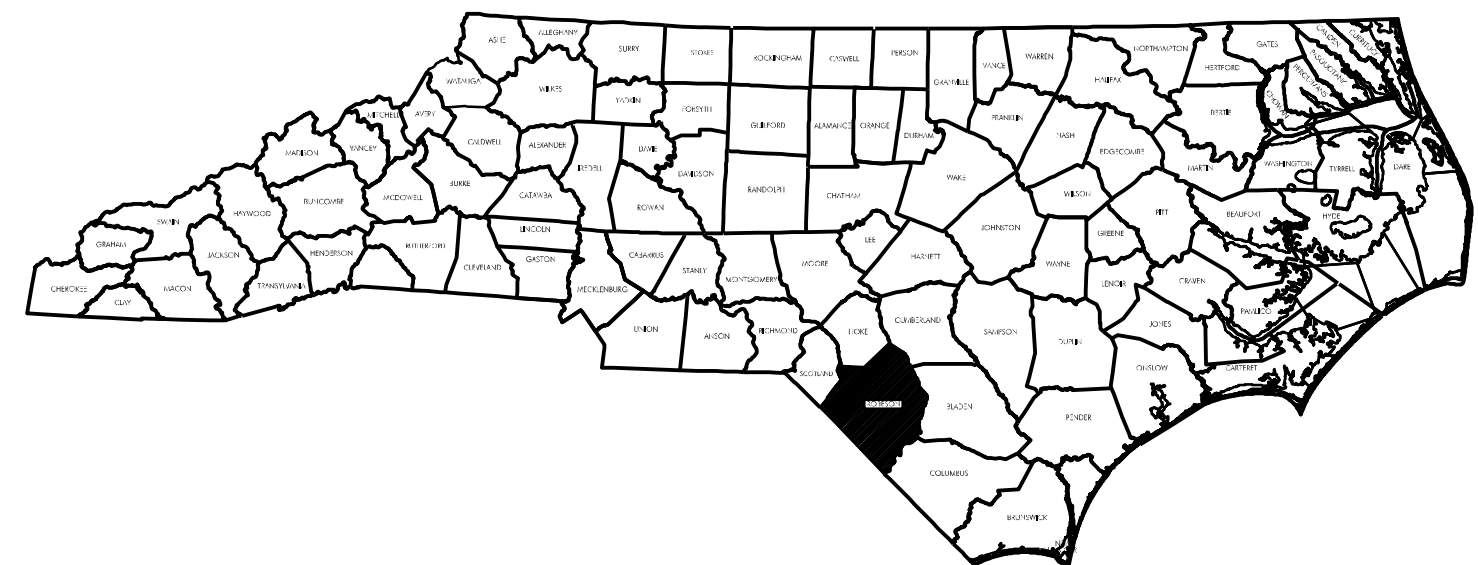


**CONTRACT: C204845 TIP PROJECT: HI-0016**

**STRUCTURES**

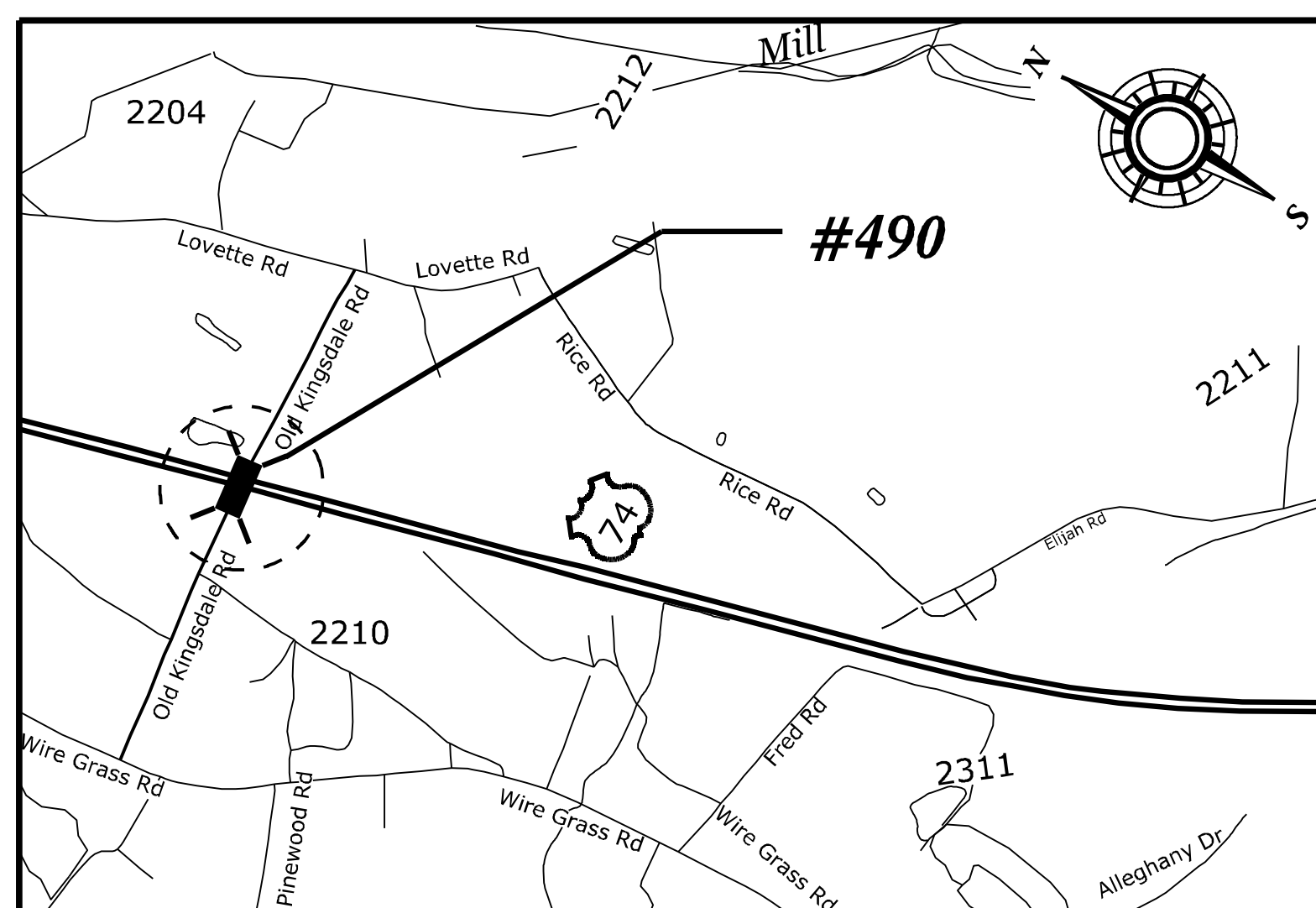


**STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROBESON COUNTY**

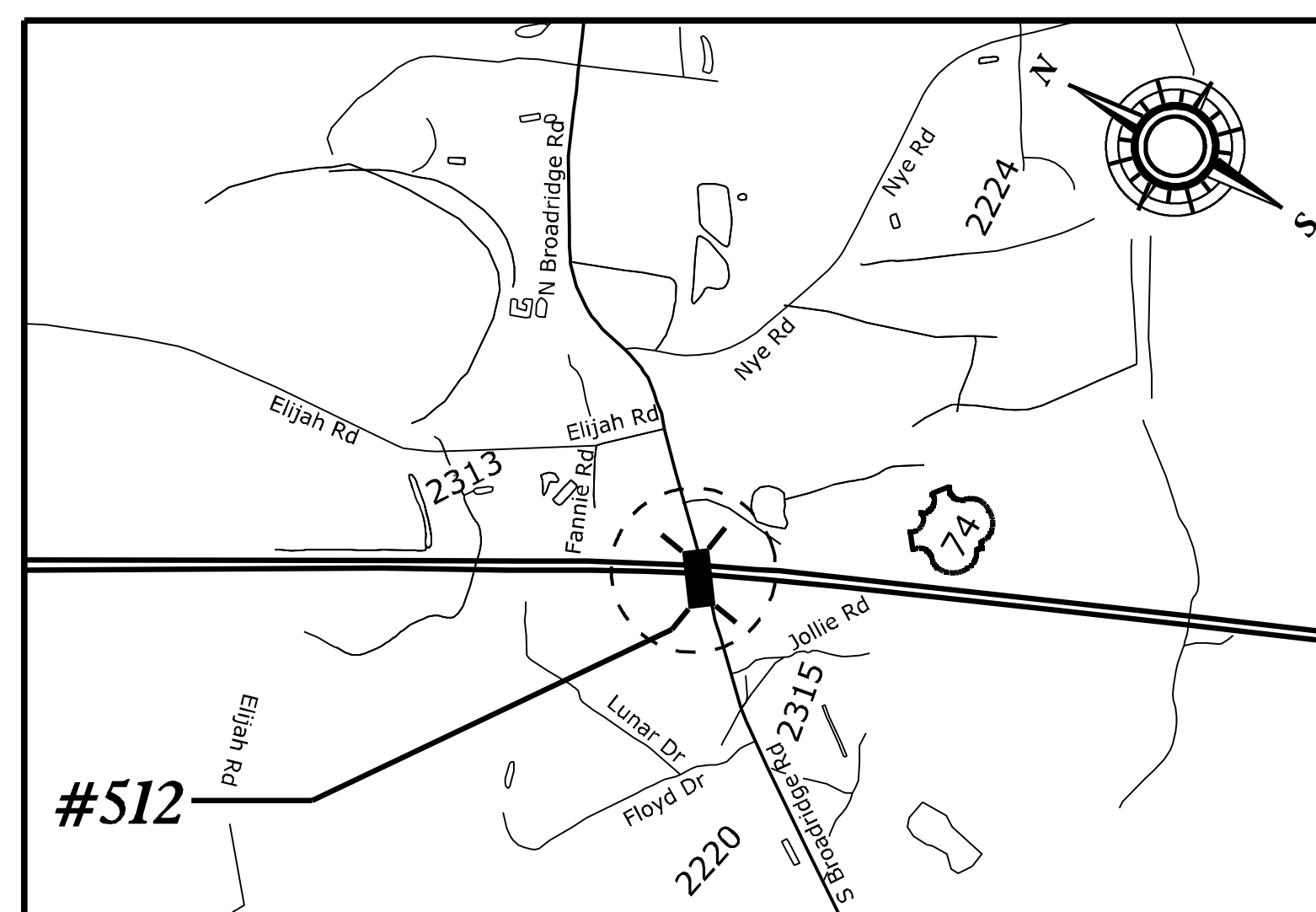
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HI-0016	1	
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
49987.1.1	0074244	PE	
49987.3.1	0074244	CONSTR.	

LOCATION: BRIDGE #770110 ON US 74 WBL/NC 130 WBL OVER LUMBER RIVER OVERFLOW  
 BRIDGE #770465 ON US 74 EBL/NC 130 EBL OVER LUMBER RIVER OVERFLOW  
 BRIDGE #770118 ON US 74 WBL/NC 130 WBL OVER LUMBER RIVER  
 BRIDGE #770466 ON US 74 EBL/NC 130 EBL OVER LUMBER RIVER  
 BRIDGE #770490 ON SR 2210 OVER US 74  
 BRIDGE #770512 ON SR 2220 OVER US 74

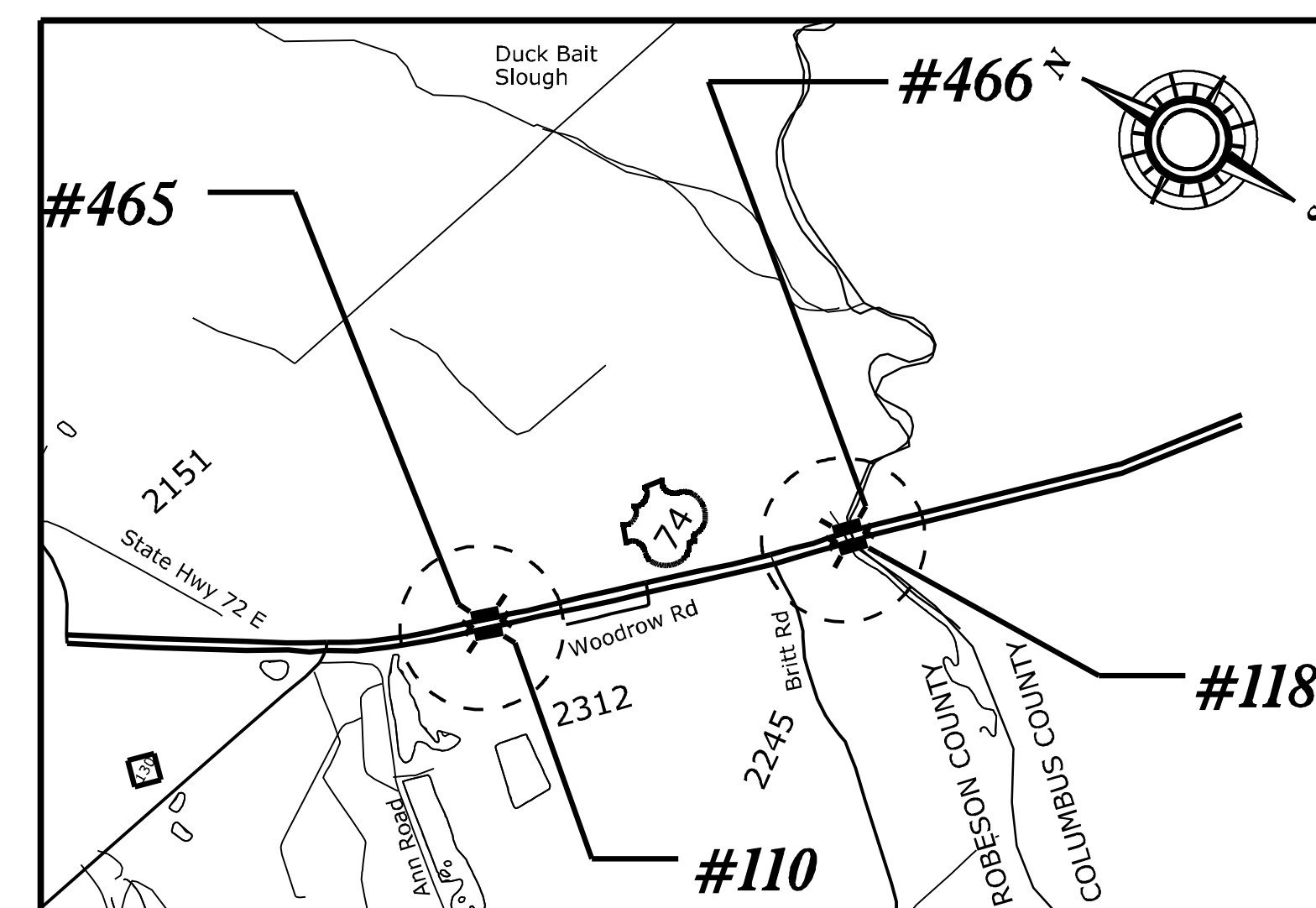
TYPE OF WORK: BRIDGE PRESERVATION - SHOTBLASTING, SILANE DECK TREATMENT & SILANE BARRIER  
 RAIL TREATMENT, RECONSTRUCTION OF BRIDGE JOINTS AND SEALS



**BRIDGE #770490**

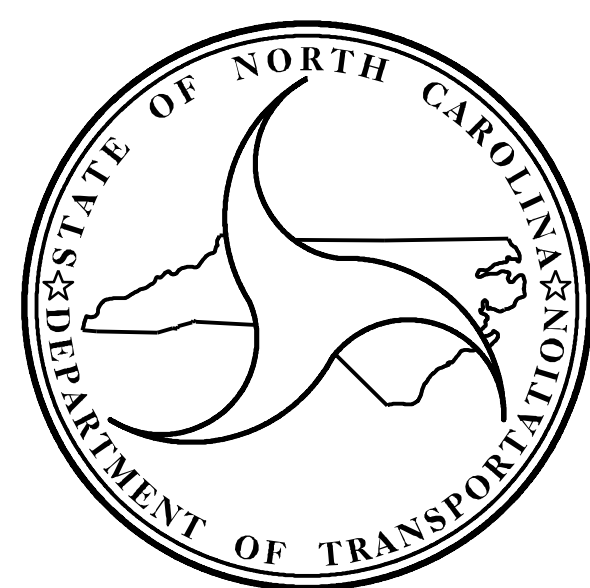


**BRIDGE #770512**



**BRIDGE #770110  
BRIDGE #770465  
BRIDGE #770118  
BRIDGE #770466**

**VICINITY MAP**



**DESIGN DATA**

BRIDGE #110 ADT 2019	=	9000
BRIDGE #465 ADT 2019	=	9000
BRIDGE #118 ADT 2019	=	9000
BRIDGE #466 ADT 2018	=	8000
BRIDGE #490 ADT 2016	=	1100
BRIDGE #512 ADT 2019	=	900

**PROJECT LENGTH**

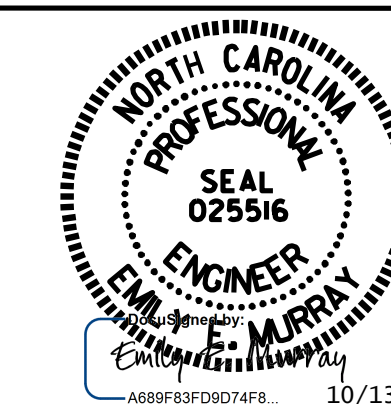
PROJECT LENGTH #110	=	0.026 MI
PROJECT LENGTH #465	=	0.026 MI
PROJECT LENGTH #118	=	0.052 MI
PROJECT LENGTH #466	=	0.052 MI
PROJECT LENGTH #490	=	0.038 MI
PROJECT LENGTH #512	=	0.035 MI

**NCDOT CONTACT: TIM SHERRILL, PE**  
PROJECT MANAGER

Prepared for:  
**STRUCTURES MANAGEMENT UNIT**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

**LETTING DATE:**  
DECEMBER 19, 2023

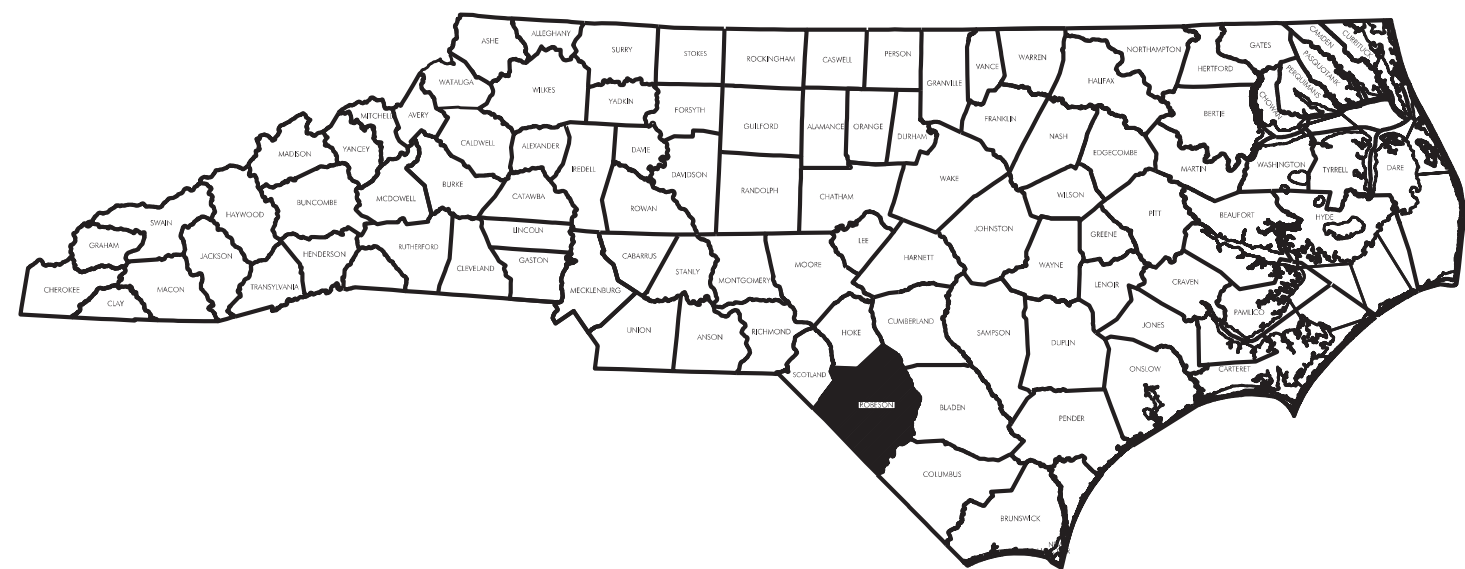


**EMILY MURRAY, PE**  
PROJECT ENGINEER

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Raleigh, NC 27607  
Tel. 919-854-0344 Fax. 919-854-0355  
NC License No. F-0765

**TIP PROJECT: HI-0016**

**CONTRACT: C204845**



**STATE OF NORTH CAROLINA**  
**DIVISION OF HIGHWAYS**  


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**ROBESON COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	HI-0016	1A	
STATE PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION	
49987.1.1	0074244	PE	
49987.3.1	0074244	CONSTR.	

LOCATION: BRIDGE #770110 ON US 74 WBL/NC 130 WBL OVER LUMBER RIVER OVERFLOW  
 BRIDGE #770465 ON US 74 EBL/NC 130 EBL OVER LUMBER RIVER OVERFLOW  
 BRIDGE #770118 ON US 74 WBL/NC 130 WBL OVER LUMBER RIVER  
 BRIDGE #770466 ON US 74 EBL/NC 130 EBL OVER LUMBER RIVER  
 BRIDGE #770490 ON SR 2210 OVER US 74  
 BRIDGE #770512 ON SR 2220 OVER US 74

TYPE OF WORK: BRIDGE PRESERVATION - SHOTBLASTING, SILANE DECK TREATMENT & SILANE BARRIER RAIL TREATMENT, RECONSTRUCTION OF BRIDGE JOINTS AND SEALS

**INDEX OF SHEETS**

STRUCTURE NO.	DESCRIPTION	SHEET NUMBER
	TITLE SHEET	
	INDEX OF SHEETS & SUMMARY OF QUANTITIES	
	LOCATION SKETCH	S-1
770110	STRUCTURAL PLANS FOR BRIDGE 770110	S-2 TO S-4
770465	STRUCTURAL PLANS FOR BRIDGE 770465	S-5 TO S-7
770118	STRUCTURAL PLANS FOR BRIDGE 770118	S-8 TO S-10
770466	STRUCTURAL PLANS FOR BRIDGE 770466	S-11 TO S-13
770490	STRUCTURAL PLANS FOR BRIDGE 770490	S-14 TO S-16
770512	STRUCTURAL PLANS FOR BRIDGE 770512	S-17 TO S-19
	JOINT REPAIR DETAILS	S-20 TO S-21
	STANDARD NOTES	SN

TOTAL BILL OF MATERIAL							
BRIDGE NO.	FOAM JOINT SEALS FOR PRESERVATION	ELASTOMERIC CONCRETE FOR PRESERVATION	BRIDGE JOINT DEMOLITION	SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	SILANE BARRIER RAIL TREATMENT	SHOTBLASTING BRIDGE DECK	SILANE DECK TREATMENT
	LIN. FT.	CU. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. YDS.	SQ. YDS.
770110	78.0	19.0	76.0	930.4	930.4	654.5	654.5
770465	78.0	19.0	76.0	930.4	930.4	654.5	654.5
770118	78.0	19.0	76.0	1917.4	1917.4	1292.0	1292.0
770466	78.0	19.0	76.0	1917.4	1917.4	1292.0	1292.0
770490	0.0	0.0	0.0	1392.4	1392.4	757.8	757.8
770512	0.0	0.0	0.0	1301.4	1301.4	857.0	857.0
TOTAL	312.0	76.0	304.0	8389.4	8389.4	5507.8	5507.8

