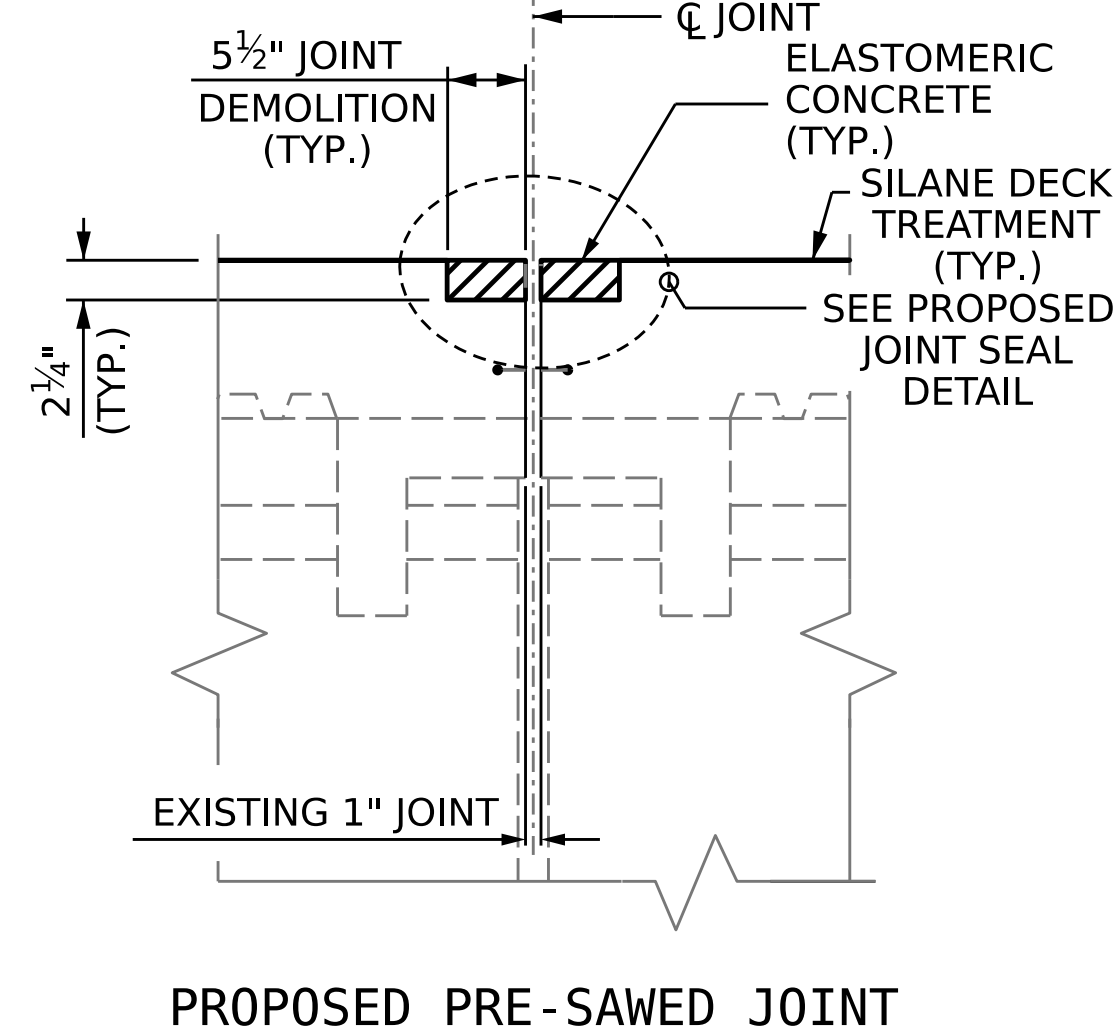
SECTION A-A



EXISTING JOINT



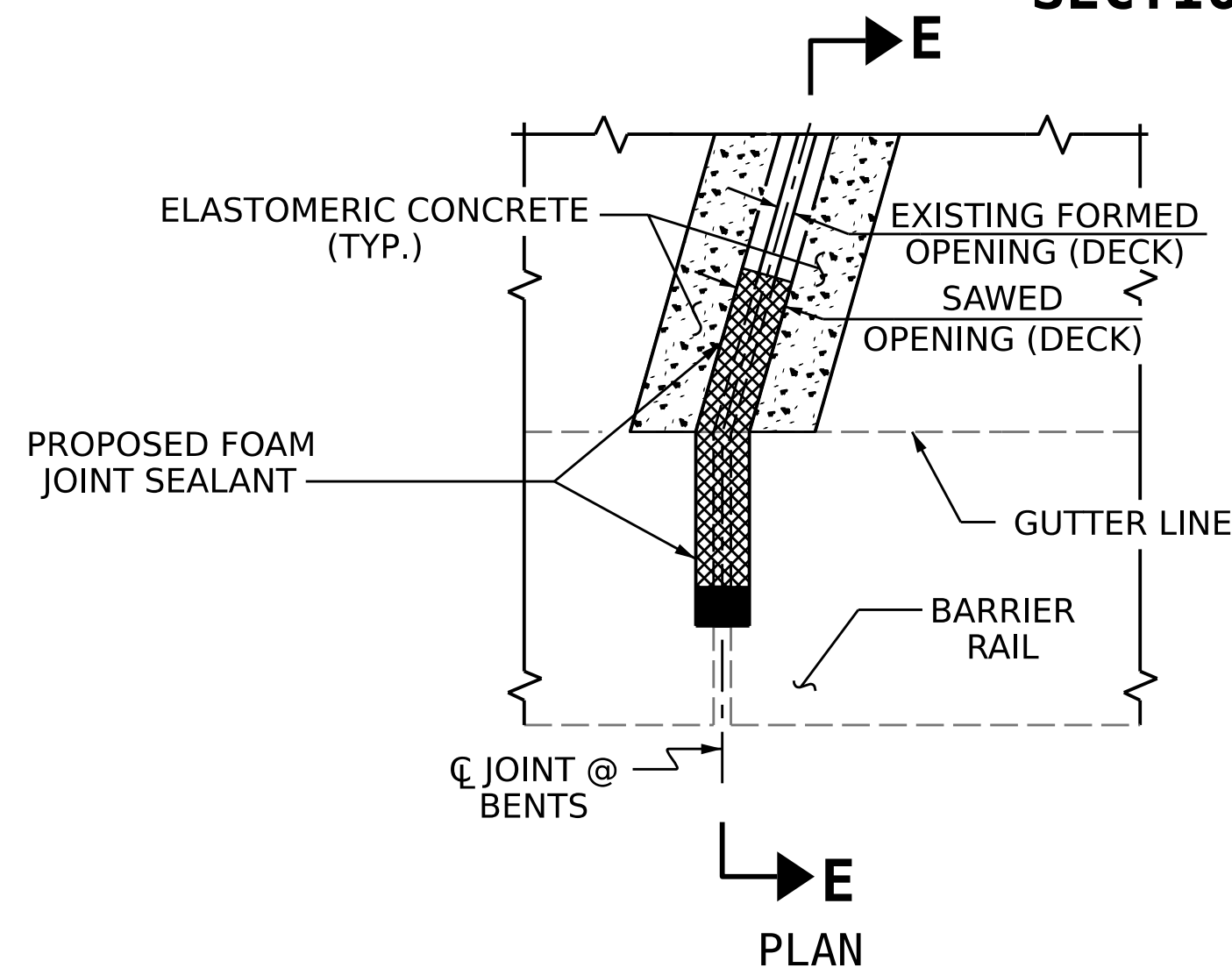
MINIMUM EXISTING JOINT DEMOLITION



PROPOSED PRE-SAWED JOINT

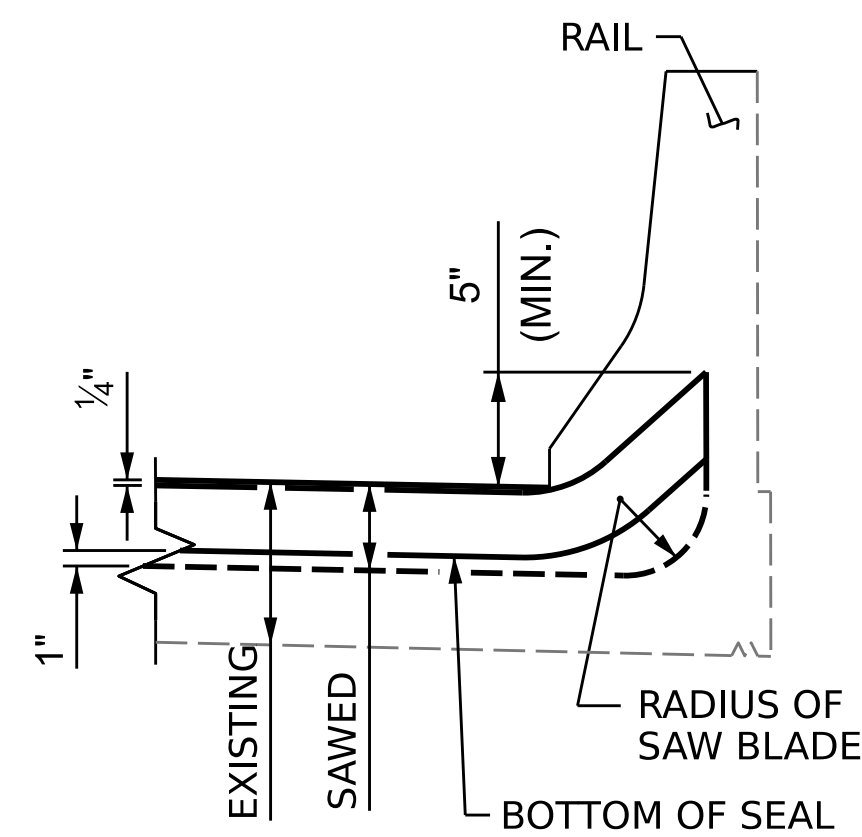
JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



PLAN

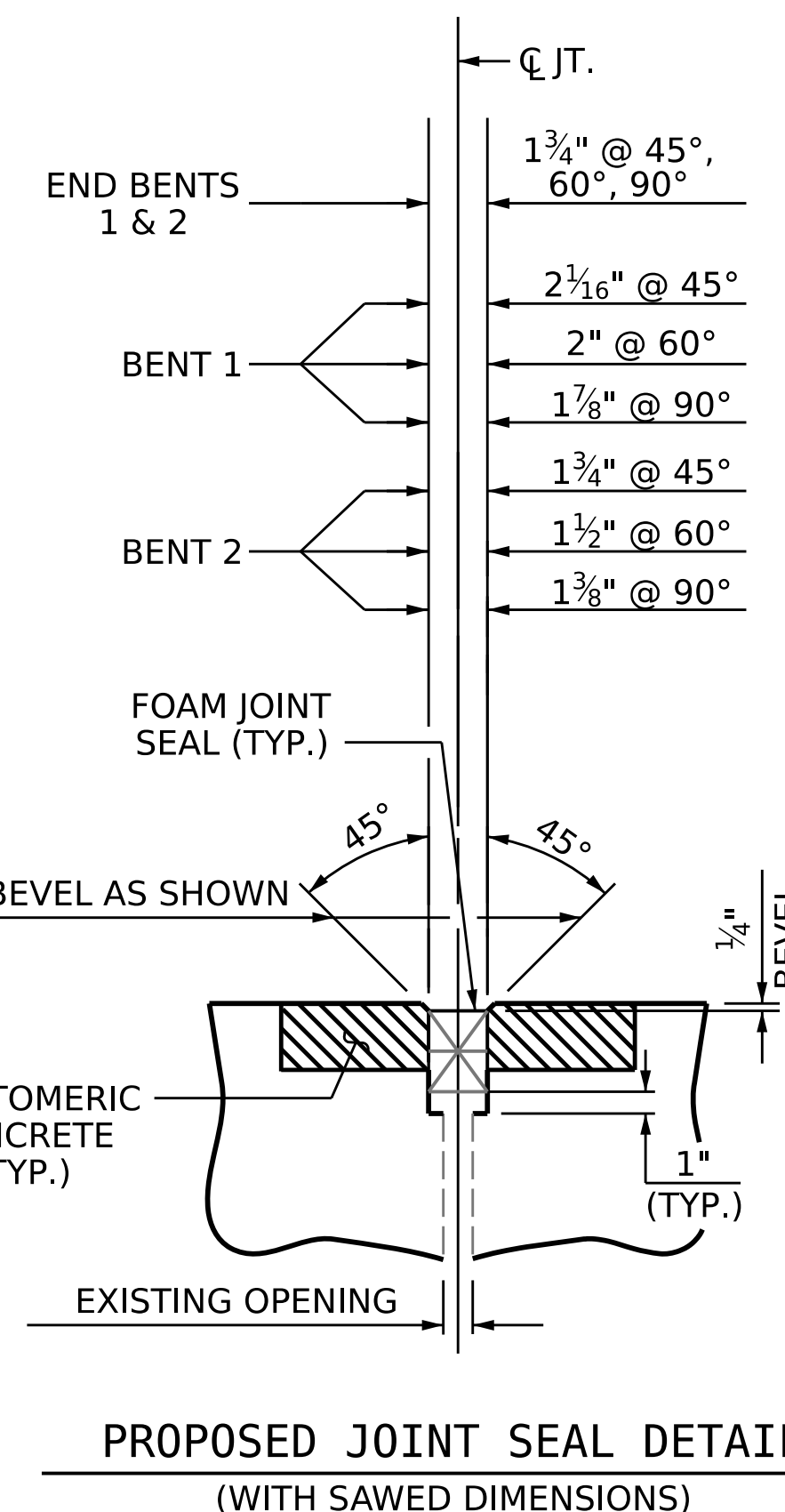
JOINT DETAIL AT BARRIER RAIL



SECTION E-E

NOTES

- FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY OR SEALANT WORK IS COMPLETE.
- CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL. IF ACTUAL JOINT OPENINGS VARIES FROM THE OPENING INDICATED IN DETAIL MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE MAY BE NECESSARY.
- 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.
- UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
- ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.
- THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.
- FOR FOAM EXPANSION JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- DURING JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.
- QUANTITIES SHOWN IN THE SUMMARY OF QUANTITIES TABLE ARE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.
- FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DEMOLITION, CONCRETE FOR DECK REPAIR SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL OR ELASTOMERIC CONCRETE SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE OR ELASTOMERIC CONCRETE.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.



PROPOSED JOINT SEAL DETAIL
(WITH SAWED DIMENSIONS)

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	43.9 CF	
FOAM JOINT SEALS FOR PRESERVATION	257.3 LF	

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770456**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

DRAWN BY : J. BALDWIN DATE : 11/2022
 CHECKED BY : G. AYES DATE : 11/2022

DESIGNED BY: *Tyler C. Abramo*
 DATE: 09/29/2023

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S6-4
1			3			TOTAL SHEETS
2			4			7

SUBSTRUCTURE REPAIR QUANTITY TABLE

REPAIRS - END BENT 1 & 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CURTAIN WALL	0	0		
WINGWALL				
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
CURTAIN WALL	0	0		
WINGWALL				
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
CURTAIN WALL		0		
WINGWALL				

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

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

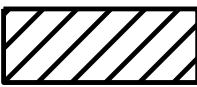

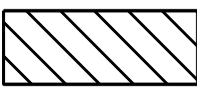

CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

REPAIR KEY

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  PREVIOUSLY ACCOUNTED FOR AREA
-  EPOXY RESIN INJECTION

PROJECT NO. HI-0017
ROBESON COUNTY
 BRIDGE NO. 770456

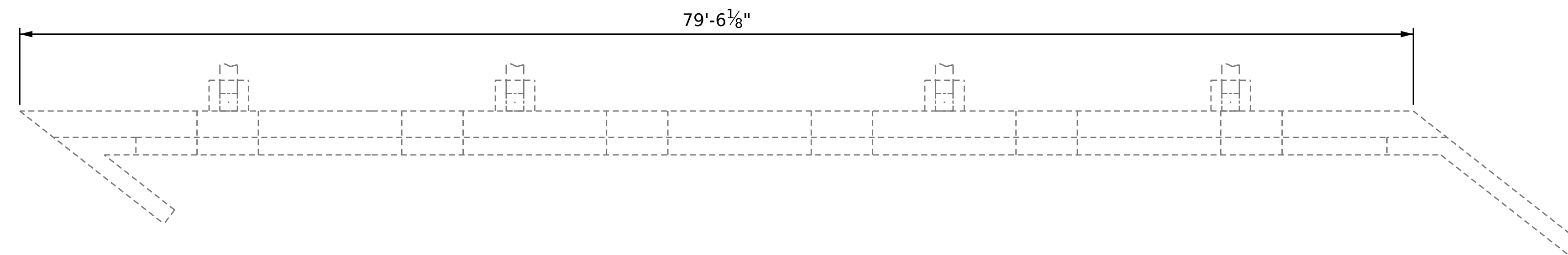


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE
 END BENT 1
 &
 END BENT 2

