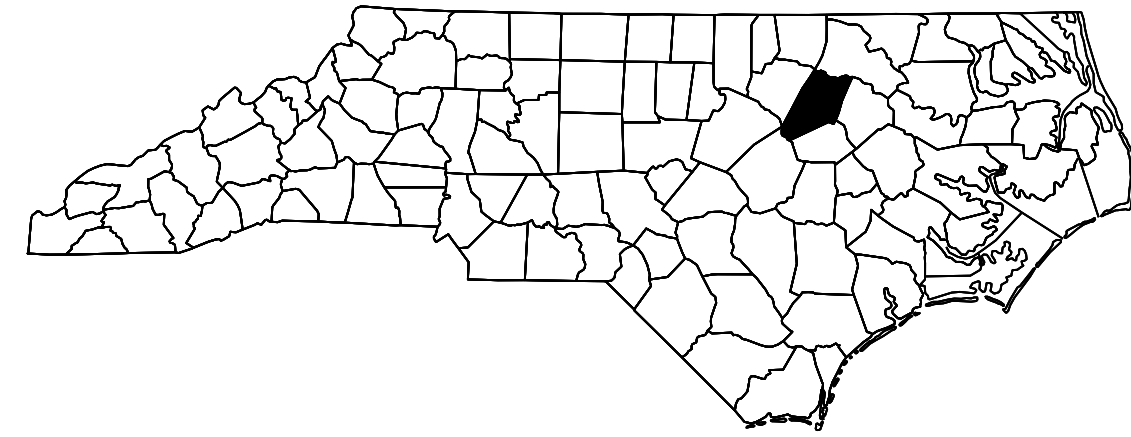


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**This file or an individual page
shall not be considered a certified document.**

CONTRACT NO: DD00358 PROJECT: I-6045A



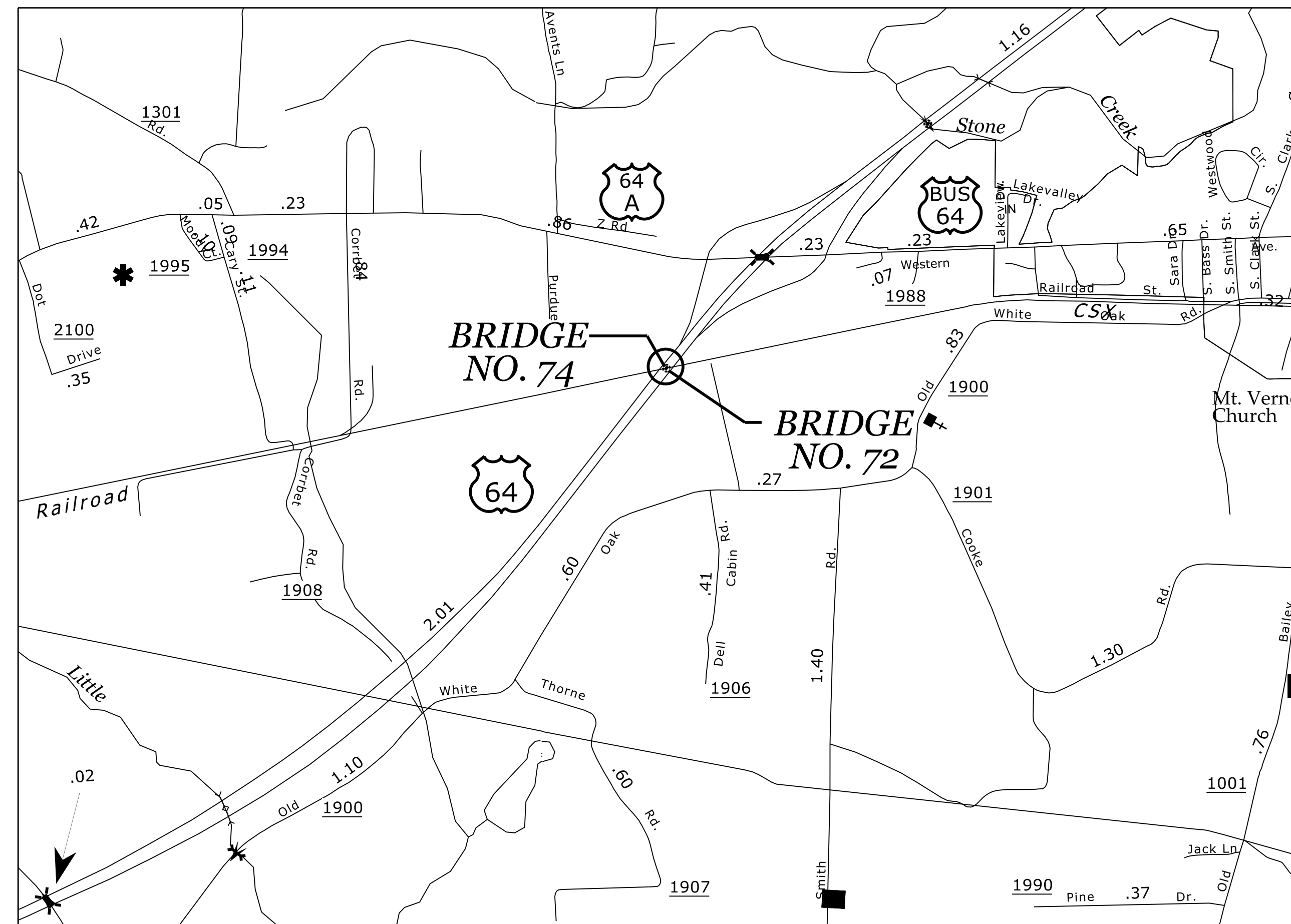
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

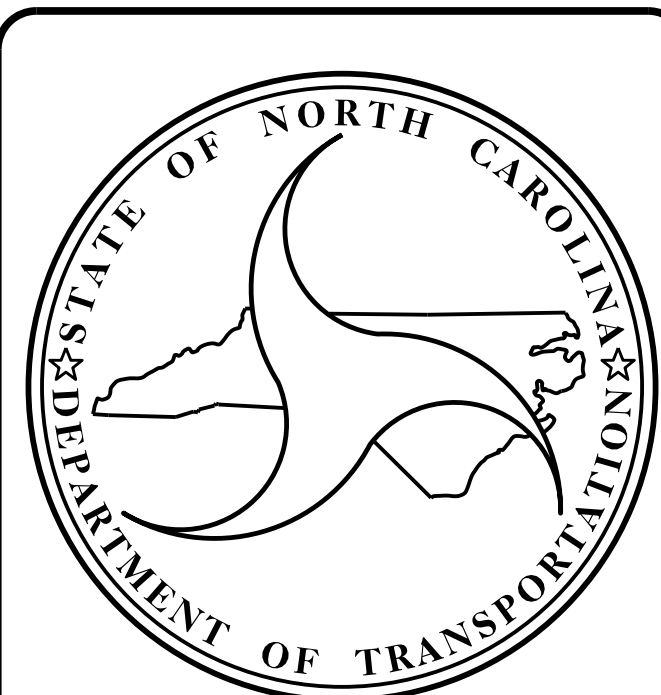
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N.C.	I-6045A	1	23
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47994.1.2	0087047	P.E.	
47994.3.1	0087047	CONST.	

LOCATION: BRIDGE #630072 ON US-64 EBL OVER SCL RAILROAD.
BRIDGE #630074 ON US-64 WBL OVER SCL RAILROAD.

TYPE OF WORK: BRIDGE PRESERVATION – CONCRETE DECK REPAIRS, SHOTBLASTING AND PLACEMENT OF EPOXY OVERLAY HAND APPLICATION SYSTEM; RECONSTRUCTION OF BRIDGE DECK JOINTS AND SEALS; SUBSTRUCTURE CONCRETE REPAIRS WITH SHOTCRETE AND CONCRETE; & TYPE I BRIDGE JACKING



VICINITY MAP – NASH COUNTY



DESIGN DATA

BRIDGE #72 ADT 2019 = 24,000
BRIDGE #74 ADT 2019 = 24,000

PROJECT LENGTH

BRIDGE #72 = 0.035 MILES
BRIDGE #74 = 0.035 MILES

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

2018 STANDARD SPECIFICATIONS

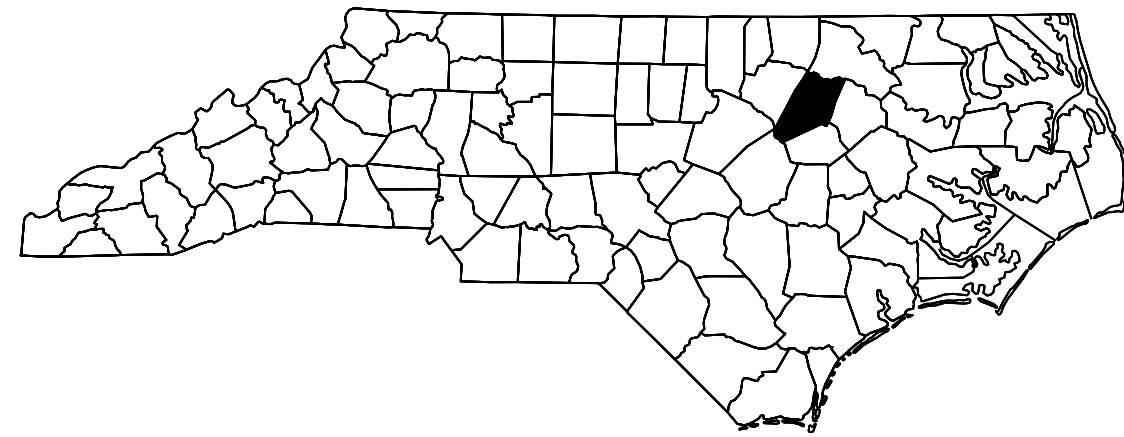
LETTING DATE :

September 21, 2021

Kristy W. Alford, P.E.
PROJECT ENGINEER

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

CONTRACT NO: DD00358 PROJECT: I-6045A



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

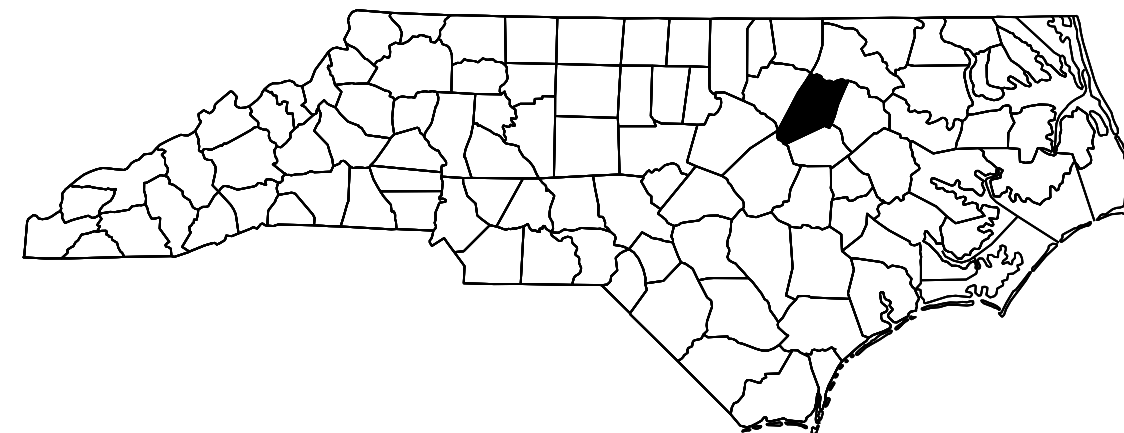
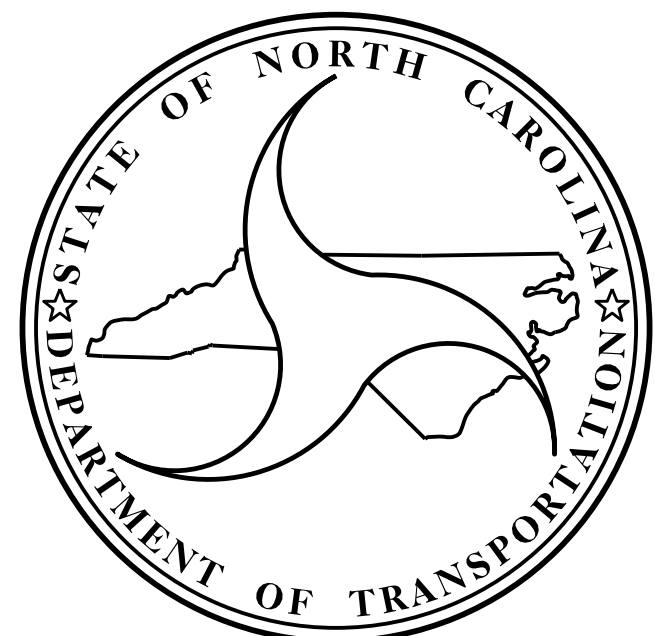
NASH COUNTY

**LOCATION: BRIDGE #630072 ON US 64 EBL OVER SCL RAILROAD
BRIDGE #630074 ON US 64 WBL OVER SCL RAILROAD**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-6045A	1A	23
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47994.1.2	0087047	P.E.	
47994.3.1	0087047	CONST.	

INDEX OF STRUCTURES SHEETS

<u>SHEET No.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
1A	INDEX OF SHEETS
S-1	LOCATION SKETCHES
S-2	TOTAL BILL OF MATERIAL
<i>STRUCTURE No. 630072</i>	
SI-1	GENERAL DRAWING
SI-2	TYPICAL SECTION
SI-3 THRU S-5	SURFACE PREPARATION
SI-6	JOINT REPAIR
<i>STRUCTURE No. 630074</i>	
S2-1	GENERAL DRAWING
S2-2	TYPICAL SECTION
S2-3 THRU S2-5	SURFACE PREPARATION
S2-6	DECK UNDERSIDE REPAIRS
S2-7	JOINT REPAIR
S2-8	END BENTS
S2-9 THRU S2-10	BENTS
S2-11	CAP COLUMN REPAIR DETAILS
S2-12	BRIDGE JACKING
<i>STANDARD SHEETS</i>	
SN	STANDARD NOTES



TYPE OF WORK:
**BRIDGE PRESERVATION - CONCRETE DECK
REPAIRS, SHOTBLASTING & PLACEMENT OF EPOXY
OVERLAY HAND APPLICATION SYSTEM;
RECONSTRUCTION OF BRIDGE DECK JOINTS AND
SEALS; SUBSTRUCTURE CONCRETE REPAIRS WITH
SHOTCRETE AND CONCRETE; AND TYPE I BRIDGE
JACKING**

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

GENERAL NOTES:

ASSUMED LIVE LOAD FOR REPAIRS = HS 20-44 OR ALTERNATE LOADING. (DESIGN BASED OFF ORIGINAL DESIGN PLANS)

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 CONTRACTORS PLAN 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 ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR EPOXY OVERLAY HAND APPLICATION SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

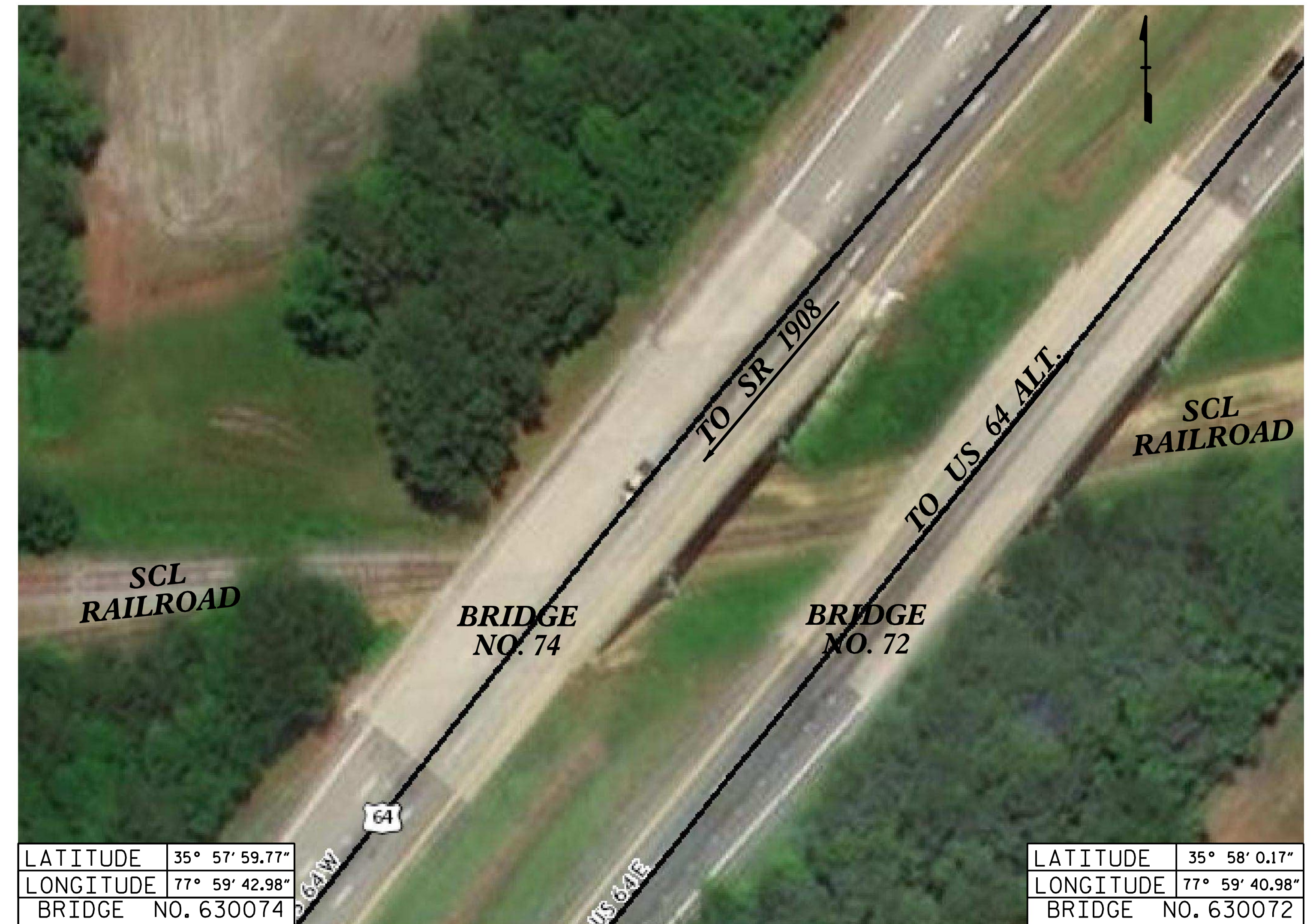
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

THE RAILROAD TRACK TOP OF RAIL TO BOTTOM OF BEAM VERTICAL CLEARANCES ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. PRIOR TO BEGINNING BRIDGE CONSTRUCTION, VERIFY THE TOP OF RAIL TO BOTTOM OF BEAM CLEARANCES AND REPORT ANY VARIATIONS TO THE ENGINEER. ANY PLAN REVISIONS NECESSARY TO ACHIEVE THE REQUIRED MINIMUM CLEARANCE WILL BE PROVIDED BY THE DEPARTMENT.

ALL PAVEMENT MARKINGS WILL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

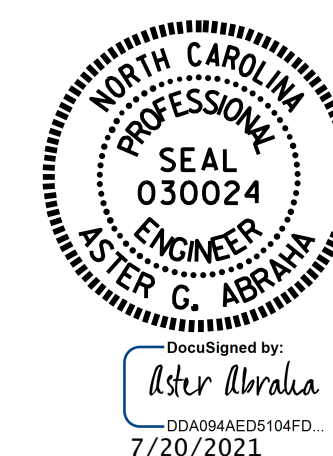
EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATIONS OF THE BRIDGE DECK. THE CONTRACTOR SHALL TAKE CARE THAT ANY CONSTRUCTION DEBRIS THAT COLLECTS IN THE DRAINS IS CONTAINED. DRAINS IN SHOULDERS OF ADJACENT TRAVEL LANE(S) SHALL BE KEPT FREE AND CLEAR OF DEBRIS.



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. I-6045A
NASH COUNTY
 BRIDGE NO. 630072 &
630074



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL NOTES, &
 LOCATION SKETCHES**

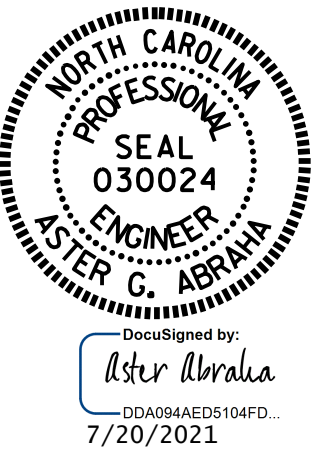
DRAWN BY : A.Y. GODFREY DATE : 02/2021
 CHECKED BY : A. G. ABRAHA DATE : 04/2021

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			23

TOTAL BILL OF MATERIAL									
BRIDGE NO.	CONCRETE REPAIRS	SHOTCRETE REPAIRS	VOLUMETRIC MIXER	POURABLE SILICONE JOINT SEALANT	ELASTOMERIC CONCRETE FOR PRESERVATION	BRIDGE JOINT DEMOLITION	CONCRETE DECK REPAIR FOR EPOXY OVERLAY	EPOXY OVERLAY HAND APPLICATION SYSTEM	TYPE I BRIDGE JACKING BRIDGE No. --
	CU. FT.	CU. FT.	LUMP SUM	LN. FT.	CU. FT.	SO. FT.	SO. FT.	SO. FT.	EACH
630072	--	--	LUMP SUM	297.8	51.2	273.0	--	12,430.6	--
630074	13.5	19.5	LUMP SUM	353.6	60.8	324.2	4.0	15,427.3	1
TOTAL	13.5	19.5	LUMP SUM	651.4	112.0	597.2	4.0	27,857.9	1

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630072 &
630074

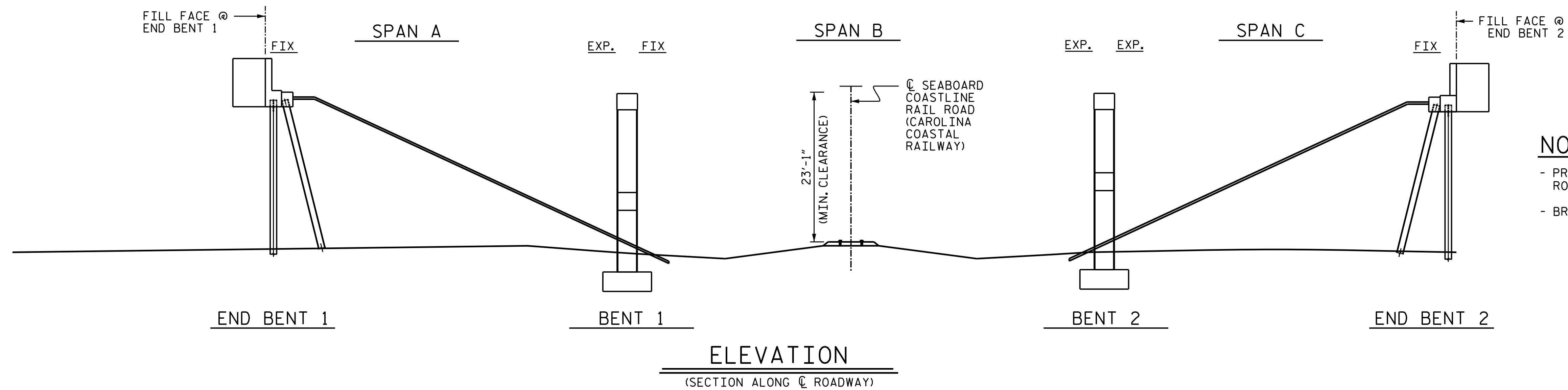


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 TOTAL
 BILL OF MATERIAL

DRAWN BY : A. Y. GODFREY DATE : 03/2021
 CHECKED BY : A. G. ABRAHA DATE : 06/2021

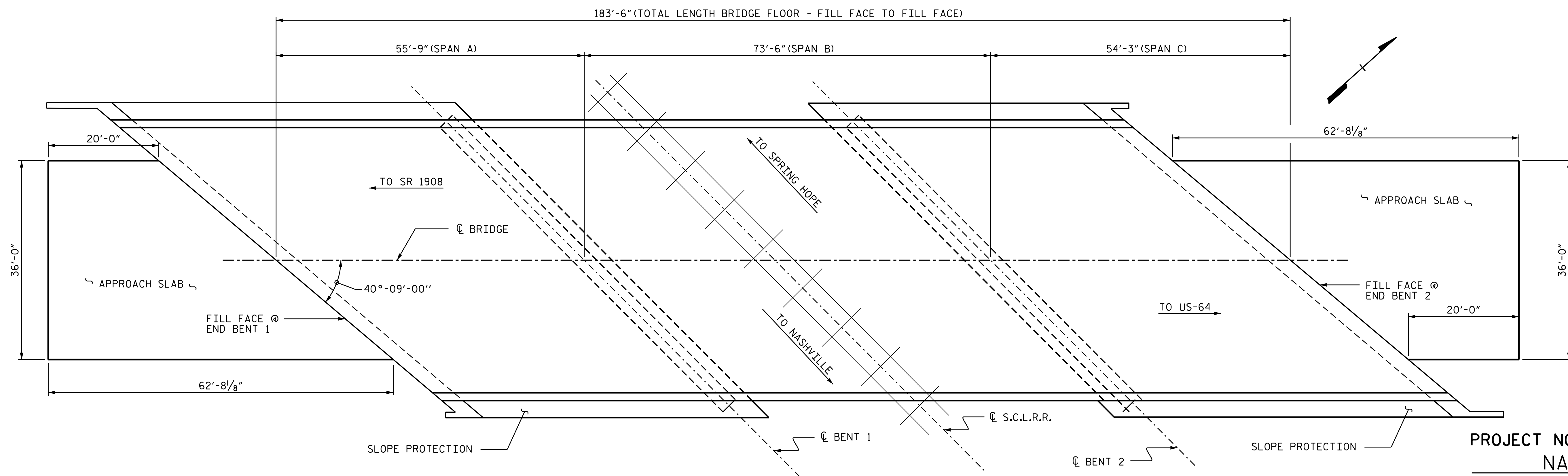
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			23



NOTES

- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND THE ROUTINE INSPECTION, DATED 08/18/2020.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



SCOPE OF WORK

- BRIDGE DECK PREPARATION WITH SHOTBLASTING METHODS.
- PERFORM CONCRETE DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED TOP OF BRIDGE DECK WITH EPOXY OVERLAY.
- BRIDGE JOINT DEMOLITION.
- RECONSTRUCT BRIDGE JOINTS WITH ELASTOMERIC CONCRETE AND INSTALL BACKER ROD AND SILICONE JOINT SEALANT.