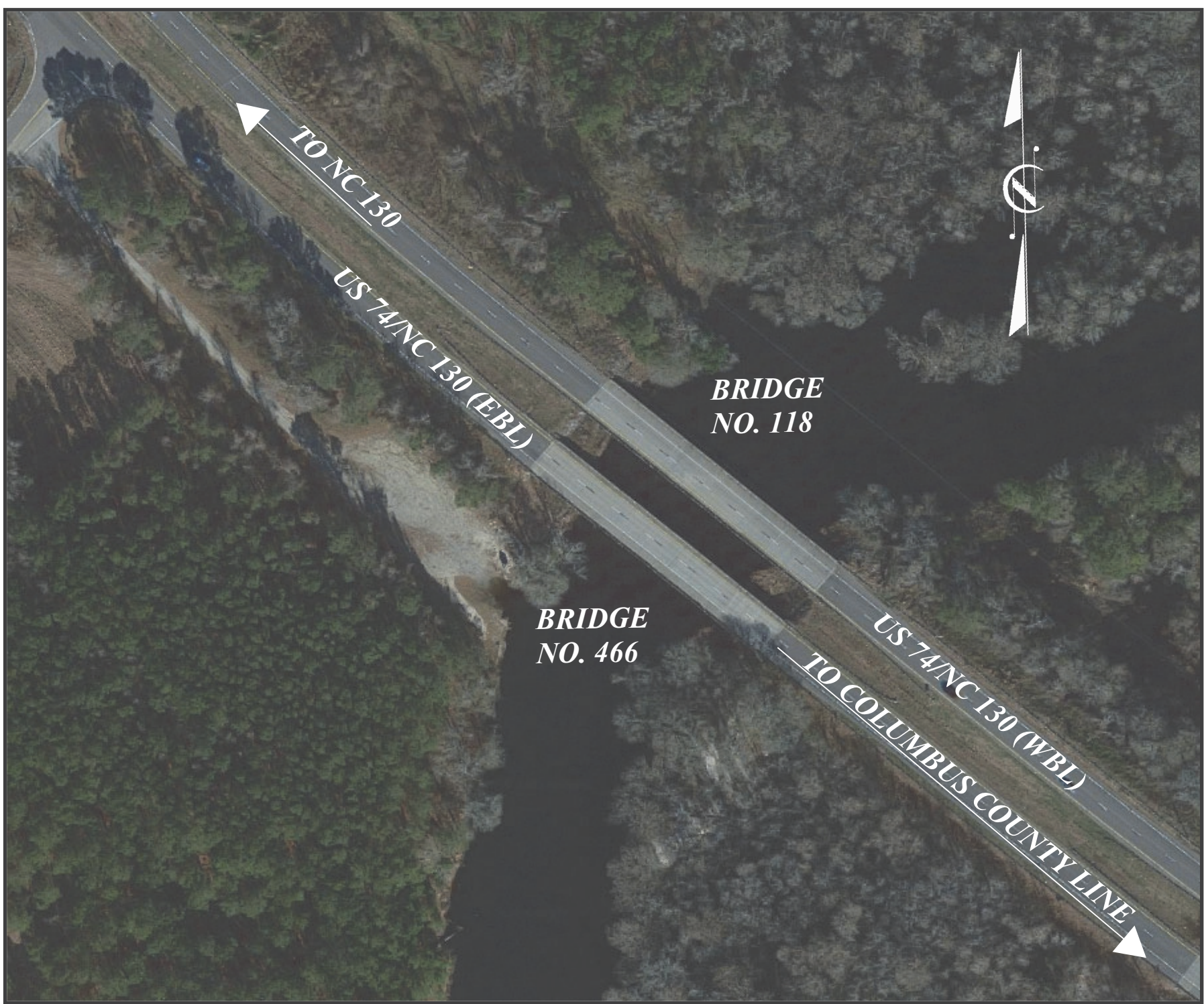
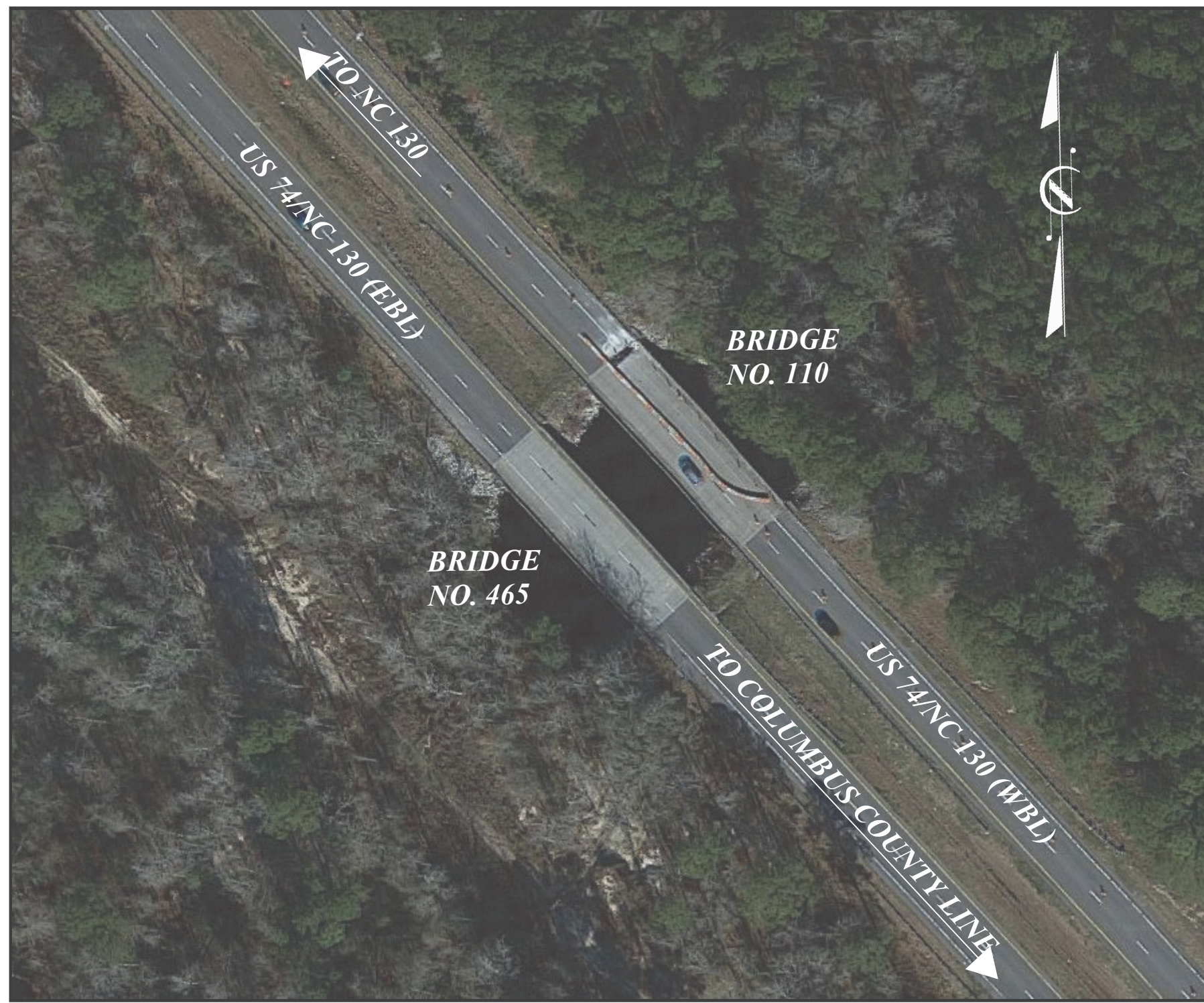
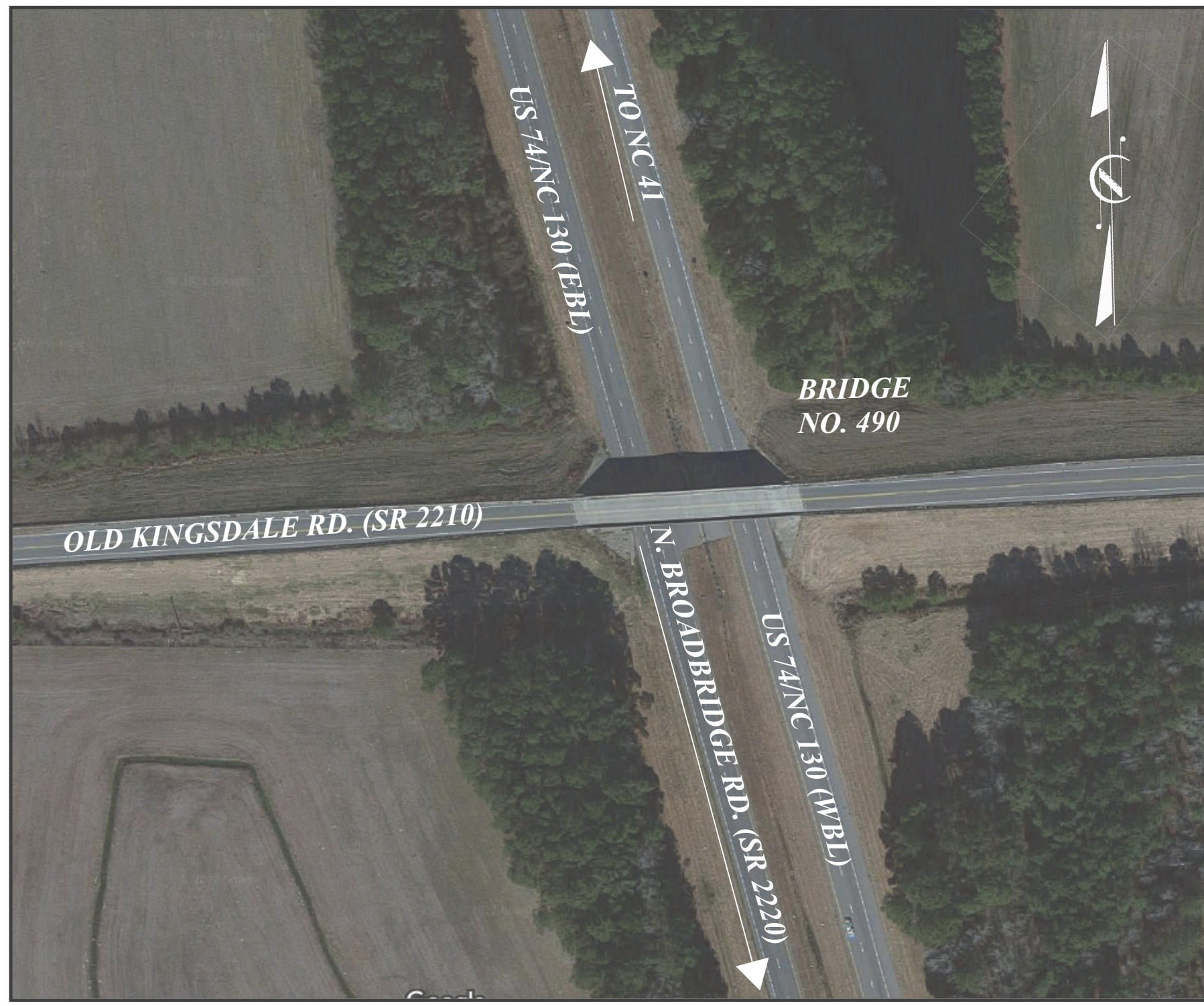


4/6/2023

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 NC License No. F-0765

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED



**LOCATION SKETCHES**

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

**NOTES**

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

ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE 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.

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

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

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.

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

WORK ON THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE 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 CONTRACTORS OPERATIONS, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST TO THE DEPARTMENT.

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

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

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 GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

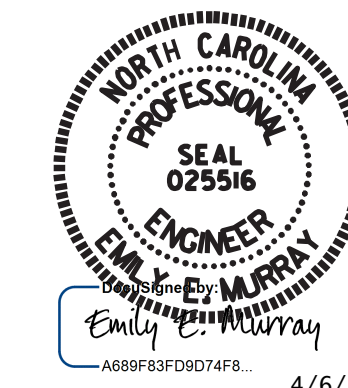
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

BRIDGE COORDINATES		
BRIDGE NO.	LATITUDE	LONGITUDE
770110	34°26'58.26"	78°58'2.25"
770465	34°26'57.7"	78°58'2.97"
770118	34°26'34.59"	78°57'35.21"
770466	34°26'34.04"	78°57'35.73"
770490	34°32'40.45"	79°1'17.69"
770512	34°30'6.8"	78°59'57.4"



PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770110, 770465  
770118, 770466, 770490, 770512

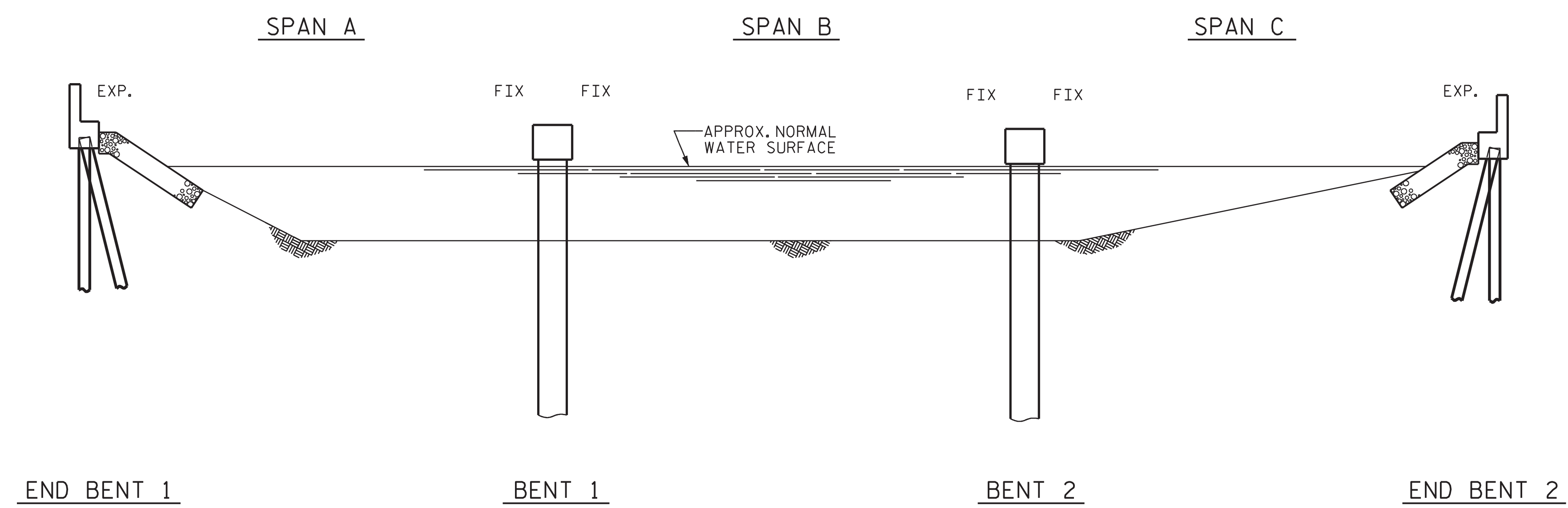
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL NOTES  
 AND  
 LOCATION SKETCHES**

DRAWN BY : D. A. GLADDEN DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22

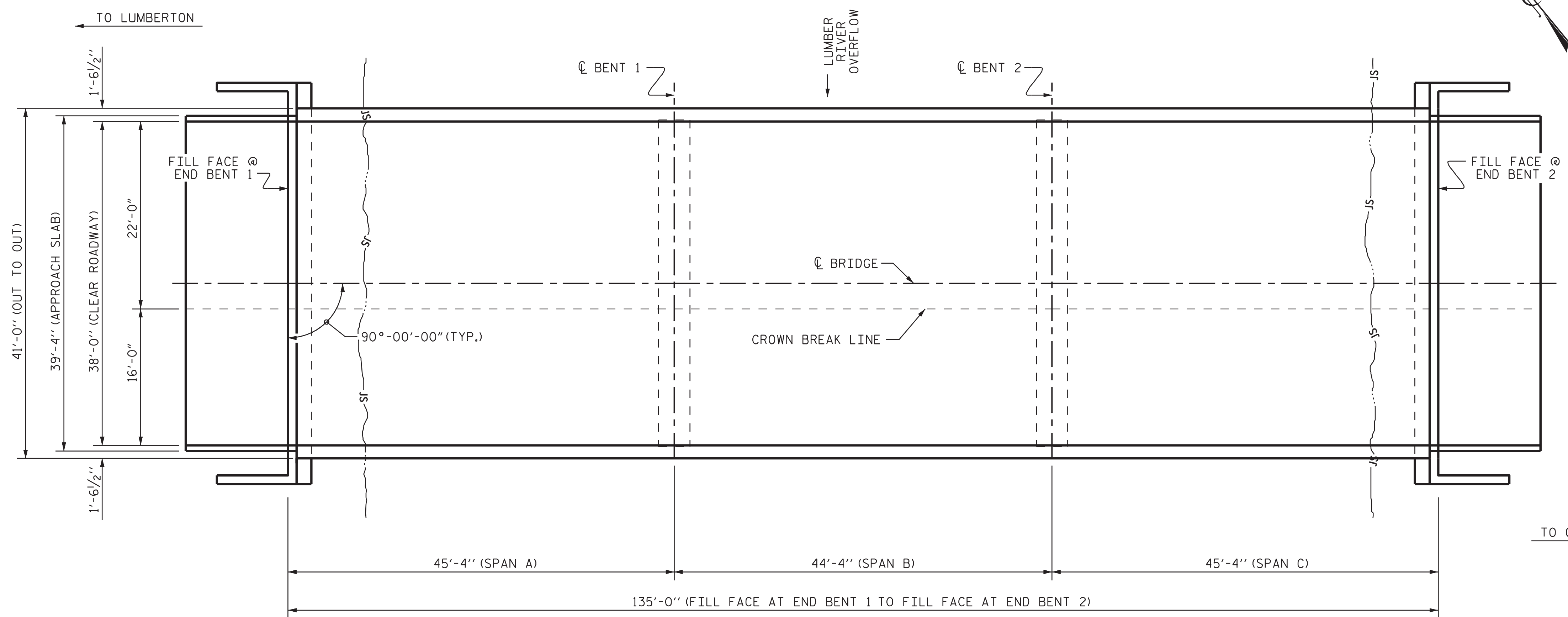
**VOLKERT**  
 5430 Wade Park Boulevard, Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax 919-854-0355  
 NC License No. F-0765

DOCUMENT NOT CONSIDERED  
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			21
2			4			21



SECTION ALONG  $\phi$  BRIDGE



PLAN

(PILES NOT SHOWN FOR CLARITY)

NOTES

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

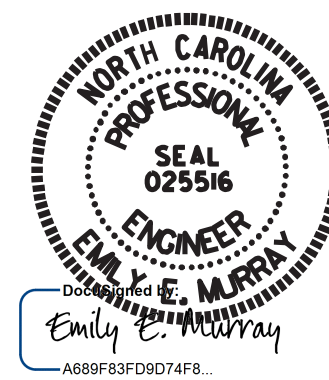
SCOPE OF WORK

SHOTBLAST DECK AND APPLY SILANE DECK TREATMENT.  
PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT.  
DEMOLISH AND RECONSTRUCT HEADERS AND INSTALL FOAM JOINT SEALS.

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

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

PROJECT NO. HI-0016  
ROBESON COUNTY  
BRIDGE NO. 770110



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING**  
FOR BRIDGE ON US 74/NC 130  
OVER LUMBER RIVER OVERFLOW  
(WBL)

DRAWN BY : D.A.GLADDEN      DATE : 11/21  
CHECKED BY : E.E.MURRAY      DATE : 12/21

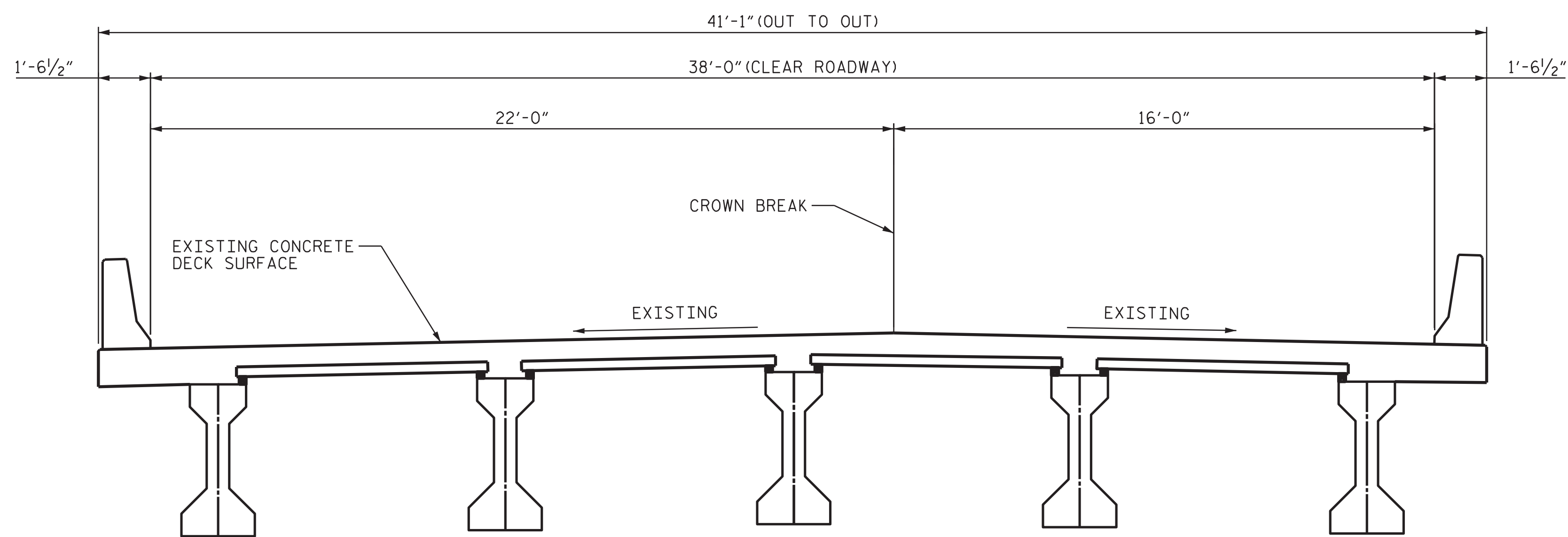
**VOLKERT**  
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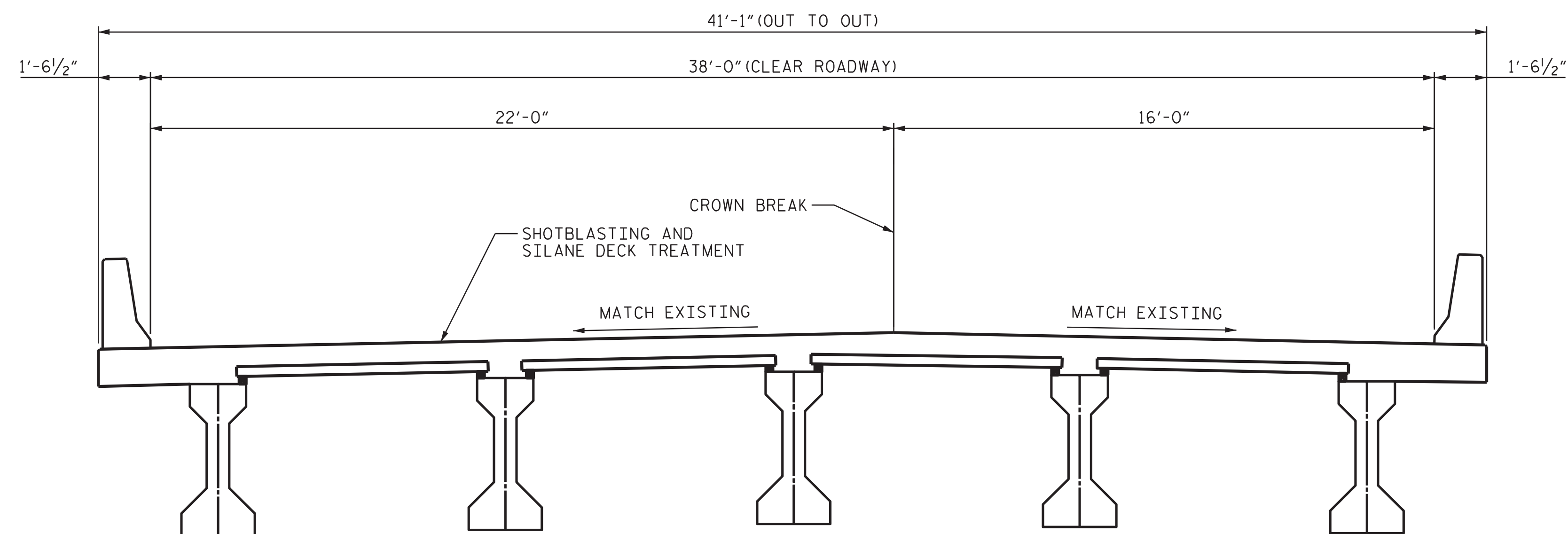
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**NOTES**

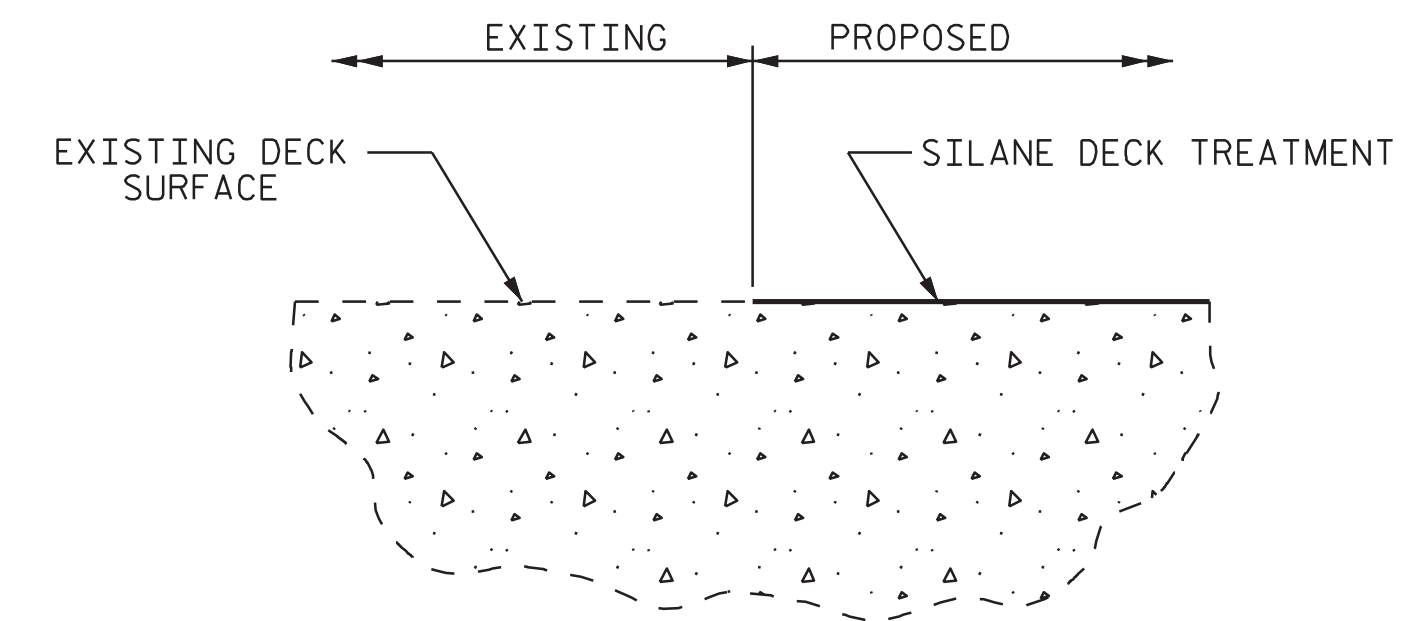
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.



