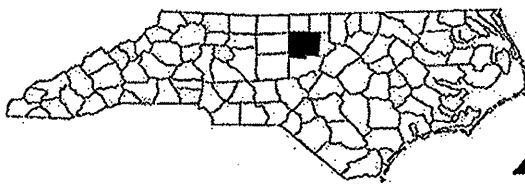


04/78/99

TIP PROJECT: 17BP.7.P.2

CONTRACT: C203006



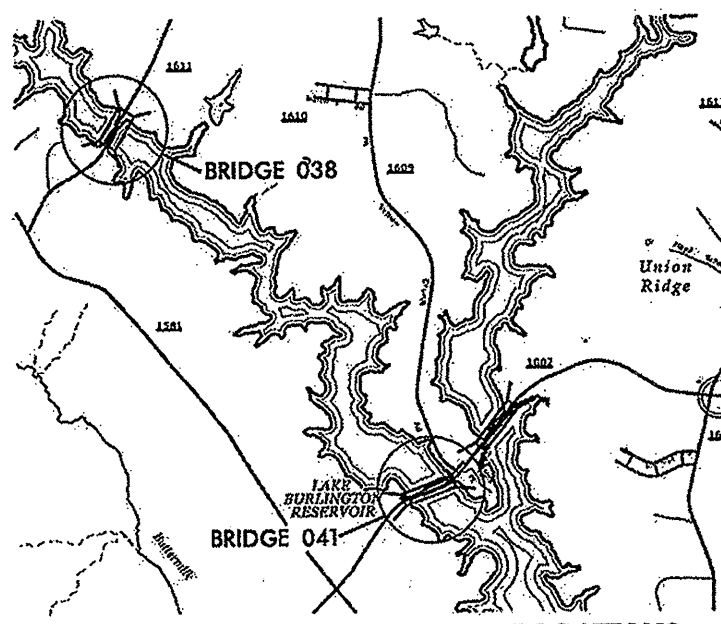
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE & ORANGE COUNTIES**

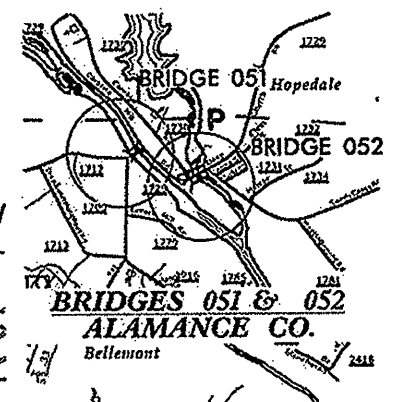
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS 17BP.7.P.2	1	
WBS NO.	R.A. PROJECT NO.	DESCRIPTION	
17BP.7.P.2		PE	
17BP.7.P.2		CONST.	

**LOCATION:** ALAMANCE CO. BRIDGE 038 ON SR 1611 OVER STONEY CREEK  
 ALAMANCE CO. BRIDGE 041 ON SR 1002 OVER STONEY CREEK  
 ALAMANCE CO. BRIDGE 051 ON SR 1712 OVER HAW RIVER  
 ALAMANCE CO. BRIDGE 052 ON SR 1729 OVER STONEY CREEK  
 ALAMANCE CO. BRIDGE 121 ON SR 1136 OVER STINKING QUARTER CREEK  
 ALAMANCE CO. BRIDGE 293 ON SR 2123 OVER BACK CREEK  
 ORANGE CO. BRIDGE 006 ON US 70 BUSINESS OVER ENO RIVER  
 ORANGE CO. BRIDGE 059 ON NC 86 OVER I-85  
 ORANGE CO. BRIDGE 081 ON I-85 NBL OVER SR 1006  
 ORANGE CO. BRIDGE 082 ON I-85 SBL OVER SR 1006

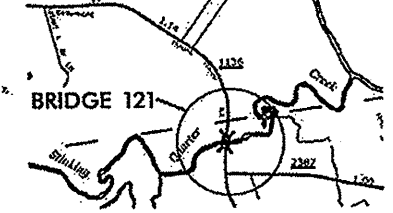
**TYPE OF WORK:** BRIDGE PRESERVATION; HYDRO-DEMOLITION, LATEX MODIFIED CONCRETE OVERLAY, SHOULDER RECONSTRUCTION, REMOVE AND RESET GUARDRAIL AND SUBSTRUCTURE REPAIRS



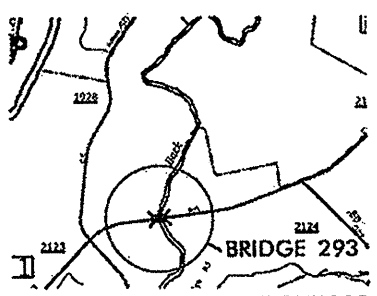
**BRIDGES 038 & 041 LOCATIONS  
ALAMANCE CO.**



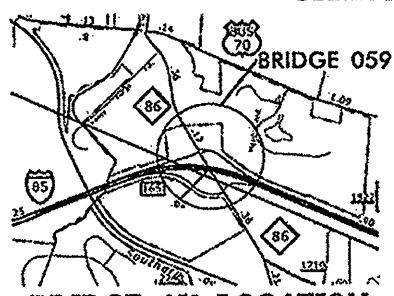
**BRIDGES 051 & 052  
ALAMANCE CO.**



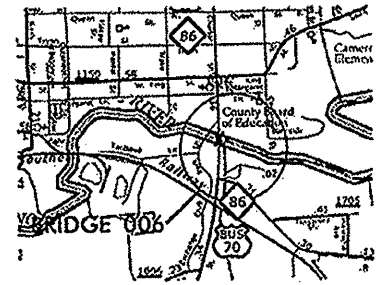
**BRIDGE 121 LOCATION  
ALAMANCE CO.**



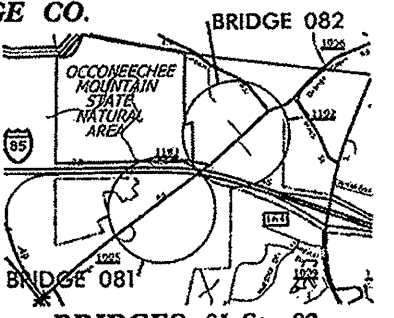
**BRIDGE 293 LOCATION  
ALAMANCE CO.**



**BRIDGE 059 LOCATION  
ORANGE CO.**



**BRIDGE 006 LOCATION  
ORANGE CO.**



**BRIDGES 81 & 82  
LOCATIONS  
ORANGE CO.**

**VICINITY MAP**

SYSTEMS TIME 04/09/12 10:00 AM

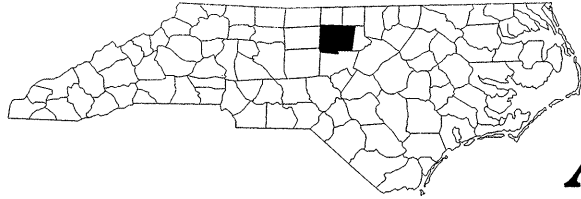
PREPARED IN THE OFFICE OF:  
  
 Stantec  
 FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N.A.  
 LETTING DATE: MAY 15, 2012

JOE KELVINGTON, PE  
 PROJECT DESIGN ENGINEER

THEO BEACH, PE  
 PROJECT ENGINEER  
 2/21/12

DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ALAMANCE & ORANGE COUNTIES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS 17BP.7.P.2	1A	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.7.P.2		PE	
17BP.7.P.2		CONST.	

**LOCATION:** ALAMANCE CO. BRIDGE 038 ON SR 1611 OVER STONEY CREEK  
 ALAMANCE CO. BRIDGE 041 ON SR 1002 OVER STONEY CREEK  
 ALAMANCE CO. BRIDGE 051 ON SR 1712 OVER HAW RIVER  
 ALAMANCE CO. BRIDGE 052 ON SR 1729 OVER STONEY CREEK  
 ALAMANCE CO. BRIDGE 121 ON SR 1136 OVER STINKING QUARTER CREEK  
 ALAMANCE CO. BRIDGE 293 ON SR 2123 OVER BACK CREEK  
 ORANGE CO. BRIDGE 006 ON US 70 BUSINESS OVER ENO RIVER  
 ORANGE CO. BRIDGE 059 ON NC 86 OVER I-85  
 ORANGE CO. BRIDGE 081 ON I-85 NBL OVER SR 1006  
 ORANGE CO. BRIDGE 082 ON I-85 SBL OVER SR 1006

**TYPE OF WORK:** BRIDGE PRESERVATION; HYDRO-DEMOLITION, LATEX MODIFIED CONCRETE OVERLAY, SHOULDER RECONSTRUCTION, REMOVE AND RESET GUARDRAIL AND SUBSTRUCTURE REPAIRS

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
RDY-1 THRU RDY-4	ROADWAY PLANS
S-1 THRU S-6	ALAMANCE CO. BRIDGE #38
S-7 THRU S-15	ALAMANCE CO. BRIDGE #41
S-16 THRU S-24	ALAMANCE CO. BRIDGE #51
S-25 THRU S-32	ALAMANCE CO. BRIDGE #52
S-33 THRU S-39	ALAMANCE CO. BRIDGE #121
S-40 THRU S-46	ALAMANCE CO. BRIDGE #293
S-47 THRU S-52	ORANGE CO. BRIDGE #6
S-53 THRU S-64	ORANGE CO. BRIDGE #59
S-65 THRU S-73	ORANGE CO. BRIDGE #81
S-74 THRU S-83	ORANGE CO. BRIDGE #82
TMP-1 THRU TMP-11A	TRANSPORTATION MANAGEMENT PLANS

**TIP PROJECT: 17BP.7.P.2**

**CONTRACT: C203006**

2/24/2012 J:\17100107\transportation\Design\Structures\Bridges\Group 2011\WBS 17BP.7.P.2 Alamance-Orange Co\TSH\Alamance-Orange-tsh-OVERALL-2.dgn  
 09/08/99

**CONTRACT: C203006**      **TIP PROJECT: 17BP.7.P.2**

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

# SUMMARY OF QUANTITIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS 17BP.7.P.2	2	

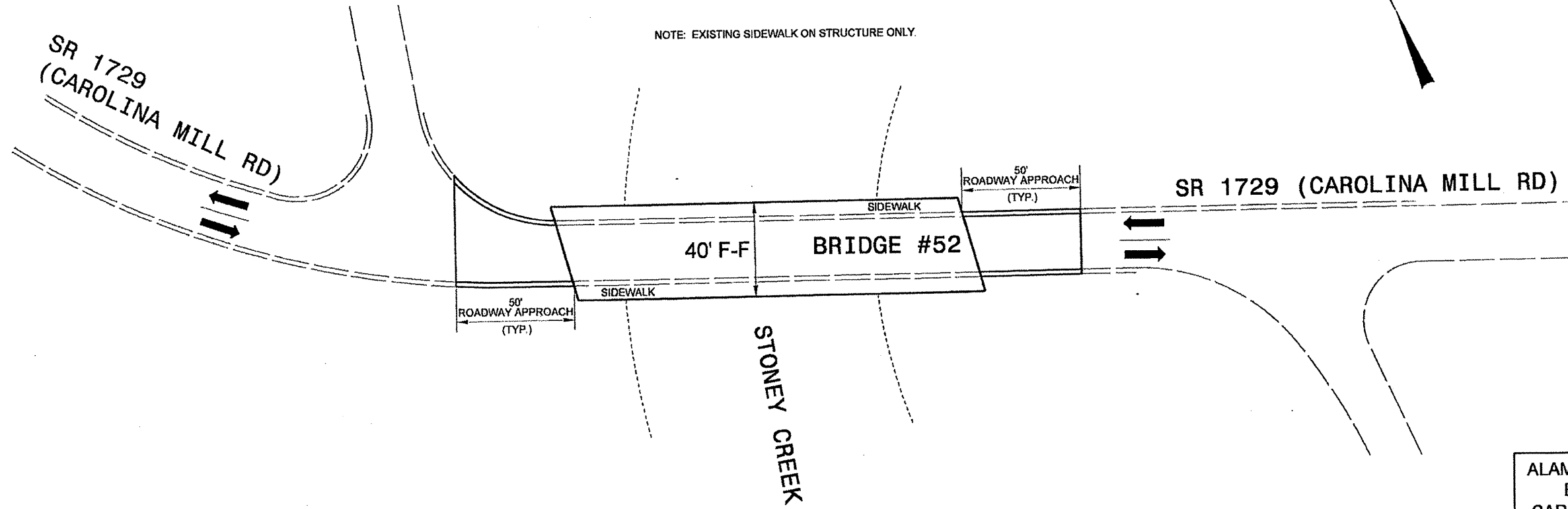
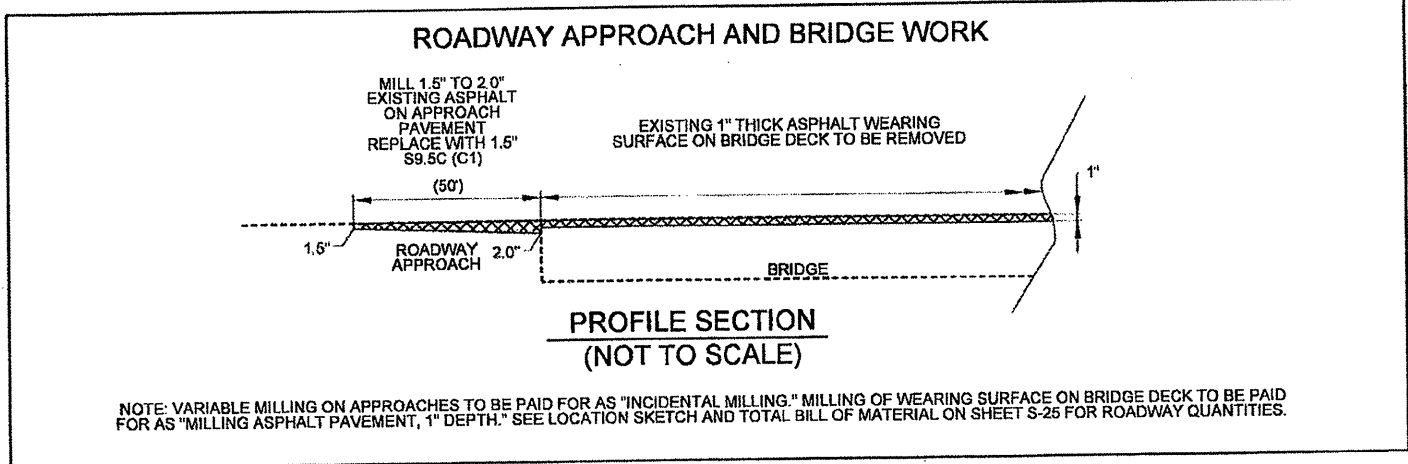
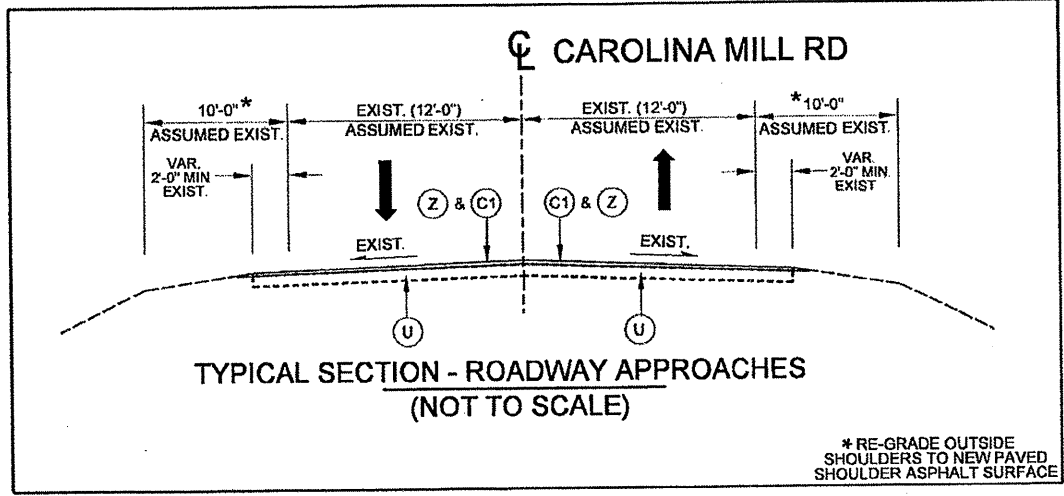
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
 ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203006

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	481000000-E	1205	13,838	LF	PAINT PAVEMENT MARKING LINES (4")
1245000000-E	SP	0.204	SMI	SHOULDER RECONSTRUCTION	4847000000-E	1205	1,462	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (HIGHLY REFLECTIVE ELEMENTS)
1297000000-E	607	536.7	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (1")	4847000000-E	1205	3,200	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (STANDARD GLASS BEADS)
1297000000-E	607	855.6	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2")	4900000000-N	1251	18	EA	PERMANENT RAISED PAVEMENT MARKERS
1297000000-E	607	645.6	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (3")	8161000000-E	420	50,234	SF	GROOVING BRIDGE FLOORS
1297000000-E	607	645.6	SY	MILLING ASPHALT PAVEMENT, **** DEPTH (4")	8660000000-E	SP	101	CF	CONCRETE REPAIRS
1330000000-E	607	3,077	SY	INCIDENTAL MILLING	8664000000-E	SP	226	CF	SHOTCRETE REPAIRS
1491000000-E	610	26	TON	ASPHALT CONC BASE COURSE, TYPE B25.0C	8692000000-N	SP	Lump Sum		FOAM JOINT SEALS
1519000000-E	610	90	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	8881000000-E	SP	59	CY	GENERIC STRUCTURE ITEM LATEX MOD CONC OVERLAY
1523000000-E	610	174	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	8881000000-E	SP	312.6	CY	GENERIC STRUCTURE ITEM LATEX MOD CONC OVERLAY - VERY EARLY STRENGTH
1575000000-E	620	17	TON	ASPHALT BINDER FOR PLANT MIX	8893000000-E	SP	6,527.6	SY	GENERIC STRUCTURE ITEM HYDRO-DEMOLITION OF BRIDGE DECK
3345000000-E	864	900	LF	REMOVE & RESET EXISTING GUARD-RAIL	8893000000-E	SP	1,087.7	SY	GENERIC STRUCTURE ITEM PLACING & FINISHING LATEX MOD CONC OVERLAY
4400000000-E	1110	731	SF	WORK ZONE SIGNS (STATIONARY)	8893000000-E	SP	5,439.9	SY	GENERIC STRUCTURE ITEM PLACING & FINISHING LATEX MOD CONC OVERLAY - VERY EARLY STRENGTH
4405000000-E	1110	905	SF	WORK ZONE SIGNS (PORTABLE)	8893000000-E	SP	6,527.6	SY	GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK
4410000000-E	1110	267	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	8897000000-N	SP	3	EA	GENERIC STRUCTURE ITEM SPAN JACKING ORANGE CO BRIDGE #59
4415000000-N	1115	4	EA	FLASHING ARROW BOARD	8897000000-N	SP	2	EA	GENERIC STRUCTURE ITEM SPAN JACKING ORANGE CO BRIDGE #81
4420000000-N	1120	3	EA	PORTABLE CHANGEABLE MESSAGE SIGN	8897000000-N	SP	1	EA	GENERIC STRUCTURE ITEM SPAN JACKING ORANGE CO BRIDGE #82
4430000000-N	1130	640	EA	DRUMS					
4435000000-N	1135	100	EA	CONES					
4445000000-E	1145	320	LF	BARRICADES (TYPE III)					
4450000000-N	1150	2,128	HR	FLAGGER					
4480000000-N	1165	1	EA	TMA					
4510000000-N	SP	488	HR	LAW ENFORCEMENT					

8/17/99

PROJECT REFERENCE NO. WBS 17BP.7.P.2	SHEET NO. RDY-1
ROADWAY DESIGN ENGINEER	

PAVEMENT SCHEDULE	
C1	PROP. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
Z	ASPHALT MILLING

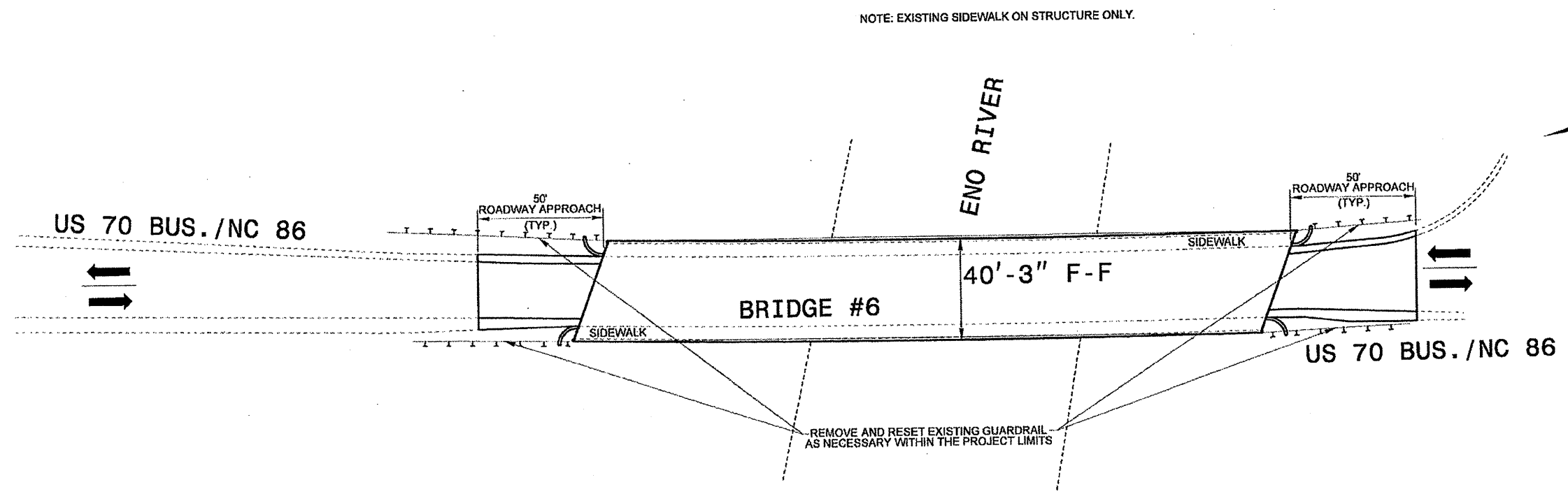
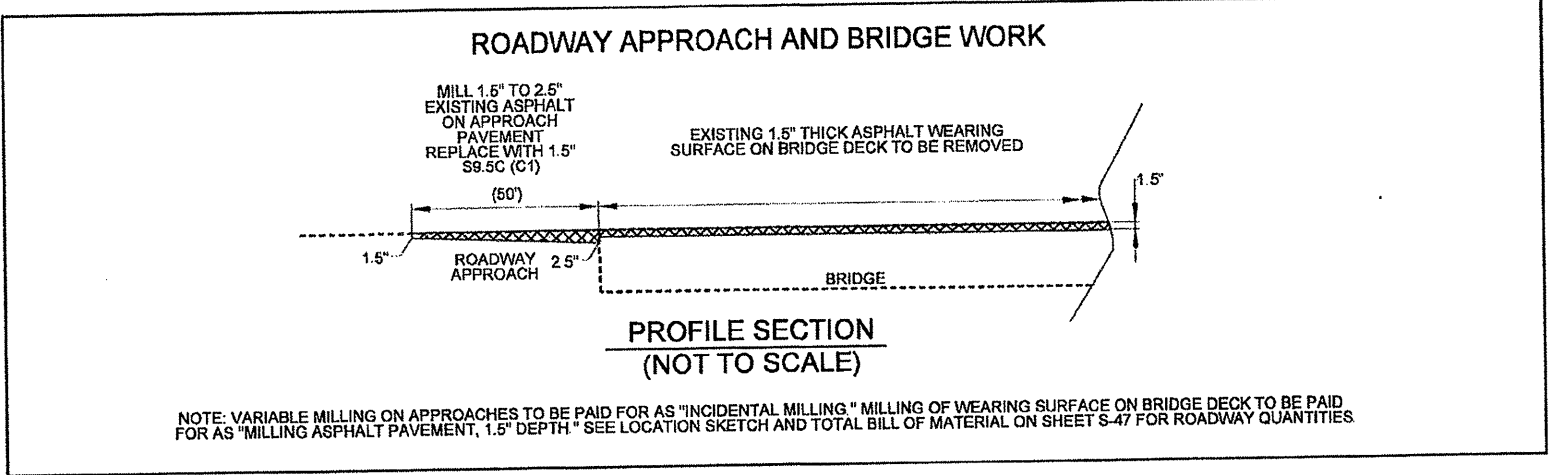
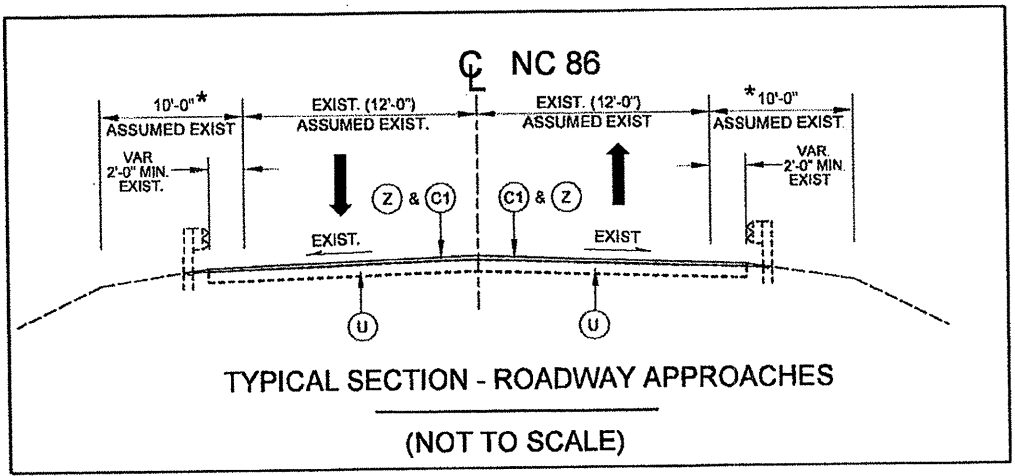


ALAMANCE COUNTY  
BRIDGE #52  
CAROLINA MILL RD.  
OVER  
STONEY CREEK

8/1/79

PROJECT REFERENCE NO. WBS 17BP.7.P.2	SHEET NO. RDY-2
ROADWAY DESIGN ENGINEER	

PAVEMENT SCHEDULE	
C1	PROP. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
Z	ASPHALT MILLING



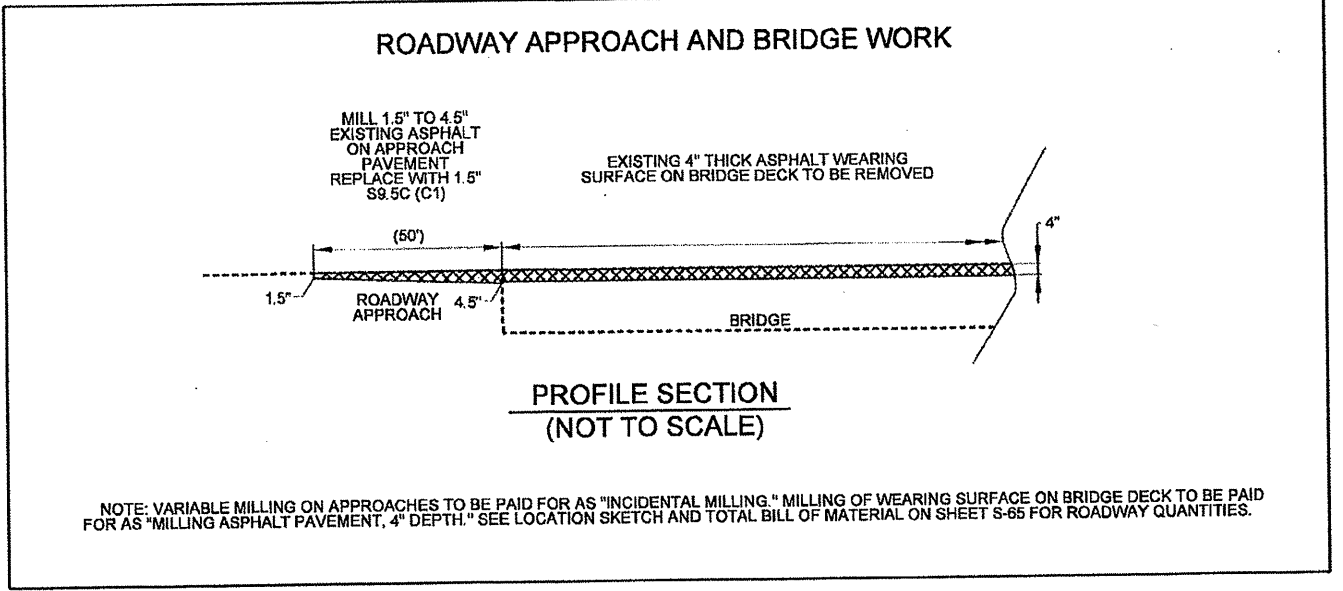
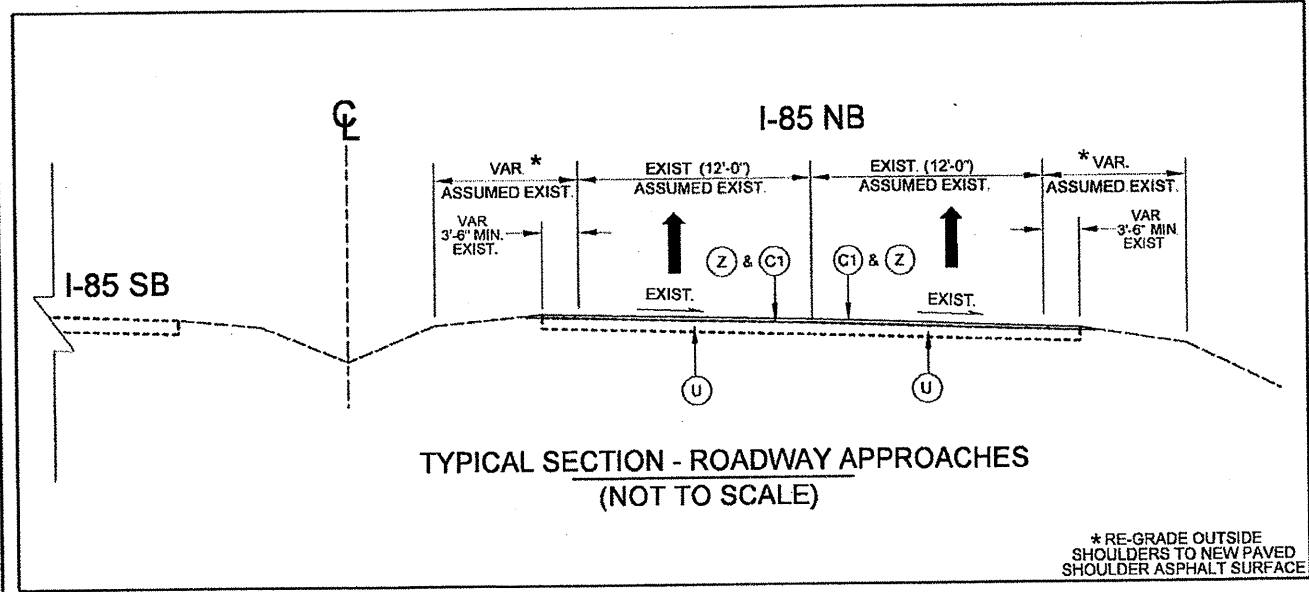
ORANGE COUNTY  
BRIDGE #6  
NC 86 OVER  
ENO RIVER

ROADWAY DESIGN  
ENGINEER

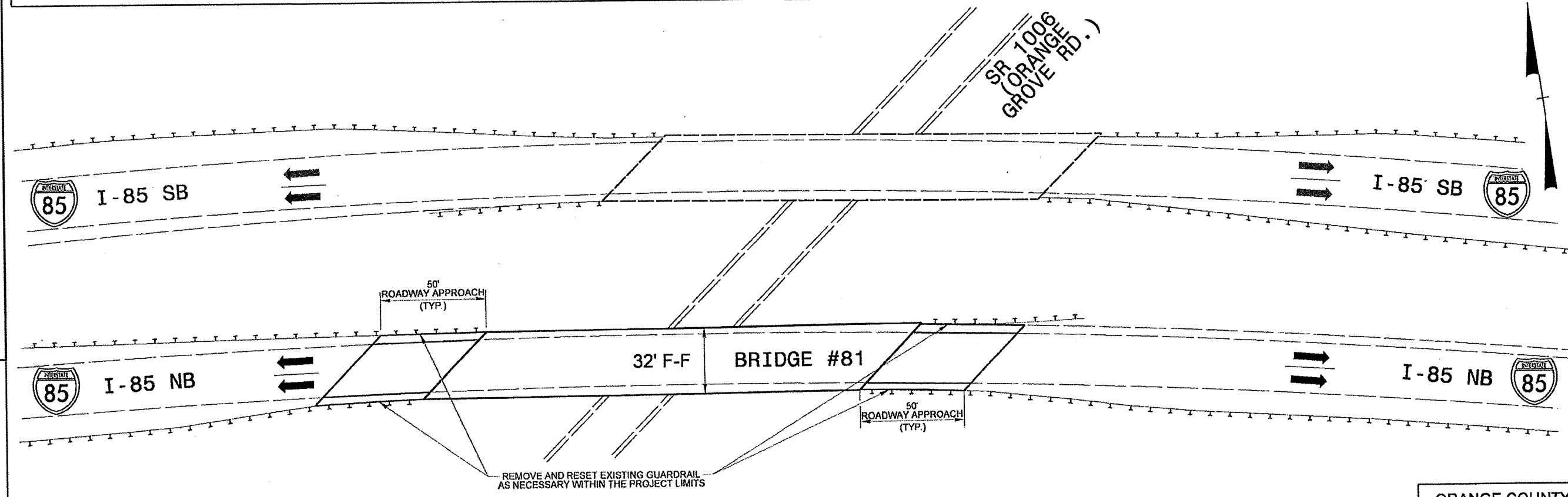


2/12/2012

PAVEMENT SCHEDULE	
C1	PROP. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
Z	ASPHALT MILLING



NOTE: VARIABLE MILLING ON APPROACHES TO BE PAID FOR AS "INCIDENTAL MILLING." MILLING OF WEARING SURFACE ON BRIDGE DECK TO BE PAID FOR AS "MILLING ASPHALT PAVEMENT, 4\"/>



DISCLAIMER: THIS PROJECT HAS NOT BEEN SURVEYED. EXISTING TOPOGRAPHY WAS CREATED FROM AERIAL PHOTOGRAPHY NOT ACTUAL SURVEY.


NOTES:  
1. ALL EROSION CONTROL MEASURES SHALL ADHERE TO NCDOT STANDARDS.

ORANGE COUNTY  
BRIDGE #81  
I-85 OVER  
ORANGE GROVE RD.

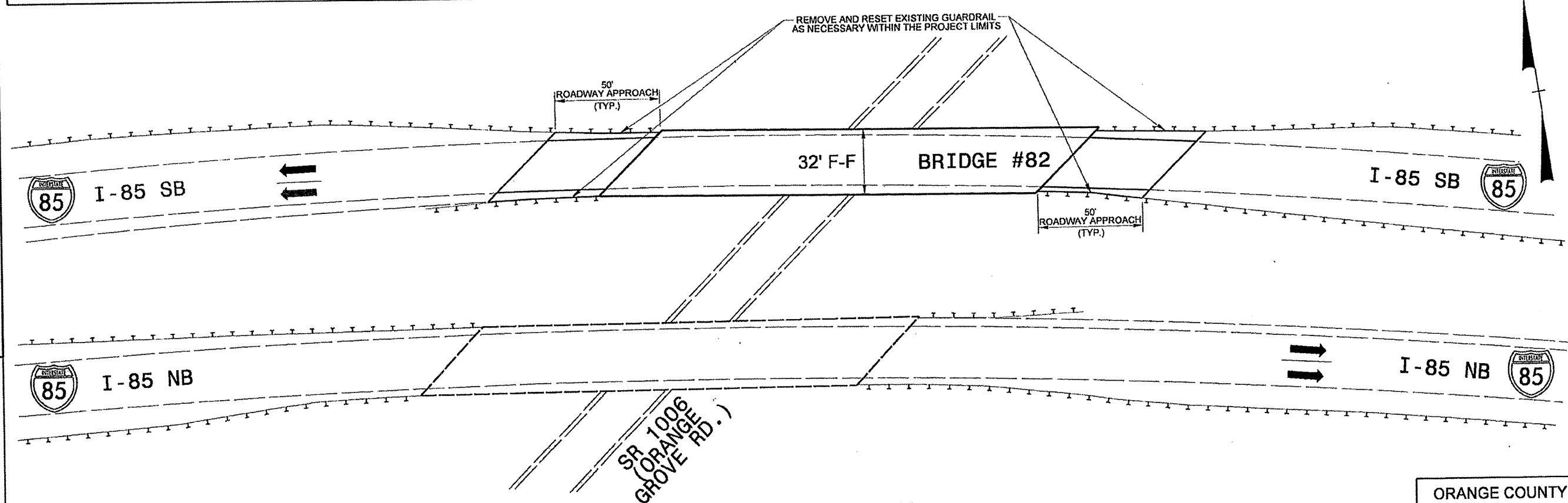
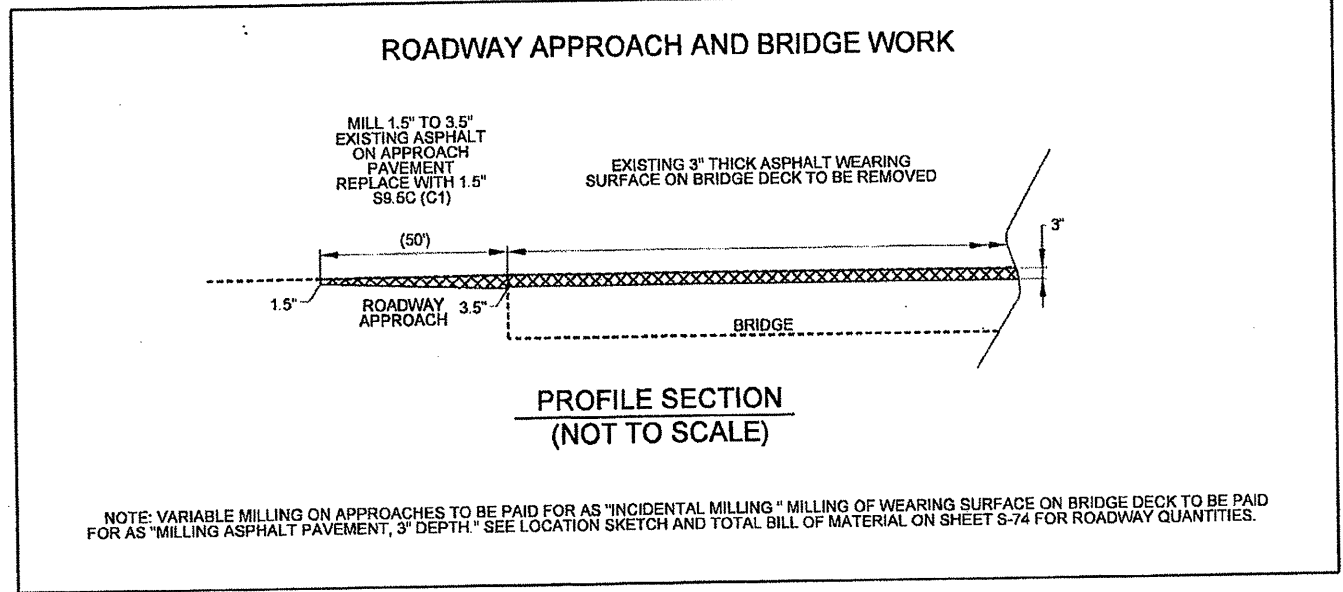
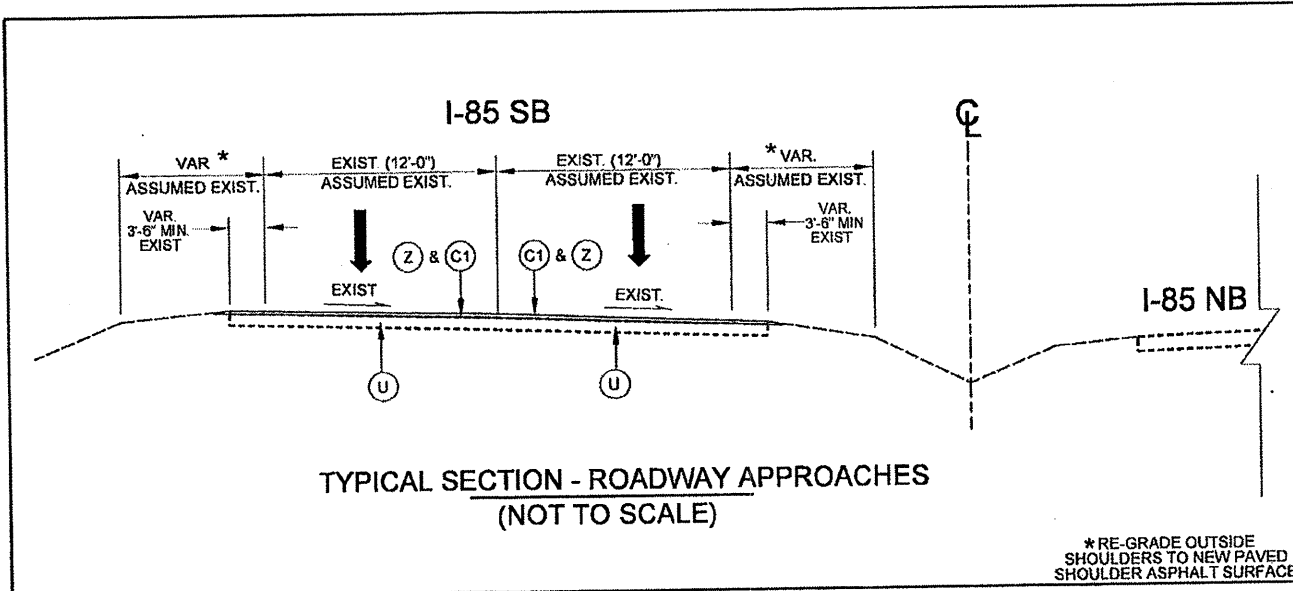
REVISIONS

8/17/99

B/17/99

PROJECT REFERENCE NO. WBS 17BP.7.P.2	SHEET NO. RDY-4
ROADWAY DESIGN ENGINEER	
	
2/22/2012	

PAVEMENT SCHEDULE	
C1	PROP. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
Z	ASPHALT MILLING

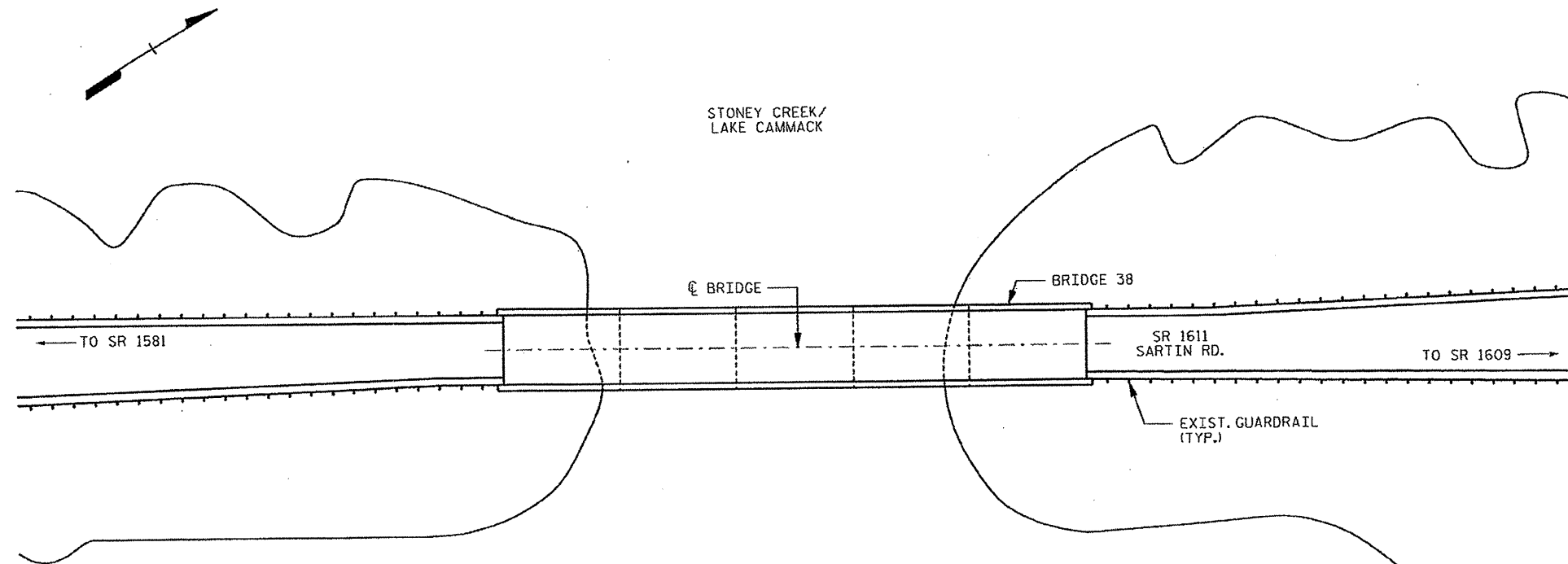


REVISIONS

DISCLAIMER: THIS PROJECT HAS NOT BEEN SURVEYED. EXISTING TOPOGRAPHY WAS CREATED FROM AERIAL PHOTOGRAPHY NOT ACTUAL SURVEY.

NOTES:  
1. ALL EROSION CONTROL MEASURES SHALL ADHERE TO NCDOT STANDARDS.

ORANGE COUNTY  
BRIDGE #82  
I-85 OVER  
ORANGE GROVE RD.



