

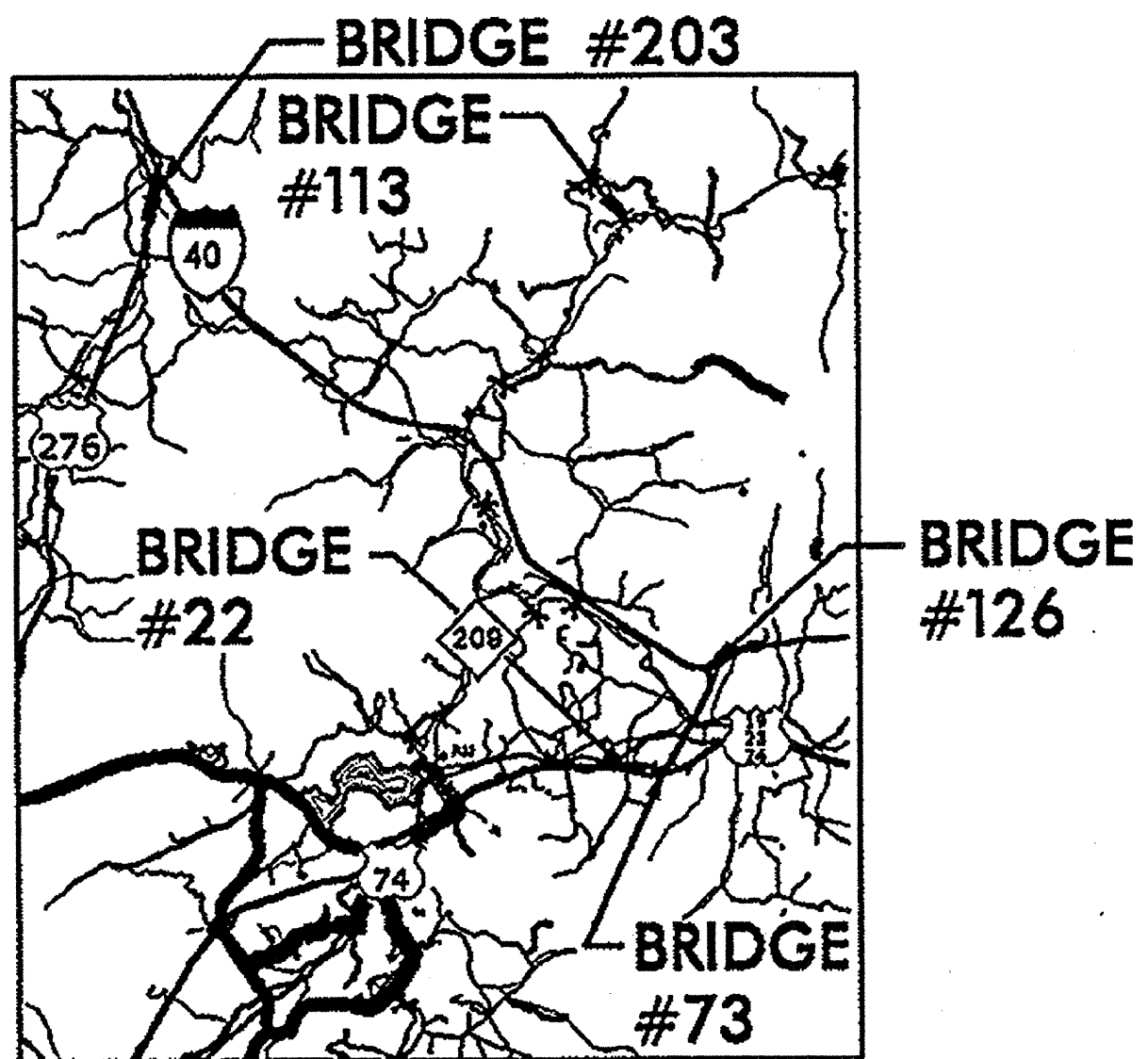
PROJECT: 17BP.14.P.4

CONTRACT: C202972

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SWAIN COUNTY  
HAYWOOD COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.P.4	1	71
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.P.4	NA	PE	
17BP.14.P.4	NA	CONSTR.	



VICINITY MAP  
HAYWOOD COUNTY

**LOCATION:** BRIDGE #113 ON NC209 OVER CRABTREE CREEK, HAYWOOD COUNTY  
BRIDGE #126 ON S.R. 1660 OVER INTERSTATE 40, HAYWOOD COUNTY  
BRIDGE #22 ON US19/23/74 OVER S.R. 1532, HAYWOOD COUNTY  
BRIDGE #73 ON S.R. 1660 OVER US19/23/74, HAYWOOD COUNTY  
BRIDGE #203 ON US276 OVER JONATHAN CREEK, HAYWOOD COUNTY  
BRIDGES #18 & #19 ON US74 OVER S.R. 1166, SWAIN COUNTY  
BRIDGES #22 & #23 ON US74 OVER S.R. 1173, GREAT SMOKY MOUNTAINS RR & TUCKASEEGEE RIVER, SWAIN COUNTY

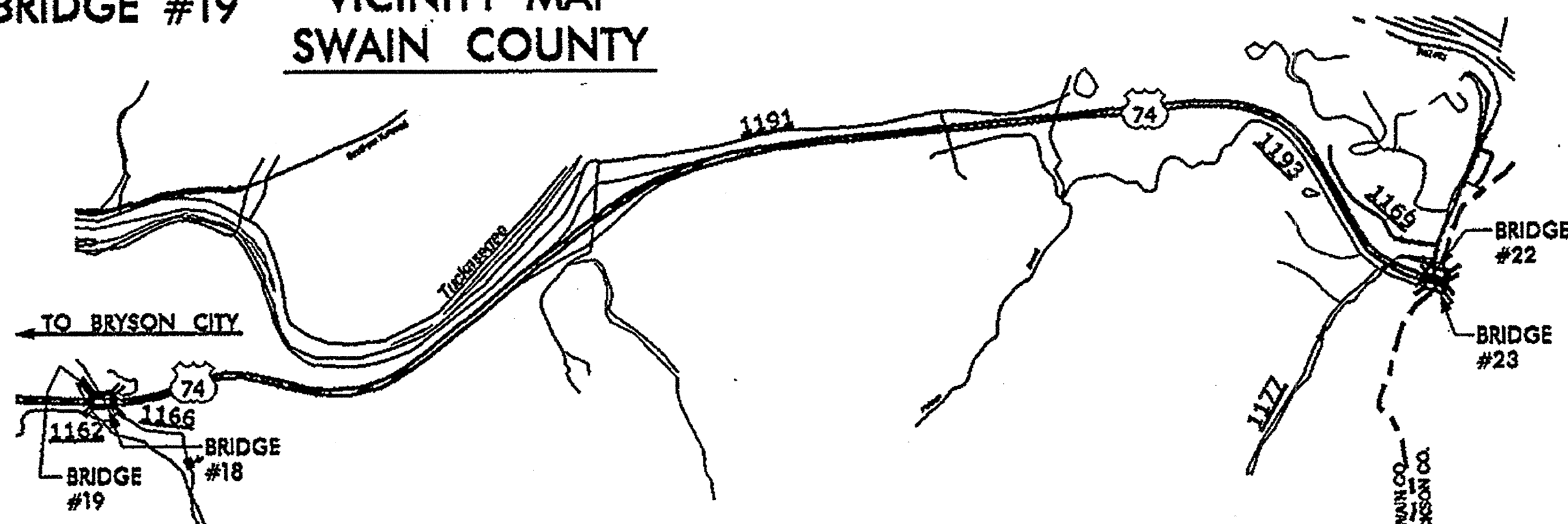
**TYPE OF WORK:** BRIDGE PRESERVATION: HYDRODEMOLITION, LMC OVERLAY, AND SUBSTRUCTURE REPAIRS



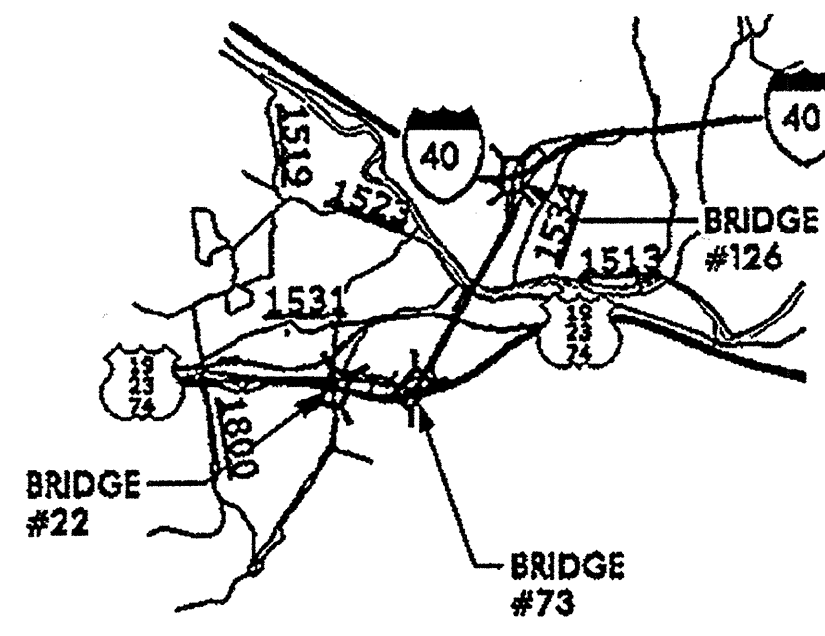
BRIDGE #22  
BRIDGE #23

BRIDGE #18  
BRIDGE #19

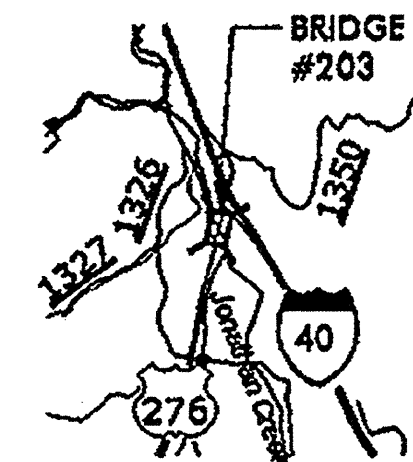
VICINITY MAP  
SWAIN COUNTY



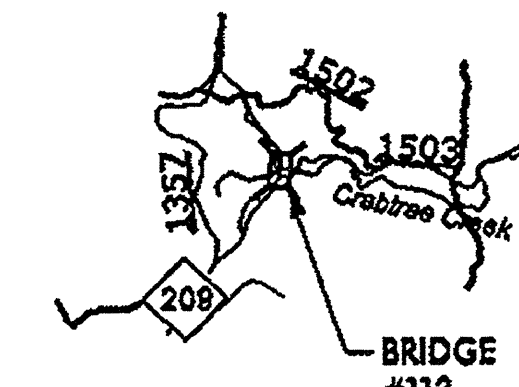
VICINITY MAP BRIDGES #18, #19, #22, & #23  
SWAIN COUNTY



VICINITY MAP  
BRIDGES #22, #73, & #126  
HAYWOOD COUNTY

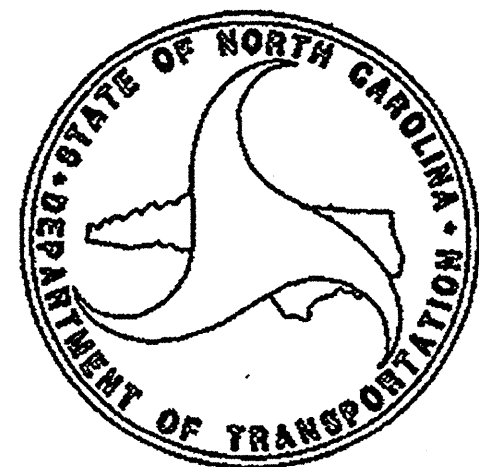


VICINITY MAP  
BRIDGE #203  
HAYWOOD COUNTY



VICINITY MAP  
BRIDGE #113  
HAYWOOD COUNTY

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



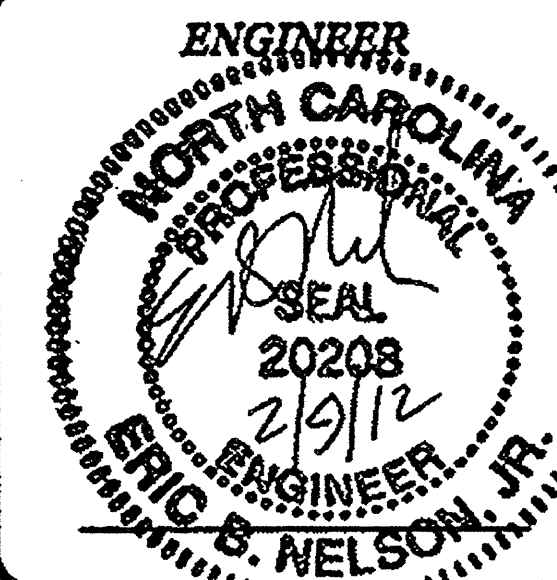
PROJECT LENGTH

BRIDGE	LENGTH	STRUCTURE PROJECT
#113 (HAYWOOD COUNTY)	.03 MILE	
#126 (HAYWOOD COUNTY)	.06 MILE	
#22 (HAYWOOD COUNTY)	.04 MILE	
#73 (HAYWOOD COUNTY)	.06 MILE	
#203 (HAYWOOD COUNTY)	.06 MILE	
#18 (SWAIN COUNTY)	.03 MILE	
#19 (SWAIN COUNTY)	.03 MILE	
#22 (SWAIN COUNTY)	.10 MILE	
#23 (SWAIN COUNTY)	.10 MILE	

STRUCTURES MANAGEMENT UNIT

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
1000 BIRCH RIDGE DRIVE, RALEIGH, NC 27610

LETTING DATE:  
MARCH 20, 2012



\*FILES\*  
\*DATES\*  
\*TIMES\*

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.P.4	1A	71
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.P.4	NA	PE	
17BP.14.P.4	NA	CONSTR.	

**SWAIN COUNTY  
HAYWOOD COUNTY**

**LOCATION:** BRIDGE #113 ON NC209 OVER CRABTREE CREEK, HAYWOOD COUNTY  
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BRIDGE #73 ON S.R. 1660 OVER US19/23/74, HAYWOOD COUNTY  
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BRIDGES #18 & #19 ON US74 OVER S.R. 1166, SWAIN COUNTY  
BRIDGES #22 & #23 ON US74 OVER S.R. 1173, SOUTHERN RR  
& TUCKASEEGEE RIVER, SWAIN COUNTY

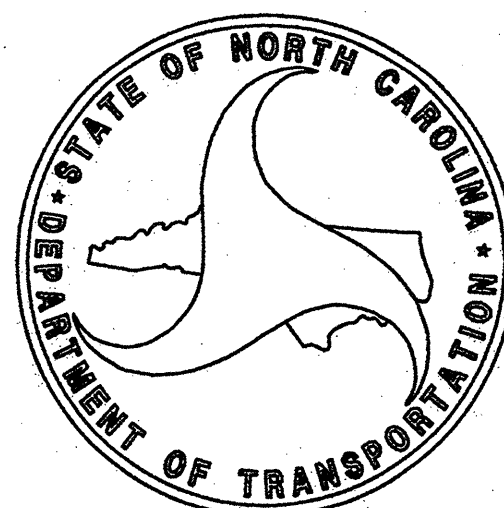
**TYPE OF WORK:** BRIDGE PRESERVATION: HYDRODEMOLITION, LMC OVERLAY,  
AND SUBSTRUCTURE REPAIRS

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
S1-S57	STRUCTURES
TMP-1 - TMP-10	TRAFFIC MANAGEMENT PLANS

PROJECT: 17BP.14.P.4

CONTRACT: C202972



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

**LETTING DATE:**  
MARCH 20, 2012

ENGINEER



10/02/09

COMPUTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT REFERENCE NO. 17BP.14.P.4 SHEET NO. 2

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
 ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202972

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	8664000000-E	SP	662	CF	SHOTCRETE REPAIRS
1330000000-E	607	1,572	SY	INCIDENTAL MILLING	8678000000-E	SP	284	LF	EPOXY RESIN INJECTION
1525000000-E	610	95	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	8692000000-N	SP	Lump Sum		FOAM JOINT SEALS
1575000000-E	620	7	TON	ASPHALT BINDER FOR PLANT MIX	8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING
4400000000-E	1110	662	SF	WORK ZONE SIGNS (STATIONARY)	8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM UNDER STRUCTURE WORK PLATFORM
4405000000-E	1110	480	SF	WORK ZONE SIGNS (PORTABLE)	8881000000-E	SP	175	CY	GENERIC STRUCTURE ITEM LATEX MOD CONC OVERLAY, VERY EARLY STRENGTH
4410000000-E	1110	46	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	8893000000-E	SP	14,552	SY	GENERIC STRUCTURE ITEM HYDRO-DEMOLITION OF BRIDGE DECK
4415000000-N	1115	6	EA	FLASHING ARROW BOARD	8893000000-E	SP	3,389	SY	GENERIC STRUCTURE ITEM PLACING & FINISHING OF LATEX MOD CONC OVERLAY, VERY EARLY STRENGTH
4420000000-N	1120	3	EA	PORTABLE CHANGEABLE MESSAGE SIGN	8893000000-E	SP	14,552	SY	GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK
4430000000-N	1130	96	EA	DRUMS					
4445000000-E	1145	16	LF	BARRICADES (TYPE III)					
4455000000-N	1150	152	DAY	FLAGGER					
4465000000-N	1160	1	EA	TEMPORARY CRASH CUSHIONS					
4470000000-N	1160	15	EA	RESET TEMPORARY CRASH CUSHION					
4480000000-N	1165	2	EA	TMA					
4485000000-E	1170	1,120	LF	PORTABLE CONCRETE BARRIER					
4500000000-E	1170	13,480	LF	RESET PORTABLE CONCRETE BARRIER					
4685000000-E	1205	2,650	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)					
4686000000-E	1205	464	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)					
4725000000-E	1205	1	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)					
4847000000-E	1205	7,995	LF	POLYUREA PAVEMENT MARKING LINES (4" *****) (HIGHLY REFLECTIVE ELEMENTS)					
4900000000-N	1251	48	EA	PERMANENT RAISED PAVEMENT MARKERS					
8161000000-E	420	119,494	SF	GROOVING BRIDGE FLOORS					
8573000000-E	SP	573	CY	LATEX MODIFIED CONC OVERLAY					
8580000000-E	SP	11,163	SY	PLACING & FINISHING OF LATEX MODIFIED CONC 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.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR BRIDGE JACKING, SEE SPECIAL PROVISIONS.

FOR CLEANING & PAINTING EXISTING BEARING PLATES, SEE SPECIAL PROVISIONS.

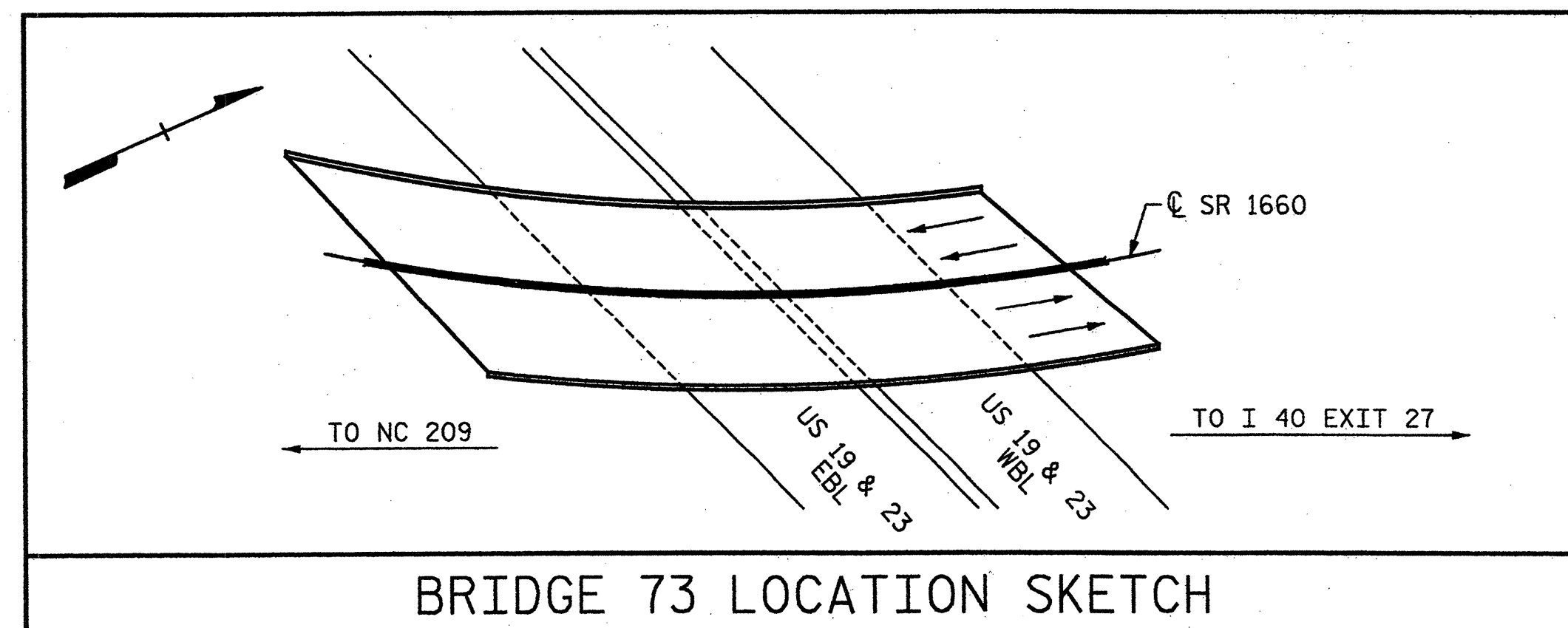
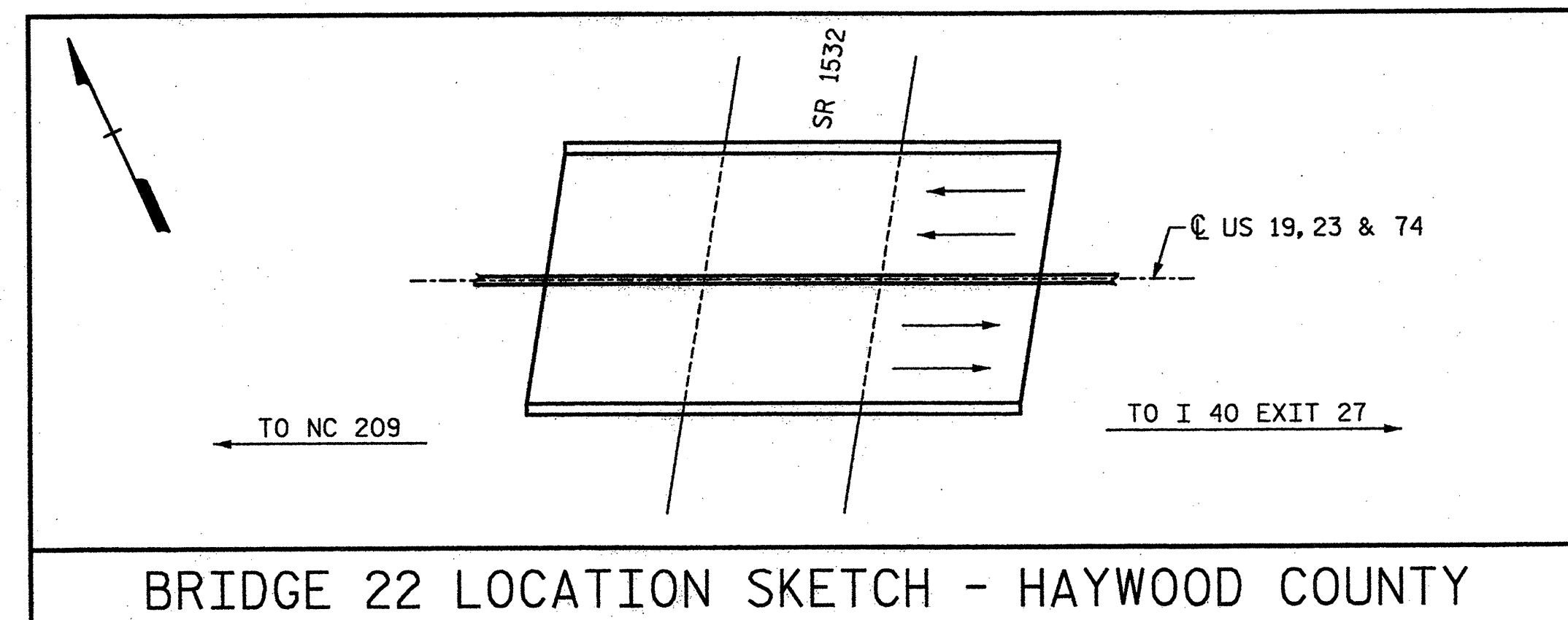
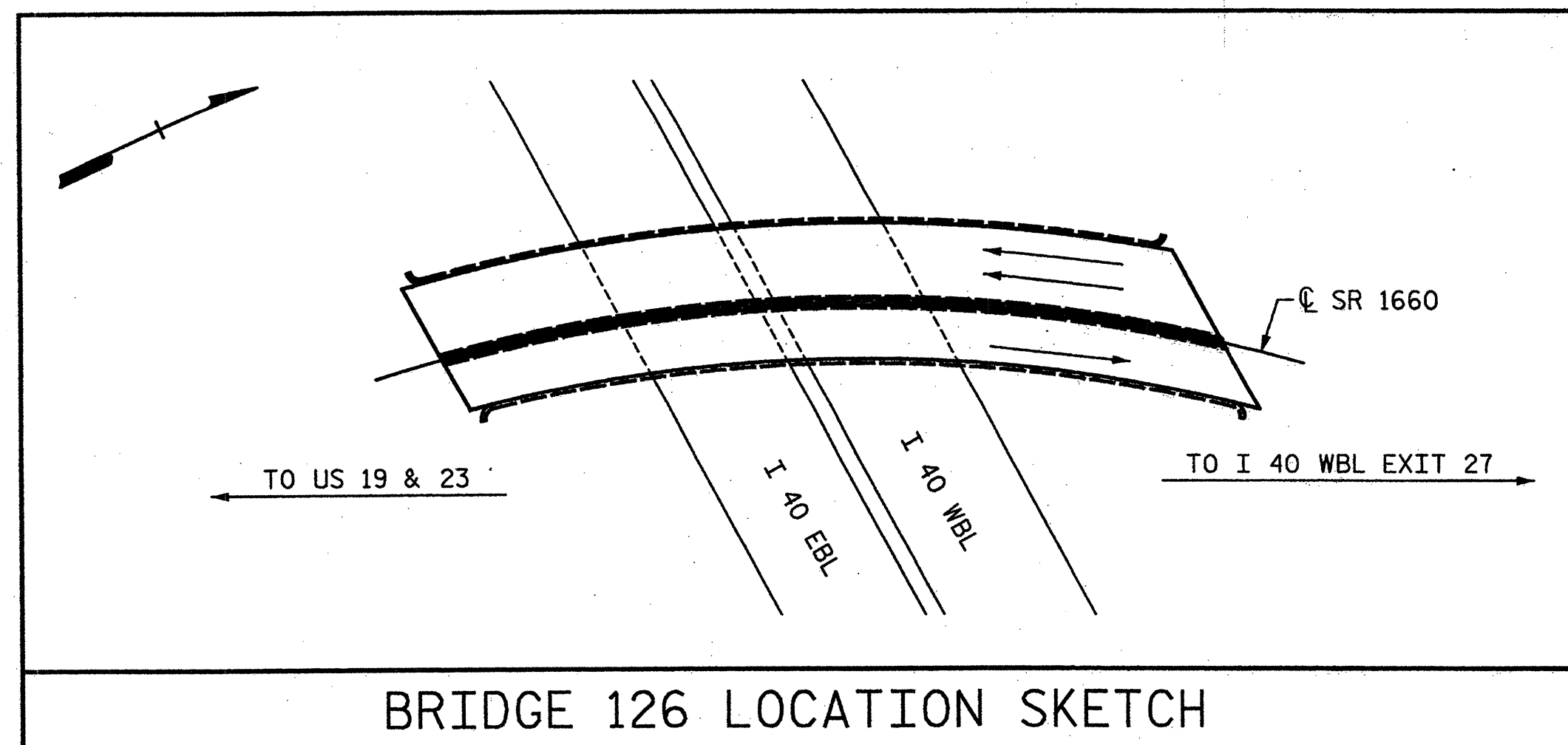
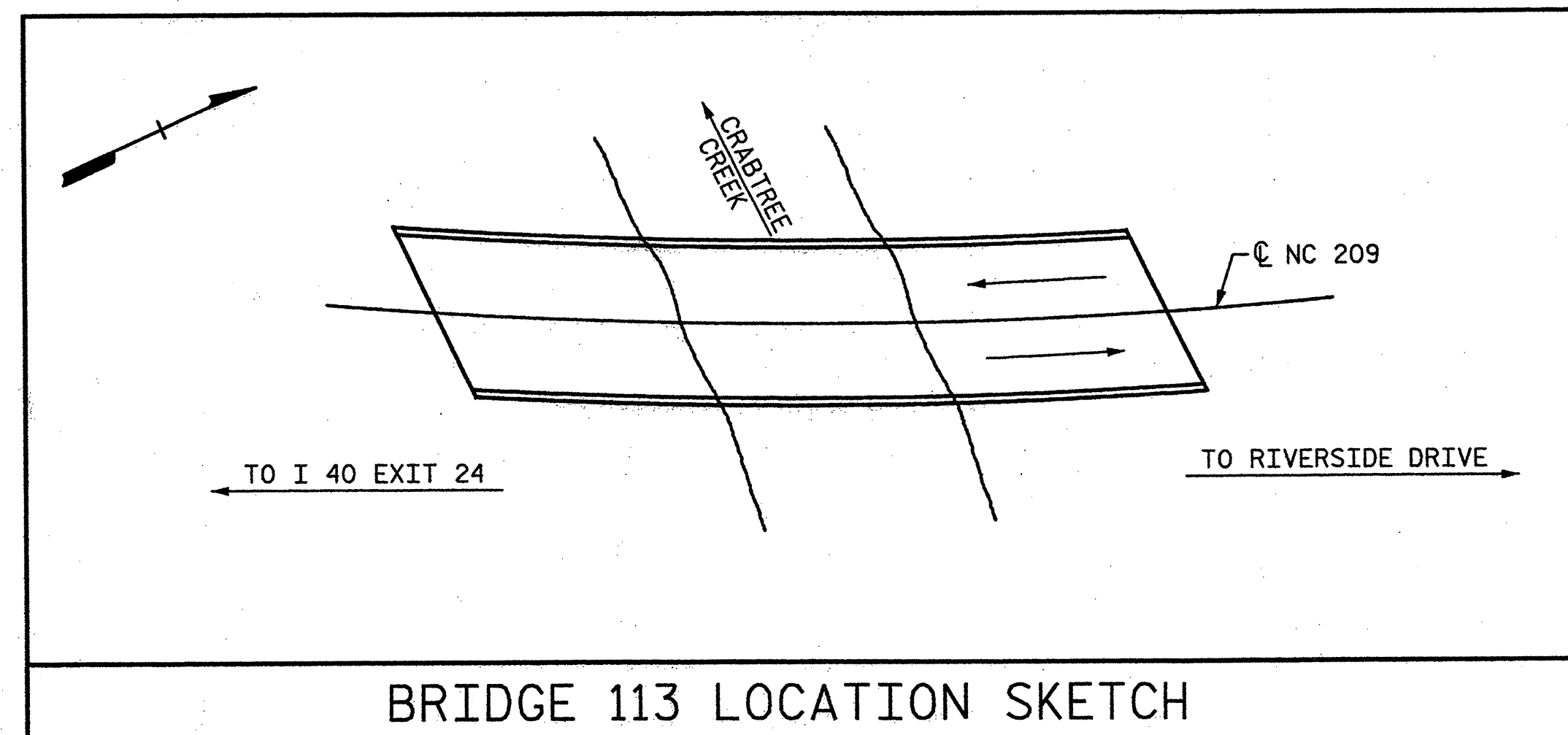
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR POLLUTION CONTROL, SEE STANDARD SPECIFICATIONS, SECTION 442, "PAINTING STEEL STRUCTURES".

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.

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 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 CONCRETE REPAIR PAY ITEM.



PROJECT NO. 17BP.14.P.4

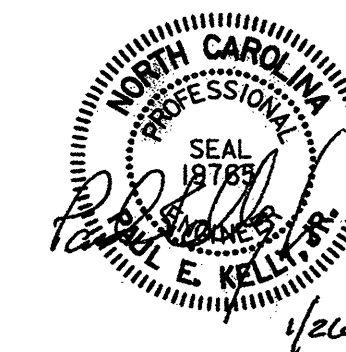
HAYWOOD/SWAIN COUNTY

BRIDGE NO.: 22, 73, 113, 126

REHAB. OF HAYWOOD & SWAIN BRIDGES

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

GENERAL NOTES AND  
LOCATION SKETCHES



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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:	S-1
1			3			TOTAL SHEETS
2			4			57

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1/26/2012

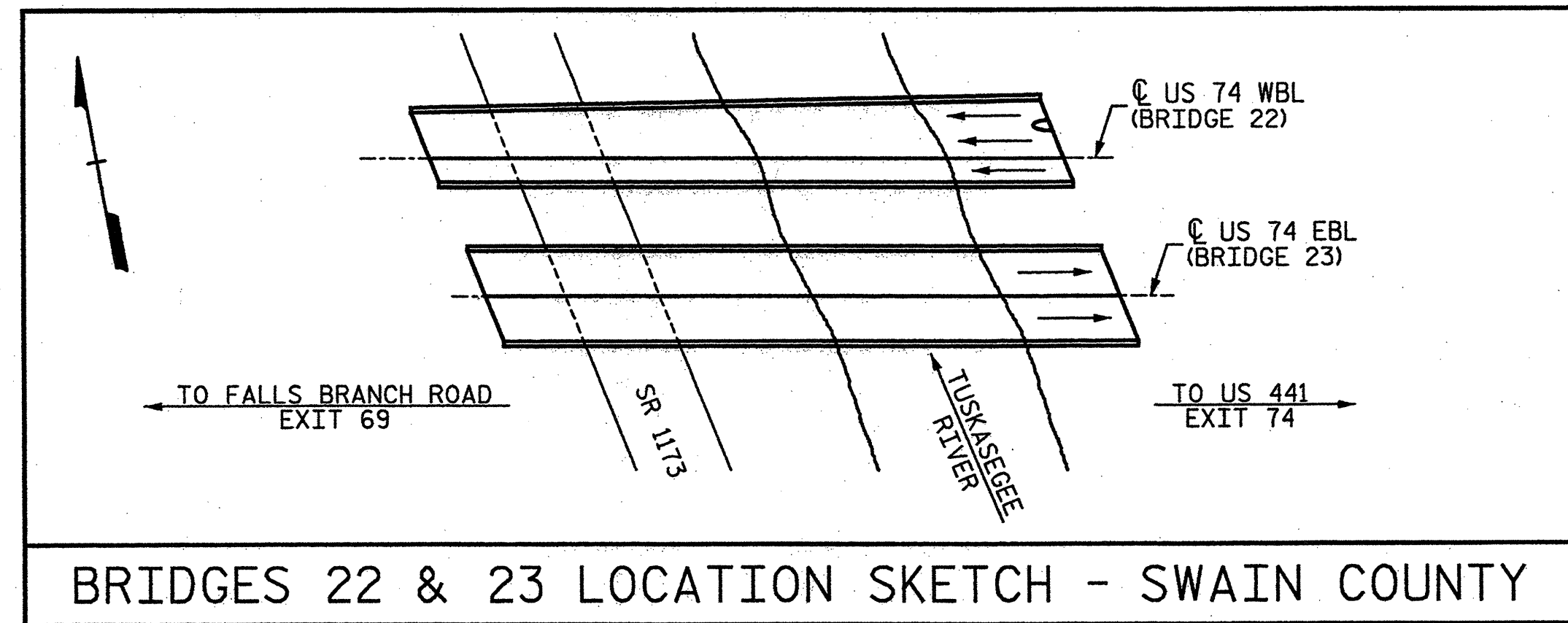
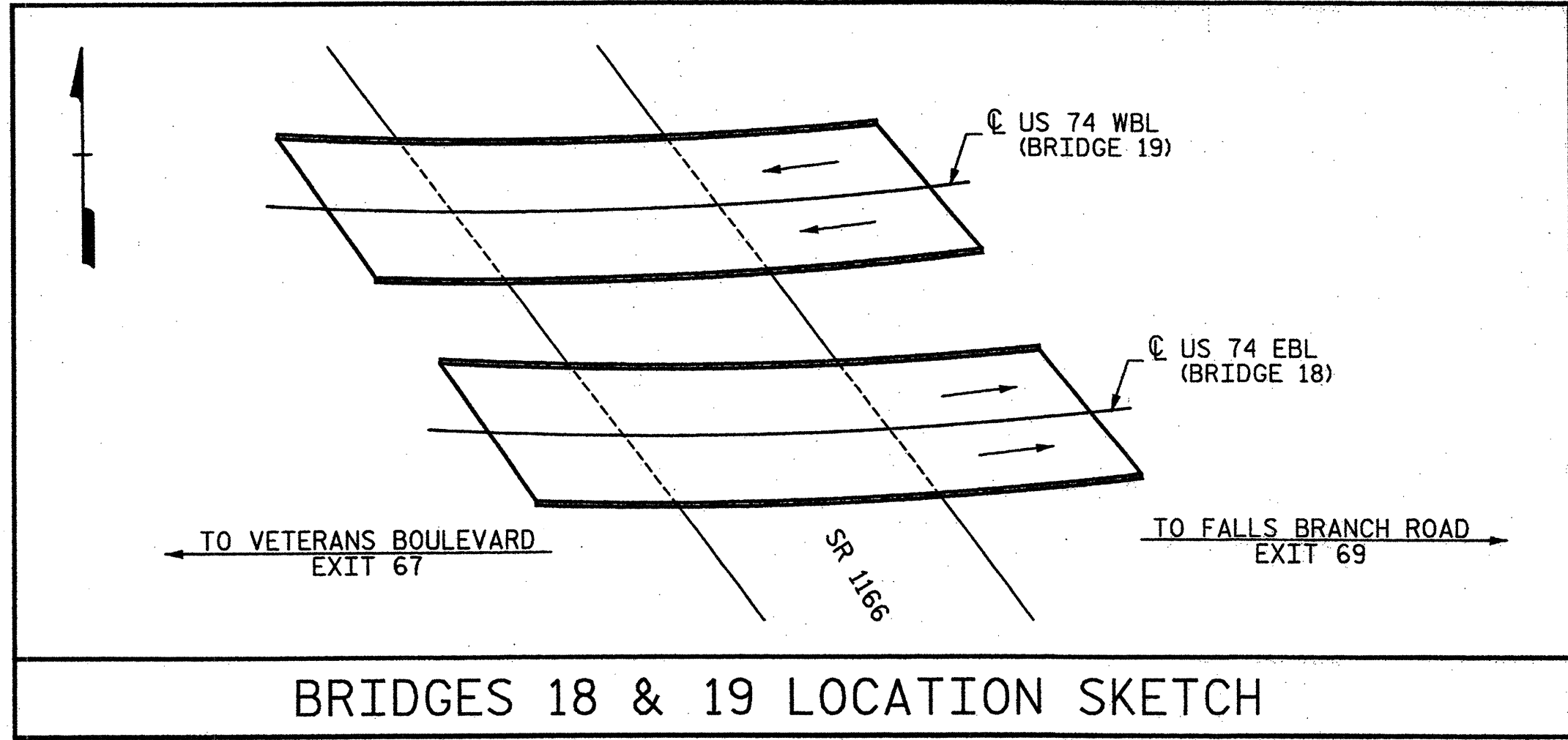
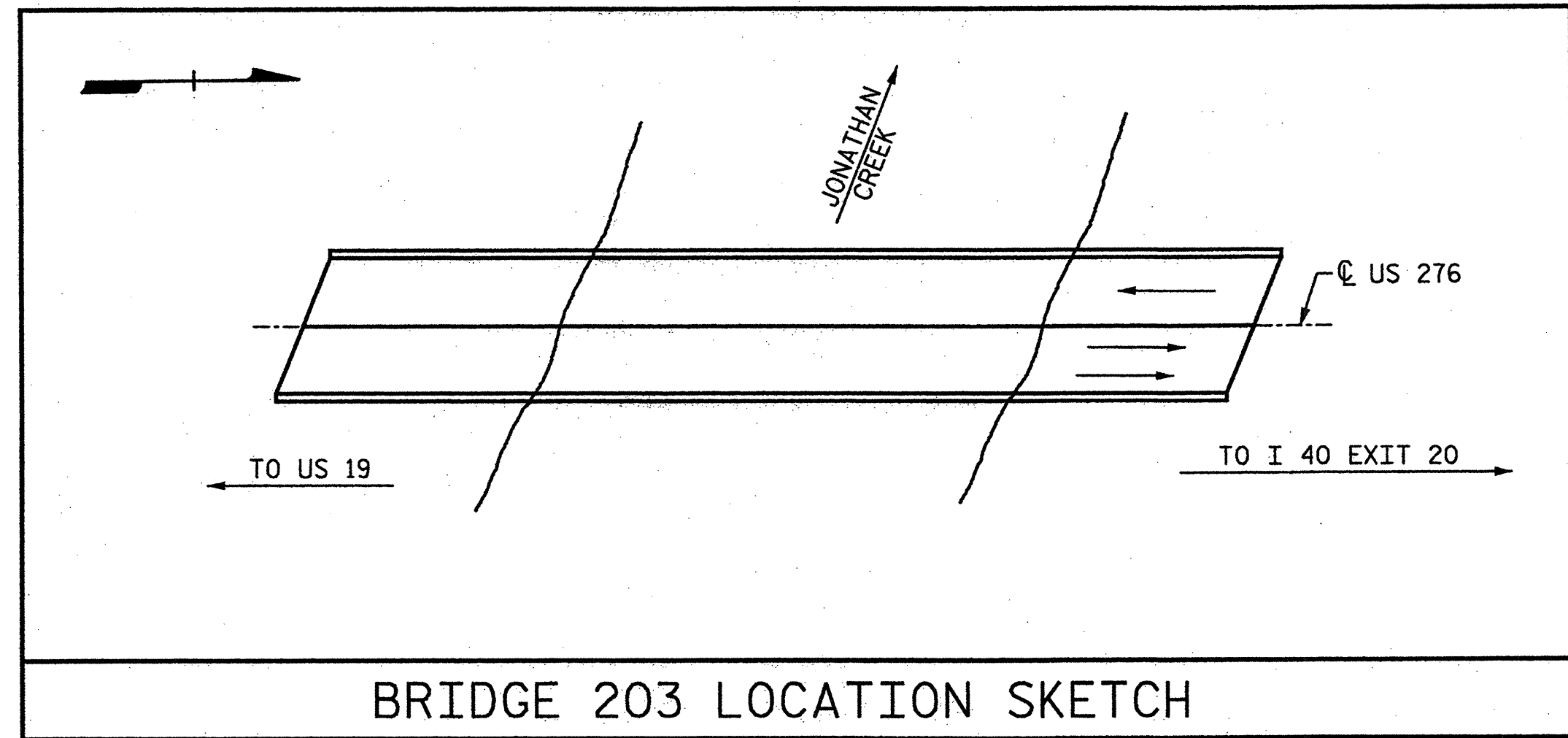
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1/26/2012



PROJECT NO. 17BP.14.P.4  
HAYWOOD/SWAIN COUNTY  
 BRIDGE NO.: 18, 19, 22, 23, 203

REHAB. OF HAYWOOD & SWAIN BRIDGES

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

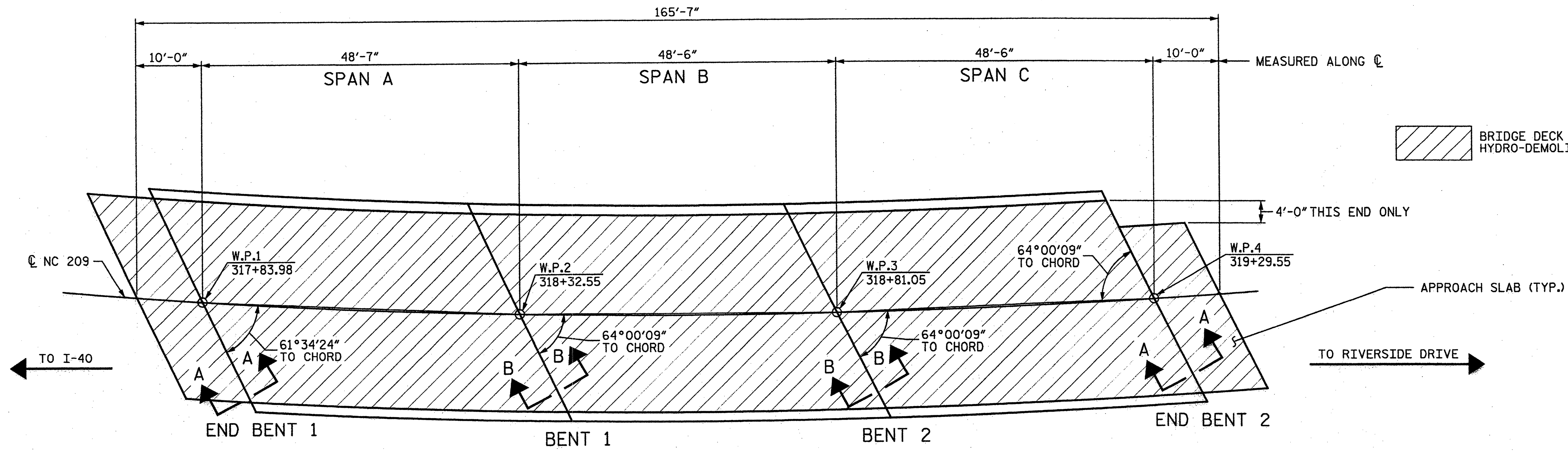
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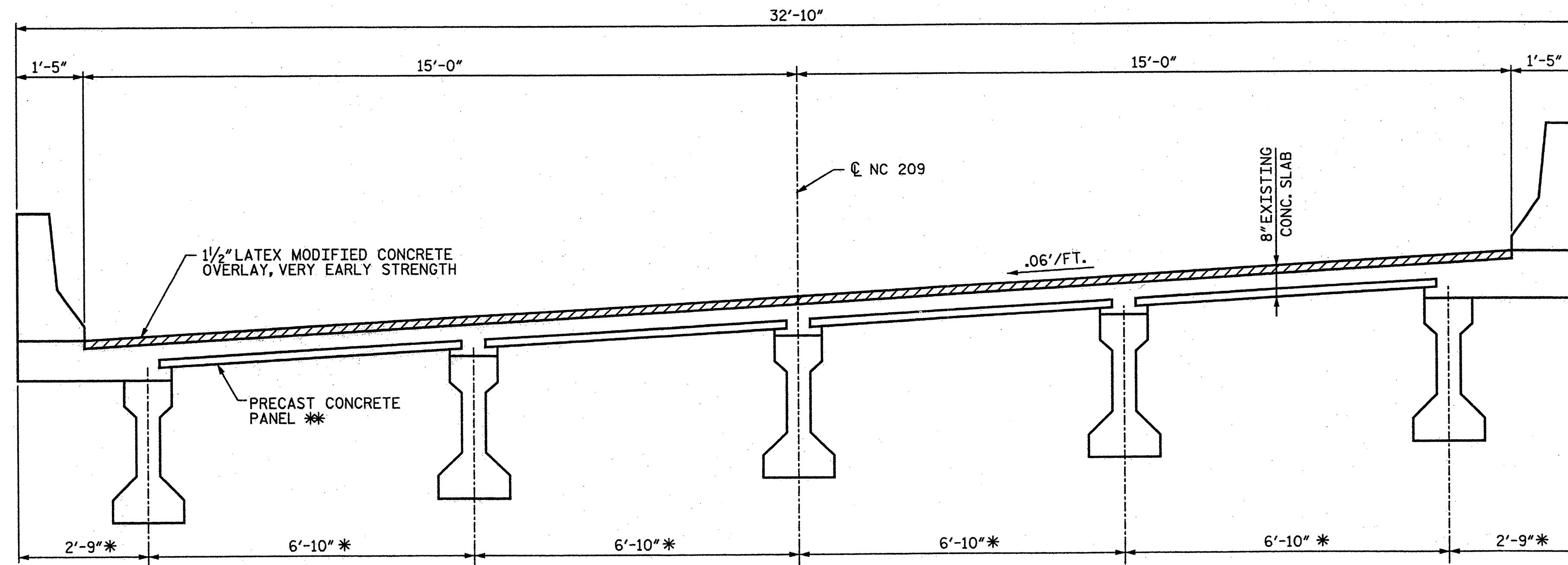
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
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2			4			57

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 CHECKED BY : DRG DATE : 10-11



**PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION**

(CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS.)



**TYPICAL SECTION**

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

\*\* CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE PRECAST CONCRETE PANELS DURING BRIDGE DECK SCARIFICATION AND HYDRO-DEMOLITION.

**TOTAL BILL OF MATERIAL**

DECK SCARIFICATION	* 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
SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.
547	177	547	23	547	LUMP SUM	4156

\* QUANTITIES FOR INFORMATION ONLY.

**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.

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 3 OF 4 AND SPECIAL PROVISIONS.

EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.

CONTRACTOR'S MEANS AND METHODS SHALL MINIMIZE DAMAGE TO EXISTING APPROACH PAVEMENT. AREAS OF APPROACH PAVEMENT DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. ANY COST ASSOCIATED WITH REPAIR OF APPROACH PAVEMENT SHALL BE CONSIDERED INCIDENTAL AND NO SEPERATE MEASUREMENT AND PAYMENT WILL BE MADE.

EXISTING JOINTS AND DECK DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

PROJECT NO. **17BP.14.P.4**

**HAYWOOD** COUNTY

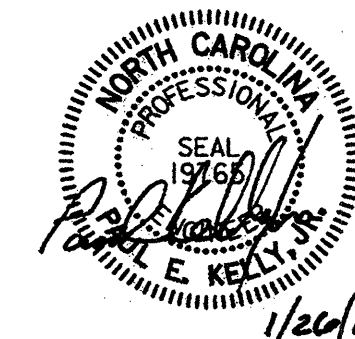
BRIDGE NO.: **113**

REHAB. OF BRIDGE NO. 113 SHEET 1 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

PLAN OF SPANS & TYPICAL SECTION

BRIDGE ON N.C. 209 OVER CRABTREE CREEK



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1			3			TOTAL SHEETS
2			4			57

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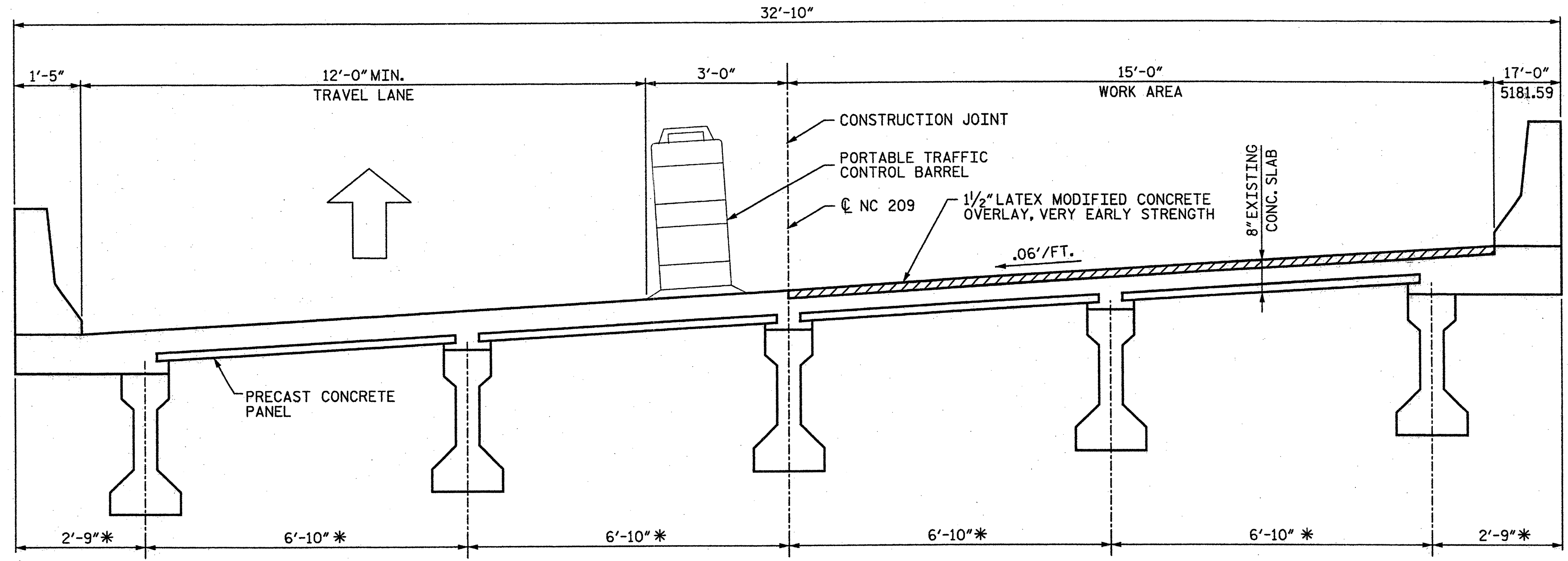
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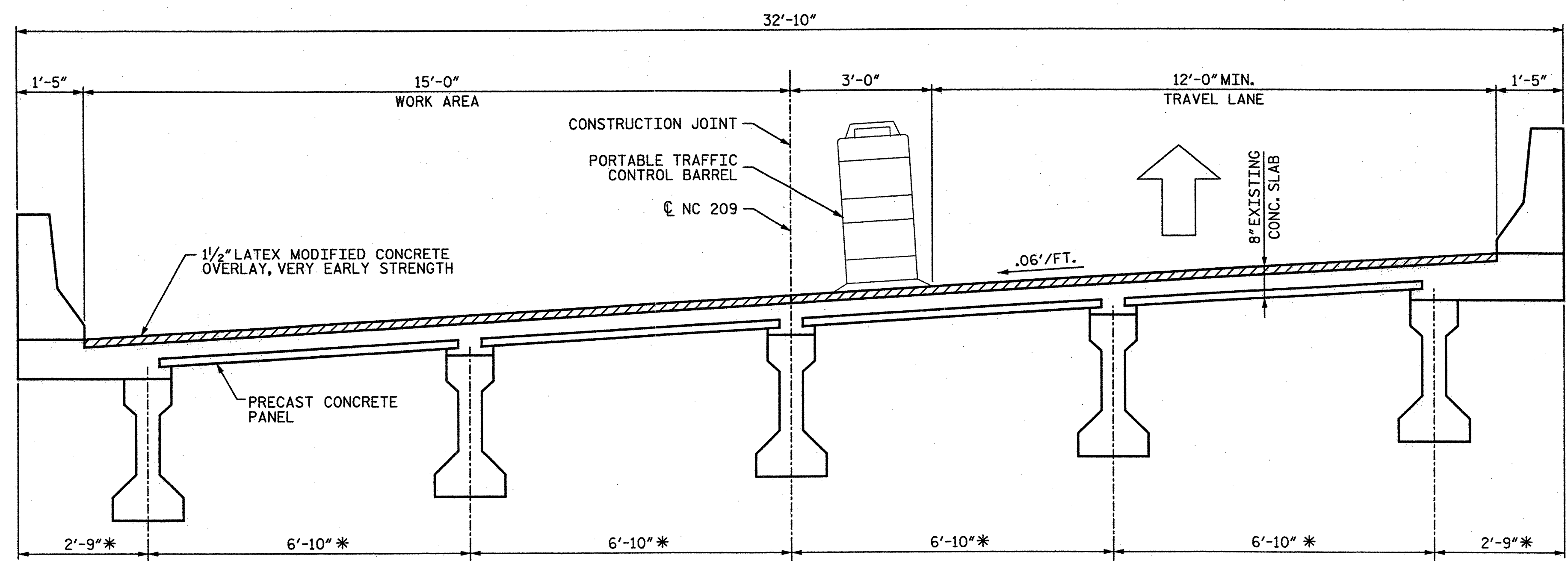


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\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

TYPICAL SECTION - STAGE I



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED.

TYPICAL SECTION - STAGE II

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 113  
 REHAB. OF BRIDGE NO. 113 SHEET 2 OF 4

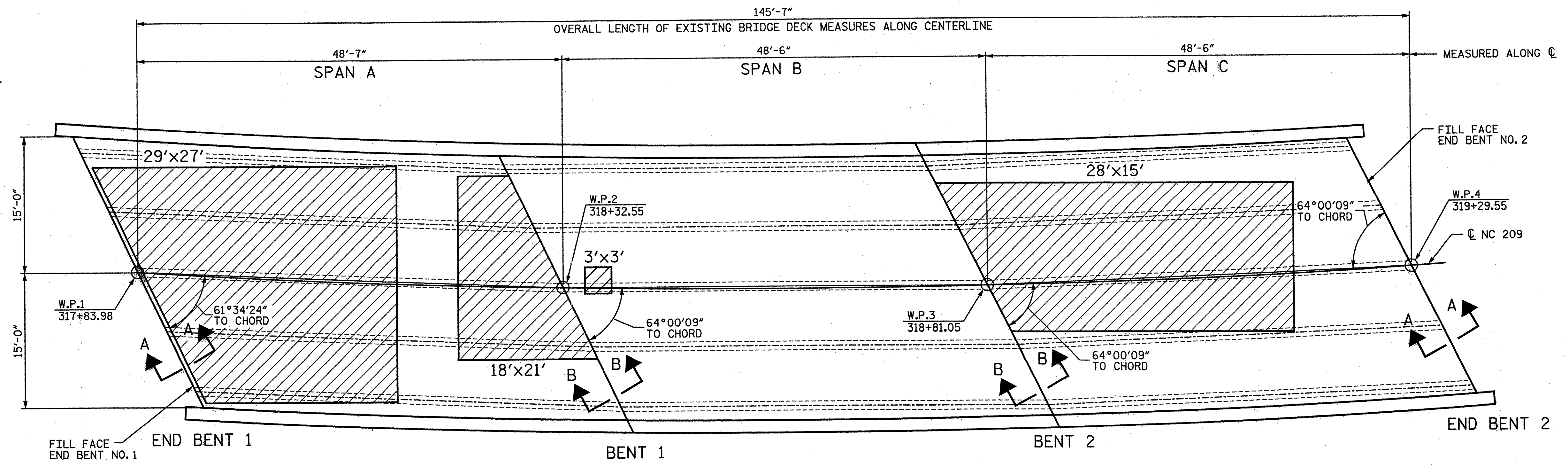
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STAGED CONSTRUCTION  
 BRIDGE ON N.C. 209  
 OVER CRABTREE CREEK



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2			4			57



APPROX. AREA: CLASS II REPAIR

PLAN OF SPANS - DECK REPAIR

**NOTES:**

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

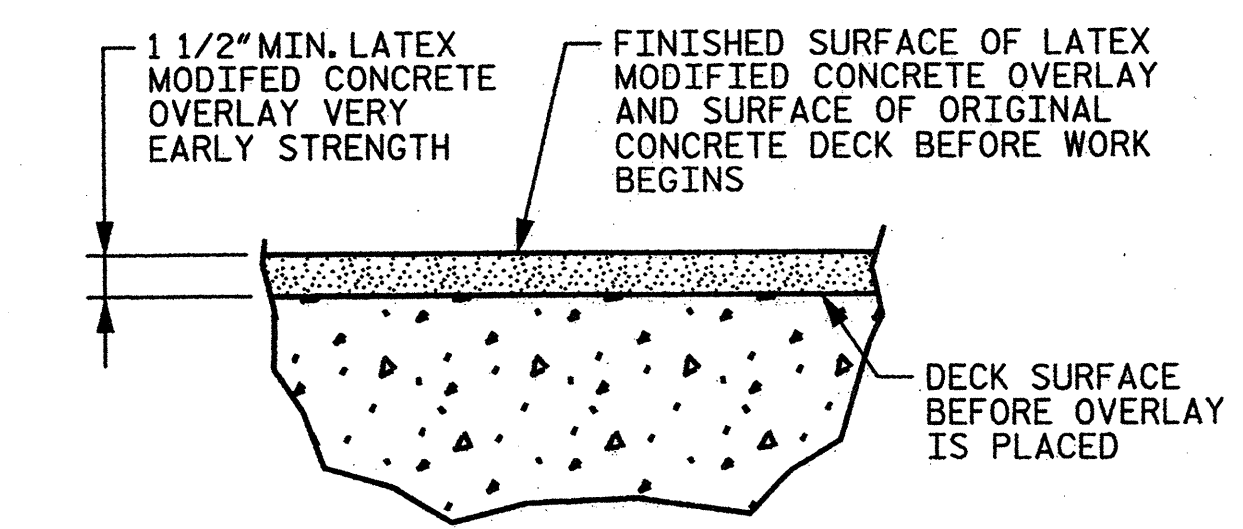
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

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

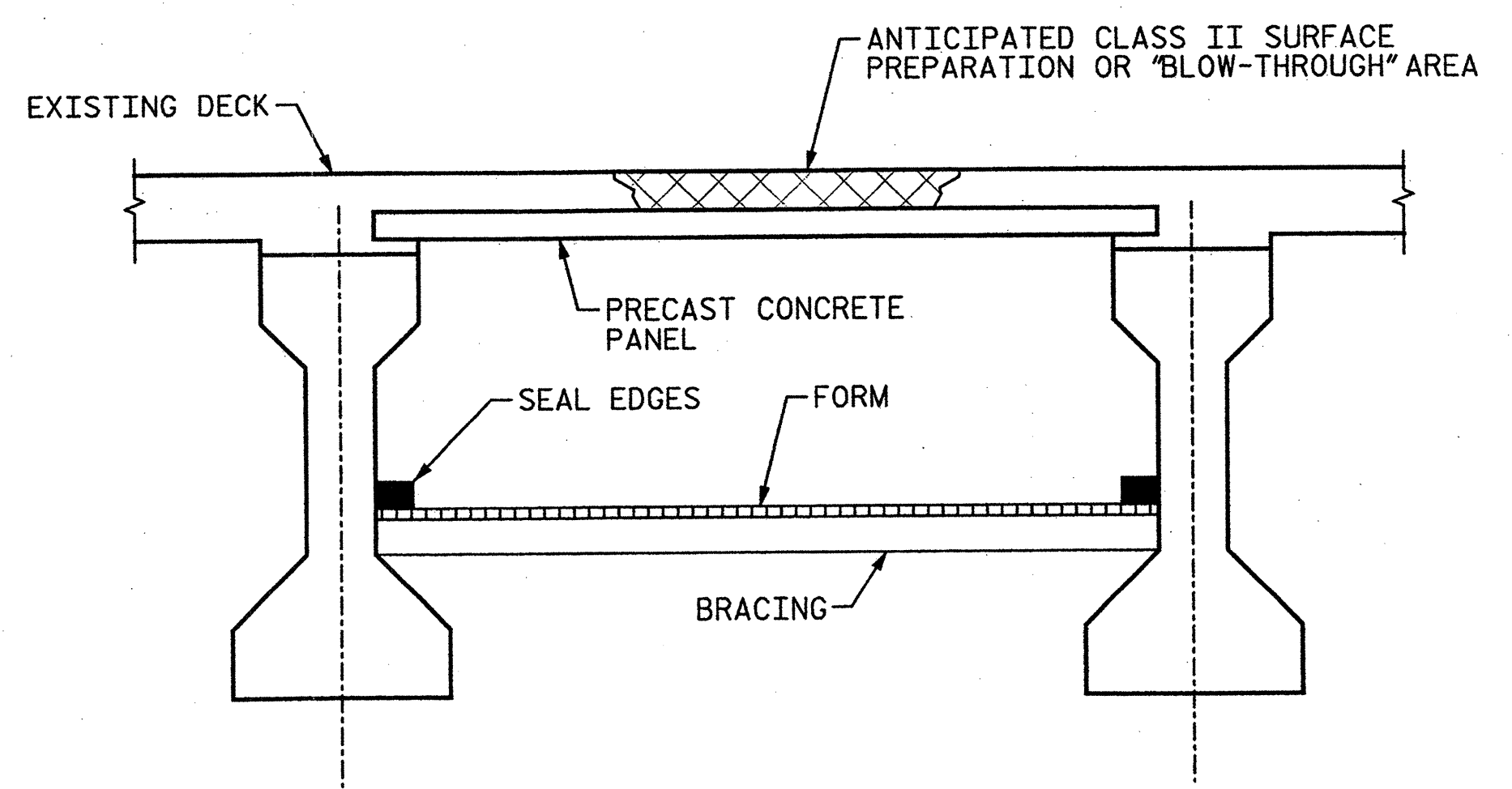
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

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 SEPERATE MEASUREMENT OR PAYMENT WILL BE MADE.

FOR ADDITIONAL NOTES SEE SHEET 1 OF 4.



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK

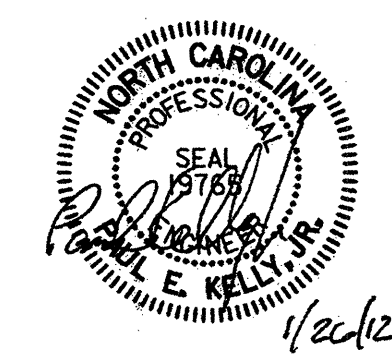
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS II SURFACE PREPARATION.

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.14.P.4  
 HAYWOOD COUNTY  
 BRIDGE NO.: 113  
 REHAB. OF BRIDGE NO. 113 SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PLAN OF SPANS &  
 DECK REPAIR  
 BRIDGE ON N.C. 209  
 OVER CRABTREE CREEK



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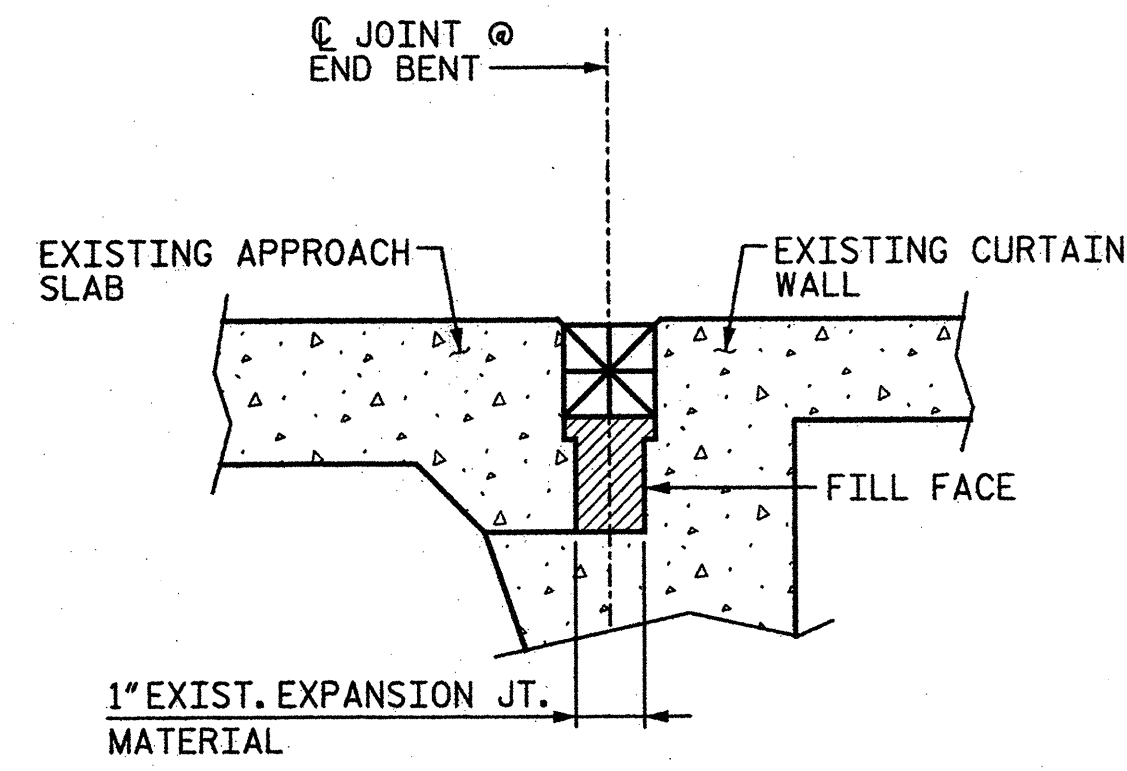
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1			3			TOTAL SHEETS
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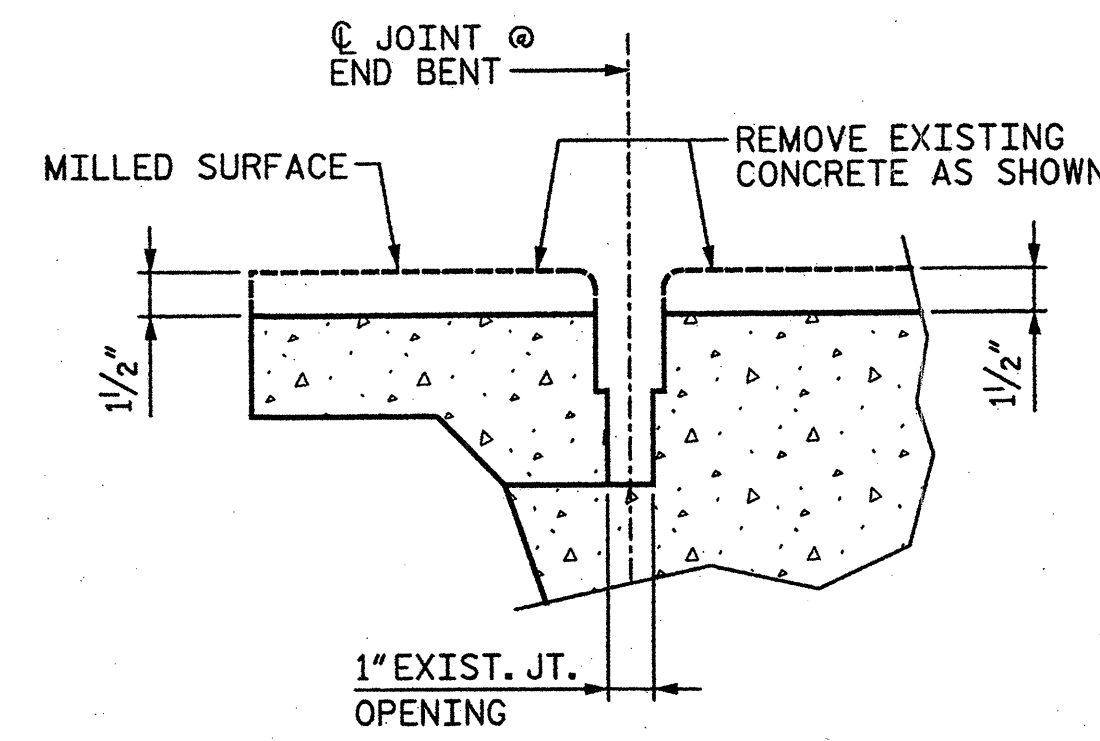
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 CHECKED BY: DRG DATE: 10-11



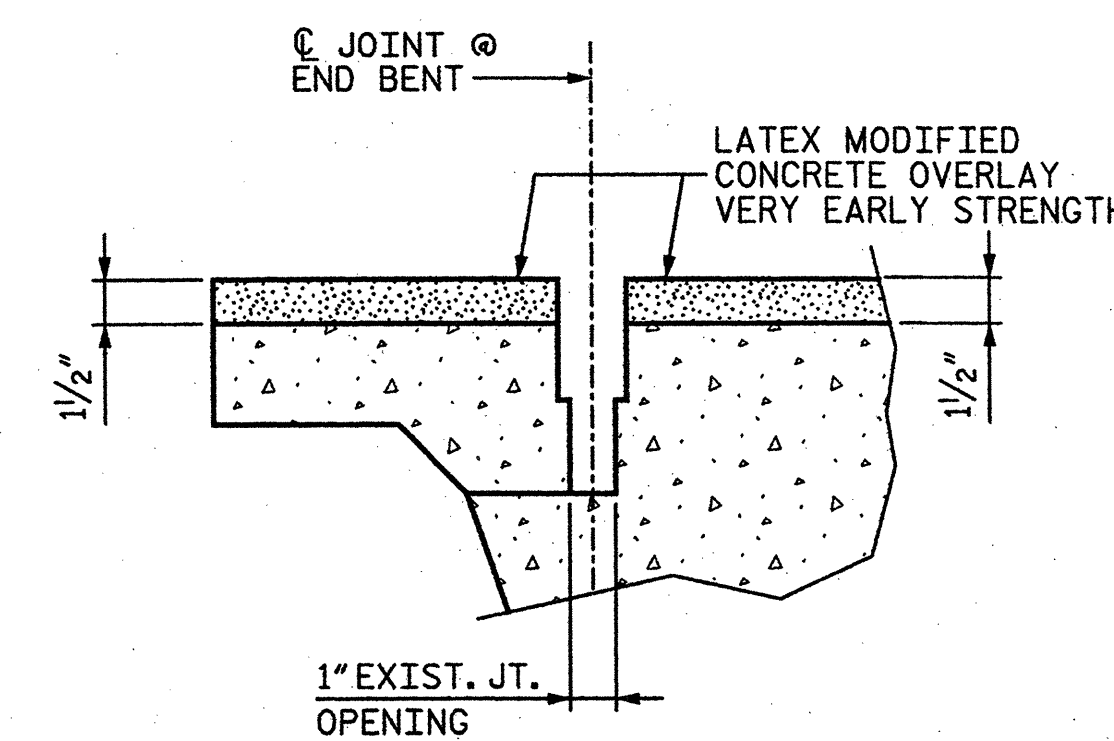
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 1/26/2012



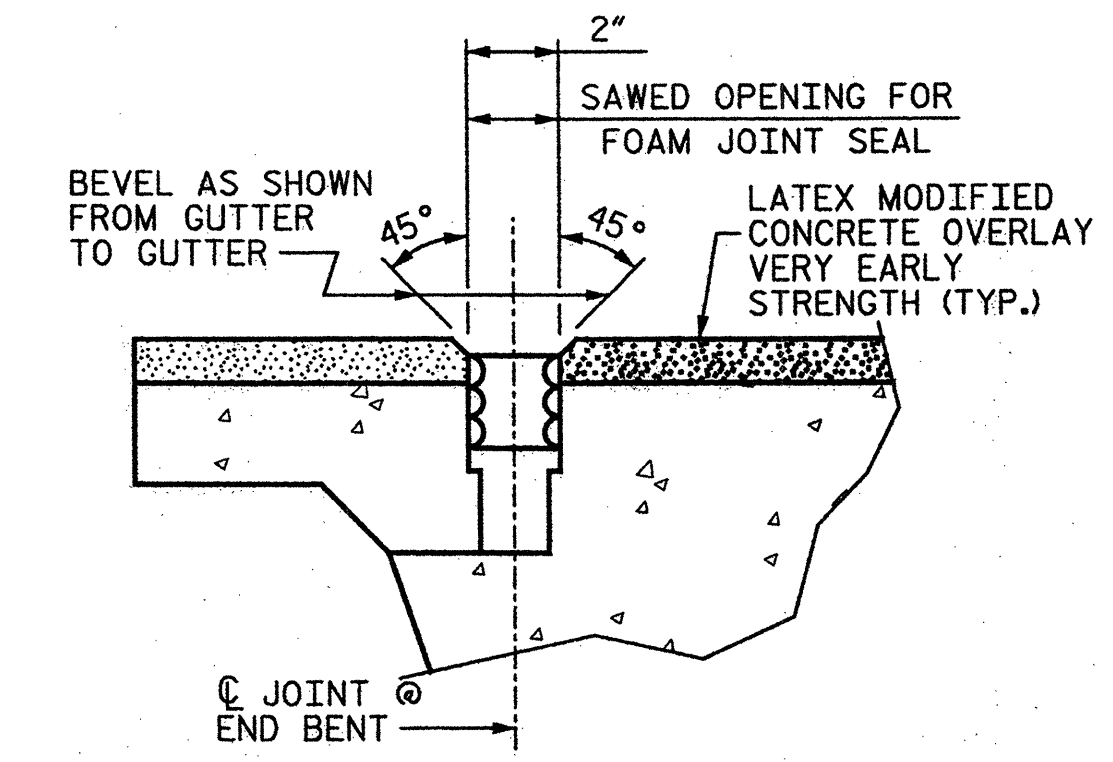
**SECTION A-A**  
DETAIL OF EXISTING EXPANSION JOINT



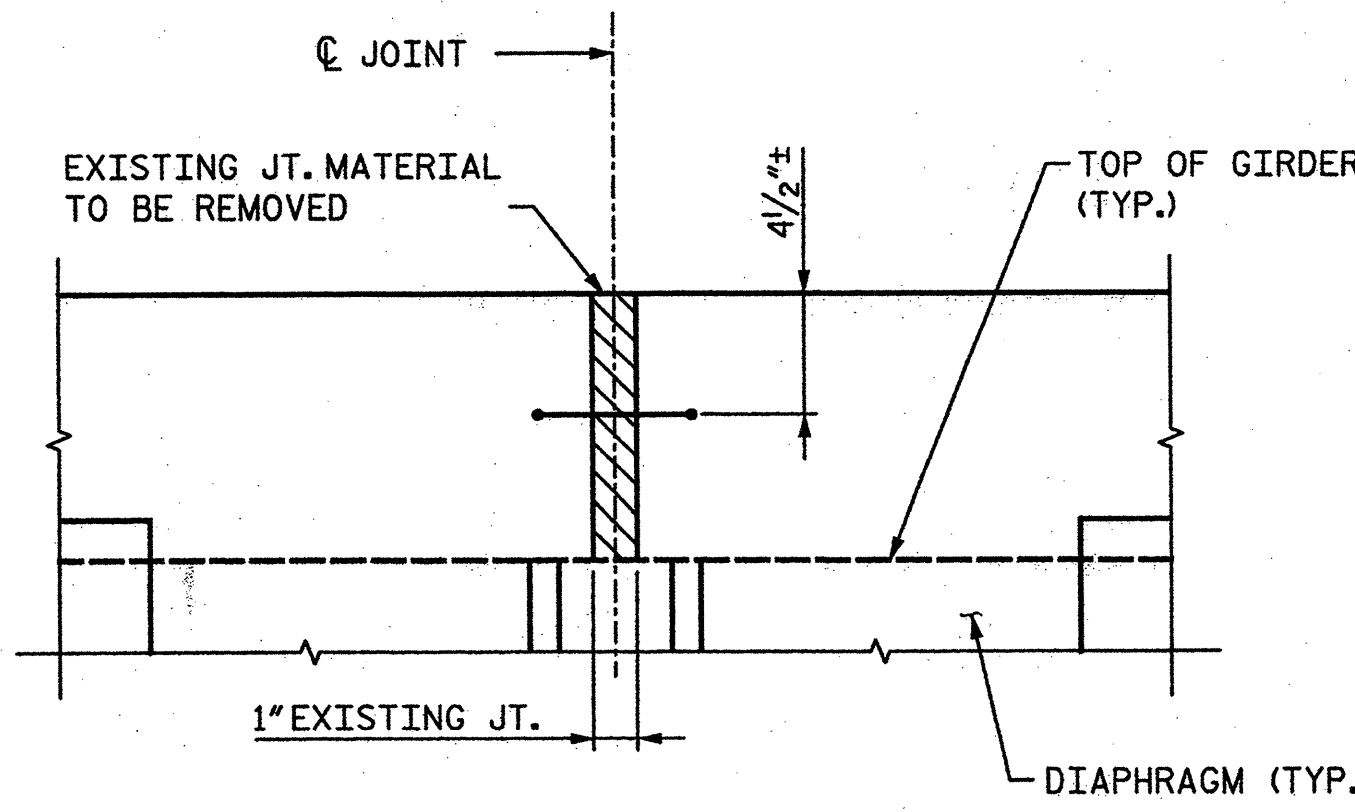
**SECTION A-A**  
MINIMUM CONCRETE REMOVAL DETAIL @ EXPANSION JOINT



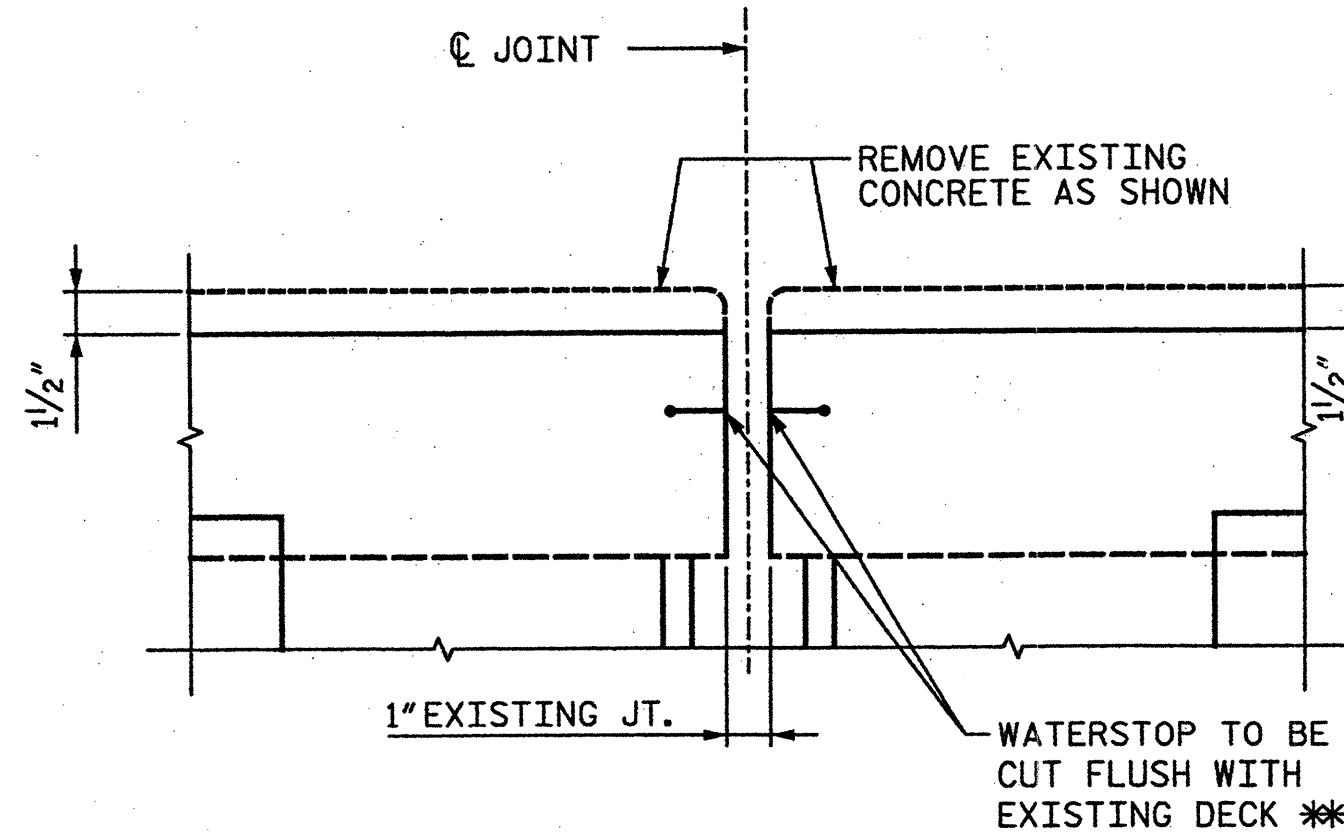
**SECTION A-A**  
PROPOSED FOAM JOINT SEAL (DETAIL BEFORE SAWING)



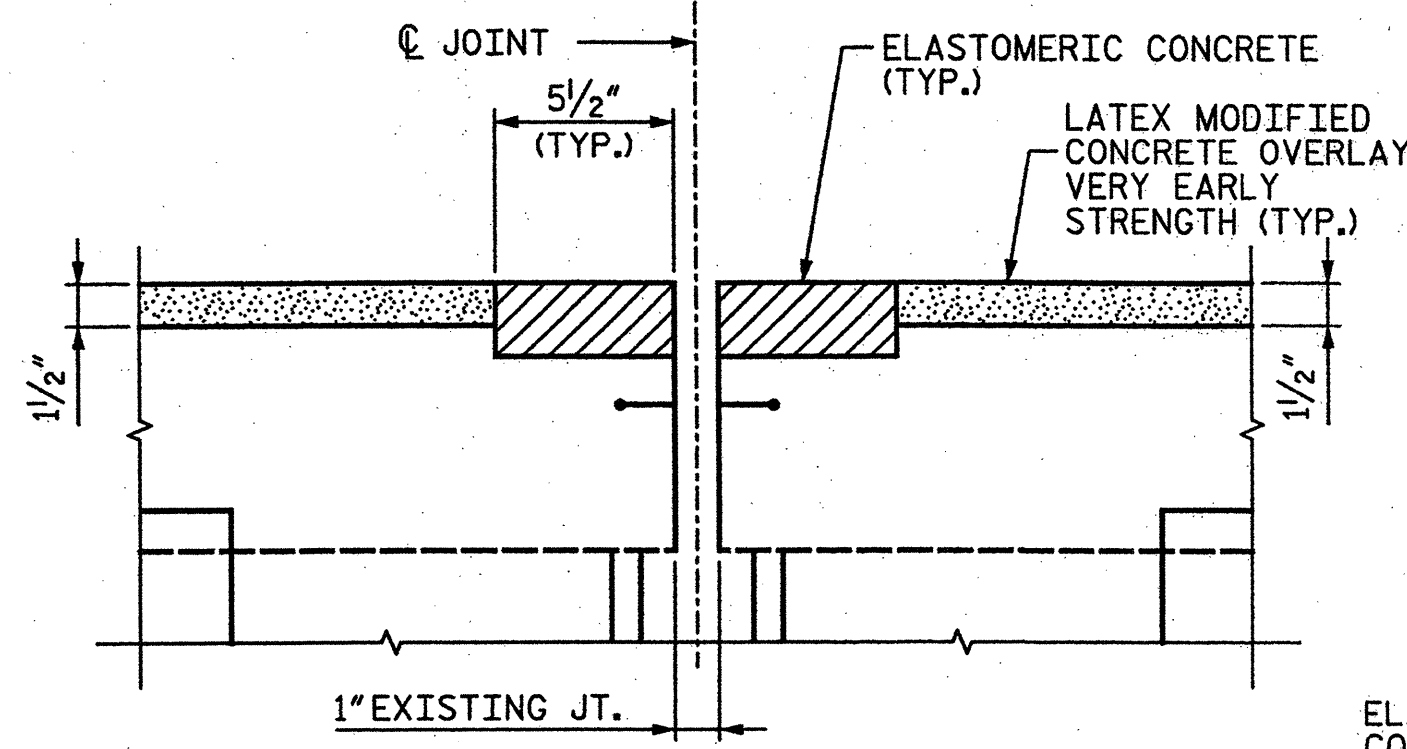
**SECTION A-A**  
PROPOSED FOAM JOINT SEAL (DETAIL AFTER SAWING)



