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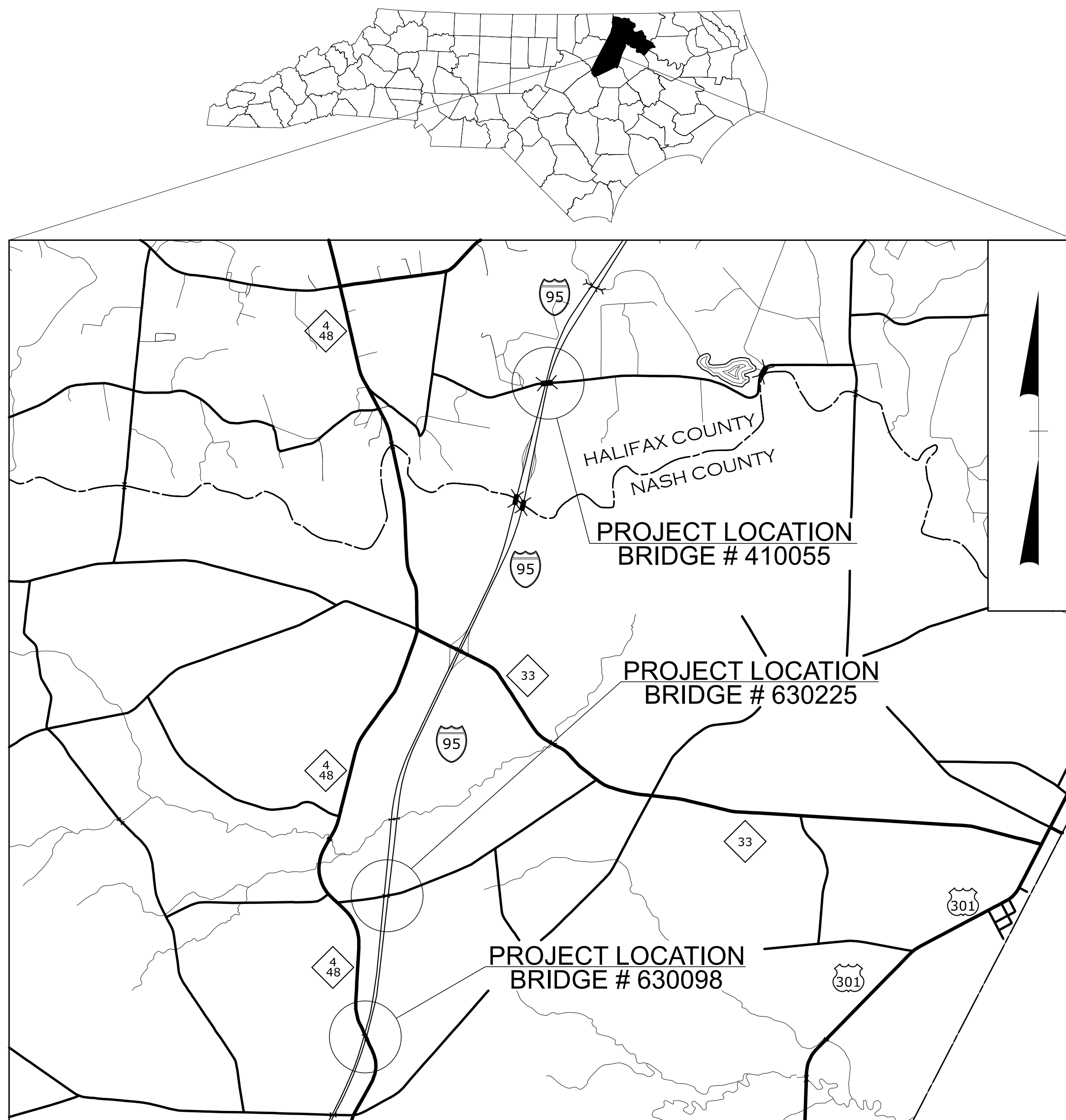
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HALIFAX/NASH COUNTY

LOCATION: BRIDGE #410055 ON SR 1226 OVER I-95
BRIDGE #630098 ON NC4/NC 48 OVER I-95
BRIDGE #630225 ON SR 1515 OVER I-95



VICINITY MAP

INDEX OF SHEETS

| SHEET NO. | TITLE |
|-----------|---|
| TMP-1 | TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS |
| TMP-1A | LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND |
| TMP-1B | TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES) |
| TMP-2 | SIGN DESIGNS |
| TMP-2A | BRIDGE #630098 DETOUR |
| TMP-2B | BRIDGE #630225 DETOUR |
| TMP-2C | BRIDGE #410055 DETOUR |
| TMP-3 | TEMPORARY TRAFFIC CONTROL PHASING |

SHEET NO.

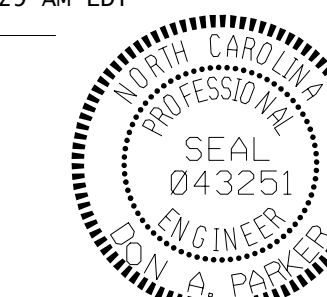
TMP-1

TIP PROJECT: 4B.104213/4B.106413

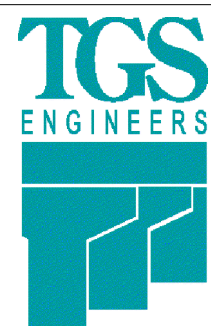
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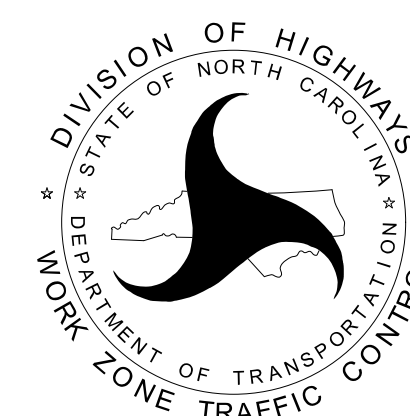
PLANS PREPARED FOR N.C.D.O.T. BY: TGS ENGINEERS



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CORP. LICENSE NO.: C-0275

DON A. PARKER, P.E.
PROJECT ENGINEER


CODA BRANNAN, E.I.
DESIGN ENGINEER



ROADWAY STANDARD DRAWINGS



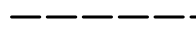

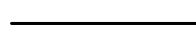


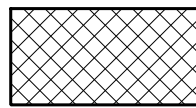

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

| STD. NO. | TITLE |
|----------|---|
| 1101.01 | WORK ZONE WARNING SIGNS |
| 1101.02 | TEMPORARY LANE CLOSURES |
| 1101.03 | TEMPORARY ROAD CLOSURES |
| 1101.11 | TRAFFIC CONTROL DESIGN TABLES |
| 1110.01 | STATIONARY WORK ZONE SIGNS |
| 1110.02 | PORTABLE WORK ZONE SIGNS |
| 1115.01 | FLASHING ARROW BOARDS |
| 1130.01 | DRUMS |
| 1135.01 | CONES |
| 1145.01 | BARRICADES |
| 1150.01 | FLAGGING DEVICES |
| 1165.01 | TRUCK MOUNTED ATTENUATOR |
| 1205.01 | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS |
| 1205.02 | PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS |
| 1205.04 | PAVEMENT MARKINGS - INTERSECTIONS |
| 1205.05 | PAVEMENT MARKINGS - TURN LANES |
| 1205.08 | PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES |
| 1205.12 | PAVEMENT MARKINGS - BRIDGES |

| | |
|--|---------------------|
| PROJ. REFERENCE NO. 4B.104213/ 4B.106413 | SHEET NO. TMP-1A |
|  TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275 | |

LEGEND

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)
-  WORK AREA
-  REMOVAL
-  WEDGING







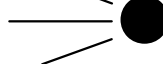

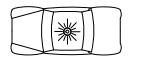

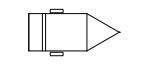
SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY




PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES




TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM
-  SKINNY DRUM
-  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

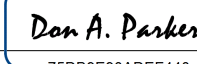
PAVEMENT MARKERS

-  CRYSTAL/CRYSTAL
-  CRYSTAL/RED
-  YELLOW/YELLOW

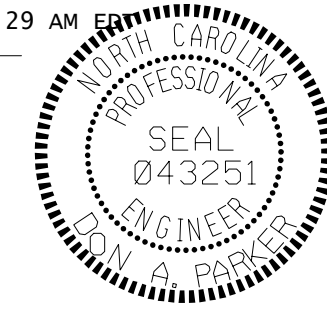
PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

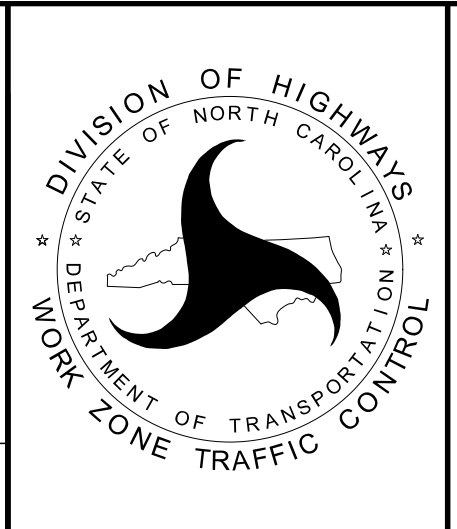
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User:cbgramm

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DocuSigned by: Don A. Parker 750B8E9ADEF440...

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ROADWAY STANDARD DRAWINGS & LEGEND

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIREED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

| ROAD NAME | DAY AND TIME RESTRICTIONS |
|-----------|--|
| I-95 | MONDAY THRU THURSDAY 7:00 AM TO 8:00 PM AND FRIDAY THRU SUNDAY 7:00 AM TO 10:00 PM |

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

| ROAD NAME |
|-----------|
| I-95 |

| HOLIDAY |
|--|
| 1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER. |
| 2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:30 A.M. DECEMBER 31st TO 8:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 P.M. THE FOLLOWING TUESDAY. |
| 3. FOR EASTER, BETWEEN THE HOURS OF 6:30 A.M. THURSDAY AND 8:00 P.M. MONDAY. |
| 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:30 A.M. FRIDAY TO 8:00 P.M. TUESDAY. |
| 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:30 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:30 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY. |
| 6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:30 A.M. FRIDAY AND 8:00 P.M. TUESDAY. |
| 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:30 A.M. TUESDAY TO 8:00 P.M. MONDAY. |
| 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:30 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS. |

LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

- G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

- H) USE SEQUENTIAL FLASHING WARNING LIGHTS ON DRUMS USED FOR THE MERGING TAPERS OF NIGHTTIME LANE CLOSURES IN ACCORDANCE WITH SECTION 1140 IN THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

- I) NOTIFY THE NCDOT STATEWIDE TRANSPORTATION OPERATIONS CENTER (STOC) AT 877-627-7862 APPROXIMATELY 30 MINUTES PRIOR TO INSTALLING AND WITHIN 15 MINUTES AFTER REMOVING LANE CLOSURES ON INTERSTATES, FREEWAYS, CONTROLLED ACCESS FACILITIES, AND US ROUTES.

TRAFFIC PATTERN ALTERATIONS

- J) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

- L) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- M) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

- N) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- O) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

- P) INSTALL FINAL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON FINAL PAVEMENT SURFACE AS FOLLOWS:

| ROAD NAME | MARKING | MARKER |
|-----------------------------------|----------------------|--------|
| ALL ROADS (ASPHALT) | THERMOPLASTIC | NONE |
| ALL ROADS (CONCRETE BRIDGE DECKS) | COLD APPLIED PLASTIC | NONE |

- Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

- R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- S) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/ OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

LOCAL NOTES

LOCAL NOTES

1. THE FOLLOWING REQUIREMENTS APPLY TO LANE CLOSURES ON I-95:

-- REDUCE SPEED DISPLAY ON DIGITAL SPEED LIMIT SIGNS (DSL) AS STATED IN THE WORK ZONE VARIABLE SPEED LIMIT (WZVSL) ORDINANCE. WHEN THE LANE CLOSURE IS REMOVED, RESTORE THE SPEED DISPLAY TO THE POSTED SPEED LIMIT. (SEE DSL SPECIAL PROVISION.)

-- INCLUDE UP TO TWO ADDITIONAL PCMS TO THE TWO REQUIRED BY RSD 1102.02, SHEET 4 (4 TOTAL). LOCATE AND PROVIDE MESSAGING AS DIRECTED BY THE ENGINEER.

-- USE A CONNECTED LANE CLOSURE SYSTEM (SEE SPECIAL PROVISION). WHEN THE SYSTEM IS TURNED ON FOR THE LANE CLOSURE, THE CONTRACTOR SHALL CONFIRM THE SYSTEM IS TRANSMITTING INFORMATION PRIOR TO LEAVING THE SYSTEM UNATTENDED.

-- USE PRESENCE LIGHTING IN ADVANCE OF THE MERGE TAPER FOR NIGHTTIME LANE CLOSURES (SEE SPECIAL PROVISIONS).

-- USE SEQUENTIAL FLASHING WARNING LIGHTS ON DRUM TAPERS FOR NIGHTTIME LANE CLOSURES.

-- USE LAW ENFORCEMENT AS DIRECTED BY THE ENGINEER.

MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:

- FULL ROADWAY CLOSURES
- LANE SHIFTS OR CLOSURES
- SHOULDER CLOSURES
- NIGHT WORK
- OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES

WORK ZONE SAFETY & MOBILITY STRATEGIES:

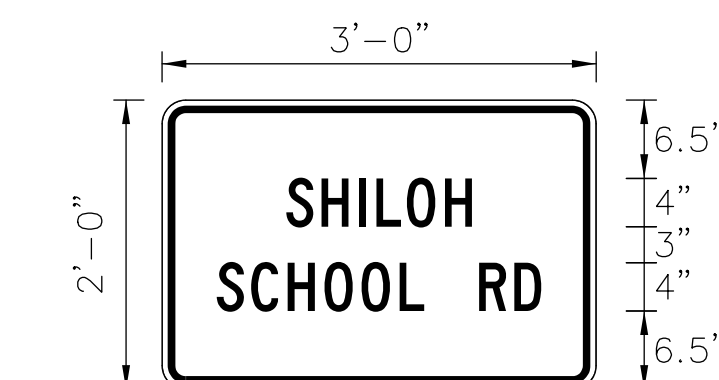
- SPEED LIMIT REDUCTION
- DIGITAL SPEED LIMIT SIGNS / VARIABLE SPEED LIMITS
- SEQUENTIAL LIGHTING
- PRESENCE LIGHTING


| PROJ. REFERENCE NO. | SHEET NO. |
|-------------------------|-----------|
| 4B.104213/ 4B.106413 | TMP-1B |

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CORP. LICENSE NO.: C-0275

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| APPROVED: <u>Don A. Parker</u> <small>75089690ADEF440...</small> DATE: 7/30/2024 11:29 AM EDT | | | <h2>TRANSPORTATION OPERATIONS PLAN</h2> |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |

| SIGN NUMBER: DET-1 TYPE: STATIONARY | BACKG COLOR: Fluorescent Orange COPY COLOR: Black | DESIGN BY: CMB PROJECT ID: 4B.104213/4B.106413 | CHECKED BY: DAP LOCATION: NASH CO. | Jul 15, 2024 DIV: 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| QUANTITY: SEE PLANS | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table> | SYMBOL | X | Y | WID | HT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | |
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| SIGN WIDTH: 3'-0" HEIGHT: 2'-0" TOTAL AREA: 6 Sq.Ft. | BORDER TYPE: INSET RECESS: 0.47" WIDTH: 0.63" RADII: 1.5" | MAT'L: 0.080" (2.0 mm) ALUMINUM NO. Z BARS: LENGTH: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USE NOTES: 1,2 1. Legend and border shall be direct applied black non-reflective sheeting. 2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| SIGN NUMBER: DET-2 TYPE: STATIONARY | BACKG COLOR: Fluorescent Orange COPY COLOR: Black | DESIGN BY: CMB PROJECT ID: 4B.104213/4B.106413 | CHECKED BY: DAP LOCATION: HALIFAX CO. | Jul 15, 2024 DIV: 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| SIGN WIDTH: 2'-6" HEIGHT: 2'-0" TOTAL AREA: 5 Sq.Ft. | BORDER TYPE: INSET RECESS: 0.47" WIDTH: 0.63" RADII: 1.5" | MAT'L: 0.080" (2.0 mm) ALUMINUM NO. Z BARS: LENGTH: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| USE NOTES: 1,2 1. Legend and border shall be direct applied black non-reflective sheeting. 2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LETTER POSITIONS

Letter locations are panel edge to lower left corner

| Letter | Series/Size | Text Length |
|-----------------|-------------|-------------|
| S H I L O H | C 2000 | 15.4 |
| S C H O O L R D | C 2000 | 26.92 |

FILENAME: Sign_Designs NORTH CAROLINA D.O.T. SIGN DETAIL

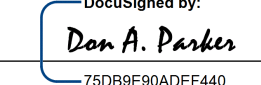
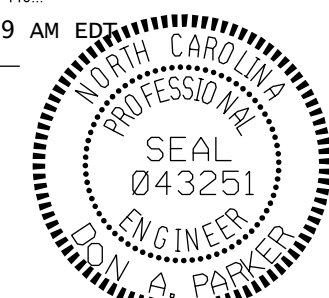
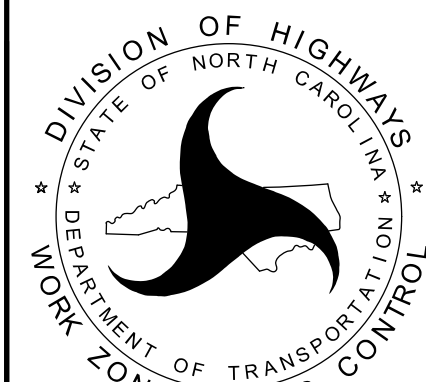
LETTER POSITIONS

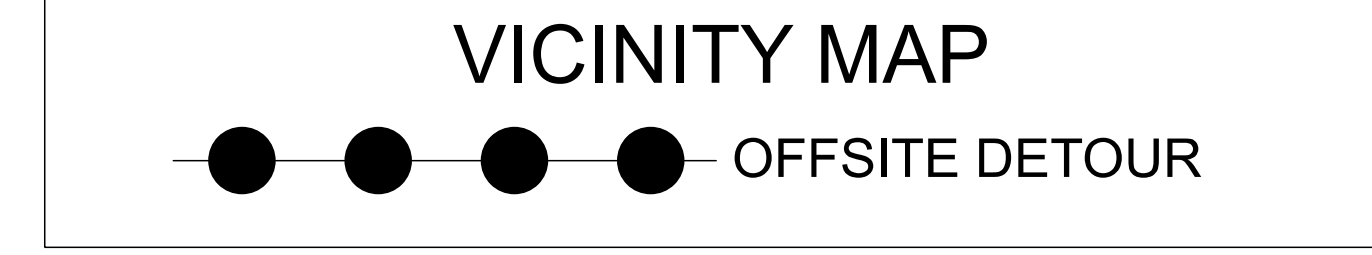
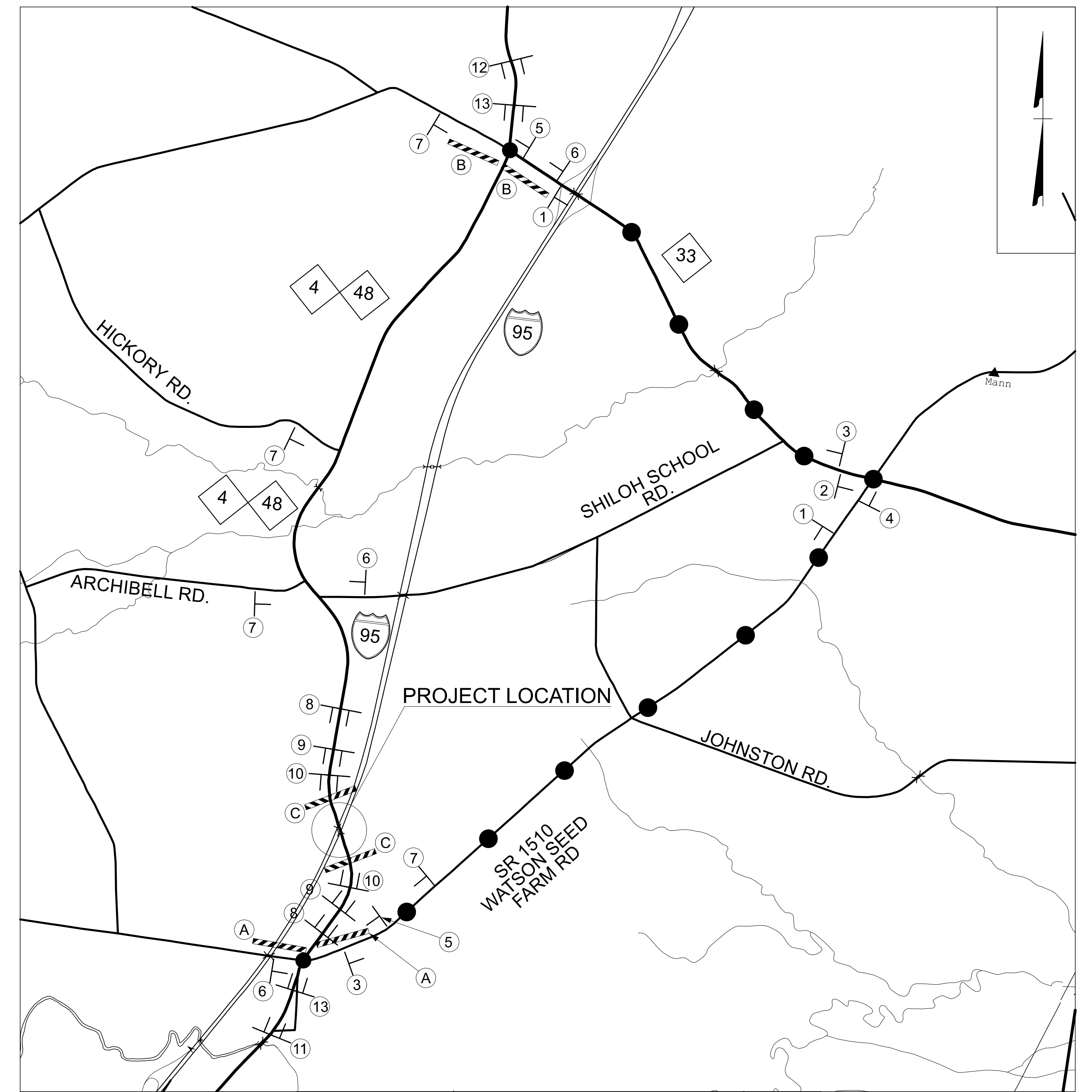
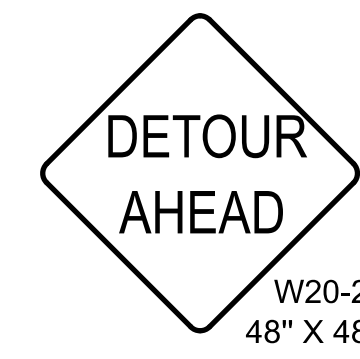
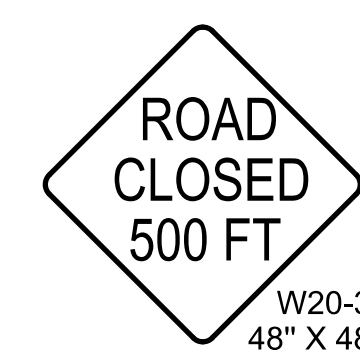
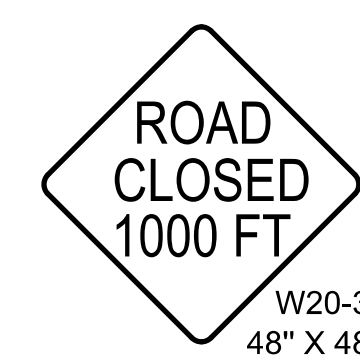
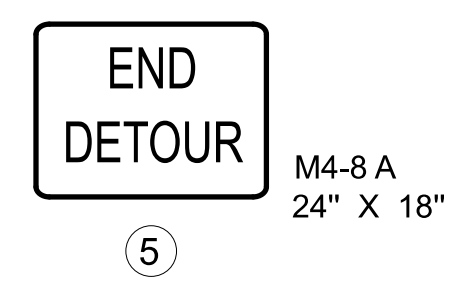
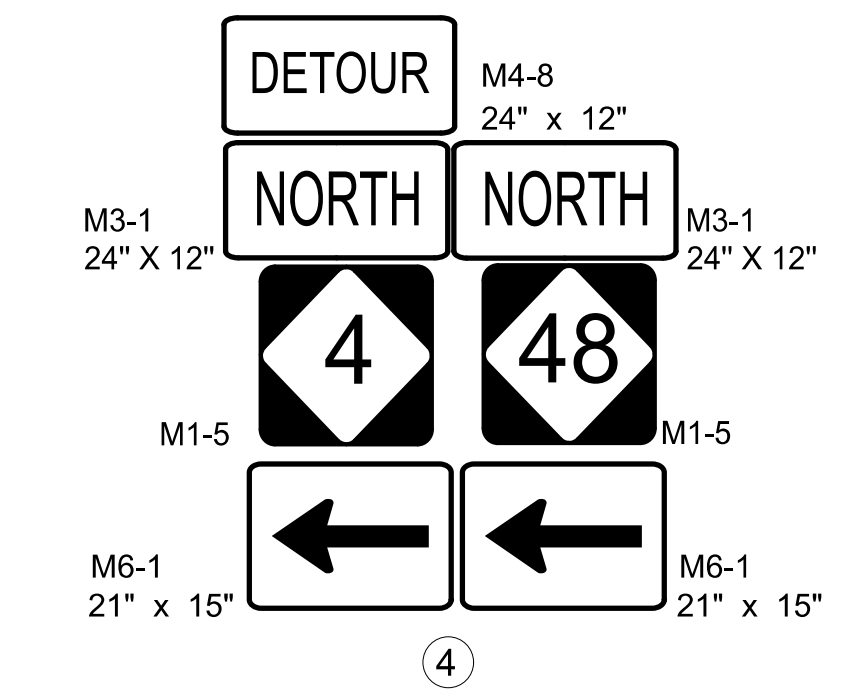
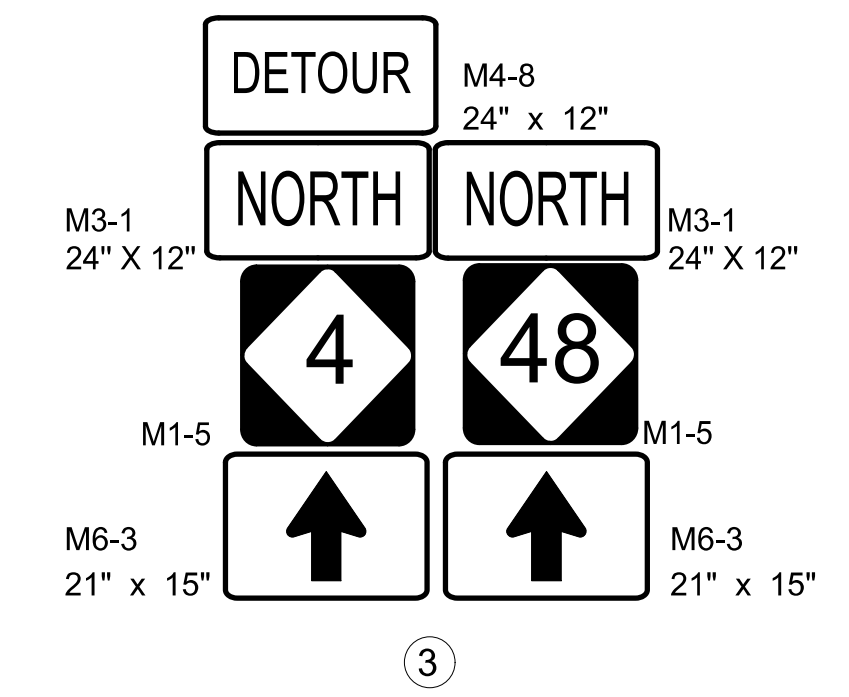
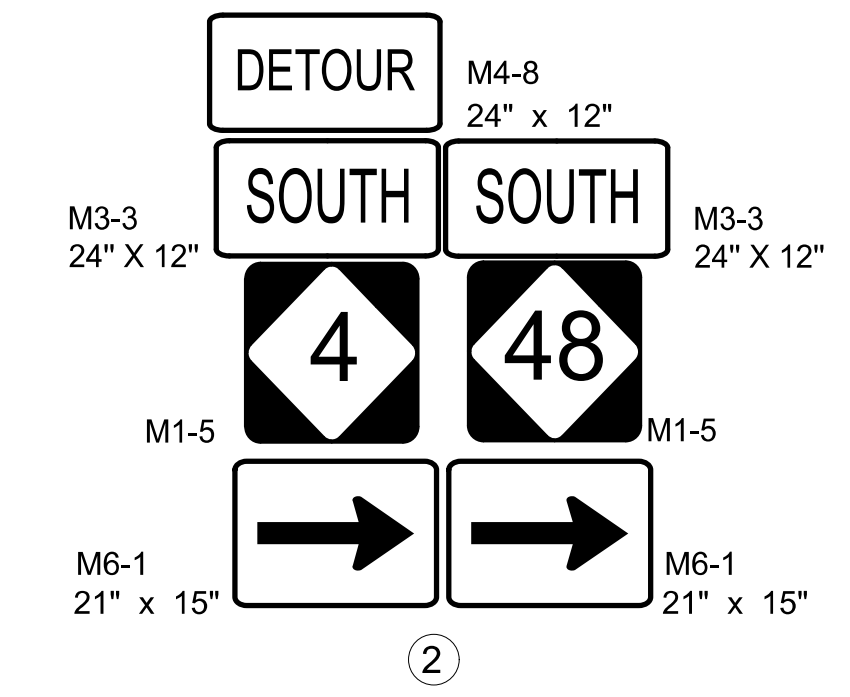
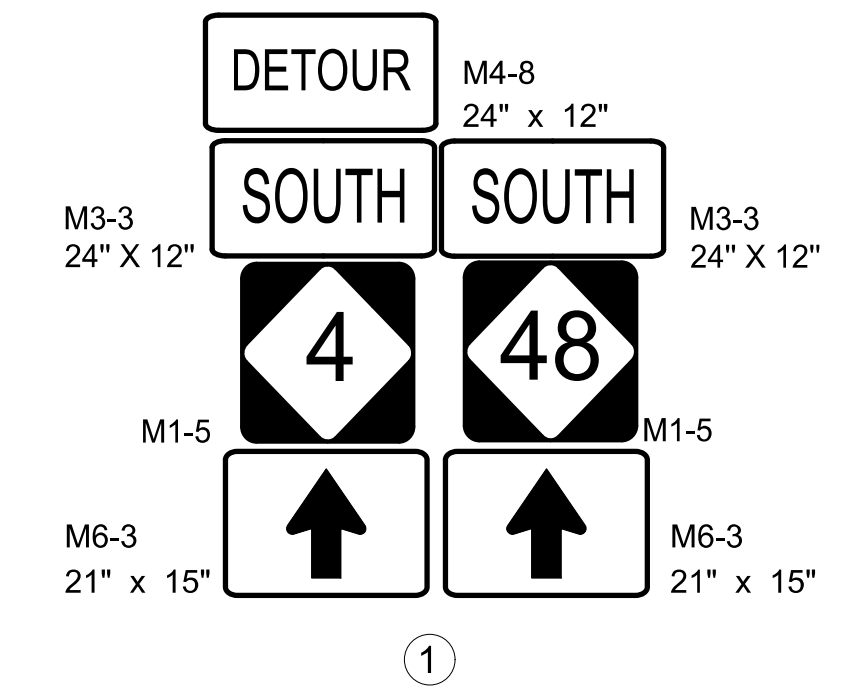
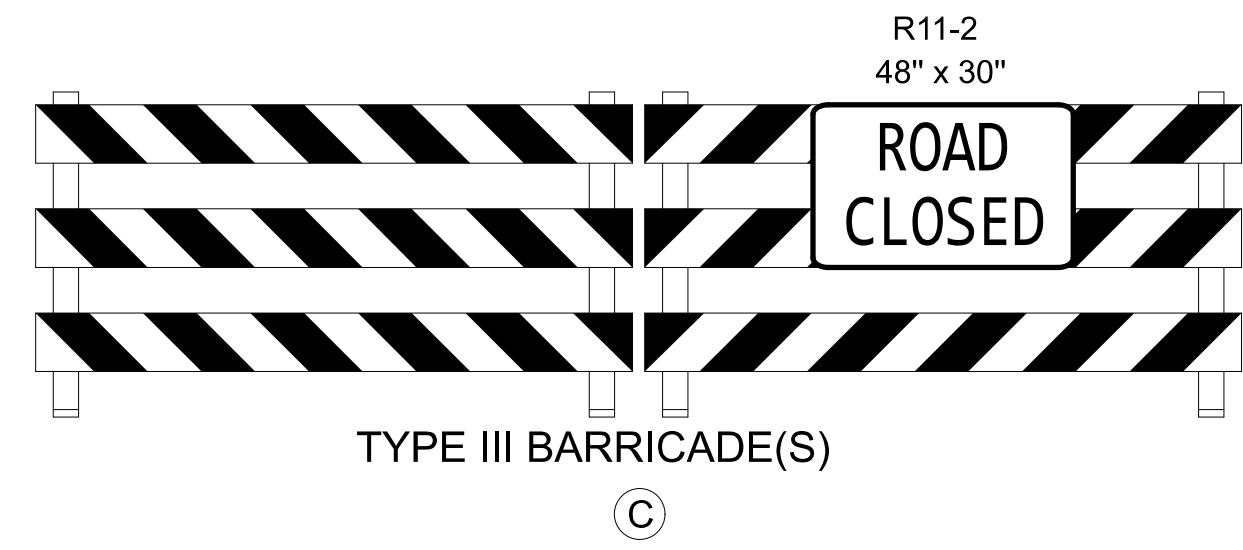
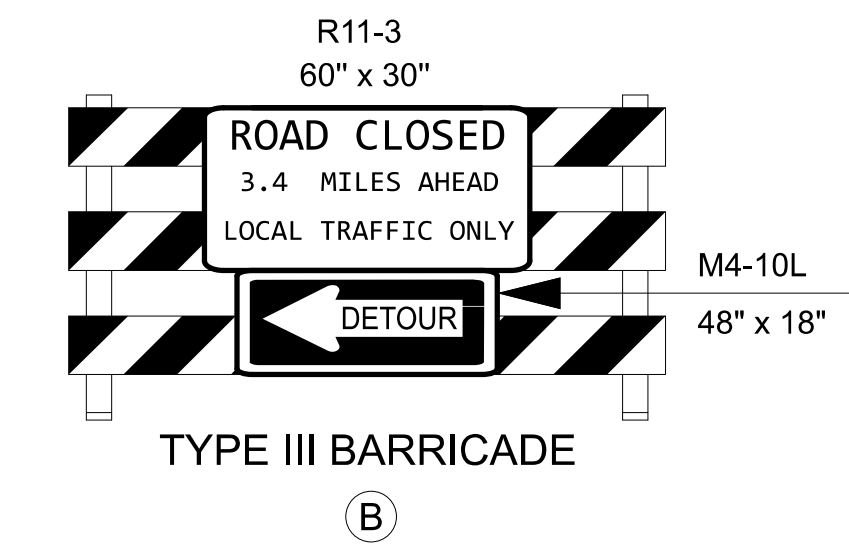
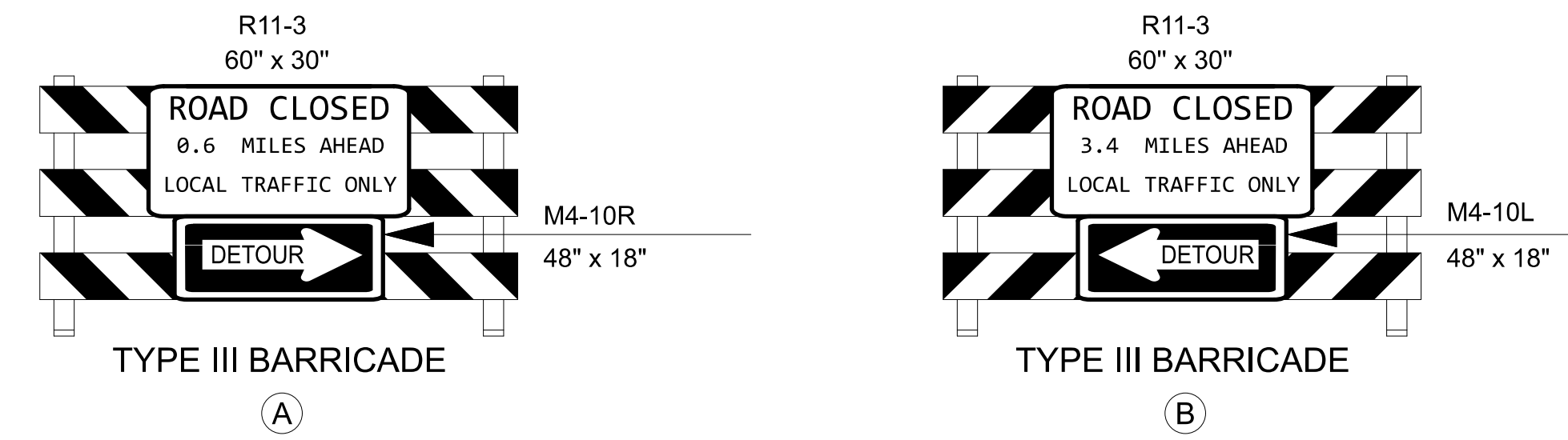
Letter locations are panel edge to lower left corner

| Letter | Series/Size | Text Length |
|---------------|-------------|-------------|
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| L A K E R D | C 2000 | 20.2 |

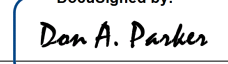
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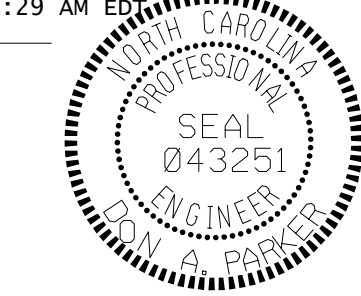
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| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |




NOTE: SEE RSD 1101.03 SHEET 1 FOR ADDITIONAL NOTES AND DETAILS.

APPROVED:  Don A. Parker
 DATE: 7/30/2024 | 11:29 AM EDT



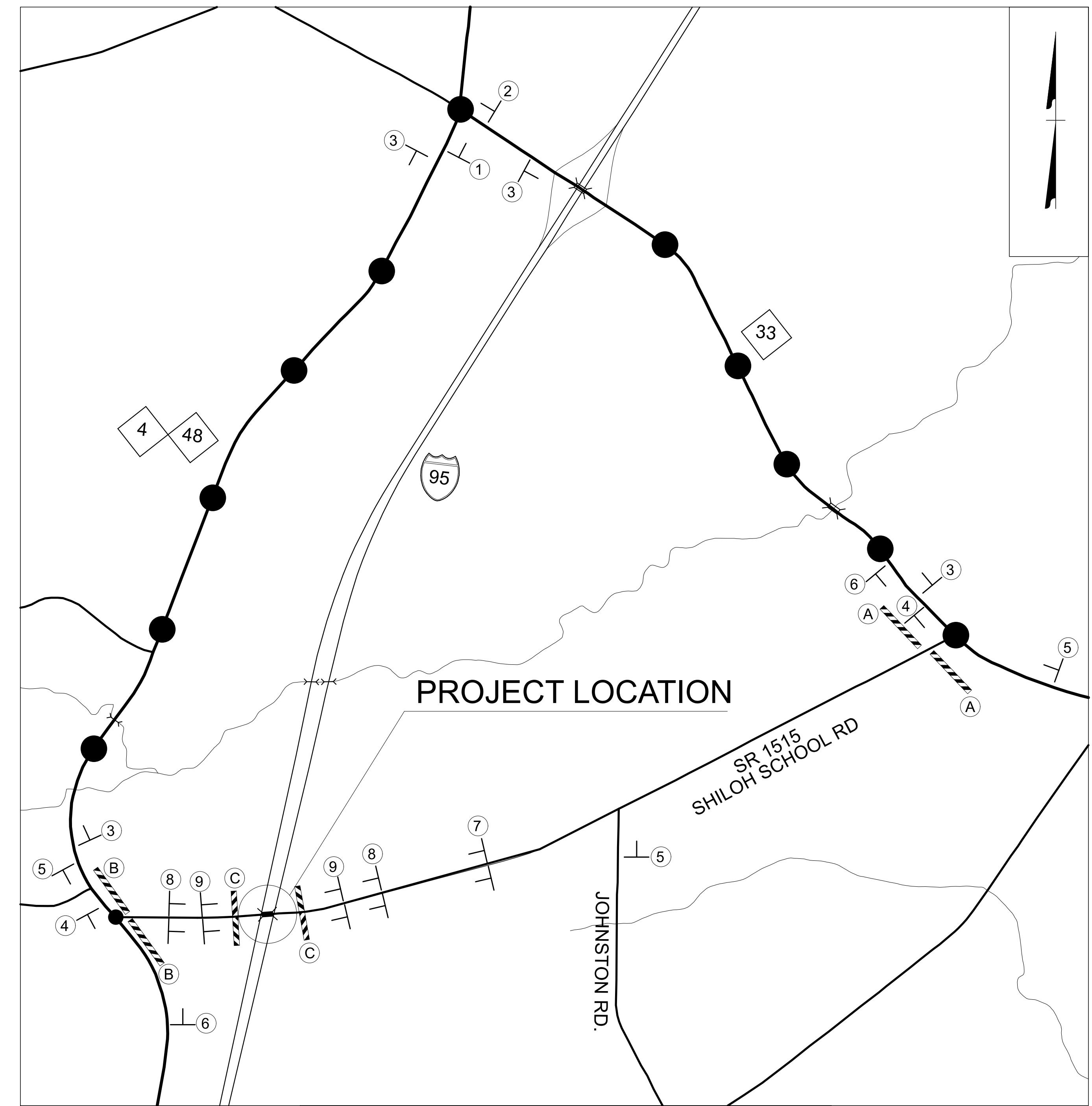
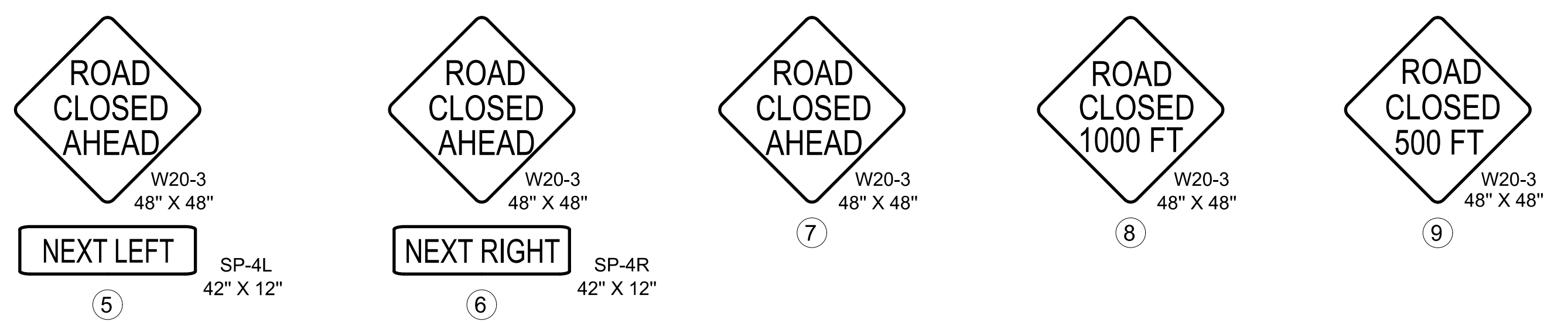
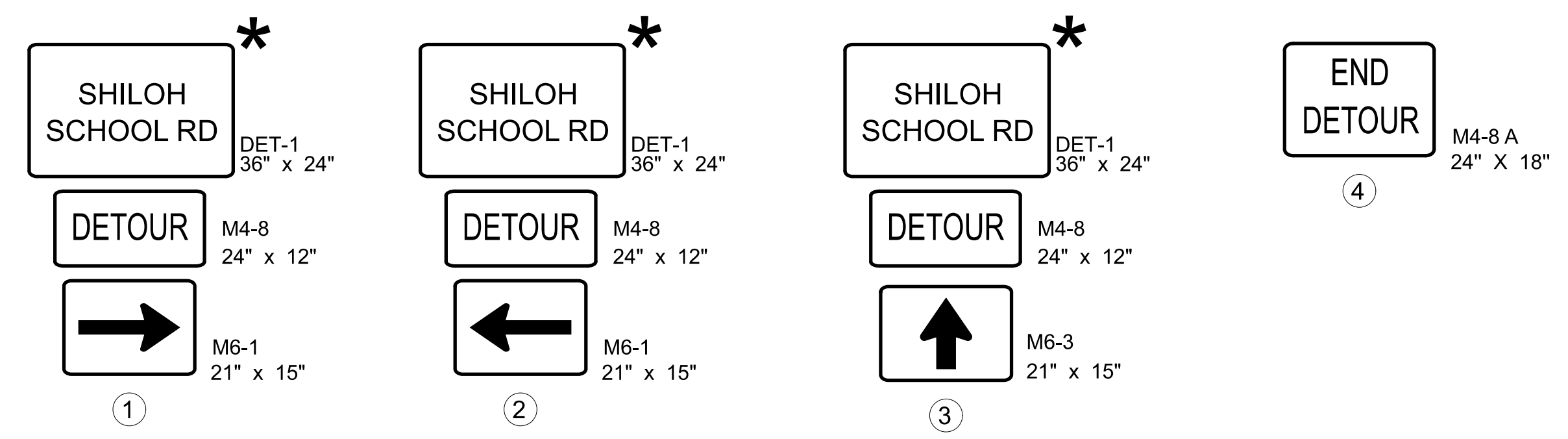
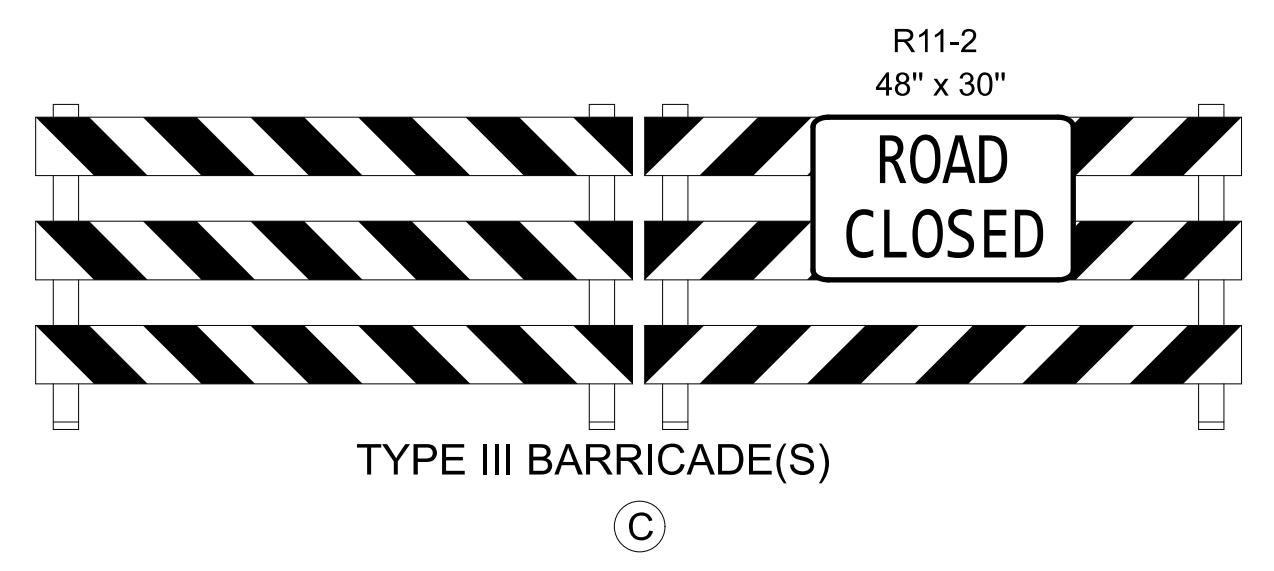
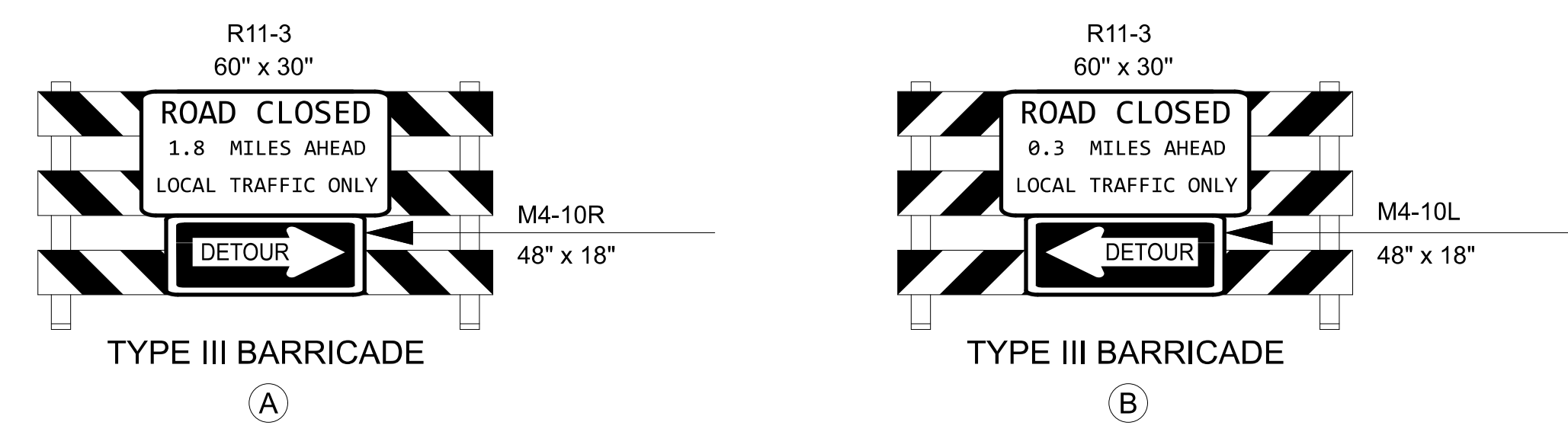
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DIVISION OF HIGHWAYS
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL



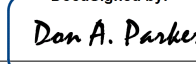
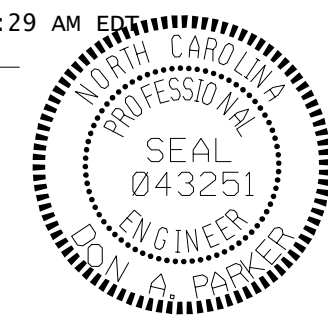
**BRIDGE #630098
 DETOUR**

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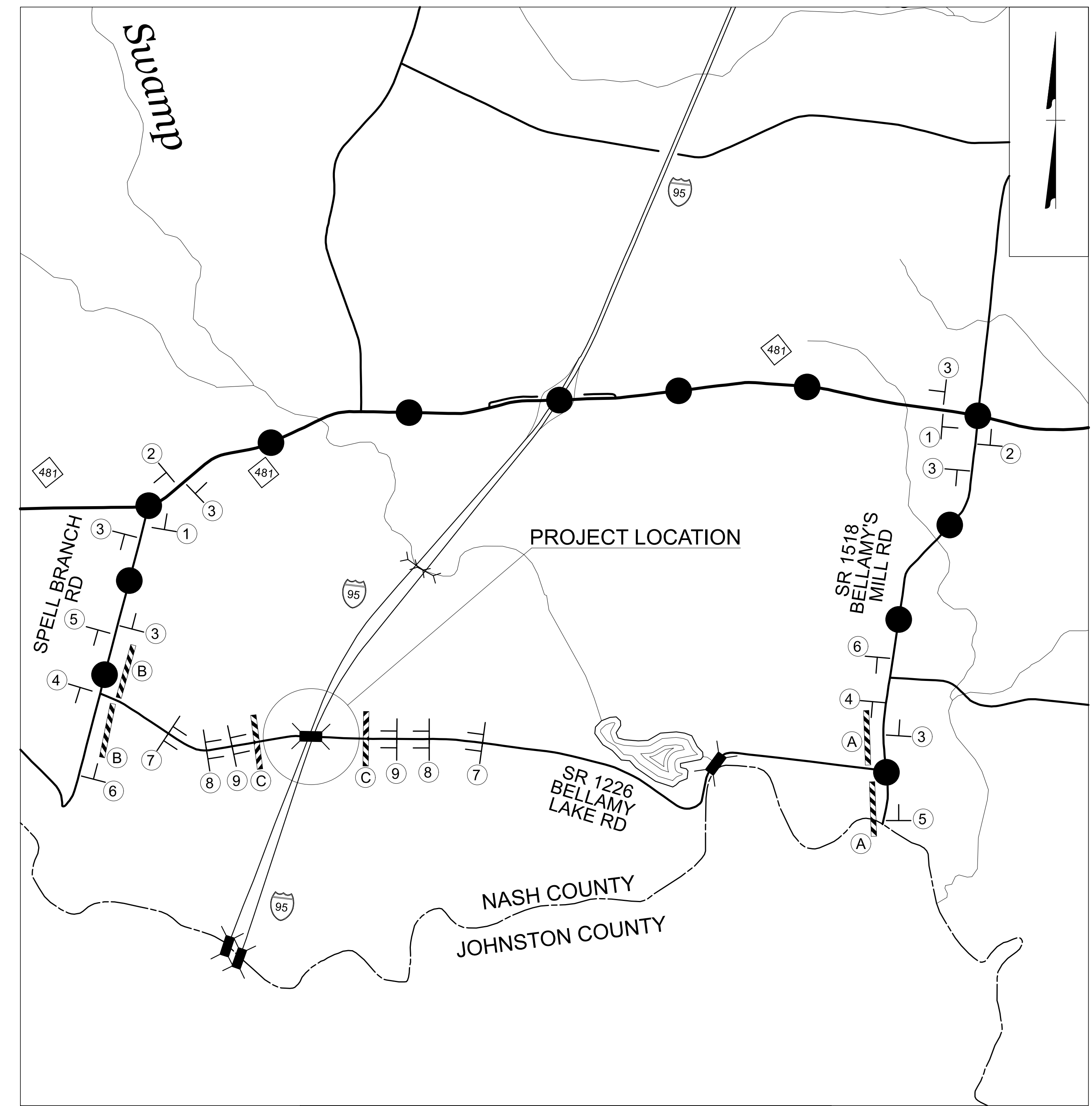
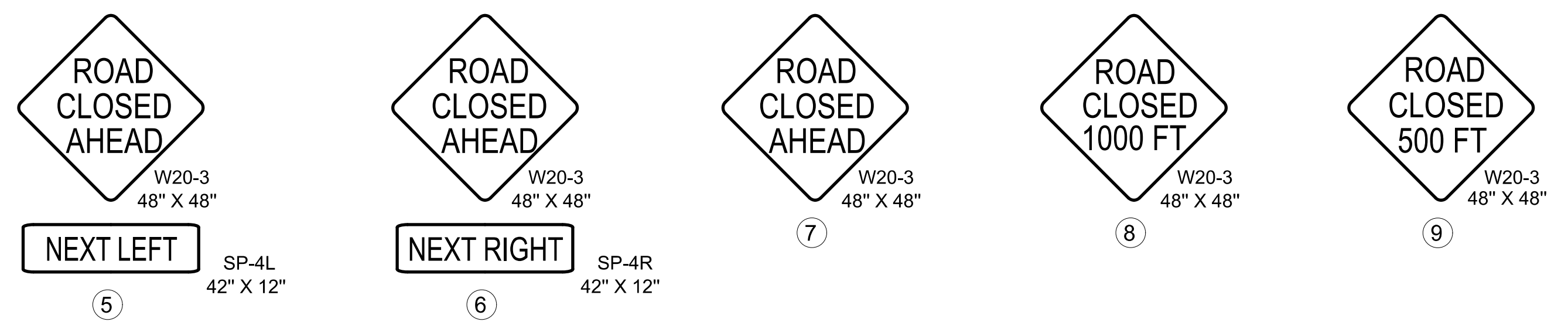
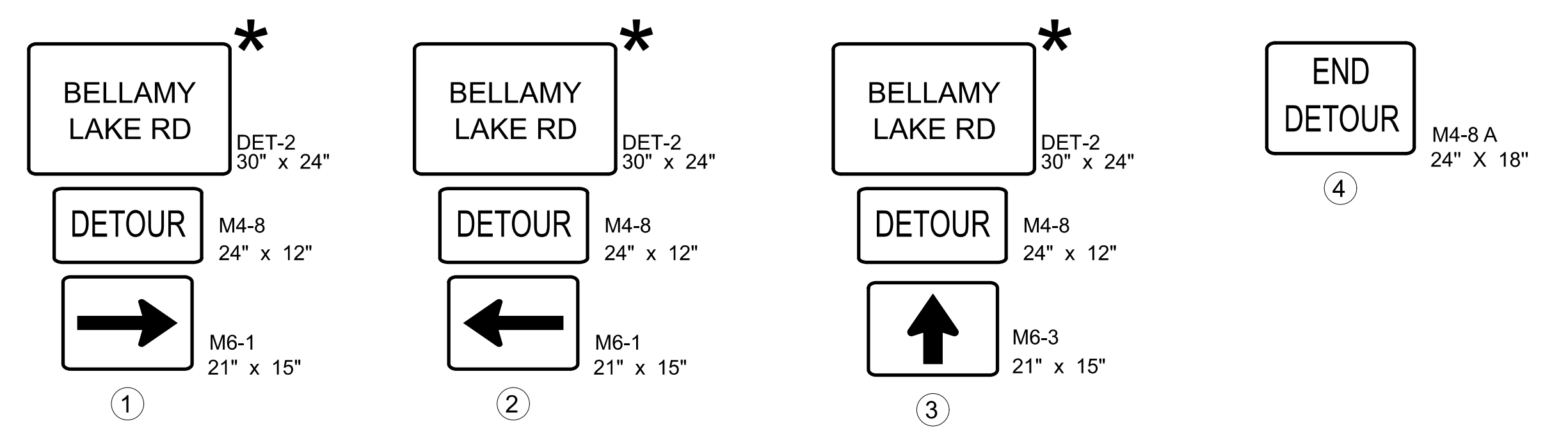
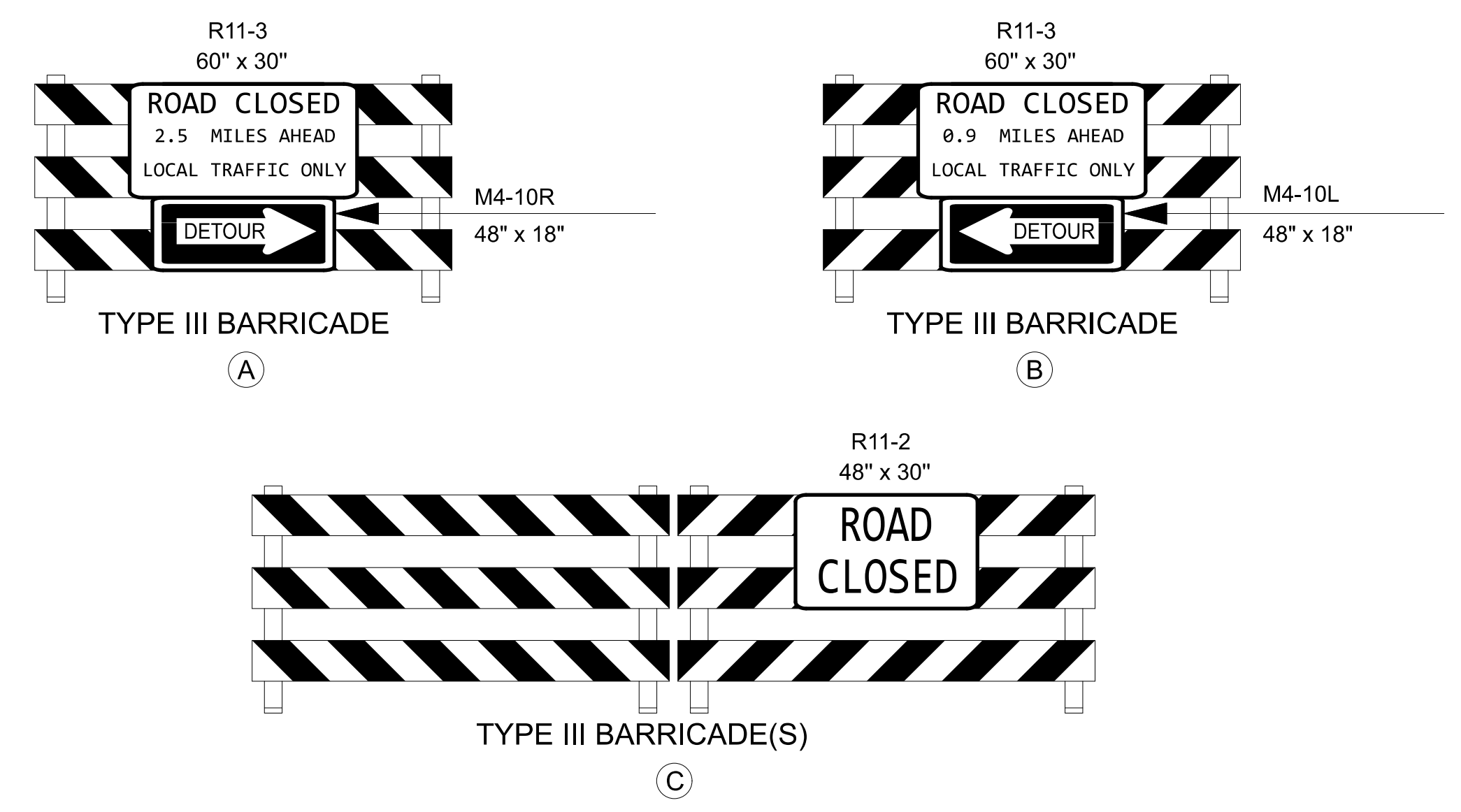
NOTE: SEE RSD 1101.03 SHEET 1 FOR ADDITIONAL NOTES AND DETAILS.

* SEE TMP-2 FOR SIGN DESIGN

APPROVED: 
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BRIDGE #630225
DETOUR

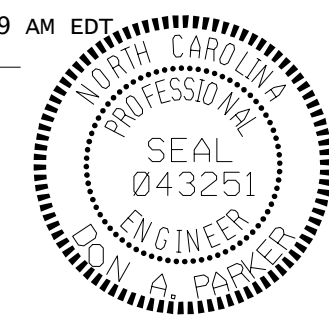
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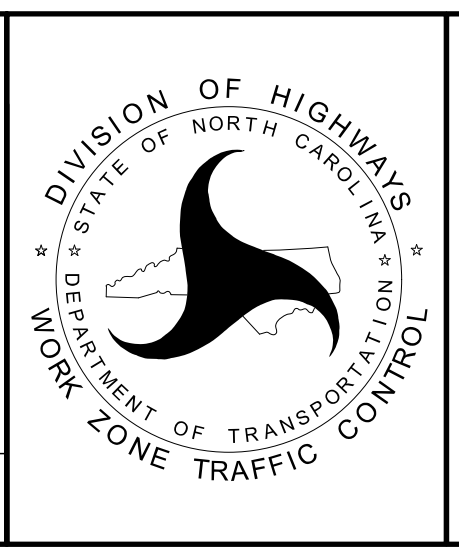
NOTE: SEE RSD 1101.03 SHEET 1 FOR ADDITIONAL NOTES AND DETAILS.

* SEE TMP-2 FOR SIGN DESIGN

APPROVED: Don A. Parker
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 DATE: 7/30/2024 | 11:29 AM EDT




DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



**BRIDGE #410055
 DETOUR**

7/30/2024
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 User: cbraman

| | |
|---|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| 4B.104213/ 4B.106413 | TMP-3 |
|  TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275 | |

PHASING

STRUCTURE NO. 630098 ON NC 4/NC 48 OVER I-95

NOTE: NC 4/NC 48 AND SR 1515 (SHILOH SCHOOL RD.) SHALL NOT BE CLOSED CONCURRENTLY.

STEP 1 — INSTALL AND COVER DETOUR SIGNING FOR THE CLOSURE OF NC 4/NC 48 (SEE RSD 1101.03, SHEET 1 AND TMP-2A).

-- INSTALL ADVANCE WARNING SIGNS ON I-95 IN ACCORDANCE WITH RSD 1101.01, SHEET 1.

-- RECORD THE LOCATION OF EXISTING PAVEMENT MARKINGS ON NC 4/NC 48.

STEP 2 — UNCOVER DETOUR SIGNING AND CLOSE NC 4/NC 48.

STEP 3 — AWAY FROM TRAFFIC, COMPLETE BRIDGE DECK AND APPROACH PAVEMENT REHABILITATION (SEE STRUCTURE PLANS).

NOTE: STEP 4 MAY BE PERFORMED INDEPENDENTLY OF STEPS 2 AND 3.

STEP 4 — USE LANE CLOSURES ON I-95 AS NECESSARY TO COMPLETE BRIDGE REHABILITATION OVER AND ADJACENT TO I-95 TRAVEL LANES (SEE STRUCTURE PLANS, LOCAL NOTE 1 ON TMP-1B, AND RSD 1101.02, SHEET 4).

STEP 5 — INSTALL FINAL PAVEMENT MARKINGS ON NC 4/NC 48 IN ACCORDANCE WITH RSD 1205.01, 1205.02, AND 1205.12.

STEP 6 — RE-OPEN NC 4/NC 48 TO TRAFFIC.

STEP 7 — REMOVE ALL TRAFFIC CONTROL DEVICES.

STRUCTURE NO. 630225 ON SR 1515 (SHILOH SCHOOL RD.) OVER I-95

NOTE: SR 1515 (SHILOH SCHOOL RD.) AND NC 4/NC 48 SHALL NOT BE CLOSED CONCURRENTLY.

STEP 1 — INSTALL AND COVER DETOUR SIGNING FOR THE CLOSURE OF SR 1515 (SHILOH SCHOOL RD.) (SEE RSD 1101.03, SHEET 1 AND TMP-2B).

-- INSTALL ADVANCE WARNING SIGNS ON I-95 IN ACCORDANCE WITH RSD 1101.01, SHEET 1.

-- RECORD THE LOCATION OF EXISTING PAVEMENT MARKINGS ON SR 1515 (SHILOH SCHOOL RD.).

STEP 2 — UNCOVER DETOUR SIGNING AND CLOSE SR 1515 (SHILOH SCHOOL RD.).

STEP 3 — AWAY FROM TRAFFIC, COMPLETE BRIDGE DECK AND APPROACH PAVEMENT REHABILITATION (SEE STRUCTURE PLANS).

NOTE: STEP 4 MAY BE PERFORMED INDEPENDENTLY OF STEPS 2 AND 3.

STEP 4 — USE LANE CLOSURES ON I-95 AS NECESSARY TO COMPLETE BRIDGE REHABILITATION OVER AND ADJACENT TO I-95 TRAVEL LANES (SEE STRUCTURE PLANS, LOCAL NOTE 1 ON TMP-1B, AND RSD 1101.02, SHEET 4).

STEP 5 — INSTALL FINAL PAVEMENT MARKINGS ON SR 1515 (SHILOH SCHOOL RD.) IN ACCORDANCE WITH RSD 1205.01, 1205.02, AND 1205.12.

STEP 6 — RE-OPEN SR 1515 (SHILOH SCHOOL RD.) TO TRAFFIC.

STEP 7 — REMOVE ALL TRAFFIC CONTROL DEVICES.

STRUCTURE NO. 410055 ON SR 1226 (BELLAMY LAKE RD.) OVER I-95

STEP 1 — INSTALL AND COVER DETOUR SIGNING FOR THE CLOSURE OF SR 1226 (BELLAMY LAKE RD.) (SEE RSD 1101.03, SHEET 1 AND TMP-2C).

-- INSTALL ADVANCE WARNING SIGNS ON I-95 IN ACCORDANCE WITH RSD 1101.01, SHEET 1.

-- RECORD THE LOCATION OF EXISTING PAVEMENT MARKINGS ON SR 1226 (BELLAMY LAKE RD.).

STEP 2 — UNCOVER DETOUR SIGNING AND CLOSE SR 1226 (BELLAMY LAKE RD.).

STEP 3 — AWAY FROM TRAFFIC, COMPLETE BRIDGE DECK AND APPROACH PAVEMENT REHABILITATION (SEE STRUCTURE PLANS).

NOTE: STEP 4 MAY BE PERFORMED INDEPENDENTLY OF STEPS 2 AND 3.



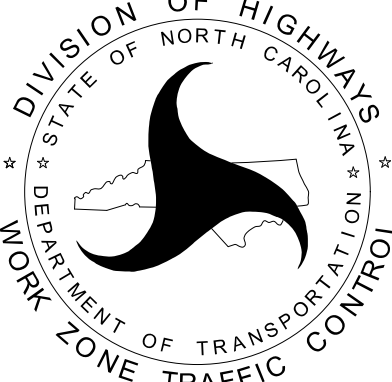
STEP 4 -- USE LANE CLOSURES ON I-95 AS NECESSARY TO COMPLETE BRIDGE REHABILITATION OVER AND ADJACENT TO I-95 TRAVEL LANES (SEE STRUCTURE PLANS, LOCAL NOTE 1 ON TMP-1B, AND RSD 1101.02, SHEET 4).

STEP 5 -- INSTALL FINAL PAVEMENT MARKINGS ON SR 1226 (BELLAMY LAKE RD.) IN ACCORDANCE WITH RSD 1205.01, 1205.02, AND 1205.12.

STEP 6 — RE-OPEN SR 1226 (BELLAMY LAKE RD.) TO TRAFFIC.

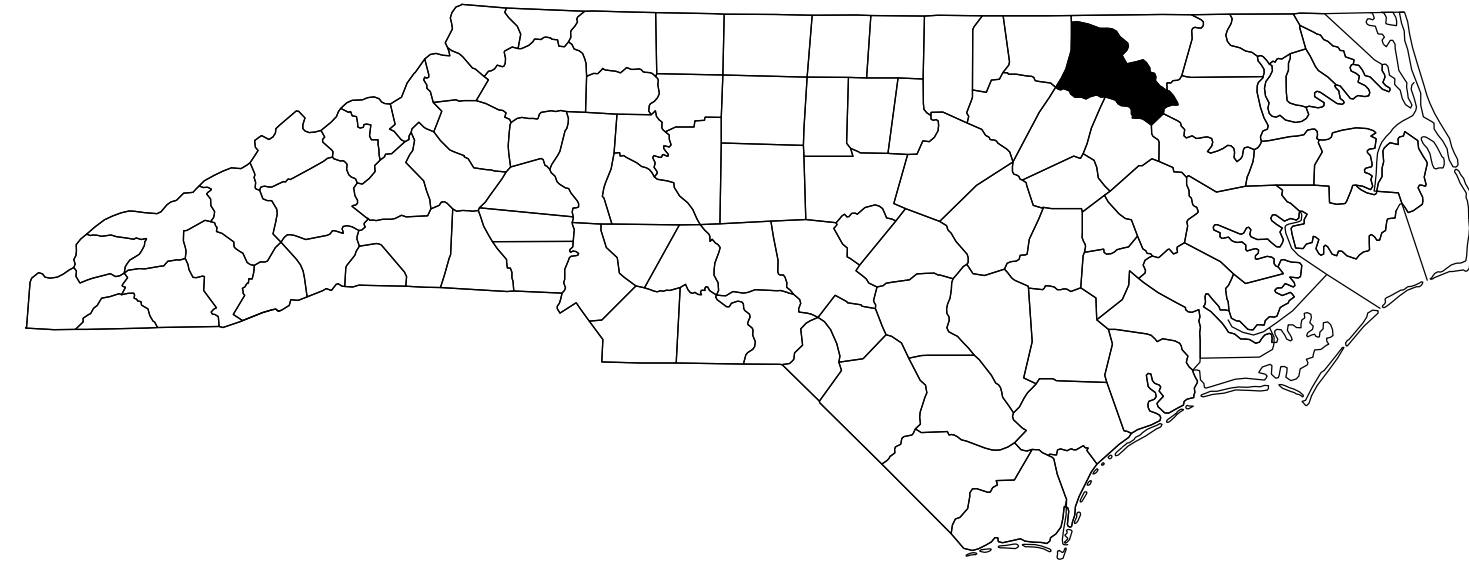
STEP 7 — REMOVE ALL TRAFFIC CONTROL DEVICES.

7/30/2024
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 User:cbraam

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TIP PROJECT: 4B.104213

CONTRACT: DD00470



STATE OF NORTH CAROLINA

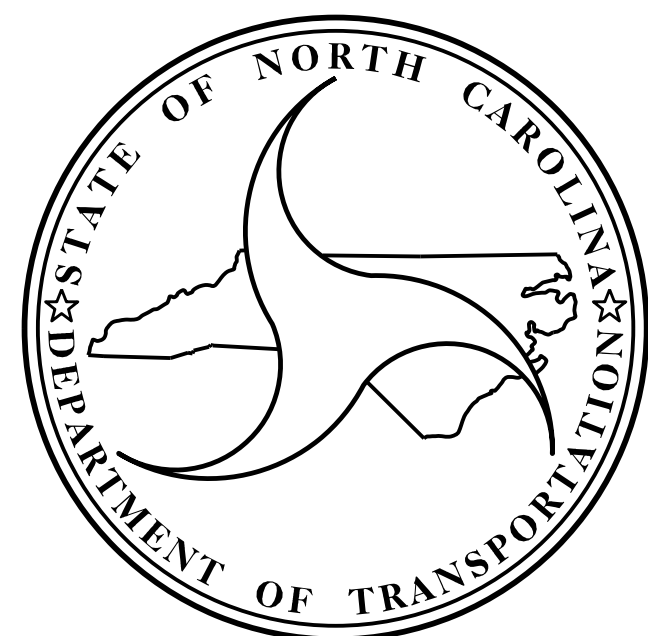
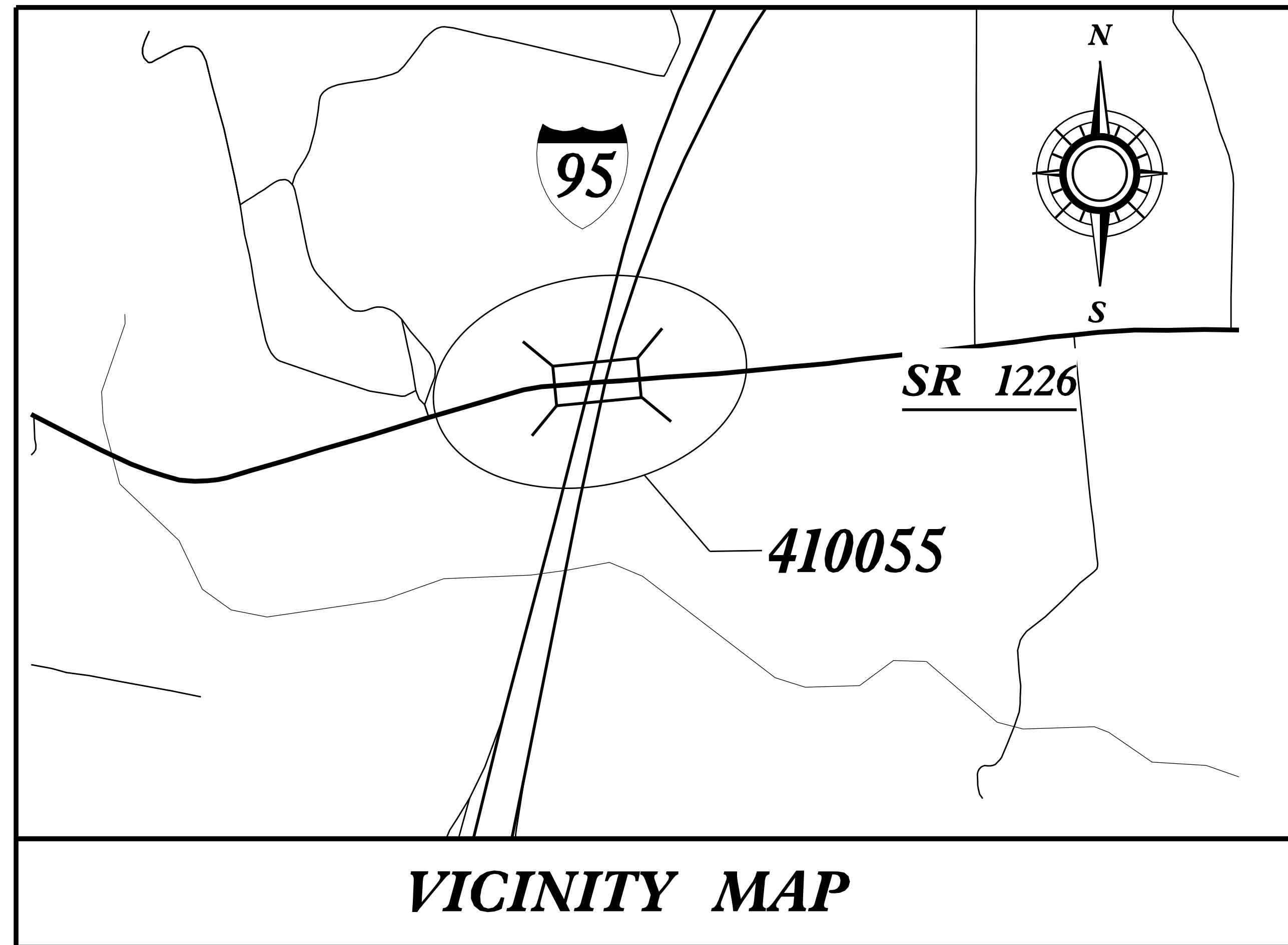
DIVISION OF HIGHWAYS

HALIFAX COUNTY

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | 4B.104213 | | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 4B.104213 | - | P.E. | |
| 4B.104213 | - | CONST. | |
| | | | |
| | | | |
| | | | |
| | | | |

LOCATION: BRIDGE #410055 ON SR 1226 (BELLAMY LAKE ROAD) OVER I-95

TYPE OF WORK: CONCRETE BRIDGE DECK REHABILITATION BY SCARIFICATION, HYDRO-DEMOLITION, AND PLACEMENT OF LATEX MODIFIED CONCRETE; DEMOLITION AND RECONSTRUCTION OF DECK JOINTS AND SEALS; PAINTING OF EXISTING BEARINGS WITH HRCSA; SUBSTRUCTURE REPAIRS WITH SHOTCRETE; EPOXY COATING; REPLACE APPROACH PAVEMENT



DESIGN DATA

BRIDGE #410055 ADT 2024 = 200

PROJECT LENGTH

BRIDGE #410055 = 0.04 MILES

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

2024 STANDARD SPECIFICATIONS

LETTING DATE :

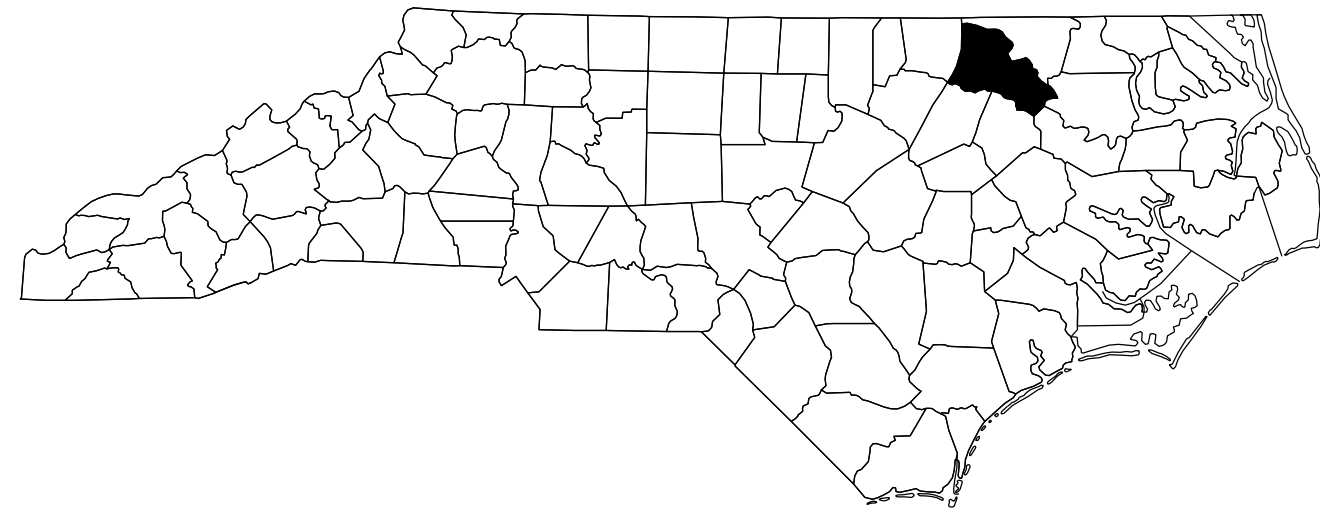
SEPTEMBER 24, 2024

 KRISTY ALFORD, PE
 PROJECT ENGINEER

 ASTER G. ABRAHA, PE
 PROJECT DESIGN ENGINEER

TIP PROJECT: 4B.104213

CONTRACT: DD00470



STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

HALIFAX COUNTY

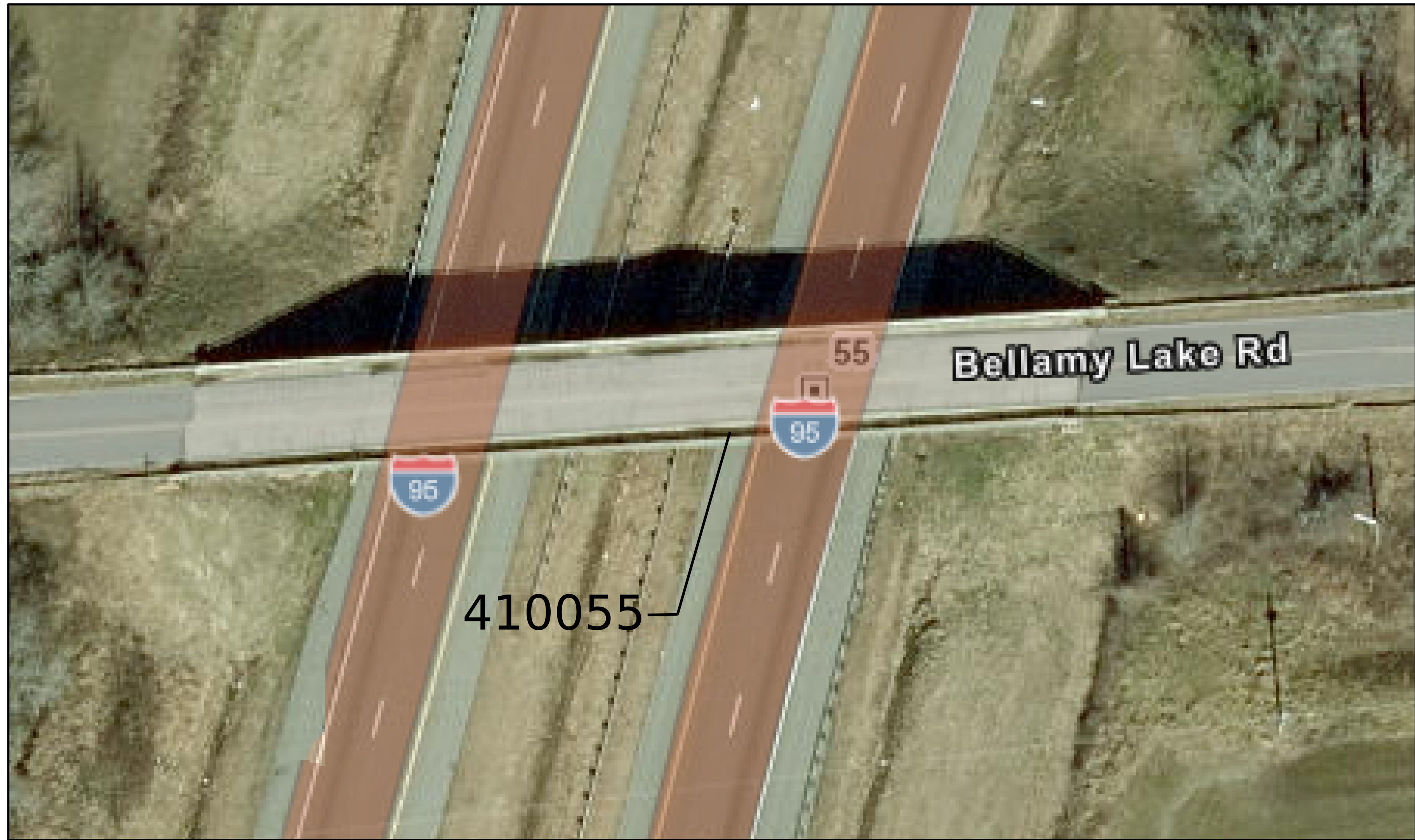
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| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 4B.104213 | - | P.E. | |
| 4B.104213 | - | CONST. | |
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LOCATION: BRIDGE #410055 ON SR 1226 (BELLAMY LAKE ROAD) OVER I-95

TYPE OF WORK: CONCRETE BRIDGE DECK REHABILITATION BY SCARIFICATION, HYDRO-DEMOLITION, AND PLACEMENT OF LATEX MODIFIED CONCRETE; DEMOLITION AND RECONSTRUCTION OF DECK JOINTS AND SEALS; PAINTING OF EXISTING BEARINGS WITH HRCSA; SUBSTRUCTURE REPAIRS WITH SHOTCRETE; EPOXY COATING; REPLACE APPROACH PAVEMENT

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION | SHEET NO. | DESCRIPTION |
|-----------|-------------------------|------------------|---|
| 1 | TITLE SHEET | STRUCTURE | #410055 |
| 1A | INDEX OF SHEETS | SI-1 | GENERAL DRAWING |
| S-1 | LOCATION SKETCHES | SI-2 | TYPICAL SECTION |
| S-2 | TOTAL BILL OF MATERIALS | SI-3 THRU SI-6 | DECK SURFACE REPAIRS |
| | | SI-7 THRU SI-10 | DECK UNDERSIDE REPAIRS |
| | | SI-11 | JOINT REPAIR DETAILS |
| | | SI-12 | DECK REPAIR DETAILS |
| | | SI-13 | OVERHANG & DIAPHRAGM REPAIR DETAILS |
| | | SI-14 | END BENT 1 & 2 |
| | | SI-15 THRU SI-17 | BENTS |
| | | SI-18 | TYPICAL CAP AND COLUMN REPAIR DETAILS |
| | | SI-19 | APPROACH MILLING & TYPICAL ROADWAY SECTIONS |
| | | SN | STANDARD NOTES |

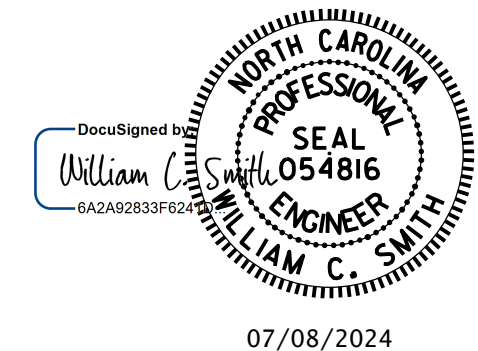


| BRIDGE COORDINATES | | |
|--------------------|----------------|----------------|
| BRIDGE No. | LATITUDE | LONGITUDE |
| 410055 | 36°-09'-23.34" | 77°-46'-58.00" |

LOCATION SKETCH

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

PROJECT NO. 4B.104213
HALIFAX COUNTY
 BRIDGE NO. 410055



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

LOCATION SKETCH

DRAWN BY : Q. T. NGUYEN DATE : 05/2024
 CHECKED BY : F. LEA DATE : 05/2024

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 | | | 3 |

GENERAL NOTES:

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

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

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

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

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

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 ELSEWHERE IN THE CONTRACT DOCUMENTS.

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR PAVEMENT MARKING SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

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

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR CLEANING AND PAINTING EXISTING BEARINGS WITH HRCSA, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT AND POLLUTION CONTROL, SEE "CLEANING AND PAINTING EXISTING BEARINGS WITH HRCSA" SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR ANCHOR BOLT REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK, CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION, AND HYDRO-DEMOLITION OF DECK, SEE "LMC OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

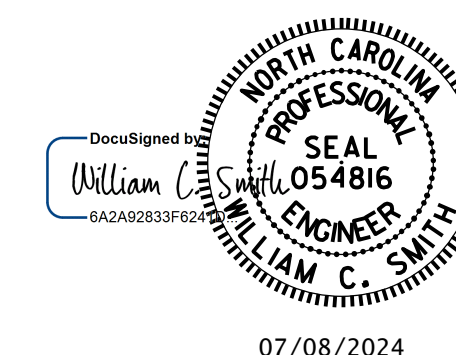
DURING CONSTRUCTION, APPROPRIATE MEASURES SHALL BE USED TO ENSURE THAT HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

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

| ITEM | DESCRIPTION | UNIT |
|------|-------------------------------|----------|
| 1. | CLASS III SURFACE PREPARATION | SQ. YDS. |
| 2. | CONCRETE REPAIR | CU. FT. |
| 3. | EPOXY RESIN INJECTION | LN. FT. |
| 4. | ANCHOR BOLT REPAIR | EA. |
| 5. | VOLUMETRIC MIXER | LS |

| TOTAL BILL OF MATERIAL | | | | | | | | | | |
|------------------------|---------------------------------|---|---------------------------------------|-------------------------|---------------------------------|------------------------------|---|---|-------------------|---|
| BRIDGE NO. | INCIDENTAL MILLING | ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | ASPHALT BINDER FOR PLANT MIX | GROOVING BRIDGE FLOORS | POLLUTION CONTROL | CLASS II SURFACE PREPARATION | LATEX MODIFIED CONCRETE OVERLAY | PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY | SHOTCRETE REPAIRS | PAINTING CONTAINMENT FOR BRIDGE NO. ___ |
| | SQ. YDS. | TONS | TONS | SQ. FT. | LUMP SUM | SQ. YD. | CU. YD. | SQ. YD. | CU. FT. | LUMP SUM |
| 410055 | 288.1 | 30 | 5 | 4,806.1 | LUMP SUM | 63.3 | 31.2 | 605.3 | 27.4 | LUMP SUM |
| BRIDGE NO. | POURABLE SILICONE JOINT SEALANT | EPOXY COATING | ELASTOMERIC CONCRETE FOR PRESERVATION | BRIDGE JOINT DEMOLITION | HYDRO-DEMOLITION OF BRIDGE DECK | SCARIFYING BRIDGE DECK | CLEANING & PAINTING EXISTING BEARINGS WITH HIGH RATIO CALCIUM SULFONATE | | | |
| | LN. FT. | SQ. FT. | CU. FT. | SQ. FT. | SQ. YD. | SQ. YD. | EA. | | | |
| 410055 | 95.0 | 350.8 | 15.9 | 69.6 | 605.3 | 605.3 | 24 | | | |

PROJECT NO. 4B.104213
HALIFAX COUNTY
 BRIDGE NO. 410055

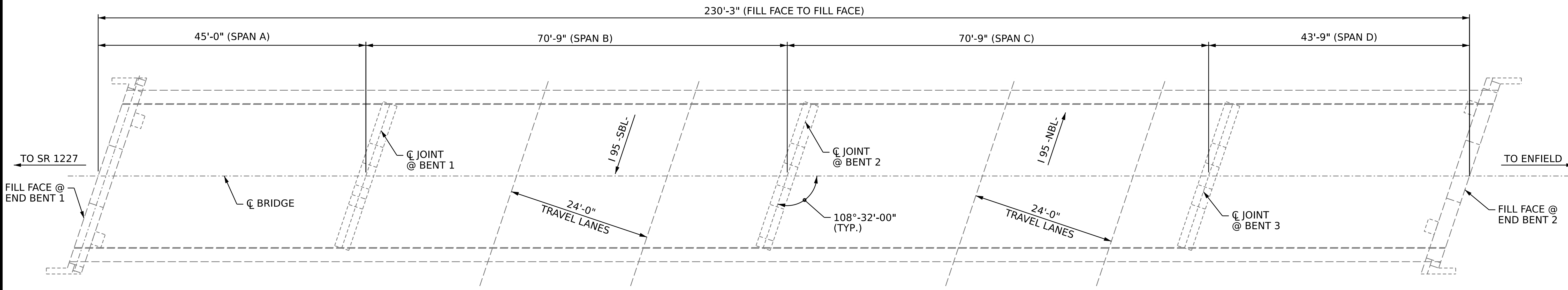
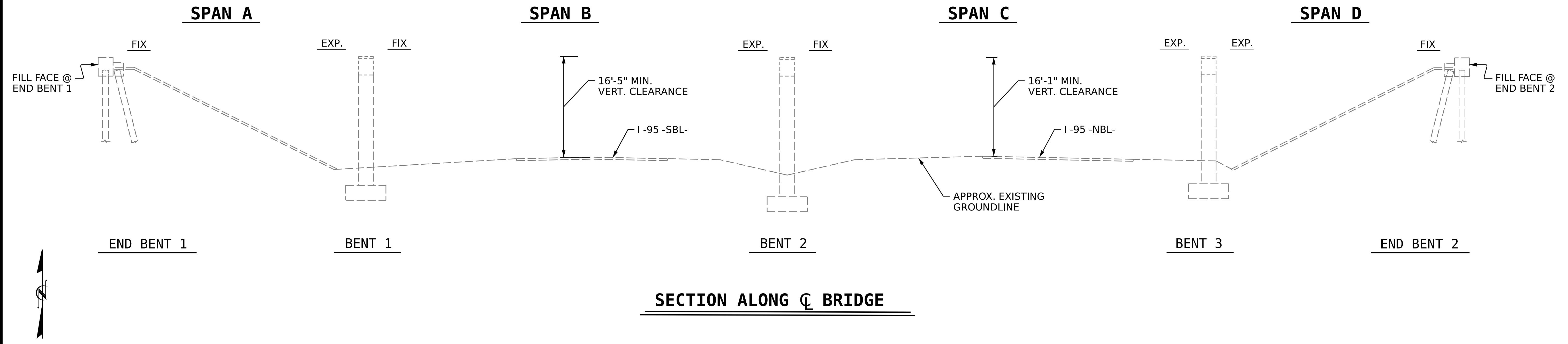


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**BILL OF MATERIAL
 AND GENERAL NOTES**

DRAWN BY : Q. T. NGUYEN DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 06/2024

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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



PLAN

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

NOTES

- GENERAL DRAWING INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 07/13/2023.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- PERFORM CONCRETE DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED TOP OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE (LMC).
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL BACKER ROD AND POURABLE SILICONE JOINT SEALANT.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.
- CLEAN AND PAINT EXISTING BEARINGS WITH HRSCA.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE AREAS FOR CONCRETE AND SHOTCRETE REPAIRS.
- REPAIR SUBSTRUCTURE USING CONCRETE AND SHOTCRETE.