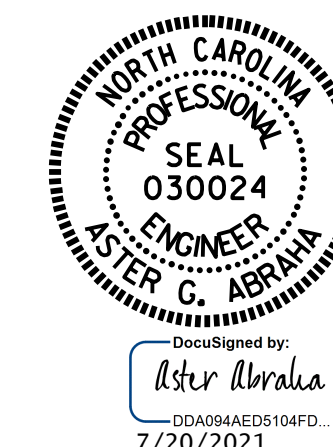
I hereby certify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer _____ Date _____

PLAN

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

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630072



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE 72 ON
 US64 BYP EBL OVER
 SEABOARD COASTLINE
 RAILROAD

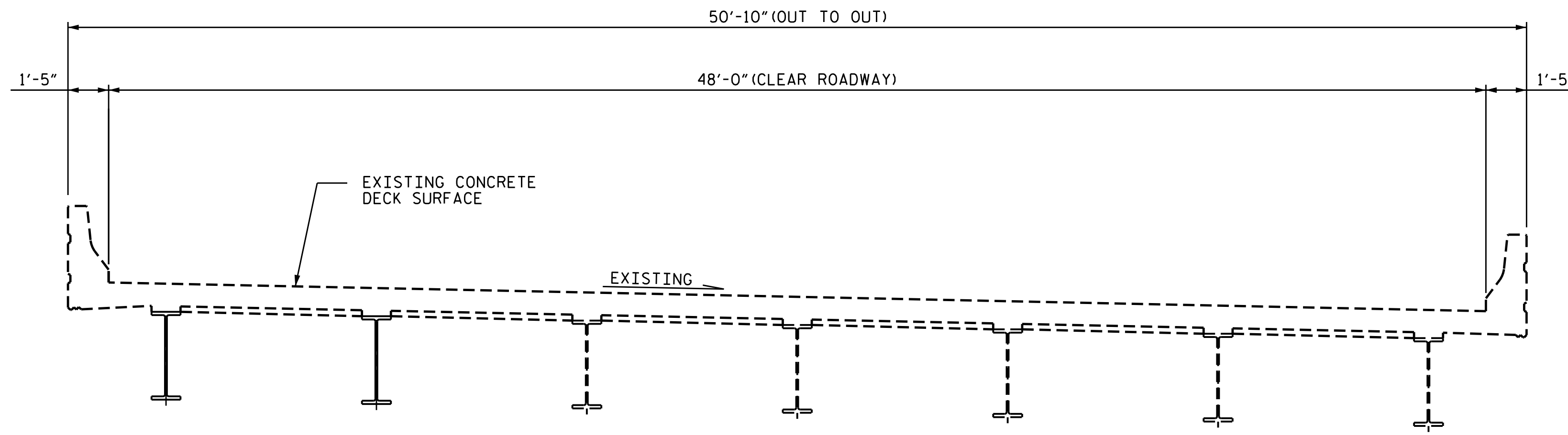
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NO.	BY:	DATE:	NO.	BY:	DATE:	S1-1
1			3			TOTAL SHEETS
2			4			23

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

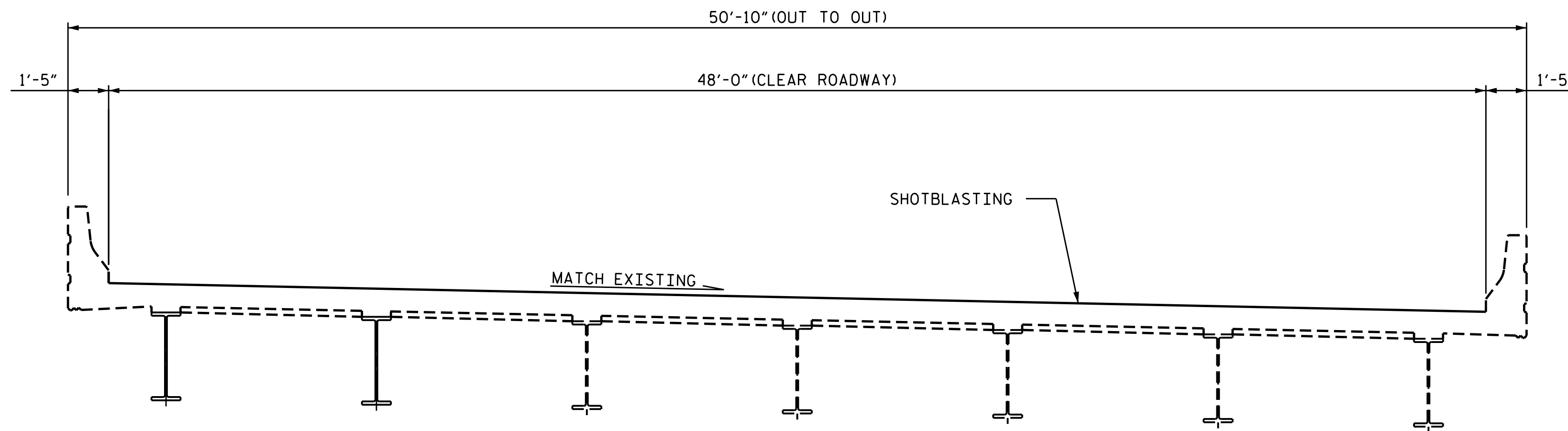
DRAWN BY : S. T. SANDOR/A. Y. GODFREY DATE : 12/2020
 CHECKED BY : A. G. ABRAHA DATE : 04/2021

NOTES

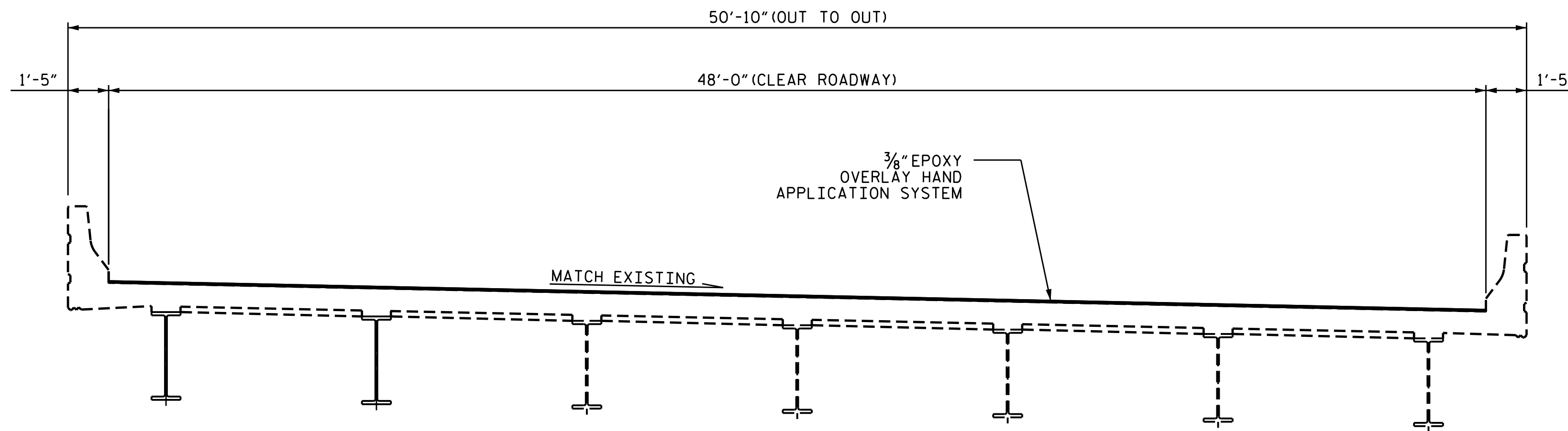
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND EPOXY OVERLAY PLACEMENT.



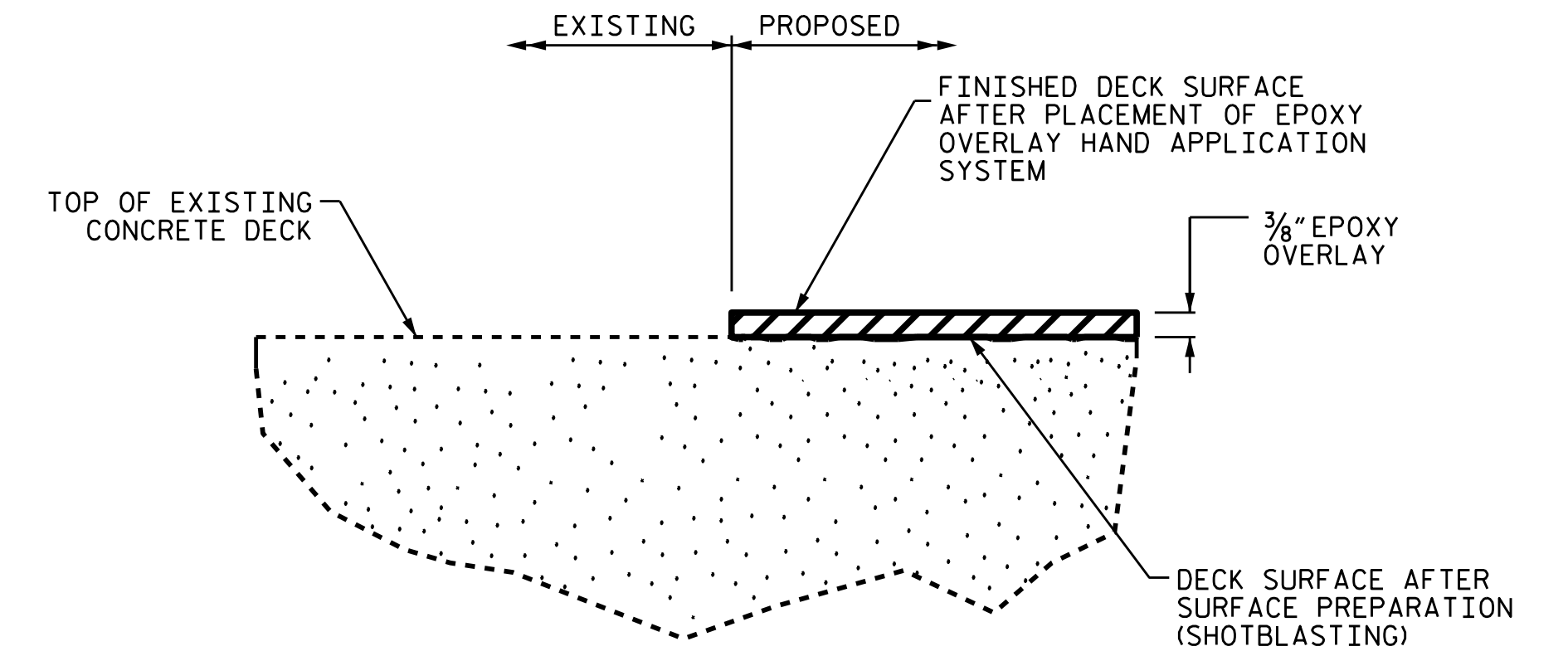
TYPICAL SECTION
(EXISTING)



TYPICAL SECTION
(DECK PREPARATION)

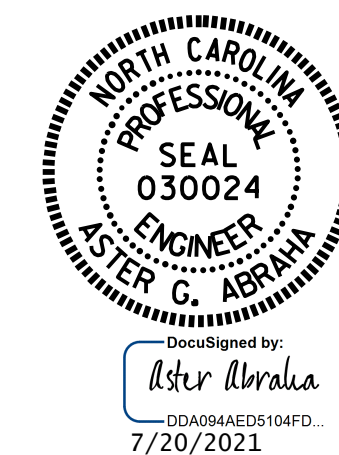


TYPICAL SECTION
(PROPOSED)



DETAIL FOR EPOXY OVERLAY

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630072



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

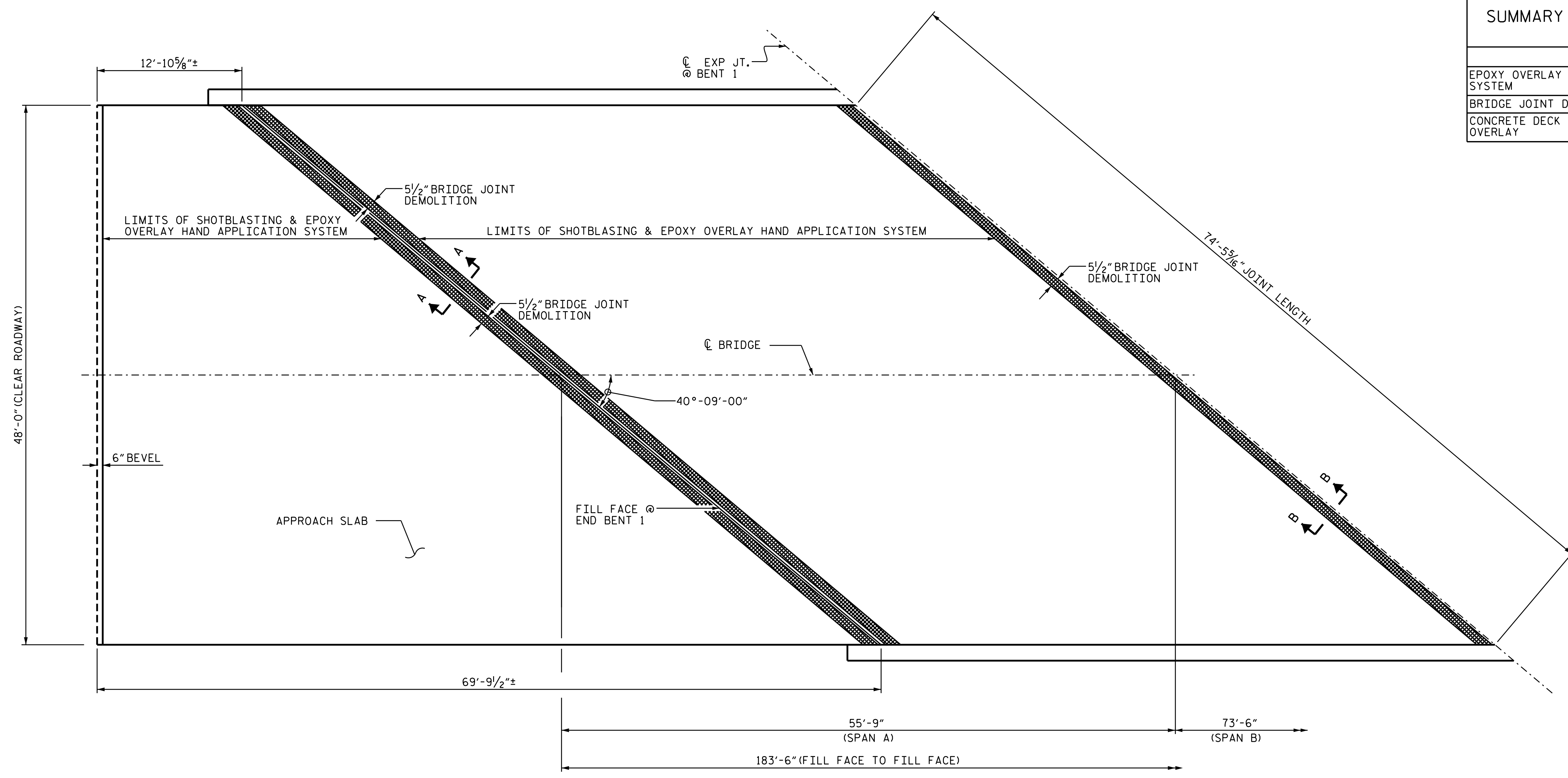
DRAWN BY : A. Y. GODFREY DATE : 02/2021
 CHECKED BY : A. G. ABRAHA DATE : 04/2021

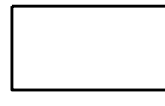
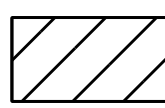
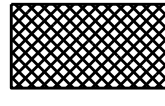
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			23
2			4			

SUMMARY OF QUANTITIES FOR SPAN A AND APPROACH SLAB 1

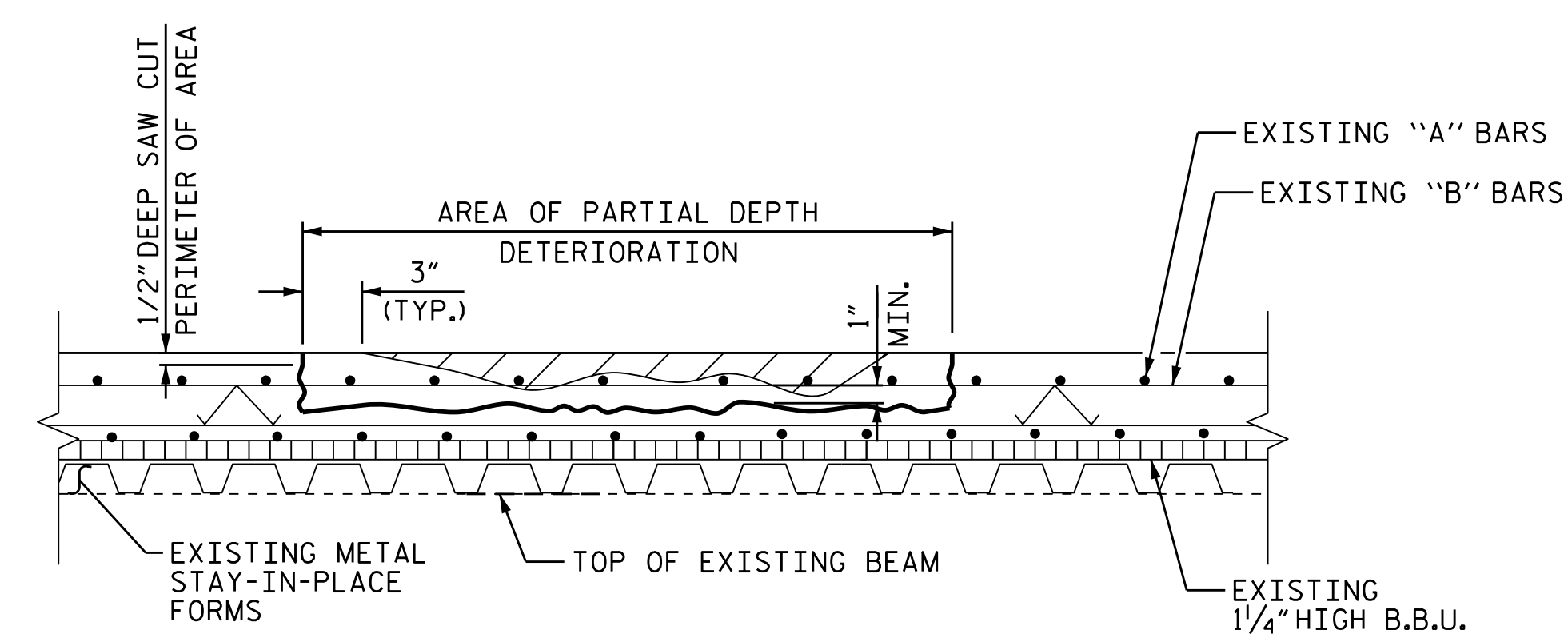
	ESTIMATE	ACTUAL
EPOXY OVERLAY HAND APPLICATION SYSTEM	4,524.5 SF	
BRIDGE JOINT DEMOLITION	102.4 SF	
CONCRETE DECK REPAIRS FOR EPOXY OVERLAY		



-  - SHOTBLASTING & EPOXY OVERLAY OF BRIDGE DECK
-  - CONCRETE DECK REPAIR FOR EPOXY OVERLAY
-  - BRIDGE JOINT DEMOLITION

PLAN OF SPAN A AND APPROACH SLAB 1
(SEE SHEET NO. S1-6 FOR SECTIONS A-A AND B-B)

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 AS-BUILT REPAIR QUANTITIES TABLE.
 FOR EPOXY OVERLAY HAND APPLICATION SYSTEM, SEE SPECIAL PROVISIONS.
 FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS AND DETAIL ON THIS SHEET.
 FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.
 FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.



CONCRETE DECK REPAIR FOR EPOXY OVERLAY

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630072

SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SURFACE PREPARATION
 SPAN A AND
 APPROACH SLAB 1

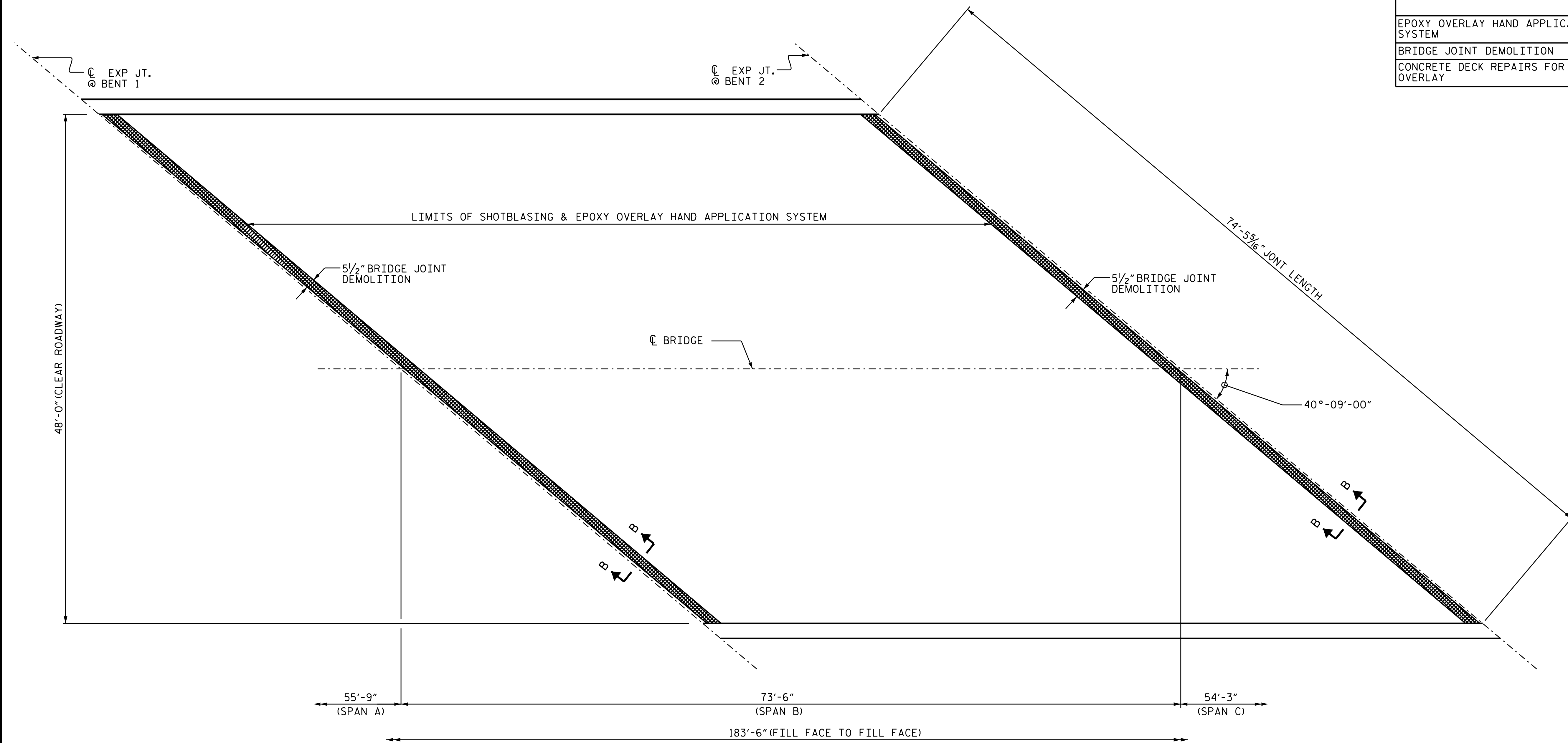
DRAWN BY : A. Y. GODFREY DATE : 02/2021
 CHECKED BY : A. G. ABRAHA DATE : 06/2021

NO.	REVISIONS			NO.	REVISIONS			SHEET NO.
	BY:	DATE:			BY:	DATE:		
1				3			S1-3	
2				4			TOTAL SHEETS 23	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUMMARY OF QUANTITIES FOR SPAN B

	ESTIMATE	ACTUAL
EPOXY OVERLAY HAND APPLICATION SYSTEM	3,453.6 SF	
BRIDGE JOINT DEMOLITION	68.2 SF	
CONCRETE DECK REPAIRS FOR EPOXY OVERLAY		



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 AS-BUILT REPAIR QUANTITIES TABLE.

FOR EPOXY OVERLAY HAND APPLICATION SYSTEM, SEE SPECIAL PROVISIONS.

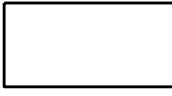
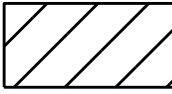

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS AND DETAIL ON SHEET 1 OF 3.

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

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

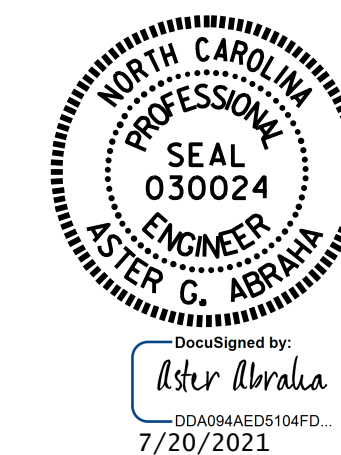
PLAN OF SPAN B

(SEE SHEET NO. S1-6 FOR SECTIONS A-A AND B-B)

-  - SHOTBLASTING & EPOXY OVERLAY OF BRIDGE DECK
-  - CONCRETE DECK REPAIR FOR EPOXY OVERLAY
-  - BRIDGE JOINT DEMOLITION

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630072

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN B**

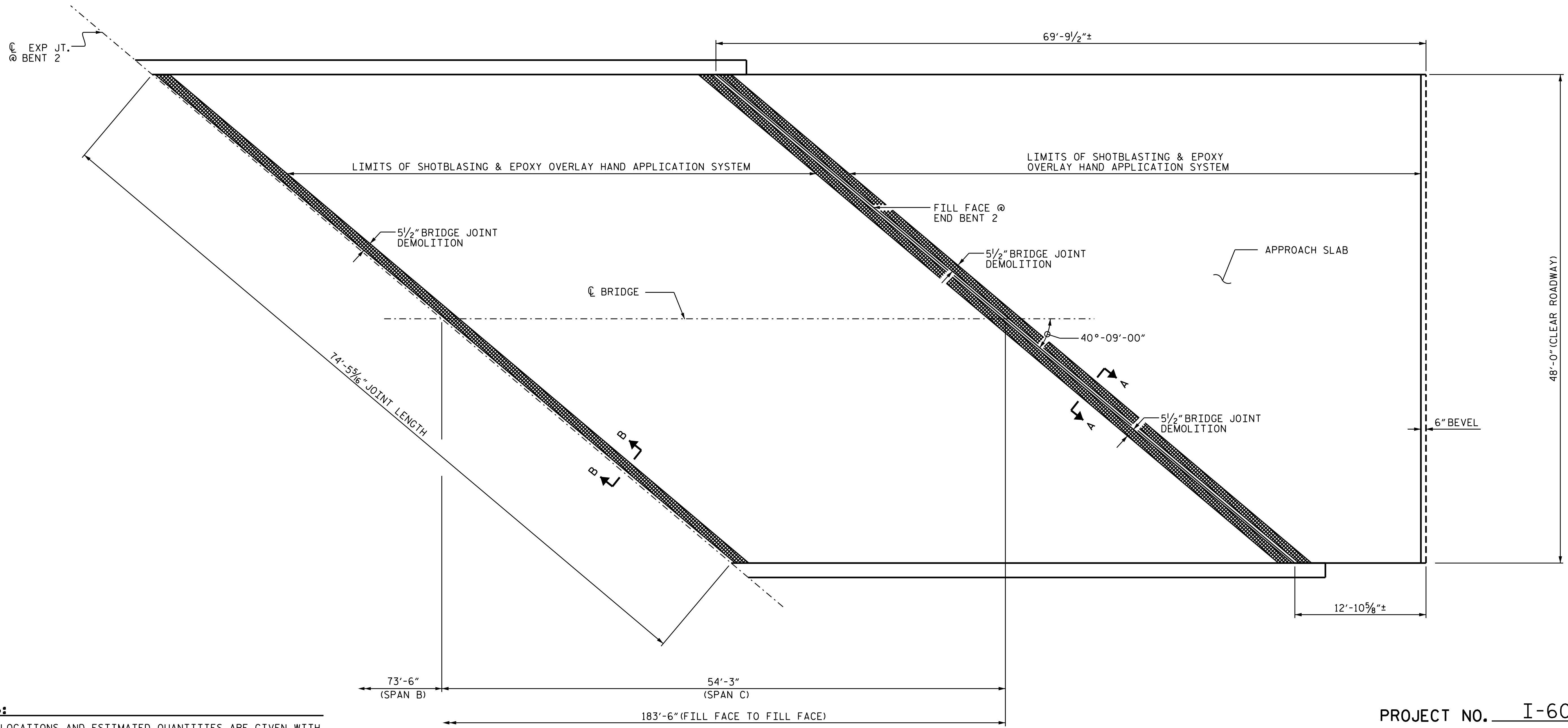
DRAWN BY : A. Y. GODFREY DATE : 02/2021
 CHECKED BY : A. G. ABRAHA DATE : 06/2021

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-4
1			3			TOTAL SHEETS
2			4			23

SUMMARY OF QUANTITIES FOR SPAN C AND APPROACH SLAB 2

	ESTIMATE	ACTUAL
EPOXY OVERLAY HAND APPLICATION SYSTEM	4,452.5 SF	
BRIDGE JOINT DEMOLITION	102.4 SF	
CONCRETE DECK REPAIRS FOR EPOXY OVERLAY		



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 AS-BUILT REPAIR QUANTITIES TABLE.

FOR EPOXY OVERLAY HAND APPLICATION SYSTEM, SEE SPECIAL PROVISIONS.



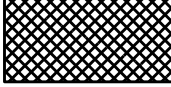
FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS AND DETAIL ON SHEET 1 OF 3.

