

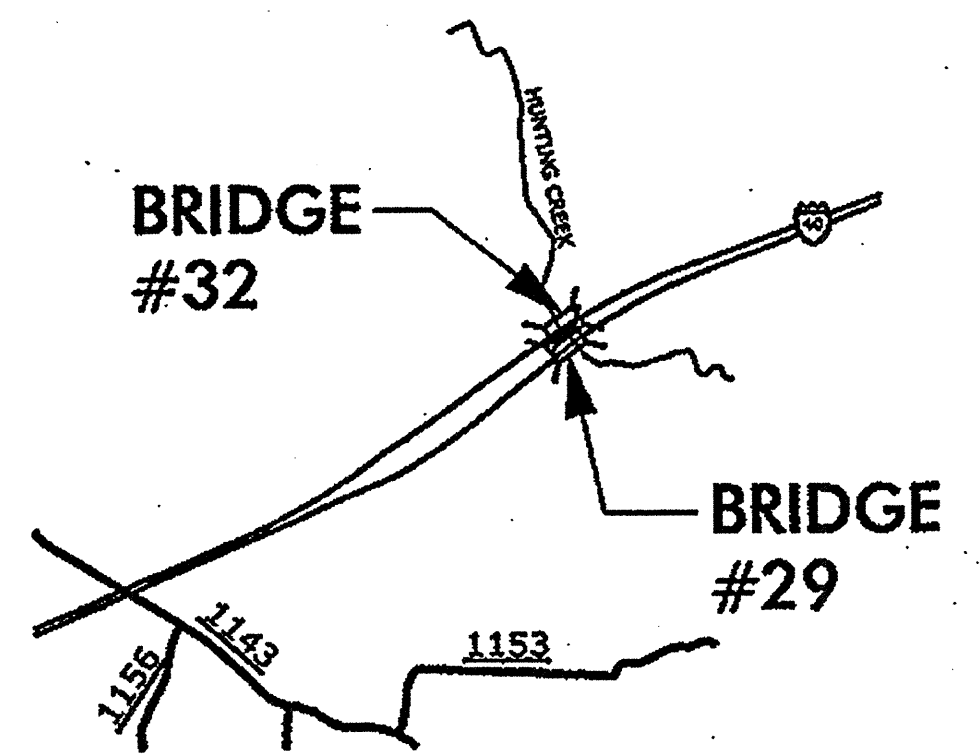
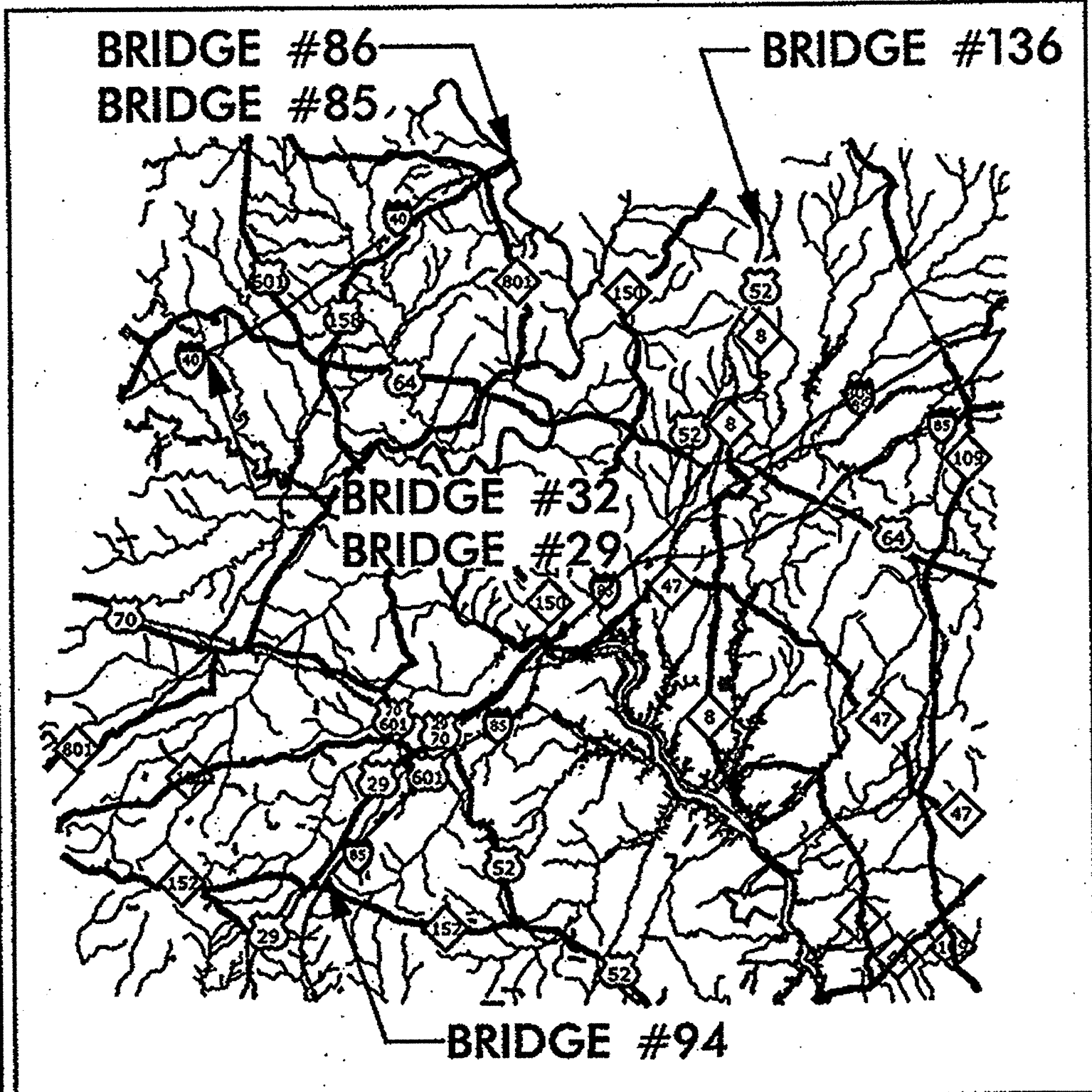
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.9.P.2	1	51
STATE PROJECT	S.A. PROJECT NO.	DESCRIPTION	
17BP.9.P.2	NA	PE	
17BP.9.P.2	NA	CONSTR.	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

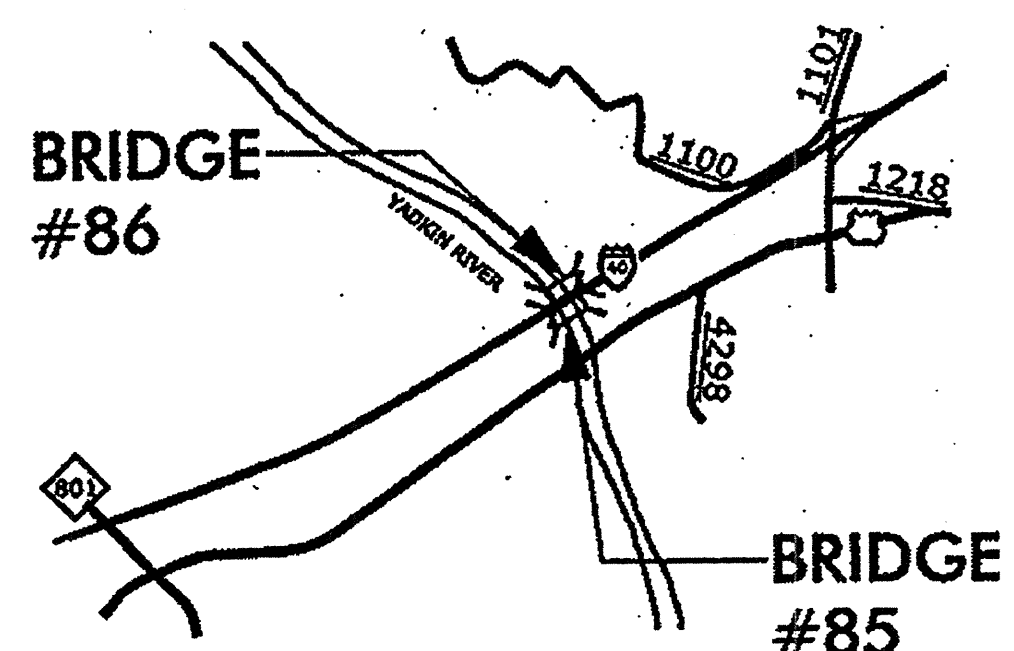
**DAVIE COUNTY  
DAVIDSON COUNTY  
ROWAN COUNTY**

**LOCATION:** BRIDGES #29 & #32 ON INTERSTATE 40 OVER HUNTING CREEK, DAVIE COUNTY  
BRIDGES #85 & #86 ON INTERSTATE 40 OVER YADKIN RIVER, DAVIE COUNTY  
BRIDGE #136 ON S.R. 1508 OVER US52, DAVIDSON COUNTY  
BRIDGE #94 ON S.R. 2664 NBL OVER INTERSTATE 85 & US601, ROWAN COUNTY

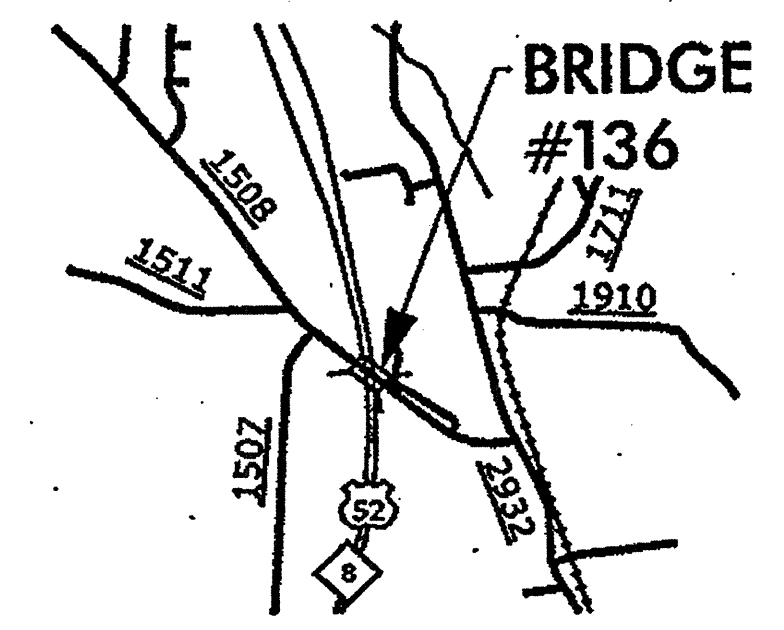
**TYPE OF WORK:** BRIDGE PRESERVATION; HYDRODEMOLITION, LMC OVERLAY, EPOXY OVERLAY AND SUBSTRUCTURE REPAIRS



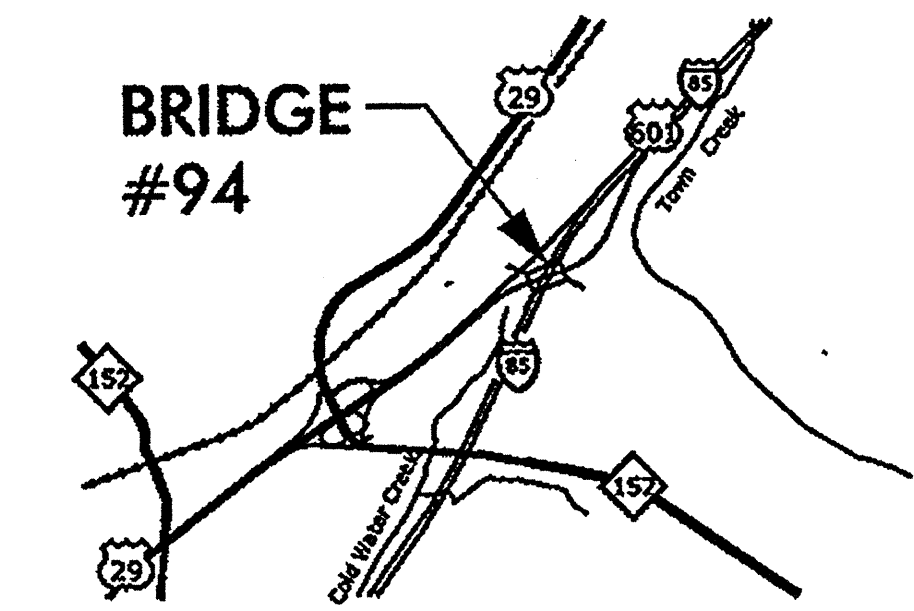
VICINITY MAP  
BRIDGES #29 & #32  
DAVIE COUNTY



VICINITY MAP  
BRIDGES #85 & #86  
DAVIE COUNTY

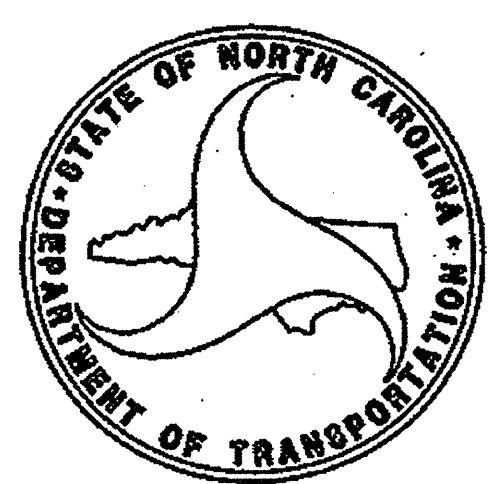


VICINITY MAP BRIDGE #136  
DAVIDSON COUNTY



VICINITY MAP BRIDGE #94  
ROWAN COUNTY

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1000 West Morehead St., Ste. 200  
Charlotte, NC 28208  
NC LICENSE NO. F-0991

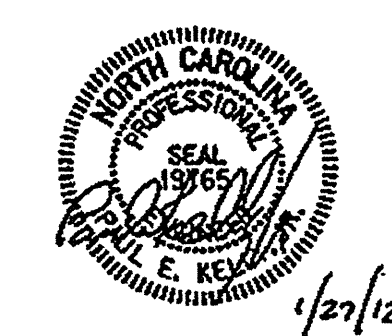


**PROJECT LENGTH**

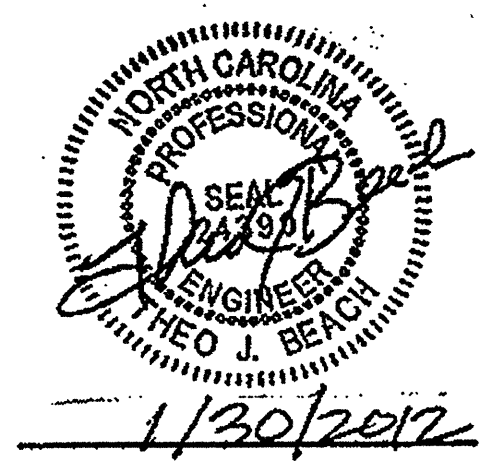
BRIDGE	LENGTH STRUCTURE PROJECT
#29	.04 MILE
#32	.05 MILE
#85	.22 MILE
#86	.22 MILE
#94	.08 MILE
#136	.08 MILE

Prepared For:  
**STRUCTURES MANAGEMENT UNIT**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
1000 BIRCH RIDGE DRIVE, RALEIGH, NC 27610

**LETTING DATE:**  
MARCH 20, 2012



**ENGINEER**



PROJECT: 17BP.9.P.2  
CONTRACT: C202965

**CONTRACT: C202965** **PROJECT: 17BP.9.P.2**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.9.P.2	1A	51
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
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17BP.9.P.2	NA	CONSTR.	

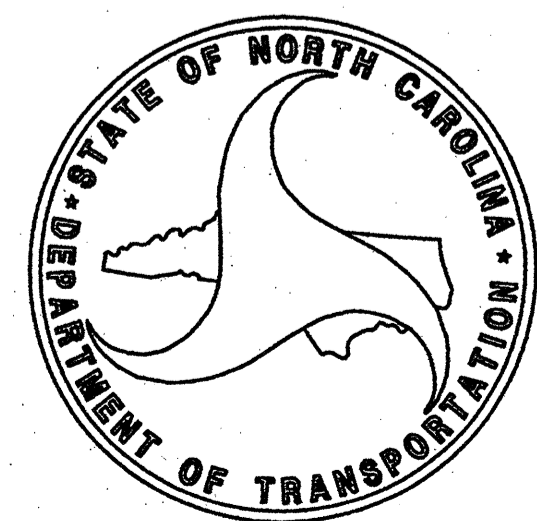
**DAVIE COUNTY  
DAVIDSON COUNTY  
ROWAN COUNTY**

**LOCATION: BRIDGES #29 & #32 ON INTERSTATE 40 OVER HUNTING CREEK, DAVIE COUNTY  
BRIDGES #85 & #86 ON INTERSTATE 40 OVER YADKIN RIVER, DAVIE COUNTY  
BRIDGE #136 ON S.R. 1508 OVER US52, DAVIDSON COUNTY  
BRIDGE #94 ON S.R. 2664 NBL OVER INTERSTATE 85 & US601, ROWAN COUNTY**

**TYPE OF WORK: BRIDGE PRESERVATION: HYDRODEMOLITION, LMC OVERLAY, EPOXY OVERLAY AND SUBSTRUCTURE REPAIRS**

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
S1-S42	STRUCTURES
TMP-1 – TMP-2	TRAFFIC MANAGEMENT PLANS



Prepared For:  
**STRUCTURES MANAGEMENT UNIT**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
1000 BIRCH RIDGE DRIVE, RALEIGH, NC 27610

**LETTING DATE:**  
MARCH 20, 2012

**ENGINEER**

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
 ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202965

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	8892000000-E	SP	29,694	SF	GENERIC STRUCTURE ITEM PLACEMENT OF EPOXY OVERLAY
1330000000-E	607	230	SY	INCIDENTAL MILLING	8893000000-E	SP	10,784	SY	GENERIC STRUCTURE ITEM HYDRO-DEMOLITION OF BRIDGE DECK
1525000000-E	610	36	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	8893000000-E	SP	10,784	SY	GENERIC STRUCTURE ITEM PLACING & FINISHING LATEX MOD CONC OVERLAY - VERY EARLY STRE NGTH
1575000000-E	620	2	TON	ASPHALT BINDER FOR PLANT MIX	8893000000-E	SP	10,784	SY	GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK
4400000000-E	1110	80	SF	WORK ZONE SIGNS (STATIONARY)	8897000000-N	SP	200	EA	GENERIC STRUCTURE ITEM BOLT REMOVAL AND REPLACEMENT
4405000000-E	1110	224	SF	WORK ZONE SIGNS (PORTABLE)					
4415000000-N	1115	3	EA	FLASHING ARROW BOARD					
4420000000-N	1120	1	EA	PORTABLE CHANGEABLE MESSAGE SIGN					
4430000000-N	1130	40	EA	DRUMS					
4455000000-N	1150	120	DAY	FLAGGER					
4480000000-N	1165	1	EA	TMA					
4510000000-N	SP	400	HR	LAW ENFORCEMENT					
4516000000-N	1180	42	EA	SKINNY DRUM					
4847000000-E	1205	8,595	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) HIGHLY REFLECTIVE ELEMENTS					
4847110000-E	1205	180	LF	POLYUREA PAVEMENT MARKING LINES (8", *****) HIGHLY REFLECTIVE ELEMENTS					
8161000000-E	420	81,102	SF	GROOVING BRIDGE FLOORS					
8664000000-E	SP	48	CF	SHOTCRETE REPAIRS					
8678000000-E	SP	553	LF	EPOXY RESIN INJECTION					
8692000000-N	SP	Lump Sum		FOAM JOINT SEALS					
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING					
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM DRAIN TROUGH SYSTEM					
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM UNDER STRUCTURE WORK PLATFORM					
8881000000-E	SP	450	CY	GENERIC STRUCTURE ITEM LATEX MOD CONC OVERLAY - VERY EARLY STRENGTH					
8892000000-E	SP	300	SF	GENERIC STRUCTURE ITEM CLASS II CONC DECK REPAIRS FOR EPOXY OVERLAY					

# GENERAL NOTES

EXISTING BRIDGE AND REPAIR DETAILS INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE AND REPAIR DETAILS SHOWN ON THE PLANS AND THE ACTUAL CONDITION AT THE PROJECT SITE. WORK ON BRIDGES SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION ACCESS IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL OSHA AND STATE SAFETY REQUIREMENTS. DIMENSIONS IN THESE PLANS ARE BASED ON ORIGINAL PLANS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

ALL VISUAL AND NON-DESTRUCTIVE TESTING WILL BE PERFORMED BY NCDOT.

FOR UNDER STRUCTURE WORK PLATFORM, SEE SPECIAL PROVISIONS.

CONTRACTOR SHALL COORDINATE WITH INSPECTION PERSONNEL TO CAREFULLY EXAMINE HEAVILY RUSTED AREAS, AFTER SURFACE PREPARATION, TO DETERMINE IF ANY SUBSTANTIAL SECTION LOSS HAS OCCURRED.

ALL STRUCTURAL STEEL FOR REPAIRS SHALL BE NEW AASHTO M270 GRADE 36, OR APPROVED EQUIVALENT.

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH CURRENT AWS SPECIFICATIONS

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR BOLT REMOVAL AND REPLACEMENT, SEE SPECIAL PROVISIONS.

FOR EPOXY OVERLAY SYSTEM, SEE SPECIAL PROVISIONS.

FOR CONCRETE DECK REPAIR FOR EPOXY OR ASPHALT OVERLAYS, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.

FOR LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

FOR DRAIN TROUGH SYSTEM, SEE SPECIAL PROVISIONS.

FOR RESET ROCKER BEARINGS, SEE SPECIAL PROVISIONS.

FOR ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A, SEE STANDARD SPECIFICATIONS.

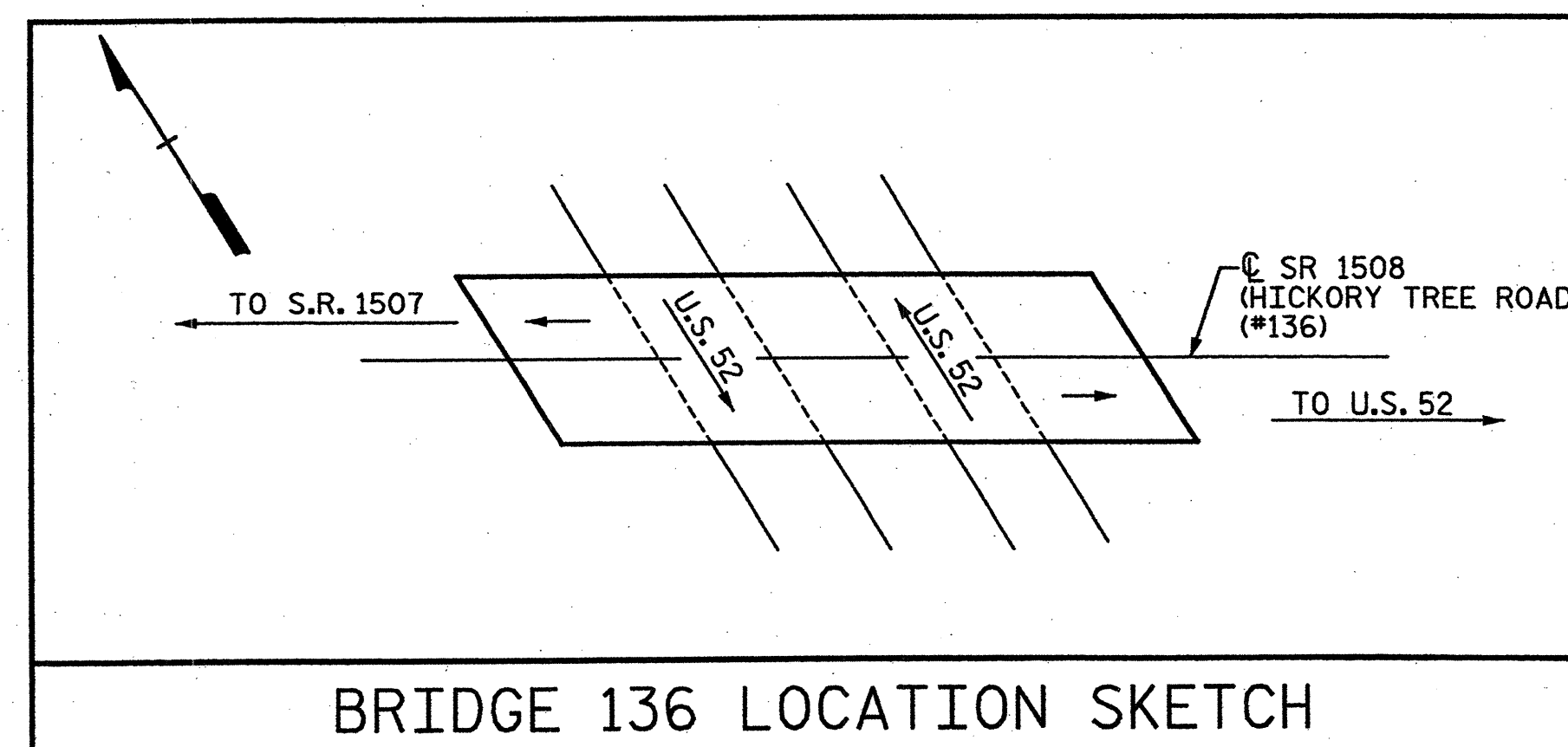
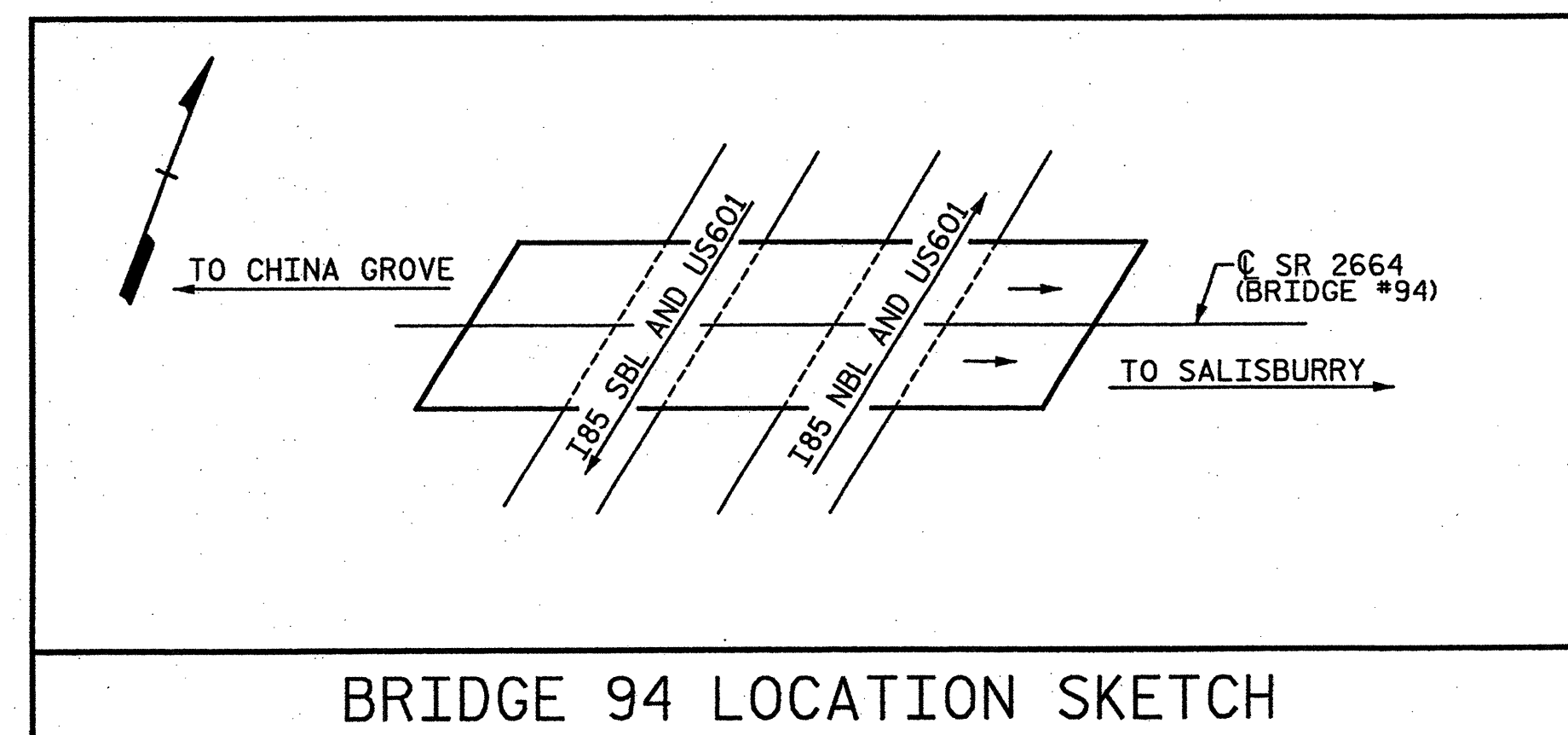
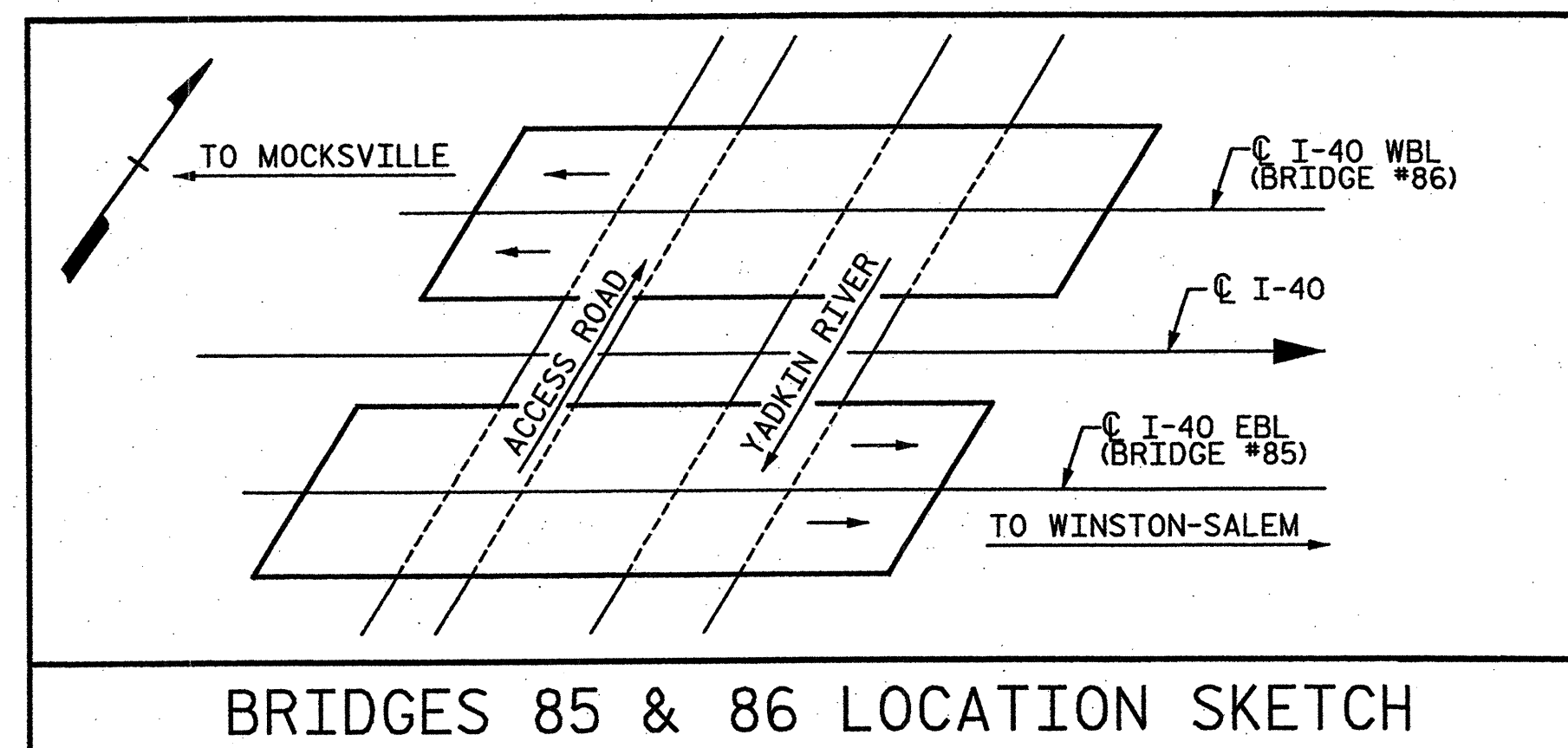
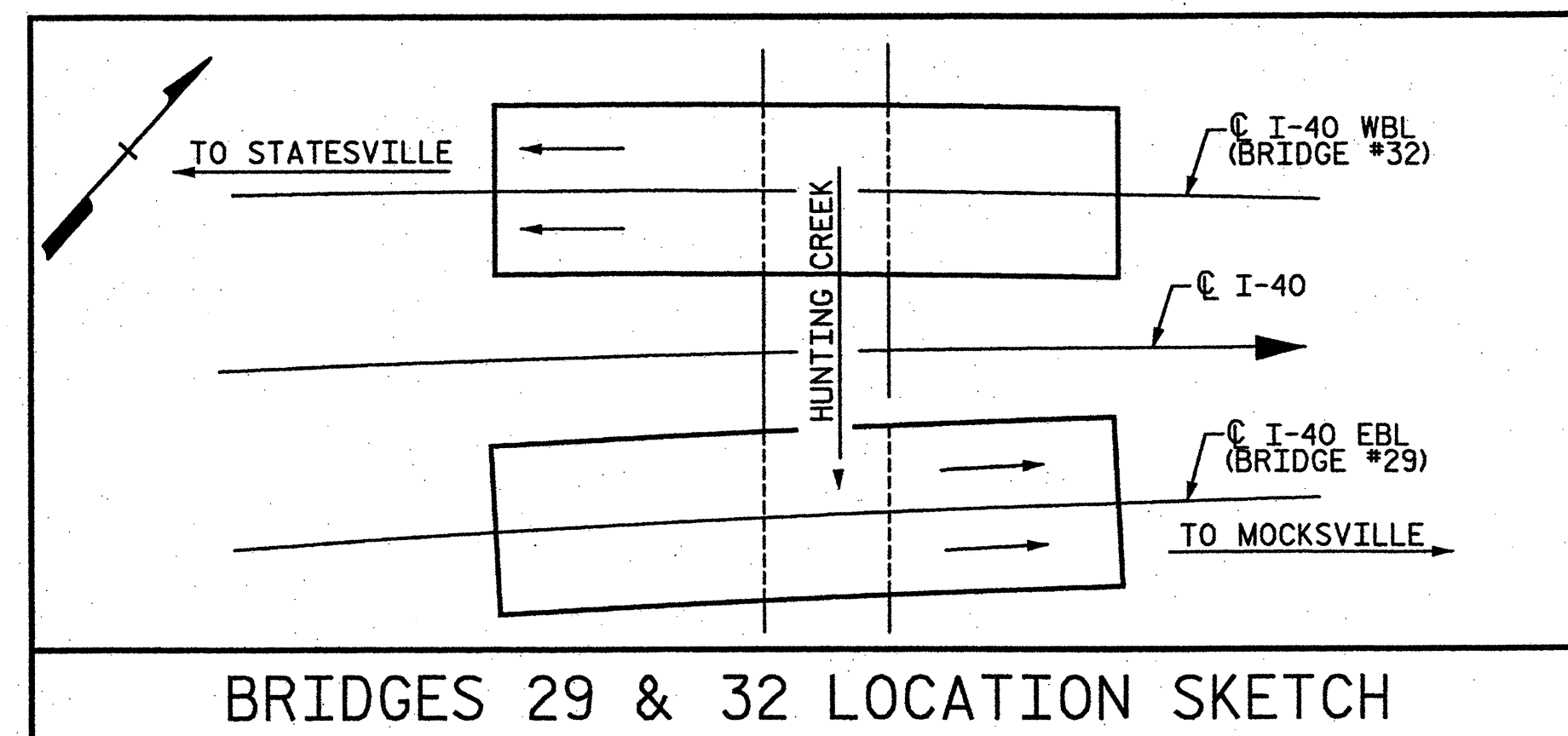
REPLACEMENT OF DAMAGED REINFORCING STEEL AND DOWELS USED IN CONCRETE REPAIR SHALL BE CONSIDERED INCIDENTAL TO CONCRETE REPAIRS. NO ADDITIONAL PAYMENT OR MEASUREMENT WILL BE MADE.

ALL THE COST ASSOCIATED WITH PREPARING ENGINEERING SUBMITTALS FOR JACKING, ANY ASSOCIATED TEMPORARY SUPPORTS, DIAPHRAGM MODIFICATIONS, EQUIPMENT AND MISCELLANEOUS COMPONENTS SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM FOR "BRIDGE JACKING". NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

THE COST OF LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR REMOVAL AND DISPOSAL OF EXISTING STRUCTURE COMPONENTS SHALL BE INCLUDED IN THE BID PRICE FOR THE VARIOUS CONTRACT PAY ITEMS.

DEBRIS SHALL BE REMOVED FROM EXISTING BENT CAPS. ALL COST ASSOCIATED WITH DEBRIS REMOVAL SHALL BE CONSIDERED INCIDENTAL TO SHOTCRETE REPAIR PAY ITEM.

THE CONTRACTOR SHALL TAKE THE NECESSARY STEPS TO PREVENT DEBRIS, MATERIALS, AND SHOTCRETE FROM FALLING, ROLLING OR BLOWING INTO TRAFFIC OR ONTO BEAMS, GIRDERS, BEARINGS, OR ANY OTHER UNINTENDED SURFACE. CONSIDERATION SHALL BE GIVEN TO THE USE OF SCREENS TO PROTECT TRAFFIC ADJACENT TO THE WORK AREA AND OTHER PORTIONS OF THE BRIDGE.

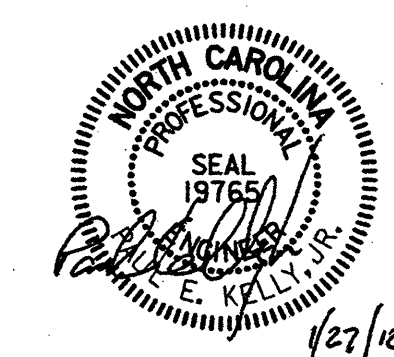


PROJECT NO. 17BP.9.P.2  
 DAVIE/DAVIDSON/ROWAN COUNTY  
 BRIDGE NO.: 29,32,85,86,94,136

REHAB. OF DAVIE, DAVIDSON & ROWAN CO. BRIDGES

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL NOTES AND  
 LOCATION SKETCHES

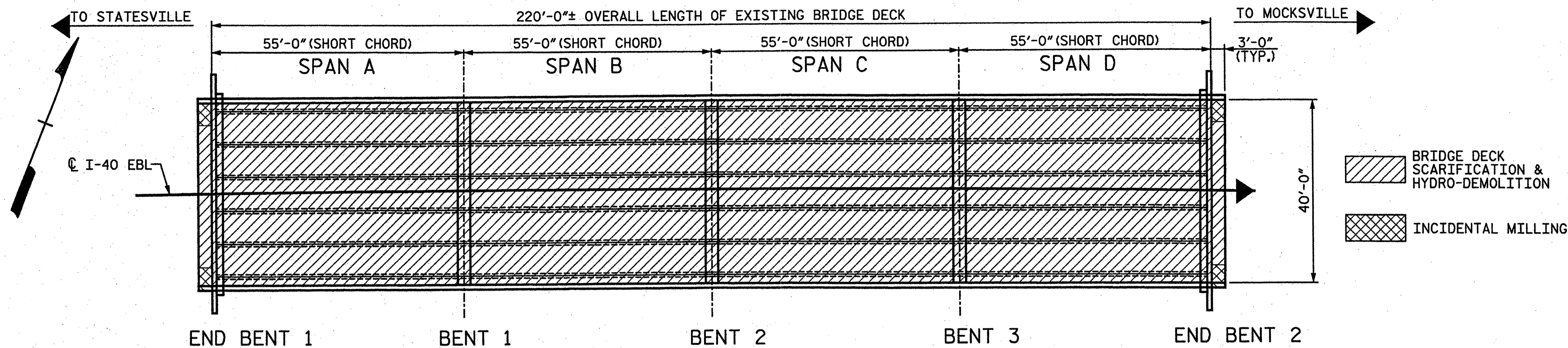


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 CHECKED BY : JAS DATE : 12-11

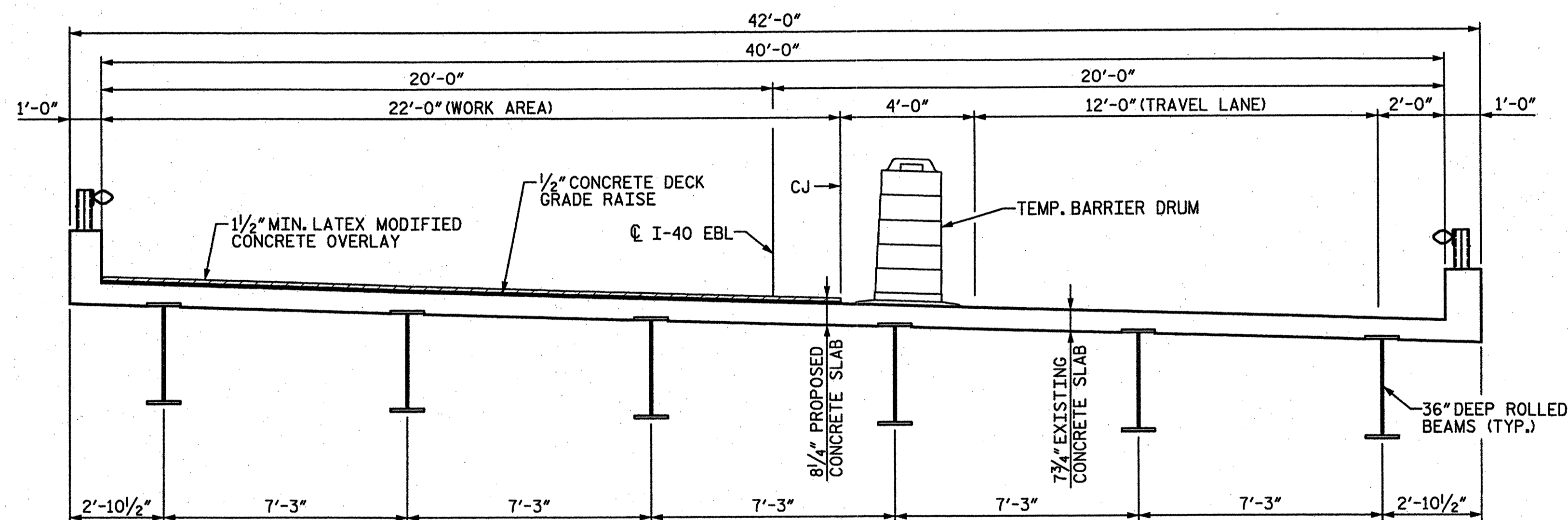
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 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License NO. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-1
2			4			TOTAL SHEETS S-42

I:\Projects\2515383\2515383\_0001\50\_Deliverables & Submittals\TBP.9.P.2\Structures\12-7-11\106NS The Sheet Br. 29,32,85,86,94,136.dgn  
 1/27/2012  
 olveyao



**PLAN OF SPANS - DECK SCARIFICATION & HYDRO-DEMOLITION**  
 (CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.)



**TYPICAL SECTION**

(STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)

**NOTES:**

- LATEX MODIFIED CONCRETE OVERLAY SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH. SEE SPECIAL PROVISIONS.
- FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.
- THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
- EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.
- INCIDENTAL MILLING SHALL BE 1/2" MINIMUM THICKNESS. THE AREA OF INCIDENTAL MILLING SHALL BE REPLACED BY VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 110LBS PER SQ. YD. PER 1" DEPTH. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

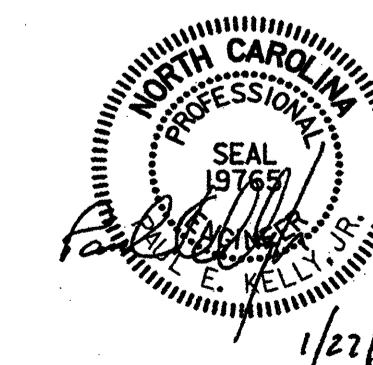
BRIDGE NO.: 29

REHAB. OF BRIDGE NO. 29 SHEET 1 OF 3

TOTAL BILL OF MATERIAL									
DECK SCARIFICATION	*CLASS I SURFACE PREPARATION	*CLASS II SURFACE PREPARATION	DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	*FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	SQ. YDS.	TONS
994	871	123	994	41.4	994	LUMP SUM	7,956	10	1

\* QUANTITIES FOR INFORMATION ONLY.

\*\* THE ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.



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 RALEIGH

**PLAN OF SPANS  
 TYPICAL SECTION**

BRIDGE ON I-40 EBL  
 OVER HUNTING CREEK

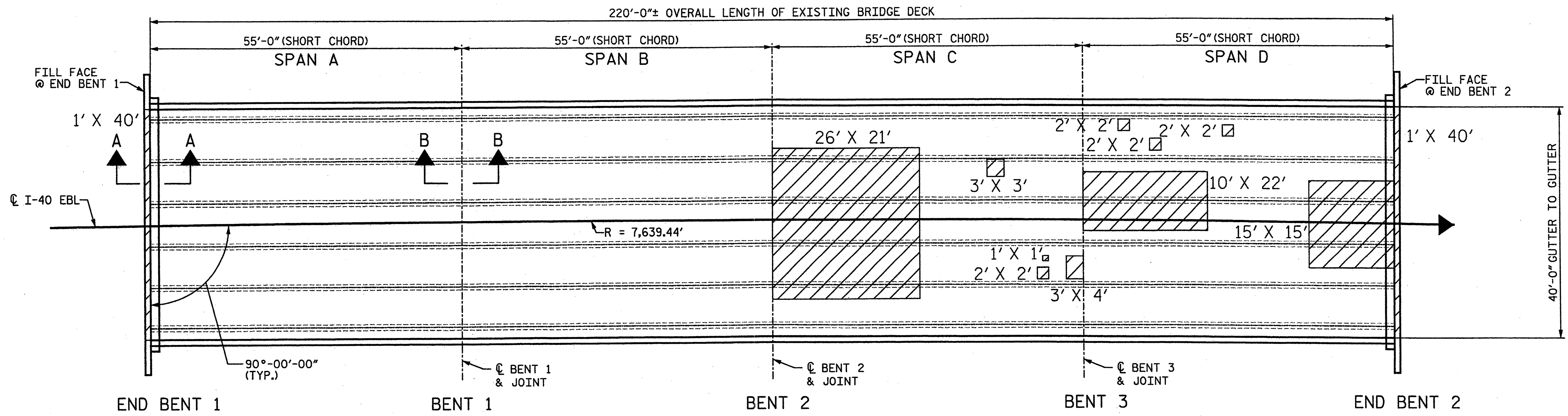
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			S-42

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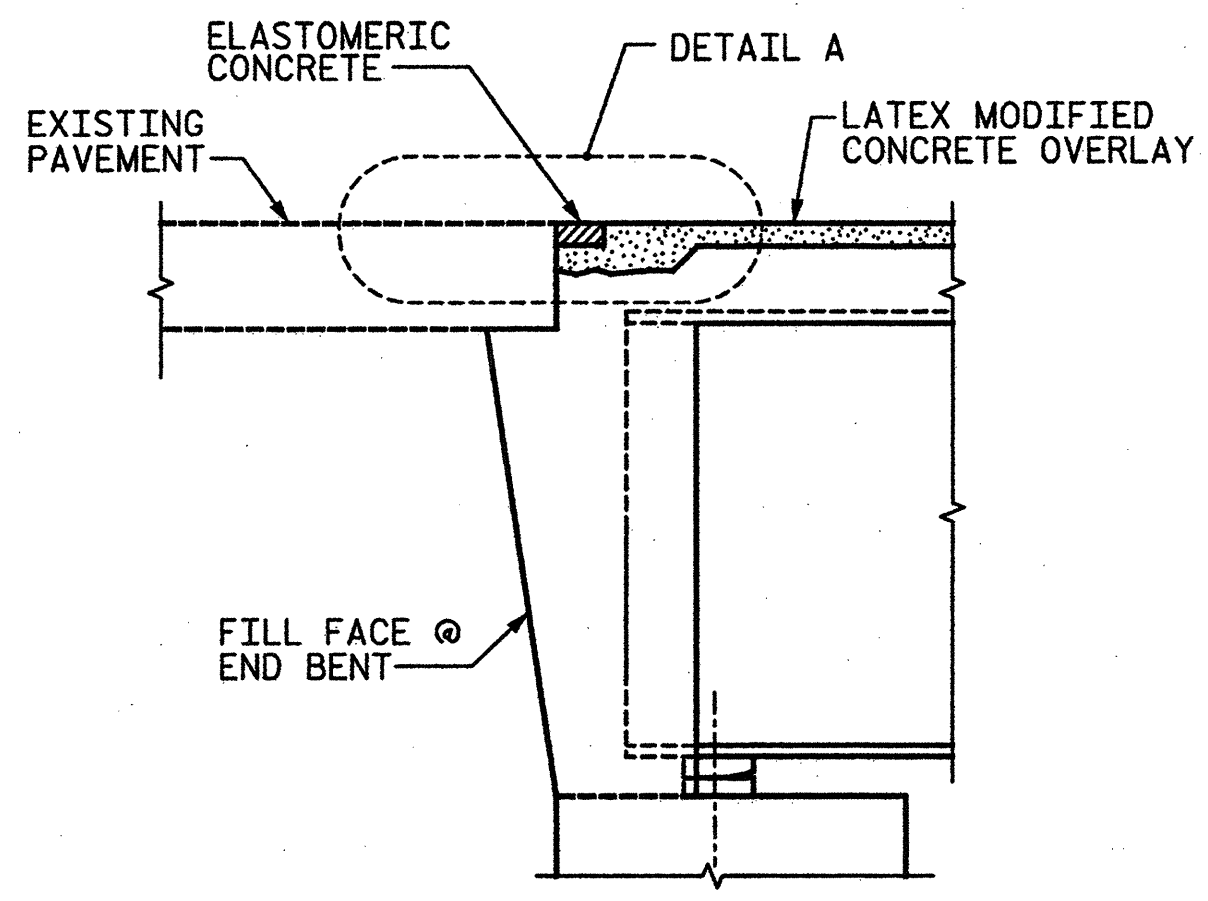
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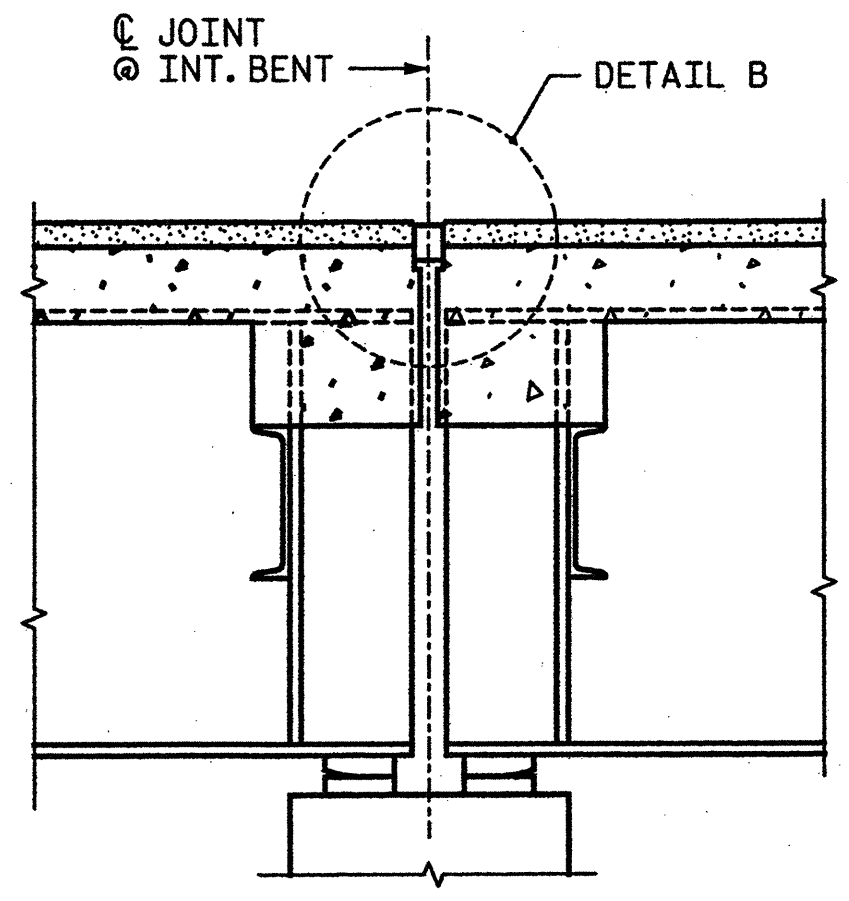
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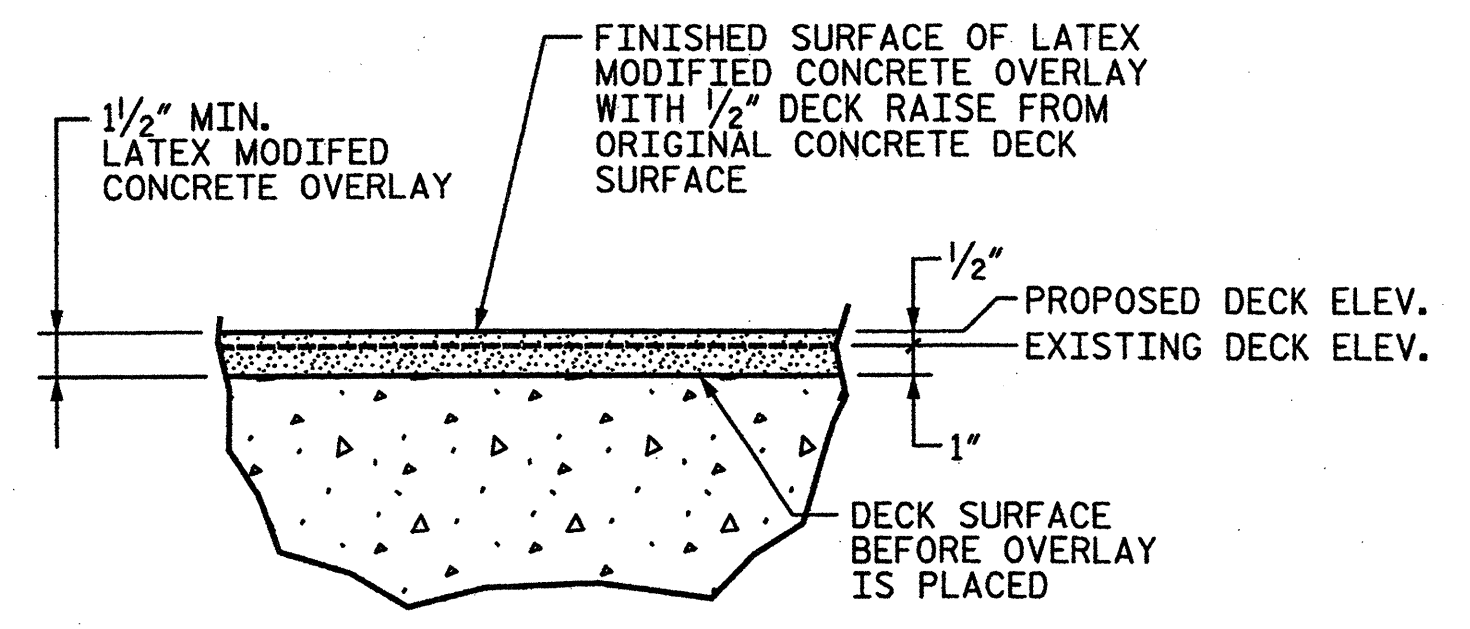
PLAN OF SPANS - DECK REPAIRS



SECTION A-A  
(PROPOSED JOINT @ END BENT 1 SHOWN  
END BENT 2 SIMILAR)



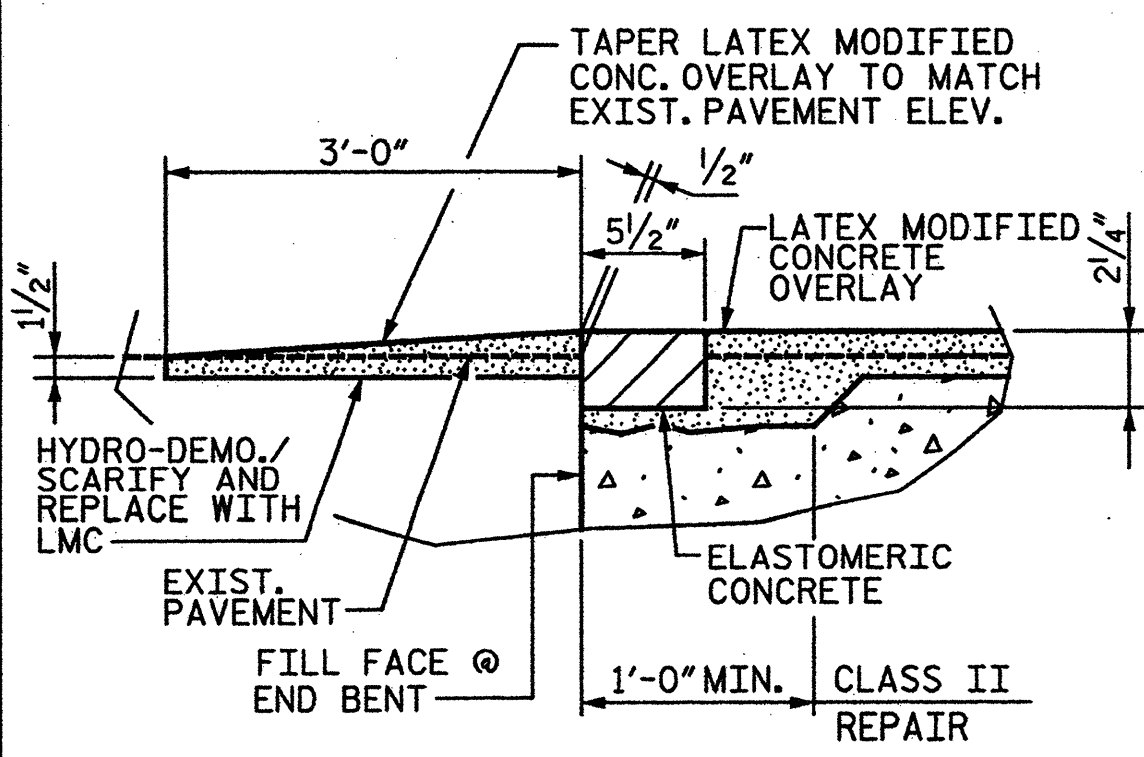
SECTION B-B  
(PROPOSED JOINT @ INTERIOR BENTS)



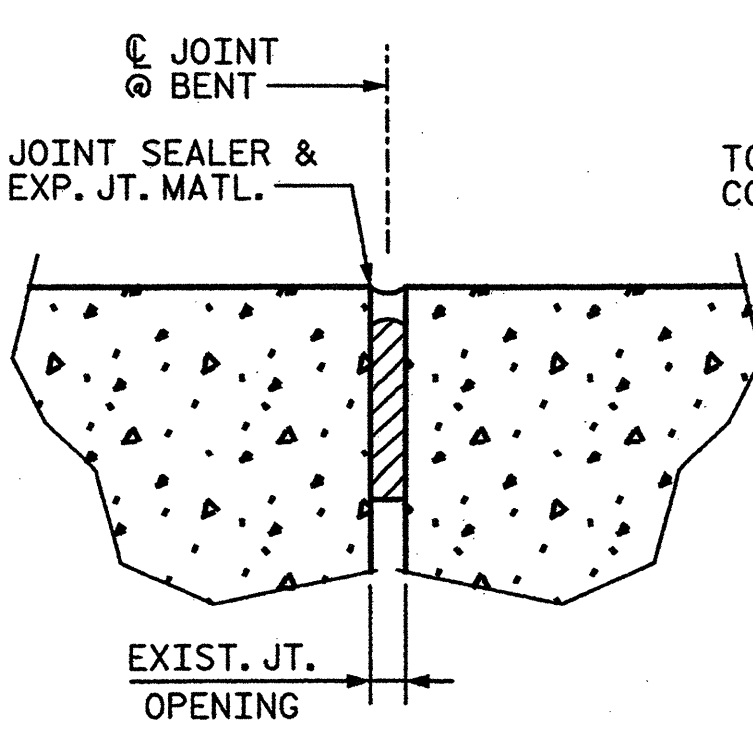
DETAIL FOR LATEX MODIFIED  
CONCRETE OVERLAY

NOTES:

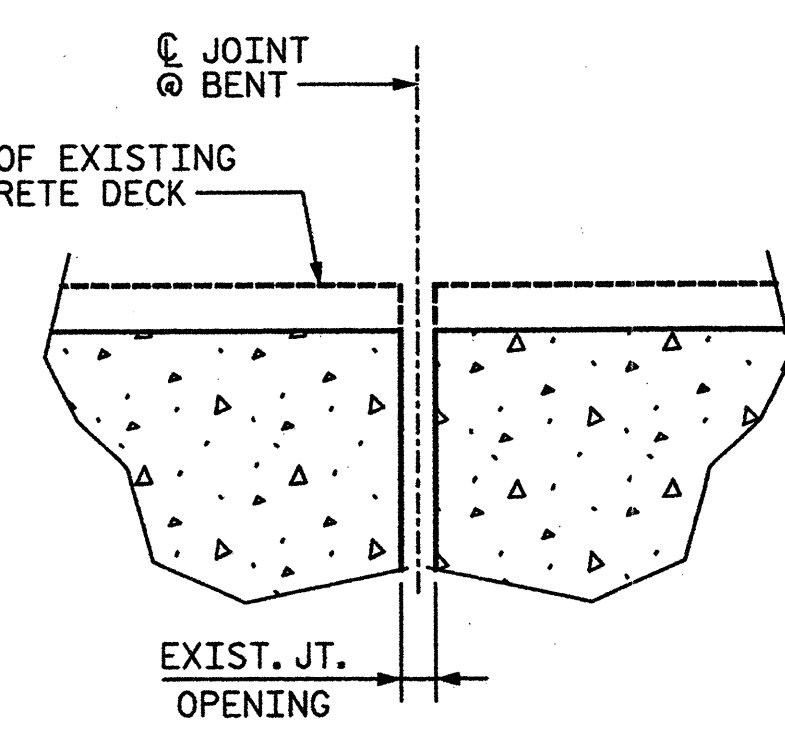
- THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 3 OF 3 AND SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
- THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
- FOAM JOINT OPENINGS SHALL BE CONFIRMED IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS TO FOAM JOINT SEALS, AS NECESSARY, TO MEET EXISTING CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY COST ASSOCIATED WITH THESE ADJUSTMENTS ARE CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- FOR ADDITIONAL NOTES SEE SHEET 1 OF 3.



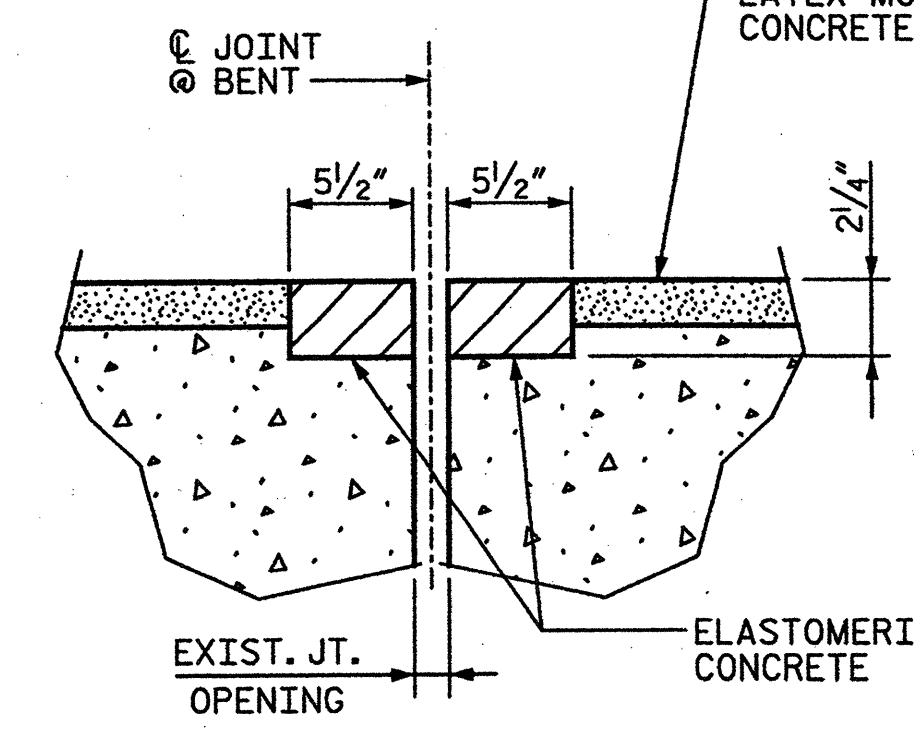
DETAIL A  
(LOCATION OF JOINT TO MATCH  
EXISTING JOINT LOCATION)



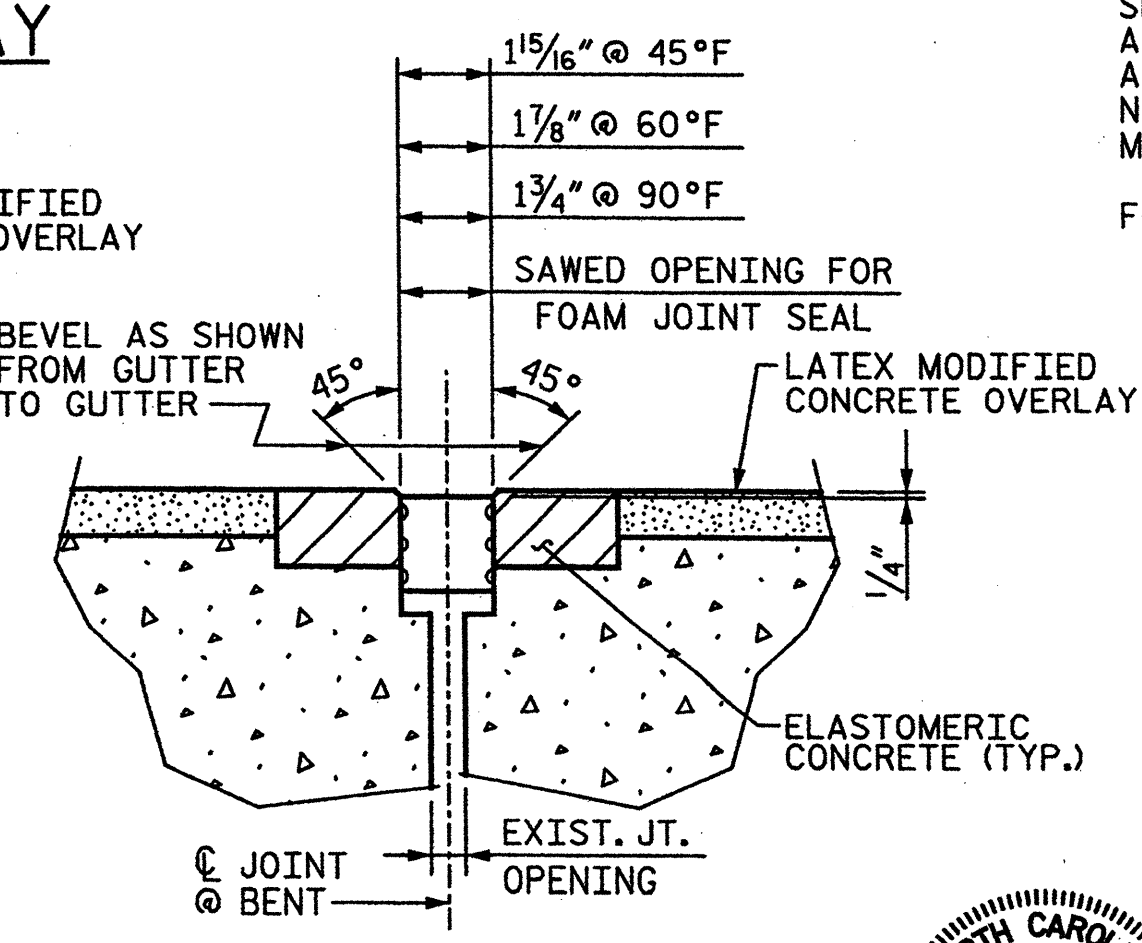
EXISTING JOINT DETAIL



MINIMUM CONCRETE REMOVAL  
DETAIL @ EXISTING JOINT



PROPOSED FOAM JOINT SEAL  
(DETAIL BEFORE SAWING)



PROPOSED FOAM JOINT SEAL  
(DETAIL AFTER SAWING)

DETAIL B

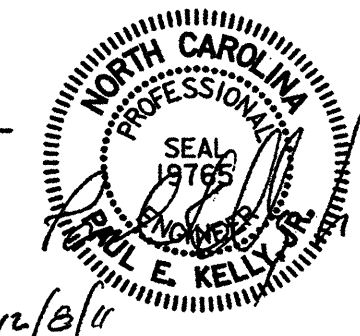
PROJECT NO. 17BP.9.P.2  
DAVIE COUNTY

BRIDGE NO.: 29  
REHAB. OF BRIDGE NO. 29 SHEET 2 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

PLAN OF SPANS  
DECK REPAIR  
SHEET 1 OF 2

BRIDGE ON I-40 EBL  
OVER HUNTING CREEK

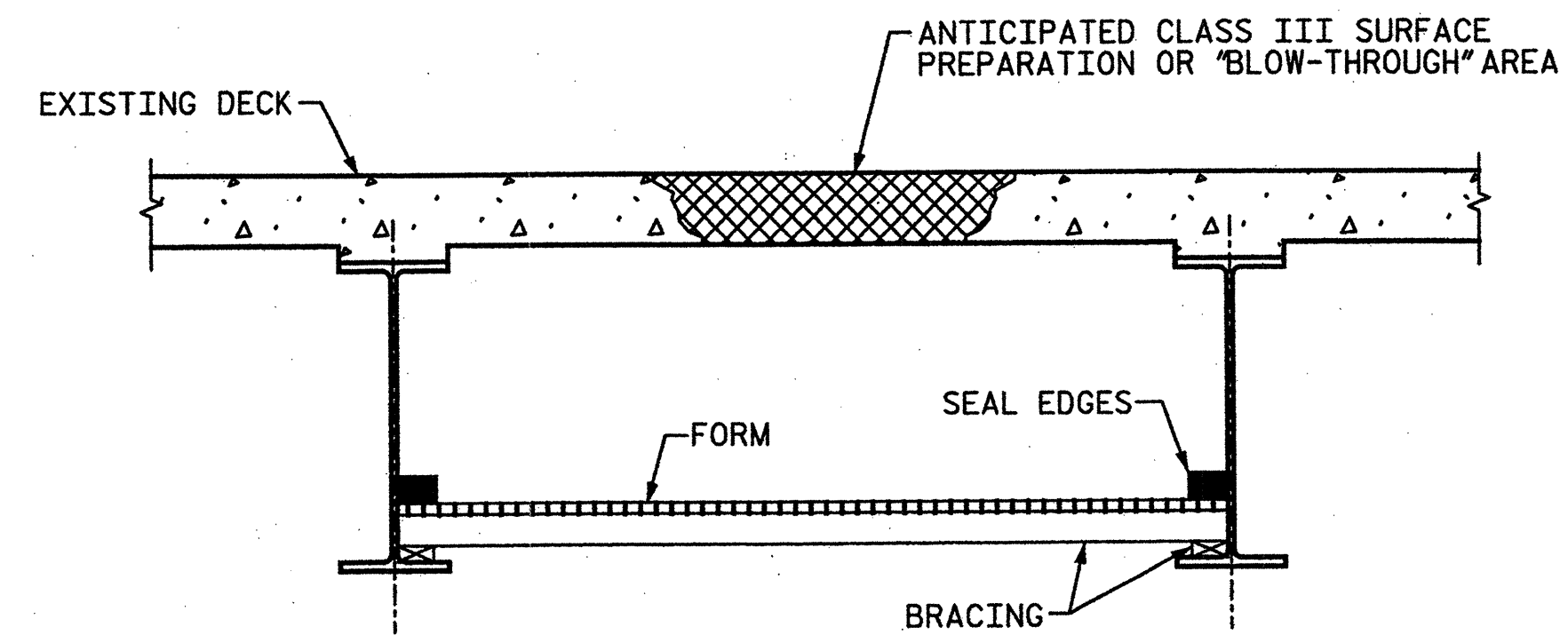
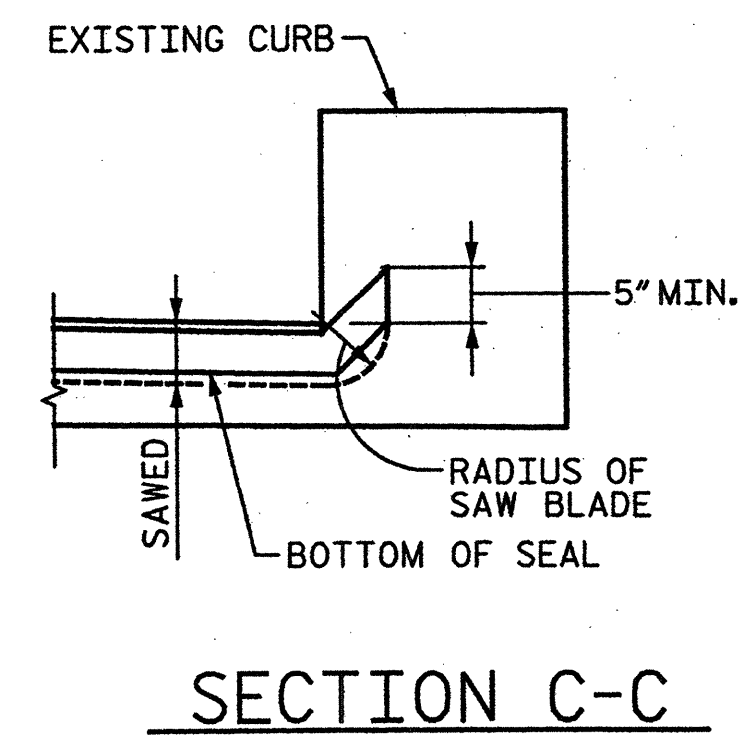
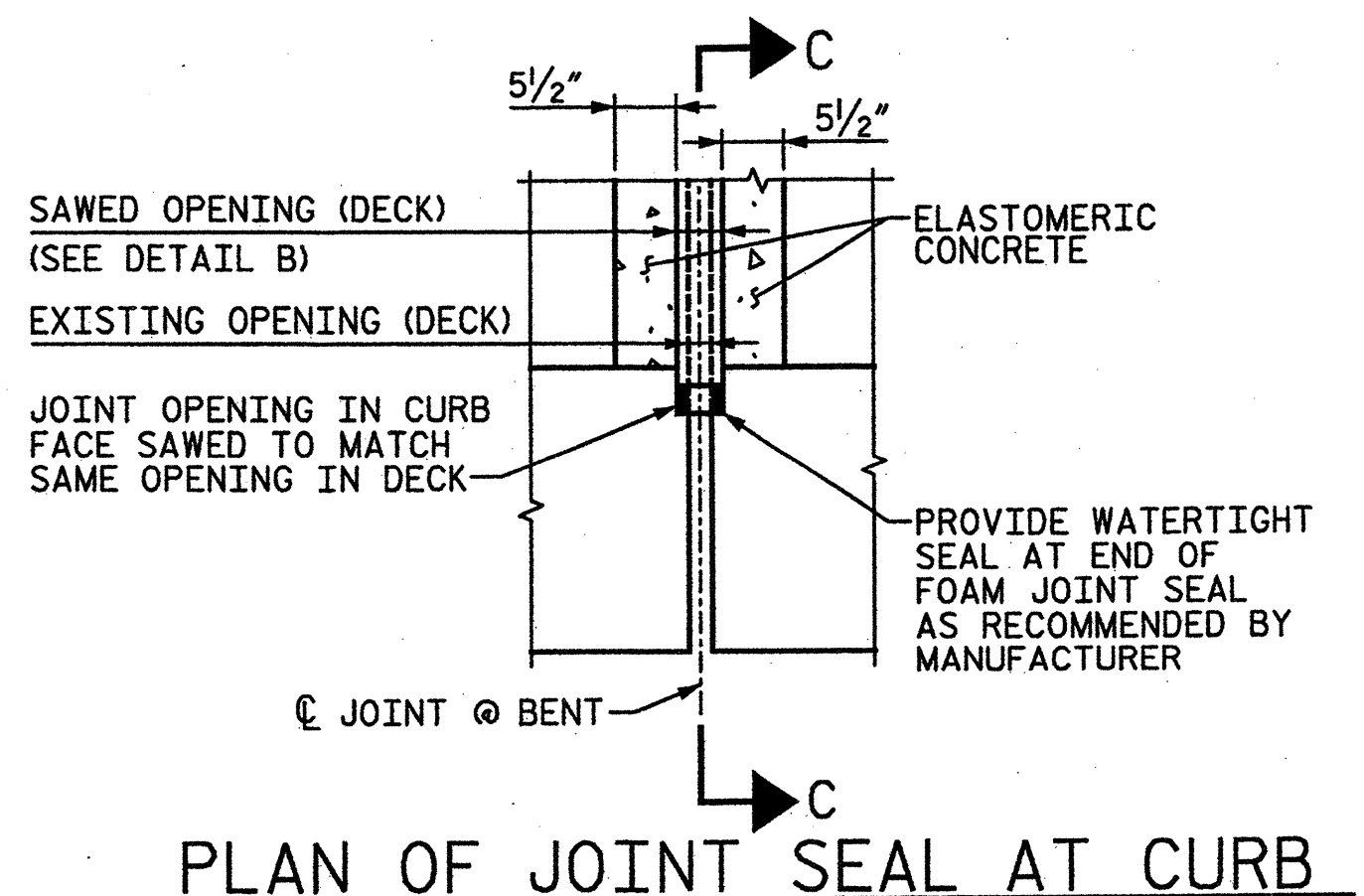


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			S-42

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**TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK DETAIL**

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

PROJECT NO. **17BP.9.P.2**  
**DAVIE** COUNTY  
 BRIDGE NO.: **29**  
 REHAB. OF BRIDGE NO. 29 SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS  
 DECK REPAIR  
 SHEET 2 OF 2**

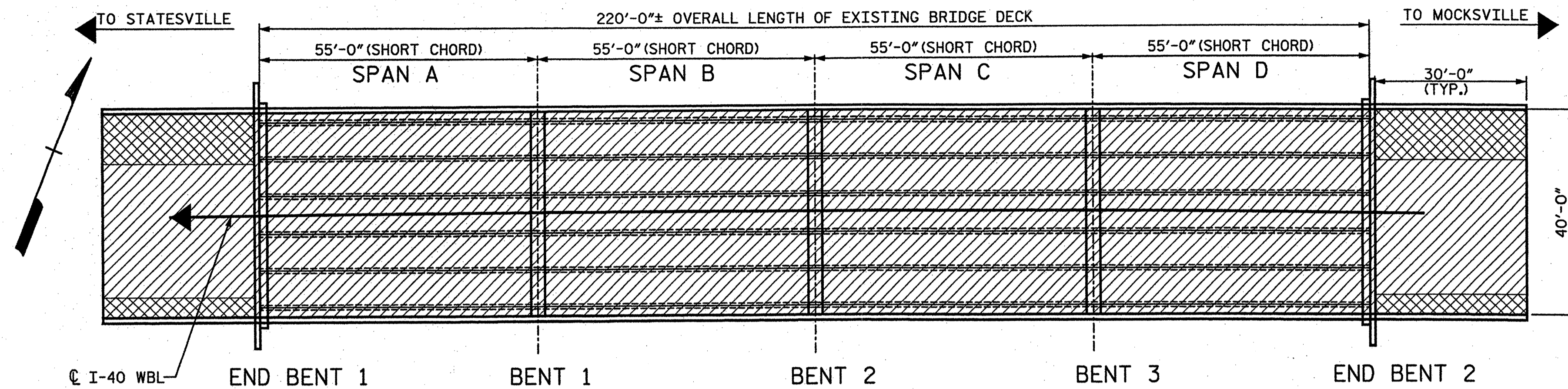
BRIDGE ON I-40 EBL  
 OVER HUNTING CREEK



DRAWN BY : **MTC** DATE : **12-11**  
 CHECKED BY : **JAS** DATE : **12-11**

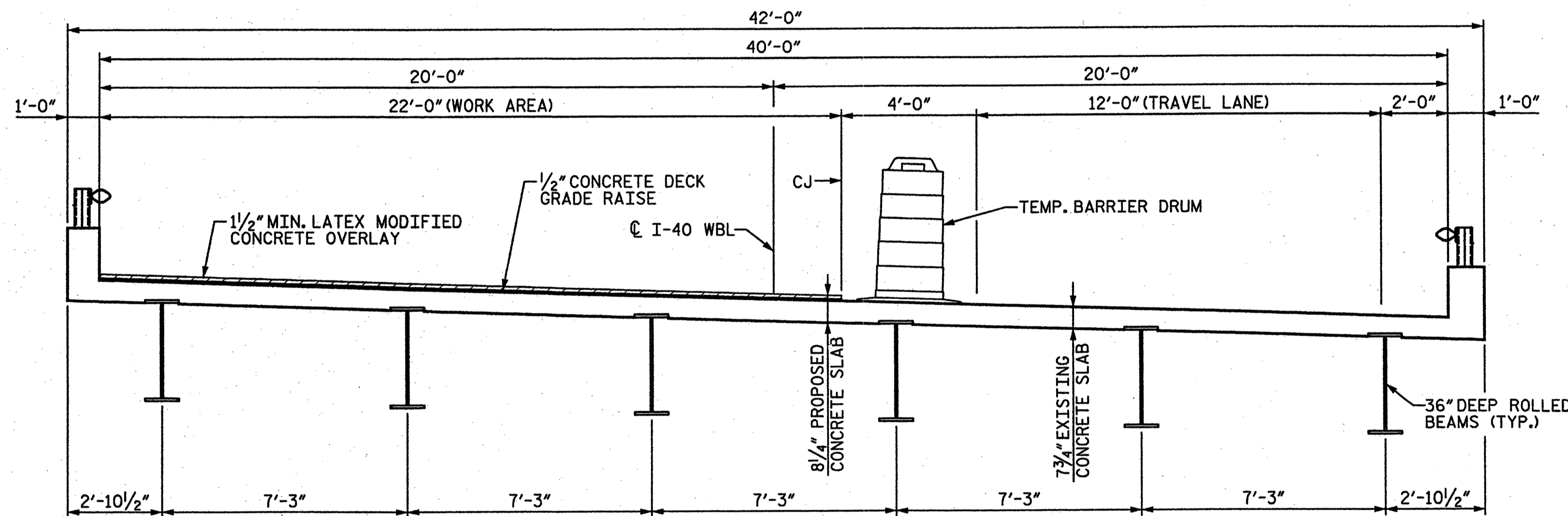
**STV / Ralph Whitehead Associates, Inc.**  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License NO. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			S-42



**PLAN OF SPANS - DECK SCARIFICATION & HYDRO-DEMOLITION**  
 (CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.)

BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION  
 INCIDENTAL MILLING



**TYPICAL SECTION**  
 (STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)

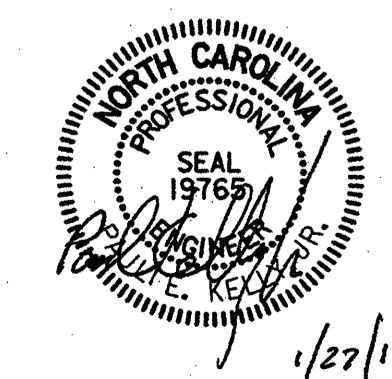
**NOTES:**  
 LATEX MODIFIED CONCRETE OVERLAY SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH. SEE SPECIAL PROVISIONS.  
 FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.  
 THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.  
 EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.  
 INCIDENTAL MILLING SHALL BE 1 1/2" MINIMUM THICKNESS. THE AREA OF INCIDENTAL MILLING SHALL BE REPLACED BY VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 110LBS PER SQ. YD. PER 1" DEPTH. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.

