

8/26/24



### LOCATION SKETCH

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

### BRIDGE COORDINATES

LATITUDE	LONGITUDE
34°-19'-20.52"	78°-28'-9.54"

### GENERAL NOTES

SEE CONTRACT DOCUMENTS FOR LANE WIDTHS, SEQUENCING AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF OVERLAY SURFACE PREPARATION AND POLYMER CONCRETE (PC) PLACEMENT.

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 REPAIR.

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 SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR'S PLAN USED PLATFORMS, NETS, SCREEN 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. 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 OF PHASING OF CONSTRUCTION, SEE 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 FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

ALL PAVEMENT MARKING WILL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

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.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

FOR CLASS 1B SURFACE PREPARATION, SEE BRIDGE DECK ASPHALT OVERLAY SPECIAL PROVISION.

FOR ASPHALT PLUG JOINTS FOR PRESERVATION, SEE SPECIAL PROVISIONS.

FOR PILE ENCAPSULATION, SEE SPECIAL PROVISIONS.

FOR BRIDGE DECK WATERPROOFING MEMBRANE-SPRAY APPLIED, SEE SPECIAL PROVISIONS.

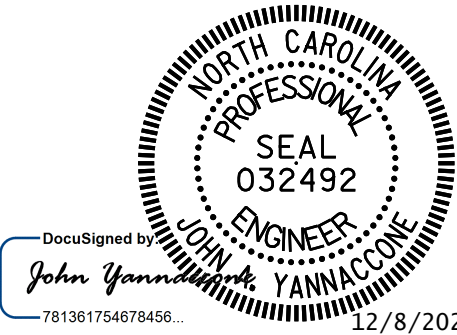
PROJECT NO. **HI-0018**  
**COLUMBUS** COUNTY  
BRIDGE NO. **230383**

SHEET 2 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

### GENERAL DRAWING

FOR BRIDGE ON  
US 74 - US 76 BYP EBL  
OVER FRIAR SWAMP



DOCUMENT NOT CONSIDERED  
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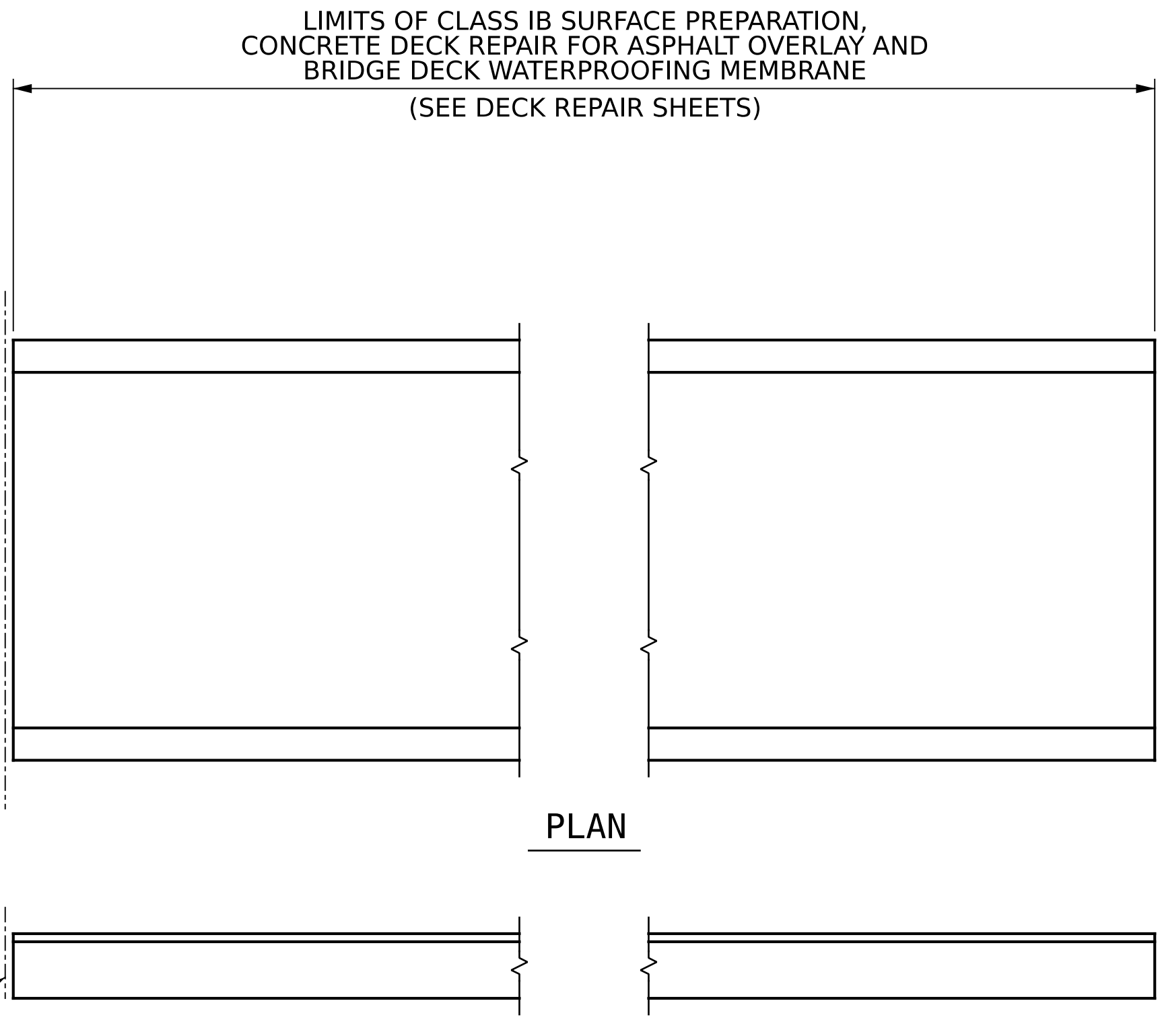
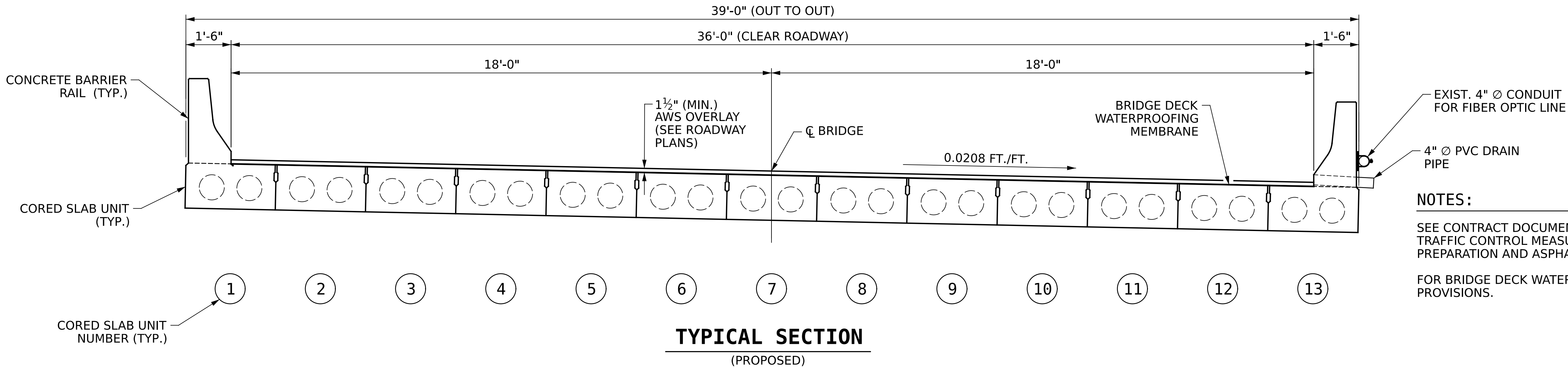
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2			4			



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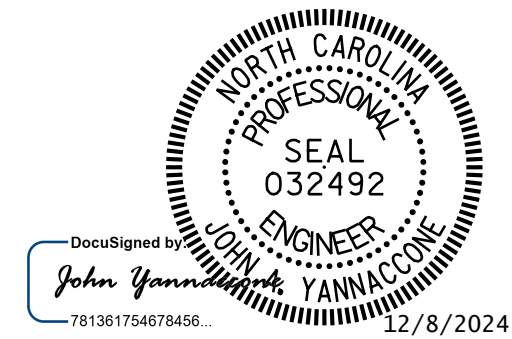
DRAWN BY : **R.L.PUTEK** DATE : **08/2024**  
CHECKED BY : **J.A.YANNACCON** DATE : **08/2024**