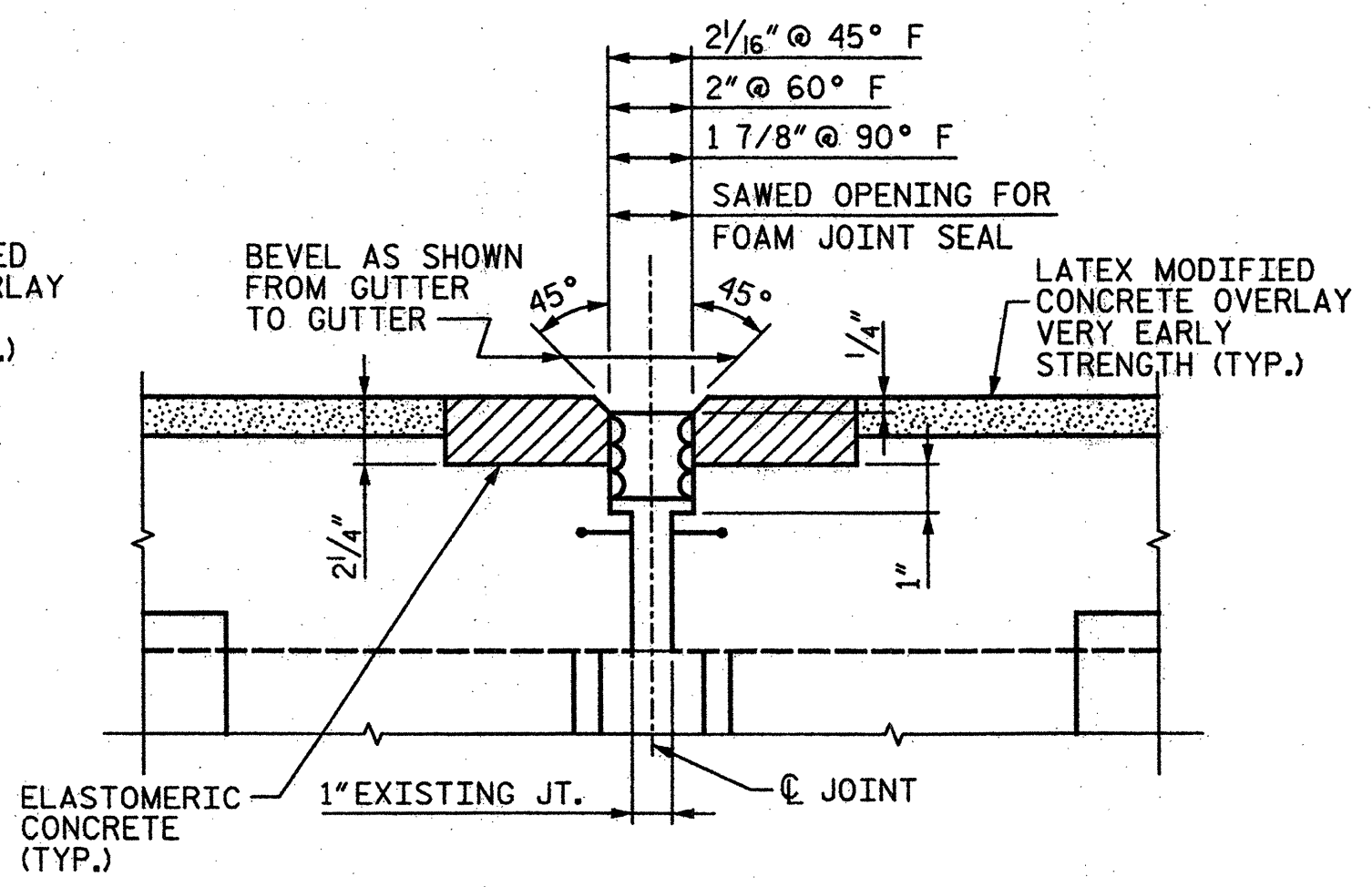
**SECTION B-B**  
(EXISTING JOINT)



**SECTION B-B**  
(DEMO OF JOINT)



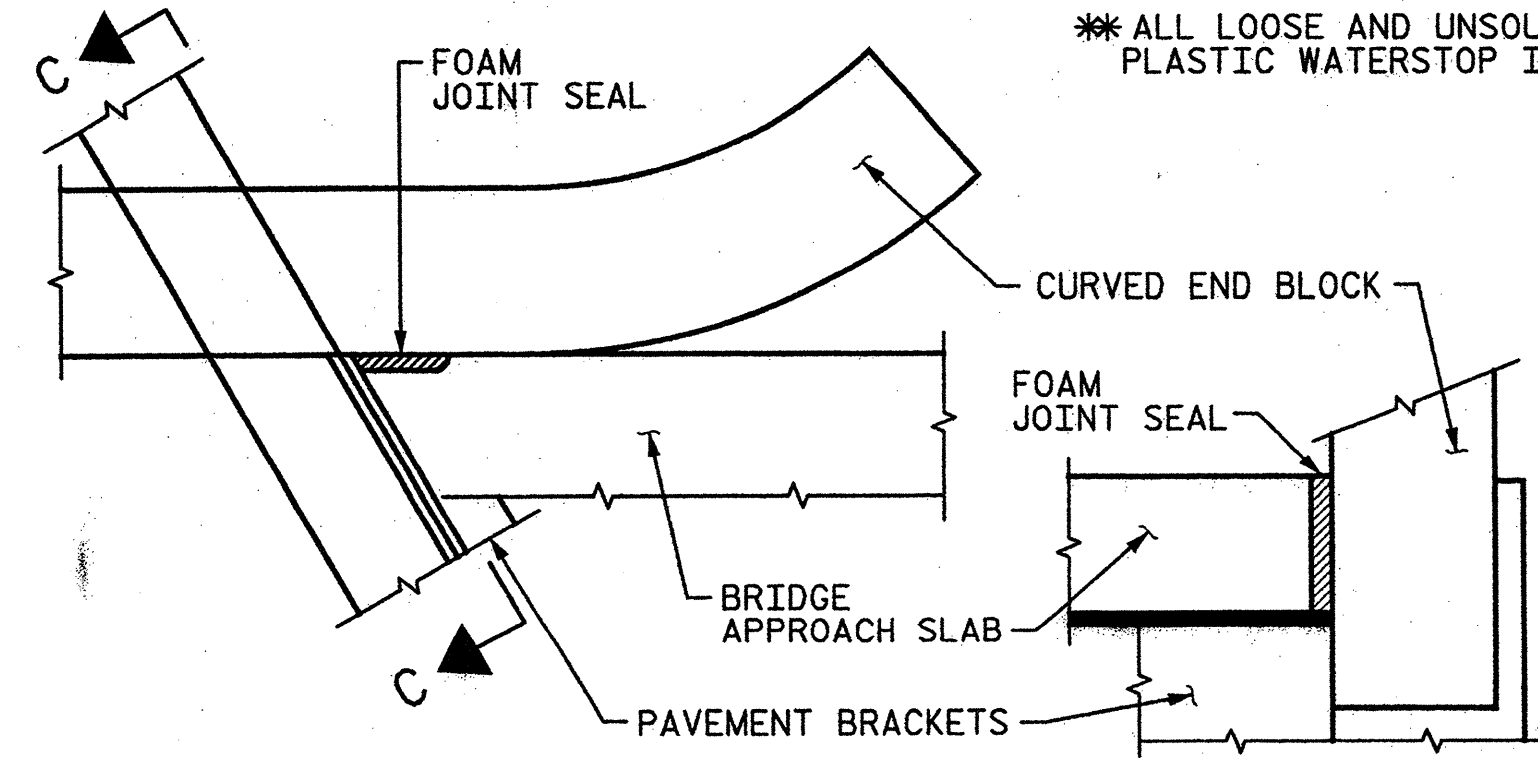
**SECTION B-B**  
(PROPOSED JOINT PRE-SAWED)



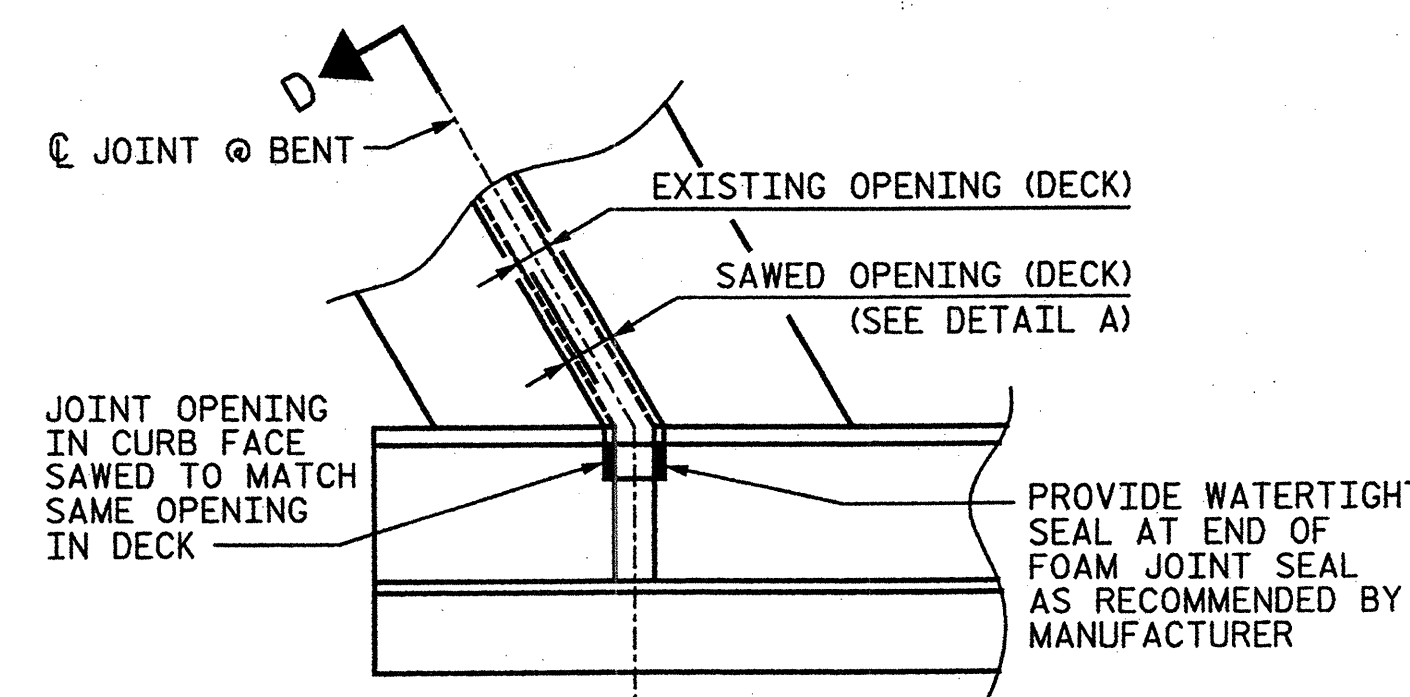
**SECTION B-B**  
(PROPOSED JOINT)

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

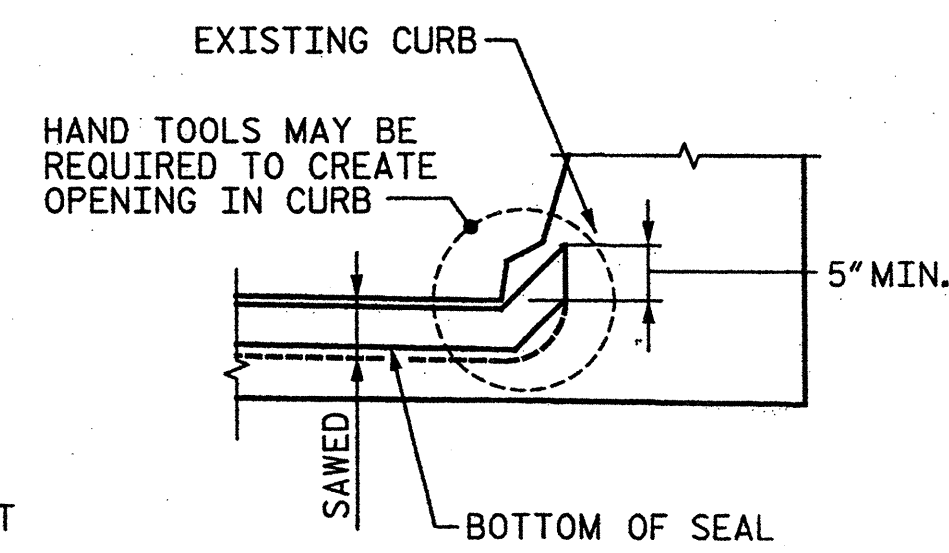
\*\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.



**DETAIL OF EXPANSION JOINT BETWEEN APPROACH SLAB AND CURVED END BLOCK**



**PLAN OF JOINT SEAL AT CURB**



**SECTION D-D**

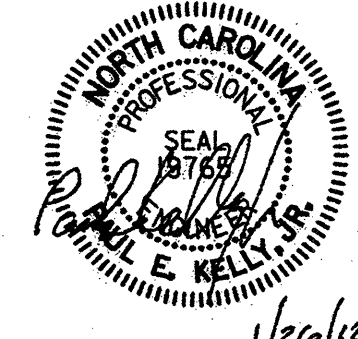
PROJECT NO. **17BP.14.P.4**  
**HAYWOOD** COUNTY  
 BRIDGE NO.: **113**

REHAB. OF BRIDGE NO. 113 SHEET 4 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT DETAILS**

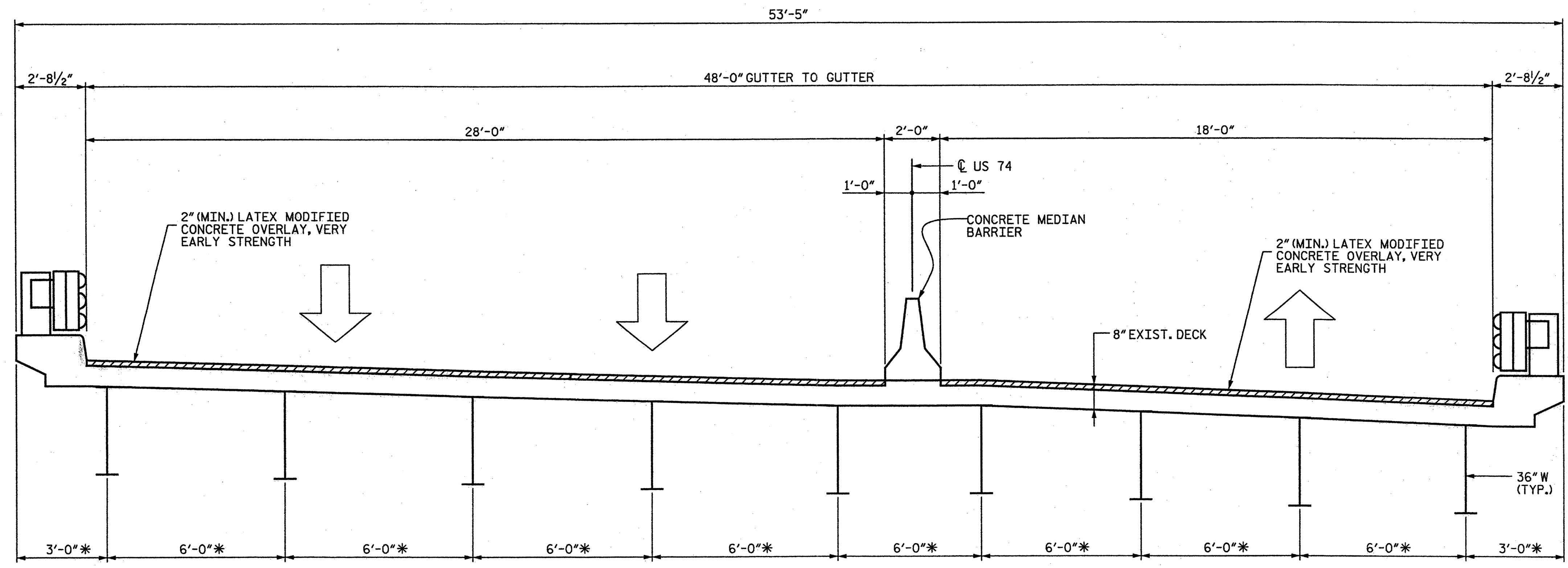
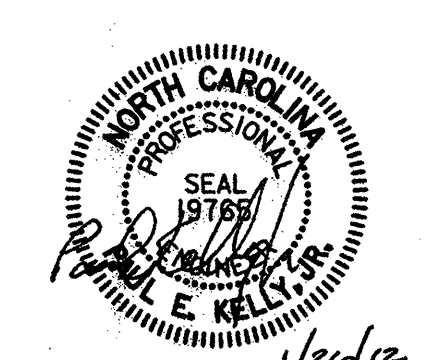
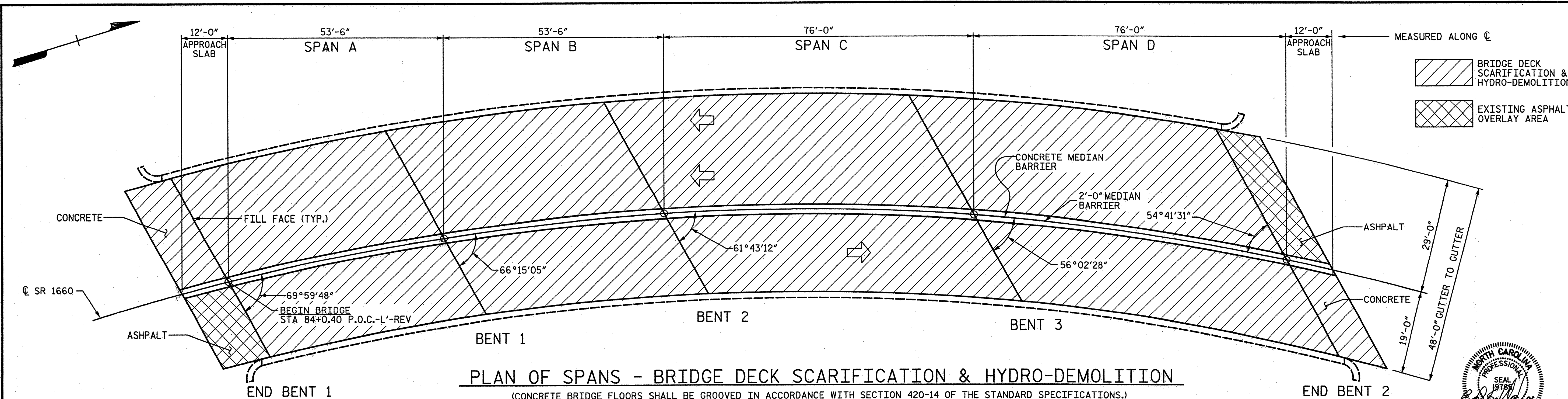
BRIDGE ON N.C. 209  
 OVER CRABTREE CREEK



DRAWN BY: SEC DATE: 10-11  
 CHECKED BY: DRG DATE: 10-11

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6	
1			3			TOTAL SHEETS	
2			4			57	



**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.

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 4 OF 8 AND SPECIAL PROVISIONS.

EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.

CONTRACTOR'S MEANS AND METHODS SHALL MINIMIZE DAMAGE TO EXISTING APPROACH PAVEMENT. AREAS OF APPROACH PAVEMENT DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. ANY COST ASSOCIATED WITH REPAIR OF APPROACH PAVEMENT SHALL BE CONSIDERED INCIDENTAL AND NO SEPARATE MEASUREMENT AND PAYMENT WILL BE MADE.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

**PROJECT NO. 17BP.14.P.4**  
**HAYWOOD COUNTY**  
**BRIDGE NO.: 126**  
 REHAB. OF BRIDGE NO. 126 SHEET 1 OF 8

**TOTAL BILL OF MATERIAL**

DECK SCARIFICATION	* 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	EPOXY RESIN INJECTION	UNDER STRUCTURE WORK PLATFORM	BRIDGE JACKING	SHOTCRETE REPAIRS
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	LIN. FEET	LUMP SUM	LUMP SUM	CU. FT.
1630	8	5	1630	85	1630	LUMP SUM	13,115	78	LUMP SUM	LUMP SUM	137

\* QUANTITIES FOR INFORMATION ONLY.

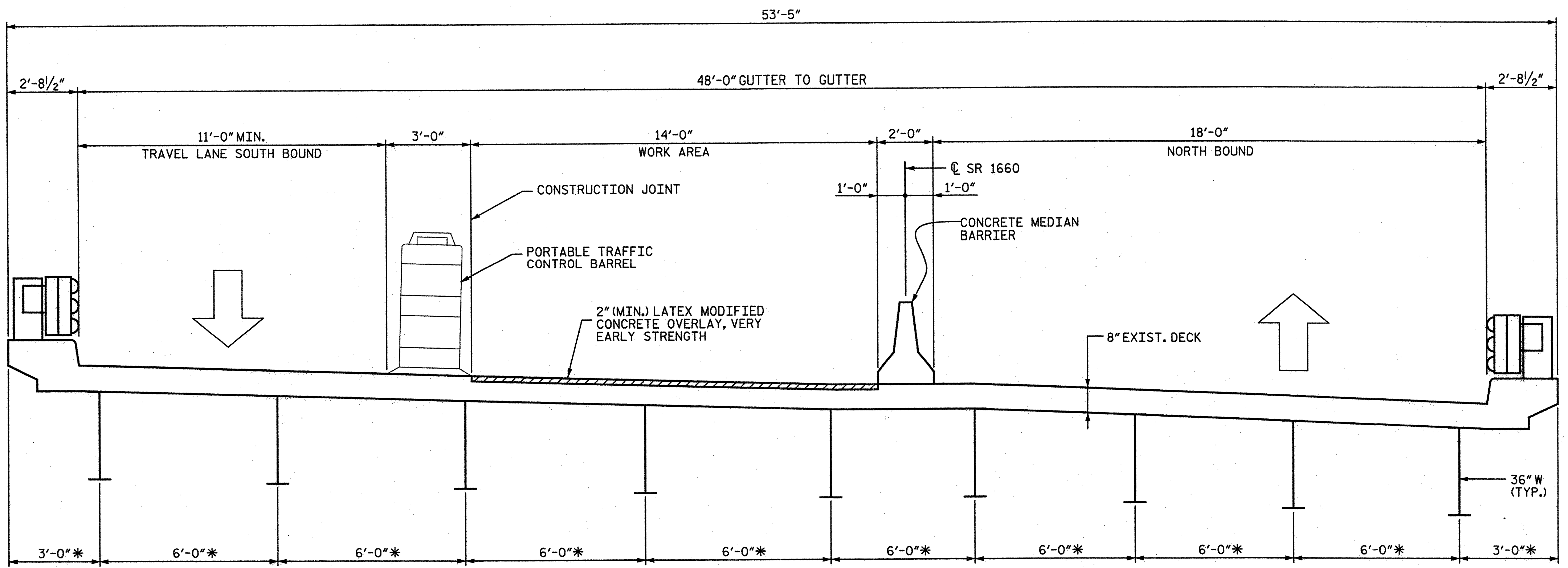
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 CHECKED BY: DRG DATE: 10-11

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			57

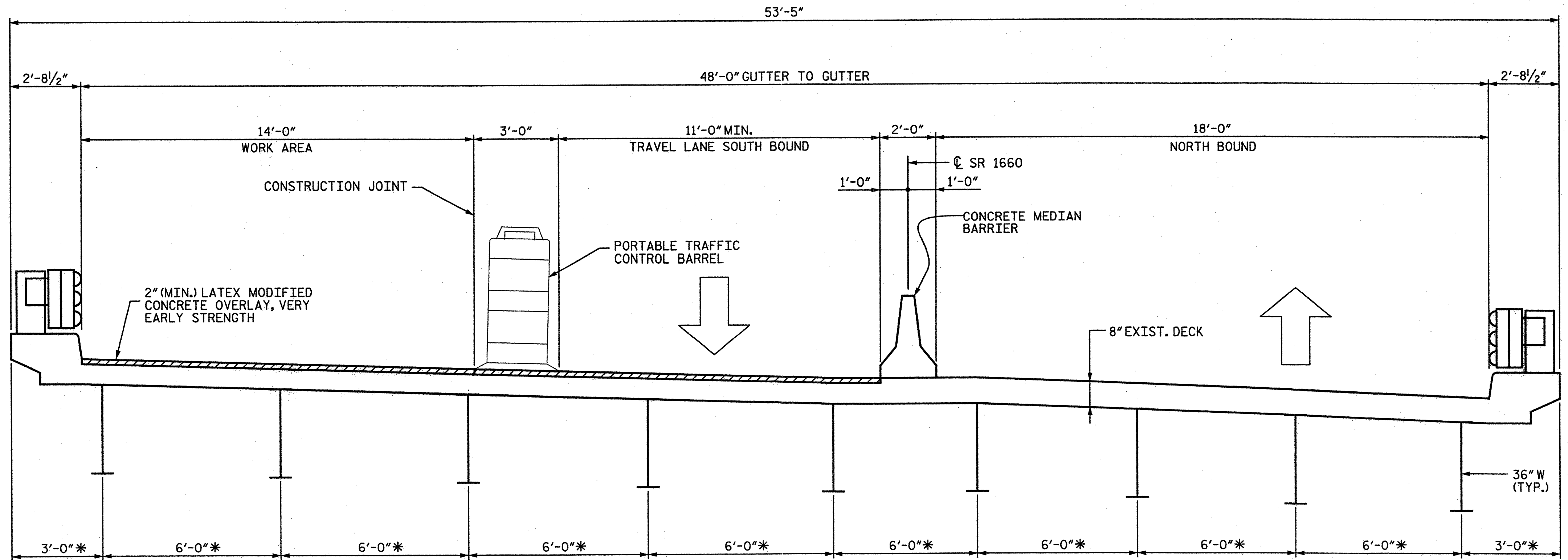
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 1/26/2012  
 wvm





\* DIMENSIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN FIELD

TYPICAL SECTION - STAGE I



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN FIELD

TYPICAL SECTION - STAGE II



PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 126  
 REHAB. OF BRIDGE NO. 126 SHEET 2 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STAGED CONSTRUCTION  
 BRIDGE ON SR 1660  
 OVER I-40

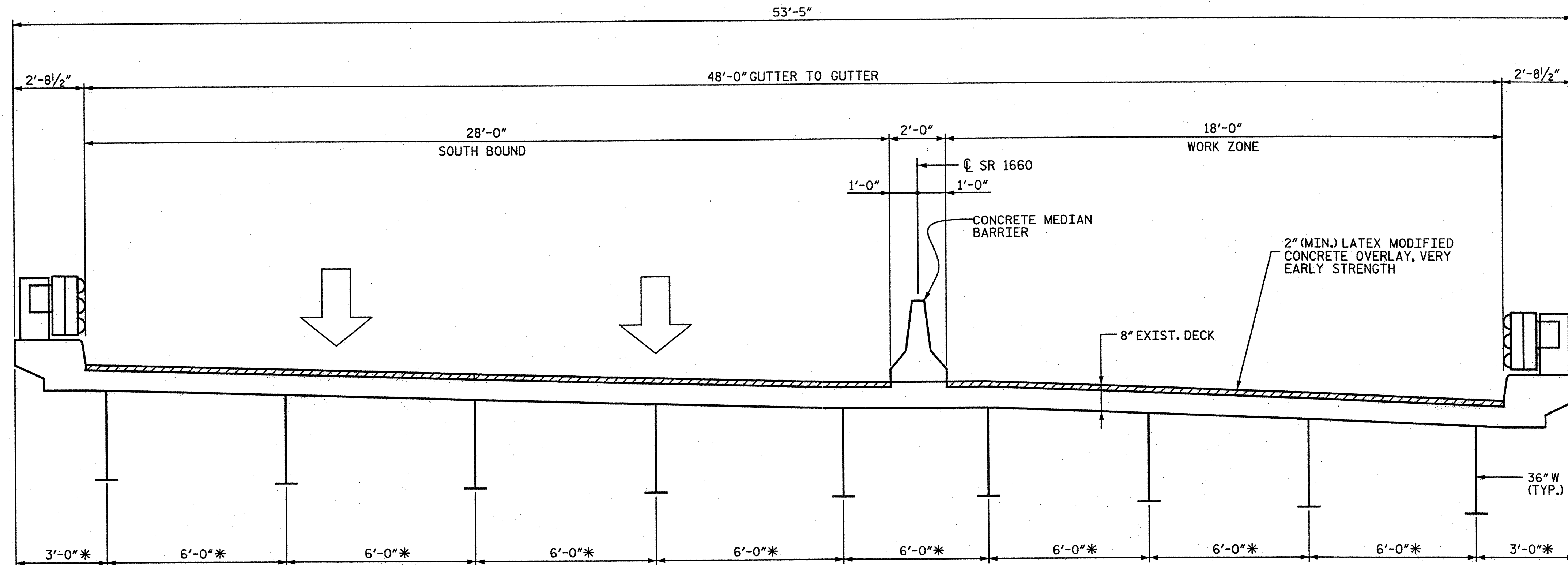
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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8	
1			3			TOTAL SHEETS	57
2			4				

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 1/26/2012



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN FIELD

TYPICAL SECTION - STAGE III

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 126  
 REHAB. OF BRIDGE NO. 126 SHEET 3 OF 8



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STAGED CONSTRUCTION  
 BRIDGE ON SR 1660  
 OVER I-40

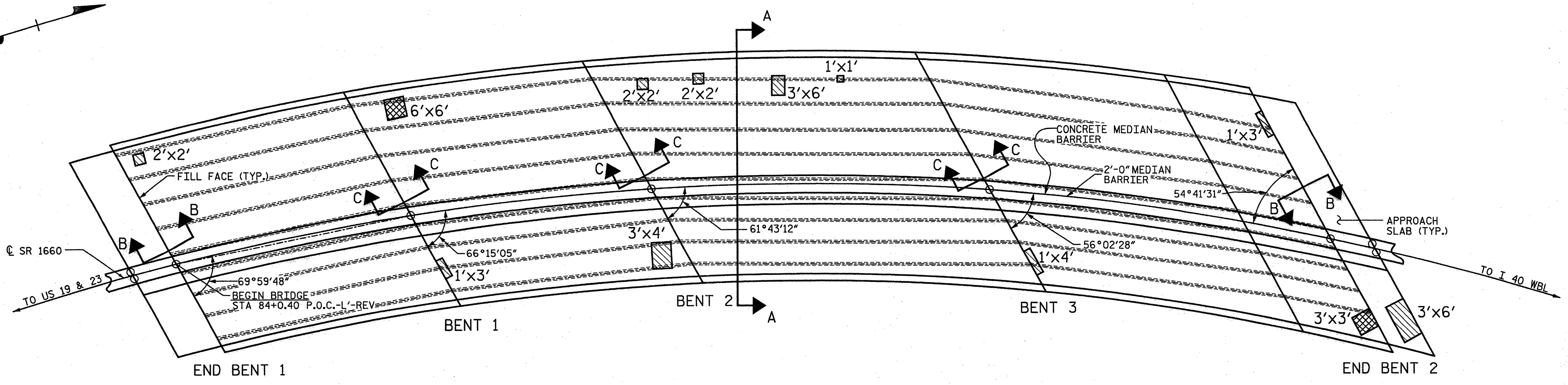
DRAWN BY: RWM DATE: 10-11  
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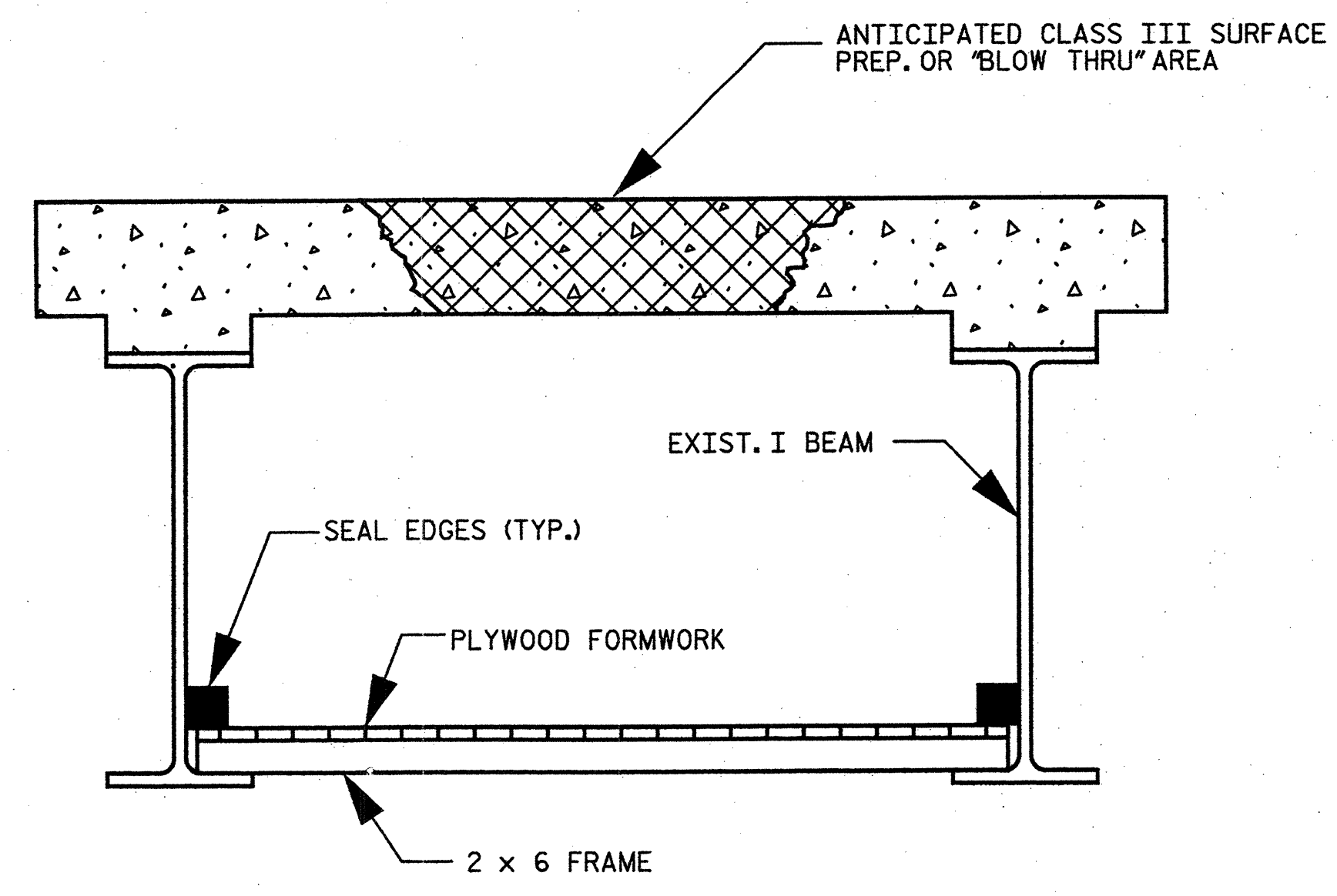
REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			57



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PLAN OF SPANS - DECK REPAIRS



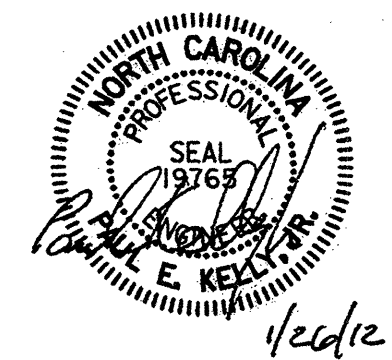
TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

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

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

CONTRACTOR, AT HIS OPTION, MAY CHOOSE TO MONITOR HYDRO-DEMOLITION WORK AND CONTROL TRAFFIC UNDER THE BRIDGE IN LIEU OF BLOW THRU CONTAINMENT. SEE TRAFFIC MANAGEMENT PLANS.

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



PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 126  
 REHAB. OF BRIDGE NO. 126 SHEET 4 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS &  
 DECK REPAIRS**

BRIDGE ON SR 1660  
 OVER I-40

DRAWN BY: RWM DATE: 10-11  
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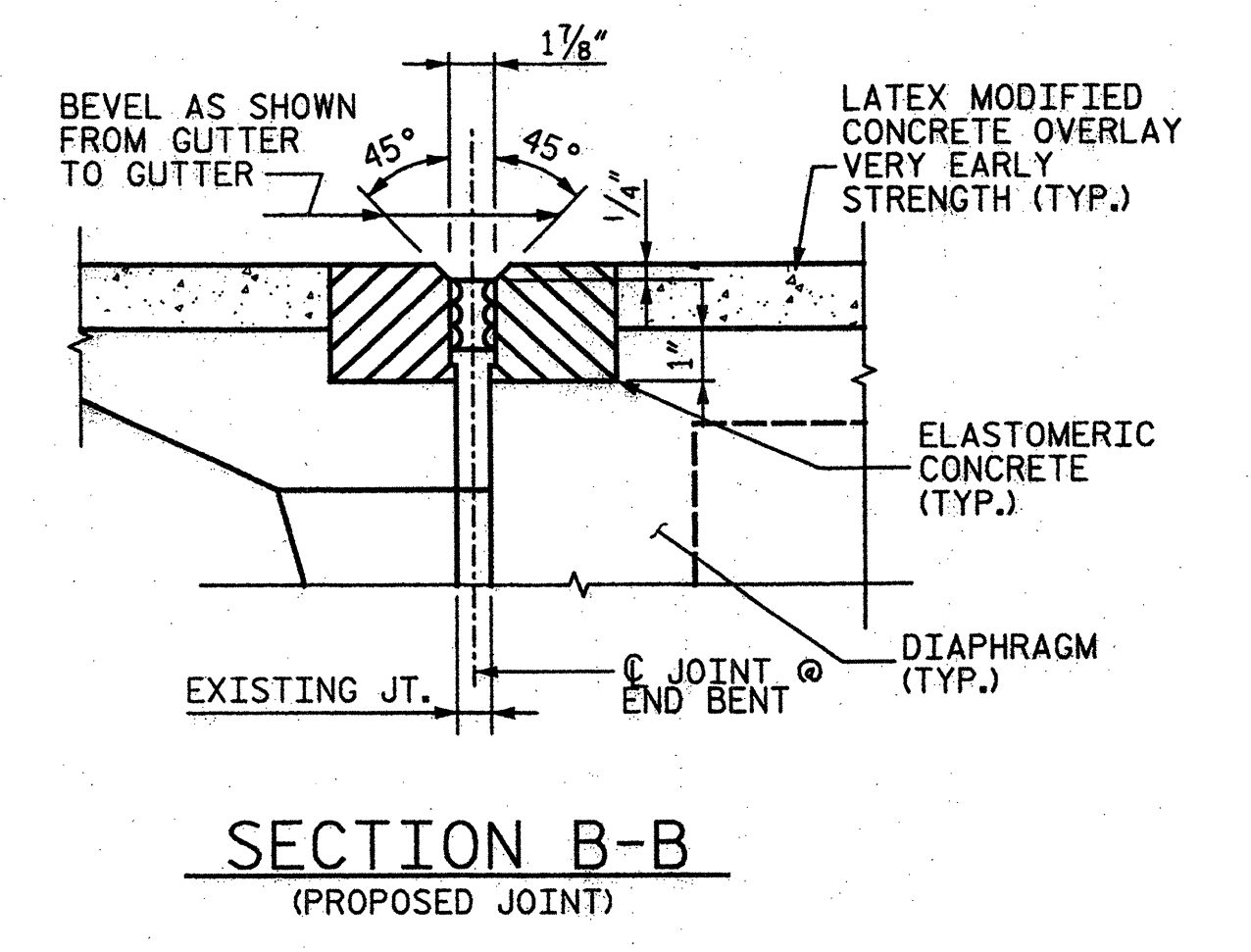
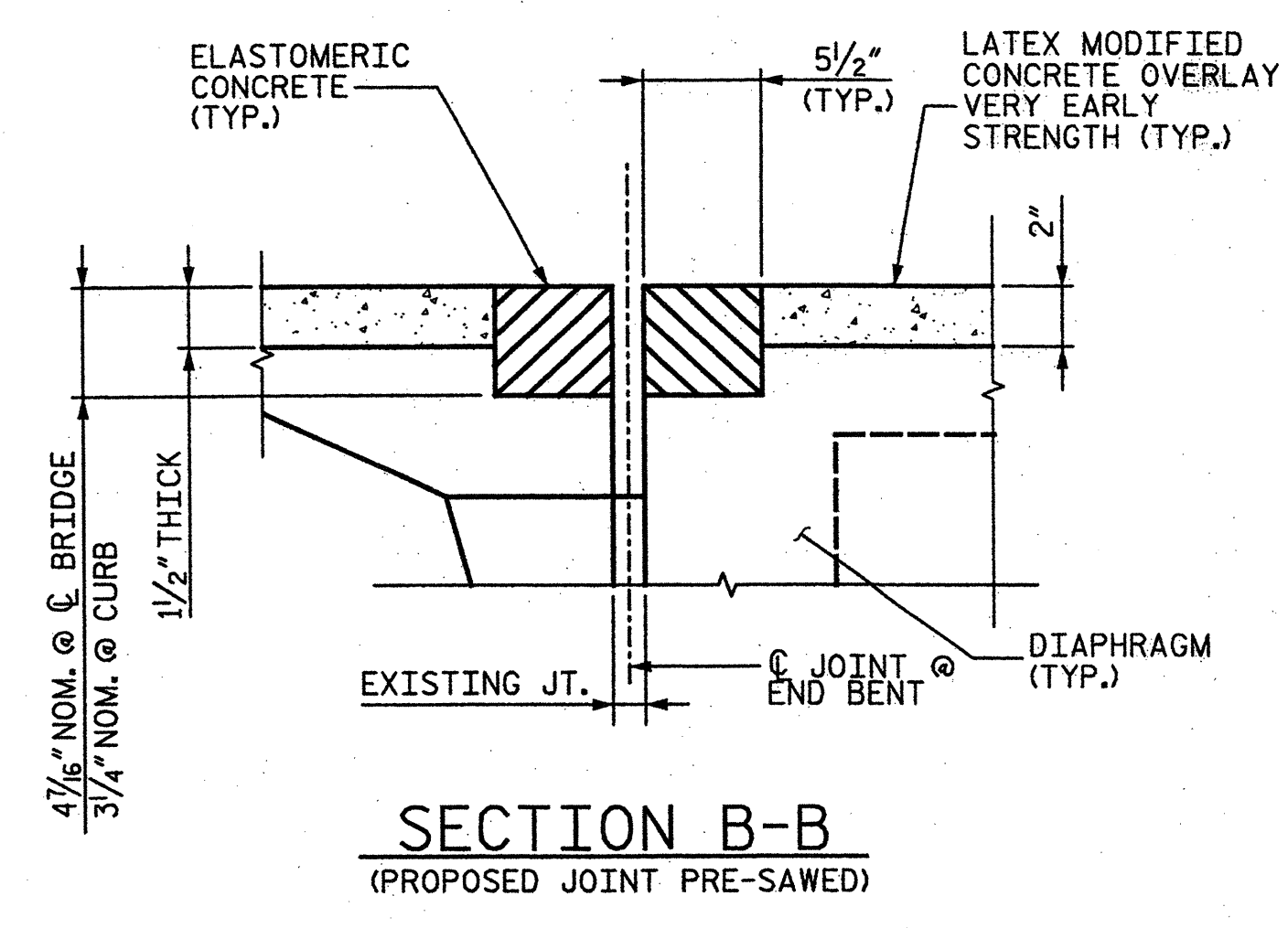
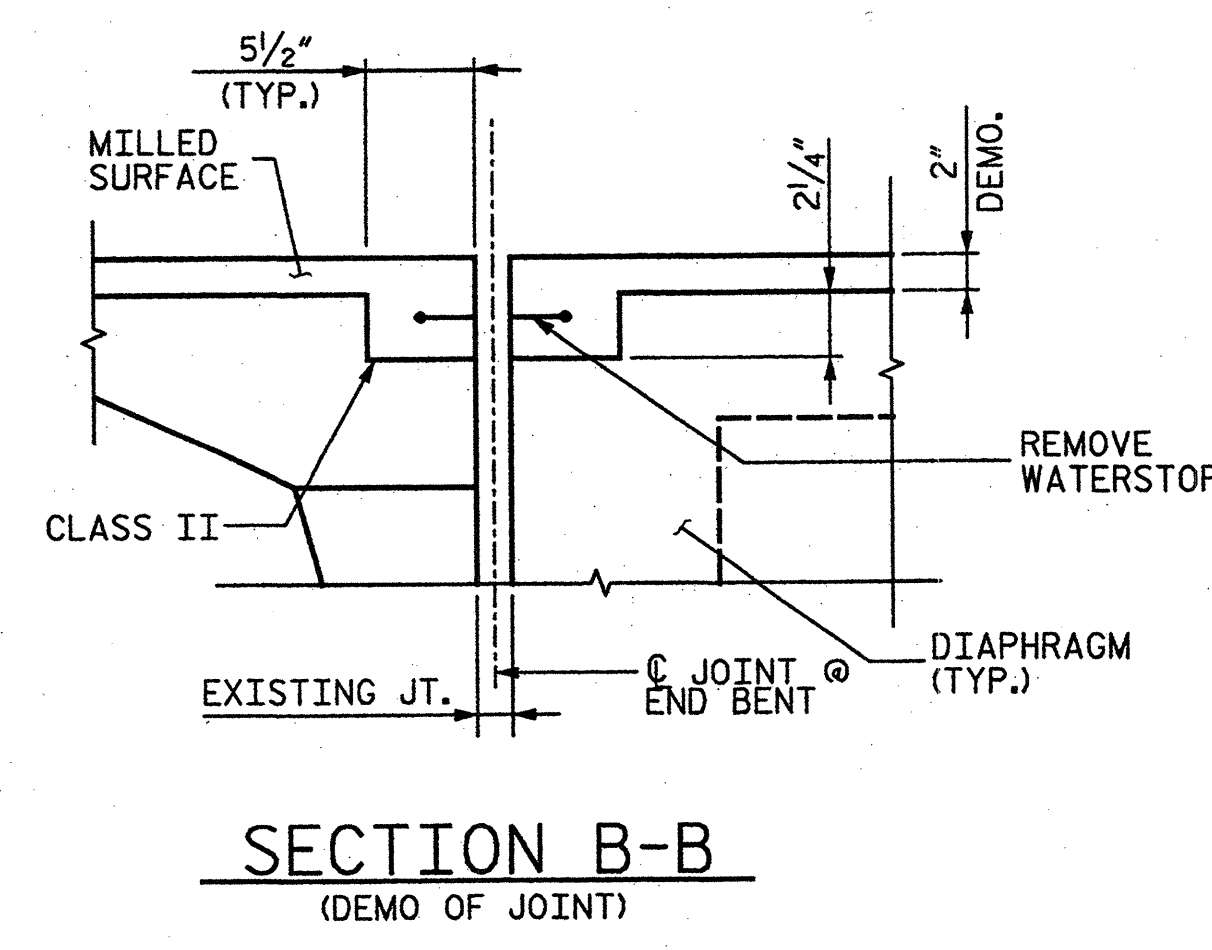
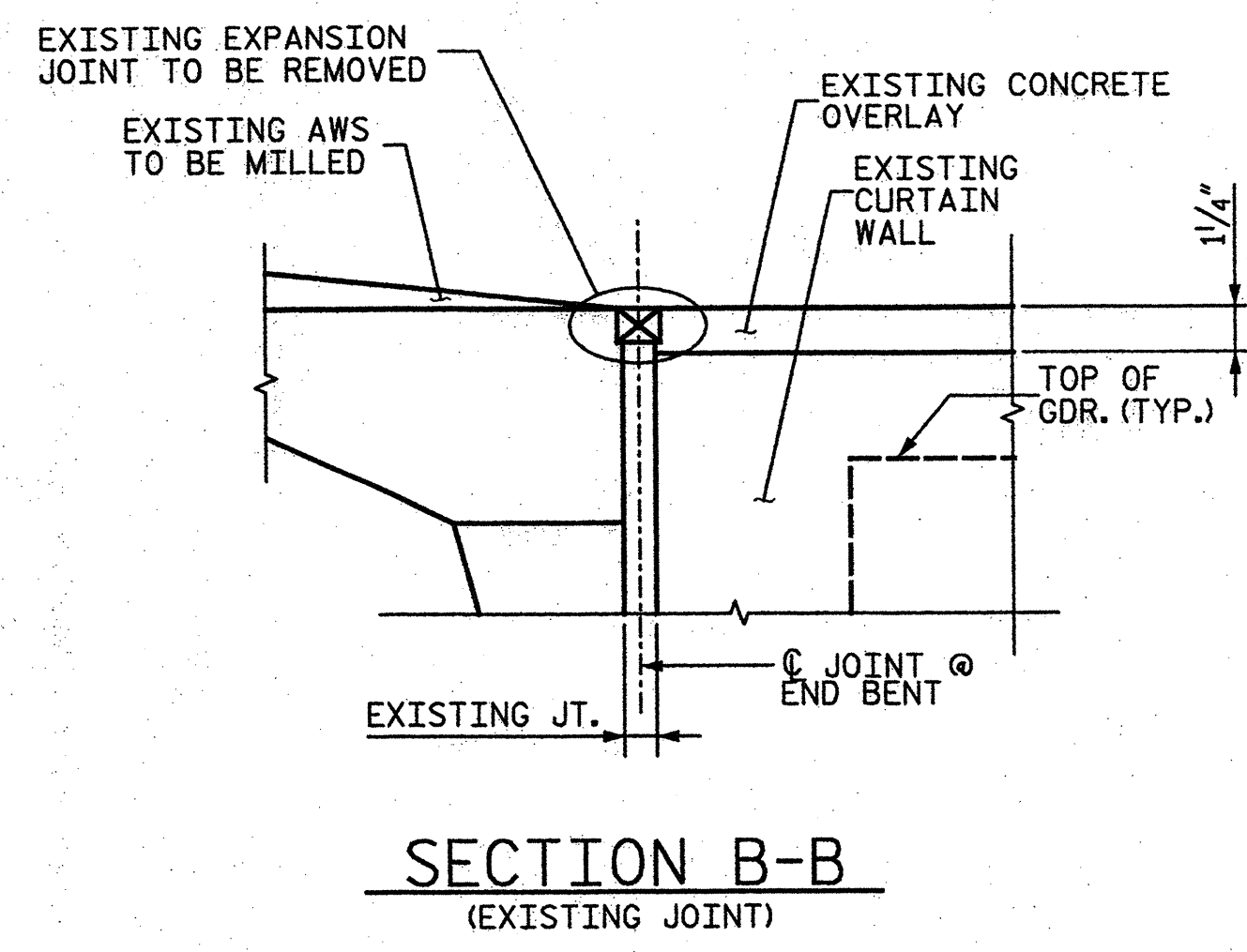
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 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			57

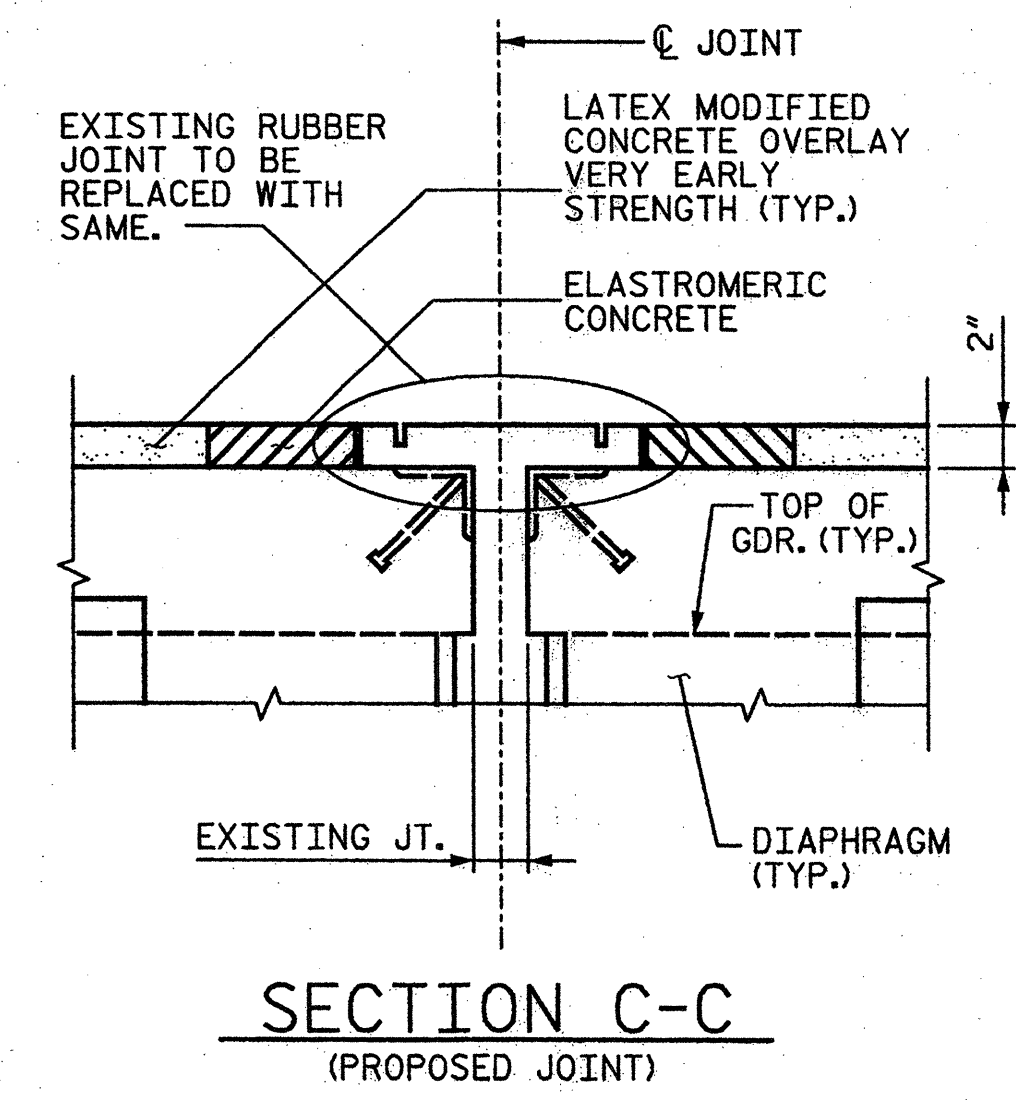
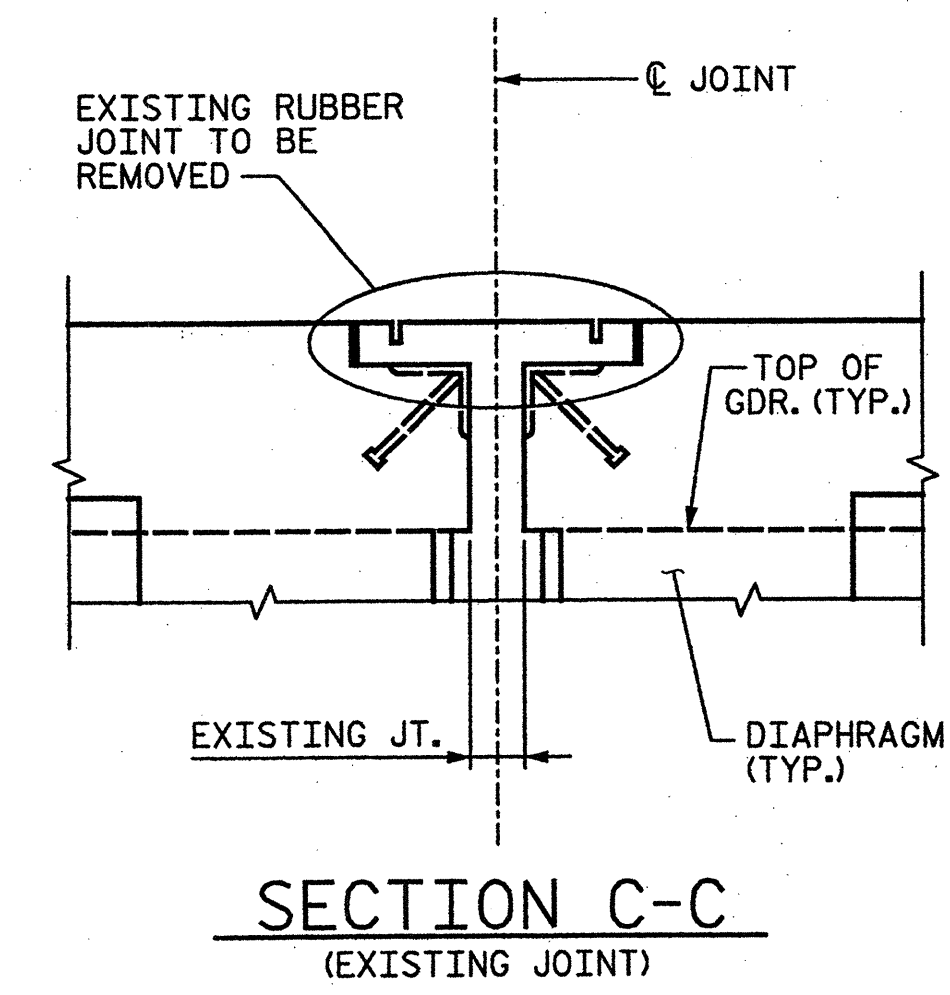
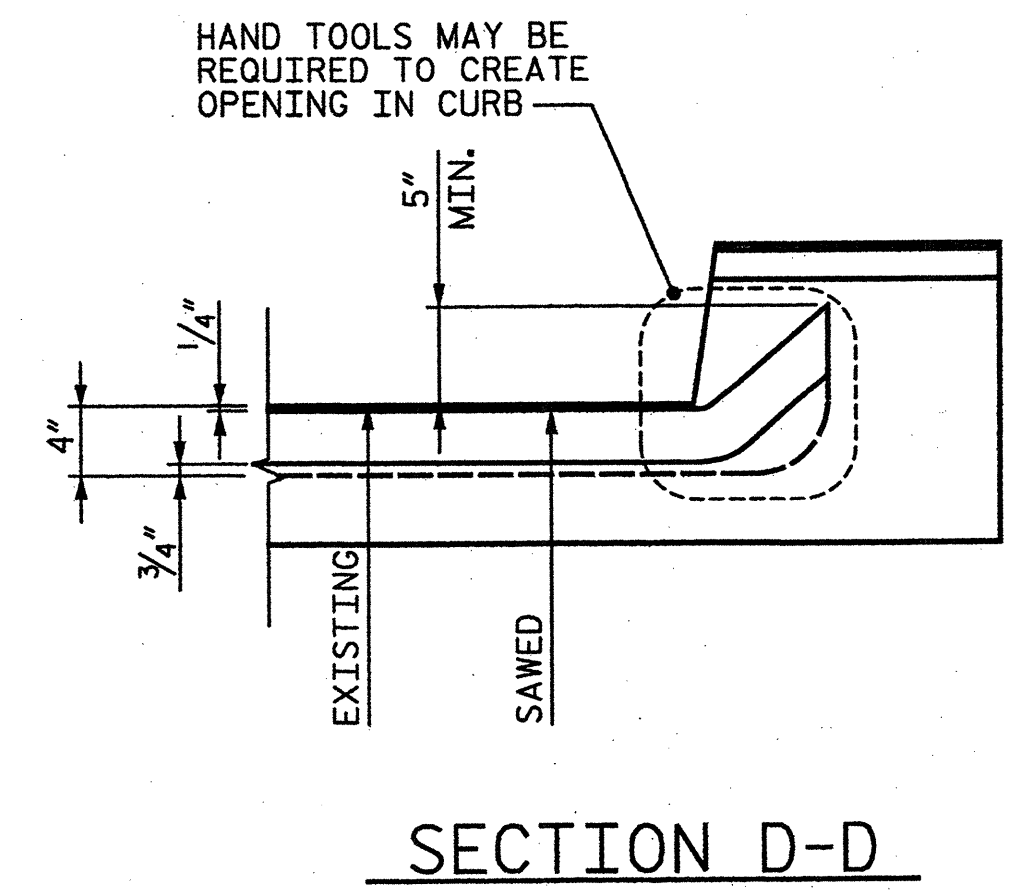
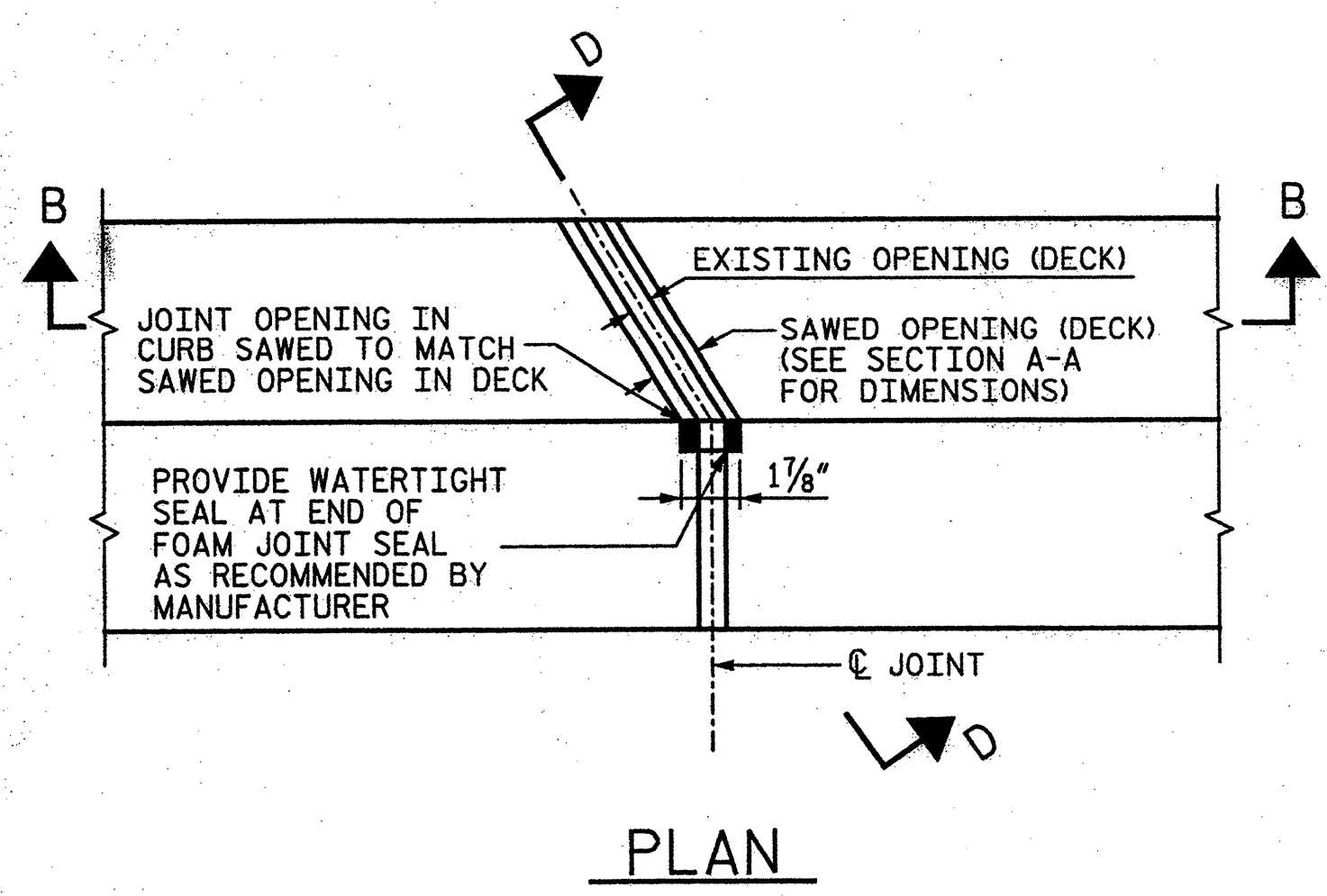
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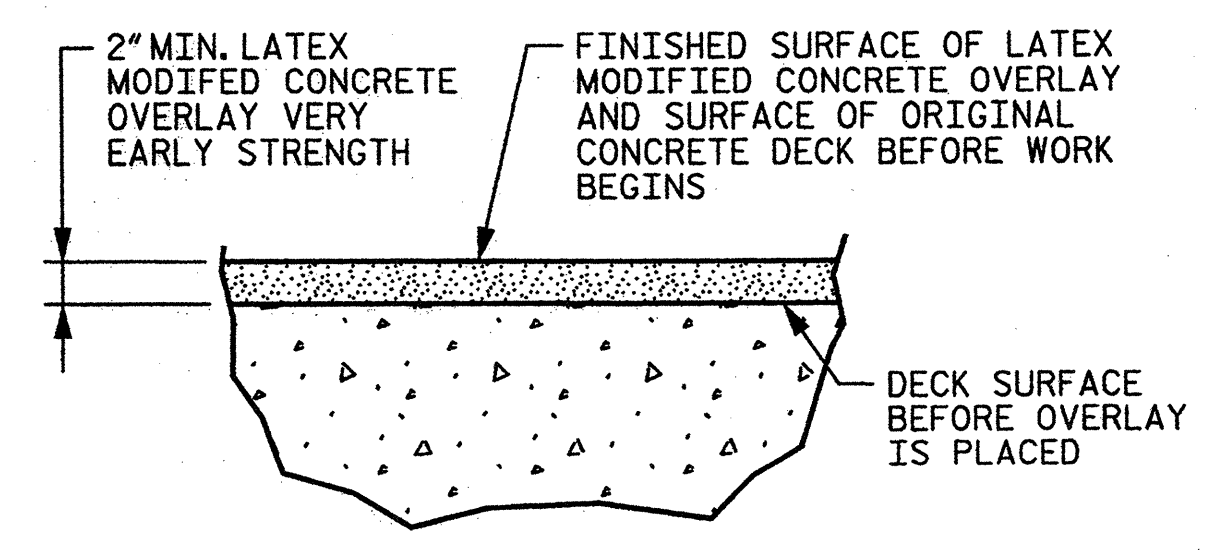
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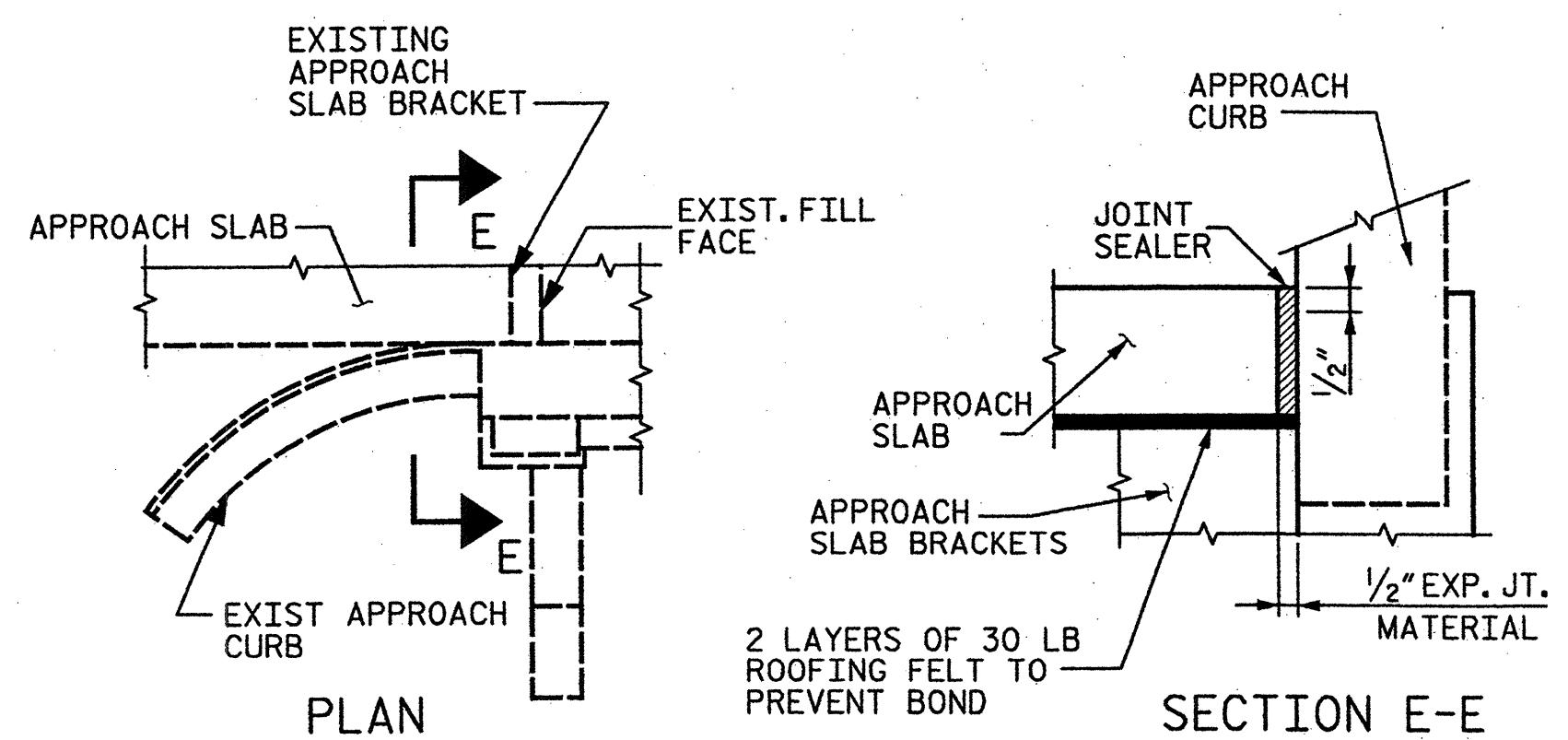
ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.



**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\"/>



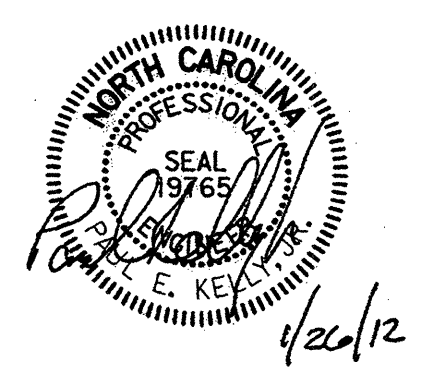
DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



DETAIL OF EXPANSION JOINT BETWEEN APPROACH SLAB AND CURVED END BLOCK

PROJECT NO. 17BP.14.P.4  
 HAYWOOD COUNTY  
 BRIDGE NO. 126  
 REHAB. OF BRIDGE NO. 126 SHEET 5 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 JOINT DETAILS  
 BRIDGE ON SR 1660  
 OVER I-40

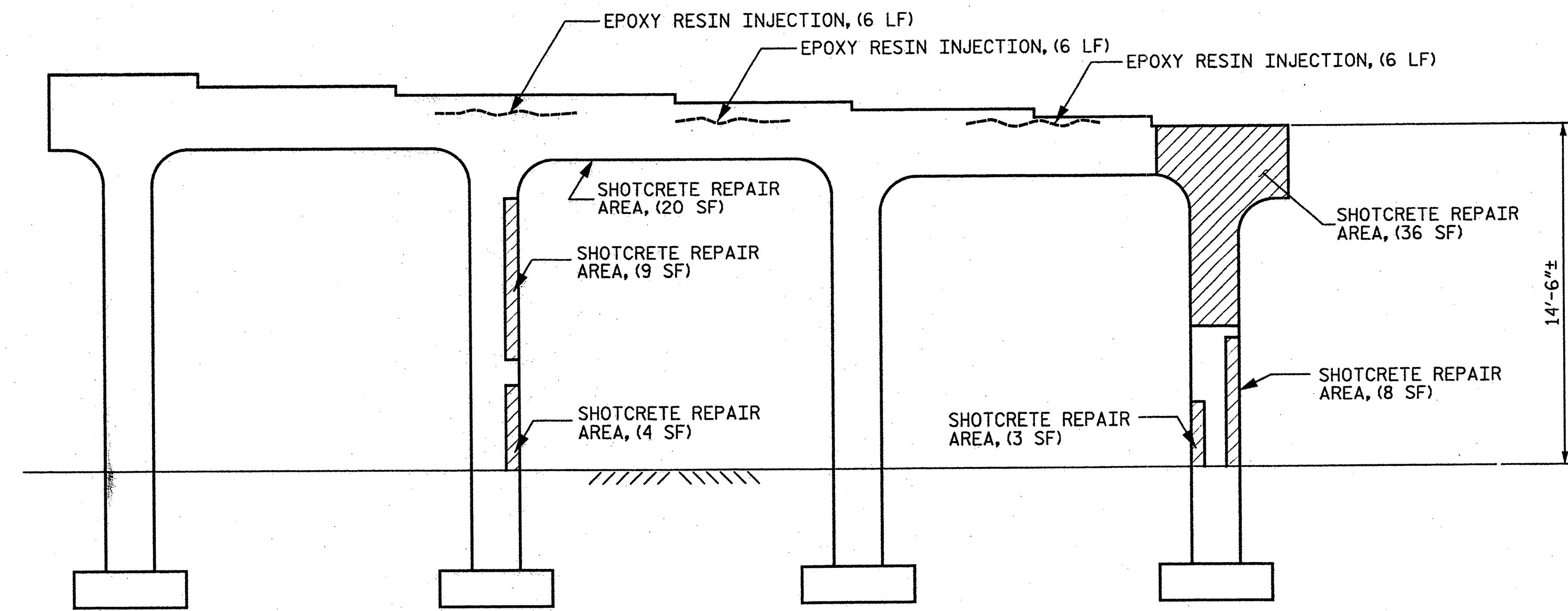


REVISIONS						SHEET NO.	
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1			3			TOTAL SHEETS	
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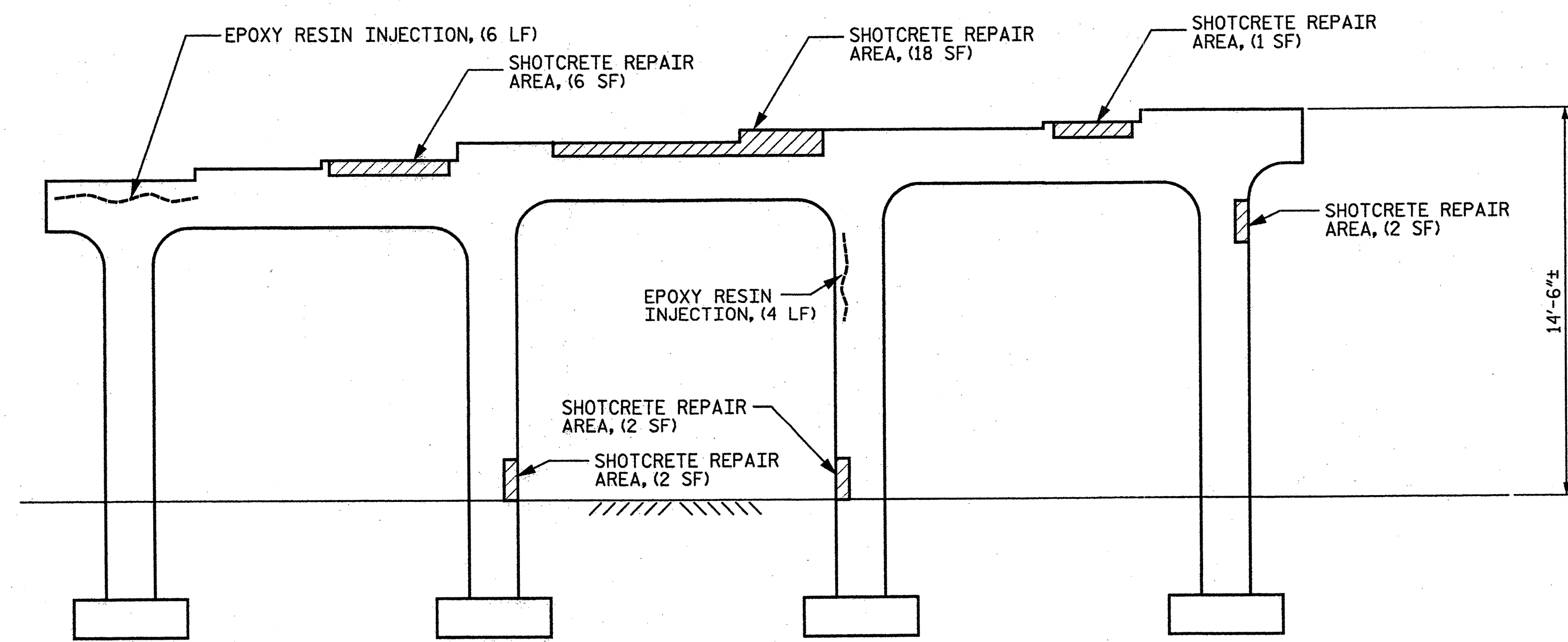
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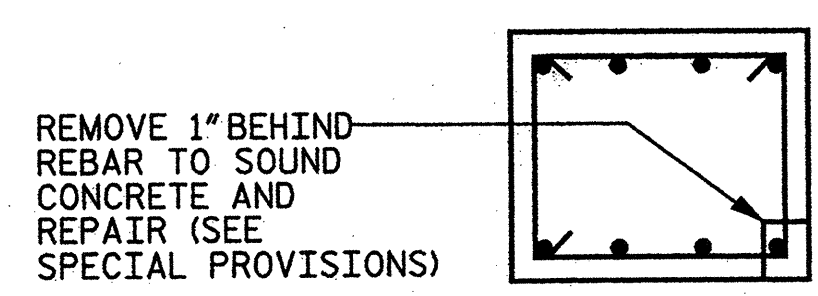
ELEVATION OF BENT 1 - LOOKING NORTH



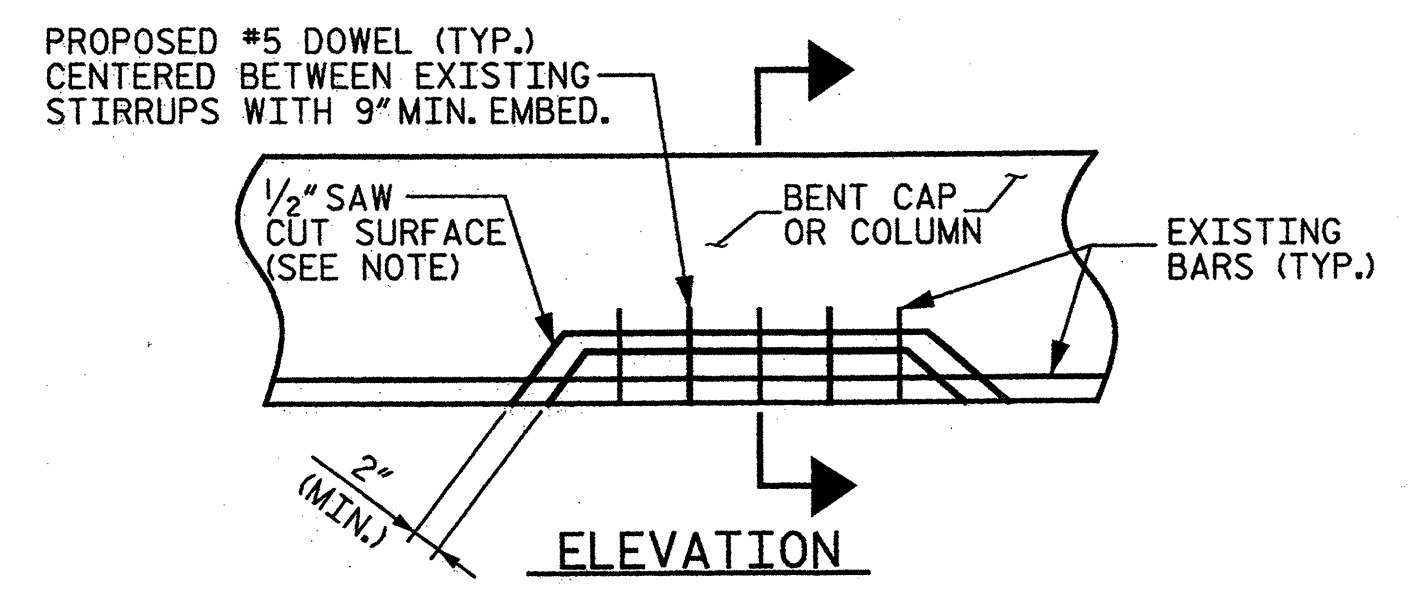
ELEVATION OF BENT 1 - LOOKING SOUTH

**NOTES:**

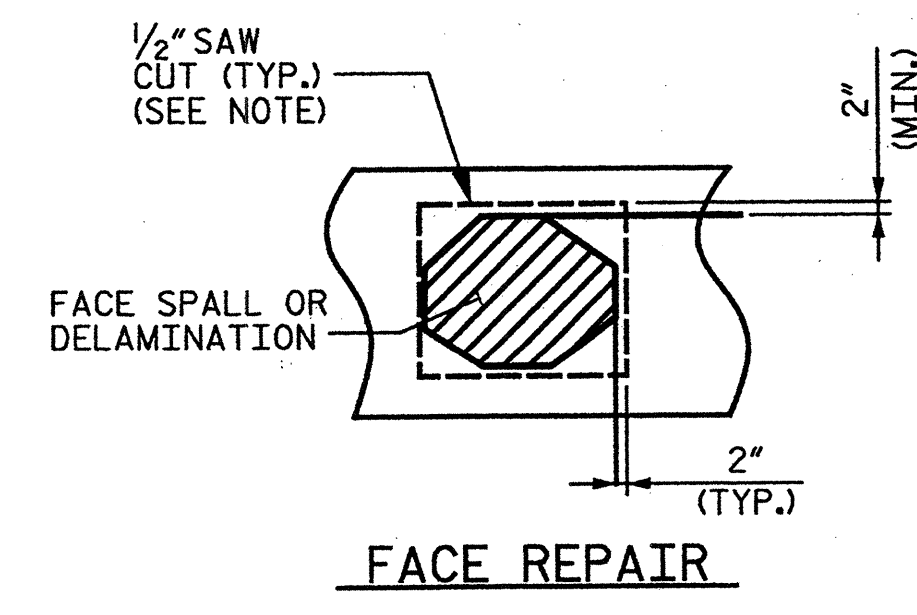
1. CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
2. FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
3. SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND 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. BENT CAP REPAIRS IN BEARING AREAS SHALL BE PERFORMED WITH CLASS A CONCRETE.
8. BRIDGE JACKING IS REQUIRED FOR CONCRETE REPAIRS THAT EXTEND UNDER A BEARING PLATE. FOR JACKING DETAILS AND NOTES, SEE SHEET S-57.
9. SEE SHEET 1 OF 8 FOR ADDITIONAL NOTES.
10. SUBSTRUCTURE REPAIRS SHALL PROVIDE A MINIMUM OF 2" CLEAR COVER TO REINFORCING STEEL. REPAIRED AREAS AY BE BUILT OUT TO ACHIEVE CLEARANCE.
11. EPOXY COATING SHALL BE APPLIED TO THE TOP OF ALL BENT CAPS. COST SHALL BE INCLUDED IN OTHER BENT REPAIRS.
12. THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO PREVENT DEBRIS AND MATERIALS FROM FALLING, ROLLING, OR BLOWING INTO TRAFFIC OR ONTO BEAMS, GIRDERS, BEARINGS OR ANY OTHER UNINTENDED SURFACES. CONSIDERATION SHALL BE GIVEN TO THE USE OF SCREENS TO PROTECT TRAFFIC ADJACENT TO THE WORK AREA AND OTHER PORTIONS OF THE BRIDGE.