PROJECT NO. **17BP.9.P.2**  
**DAVIE** COUNTY  
 BRIDGE NO.: **32**

REHAB. OF BRIDGE NO. 32 SHEET 1 OF 3

TOTAL BILL OF MATERIAL									
DECK SCARIFICATION	*CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	** FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	SQ. YDS.	TONS
1150	1131	19	1150	48.0	1150	LUMP SUM	7,956	94	15

\* QUANTITIES FOR INFORMATION ONLY.  
 \*\* THE ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS**  
**TYPICAL SECTION**  
 BRIDGE ON I-40 WBL  
 OVER HUNTING CREEK

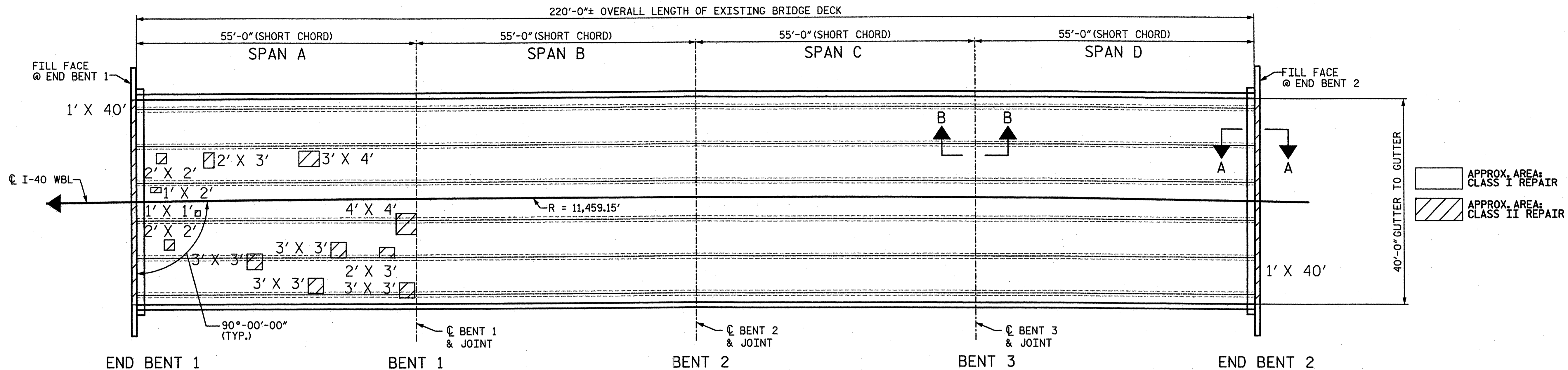
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			S-42

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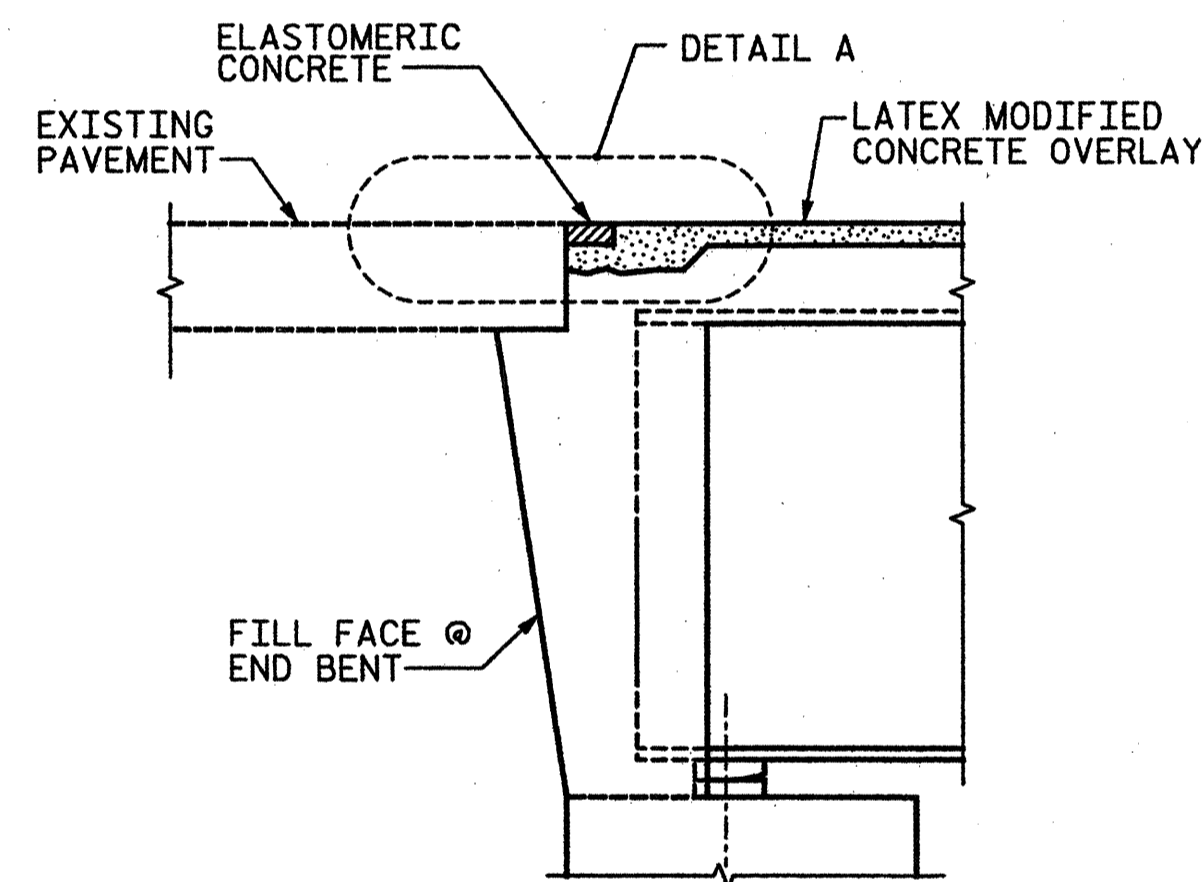
DRAWN BY : **MTC** DATE : **12-11**  
 CHECKED BY : **JAS** DATE : **12-11**

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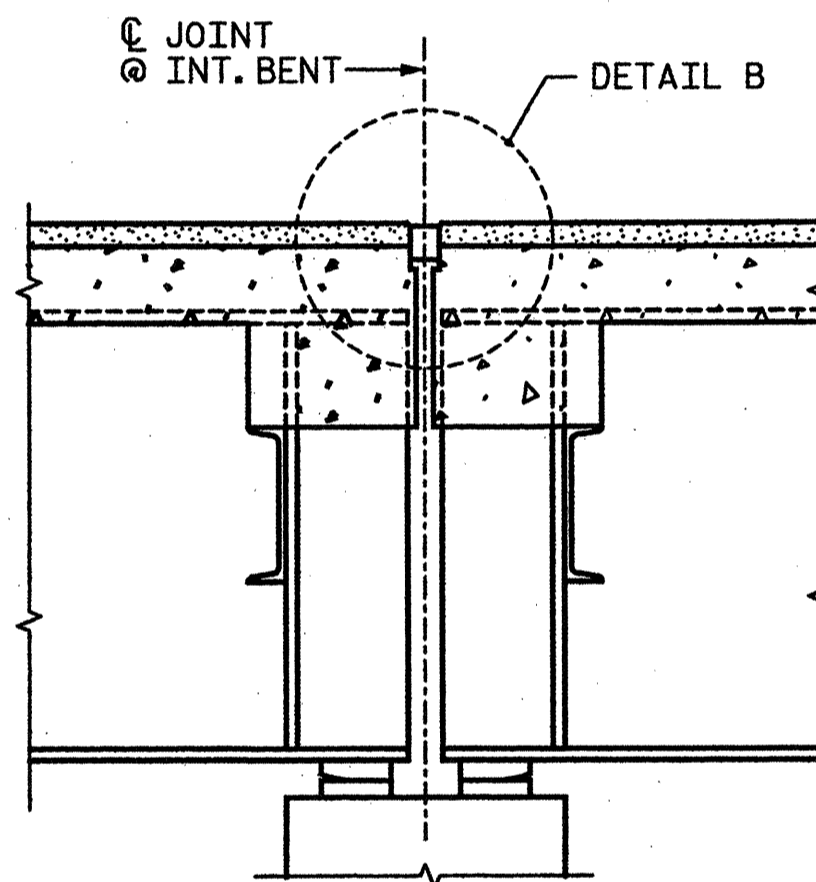




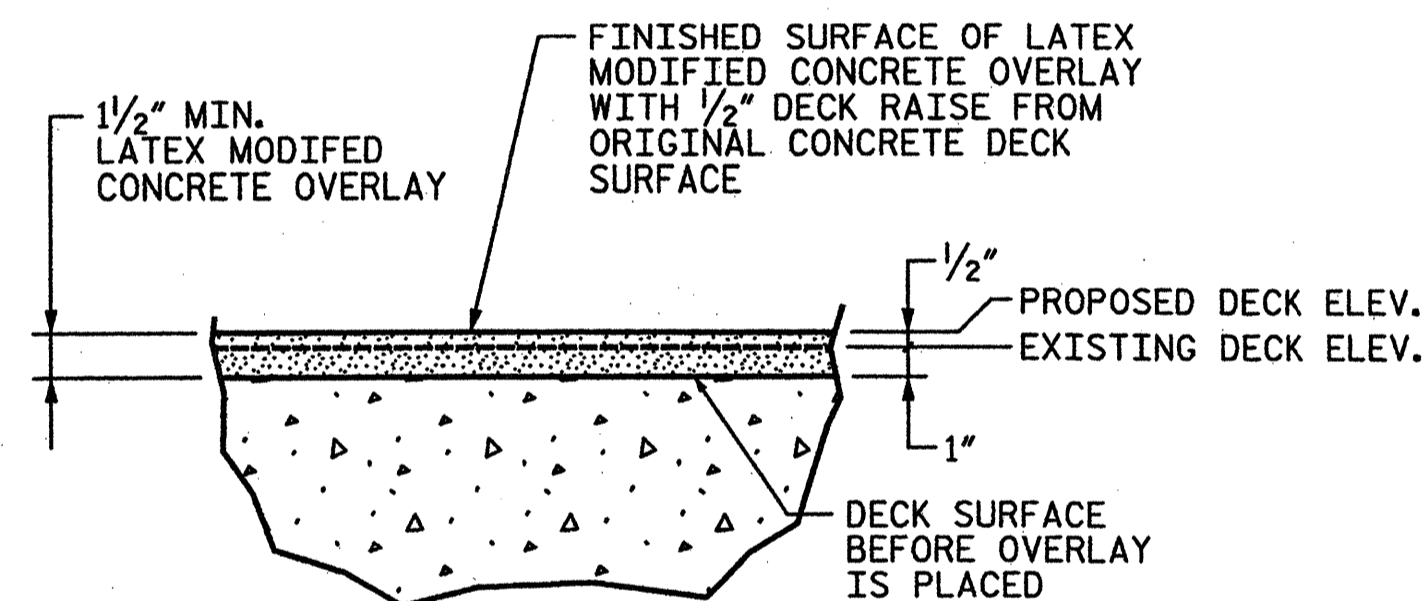
PLAN OF SPANS - DECK REPAIRS



SECTION A-A  
(PROPOSED JOINT @ END BENT 2 SHOWN  
END BENT 1 SIMILAR)



SECTION B-B  
(PROPOSED JOINT @ INTERIOR BENTS)



DETAIL FOR LATEX MODIFIED  
CONCRETE OVERLAY

NOTES:

THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 3 OF 3 AND SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

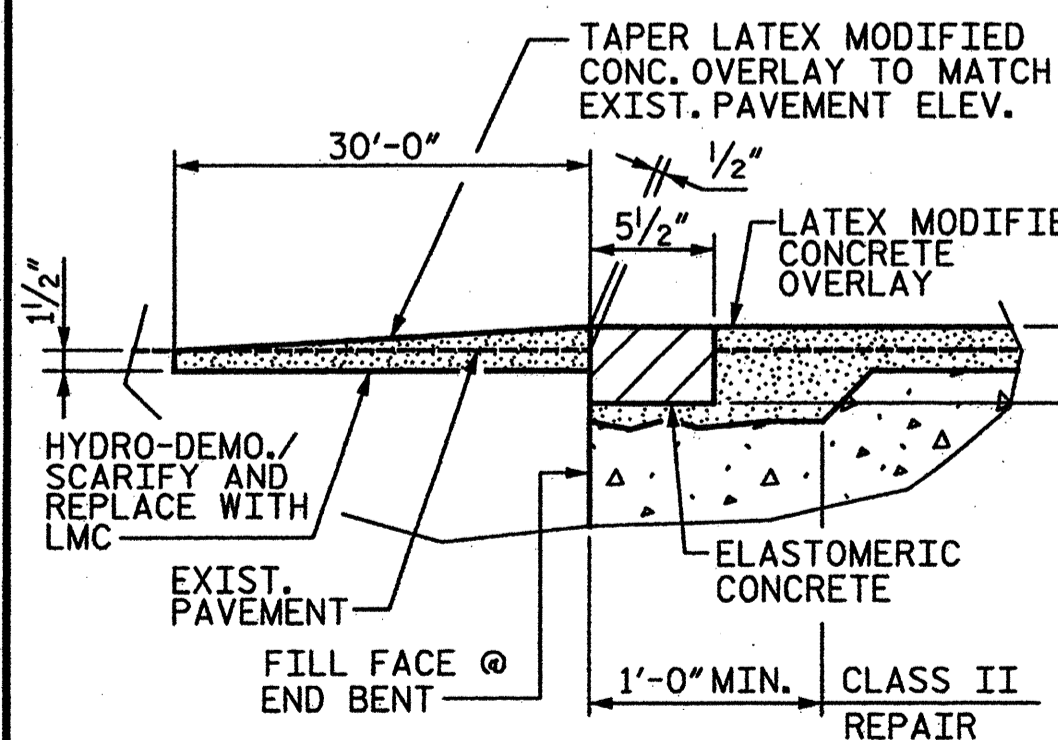
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".

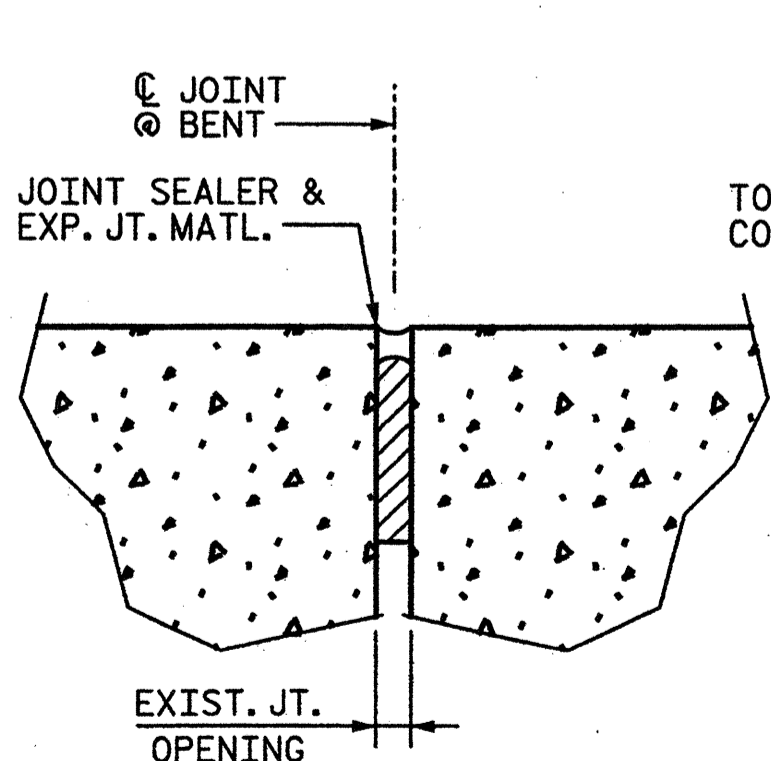
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

FOAM JOINT OPENINGS SHALL BE CONFIRMED IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS TO FOAM JOINT SEALS, AS NECESSARY, TO MEET EXISTING CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY COST ASSOCIATED WITH THESE ADJUSTMENTS ARE CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

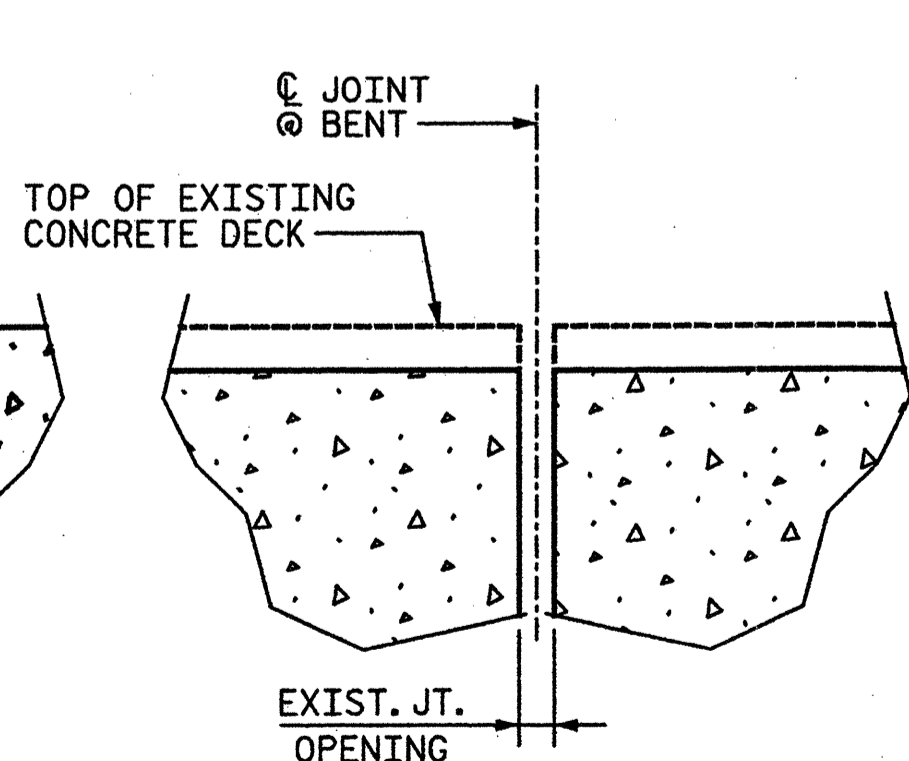
FOR ADDITIONAL NOTES SEE SHEET 1 OF 3.



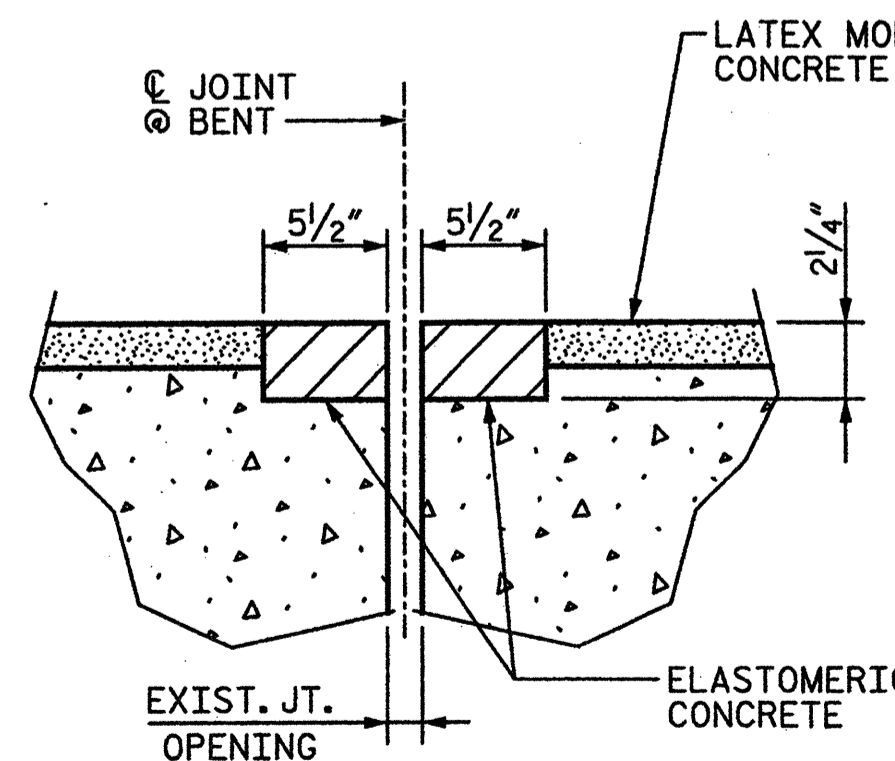
DETAIL A  
(LOCATION OF JOINT TO MATCH  
EXISTING JOINT LOCATION)



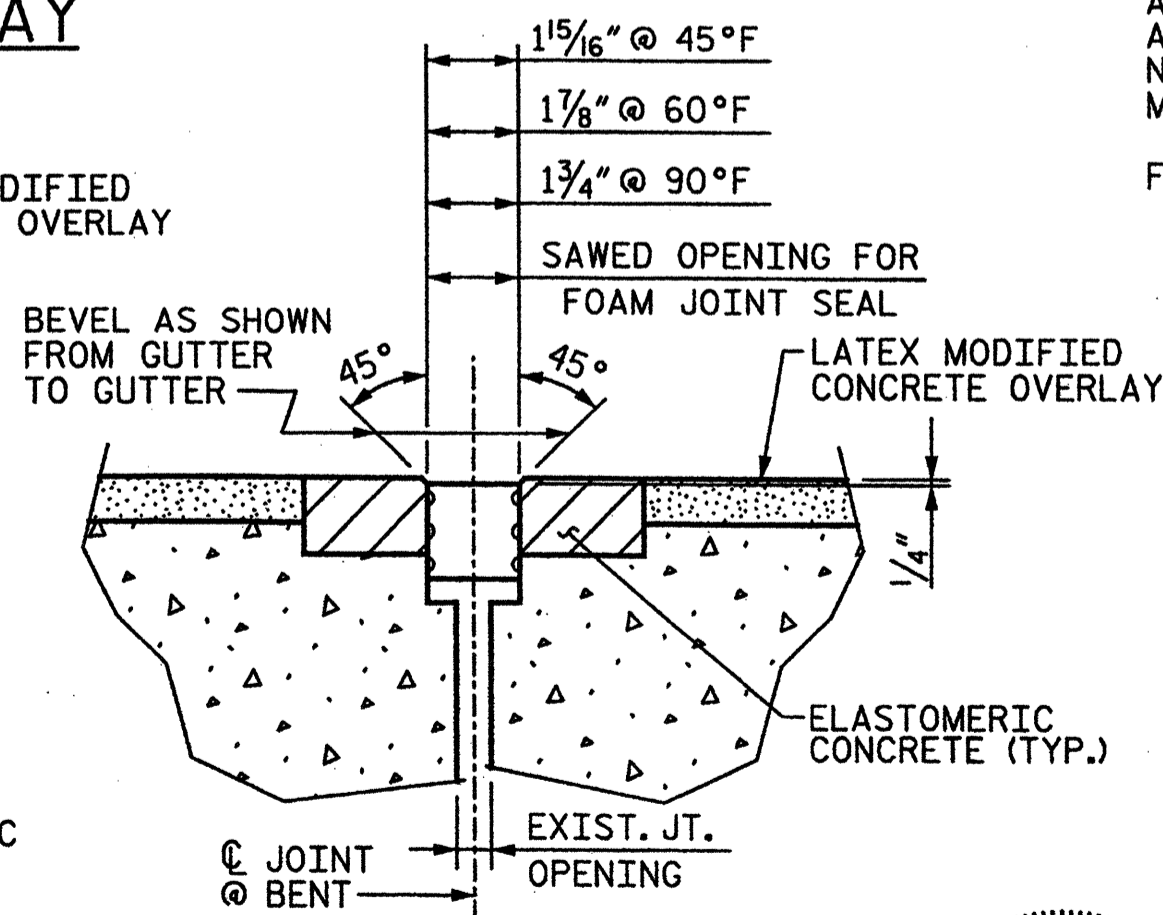
EXISTING JOINT DETAIL



MINIMUM CONCRETE REMOVAL  
DETAIL @ EXISTING JOINT



PROPOSED FOAM JOINT SEAL  
(DETAIL BEFORE SAWING)



PROPOSED FOAM JOINT SEAL  
(DETAIL AFTER SAWING)

PROJECT NO. 17BP.9.P.2  
DAVIE COUNTY

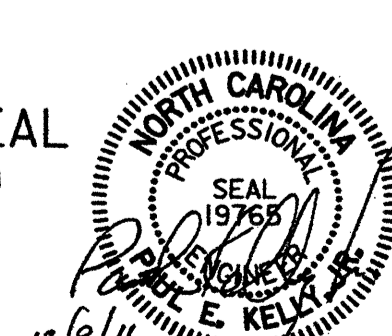
BRIDGE NO.: 32

REHAB. OF BRIDGE NO. 32 SHEET 2 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

PLAN OF SPANS  
DECK REPAIR  
SHEET 1 OF 2

BRIDGE ON I-40 WBL  
OVER HUNTING CREEK

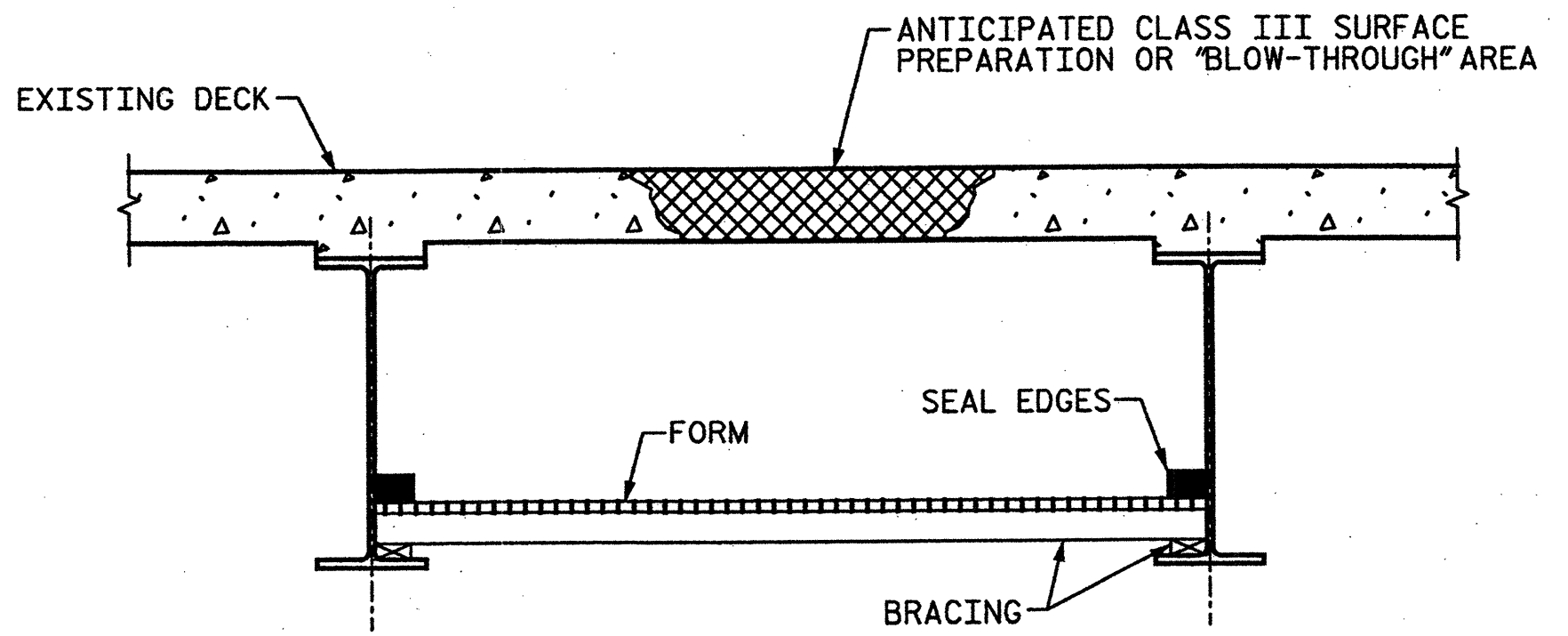
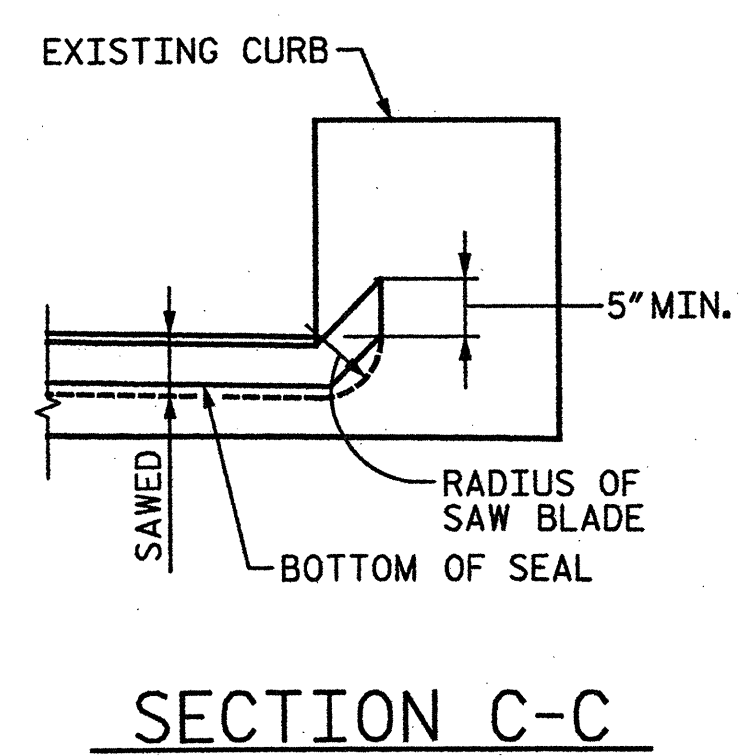
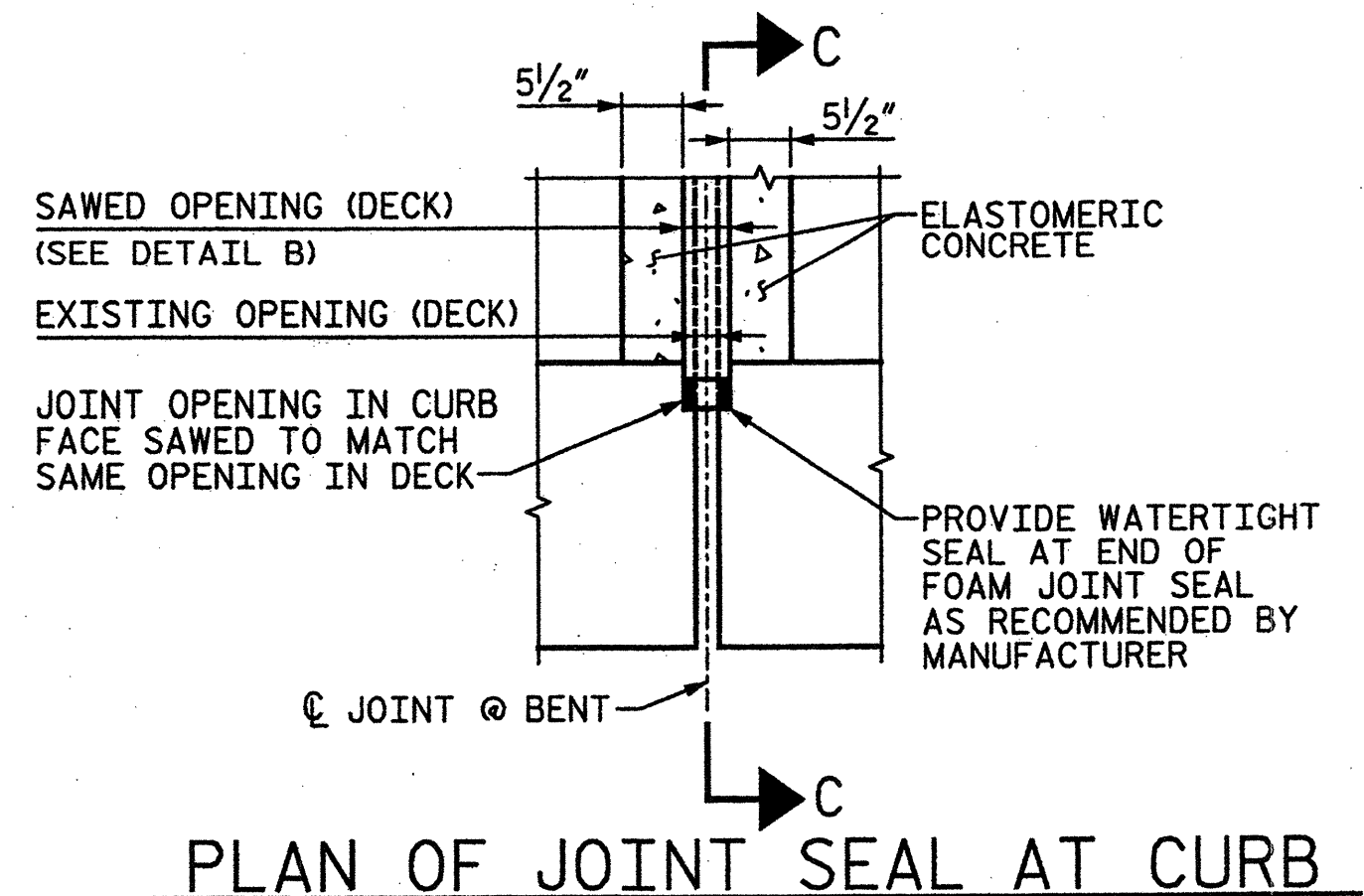


REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6	
1			3			TOTAL SHEETS	
2			4			S-42	

DRAWN BY: MTC DATE: 12-11  
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12/7/2011



**TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK DETAIL**

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

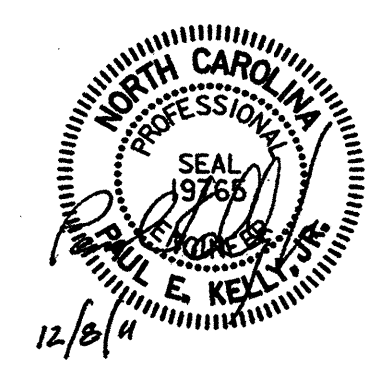
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

PROJECT NO. 17BP.9.P.2  
 DAVIE COUNTY  
 BRIDGE NO.: 32  
 REHAB. OF BRIDGE NO. 32 SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 DECK REPAIR  
 SHEET 2 OF 2

BRIDGE ON I-40 WBL  
 OVER HUNTING CREEK

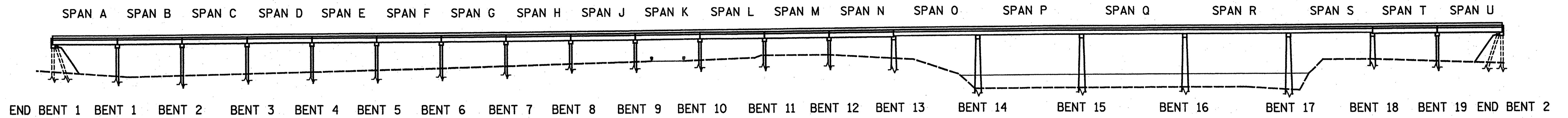


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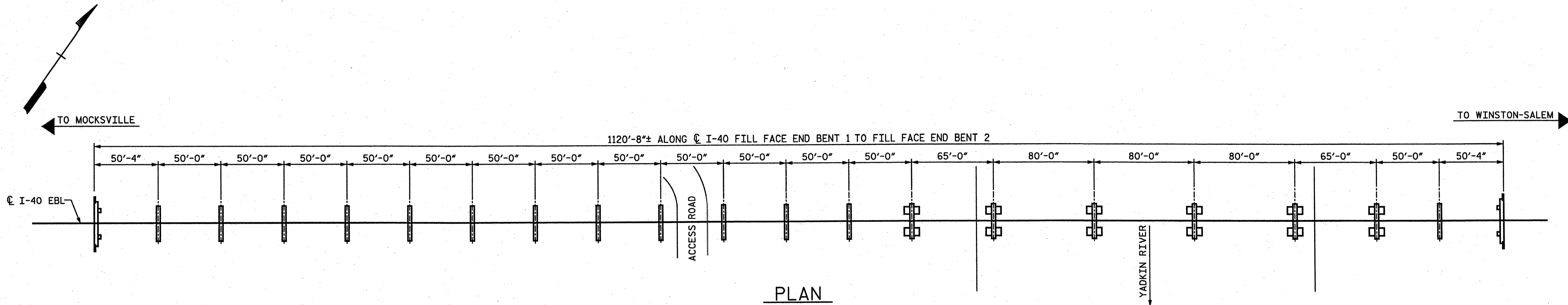
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			S-42

DRAWN BY : MTC DATE : 12-11  
 CHECKED BY : JAS DATE : 12-11

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ELEVATION



PLAN

TOTAL BILL OF MATERIAL							
** DECK SCARIFICATION	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	SHOTCRETE CONCRETE REPAIR	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.
3,487	3,044	435	8	29	3,487	145.3	3,487

TOTAL BILL OF MATERIAL								
*** FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	BRIDGE JACKING	UNDER STRUCTURE WORK PLATFORM	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	INCIDENTAL MILLING	DRAIN TROUGH SYSTEM	BOLT REMOVAL AND REPLACEMENT
LUMP SUM	SQ. FT.	LIN. FT.	LUMP SUM	LUMP SUM	TONS	SQ. YDS.	LUMP SUM	EA.
LUMP SUM	27,342	216	LUMP SUM	LUMP SUM	10	63	LUMP SUM	100

\*QUANTITIES FOR INFORMATION ONLY.  
 \*\*INCLUDES ASPHALT MILLING OF BRIDGE DECK, NOT APPROACH.  
 \*\*\*THE ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

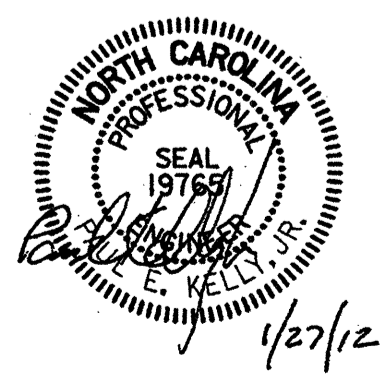
GENERAL NOTES:  
 SEE SHEET 2 OF 15 FOR ADDITIONAL NOTES.  
 FOR BOLT REMOVAL AND REPLACEMENT, SEE SPECIAL PROVISIONS

PROJECT NO. 17BP.9.P.2  
 DAVIE COUNTY  
 BRIDGE NO.: 85  
 REHAB. OF BRIDGE NO. 85 SHEET 1 OF 15

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL PLAN & ELEVATION

BRIDGE ON I-40 EBL OVER YADKIN RIVER

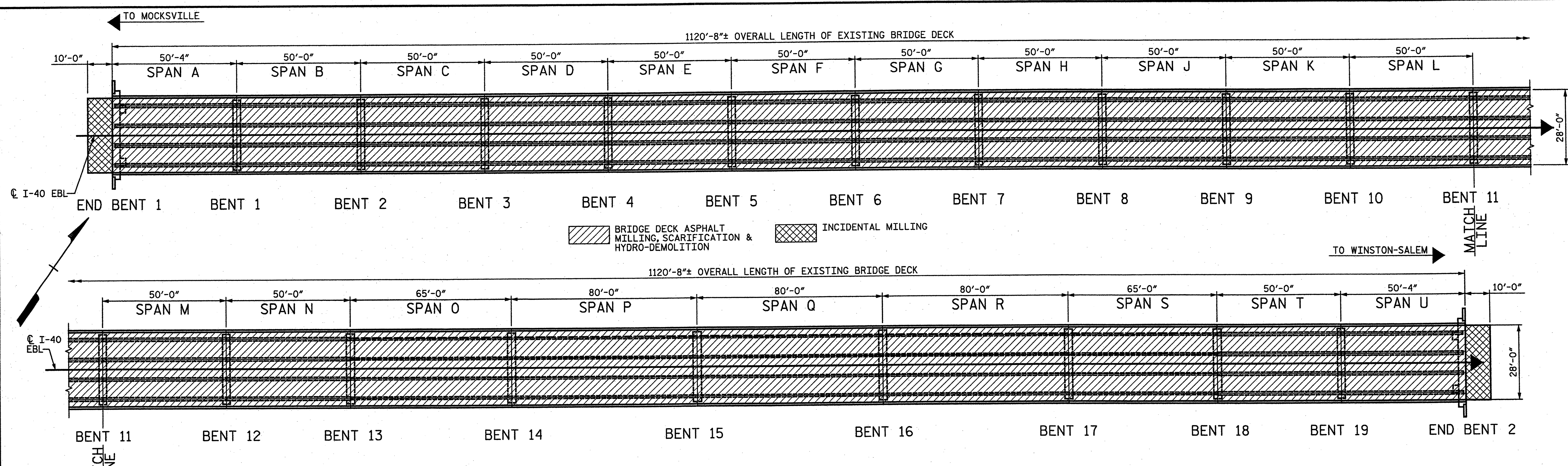


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS S-42
2			4			

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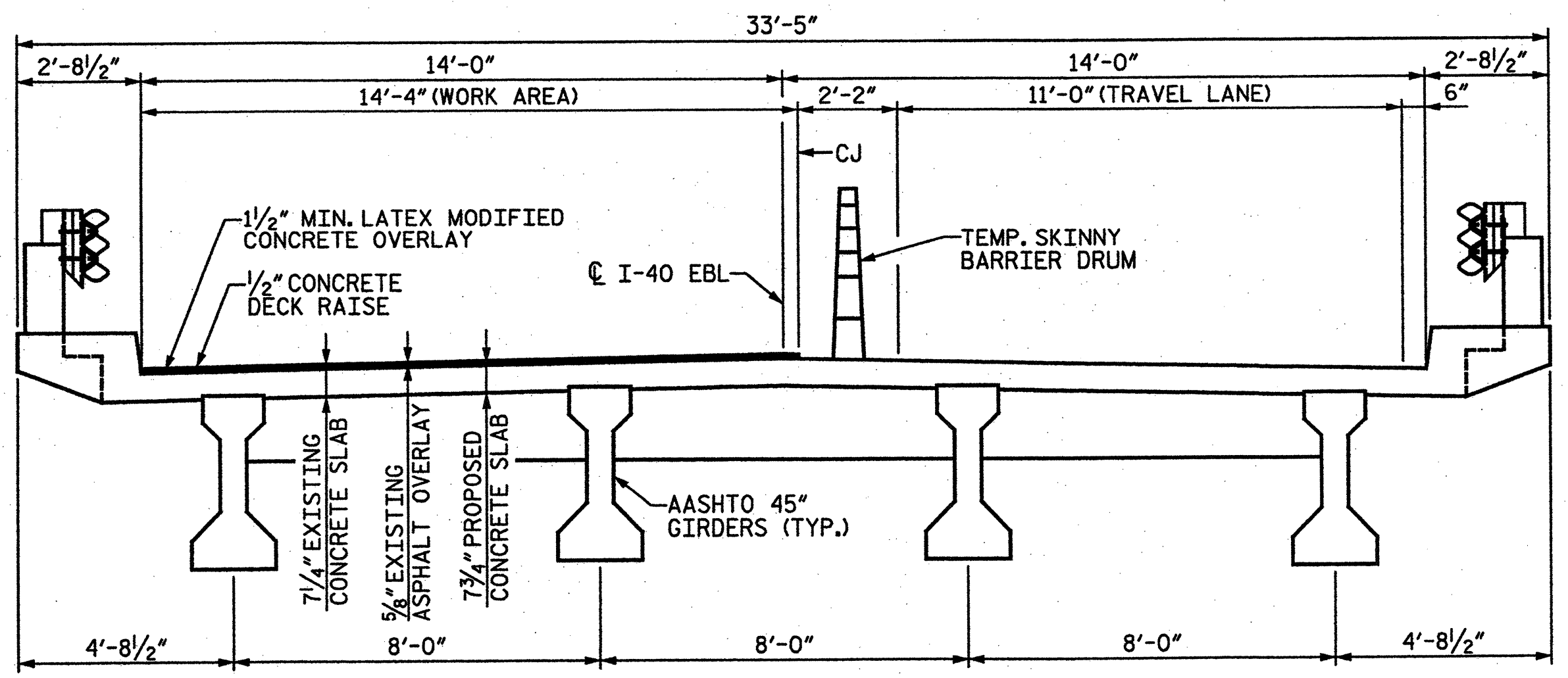
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 1/27/2012  
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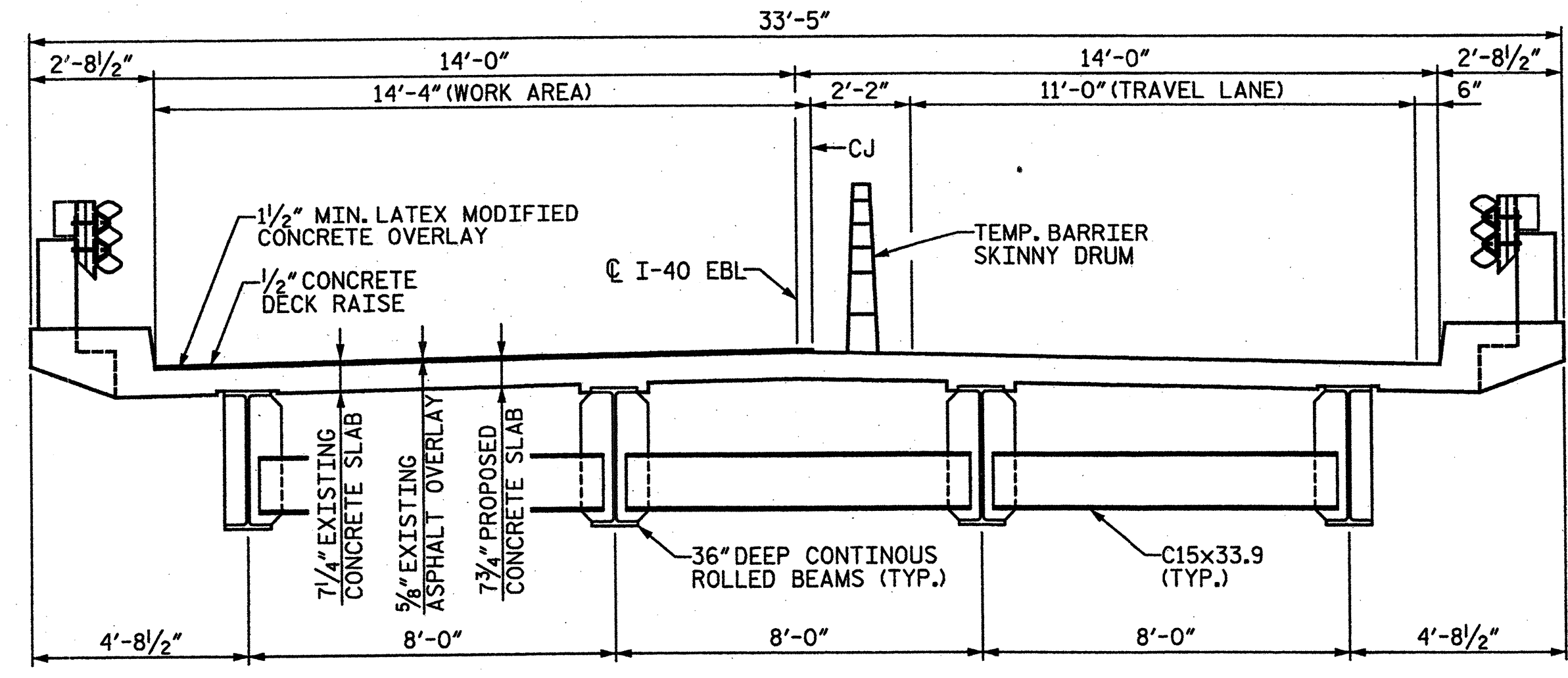


**PLAN OF SPANS - DECK SCARIFICATION & HYDRO-DEMOLITION**  
 (CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.)

**NOTES:**  
 LATEX MODIFIED CONCRETE OVERLAY SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH. SEE SPECIAL PROVISIONS.  
 FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.  
 THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.  
 EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.



**TYPICAL SECTION**  
 (SPANS A-N, T & U)  
 (STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)



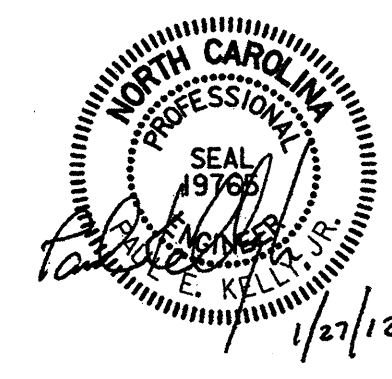
**TYPICAL SECTION**  
 (SPANS O-S)  
 (STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)

INCIDENTAL MILLING SHALL BE 1/2" MINIMUM THICKNESS. THE AREA OF INCIDENTAL MILLING SHALL BE REPLACED BY VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 110LBS PER SQ. YD. PER 1" DEPTH. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1/2" IN DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.

**PROJECT NO. 17BP.9.P.2**  
**DAVIE COUNTY**  
**BRIDGE NO.: 85**

REHAB. OF BRIDGE NO. 85 SHEET 2 OF 15

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS  
 DECK SCARIFICATION  
 & HYDRO-DEMOLITION  
 TYPICAL SECTIONS**  
 BRIDGE ON I-40 EBL  
 OVER YADKIN RIVER

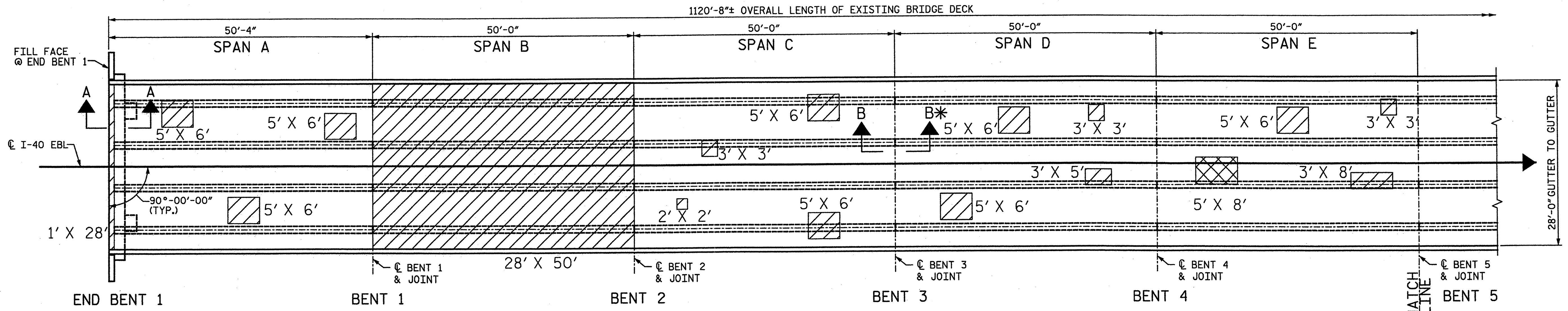


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REVISIONS						SHEET NO. S-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS S-42
2			4			

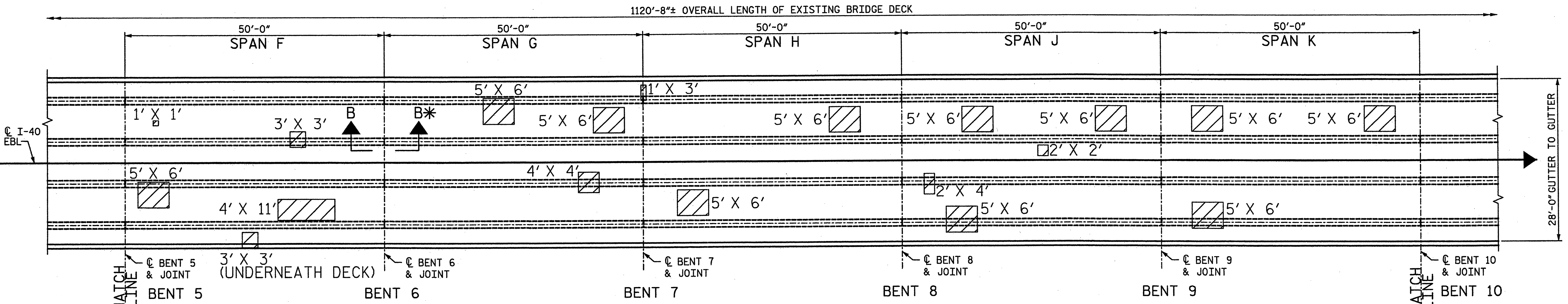
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 1/27/2012



**PARTIAL PLAN OF SPANS - DECK REPAIRS**

(SEE SHEET S-12 FOR SECTION A-A AND B-B)  
\* TYPICAL UNLESS NOTED OTHERWISE

- APPROX. AREA: CLASS I REPAIR
- APPROX. AREA: CLASS II REPAIR
- APPROX. AREA: CLASS III REPAIR



**PARTIAL PLAN OF SPANS - DECK REPAIRS**

(SEE SHEET S-12 FOR SECTION B-B)  
\* TYPICAL UNLESS NOTED OTHERWISE

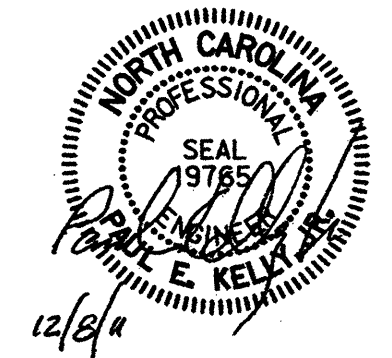
PROJECT NO. **17BP.9.P.2**  
**DAVIE** COUNTY  
 BRIDGE NO.: **85**

REHAB. OF BRIDGE NO. 85 SHEET 3 OF 15

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS  
 DECK REPAIRS  
 SPANS A-K**

BRIDGE ON I-40 EBL  
 OVER YADKIN RIVER



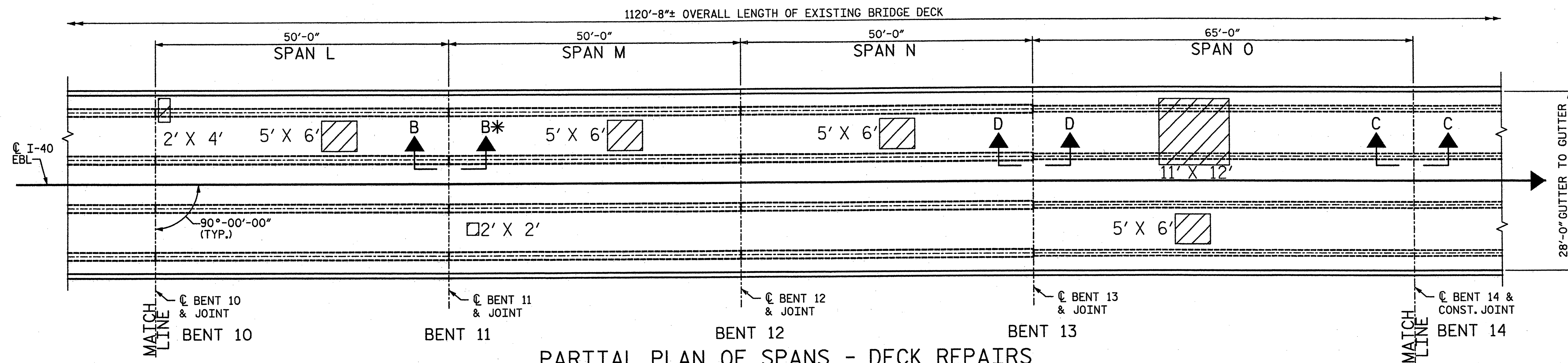
STV / Ralph Whitehead Associates, Inc.  
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 Charlotte, NC 28208  
 NC License NO. F-0991

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10	
1			3			TOTAL SHEETS	
2			4			S-42	

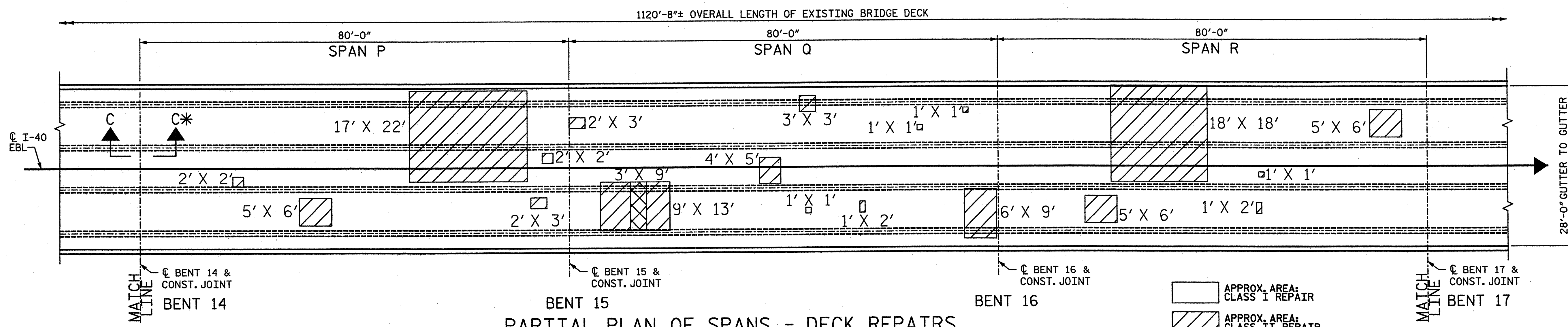
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 12/7/2011  
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12/7/2011



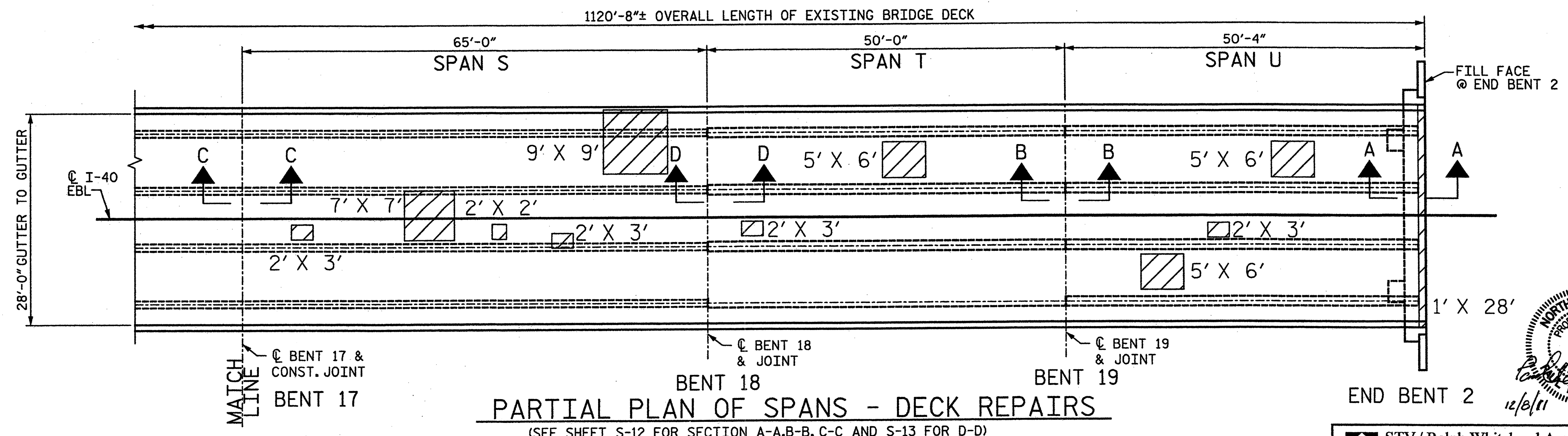
**PARTIAL PLAN OF SPANS - DECK REPAIRS**  
(SEE SHEET S-12 FOR SECTION B-B, C-C AND SHEET S-13 FOR D-D)  
\* TYPICAL UNLESS NOTED OTHERWISE



**PARTIAL PLAN OF SPANS - DECK REPAIRS**  
(SEE SHEET S-12 FOR SECTION C-C)  
\* TYPICAL UNLESS NOTED OTHERWISE

- APPROX. AREA: CLASS I REPAIR
- APPROX. AREA: CLASS II REPAIR
- APPROX. AREA: CLASS III REPAIR

**NOTES:**  
THE BOUNDARY AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 5 OF 15 AND SPECIAL PROVISIONS.



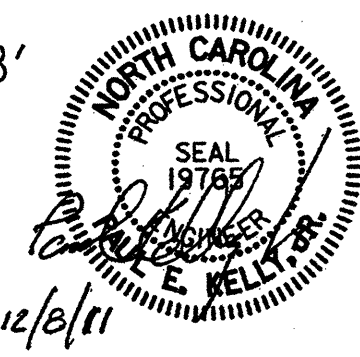
**PARTIAL PLAN OF SPANS - DECK REPAIRS**  
(SEE SHEET S-12 FOR SECTION A-A, B-B, C-C AND S-13 FOR D-D)

PROJECT NO. **17BP.9.P.2**  
DAVIE COUNTY  
BRIDGE NO.: **85**  
REHAB. OF BRIDGE NO. 85 SHEET 4 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**PLAN OF SPANS  
DECK REPAIRS  
SPANS L-U**