NOTES:  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

**BRIDGE 38**

SR1611 SARTIN RD. OVER LAKE CAMMACK  
 0.5 MILES NORTH OF JUNCTION SR 1581

**BRIDGE 38**

**TOTAL BILL OF MATERIAL**

INCIDENTAL MILLING	SCARIFYING BRIDGE DECK	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	CLASS I * SURFACE PREPARATION	CLASS II * SURFACE PREPARATION	CLASS III * SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	CLASS AA CONCRETE	LATEX MODIFIED CONCRETE OVERLAY	PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SO. YDS.	SQ. YDS.	TON	SO. YDS.	SO. YDS.	SO. YDS.	SO. YDS.	CU. YDS.	CU. YDS.	SO. YDS.	LUMP SUM	SO. FT.
211	533.4	17	0	10.7	0	533.4	0	35.7	533.4	LUMP SUM	4,032

\* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. BLOW THRU CONTAINMENT AND FORMWORK" DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THESE ITEMS WILL BE MADE. ALL COSTS FOR THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

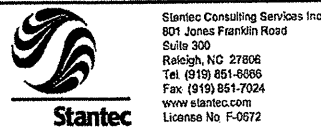
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LOCATION SKETCH AND TOTAL BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 38

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			83

*Joseph K. Kelvington*  
 11/23/2012  
 PROFESSIONAL SEAL  
 13406  
 ENGINEER  
 JOSEPH K. KELVINGTON

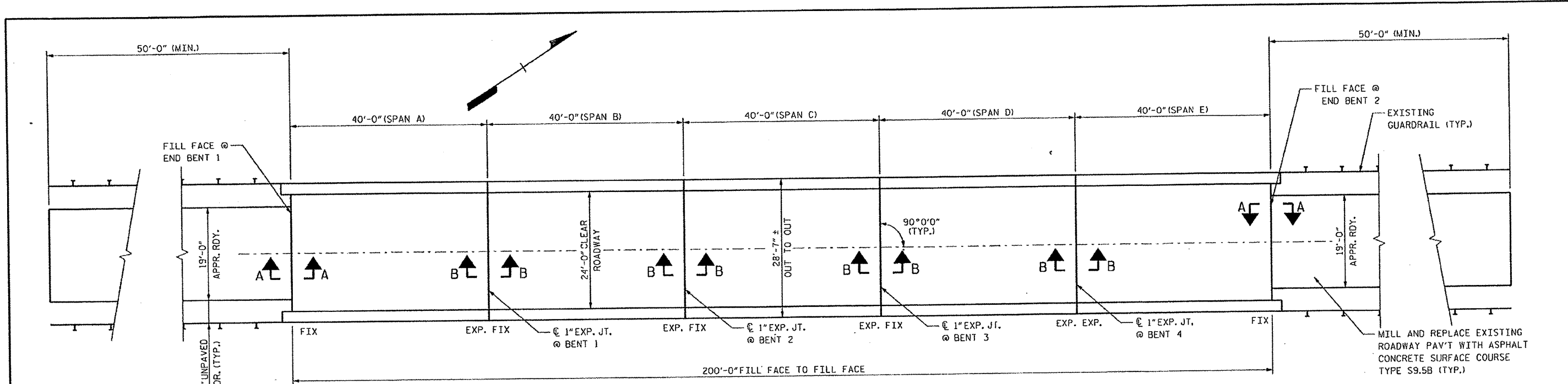


DRAWN BY : C. B. BAKER DATE : 11/11  
 CHECKED BY : J. T. KELVINGTON DATE : 11/11

78P.7.P.2, Alamance-Orange, Co. Alamance, Bridge 03E, Drawing, Valencio38.1.S, 30M.dgn 2/23/2012 12:49:21 PM b1e-on



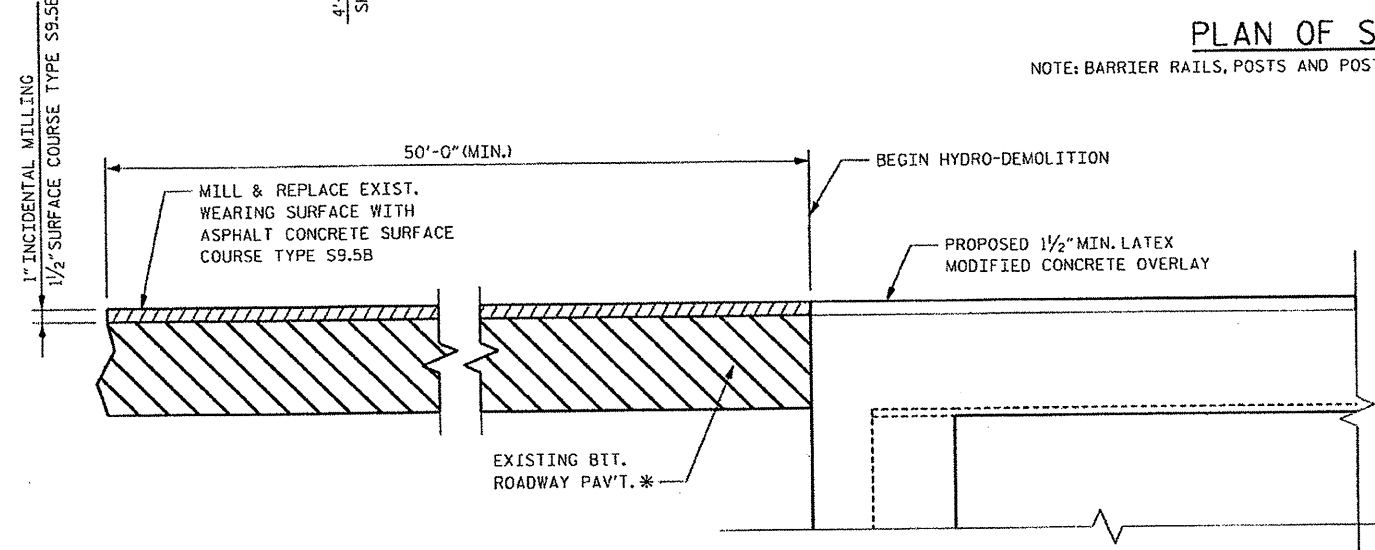
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**PLAN OF SPANS A-E**

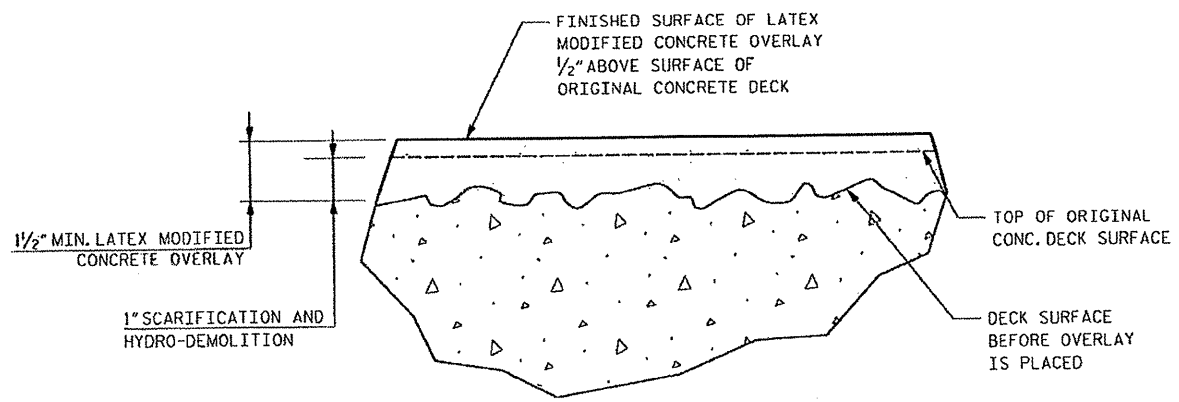
NOTE: BARRIER RAILS, POSTS AND POST BRACKETS ARE NOT SHOWN FOR CLARITY.

**NOTES:**  
 EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.  
 FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.  
 THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.  
 THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-4.  
 FOR SECTION B-B, SEE SHT. NO. S-6.



**SECTION A-A**

\*PAV'T IS ASSUMED.



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA		SHEET NO.	
DEPARTMENT OF TRANSPORTATION		S-2	
RALEIGH		TOTAL SHEETS	
PLAN OF BRIDGE		83	
DECK REHAB. FOR BRIDGE NO. 38			
REVISIONS			
NO.	BY:	DATE:	NO.
1			3
2			4

*John Kelvington*  
 11/11/12  
 13406  
 ENGINEER

**Stantec**  
 Stantec Consulting Services Inc  
 601 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel (919) 851-6666  
 Fax (919) 851-7024  
 www.stantec.com  
 License No. F-0872

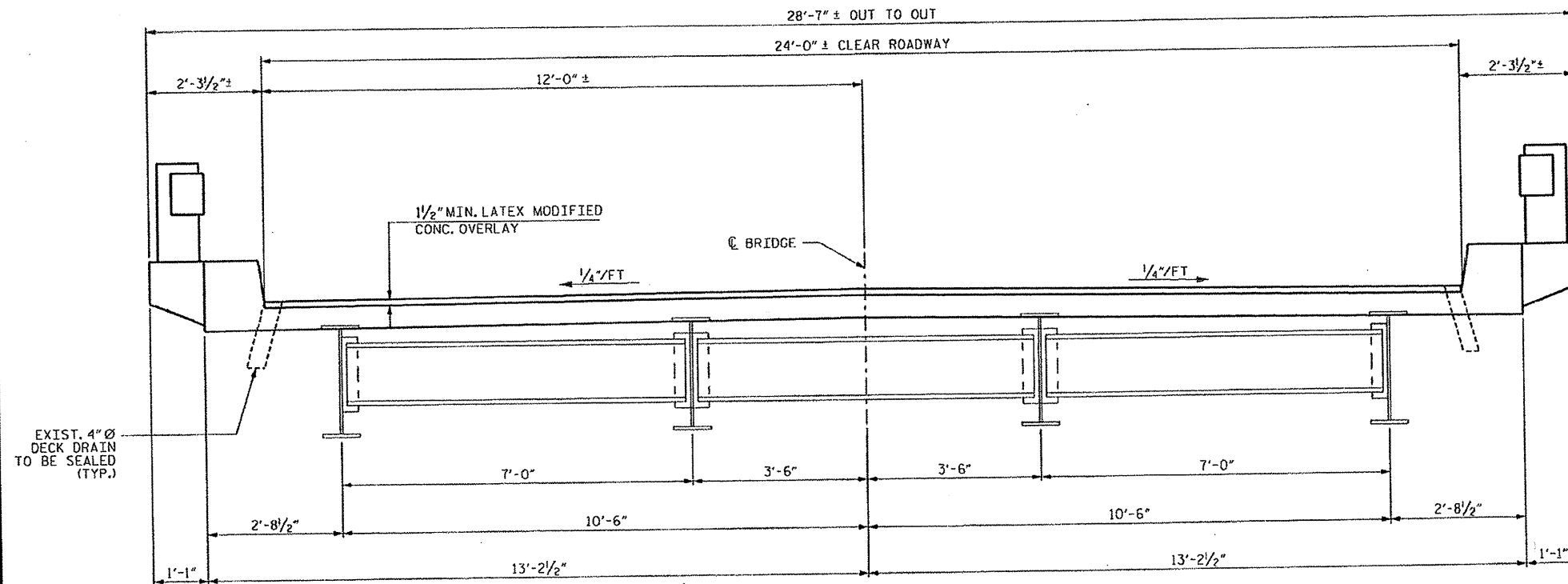
DRAWN BY : C B BAKER DATE : 11/11  
 CHECKED BY : J T KELVINGTON DATE : 11/11

NOTES:

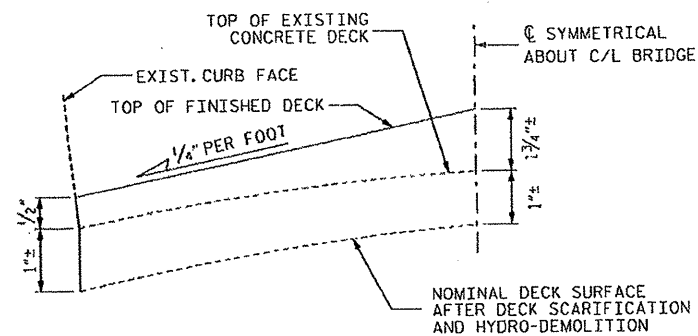
SPANS A-E W27 X 102 I-BEAMS SHOWN.

FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING,  
SEE TRANSPORTATION MANAGEMENT PLANS.

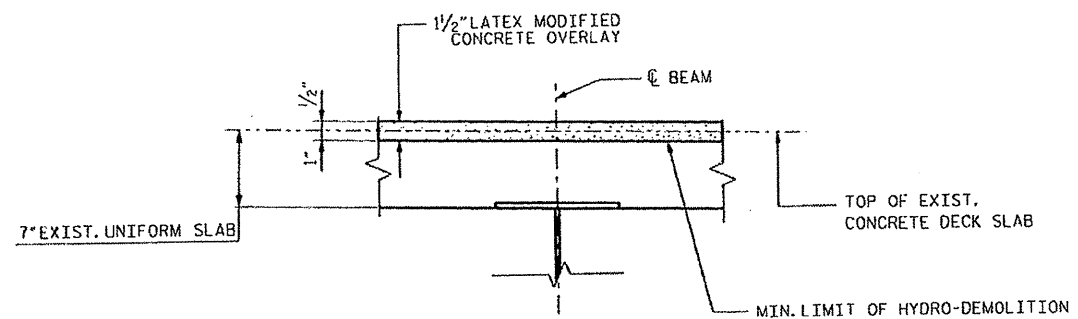
ALL DIMENSIONS SHOWN ARE APPROXIMATE.



TYPICAL SECTION  
SPANS A-E



BRIDGE CROSS SLOPE SCHEMATIC FOR  
DECK OVERLAY



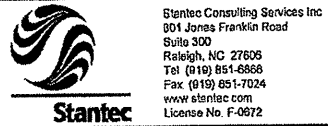
EXIST. SLAB BUILDUP

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
TYPICAL SECTION  
DECK REHAB. FOR BRIDGE NO. 38

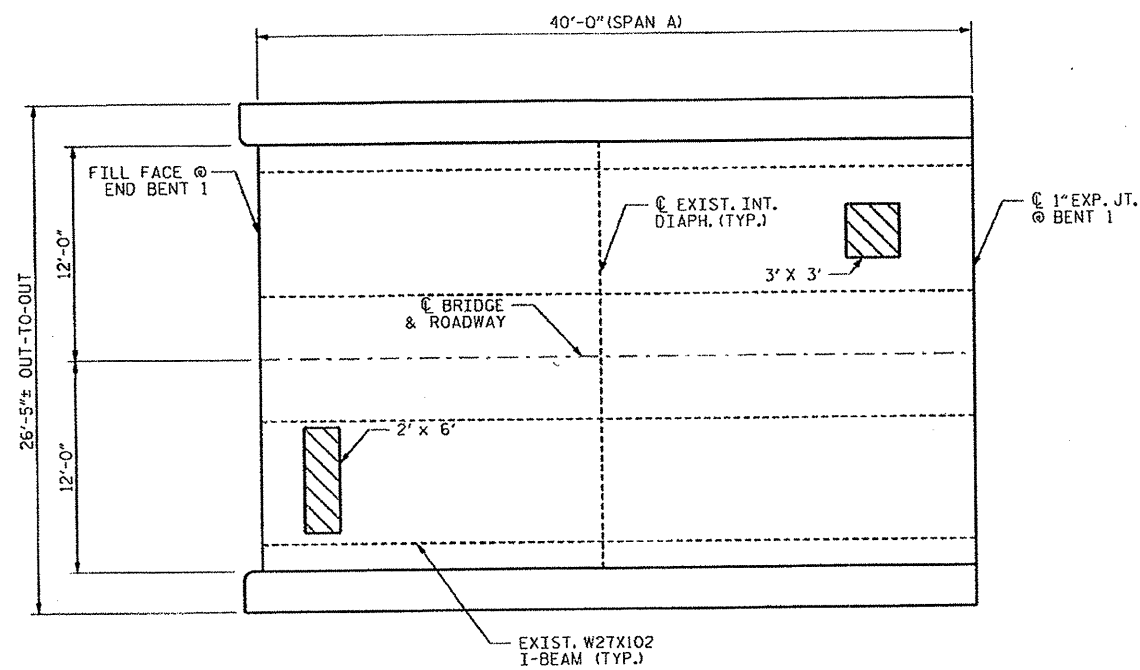
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			83

*Joseph Kelvington*  
11/11/2012  
13406  
ENGINEER  
STATE OF NORTH CAROLINA

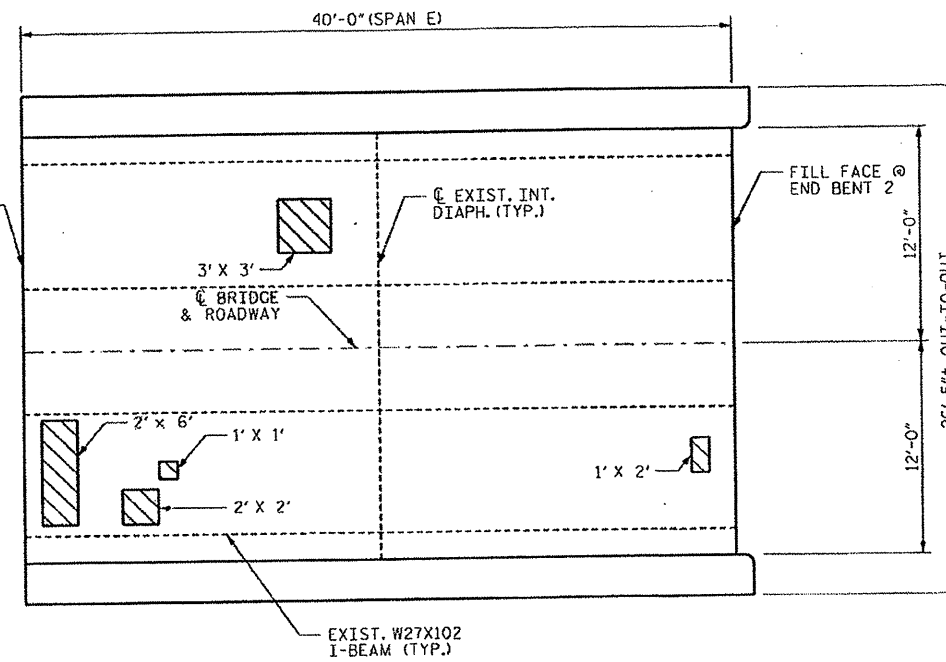


DRAWN BY : C. B. BAKER DATE : 11/11  
CHECKED BY : J. T. KELVINGTON DATE : 11/11

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PLAN OF SPAN A - DECK REPAIRS



PLAN OF SPAN E - DECK REPAIRS

NOTE: BARRIERS, POSTS AND POST BRACKETS ARE NOT SHOWN FOR CLARITY.

NOTES:

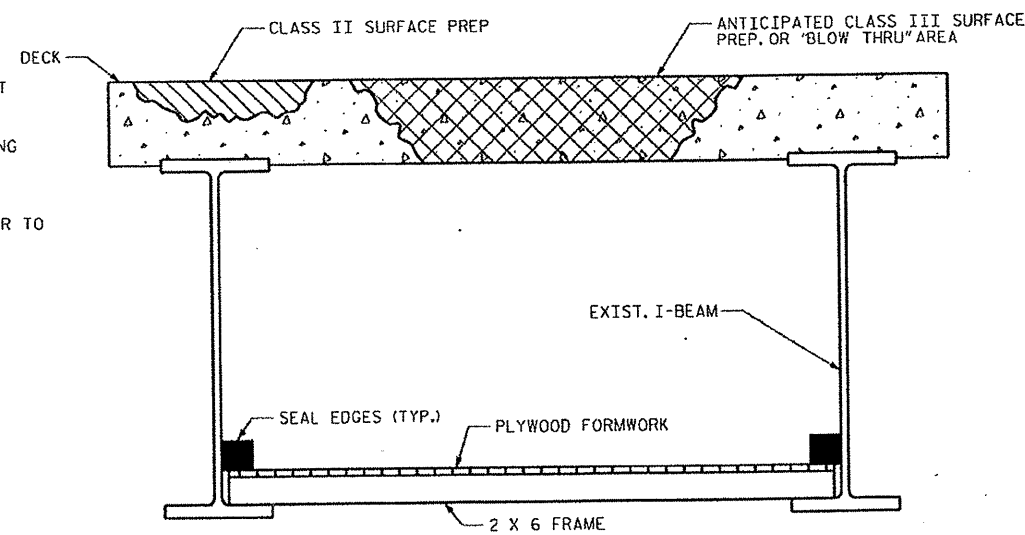
CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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

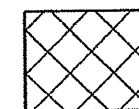
SUBMIT DETAILS OF ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.



TYP. "BLOW-THRU" CONTAINMENT AND FORMWORK



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

NOTES:

L' X W' = LENGTH OF AREA ALONG © BRIDGE X WIDTH OF AREA NORMAL TO © BRIDGE

PROJECT NO. WBS 17BP.7.P.2  
 ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DECK REPAIR DETAILS  
 SPANS A & E

DECK REHAB. FOR BRIDGE NO. 38

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
TOTAL SHEETS					83

*Joseph J. Kelvington*  
 11/23/2012

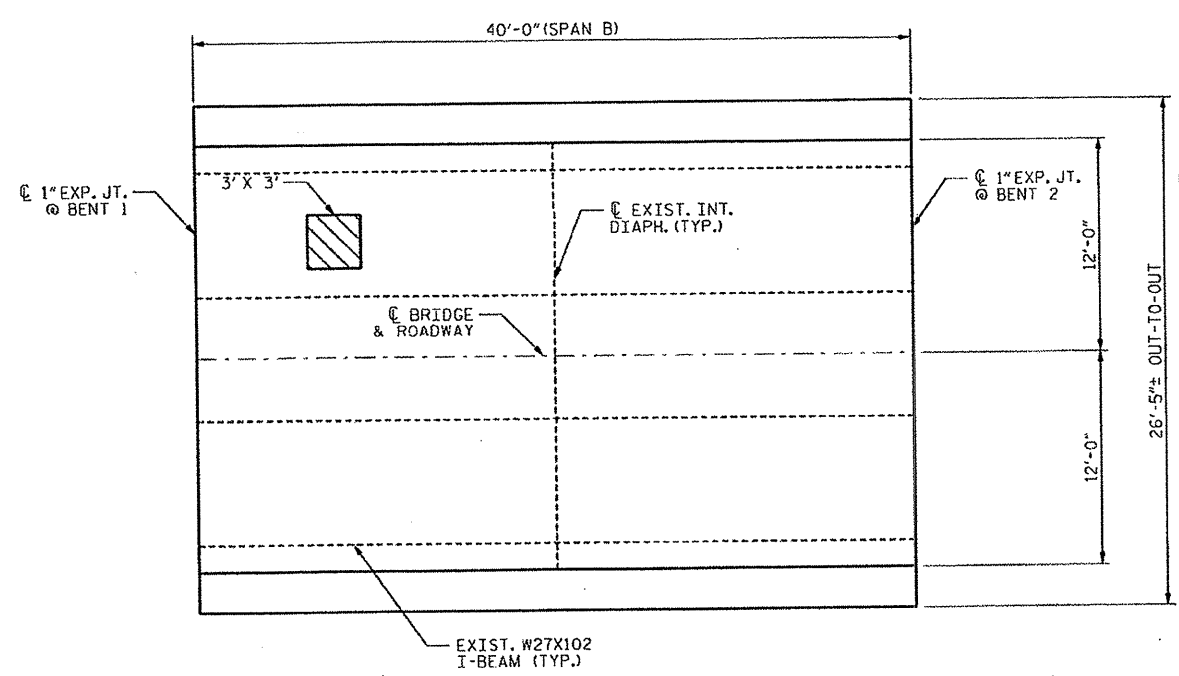


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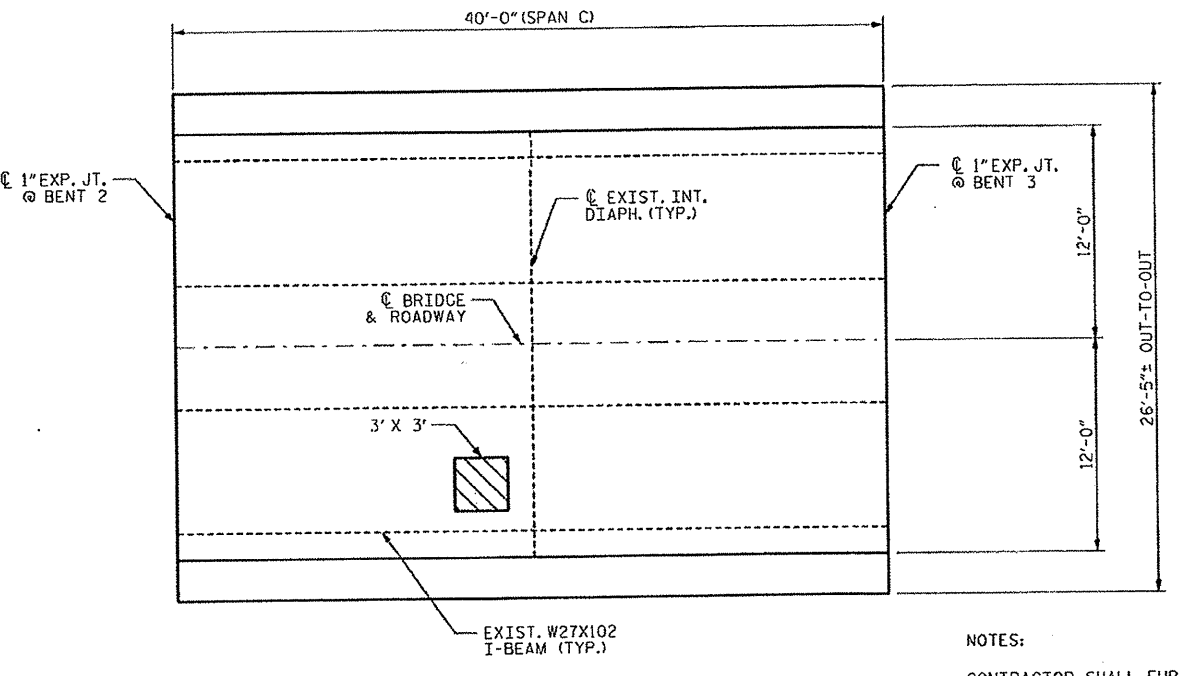
DRAWN BY : C.B. BAKER DATE : 11/11  
 CHECKED BY : J.T. KELVINGTON DATE : 11/11

P.2 Alamance-Orange Co., Alamance 3-1.dwg 038\Drawings\Alamance38\_Repair\Plan\A.E.dgn 2/23/2012 12:59:24 PM bieron

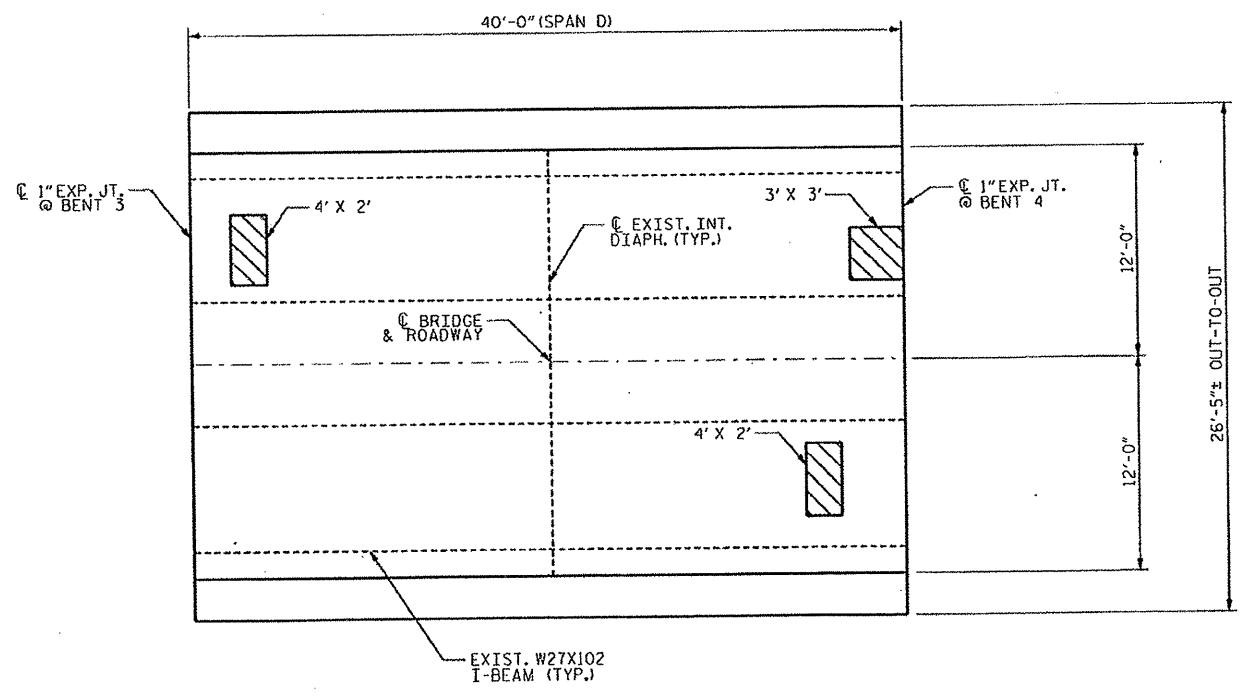
2 Alameda-Orange, 50 Alameda, Bridge, 038, Drawing, Alameda38\_RepairPlan8CD.dgn 2/21/2012 12:52:24 PM bicton



PLAN OF SPAN B - DECK REPAIRS



PLAN OF SPAN C - DECK REPAIRS



PLAN OF SPAN D - DECK REPAIRS

NOTE: BARRIERS, POSTS AND POST BRACKETS ARE NOT SHOWN FOR CLARITY.

NOTES:

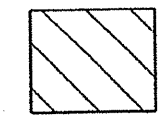
CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

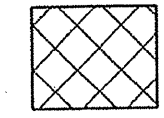
CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

NOTES:

L' X W' = LENGTH OF AREA ALONG @ BRIDGE X WIDTH OF AREA NORMAL TO @ BRIDGE



PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

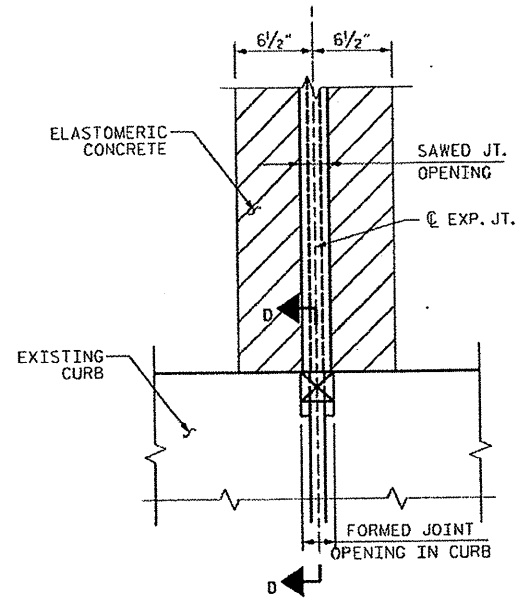
DECK REPAIR DETAILS  
 SPANS B - D

DECK REHAB. FOR BRIDGE NO. 38

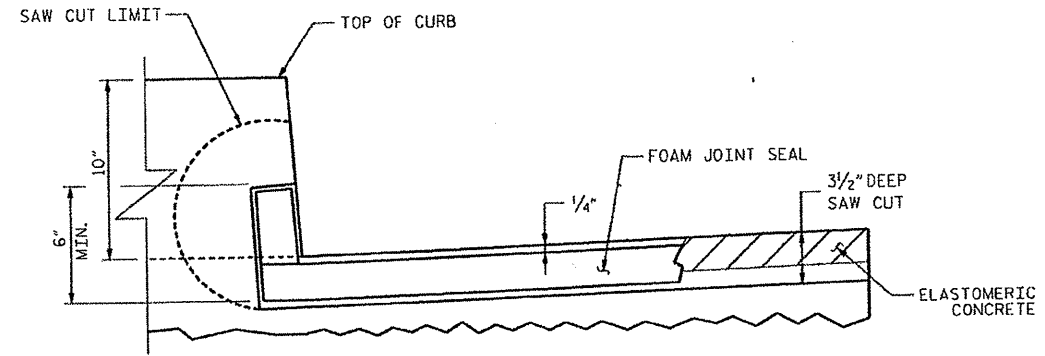
REVISIONS						SHEET NO. S-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

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DRAWN BY: C. B. BAKER DATE: 11/11  
 CHECKED BY: J. T. KELVINGTON DATE: 11/11

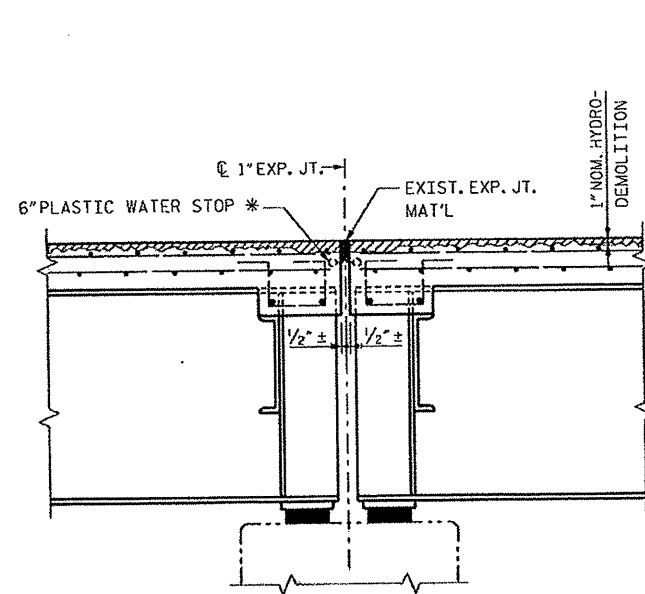


**PARTIAL PLAN @ JOINT**  
(TYP. @ BENTS 1-4)



**SECTION D-D**

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.

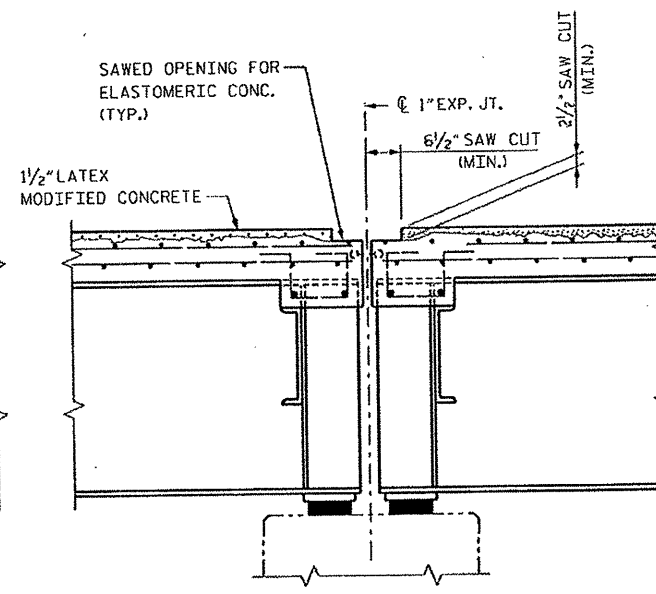


**SECTION B-B**  
(CONCRETE REMOVAL AT EXISTING JOINT)

\* FROM BEST AVAILABLE INFORMATION.

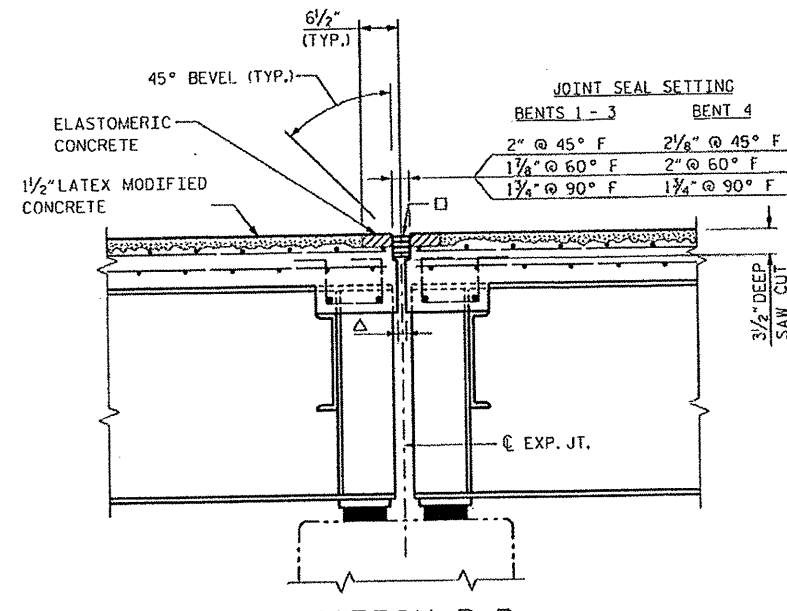
NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.

ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.



**SECTION B-B**

(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION B-B**

(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

□ USE 2.8125" X 2.5" UNCOMPRESSED FOAM JT. SEAL MATERIAL FOR BENTS 1 THRU 4.

△ EXISTING 1" FORMED OPENING

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	5.0 C.F.
BENT 2	5.0 C.F.
BENT 3	5.0 C.F.
BENT 4	5.0 C.F.

TOTAL ELASTOMERIC CONC. = 20 C.F.  
TOTAL ELASTOMERIC CONC. = 0.74 C.Y.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

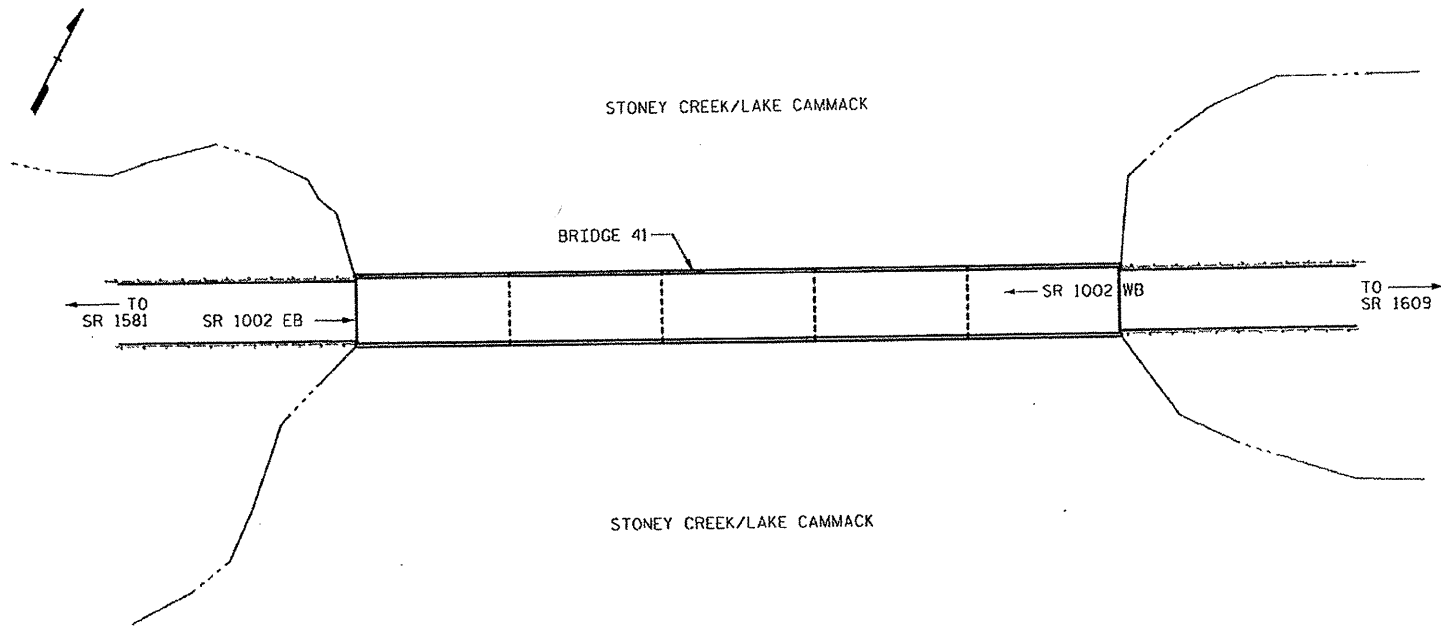
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH				
EXPANSION JOINT DETAILS				
DECK REHAB. FOR BRIDGE NO. 38				
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	
				TOTAL SHEETS 83

*Joseph Kelvington*  
2/23/2012

S:\17BP.7.P.2 Alamance-Orange Co.\Alamance Bridge\_038\Drawings\Alamance38\_DET.dgn 2/23/2012 12:19:25 PM bkr-on

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License No. F-0872

DRAWN BY : C B BAKER DATE : 11/11  
CHECKED BY : J T KELVINGTON DATE : 11/11



NOTES:  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

**BRIDGE 41 ON ALTAMAHAW UNION RIDGE RD.  
 OVER STONEY CREEK**

LOCATION: BRIDGE 000041, ON SR 1002 (ALTAMAHAW UNION RIDGE RD.)  
 0.5 MILES EAST OF JUNCTION SR 1581

**BRIDGE 41**

TOTAL BILL OF MATERIAL											
INCIDENTAL MILLING	SCARIFYING BRIDGE DECK	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	CLASS I* SURFACE PREPARATION	CLASS II* SURFACE PREPARATION	CLASS III* SURFACE PREPARATION	HYDRO-DEMOLITION	CLASS AA* CONCRETE	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SQ.YDS.	SQ.YDS.	TON	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.
222	733.4	18	0	11.8	0	733.4	0	43.2	733.4	LUMP SUM	5,565

\* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THIS ITEM SHALL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LOCATION SKETCH AND TOTAL BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 41

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

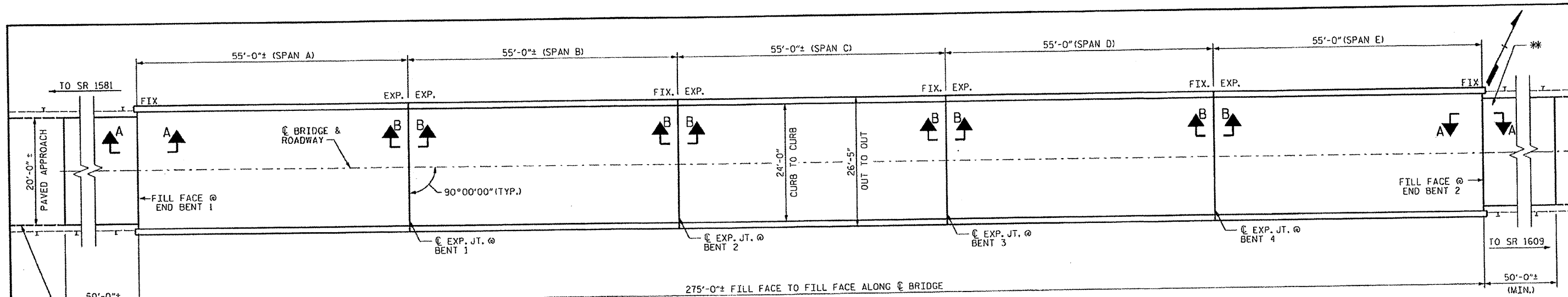
TOTAL SHEETS: 83

*Joseph L. Kelvington*  
 10/23/2012  
 PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA  
 LICENSE NO. 12440

2/23/2012 2:49:26 PM beton  
 I:\BP.7.P.2 Alamance-Orange Co\Alamance Bridge 04\Drawings\BP.7.LocSke.BDM.dwg

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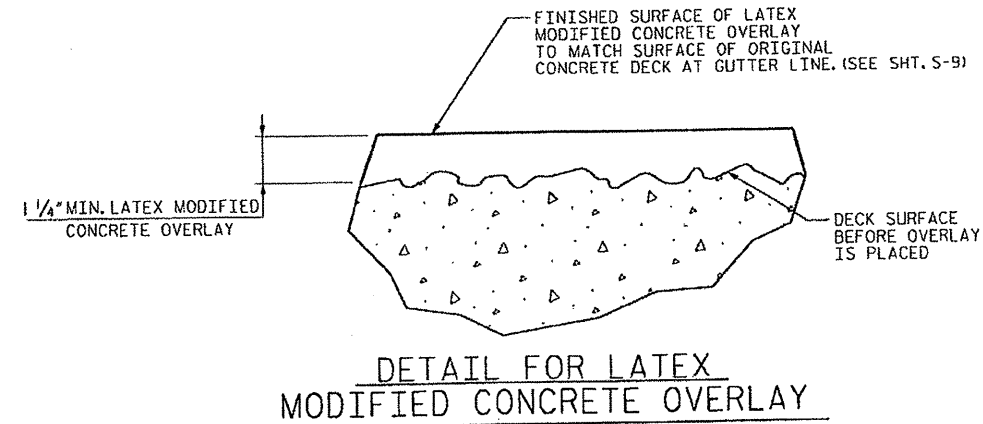
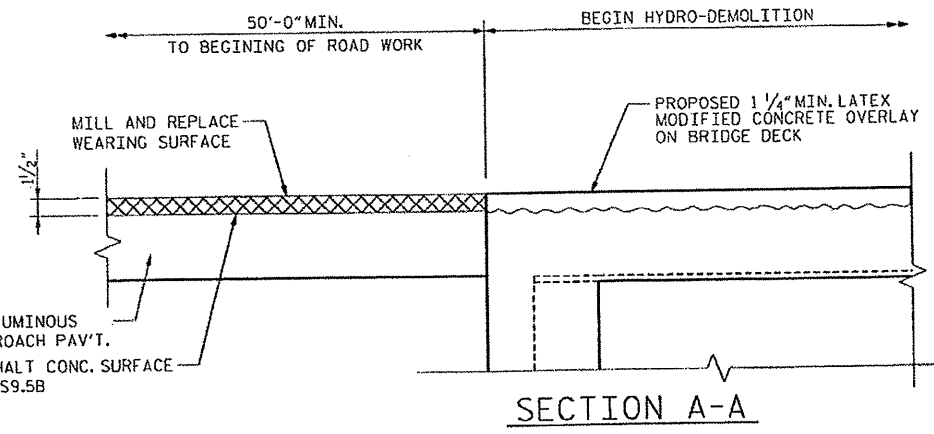
DRAWN BY: P. Z. ARMATA DATE: 10/11  
 CHECKED BY: J. I. KELVINGTON DATE: 10/11



**PLAN OF SPANS**

NOTE: BARRIERS, END POSTS, AND BARRIER POST BRACKETS NOT SHOWN FOR CLARITY.

\*\*MILL AND REPLACE EXISTING ROADWAY PAVEMENT W/ ASPHALT CONC. SURFACE COURSE TYPE S9.5B (TYP, EACH END)



**NOTES:**

- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
- THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
- THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL ON SHT. S-10.
- LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
- FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
- FOR SECTION B-B, SEE SHEET S-15.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

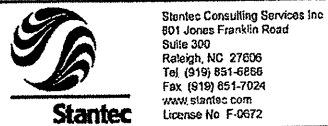
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF BRIDGE**

DECK REHAB. FOR BRIDGE NO. 41

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			83

*Joseph Kelvington*  
 10/25/2012



DRAWN BY: P. Z. ARMATA DATE: 10/11  
 CHECKED BY: J. T. KELVINGTON DATE: 10/11

WBS 17BP.7.P.2, Alamance County Co. Va. Alignment Bridge Deck Drawing, B14, Deck Plan, dcn 2/23/2012 12:58:28 PM blrton

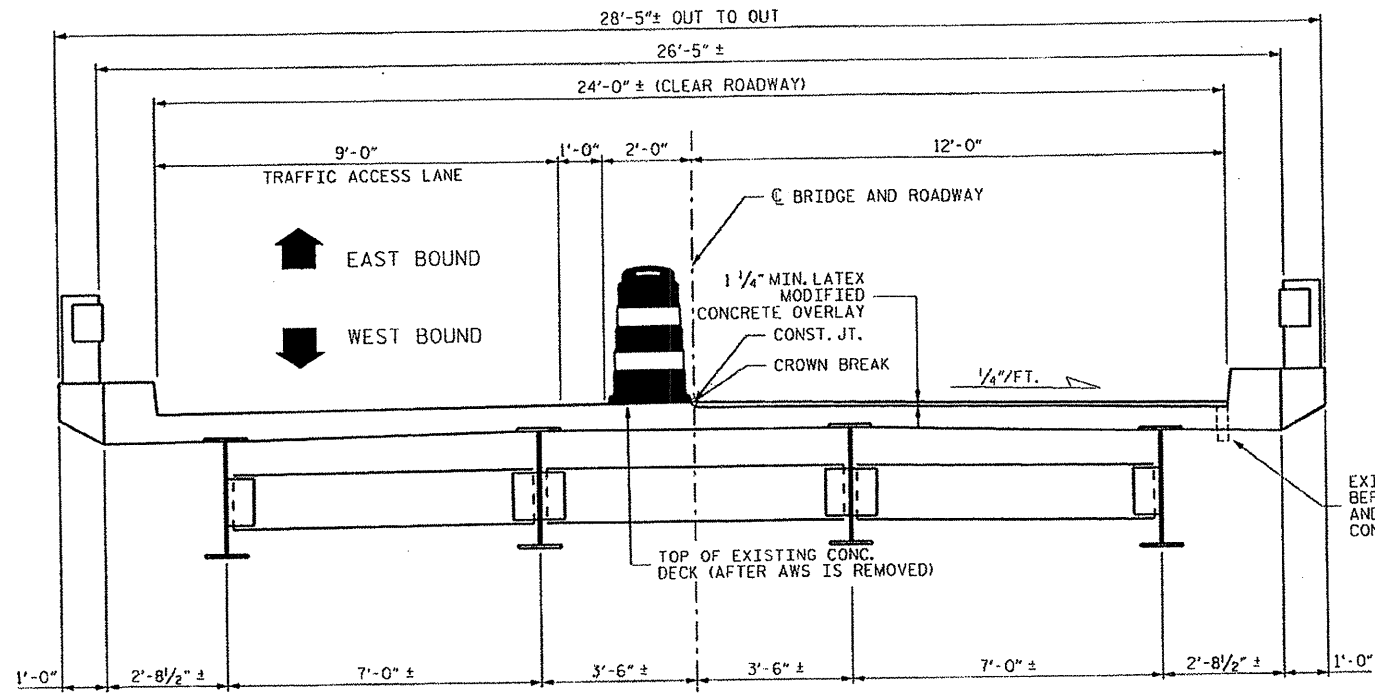
NOTES:

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

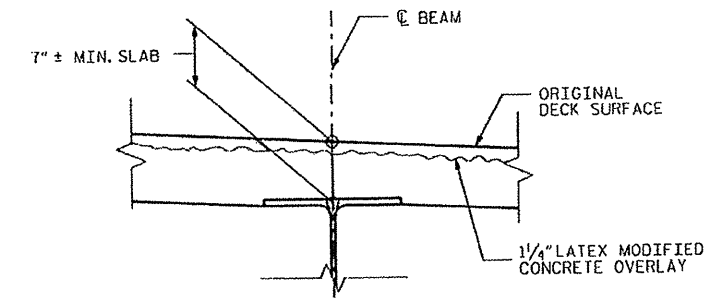
FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRAFFIC MANAGEMENT PLANS.