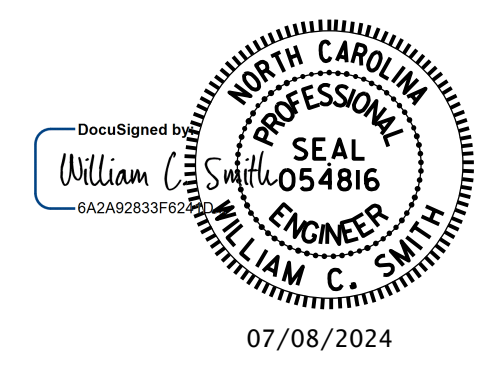
- REMOVE DEBRIS FROM TOP OF EXISTING BENT CAPS AND APPLY EPOXY COATING.
- MILL AND PAVE ASPHALT ROADWAY APPROACHES.

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING

FOR BRIDGE ON S.R. 1226
 OVER I-95
 BETWEEN SR 1227 AND ENFIELD



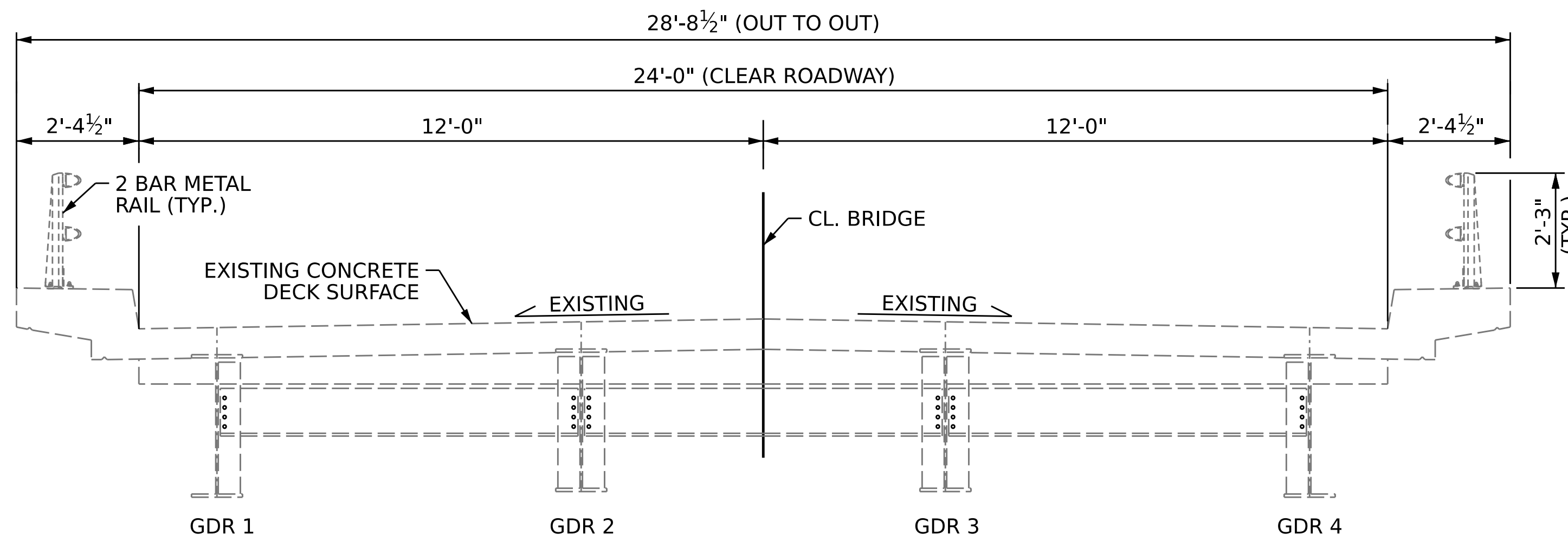
I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER _____ DATE _____

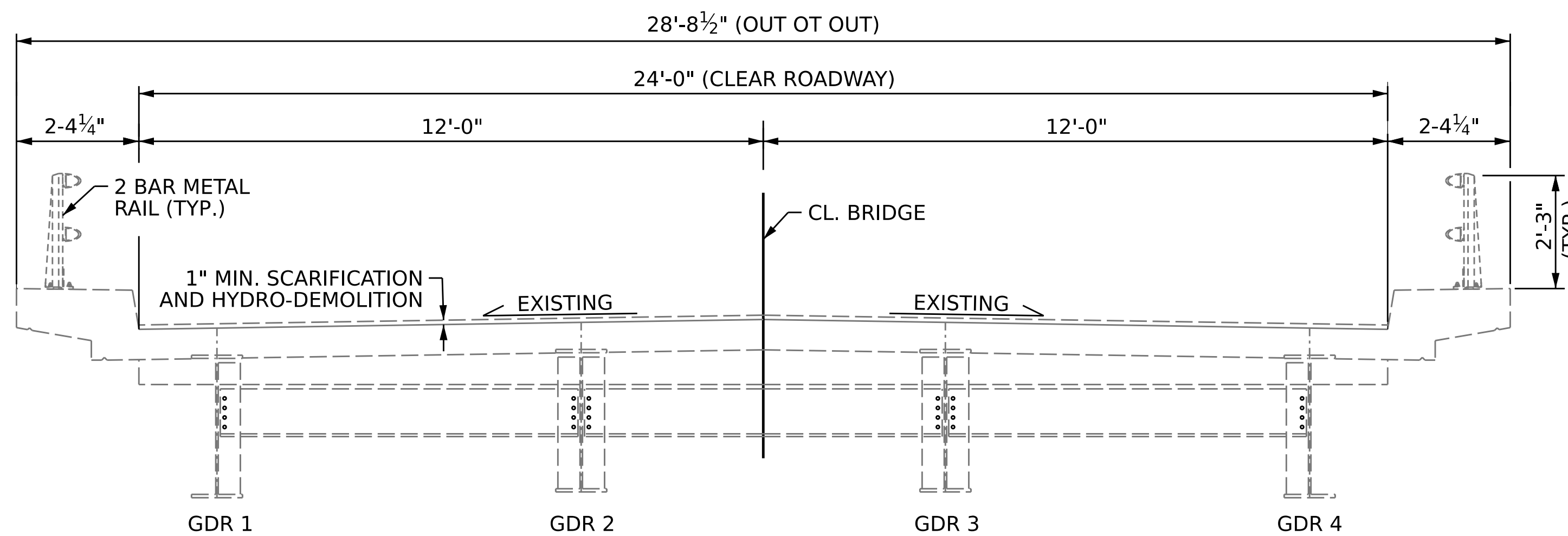
| | | | |
|-----------------------------|--------------|--------|---------|
| DRAWN BY : | S. T. SANDOR | DATE : | 04/2024 |
| CHECKED BY : | W. C. SMITH | DATE : | 05/2024 |
| DESIGN ENGINEER OF RECORD : | | DATE : | |

| REVISIONS | | | | | | SHEET NO. S1-01 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 19 |
| 2 | | | 4 | | | |

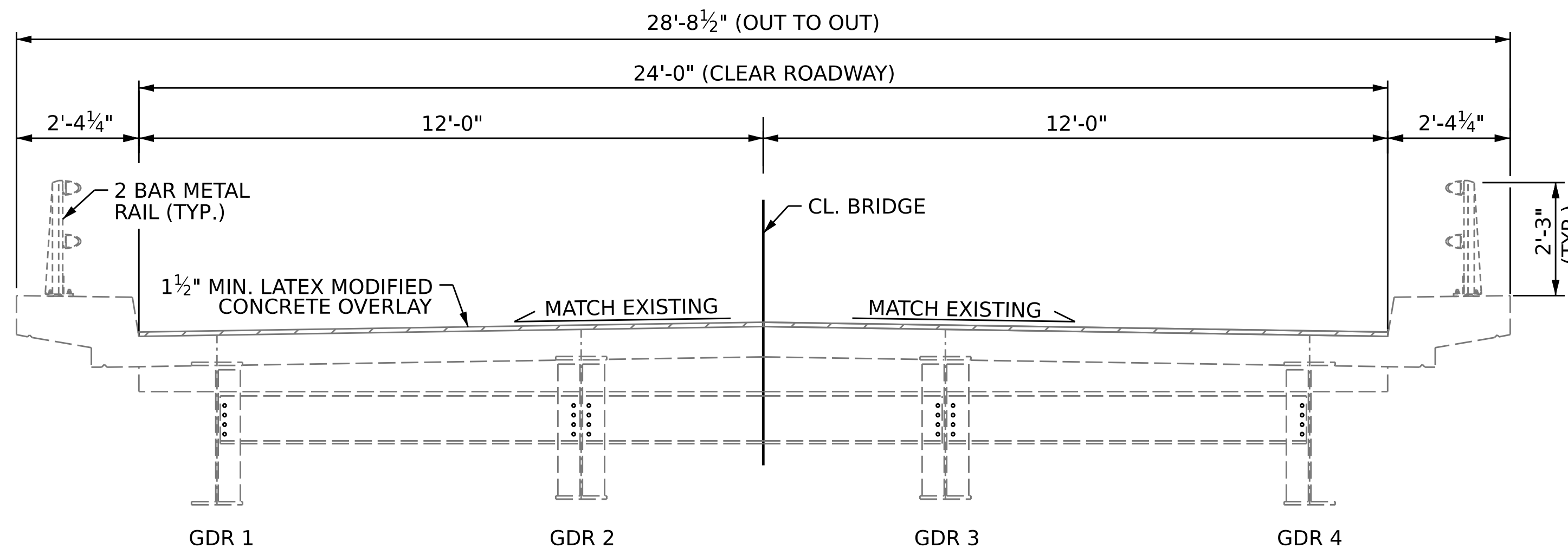
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION
(EXISTING) (SHOWING DIAPHRAGMS AT BENTS)



TYPICAL SECTION
(DECK PREPARATION) (SHOWING DIAPHRAGMS AT BENTS)



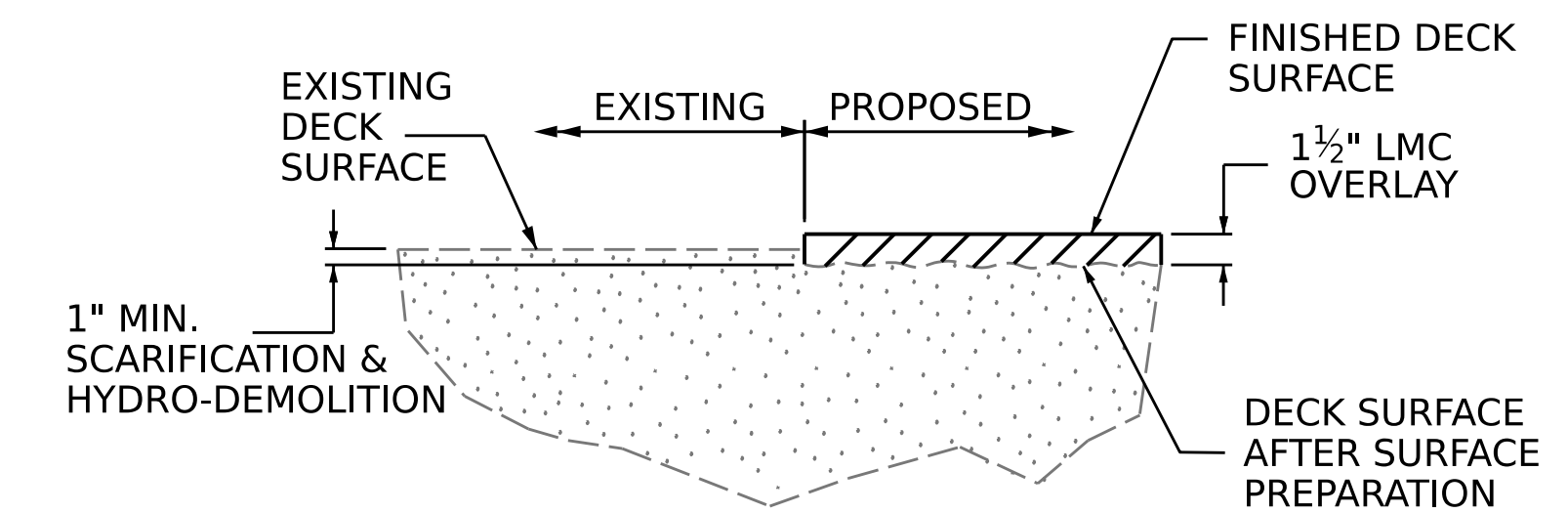
TYPICAL SECTION
(PROPOSED) (SHOWING DIAPHRAGMS AT BENTS)

NOTES

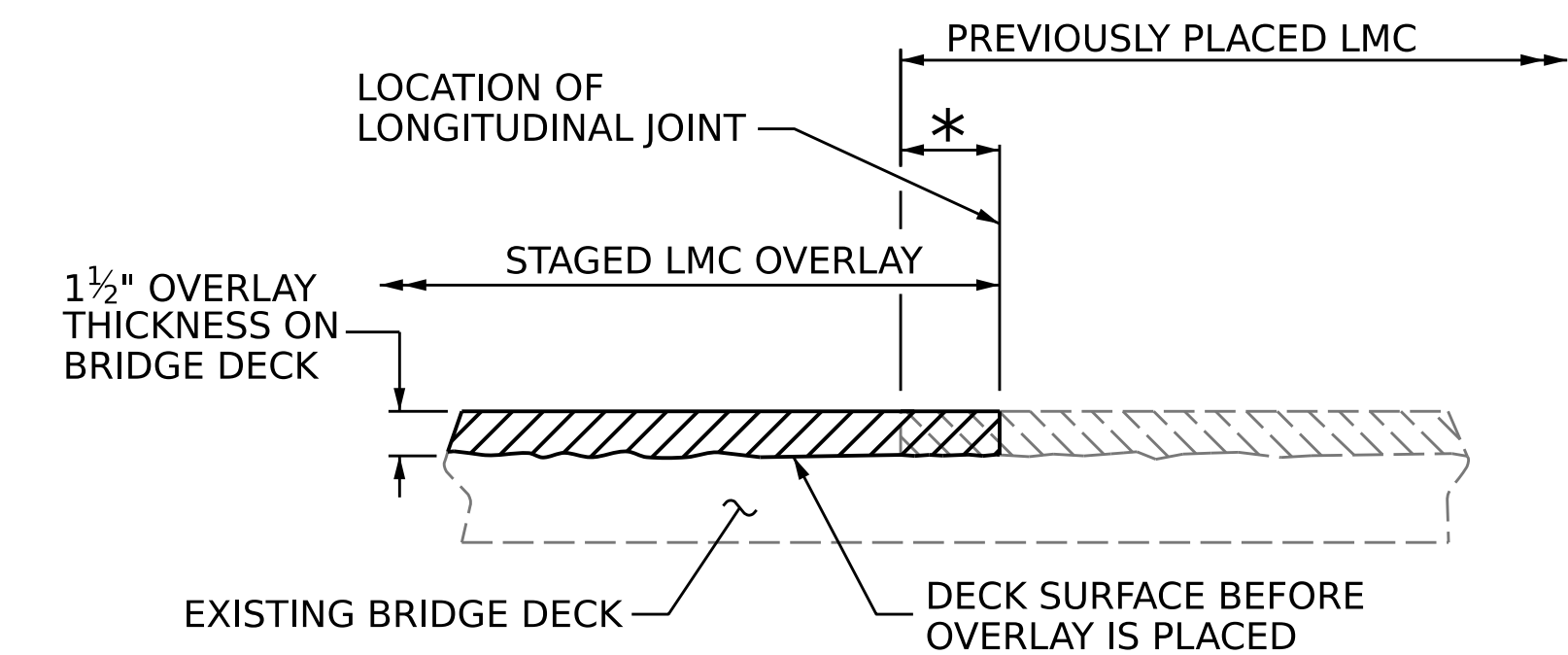
FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LATEX MODIFIED CONCRETE (LMC) PLACEMENT, SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

WHEN PREPARING THE SURFACE FOR LMC OVERLAY ADJACENT TO THE PREVIOUSLY PLACED LMC STAGE, THE PREVIOUSLY PLACED LMC SHALL BE SAW-CUT TO THE FULL DEPTH OF THE LMC AT THE CENTERLINE OF THE BRIDGE AND ALL LMC IN THE 4\"/>

THE CONTRACTOR IS ALERTED TO THE FACT THAT THERE ARE MANY AREAS IN THE EXISTING BRIDGE DECK WHERE CONCRETE COVER OVER THE TOP MAT OF REINFORCING STEEL IS APPROXIMATELY 1/2\"/>



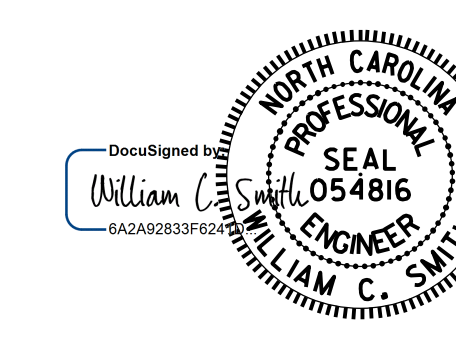
DETAIL OF LMC OVERLAY



SECTION THRU DECK
STAGED LMC OVERLAY JOINT

* 4" OVERLAP BETWEEN OVERLAYS

PROJECT NO. **4B.104213**
HALIFAX COUNTY
BRIDGE NO. **410055**



07/08/2024

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

DRAWN BY : E. BAYISSA DATE : 05/2024
CHECKED BY : F. LEA DATE : 05/2024
DESIGN ENGINEER OF RECORD : _____ DATE : _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. S1-02 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 19 |
| 2 | | | 4 | | | |

DECK SURFACE REPAIR QUANTITY TABLE

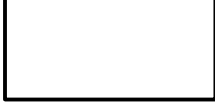
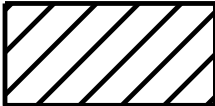
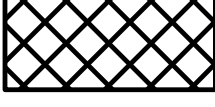
DECK SURFACE REPAIR - SPAN A

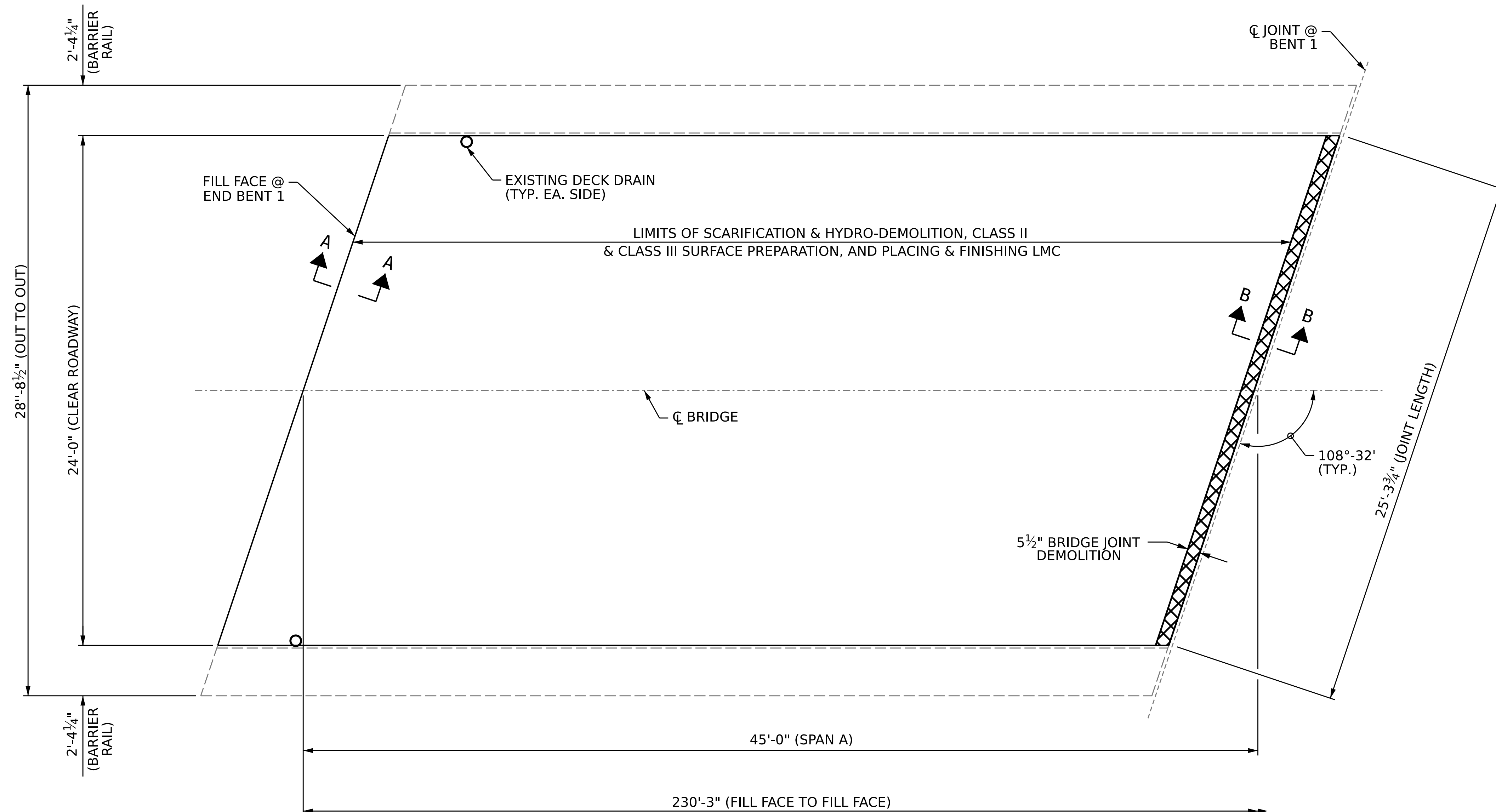
| | ESTIMATE | ACTUAL |
|---|----------------|--------|
| SCARIFYING BRIDGE DECK | 118.6 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 118.6 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 0.0 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 5.8 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 118.6 SQ. YDS. | |
| GROOVING BRIDGE DECK | 937.6 SF | |
| BRIDGE JOINT DEMOLITION | 11.6 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

NOTES

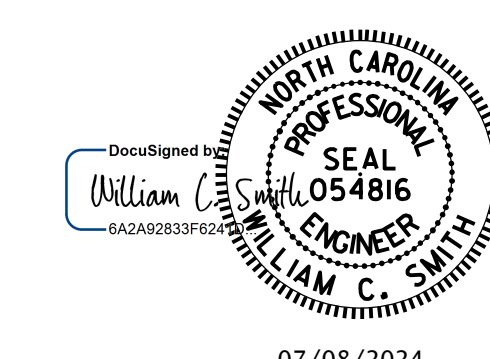
FOR SECTIONS A-A AND B-B, SEE "JOINT DETAIL" SHEET S1-11.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-12.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION



PLAN OF SPAN A

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



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




DRAWN BY : **S. T. SANDOR** DATE : **04/2024**
 CHECKED BY : **W. C. SMITH** DATE : **05/2024**
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-03 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |

NOTES

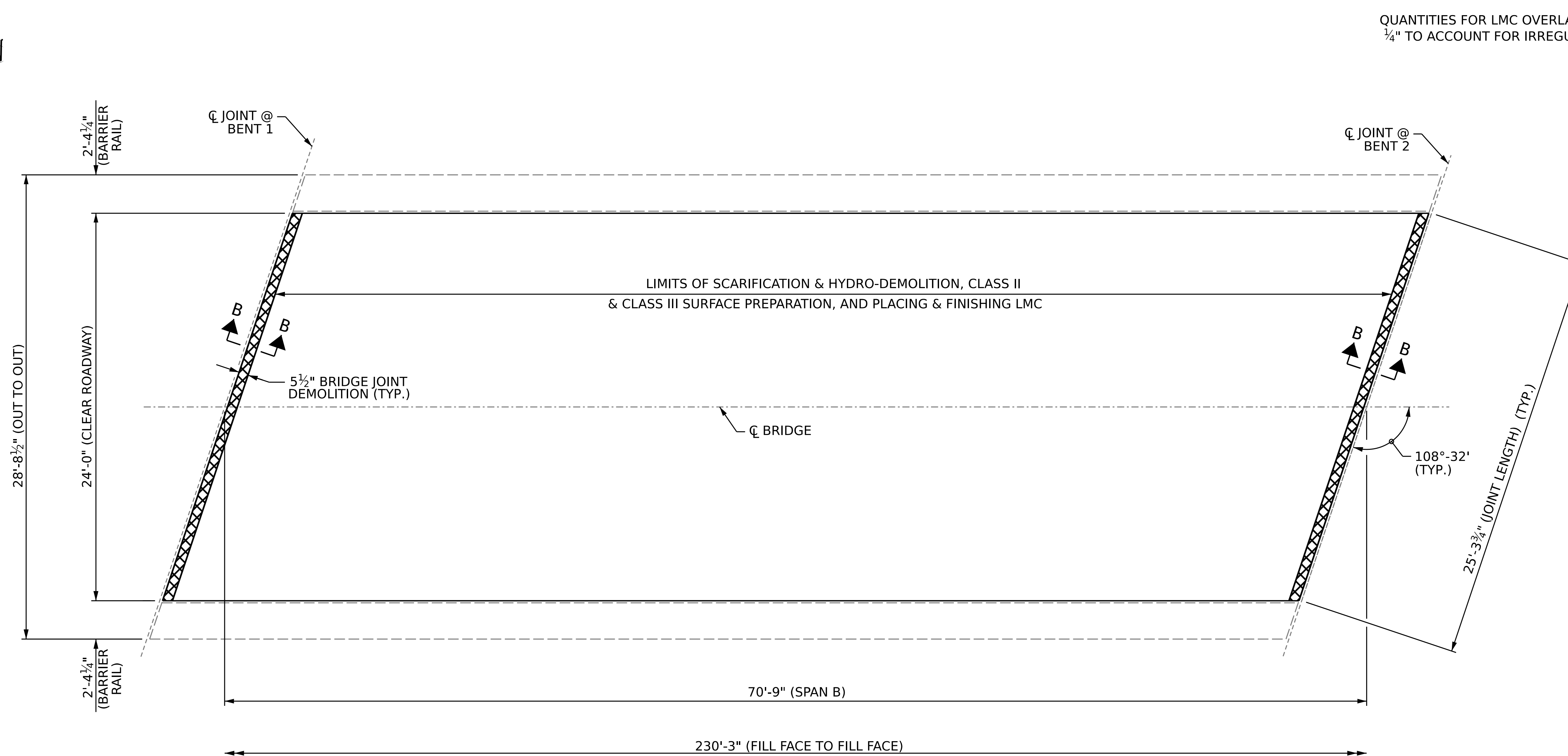
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S1-11.
 FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-12.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

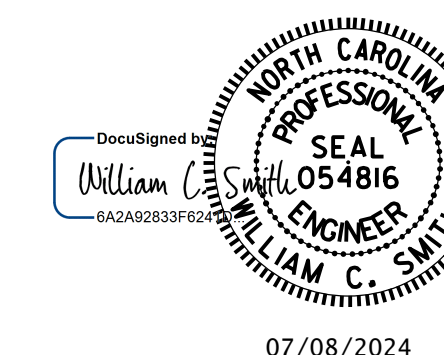
| DECK SURFACE REPAIR - SPAN B | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 185.8 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 185.8 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 0.0 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 9.0 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 185.8 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1,478.4 SF | |
| BRIDGE JOINT DEMOLITION | 23.2 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN B

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN B**


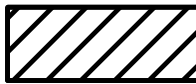

DRAWN BY : S. T. SANDOR DATE : 04/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S1-04 |
| 2 | | | 4 | | | TOTAL SHEETS 19 |

NOTES

FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S1-11.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-12.

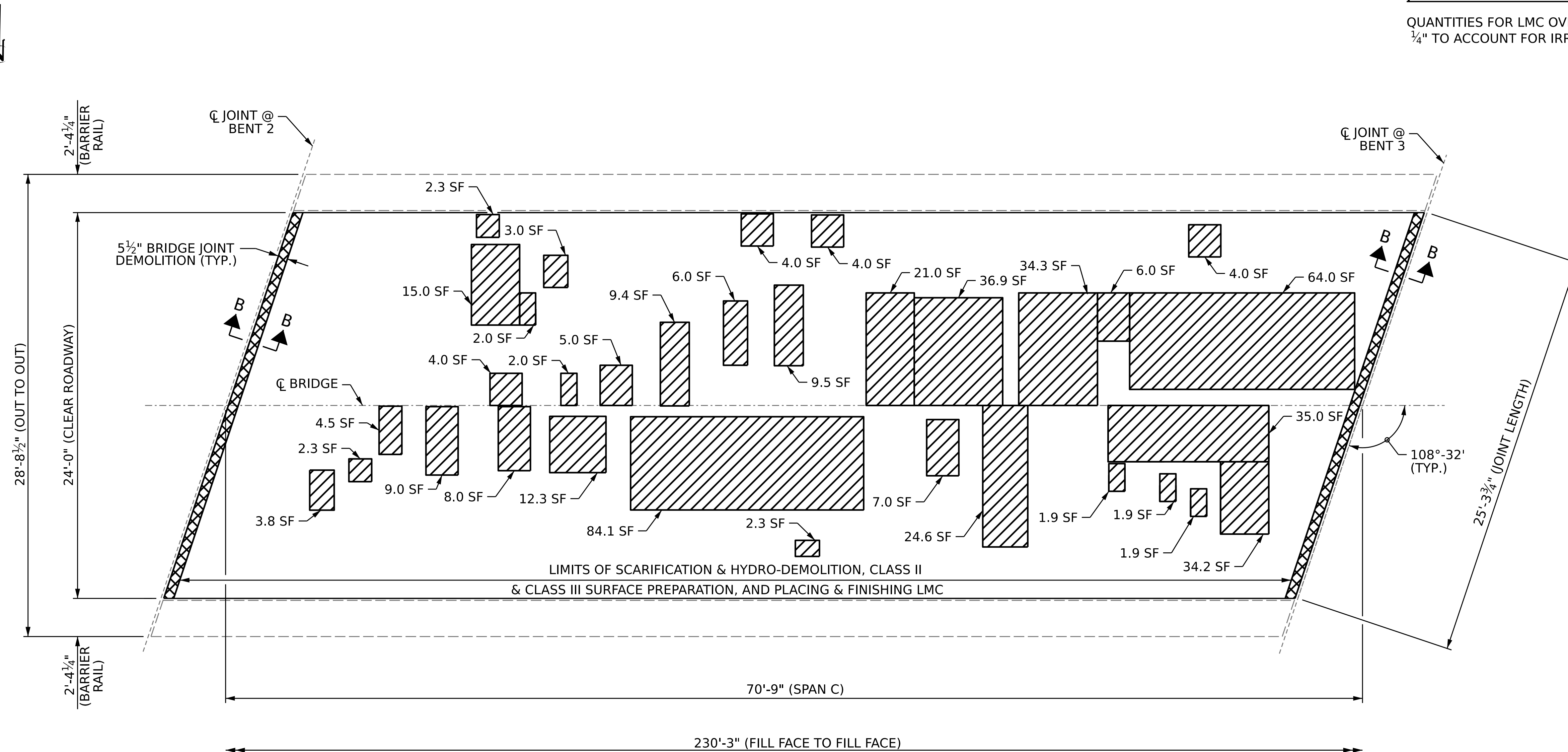
-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

DECK SURFACE REPAIR - SPAN C

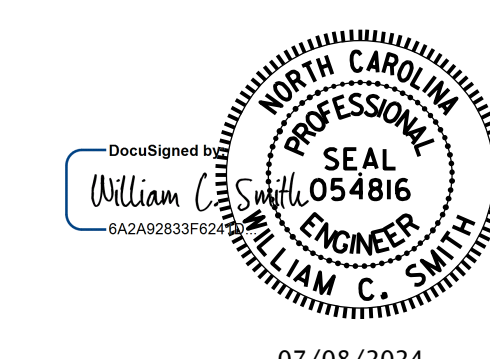
| | ESTIMATE | ACTUAL |
|---|----------------|--------|
| SCARIFYING BRIDGE DECK | 185.8 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 185.8 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 51.6 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 10.5 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 185.8 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1,478.4 SF | |
| BRIDGE JOINT DEMOLITION | 23.2 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN C

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



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


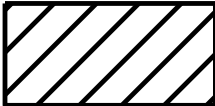
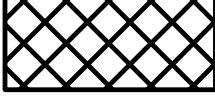
DRAWN BY : S. T. SANDOR DATE : 04/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : DATE :

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S1-05 |
| 2 | | | 4 | | | TOTAL SHEETS 19 |

NOTES

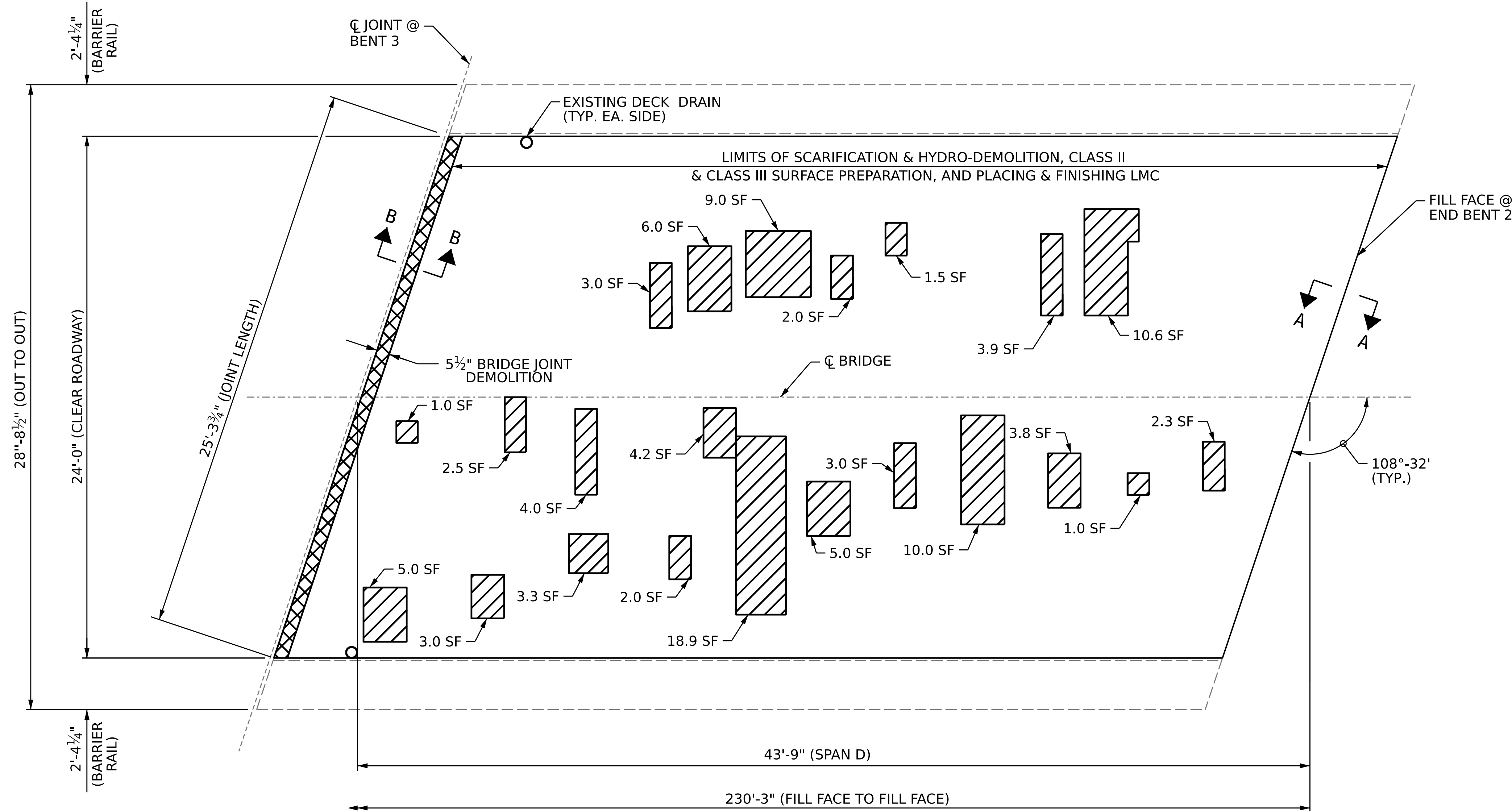
FOR SECTIONS A-A AND B-B, SEE "JOINT DETAIL" SHEET S1-11.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-12.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

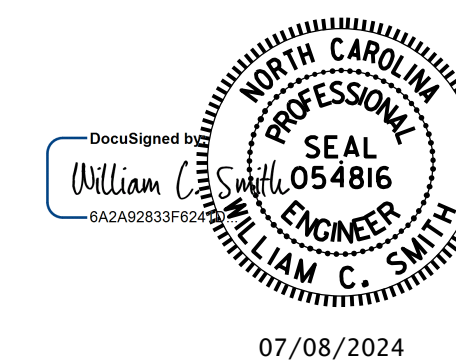
| DECK SURFACE REPAIR - SPAN D | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 115.1 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 115.1 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 11.7 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 5.9 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 115.1 SQ. YDS. | |
| GROOVING BRIDGE DECK | 911.7 SF | |
| BRIDGE JOINT DEMOLITION | 11.6 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN D

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN D**

DRAWN BY : S. T. SANDOR DATE : 04/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : DATE :




DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS |
| 1 | | | 3 | | | 19 |
| 2 | | | 4 | | | |

NOTES

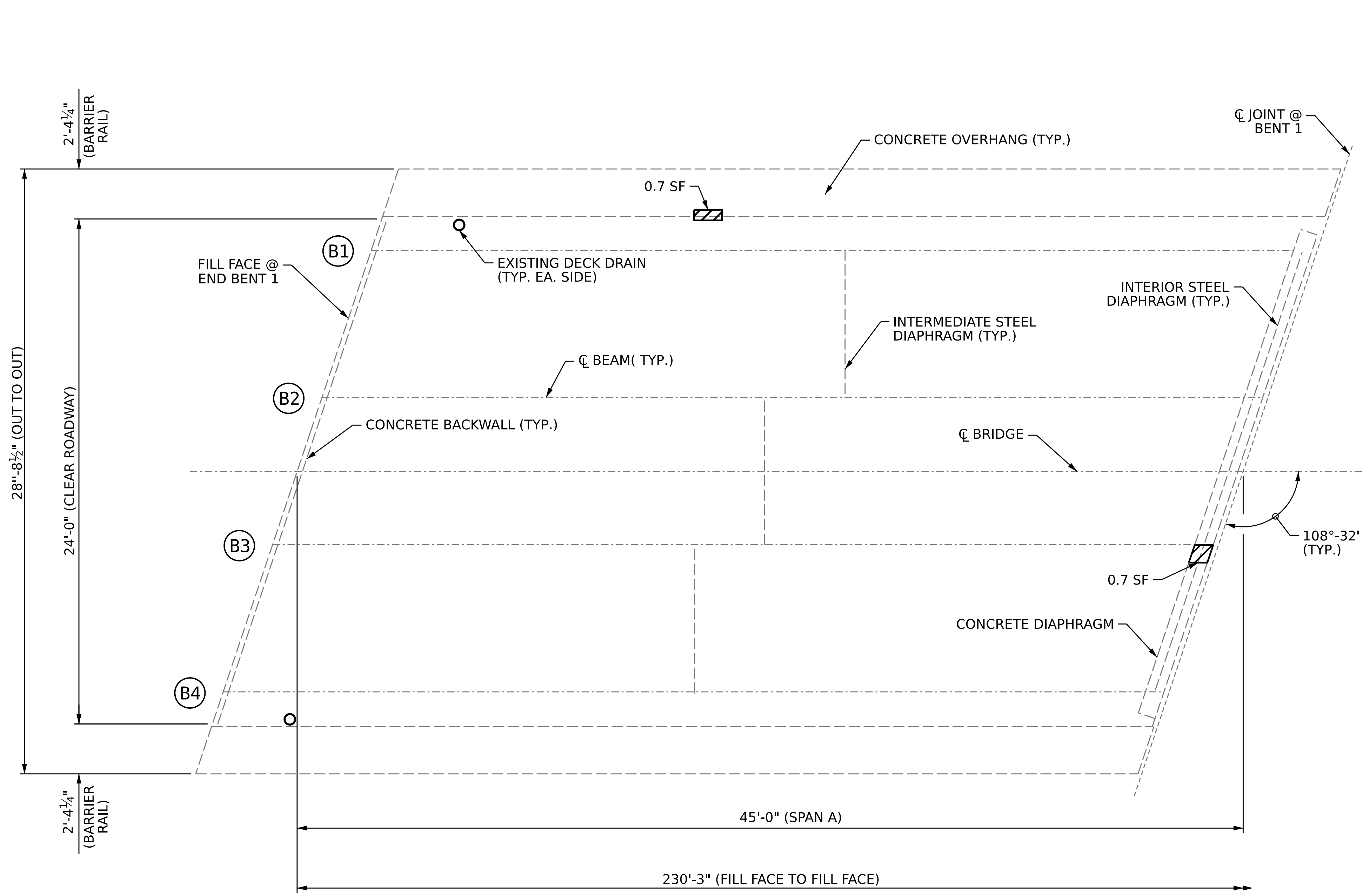
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES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

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

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

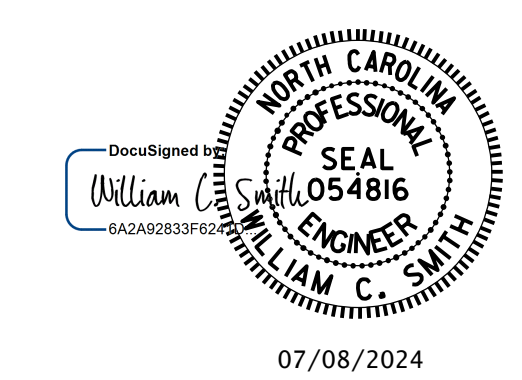
| DECK UNDERSIDE REPAIR QUANTITY TABLE | | | | |
|--------------------------------------|------------|-----------|---------|-----------|
| DECK UNDERSIDE REPAIRS SPAN A | QUANTITIES | | | |
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0.7 | 0.4 | | |
| OVERHANG | 0.7 | 0.4 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN A

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**UNDERSIDE REPAIRS
 SPAN A**

DRAWN BY : **S. T. SANDOR** DATE : **04/2024**
 CHECKED BY : **W. C. SMITH** DATE : **05/2024**
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

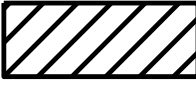


| REVISIONS | | | | | | SHEET NO. S1-07 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 19 |
| 2 | | | 4 | | | |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES

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

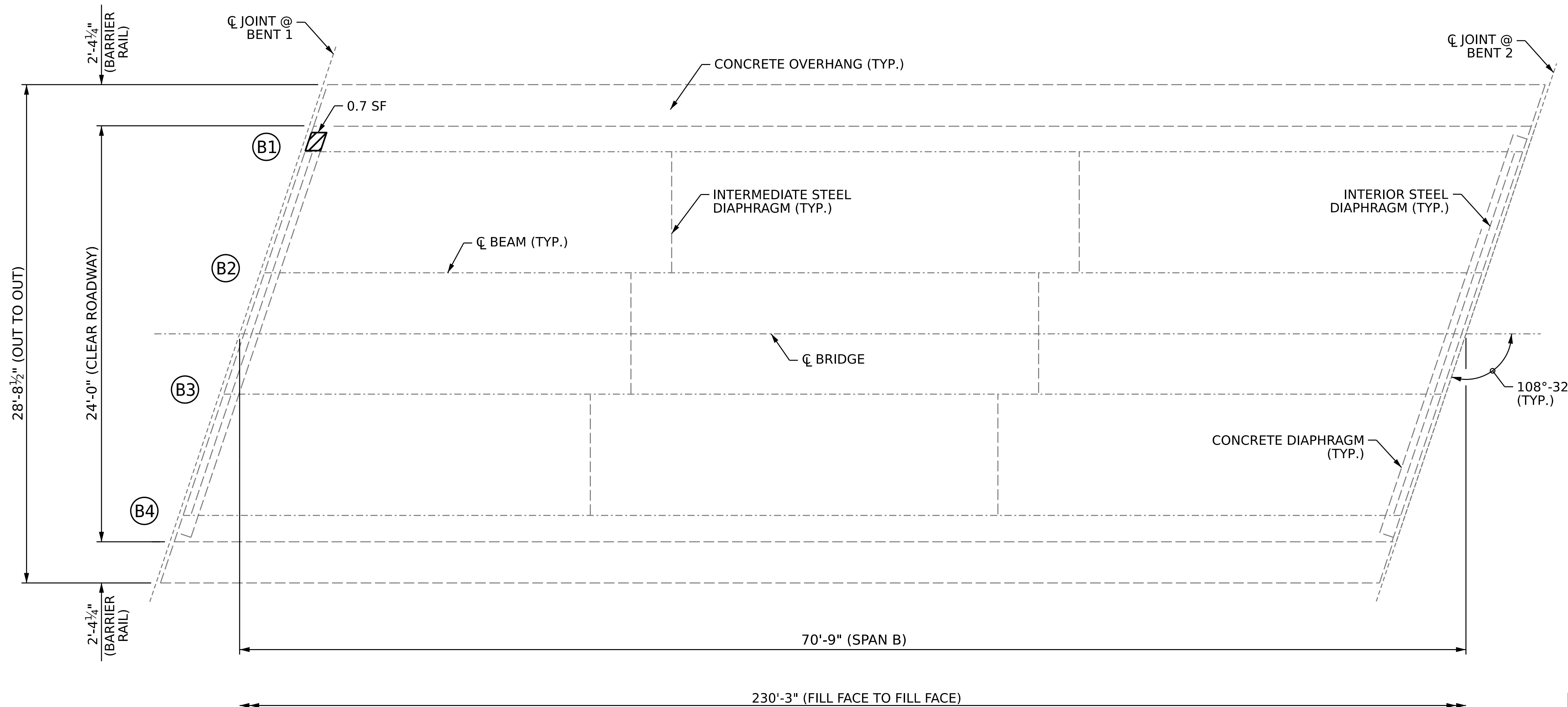
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

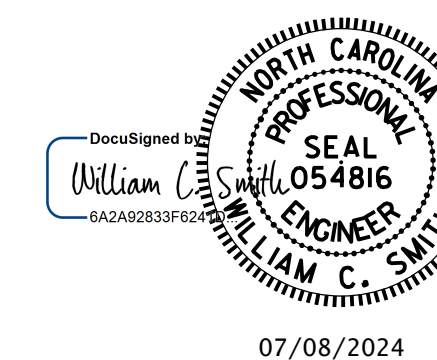
| DECK UNDERSIDE REPAIRS SPAN B | QUANTITIES | | | |
|----------------------------------|------------|--------------|------------|--------------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0.7 | 0.4 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN B

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**UNDERSIDE DECK REPAIRS
 SPAN B**

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : DATE :

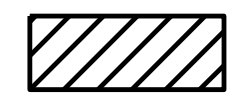
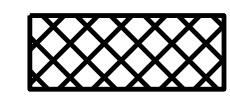

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. S1-08 |
|-----------|-----|-------|-----|-----|-------|--------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS 19 |
| 2 | | | 4 | | | |

NOTES

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

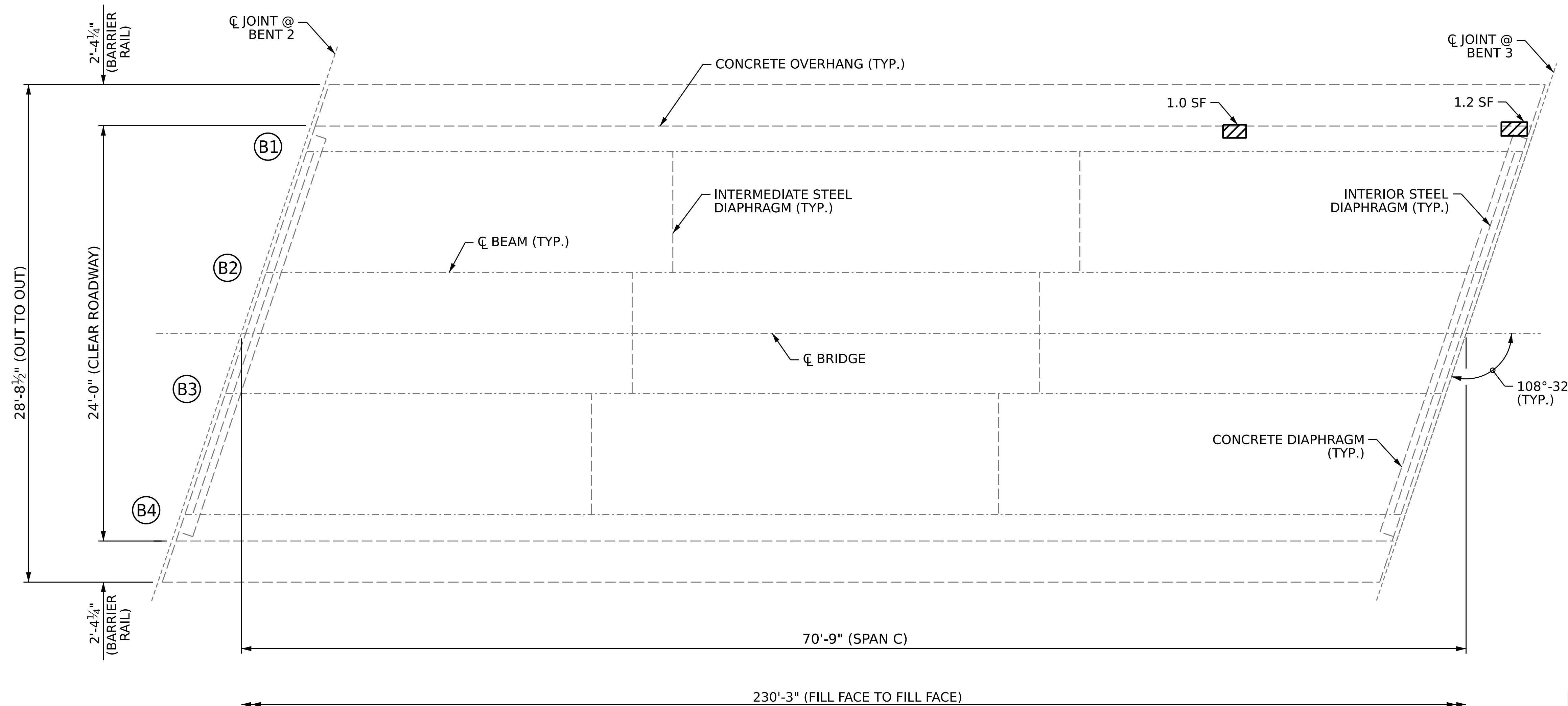
CONCRETE REPAIRS MAY BE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

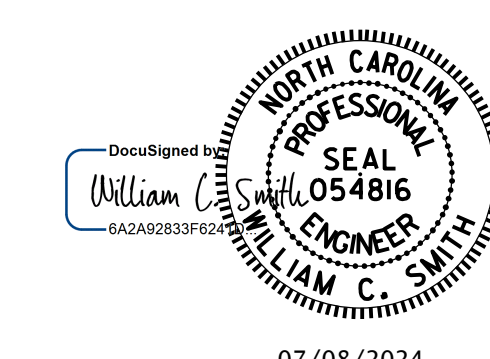
| DECK UNDERSIDE REPAIRS SPAN C | QUANTITIES | | | |
|----------------------------------|------------|--------------|------------|--------------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 2.2 | 1.1 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN C

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN C**

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : _____ DATE : _____




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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. S1-09 TOTAL SHEETS 19 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

NOTES

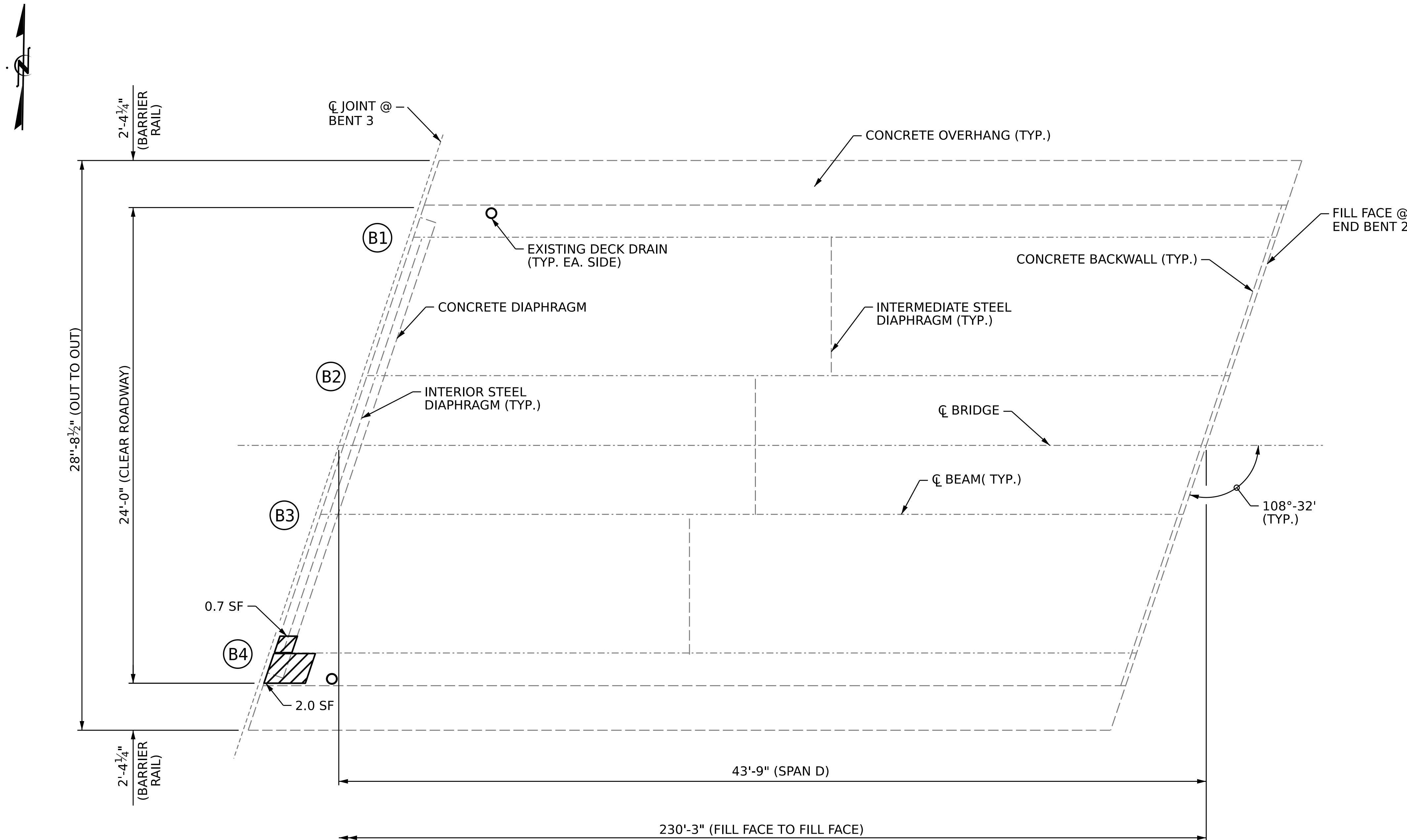
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES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

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

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

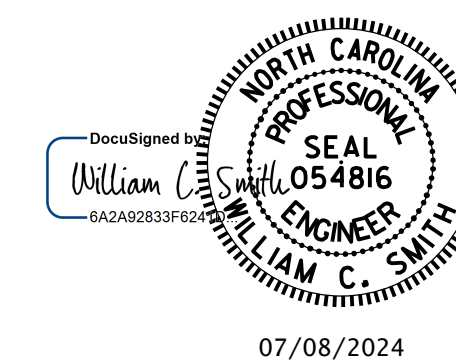
| DECK UNDERSIDE REPAIR QUANTITY TABLE | | | | |
|--------------------------------------|------------|--------------|------------|--------------|
| DECK UNDERSIDE REPAIRS SPAN D | QUANTITIES | | | |
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 2.0 | 1.0 | | |
| CONCRETE DIAPHRAGM | 0.7 | 0.4 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN D

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**

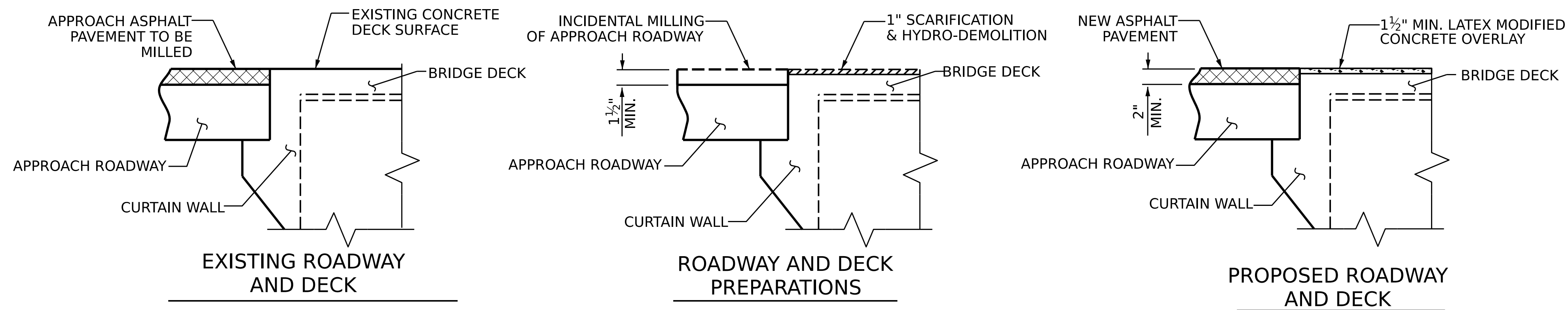


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN D**

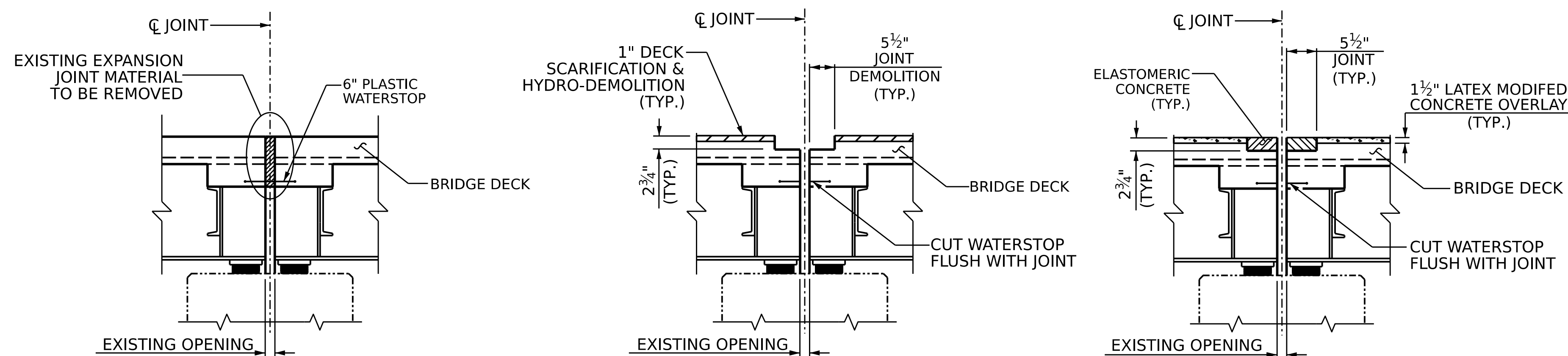
DRAWN BY : S. T. SANDOR DATE : 04/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : DATE :

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-10 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |



(SECTION A-A)
(ROADWAY AND BRIDGE DECK SEQUENCE AT END BENTS)

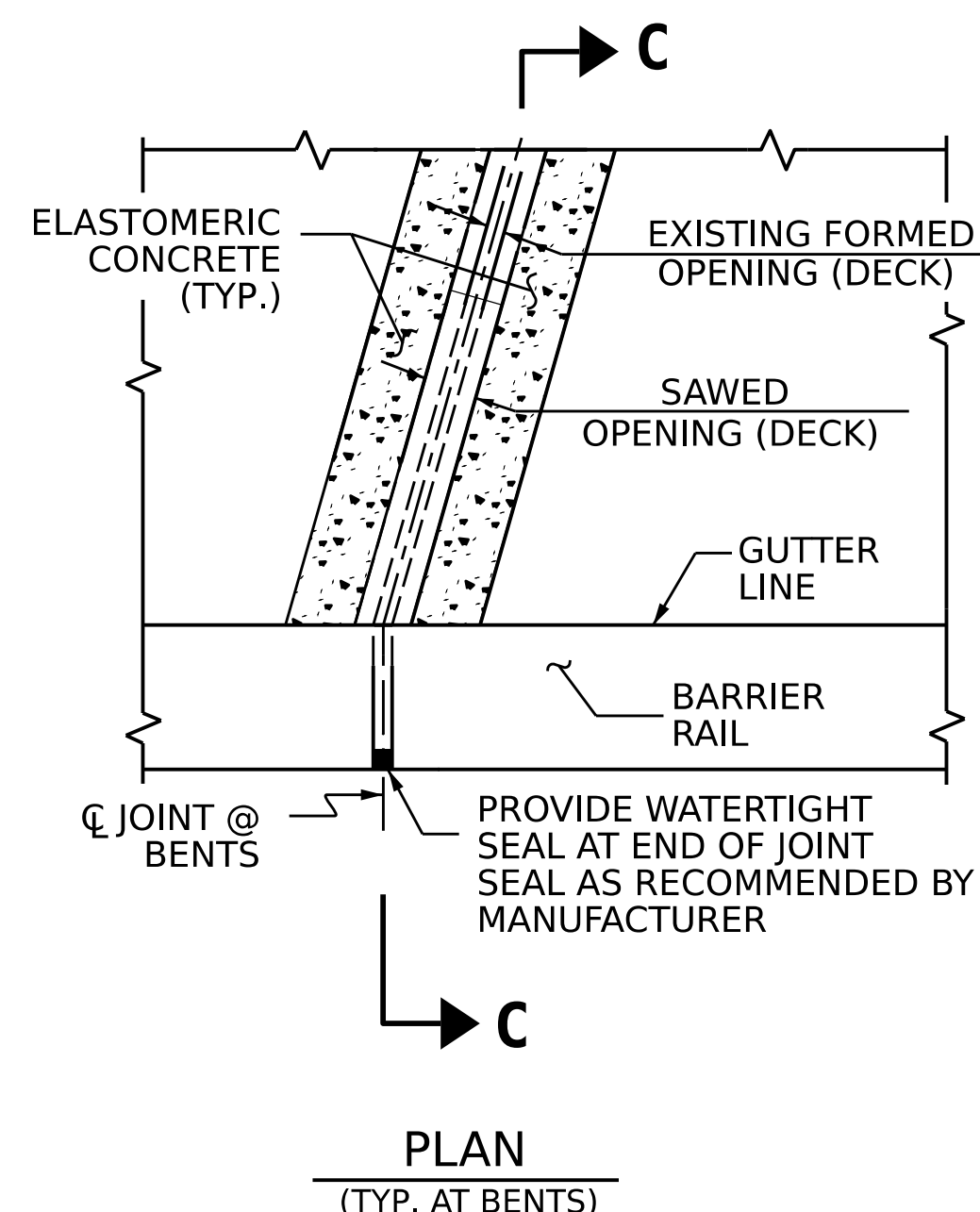


EXISTING JOINT

MINIMUM EXISTING JOINT DEMOLITION

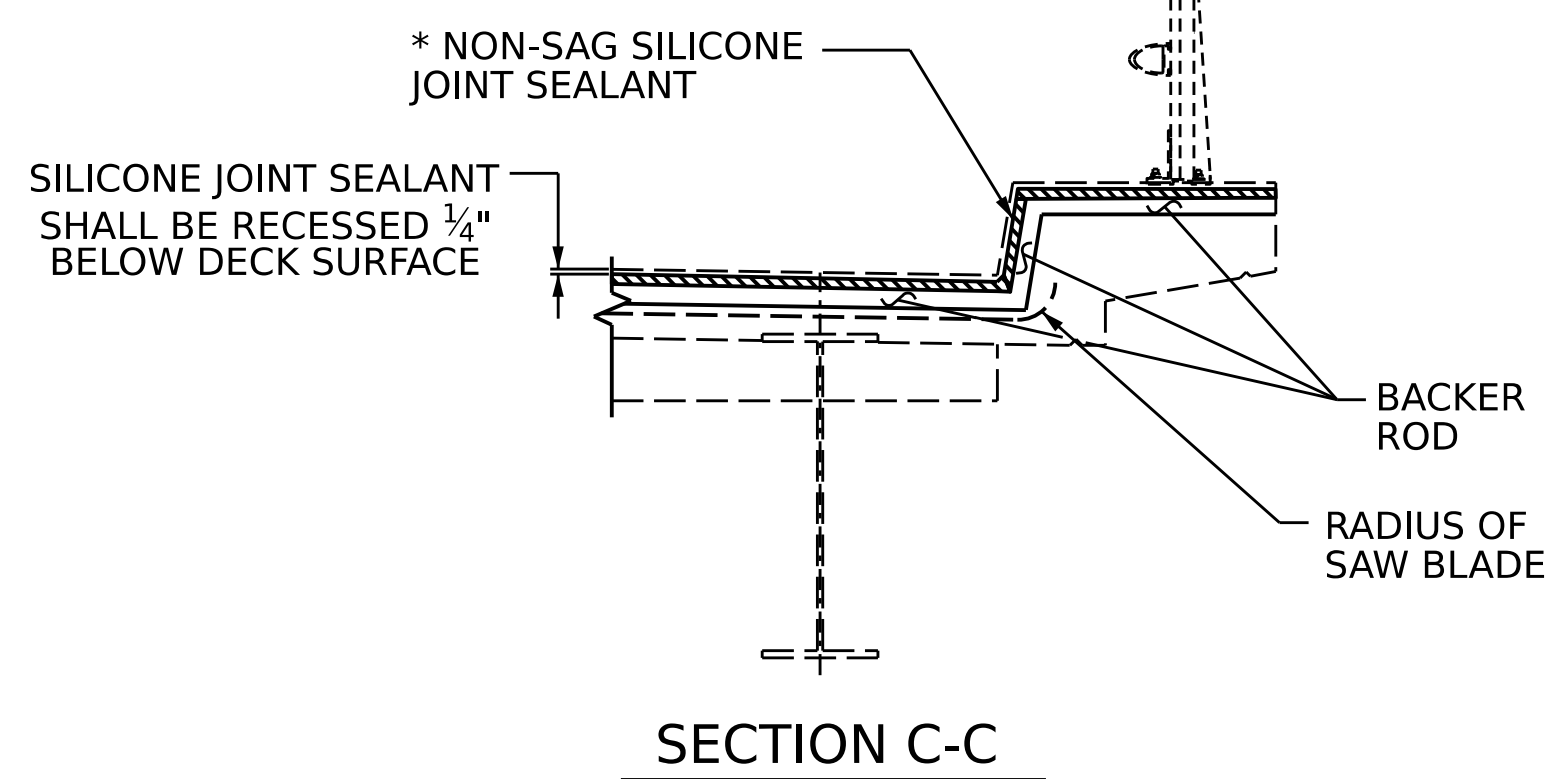
(PROPOSED JOINT PRE-SAWED)

(SECTION B-B)
(JOINT INSTALLATION SEQUENCE AT BENTS)

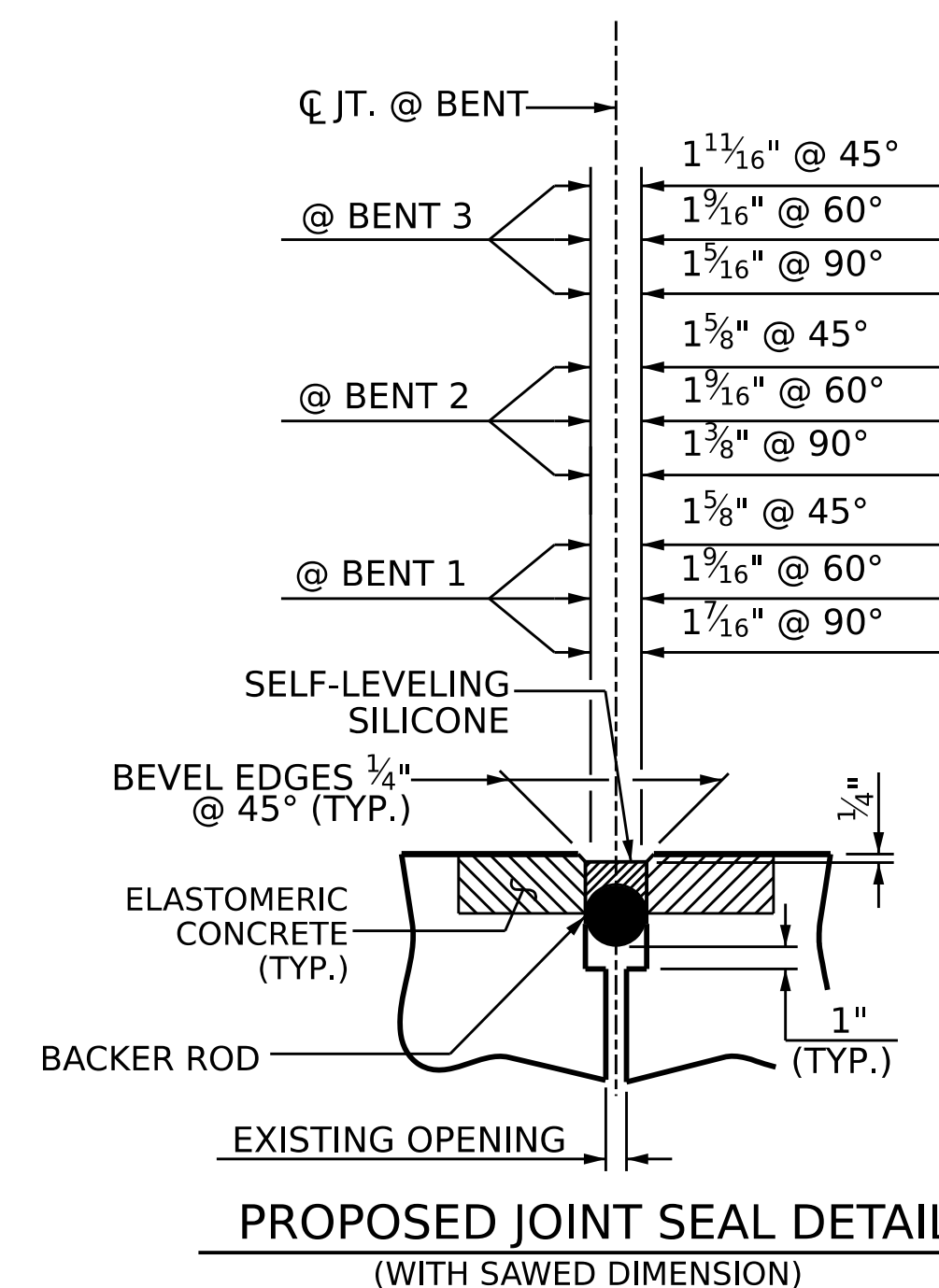


PLAN
(TYP. AT BENTS)

* NON-SAG SILICONE JOINT SEALANT TO BE PLACED AND ALLOWED TO SET, PRIOR TO PLACEMENT OF SELF-LEVELING SILICONE JOINT SEALANT.



SECTION C-C



PROPOSED JOINT SEAL DETAIL
(WITH SAWED DIMENSION)

NOTES:

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

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

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

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

THE INSTALLATION OF JOINT SEAL SHALL BE WATERTIGHT.

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

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

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH. SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.

| SUMMARY OF QUANTITIES | | |
|---------------------------------------|----------|--------|
| | ESTIMATE | ACTUAL |
| ELASTOMERIC CONCRETE FOR PRESERVATION | 15.9 CF | |
| POURABLE SILICONE JOINT SEALANT | 95.0 LF | |

PROJECT NO. 4B.104213
HALIFAX COUNTY
BRIDGE NO. 410055



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

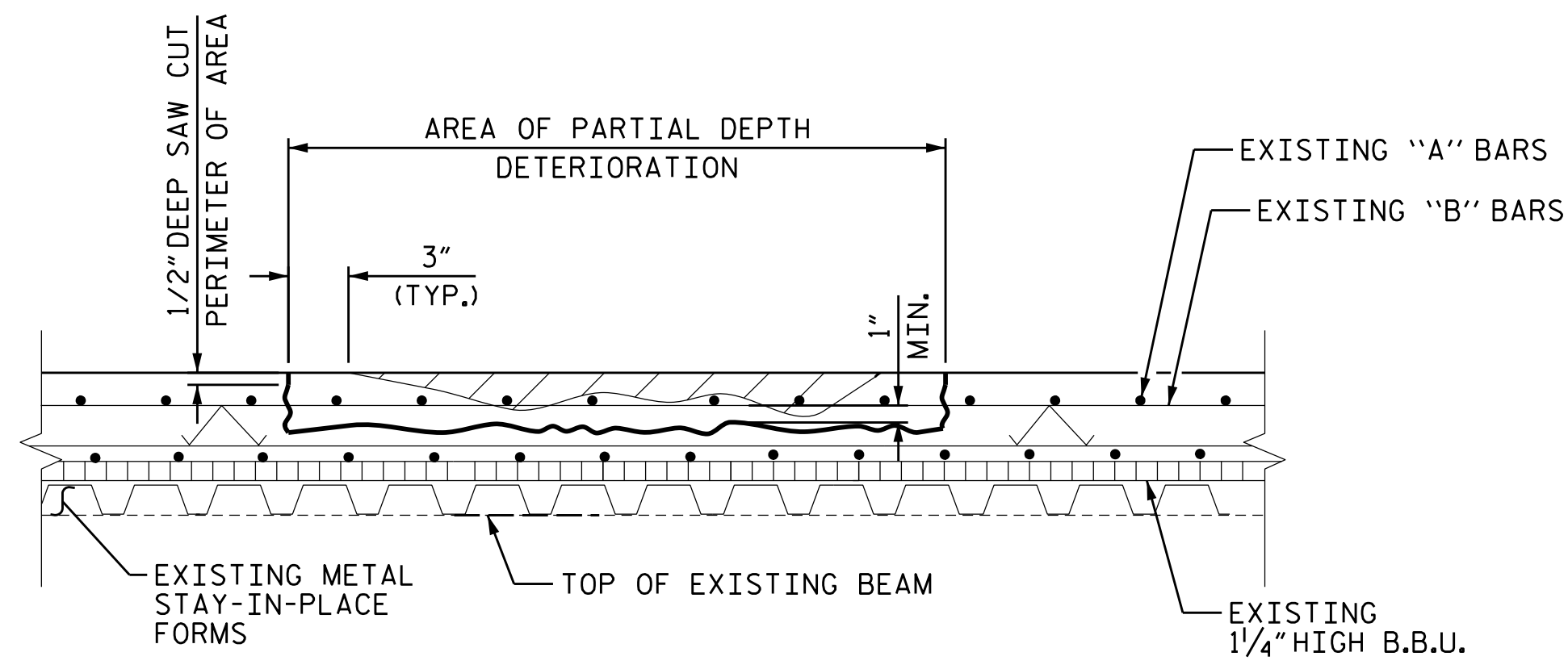
JOINT REPAIR DETAILS

07/08/2024

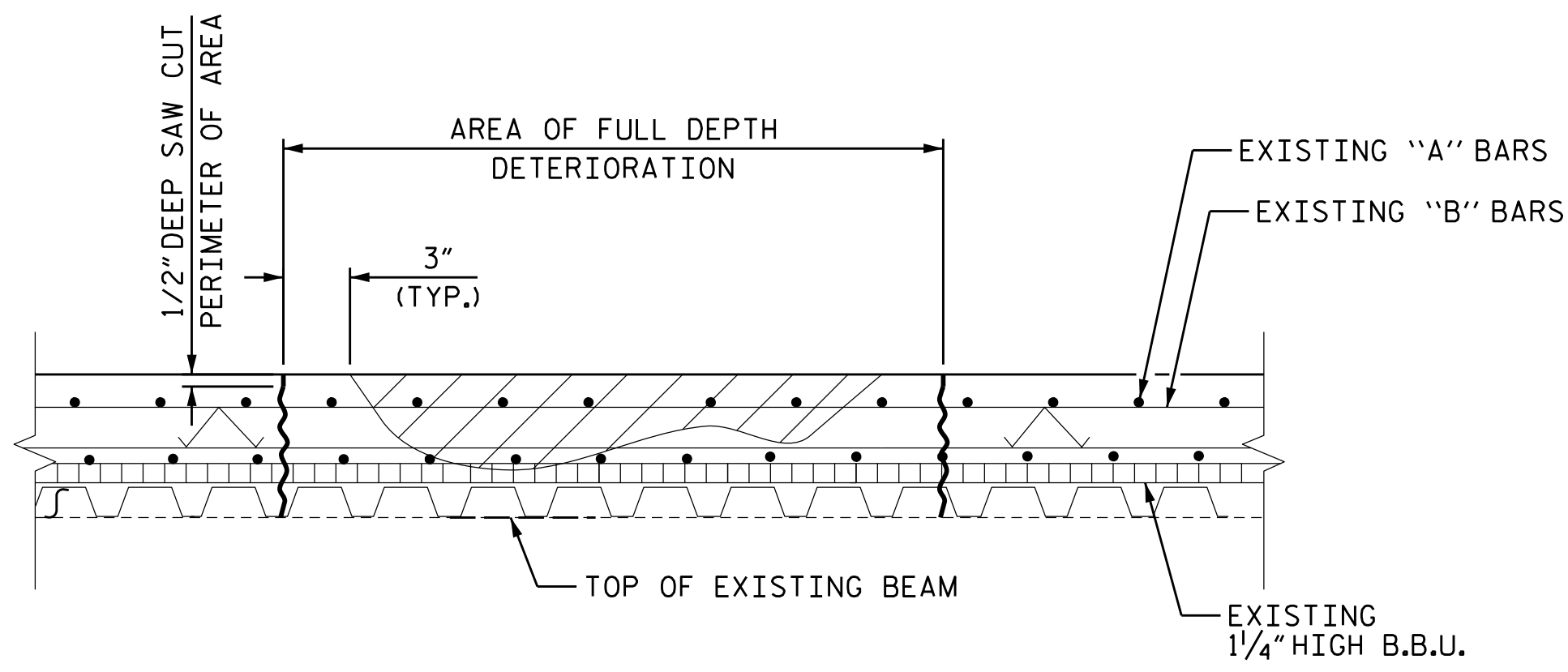
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-11 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |

DRAWN BY : Q. T. NGUYEN / E. BAYISSA DATE : 06/2024
CHECKED BY : F. LEA \ W. C. SMITH DATE : 06/2024

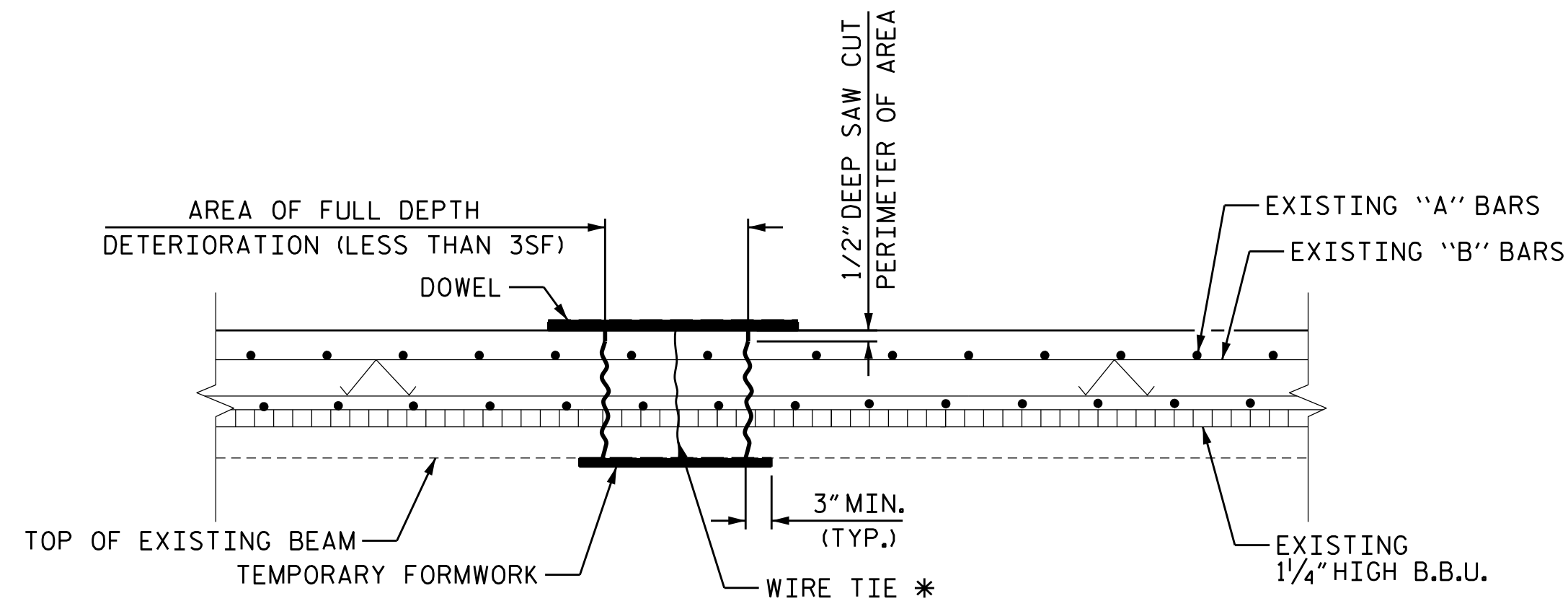


CLASS II (PARTIAL DEPTH) REPAIR



CLASS III (FULL DEPTH) REPAIR

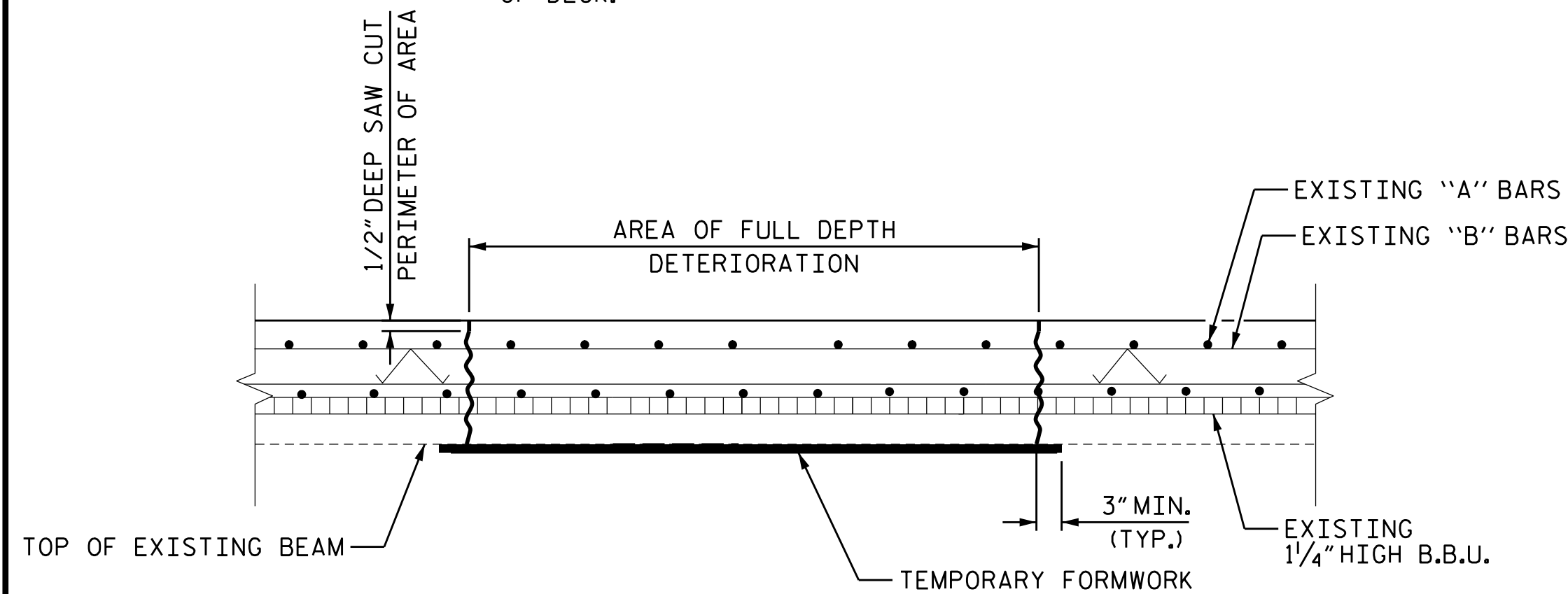
AREA OF DETERIORATION



FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

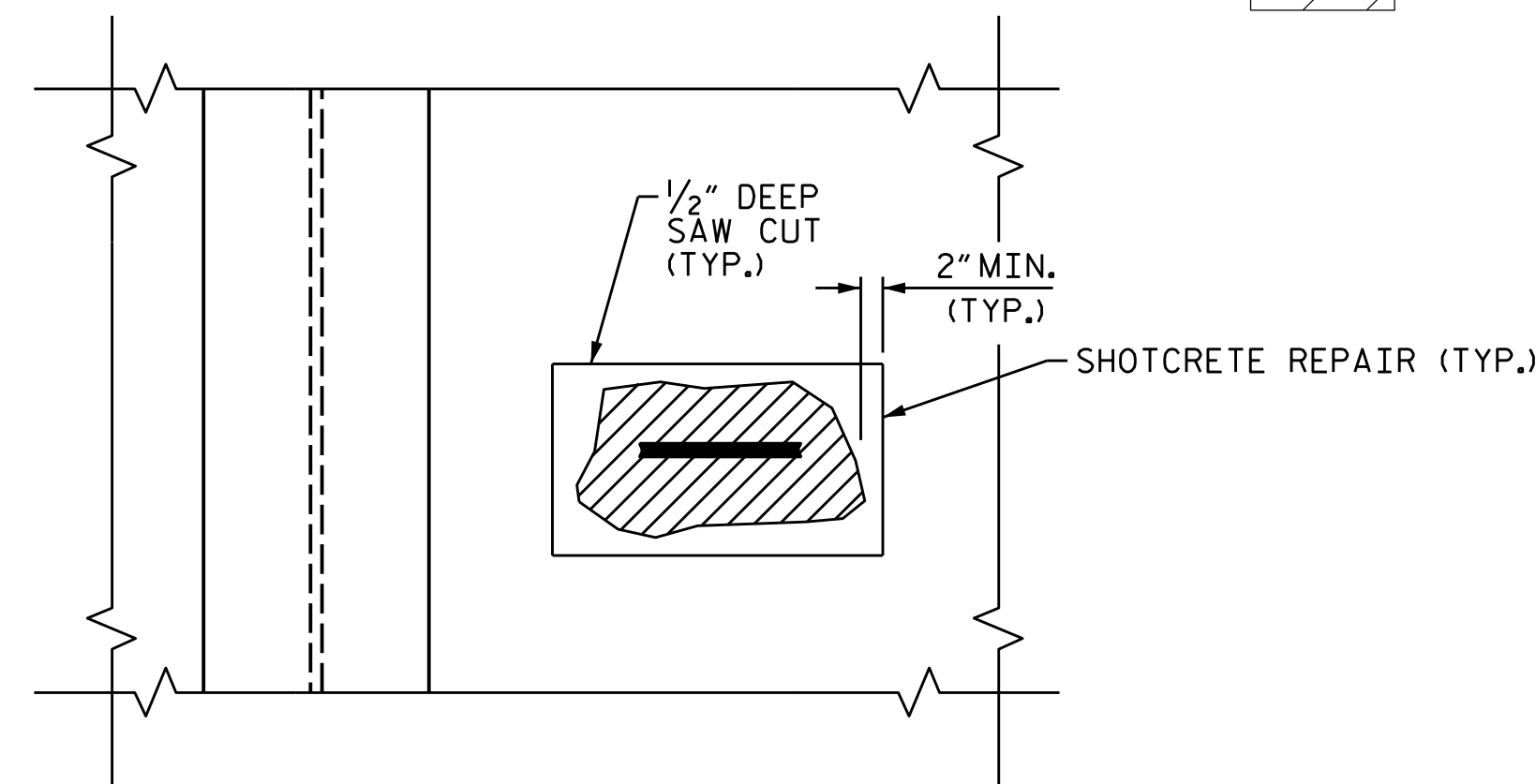
(FOR AREAS OF DETERIORATION EQUAL TO OR LESS THAN 3SF)

* WIRE TIE TO BE KNOTTED BELOW TEMPORARY FORMWORK AND ATTACHED TO DOWEL THAT IS WIDER THAN FORMED FULL DEPTH HOLE. ROTATE DOWEL TO TIGHTEN FORMWORK AGAINST BOTTOM OF DECK.