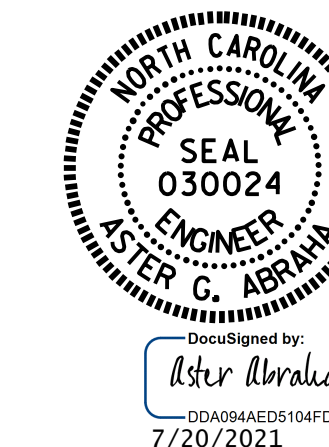
FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

PLAN OF SPAN C AND APPROACH SLAB 2

(SEE SHEET NO. S1-6 FOR SECTIONS A-A AND B-B)

-  - SHOTBLASTING & EPOXY OVERLAY OF BRIDGE DECK
-  - CONCRETE DECK REPAIR FOR EPOXY OVERLAY
-  - BRIDGE JOINT DEMOLITION



PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630072

SHEET 3 OF 3

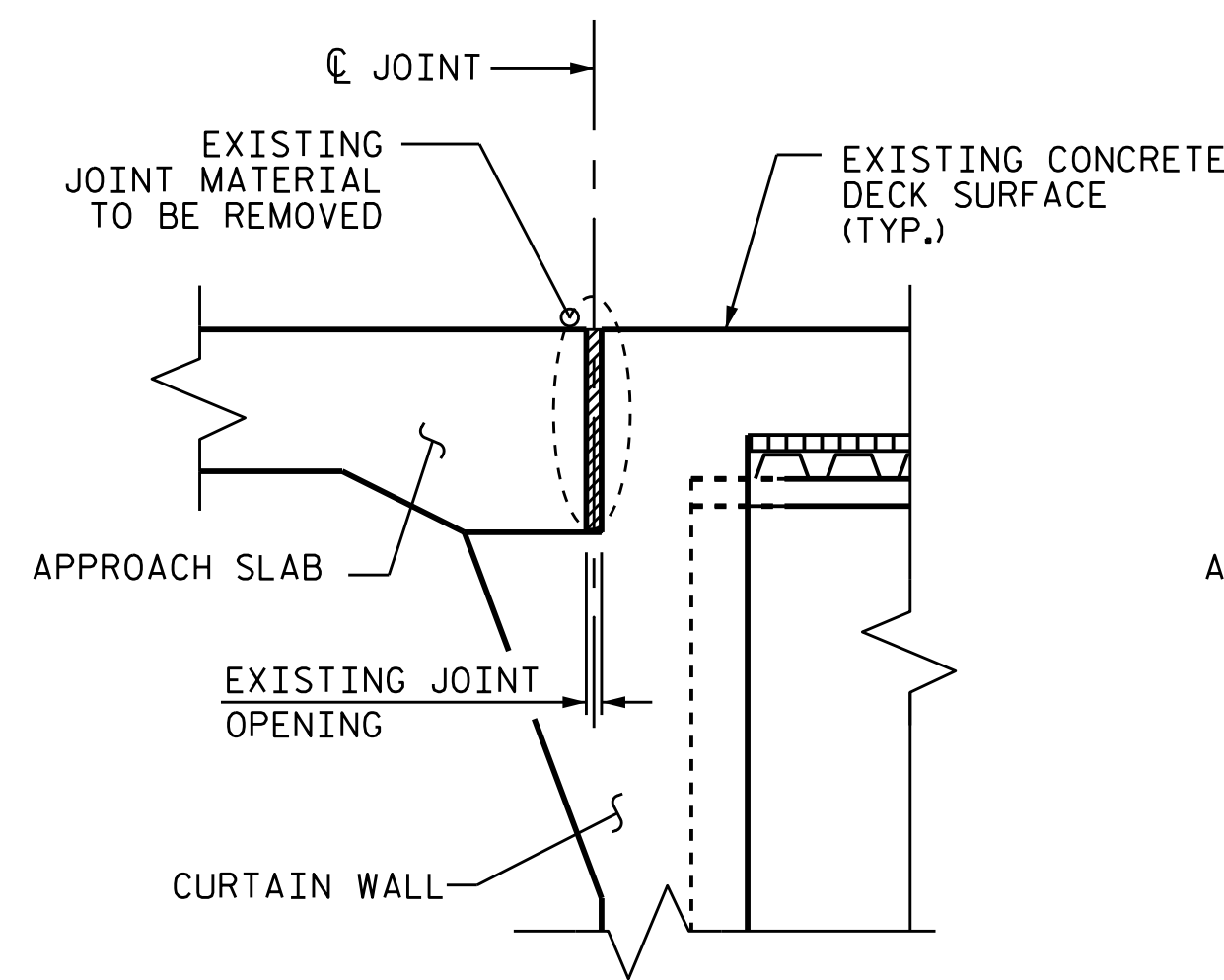
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION SPAN C AND APPROACH SLAB 2

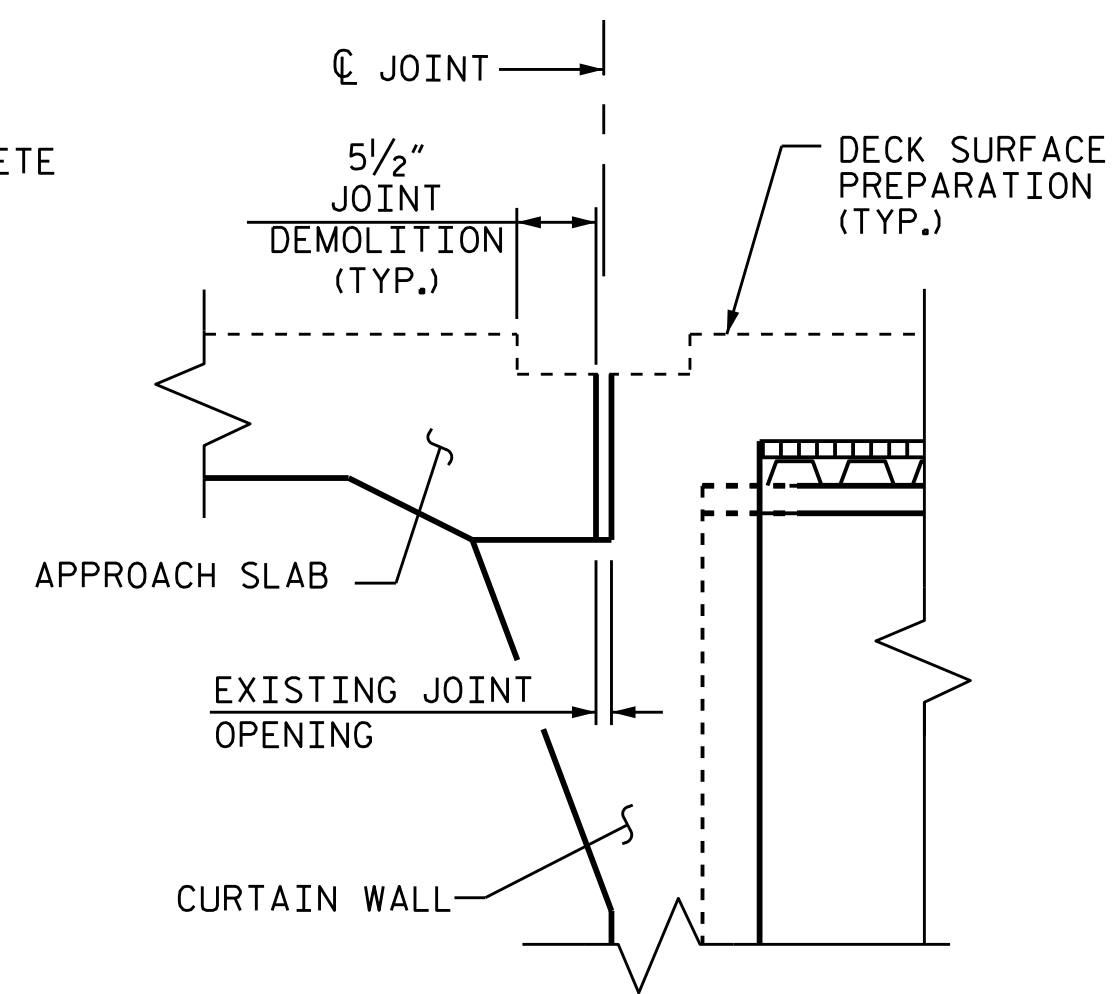
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-5
1			3			TOTAL SHEETS
2			4			23

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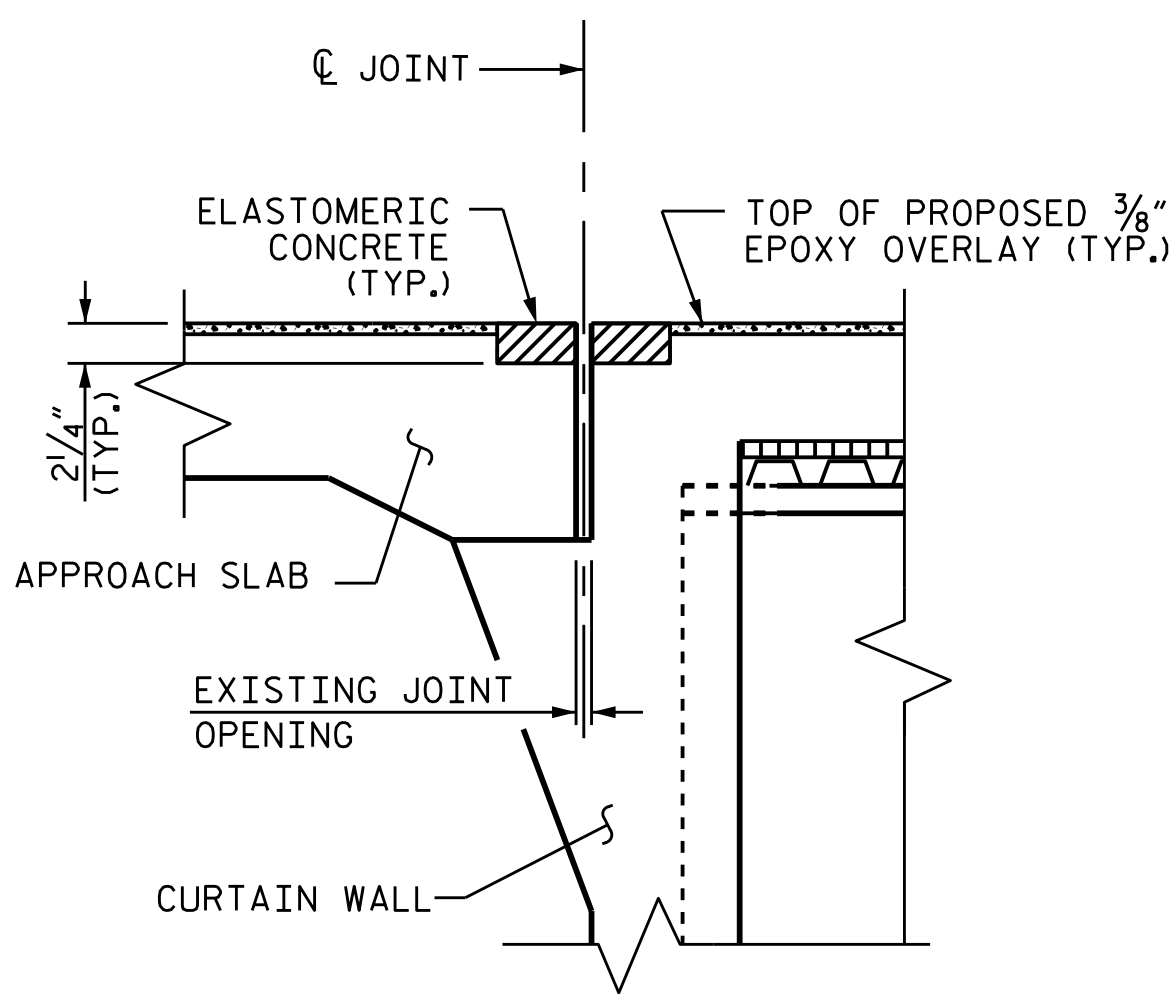
DRAWN BY : A. Y. GODFREY DATE : 02/2021
 CHECKED BY : A. G. ABRAHA DATE : 06/2021



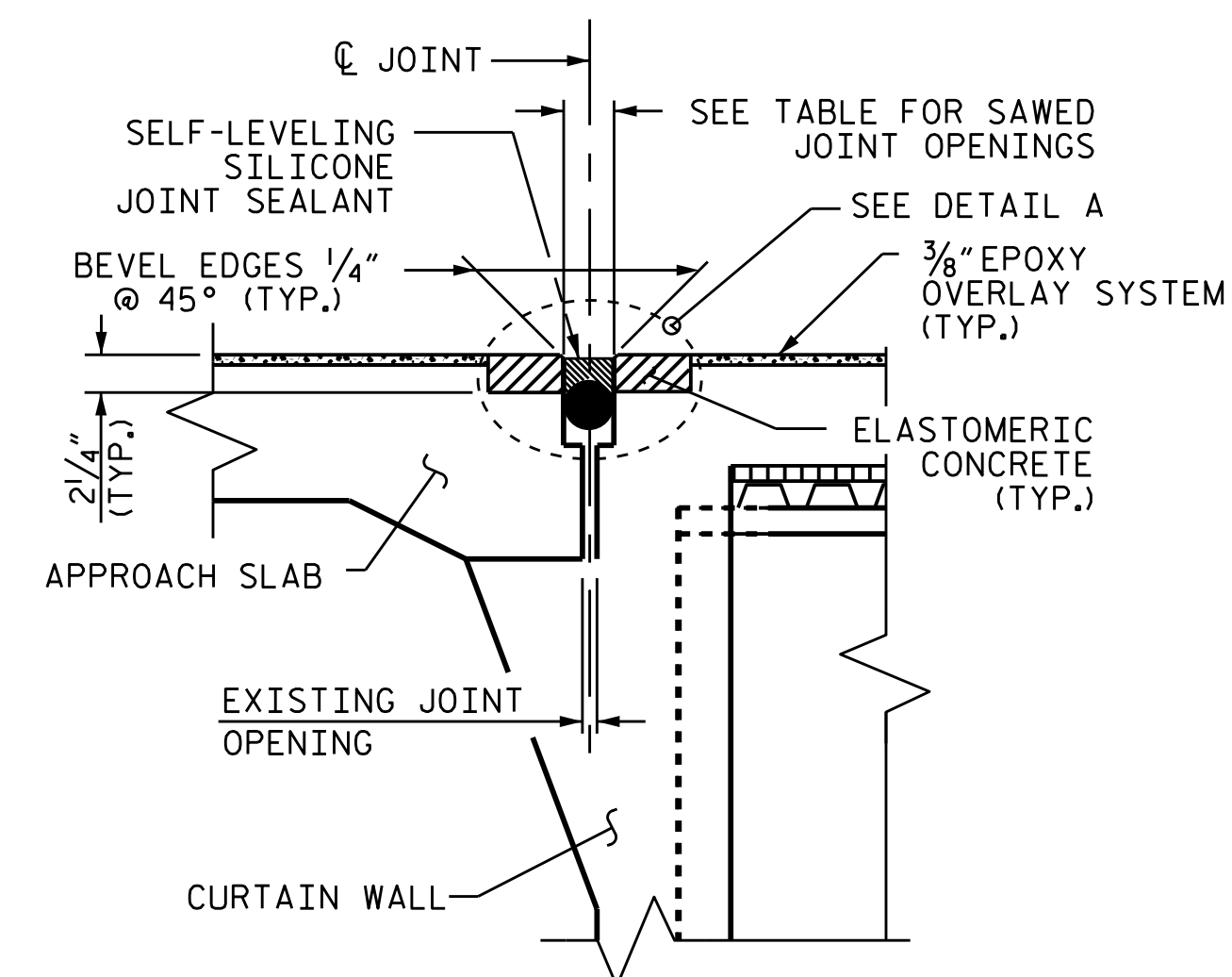
EXISTING JOINT



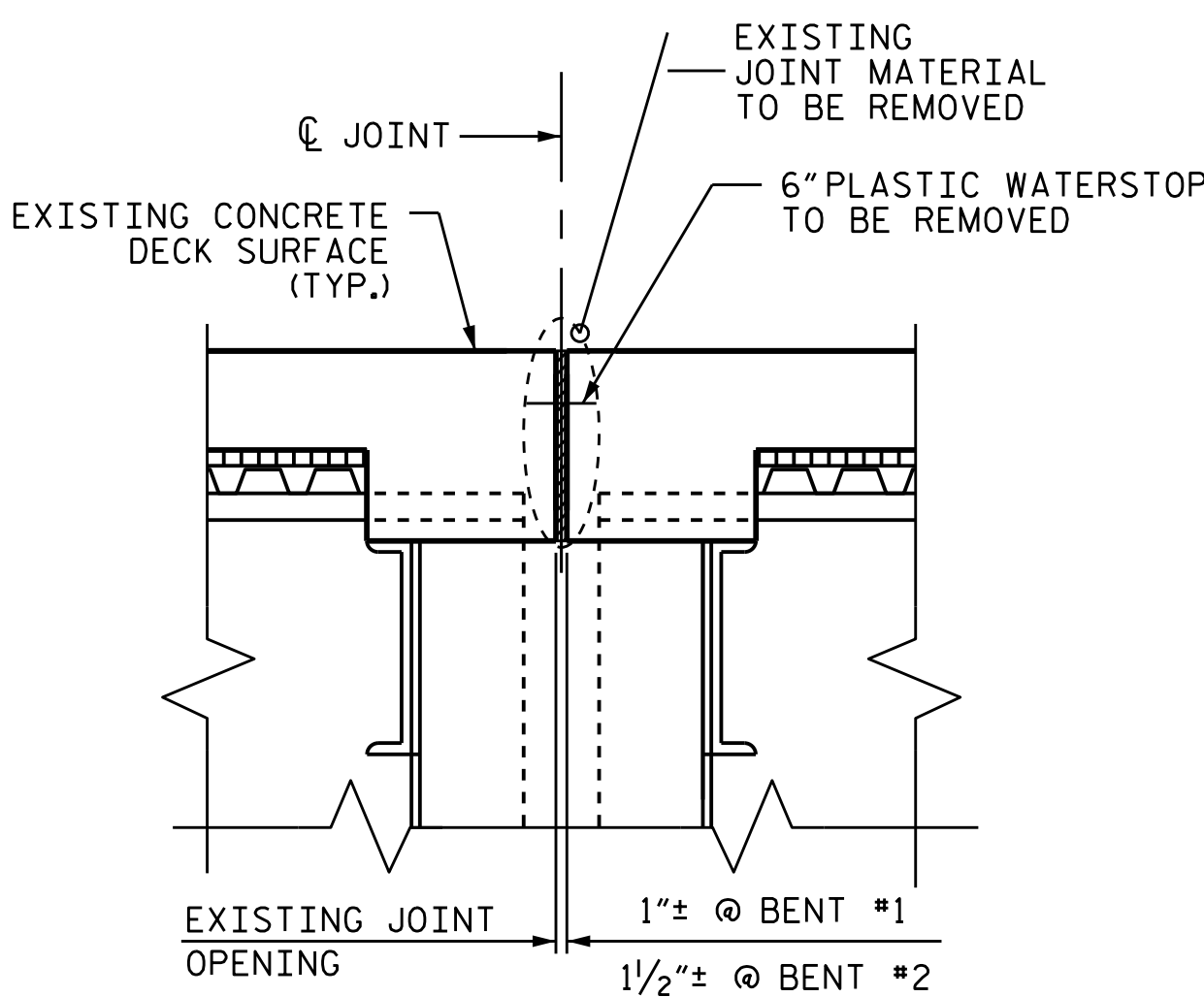
MINIMUM EXISTING JOINT DEMOLITION



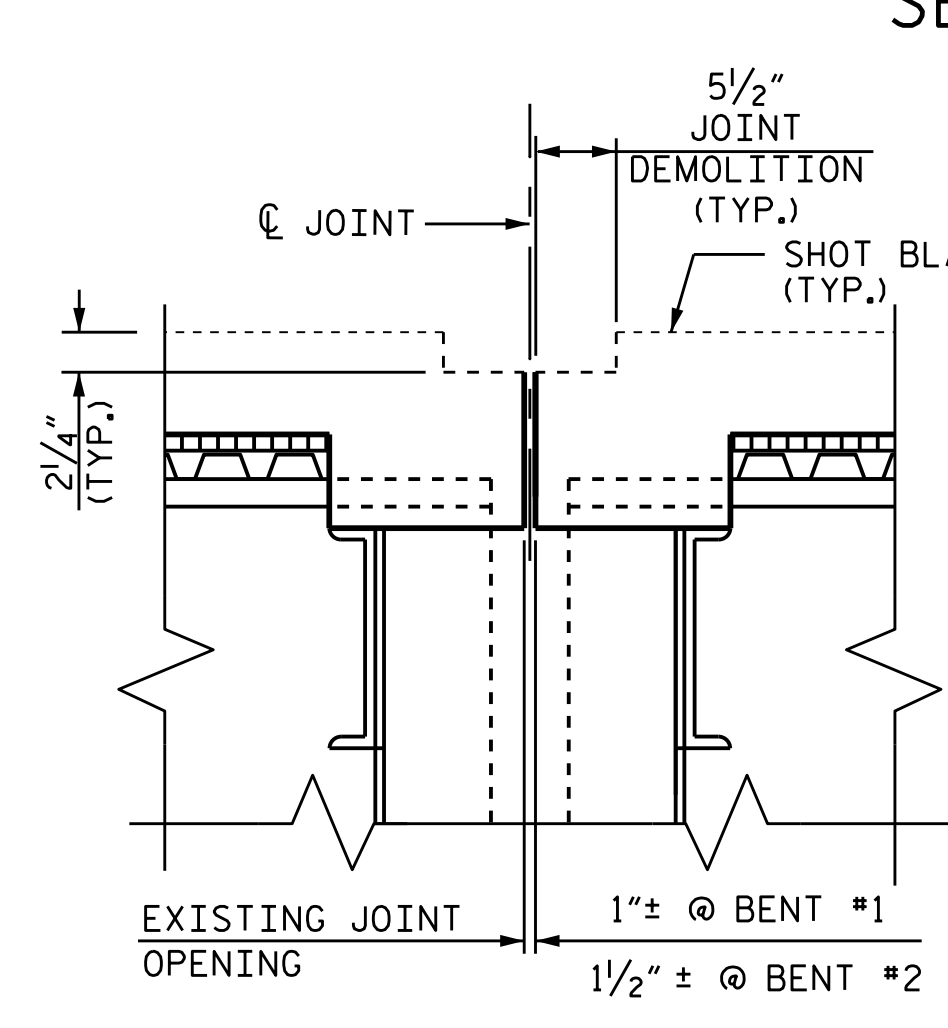
PROPOSED PRE-SAWED JOINT



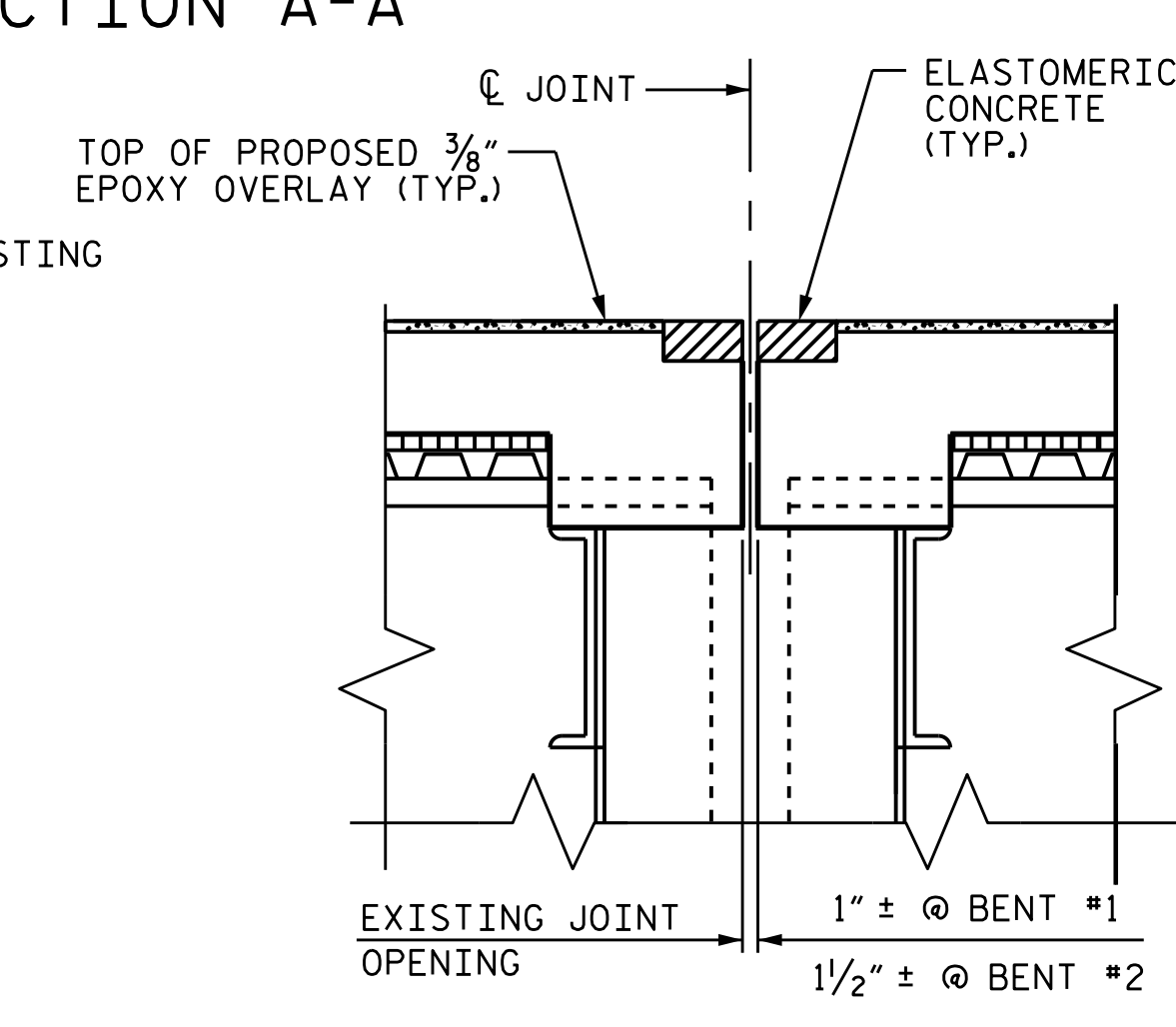
PROPOSED SILICONE JOINT SEAL WITH SAWED DIMENSIONS



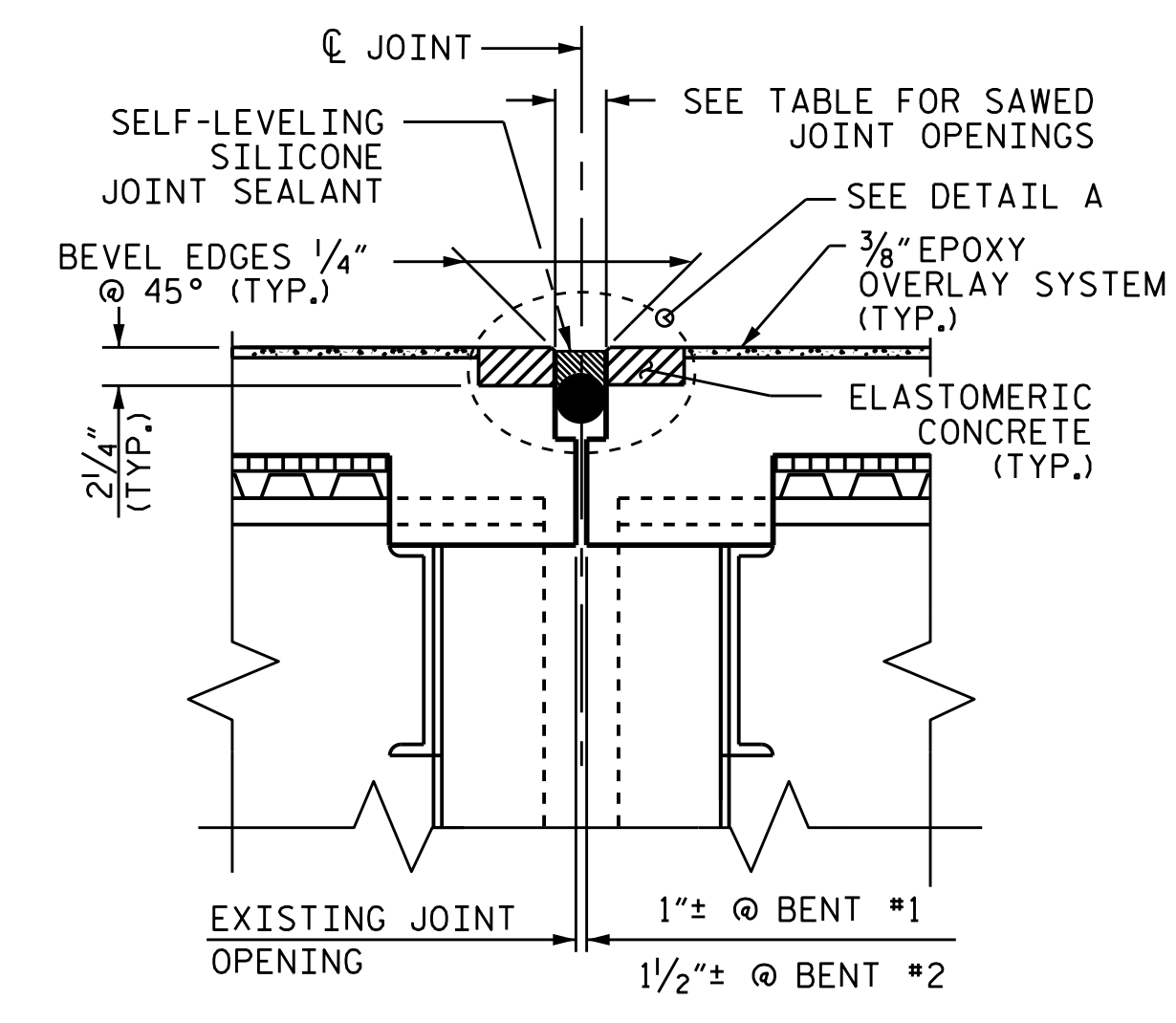
EXISTING JOINT



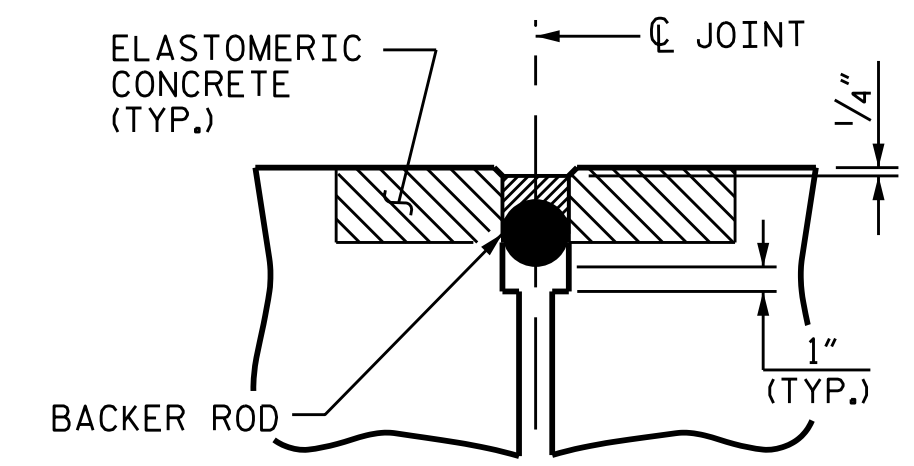
MINIMUM EXISTING JOINT DEMOLITION



PROPOSED PRE-SAWED JOINT



PROPOSED SILICONE JOINT SEAL WITH SAWED DIMENSIONS



DETAIL A (PROPOSED)