**PAY LIMITS FOR OVERLAY BID ITEMS**

PROJECT NO. **HI-0018**  
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**TYPICAL SECTION AND SURFACE PREPARATION DETAILS**

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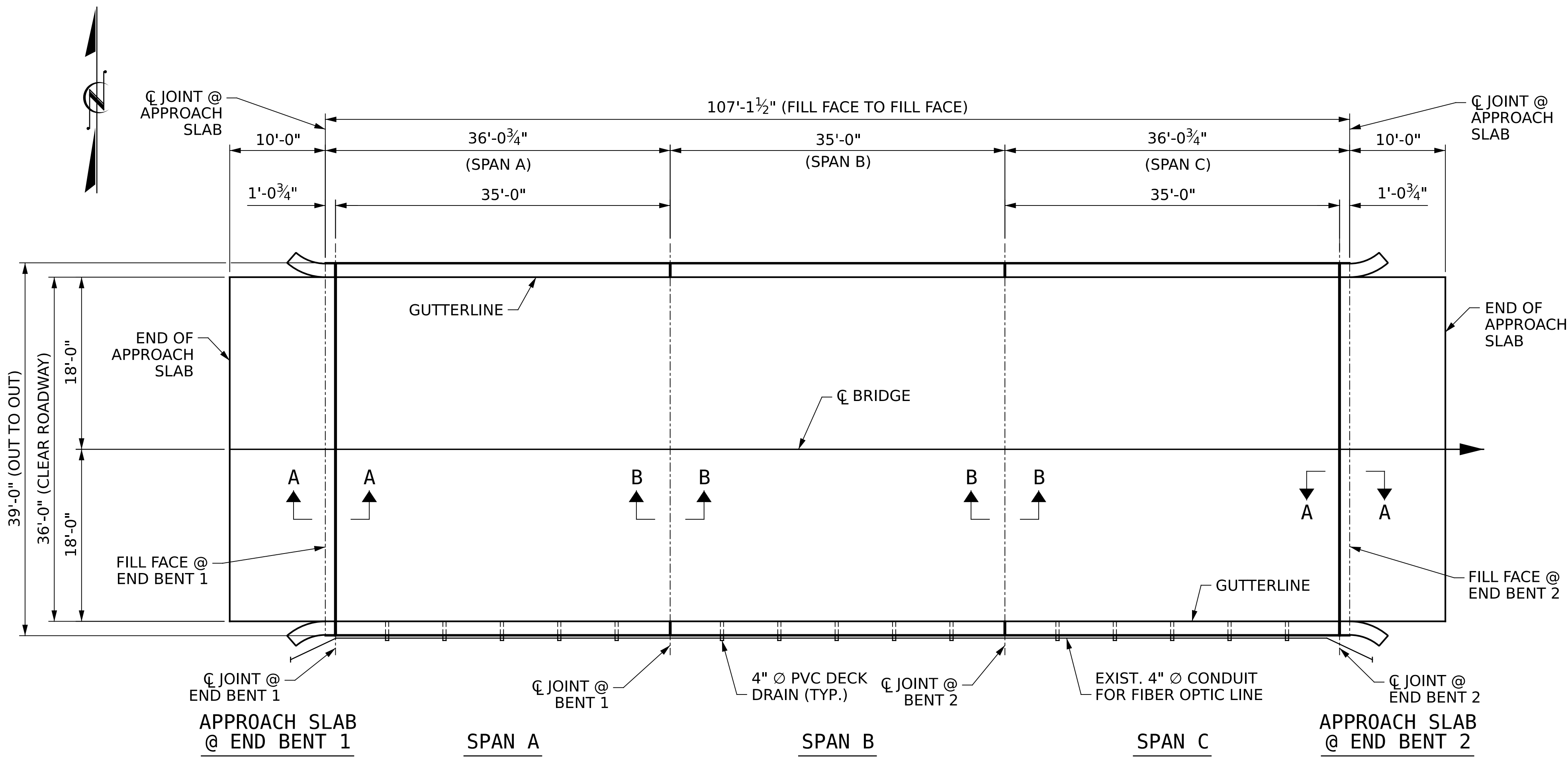


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8/26/21



PLAN

AS-BUILT QUANTITY REPAIR TABLE

DECK SURFACE REPAIR & APPROACH SLAB REPAIR

		ESTIMATE	ACTUAL
CLASS IB SURFACE PREPARATION	APPROACH SLAB @ END BENT 1	40.0 SQ. YDS.	
	SPAN A	144.3 SQ. YDS.	
	SPAN B	140.0 SQ. YDS.	
	SPAN C	144.3 SQ. YDS.	
	APPROACH SLAB @ END BENT 2	40.0 SQ. YDS.	
BRIDGE DECK WATERPROOFING MEMBRANE-SPRAY APPLIED	APPROACH SLAB @ END BENT 1	6.0 SQ. YDS.	
	SPAN A	144.3 SQ. YDS.	
	SPAN B	140.0 SQ. YDS.	
	SPAN C	144.3 SQ. YDS.	
	APPROACH SLAB @ END BENT 2	6.0 SQ. YDS.	

CLASS IB SURFACE PREPARATION

NOTES

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

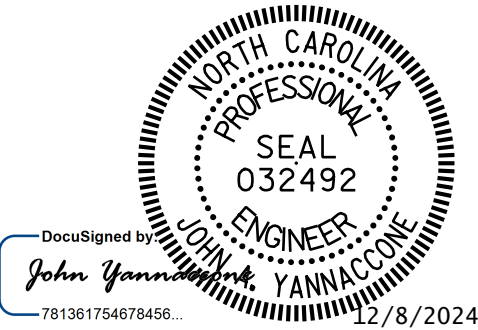
FOR SECTION A-A AND B-B. SEE "ASPHALT PLUG JOINT DETAILS" SHEET.

FOR CLASS IB SURFACE PREPARATION, SEE BRIDGE DECK ASPHALT OVERLAY SPECIAL PROVISION.

FOR BRIDGE DECK WATERPROOFING MEMBRANE-SPRAY APPLIED, SEE SPECIAL PROVISIONS.

FOR ASPHALT OVERLAY, SEE ROADWAY PLANS.

PROJECT NO. **HI-0018**  
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STATE OF NORTH CAROLINA  
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RALEIGH  
**DECK REPAIRS**  
SPAN A W/APPROACH SLAB, SPAN B,  
& SPAN C W/ APPROACH SLAB

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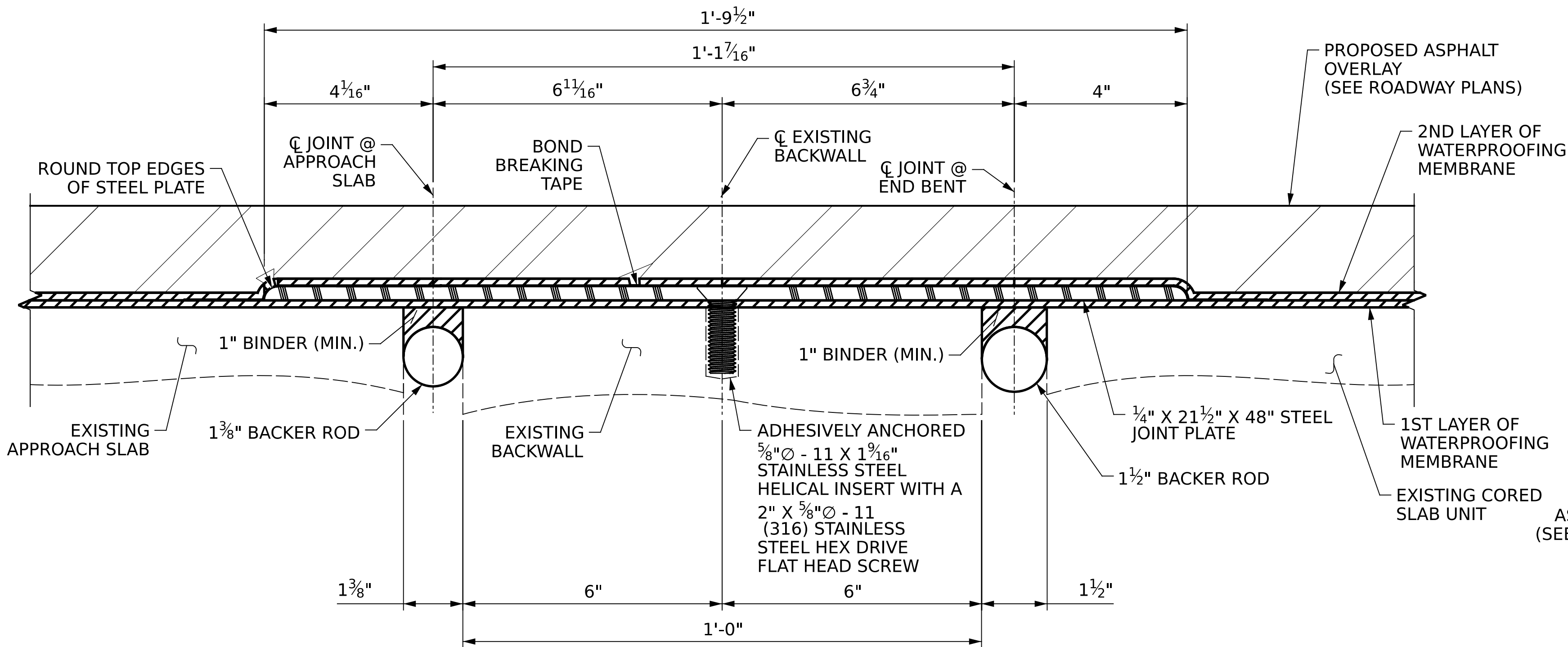


