

## 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'-20.51''	78°-28'-03.22''							

### **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 BRIDGE SURFACE AND/OR TRAFFIC.

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

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 IB 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.

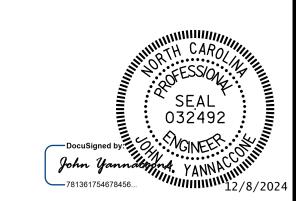
> **HI-0018** PROJECT NO. \_ **COLUMBUS** COUNTY 230386 BRIDGE NO. \_

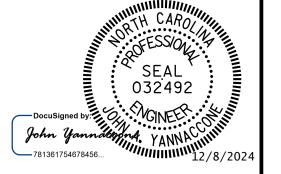
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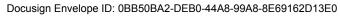
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

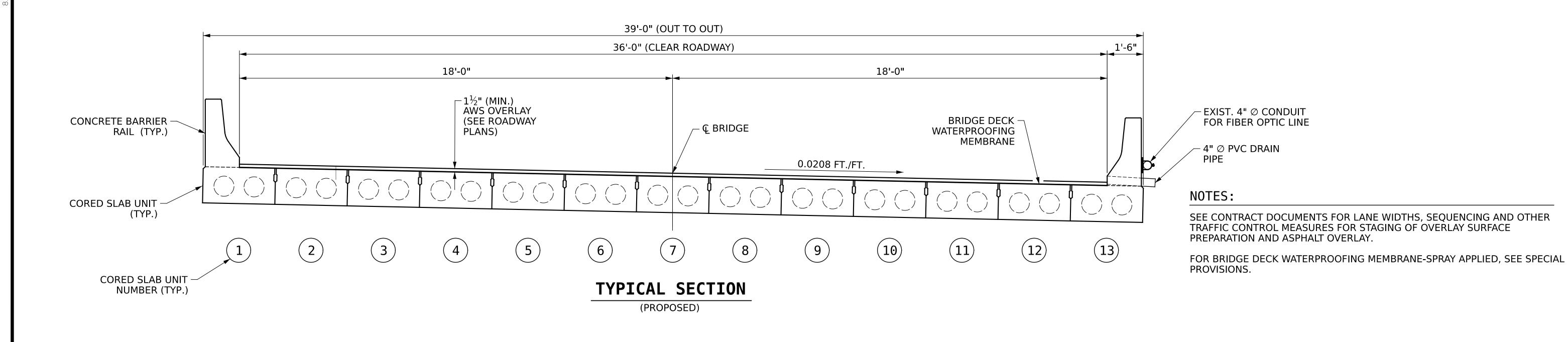
# GENERAL DRAWING

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









CONCRETE DECK REPAIR FOR ASPHALT OVERLAY AND BRIDGE DECK WATERPROOFING MEMBRANE

(SEE DECK REPAIR SHEETS)