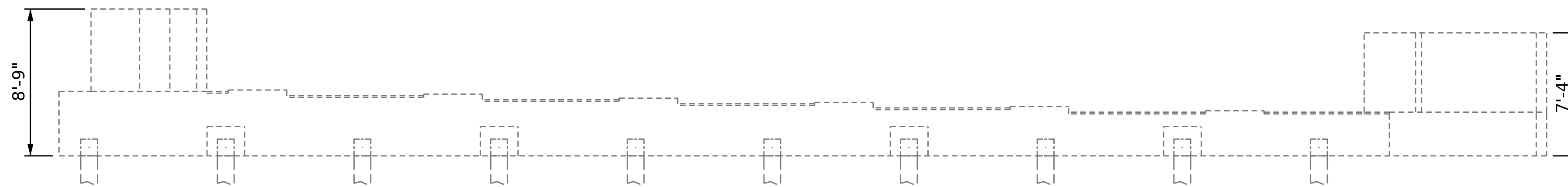
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

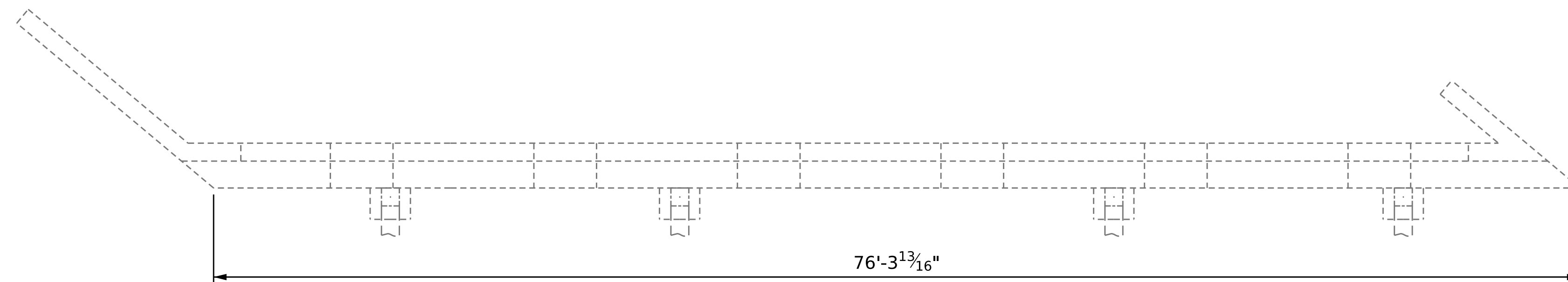


PLAN
(TOP OF CAP)

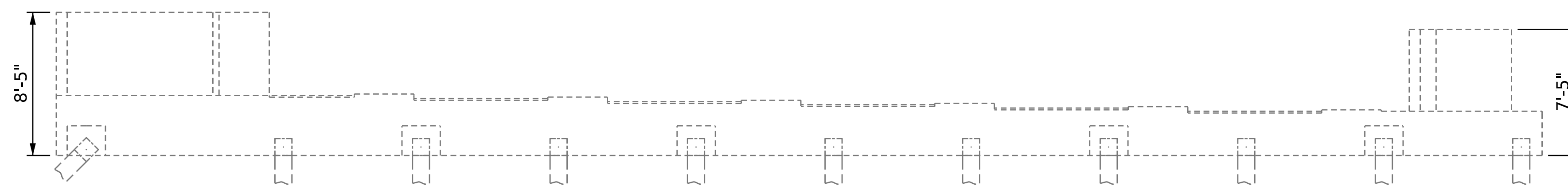


ELEVATION

END BENT 1



PLAN
(TOP OF CAP)



ELEVATION

END BENT 2

DRAWN BY : J. BALDWIN DATE : 11/2022
 CHECKED BY : G. AYES DATE : 11/2022
 DESIGN ENGINEER OF RECORD: DATE :

NOTES

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE REPAIR QUANTITY TABLE.

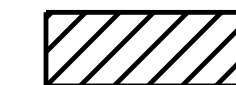

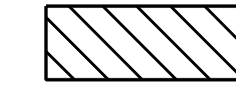

CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

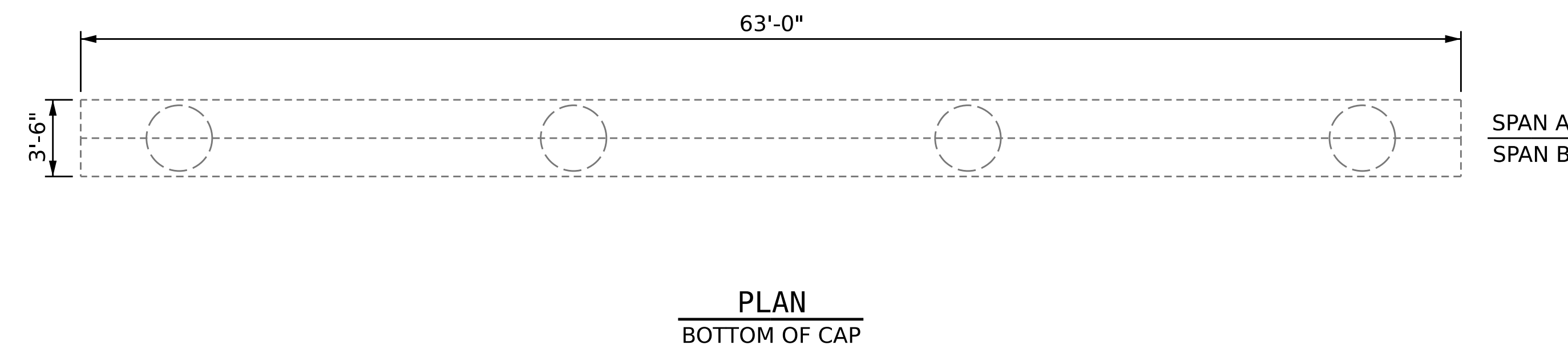
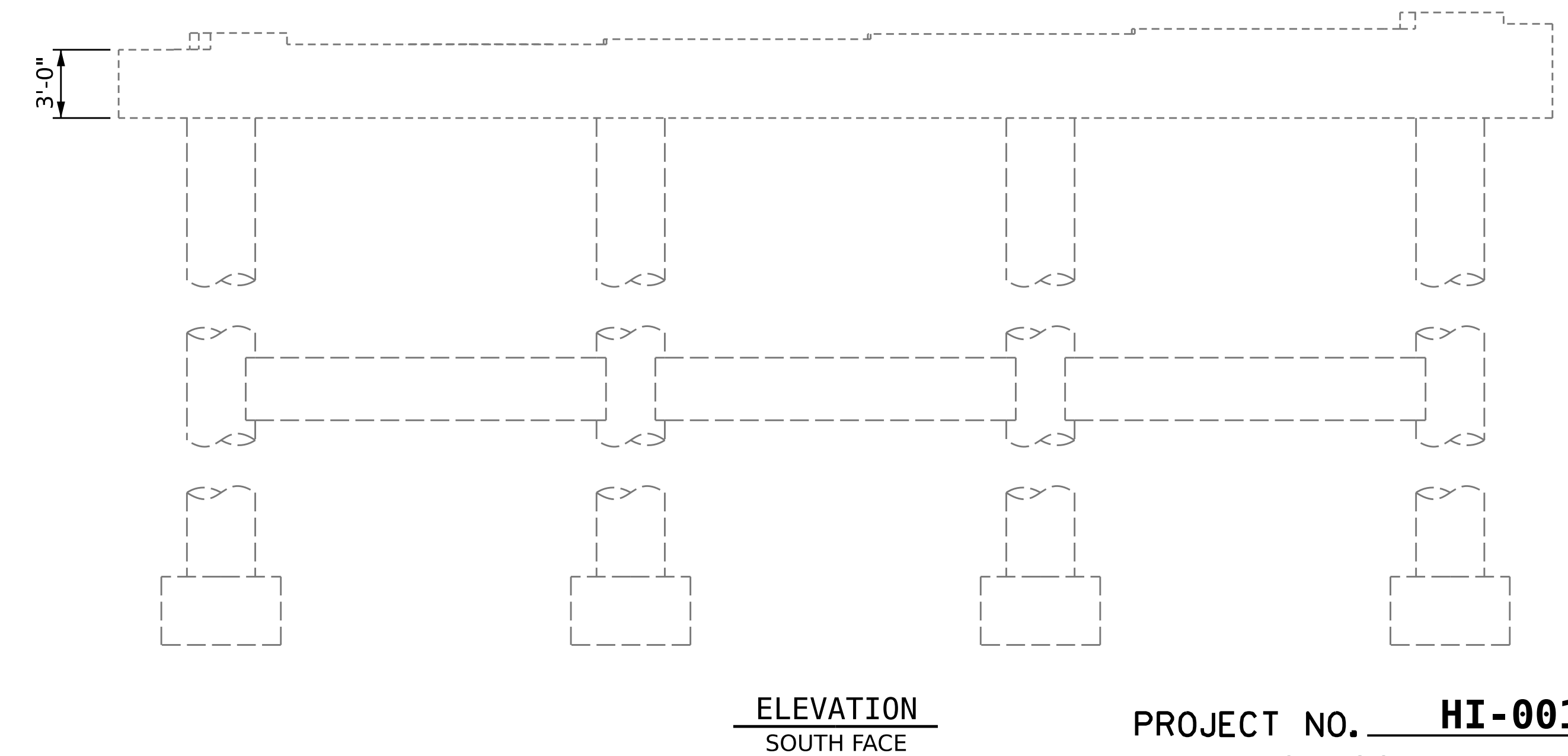
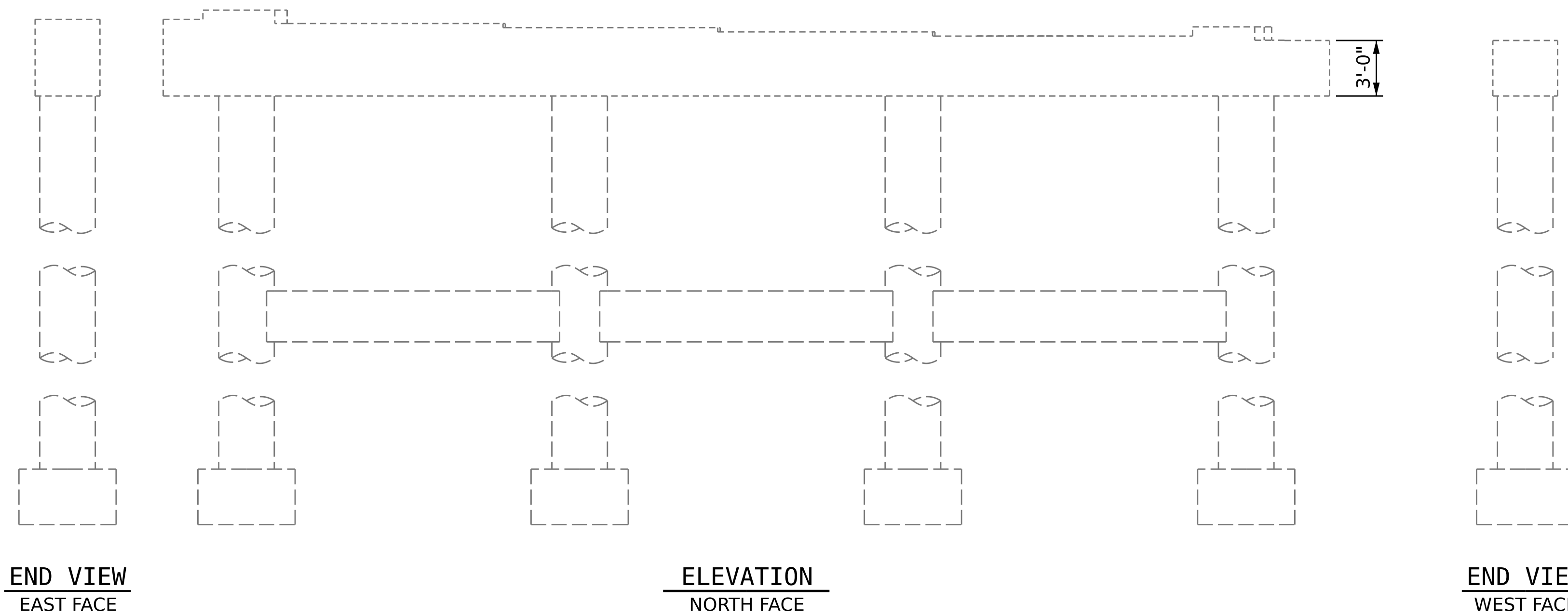
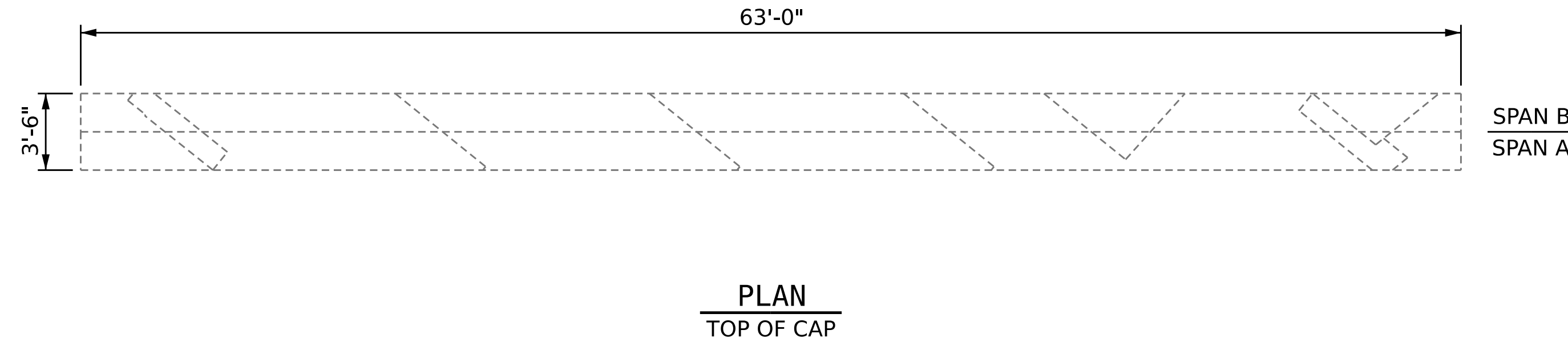
FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

REPAIR KEY

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  PREVIOUSLY ACCOUNTED FOR AREA
-  EPOXY RESIN INJECTION



SUBSTRUCTURE REPAIR QUANTITY TABLE

REPAIRS - BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP	0	0		
COLUMN	0	0		
EPOXY RESIN INJECTION		LINEAR FT		LINEAR FT
CAP		0		
COLUMN		0		
EPOXY COATING		AREA SF		AREA SF
CAP		0		

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

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770456**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE BENT 1

DRAWN BY : J. BALDWIN DATE : 11/2022
 CHECKED BY : G. AYES DATE : 11/2022

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO. S6-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 7
2			4			

NOTES

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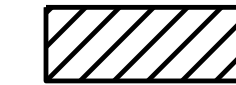



CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

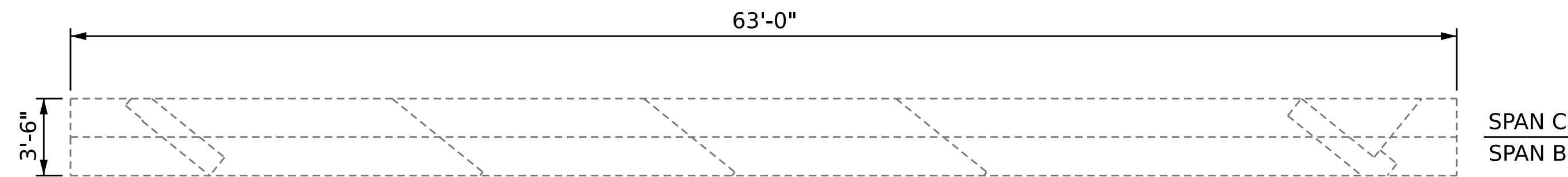
REPAIR KEY

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  PREVIOUSLY ACCOUNTED FOR AREA
-  EPOXY RESIN INJECTION

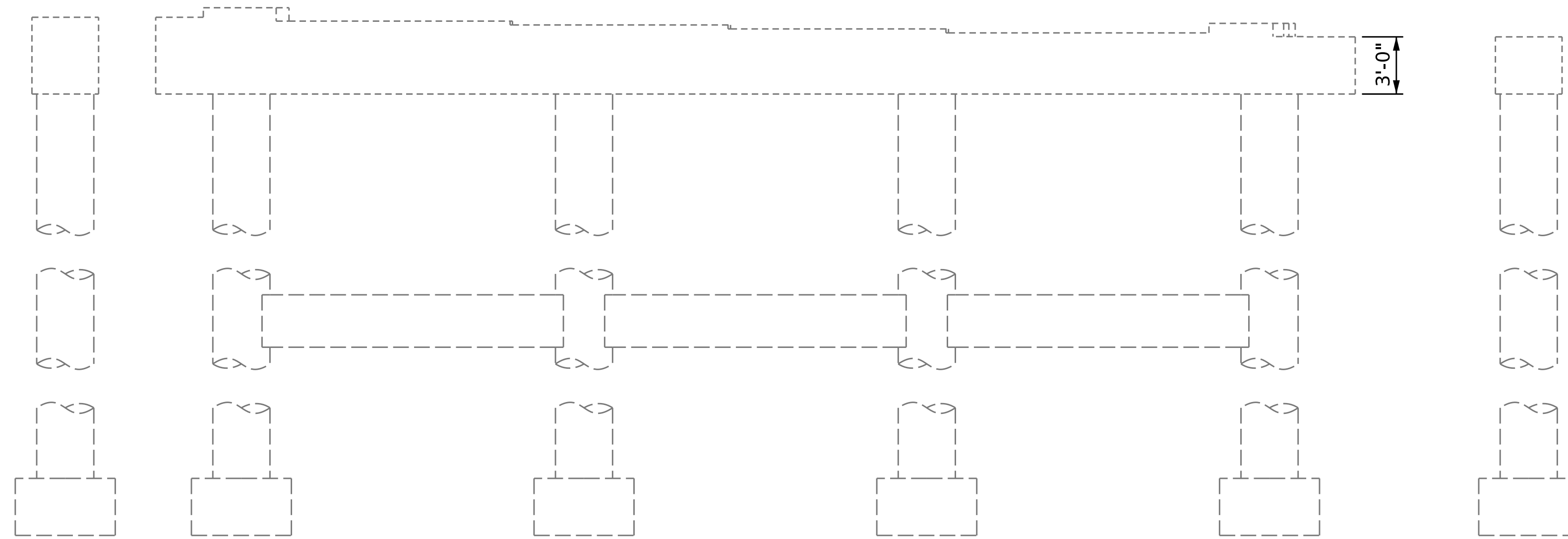
SUBSTRUCTURE REPAIR QUANTITY TABLE

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

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



PLAN
TOP OF CAP

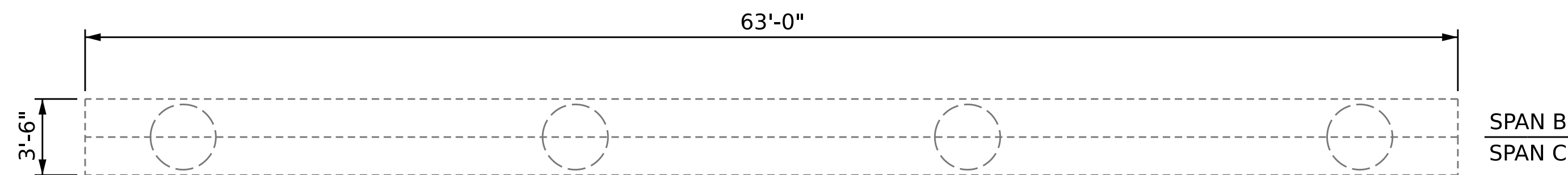


END VIEW
EAST FACE

ELEVATION
NORTH FACE
(LOOKING SOUTH)