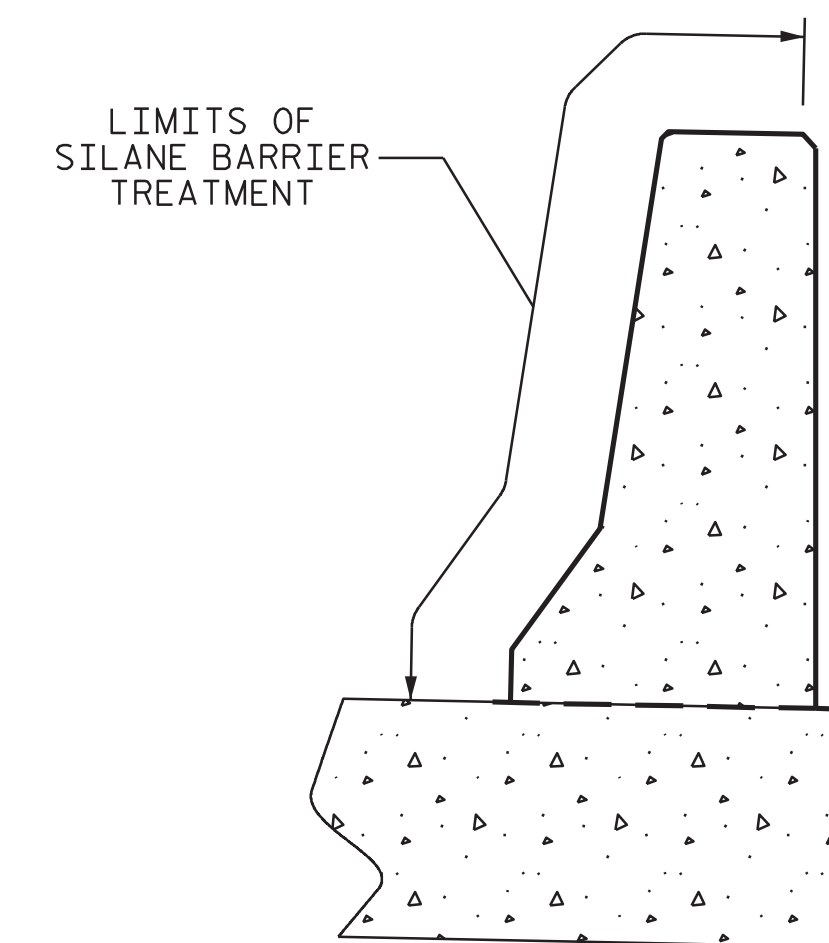
EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION



SILANE DECK TREATMENT



SILANE BARRIER RAIL TREATMENT

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO: 770110



4/6/2023

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**TYPICAL SECTION**

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 5430 Wade Park Blvd., Suite 410  
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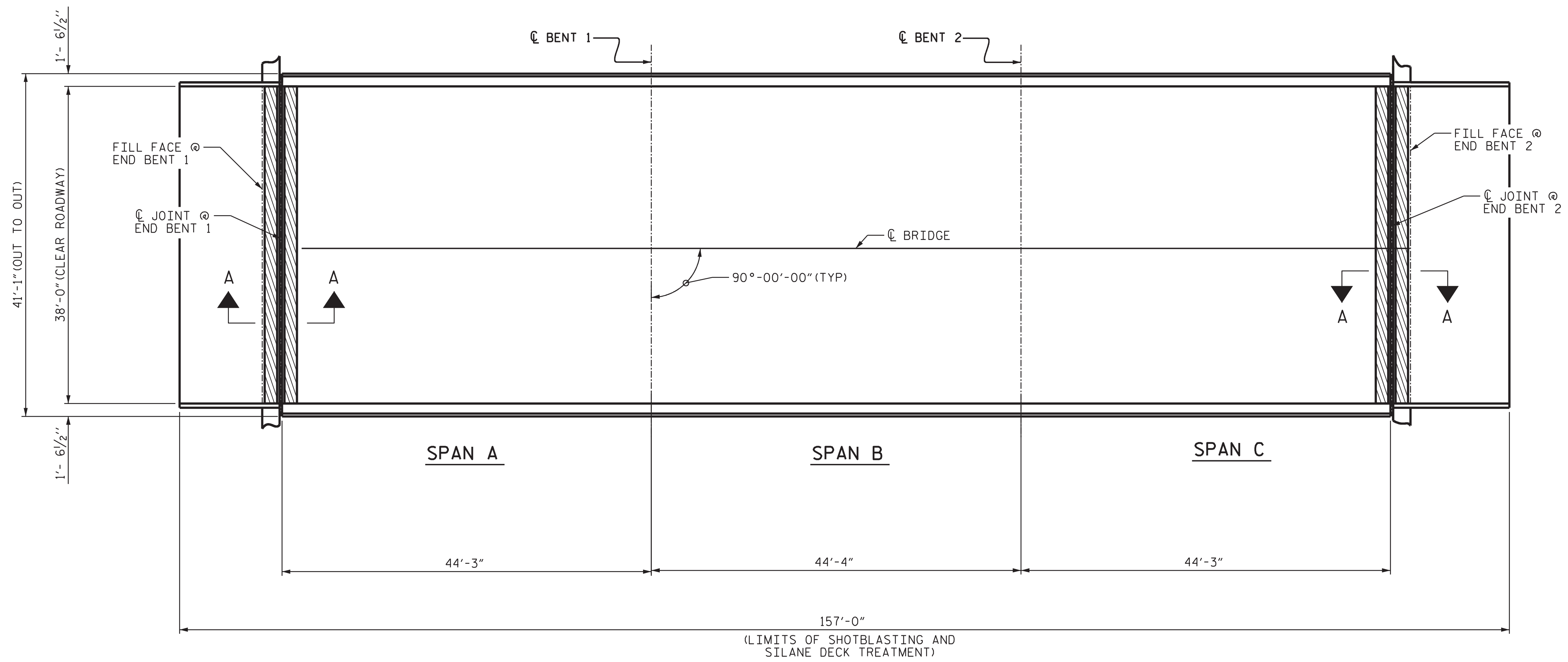
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-3
2			4			21

DRAWN BY : T. MAZARURA DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22

### SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
BRIDGE JOINT DEMOLITION	76.0 SF	
SHOTBLASTING OF BRIDGE DECK	654.5 SY	
SILANE DECK TREATMENT	654.5 SY	
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	930.4 SF	
SILANE BARRIER RAIL TREATMENT	930.4 SF	

 BRIDGE JOINT DEMOLITION

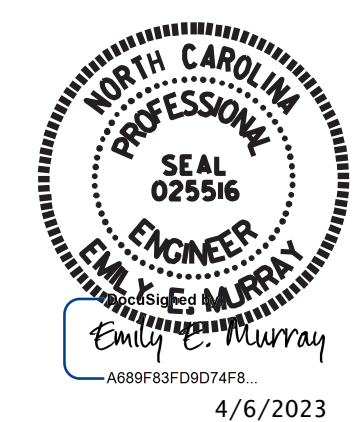


PLAN OF SPAN A-C

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770110

NOTES

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



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

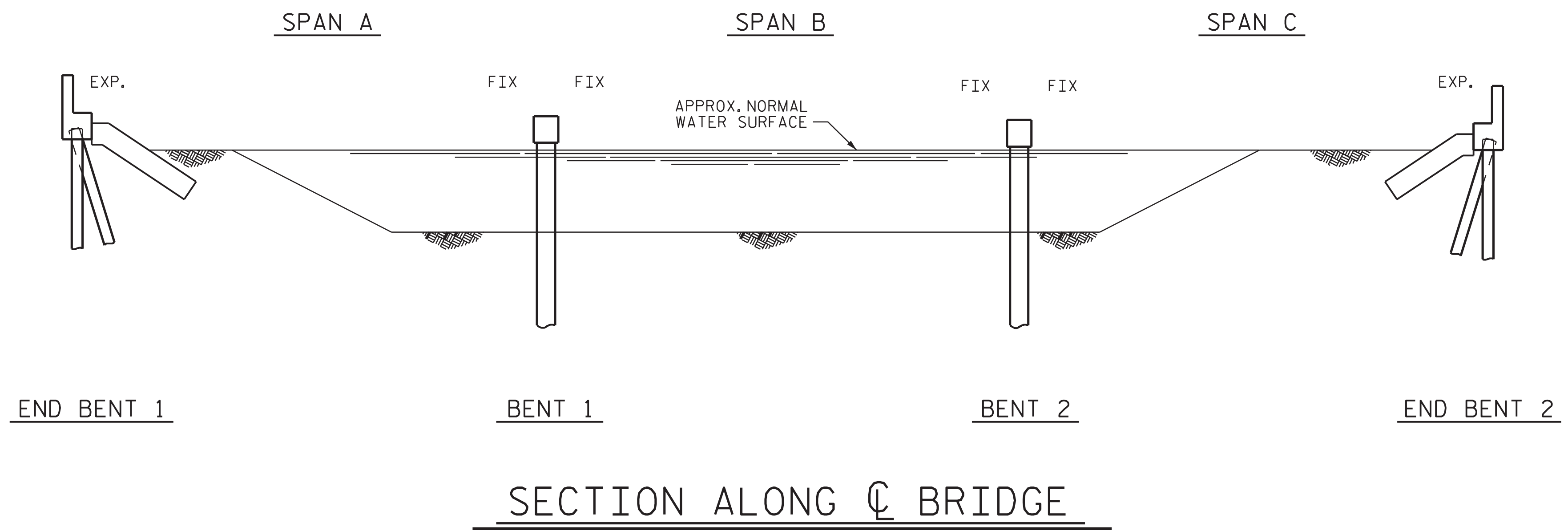
PLAN OF SPAN A-C

DRAWN BY : T. MAZARURA DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
1			3			S-4
2			4			TOTAL SHEETS 21

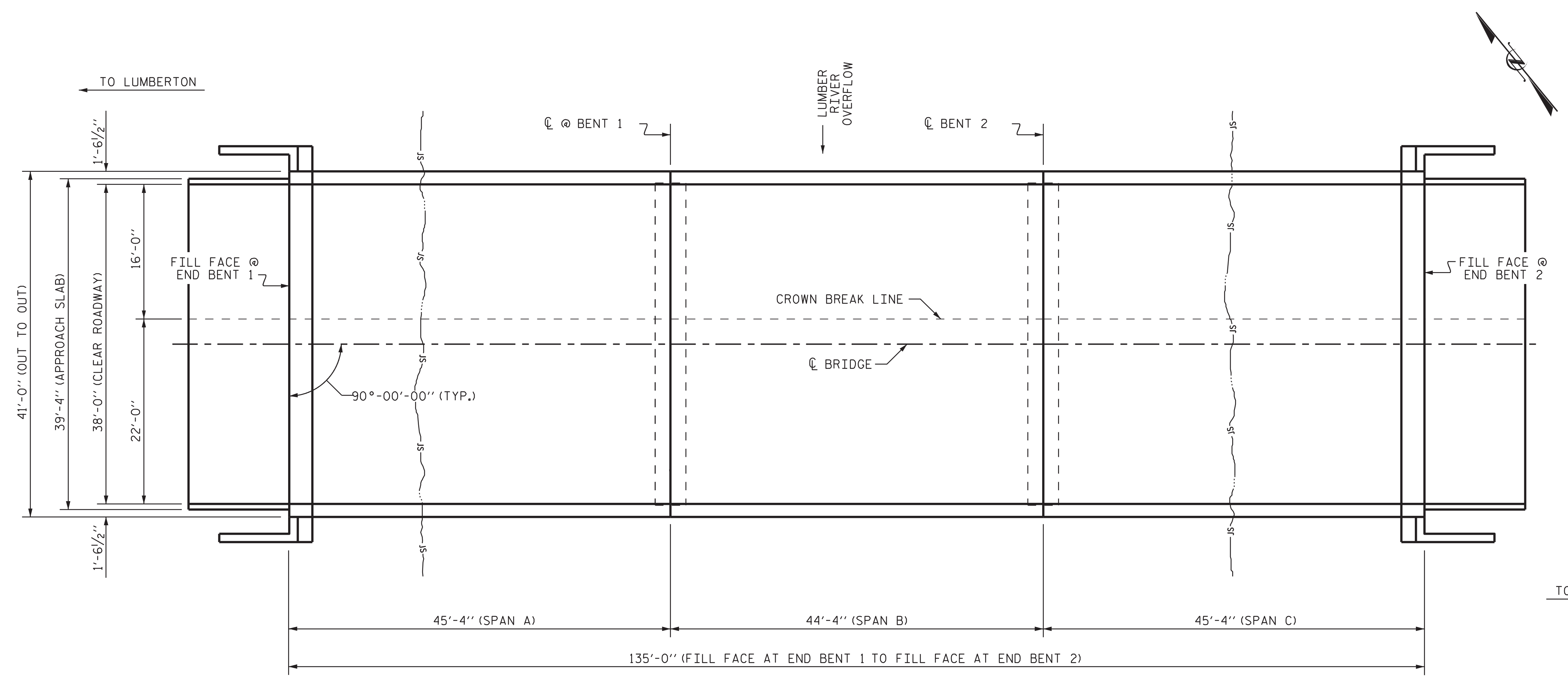


**NOTES**

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

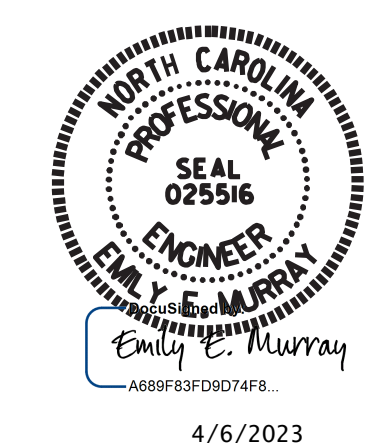
**SCOPE OF WORK**

SHOTBLAST DECK AND APPLY SILANE DECK TREATMENT.  
 PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT.  
 DEMOLISH AND RECONSTRUCT HEADERS AND INSTALL FOAM JOINT SEALS.

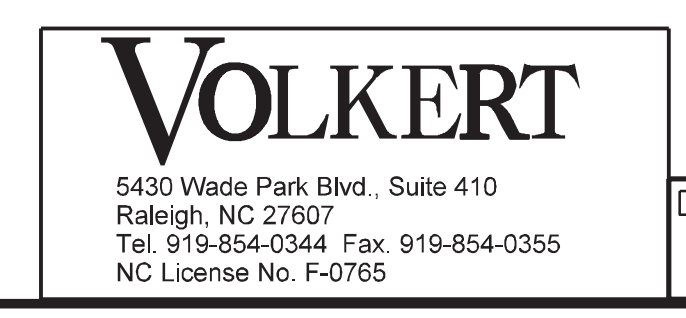


I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.  
 RESIDENT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770465



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE ON US 74/NC 130  
 OVER LUMBER RIVER OVERFLOW  
 (EBL)



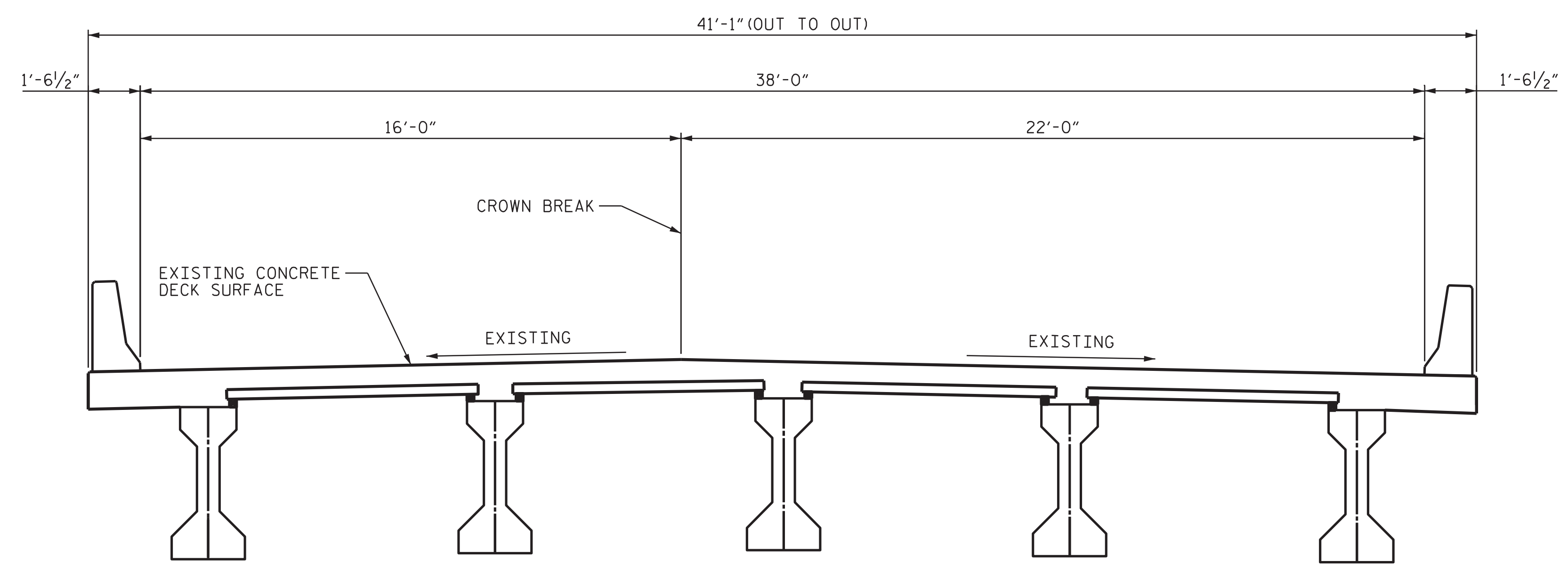
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2			4			21

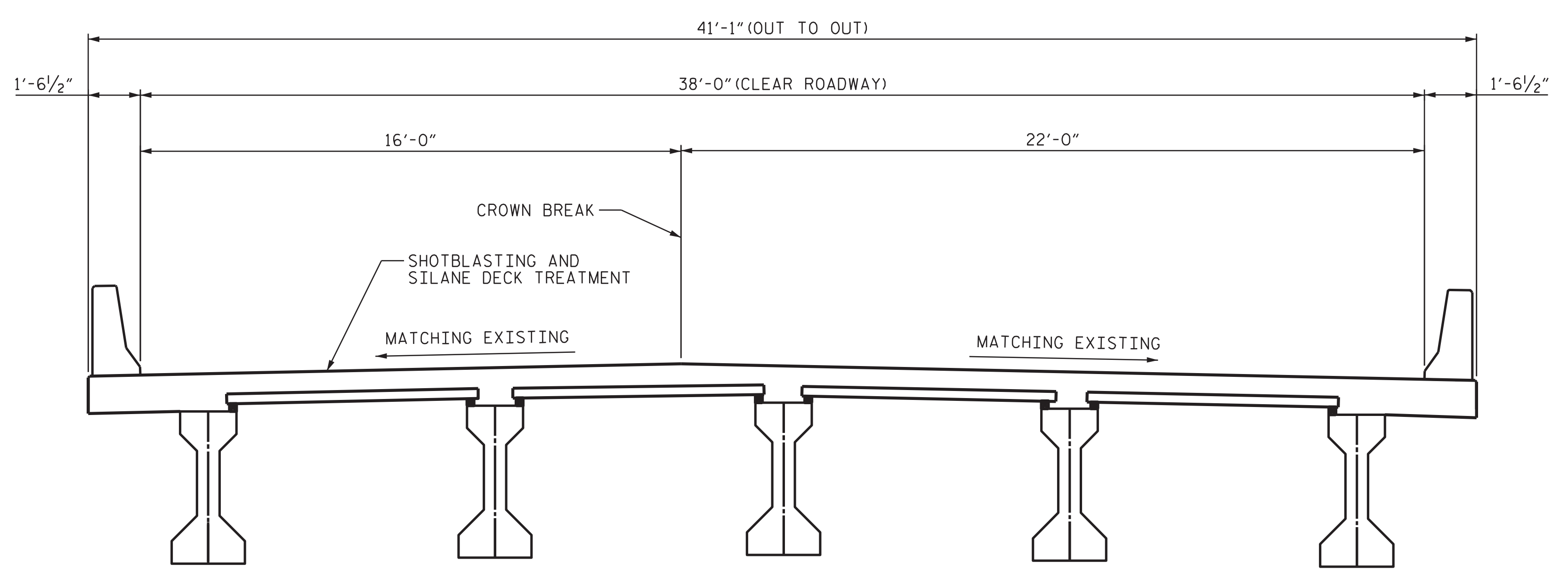
DRAWN BY : D. A. GLADDEN DATE : 12/21  
 CHECKED BY : E. E. MURRAY DATE : 12/21

**NOTES**

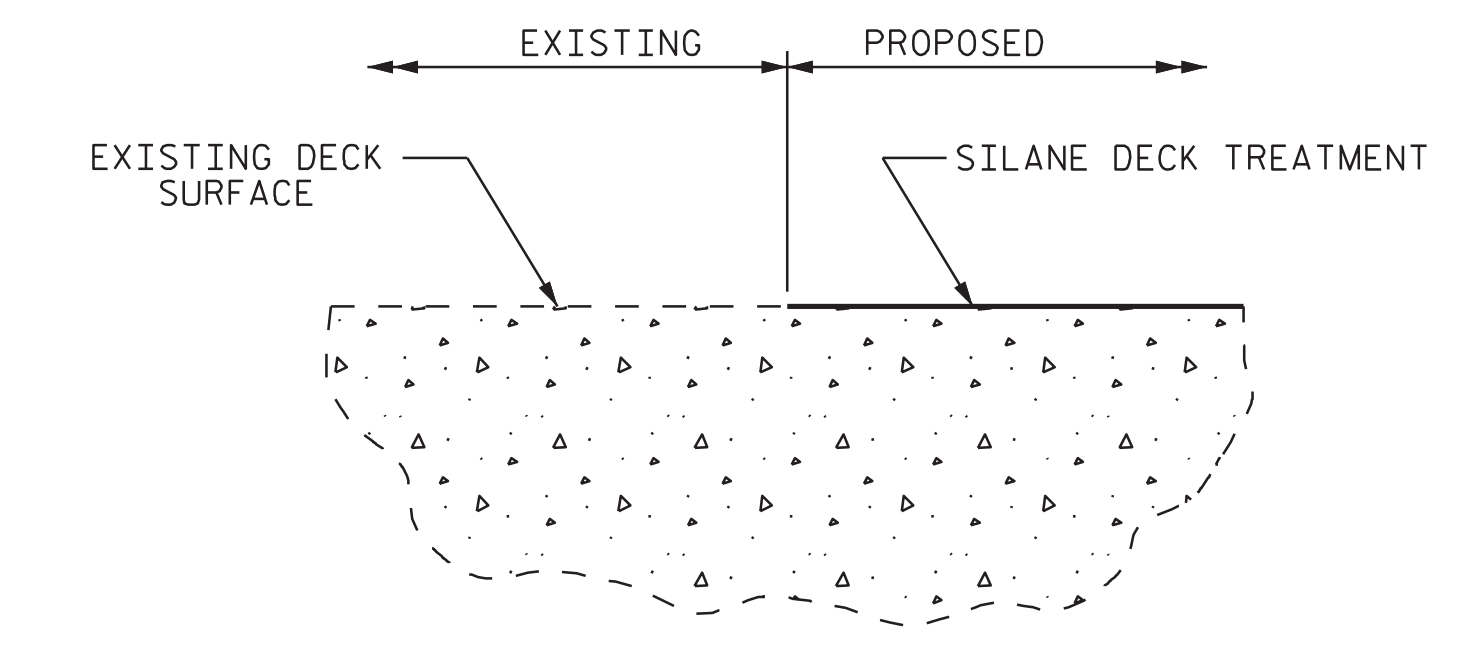
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.



EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION



SILANE DECK TREATMENT



SILANE BARRIER RAIL TREATMENT

PROJECT NO. HI-0016  
ROBESON COUNTY  
BRIDGE NO: 770465



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**TYPICAL SECTION**

DRAWN BY : T. MAZARURA DATE : 11/22  
CHECKED BY : E. E. MURRAY DATE : 11/22

**VOLKERT**  
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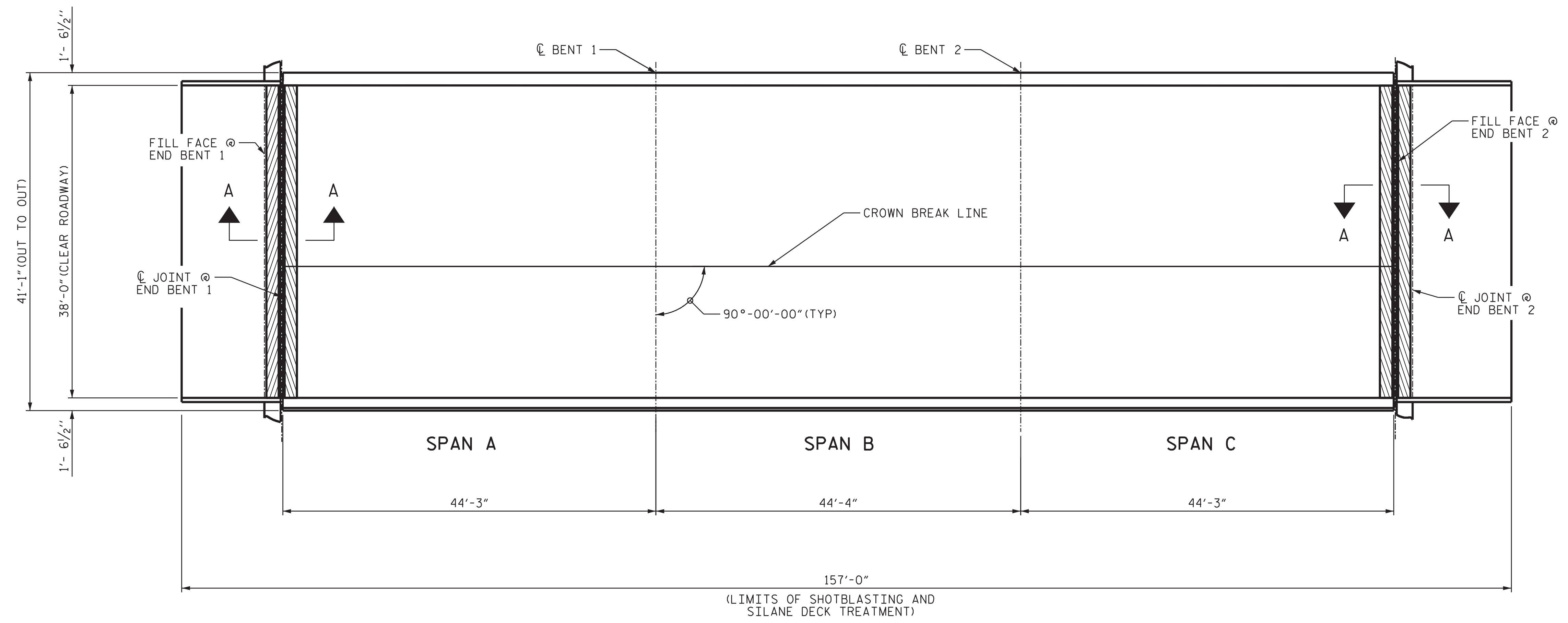
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			21



### SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
BRIDGE JOINT DEMOLITION	76.0 SF	
SHOTBLASTING OF BRIDGE DECK	654.5 SY	
SILANE DECK TREATMENT	654.5 SY	
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	930.4 SF	
SILANE BARRIER RAIL TREATMENT	930.4 SF	

 BRIDGE JOINT DEMOLITION

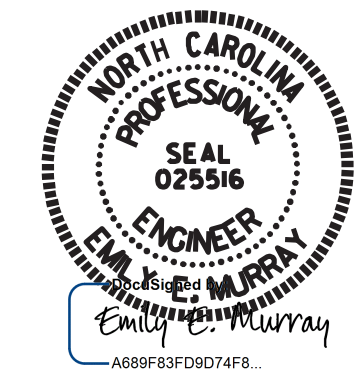


### PLAN OF SPAN A- C

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770465

### NOTES

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



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

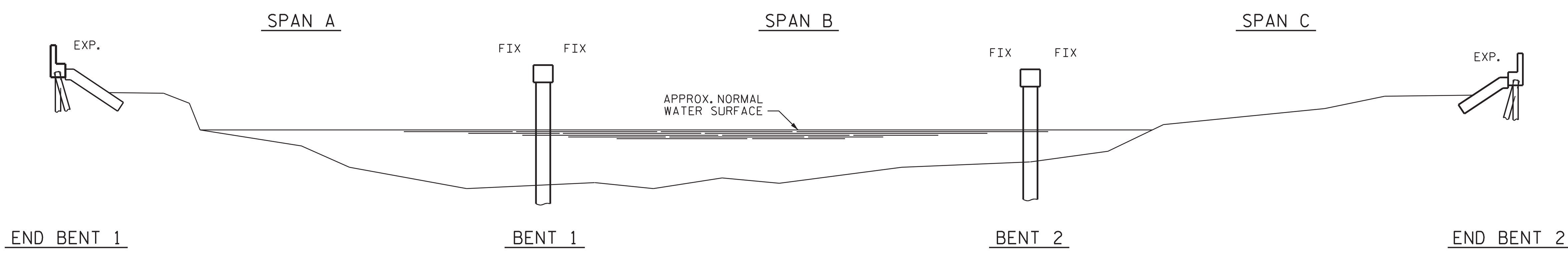
### PLAN OF SPAN A-C

**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

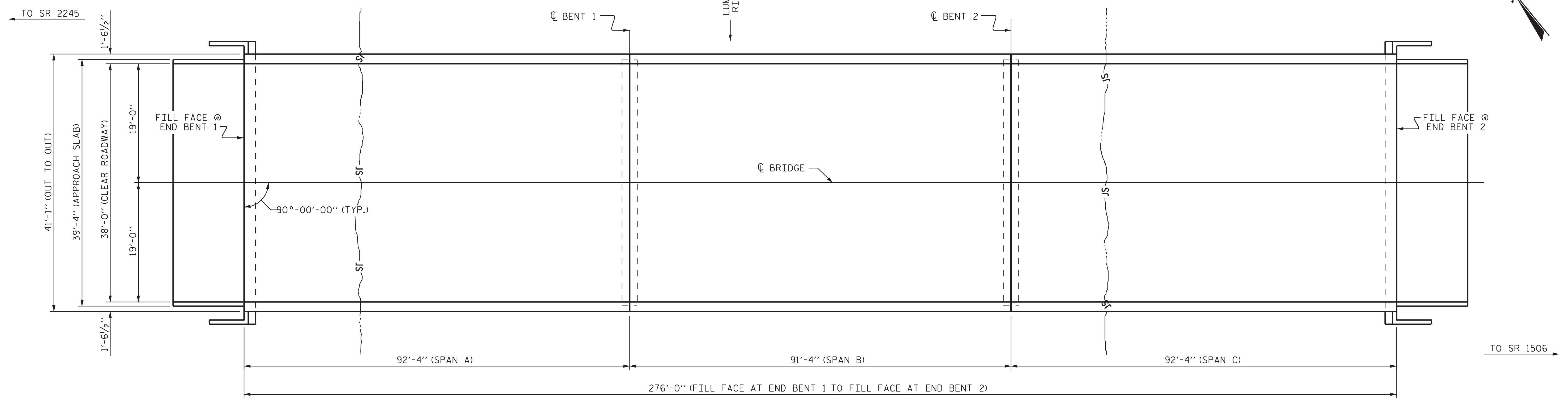
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : D. A. GLADDEN DATE : 5/21  
 CHECKED BY : E. E. MURRAY DATE : 11/22



SECTION ALONG  $\bar{C}$  BRIDGE



PLAN

(PILES NOT SHOWN FOR CLARITY)

NOTES

PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 12/21/2020.  
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- SHOTBLAST DECK AND APPLY SILANE DECK TREATMENT.
- PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT.
- DEMOLISH AND RECONSTRUCT HEADERS AND INSTALL FOAM JOINT SEALS.

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

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

PROJECT NO. HI-0016  
ROBESON COUNTY  
STATION: 770118



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**GENERAL DRAWING**  
US 74/NC 130  
OVER LUMBER  
RIVER (WBL)

DRAWN BY: D. A. GLADDEN DATE: 12/21  
CHECKED BY: E. E. MURRAY DATE: 12/21

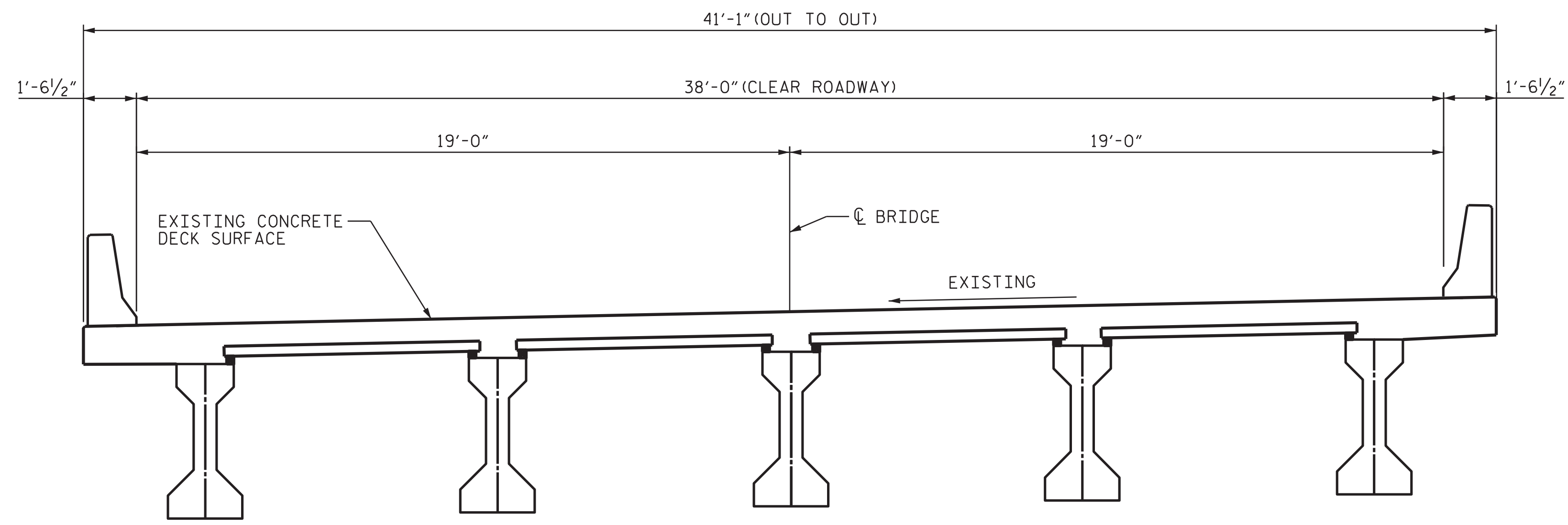
**VOLKERT**  
5430 Wade Park Blvd., Suite 410  
Raleigh, NC 27607  
Tel. 919-854-0344 Fax. 919-854-0355  
NC License No. F-0765

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

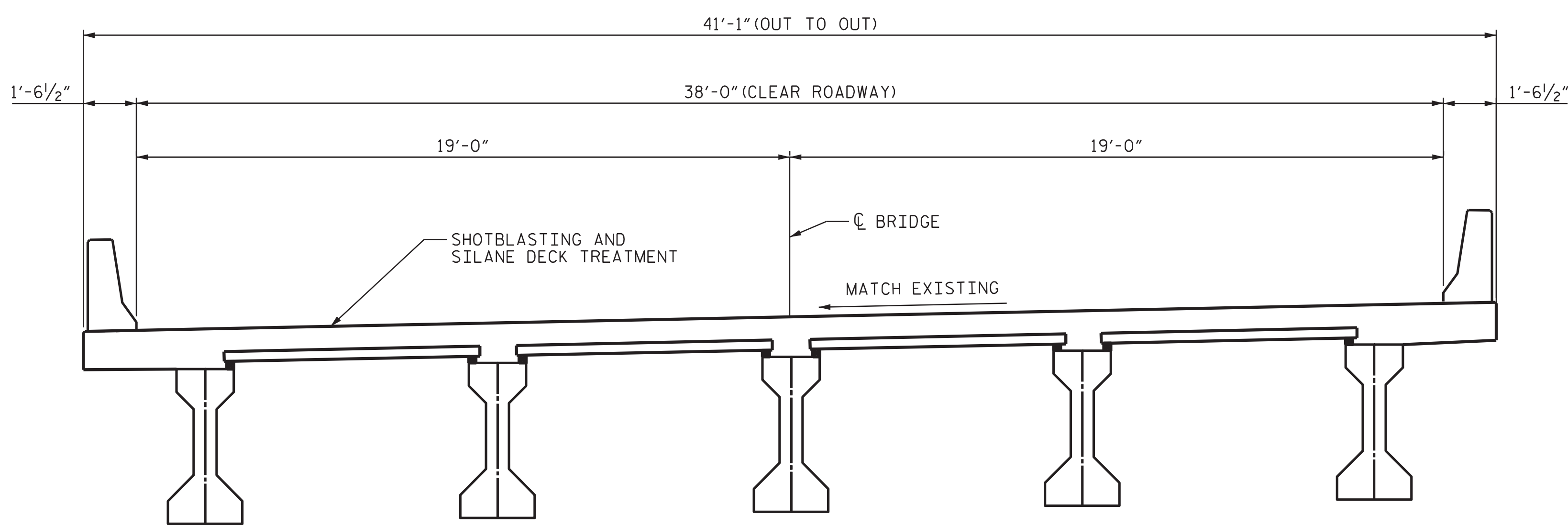
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8 TOTAL SHEETS 21
2			4			

**NOTES**

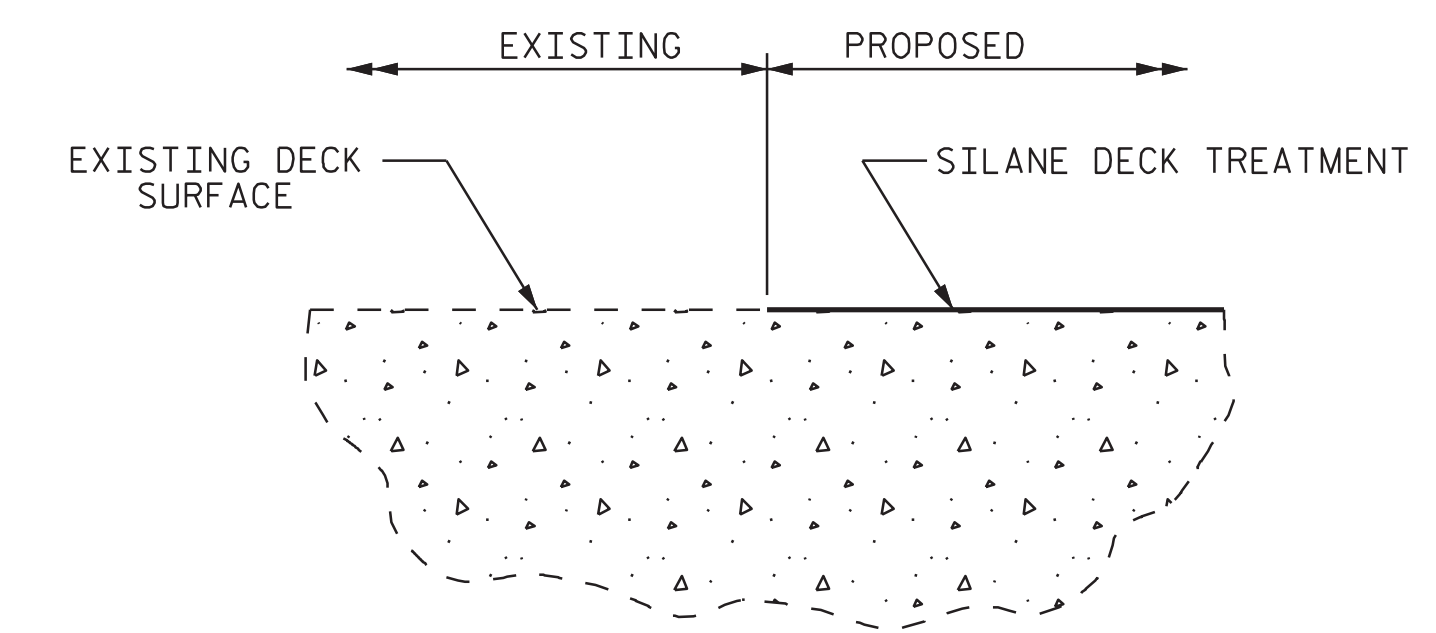
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.



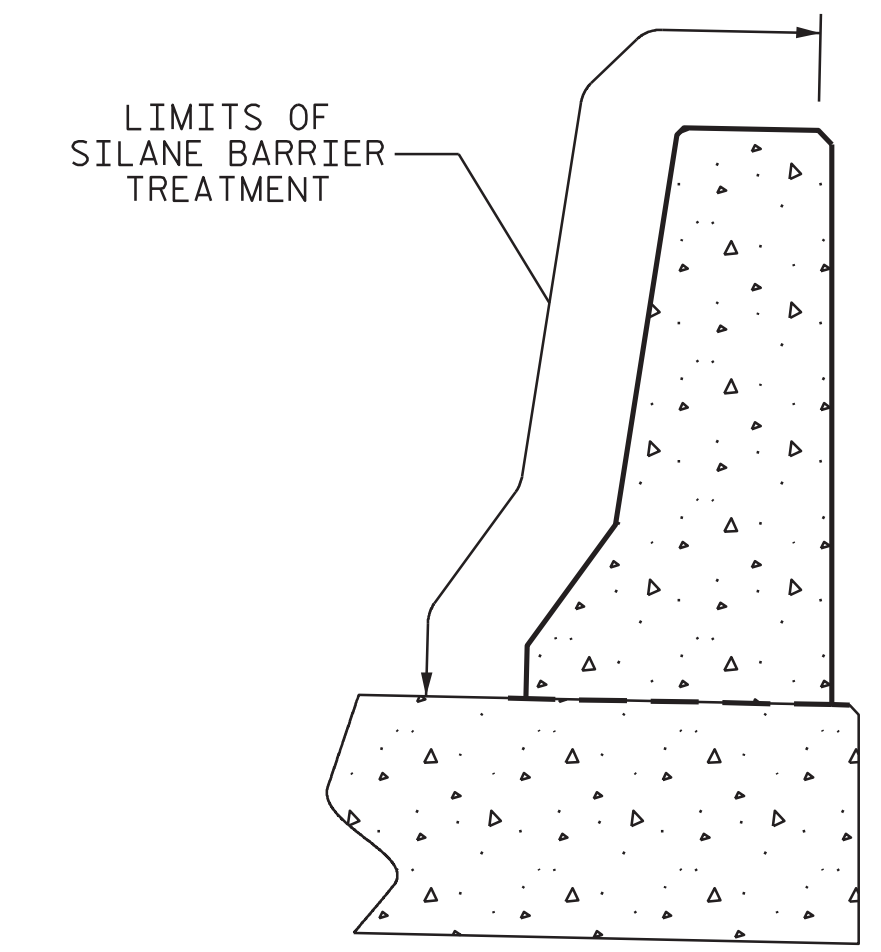
EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION



SILANE DECK TREATMENT



SILANE BARRIER RAIL TREATMENT

PROJECT NO. HI-0016  
ROBESON COUNTY  
BRIDGE NO. 770118



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**TYPICAL SECTION**

**VOLKERT**  
5430 Wade Park Blvd., Suite 410  
Raleigh, NC 27607  
Tel. 919-854-0344 Fax. 919-854-0355  
NC License No. F-0765

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

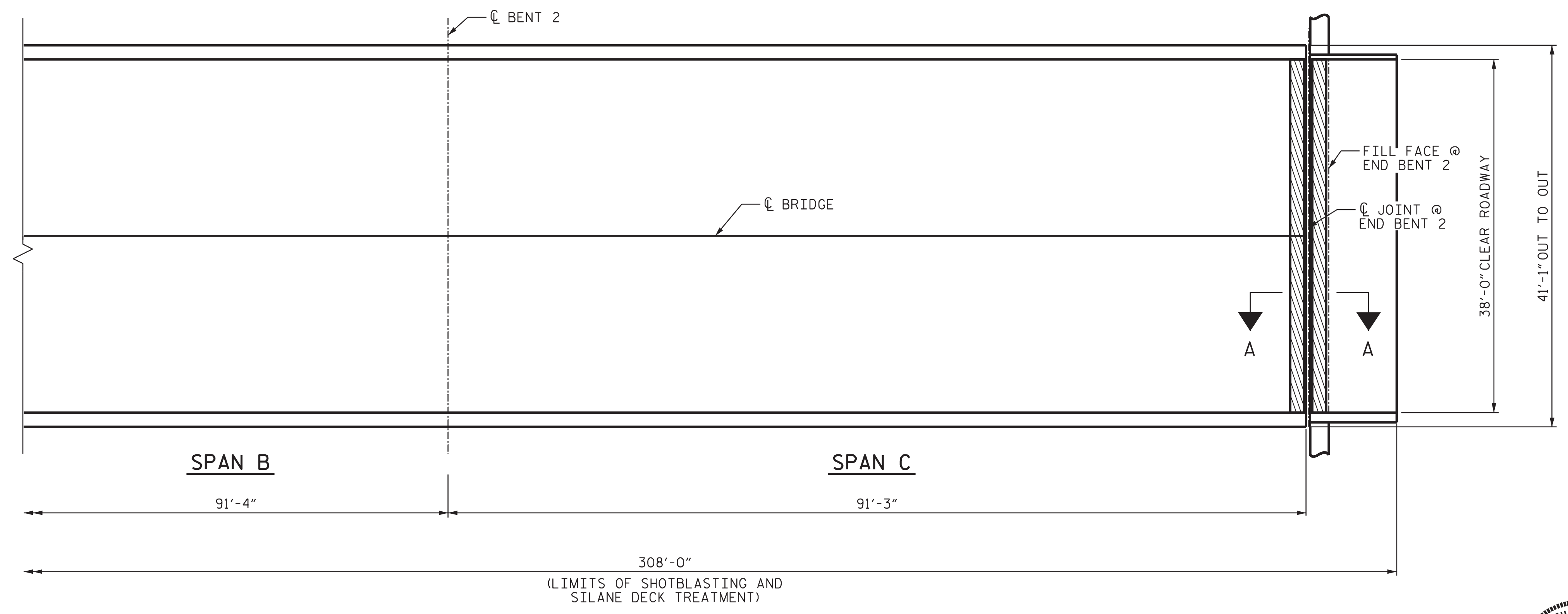
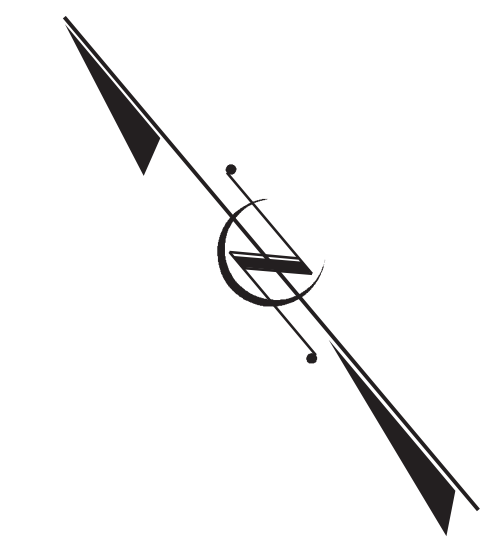
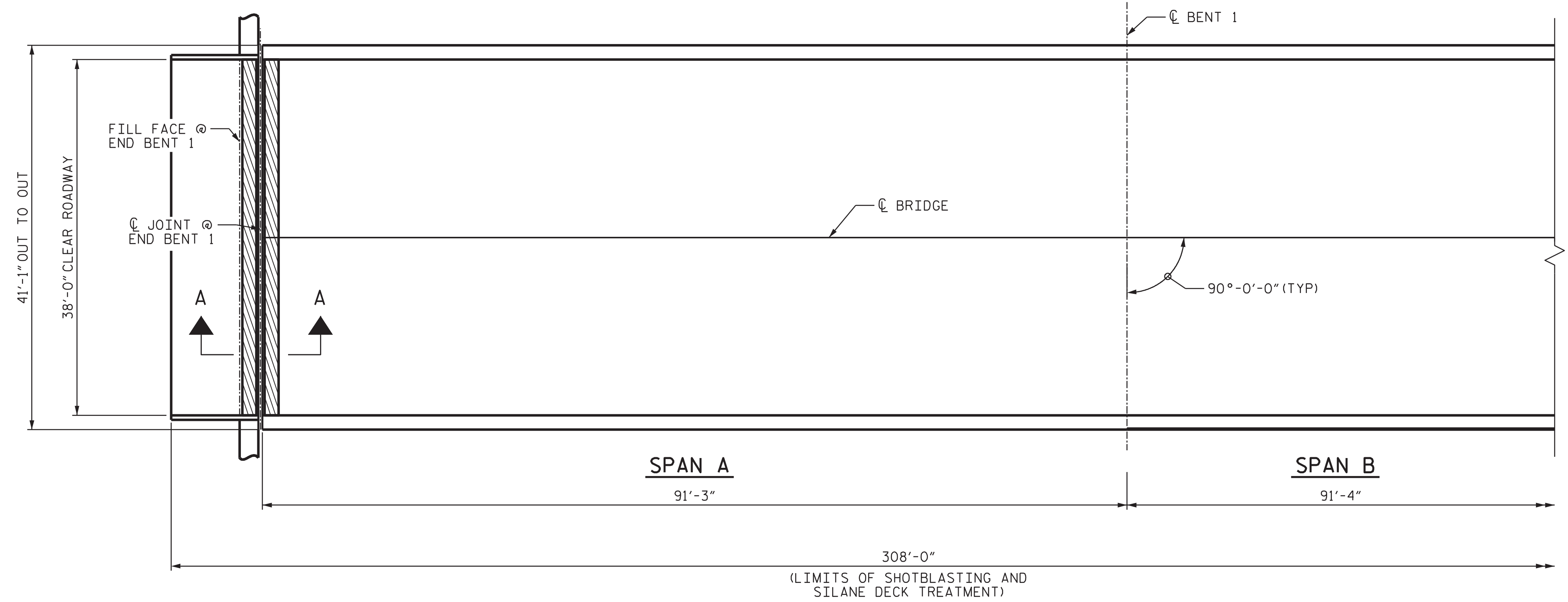
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-9
2			4			21