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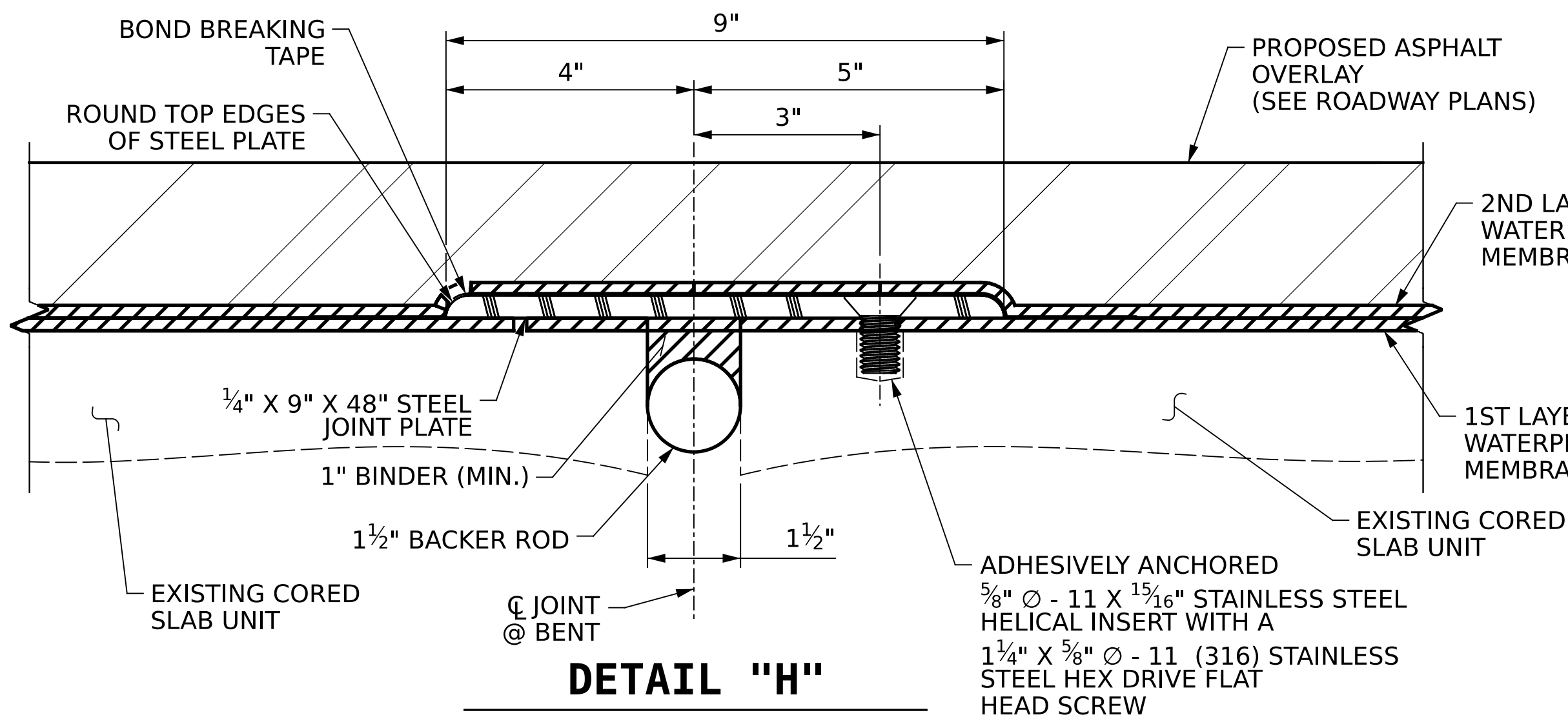
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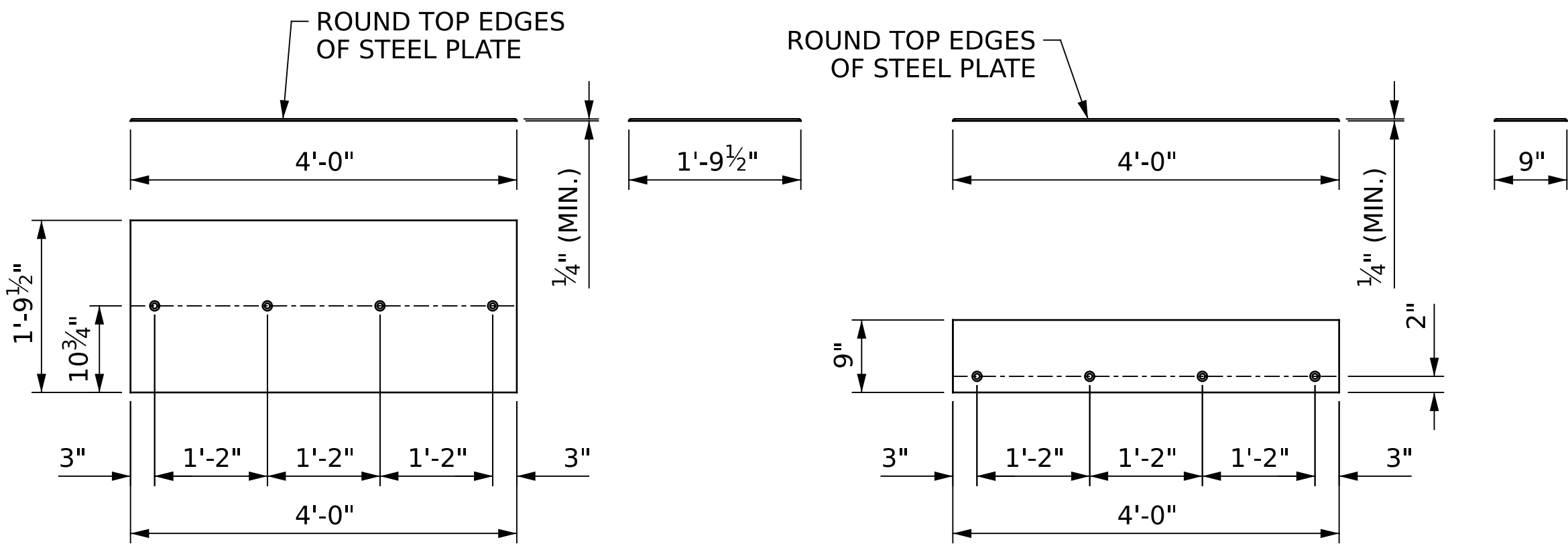
DETAIL "G"

(PROPOSED)



DETAIL "H"

(PROPOSED)



STEEL JOINT PLATE

END BENTS

(18 REQ'D)

BENTS

(18 REQ'D)

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PROPOSED ASPHALT  
OVERLAY  
(SEE ROADWAY PLANS)

2ND LAYER OF  
WATERPROOFING  
MEMBRANE

ROUND TOP EDGES  
OF STEEL PLATE

CL JOINT @  
APPROACH  
SLAB

BOND  
BREAKING  
TAPE

CL EXISTING  
BACKWALL

CL JOINT @  
END BENT

1" BINDER (MIN.)