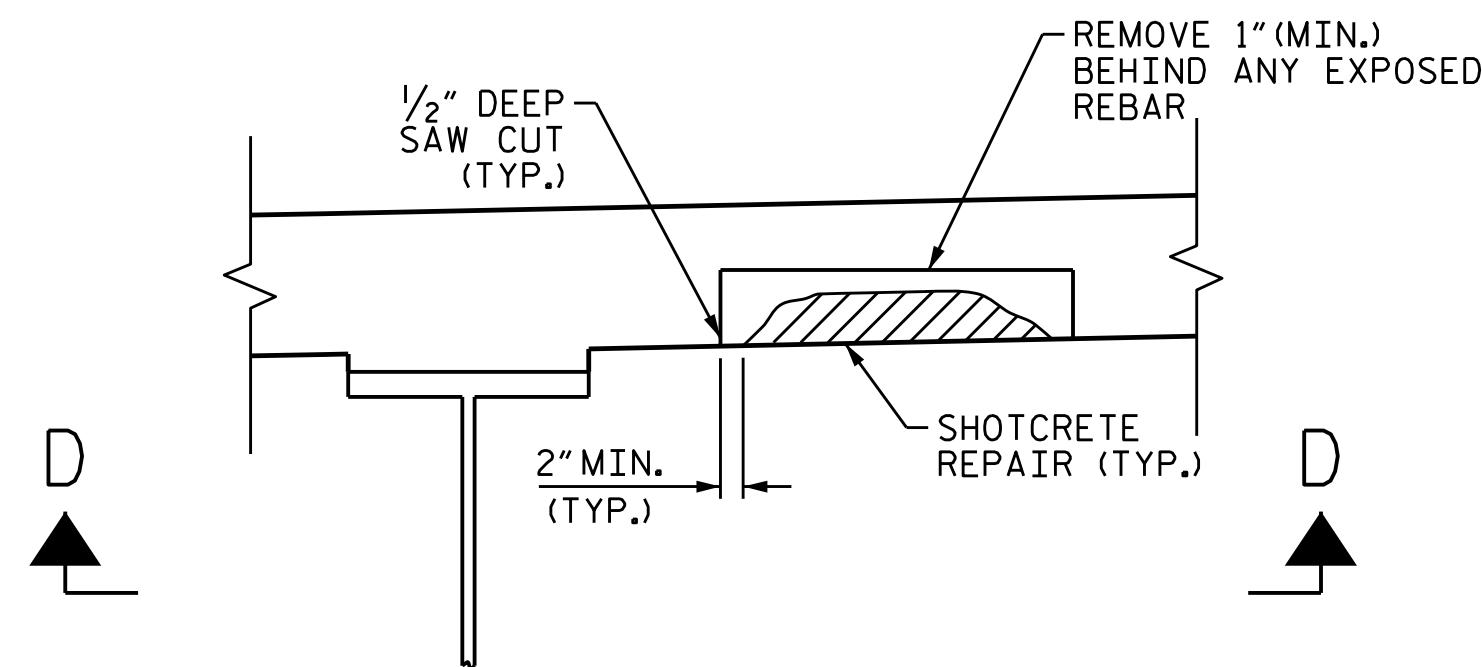


FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

(FOR AREAS OF DETERIORATION GREATER THAN 3SF)

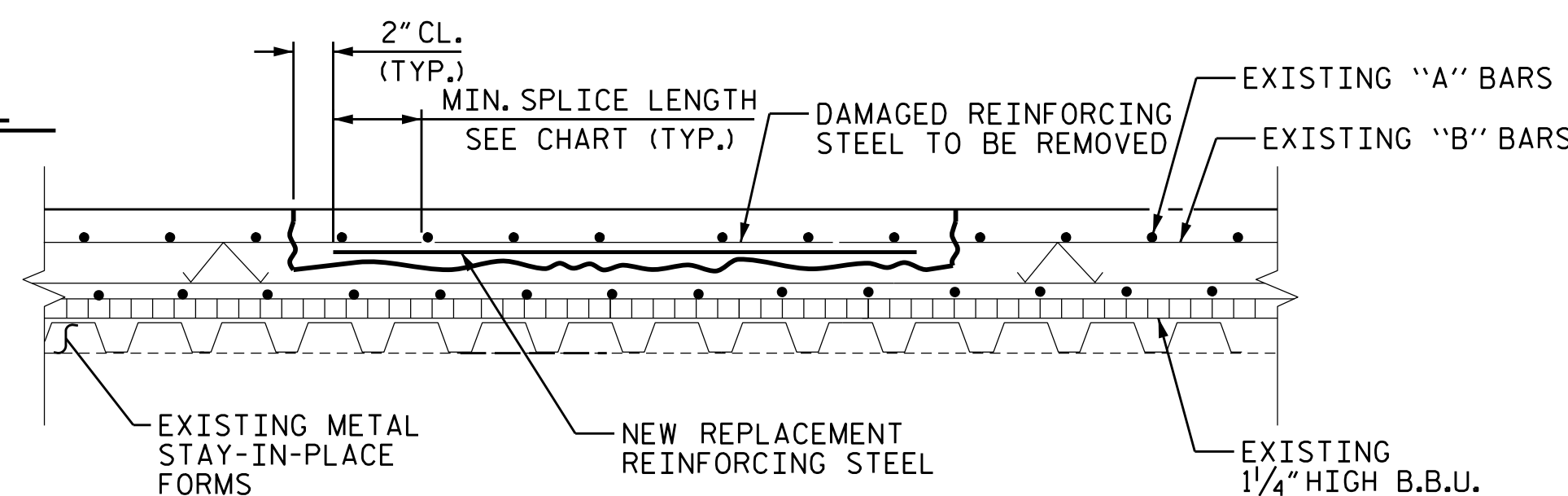


SECTION D-D



TYPICAL SECTION

UNDERSIDE OF DECK REPAIR



REINFORCING STEEL REPAIR

NOTES

FOR AREAS TO BE REPAIRED, SEE "PLAN OF SPAN" SHEETS.

ALL DECK REPAIRS SHALL BE COMPLETED PRIOR TO PLACEMENT OF OVERLAY.

FOR CLASS II AND CLASS III SURFACE PREPARATION, SEE "OVERLAY SURFACE PREPARATIONS" SPECIAL PROVISION.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK. FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

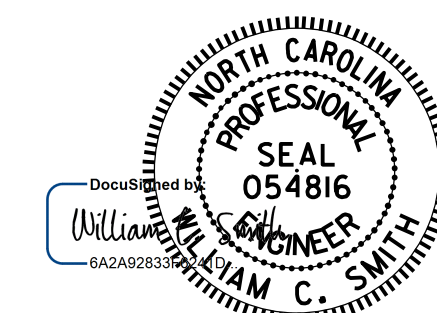
UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

| BAR SIZE | SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL | | APPROACH SLABS | | PARAPET AND BARRIER RAIL |
|----------|---|----------|----------------|----------|--------------------------|
| | EPOXY COATED | UNCOATED | EPOXY COATED | UNCOATED | |
| #4 | 1'-11" | 1'-7" | 1'-11" | 1'-7" | 2'-6" |
| #5 | 2'-5" | 2'-0" | 2'-5" | 2'-0" | 3'-1" |
| #6 | 2'-10" | 2'-5" | 3'-7" | 2'-5" | 3'-8" |
| #7 | 4'-2" | 2'-9" | — | — | — |
| #8 | 4'-9" | 3'-2" | — | — | — |

PROJECT NO. 4B.104213
HALIFAX COUNTY
 BRIDGE NO. 410055



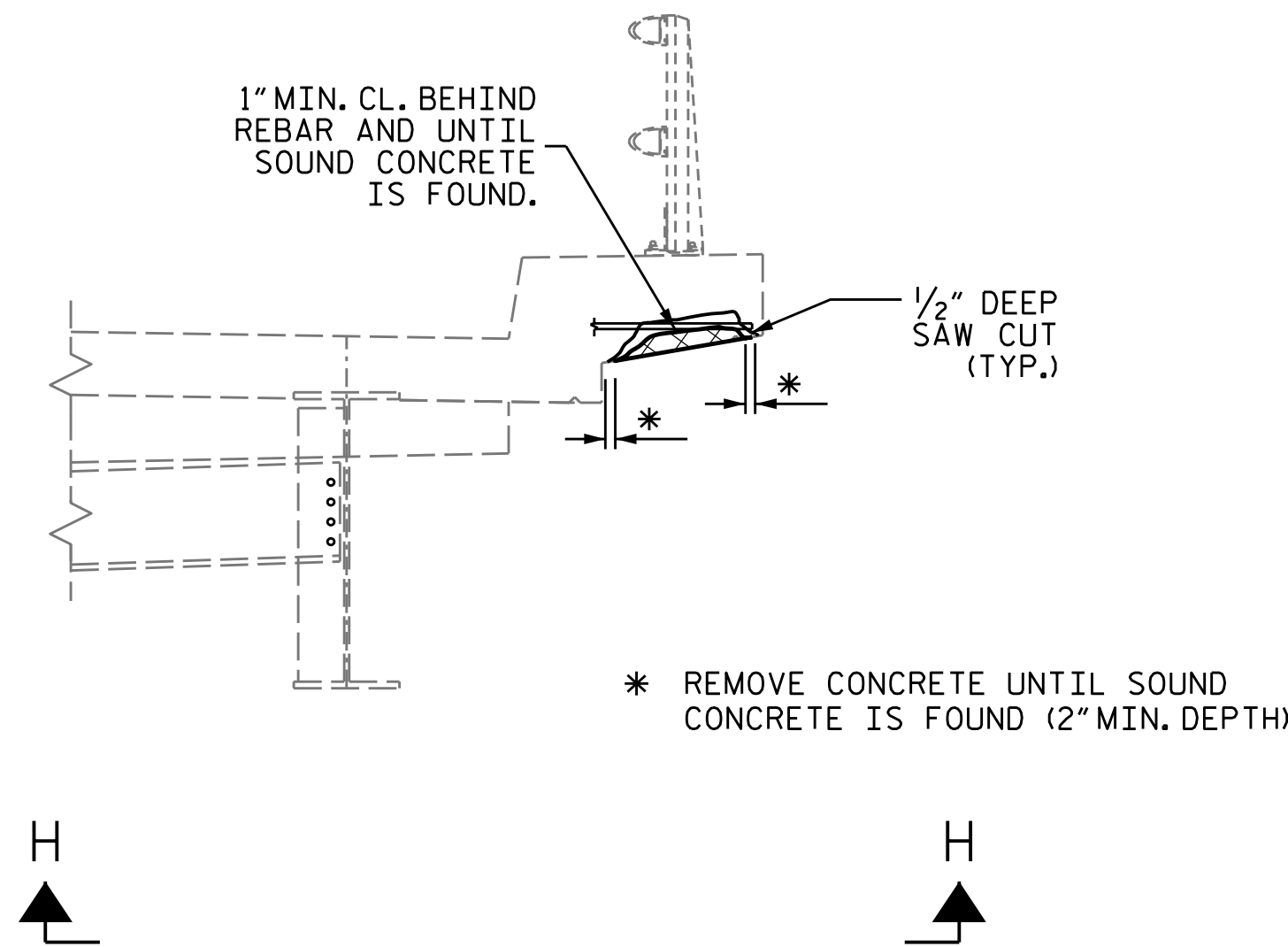
07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
DECK REPAIR DETAILS

ASSEMBLED BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DRAWN BY : NAP 9/18
 CHECKED BY :

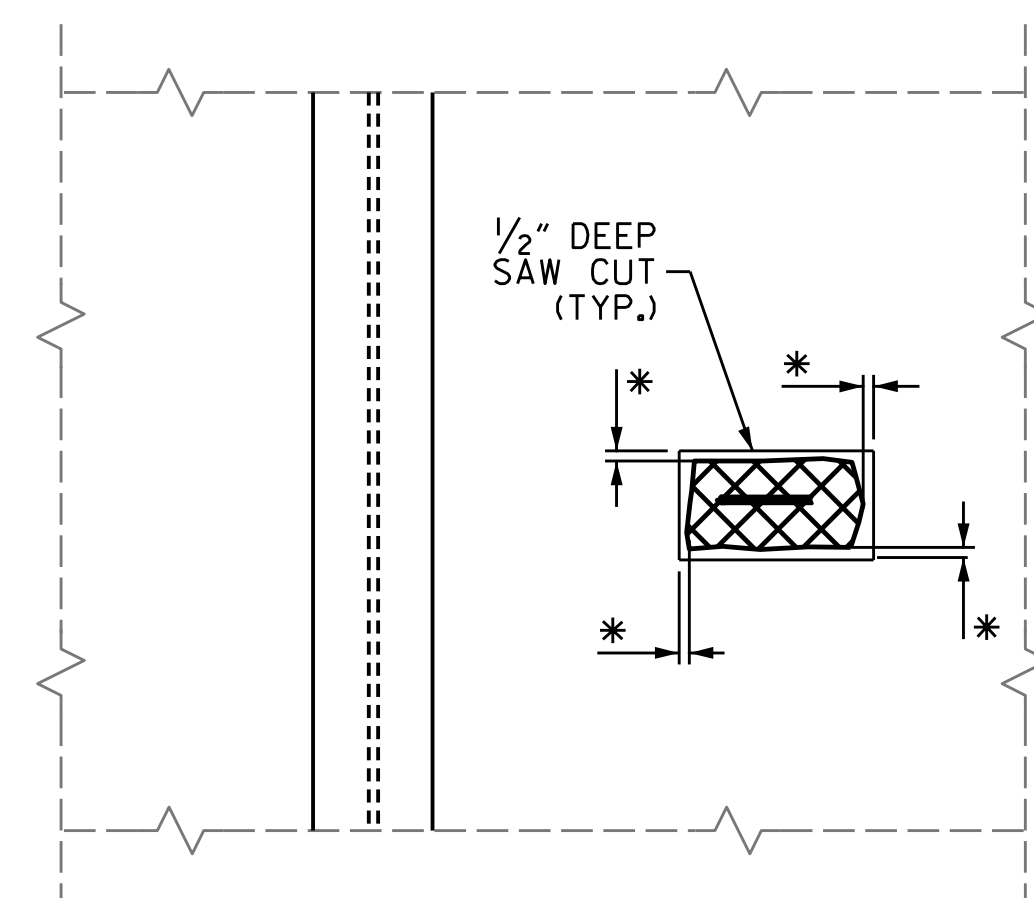
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-12 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |



TYPICAL SECTION
(UTILITIES NOT SHOWN FOR CLARITY)

DAMAGED AREA



SECTION H-H
OVERHANG DETAILS

NOTES

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.

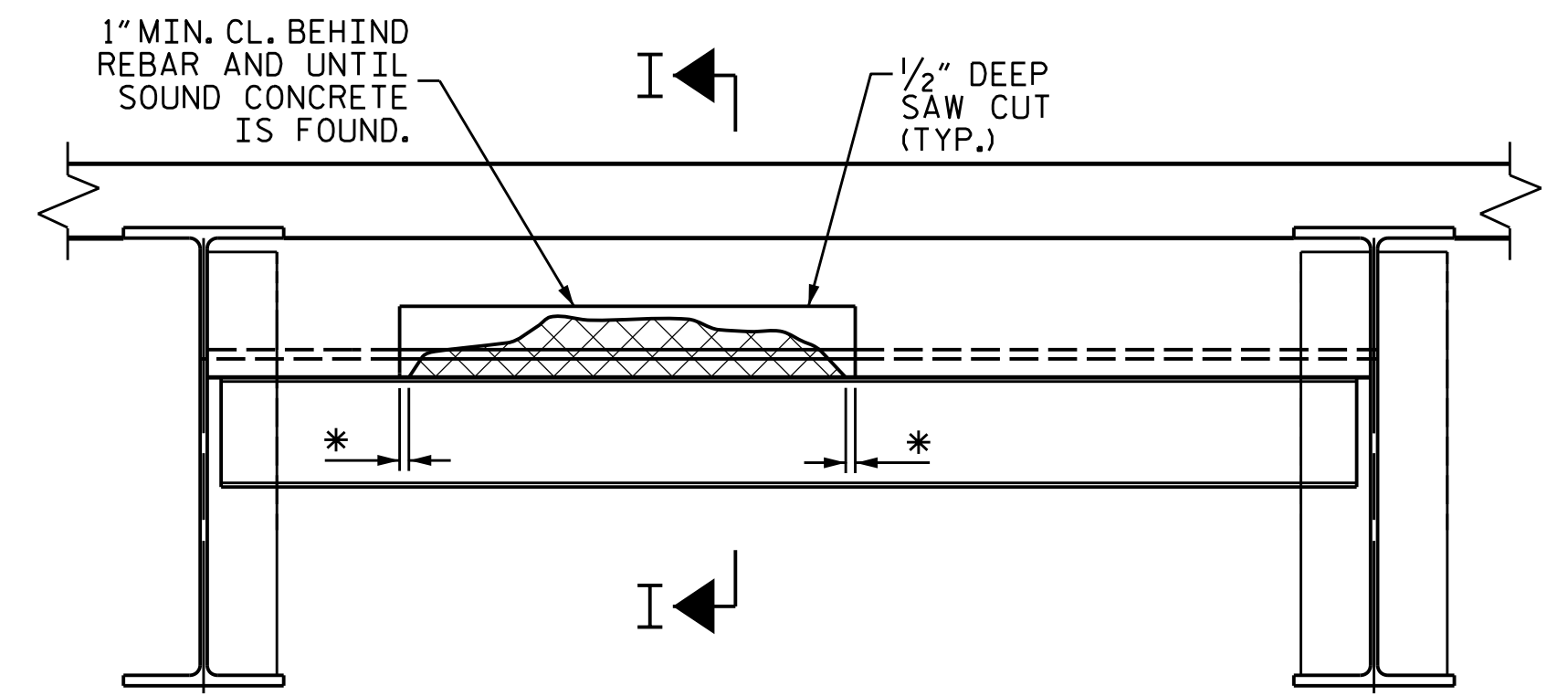
REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THE "DECK REPAIR DETAIL" SHEET.

FOR AREAS TO BE REPAIRED, SEE "UNDERSIDE DECK REPAIRS" SHEETS.

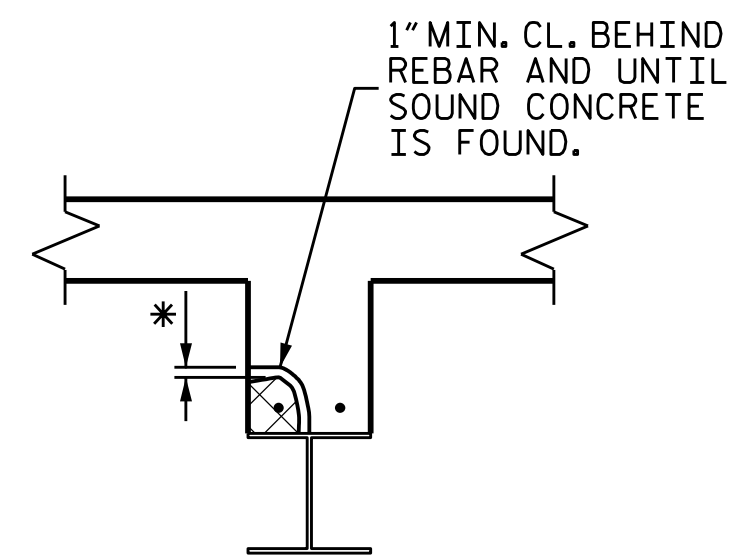
THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK. FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.



TYPICAL SECTION



SECTION I-I

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. DEPTH)

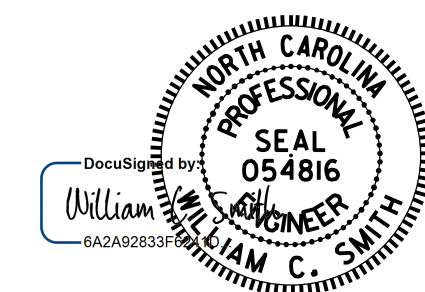
DAMAGED AREA

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

INTERIOR DIAPHRAGM REPAIR DETAILS

(EXTERIOR DIAPHRAGM SIMILAR)

PROJECT NO. 4B.104213
HALIFAX COUNTY
BRIDGE NO. 410055



07/08/2024

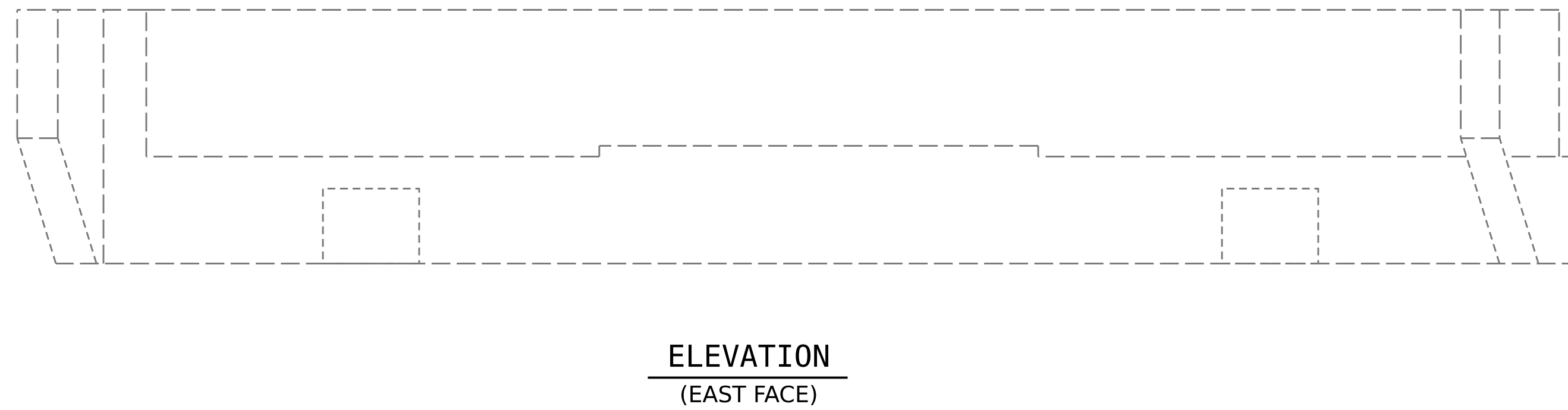
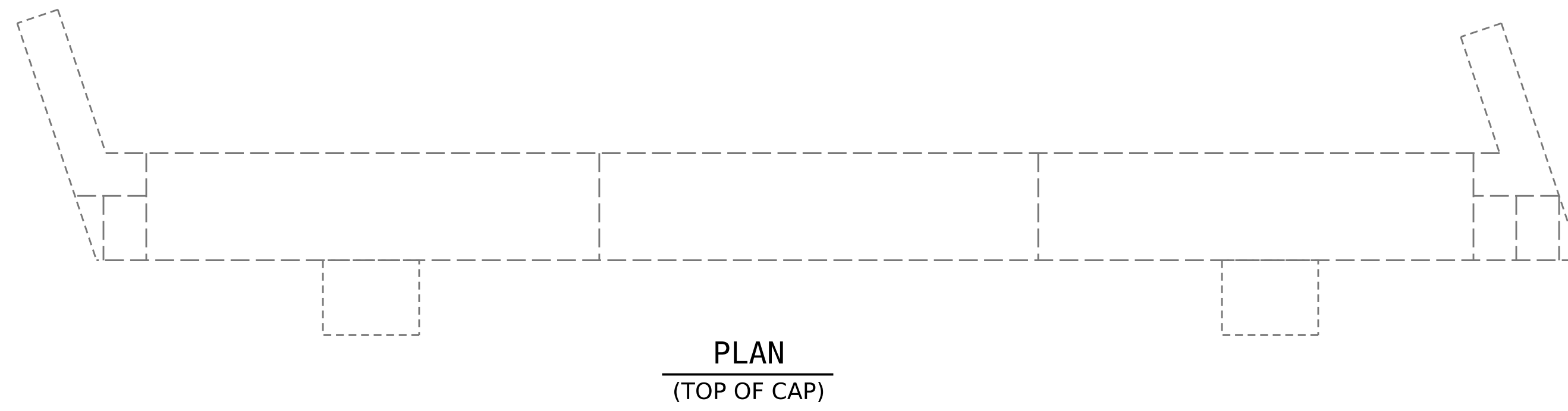
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

OVERHANG & DIAPHRAGM REPAIR DETAILS

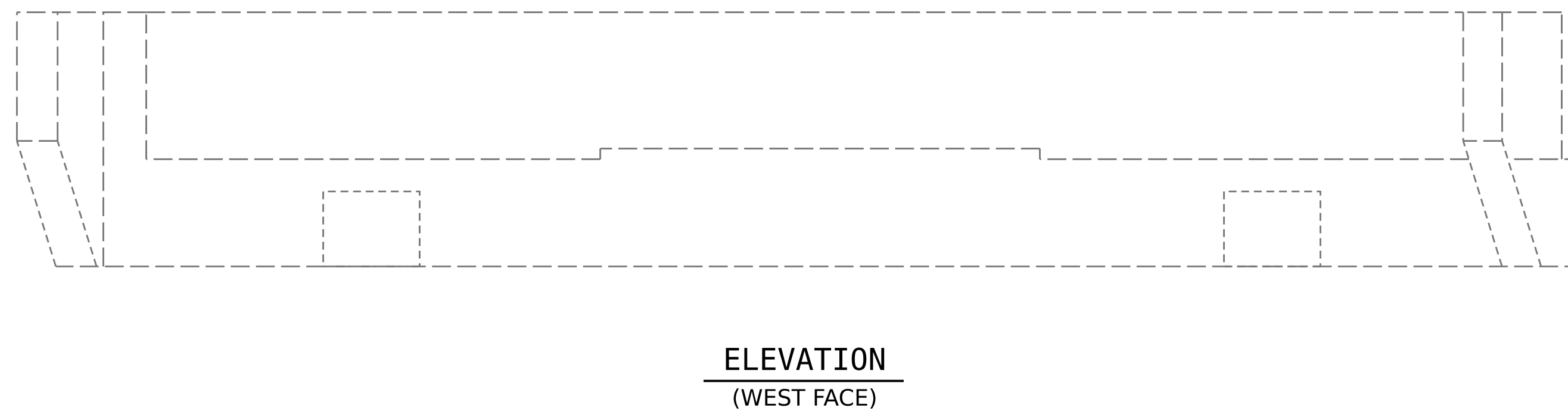
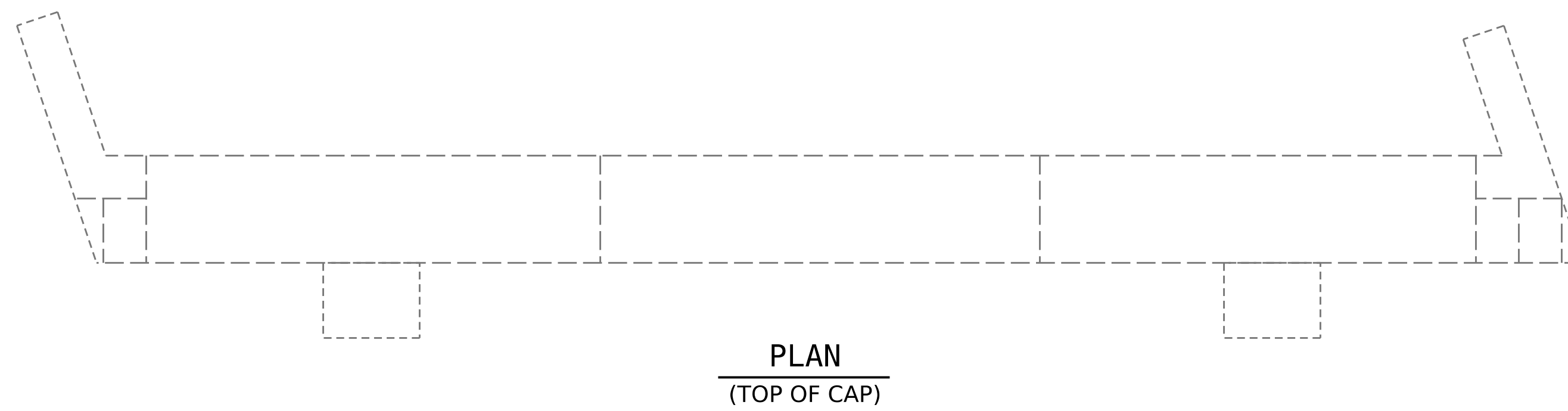
DRAWN BY : S. T. SANDOR DATE : 05/2024
CHECKED BY : W. C. SMITH DATE : 05/2024

DOCUMENT NOT CONSIDERED
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SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |



END BENT 1



END BENT 2

SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - END BENT 1 & 2 | QUANTITIES | | | |
|--------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| CURTAIN WALL | 0 | 0 | | |
| WINGWALL | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| CURTAIN WALL | 0 | 0 | | |
| WINGWALL | | | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| CURTAIN WALL | | 0 | | |
| WINGWALL | | | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 100 | | |





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

NOTES

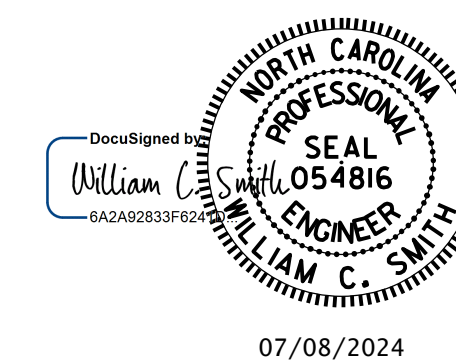
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

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

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



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

DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |





NOTES

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

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

SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 1 | QUANTITIES | | | |
|-----------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 20.8 | 10.4 | | |
| COLUMN | 20.8 | 10.4 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 59.8 | | |

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



SPAN B
SPAN A

PLAN

TOP OF CAP

6.9 SF

2.1 SF

1.4 SF

7.0 SF

2.1 SF

19.8 SF

1.0 SF

1.3 SF

END VIEW

NORTH FACE

ELEVATION

WEST FACE
(LOOKING EAST)

END VIEW

SOUTH FACE

ELEVATION

EAST FACE
(LOOKING WEST)

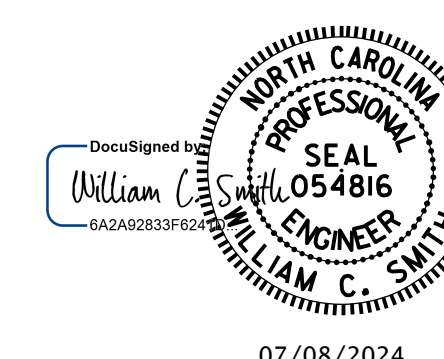


SPAN A
SPAN B

PLAN

BOTTOM OF CAP

PROJECT NO. **4B.104213**
HALIFAX COUNTY
BRIDGE NO. **410055**



07/08/2024

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUBSTRUCTURE REPAIR
BENT 1**

DRAWN BY : N. S. HART DATE : 05/2024
CHECKED BY : Z. MALIK DATE : 05/2024
DESIGN ENGINEER OF RECORD: _____ DATE : _____

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

SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 2 | QUANTITIES | | | |
|------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 4.8 | 2.4 | | |
| CONCRETE REPAIRS | | | | |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | | | |
| CAP | | LINEAR FT | | LINEAR FT |
| COLUMN | | 0 | | |
| EPOXY COATING | | | | |
| TOP OF CAP | | AREA SF | | AREA SF |
| WEST FACE OF CAP | | 59.8 | | |
| | | 71.4 | | |

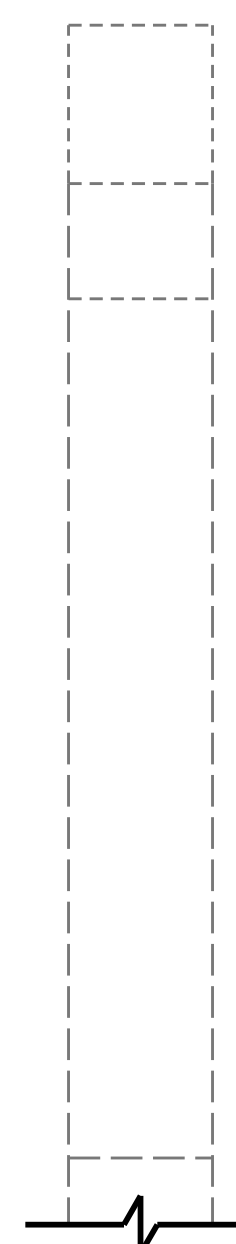
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT. SEE REPAIR DETAILS.



SPAN C
SPAN B

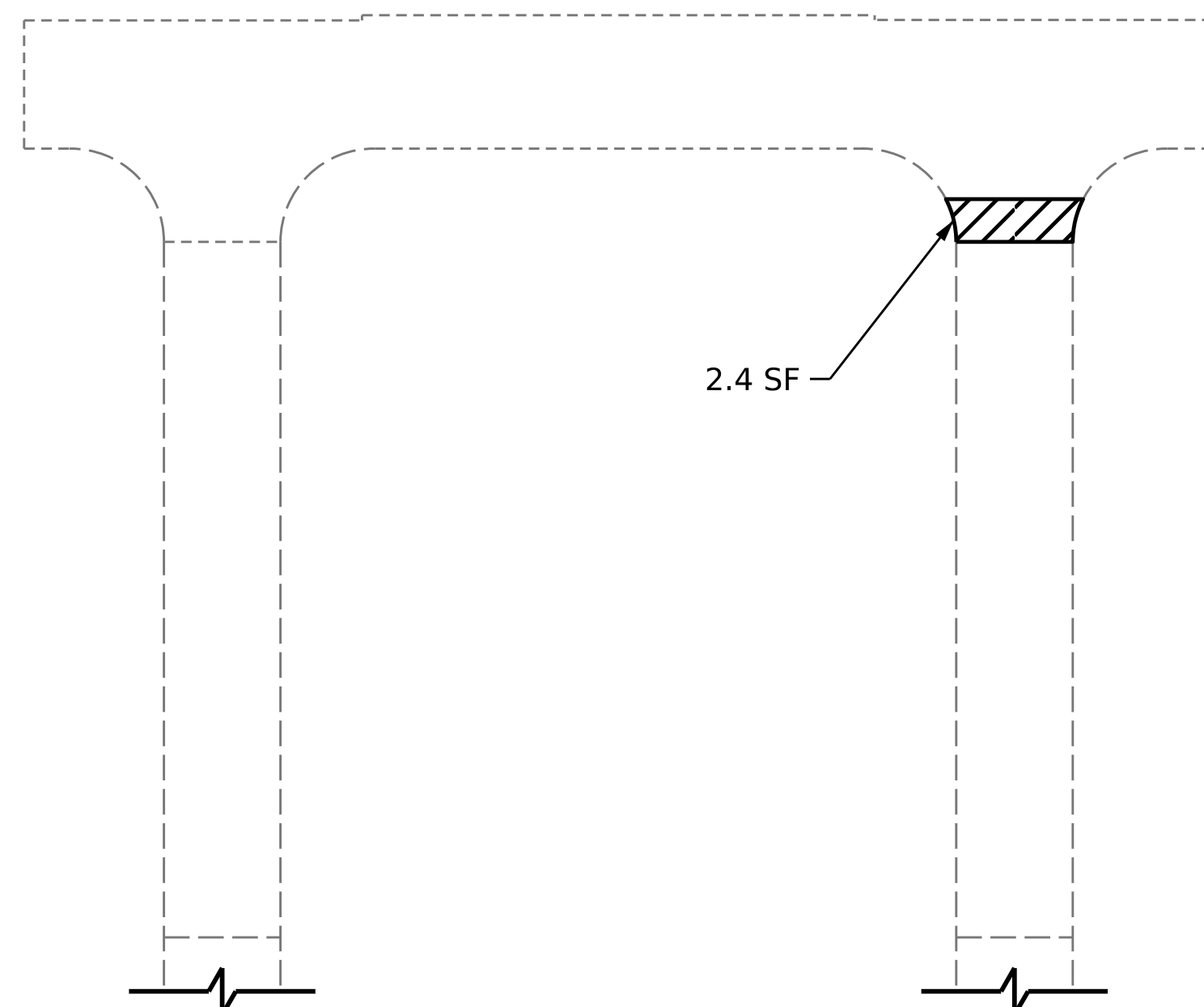
PLAN

TOP OF CAP



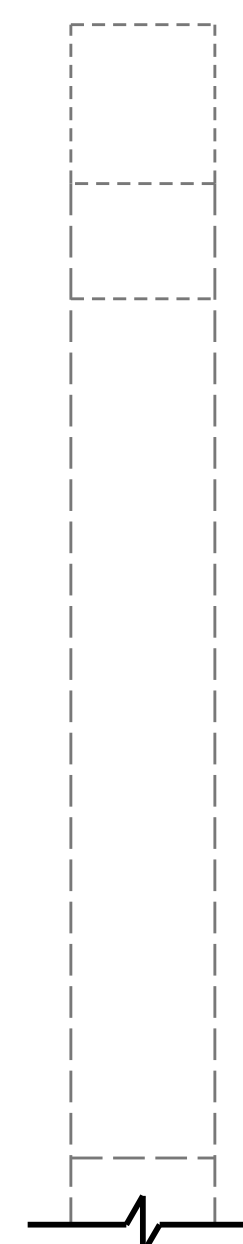
END VIEW

NORTH FACE



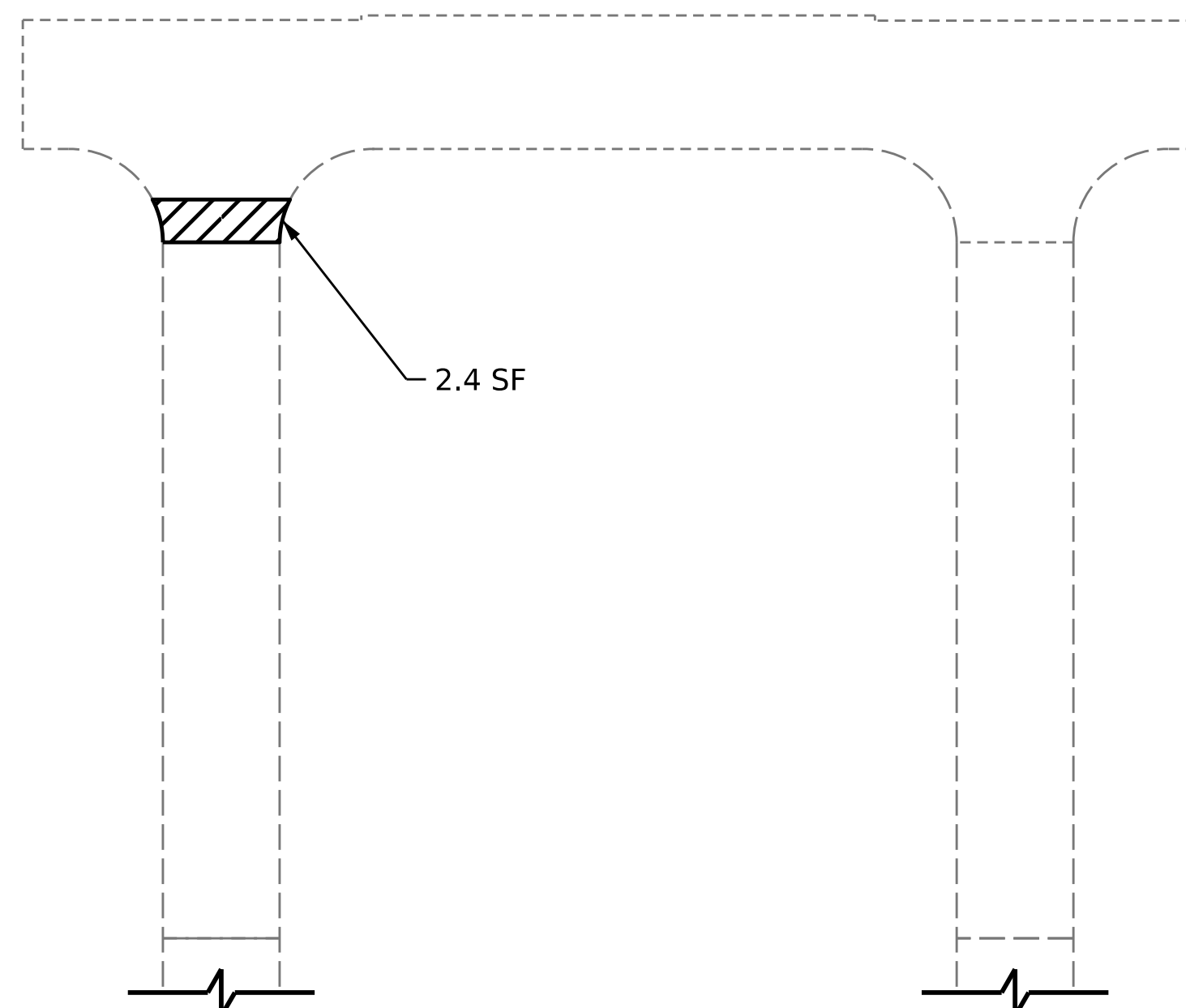
ELEVATION

WEST FACE
(LOOKING EAST)



END VIEW

SOUTH FACE



ELEVATION

EAST FACE
(LOOKING WEST)

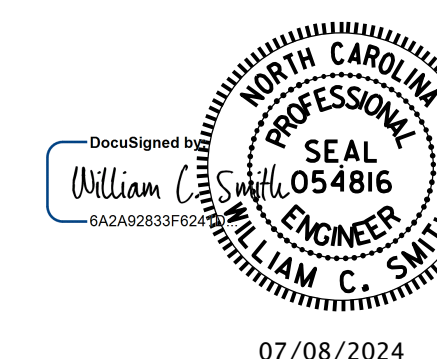


SPAN B
SPAN C

PLAN

BOTTOM OF CAP

PROJECT NO. **4B.104213**
HALIFAX COUNTY
BRIDGE NO. **410055**



07/08/2024

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUBSTRUCTURE REPAIR
BENT 2**

DRAWN BY : N. S. HART DATE : 05/2024
CHECKED BY : Z. MALIK DATE : 05/2024
DESIGN ENGINEER OF RECORD: _____ DATE : _____

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| REVISIONS | | | | | SHEET NO. S1-16 TOTAL SHEETS 19 |
|-----------|-----|-------|-----|-------|--|
| NO. | BY: | DATE: | NO. | DATE: | |
| 1 | | | 3 | | |
| 2 | | | 4 | | |





NOTES

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

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

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

SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 3 | QUANTITIES | | | |
|-----------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 1.0 | 0.5 | | |
| COLUMN | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 59.8 | | |

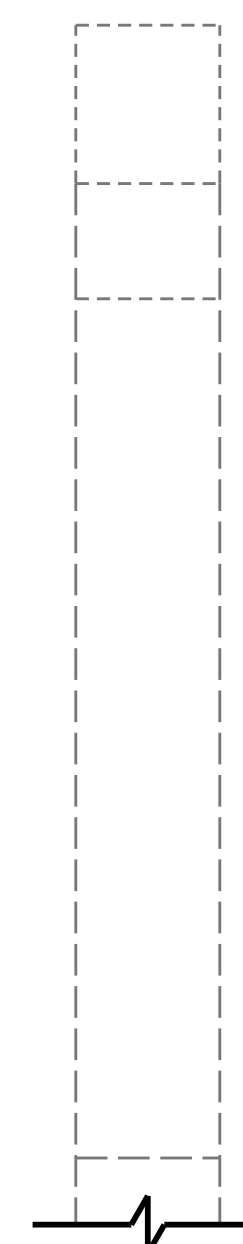
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT. SEE REPAIR DETAILS.



SPAN D
SPAN C

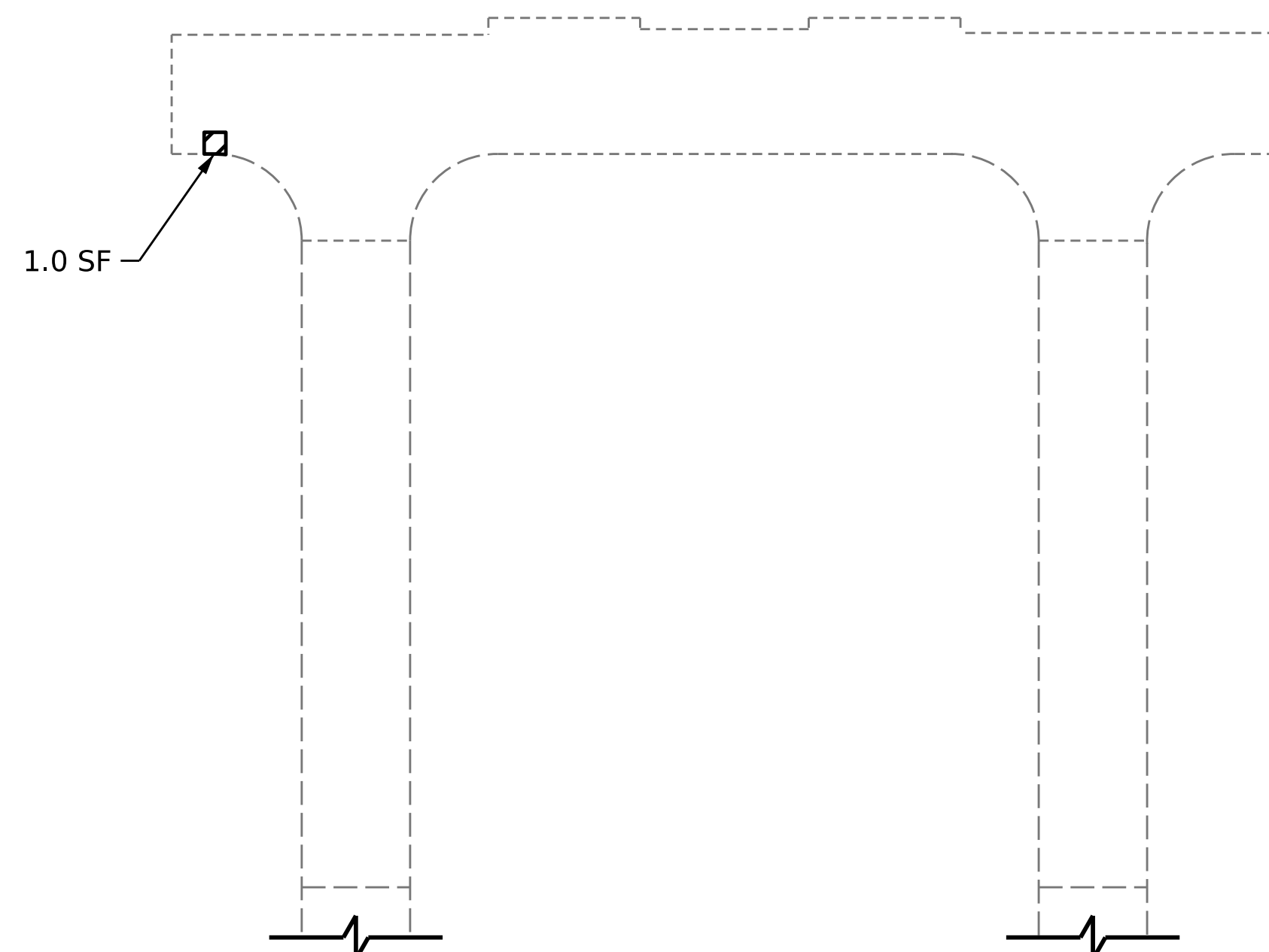
PLAN

TOP OF CAP



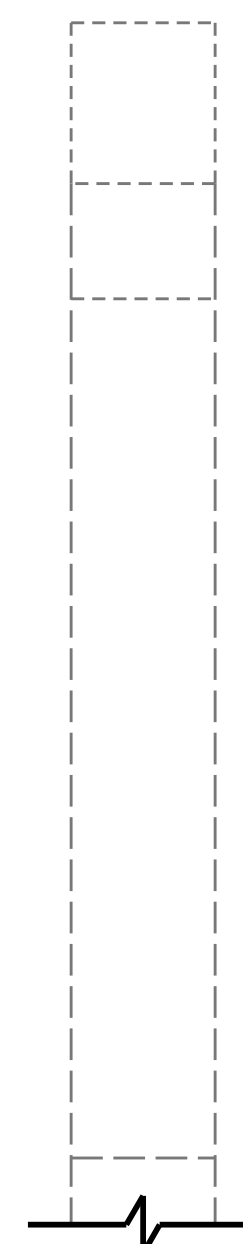
END VIEW

NORTH FACE



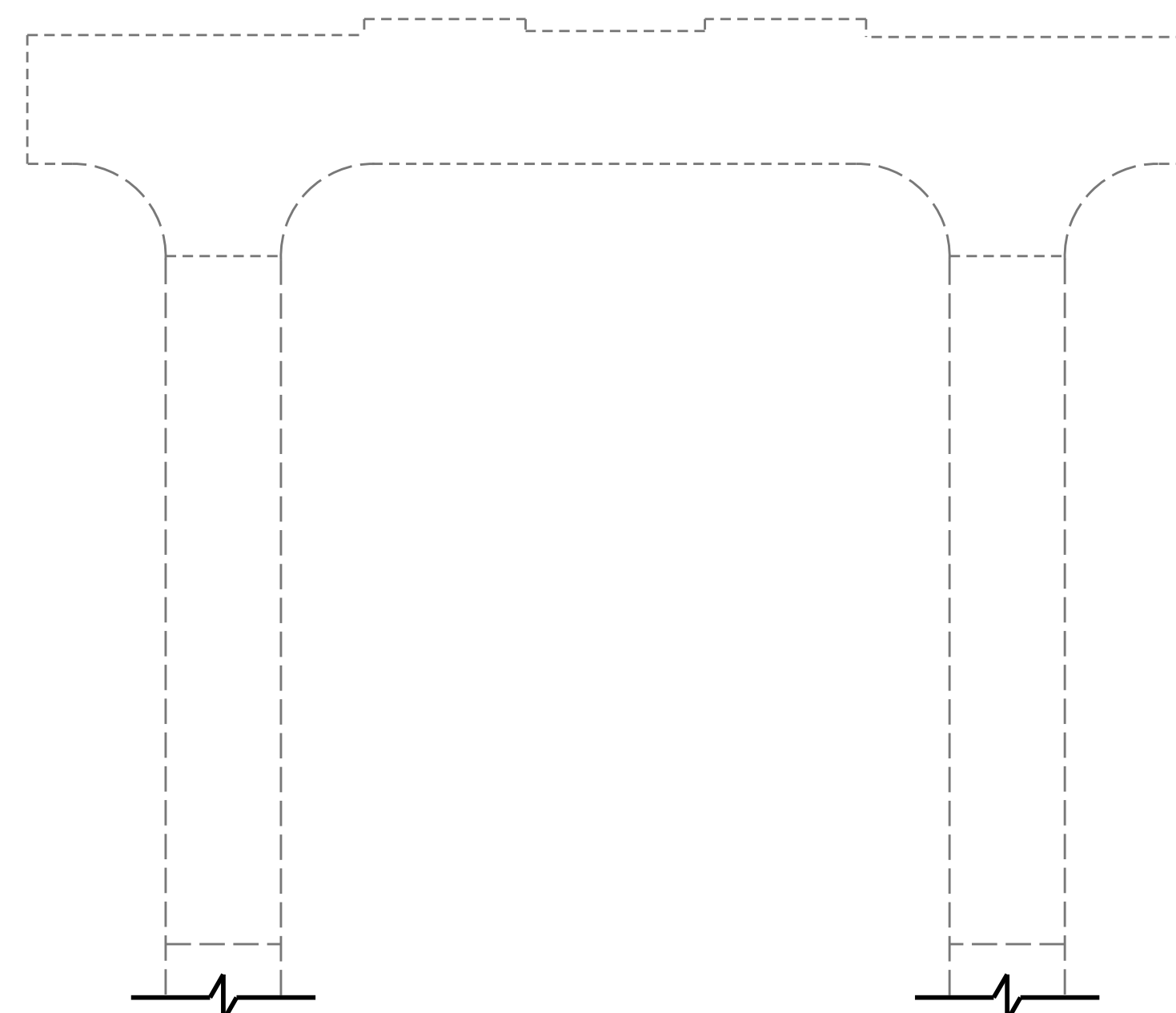
ELEVATION

WEST FACE
(LOOKING EAST)



END VIEW

SOUTH FACE



ELEVATION

EAST FACE
(LOOKING WEST)

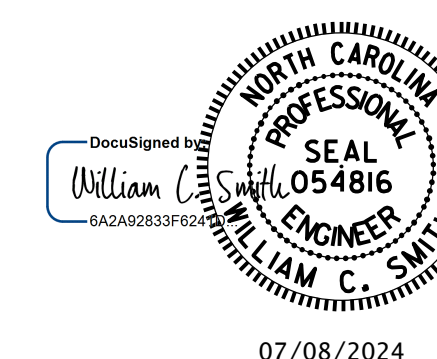


SPAN C
SPAN D

PLAN

BOTTOM OF CAP

PROJECT NO. **4B.104213**
HALIFAX COUNTY
BRIDGE NO. **410055**



07/08/2024

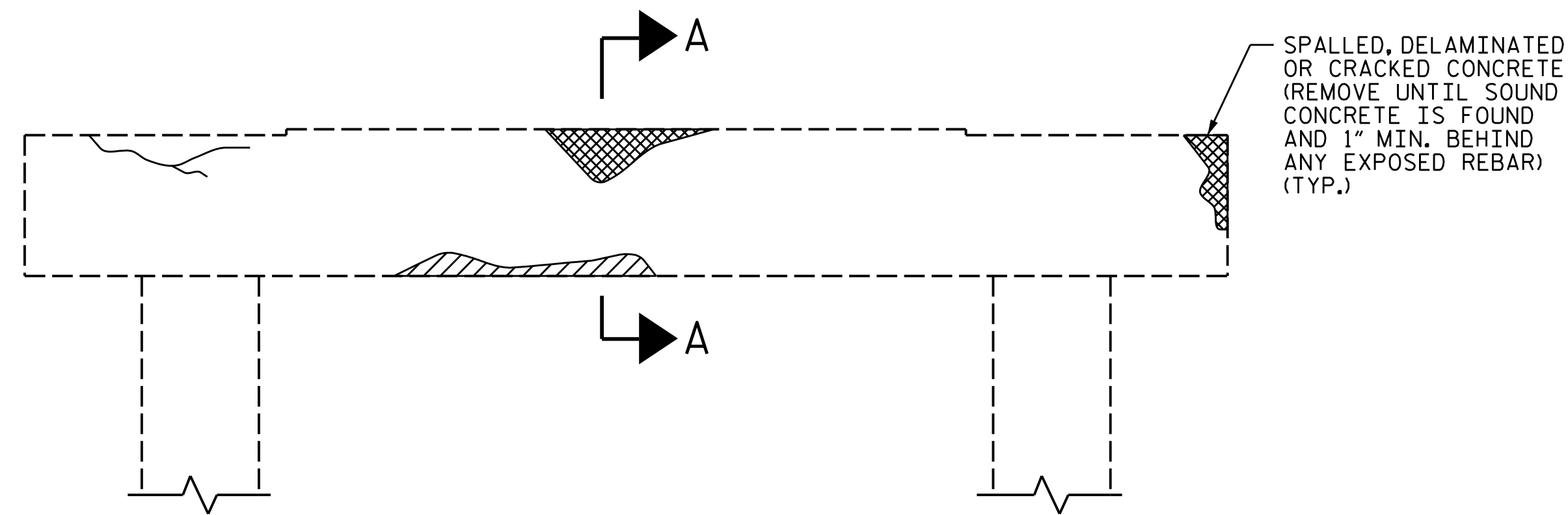
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE REPAIR
BENT 3**

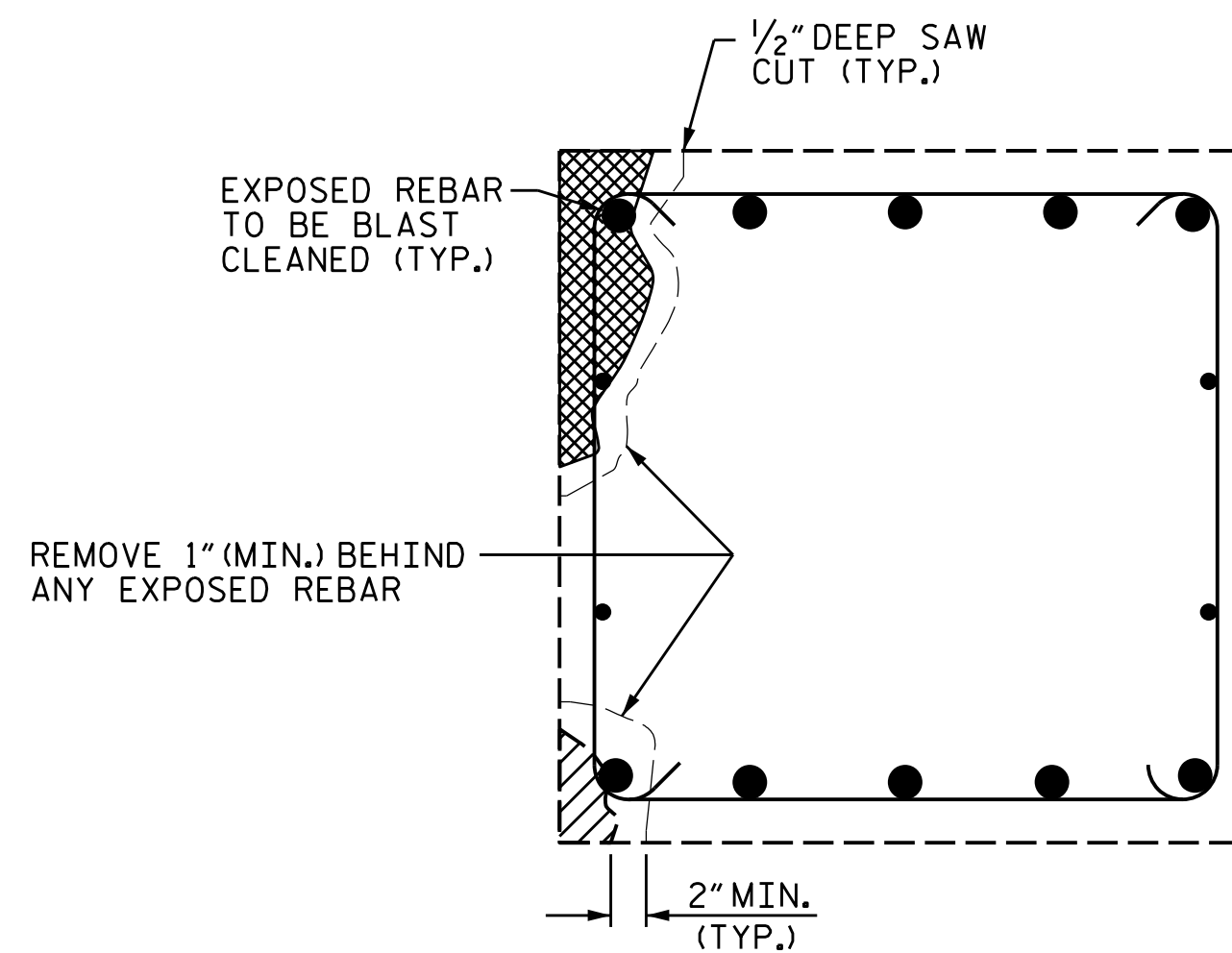
| REVISIONS | | | | | | SHEET NO. S1-17 TOTAL SHEETS 19 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

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DRAWN BY : N. S. HART DATE : 05/2024
CHECKED BY : Z. MALIK DATE : 05/2024
DESIGN ENGINEER OF RECORD: _____ DATE : _____

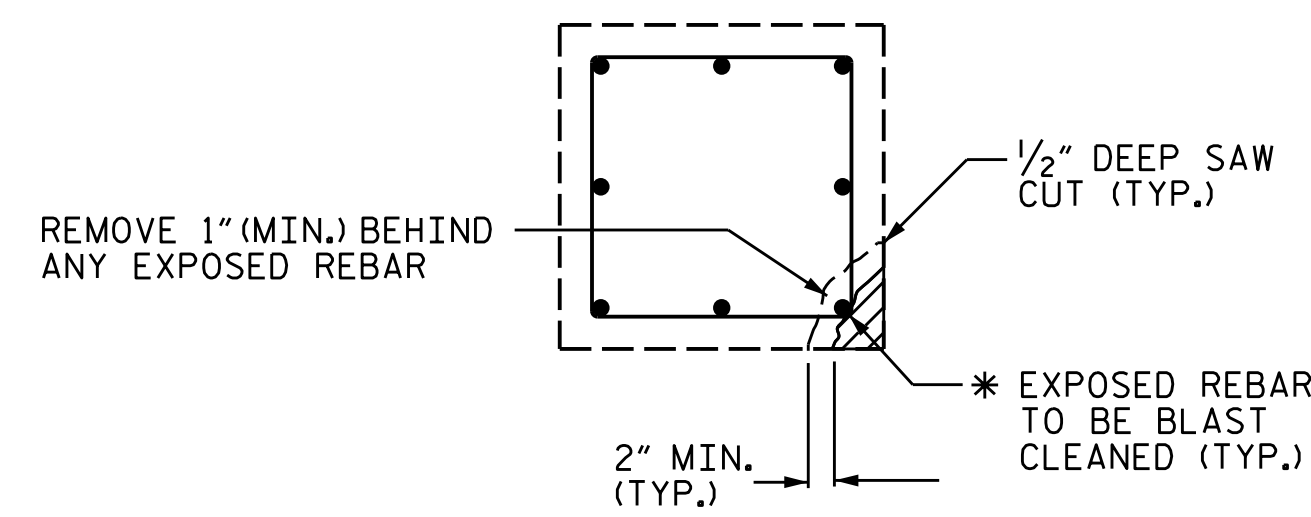


BENT CAP REPAIRS

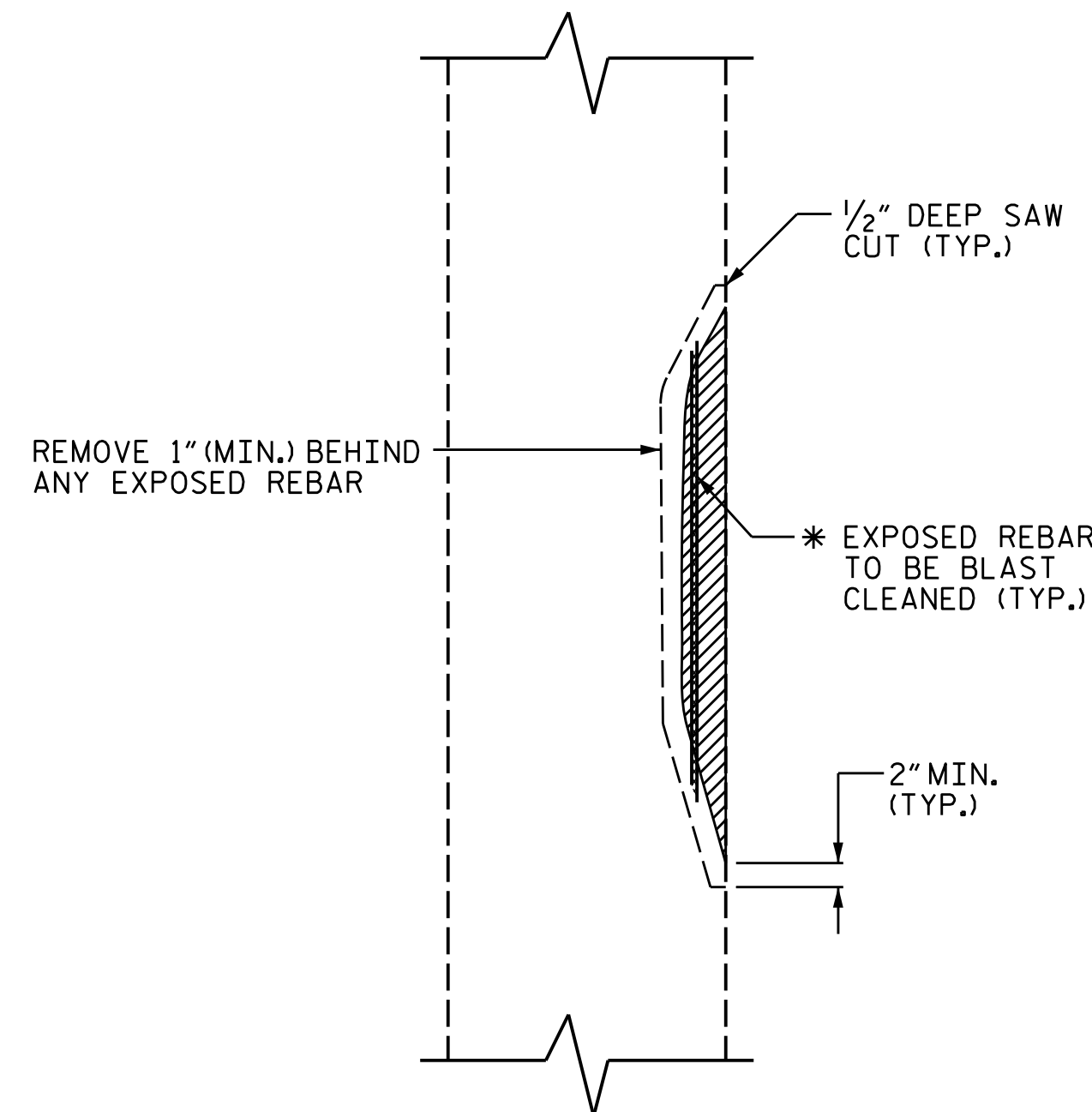


SECTION A-A

CAP REPAIR



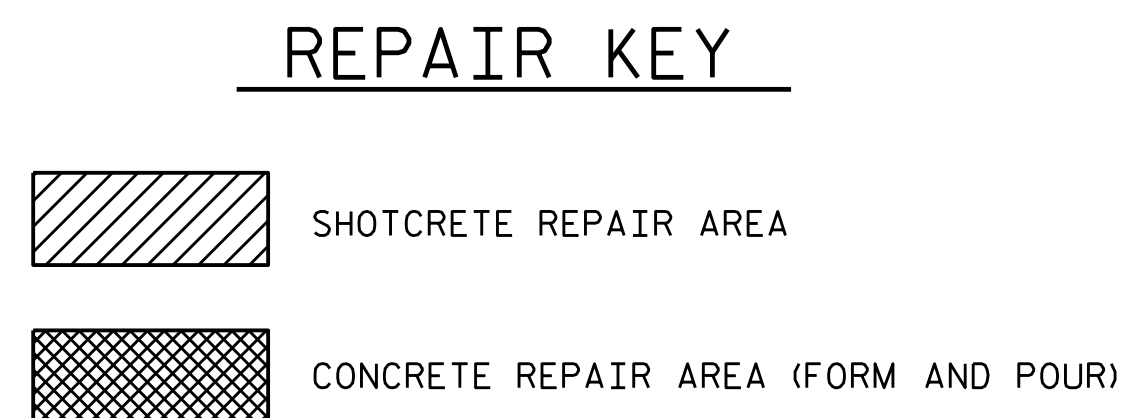
PLAN OF COLUMN



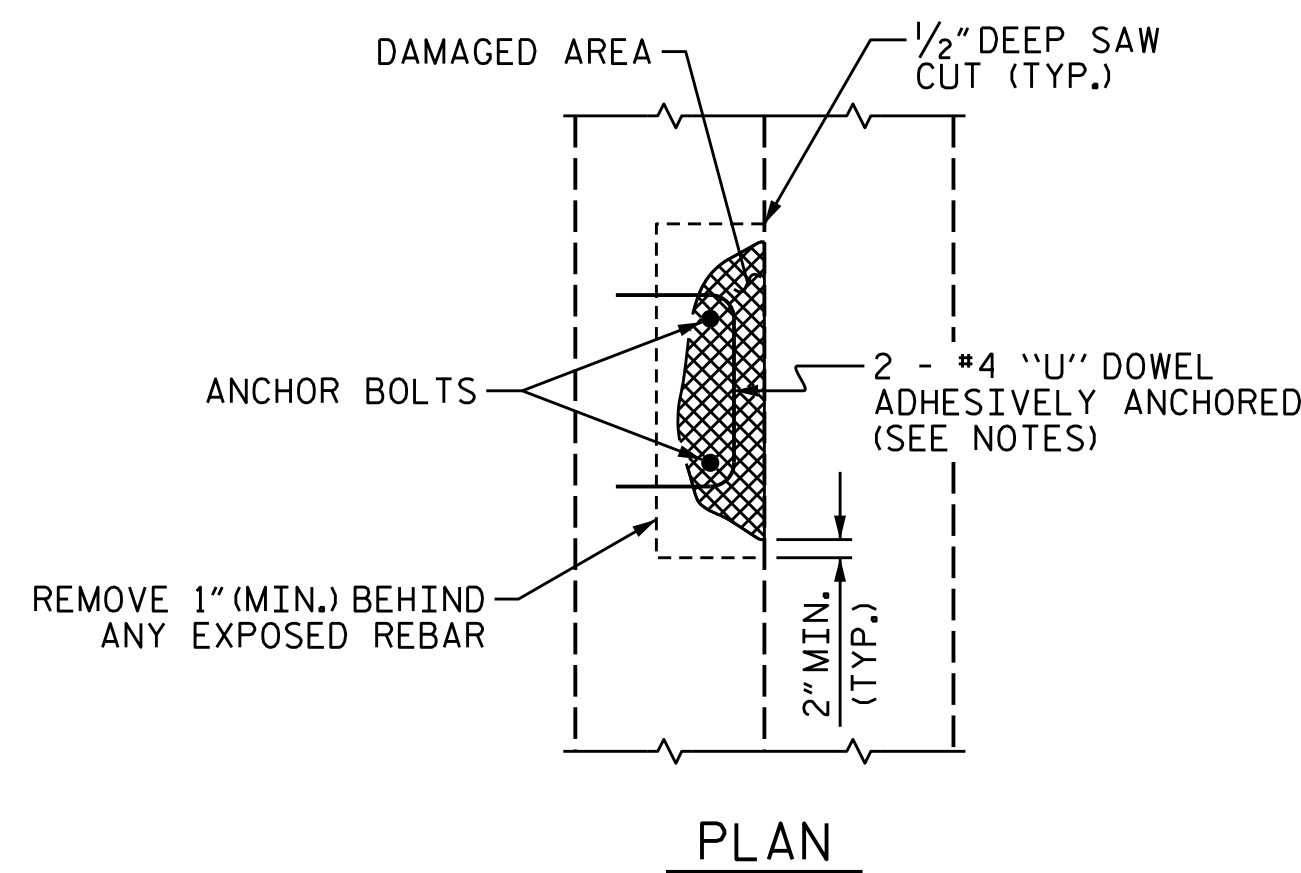
ELEVATION OF COLUMN

COLUMN REPAIR

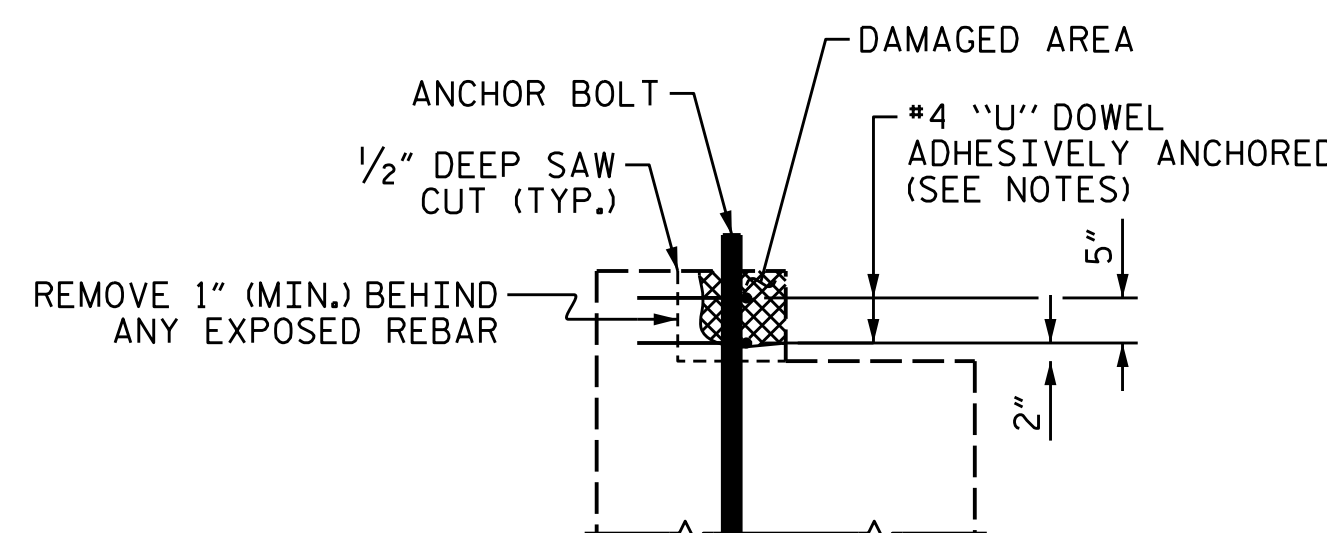
* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.



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



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.

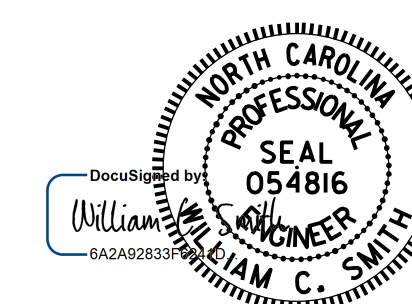
THE #4 "U" DOWELS ARE REQUIRED ONLY AROUND THE ANCHOR BOLTS. THE EXISTING REINFORCING STEEL IN THE PEDESTAL WALL SHALL BE CLEANED, STRAIGHTENED AND REMAIN IN PLACE.

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.

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.

PROJECT NO. 4B.104213
HALIFAX COUNTY
 BRIDGE NO. 410055



07/08/2024

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

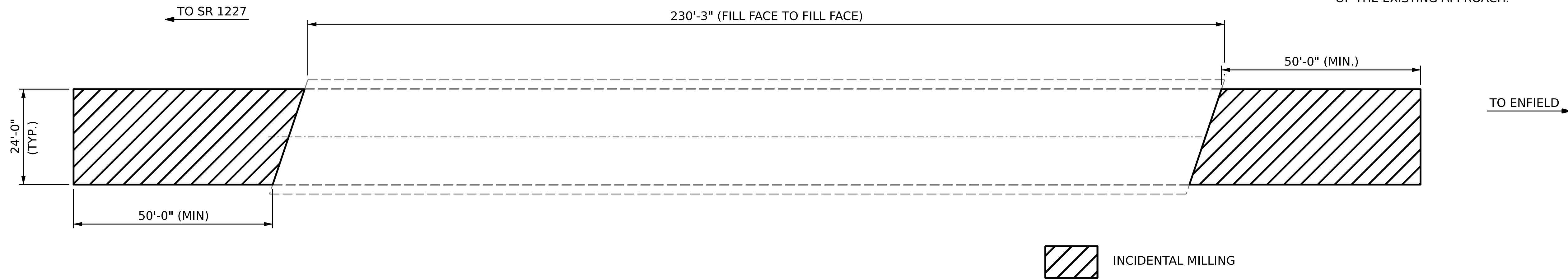
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| ASSEMBLED BY : S. T. SANDOR | DATE : 05/2024 |
| CHECKED BY : W. C. SMITH | DATE : 05/2024 |
| DRAWN BY : NAP 8/18 | |
| CHECKED BY : | |

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 SIGNATURES COMPLETED

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| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-18 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 19 |

NOTES

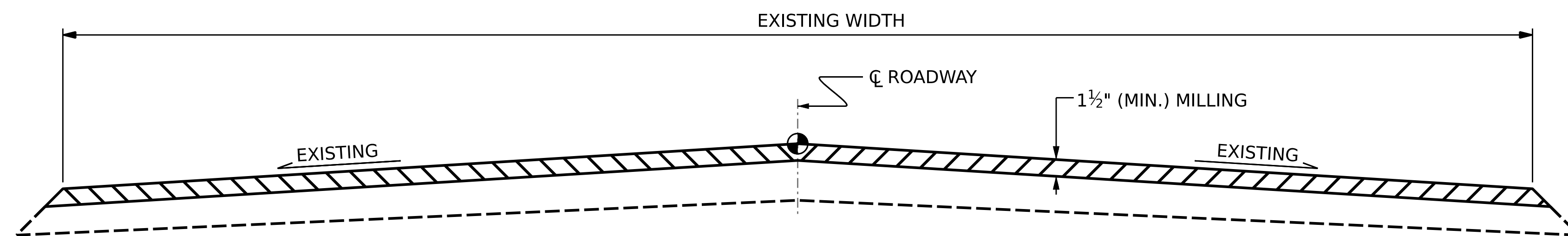
INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1½" DEPTH OF NEW ASPHALT PAVING. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1½" DUE TO SETTLEMENT OF THE EXISTING APPROACH.



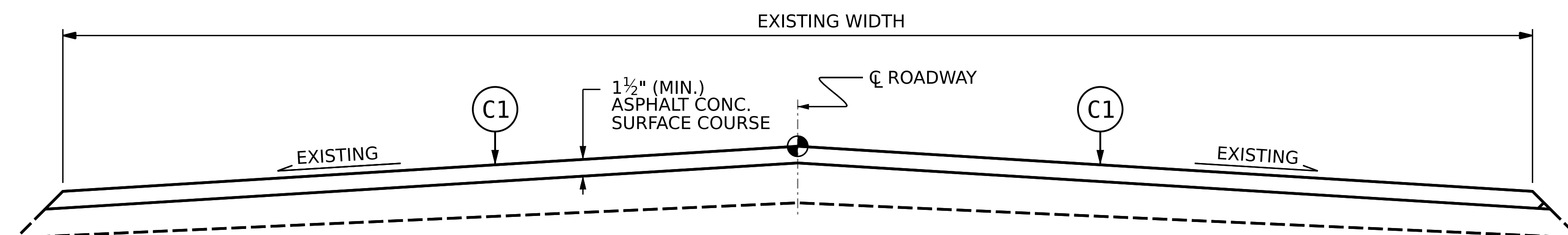
PLAN

C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" DEPTH.

| SUMMARY OF QUANTITIES | | |
|---|-----------|--------|
| | ESTIMATE | ACTUAL |
| INCIDENTAL MILLING | 288.1 SY | |
| ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | 30.0 TONS | |
| ASPHALT BINDER FOR PLANT MIX | 5.0 TONS | |

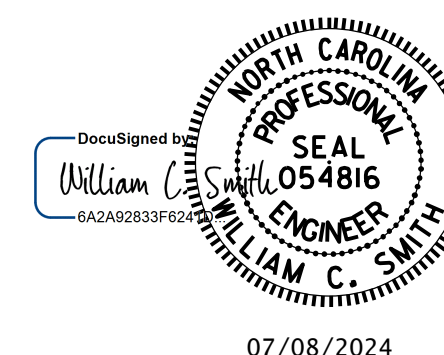


TYPICAL ROADWAY MILLING SECTION



TYPICAL PROPOSED ROADWAY SECTION

PROJECT NO. **4B.104213**
HALIFAX COUNTY
 BRIDGE NO. **410055**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

APPROACH MILLING & TYPICAL ROADWAY SECTIONS

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : DATE :

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| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. |
| 1 | | | 3 | | | 51-19 |
| 2 | | | 4 | | | TOTAL SHEETS 19 |

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $\frac{1}{4}$ " RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{5}{16}$ " IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $\frac{1}{16}$ " OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

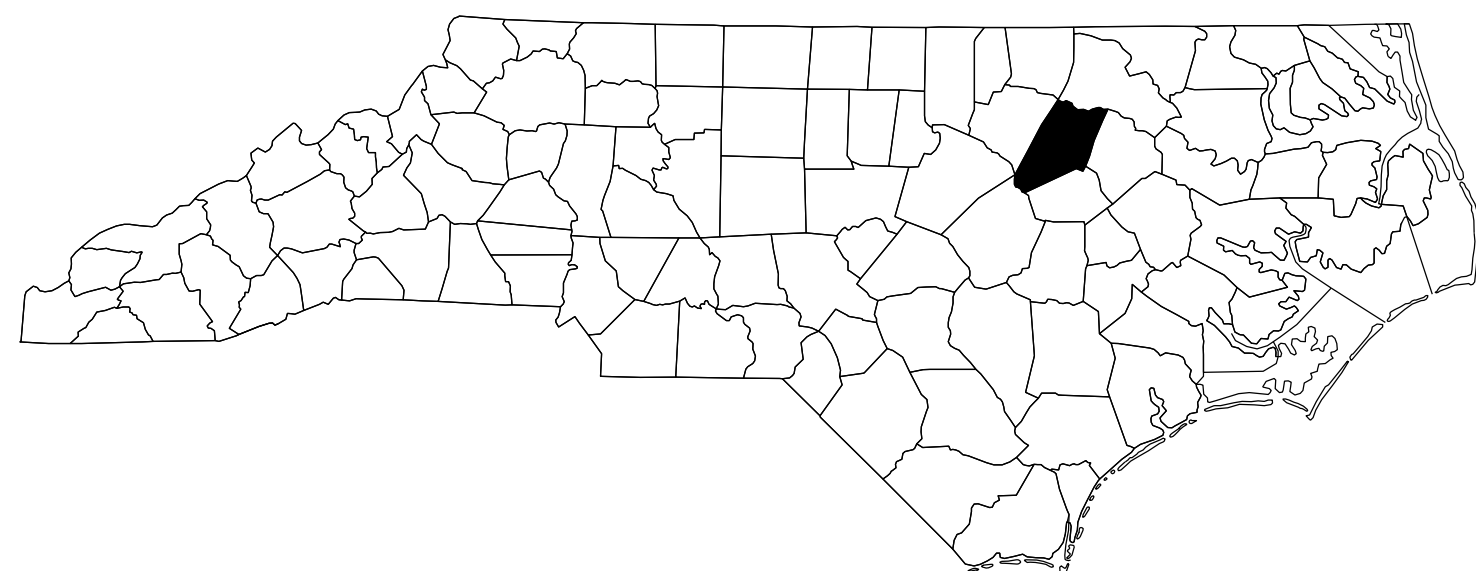
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL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

SPECIAL NOTES:

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

TIP PROJECT: 4B.106413

CONTRACT: DD00470



STATE OF NORTH CAROLINA

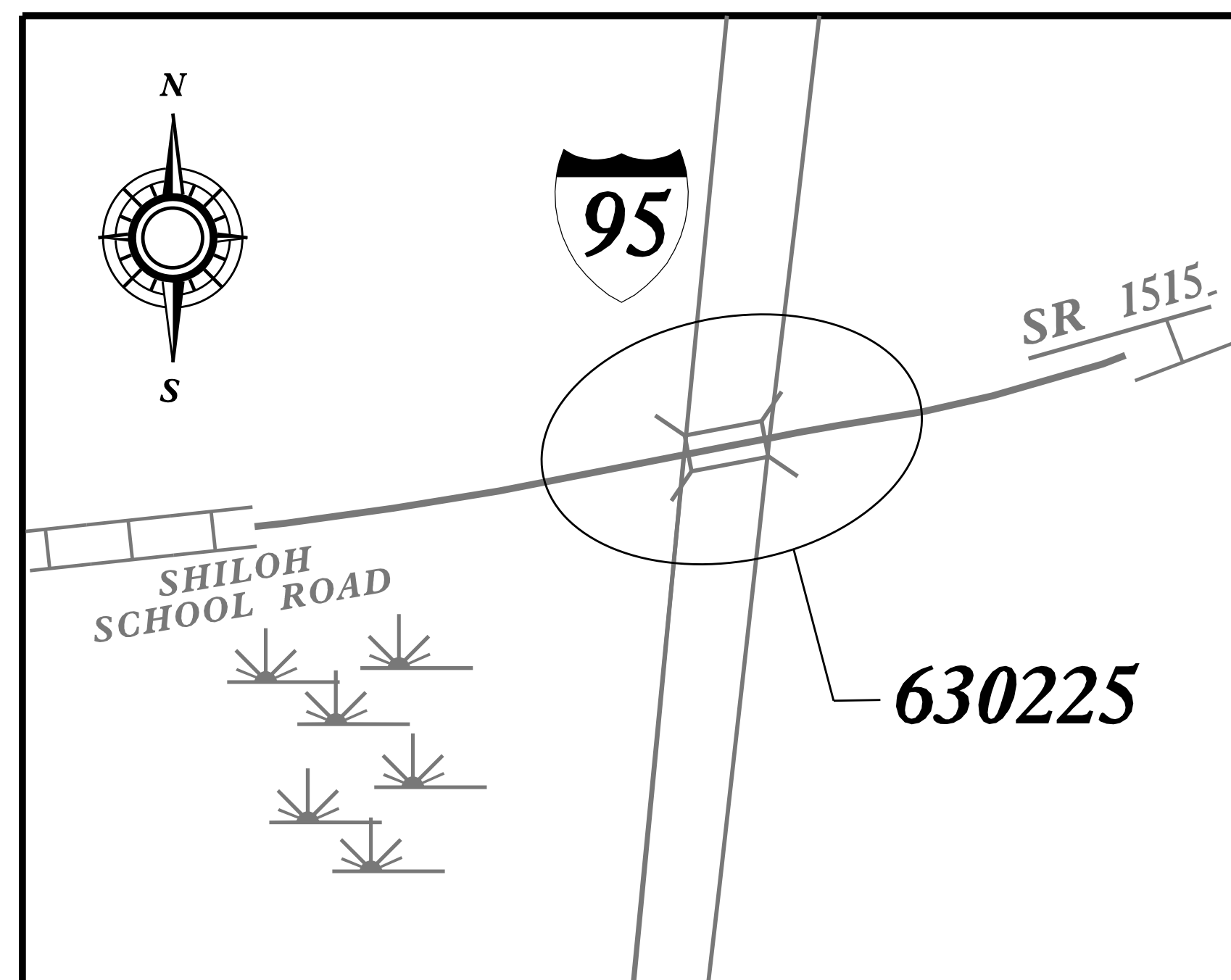
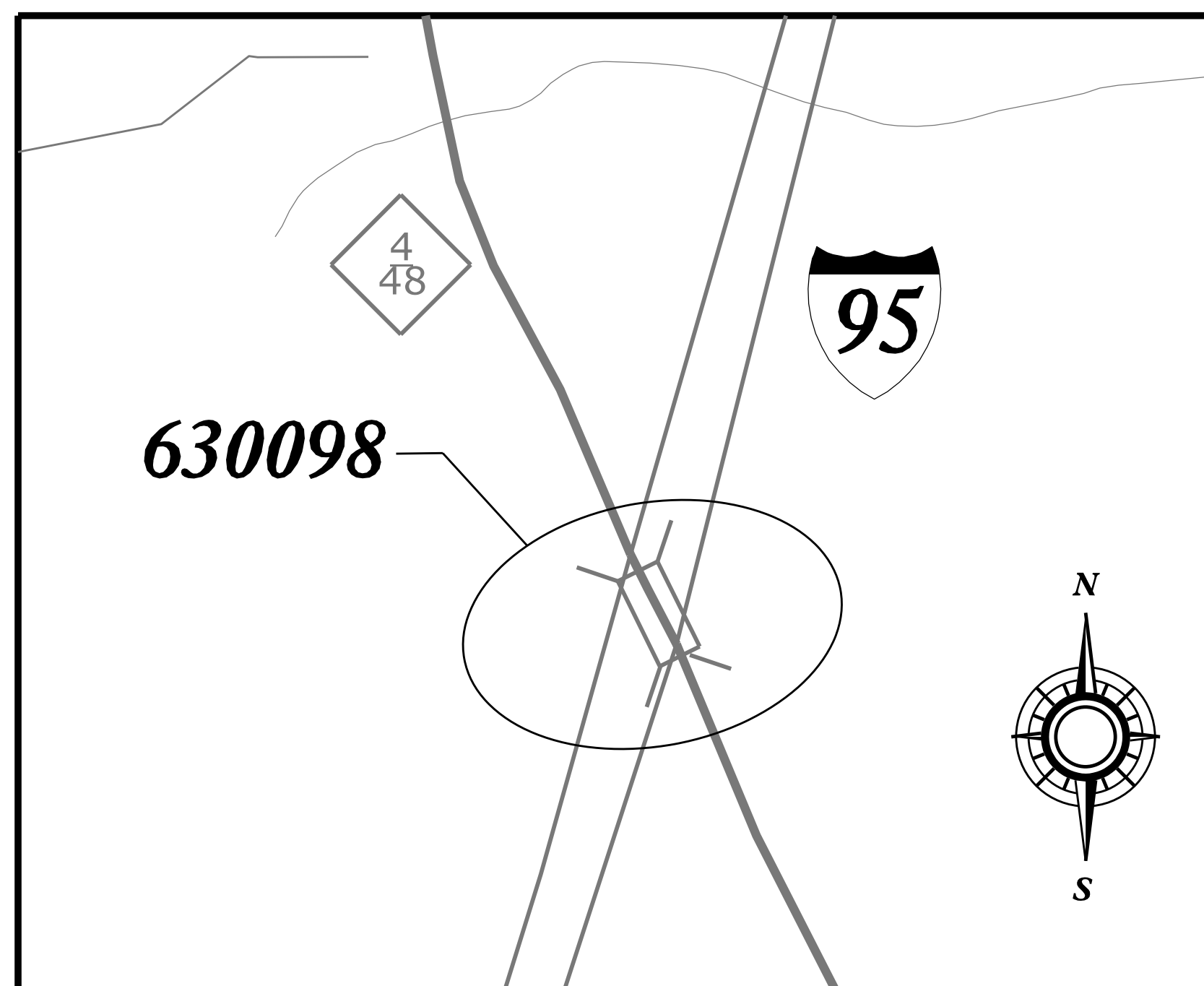
DIVISION OF HIGHWAYS

NASH COUNTY

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | 4B.106413 | | |
| STATE PROJ. NO. | P.A. PROJ. NO. | DESCRIPTION | |
| 4B.106413 | - | P.E. | |
| 4B.106413 | - | CONST. | |
| | | | |
| | | | |
| | | | |
| | | | |

**LOCATION: BRIDGE #630098 ON NC 4/NC 48 OVER I-95
BRIDGE #630225 ON SR 1515 (SHILOH SCHOOL ROAD) OVER I-95**

TYPE OF WORK: CONCRETE BRIDGE DECK REHABILITATION BY SCARIFICATION, HYDRO-DEMOLITION, AND PLACEMENT OF LATEX MODIFIED CONCRETE; DEMOLITION AND RECONSTRUCTION OF DECK JOINTS AND SEALS; PAINTING OF EXISTING BEARINGS WITH HRCSA; SUBSTRUCTURE REPAIRS WITH SHOTCRETE; EPOXY COATING; REPLACE APPROACH PAVEMENT



VICINITY MAP



DESIGN DATA

BRIDGE #630098 ADT 2040 = 3,400
BRIDGE #630225 ADT 2040 = 200

PROJECT LENGTH

BRIDGE #630098 = 0.06 MILES
BRIDGE #630225 = 0.06 MILES

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

2024 STANDARD SPECIFICATIONS

LETTING DATE :

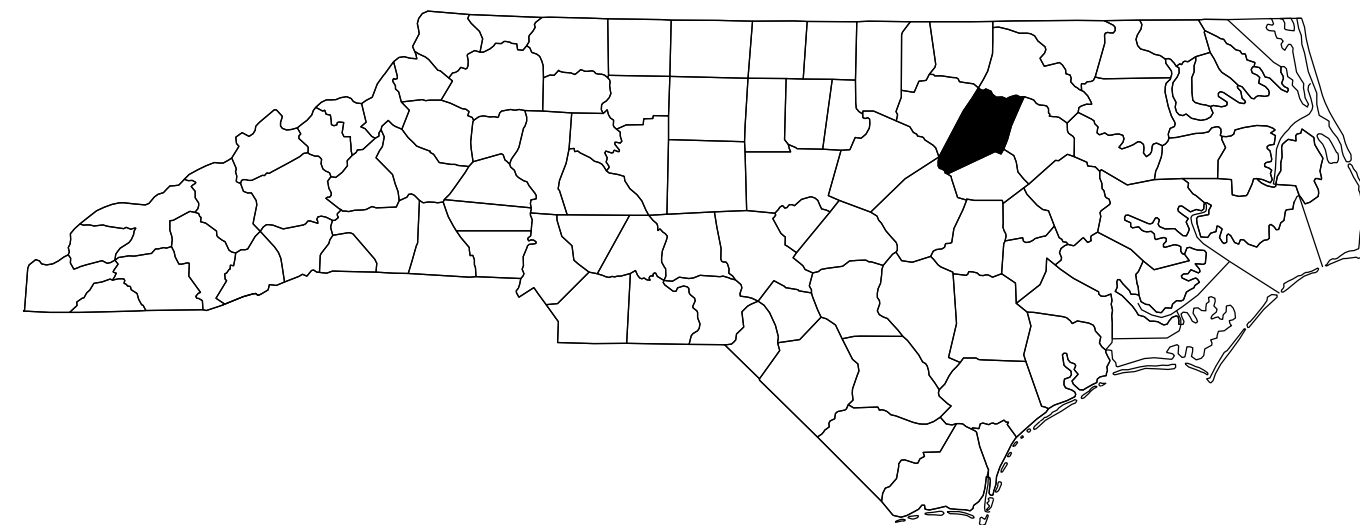
SEPTEMBER 24, 2024

KRISTY ALFORD, PE
PROJECT ENGINEER

ASTER G. ABRAHA, PE
PROJECT DESIGN ENGINEER

TIP PROJECT: 4B.106413

CONTRACT: DD00470



STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

NASH COUNTY

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | 4B.106413 | | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 4B.106413 | - | P.E. | |
| 4B.106413 | - | CONST. | |
| | | | |
| | | | |
| | | | |
| | | | |

LOCATION: BRIDGE #630098 ON NC 4/NC 48 OVER I-95
 BRIDGE #630225 ON SR 1515 (SHILOH SCHOOL ROAD) OVER I-95

TYPE OF WORK: CONCRETE BRIDGE DECK REHABILITATION BY SCARIFICATION, HYDRO-DEMOLITION, AND PLACEMENT OF LATEX MODIFIED CONCRETE; DEMOLITION AND RECONSTRUCTION OF DECK JOINTS AND SEALS; PAINTING OF EXISTING BEARINGS WITH HRCSA; SUBSTRUCTURE REPAIRS WITH SHOTCRETE; EPOXY COATING; REPLACE APPROACH PAVEMENT

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION | SHEET NO. | DESCRIPTION | SHEET NO. | DESCRIPTION |
|-----------|-------------------------|------------------|---|------------------|---|
| 1 | TITLE SHEET | | | | |
| 1A | INDEX OF SHEETS | | | | |
| S-1 | LOCATION SKETCHES | | | | |
| S-2 | TOTAL BILL OF MATERIALS | | | | |
| | | STRUCTURE | #630098 | STRUCTURE | #630225 |
| | | SI-1 | GENERAL DRAWING | S2-1 | GENERAL DRAWING |
| | | SI-2 | TYPICAL SECTION | S2-2 | TYPICAL SECTION |
| | | SI-3 THRU SI-7 | DECK SURFACE REPAIRS | S2-3 THRU S2-7 | DECK SURFACE REPAIRS |
| | | SI-8 THRU SI-12 | DECK UNDERSIDE REPAIRS | S2-8 THRU S2-12 | DECK UNDERSIDE REPAIRS |
| | | SI-13 | JOINT REPAIR DETAILS | S2-13 | JOINT REPAIR DETAILS |
| | | SI-14 | DECK REPAIR DETAILS | S2-14 | DECK REPAIR DETAILS |
| | | SI-15 | OVERHANG & DIAPHRAGM REPAIR DETAILS | S2-15 | OVERHANG & DIAPHRAGM REPAIR DETAILS |
| | | SI-16 | END BENT 1 & 2 | S2-16 | BRIDGE JACKING DETAILS |
| | | SI-17 THRU SI-20 | BENTS | S2-17 | END BENT 1 & 2 |
| | | SI-21 | TYPICAL CAP AND COLUMN REPAIR DETAILS | S2-18 THRU S2-21 | BENTS |
| | | SI-22 | APPROACH MILLING & TYPICAL ROADWAY SECTIONS | S2-22 | TYPICAL CAP AND COLUMN REPAIR DETAILS |
| | | | | S2-23 | APPROACH MILLING & TYPICAL ROADWAY SECTIONS |
| | | | | SN | STANDARD NOTES |

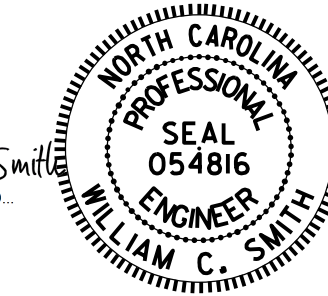


LOCATION SKETCHES

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE 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. 4B.106413
NASH COUNTY
 BRIDGE NO. 630098, 630225

| BRIDGE COORDINATES | | |
|--------------------|---------------|----------------|
| BRIDGE No. | LATITUDE | LONGITUDE |
| 630098 | 36°-05'-0.64" | 77°-48'-31.97" |
| 630225 | 36°-05'-58.1" | 77°-48'-20.19" |

DocuSigned by:
 William C. Smith
 0A2A9283F62410...