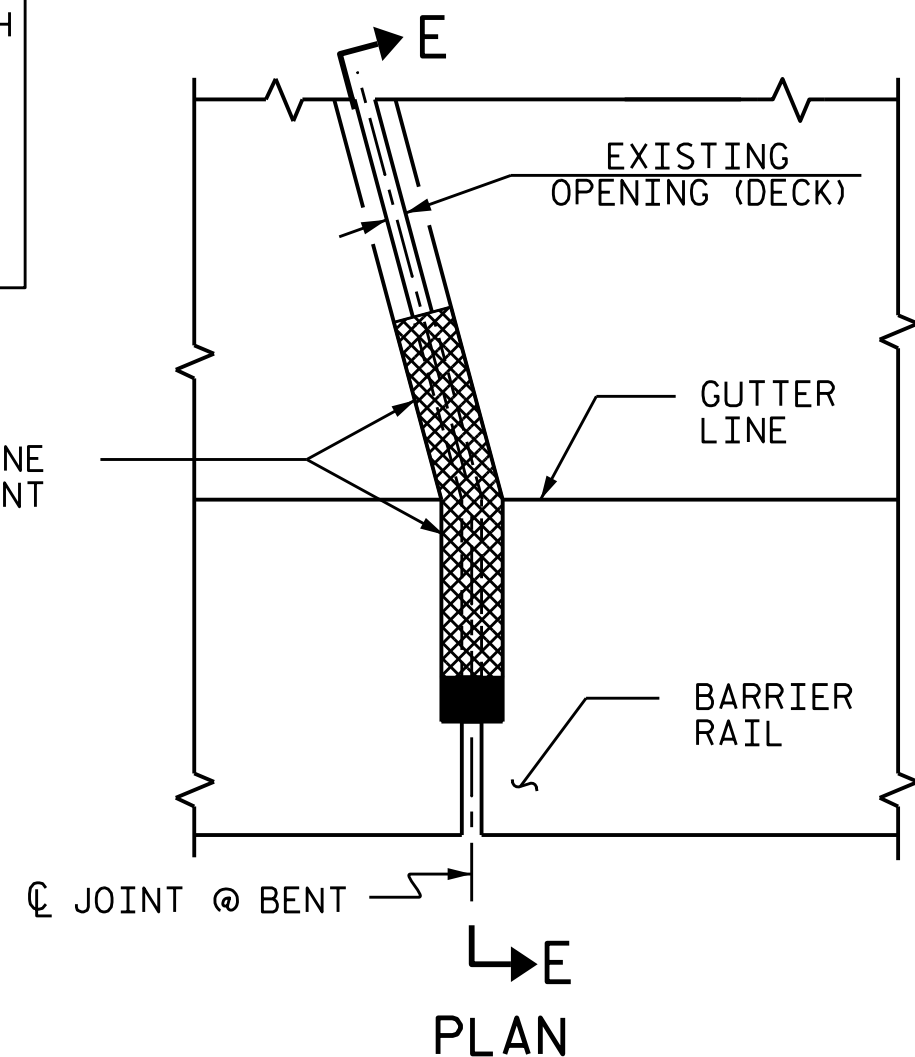
JOINT INSTALLATION SEQUENCE AT END BENTS

SECTION A-A

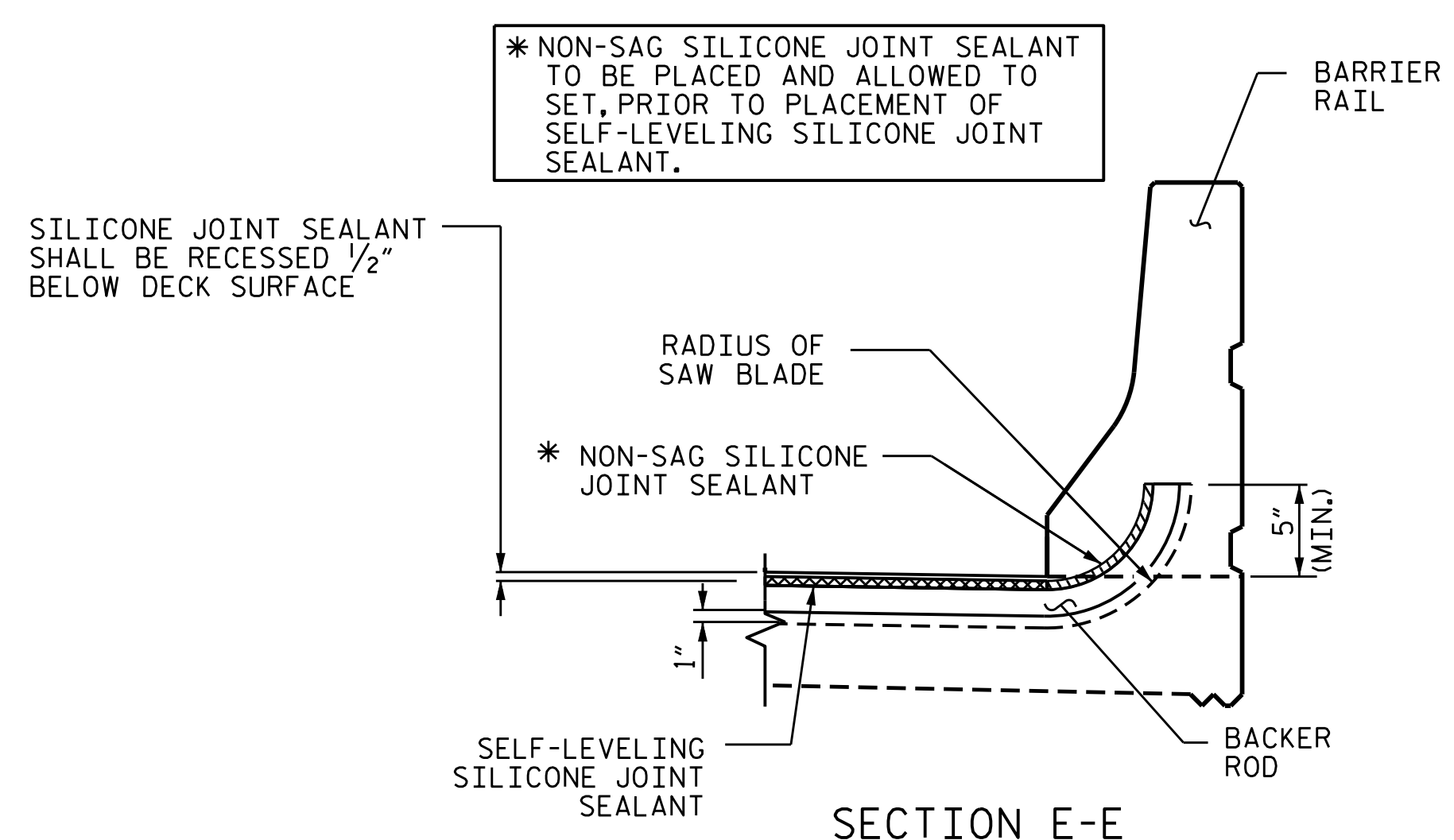
JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B

IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOP SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.



PLAN

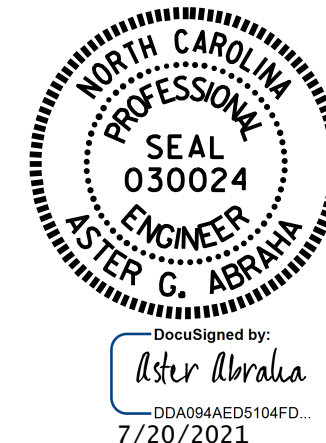


SECTION E-E

LOCATION	TOTAL MOVEMENT (ALONG C.RDY)	SAWED JT. OPENING (PERPENDICULAR TO JT.)		
		AT 45°	AT 60°	AT 90°
END BENT 1			1 9/16"	
BENT 1	1/4"	1 5/8"	1 9/16"	1 1/2"
BENT 2	5/8"	1 11/16"	1 9/16"	1 7/8"
END BENT 2			1 9/16"	

	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	51.2 C.F.	
POURABLE SILICONE JOINT SEALANT	297.8 L.F.	

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630072



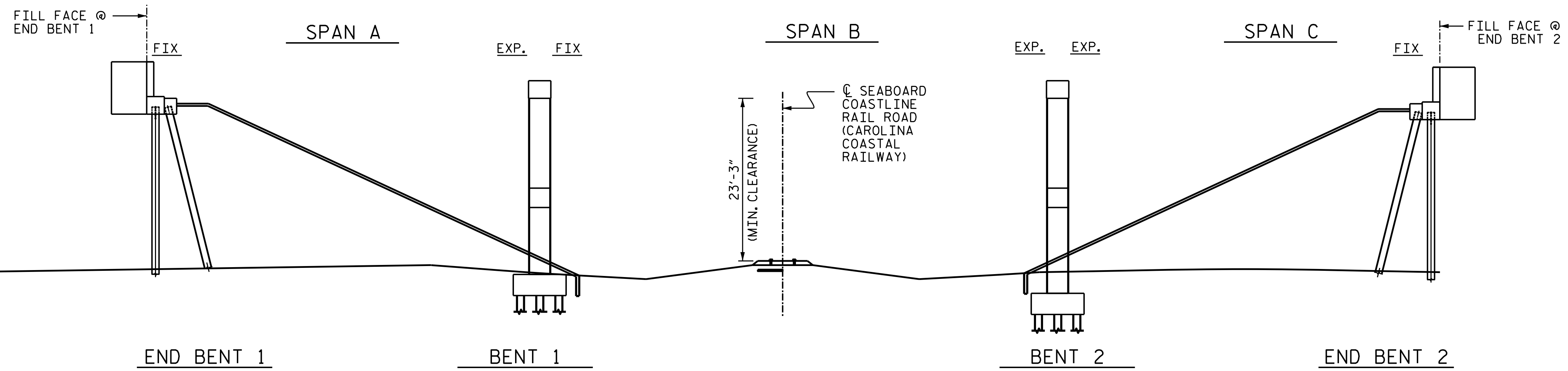
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S1-6
2			4			TOTAL SHEETS 23

DRAWN BY : A. Y. GODFREY DATE : 03/2021
 CHECKED BY : A. G. ABRAHA DATE : 04/2021

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ELEVATION

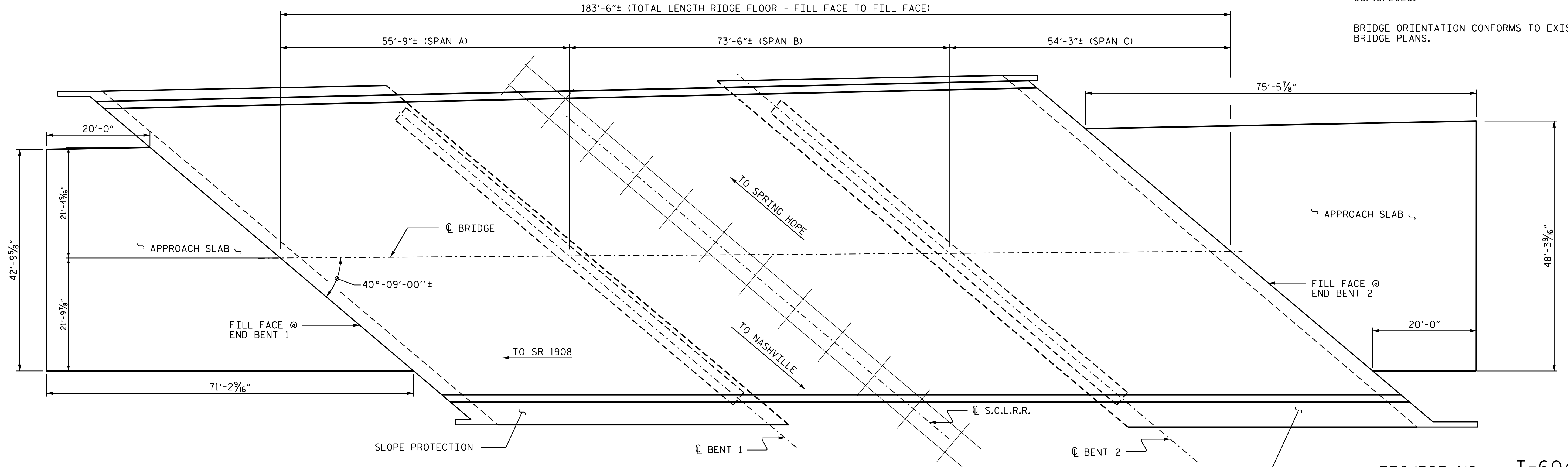
(SECTION ALONG CL ROADWAY)

SCOPE OF WORK

- BRIDGE DECK PREPARATION WITH SHOTBLASTING METHODS.
- PERFORM CONCRETE DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED TOP OF BRIDGE DECK WITH EPOXY OVERLAY.
- BRIDGE JOINT DEMOLITION.
- RECONSTRUCT BRIDGE JOINTS WITH ELASTOMERIC CONCRETE AND INSTALL BACKER ROD AND SILICONE JOINT SEALANT.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE EXISTING END BENT AND BENT AREAS FOR SHOTCRETE AND CONCRETE REPAIRS.
- REPAIR SUBSTRUCTURE USING SHOTCRETE AND CONCRETE.

NOTES

- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND THE ROUTINE INSPECTION, DATED 08/18/2020.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.



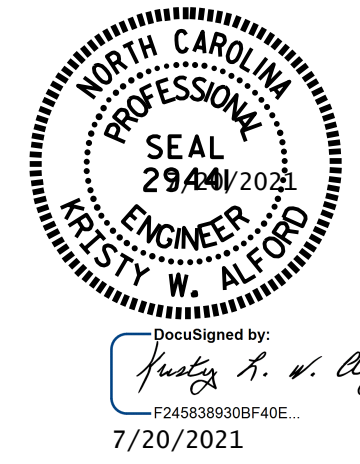
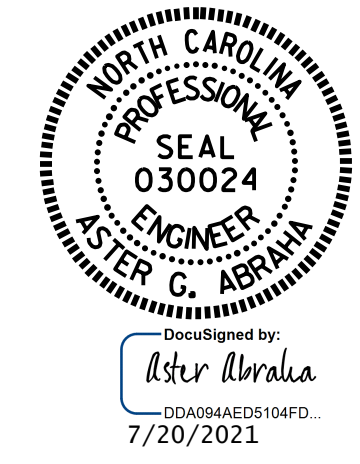
PLAN

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

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074

I hereby certify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer _____ Date _____



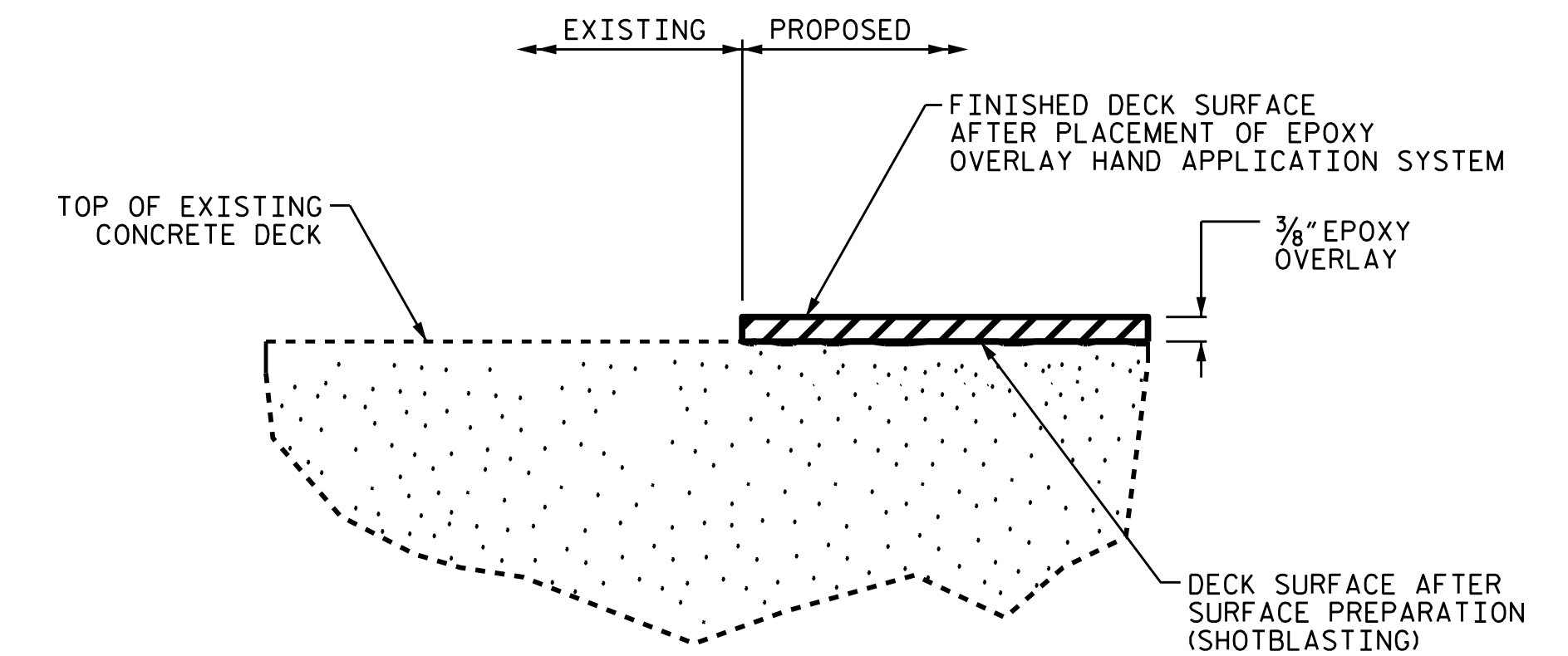
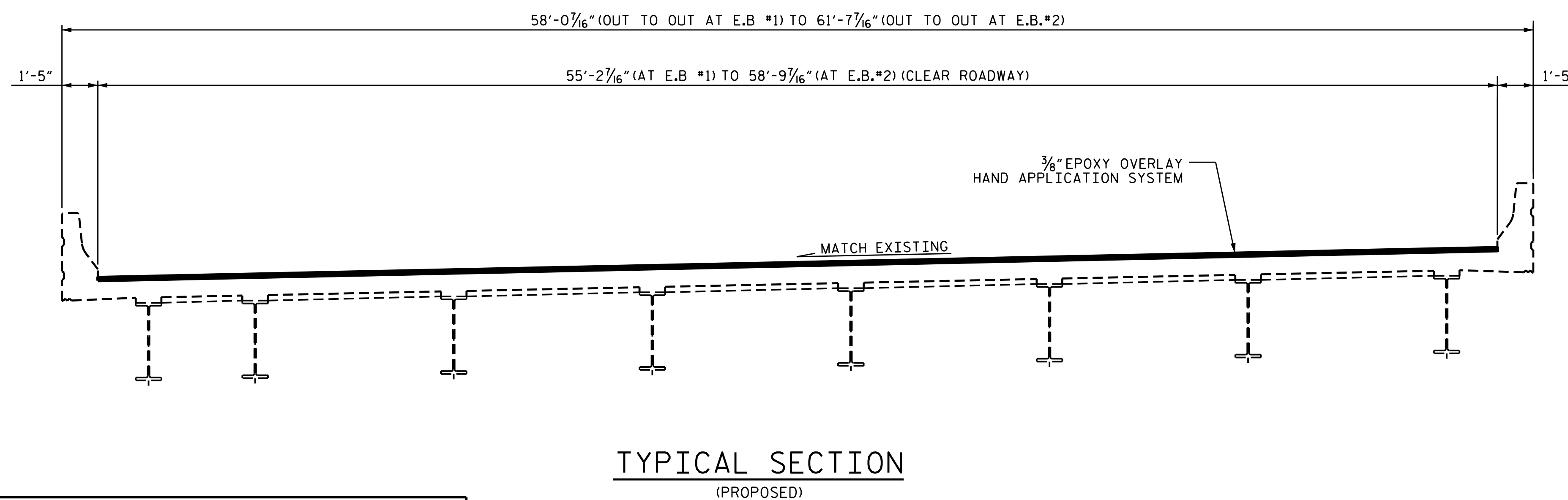
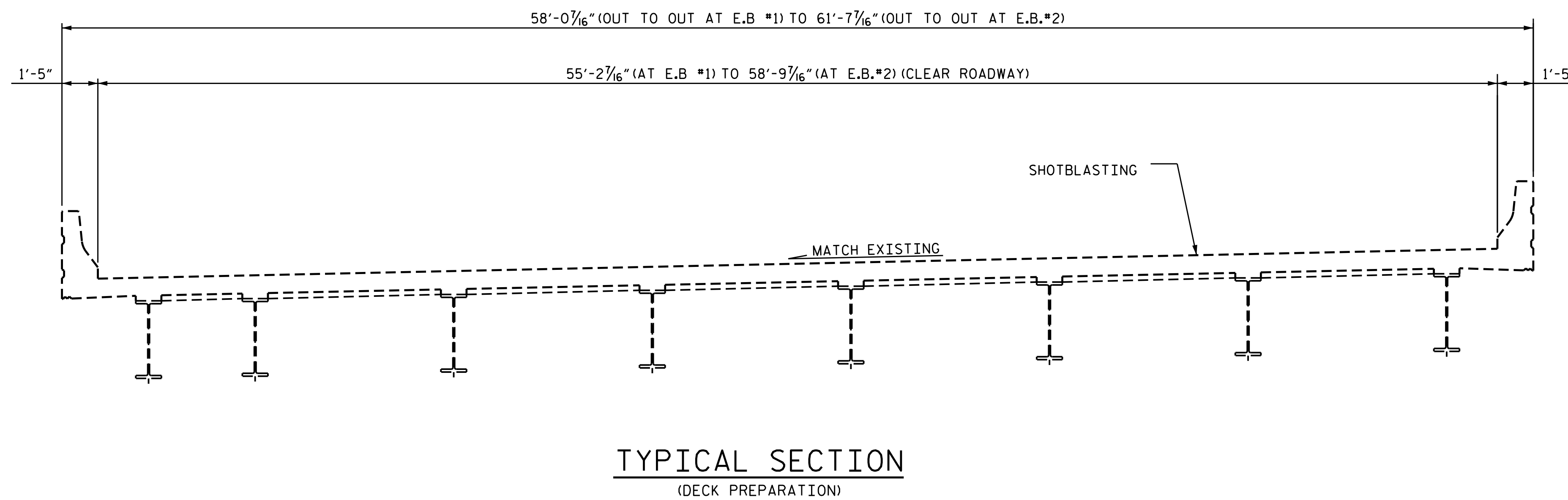
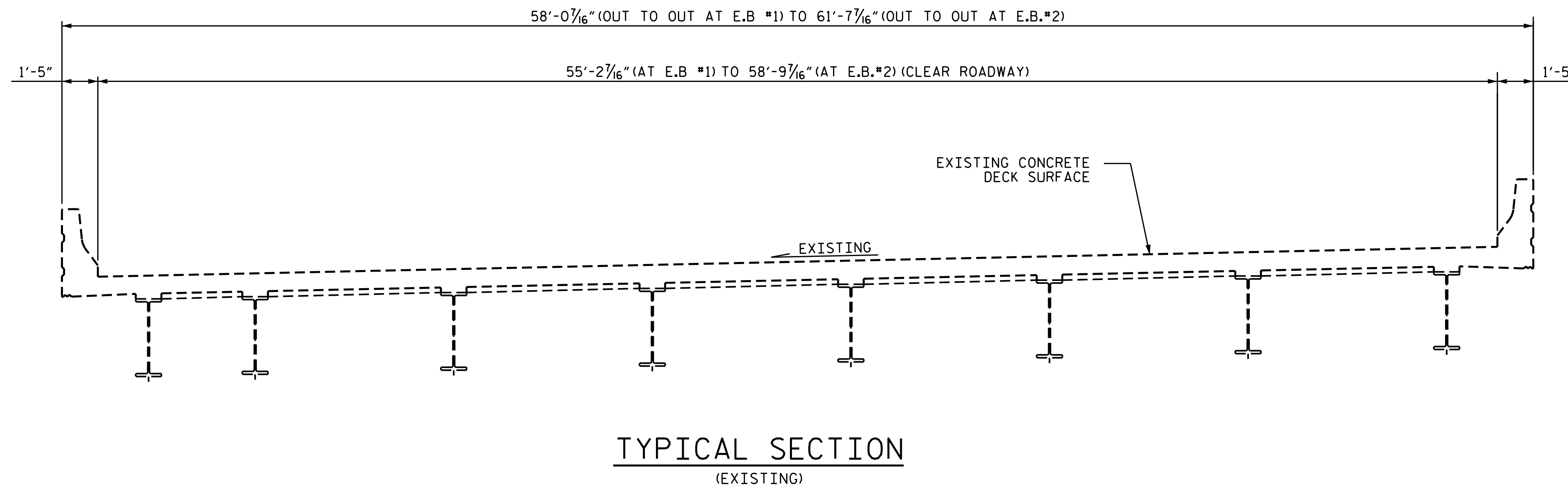
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE #74 ON
 US64 BYP WBL OVER
 SEABOARD COASTLINE
 RAILROAD

DRAWN BY : A. Y. GODFREY DATE : .03/2021
 CHECKED BY : A. G. ABRAHA DATE : .06/2021

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-1
1			3			TOTAL SHEETS
2			4			23

NOTES

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



PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

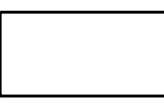

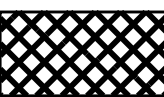
DRAWN BY : A. Y. GODFREY DATE : 03/2021
 CHECKED BY : A. G. ABRAHA DATE : 04/2021