END VIEW
WEST FACE

ELEVATION
SOUTH FACE
(LOOKING NORTH)



PLAN
BOTTOM OF CAP

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770456**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE BENT 2

DRAWN BY : J. BALDWIN DATE : 11/2022
 CHECKED BY : G. AYES DATE : 11/2022

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

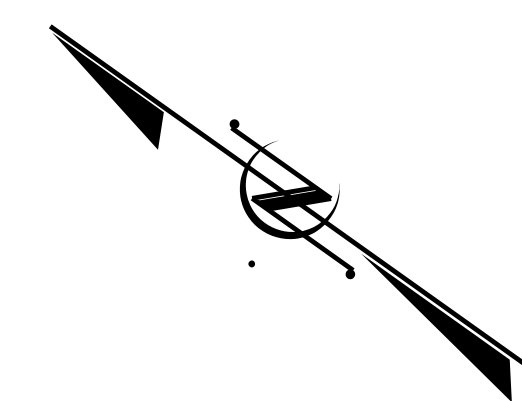
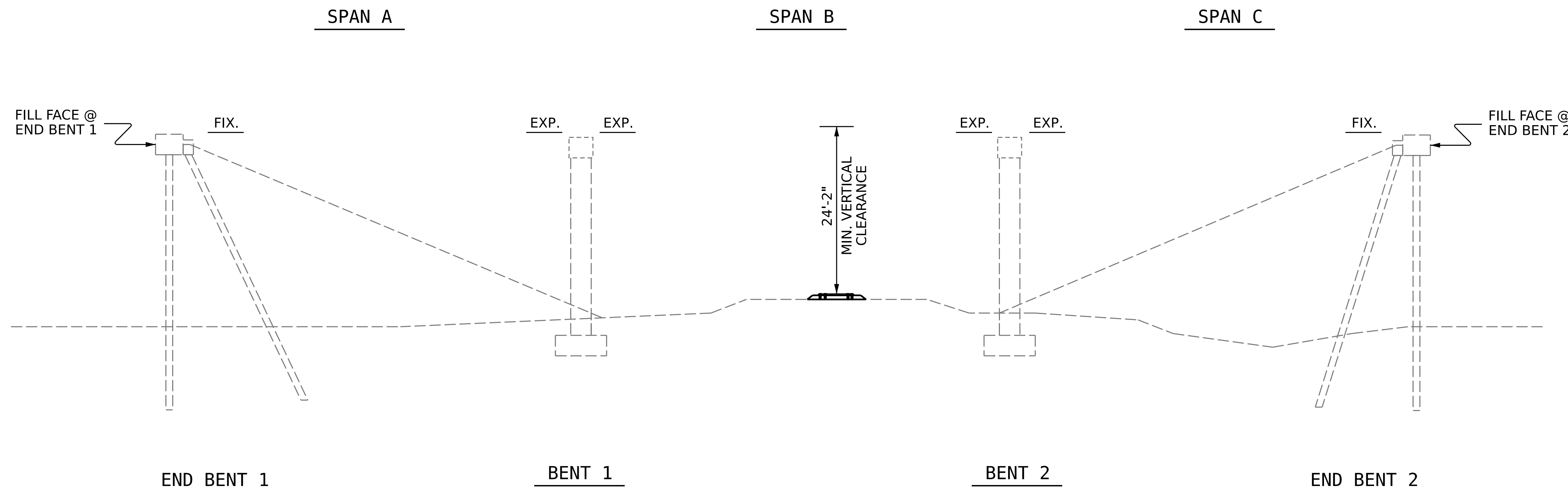
REVISIONS						SHEET NO. S6-7 TOTAL SHEETS 7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

NOTES

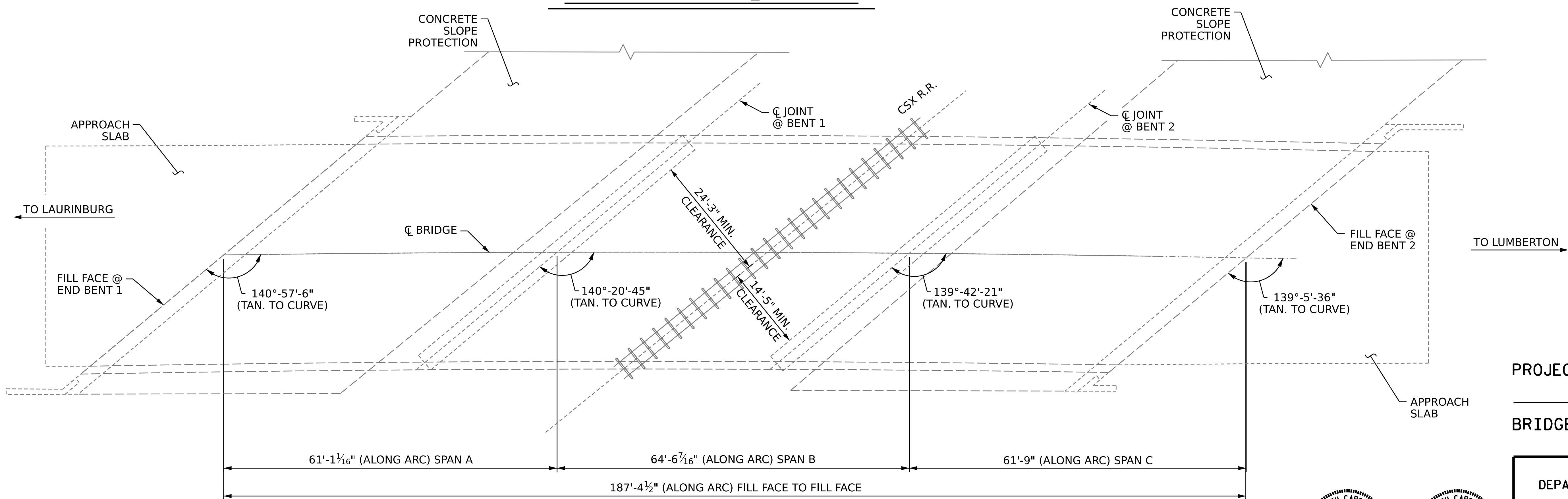
- GENERAL DRAWING AND PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 04/06/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CONCRETE RAIL SURFACE PREPARATION.
- PREPARE BRIDGE DECK BY SHOTBLASTING METHODS.
- PLACE SILANE TREATMENT ON DECK AND BARRIER RAILS.
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS WITH ELASTOMERIC CONCRETE, AND INSTALL FOAM JOINT SEALS.



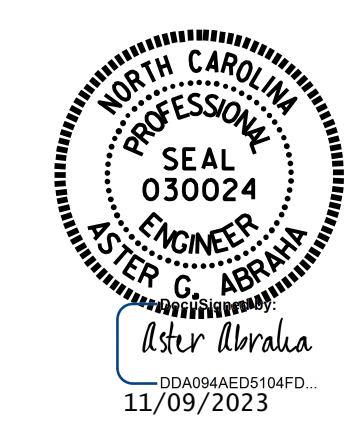
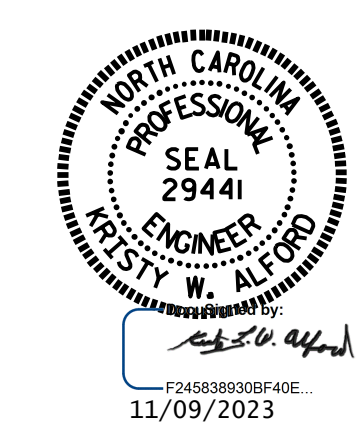
SECTION ALONG ϕ BRIDGE



PLAN

(FOOTINGS, COLUMNS & PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770457**
 MILEPOST SE 278.05



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE 457 ON
 US 74 W BYP OVER CSX R/R
 BETWEEN SR 1303 & SR 1153

DRAWN BY : J. BALDWIN / G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD: DATE :

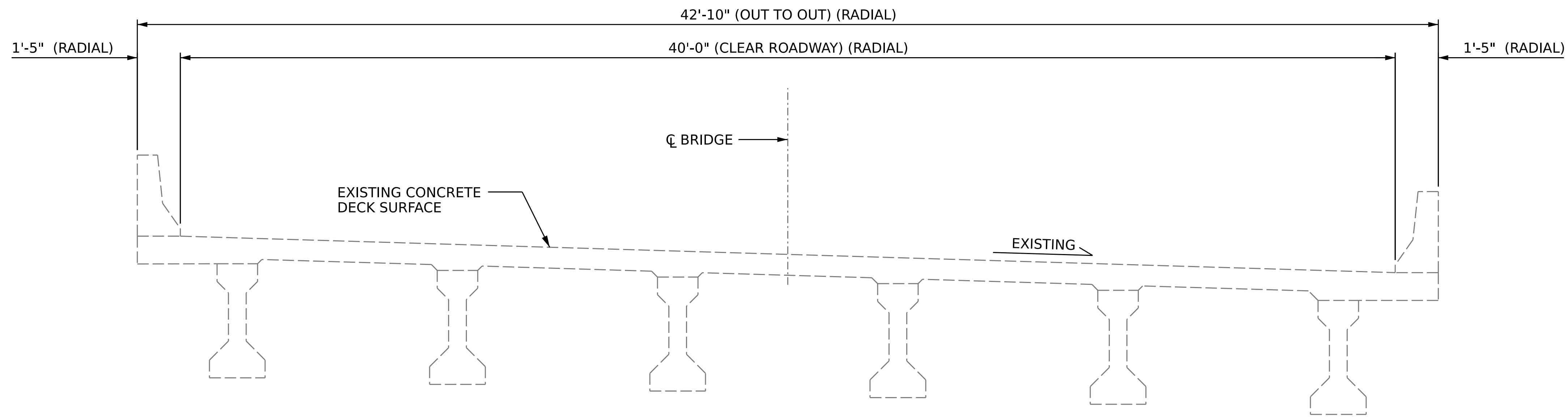
DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

NOTES

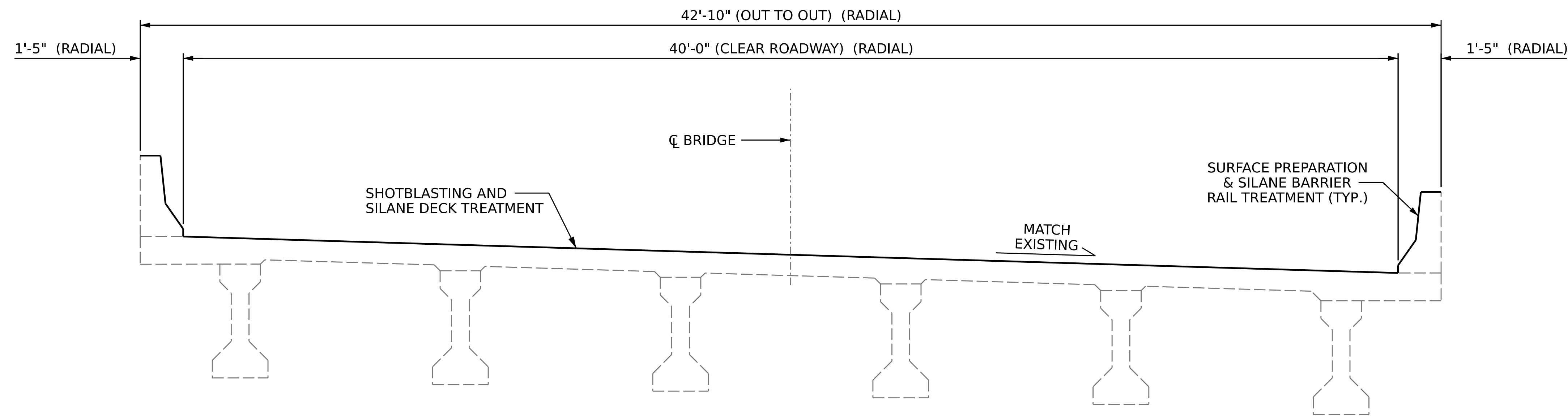
SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.



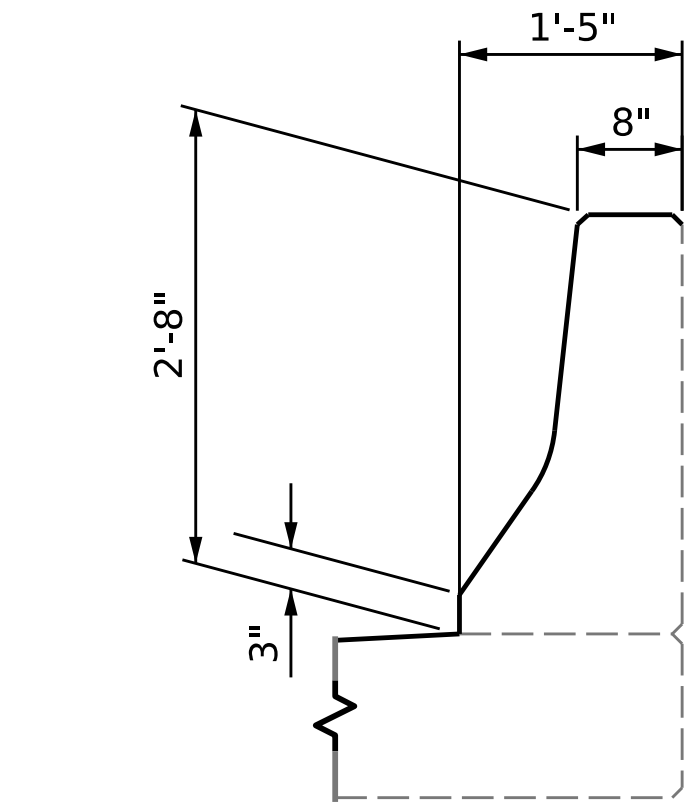
TYPICAL SECTION

(EXISTING)