LATEX MODIFIED CONCRETE SHALL BE VERY EARLY STRENGTH.

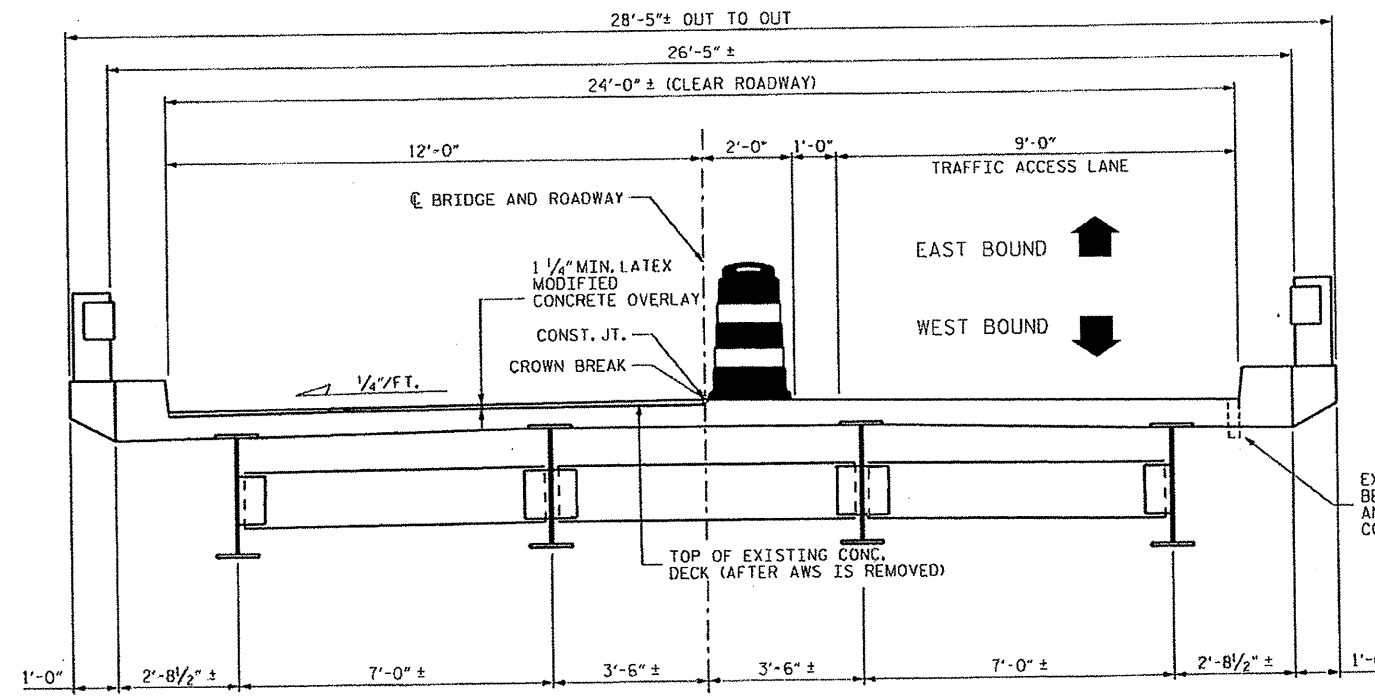
FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.



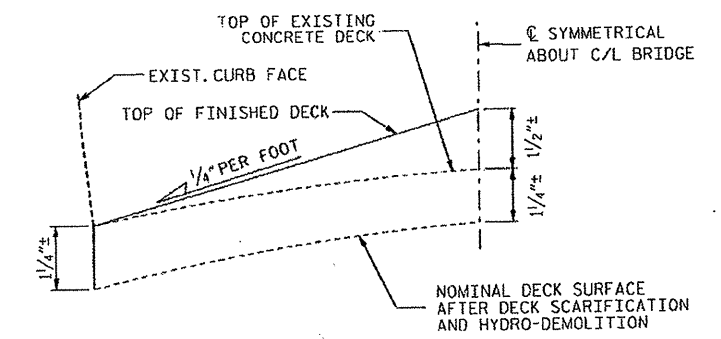
TYPICAL SECTION



EXIST. SLAB BUILDUP



TYPICAL SECTION



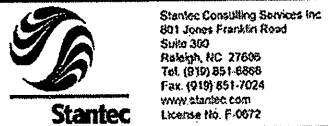
BRIDGE CROSS SLOPE SCHEMATIC FOR DECK OVERLAY

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

*Joseph Kelvington*  
 10/23/2011



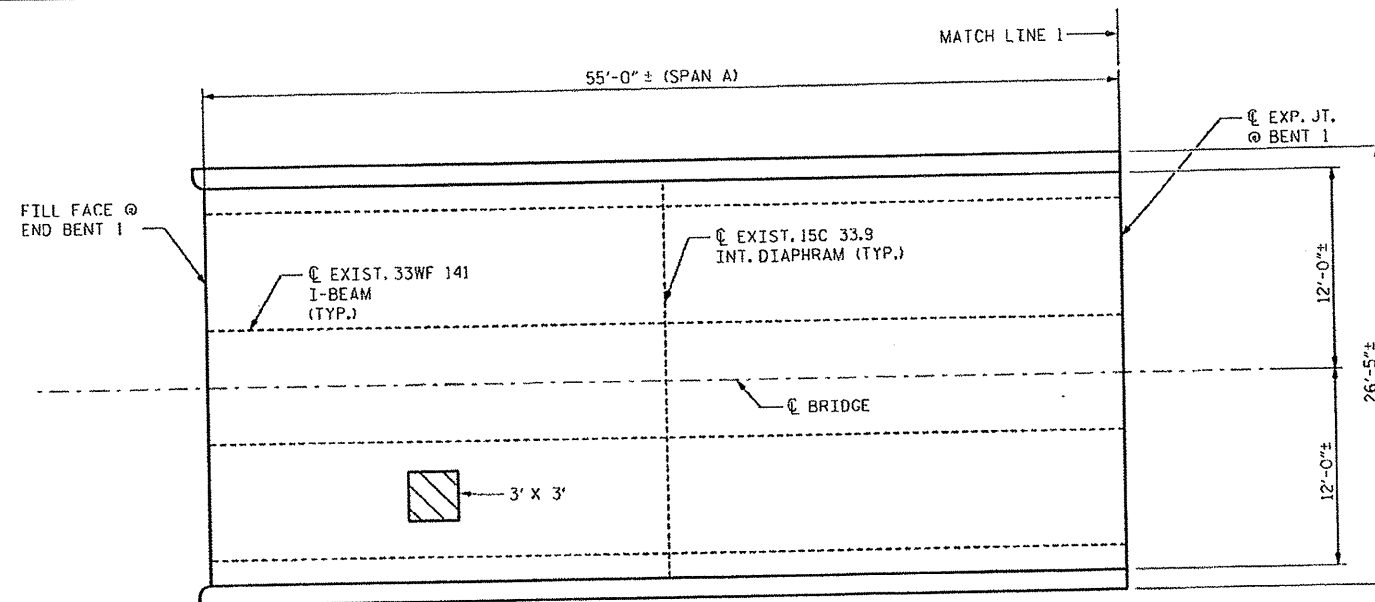
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TYPICAL SECTION					
DECK REHAB. FOR BRIDGE NO. 41					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-9
TOTAL SHEETS					83



DRAWN BY: P. Z. ARMATA DATE: 10/11  
 CHECKED BY: J. T. KELVINGTON DATE: 10/11

WBS 17BP.7.P.2 Alamance-Orange Covariance Bridge 04\Drawings\BP4\_TypSect.dwg 12/18/28 P4 Burton 2/23/2012





**PLAN OF SPAN A - DECK REPAIRS**

NOTE: BARRIER RAILS, POST, AND BRACKETS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

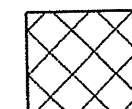
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

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



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

**NOTES:**

L' X W' = LENGTH OF AREA ALONG @ BRIDGE X WIDTH OF AREA NORMAL TO @ BRIDGE

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

*Joseph J. Kelvington*  
 10/10/11  
 13406

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN A**

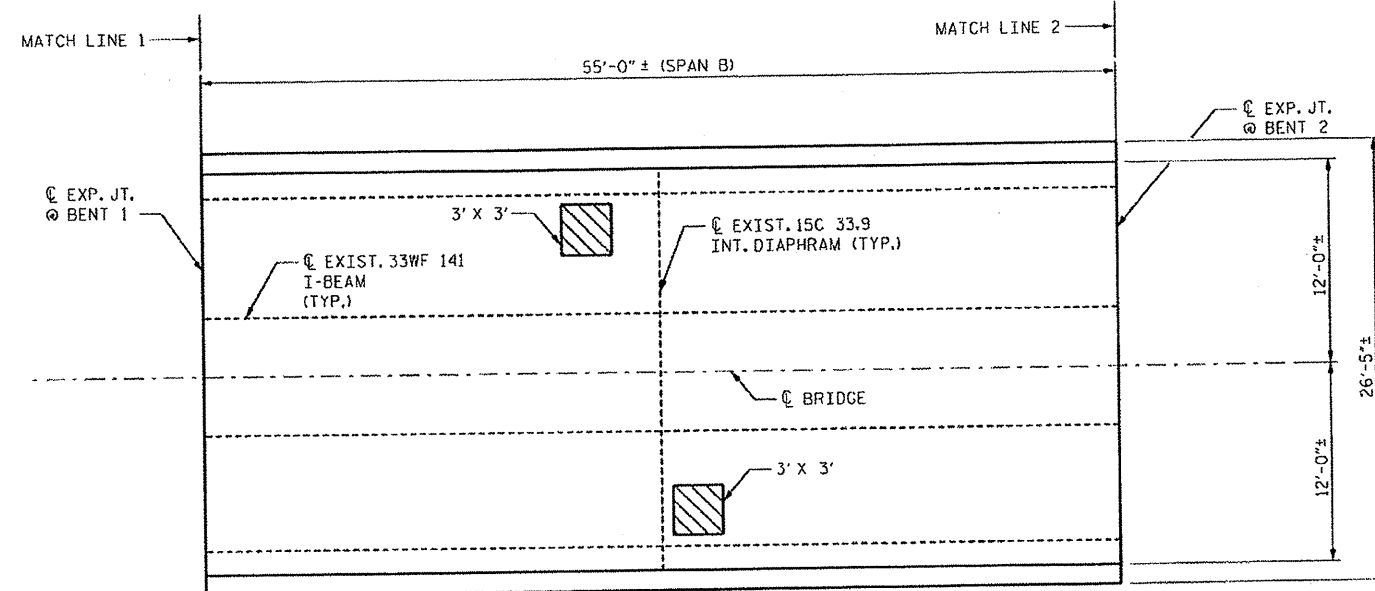
**DECK REHAB. FOR BRIDGE NO. 41**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS 83
2			4			

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DRAWN BY : P. Z. ARMATA DATE : 10/11  
 CHECKED BY : J. T. KELVINGTON DATE : 10/11

17BP.7.P.2 Alamacnce-Orange Co Valerianosa Bridge 04\Draw\17BP.7.P.2\ReparPlan\_A.dgn 2/23/2012 12:49:29 PM b1aton



**PLAN OF SPAN B - DECK REPAIRS**

NOTE: BARRIER RAILS, POST, AND BRACKETS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

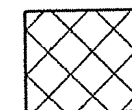
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

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



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

**NOTES:**

L' X W' = LENGTH OF AREA ALONG C BRIDGE X WIDTH OF AREA NORMAL TO C BRIDGE

PROJECT NO. WBS 17BP.7.P.2

ALAMANCE COUNTY

STATION: \_\_\_\_\_



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DRAWN BY : P. Z. ARMATA DATE : 10/11  
CHECKED BY : J. T. KELVINGTON DATE : 10/11

*Joseph J. Kelvington*  
2/20/12  
Professional Engineer Seal  
JOSEPH J. KELVINGTON  
3406  
ENGINEER  
NORTH CAROLINA

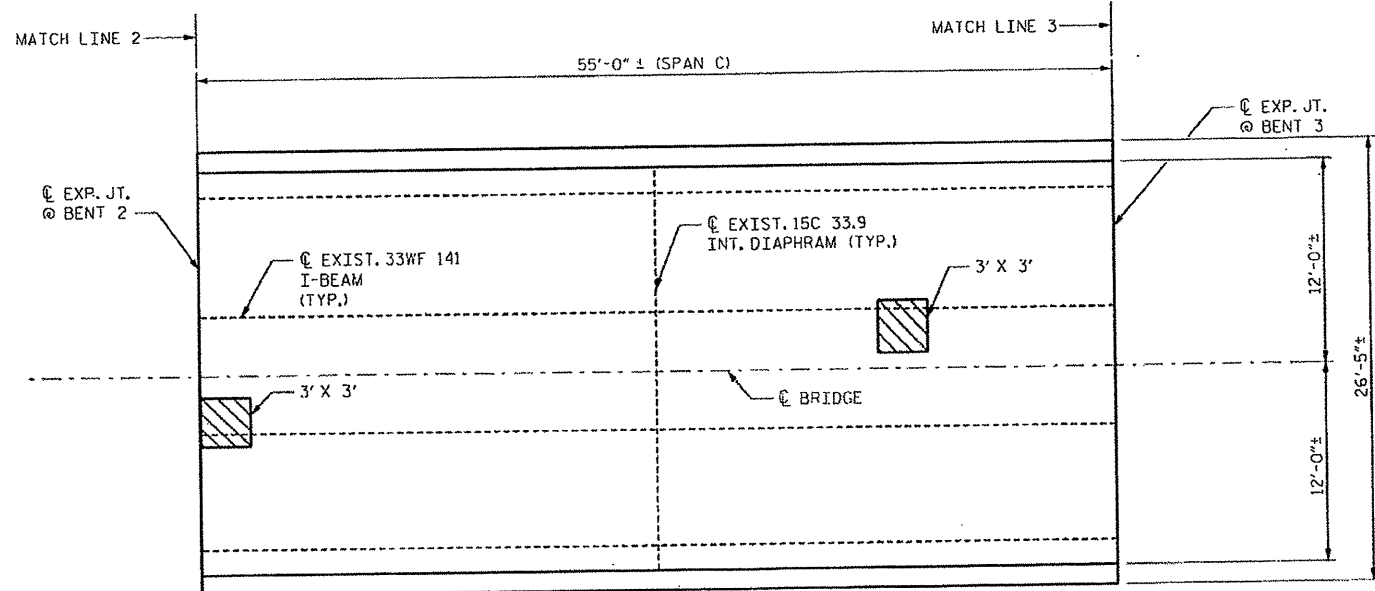
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

DECK REPAIR DETAILS  
SPAN B

DECK REHAB. FOR BRIDGE NO. 41

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-11
1			3			TOTAL SHEETS
2			4			83

17BP.7.P.2 Alamance-Corncrook Co. Alamance Bridge Deck Drawing 1954 Repair Plan 2 3.dwg 2/23/2012 12:15:30 PM b10701



**PLAN OF SPAN C - DECK REPAIRS**

NOTE: BARRIER RAILS, POST, AND BRACKETS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

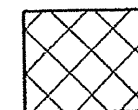
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

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



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

**NOTES:**

L' x W' = LENGTH OF AREA ALONG CL BRIDGE X WIDTH OF AREA NORMAL TO CL BRIDGE

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

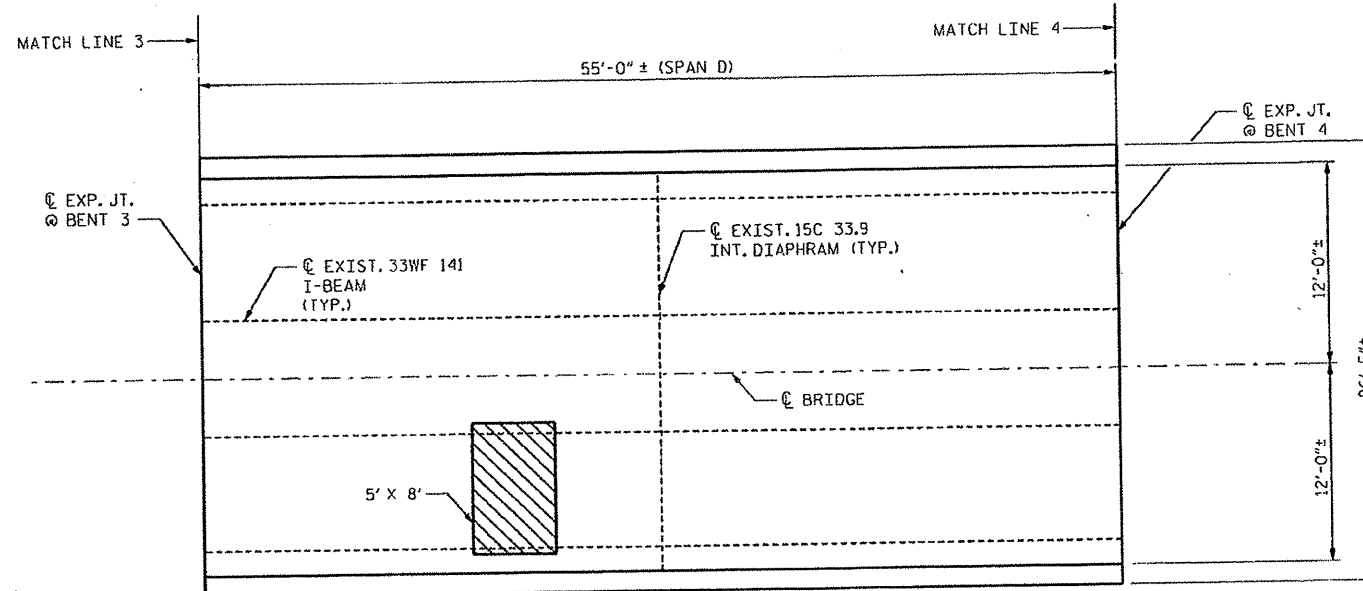
*Joseph Kelvington*  
 REGISTERED PROFESSIONAL ENGINEER  
 NO. 13406  
 STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
DECK REPAIR DETAILS					
SPAN C					
DECK REHAB. FOR BRIDGE NO. 41					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					83

**Stantec**  
 Stantec Consulting Services Inc.  
 601 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel (919) 851-6856  
 Fax (919) 851-7024  
 www.stantec.com  
 License No. F-6572

DRAWN BY: P. Z. ARMATA DATE: 10/11  
 CHECKED BY: J. I. KELVINGTON DATE: 10/11

17BP.7.P.2 Alamance-Crance Co. Vammonca Bridge 04\Drawing\SP41\_Repair-Plan-1.C.dgn 2/23/2012 2:18:31 PM b1stcn



**PLAN OF SPAN D - DECK REPAIRS**

NOTE: BARRIER RAILS, POST, AND BRACKETS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

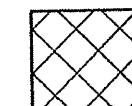
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

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



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

**NOTES:**

L' X W' = LENGTH OF AREA ALONG C<sub>B</sub> BRIDGE X WIDTH OF AREA NORMAL TO C<sub>B</sub> BRIDGE

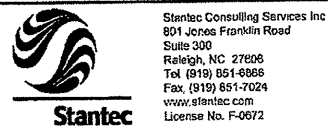
PROJECT NO. WBS 17BP.7.P.2

ALAMANCE COUNTY

STATION: \_\_\_\_\_

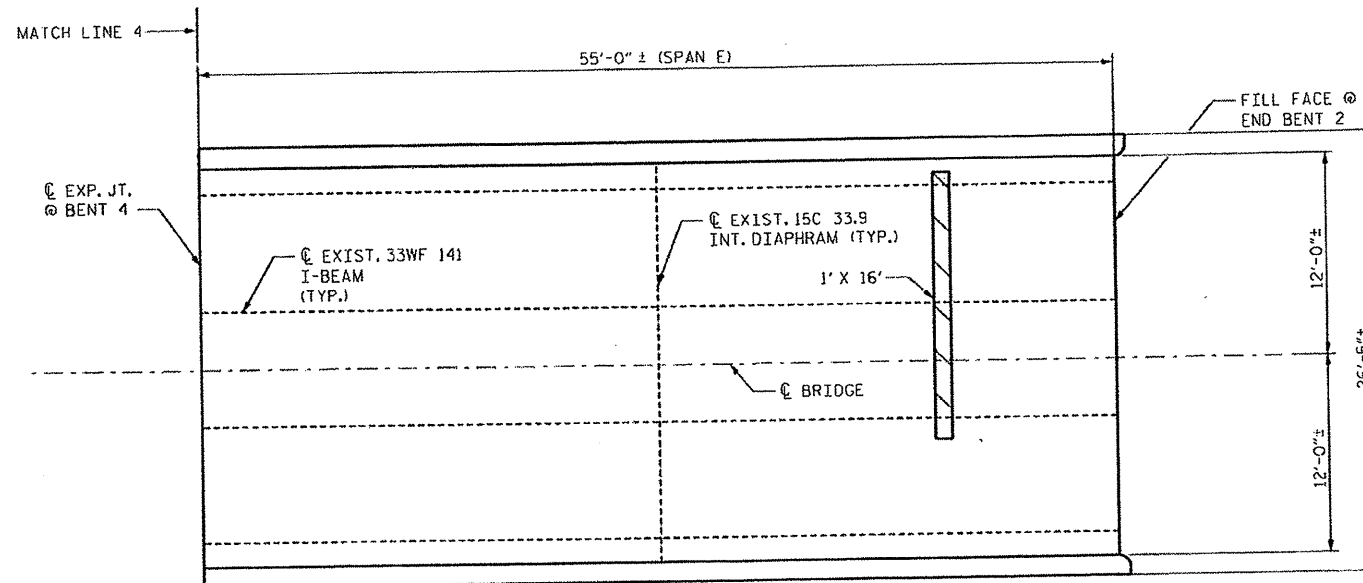
*Joseph Kelvington*  
 10/11/2012  
 13406  
 ENGINEER  
 KELVINGTON

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
DECK REPAIR DETAILS					
SPAN D					
DECK REHAB. FOR BRIDGE NO. 41					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			2		
2			4		
					S-13
					TOTAL SHEETS
					83



DRAWN BY : P. Z. ARMATA DATE : 10/11  
 CHECKED BY : J. T. KELVINGTON DATE : 10/11

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 I:\BP.7.P.2 Alamance-Orange Co\Alamance Bridge 04\Drawing\BP.7.Repair-Plan-D.dgn



**PLAN OF SPAN E - DECK REPAIRS**

NOTE: BARRIER RAILS, POST, AND BRACKETS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

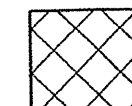
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

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



CLASS II SURFACE PREPARATION



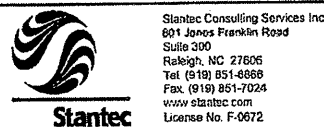
CLASS III SURFACE PREPARATION

**NOTES:**

L' X W' = LENGTH OF AREA ALONG @ BRIDGE X WIDTH OF AREA NORMAL TO @ BRIDGE

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

17BP.7.P.2, Alamance-Orange Co., Alamance Bridge 04, Drawing\BP4\_Repair\Plans.E.dgn 2/23/2012 12:18:33 PM b10101



DRAWN BY : P. Z. ARMATA DATE : 10/11  
 CHECKED BY : J. T. KELVINGTON DATE : 10/11

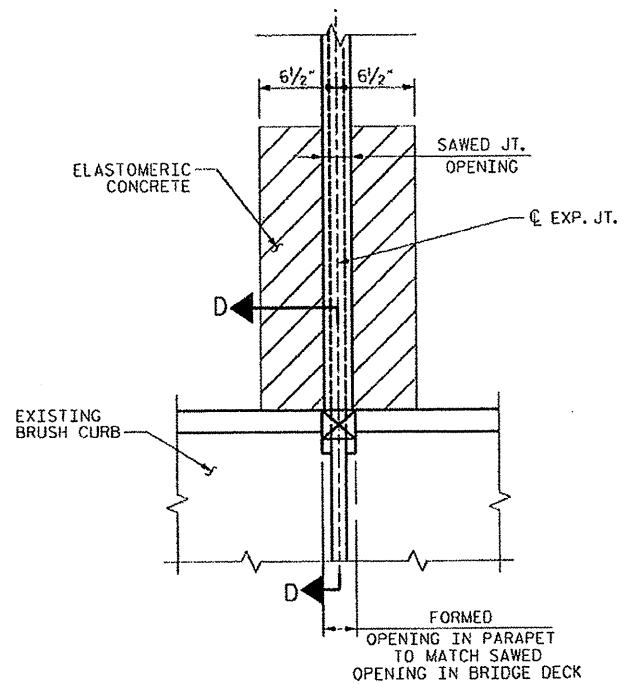
*Joseph J. Kelvington*  
 2/23/2012  
 PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA  
 13406

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN E**

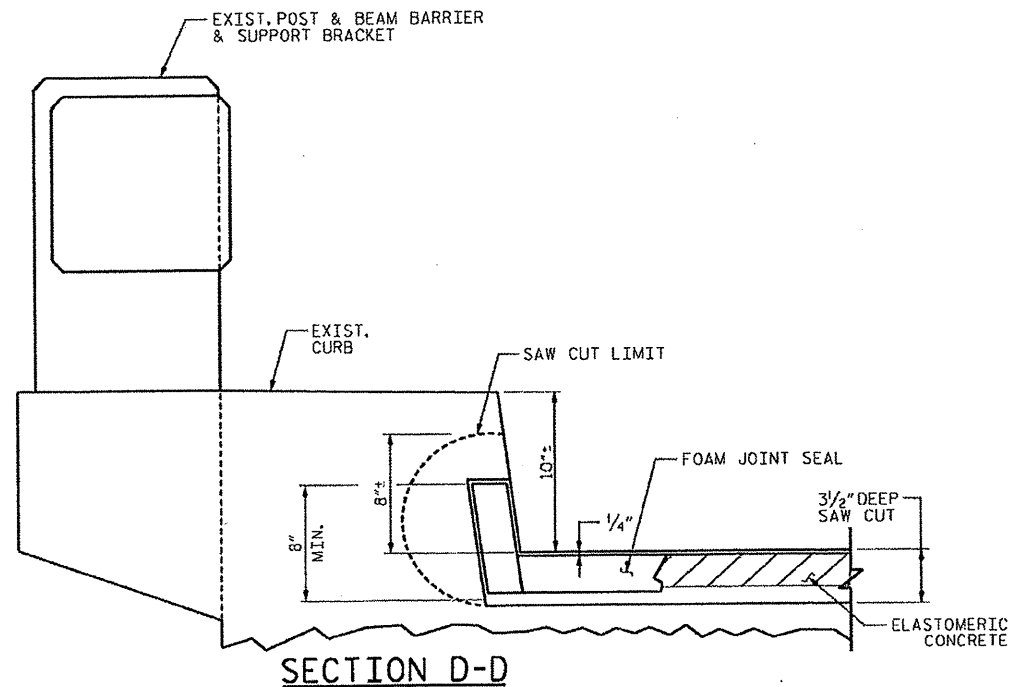
**DECK REHAB. FOR BRIDGE NO. 41**

REVISIONS						SHEET NO. S-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			



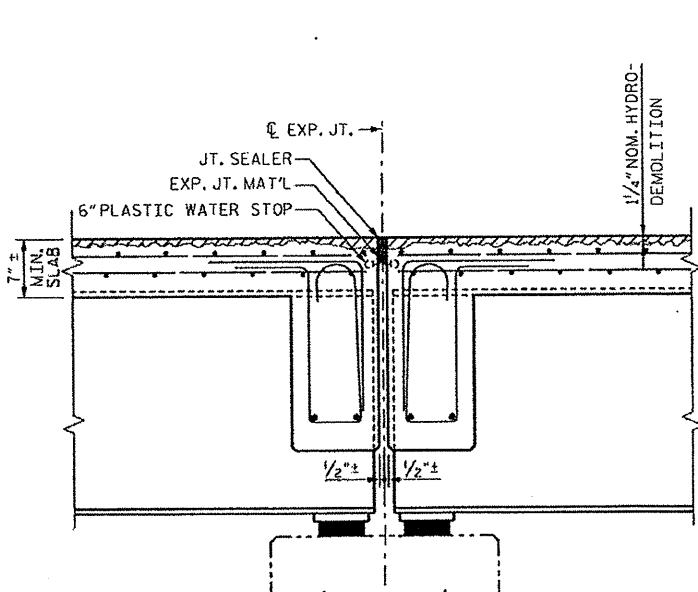
**PARTIAL PLAN @ JOINT**

TYPICAL AT BENTS 1-4.



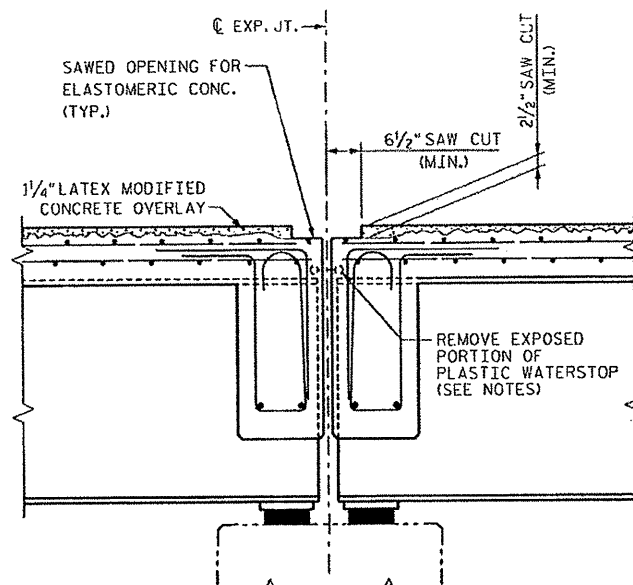
**SECTION D-D**

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.



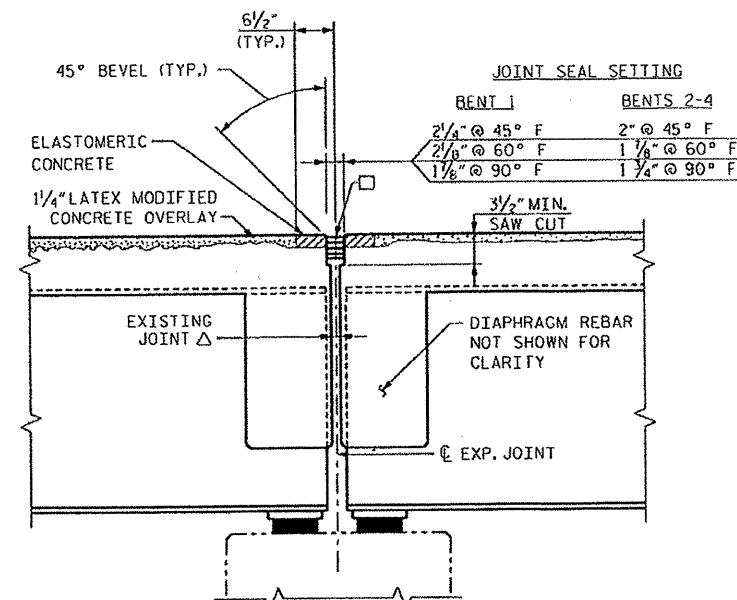
**SECTION B-B**

(CONCRETE REMOVAL AT EXISTING JOINT)



**SECTION B-B**

(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION B-B**

(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

NOTE: FOR FOAM JOINT SEAL, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

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

☐ USE 2.8125" x 2.50" UNCOMPRESSED SEAL @ BENTS 1-4.

△ 1" EXIST. JOINT OPENING @ BENTS 1-4.

**JOINT SEAL SETTING**

BENT 1	BENTS 2-4
2 1/4" @ 45° F	2" @ 45° F
2 1/8" @ 60° F	1 1/8" @ 60° F
1 1/8" @ 90° F	1 1/4" @ 90° F

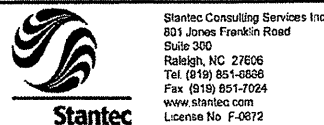
ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	5.0 C.F.
BENT 2	5.0 C.F.
BENT 3	5.0 C.F.
BENT 4	5.0 C.F.

TOTAL ELASTOMERIC CONC. = 20 C.F.  
TOTAL ELASTOMERIC CONC. = 0.74 C.Y.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

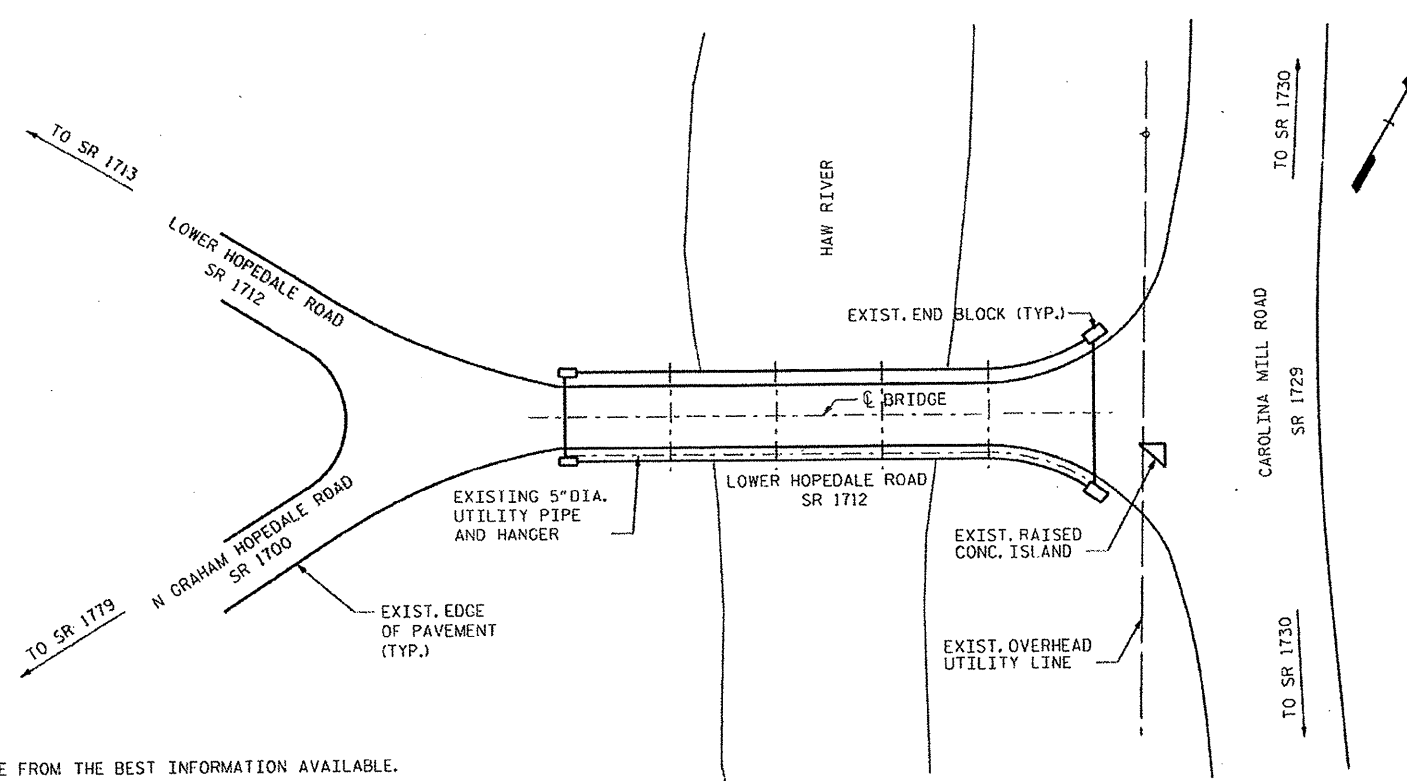
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
EXPANSION JOINT DETAILS					
DECK REHAB. FOR BRIDGE NO. 41					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					S-15
					TOTAL SHEETS 83

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DRAWN BY: P. Z. ARMATA DATE: 10/11  
CHECKED BY: J. T. KELVINGTON DATE: 10/11

*J. Kelvington*  
Professional Engineer  
No. 49413  
13 Oct 2012



NOTES:  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

### BRIDGE 051 ON SR 1712

LOCATION: BRIDGE 000051, SR 1712 OVER HAW RIVER  
 50 FEET WEST OF JUNCTION WITH SR 1729

### TOTAL BILL OF MATERIAL

INCIDENTAL MILLING	SCARIFYING BRIDGE DECK	ASHPHALT CONC. SURF. COURSE TYPE S9.5C	*CLEAN AND PAINT EXISTING BEARINGS	CLASS I * SURFACE PREPARATION	CLASS II * SURFACE PREPARATION	CLASS III * SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	CLASS AA * CONCRETE	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SO.YDS.	SO.YDS.	TON	LUMP SUM	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	CU.YDS.	CU.YDS.	SO.YDS.	LUMP SUM	SO.FT.
322	787.2	26	LUMP SUM	0	40.5	0	787.2	0	49.3	787.2	LUMP SUM	6,104

\* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE TYP. "BLOW THRU" CONTAINMENT AND FORMWORK DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THESE ITEMS WILL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

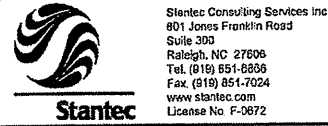
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LOCATION SKETCH AND TOTAL BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 51

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			83

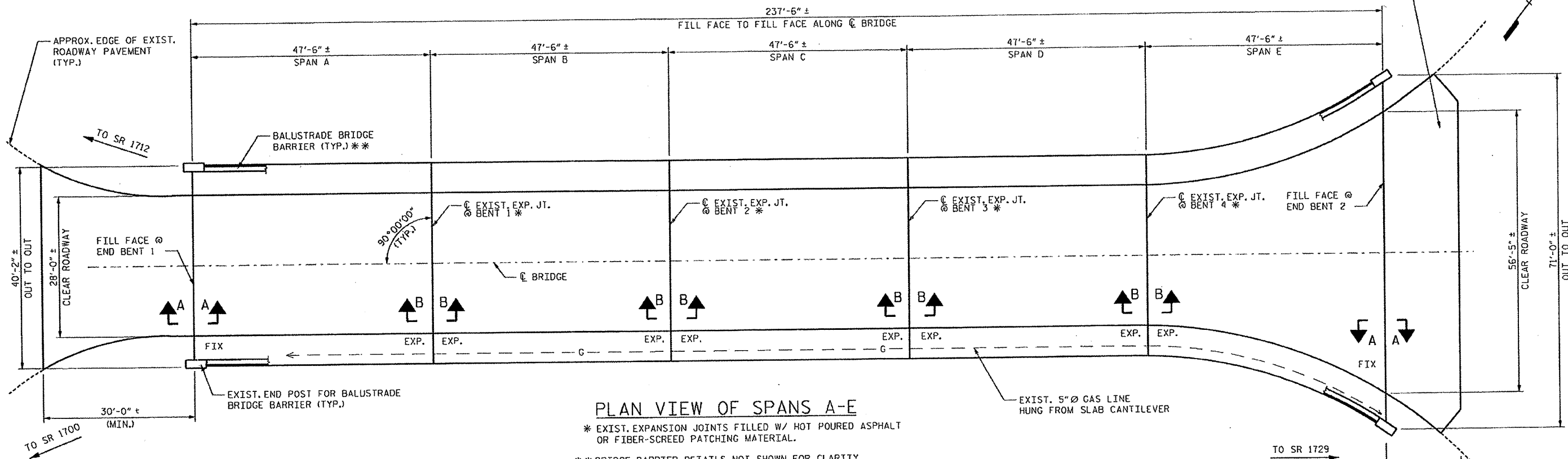
*Joseph J. Kelmington*  
 1/20/12



DRAWN BY: B. C. MACYOWSKY DATE: 1-20-12  
 CHECKED BY: J. T. KELVINGTON DATE: 1-20-12

5: 7BP.7.P.2 Alamance-Orange Co-Alamance BR1998 05A Drawing BPO00051.L.S.BDM.dgn 2/23/2012 12:49:35 PM DICTOR

MILL AND REPLACE EXIST. PAV'T W/ ASPHALT CONC. SURFACE COURSE TYPE S9.5C (TYP. EACH APPROACH)



**PLAN VIEW OF SPANS A-E**

\* EXIST. EXPANSION JOINTS FILLED W/ HOT POURED ASPHALT OR FIBER-SCREED PATCHING MATERIAL.

\*\* BRIDGE BARRIER DETAILS NOT SHOWN FOR CLARITY.

\*\*\* ASSUMED DIMENSION. TO BE SET IN FIELD TO CLEAR RAISED CONCRETE ISLAND.

**NOTES:**

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-19.

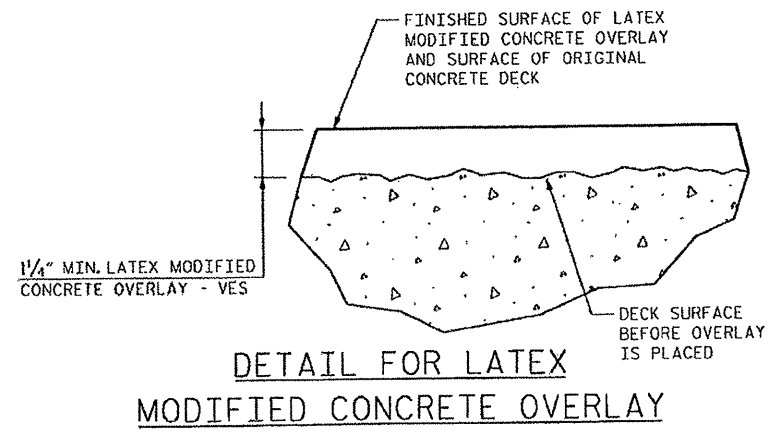
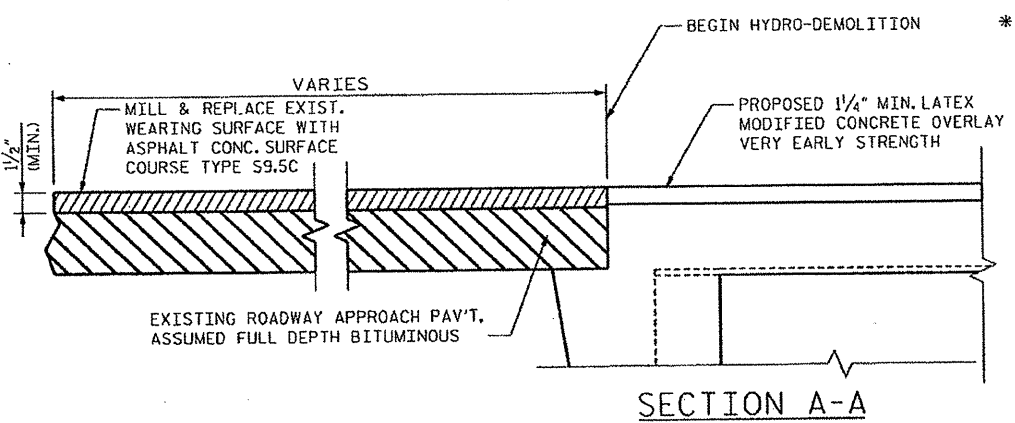
LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.

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

SECTION B-B IS TYPICAL AT BENTS 1-4.

FOR SECTION B-B, SEE SHT. NO. S-24.

**PROJECT NO. WBS 17BP.7.P.2**  
**ALAMANCE COUNTY**  
**STATION: \_\_\_\_\_**



*Joseph J. Kelvington*  
 PROJECT ENGINEER  
 13408  
 KELVINGTON

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF BRIDGE**

**DECK REHAB. FOR BRIDGE NO. 51**

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

TOTAL SHEETS: 83

WBS: 17BP.7.P.2 Alamance-Orange Co. Alamance Br. dge 05/10/2012 2:23:20/2012 02:19:35 PM bicton

**Stantec**  
 Stantec Consulting Services Inc  
 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel (919) 651-8888  
 Fax (919) 651-7024  
 www.stantec.com  
 License No. F-6672

DRAWN BY: B. C. MACYOWSKY DATE: 1-20-12  
 CHECKED BY: J. T. KELVINGTON DATE: 1-20-12

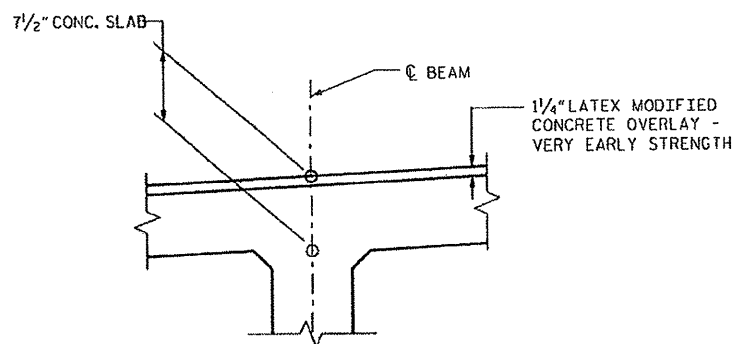


**NOTES:**

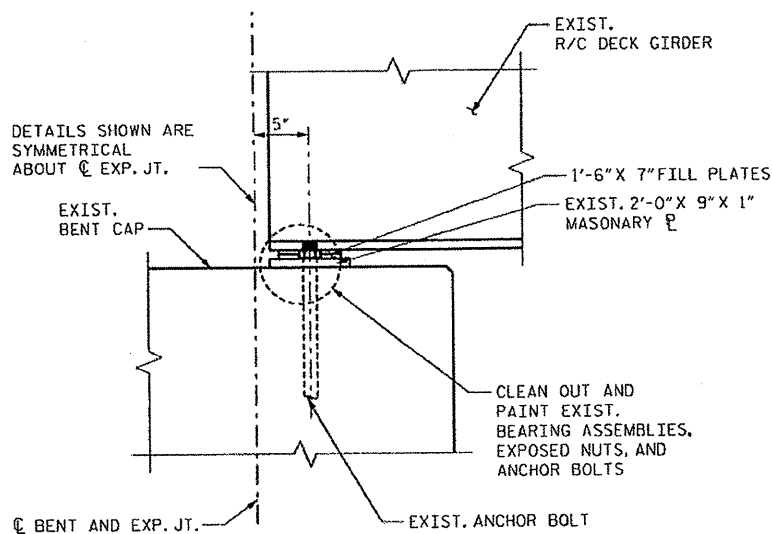
WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRANSPORTATION MANAGEMENT PLANS.