DRAWN BY : T. MAZARURA DATE : 11/22  
CHECKED BY : E. E. MURRAY DATE : 12/22

### SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
BRIDGE JOINT DEMOLITION	76.0 SF	
SHOTBLASTING OF BRIDGE DECK	1292.0 SY	
SILANE DECK TREATMENT	1292.0 SY	
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1917.4 SF	
SILANE BARRIER RAIL TREATMENT	1917.4 SF	

 BRIDGE JOINT DEMOLITION

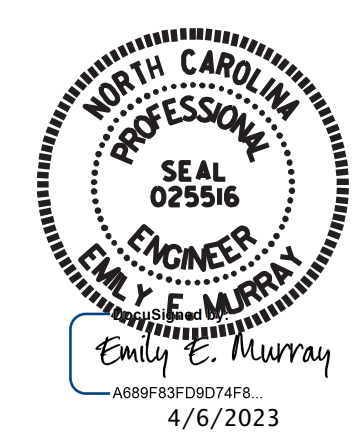


PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770118

### NOTES

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

### SPAN A-C



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

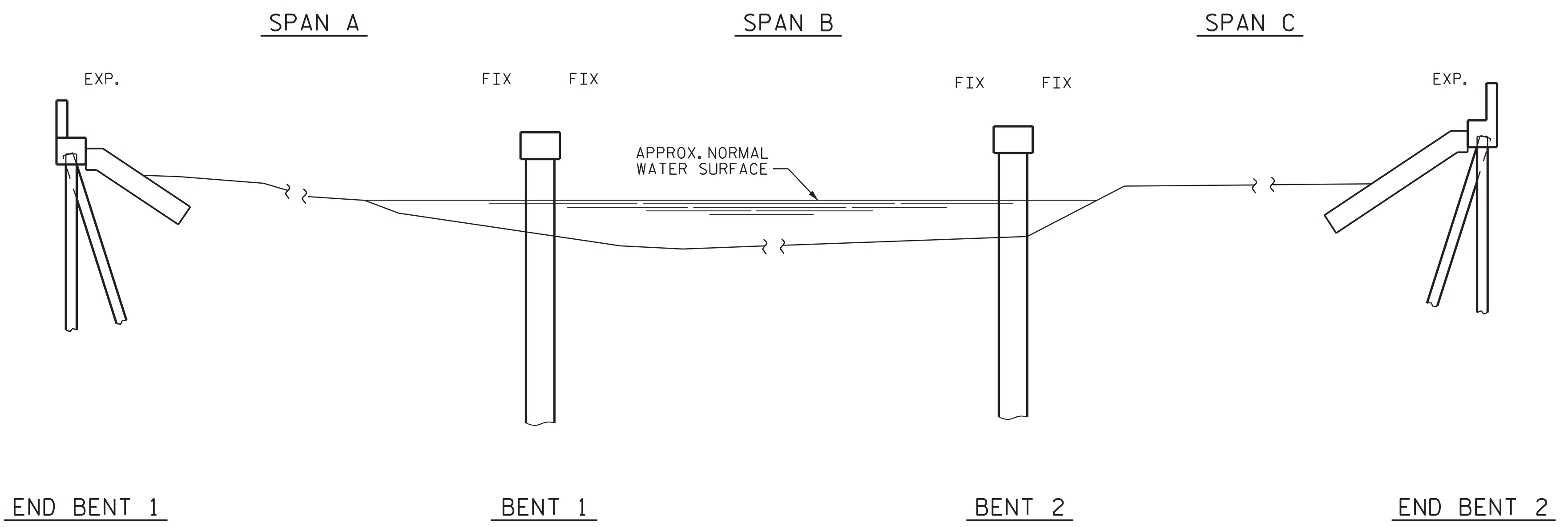
### PLAN OF SPAN A-C

DRAWN BY : J. BRYANT DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22

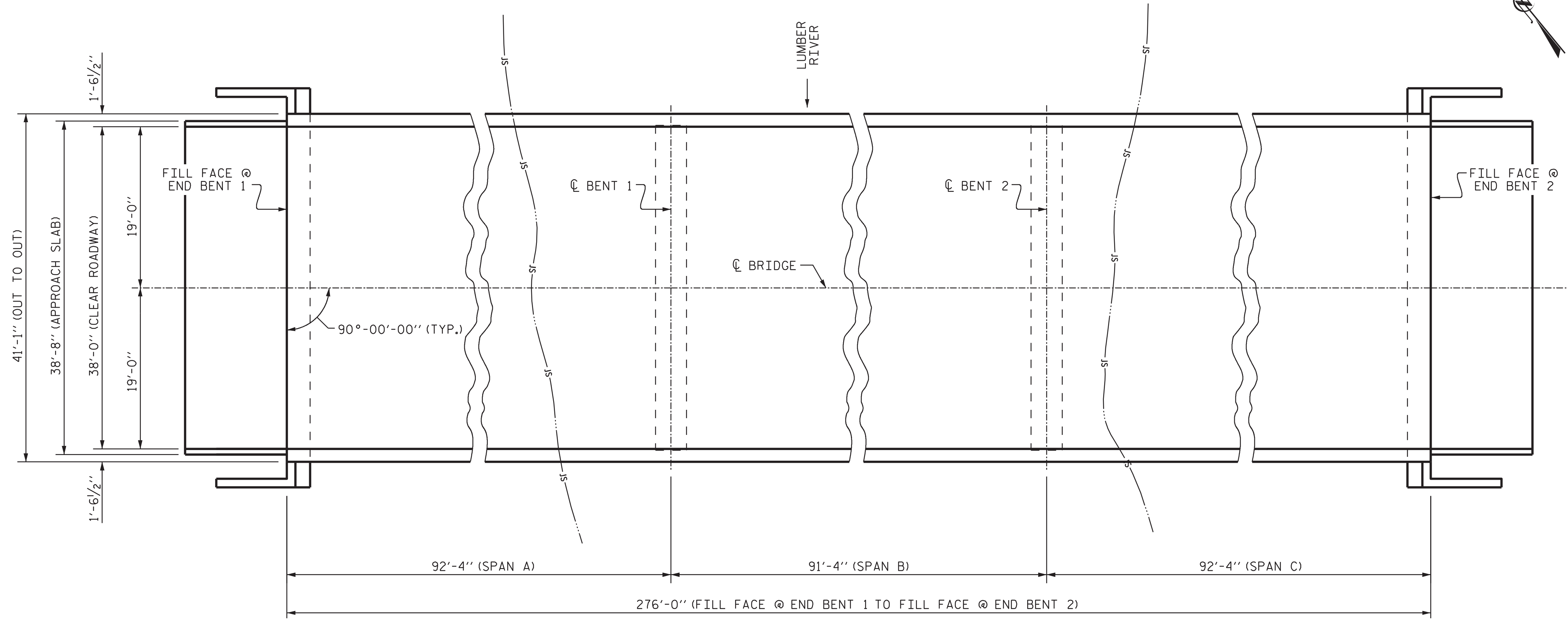
**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-10
2			4			21



**SECTION ALONG Q BRIDGE**  
(SECTION TAKEN AT RIGHT ANGLE TO END BENT)



**PLAN**

(PILES ARE NOT SHOWN FOR CLARITY)

**NOTES**

PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 12/21/2020.  
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

**SCOPE OF WORK**

SHOTBLAST DECK AND APPLY SILANE DECK TREATMENT.  
PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT.  
DEMOLISH AND RECONSTRUCT HEADERS AND INSTALL FOAM JOINT SEALS.

I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.  
RESIDENT ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

PROJECT NO. HI-0016  
ROBESON COUNTY  
BRIDGE NO. 770466



4/6/2023

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**GENERAL DRAWING**  
US 74/NC 130  
OVER LUMBER  
RIVER (EBL)

DRAWN BY : D. A. GLADDEN DATE : 10/22  
CHECKED BY : E. E. MURRAY DATE : 12/22

**VOLKERT**  
5430 Wade Park Blvd., Suite 410  
Raleigh, NC 27607  
Tel. 919-854-0344 Fax. 919-854-0355  
NC License No. F-0765

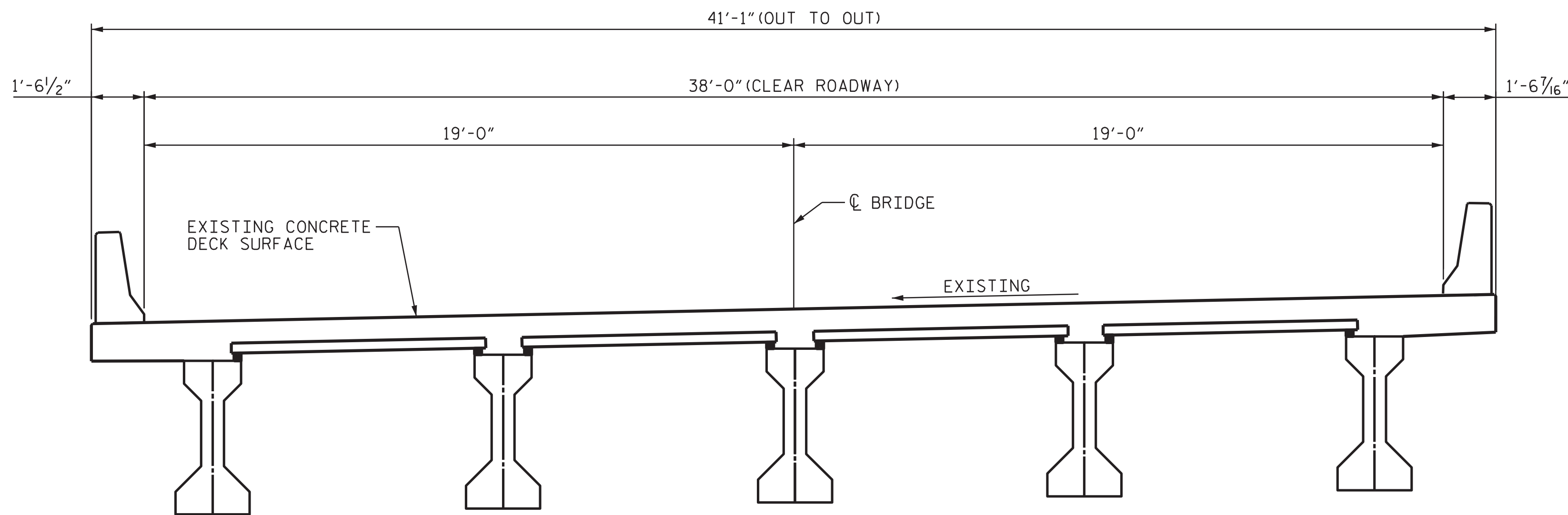
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

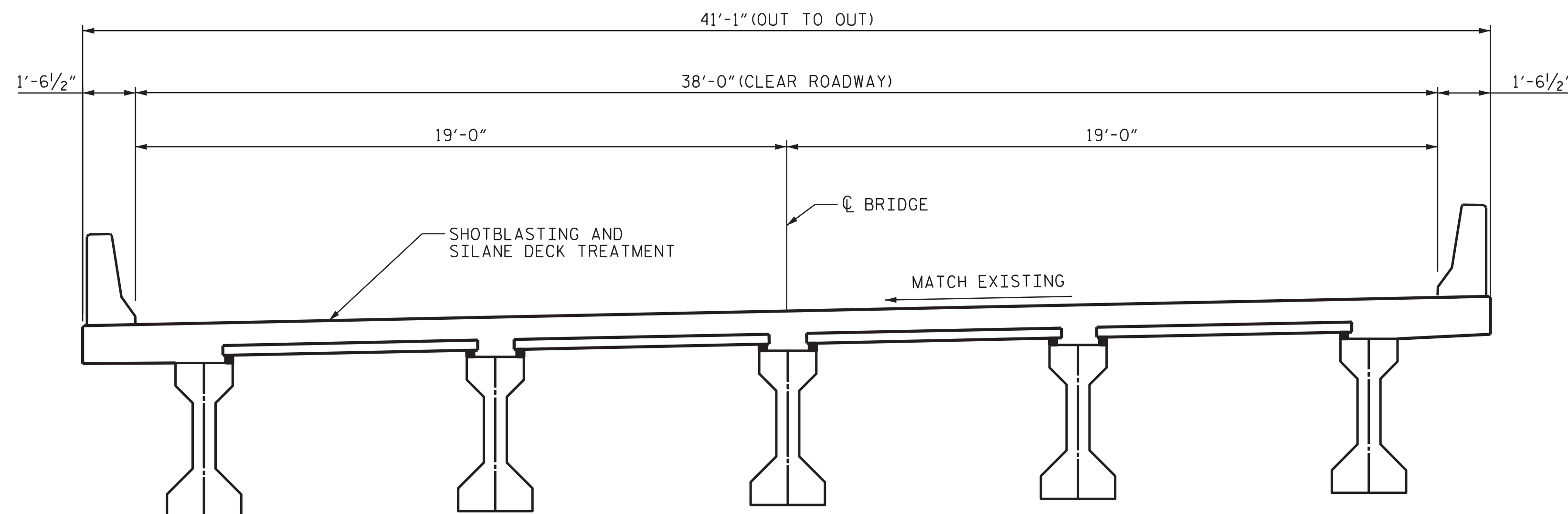
SHEET NO. **S-11**  
TOTAL SHEETS **21**

**NOTES**

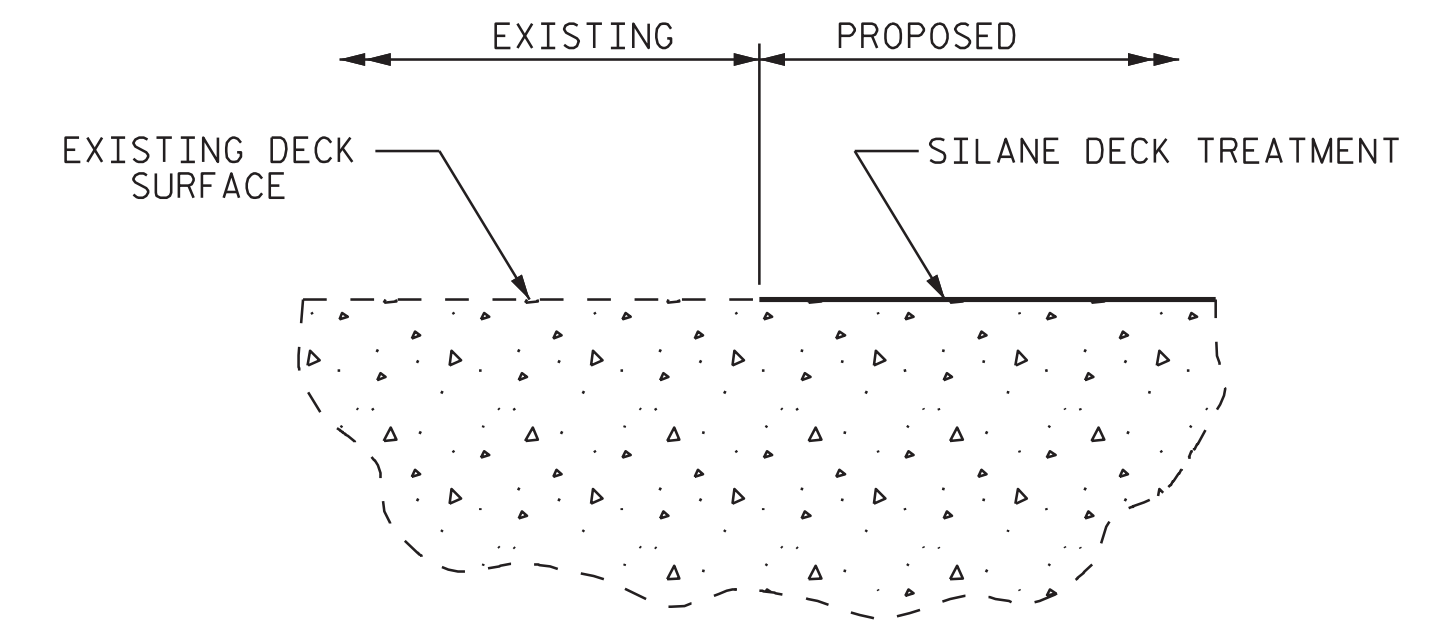
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.



EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION

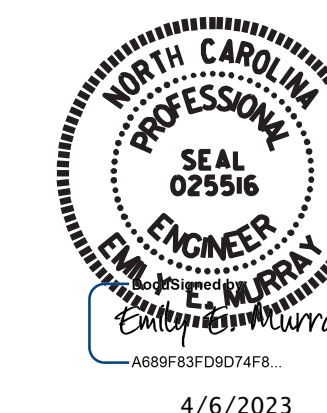


SILANE DECK TREATMENT



SILANE BARRIER RAIL TREATMENT

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO: 770466



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TYPICAL SECTION**

DRAWN BY : T.MAZARURA DATE : 11/22  
 CHECKED BY : J.BRYANT DATE : 12/22

06-APR-2023 10:43  
 \*\*\*\*\*SDGN\*\*\*\*\*  
 raffymazarura AT C-160013

**VOLKERT**

5430 Wade Park Blvd., Suite 410  
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 Tel 919-854-0344 Fax 919-854-0355  
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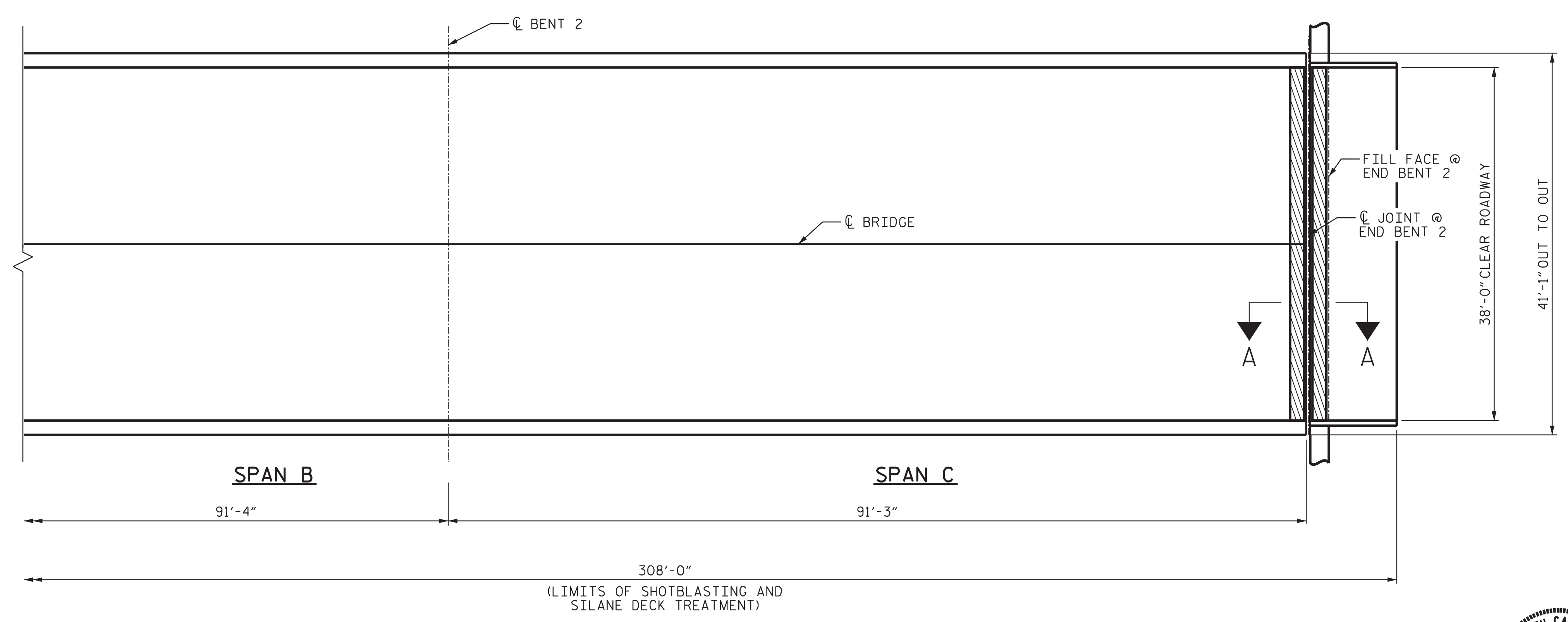
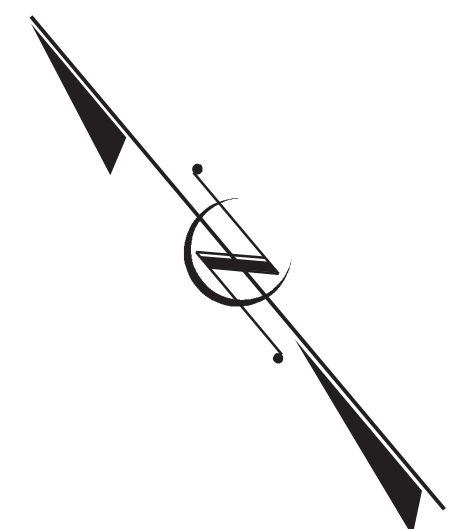
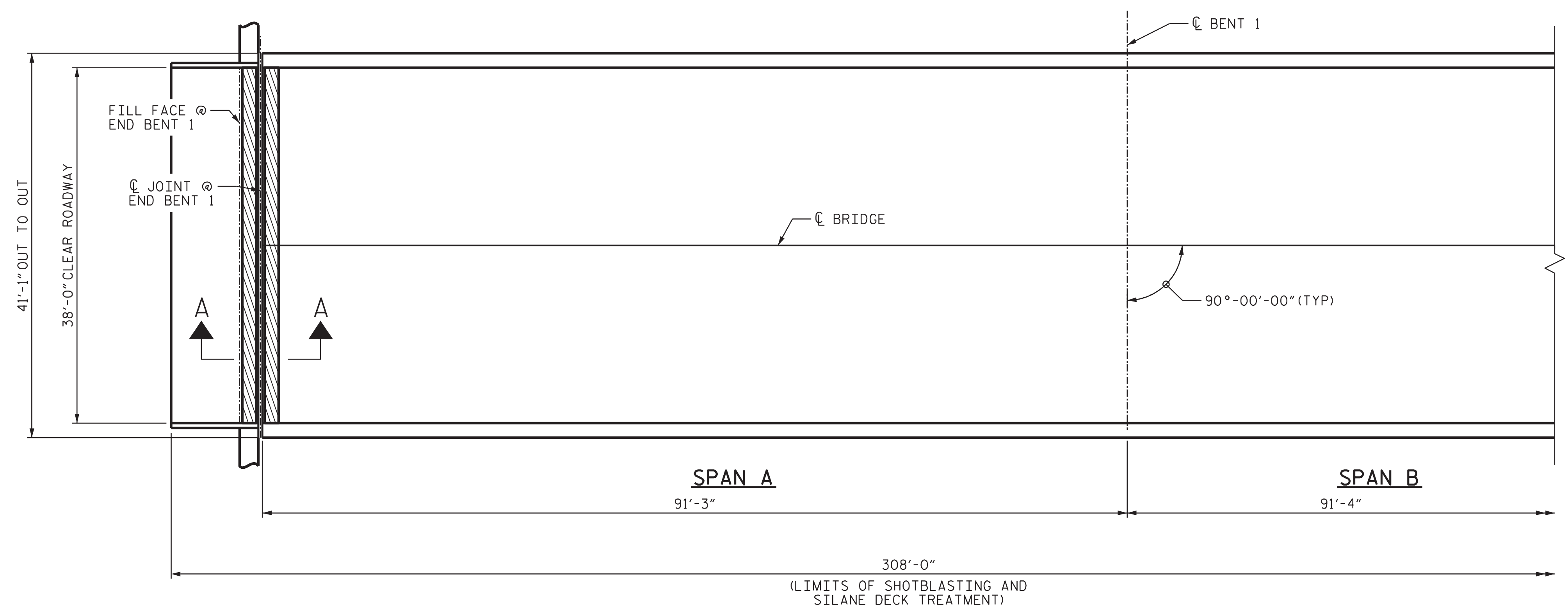
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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			21

### SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
BRIDGE JOINT DEMOLITION	76.0 SF	
SHOTBLASTING OF BRIDGE DECK	1292.0 SY	
SILANE DECK TREATMENT	1292.0 SY	
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1917.4 SF	
SILANE BARRIER RAIL TREATMENT	1917.4 SF	

 BRIDGE JOINT DEMOLITION

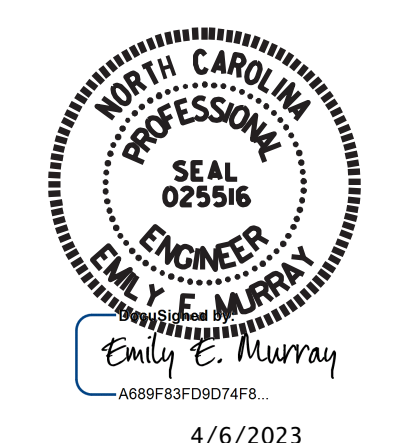


### NOTES

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### SPAN A-C

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770466



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

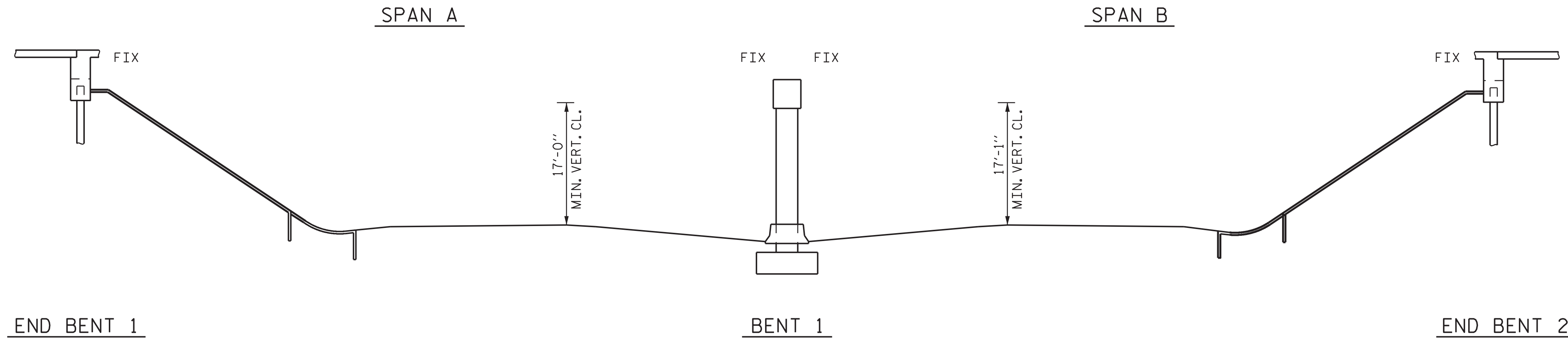
### PLAN OF SPAN A-C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-13
2			4			21

**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0785

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : J. BRYANT DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22



**NOTES**

PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 11/09/2021.