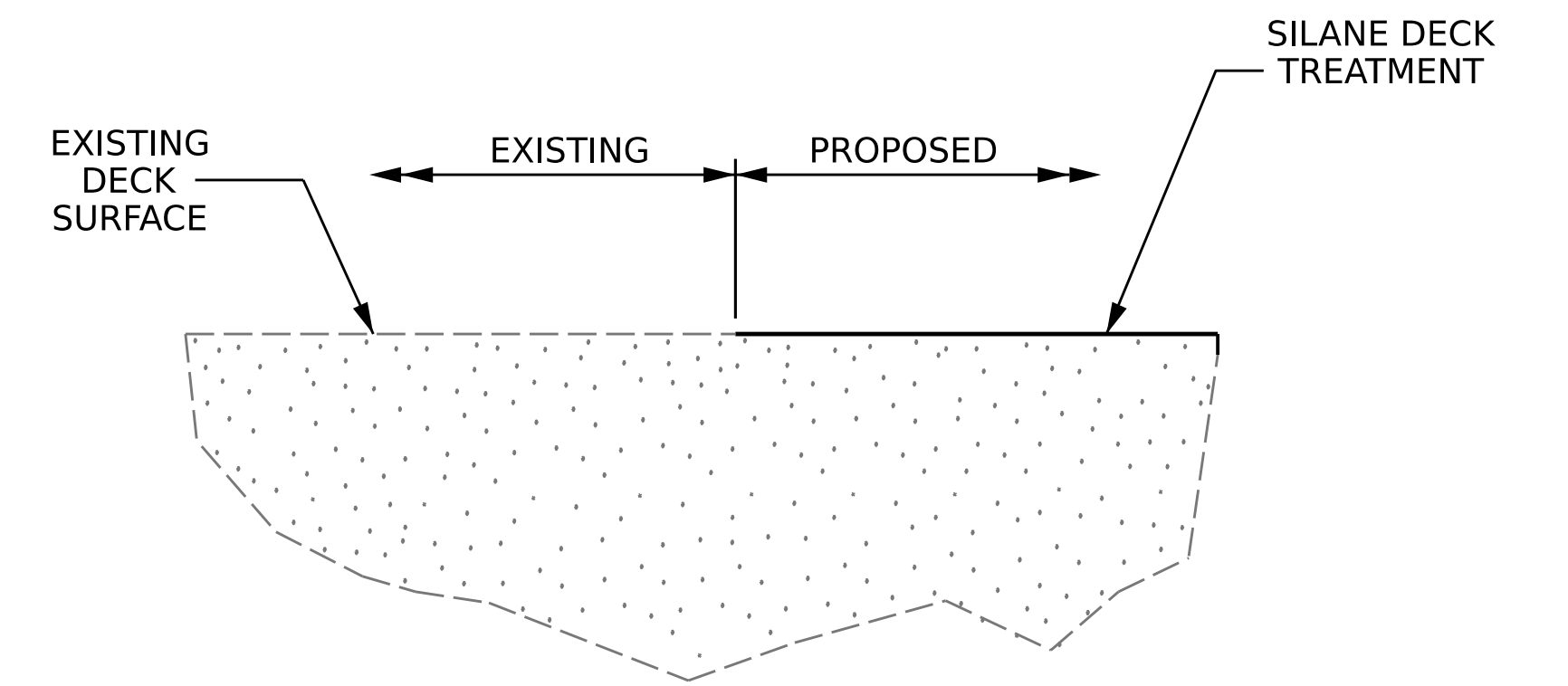


TYPICAL SECTION

(PROPOSED)



LIMIT OF BARRIER RAIL SILANE APPLICATION



SILANE DECK TREATMENT DETAIL

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770457**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

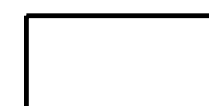
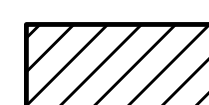
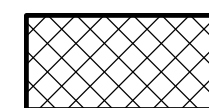
SUPERSTRUCTURE
 TYPICAL SECTION
 AND SILANE DECK
 TREATMENT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S7-2
1			3			TOTAL SHEETS
2			4			4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

REPAIR KEY

-  - SHOTBLASTING AND SILANE DECK TREATMENT
-  - CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT
-  - BRIDGE JOINT DEMOLITION

NOTES

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

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE SILANE DECK TREATMENT IS COMPLETE.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

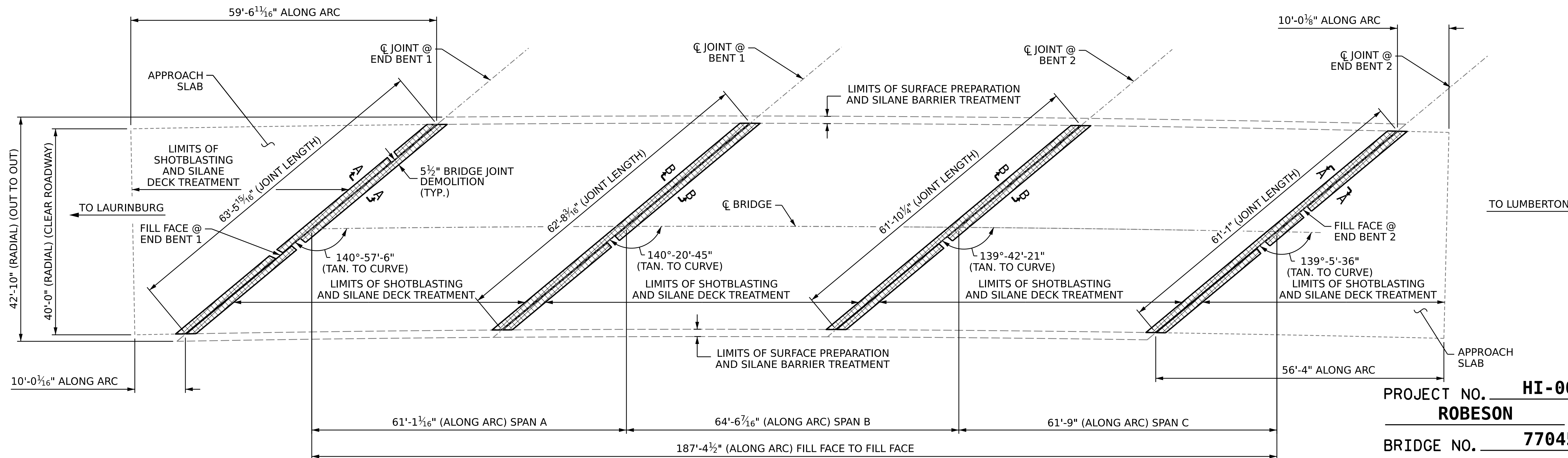
FOR SECTION A-A AND B-B, SEE JOINT REPAIR DETAILS SHEET S7-4.

SUMMARY OF QUANTITIES FOR DECK AND APPROACH SLABS

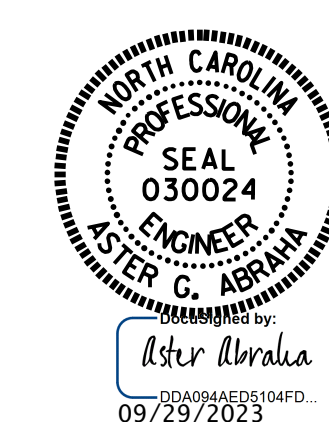
	ESTIMATE	ACTUAL
SHOTBLASTING BRIDGE DECK	1,104.1 SY	
SILANE DECK TREATMENT	1,104.1 SY	
CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	0 SF	
BRIDGE JOINT DEMOLITION	228.4 SF	

SUMMARY OF QUANTITIES FOR BARRIER RAIL TREATMENT

	ESTIMATE	ACTUAL
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	1,319.4 SF	
SILANE BARRIER RAIL TREATMENT	1,319.4 SF	



PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770457**



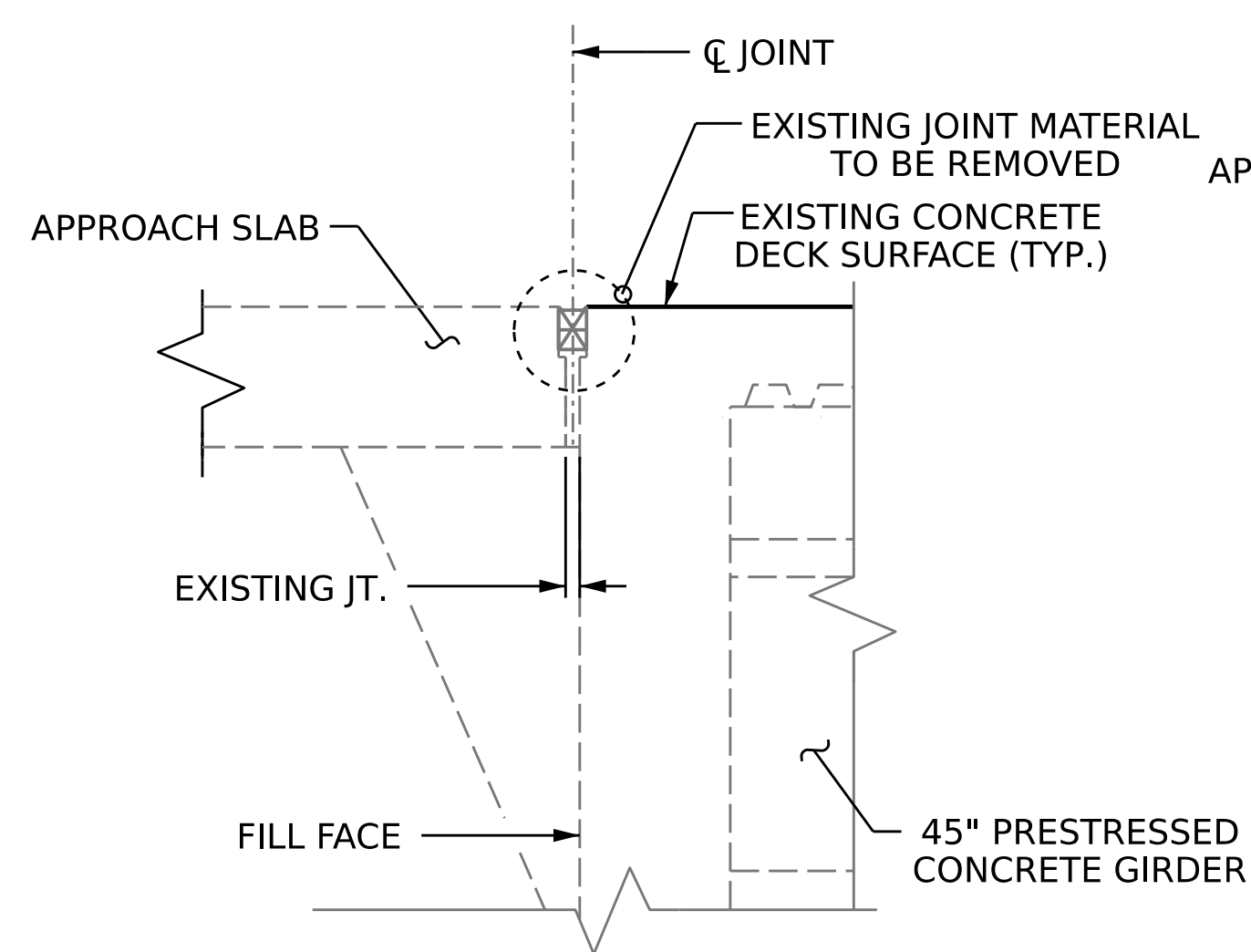
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SILANE DECK TREATMENT

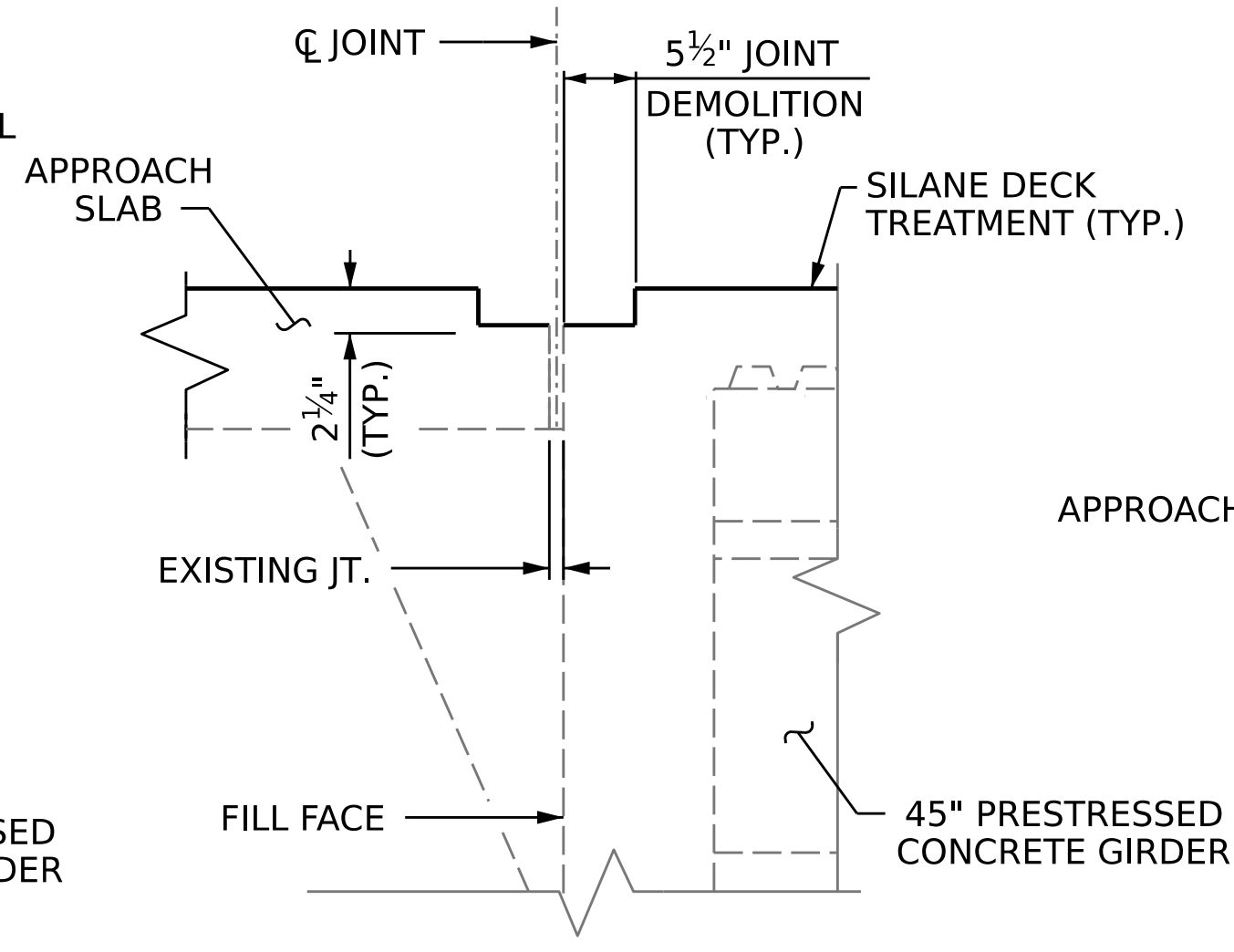
DRAWN BY : G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD: DATE :

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

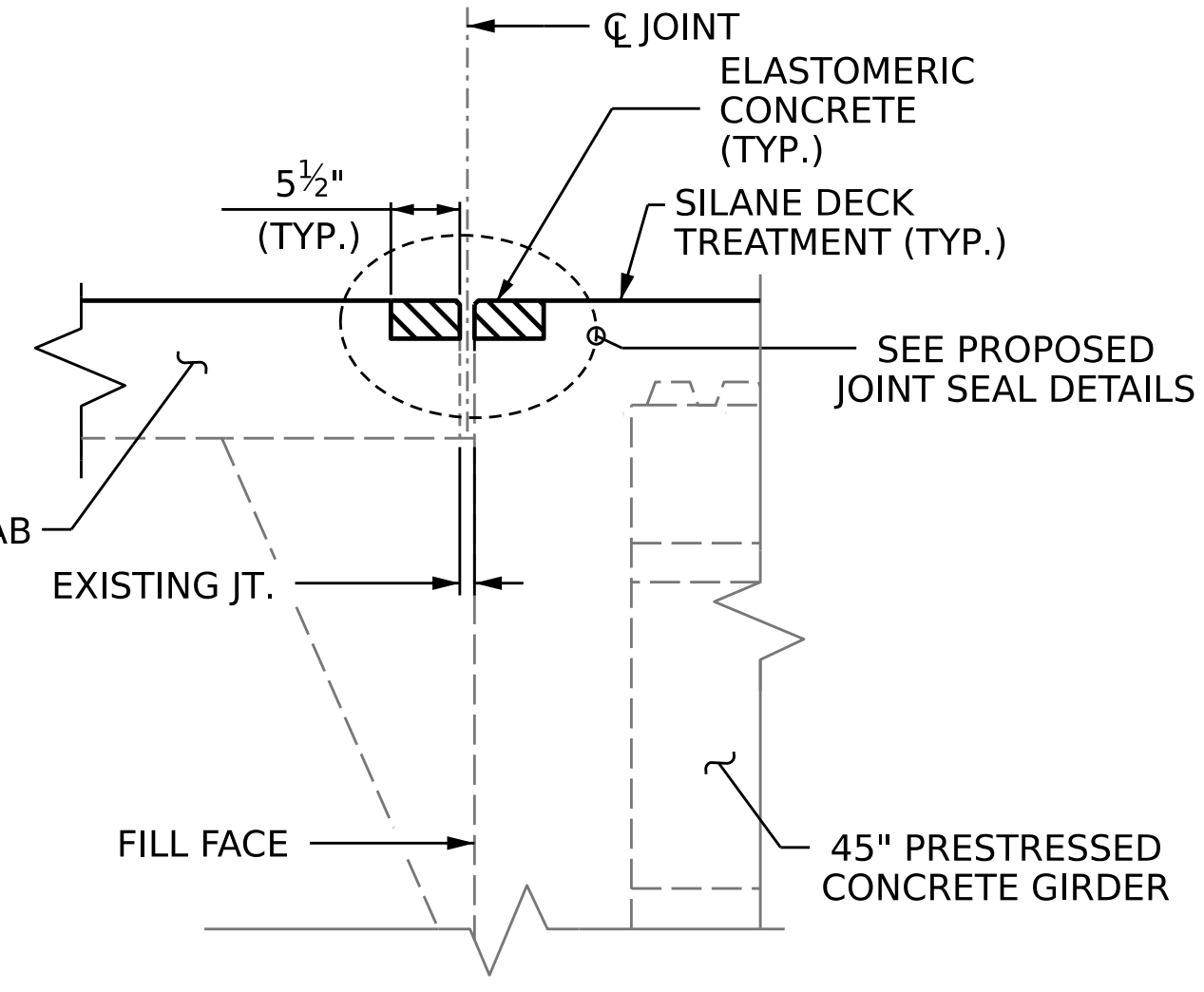
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S7-3
2			4			TOTAL SHEETS 4