 07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

LOCATION SKETCHES

DRAWN BY : Q. T. NGUYEN DATE : 05/2024
 CHECKED BY : F. LEA DATE : 05/2024

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 | | | 3 |

GENERAL NOTES:

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

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

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

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

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

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 ELSEWHERE IN THE CONTRACT DOCUMENTS.

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

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR PAVEMENT MARKING SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

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

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

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

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR CLEANING AND PAINTING EXISTING BEARINGS WITH HRCSA, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR PAINTING CONTAINMENT AND POLLUTION CONTROL, SEE "CLEANING AND PAINTING EXISTING BEARINGS WITH HRCSA" SPECIAL PROVISION.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR ANCHOR BOLT REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SCARIFYING BRIDGE DECK, CLASS II SURFACE PREPARATION, CLASS III SURFACE PREPARATION, AND HYDRO-DEMOLITION OF DECK, SEE "LMC OVERLAY SURFACE PREPARATION" SPECIAL PROVISION.

DURING CONSTRUCTION, APPROPRIATE MEASURES SHALL BE USED TO ENSURE THAT HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

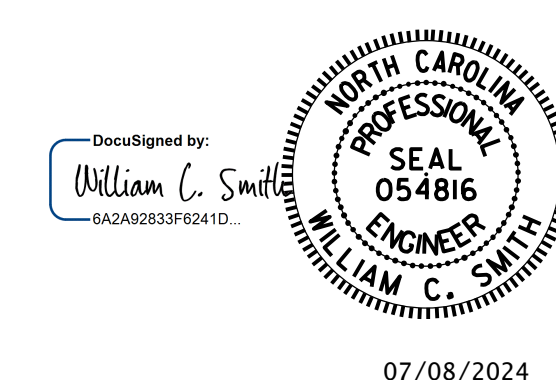
AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT THE FOLLOWING ITEM(S) LISTED WOULD BE REQUIRED. HOWEVER, IT MAY BE DETERMINED IN THE FIELD THAT THE FOLLOWING ITEM(S) LISTED, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED BRIDGE PRESERVATION/REHABILITATION WORK.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

| ITEM | DESCRIPTION | UNIT |
|------|-------------------------------|----------|
| 1. | CLASS III SURFACE PREPARATION | SQ. YDS. |
| 2. | EPOXY RESIN INJECTION | LN. FT. |
| 3. | ANCHOR BOLT REPAIR | EA. |
| 4. | VOLUMETRIC MIXER | LS |

TOTAL BILL OF MATERIAL

| BRIDGE NO. | INCIDENTAL MILLING | ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | ASPHALT BINDER FOR PLANT MIX | GROOVING BRIDGE FLOORS | POLLUTION CONTROL | CLASS II SURFACE PREPARATION | LATEX MODIFIED CONCRETE OVERLAY | PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY | CONCRETE REPAIRS | SHOTCRETE REPAIRS |
|--------------|---|---|------------------------------|---------------------------------------|-------------------------|---------------------------------|---------------------------------|---|---|-------------------|
| | SQ. YDS. | TONS | TONS | SQ. FT. | LUMP SUM | SQ. YD. | CU. YD. | SQ. YD. | CU. FT. | CU. FT. |
| 630098 | 411.1 | 40 | 5 | 8,508.4 | LUMP SUM | 212.9 | 56.8 | 1,046.4 | - | 125.9 |
| 630225 | 285.7 | 30 | 5 | 6,333.3 | LUMP SUM | 83.0 | 41.1 | 797.3 | 10.3 | 61.4 |
| TOTAL | 696.8 | 70 | 10 | 14,841.7 | LUMP SUM | 295.9 | 97.9 | 1,843.7 | 10.3 | 187.3 |
| BRIDGE NO. | PAINTING CONTAINMENT FOR BRIDGE NO. ___ | POURABLE SILICONE JOINT SEALANT | EPOXY COATING | ELASTOMERIC CONCRETE FOR PRESERVATION | BRIDGE JOINT DEMOLITION | HYDRO-DEMOLITION OF BRIDGE DECK | SCARIFYING BRIDGE DECK | CLEANING & PAINTING EXISTING BEARINGS WITH HIGH RATIO CALCIUM SULFONATE | TYPE II BRIDGE JACKING FOR BRIDGE NO. ___ | |
| | LUMP SUM | LN. FT. | SQ. FT. | CU. FT. | SQ. FT. | SQ. YD. | SQ. YD. | EA. | EA. | |
| 630098 | LUMP SUM | 222.5 | 601.0 | 35.5 | 155.2 | 1,046.4 | 1,046.4 | 32 | - | |
| 630225 | LUMP SUM | 135.1 | 332.5 | 21.0 | 92.8 | 797.3 | 797.3 | 32 | 5 | |
| TOTAL | LUMP SUM | 357.6 | 933.5 | 56.5 | 248.0 | 1,843.7 | 1,843.7 | 64 | 5 | |

PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630098, 630225



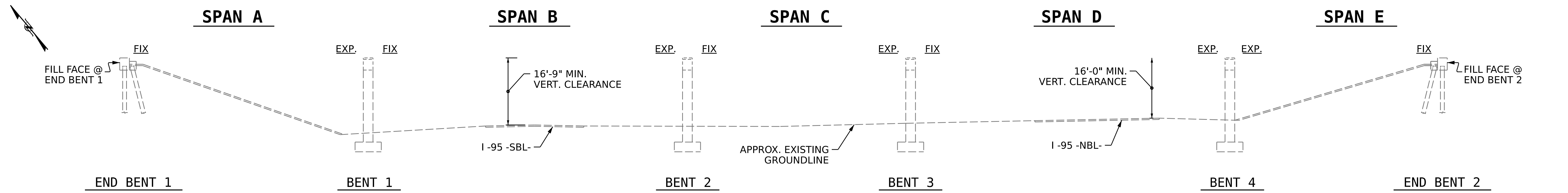
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BILL OF MATERIAL AND GENERAL NOTES

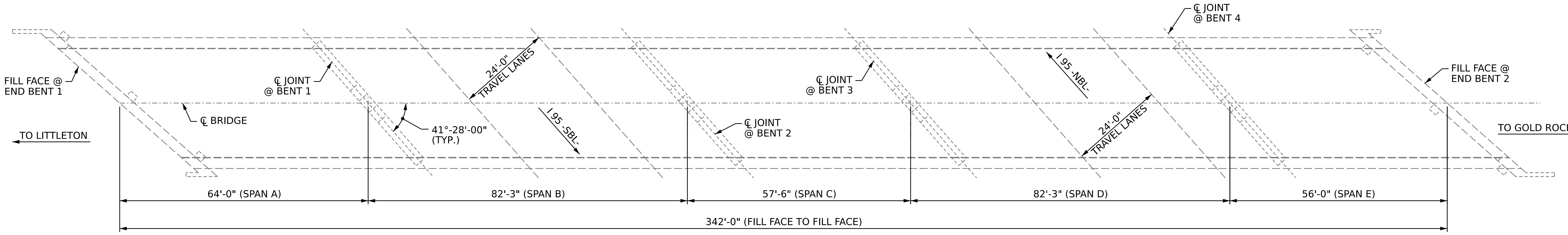
| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S-2 |
| 2 | | | 4 | | | TOTAL SHEETS 3 |

DRAWN BY : Q. T. NGUYEN DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 06/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SECTION ALONG CL BRIDGE



PLAN

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

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

RESIDENT ENGINEER _____ DATE _____

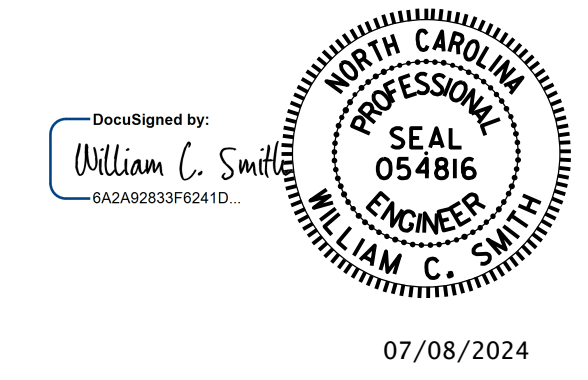
NOTES

- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 08/23/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.

SCOPE OF WORK

- PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- PERFORM CONCRETE DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED TOP OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE (LMC).
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL BACKER ROD AND POURABLE SILICONE JOINT SEALANT.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.
- CLEAN AND PAINT EXISTING BEARINGS WITH HRSCA.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE AREAS FOR CONCRETE AND SHOTCRETE REPAIRS.
- REPAIR SUBSTRUCTURE USING CONCRETE AND SHOTCRETE.
- REMOVE DEBRIS FROM TOP OF EXISTING BENT CAPS AND APPLY EPOXY COATING.
- MILL AND PAVE ASPHALT ROADWAY APPROACHES.

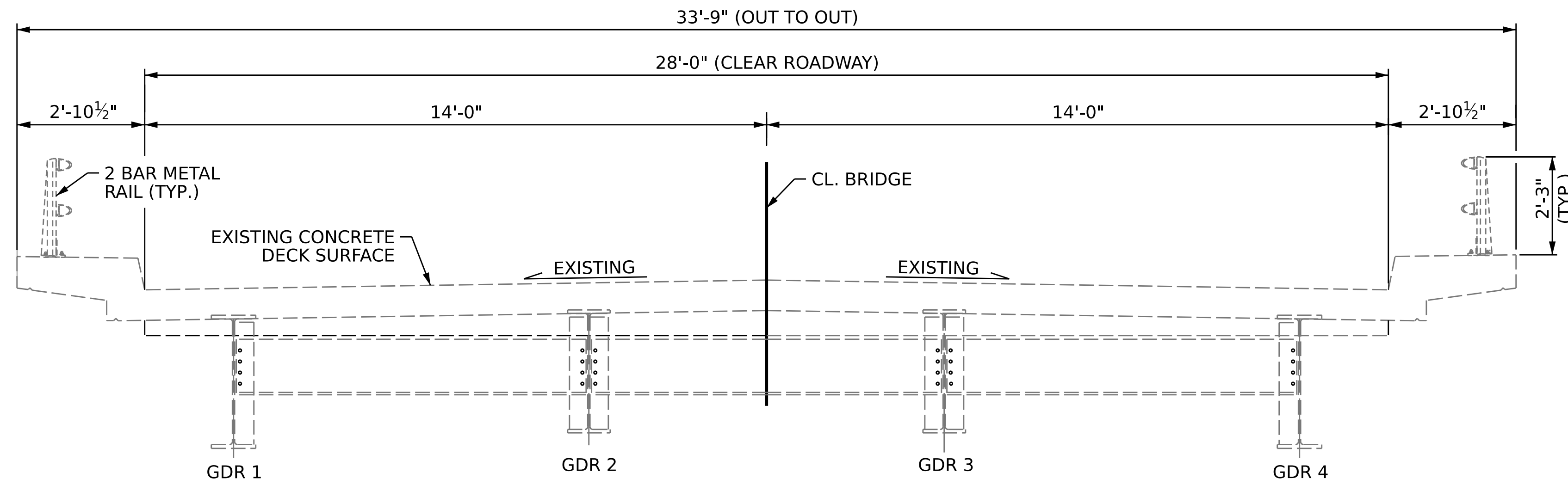
PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



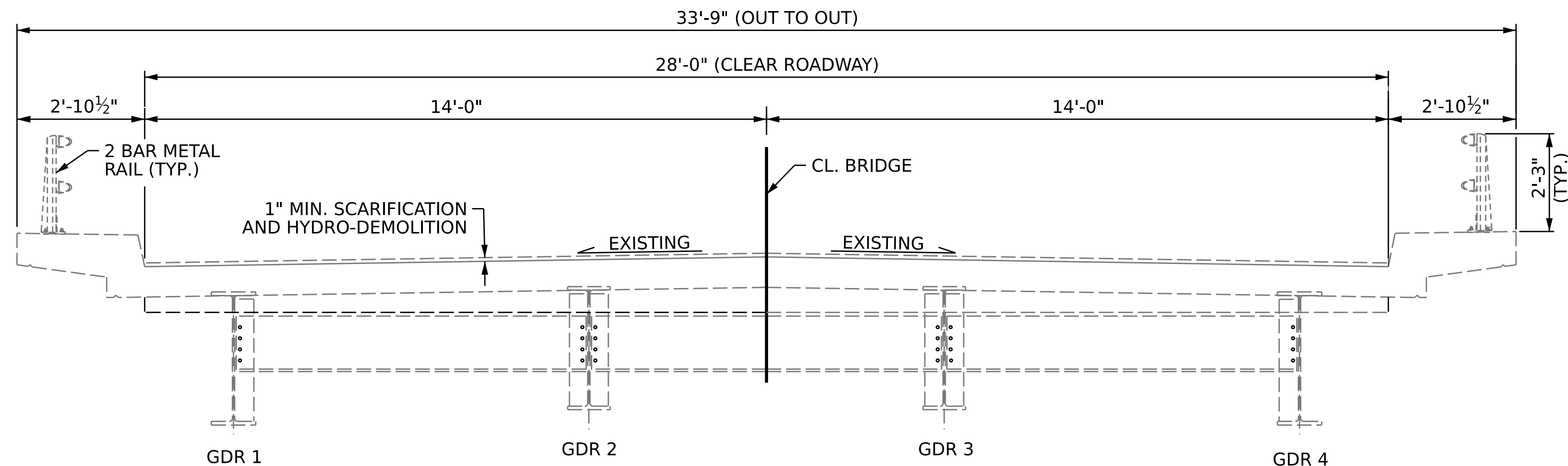
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON NC 48
 OVER I-95 BETWEEN
 LITTLETON & GOLD ROCK

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

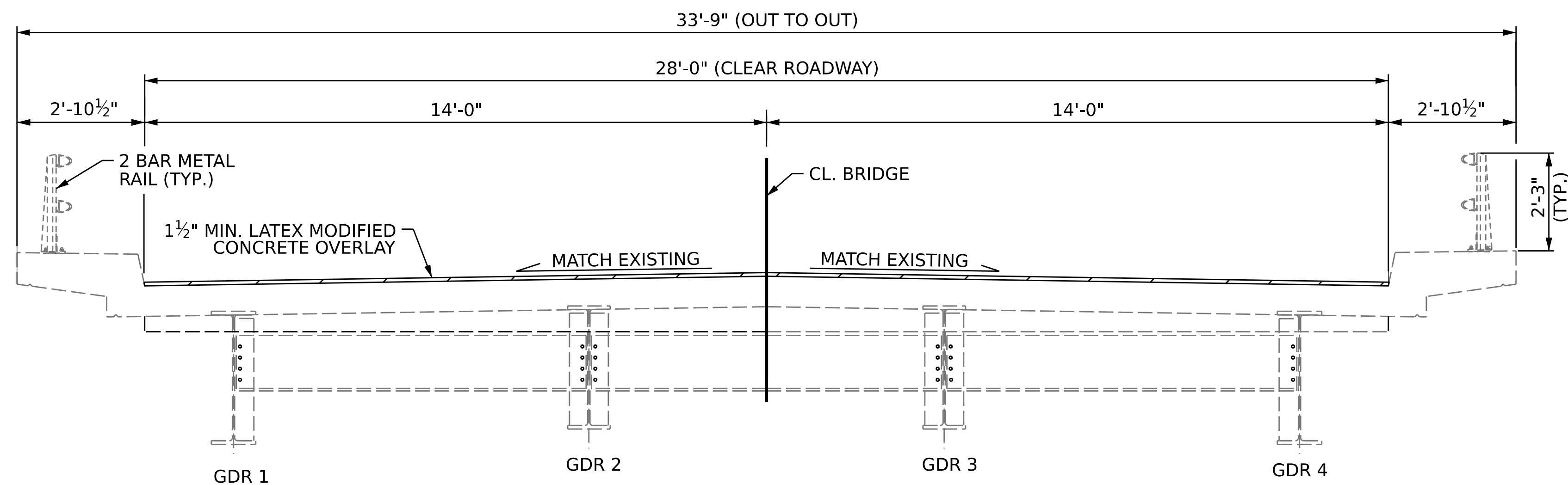
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TYPICAL SECTION
(EXISTING) (SHOWING DIAPHRAGMS AT BENTS)



TYPICAL SECTION
(DECK PREPARATION) (SHOWING DIAPHRAGMS AT BENTS)



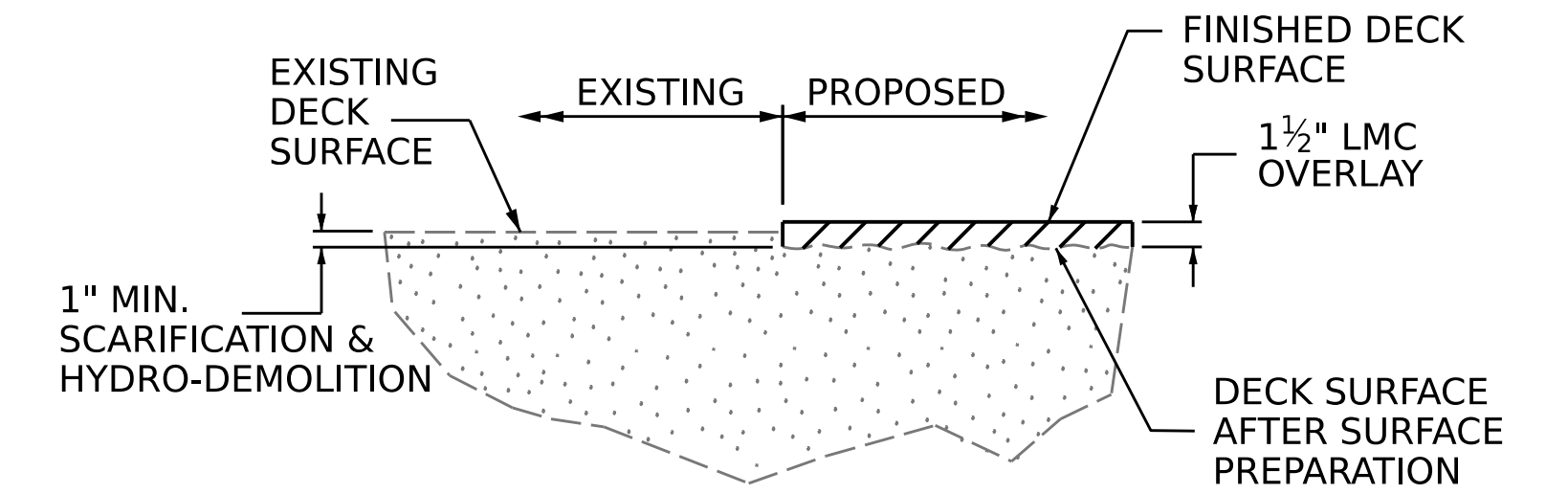
TYPICAL SECTION
(PROPOSED) (SHOWING DIAPHRAGMS AT BENTS)

NOTES

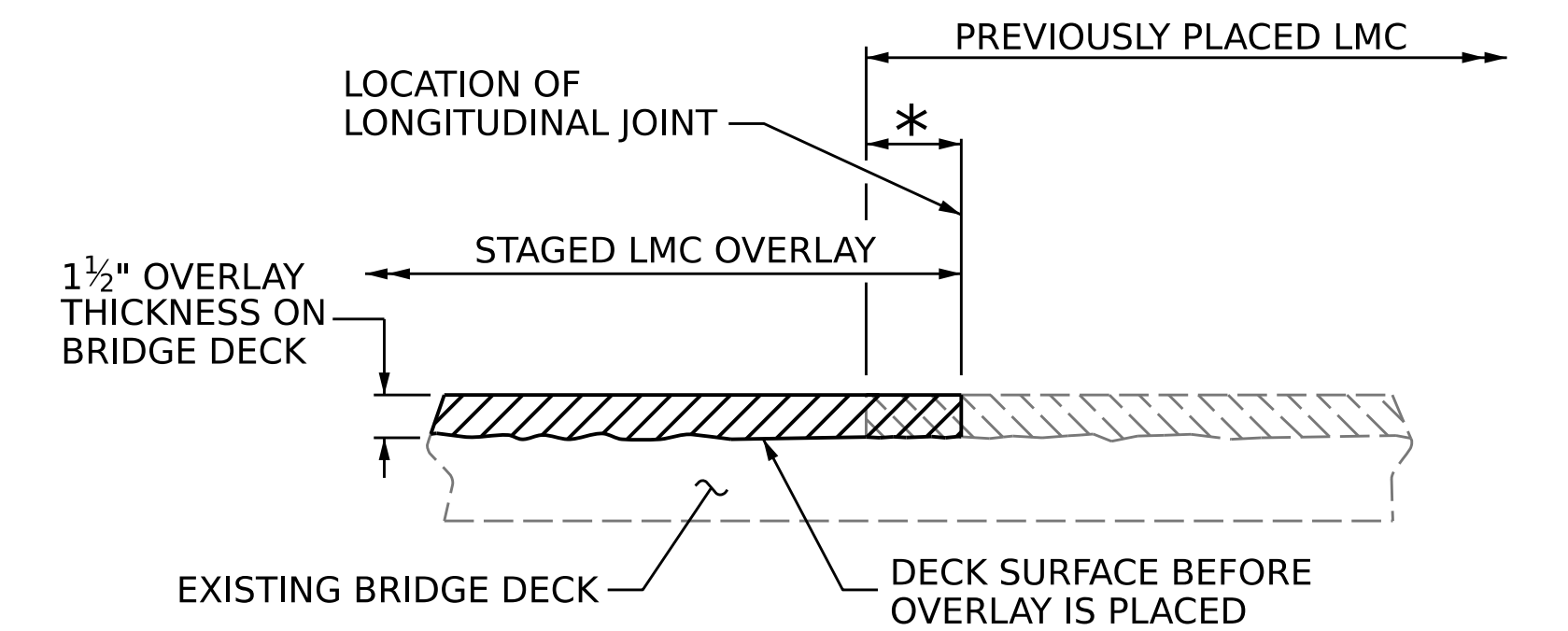
FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LATEX MODIFIED CONCRETE (LMC) PLACEMENT, SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

WHEN PREPARING THE SURFACE FOR LMC OVERLAY ADJACENT TO THE PREVIOUSLY PLACED LMC STAGE, THE PREVIOUSLY PLACED LMC SHALL BE SAW-CUT TO THE FULL DEPTH OF THE LMC AT THE CENTERLINE OF THE BRIDGE AND ALL LMC IN THE 4" OVERLAP SHALL BE REMOVED WITH HAND TOOLS PRIOR TO PLACEMENT OF LMC IN THE SECOND STAGE.

THE CONTRACTOR IS ALERTED TO THE FACT THAT THERE ARE MANY AREAS IN THE EXISTING BRIDGE DECK WHERE CONCRETE COVER OVER THE TOP MAT OF REINFORCING STEEL IS APPROXIMATELY 1/2". APPROPRIATE CARE AND MEASURES SHALL BE TAKEN TO ENSURE THAT REINFORCING BARS ARE NOT DAMAGED DURING SURFACE PREPARATION OPERATIONS.



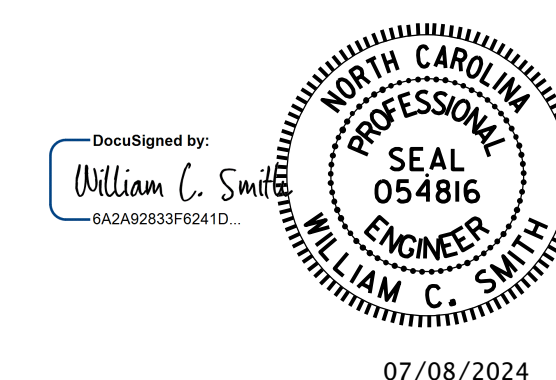
DETAIL OF LMC OVERLAY



SECTION THRU DECK
STAGED LMC OVERLAY JOINT

* 4" OVERLAP BETWEEN OVERLAYS

PROJECT NO. **4B.106413**
NASH COUNTY
BRIDGE NO. **630098**



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

DRAWN BY : E. BAYISSA DATE : 05/2024
CHECKED BY : F. LEA DATE : 05/2024
DESIGN ENGINEER OF RECORD : DATE :

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| REVISIONS | | | | | | SHEET NO. S1-02 |
|-----------|-----|-------|-----|-----|-------|--------------------|
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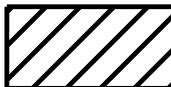

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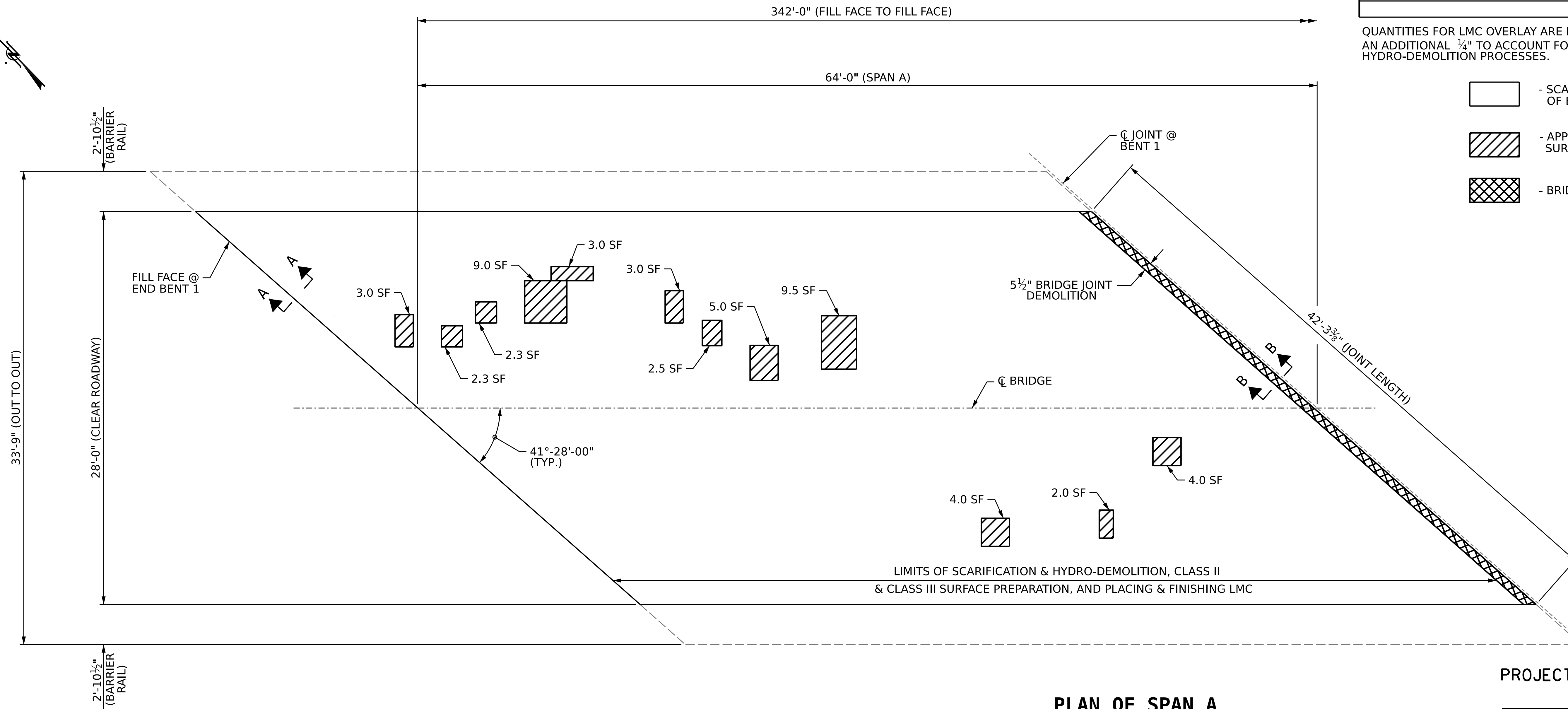
FOR SECTIONS A-A AND B-B, SEE "JOINT DETAIL" SHEET S1-13.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-14.

DECK SURFACE REPAIR QUANTITY TABLE

| DECK SURFACE REPAIR - SPAN A | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 197.5 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 197.5 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 5.5 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 9.8 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 197.5 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1591.7 SF | |
| BRIDGE JOINT DEMOLITION | 19.4 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

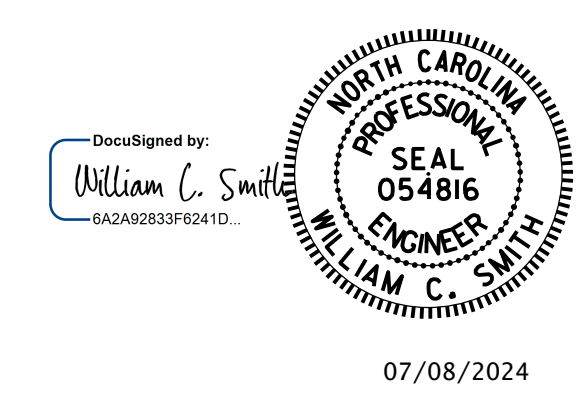
-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION



LIMITS OF SCARIFICATION & HYDRO-DEMOLITION, CLASS II & CLASS III SURFACE PREPARATION, AND PLACING & FINISHING LMC

PLAN OF SPAN A

PROJECT NO. **4B.106413**
NASH COUNTY
BRIDGE NO. **630098**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SURFACE PREPARATION
SPAN A**

DRAWN BY : S. T. SANDOR DATE : 04/2024
CHECKED BY : W. C. SMITH DATE : 05/2024
DESIGN ENGINEER OF RECORD: DATE :

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| REVISIONS | | | | | | SHEET NO. |
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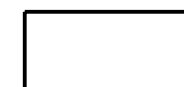


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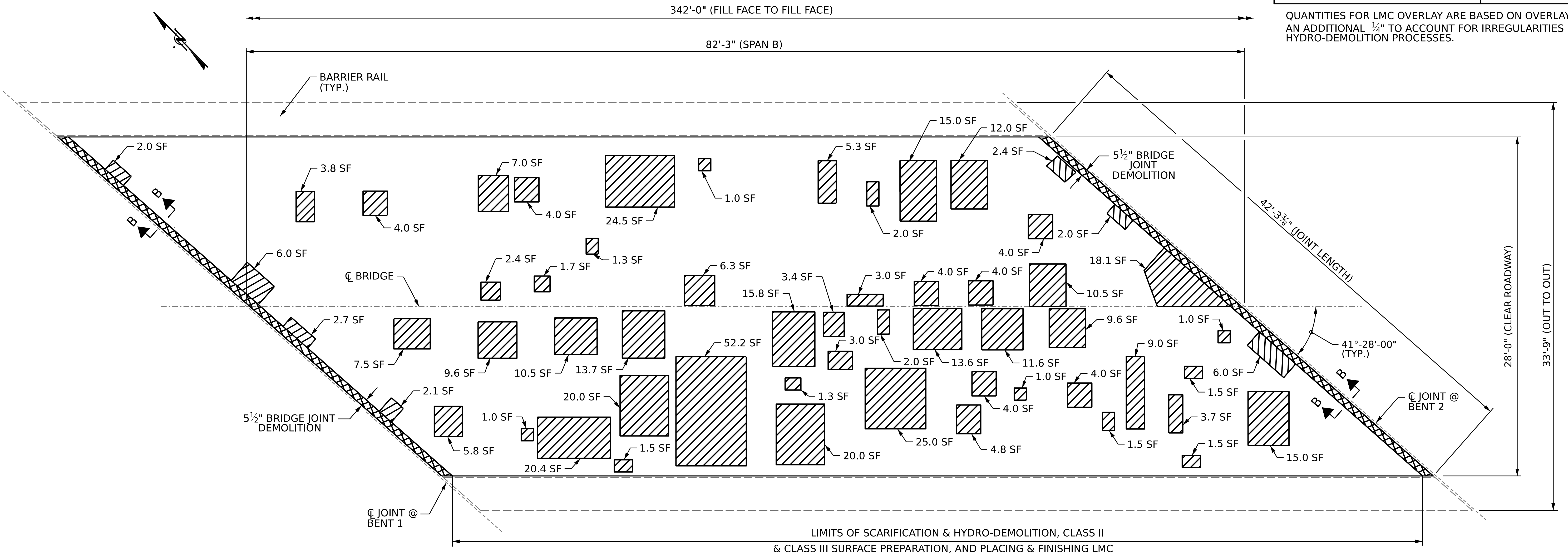
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S1-13.
 FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-14.

DECK SURFACE REPAIR QUANTITY TABLE

| DECK SURFACE REPAIR - SPAN B | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 251.1 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 251.1 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 50.2 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 13.6 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 251.1 SQ. YDS. | |
| GROOVING BRIDGE DECK | 2047.9 SF | |
| BRIDGE JOINT DEMOLITION | 38.8 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

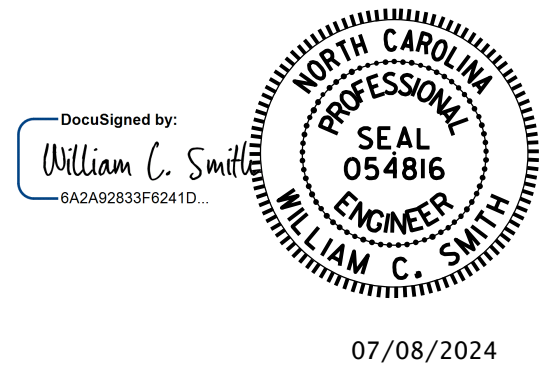
-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION



LIMITS OF SCARIFICATION & HYDRO-DEMOLITION, CLASS II & CLASS III SURFACE PREPARATION, AND PLACING & FINISHING LMC

PLAN OF SPAN B

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



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




DRAWN BY: **S. T. SANDOR** DATE: **05/2024**
 CHECKED BY: **W. C. SMITH** DATE: **05/2024**
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| REVISIONS | | | | | | SHEET NO. S1-04 TOTAL SHEETS 22 |
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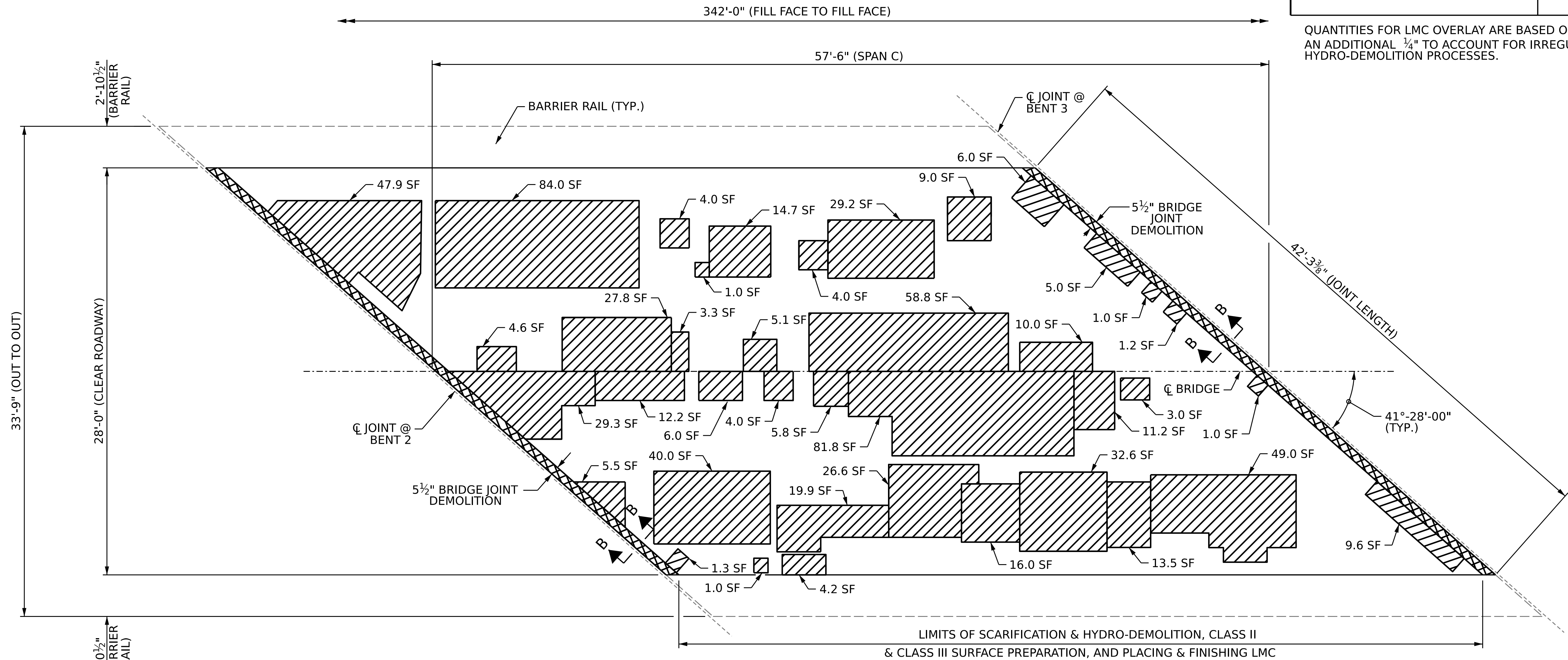
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S1-13.
 FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

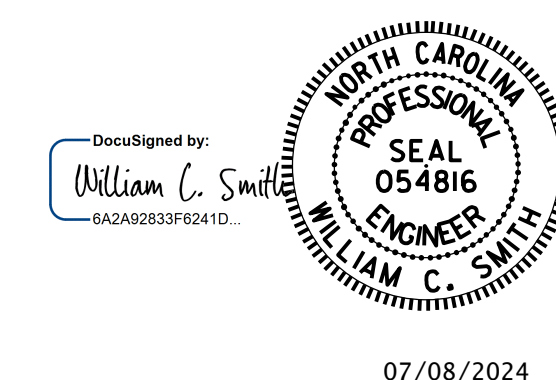
| DECK SURFACE REPAIR - SPAN C | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 174.1 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 174.1 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 76.7 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 10.6 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 174.1 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1429.2 SF | |
| BRIDGE JOINT DEMOLITION | 38.8 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN C

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN C**




DRAWN BY : S. T. SANDOR DATE : 04/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
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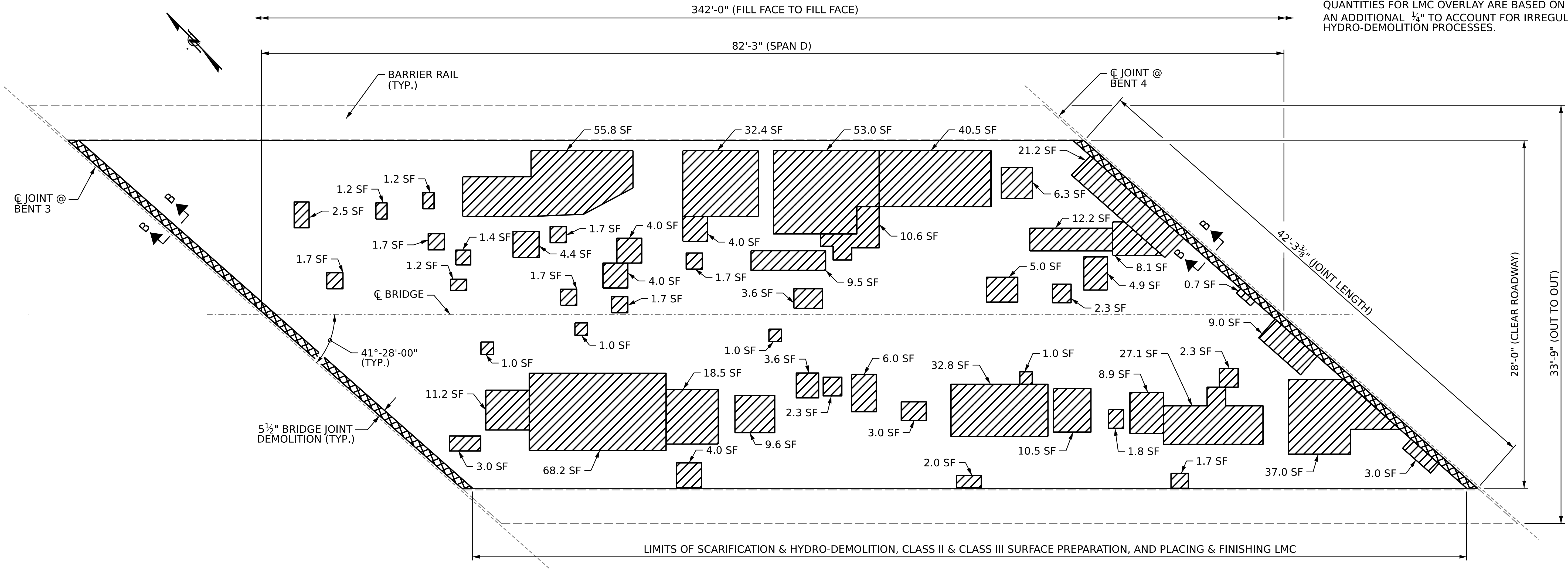
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S1-13.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

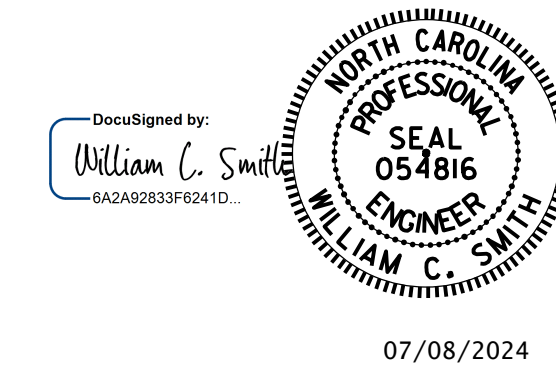
| DECK SURFACE REPAIR - SPAN D | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 251.1 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 251.1 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 63.1 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 14.0 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 251.1 SQ. YDS. | |
| GROOVING BRIDGE DECK | 2047.9 SF | |
| BRIDGE JOINT DEMOLITION | 38.8 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN D

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



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




DRAWN BY : **S. T. SANDOR** DATE : **04/2024**
 CHECKED BY : **W. C. SMITH** DATE : **05/2024**
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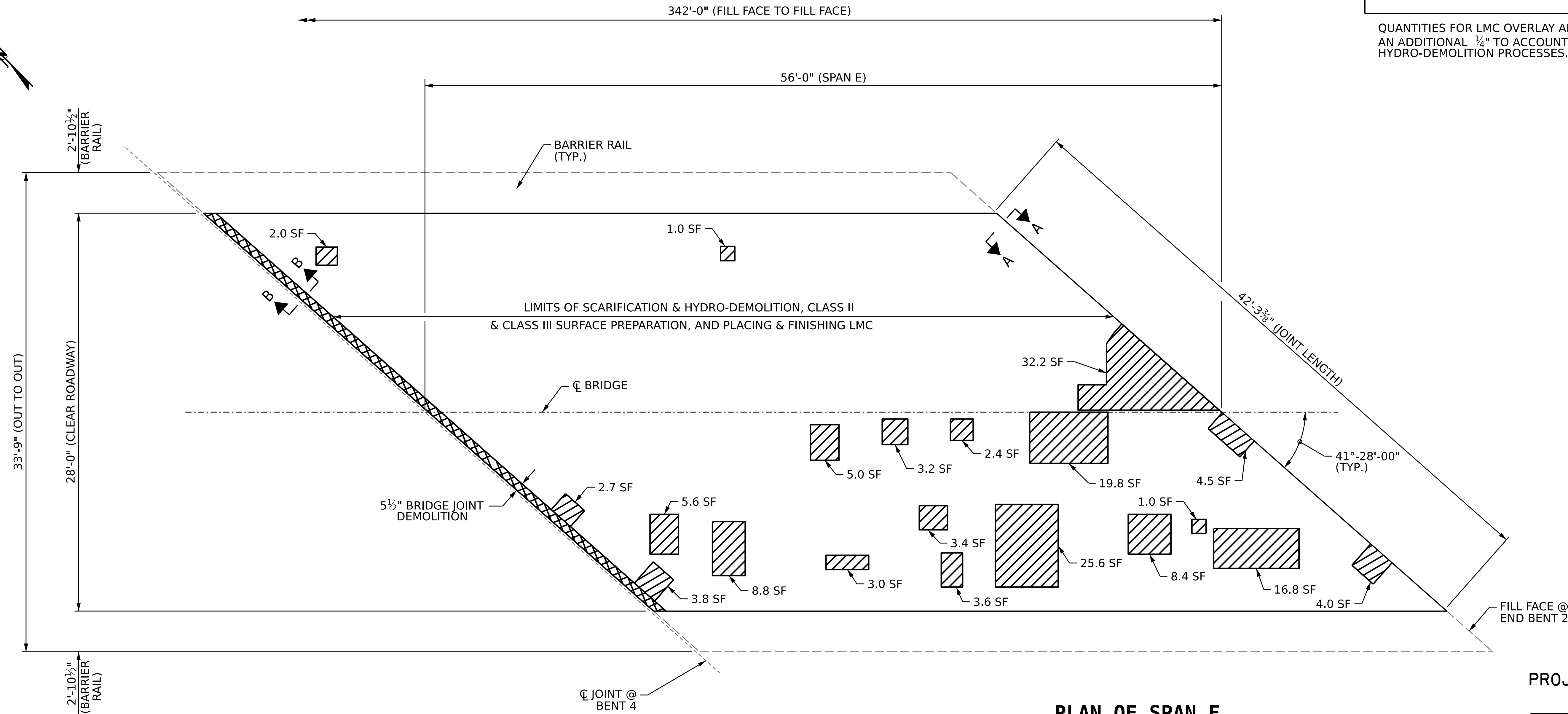
FOR SECTIONS A-A AND B-B, SEE "JOINT DETAIL" SHEET S1-13.
 FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

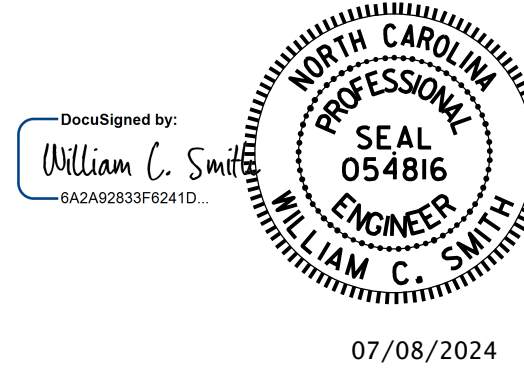
| DECK SURFACE REPAIR - SPAN E | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 172.6 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 172.6 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 17.4 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 8.8 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 172.6 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1391.7 SF | |
| BRIDGE JOINT DEMOLITION | 19.4 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN E

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



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

DRAWN BY : **S. T. SANDOR** DATE : **04/2024**
 CHECKED BY : **W. C. SMITH** DATE : **05/2024**
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| 2 | | | 4 | | | |

NOTES

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

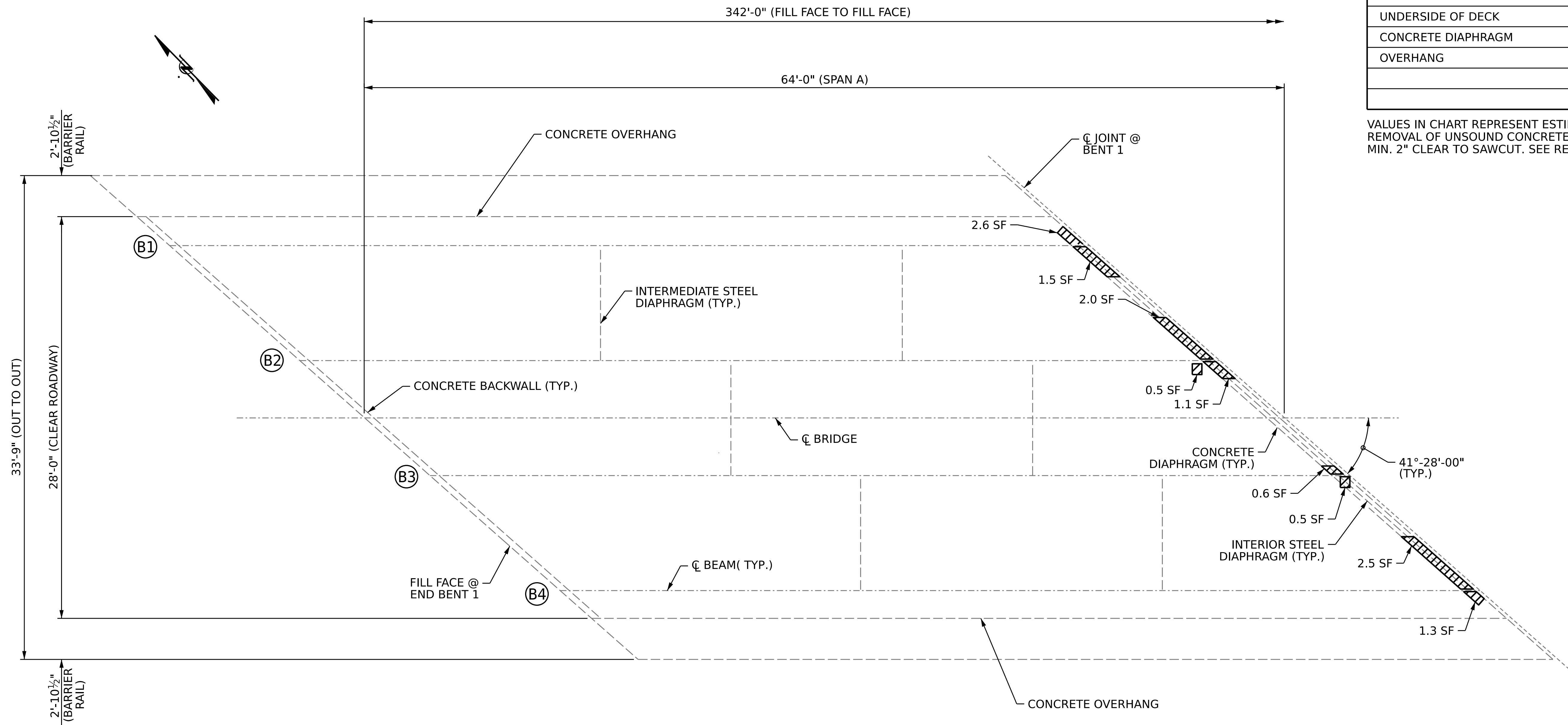
CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

| DECK UNDERSIDE REPAIRS SPAN A | QUANTITIES | | | |
|----------------------------------|------------|--------------|------------|--------------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 1.0 | 0.5 | | |
| CONCRETE DIAPHRAGM | 11.6 | 5.8 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN A

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**

DocuSigned by:
 William C. Smith
 SEAL
 054816
 ENGINEER
 WILLIAM C. SMITH
 07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN A**

DRAWN BY: S. T. SANDOR DATE: 05/2024
 CHECKED BY: W. C. SMITH DATE: 05/2024
 DESIGN ENGINEER OF RECORD: DATE:




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| 2 | | | 4 | | | |

NOTES

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

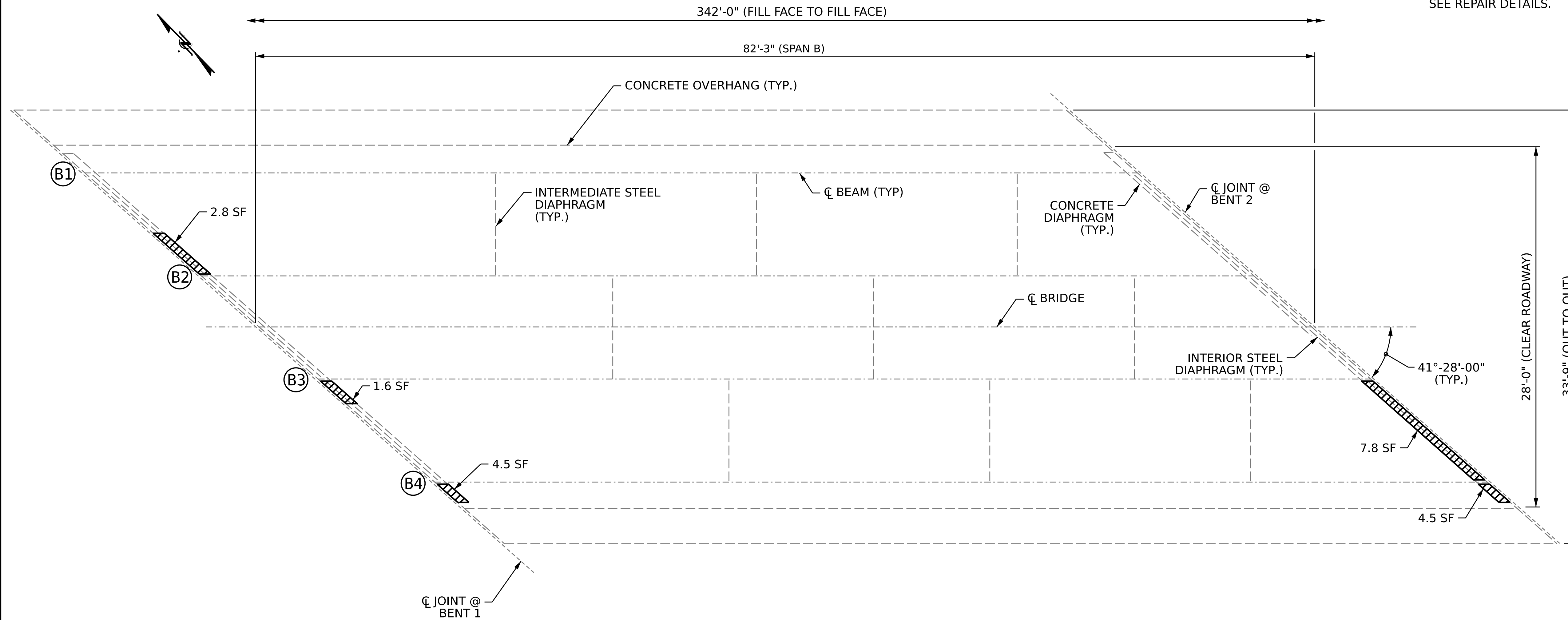
CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

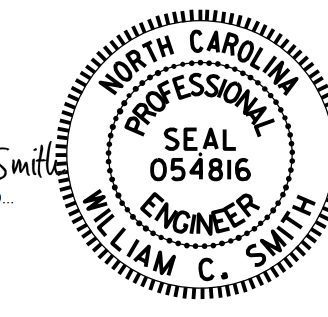
| DECK UNDERSIDE REPAIRS SPAN B | QUANTITIES | | | |
|----------------------------------|--------------------|----------------------|--------------------|----------------------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 21.2 | 10.6 | | |
| OVERHANG | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |

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



PLAN OF SPAN B

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**

DocuSigned by:
 William C. Smith
 0A2A9283F62410

 07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN B**


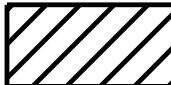

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
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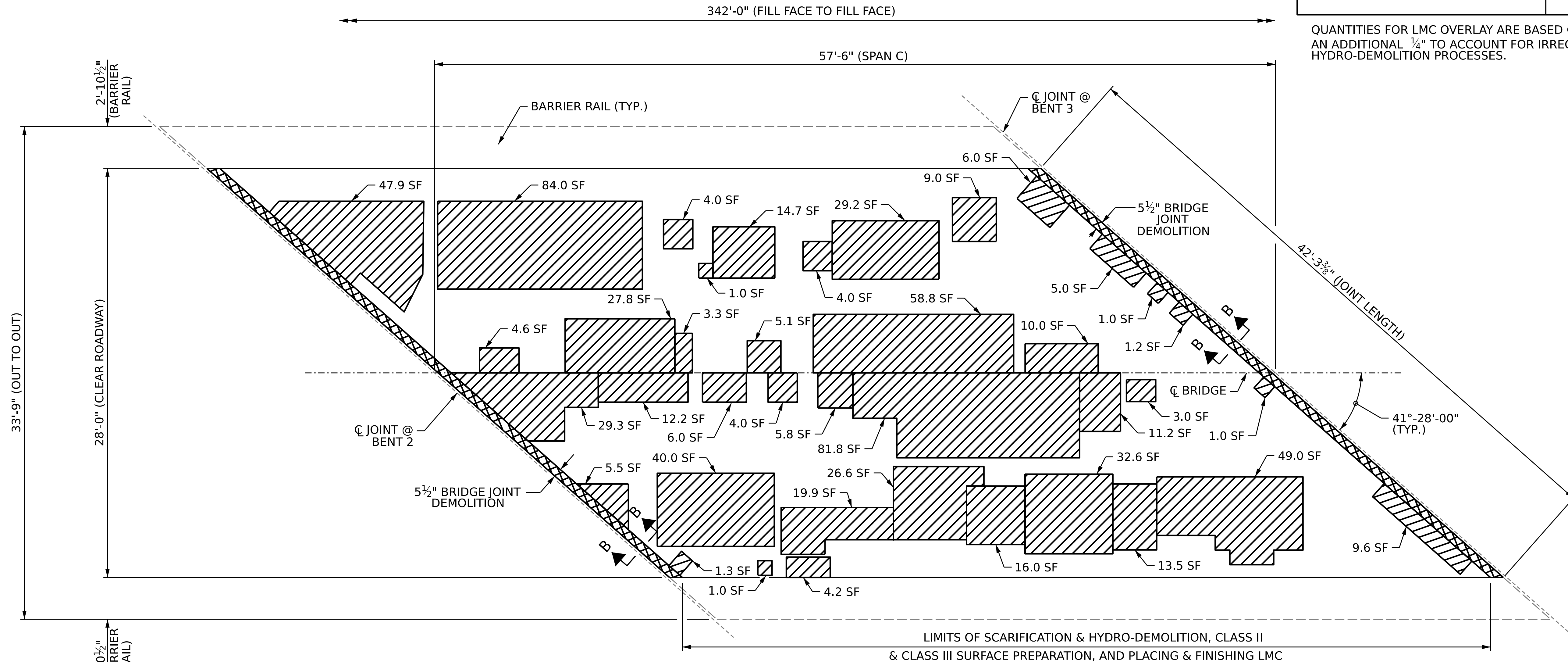
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S1-13.
 FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S1-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

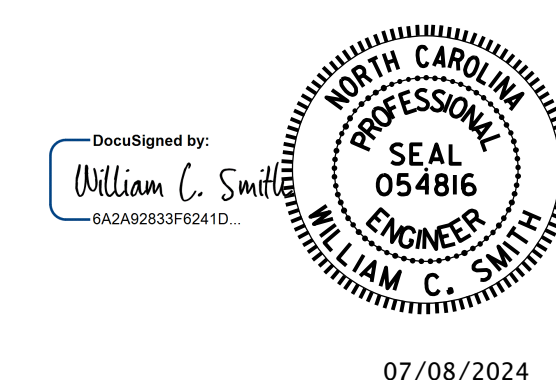
| DECK SURFACE REPAIR - SPAN C | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 174.1 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 174.1 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 76.7 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 10.6 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 174.1 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1429.2 SF | |
| BRIDGE JOINT DEMOLITION | 38.8 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN C

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



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

DRAWN BY : S. T. SANDOR DATE : 04/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

TOTAL SHEETS: 22

NOTES

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

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

 SHOTCRETE REPAIR AREA

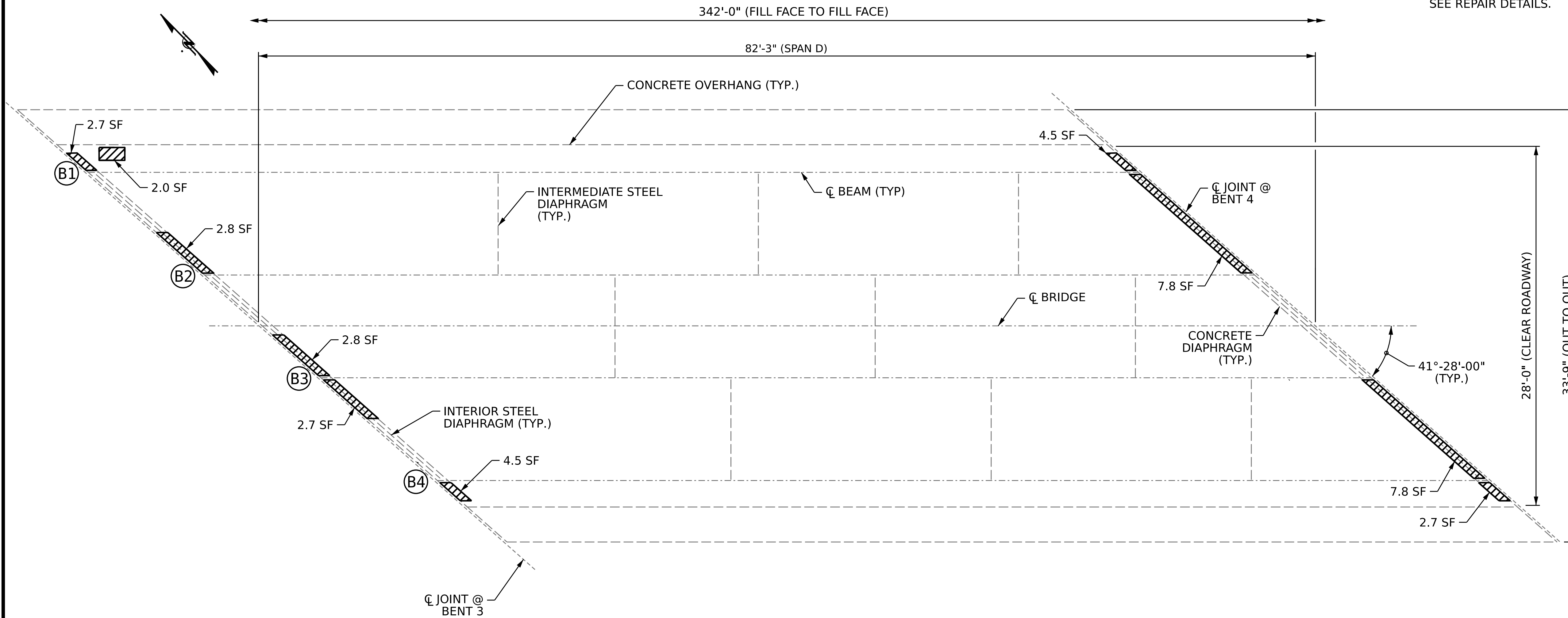
 CONCRETE REPAIR AREA

 BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

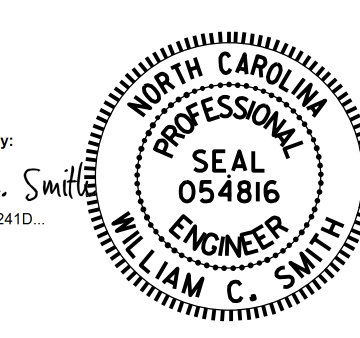
| DECK UNDERSIDE REPAIRS SPAN D | QUANTITIES | | | |
|----------------------------------|--------------------|----------------------|--------------------|----------------------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 2.0 | 1.0 | | |
| CONCRETE DIAPHRAGM | 38.3 | 19.2 | | |
| OVERHANG | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |

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



PLAN OF SPAN D

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**

DocuSigned by:
 William C. Smith
 0A2A9283F62410

 07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN D**

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____




DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. S1-11 TOTAL SHEETS 22 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

NOTES

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

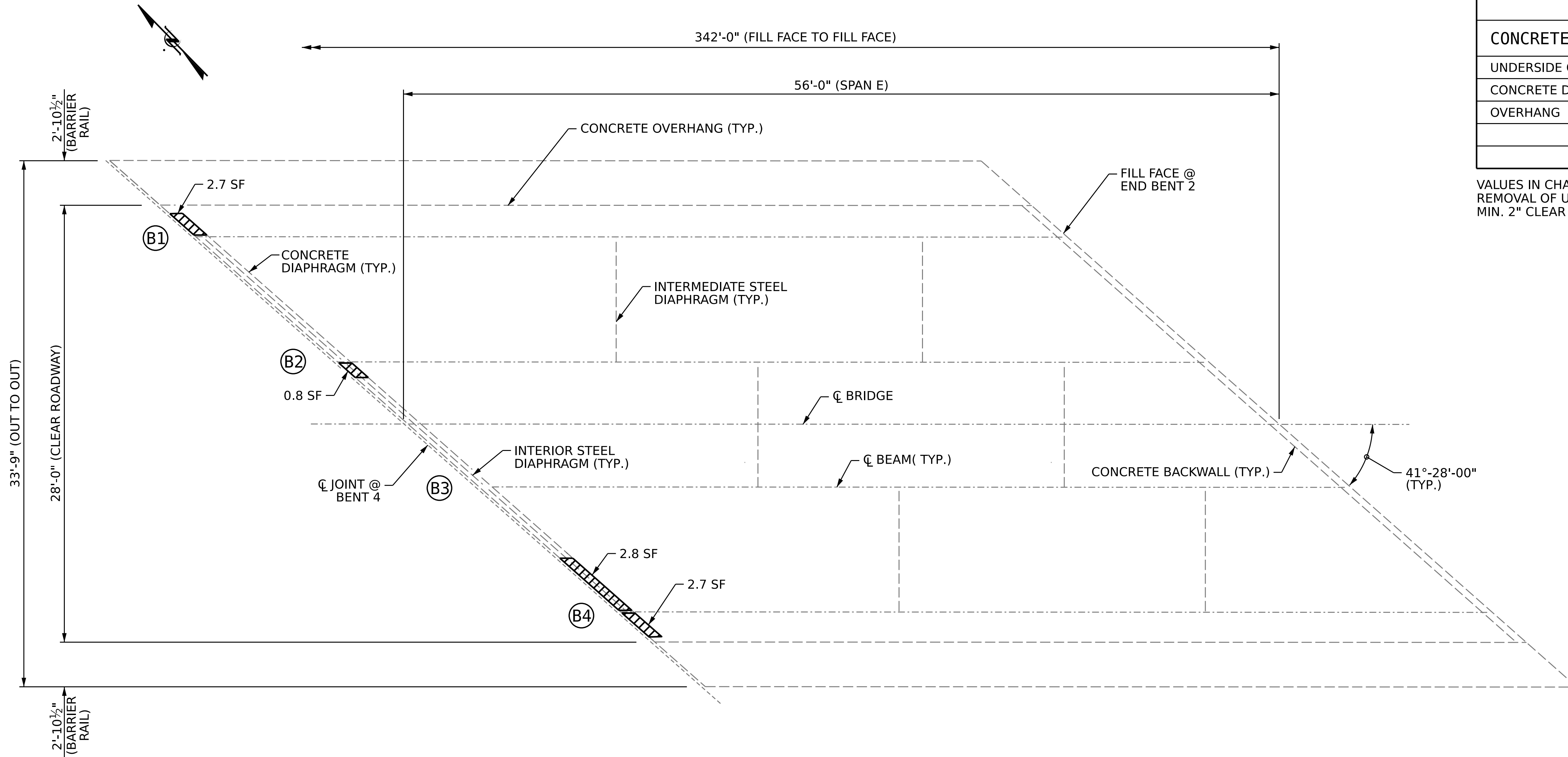
CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

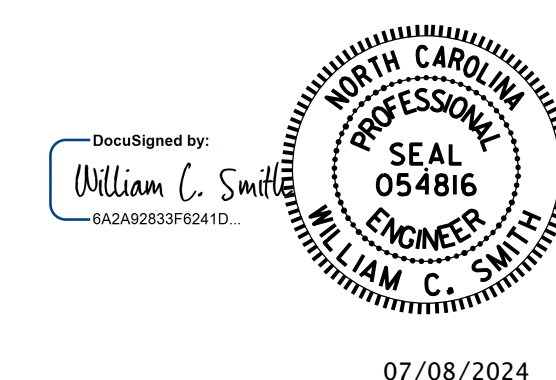
| DECK UNDERSIDE REPAIRS SPAN E | QUANTITIES | | | |
|----------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 9.0 | 4.5 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN E

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**

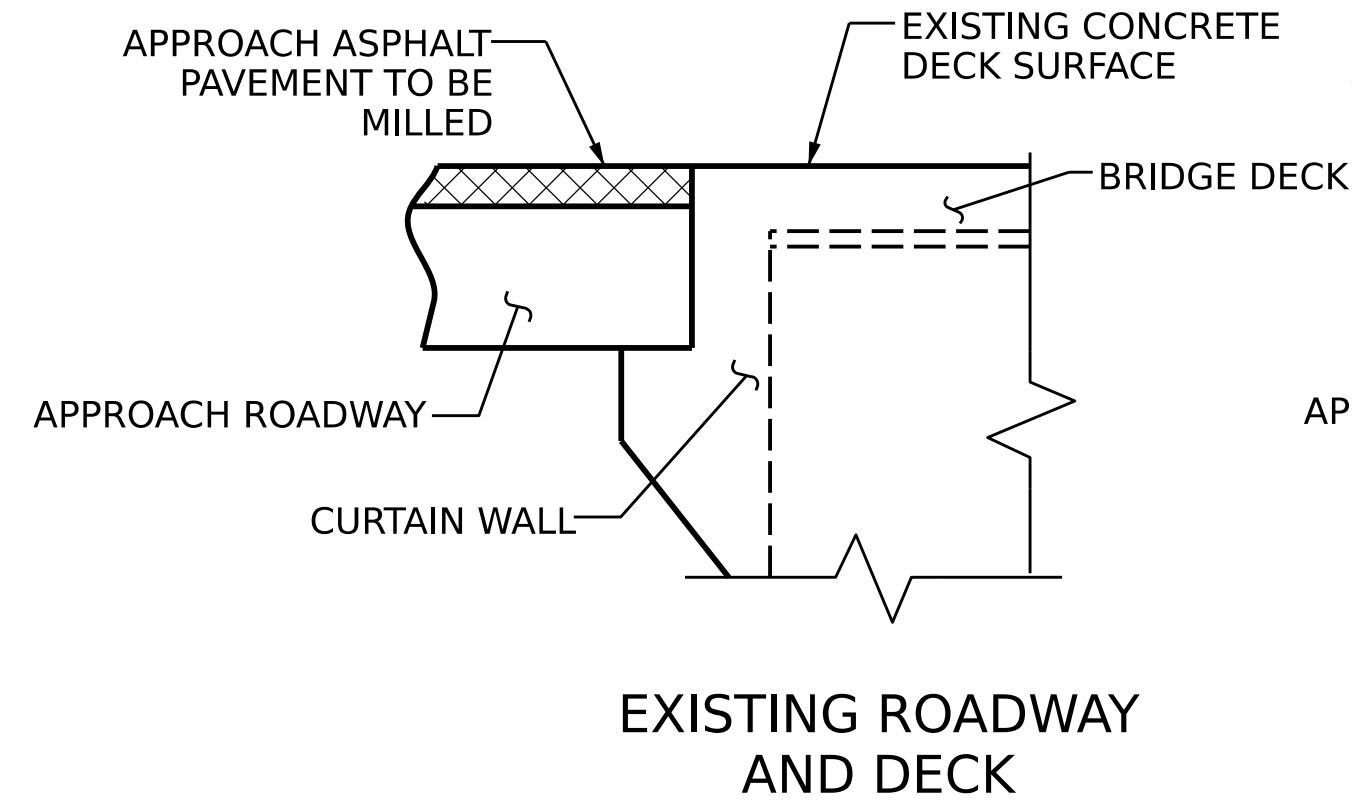


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN E**

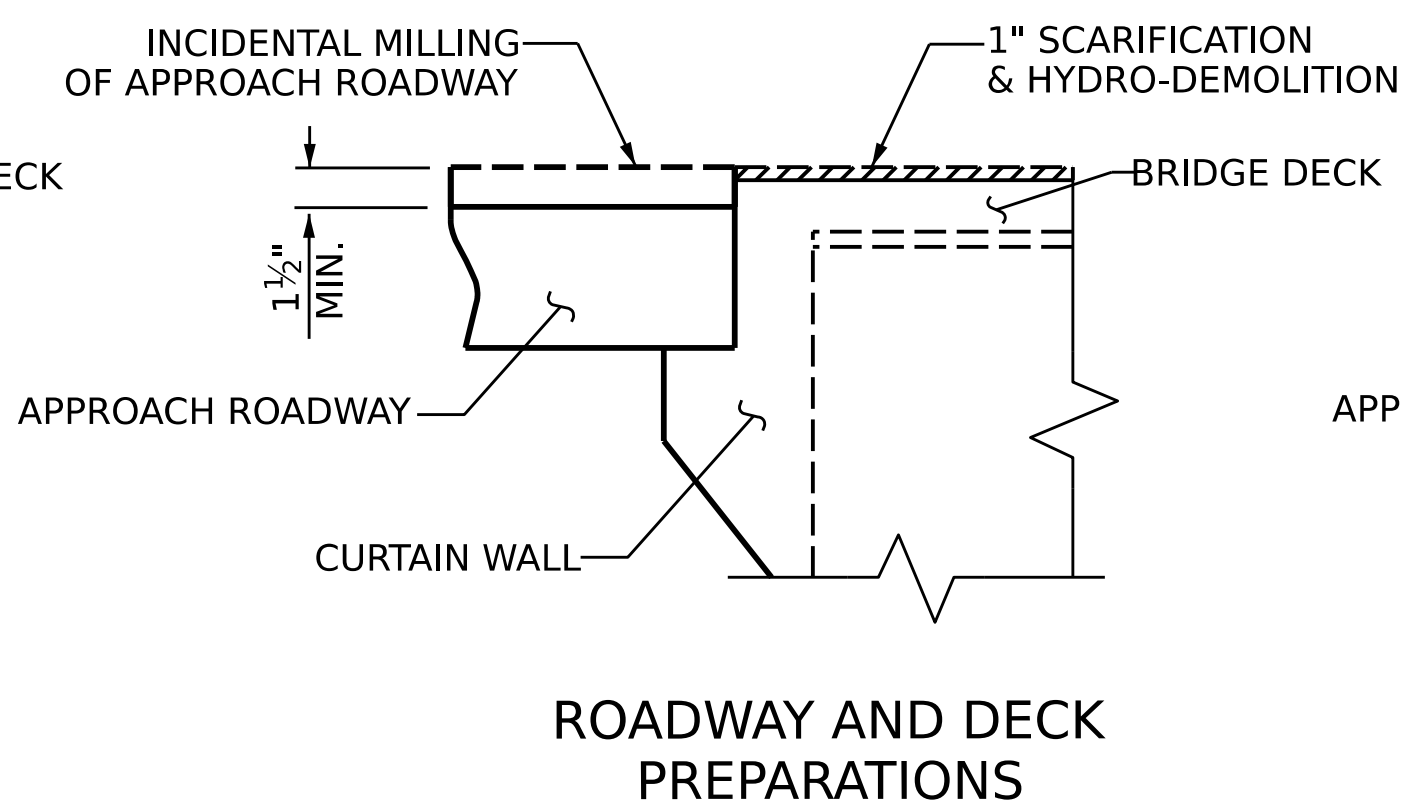
DRAWN BY: S. T. SANDOR DATE: 05/2024
 CHECKED BY: W. C. SMITH DATE: 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE: _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

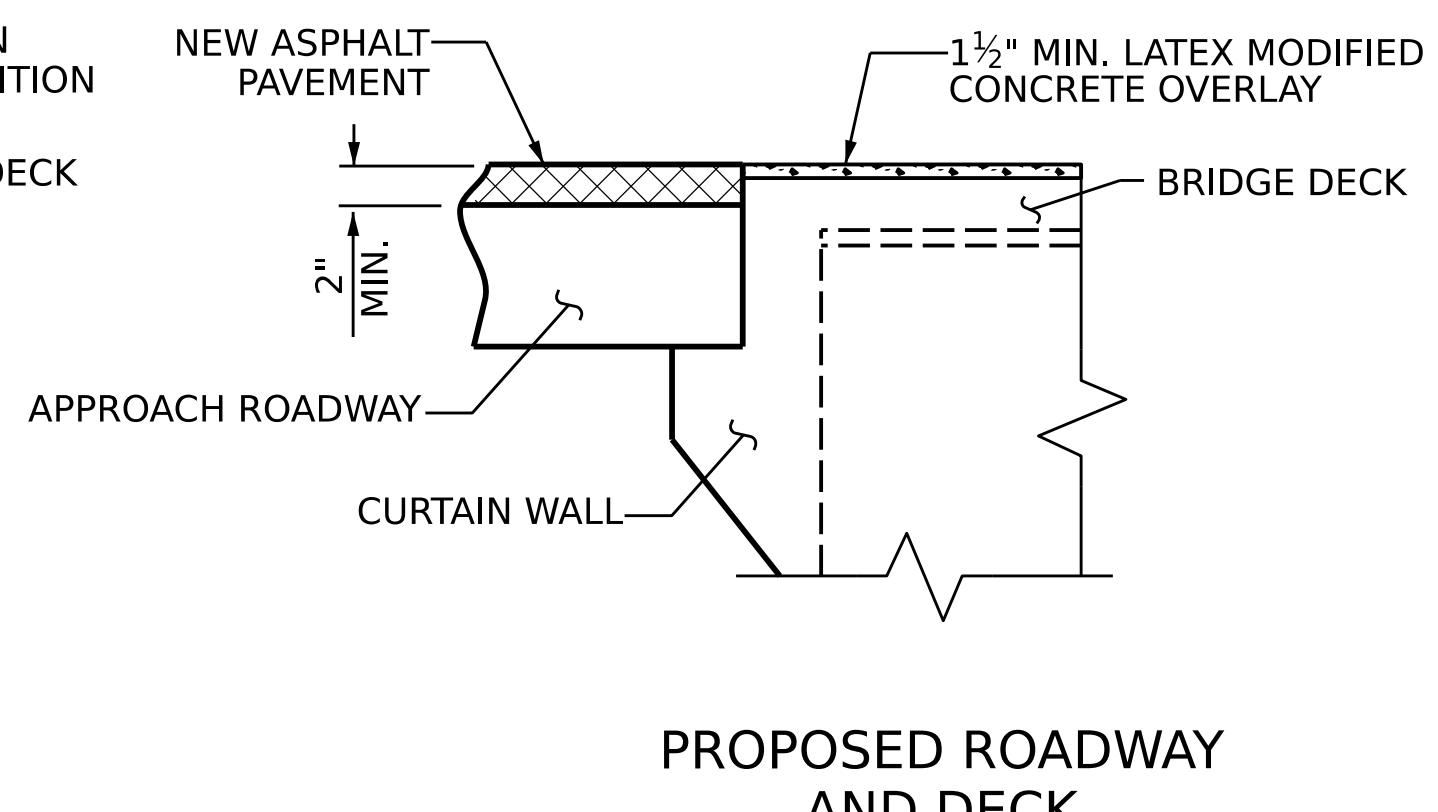
| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-12 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 22 |



EXISTING ROADWAY AND DECK

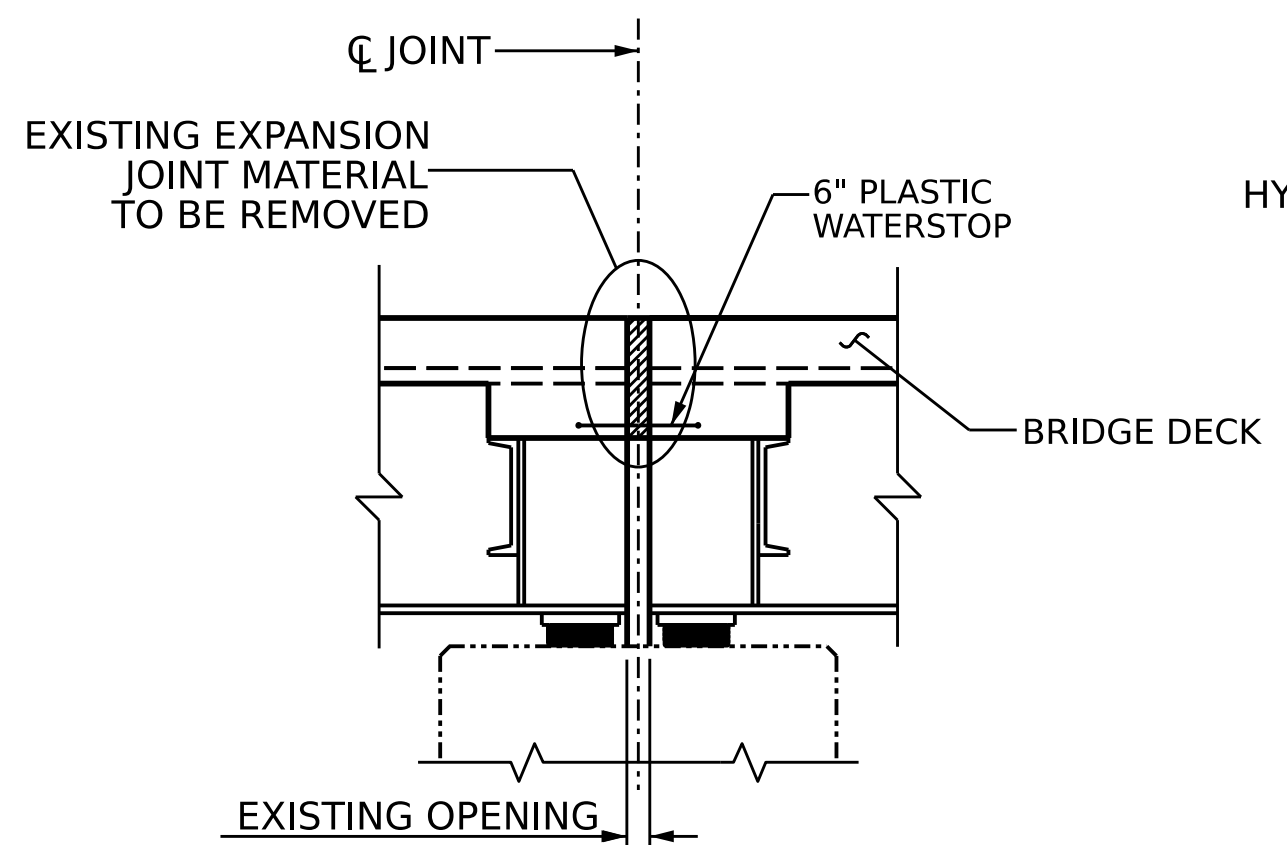


ROADWAY AND DECK PREPARATIONS

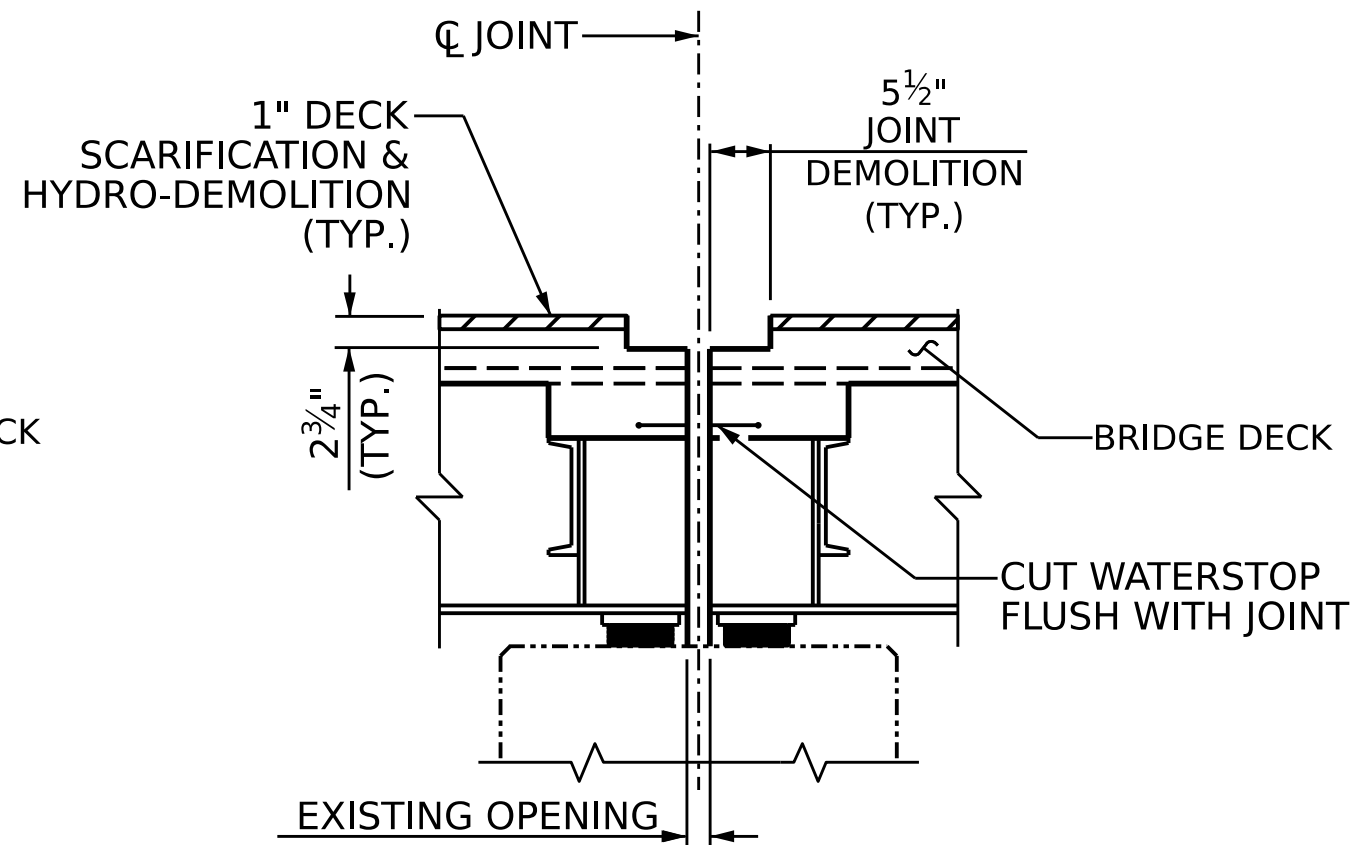


PROPOSED ROADWAY AND DECK

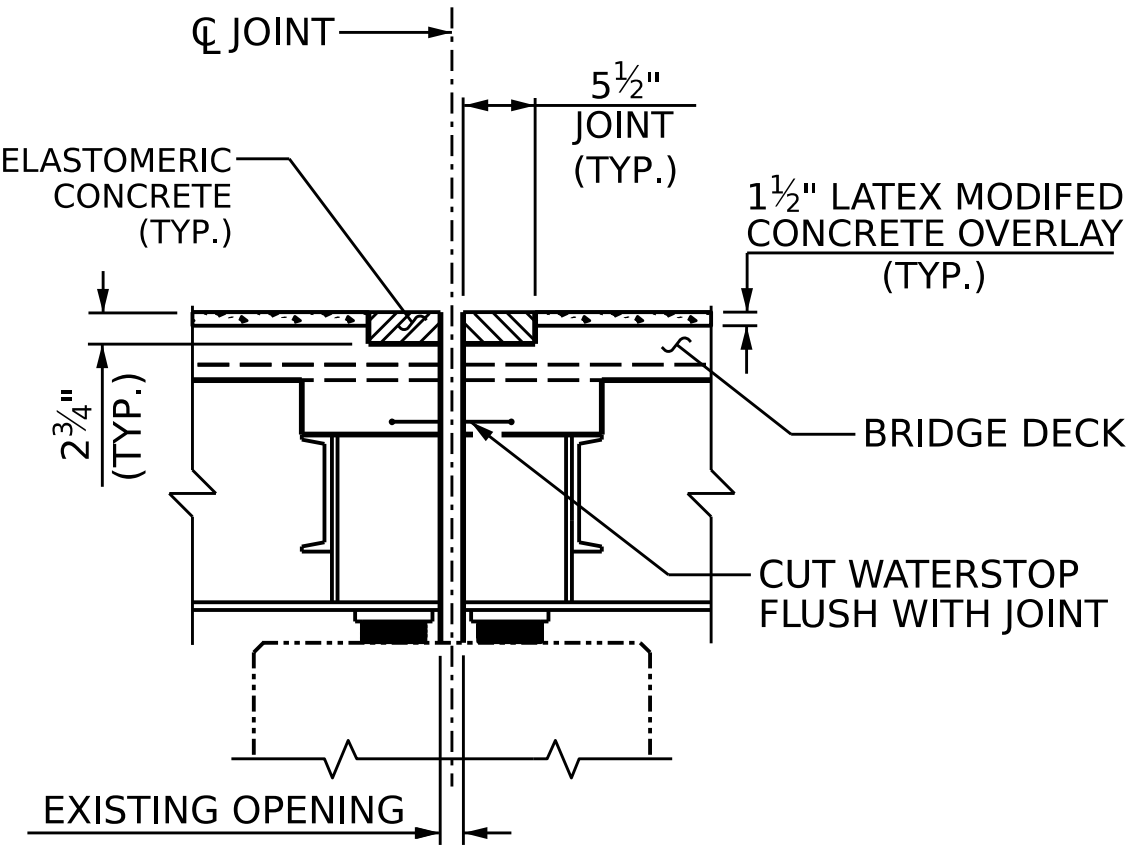
(SECTION A-A)
(ROADWAY AND BRIDGE DECK SEQUENCE AT END BENTS)



EXISTING JOINT



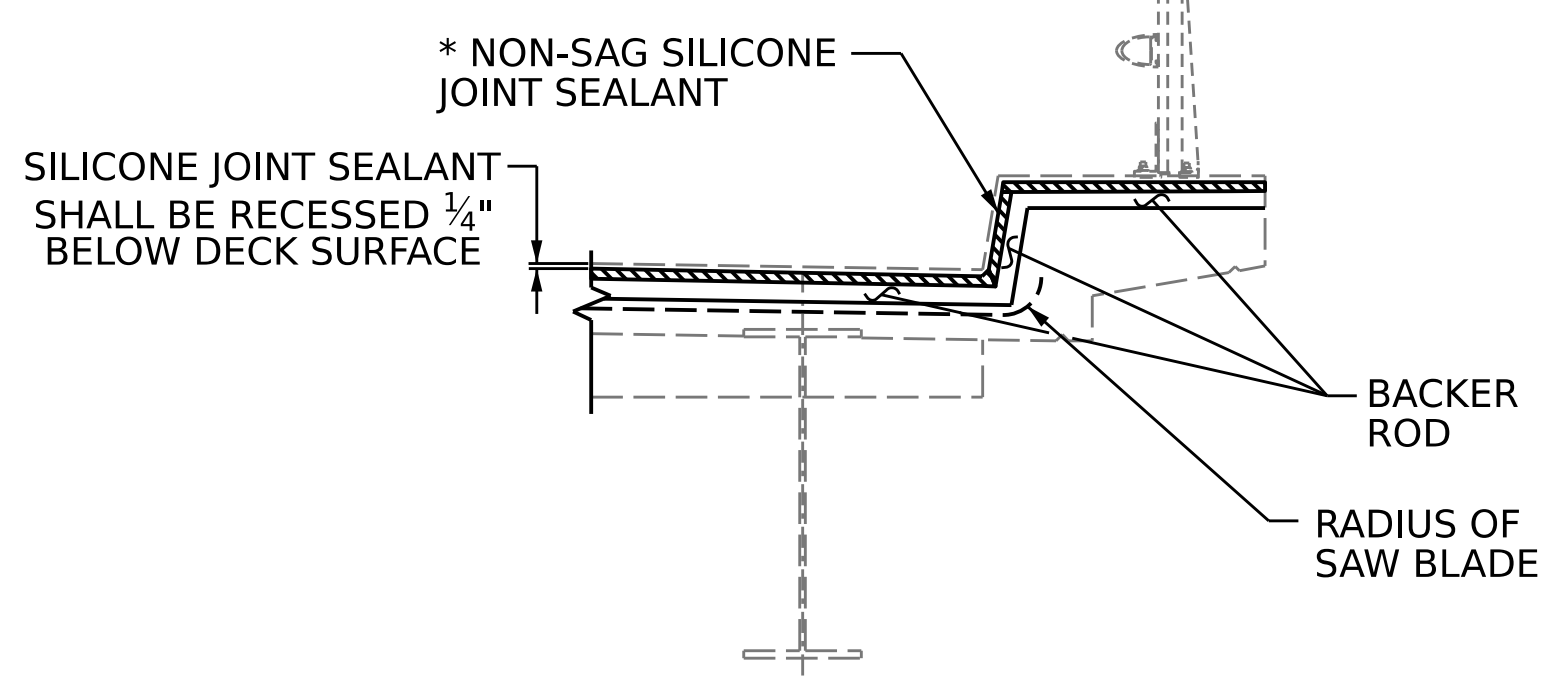
MINIMUM EXISTING JOINT DEMOLITION



(PROPOSED JOINT PRE-SAWED)

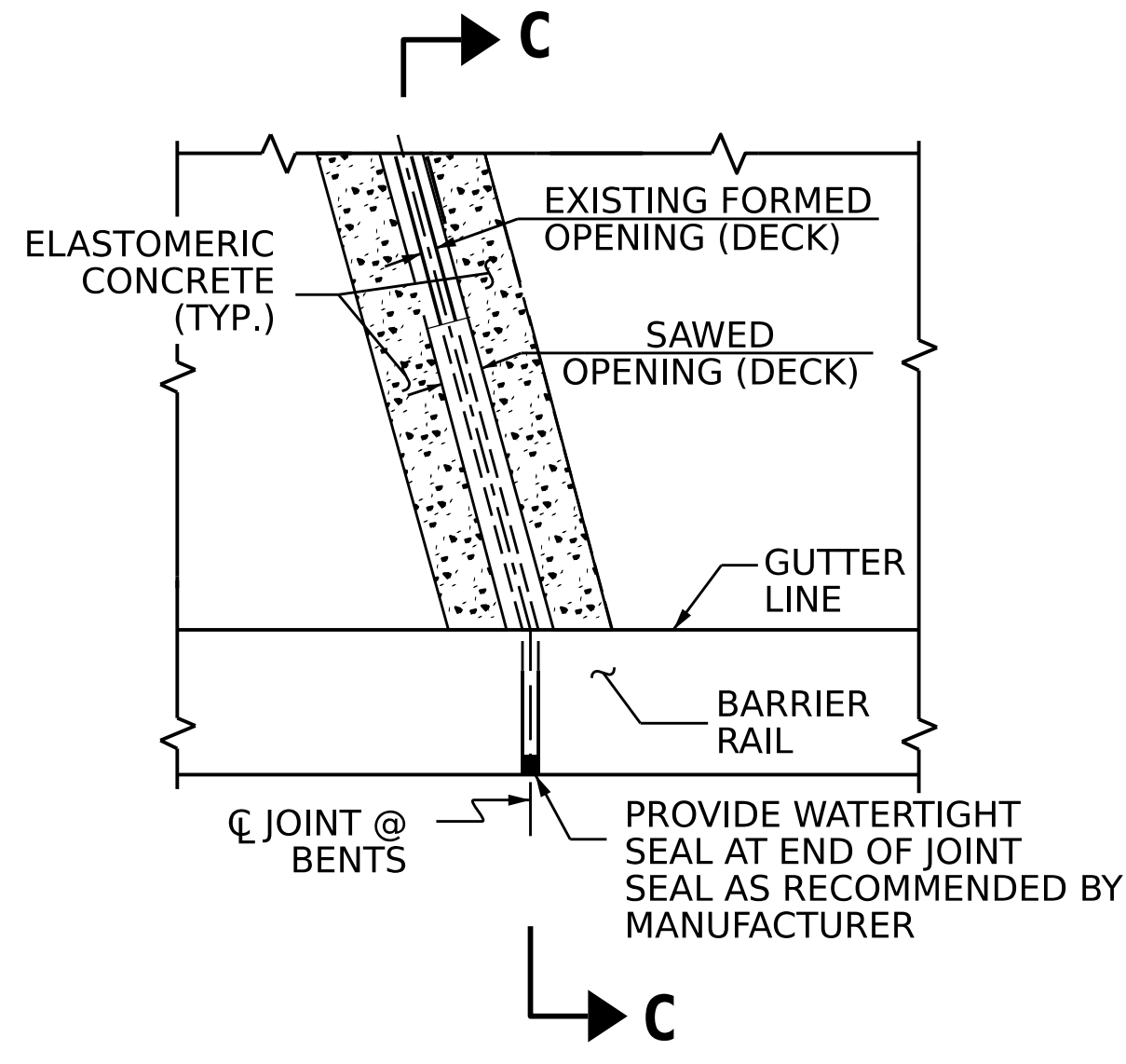
(SECTION B-B)
(JOINT INSTALLATION SEQUENCE AT BENTS)

* NON-SAG SILICONE JOINT SEALANT TO BE PLACED AND ALLOWED TO SET, PRIOR TO PLACEMENT OF SELF-LEVELING SILICONE JOINT SEALANT.