PLAN

PLAN

PLOINT

CONCRETE OF CASS IB SURFACE PREPARATION, CONCRETE OF CONC

PAY LIMITS FOR OVERLAY BID ITEMS

ELEVATION

PROJECT NO. HI-0018
COLUMBUS

230386

BRIDGE NO.\_\_\_

Docusigned by Pannalisman Pann

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

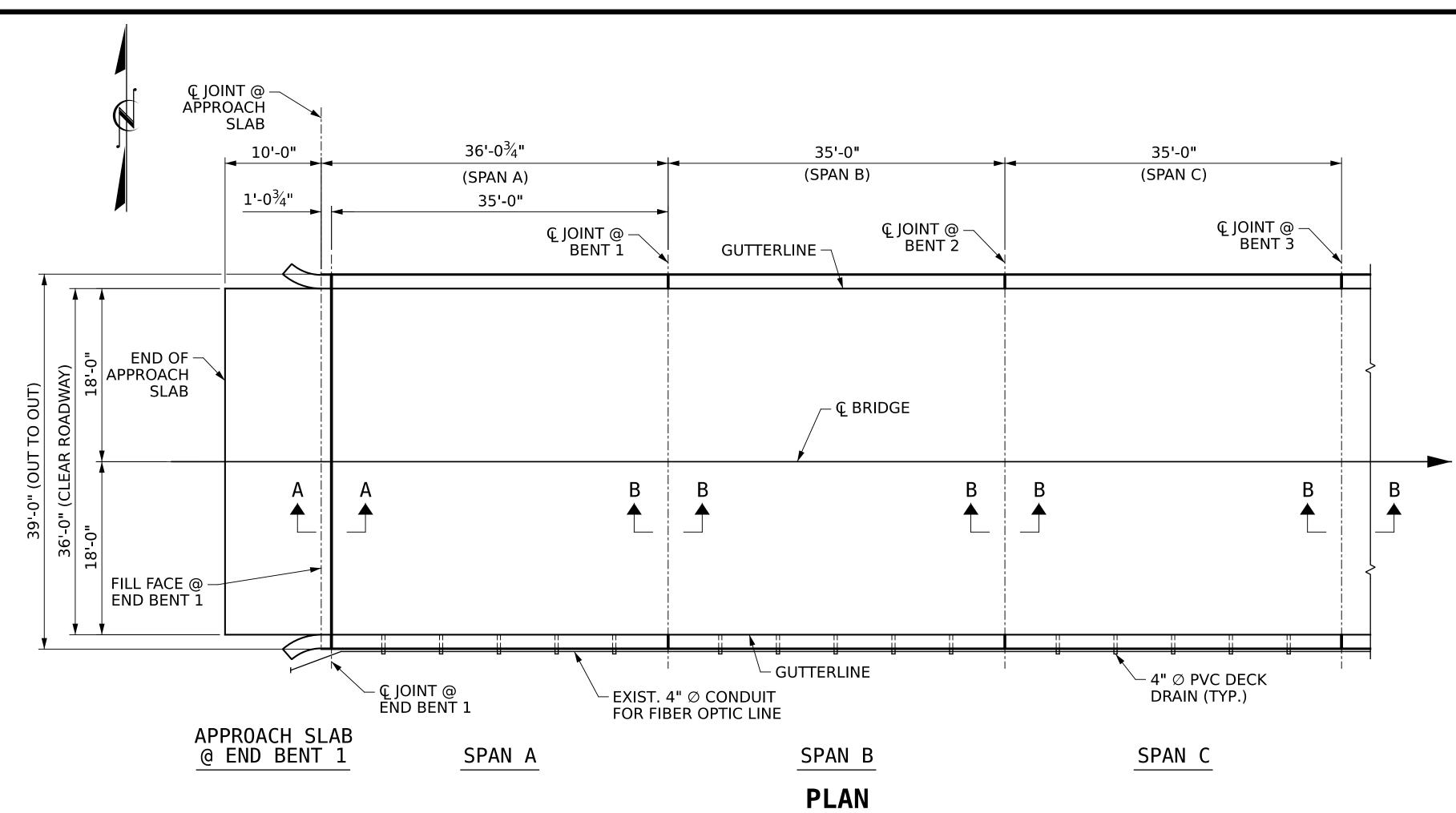
TYPICAL SECTION AND SURFACE PREPARATION DETAILS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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GANNETT One Glenwood Average Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-027

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



#### **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.

# AS-BUILT QUANTITY REPAIR TABLE

DECK SURFACE REPAIR & APPROACH SLAB REPAIR

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

CLASS IB SURFACE PREPARATION

**HI-0018** PROJECT NO.\_

**COLUMBUS** 

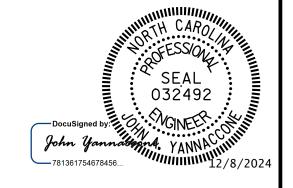
COUNTY 230386 BRIDGE NO.\_

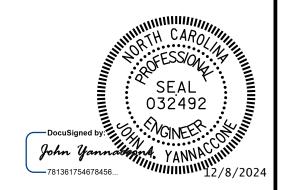
SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