FOR PAINTING EXISTING BEARING ASSEMBLIES, SEE SPECIAL PROVISIONS.

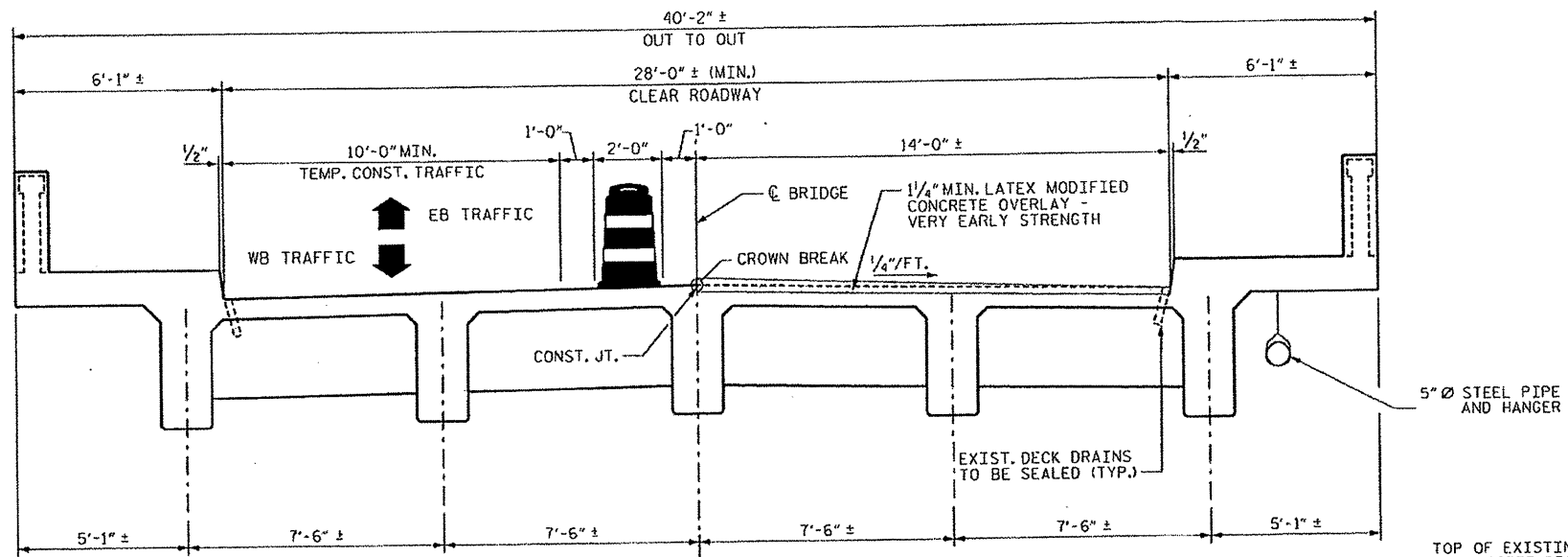


**EXIST. SLAB DETAIL**



**SECTION C-C**

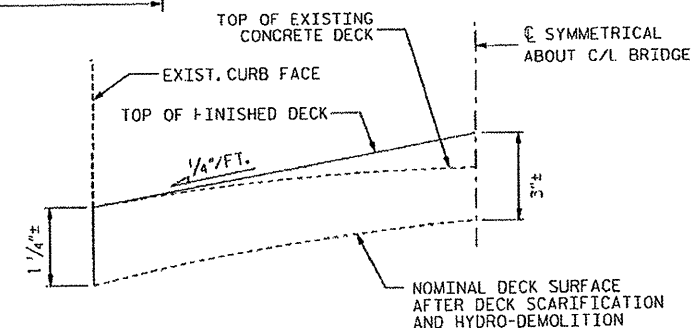
NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE. BEARING @ INTERIOR BENT SHOWN. BEARINGS @ END BENTS ARE SIMILAR.



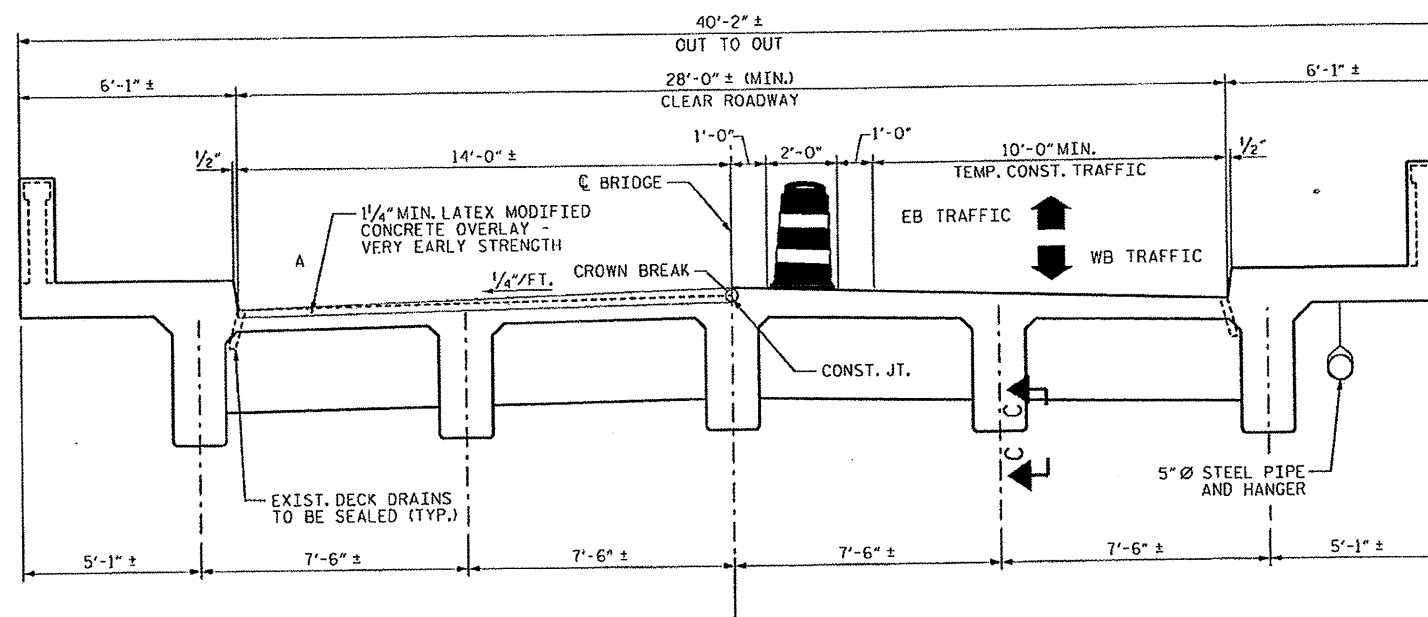
**TYPICAL SECTION**

SPANS A-E

NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.



**BRIDGE CROSS SLOPE SCHEMATIC FOR DECK OVERLAY**



**TYPICAL SECTION**

SPANS A-E

NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TYPICAL SECTION

DECK REHAB. FOR BRIDGE NO. 51

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

TOTAL SHEETS  
83

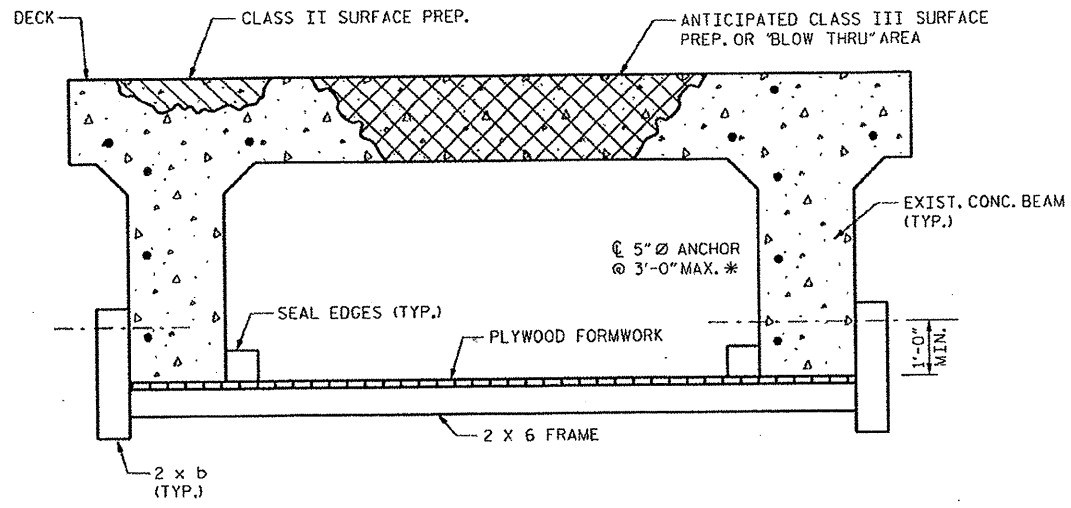
*Joseph Kelvington*  
 2/23/12  
 3406  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA



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 Raleigh, NC 27606  
 Tel. (919) 851-8888  
 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-0872

DRAWN BY : B. C. MACYOWSKY DATE : 1-20-12  
 CHECKED BY : J. T. KELVINGTON DATE : 1-20-12

WBS 17BP.7.P.2 Alamance-Orange Co\alamance B-1008 05\Jr\cwg\NBP00051\_TYS.dgn 2/23/2012 12:58:35 PM platorn



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

NOTES:

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

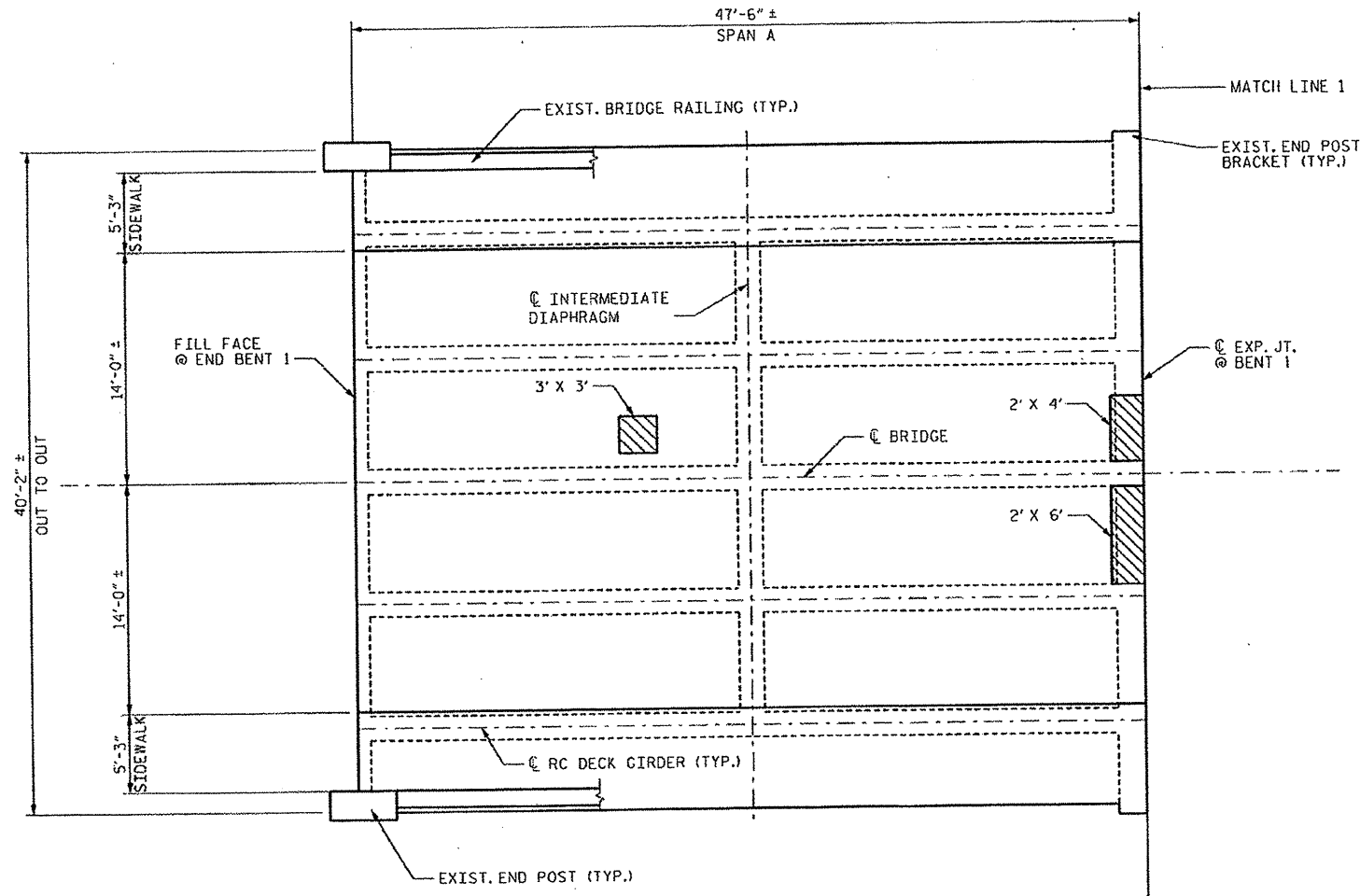
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO-DEMOLITION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

\* ANCHORS SHALL BE SECURED IN EXISTING CONCRETE GIRDERS WITH GROUT OR EPOXY ADHESIVES. RELOCATE HOLES DRILLED INTO EXISTING CONCRETE AS NECESSARY TO AVOID CUTTING EXISTING REINFORCING STEEL.



PLAN OF SPAN A - DECK REPAIRS

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA PARALLEL TO C BRIDGE X WIDTH OF AREA PERPENDICULAR TO C BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN A**

**DECK REHAB. FOR BRIDGE NO. 51**

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

TOTAL SHEETS: 83

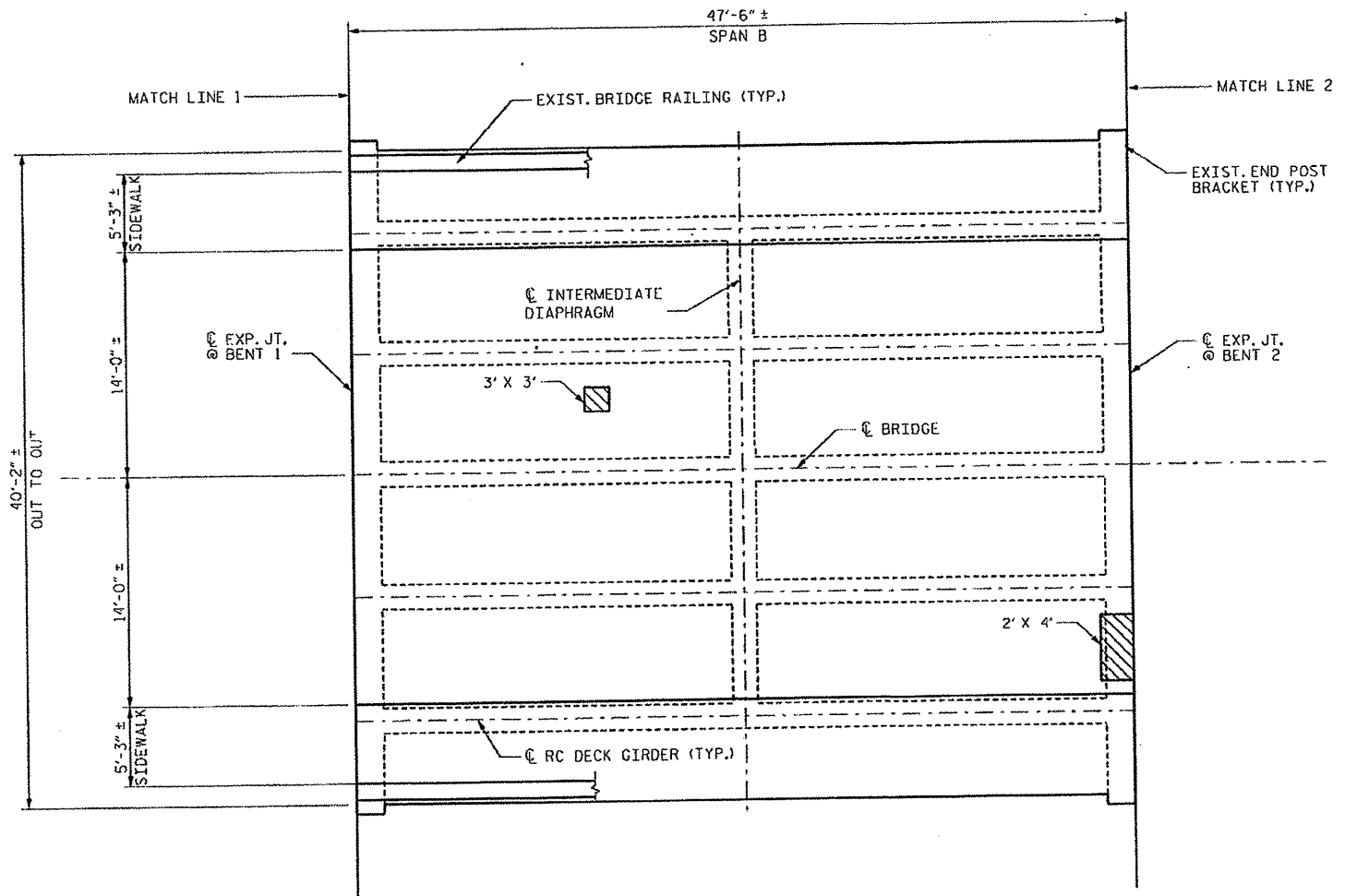
*Joseph Kelvington*

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 27/23/2012  
 T.P.2 Alamance-07-enge Co.\alamance B-ridge 05\Ndr\awing\3P0000051\_Rep\01-PlanA.dgn

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 Tel (919) 851-8866  
 Fax (919) 851-7024  
 www.stantec.com  
 License No. F-0672

DRAWN BY : B. C. MACYOWSKY DATE : 1-20-12  
 CHECKED BY : J. T. KELVINGTON DATE : 1-20-12

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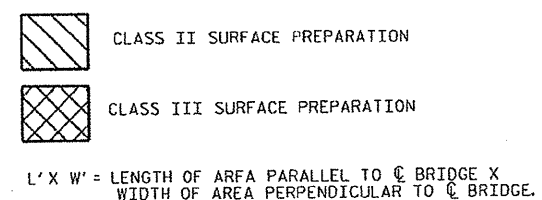


**PLAN OF SPAN B - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

- CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.
- COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO-DEMOLITION.
- CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.
- 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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.



PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN B**

**DECK REHAB. FOR BRIDGE NO. 51**

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

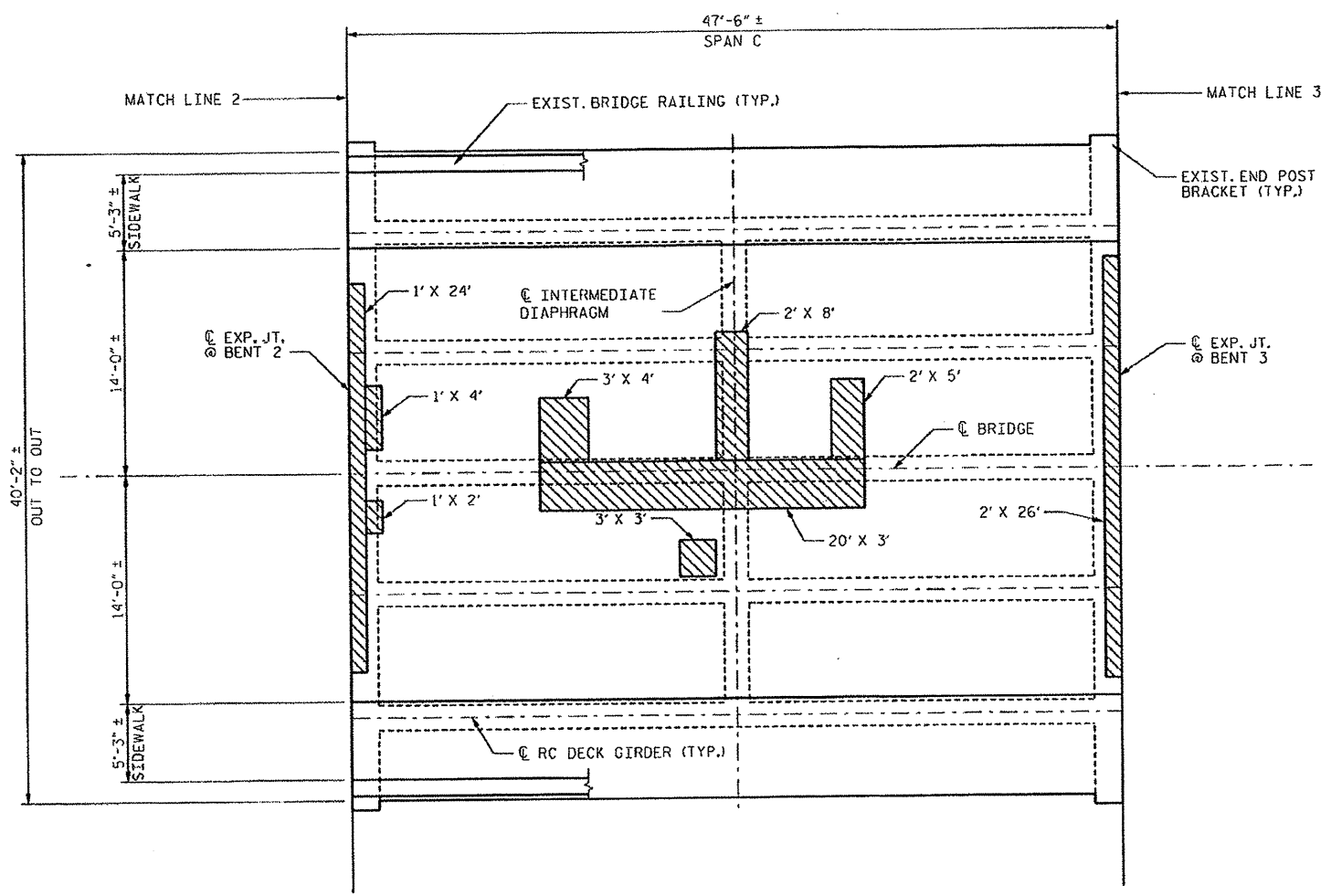
TOTAL SHEETS: 83

*Joseph Kelvington*

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 Fax: (919) 851-7024  
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DRAWN BY : B. C. MACYOWSKY DATE : 1-20-12  
 CHECKED BY : J. T. KELVINGTON DATE : 1-20-12

7.P.2 Alamance-Orange Co. Alamance Bridge 0510r-01r-01BPO0005...Repair-PlanC.dgn 2/23/2012 12:58:39 PM borton



**PLAN OF SPAN C - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA PARALLEL TO C BRIDGE X WIDTH OF AREA PERPENDICULAR TO C BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

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 DEPARTMENT OF TRANSPORTATION  
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**DECK REPAIR DETAILS  
 SPAN C**

**DECK REHAB. FOR BRIDGE NO. 51**

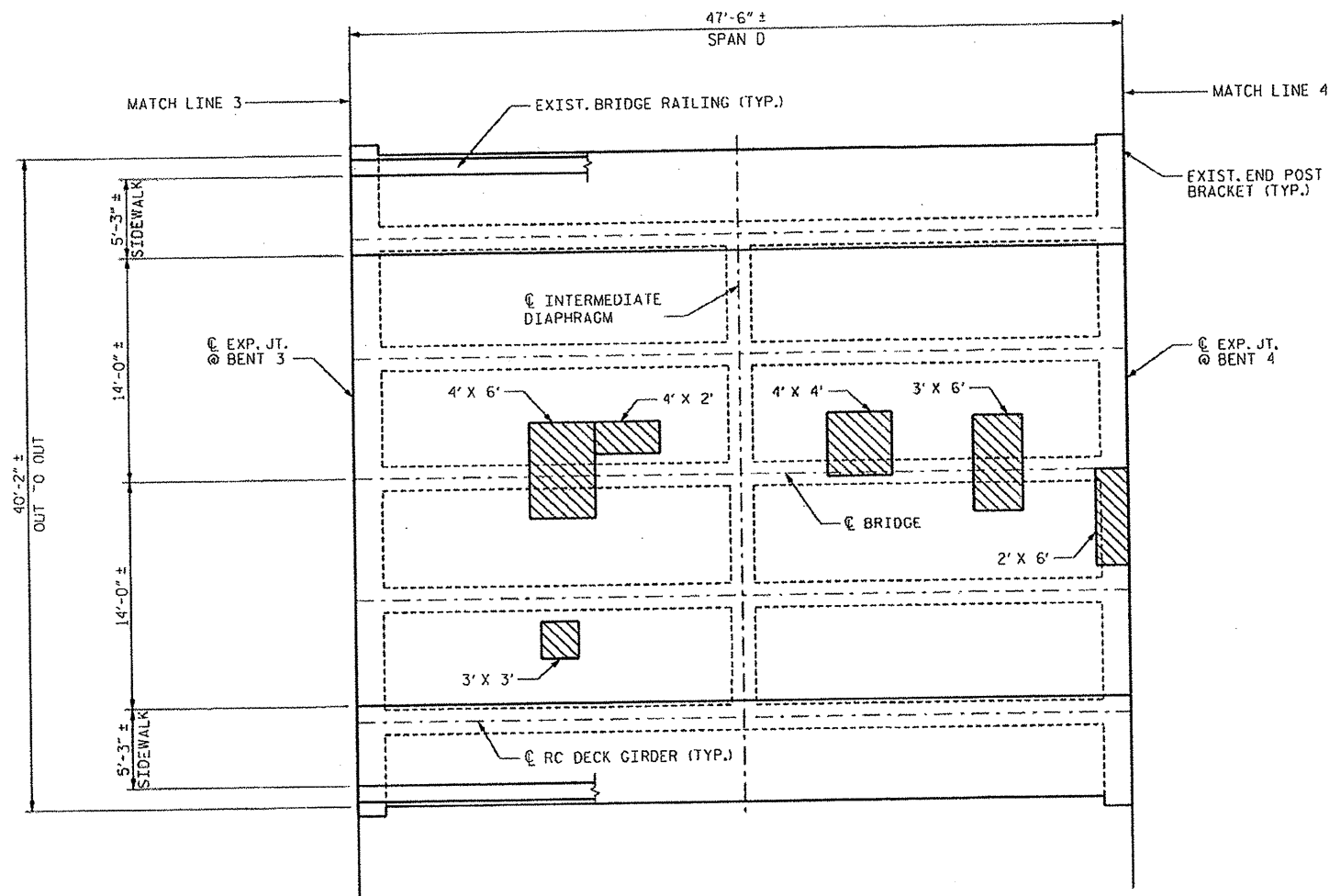
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

Joseph Kelvington

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 CHECKED BY : J. T. KELVINGTON DATE : 1-20-12

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**PLAN OF SPAN D - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

**NOTES:**



CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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

-  CLASS II SURFACE PREPARATION
-  CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA PARALLEL TO © BRIDGE X  
 WIDTH OF AREA PERPENDICULAR TO © BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH


**DECK REPAIR DETAILS  
 SPAN D**

**DECK REHAB. FOR BRIDGE NO. 51**

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

TOTAL SHEETS  
83

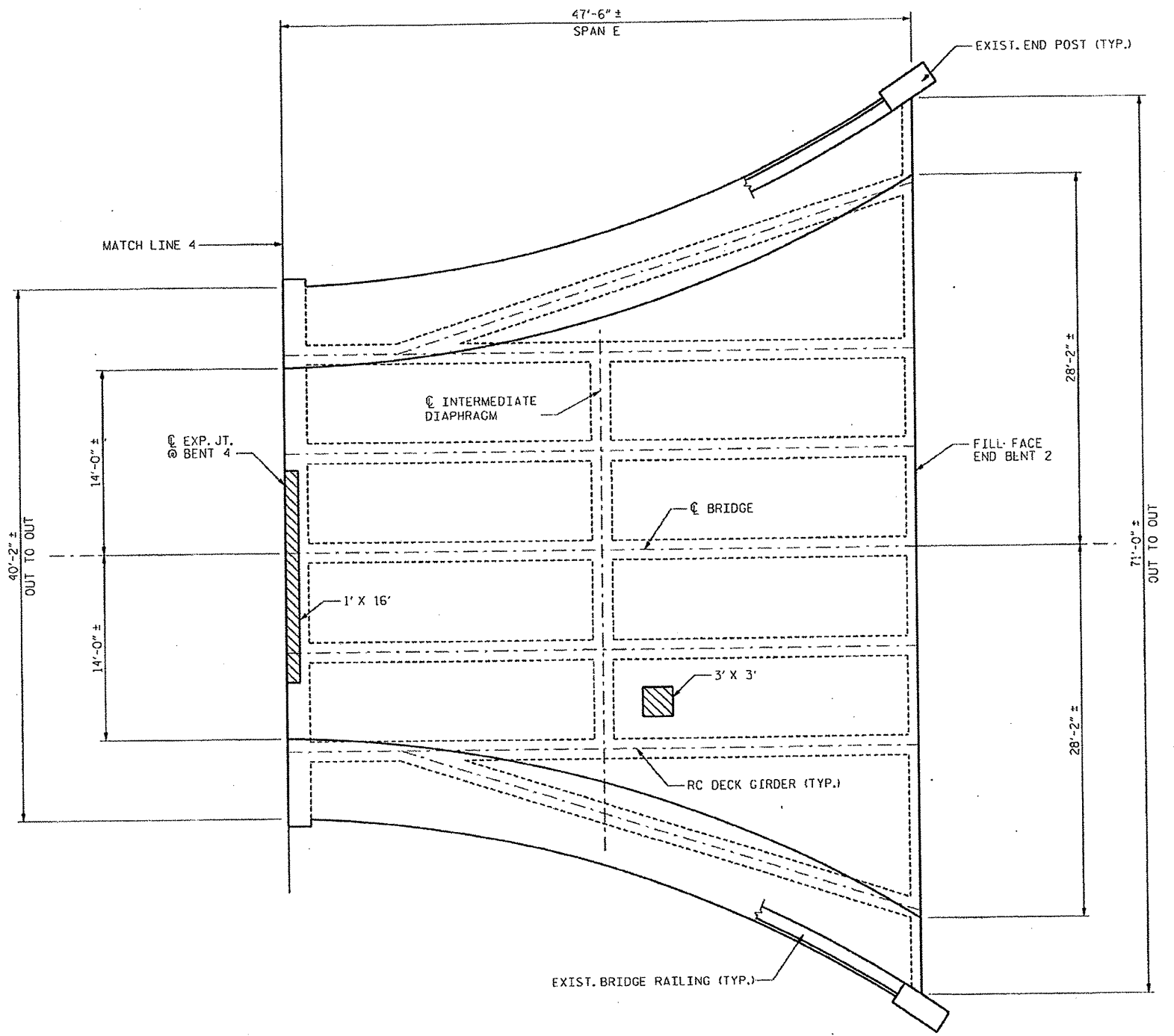
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 CHECKED BY : J. T. KELVINGTON DATE : 1-20-12

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**NOTES:**

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

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

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA PARALLEL TO  $\phi$  BRIDGE X WIDTH OF AREA PERPENDICULAR TO  $\phi$  BRIDGE.

**PLAN OF SPAN E - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN E**

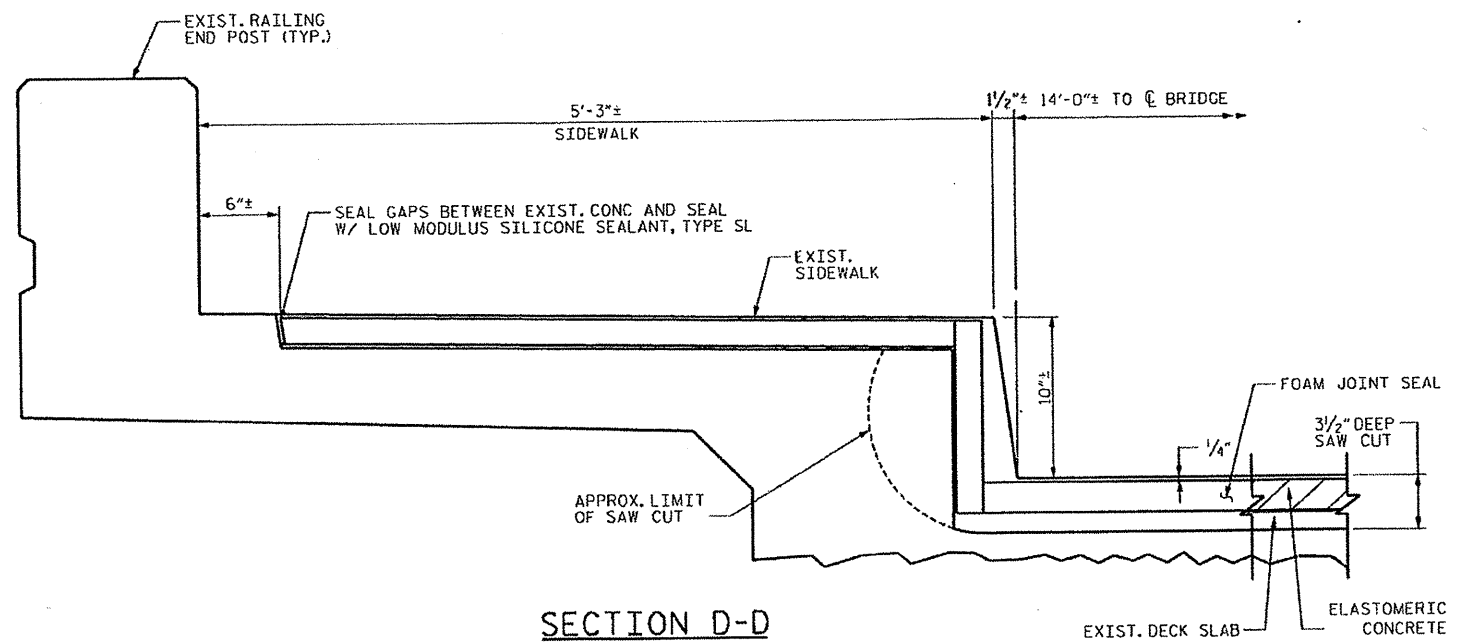
**DECK REHAB. FOR BRIDGE NO. 51**

REVISIONS						SHEET NO. S-23
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

Joseph Kelvington

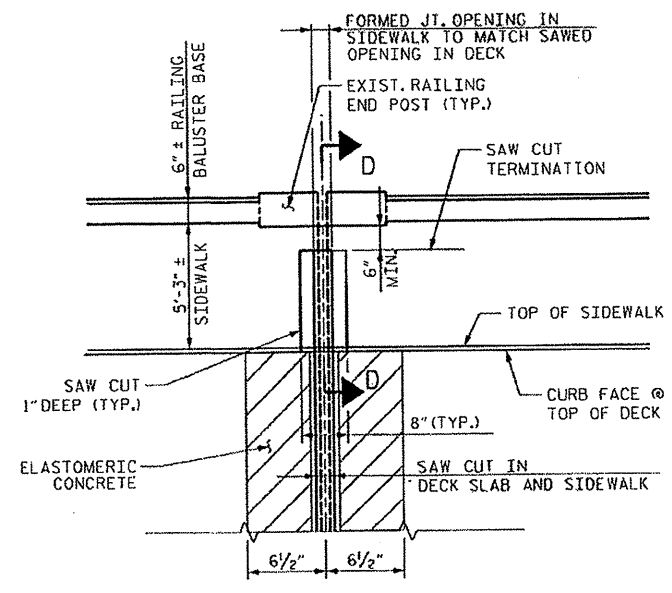
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 CHECKED BY : J. T. KELVINGTON DATE : 1-20-12



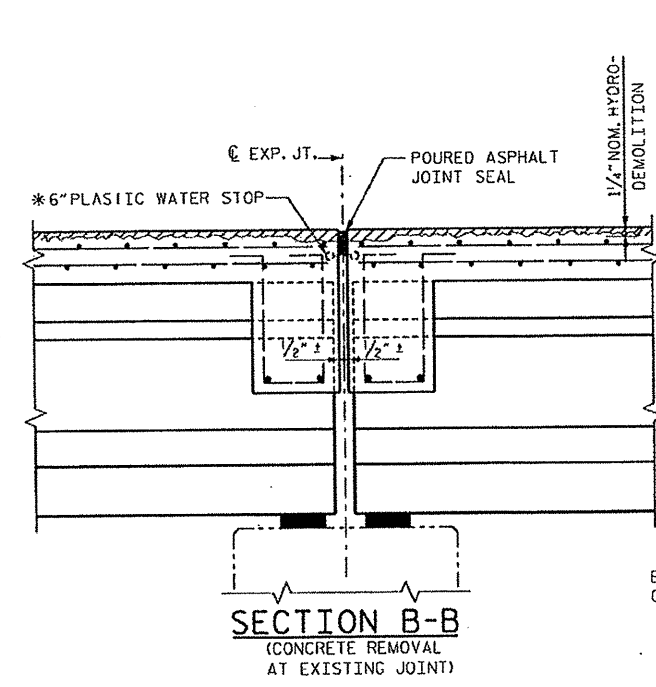
SECTION D-D

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.

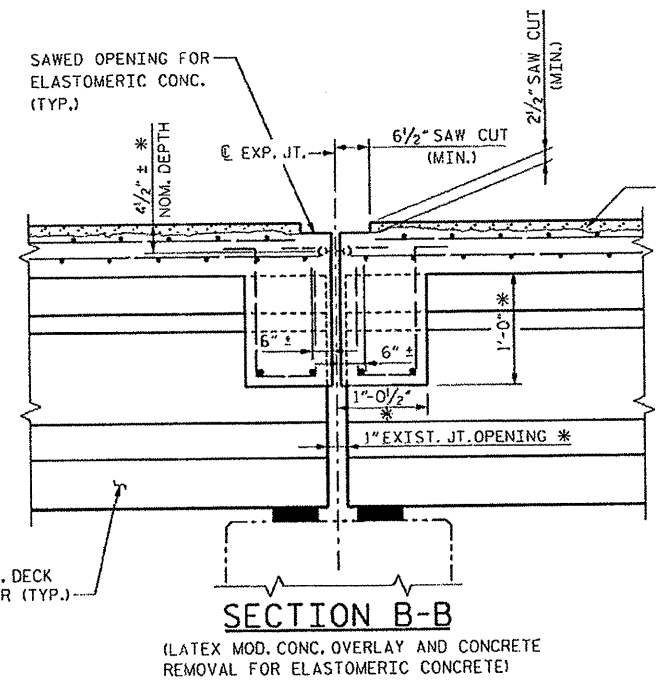


PLAN OF JOINT @ INTERIOR BENTS

TYP. AT BENTS 1-4

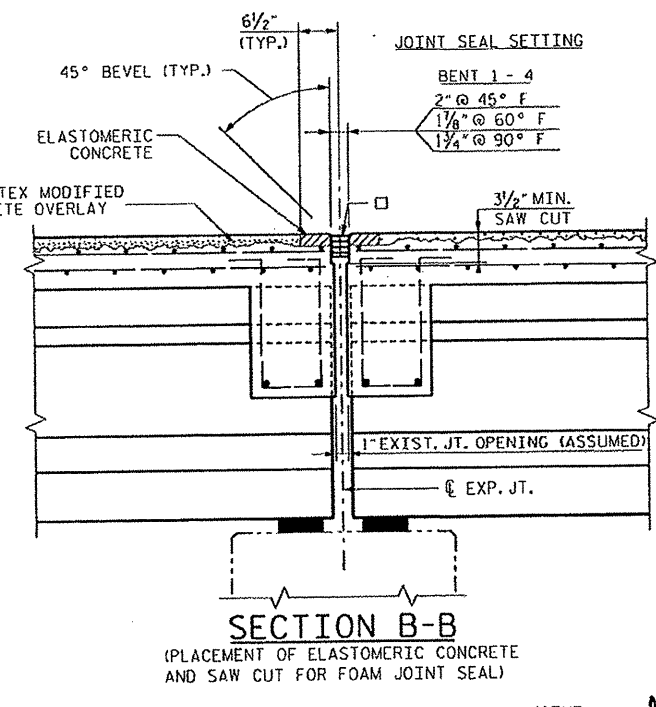


SECTION B-B  
(CONCRETE REMOVAL AT EXISTING JOINT)



SECTION B-B  
(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)

NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.  
\* ASSUMED EXISTING STR. DIMENSIONS  
ALL EXISTING JOINT SEAL MATERIALS EXPOSED BY SURFACE PREPARATION WORK SHALL BE REMOVED. OTHERWISE, LEAVE EXISTING JOINT MATERIALS IN PLACE.



SECTION B-B  
(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

□ USE 2.8125" X 2.50" UNCOMPRESSED FOAM JOINT SEAL MATERIAL AT BENTS 1-4.

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	5.9 C.F.
BENT 2	5.9 C.F.
BENT 3	5.9 C.F.
BENT 4	5.9 C.F.

TOTAL ELASTOMERIC CONC. = 23.6 C.F.  
TOTAL ELASTOMERIC CONC. = 0.87 C.Y.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
JOINT DETAILS  
DECK REHAB. FOR BRIDGE NO. 51

*Joseph King*  
10/23/2012  
Professional Engineer Seal

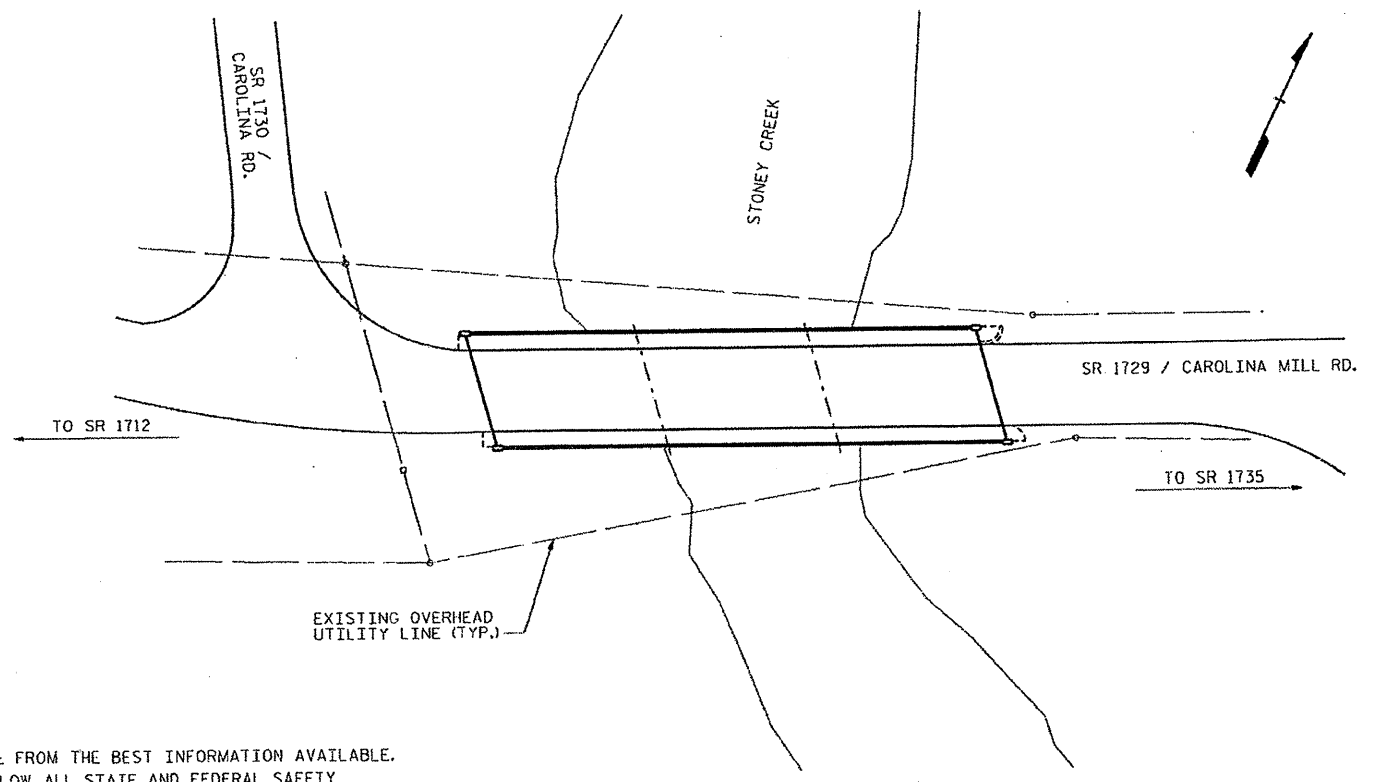
REVISIONS				SHEET NO.
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TOTAL SHEETS: 83

WBS 17BP.7.P.2 Alamance-Orange Co. Alignment Br-1dga 05/10/12 Drawing VBP000051\_Doc.dgn 2/23/2012 12:58:41 PM Sigiton

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CHECKED BY : J. T. KELVINGTON DATE : 1-20-12



**NOTES:**  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

**BRIDGE 52 ON SR 1729**  
 LOCATION: BRIDGE 000052, SR 1729 OVER STONEY CREEK  
 100 FEET WEST OF JUNCTION WITH SR 1735

**TOTAL BILL OF MATERIAL**

SHOULDER RECONSTRUCTION	MILLING ASPHALT PAVEMENT, 1" DEPTH	INCIDENTAL MILLING	ASPHALT CONC. SURFACE COURSE TYPE S9.5C	SCARIFYING BRIDGE DECK	CLASS I * SURFACE PREPARATION	CLASS II * SURFACE PREPARATION	CLASS III * SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	CLASS AA * CONCRETE	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SHLDR.MI.	SQ.YDS.	SQ.YDS.	TONS	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.
0.03	536.7	320	27	536.7	0	44.2	0	536.7	0	30.5	536.7	LUMP SUM	4,158

\* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE TYP. "BLOW THRU" CONTAINMENT AND FORMWORK DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THESE ITEMS WILL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

**PROJECT NO. WBS 17BP.7.P.2**  
**ALAMANCE COUNTY**  
**STATION: \_\_\_\_\_**

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**LOCATION SKETCH AND TOTAL BILL OF MATERIAL**

**DECK REHAB. FOR BRIDGE NO. 52**

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

TOTAL SHEETS: 83

*Joseph Kelvington*  
 1/20/2012

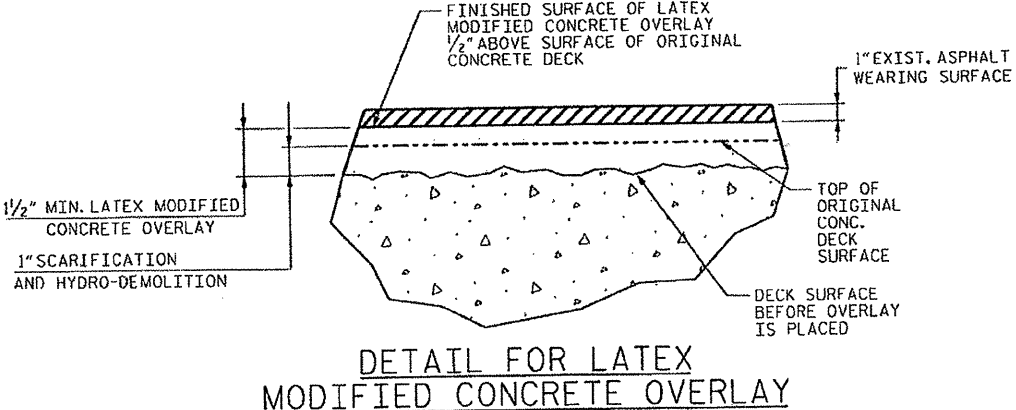
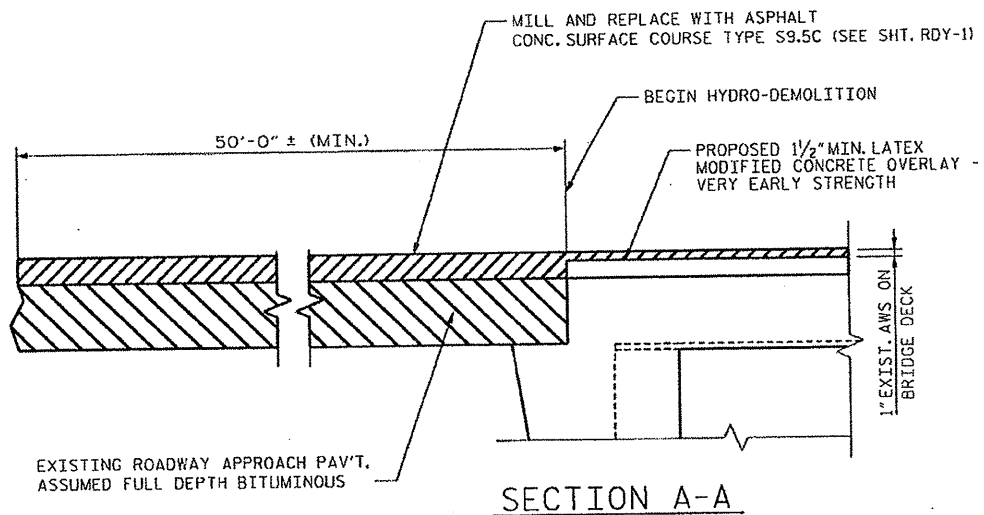
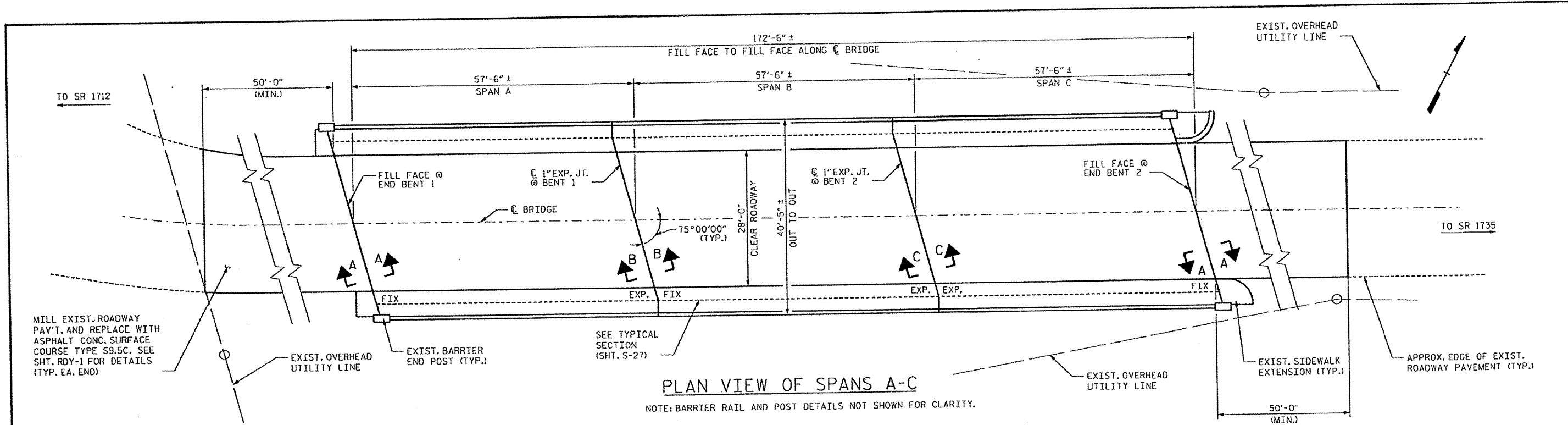
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 CHECKED BY: J. T. KELVINGTON DATE: 1/20/2012



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**NOTES:**

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-28.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.