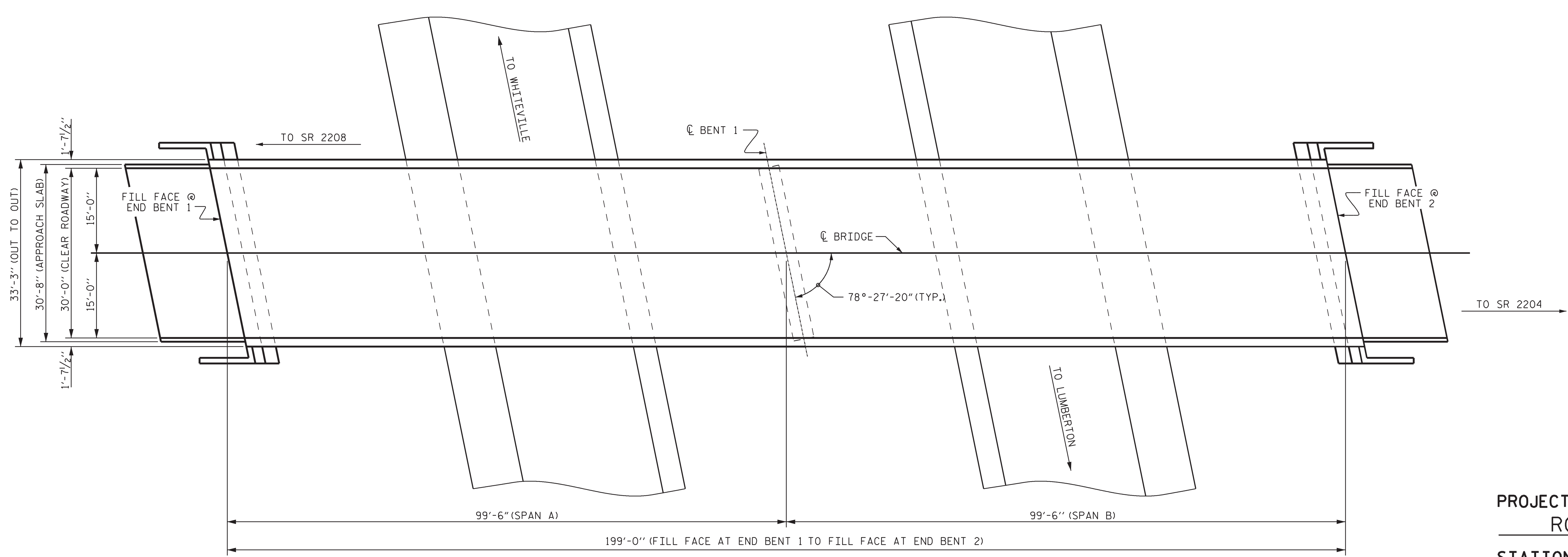
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

**SCOPE OF WORK**

SHOTBLAST DECK AND APPLY SILANE DECK TREATMENT.

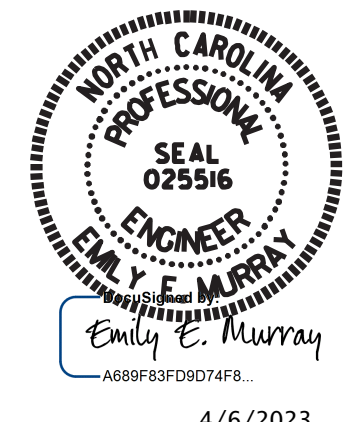
PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT

**SECTION ALONG  $\text{\textcircled{C}}$  BRIDGE**  
 (SECTION TAKEN AT RIGHT ANGLE TO END BENT)



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

PROJECT NO. HI-0016  
ROBESON COUNTY  
 STATION: 770490



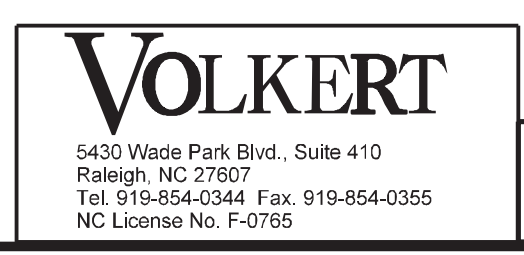
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON SR 2210  
 OVER US 74/NC 130

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

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



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

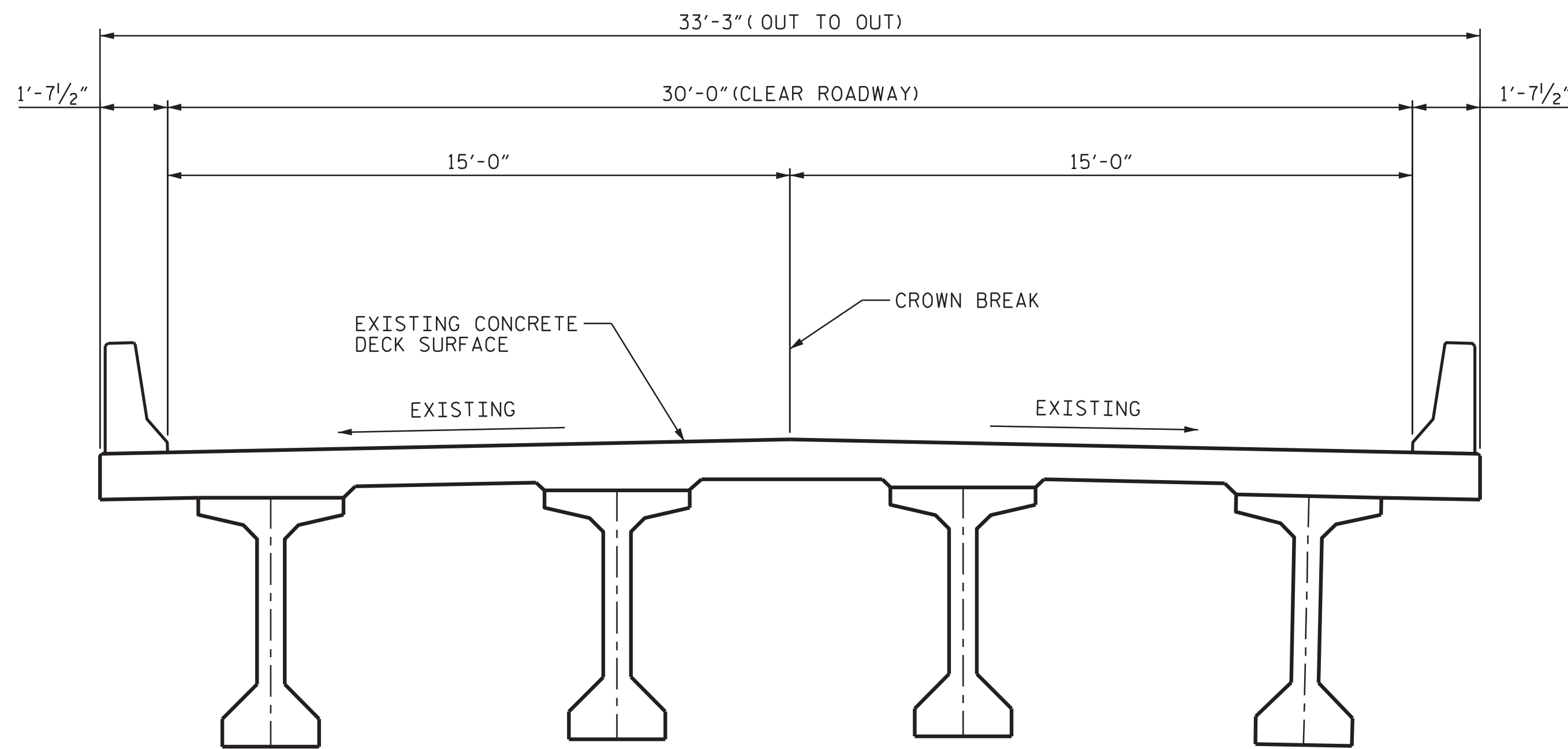
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : D. A. GLADDEN DATE : 10-22  
 CHECKED BY : E. E. MURRAY DATE : 12-22

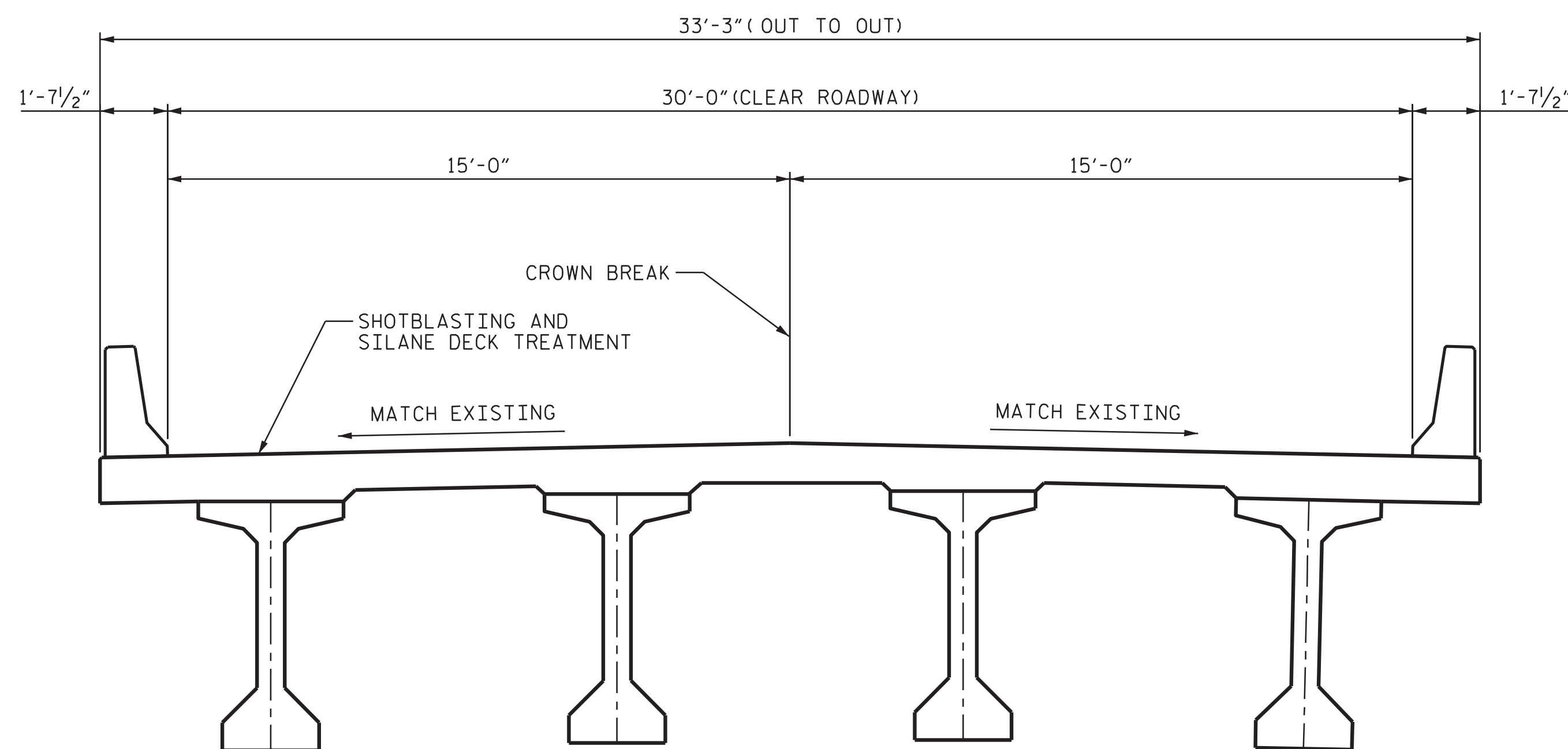


**NOTES**

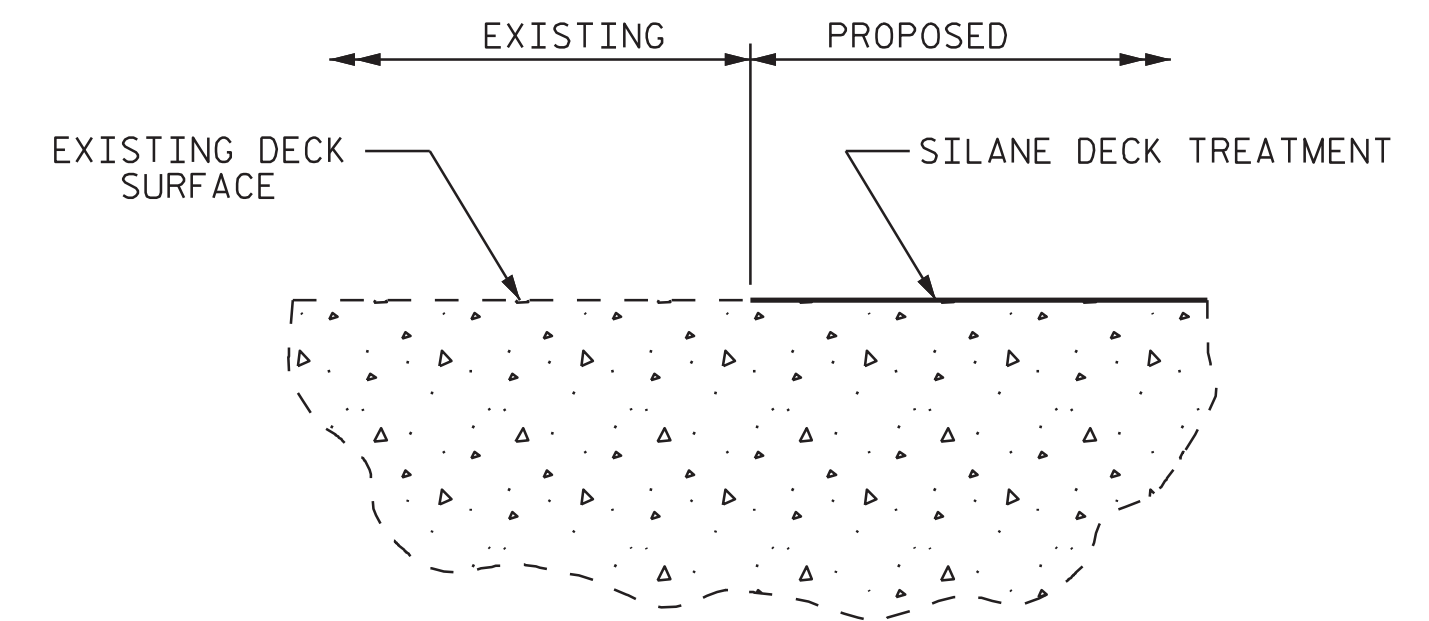
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.



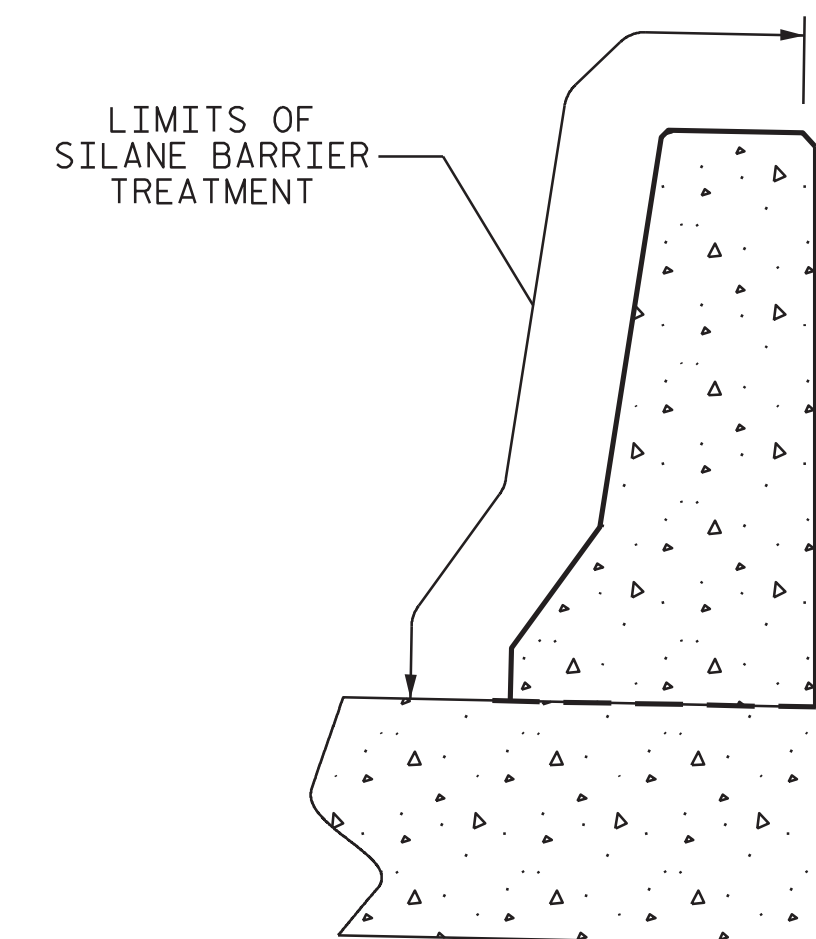
EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION



SILANE DECK TREATMENT

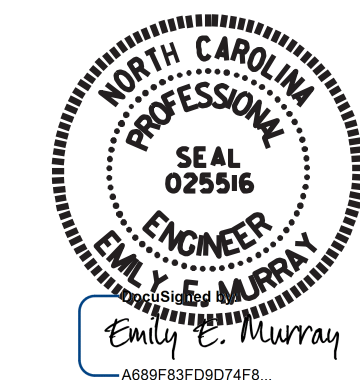


SILANE BARRIER RAIL TREATMENT

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO: 770490

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TYPICAL SECTION



4/6/2023

**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

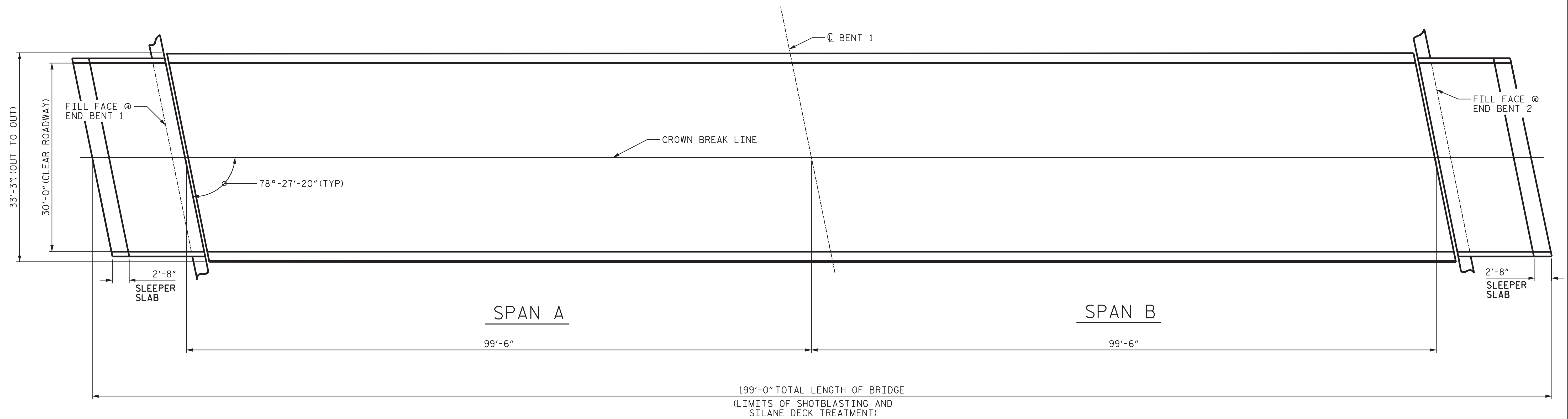
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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL
2			4			21

DRAWN BY : T. MAZARURA DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22

### SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SHOTBLASTING OF BRIDGE DECK	757.8 SY	
SILANE DECK TREATMENT	757.8 SY	
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1392.4 SF	
SILANE BARRIER RAIL TREATMENT	1392.4 SF	

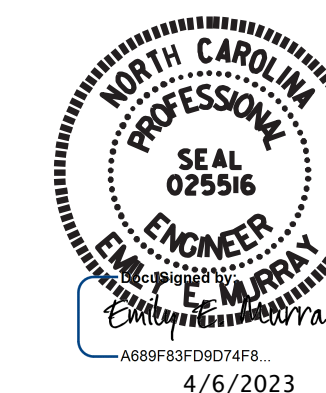


### PLAN OF SPAN A-B

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770490

### NOTES

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



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

### PLAN OF SPAN A-B

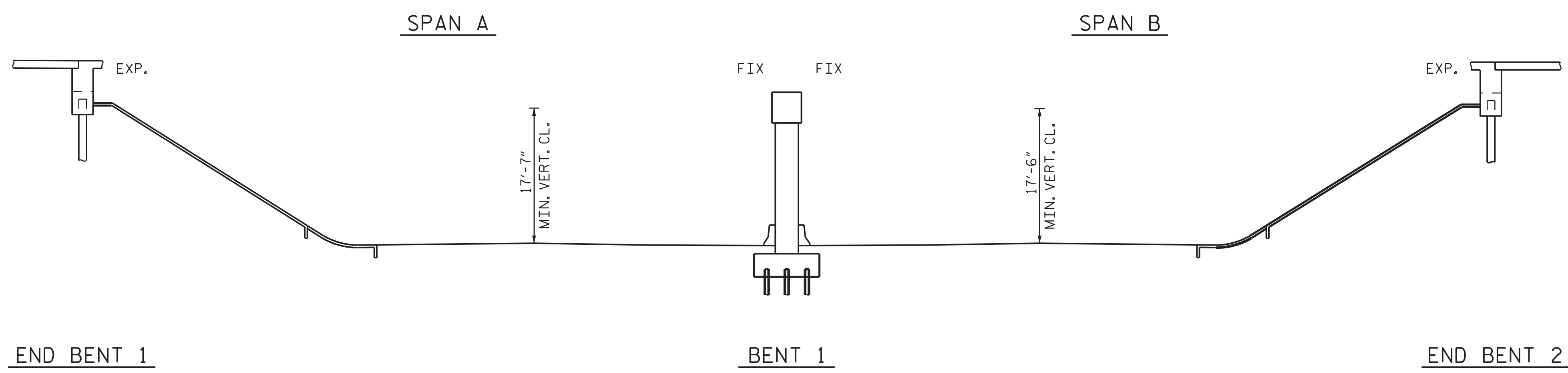
DRAWN BY: T. MAZARURA DATE: 11/22  
 CHECKED BY: E. E. MURRAY DATE: 11/22

**VOLKERT**

5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			21



**NOTES**

PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 07/01/2021.