# **DECK REPAIRS**

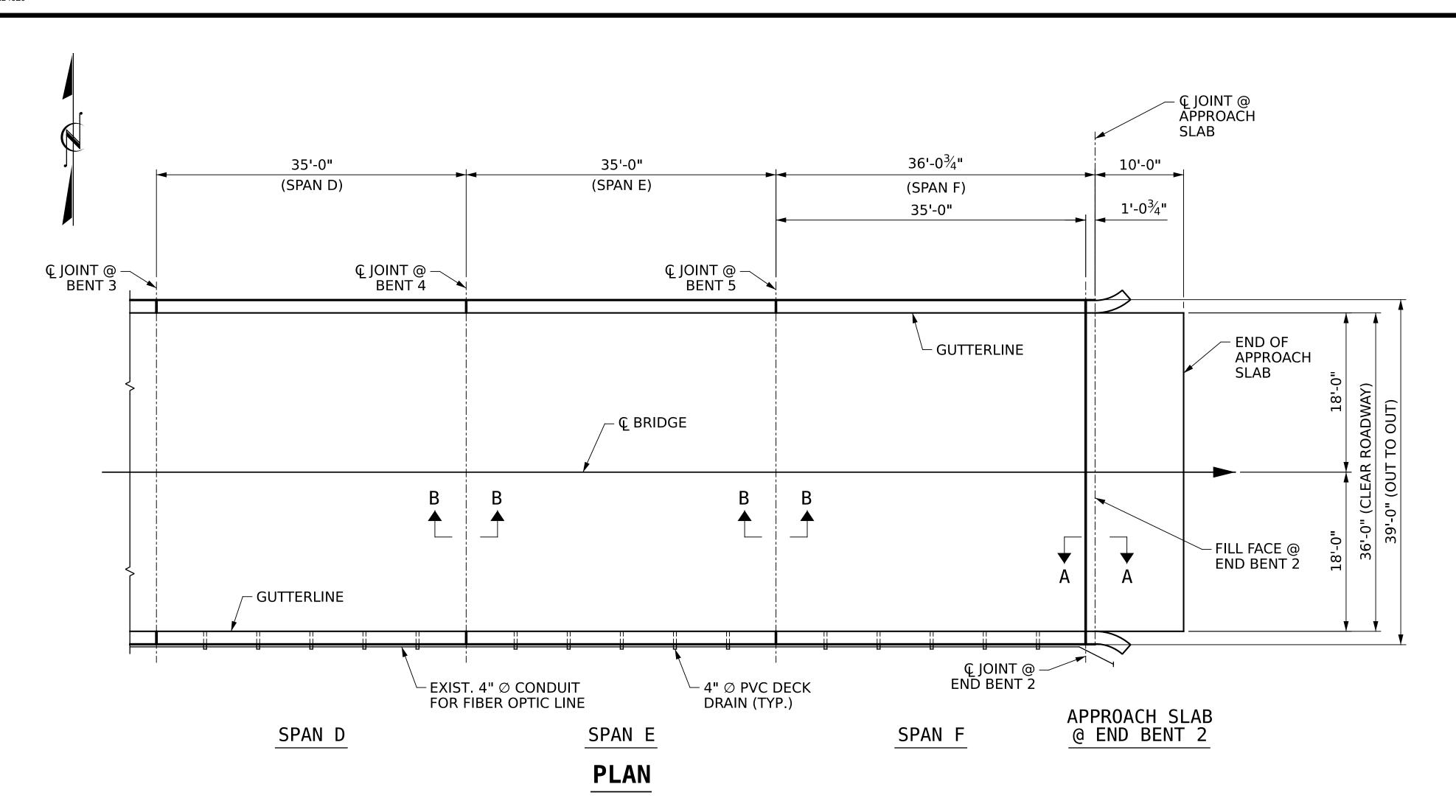
SPAN A W/APPROACH SLAB, SPAN B & SPAN C





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



# AS-BUILT QUANTITY REPAIR TABLE

DECK SURFACE REPAIR & APPROACH SLAB REPAIR

		ESTIMATE	ACTUAL
CLASS IB	SPAN D	140.0 SQ. YDS.	
SURFACE PREPARATION	SPAN E	140.0 SQ. YDS.	
	SPAN F	144.3 SQ. YDS.	
	APPROACH SLAB @ END BENT 2	40.0 SQ. YDS.	
BRIDGE DECK	SPAN D	140.0 SQ. YDS.	
WATERPROOFING MEMBRANE-SPRAY	SPAN E	140.0 SQ. YDS.	
APPLIED	SPAN F	144.3 SQ. YDS.	
	APPROACH SLAB @ END BENT 2	6.0 SQ. YDS.	