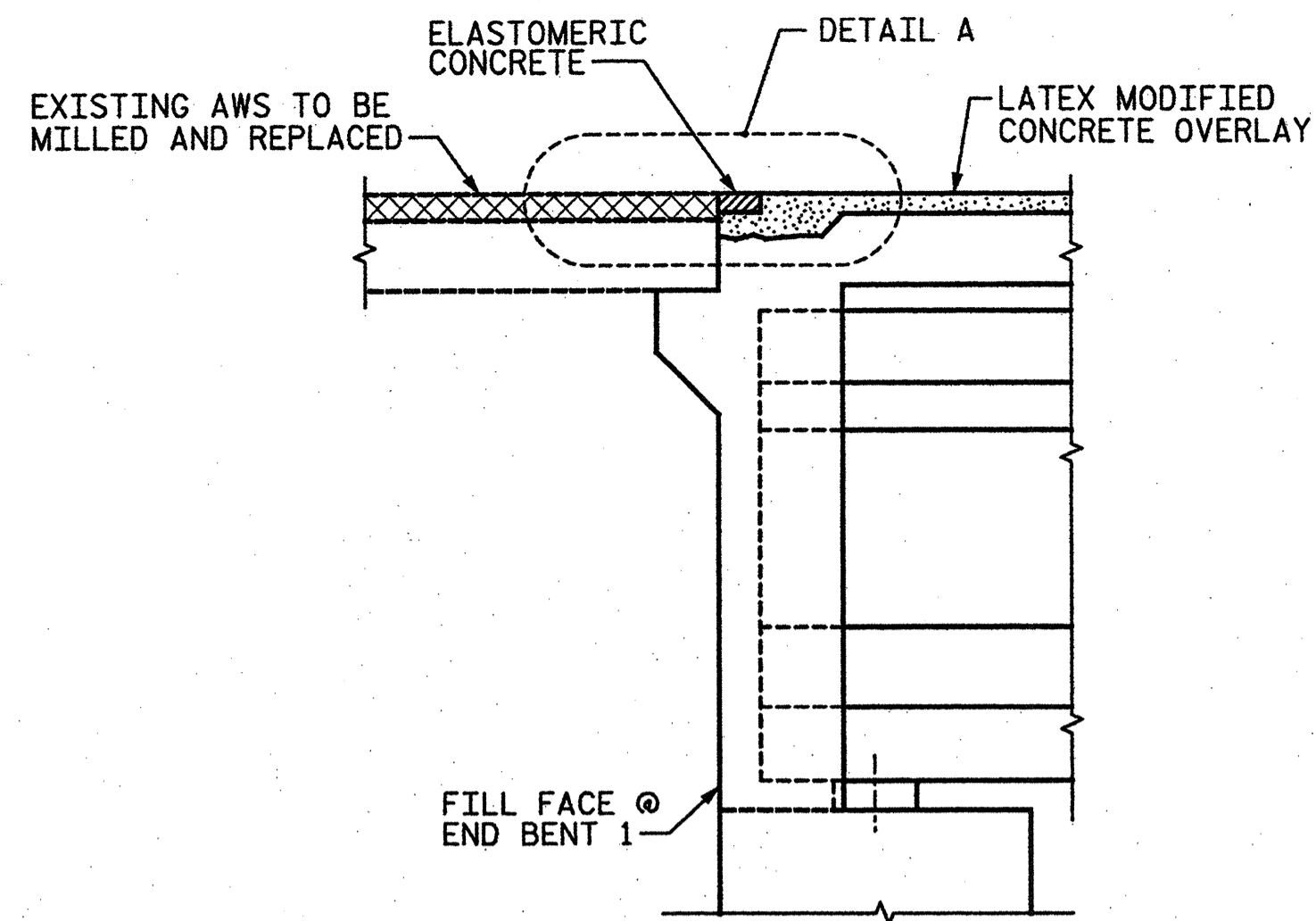
BRIDGE ON I-40 EBL  
OVER YADKIN RIVER



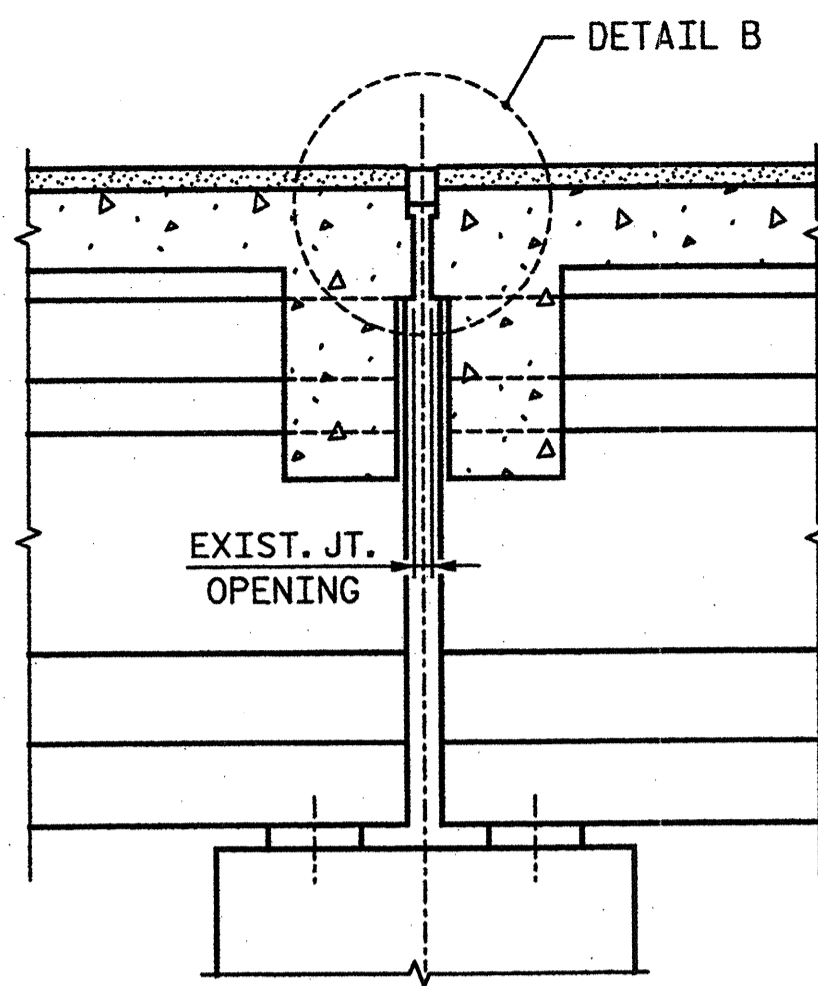
DRAWN BY: MTC DATE: 12-11  
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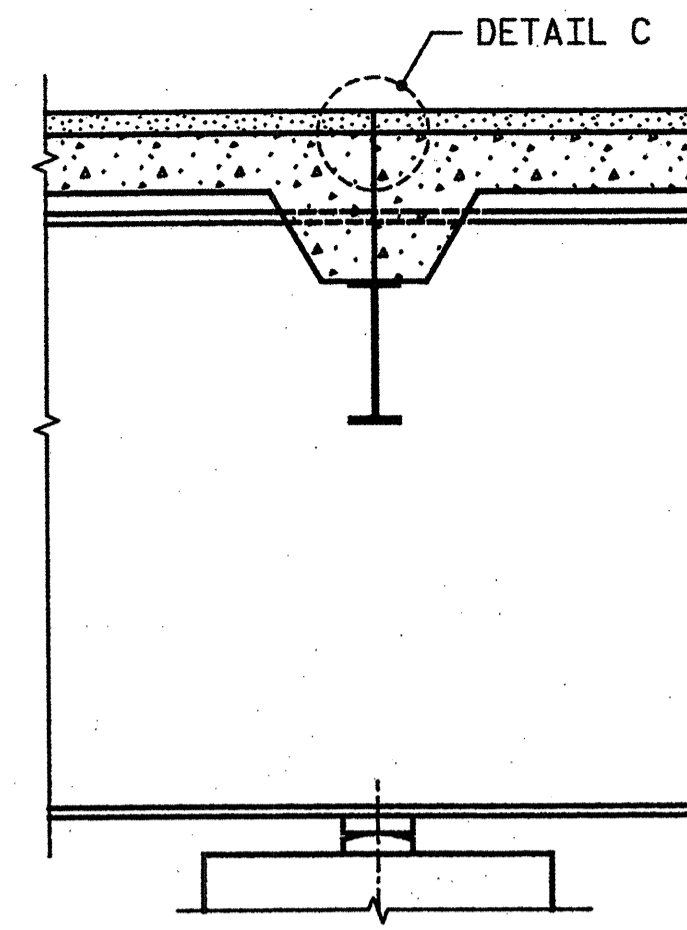
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS	
2			4			S-42	



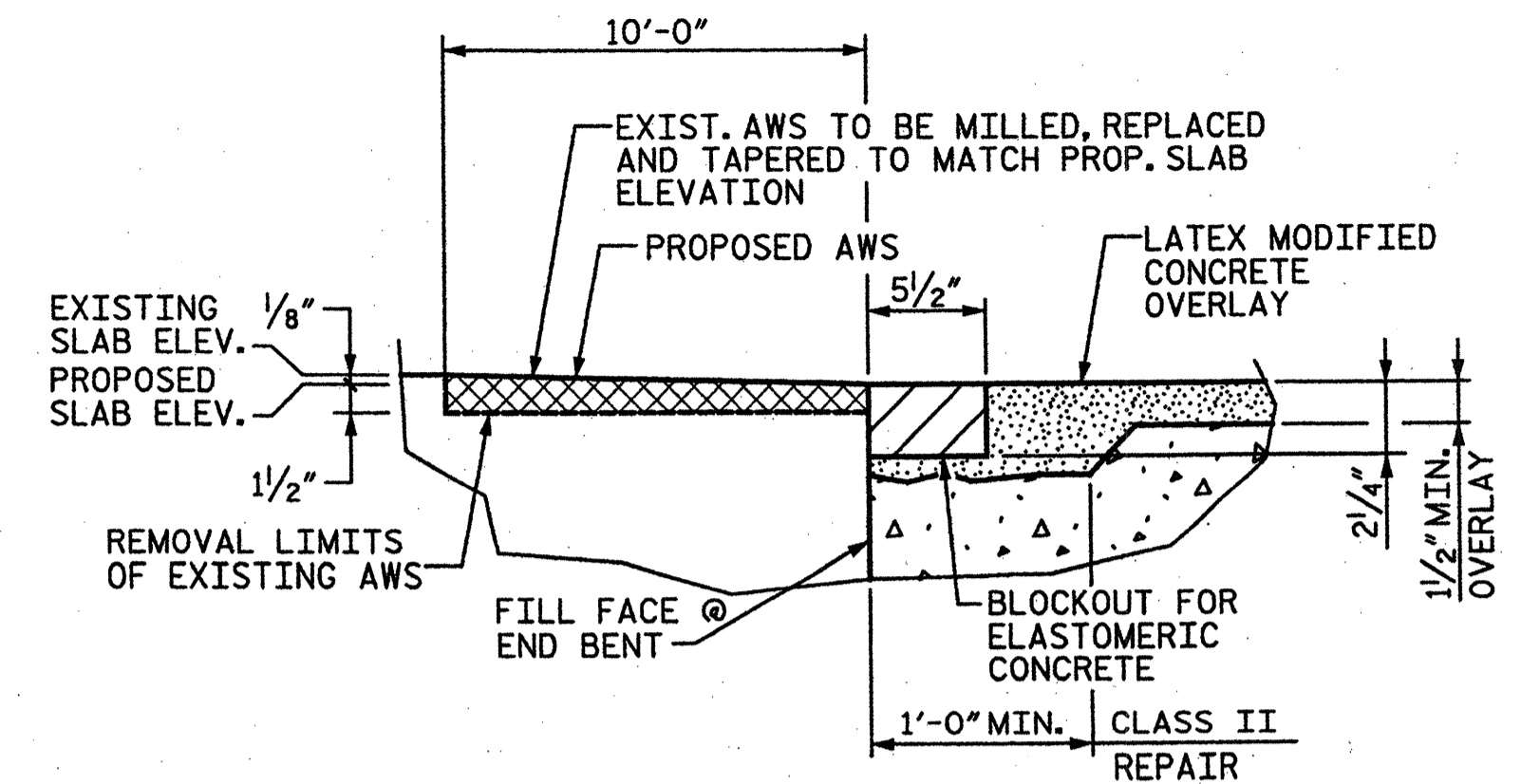
**SECTION A-A**  
(PROPOSED JOINT @ END BENT 1 SHOWN, END BENT 2 SIMILAR)



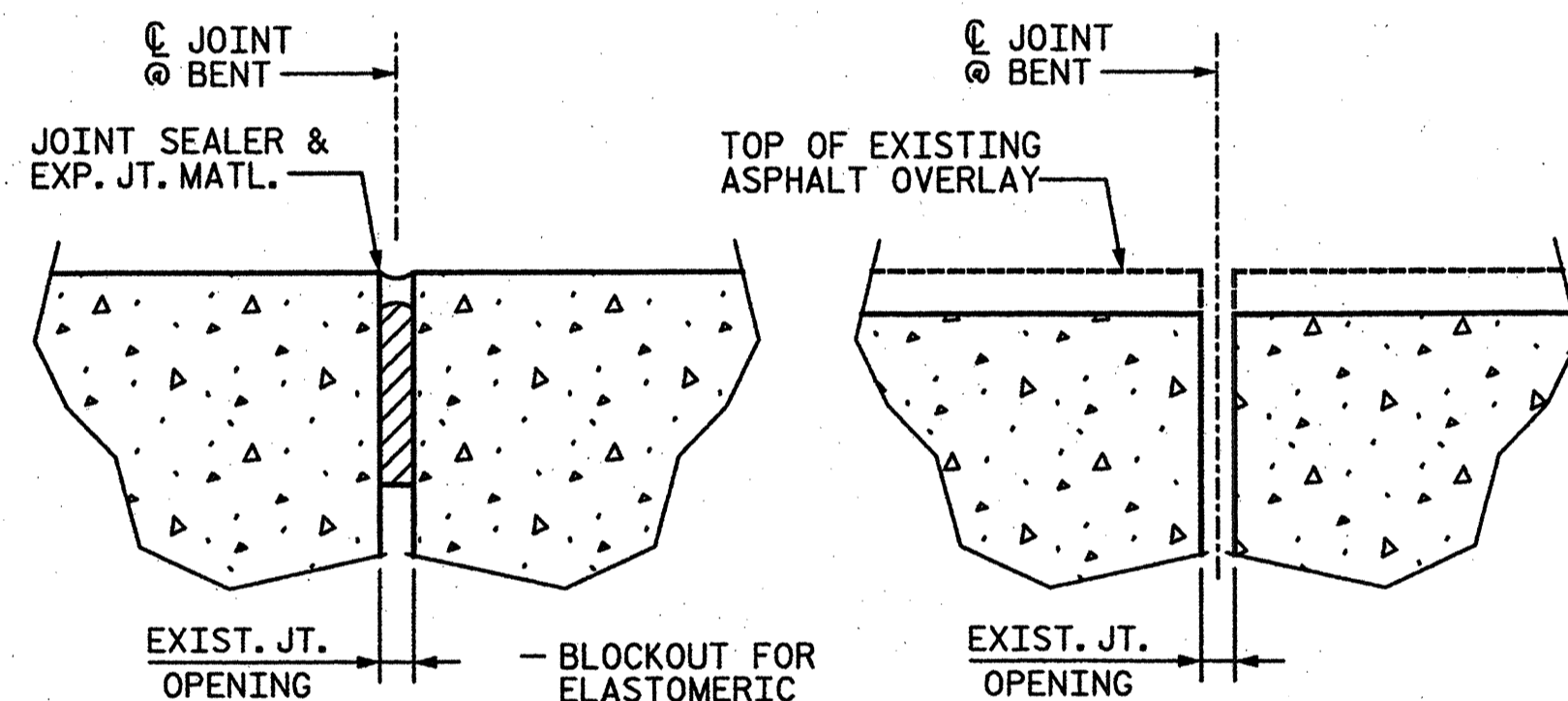
**SECTION B-B**  
(PROPOSED JOINT)  
(TYP. @ INTERIOR BENTS 1-12 & 19)



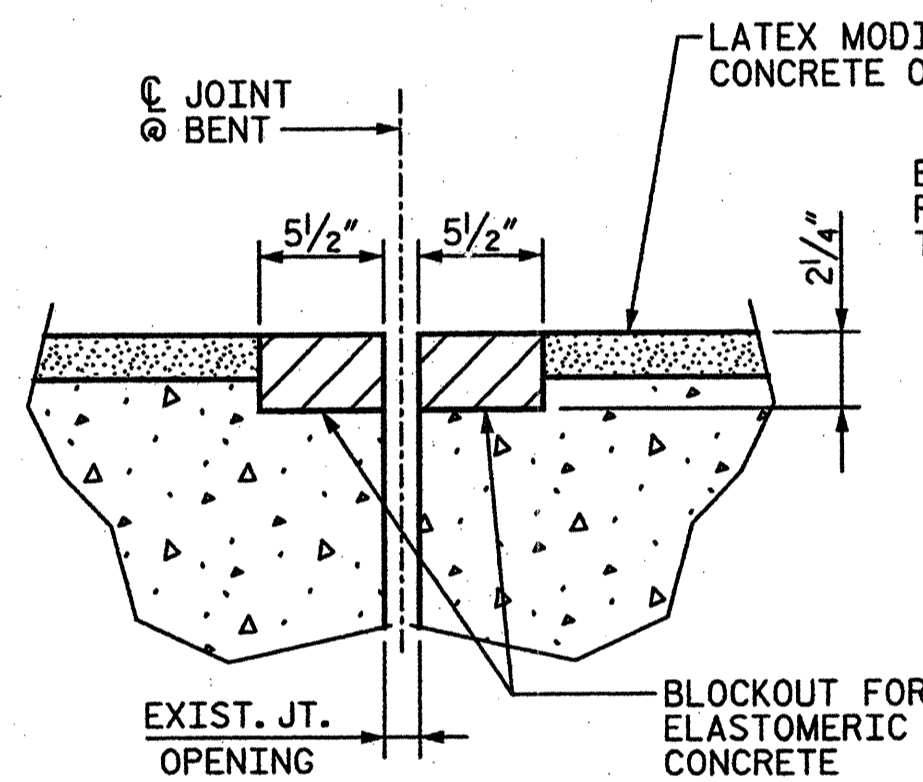
**SECTION C-C**  
(PROPOSED JOINT @ INTERIOR BENTS 14-17)



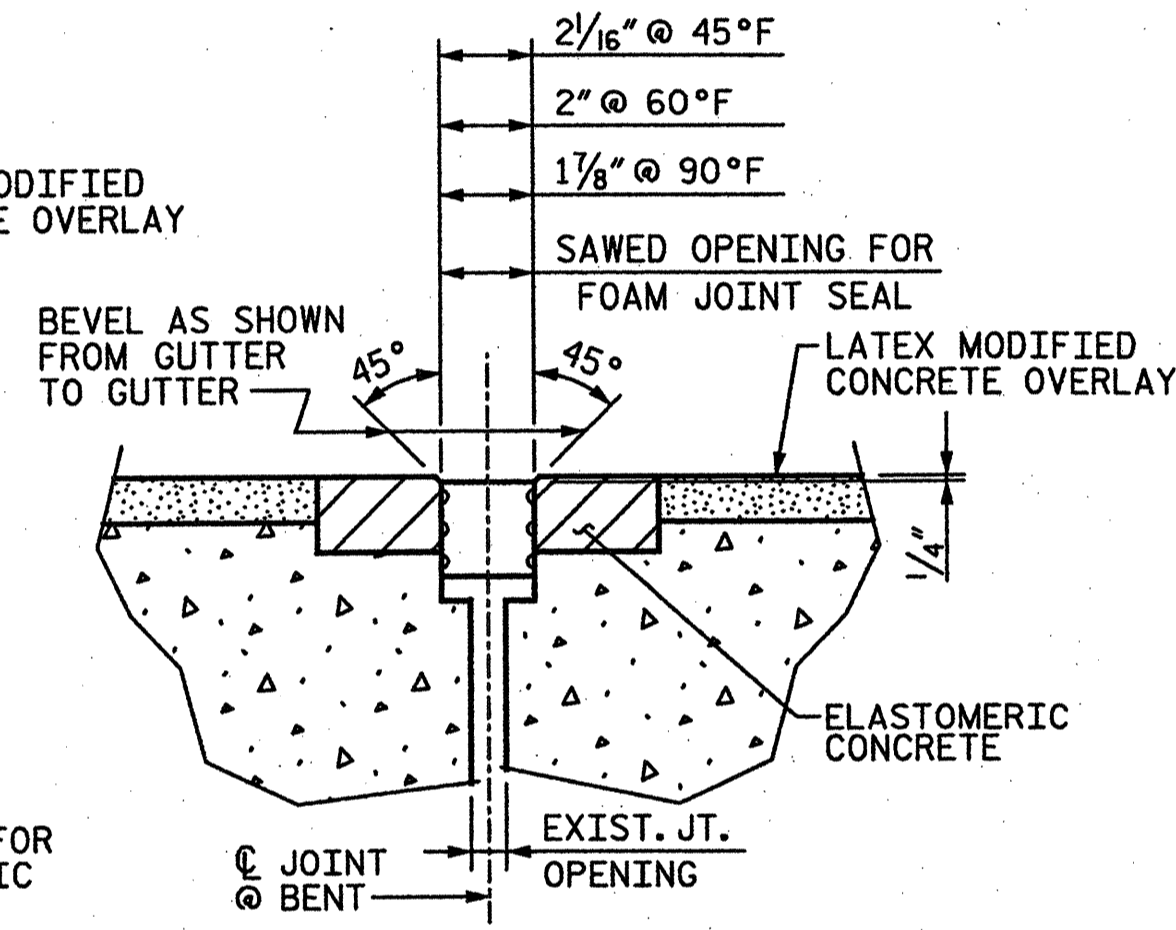
**DETAIL A**  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)



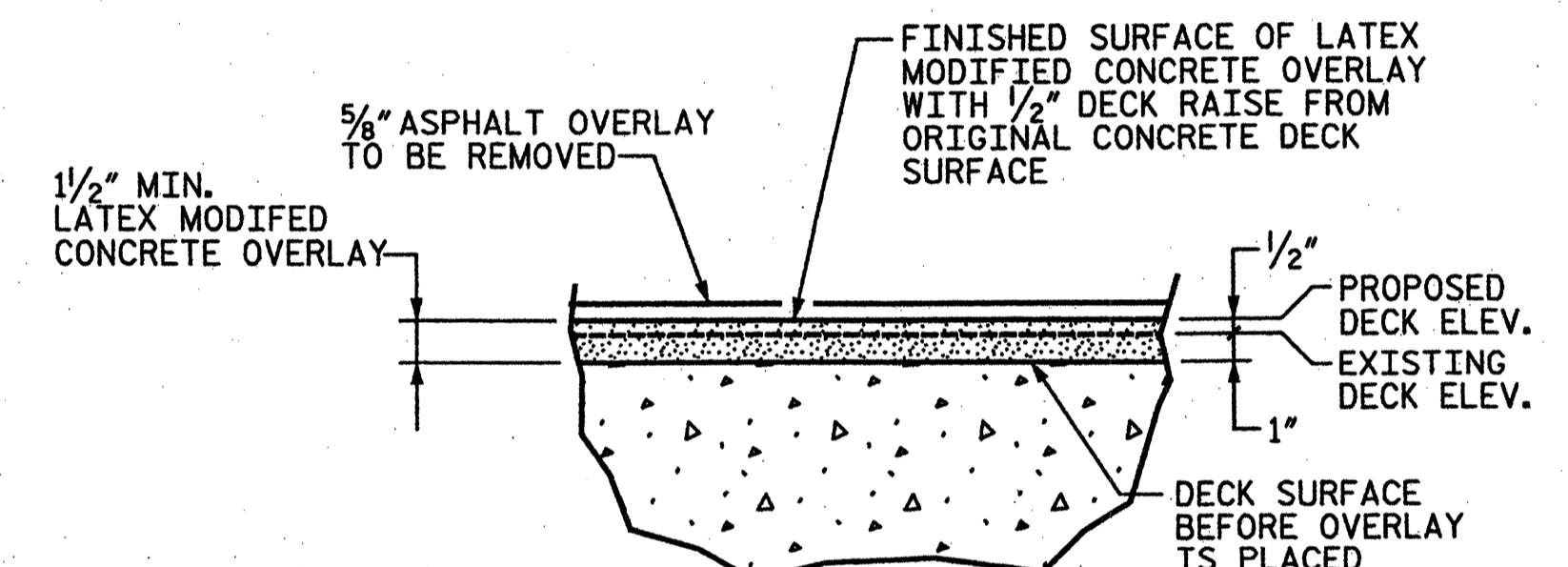
EXISTING JOINT DETAIL    MINIMUM CONCRETE REMOVAL DETAIL @ EXISTING JOINT



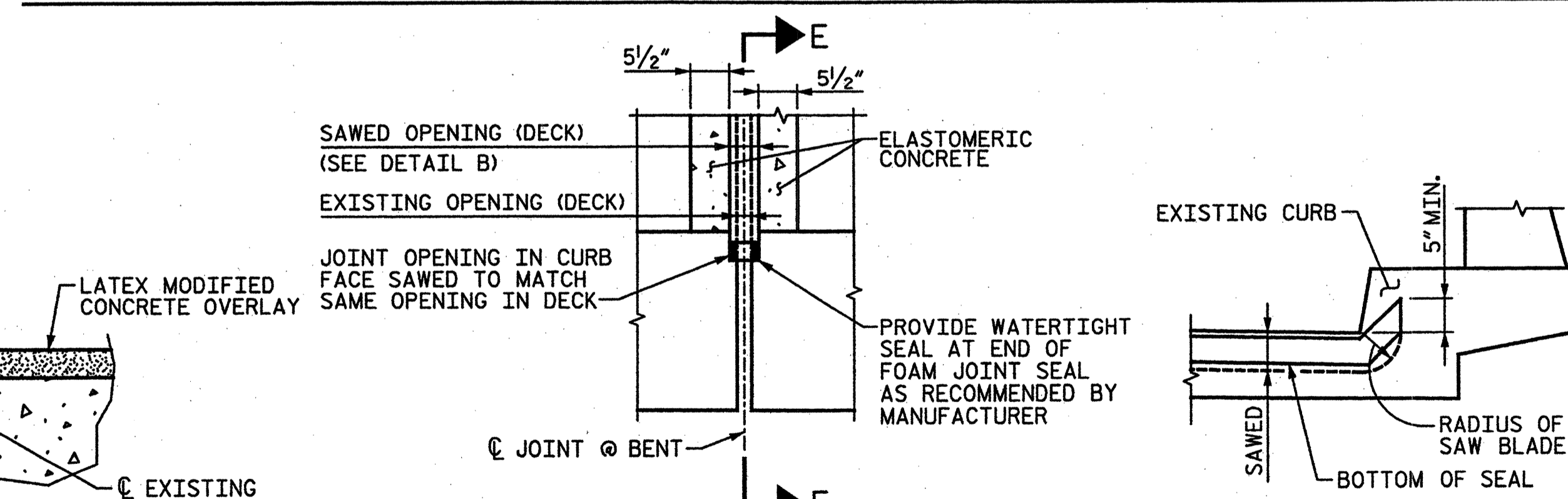
PROPOSED FOAM JOINT SEAL (DETAIL BEFORE SAWING)



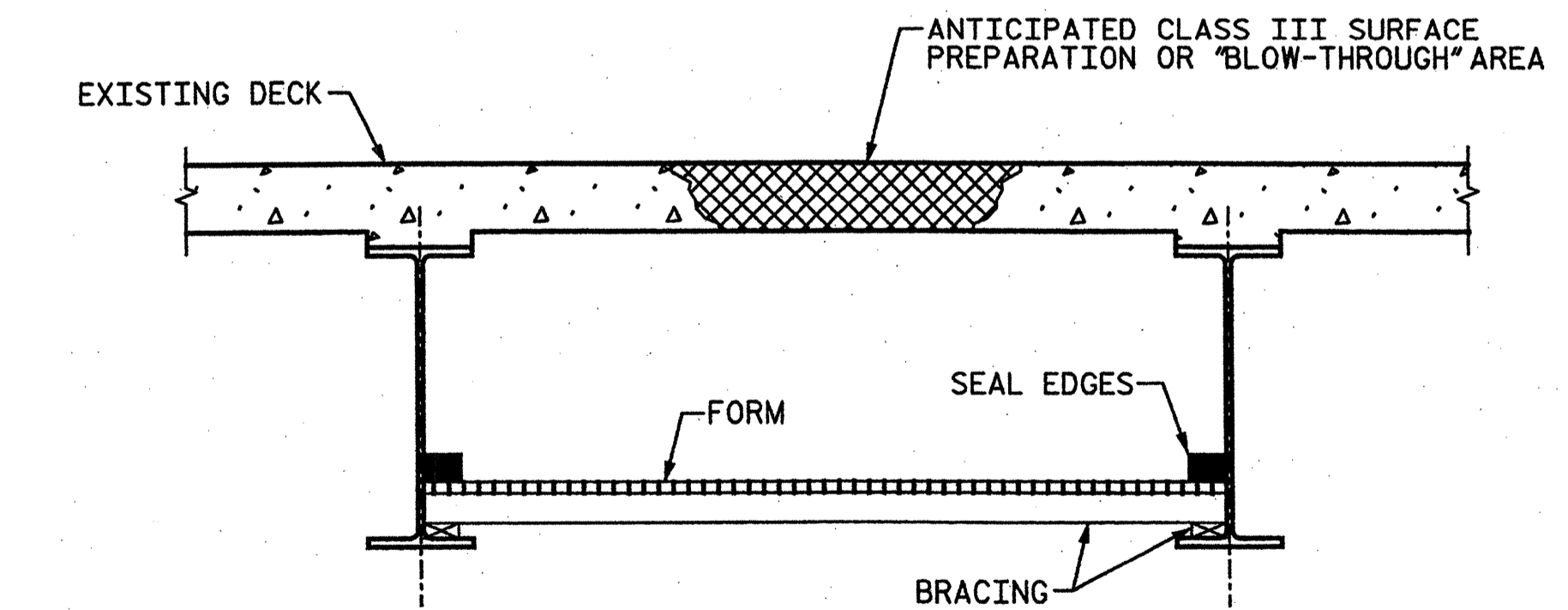
PROPOSED FOAM JOINT SEAL (DETAIL AFTER SAWING)



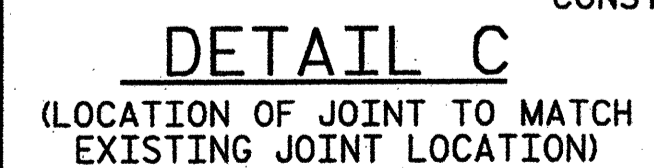
**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**



**PLAN OF JOINT SEAL AT CURB    SECTION E-E**



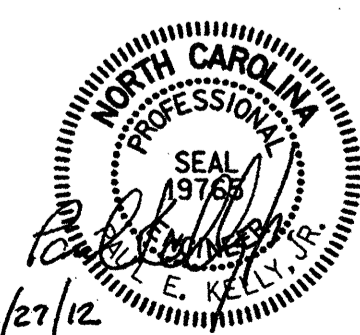
**TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK**



**DETAIL C**  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)

**NOTES:**  
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.  
 THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.  
 THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".  
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.  
 FOAM JOINT OPENINGS SHALL BE CONFIRMED IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS TO FOAM JOINT SEALS, AS NECESSARY, TO MEET EXISTING CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY COST ASSOCIATED WITH THESE ADJUSTMENTS ARE CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.  
 SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.  
 COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.



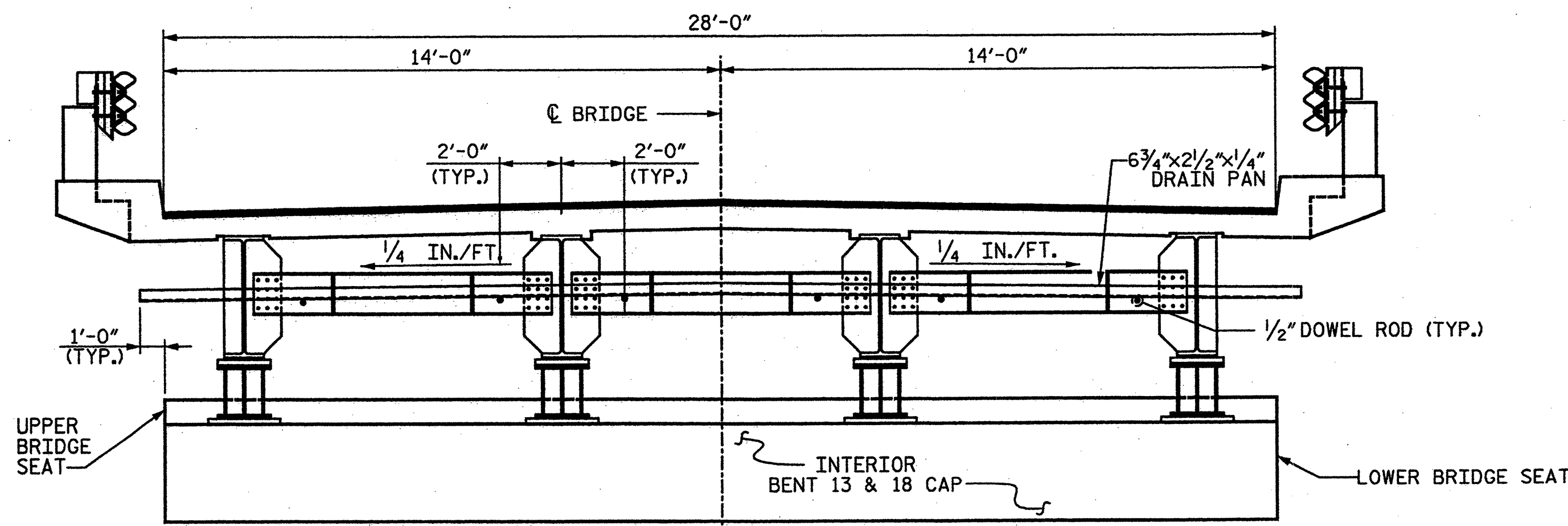
PROJECT NO. **17BP.9.P.2**  
**DAVIE** COUNTY  
 BRIDGE NO.: **85**  
 REHAB. OF BRIDGE NO. 85    SHEET 5 OF 15

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>PLAN OF SPANS DECK REPAIR DETAILS</b>					
BRIDGE ON I-40 EBL OVER YADKIN RIVER					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-12 TOTAL SHEETS S-42

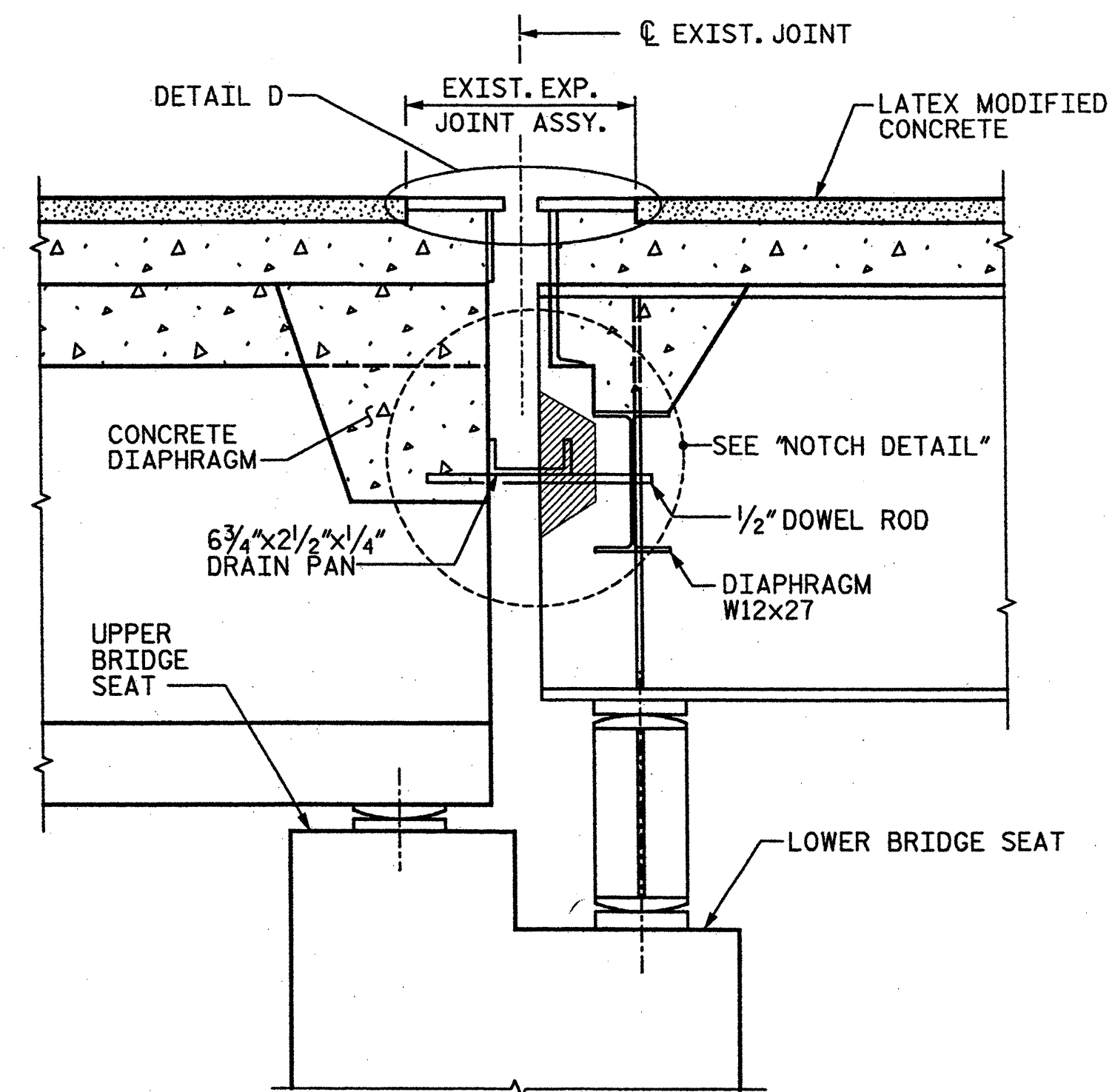
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 CHECKED BY: **EPS**    DATE: **12-11**

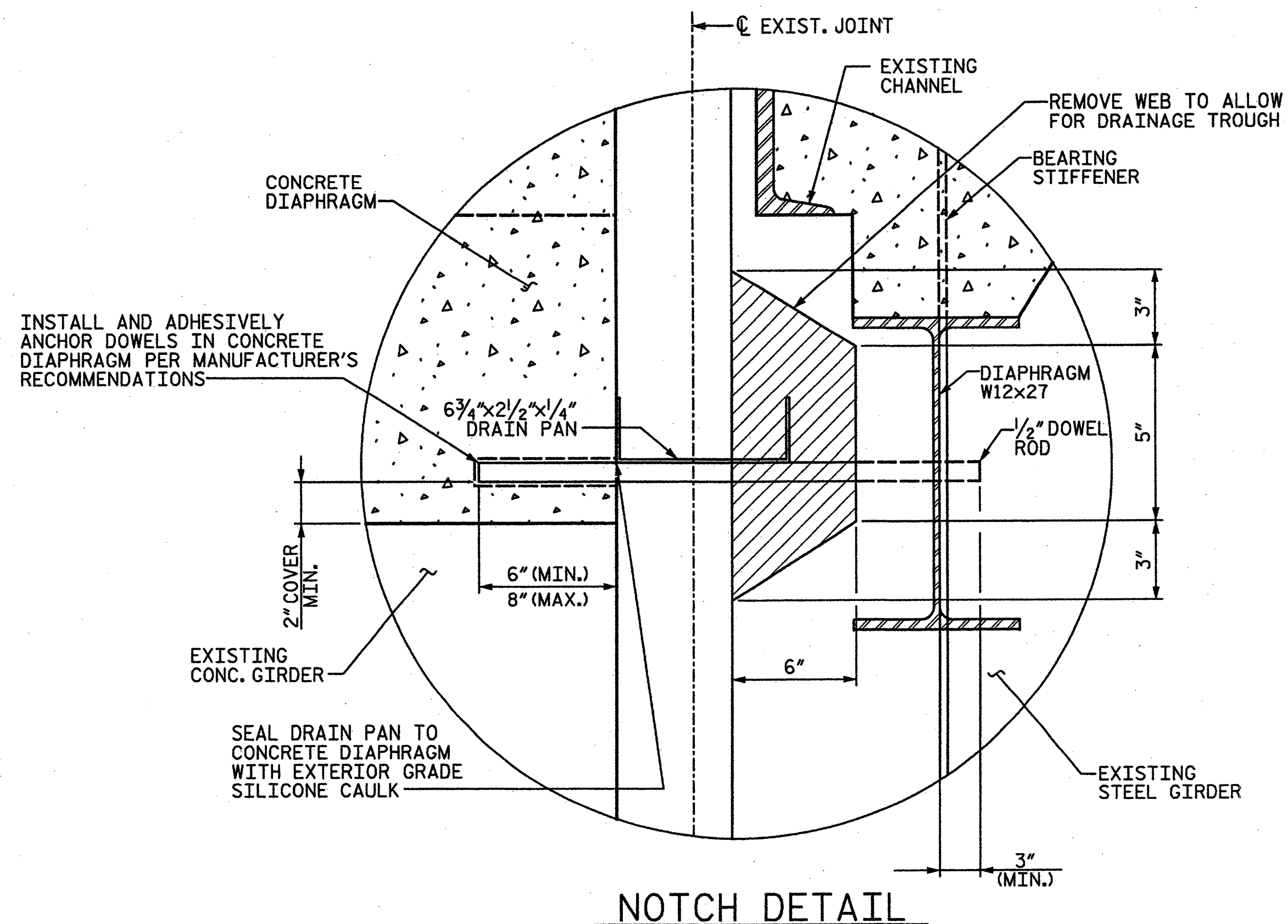
**STV / Ralph Whitehead Associates, Inc.**  
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 Charlotte, NC 28208  
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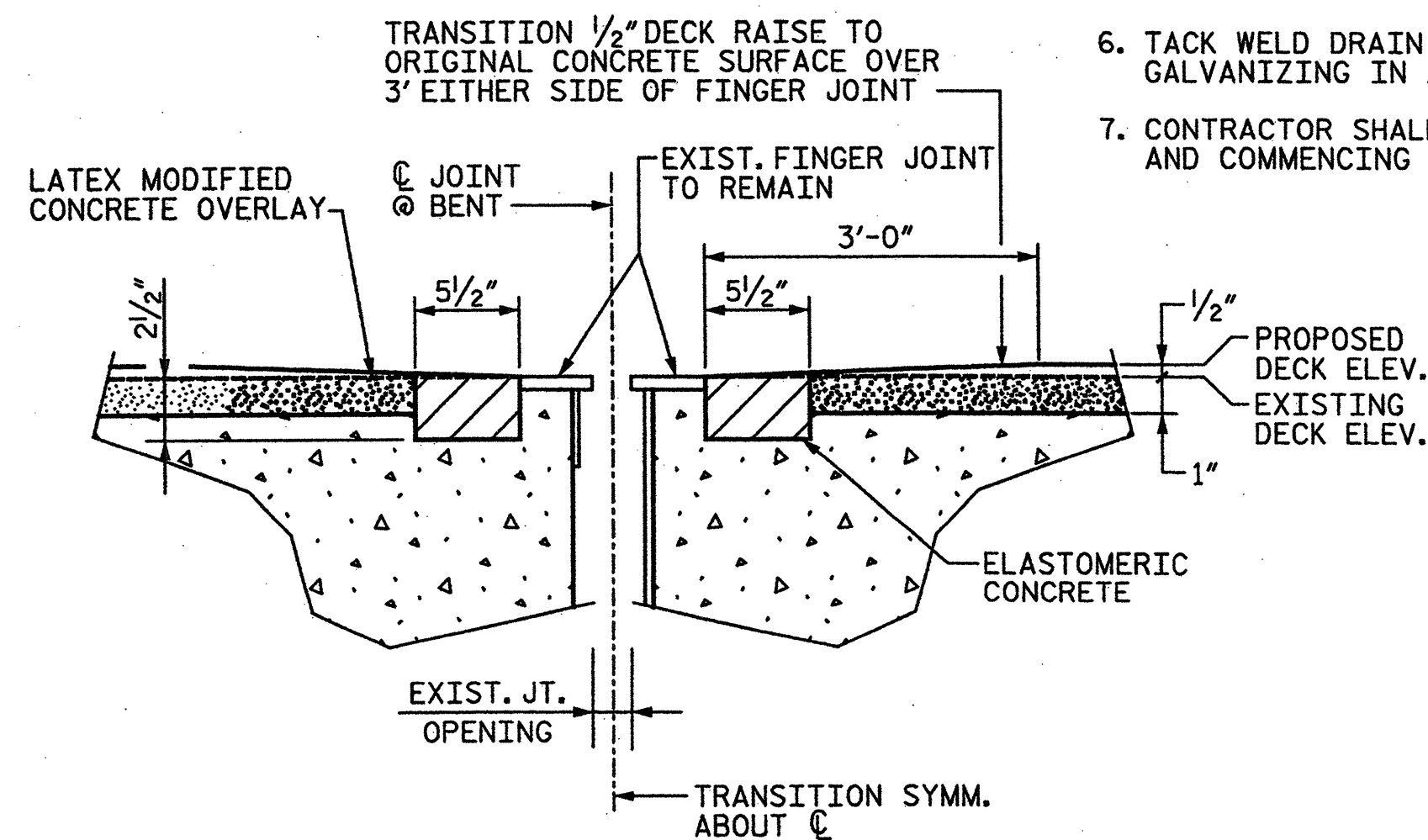
**DRAIN TROUGH SYSTEM ELEVATION**



**SECTION D-D**  
(PROPOSED JOINT @ INTERIOR BENTS 13 & 18)



**NOTCH DETAIL**



**DETAIL D**

**NOTES:**

1. BOLTS, NUTS, WASHERS, DOWEL ROD, STEEL BAR, AND DRAIN PAN SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. THE DRAIN PAN SHALL BE ASTM A36 STEEL OR APPROVED EQUAL.
3. 1/2" DOWEL ROD SHALL BE ASTM A307 STEEL OR APPROVED EQUAL.
4. APPLY AN EPOXY PROTECTIVE COATING TO THE TOP SURFACE AREA OF THE BENT CAP, EXCLUDING AREAS UNDER MASONRY PLATES. FOR EPOXY COATING SEE STANDARD SPECIFICATIONS.
5. DRAIN TROUGH SYSTEM TO BE INSTALLED AFTER ALL REPAIRS/MODIFICATIONS HAVE BEEN MADE TO BRIDGE.
6. TACK WELD DRAIN PAN TO 1/2" DOWELS ON BOTH SIDES AND REPAIR ANY DAMAGED GALVANIZING IN ACCORDANCE WITH ASTM A780.
7. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS PRIOR TO ORDERING MATERIAL AND COMMENCING ANY DRAIN TROUGH INSTALLATION WORK.

PROJECT NO. **17BP.9.P.2**  
**DAVIE** COUNTY

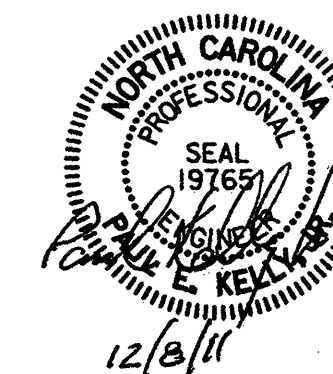
BRIDGE NO.: **85**

REHAB. OF BRIDGE NO. 85 SHEET 6 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**DRAIN TROUGH SYSTEM DETAILS**

BRIDGE ON I-40 EBL  
OVER YADKIN RIVER



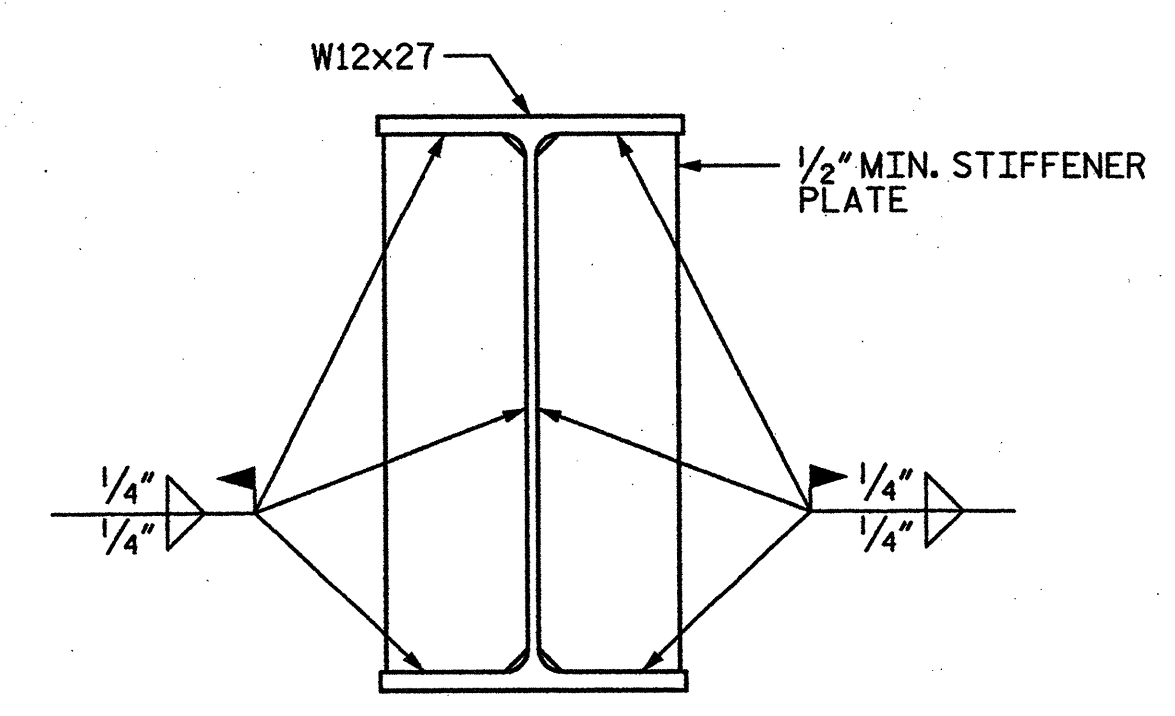
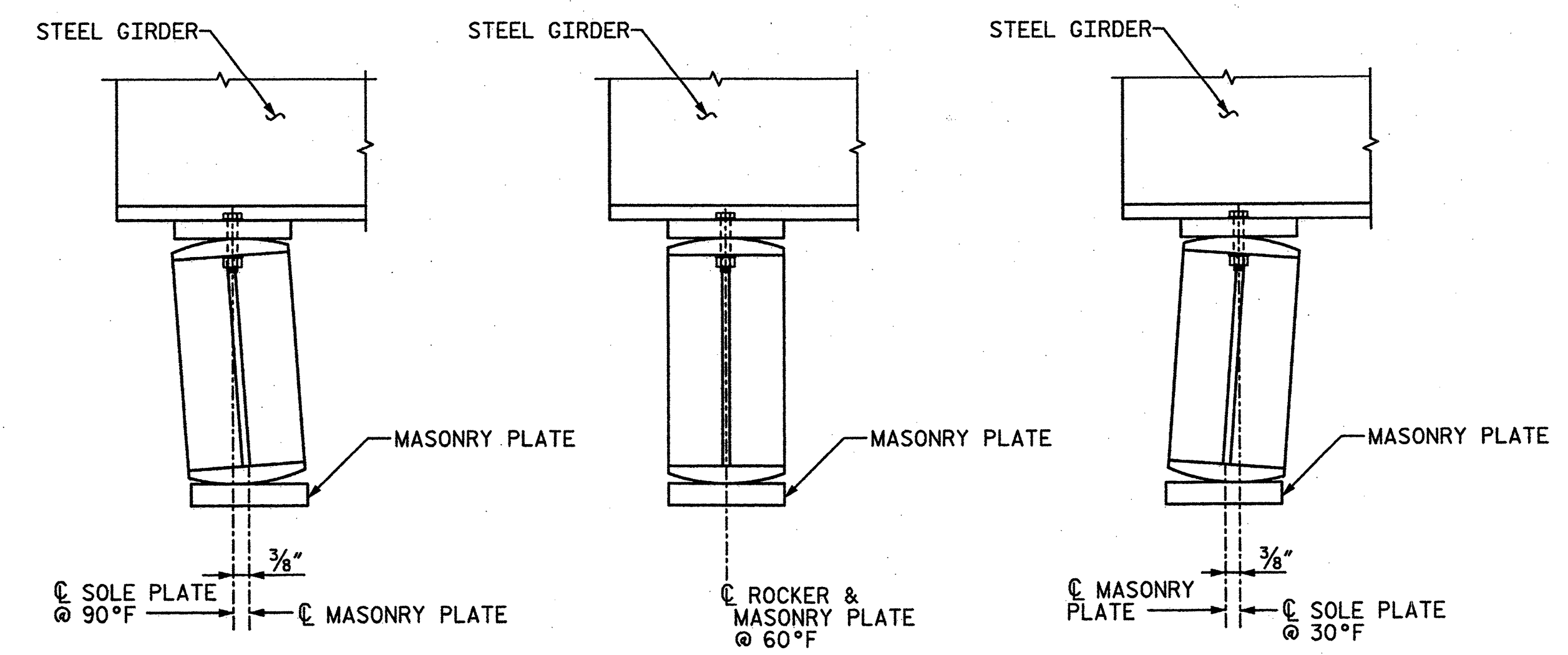
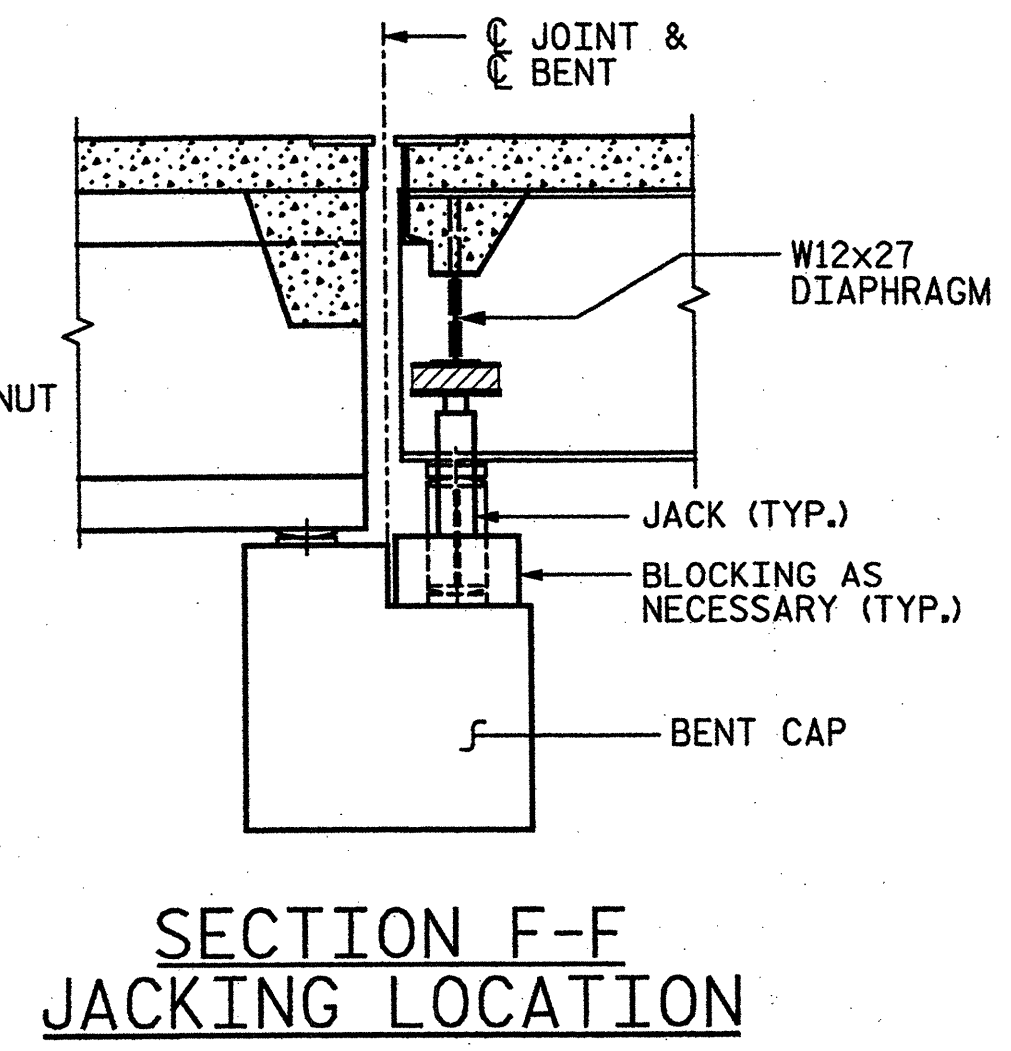
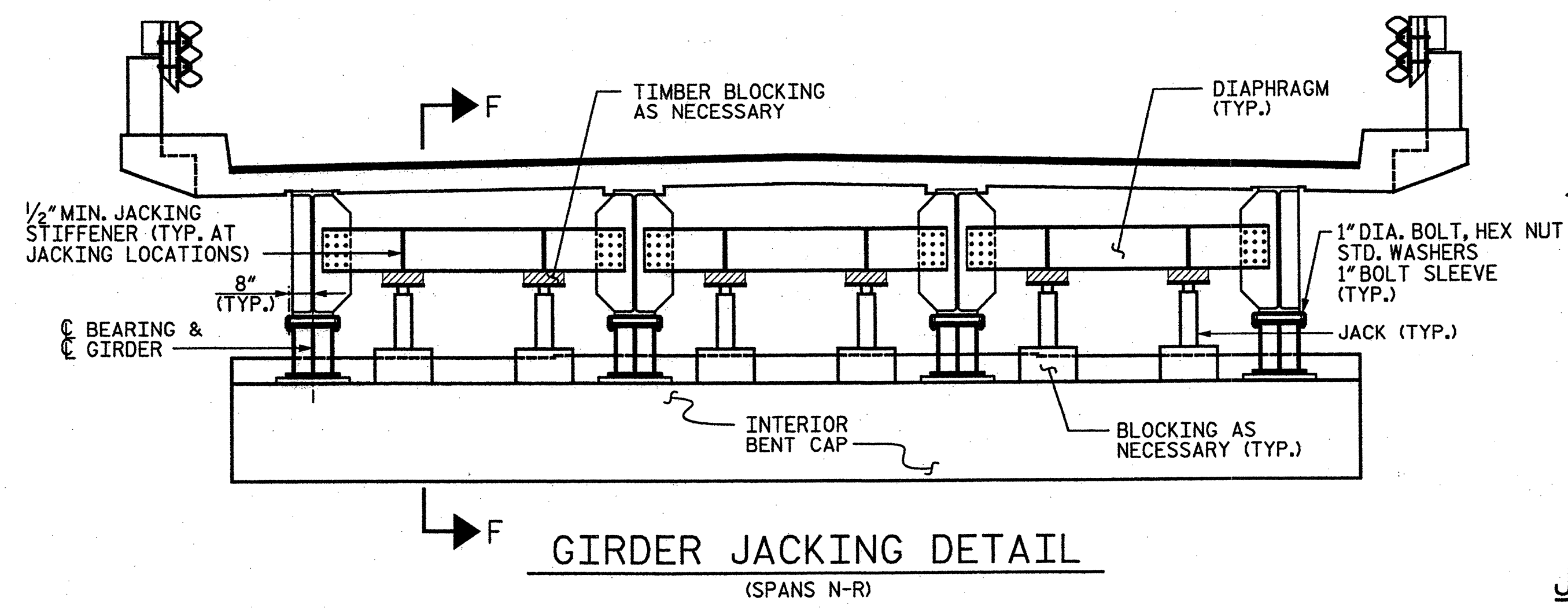
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12/8/2011  
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**CONSTRUCTION SEQUENCE:**

1. INSTALL JACKS AND BLOCKING AT LOCATIONS SHOWN ON PLAN.
  2. REMOVE NECESSARY NUTS ON CONNECTION BOLTS.
  3. JACK GIRDERS A MAXIMUM OF 1/8" IN ORDER TO RELIEVE LOAD FROM ROCKER BEARINGS.
  4. MECHANICALLY LOCK ALL JACKS AT BENT.
  5. REMOVE NECESSARY BOLTS TO FACILITATE THE RESETTING OF THE ROCKER BEARINGS AT PIERS 13 & 18.
  6. LOWER BRIDGE AND REPLACE DAMAGED, RUSTED AND/OR INADEQUATE CONNECTION BOLTS AS NECESSARY.
- NOTE:** THE CONTRACTOR HAS THE OPTION TO PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE PER THE APPROVAL OF THE ENGINEER.

**NOTES:**

1. JACKING DETAILS SHOWN ARE CONCEPTUAL AND CONSIDERED A MINIMUM. THE CONTRACTOR SHALL PROVIDE JACKING PLANS FOR ALL GIRDERS LIFTED FOR APPROVAL BY THE ENGINEER PRIOR TO ANY JACKING OPERATIONS. JACKING SHALL BE PERFORMED SUCH THAT BRIDGE CAN REMAIN OPEN TO TRAFFIC DURING JACKING OPERATIONS.
2. JACKING PLANS SHALL BE SIGNED AND SEALED BY LICENSED PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.
3. THE CONTRACTOR SHALL PROVIDE BLOCKING FOR ALL JACKS AS NECESSARY. A BLOCKING PLAN SHALL BE INCLUDED AS PART OF THE JACKING PLAN.
4. THE CONTRACTOR SHALL JACK GIRDERS ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.
5. THE CONTRACTOR SHALL MONITOR THE PLAN LOCATION OF THE GIRDERS FROM INITIAL JACKING UNTIL GIRDERS ARE SECURED ON THEIR PERMANENT BEARINGS. IF THE PLAN LOCATION OF THESE GIRDERS SHIFT FROM ITS ORIGINAL POSITION, THE CONTRACTOR SHALL SECURE FROM ADDITIONAL MOVEMENT IMMEDIATELY. NOTIFY ENGINEER PRIOR TO PROCEEDING WORK OPERATIONS.
6. EACH JACK SHALL HAVE A MINIMUM SAFE WORKING CAPACITY OF 50 TONS.
7. PRIOR TO JACKING THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.
8. ONCE SPAN HAS BEEN JACKED, CONTRACTOR SHALL INSTALL A MECHANICAL LOCKING DEVICE TO ENSURE THAT GIRDER WILL NOT BE LOWERED DURING THE REPAIR OF THE BEARINGS.
9. CONTRACTOR TO TAKE APPROPRIATE MEANS TO REMOVE NUT ON ANCHOR BOLT WITHOUT DAMAGING THE ANCHOR BOLT. CONTRACTOR SHALL SUBMIT NUT REMOVAL METHOD TO INCLUDE PROCEDURES THAT WILL LOOSEN BOND BETWEEN INTERLOCKING THREADS TO ENGINEER FOR APPROVAL PRIOR TO REMOVING ANCHOR BOLT NUTS.
10. IN NO CIRCUMSTANCES SHOULD THE JACKING BE SOLELY SUPPORTED BY THE DIAPHRAGM. JACKS SHOULD BE CENTERED UNDER DIAPHRAGM AND ADDITIONAL BLOCKING.

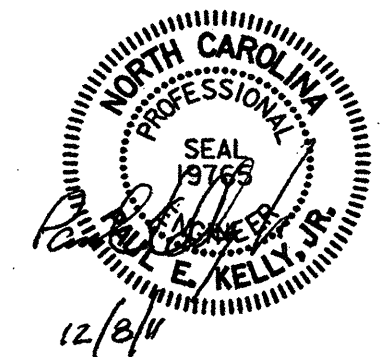
**ROCKER BEARING TEMPERATURE GUIDE**

**JACKING STIFFENER DETAIL**

ROCKER BEARING RESET RECORD TABLE						
LOCATION		DATE	TEMPERATURE	H	ROTATION	NOTES
SPAN	GIRDER					

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STATE OF NORTH CAROLINA  
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 RALEIGH  
**JACKING PLAN**  
 BRIDGE ON I-40 EBL  
 OVER YADKIN RIVER

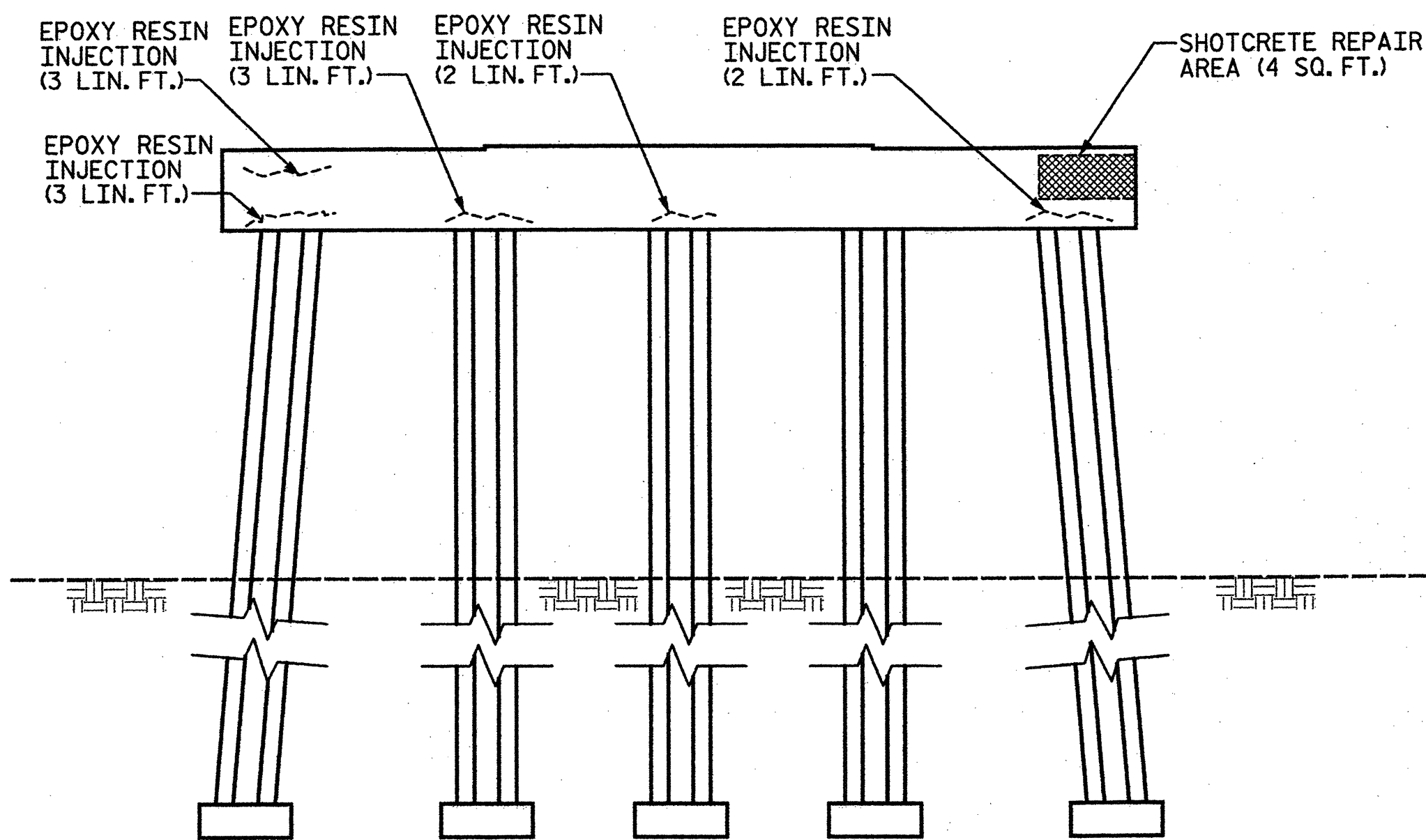


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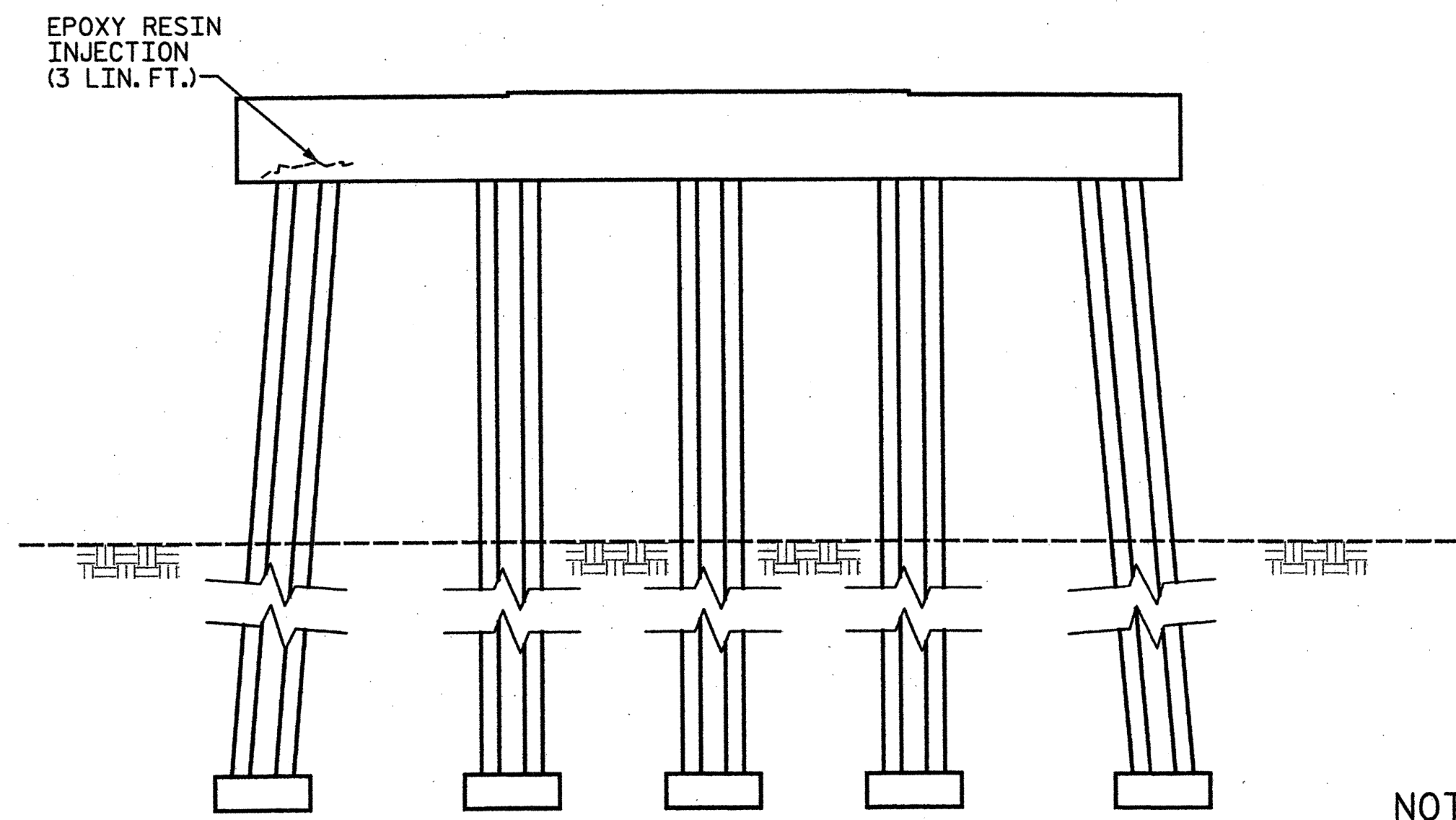
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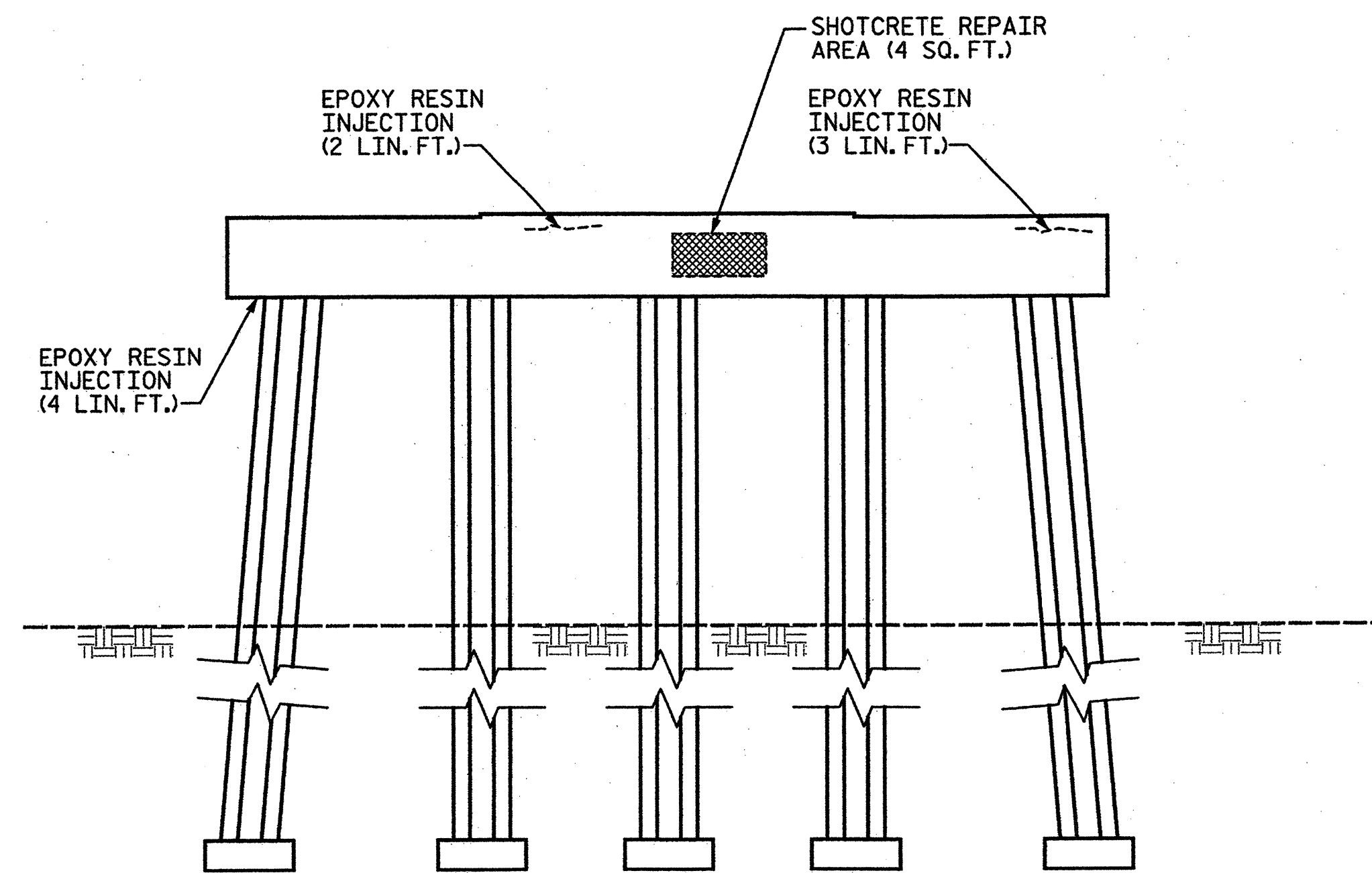
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 12/8/2011



ELEVATION OF BENT 1 - LOOKING EAST



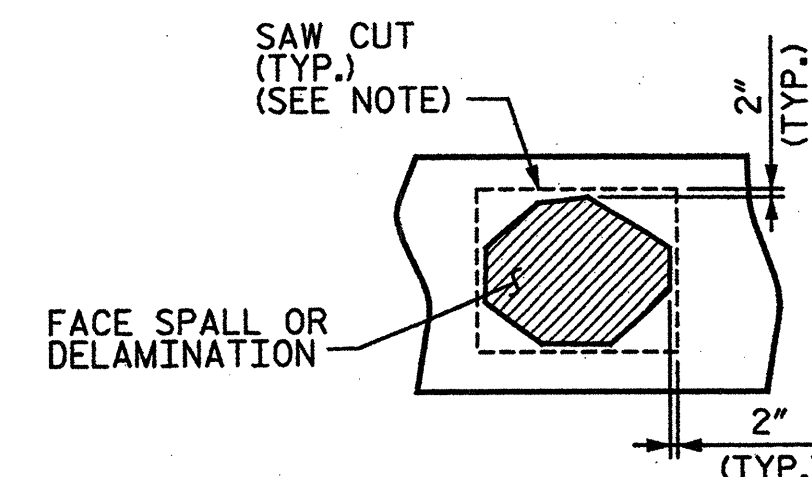
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ELEVATION OF BENT 2 - LOOKING EAST

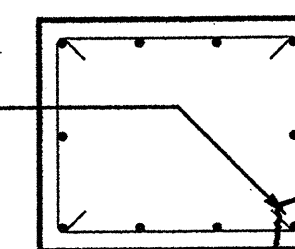
**NOTES:**

1. CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
2. FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
3. SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.
4. THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COSTS.
5. DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.
6. REINFORCING STEEL SHALL BE GRADE 60.
7. SUBSTRUCTURE REPAIRS SHALL PROVIDE A MINIMUM OF 2" CLEAR COVER TO REINFORCING STEEL. REPAIRED AREAS MAY BE BUILT OUT TO ACHIEVE CLEARANCE.
8. EPOXY PROTECTIVE COATING SHALL BE APPLIED TO THE TOP OF ALL BENT CAPS AND THE COST SHALL BE INCLUDED IN THE OTHER BENT REPAIRS. FOR EPOXY COATING, SEE STANDARD SPECIFICATIONS.