1 3/8" BACKER ROD

EXISTING  
APPROACH SLAB

EXISTING  
BACKWALL

ADHESIVELY ANCHORED  
5/8"Ø - 11 X 1 1/16" STAINLESS STEEL  
HELICAL INSERT WITH A  
2" X 5/8"Ø - 11  
(316) STAINLESS  
STEEL HEX DRIVE  
FLAT HEAD SCREW

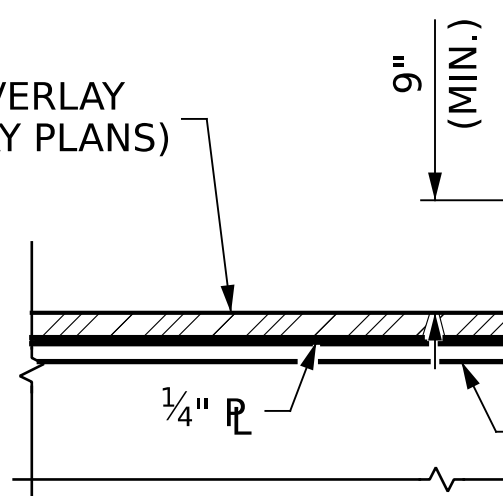
1 1/2" BACKER ROD

1/4" X 2 1/2" X 48" STEEL  
JOINT PLATE

1ST LAYER OF  
WATERPROOFING  
MEMBRANE

EXISTING CORED  
SLAB UNIT

ASPHALT OVERLAY  
(SEE ROADWAY PLANS)



CONCRETE  
BARRIER RAIL

BACKER ROD

SECTION AT GUTTERLINE

(PROPOSED PLUG JOINT)

CL JOINT @  
FILL FACE  
(TYP.)

EXIST. ASPHALT  
WEARING SURFACE

APPROACH  
SLAB (TYP.)

BACKWALL  
(TYP.)

EXISTING

TOP OF CORED SLAB  
AFTER CLASS IB  
PREPARATION

CL JOINT @  
END BENT  
(TYP.)

EXIST. JT.

CORED SLAB  
UNIT (TYP.)

AFTER SURFACE  
PREPARATION

1'-6" LIMITS OF  
WATERPROOFING  
MEMBRANE OVER  
APPROACH SLAB

SEE DETAIL "G"

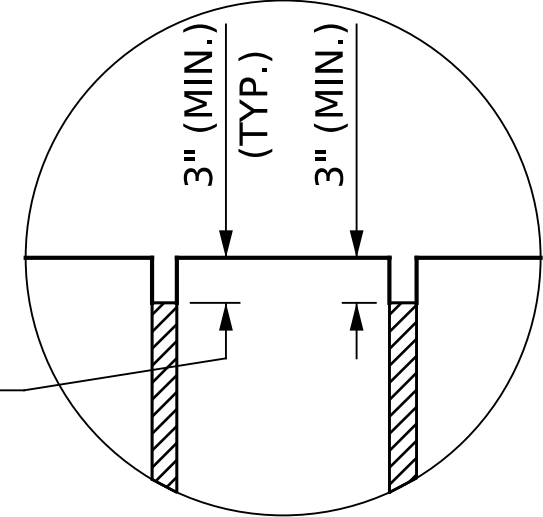
REMOVE EXIST.  
JT. MATERIAL  
(SEE INSET "A")

PLUG JOINT AND  
WATERPROOFING MEMBRANE

PROPOSED ASPHALT  
WEARING SURFACE  
(SEE ROADWAY PLANS)

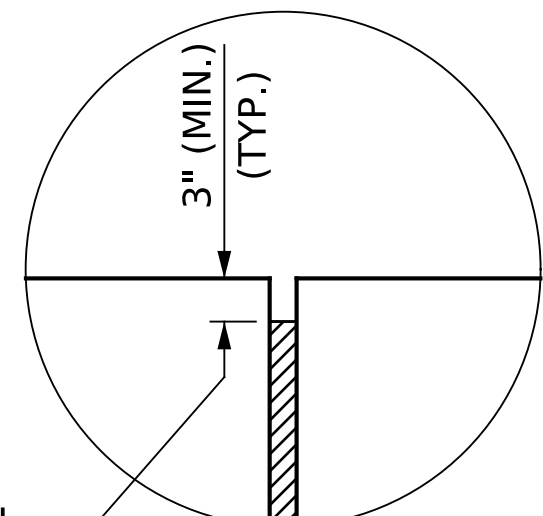
PROPOSED

LIMIT OF REMOVAL  
OF EXIST. JT. MAT'L  
(TYP.)



INSET "A"

LIMIT OF REMOVAL  
OF EXIST. JT. MAT'L  
(TYP.)



INSET "B"

EXIST. ASPHALT  
WEARING SURFACE

CORED SLAB  
UNIT (TYP.)

EXIST. JT.

EXISTING

TOP OF CORED SLAB  
AFTER CLASS IB  
PREPARATION

CL JOINT @  
BENT (TYP.)

CORED SLAB  
UNIT (TYP.)

AFTER SURFACE  
PREPARATION

SEE DETAIL "H"

REMOVE EXIST.  
JT. MATERIAL  
(SEE INSET "B")

PLUG JOINT AND  
WATERPROOFING MEMBRANE

PROPOSED ASPHALT  
WEARING SURFACE  
(SEE ROADWAY PLANS)

PROPOSED

SECTION A-A

(AT END BENTS)

SECTION B-B

(AT BENTS)

DocuSigned by:

John Yannaccone

781361754678451

SEAL  
032492  
ENGINEER

JOHN A. YANNACCONE

12/8/2024

STATE OF NORTH CAROLINA  
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RALEIGH