CLASS IB SURFACE PREPARATION

**HI-0018** PROJECT NO.\_

**COLUMBUS** 

COUNTY 230386 BRIDGE NO.\_

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

# **DECK REPAIRS**

SPAN D, SPAN E & SPAN F W/APPROACH SLAB

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#### **NOTES**

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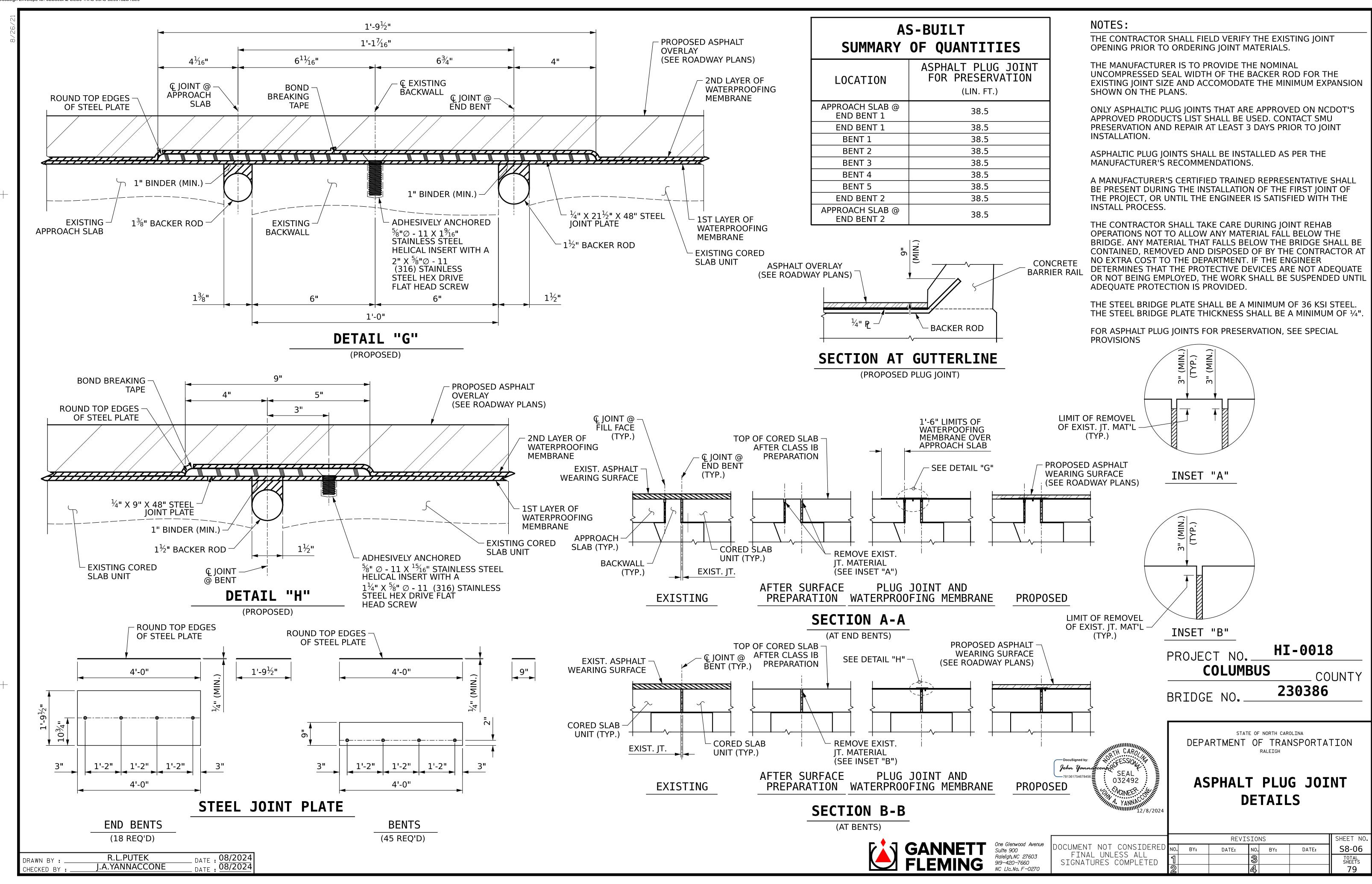
FOR SECTION A-A AND B-B. SEE "ASPHALT PLUG JOINT DETAILS" SHEET.

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

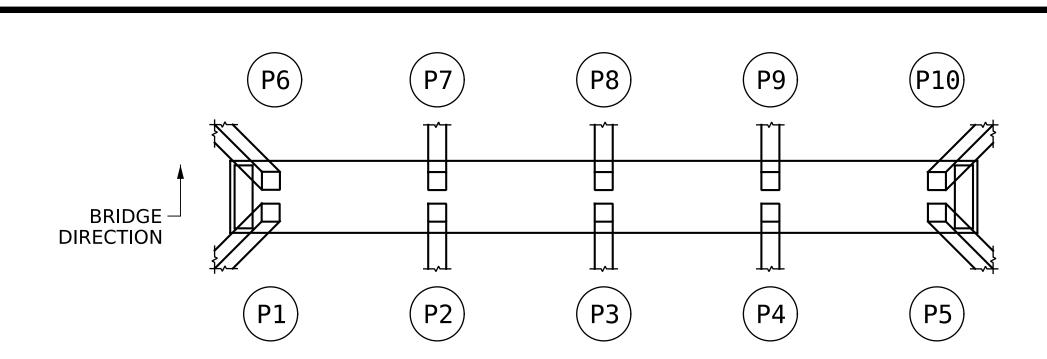
FOR BRIDGE DECK WATERPROOFING MEMBRANE-SPRAY APPLIED, SEE SPECIAL PROVISIONS.

FOR ASPHALT OVERLAY, SEE ROADWAY PLANS.