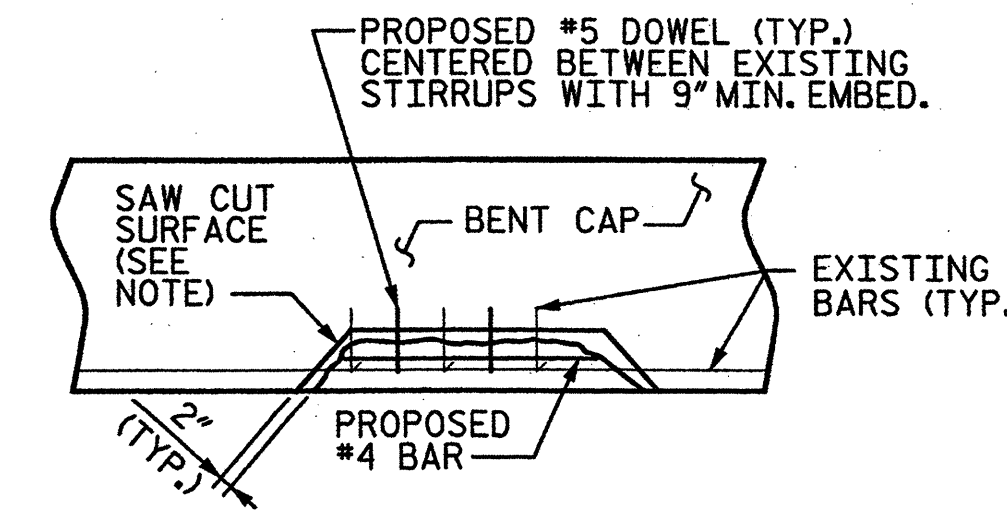


FACE REPAIR

REMOVE BACK TO SOUND CONCRETE AND REPAIR (SEE SPECIAL PROVISIONS)



SECTION



ELEVATION

CORNER REPAIR

**TYPICAL CONCRETE REPAIR DETAILS**

NOTE: CONTRACTOR SHALL SAW CUT TO A MAXIMUM DEPTH OF 1". THIS DEPTH SHALL BE REDUCED TO PREVENT DAMAGE TO EXISTING REINFORCEMENT, BUT SHALL BE NO LESS THAN 1/2". CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAW CUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

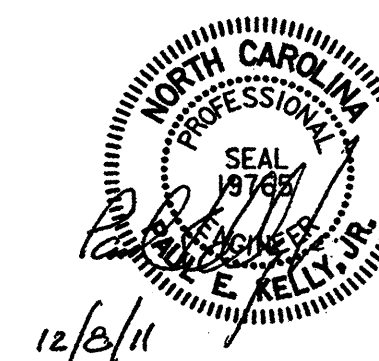
PROJECT NO. 17BP.9.P.2  
DAVIE COUNTY  
 BRIDGE NO.: 85

REHAB. OF BRIDGE NO. 85 SHEET 8 OF 15

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENTS 1 & 2  
 SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 EBL  
 OVER YADKIN RIVER

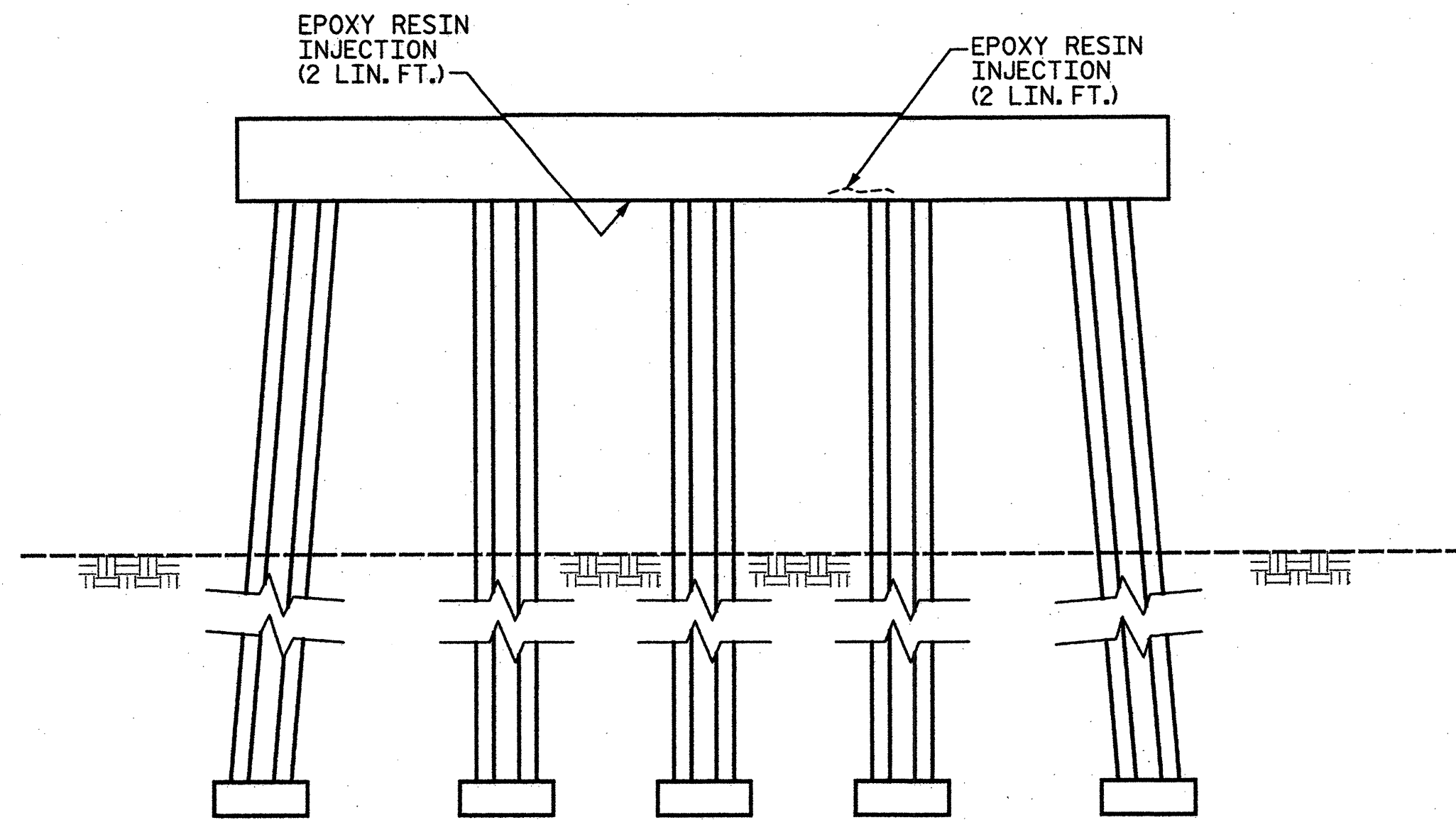


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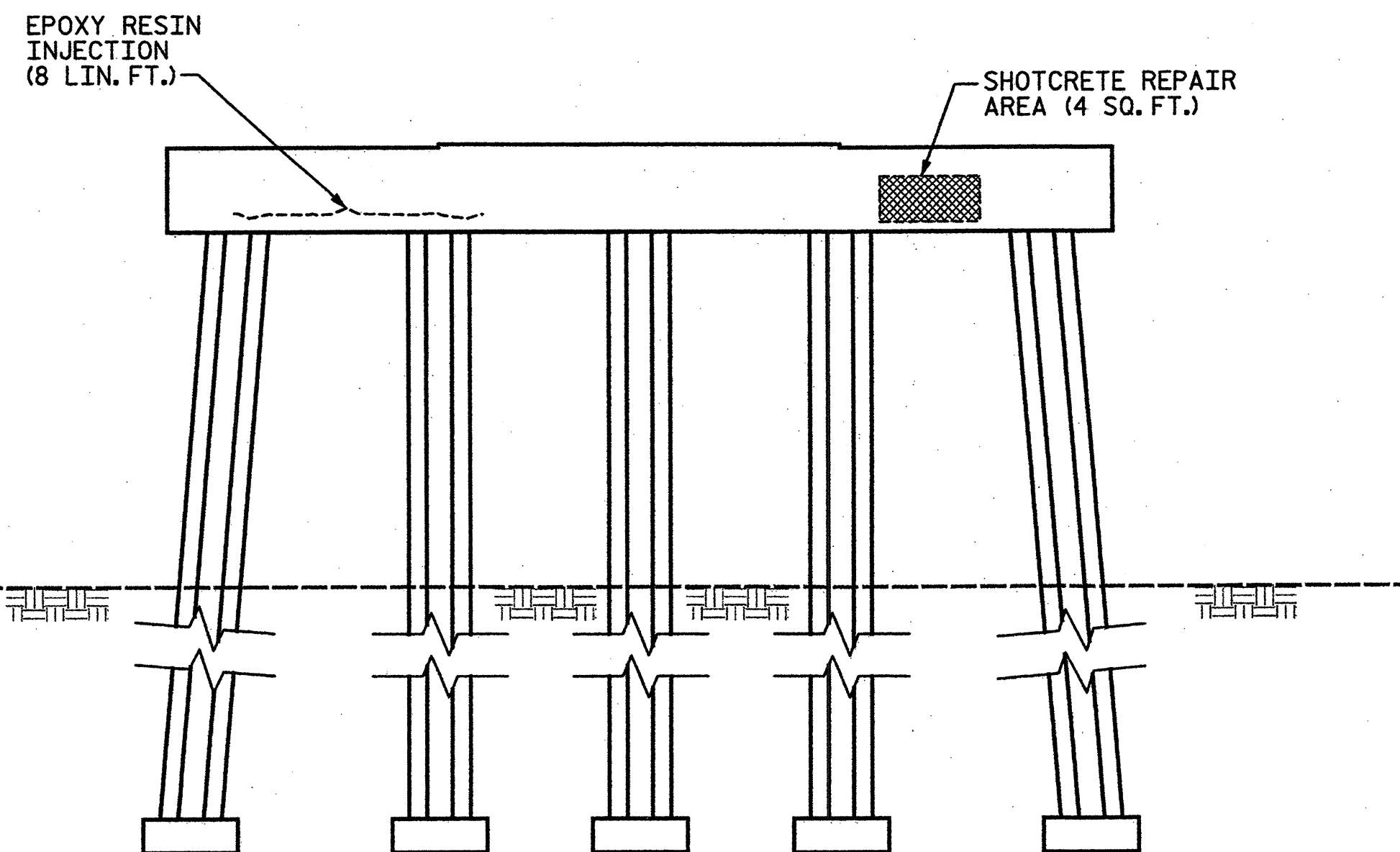
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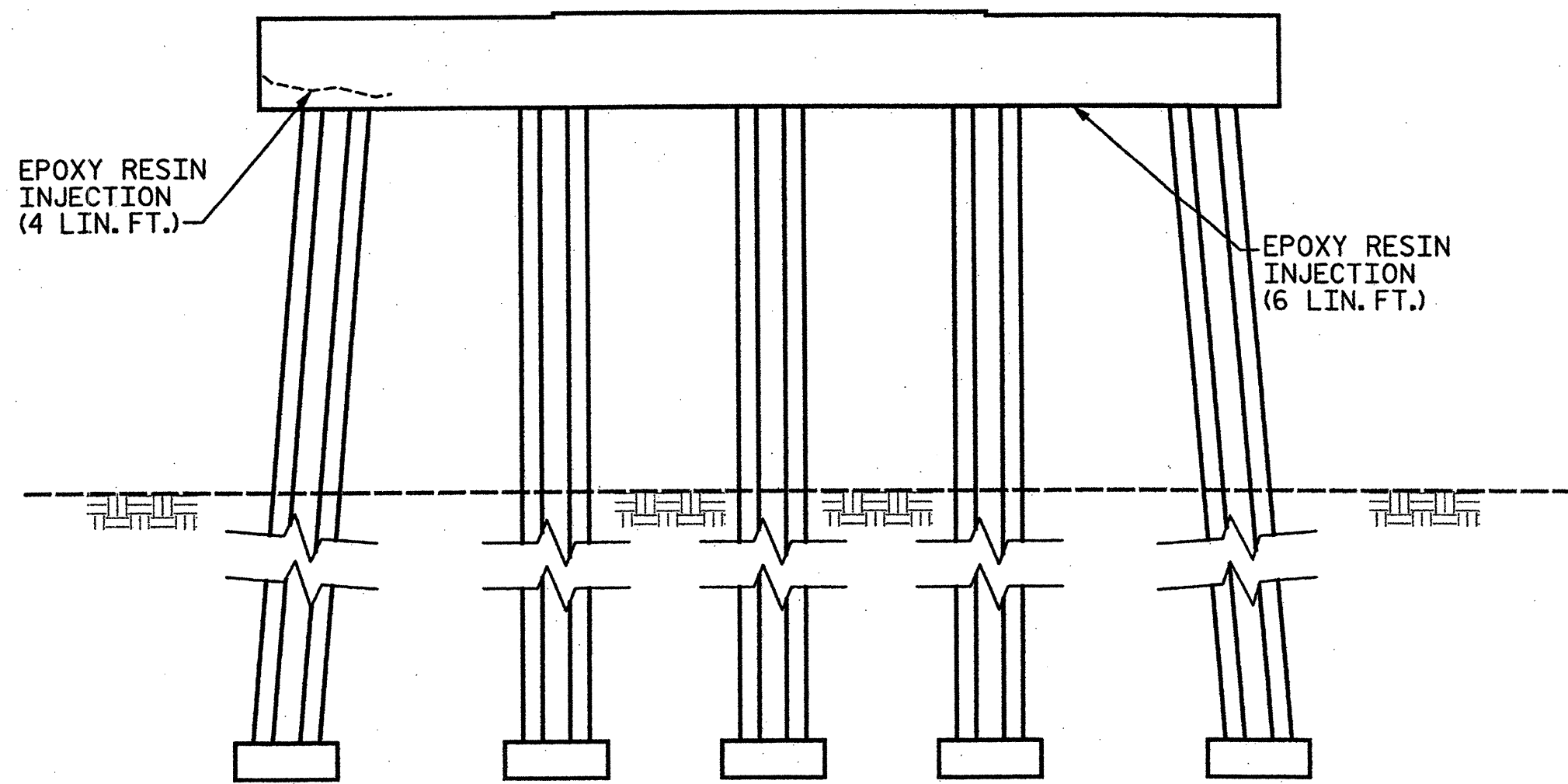
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ELEVATION OF BENT 4 - LOOKING WEST



ELEVATION OF BENT 5 - LOOKING EAST



ELEVATION OF BENT 5 - LOOKING WEST

NOTES:

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-15.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

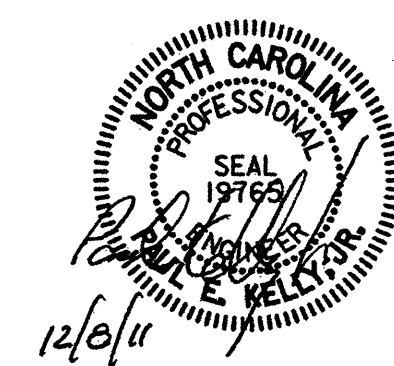
BRIDGE NO.: 85

REHAB. OF BRIDGE NO. 85 SHEET 9 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENTS 4 & 5  
SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 EBL  
OVER YADKIN RIVER



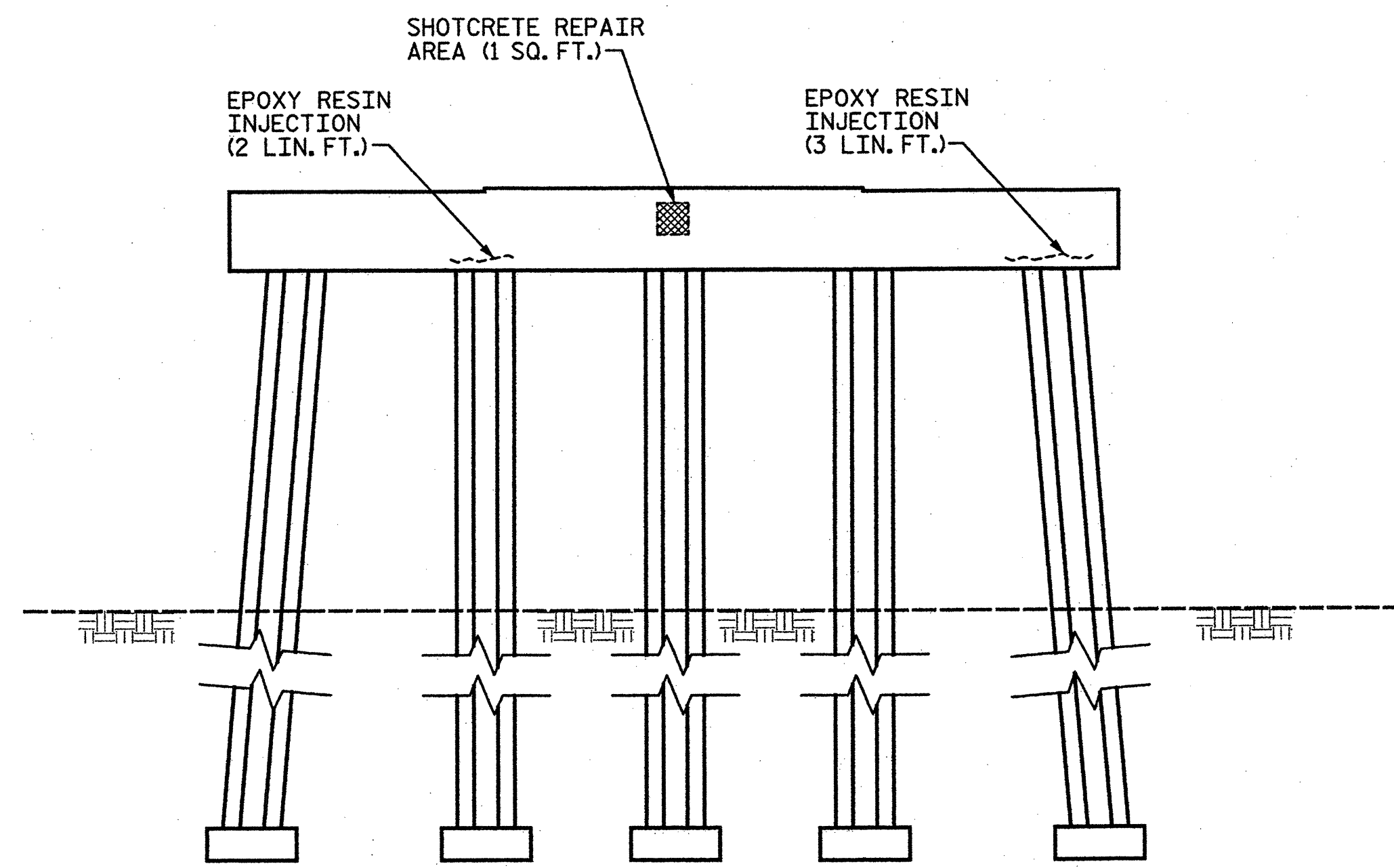
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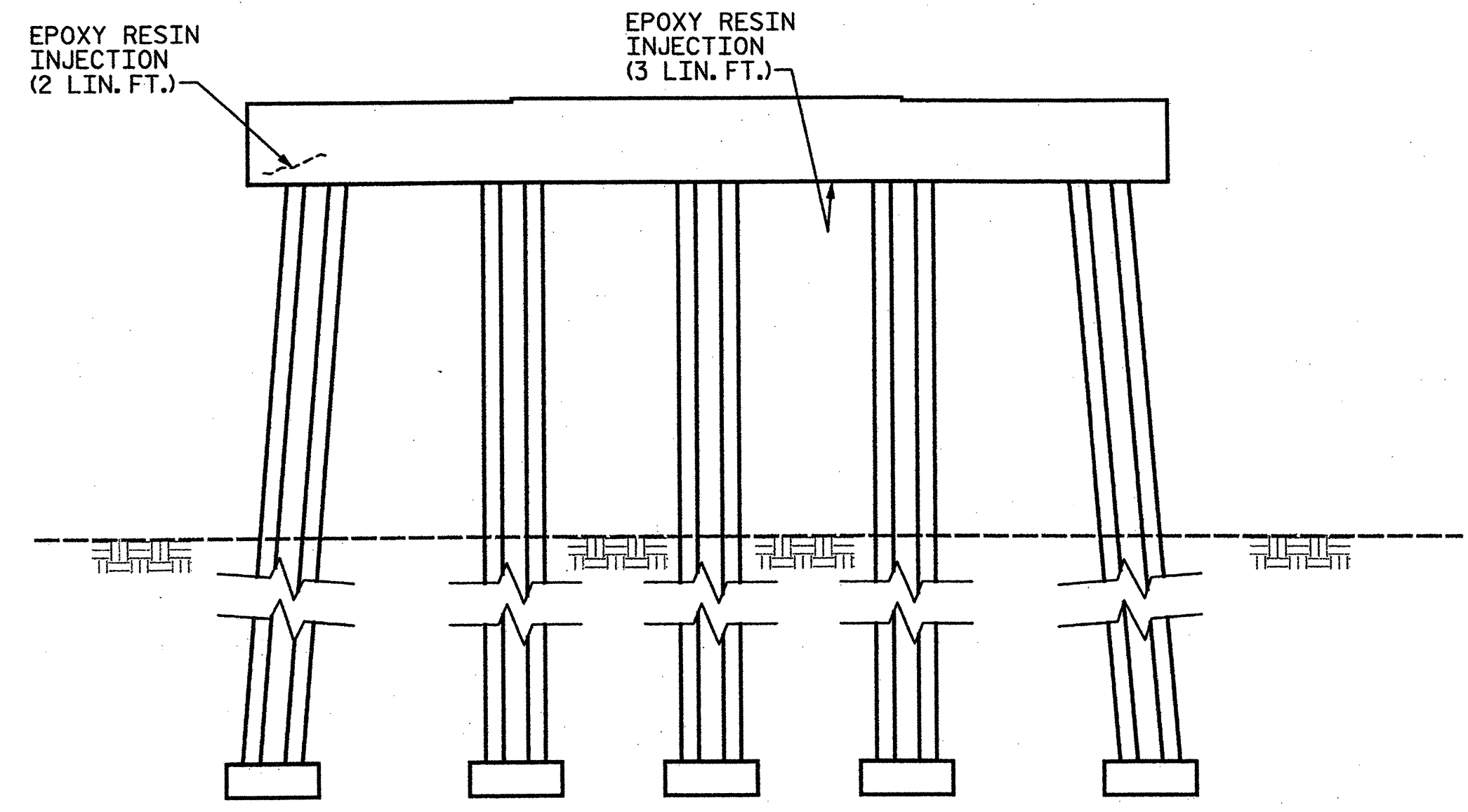
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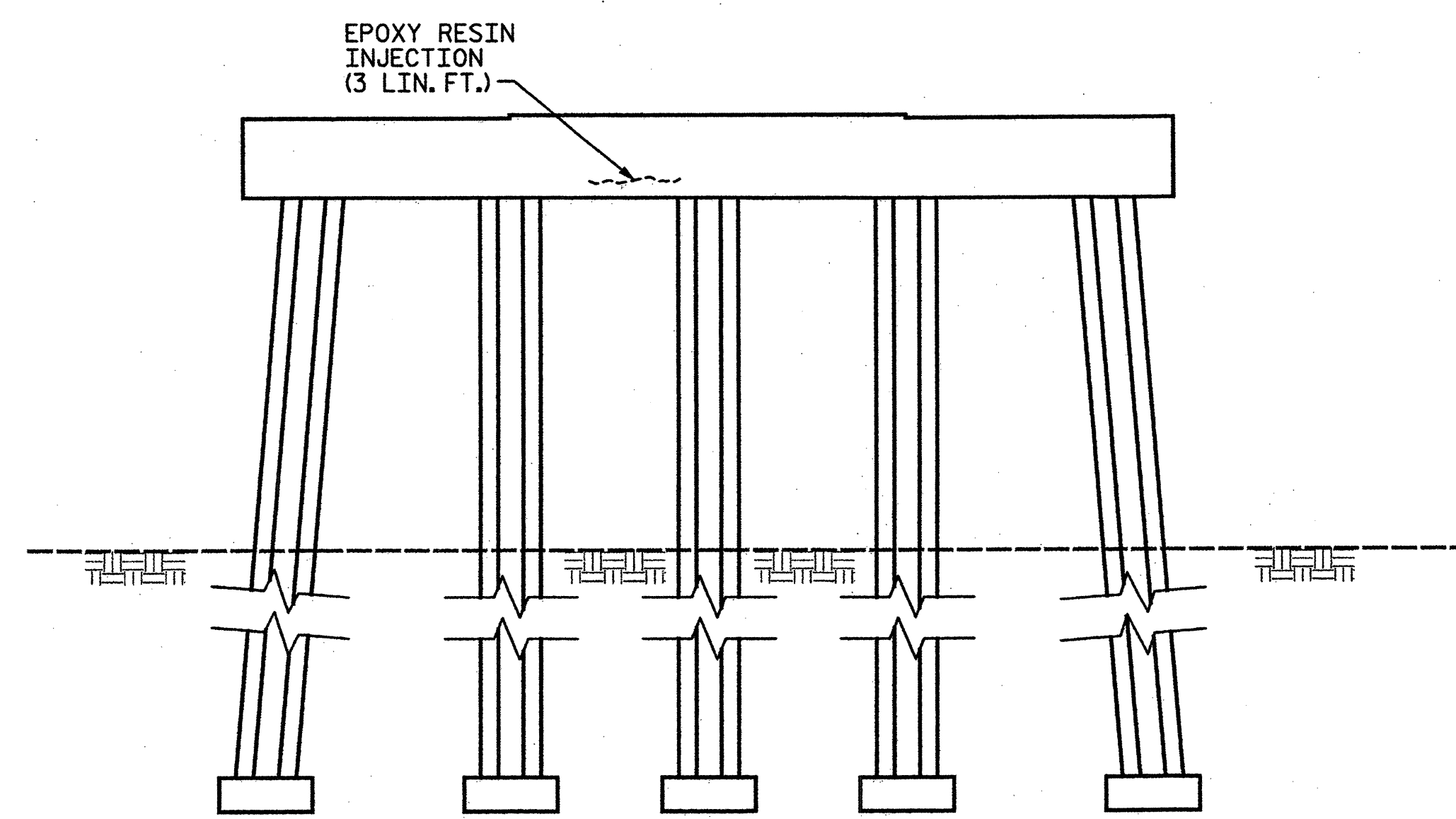
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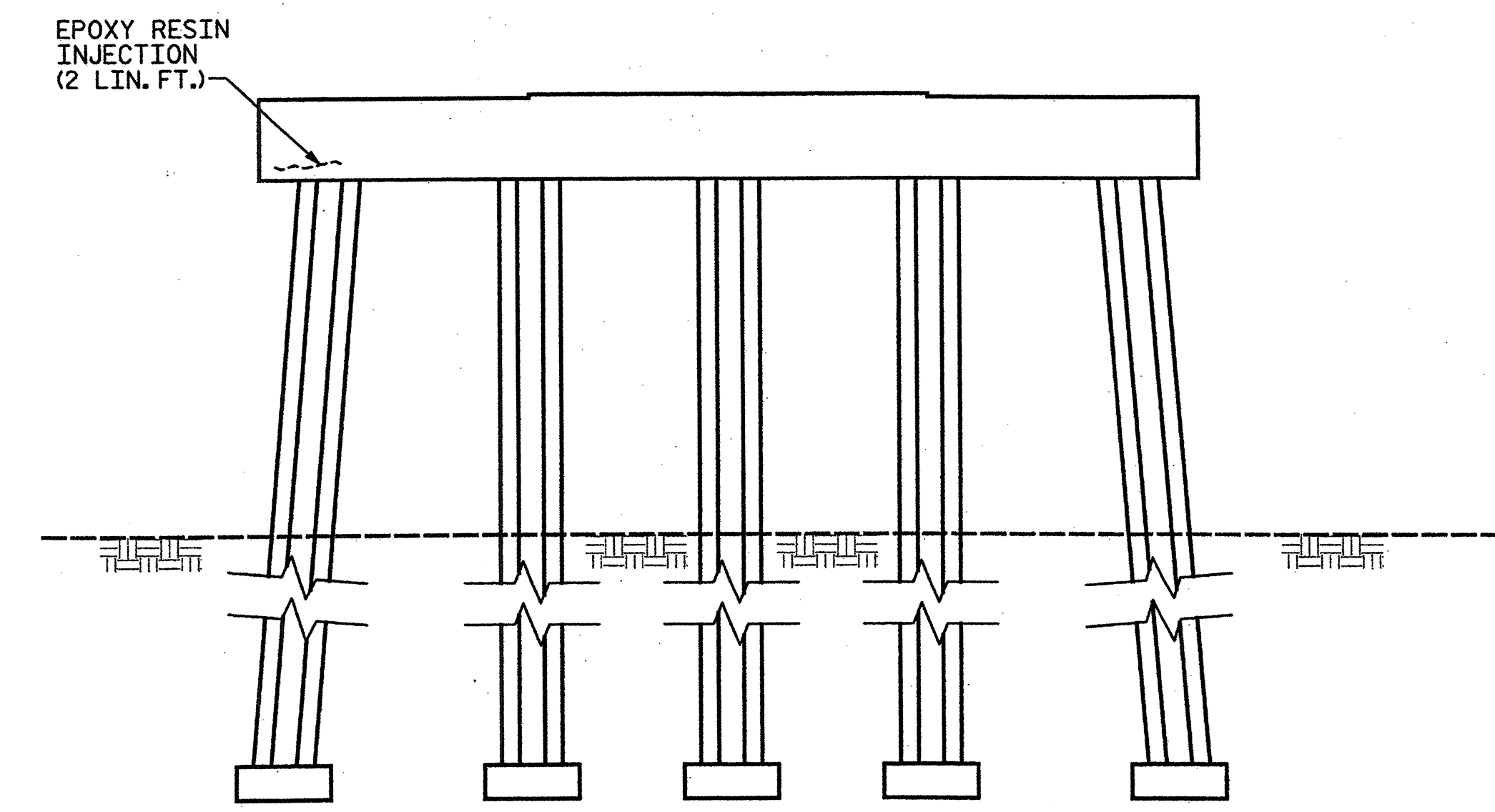
ELEVATION OF BENT 6 - LOOKING EAST



ELEVATION OF BENT 6 - LOOKING WEST

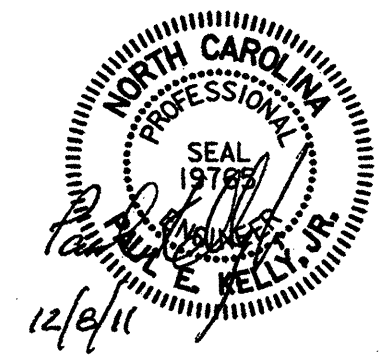


ELEVATION OF BENT 7 - LOOKING EAST



ELEVATION OF BENT 7 - LOOKING WEST

**NOTES:**  
 1. FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-15.  
 PROJECT NO. 17BP.9.P.2  
DAVIE COUNTY  
 BRIDGE NO.: 85  
 REHAB. OF BRIDGE NO. 85 SHEET 10 OF 15

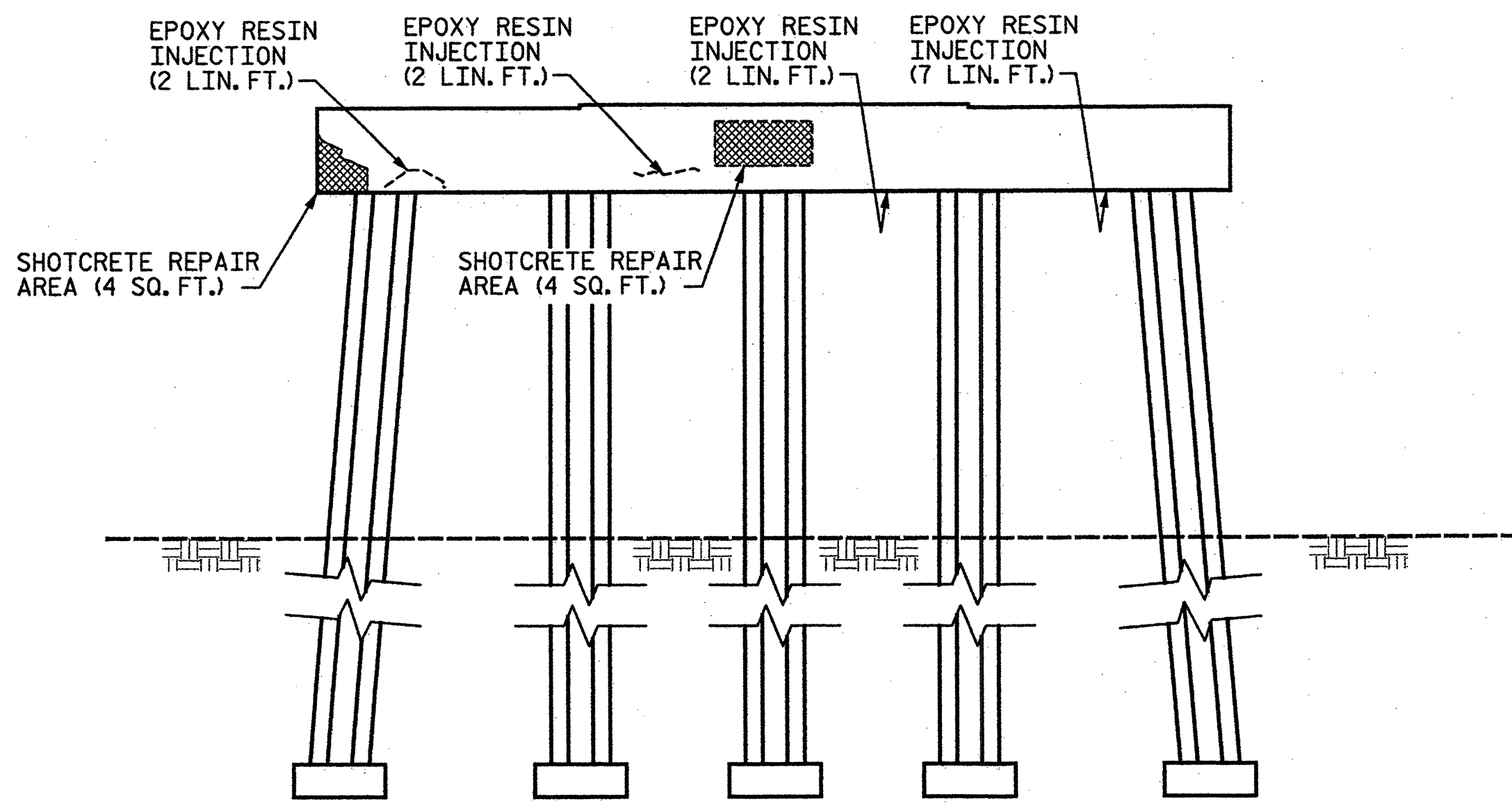


STATE OF NORTH CAROLINA  
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 RALEIGH  
**BENTS 6 & 7  
 SUBSTRUCTURE REPAIR**  
 BRIDGE ON I-40 EBL  
 OVER YADKIN RIVER

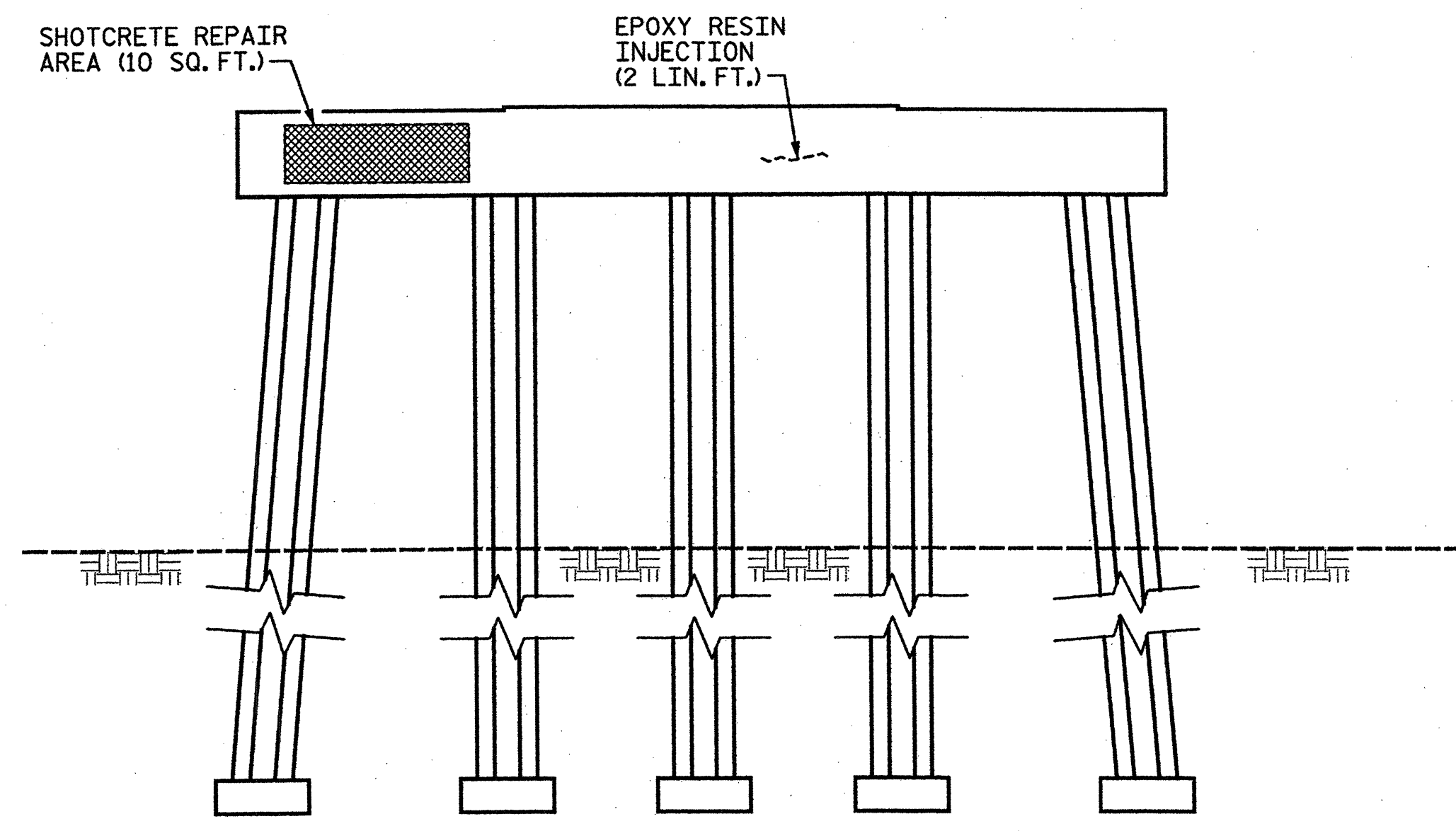
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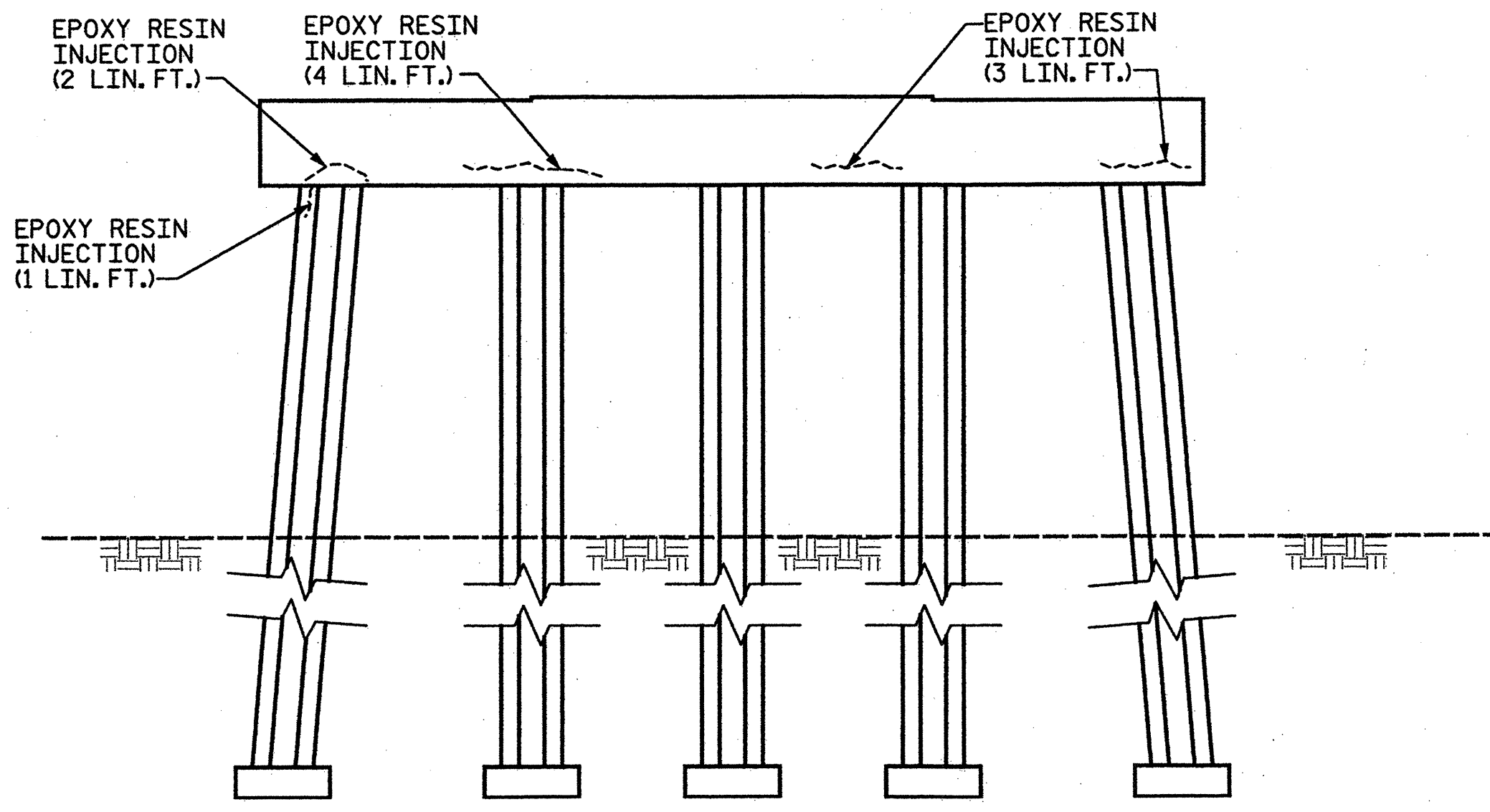
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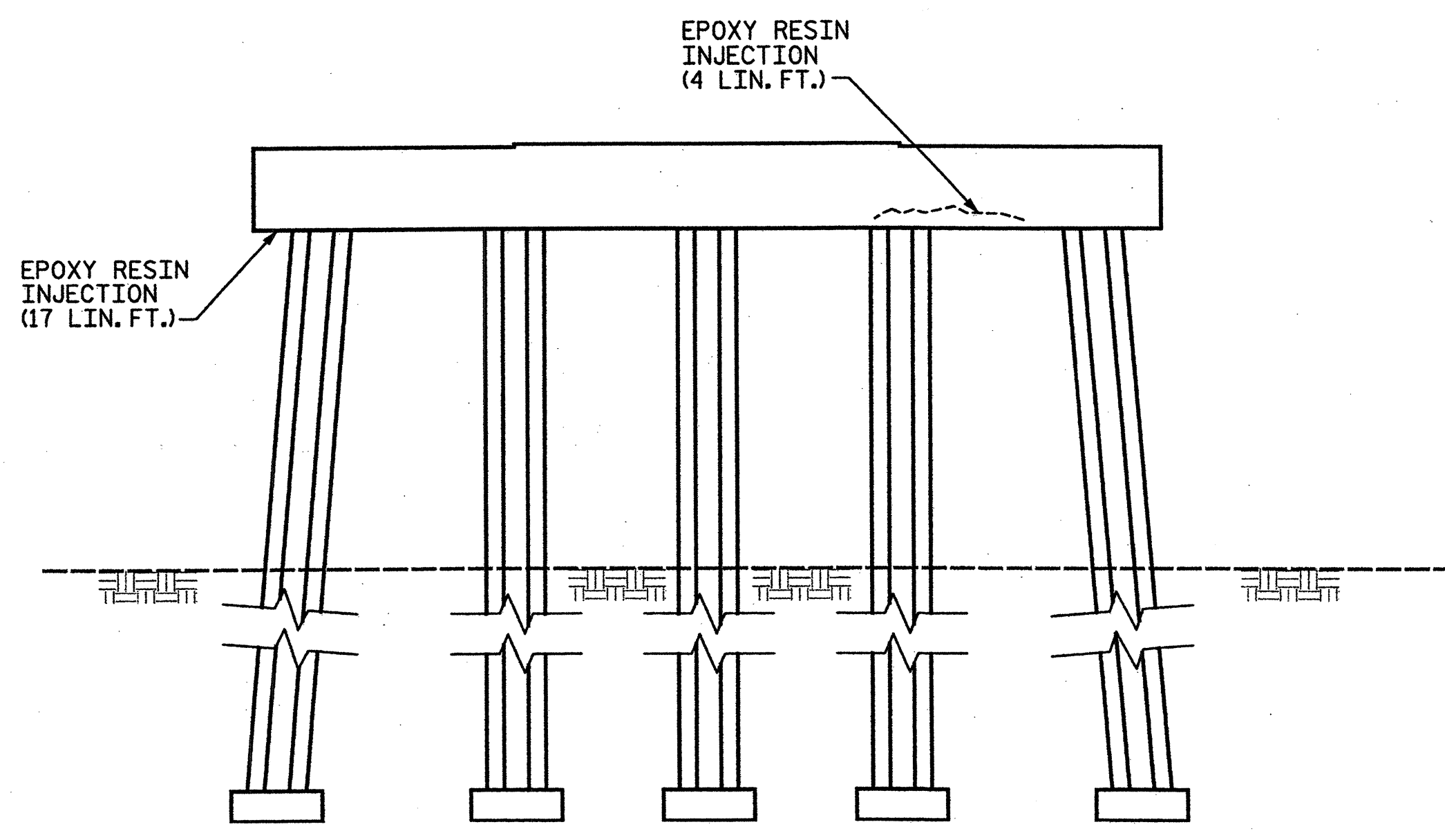
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ELEVATION OF BENT 9 - LOOKING WEST



ELEVATION OF BENT 10 - LOOKING EAST



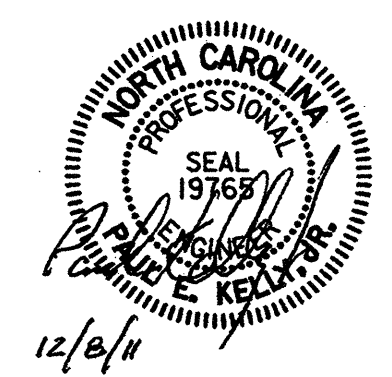
ELEVATION OF BENT 10 - LOOKING WEST

**NOTES:**  
 1. FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-15.

PROJECT NO. 17BP.9.P.2  
 DAVIE COUNTY

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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**BENTS 9 & 10  
 SUBSTRUCTURE REPAIR**  
 BRIDGE ON I-40 EBL  
 OVER YADKIN RIVER

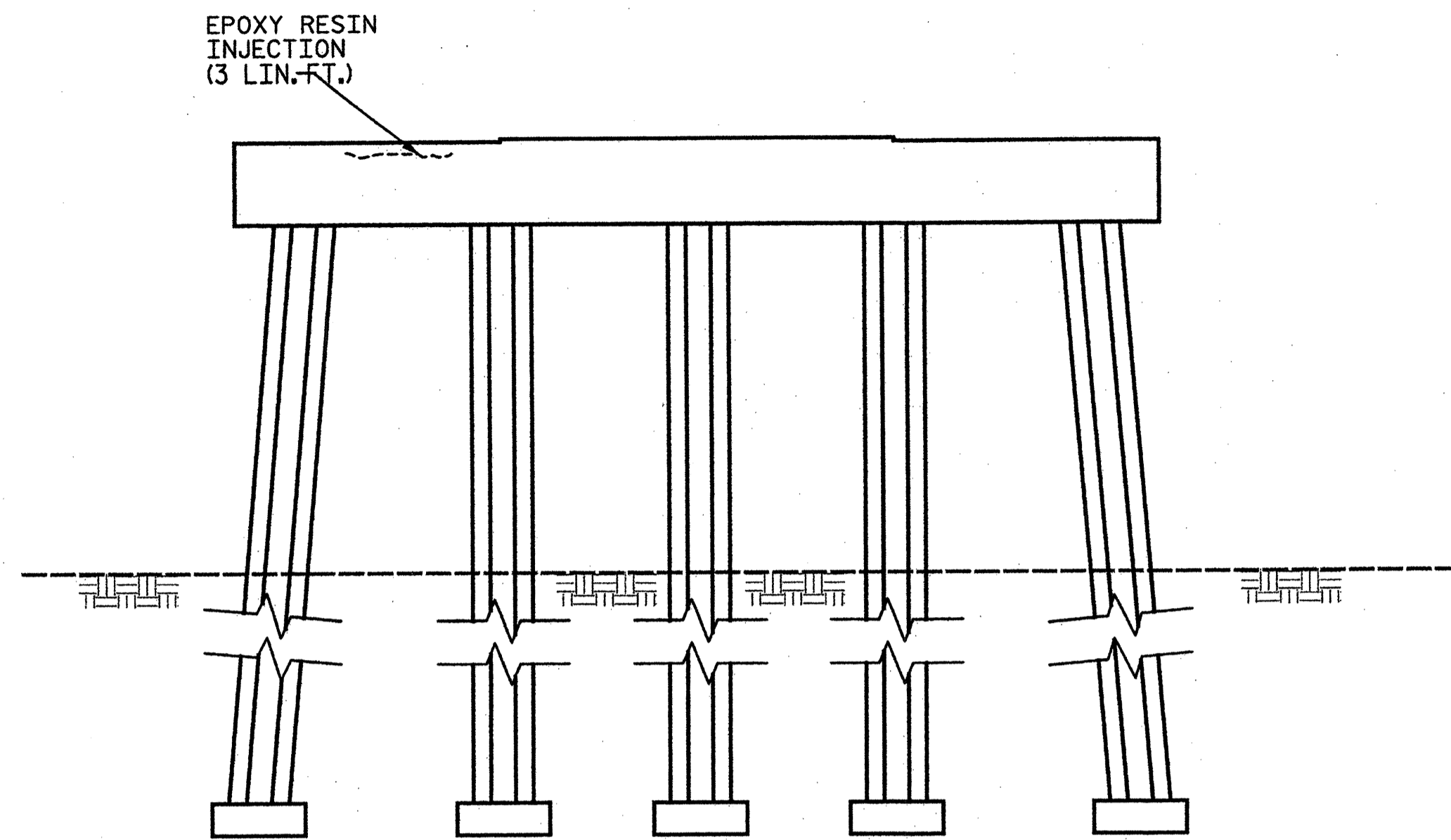


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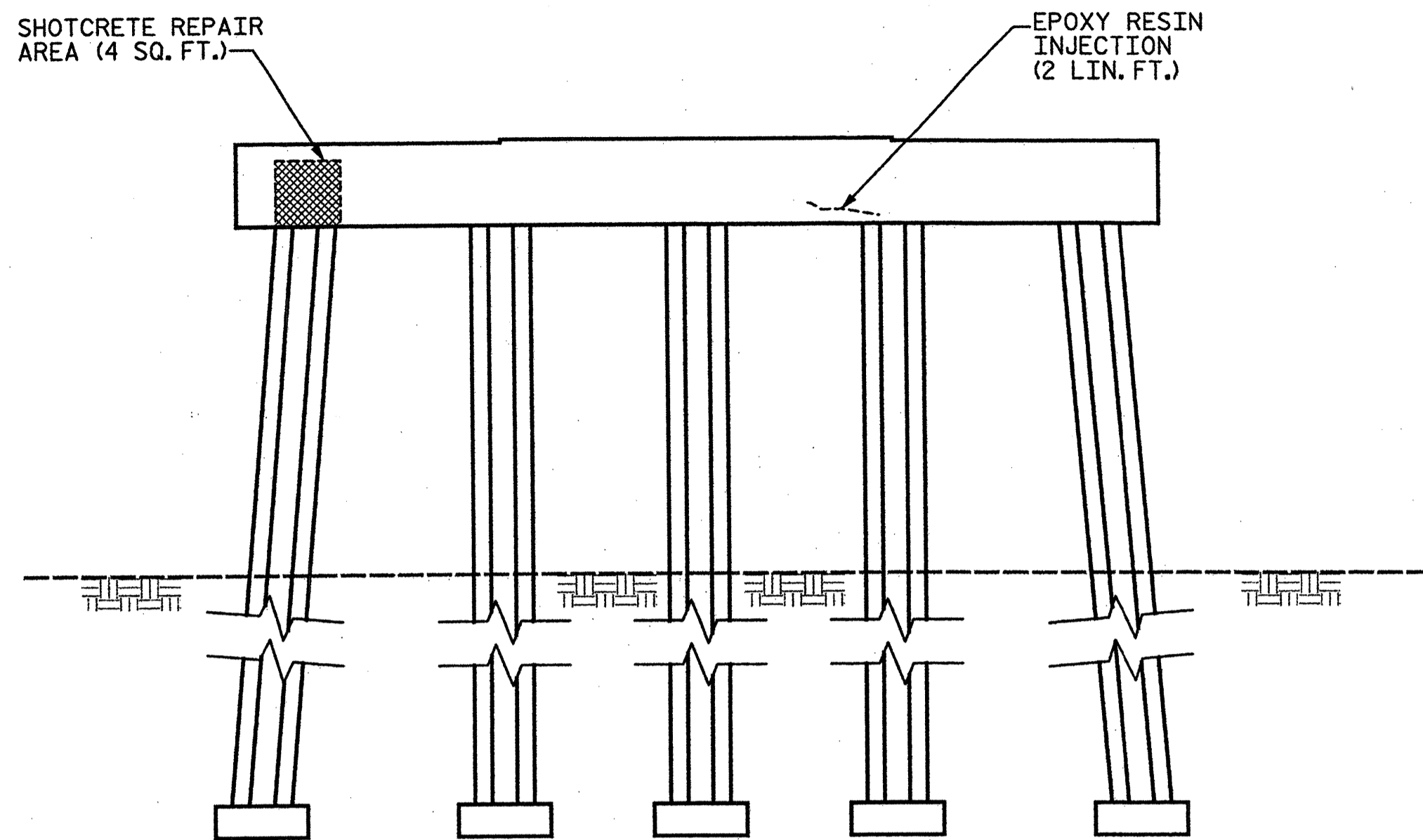
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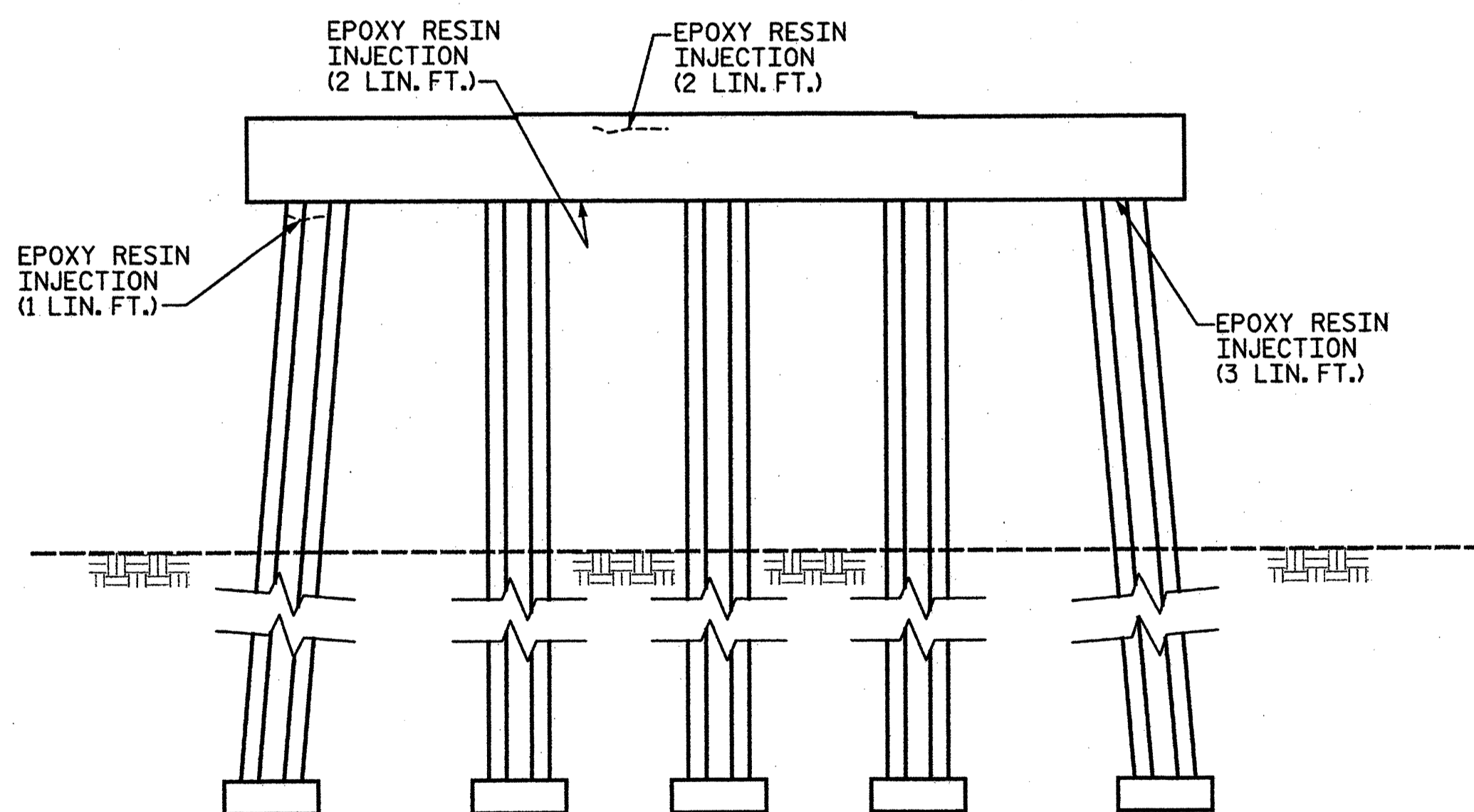
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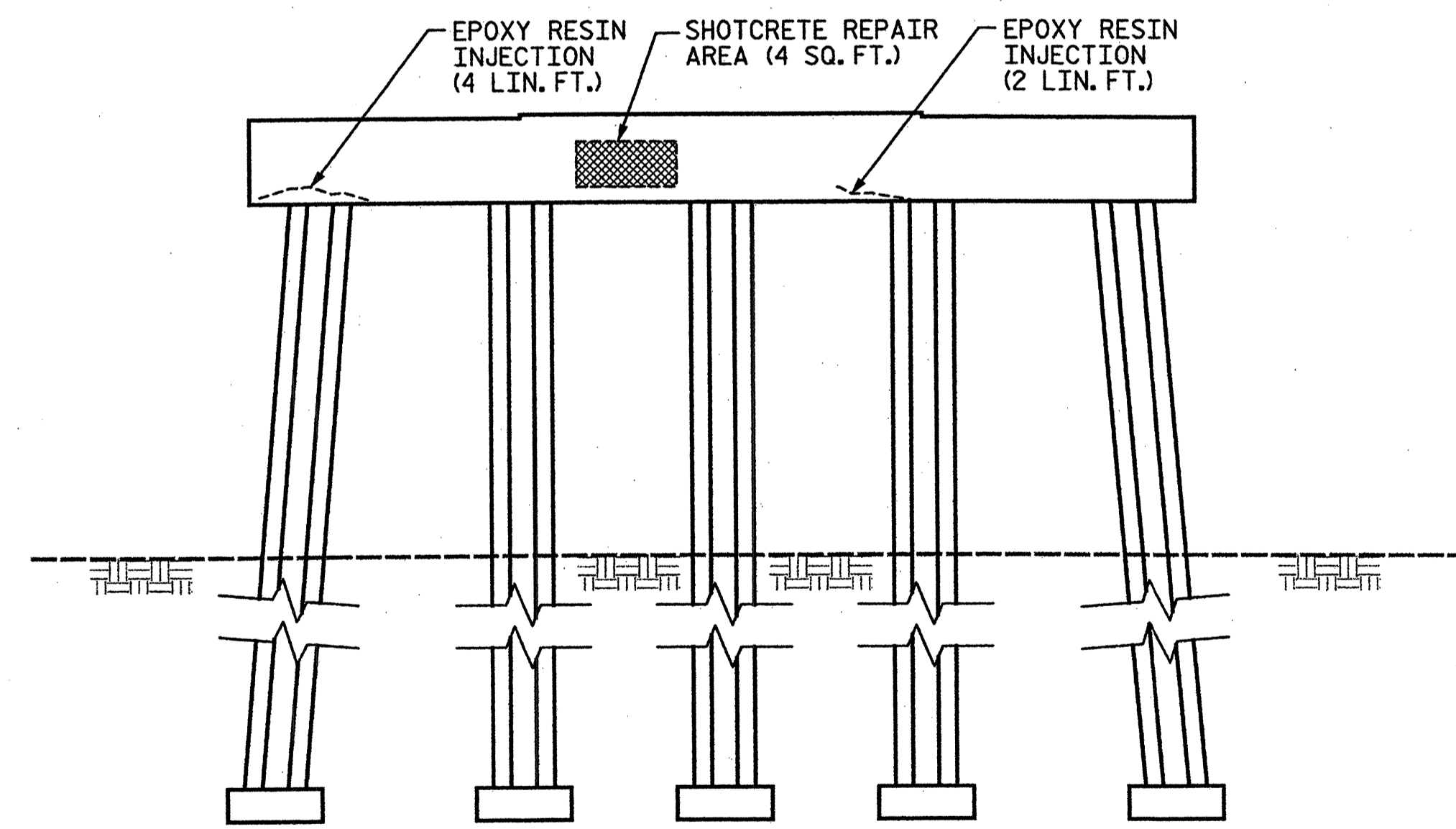
ELEVATION OF BENT 11 - LOOKING EAST



ELEVATION OF BENT 11 - LOOKING WEST



ELEVATION OF BENT 12 - LOOKING EAST



ELEVATION OF BENT 12 - LOOKING WEST

NOTES:

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-15.

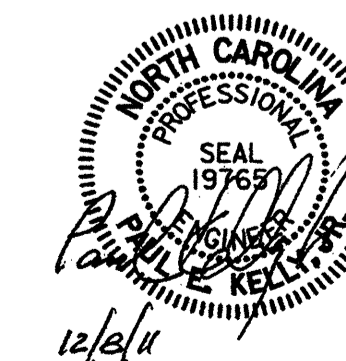
PROJECT NO. 17BP.9.P.2  
**DAVIE** COUNTY  
 BRIDGE NO.: 85

REHAB. OF BRIDGE NO. 85 SHEET 12 OF 15

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BENTS 11 & 12  
 SUBSTRUCTURE REPAIR

BRIDGE ON I-40 EBL  
 OVER YADKIN RIVER



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 Charlotte, NC 28208  
 NC License NO. F-0981

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			S-42

DRAWN BY : MTC DATE : 12-11  
 CHECKED BY : EPS DATE : 12-11

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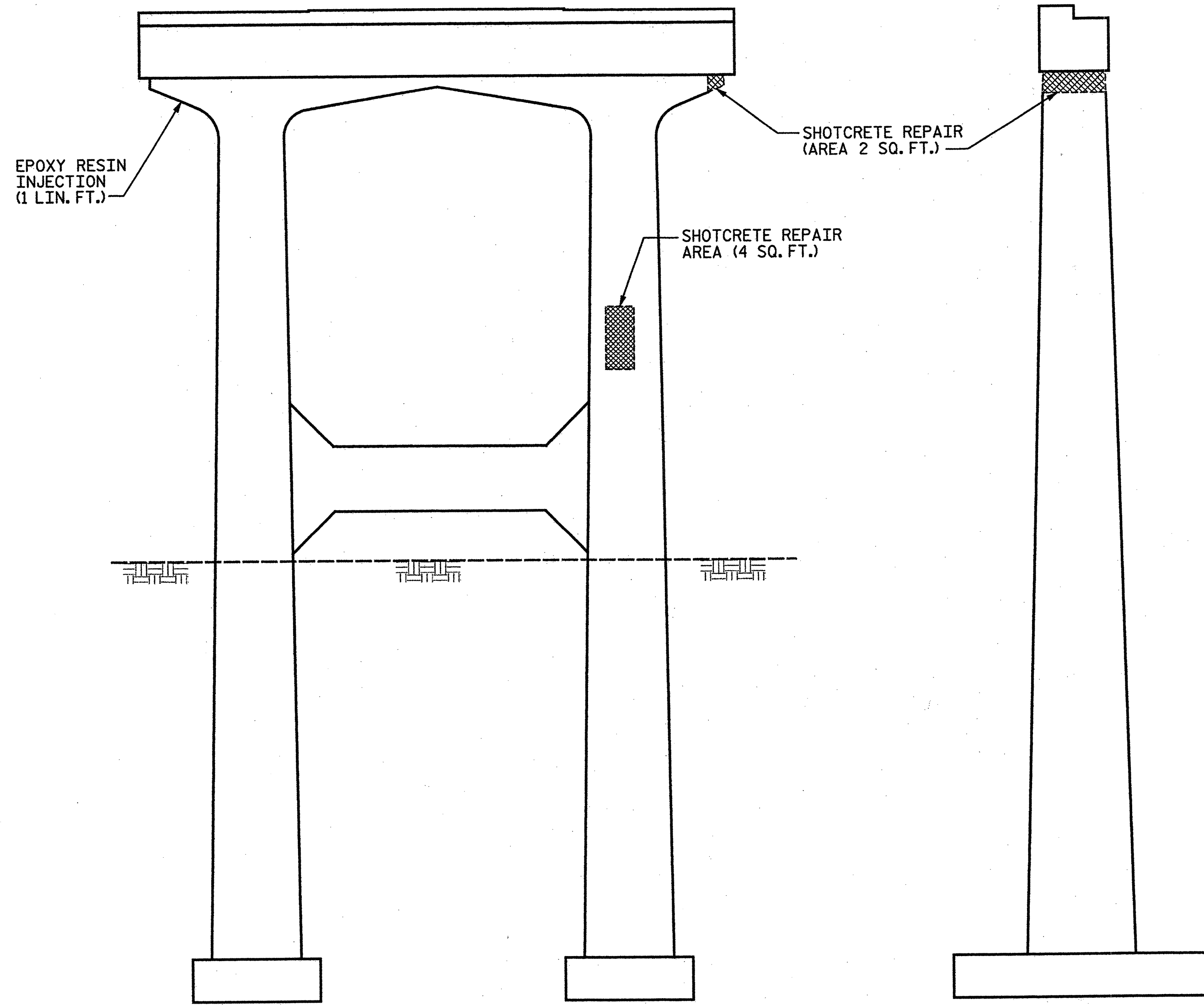
Jertlen

12/7/2011

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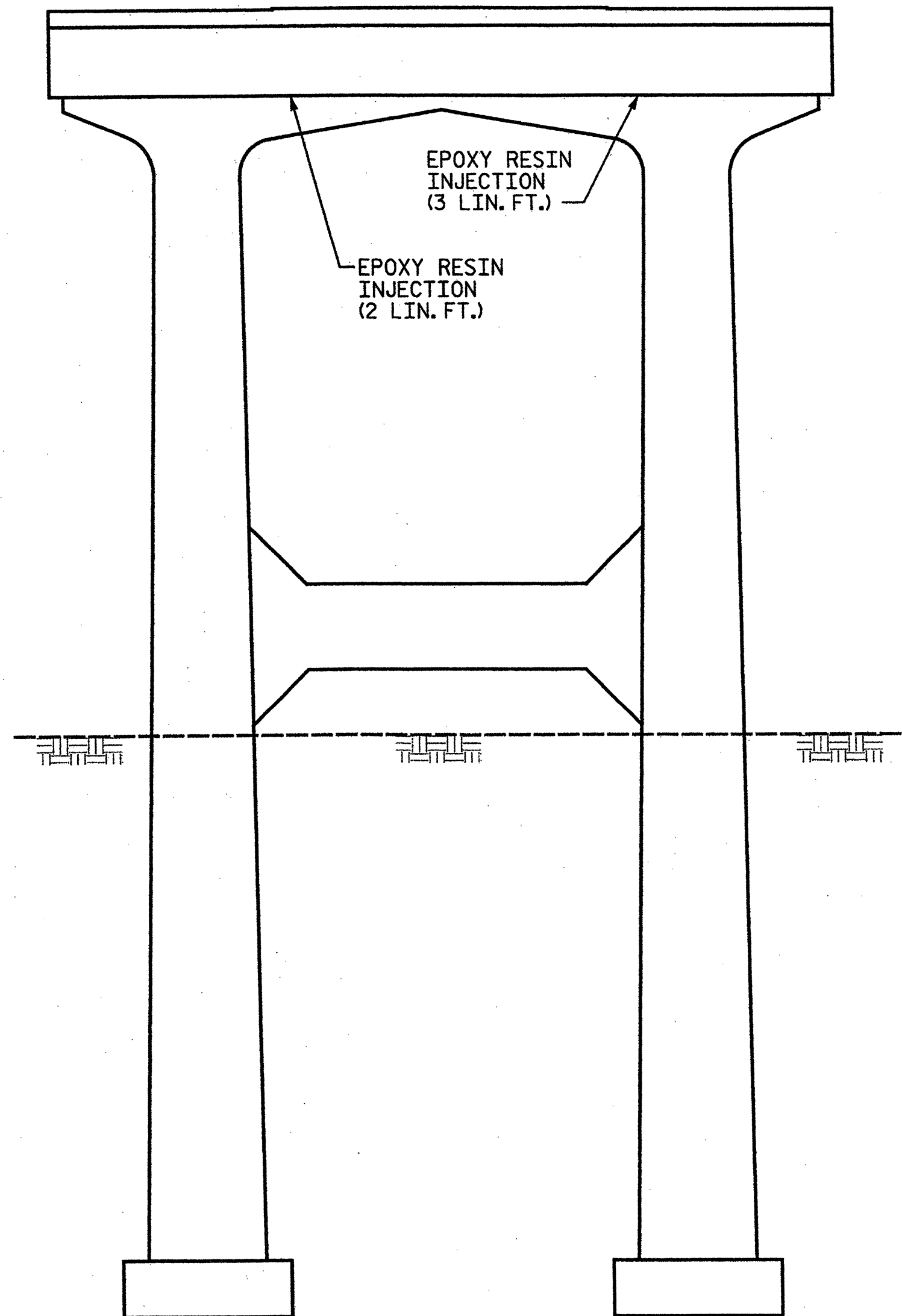
Jer-lin

12/7/2011



ELEVATION OF BENT 13 - LOOKING EAST

END VIEW



ELEVATION OF BENT 13 - LOOKING WEST

**NOTES:**

- 1. FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-15.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

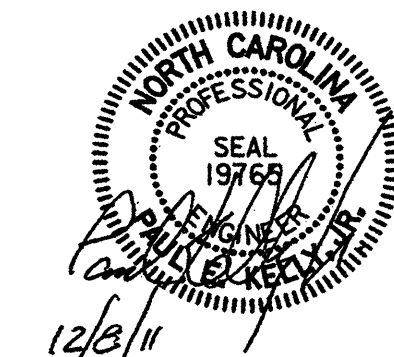
BRIDGE NO.: 85

REHAB. OF BRIDGE NO. 85 SHEET 13 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 13  
SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 EBL  
OVER YADKIN RIVER



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NC License No. F-0991

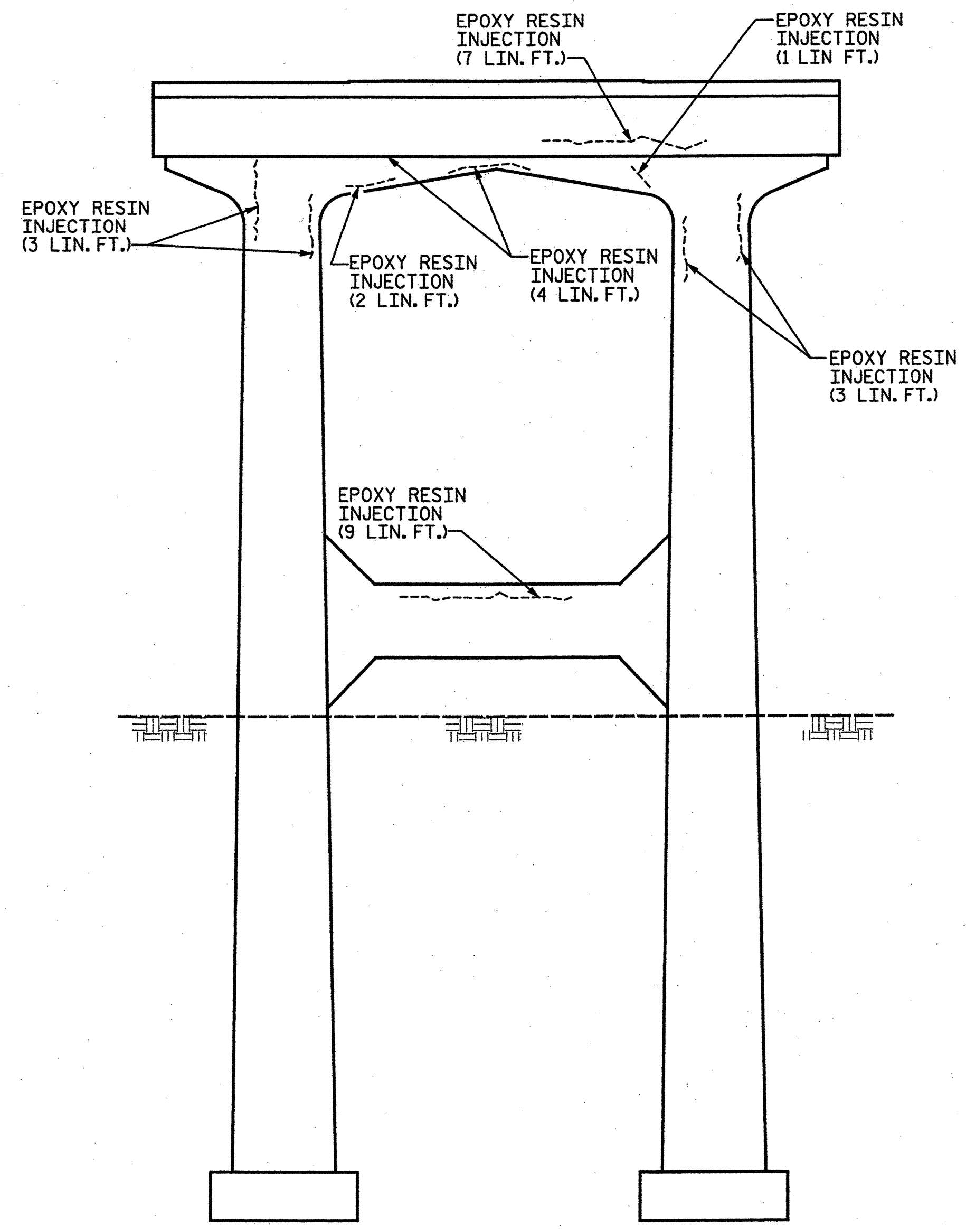
DRAWN BY : MTC DATE : 12-11  
CHECKED BY : EPS DATE : 12-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-20
2			4			S-42