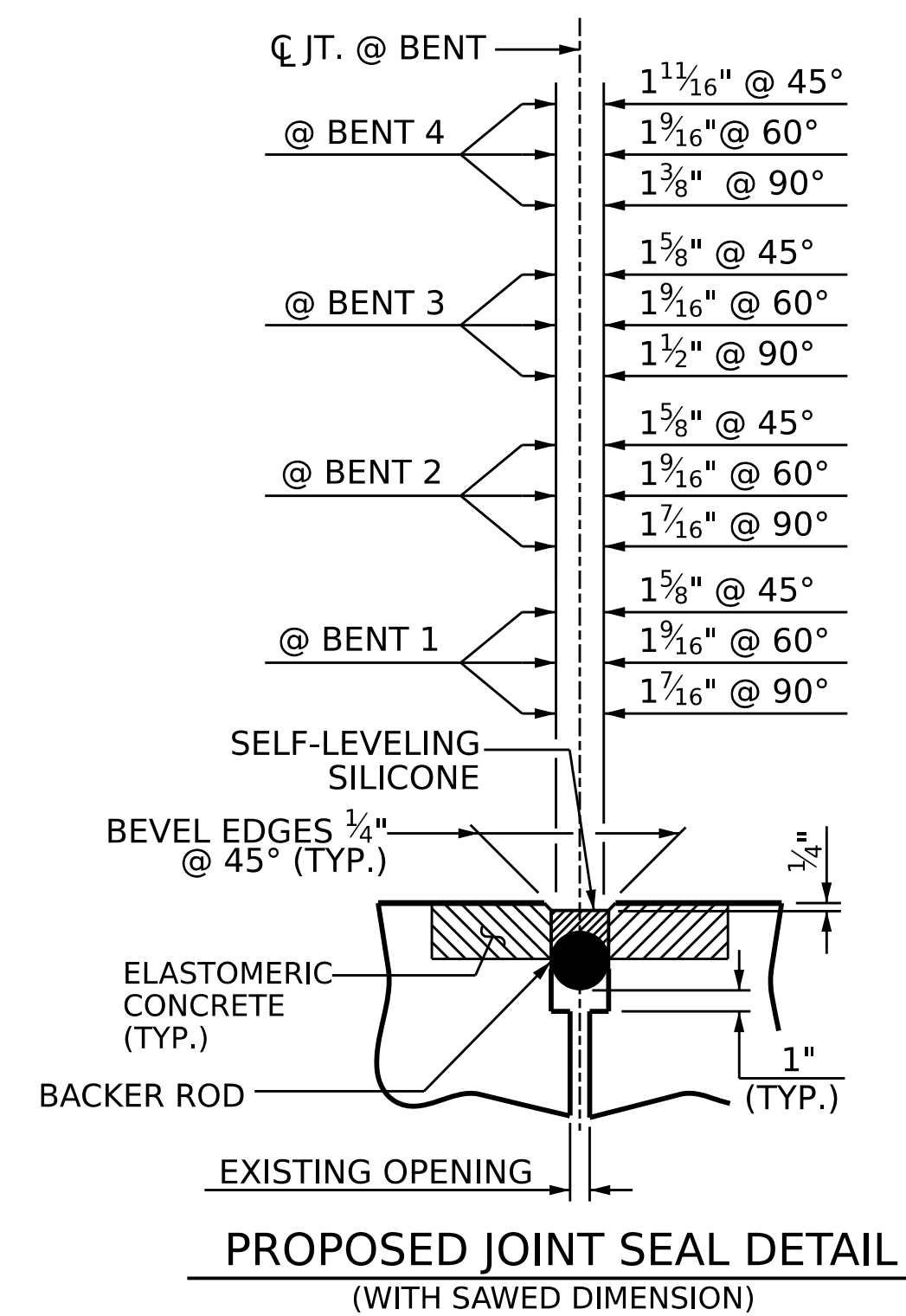


SECTION C-C

JOINT SEAL DETAILS



PLAN
(TYP. AT BENTS)



PROPOSED JOINT SEAL DETAIL
(WITH SAWED DIMENSION)

NOTES:

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

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

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

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

THE INSTALLATION OF JOINT SEAL SHALL BE WATERTIGHT.

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

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

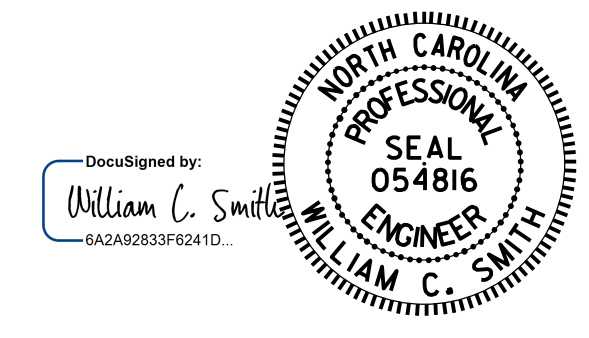
FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

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

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH. SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.

| SUMMARY OF QUANTITIES | | |
|---------------------------------------|----------|--------|
| | ESTIMATE | ACTUAL |
| ELASTOMERIC CONCRETE FOR PRESERVATION | 35.5 CF | |
| POURABLE SILICONE JOINT SEALANT | 203.7 LF | |

PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630098



07/08/2024

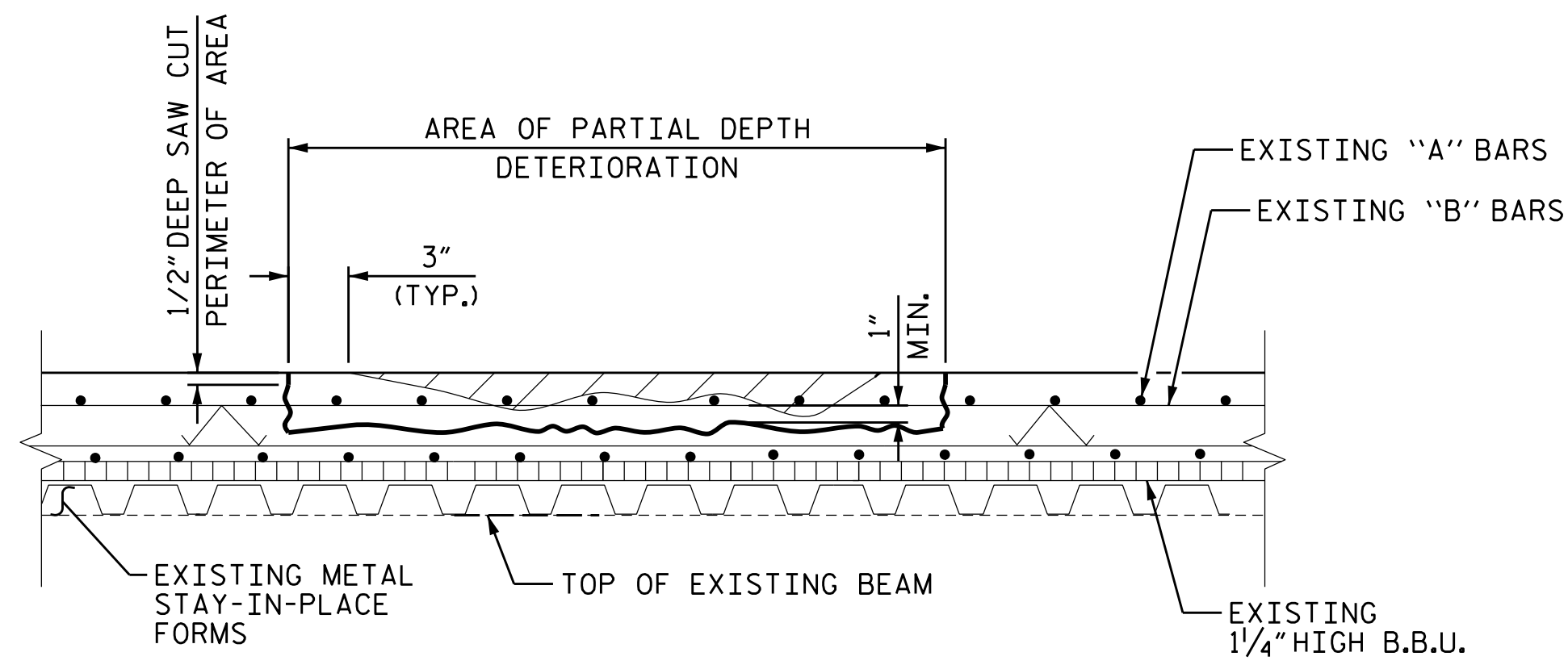
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

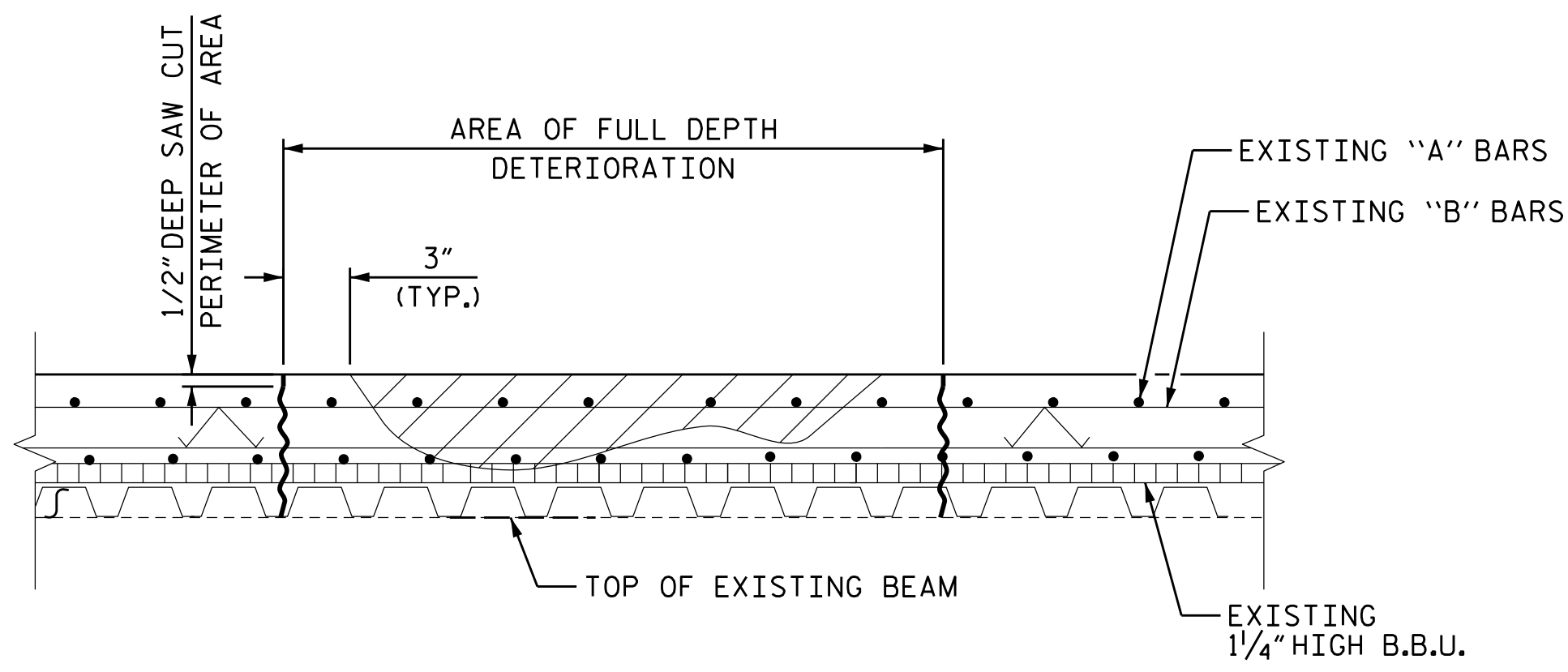
DRAWN BY : Q. T. NGUYEN \ E. BAYISSA DATE : 06/2024
 CHECKED BY : W. C. SMITH DATE : 06/2024

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-13 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 22 |

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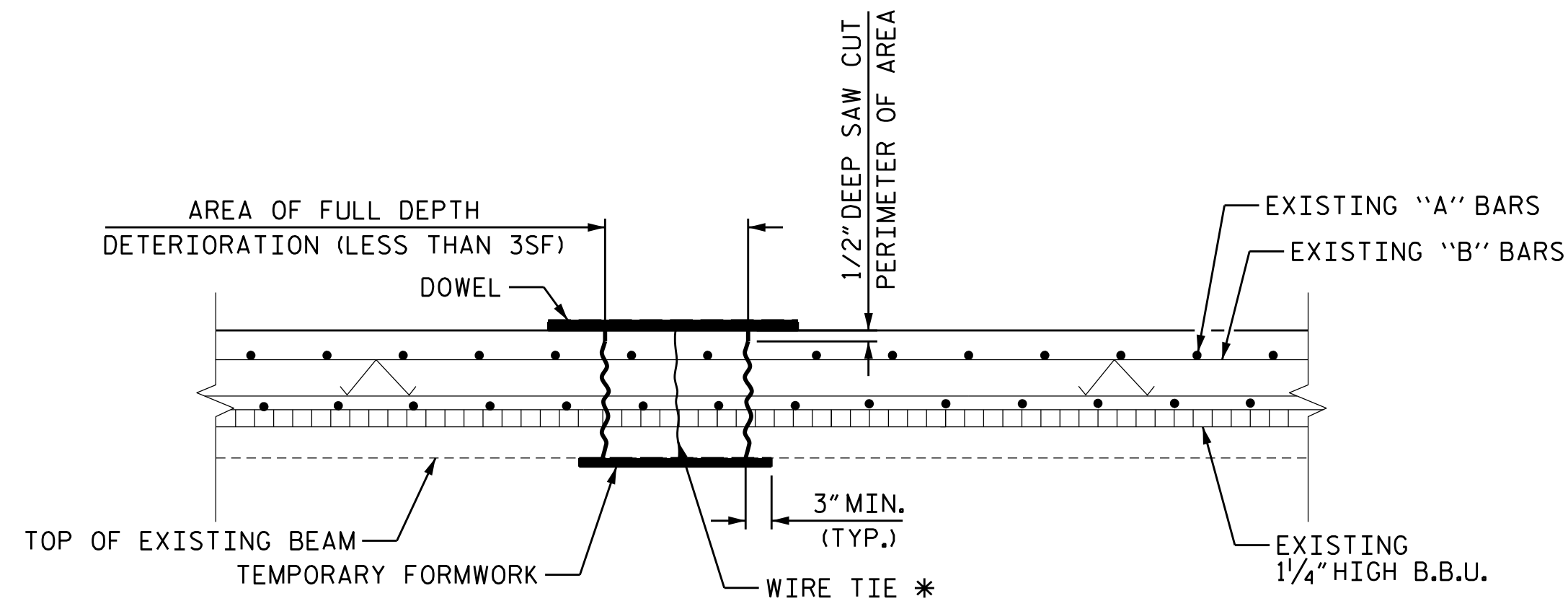


CLASS II (PARTIAL DEPTH) REPAIR



CLASS III (FULL DEPTH) REPAIR

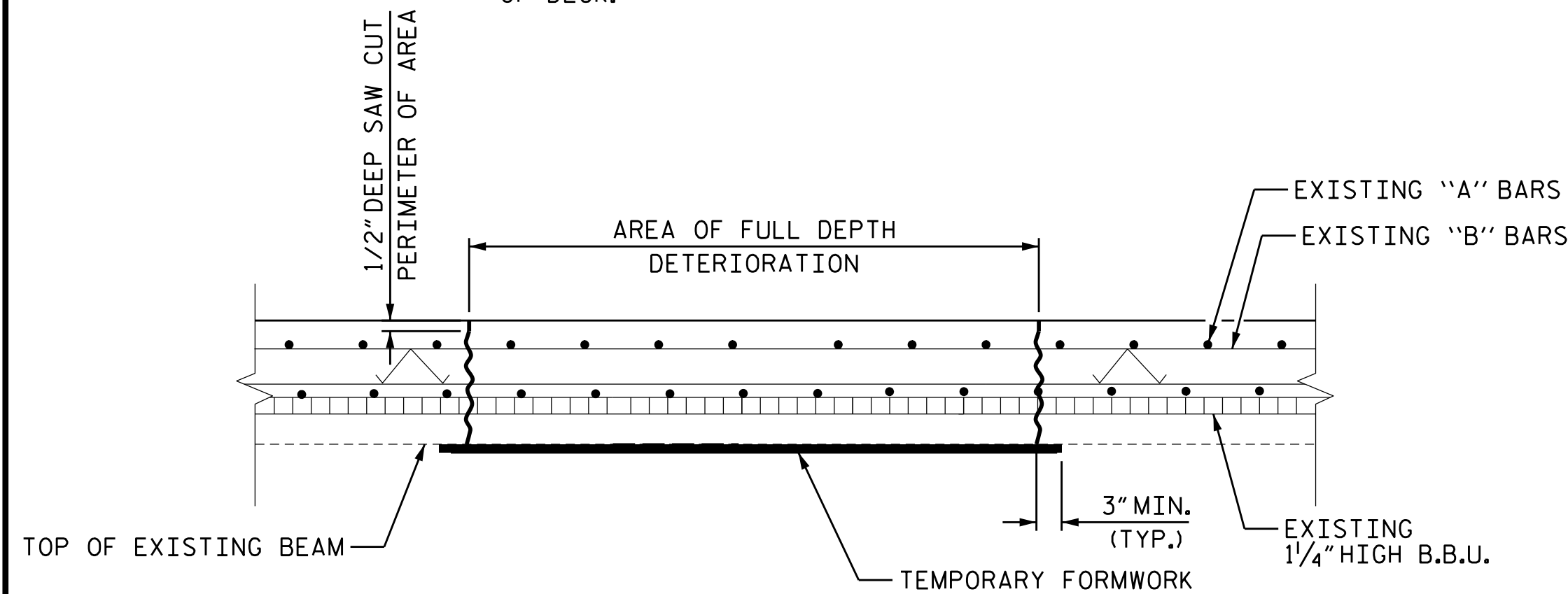
AREA OF DETERIORATION



FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

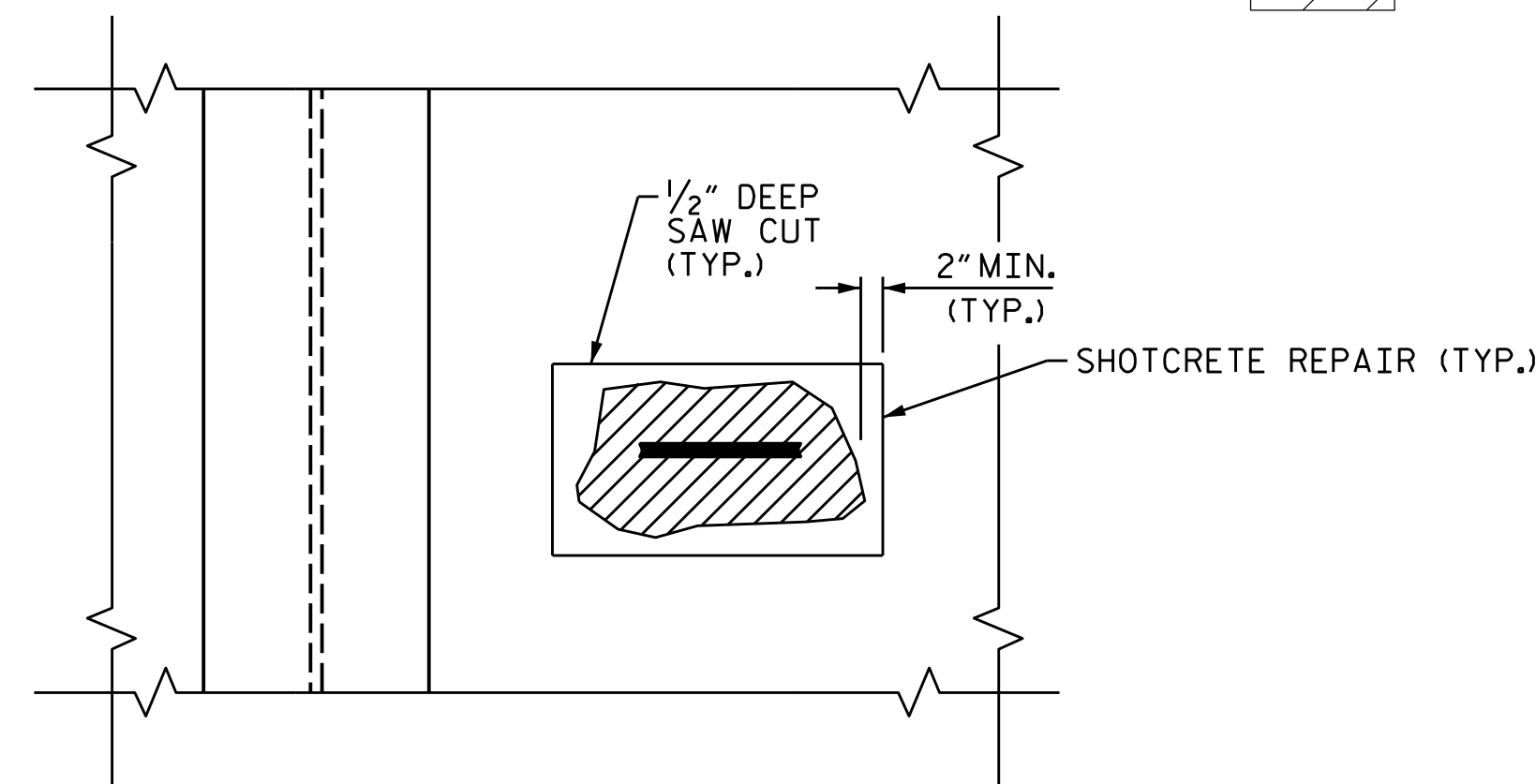
(FOR AREAS OF DETERIORATION EQUAL TO OR LESS THAN 3SF)

* WIRE TIE TO BE KNOTTED BELOW TEMPORARY FORMWORK AND ATTACHED TO DOWEL THAT IS WIDER THAN FORMED FULL DEPTH HOLE. ROTATE DOWEL TO TIGHTEN FORMWORK AGAINST BOTTOM OF DECK.

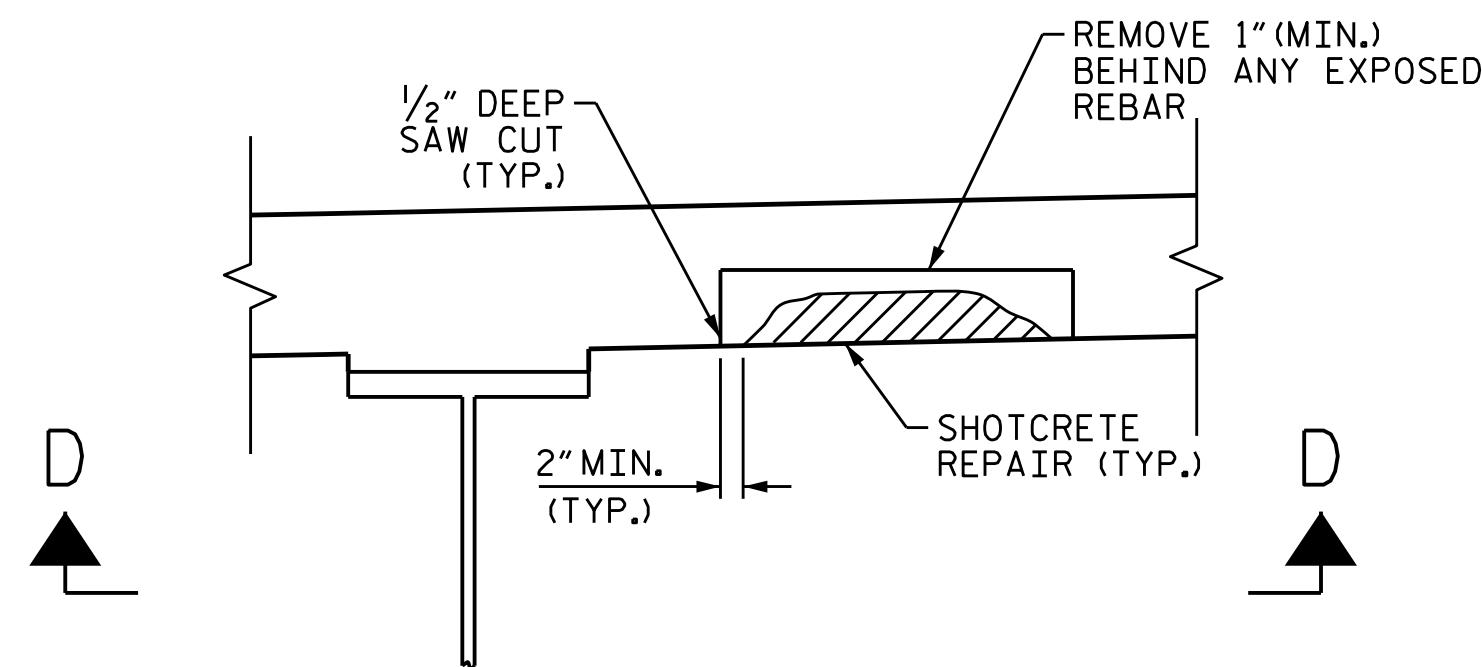


FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

(FOR AREAS OF DETERIORATION GREATER THAN 3SF)

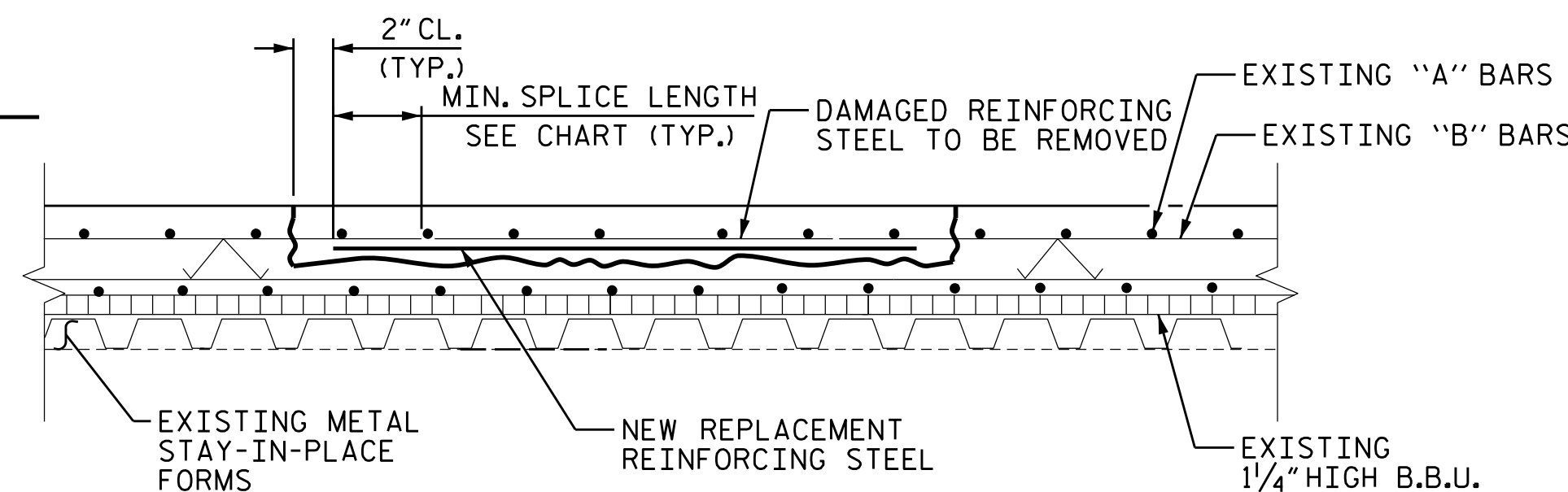


SECTION D-D



TYPICAL SECTION

UNDERSIDE OF DECK REPAIR



REINFORCING STEEL REPAIR

NOTES

FOR AREAS TO BE REPAIRED, SEE "PLAN OF SPAN" SHEETS.

ALL DECK REPAIRS SHALL BE COMPLETED PRIOR TO PLACEMENT OF OVERLAY.

FOR CLASS II AND CLASS III SURFACE PREPARATION, SEE "LMC OVERLAY SURFACE PREPARATIONS" SPECIAL PROVISION.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK. FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

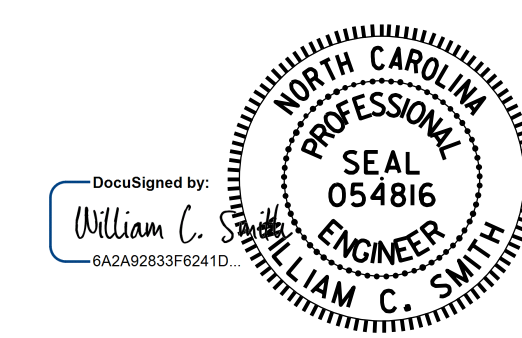
UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

| BAR SIZE | SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL | | APPROACH SLABS | | PARAPET AND BARRIER RAIL |
|----------|---|----------|----------------|----------|--------------------------|
| | EPOXY COATED | UNCOATED | EPOXY COATED | UNCOATED | |
| #4 | 1'-11" | 1'-7" | 1'-11" | 1'-7" | 2'-6" |
| #5 | 2'-5" | 2'-0" | 2'-5" | 2'-0" | 3'-1" |
| #6 | 2'-10" | 2'-5" | 3'-7" | 2'-5" | 3'-8" |
| #7 | 4'-2" | 2'-9" | --- | --- | --- |
| #8 | 4'-9" | 3'-2" | --- | --- | --- |

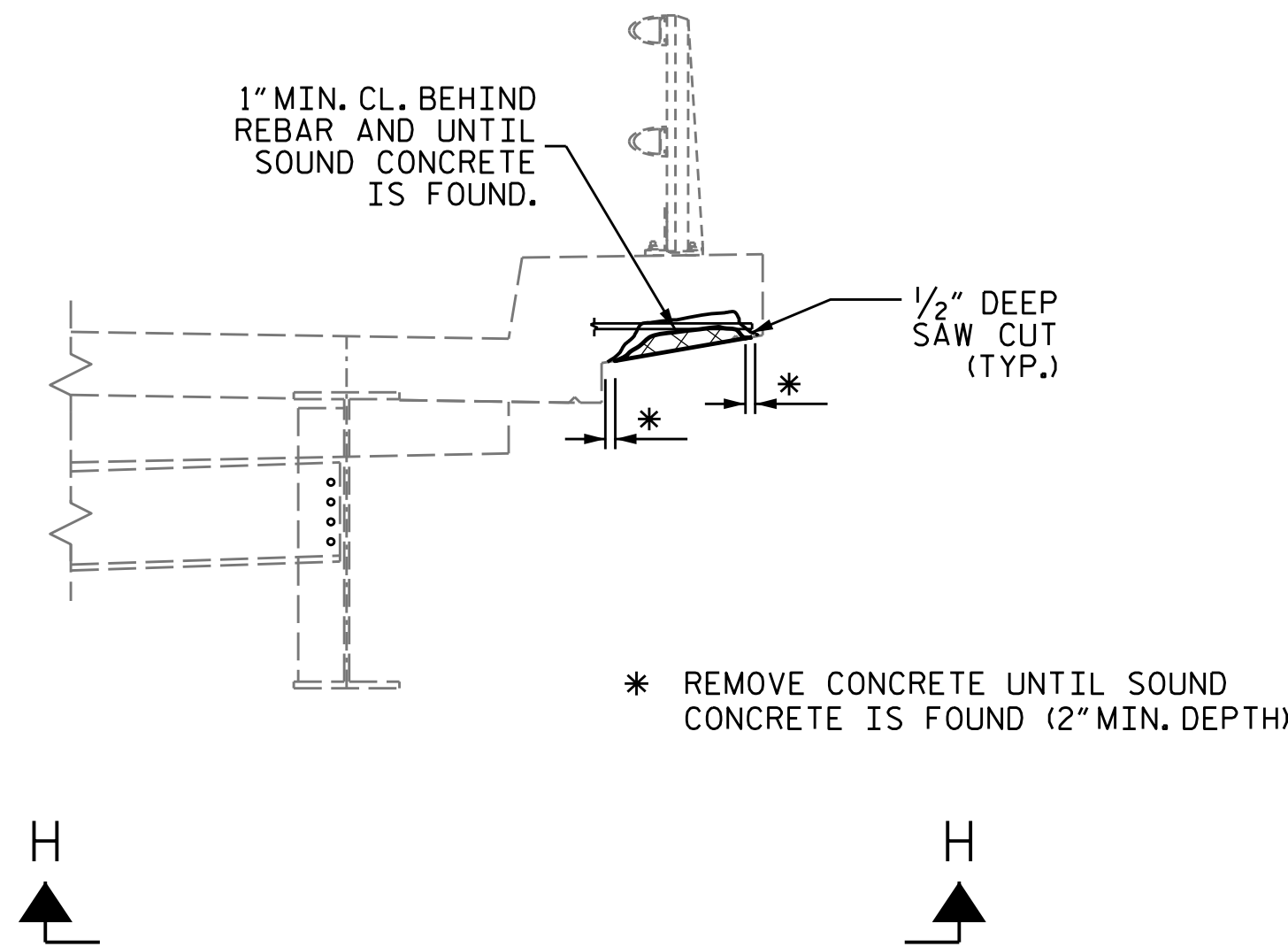
PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630098



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
DECK REPAIR DETAILS

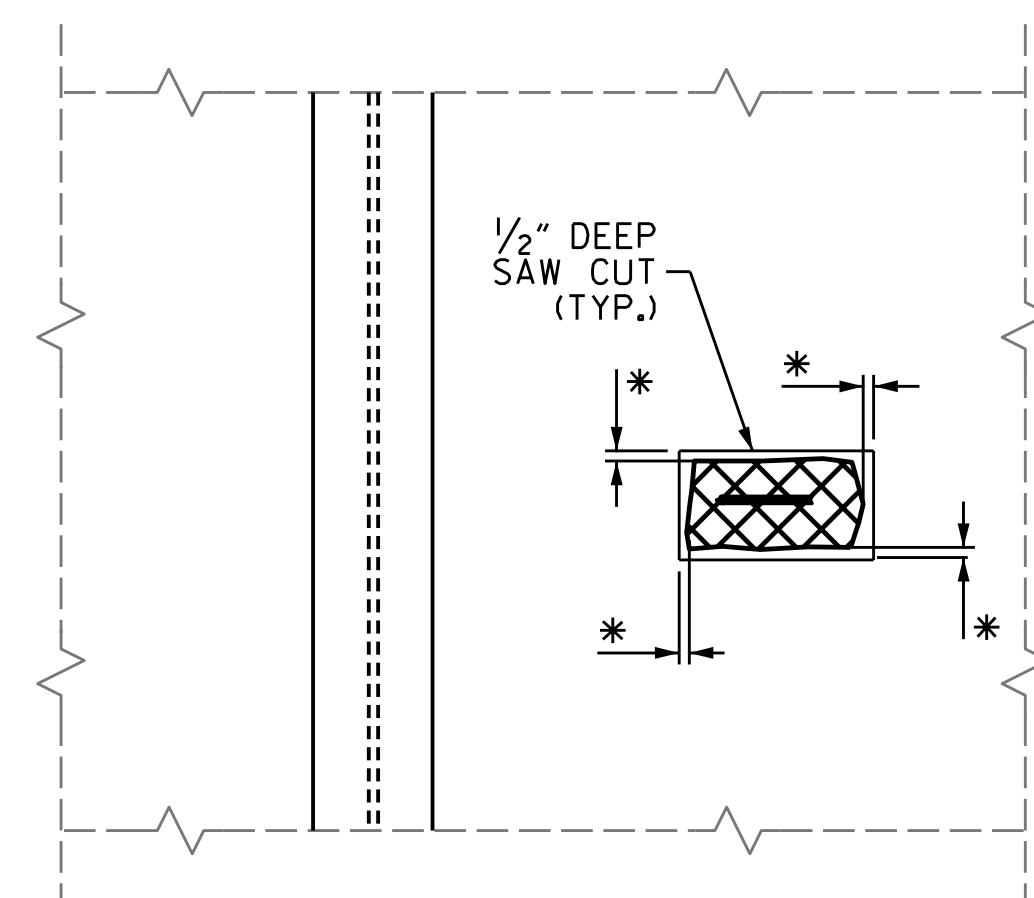
ASSEMBLED BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DRAWN BY : NAP 9/18
 CHECKED BY :

| NO. | BY: | DATE: | REVISIONS | | | SHEET NO. |
|-----|-----|-------|-----------|-----|-------|-----------------|
| | | | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S1-14 |
| 2 | | | 4 | | | TOTAL SHEETS 22 |



TYPICAL SECTION
(UTILITIES NOT SHOWN FOR CLARITY)

DAMAGED AREA



SECTION H-H
OVERHANG DETAILS

NOTES

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.

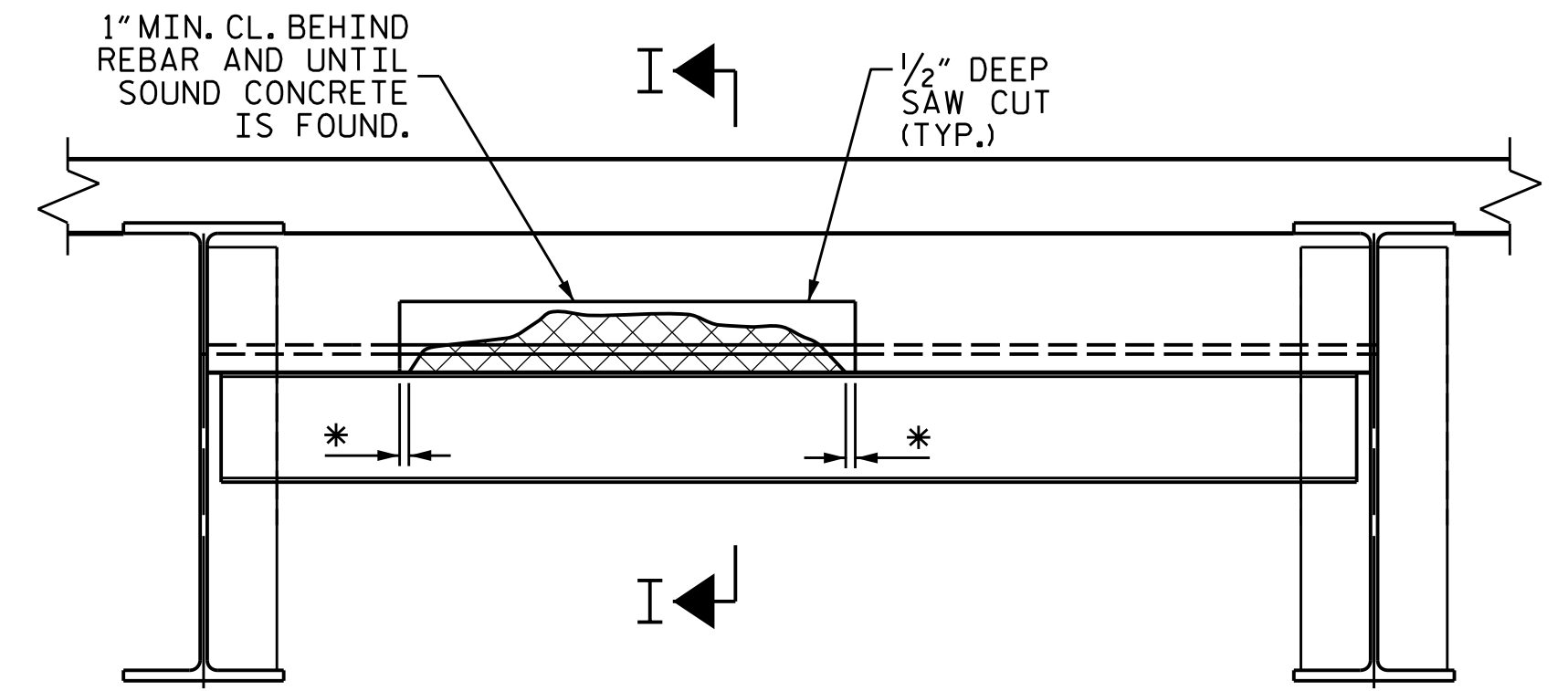
REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THE "DECK REPAIR DETAIL" SHEET.

FOR AREAS TO BE REPAIRED, SEE "UNDERSIDE DECK REPAIRS" SHEETS.

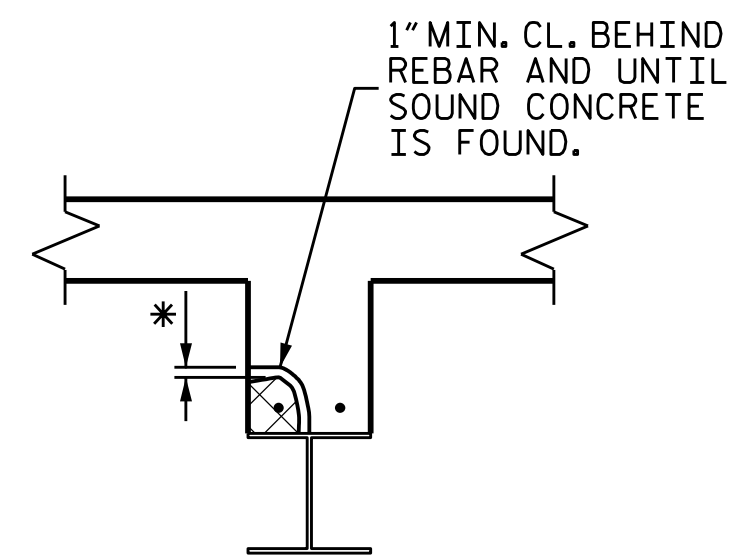
THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK. FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.



TYPICAL SECTION



SECTION I-I

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. DEPTH)

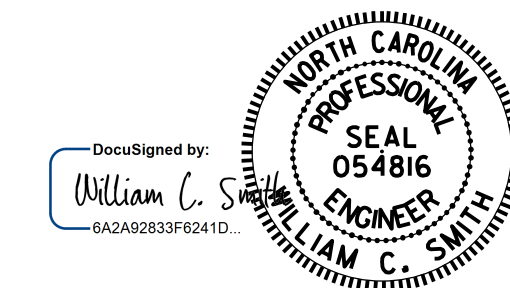
DAMAGED AREA

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

INTERIOR DIAPHRAGM REPAIR DETAILS

(EXTERIOR DIAPHRAGM SIMILAR)

PROJECT NO. 4B.106413
NASH COUNTY
BRIDGE NO. 630098



07/08/2024

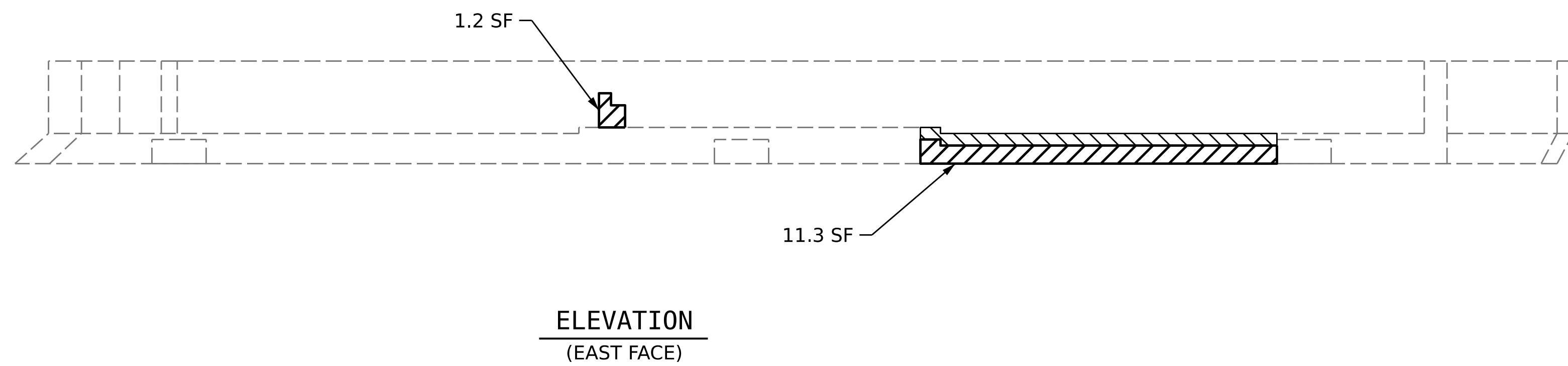
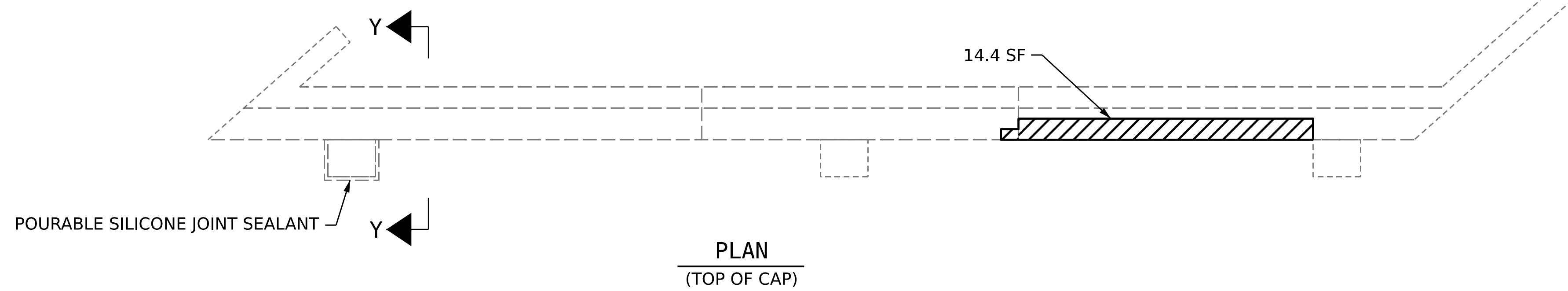
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

OVERHANG & DIAPHRAGM REPAIR DETAILS

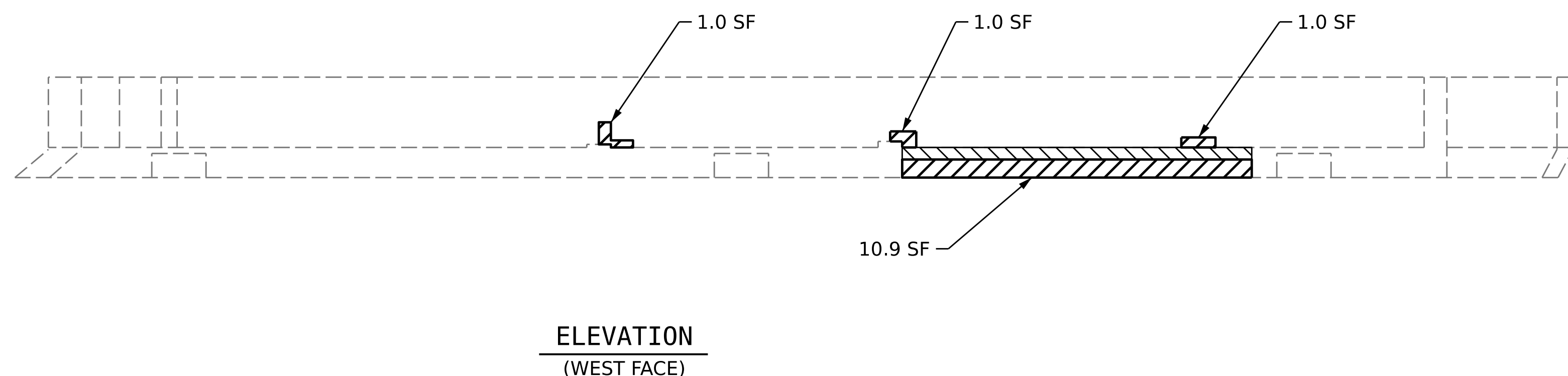
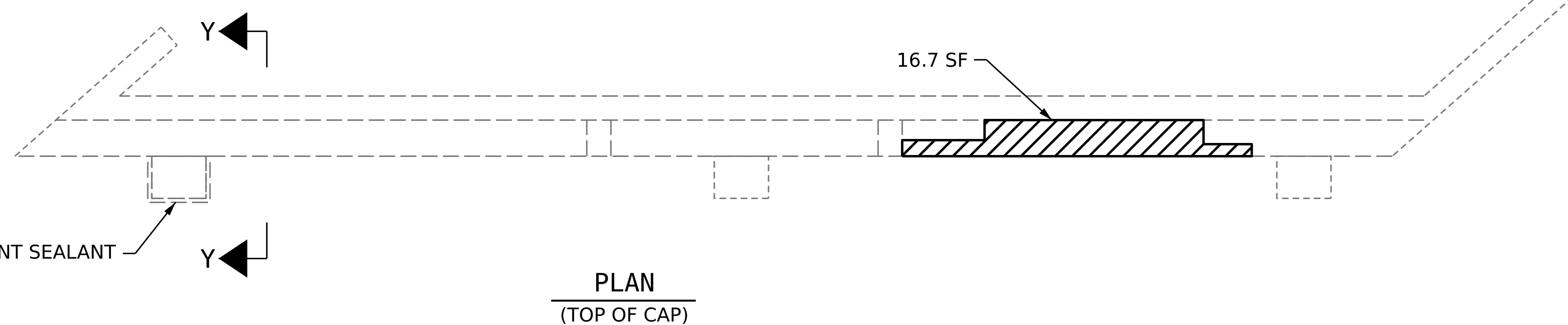
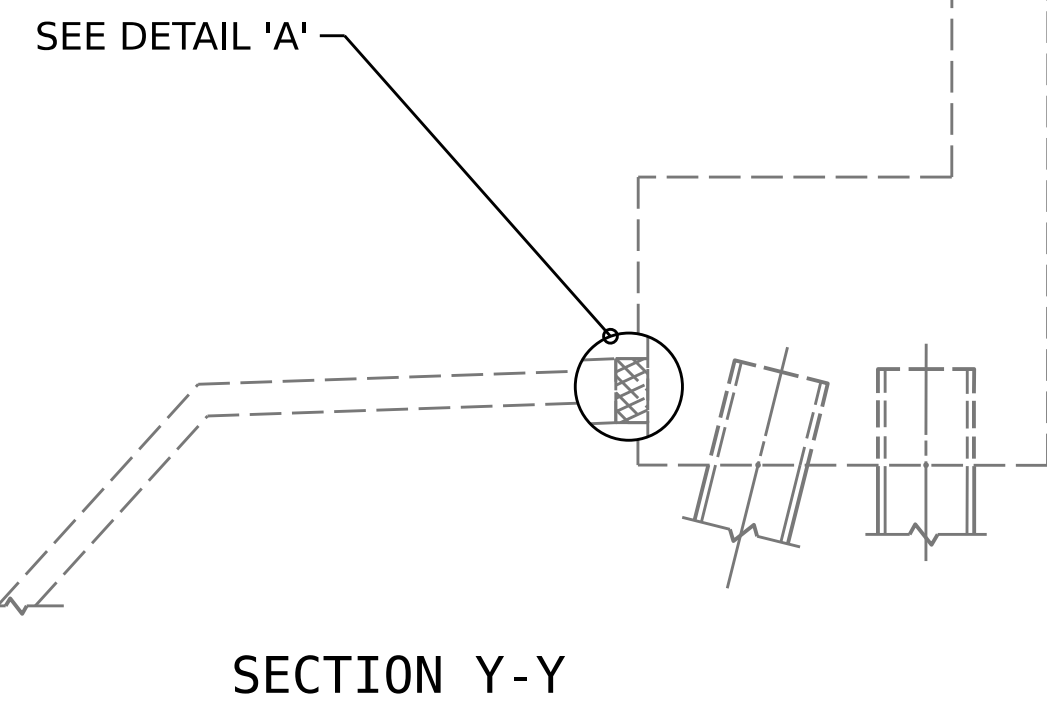
DRAWN BY : S. T. SANDOR DATE : 05/2024
CHECKED BY : W. C. SMITH DATE : 05/2024

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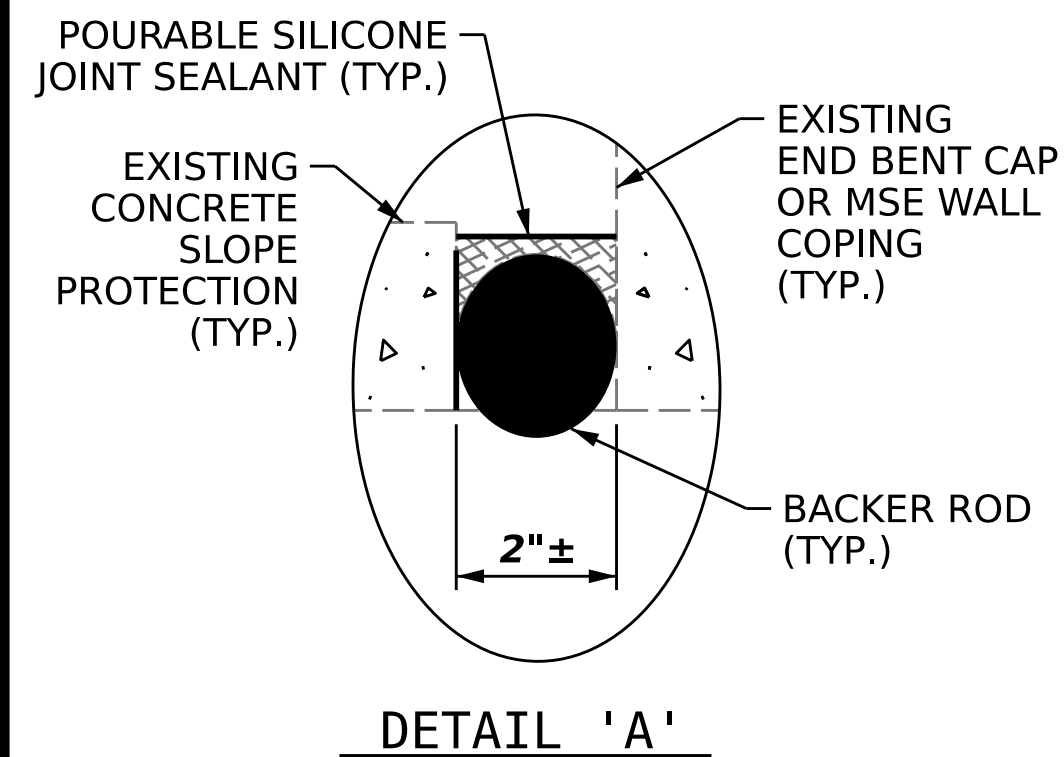
| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-15 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 22 |



END BENT 1



END BENT 2



| SUBSTRUCTURE REPAIR QUANTITY TABLE | | | | |
|------------------------------------|------------|-----------|---------|-----------|
| END BENT 1 & 2 | QUANTITIES | | | |
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 53.3 | 26.7 | | |
| CURTAIN WALL | 4.2 | 2.1 | | |
| WINGWALL | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| CURTAIN WALL | 0 | 0 | | |
| WINGWALL | | | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| CURTAIN WALL | | 0 | | |
| WINGWALL | | | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 171.4 | | |
| POURABLE SILICONE JT. SEALANT | | LINEAR FT | | LINEAR FT |
| JOINT | | 11.5 | | |

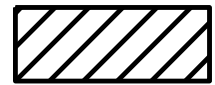



VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT. SEE REPAIR DETAILS.

NOTES

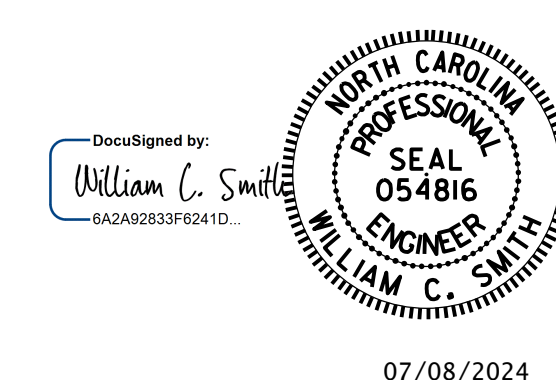
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

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

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE REPAIR
 END BENT 1 &
 END BENT 2**

DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

| REVISIONS | | | | | | SHEET NO. S1-16 TOTAL SHEETS 22 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





NOTES

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

SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 1 | QUANTITIES | | | |
|------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 18.4 | 9.2 | | |
| COLUMN | 1 | 0.5 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 107.4 | | |

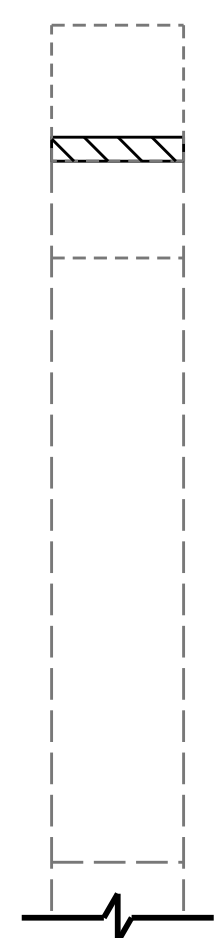
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT. SEE REPAIR DETAILS.



SPAN B
SPAN A

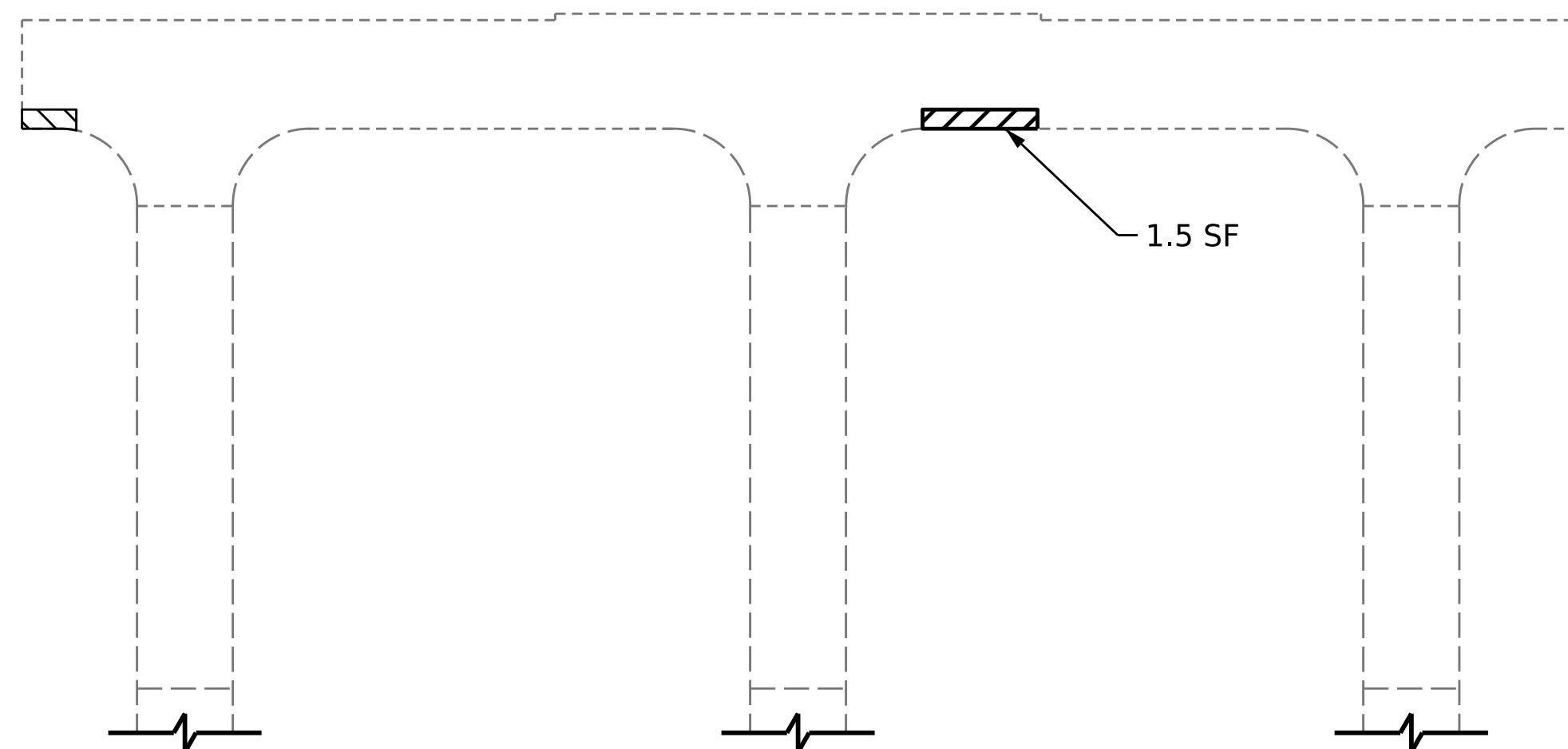
PLAN

TOP OF CAP



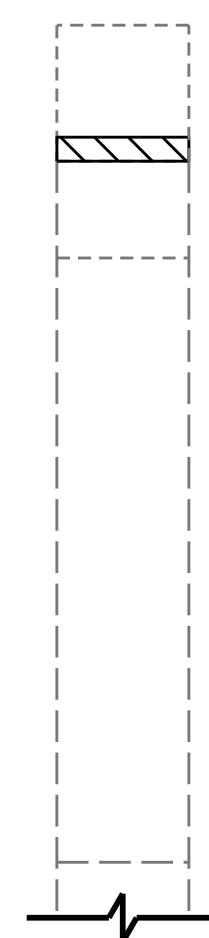
END VIEW

NORTH FACE



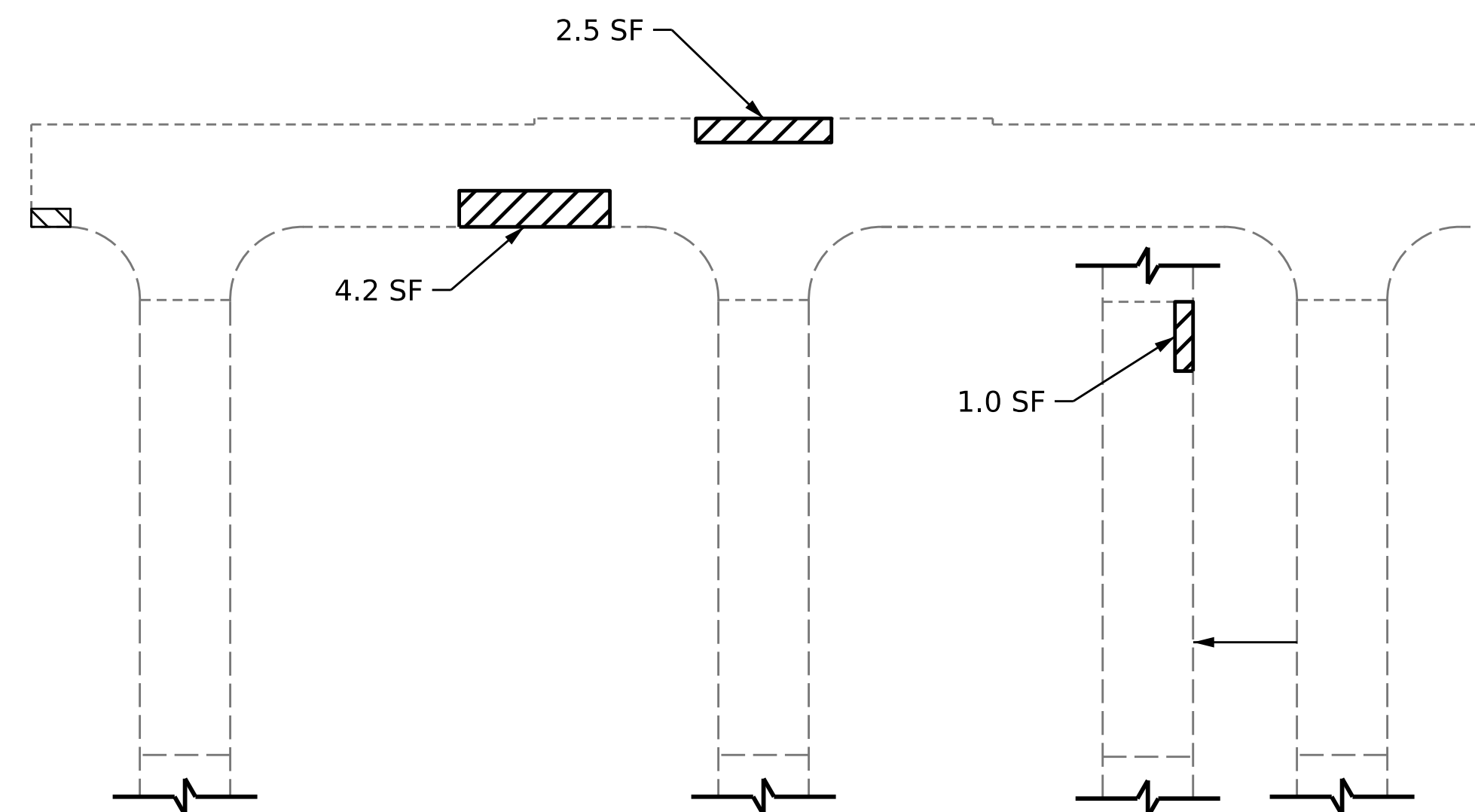
ELEVATION

WEST FACE
(LOOKING EAST)



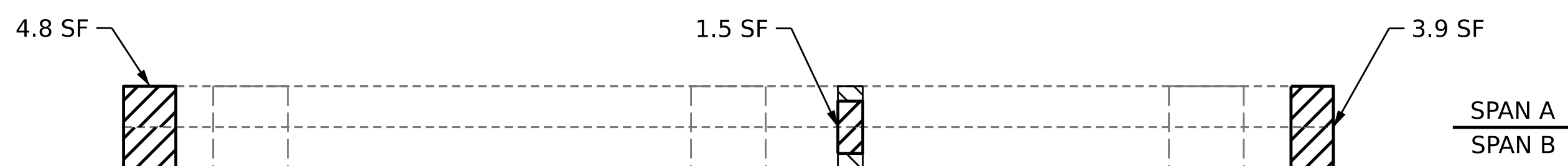
END VIEW

SOUTH FACE



ELEVATION

EAST FACE
(LOOKING WEST)

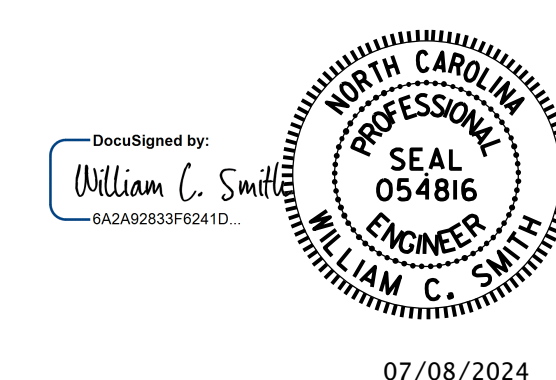


SPAN A
SPAN B

PLAN

BOTTOM OF CAP

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE REPAIR
 BENT 1**

DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | SHEET NO. S1-17 TOTAL SHEETS 22 |
|-----------|-----|-------|-----|-------|--|
| NO. | BY: | DATE: | NO. | DATE: | |
| 1 | | | 3 | | |
| 2 | | | 4 | | |





NOTES

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

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

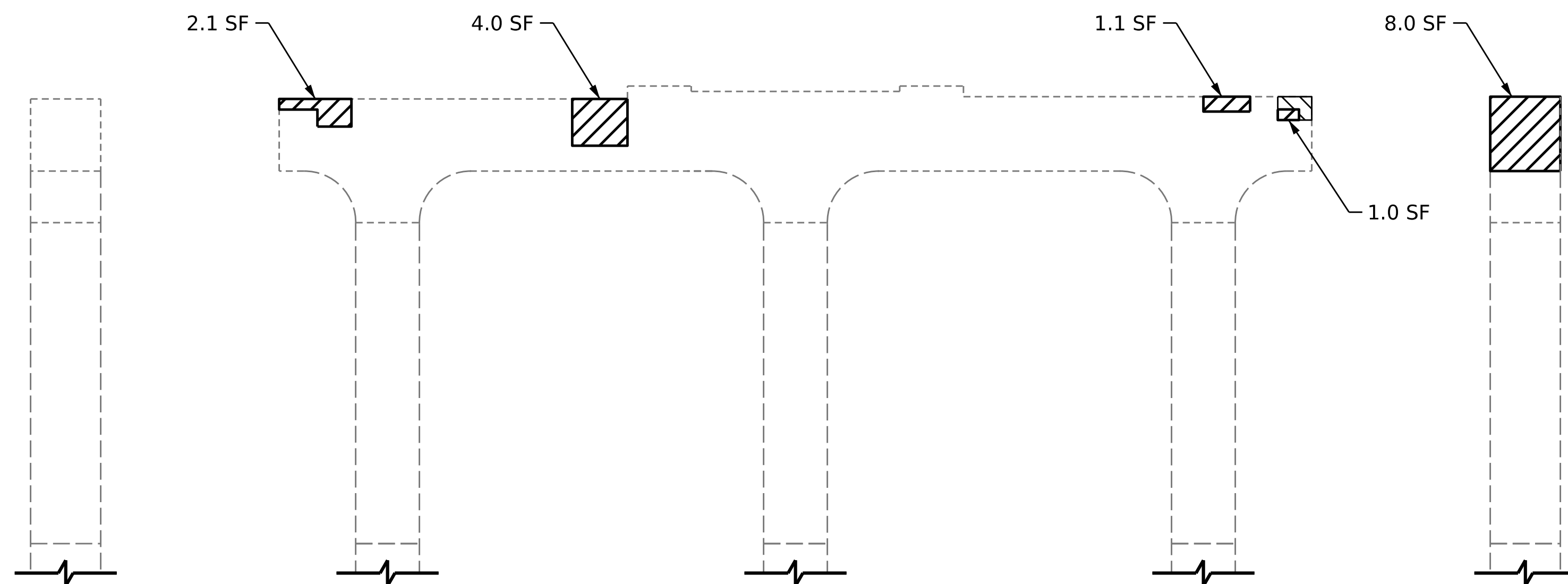
SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 2 | QUANTITIES | | | |
|-----------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| | 30.4 | 15.2 | | |
| COLUMN | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 107.4 | | |

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



PLAN
TOP OF CAP

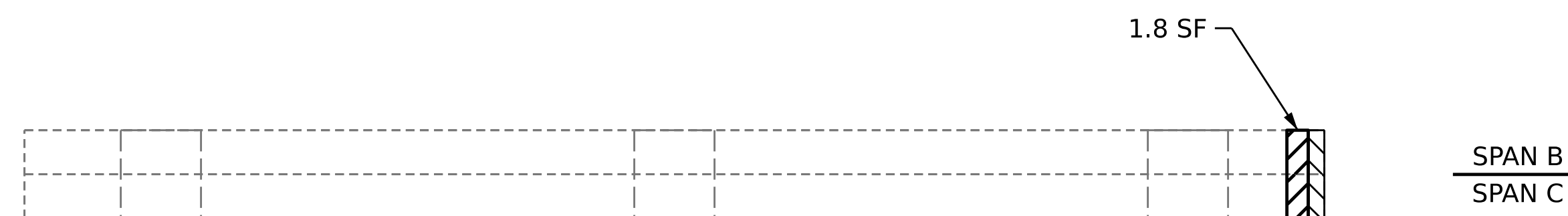


END VIEW
NORTH FACE

ELEVATION
WEST FACE
(LOOKING EAST)

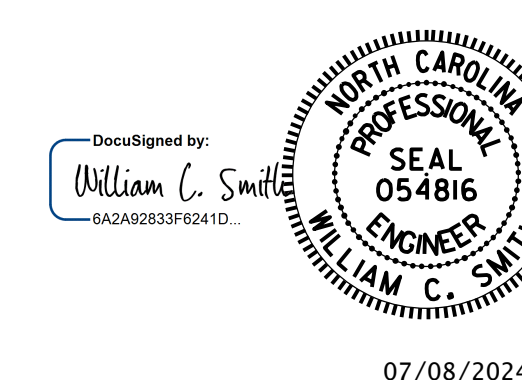
END VIEW
SOUTH FACE

ELEVATION
EAST FACE
(LOOKING WEST)



PLAN
BOTTOM OF CAP

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE REPAIR
 BENT 2**

DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 22 |

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

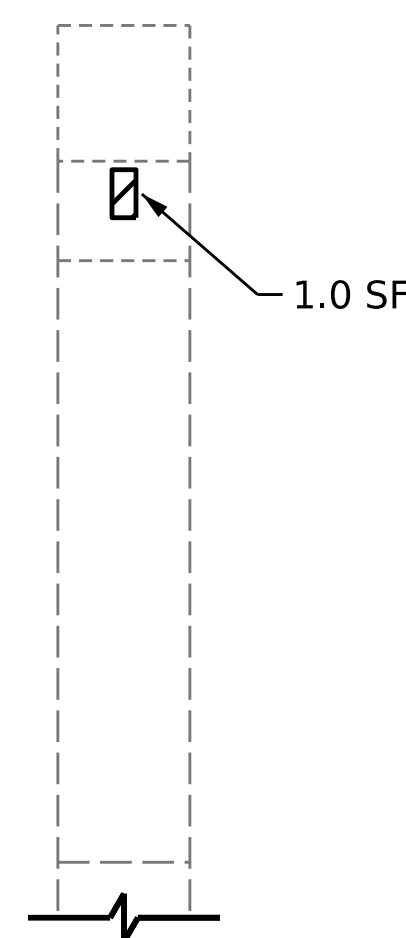
SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 3 | QUANTITIES | | | |
|------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 3.2 | 1.6 | | |
| COLUMN | 3.0 | 1.5 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 107.4 | | |

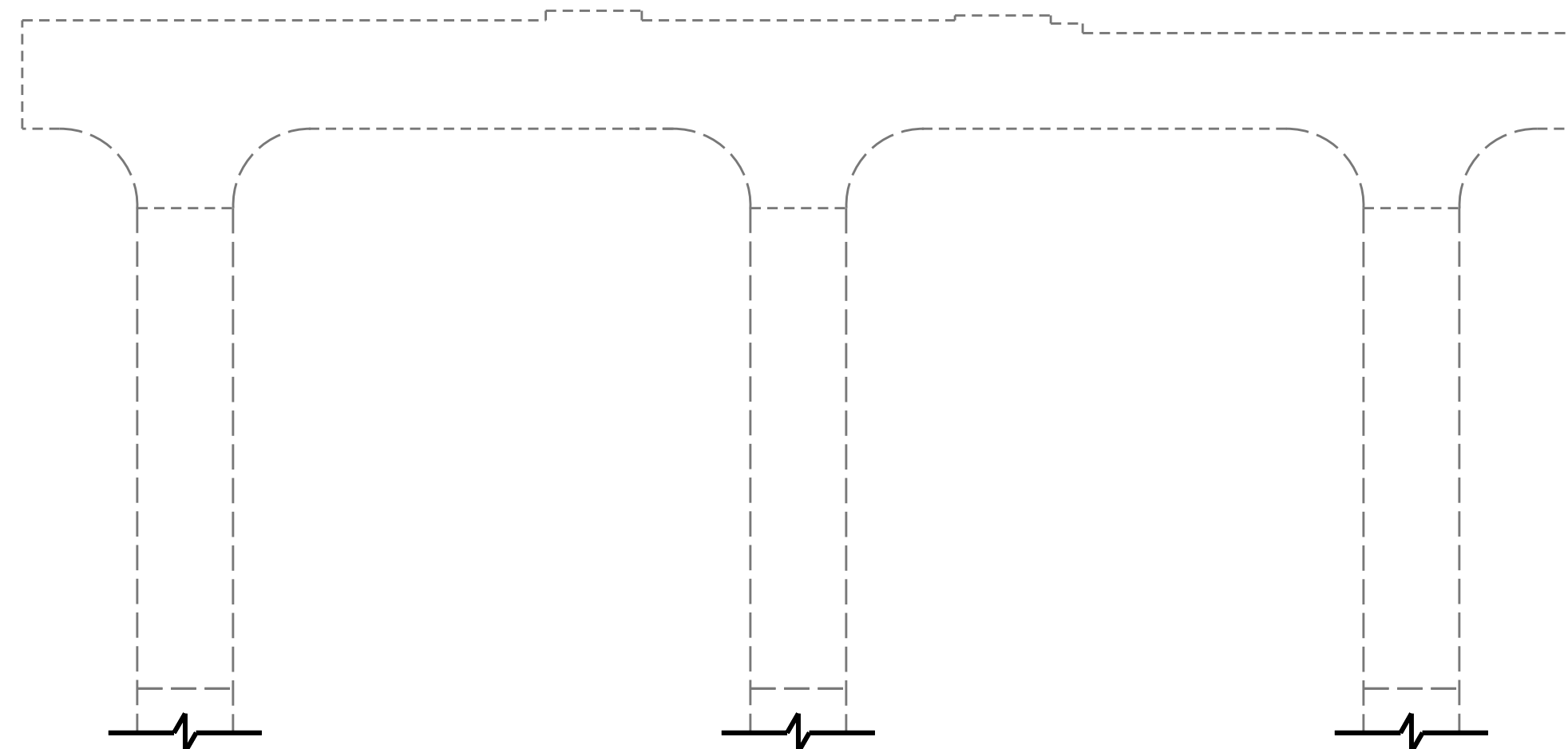
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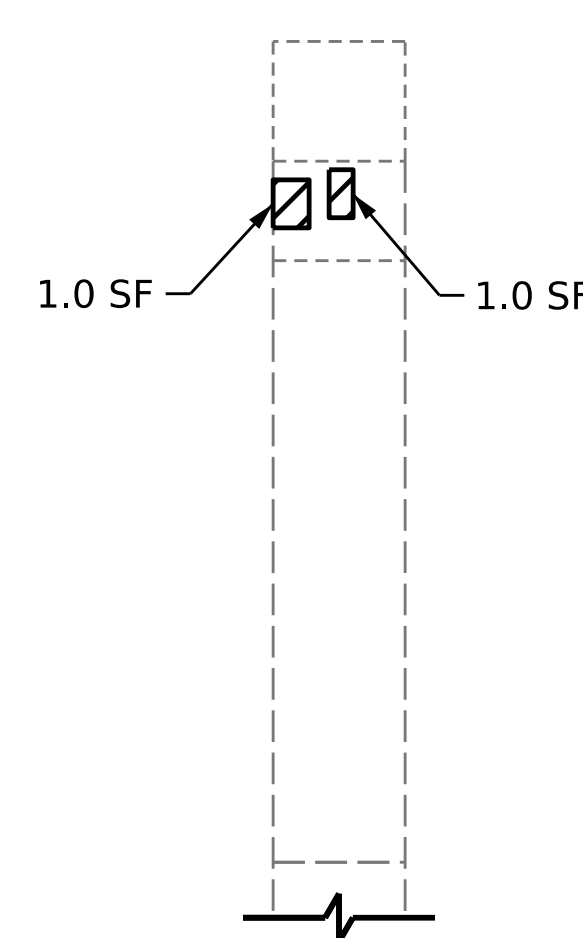
PLAN
TOP OF CAP



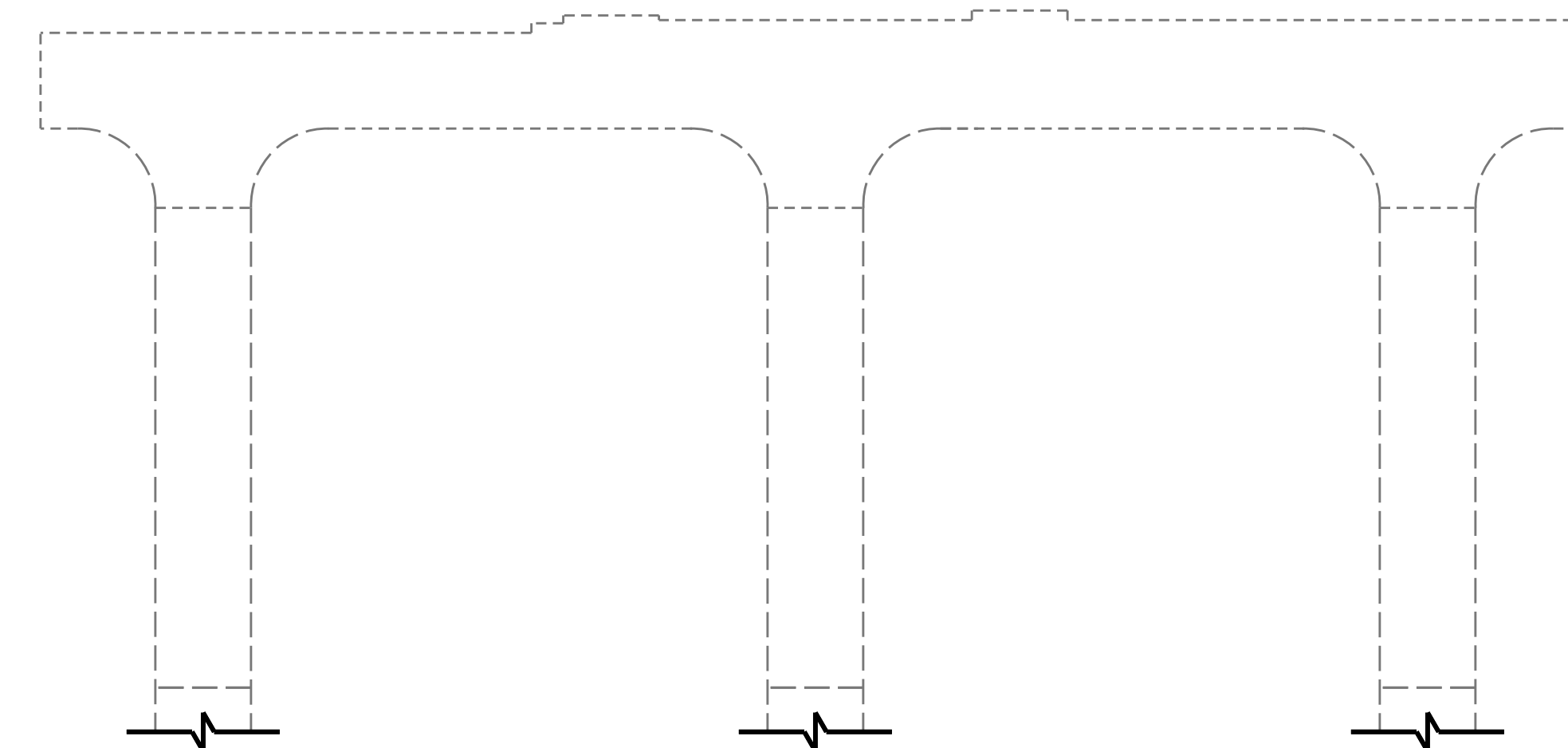
END VIEW
NORTH FACE



ELEVATION
WEST FACE
(LOOKING EAST)



END VIEW
SOUTH FACE

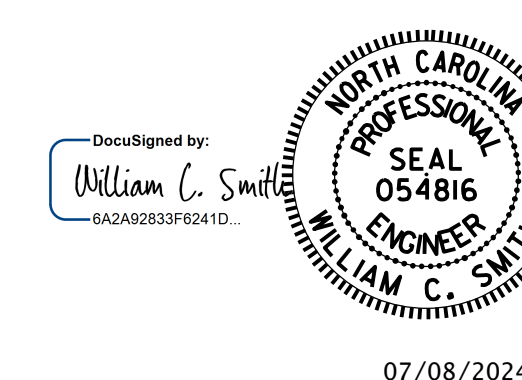


ELEVATION
EAST FACE
(LOOKING WEST)



PLAN
BOTTOM OF CAP

PROJECT NO. **4B.106413**
NASH COUNTY
BRIDGE NO. **630098**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUBSTRUCTURE REPAIR
BENT 3**

DRAWN BY : N. S. HART DATE : 05/2024
CHECKED BY : Z. MALIK DATE : 05/2024
DESIGN ENGINEER OF RECORD: _____ DATE : _____

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 22 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





NOTES

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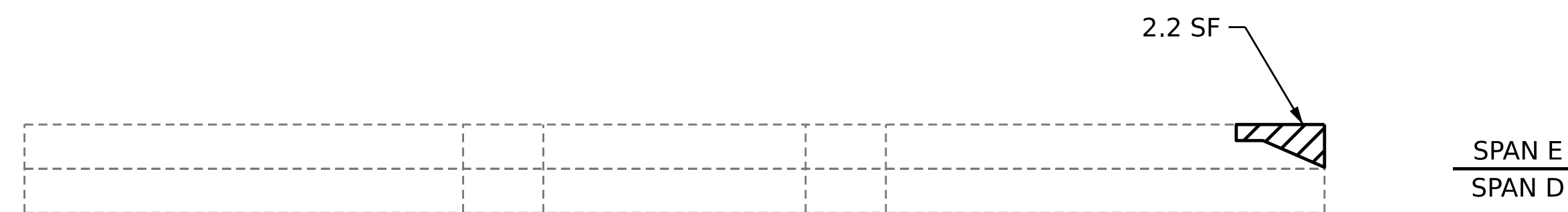
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-  CONCRETE REPAIR AREA
-  PREVIOUSLY ACCOUNTED FOR AREA
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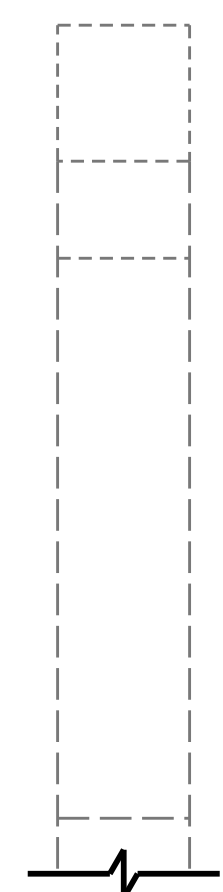
SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 4 | QUANTITIES | | | |
|------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 24.6 | 12.3 | | |
| COLUMN | 6.8 | 3.4 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 107.4 | | |

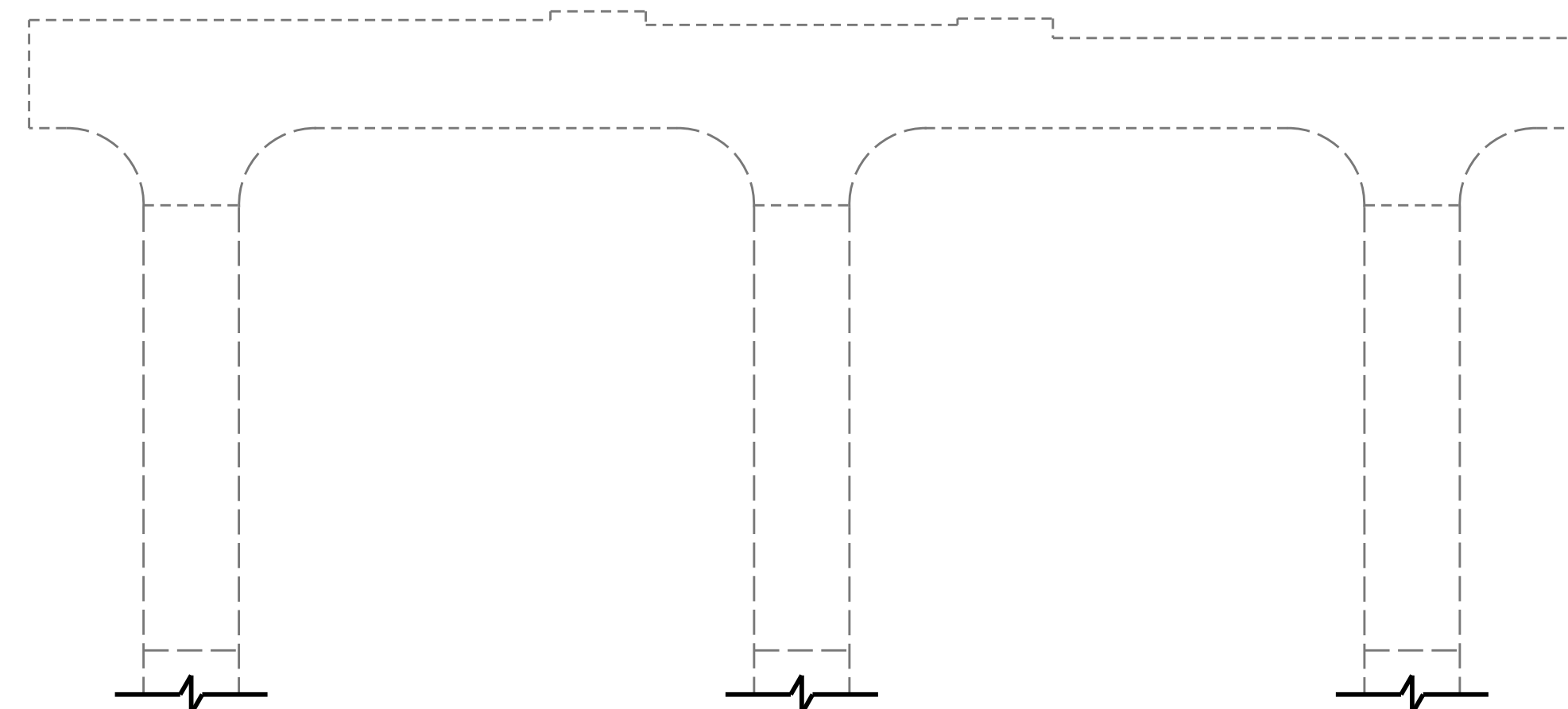
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT. SEE REPAIR DETAILS.