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



**BEGIN PILE-**



# AS-BUILT SUMMARY OF QUANTITIES

# CONCRETE PILE ENCAPSULATION LOCATION TABLE

	FIBER	GLASS	REINFO	RCED F	PLASTIC	(FRP)	JACKET	LENGT	HS (LI	N.FT.)	ESTIMATE	ACTUAL
LOCATION	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	LIN. FT.	LIN. FT.
BENT 1	4.1	3.7	3.2	2.7	2.2	4.1	3.7	3.2	2.7	2.2	31.5	
BENT 2	3.8	3.8	3.9	3.9	3.9	3.8	3.8	3.9	3.9	3.9	38.6	
BENT 3	9.1	8.5	7.8	7.2	6.5	9.1	8.5	7.8	7.2	6.5	78.2	
BENT 4	8.7	8.4	8.0	7.7	7.4	8.7	8.4	8.0	7.7	7.4	80.4	
BENT 5	2.7	2.6	2.5	2.3	2.2	2.7	2.6	2.5	2.3	2.2	24.6	
TOTAL											253.6	

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

**GROUT** 

FRP JACKET

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

FRP IACKET

**APPLY MARINE** 

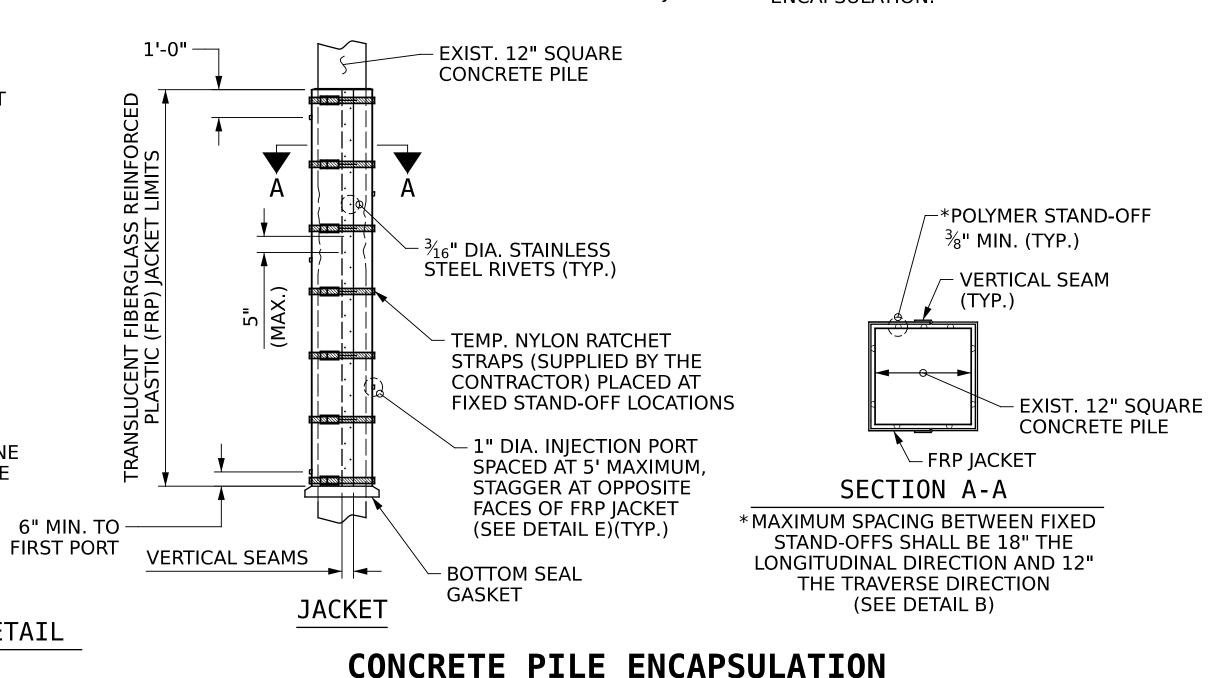
**EPOXY PASTE** 

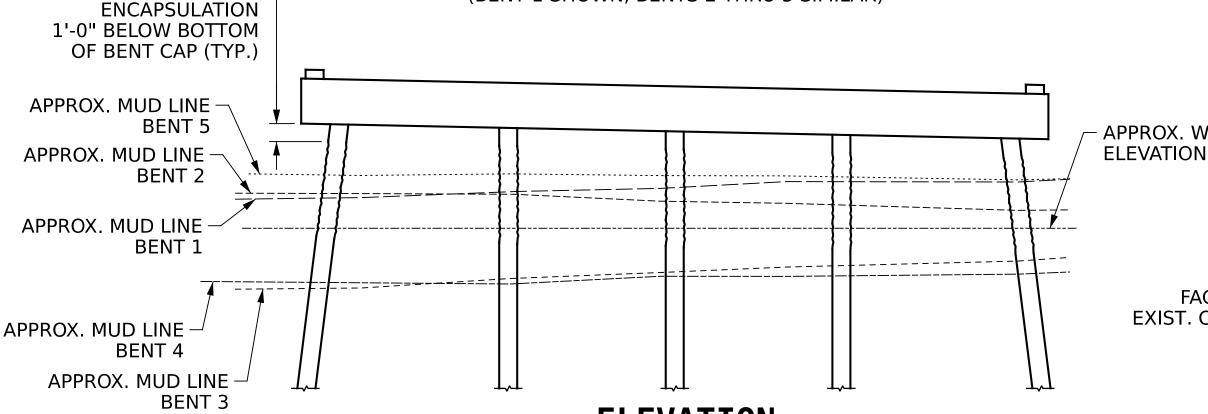
### NOTE:

THE FLOATING TURBIDITY CURTAIN QUANTITY SHOWN ON THE TOTAL BILL OF MATERIAL IS BASED ON A 3.5' 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.** 





**ELEVATION** (BENT 1 SHOWN, BENTS 2 THRU 5 SIMILAR)

**DETAIL B** 

**FACE OF** 

PILE

EXIST. CONC

**PLAN** 

(BENT 1 SHOWN, BENTS 2 THRU 5 SIMILAR)

STAINLESS STEEL RIVETS — <sup>1</sup>/<sub>4</sub>"-<sup>3</sup>/<sub>8</sub>" GRIP. <sup>3</sup>/<sub>16</sub>" DIA RIVET HOLES FIELD SUPPLIED WITH JACKET MATCH DRILLED STAGGER LEFT TO RIGHT APPLY MARINE EPOXY ADHESIVE TO SEAMS

#### **BOTTOM SEAL DETAIL** ALTERNATE BOTTOM SEAL DETAIL

# **DETAIL D**

TEMPORARY GROUT FITTING SUPPLIED

BY CONTRACTOR TO BE PVC BALL VALVE

AND CAM LOCK TO FIT 1" N.P.T. INJECTION PORT

FACE OF

PILE

ISOMETRIC VIEW

EXIST. CONC.

#### - 1" PVC PLUG SUPPLIED BY **DETAIL A** INJECTION PORT -**HEX NUT** ADHERED IN FIELD CONTRACTOR USED TO SEAL PORT AFTER GROUT INJECTION (SEAM DETAIL) **USING HOT MELT GLUE** FACE OF -FIXED 5/8" POLYMER **VARIES** EXIST. CONC. STAND-OFF PILE THREADED FACE OF POLYMER BOSS INSIDE THREAD -EXIST. CONC 1" N.P.T. PILE FRP JACKET 1" PVC PLUG THREADED POLYMER ADHERE POLYMER MOLDED POLYMER STAND-OFF STAND-OFF TO JACKET INJECTION PORT - POLYMER (VARIABLE LENGTH) - FRP JACKET IN FIELD USING HOT **BODY HEX NUT MELT GLUE** – FRP JACKET ADJUSTABLE STAND-OFF DETAIL FIXED STAND-OFF DETAIL

CAP ENCAPSULATION

WITH MARINE EPOXY

15°-0'-0" (MIN.)

PASTE

GROUT

# REPAIR SEQUENCE

- INSTALL FLOATING TURBIDITY CURTAIN TO ENCOMPASS ENTIRE INTERIOR BENT. ALLOW ENOUGH SPACE FOR PILE ENCAPSULATION WORK.
- AFTER SURFACE PREPARATION, PLACE JACKET IN PROPER LOCATION AROUND PILE AND SEAL LONGITUDINAL SEAMS (SEE DETAIL A). INSTALL TEMPORARY BRACING.
- CONFIRM SPACING BETWEEN JACKET AND PILE. INSTALL BOTTOM SEAL (SEE DETAIL D). ALLOW BOTTOM SEAL TO CURE APPROX. 4 HOURS.
- 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.)
- PLUG UPPER INJECTION PORTS AND PUMP GROUT INTO ONLY USE UPPER PORTS IF INJECTION BECOME DIFFICULT.
- REPEAT STEPS 2 THRU 5 FOR EACH PILE WITHIN ONE BENT.
- 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.

**HI-0018** PROJECT NO.

> COUNTY 230386

BRIDGE NO.

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

SUBSTRUCTURE REPAIR

CONCRETE PILE ENCAPSULATION



SECTION THRU PORT

APPROX. WATER

**GROUT** 

FACE OF

EXIST. CONC.