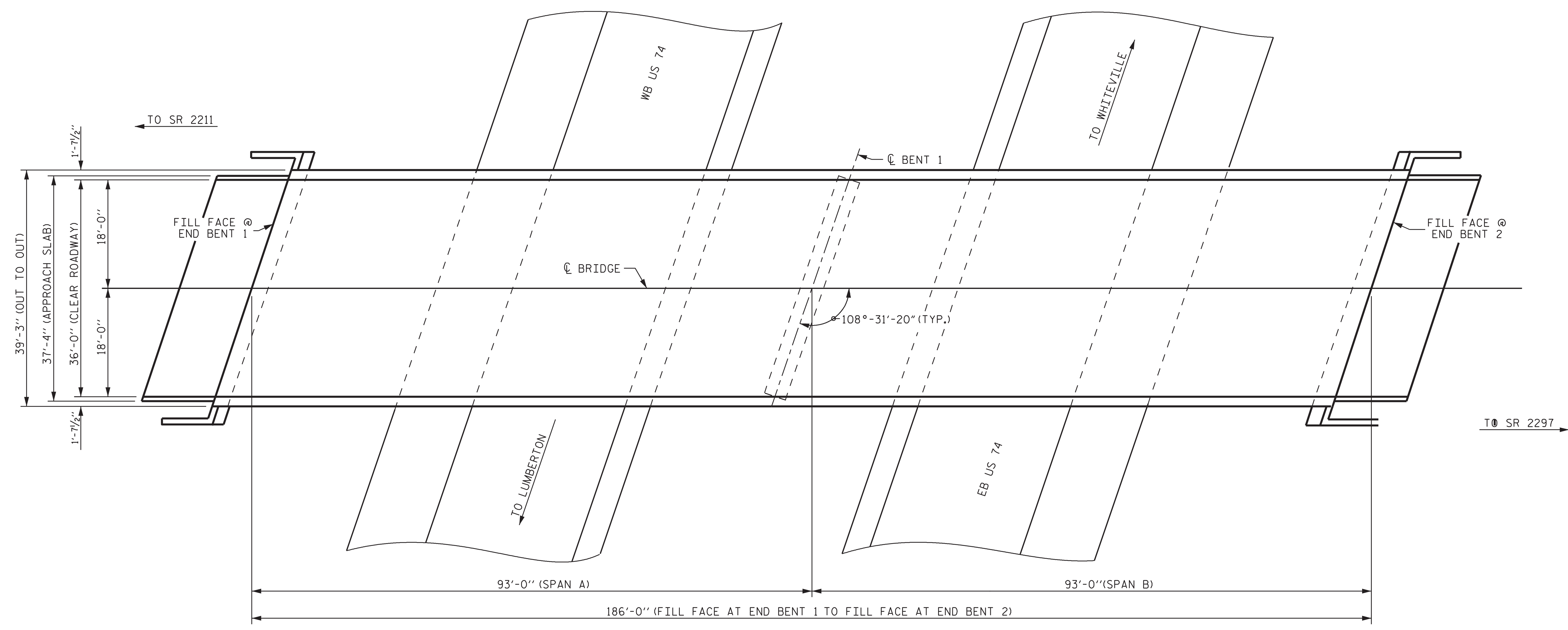
BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

**SCOPE OF WORK**

SHOTBLAST DECK AND APPLY SILANE DECK TREATMENT.

PREPARE SURFACE AND APPLY SILANE BARRIER RAIL TREATMENT.

**SECTION ALONG  $\phi$  BRIDGE**  
 (SECTION TAKEN AT RIGHT ANGLE TO END BENT)



**PLAN**

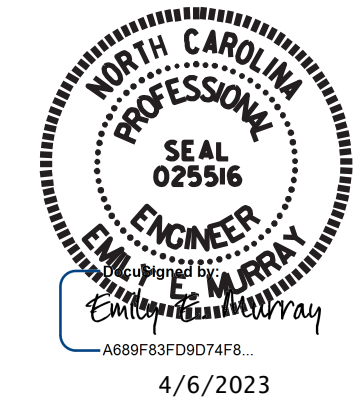
(PILES ARE NOT SHOWN FOR CLARITY)

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

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

**VOLKERT**

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 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax 919-854-0355  
 NC License No. F-0765



PROJECT NO. HI-0016  
ROBESON COUNTY  
 STATION: 770512

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**  
 FOR BRIDGE ON SR 2220  
 OVER US 74

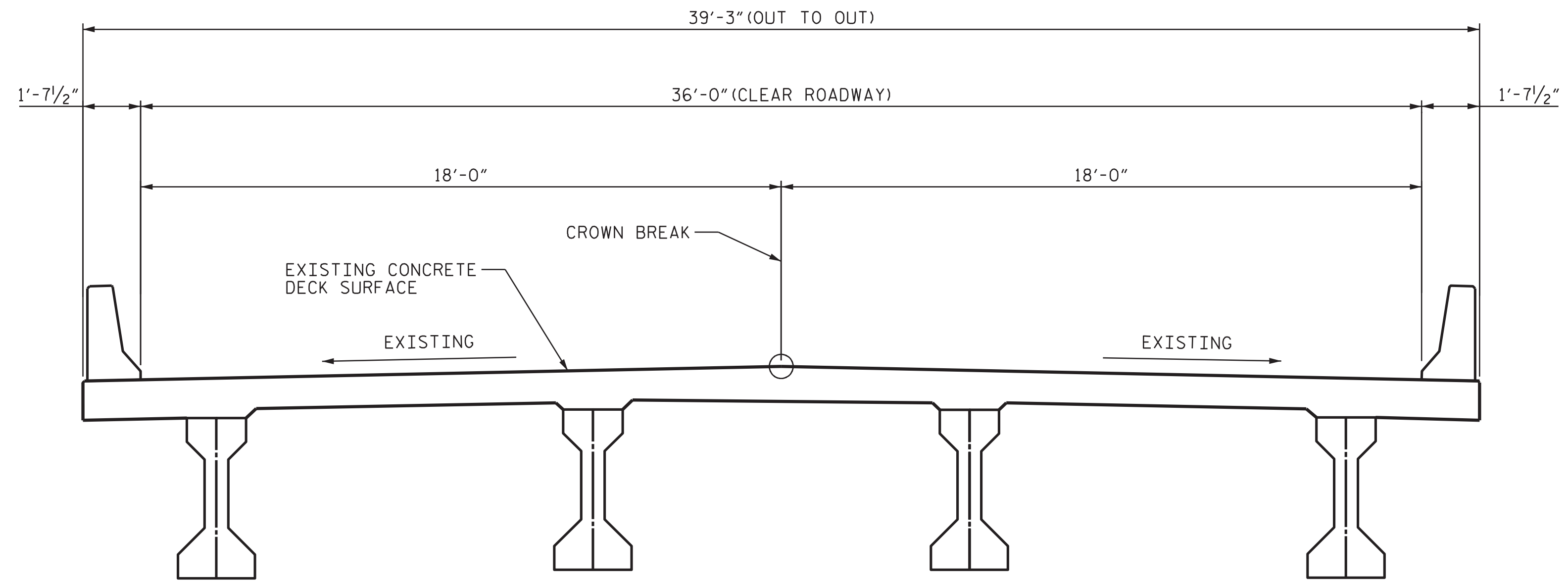
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			21

DRAWN BY: D. A. GLADDEN DATE: 10/22  
 CHECKED BY: E. E. MURRAY DATE: 11/22

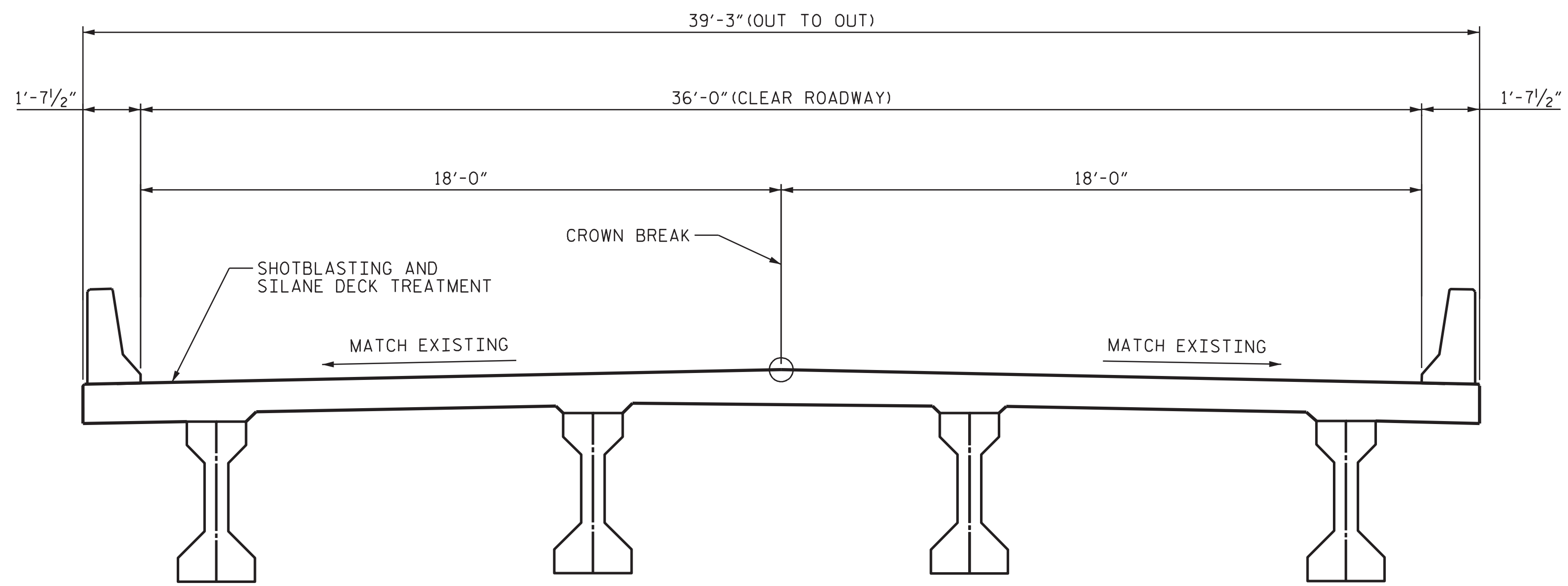
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 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

**NOTES**

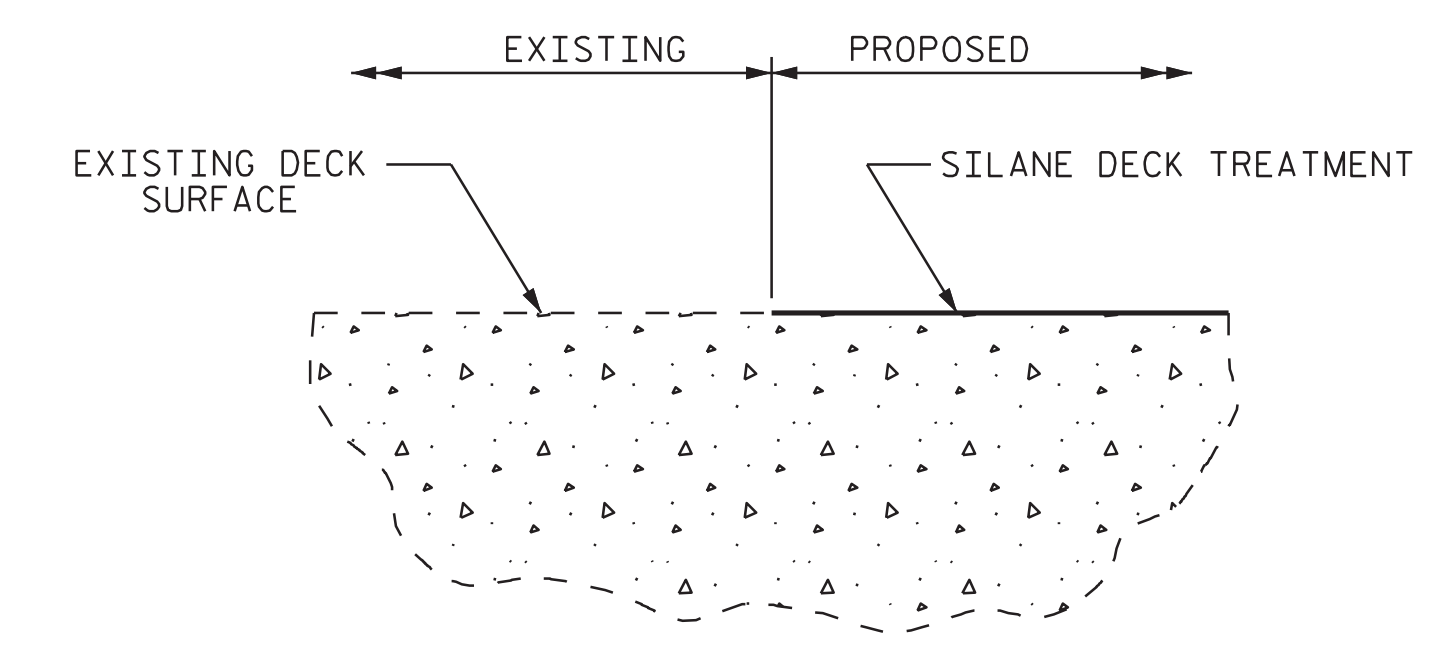
SEE TRANSPORTATION MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF SURFACE PREPARATION AND SILANE DECK TREATMENT.



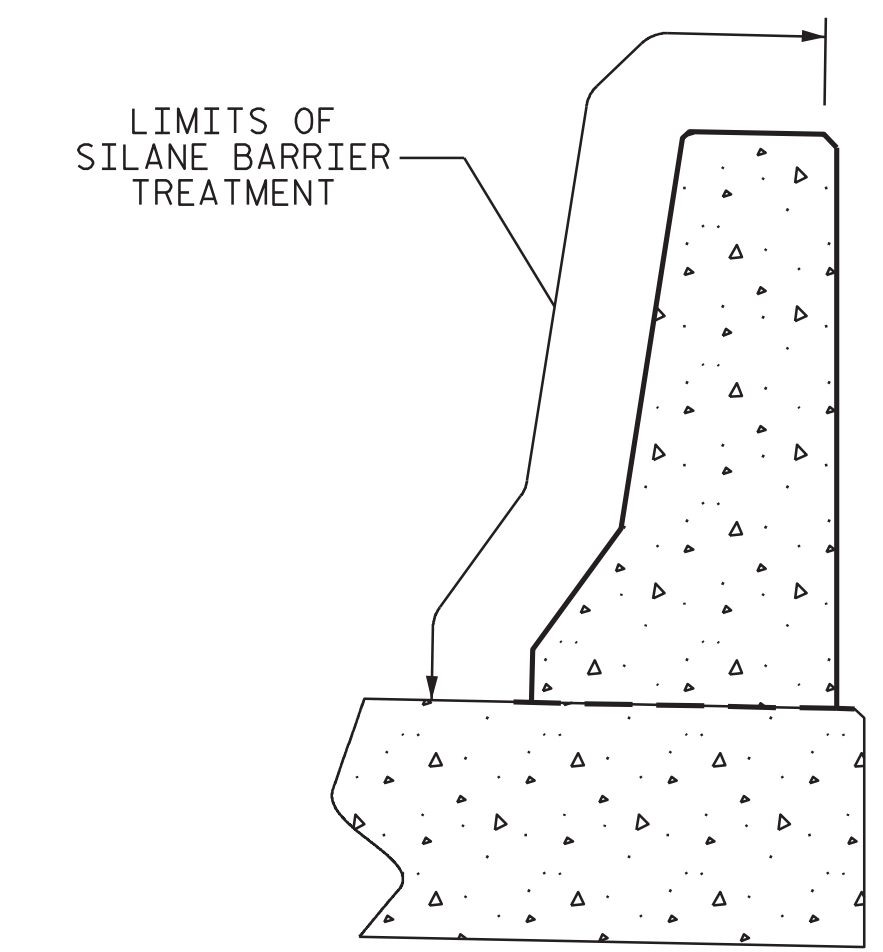
EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION



SILANE DECK TREATMENT



SILANE BARRIER RAIL TREATMENT

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO: 770512



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TYPICAL SECTION					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-18
					TOTAL SHEETS 21

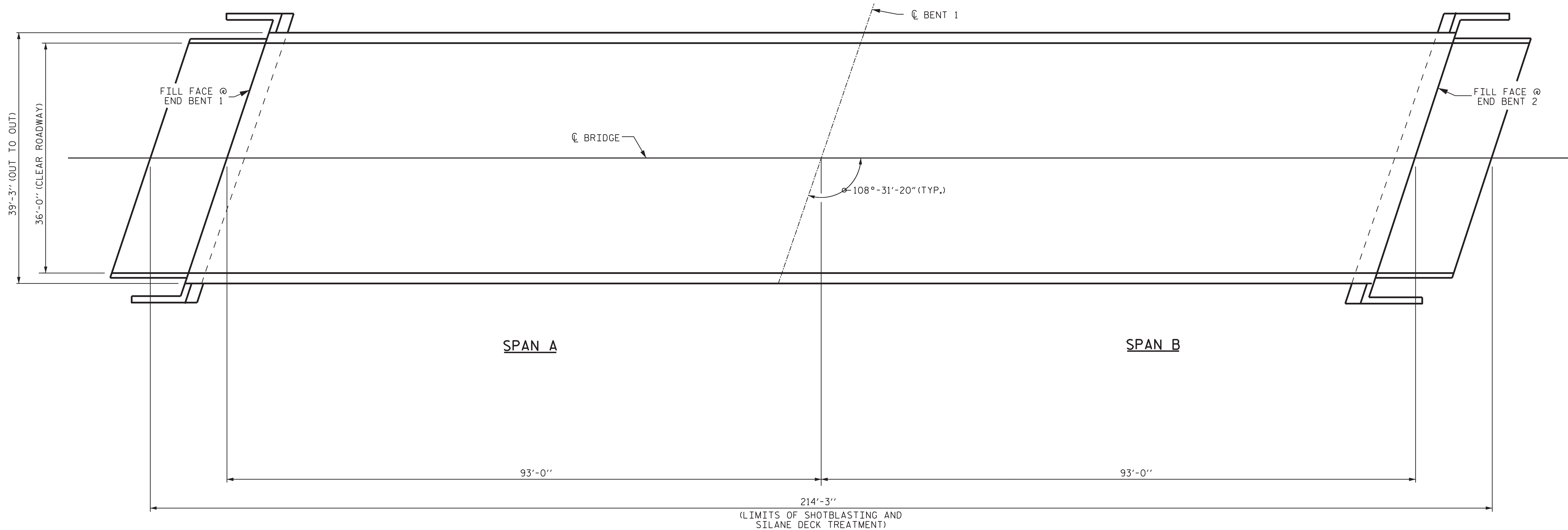
**VOLKERT**  
 5430 Wade Park Blvd., Suite 410  
 Raleigh, NC 27607  
 Tel. 919-854-0344 Fax. 919-854-0355  
 NC License No. F-0765

DOCUMENT NOT CONSIDERED  
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DRAWN BY : T. MAZARURA DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 11/22

### SUMMARY OF QUANTITIES

	ESTIMATE	ACTUAL
SHOTBLASTING OF BRIDGE DECK	857.0 SY	
SILANE DECK TREATMENT	857.0 SY	
SURFACE PREPARATION FOR SILANE BARRIER RAIL TREATMENT	1301.4 SF	
SILANE BARRIER RAIL TREATMENT	1301.4 SF	