SECTION



CORNER REPAIR



FACE REPAIR

TYPICAL SUBSTRUCTURE REPAIR DETAILS

**NOTE:**

CONTRACTOR SHALL SAW CUT TO A MAXIMUM DEPTH OF 1/2". THIS DEPTH SHALL BE REDUCED TO PREVENT DAMAGE TO EXISTING REINFORCEMENT. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

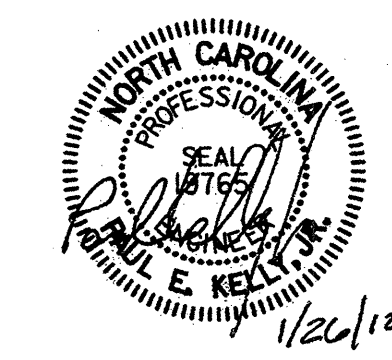
PROJECT NO. **17BP.14.P.4**  
**HAYWOOD** COUNTY

BRIDGE NO.: **126**

REHAB. OF BRIDGE NO. 126 SHEET 6 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BENT 1**  
**STRUCTURE REPAIR**  
 BRIDGE ON SR 1660  
 OVER I-40



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1			3			TOTAL SHEETS
2			4			57

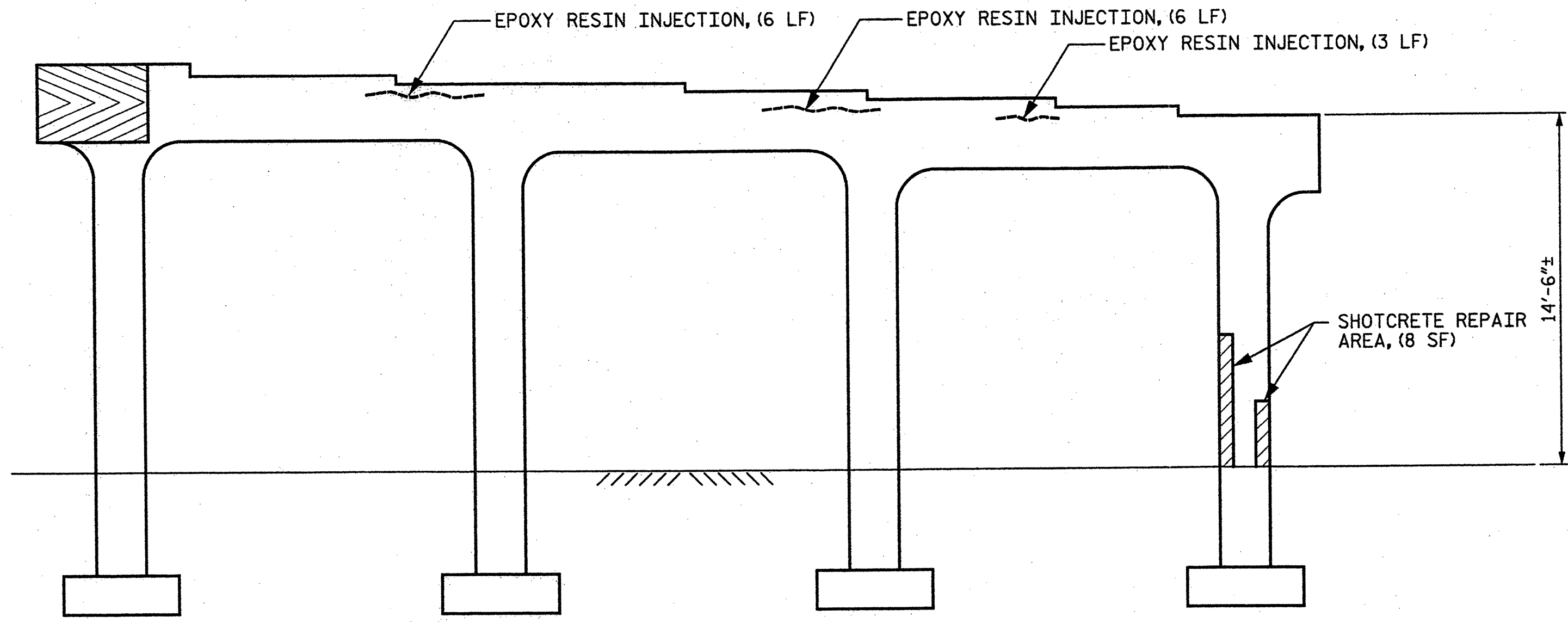
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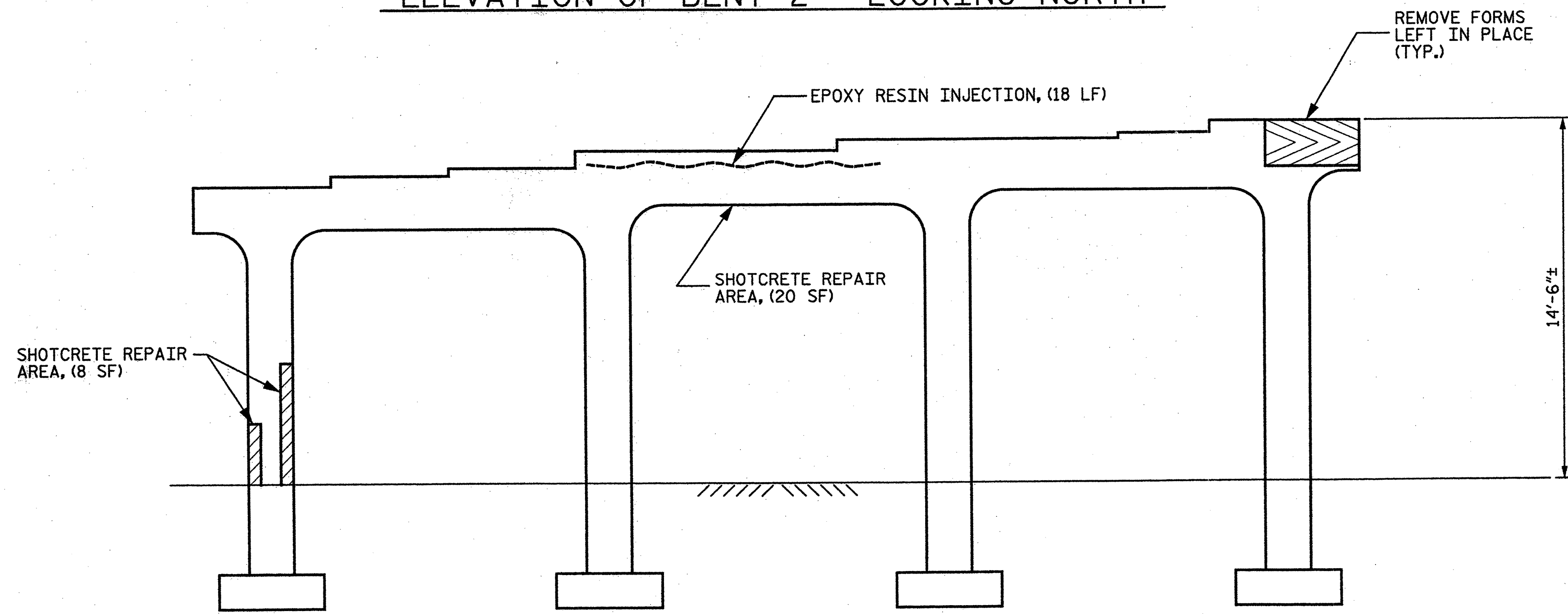
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1/26/2012



ELEVATION OF BENT 2 - LOOKING NORTH



ELEVATION OF BENT 2 - LOOKING SOUTH

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

BRIDGE NO.: 126

REHAB. OF BRIDGE NO.126 SHEET 7 OF 8

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 2  
STRUCTURE REPAIR  
BRIDGE ON SR 1660  
OVER I-40

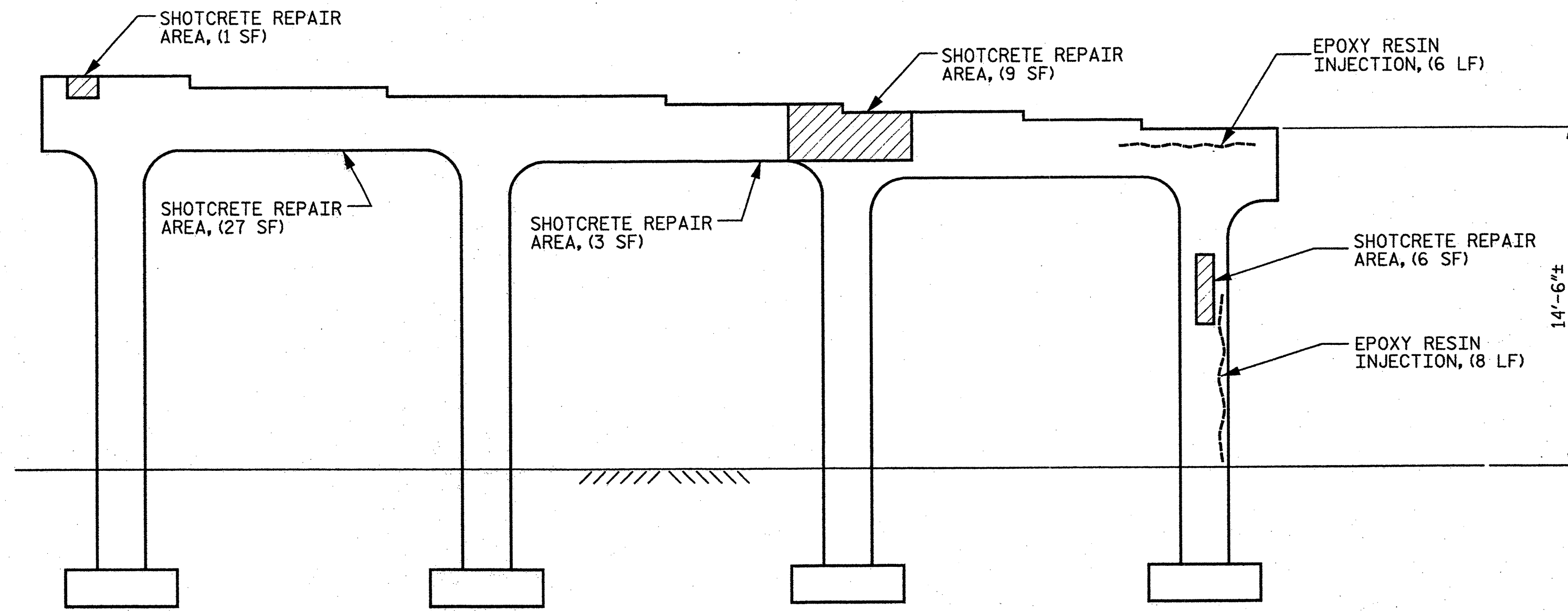


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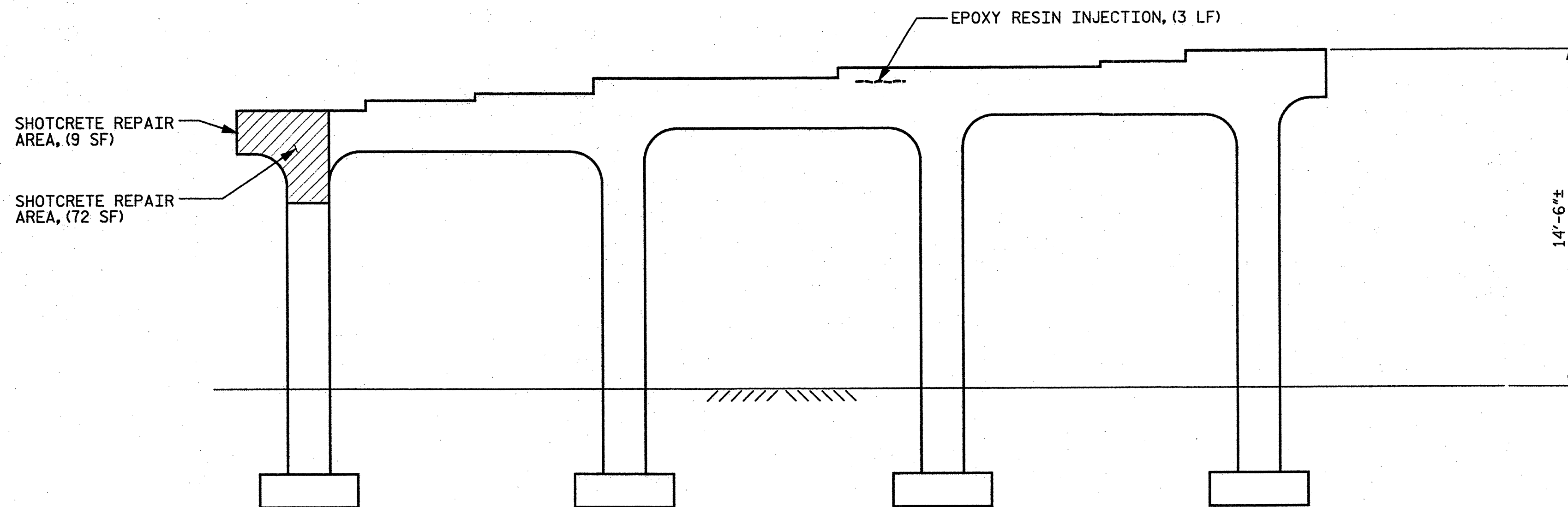
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ELEVATION OF BENT 3 - LOOKING NORTH



ELEVATION OF BENT 3 - LOOKING SOUTH

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

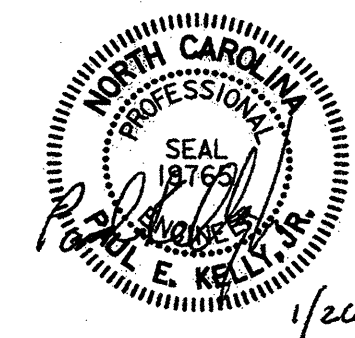
BRIDGE NO.: 126

REHAB. OF BRIDGE NO. 126 SHEET 8 OF 8

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 3  
STRUCTURE REPAIR**

BRIDGE ON SR 1660  
OVER I-40

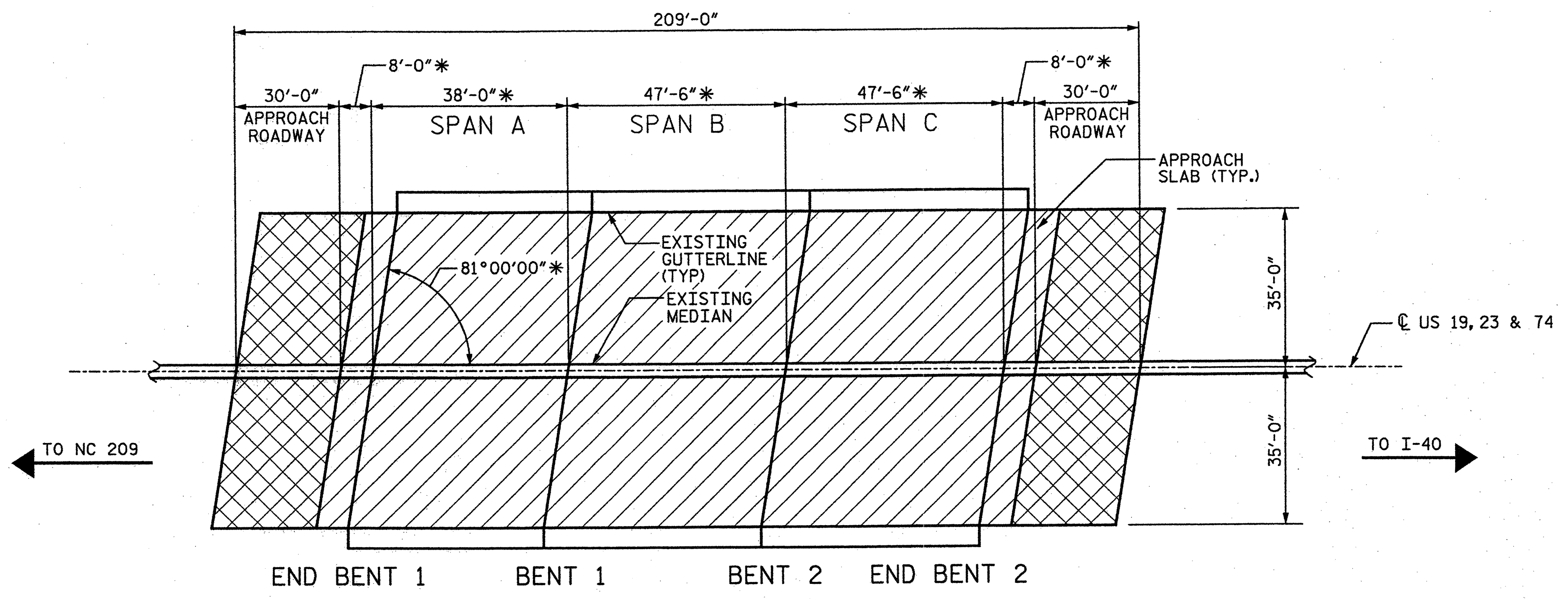


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NC License No. F-0891

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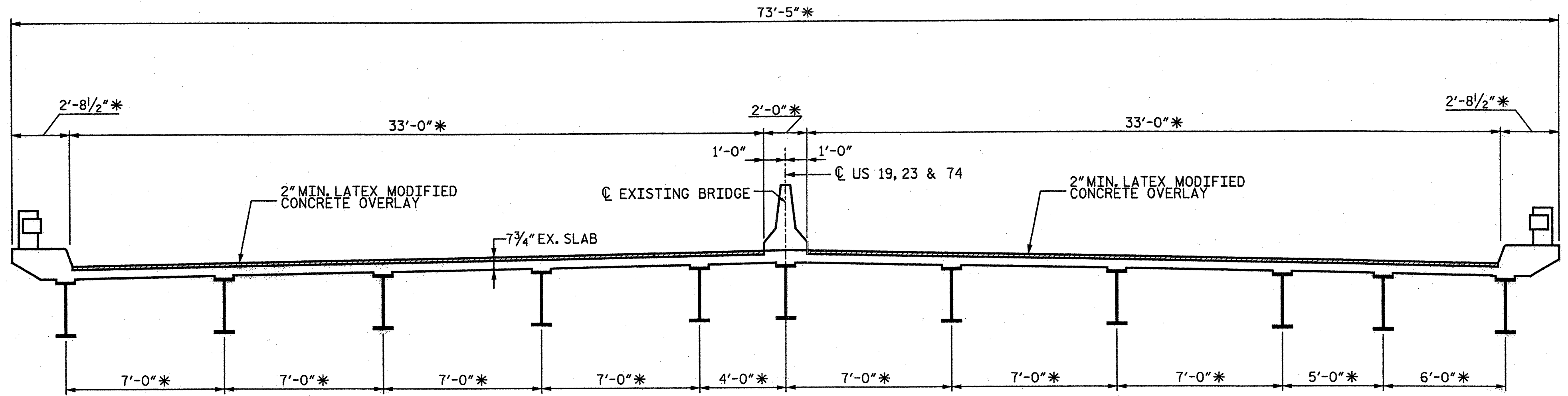
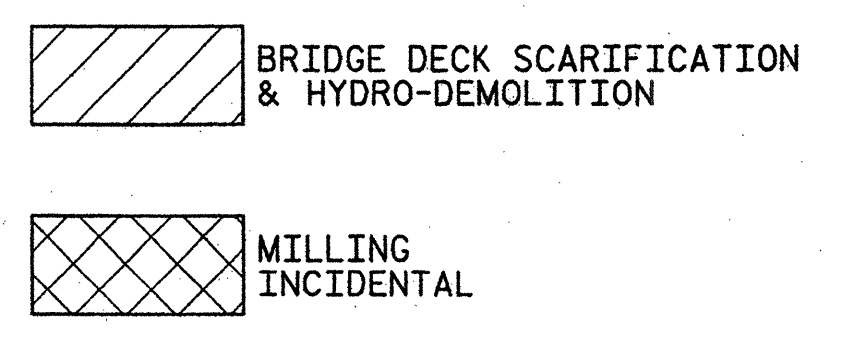
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**PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION**

**NOTES:**

- FOR REPAIR OF BRIDGE WITH LATEX MODIFIED CONCRETE SEE SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS FOR SURFACE PREPARATION.
- EXPANSION JOINTS SHALL BE COVERED WITH POLYETHYLENE SHEETING OR OTHER APPROVED MATERIAL AND GRAVEL AGGREGATE DAMS PRIOR TO BEGINNINGS CLASS I SURFACE PREPARATION, SEE SPECIAL PROVISIONS.
- FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
- THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN OFF WATER FROM HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
- THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II & III SURFACE PREPARATION ARE APPROXIMATE.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- BRIDGE DECK DRAINS SHALL BE PLUGGED DURING HYDRO-DEMOLITION PROCESS. SEE HYDRO-DEMOLITION SPECIAL PROVISION.
- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.
- 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 1/2" DEPTH. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.



**TYPICAL SECTION**

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

PROJECT NO. **17BP.14.P.4**  
**HAYWOOD** COUNTY  
 BRIDGE NO.: **22**  
 REHAB. OF BRIDGE NO. 22 SHEET 1 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS & TYPICAL SECTION**  
 BRIDGE ON US 19, 23 & 74  
 OVER SR 1532



DRAWN BY: **RWM** DATE: **10-11**  
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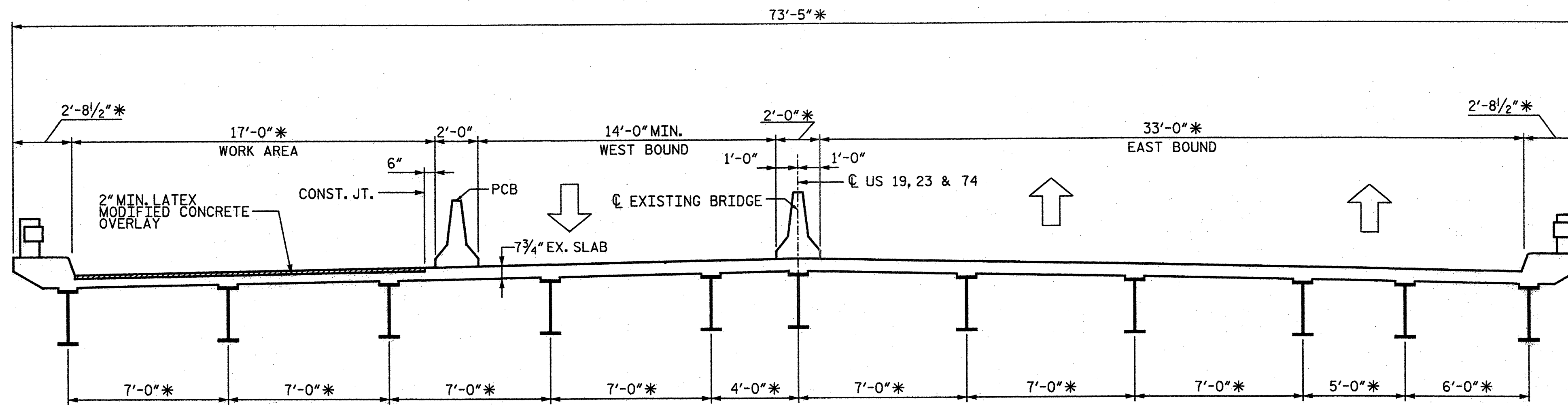
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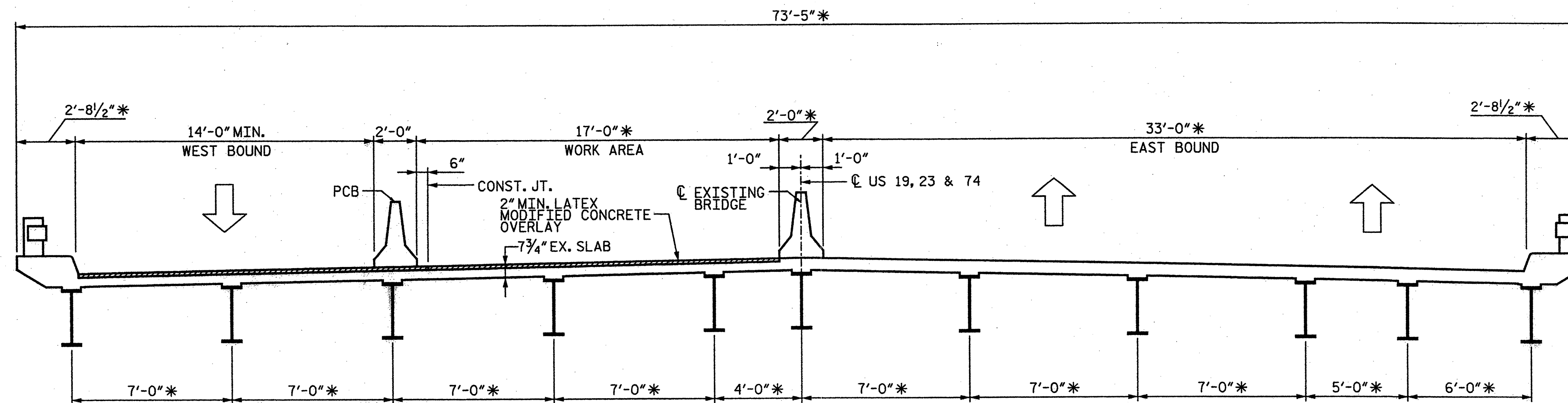
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TYPICAL SECTION - STAGE I

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

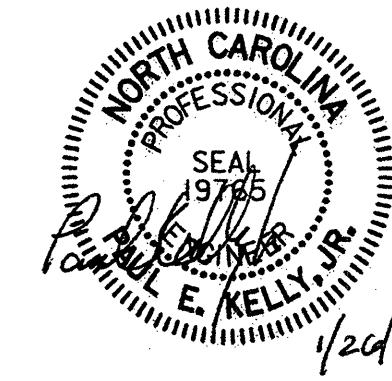


TYPICAL SECTION - STAGE II

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 22  
 REHAB. OF BRIDGE NO. 22 SHEET 2 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STAGED CONSTRUCTION  
 BRIDGE ON US 19, 23 & 74  
 OVER SR 1532

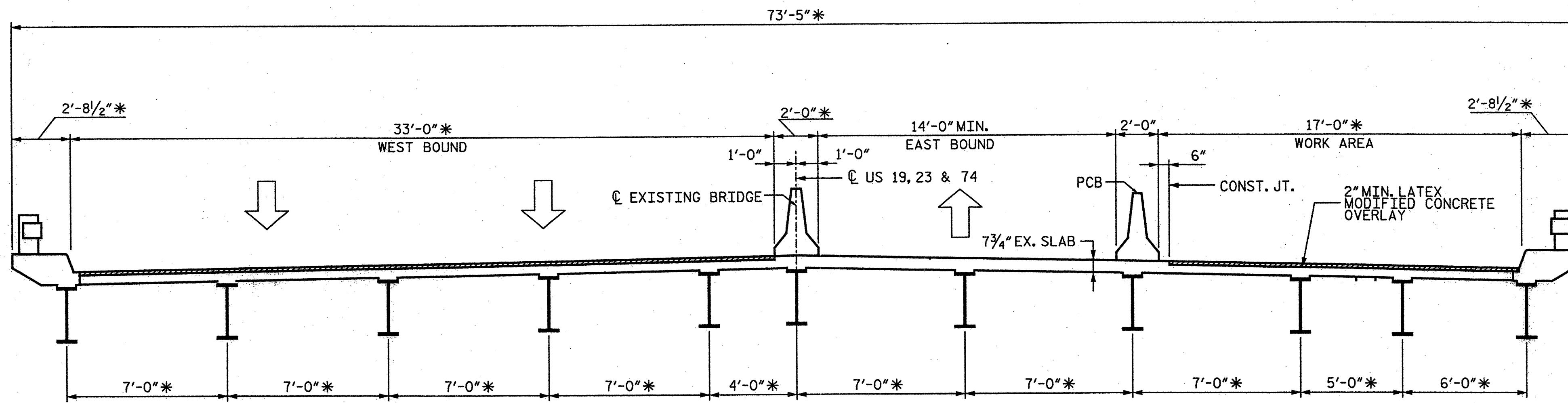


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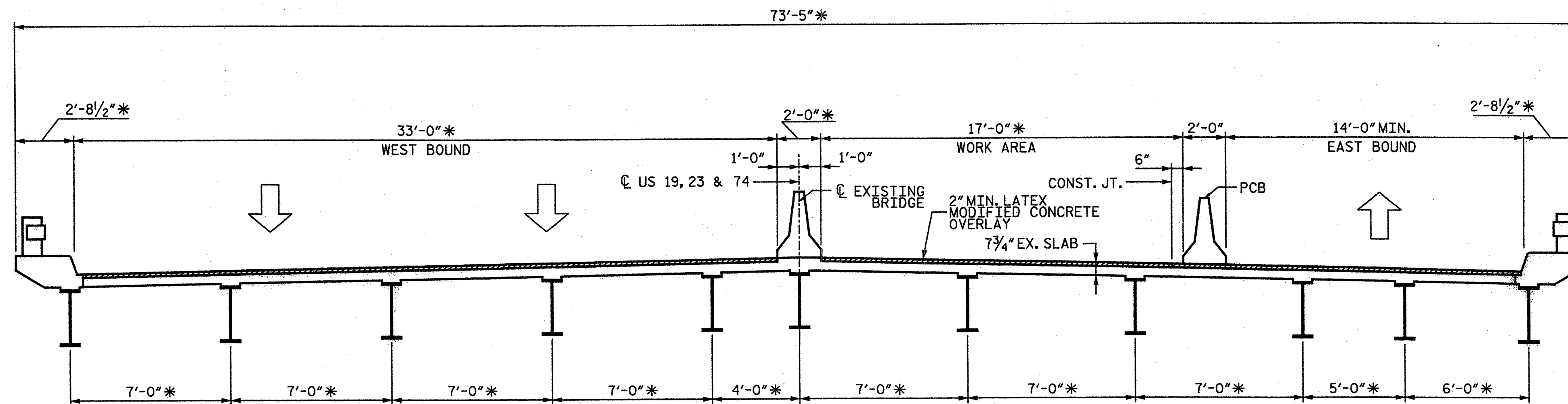
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TYPICAL SECTION - STAGE III

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED



TYPICAL SECTION - STAGE IV

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY

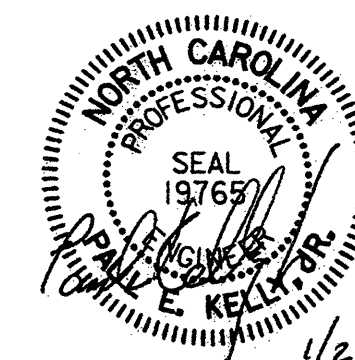
BRIDGE NO.: 22

REHAB. OF BRIDGE NO. 22 SHEET 3 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STAGED CONSTRUCTION

BRIDGE ON US 19, 23 & 74  
 OVER SR 1532

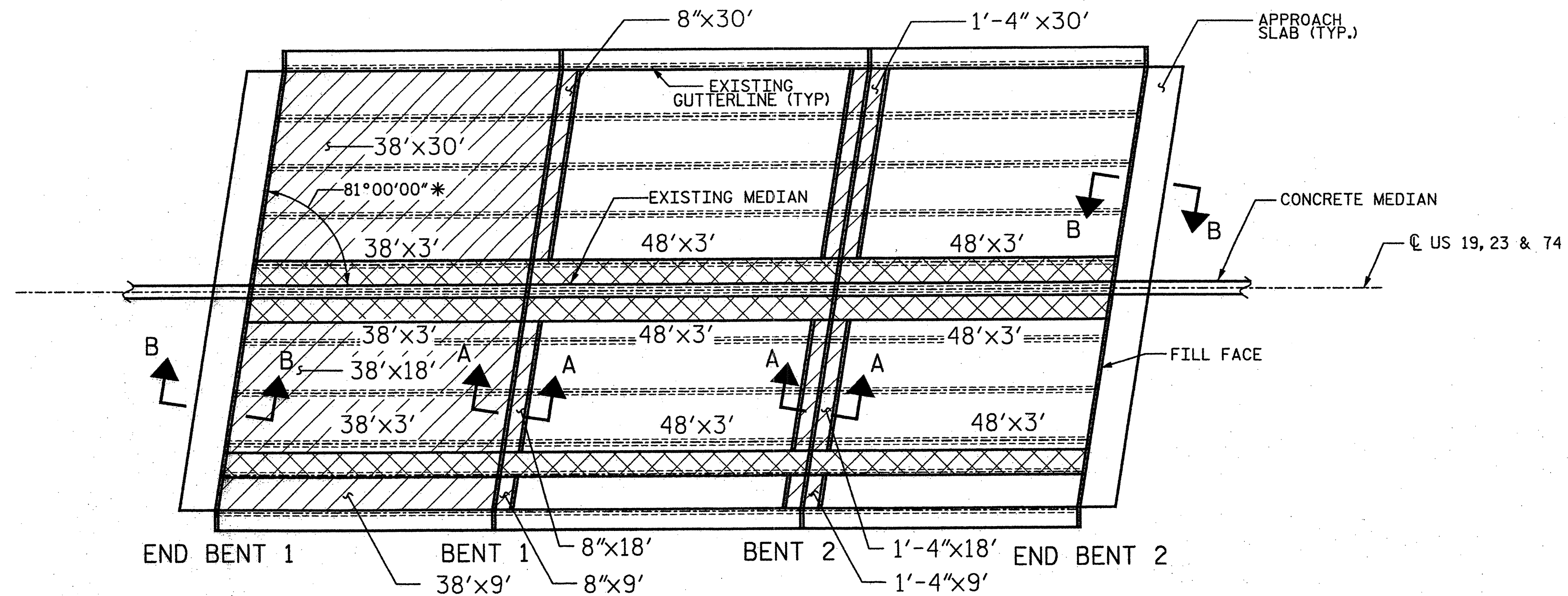


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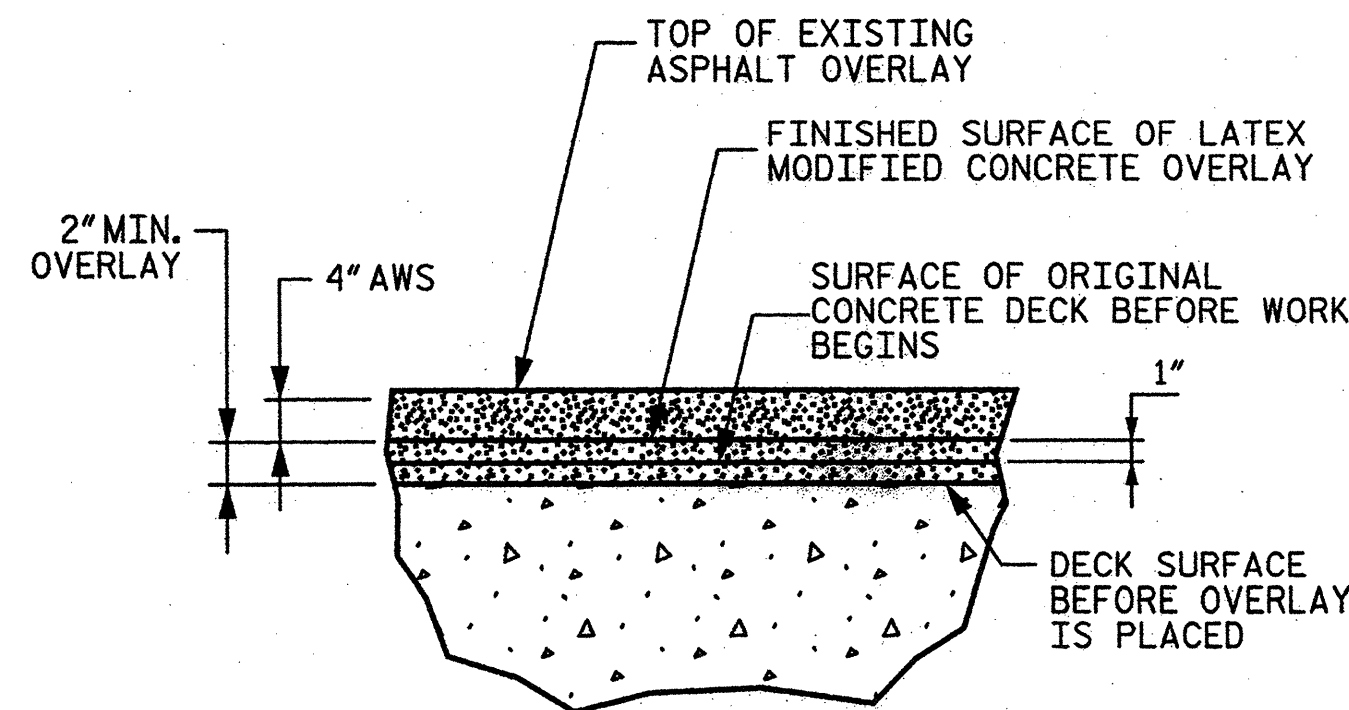
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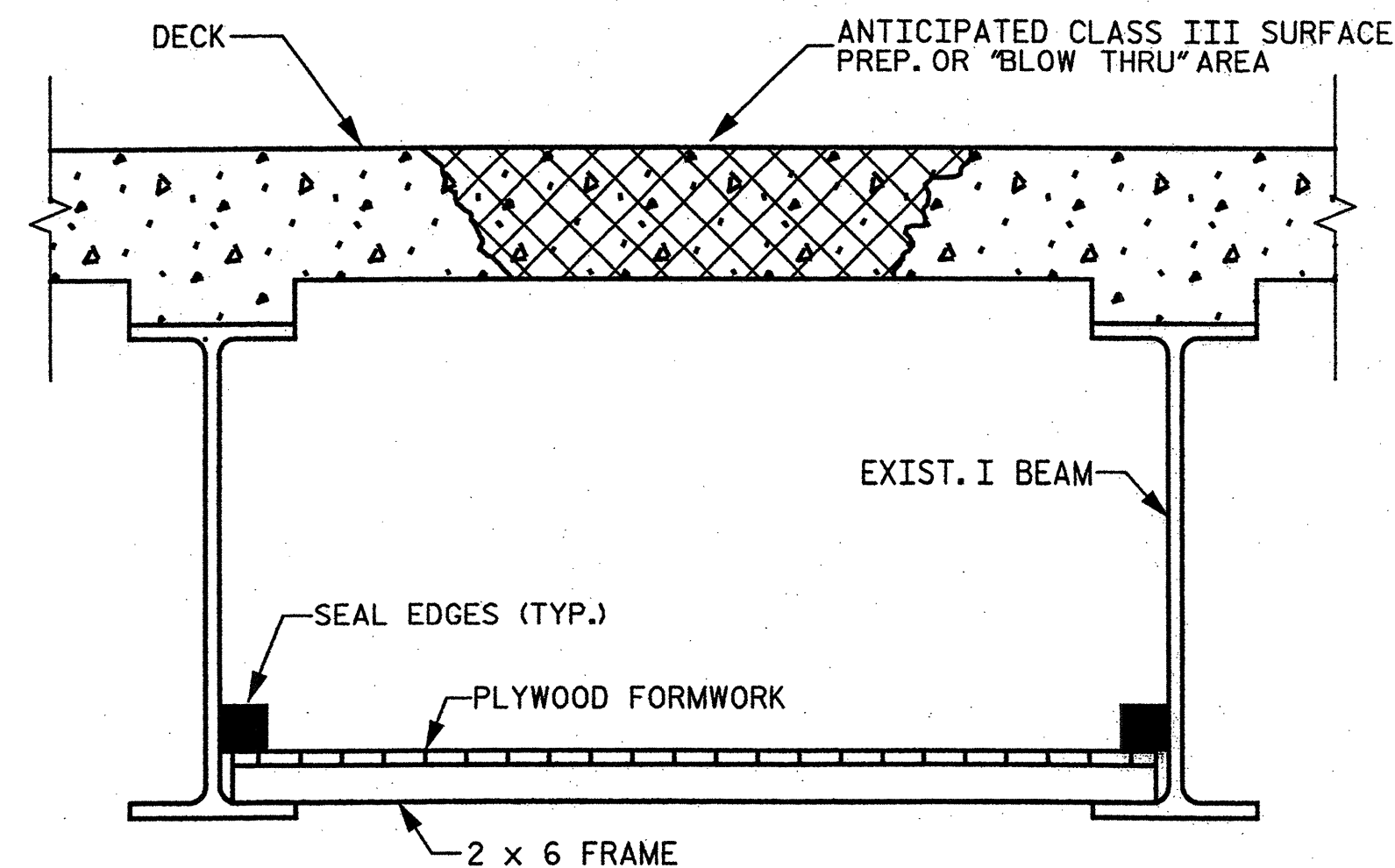


**PLAN OF SPAN - DECK REPAIRS**

NOTE: CONCRETE BRIDGE FLOORS SHALL BE GROOVED TO WITHIN 1'-6" OF THE GUTTER LINE AND 2" OF JOINTS.



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**



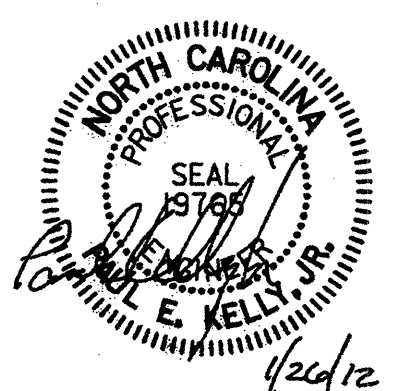
**TYP. "BLOW THRU" CONTAINMENT AND FORMWORK**

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

SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK. COST FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

APPROX. AREA: CLASS II REPAIR

APPROX. AREA: CLASS III REPAIR



PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

BRIDGE NO.: 22

REHAB. OF BRIDGE NO. 22 SHEET 4 OF 8

**TOTAL BILL OF MATERIAL**

DECK SCARIFICATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	UNDER STRUCTURE WORK PLATFORM	BRIDGE JACKING	SHOTCRETE REPAIRS	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	LIN. FEET	LUMP SUM	LUMP SUM	CU. FT.	SQ. YDS.	TONS
1093	253	134	1093	61	1093	LUMP SUM	8860	34	LUMP SUM	LUMP SUM	116	220	13

\* QUANTITIES FOR INFORMATION ONLY.

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**OVERLAY DETAILS**

BRIDGE ON US 19, 23 & 74  
OVER SR 1532

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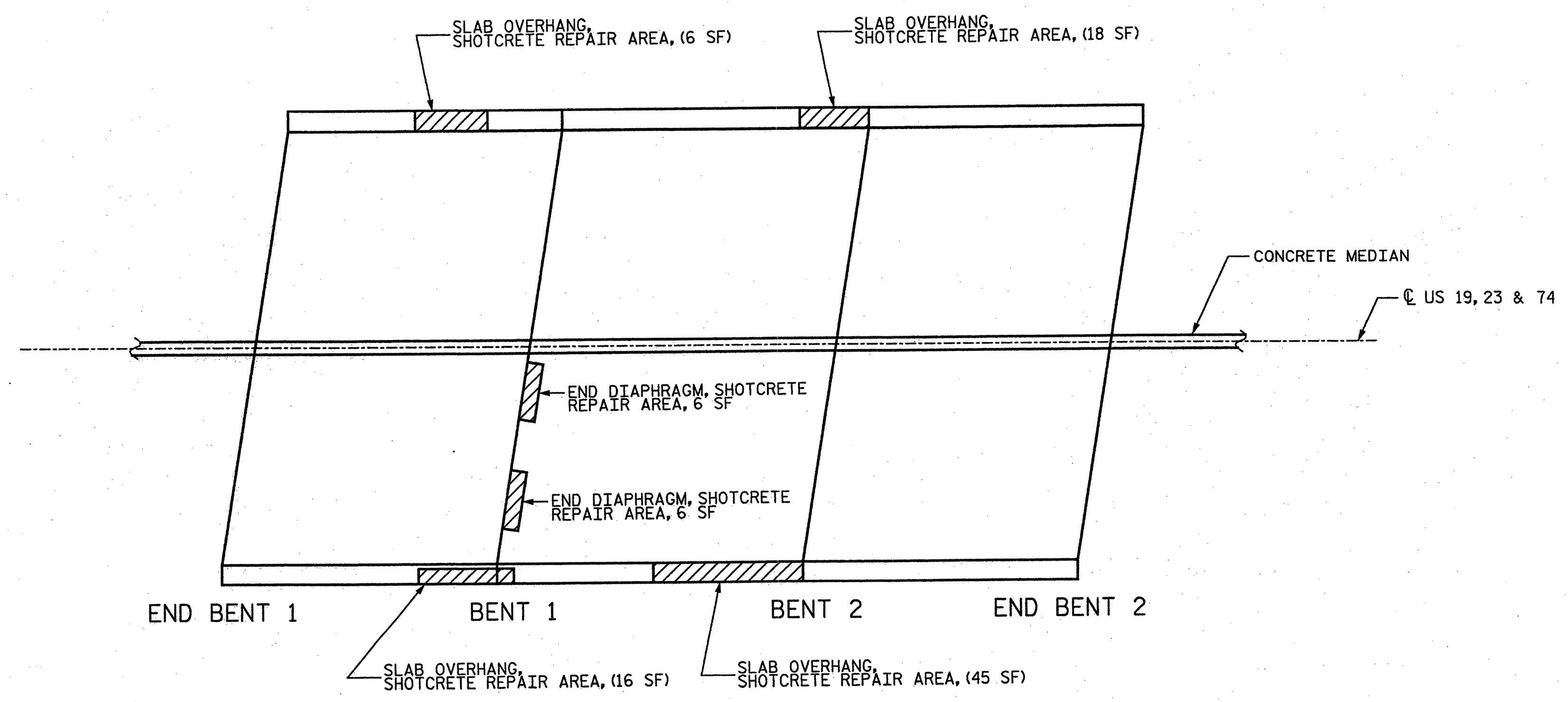
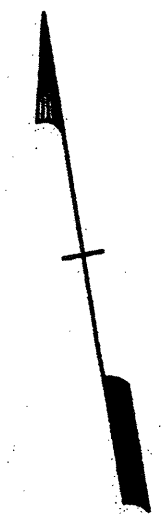
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**PLAN VIEW**  
(UNDERSIDE OF DECK SHOWN)

**NOTE:**  
FOR SHOTCRETE REPAIR, SEE SPECIAL PROVISIONS

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 22  
 REHAB. OF BRIDGE NO. 22 SHEET 5 OF 8

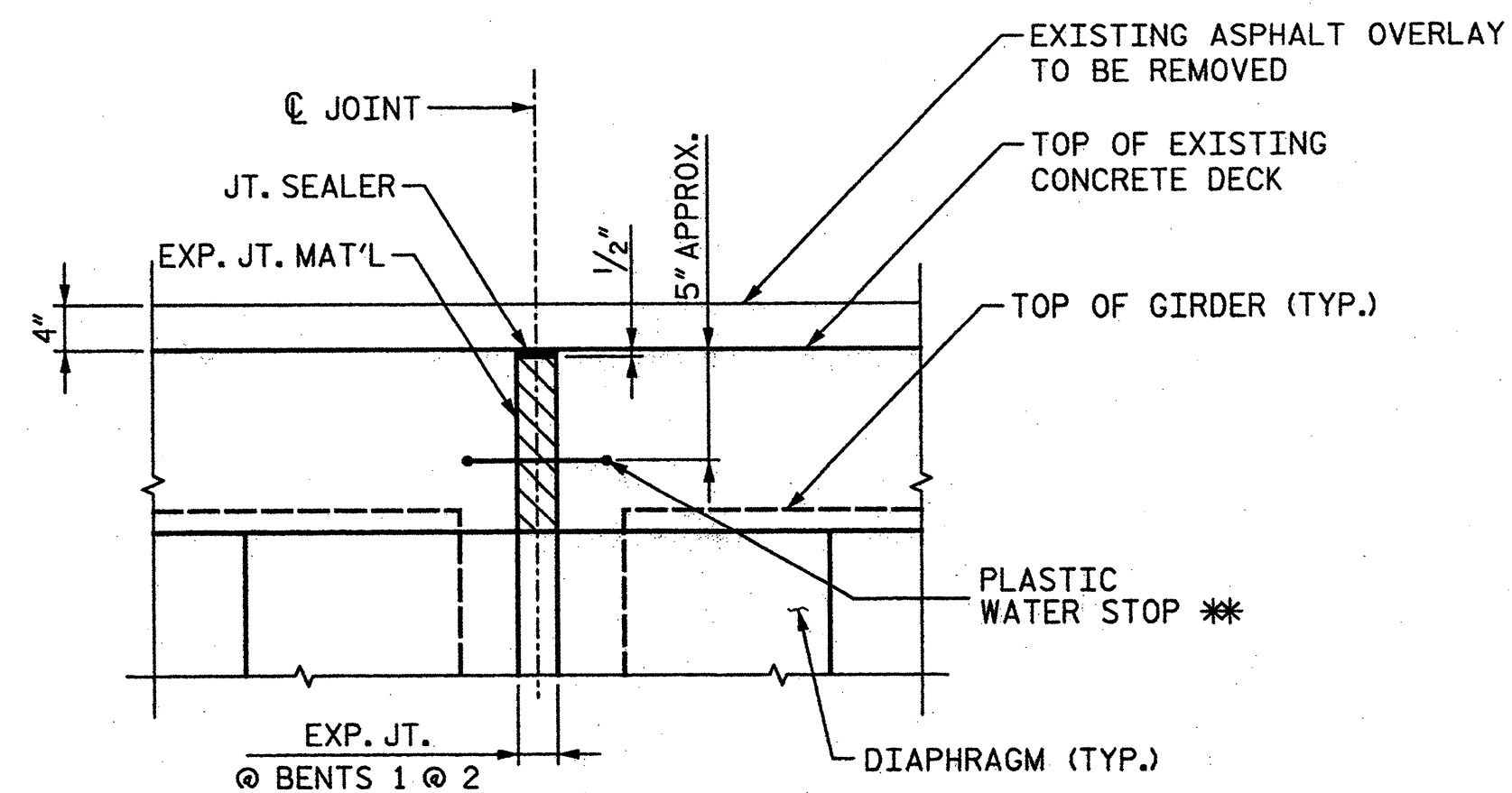


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**END DIAPHRAGM  
 DETAILS**  
 BRIDGE ON US 19, 23 & 74  
 OVER SR 1532

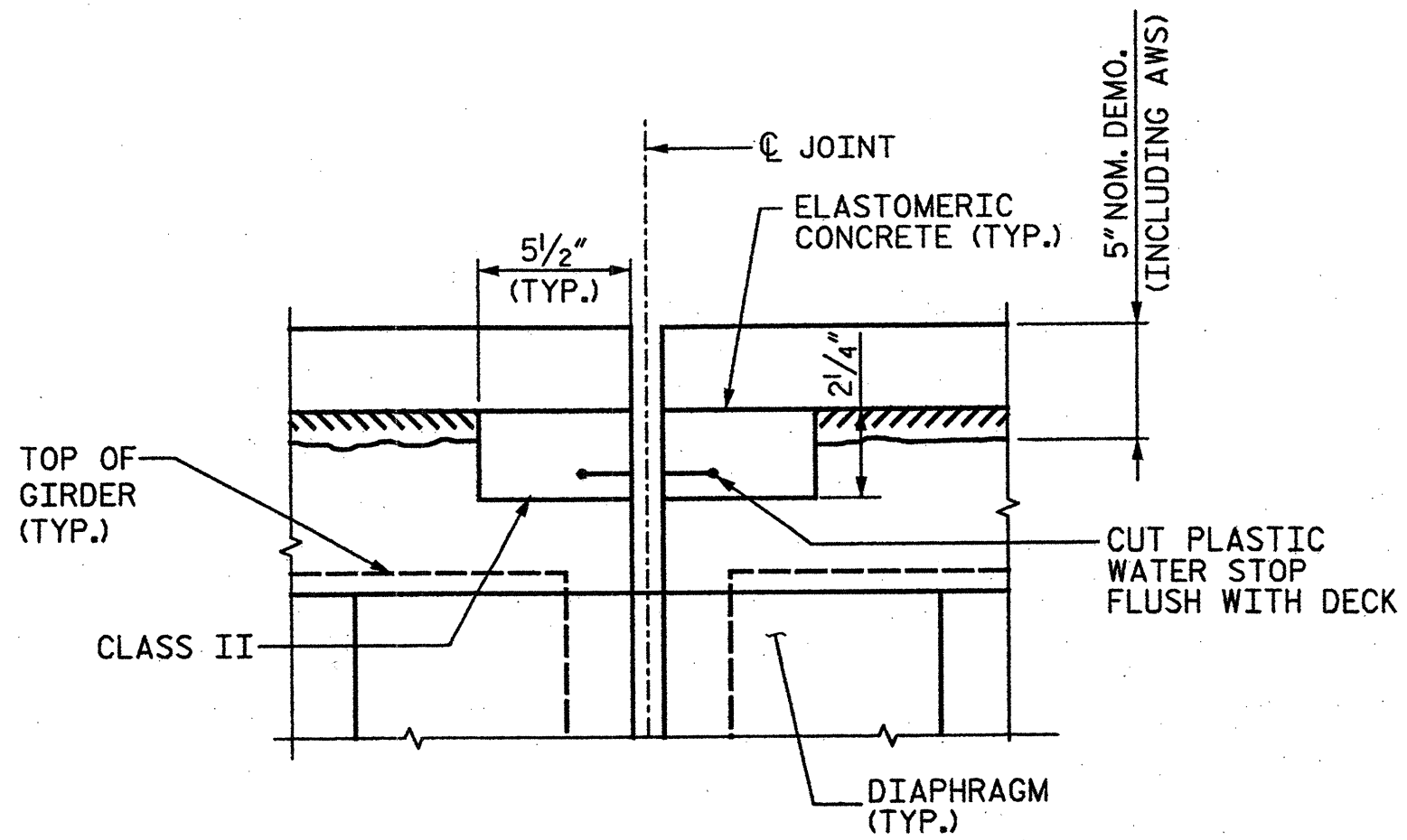
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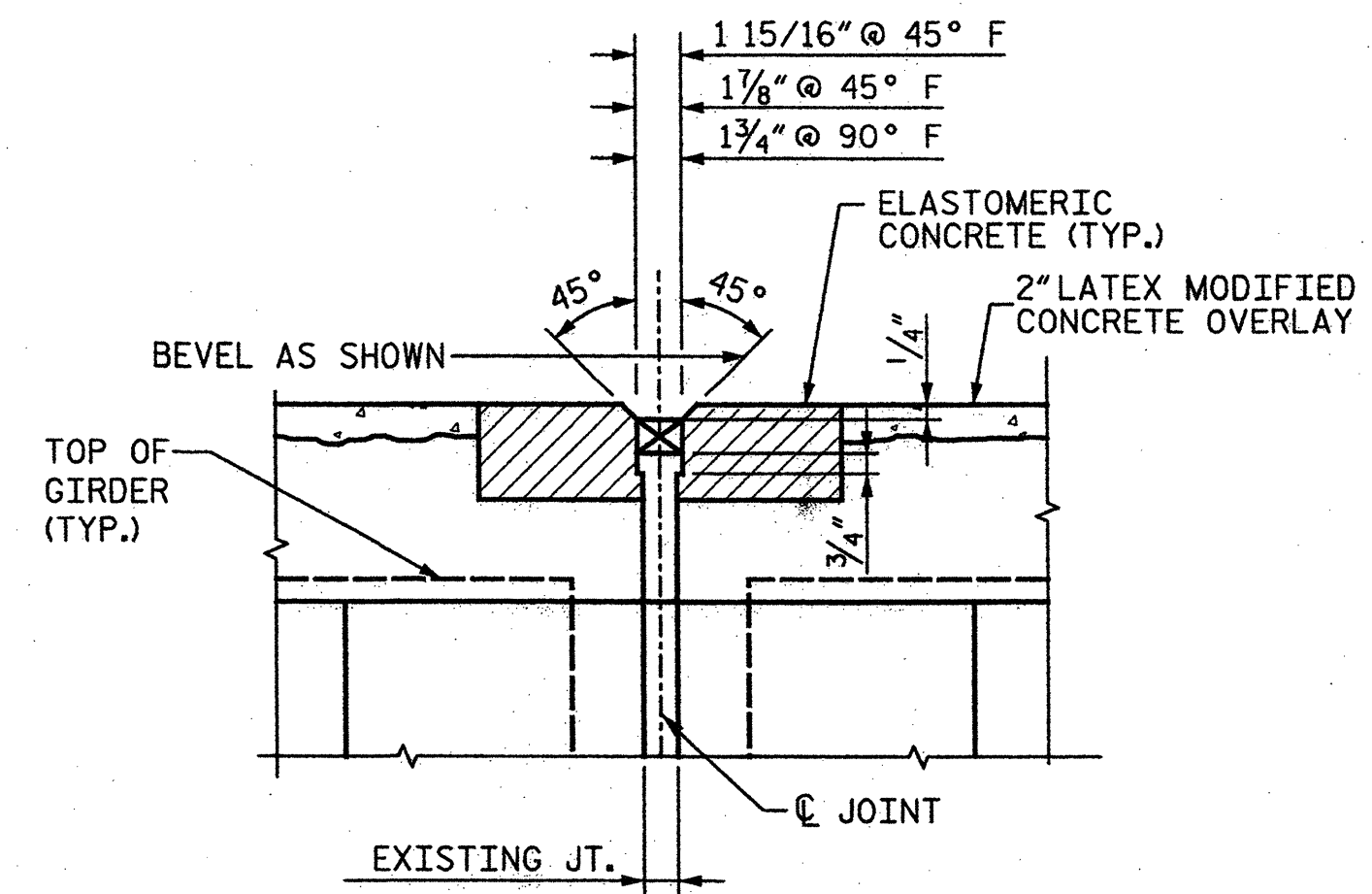
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			57



**SECTION A-A**  
(MINIMUM EXISTING JOINT DEMOLITION)

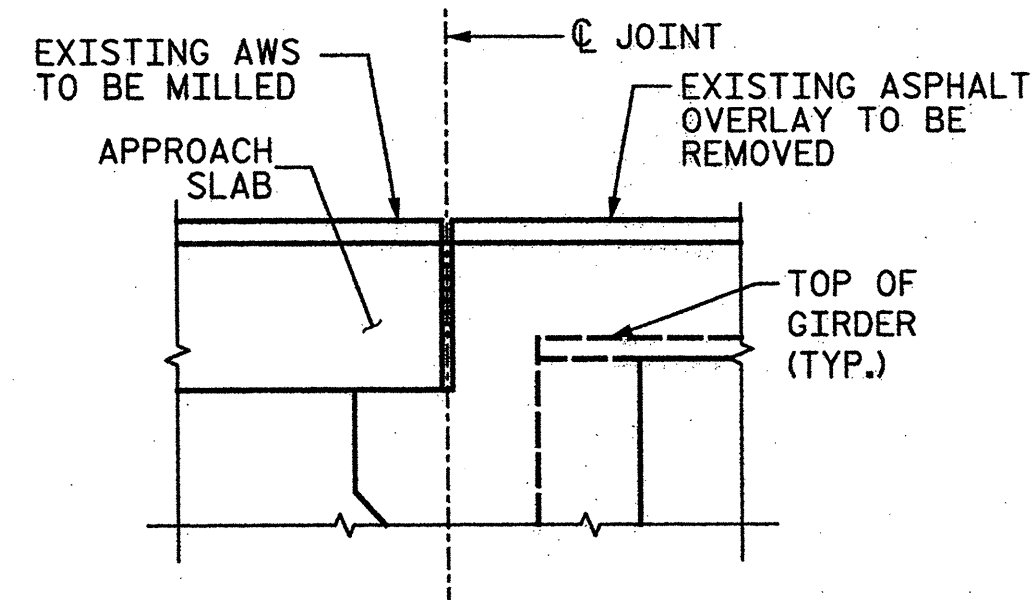


**SECTION A-A**  
(MINIMUM EXISTING JOINT DEMOLITION)

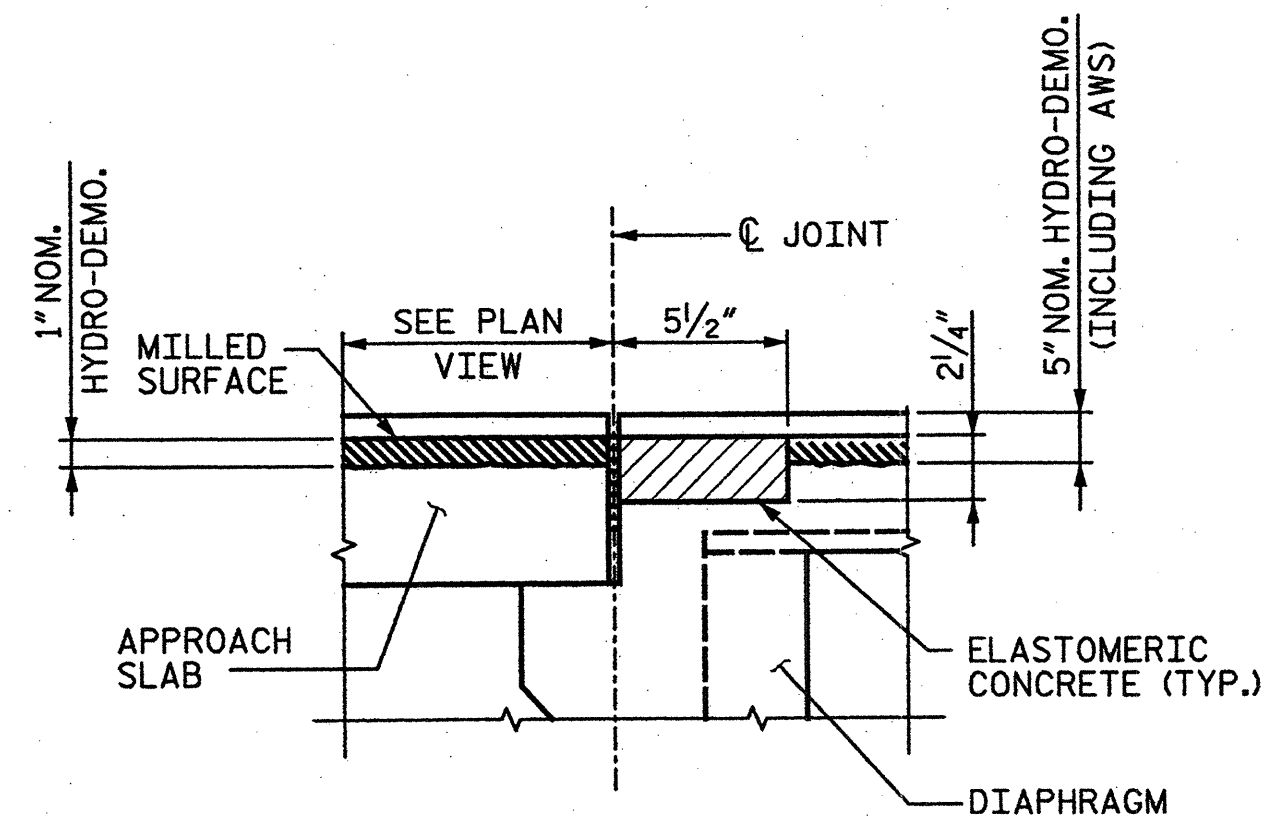


**SECTION A-A**  
(PROPOSED FOAM JOINT SEAL EXPANSION)

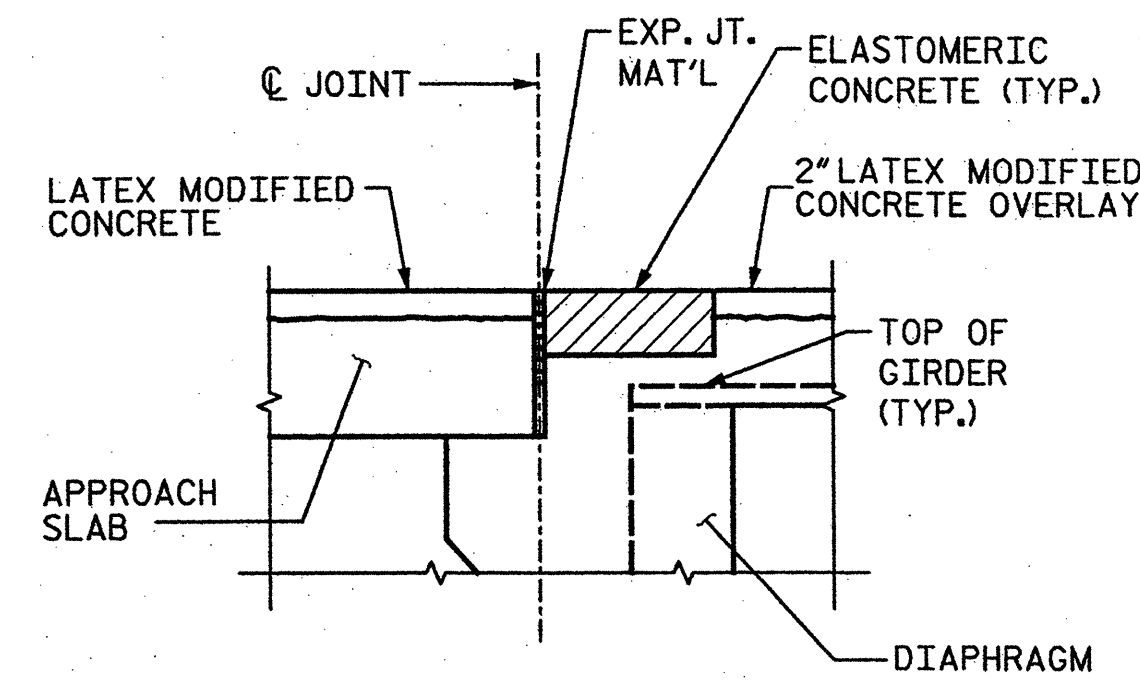
\*\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.



**SECTION B-B**  
(EXISTING JOINT)



**SECTION B-B**  
(EXISTING JOINT DEMOLITION)



**SECTION B-B**  
(PROPOSED JOINT)

**NOTES:**

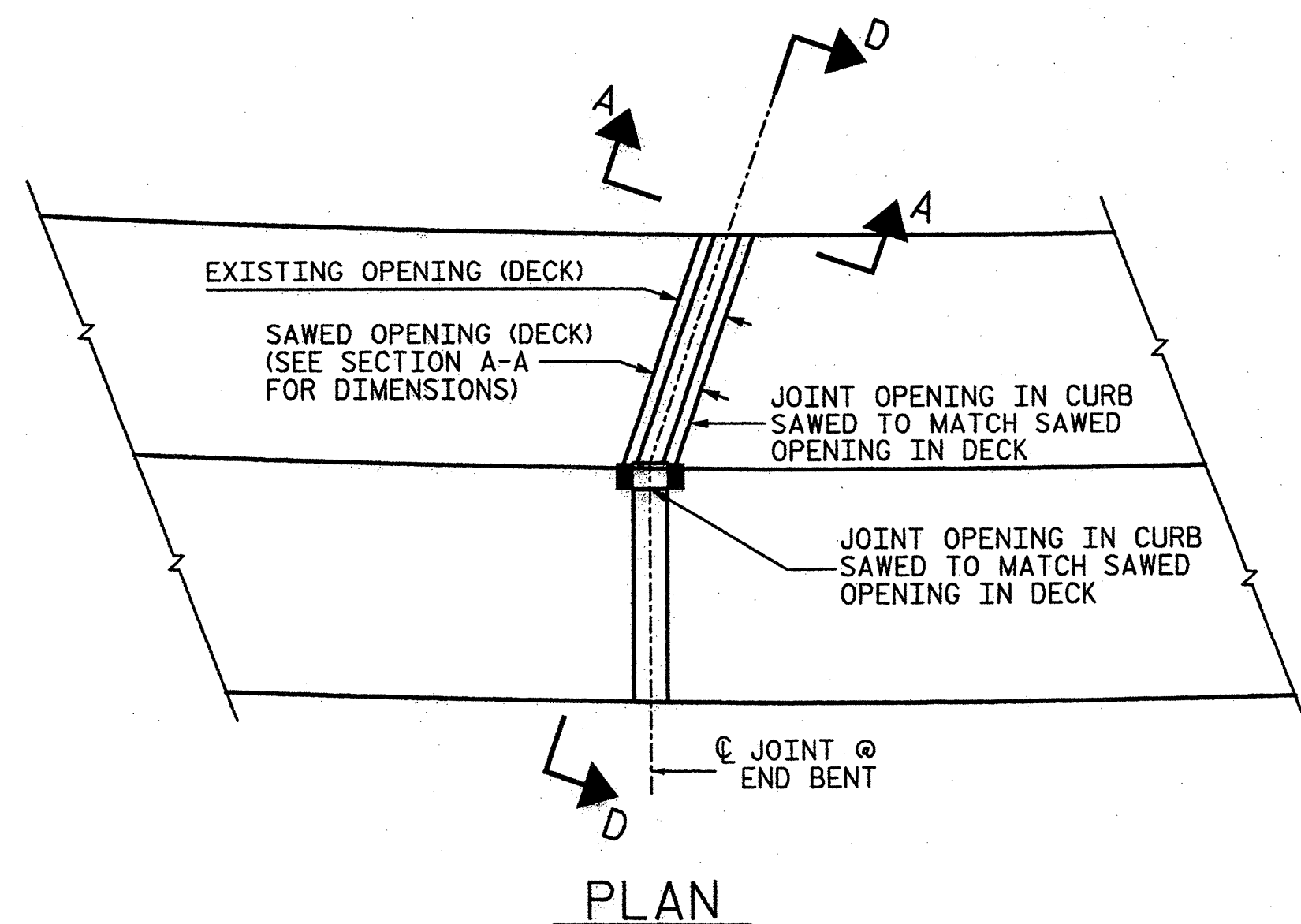
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

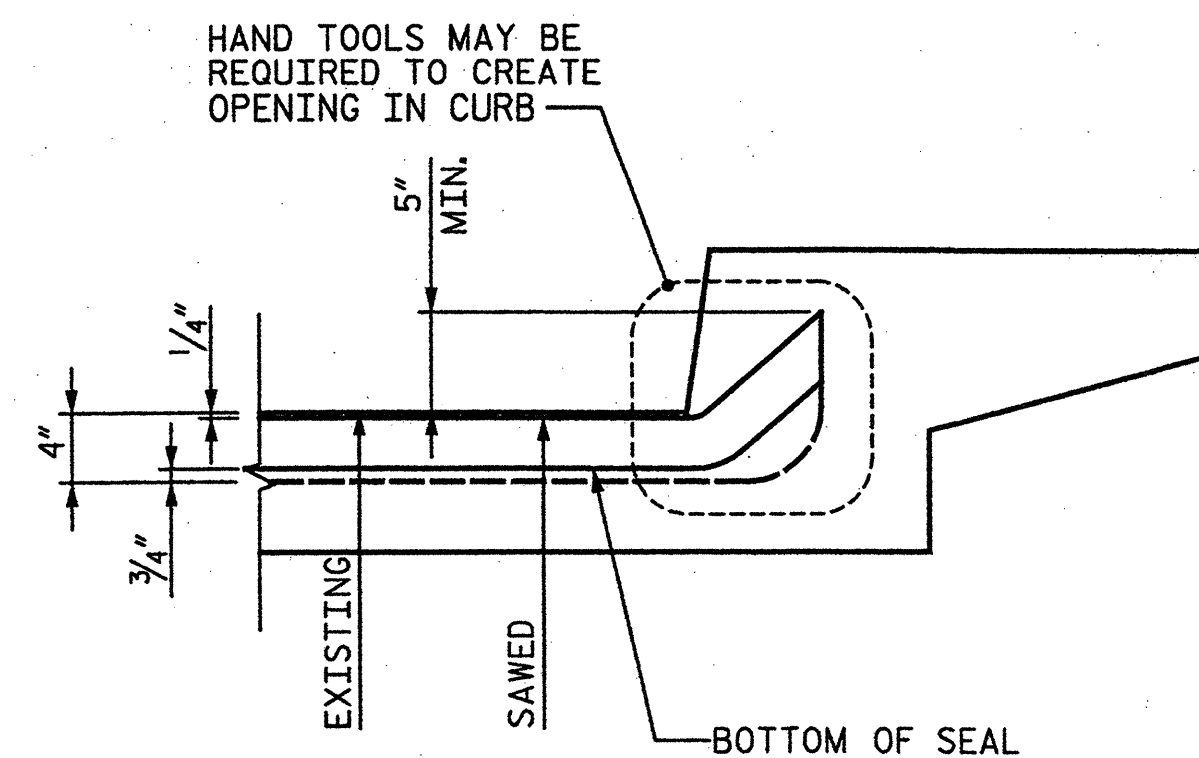
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2" AT BENTS.

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

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



**PLAN**



**SECTION D-D**

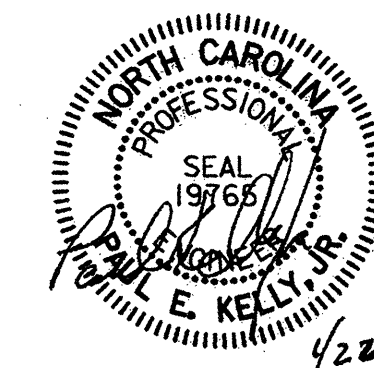
PROJECT NO. **17BP.14.P.4**  
**HAYWOOD** COUNTY  
 BRIDGE NO.: **22**

REHAB. OF BRIDGE NO. 22 SHEET 6 OF 8

STATE OF NORTH CAROLINA  
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**JOINT DETAILS**

BRIDGE ON US 19, 23 & 74  
 OVER SR 1532



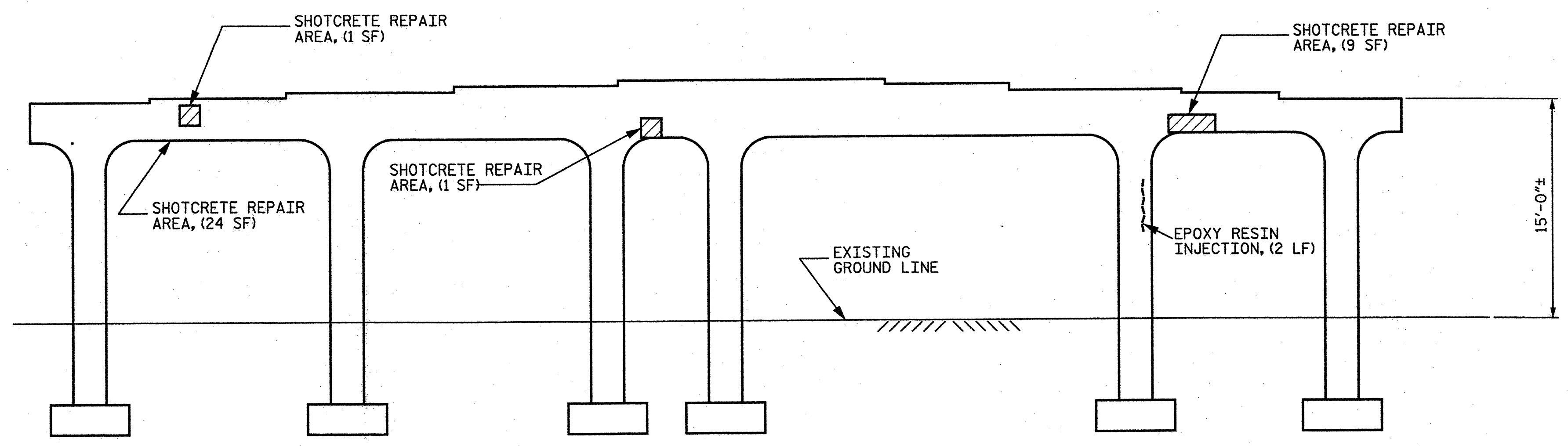
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2			4			57

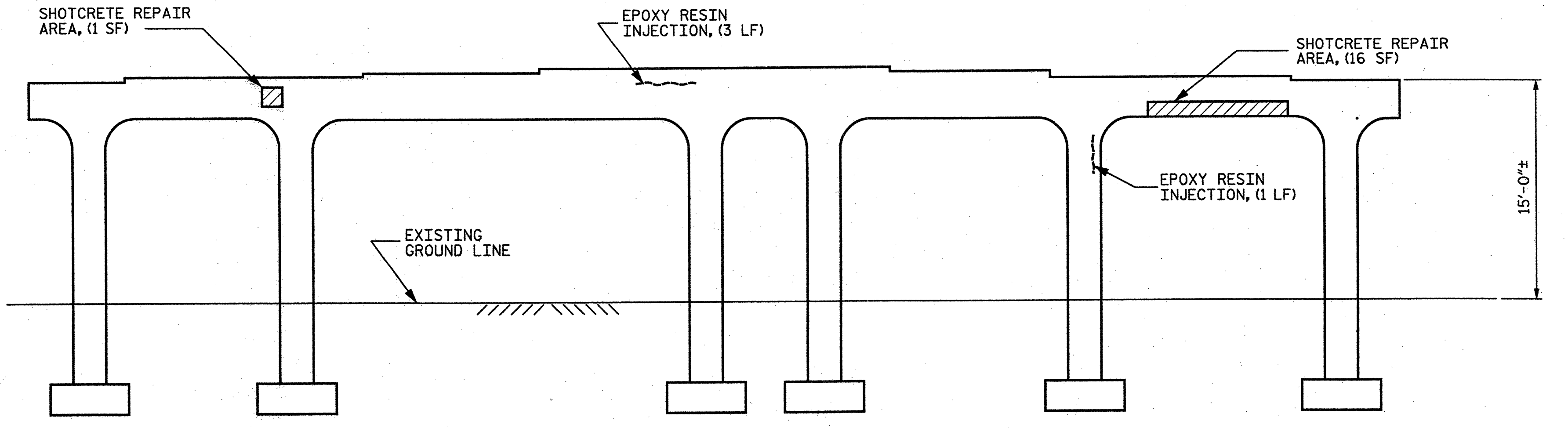
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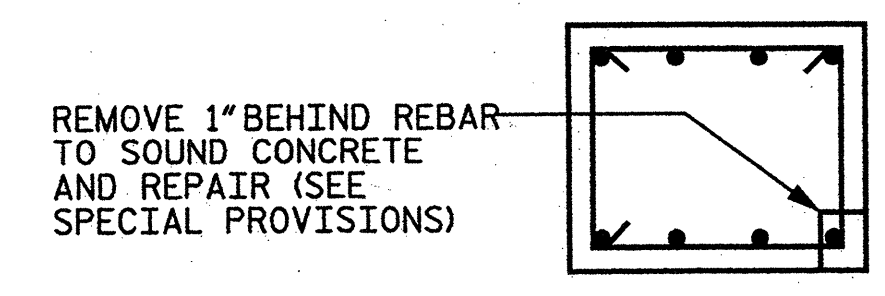
ELEVATION OF BENT 1 - LOOKING EAST



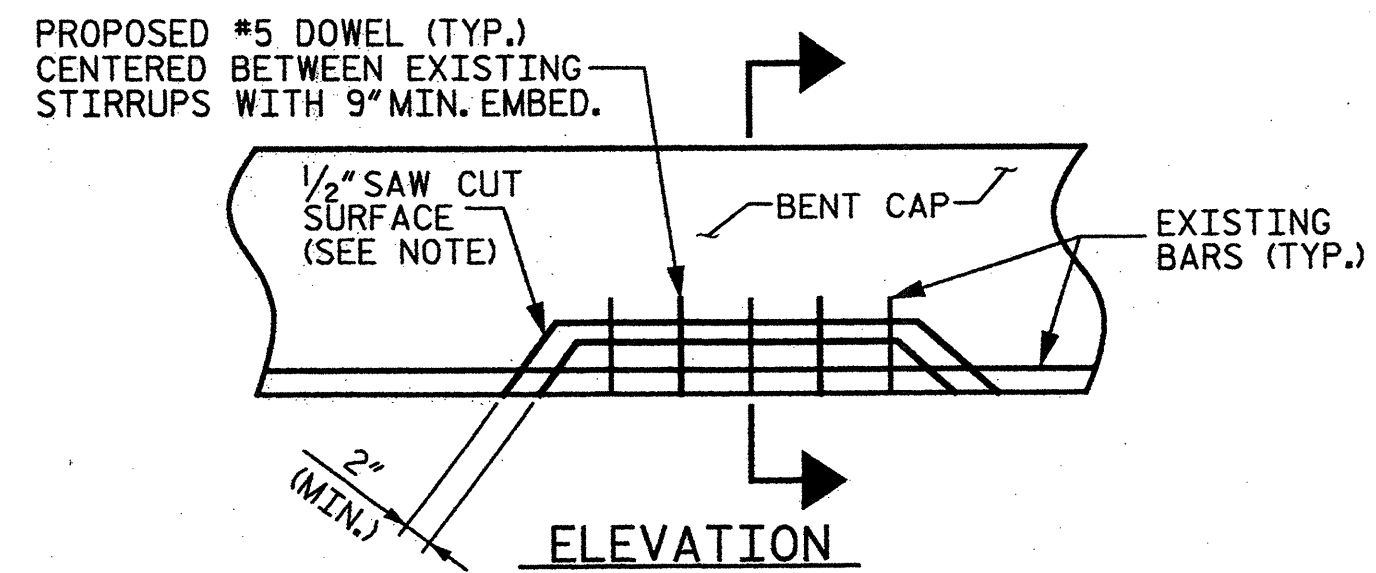
ELEVATION OF BENT 1 - LOOKING WEST

**NOTES:**

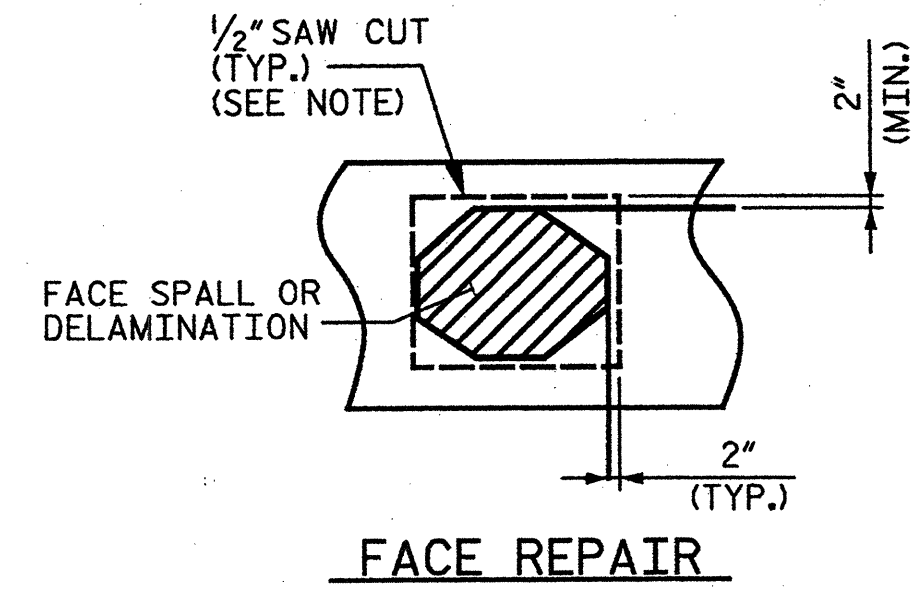
1. CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
2. FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
3. SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND 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. BENT CAP REPAIRS IN BEARING AREAS SHALL BE PERFORMED WITH CLASS A CONCRETE.
8. BRIDGE JACKING IS REQUIRED FOR CONCRETE REPAIRS THAT EXTEND UNDER A BEARING PLATE. FOR JACKING DETAILS AND NOTES, SEE SHEET S-57.
9. SEE SHEET 1 OF 8 FOR ADDITIONAL NOTES.
10. SUBSTRUCTURE REPAIRS SHALL PROVIDE A MINIMUM OF 2" CLEAR COVER TO REINFORCING STEEL. REPAIRED AREAS AY BE BUILT OUT TO ACHIEVE CLEARANCE.
11. EPOXY COATING SHALL BE APPLIED TO THE TOP OF ALL BENT CAPS. COST SHALL BE INCLUDED IN OTHER BENT REPAIRS.
12. THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO PREVENT DEBRIS AND MATERIALS FROM FALLING, ROLLING, OR BLOWING INTO TRAFFIC OR ONTO BEAMS, GIRDERS, BEARINGS OR ANY OTHER UNINTENDED SURFACES. CONSIDERATION SHALL BE GIVEN TO THE USE OF SCREENS TO PROTECT TRAFFIC ADJACENT TO THE WORK AREA AND OTHER PORTIONS OF THE BRIDGE.