ASPHALT PLUG JOINT  
DETAILS

PROJECT NO. **HI-0018**  
**COLUMBUS** COUNTY  
BRIDGE NO. **230383**

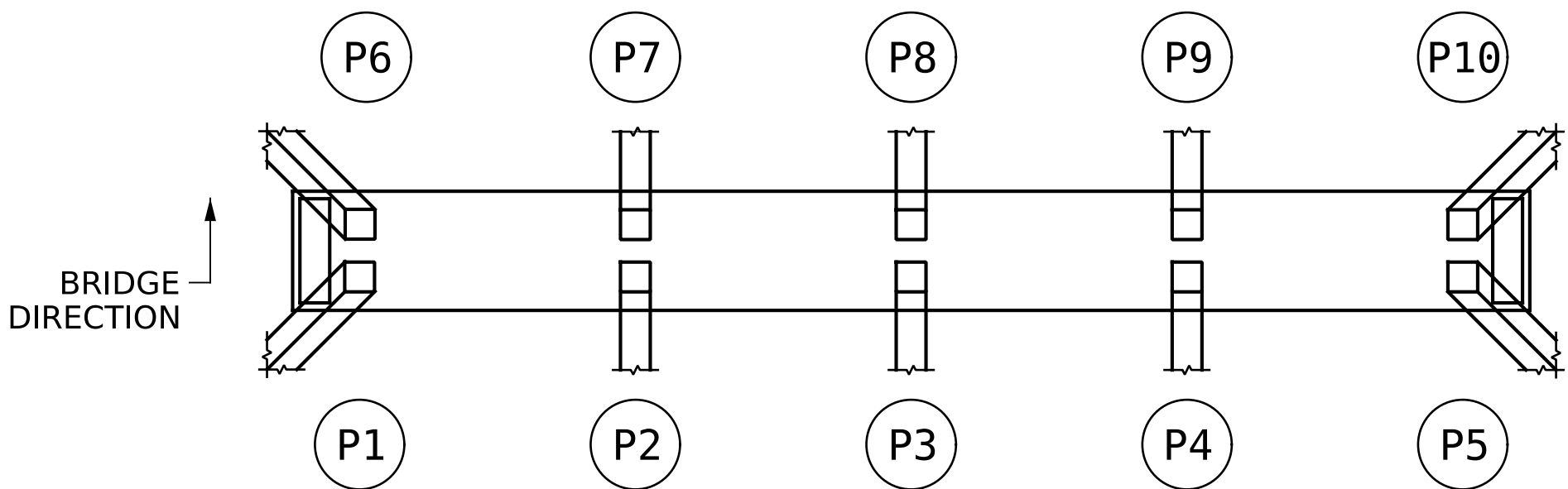
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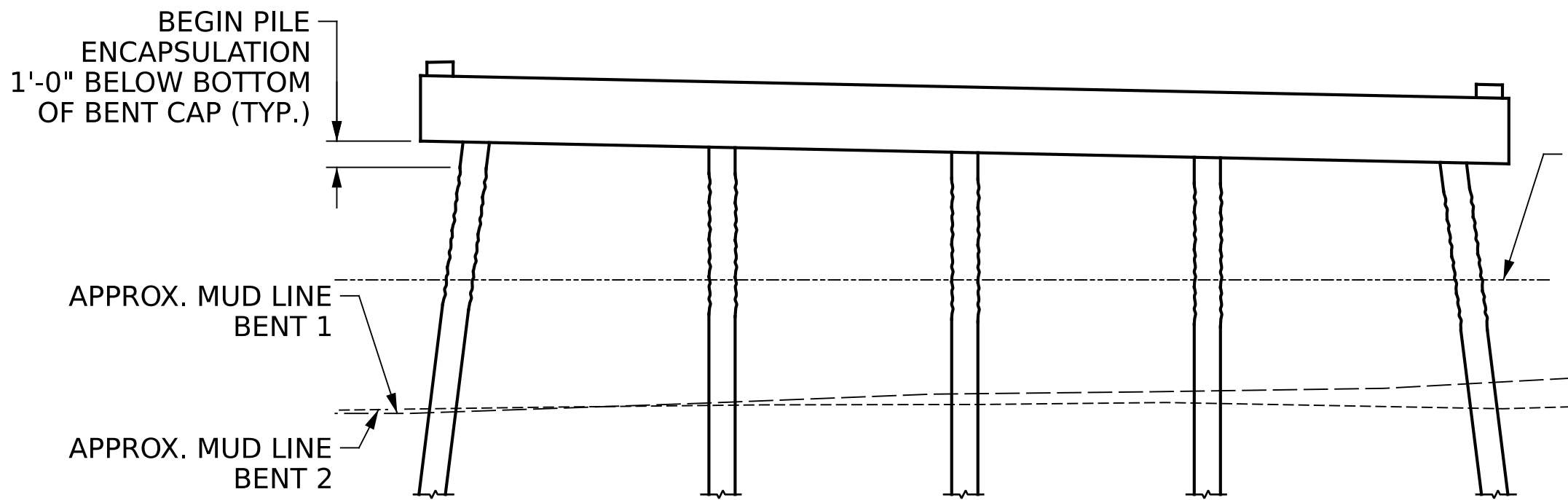
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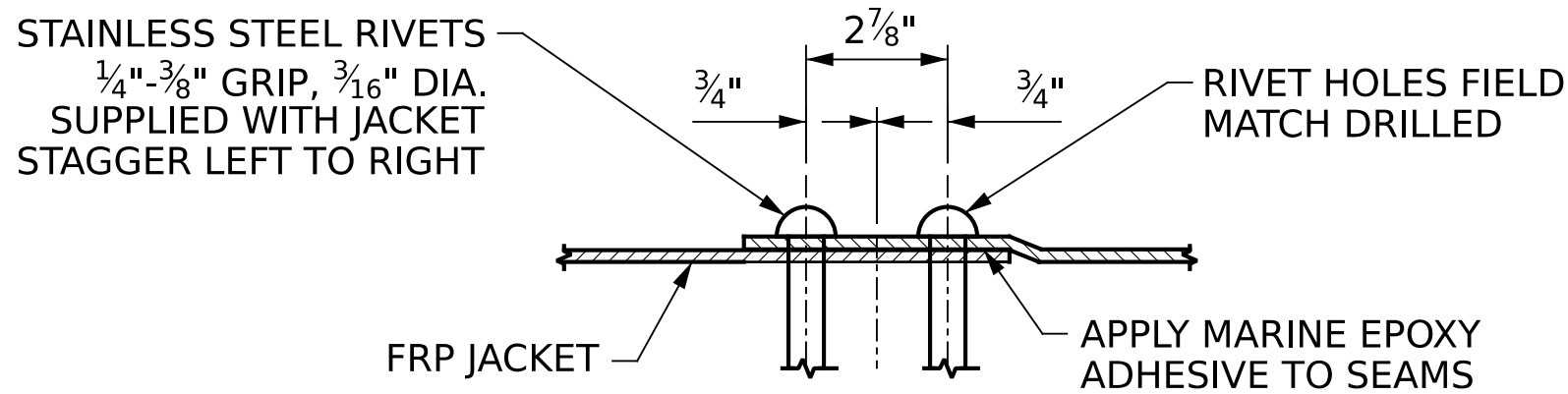
PLAN

(BENT 1 SHOWN, BENT 2 SIMILAR)



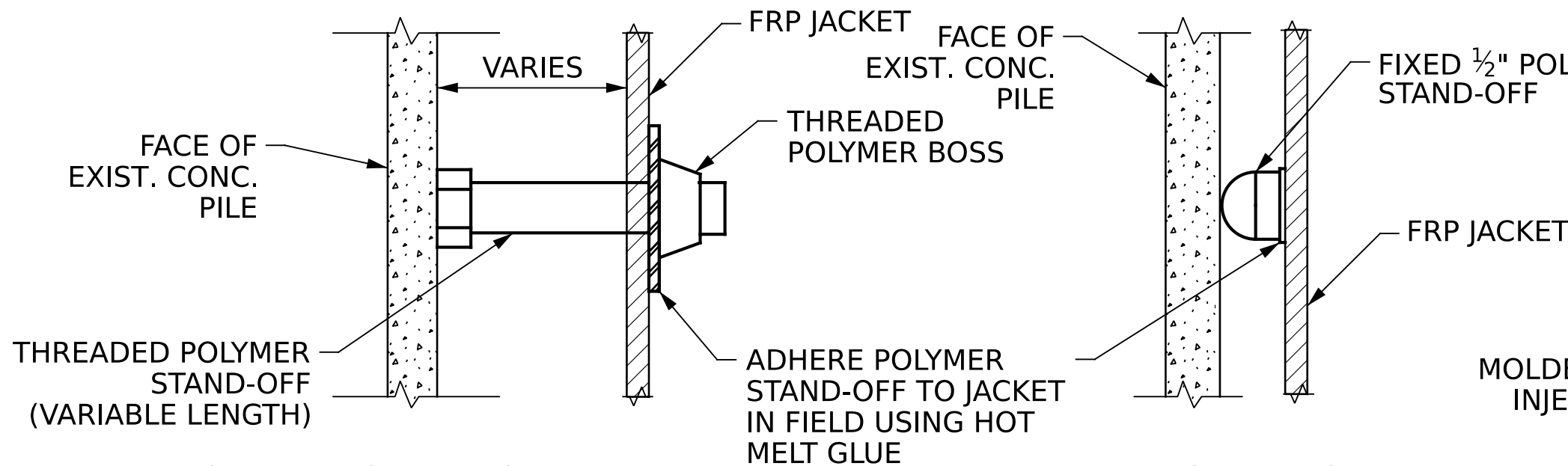
ELEVATION

(BENT 1 SHOWN, BENT 2 SIMILAR)



DETAIL A

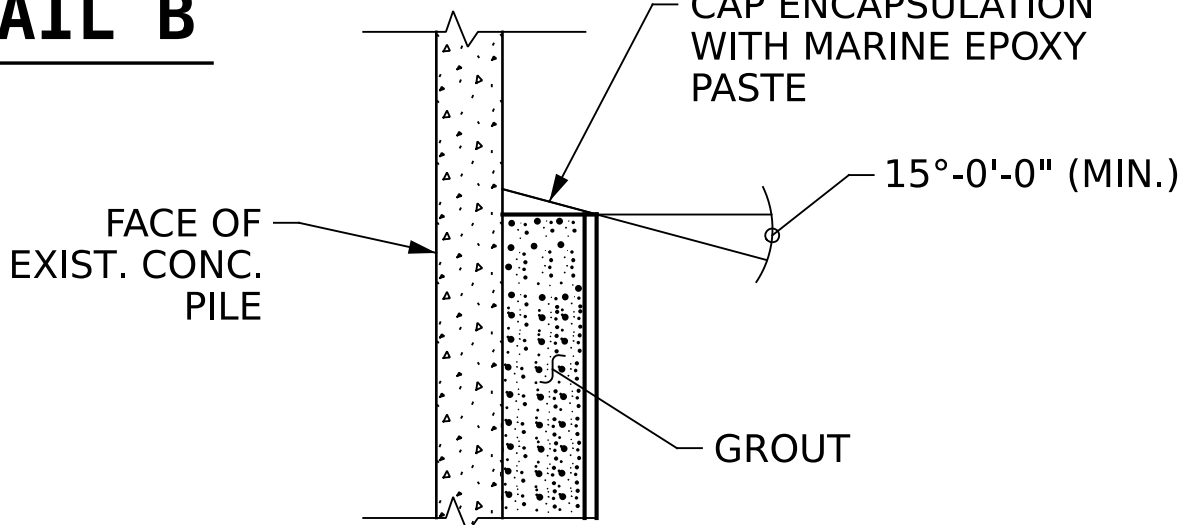
(SEAM DETAIL)