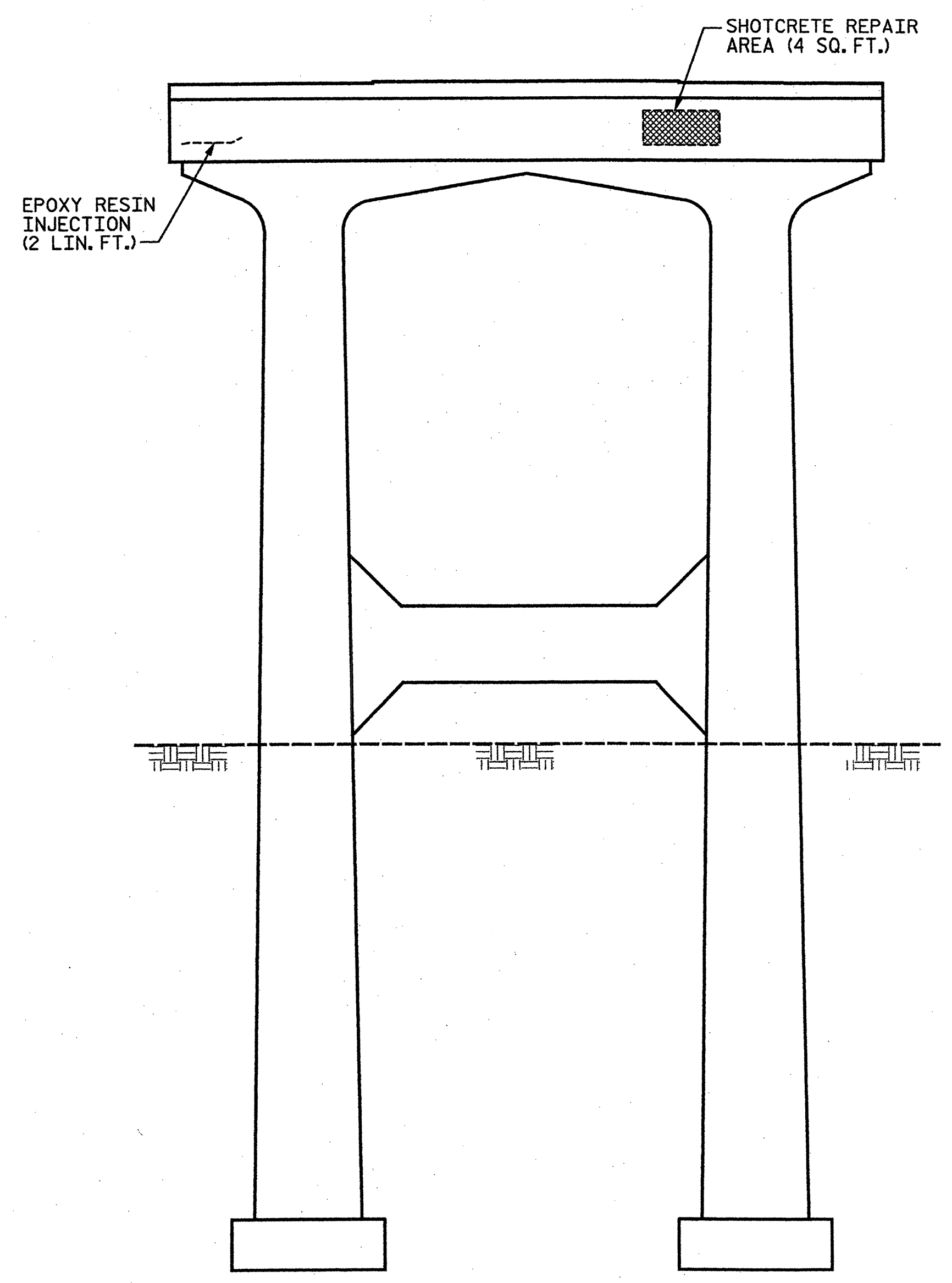
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Jerrilen

12/7/2011



ELEVATION OF BENT 18 - LOOKING EAST



ELEVATION OF BENT 18 - LOOKING WEST

**NOTES:**

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-15.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

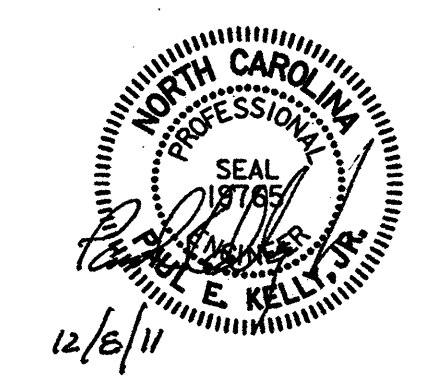
BRIDGE NO.: 85

REHAB. OF BRIDGE NO. 85 SHEET 14 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 18  
SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 EBL  
OVER YADKIN RIVER



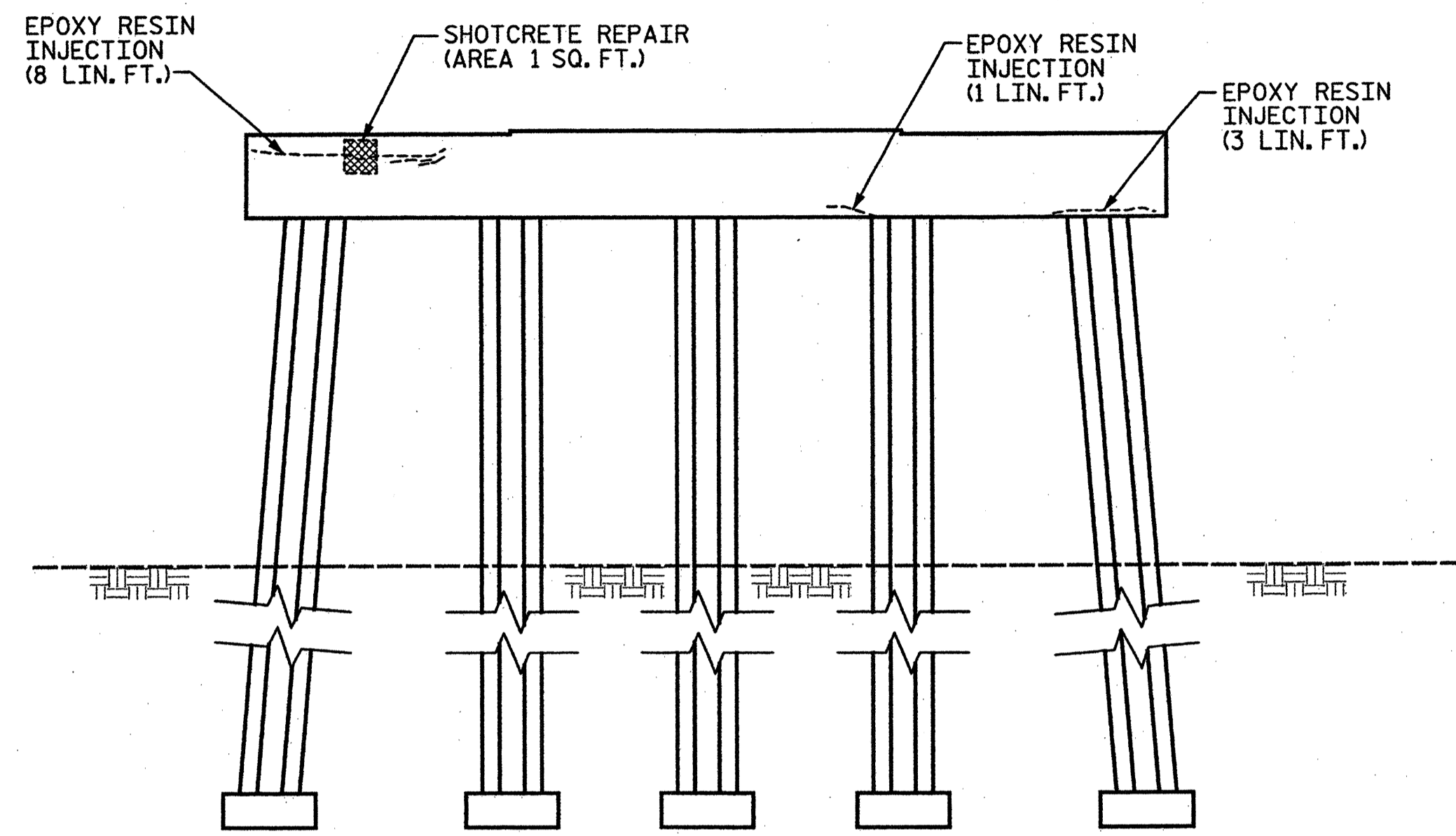
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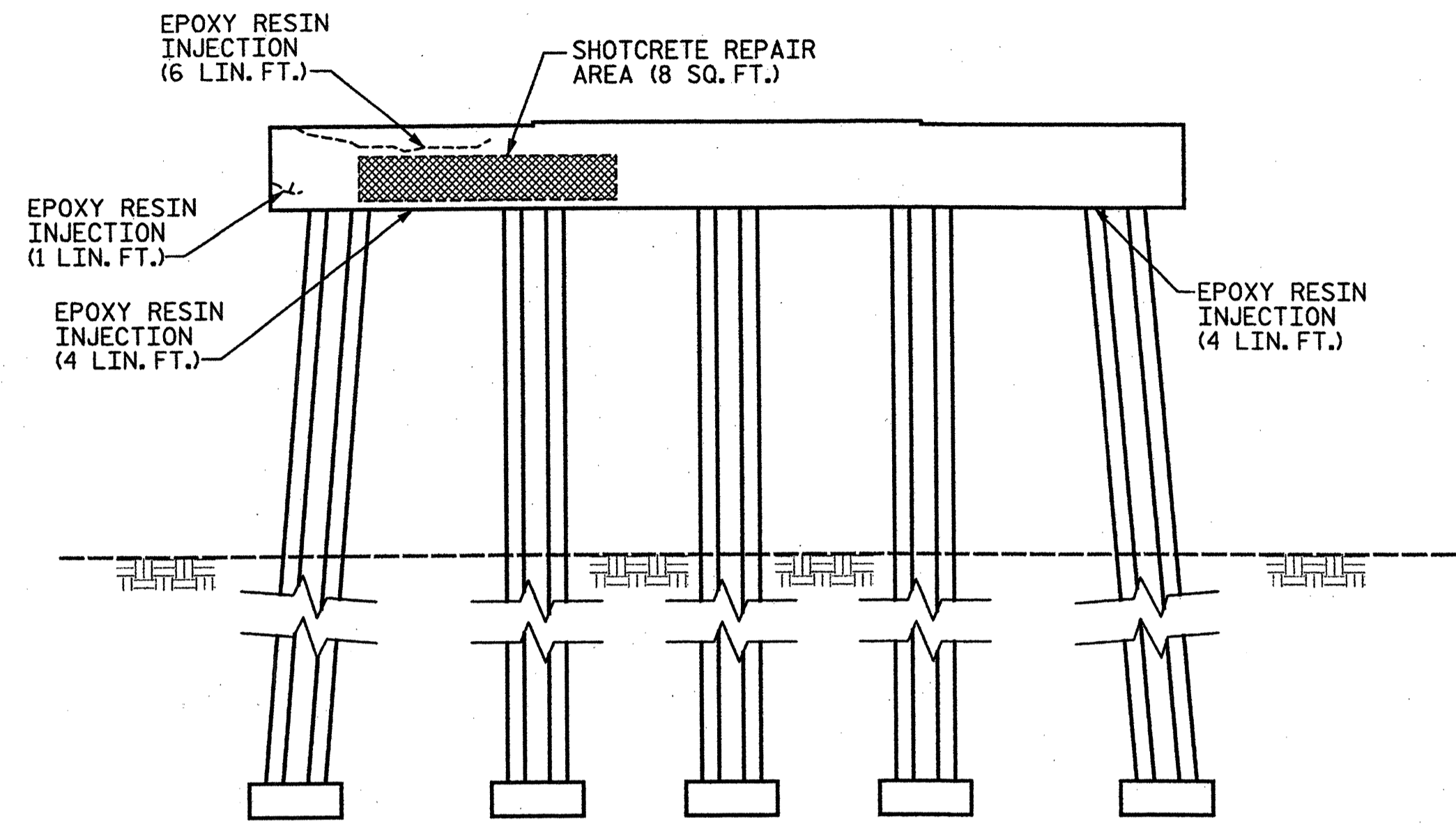
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-21
2			4			S-42



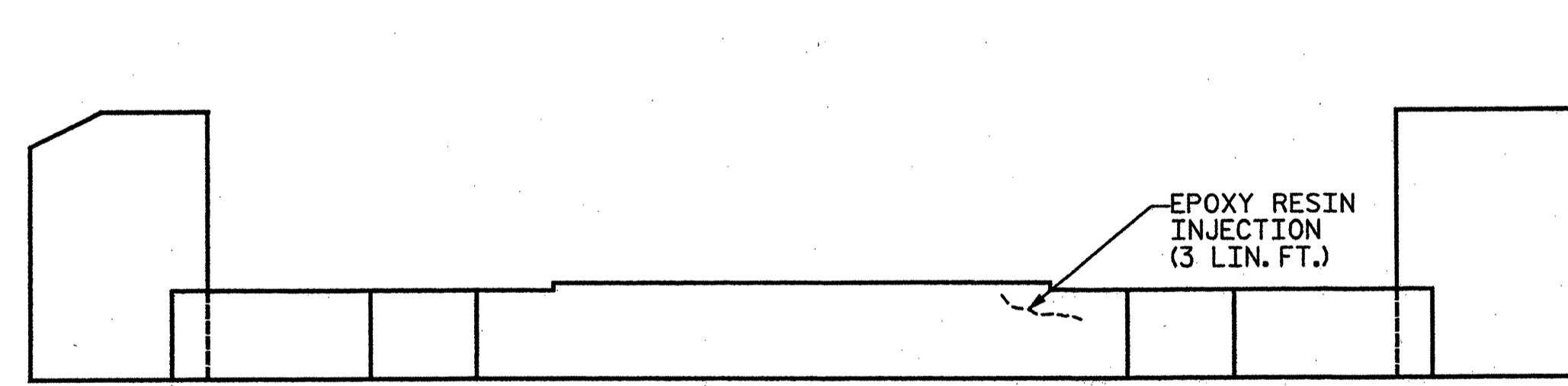
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12/7/2011  
Jerrilen



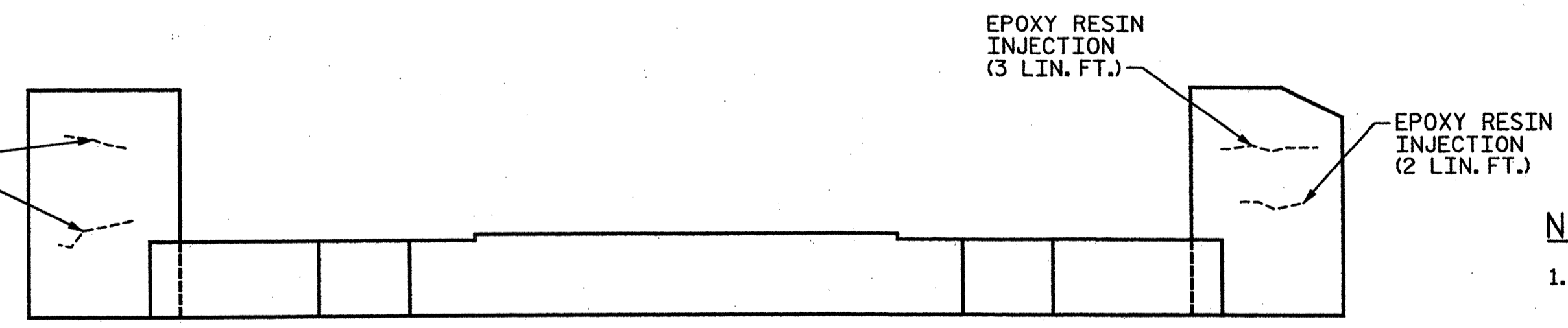
ELEVATION OF BENT 19 - LOOKING EAST



ELEVATION OF BENT 19 - LOOKING WEST



ELEVATION OF ABUTMENT 1 - LOOKING WEST



ELEVATION OF ABUTMENT 2 - LOOKING EAST

**NOTES:**

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-15.

PROJECT NO. 17BP.9.P.2

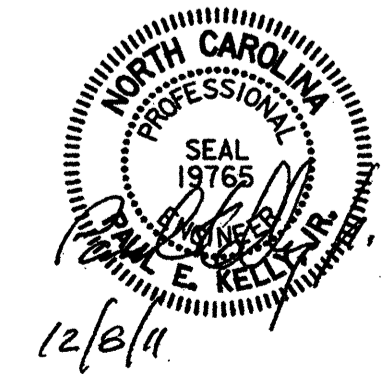
DAVIE COUNTY

BRIDGE NO.: 85

REHAB. OF BRIDGE NO. 85 SHEET 15 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

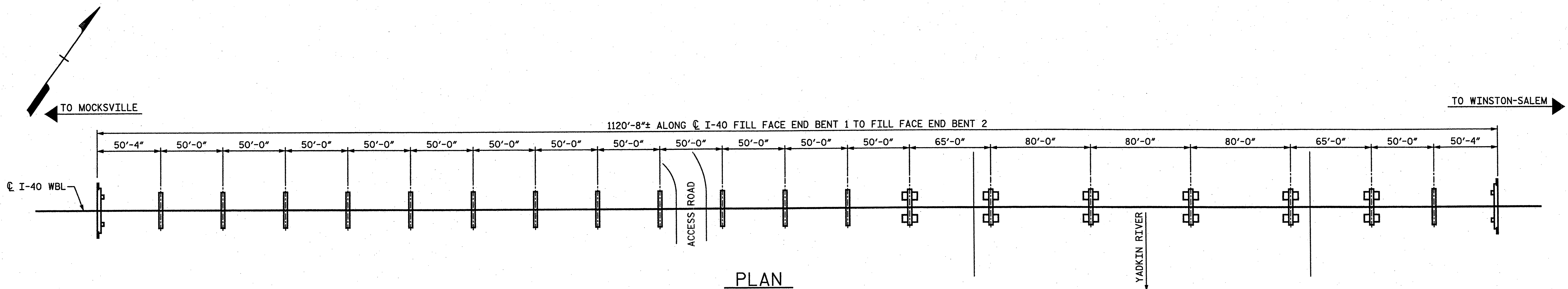
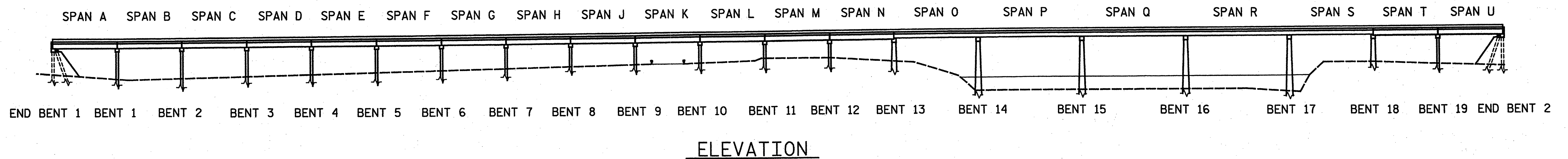
**BENT 19 &  
ABUTMENT 1 & 2  
SUBSTRUCTURE REPAIR**  
BRIDGE ON I-40 EBL  
OVER YADKIN RIVER



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-22
2			4			S-42



TOTAL BILL OF MATERIAL							
** DECK SCARIFICATION	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	SHOTCRETE CONCRETE REPAIR	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.
3,487	3,191	274	22	19	3,487	145.3	3,487

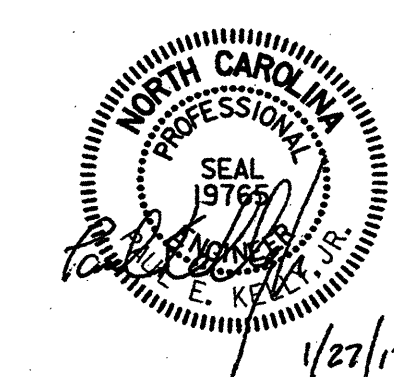
TOTAL BILL OF MATERIAL								
*** FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	BRIDGE JACKING	UNDER STRUCTURE WORK PLATFORM	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	INCIDENTAL MILLING	DRAIN TROUGH SYSTEM	BOLT REMOVAL AND REPLACEMENT
LUMP SUM	SQ. FT.	LIN. FT.	LUMP SUM	LUMP SUM	TONS	SQ. YDS.	LUMP SUM	EA.
LUMP SUM	27,342	337	LUMP SUM	LUMP SUM	10	63	LUMP SUM	100

\* QUANTITIES FOR INFORMATION ONLY.  
 \*\* INCLUDES ASPHALT MILLING OF BRIDGE DECK, NOT APPROACH.  
 \*\*\* THE ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

**GENERAL NOTES:**  
 SEE SHEET 2 OF 15 FOR ADDITIONAL NOTES.  
 FOR BOLT REMOVAL AND REPLACEMENT, SEE SPECIAL PROVISIONS

**PROJECT NO. 17BP.9.P.2**  
**DAVIE COUNTY**  
**BRIDGE NO.: 86**

REHAB. OF BRIDGE NO. 86 SHEET 1 OF 15



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL PLAN  
 & ELEVATION**

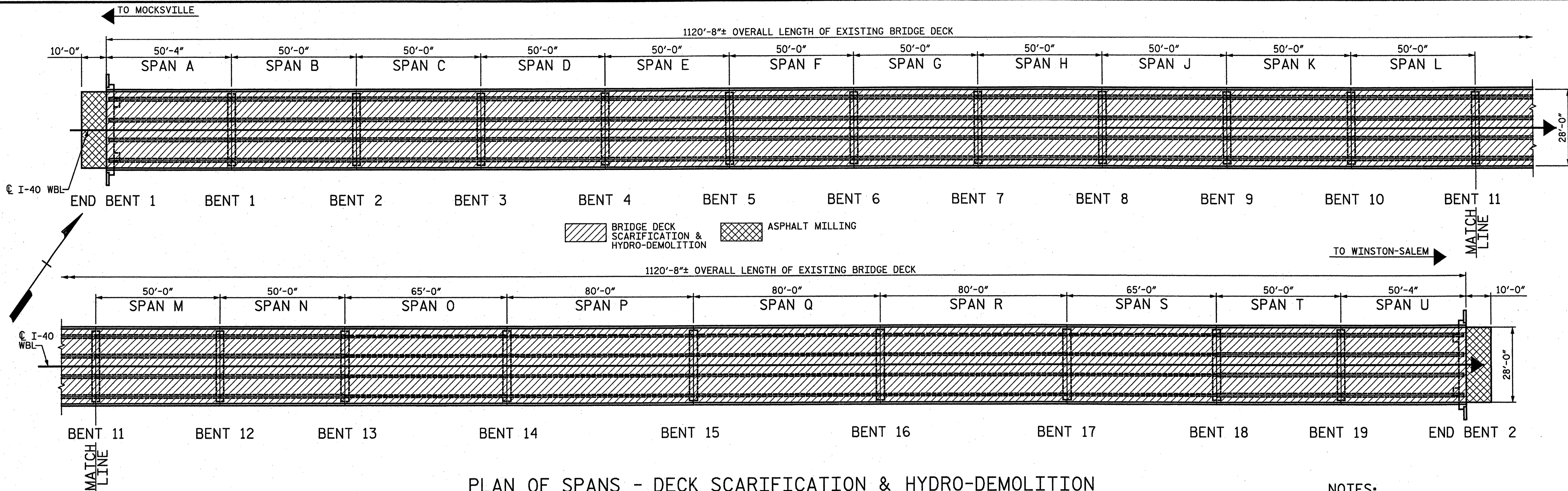
**BRIDGE ON I-40 WBL  
 OVER YADKIN RIVER**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS S-42
2			4			

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 1/27/2012  
 dveyac



**PLAN OF SPANS - DECK SCARIFICATION & HYDRO-DEMOLITION**  
 (CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.)

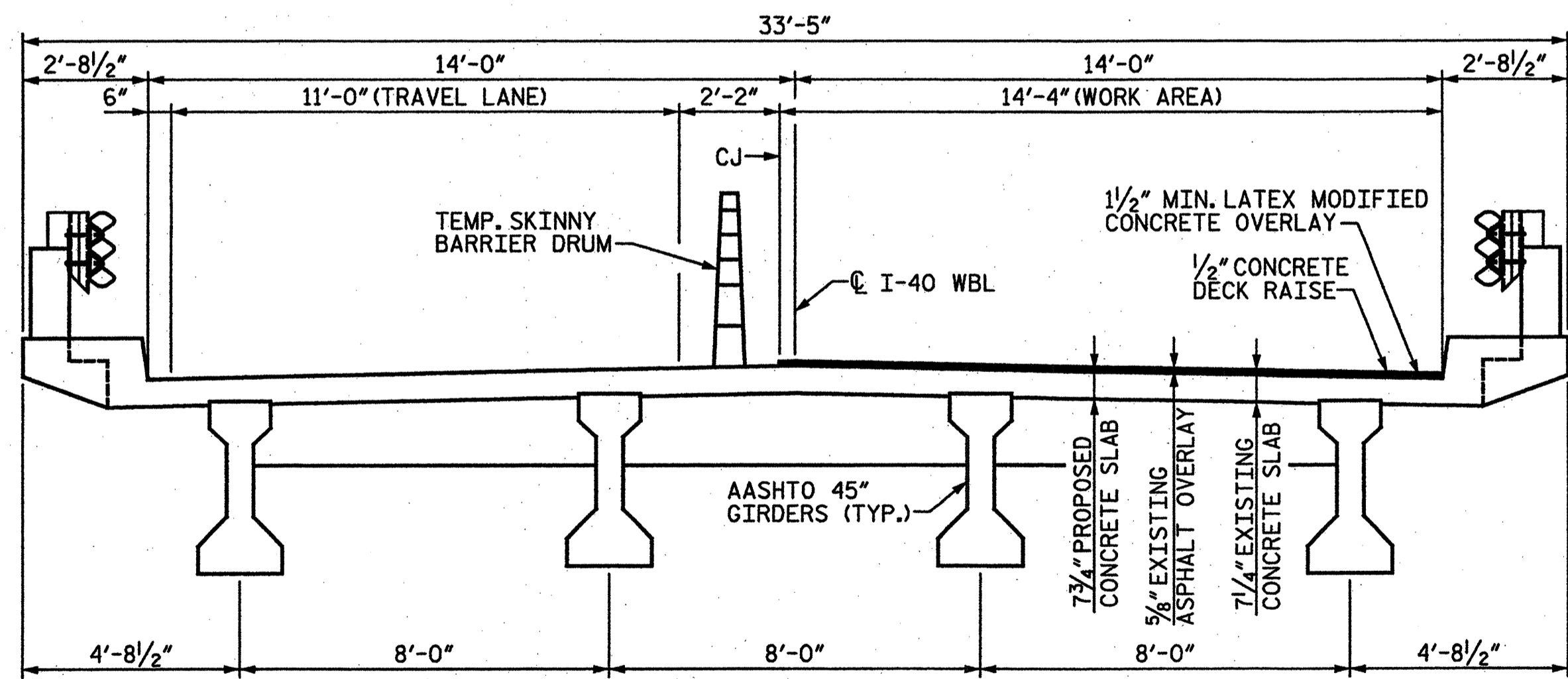
**NOTES:**  
 LATEX MODIFIED CONCRETE OVERLAY SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH. SEE SPECIAL PROVISIONS.  
 FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.  
 EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.

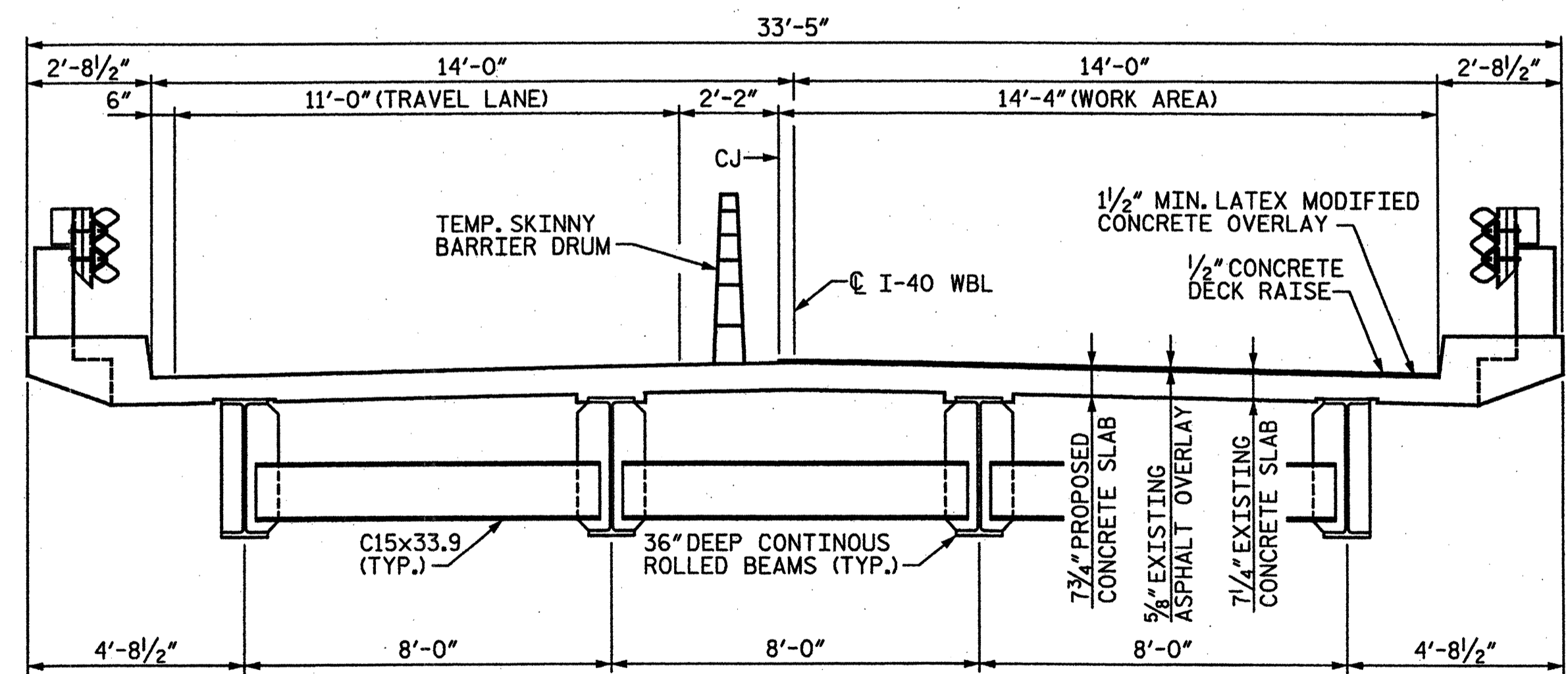
INCIDENTAL MILLING SHALL BE 1/2" MINIMUM THICKNESS. THE AREA OF INCIDENTAL MILLING SHALL BE REPLACED BY VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 110 LBS PER SQ. YD. PER 1" DEPTH OR GREATER THAN 1/2" IN DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.

PROJECT NO. 17BP.9.P.2  
 DAVIE COUNTY  
 BRIDGE NO.: 86

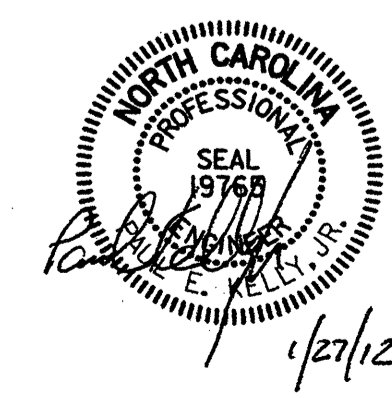
REHAB. OF BRIDGE NO. 86 SHEET 2 OF 15



**TYPICAL SECTION**  
 (SPANS A-N, T & U)  
 (STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)



**TYPICAL SECTION**  
 (SPANS O-S)  
 (STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)

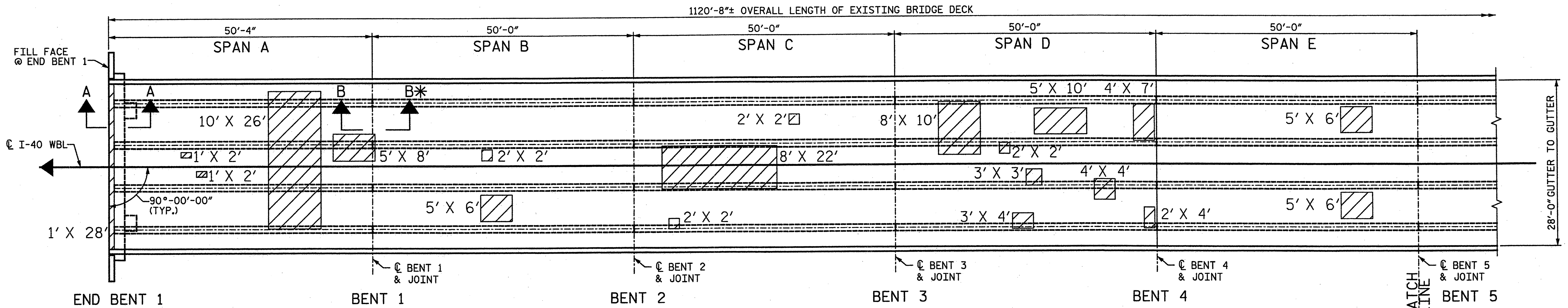


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REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	DATE	S-24
1			3		TOTAL SHEETS
2			4		S-42

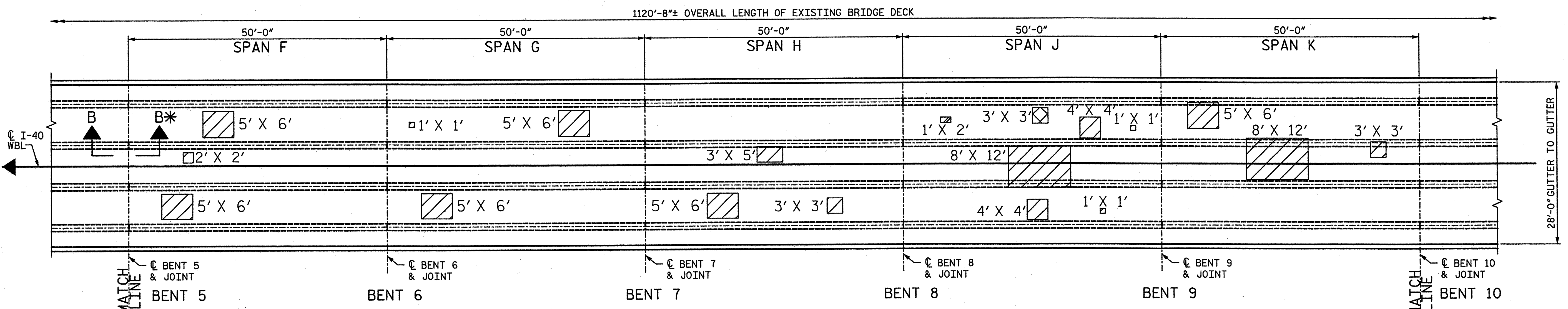
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 1/27/2012  
 dveyao



**PARTIAL PLAN OF SPANS - DECK REPAIRS**

(SEE SHEET S-27 FOR SECTION A-A AND B-B)  
 \*TYPICAL UNLESS NOTED OTHERWISE

- APPROX. AREA: CLASS I REPAIR
- APPROX. AREA: CLASS II REPAIR
- APPROX. AREA: CLASS III REPAIR

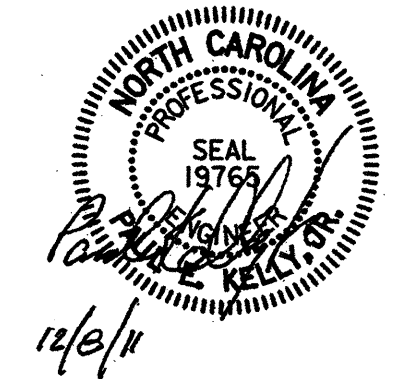


**PARTIAL PLAN OF SPANS - DECK REPAIRS**

(SEE SHEET S-27 FOR SECTION B-B)  
 \*TYPICAL UNLESS NOTED OTHERWISE

PROJECT NO. **17BP.9.P.2**  
**DAVIE** COUNTY  
 BRIDGE NO.: **86**  
 REHAB. OF BRIDGE NO. 86 SHEET 3 OF 15

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS  
 DECK REPAIRS  
 SPANS A-K**  
 BRIDGE ON I-40 WBL  
 OVER YADKIN RIVER



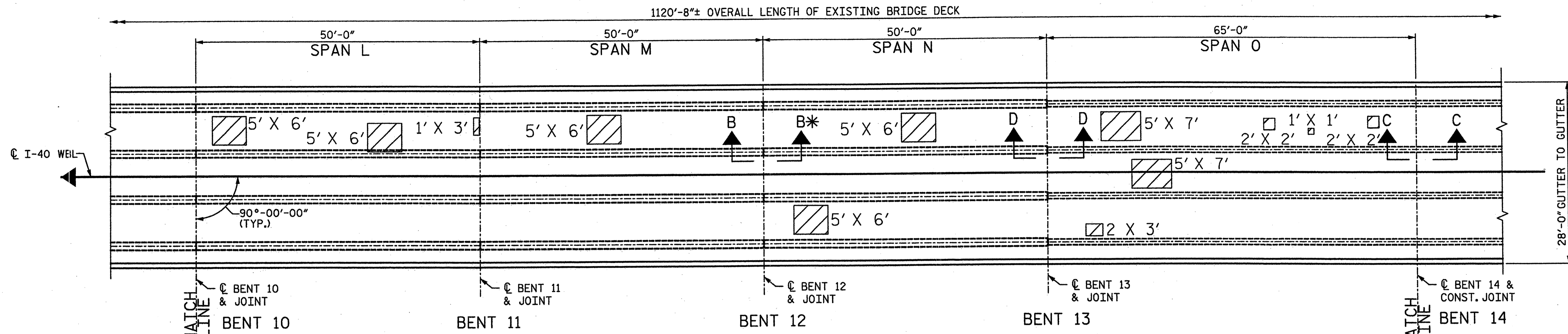
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 Charlotte, NC 28208  
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-25
2			4			S-42

DRAWN BY: MTC DATE: 12-11  
 CHECKED BY: EPS DATE: 12-11

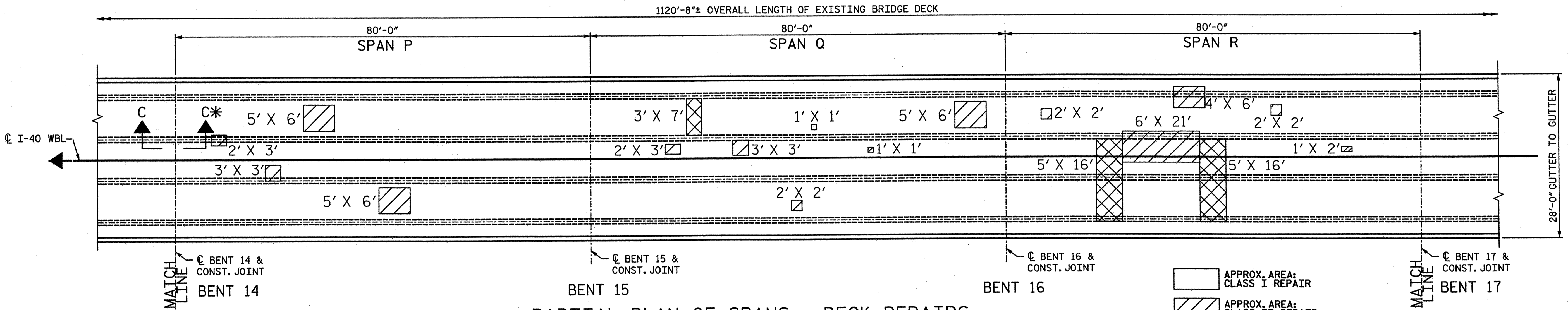
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 12/7/2011  
 Jerlien

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Jellen  
12/7/2011



**PARTIAL PLAN OF SPANS - DECK REPAIRS**

(SEE SHEET S-27 FOR SECTION B-B, C-C AND SHEET S-28 FOR D-D)  
\* TYPICAL UNLESS NOTED OTHERWISE

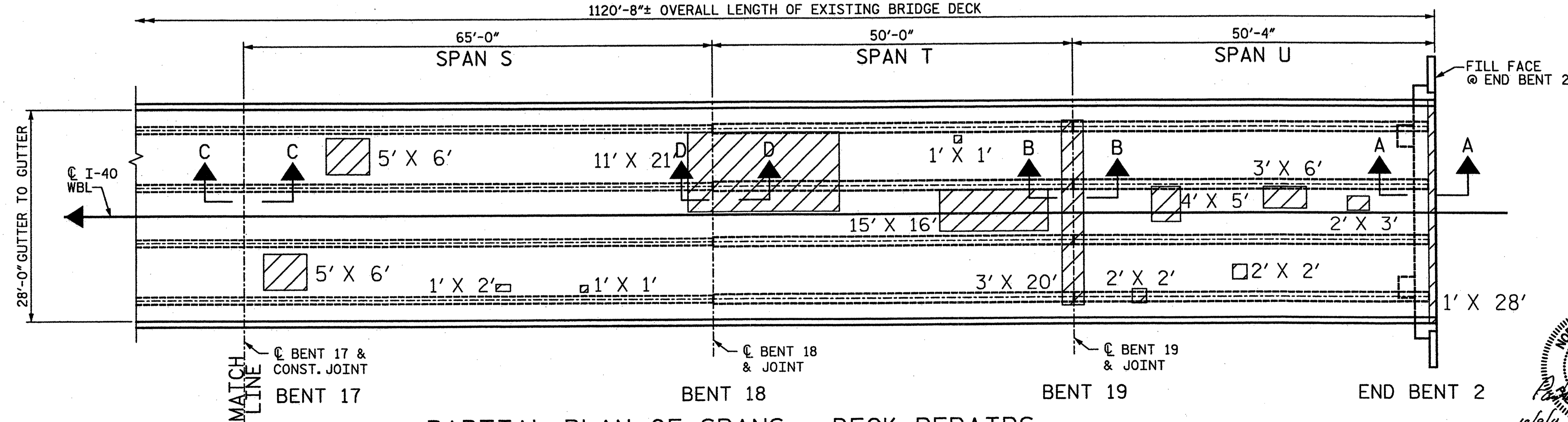


**PARTIAL PLAN OF SPANS - DECK REPAIRS**

(SEE SHEET S-27 FOR SECTION C-C)  
\* TYPICAL UNLESS NOTED OTHERWISE

- APPROX. AREA: CLASS I REPAIR
- APPROX. AREA: CLASS II REPAIR
- APPROX. AREA: CLASS III REPAIR

**NOTES:**  
THE BOUNDARY AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 5 OF 15 AND SPECIAL PROVISIONS.



**PARTIAL PLAN OF SPANS - DECK REPAIRS**

(SEE SHEET S-27 FOR SECTION A-A, B-B, C-C AND SHEET S-28 FOR D-D)

PROJECT NO. **17BP.9.P.2**  
DAVIE COUNTY  
BRIDGE NO.: **86**  
REHAB. OF BRIDGE NO. 86 SHEET 4 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**PLAN OF SPANS  
DECK REPAIRS  
SPANS L-U**

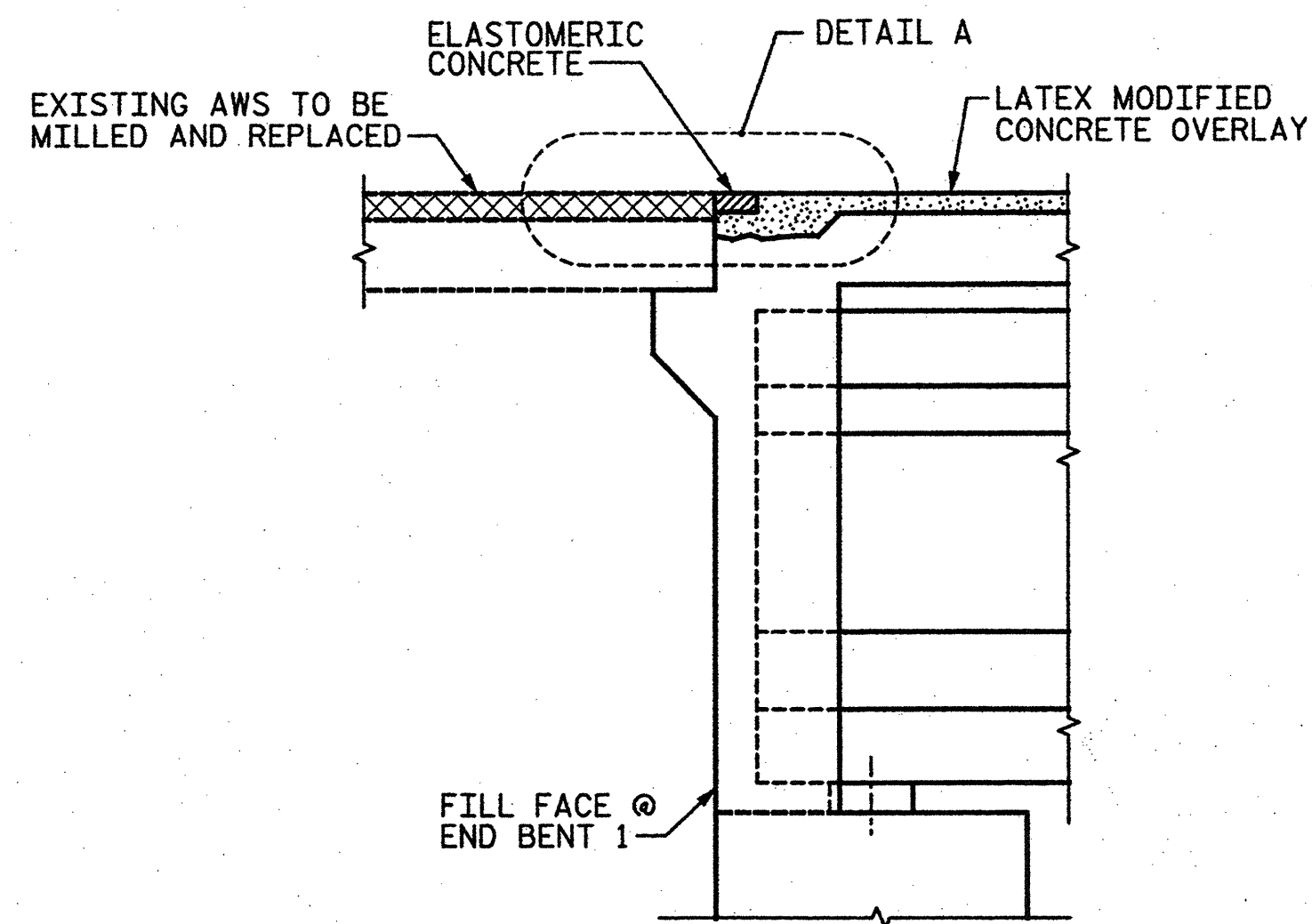
BRIDGE ON I-40 WBL  
OVER YADKIN RIVER



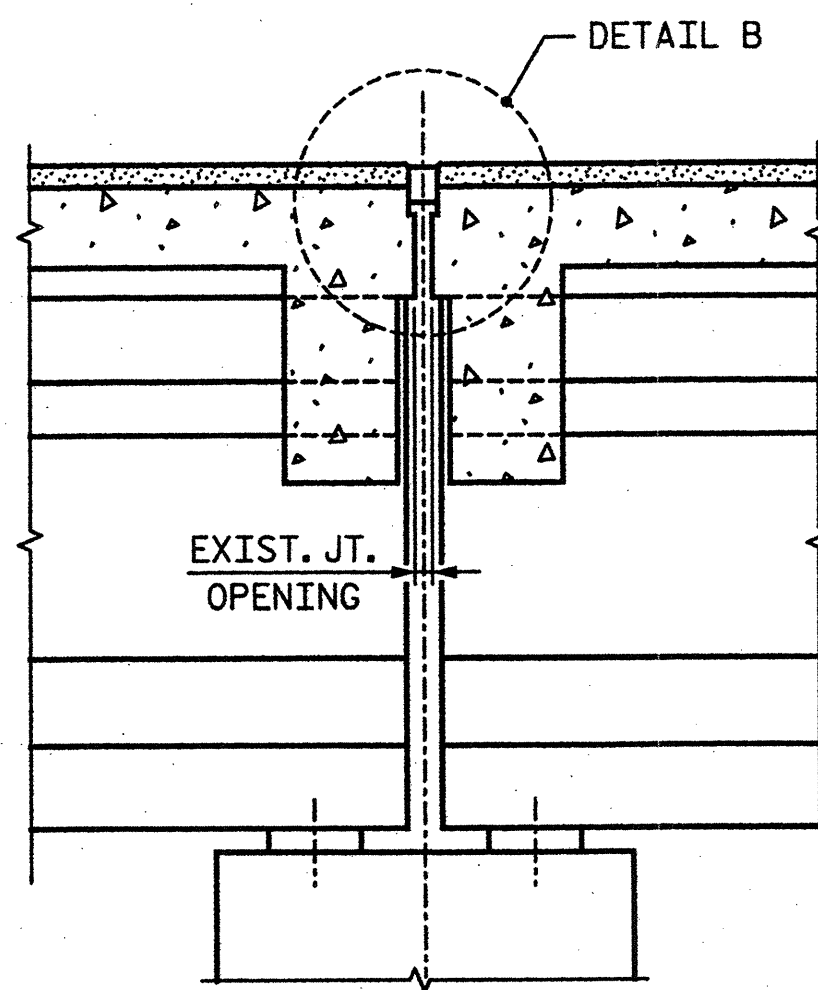
DRAWN BY: MTC DATE: 12-11  
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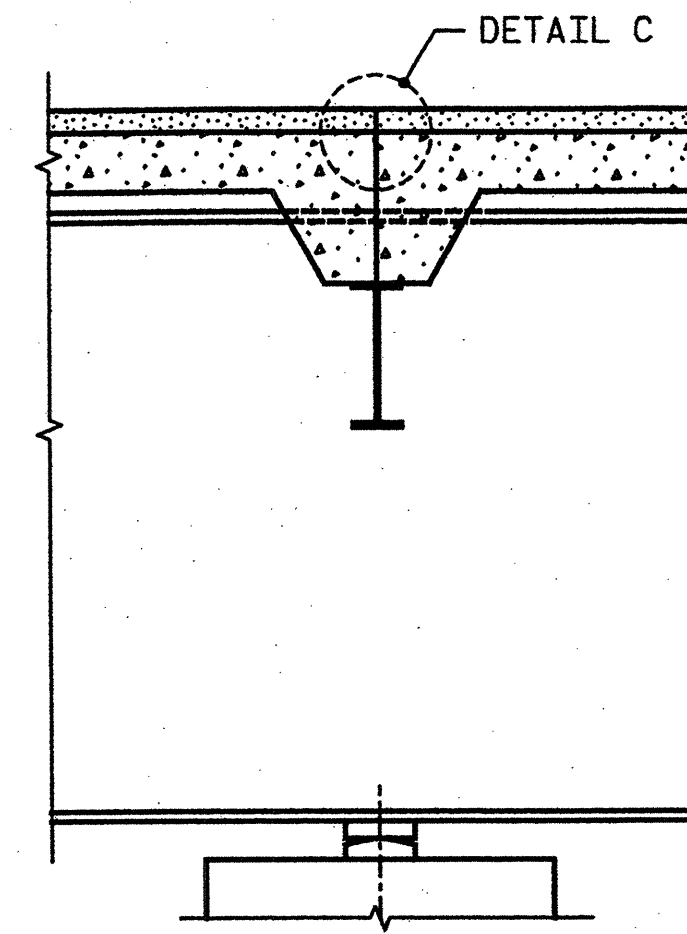
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-26
2			4			S-42



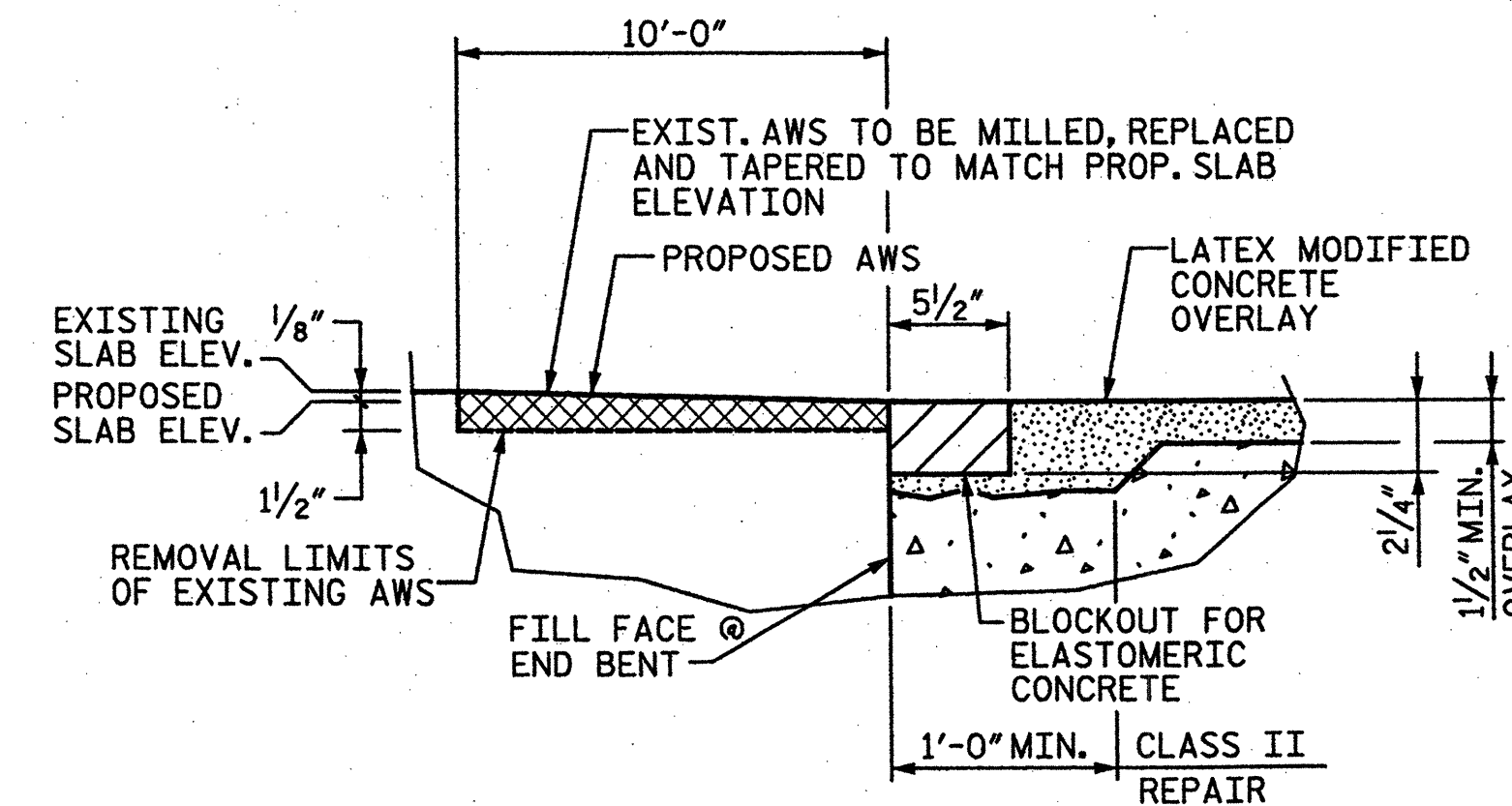
**SECTION A-A**  
(PROPOSED JOINT @ END BENT 1 SHOWN, END BENT 2 SIMILAR)



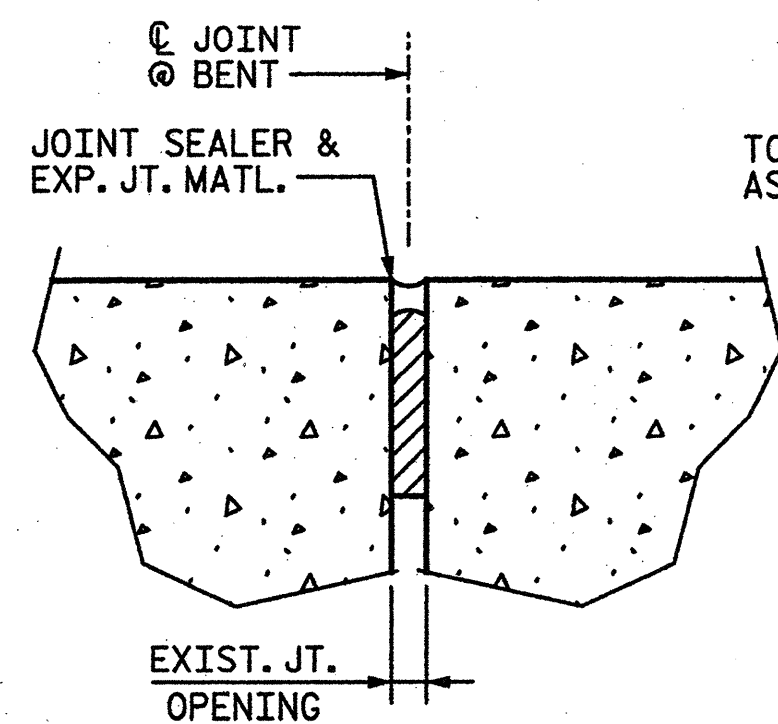
**SECTION B-B**  
(PROPOSED JOINT)  
(TYP. @ INTERIOR BENTS 1-12 & 19)



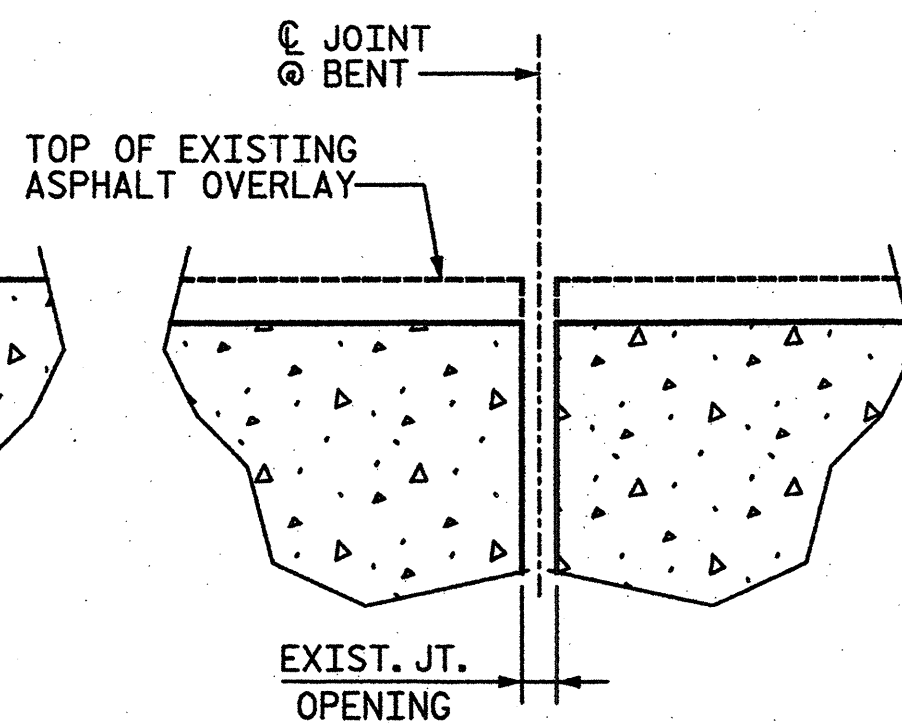
**SECTION C-C**  
(PROPOSED JOINT @ INTERIOR BENTS 14-17)



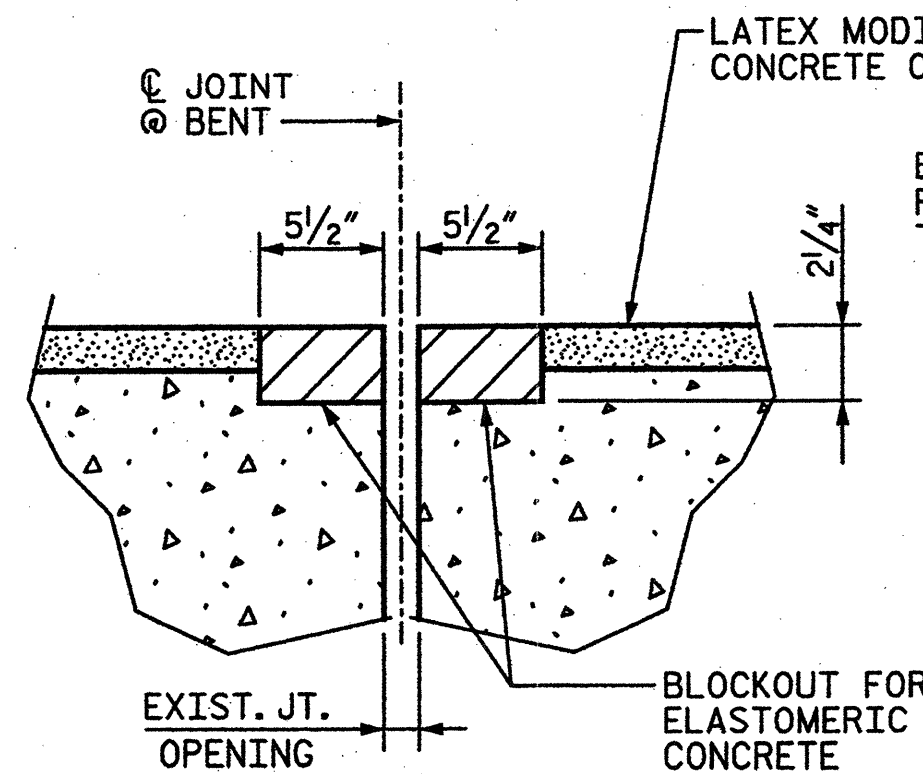
**DETAIL A**  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)



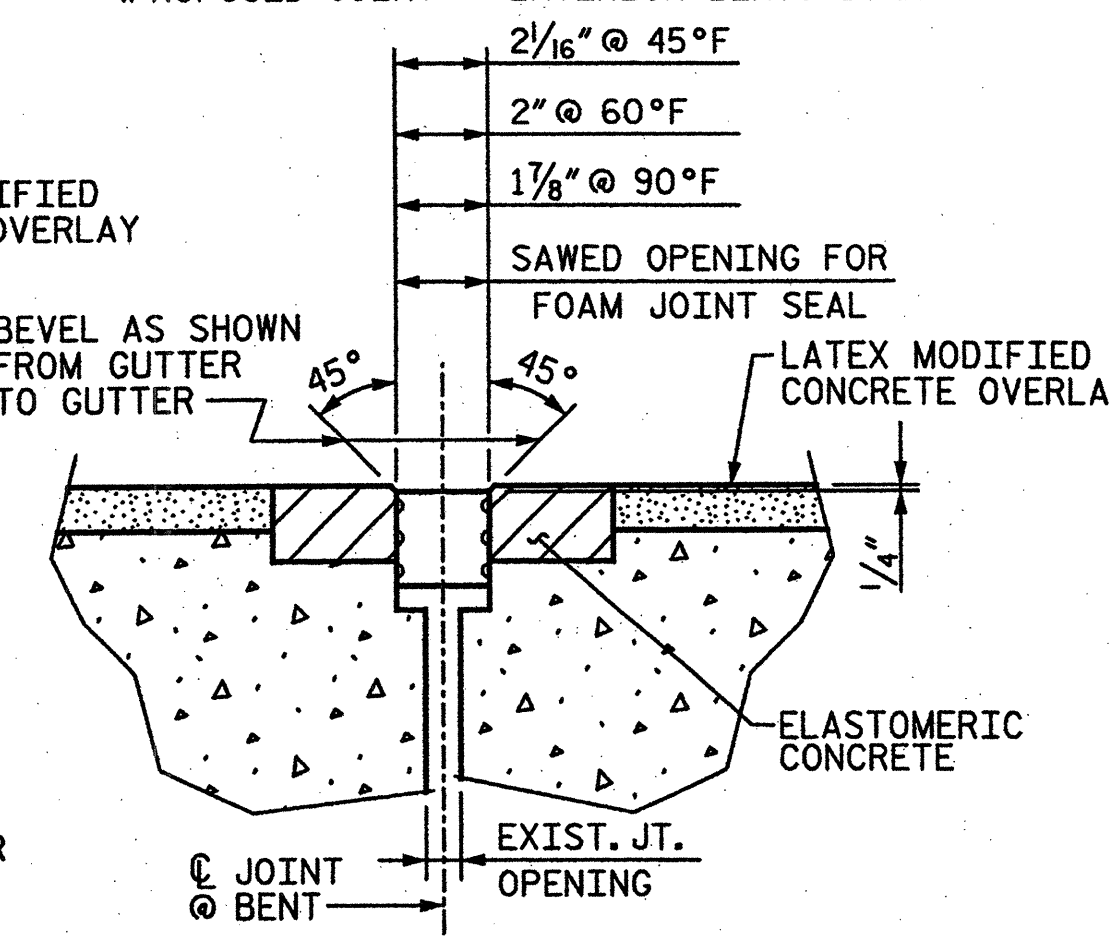
EXISTING JOINT DETAIL



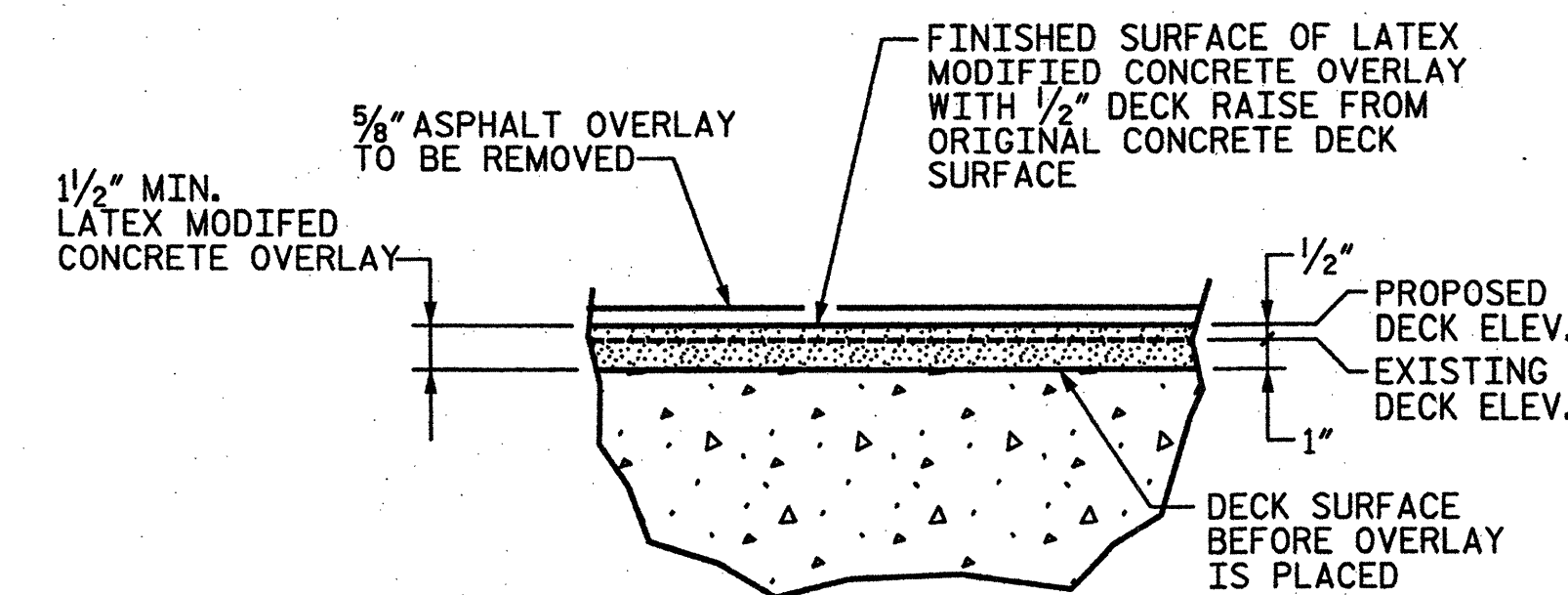
MINIMUM CONCRETE REMOVAL  
DETAIL @ EXISTING JOINT



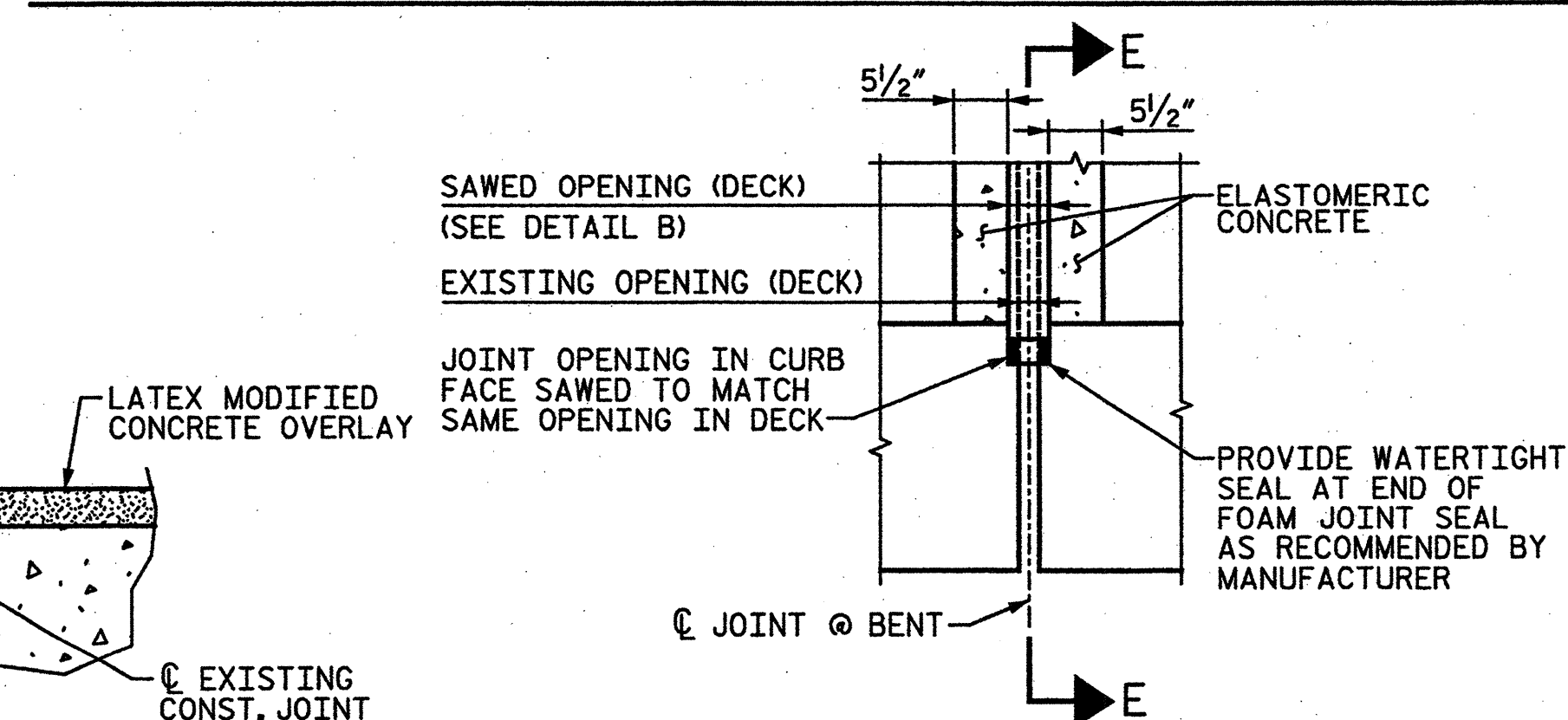
PROPOSED FOAM JOINT SEAL  
(DETAIL BEFORE SAWING)



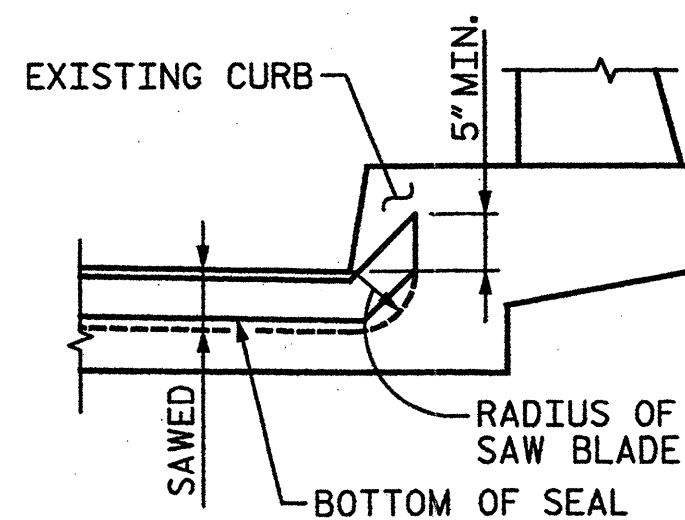
PROPOSED FOAM JOINT SEAL  
(DETAIL AFTER SAWING)



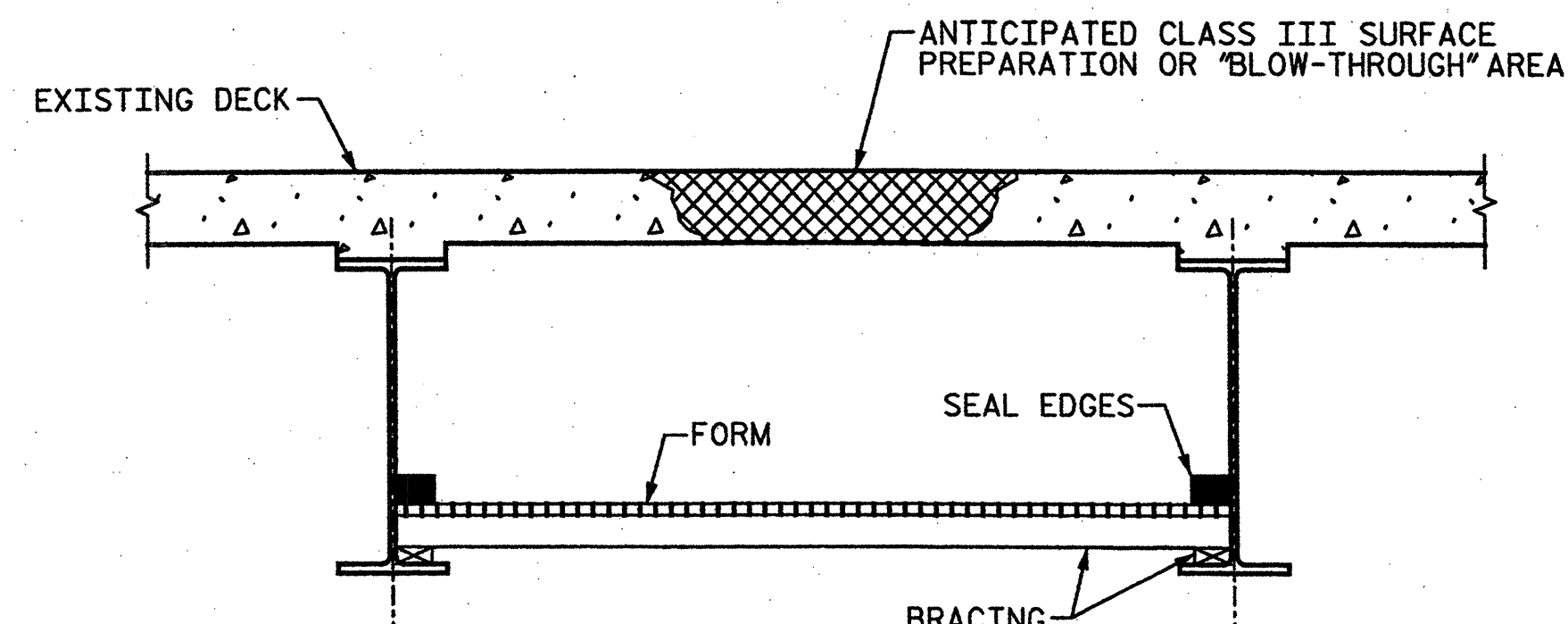
**DETAIL FOR LATEX MODIFIED  
CONCRETE OVERLAY**



**PLAN OF JOINT SEAL AT CURB**



**SECTION E-E**

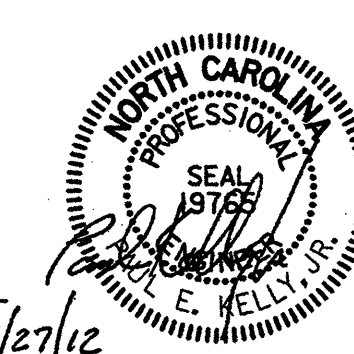


**TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK**

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.