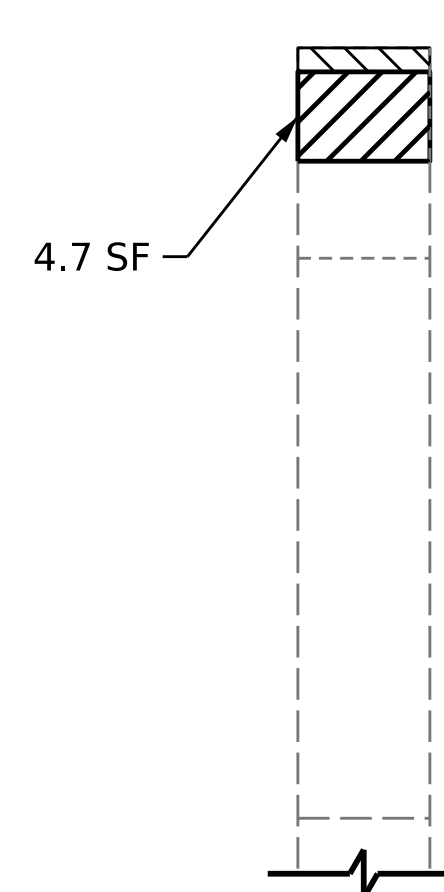
PLAN
TOP OF CAP



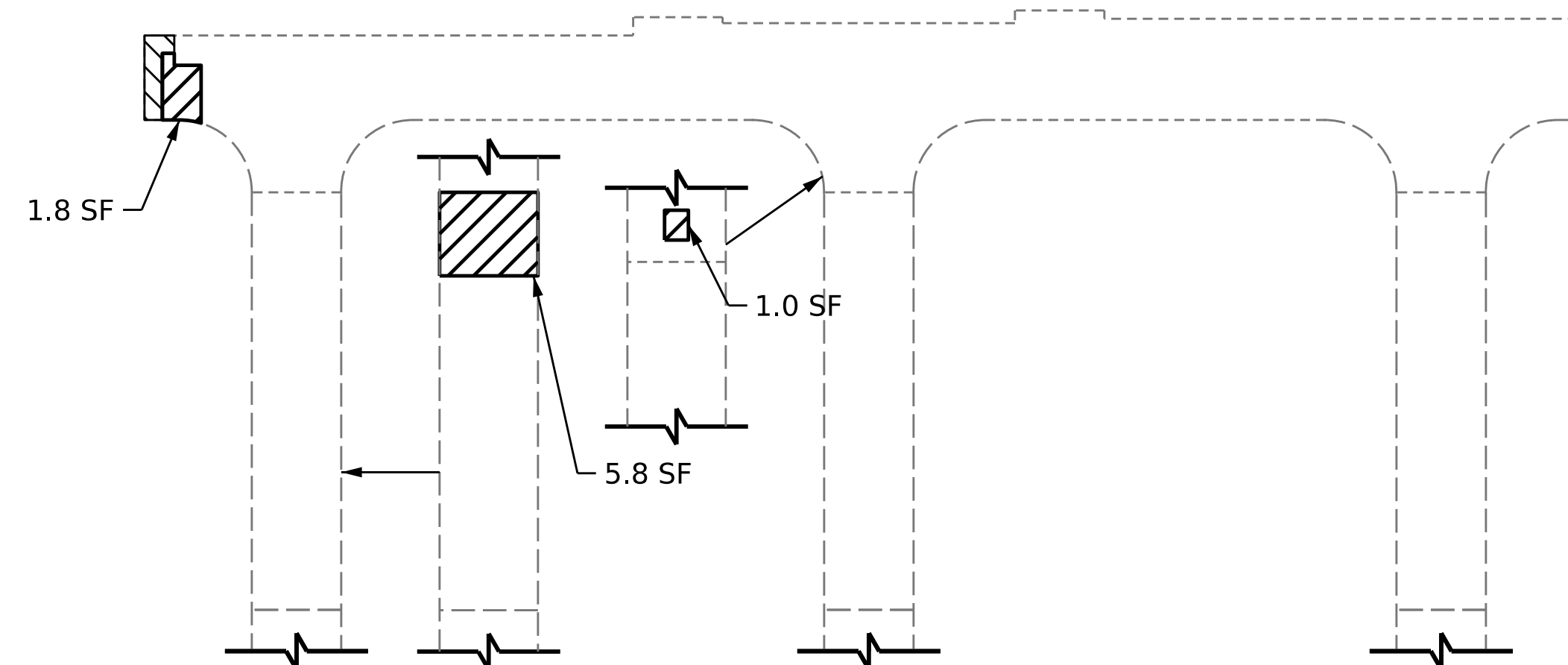
END VIEW
NORTH FACE



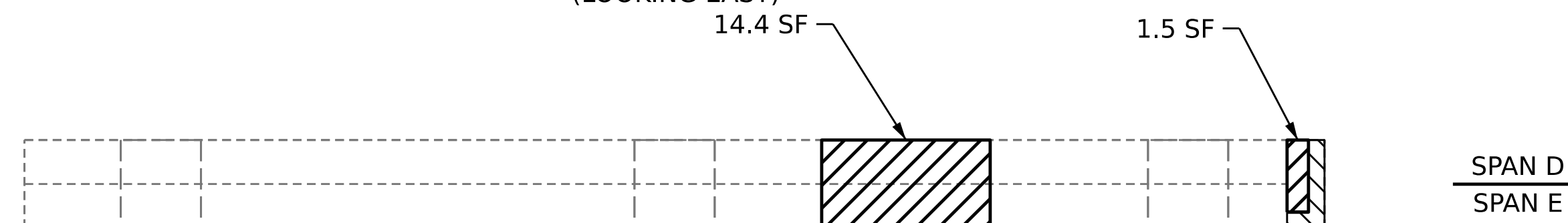
ELEVATION
WEST FACE
(LOOKING EAST)



END VIEW
SOUTH FACE

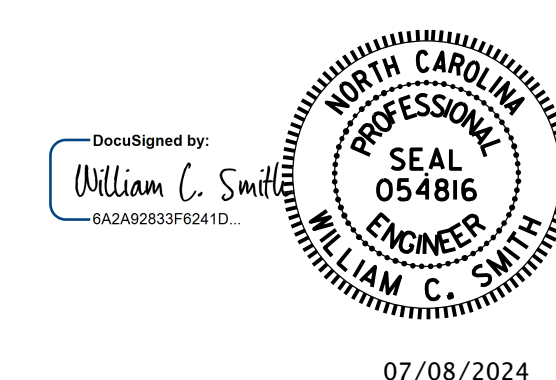


ELEVATION
EAST FACE
(LOOKING WEST)



PLAN
BOTTOM OF CAP

PROJECT NO. **4B.106413**
NASH COUNTY
BRIDGE NO. **630098**

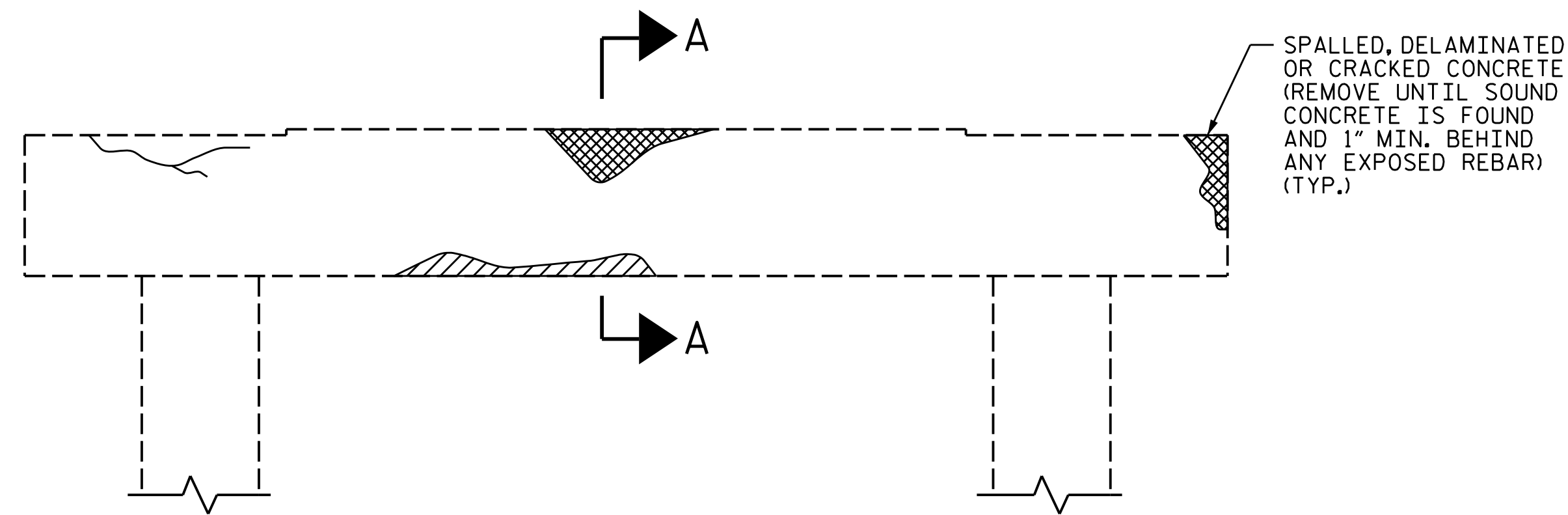


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUBSTRUCTURE REPAIR
BENT 4**

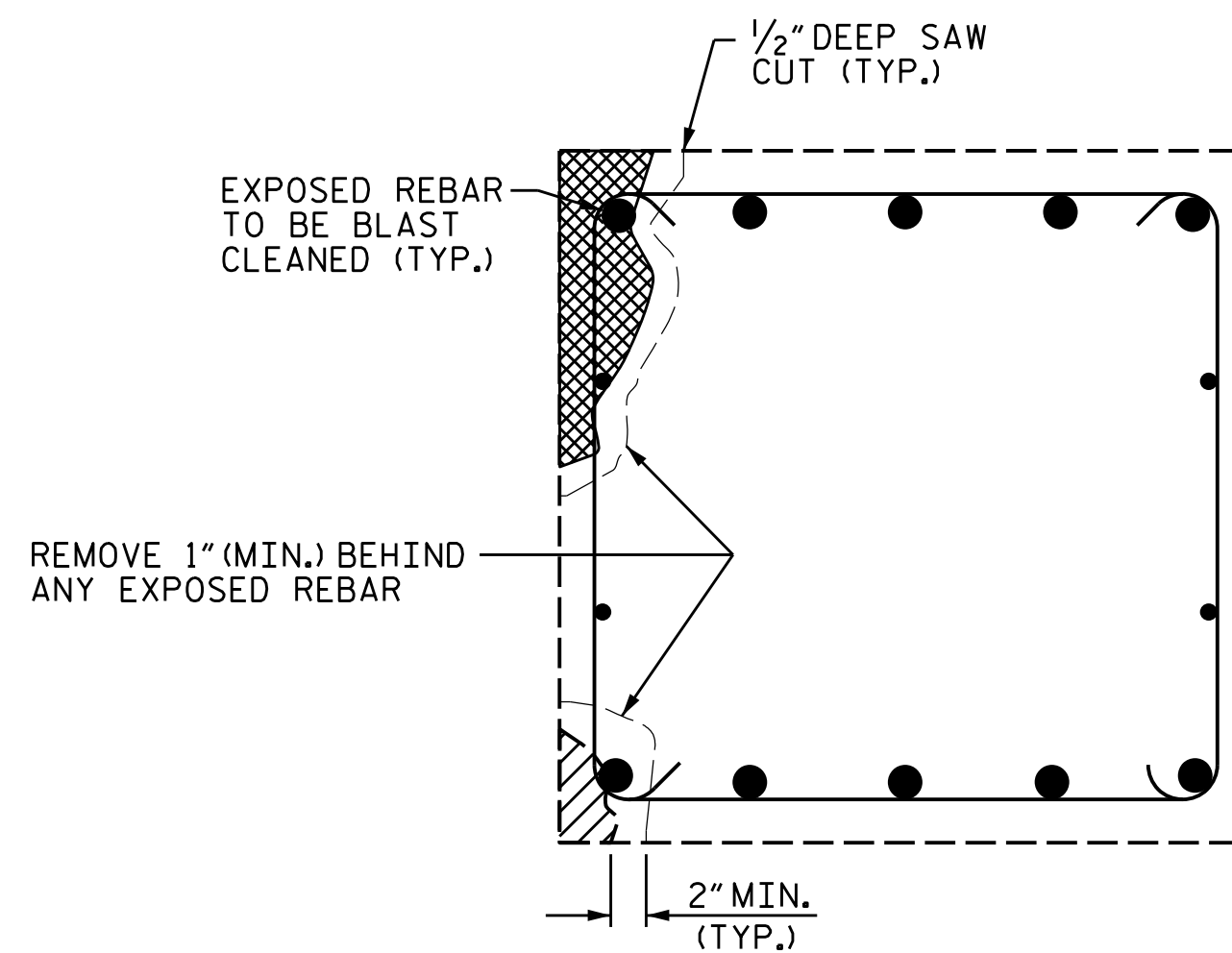
DRAWN BY : N. S. HART DATE : 05/2024
CHECKED BY : Z. MALIK DATE : 05/2024
DESIGN ENGINEER OF RECORD: _____ DATE : _____

| REVISIONS | | | | | | SHEET NO. S1-20 TOTAL SHEETS 22 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
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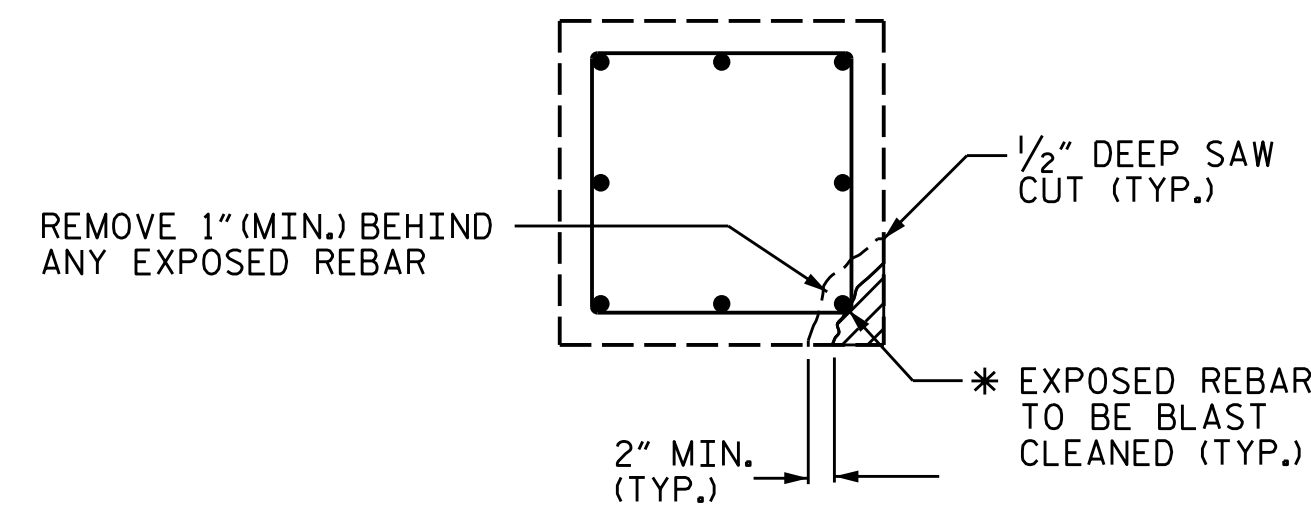


BENT CAP REPAIRS

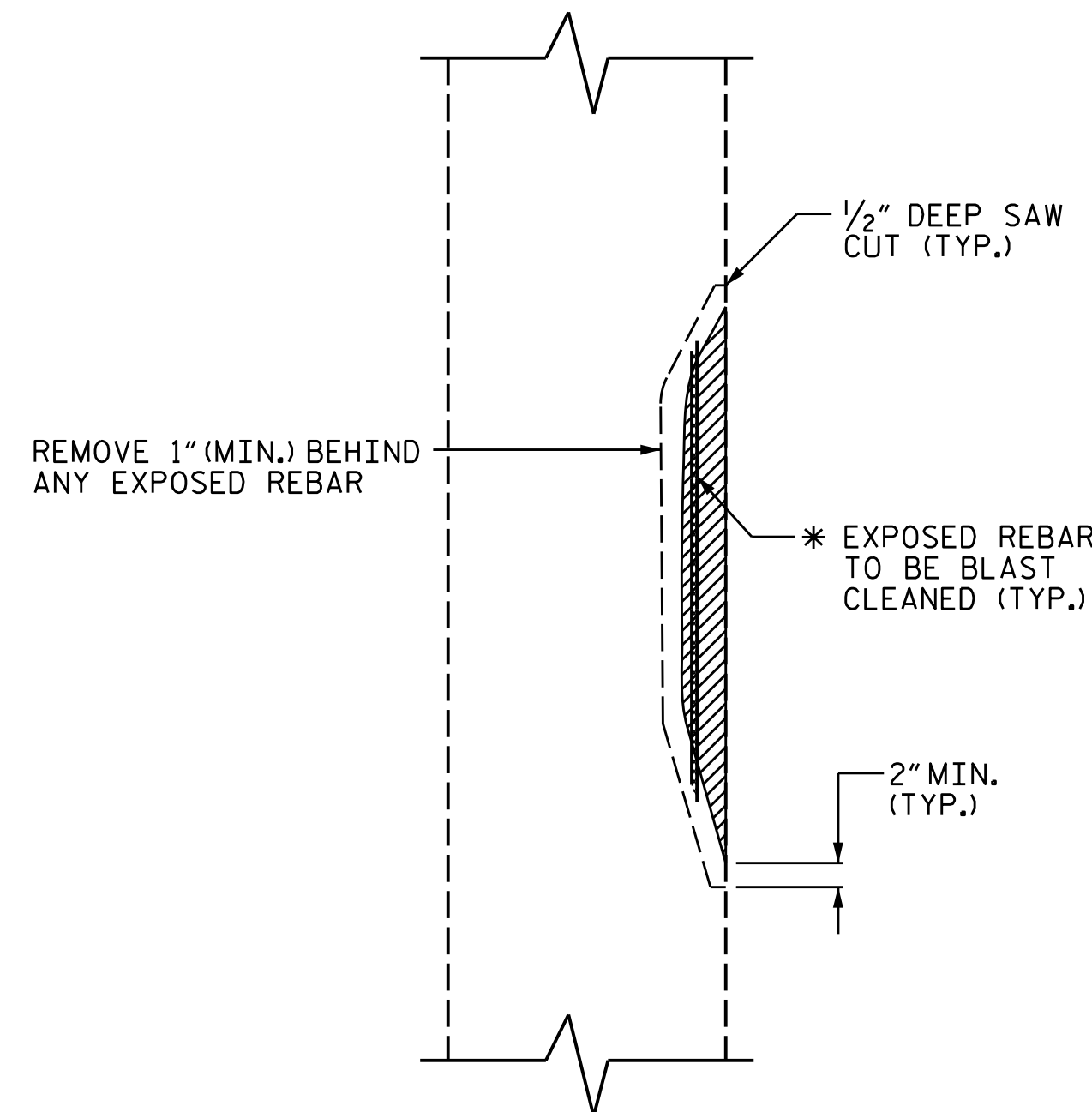


SECTION A-A

CAP REPAIR



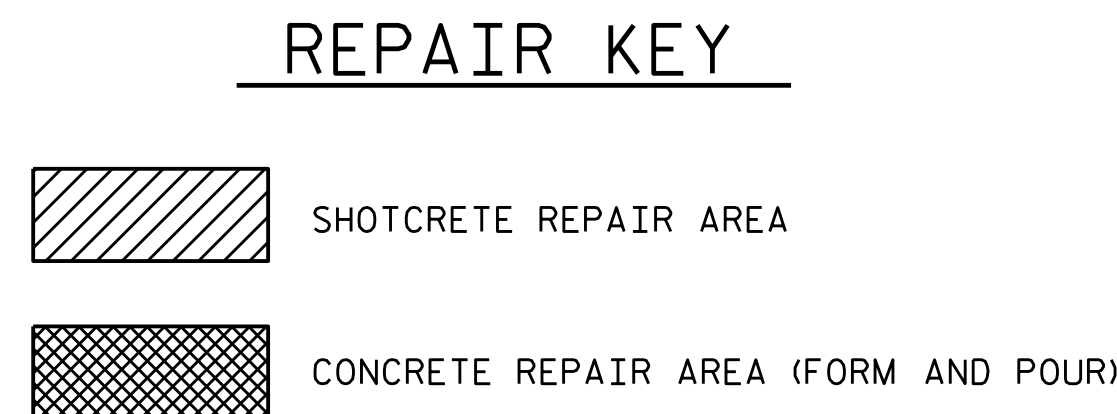
PLAN OF COLUMN



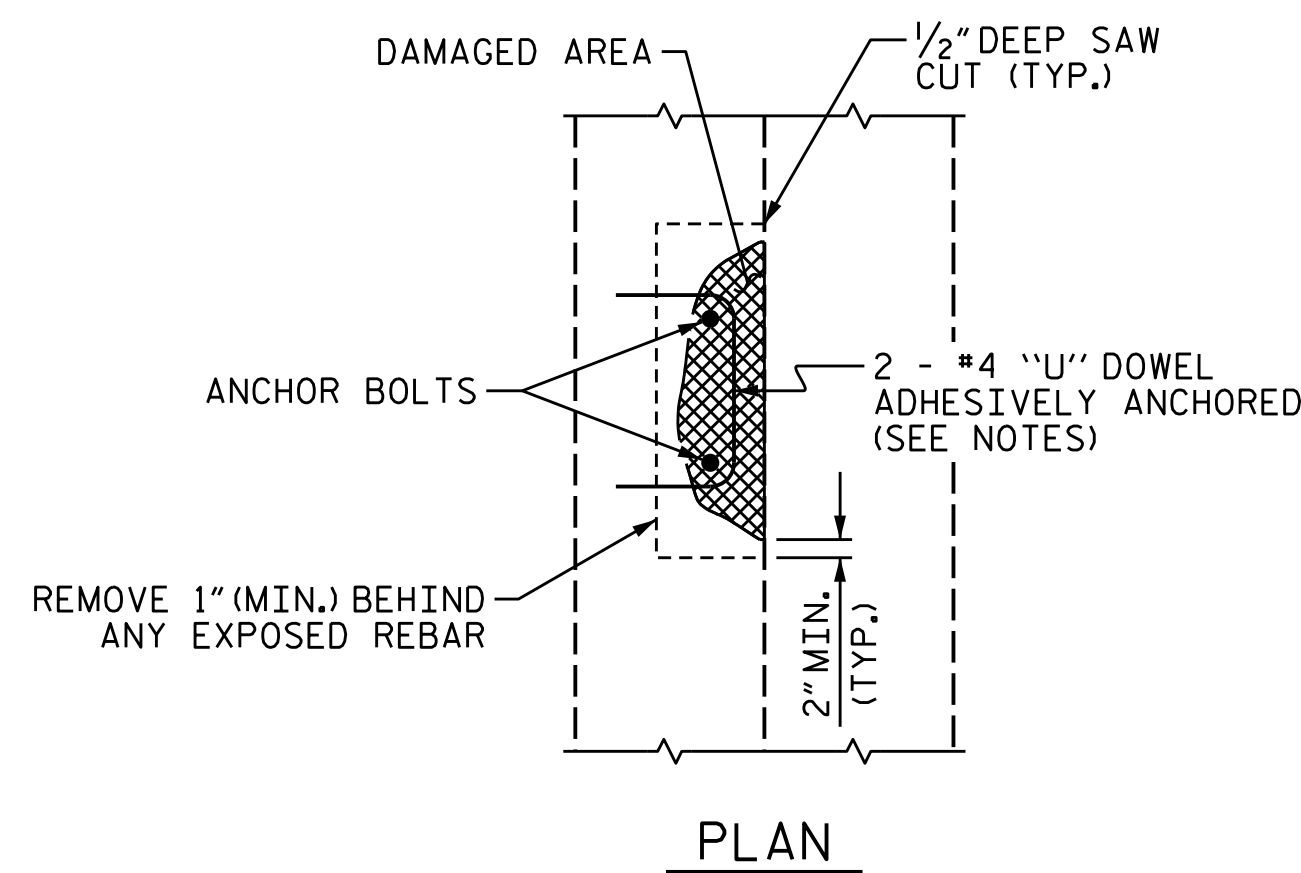
ELEVATION OF COLUMN

COLUMN REPAIR

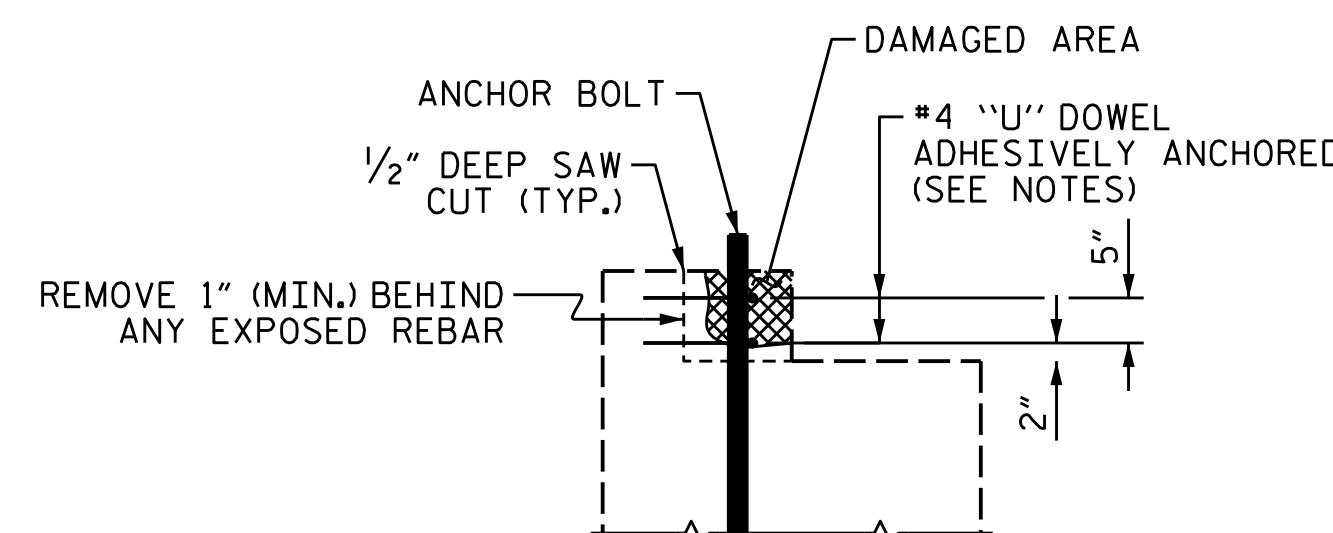
* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.



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



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.

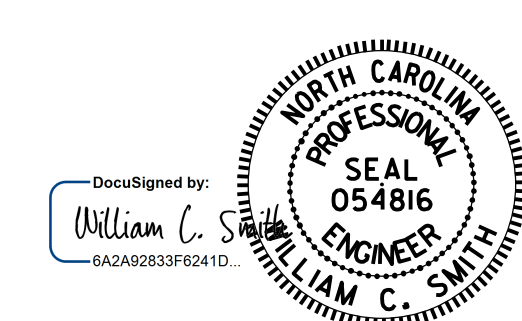
THE #4 "U" DOWELS ARE REQUIRED ONLY AROUND THE ANCHOR BOLTS. THE EXISTING REINFORCING STEEL IN THE PEDESTAL WALL SHALL BE CLEANED, STRAIGHTENED AND REMAIN IN PLACE.

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.

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.

PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630098



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

07/08/2024

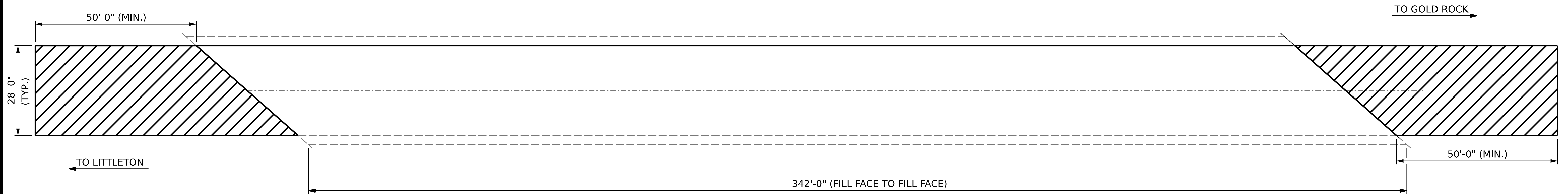
ASSEMBLED BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DRAWN BY : NAP 8/18
 CHECKED BY :

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| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S1-21 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 22 |

NOTES

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1½" DEPTH OF NEW ASPHALT PAVING. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1½" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

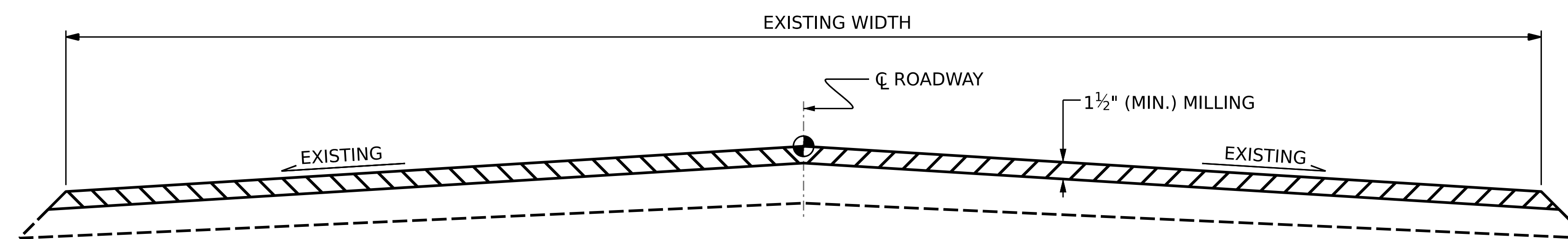


INCIDENTAL MILLING

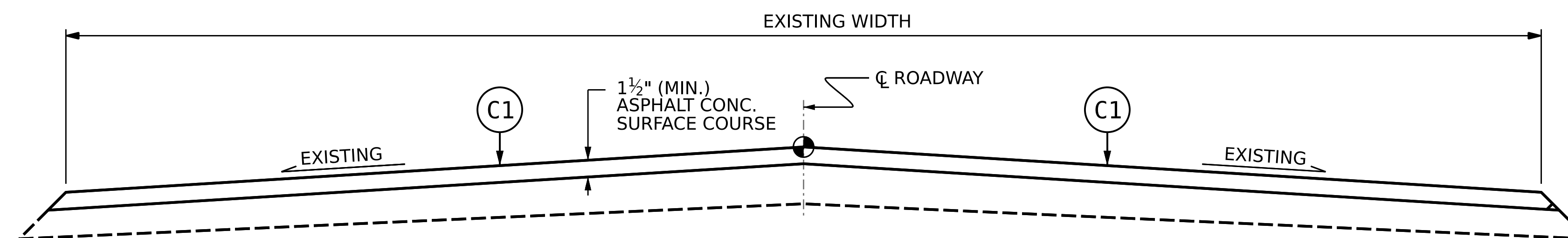
PLAN

C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" DEPTH.

| SUMMARY OF QUANTITIES | | |
|---|-----------|--------|
| | ESTIMATE | ACTUAL |
| INCIDENTAL MILLING | 411.1 SY | |
| ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | 40.0 TONS | |
| ASPHALT BINDER FOR PLANT MIX | 5.0 TONS | |



TYPICAL ROADWAY MILLING SECTION



TYPICAL PROPOSED ROADWAY SECTION

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630098**

DocuSigned by:
 William C. Smith
 0A2A9283F62410...

 07/08/2024

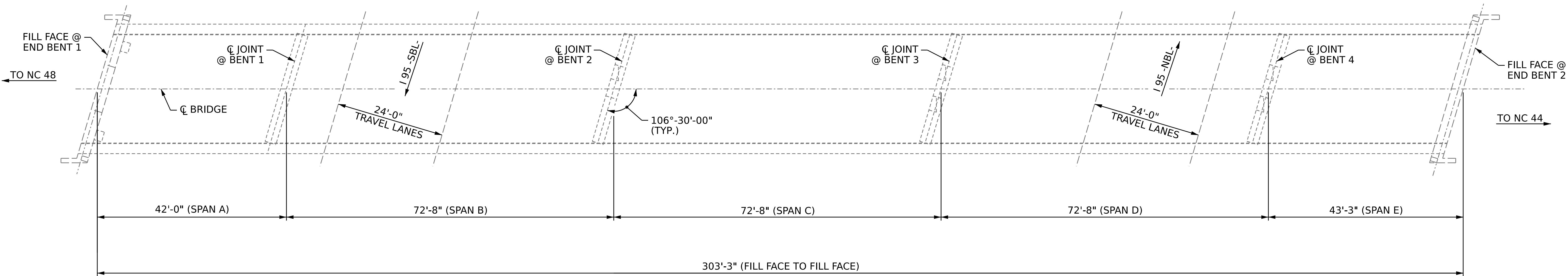
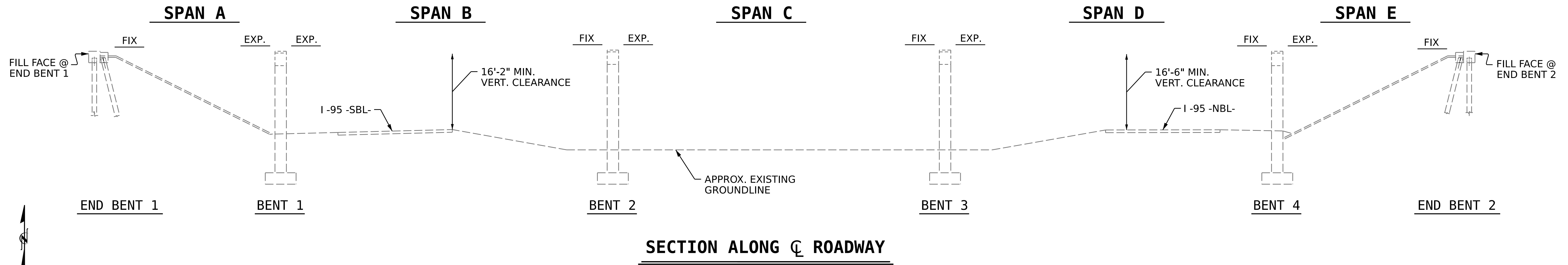
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

APPROACH MILLING & TYPICAL ROADWAY SECTIONS

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: DATE :

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|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S1-22 |
| 2 | | | 4 | | | TOTAL SHEETS 22 |



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

NOTES

- PROFILE INFORMATION IS TAKEN FROM ORIGINAL PLANS AND INSPECTION REPORT DATED 07/14/2022.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.
- BEFORE CLEANING AND PAINTING WITH HRCSA BEGINS ON EXPANSION BEARINGS, THE SPAN EXPANSION END SHALL BE JACKED TO A MINIMAL HEIGHT, BUT ADEQUATELY TO ALLOW REMOVAL OF PACK RUST BETWEEN BEARING PLATES. SPAN END SHALL REMAIN RAISED UNTIL AFTER CLEANING AND PAINTING IS COMPLETE, AT WHICH TIME SPAN END MAY BE LOWERED, AND JACKING EQUIPMENT AND OTHER NECESSITIES MAY BE REMOVED.
- ALL WORK REQUIRING JACKING SHALL BE COMPLETE PRIOR TO BRIDGE DECK OVERLAY WORK AND INSTALLATION OF BRIDGE DECK JOINTS AND SEALS.

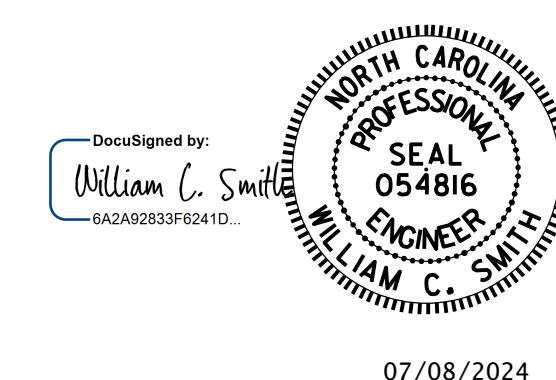
SCOPE OF WORK

- PARTIALLY REMOVE TOP OF BRIDGE DECK CONCRETE BY SCARIFICATION AND HYDRO-DEMOLITION METHODS.
- PERFORM CONCRETE DECK REPAIRS IN PREPARED AREAS.
- OVERLAY PREPARED TOP OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE (LMC).
- DEMOLISH EXISTING BRIDGE DECK JOINTS.
- RECONSTRUCT BRIDGE JOINTS AND INSTALL BACKER ROD AND POURABLE SILICONE JOINT SEALANT.
- GROOVE LATEX MODIFIED CONCRETE BRIDGE DECK.
- PERFORM TYPE II BRIDGE JACKING AT EXPANSION BEARINGS SPAN ENDS.
- CLEAN AND PAINT EXISTING BEARINGS WITH HRCSA.
- REMOVE UNSOUND CONCRETE AND PROPERLY PREPARE AREAS FOR CONCRETE AND SHOTCRETE REPAIRS.
- REPAIR SUBSTRUCTURE USING CONCRETE AND SHOTCRETE.
- REMOVE DEBRIS FROM TOP OF EXISTING BENT CAPS AND APPLY EPOXY COATING.
- MILL AND PAVE ASPHALT ROADWAY APPROACHES.

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

RESIDENT ENGINEER _____ DATE _____

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**

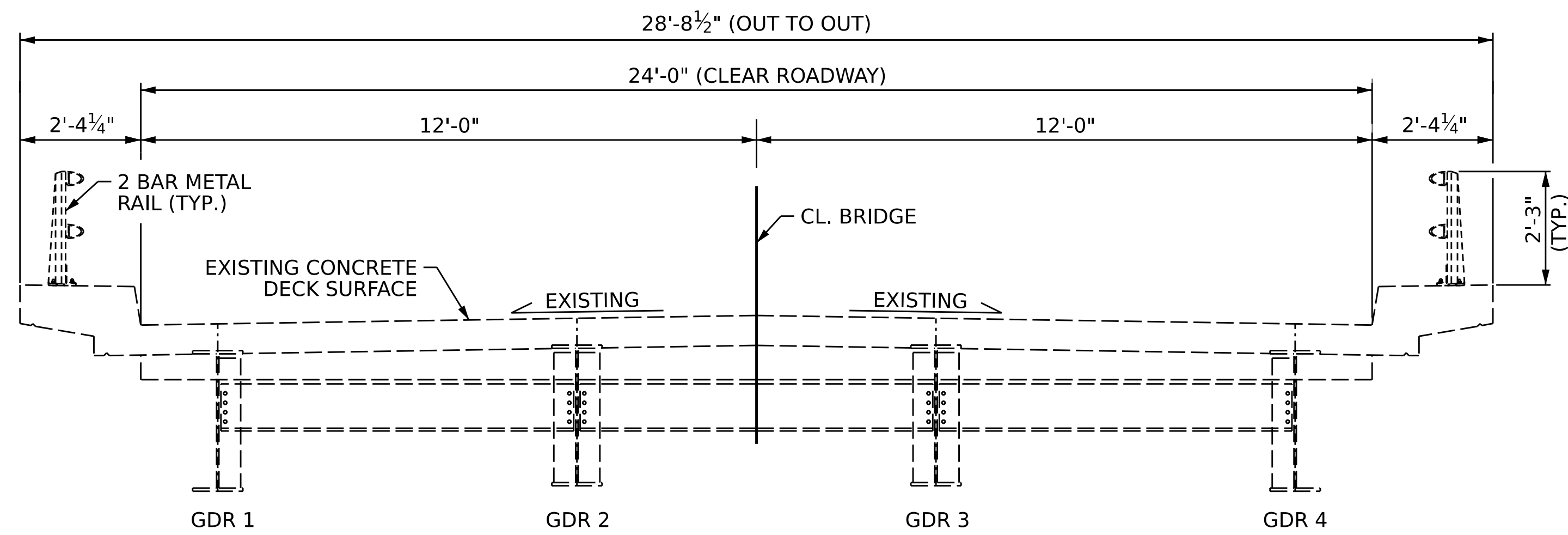


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON S.R. 1515
 OVER I-95
 BETWEEN NC 48 AND NC 44

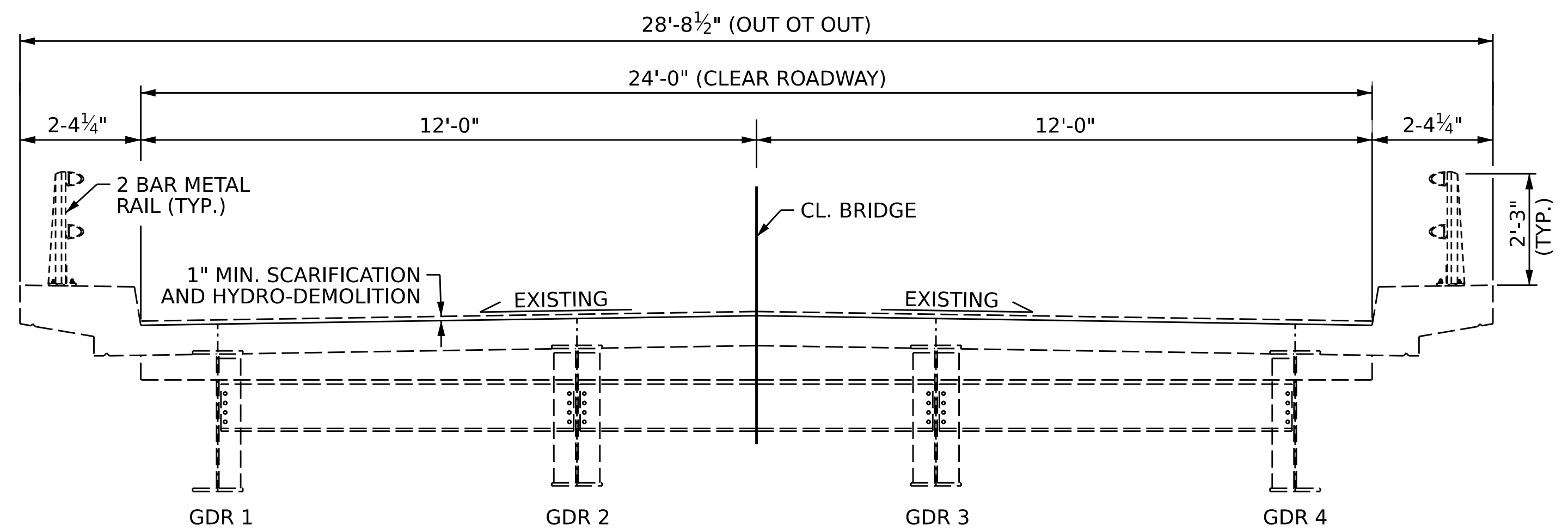
DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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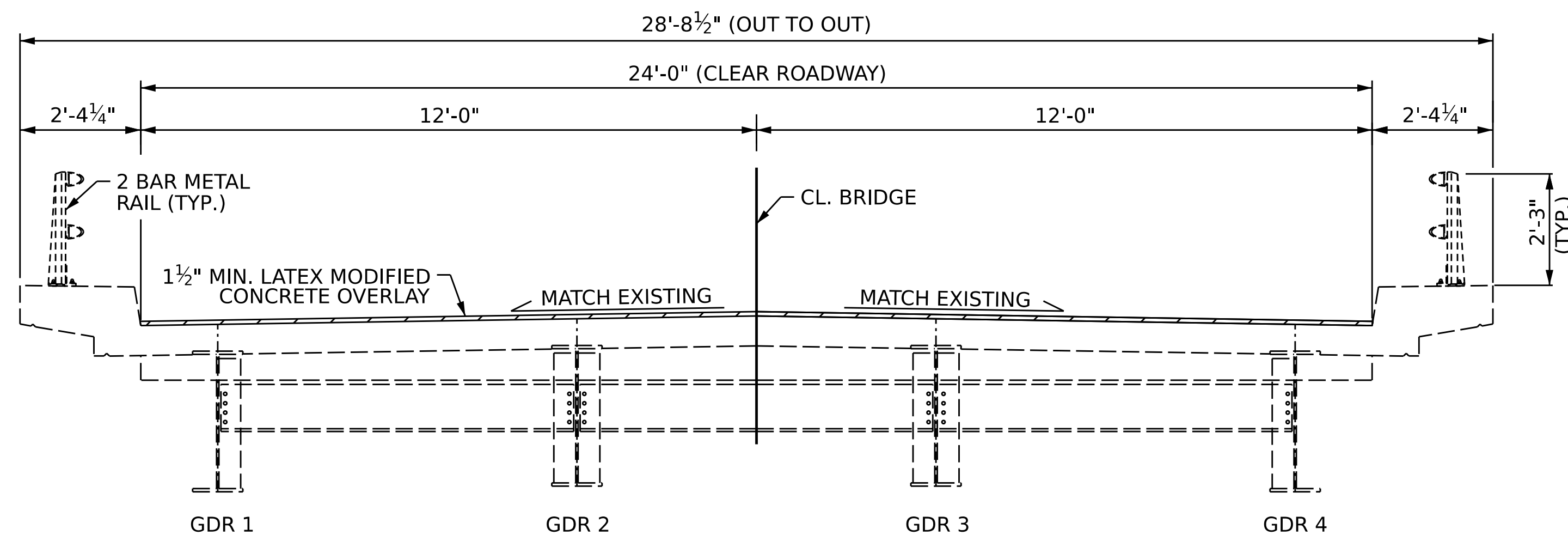
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| NO. | BY: | DATE: | NO. | BY: | DATE: | S2-01 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |



TYPICAL SECTION
(EXISTING) (SHOWING DIAPHRAGMS AT BENTS)



TYPICAL SECTION
(DECK PREPARATION) (SHOWING DIAPHRAGMS AT BENTS)



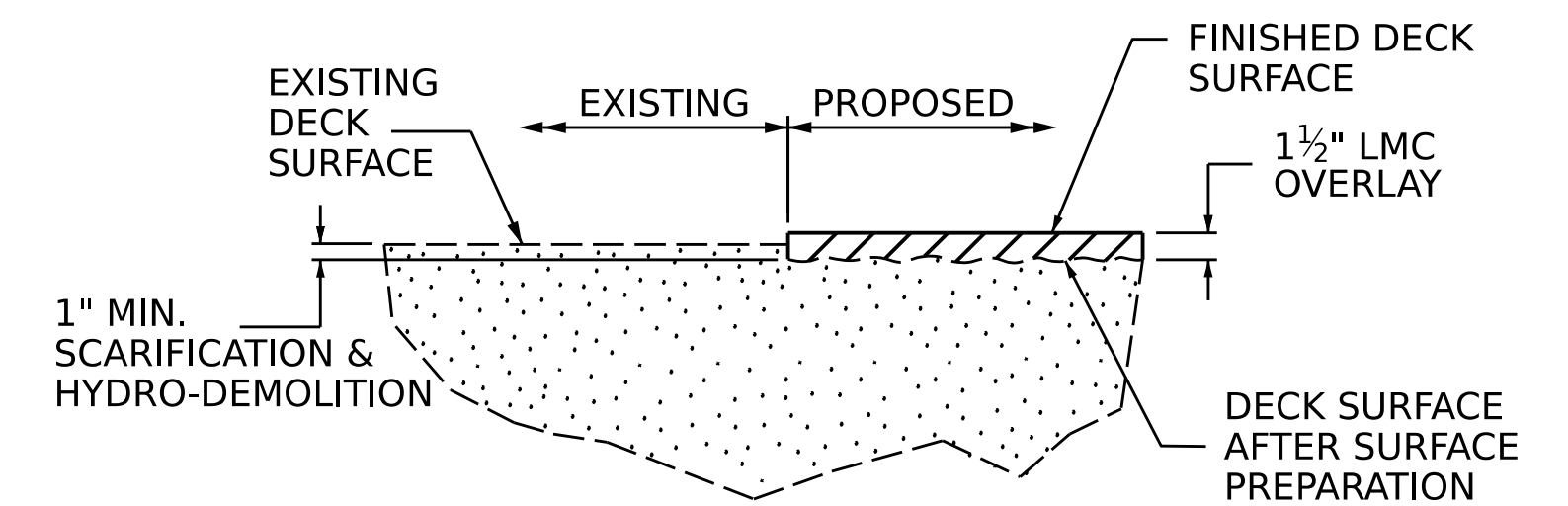
TYPICAL SECTION
(PROPOSED) (SHOWING DIAPHRAGMS AT BENTS)

NOTES

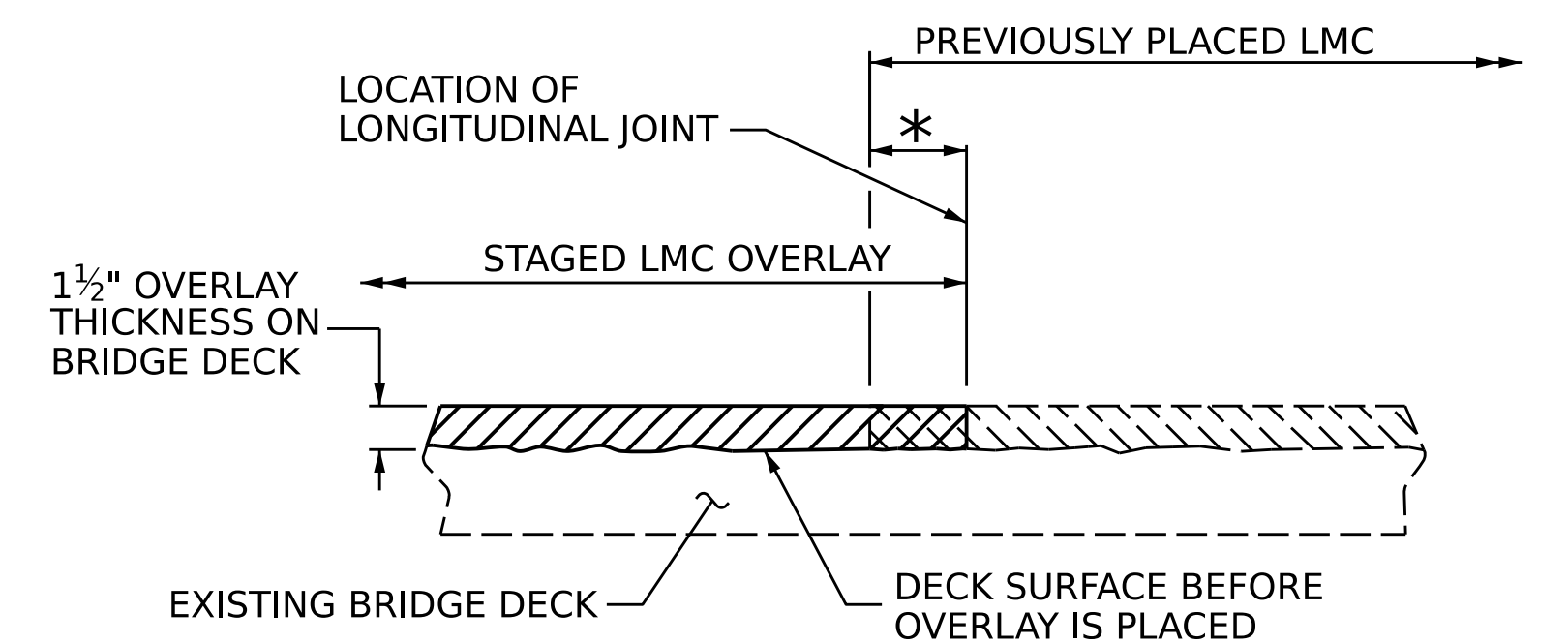
FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND LATEX MODIFIED CONCRETE (LMC) PLACEMENT, SEE ELSEWHERE IN THE CONTRACT DOCUMENTS.

WHEN PREPARING THE SURFACE FOR LMC OVERLAY ADJACENT TO THE PREVIOUSLY PLACED LMC STAGE, THE PREVIOUSLY PLACED LMC SHALL BE SAW-CUT TO THE FULL DEPTH OF THE LMC AT THE CENTERLINE OF THE BRIDGE AND ALL LMC IN THE 4\"/>

THE CONTRACTOR IS ALERTED TO THE FACT THAT THERE ARE MANY AREAS IN THE EXISTING BRIDGE DECK WHERE CONCRETE COVER OVER THE TOP MAT OF REINFORCING STEEL IS APPROXIMATELY 1/2\"/>



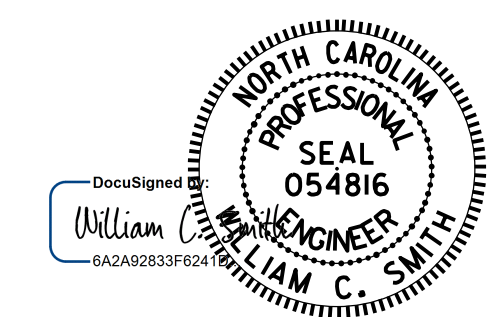
DETAIL OF LMC OVERLAY



SECTION THRU DECK
STAGED LMC OVERLAY JOINT

* 4" OVERLAP BETWEEN OVERLAYS

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION AND SURFACE PREPARATION DETAILS

DRAWN BY : E. BAYISSA DATE : 05/2024
 CHECKED BY : F. LEA DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
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| 1 | | | 3 | | | 23 |
| 2 | | | 4 | | | |

DECK SURFACE REPAIR QUANTITY TABLE


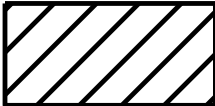
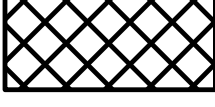
DECK SURFACE REPAIR - SPAN A

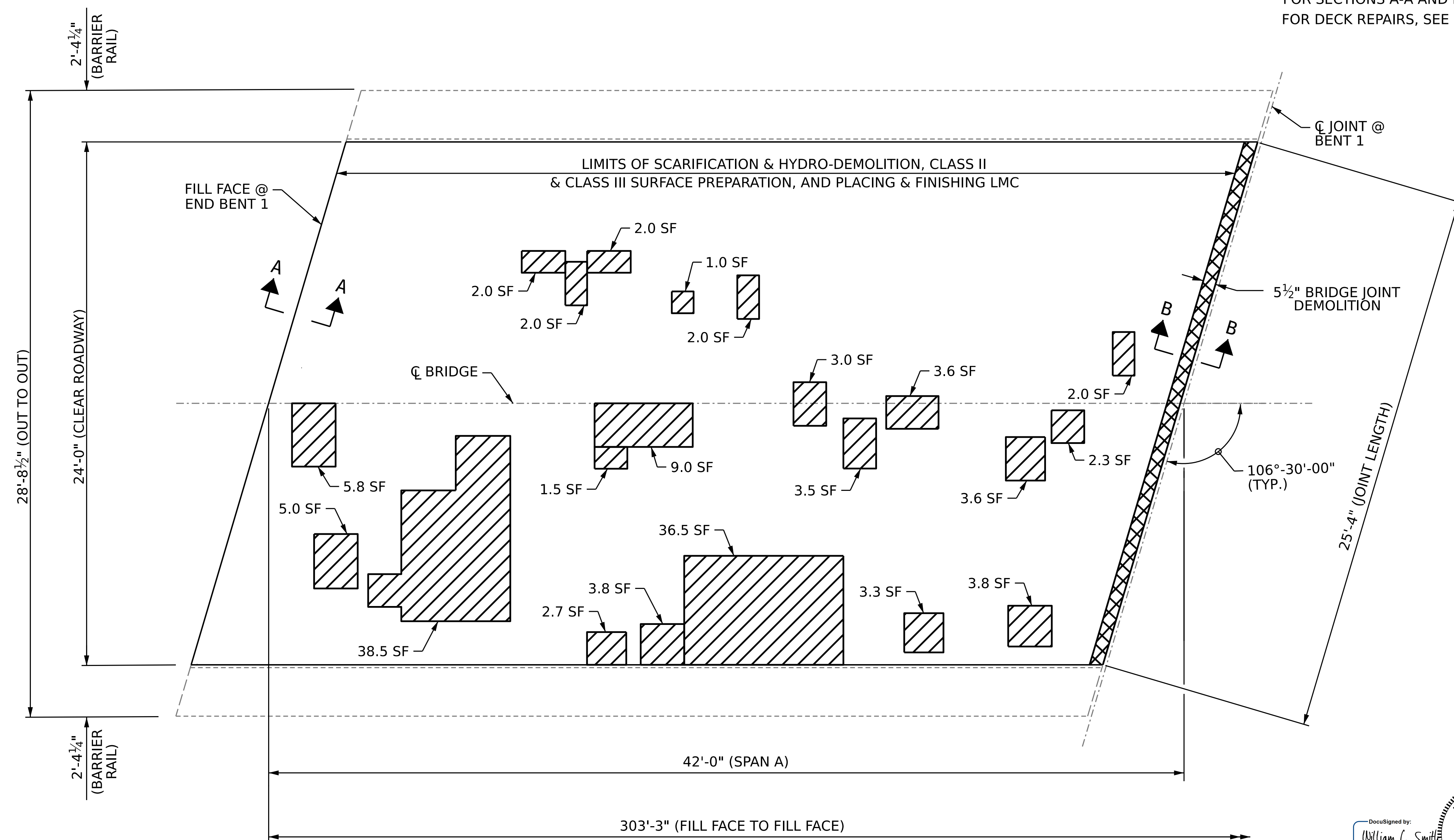
| | ESTIMATE | ACTUAL |
|---|----------------|--------|
| SCARIFYING BRIDGE DECK | 110.6 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 110.6 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 15.2 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 5.8 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 110.6 SQ. YDS. | |
| GROOVING BRIDGE DECK | 875.00 SF | |
| BRIDGE JOINT DEMOLITION | 11.6 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

NOTES

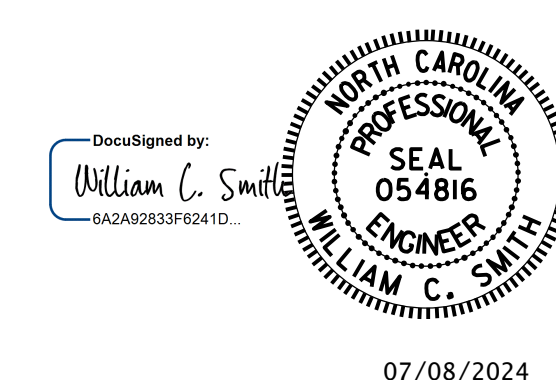
FOR SECTIONS A-A AND B-B, SEE "JOINT DETAIL" SHEET S2-13.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S2-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION



PLAN OF SPAN A

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



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


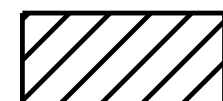

DRAWN BY : **S. T. SANDOR** DATE : **04/2024**
 CHECKED BY : **W. C. SMITH** DATE : **05/2024**
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

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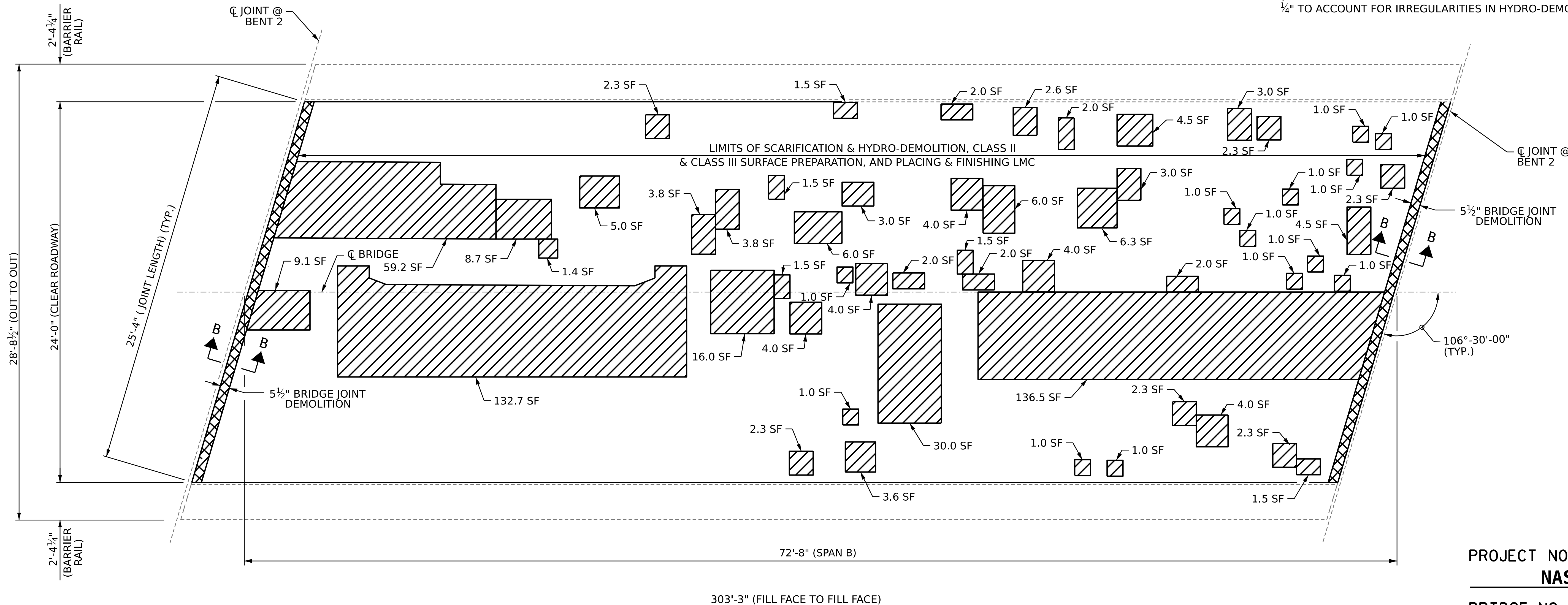
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S2-13.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S2-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

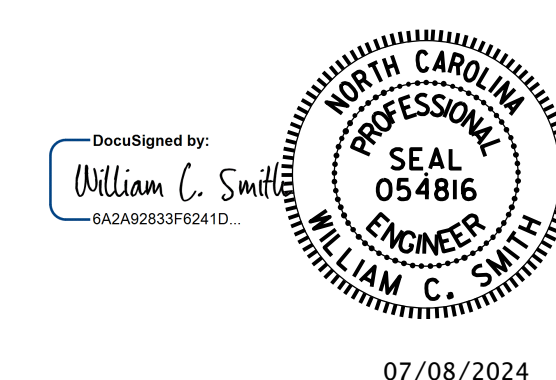
| DECK SURFACE REPAIR - SPAN B | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 190.9 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 190.9 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 57.0 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 10.9 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 190.9 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1,519.0 SF | |
| BRIDGE JOINT DEMOLITION | 23.2 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN B

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN B**

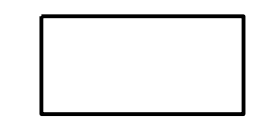
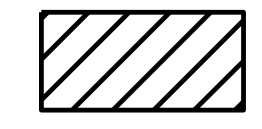
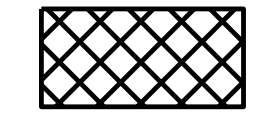
DRAWN BY: S. T. SANDOR DATE: 05/2024
 CHECKED BY: W. C. SMITH DATE: 05/2024
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| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | TOTAL SHEETS |
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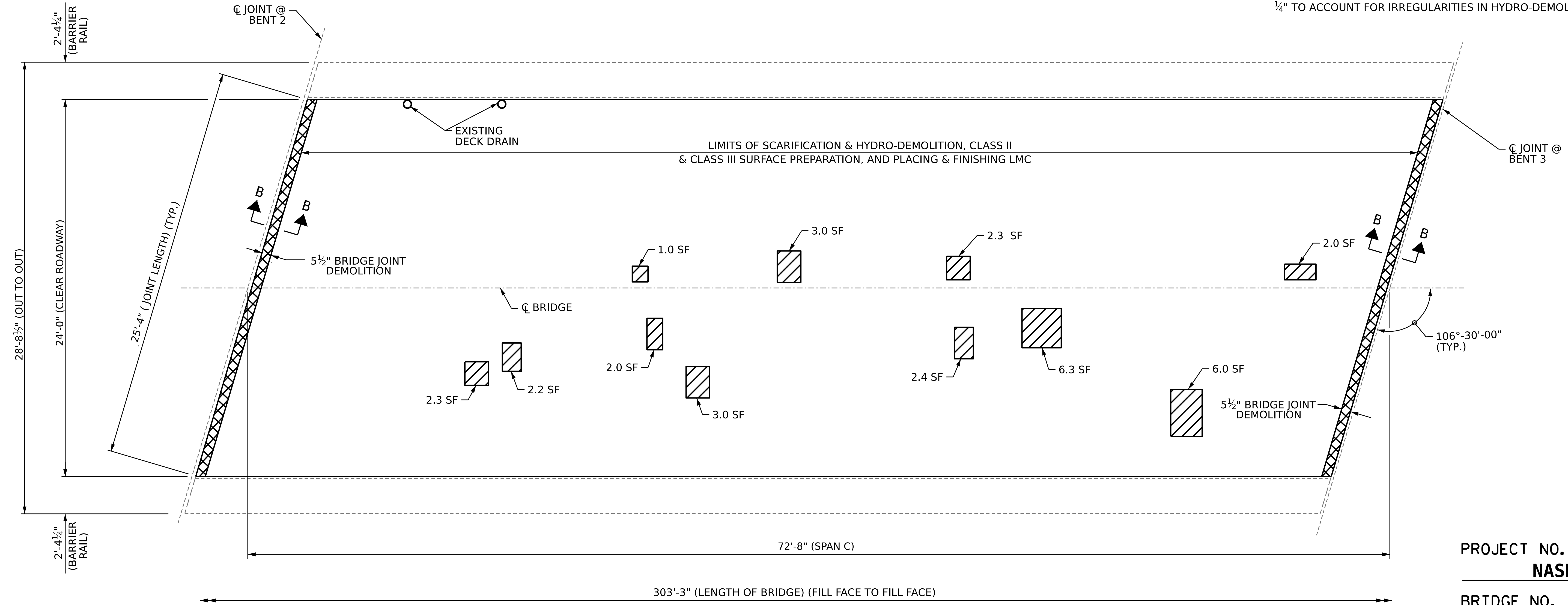
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S2-13.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S2-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

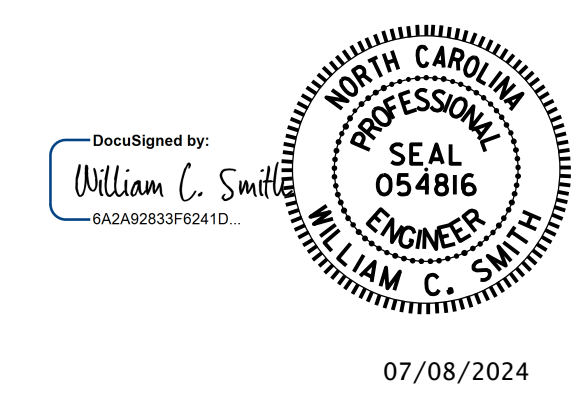
| DECK SURFACE REPAIR - SPAN C | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 190.9 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 190.9 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 3.6 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 9.4 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 190.9 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1,519.0 SF | |
| BRIDGE JOINT DEMOLITION | 23.2 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN C

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 SPAN C**


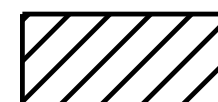

DRAWN BY: S. T. SANDOR DATE: 05/2024
 CHECKED BY: W. C. SMITH DATE: 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE: _____

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| 1 | | | 3 | | | TOTAL SHEETS |
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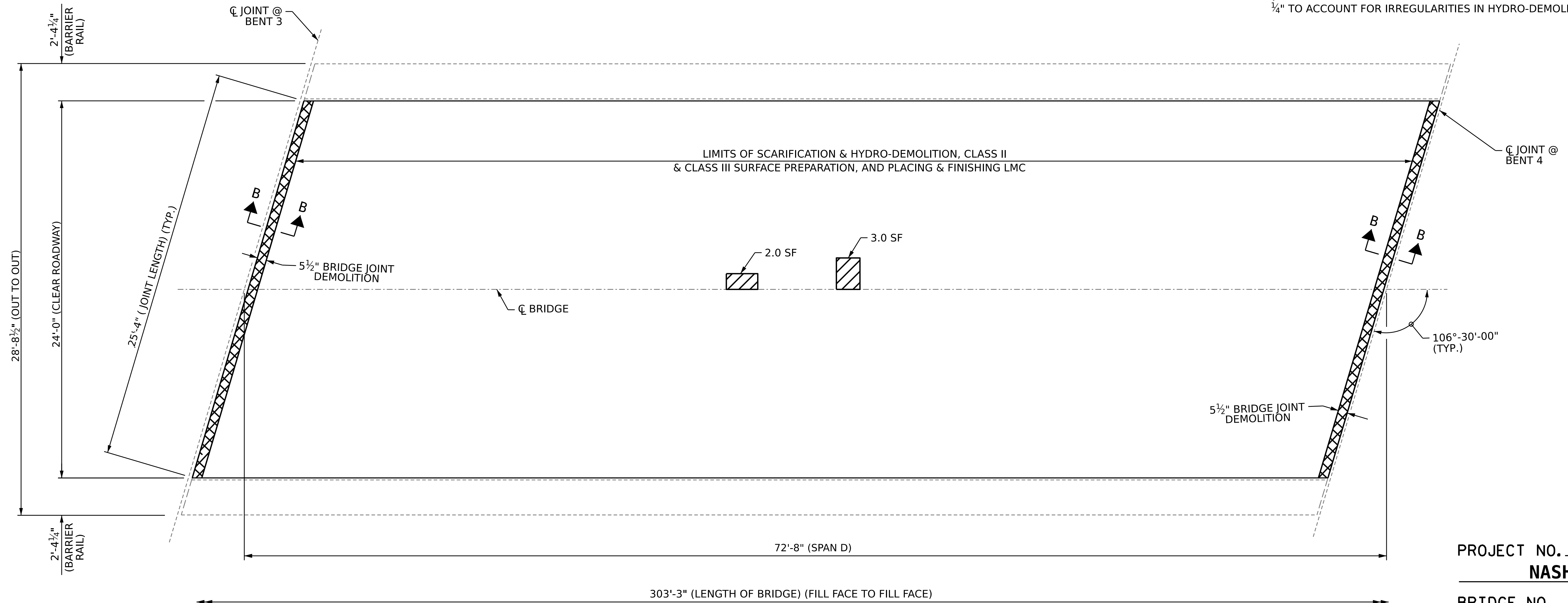
FOR SECTION B-B, SEE "JOINT DETAIL" SHEET S2-13.
 FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S2-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION

DECK SURFACE REPAIR QUANTITY TABLE

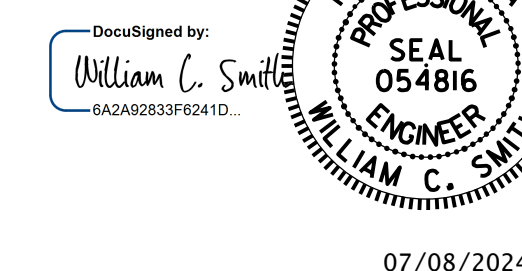
| DECK SURFACE REPAIR - SPAN D | | |
|---|----------------|--------|
| | ESTIMATE | ACTUAL |
| SCARIFYING BRIDGE DECK | 190.9 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 190.9 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 0.6 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 9.3 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 190.9 SQ. YDS. | |
| GROOVING BRIDGE DECK | 1,519.0 SF | |
| BRIDGE JOINT DEMOLITION | 23.2 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.



PLAN OF SPAN D

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



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

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: DATE :

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

DECK SURFACE REPAIR QUANTITY TABLE


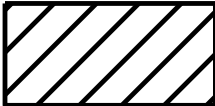
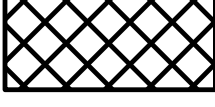
DECK SURFACE REPAIR - SPAN E

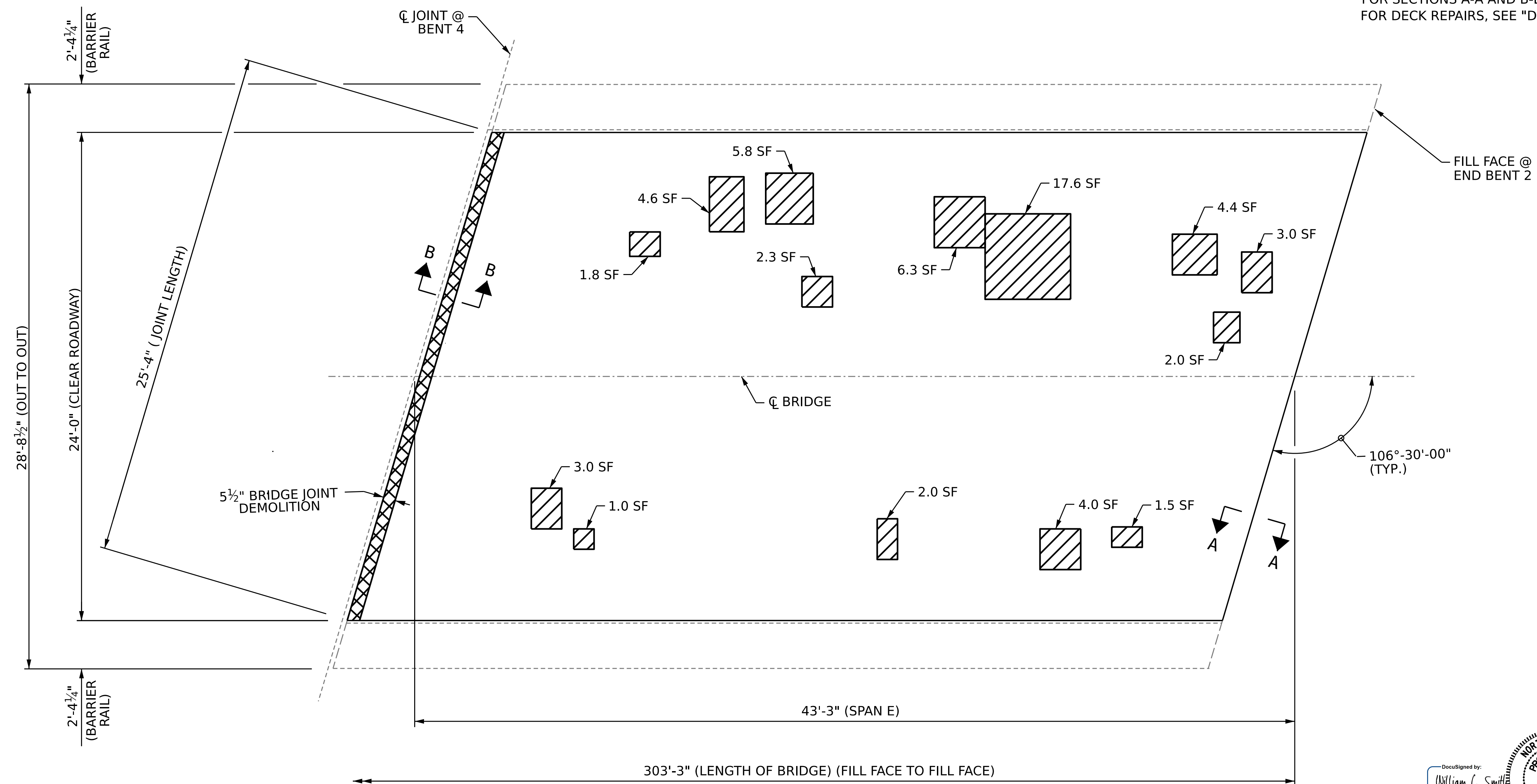
| | ESTIMATE | ACTUAL |
|---|----------------|--------|
| SCARIFYING BRIDGE DECK | 114.0 SQ. YDS. | |
| HYDRO-DEMOLITION OF BRIDGE DECK | 114.0 SQ. YDS. | |
| CLASS II SURFACE PREPARATION | 6.6 SQ. YDS. | |
| CLASS III SURFACE PREPARATION | 0.0 SQ. YDS. | |
| LATEX MODIFIED CONCRETE OVERLAY | 5.7 CU. YDS. | |
| PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY | 114.0 SQ. YDS. | |
| GROOVING BRIDGE DECK | 901.3 SF | |
| BRIDGE JOINT DEMOLITION | 11.6 SF | |

QUANTITIES FOR LMC OVERLAY ARE BASED ON OVERLAY DEPTH PLUS AN ADDITIONAL 1/4" TO ACCOUNT FOR IRREGULARITIES IN HYDRO-DEMOLITION PROCESSES.

NOTES

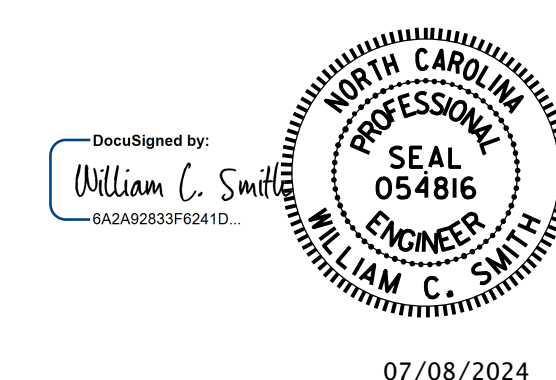
FOR SECTIONS A-A AND B-B, SEE "JOINT DETAIL" SHEET S2-13.
FOR DECK REPAIRS, SEE "DECK REPAIR DETAILS" SHEET S2-14.

-  - SCARIFYING AND HYDRO-DEMOLITION OF BRIDGE DECK FOR LMC OVERLAY
-  - APPROX AREA CLASS II SURFACE PREPARATION
-  - BRIDGE JOINT DEMOLITION



PLAN OF SPAN E

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



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

DRAWN BY : S. T. SANDOR DATE : 04/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : DATE :




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 SIGNATURES COMPLETED

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

NOTES

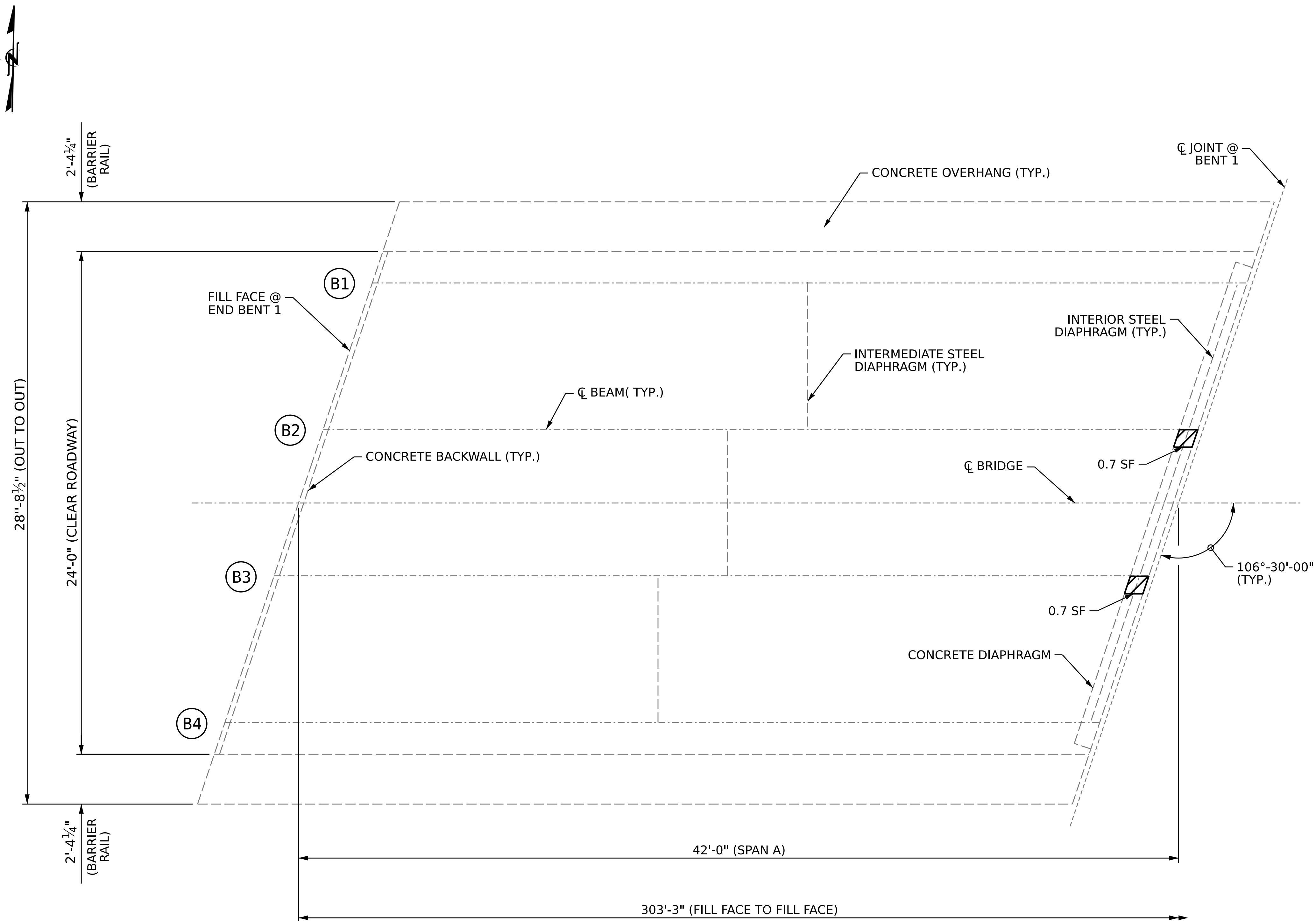
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES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

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

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

| DECK UNDERSIDE REPAIR QUANTITY TABLE | | | | |
|--------------------------------------|------------|-----------|---------|-----------|
| DECK UNDERSIDE REPAIRS SPAN A | QUANTITIES | | | |
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 1.4 | 0.7 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN A

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : DATE :

6/19/2024
 S:\DPG\Division4\Halfax 55 & Nash 98 & 225\Plans\4B.106413\630225\402.015.4B.106413.SMU.DUR.A.S2-08.630225.dgn
 ssandor

DocuSigned by:
 William C. Smith
 0A2A9283F92410...