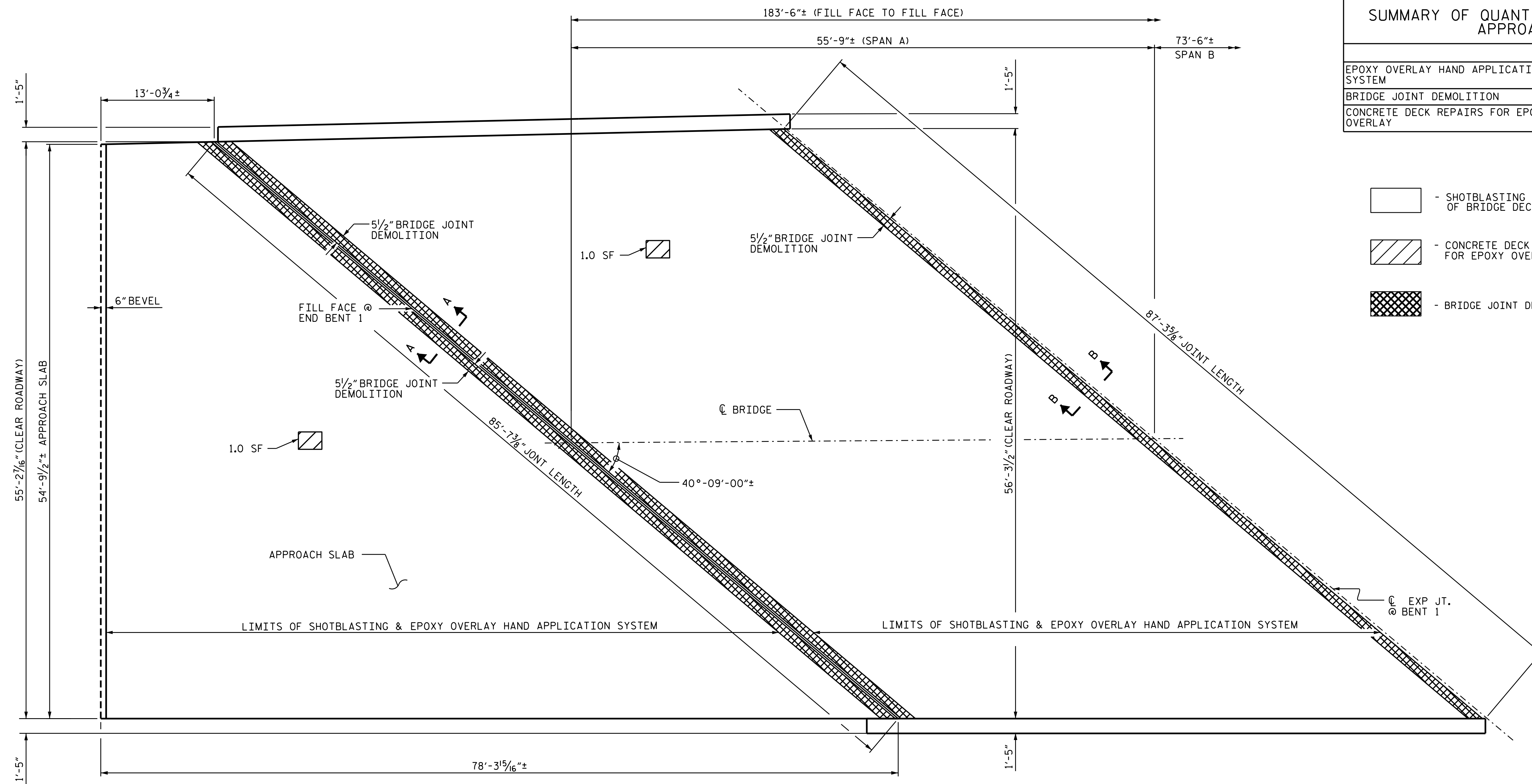
DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

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

SUMMARY OF QUANTITIES FOR SPAN A AND APPROACH SLAB 1

	ESTIMATE	ACTUAL
EPOXY OVERLAY HAND APPLICATION SYSTEM	5,458.3 SF	
BRIDGE JOINT DEMOLITION	118.5 SF	
CONCRETE DECK REPAIRS FOR EPOXY OVERLAY	2.0 SF	

-  - SHOTBLASTING & EPOXY OVERLAY OF BRIDGE DECK
-  - CONCRETE DECK REPAIR FOR EPOXY OVERLAY
-  - BRIDGE JOINT DEMOLITION



PLAN OF SPAN A AND APPROACH SLAB 1

(SEE SHEET NO. S2-7 FOR SECTIONS A-A AND B-B)

NOTES:

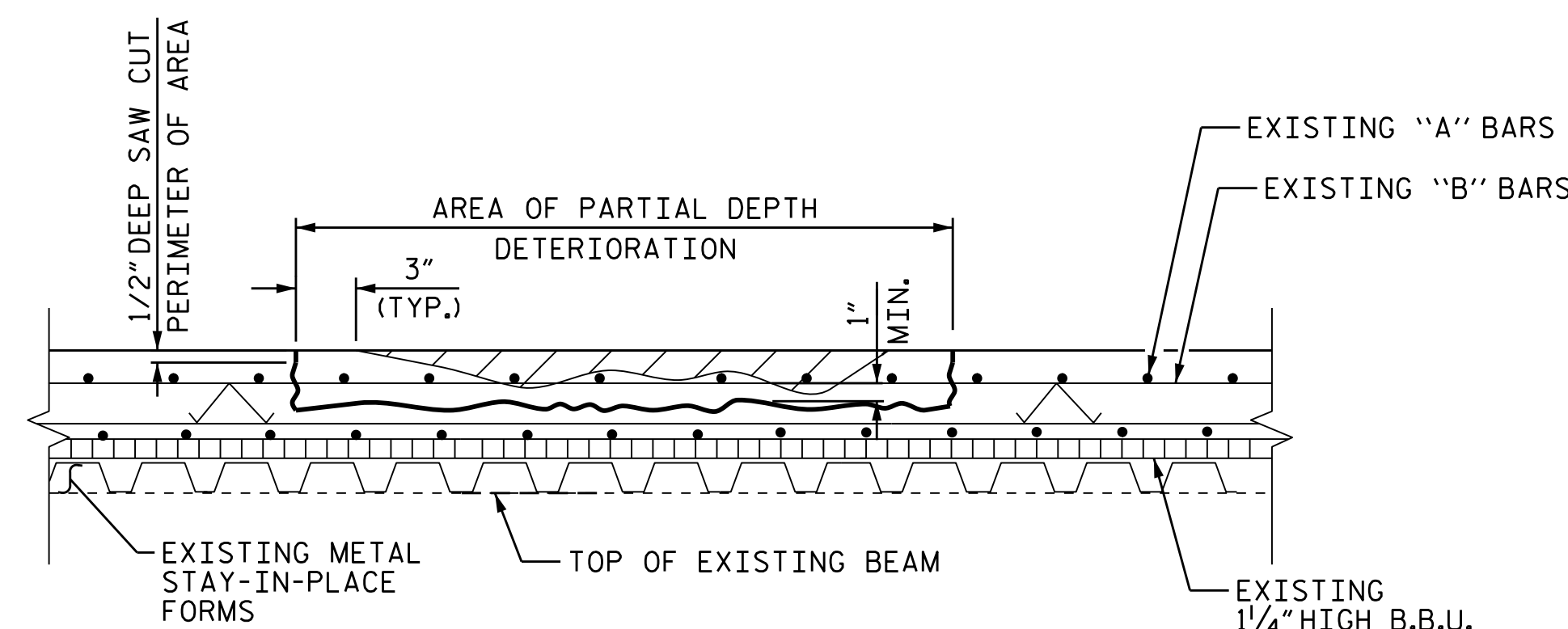
REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN IN DRAWINGS ARE DEEMED NECESSARY BY ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED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

FOR EPOXY OVERLAY HAND APPLICATION SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS AND DETAIL ON THIS SHEET.

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

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.



CONCRETE DECK REPAIR FOR EPOXY OVERLAY

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074

SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN A AND
 APPROACH SLAB 1

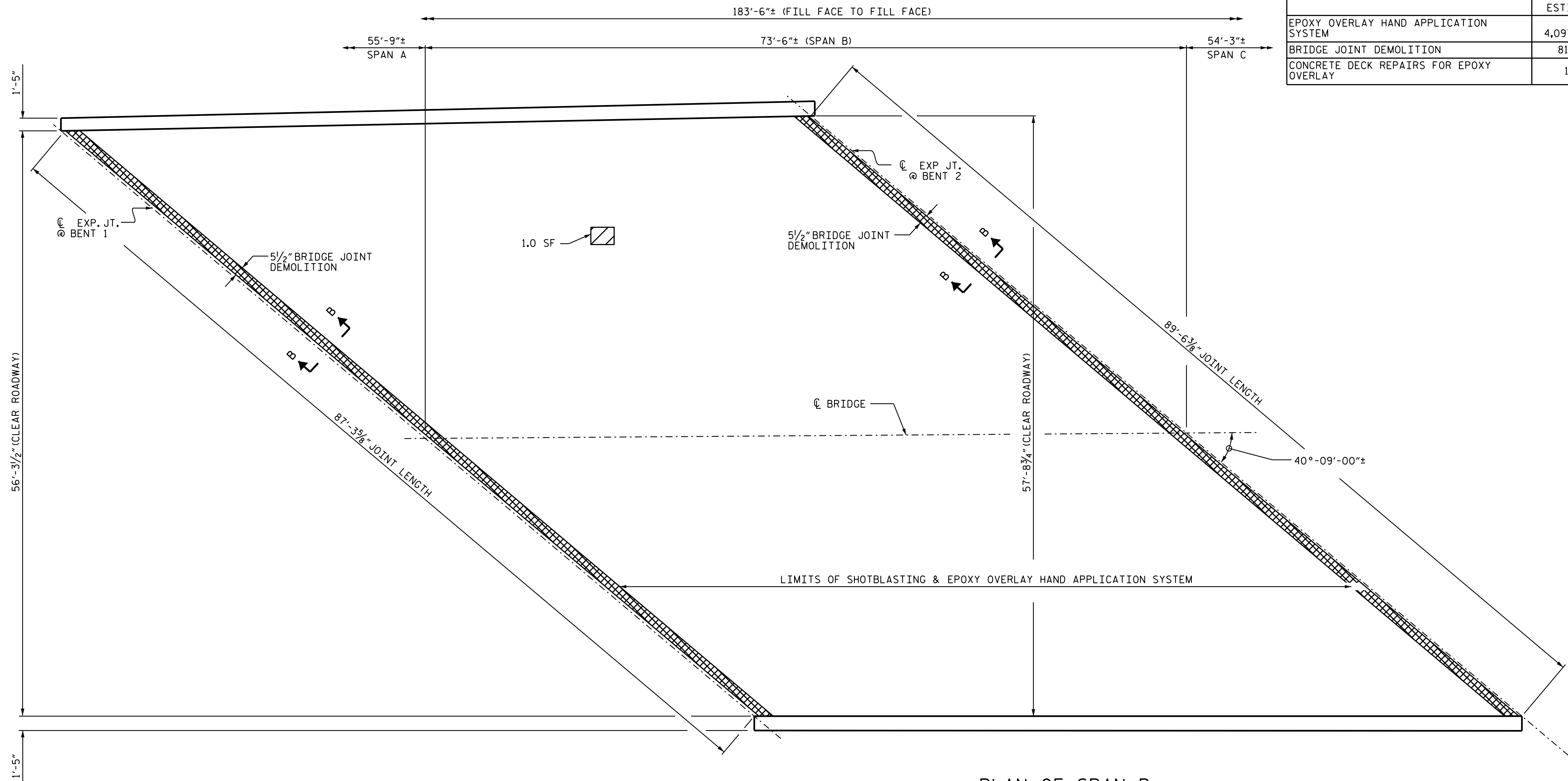
DRAWN BY : A. Y. GODFREY DATE : .03/2021
 CHECKED BY : A. G. ABRAHA DATE : .06/2021

DOCUMENT NOT CONSIDERED
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-3
1			3			TOTAL SHEETS
2			4			23

SUMMARY OF QUANTITIES FOR SPAN B

	ESTIMATE	ACTUAL
EPOXY OVERLAY HAND APPLICATION SYSTEM	4,097.7 SF	
BRIDGE JOINT DEMOLITION	81.0 SF	
CONCRETE DECK REPAIRS FOR EPOXY OVERLAY	1.0 SF	



PLAN OF SPAN B
(SEE SHEET NO. S2-7 FOR SECTIONS A-A AND B-B)

NOTES:

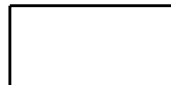


REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN IN DRAWINGS ARE DEEMED NECESSARY BY ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED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

FOR EPOXY OVERLAY HAND APPLICATION SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS AND DETAIL ON SHEET 1 OF 3.

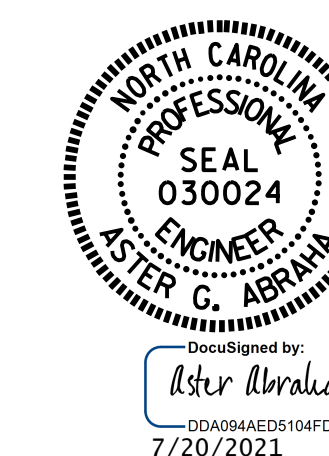
FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

-  - SHOTBLASTING AND EPOXY OVERLAY OF BRIDGE DECK
-  - CONCRETE DECK REPAIR FOR EPOXY OVERLAY
-  - BRIDGE JOINT DEMOLITION

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074

SHEET 2 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 SPAN B**

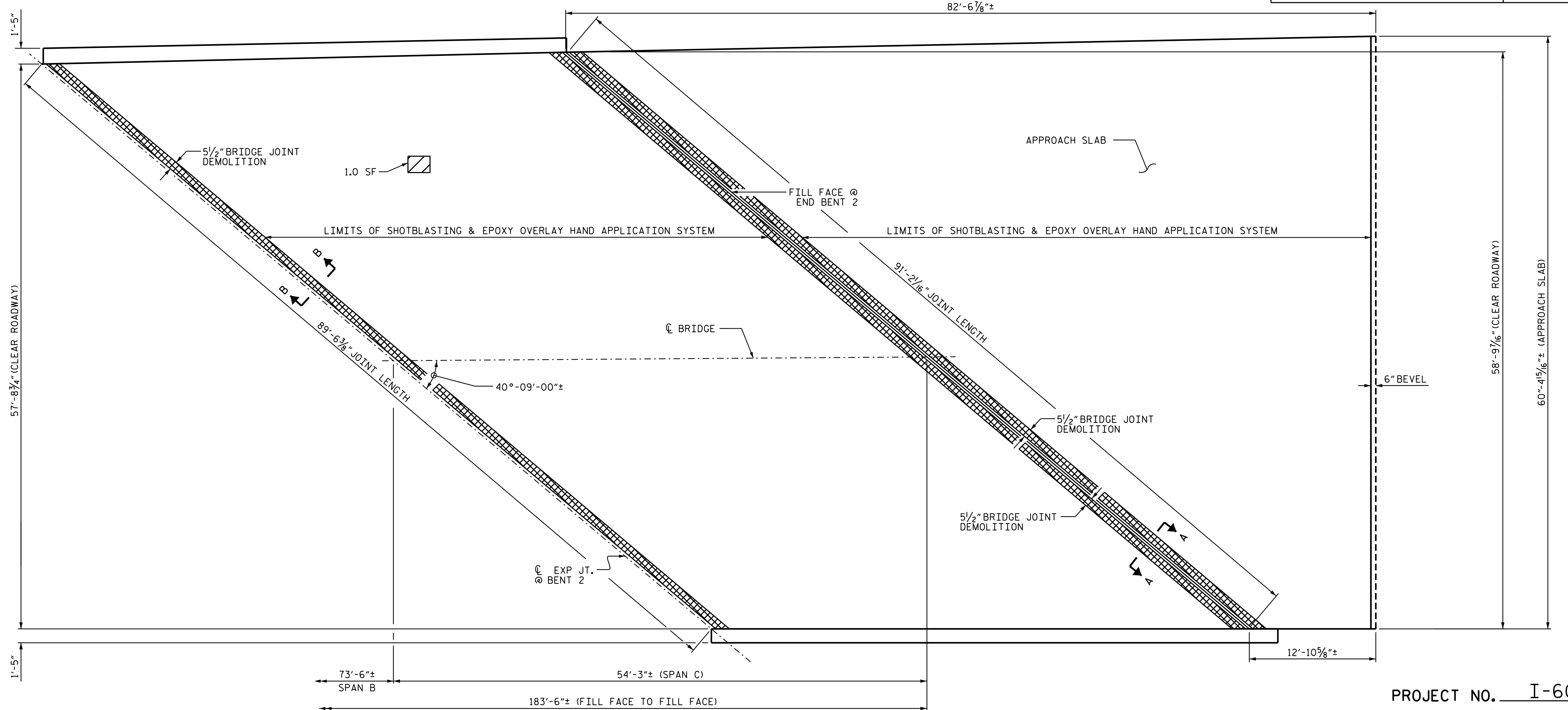
DRAWN BY : A. Y. GODFREY DATE : .03/2021
 CHECKED BY : A. G. ABRAHA DATE : .06/2021

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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-4
2			4			TOTAL SHEETS 23

SUMMARY OF QUANTITIES FOR SPAN C AND APPROACH SLAB 2

	ESTIMATE	ACTUAL
EPOXY OVERLAY HAND APPLICATION SYSTEM	5,871.3 SF	
BRIDGE JOINT DEMOLITION	124.6 SF	
CONCRETE DECK REPAIRS FOR EPOXY OVERLAY	1.0 SF	



NOTES:

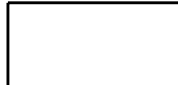


REPAIR LOCATIONS AND ESTIMATED QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN IN DRAWINGS ARE DEEMED NECESSARY BY ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED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

FOR EPOXY OVERLAY HAND APPLICATION SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS AND DETAIL ON SHEET 1 OF 3.

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

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

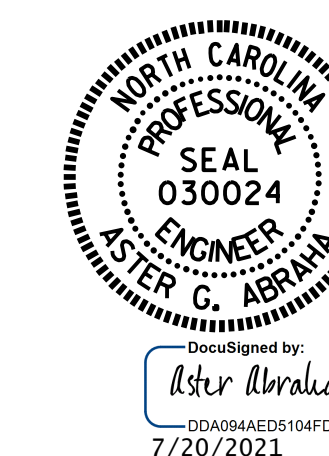
-  - SHOTBLASTING AND EPOXY OVERLAY OF BRIDGE DECK
-  - CONCRETE DECK REPAIR FOR EPOXY OVERLAY
-  - BRIDGE JOINT DEMOLITION

DRAWN BY : A. Y. GODFREY DATE : .03/2021
 CHECKED BY : A. G. ABRAHA DATE : .06/2021

PLAN OF SPAN C AND APPROACH SLAB 2
 (SEE SHEET NO. S2-7 FOR SECTIONS A-A AND B-B)

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074

SHEET 3 OF 3

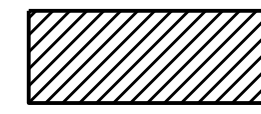


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SURFACE PREPARATION
 SPAN C AND
 APPROACH SLAB 2

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			23

REPAIR KEY



- SHOTCRETE REPAIR FOR DECK UNDERSIDE



- EPOXY RESIN INJECTION (ERI)

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE INSPECTOR OR ENGINEER THE CONTRACTOR SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

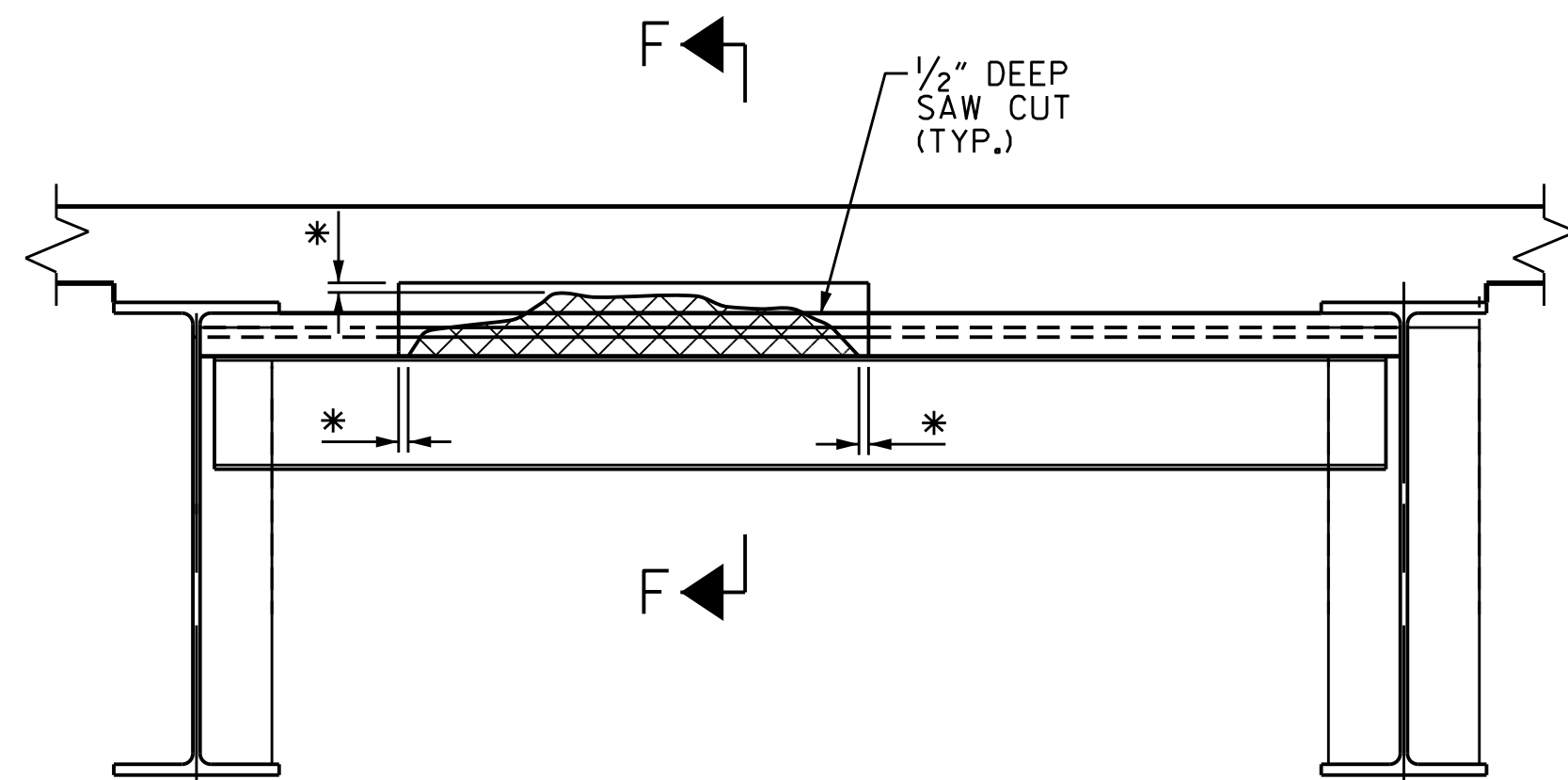
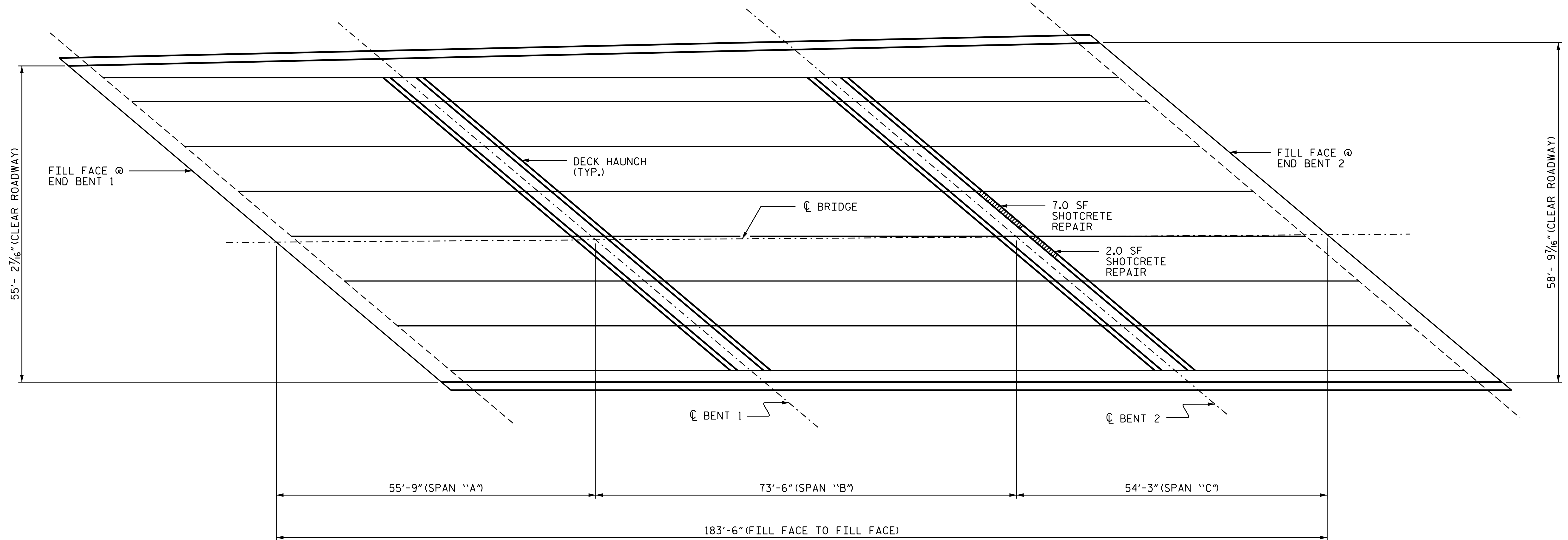
FOR DECK HAUNCH REPAIR DETAILS, SEE "DECK HAUNCH REPAIR DETAILS".

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

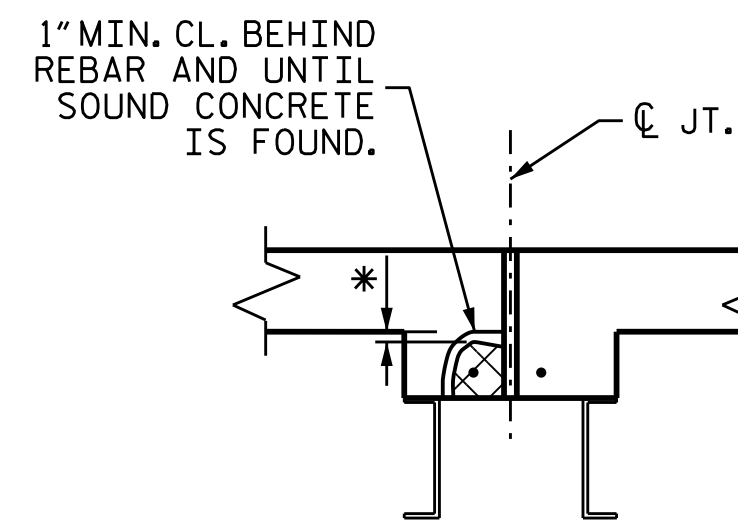
REPAIR QUANTITY TABLE

UNDERSIDE OF DECK	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA S.F.	VOLUME C.F.	AREA S.F.	VOLUME C.F.
UNDERSIDE OF DECK	9.0	4.5		
BENT DIAPHRAGMS	0.0	0.0		

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



TYPICAL SECTION



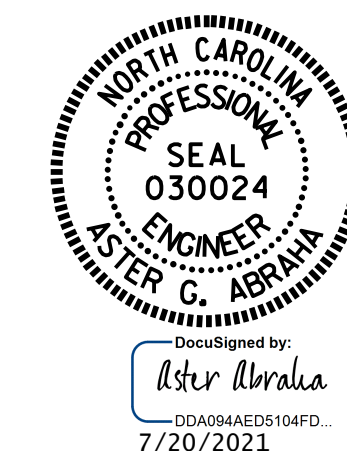
SECTION F-F

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (1" MIN. DEPTH)

DAMAGED AREA

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

PROJECT NO. I-6045A
NASH COUNTY
BRIDGE NO. 630074



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
DECK UNDERSIDE
REPAIRS**

DRAWN BY : A. Y. GODFREY DATE : 03/2021
CHECKED BY : A. G. ABRAHA DATE : 06/2021

DECK HAUNCH REPAIR DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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NO.	BY:	DATE:	NO.	BY:	DATE:	S2-6
1			3			TOTAL SHEETS
2			4			23

NOTES

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

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

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.