SECTION



CORNER REPAIR



FACE REPAIR

TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTE: CONTRACTOR SHALL SAW CUT TO A MAXIMUM DEPTH OF 1/2". THIS DEPTH SHALL BE REDUCED TO PREVENT DAMAGE TO EXISTING REINFORCEMENT. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

PROJECT NO. 17BP.14.P.4

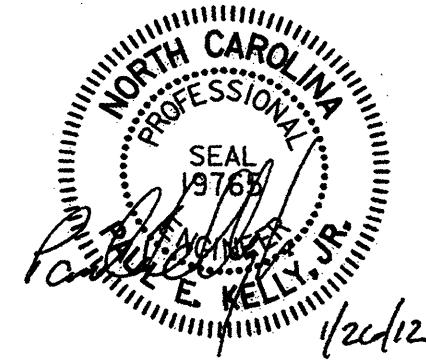
HAYWOOD COUNTY

BRIDGE NO.: 22

REHAB. OF BRIDGE NO. 22 SHEET 7 OF 8

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
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BENT 1  
STRUCTURE REPAIR  
BRIDGE ON US 19, 23 & 74  
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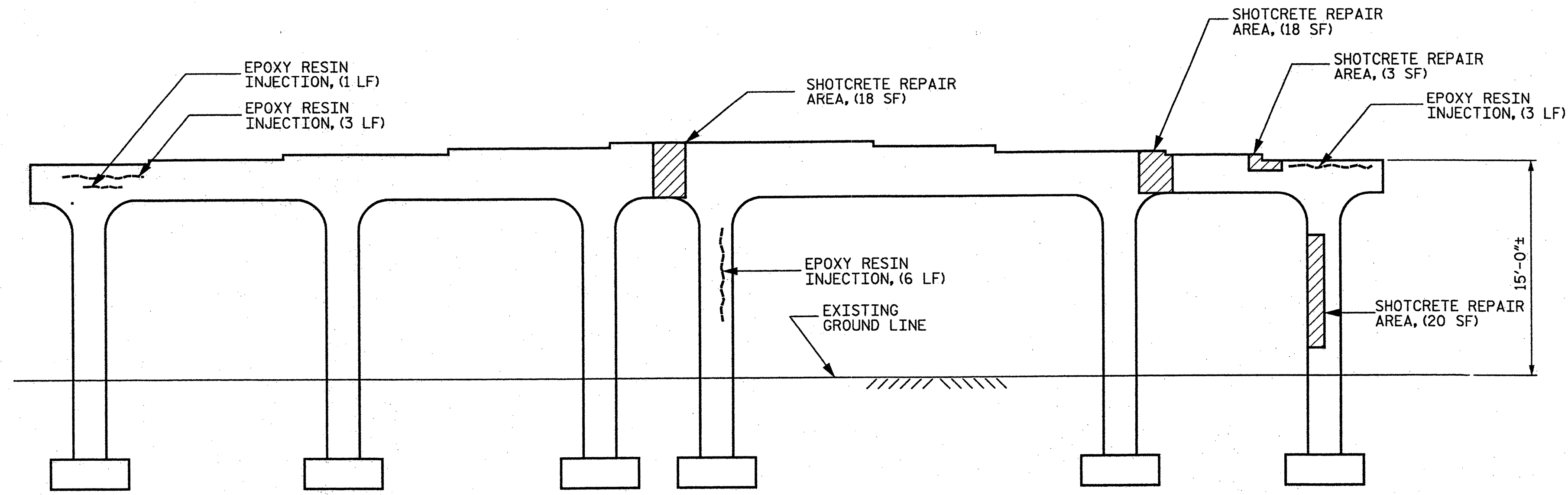
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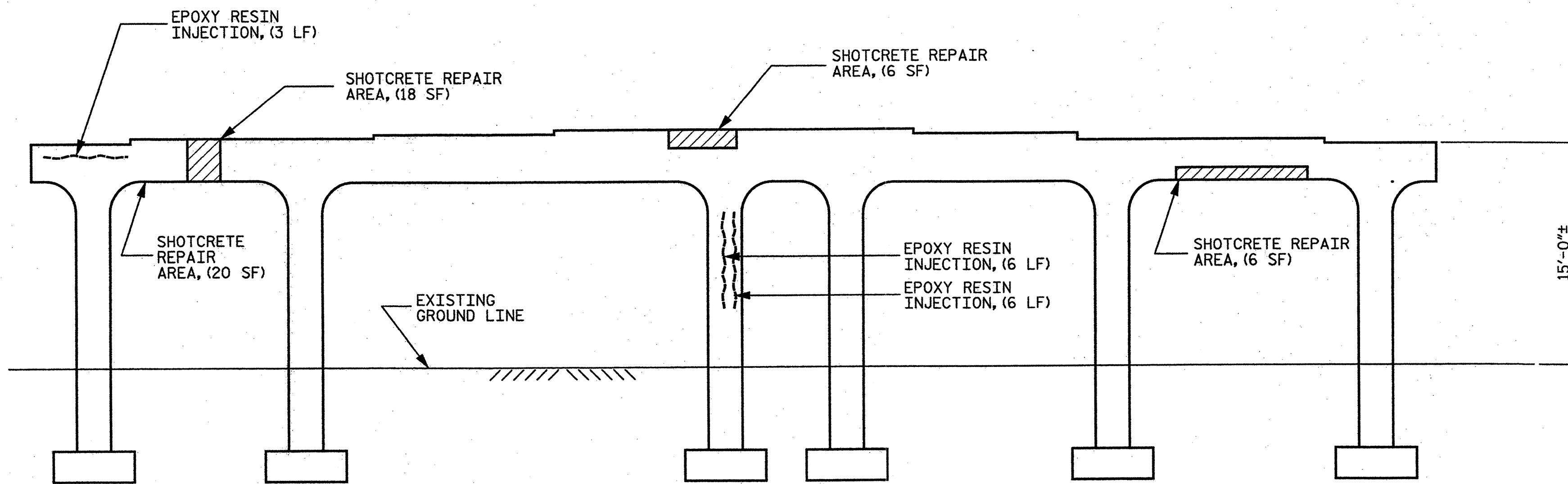
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ELEVATION OF BENT 2 - LOOKING EAST



ELEVATION OF BENT 2 - LOOKING WEST

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

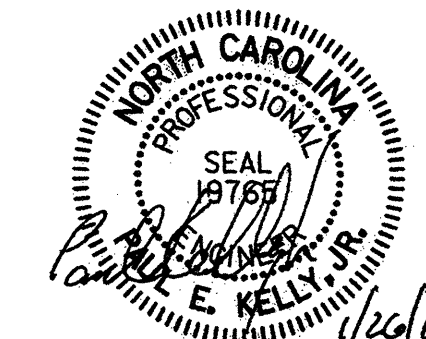
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DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 2  
STRUCTURE REPAIR**

BRIDGE ON US 19, 23 & 74  
OVER SR 1532

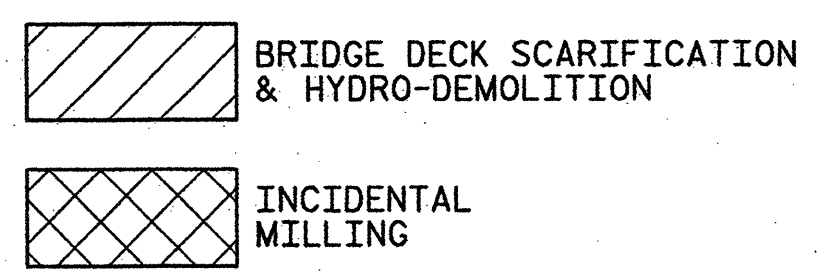
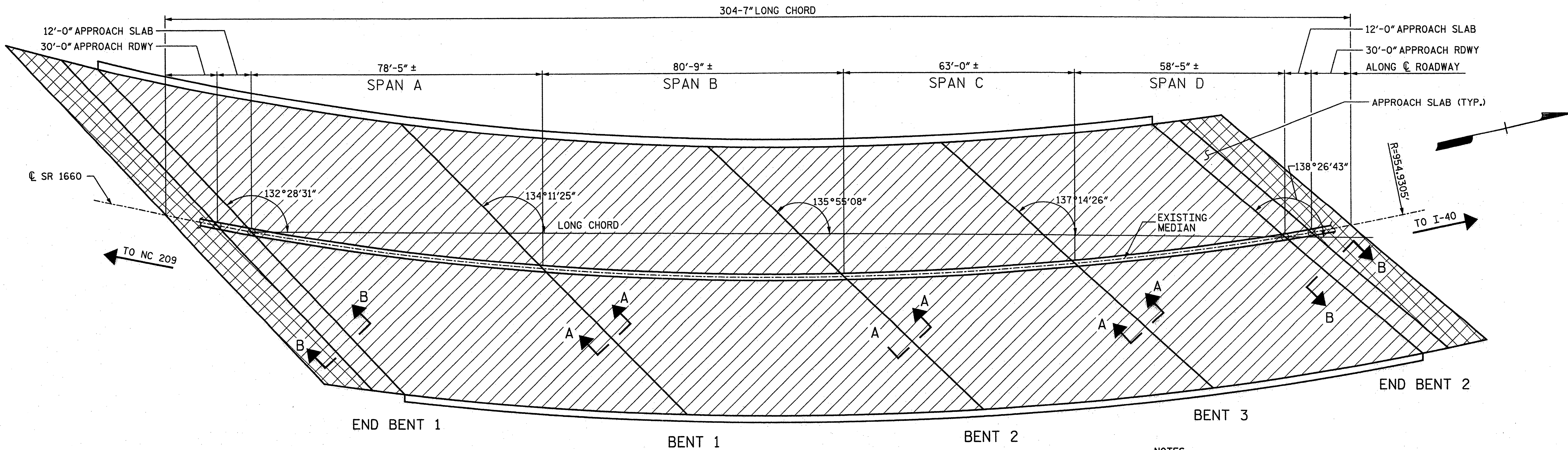


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**PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION**

(CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS)

**NOTES:**

FOR REPAIR OF BRIDGE WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

SEE SPECIAL PROVISIONS FOR SURFACE PREPARATION.

EXPANSION JOINTS SHALL BE COVERED WITH POLYETHYLENE SHEETING OR OTHER APPROVED MATERIAL AND GRAVEL AGGREGATE DAMS PRIOR TO BEGINNING CLASS I SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

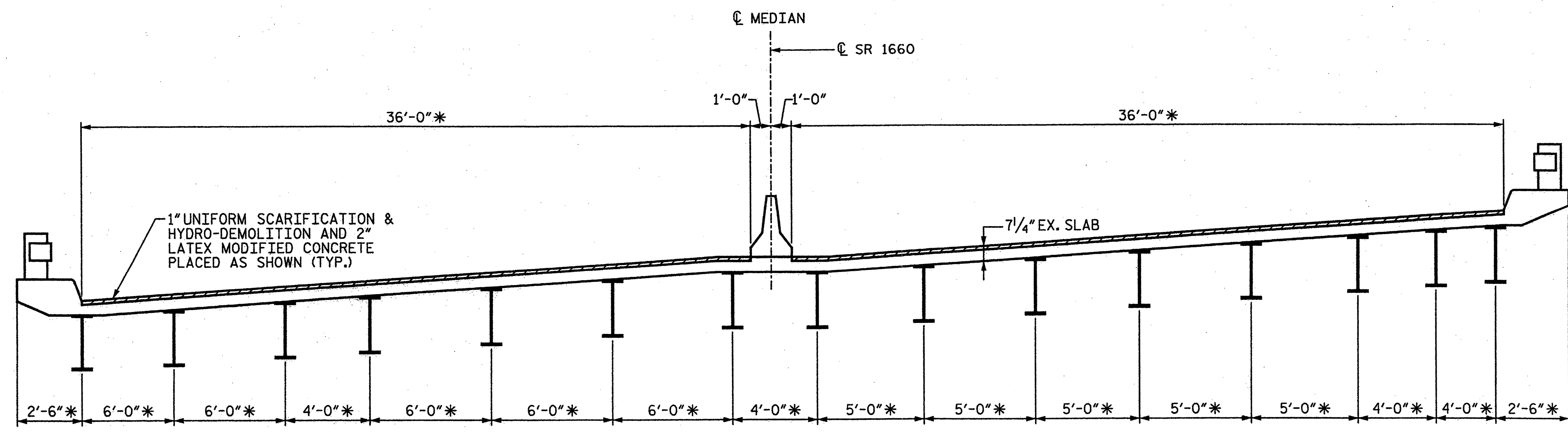
THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN OFF WATER FROM HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

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. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.

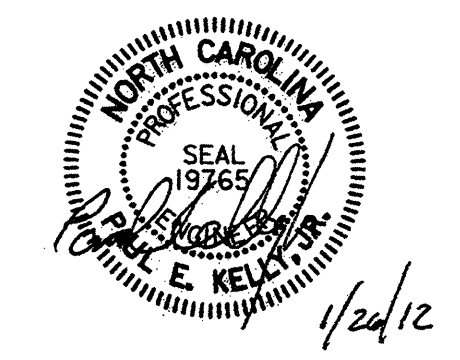


\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

**TYPICAL SECTION**

PROJECT NO. **17BP.14.P.4**  
**HAYWOOD** COUNTY  
 BRIDGE NO.: **73**  
 REHAB. OF BRIDGE NO. 73 SHEET 1 OF 10

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS & TYPICAL SECTION**  
 BRIDGE ON SR 1660  
 OVER US 19, 23 AND 74



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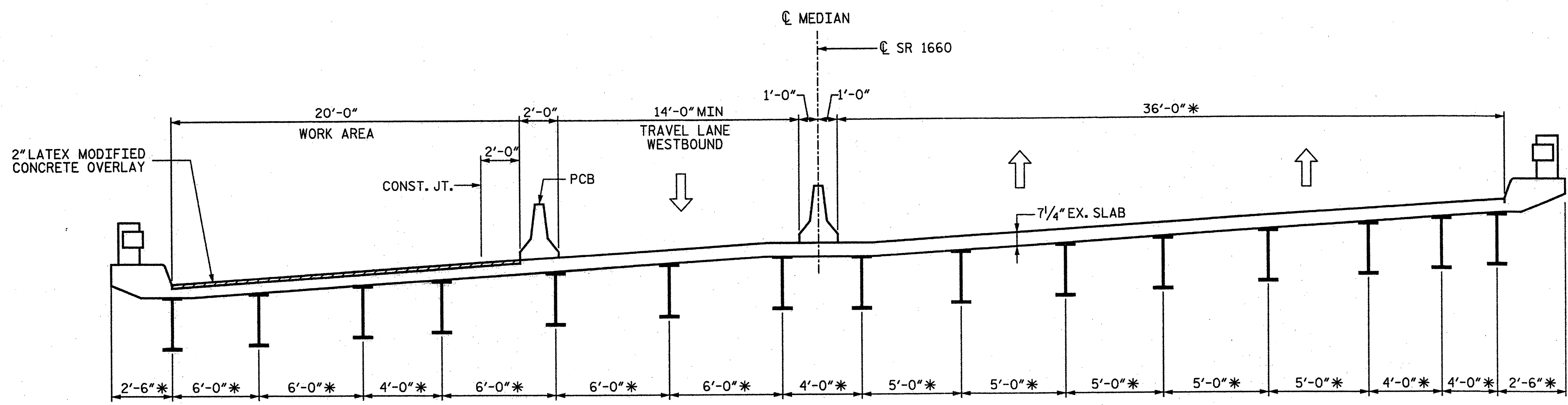
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-23	
1			3			TOTAL SHEETS	
2			4			57	



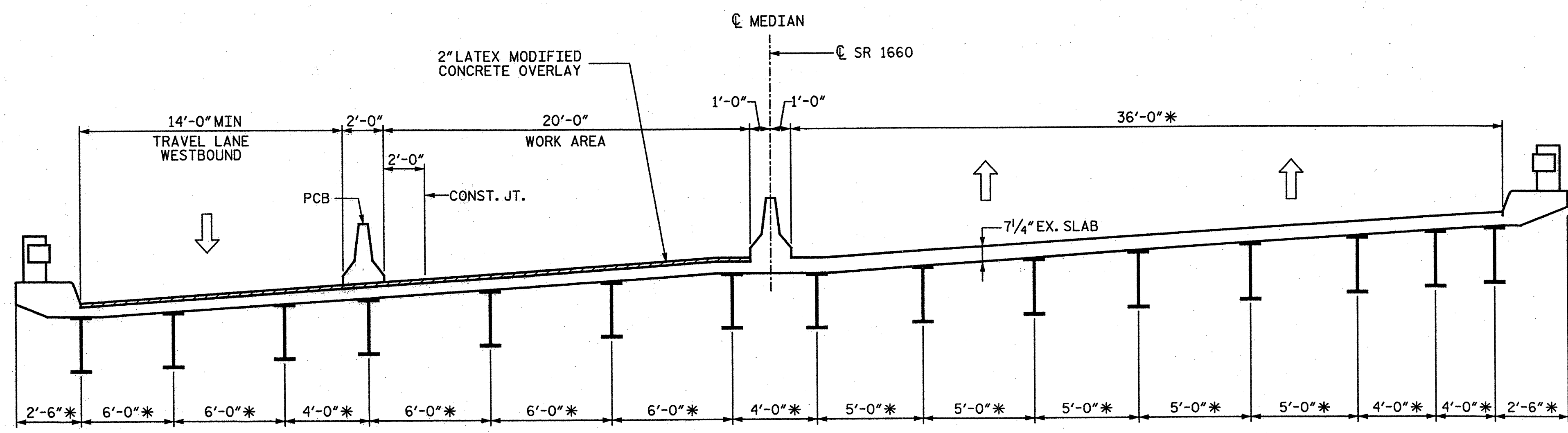
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wlvvm

1/26/2012



TYPICAL SECTION - STAGE I

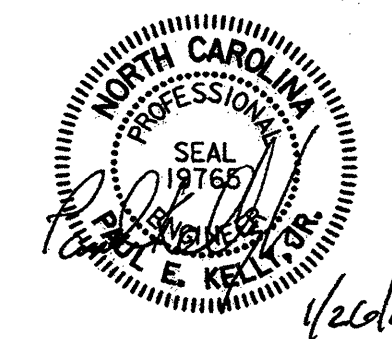


TYPICAL SECTION - STAGE II

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

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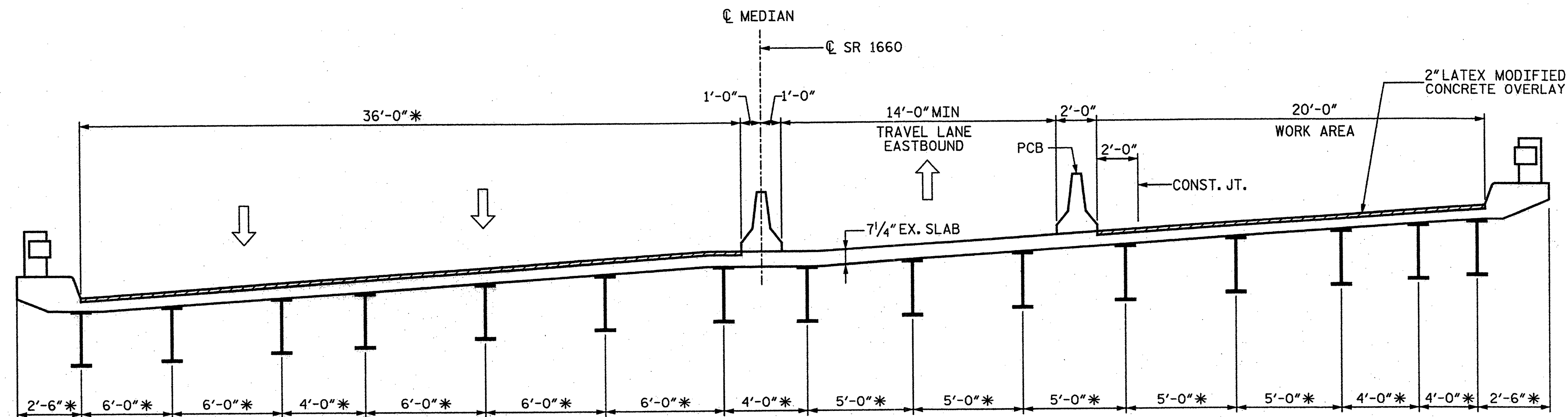
PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 73  
 REHAB. OF BRIDGE NO. 73 SHEET 2 OF 10

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
STAGED CONSTRUCTION					
BRIDGE ON SR 1660					
OVER US 19, 23 AND 74					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
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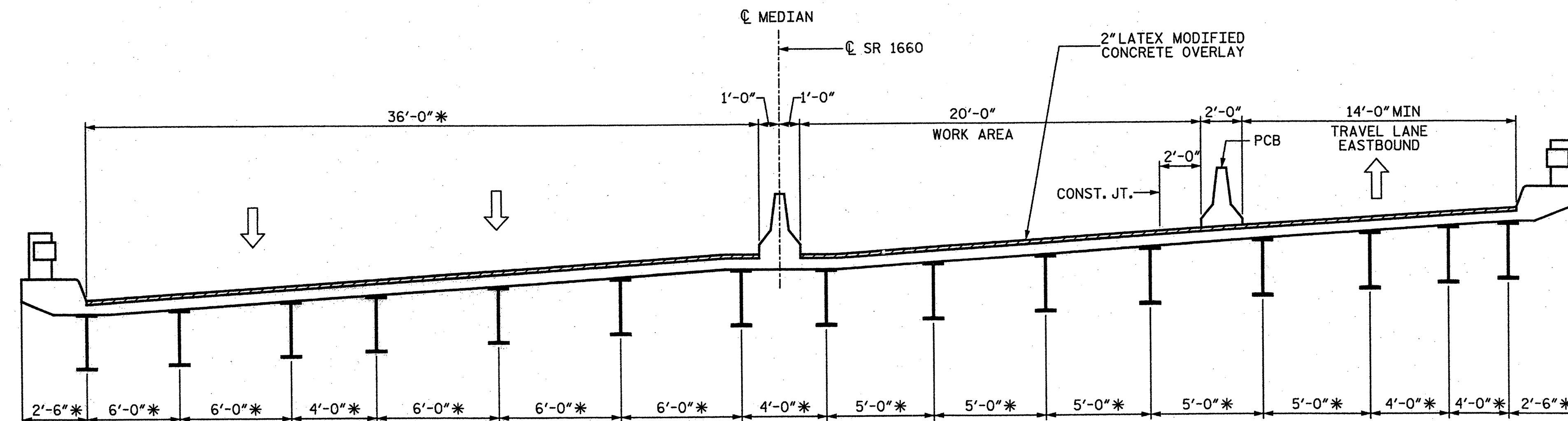
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w.r.w

1/26/2012



TYPICAL SECTION - STAGE III



TYPICAL SECTION STAGE - IV

\* DIMENSIONS ARE APPROXIMATE  
AND SHALL BE FIELD VERIFIED

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

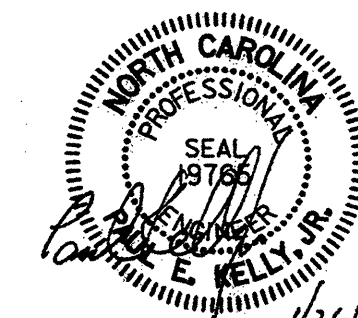
BRIDGE NO.: 73

REHAB. OF BRIDGE NO. 73 SHEET 3 OF 10

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STAGED CONSTRUCTION

BRIDGE ON SR 1660  
OVER US 19, 23 AND 74



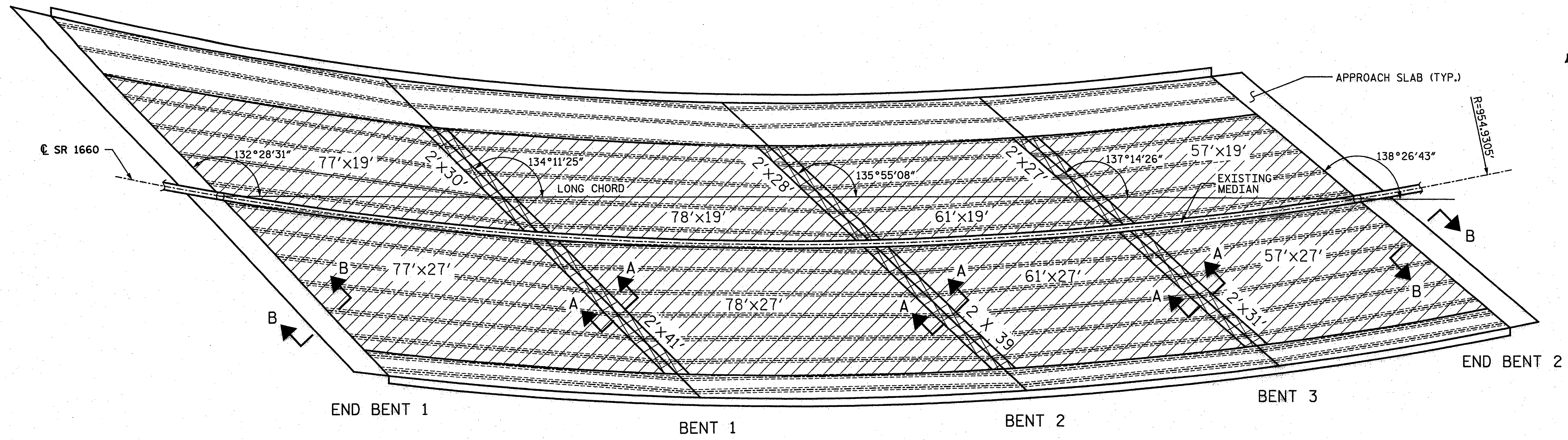
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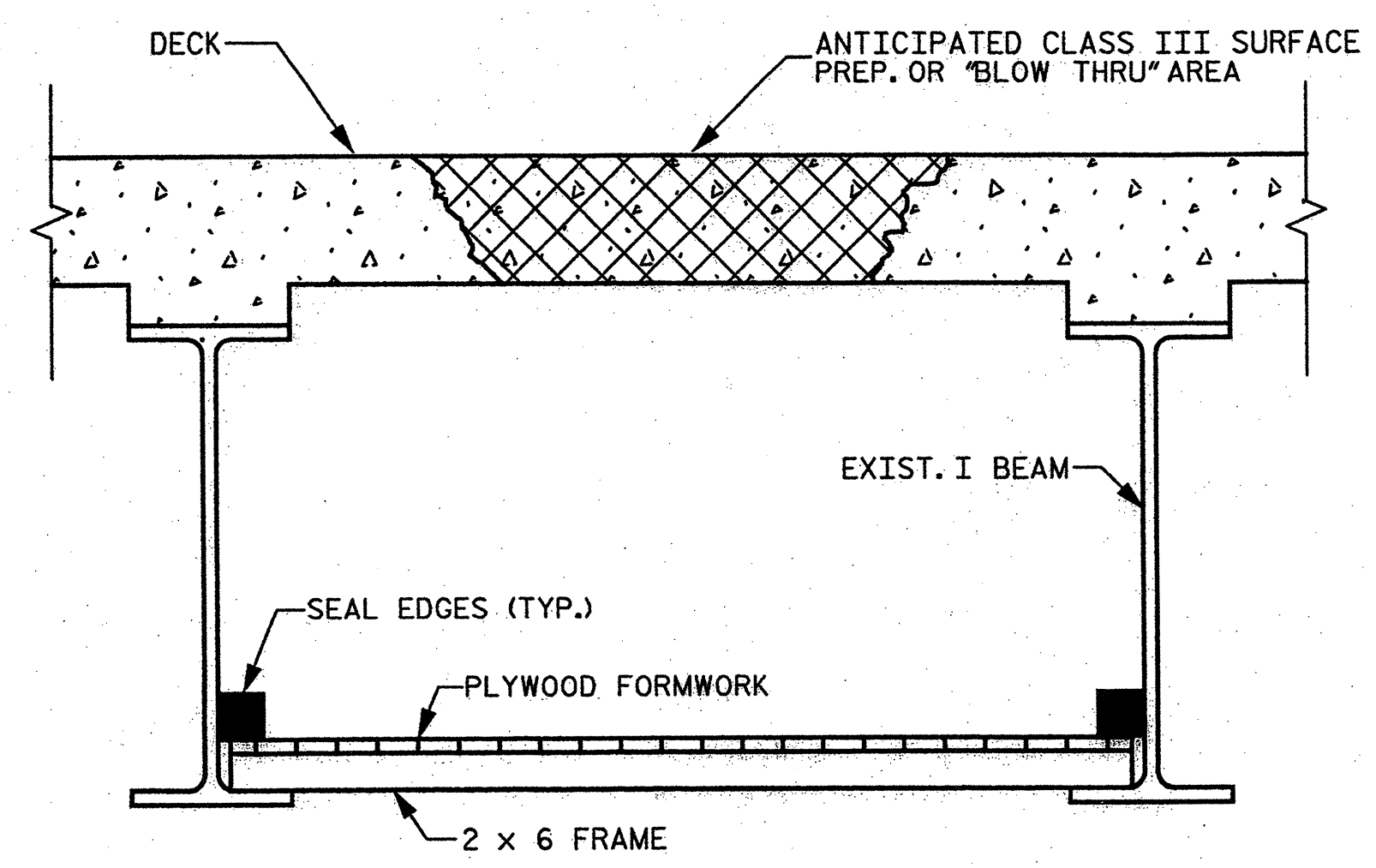
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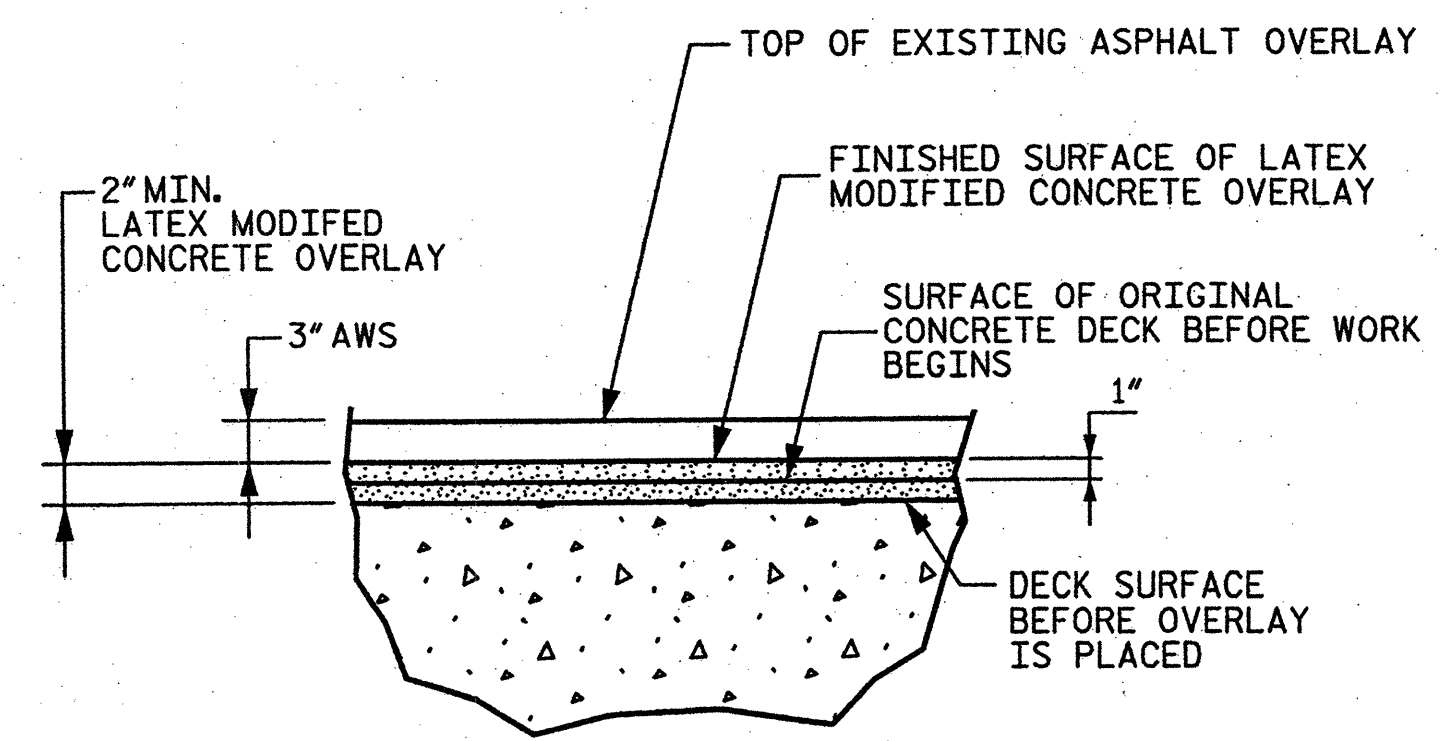


**PLAN OF SPANS - DECK REPAIRS**



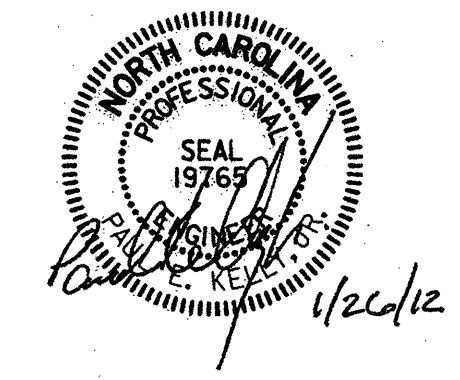
**TYP. "BLOW THRU" CONTAINMENT AND FORMWORK**

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



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**

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



PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 73  
 REHAB. OF BRIDGE NO. 73 SHEET 4 OF 10

**TOTAL BILL OF MATERIAL**

DECK SCARIFICATION	*CLASS II SURFACE PREPARATION	*CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	UNDER STRUCTURE WORK PLATFORM	BRIDGE JACKING	SHOTCRETE REPAIRS	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.	LIN. FEET	LUMP SUM	LUMP SUM	CU. FT.	SY	TONS
2,437	1,395	44	2,437	135	2,437	LUMP SUM	20,025	113	LUMP SUM	LUMP SUM	377	240	15

\* QUANTITIES FOR INFORMATION ONLY.

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 CHECKED BY: DRG DATE: 10-11

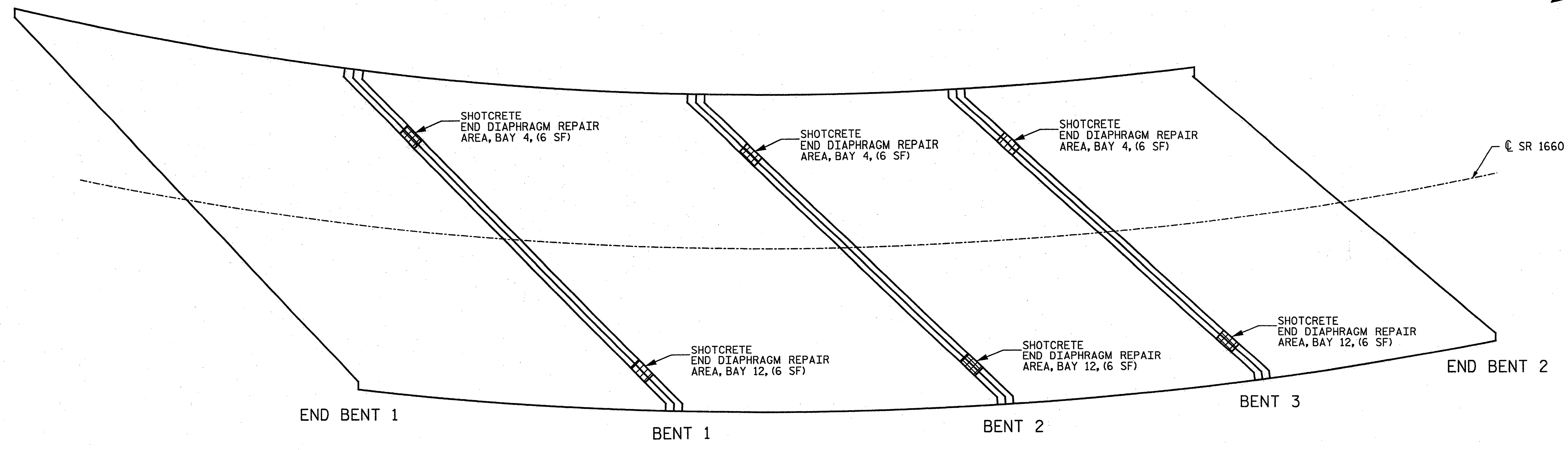
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1			3	
2			4	

TOTAL SHEETS: 57



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 1/26/2012  
 wlvw



**PLAN VIEW**  
(UNDERSIDE OF DECK SHOWN)

**NOTE:**  
FOR SHOTCRETE REPAIR, SEE  
SPECIAL PROVISIONS

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

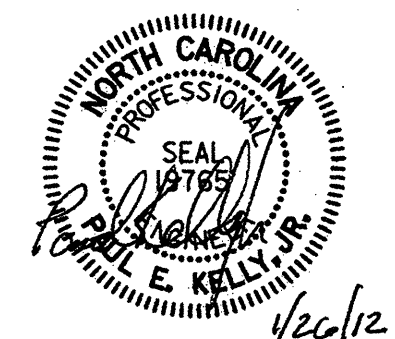
BRIDGE NO.: 73

REHAB. OF BRIDGE NO. 73 SHEET 5 OF 10

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**END DIAPHRAGM  
DETAILS**

BRIDGE ON SR 1660  
OVER US 19, 23 AND 74

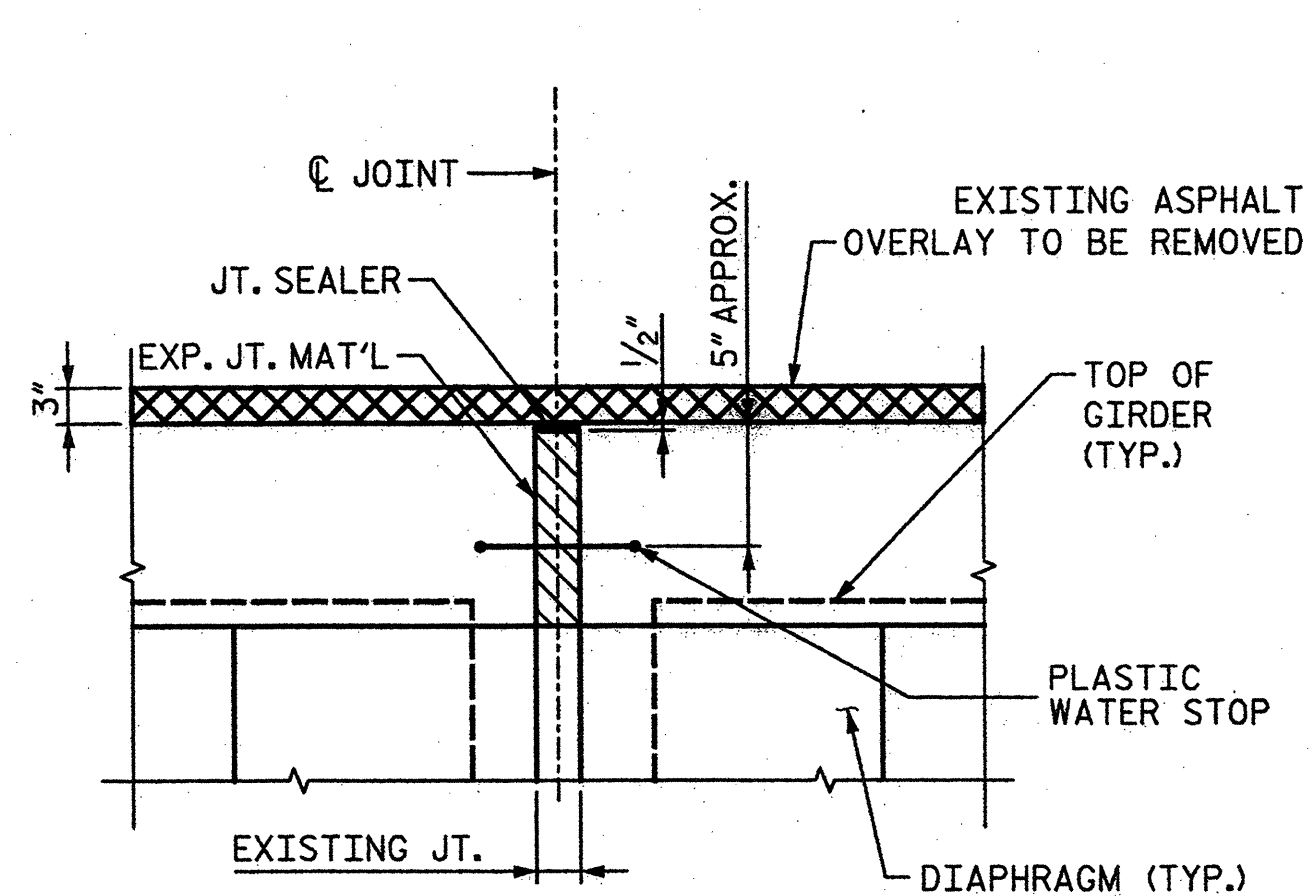


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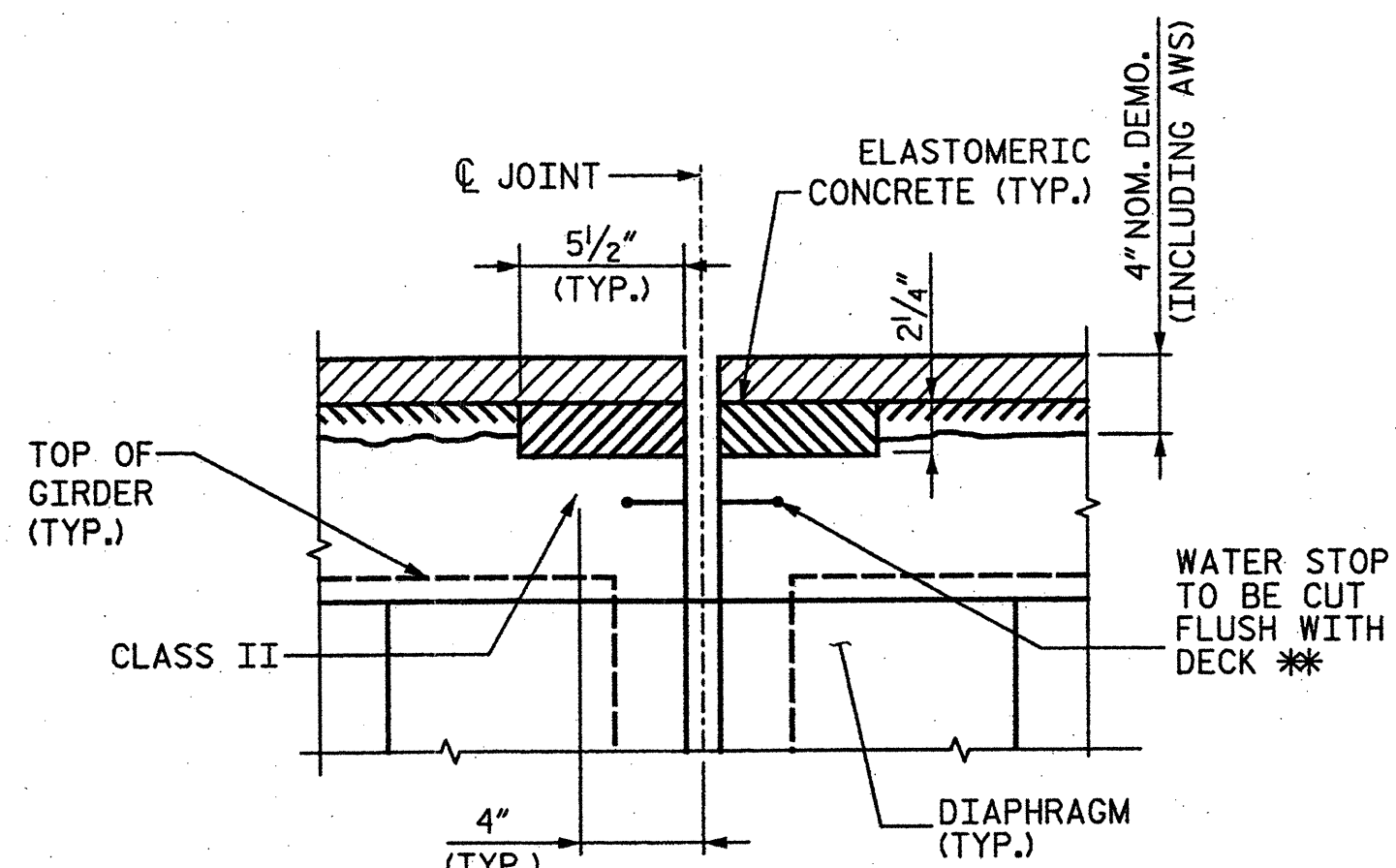
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			57

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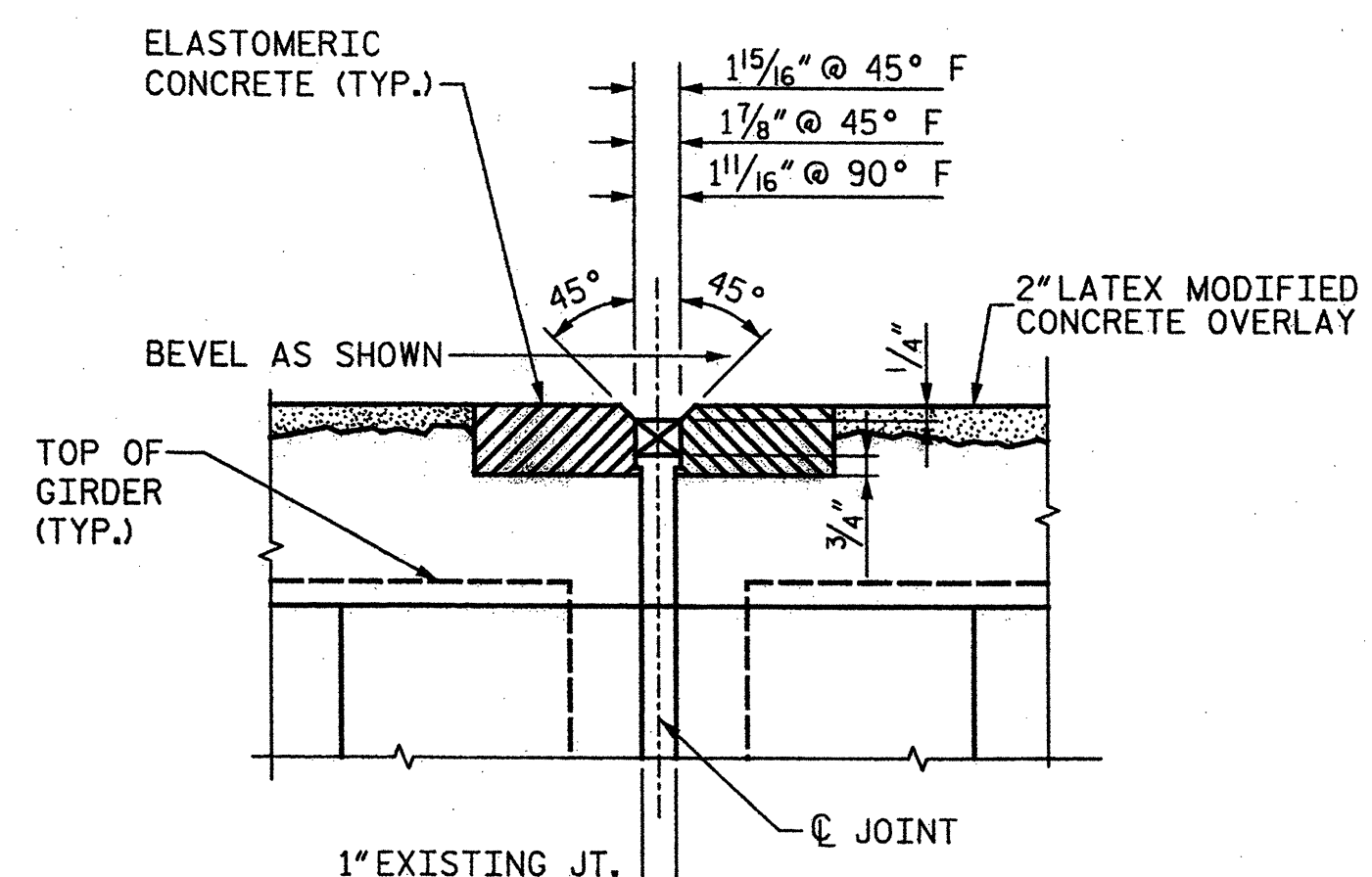
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 1/26/2012



**SECTION A-A**  
(MINIMUM EXISTING JOINT DEMOLITION)

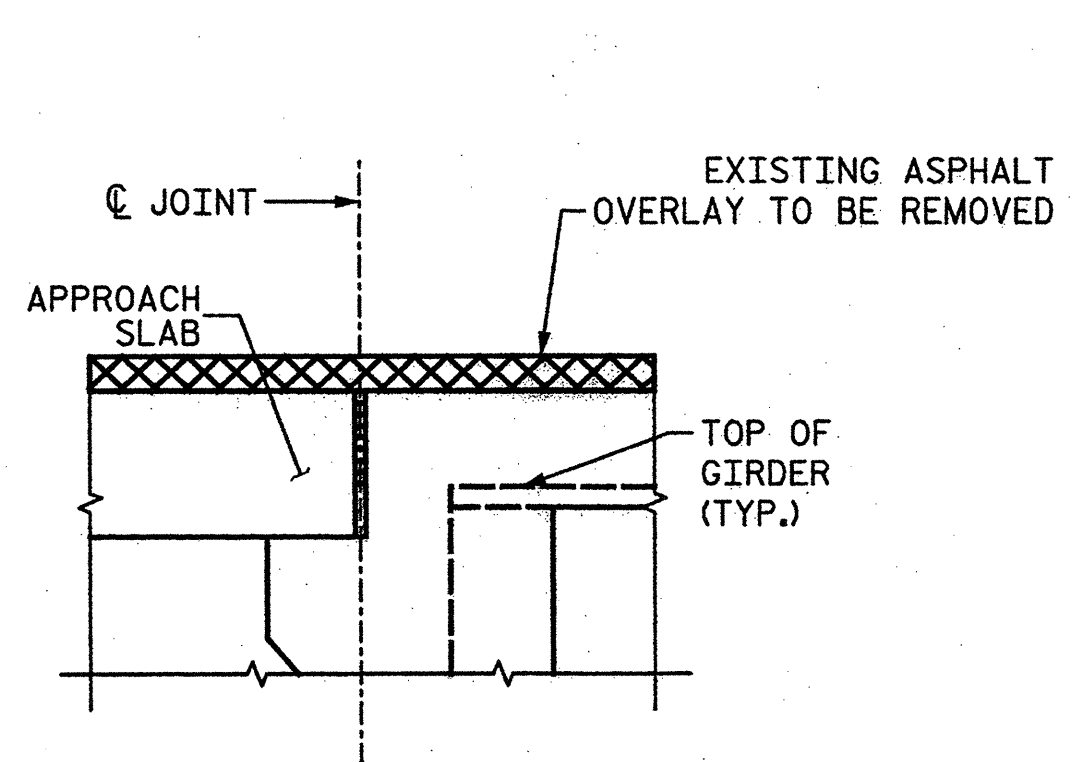


**SECTION A-A**  
(MINIMUM EXISTING JOINT DEMOLITION)

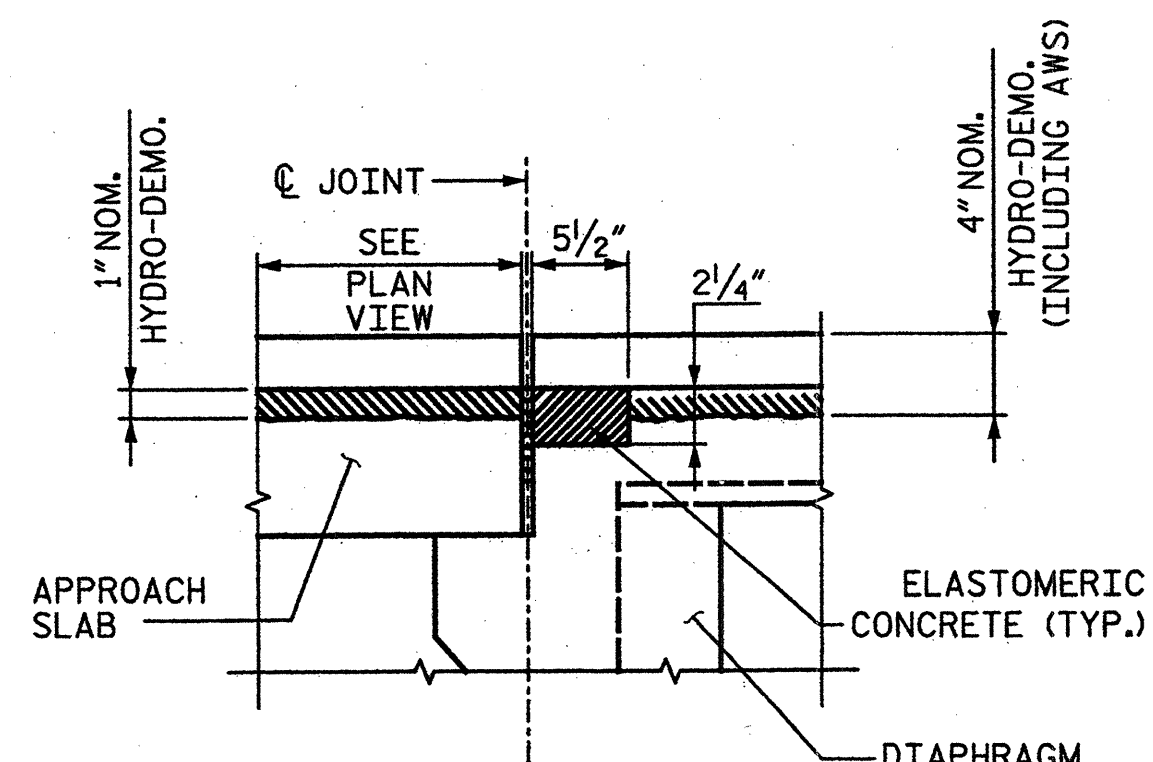


**SECTION A-A**  
(PROPOSED FOAM JOINT SEAL EXPANSION)

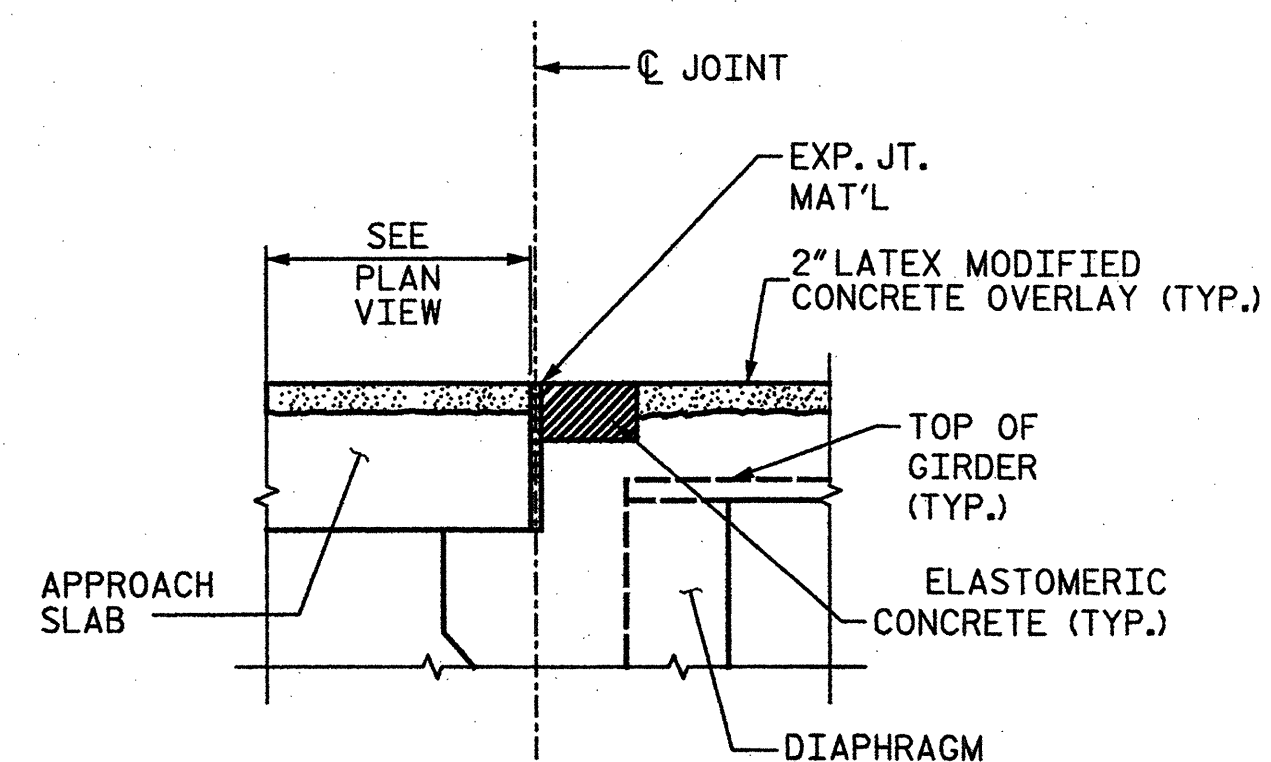
\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.



**SECTION B-B**  
(EXISTING JOINT)

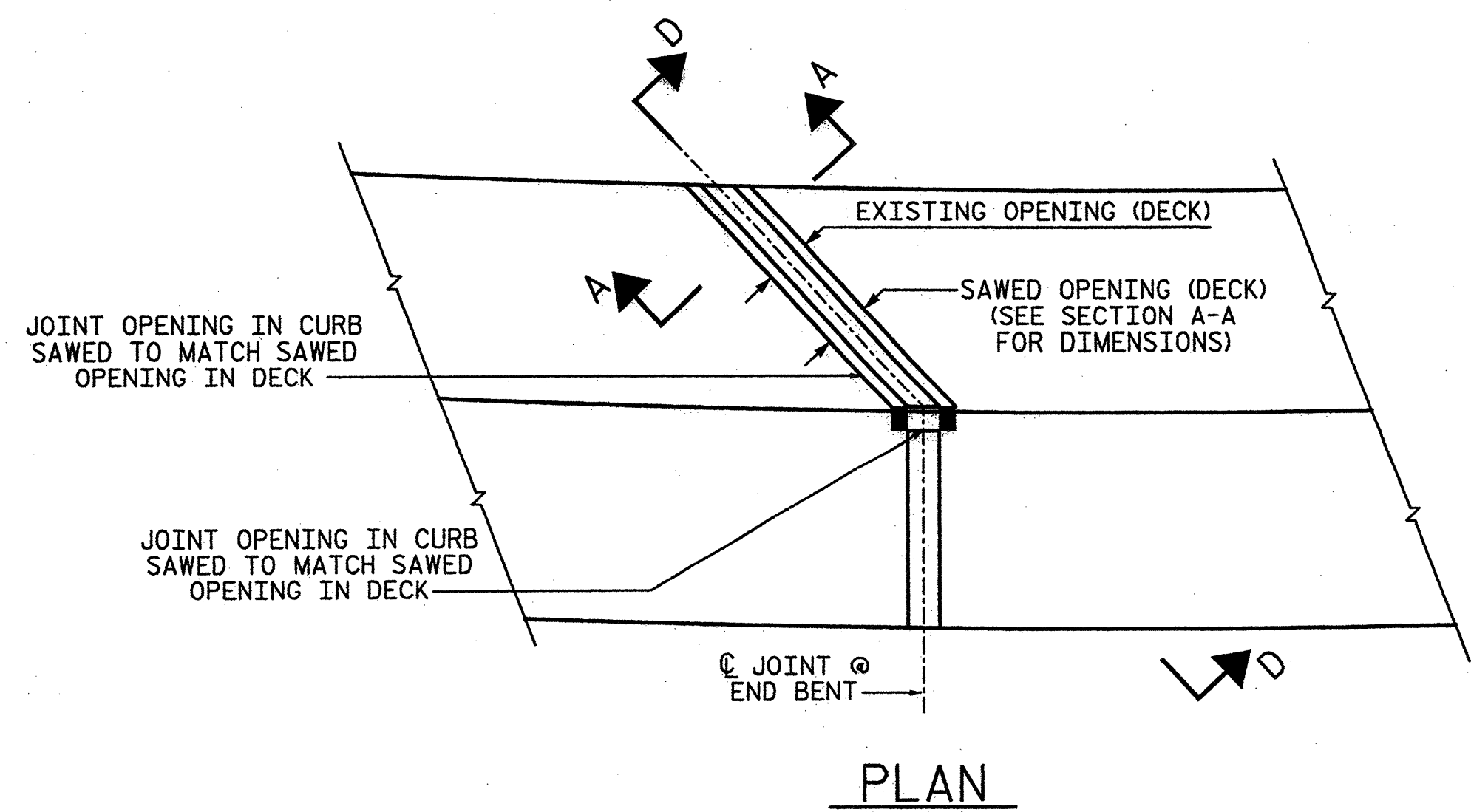


**SECTION B-B**  
(EXISTING JOINT DEMOLITION)

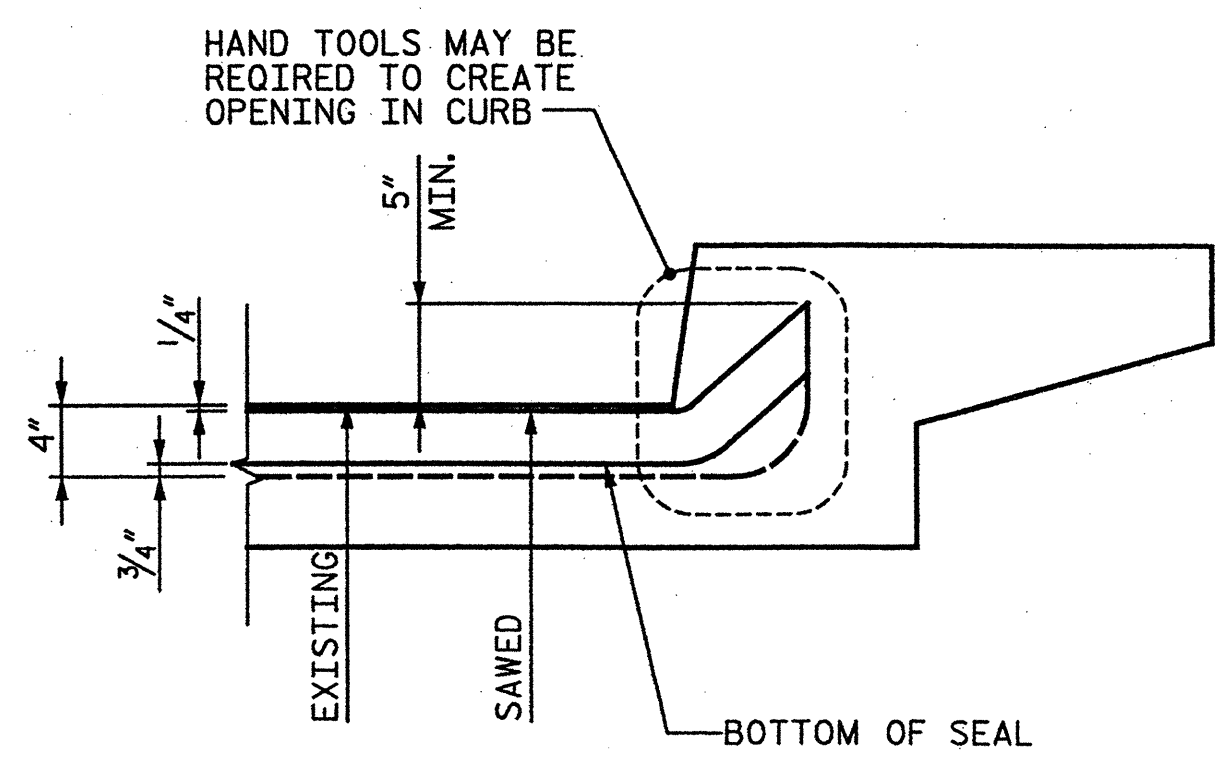


**SECTION B-B**  
(EXISTING JOINT DEMOLITION)

**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" AT BENTS.  
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.  
 ELASTOMERIC CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.



**PLAN**



**SECTION D-D**

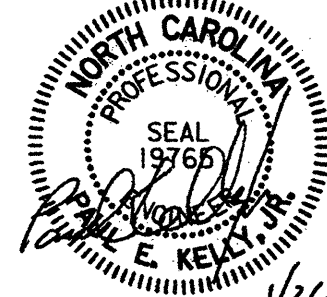
PROJECT NO. **17BP.14.P.4**  
**HAYWOOD** COUNTY  
 BRIDGE NO.: **73**

REHAB. OF BRIDGE NO. 73 SHEET 6 OF 10

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**JOINT DETAILS**

BRIDGE ON SR 1660  
 OVER US 19, 23 AND 74



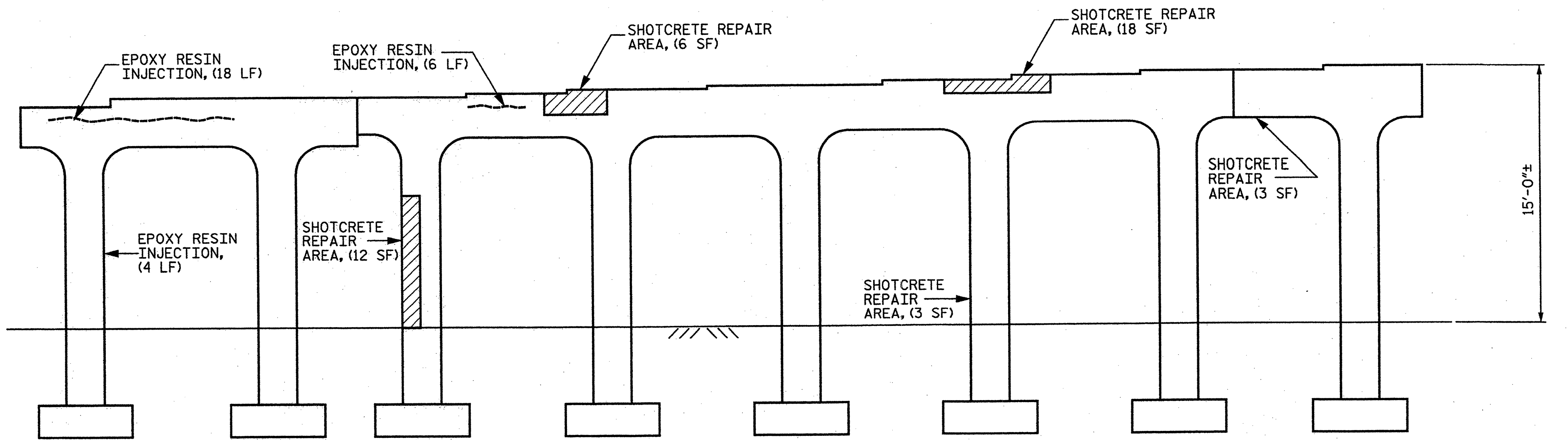
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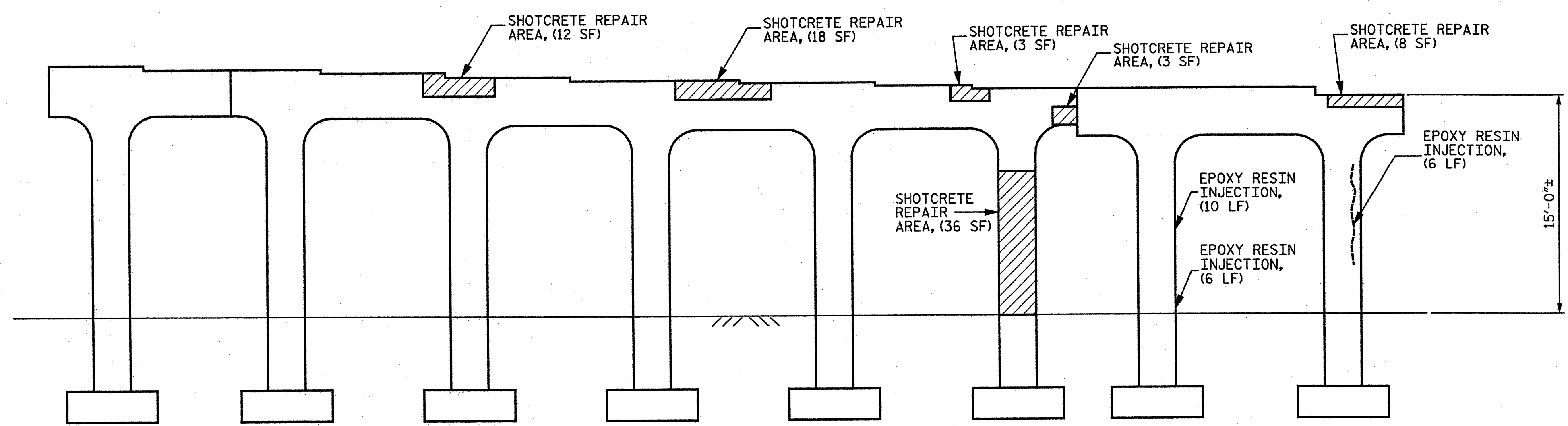
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28	
1			3			TOTAL SHEETS	
2			4			57	

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1/26/2012



ELEVATION OF BENT 1 - LOOKING NORTH

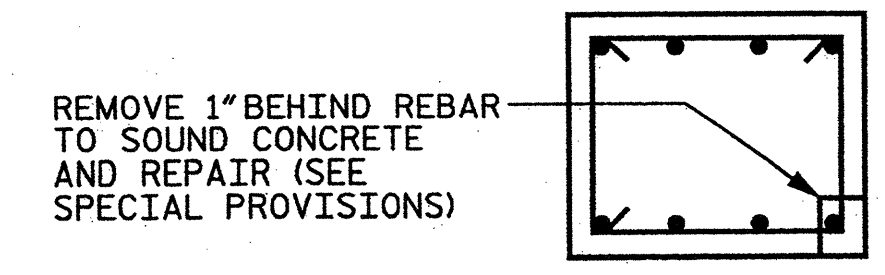


ELEVATION OF BENT 1 - LOOKING SOUTH

**NOTES:**

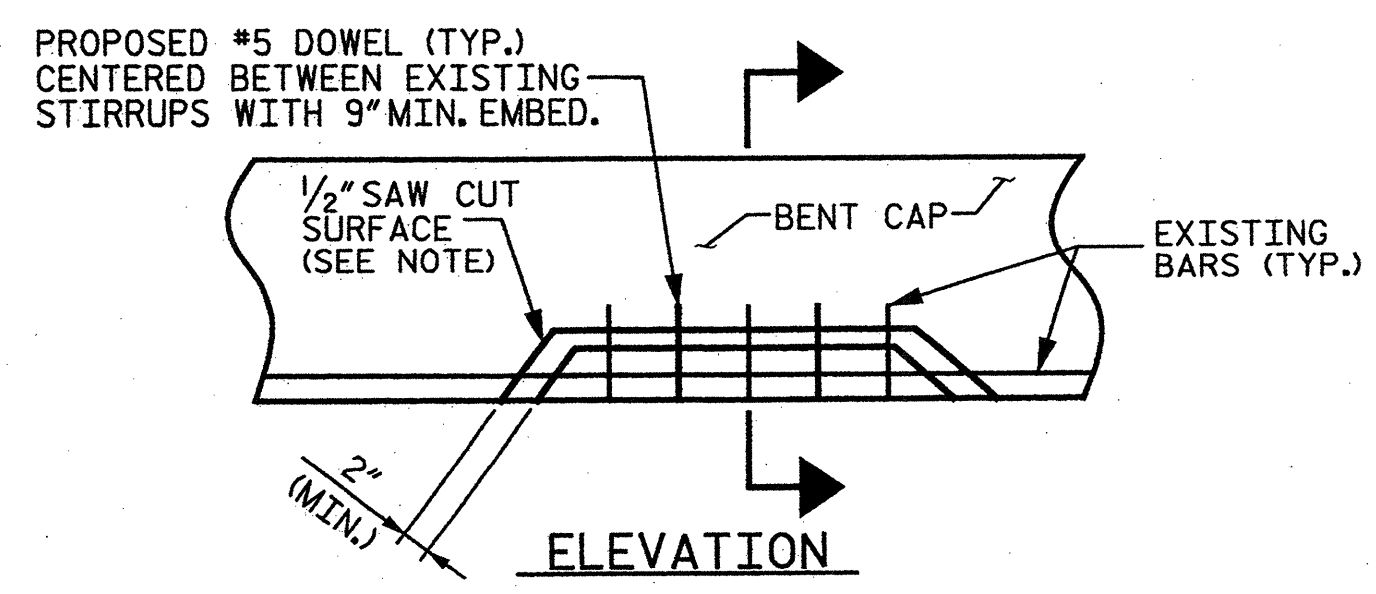
1. CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
2. FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
3. SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND 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. BENT CAP REPAIRS IN BEARING AREAS SHALL BE PERFORMED WITH CLASS A CONCRETE.
8. BRIDGE JACKING IS REQUIRED FOR CONCRETE REPAIRS THAT EXTEND UNDER A BEARING PLATE. FOR JACKING DETAILS AND NOTES, SEE SHEET S-57.
9. SEE SHEET 1 OF 10 FOR ADDITIONAL NOTES.
10. SUBSTRUCTURE REPAIRS SHALL PROVIDE A MINIMUM OF 2" CLEAR COVER TO REINFORCING STEEL. REPAIRED AREAS MAY BE BUILT OUT TO ACHIEVE CLEARANCE.
11. EPOXY COATING SHALL BE APPLIED TO THE TOP OF ALL BENT CAPS. COST SHALL BE INCLUDED IN OTHER BENT REPAIRS.
12. THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO PREVENT DEBRIS AND MATERIALS FROM FALLING, ROLLING, OR BLOWING INTO TRAFFIC OR ONTO BEAMS, GIRDERS, BEARINGS OR ANY OTHER UNINTENDED SURFACES. CONSIDERATION SHALL BE GIVEN TO THE USE OF SCREENS TO PROTECT TRAFFIC ADJACENT TO THE WORK AREA AND OTHER PORTIONS OF THE BRIDGE.

NOTE: CONTRACTOR SHALL SAW CUT TO A MAXIMUM DEPTH OF 1/2". THIS DEPTH SHALL BE REDUCED TO PREVENT DAMAGE TO EXISTING REINFORCEMENT. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

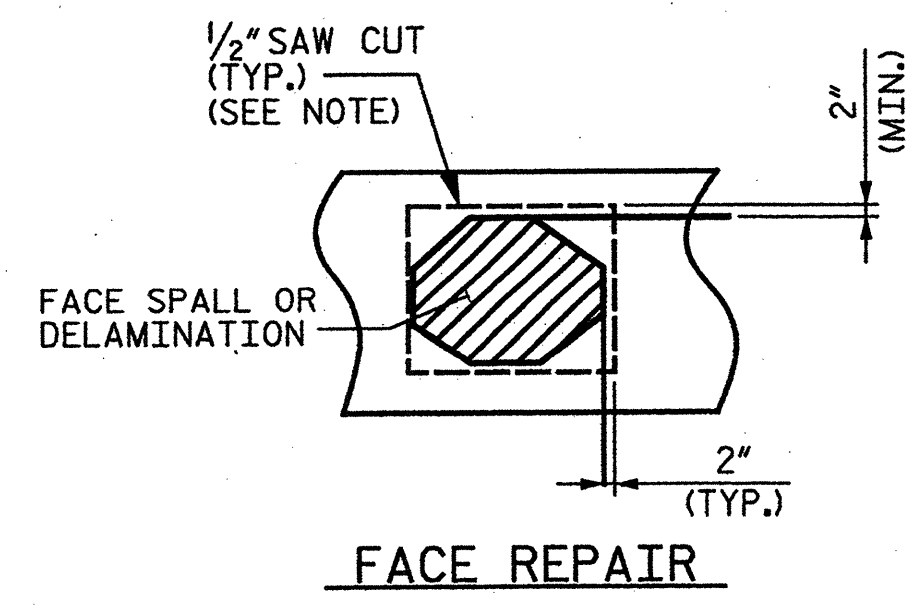


SECTION

CORNER REPAIR



ELEVATION



FACE REPAIR

TYPICAL SUBSTRUCTURE REPAIR DETAILS

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 73  
 REHAB. OF BRIDGE NO. 73 SHEET 7 OF 10



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**BENT 1  
 STRUCTURE REPAIR**  
 BRIDGE ON SR 1660  
 OVER US 19, 23 AND 74

DRAWN BY : RWM DATE : 10-11  
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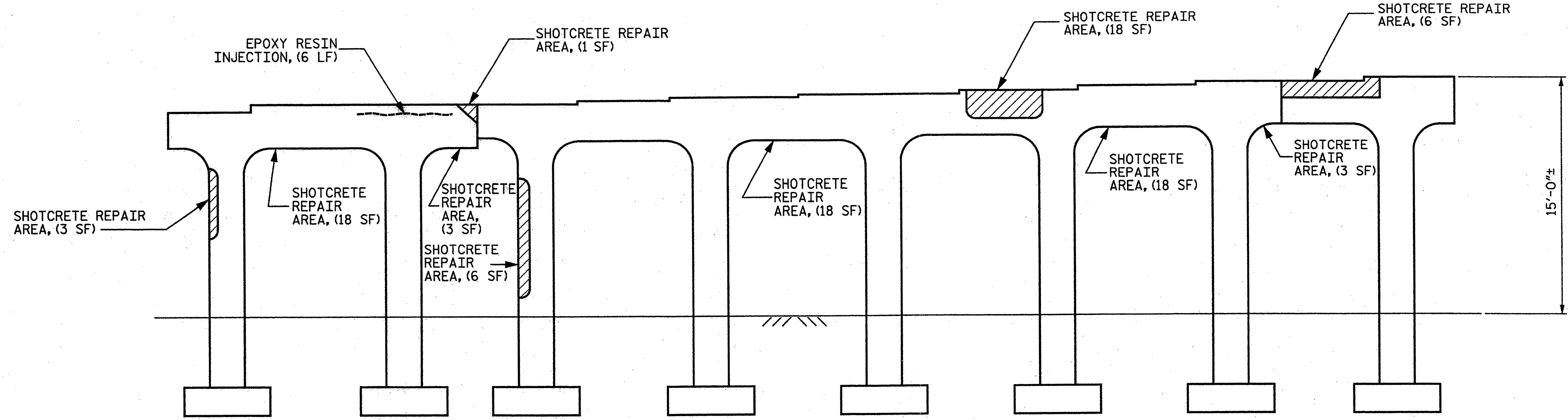
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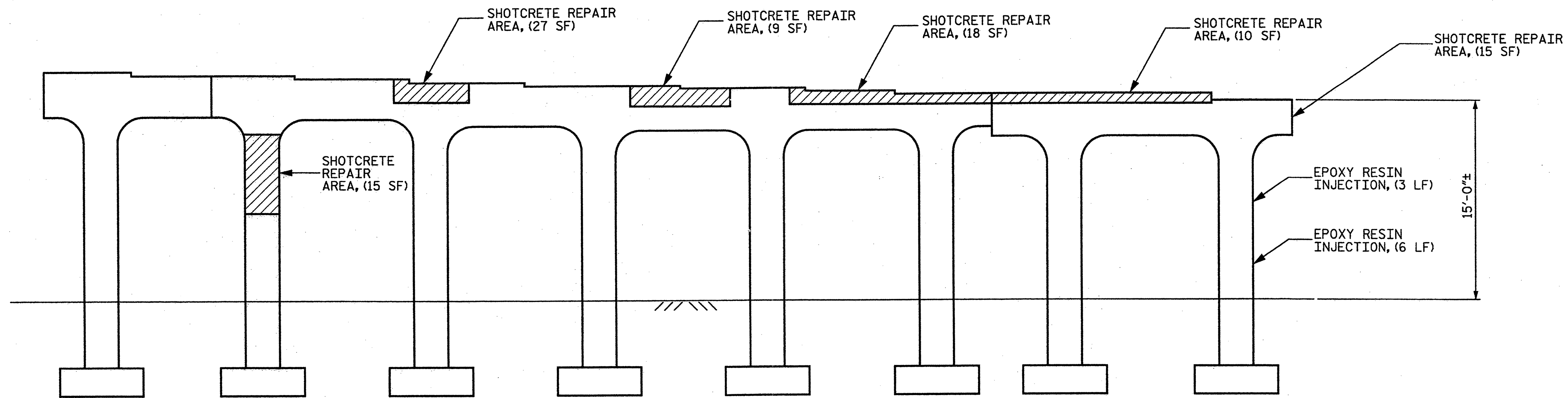
TOTAL SHEETS: 57



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ELEVATION OF BENT 2 - LOOKING NORTH



ELEVATION OF BENT 2 - LOOKING SOUTH

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

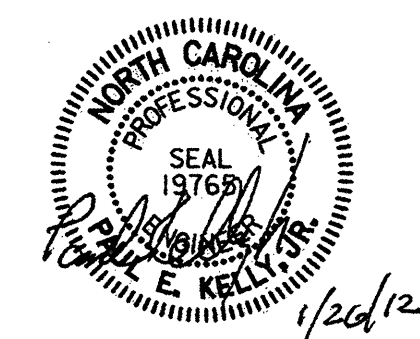
BRIDGE NO.: 73

REHAB. OF BRIDGE NO. 73 SHEET 8 OF 10

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 2  
STRUCTURE REPAIR

BRIDGE ON SR 1660  
OVER US 19, 23 AND 74

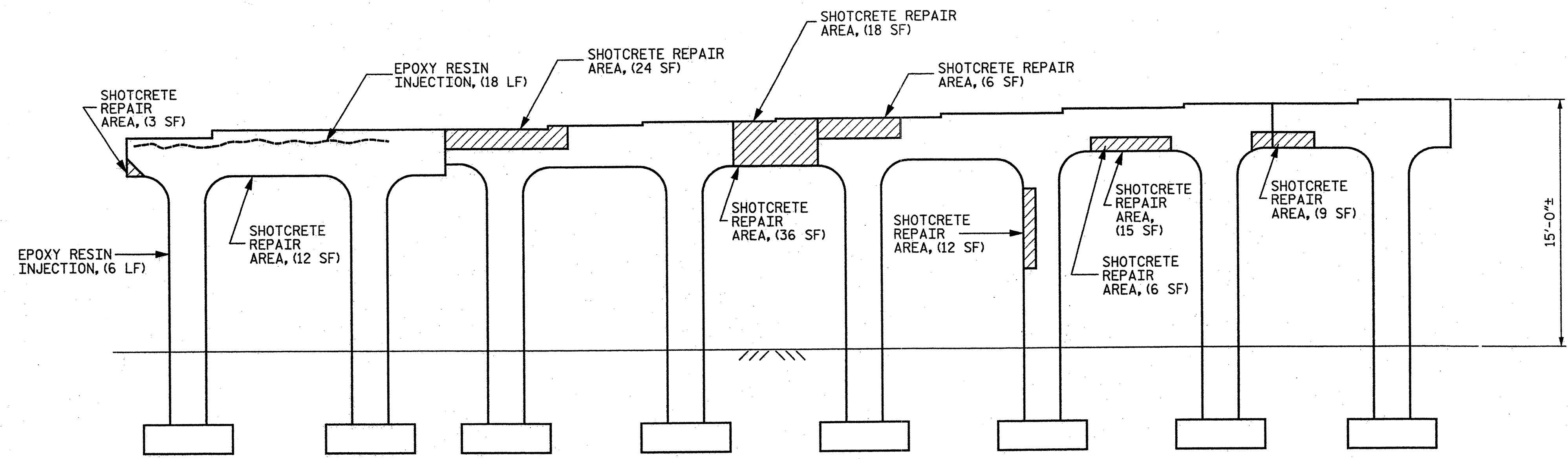


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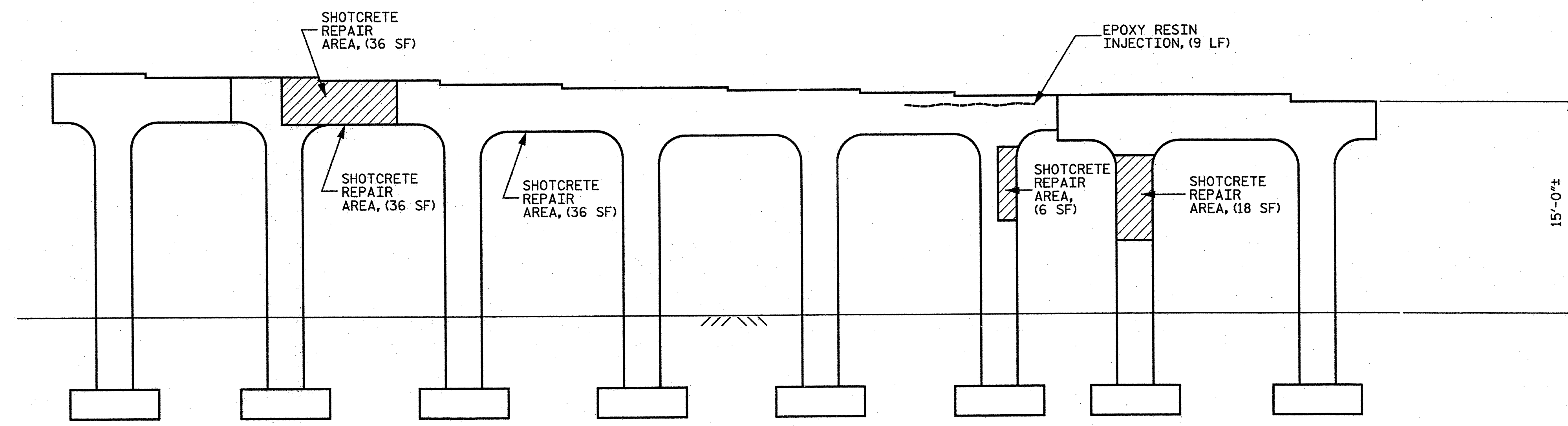
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ELEVATION OF BENT 3 - LOOKING NORTH



ELEVATION OF BENT 3 - LOOKING SOUTH

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

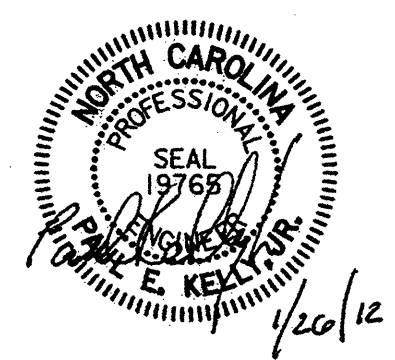
BRIDGE NO.: 73

REHAB. OF BRIDGE NO. 73 SHEET 9 OF 10

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**BENT 3  
STRUCTURE REPAIR**

BRIDGE ON SR 1660  
OVER US 19, 23 AND 74

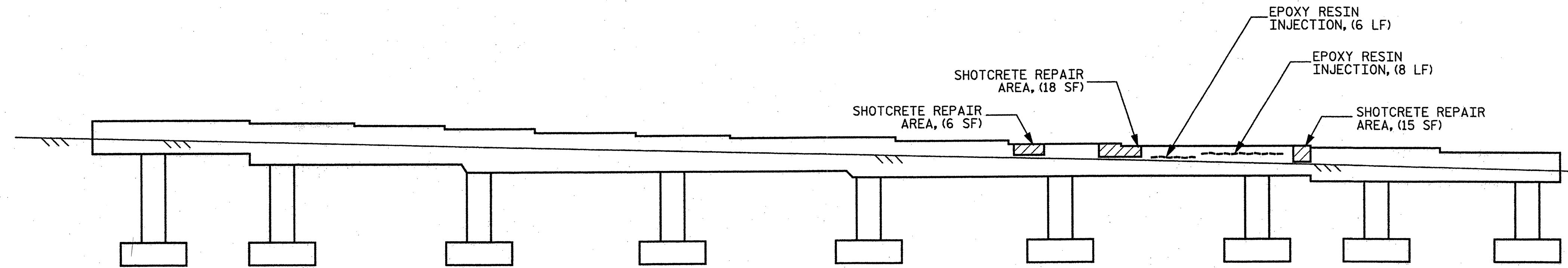


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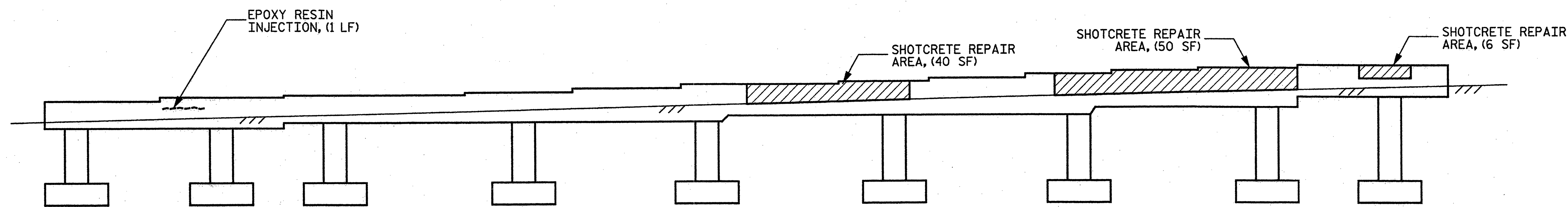
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END BENT NO. 1



END BENT NO. 2

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

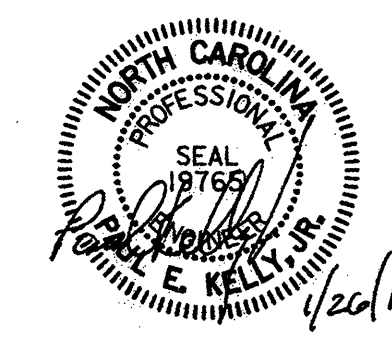
BRIDGE NO.: 73

REHAB. OF BRIDGE NO. 73 SHEET 10 OF 10

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**END BENTS 1 & 2  
STRUCTURE REPAIR**

BRIDGE ON SR 1660  
OVER US 19, 23 AND 74

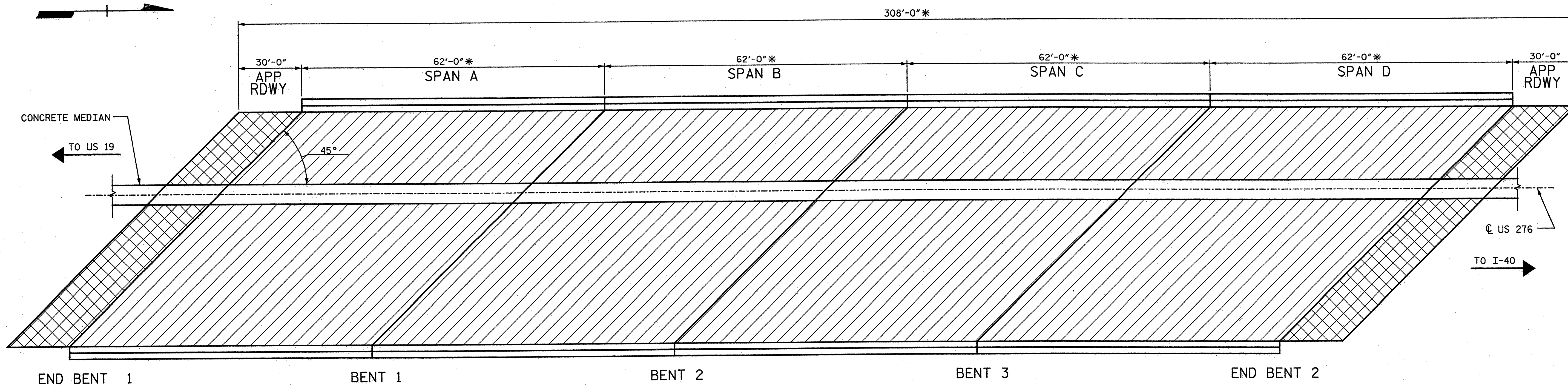


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NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			57





**PLAN OF SPANS - BRIDGE 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

**NOTES:**

FOR REPAIR OF BRIDGE WITH LATEX MODIFIED CONCRETE VERY EARLY STRENGTH SEE SPECIAL PROVISIONS.