EXISTING JOINT



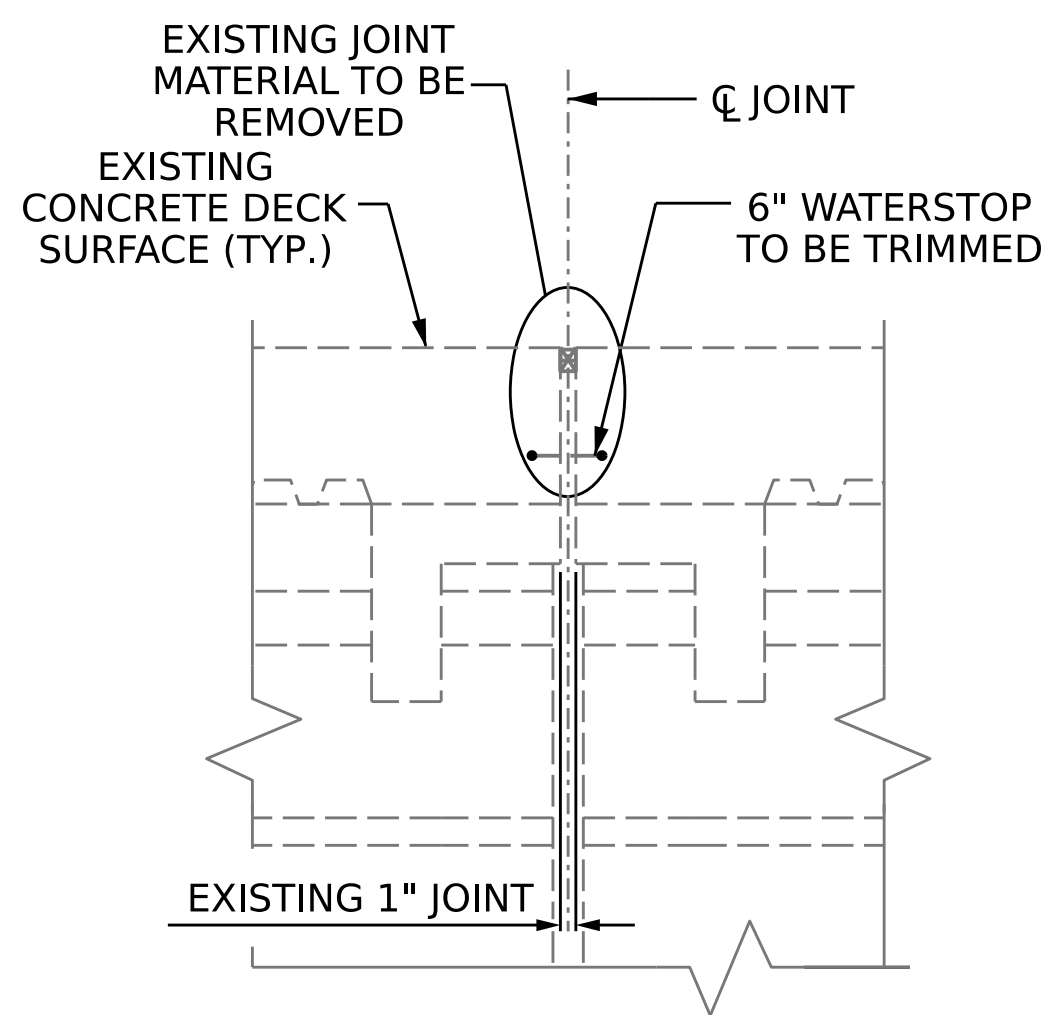
MINIMUM EXISTING JOINT DEMOLITION



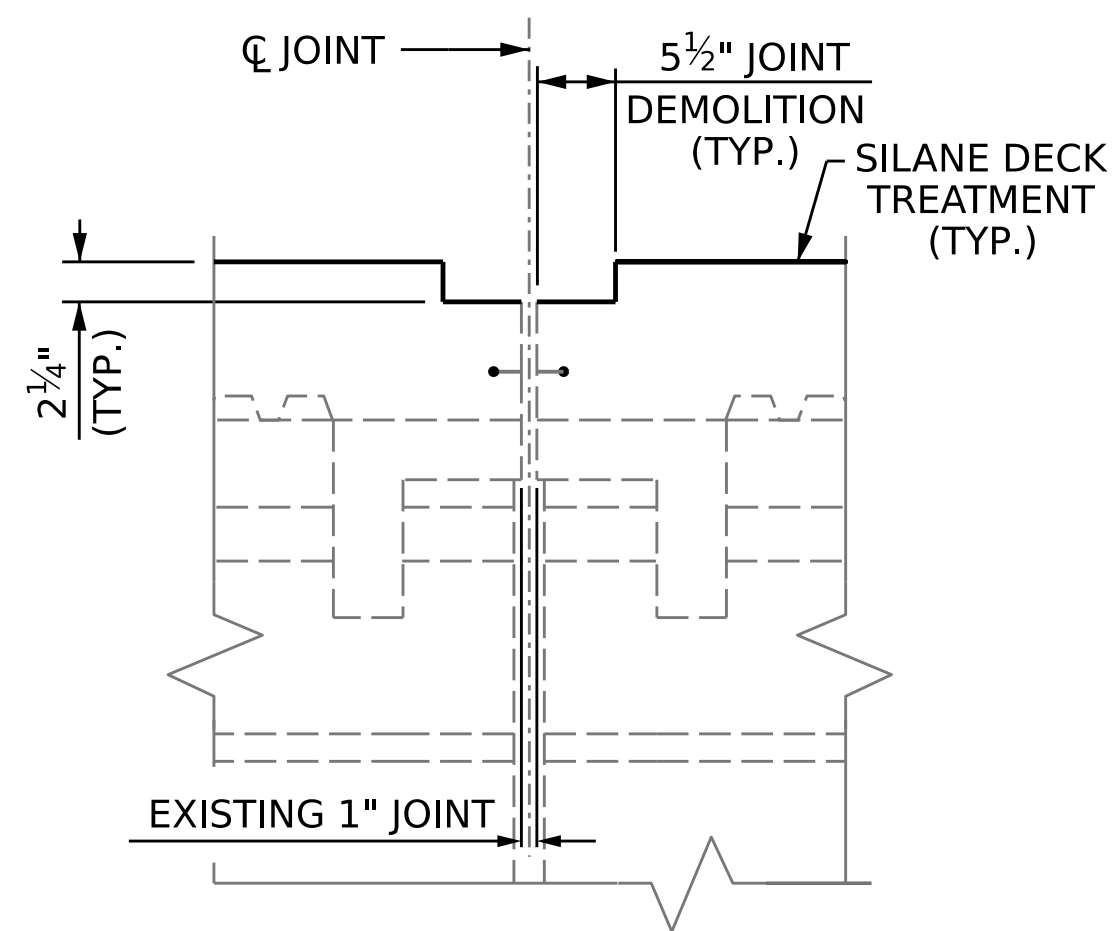
PROPOSED PRE-SAWED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