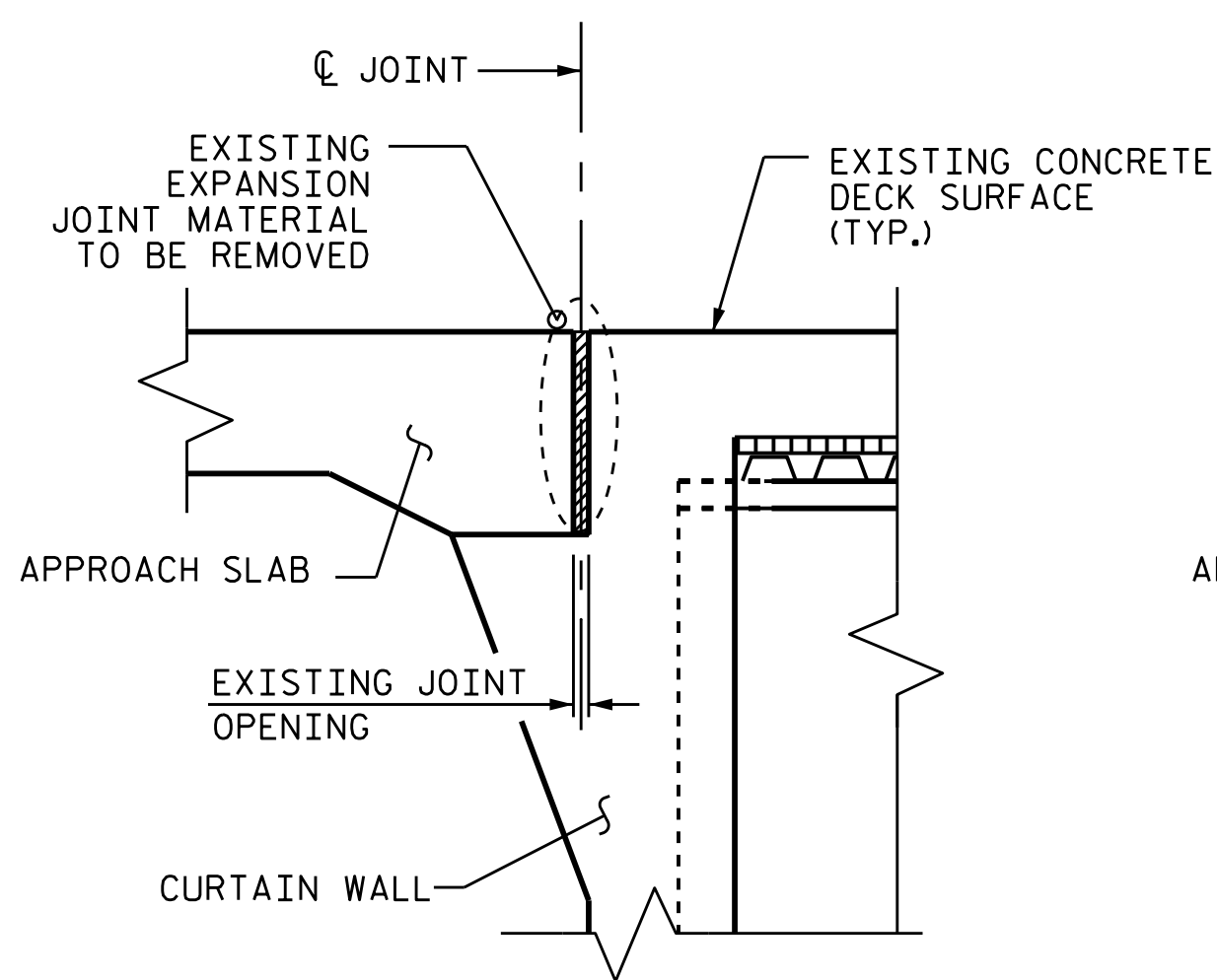
THE CONTRACTOR WILL BE NOT PERMITTED TO FORM THE JOINT IN LIEU OF SAWING THE JOINT.

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

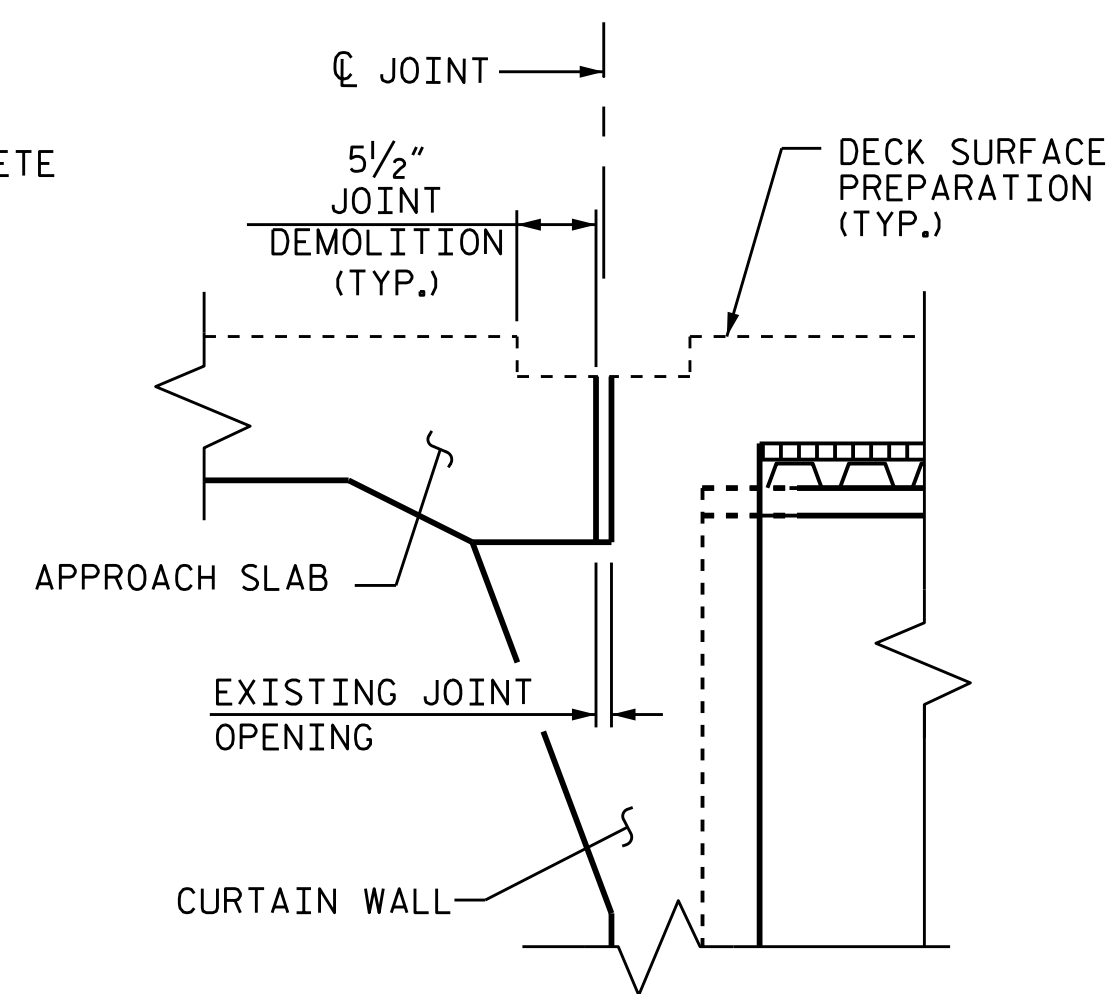
THE INSTALLED SILICONE JOINT SEALANT SHALL BE WATERTIGHT.

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

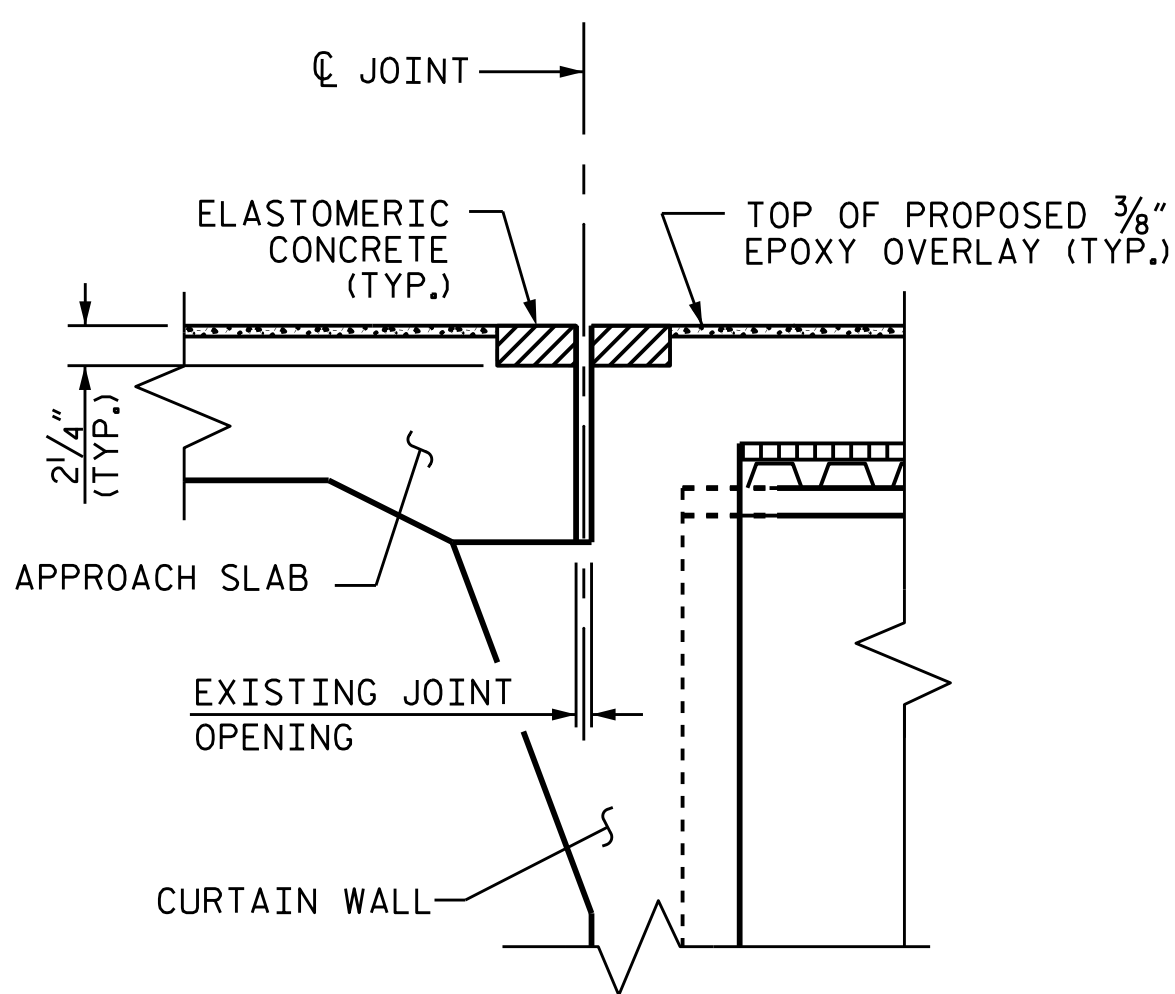
FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.



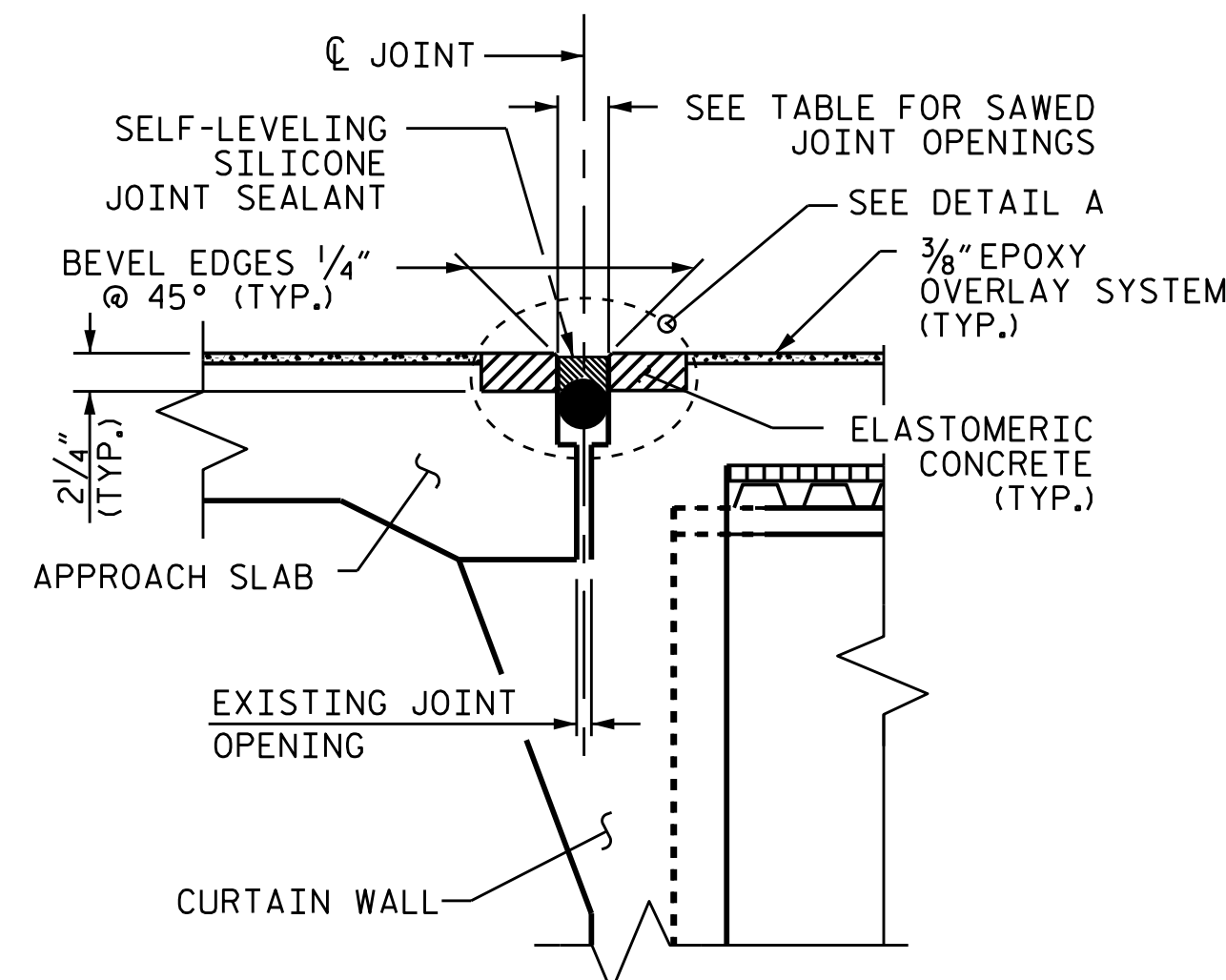
EXISTING JOINT



MINIMUM EXISTING JOINT DEMOLITION



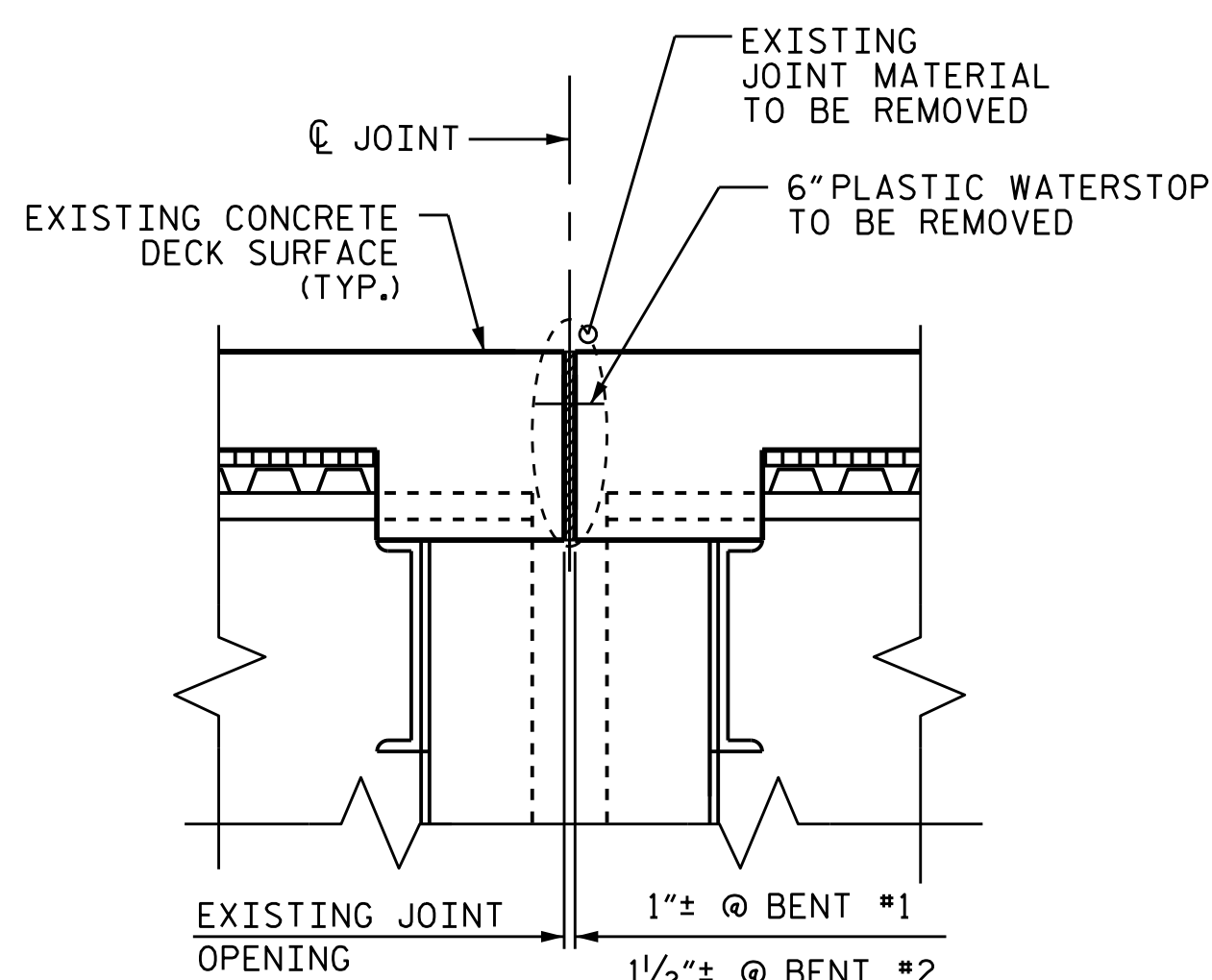
PROPOSED PRE-SAWED JOINT



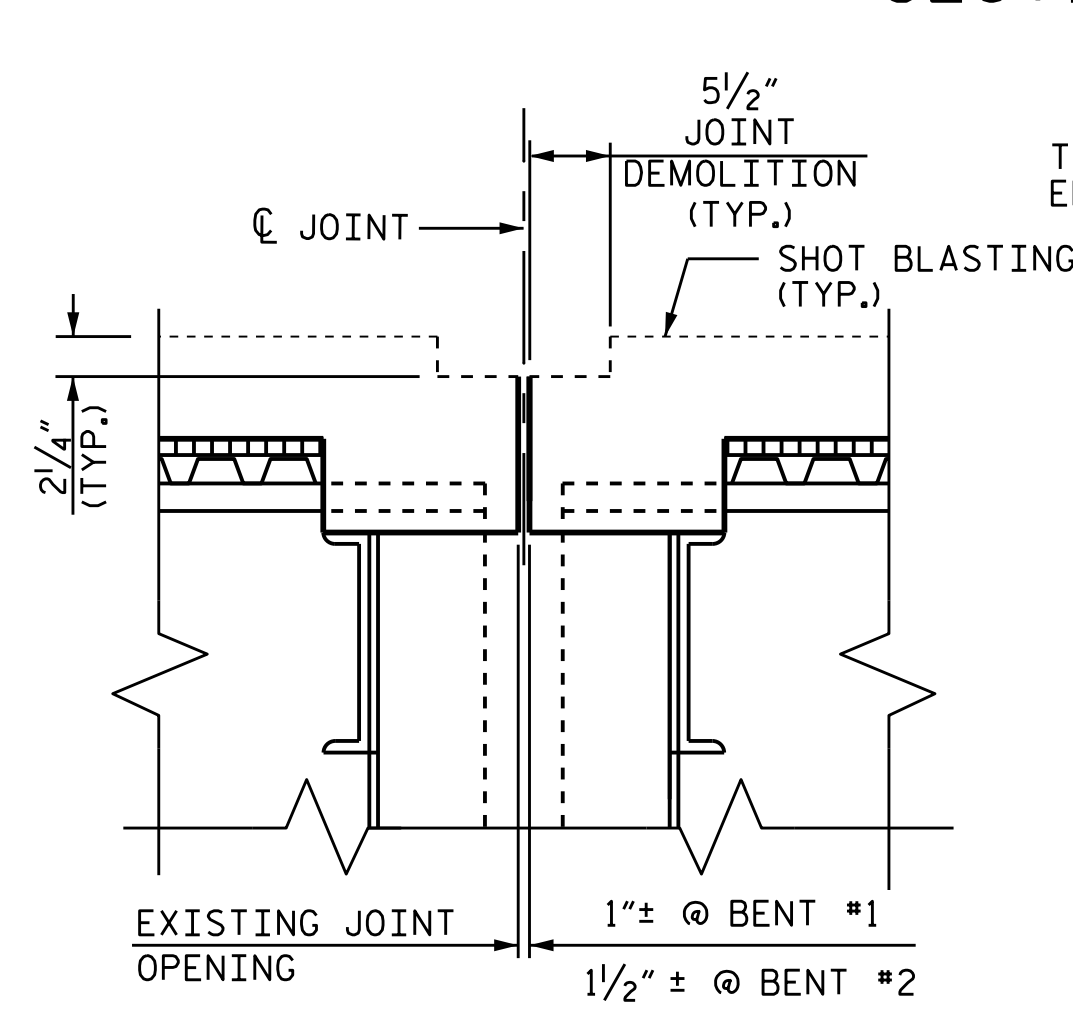
PROPOSED SILICONE JOINT SEAL WITH SAWED DIMENSIONS

JOINT INSTALLATION SEQUENCE AT END BENTS

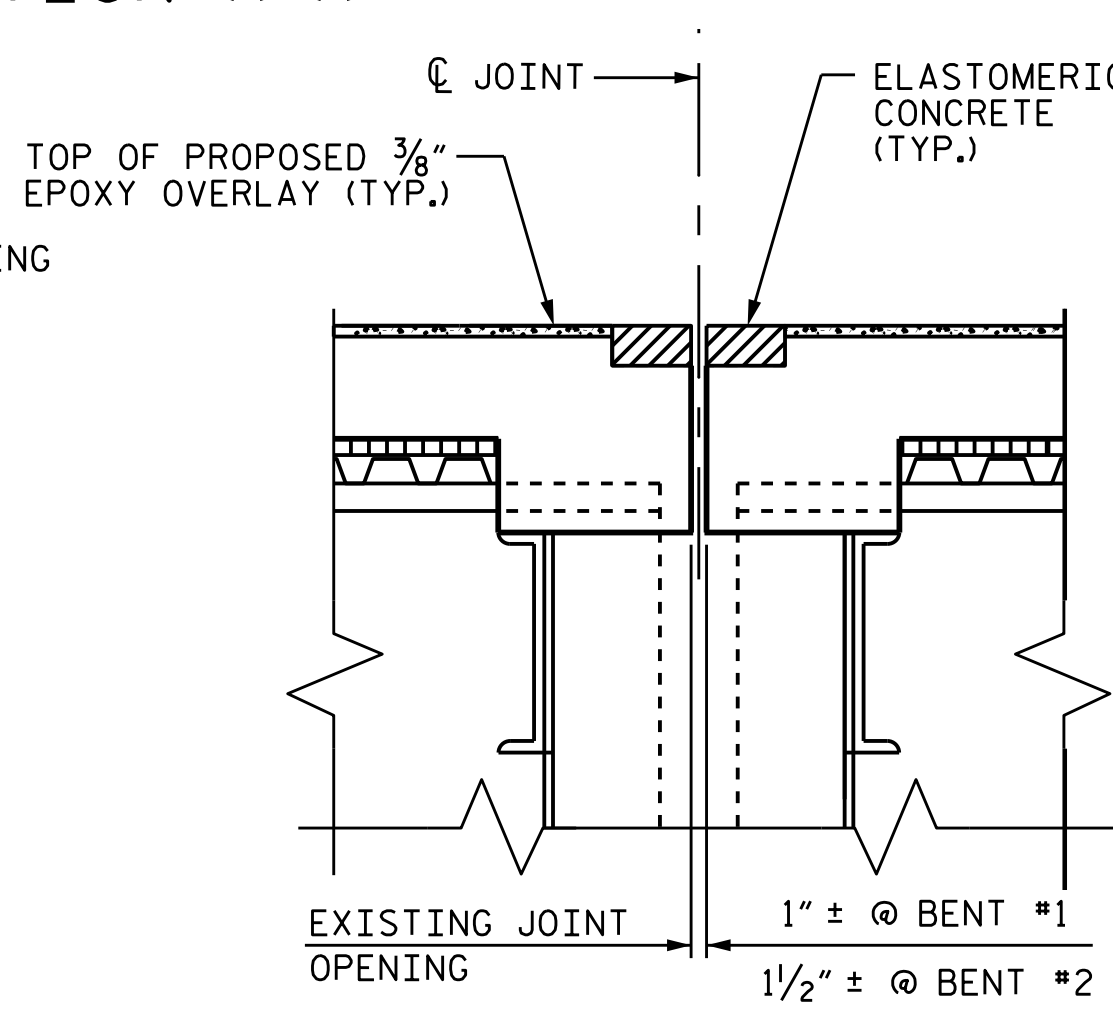
SECTION A-A



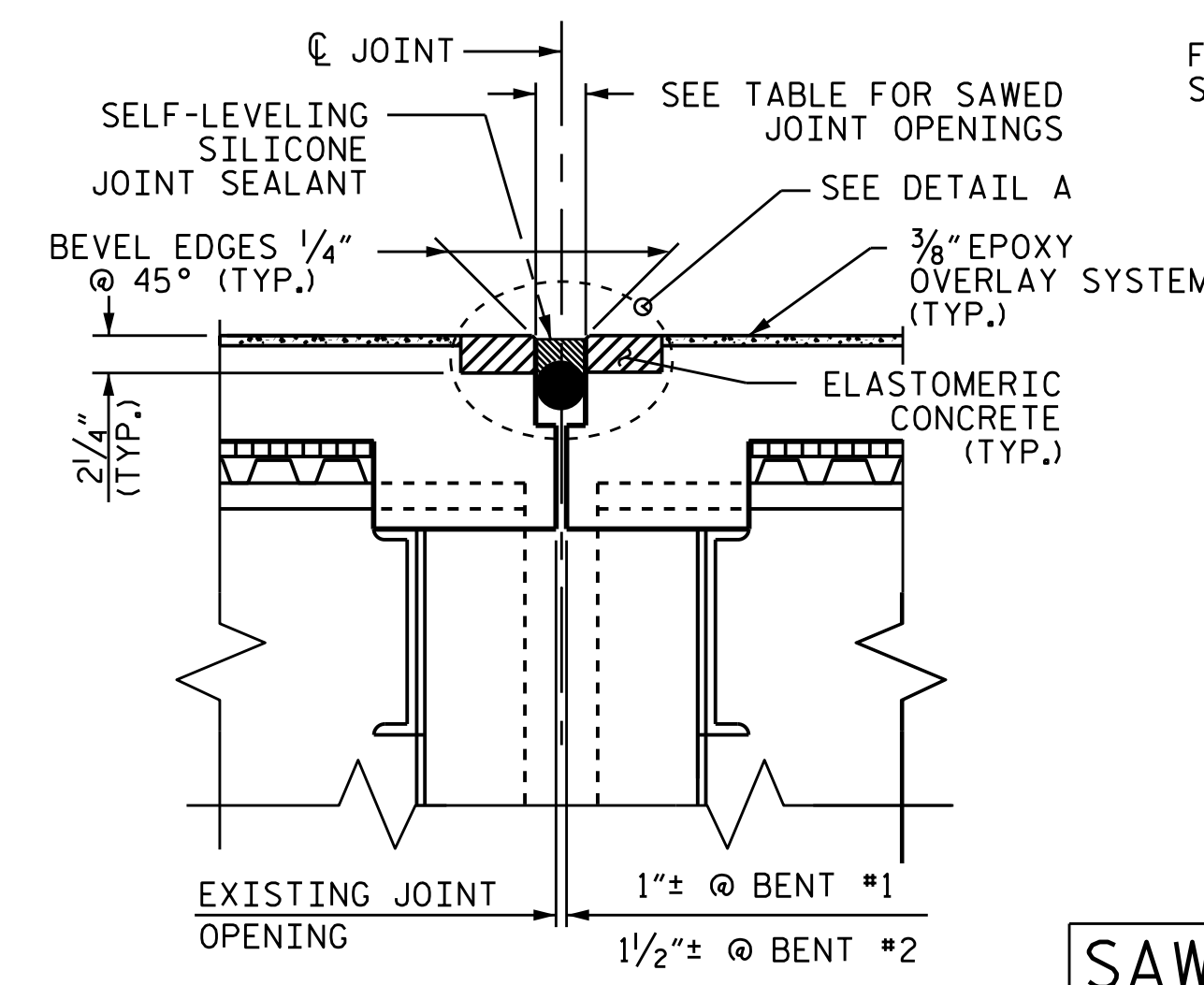
EXISTING JOINT



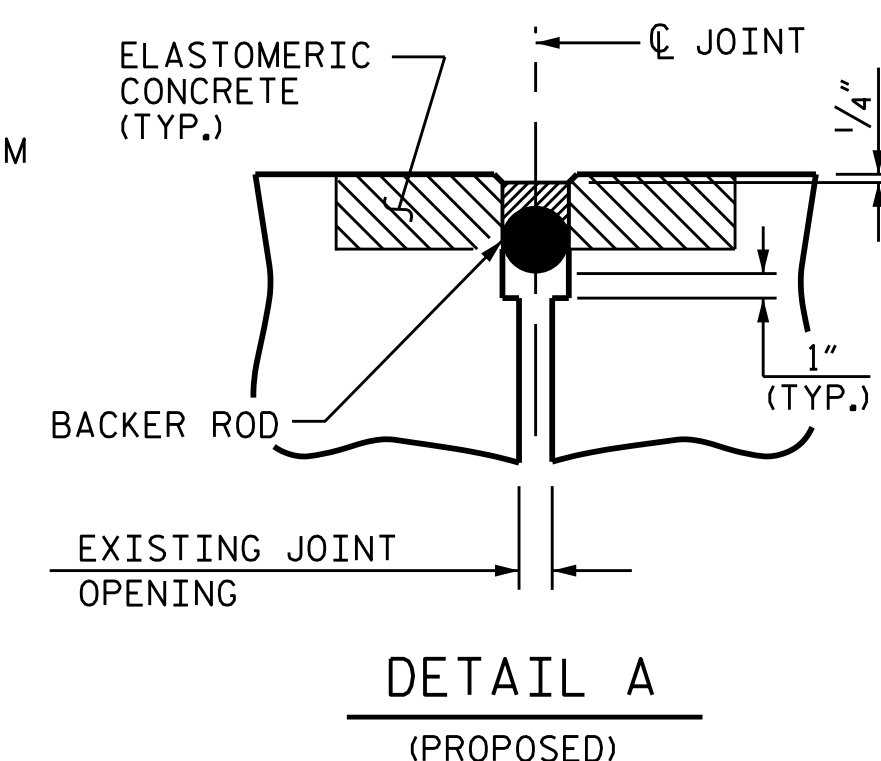
MINIMUM EXISTING JOINT DEMOLITION



PROPOSED PRE-SAWED JOINT



PROPOSED SILICONE JOINT SEAL WITH SAWED DIMENSIONS



DETAIL A (PROPOSED)