SEE SPECIAL PROVISIONS FOR SURFACE PREPARATION.

EXPANSION JOINTS SHALL BE COVERED WITH POLYETHYLENE SHEETING OR OTHER APPROVED MATERIAL AND GRAVEL AGGREGATE DAMS PRIOR TO BEGINNINGS CLASS I SURFACE PREPARATION, SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

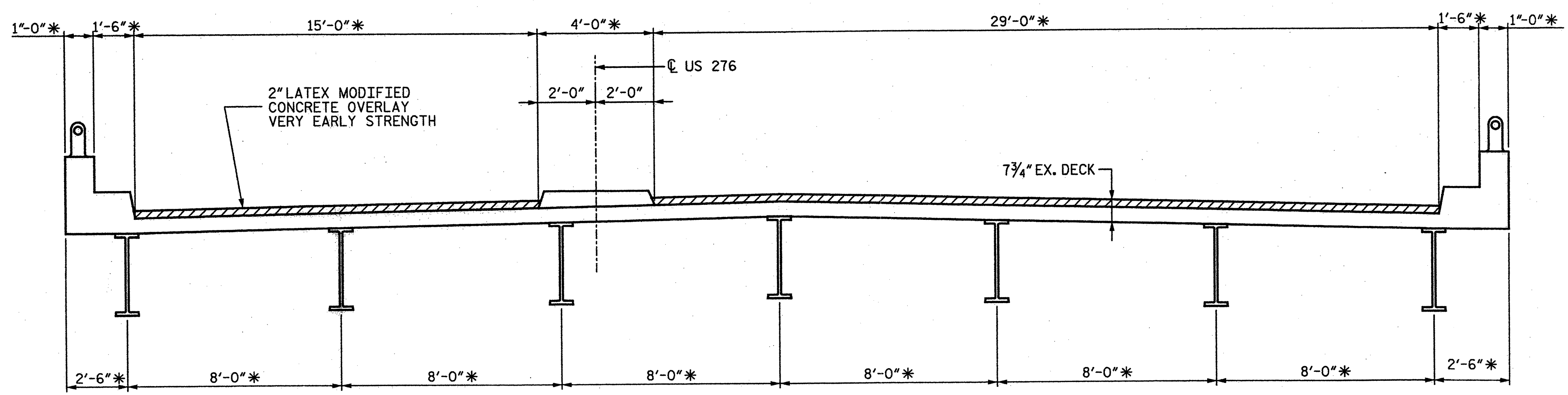
THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN OFF WATER FROM HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

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 110 LBS PER SQ. YD. PER 1" DEPTH. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.

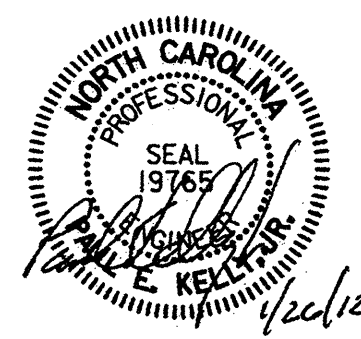


**TYPICAL SECTION - LOOKNG NORTH**

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 203  
 REHAB. OF BRIDGE NO. 203 SHEET 1 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS &  
 TYPICAL SECTION**  
 BRIDGE ON US 276  
 OVER JONATHAN CREEK



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.	DATE:
1			3	
2			4	

TOTAL SHEETS	57
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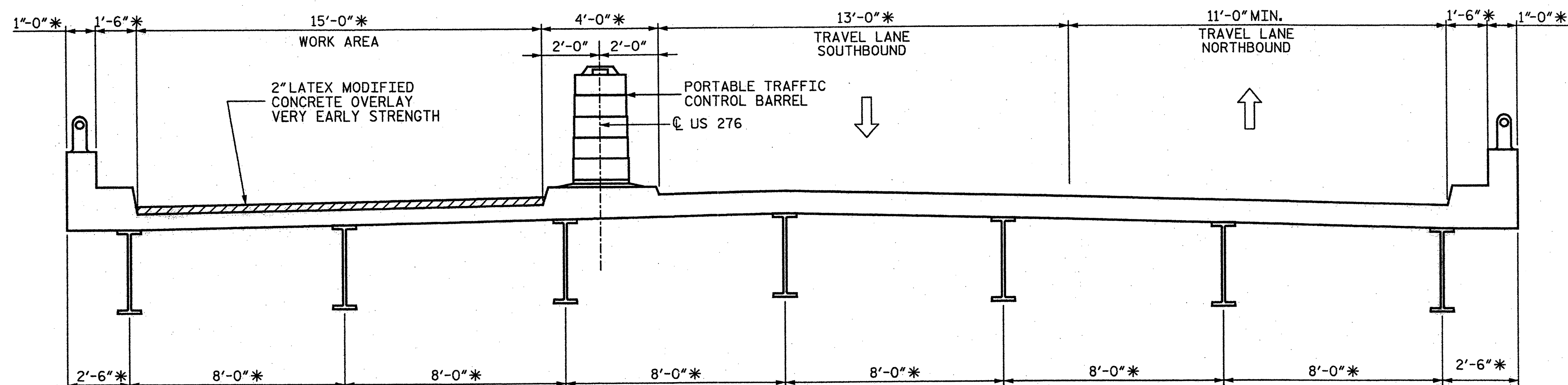
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 CHECKED BY: DRG DATE: 10-11

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 1/26/2012

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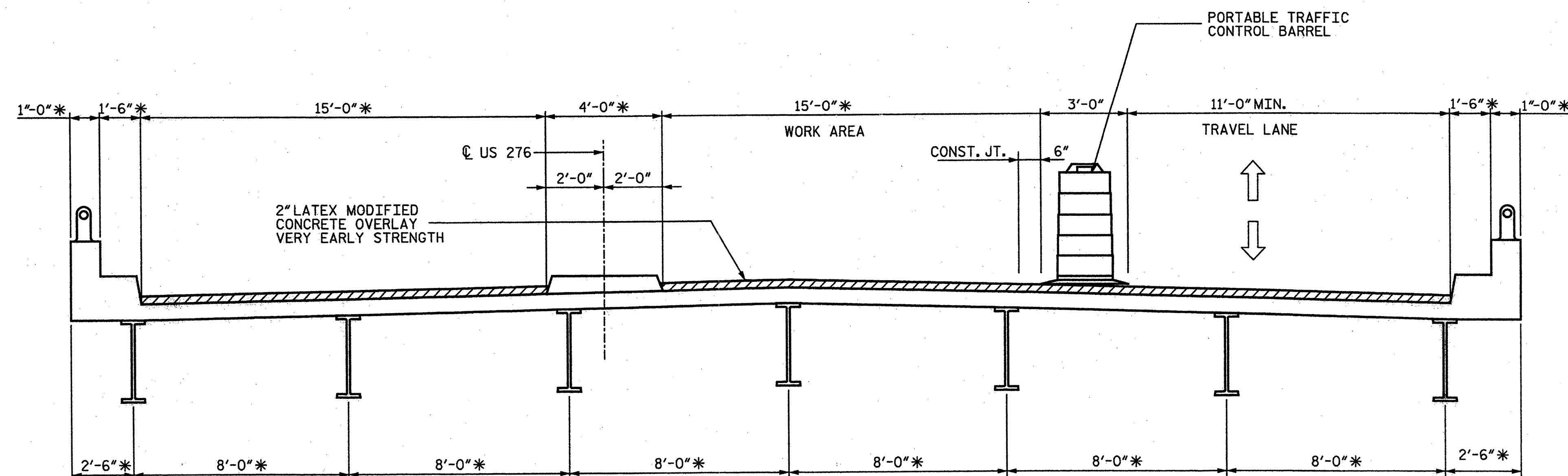
wum

1/26/2012



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

TYPICAL SECTION - STAGE I



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

TYPICAL SECTION - STAGE II

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY

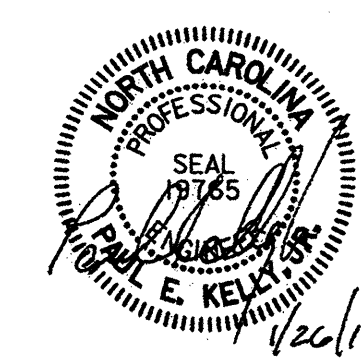
BRIDGE NO.: 203

REHAB. OF BRIDGE NO. 203 SHEET 2 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STAGED CONSTRUCTION

BRIDGE ON US 276  
 OVER JONATHAN CREEK



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 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0591

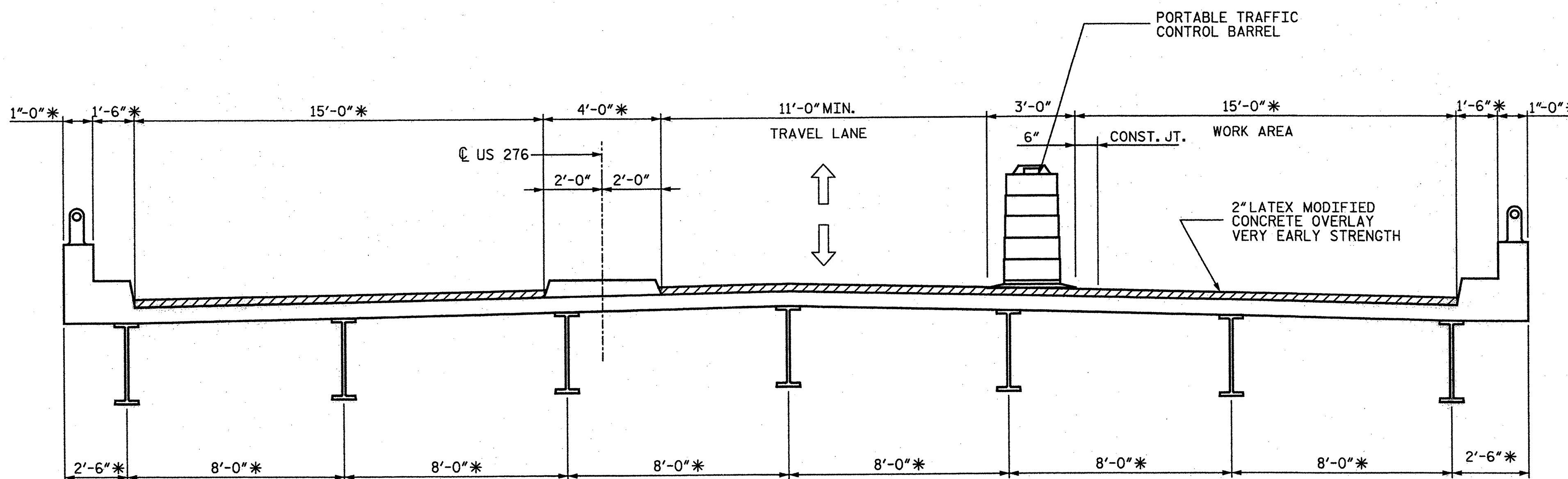
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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34	
1			3			TOTAL	57
2			4			SHEETS	

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wlvvm

1/26/2012



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

TYPICAL SECTION - STAGE III

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

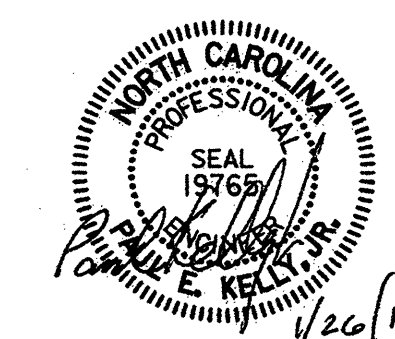
BRIDGE NO.: 203

REHAB. OF BRIDGE NO. 203 SHEET 3 OF 8

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STAGED CONSTRUCTION

BRIDGE ON US 276  
OVER JONATHAN CREEK

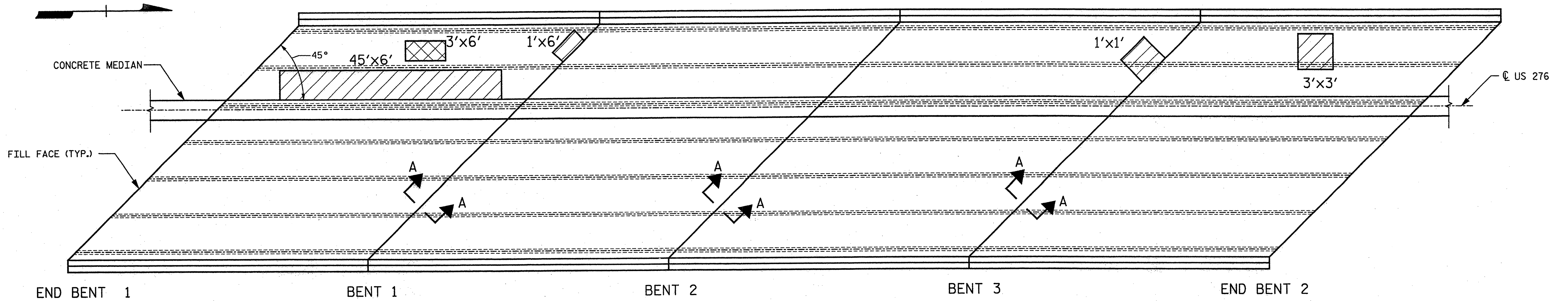


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Charlotte, NC 28208  
NC License No. F-0991

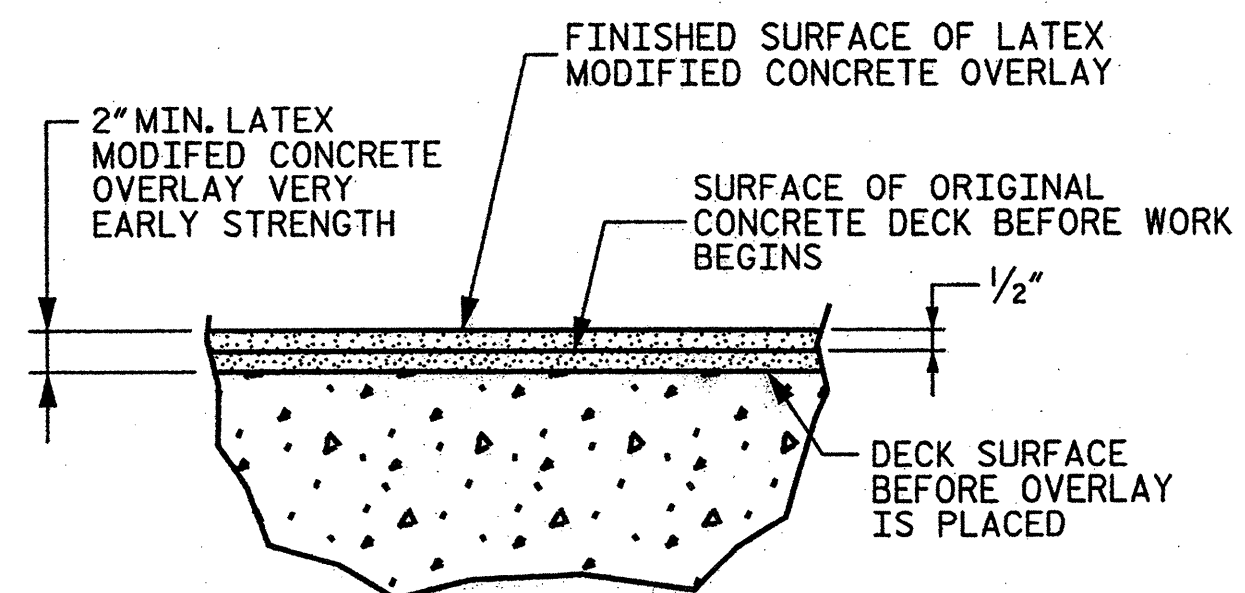
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CHECKED BY : DRG DATE : 10-11

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-35	
1			3			TOTAL SHEETS	57
2			4				

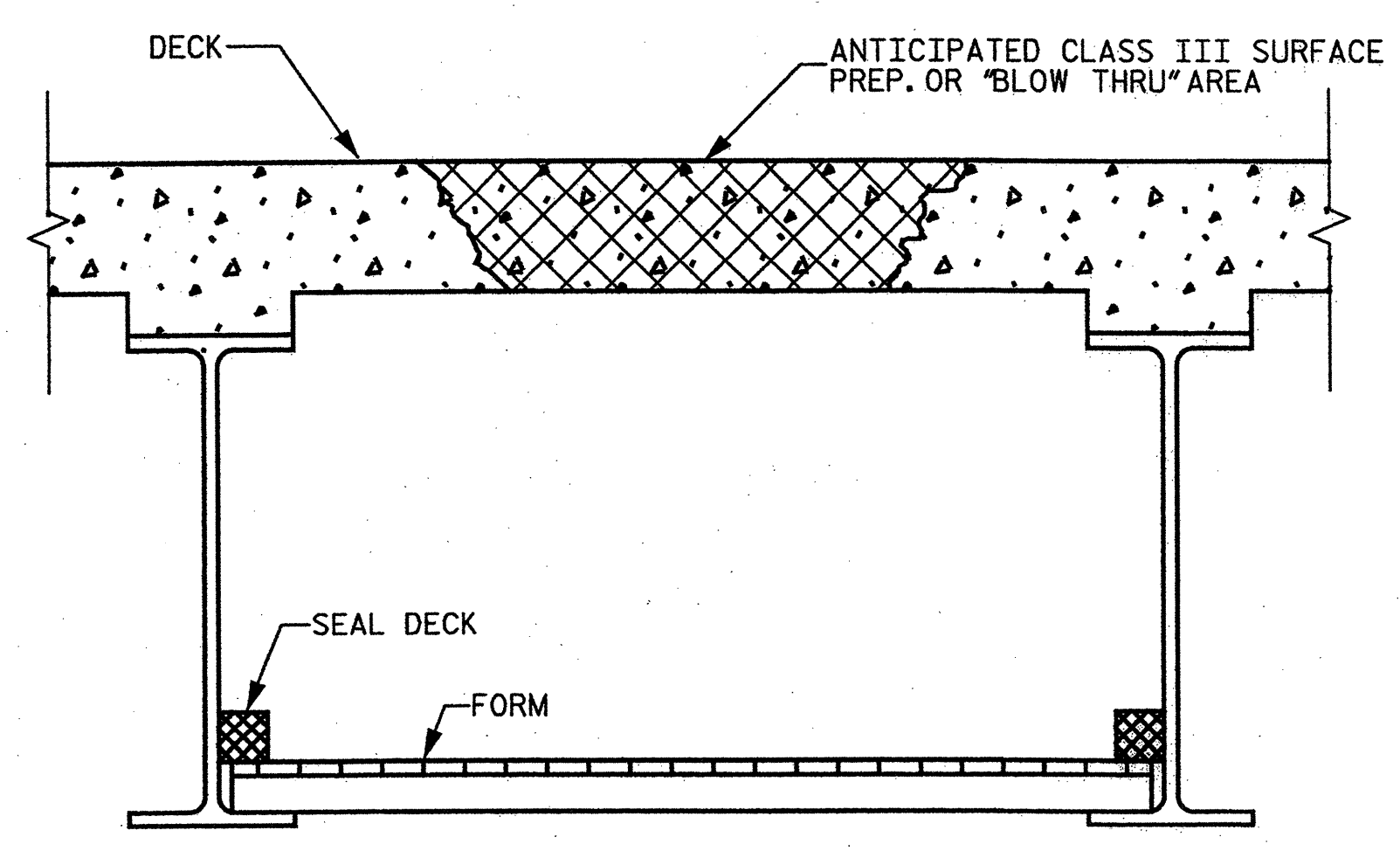




PLAN OF SPANS - DECK REPAIRS



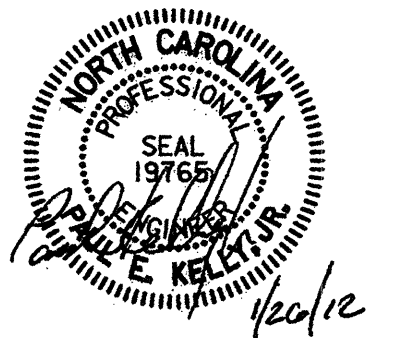
DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY  
ASPHALT WEARING SURFACE NOT SHOWN



TYP. "BLOW THRU" 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. COST FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

APPROX. AREA:  
CLASS II REPAIR

APPROX. AREA:  
CLASS III REPAIR



PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
BRIDGE NO.: 203  
REHAB. OF BRIDGE NO. 203 SHEET 4 OF 8

TOTAL BILL OF MATERIAL

DECK SCARIFICATION	* 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 VERY EARLY STRENGTH	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	UNDER STRUCTURE WORK PLATFORM	BRIDGE JACKING	SHOTCRETE REPAIRS	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	LIN. FEET	LUMP SUM	LUMP SUM	CU. FT.	SY	TONS
1,212	32	2	1,212	67	1,212	LUMP SUM	9,373	59	LUMP SUM	LUMP SUM	32	147	9

\* QUANTITIES FOR INFORMATION ONLY.

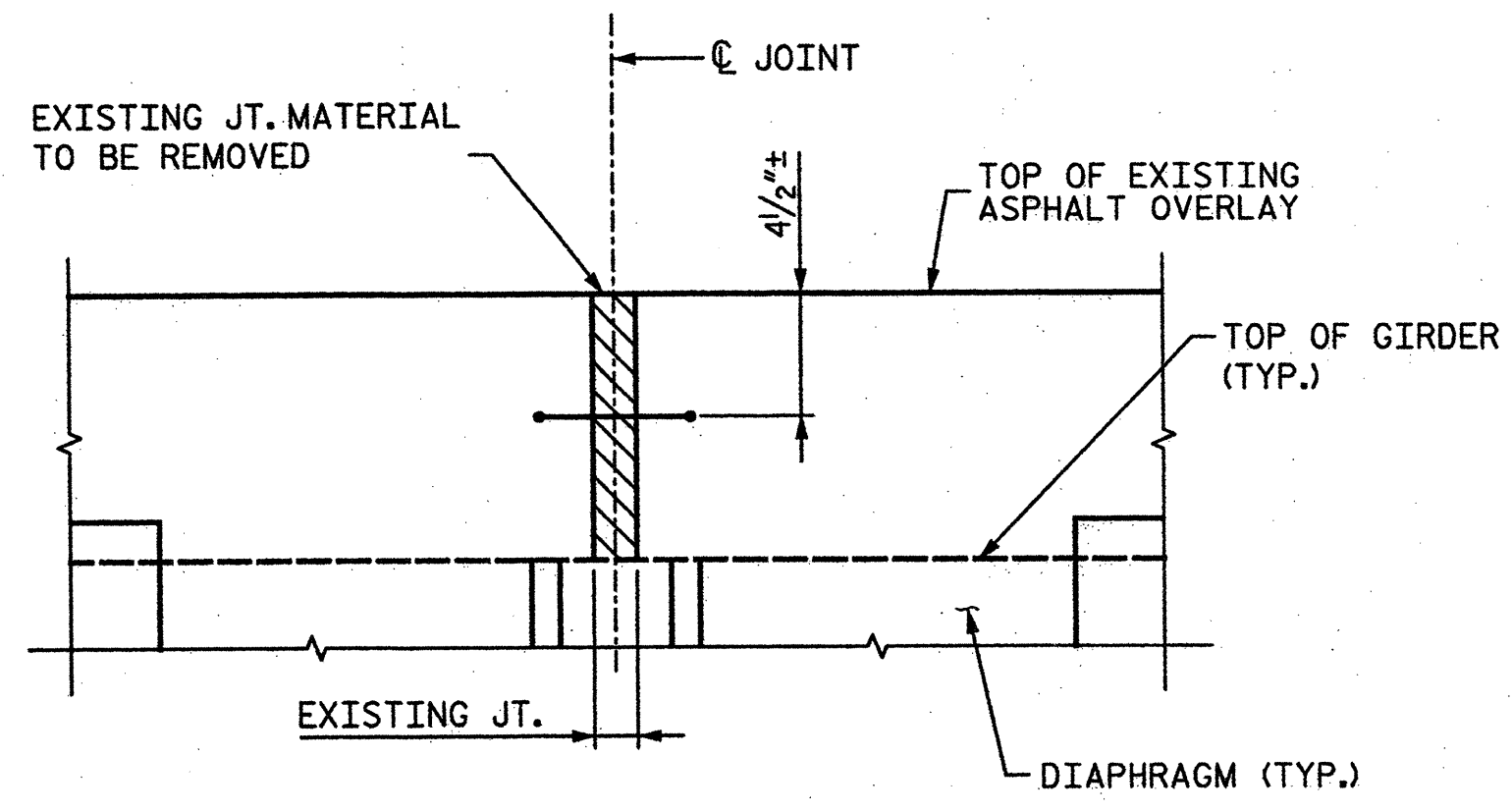
DRAWN BY: RWM DATE: 10-11  
CHECKED BY: DRG DATE: 10-11

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Charlotte, NC 28208  
NC License No. F-0991

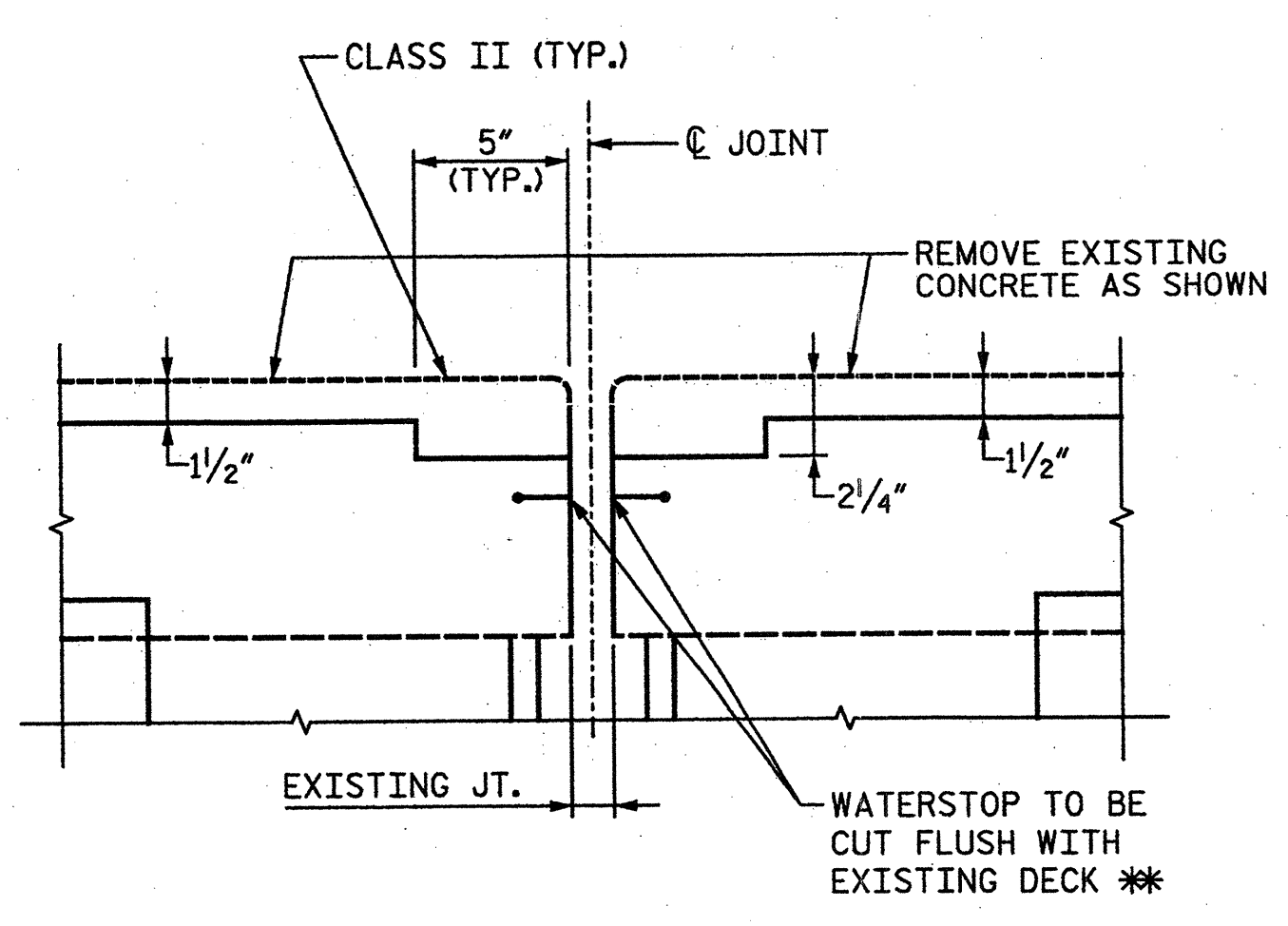
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36	
1			3			TOTAL SHEETS	
2			4			57	

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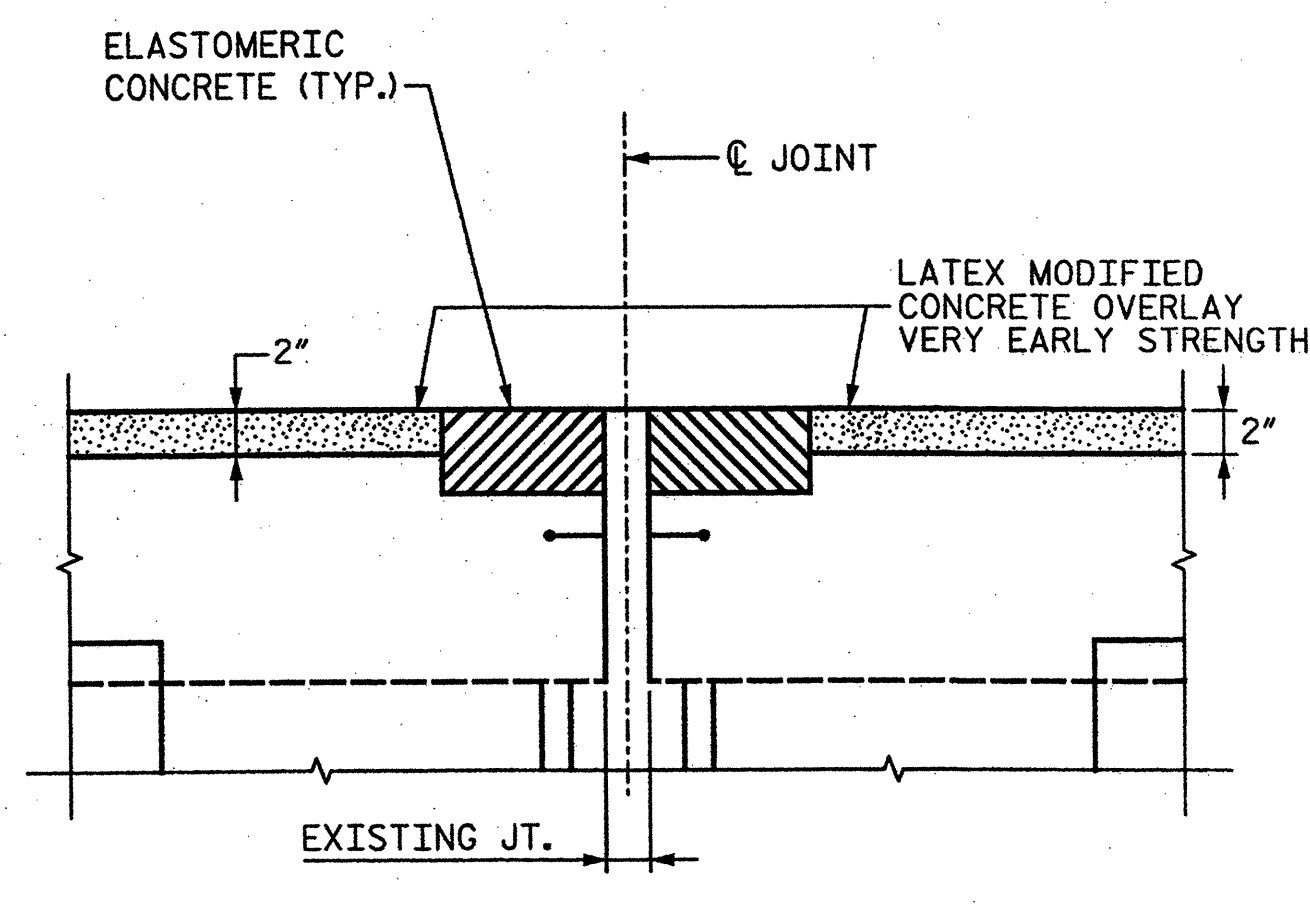
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 1/26/2012  
 RWM



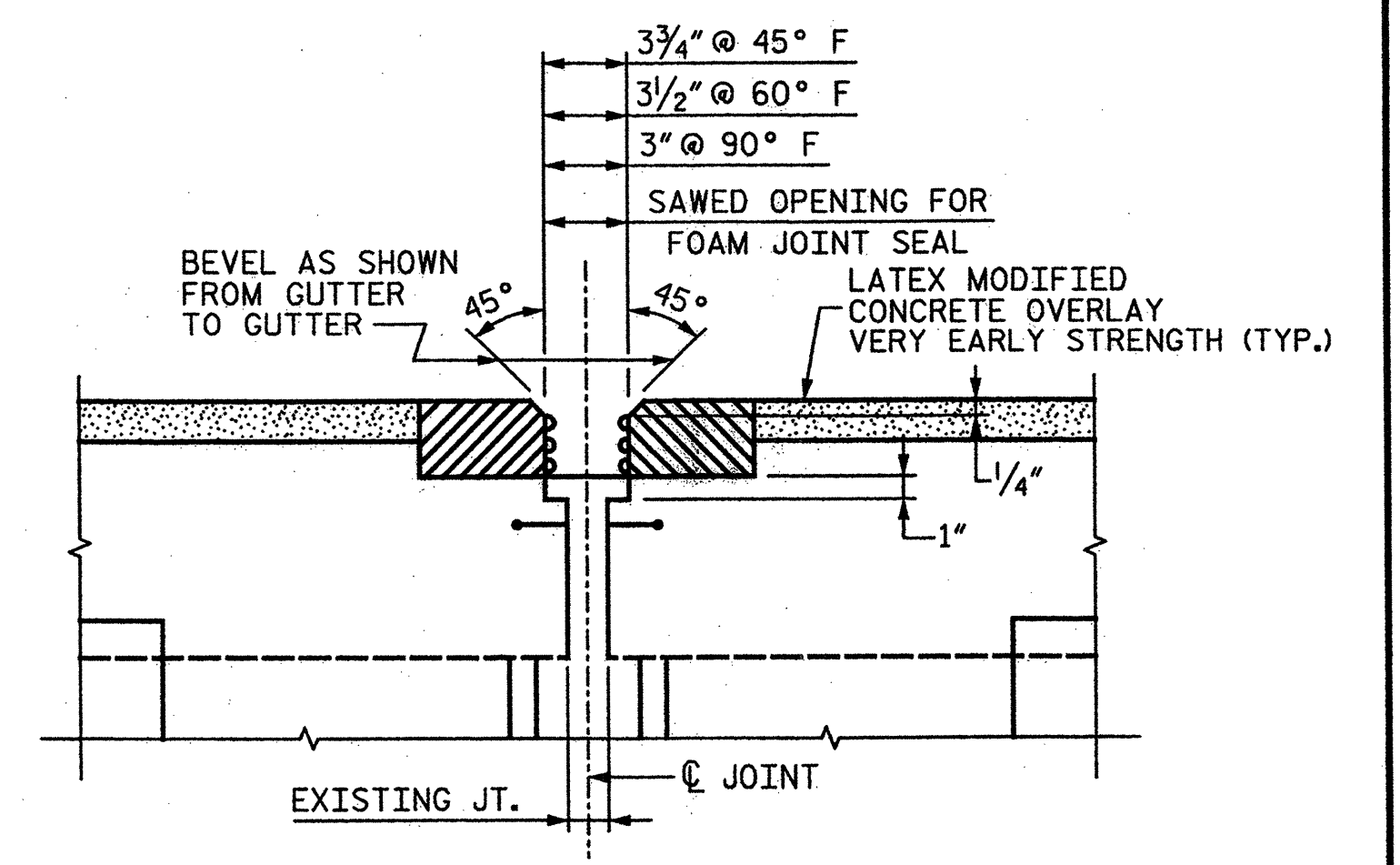
**SECTION A-A**  
(EXISTING JOINT)  
(EXISTING AWS NOT SHOWN)



**SECTION A-A**  
(DEMO OF JOINT)

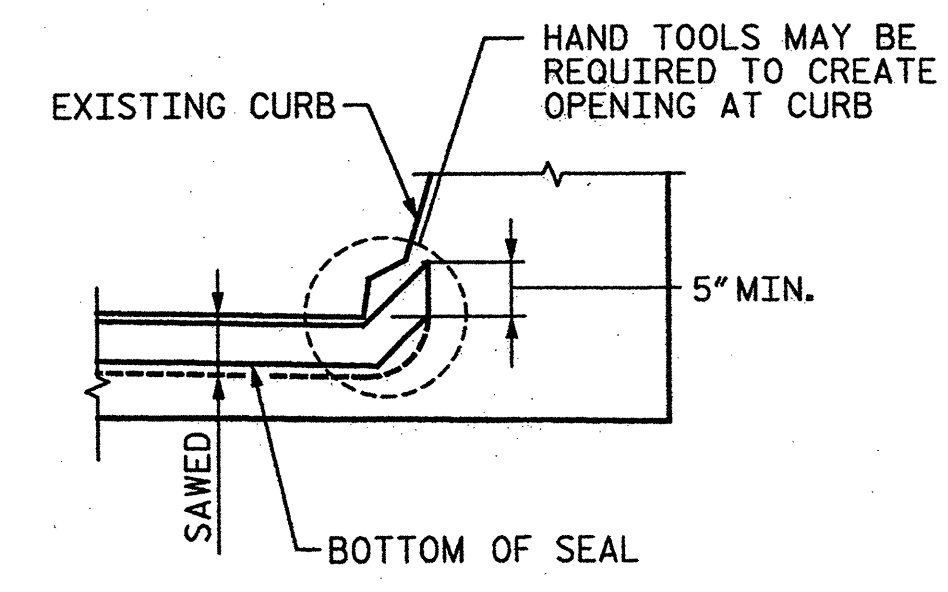


**SECTION A-A**  
(PROPOSED JOINT PRE-SAWED)

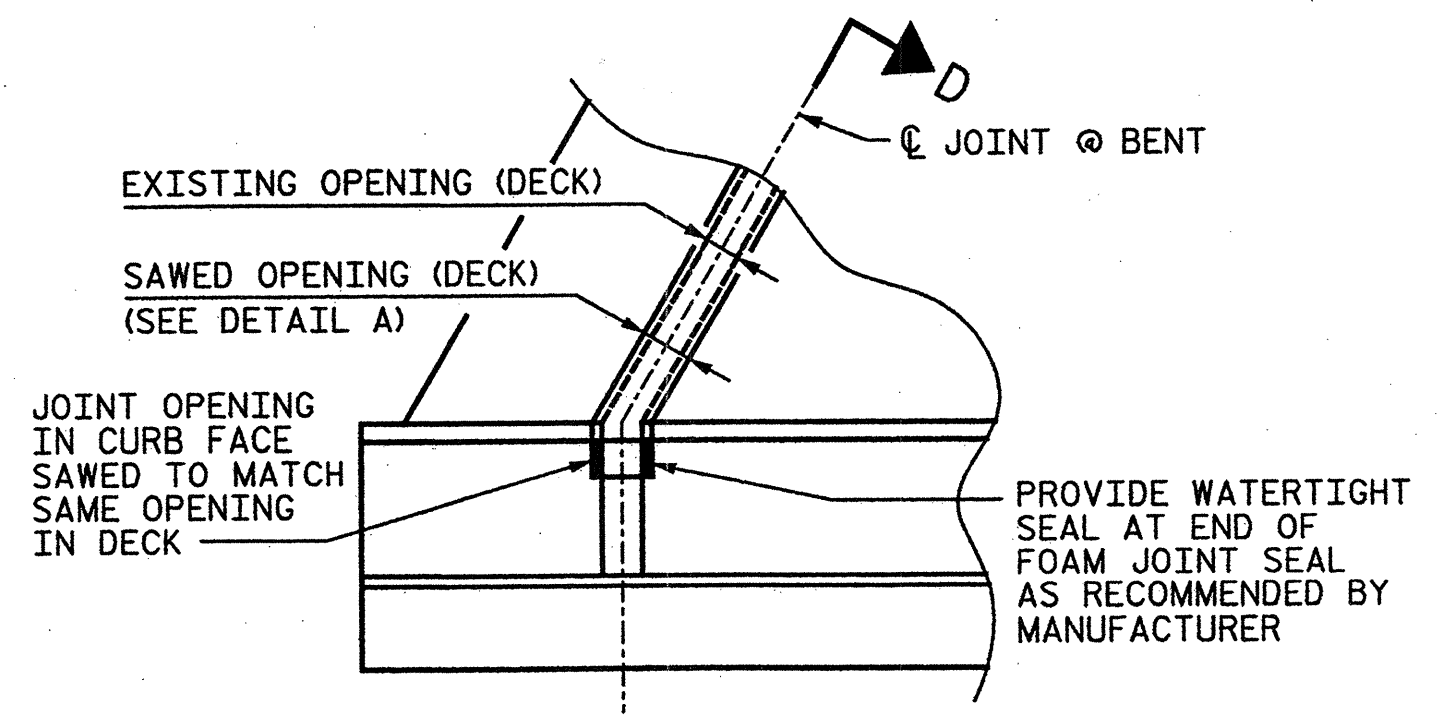


**SECTION A-A**  
(PROPOSED JOINT)

\*\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.



**SECTION D-D**



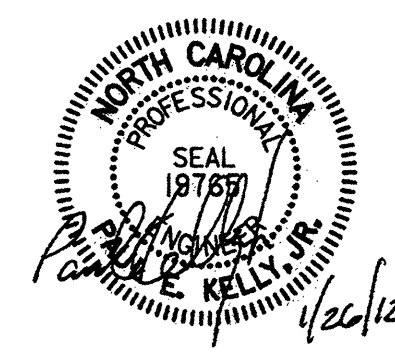
**PLAN OF JOINT SEAL AT CURB**

**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" AT BENTS.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
- ELASTOMER CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

PROJECT NO. **17BP.14.P.4**  
**HAYWOOD** COUNTY  
 BRIDGE NO.: **203**  
 REHAB. OF BRIDGE NO. 203 SHEET 5 OF 8

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**JOINT DETAILS**  
 BRIDGE ON US 276  
 OVER JONATHAN CREEK



DRAWN BY : **RWM** DATE : **10-11**  
 CHECKED BY : **DRG** DATE : **10-11**

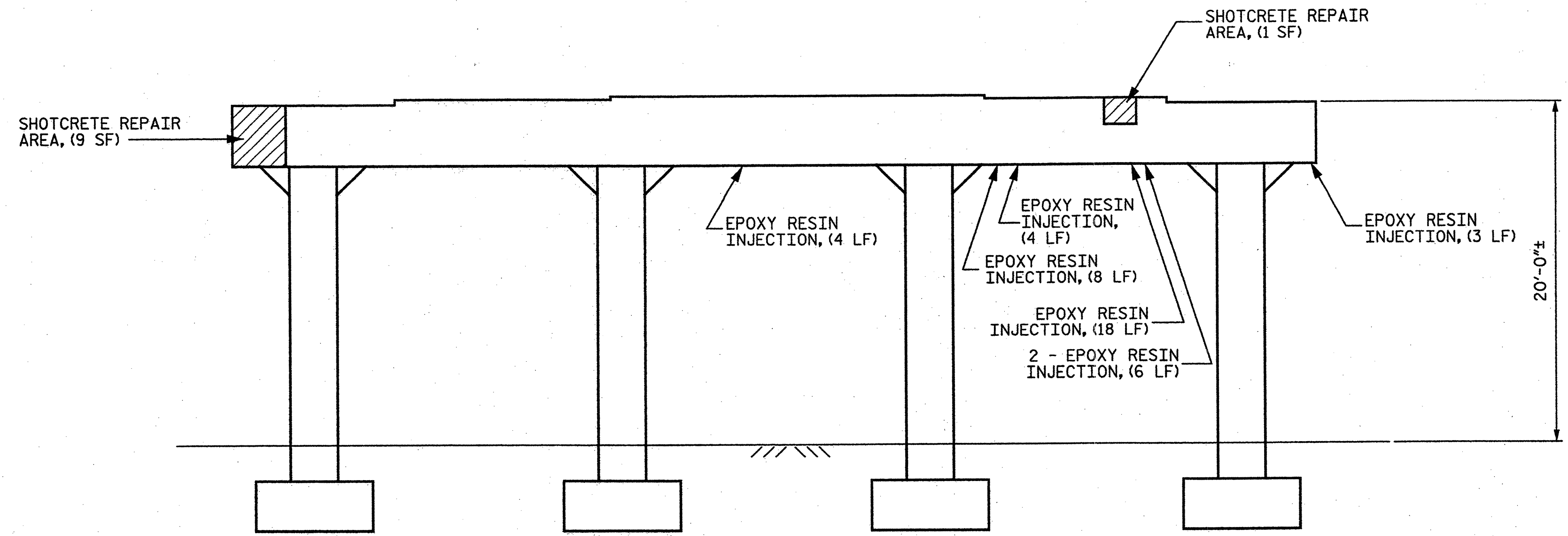
STV / Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

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

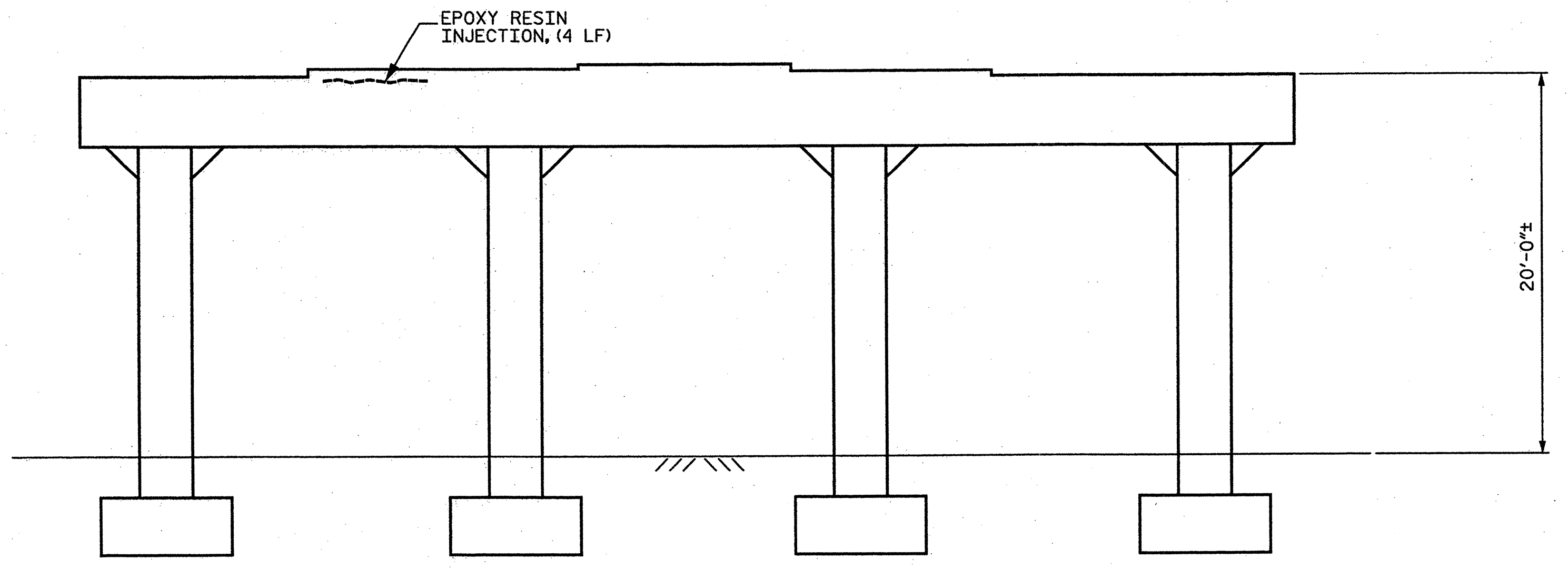
TOTAL SHEETS: 57



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1/26/2012



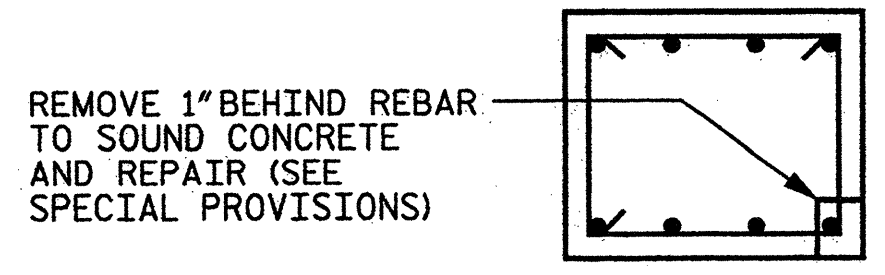
ELEVATION - SOUTH FACE LOOKING NORTH



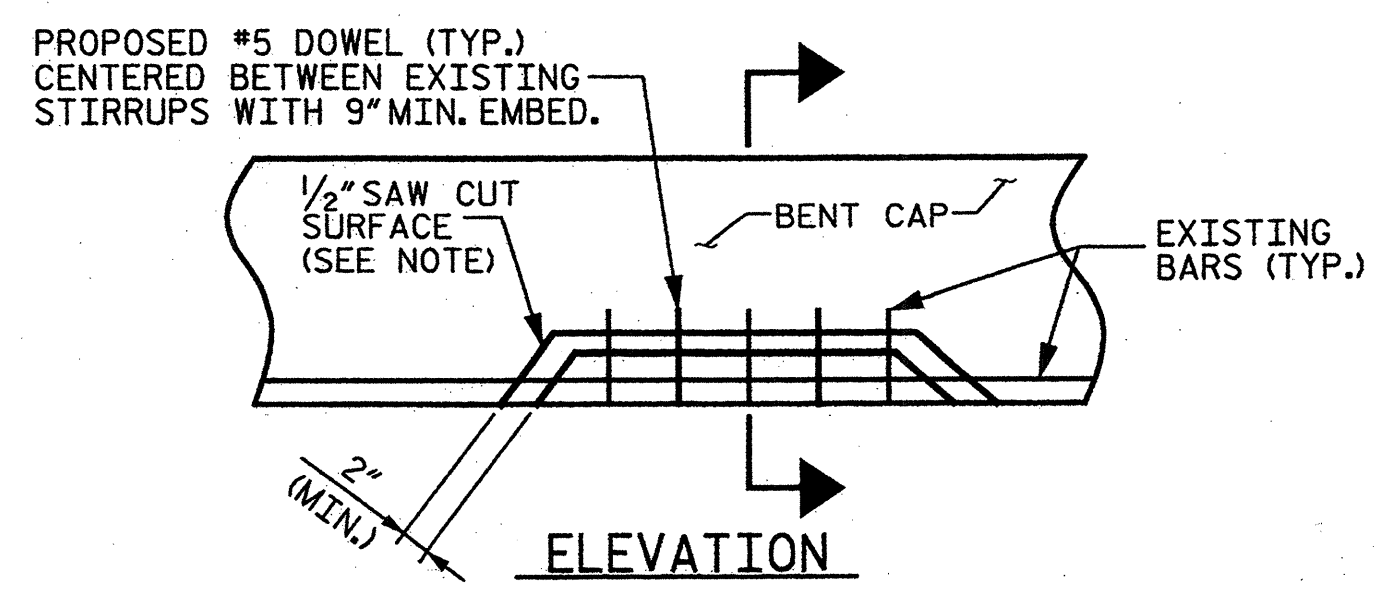
ELEVATION - NORTH FACE LOOKING SOUTH

**NOTES:**

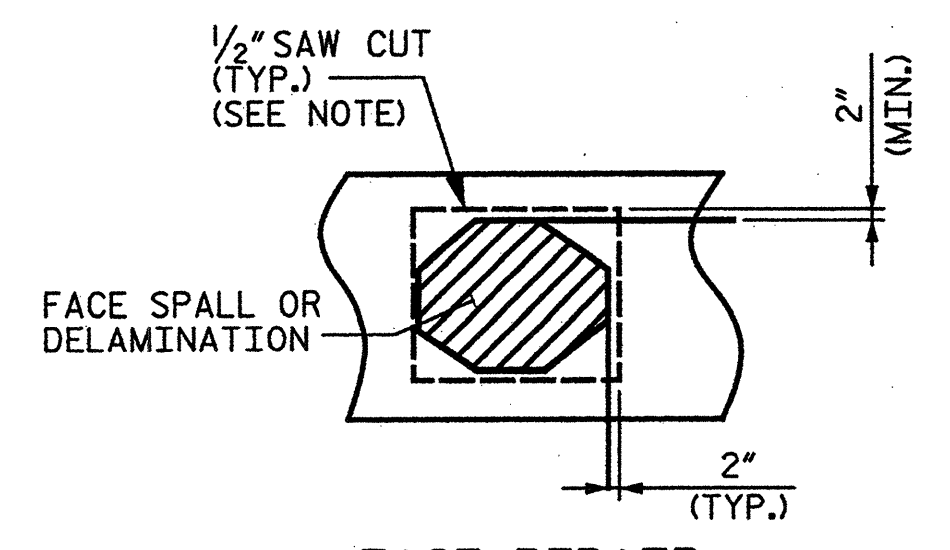
1. CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
2. FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
3. SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND 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. BENT CAP REPAIRS IN BEARING AREAS SHALL BE PERFORMED WITH CLASS A CONCRETE.
8. BRIDGE JACKING IS REQUIRED FOR CONCRETE REPAIRS THAT EXTEND UNDER A BEARING PLATE. FOR JACKING DETAILS AND NOTES, SEE SHEET S-57.
9. SEE SHEET 1 OF 8 FOR ADDITIONAL NOTES.
10. SUBSTRUCTURE REPAIRS SHALL PROVIDE A MINIMUM OF 2" CLEAR COVER TO REINFORCING STEEL. REPAIRED AREAS MAY BE BUILT OUT TO ACHIEVE CLEARANCE.
11. EPOXY COATING SHALL BE APPLIED TO THE TOP OF ALL BENT CAPS. COST SHALL BE INCLUDED IN OTHER BENT REPAIRS.
12. THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO PREVENT DEBRIS AND MATERIALS FROM FALLING, ROLLING, OR BLOWING ONTO BEAMS, GIRDERS, BEARINGS OR ANY OTHER UNINTENDED SURFACES. CONSIDERATION SHALL BE GIVEN TO THE USE OF SCREENS TO PROTECT OTHER PORTIONS OF THE BRIDGE.



SECTION



CORNER REPAIR



FACE REPAIR

TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTE: CONTRACTOR SHALL SAW CUT TO A MAXIMUM DEPTH OF 1/2". THIS DEPTH SHALL BE REDUCED TO PREVENT DAMAGE TO EXISTING REINFORCEMENT. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 203  
 REHAB. OF BRIDGE NO. 203 SHEET 6 OF 8



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**BENT 1  
 STRUCTURE REPAIR**  
 BRIDGE ON US 276  
 OVER JONATHAN CREEK

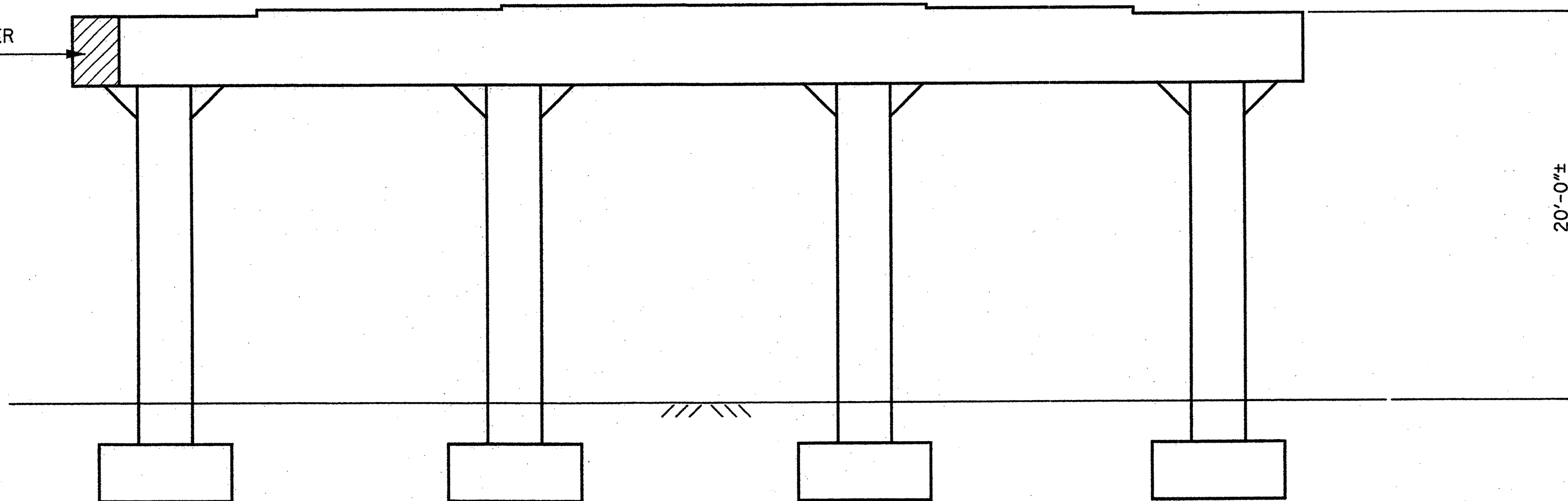
DRAWN BY : RWM DATE : 10-11  
 CHECKED BY : DRG DATE : 10-11

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38	
1			3			TOTAL	57
2			4			SHEETS	



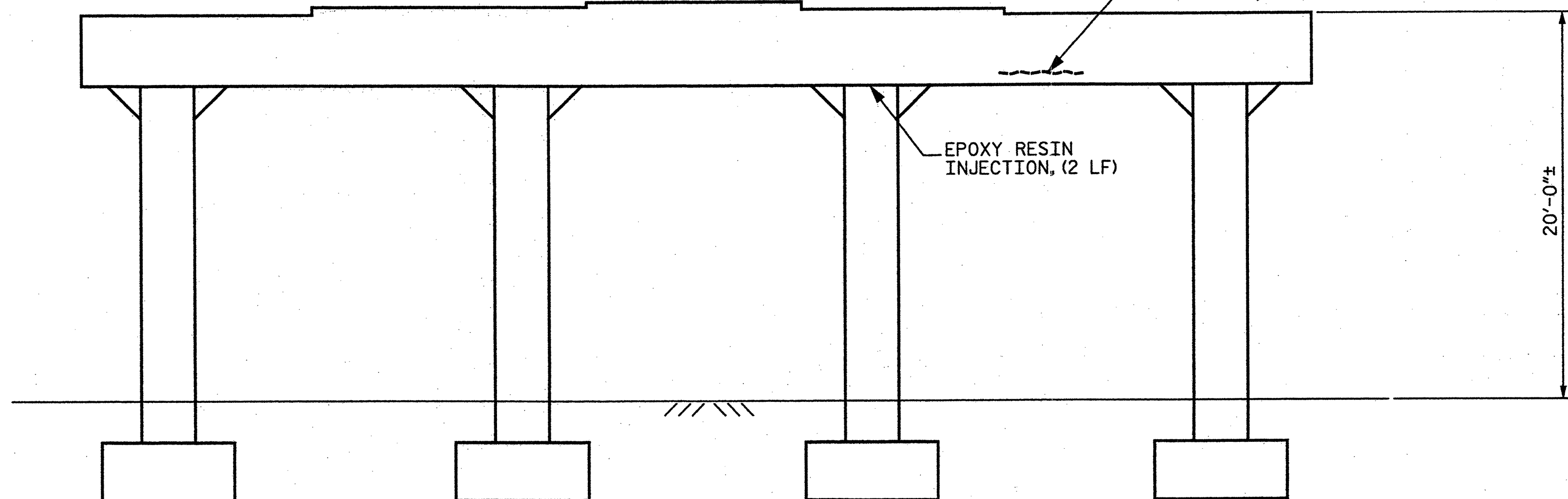
SHOTCRETE REPAIR  
AREA, (3 SF)



ELEVATION - SOUTH FACE LOOKING NORTH

EPOXY RESIN  
INJECTION, (2 LF)

EPOXY RESIN  
INJECTION, (2 LF)



ELEVATION - NORTH FACE LOOKING SOUTH

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DRAWN BY : RWM      DATE : 10-11  
CHECKED BY : DRG      DATE : 10-11

PROJECT NO. 17BP.14.P.4

HAYWOOD COUNTY

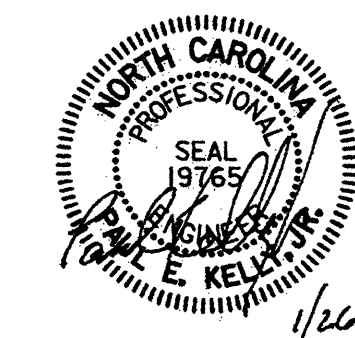
BRIDGE NO.: 203

REHAB. OF BRIDGE NO. 203      SHEET 7 OF 8

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 2  
STRUCTURE REPAIR

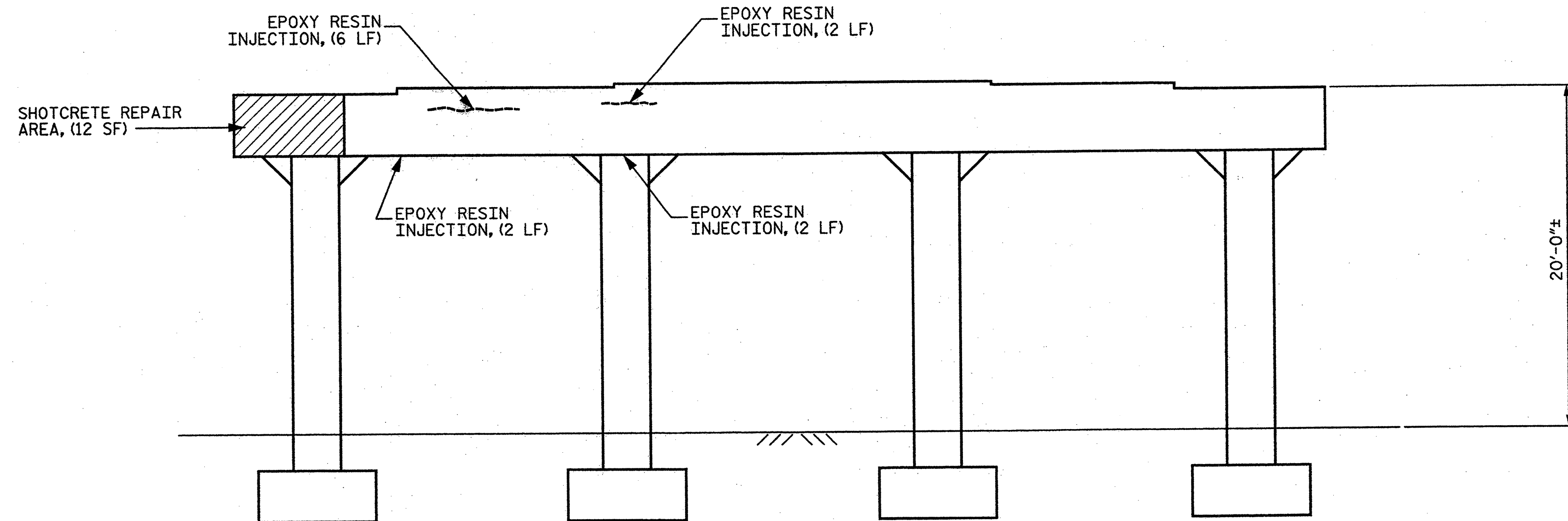
BRIDGE ON US 276  
OVER JONATHAN CREEK



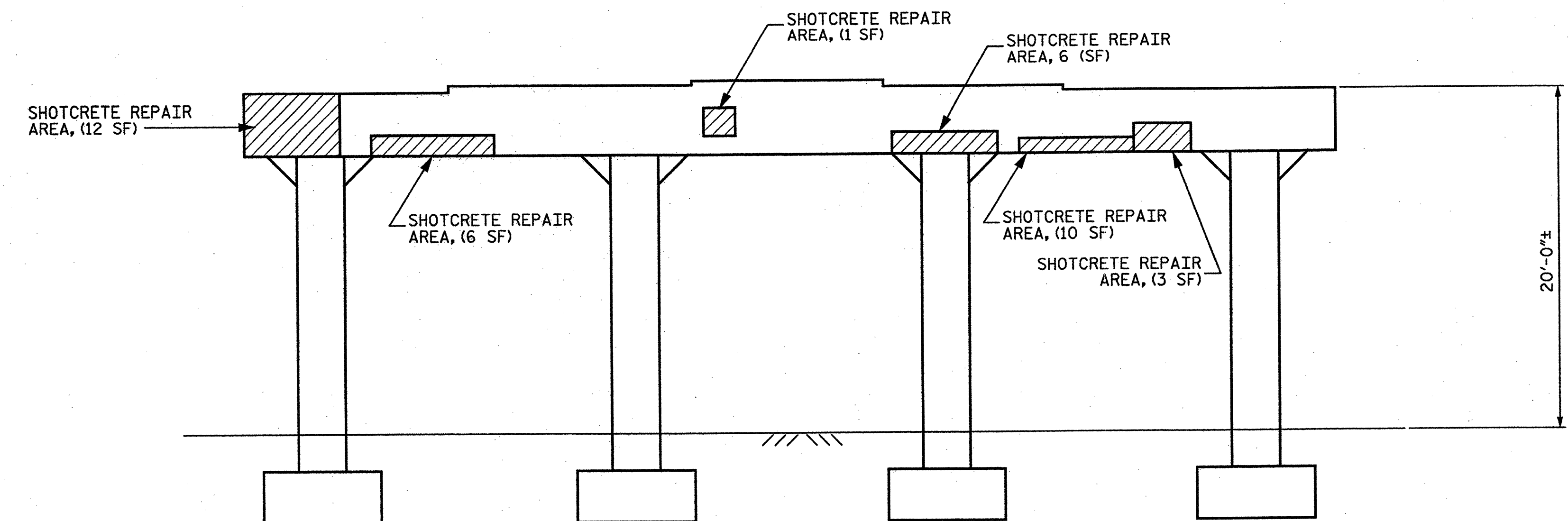
STV/Ralph Whitehead Associates, Inc.  
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NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			57

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1/26/2012



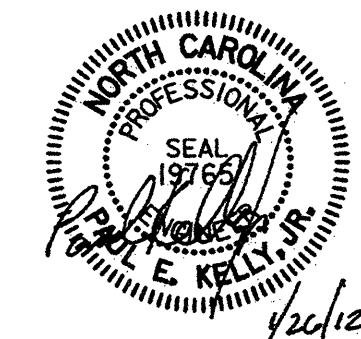
ELEVATION - SOUTH FACE LOOKING NORTH



ELEVATION - NORTH FACE LOOKING SOUTH

PROJECT NO. 17BP.14.P.4  
HAYWOOD COUNTY  
 BRIDGE NO.: 203  
 REHAB. OF BRIDGE NO. 203 SHEET 8 OF 8

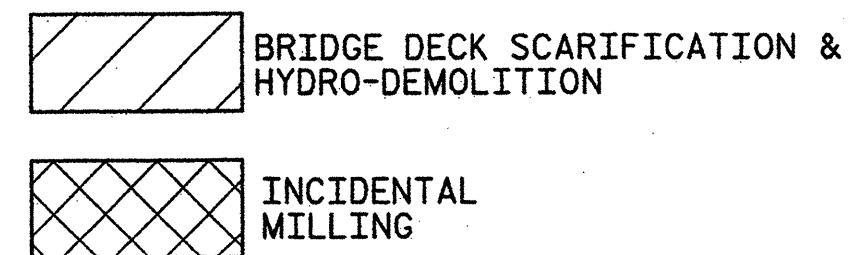
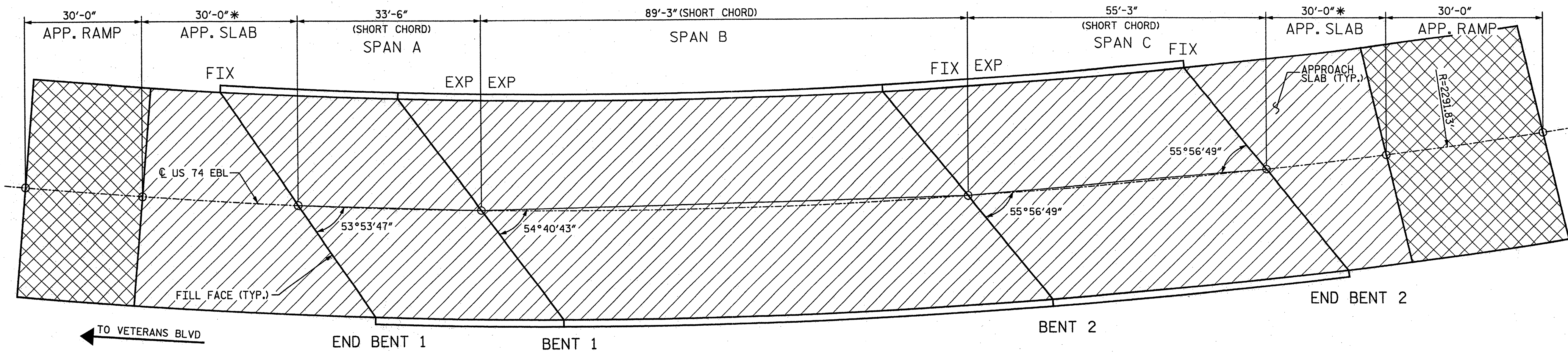
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**BENT 3  
 STRUCTURE REPAIR**  
 BRIDGE ON US 276  
 OVER JONATHAN CREEK



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 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-40
1			3			TOTAL SHEETS
2			4			57

DRAWN BY : RWM DATE : 10-11  
 CHECKED BY : DRG DATE : 10-11



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

**NOTES:**

FOR LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.

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

SEE SPECIAL PROVISIONS FOR SURFACE PREPARATION.

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN OFF WATER FROM HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.

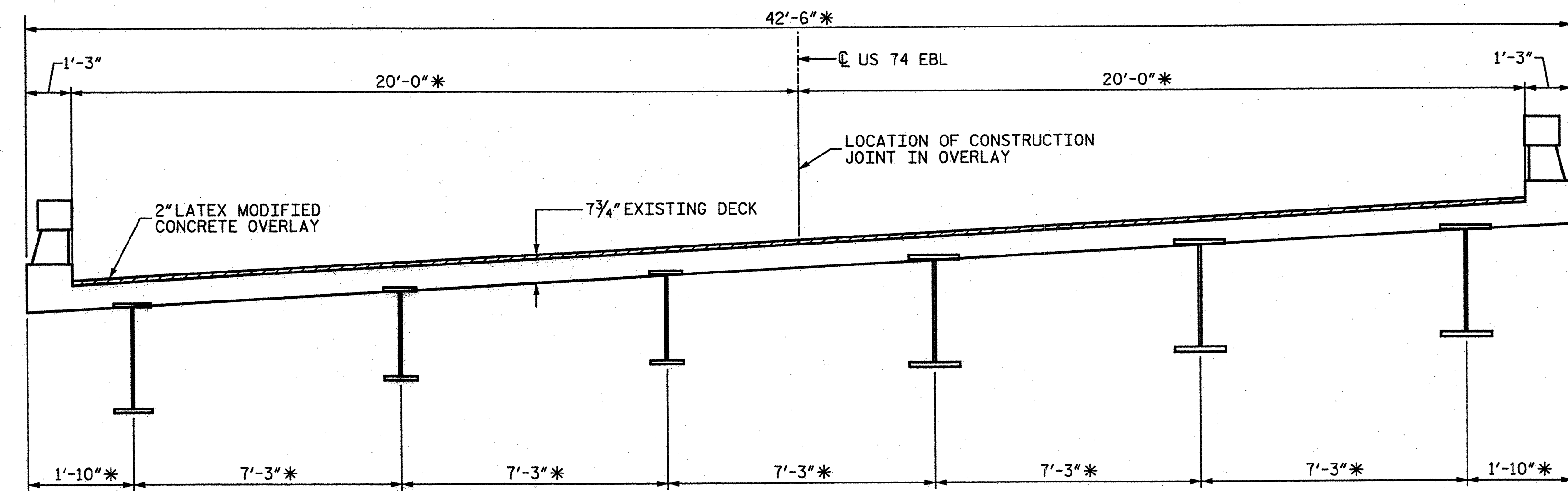
THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 3 OF 4 AND SPECIAL PROVISIONS.

EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.

BRIDGE DECK DRAINS SHALL BE PLUGGED DURING HYDRO-DEMOLITION PROCESS. SEE HYDRO-DEMOLITION SPECIAL PROVISION.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

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 110 LBS PER SQ. YD. PER 1" DEPTH. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.



**TYPICAL SECTION**

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

PROJECT NO. **17BP.14.P.4**  
**SWAIN** COUNTY  
 BRIDGE NO.: **18**  
 REHAB. OF BRIDGE NO. 18 SHEET 1 OF 4

TOTAL BILL OF MATERIAL									
DECK SCARIFICATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	SY	TONS
1058	355	31	1058	59	1058	LUMP SUM	8767	267	16

\* QUANTITIES FOR INFORMATION ONLY.