OCUMENT NOT CONSIDEREI FINAL UNLESS ALL SIGNATURES COMPLETED

SESSION A

SEAL 032492

A. YANNA

G, NGINEER

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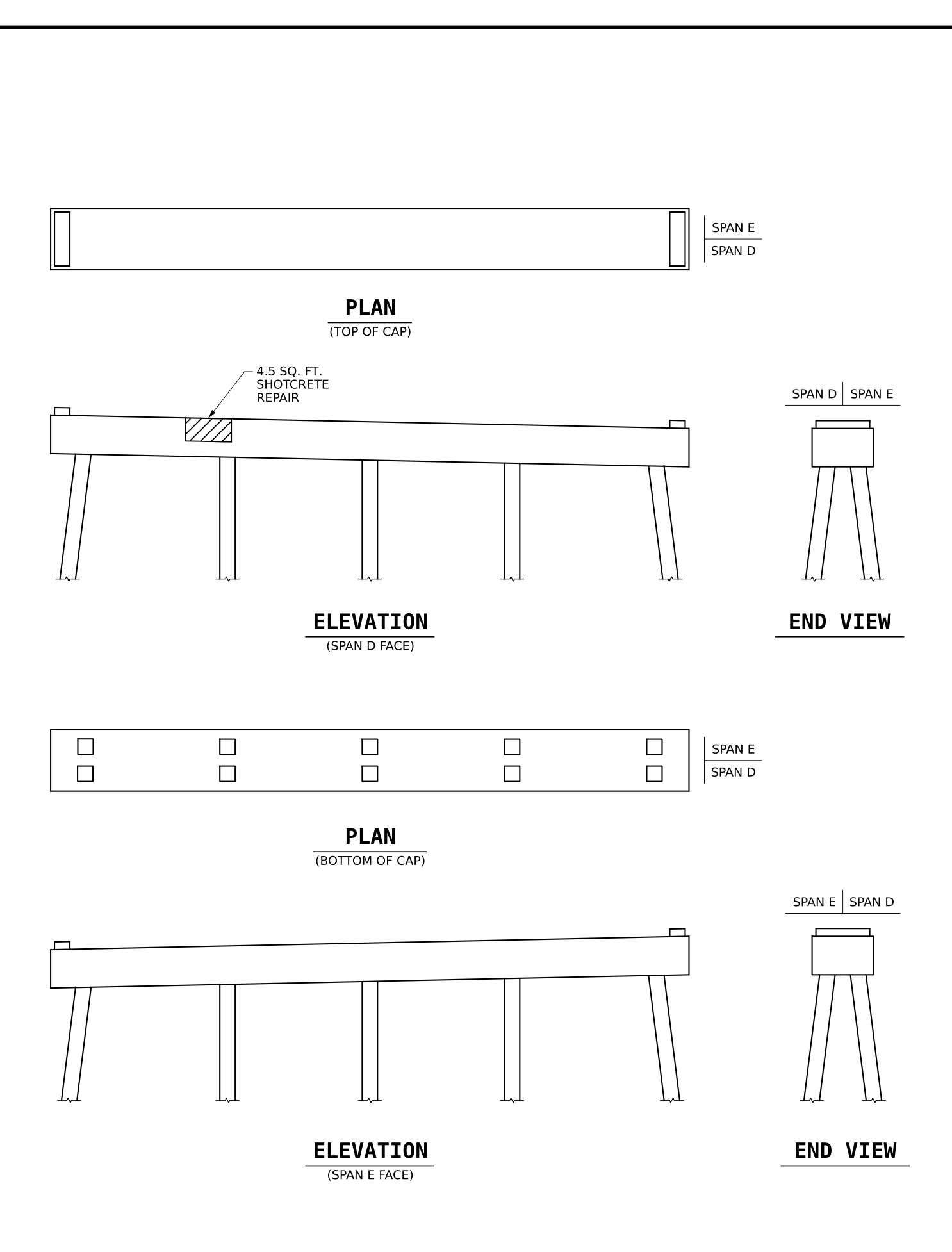
**COLUMBUS** 

LOWER PORT UNTIL GROUT REACHES TOP OF JACKET.

R.L,PUTEK J.A.YANNACCONE

DRAWN BY : \_\_\_ CHECKED BY :

\_ DATE : 08/2024 \_ DATE : 08/2024





AS-BUILI KEPAIK QUANIIII IABLE								
REPAIRS - BENT 4	QUANTITIES							
KEPAIKS - DENI 4	ESTI	MATE	ACTUAL					
SHOTCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF				
CAP	4.5	2.3						
COLUMN	0	0						
CONCRETE REPAIRS	AREA SF	VOLUME CF	AREA SF	VOLUME CF				
CAP	0	0						
COLUMN	0	0						
EPOXY RESIN INJECTION		LIN. FT.		LIN. FT.				
CAP		0						
COLUMN		0						
EPOXY COATING		AREA SF		AREA SF				
CAP		0						

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

#### NOTES

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

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

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

SHOTCRETE REPAIR



CONCRETE REPAIR (FORM & POUR)