07/08/2024

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN A**

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. S2-08 TOTAL SHEETS 23 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

NOTES

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

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

 SHOTCRETE REPAIR AREA

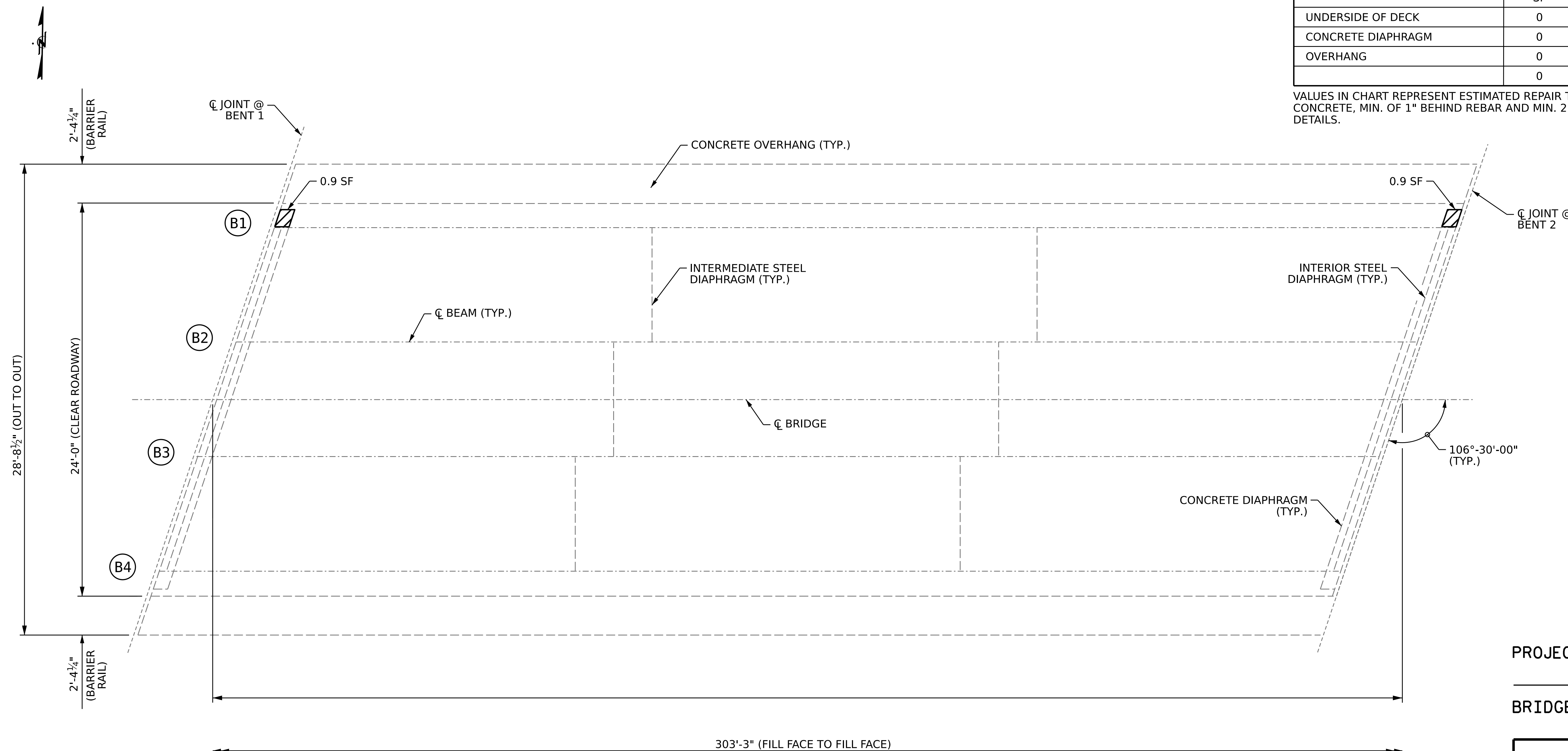
 CONCRETE REPAIR AREA

 BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

| DECK UNDERSIDE REPAIRS SPAN A | QUANTITIES | | | |
|----------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 1.8 | 0.9 | | |
| OVERHANG | 0 | 0 | | |
| | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | 0 | 0 | | |

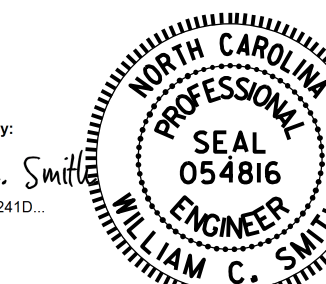
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 2" CLEAR TO SAWCUT. SEE REPAIR DETAILS.



PLAN OF SPAN B

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**

DocuSigned by:
 William C. Smith
 0A2A9283F92410...



07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**UNDERSIDE DECK REPAIRS
 SPAN B**

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : _____ DATE : _____




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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S2-09 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

NOTES

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

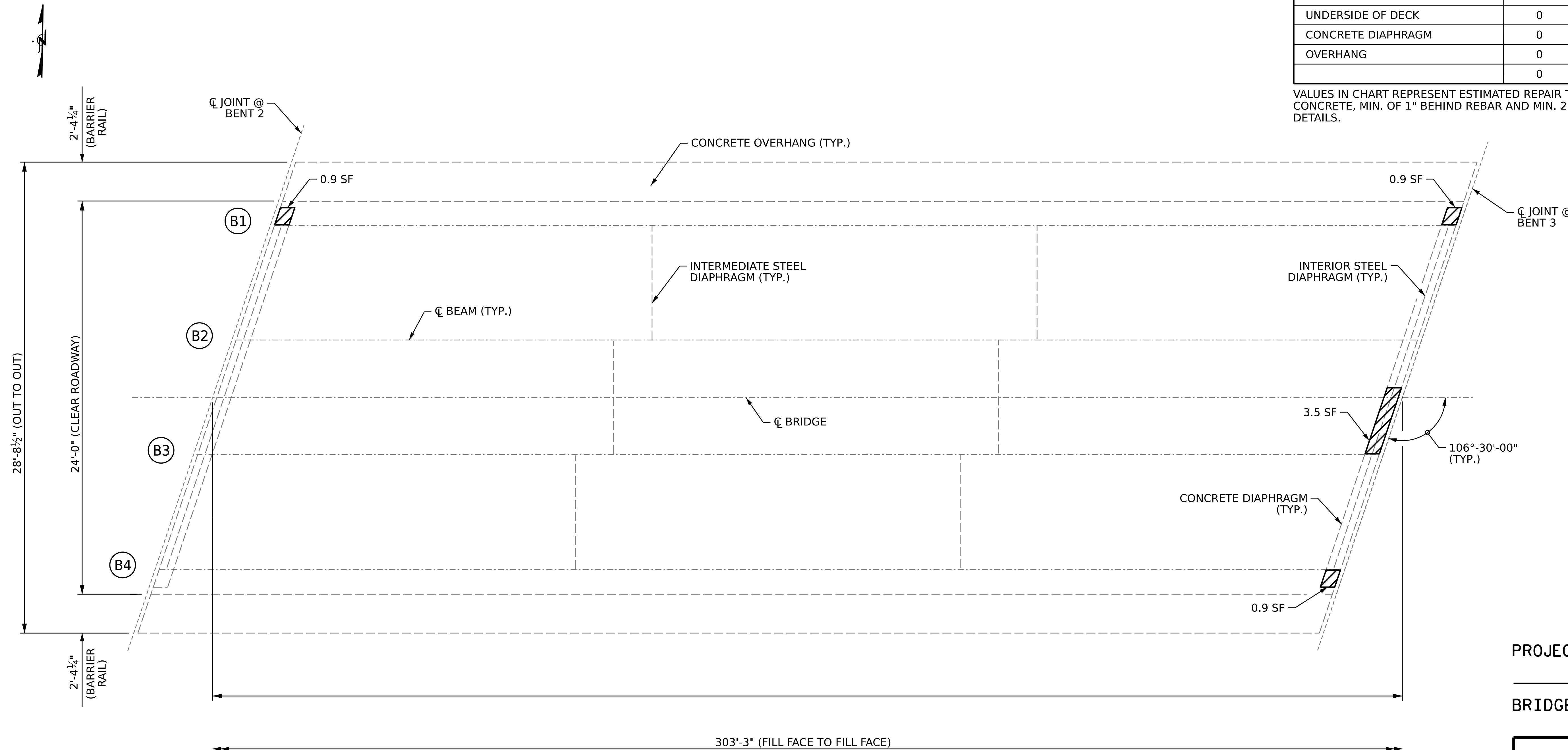
CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

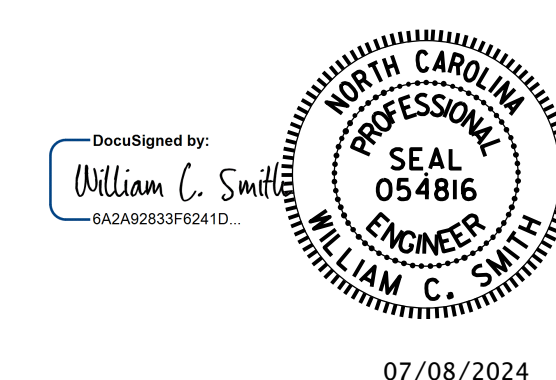
| DECK UNDERSIDE REPAIRS SPAN C | QUANTITIES | | | |
|----------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 6.2 | 3.1 | | |
| OVERHANG | 0 | 0 | | |
| | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | 0 | 0 | | |

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



PLAN OF SPAN C

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN C**

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____




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 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

NOTES

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

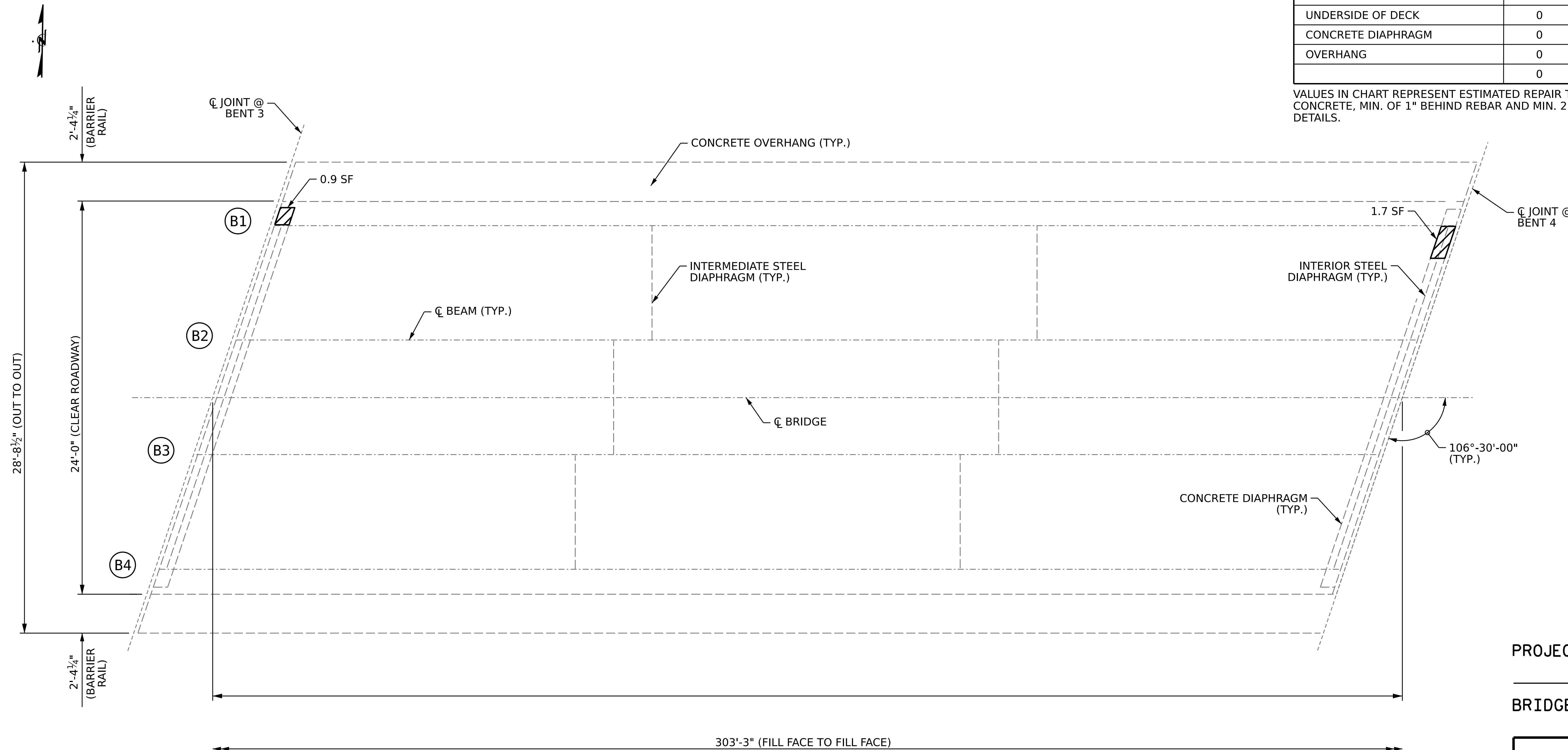
CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

DECK UNDERSIDE REPAIR QUANTITY TABLE

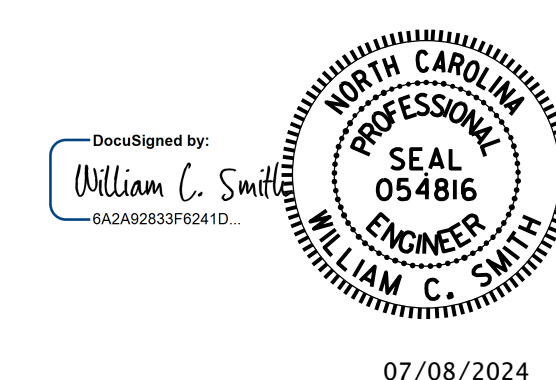
| DECK UNDERSIDE REPAIRS SPAN D | QUANTITIES | | | |
|----------------------------------|------------|--------------|------------|--------------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 2.6 | 1.3 | | |
| OVERHANG | 0 | 0 | | |
| | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | 0 | 0 | | |

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



PLAN OF SPAN D

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN D**

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE: _____




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| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
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| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

NOTES

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

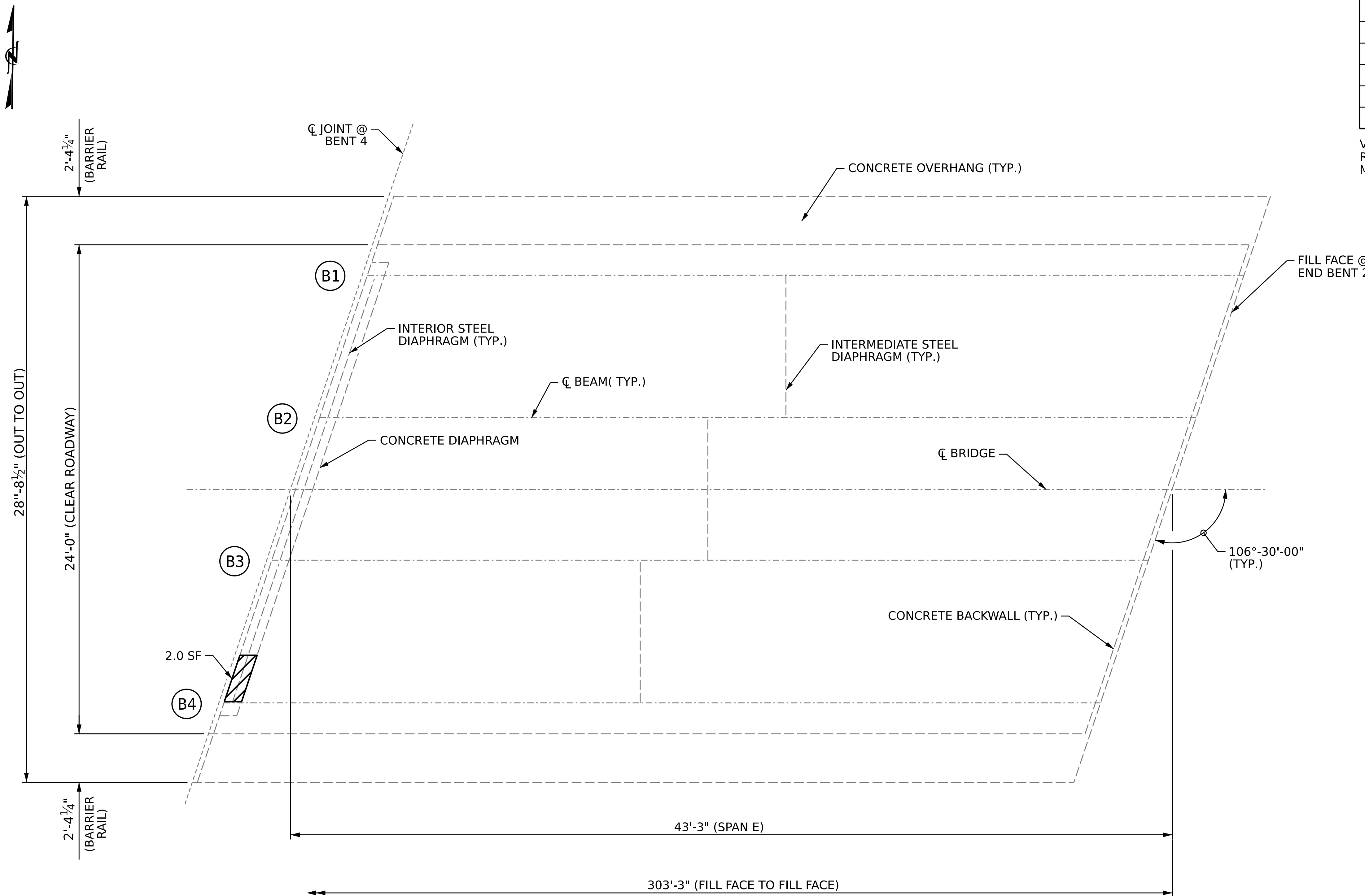
CONCRETE REPAIRS MAYBE SUBSTITUTED IN LIEU OF SHOTCRETE REPAIRS WITH THE APPROVAL OF THE ENGINEER.

-  SHOTCRETE REPAIR AREA
-  CONCRETE REPAIR AREA
-  BEAM NUMBER

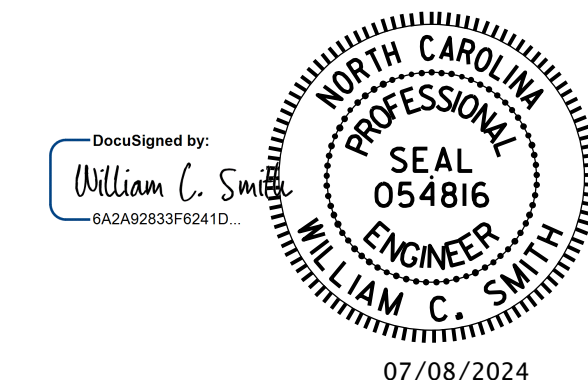
DECK UNDERSIDE REPAIR QUANTITY TABLE

| DECK UNDERSIDE REPAIRS SPAN E | QUANTITIES | | | |
|----------------------------------|------------|--------------|------------|--------------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 2.0 | 1.0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| UNDERSIDE OF DECK | 0 | 0 | | |
| CONCRETE DIAPHRAGM | 0 | 0 | | |
| OVERHANG | 0 | 0 | | |
| | | | | |

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



PLAN OF SPAN E



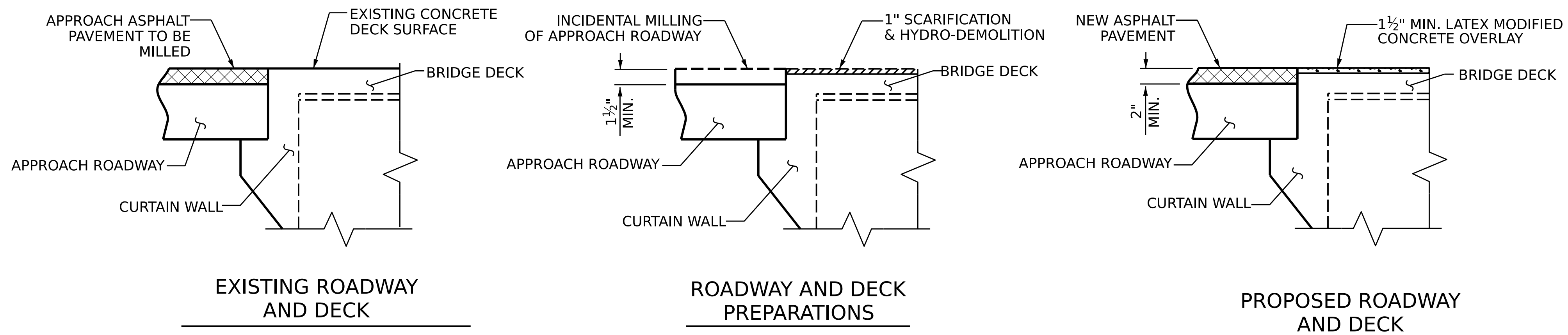
PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**UNDERSIDE DECK REPAIRS
 SPAN E**

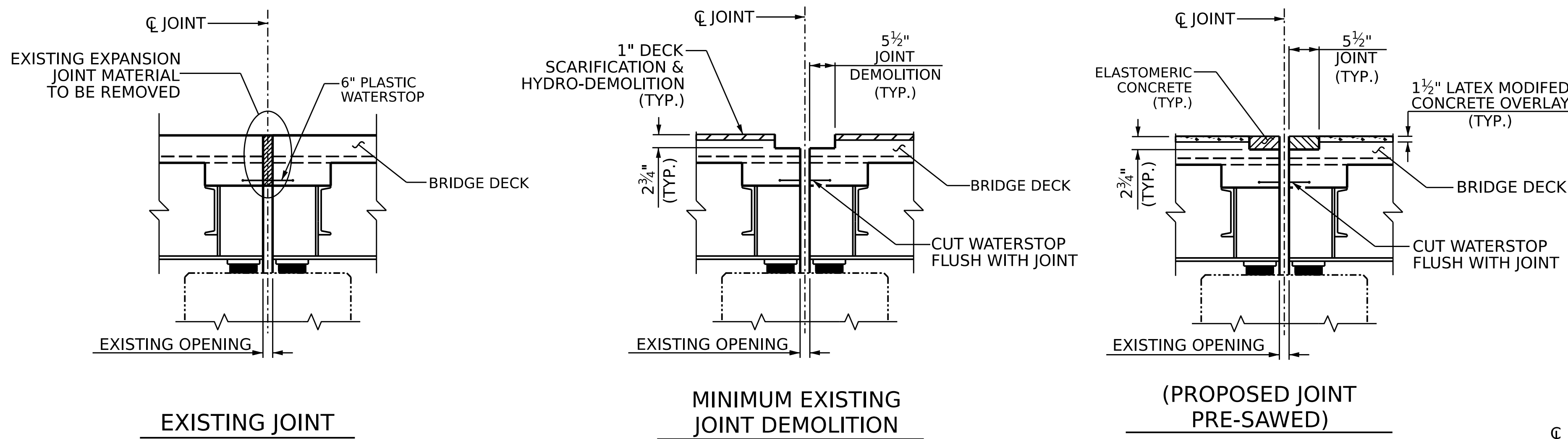
DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD : _____ DATE : _____

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

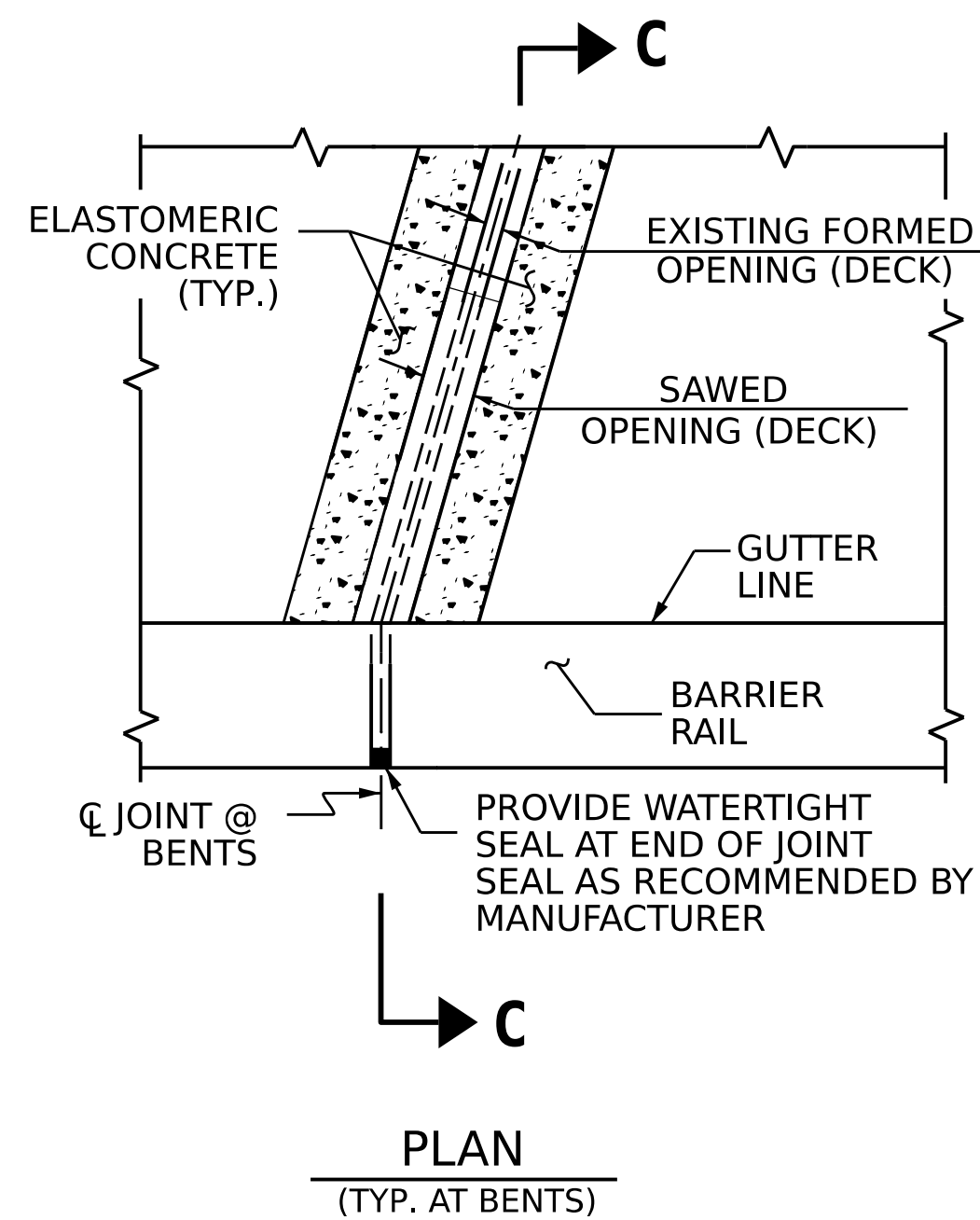
| REVISIONS | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS |
| 1 | | | 3 | | | 23 |
| 2 | | | 4 | | | |



(SECTION A-A)
(ROADWAY AND BRIDGE DECK SEQUENCE AT END BENTS)

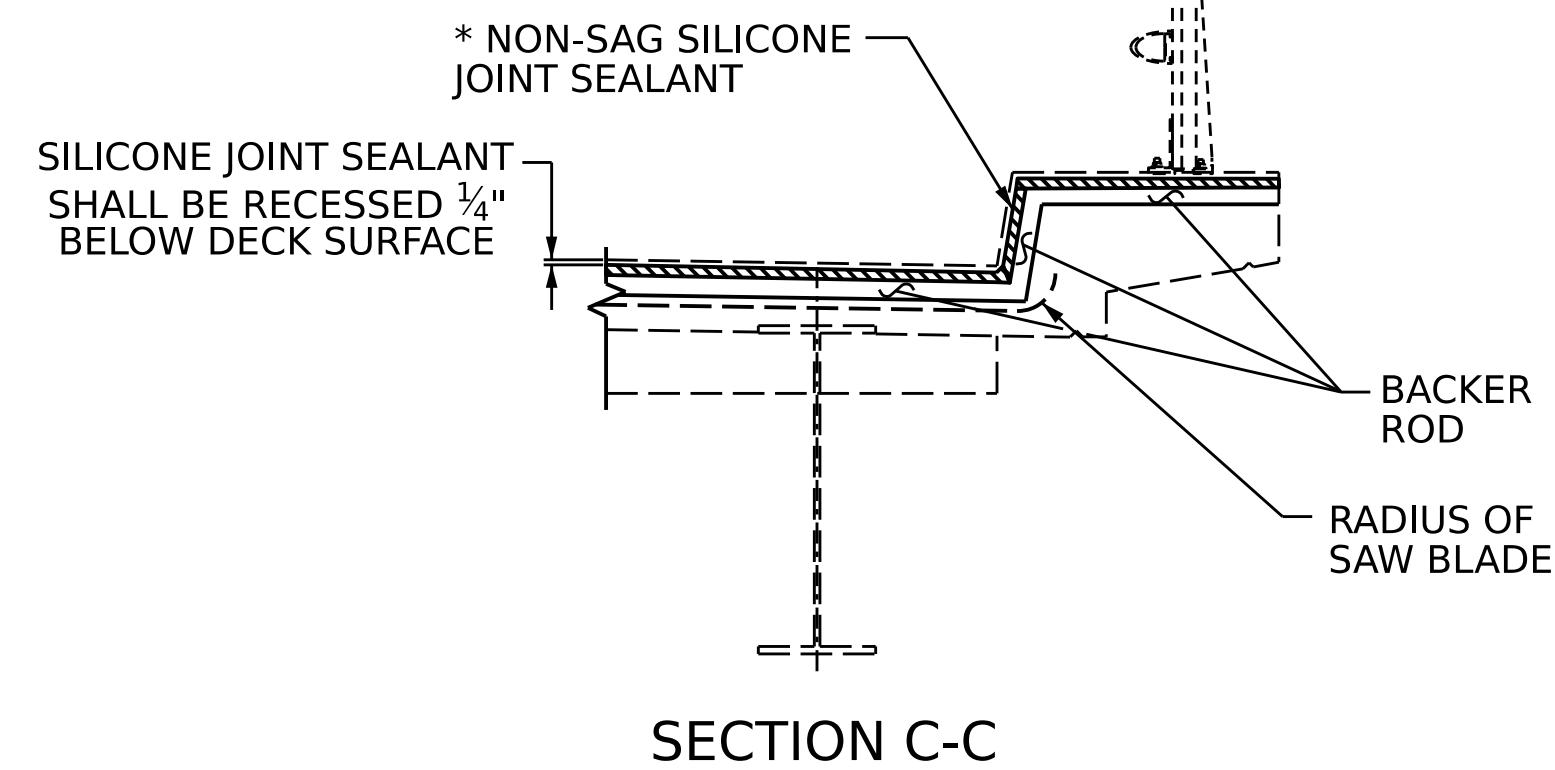


(SECTION B-B)
(JOINT INSTALLATION SEQUENCE AT BENTS)



PLAN
(TYP. AT BENTS)

* NON-SAG SILICONE JOINT SEALANT TO BE PLACED AND ALLOWED TO SET, PRIOR TO PLACEMENT OF SELF-LEVELING SILICONE JOINT SEALANT.



SECTION C-C

JOINT SEAL DETAILS

NOTES:

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

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

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

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE FOR PRESERVATION, SEE SPECIAL PROVISIONS.

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

THE INSTALLATION OF JOINT SEAL SHALL BE WATERTIGHT.

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

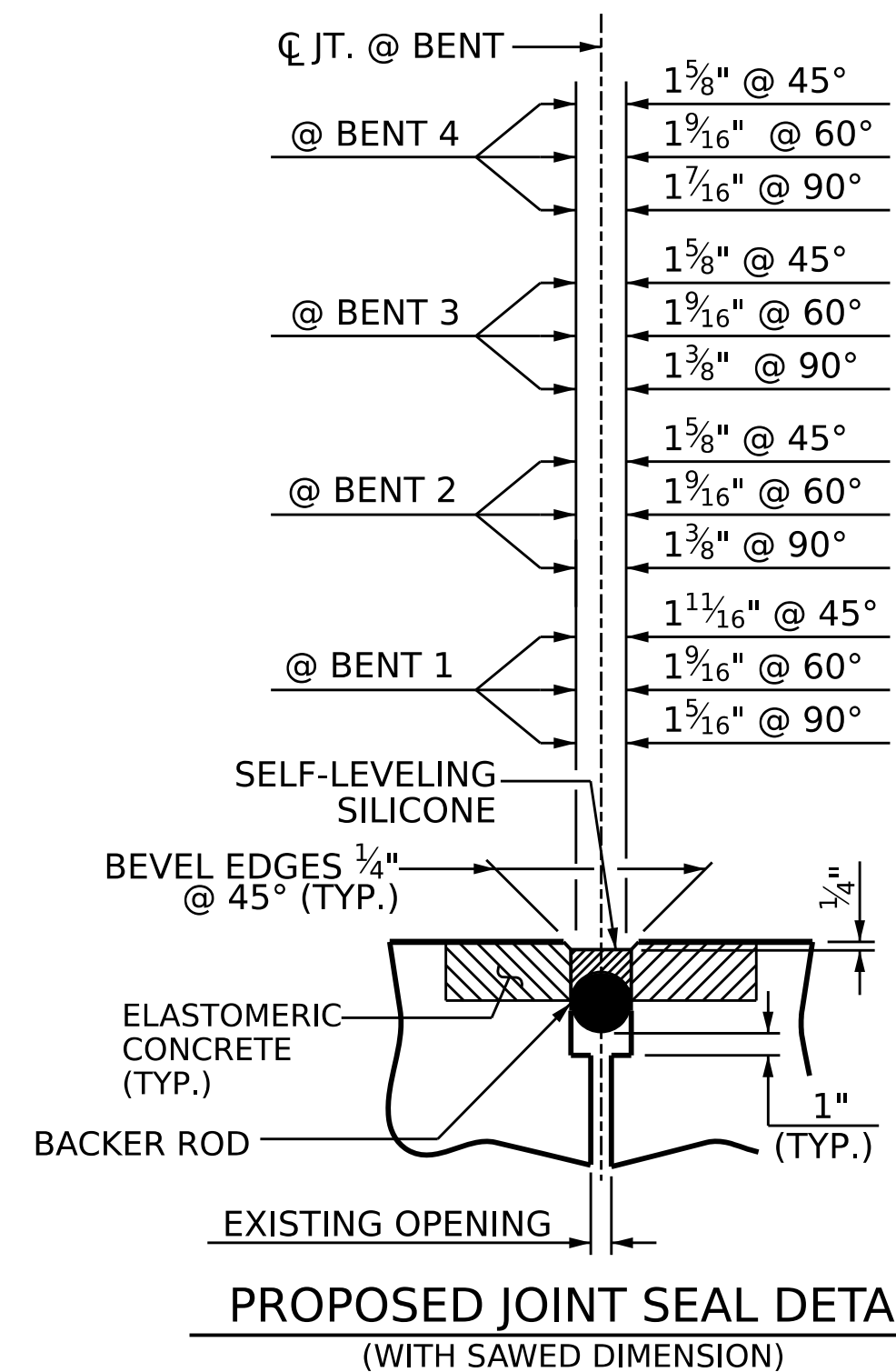
DURING JOINT INSTALLATION PROCEDURE, THE JOINT AND SURROUNDING AREA SHALL BE KEPT CLEAN AND FREE OF DEBRIS.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

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

DEMOLISH BRIDGE JOINT AREA SUCH THAT THE BOTTOM OF THE EXCAVATION SHALL BE REASONABLY FLAT AND LEVEL AND TO THE NECESSARY DEPTH. SUCH THAT ELASTOMERIC CONCRETE SHALL BE FOUNDED ON CONCRETE OR REPAIR CONCRETE SUBSTRATE, NOT LATEX MODIFIED CONCRETE.

| SUMMARY OF QUANTITIES | | |
|---------------------------------------|----------|--------|
| | ESTIMATE | ACTUAL |
| ELASTOMERIC CONCRETE FOR PRESERVATION | 21.0 CF | |
| POURABLE SILICONE JOINT SEALANT | 119.9 LF | |

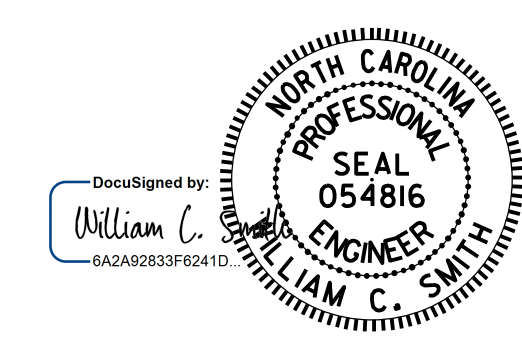


PROPOSED JOINT SEAL DETAIL
(WITH SAWED DIMENSION)

PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630225

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JOINT REPAIR DETAILS

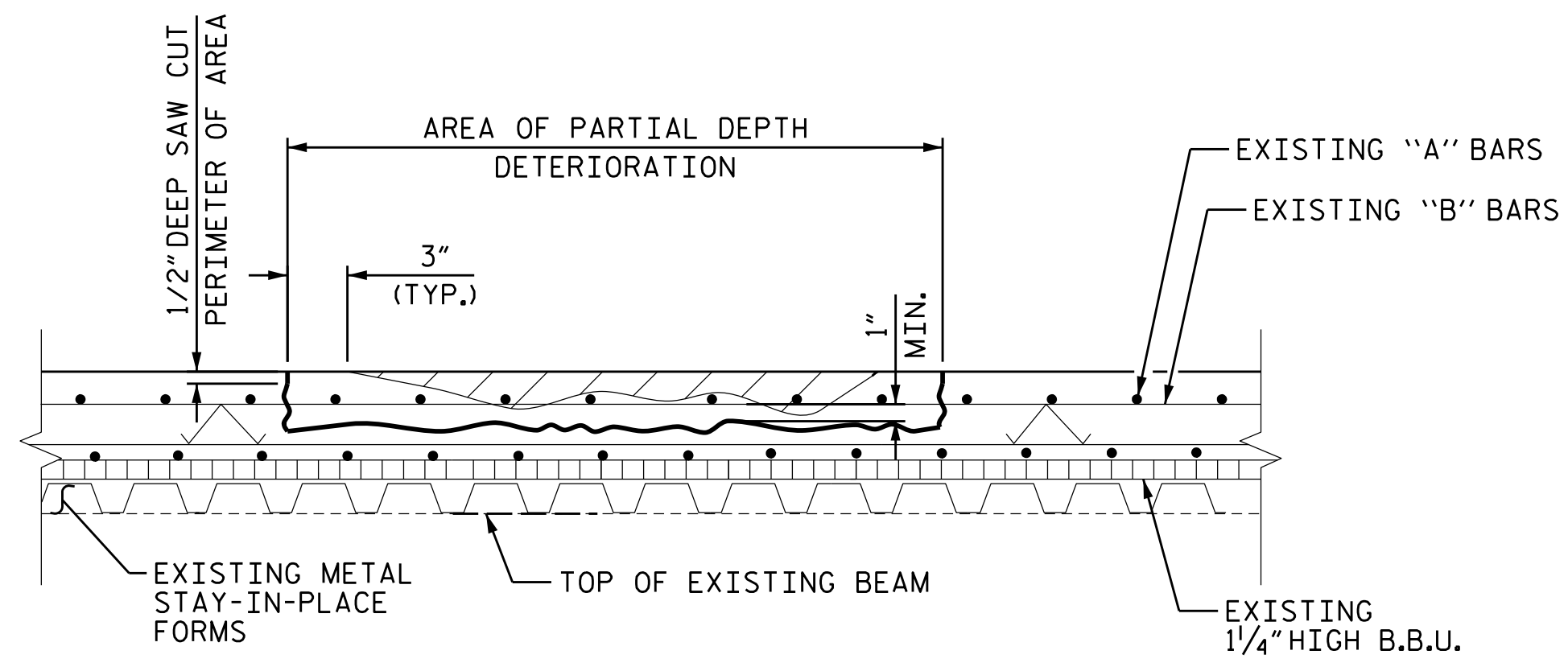


07/08/2024

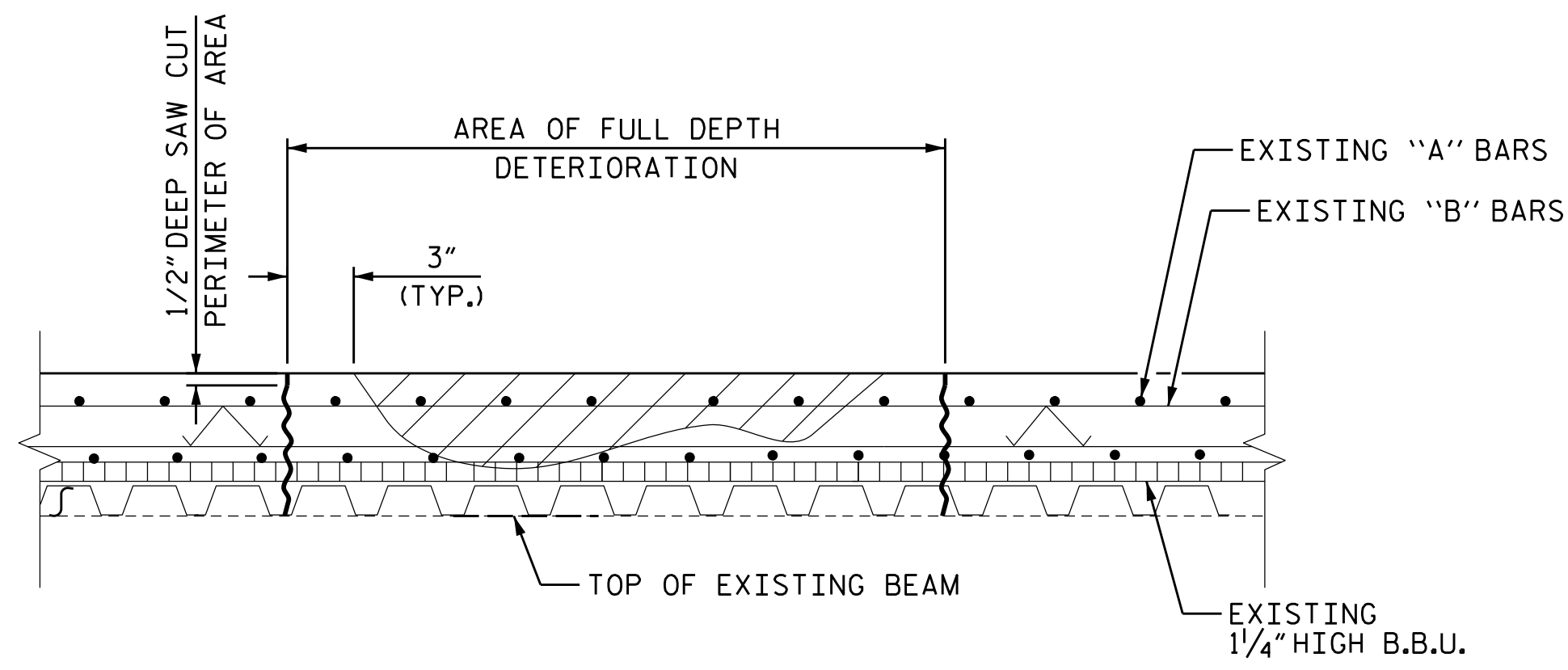
DRAWN BY : Q. T. NGUYEN \ E. BAYISSA DATE : 06/2024
 CHECKED BY : W. C. SMITH DATE : 06/2024

DOCUMENT NOT CONSIDERED
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| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS |
| 1 | | | 3 | | | 52-13 |
| 2 | | | 4 | | | 23 |

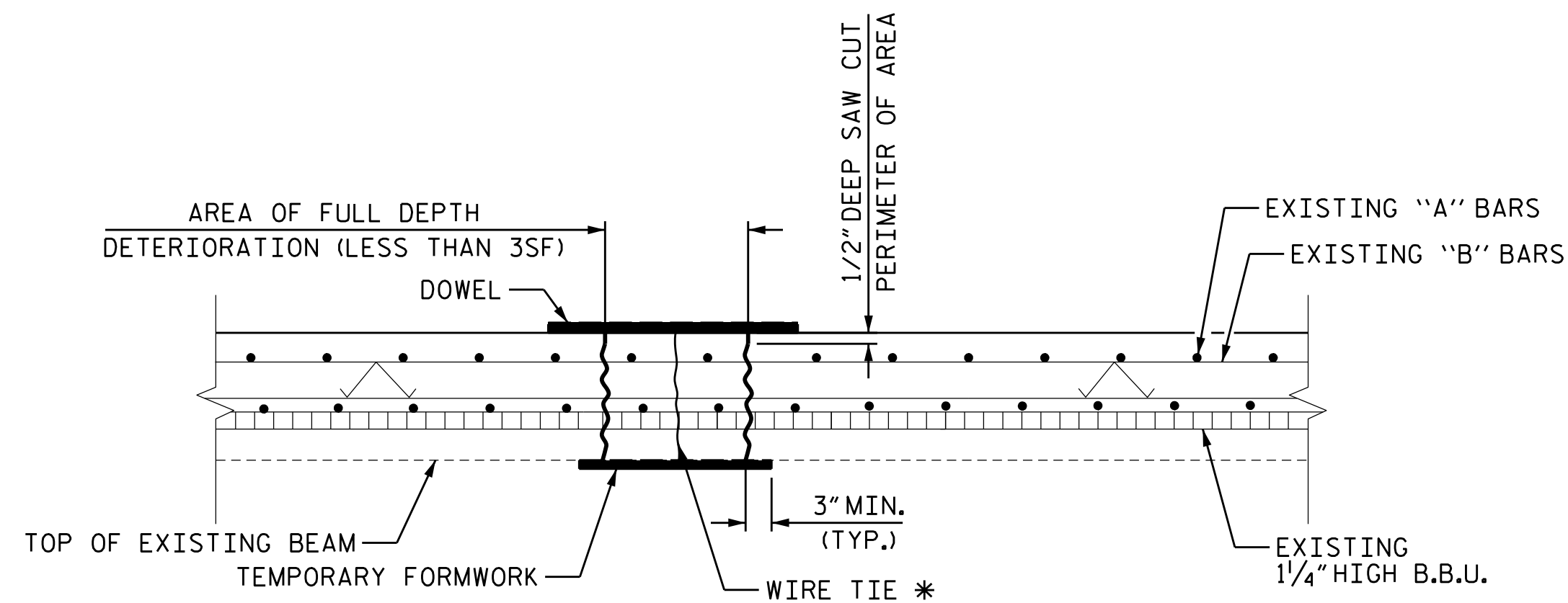


CLASS II (PARTIAL DEPTH) REPAIR



CLASS III (FULL DEPTH) REPAIR

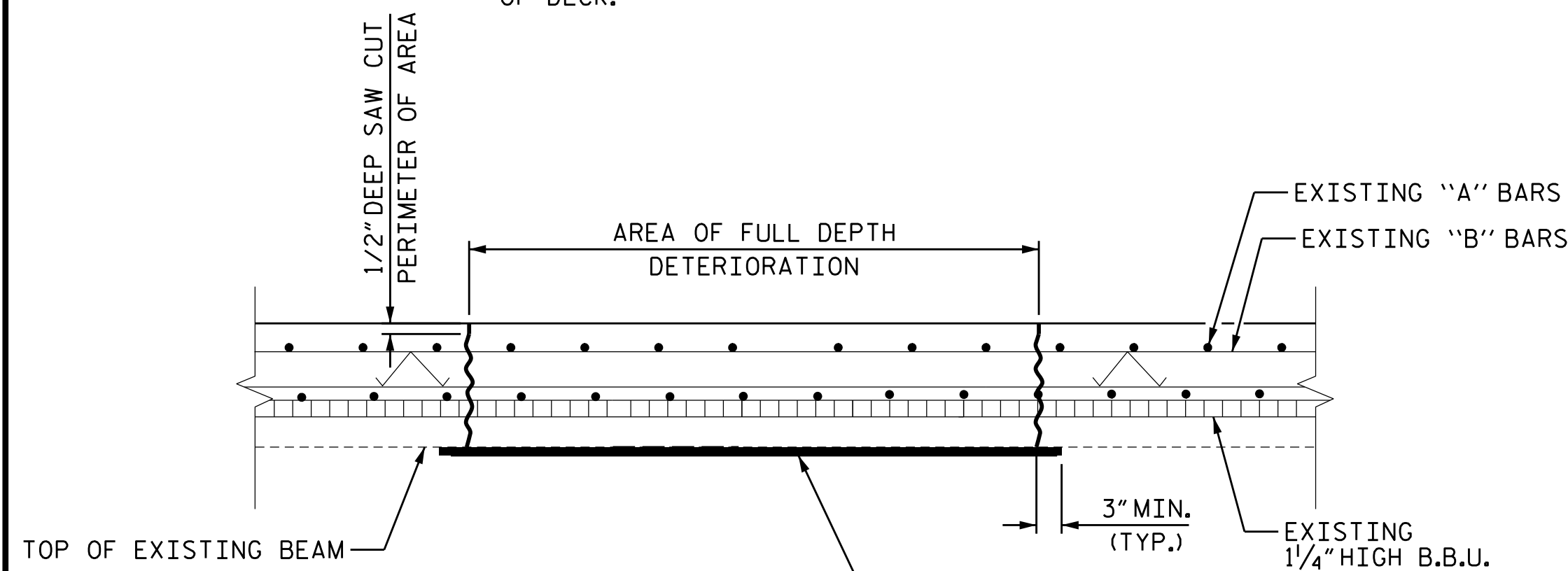
AREA OF DETERIORATION



FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

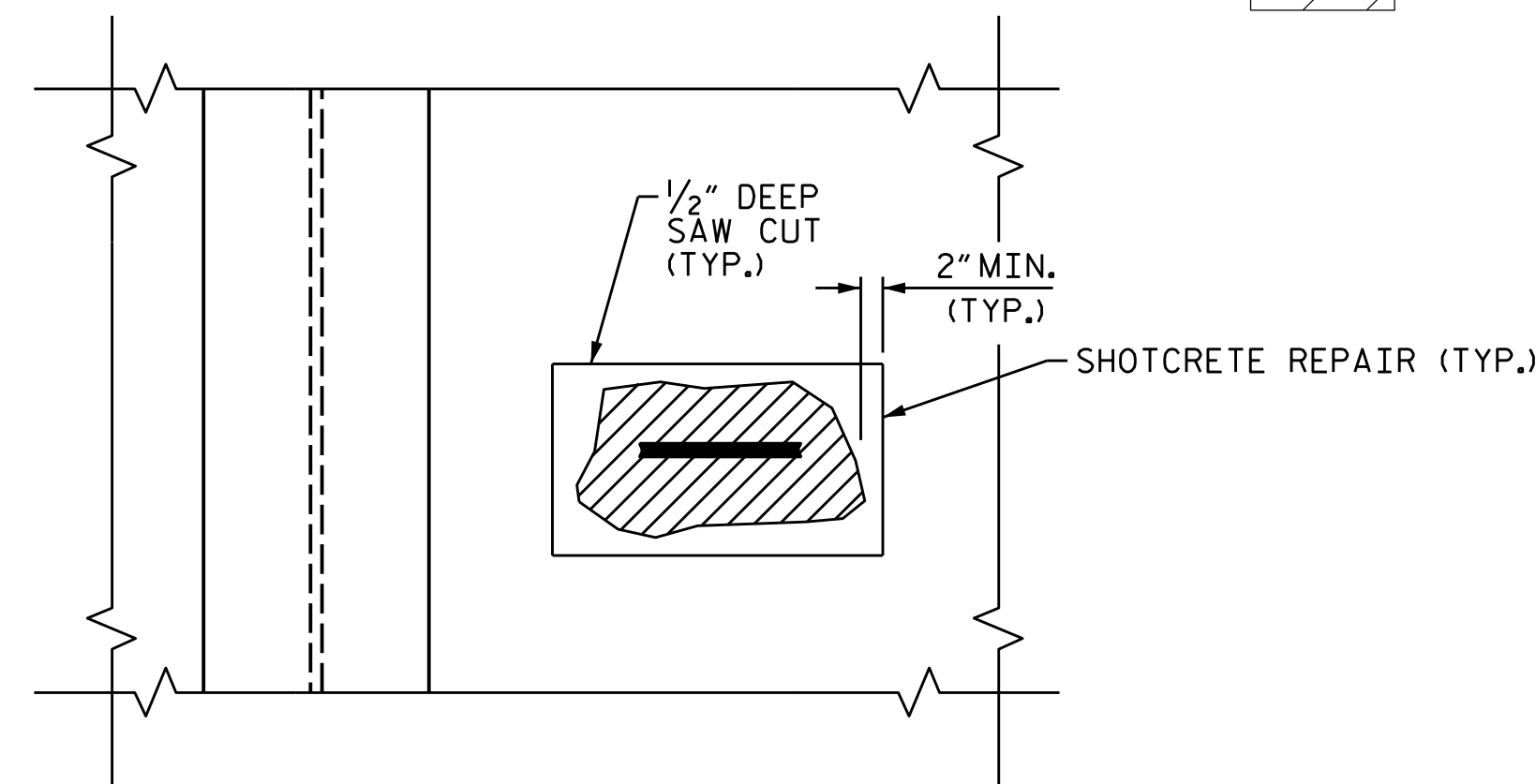
(FOR AREAS OF DETERIORATION EQUAL TO OR LESS THAN 3SF)

* WIRE TIE TO BE KNOTTED BELOW TEMPORARY FORMWORK AND ATTACHED TO DOWEL THAT IS WIDER THAN FORMED FULL DEPTH HOLE. ROTATE DOWEL TO TIGHTEN FORMWORK AGAINST BOTTOM OF DECK.

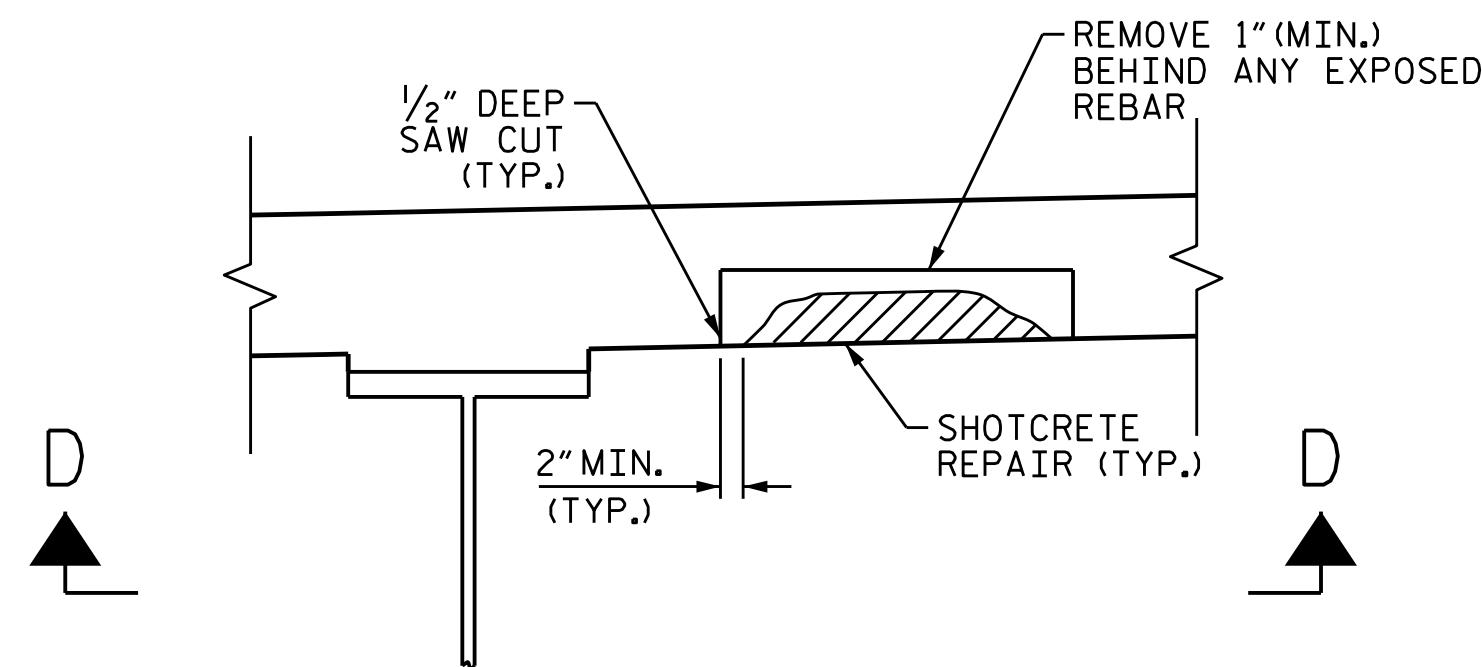


FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

(FOR AREAS OF DETERIORATION GREATER THAN 3SF)

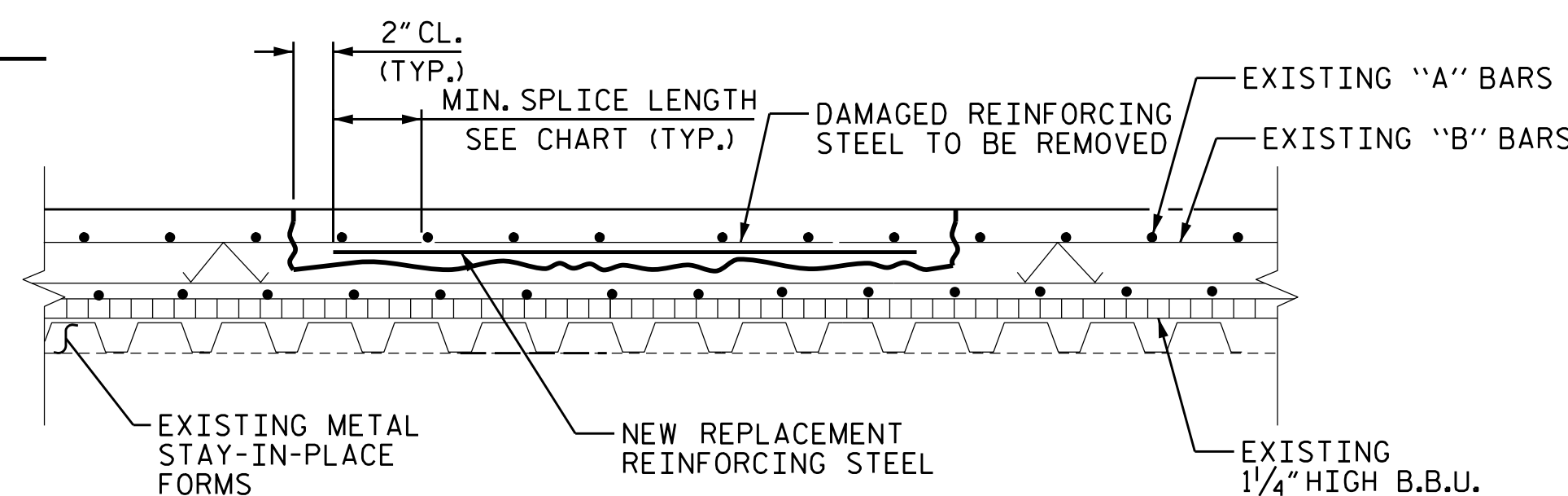


SECTION D-D



TYPICAL SECTION

UNDERSIDE OF DECK REPAIR



REINFORCING STEEL REPAIR

NOTES

FOR AREAS TO BE REPAIRED, SEE "PLAN OF SPAN" SHEETS.

ALL DECK REPAIRS SHALL BE COMPLETED PRIOR TO PLACEMENT OF OVERLAY.

FOR CLASS II AND CLASS III SURFACE PREPARATION, SEE "LMC OVERLAY SURFACE PREPARATIONS" SPECIAL PROVISION.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK. FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

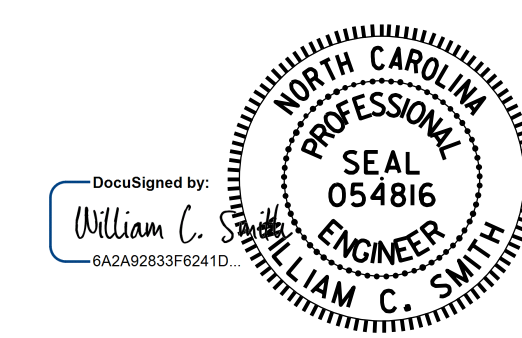
UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

| BAR SIZE | SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL | | APPROACH SLABS | | PARAPET AND BARRIER RAIL |
|----------|---|----------|----------------|----------|--------------------------|
| | EPOXY COATED | UNCOATED | EPOXY COATED | UNCOATED | |
| #4 | 1'-11" | 1'-7" | 1'-11" | 1'-7" | 2'-6" |
| #5 | 2'-5" | 2'-0" | 2'-5" | 2'-0" | 3'-1" |
| #6 | 2'-10" | 2'-5" | 3'-7" | 2'-5" | 3'-8" |
| #7 | 4'-2" | 2'-9" | — | — | — |
| #8 | 4'-9" | 3'-2" | — | — | — |

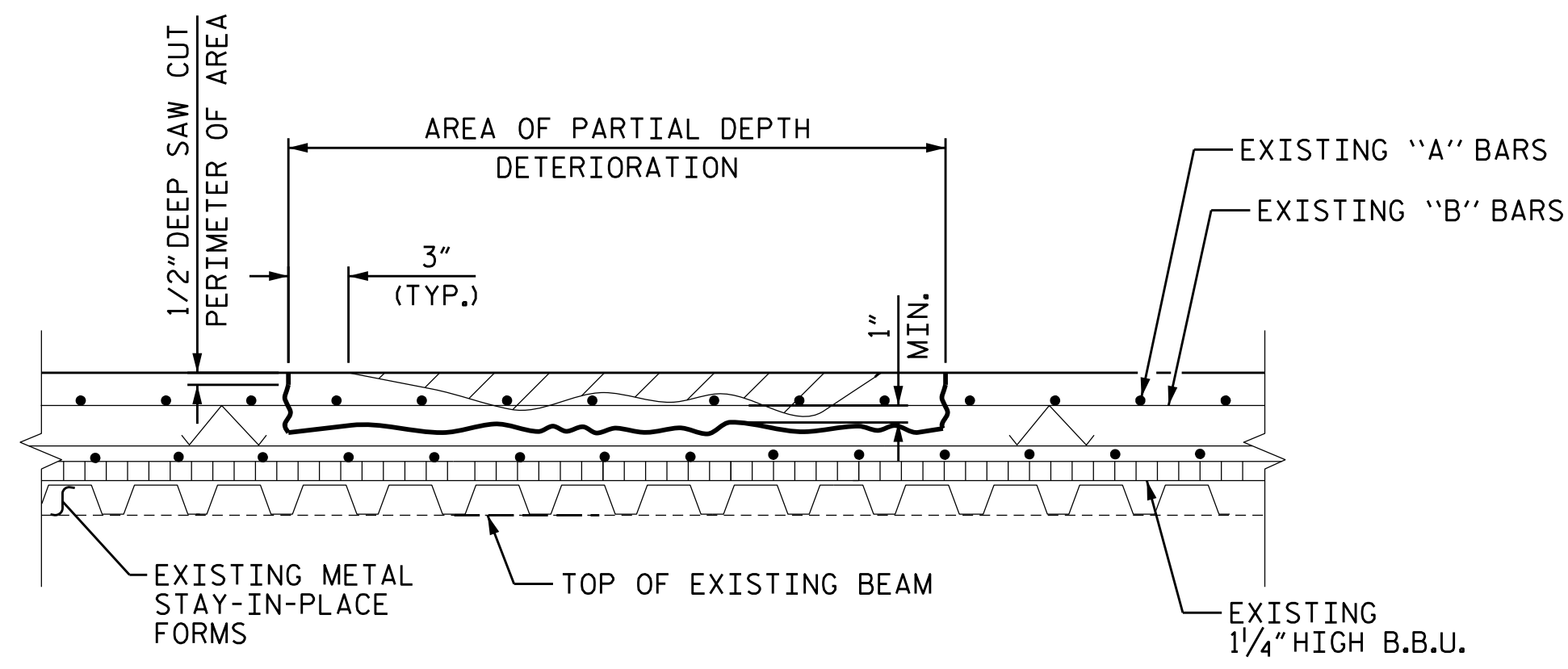
PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630225



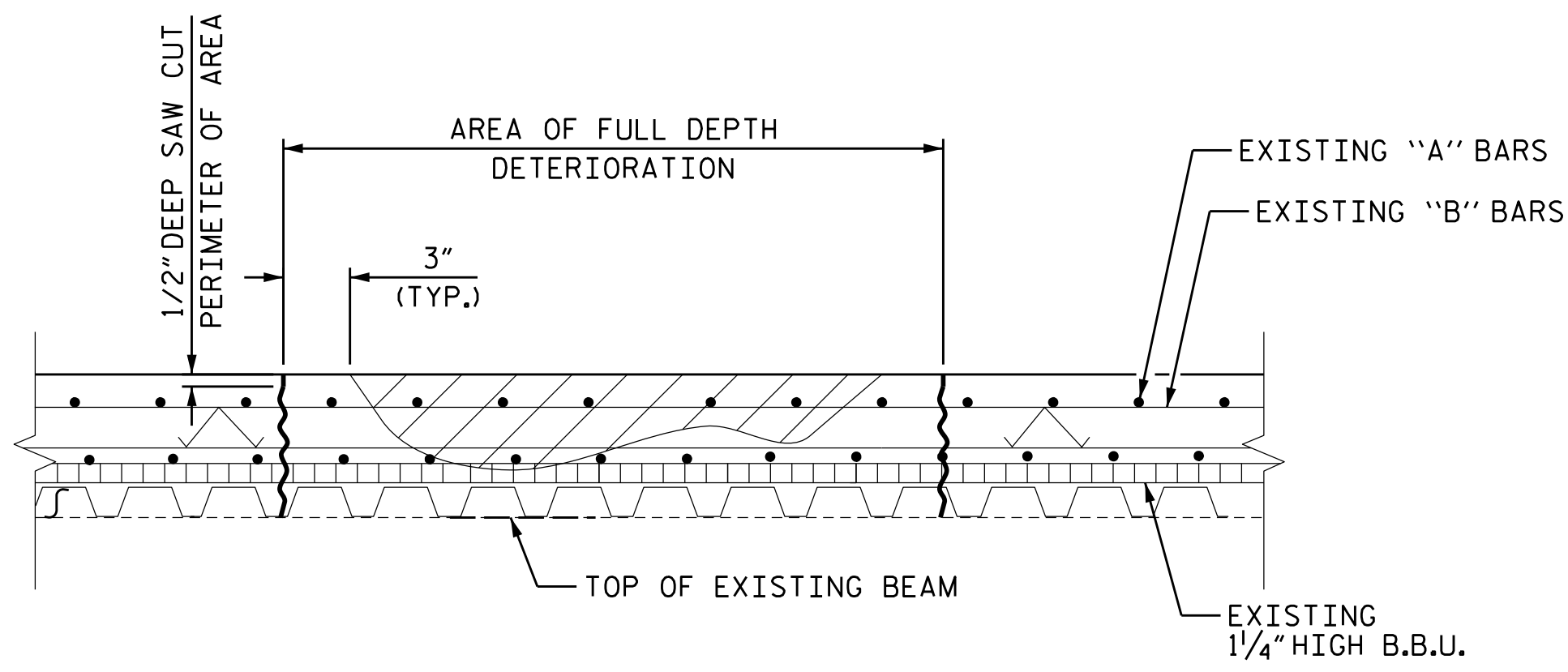
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
DECK REPAIR DETAILS

ASSEMBLED BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DRAWN BY : NAP 9/18
 CHECKED BY :

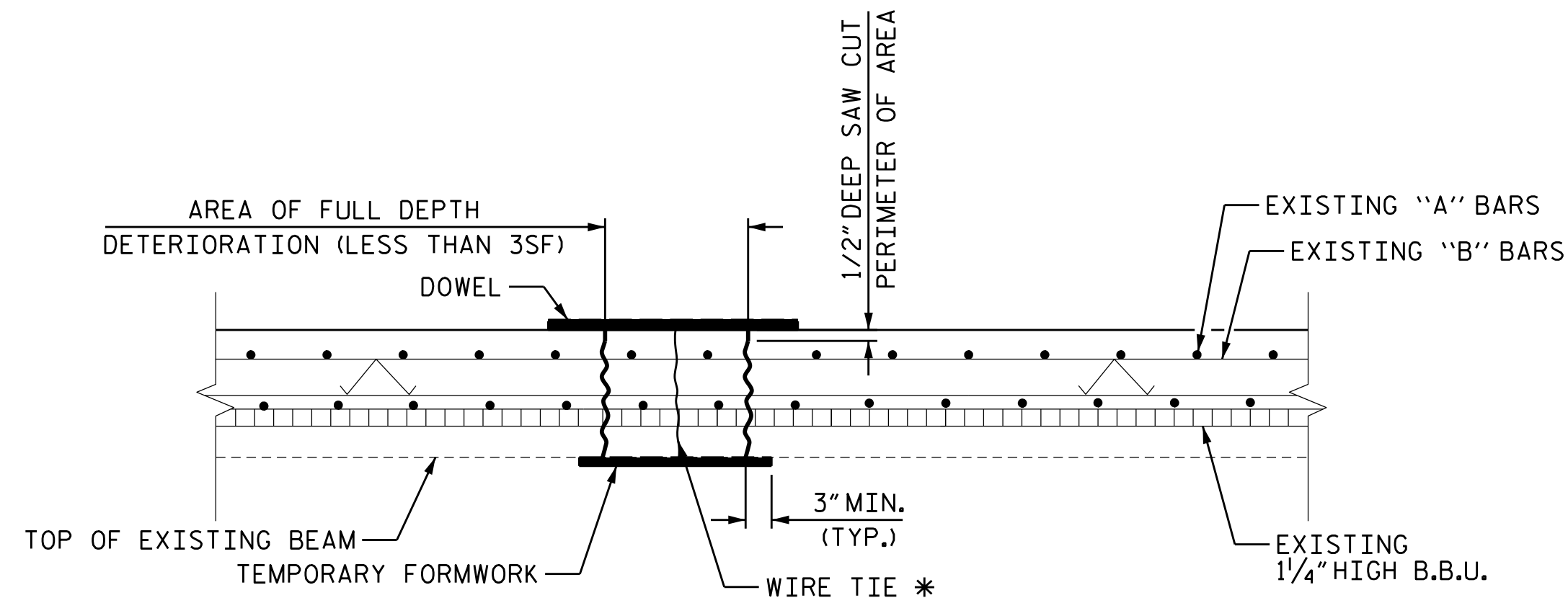
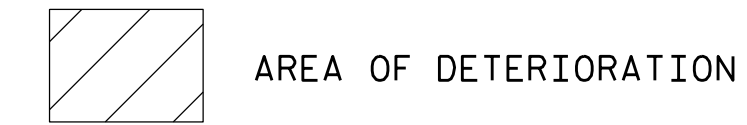
| NO. | REVISIONS | | | | | | SHEET NO. |
|-----|-----------|-------|-----|-----|-------|--------------|-----------|
| | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS | |
| 1 | | | 3 | | | 23 | |
| 2 | | | 4 | | | | |



CLASS II (PARTIAL DEPTH) REPAIR



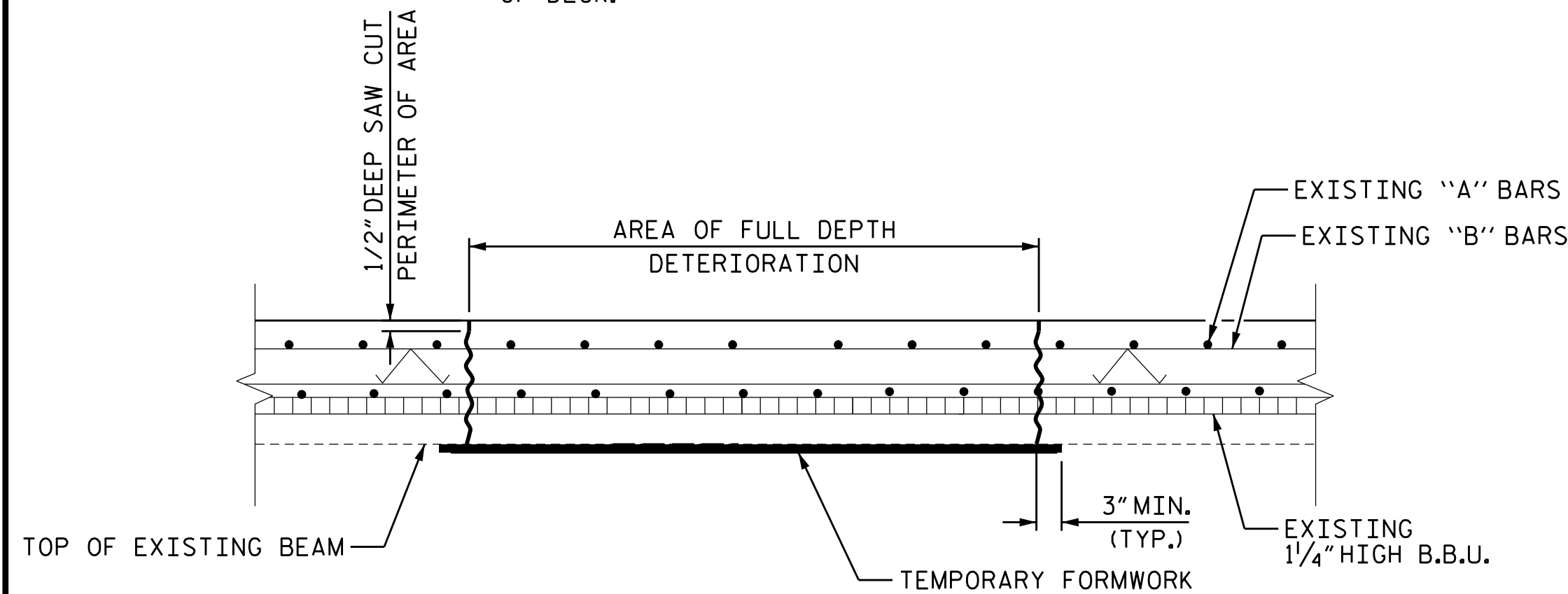
CLASS III (FULL DEPTH) REPAIR



FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

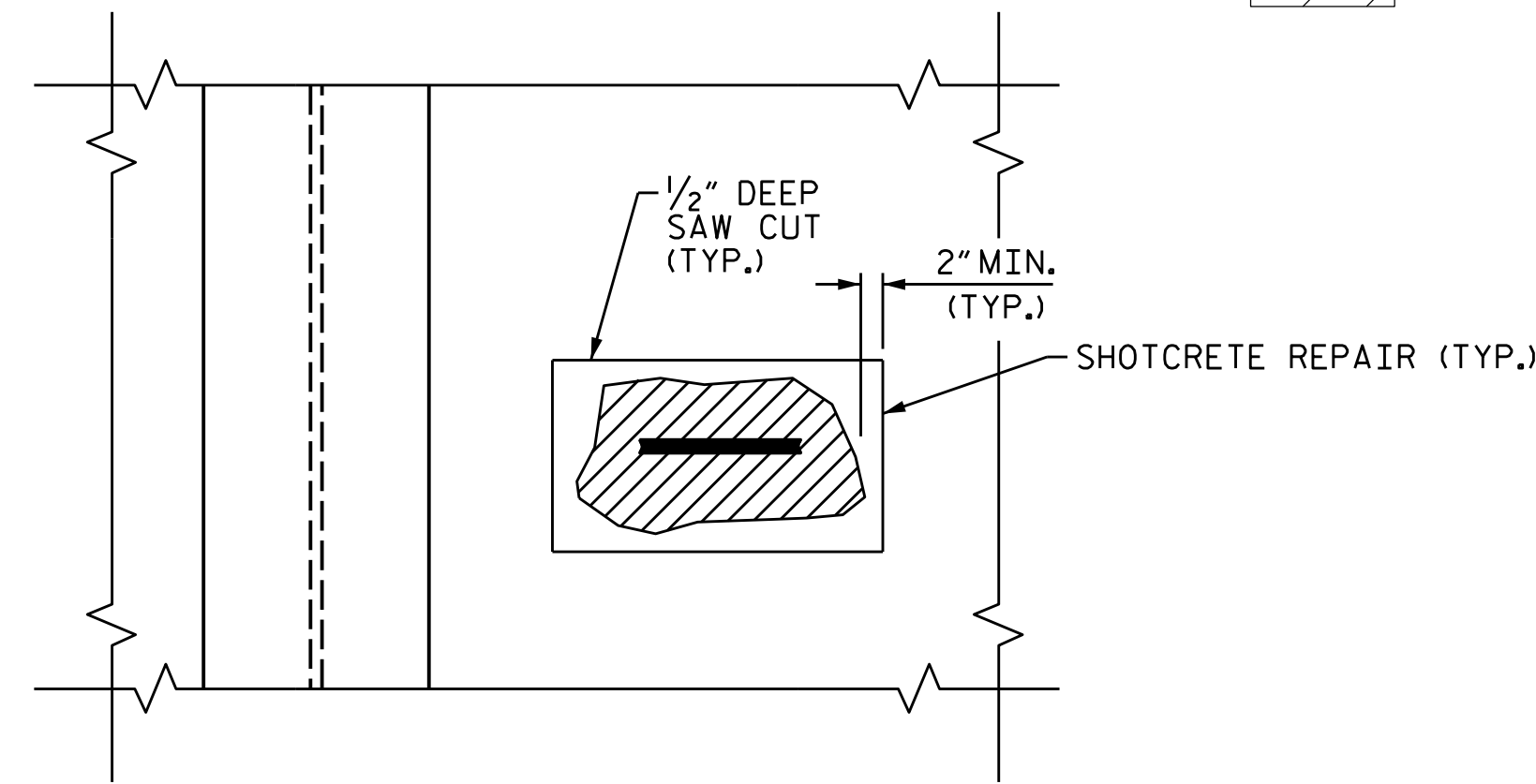
(FOR AREAS OF DETERIORATION EQUAL TO OR LESS THAN 3SF)

* WIRE TIE TO BE KNOTTED BELOW TEMPORARY FORMWORK AND ATTACHED TO DOWEL THAT IS WIDER THAN FORMED FULL DEPTH HOLE. ROTATE DOWEL TO TIGHTEN FORMWORK AGAINST BOTTOM OF DECK.

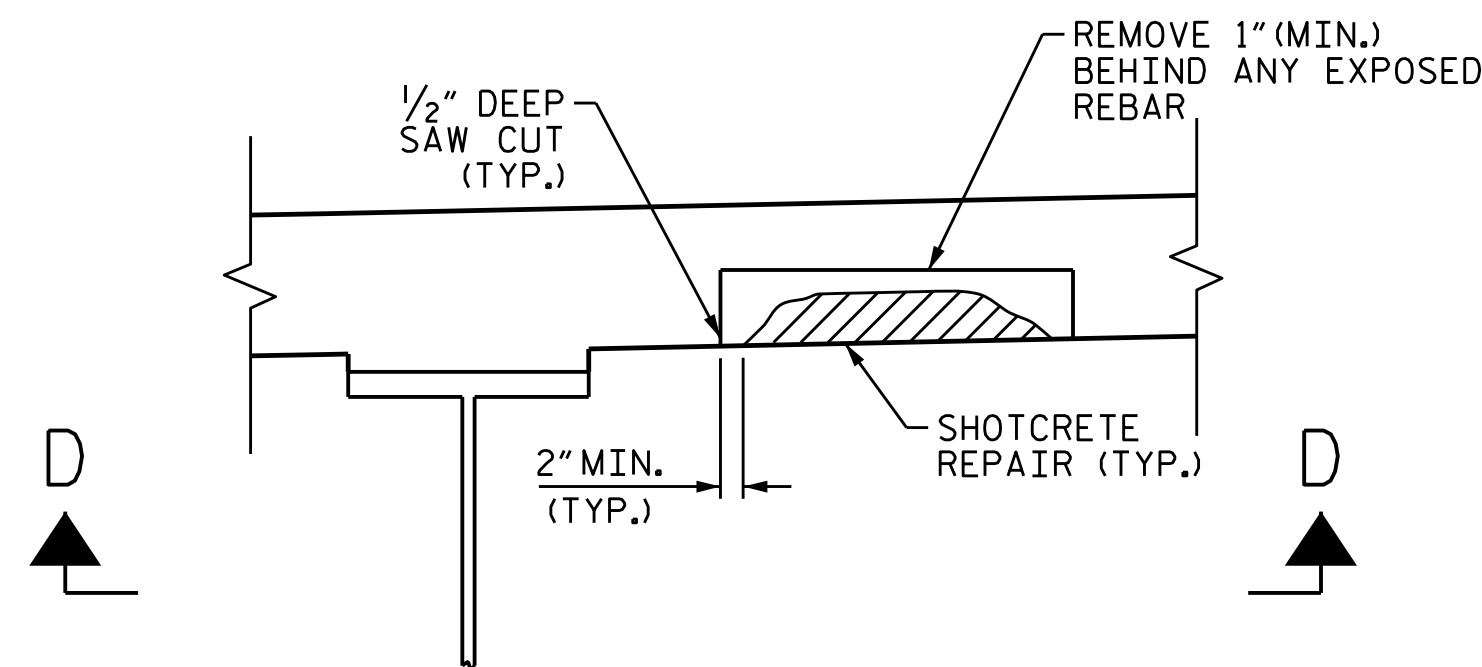


FULL DEPTH REPAIR WITH TEMPORARY FORMWORK

(FOR AREAS OF DETERIORATION GREATER THAN 3SF)

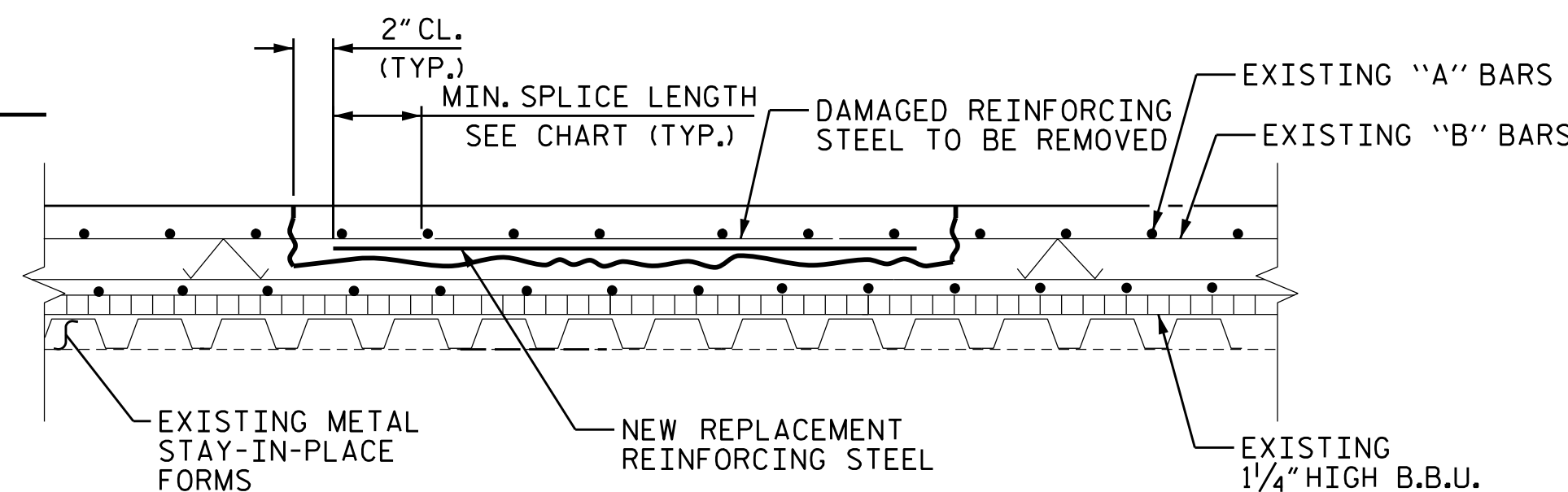


SECTION D-D



TYPICAL SECTION

UNDERSIDE OF DECK REPAIR



REINFORCING STEEL REPAIR

NOTES

FOR AREAS TO BE REPAIRED, SEE "PLAN OF SPAN" SHEETS.

ALL DECK REPAIRS SHALL BE COMPLETED PRIOR TO PLACEMENT OF OVERLAY.

FOR CLASS II AND CLASS III SURFACE PREPARATION, SEE "LMC OVERLAY SURFACE PREPARATIONS" SPECIAL PROVISION.

THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK. FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

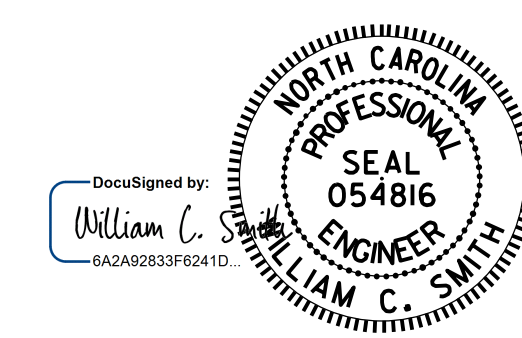
UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.

SUPERSTRUCTURE REINFORCING STEEL LENGTHS ARE BASED ON THE FOLLOWING MINIMUM SPLICE LENGTHS

| BAR SIZE | SUPERSTRUCTURE EXCEPT APPROACH SLABS, PARAPET, AND BARRIER RAIL | | APPROACH SLABS | | PARAPET AND BARRIER RAIL |
|----------|---|----------|----------------|----------|--------------------------|
| | EPOXY COATED | UNCOATED | EPOXY COATED | UNCOATED | |
| #4 | 1'-11" | 1'-7" | 1'-11" | 1'-7" | 2'-6" |
| #5 | 2'-5" | 2'-0" | 2'-5" | 2'-0" | 3'-1" |
| #6 | 2'-10" | 2'-5" | 3'-7" | 2'-5" | 3'-8" |
| #7 | 4'-2" | 2'-9" | — | — | — |
| #8 | 4'-9" | 3'-2" | — | — | — |

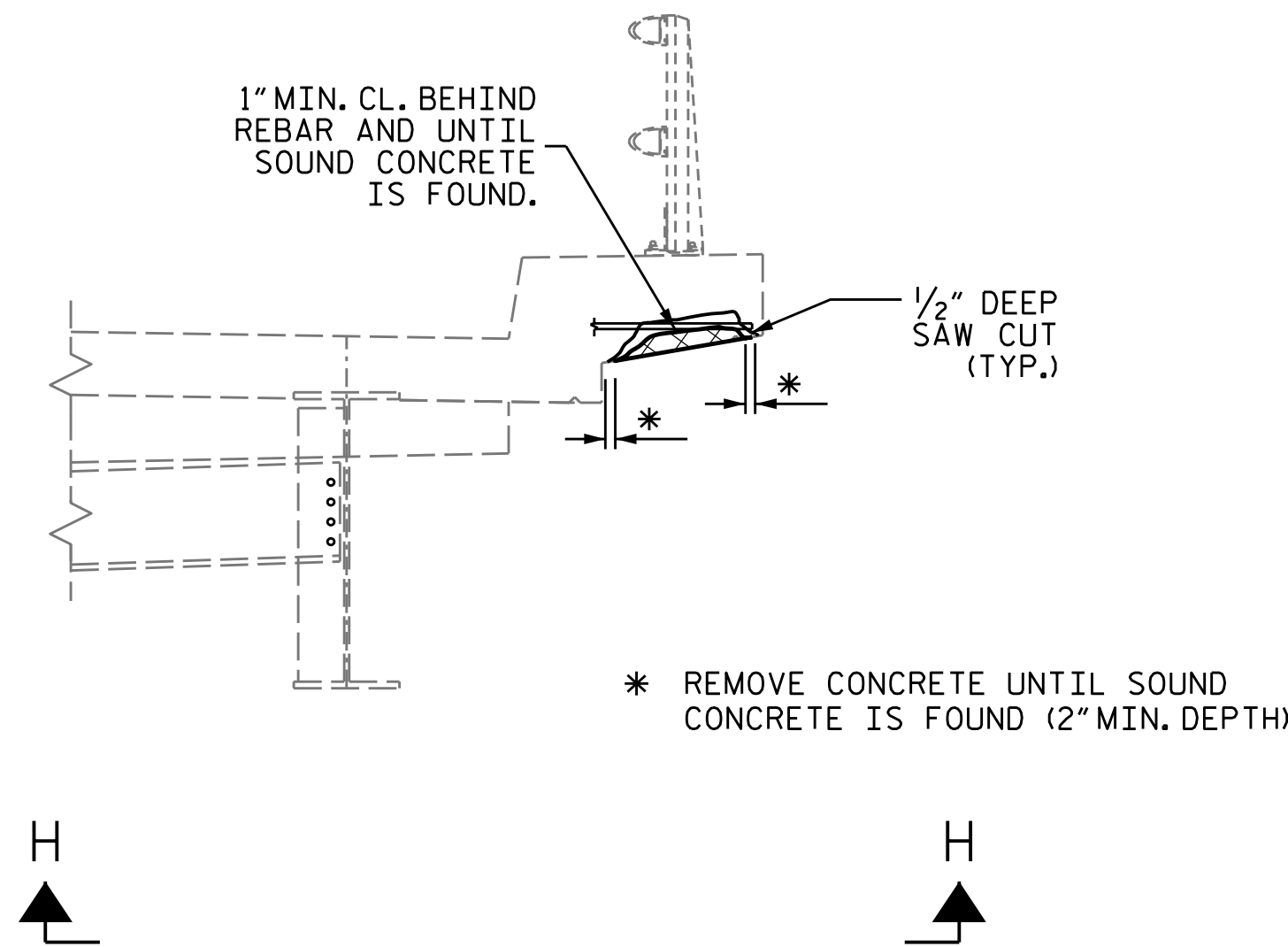
PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630225



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
DECK REPAIR DETAILS

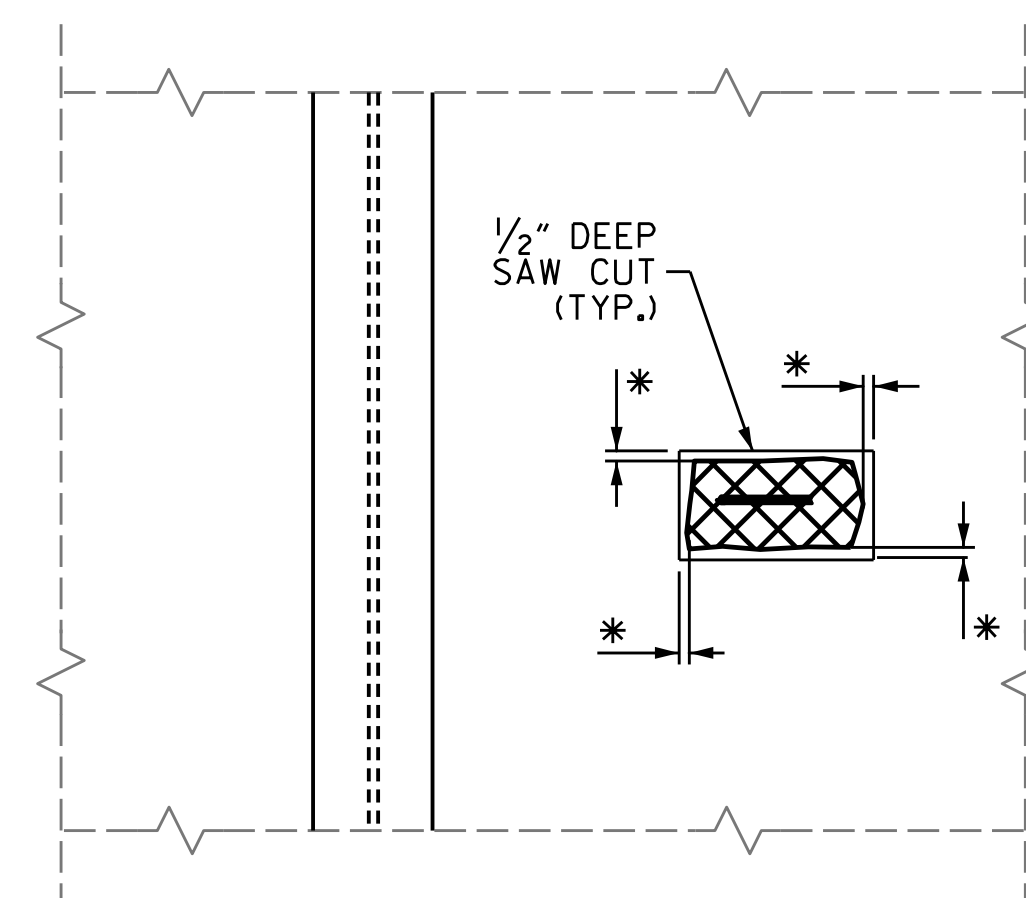
ASSEMBLED BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DRAWN BY : NAP 9/18
 CHECKED BY :

| NO. | BY: | DATE: | REVISIONS | | | SHEET NO. |
|-----|-----|-------|-----------|-----|-------|-----------------|
| | | | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S2-14 |
| 2 | | | 4 | | | TOTAL SHEETS 23 |



TYPICAL SECTION
(UTILITIES NOT SHOWN FOR CLARITY)

DAMAGED AREA



SECTION H-H
OVERHANG DETAILS

NOTES

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.