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

FOR SECTION B-B, SEE SHT. NO. S-31.

FOR SECTION C-C, SEE SHT. NO. S-32.

EXISTING BRIDGE HAS A 1" THICK ASPHALT WEARING SURFACE. THIS WEARING SURFACE SHALL BE REMOVED BY MILLING IN ITS ENTIRETY BEFORE DECK REHABILITATION BEGINS. COST FOR THIS WORK SHALL BE PAID FOR AS "MILLING ASPHALT PAVEMENT, 1" DEPTH." FOR ROADWAY DETAILS AND QUANTITIES @ BRIDGE APPROACHES, SEE SHT. RDY-1.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

PLAN OF BRIDGE

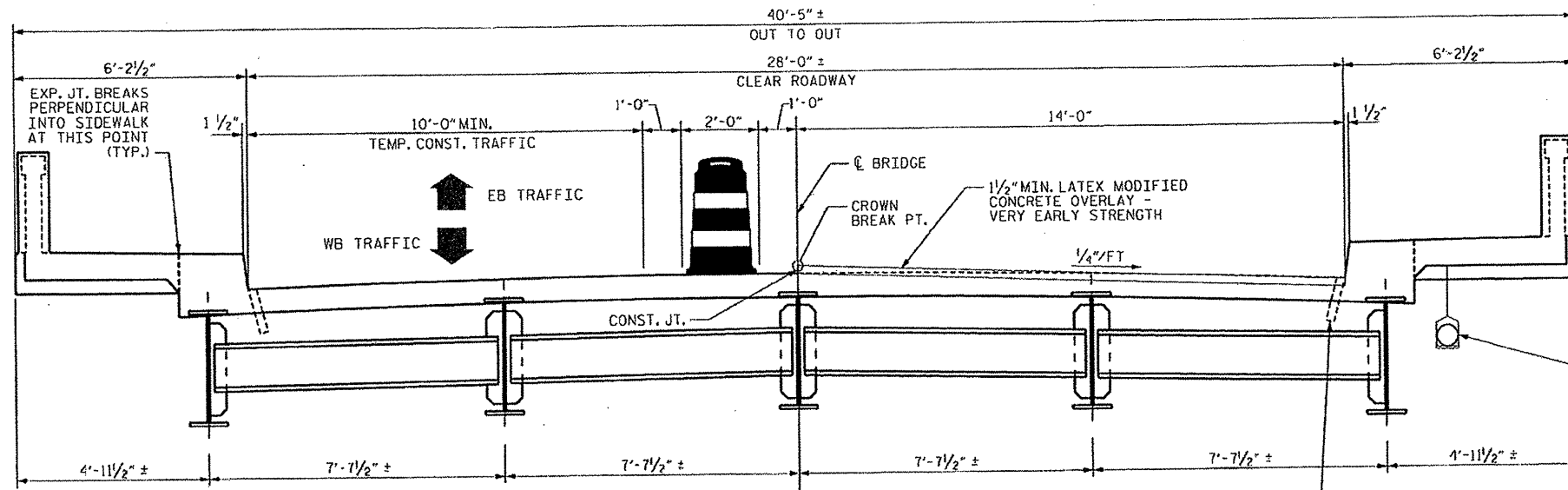
DECK REHAB. FOR BRIDGE NO. 52

REVISIONS						SHEET NO. S-26
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

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DRAWN BY: B. C. MACYOWSKY DATE: 1/20/2012  
 CHECKED BY: J. T. KELVINGTON DATE: 1/20/2012

*J. T. Kelvington*  
 1/20/2012  
 13466



**TYPICAL SECTION**

SPANS A - C  
NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.

EXIST. UTILITY (TYP.)

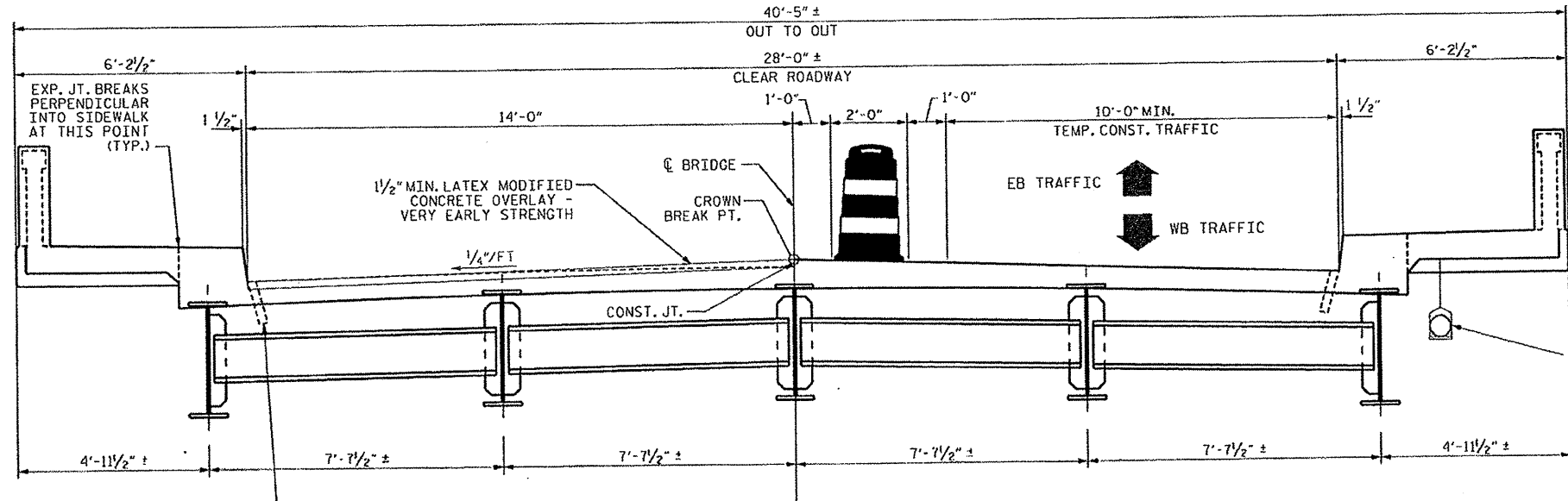
EXIST. DECK DRAINS TO BE SEALED (TYP.)

**NOTES:**

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRANSPORTATION MANAGEMENT PLANS.

ALL DIMENSIONS SHOWN ARE APPROXIMATE.

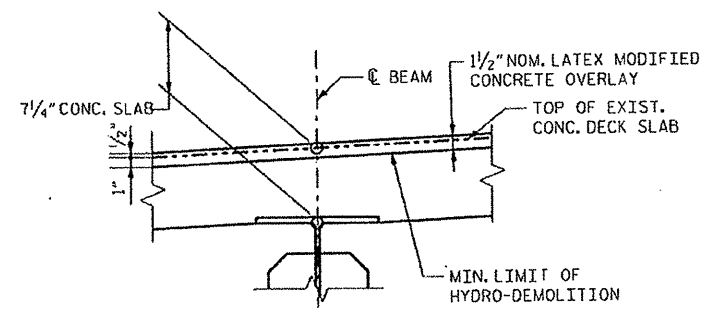


**TYPICAL SECTION**

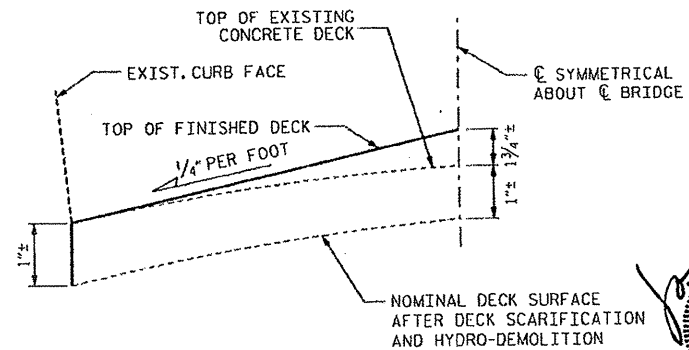
SPANS A - C  
NOTE: ALL DIMENSIONS SHOWN ARE APPROXIMATE.

EXIST. UTILITY (TYP.)

EXIST. DECK DRAINS TO BE SEALED (TYP.)



**EXIST. SLAB DETAIL**



**BRIDGE CROSS SLOPE SCHEMATIC FOR DECK OVERLAY**

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**TYPICAL SECTION**

DECK REHAB. FOR BRIDGE NO. 52

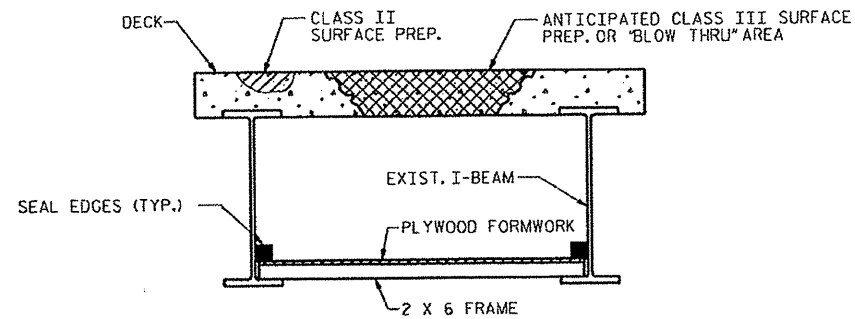
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1			3			83	
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**TYP. "BLOW THRU" CONTAINMENT AND FORMWORK**

**NOTES:**

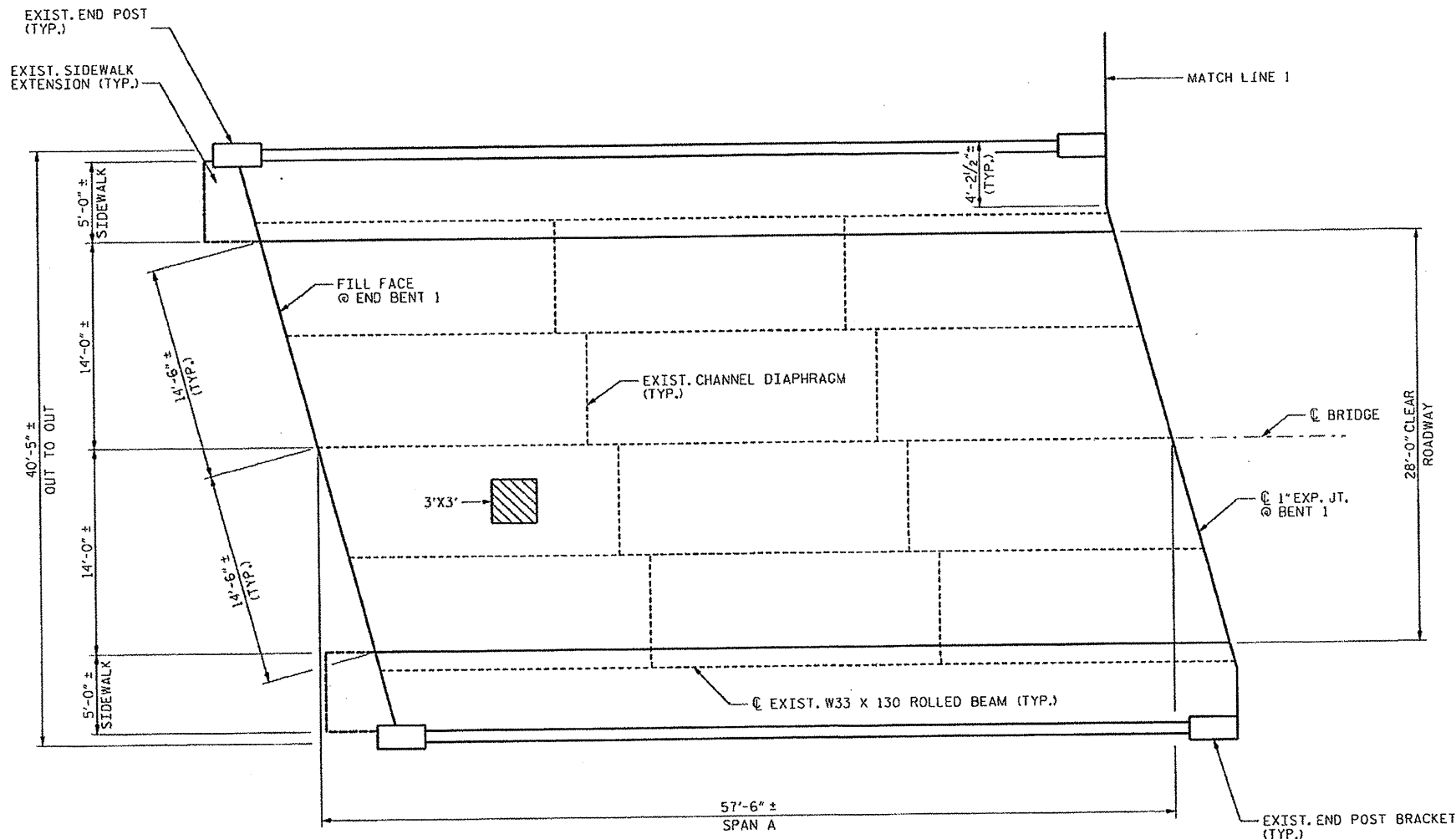
CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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**PLAN OF SPAN A - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

-  CLASS II SURFACE PREPARATION
-  CLASS III SURFACE PREPARATION

L X W = LENGTH OF AREA PARALLEL TO © BRIDGE X WIDTH OF AREA PERPENDICULAR TO © BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

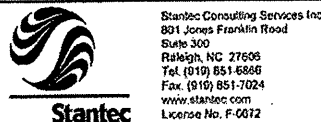
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN A**

DECK REHAB. FOR BRIDGE NO. 52

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			83

*Joseph T. Kelvington*  
 1/20/2012  

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 CHECKED BY: J. T. KELVINGTON DATE: 1/20/2012

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**NOTES:**

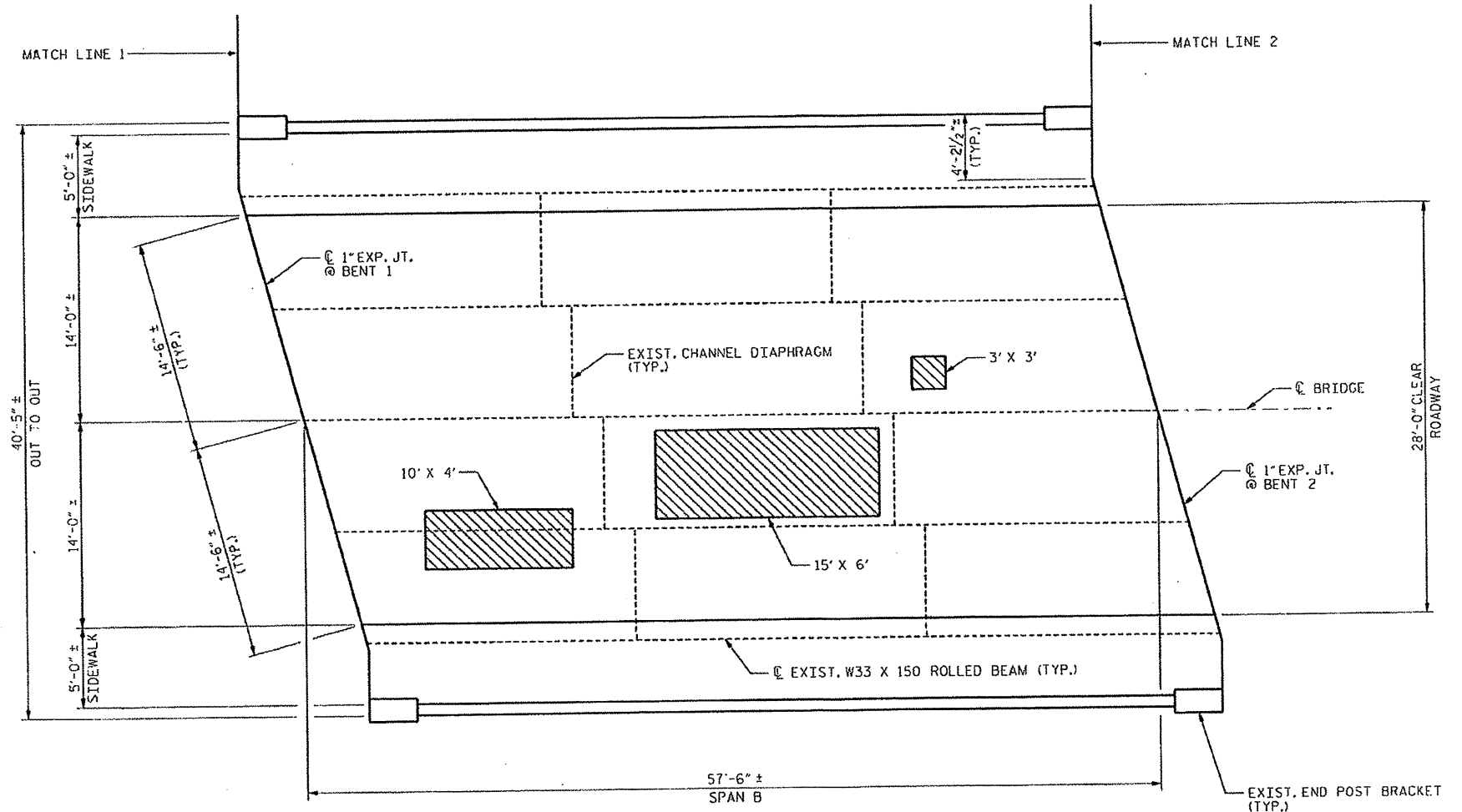
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**PLAN OF SPAN B - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

-  CLASS II SURFACE PREPARATION
-  CLASS III SURFACE PREPARATION

L X W = LENGTH OF AREA PARALLEL TO  $\text{C}$  BRIDGE X WIDTH OF AREA PERPENDICULAR TO  $\text{C}$  BRIDGE.

PROJECT NO. WBS 17BP.7.P.2

ALAMANCE COUNTY

STATION: \_\_\_\_\_

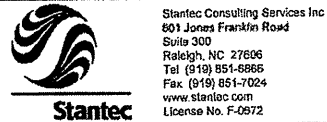
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

DECK REPAIR DETAILS  
SPAN B

DECK REHAB. FOR BRIDGE NO. 52

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-29
1			3			TOTAL SHEETS
2			4			83

*Joseph Kelvington*  
Professional Engineer  
No. 24682  
2/20/2012



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Suite 300  
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DRAWN BY : B. C. MACYOWSKY DATE : 1/20/2012  
CHECKED BY : J. T. KELVINGTON DATE : 1/20/2012

7.P.2 Alamance-Orange Co.\Alamance B-1cge 052-Drawing\BPO00052-Repair-PlanB.dgn 2/23/2012 12:38:45 PM dlaton

**NOTES:**

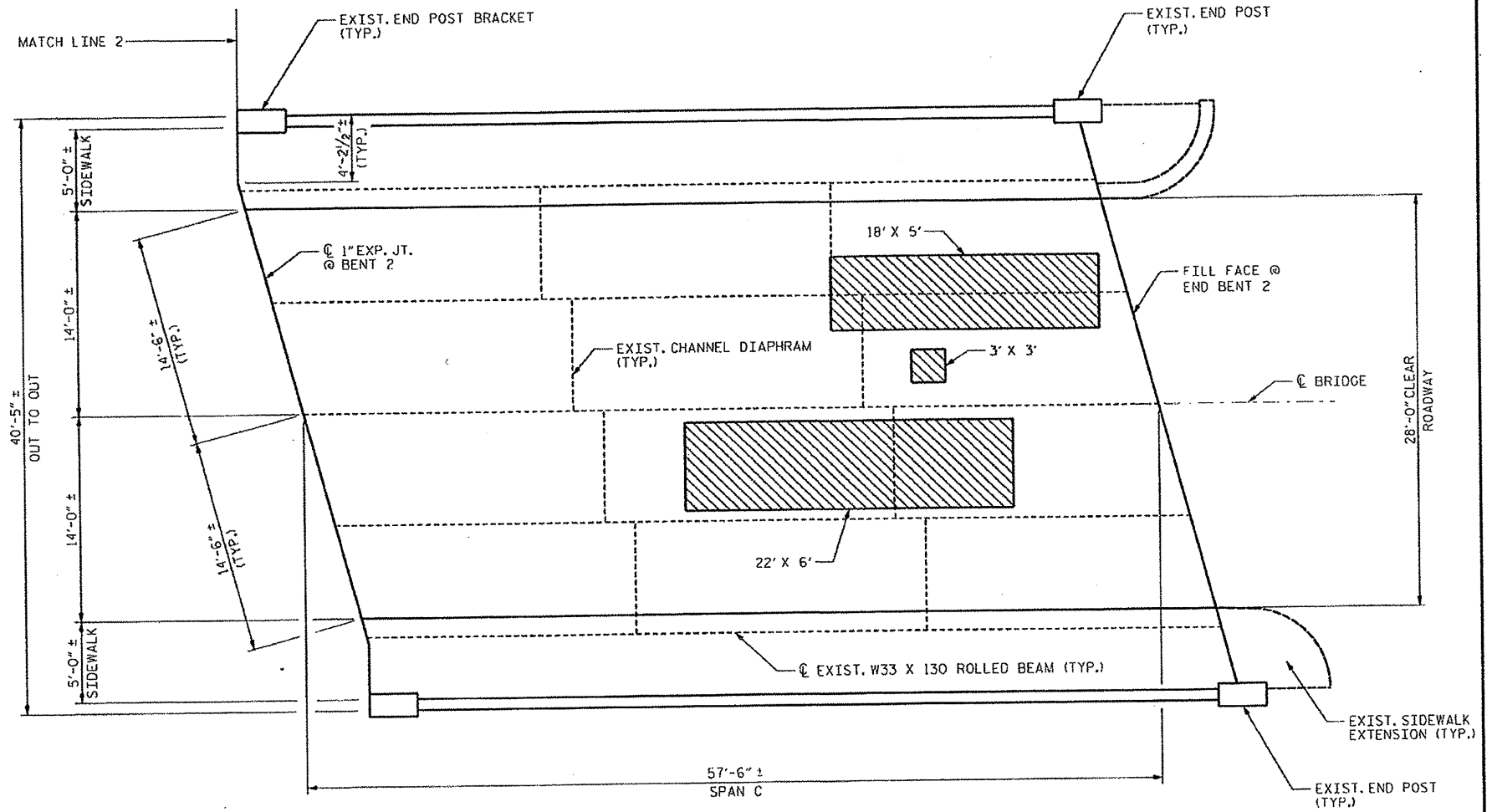
CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.



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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.



**PLAN OF SPAN C - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

-  CLASS II SURFACE PREPARATION
-  CLASS III SURFACE PREPARATION

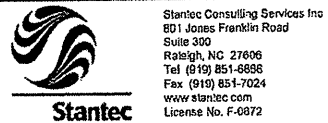
L X W = LENGTH OF AREA PARALLEL TO C BRIDGE X WIDTH OF AREA PERPENDICULAR TO C BRIDGE.

PROJECT NO. **WBS 17BP.7.P.2**  
**ALAMANCE COUNTY**  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**DECK REPAIR DETAILS  
 SPAN C**  
**DECK REHAB. FOR BRIDGE NO. 52**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			83

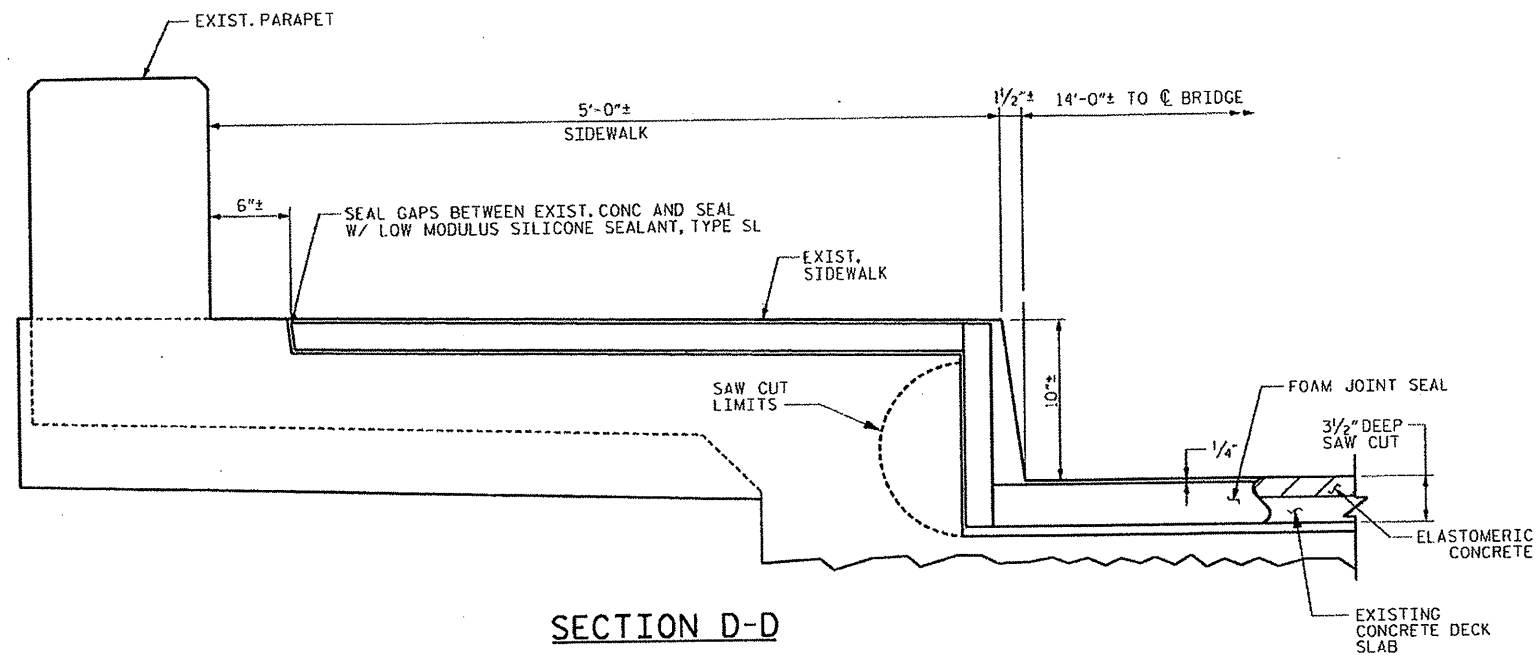
7.P.2, Alamance-Drawing 052-Drawing/BP000052\_RepairPlanC.dgn 2/23/2012 2:55:46 PM dleton



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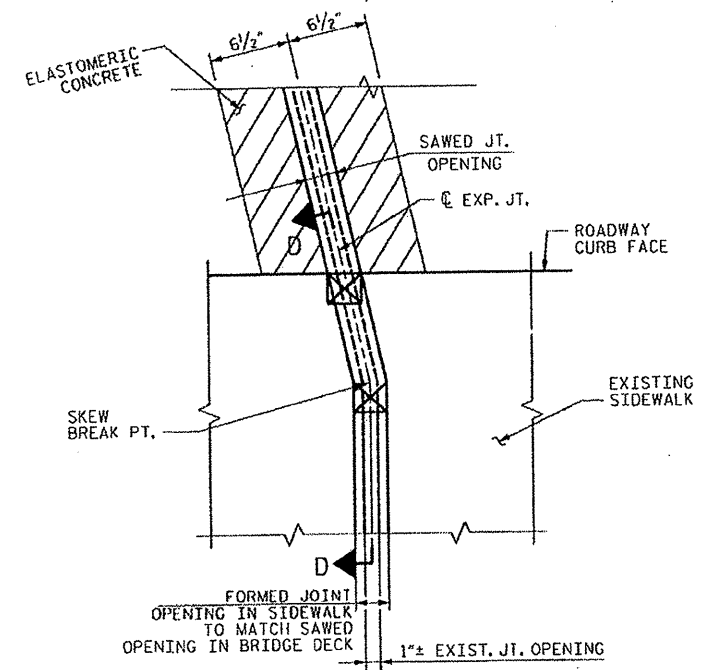
DRAWN BY: **B. C. MACYOWSKY** DATE: **1/20/2012**  
 CHECKED BY: **J. I. KELVINGTON** DATE: **1/20/2012**

*Joseph Kelvington*  
 1/20/2012  

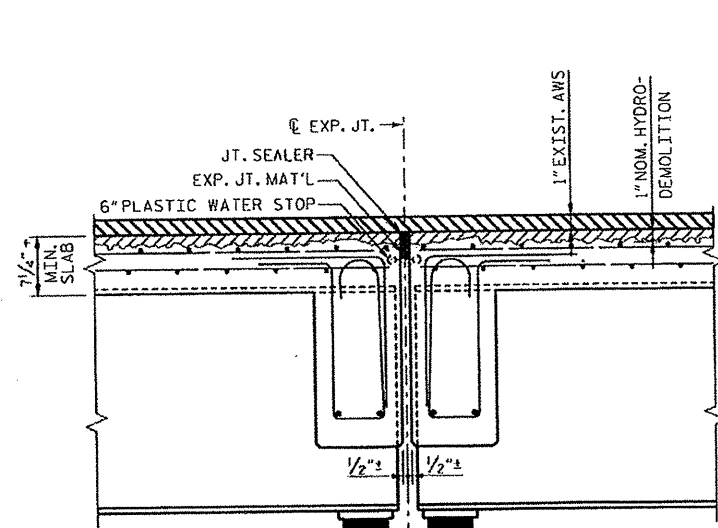
**SECTION D-D**

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.



**PARTIAL PLAN @ JOINT**

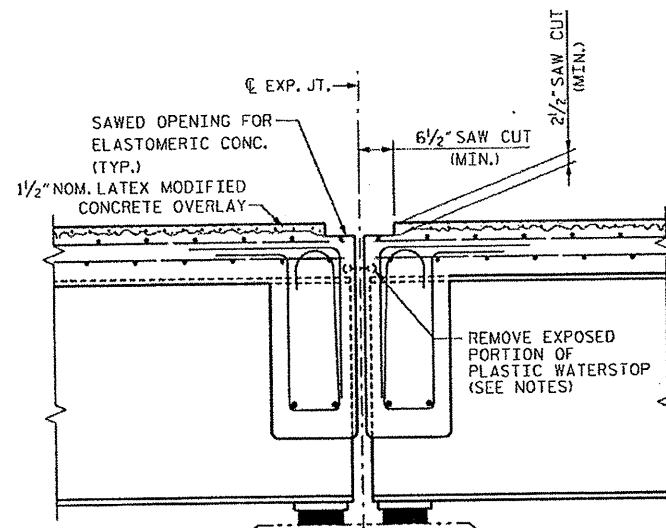
(TYPICAL AT BENTS 1 AND 2)



**SECTION B-B**

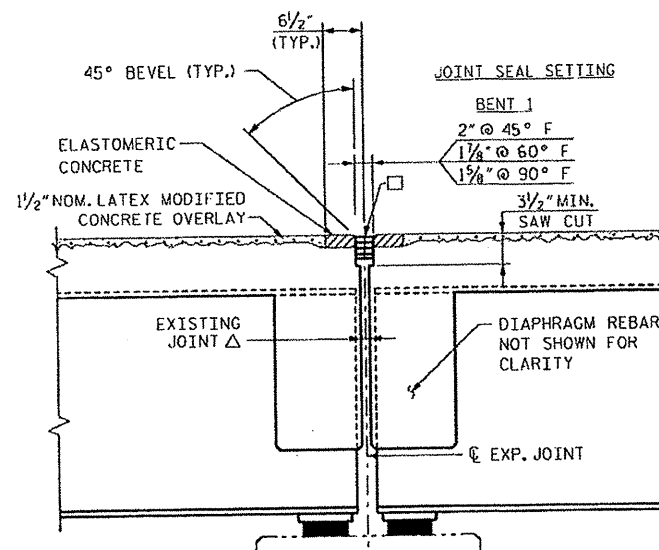
(CONCRETE REMOVAL AT EXISTING JOINT)

ALL EXIST. JT. DETAILS ARE ASSUMED.



**SECTION B-B**

(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION B-B**

(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

□ USE 2.8125" X 2.5" UNCOMPRESSED FOAM JT. SEAL MATERIAL FOR BENT 1.

△ EXISTING 1" FORMED OPENING

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	6.0 C.F.
BENT 2	6.0 C.F.

TOTAL ELASTOMERIC CONC. = 12 C.F.

TOTAL ELASTOMERIC CONC. = 0.44 C.Y.

PROJECT NO. WBS 17BP.7.P.2

ALAMANCE COUNTY

STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

EXPANSION JOINT DETAILS

DECK REHAB. FOR BRIDGE NO. 52

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS 83
2			4			

*James K. Kelvington*  
Professional Engineer  
No. 13406  
1/20/2012

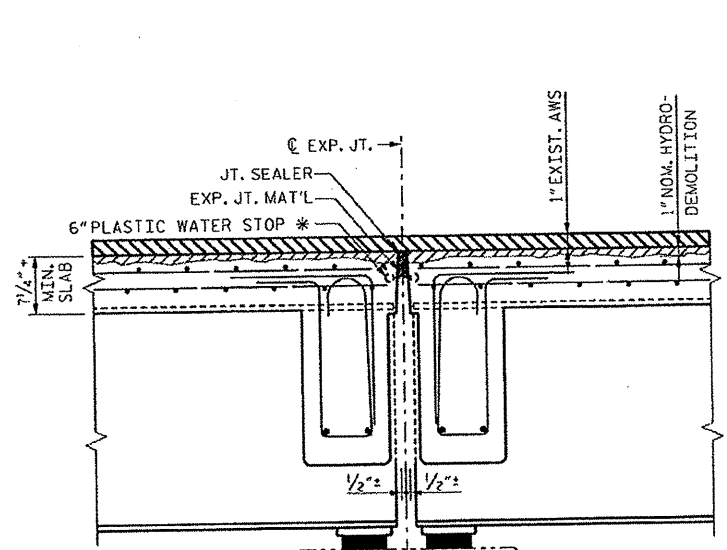


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DRAWN BY: B. C. MACYOWSKY DATE: 1/20/2012  
CHECKED BY: J. T. KELVINGTON DATE: 1/20/2012

I:\S\17BP.7.P.2 Alignment-Orange Co\Alamance Br.dgn 082\Drawings\BPO0052.Dwg.dgn 2/7/2012 2:15:47 PM bictor

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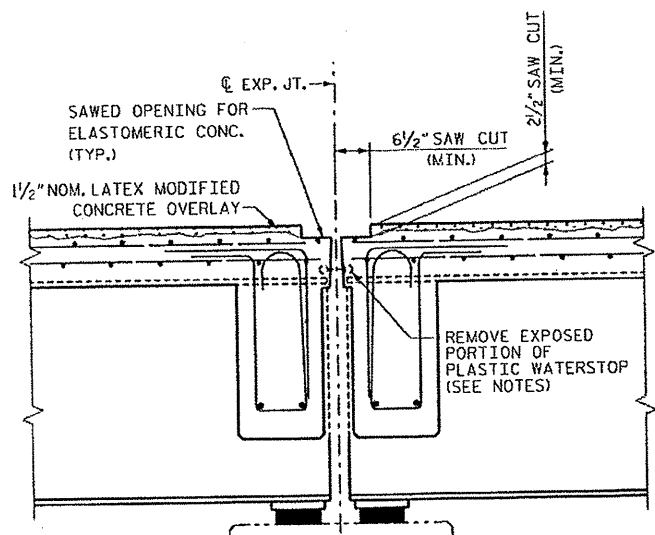
**SECTION C-C**  
(CONCRETE REMOVAL AT EXISTING JOINT)

ALL EXIST. JT. DETAILS ARE ASSUMED.

\* FROM BEST AVAILABLE INFORMATION.

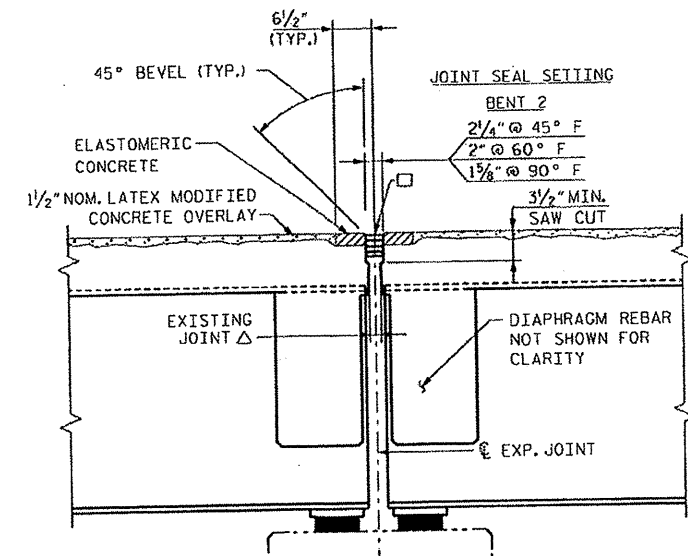
NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.

ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.



**SECTION C-C**

(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION C-C**

(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

□ USE 2.8125" X 2.5" UNCOMPRESSED FOAM JT. SEAL MATERIAL FOR BENT 2.