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 Charlotte, NC 28208  
 NC License No. F-0991

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS & TYPICAL SECTION**

BRIDGE ON US 74 EBL  
 OVER SR 1166

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

TOTAL SHEETS 57

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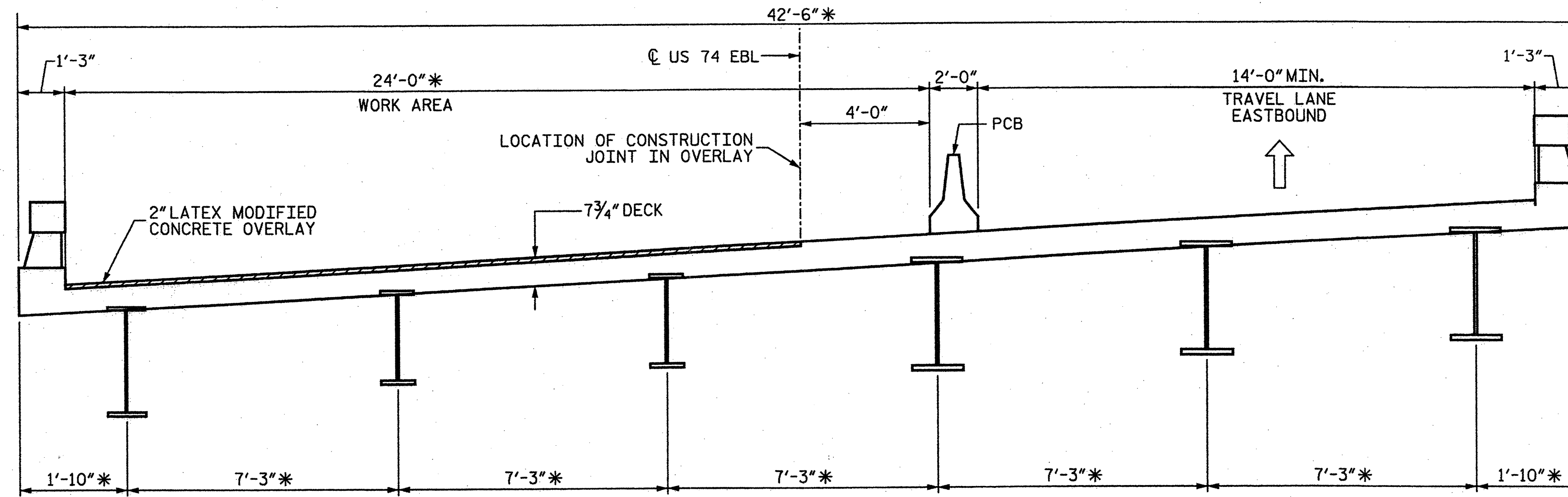
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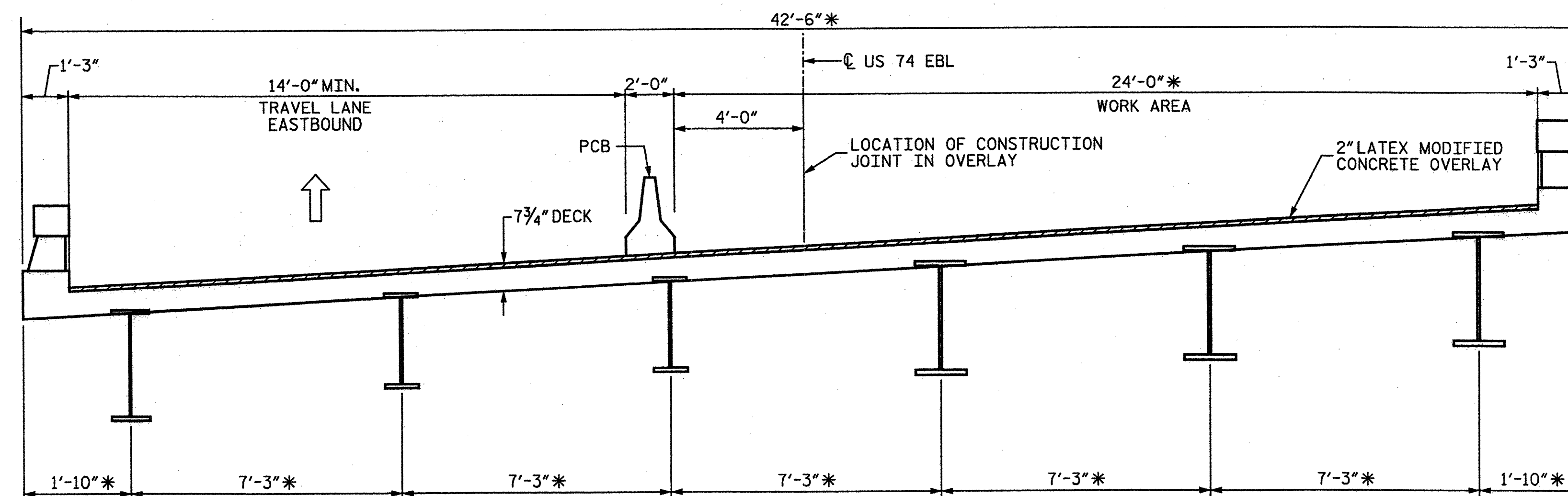
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WUVM

1/26/2012



TYPICAL SECTION - STAGE I

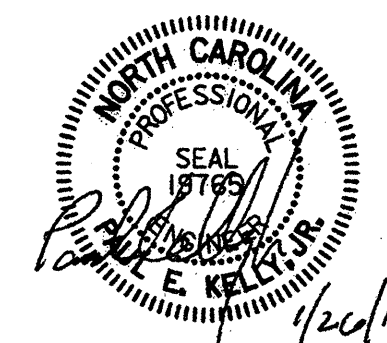


TYPICAL SECTION - STAGE II

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

DRAWN BY : SEC DATE : 10-11  
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 NC License No. F-0991



PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 18

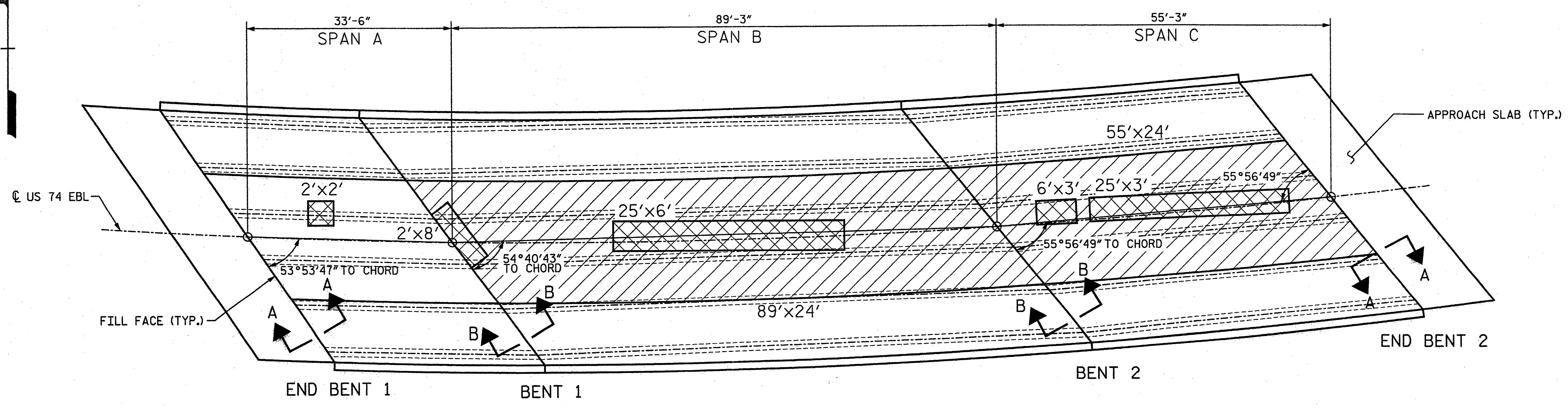
REHAB. OF BRIDGE NO. 18 SHEET 2 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STAGED CONSTRUCTION

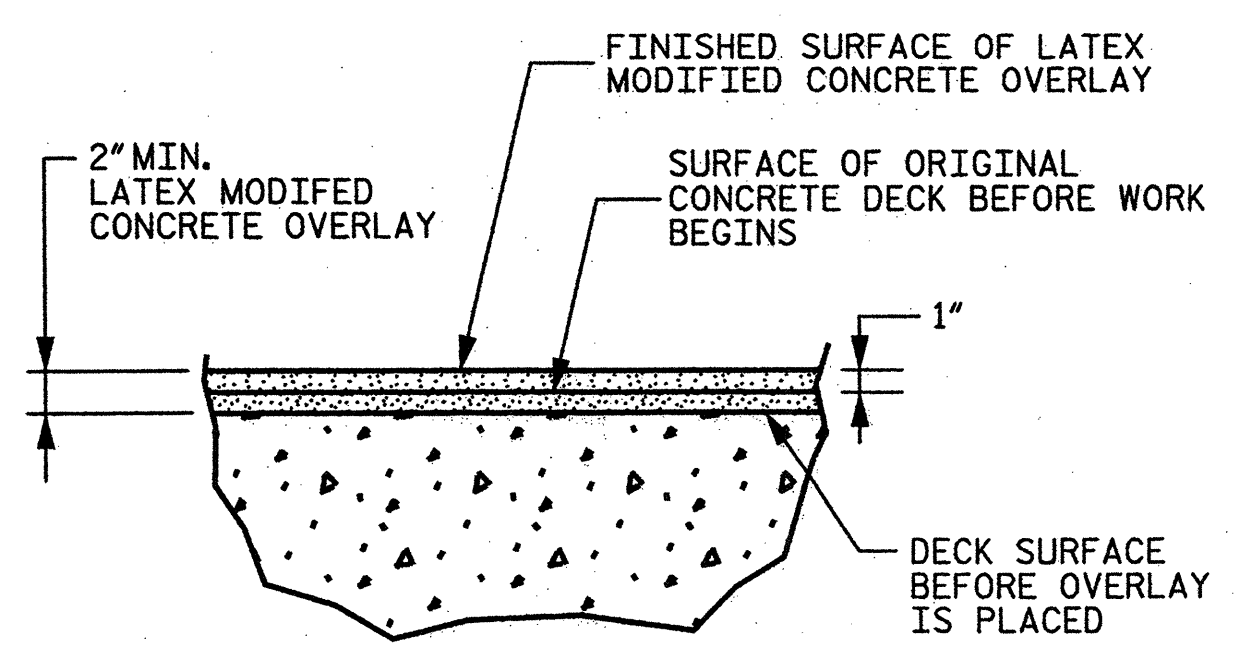
BRIDGE ON US 74 EBL  
 OVER SR 1166

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42	
1			3			TOTAL	57
2			4			SHEETS	

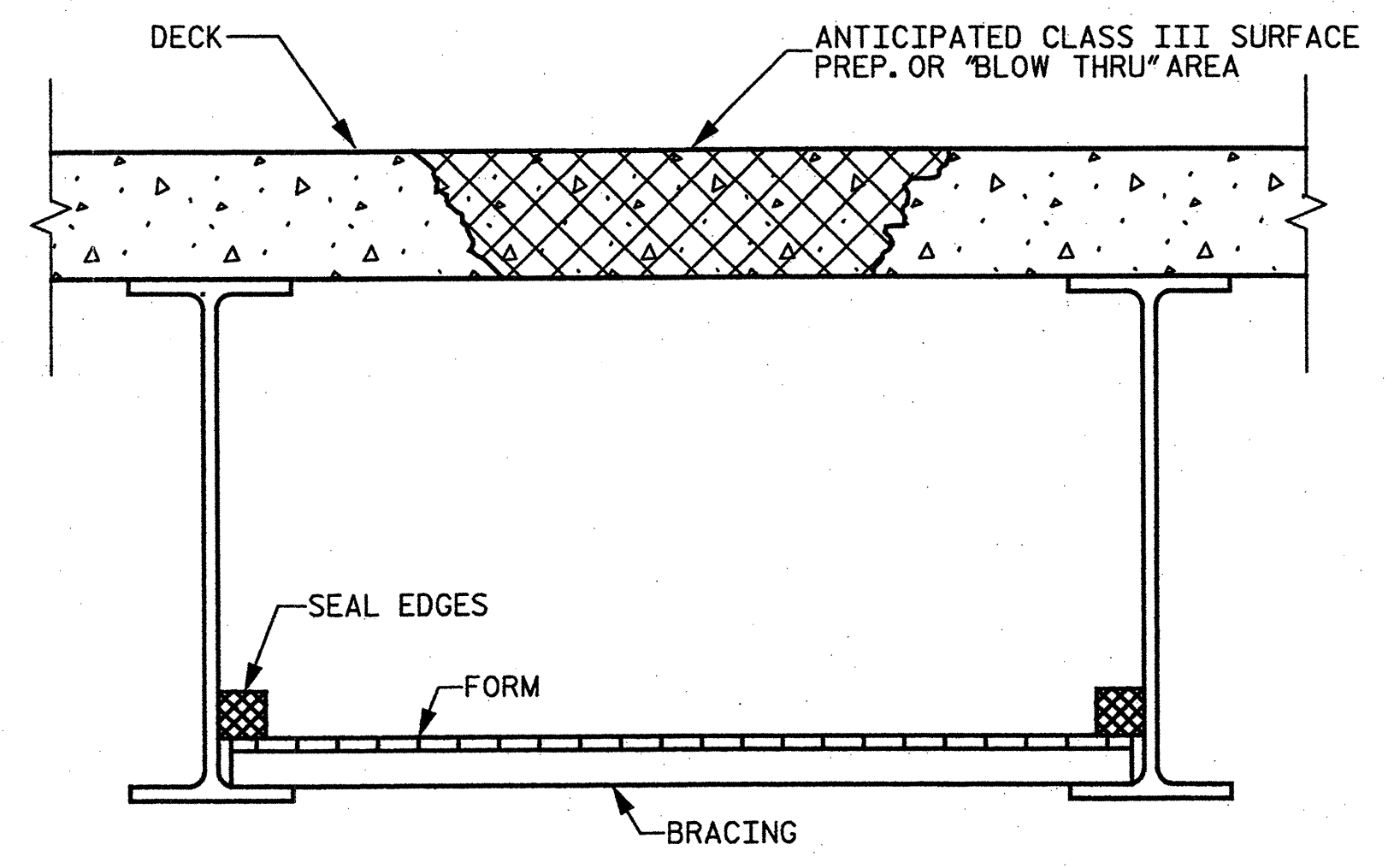


**PLAN OF SPANS - DECK REPAIRS**

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



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**



**TYP. "BLOW THRU" CONTAINMENT AND FORMWORK**

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

**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.
- FOR ADDITIONAL NOTES SEE SHEET 1 OF 4.

PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 18  
 REHAB. OF BRIDGE NO. 18 SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**OVERLAY DETAILS**  
 BRIDGE ON US 74 EBL  
 OVER SR 1166



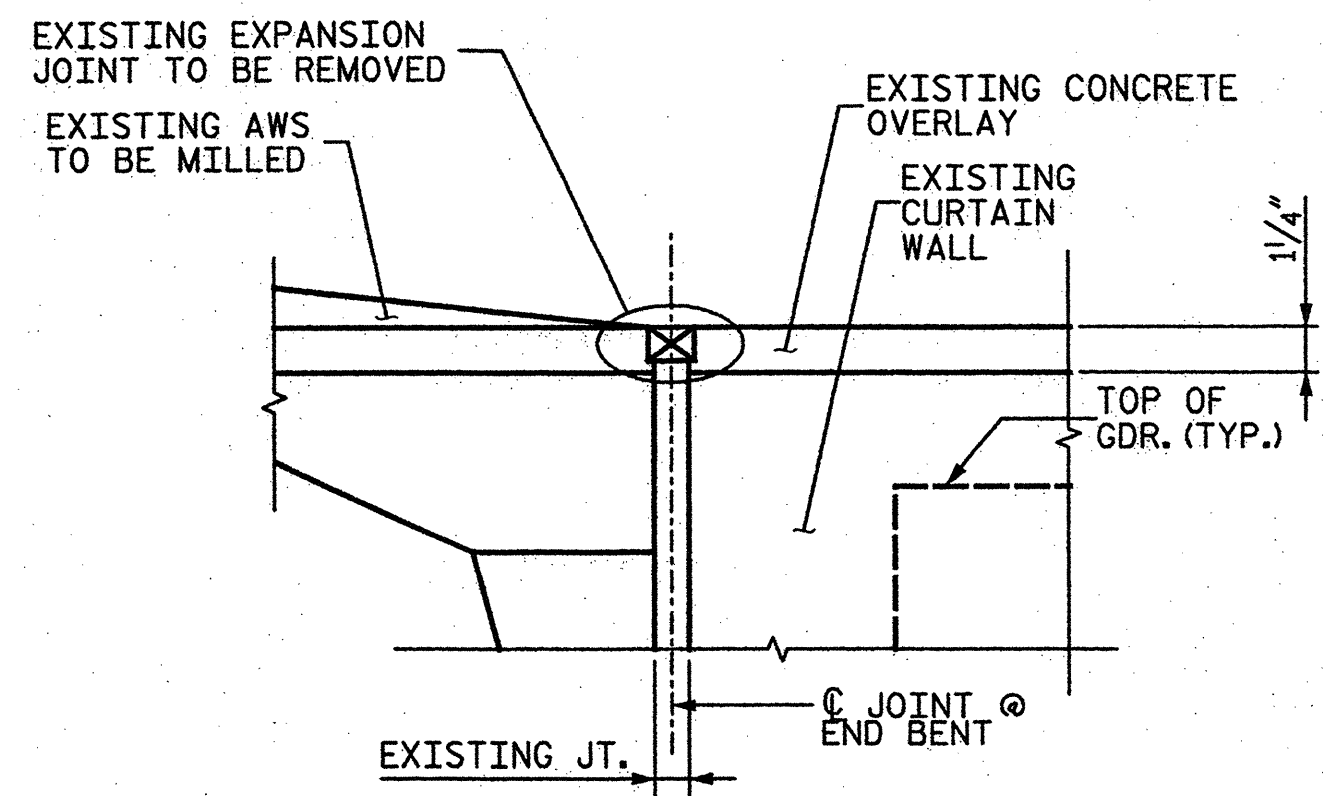
STV/Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

REVISIONS						SHEET NO.	
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2			4				

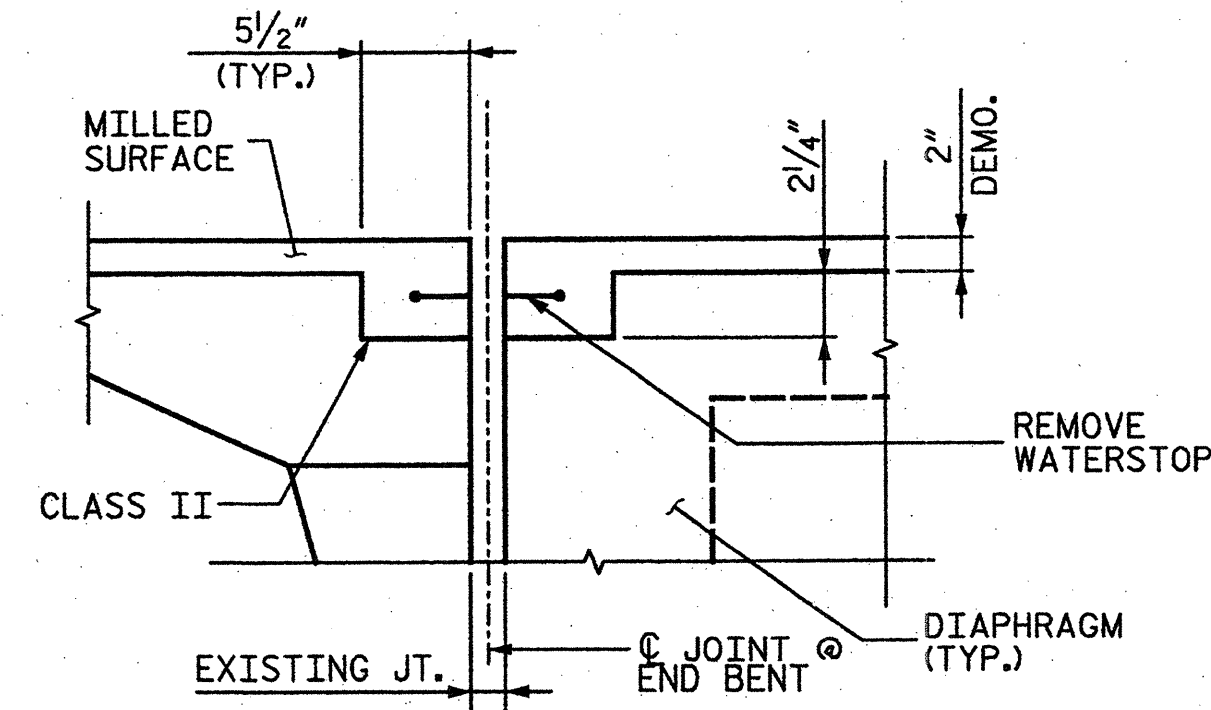
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 1/26/2012  
 WUVW

DRAWN BY: SEC DATE: 10-11  
 CHECKED BY: DRG DATE: 10-11

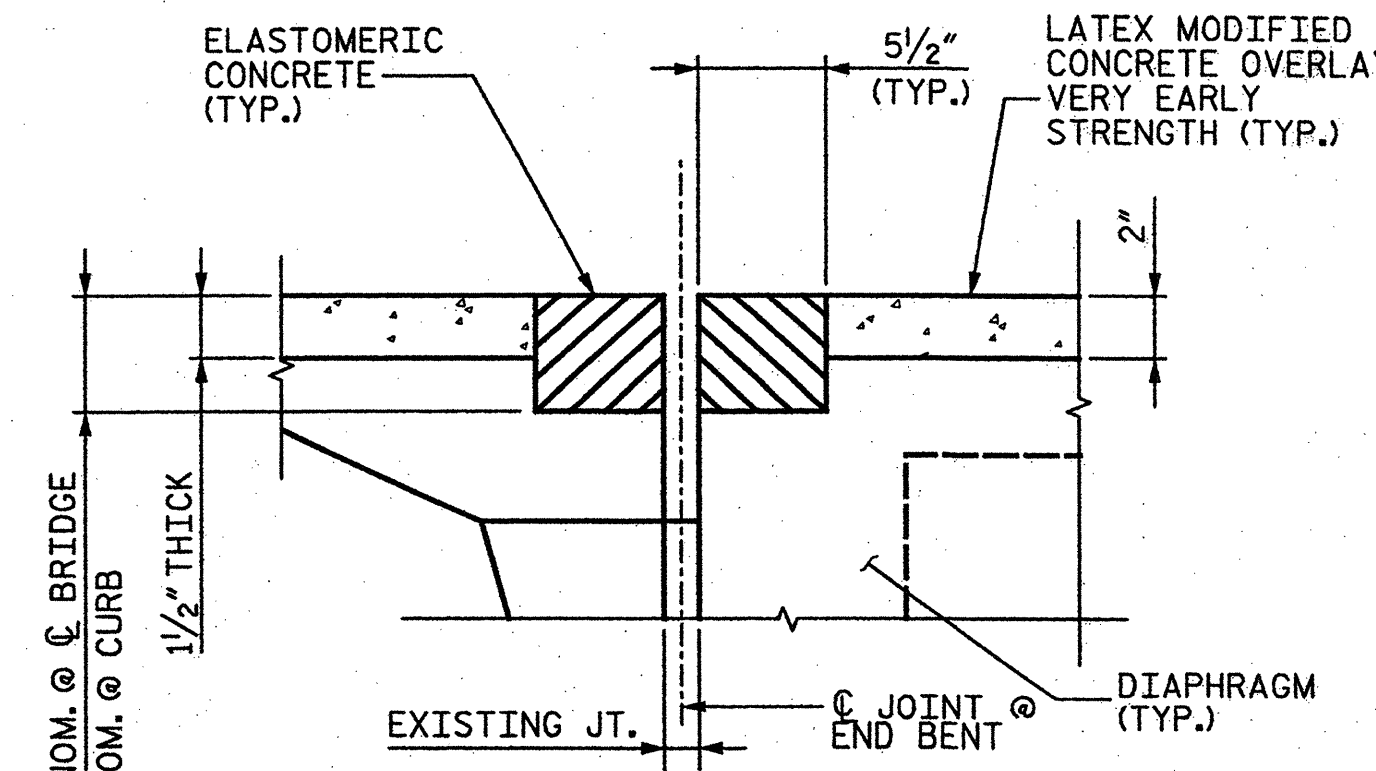
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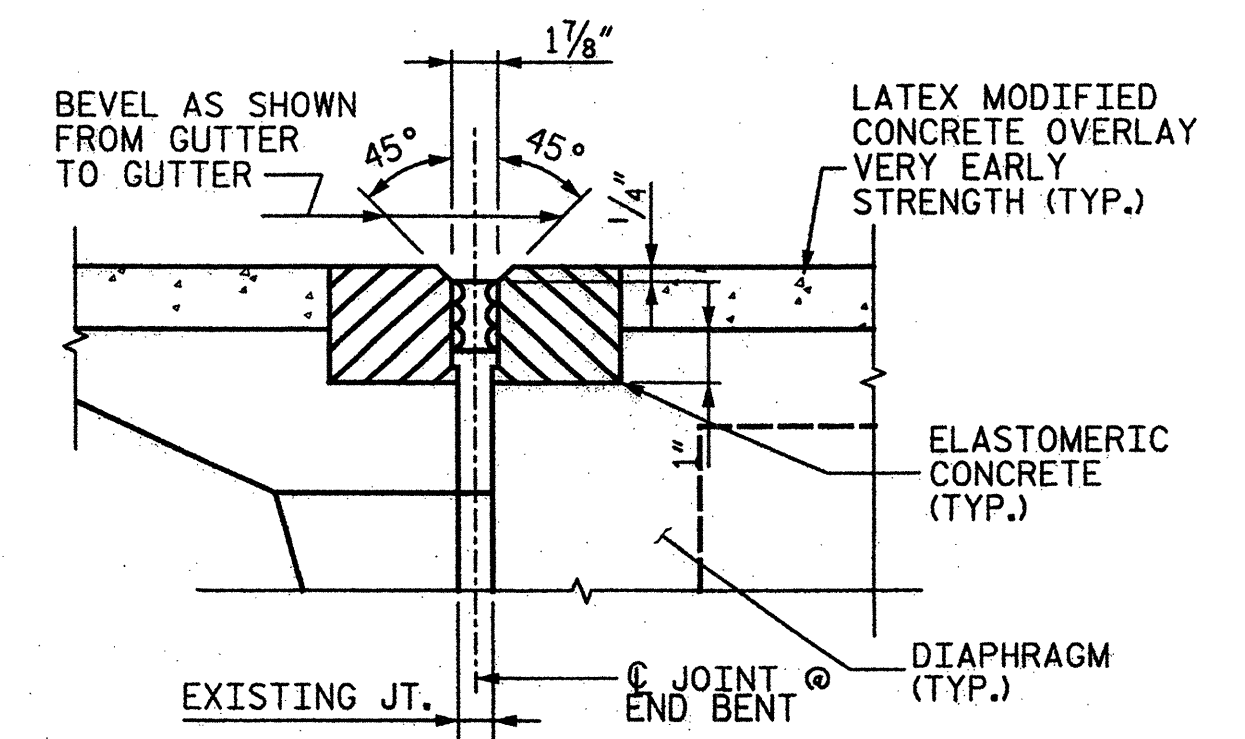
SECTION B-B



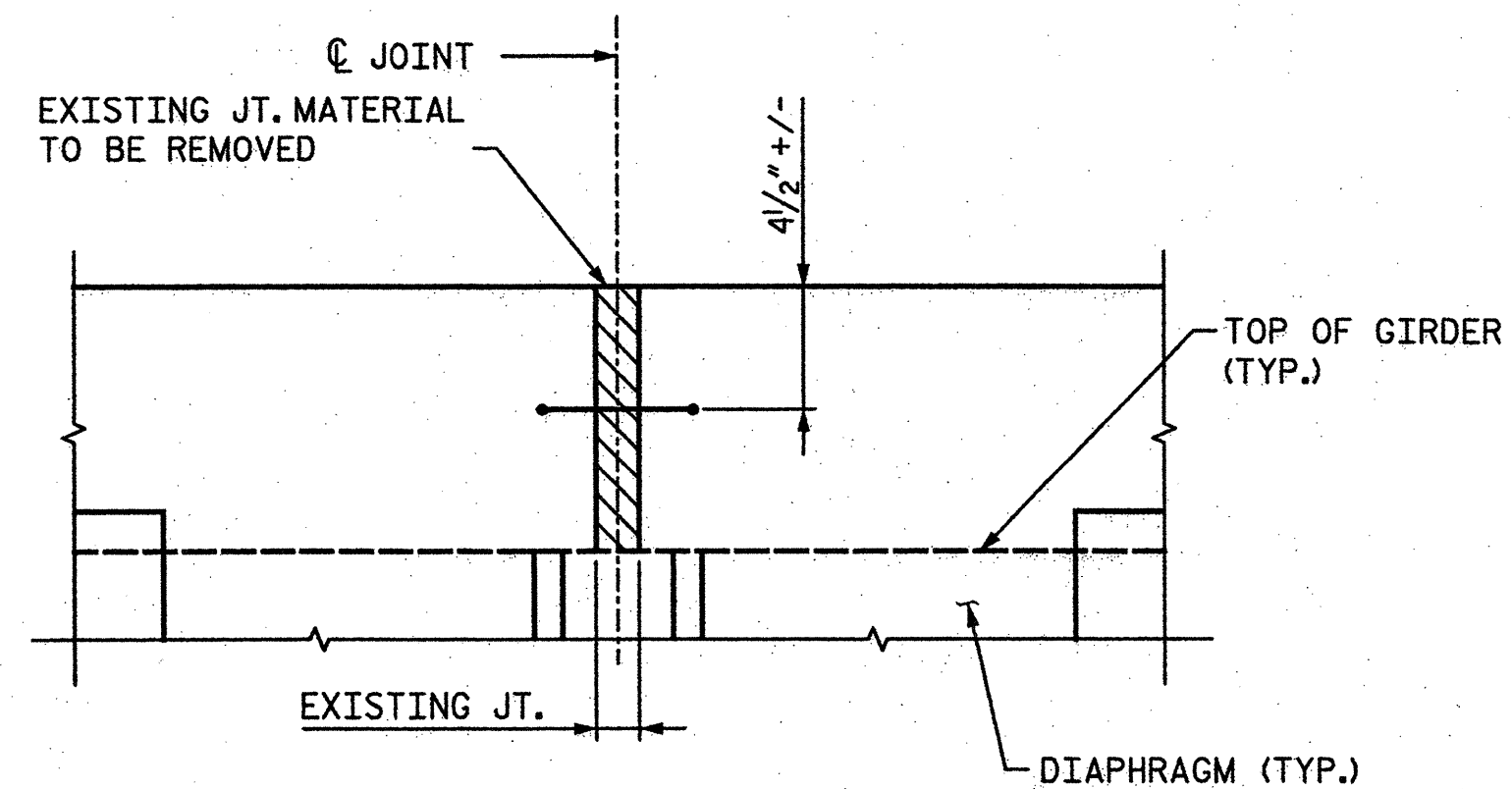
SECTION B-B



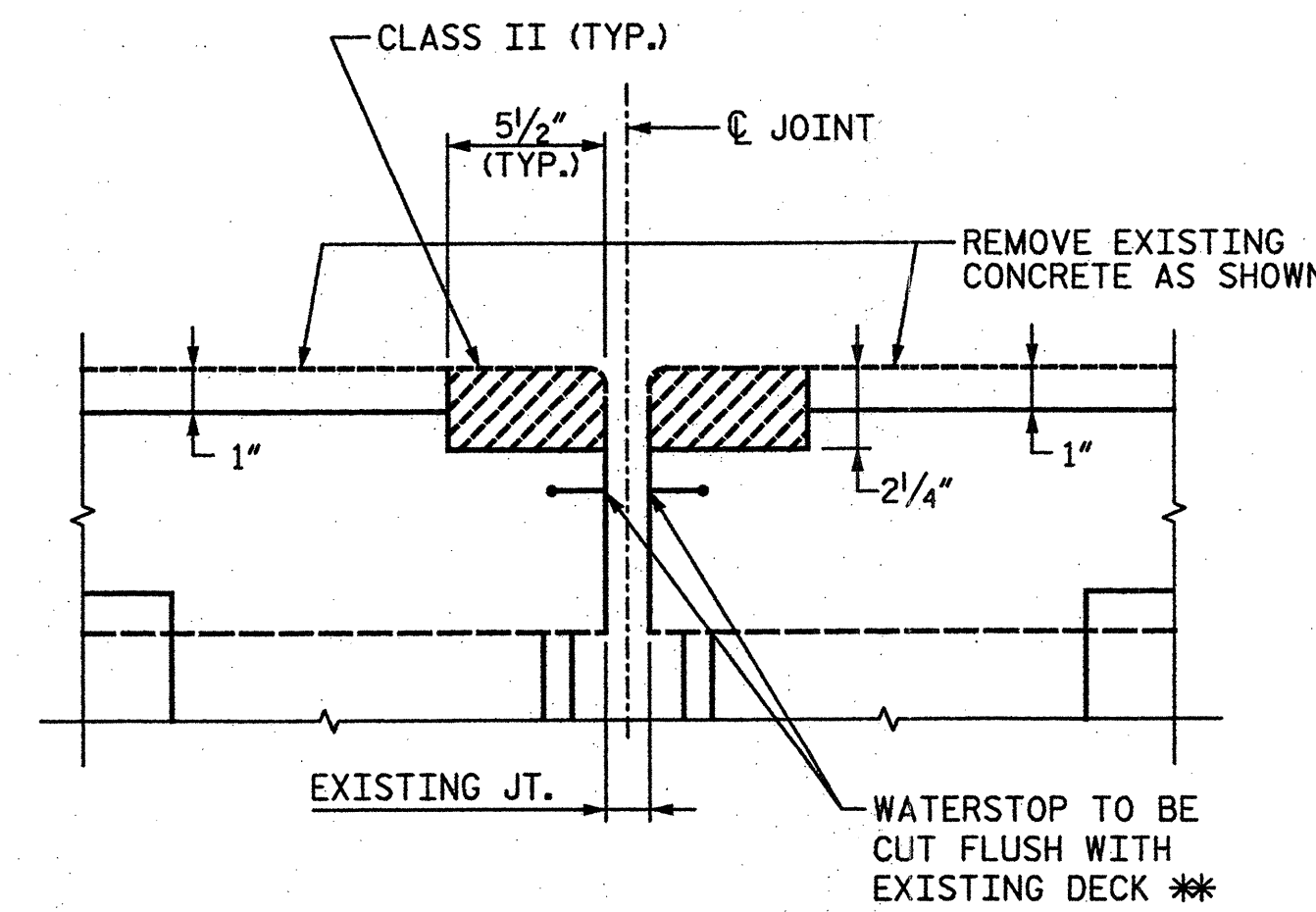
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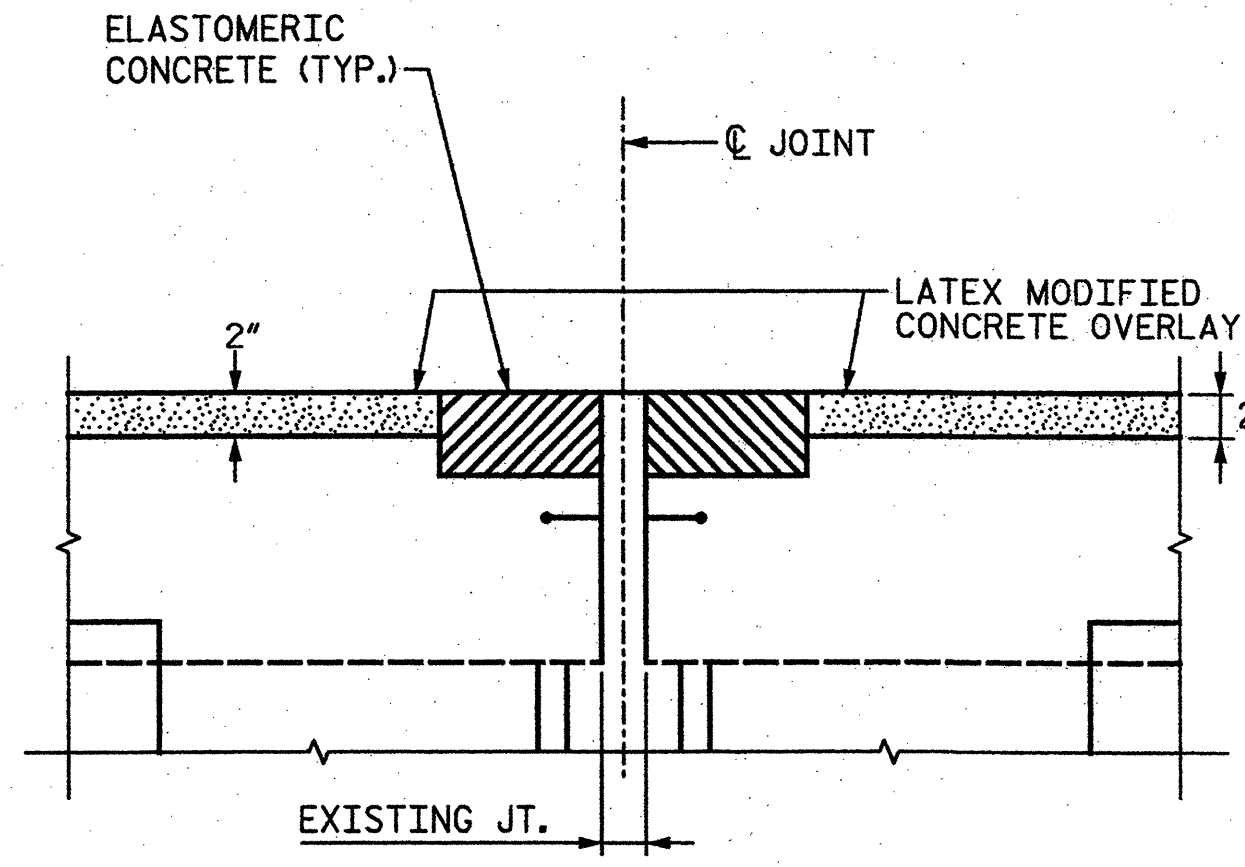
SECTION B-B



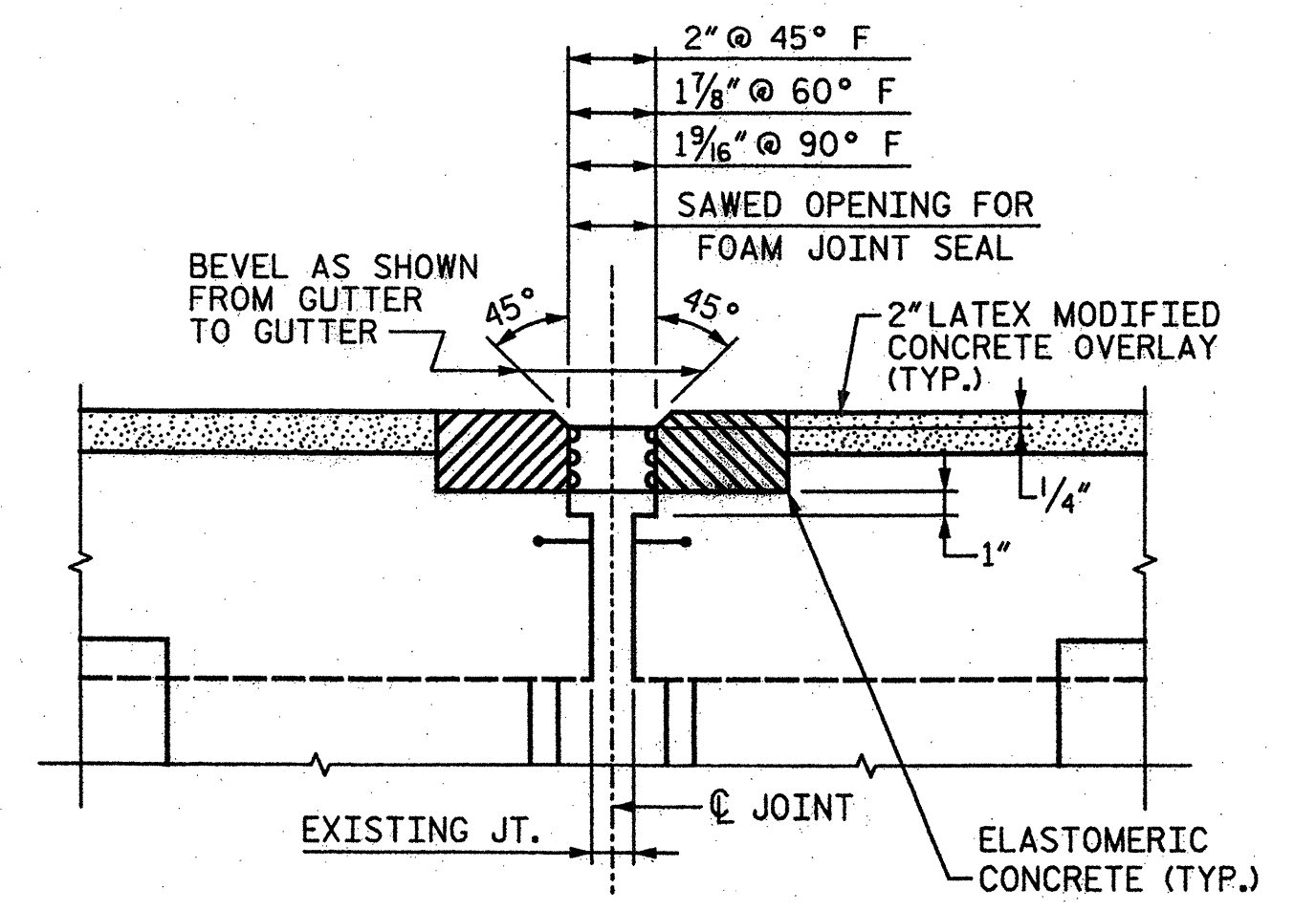
SECTION B-B  
(EXISTING JOINT)



SECTION B-B  
(DEMO OF JOINT)

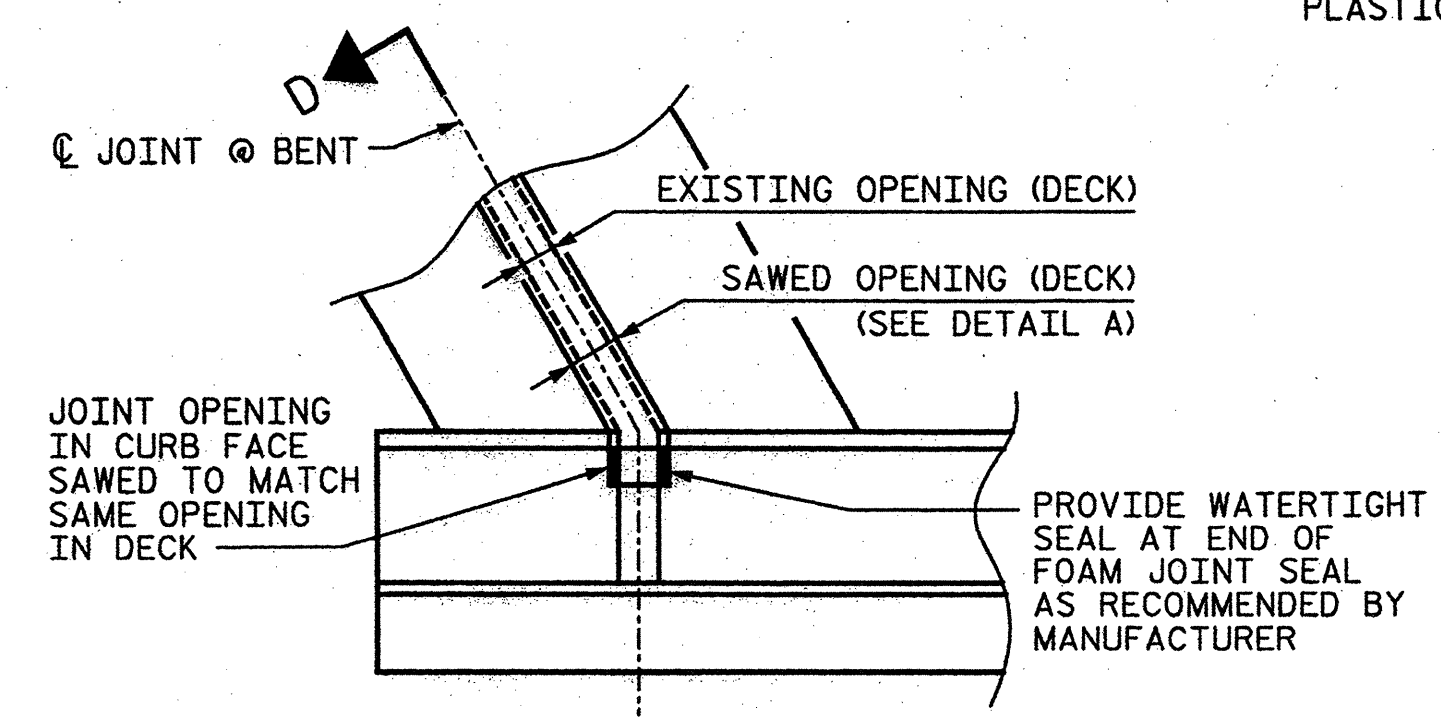


SECTION B-B  
(PROPOSED JOINT PRE-SAWED)

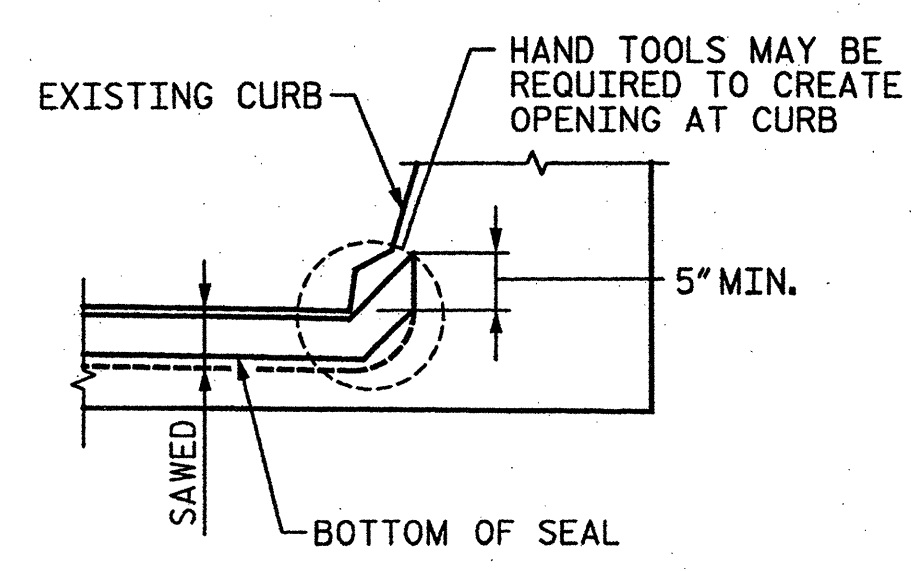


SECTION B-B  
(PROPOSED JOINT)

\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.



PLAN OF JOINT SEAL AT CURB

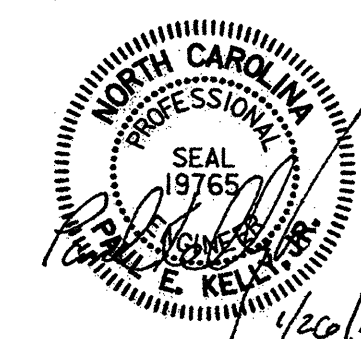


SECTION D-D

**NOTES:**  
ELASTOMER CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 18  
 REHAB. OF BRIDGE NO. 18 SHEET 4 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 JOINT DETAILS  
 BRIDGE ON US 74 EBL  
 OVER SR 1166



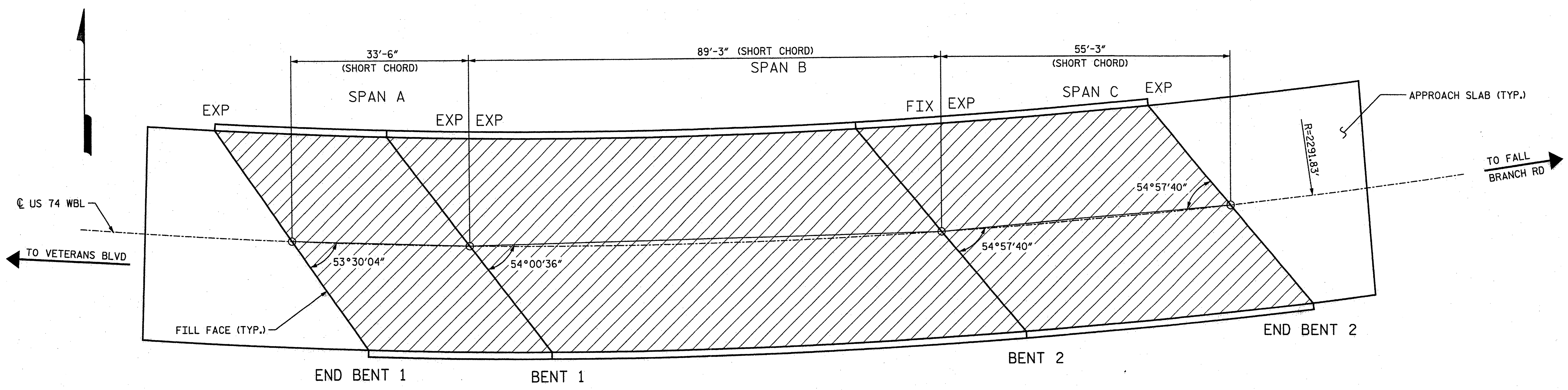
STV / Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

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

TOTAL SHEETS: 57

DRAWN BY: SEC DATE: 10-11  
 CHECKED BY: DRG DATE: 10-11





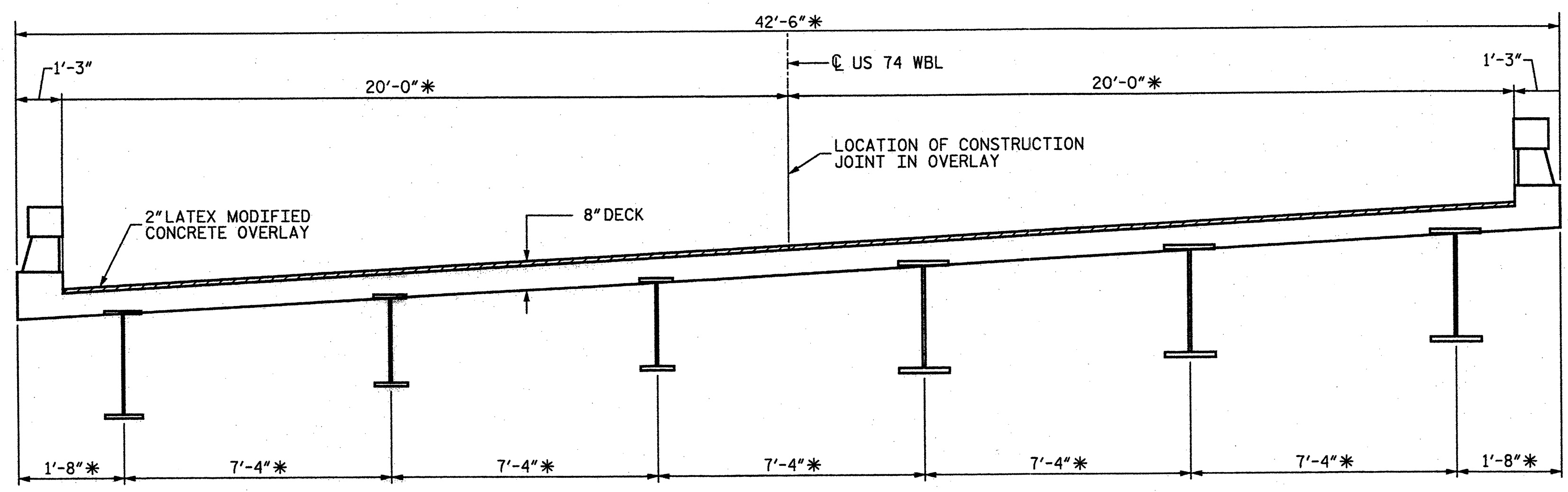
**PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION**

(CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS)

BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION

**NOTES:**

- FOR LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
- FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.
- SEE SPECIAL PROVISIONS FOR SURFACE PREPERATION.
- THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN OFF WATER FROM HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
- THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS II & III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 3 OF 4 AND SPECIAL PROVISIONS.
- EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.
- CONTRACTOR'S MEANS AND METHODS SHALL MINIMIZE DAMAGE TO EXISTING APPROACH PAVEMENT. AREAS OF APPROACH PAVEMENT DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. ANY COST ASSOCIATED WITH REPAIR OF APPROACH PAVEMENT SHALL BE CONSIDERED INCIDENTAL AND NO SEPERATE MEASUREMENT AND PAYMENT WILL BE MADE.
- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

**TYPICAL SECTION**

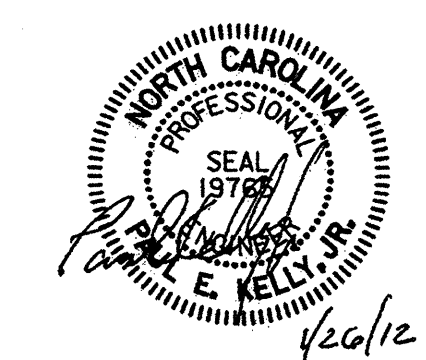
**TOTAL BILL OF MATERIAL**

DECK SCARIFICATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.
791	67	7	791	44	791	LUMP SUM	6523

\* QUANTITIES FOR INFORMATION ONLY.

PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 19  
 REHAB. OF BRIDGE NO. 19 SHEET 1 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS & TYPICAL SECTION**  
 BRIDGE ON US 74 WBL  
 OVER SR 1166



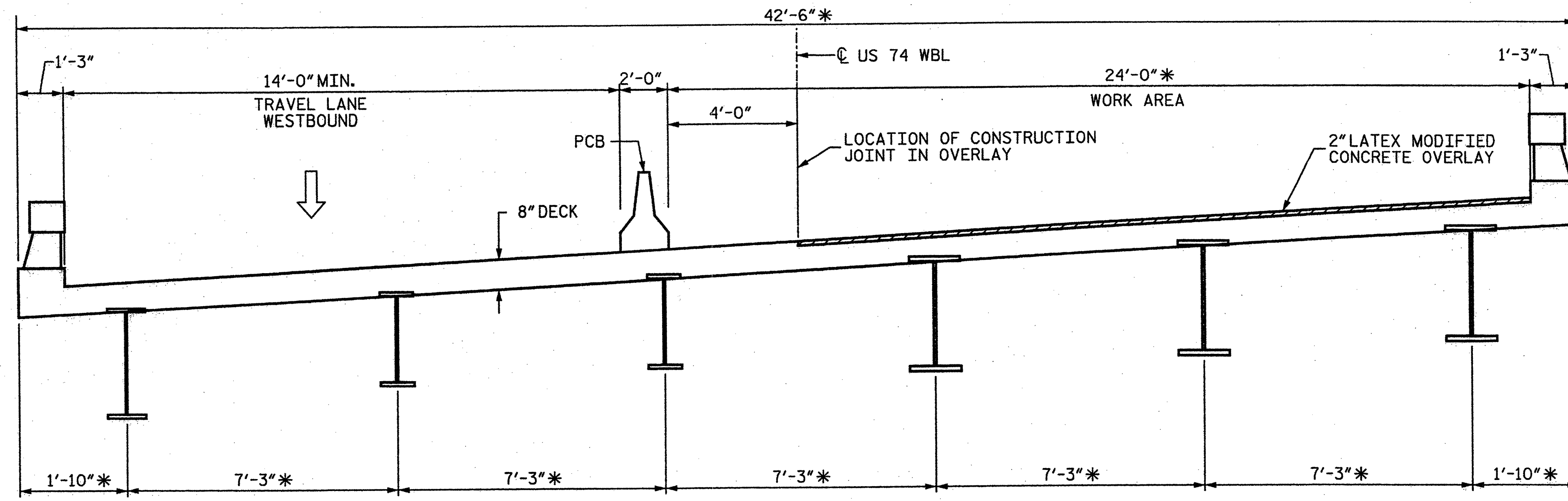
**STV/Ralph Whitehead Associates, Inc.**  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-45
1			3			TOTAL SHEETS
2			4			57

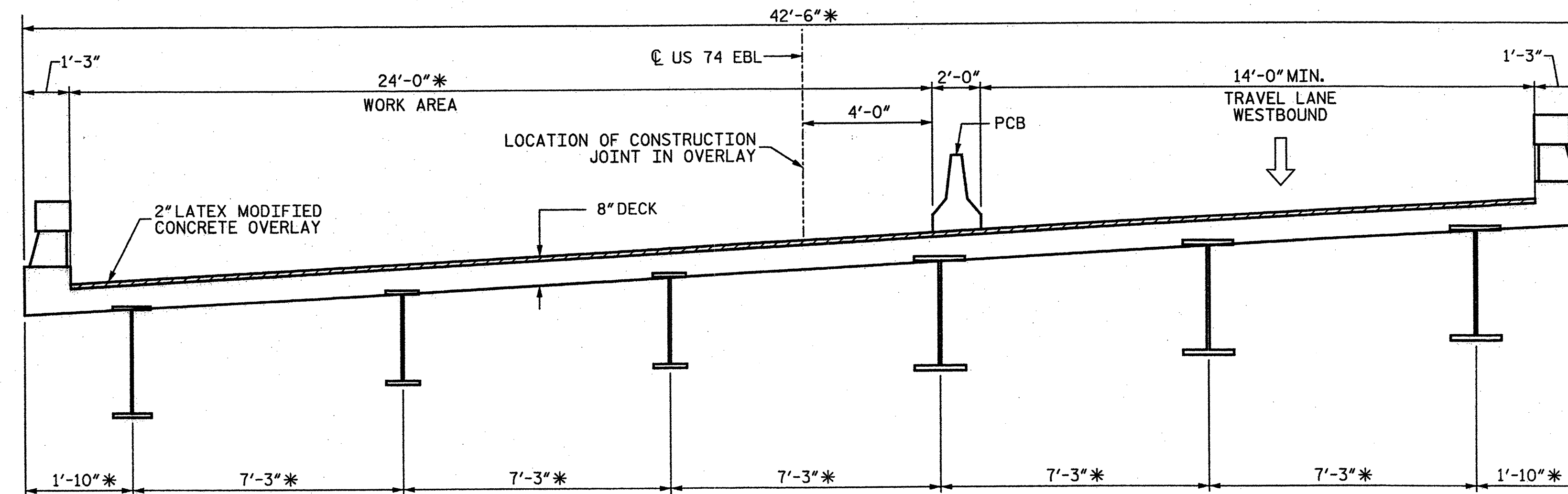
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DRAWN BY : SEC DATE : 10-11  
 CHECKED BY : DRG DATE : 10-11

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TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

PROJECT NO. 17BP.14.P.4

SWAIN COUNTY

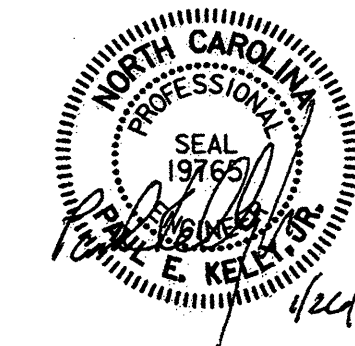
BRIDGE NO.: 19

REHAB. OF BRIDGE NO. 19 SHEET 2 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STAGED CONSTRUCTION

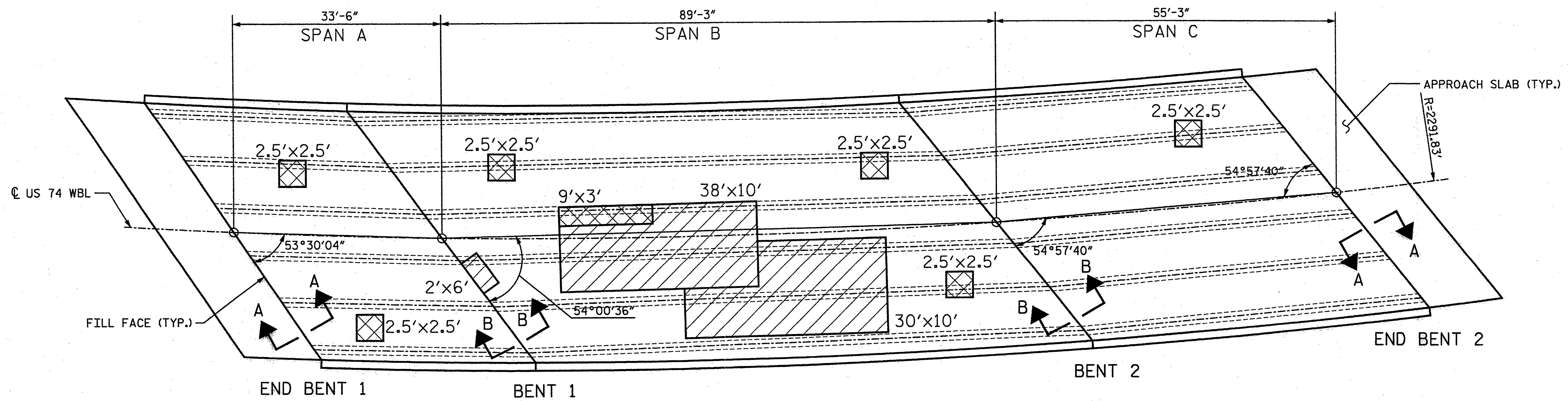
BRIDGE ON US 74 WBL  
OVER SR 1166



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

DRAWN BY : SEC DATE : 10-11  
CHECKED BY : DRG DATE : 10-11

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-46	
1			3			TOTAL	57
2			4			SHEETS	

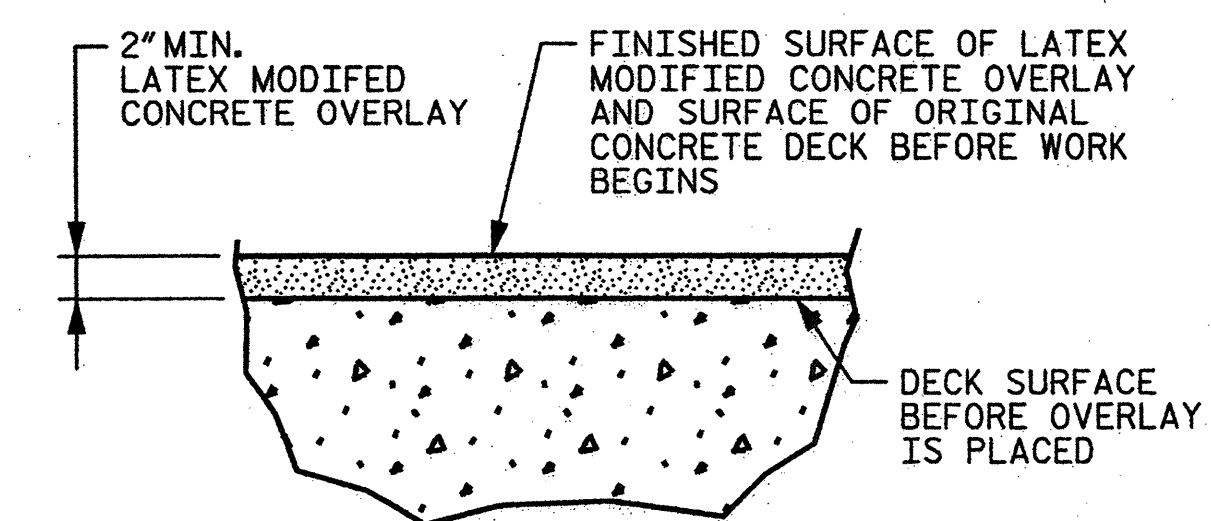


- APPROX. AREA: CLASS II REPAIR
- APPROX. AREA: CLASS III REPAIR

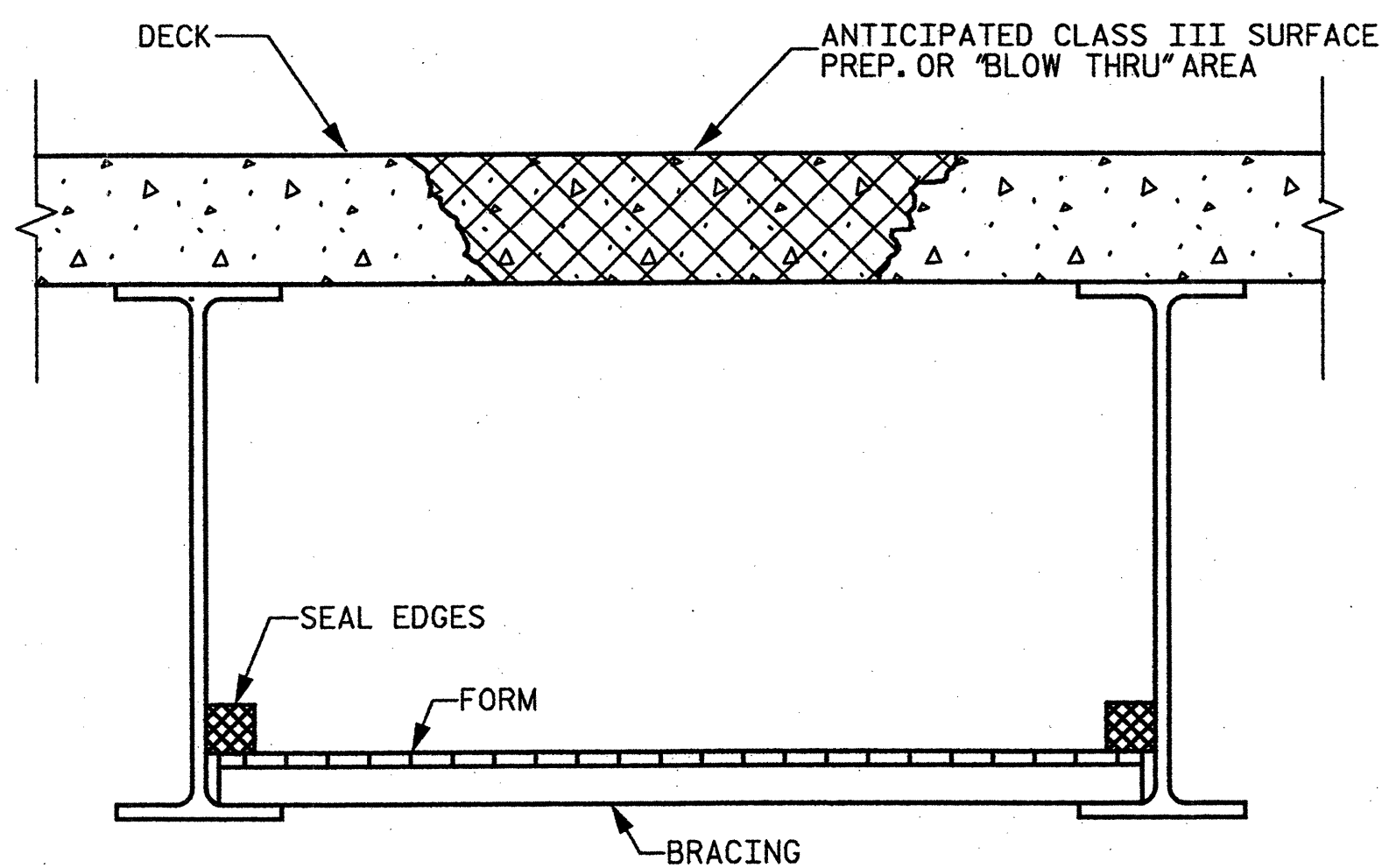
**PLAN OF SPANS - DECK REPAIRS**

**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.
- FOR ADDITIONAL NOTES SEE SHEET 1 OF 4.



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**



**TYP. "BLOW THRU" 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.

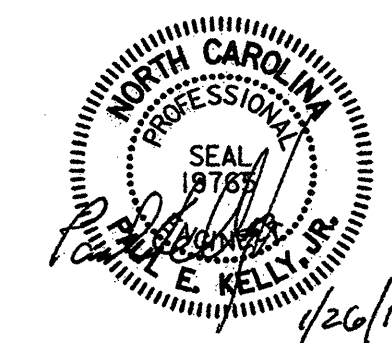
COST FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

PROJECT NO. **17BP.14.P.4**  
**SWAIN** COUNTY  
 BRIDGE NO.: **19**

REHAB. OF BRIDGE NO. 19 SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**OVERLAY DETAILS**  
 BRIDGE ON US 74 WBL  
 OVER SR 1166



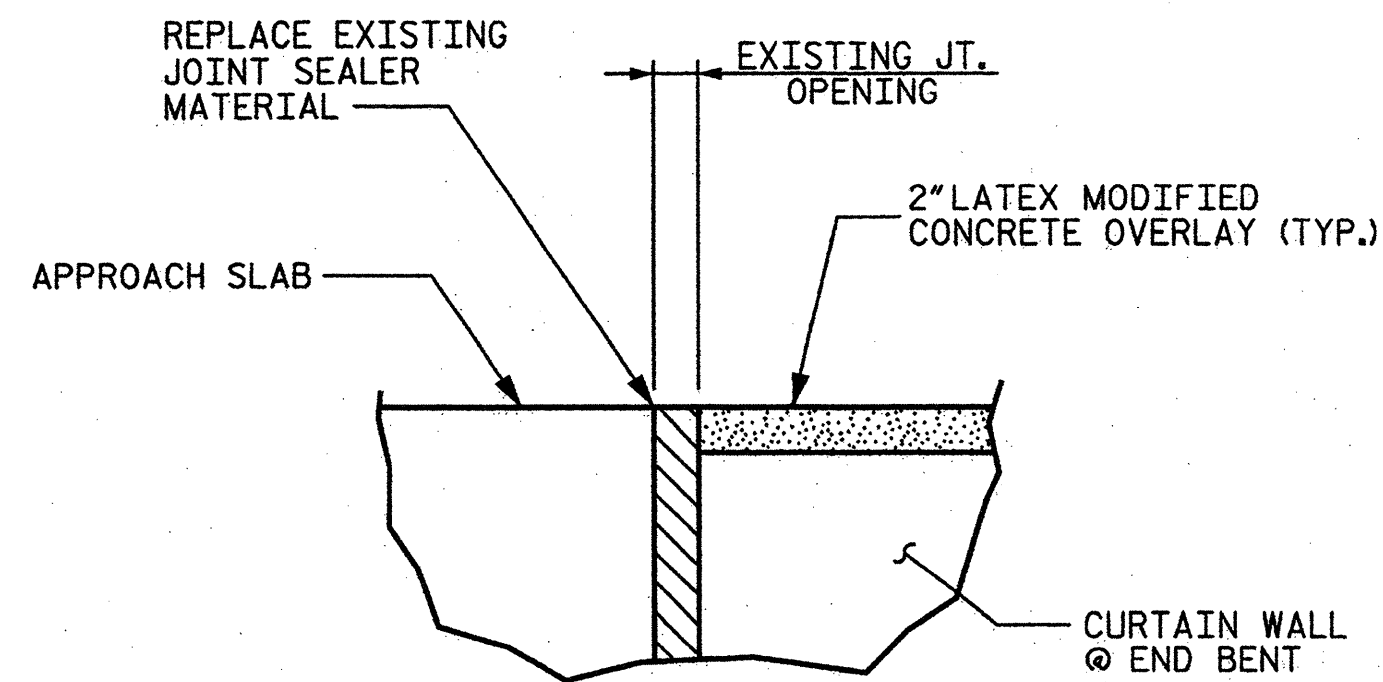
STV/Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47	
1			3			TOTAL SHEETS	
2			4			57	

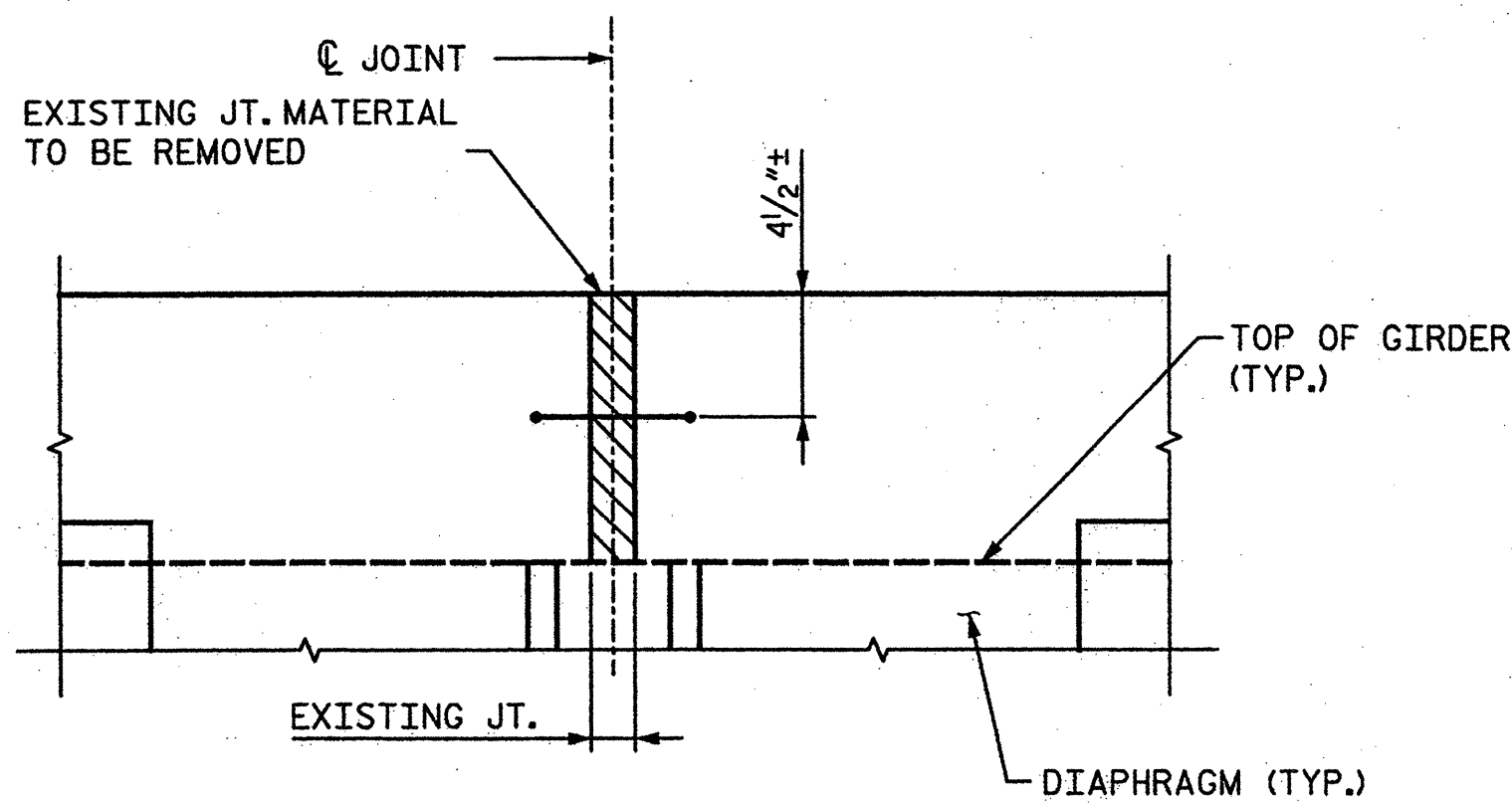
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 1/26/2012

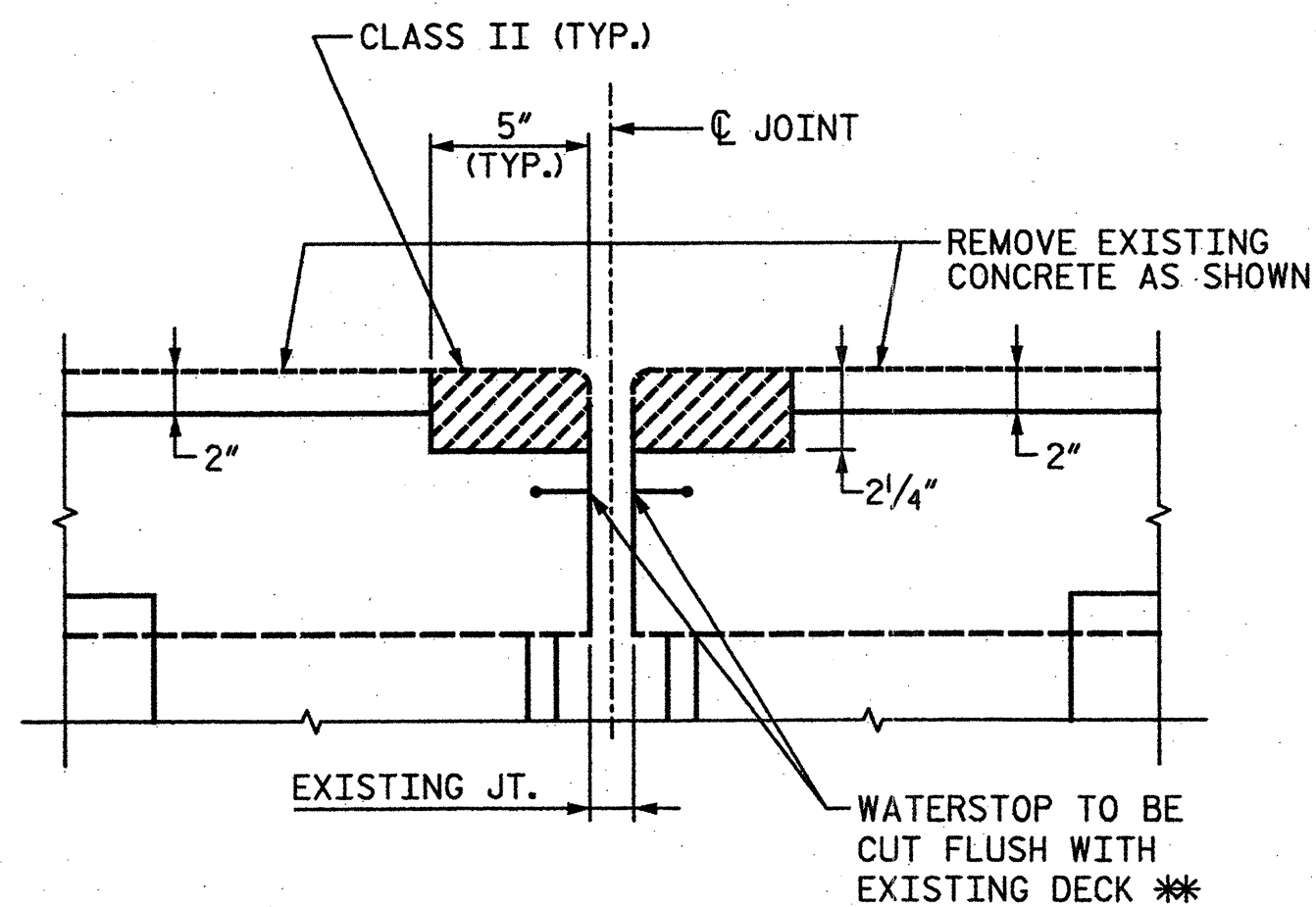




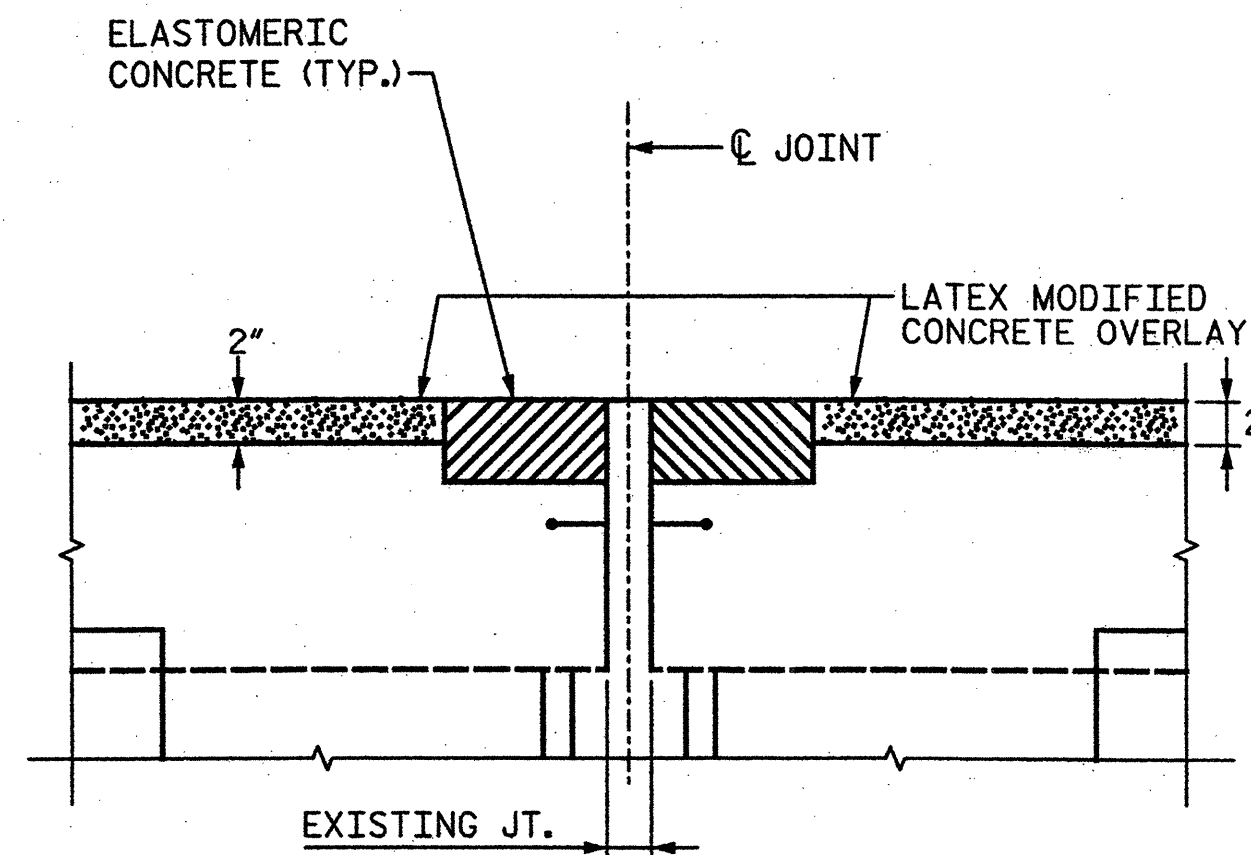
**SECTION A-A**  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)



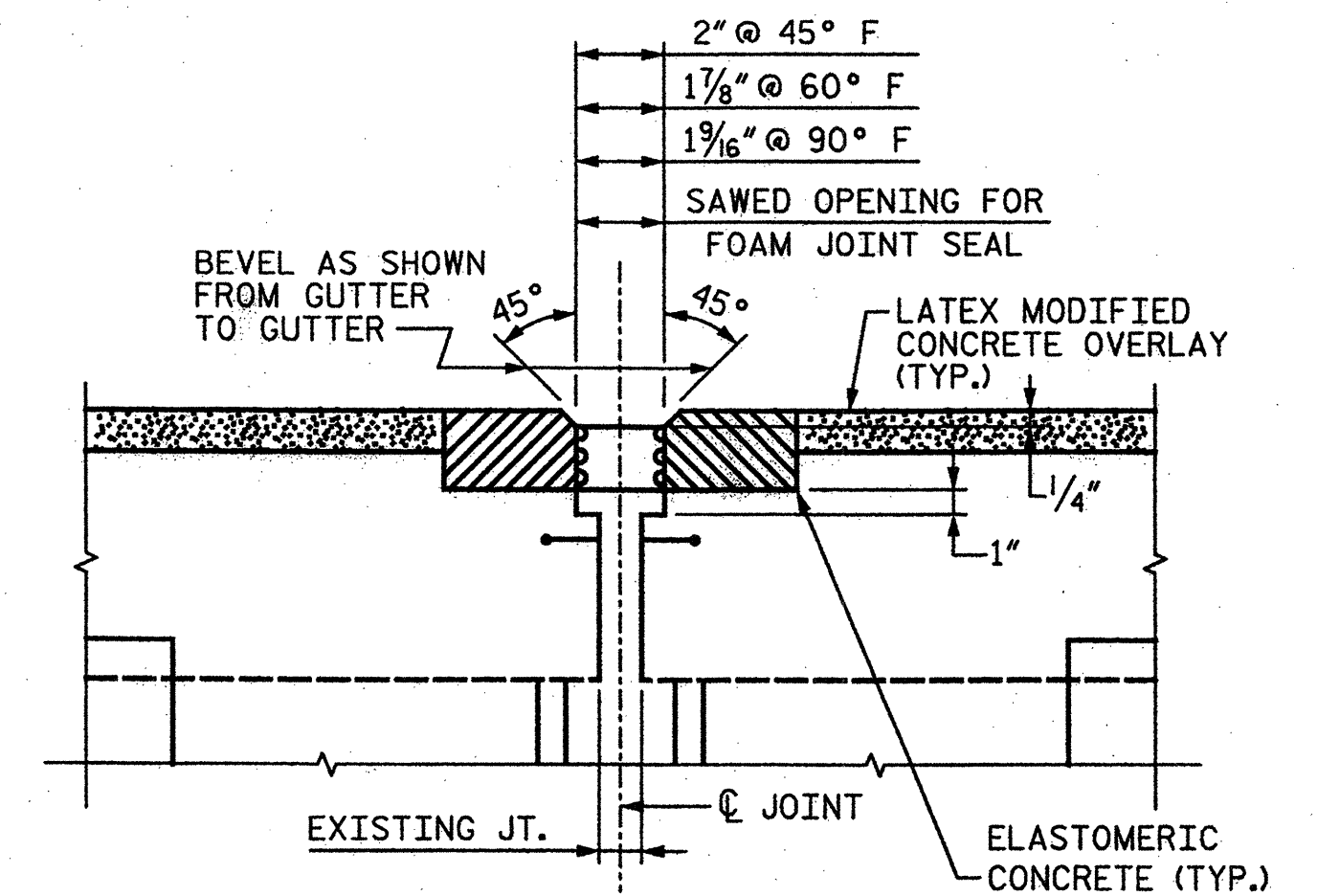
**SECTION B-B**  
(EXISTING JOINT)



**SECTION B-B**  
(DEMO OF JOINT)

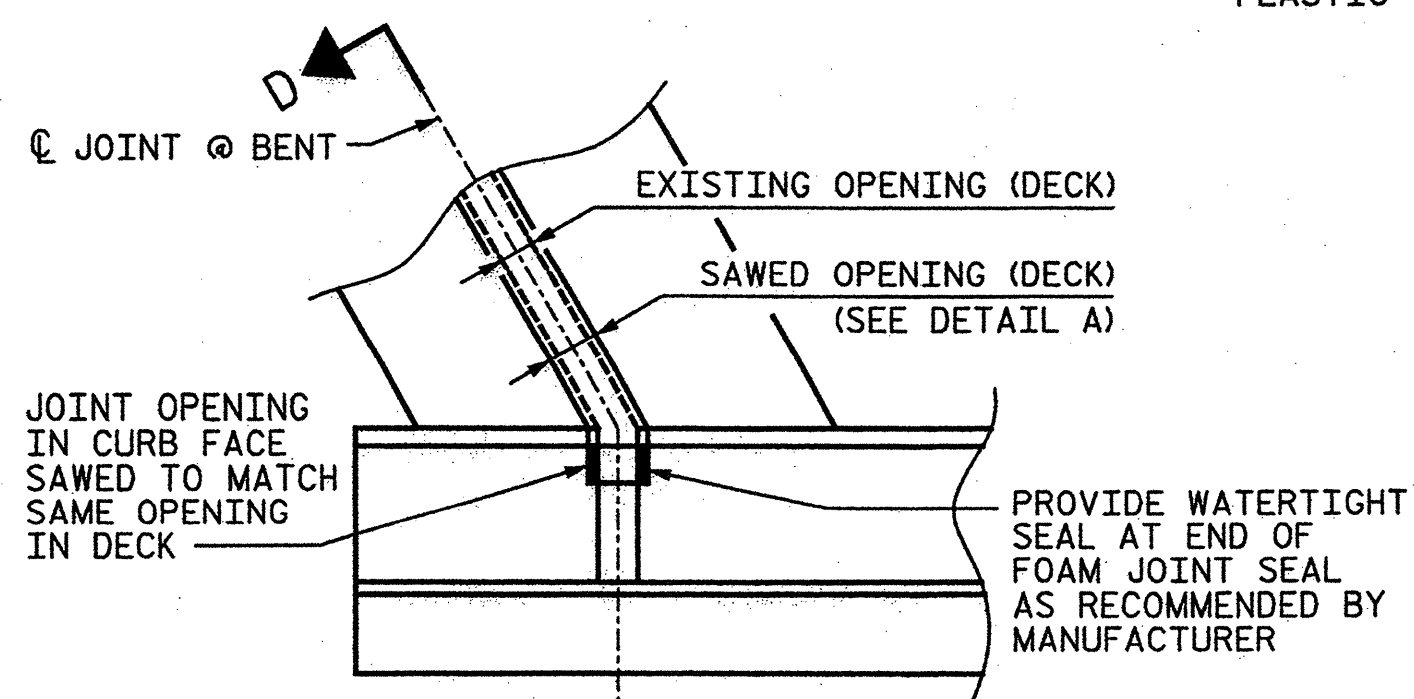


**SECTION B-B**  
(PROPOSED JOINT PRE-SAWED)

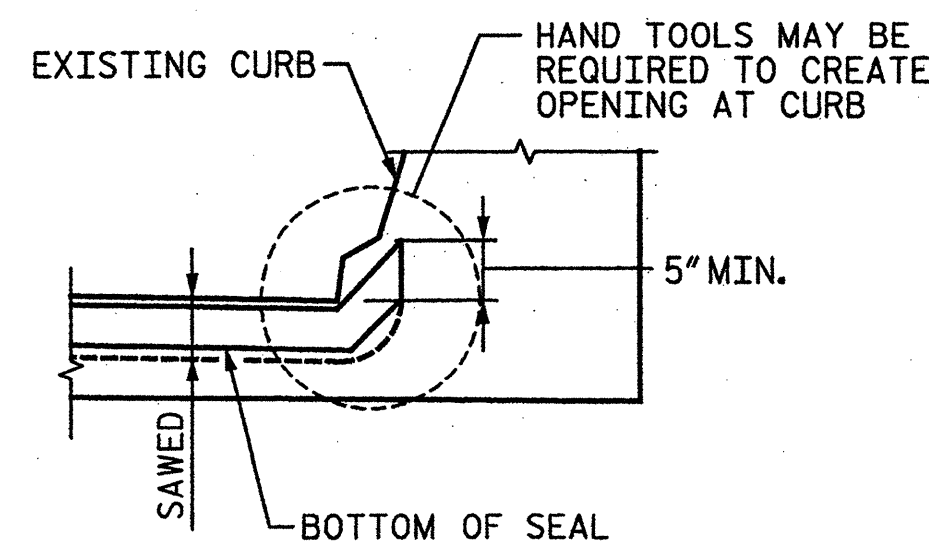


**SECTION B-B**  
(PROPOSED JOINT)

\*\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.



**PLAN OF JOINT SEAL AT CURB**



**SECTION D-D**

**NOTES:**

ELASTOMER CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

PROJECT NO. **17BP.14.P.4**

**SWAIN** COUNTY

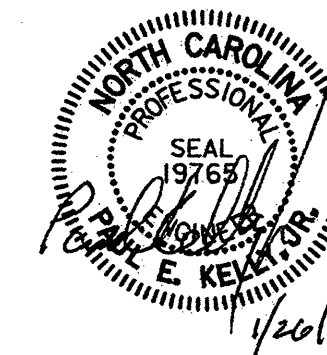
BRIDGE NO.: **19**

REHAB. OF BRIDGE NO. 19 SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**JOINT DETAILS**

BRIDGE ON US 74 WBL  
OVER SR 1166



STV/Ralph Whitehead Associates, Inc.  
1000 West Morehead St., Ste. 200  
Charlotte, NC 28208  
NC License No. F-0891

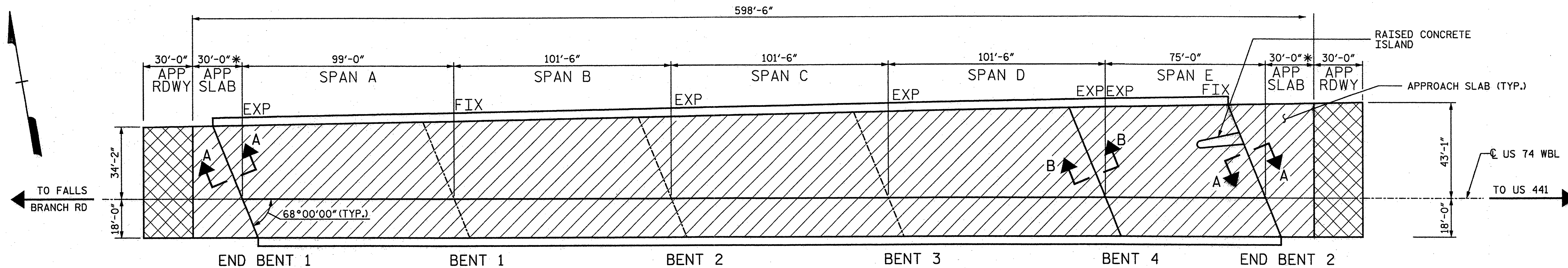
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-48	
1			3			TOTAL SHEETS	
2			4			57	

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1/26/2012

DRAWN BY : SEC DATE : 10-11  
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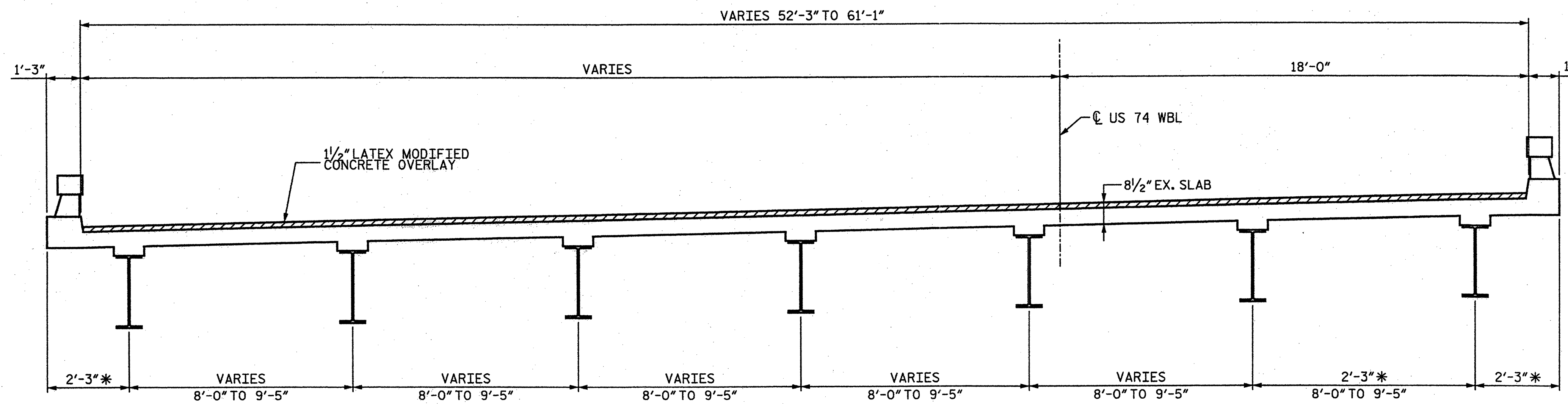
**PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION**

(CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS)

- BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION
- INCIDENTAL MILLING

**NOTES:**

- FOR LATEX MODIFIED CONCRETE 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.
- THE BOUNDARY AREAS IDENTIFIED FOR CLASS II & III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 3 OF 4 AND SPECIAL PROVISIONS.
- EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.
- CONTRACTOR'S MEANS AND METHODS SHALL MINIMIZE DAMAGE TO EXISTING APPROACH PAVEMENT. AREAS OF APPROACH PAVEMENT DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. ANY COST ASSOCIATED WITH REPAIR OF APPROACH PAVEMENT SHALL BE CONSIDERED INCIDENTAL AND NO SEPERATE MEASUREMENT AND PAYMENT WILL BE MADE.
- EXISTING JOINTS AND DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.
- 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. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.



**TYPICAL SECTION**

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

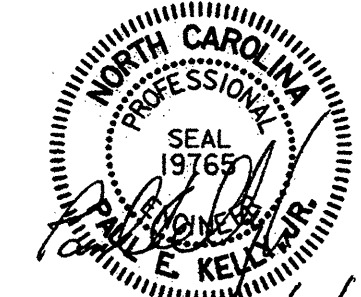
**TOTAL BILL OF MATERIAL**

DECK SCARIFICATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	SY	TONS
3,391	224	5	3,391	141	3,391	LUMP SUM	28,812	378	23

\* QUANTITIES FOR INFORMATION ONLY.

PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 22  
 REHAB. OF BRIDGE NO. 22 SHEET 1 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**PLAN OF SPANS & TYPICAL SECTION**  
 BRIDGE ON US 74 WBL OVER SR 1173, RR, TUCKASEGEE RIVER



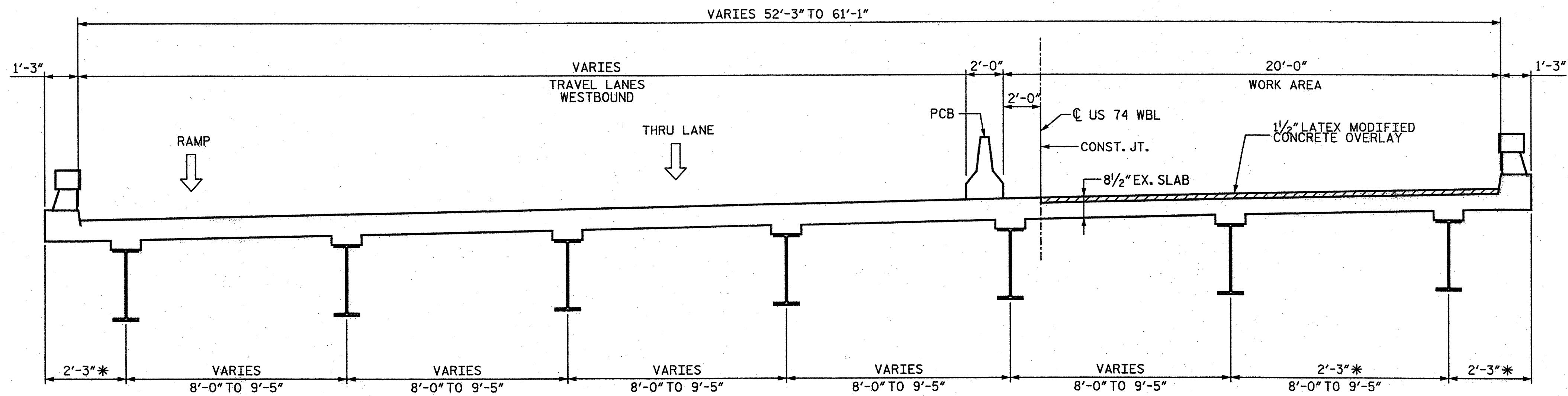
STV / Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49
1			3			TOTAL SHEETS
2			4			57

DRAWN BY : RWM DATE : 10-11  
 CHECKED BY : DRG DATE : 10-11

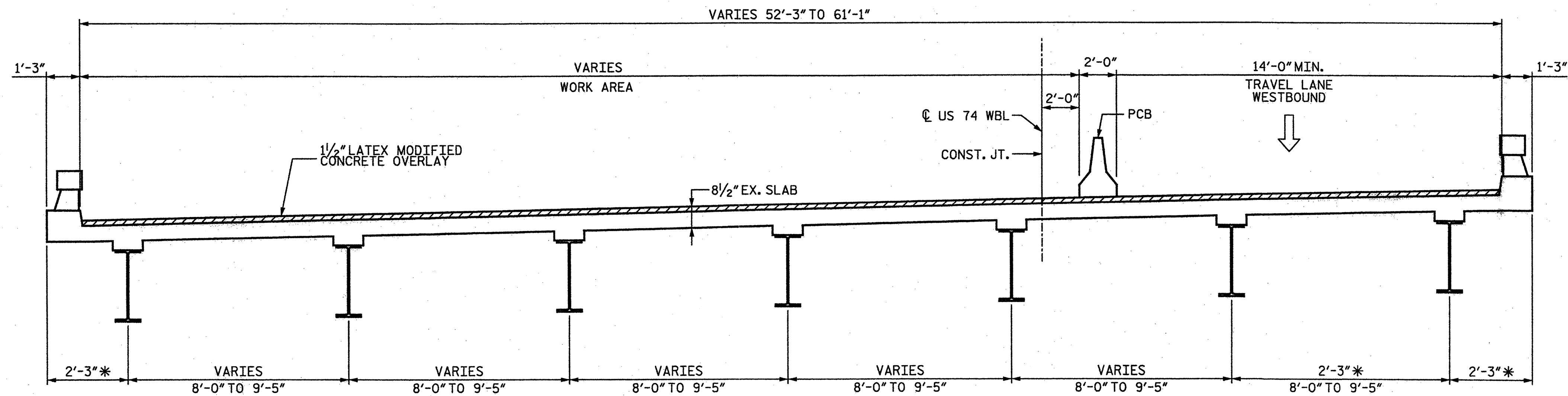
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 WJVM  
 1/26/2012



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

TYPICAL SECTION - STAGE I



\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

TYPICAL SECTION - STAGE II

PROJECT NO. 17BP.14.P.4

SWAIN COUNTY

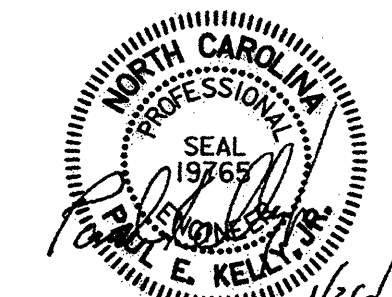
BRIDGE NO.: 22

REHAB. OF BRIDGE NO. 22 SHEET 2 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STAGED CONSTRUCTION

BRIDGE ON US 74 WBL OVER  
SR 1173, RR, TUCKASEGEE RIVER

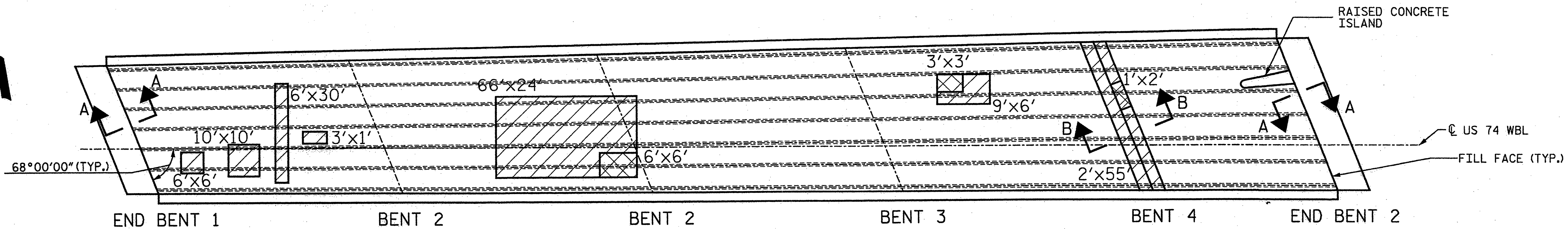


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NC License No. F-0991

DRAWN BY: RWM DATE: 10-11  
CHECKED BY: DRG DATE: 10-11

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-50	
1			3			TOTAL SHEETS	
2			4			57	





PLAN OF SPANS - DECK REPAIRS

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

**NOTES:**

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

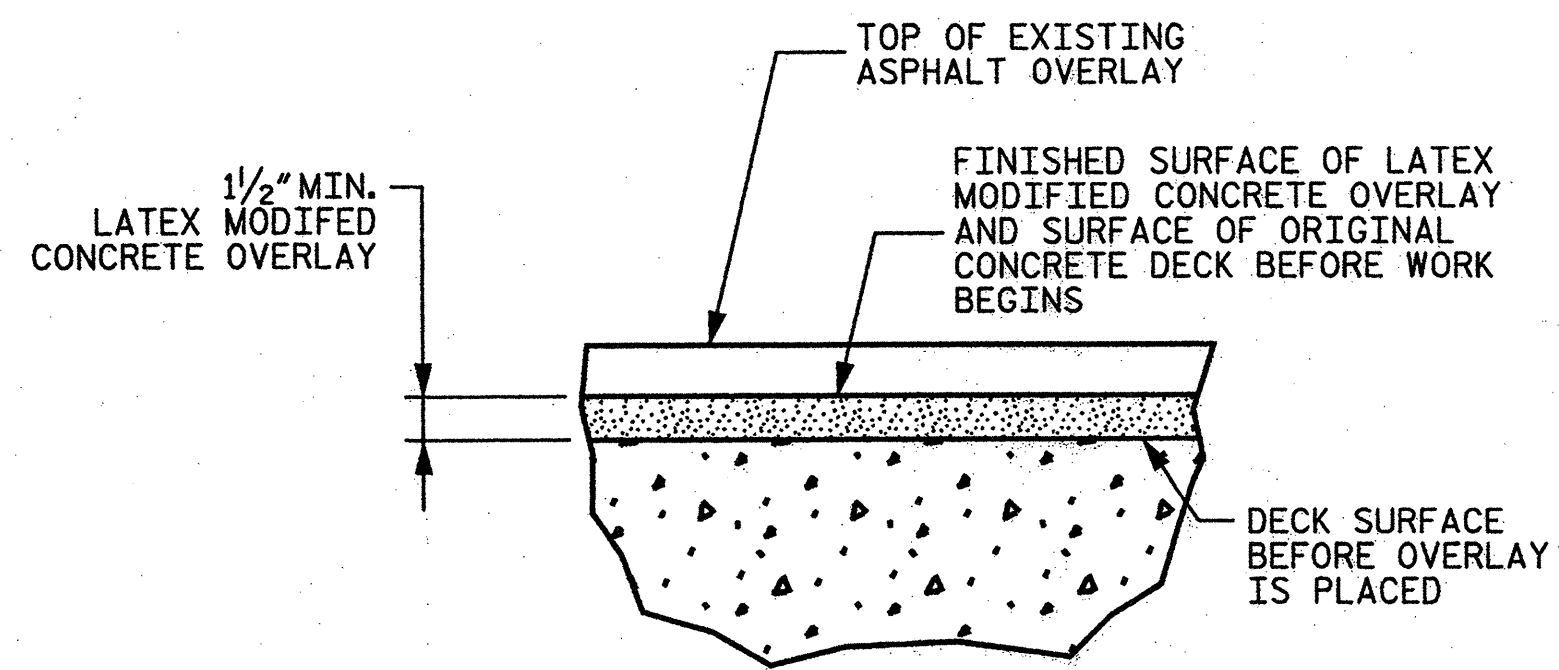
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 4/16".

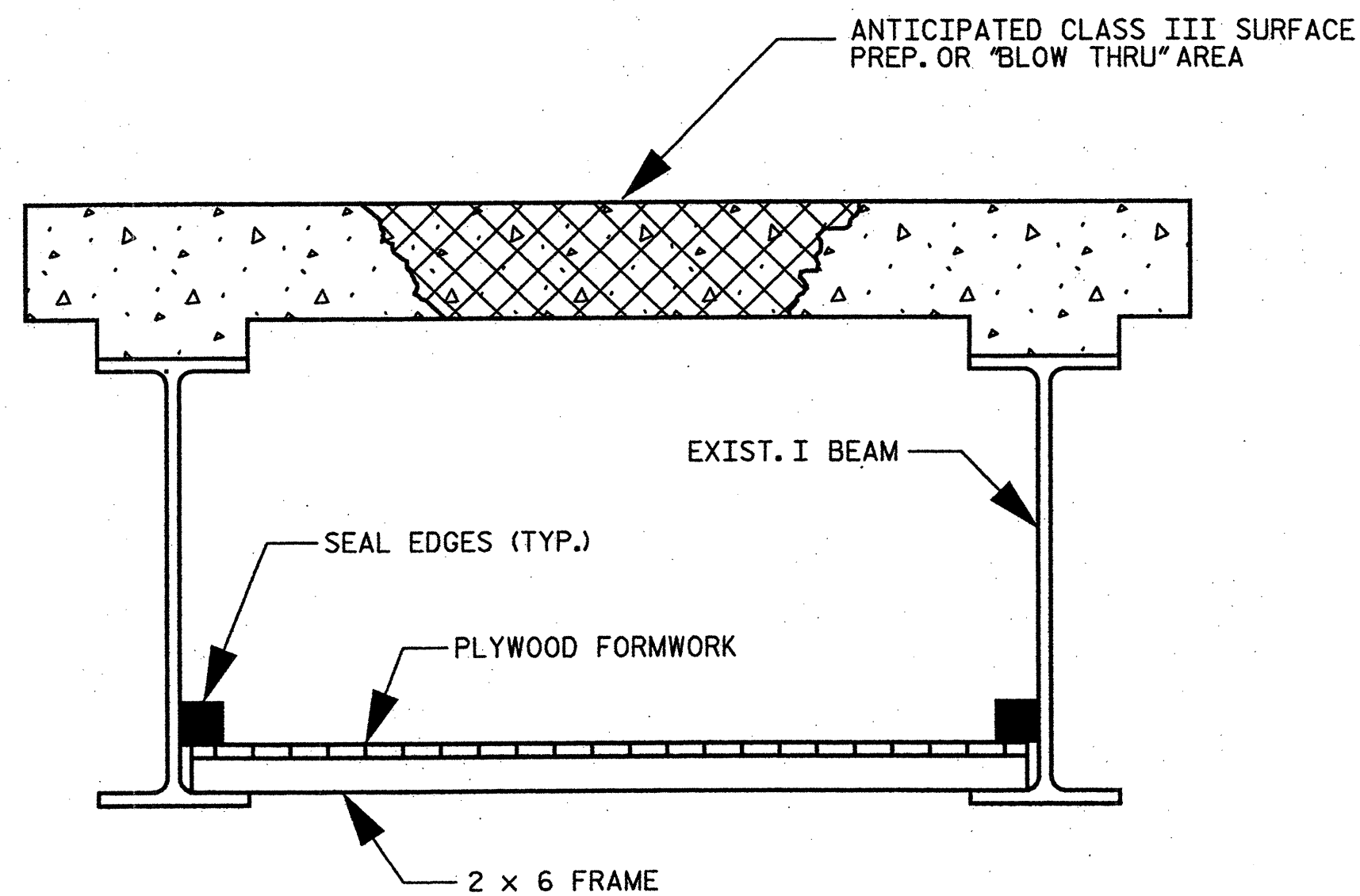
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

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 4.



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



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.

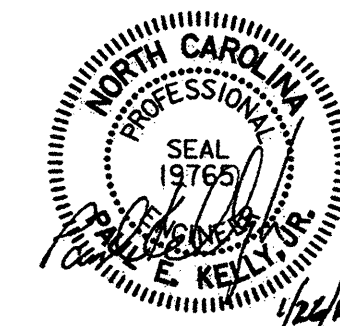
SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK. COST FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 22  
 REHAB. OF BRIDGE NO. 22 SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

OVERLAY DETAILS

BRIDGE ON US 74 WBL OVER  
 SR 1173, RR, TUCKASEGEE RIVER



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 Charlotte, NC 28209  
 NC License No. F-0991

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	DATE:	S-51
1			3		TOTAL SHEETS
2			4		57

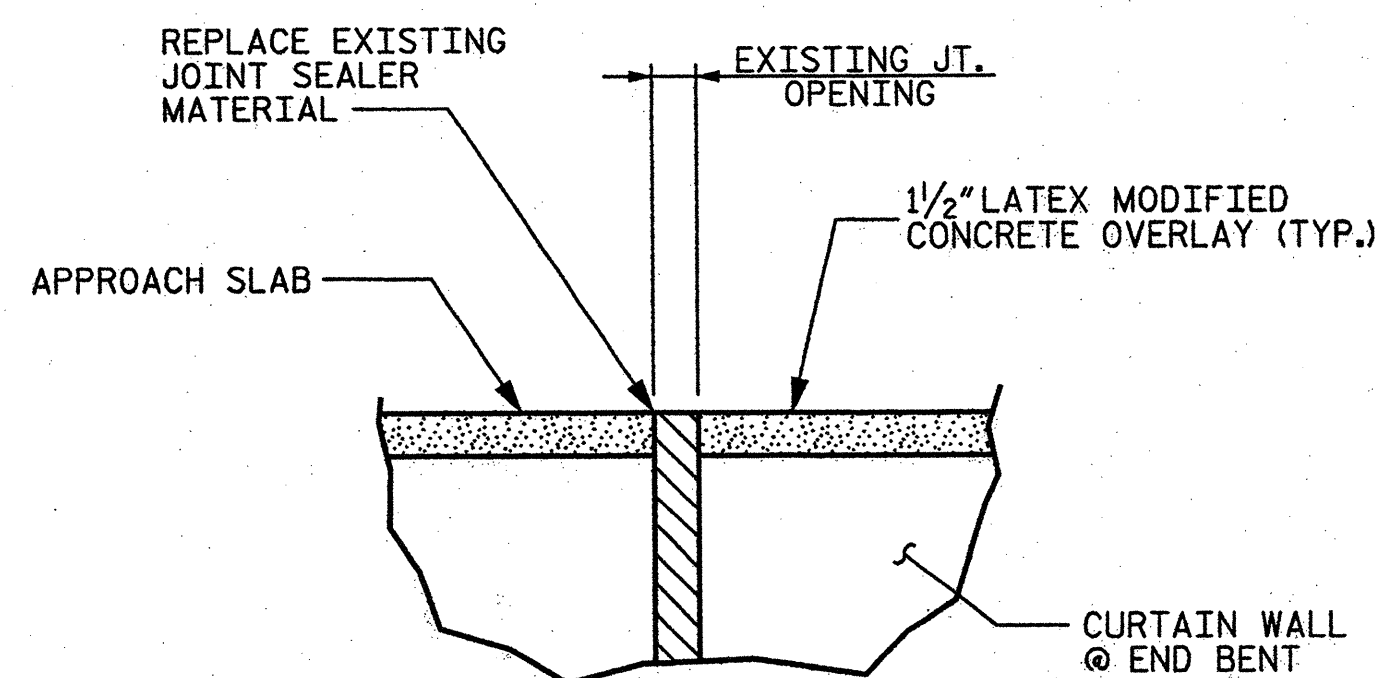
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 CHECKED BY : DRG DATE : 10-11

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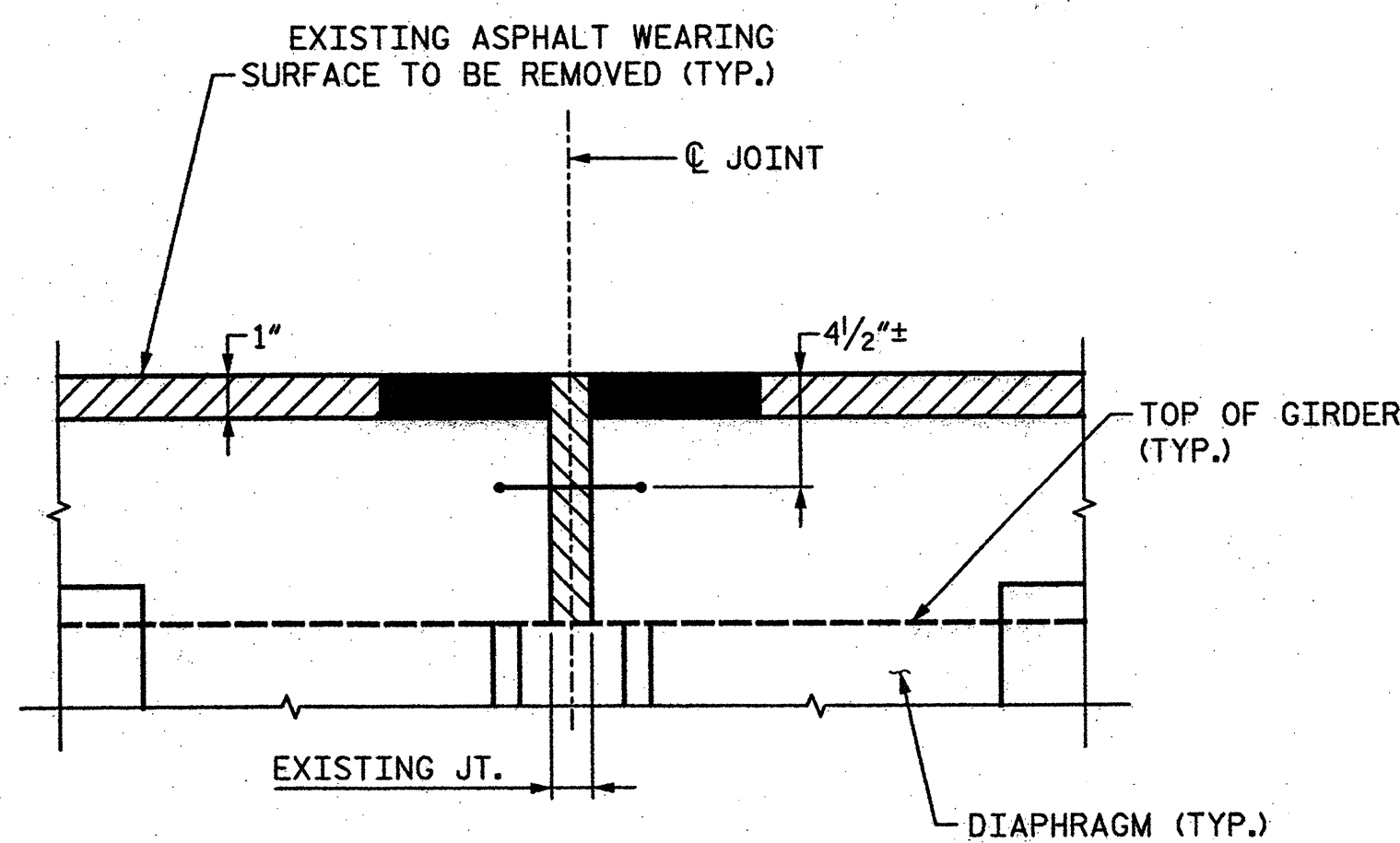
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1/26/2012

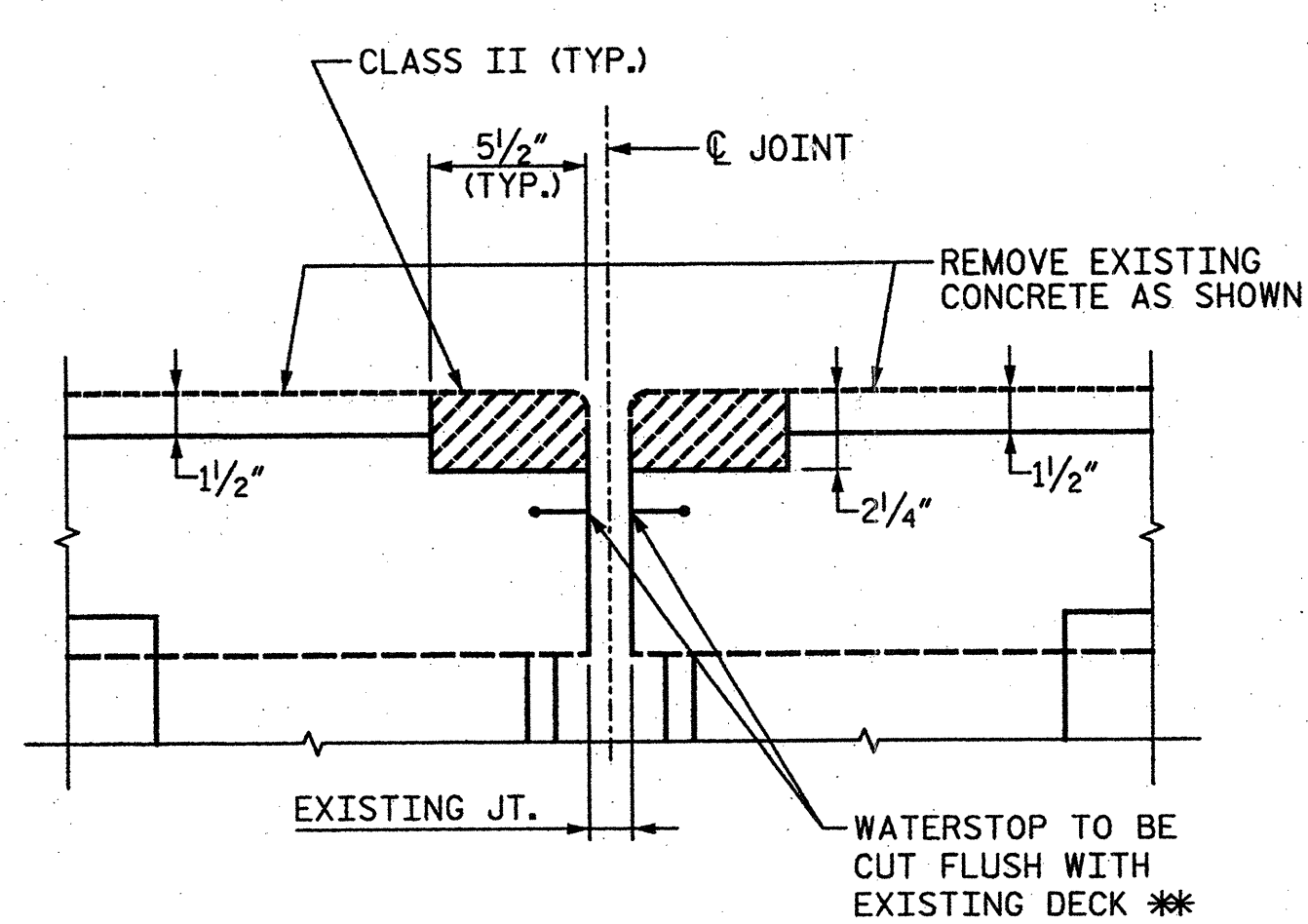
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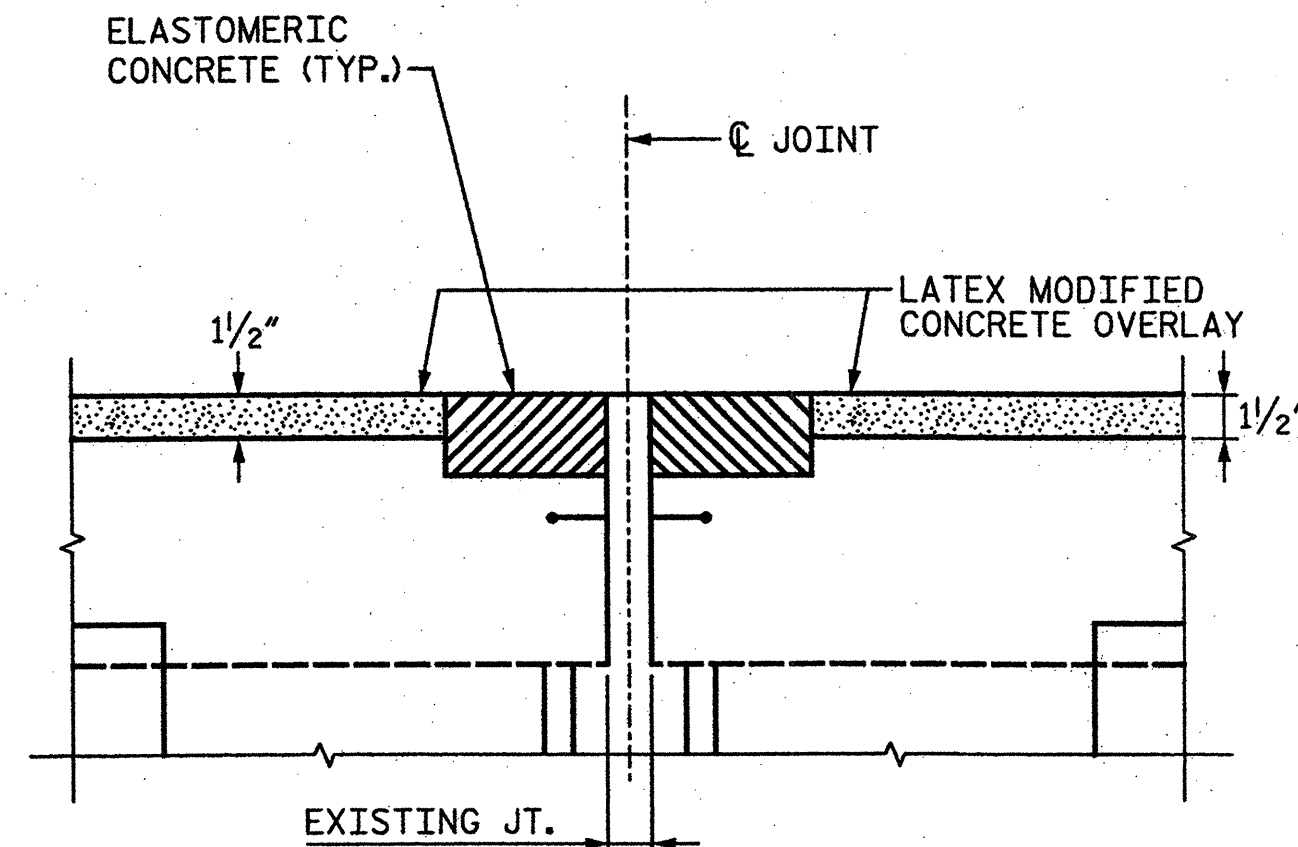
**SECTION A-A**  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)



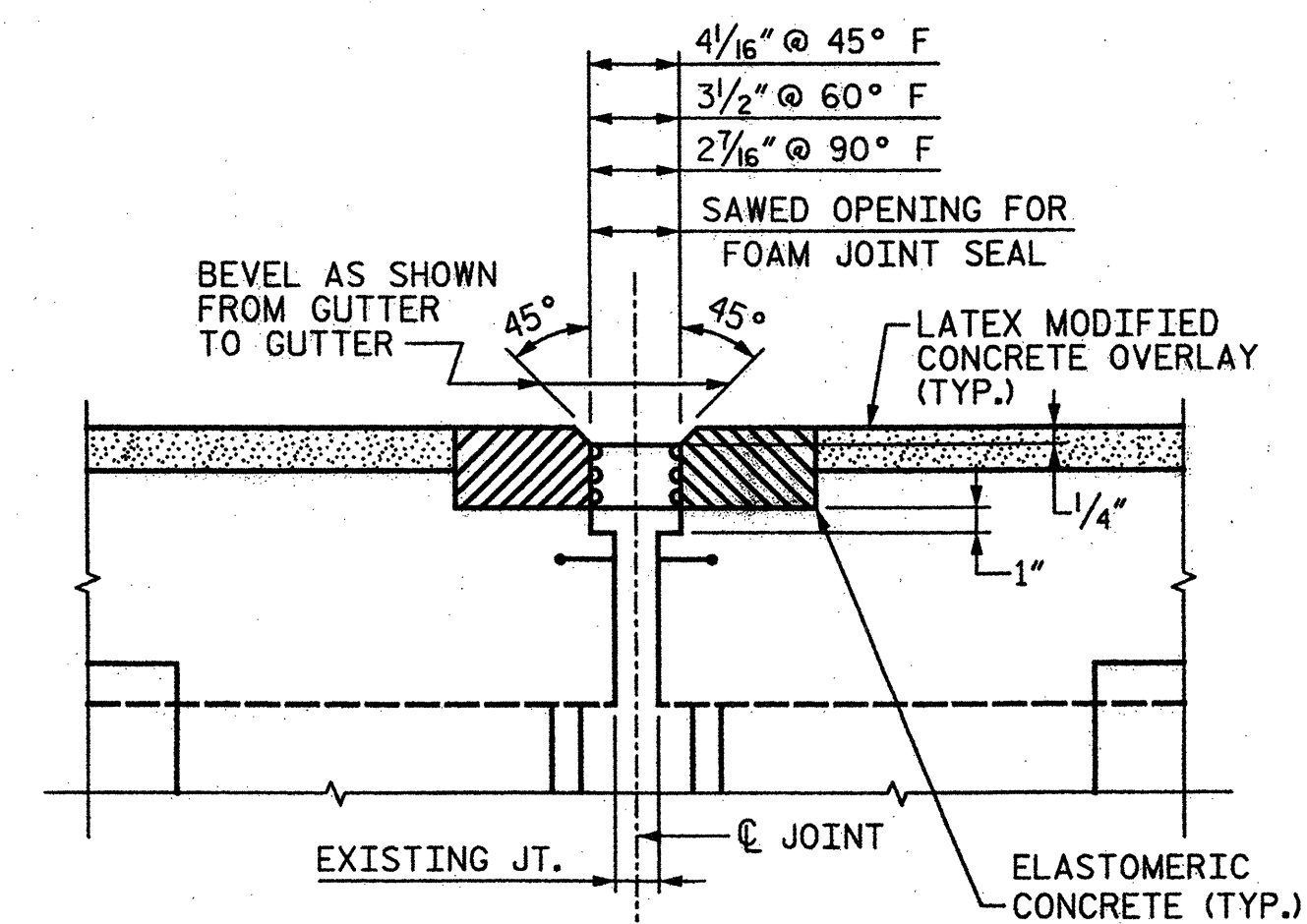
**SECTION B-B**  
(EXISTING JOINT)



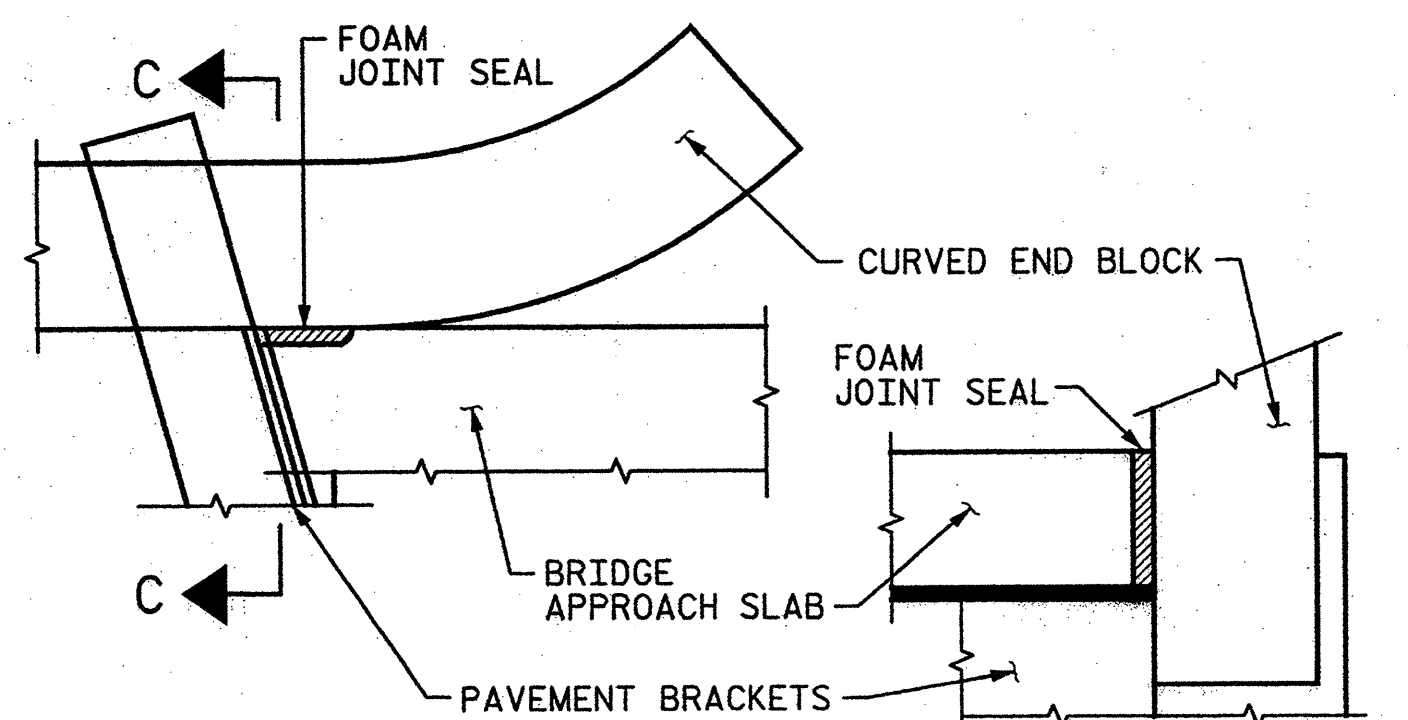
**SECTION B-B**  
(DEMO OF JOINT)



**SECTION B-B**  
(PROPOSED JOINT PRE-SAWED)



**SECTION B-B**  
(PROPOSED JOINT)

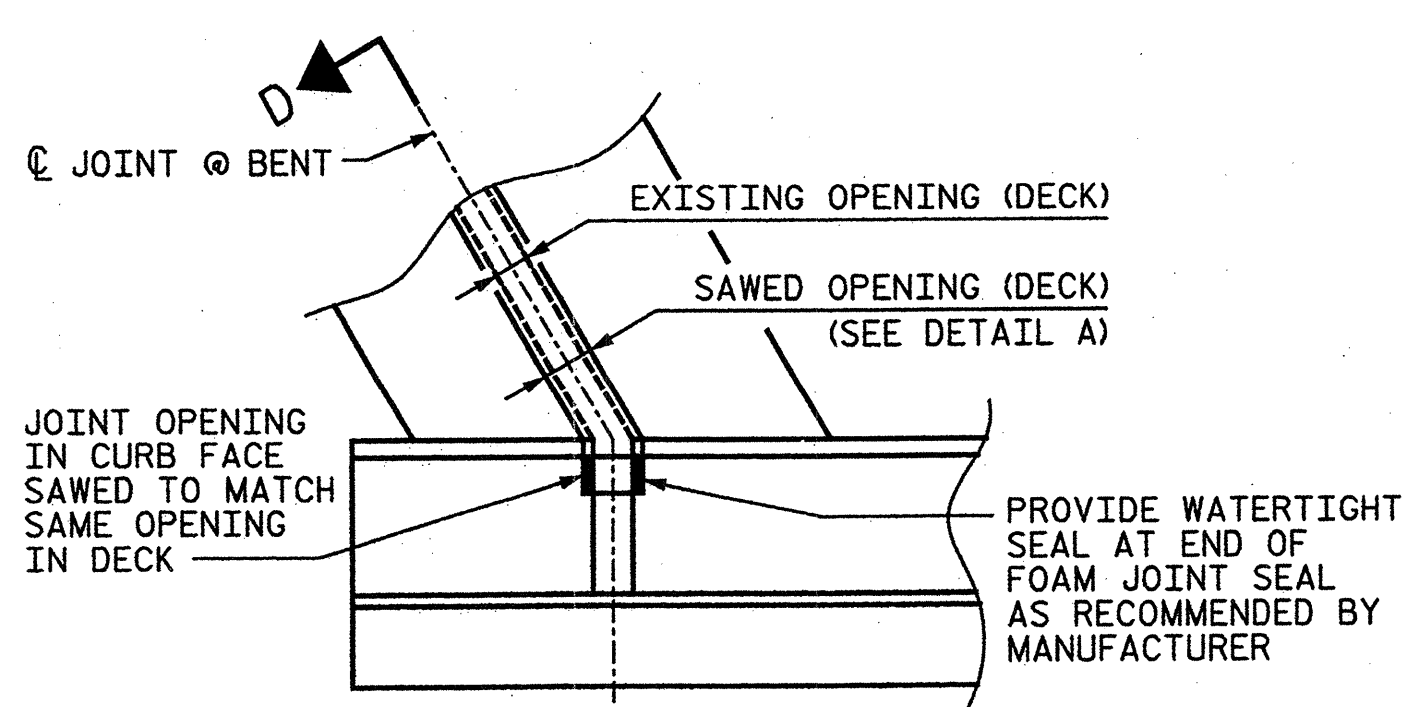


PLAN

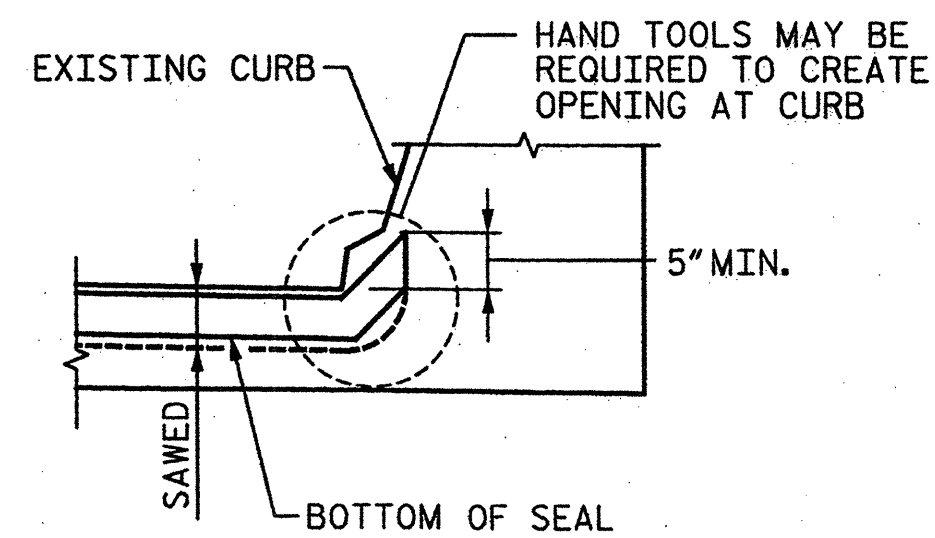
SECTION C-C

**DETAIL OF EXPANSION JOINT BETWEEN APPROACH SLAB AND CURVED END BLOCK**

**\*\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.**



**PLAN OF JOINT SEAL AT CURB**



**SECTION D-D**

**NOTES:**

ELASTOMER CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

HAND TOOLS MAY BE REQUIRED TO CREATE OPENING AT CURB

PROJECT NO. **17BP.14.P.4**

**SWAIN** COUNTY

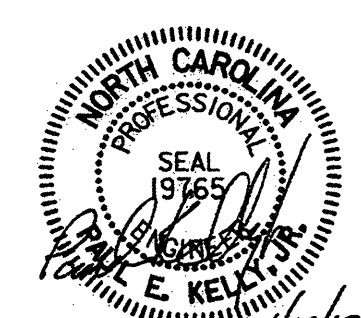
BRIDGE NO.: **22**

REHAB. OF BRIDGE NO. 22 SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**JOINT DETAILS**

BRIDGE ON US 74 WBL OVER SR 1173, RR, TUCKASEGEE RIVER

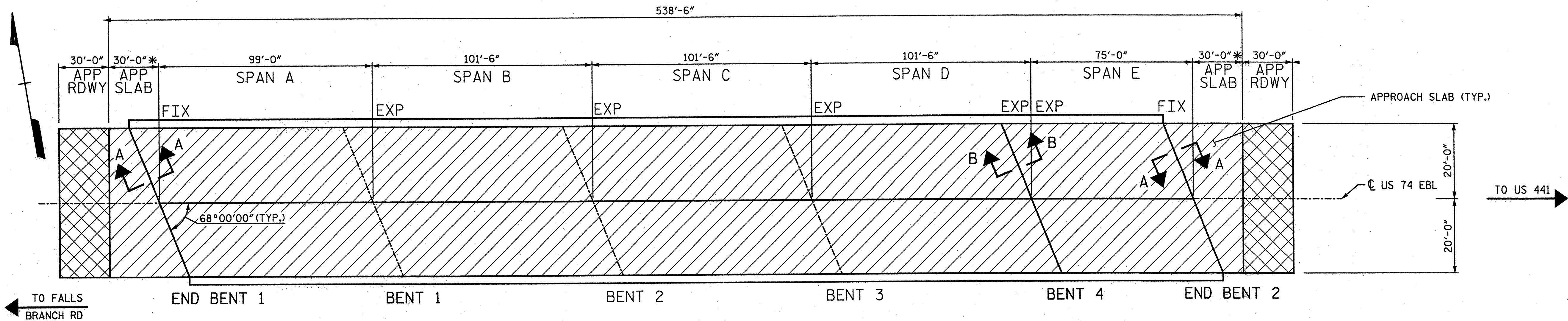


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			57

DRAWN BY: **RWM** DATE: **10-11**  
CHECKED BY: **DRG** DATE: **10-11**





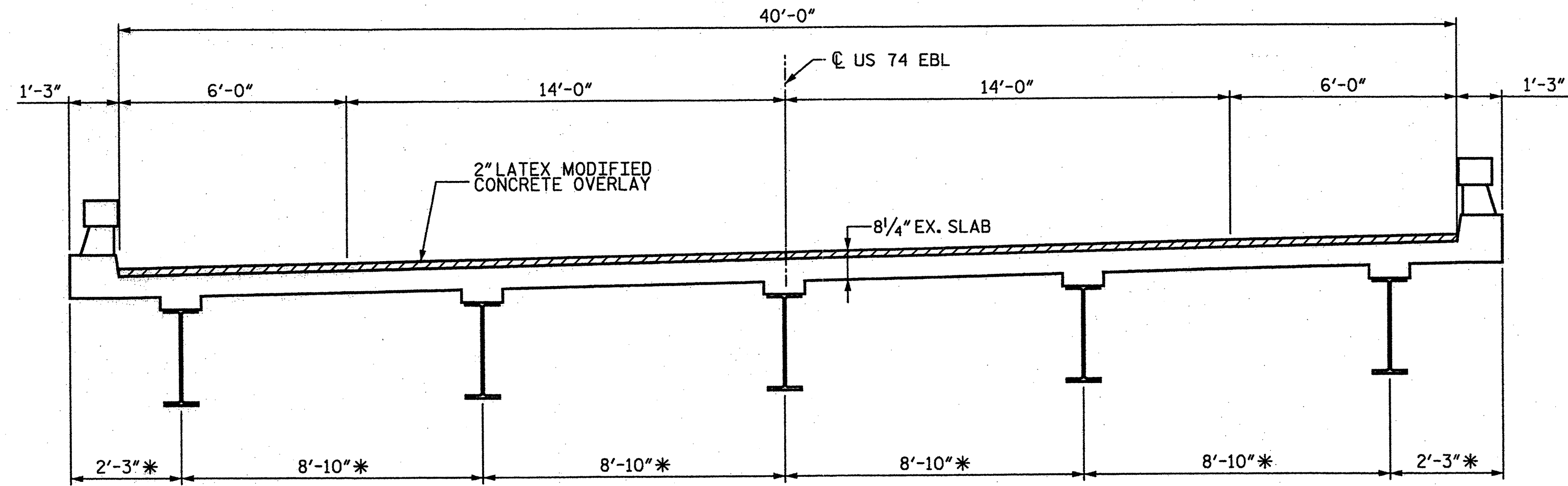
**PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION**

(CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS)

- BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION
- INCIDENTAL MILLING

**NOTES:**

- FOR LATEX MODIFIED CONCRETE 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.
- THE BOUNDARY AREAS IDENTIFIED FOR CLASS II & III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE CONTAINMENT FOR UNEXPECTED BLOW-THROUGH OF THE DECK. SEE DETAIL ON SHEET 3 OF 4 AND SPECIAL PROVISIONS.
- EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.
- CONTRACTOR'S MEANS AND METHODS SHALL MINIMIZE DAMAGE TO EXISTING APPROACH PAVEMENT. AREAS OF APPROACH PAVEMENT DAMAGED BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER. ANY COST ASSOCIATED WITH REPAIR OF APPROACH PAVEMENT SHALL BE CONSIDERED INCIDENTAL AND NO SEPERATE MEASUREMENT AND PAYMENT WILL BE MADE.
- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.
- 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. PLACE IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" DEPTH. ASPHALT SURFACE SHALL PROVIDE A SMOOTH TRANSITION BETWEEN THE EXISTING APPROACH PAVEMENT AND THE PROPOSED SURFACE OF THE BRIDGE DECK.



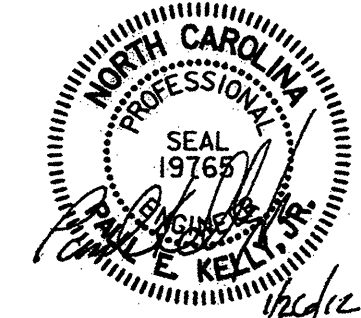
**TYPICAL SECTION**

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 23  
 REHAB. OF BRIDGE NO. 23 SHEET 1 OF 4

TOTAL BILL OF MATERIAL									
DECK SCARIFICATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEAL	GROOVING BRIDGE FLOORS	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	SY	TONS
2,393	10	8	2,393	133	2,393	LUMP SUM	19,863	267	16

\* QUANTITIES FOR INFORMATION ONLY.



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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF SPANS & TYPICAL SECTION**

BRIDGE ON US 74 EBL OVER SR 1173, RR, TUCKASEGEE RIVER

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

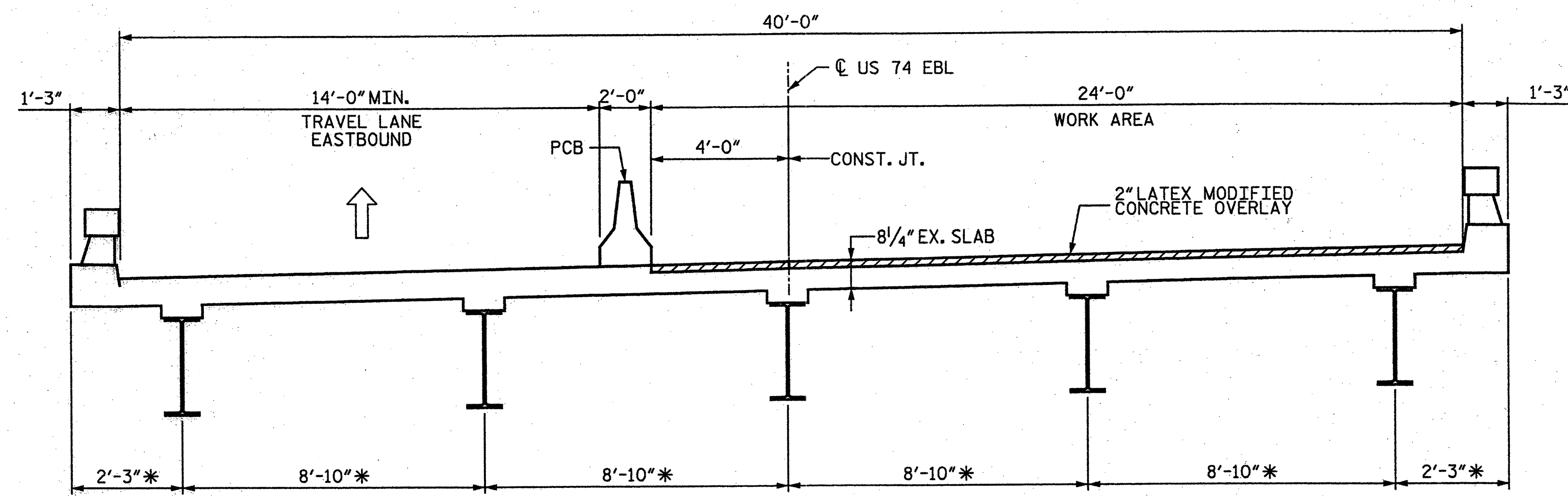
TOTAL SHEETS  
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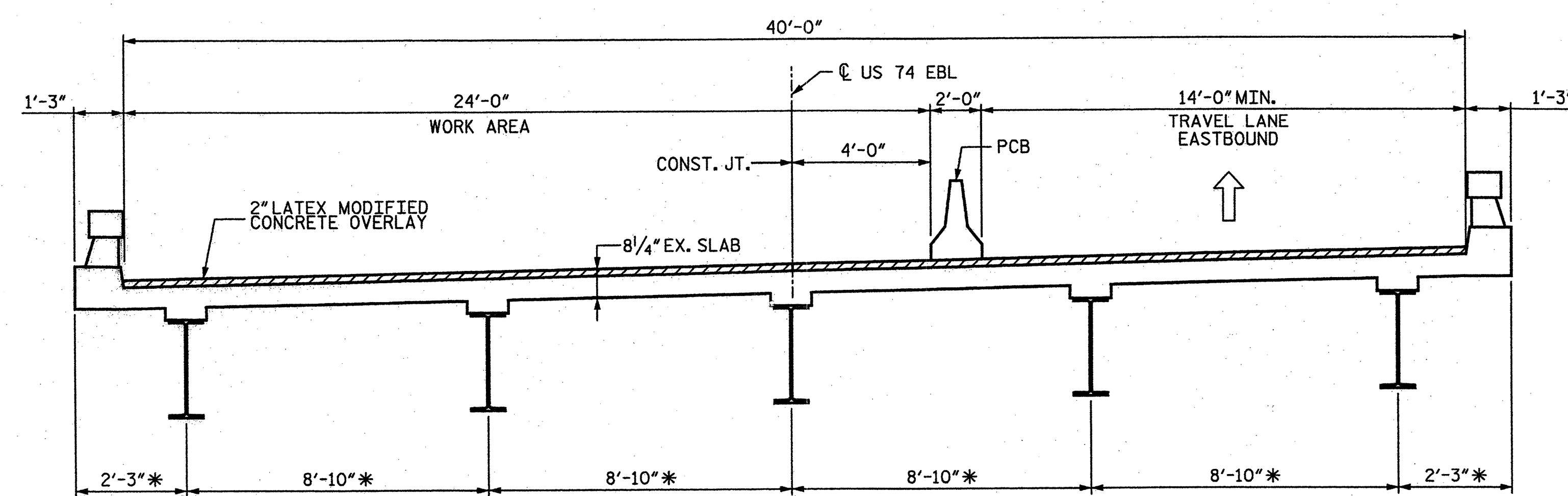
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 CHECKED BY: DRG DATE: 10-11



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TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

\* DIMENSIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED

PROJECT NO. 17BP.14.P.4

SWAIN COUNTY

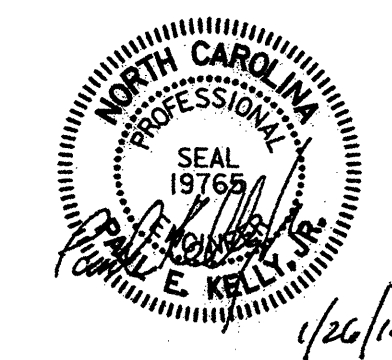
BRIDGE NO.: 23

REHAB. OF BRIDGE NO. 23 SHEET 2 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STAGED CONSTRUCTION

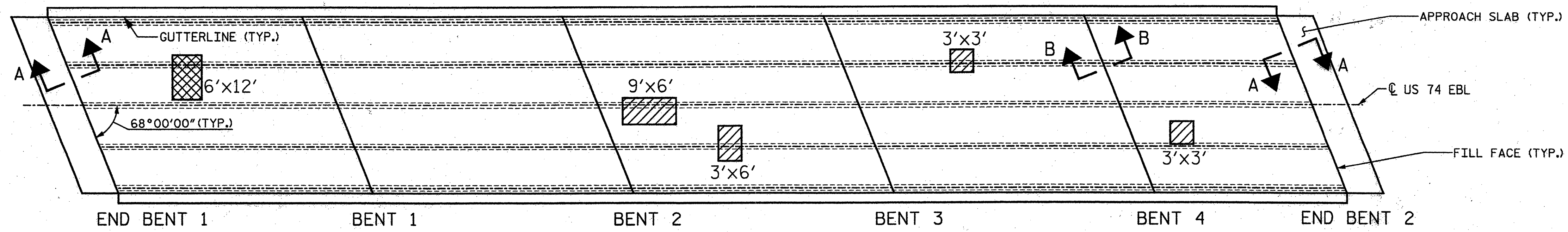
BRIDGE ON US 74 EBL OVER  
SR 1173, RR, TUCKASEGEE RIVER





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Charlotte, NC 28208  
NC License No. F-0991

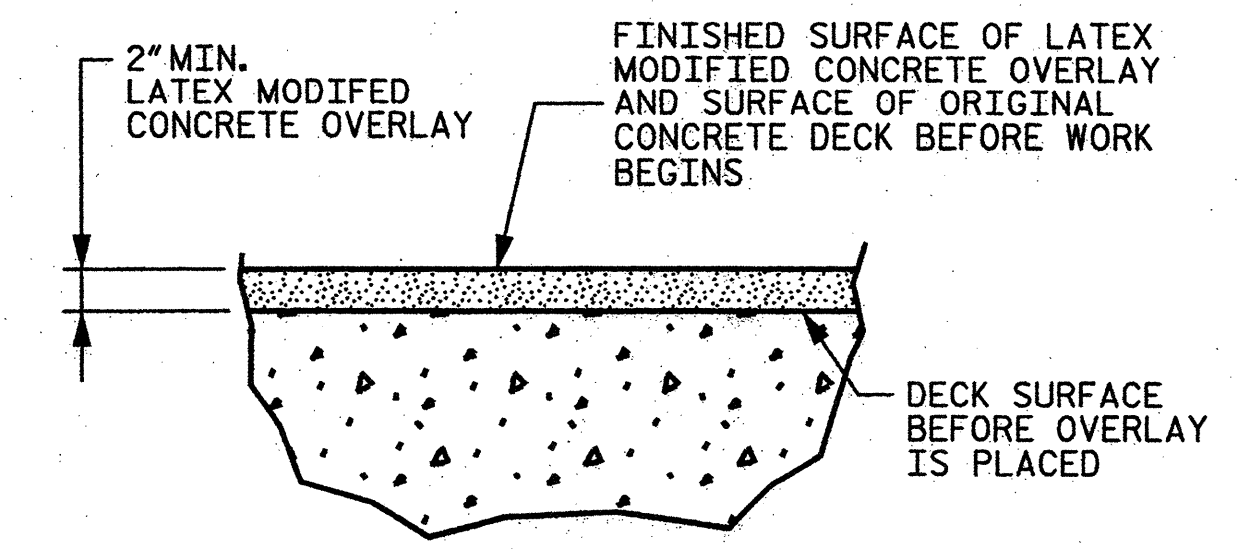
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CHECKED BY: DRG DATE: 10-11

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-54	
1			3			TOTAL SHEETS	
2			4			57	

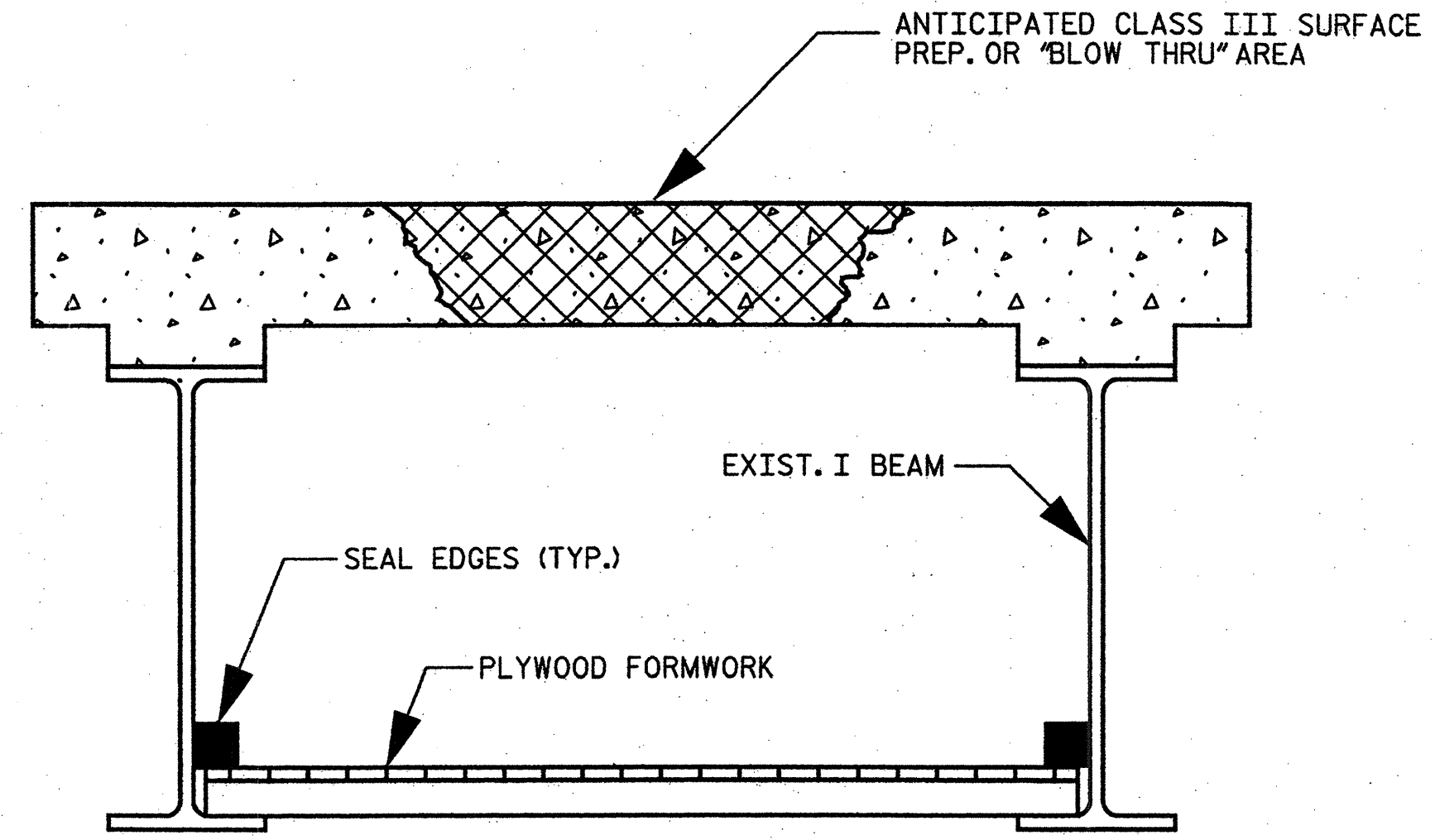


PLAN OF SPANS - DECK REPAIRS

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



DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



TYP. "BLOW THRU" 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.

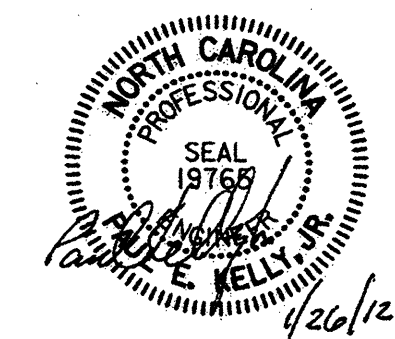
SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK. COST FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.

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 4/16".
- 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 4.

PROJECT NO. 17BP.14.P.4  
SWAIN COUNTY  
 BRIDGE NO.: 23  
 REHAB. OF BRIDGE NO. 23 SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 OVERLAY DETAILS  
 BRIDGE ON US 74 EBL OVER  
 SR 1173, RR, TUCKASEGEE RIVER



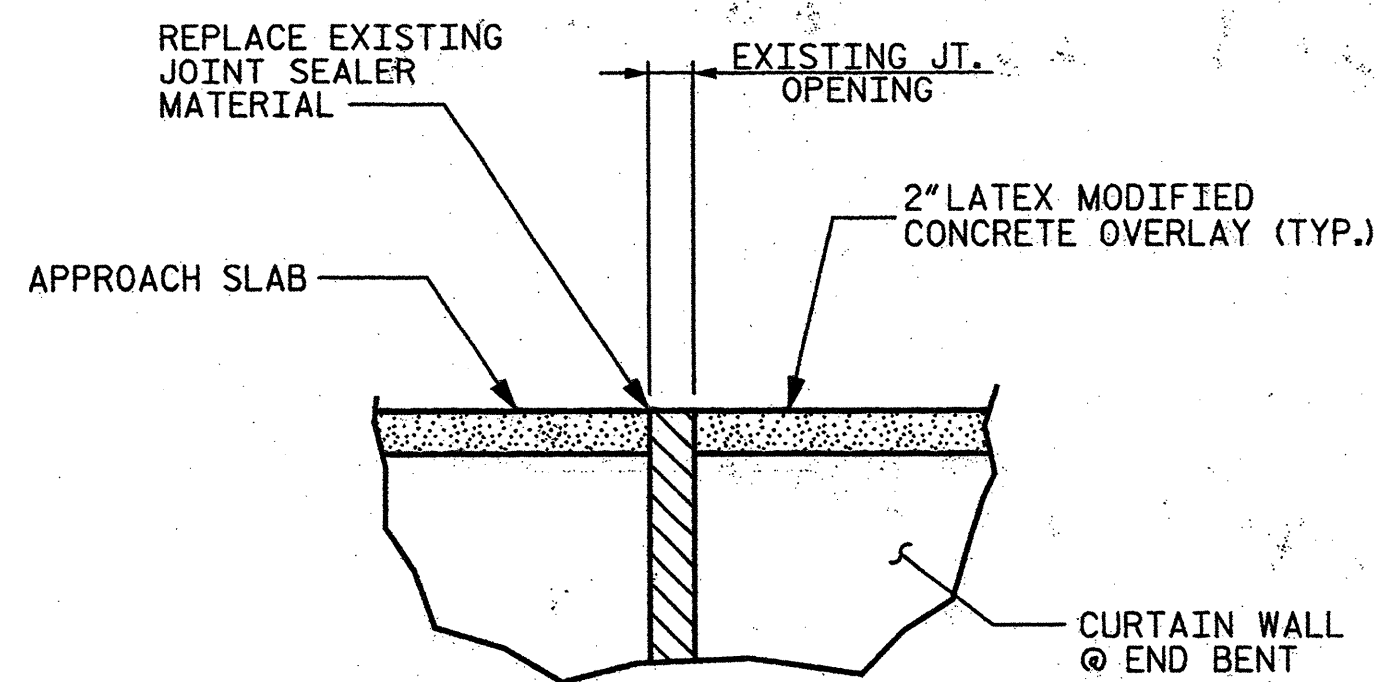
STV/Ralph Whitehead Associates, Inc.  
 1000 West Morehead St., Ste. 200  
 Charlotte, NC 28208  
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-55
1			3			TOTAL SHEETS
2			4			57

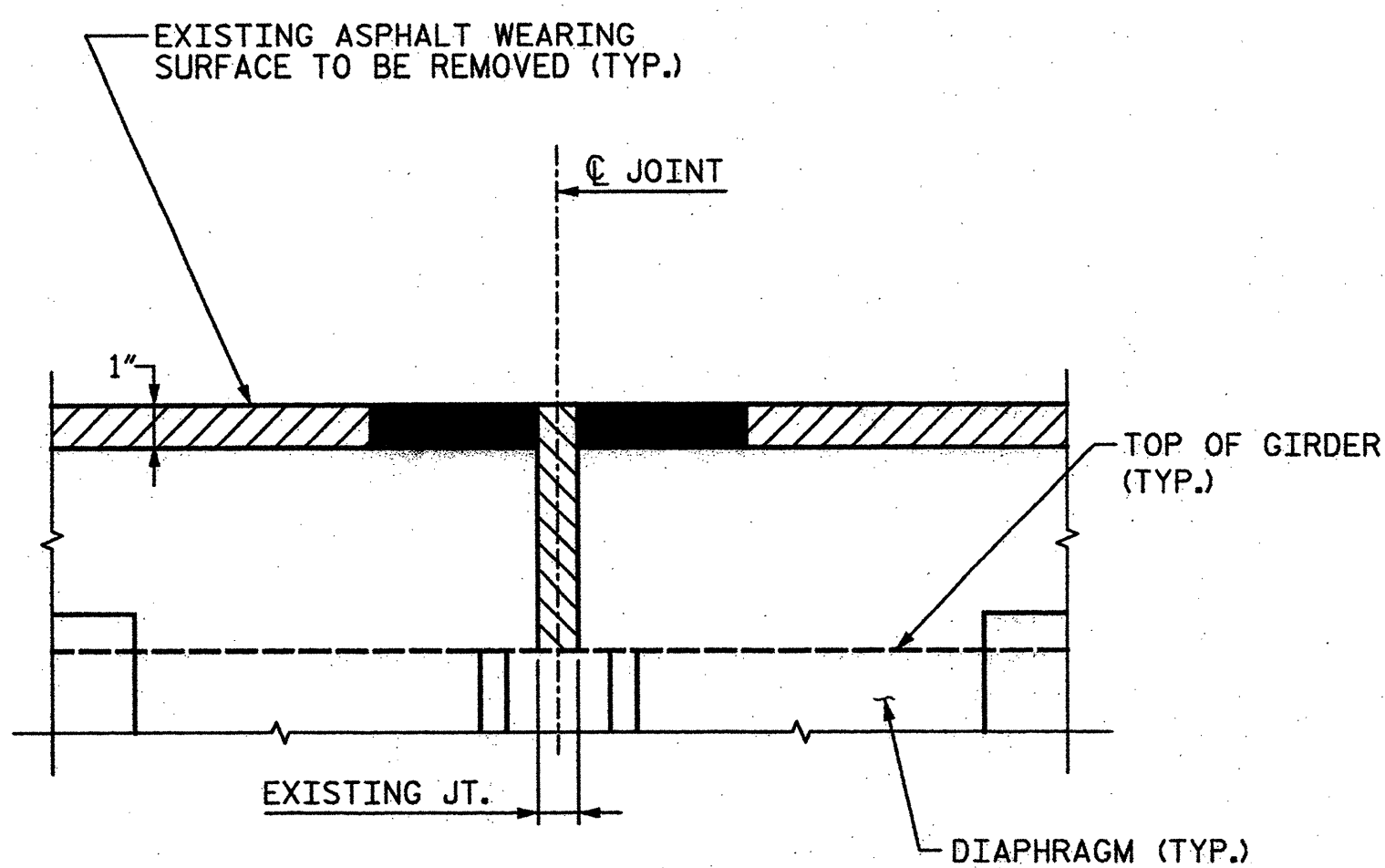
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 1/26/2012  
 WJVM

DRAWN BY: RWM DATE: 10-11  
 CHECKED BY: DRG DATE: 10-11

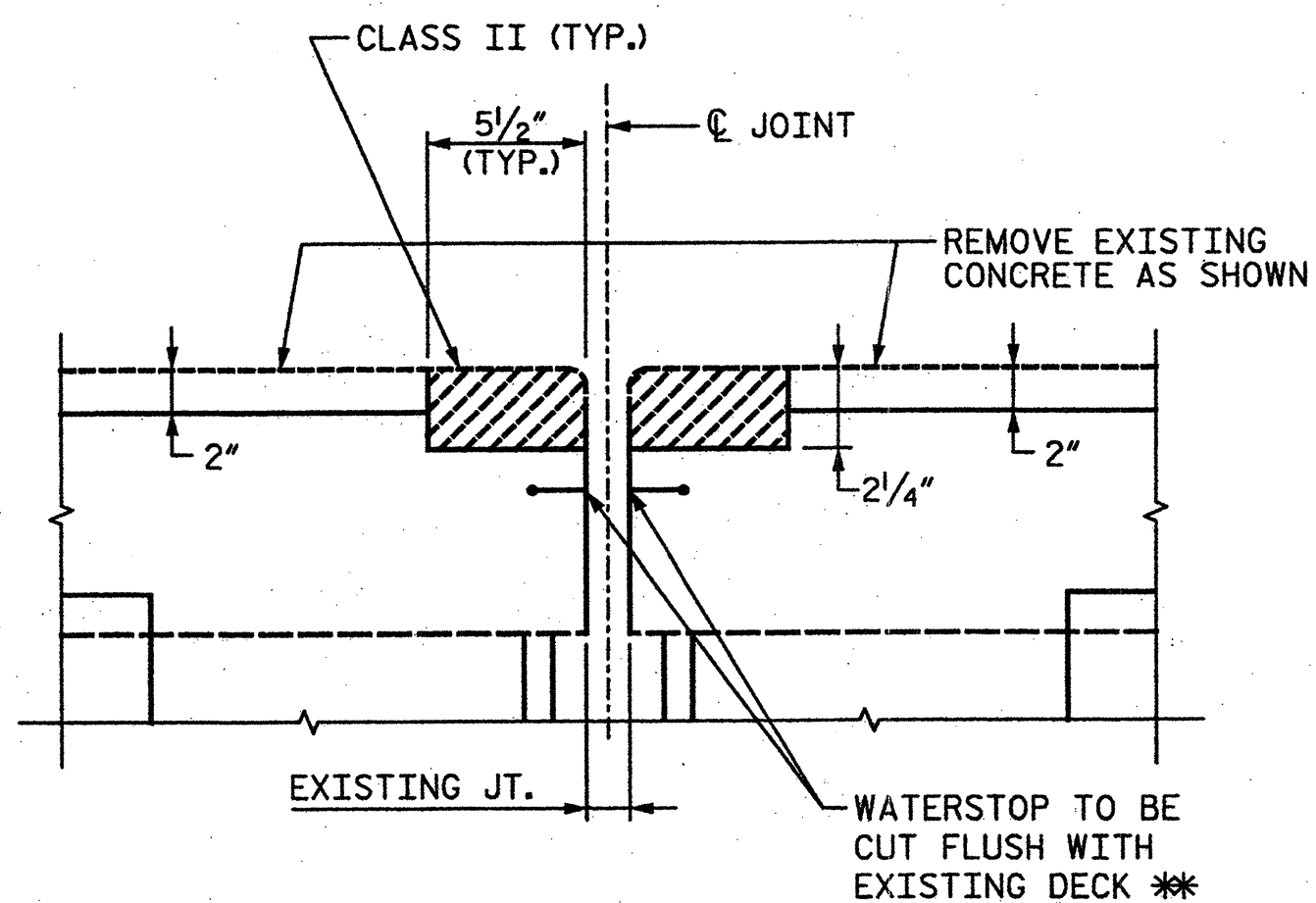
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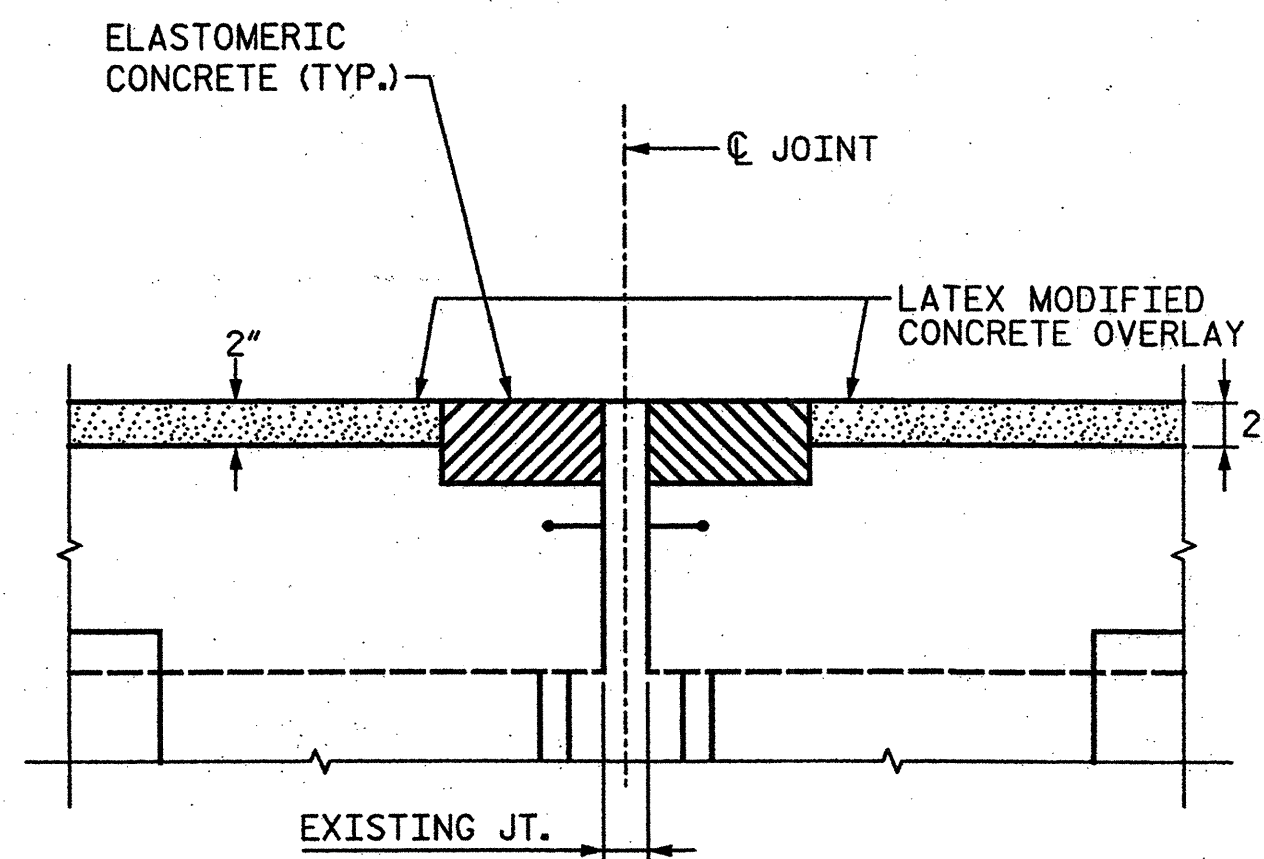
**SECTION A-A**  
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)



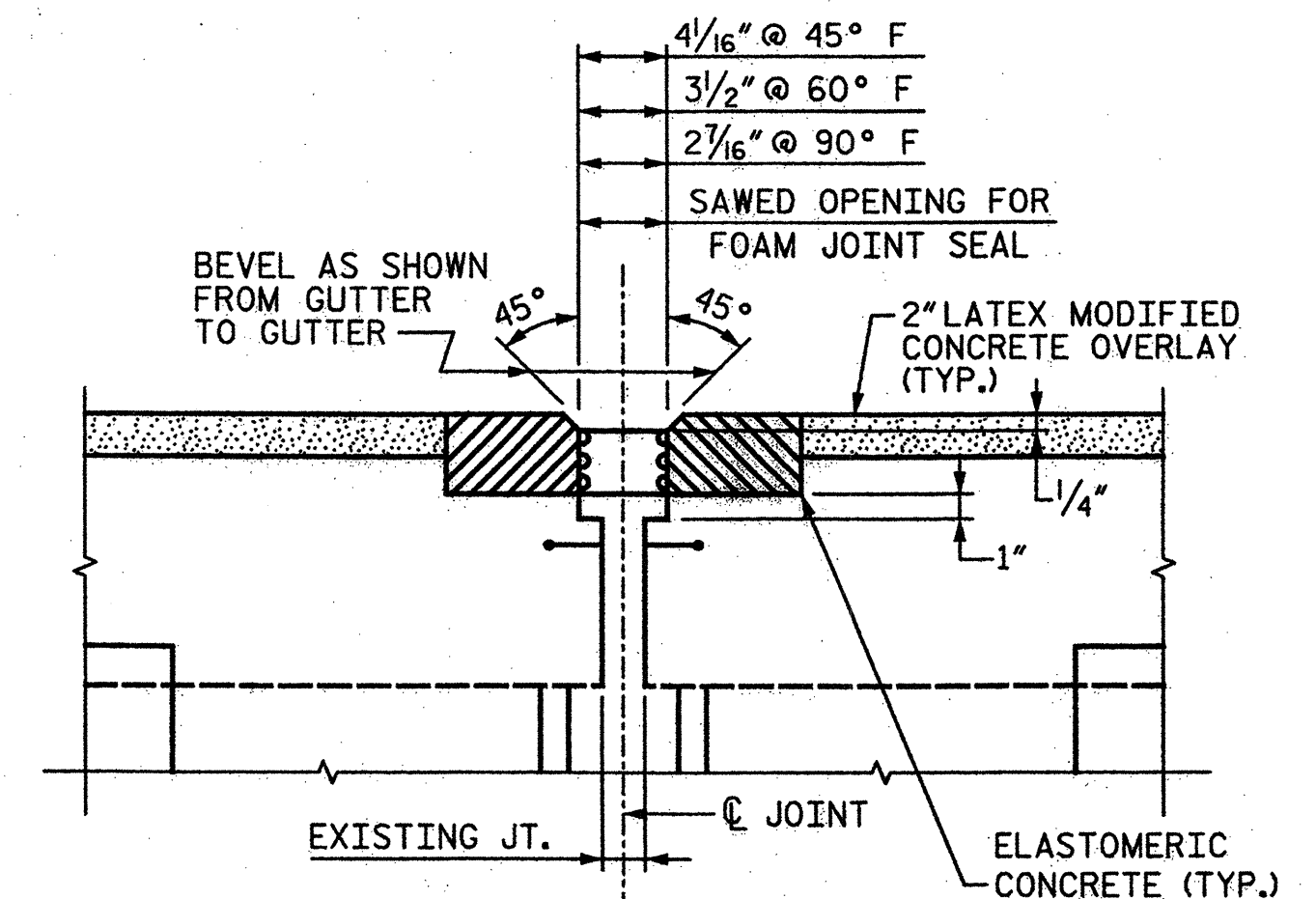
**SECTION B-B**  
(EXISTING JOINT)



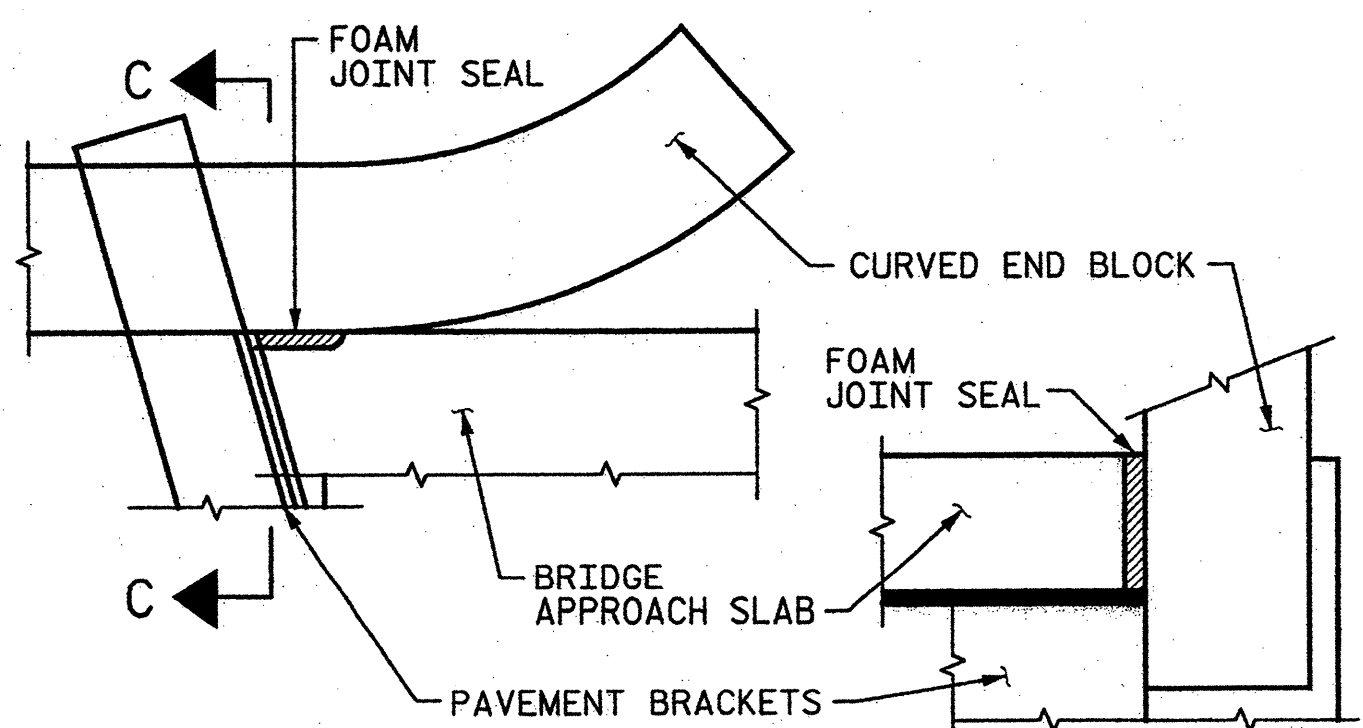
**SECTION B-B**  
(DEMO OF JOINT)



**SECTION B-B**  
(PROPOSED JOINT PRE-SAWED)



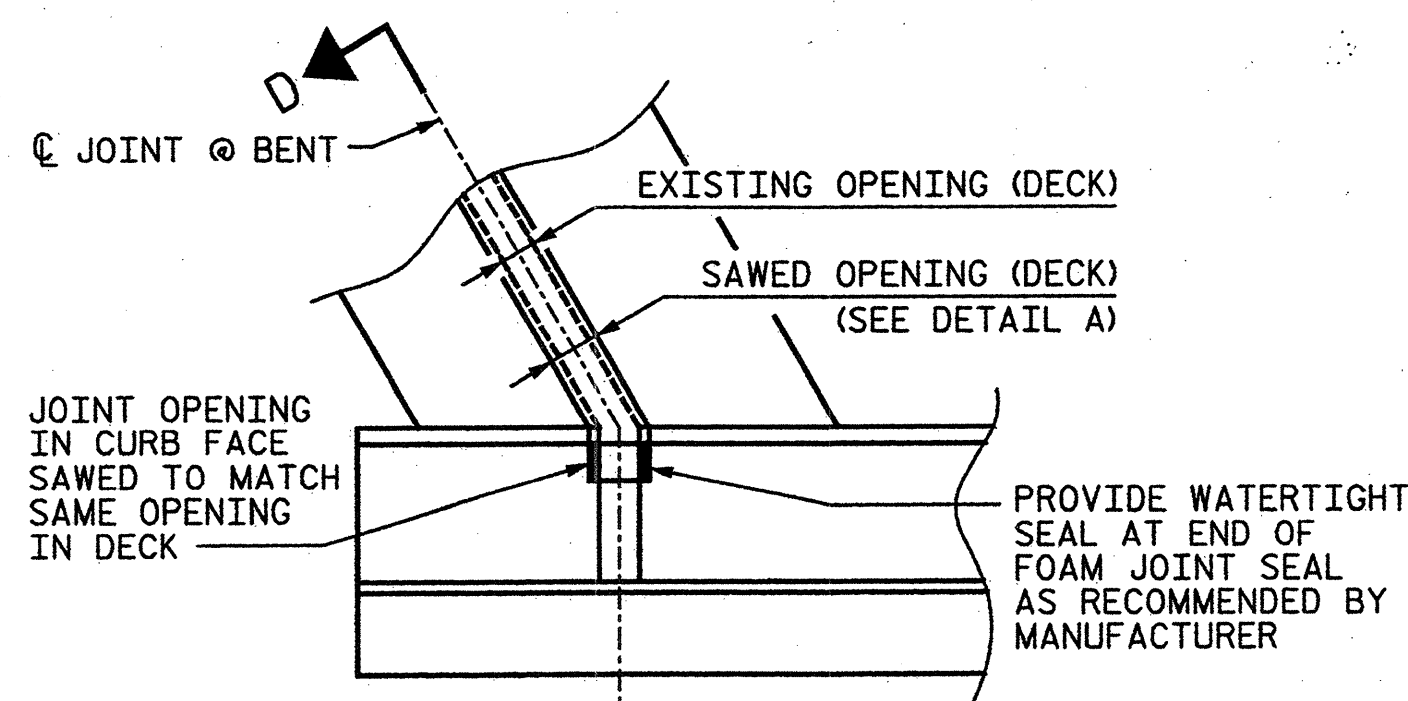
**SECTION B-B**  
(PROPOSED JOINT)



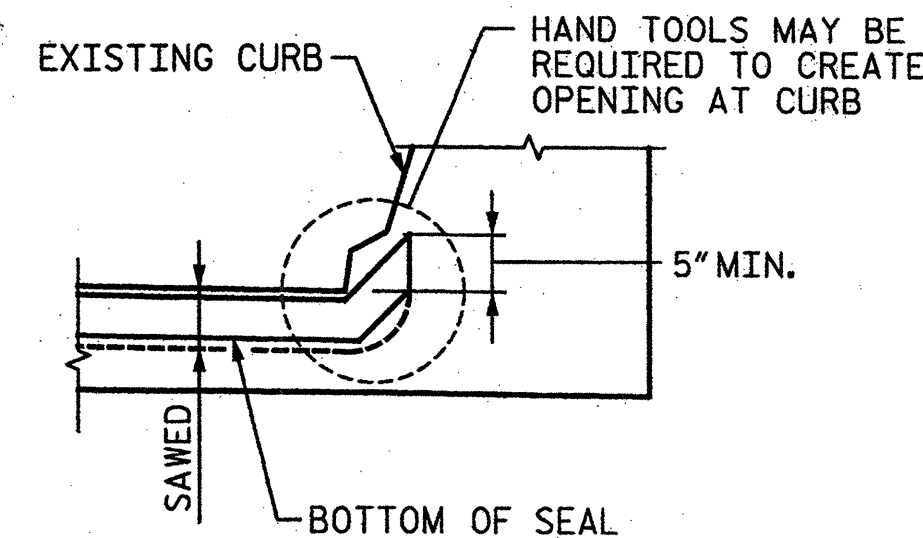
**PLAN**                      **SECTION C-C**

**DETAIL OF EXPANSION JOINT BETWEEN APPROACH SLAB AND CURVED END BLOCK**

\* ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, REMOVE THE ENTIRE WATERSTOP.