ADJUSTABLE STAND-OFF DETAIL

FIXED STAND-OFF DETAIL

DETAIL B



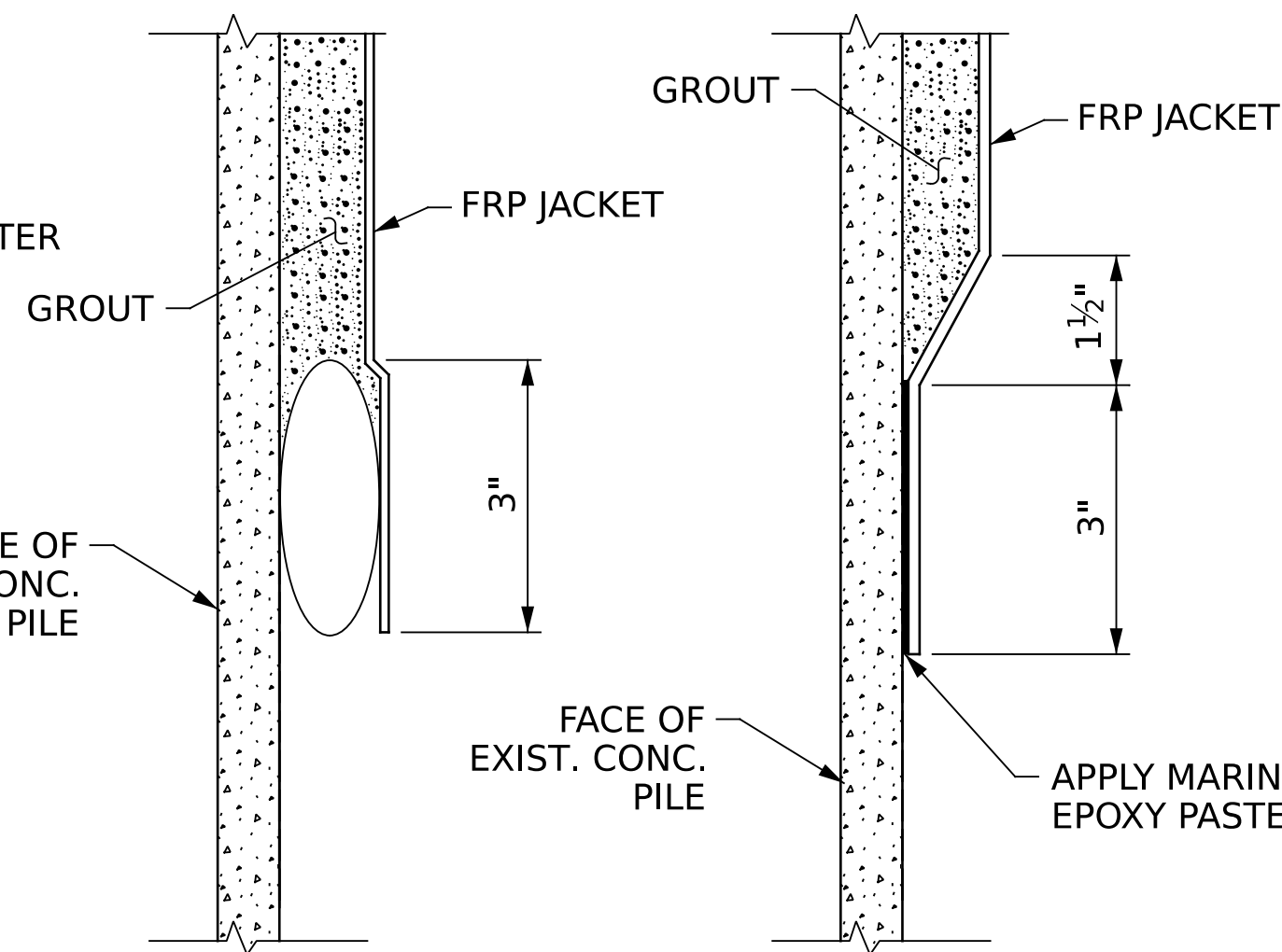
DETAIL C

(TOP OF JACKET)

AS-BUILT SUMMARY OF QUANTITIES												
CONCRETE PILE ENCAPSULATION LOCATION TABLE												
	FIBERGLASS REINFORCED PLASTIC (FRP) JACKET LENGTHS (LIN.FT.)										ESTIMATE	ACTUAL
LOCATION	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	LIN. FT.	LIN. FT.
BENT 1	10.4	9.9	9.3	8.8	8.3	10.4	9.9	9.3	8.8	8.3	93.4	
BENT 2	10.2	10.0	9.8	9.6	9.3	10.2	10.0	9.8	9.6	9.3	97.8	
TOTAL											191.2	

PILE ENCAPSULATION EXTENDS FROM 1'-0" BELOW BOTTOM OF BENT CAP TO 1'-0" BELOW MUD LINE.

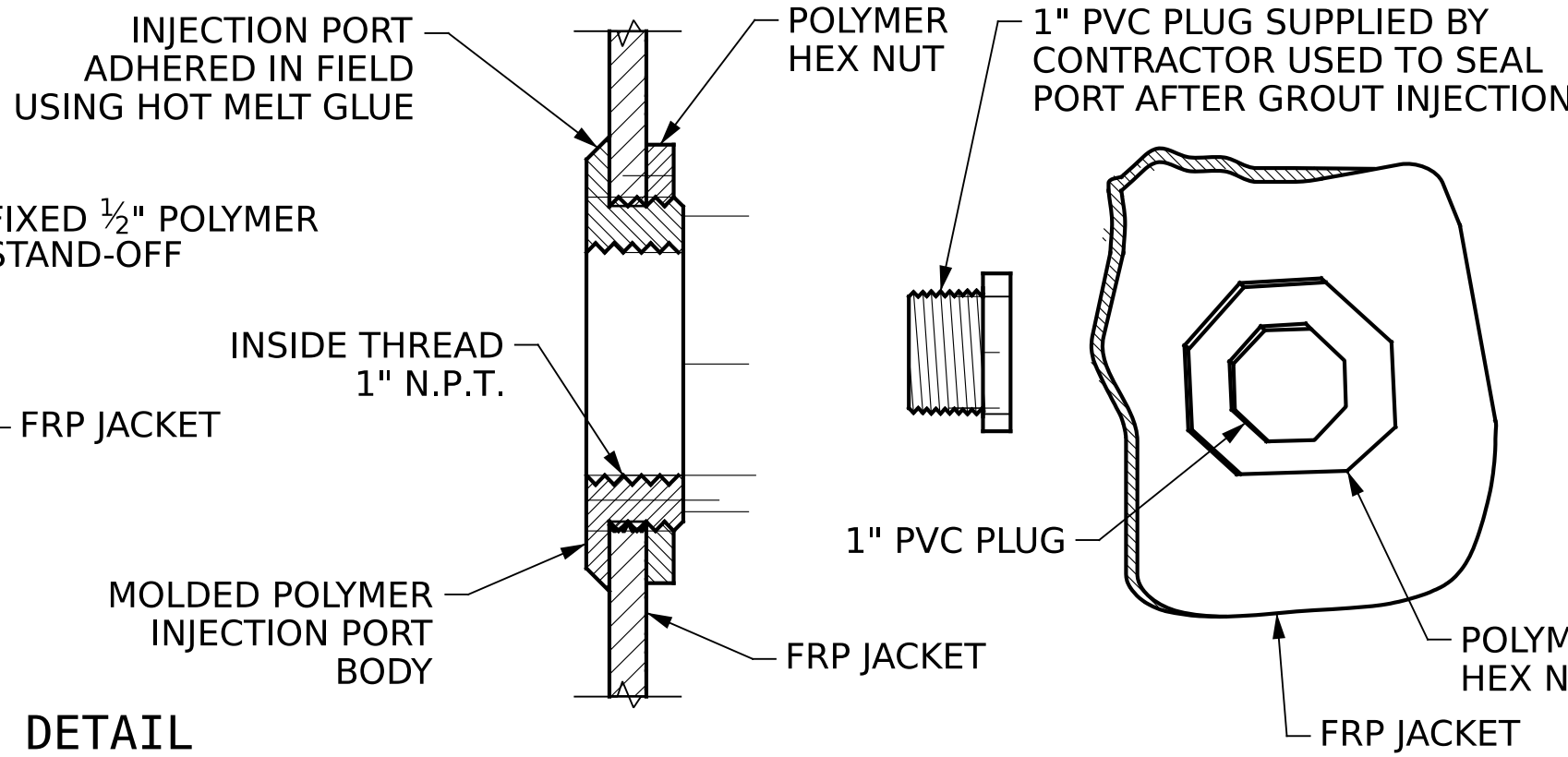
QUANTITIES ARE BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY MUD LINE ELEVATION PRIOR TO INSTALLATION OF JACKETS.