△ EXISTING 1" FORMED OPENING

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

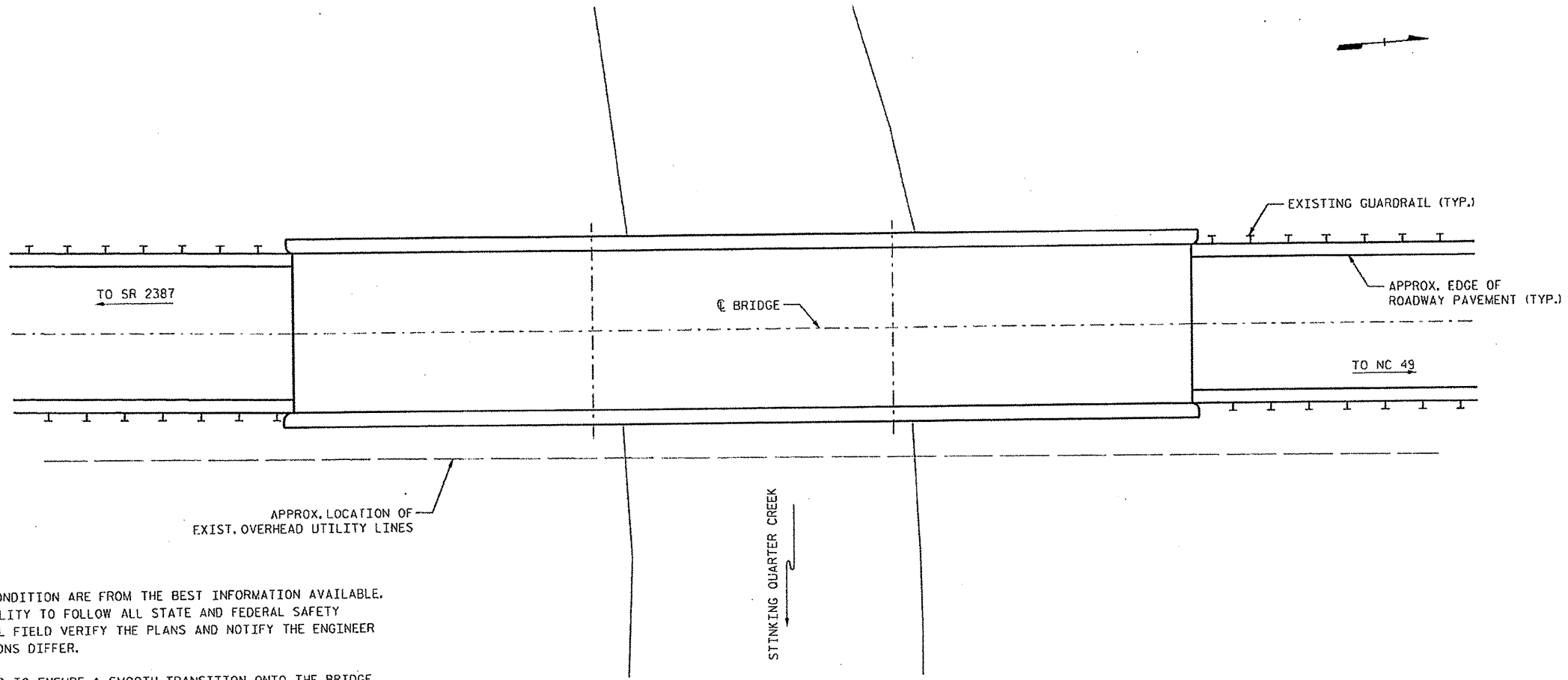
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
EXPANSION JOINT DETAILS  
DECK REHAB. FOR BRIDGE NO. 52

*Joseph Kelvington*  
2/23/2012  
Professional Engineer  
No. 12345  
State of North Carolina

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			83

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DRAWN BY : B. C. MACYOWSKY DATE : 1/20/2012  
CHECKED BY : J. T. KELVINGTON DATE : 1/20/2012



NOTES:  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

**BRIDGE 121 ON SR 1136**

LOCATION: BRIDGE 000121, SR 1136 ACROSS STINKING QUARTER CREEK, 1.0 MI. SOUTH OF JUNCTION WITH NC 49

TOTAL BILL OF MATERIAL											
INCIDENTAL MILLING	SCARIFYING BRIDGE DECK	ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B	CLASS I * SURFACE PREPARATION	CLASS II * SURFACE PREPARATION	CLASS III * SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	CLASS AA * CONCRETE	LATEX MODIFIED CONCRETE OVERLAY- VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY- VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SO.YDS.	SO.YDS.	TONS	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	CU.YDS.	CU.YDS.	SO.YDS.	LUMP SUM	SO.FT.
245	360	28	0	74.1	1.9	360	0.2	19.3	360	LUMP SUM	2,709

\* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE TYP. "BLOW THRU" CONTAINMENT AND FORMWORK DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THESE ITEMS WILL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

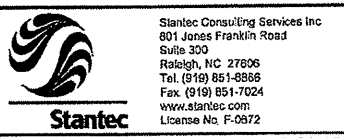
LOCATION SKETCH AND TOTAL BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 121

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

TOTAL SHEETS 83

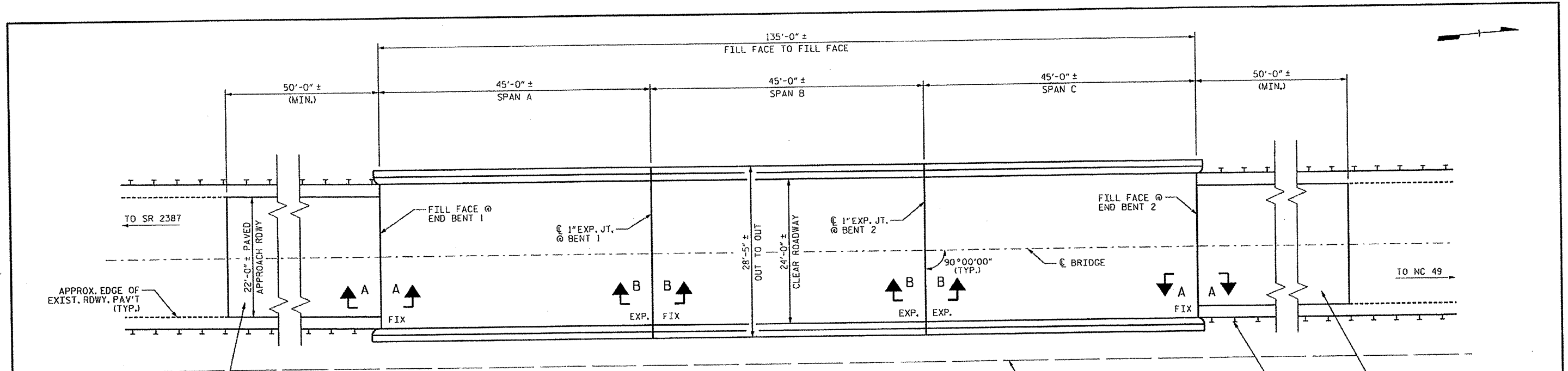
*Joseph Kelvington*  
 01/20/12  
 1746



185 ITBP.7.P.2 Alamance-Orange Co\Alamance B-1\Edge 121\Drawings\BP 00121.LS.BOV.dgn 2/23/2012 2:55:49 PM DETON

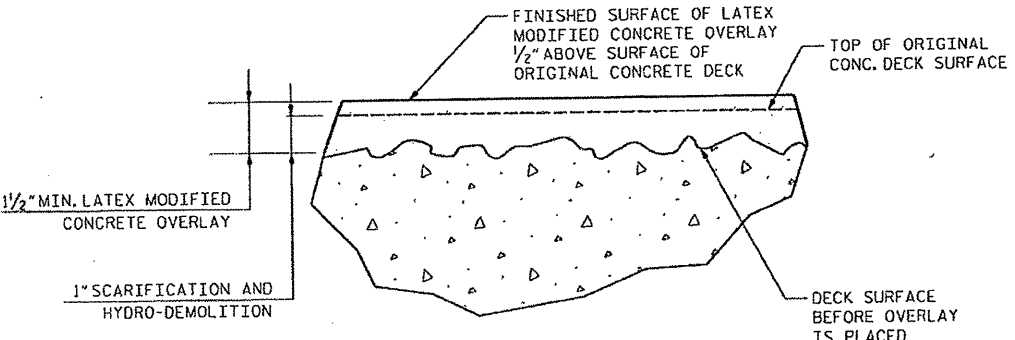
DRAWN BY : B. C. MACYOWSKY DATE : 01-20-12  
 CHECKED BY : J. T. KELVINGTON DATE : 01-20-12





**PLAN OF SPANS A-C**

NOTE: BARRIERS AND POSTS ARE NOT SHOWN FOR CLARITY



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**

- NOTES:**
- EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
  - FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
  - THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
  - THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-36.
  - LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
  - FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
  - FOR SECTION B-B, SEE SHT. NO. S-39.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF BRIDGE**

DECK REHAB. FOR BRIDGE NO. 121

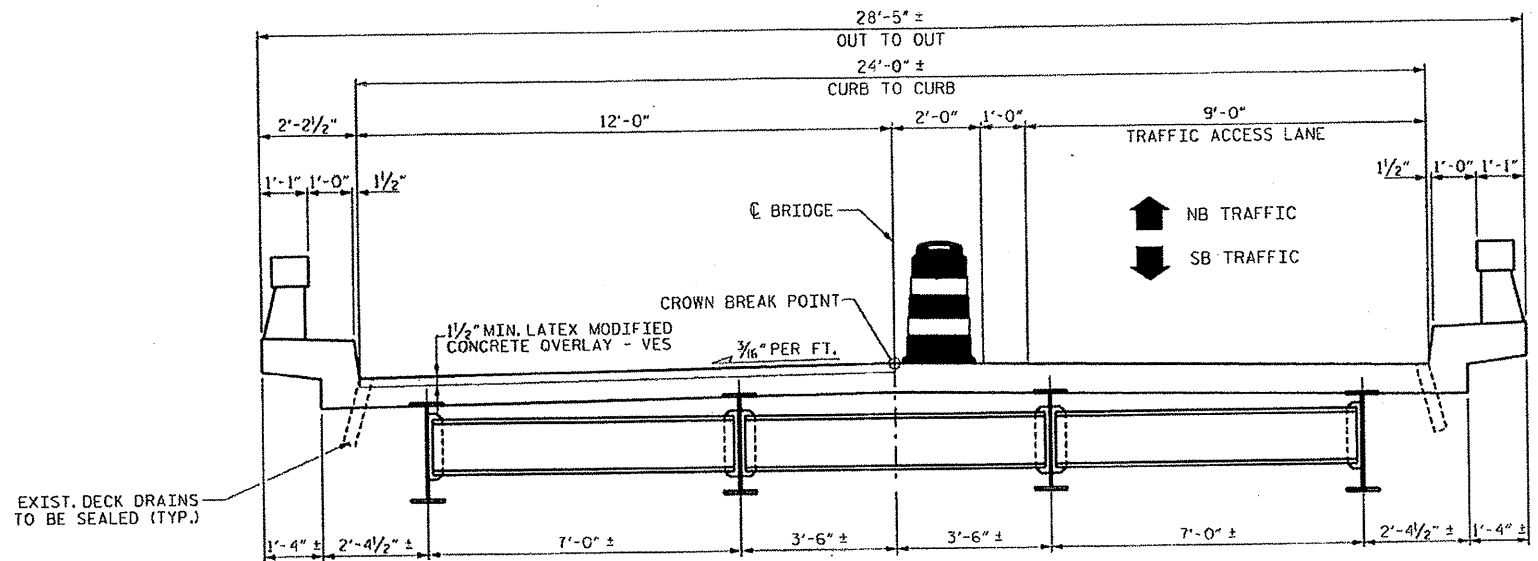
REVISIONS						SHEET NO. S-34
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

*J. T. Kelvington*  
 PROFESSIONAL ENGINEER  
 NO. 13406  
 STATE OF NORTH CAROLINA

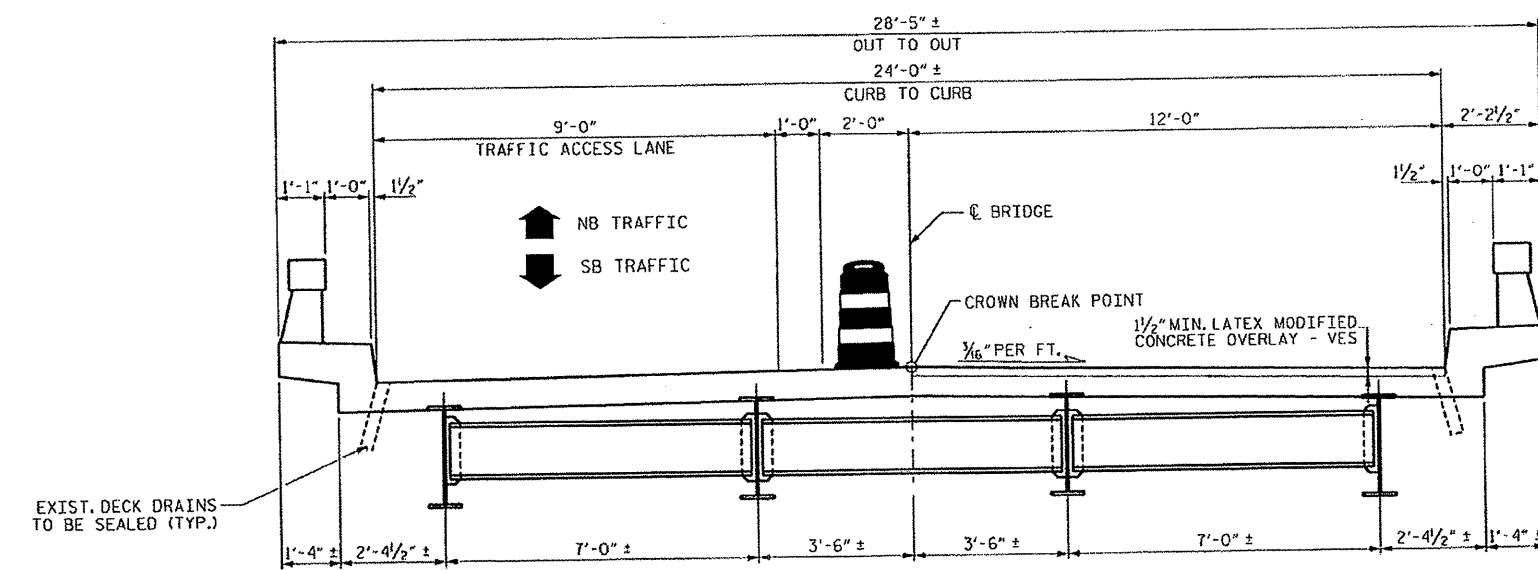
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 CHECKED BY: J. T. KELVINGTON DATE: 01-20-12

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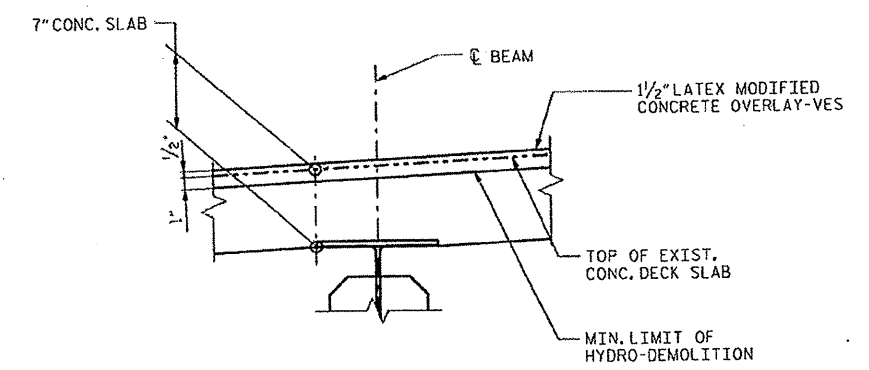


TYPICAL SECTION  
SPANS A-C



TYPICAL SECTION  
SPANS A-C

NOTES:  
"VES" DENOTES VERY EARLY STRENGTH.  
WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.  
FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRANSPORTATION MANAGEMENT PLANS.



EXIST. SLAB DETAIL

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

TYPICAL SECTION

DECK REHAB. FOR BRIDGE NO. 121

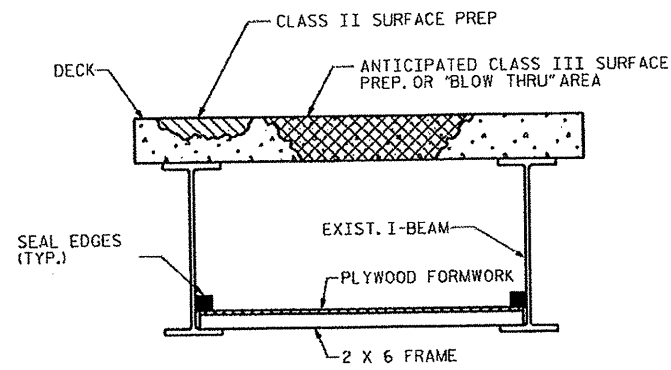
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NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

*Joseph Kelvington*  
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DRAWN BY : B. C. MACYOWSKY DATE : 01-20-12  
CHECKED BY : J. T. KELVINGTON DATE : 01-20-12

17BP.7.P.2 Alamance-Orange Co. Alamance Bridge 121Dr-awing-BP000121.TypSect1.dgn 2/23/2012 2:09:51 PM bleton



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

NOTES:

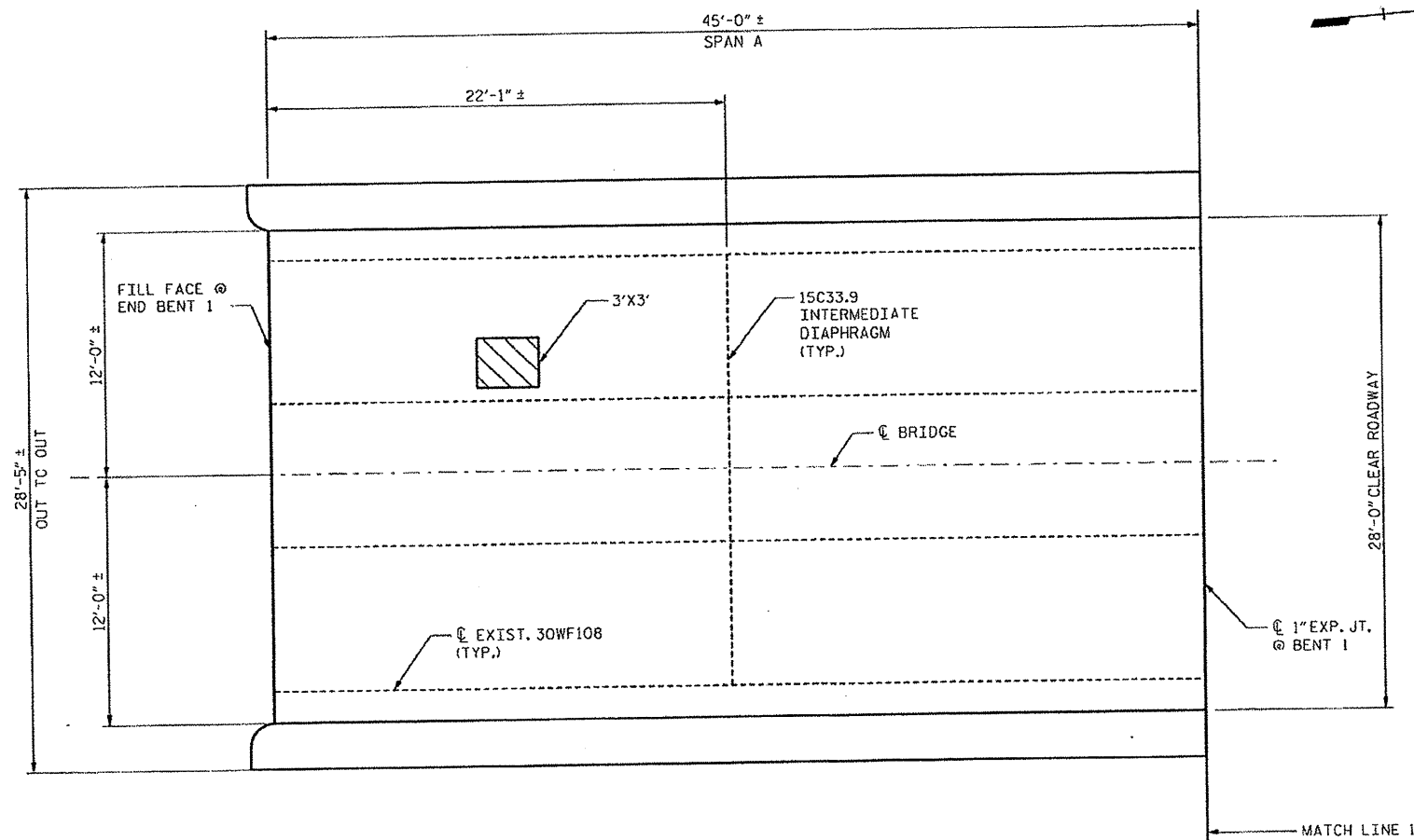
CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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



PLAN OF SPAN A - DECK REPAIRS

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DECK REPAIR DETAILS  
 SPAN A

DECK REHAB. FOR BRIDGE NO. 121

REVISIONS						SHEET NO. S-36
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

*Joseph Kelvington*  
 1/23/2012  
 PROFESSIONAL ENGINEER  
 NO. 13406  
 STATE OF NORTH CAROLINA

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

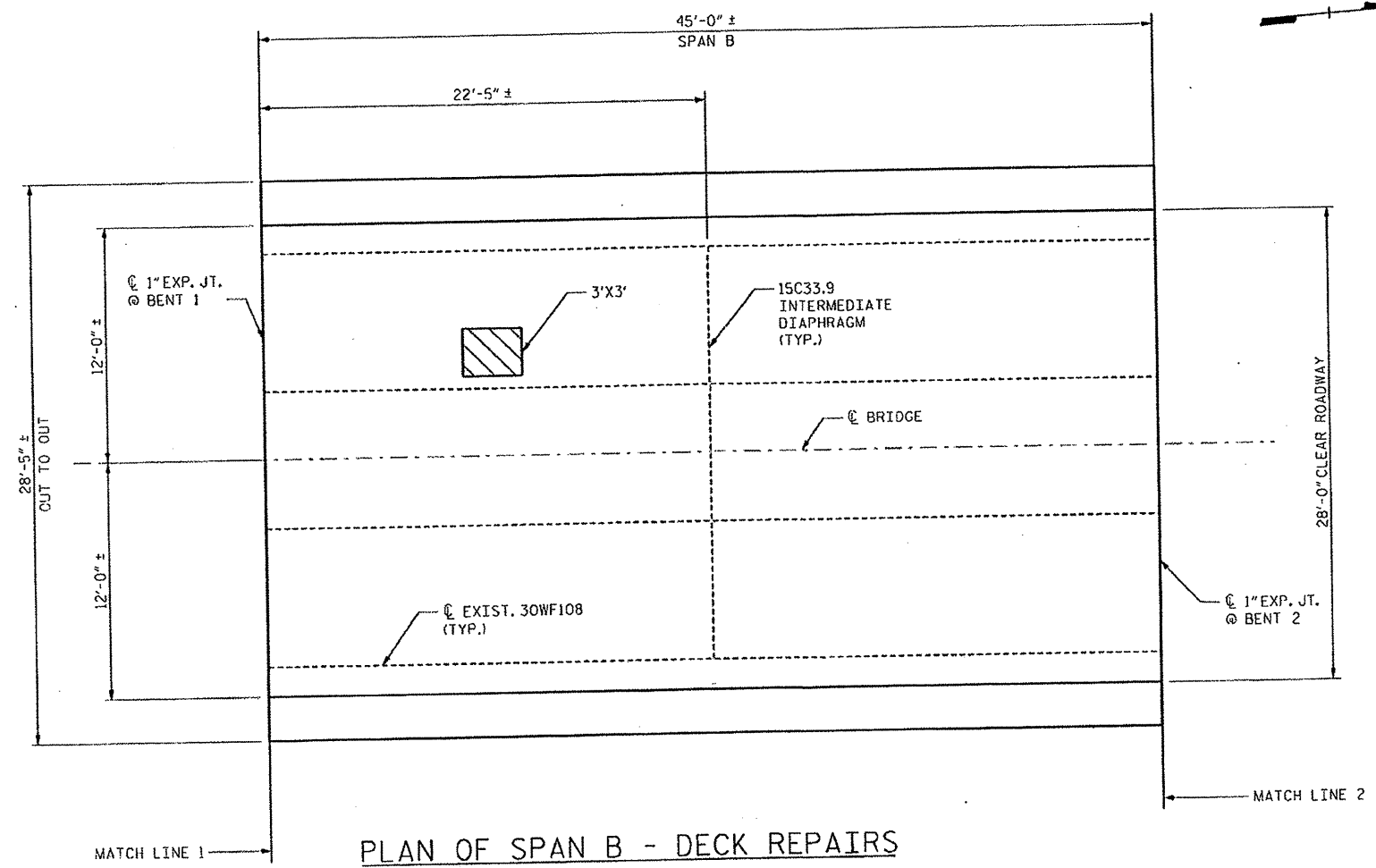
L X W = LENGTH OF AREA PARALLEL TO CL BRIDGE X  
 WIDTH OF AREA PERPENDICULAR TO CL BRIDGE.

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DRAWN BY: B. C. MACYOWSKY DATE: 01-20-12  
 CHECKED BY: J. T. KELVINGTON DATE: 01-20-12

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2/23/2012 12:55:52 PM b10101  
 2/23/2012 12:55:52 PM b10101  
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**PLAN OF SPAN B - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

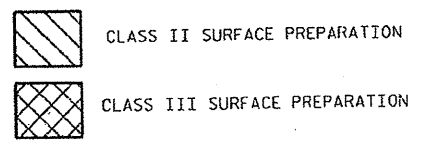
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A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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



L X W = LENGTH OF AREA PARALLEL TO  $\phi$  BRIDGE X WIDTH OF AREA PERPENDICULAR TO  $\phi$  BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN B**

**DECK REHAB. FOR BRIDGE NO. 121**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			37
2			4			83

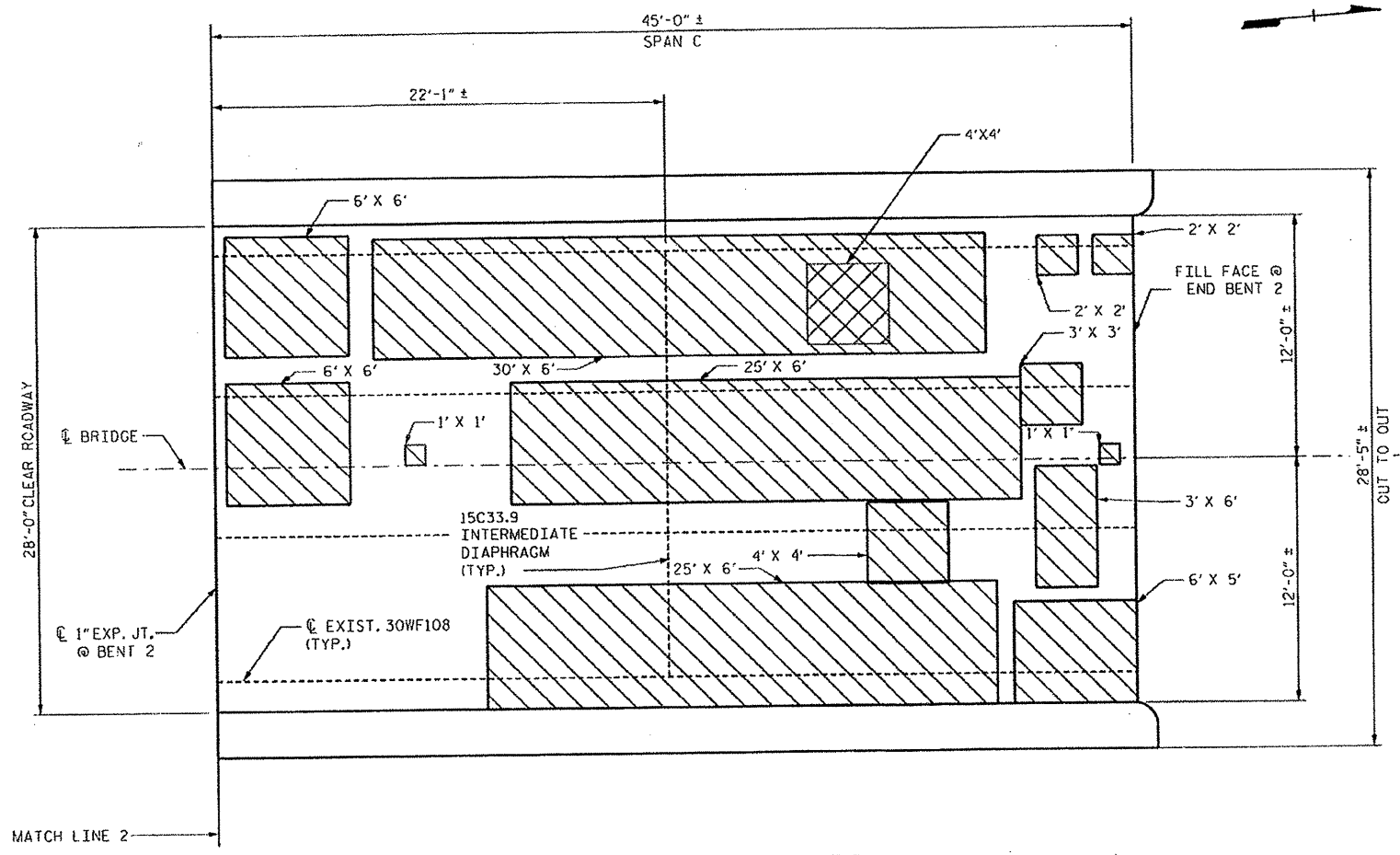
*Joseph Kelvington*  
 2/23/2012



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DRAWN BY: B. C. MACYOWSKY DATE: 01-20-12  
 CHECKED BY: J. T. KELVINGTON DATE: 01-20-12

2/21/2012 2:45:53 PM b1ar0n  
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 82.7.P.2 Alameda-Orange Co Alameda Bridge 121.Dr.cw1ng.89000101.Repair-Plan3.dgn



**NOTES:**

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

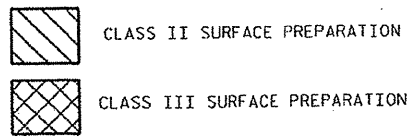
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A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

**PLAN OF SPAN C - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.



L X W = LENGTH OF AREA PARALLEL TO C BRIDGE X WIDTH OF AREA PERPENDICULAR TO C BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN C**

DECK REHAB. FOR BRIDGE NO. 121

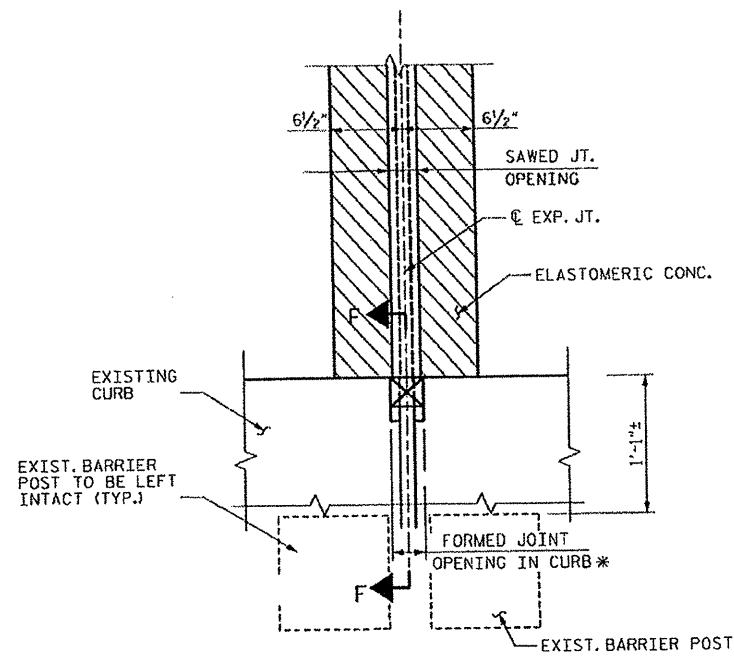
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-38  
 TOTAL SHEETS 83

*Joseph Kelvington*  
 ENGINEER  
 13406

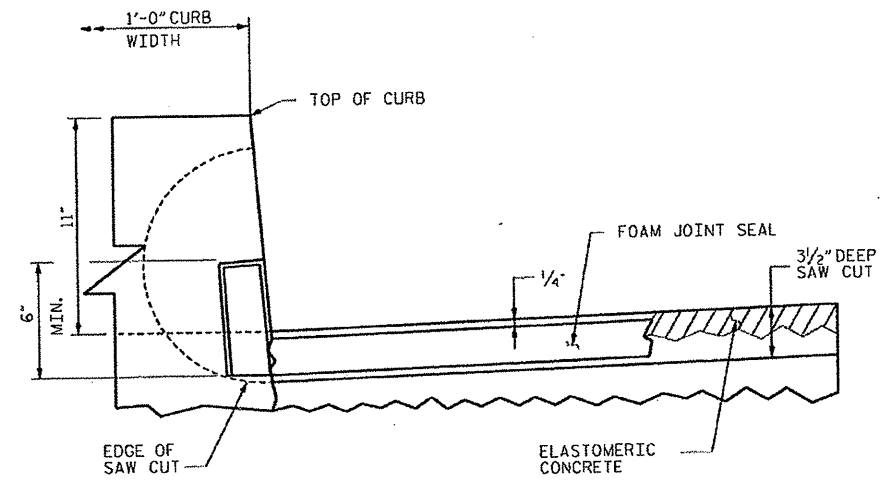
Stantec Consulting Services Inc  
 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel. (919) 851-8886  
 Fax. (919) 851-7024  
 www.stantec.com  
 License No. F-0672

DRAWN BY : B. C. MACYOWSKY DATE : 01-20-12  
 CHECKED BY : J. T. KELVINGTON DATE : 01-20-12



**PARTIAL PLAN @ JOINT**

(TYP. @ BENTS 1 & 2)  
\* MATCH TO SAWED OPENING IN DECK

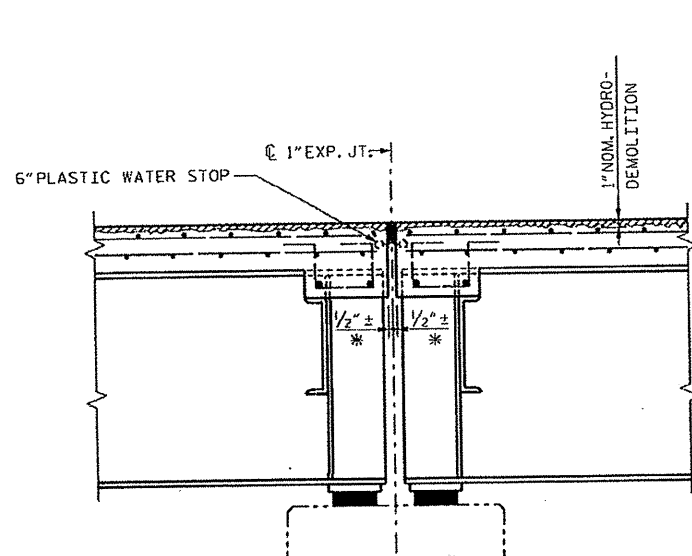


**SECTION F-F**

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.  
FOR HIGH STRENGTH GROUT, SEE SPECIAL PROVISIONS.  
HIGH STRENGTH GROUT SHALL BE APPROVED BY THE ENGINEER.

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	5.0 C.F.
BENT 2	5.0 C.F.

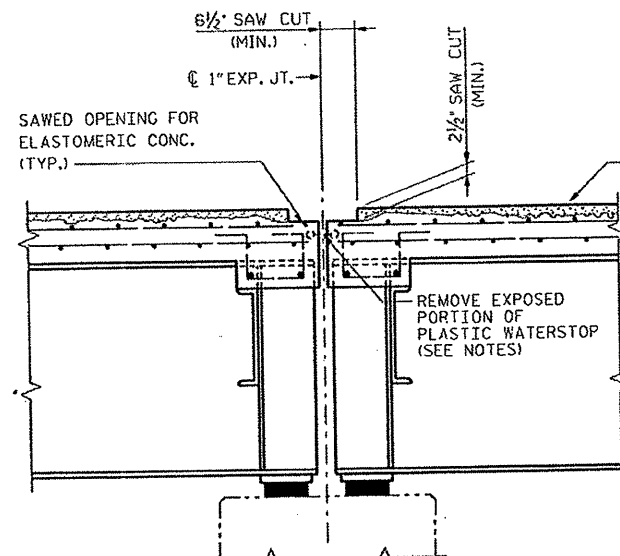
TOTAL ELASTOMERIC CONC. = 10.0 C.F.  
TOTAL ELASTOMERIC CONC. = 0.37 C.Y.



**SECTION B-B**

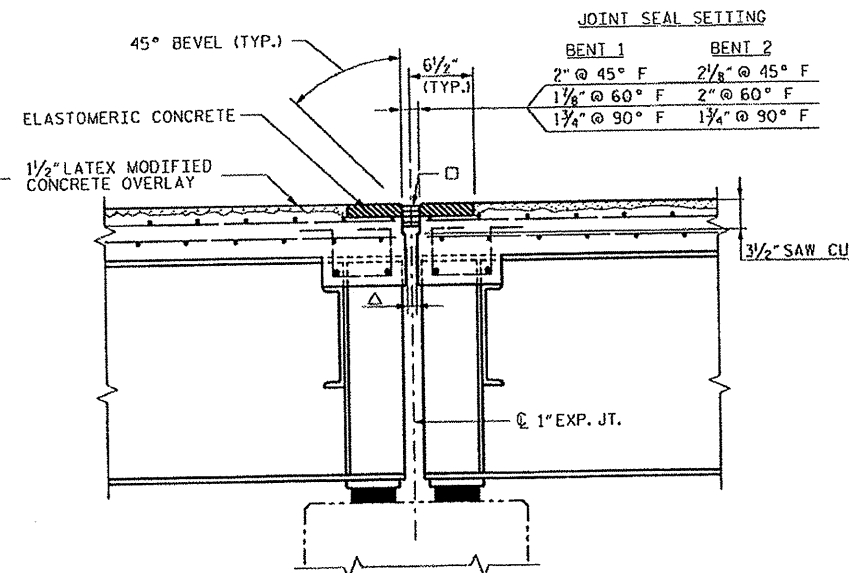
(CONCRETE REMOVAL AT EXISTING JOINT)

\* FROM BEST AVAILABLE INFORMATION.



**SECTION B-B**

(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION B-B**

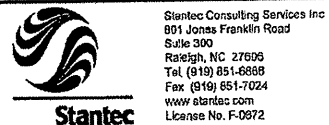
(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

- USE 2.8125" X 2.50" UNCOMPRESSED FOAM JT. SEAL MATERIAL @ BENT 1 & 2.
- △ EXISTING OPENING @ BENTS 1 & 2.

*Joseph Kelvington*  
Professional Engineer  
No. 1789  
Date: 01/20/12

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
INTERIOR BENT JOINT SEAL DETAILS					
DECK REHAB. FOR BRIDGE NO. 121					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. 5-39
					TOTAL SHEETS 83

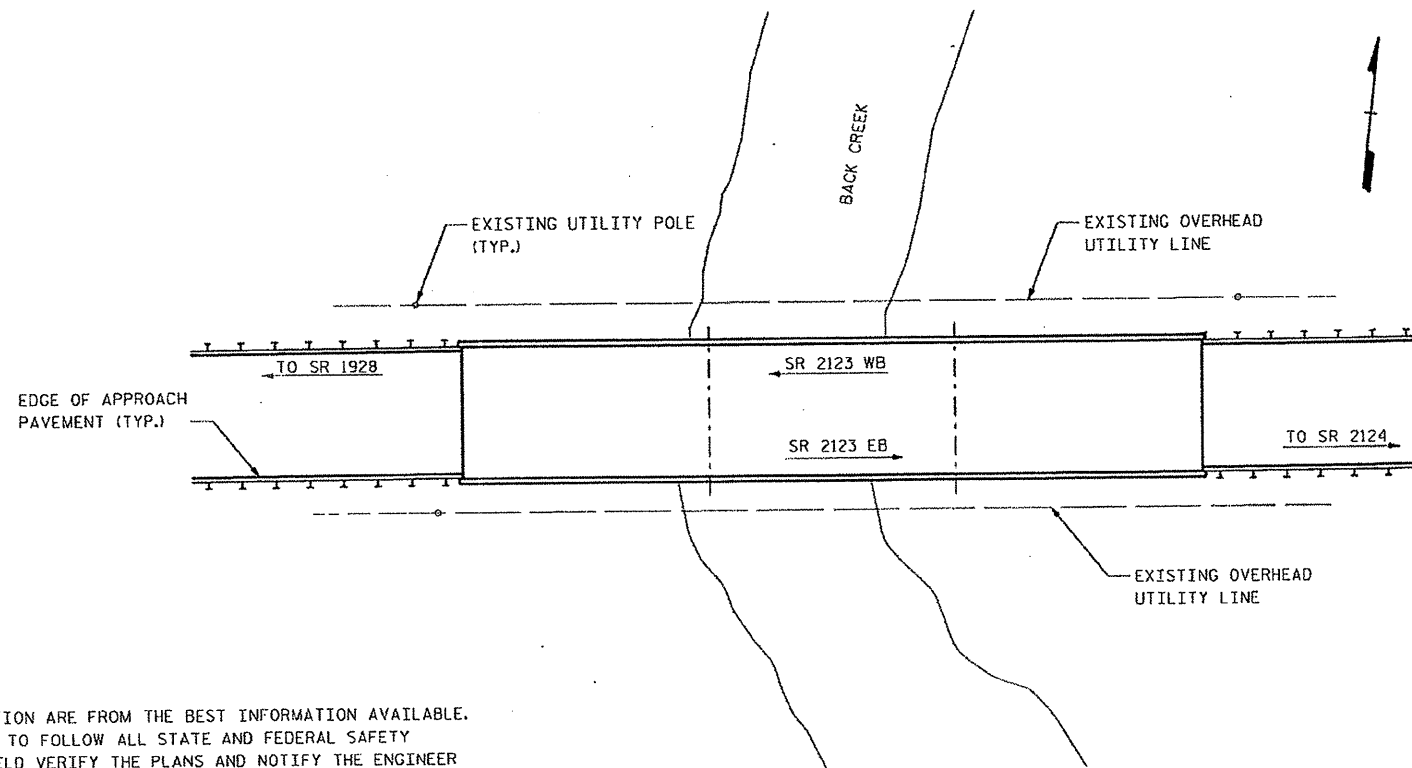


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DRAWN BY: B. C. MACYOWSKY DATE: 01-20-12  
CHECKED BY: J. T. KELVINGTON DATE: 01-20-12

NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.  
ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.

I:\WBS 17BP.7.P.2 Alamance-Orange Co\Alamance Bridge 121\Drawings\BFO00021\_DET.dwg 2/23/2012 12:54 PM b10r0n



NOTES:  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

### BRIDGE 293 ON SR 2123

LOCATION: BRIDGE 000293, SR 2123 OVER BACK CREEK  
 0.3 MILES EAST OF JUNCTION WITH SR 1928

### TOTAL BILL OF MATERIAL

INCIDENTAL MILLING	SCARIFYING BRIDGE DECK	CLASS I * SURFACE PREPARATION	CLASS II * SURFACE PREPARATION	CLASS III * SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	CLASS AA * CONCRETE	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	ASHPHALT CONC. SURF. COURSE TYPE S9.5B
SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	CU.YDS.	CU.YDS.	SO.YDS.	LUMP SUM	SO.FT.	TON
333	554.3	0	20.7	0	554.3	0	23.3	554.3	LUMP SUM	4,327	27

\* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE TYP. "BLOW THRU" CONTAINMENT AND FORMWORK DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THESE ITEMS WILL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2

ALAMANCE COUNTY

STATION: \_\_\_\_\_

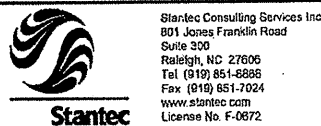
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LOCATION SKETCH AND  
 TOTAL BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 293

REVISIONS						SHEET NO. S-40
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

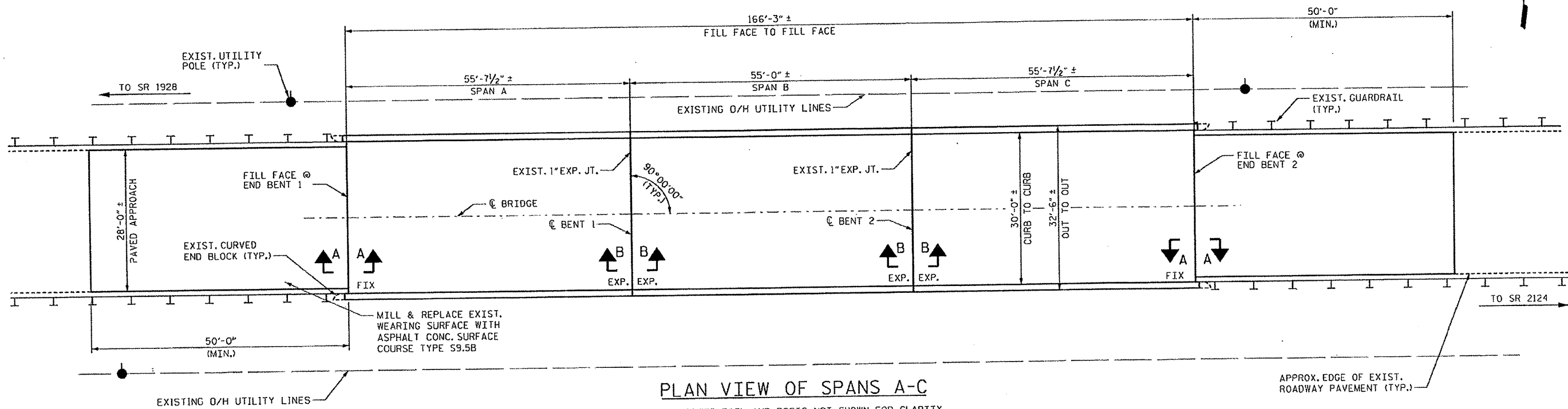
*Joseph J. Kelvington*  
 2/23/2012  
 SEAL  
 13406  
 ENGINEER



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DRAWN BY: B C MACYOWSKY DATE: 10/11  
 CHECKED BY: J T KELVINGTON DATE: 10/11

WBS 17BP.7.P.2, Alamance-Orange Co., Alamance Bridge 293, Drawing WBS17BP293.LS.BDM.cdr 2/23/2012 12:45:55 PM, bnfon



**PLAN VIEW OF SPANS A-C**

NOTE: BARRIER RAIL AND POSTS NOT SHOWN FOR CLARITY.

**NOTES:**

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

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

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-43.

FOR SECTION B-B, SEE SHT. NO. S-46.

PROJECT NO. **WBS 17BP.7.P.2**

**ALAMANCE COUNTY**

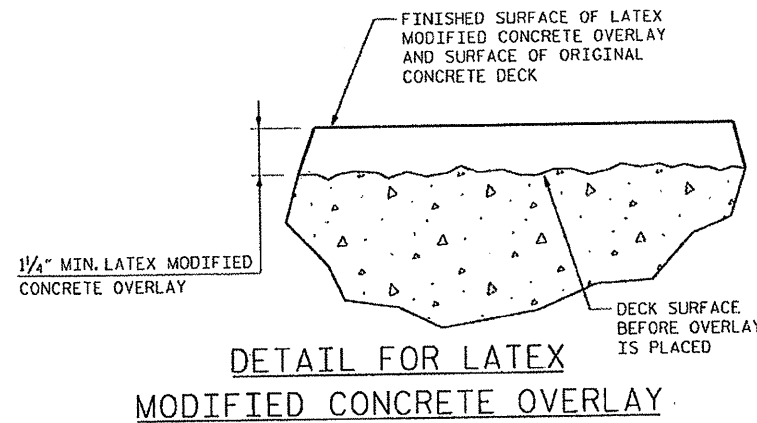
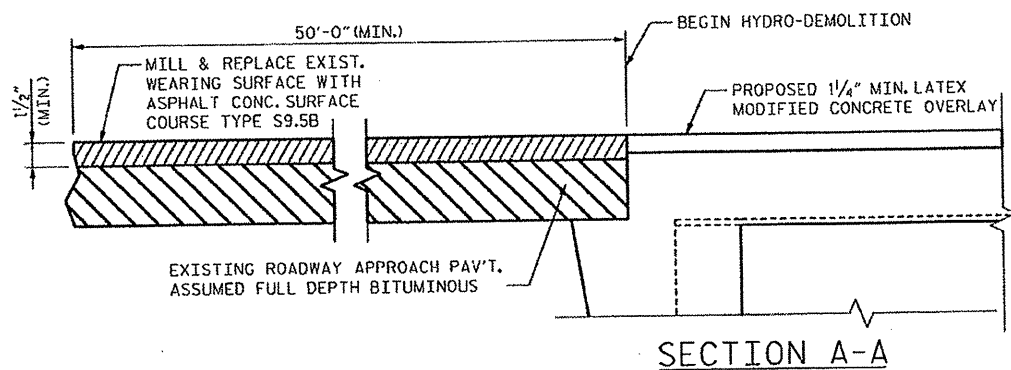
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

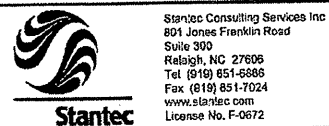
PLAN OF BRIDGE

DECK REHAB. FOR BRIDGE NO. 293

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41
1			3			TOTAL SHEETS
2			4			83



*Joseph J. Kelvington*  
Professional Engineer  
13406



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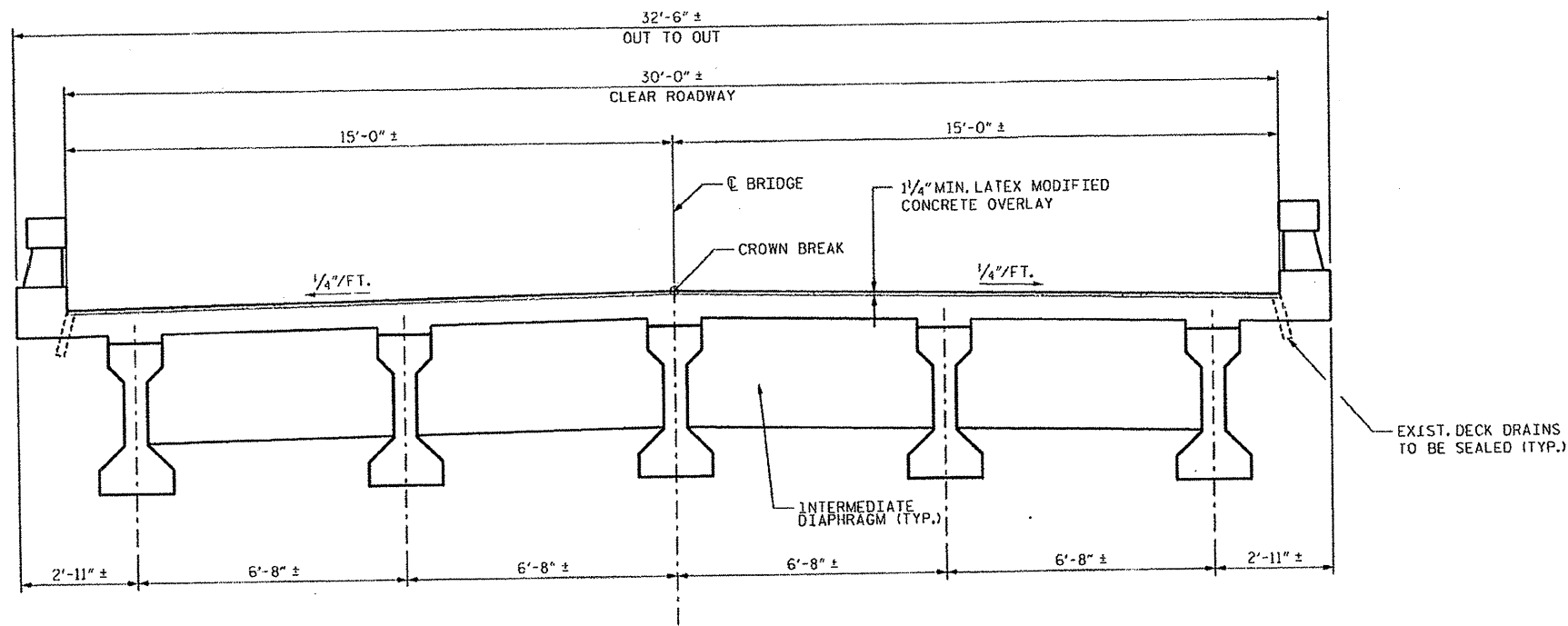
DRAWN BY: **B. C. MACYOWSKY** DATE: **10/11**  
CHECKED BY: **J. T. KELVINGTON** DATE: **10/11**



**NOTES:**

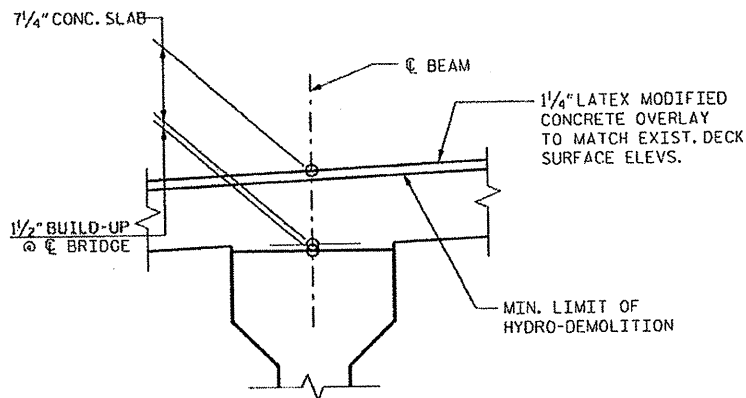
WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRANSPORTATION MANAGEMENT PLANS.