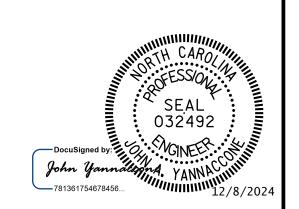
**EPOXY RESIN INJECTION** 

PROJECT NO. HI-0018

COLUMBUS COUNTY

BRIDGE NO. 230386

SHEET 2 OF 2



STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

SUBSTRUCTURE REPAIR BENT 4

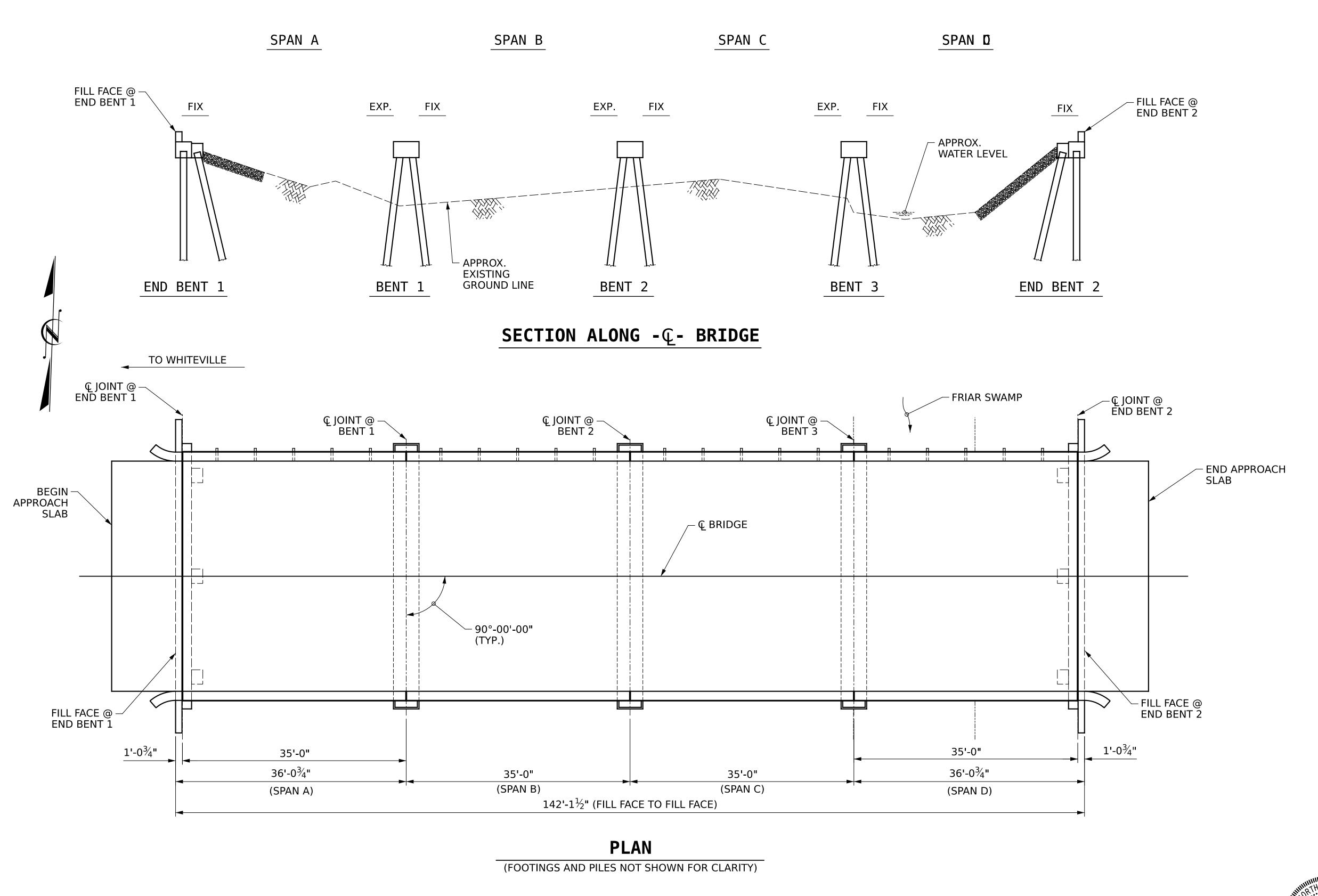


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R.L.PUTEK J.A.YANNACCONE

DRAWN BY : CHECKED BY : \_ DATE : 08/2024 \_ DATE : 08/2024



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

RESIDENT ENGINEER

DATE

# **NOTES:**

GENERAL DRAWING INFORMATION IS TAKEN FROM THE ORIGINAL PLANS AND THE ROUTINE INSPECTION REPORT DATED 07/16/2024.

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.

**HI-0018** PROJECT NO.\_ **COLUMBUS** 

COUNTY 230387

BRIDGE NO.\_

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

# GENERAL DRAWING

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

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