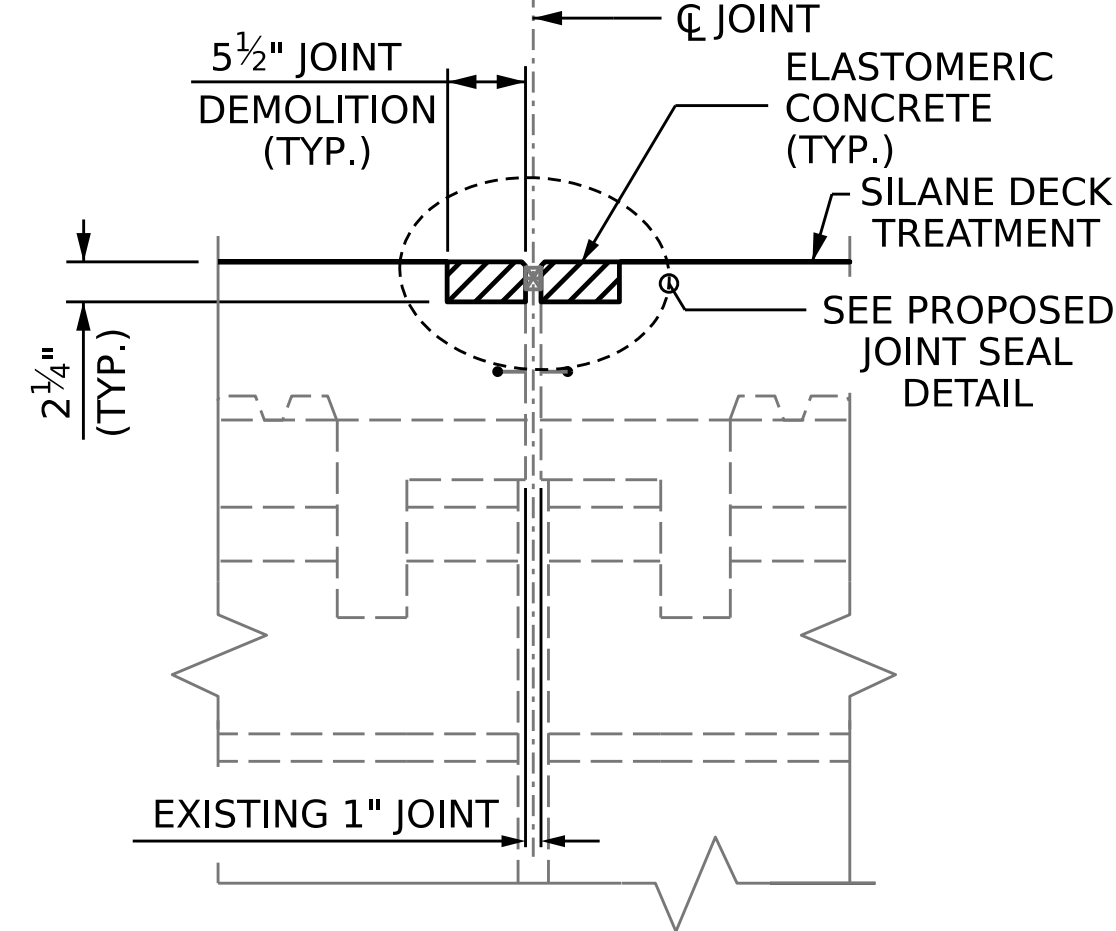
SECTION A-A



EXISTING JOINT



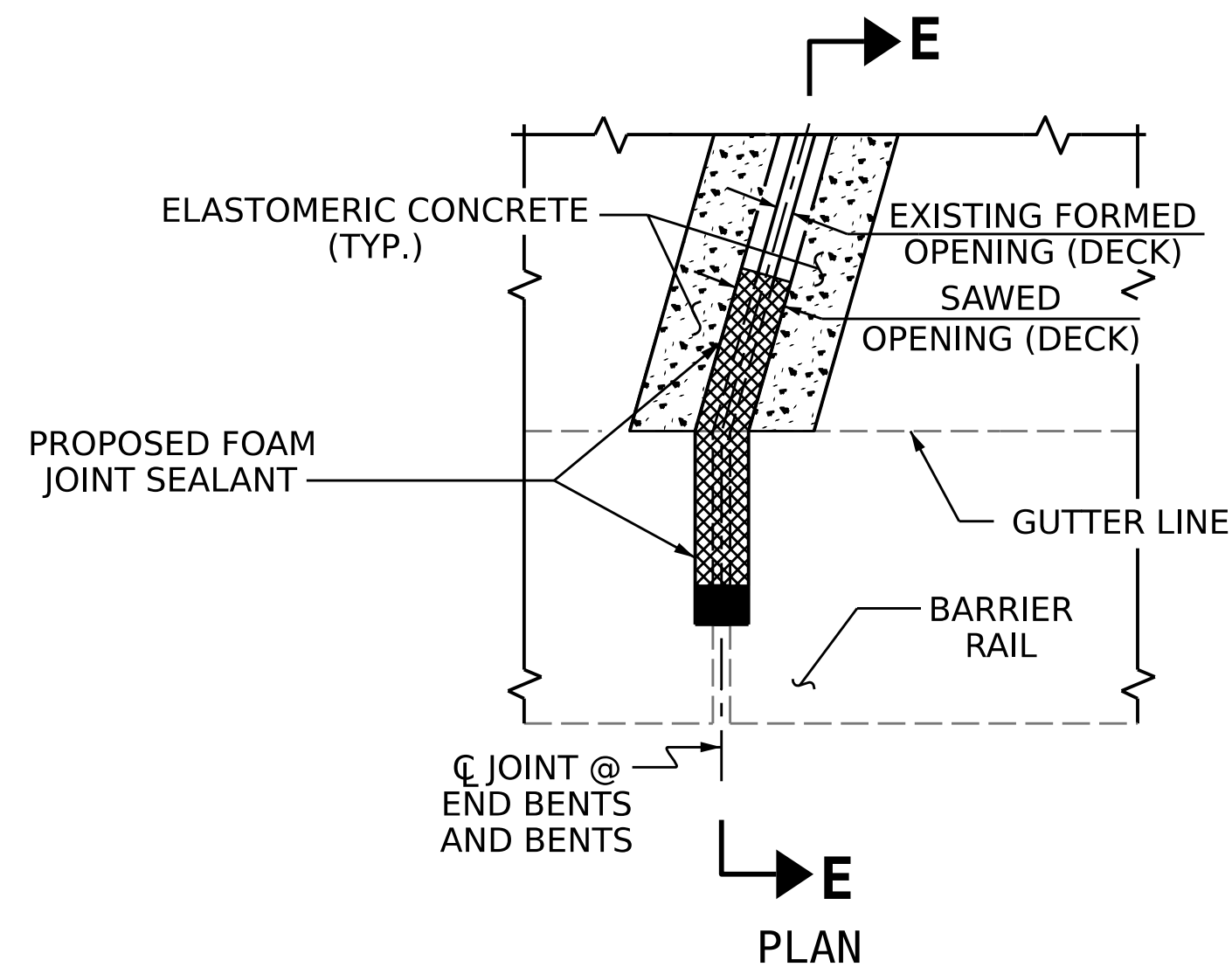
MINIMUM EXISTING JOINT DEMOLITION



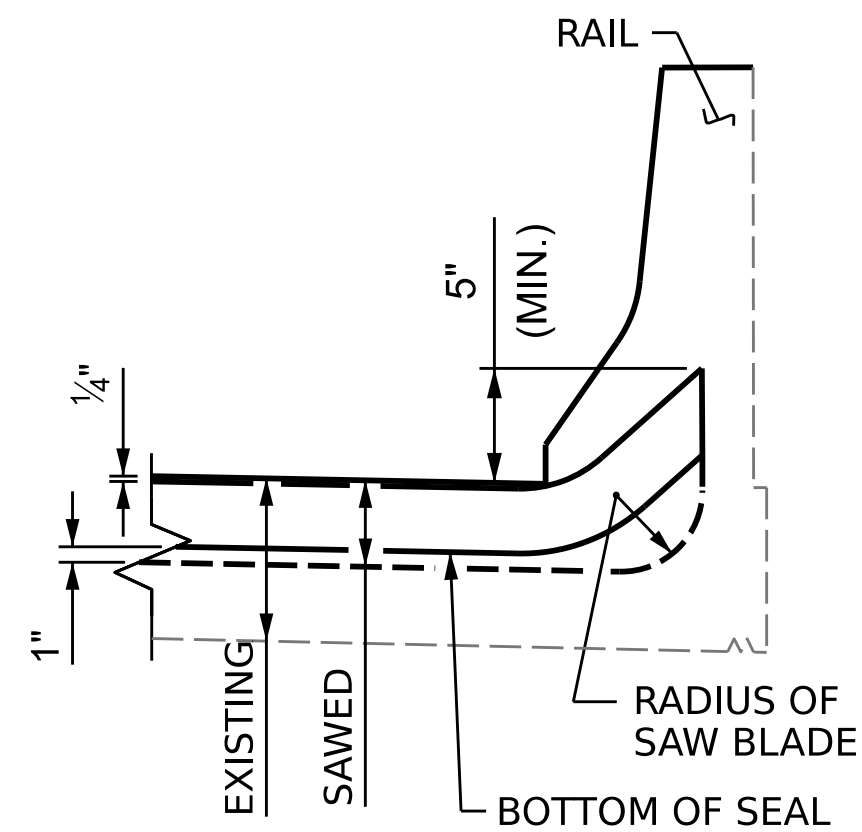
PROPOSED PRE-SAWED JOINT

JOINT INSTALLATION SEQUENCE AT BENTS

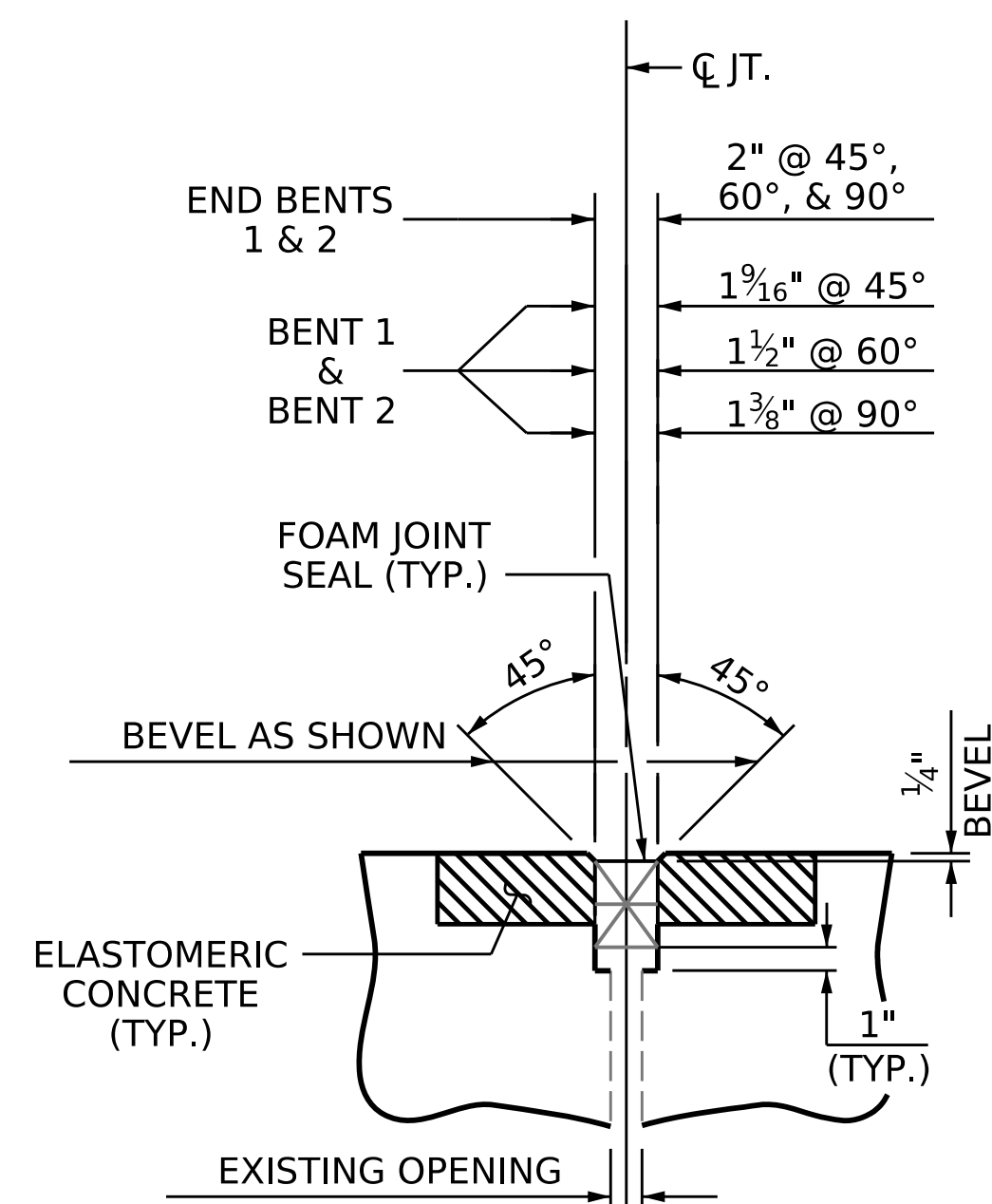
SECTION B-B



JOINT DETAIL AT BARRIER RAIL



SECTION E-E



PROPOSED JOINT SEAL DETAIL
(WITH SAWED DIMENSIONS)

NOTES

- FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY OR SEALANT WORK IS COMPLETE.
- CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED OPENING PRIOR TO OBTAINING JOINT MATERIAL. IF ACTUAL JOINT OPENINGS VARIES FROM THE OPENING INDICATED IN DETAIL MORE THAN 1/4", NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE MAY BE NECESSARY.
- 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.
- UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
- ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.
- THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.
- FOR FOAM EXPANSION JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.
- DURING JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.
- QUANTITIES SHOWN IN THE SUMMARY OF QUANTITIES TABLE ARE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.
- FOR EXCAVATION BELOW THE BOTTOM OF THE PLANNED JOINT DEMOLITION, CONCRETE FOR DECK REPAIR SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT BOTTOM OF THE PROPOSED ELASTOMERIC CONCRETE FOR PRESERVATION HEADERS SHOWN.
- FINAL SURFACE OF THE JOINT DEMOLITION AREA PRIOR TO PLACEMENT OF CONCRETE REPAIR MATERIAL OR ELASTOMERIC CONCRETE SHOULD BE REASONABLY FLAT AND LEVEL. ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF THE SURFACE PRIOR TO PLACEMENT OF REPAIR CONCRETE OR ELASTOMERIC CONCRETE.
- FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	42.8 CF	
FOAM JOINT SEALS FOR PRESERVATION	253.1 LF	

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770457**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

DRAWN BY : G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD : DATE :

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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

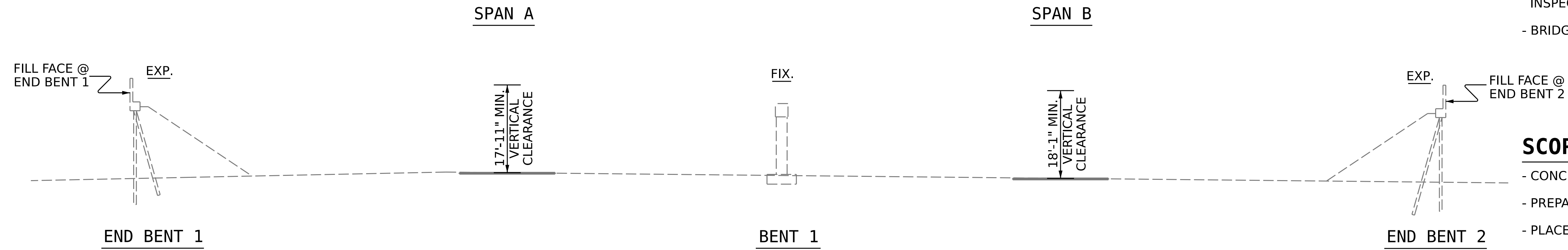
TOTAL SHEETS: 4

NOTES

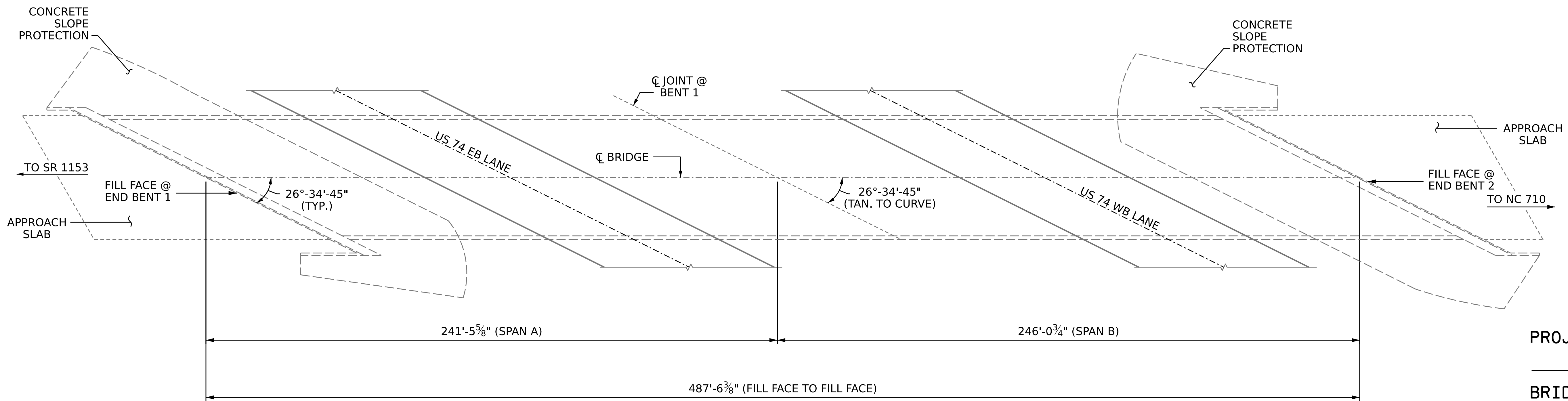
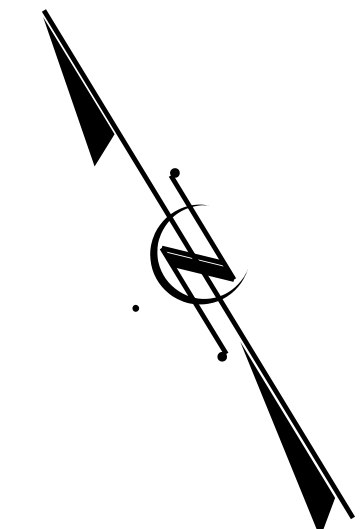
- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 05/05/2021.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- CONCRETE RAIL SURFACE PREPARATION.
- PREPARE BRIDGE DECK BY SHOTBLASTING METHODS.
- PLACE SILANE TREATMENT ON DECK AND BARRIER RAILS.
- INSTALL FOAM JOINT SEALS.



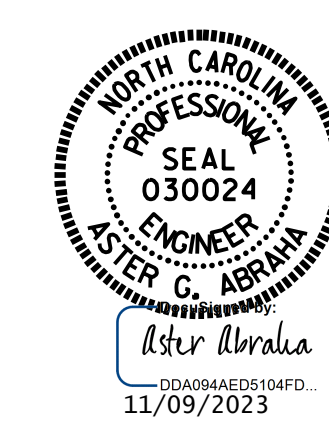
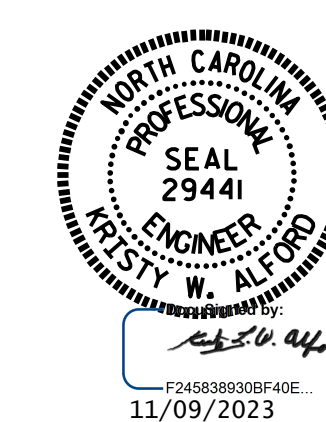
SECTION ALONG CL BRIDGE



PLAN

(FOOTINGS, COLUMNS AND PILES NOT SHOWN IN PLAN VIEW FOR CLARITY)

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770476**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON US 74 BUS
 OVER US 74 BYPASS
 BETWEEN SR 1153
 AND NC 710

DRAWN BY : N. VANDERMARK / G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

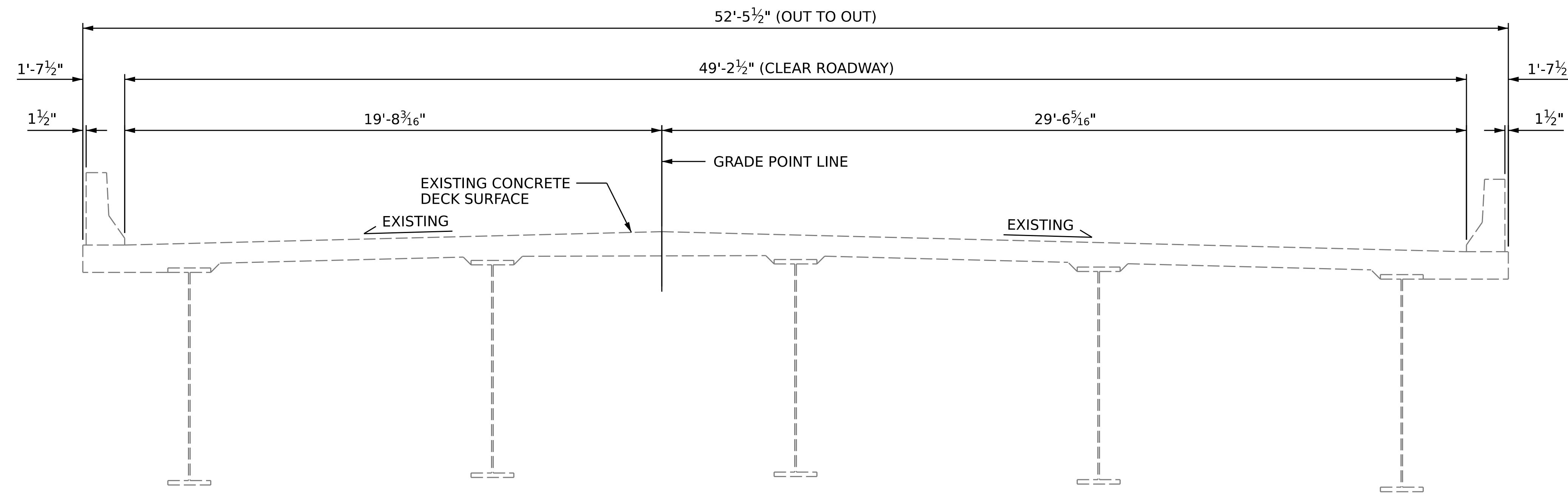
DOCUMENT NOT CONSIDERED
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			4

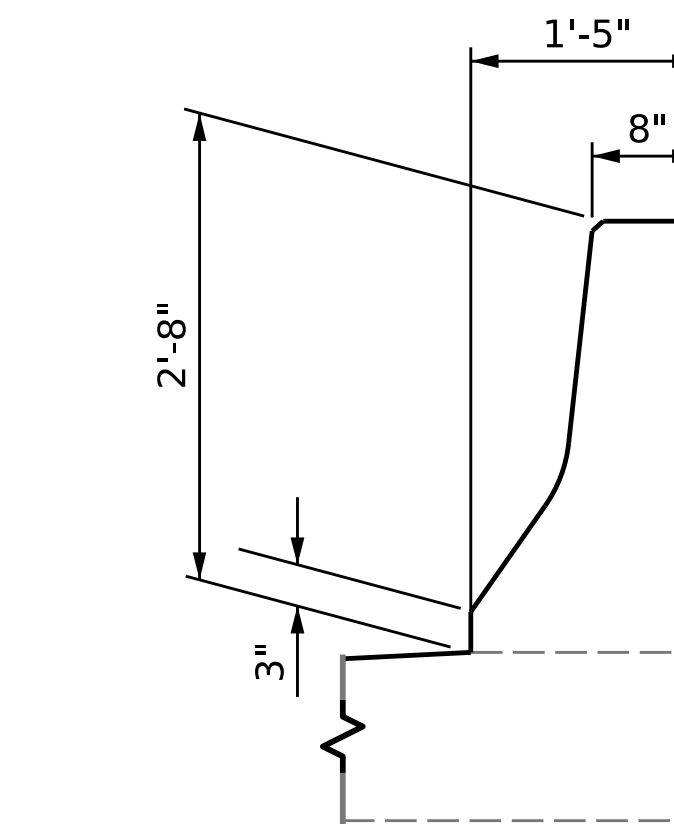
NOTES

SEE TRAFFIC PLANS FOR LANE WIDTH, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.

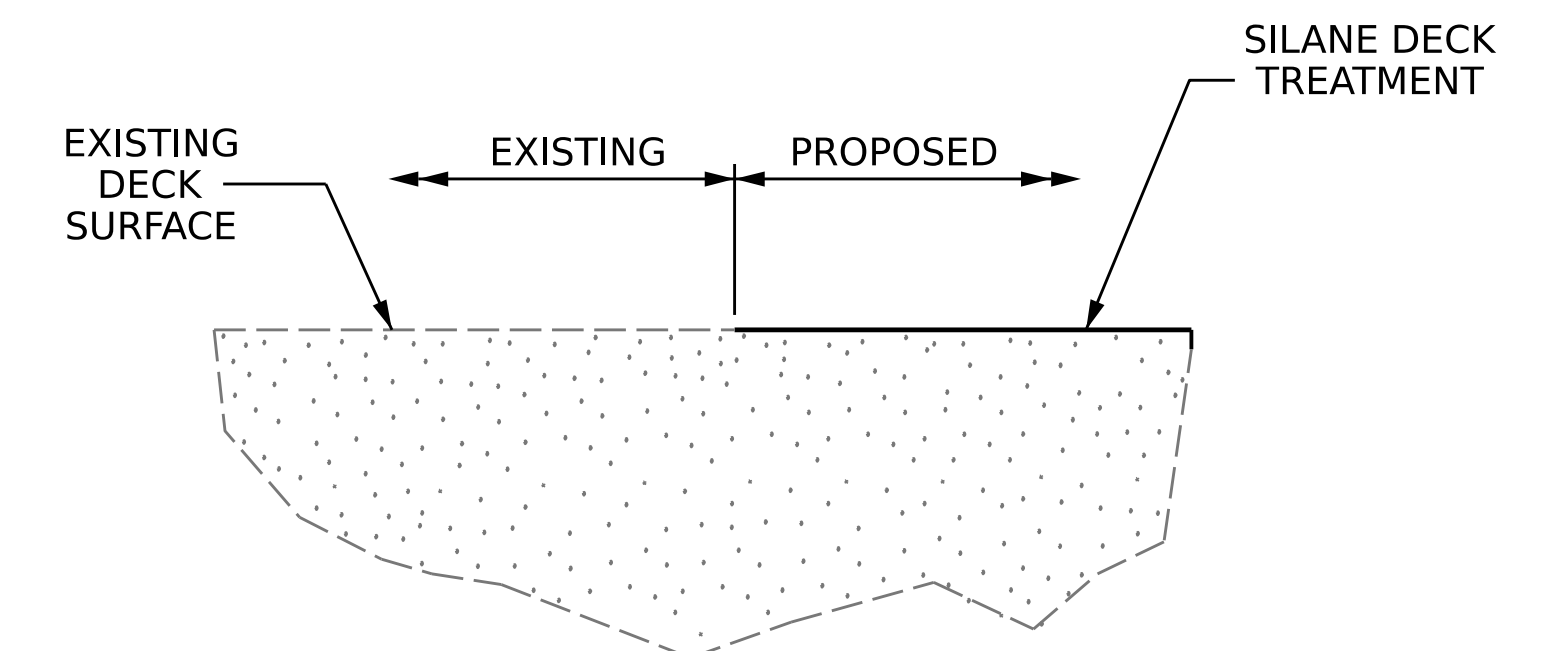
PROTECT TRAFFIC FROM REBOUND, DUST, OVERSPRAY, AND CONSTRUCTION ACTIVITIES. PROVIDE APPROPRIATE SHIELDING, AS REQUIRED AND/OR DIRECTED BY ENGINEER.