BOTTOM SEAL DETAIL

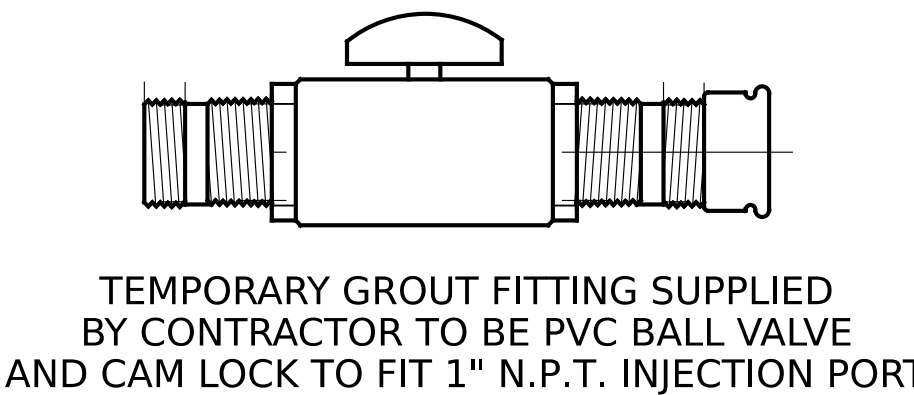
ALTERNATE BOTTOM SEAL DETAIL

DETAIL D

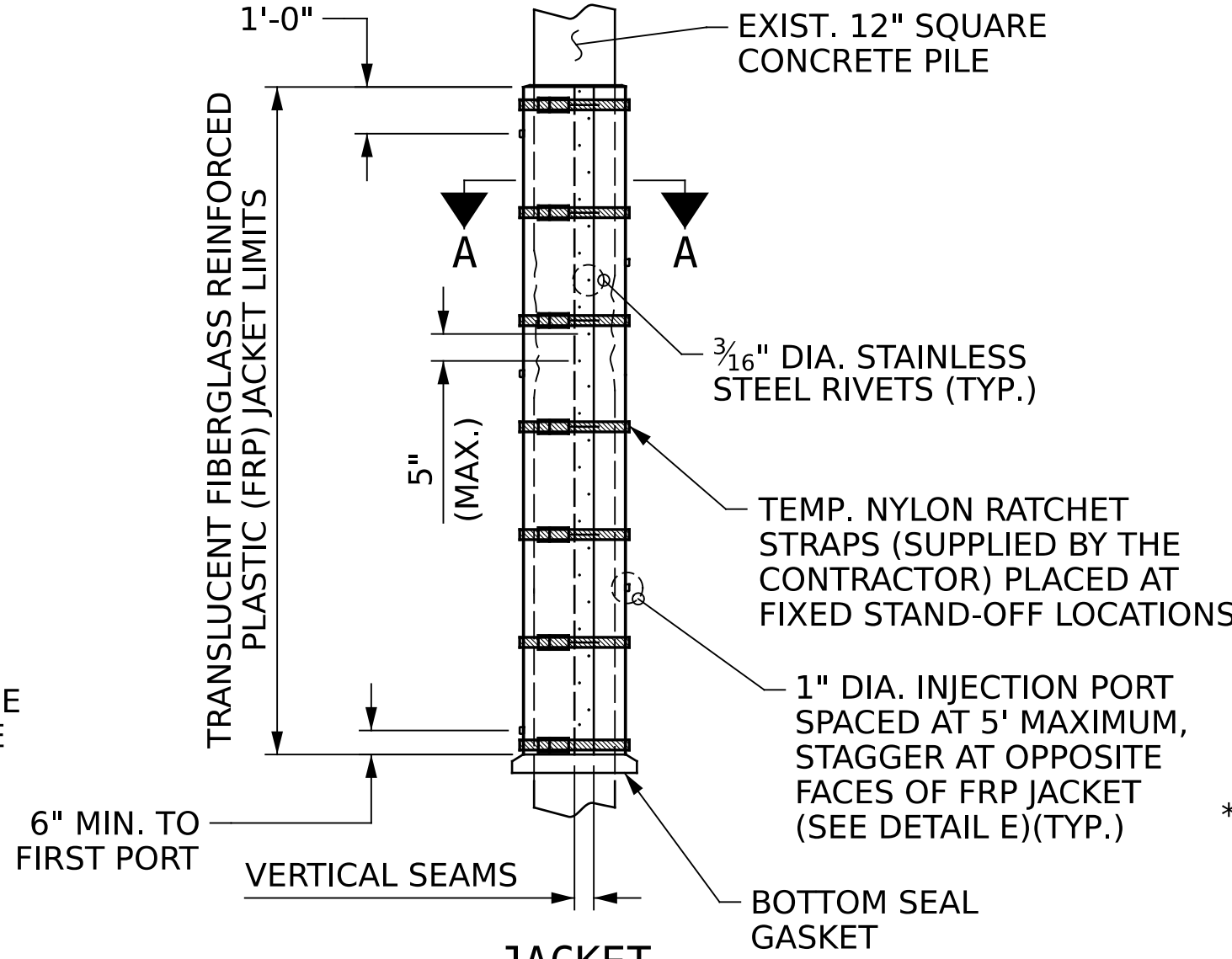


SECTION THRU PORT

ISOMETRIC VIEW



DETAIL E



JACKET

CONCRETE PILE ENCAPSULATION

REPAIR SEQUENCE

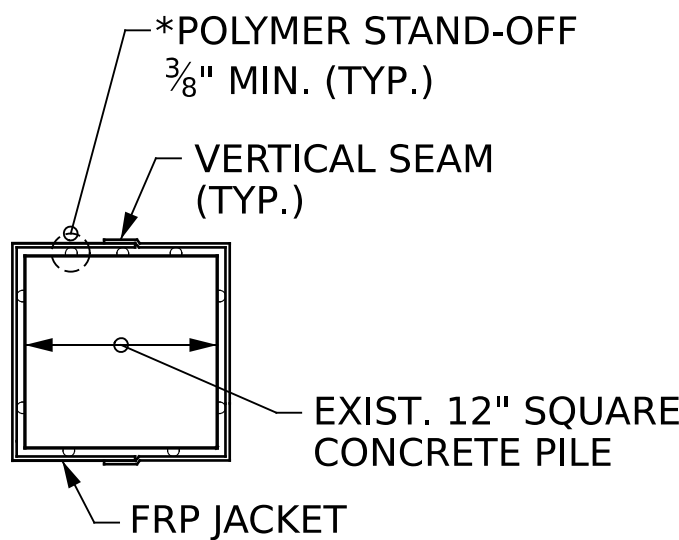
1. INSTALL FLOATING TURBIDITY CURTAIN TO ENCOMPASS ENTIRE INTERIOR BENT. ALLOW ENOUGH SPACE FOR PILE ENCAPSULATION WORK.
2. AFTER SURFACE PREPARATION, PLACE JACKET IN PROPER LOCATION AROUND PILE AND SEAL LONGITUDINAL SEAMS (SEE DETAIL A). INSTALL TEMPORARY BRACING.
3. CONFIRM SPACING BETWEEN JACKET AND PILE. INSTALL BOTTOM SEAL (SEE DETAIL D). ALLOW BOTTOM SEAL TO CURE APPROX. 4 HOURS.
4. ATTACH GROUT HOSE TO LOWERMOST INJECTION PORT AND PUMP EPOXY GROUT FOR 30-SEC. CHECK FOR LEAKS ALONG SEAM AND BOTTOM SEAL. (OPTIONALLY ALLOW THIS GROUT TO CURE AND PROCEED WITH GROUT INJECTION FROM 2ND PORT.)
5. PLUG UPPER INJECTION PORTS AND PUMP GROUT INTO LOWER PORT UNTIL GROUT REACHES TOP OF JACKET. ONLY USE UPPER PORTS IF INJECTION BECOME DIFFICULT.
6. REPEAT STEPS 2 THRU 5 FOR EACH PILE WITHIN ONE BENT.
7. WHEN PILE ENCAPSULATION WORK AT THE BENT IS COMPLETE, REMOVE FLOATING TURBIDITY CURTAIN AND REINSTALL THE CURTAIN FOR THE PILE ENCAPSULATION WORK AT THE NEXT INTERIOR BENT.