**TYPICAL SECTION**

SPANS A, B, C



**EXIST. SLAB DETAIL**

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

TYPICAL SECTION

DECK REHAB. FOR BRIDGE NO. 293

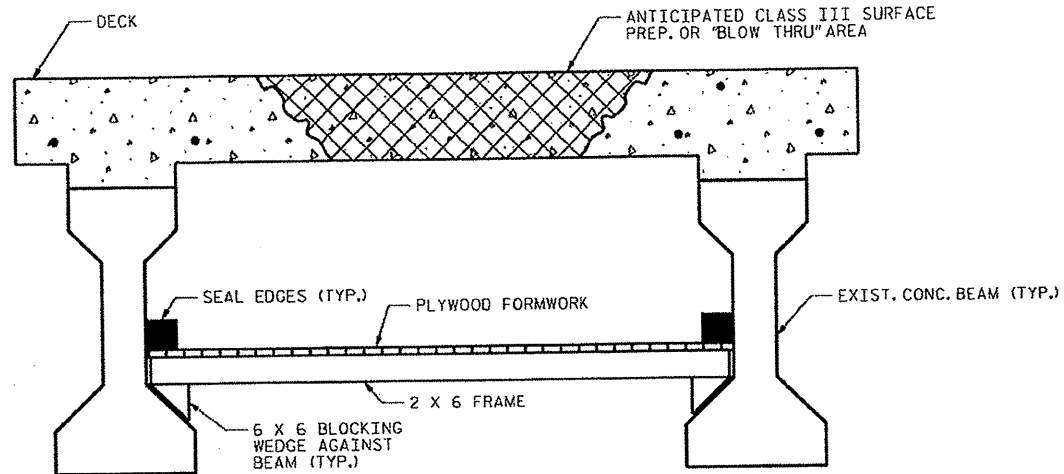
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-42
2			4			83

*Joseph J. Kelvington*  
 10/11/2011



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DRAWN BY : B. C. MACYOWSKY DATE : 10/11  
 CHECKED BY : J. T. KELVINGTON DATE : 10/11



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

**NOTES:**

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

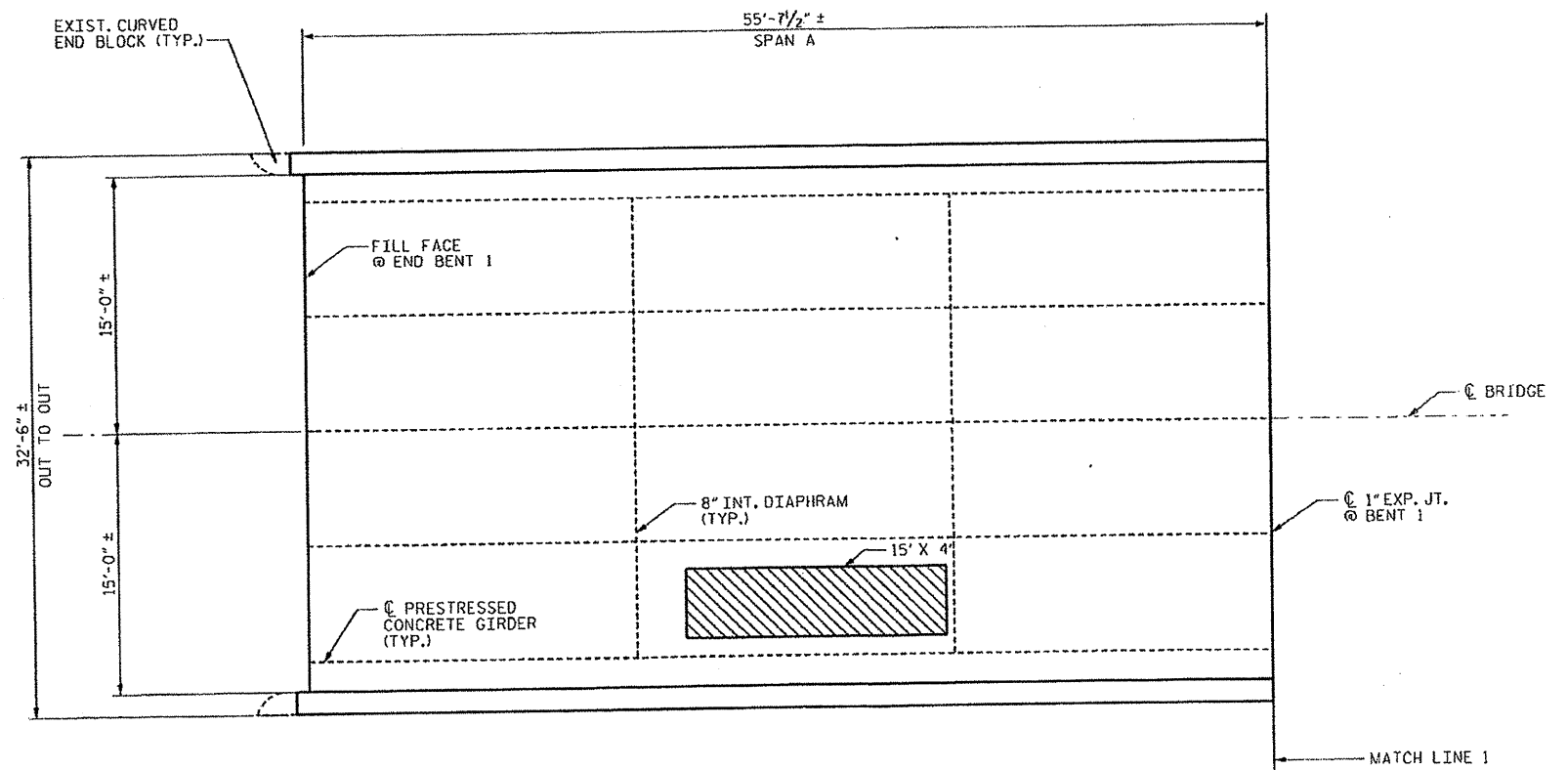
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO DEMOLITION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

PLACE PLYWOOD AND FRAMING TO CLEAR INTERMEDIATE CONCRETE DIAPHRAGMS.



PLAN OF SPAN A - DECK REPAIRS

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

L' X' W' = LENGTH OF AREA PARALLEL TO © BRIDGE X WIDTH OF AREA PERPENDICULAR TO © BRIDGE.

*Joseph Kelvington*

PROJECT NO. WBS 17BP.7.P.2  
 ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 DECK REPAIR DETAILS  
 SPAN A

DECK REHAB. FOR BRIDGE NO. 293

REVISIONS						SHEET NO. S-43
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

12:55:57 PM: b10700  
 2/23/2012  
 C:\Alamance-Corridor\Bridges\293\Drawings\BP293\_Plan\PlanA.dgn

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DRAWN BY: B.C. MACYOWSKY DATE: 10/11  
 CHECKED BY: J.T. KELVINGTON DATE: 10/11

**NOTES:**

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

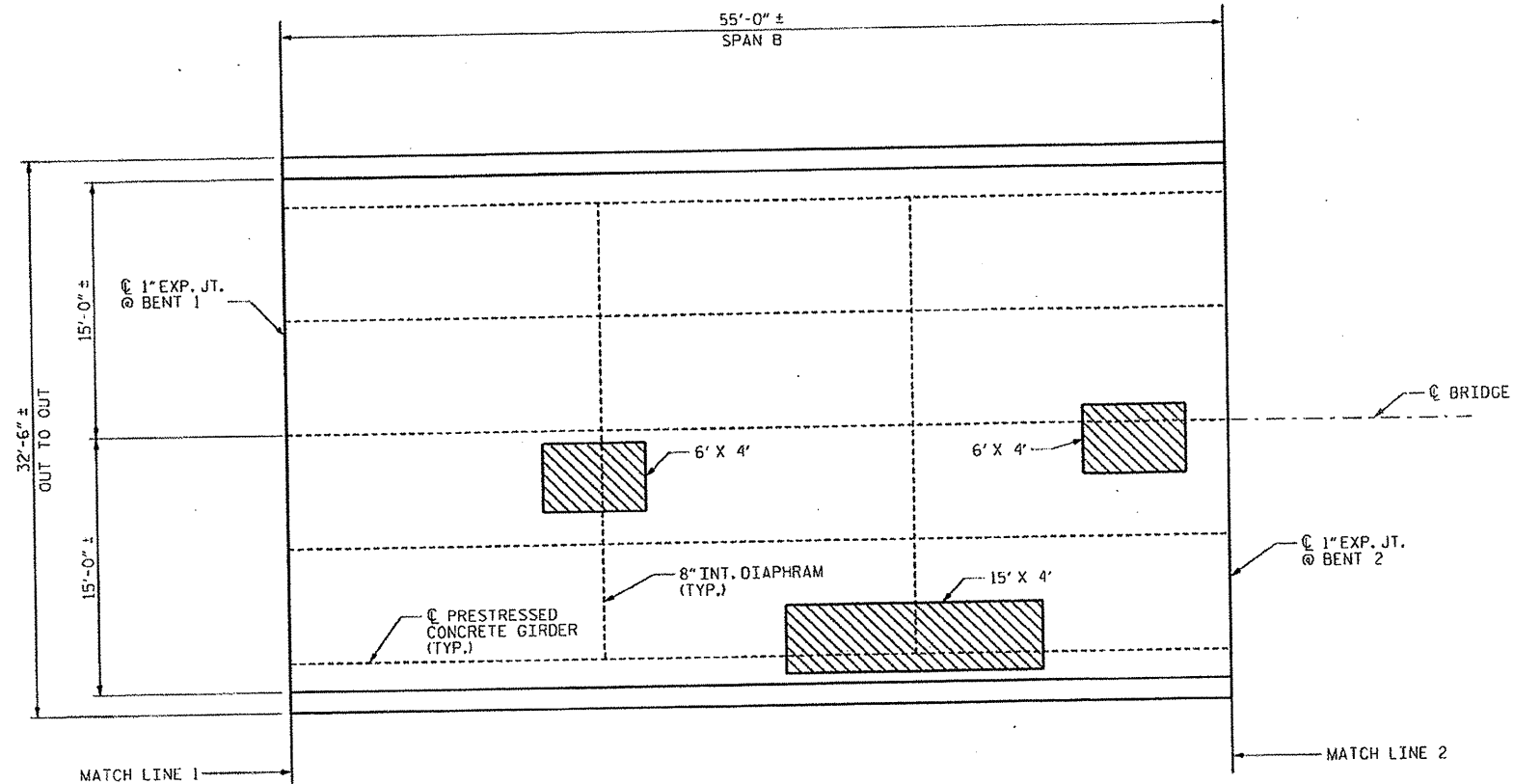
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO DEMOLITION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

PLACE PLYWOOD AND FRAMING TO CLEAR INTERMEDIATE CONCRETE DIAPHRAGMS.



**PLAN OF SPAN B - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.

-  CLASS II SURFACE PREPARATION
-  CLASS III SURFACE PREPARATION

L' X' W' = LENGTH OF AREA PARALLEL TO C BRIDGE X WIDTH OF AREA PERPENDICULAR TO C BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

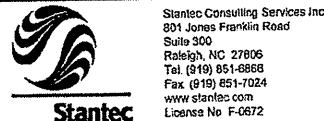
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DECK REPAIR DETAILS  
 SPAN B

DECK REHAB. FOR BRIDGE NO. 293


REVISIONS						SHEET NO. S-44
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

2/23/2012 2:58:58 PM dleton  
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DRAWN BY : B. C. MACYOWSKY DATE : 10/11  
 CHECKED BY : J. I. KELVINGTON DATE : 10/11

*Joseph Kelvington*  
 10/13/2012  


**NOTES:**

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

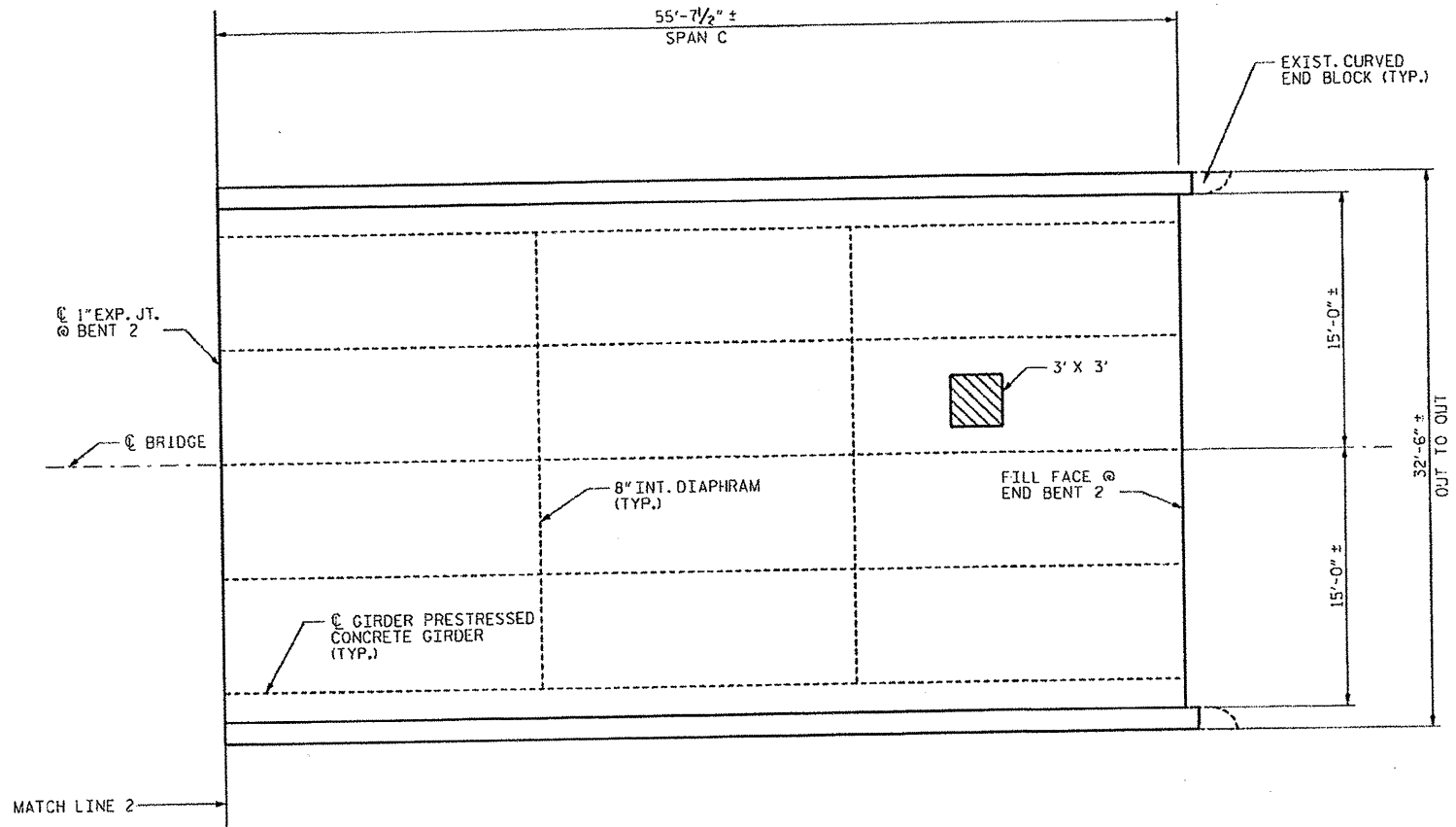
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO DEMOLITION.

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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

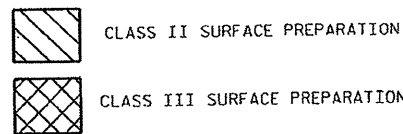
SUBMIT DETAILS OF ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

PLACE PLYWOOD AND FRAMING TO CLEAR INTERMEDIATE CONCRETE DIAPHRAGMS.



**PLAN OF SPAN C - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.



L' X' W' = LENGTH OF AREA PARALLEL TO ℄ BRIDGE X WIDTH OF AREA PERPENDICULAR TO ℄ BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**DECK REPAIR DETAILS  
 SPAN C**  
 DECK REHAB. FOR BRIDGE NO. 293

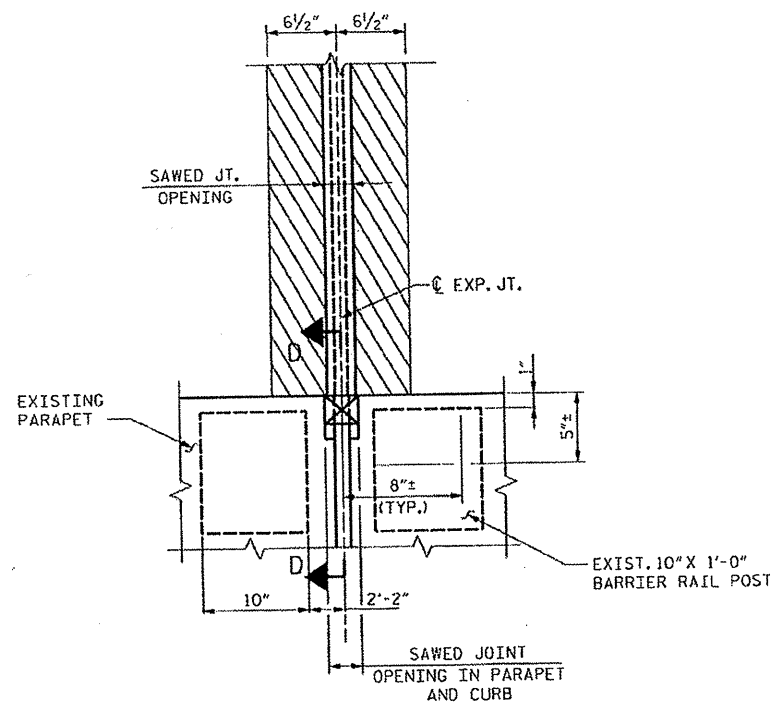
*James T. Kelvington*  
 2/10/11  
 PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA  
 13406

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-45
1			3			TOTAL SHEETS
2			4			83

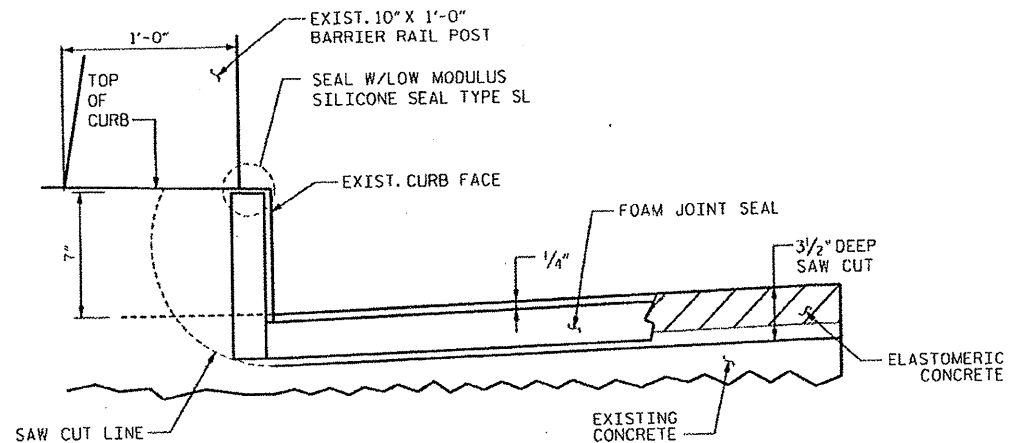


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DRAWN BY : B C MACYOWSKY DATE : 10/11  
 CHECKED BY : J T KELVINGTON DATE : 10/11



**PARTIAL PLAN @ JOINT**  
(TYP. @ INTERIOR BENTS)

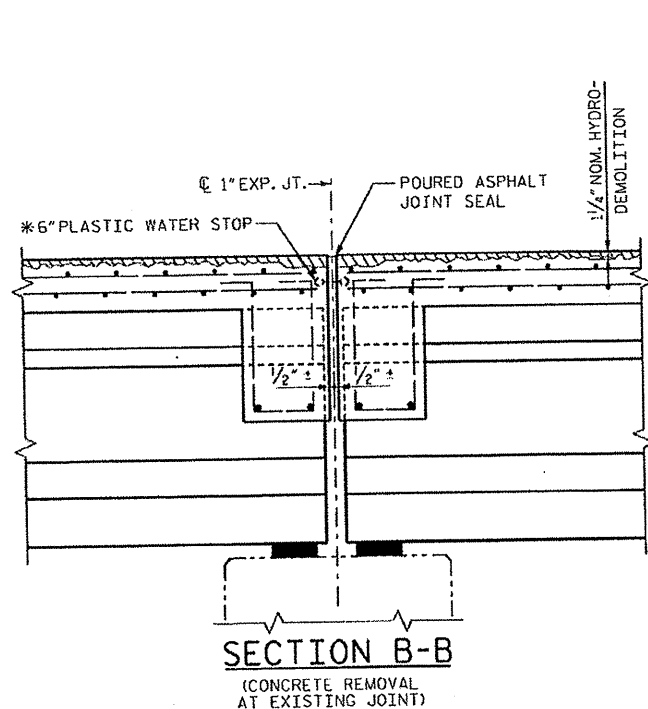


**SECTION D-D**

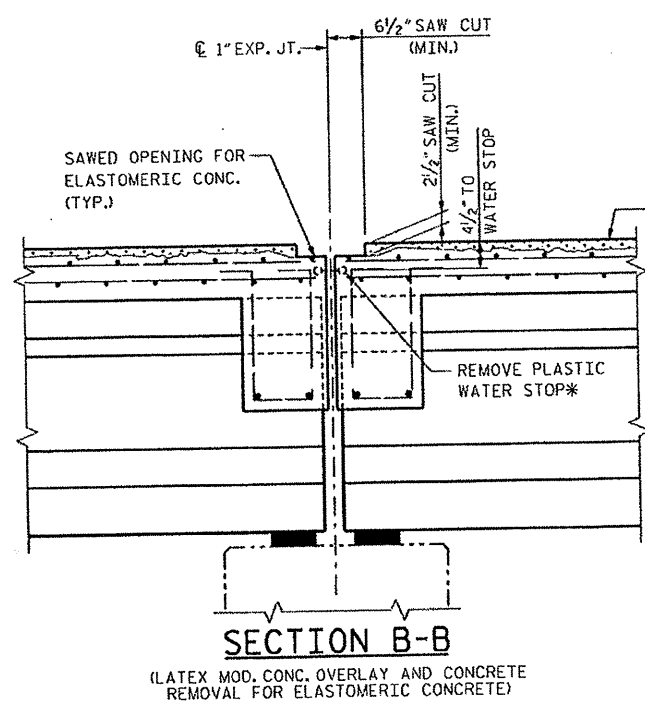
CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	6.25 C.F.
BENT 2	6.25 C.F.

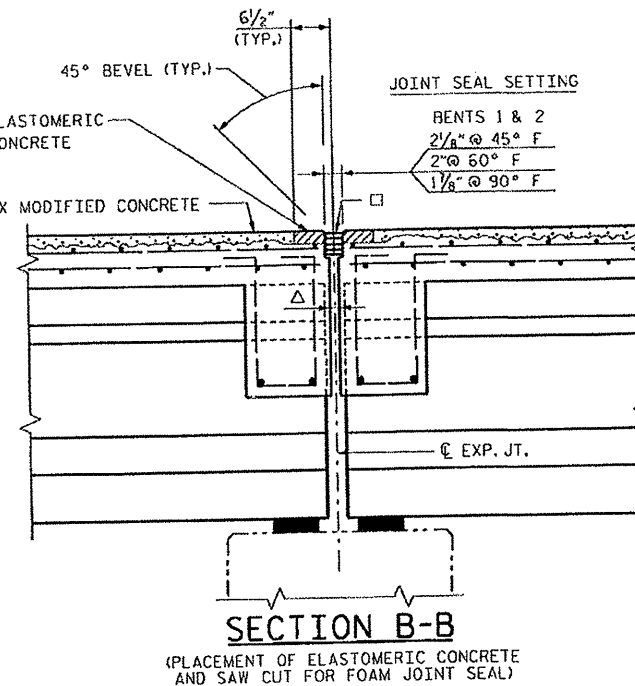
TOTAL ELASTOMERIC CONC. = 12.5 C.F.  
TOTAL ELASTOMERIC CONC. = 0.46 C.Y.



**SECTION B-B**  
(CONCRETE REMOVAL AT EXISTING JOINT)



**SECTION B-B**  
(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION B-B**  
(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

- USE 2.8125" X 2.50" UNCOMPRESSED FOAM JT. SEAL MATERIAL
- △ 1" EXISTING OPENING

PROJECT NO. WBS 17BP.7.P.2  
ALAMANCE COUNTY  
STATION: \_\_\_\_\_

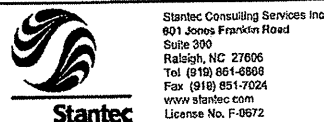
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**EXPANSION JOINT DETAILS**

DECK REHAB. FOR BRIDGE NO. 293

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-46
1			3			TOTAL SHEETS 83
2			4			

*Joseph Kelvington*  
Professional Engineer  
No. 2825  
2012



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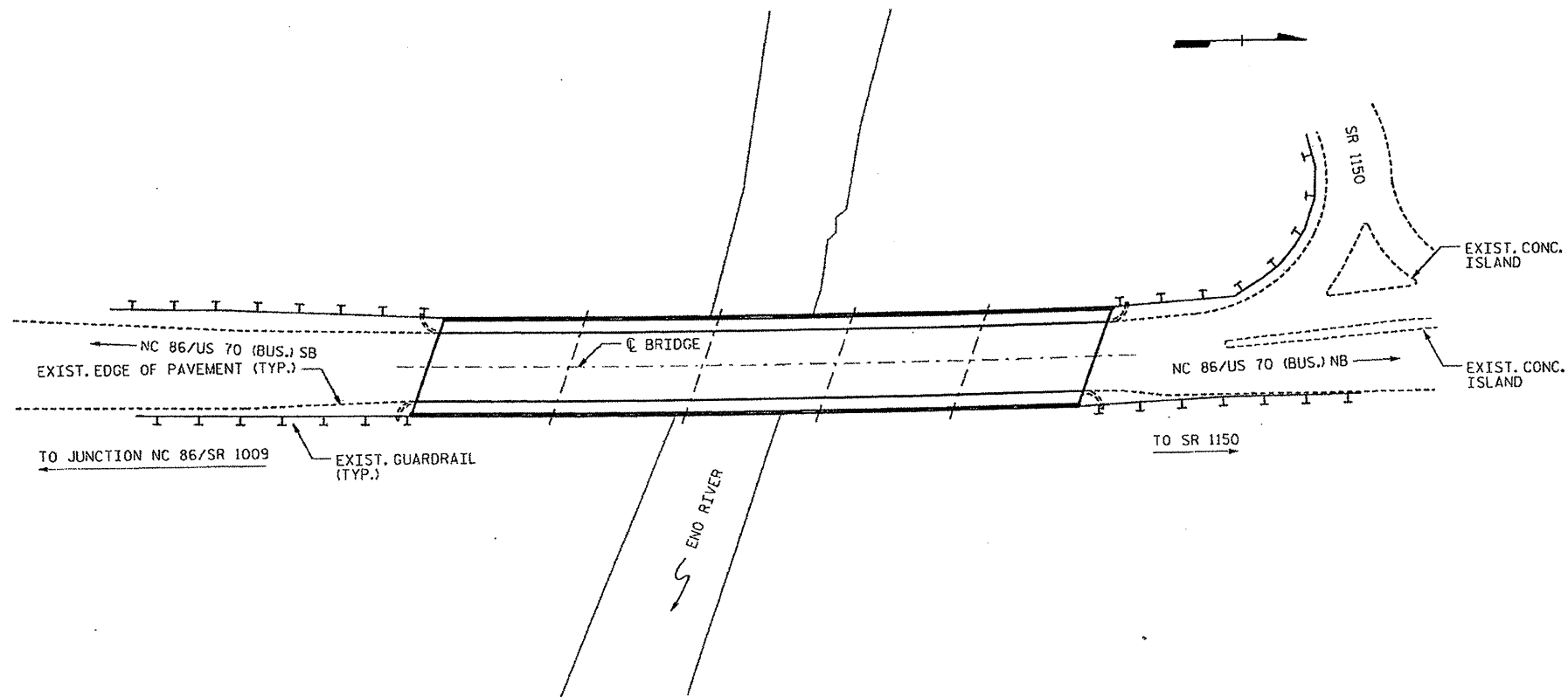
\* FROM BEST AVAILABLE INFORMATION.

NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.

ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.

DRAWN BY: B. C. MACYOWSKY DATE: 10/11  
CHECKED BY: J. T. KELVINGTON DATE: 10/11

2111 WBS 17BP.7.P.2 Alamance-Orange Co. Alamance Bridge 293A Drawing 17BP293.Dwg 2/23/2012 2:20:00 PM dleten



NOTES:  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

### BRIDGE 6 ON US 70 (BUSINESS)/NC 86

LOCATION: BRIDGE 670006, US 70 (BUSINESS)/NC 86 OVER ENO RIVER  
 0.36 MILES EAST OF JUNCTION SR 1002

### BRIDGE 6 ON US 70 (BUSINESS)

#### TOTAL BILL OF MATERIAL

SHOULDER RECONSTRUCTION	MILLING ASPHALT PAVEMENT, 1.5" DEPTH	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C	REMOVE & RESET EXISTING GUARDRAIL	SCARIFYING BRIDGE DECK	CLASS I* SURFACE PREPARATION	CLASS II* SURFACE PREPARATION	CLASS III* SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	CLASS AA* CONCRETE	LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	PLACING & FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SHLDR.MI.	SQ.YDS.	SQ.YDS.	TONS	LN.FT.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SO.FT.
0.038	855.6	338	30	200	855.6	0	31.9	0	855.6	0	41.7	855.6	LUMP SUM	6,609

\* QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE TYP. "BLOW THRU" CONTAINMENT AND FORMWORK DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THESE ITEMS WILL BE MADE. ALL COSTS FOR THIS WORK WILL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2

ORANGE COUNTY

STATION: \_\_\_\_\_

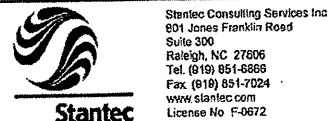
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LOCATION SKETCH  
 AND TOTAL  
 BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 6

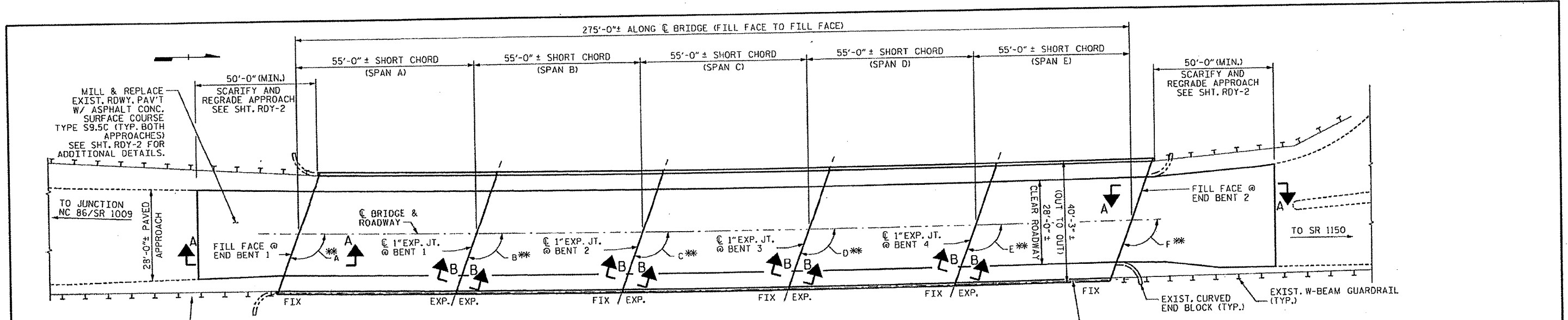
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTAL SHEETS
2			4			83

*Joseph Kelvington*  
 2/23/2012



DRAWN BY: J. L. HENNEKES DATE: 12-08-11  
 CHECKED BY: J. T. KELVINGTON DATE: 12-08-11

S:\17BP.7.P.2\_Altamance-Dr-enge Co\Drawings\BPF670006.LS.BOM.dgn 2/23/2012 2:20:01 PM dlaton



**PLAN OF SPANS A-E**

NOTE: ALL HORIZONTAL DIMENSIONS ARE RADIAL OR ARC DIMENSIONS UNLESS NOTED OTHERWISE.

- \*\* ANGLES SHOWN ARE MEASURED TO SHORT CHORDS
- A 109° 10' 30" ±
  - B 109° 35' 15" ±
  - C 110° 00' 00" ±
  - D 110° 24' 45" ±
  - E 110° 49' 30" ±
  - F 110° 49' 30" ±

NOTES:

EXISTING JOINTS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

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

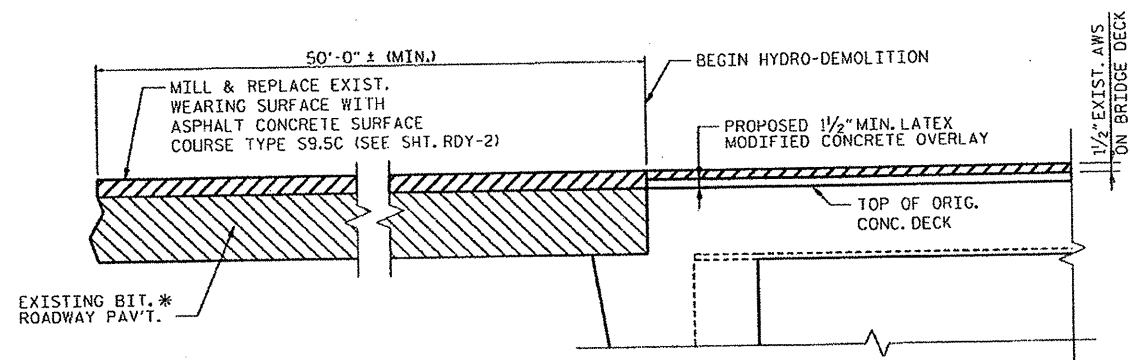
THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-50.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.

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

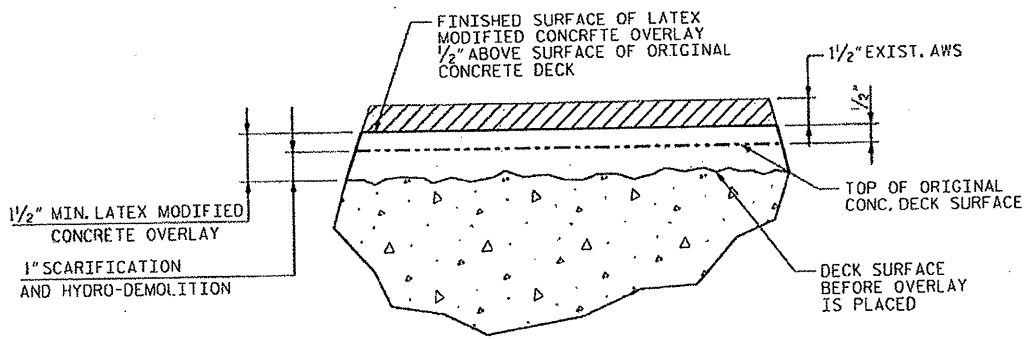
FOR SECTION B-B, SEE SHT. NO. S-53.

EXISTING BRIDGE HAS A 1 1/2" THICK ASPHALT WEARING SURFACE. THIS WEARING SURFACE SHALL BE REMOVED BY MILLING IN ITS ENTIRETY BEFORE DECK REHABILITATION BEGINS. COST FOR THIS WORK SHALL BE PAID FOR AS "MILLING ASPHALT PAVEMENT, 1 1/2" DEPTH." FOR ROADWAY DETAILS @ BRIDGE APPROACHES, SEE SHT. RDY-2.



**SECTION A-A**

\* PAV'T IS ASSUMED.



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF BRIDGE**

**DECK REHAB. FOR BRIDGE NO. 6**

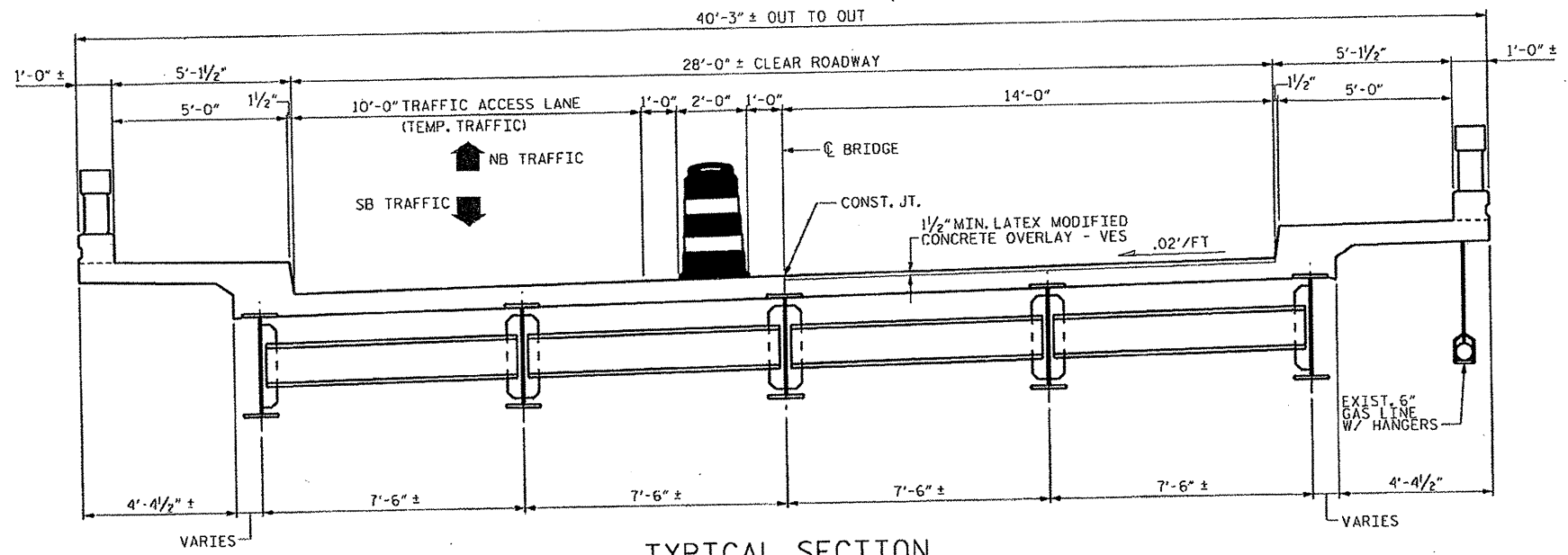
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-48
2			4			83

*Joseph Kelvington*  
 12/08/2012

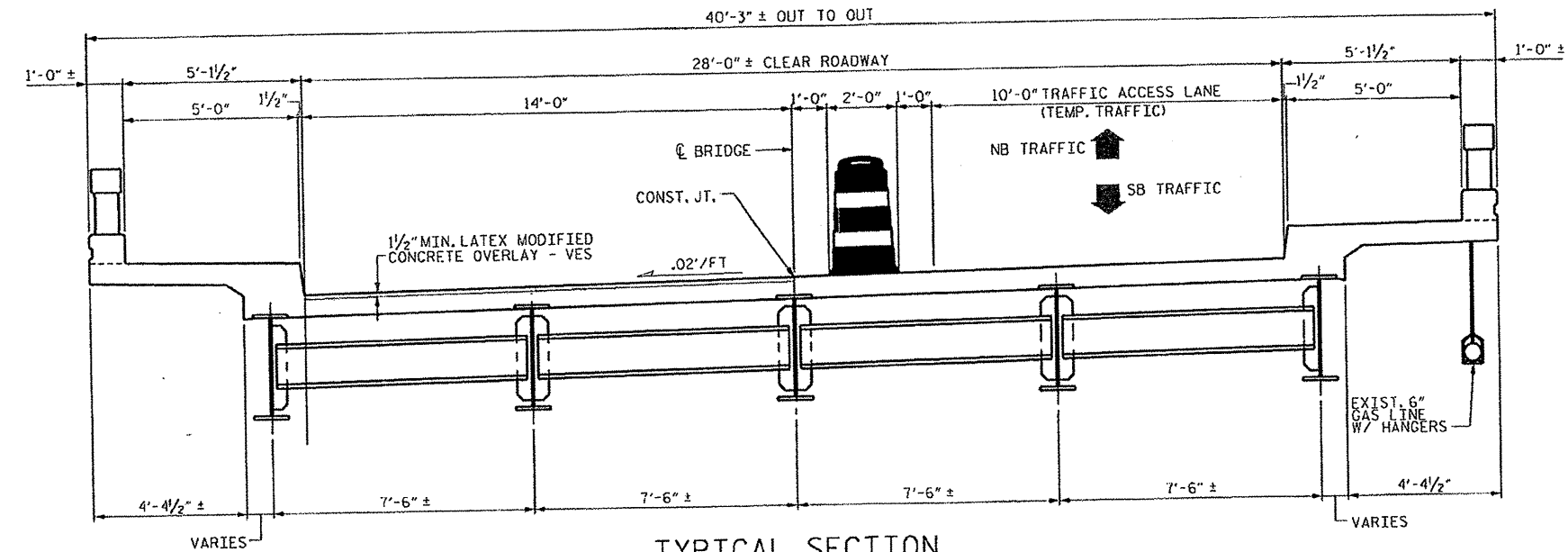
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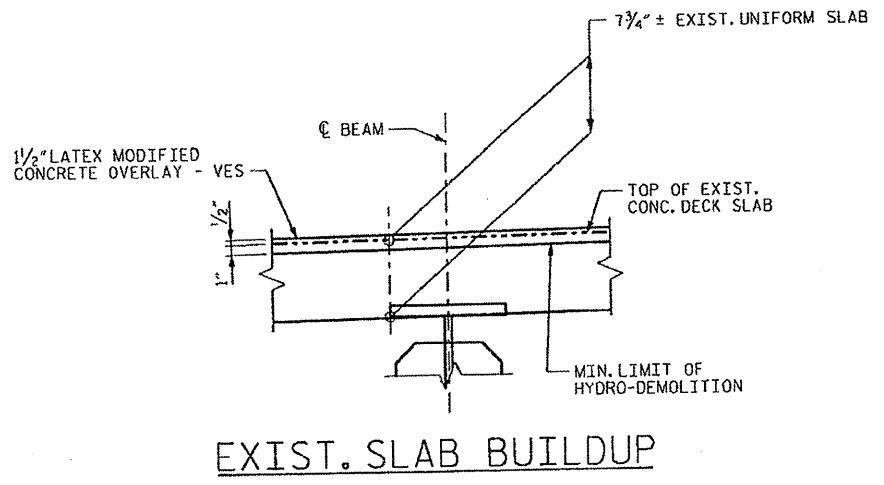
DRAWN BY: J. L. HENNEKES DATE: 12-08-11  
 CHECKED BY: J. T. KELVINGTON DATE: 12-08-11



**TYPICAL SECTION**  
SPANS A THRU E



**TYPICAL SECTION**  
SPANS A THRU E



**EXIST. SLAB BUILDUP**

- NOTES:
- "VES" DENOTES VERY EARLY STRENGTH.
  - WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.
  - FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRANSPORTATION MANAGEMENT PLANS.
  - ALL DIMENSIONS ARE RADIAL UNLESS OTHERWISE NOTED.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**TYPICAL SECTION**

**DECK REHAB. FOR BRIDGE NO. 6**

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	5-49	
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2			4			83	

*Joseph Kelvington*

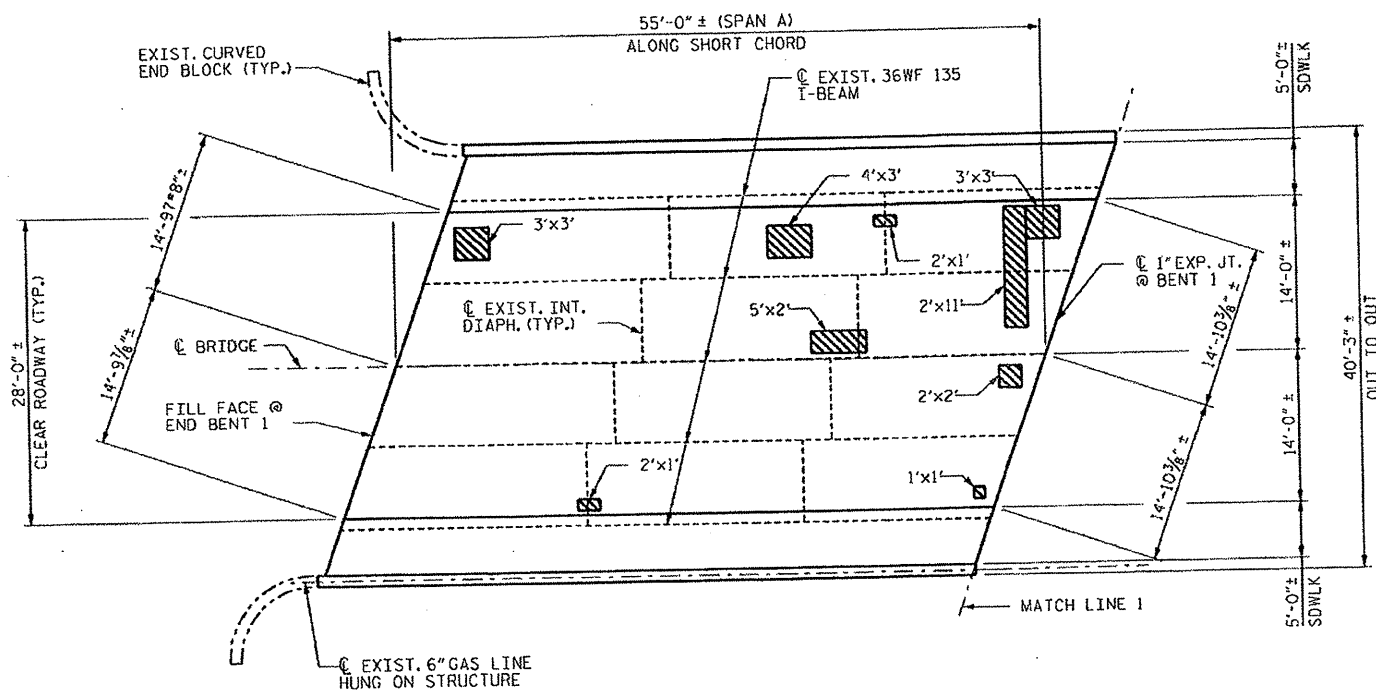
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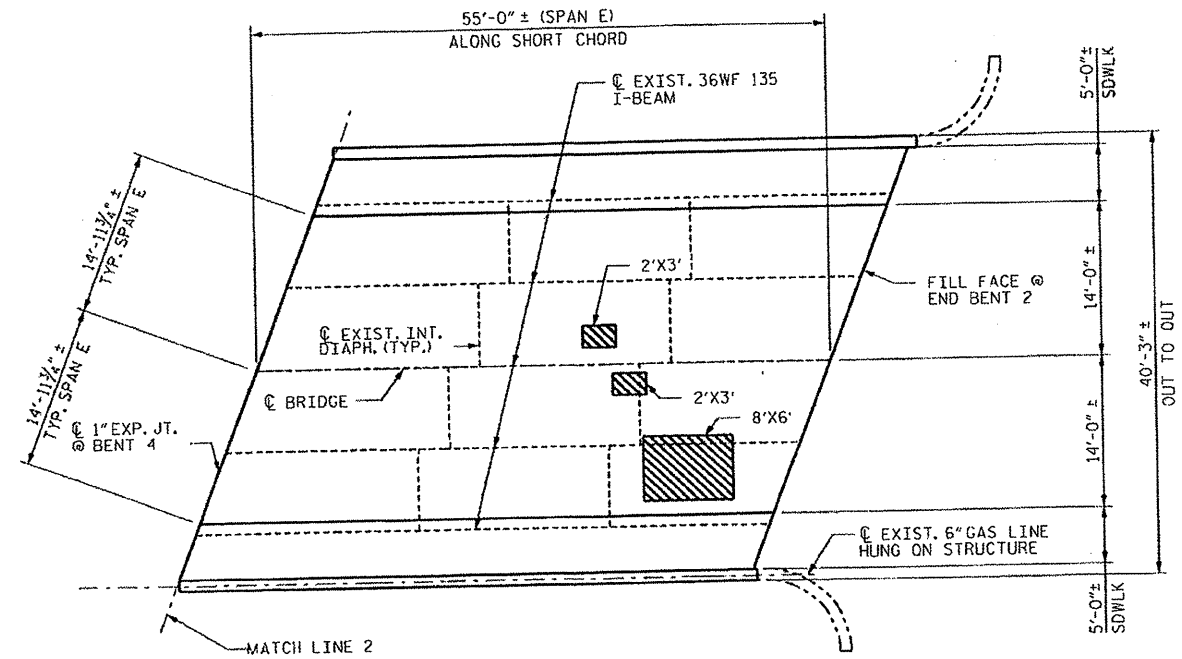
DRAWN BY: J. L. HENNEKES DATE: 12-08-11  
 CHECKED BY: J. T. KELVINGTON DATE: 12-08-11

17BP.7.P.2 Monrovia-Orange Co. Orange Bridge\_006.Drawing\_BP670006\_TypSect.dgn 2/23/2012 12:20:03 PM Bloton



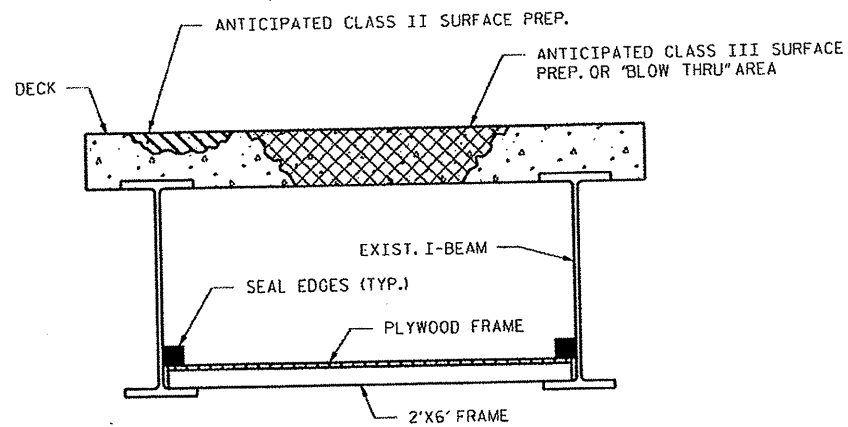
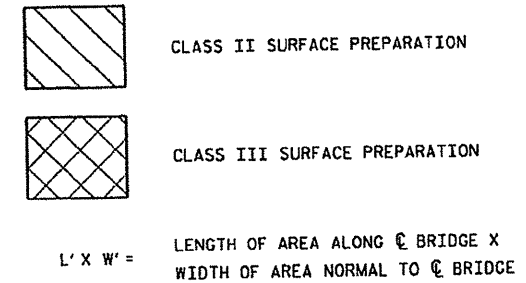


PLAN OF SPAN A - DECK REPAIRS



PLAN OF SPAN E - DECK REPAIRS

NOTE: ALL HORIZONTAL DIMENSIONS ARE ALONG ARC OR RADIAL LINES UNLESS OTHERWISE NOTED. BARRIER RAIL AND POST DETAILS ARE NOT SHOWN FOR CLARITY.