PROJECT NO. **17BP.9.P.2**  
DAVIE COUNTY

BRIDGE NO.: **86**

REHAB. OF BRIDGE NO. 86 SHEET 5 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**PLAN OF SPANS  
DECK REPAIR  
DETAILS**

BRIDGE ON I-40 WBL  
OVER YADKIN RIVER

REVISIONS		SHEET NO.	
NO.	DATE	NO.	DATE
1		3	
2		4	

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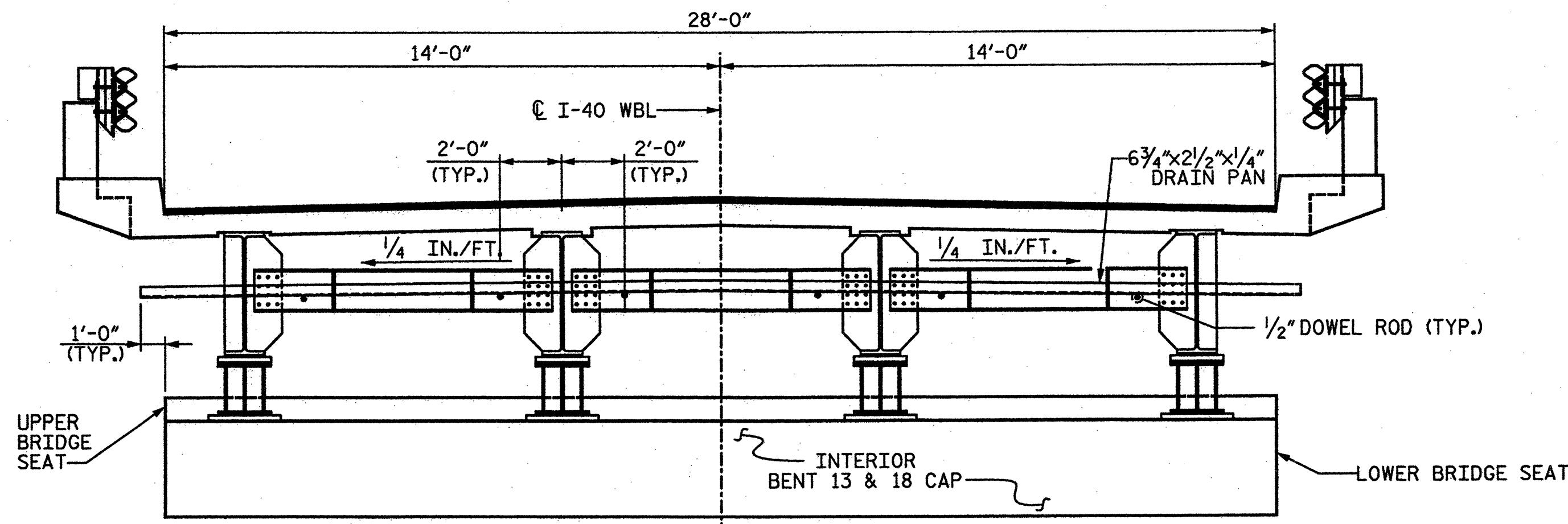
**NOTES:**

- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
- THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
- FOAM JOINT OPENINGS SHALL BE CONFIRMED IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS TO FOAM JOINT SEALS, AS NECESSARY, TO MEET EXISTING CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY COST ASSOCIATED WITH THESE ADJUSTMENTS ARE CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.

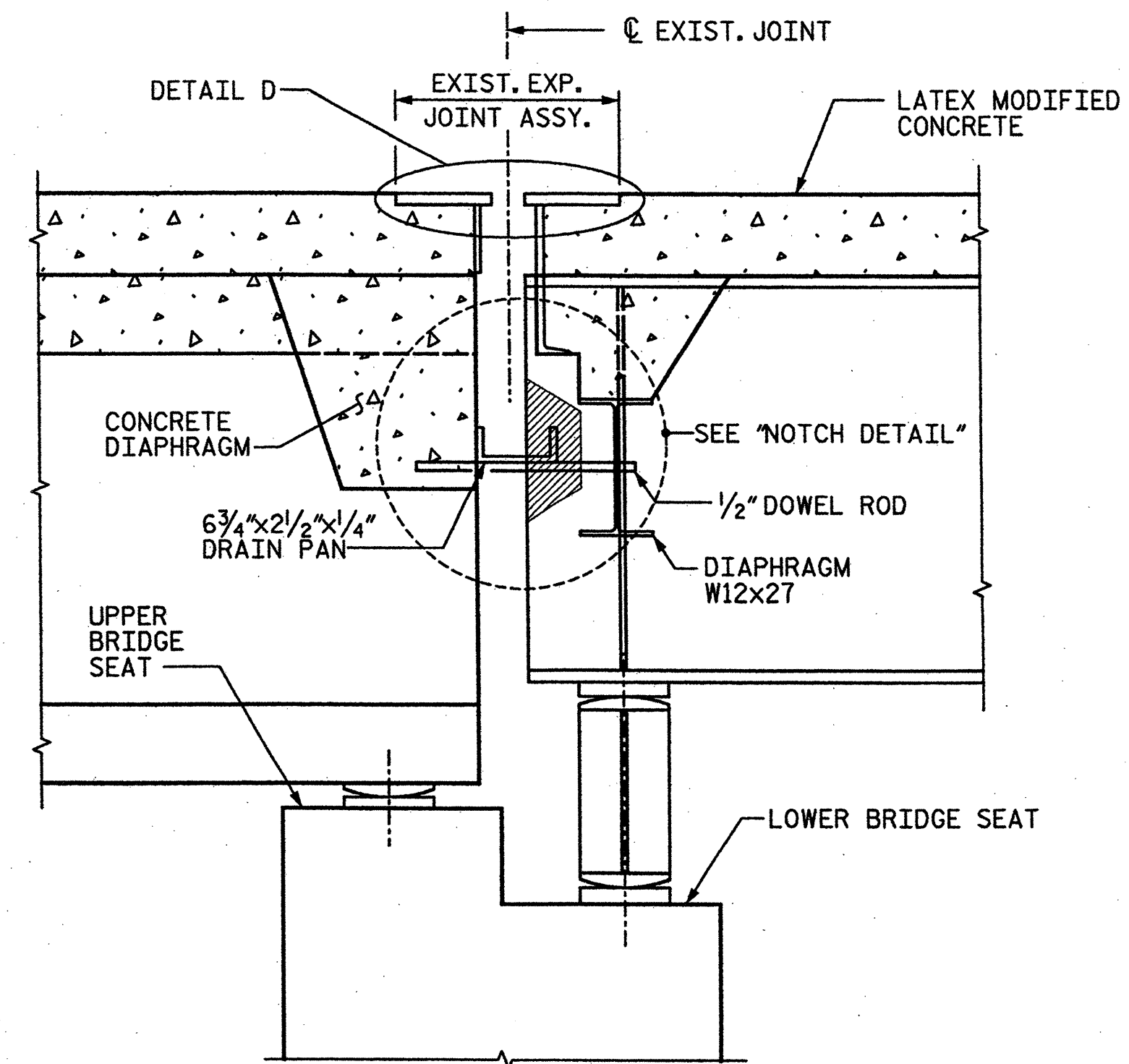
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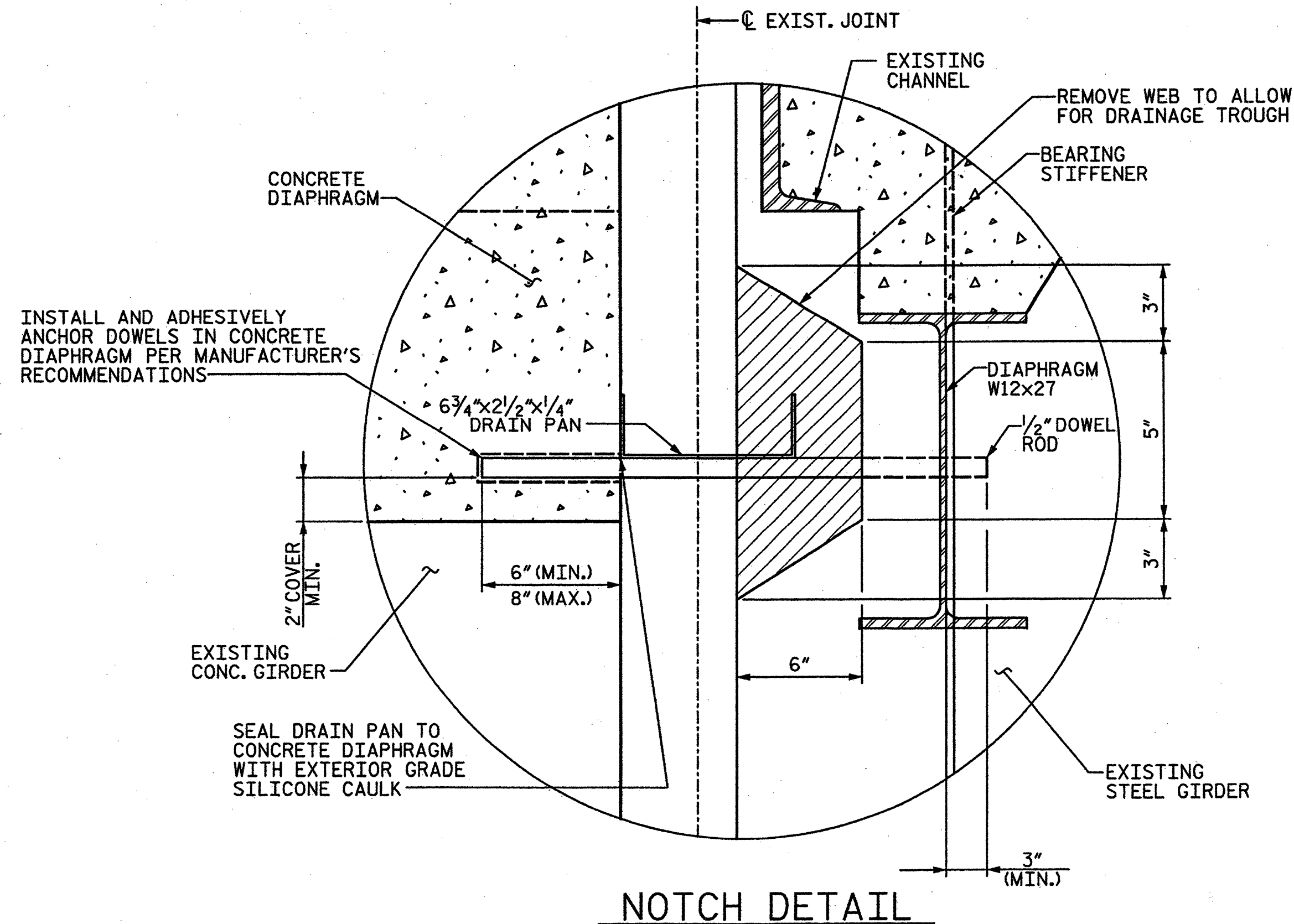
1/27/2012



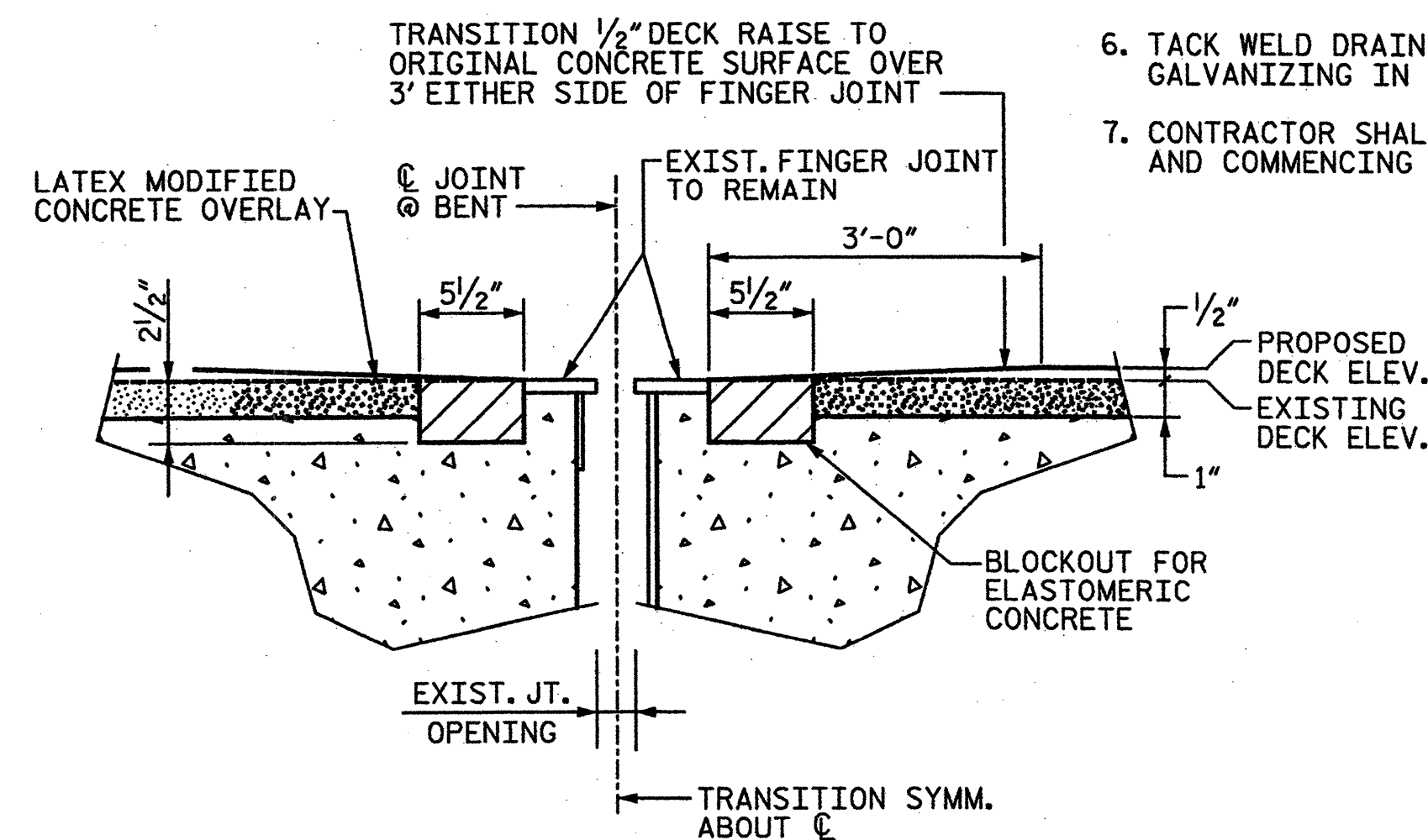
**DRAIN TROUGH SYSTEM ELEVATION**



**SECTION D-D**  
(PROPOSED JOINT @ INTERIOR BENTS 13 & 18)



**NOTCH DETAIL**



**DETAIL D**

**NOTES:**

1. BOLTS, NUTS, WASHERS, DOWEL ROD, STEEL BAR, AND DRAIN PAN SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
2. THE DRAIN PAN SHALL BE ASTM A36 STEEL OR APPROVED EQUAL.
3. 1/2" DOWEL ROD SHALL BE ASTM A307 STEEL OR APPROVED EQUAL.
4. APPLY AN EPOXY PROTECTIVE COATING TO THE TOP SURFACE AREA OF THE BENT CAP, EXCLUDING AREAS UNDER MASONRY PLATES. FOR EPOXY COATING SEE STANDARD SPECIFICATIONS.
5. DRAIN TROUGH SYSTEM TO BE INSTALLED AFTER ALL REPAIRS/MODIFICATIONS HAVE BEEN MADE TO BRIDGE.
6. TACK WELD DRAIN PAN TO 1/2" DOWELS ON BOTH SIDES AND REPAIR ANY DAMAGED GALVANIZING IN ACCORDANCE WITH ASTM A780.
7. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS PRIOR TO ORDERING MATERIAL AND COMMENCING ANY DRAIN TROUGH INSTALLATION WORK.

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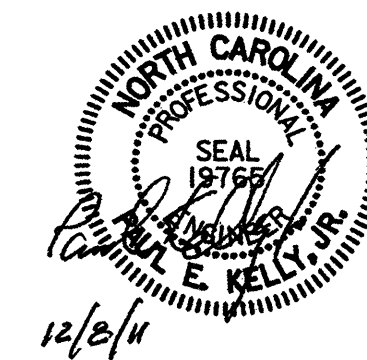
BRIDGE NO.: 86

REHAB. OF BRIDGE NO. 86 SHEET 6 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**DRAIN TROUGH SYSTEM DETAILS**

BRIDGE ON I-40 WBL  
OVER YADKIN RIVER



REVISIONS

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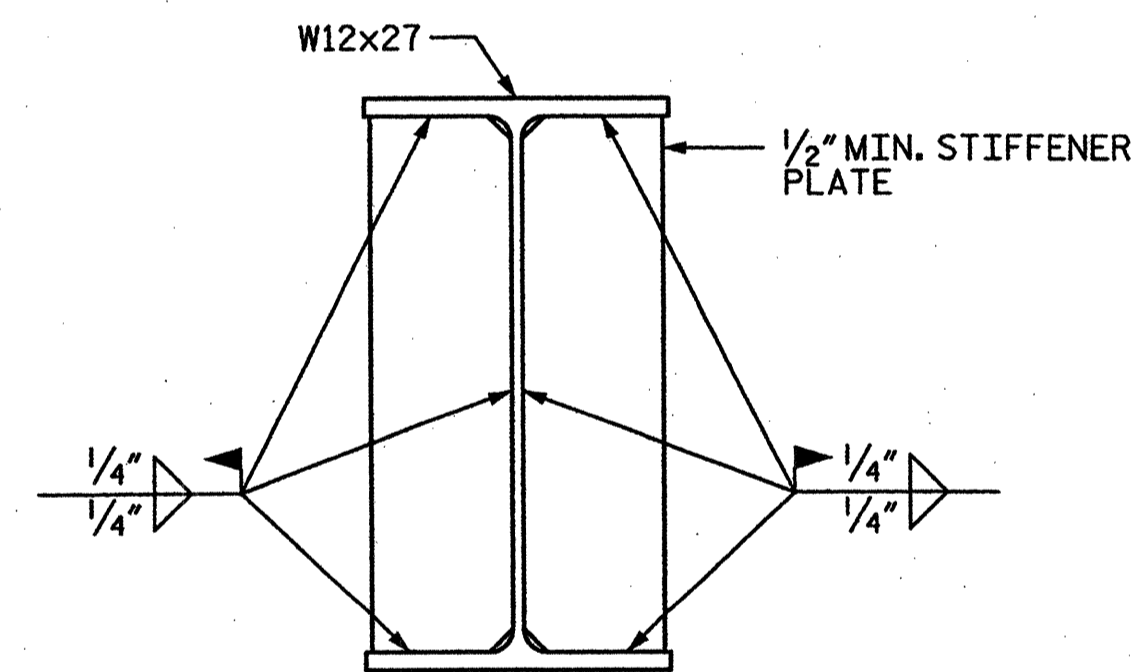
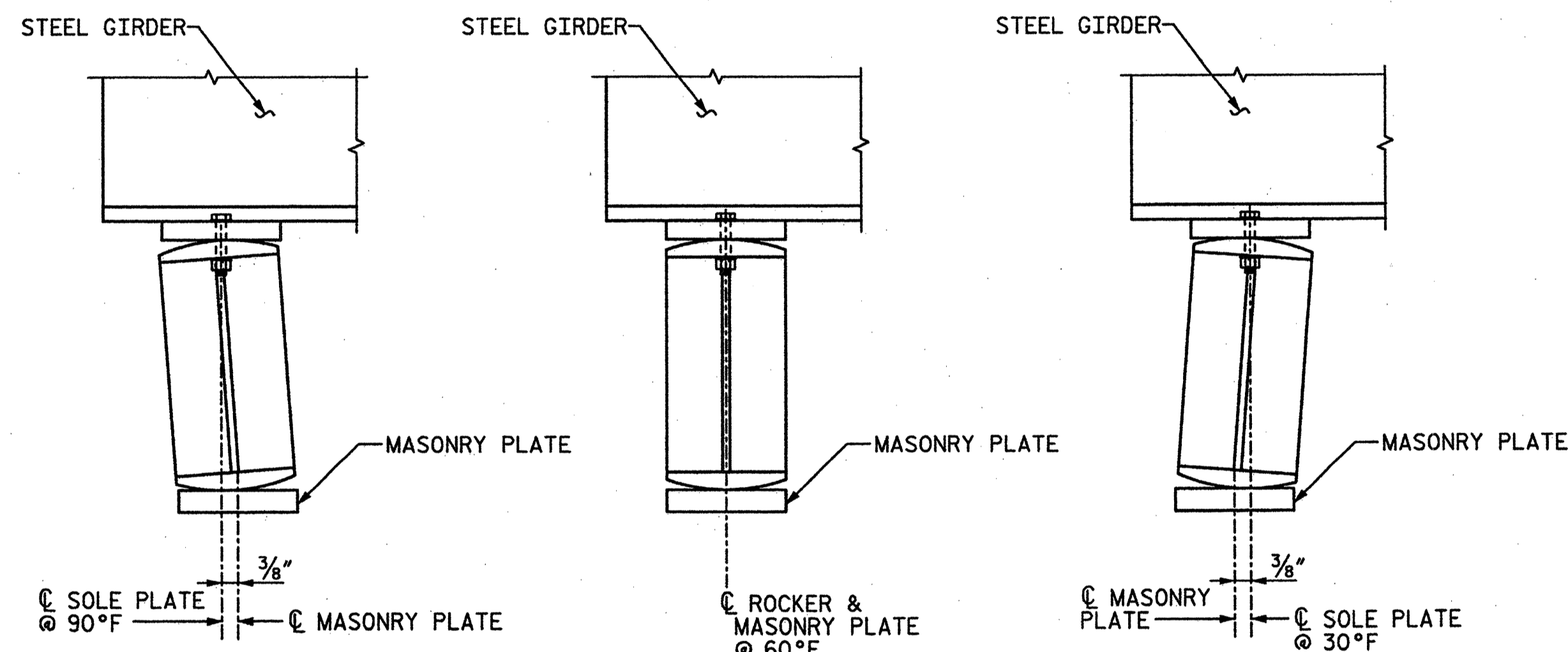
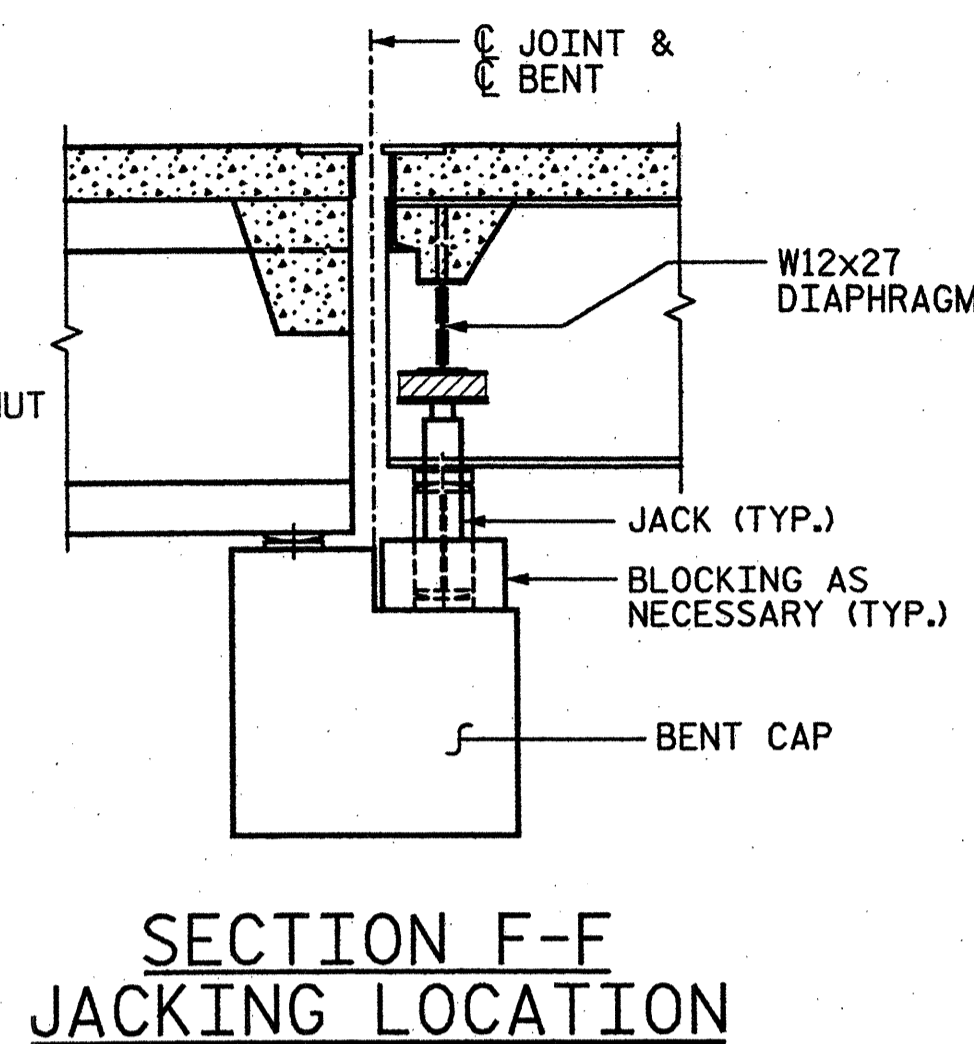
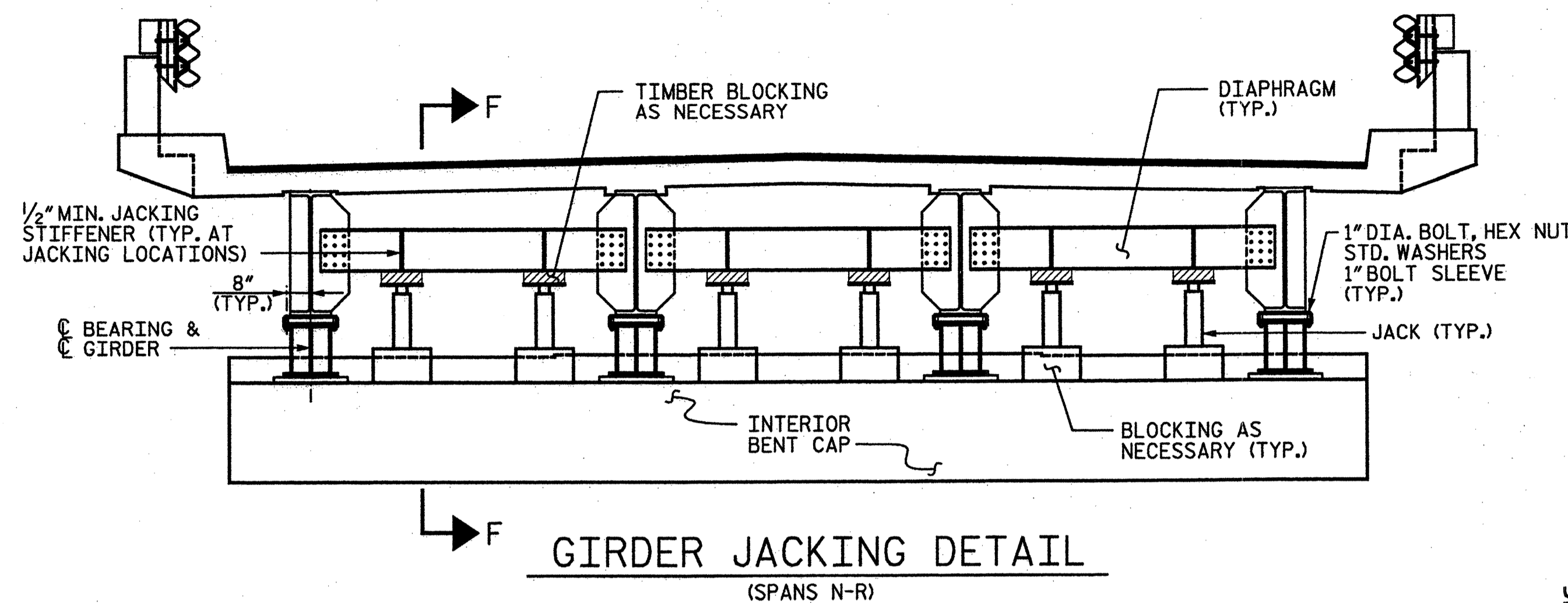
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12/8/2011



ROCKER BEARING TEMPERATURE GUIDE

JACKING STIFFENER DETAIL

ROCKER BEARING RESET RECORD TABLE						
LOCATION		DATE	TEMPERATURE	H	ROTATION	NOTES
SPAN	GIRDER					

CONSTRUCTION SEQUENCE:

1. INSTALL JACKS AND BLOCKING AT LOCATIONS SHOWN ON PLAN.
  2. REMOVE NECESSARY NUTS ON CONNECTION BOLTS.
  3. JACK GIRDERS A MAXIMUM OF 1/8" IN ORDER TO RELIEVE LOAD FROM ROCKER BEARINGS.
  4. MECHANICALLY LOCK ALL JACKS AT BENT.
  5. REMOVE NECESSARY BOLTS TO FACILITATE THE RESETTING OF THE ROCKER BEARINGS AT PIERS 13 & 18.
  6. LOWER BRIDGE AND REPLACE DAMAGED, RUSTED AND/OR INADEQUATE CONNECTION BOLTS AS NECESSARY.
- NOTE: THE CONTRACTOR HAS THE OPTION TO PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE PER THE APPROVAL OF THE ENGINEER.

NOTES:

1. JACKING DETAILS SHOWN ARE CONCEPTUAL AND CONSIDERED A MINIMUM. THE CONTRACTOR SHALL PROVIDE JACKING PLANS FOR ALL GIRDERS LIFTED FOR APPROVAL BY THE ENGINEER PRIOR TO ANY JACKING OPERATIONS. JACKING SHALL BE PERFORMED SUCH THAT BRIDGE CAN REMAIN OPEN TO TRAFFIC DURING JACKING OPERATIONS.
2. JACKING PLANS SHALL BE SIGNED AND SEALED BY LICENSED PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.
3. THE CONTRACTOR SHALL PROVIDE BLOCKING FOR ALL JACKS AS NECESSARY. A BLOCKING PLAN SHALL BE INCLUDED AS PART OF THE JACKING PLAN.
4. THE CONTRACTOR SHALL JACK GIRDERS ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.
5. THE CONTRACTOR SHALL MONITOR THE PLAN LOCATION OF THE GIRDERS FROM INITIAL JACKING UNTIL GIRDERS ARE SECURED ON THEIR PERMANENT BEARINGS. IF THE PLAN LOCATION OF THESE GIRDERS SHIFT FROM ITS ORIGINAL POSITION, THE CONTRACTOR SHALL SECURE FROM ADDITIONAL MOVEMENT IMMEDIATELY. NOTIFY ENGINEER PRIOR TO PROCEEDING WORK OPERATIONS.
6. EACH JACK SHALL HAVE A MINIMUM SAFE WORKING CAPACITY OF 50 TONS.
7. PRIOR TO JACKING THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.
8. ONCE SPAN HAS BEEN JACKED, CONTRACTOR SHALL INSTALL A MECHANICAL LOCKING DEVICE TO ENSURE THAT GIRDER WILL NOT BE LOWERED DURING THE REPAIR OF THE BEARINGS.
9. CONTRACTOR TO TAKE APPROPRIATE MEANS TO REMOVE NUT ON ANCHOR BOLT WITHOUT DAMAGING THE ANCHOR BOLT. CONTRACTOR SHALL SUBMIT NUT REMOVAL METHOD TO INCLUDE PROCEDURES THAT WILL LOOSEN BOND BETWEEN INTERLOCKING THREADS TO ENGINEER FOR APPROVAL PRIOR TO REMOVING ANCHOR BOLT NUTS.
10. IN NO CIRCUMSTANCES SHOULD THE JACKING BE SOLELY SUPPORTED BY THE DIAPHRAGM. JACKS SHOULD BE CENTERED UNDER DIAPHRAGM AND ADDITIONAL BLOCKING.

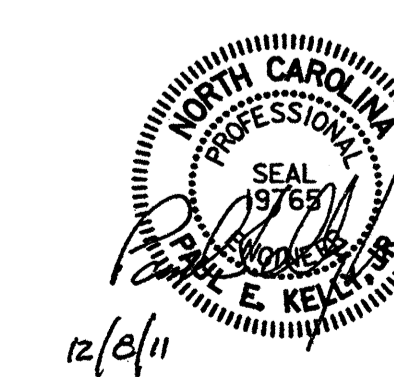
PROJECT NO. 17BP.9.P.2  
 DAVIE COUNTY  
 BRIDGE NO.: 86

REHAB. OF BRIDGE NO. 86 SHEET 7 OF 15

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

JACKING PLAN

BRIDGE ON I-40 WBL  
 OVER YADKIN RIVER



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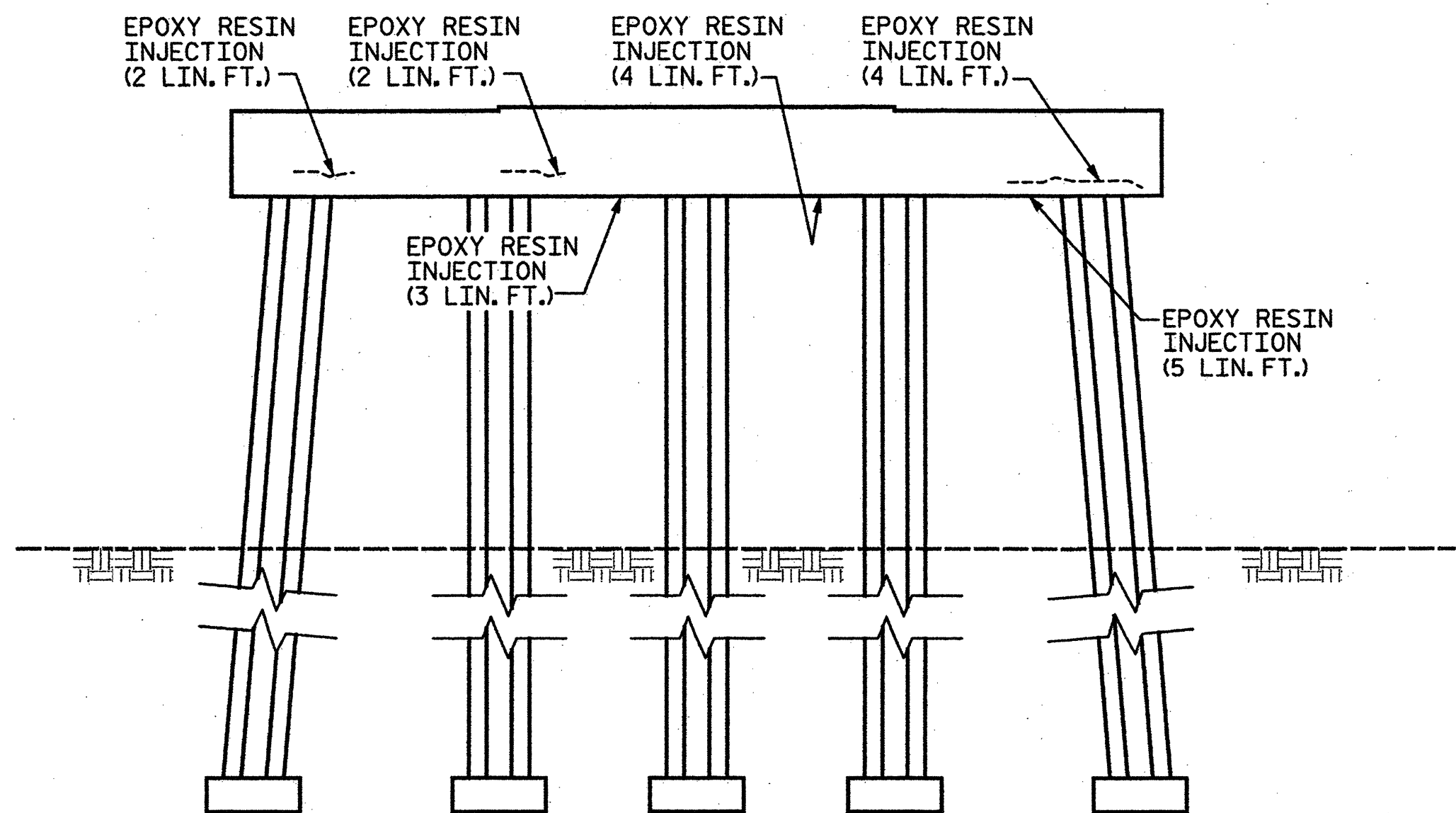
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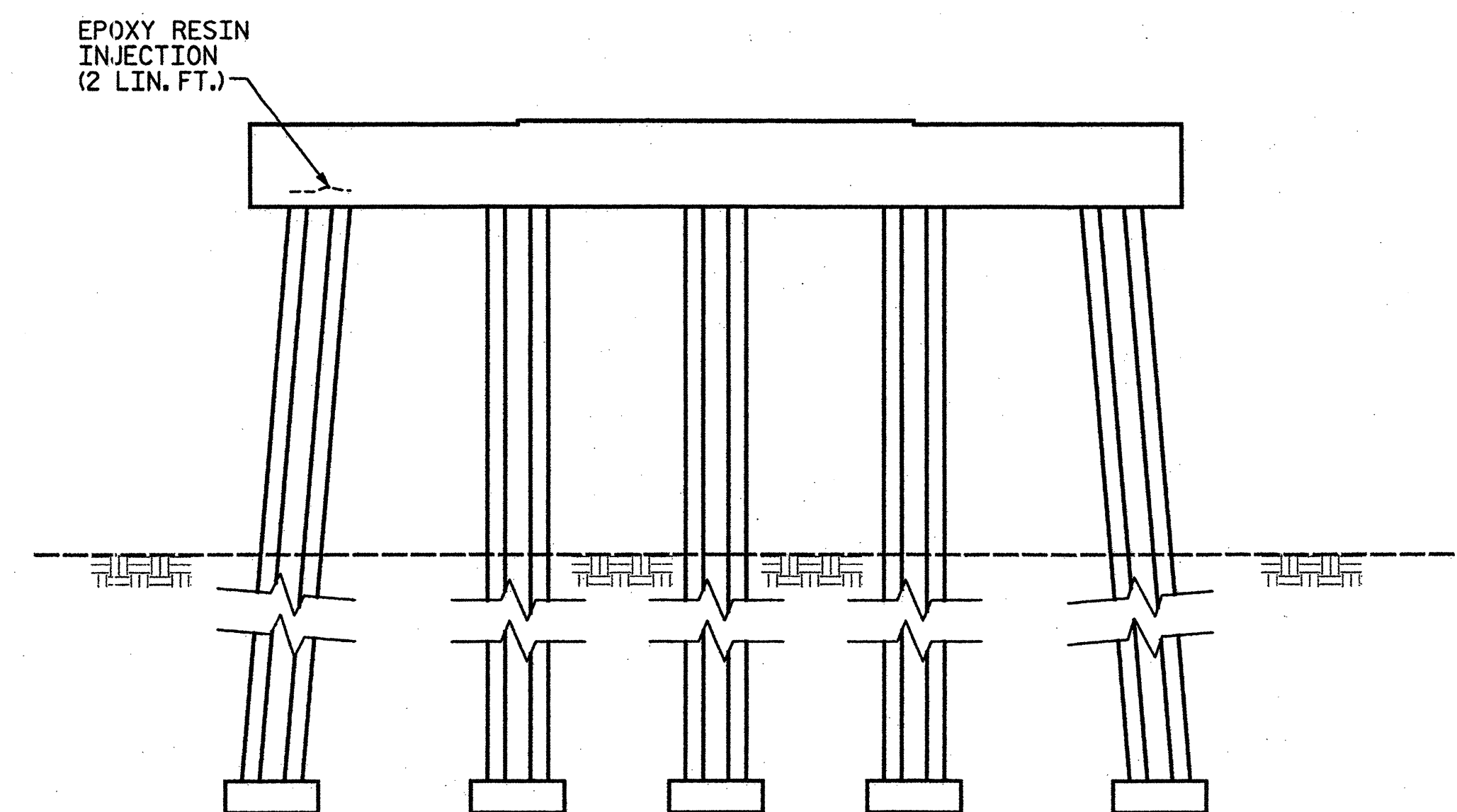
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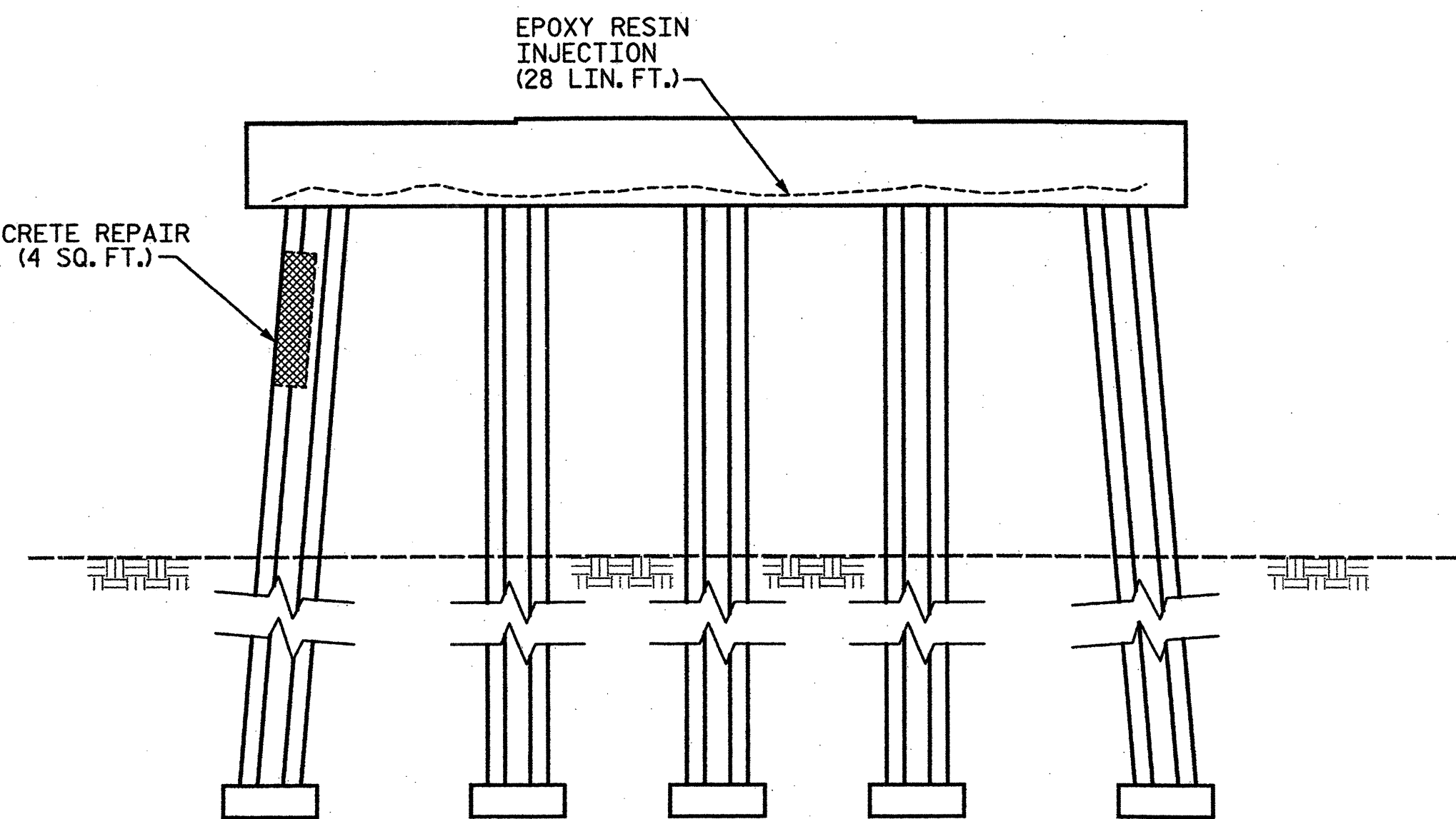
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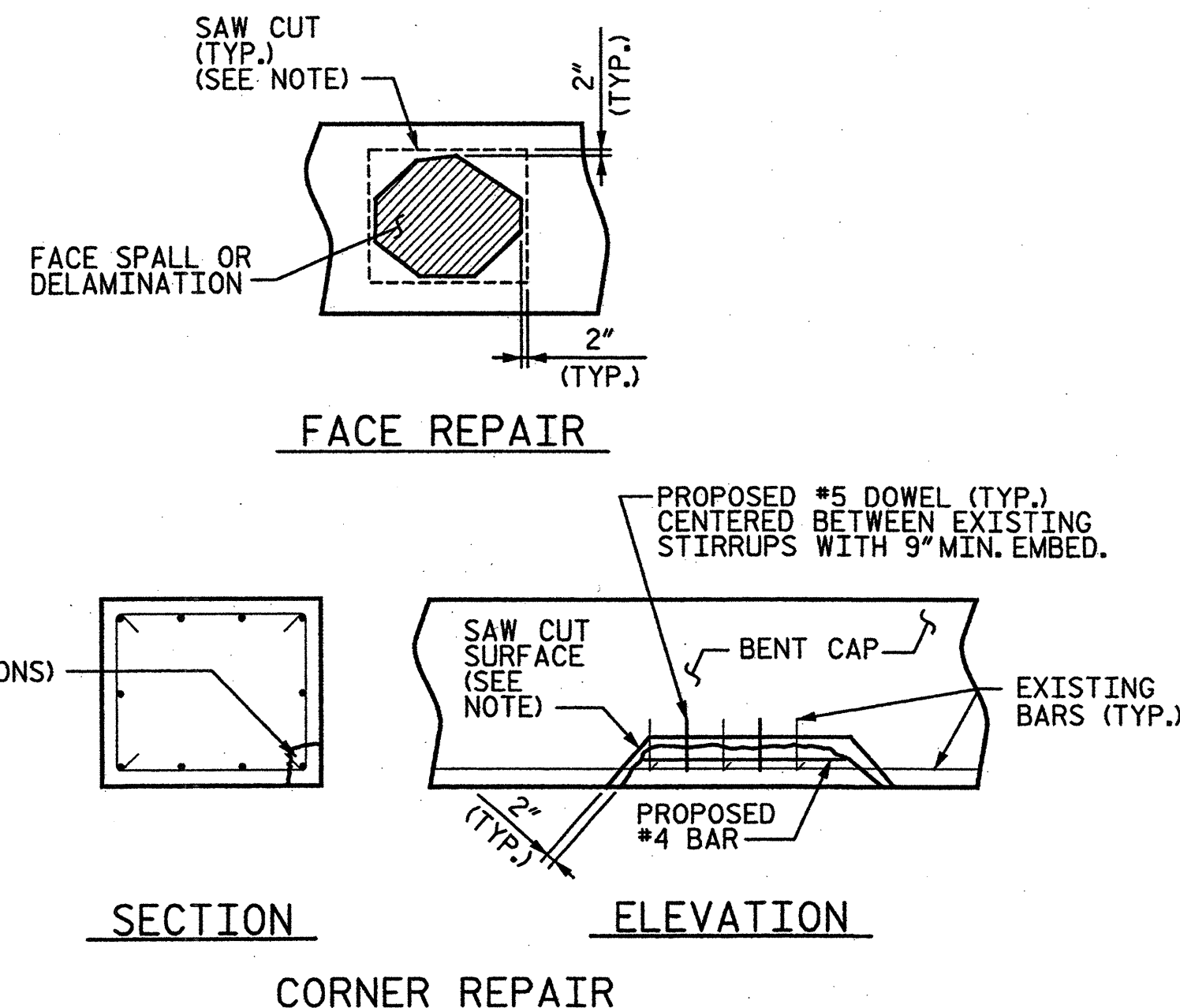
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ELEVATION OF BENT 2 - LOOKING EAST



ELEVATION OF BENT 2 - LOOKING WEST



TYPICAL CONCRETE REPAIR DETAILS

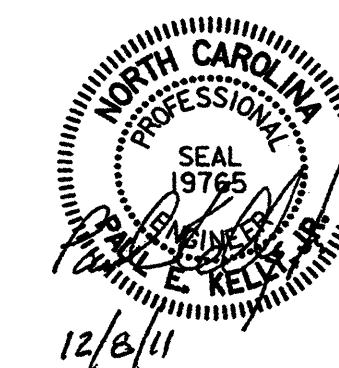
NOTE: CONTRACTOR SHALL SAW CUT TO A MAXIMUM DEPTH OF 1\"/>

NOTES:

1. CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
2. FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
3. SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.
4. THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COSTS.
5. DOWEL LENGTH SHALL BE BASED ON A 9\"/>

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 BRIDGE NO.: 86  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 BENTS 1 & 2  
 SUBSTRUCTURE REPAIR  
 BRIDGE ON I-40 WBL  
 OVER YADKIN RIVER

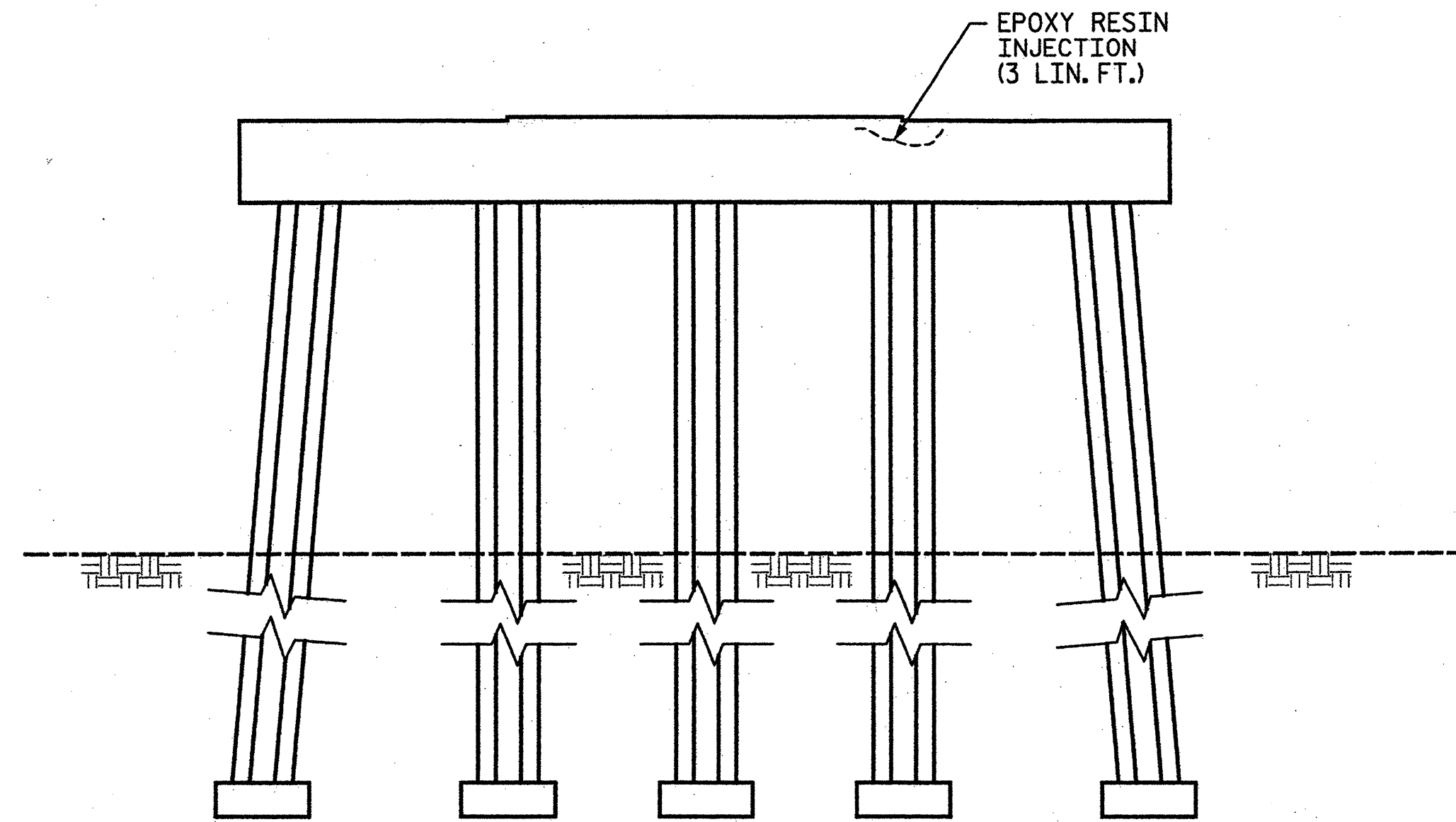


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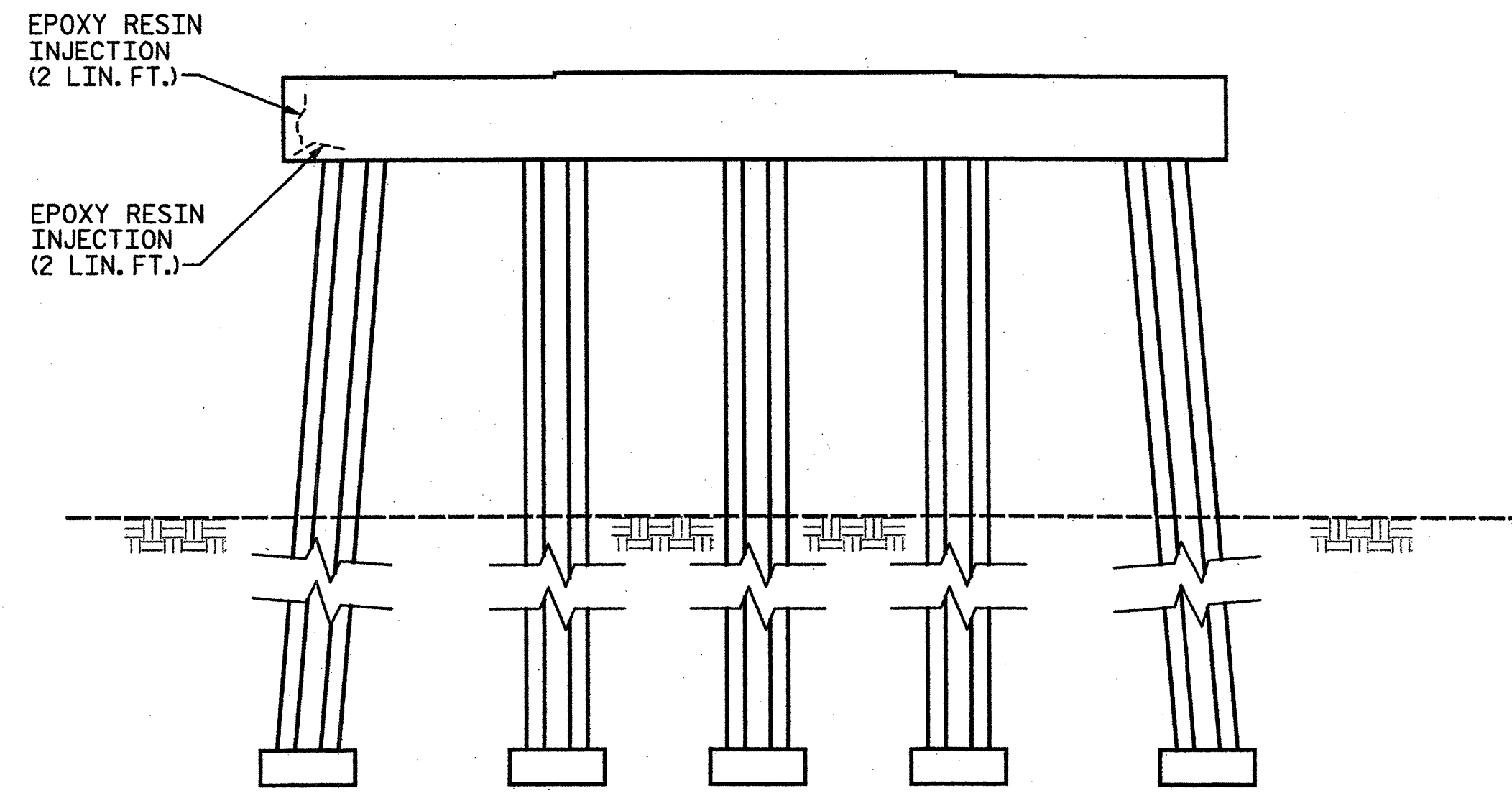
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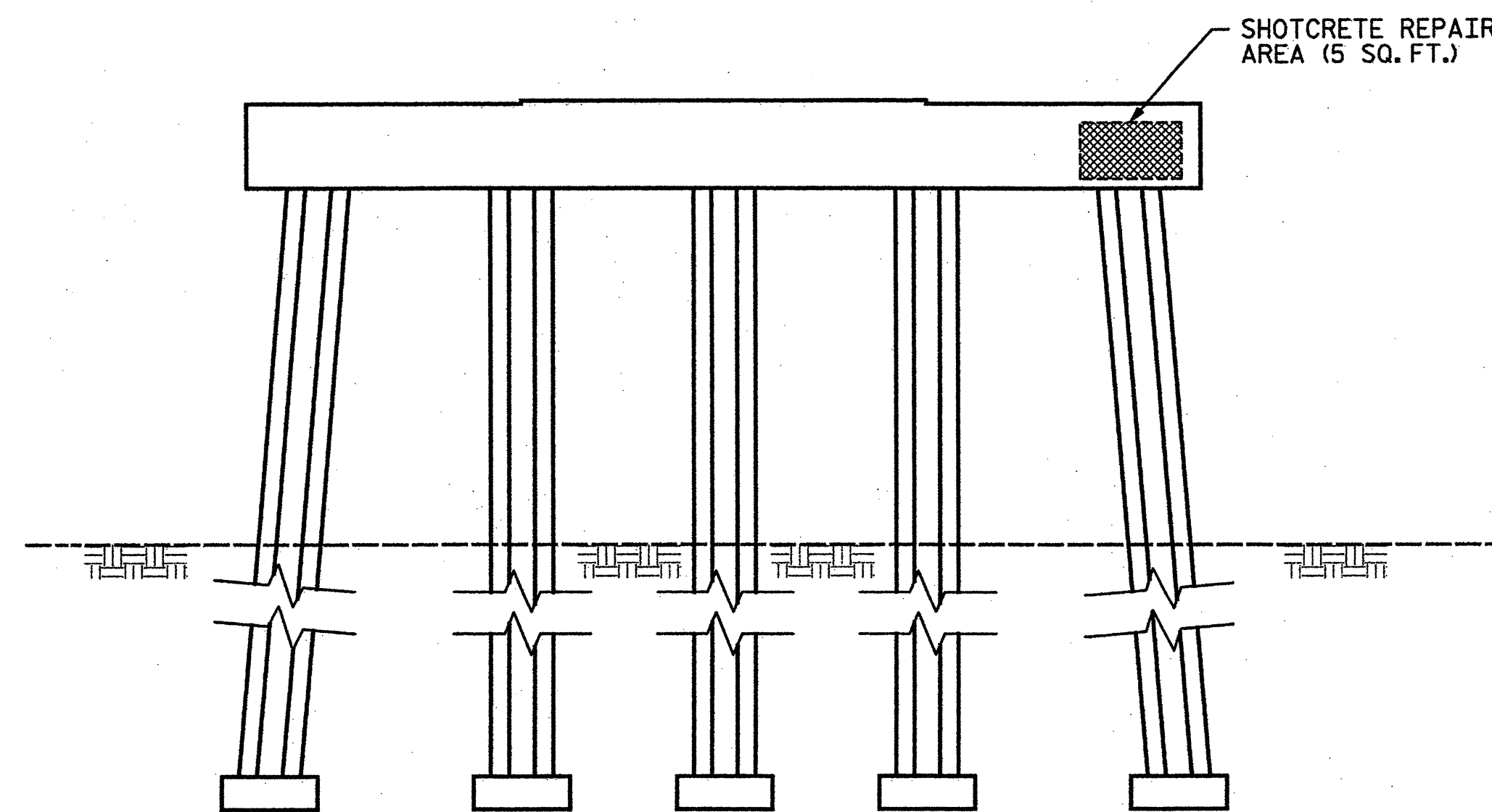
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ELEVATION OF BENT 3 - LOOKING EAST



ELEVATION OF BENT 3 - LOOKING WEST

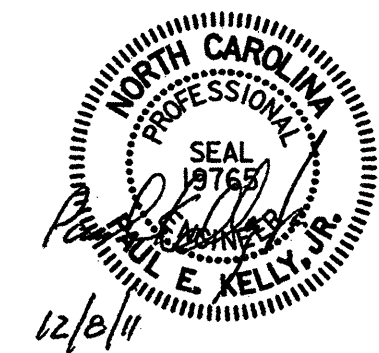


ELEVATION OF BENT 4 - LOOKING EAST

**NOTES:**  
 1. FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-30.

PROJECT NO. 17BP.9.P.2  
 DAVIE COUNTY  
 BRIDGE NO.: 86  
 REHAB. OF BRIDGE NO. 86 SHEET 9 OF 15

STATE OF NORTH CAROLINA  
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 RALEIGH  
 BENTS 3 & 4  
 SUBSTRUCTURE REPAIR  
 BRIDGE ON I-40 WBL  
 OVER YADKIN RIVER



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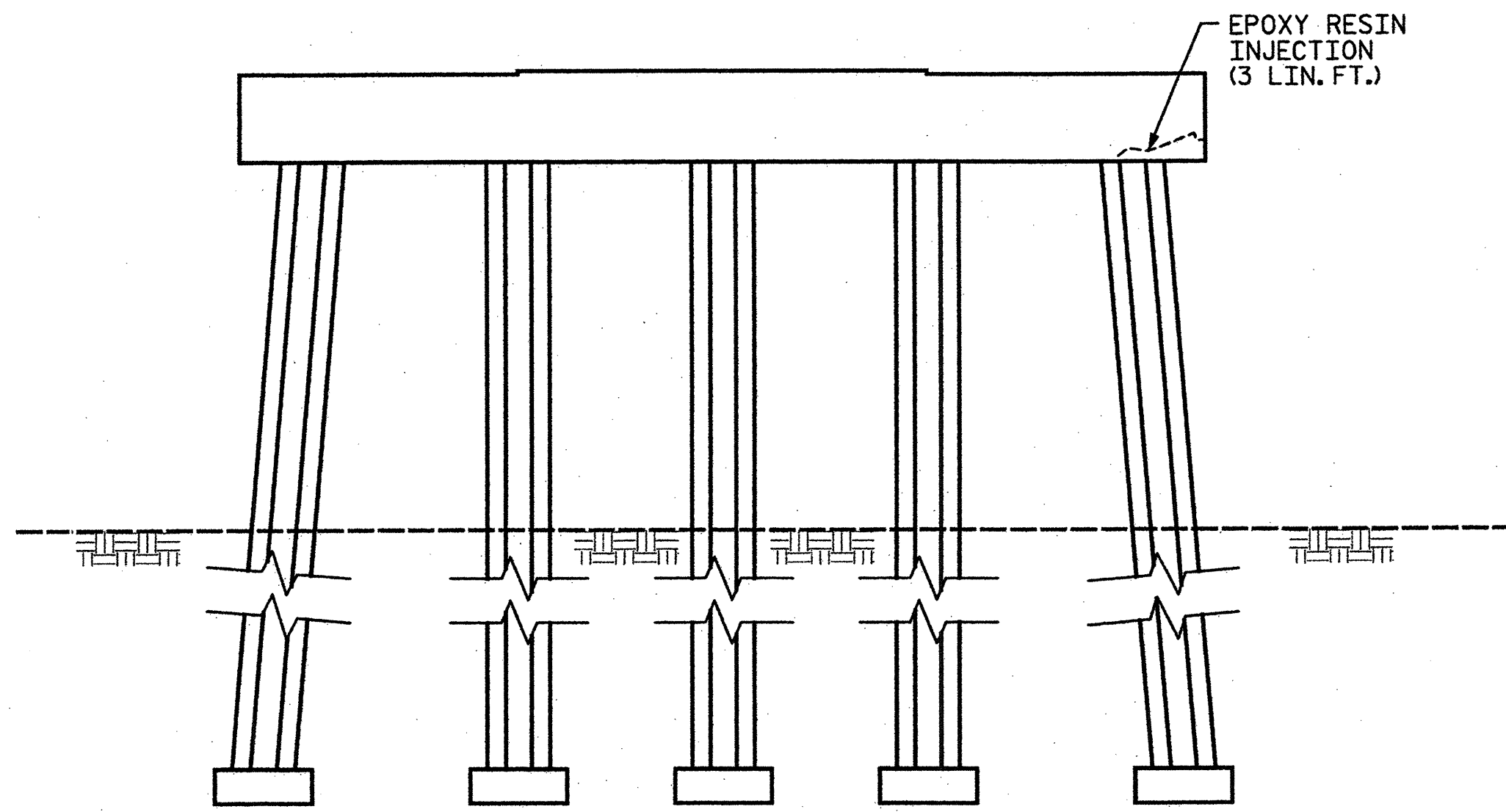
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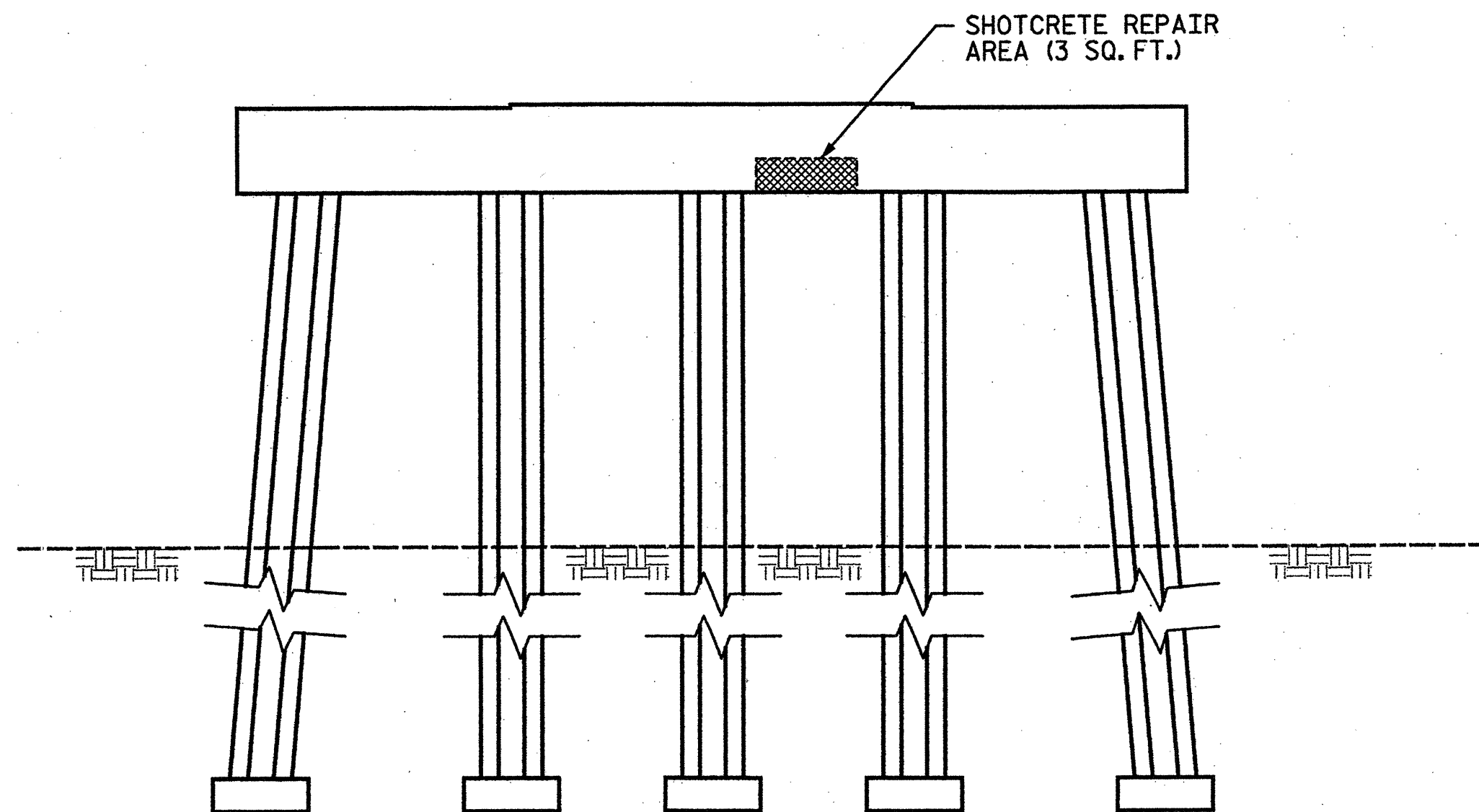
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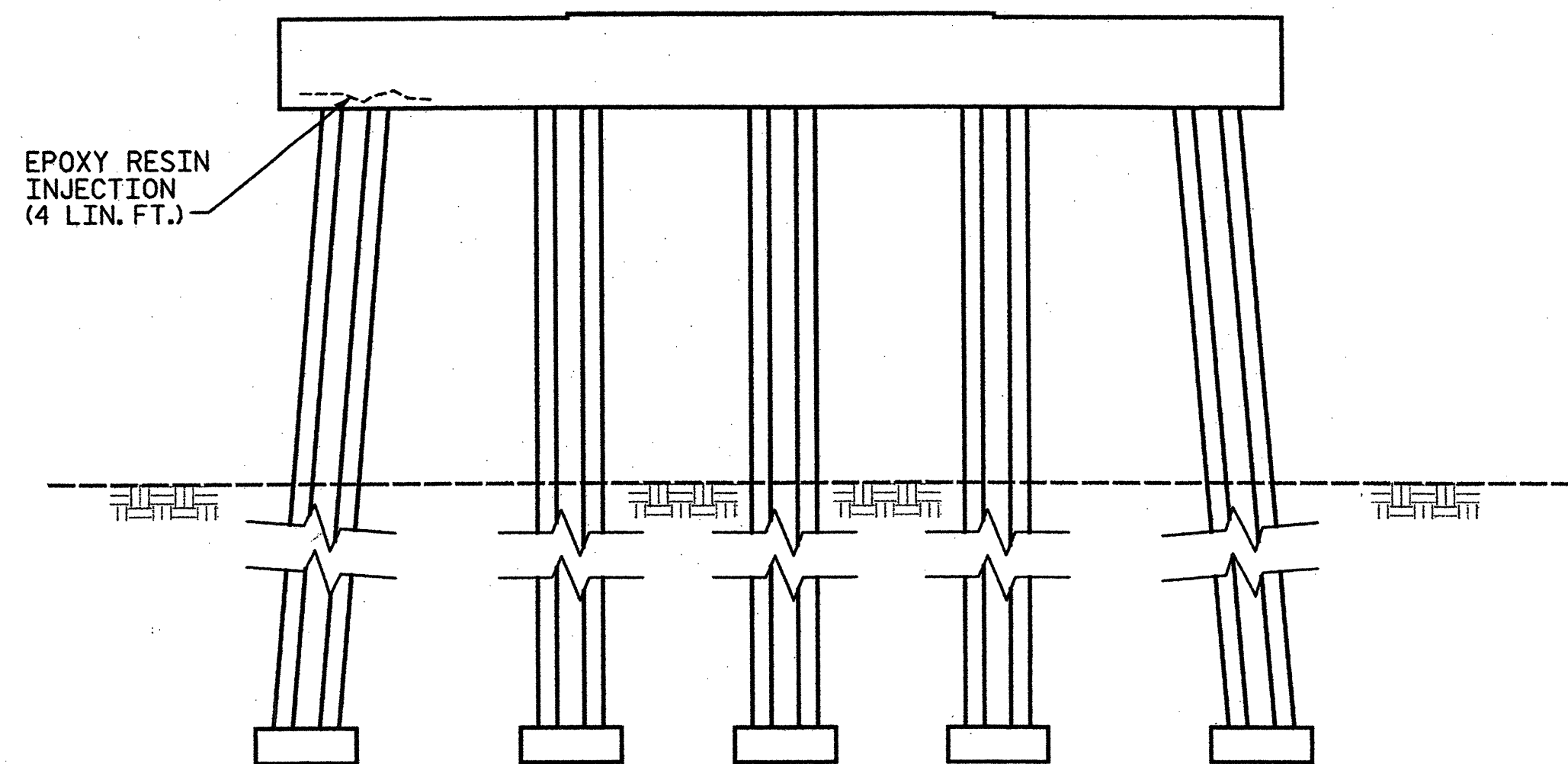
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ELEVATION OF BENT 5 - LOOKING EAST



ELEVATION OF BENT 6 - LOOKING EAST



ELEVATION OF BENT 6 - LOOKING WEST

**NOTES:**

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-30.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

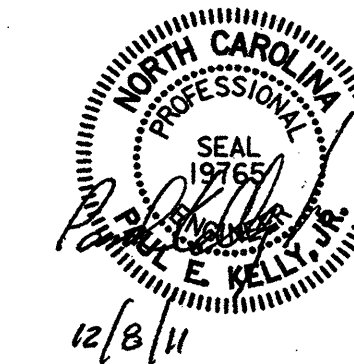
BRIDGE NO.: 86

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENTS 5 & 6  
SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 WBL  
OVER YADKIN RIVER