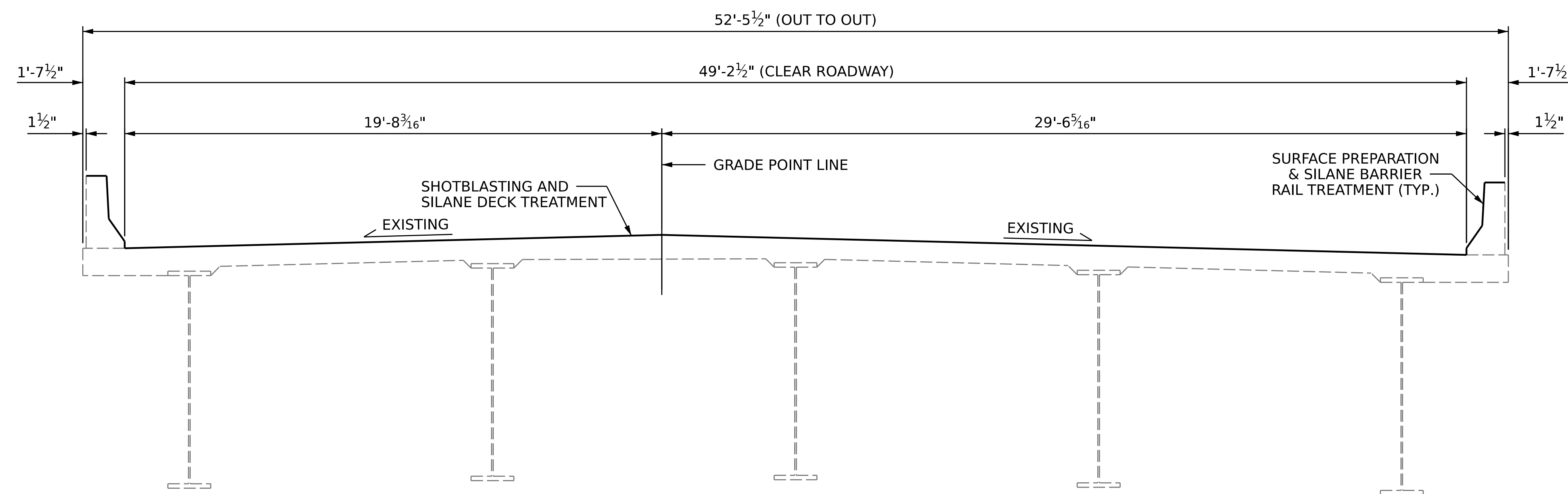
TYPICAL SECTION
(EXISTING)



LIMIT OF BARRIER RAIL SILANE APPLICATION



SILANE DECK TREATMENT DETAIL



TYPICAL SECTION
(PROPOSED)

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770476**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
 TYPICAL SECTION
 AND SILANE DECK
 TREATMENT DETAILS

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

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DRAWN BY : N. VANDERMARK / G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
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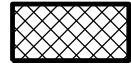
SUMMARY OF QUANTITIES FOR DECK AND APPROACH SLAB

	ESTIMATE	ACTUAL
SHOTBLASTING BRIDGE DECK	2,676.4 SY	
SILANE DECK TREATMENT	2,676.4 SY	
CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT	0 SF	
BRIDGE JOINT DEMOLITION	0 SF	

SUMMARY OF QUANTITIES FOR BARRIER RAIL TREATMENT

	ESTIMATE	ACTUAL
SURFACE PREPARATION FOR CONCRETE BARRIER RAIL	3,666.6 SF	
SILANE BARRIER RAIL TREATMENT	3,666.6 SF	

REPAIR KEY

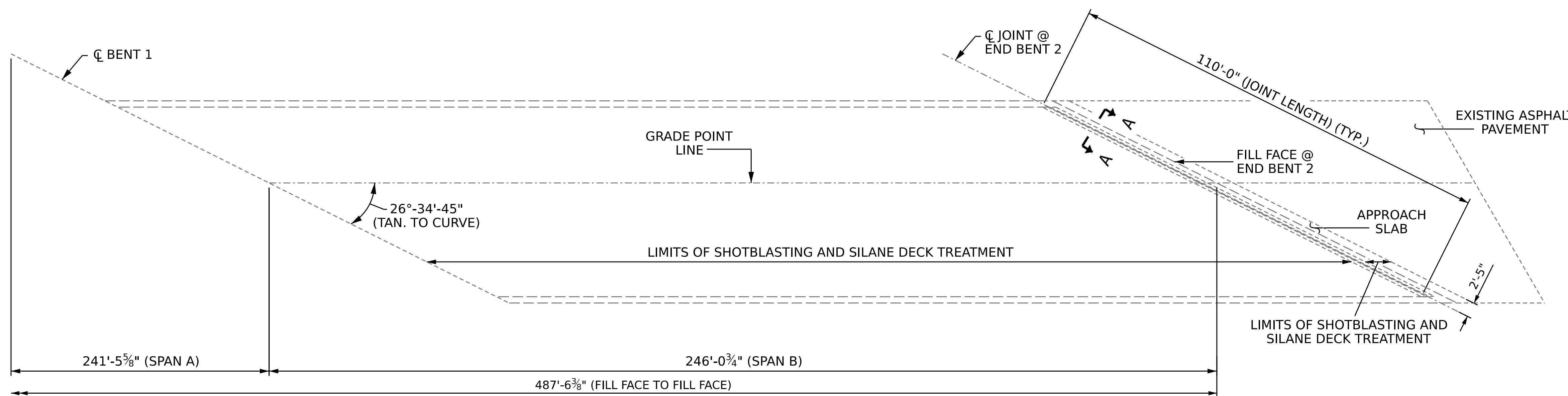
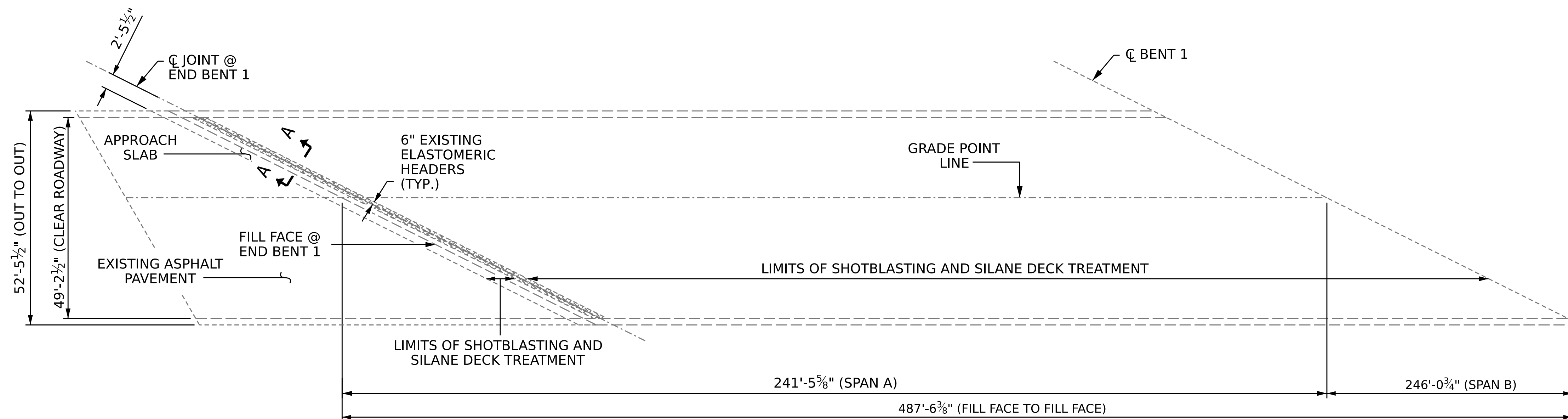
-  - SHOTBLASTING AND SILANE DECK TREATMENT
-  - CONCRETE DECK REPAIR FOR SILANE DECK TREATMENT
-  - EXISTING CONCRETE HEADER

NOTES

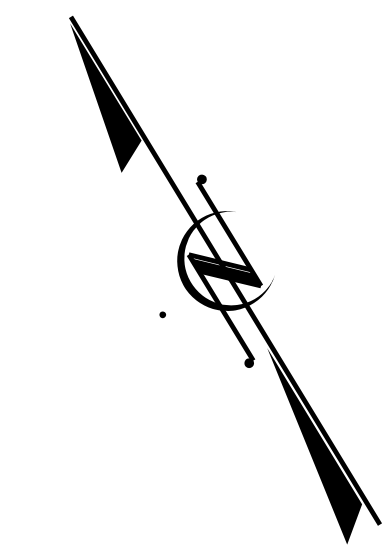
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN IN DRAWINGS ARE DEEMED NECESSARY BY ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED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

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE SILANE DECK TREATMENT IS COMPLETE.

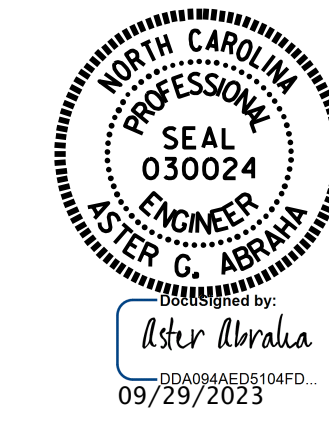
FOR SECTION A-A, SEE JOINT REPAIR DETAILS SHEET S8-4.



PLAN OF SPANS



PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770476**



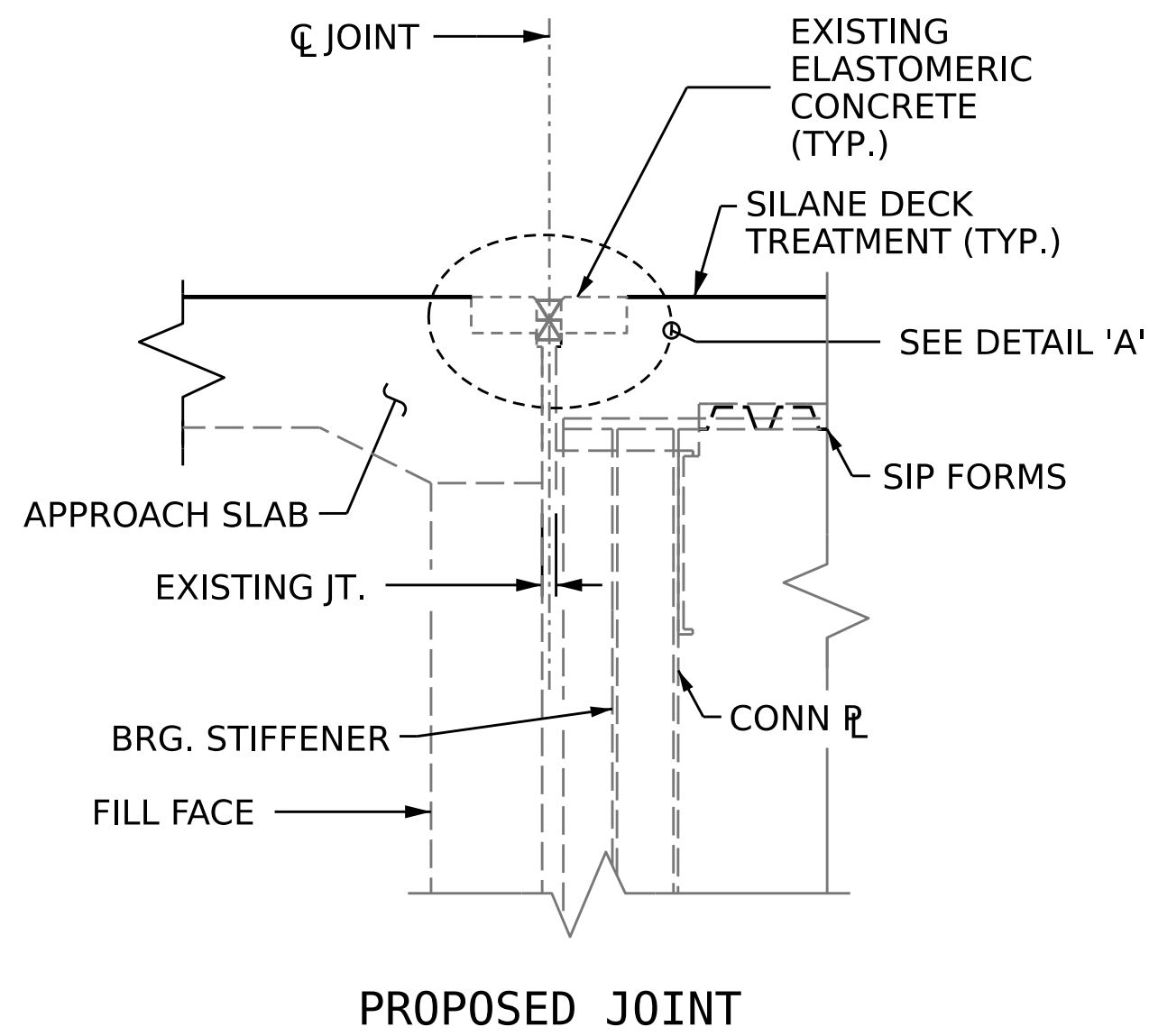
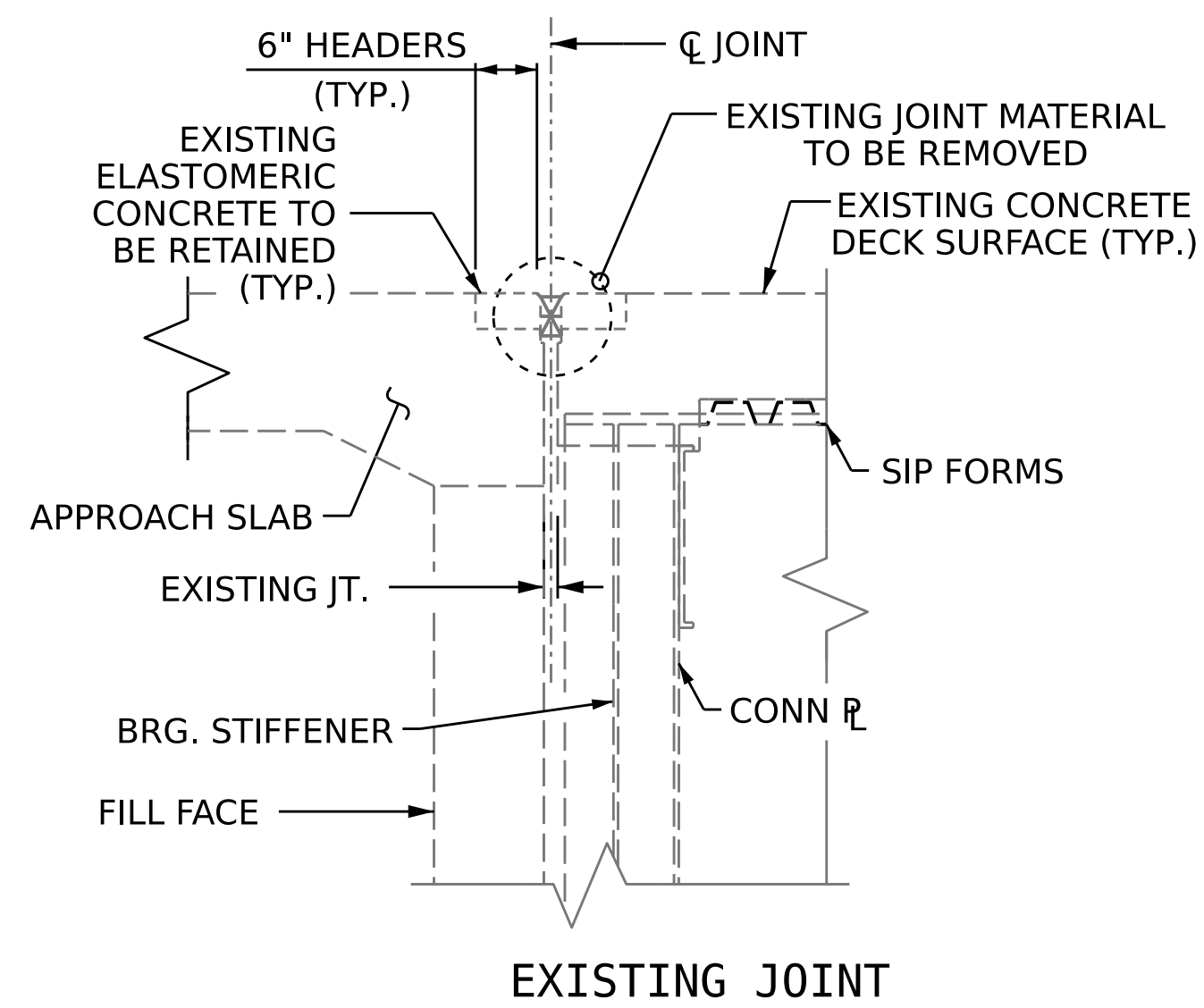
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SILANE DECK TREATMENT