NOTE:

THE FLOATING TURBIDITY CURTAIN QUANTITY SHOWN ON THE TOTAL BILL OF MATERIAL IS BASED ON A 5.0' WATER DEPTH AND THE LENGTH NECESSARY TO FULLY ENCOMPASS ONE INTERIOR BENT.

FOR FLOATING TURBIDITY CURTAIN, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO LIMIT CONTAMINATION OF THE WATER DURING EXCAVATION FOR THE PILE ENCAPSULATION, PUMPING OF EPOXY GROUT, AND ALL OTHER WORK TO INSTALL THE PILE ENCAPSULATION.



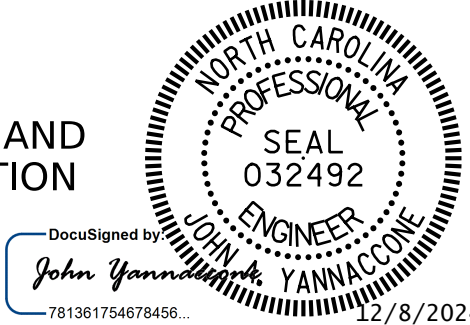
SECTION A-A

\*MAXIMUM SPACING BETWEEN FIXED STAND-OFFS SHALL BE 18" THE LONGITUDINAL DIRECTION AND 12" THE TRAVERSE DIRECTION (SEE DETAIL B)

PROJECT NO. **HI-0018**  
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**SUBSTRUCTURE REPAIR**  
**CONCRETE PILE ENCAPSULATION**



DRAWN BY : **R.L.PUTEK** DATE : **08/2024**  
CHECKED BY : **J.A.YANNACCONE** DATE : **08/2024**

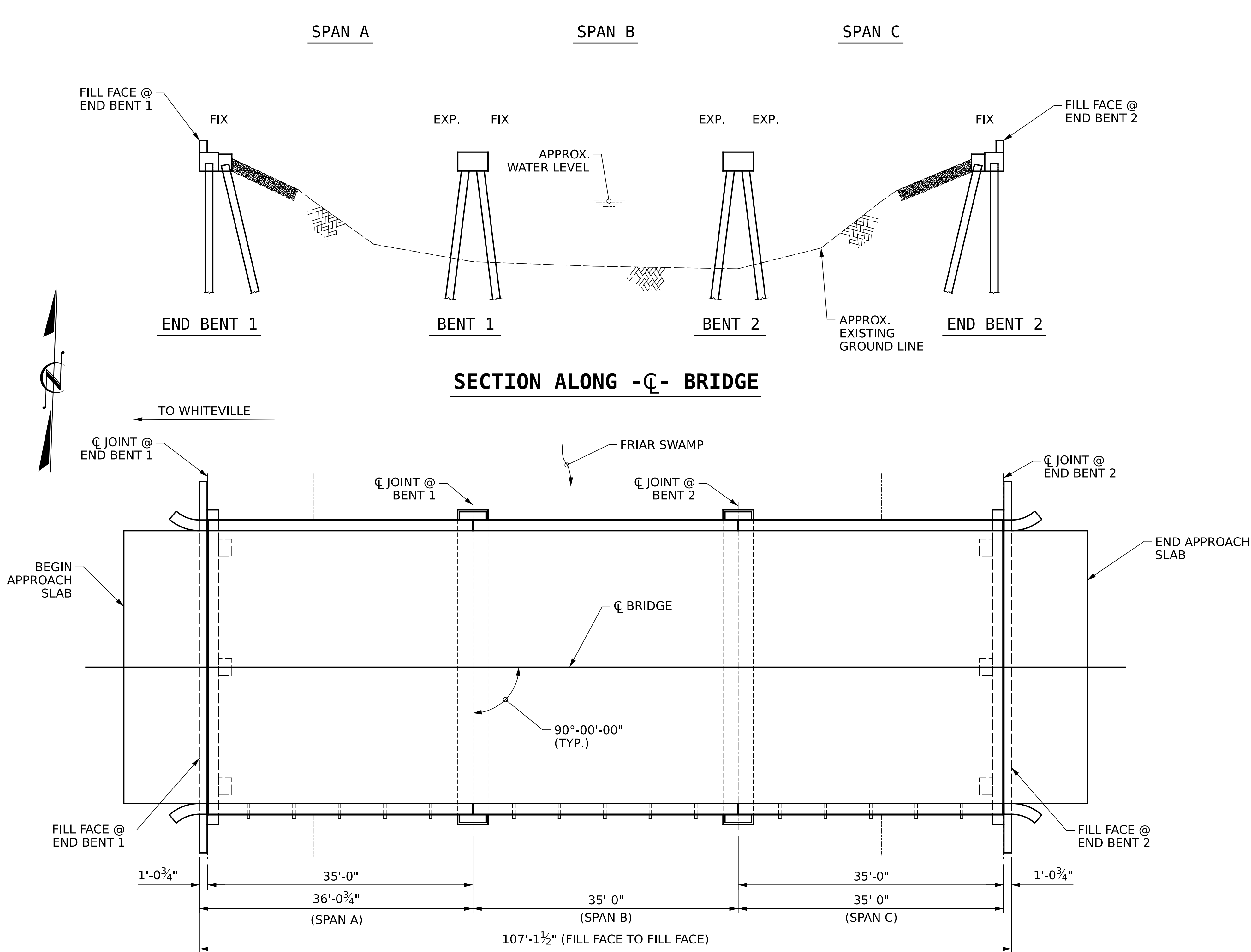


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**PLAN**  
(FOOTINGS AND PILES NOT SHOWN FOR CLARITY)

**NOTES:**

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 07/15/2024.

BRIDGE ORIENTATION CONFORMS TO THE EXISTING BRIDGE PLANS AND ROUTINE INSPECTION REPORT.

**SCOPE OF WORK:**

- REMOVE ASPHALT WEARING SURFACE BY SCARIFICATION.
- INSTALL WATERPROOFING MEMBRANE.
- OVERLAY PREPARED TOP OF CORED SLABS WITH ASPHALT OVERLAY.
- REMOVE EXISTING JOINT AND INSTALL ASPHALT PLUG JOINTS.
- ENCAPSULATE CONCRETE PILES WITH FRP JACKETS.

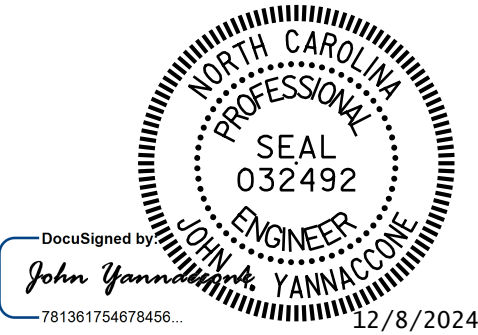
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SHEET 1 OF 2

STATE OF NORTH CAROLINA  
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RALEIGH

**GENERAL DRAWING**

FOR BRIDGE ON  
US 74 - US 76 BYP WBL  
OVER FRIAR SWAMP



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

RESIDENT ENGINEER

DATE



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