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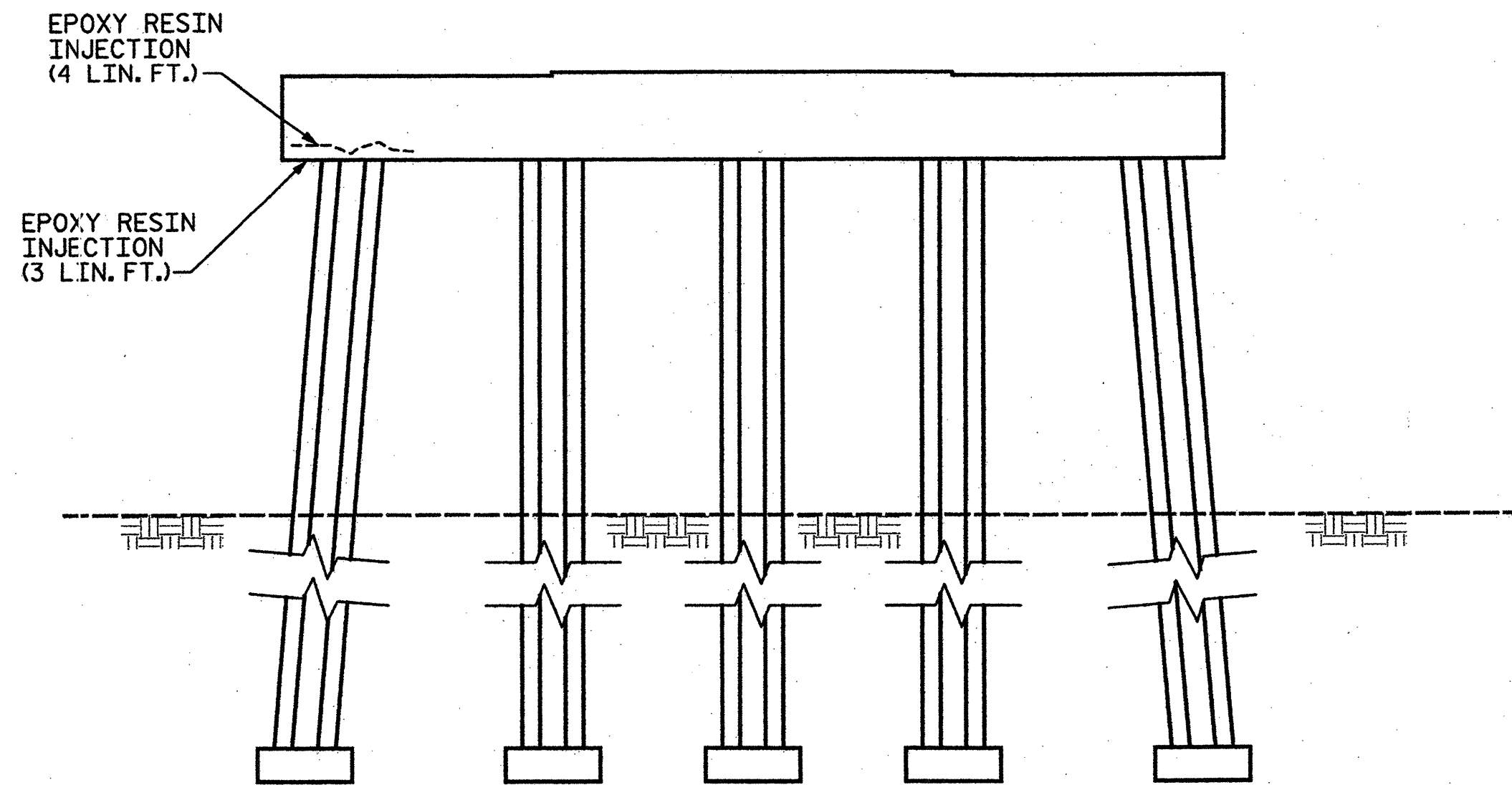
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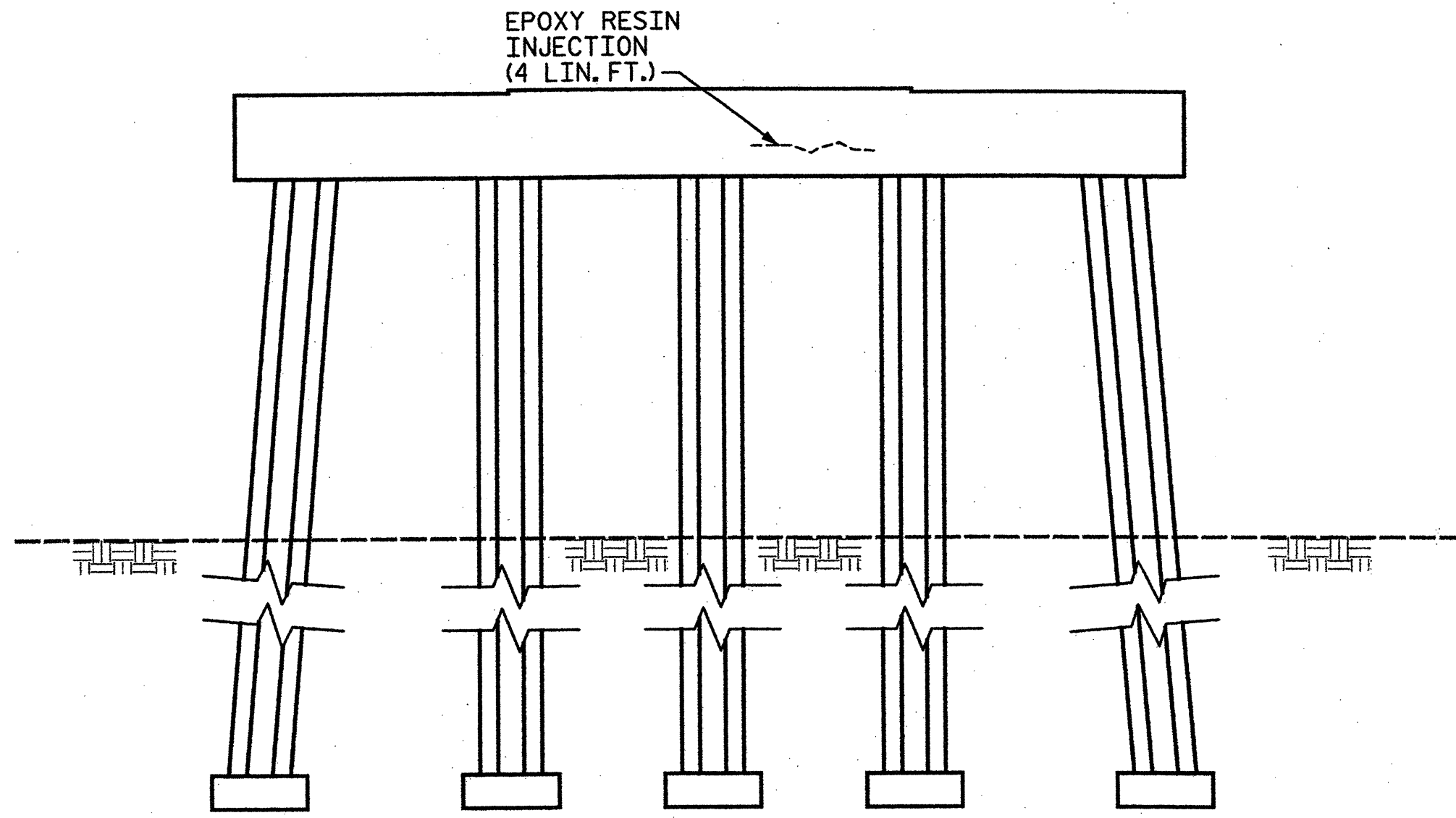
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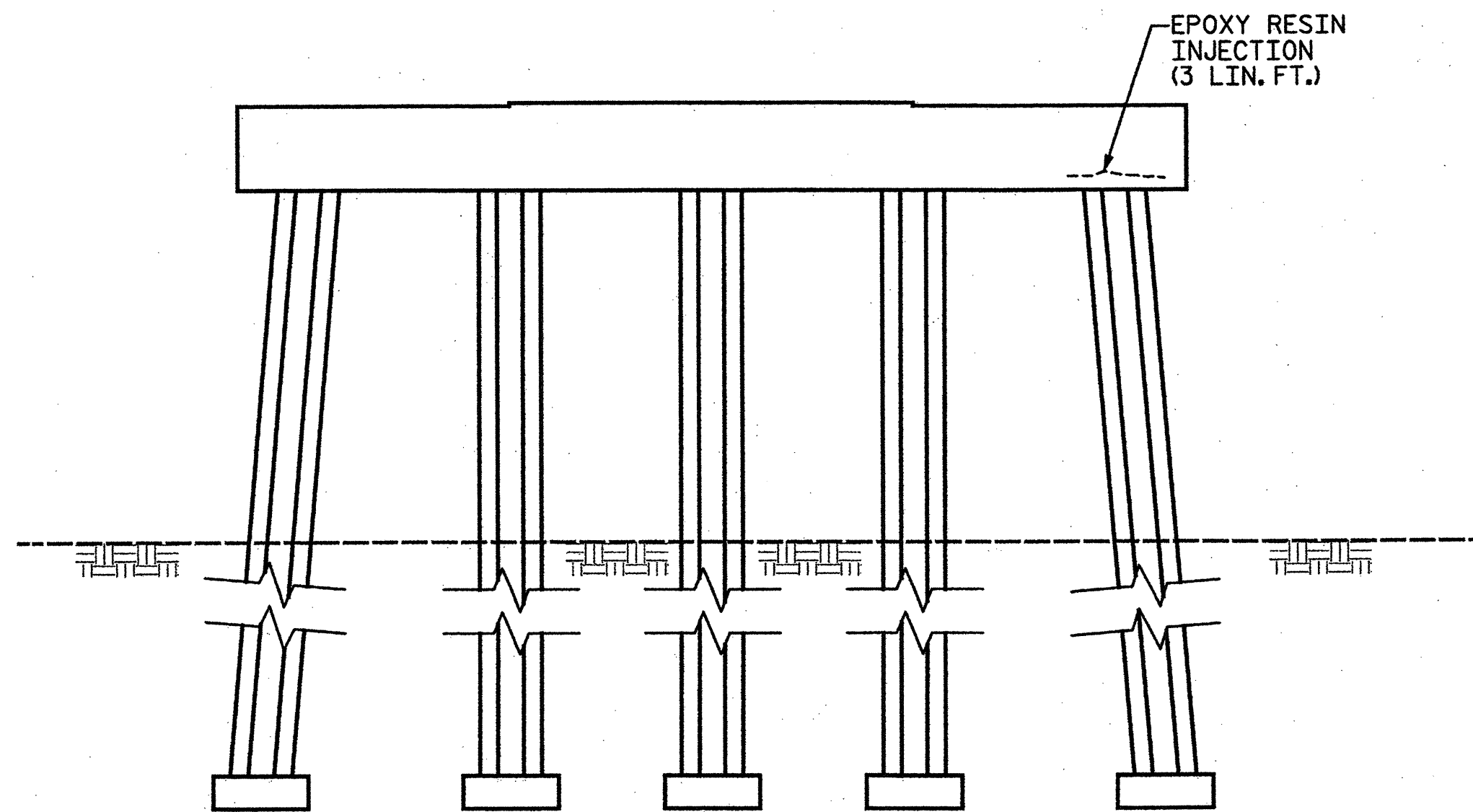
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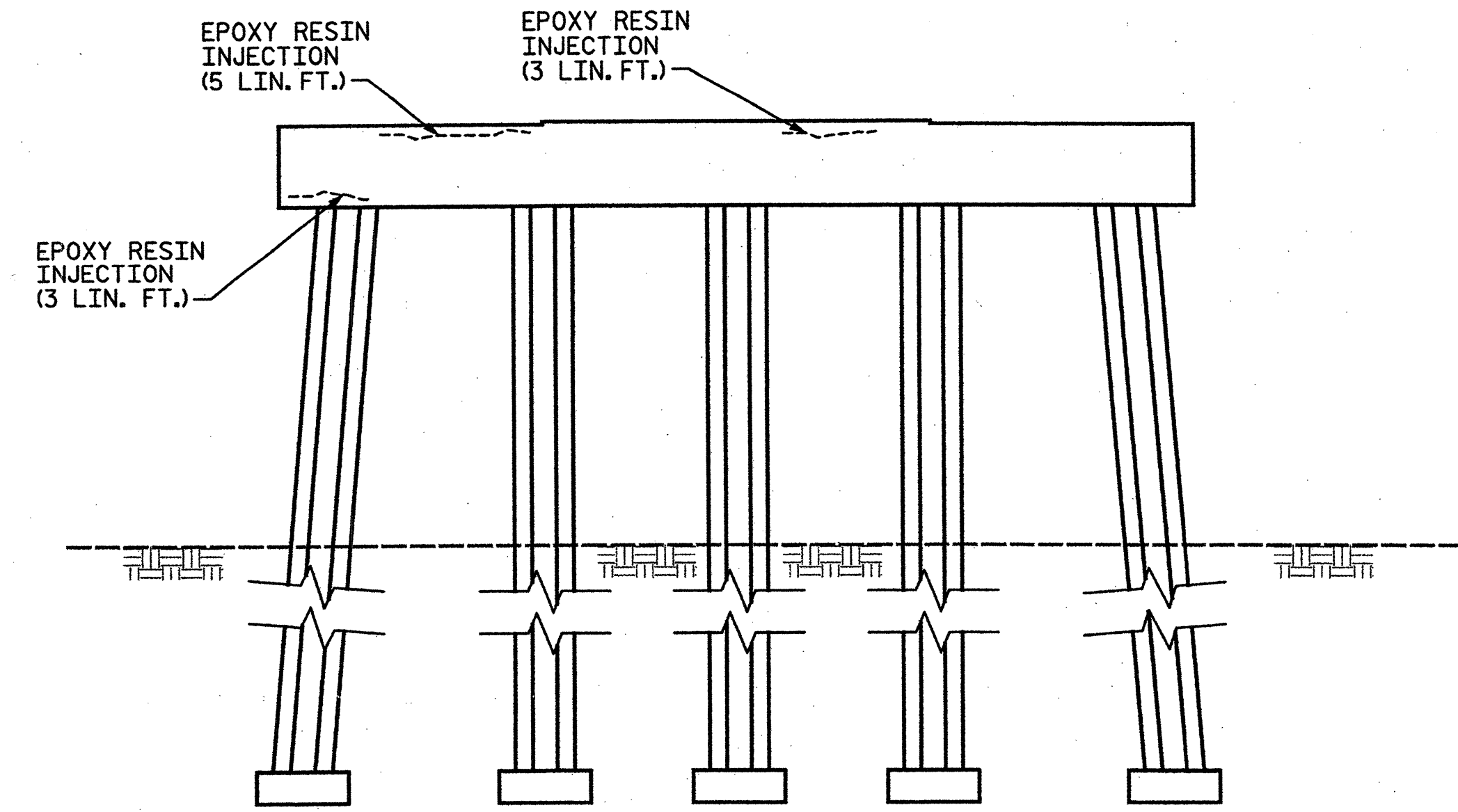
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ELEVATION OF BENT 8 - LOOKING EAST



ELEVATION OF BENT 9 - LOOKING EAST



ELEVATION OF BENT 9 - LOOKING WEST

**NOTES:**

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-30.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

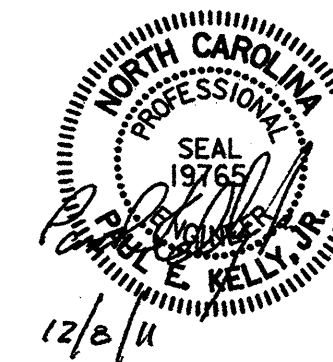
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REHAB. OF BRIDGE NO. 86 SHEET 11 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENTS 7, 8 & 9  
SUBSTRUCTURE REPAIR

BRIDGE ON I-40 WBL  
OVER YADKIN RIVER



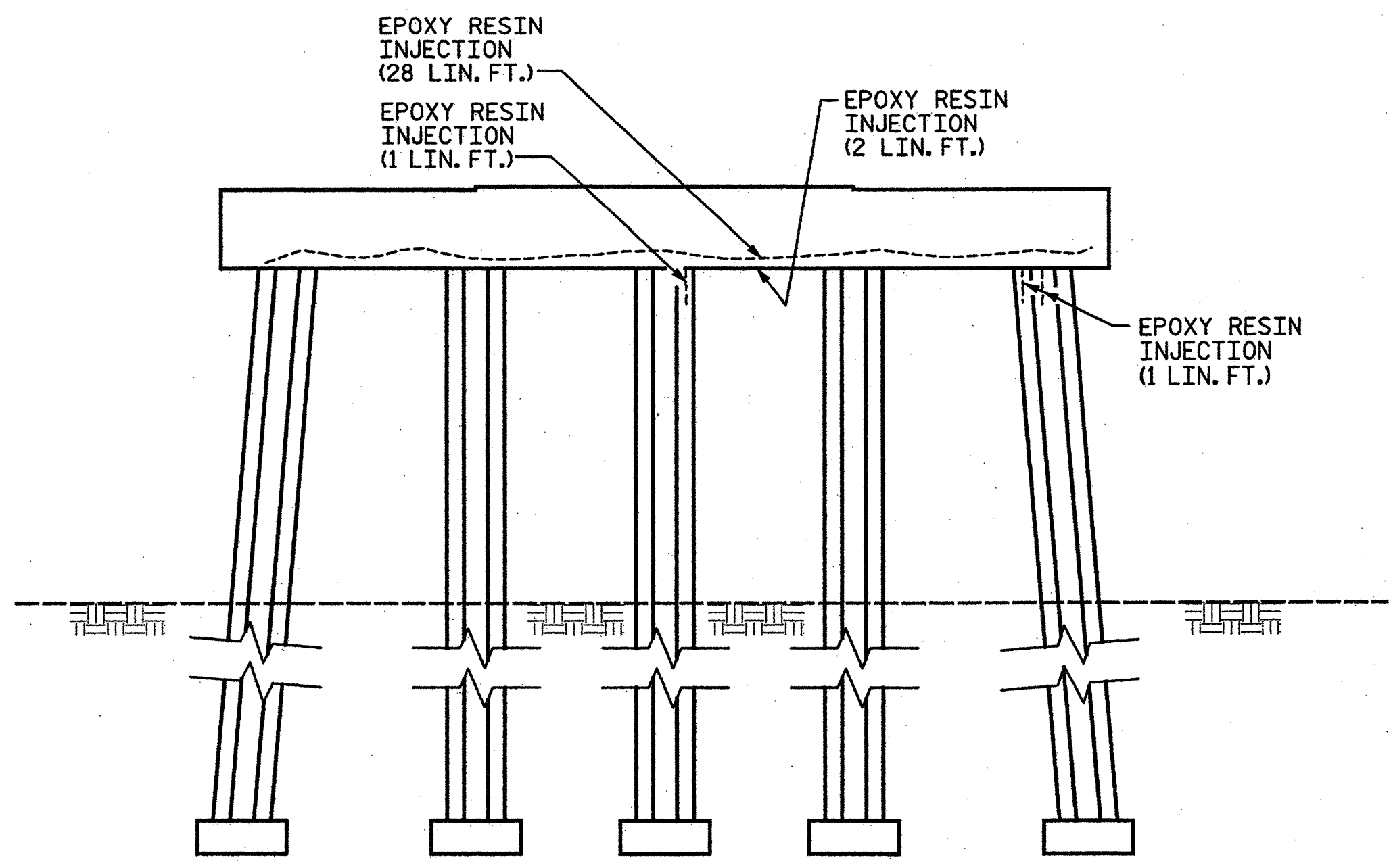
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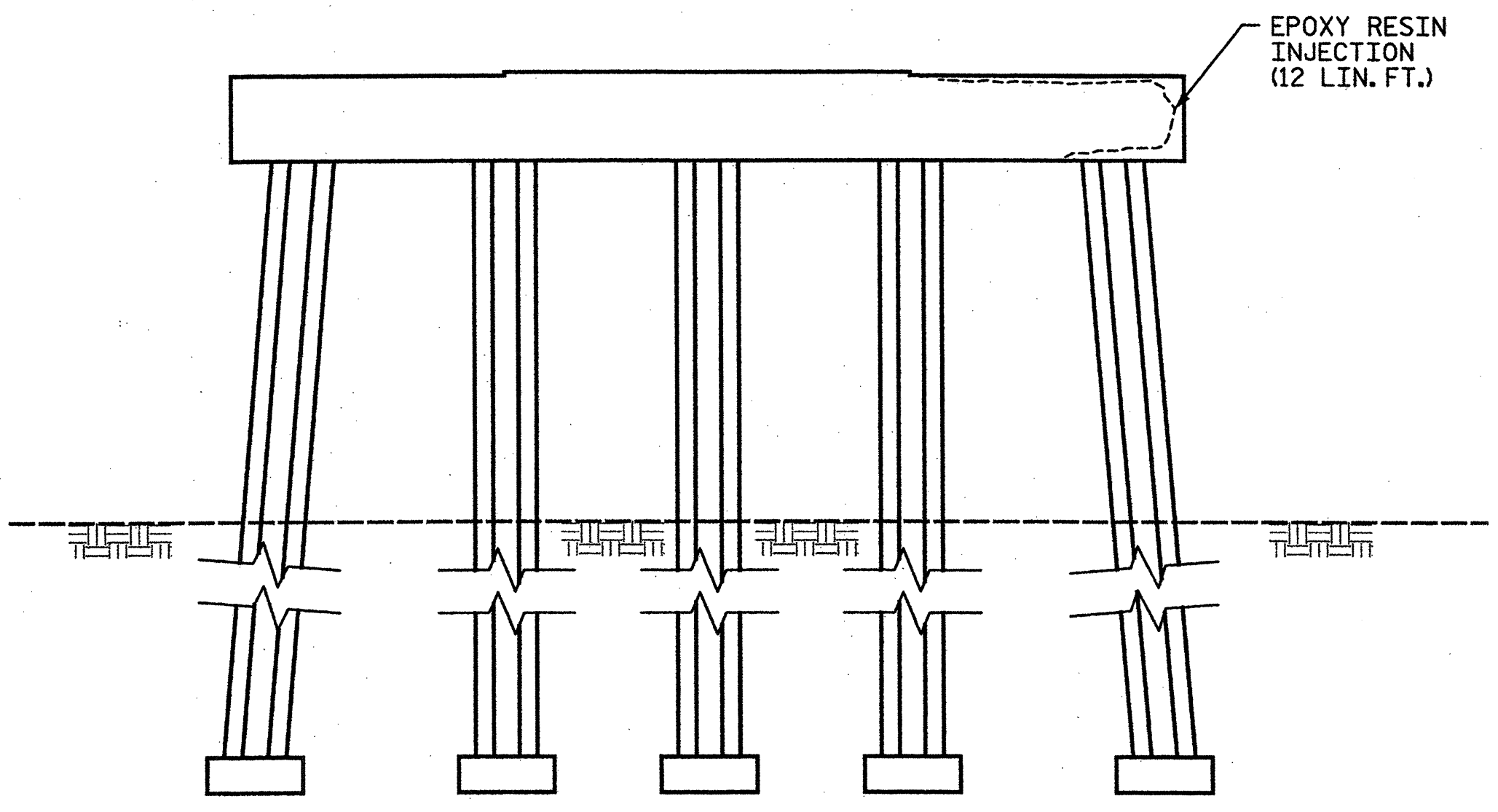
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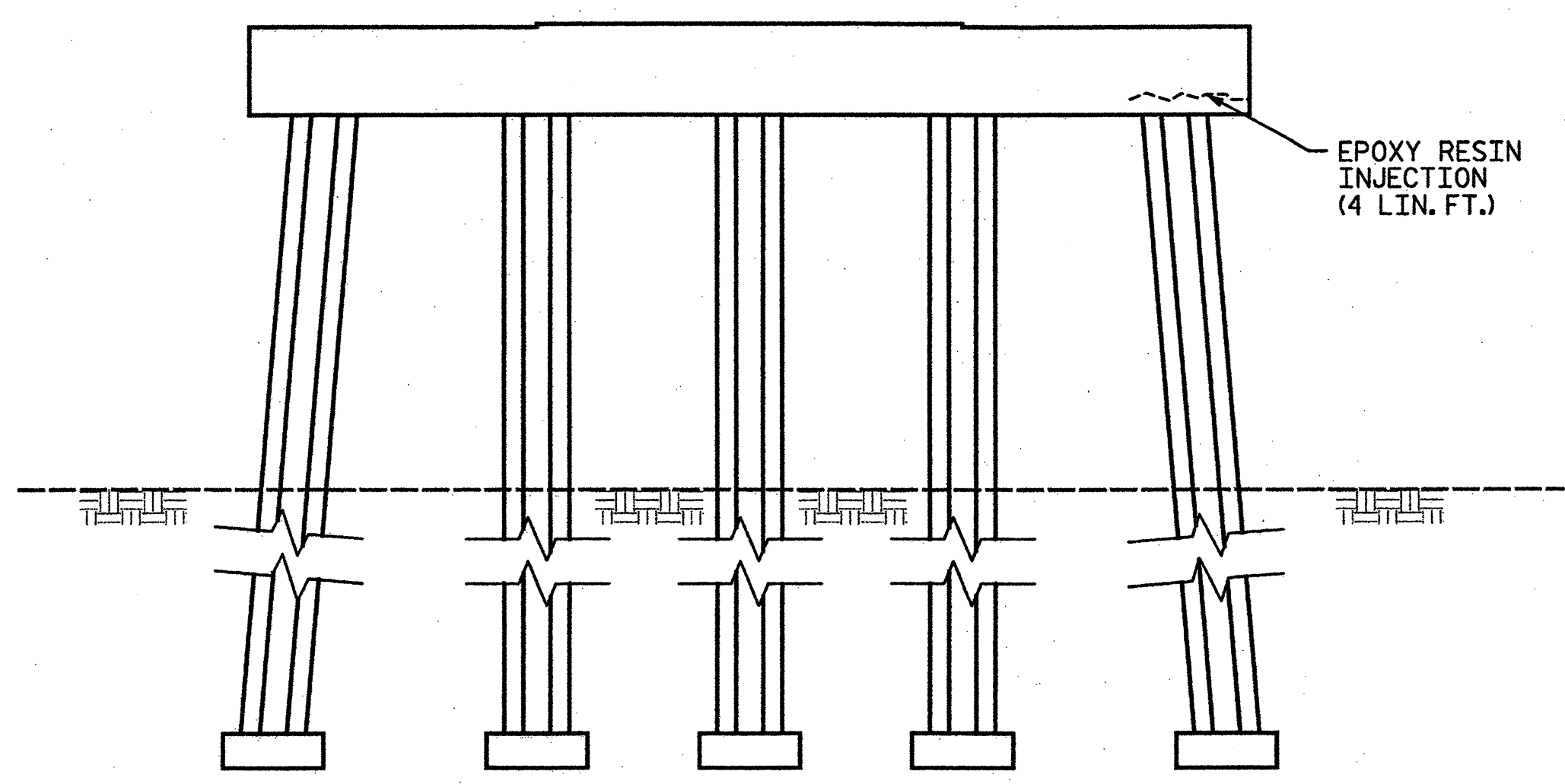
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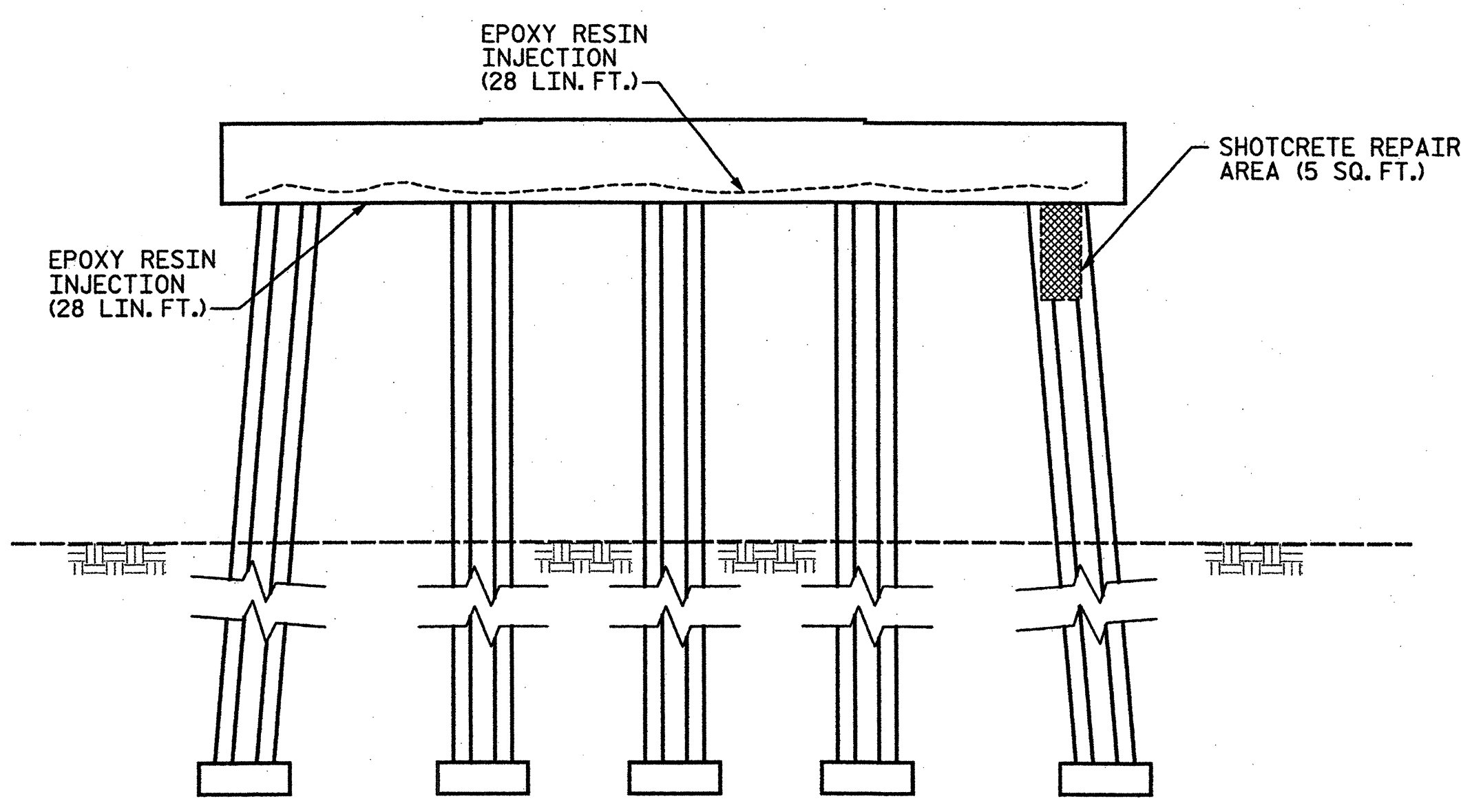
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ELEVATION OF BENT 11 - LOOKING EAST



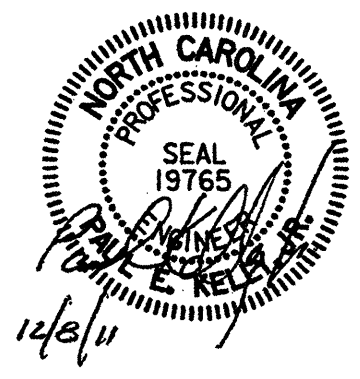
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ELEVATION OF BENT 12 - LOOKING WEST

**NOTES:**  
 1. FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-30.

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DAVIE COUNTY  
 BRIDGE NO.: 86  
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENTS 10, 11 & 12  
 SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 WBL  
 OVER YADKIN RIVER

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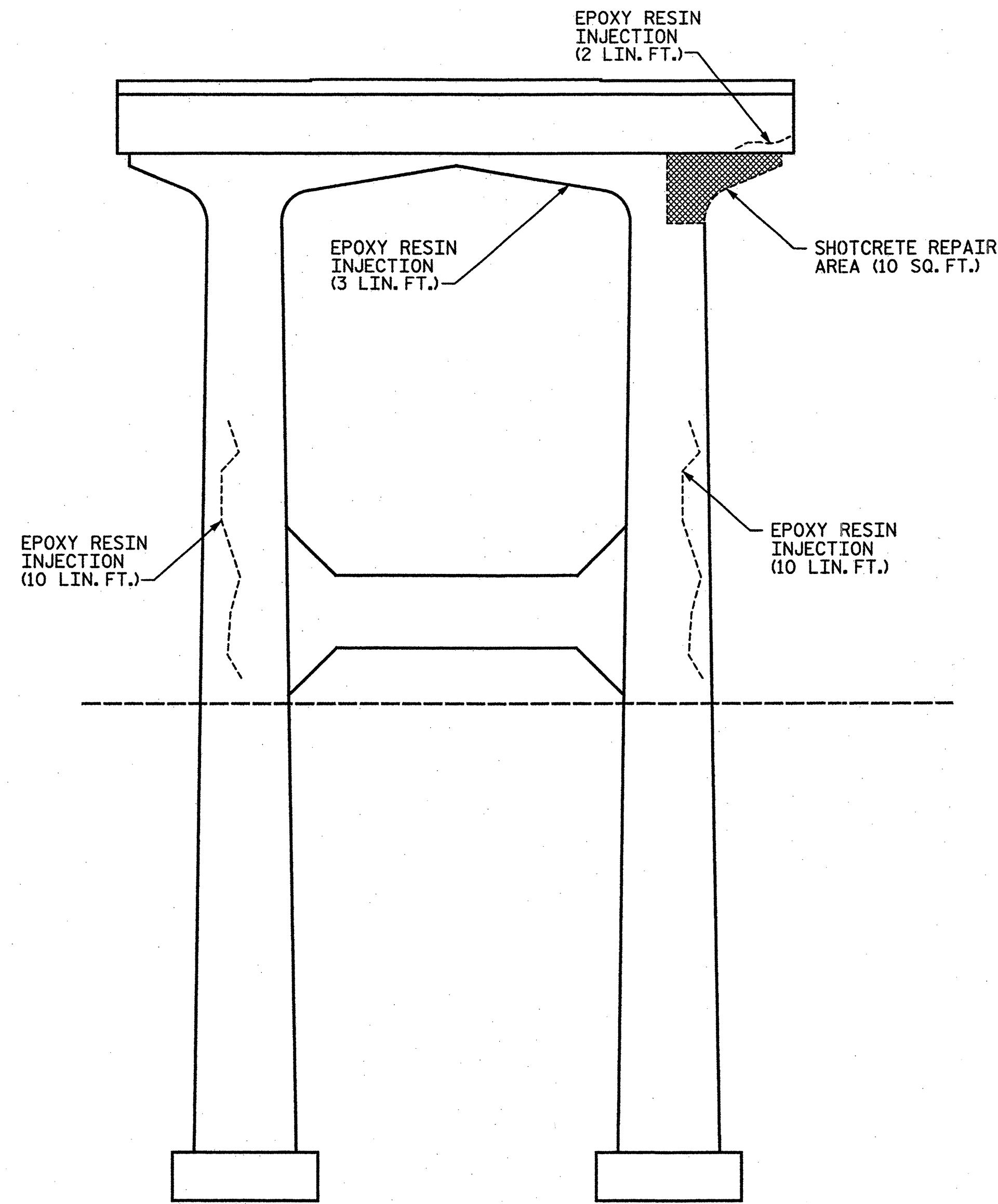
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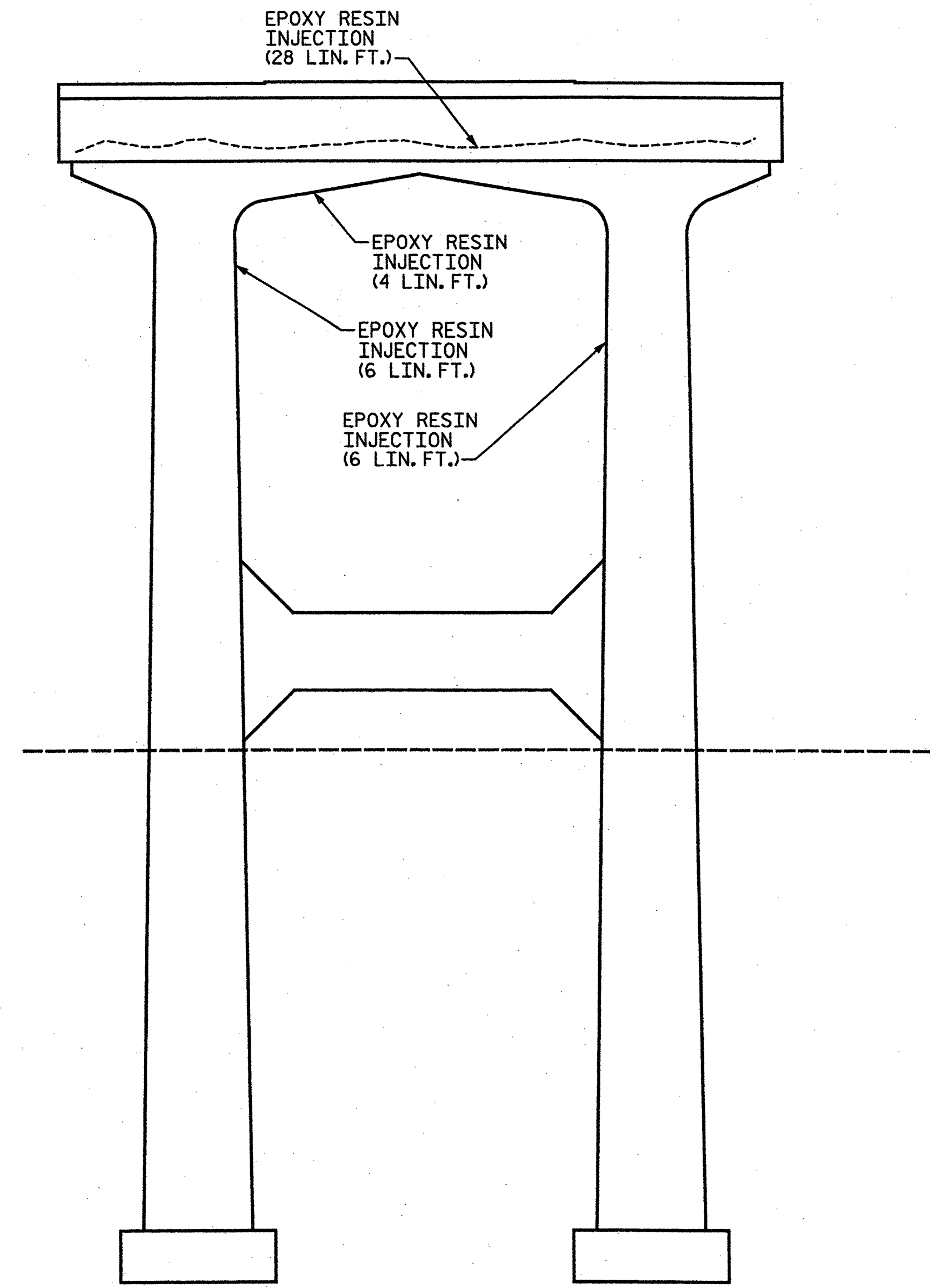
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ELEVATION OF BENT 13 - LOOKING EAST



ELEVATION OF BENT 13 - LOOKING WEST

**NOTES:**

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-30.

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DAVIE COUNTY

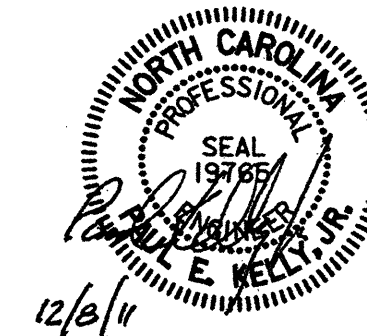
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 13  
SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 WBL  
OVER YADKIN RIVER

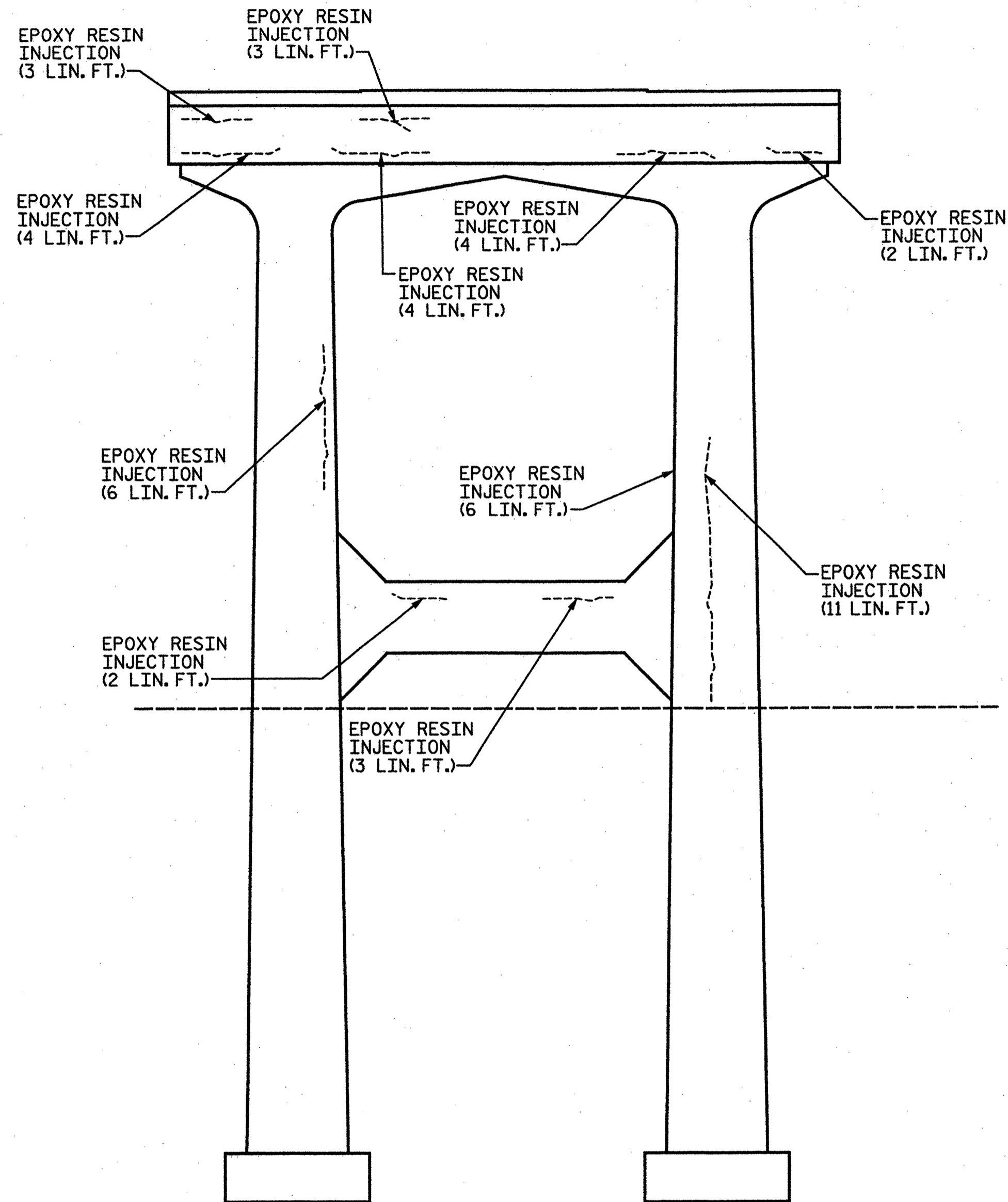


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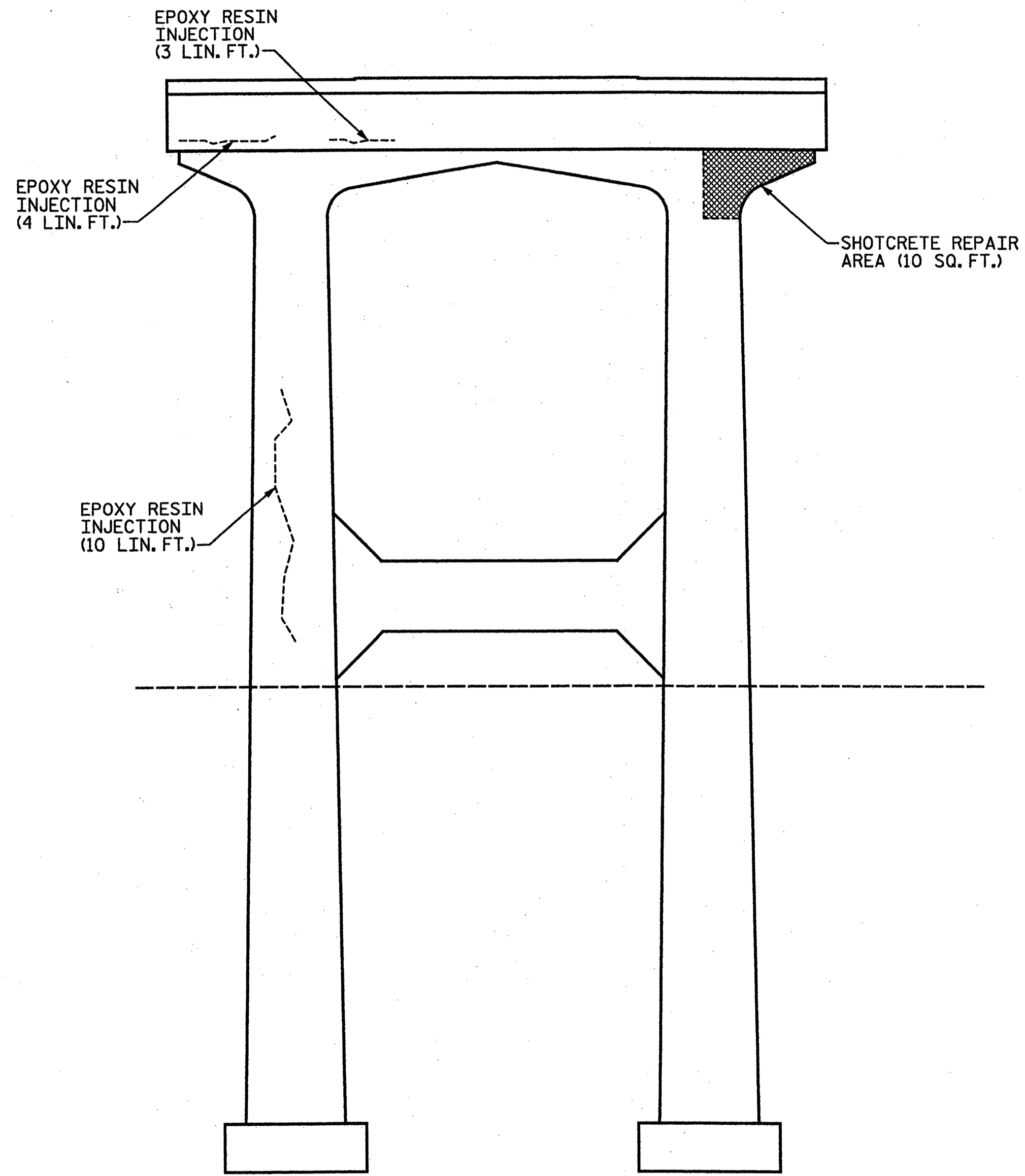
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 12/7/2011  
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ELEVATION OF BENT 18 - LOOKING EAST



ELEVATION OF BENT 18 - LOOKING WEST

**NOTES:**

- FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-30.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

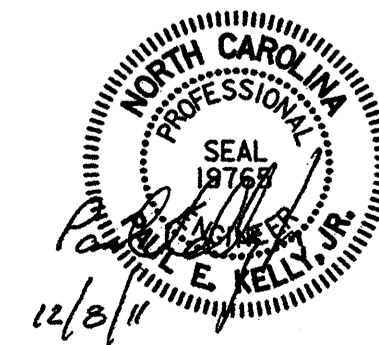
BRIDGE NO.: 86

REHAB. OF BRIDGE NO. 86 SHEET 14 OF 15

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 18  
SUBSTRUCTURE REPAIR

BRIDGE ON I-40 WBL  
OVER YADKIN RIVER

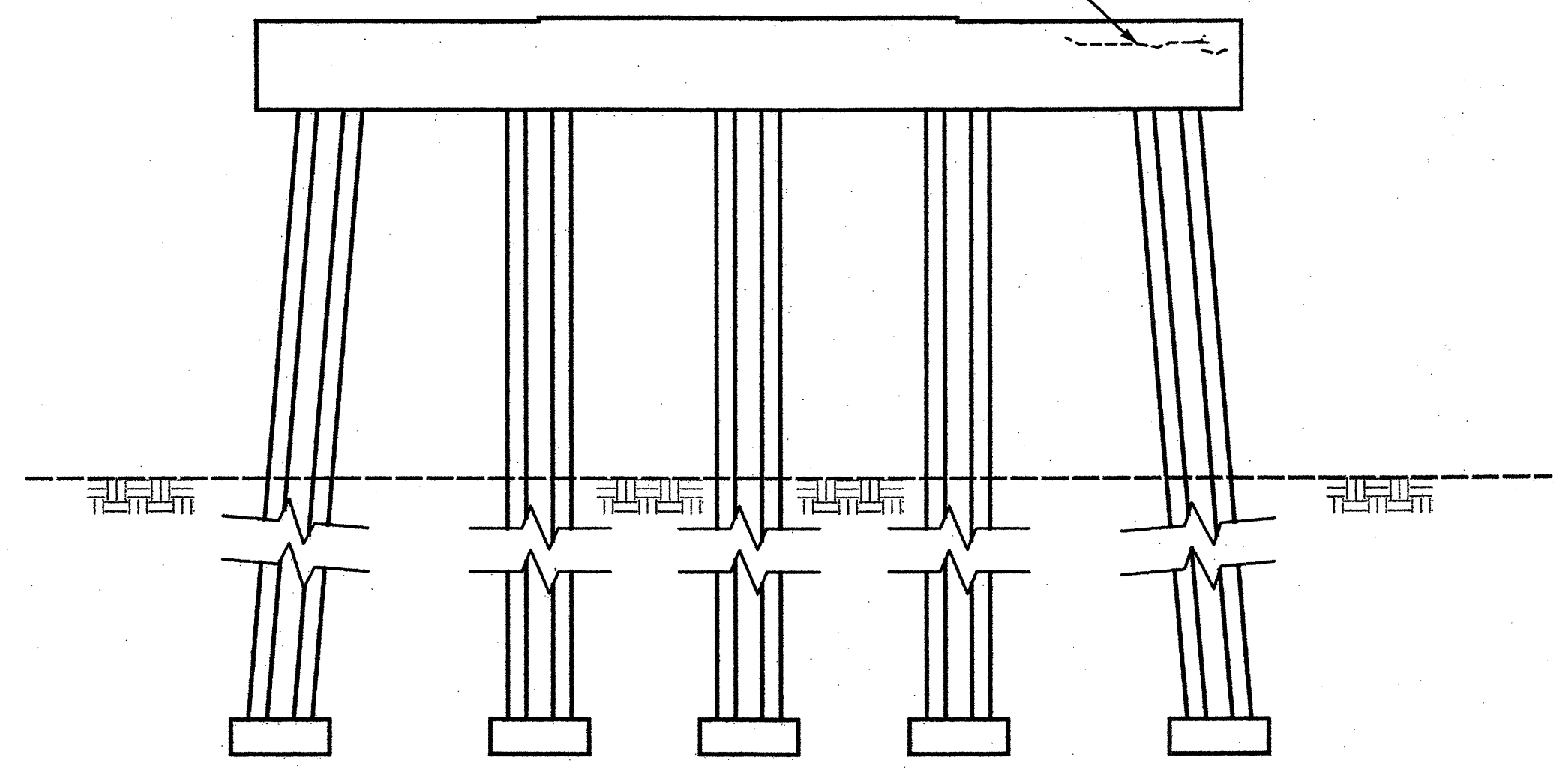


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 CHECKED BY : EPS DATE : 12-11

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 Charlotte, NC 28208  
 NC License NO. F-0391

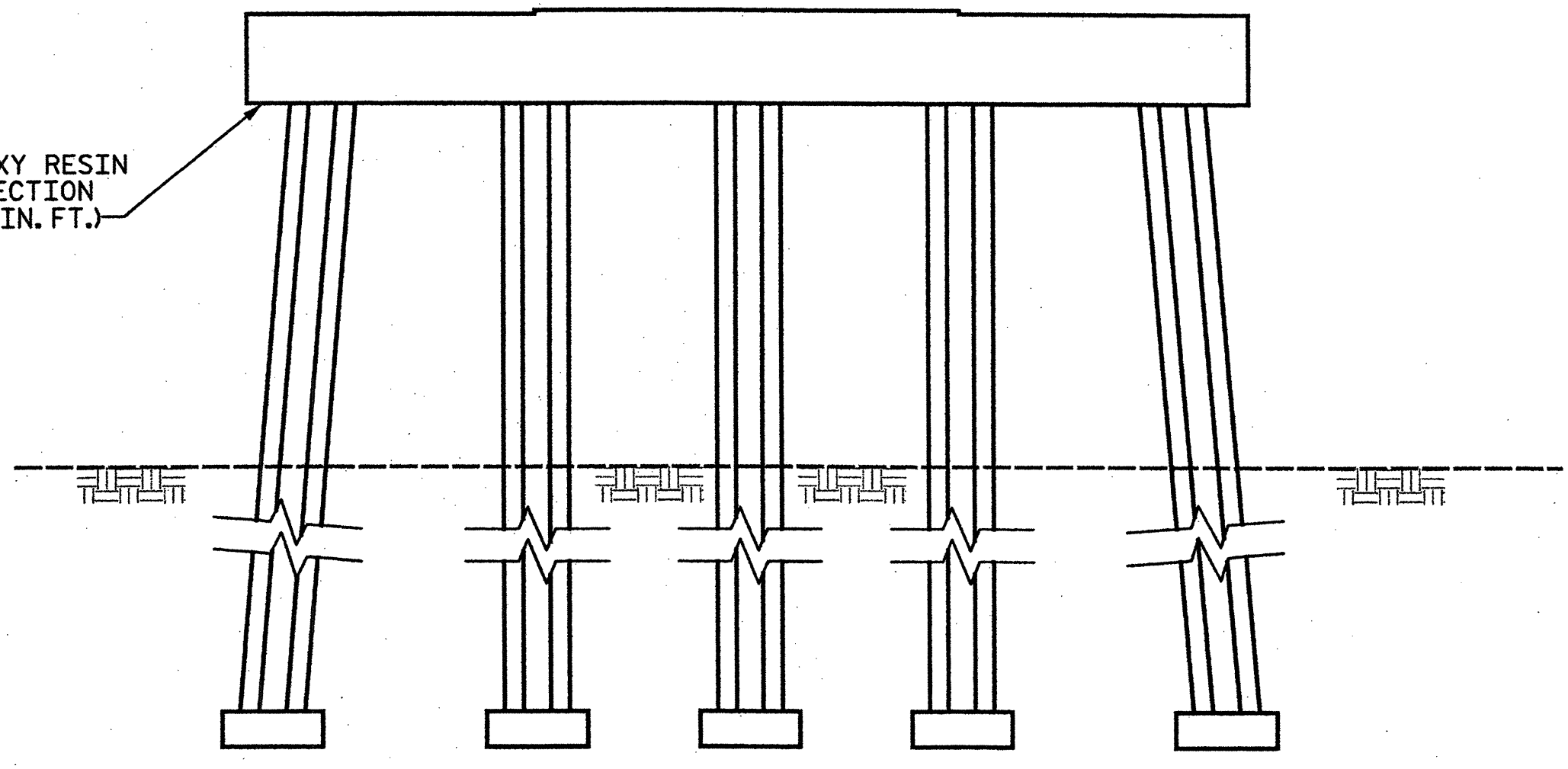
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL
2			4			S-42

EPOXY RESIN INJECTION (5 LIN. FT.)



ELEVATION OF BENT 19 - LOOKING EAST

EPOXY RESIN INJECTION (4 LIN. FT.)



ELEVATION OF BENT 19 - LOOKING WEST

NOTES:

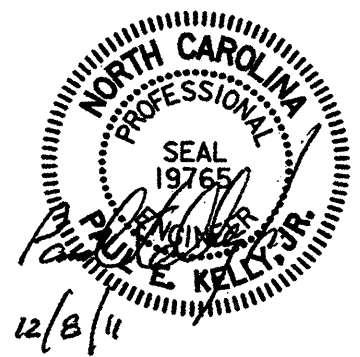
- 1. FOR NOTES AND TYPICAL CONCRETE REPAIR DETAILS, SEE SHEET S-30.

PROJECT NO. 17BP.9.P.2

DAVIE COUNTY

BRIDGE NO.: 86

REHAB. OF BRIDGE NO. 86 SHEET 15 OF 15



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 19  
SUBSTRUCTURE REPAIR**

BRIDGE ON I-40 WBL  
OVER YADKIN RIVER

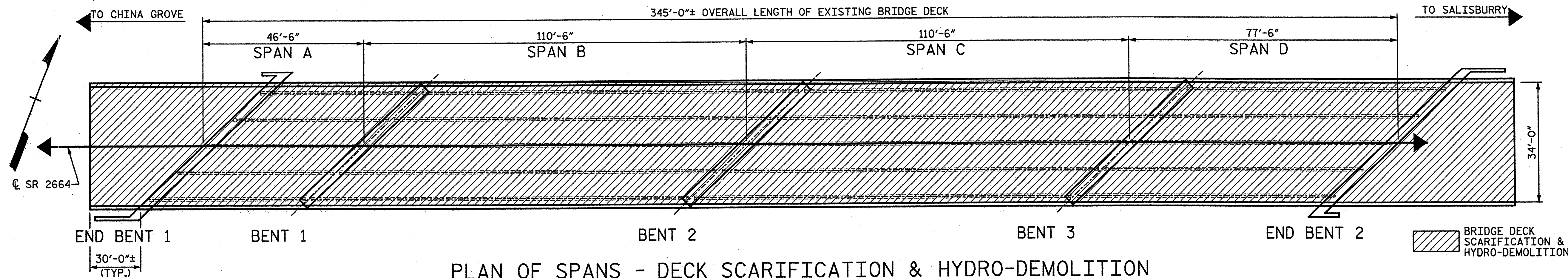
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-37
2			4			S-42

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NC License No. F-0991

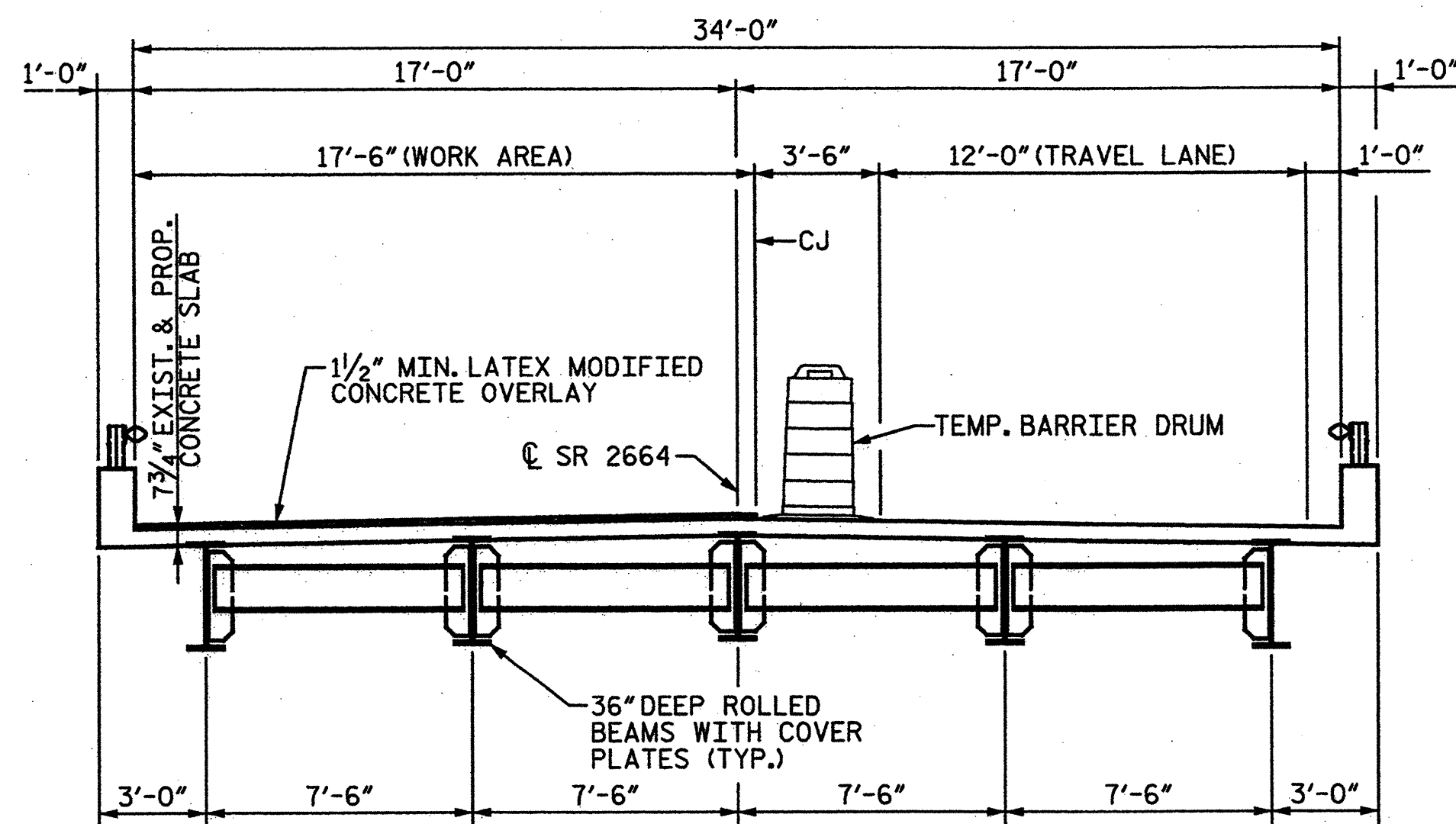
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12/7/2011  
jerlen

DRAWN BY : MTC DATE : 12-11  
CHECKED BY : EPS DATE : 12-11



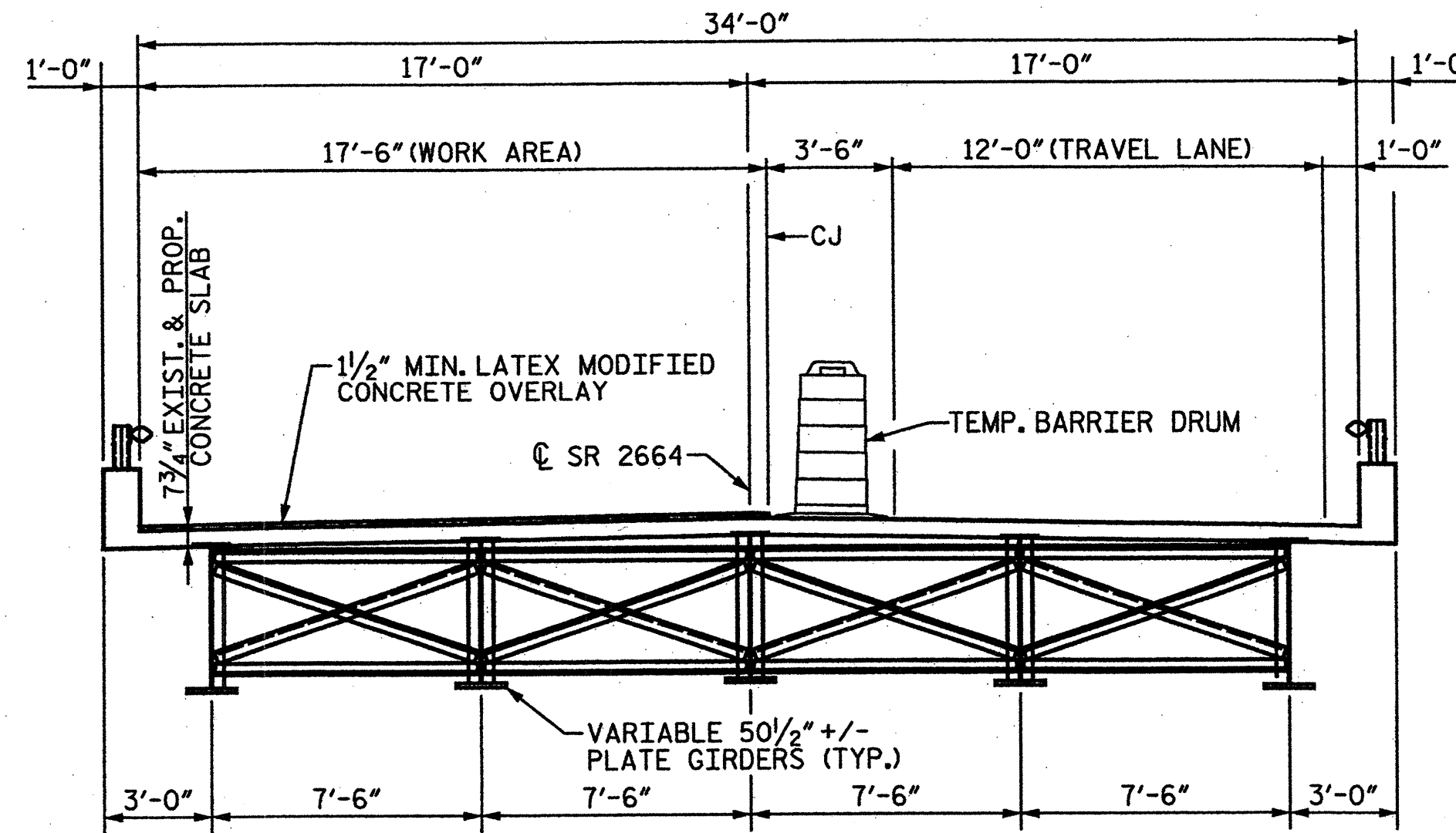


**PLAN OF SPANS - DECK SCARIFICATION & HYDRO-DEMOLITION**  
 (CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.)



**TYPICAL SECTION**

(SPANS A & D)  
 (STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)



**TYPICAL SECTION**

(SPANS B & C)  
 (STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)

**NOTES:**

- LATEX MODIFIED CONCRETE OVERLAY SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH. SEE SPECIAL PROVISIONS.
- FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.
- THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
- EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.

**TOTAL BILL OF MATERIAL**

DECK SCARIFICATION	*CLASS I SURFACE PREPARATION	*CLASS II SURFACE PREPARATION	*CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY VERY EARLY STRENGTH	**FOAM JOINT SEAL	GROOVING BRIDGE FLOORS
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.
1,666	1,022	281	0	1,666	69.4	1,666	LUMP SUM	10,506

\* QUANTITIES FOR INFORMATION ONLY.  
 \*\* THE ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

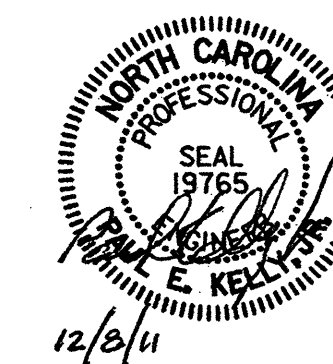
PROJECT NO. **17BP.9.P.2**  
**ROWAN** COUNTY  
 BRIDGE NO.: **94**

REHAB. OF BRIDGE NO. 94 SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS  
 TYPICAL SECTION**

BRIDGE ON SR 2664  
 (US 29 CONNECTOR) OVER  
 I-85 AND US 601

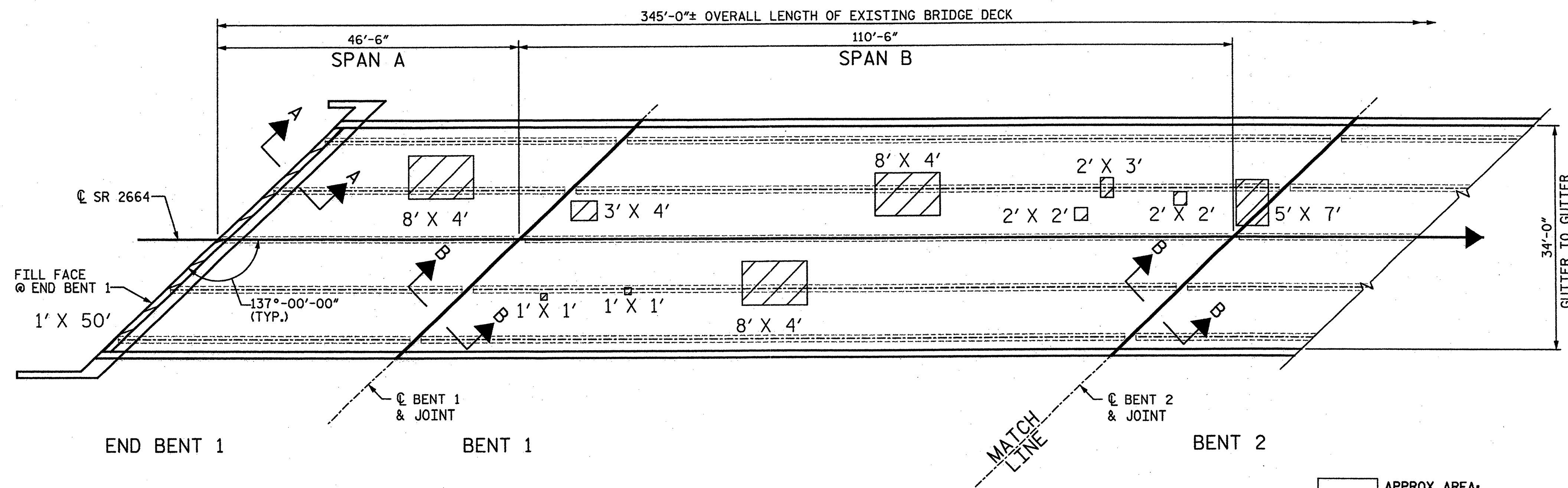


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 NC License No. F-0981

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			S-42

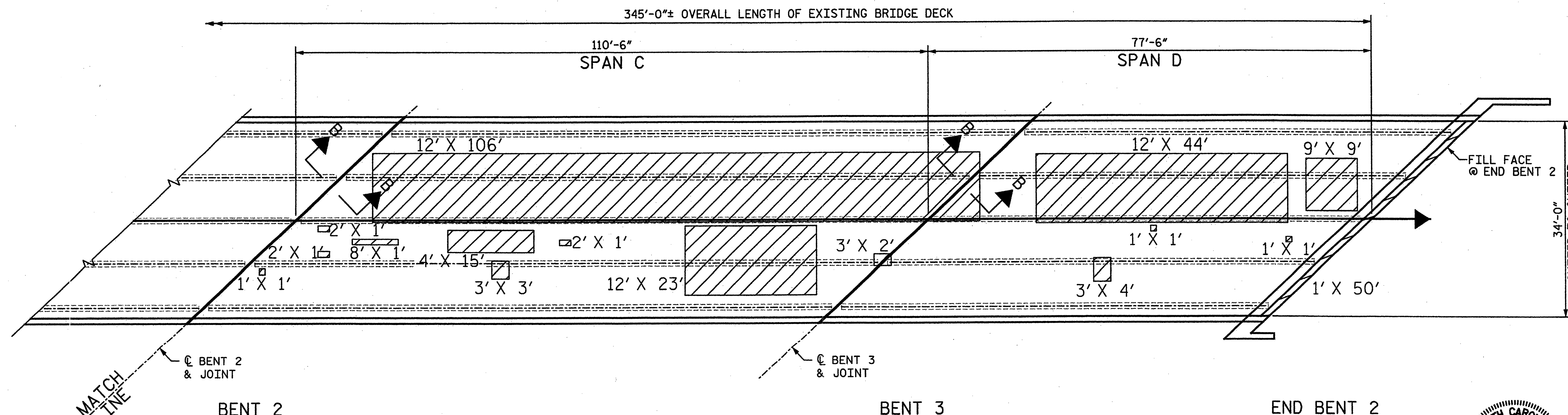
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 Jerlen  
 12/8/2011



**PARTIAL PLAN OF SPANS - DECK REPAIRS**  
(SEE SHEET S-40 FOR SECTION A-A & B-B)

□ APPROX. AREA: CLASS I REPAIR  
 ▨ APPROX. AREA: CLASS II REPAIR



**PARTIAL PLAN OF SPANS - DECK REPAIRS**  
(SEE SHEET S-40 FOR SECTION A-A & B-B)

**NOTES:**

THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 3 OF 3 AND SPECIAL PROVISIONS.