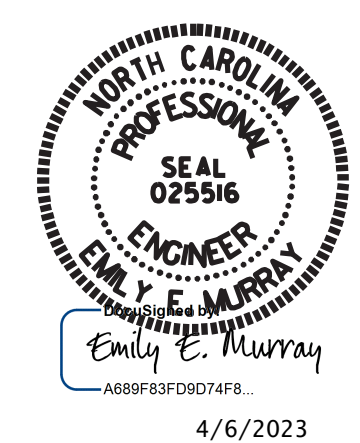


**PLAN**  
(PILES ARE NOT SHOWN FOR CLARITY)

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770512

**NOTES**

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



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

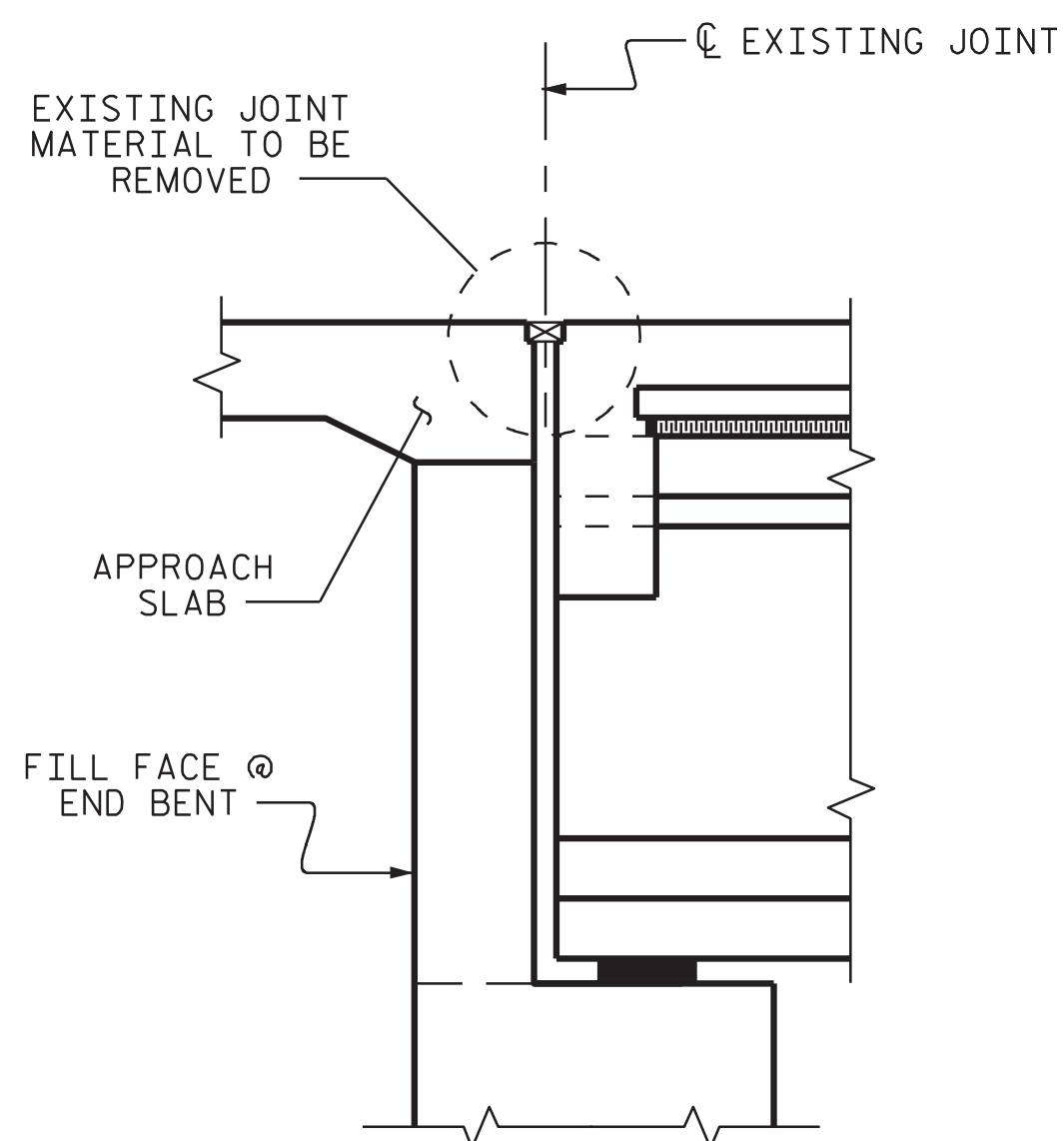
**PLAN OF SPAN A-B**

DRAWN BY : T. MAZARURA DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22

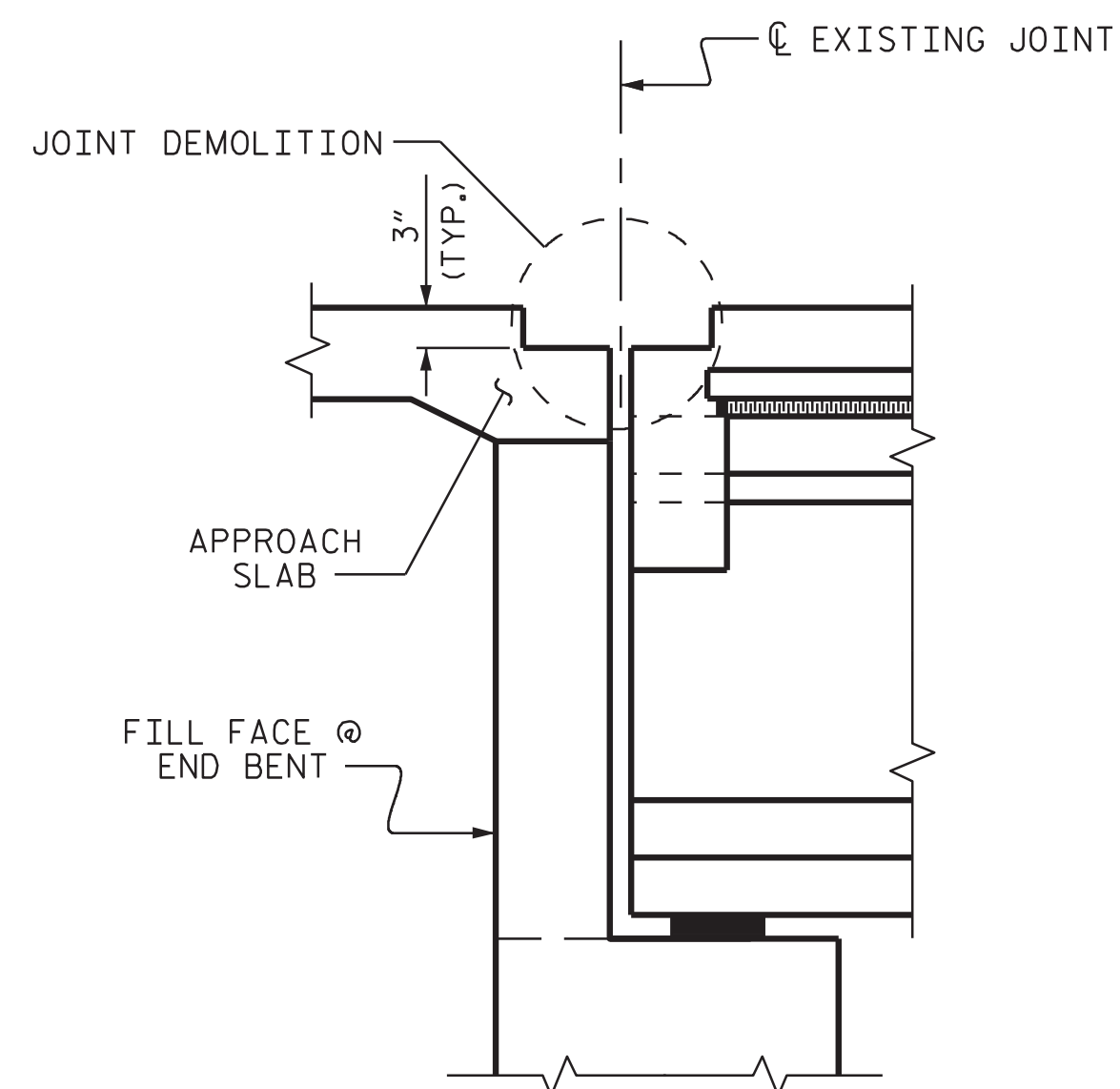
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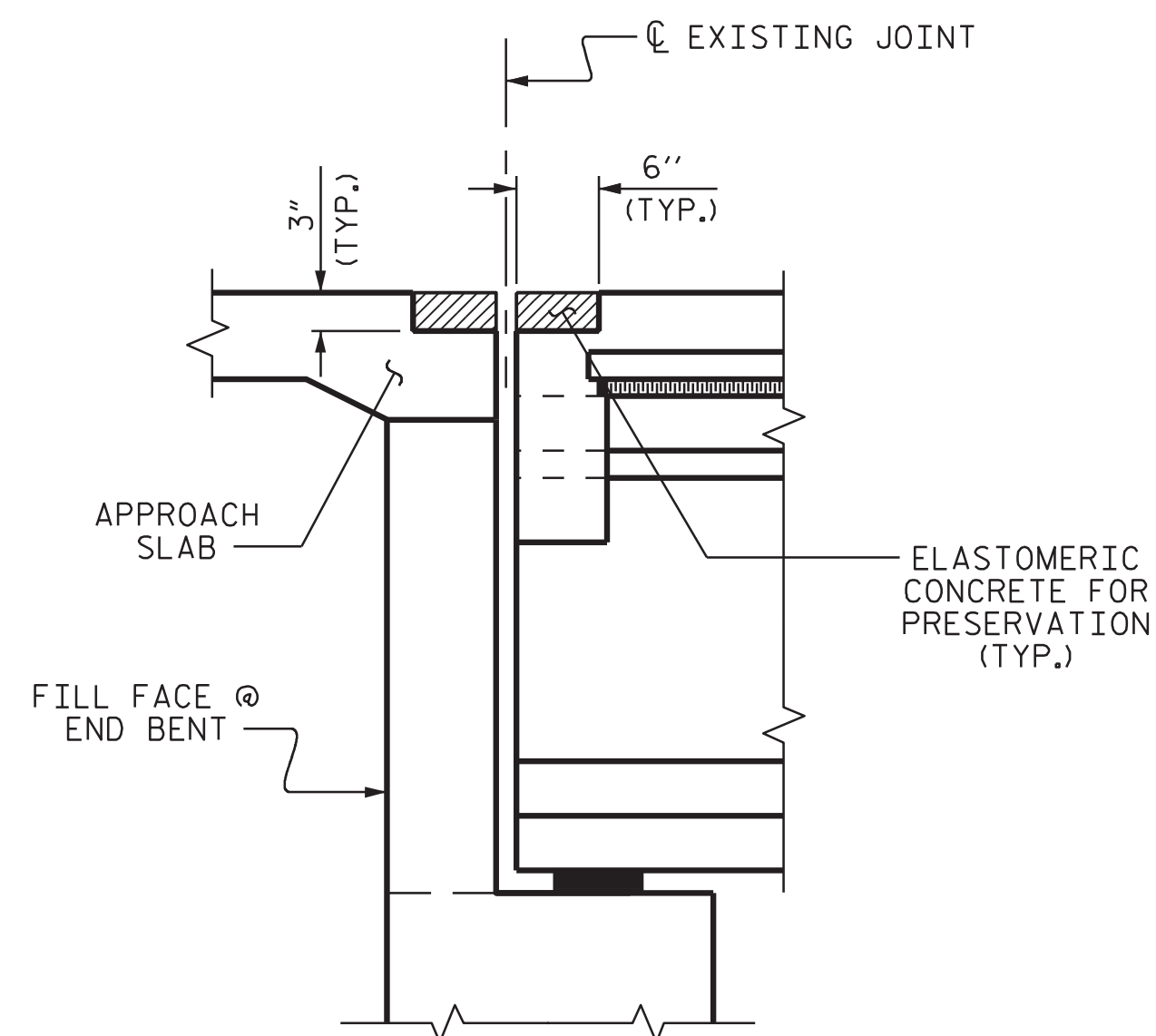
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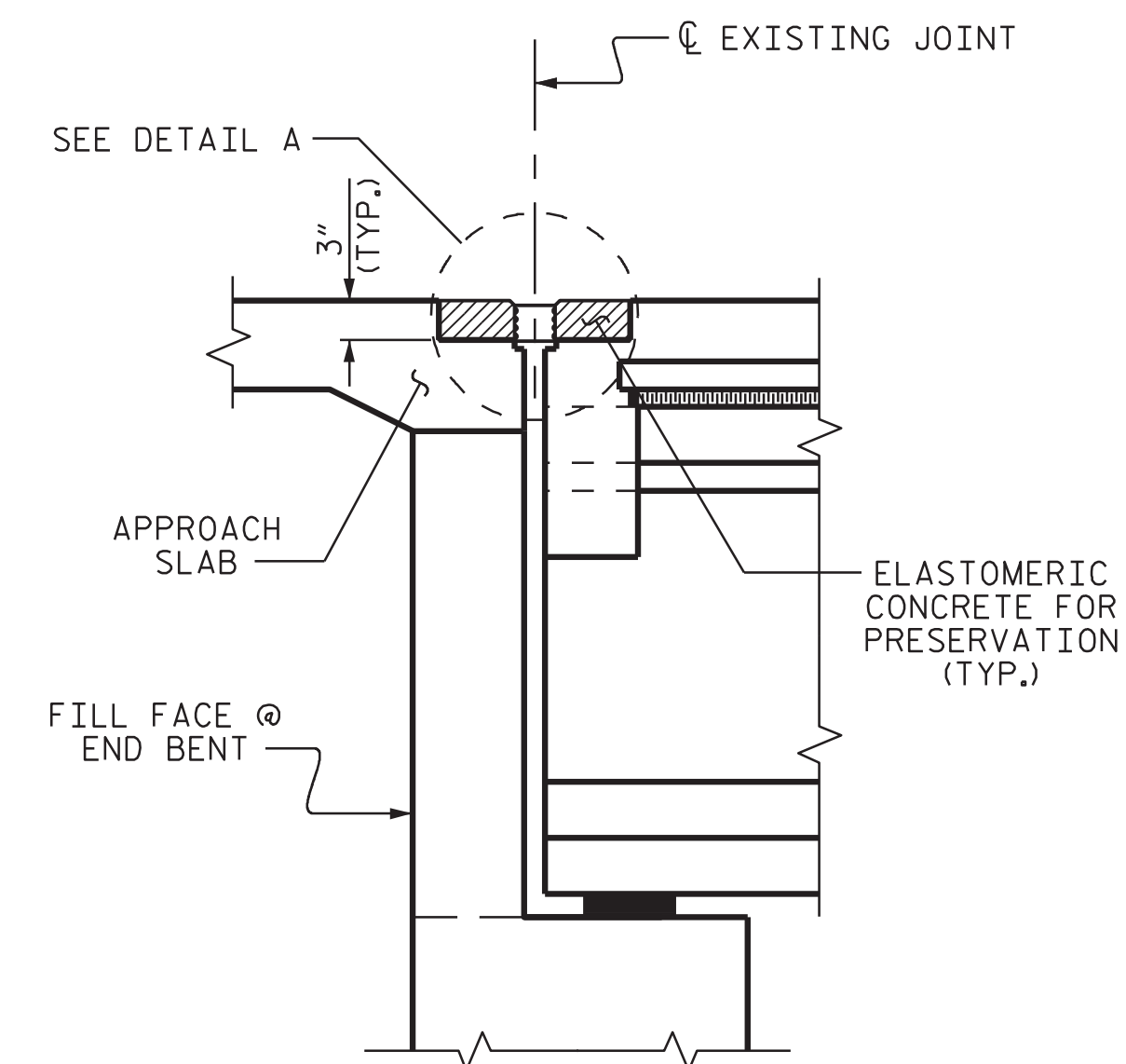
EXISTING JOINT



PROPOSED JOINT PREPARATION  
(MINIMUM EXISTING JOINT DEMOLITION)



PROPOSED JOINT PRESAWED



PROPOSED FOAM JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS (SECTION A-A)

PROJECT NO. HI-0016  
ROBESON COUNTY  
 BRIDGE NO. 770110, 770465  
770118, 770466  
 SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JOINT REPAIR  
 DETAILS



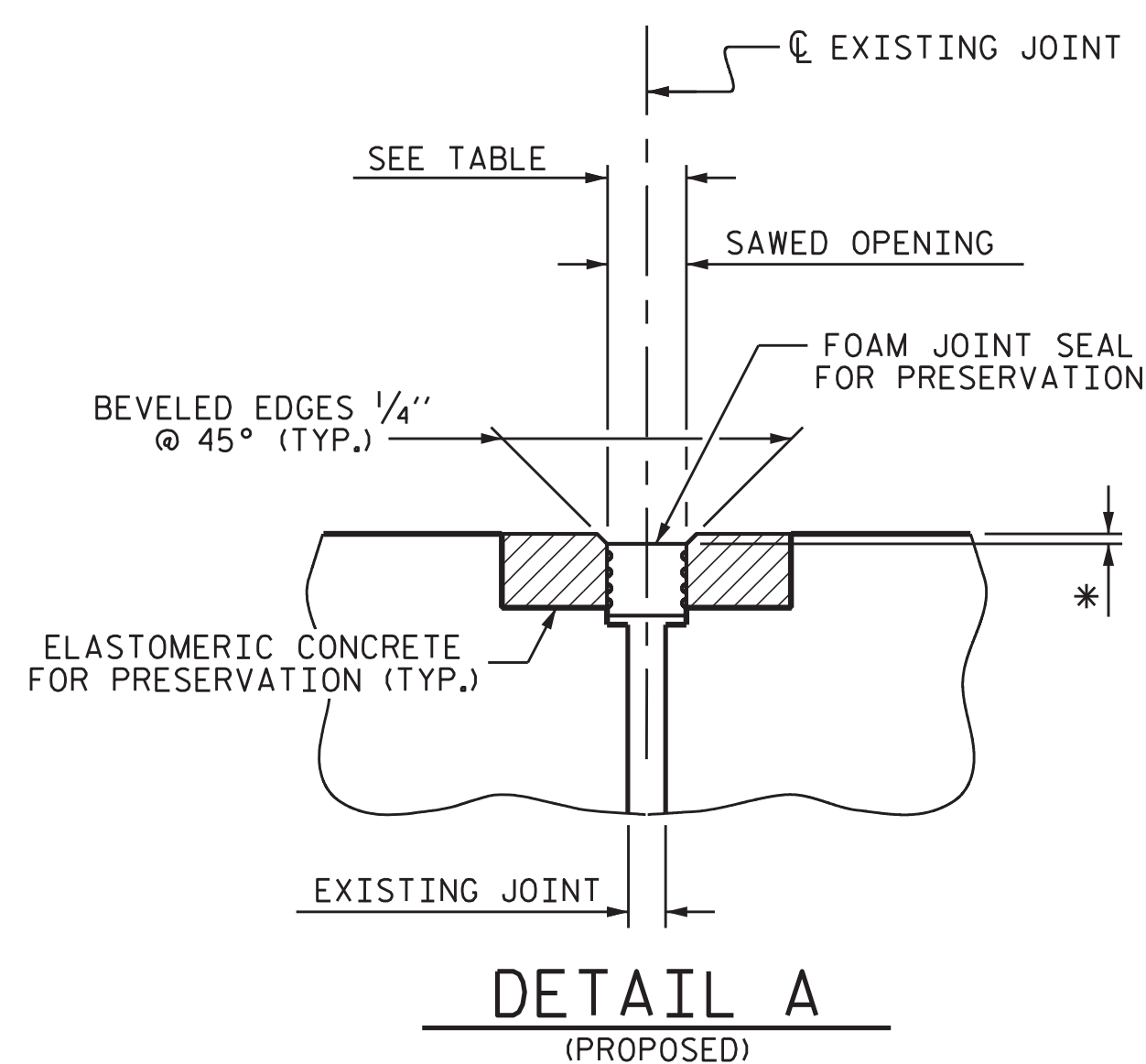
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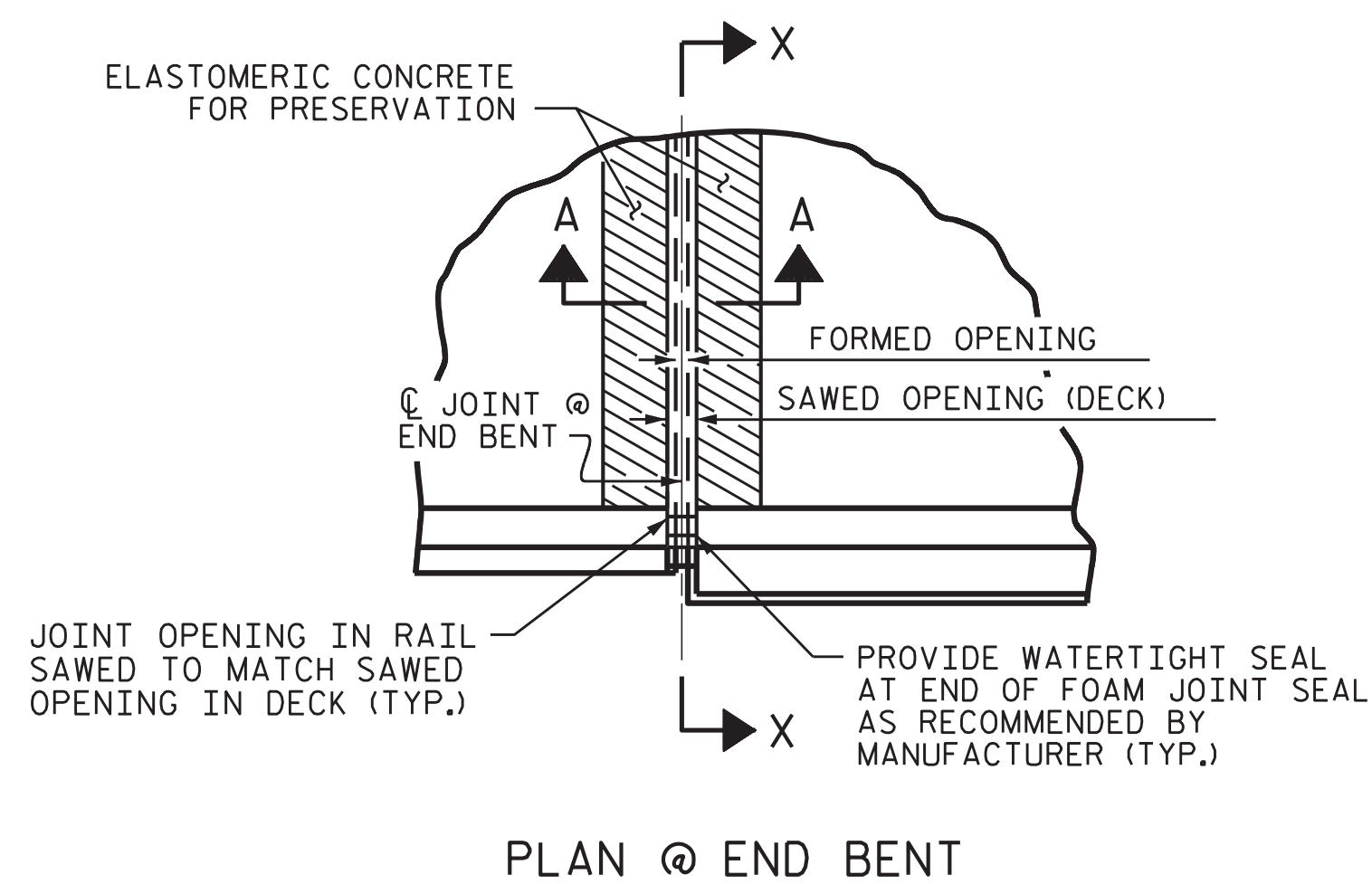
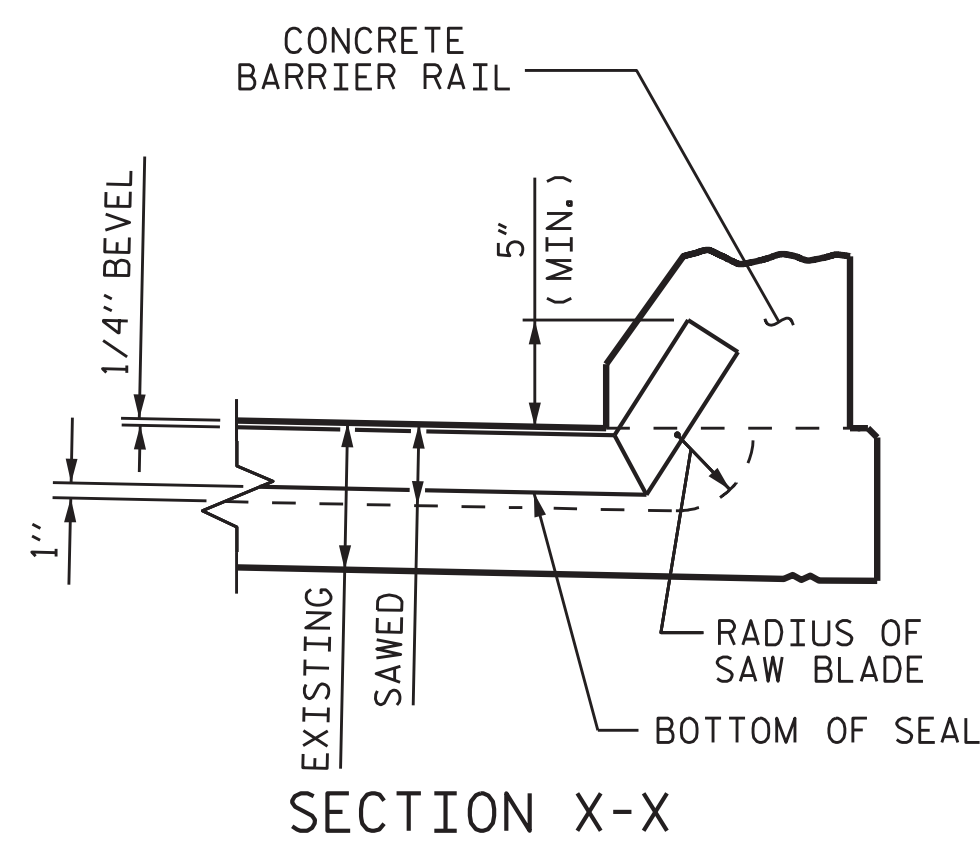
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			21

DRAWN BY : D. A. GLADDEN DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 11/22

SAWED JOINT OPENING TABLE					
BRIDGE NO.	LOCATION	SKEW ANGLE	PERPENDICULAR JOINT OPENING AT 30°	PERPENDICULAR JOINT OPENING AT 60°	PERPENDICULAR JOINT OPENING AT 90°
770110	END BENT 1	90°-00'-00"	1 7/16"	1 9/16"	1 5/8"
770110	END BENT 2	90°-00'-00"	1 7/16"	1 9/16"	1 5/8"
770465	END BENT 1	90°-00'-00"	1 7/16"	1 9/16"	1 5/8"
770465	END BENT 2	90°-00'-00"	1 7/16"	1 9/16"	1 5/8"
770118	END BENT 1	90°-00'-00"	1 1/4"	1 9/16"	1 11/16"
770118	END BENT 2	90°-00'-00"	1 1/4"	1 9/16"	1 11/16"
770466	END BENT 1	90°-00'-00"	1 1/4"	1 9/16"	1 11/16"
770466	END BENT 2	90°-00'-00"	1 1/4"	1 9/16"	1 11/16"



\* FOAM JOINT SEALS FOR PRESERVATION SHALL BE RECESSED AS PER MANUFACTURER'S RECOMMENDATIONS.



**JOINT SEAL DETAILS @ END BENTS**

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

**NOTES**

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

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING JOINT OPENING PRIOR TO ORDERING JOINT SEAL MATERIAL. IF THE ACTUAL JOINT OPENING VARIES FROM THE OPENING ALLOWED BY THE JOINT SEAL MATERIAL, NOTIFY THE ENGINEER. REVISION TO THE JOINT SEAL SIZE AND TYPE MIGHT BE NECESSARY.

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

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

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.

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

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

FOR FOAM JOINT SEALS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

THE INSTALLED FOAM JOINT SEALS FOR PRESERVATION SHALL BE WATER TIGHT.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR LOCATION OF SECTIONS A-A, SEE PLAN OF SPAN SHEETS.

QUANTITIES					
BRIDGE NO.	LOCATION	FOAM JOINT SEALS FOR PRESERVATION		ELASTOMERIC CONCRETE FOR PRESERVATION	
		ESTIMATED (LIN. FT.)	ACTUAL (LIN. FT.)	ESTIMATED (CU. FT.)	ACTUAL (CU. FT.)
770110	END BENT 1	39.0		9.5	
770110	END BENT 2	39.0		9.5	
770118	END BENT 1	39.0		9.5	
770118	END BENT 2	39.0		9.5	
770465	END BENT 1	39.0		9.5	
770465	END BENT 2	39.0		9.5	
770466	END BENT 1	39.0		9.5	
770466	END BENT 2	39.0		9.5	

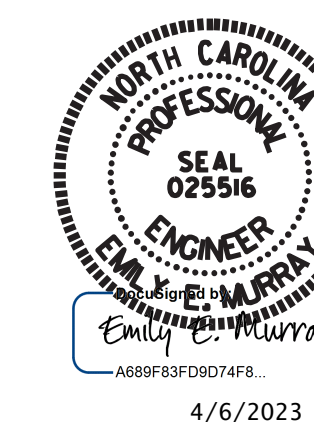
PROJECT NO. HI-0016  
ROBESON COUNTY

BRIDGE NO. 770110, 770465  
770118, 770466

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT REPAIR DETAILS**



4/6/2023

**VOLKERT**

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1			3			TOTAL SHEETS
2			4			21

DRAWN BY : D. A. GLADDEN DATE : 11/22  
 CHECKED BY : E. E. MURRAY DATE : 12/22

## 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 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 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 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 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø 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 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 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