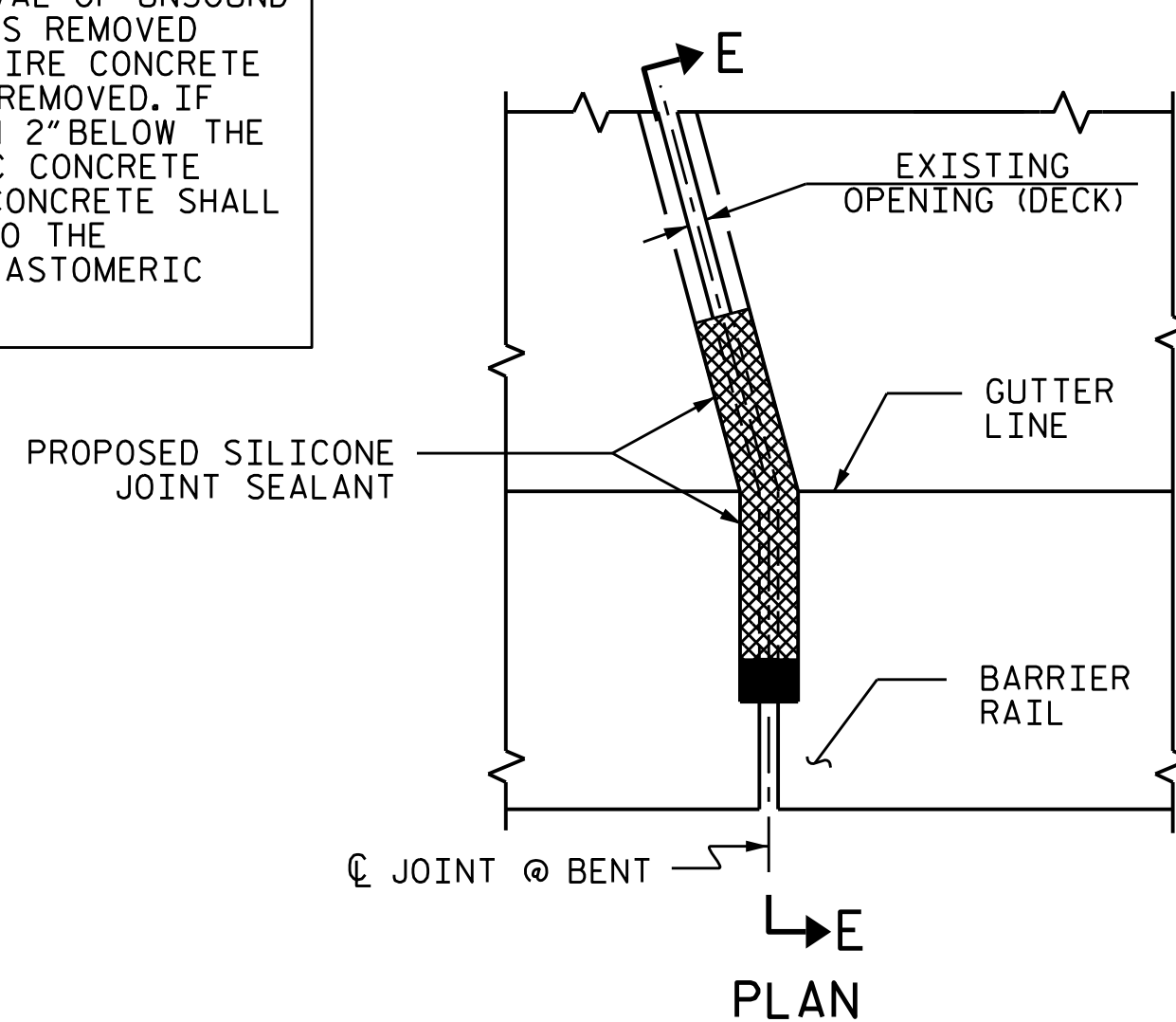
SAWED JOINT OPENING TABLE

LOCATION	TOTAL MOVEMENT (ALONG CL RDY)	SAWED JT. OPENING (PERPENDICULAR TO JT.)		
		AT 45°	AT 60°	AT 90°
END BENT 1			1 9/16"	
BENT 1	1/4"	1 5/8"	1 9/16"	1 1/2"
BENT 2	5/8"	1 11/16"	1 9/16"	1 3/8"
END BENT 2			1 9/16"	

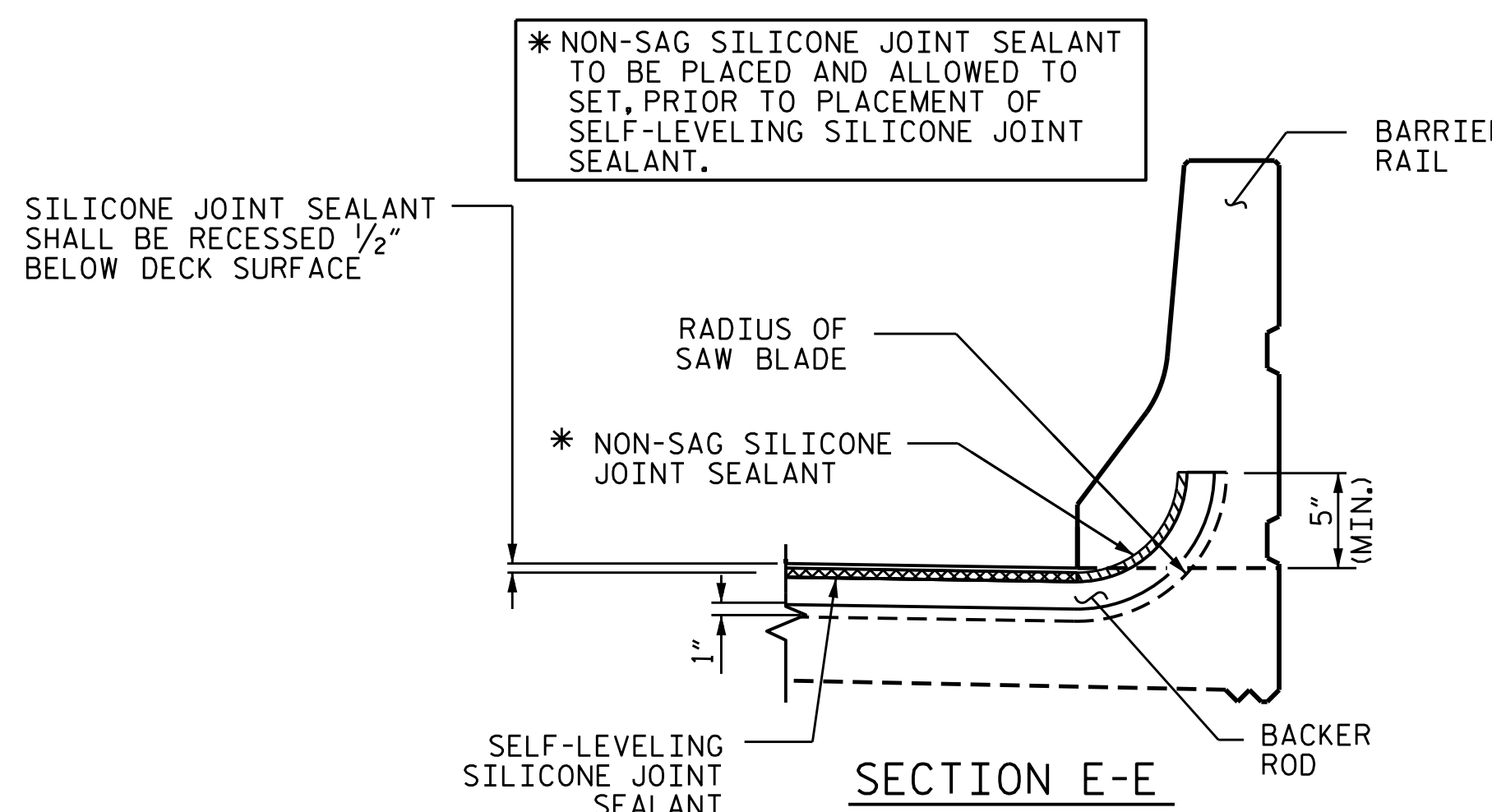
IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, OR IF UNSOUND CONCRETE IS REMOVED WITHIN 2" OF THE WATERSTOP, THE ENTIRE CONCRETE DEPTH TO THE WATERSTOP SHALL BE REMOVED. IF SUCH EXCAVATION EXTENDS MORE THAN 2" BELOW THE BOTTOM OF THE PLANNED ELASTOMERIC CONCRETE HEADER, AS SHOWN, APPROVED REPAIR CONCRETE SHALL BE PLACED IN THE EXCAVATED AREA TO THE ELEVATION AT THE BOTTOM OF THE ELASTOMERIC CONCRETE.

JOINT INSTALLATION SEQUENCE AT BENTS

SECTION B-B



JOINT DETAIL AT BARRIER RAIL



SECTION E-E

SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
ELASTOMERIC CONCRETE FOR PRESERVATION	60.8 C.F.	
POURABLE SILICONE JOINT SEALANT	353.6 L.F.	



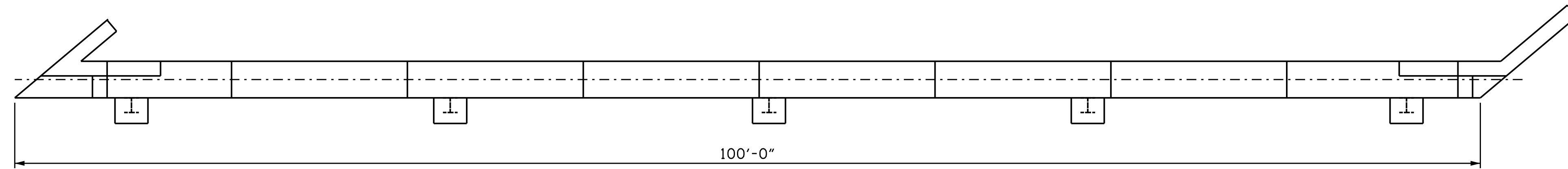
PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
JOINT REPAIR DETAILS

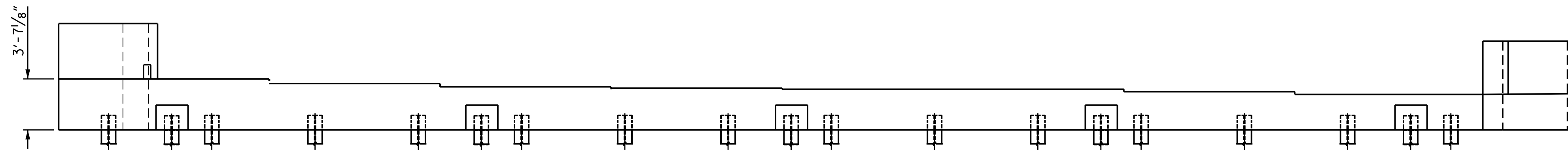
DRAWN BY : A. Y. GODFREY DATE : 03/2021
 CHECKED BY : A. G. ABRAHA DATE : 07/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-7
2			4			TOTAL SHEETS 23

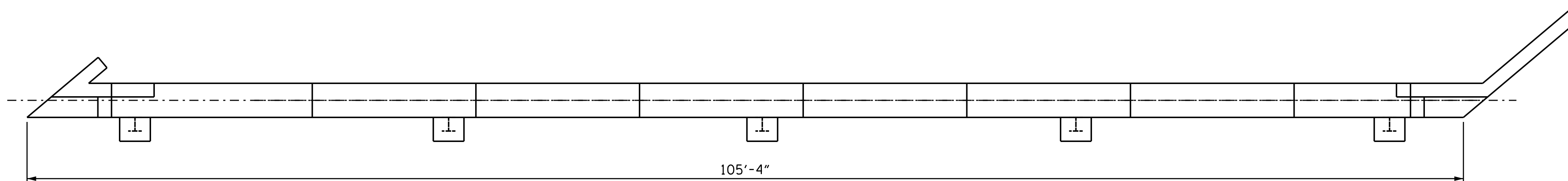


PLAN
(TOP OF CAP)

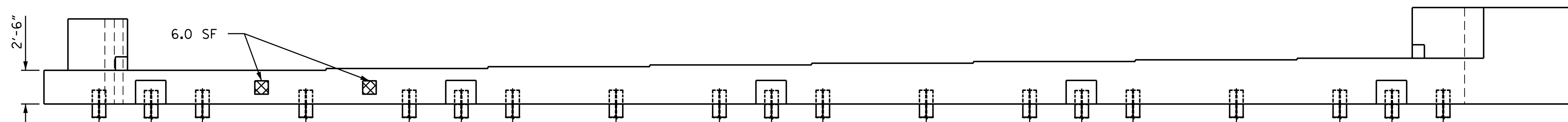


ELEVATION
(EAST FACE)

END BENT 1



PLAN
(TOP OF CAP)



ELEVATION
(WEST FACE)

END BENT 2

REPAIR QUANTITY TABLE

REPAIRS END BENT 1 & 2	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
COLUMN	0.0	0.0		
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF
CAP (VERTICAL FACE)	6.0	3.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
COLUMN	0.0	0.0		

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

NOTES:

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

REPAIR KEY

- CONCRETE REPAIR AREA (FORM AND POUR)
- SHOTCRETE REPAIR AREA

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074



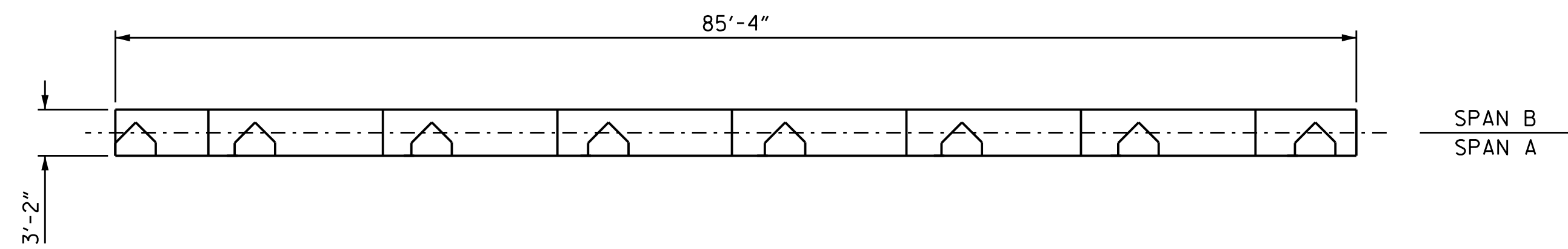
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

END BENT 1 AND
 END BENT 2
 STRUCTURE REPAIR

DRAWN BY : S. T. SANDOR DATE : .08/2019
 CHECKED BY : A. Y. GODFREY DATE : .06/2021

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-8
1			3			TOTAL SHEETS
2			4			23



PLAN
TOP OF CAP

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 SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES INTO THE AS-BUILT REPAIR QUANTITY TABLE.

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

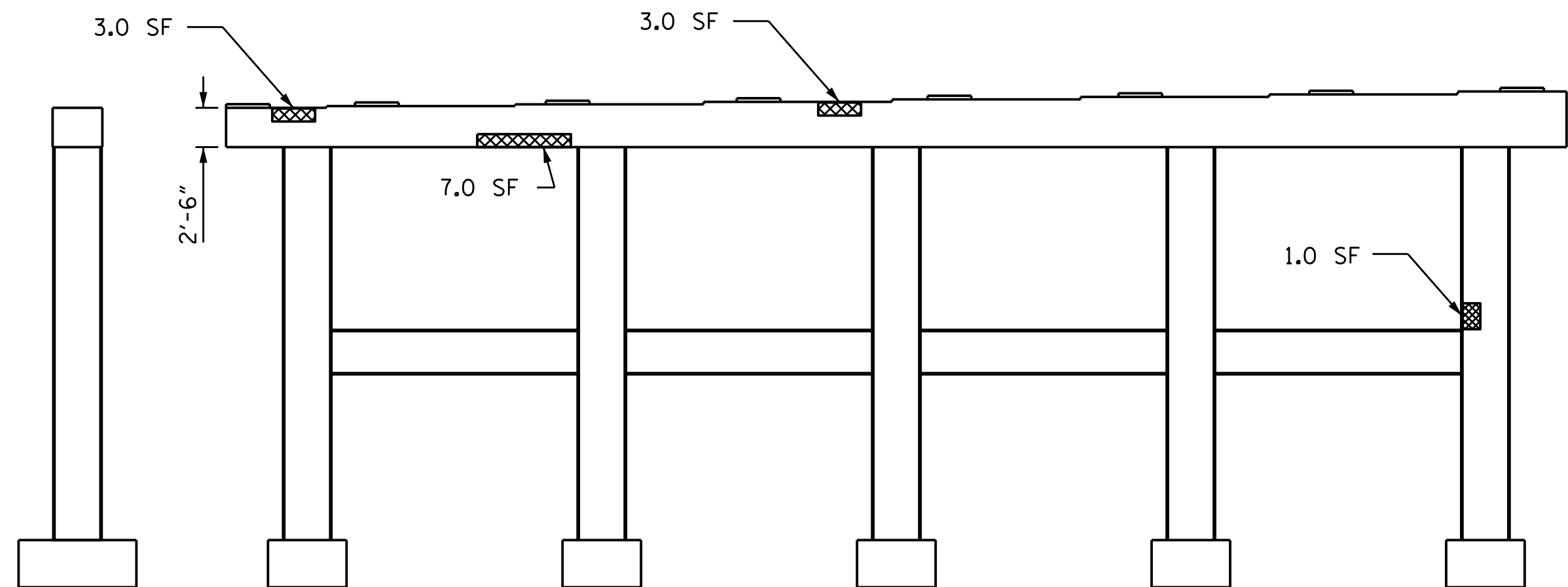
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

REPAIR QUANTITY TABLE

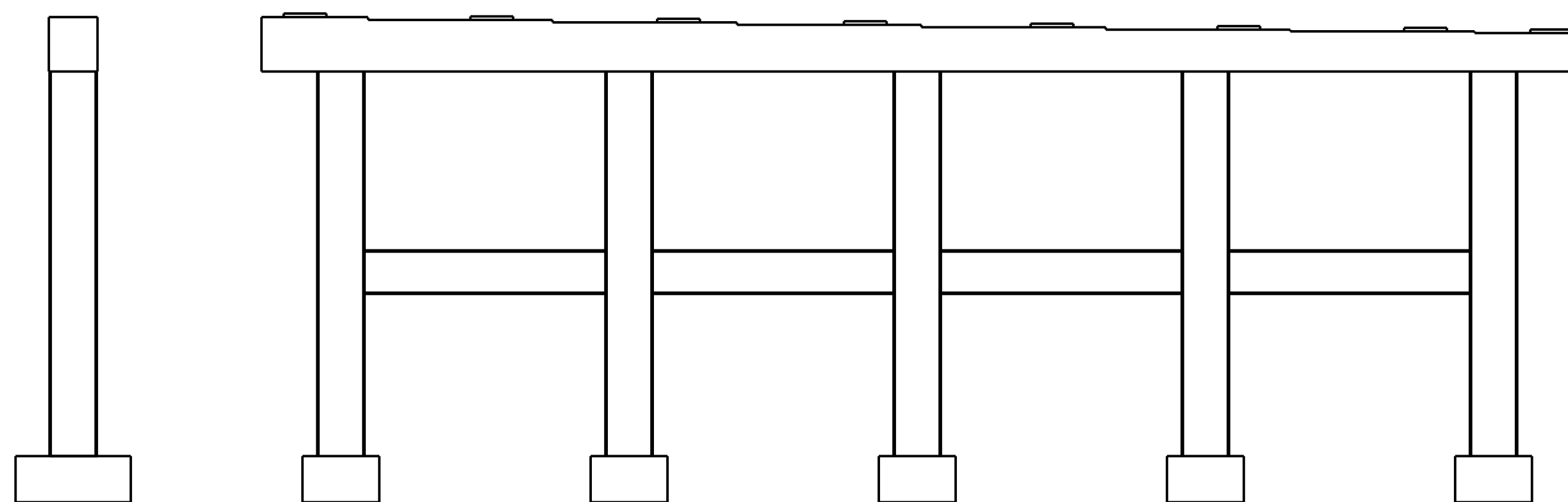
REPAIRS BENT 1	QUANTITIES		
	ESTIMATE		ACTUAL
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF
CAP (VERTICAL FACE)	13.0	6.5	
CAP (HORIZONTAL, CORNER)	0.0	0.0	
COLUMN	1.0	0.5	
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF
CAP (VERTICAL FACE)	0.0	0.0	
CAP (HORIZONTAL, CORNER)	0.0	0.0	
COLUMN	0.0	0.0	

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



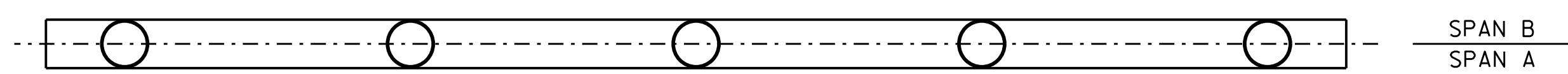
END VIEW
NORTH SIDE

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE



PLAN
BOTTOM OF CAP

REPAIR KEY

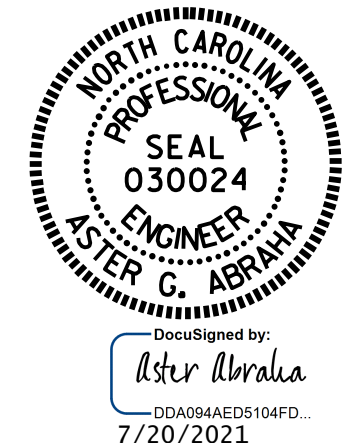
- CONCRETE REPAIR AREA (FORM AND POUR)
- SHOTCRETE REPAIR AREA

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 1**



DRAWN BY : S. T. SANDOR/A. Y. GODFREY DATE : 01/2021
 CHECKED BY : A. G. ABRAHA DATE : 04/2021

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-9
1			3			TOTAL SHEETS
2			4			23

REPAIR QUANTITY TABLE

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	
CAP (VERTICAL FACE)	10.0	5.0		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
COLUMN	0.0	0.0		
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	
CAP (VERTICAL FACE)	27.0	13.5		
CAP (HORIZONTAL, CORNER)	0.0	0.0		
COLUMN	0.0	0.0		

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

* SEE BRIDGE JACKING DETAILS SHEET, S2-12.

NOTES:

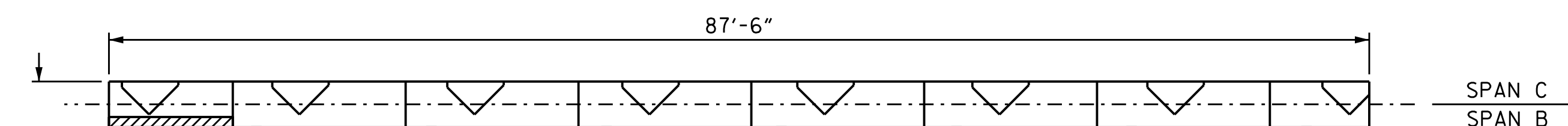
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATIONS AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