PROJECT NO. 17BP.9.P.2

ROWAN COUNTY

BRIDGE NO.: 94

REHAB. OF BRIDGE NO. 94 SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF SPANS  
 DECK REPAIR  
 SHEET 1 OF 2

BRIDGE ON SR 2664  
 (US 29 CONNECTOR) OVER  
 I-85 AND US 601

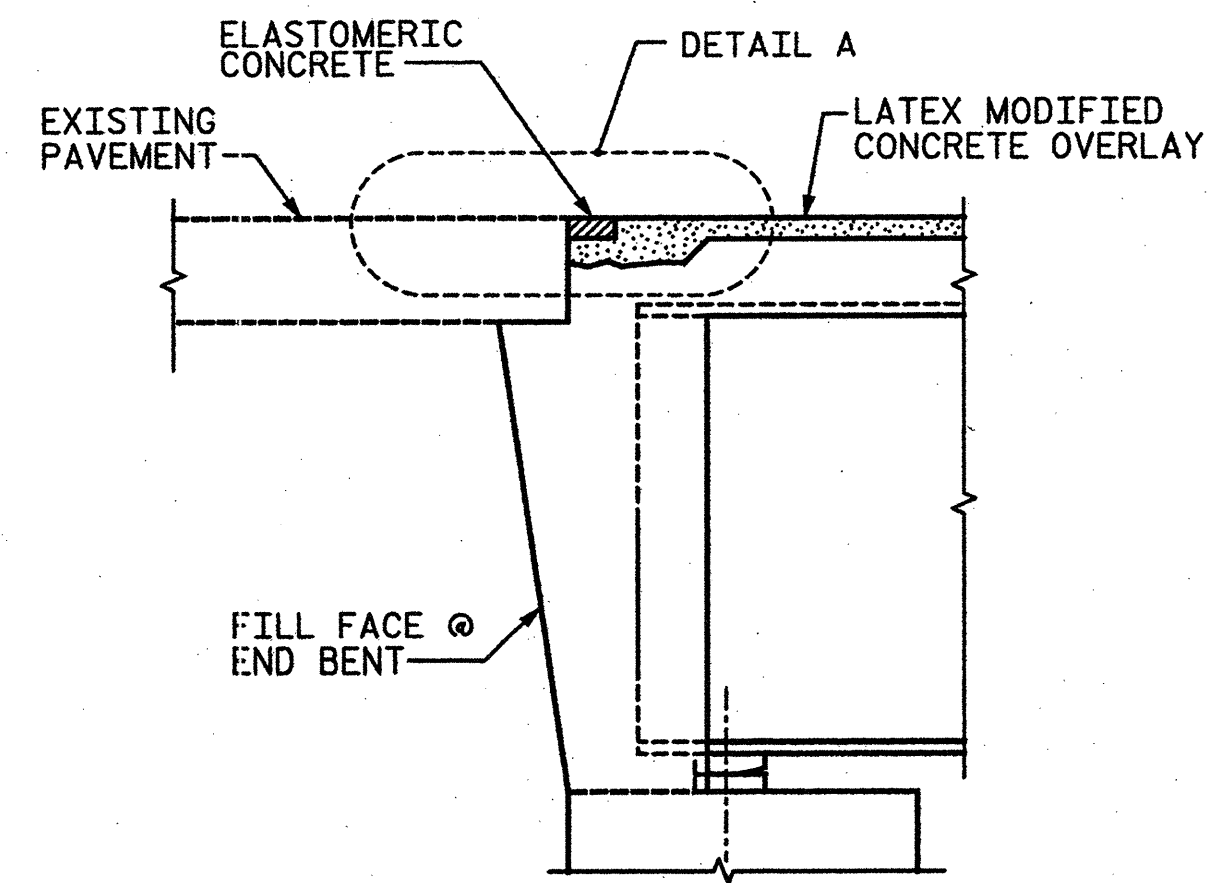


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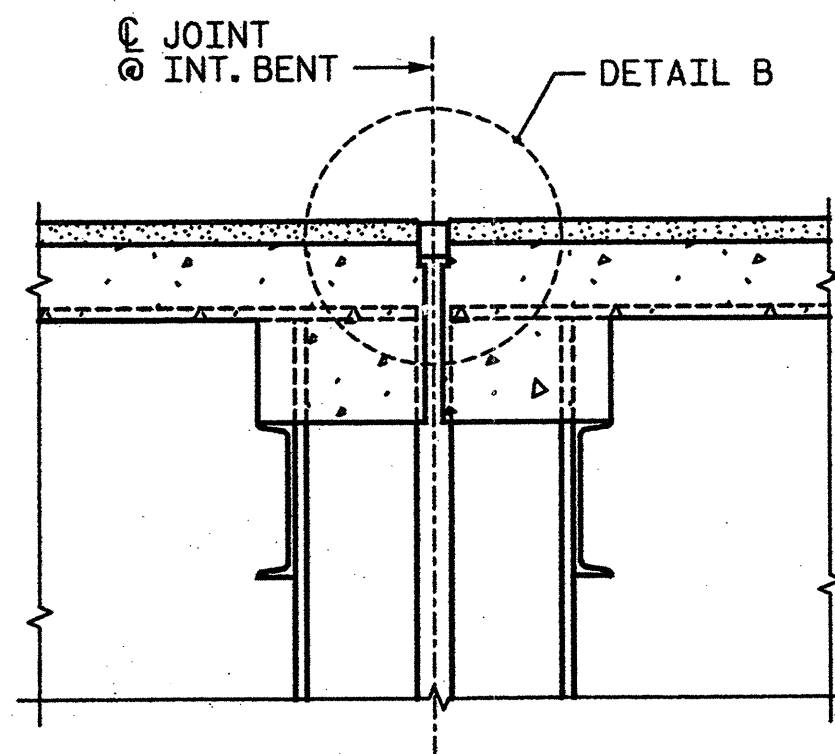
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 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			S-42

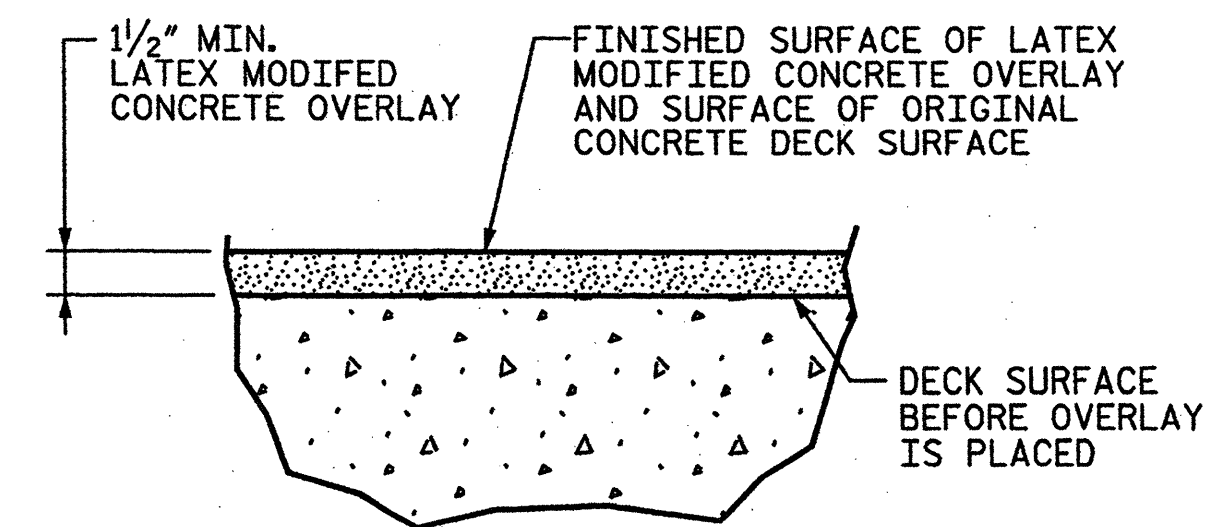
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 12/8/2011  
 pkelly



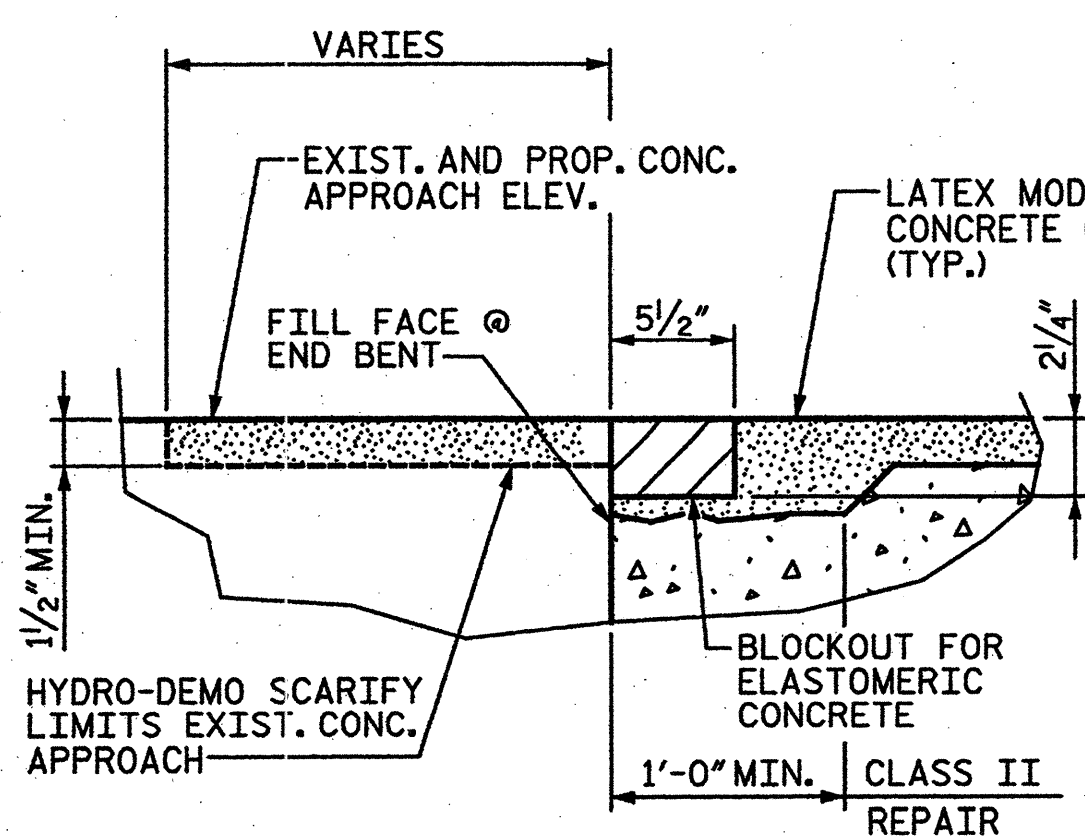
**SECTION A-A**  
(PROPOSED JOINT @ END BENT 1 SHOWN, END BENT 2 SIMILAR)



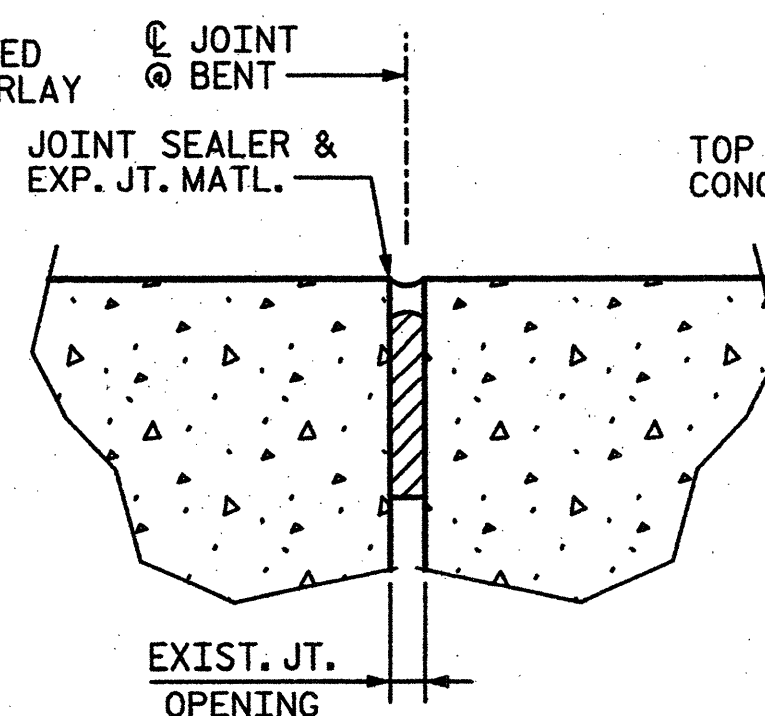
**SECTION B-B**  
(PROPOSED JOINT @ INTERIOR BENTS 1 & 3)



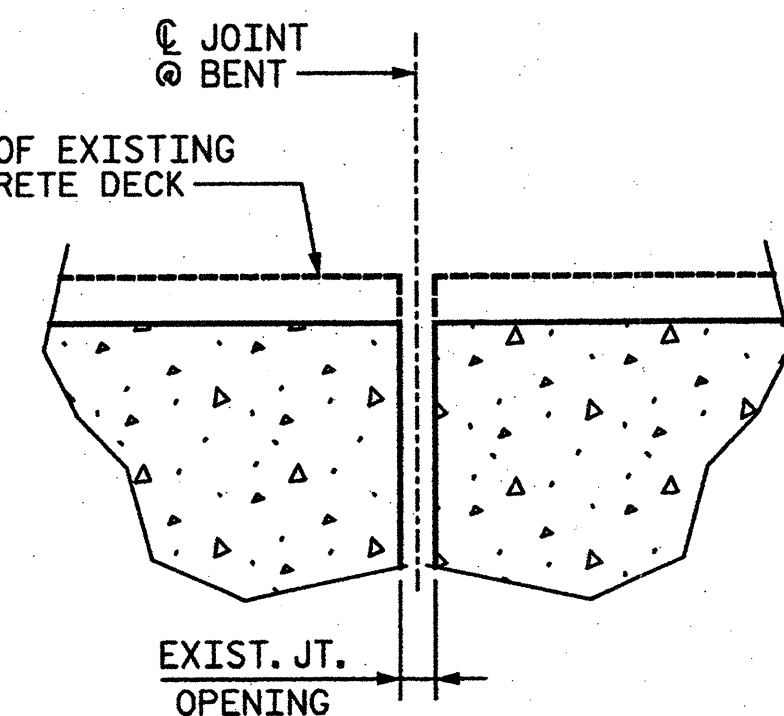
**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**



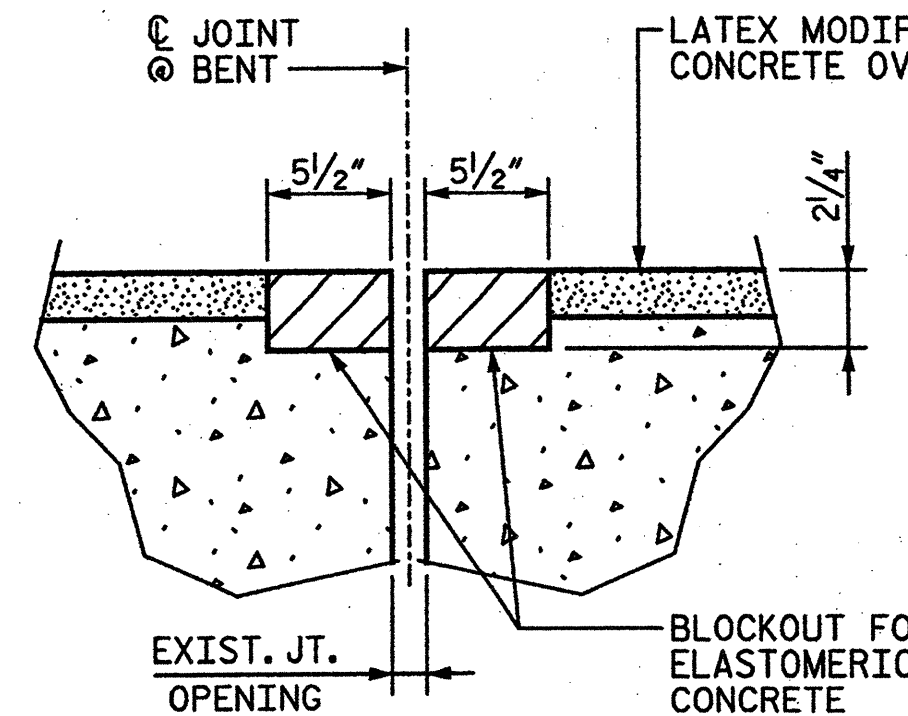
**DETAIL A**  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)



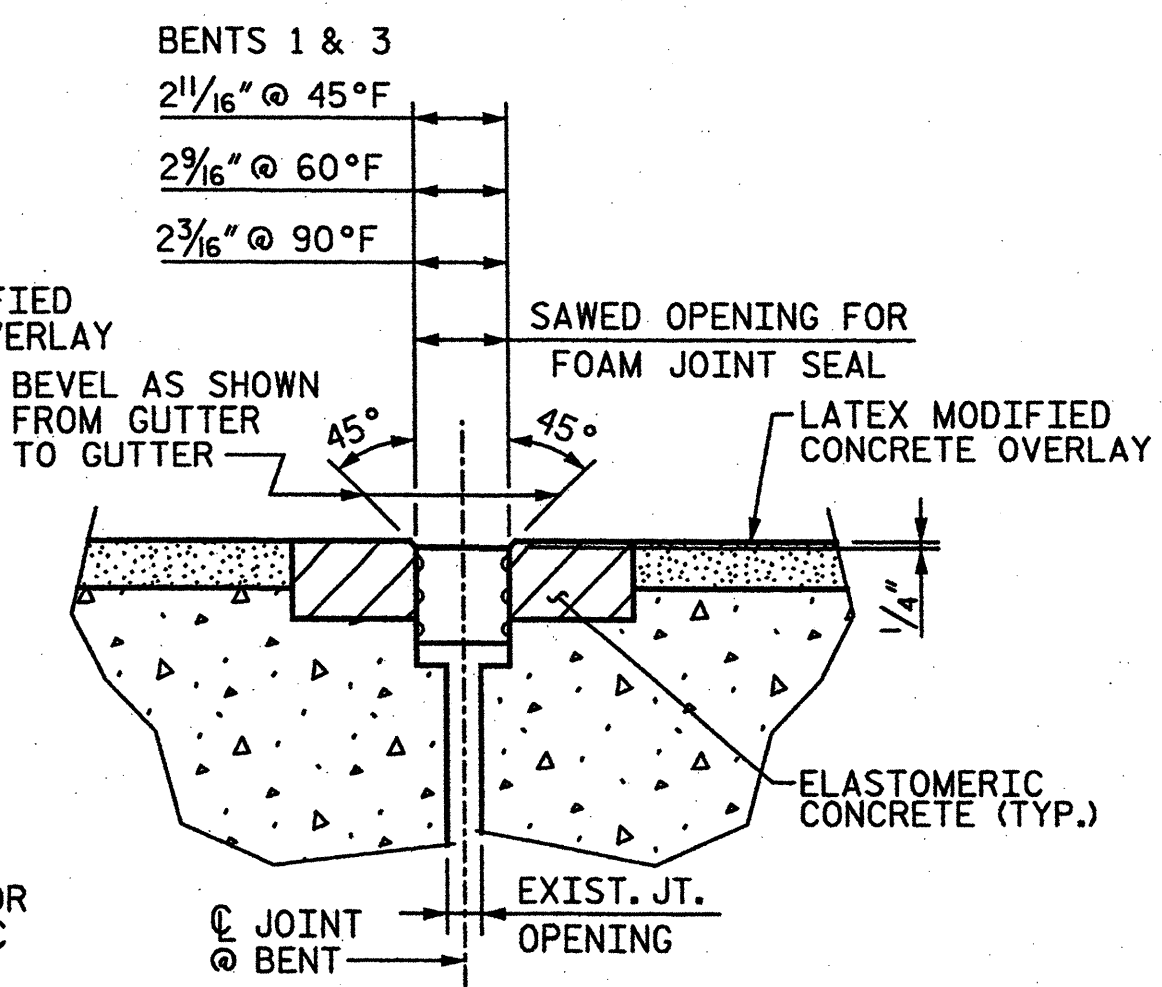
**EXISTING JOINT DETAIL**



**MINIMUM CONCRETE REMOVAL DETAIL @ EXISTING JOINT**



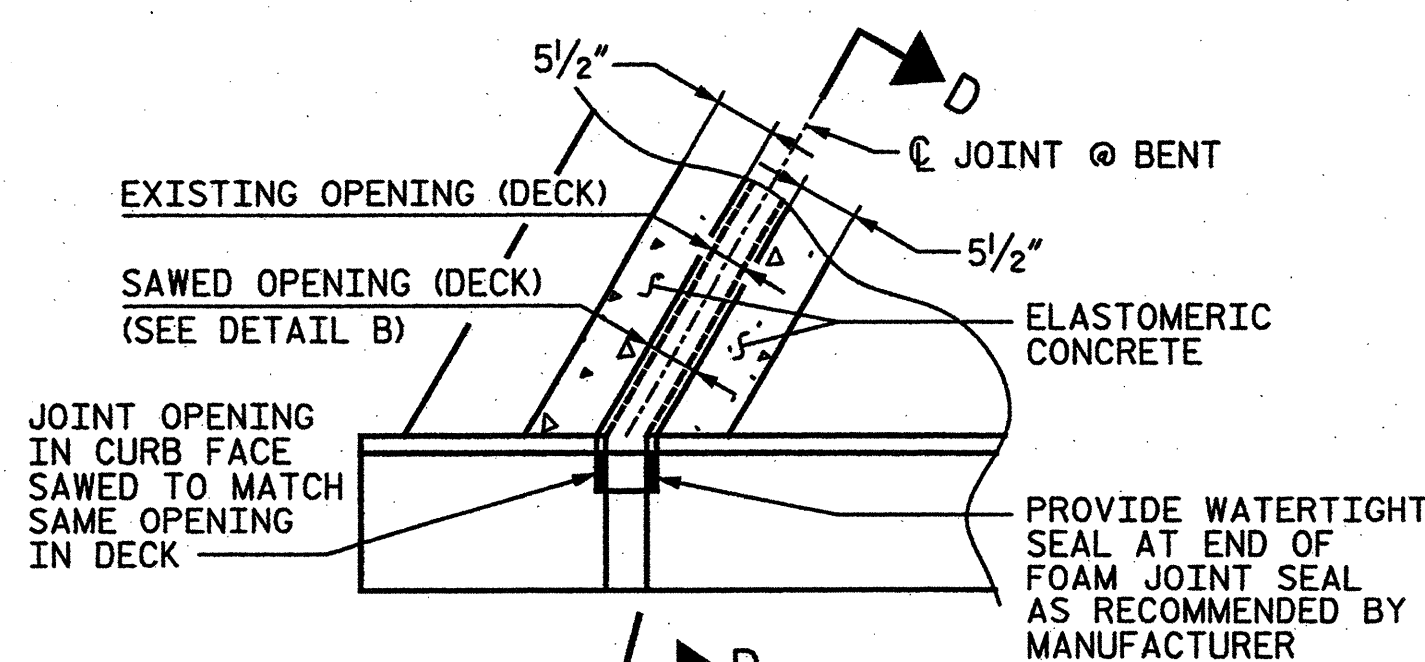
**PROPOSED FOAM JOINT SEAL (DETAIL BEFORE SAWING)**



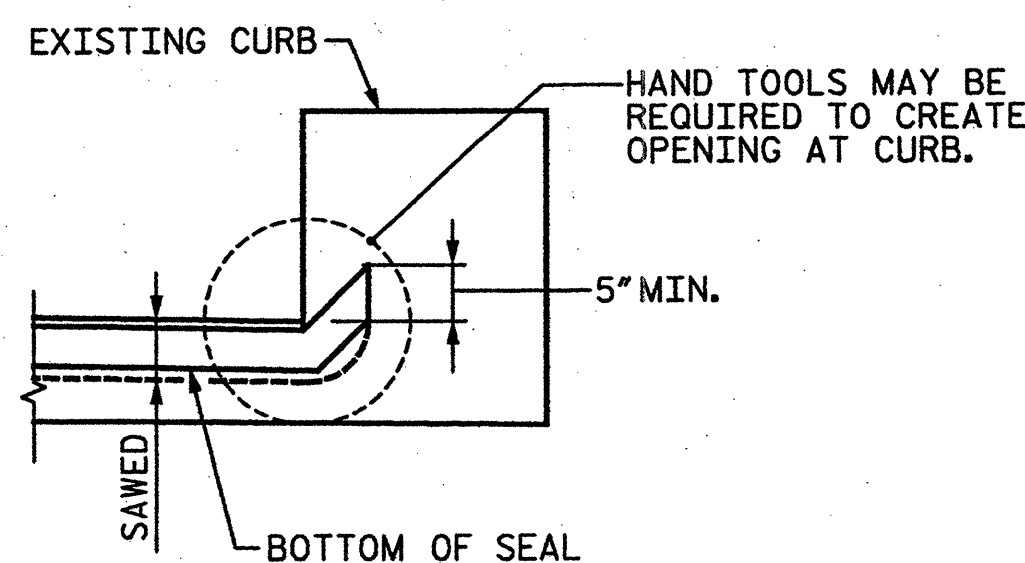
**PROPOSED FOAM JOINT SEAL (DETAIL AFTER SAWING)**

**NOTES:**

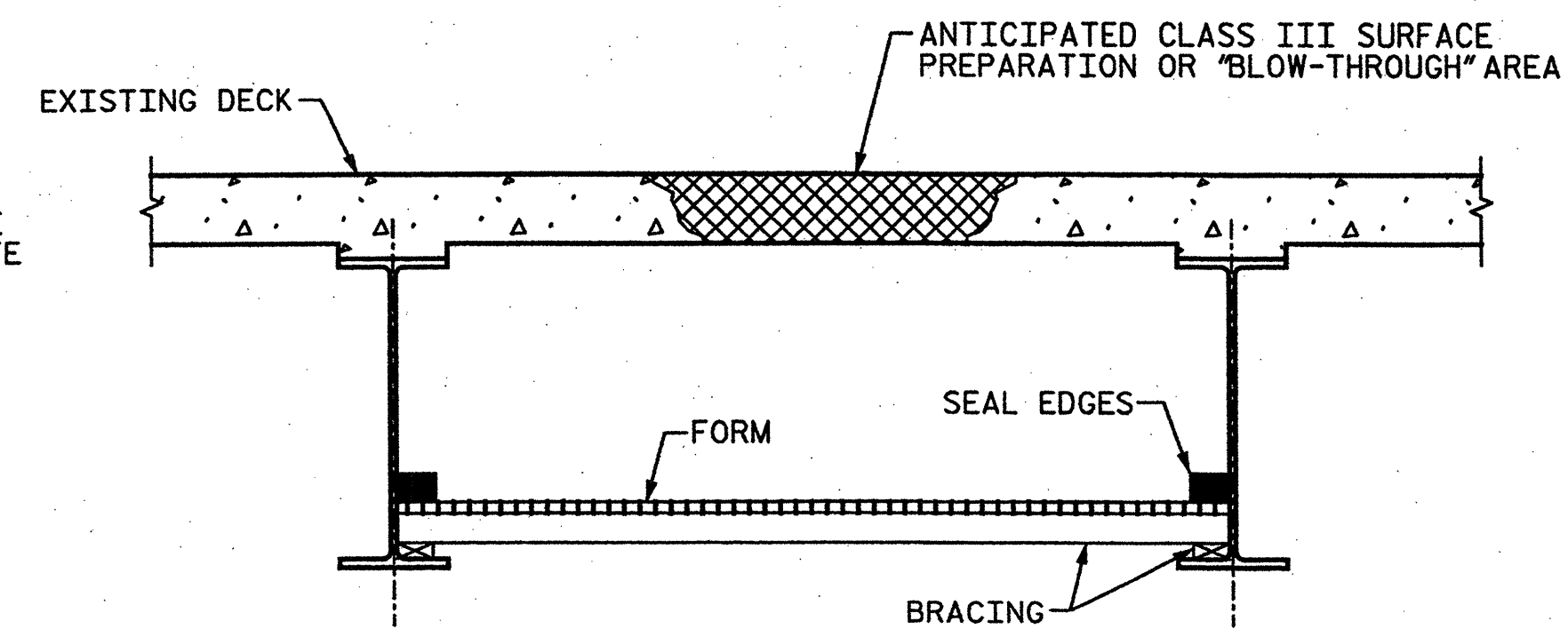
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
- THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 3/16" AT BENTS 1 & 3.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
- FOAM JOINT OPENINGS SHALL BE CONFIRMED IN THE FIELD. CONTRACTOR SHALL MAKE ADJUSTMENTS TO FOAM JOINT SEALS, AS NECESSARY, TO MEET EXISTING CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS. ANY CHANGES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ANY COST ASSOCIATED WITH THESE ADJUSTMENTS ARE CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE.
- FOR ADDITIONAL NOTES SEE SHEET 1 OF 3.



**PLAN OF JOINT SEAL AT CURB**



**SECTION D-D**

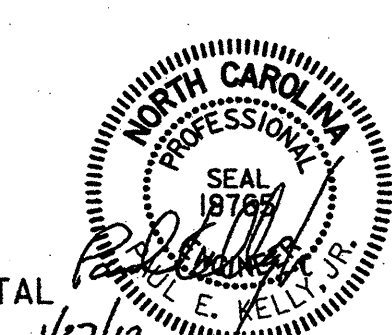


**TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK DETAIL**

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.



PROJECT NO. **17BP.9.P.2**

ROWAN COUNTY

BRIDGE NO.: **94**

REHAB. OF BRIDGE NO. 94 SHEET 3 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

PLAN OF SPANS  
DECK REPAIR  
SHEET 2 OF 2

BRIDGE ON SR 2664  
(US 29 CONNECTOR) OVER  
I-85 AND US 601

REVISIONS

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2			4		

SHEET NO.  
S-40

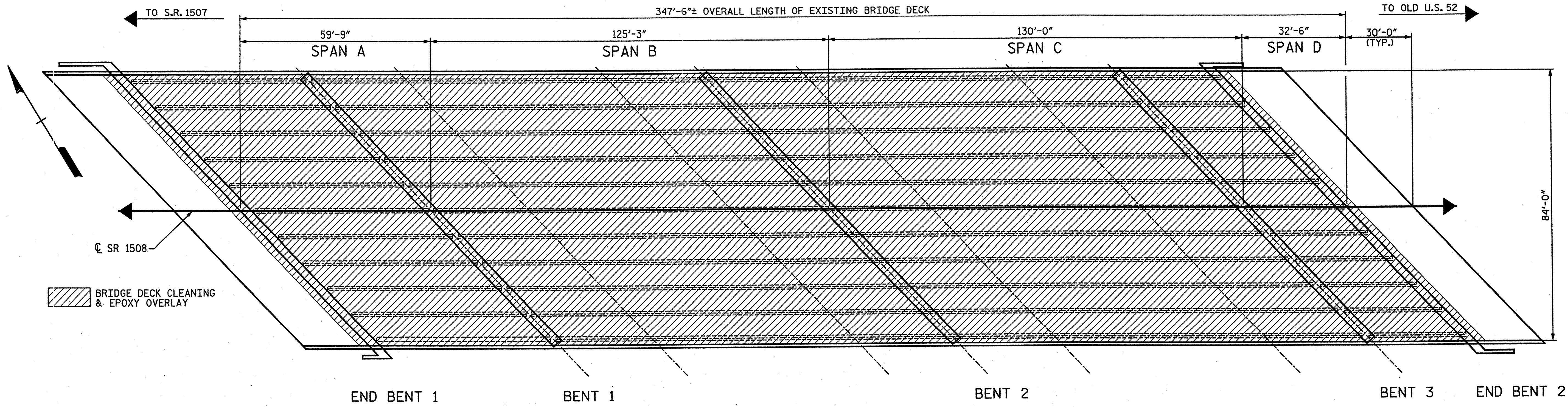
TOTAL SHEETS  
S-42

DRAWN BY : MTC DATE : 12-11  
CHECKED BY : JAS DATE : 12-11

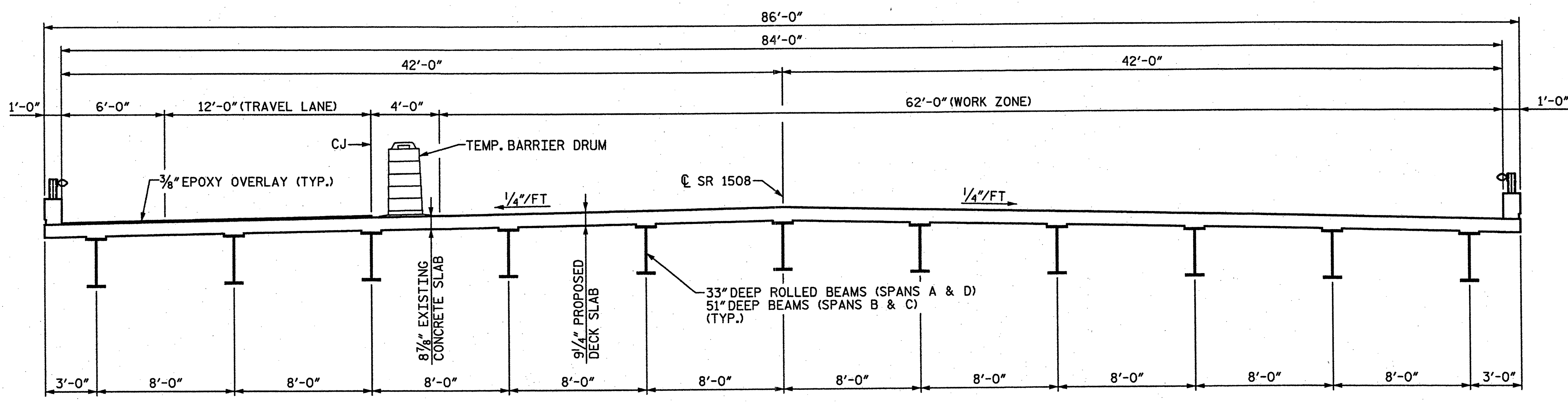
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Charlotte, NC 28208  
NC License No. F-0291

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1/27/2012

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**PLAN OF SPANS - PLACEMENT OF EPOXY OVERLAY**



**TYPICAL SECTION**  
(STAGE I CONST. SHOWN, STAGE II CONST. OPPOSITE HAND)

**NOTES:**  
FOR REPAIR OF BRIDGE DECK USING EPOXY OVERLAY, SEE SPECIAL PROVISIONS.  
EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.

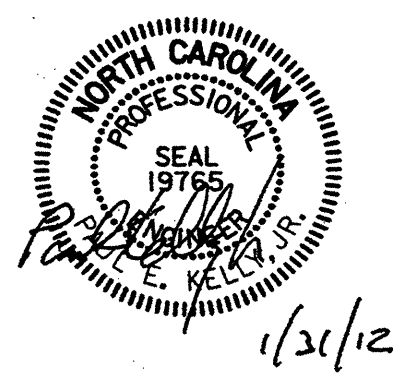
**PROJECT NO. 17BP.9.P.2**  
**DAVIDSON COUNTY**  
**BRIDGE NO.: 136**

REHAB. OF BRIDGE NO. 136 SHEET 1 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**PLAN OF SPANS  
TYPICAL SECTION**

BRIDGE ON SR 1508  
(HICKORY TREE ROAD)  
OVER US 52



TOTAL BILL OF MATERIAL			
CLASS II CONCRETE DECK REPAIRS FOR EPOXY OVERLAY	PLACEMENT OF EPOXY OVERLAY	* CLASS AA CONCRETE	FOAM JOINT SEAL
SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM
300	29,694	0.3	LUMP SUM

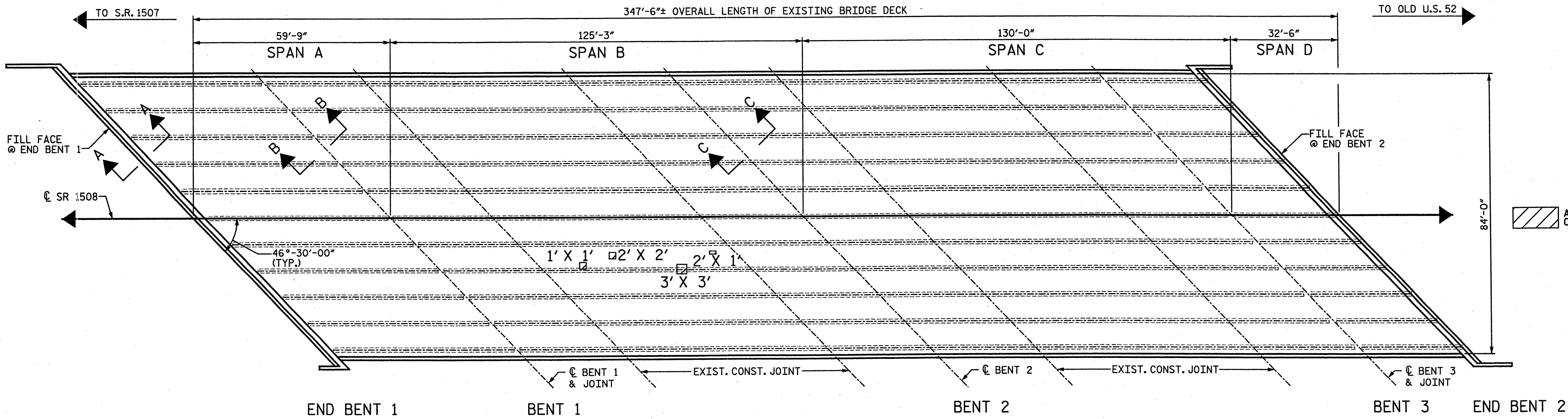
\* QUANTITIES FOR INFORMATION ONLY.

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CHECKED BY : JAS DATE : 12-11

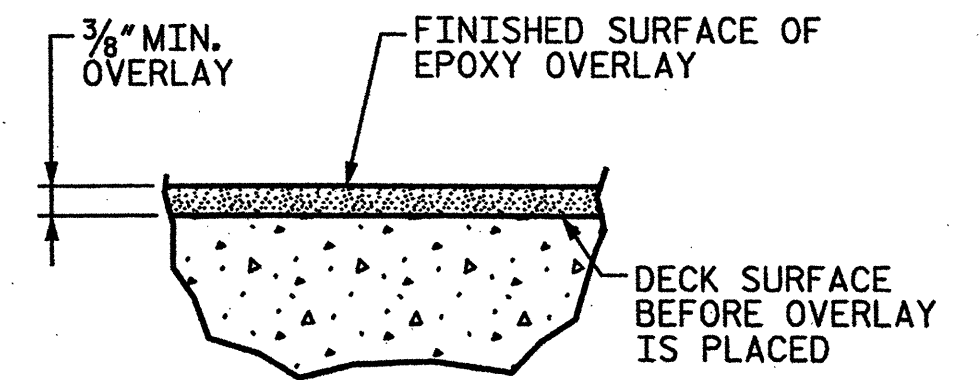
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NC License No. F-0991

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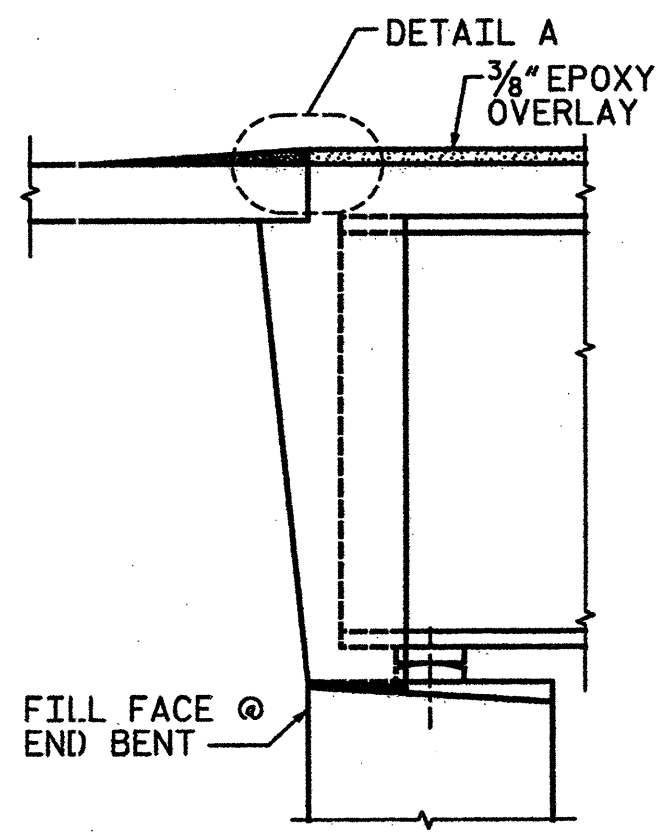
SHEET NO. S-41  
TOTAL SHEETS S-42



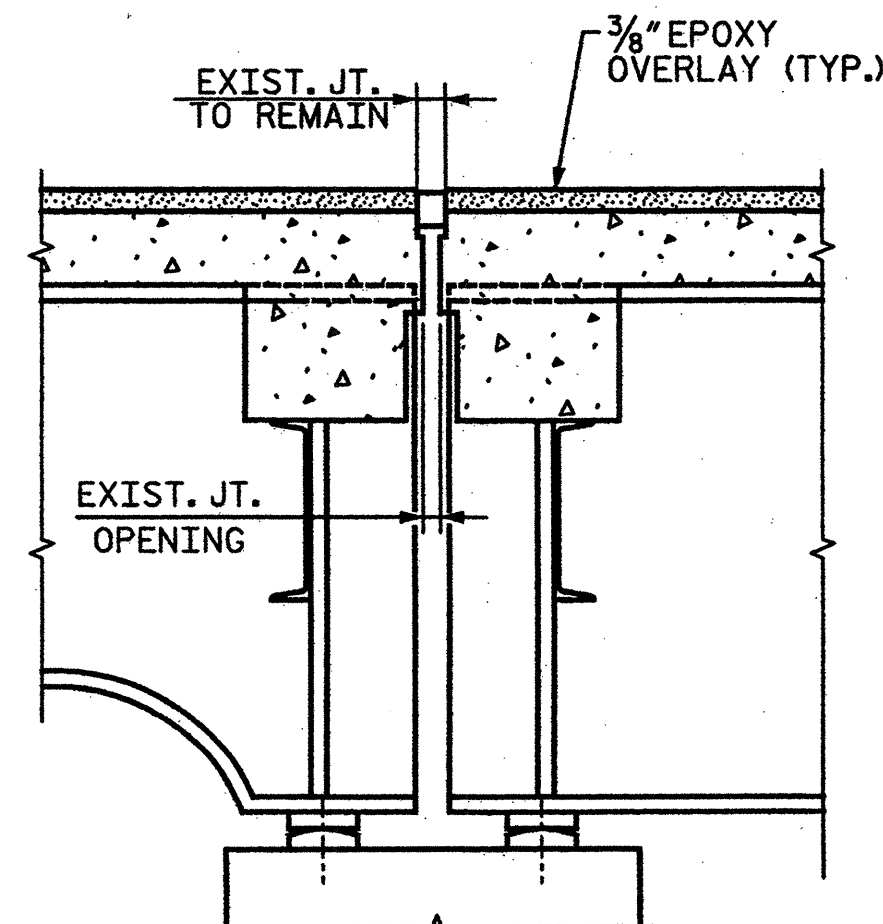
PLAN OF SPANS - DECK REPAIRS



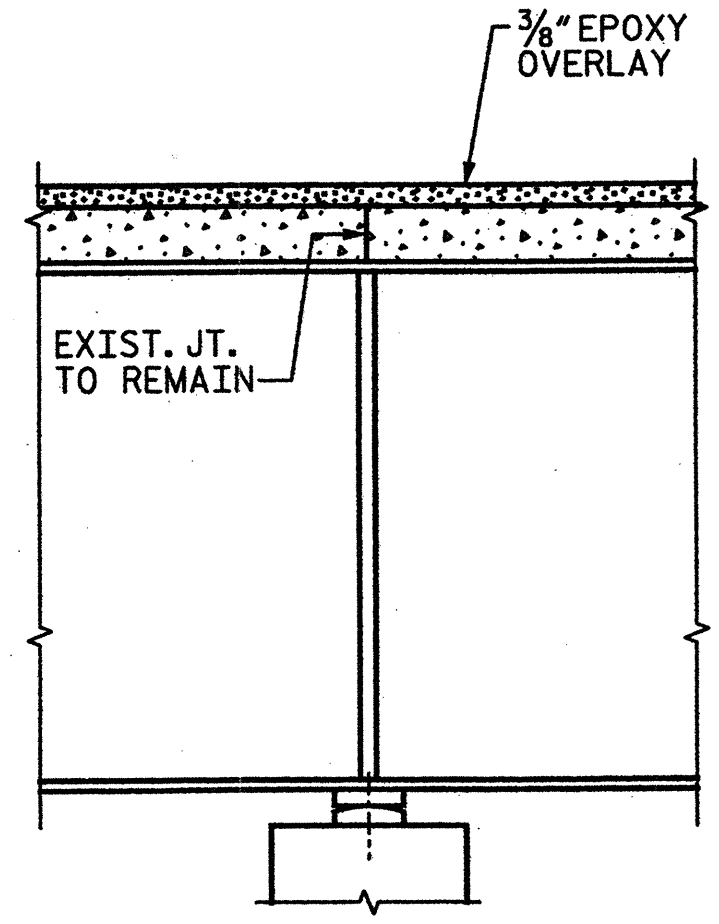
DETAIL FOR EPOXY OVERLAY



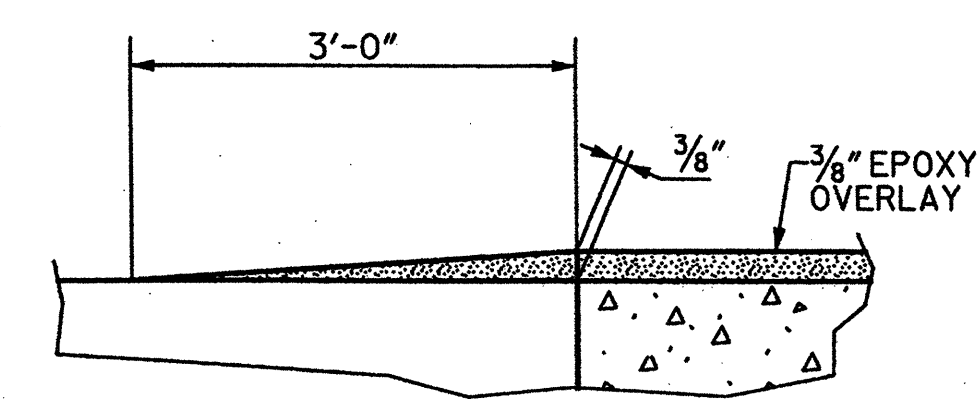
SECTION A-A  
(PROPOSED JOINT @ END BENT 1 SHOWN, END BENT 2 SIMILAR)



SECTION B-B  
(BENTS 1 & 3)



SECTION C-C  
(BENT 2)

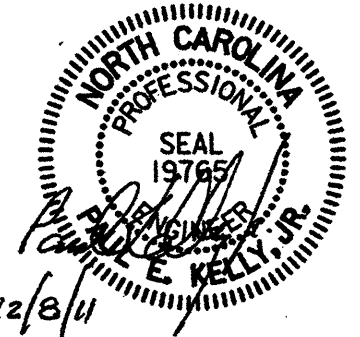


DETAIL A  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)

**NOTES:**  
 FOR CLASS II CONCRETE DECK REPAIRS, SEE SPECIAL PROVISIONS.  
 THE BOUNDARY AREAS IDENTIFIED FOR CLASS II CONCRETE DECK REPAIRS ARE APPROXIMATE.

PROJECT NO. 17BP.9.P.2  
DAVIDSON COUNTY  
 BRIDGE NO.: 136  
 REHAB. OF BRIDGE NO. 136 SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PLAN OF SPANS  
 DECK REPAIR  
 BRIDGE ON SR 1508  
 (HICKORY TREE ROAD)  
 OVER US 52



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 Charlotte, NC 28208  
 NC License No. F-0291

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1			3			TOTAL SHEETS
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DRAWN BY : MTC DATE : 12-11  
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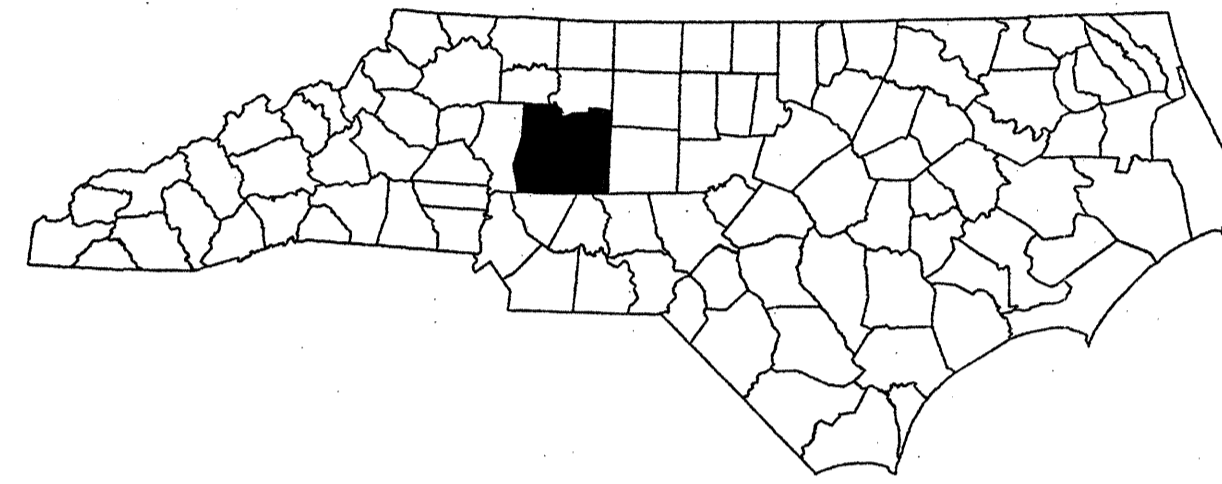
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 12/8/2011  
 Jerleen

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**DAVIE, DAVIDSON  
AND ROWAN COUNTIES**

**DIVISION 9**



**LOCATION 1: DAVIE COUNTY BRIDGE #29 I-40 EB OVER HUNTING CREEK  
TYPE OF WORK: OVERLAY**

**LOCATION 2: DAVIE COUNTY BRIDGE #32 I-40 WB OVER HUNTING CREEK  
TYPE OF WORK: OVERLAY**

**LOCATION 3: DAVIE COUNTY BRIDGE #85 I-40 EB OVER YADKIN RIVER  
TYPE OF WORK: OVERLAY, REPLACE FINGER JOINTS, CONSTRUCT  
SUBSTRUCTURE REPAIRS**

**LOCATION 4: DAVIE COUNTY BRIDGE #86 I-40 WB OVER YADKIN RIVER  
TYPE OF WORK: OVERLAY, REPLACE FINGER JOINTS, CONSTRUCT  
SUBSTRUCTURE REPAIRS**

**LOCATION 5: DAVIDSON COUNTY BRIDGE #136 SR 1508 (HICKORY TREE ROAD)  
OVER US 52NC 8  
TYPE OF WORK: OVERLAY, JOINT REPAIRS**

**LOCATION 6: ROWAN COUNTY BRIDGE #94, ON US 29 CONNECTOR OVER I-85  
TYPE OF WORK: OVERLAY**

**SEE SHEET 1 FOR VICINITY MAPS**

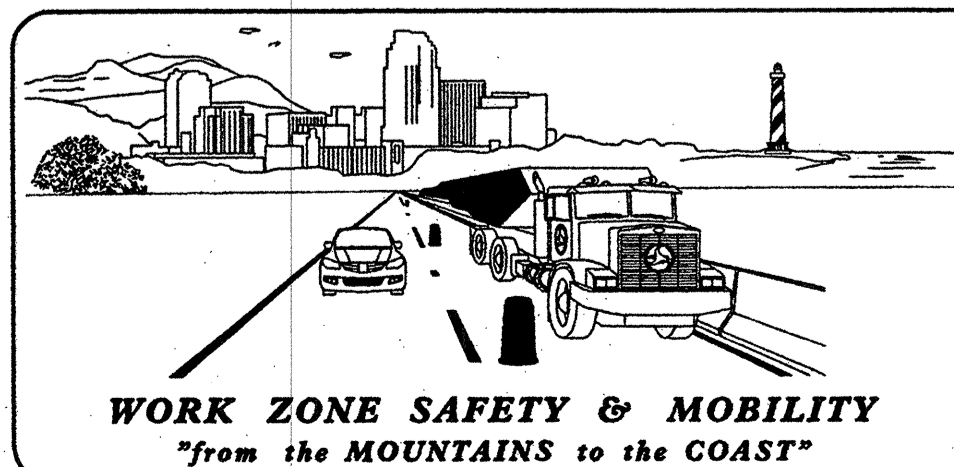
**INDEX OF SHEETS**

<u>SHEET NO.</u>	<u>TITLE</u>
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	GENERAL NOTES
TMP-1C	PHASING NOTES
TMP-1D	PHASING NOTES
TMP-2	TYPICAL SECTIONS

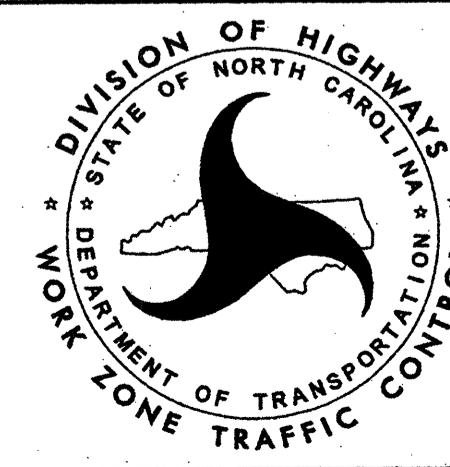
SHEET NO.

TMP-1

12/30/2011  
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PLAN PREPARED FOR NCDOT BRIDGE MANAGEMENT UNIT  
RALEIGH, NC

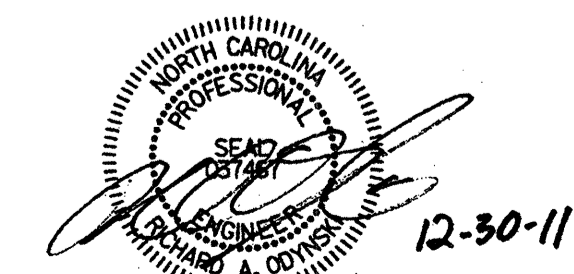


**STV / Ralph Whitehead Associates, Inc.**  
1000 West Morehead St., Ste. 200  
Charlotte, NC 28208  
NC License Number F-0991

PROJECT ENGINEER JOHN JOHNSON, PE  
DESIGN ENGINEER RICHARD ODYSKI, PE

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_

SEAL



**PROJECT: 17BP.9.P.2**

# ROADWAY STANDARD DRAWINGS

REV. SEPTEMBER 2011

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESS
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
1145.01	BARRICADES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES

# LEGEND

## GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. P.VMT.
- NORTH ARROW
- PROPOSED P.VMT.
- WORK AREA
- REMOVAL

## TRAFFIC CONTROL DEVICES

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

## TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

## SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

## PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

## PAVEMENT MARKERS

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

## PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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APPROVED: _____	DATE: _____			<p>ROADWAY STANDARD DRAWINGS &amp; LEGEND</p>

## 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 UNDESIRE 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-40, I-85 & US 29	FRIDAY 6:00 A.M. TO MONDAY 8:00 P.M.
I-40, I-85 & US 29	TUESDAY 6:00 A.M. TO TUESDAY 8:00 P.M.
I-40, I-85 & US 29	WEDNESDAY 6:00 A.M. TO WEDNESDAY 8:00 P.M.
I-40, I-85 & US 29	THURSDAY 6:00 A.M. TO THURSDAY 8:00 P.M.

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

ROAD NAME
I-40, I-85 & US 29

### HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 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.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 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 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 8:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 8:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

- DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.
- USE ANCHORED STEEL PLATES AS NEEDED TO COVER ANY UNFINISHED REPAIR WORK IN ORDER TO MAINTAIN TRAFFIC AT THE END OF EACH NIGHT OPERATION AS DIRECTED BY THE ENGINEER.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- 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.
- 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.
- 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.
- DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON ALL ROADS.

### TRAFFIC PATTERN ALTERATIONS

- NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.
- ANY CHANGE TO THE PROPOSED PHASING OR DETAILS SHALL REQUIRE APPROVAL FROM THE ENGINEER.

### SIGNING

- 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.
- ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- COVER ALL SIGNS AND DEVICES AT THE END OF EACH NIGHT OPERATION.

### TRAFFIC CONTROL DEVICES

- WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

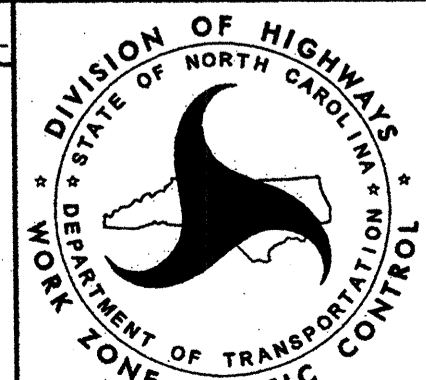
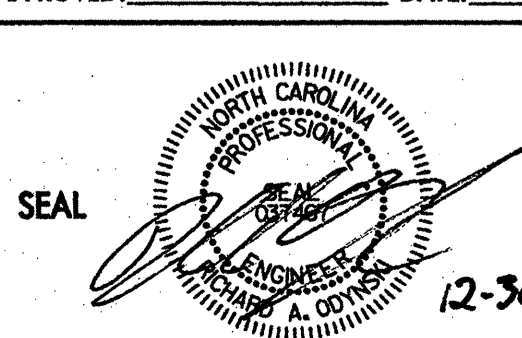
### PAVEMENT MARKINGS

- UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS, REPLACE PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

SURFACE	MARKING TYPE
CONCRETE	POLYUREA, RAISED PAVEMENT MARKERS
ASPHALT	THERMOPLASTIC, RAISED PAVEMENT MARKERS

### MISCELLANEOUS

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

APPROVED: _____ DATE: _____		<b>GENERAL NOTES</b>
		



## PHASING NOTES

USE NCDOT RSD. 1101.01 SHEETS 1 AND 3 OF 3 TO INSTALL WORK ZONE ADVANCE WARNING SIGNS.

DO NOT PERFORM WORK ON MULTIPLE BRIDGE LOCATIONS SIMULTANEOUSLY. DO NOT WORK ON BOTH SIDES OF ROADWAY AT THE SAME LOCATION SIMULTANEOUSLY.

### PHASE 1 (DAVIE 29):

STEP 1: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE EASTBOUND INSIDE LANE OF BRIDGE 29 DURING NIGHT OPERATIONS.

STEP 2: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

INSTALL OVERLAY ON THE EASTBOUND INSIDE LANE, SEE STRUCTURE PLANS.

STEP 3: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 4: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

STEP 5: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE EASTBOUND OUTSIDE LANE OF BRIDGE 29 DURING NIGHT OPERATIONS.

STEP 6: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

INSTALL OVERLAY ON THE EASTBOUND OUTSIDE LANE, SEE STRUCTURE PLANS.

STEP 7: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 8: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

### PHASE 2 (DAVIE 32):

STEP 1: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE WESTBOUND INSIDE LANE OF BRIDGE 32 DURING NIGHT OPERATIONS.

STEP 2: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

INSTALL OVERLAY ON THE WESTBOUND INSIDE LANE, SEE STRUCTURE PLANS.

STEP 3: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 4: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

STEP 5: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE WESTBOUND OUTSIDE LANE OF BRIDGE 32 DURING NIGHT OPERATIONS.

STEP 6: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

INSTALL OVERLAY ON THE WESTBOUND OUTSIDE LANE, SEE STRUCTURE PLANS.

STEP 7: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 8: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

### PHASE 3 (DAVIE 85):

STEP 1: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE EASTBOUND INSIDE LANE OF BRIDGE 85 DURING NIGHT OPERATIONS.

STEP 2: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

REPLACE FINGER JOINTS, CONSTRUCT SUBSTRUCTURE REPAIRS, INSTALL OVERLAY ON THE EASTBOUND INSIDE LANE, SEE STRUCTURE PLANS.

STEP 3: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 4: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

STEP 5: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE EASTBOUND OUTSIDE LANE OF BRIDGE 85 DURING NIGHT OPERATIONS.

STEP 6: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

REPLACE FINGER JOINTS, CONSTRUCT SUBSTRUCTURE REPAIRS, INSTALL OVERLAY ON THE EASTBOUND OUTSIDE LANE, SEE STRUCTURE PLANS.

STEP 7: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 8: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

### PHASE 4 (DAVIE 86):

STEP 1: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE WESTBOUND INSIDE LANE OF BRIDGE 86 DURING NIGHT OPERATIONS.

STEP 2: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

REPLACE FINGER JOINTS, CONSTRUCT SUBSTRUCTURE REPAIRS, INSTALL OVERLAY ON THE WESTBOUND INSIDE LANE, SEE STRUCTURE PLANS.

STEP 3: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 4: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

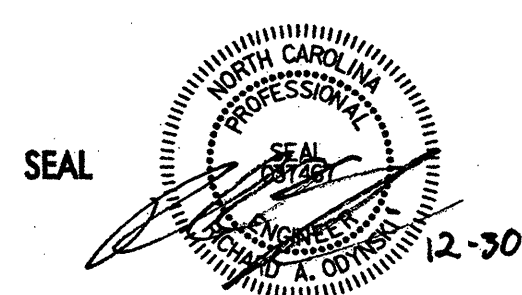
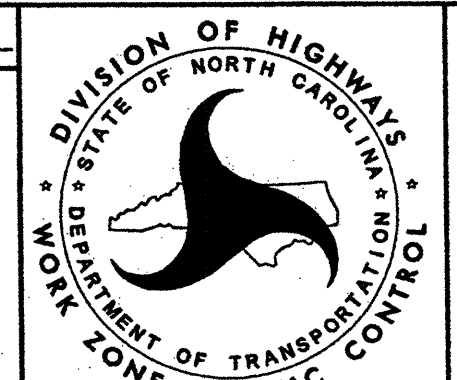
STEP 5: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE WESTBOUND OUTSIDE LANE OF BRIDGE 86 DURING NIGHT OPERATIONS.

STEP 6: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

REPLACE FINGER JOINTS, CONSTRUCT SUBSTRUCTURE REPAIRS, INSTALL OVERLAY ON THE WESTBOUND OUTSIDE LANE, SEE STRUCTURE PLANS.

STEP 7: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 8: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

APPROVED:	DATE:			<b>PHASING NOTES</b>
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## PHASING NOTES

### PHASE 5 (DAVIDSON 136)

STEP 1: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL FLAGGER SIGNS AND DEVICES TO CLOSE THE WESTBOUND LANES OF BRIDGE 136.

STEP 2: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

INSTALL OVERLAY AND REPAIR JOINTS IN WESTBOUND LANES. SEE STRUCTURE PLANS.

STEP 3: WHEN WORK IS COMPLETE, REMOVE ALL FLAGGER SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

STEP 4: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL FLAGGER SIGNS AND DEVICES TO CLOSE THE EASTBOUND LANES OF BRIDGE 136.

STEP 5: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

INSTALL OVERLAY AND REPAIR JOINTS IN EASTBOUND LANES, SEE STRUCTURE PLANS.

STEP 6: WHEN WORK IS COMPLETE, REMOVE ALL FLAGGER SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

### PHASE 6 (ROWAN 94):

STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE NORTHBOUND INSIDE LANE OF BRIDGE 94 DURING NIGHT OPERATIONS.

STEP 2: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

INSTALL OVERLAY ON THE NORTHBOUND INSIDE LANE OF BRIDGE 94, SEE STRUCTURE PLANS.

STEP 3: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

STEP 4: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE NORTHBOUND OUTSIDE LANE OF BRIDGE 94 DURING NIGHT OPERATIONS.

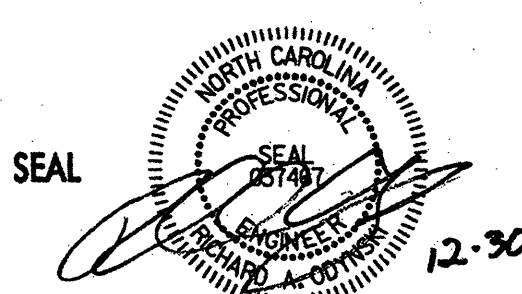
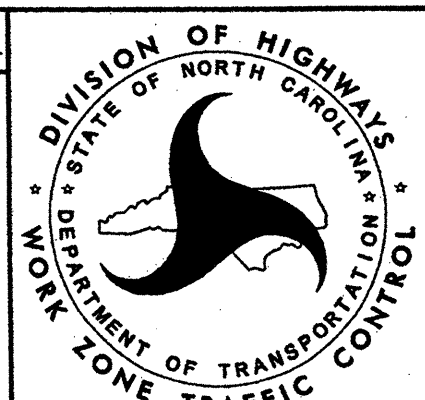
STEP 6: AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:

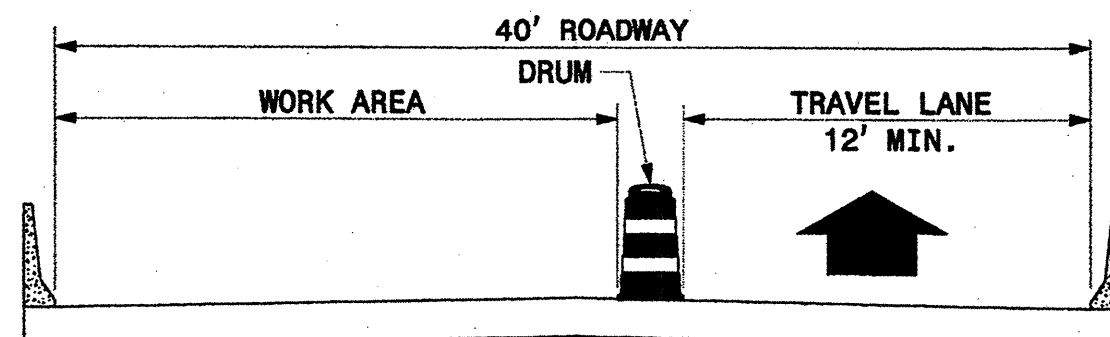
INSTALL OVERLAY ON THE NORTHBOUND OUTSIDE LANE OF BRIDGE 94, SEE STRUCTURE PLANS.

STEP 7: COVER ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN AT THE END OF EACH NIGHT OPERATION.

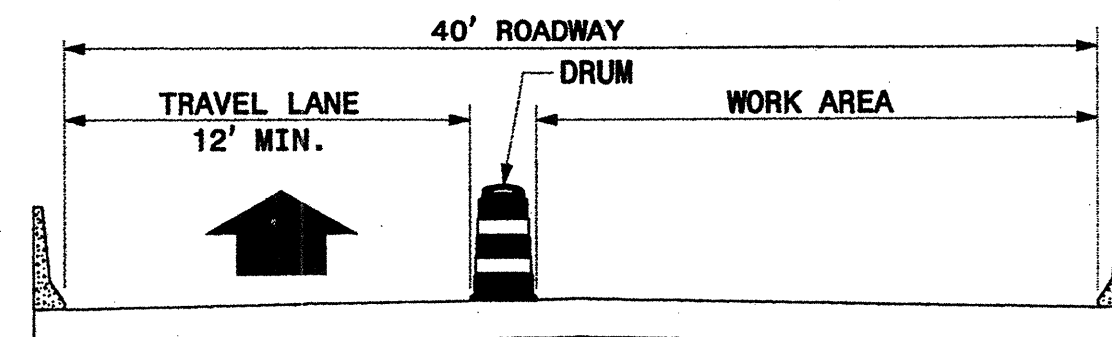
STEP 8: WHEN WORK IS COMPLETE, REMOVE ALL LANE CLOSURE SIGNS AND DEVICES AND RETURN TRAFFIC TO ITS NORMAL TRAFFIC PATTERN.

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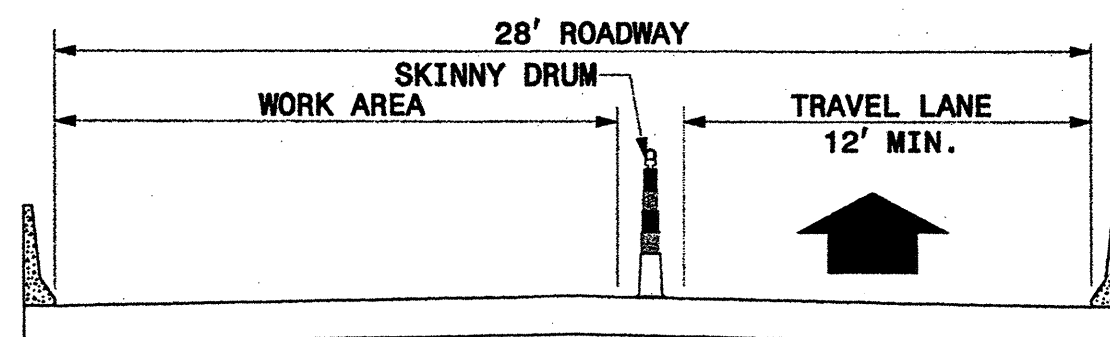
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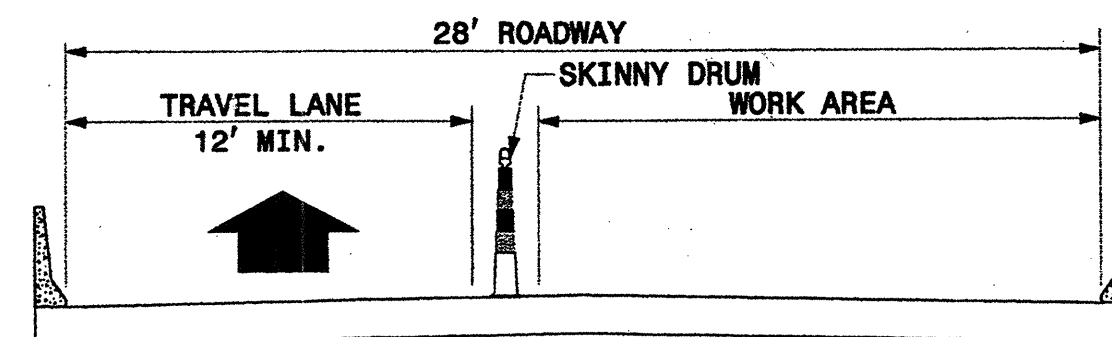
TYPICAL SECTION ON BRIDGE  
DAVIE 29 AND 32



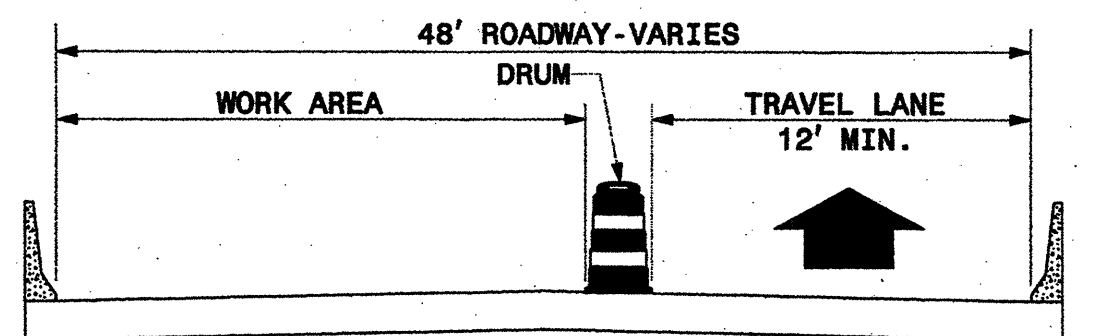
TYPICAL SECTION ON BRIDGE  
DAVIE 29 AND 32



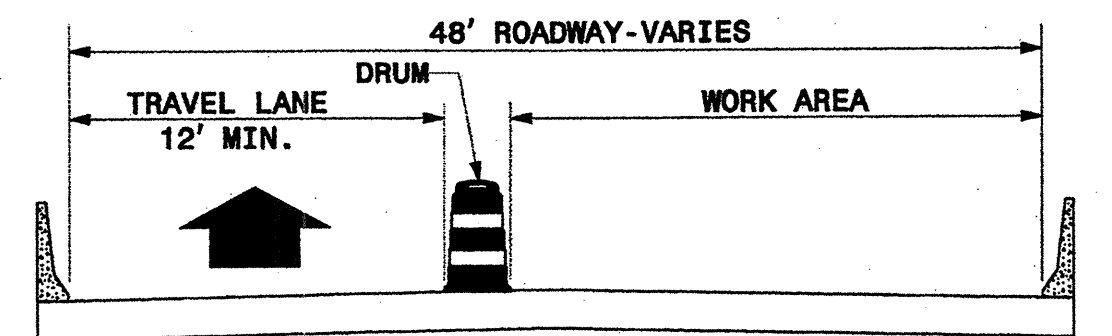
TYPICAL SECTION ON BRIDGE  
DAVIE 85 AND 86



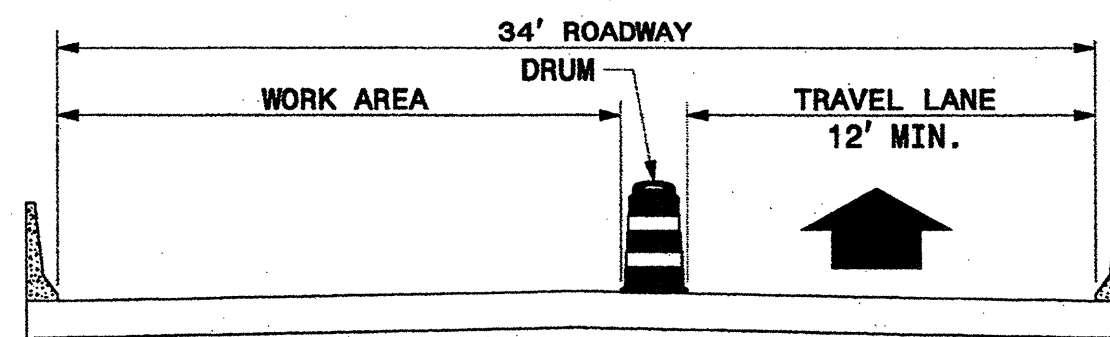
TYPICAL SECTION ON BRIDGE  
DAVIE 85 AND 86



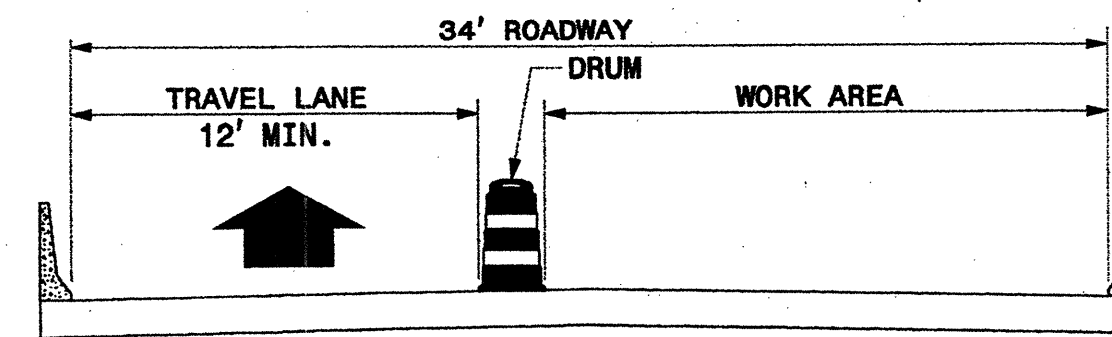
TYPICAL SECTION ON BRIDGE  
DAVIDSON 136



TYPICAL SECTION ON BRIDGE  
DAVIDSON 136



TYPICAL SECTION ON BRIDGE  
ROWAN 94

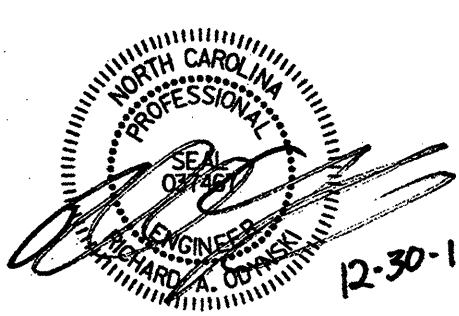


TYPICAL SECTION ON BRIDGE  
ROWAN 94

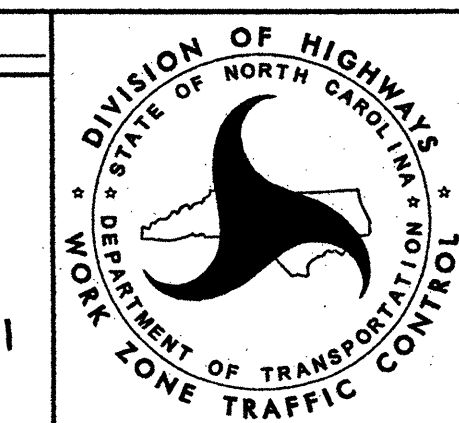
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SEAL



12-30-11



TYPICAL SECTIONS

## STANDARD NOTES

### DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- 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 A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT. (MINIMUM)

### MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2006 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

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

### CONCRETE:

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

### CONCRETE CHAMFERS:

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

### DOWELS:

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

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

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

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

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

### REINFORCING STEEL:

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

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

### STRUCTURAL STEEL:

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

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 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 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

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

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