**PLAN OF JOINT SEAL AT CURB**



**SECTION D-D**

**NOTES:**

ELASTOMER CONCRETE SHALL BE INCLUDED IN THE FOAM JOINT SEAL PAY ITEM.

PROJECT NO. **17BP.14.P.4**

**SWAIN** COUNTY

BRIDGE NO.: **23**

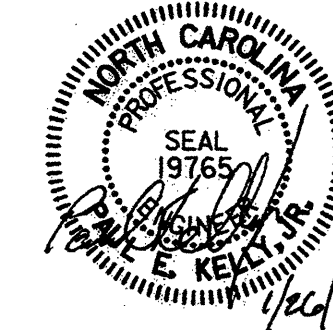
REHAB. OF BRIDGE NO. 23                      SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**JOINT DETAILS**

BRIDGE ON US 74 EBL OVER SR 1173, RR, TUCKASEGEE RIVER

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



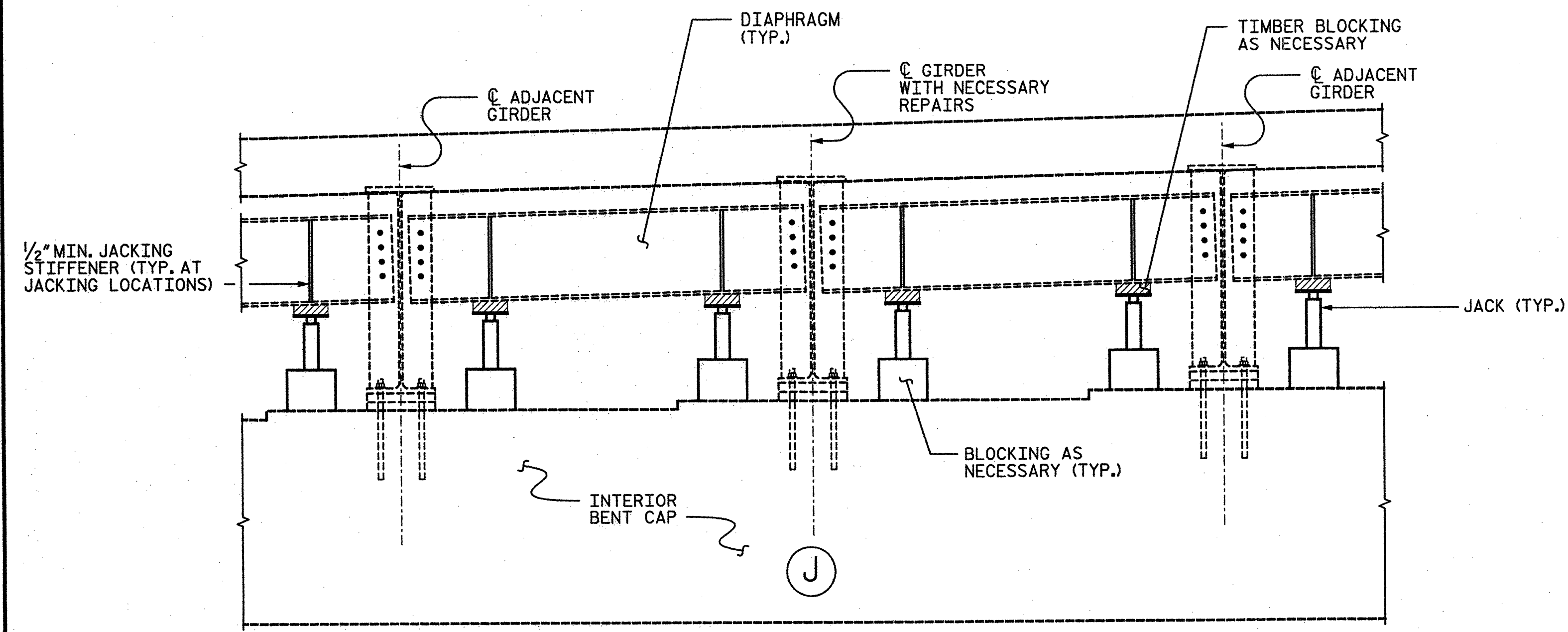
DRAWN BY: **RWM**                      DATE: **10-11**  
CHECKED BY: **DRG**                      DATE: **10-11**

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-56	
1			3			TOTAL SHEETS	
2			4			57	

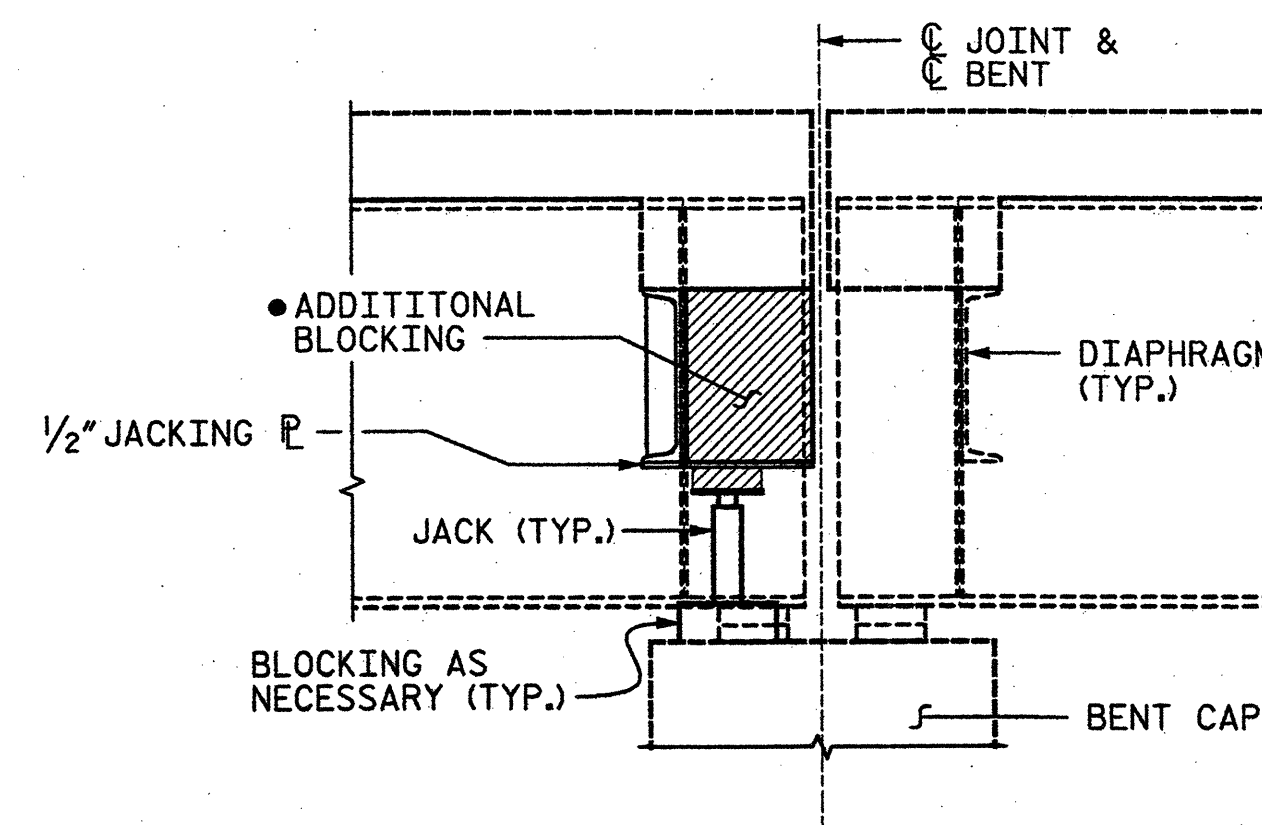


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1/26/2012

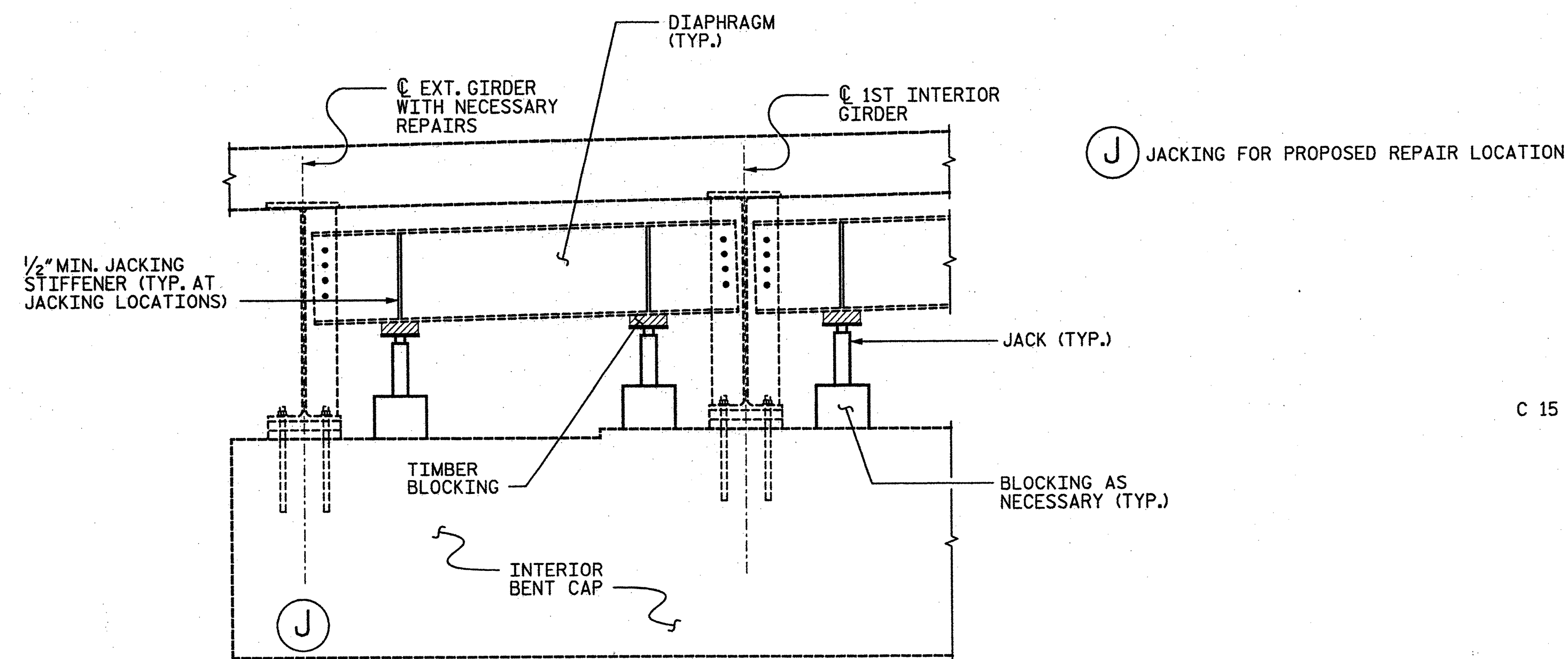


**GIRDER JACKING DETAIL AT INTERIOR GIRDER**

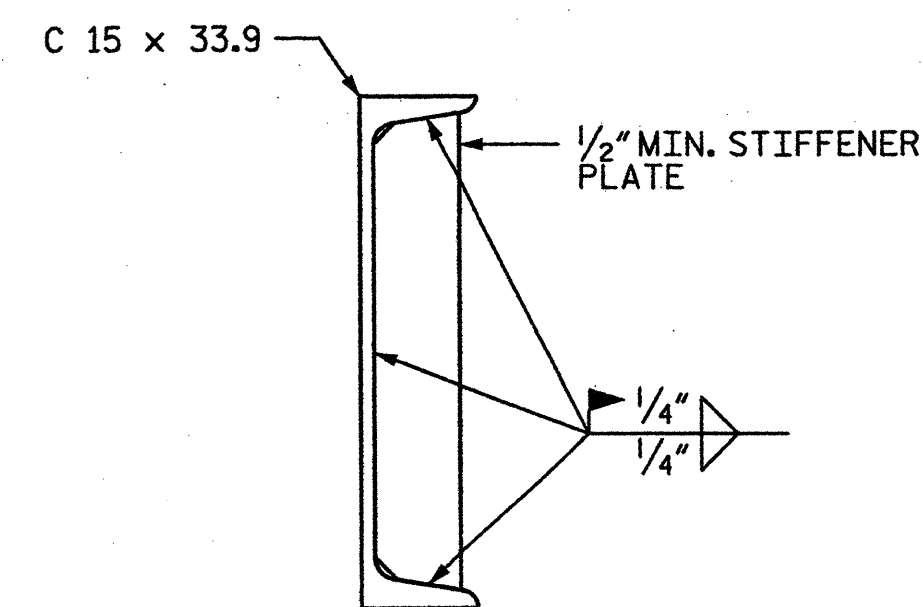


**TYPICAL SECTION @ JACKING LOCATION**

• BLOCKING SHALL BE FULL WIDTH FROM BACK OF DIAPHRAGM CHANNEL TO THE END OF THE DECK TURN DOWN. BLOCKING SHALL BE INSTALLED THE FULL DEPTH OF THE DIAPHRAGM SUCH THAT THE BLOCKING WILL BE LIFTED SIMULTANEOUSLY WITH THE EXISTING DIAPHRAGM.



**GIRDER JACKING DETAIL AT EXTERIOR GIRDER**



**JACKING STIFFENER DETAIL**

**CONSTRUCTION SEQUENCE:**

- INSTALL JACKS AND BLOCKING AT LOCATIONS SHOWN ON PLAN.
- REMOVE NECESSARY NUTS ON ANCHOR BOLTS.
- JACK GIRDERS A MAXIMUM OF 1/8" IN ORDER TO RELIEVE LOAD ON BENT CAP UNDER BEARING.
- MECHANICALLY LOCK ALL JACKS AT BENT.
- PERFORM CONCRETE REPAIRS AT SPECIFIED LOCATIONS.
- ONCE ALL REPAIRS ARE COMPLETE, LOWER BRIDGE. CONTRACTOR SHALL NOT LOWER BRIDGE UNTIL CONCRETE REPAIR MATERIAL HAS REACHED A COMPRESSIVE STRENGTH OF 3,000 PSI.

**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 60 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 CURING OF CONCRETE.
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.14.P.4**

**HAYWOOD & SWAIN COUNTY**

BRIDGE NO.: **126, 22, 73, 203**

REHAB. OF HAYWOOD & SWAIN CO. BRIDGES

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**JACKING PLAN**  
BRIDGES 126, 22, 73, 203



DRAWN BY : **RWM** DATE : **10-11**  
CHECKED BY : **DRG** DATE : **10-11**

**STV / Ralph Whitehead Associates, Inc.**  
1000 West Morehead St., Ste. 200  
Charlotte, NC 28206  
NC License No. F-0991

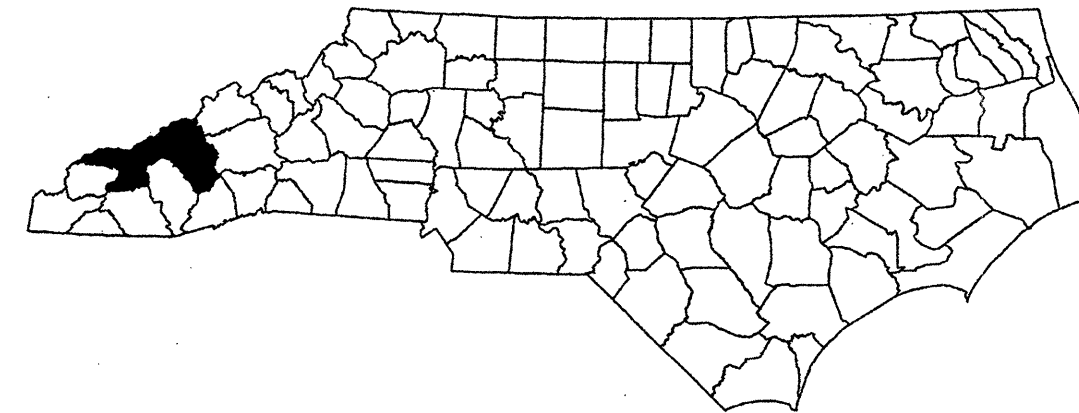
REVISIONS						SHEET NO. S-57
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			S-57

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**HAYWOOD AND SWAIN COUNTIES**

**DIVISION 14**



**LOCATION 1: HAYWOOD COUNTY BRIDGE #113 NC 209 OVER CRABTREE CREEK**

**TYPE OF WORK: OVERLAY**

**LOCATION 2: HAYWOOD COUNTY BRIDGE #126 US 74 OVER I-40**

**TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR**

**LOCATION 3: HAYWOOD COUNTY BRIDGE #22 US 74 OVER JONES COVE RD**

**TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR**

**LOCATION 4: HAYWOOD COUNTY BRIDGE #73 US 74 OVER CAROLINA BLVD**

**TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR**

**LOCATION 5: HAYWOOD COUNTY BRIDGE #203 US 276 OVER JONATHAN CREEK**

**TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR**

**LOCATION 6: SWAIN COUNTY BRIDGE #18 US 74 WB OVER SHEPARDS CREEK RD**

**TYPE OF WORK: OVERLAY**

**LOCATION 7: SWAIN COUNTY BRIDGE #19 US 74 EB OVER SHEPARDS CREEK RD**

**TYPE OF WORK: OVERLAY**

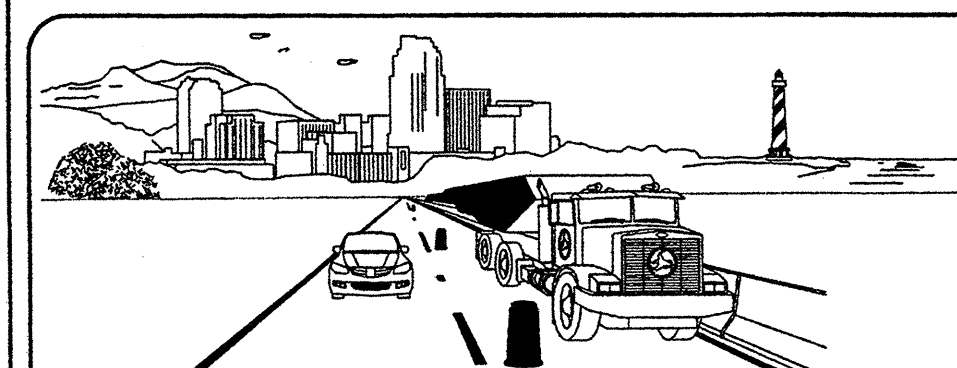
**LOCATION 8: SWAIN COUNTY BRIDGE #22 US 74 WB OVER TUCKASEGEE RIVER**

**TYPE OF WORK: OVERLAY**

**LOCATION 9: SWAIN COUNTY BRIDGE #23 US 74 EB OVER TUCKASEGEE RIVER**

**TYPE OF WORK: OVERLAY**

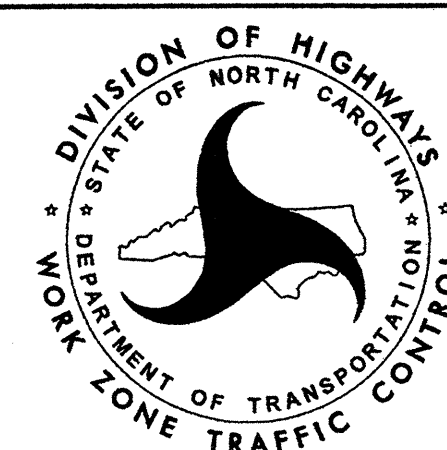
**SEE SHEET 1 FOR VICINITY MAPS**



**WORK ZONE SAFETY & MOBILITY**  
"from the MOUNTAINS to the COAST"

PLAN PREPARED FOR NCDOT BRIDGE MANAGEMENT UNIT

RALEIGH, NC



**INDEX OF SHEETS**

SHEET NO.	TITLE
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-1E	PHASING NOTES
TMP-2	FLAGGER DETAIL A
TMP-3	OFFSITE DETOUR A
TMP-4	FLAGGER DETAIL B
TMP-5	FLAGGER DETAIL C
TMP-6	OFFSITE DETOUR B
TMP-7	LANE CLOSURE DETAIL A
TMP-8	LANE CLOSURE DETAIL B
TMP-9	LANE CLOSURE DETAIL C
TMP-10	LANE CLOSURE DETAIL D

SHEET NO.

TMP-1

**PROJECT: 17BP.14.P.4**

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

**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 ODYNSKI, PE

SEAL



1-3-12



# 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:










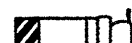

STD.NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

# LEGEND




## GENERAL

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




## TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM     SKINNY DRUM     TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW PANEL (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


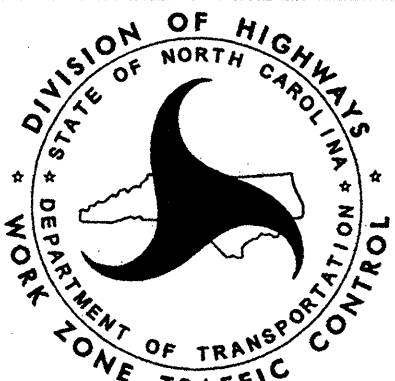
-  EXISTING LINES
-  TEMPORARY LINES

## PAVEMENT MARKERS

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

## PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

APPROVED:	DATE:	 SEAL	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL
		1-3-12	<b>ROADWAY STANDARD DRAWINGS &amp; LEGEND</b>



# 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 UNDESIRED 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, US 74, AND US 276	FRIDAY 6:00 A.M. TO MONDAY 9:00 P.M. 6:00 A.M. TO 9:00 P.M. TUESDAY TO THURSDAY

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

- | ROAD NAMES              |
|-------------------------|
| I-40, US 74, AND US 276 |
- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
  - FOR CHRISTMAS AND NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 18th THROUGH 9:00 P.M. JANUARY 4th.
  - FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. TUESDAY.
  - FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
  - FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE MONDAY 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 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
  - FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
  - FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
  - LEAF SEASON- FROM THE THURSDAY CLOSEST TO OCTOBER 7th TO THE MONDAY CLOSEST TO NOVEMBER 4th, NO LANE CLOSURES ARE ALLOWED BETWEEN 6:00 A.M. AND 9:00 P.M. TUESDAY TO THURSDAY AND FRIDAY 6:00 A.M. TO MONDAY 9:00 P.M.

### I-40

- CHRISTMAS RETAIL SEASON- NO LANE CLOSURES ARE ALLOWED BETWEEN 6:00 A.M. THE FRIDAY BEFORE THANKSGIVING UNTIL 9:00 P.M. ON THE THIRD WEEKDAY FOLLOWING NEW YEAR'S DAY. EXCEPT THAT A LANE CLOSURE WILL BE ALLOWED FROM 9:00 P.M. TO 6:00 A.M. ON MONDAY, TUESDAY, AND WEDNESDAY NIGHTS.

- C) 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.

## LANE AND SHOULDER CLOSURE REQUIREMENTS

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

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

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

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

## TRAFFIC PATTERN ALTERATIONS

- H) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

## SIGNING

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

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

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

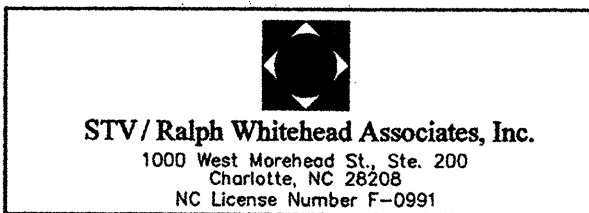
COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

## TRAFFIC BARRIER

- M) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.



PROJ. REFERENCE NO.	SHEET NO.
17BP.14.P.4	TMP-1B

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC. INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

- N) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS:

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

## TRAFFIC CONTROL DEVICES

- O) 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.
- P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- Q) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.
- R) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- S) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- T) UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS, REPLACE PAVEMENT MARKINGS WITH POLYUREA AND RAISED PAVEMENT MARKERS ON THE FINAL SURFACE AS DIRECTED BY THE ENGINEER.

## MISCELLANEOUS

- U) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- V) THE ENGINEER WILL CONTACT THE OVERSIZE/OVERWEIGHT PERMIT UNIT (MS. TAMMY DENNING OR MS. JOY WIGGINS AT 919-733-4740) TWO WEEKS BEFORE TRAFFIC IS PLACED IN A ONE-LANE PATTERN UTILIZING PORTABLE CONCRETE BARRIER AND WHEN TRAFFIC IS RESTORED TO THE EXISTING TRAFFIC PATTERN.

APPROVED: _____ DATE: _____			GENERAL NOTES

2/2/2012 R:\TrafficControl\TrafficControl\Microstation Set\14P4\_TCP\_IB.dgn

## PHASING

USE NCDOT RSD. 1101.01 SHEETS 1, 2, AND 3 OF 3 FOR WORK ZONE ADVANCE WARNING SIGNS.  
CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

### LOCATION 1 (HAYWOOD 113):

- STEP 1: USING SHEET TMP-2, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE A LANE OF BRIDGE 113. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING SHEET TMP-2, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE A LANE OF BRIDGE 113. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

### LOCATION 2 (HAYWOOD 126):

#### PHASE 1:

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 5 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF BRIDGE 126, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USE NCDOT RSD. 1101.02 SHEET 5 OF 15 TO SWITCH THE LANE CLOSURE TO THE LEFT LANE. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 5 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF BRIDGE 126, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 6: USE NCDOT RSD. 1101.02 SHEET 5 OF 15 TO SWITCH THE LANE CLOSURE TO THE LEFT LANE. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

#### PHASE 2:

- STEP 1: USING TMP-3 FOR THE OFFSITE DETOUR OF THE US 74 NB RAMP TO I-40 WEST, PLACE DETOUR SIGNING FOR CLOSURE ALONG US 74 RAMP, I-40, AND NC 215. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 2: USING NCDOT RSD. 1101.03 SHEET 7 OF 9, CLOSE THE US 74 RAMP TO I-40 WEST, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD COVER THE DETOUR SIGNS AND REOPEN THE ROADWAY TO TRAFFIC.
- STEP 3: REPEAT STEP 2 UNTIL ALL WORK IS COMPLETED.
- STEP 4: USE NCDOT RSD. 1101.03 SHEET 7 OF 9 TO CLOSE THE US 74 RAMP TO I-40 WEST DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

### LOCATION 2 (HAYWOOD 126) CONT.:

#### PHASE 3:

- STEP 1: USING NCDOT RSD. 1101.02 SHEETS 6, 9, AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-40. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANE OF I-40. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.

### LOCATION 3 (HAYWOOD 22):

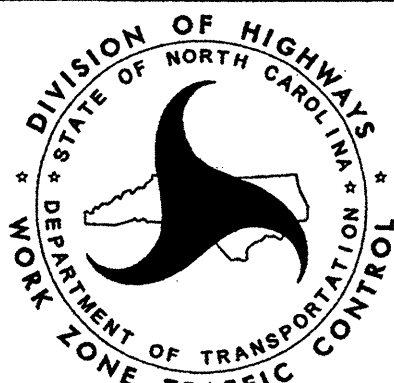
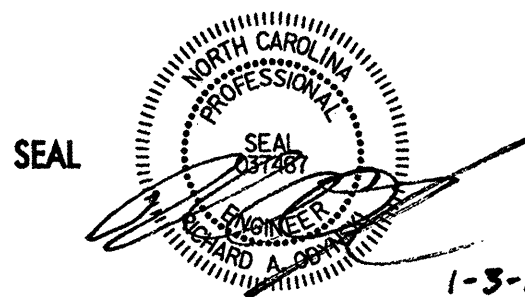
#### PHASE 1:

- STEP 1: USING TMP-7, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE OUTSIDE LANE OF BRIDGE 22. USE NCDOT RSD. 1101.02 SHEETS 9 AND 10 OF 15 IN CONJUNCTION WITH TMP-7 FOR ON AND OFF RAMP. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: USING TMP-7, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE INSIDE LANE OF BRIDGE 22. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

#### PHASE 2:

- STEP 1: USING SHEET TMP-4, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE A LANE OF SR 1800. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.

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odynskr

APPROVED: _____	DATE: _____	
 SEAL 1-3-12	<b>PHASING NOTES</b>	



## PHASING (CONT.)

USE NCDOT RSD. 1101.01 SHEETS 1, 2, AND 3 OF 3 FOR WORK ZONE ADVANCE WARNING SIGNS.  
 CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

### LOCATION 4 (HAYWOOD 73):

#### PHASE 1:

STEP 1: USING TMP-8, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE OUTSIDE LANE OF BRIDGE 73. USE NCDOT RSD. 1101.02 SHEETS 9 AND 10 OF 15 IN CONJUNCTION WITH TMP-8 FOR ON AND OFF RAMP. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

STEP 2: USING TMP-8, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE INSIDE LANE OF BRIDGE 73. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

#### PHASE 2:

STEP 1: USING NCDOT RSD. 1101.02 SHEETS 4, 9, AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF CAROLINA BLVD. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

STEP 2: USING NCDOT RSD. 1101.02 SHEET 4 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANE OF CAROLINA BLVD. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

### LOCATION 5 (HAYWOOD 203):

#### PHASE 1:

STEP 1: USING TMP-5, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE THE SOUTHBOUND LANE OF US 276 DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.

STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE NORTHBOUND LANE OF US 276 DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.

STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE NORTHBOUND LANE OF US 276 DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

STEP 6: REPEAT STEP 5 UNTIL ALL WORK IS COMPLETED.

### LOCATION 5 (HAYWOOD 203) CONT.:

#### PHASE 2:

STEP 1: USING TMP-5, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE THE SOUTHBOUND LANE OF US 276 DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

STEP 2: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE NORTHBOUND LANE OF US 276 DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE NORTHBOUND LANE OF US 276 DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

### LOCATION 6 (SWAIN 18):

STEP 1: USING TMP-9, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE OUTSIDE LANE OF BRIDGE 18. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.


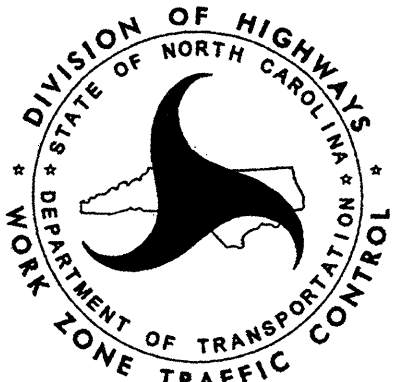
STEP 2: USING TMP-9, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE INSIDE LANE OF BRIDGE 18. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

### LOCATION 7 (SWAIN 19):

STEP 1: USING TMP-9, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE OUTSIDE LANE OF BRIDGE 19. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

STEP 2: USING TMP-9, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE INSIDE LANE OF BRIDGE 19. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

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APPROVED: _____	DATE: _____	 SEAL 1-3-12	 DIVISION OF HIGHWAYS NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	PHASING NOTES
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.P.4	TMP-1E

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

## PHASING (CONT.)

USE NCDOT RSD. 1101.01 SHEETS 1, 2, AND 3 OF 3 FOR WORK ZONE ADVANCE WARNING SIGNS.  
 CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

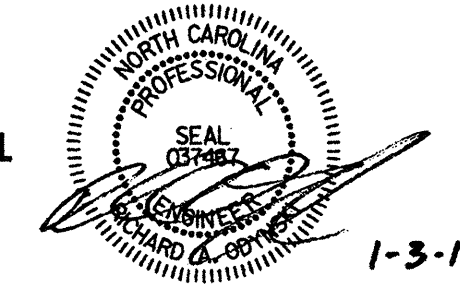
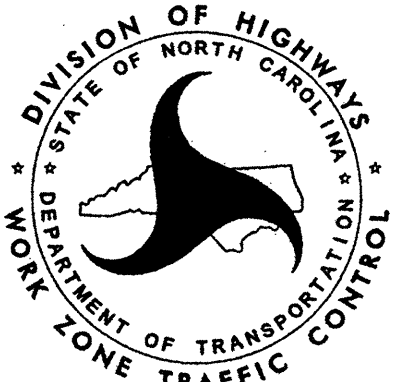
### LOCATION 8 (SWAIN 22):

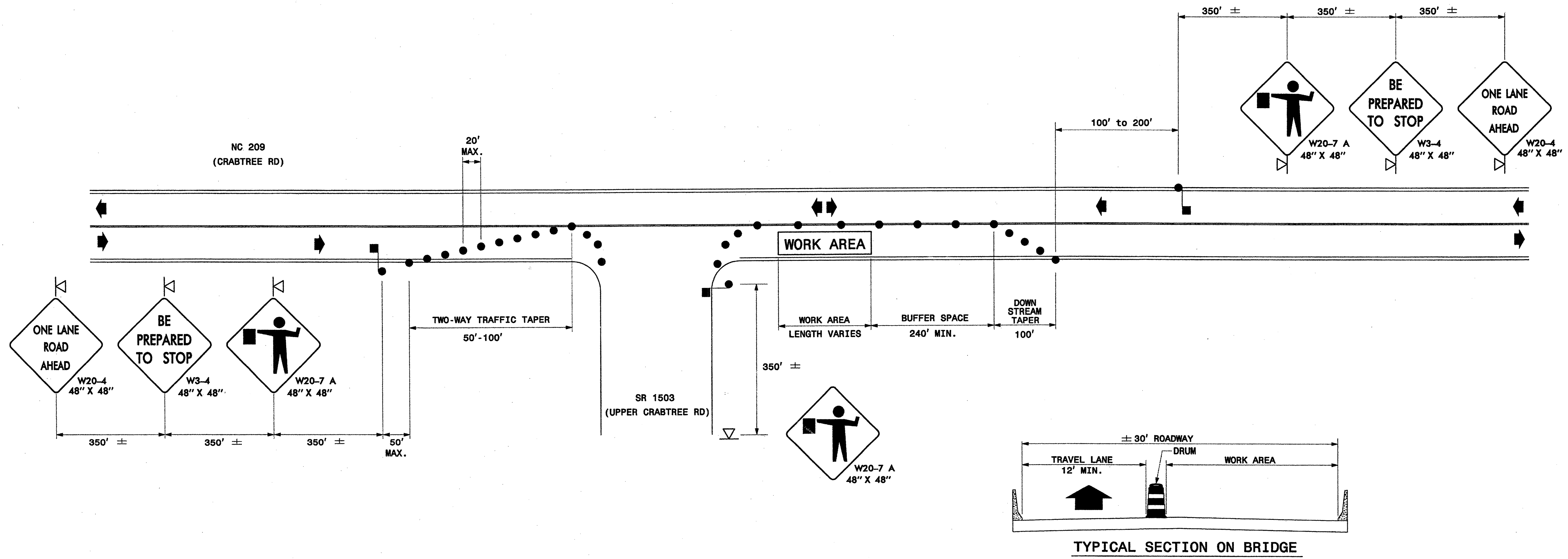
- STEP 1: USING TMP-10, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE INSIDE LANE OF BRIDGE 22. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: USING TMP-6 FOR THE OFFSITE DETOUR FOR THE SR 1531 SB RAMP TO US 74 WEST, PLACE DETOUR SIGNING FOR CLOSURE ALONG SR 1531, WHITTIER DEPOT ST, OLD BRYSON CITY ST, HYATT CREEK RD, AND US 74. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 3: USING TMP-6, CLOSE THE SR 1531 RAMP TO US 74 WEST. USING TMP-10, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE OUTSIDE LANES OF BRIDGE 22. PERFORM THE BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

### LOCATION 9 (SWAIN 23):

- STEP 1: USING TMP-9, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE OUTSIDE LANE OF BRIDGE 23. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: USING TMP-9, INSTALL LANE CLOSURE SIGNS, DEVICES, AND PORTABLE CONCRETE BARRIER TO CLOSE THE INSIDE LANE OF BRIDGE 23. PERFORM BRIDGE DECK PRESERVATION REPAIRS AS REQUIRED. AFTER ALL OTHER CONSTRUCTION OPERATIONS ARE COMPLETE INSTALL FINAL PAVEMENT MARKINGS. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.


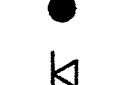

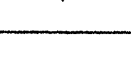
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APPROVED:	DATE:		
		1-3-12	<b>PHASING NOTES</b>

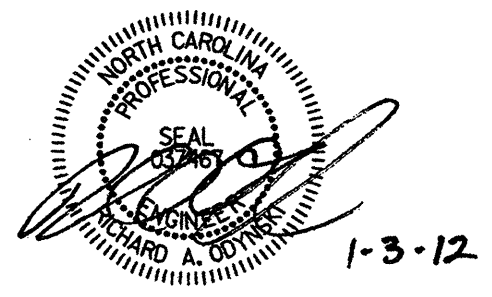
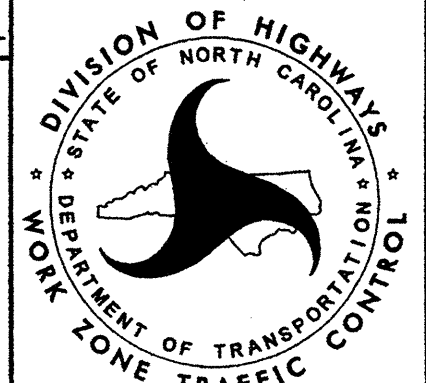


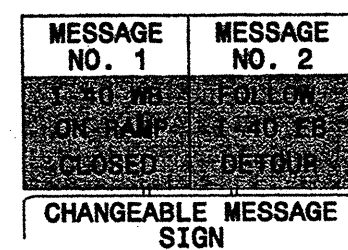
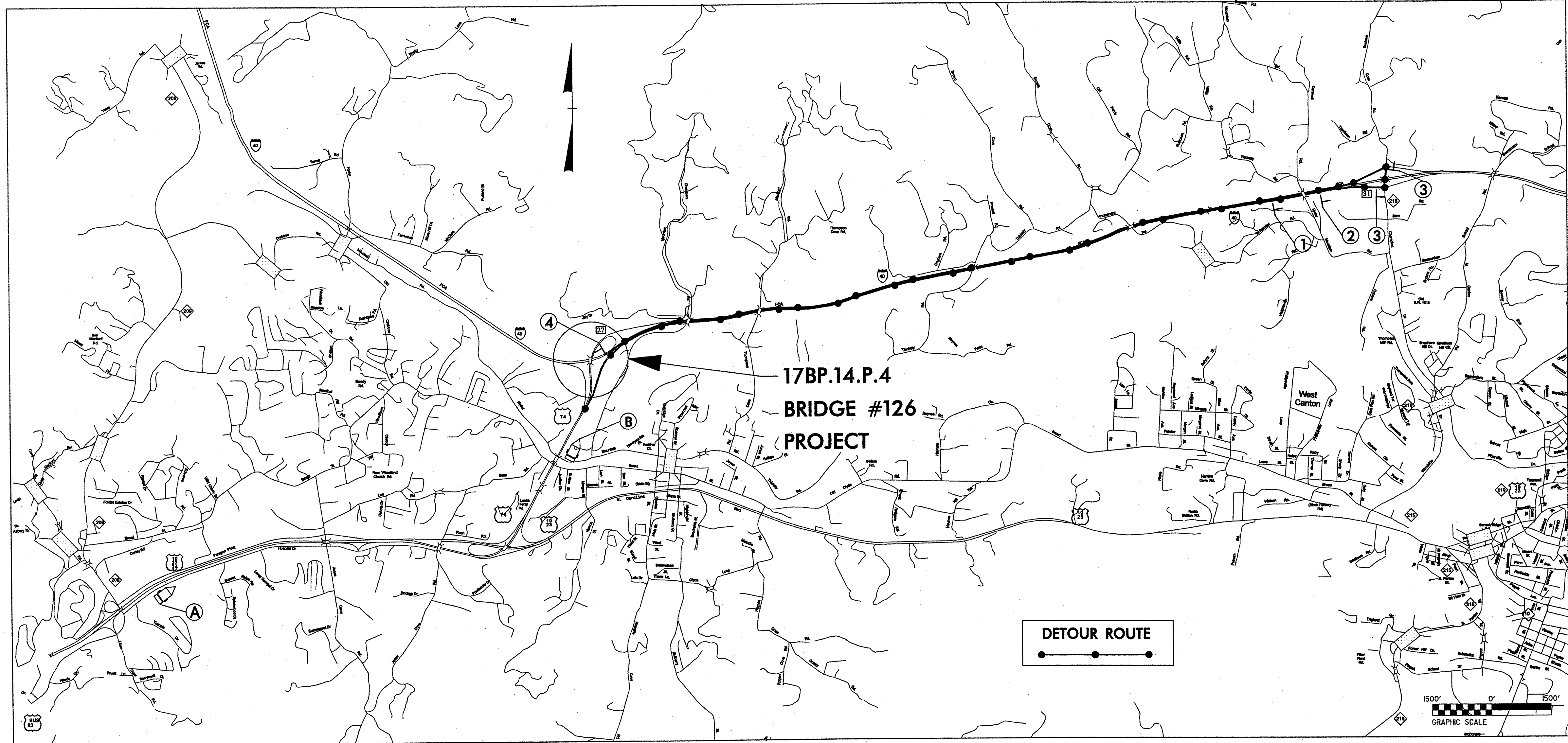
**GENERAL NOTES**

1. INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
2. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
3. PLACE DRUMS THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
4. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO NCDOT STD. 1101.11 SHEET 2).
5. DO NOT STOP IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
6. USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FEET IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND RECOMMEND THE USE OF LAW ENFORCEMENT.
7. REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
8. DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
9. CONTRACTOR MAY USE CONES OR SKINNY DRUMS IN PLACE OF DRUMS IF APPROVED BY THE ENGINEER.

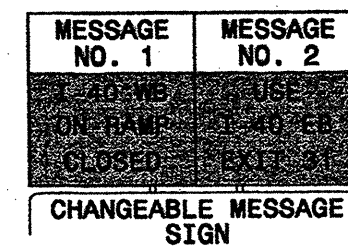
LEGEND	
	FLAGGER
	DRUM
	PORTABLE SIGN
	DIRECTION OF TRAFFIC FLOW

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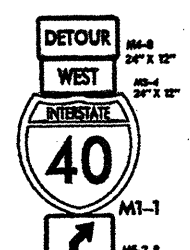
APPROVED: _____ DATE: _____	 1-3-12		<b>FLAGGER DETAIL A</b> <b>HAYWOOD 113</b>
SEAL			



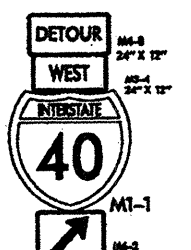
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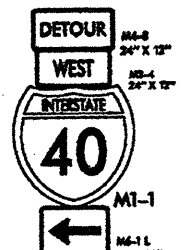
(B)



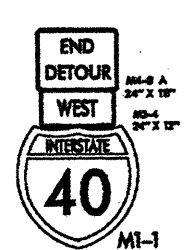
(1)



(2)



(3)



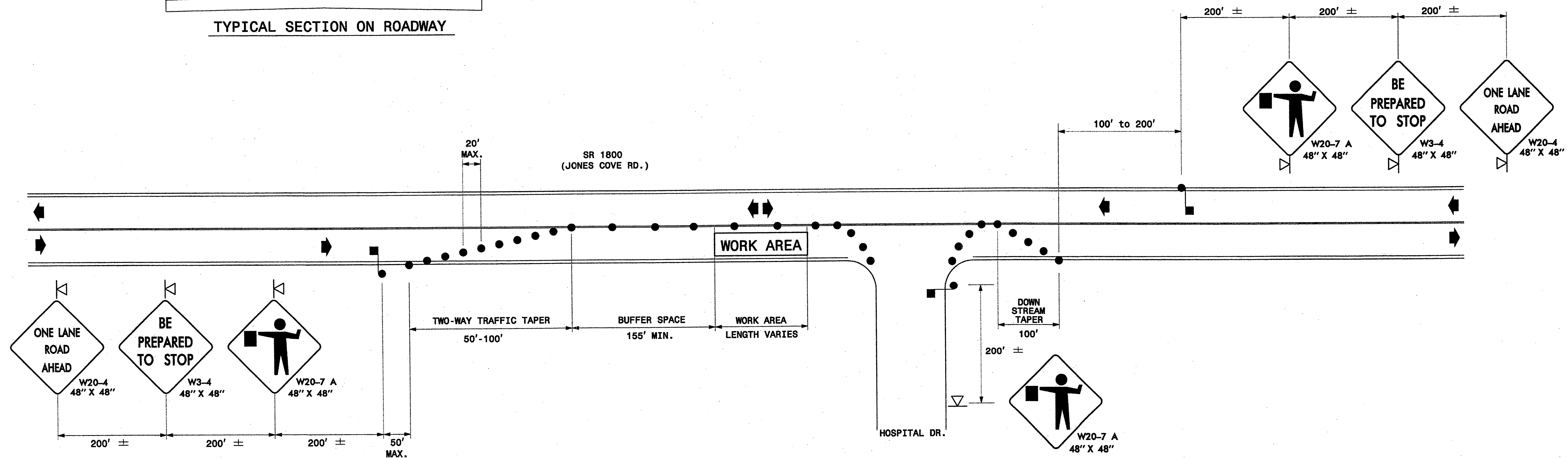
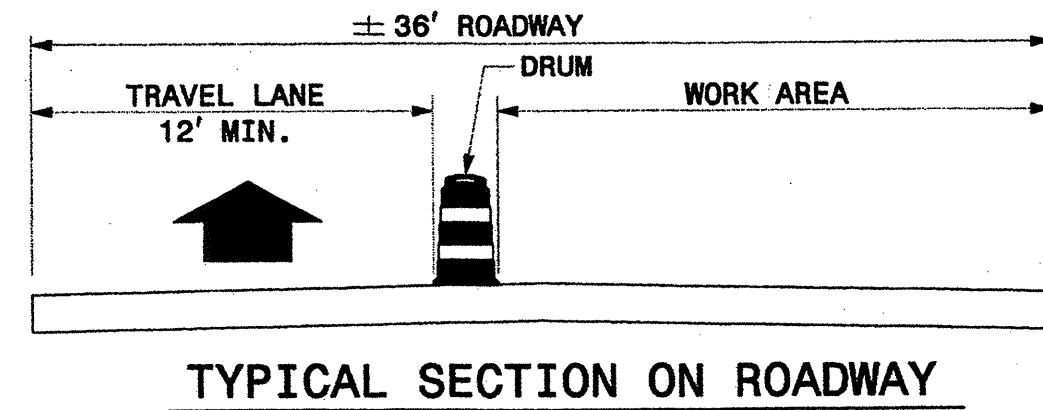
(4)

**NOTE:**

TRAFFIC CONTROL DEVICES (1) THRU (4) AND (A) AND (B) SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.

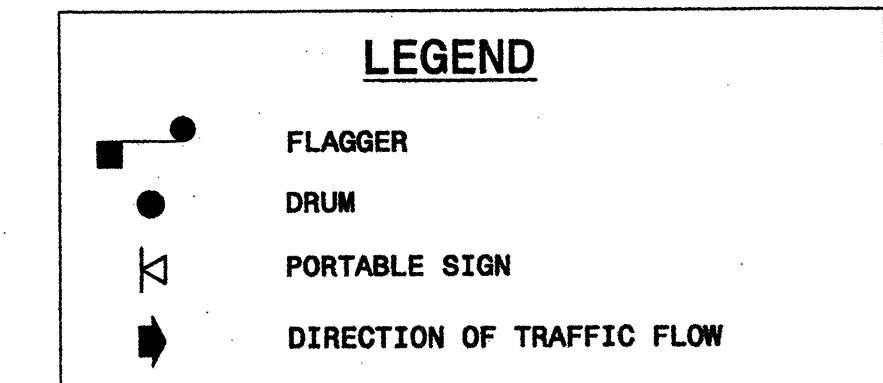
APPROVED:	DATE:		<b>OFFSITE DETOUR A SIGNING AND ROAD CLOSURE SIGNING</b>
	1-3-12		




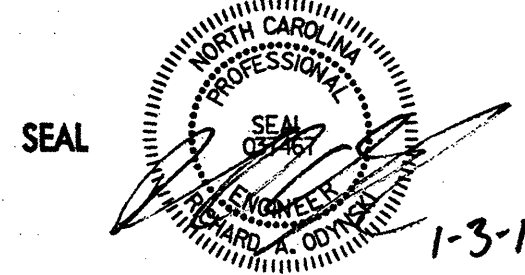


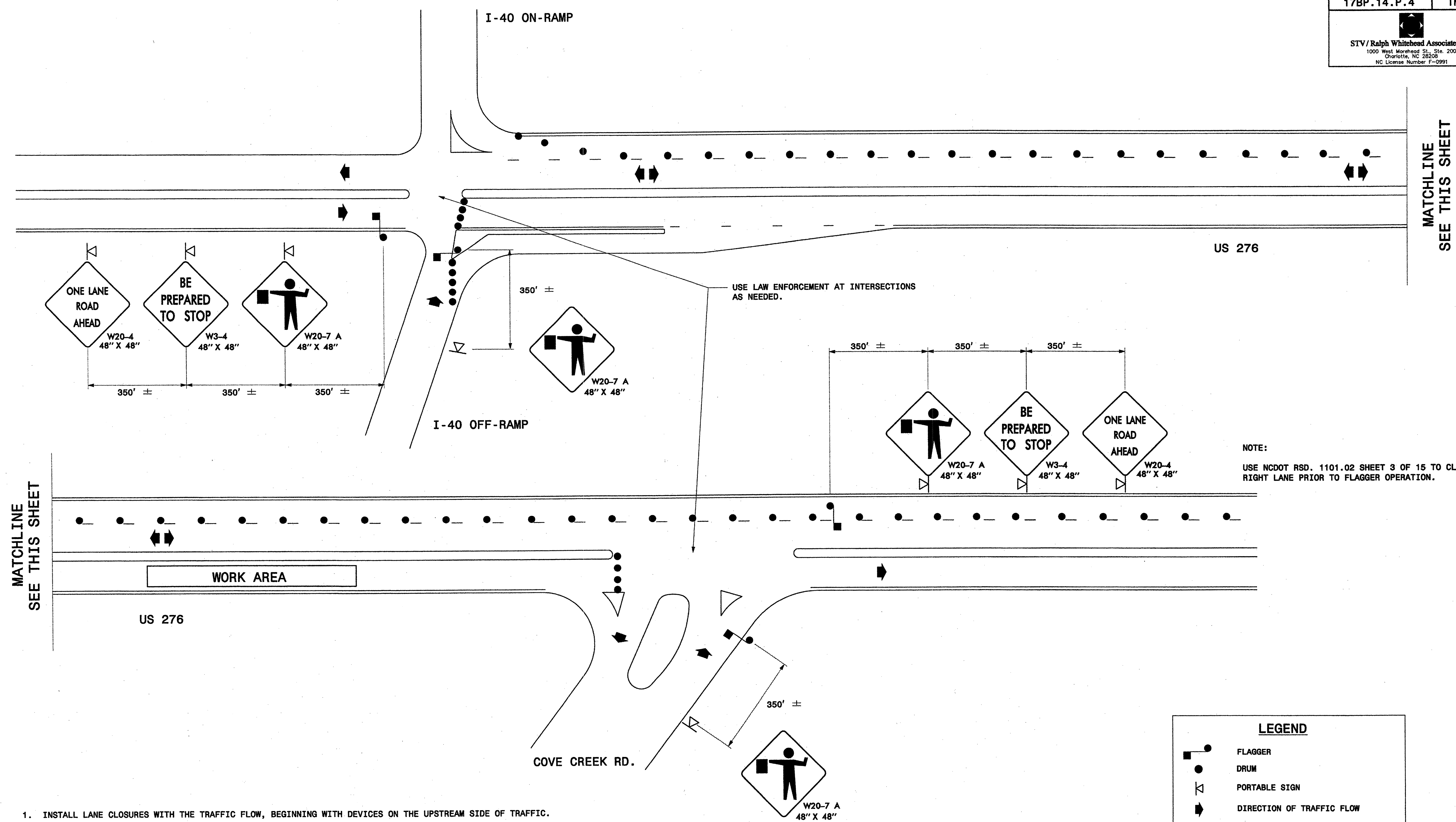
**GENERAL NOTES**

1. INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
2. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
3. PLACE DRUMS THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
4. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO NCDOT STD. 1101.11 SHEET 2).
5. DO NOT STOP IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
6. USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FEET IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND RECOMMEND THE USE OF LAW ENFORCEMENT.
7. REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
8. DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
9. CONTRACTOR MAY USE CONES OR SKINNY DRUMS IN PLACE OF DRUMS IF APPROVED BY THE ENGINEER.



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APPROVED:	DATE:	 <b>FLAGGER DETAIL B</b> <b>SR 1800</b>
 SEAL	1-3-12	



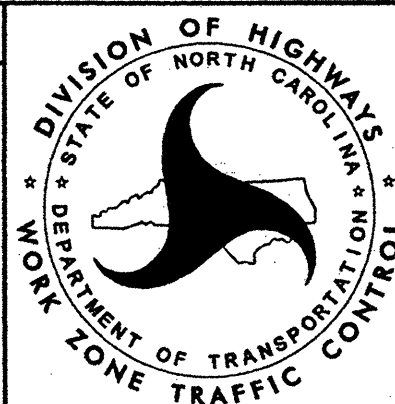
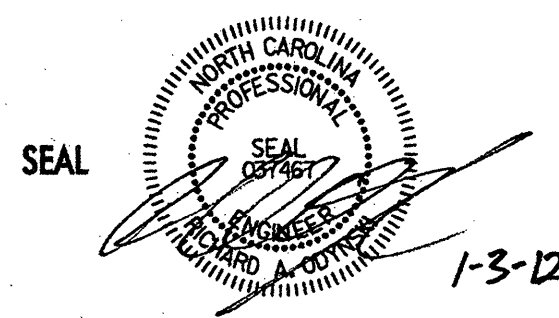
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SEE THIS SHEET

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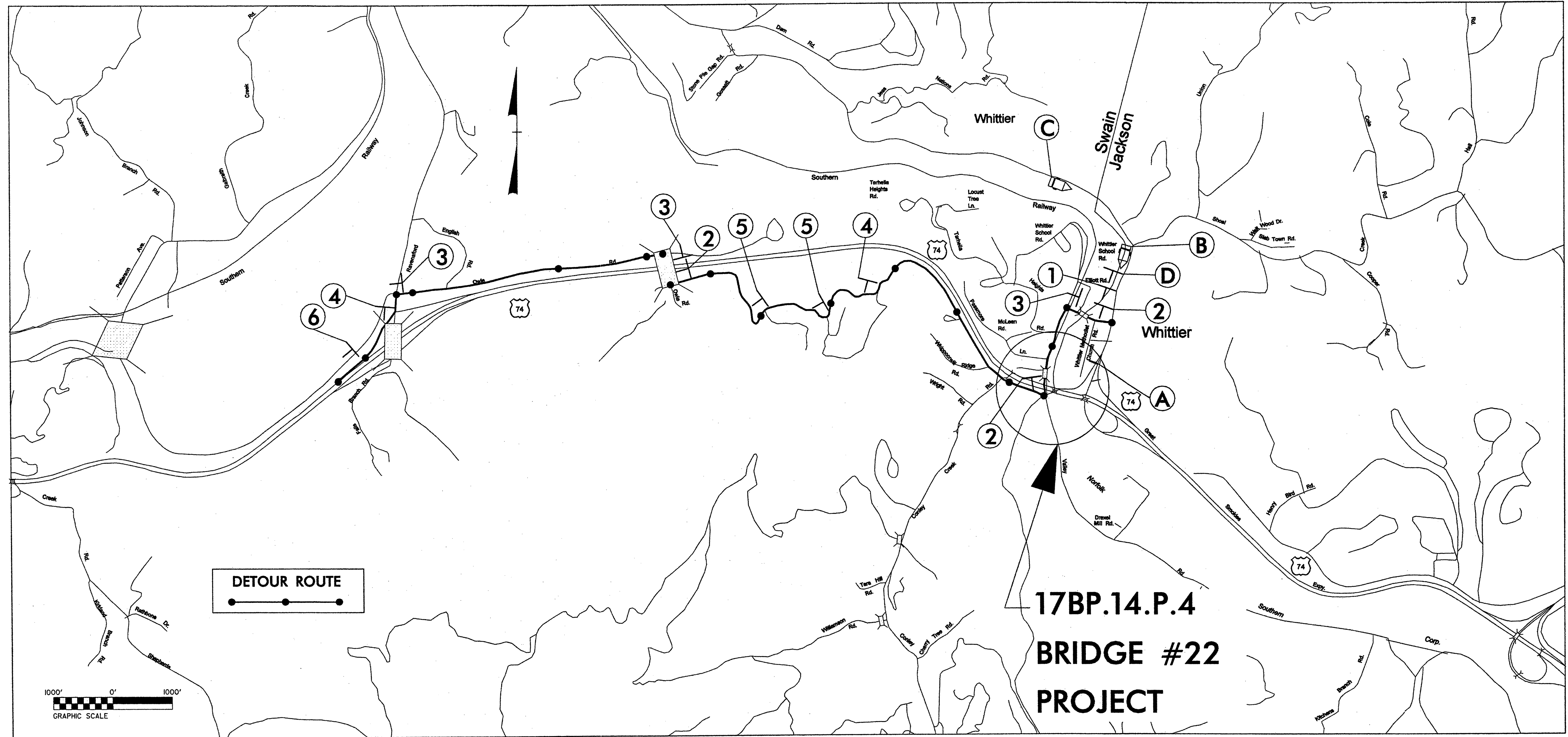
NOTE:  
USE NCDOT RSD. 1101.02 SHEET 3 OF 15 TO CLOSE  
RIGHT LANE PRIOR TO FLAGGER OPERATION.

LEGEND	
	FLAGGER
	DRUM
	PORTABLE SIGN
	DIRECTION OF TRAFFIC FLOW

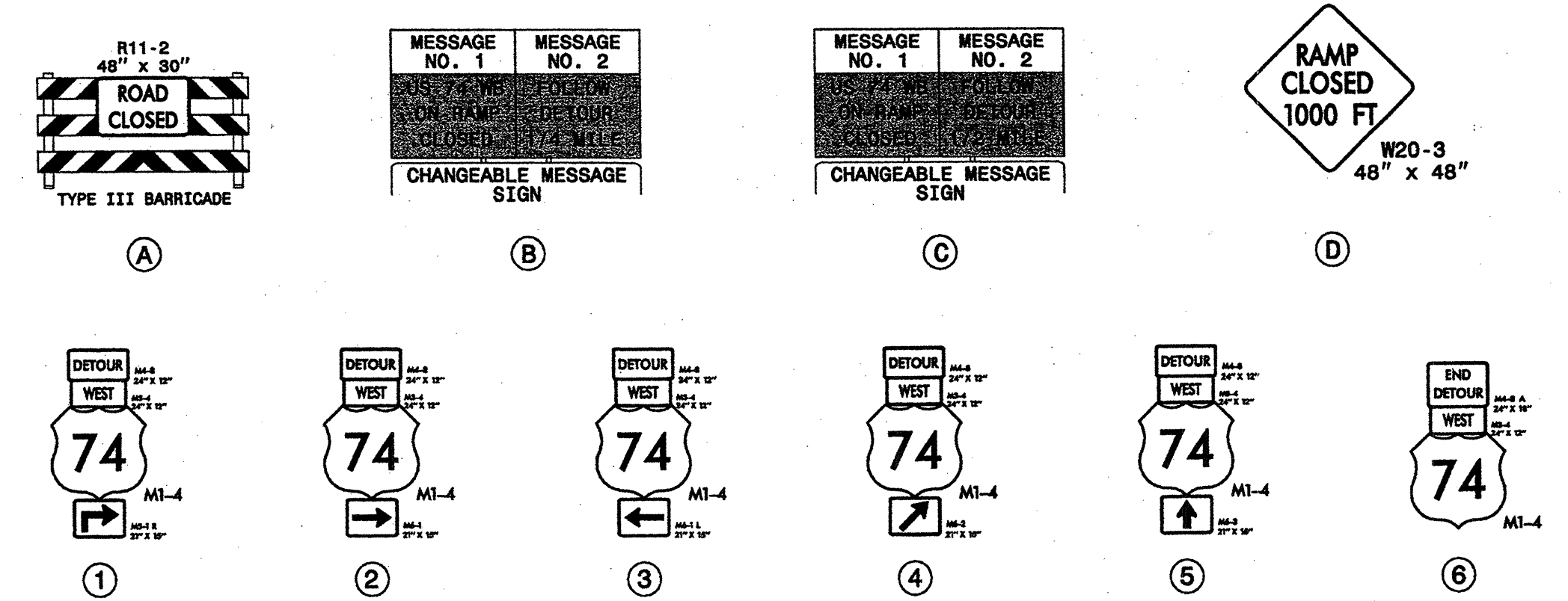
1. INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
2. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
3. PLACE DRUMS THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
4. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO NCDOT STD. 1101.11 SHEET 2).
5. DO NOT STOP IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
6. USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FEET IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND RECOMMEND THE USE OF LAW ENFORCEMENT.
7. REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
8. DO NOT EXCEED A 1 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
9. CONTRACTOR MAY USE CONES OR SKINNY DRUMS IN PLACE OF DRUMS IF APPROVED BY THE ENGINEER.

APPROVED: _____ DATE: _____	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	<b>FLAGGER DETAIL C</b> <b>HAYWOOD 203</b>
 SEAL 1-3-12		

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**17BP.14.P.4  
 BRIDGE #22  
 PROJECT**



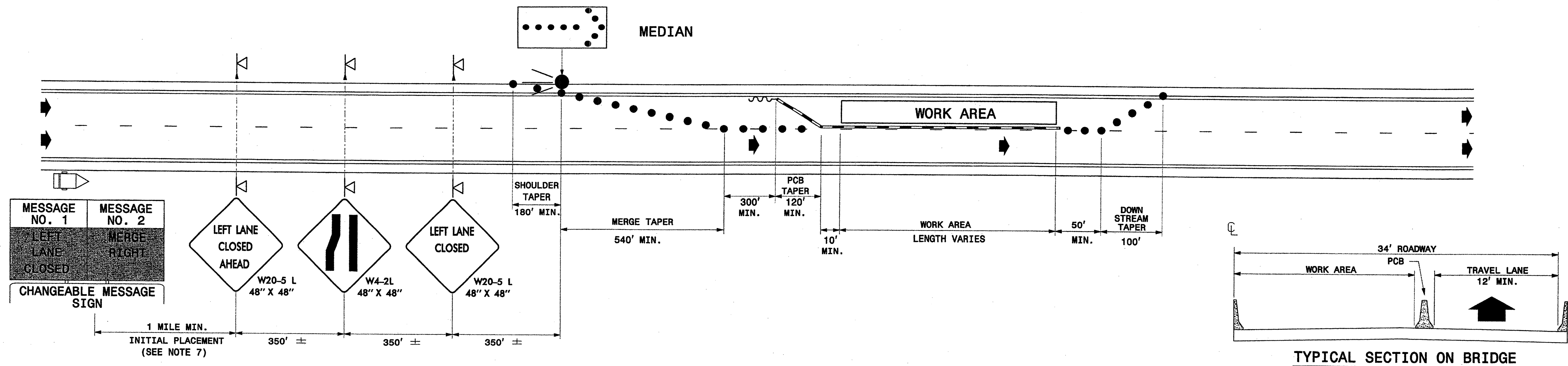
**NOTES:**  
 TRAFFIC CONTROL DEVICES ① THRU ⑥ AND ⑧ THRU ⑩ SHALL BE INSTALLED PER ENGINEER'S INSTRUCTION.  
 PLACE DRUMS AND TRAFFIC CONTROL DEVICE ① PER ENGINEER'S INSTRUCTIONS TO CLOSE THE US 74 WB RAMP.

APPROVED: _____ DATE: _____		<b>OFFSITE DETOUR B          SIGNING AND ROAD          CLOSURE SIGNING</b>

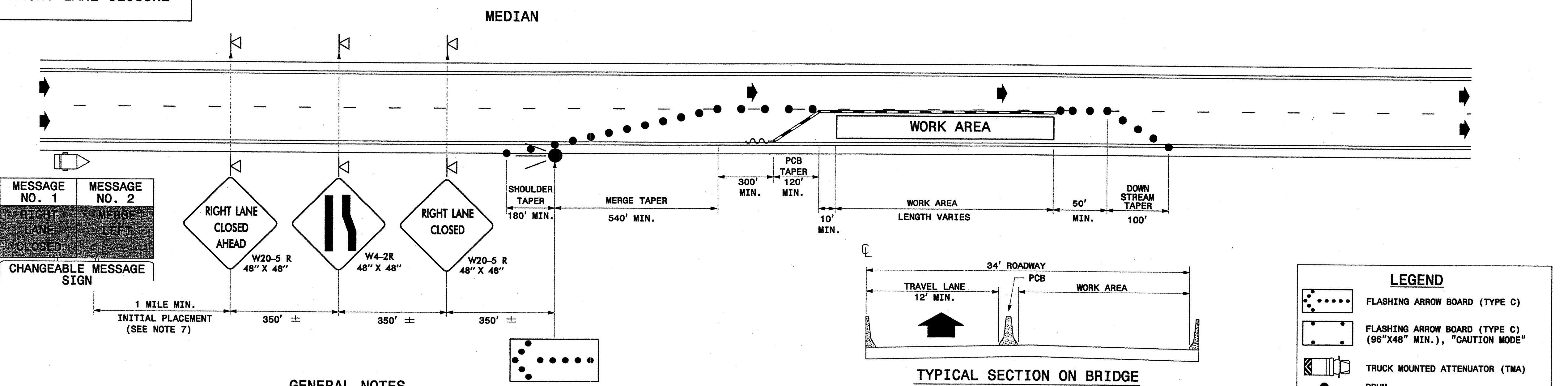
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### LEFT LANE CLOSURE



### RIGHT LANE CLOSURE



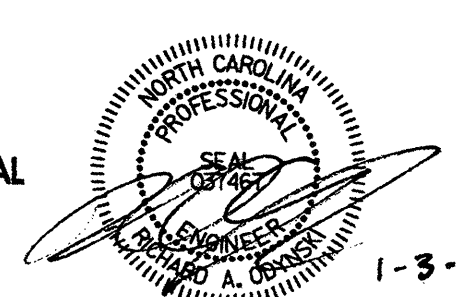
### GENERAL NOTES

- IF NECESSARY USE THIS STD. FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.
- PLACE ARROW BOARDS ON THE SHOULDER (PAVED OR UNPAVED). PLACE ARROW BOARDS WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE ARROW BOARD LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE ARROW BOARD IS MET (SEE STD. 1101.11 SHEET 2).
- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- REFER TO STD. 1101.02 SHEETS 9 AND 10 FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER, PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC, MOVE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP.
- DO NOT EXCEED A 2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
- USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).

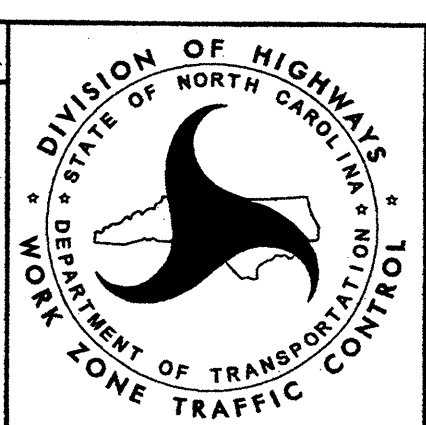
LEGEND	
	FLASHING ARROW BOARD (TYPE C)
	FLASHING ARROW BOARD (TYPE C) (96"X48" MIN.), "CAUTION MODE"
	TRUCK MOUNTED ATTENUATOR (TMA)
	DRUM
	PORTABLE SIGN
	TEMPORARY CRASH CUSHION
	PORTABLE CONCRETE BARRIER
	DIRECTION OF TRAFFIC FLOW
	CHANGEABLE MESSAGE SIGN (CMS)

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

SEAL



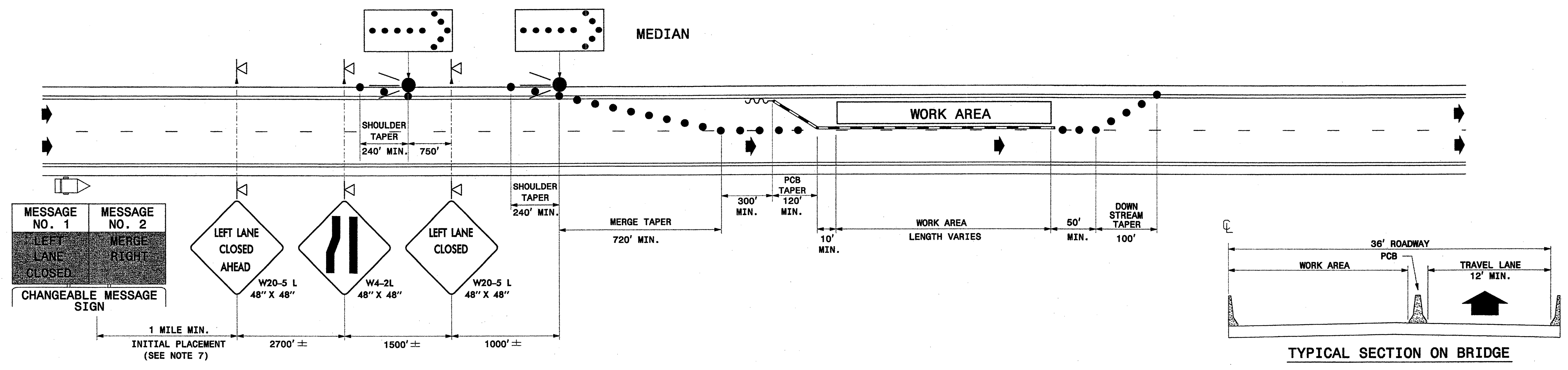
1-3-12



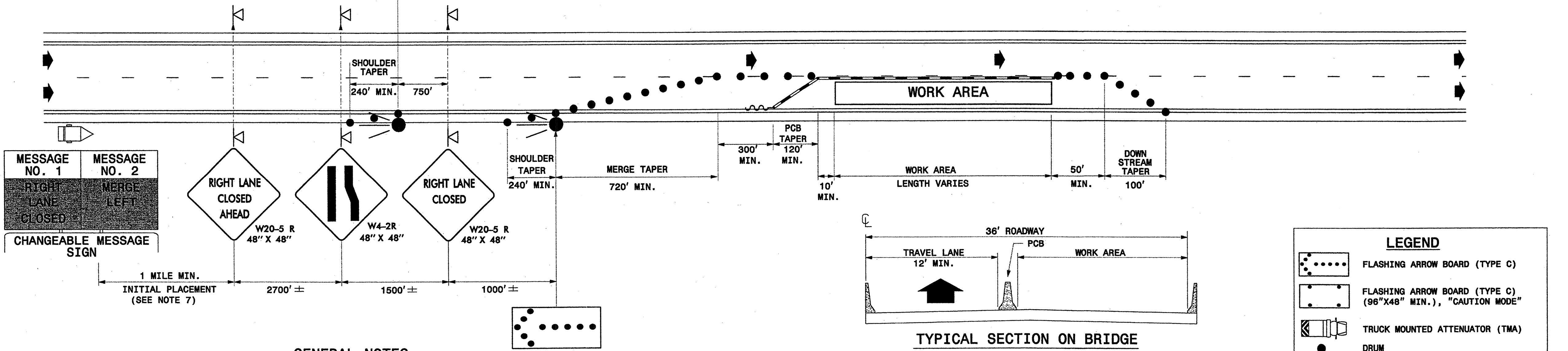
LANE CLOSURE DETAIL A  
 HAYWOOD 22  
 POSTED SPEED = 45 MPH

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**LEFT LANE CLOSURE**







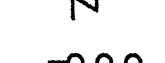




**RIGHT LANE CLOSURE**

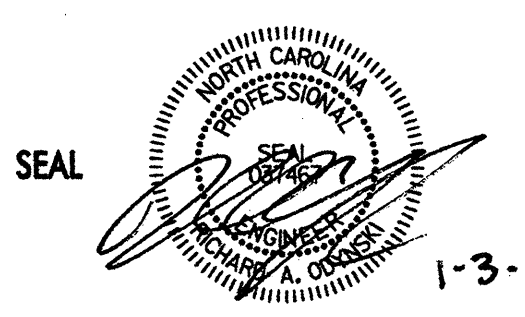


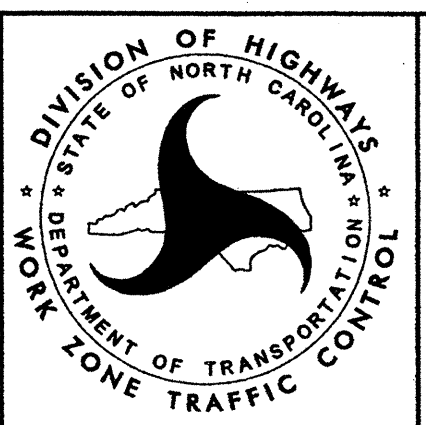
**GENERAL NOTES**

- IF NECESSARY USE THIS STD. FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.
- PLACE ARROW BOARDS ON THE SHOULDER (PAVED OR UNPAVED). PLACE ARROW BOARDS WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE ARROW BOARD LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE ARROW BOARD IS MET (SEE STD. 1101.11 SHEET 2).
- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- REFER TO STD. 1101.02 SHEETS 9 AND 10 FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER, PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC, MOVE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP.
- DO NOT EXCEED A 2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
- USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).

**LEGEND**

	FLASHING ARROW BOARD (TYPE C)
	FLASHING ARROW BOARD (TYPE C) (96"X48" MIN.), "CAUTION MODE"
	TRUCK MOUNTED ATTENUATOR (TMA)
	DRUM
	PORTABLE SIGN
	TEMPORARY CRASH CUSHION
	PORTABLE CONCRETE BARRIER
	DIRECTION OF TRAFFIC FLOW
	CHANGEABLE MESSAGE SIGN (CMS)

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

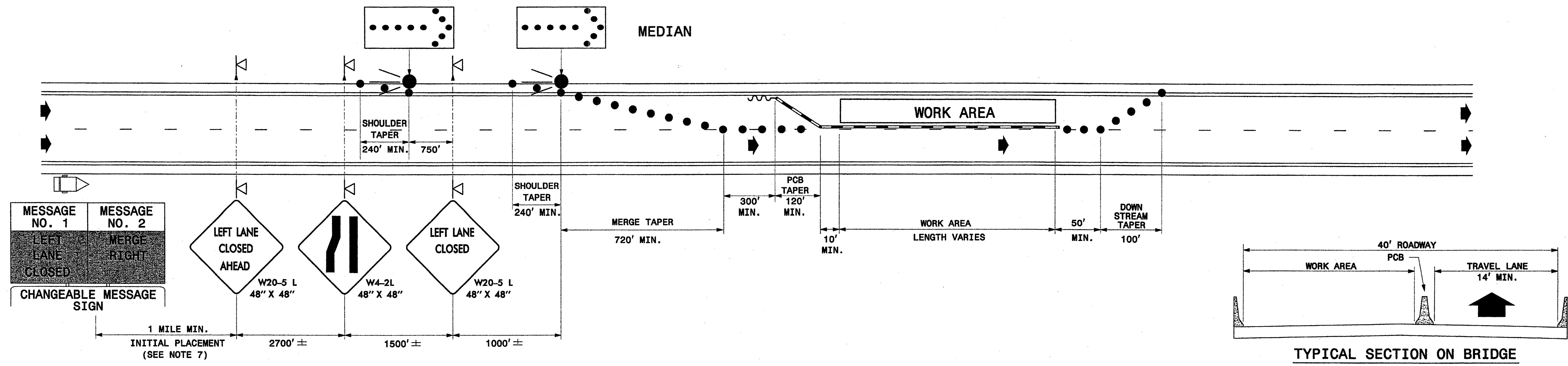


**LANE CLOSURE DETAIL B**  
**HAYWOOD 73**  
**POSTED SPEED = 60 MPH**

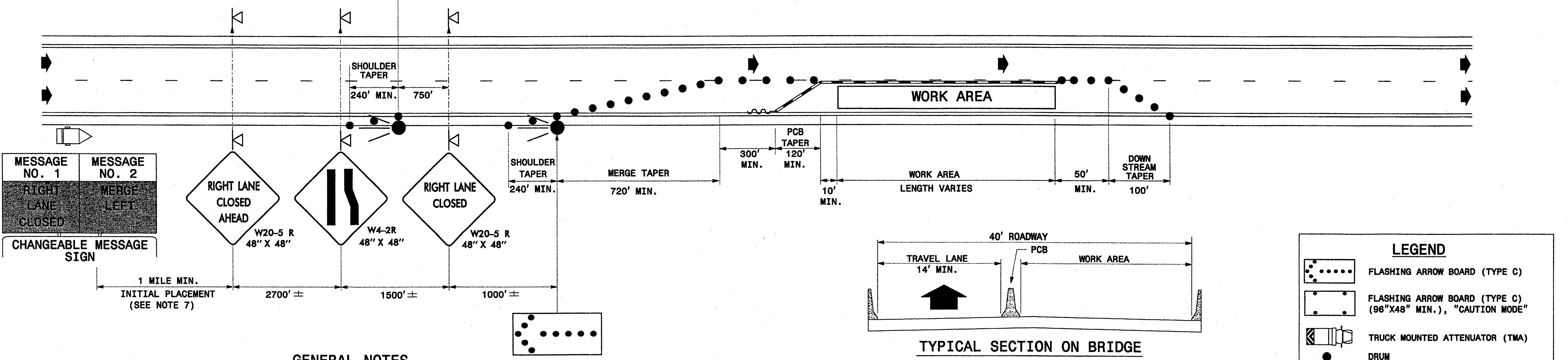
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**LEFT LANE CLOSURE**



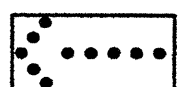
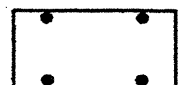







**RIGHT LANE CLOSURE**



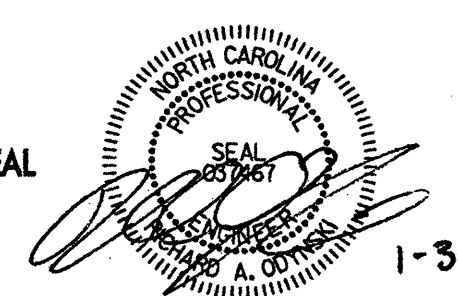
**GENERAL NOTES**

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- PLACE ARROW BOARDS ON THE SHOULDER (PAVED OR UNPAVED). PLACE ARROW BOARDS WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE ARROW BOARD LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE ARROW BOARD IS MET (SEE STD. 1101.11 SHEET 2).
- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- REFER TO STD. 1101.02 SHEETS 9 AND 10 FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER, PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC, MOVE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP.
- DO NOT EXCEED A 2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
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**LEGEND**

	FLASHING ARROW BOARD (TYPE C)
	FLASHING ARROW BOARD (TYPE C) (96"X48" MIN.), "CAUTION MODE"
	TRUCK MOUNTED ATTENUATOR (TMA)
	DRUM
	PORTABLE SIGN
	TEMPORARY CRASH CUSHION
	PORTABLE CONCRETE BARRIER
	DIRECTION OF TRAFFIC FLOW
	CHANGEABLE MESSAGE SIGN (CMS)

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

SEAL  1-3-12

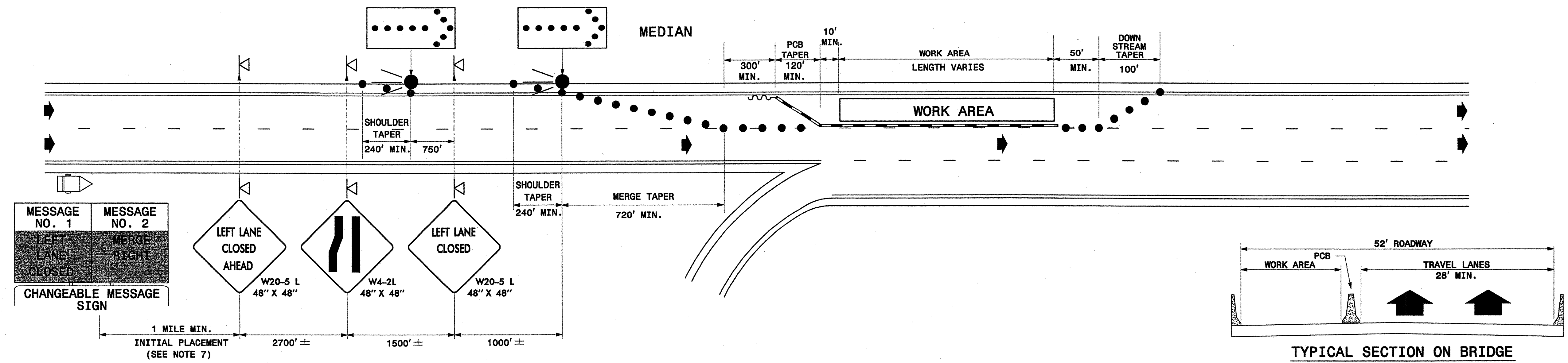


**LANE CLOSURE DETAIL C**  
SWAIN 18, 19, AND 23  
POSTED SPEED = 60 MPH

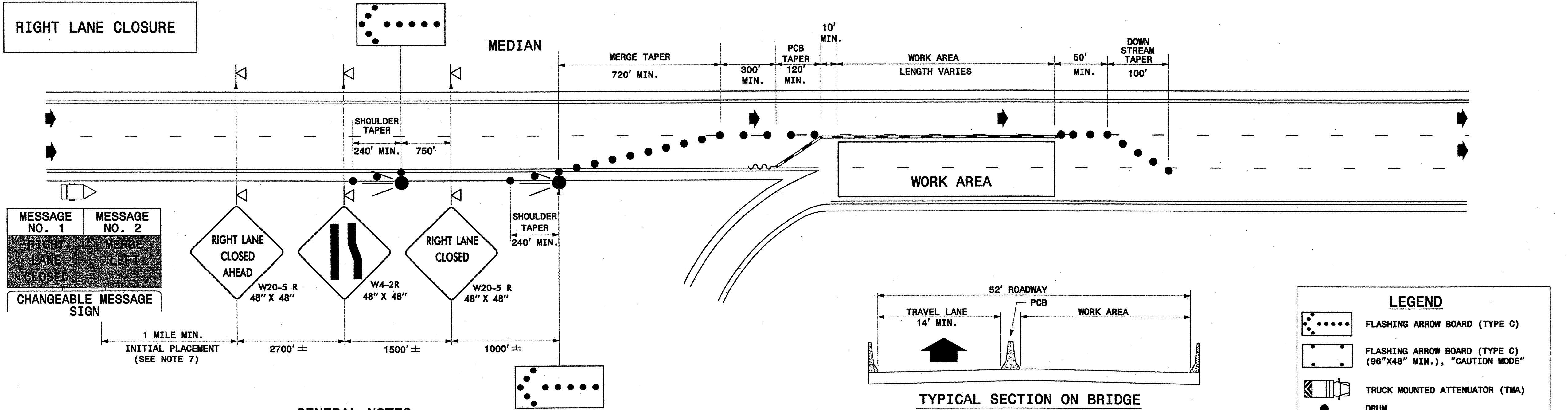
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**LEFT LANE CLOSURE**



**RIGHT LANE CLOSURE**




**GENERAL NOTES**

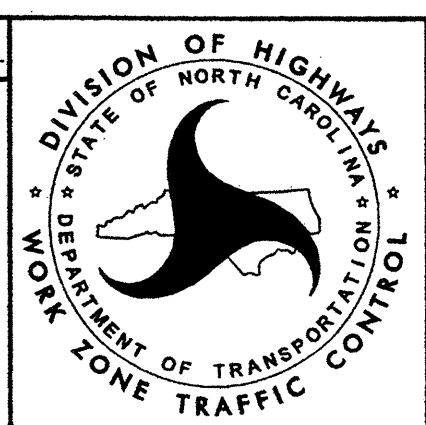
1. IF NECESSARY USE THIS STD. FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.
2. PLACE ARROW BOARDS ON THE SHOULDER (PAVED OR UNPAVED). PLACE ARROW BOARDS WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE ARROW BOARD LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE ARROW BOARD IS MET (SEE STD. 1101.11 SHEET 2).
3. PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
4. REFER TO STD. 1101.02 SHEETS 9 AND 10 FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
5. INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
6. POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.
7. PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER, PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC, MOVE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP.
8. DO NOT EXCEED A 2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.
9. USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).

**LEGEND**

	FLASHING ARROW BOARD (TYPE C)
	FLASHING ARROW BOARD (TYPE C) (96"X48" MIN.), "CAUTION MODE"
	TRUCK MOUNTED ATTENUATOR (TMA)
	DRUM
	PORTABLE SIGN
	TEMPORARY CRASH CUSHION
	PORTABLE CONCRETE BARRIER
	DIRECTION OF TRAFFIC FLOW
	CHANGEABLE MESSAGE SIGN (CMS)

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

SEAL  1-3-12



**LANE CLOSURE DETAIL D**  
**SWAIN 22**  
**POSTED SPEED = 60 MPH**

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

### SPECIAL NOTES:

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

# ENGLISH

JANUARY, 1990

STD. NO. SN