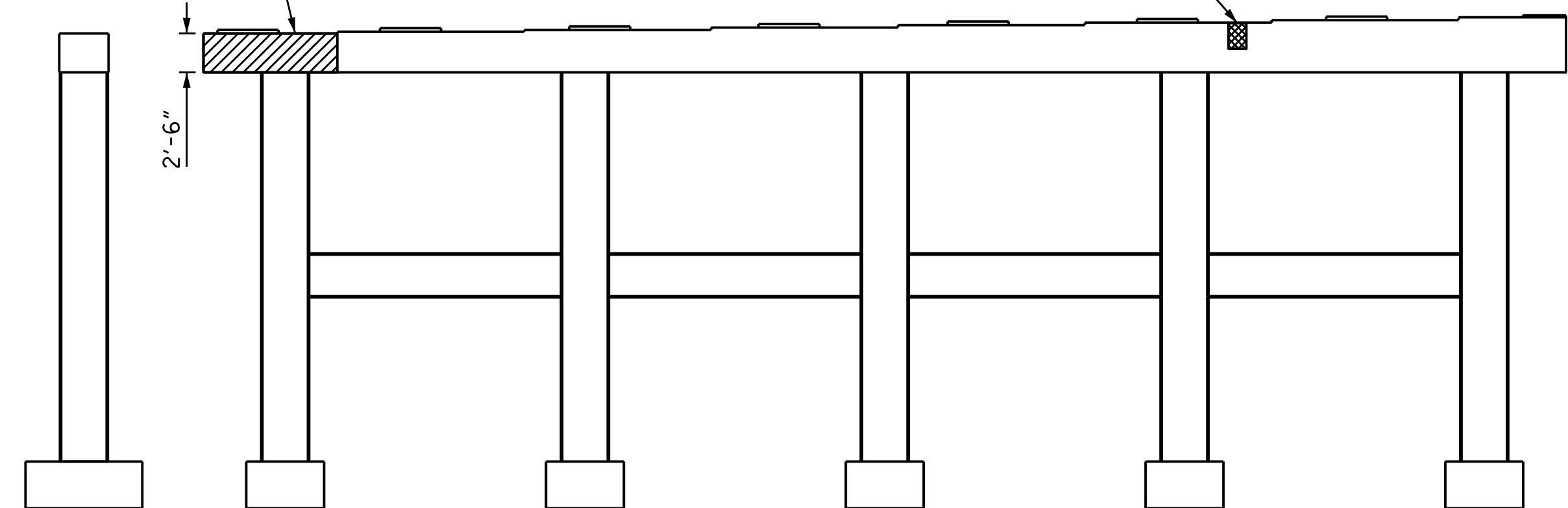


PLAN
TOP OF CAP

27.0 SF
CONCRETE
REPAIR *

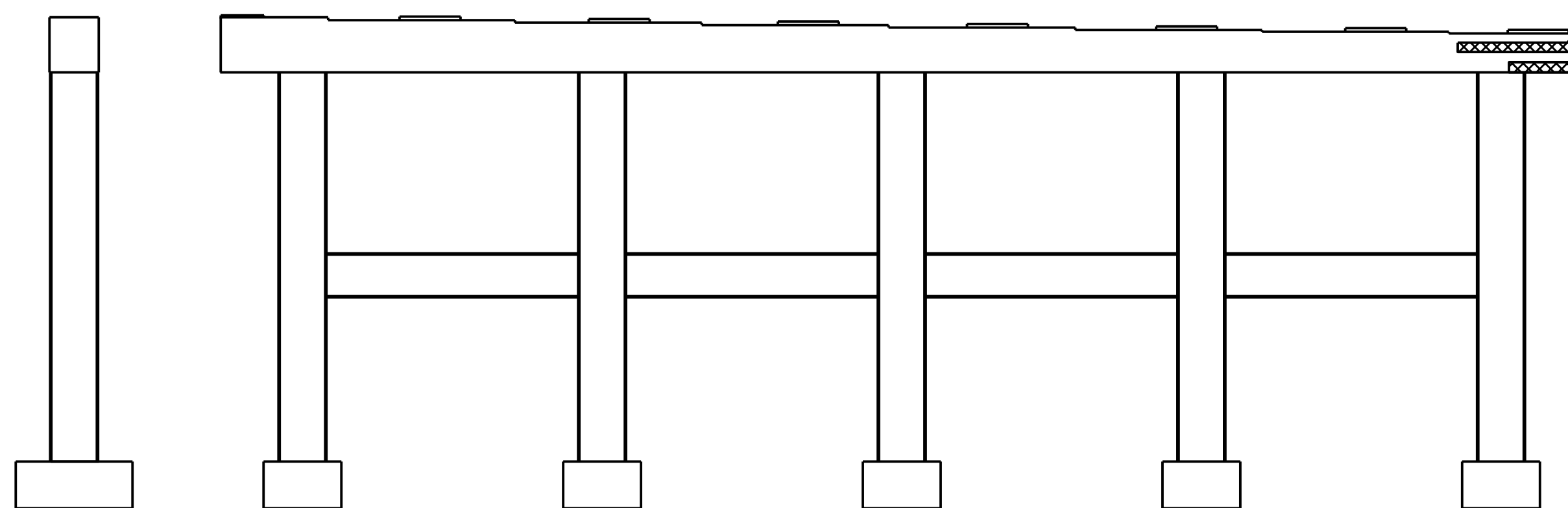
1.0 SF
SHOTCRETE
REPAIR

9.0 SF
SHOTCRETE
REPAIR



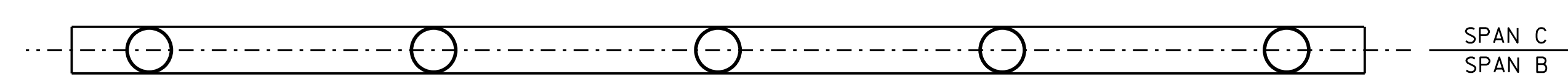
END VIEW
NORTH SIDE

ELEVATION
WEST SIDE



END VIEW
SOUTH SIDE

ELEVATION
EAST SIDE



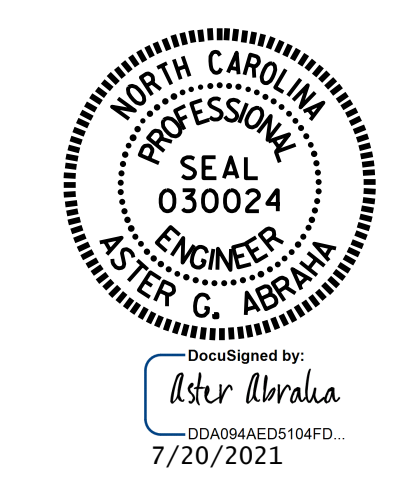
PLAN
BOTTOM OF CAP

REPAIR KEY

- CONCRETE REPAIR AREA (FORM AND POUR)
- SHOTCRETE REPAIR AREA

PROJECT NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074

SHEET 2 OF 2



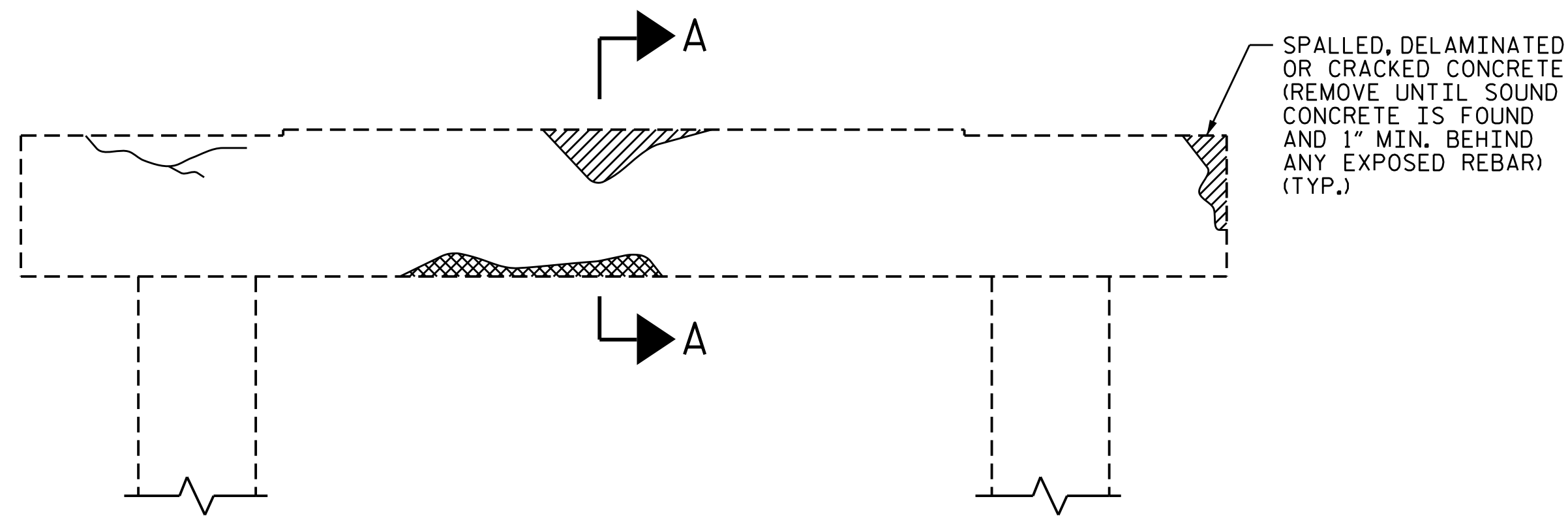
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 2

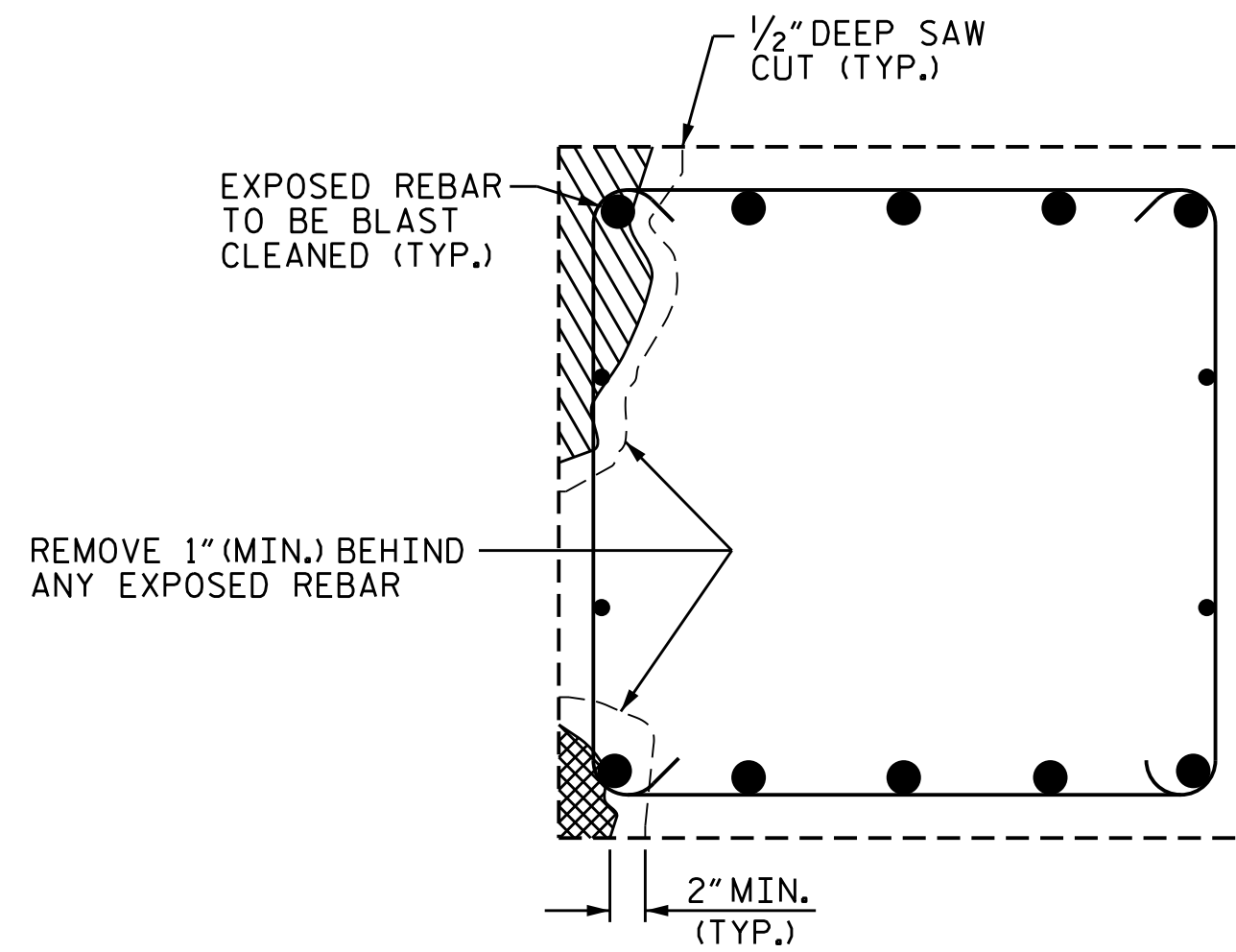
DRAWN BY : S. T. SANDOR DATE : .08/2019
 CHECKED BY : A. Y. GODFREY DATE : .06/2021

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1			3			S2-10
2			4			TOTAL SHEETS 23

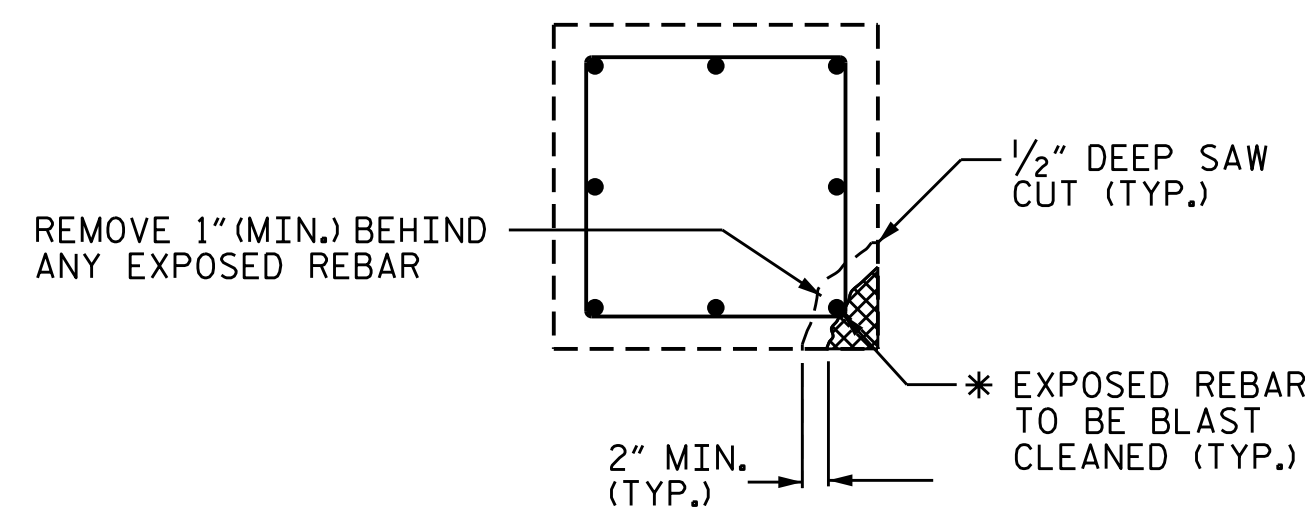


BENT CAP REPAIRS



SECTION A-A

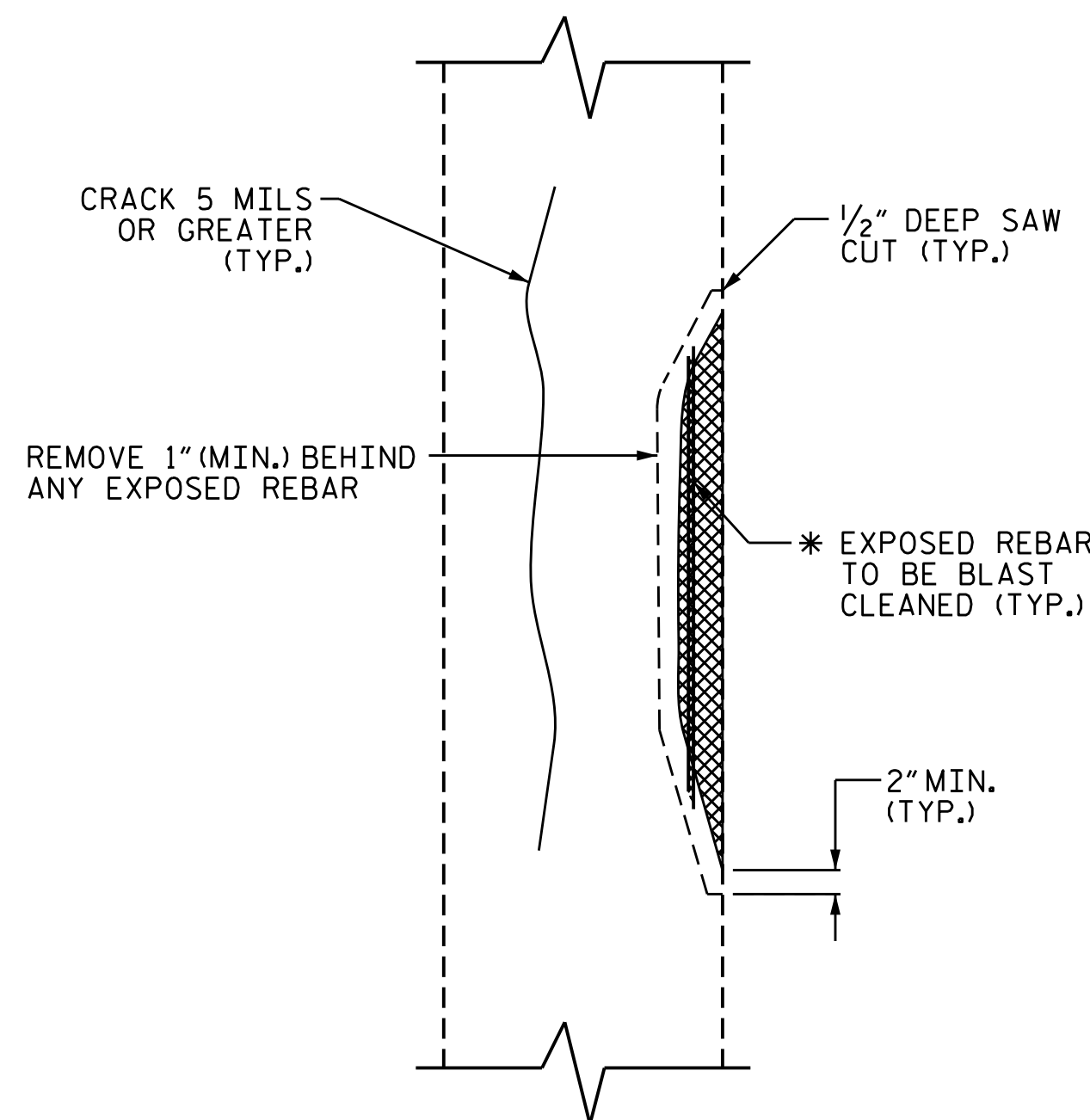
CAP REPAIR



PLAN OF COLUMN

REPAIR KEY

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

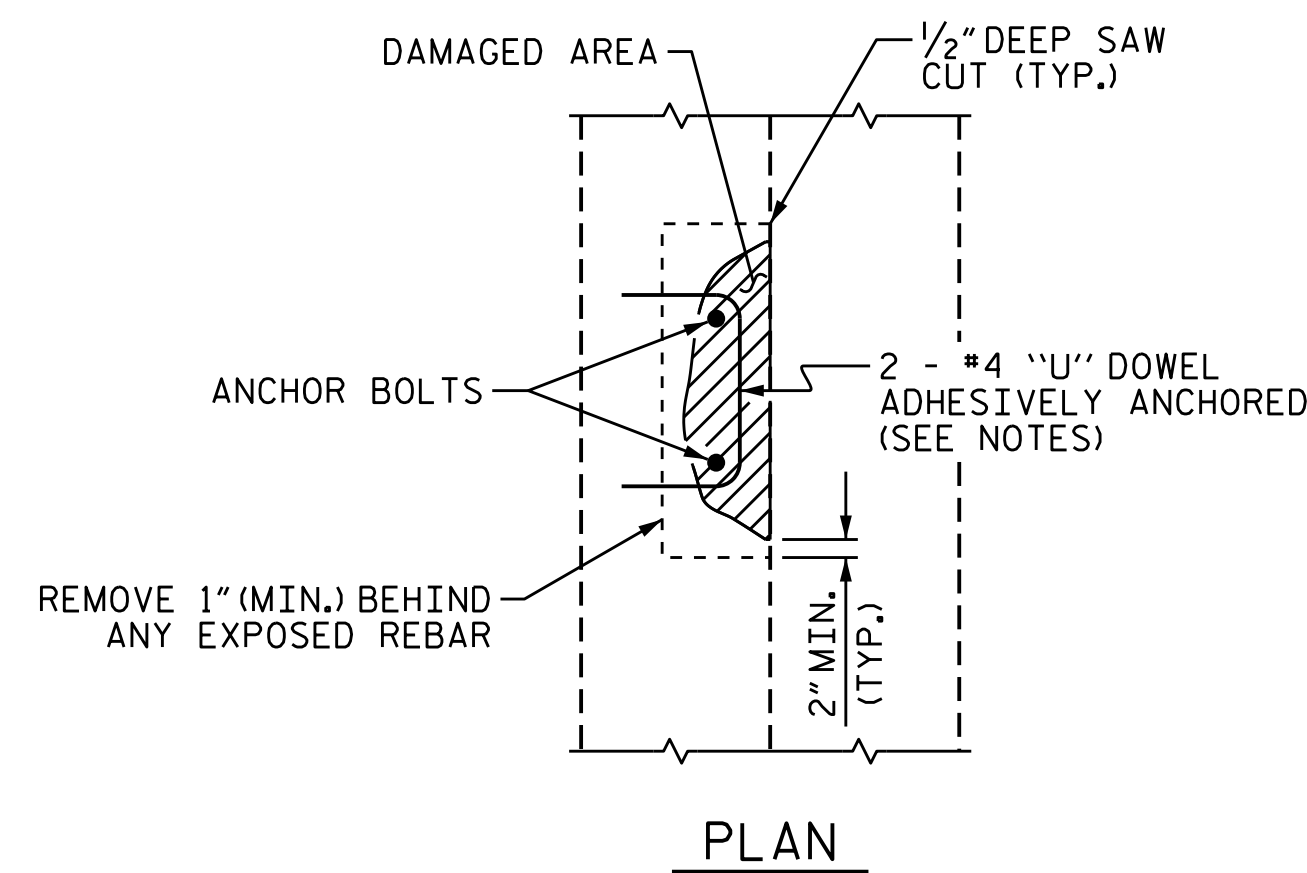


ELEVATION OF COLUMN

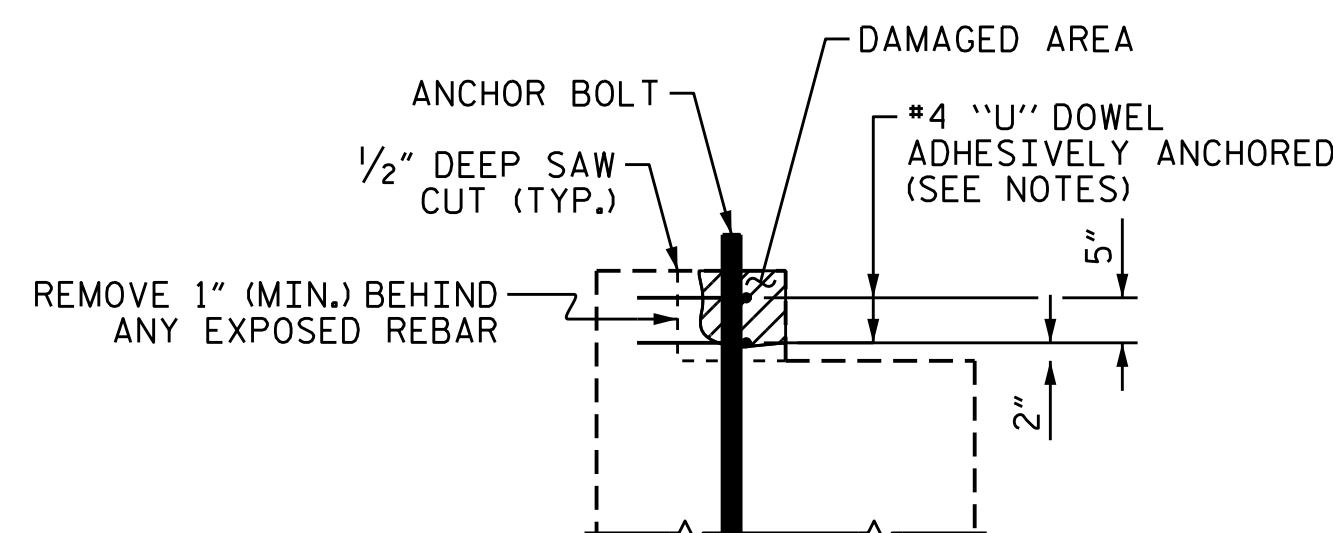
COLUMN REPAIR

* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.

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



PLAN



ELEVATION

PEDESTAL WALL REPAIR

NOTES

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

THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OR REQUIRE HARSH CHEMICALS TO REMOVE.

THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT.

NO MORE THAN ONE-THIRD OF THE CAP OR COLUMN CIRCUMFERENCE SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN 30% OF A CAP OR COLUMN CROSS SECTIONAL AREA, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

SIMULTANEOUS REMOVAL OF UNSOUND CONCRETE MAY BE PERMITTED ON MORE THAN ONE FACE OF A CAP AND/OR COLUMN, BUT NO MORE THAN 1/2 OF THE CIRCUMFERENCE SHALL BE REMOVED AT ONE TIME. IF REMOVAL EXTENDS MORE THAN 1 1/2" BEHIND THE MAIN REINFORCING BARS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING. ON COLUMNS AND PILES, NO MORE THAN 10 VERTICAL FEET MAY BE EXPOSED AT ONE TIME BEFORE PLACEMENT OF REPAIR CONCRETE.

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

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

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

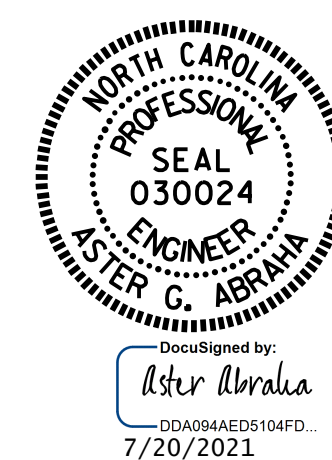
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

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

CLEAN ALL EXPOSED REINFORCING BARS AND PRESTRESSED STRANDS IN ACCORDANCE WITH APPROPRIATE SPECIAL PROVISIONS. FOR BARS WITH MORE THAN 10% SECTION LOSS, SPLICE AND SECURELY TIE SUPPLEMENTAL REINFORCING BARS AS NEEDED. NOTE AND PROVIDE DETAILED DOCUMENTATION, INCLUDING LOCATION AND SEVERITY, OF ALL DAMAGE TO PRESTRESSED STRANDS THAT EXCEEDS 10% SECTION LOSS. IF FIVE OR MORE STRANDS ARE DAMAGED, NOTIFY THE ENGINEER PRIOR TO PLACEMENT OF REPAIR MATERIAL.

PROJ. NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074



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

ASSEMBLED BY : A. Y. GODFREY DATE : 01/2021
 CHECKED BY : A. G. ABRAHA DATE : 01/2021
 DRAWN BY : NAP 8/18
 CHECKED BY :

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-11
1			3			TOTAL SHEETS
2			4			23

BRIDGE JACKING NOTES:

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

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

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

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

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

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

THE MAXIMUM DIFFERENTIAL BETWEEN ADJACENT BEAMS THAT ARE BEING JACKED IS $\frac{1}{8}$ ".

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

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

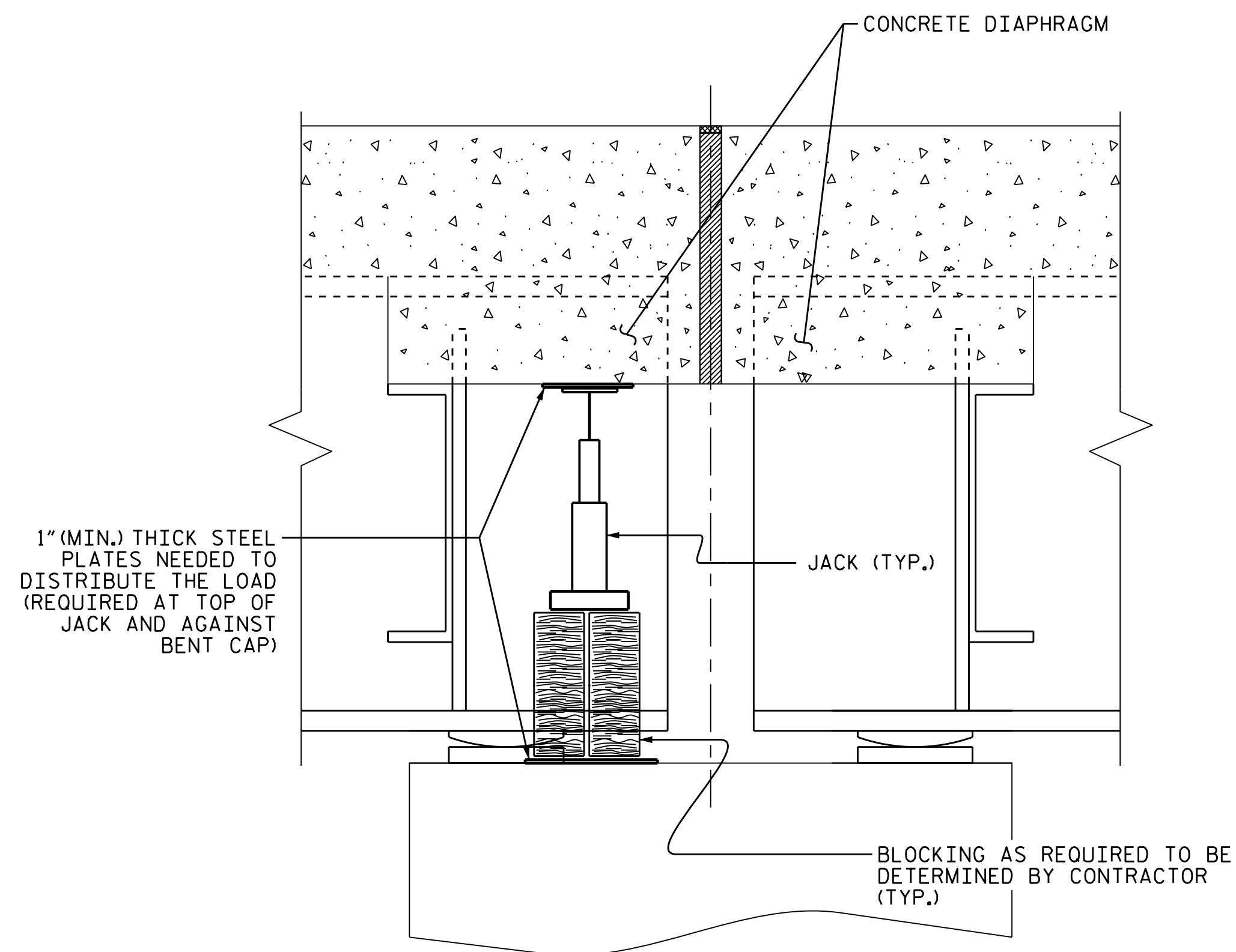
FOR TYPE I OR TYPE II BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR WORKING DRAWING SUBMITTALS, SEE SPECIAL PROVISIONS.

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

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

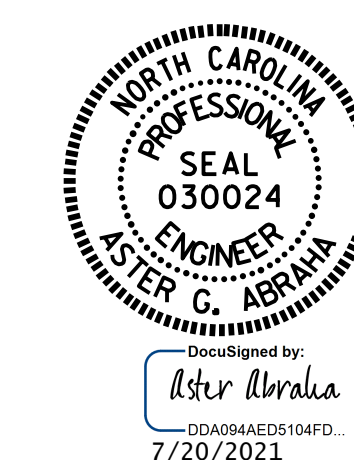
THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED TO THE EXISTING STRUCTURE BY BRIDGE JACKING OPERATIONS AT NO ADDITIONAL COST TO THE DEPARTMENT.



SECTION THRU DIAPHRAGM

BRIDGE JACKING TABLE				
LOCATION	SPAN	BEAM(S)	BRIDGE JACKING TYPE	DEAD LOAD (DC+DW) (KIPS)
END BENT 1				
BENT 1				
BENT 2	2	1	TYPE I	
END BENT 2				

PROJ. NO. I-6045A
NASH COUNTY
 BRIDGE NO. 630074



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
**BRIDGE JACKING
 DETAILS**

ASSEMBLED BY : A. Y. GODFREY DATE : 06/2021
 CHECKED BY : A. G. ABRAHA DATE : 06/2021
 DRAWN BY : NAP 08/18
 CHECKED BY :

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1			3			TOTAL SHEETS
2			4			23