DRAWN BY : N. VANDERMARK / G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : 11/2022
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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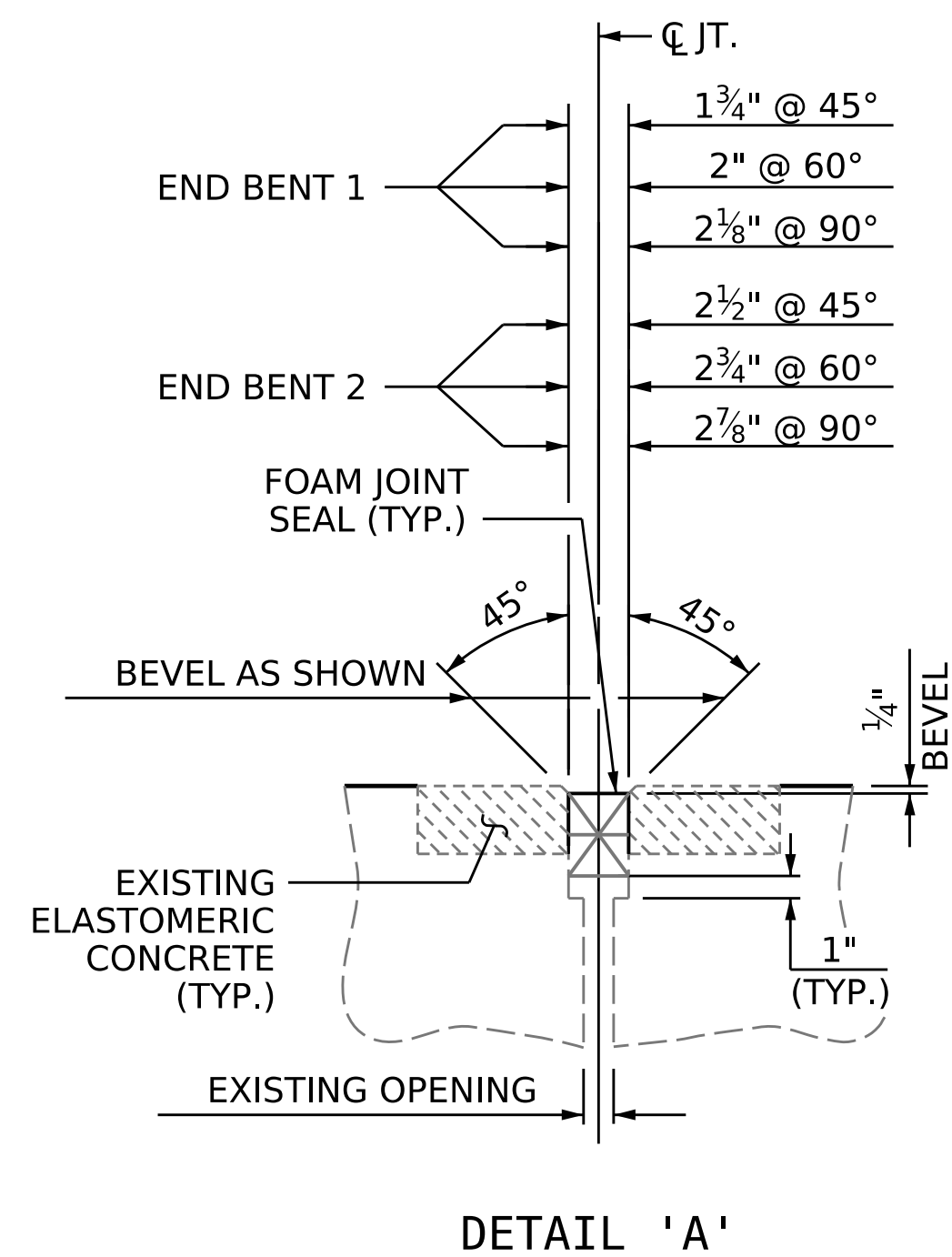
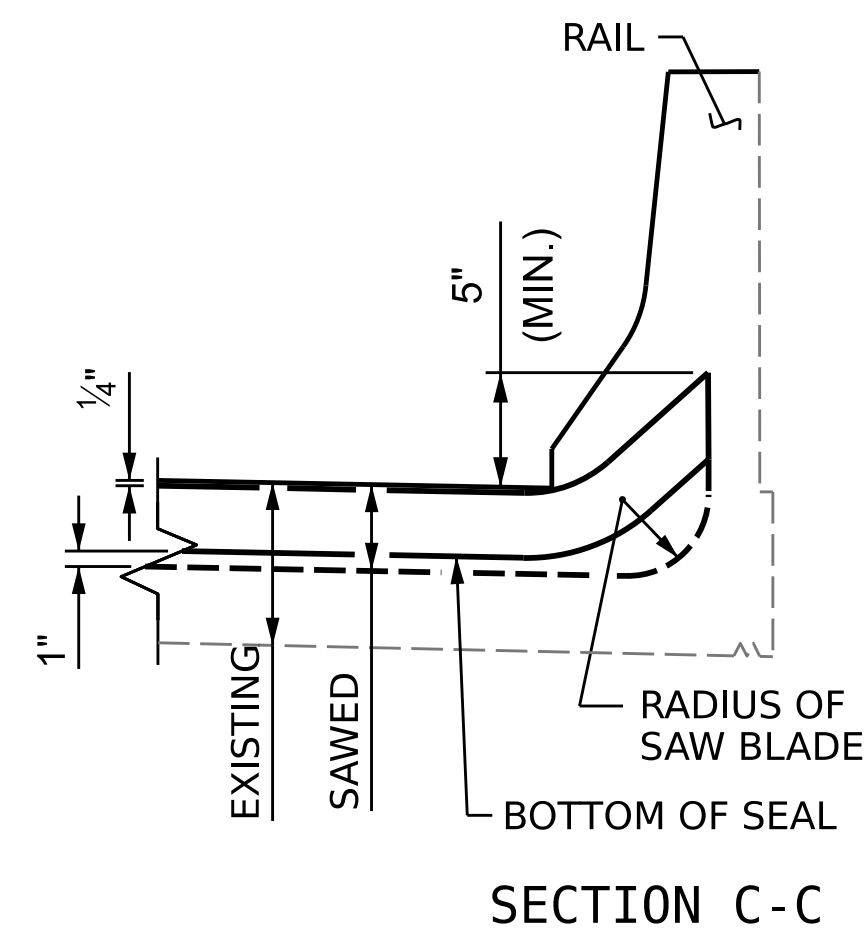
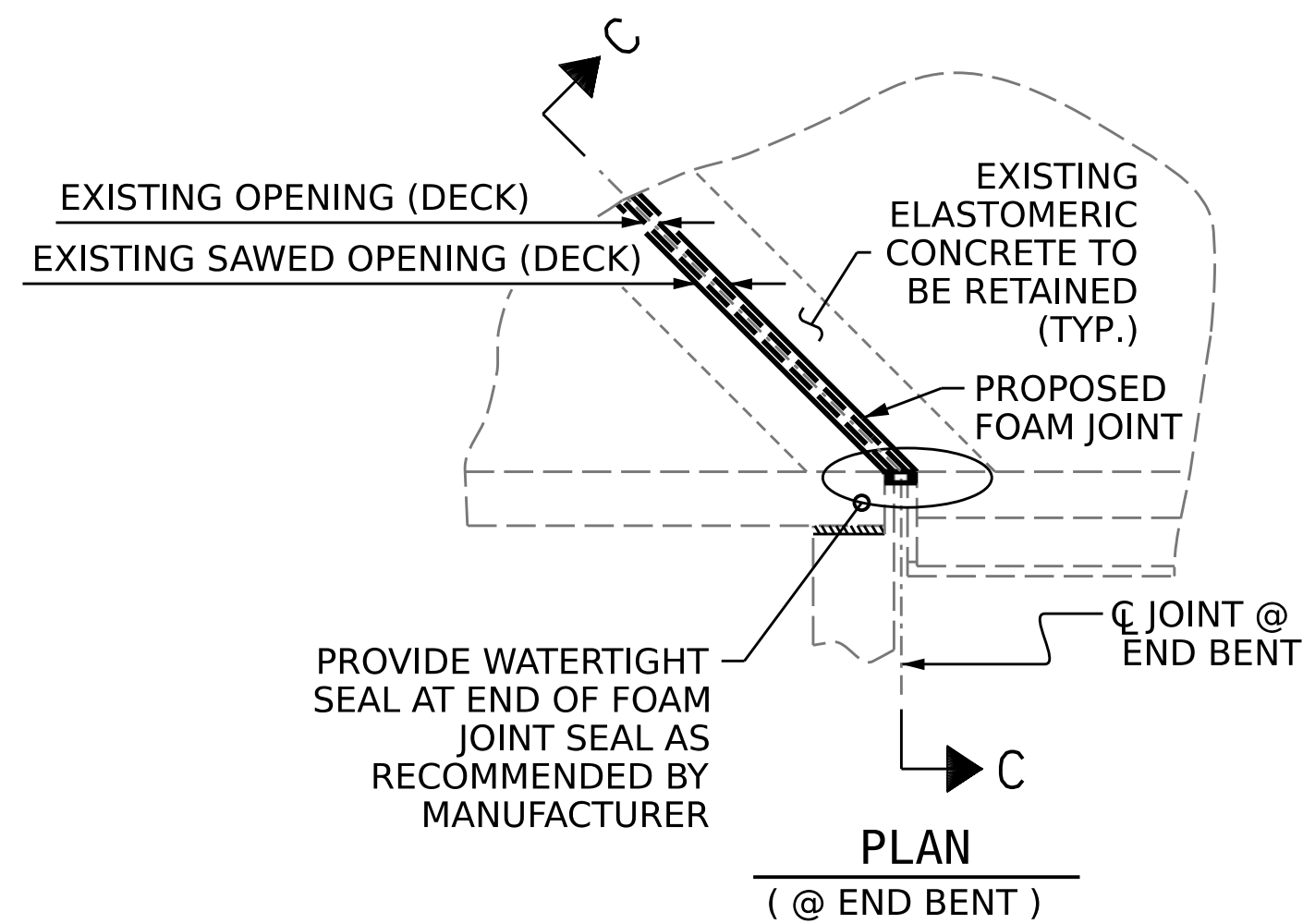
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NO.	BY:	DATE:	NO.	BY:	DATE:	S8-3
1			3			TOTAL SHEETS
2			4			4



JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A

SUMMARY OF QUANTITIES		
	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	0 SF	
FOAM JOINT SEALANT	222.0 LF	



JOINT SEAL DETAILS

NOTES

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

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

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.

UNLESS NOTED OTHERWISE RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.

ALL EXPOSED ENDS OF CUT BARS SHALL BE COATED WITH EPOXY PRIOR TO THE NEW JOINT MATERIAL INSTALLATION.

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

THE INSTALLED FOAM JOINTS SHALL BE WATERTIGHT.

FOR FOAM EXPANSION JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

QUANTITIES SHOWN IN THE SUMMARY OF QUANTITIES TABLE ARE BASED ON THE MINIMUM JOINT DEMOLITION SHOWN.

PROJECT NO. **HI-0017**
ROBESON COUNTY
 BRIDGE NO. **770476**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

DRAWN BY : N. VANDERMARK / G. AYES DATE : 11/2022
 CHECKED BY : A. G. ABRAHA DATE : _____
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S8-4
1			3			TOTAL SHEETS
2			4			4

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $\frac{1}{2}$ " 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 $\frac{1}{4}$ " RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $\frac{7}{8}$ " \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 $\frac{3}{16}$ " 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 $\frac{1}{16}$ " INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

STD. NO. SN

NOTES:

- A. THE CONTRACTOR MUST PLAN AND PERFORM THE WORK IN A MANNER SUCH THAT THE CSXT TRACKS AT THE PROJECT LOCATION REMAIN FULLY CAPABLE OF CARRYING RAIL TRAFFIC THROUGHOUT THE WORK PERIOD AND RAIL TRAFFIC IS NOT DELAYED OR OTHERWISE IMPACTED DUE TO THE WORK BEING PERFORMED.
- B. THE CONTRACTOR SHALL NOT BE PERMITTED TO USE THE CSXT RIGHT-OF-WAY FOR STORAGE OF MATERIALS OR EQUIPMENT DURING CONSTRUCTION. THE CSXT RIGHT-OF-WAY MUST REMAIN CLEAR AT ALL TIMES.
- C. NO EQUIPMENT WILL BE PERMITTED TO BE STAGED WITHIN 15 FEET OF TRACK CENTERLINE AT ANY TIME DURING THE PERFORMANCE OF THE PROJECT WORK.
- D. THE CONTRACTOR SHALL BE REQUIRED TO FULLY COMPLY WITH ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL LAWS, REGULATIONS, STATUTES AND ORDINANCES AT ALL TIMES.
- E. CSXT FACILITIES ARE NOT SUBJECT TO "MISS UTILITY" PROGRAMS SUCH AS NORTH CAROLINA 811. CONTRACTOR SHALL COORDINATE WITH CSXT TO HAVE ITS FACILITIES MARKED IN THE FIELD PRIOR TO PERFORMING WORK WITH THE POTENTIAL TO IMPACT BELOW-GRADE FACILITIES. CSXT WILL MARK OUT EXISTING CSXT FACILITIES AT PROJECT EXPENSE.
- F. A CSXT FLAGMAN MAY BE REQUIRED FOR ANY WORK WHICH REQUIRES ENTRY ONTO THE CSXT RIGHT-OF-WAY, ANY WORK THAT HAS POTENTIAL TO FOUL CSXT TRACK, AND ANY WORK TO BE PERFORMED WITHIN 50 FEET OF THE CENTERLINE OF TRACK. CSXT SHALL HAVE SOLE AUTHORITY TO DETERMINE THE NEED FOR FLAGGING REQUIRED TO PROTECT ITS OPERATIONS AND PROPERTY.
- G. THE CONTRACTOR MUST ADHERE TO THE PROVISIONS OF THE CSXT INSURANCE REQUIREMENTS, CSXT SPECIAL PROVISIONS, CSXT CONSTRUCTION SUBMISSION CRITERIA, CSXT SOIL AND WATER MANAGEMENT POLICY, AND PROJECT-SPECIFIC CONSTRUCTION REQUIREMENTS. IN THE EVENT THERE IS ANY DISCREPANCY OR PERCEIVED VARIANCE BETWEEN THE PROVISIONS WITHIN THE CSXT DOCUMENTS AND THOSE OF THE NCDOT AS RELATED TO THIS PROJECT, THEN THE PROVISIONS OF THE CSXT DOCUMENTS SHALL GOVERN.
- H. CSXT DOES NOT PERMIT ANY REDUCTION TO THE EXISTING HORIZONTAL OR VERTICAL CLEARANCES AT ANY TIME DURING CONSTRUCTION, OR IN THE FINAL CONDITION. ANY PROPOSED TEMPORARY REDUCTION OF THE EXISTING HORIZONTAL OR VERTICAL CLEARANCE MUST BE REVIEWED BY CSXT WITH NO GUARANTEE OF APPROVAL.
- I. CSXT TYPICALLY REQUIRES A MINIMUM HORIZONTAL CLEARANCE OF FIFTEEN FEET (15'-0") FROM CENTERLINE OF TRACK TO ANY TEMPORARY MEASURES TO BE INSTALLED BY THE CONTRACTOR. ANY TEMPORARY REDUCTIONS FROM THE EXISTING HORIZONTAL CLEARANCE ARE SUBJECT TO REVIEW BY CSXT, WITH NO GUARANTEE OF APPROVAL.
- J. DEMOLITION DEBRIS SHIELD SHALL BE INSTALLED PRIOR TO THE DEMOLITION OF THE BRIDGE DECK OR OTHER RELEVANT PORTIONS OF THE STRUCTURE. THE DEMOLITION DEBRIS SHIELD SHALL BE ERRECTED FROM THE UNDERSIDE OF THE BRIDGE OVER THE TRACK AREA TO CATCH ALL FALLING DEBRIS.
- K. MEANS AND METHODS FOR ALL UNDER DECK REPAIR WORK BY THE CONTRACTOR MUST BE REVIEWED AND APPROVED BY CSXT, PRIOR TO THE CONTRACTOR STARTING UNDER DECK REPAIR.
- L. SEE SPECIAL PROVISIONS FOR PROTECTION OF RAILROAD INTEREST FOR ADDITIONAL REQUIREMENTS AND MORE INFORMATION.

PROJECT NO. HI-0017
ROBESON COUNTY
BRIDGE NO. : 770452,
770453, 770456 & 770457



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**NOTES FOR WORKING
OVER CSX
RIGHT OF WAY**

DRAWN BY : A. ABRAHA DATE : 6/2023
CHECKED BY : _____ DATE : _____

DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

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