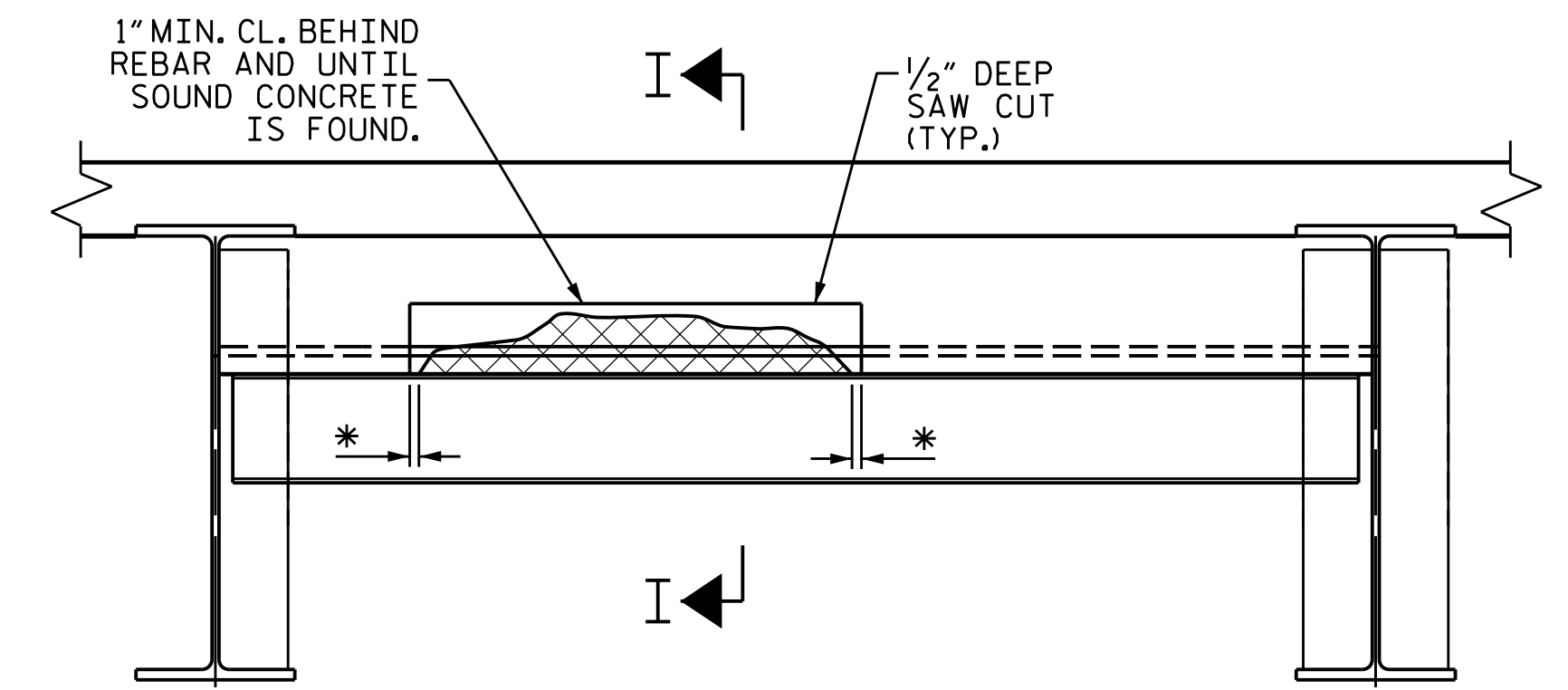
REINFORCING STEEL WHICH IS DETERMINED BY THE ENGINEER TO BE REPLACED, SHALL BE REMOVED TO A POINT WHERE IT IS SOUND. THE PATCH SHALL EXTEND A SUFFICIENT DISTANCE BEYOND THIS POINT TO DEVELOP A SPLICE LENGTH SPECIFIED IN THE TABLE ON THE "DECK REPAIR DETAIL" SHEET.

FOR AREAS TO BE REPAIRED, SEE "UNDERSIDE DECK REPAIRS" SHEETS.

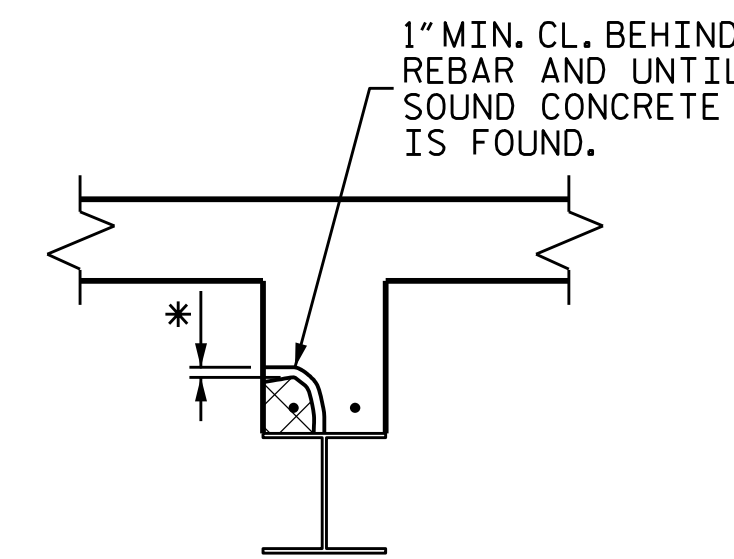
THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK FOR TEMPORARY FORMWORK. FOR SUBMITTALS OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

UPON REMOVAL OF TEMPORARY FORMWORK, ALL VOIDS AND HONEYCOMBS ON THE UNDERSIDE OF DECK SURFACE SHALL BE FILLED WITH THE SAME MATERIAL AS USED FOR THE PATCH, AND FINISHED TO CONFORM TO THE SURROUNDING CONCRETE SURFACE.

NO FORMWORK SHALL BE LEFT IN PLACE.



TYPICAL SECTION



SECTION I-I

* REMOVE CONCRETE UNTIL SOUND CONCRETE IS FOUND (2" MIN. DEPTH)

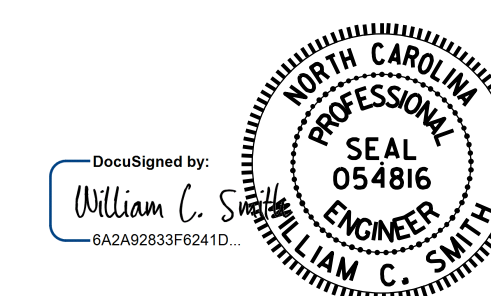
DAMAGED AREA

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

INTERIOR DIAPHRAGM REPAIR DETAILS

(EXTERIOR DIAPHRAGM SIMILAR)

PROJECT NO. 4B.106413
NASH COUNTY
BRIDGE NO. 630225



07/08/2024

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
OVERHANG & DIAPHRAGM REPAIR DETAILS

DRAWN BY : S. T. SANDOR DATE : 05/2024
CHECKED BY : W. C. SMITH DATE : 05/2024

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S2-15 |
| 1 | | | 3 | | | TOTAL SHEETS |
| 2 | | | 4 | | | 23 |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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.

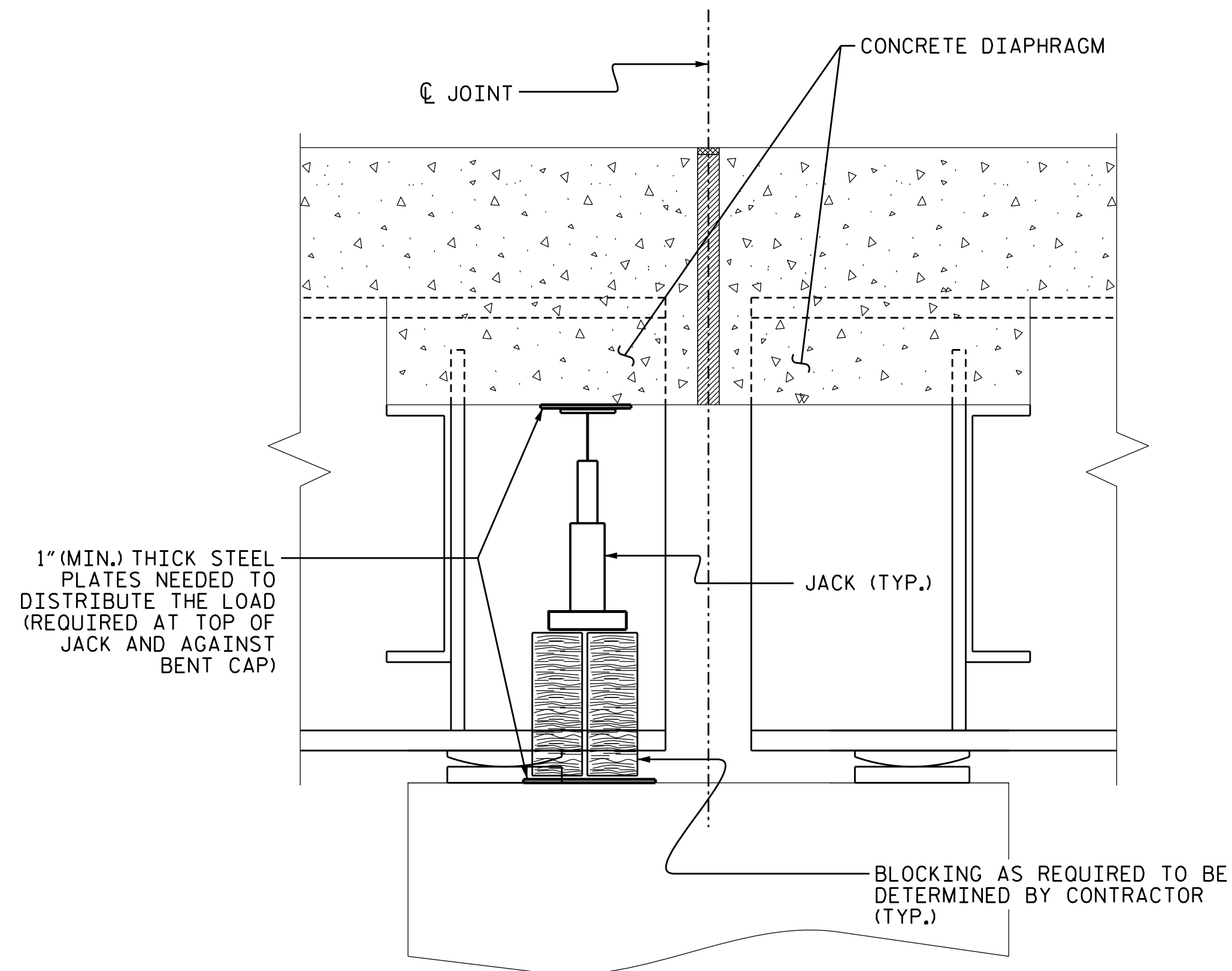
FOR TYPE II BRIDGE JACKING, SEE SPECIAL PROVISIONS.

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 HYDRAULIC JACKING SYSTEM THAT LIFTS EACH BEAM ALONG ENTIRE SPAN END WITH EQUAL FORCE AND AT 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.

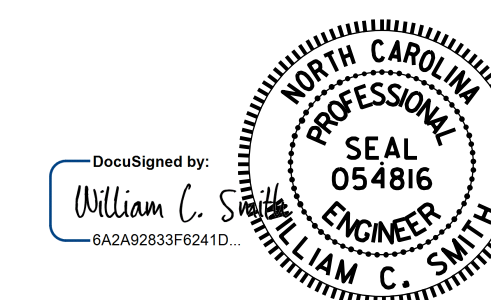


SECTION THRU DIAPHRAGM

BRIDGE JACKING TABLE

| LOCATION | SPAN | BEAM(S) | BRIDGE JACKING TYPE | DEAD LOAD (DC + DW) (KIPS) |
|----------|------|------------|---------------------|----------------------------|
| BENT 1 | A | 1, 2, 3, 4 | TYPE II | --- |
| BENT 1 | B | 1, 2, 3, 4 | TYPE II | --- |
| BENT 2 | C | 1, 2, 3, 4 | TYPE II | --- |
| BENT 3 | D | 1, 2, 3, 4 | TYPE II | --- |
| BENT 4 | E | 1, 2, 3, 4 | TYPE II | --- |

PROJ. NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630225



07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD

BRIDGE JACKING
 DETAILS

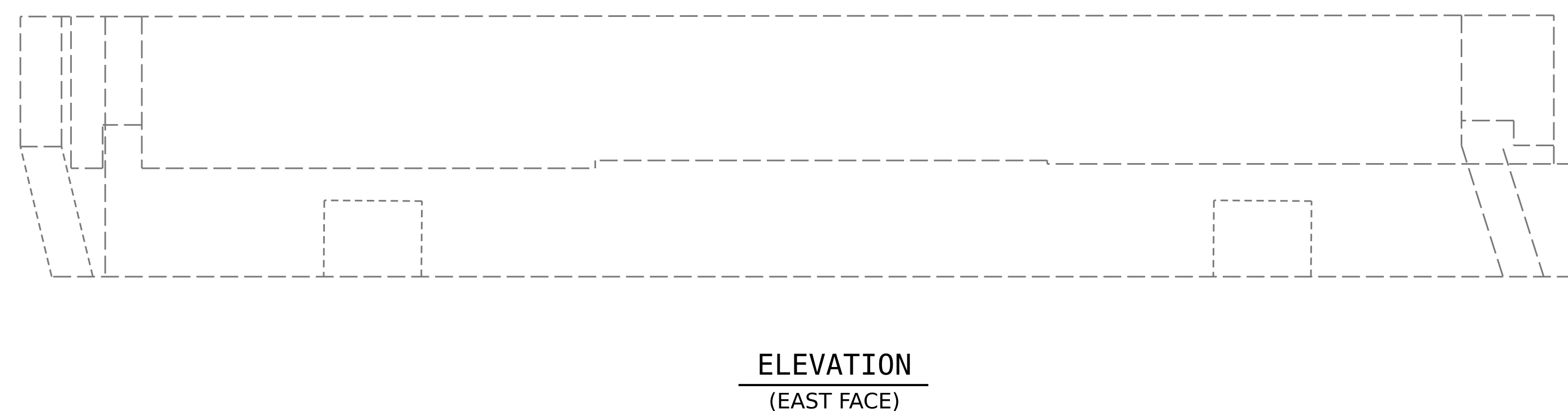
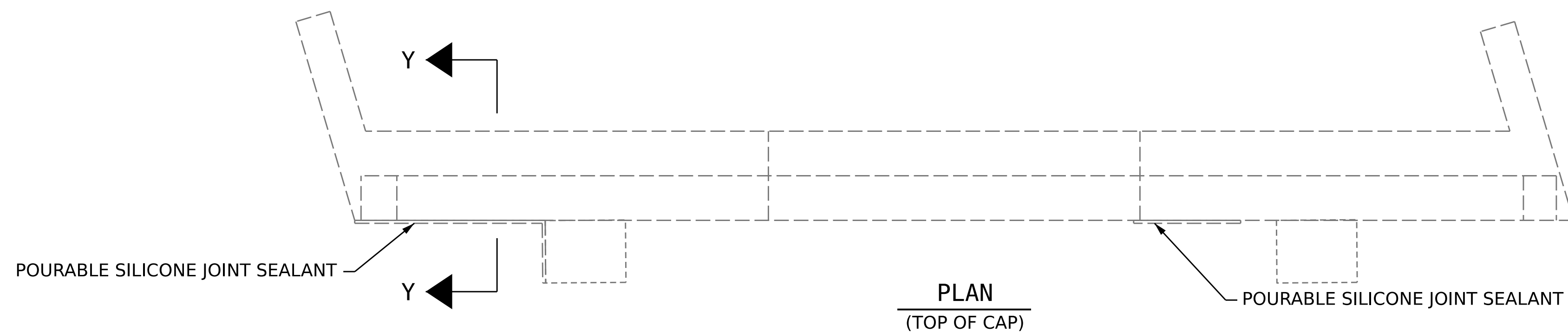
ASSEMBLED BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024

DRAWN BY : NAP 08/18
 CHECKED BY :

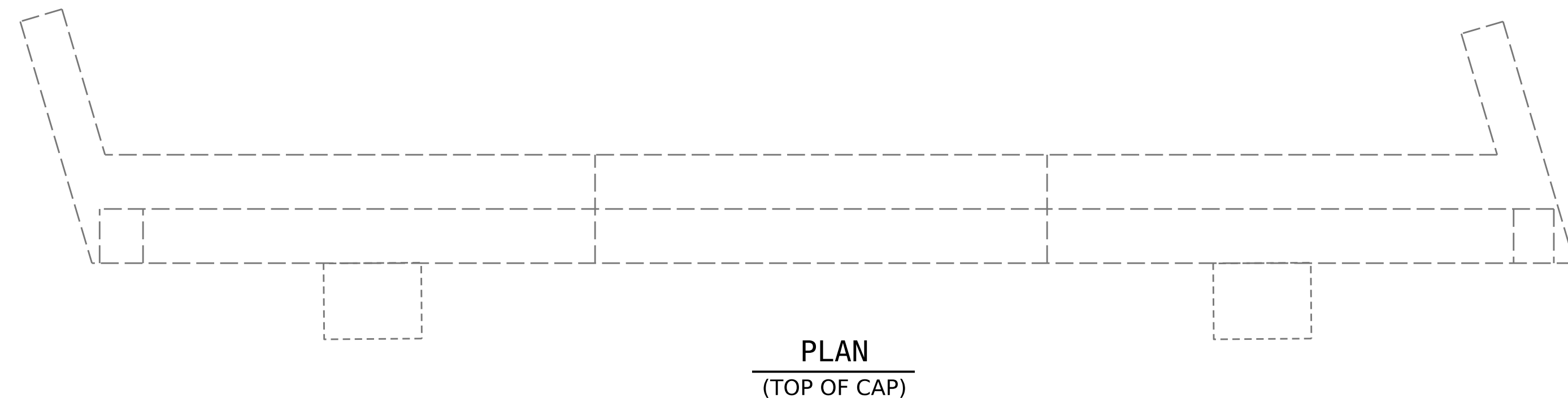
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DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
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| NO. | BY: | DATE: | NO. | BY: | DATE: | S2-16 |
| 1 | | | 3 | | | TOTAL SHEETS |
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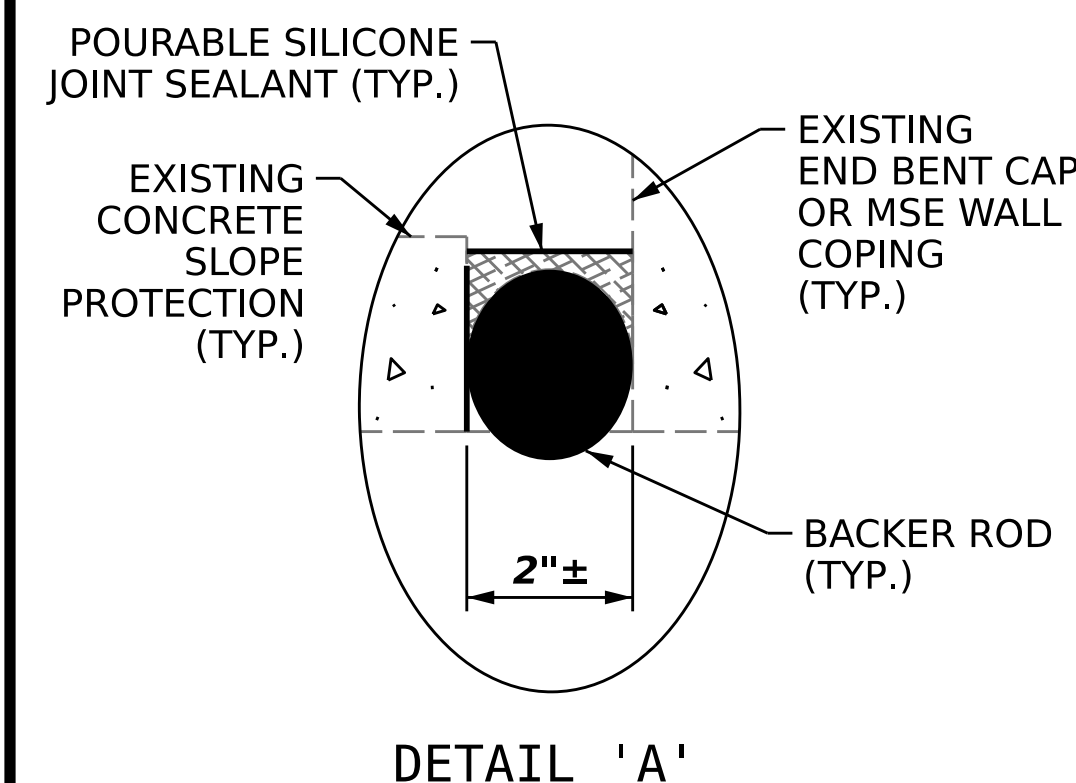
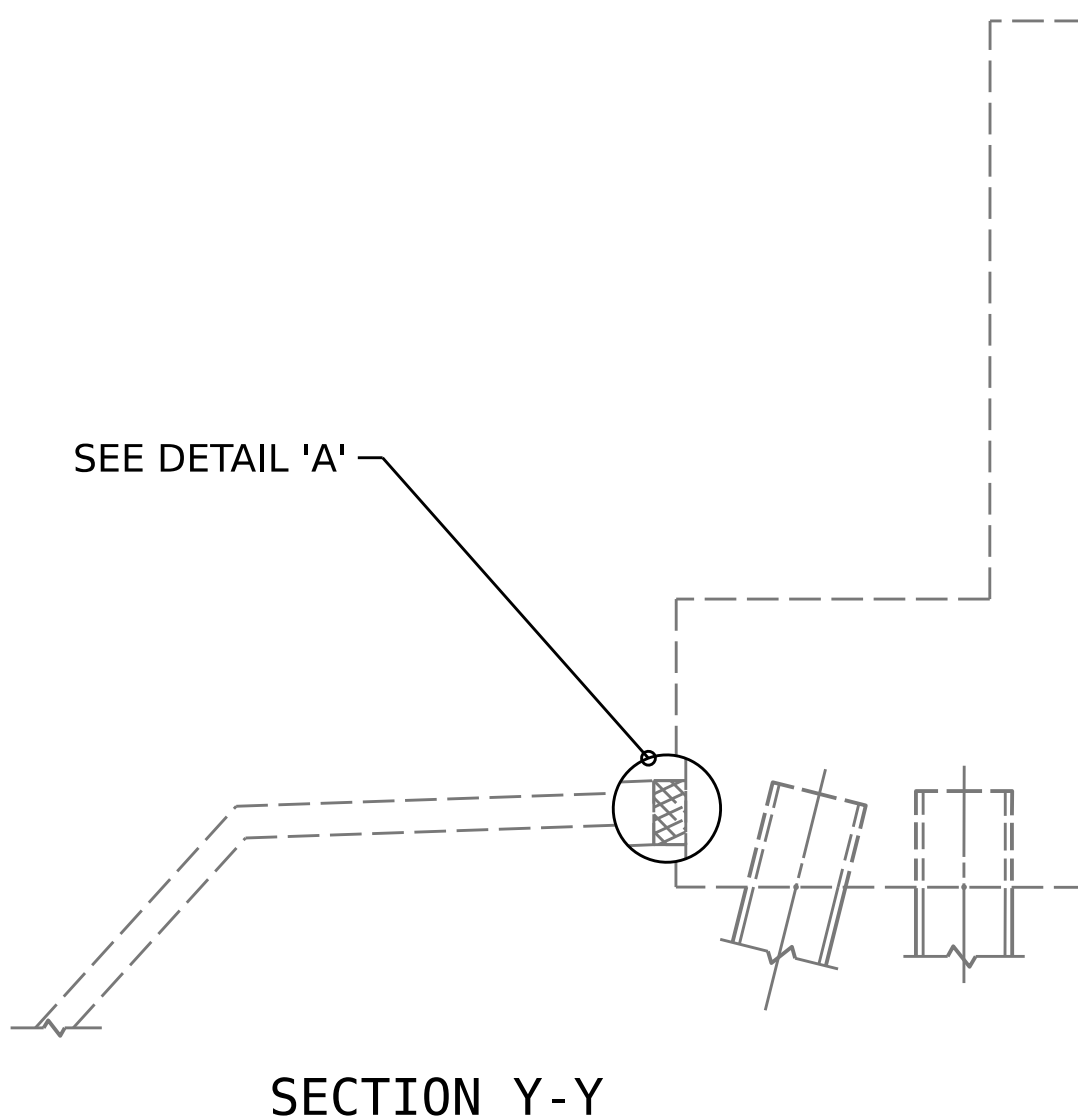


END BENT 1



ELEVATION
(WEST FACE)

END BENT 2



| SUBSTRUCTURE REPAIR QUANTITY TABLE | | | | |
|------------------------------------|------------|-----------|-----------|-----------|
| REPAIRS - END BENT 1 & 2 | QUANTITIES | | | |
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| CURTAIN WALL | 1.0 | 0.5 | | |
| WINGWALL | | | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| CURTAIN WALL | 0 | 0 | | |
| WINGWALL | | | | |
| EPOXY RESIN INJECTION | LINEAR FT | | LINEAR FT | |
| CAP | 0 | | | |
| CURTAIN WALL | 0 | | | |
| WINGWALL | | | | |
| EPOXY COATING | AREA SF | | AREA SF | |
| TOP OF CAP | 98.5 | | | |
| POURABLE SILICONE JT. SEALANT | LINEAR FT | | LINEAR FT | |
| JOINT | 10.1 | | | |

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

NOTES

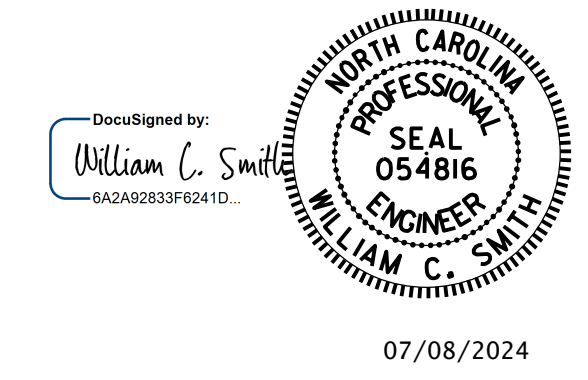
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN BASED ON THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ENTER THE ACTUAL QUANTITIES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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

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

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE REPAIR
 END BENT 1 &
 END BENT 2**

DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

| REVISIONS | | | | | | SHEET NO. S2-17 TOTAL SHEETS 23 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

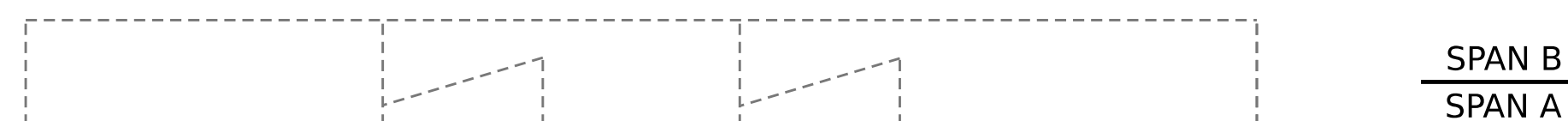
FOR CAP AND COLUMN REPAIR, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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

SUBSTRUCTURE REPAIR QUANTITY TABLE

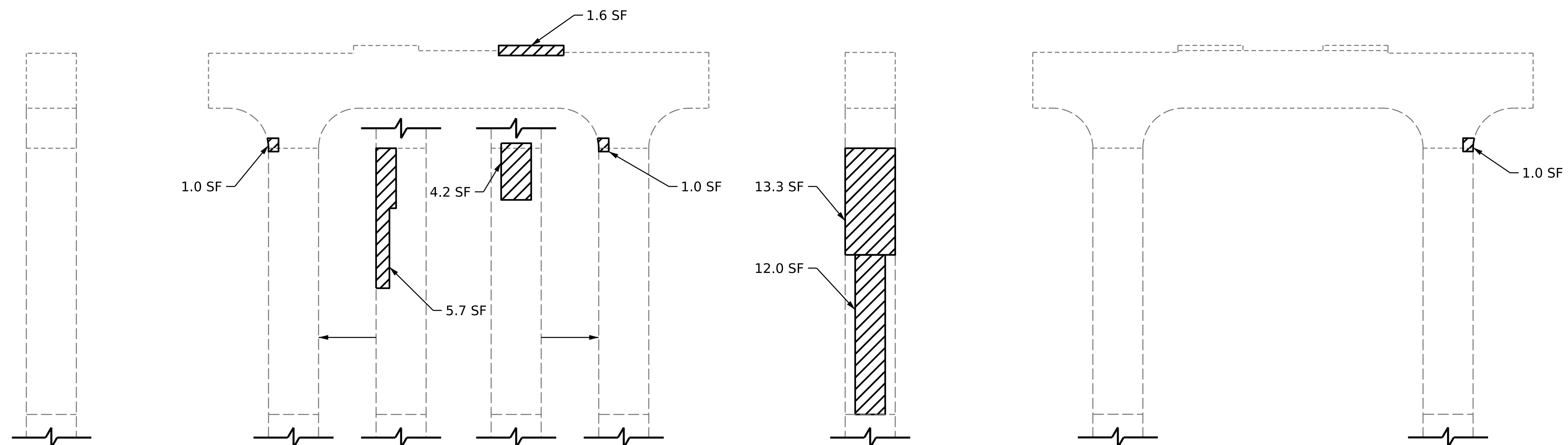
| REPAIRS - BENT 1 | QUANTITIES | | | |
|------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 1.6 | 0.8 | | |
| COLUMN | 38.2 | 19.1 | | |
| CONCRETE REPAIRS | | | | |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | | | |
| CAP | | LINEAR FT | | LINEAR FT |
| COLUMN | | 0 | | |
| EPOXY COATING | | | | |
| TOP OF CAP | | AREA SF | | AREA SF |
| | | 58.5 | | |

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



PLAN

TOP OF CAP



END VIEW

NORTH FACE

ELEVATION

WEST FACE (LOOKING EAST)

END VIEW

SOUTH FACE

ELEVATION

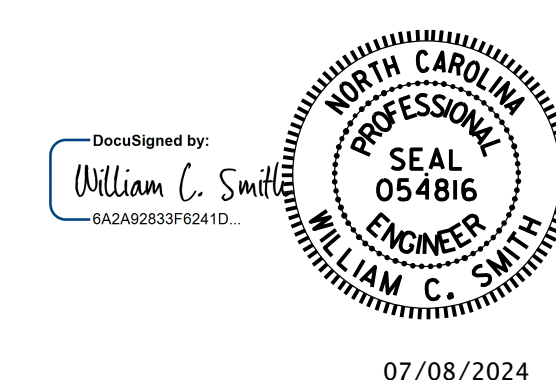
EAST FACE (LOOKING WEST)



PLAN

BOTTOM OF CAP

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIR BENT 1

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. |
| 1 | | | 3 | | | 52-18 |
| 2 | | | 4 | | | TOTAL SHEETS 23 |

DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

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



SHOTCRETE REPAIR AREA



CONCRETE REPAIR AREA



PREVIOUSLY ACCOUNTED FOR AREA



EPOXY RESIN INJECTION

SUBSTRUCTURE REPAIR QUANTITY TABLE

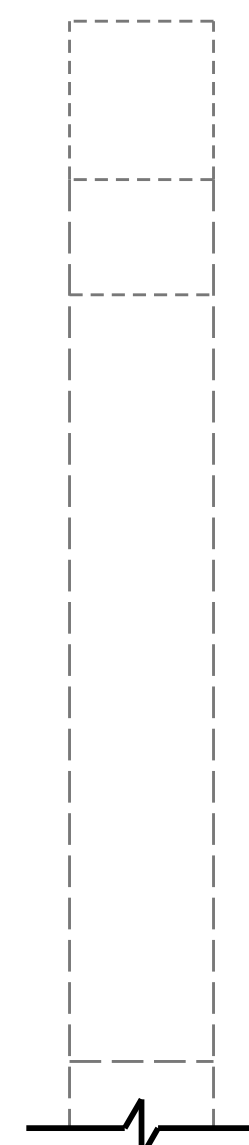
| REPAIRS - BENT 2 | QUANTITIES | | | |
|-----------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 2.0 | 1.0 | | |
| COLUMN | 0 | 0 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 58.5 | | |

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



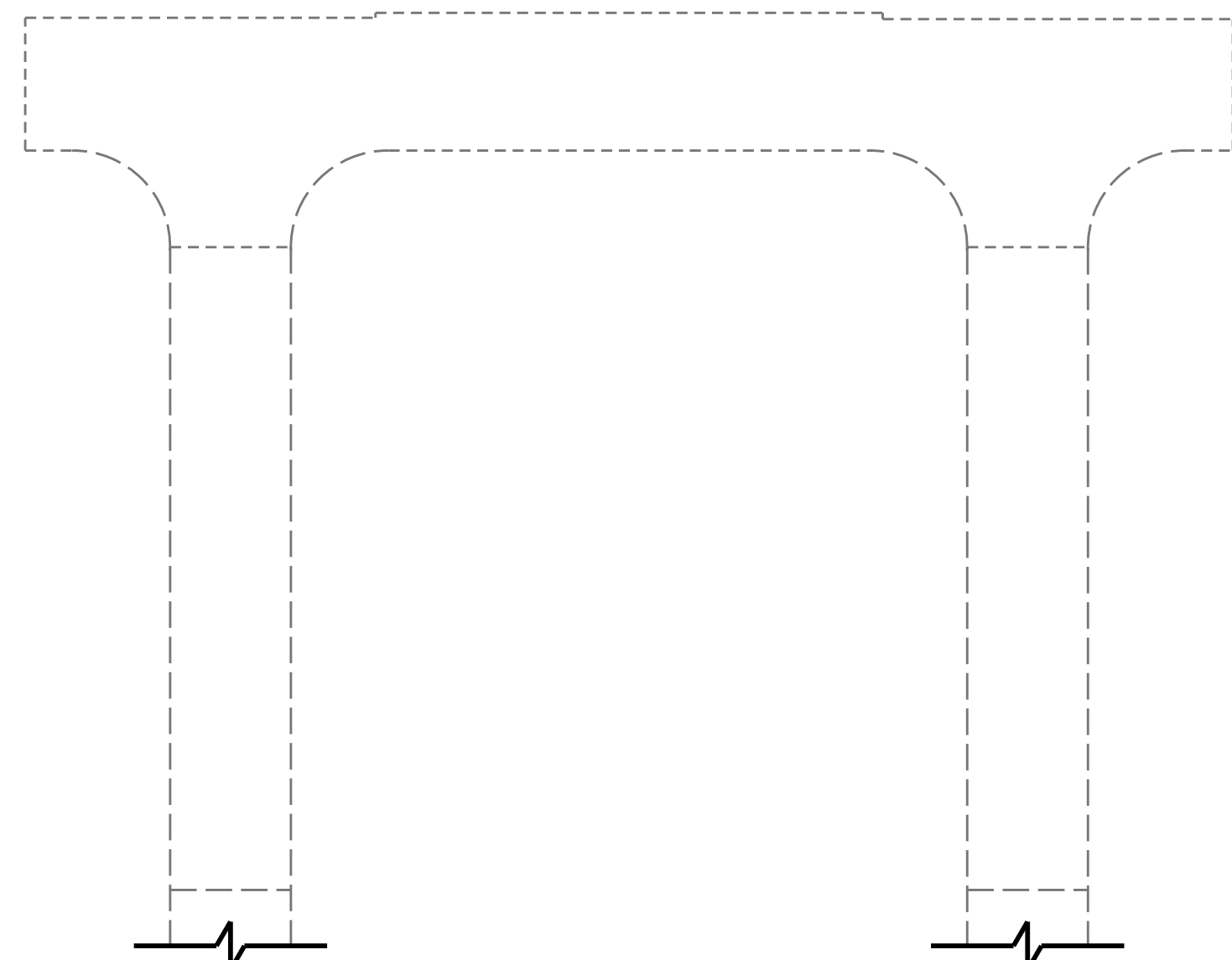
PLAN

TOP OF CAP



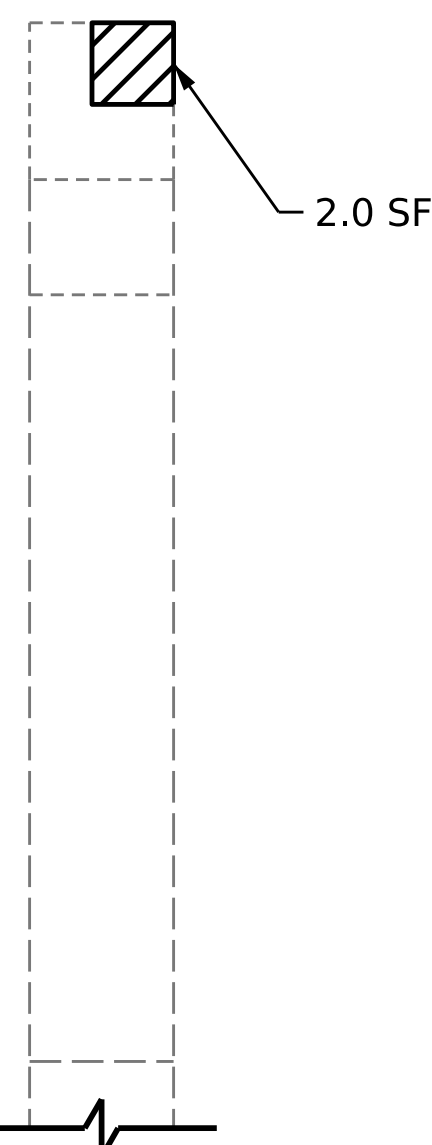
END VIEW

NORTH FACE



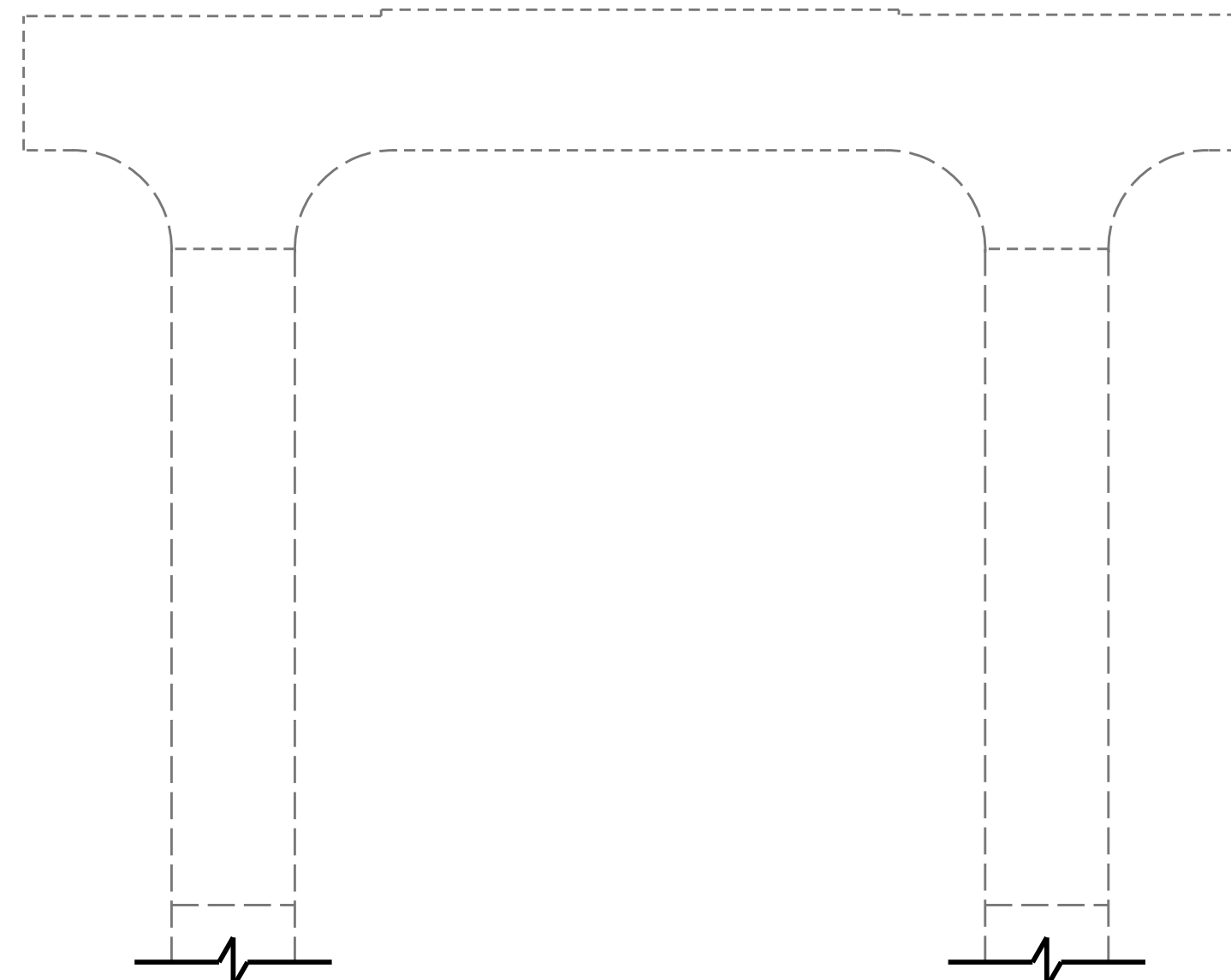
ELEVATION

WEST FACE (LOOKING EAST)



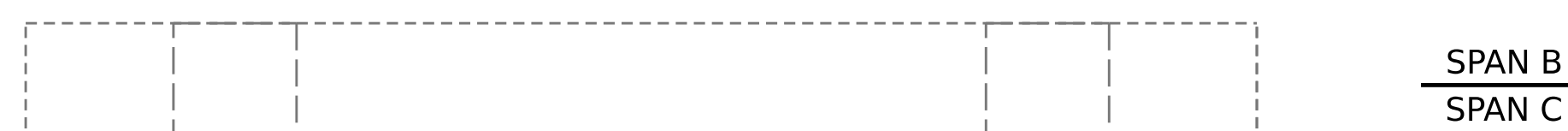
END VIEW

SOUTH FACE



ELEVATION

EAST FACE (LOOKING WEST)

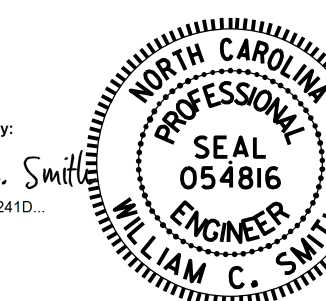


PLAN

BOTTOM OF CAP

PROJECT NO. **4B.106413**
NASH COUNTY
BRIDGE NO. **630225**

DocuSigned by:
William C. Smith
0A2A9283F92410...



07/08/2024

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE REPAIR
BENT 2

| REVISIONS | | | | | SHEET NO. S2-19 TOTAL SHEETS 23 |
|-----------|-----|-------|-----|-----|--|
| NO. | BY: | DATE: | NO. | BY: | |
| 1 | | | 3 | | |
| 2 | | | 4 | | |

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY : N. S. HART DATE : 05/2024
CHECKED BY : Z. MALIK DATE : 05/2024
DESIGN ENGINEER OF RECORD: _____ DATE : _____





NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

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

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

SUBSTRUCTURE REPAIR QUANTITY TABLE

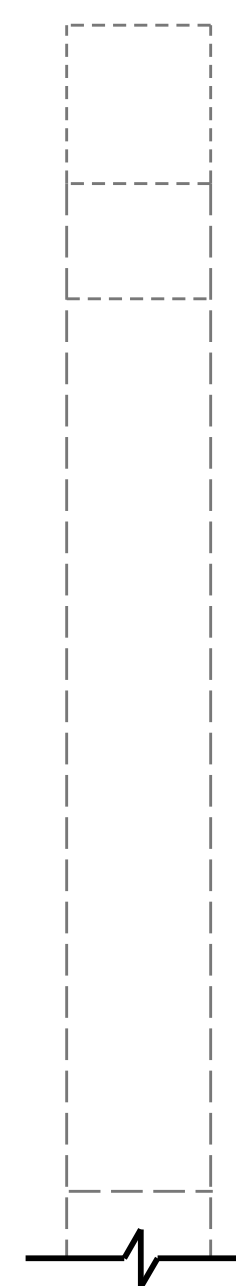
| REPAIRS - BENT 3 | QUANTITIES | | | |
|-----------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 9.3 | 4.7 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 0 | 0 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 58.5 | | |

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



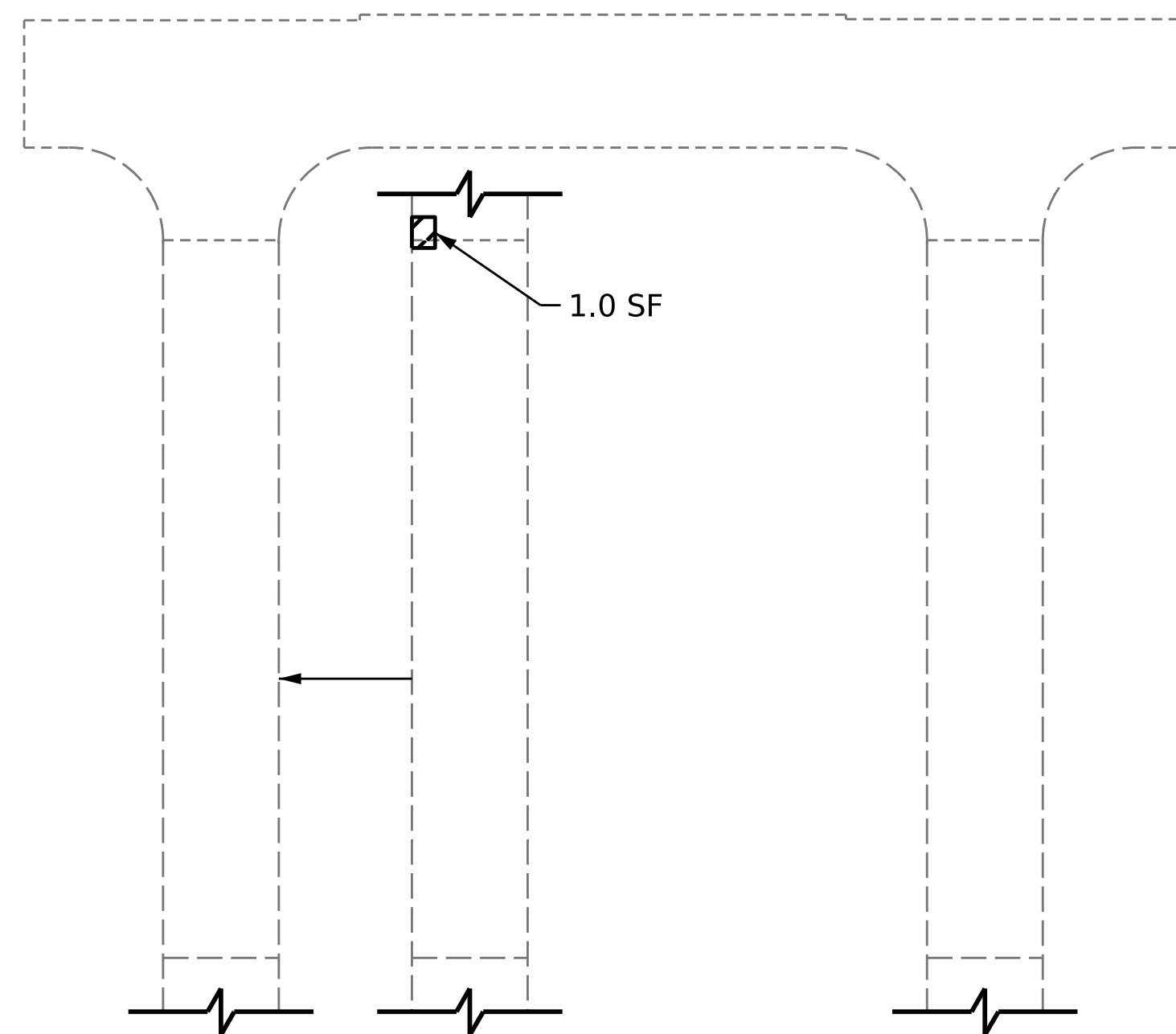
PLAN

TOP OF CAP



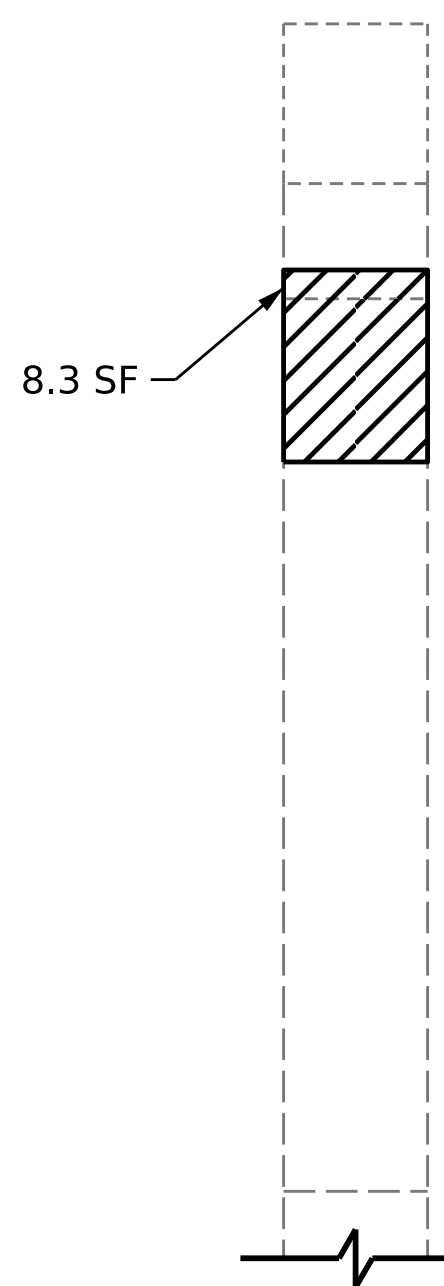
END VIEW

NORTH FACE



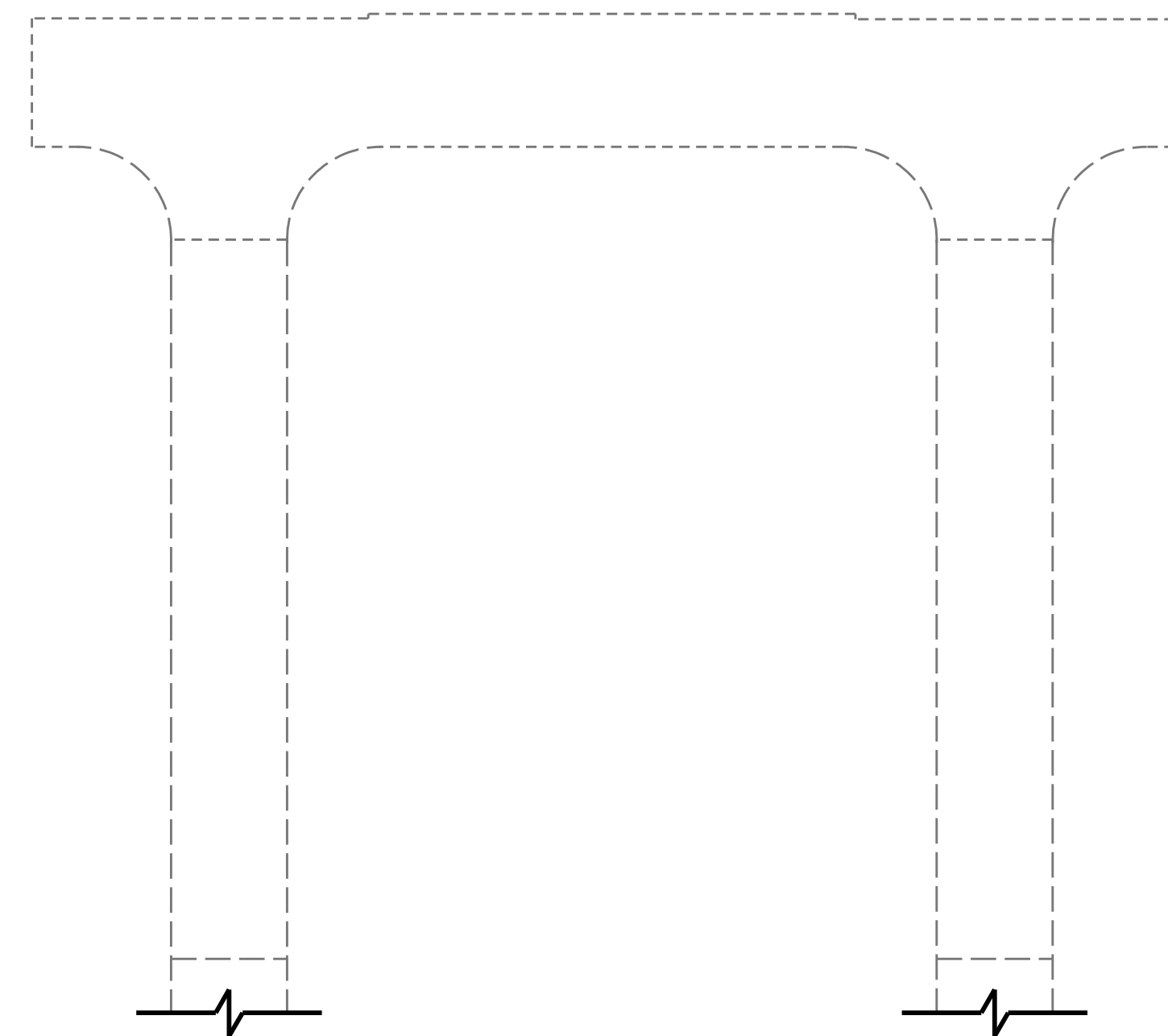
ELEVATION

WEST FACE
(LOOKING EAST)



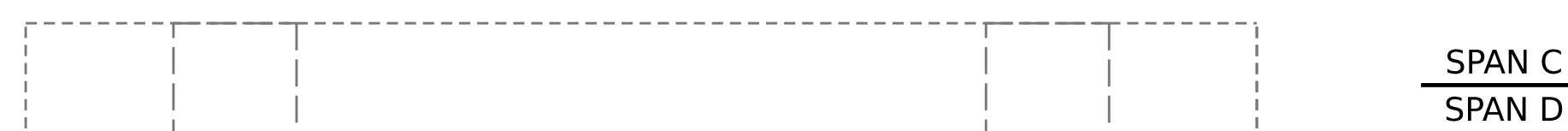
END VIEW

SOUTH FACE



ELEVATION

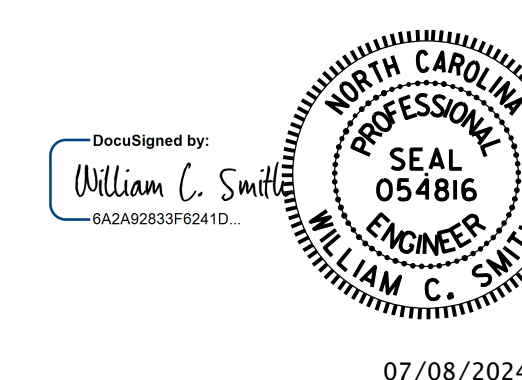
EAST FACE
(LOOKING WEST)



PLAN

BOTTOM OF CAP

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**



07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE REPAIR
 BENT 3**

DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

| REVISIONS | | | | | SHEET NO. 52-20 TOTAL SHEETS 23 |
|-----------|-----|-------|-----|-----|--|
| NO. | BY: | DATE: | NO. | BY: | |
| 1 | | | 3 | | |
| 2 | | | 4 | | |





NOTES

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

CLEAN AND REMOVE DEBRIS FROM THE TOP OF THE CAP AND APPLY EPOXY PROTECTIVE COATING. EPOXY COATING SHALL BE APPLIED TO THE TOP SURFACE OF THE CAP. THE CONTRACTOR SHALL NOT COAT THE AREA OF THE CAP BENEATH THE MASONRY PLATES. FOR EPOXY COATING, SEE SPECIAL PROVISIONS.

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

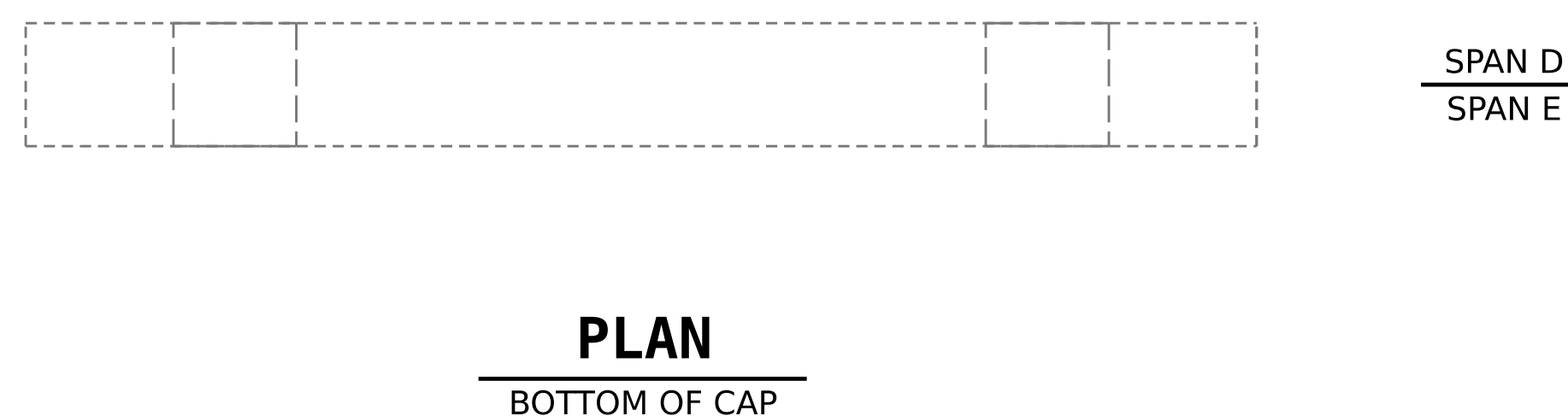
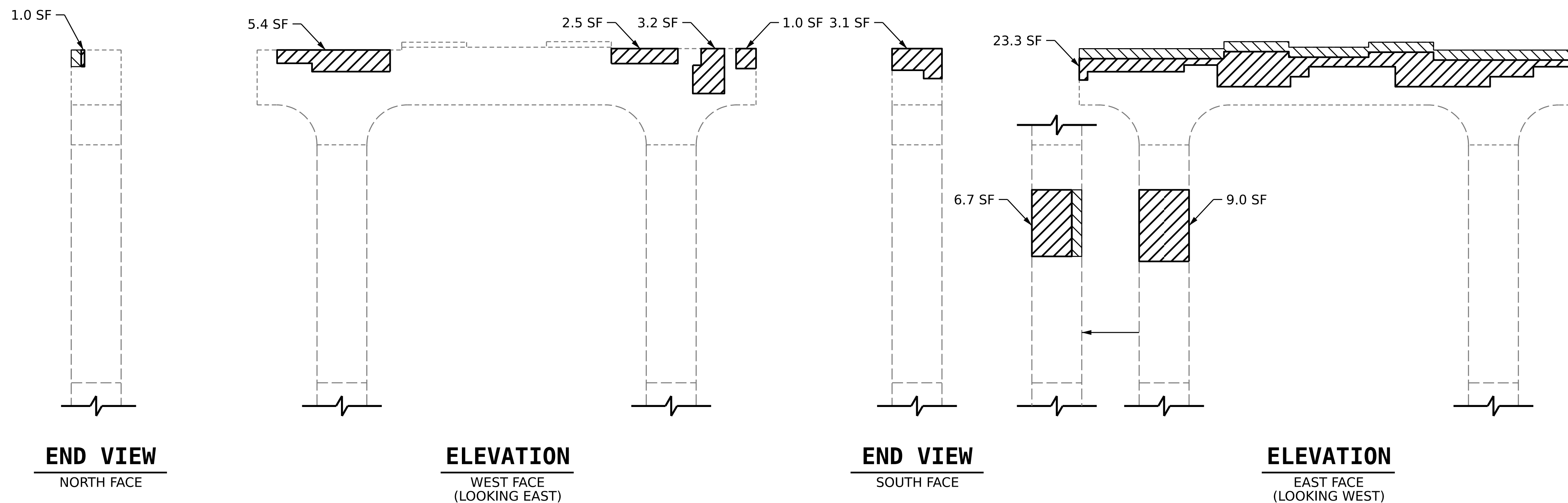
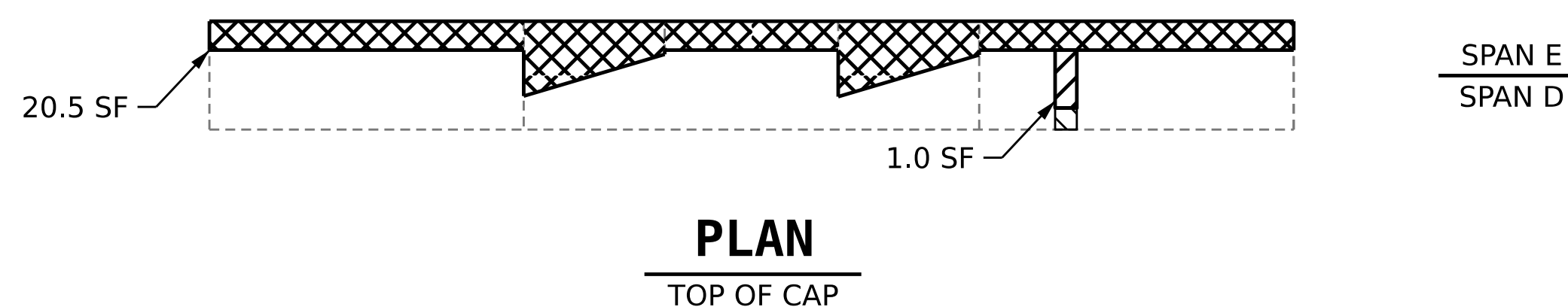
FOR CAP AND COLUMN REPAIR, SEE "TYPICAL CAP AND COLUMN REPAIR DETAILS" SHEET.

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

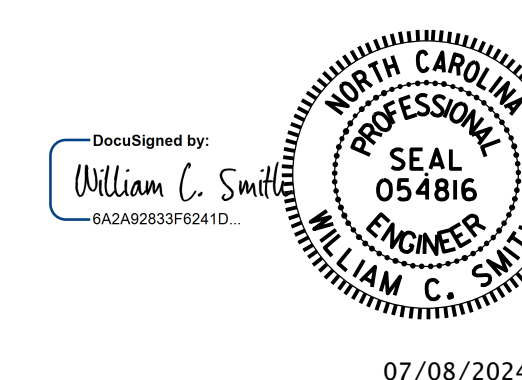
SUBSTRUCTURE REPAIR QUANTITY TABLE

| REPAIRS - BENT 4 | QUANTITIES | | | |
|------------------------------|------------|-----------|---------|-----------|
| | ESTIMATE | | ACTUAL | |
| SHOTCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 40.5 | 20.3 | | |
| COLUMN | 15.7 | 7.9 | | |
| CONCRETE REPAIRS | AREA SF | VOLUME CF | AREA SF | VOLUME CF |
| CAP | 20.5 | 10.3 | | |
| COLUMN | 0 | 0 | | |
| EPOXY RESIN INJECTION | | LINEAR FT | | LINEAR FT |
| CAP | | 0 | | |
| COLUMN | | 0 | | |
| EPOXY COATING | | AREA SF | | AREA SF |
| TOP OF CAP | | 58.5 | | |

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



PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**

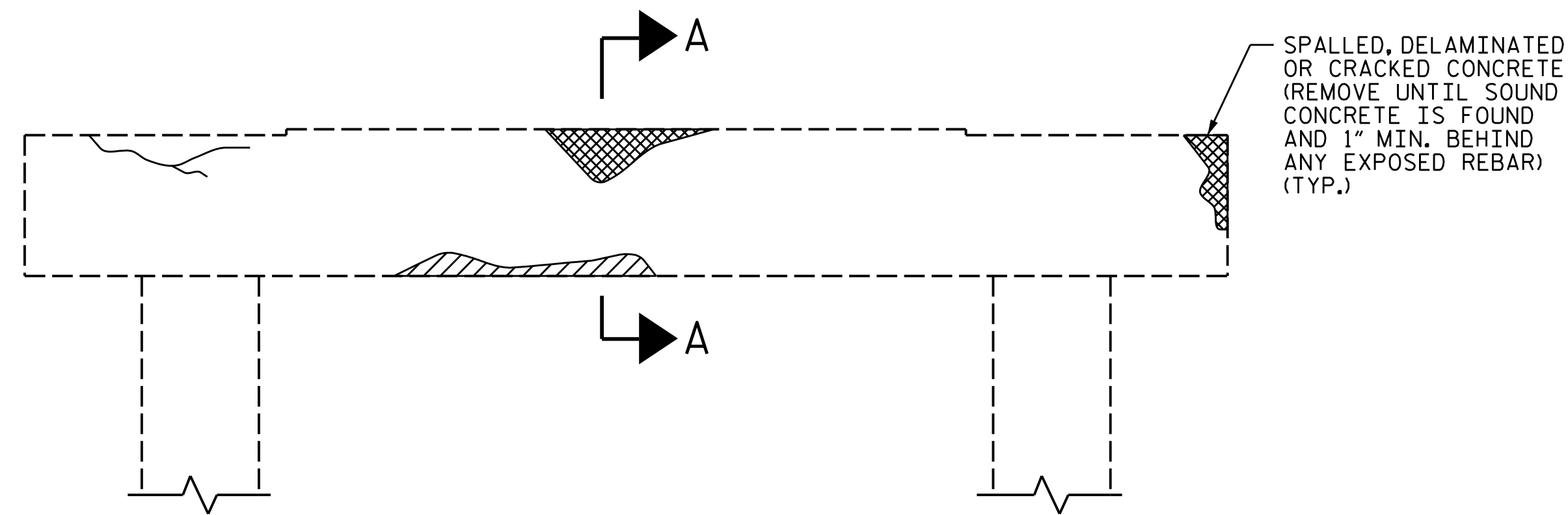


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE REPAIR
 BENT 4**

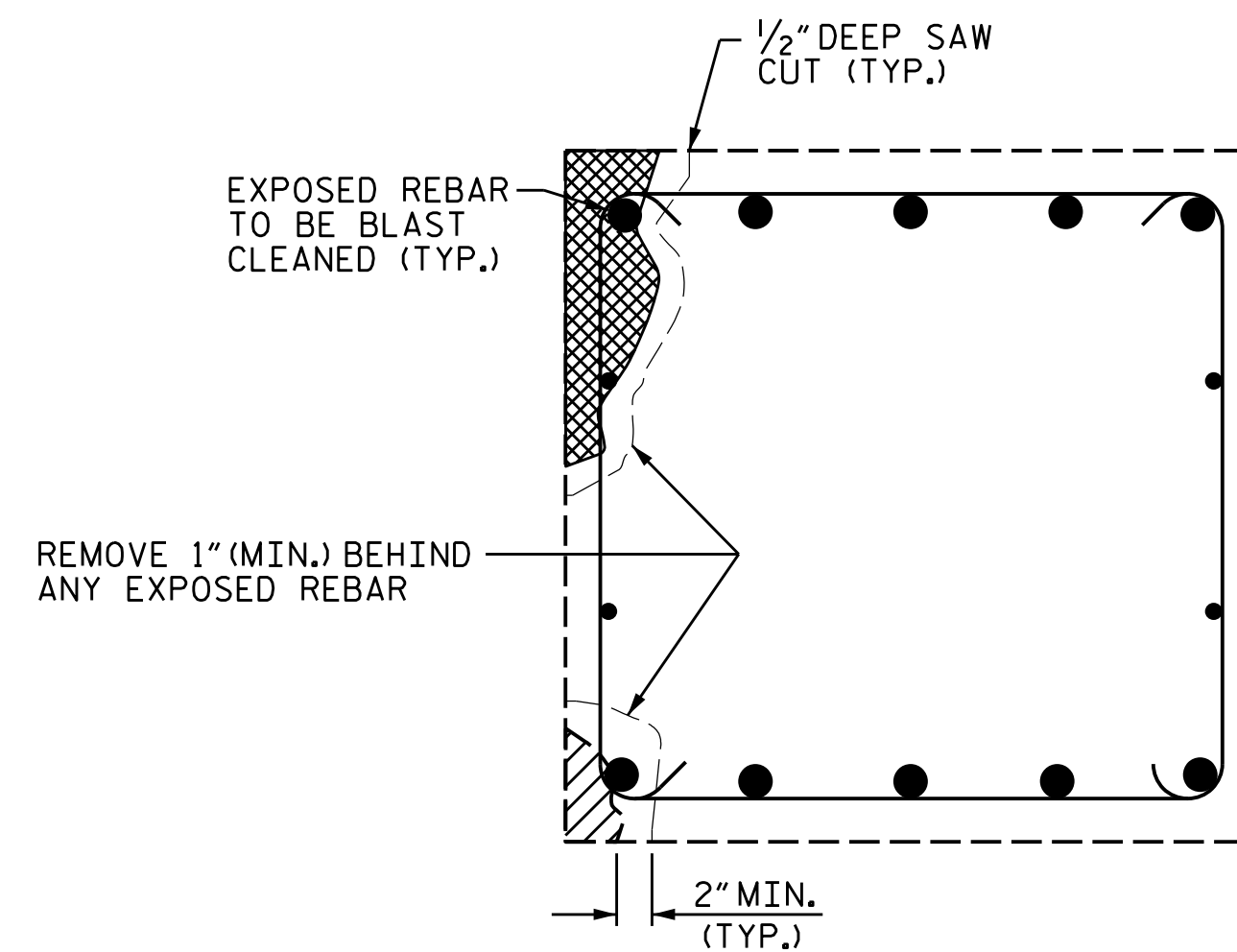
DRAWN BY : N. S. HART DATE : 05/2024
 CHECKED BY : Z. MALIK DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. S2-21 TOTAL SHEETS 23 |
|-----------|-----|-------|-----|-----|-------|--|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

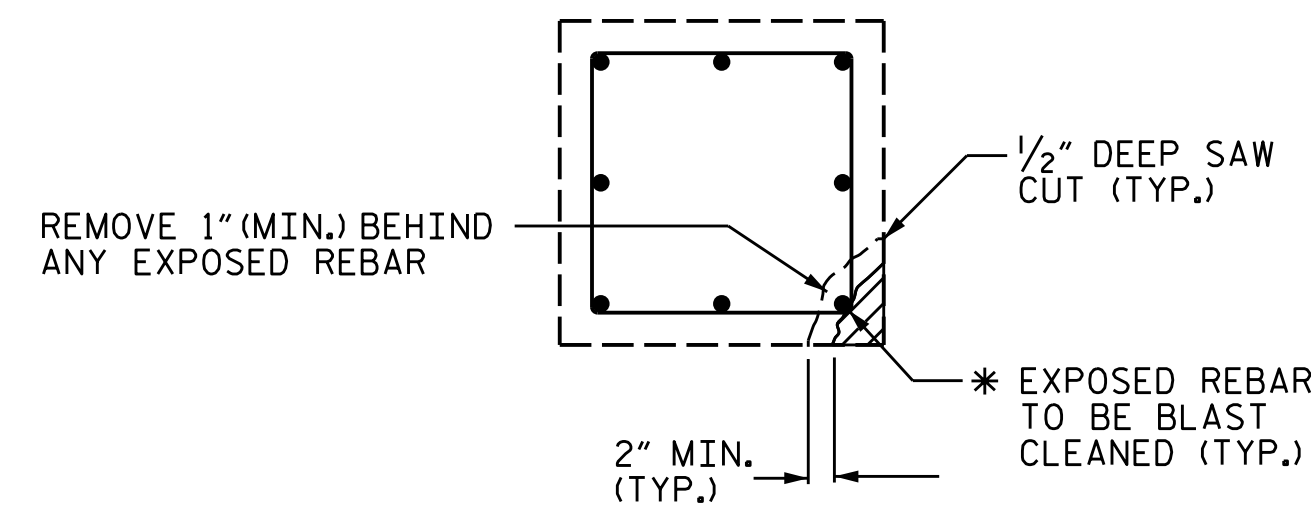


BENT CAP REPAIRS

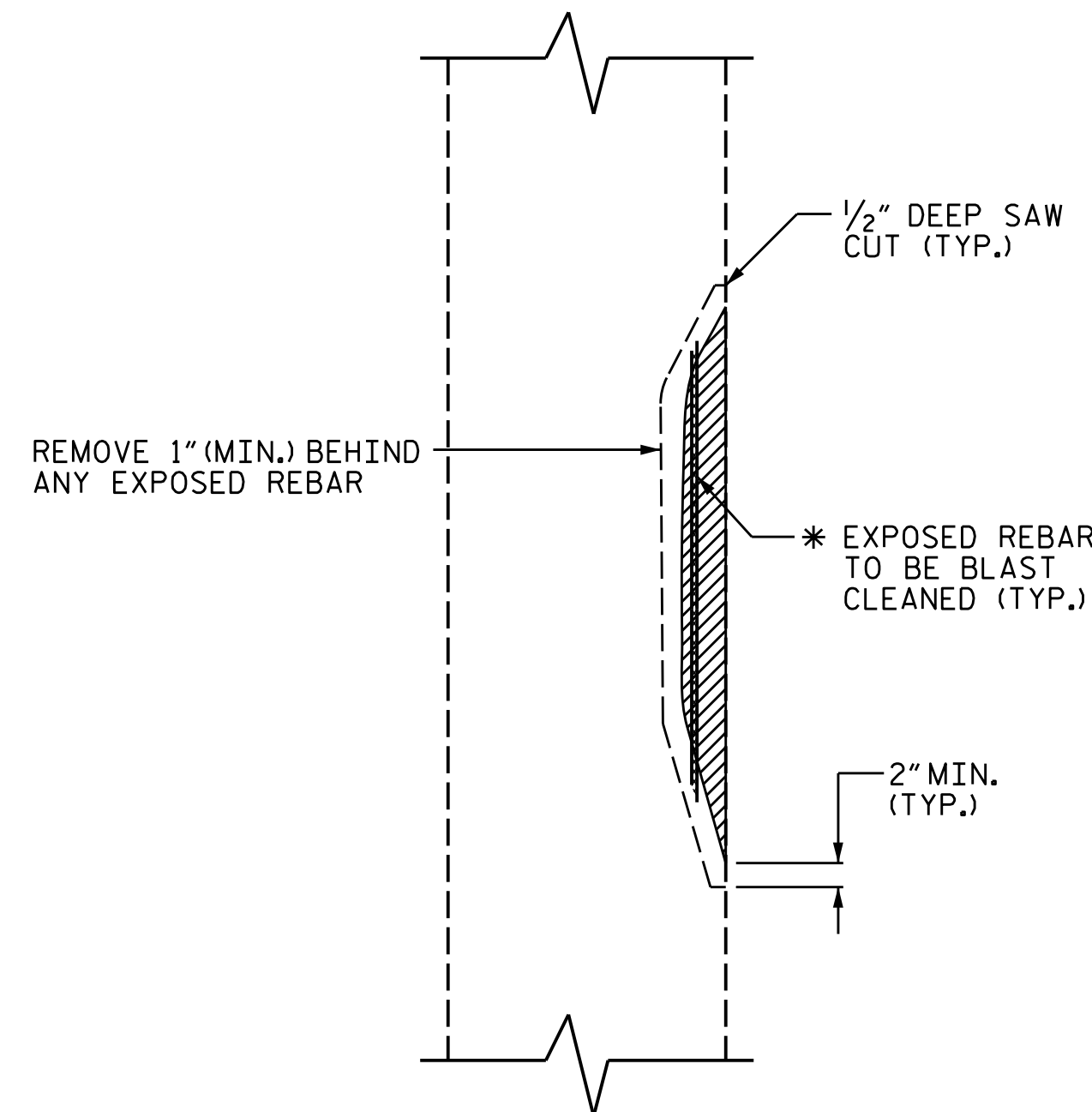


SECTION A-A

CAP REPAIR



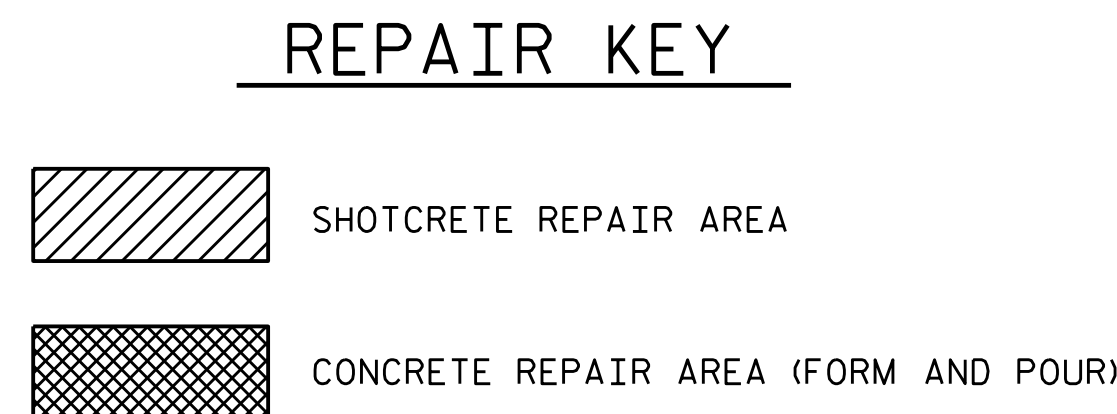
PLAN OF COLUMN



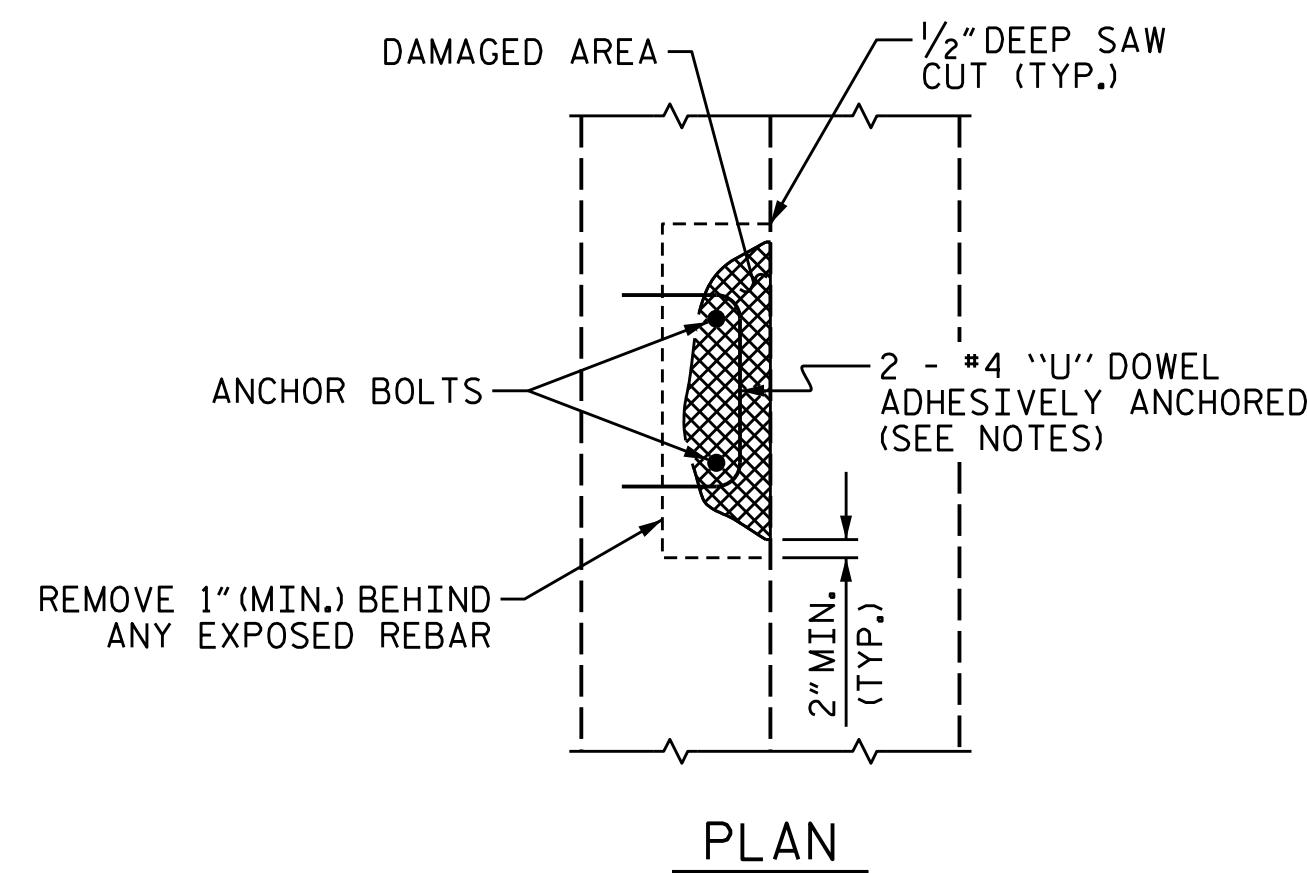
ELEVATION OF COLUMN

COLUMN REPAIR

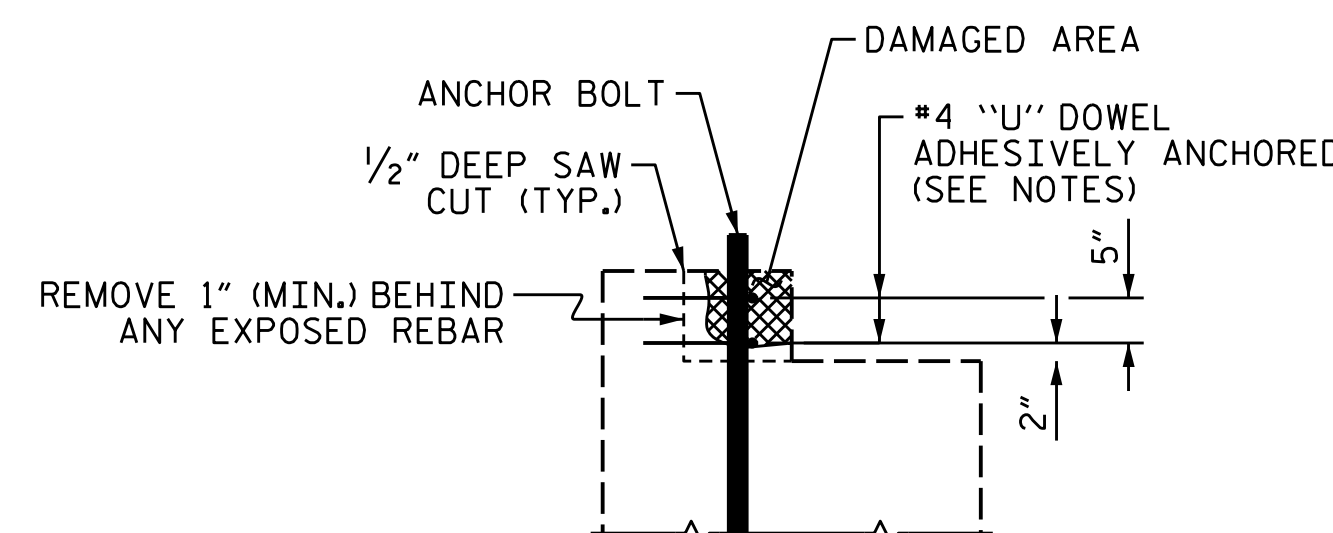
* REPAIR LENGTH SHALL NOT EXCEED 10 FEET.



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



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 1/2" 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.

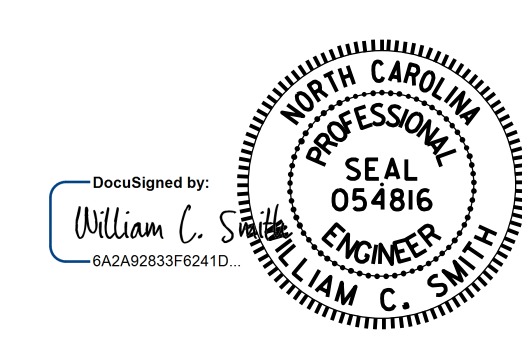
THE #4 "U" DOWELS ARE REQUIRED ONLY AROUND THE ANCHOR BOLTS. THE EXISTING REINFORCING STEEL IN THE PEDESTAL WALL SHALL BE CLEANED, STRAIGHTENED AND REMAIN IN PLACE.

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.

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.

PROJECT NO. 4B.106413
NASH COUNTY
 BRIDGE NO. 630225



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

07/08/2024

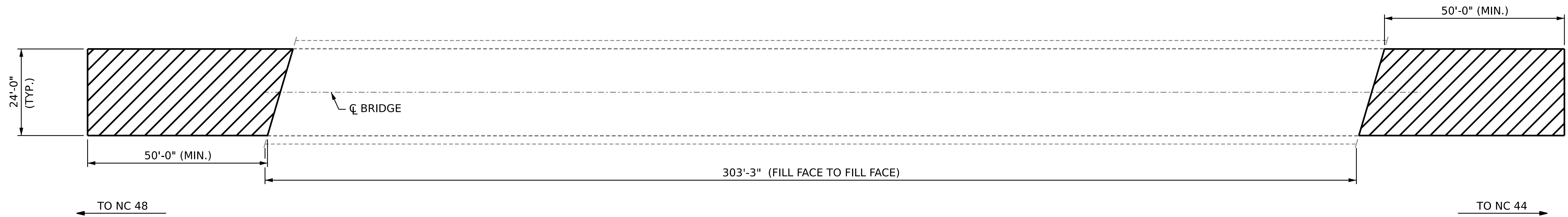
ASSEMBLED BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DRAWN BY : NAP 8/18
 CHECKED BY :

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | TOTAL SHEETS |
| 1 | | | 3 | | | 22 |
| 2 | | | 4 | | | 23 |

NOTES

INCIDENTAL MILLING - EXISTING APPROACH ASPHALT PAVING TO BE MILLED AS NECESSARY TO ATTAIN MINIMUM 1½" DEPTH OF NEW ASPHALT PAVING. NEW ASPHALT PAVEMENT SHALL BE OF THICKNESS NECESSARY TO PROVIDE A SMOOTH TRANSITION BETWEEN THE ROADWAY AND THE BRIDGE DECK. THE NEW ASPHALT PAVEMENT THICKNESS MAY EXCEED 1½" DUE TO SETTLEMENT OF THE EXISTING APPROACH.

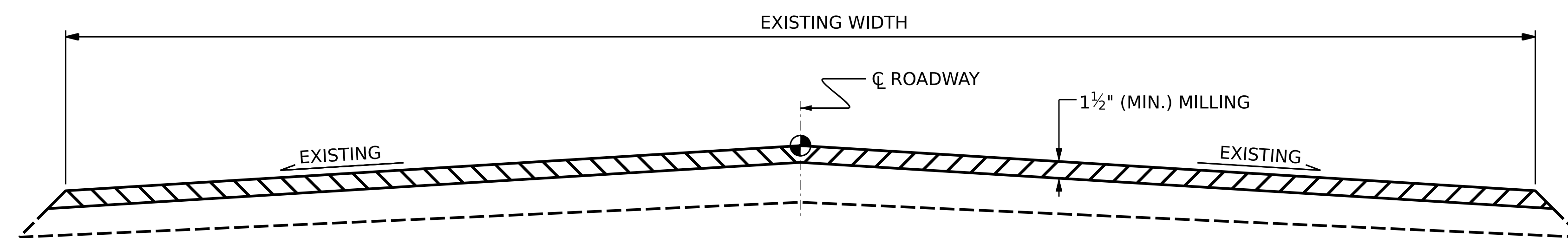


 INCIDENTAL MILLING

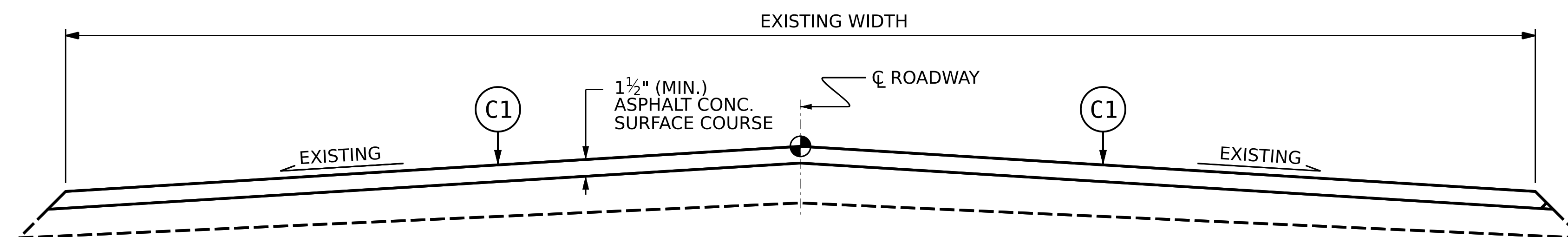
PLAN

C1 PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" DEPTH.

| SUMMARY OF QUANTITIES | | |
|---|-----------|--------|
| | ESTIMATE | ACTUAL |
| INCIDENTAL MILLING | 285.7 SY | |
| ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B | 30.0 TONS | |
| ASPHALT BINDER FOR PLANT MIX | 5.0 TONS | |

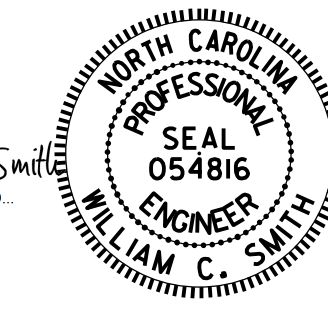


TYPICAL ROADWAY MILLING SECTION



TYPICAL PROPOSED ROADWAY SECTION

PROJECT NO. **4B.106413**
NASH COUNTY
 BRIDGE NO. **630225**

DocuSigned by:
 William C. Smith
 0A2A9283F62410...

 07/08/2024

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**APPROACH MILLING
 & TYPICAL ROADWAY
 SECTIONS**

DRAWN BY : S. T. SANDOR DATE : 05/2024
 CHECKED BY : W. C. SMITH DATE : 05/2024
 DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}$ " WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO $1\frac{1}{2}$ " RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A $\frac{1}{4}$ " FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A $\frac{1}{4}$ " RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE $\frac{7}{8}$ " \emptyset SHEAR STUDS FOR THE $\frac{3}{4}$ " \emptyset STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$ " \emptyset STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$ " \emptyset STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$ " \emptyset STUDS FOR 4 - $\frac{3}{4}$ " \emptyset STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST $\frac{5}{16}$ " IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY $\frac{1}{16}$ " OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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