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

NOTES:

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

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

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

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DECK REPAIR DETAILS  
 SPANS A & E

DECK REHAB. FOR BRIDGE NO. 6

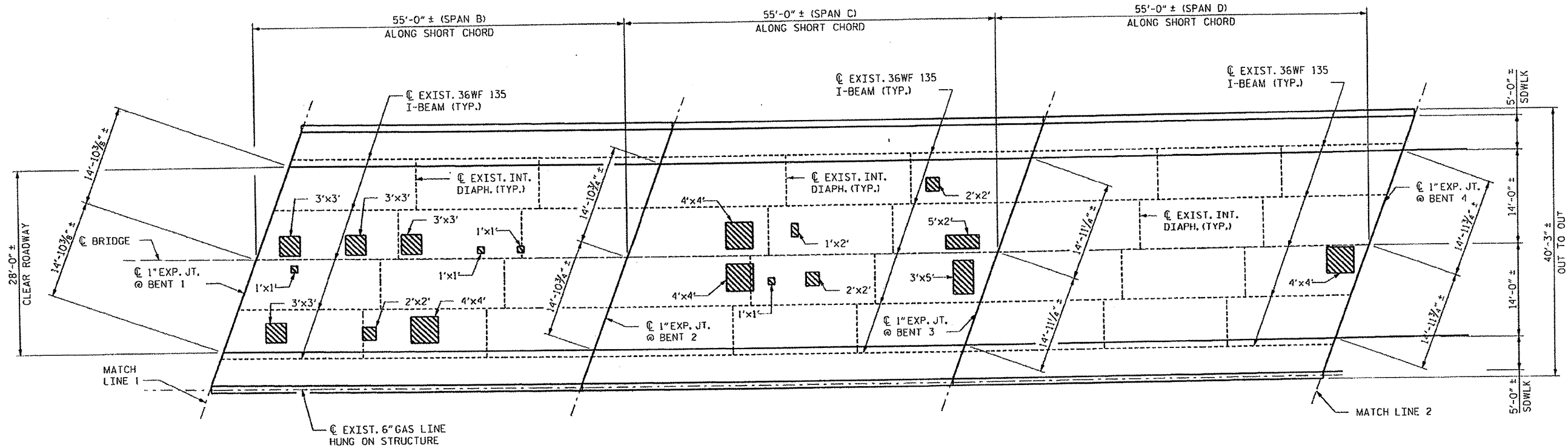
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-50
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2			4			

*Joseph Kelvington*  
 PROJECT ENGINEER  
 13406

3P.7.P.2 Alamance-Orange Co Bridge 006 Drawing\BPS\0005\_Report\Plan1.cdw 2/23/2012 2:20:05 PM DICTOR

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DRAWN BY: J. L. HENNEKES DATE: 12-08-11  
 CHECKED BY: J. T. KELVINGTON DATE: 12-08-11



### PLAN OF SPANS B, C, & D - DECK REPAIRS

NOTE: ALL HORIZONTAL DIMENSIONS ARE ALONG ARC OR RADIAL LINES  
UNLESS OTHERWISE NOTED.  
BARRIER RAIL AND POST DETAILS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

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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.



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA ALONG @ BRIDGE X WIDTH OF AREA NORMAL TO @ BRIDGE

PROJECT NO. WBS 17BP.7.P.2

ORANGE COUNTY

STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

DECK REPAIR DETAILS  
SPANS B, C, & D

DECK REHAB. FOR BRIDGE NO. 6

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-51	
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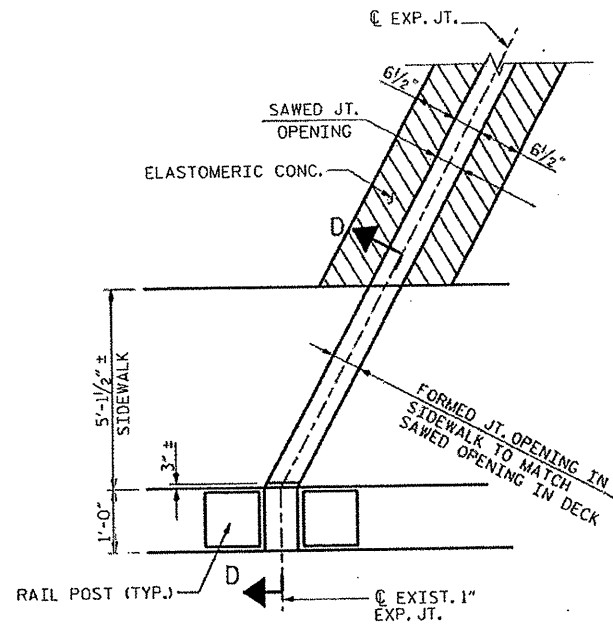
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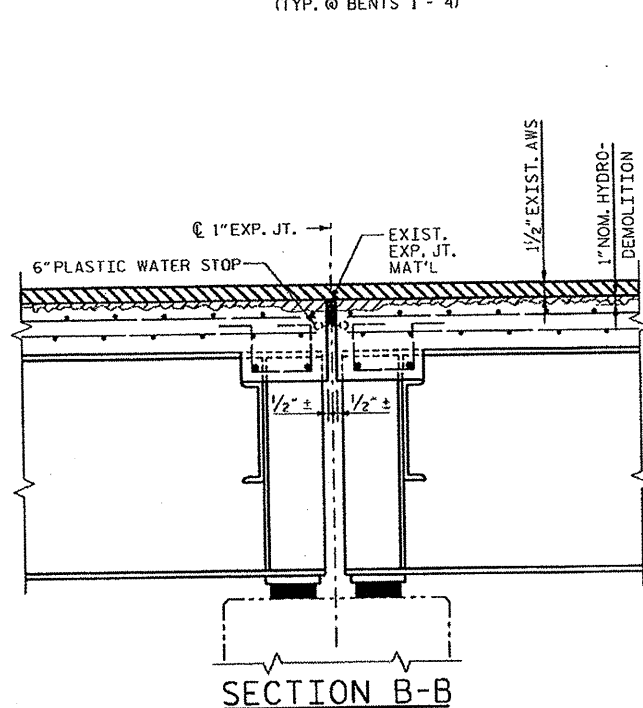
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License No. F-0672

DRAWN BY: J. L. HENNEKES DATE: 12-08-11  
CHECKED BY: J. T. KELVINGTON DATE: 12-08-11

*Joseph Kelvington*  
Professional Engineer  
No. 3406  
KELVINGTON



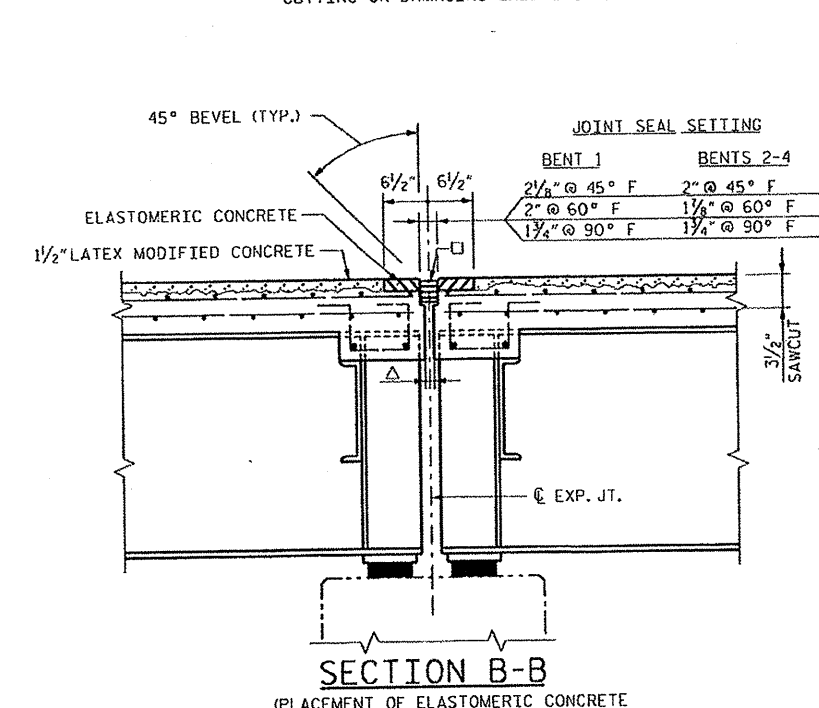
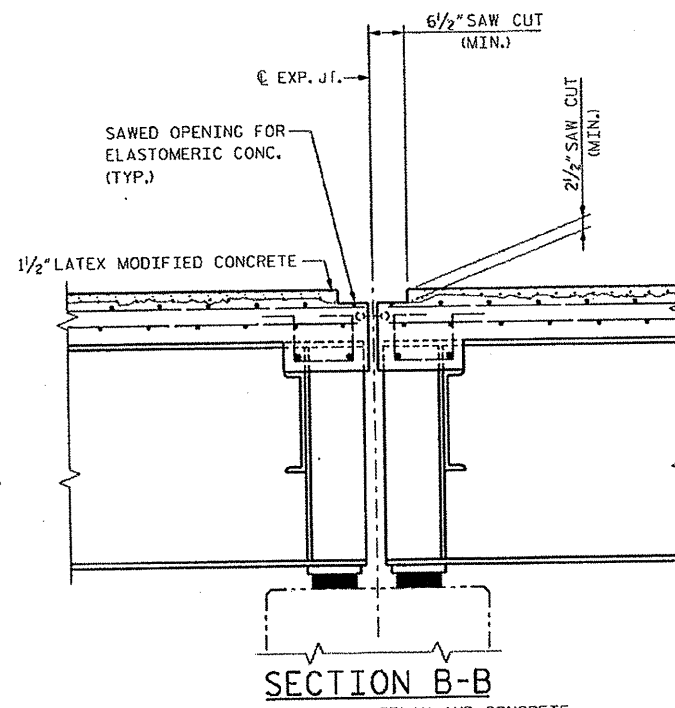
**PARTIAL PLAN @ JOINT**  
(TYP. @ BENTS 1 - 4)



\* FROM BEST AVAILABLE INFORMATION.

NOTE: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D.

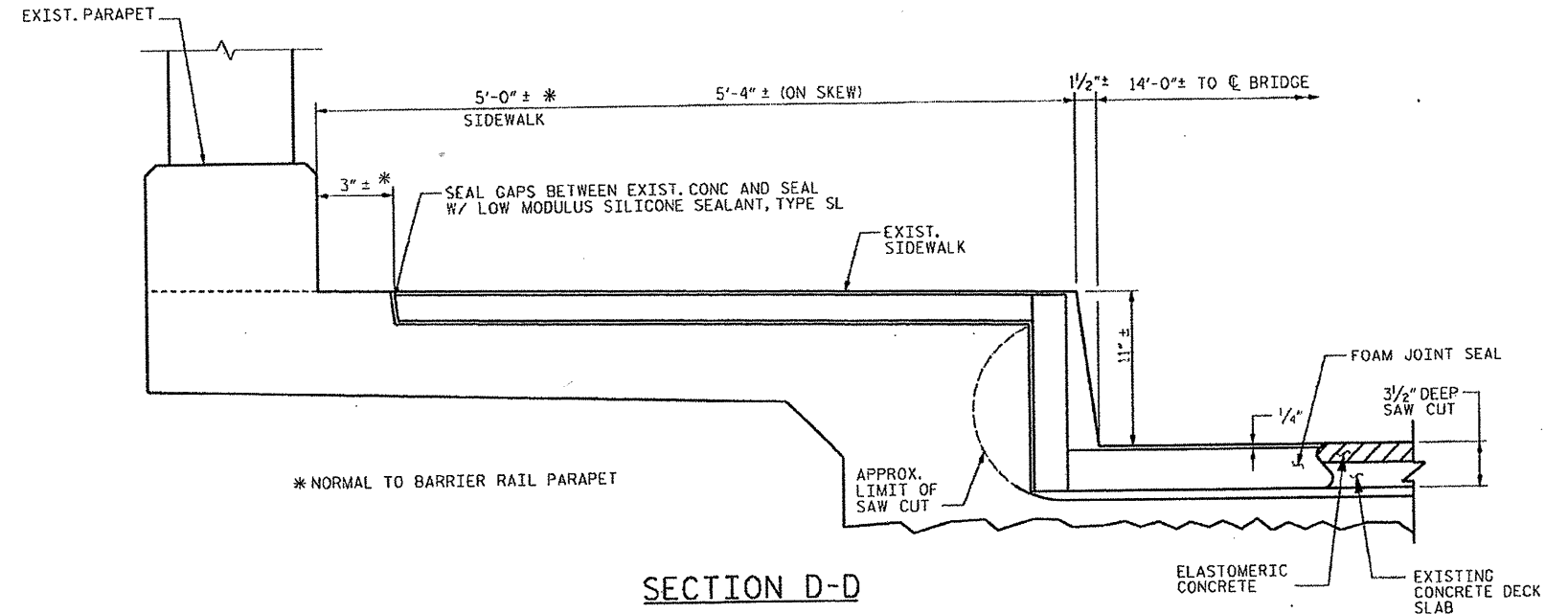
ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.



SECTION B-B  
(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

□ USE 2.8125" X 2.5" UNCOMPRESSED FOAM JT. SEAL MATERIAL @ BENT 1 THRU 4.

△ EXISTING 1" OPENING @ BENTS 1-4



**SECTION D-D**

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.

**JOINT SEAL SETTING**

	BENT 1	BENTS 2-4
2 1/8" @ 45° F	2" @ 45° F	
2" @ 60° F	1 1/4" @ 60° F	
1 3/4" @ 90° F	1 3/4" @ 90° F	

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	6.2 C.F.
BENT 2	6.2 C.F.
BENT 3	6.2 C.F.
BENT 4	6.2 C.F.

TOTAL ELASTOMERIC CONC. = 24.8 C.F.  
TOTAL ELASTOMERIC CONC. = 0.92 C.Y.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

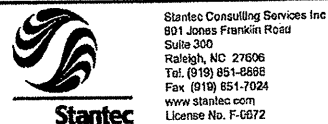
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

EXPANSION JOINT DETAILS

DECK REHAB. FOR BRIDGE NO. 6

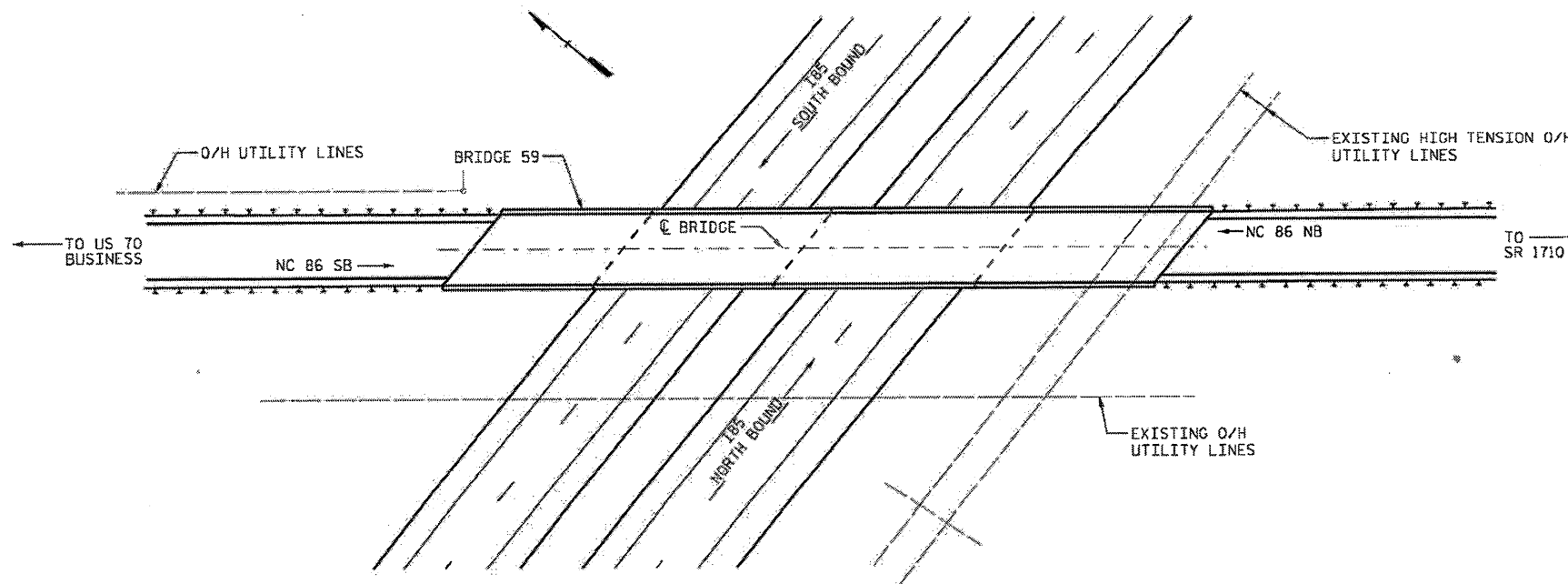
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			83

*Handwritten signature and date: J. T. KELVINGTON 12/08/11*



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DRAWN BY: J. L. HENNEKES DATE: 12-08-11  
CHECKED BY: J. T. KELVINGTON DATE: 12-08-11



NOTES:  
 EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR, DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR HEAT STRAIGHTENING EXISTING STEEL BEAMS, SEE SPECIAL PROVISIONS.

**BRIDGE 59 ON NC 86  
 OVER INTERSTATE 85**

LOCATION: BRIDGE 670059, ON NC 86  
 0.6 MILES SOUTH OF JUNCTION US 70 BUSINESS

**BRIDGE 59**

**TOTAL BILL OF MATERIAL**

REMOVE & RESET EXISTING GUARDRAIL	SHOULDER RECONSTRUCTION	ASPHALT CONC. BASE COURSE B25.0C	INCIDENTAL MILLING	ASPHALT CONC. SURFACE COURSE TYPE S9.5C	SCARIFYING BRIDGE DECK	CLASS I* SURFACE PREPARATION	CLASS II* SURFACE PREPARATION	CLASS III* SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	CLASS AA* CONCRETE	LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	CONCRETE REPAIRS	SHOTCRETE REPAIRS	SPAN JACKING ORANGE CO. BRIDGE #59
LIN.FT.	SHLDR.MI.	TON	SQ.YDS.	TON	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	CU.YDS.	CU.YDS.	SO.YDS.	LUMP SUM	SO.FT.	CU.FT.	CU.FT.	EA.
300	0.06	26	384	31	875.8	0	20.4	0	875.8	0	49.4	875.8	LUMP SUM	6,778	46.5	160	3

\*QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. BLOW THRU" CONTAINMENT AND FORMWORK DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THIS ITEM SHALL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2

ORANGE COUNTY

STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LOCATION SKETCH  
 AND TOTAL  
 BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 59

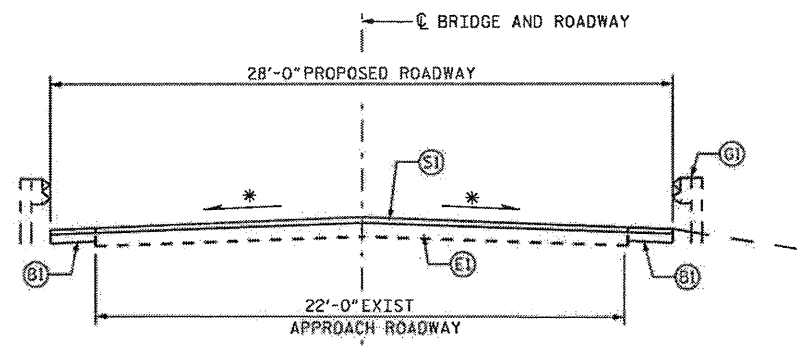
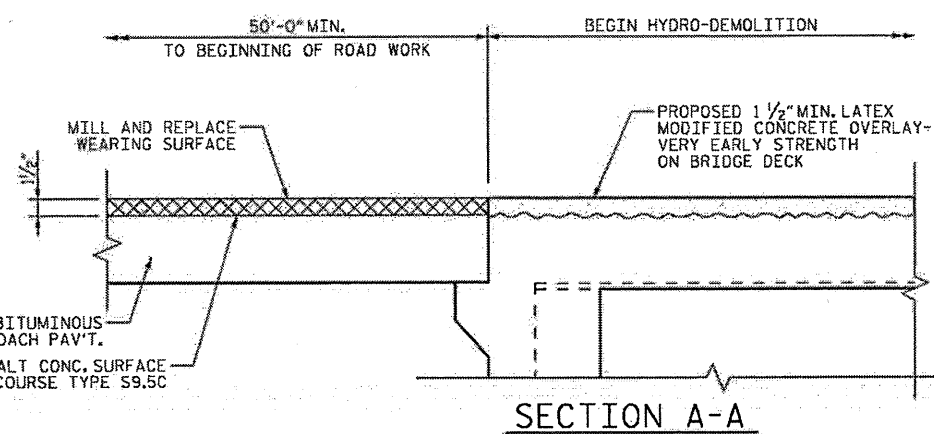
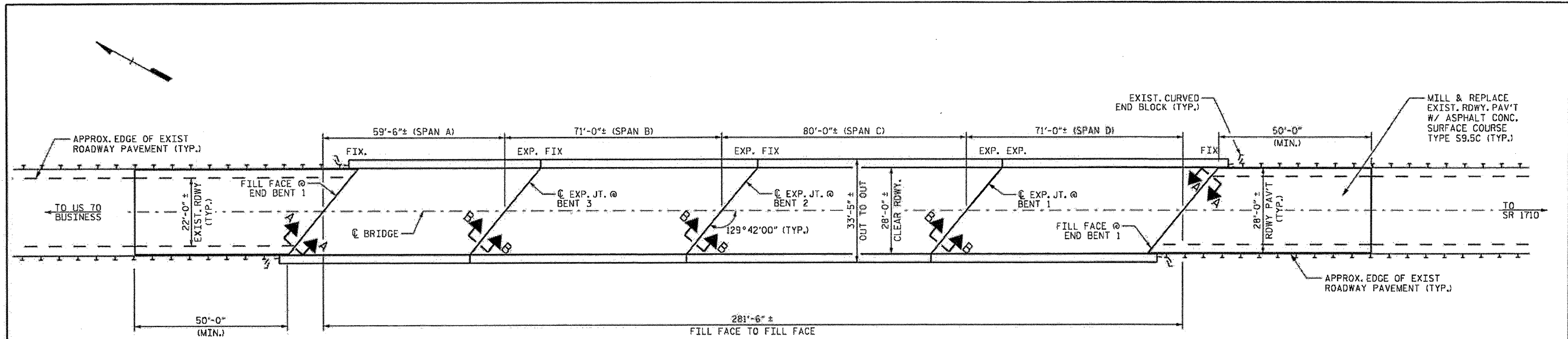
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1			3	
2			4	

TOTAL SHEETS: 83

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 License No. F-0972

DRAWN BY: P. Z. ARMATA DATE: 1/12  
 CHECKED BY: J. T. KELVINGTON DATE: 1/12

WBS 17BP.7.P.2 Alterance-Orange Co. Bridge 055 Drawing WBS 17BP.7.P.2-001.dgn 3/1/2012 2:49:37 PM jhenkel@cs



**TYPICAL SECTION**

- APPROACH ROADWAY
- \* TIE EXISTING CROSS-SLOPE TO MATCH BRIDGE SLOPE.
- (E) EXISTING ROADWAY PAVEMENT
  - (B) 6" ASPHALT CONCRETE BASE COURSE TYPE B25.0C
  - (S) 1 1/2" MIN. ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C
  - (G) REMOVE AND RESET EXISTING GUARDRAIL AS REQ'D. TO CONST. SHOULDERS

NOTES:

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK WITH LATEX MODIFIED CON

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

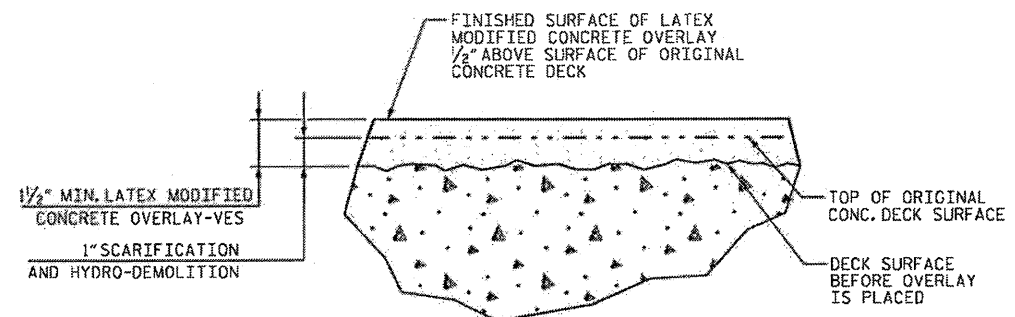
THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.

THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-56.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH.

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

FOR SECTION B-B, SEE SHEET NO. S-60.



**DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY**

PROJECT NO. WBS 17BP.7.P.2

ORANGE COUNTY

STATION: \_\_\_\_\_

*John J. Kelvington*

3/1/2012

SEAL 13406

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**PLAN OF BRIDGE**

**DECK REHAB. FOR BRIDGE NO. 59**

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

TOTAL SHEETS: 83

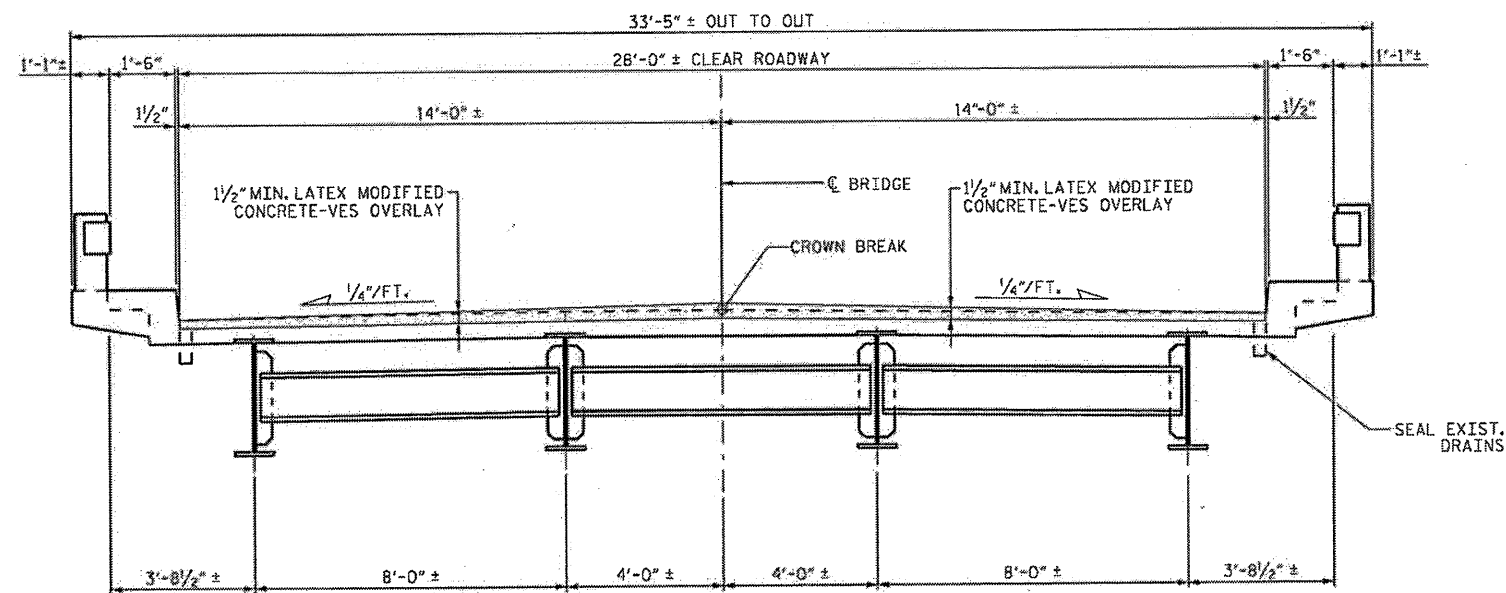
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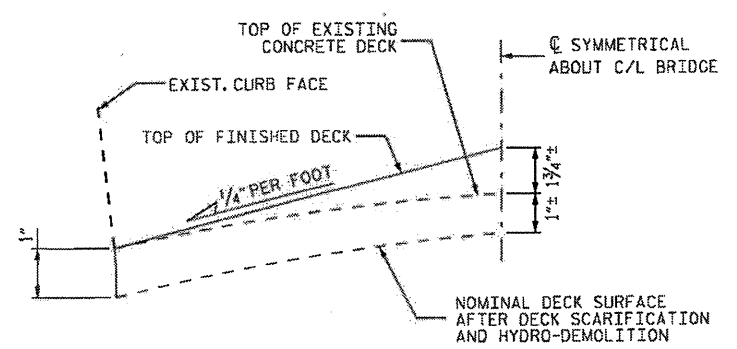
DRAWN BY : P. Z. ARMATA DATE : 1/12

CHECKED BY : J. T. KELVINGTON DATE : 1/12

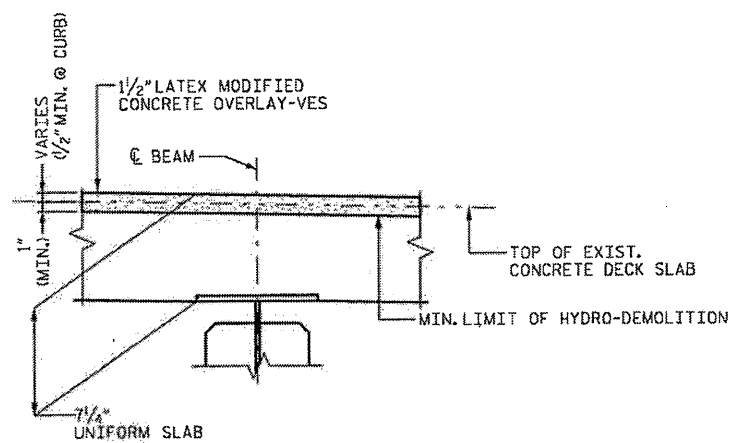
2011WBS 17BP.7.P.2 Alterance-Orange Co. Orange Bridge CS3-Drawing BR59\_TypSection.dgn 2/1/2012 12:28:07 PM jhenriques



**TYPICAL SECTION**  
SPANS A-D



**BRIDGE CROSS SLOPE SCHEMATIC FOR DECK OVERLAY**



**EXIST. SLAB DETAIL**

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

**NOTES:**

\*VES\* DENOTES VERY EARLY STRENGTH  
 WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.  
 FOR TRAFFIC CONTROL AND PHASING DETAILS, SEE TRAFFIC MANAGEMENT PLANS.

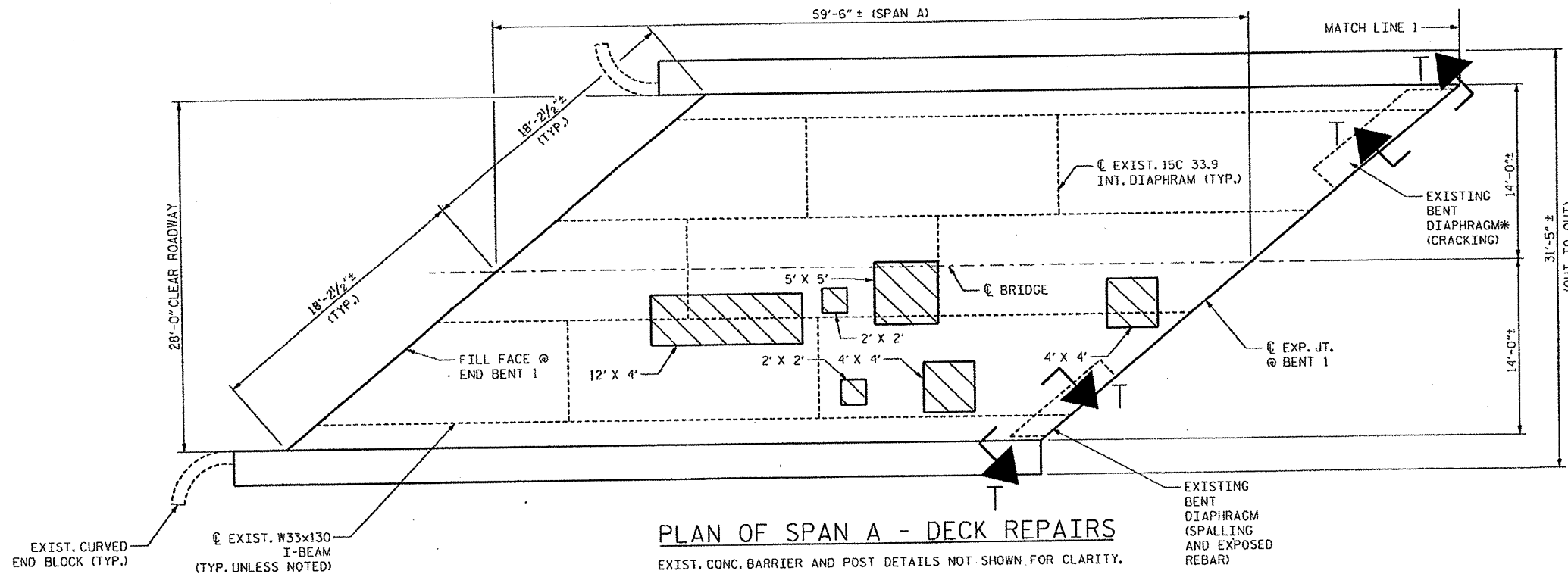
*Handwritten signature and date: J. T. Kelvington 2/1/2012*

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**TYPICAL SECTION**  
**DECK REHAB. FOR BRIDGE NO. 59**

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-55
1			3			TOTAL SHEETS
2			4			83

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 Fax. (919) 861-7024  
 www.stantec.com  
 License No. F-0972

DRAWN BY : P. Z. ARMATA DATE : 1/12  
 CHECKED BY : J. T. KELVINGTON DATE : 1/12



**PLAN OF SPAN A - DECK REPAIRS**

EXIST. CONC. BARRIER AND POST DETAILS NOT SHOWN FOR CLARITY.

**NOTES:**

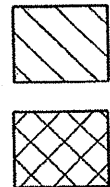
CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

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

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

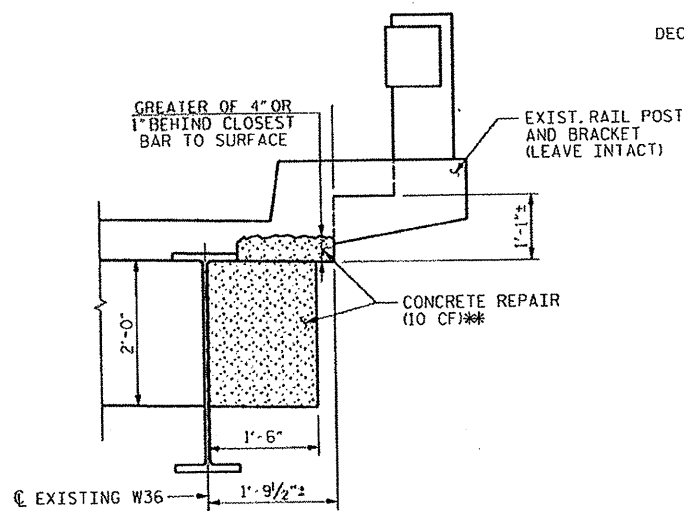
CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.



CLASS II SURFACE PREPARATION

CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA ALONG @ BRIDGE X WIDTH OF AREA NORMAL TO @ BRIDGE



**SECTION T-T**

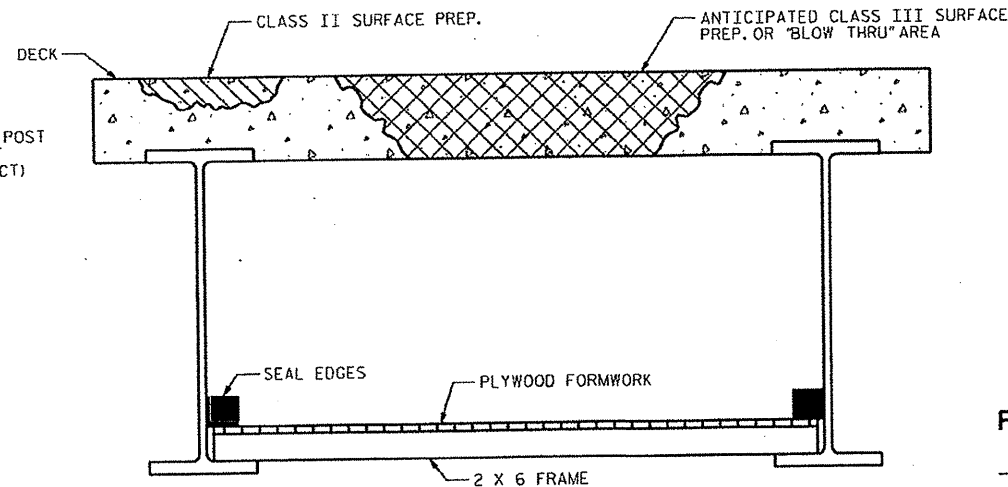
\* WORK REPAIRS WITH SECTION S-S (SPAN B)

REMOVE ALL EXISTING UNSOUND CONCRETE TO APPROX. LIMITS SHOWN OR AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL EXERCISE CARE TO ENSURE NO EXISTING REINF. STEEL IS CUT.

ALL EXISTING REINF. STEEL SHALL BE CLEANED AND REPAIRED AS DIRECTED BY THE ENGINEER.

\*\* REPLACE ALL CONCRETE REMOVED TO MATCH EXISTING CONCRETE SURFACES



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

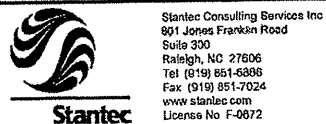
ESTIMATED QUANTITIES  
SHOTCRETE REPAIR = 20 C.F.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**DECK REPAIR DETAILS  
SPAN A**  
**DECK REHAB. FOR BRIDGE NO. 59**

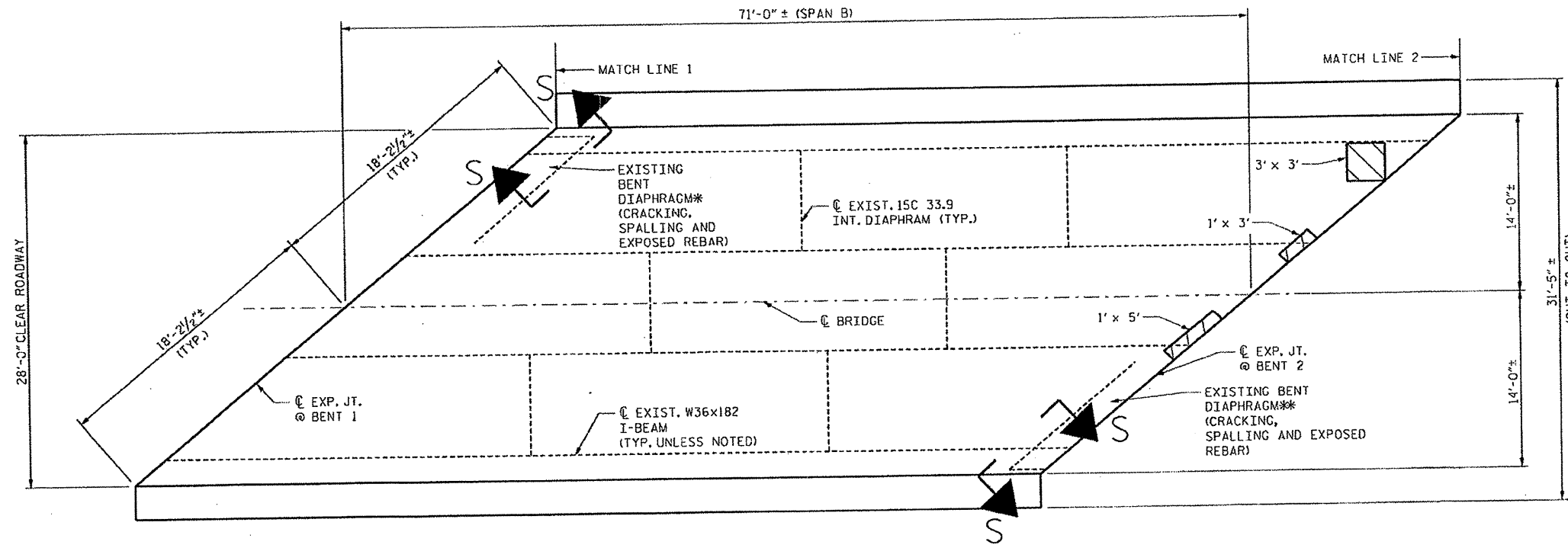
REVISIONS						SHEET NO. S-56
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

12:20:31 PM 2/23/2012 C:\V\Orange Co\Orange Bridge\_059\Drawings\BPS3-Repair\Plan-A.dwg



DRAWN BY: P Z ARMATA DATE: 1/12  
CHECKED BY: J T KELVINGTON DATE: 1/12

*Joseph J. Kelvington*  
Professional Engineer  
No. 1703  
Exp. 12/31/2012

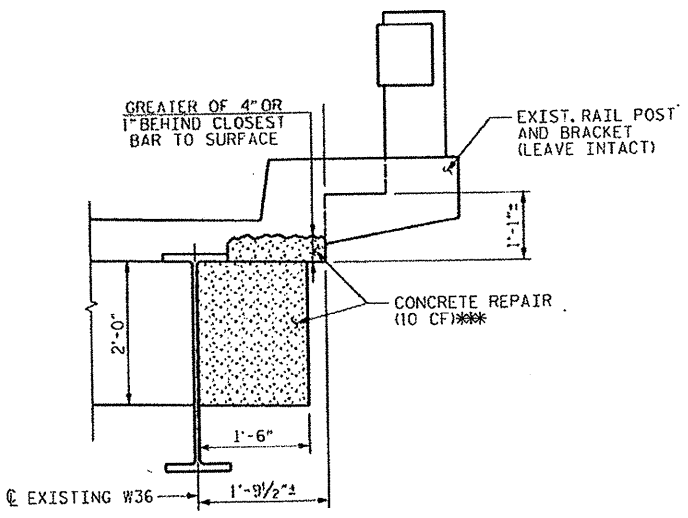


**PLAN OF SPAN B - DECK REPAIRS**

EXIST. CONC. BARRIER AND POST DETAILS NOT SHOWN FOR CLARITY.

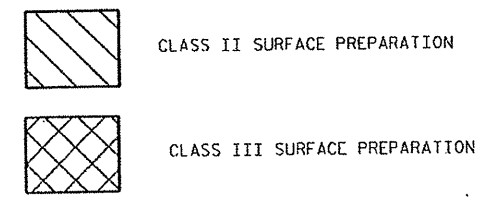
**NOTES:**

- CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.
- A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.
- SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.
- COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.
- CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.



**SECTION S-S**

- \* WORK REPAIRS WITH SECTION T-T (SPAN A)
- \* WORK REPAIRS WITH SECTION R-R (SPAN C)
- REMOVE ALL EXISTING UNSOUND CONCRETE TO APPROX. LIMITS SHOWN OR AS DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL EXERCISE CARE TO ENSURE NO EXISTING REINF. STEEL IS CUT.
- ALL EXISTING REINF. STEEL SHALL BE CLEANED AND REPAIRED AS DIRECTED BY THE ENGINEER.
- \*\* REPLACE ALL CONCRETE REMOVED TO MATCH EXISTING CONCRETE SURFACES



L' X W' = LENGTH OF AREA ALONG @ BRIDGE X WIDTH OF AREA NORMAL TO @ BRIDGE  
ESTIMATED QUANTITIES  
SHOTCRETE REPAIR = 20 C.F.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**DECK REPAIR DETAILS  
SPAN B**

DECK REHAB. FOR BRIDGE NO. 59

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-57
1			3			TOTAL SHEETS
2			4			85

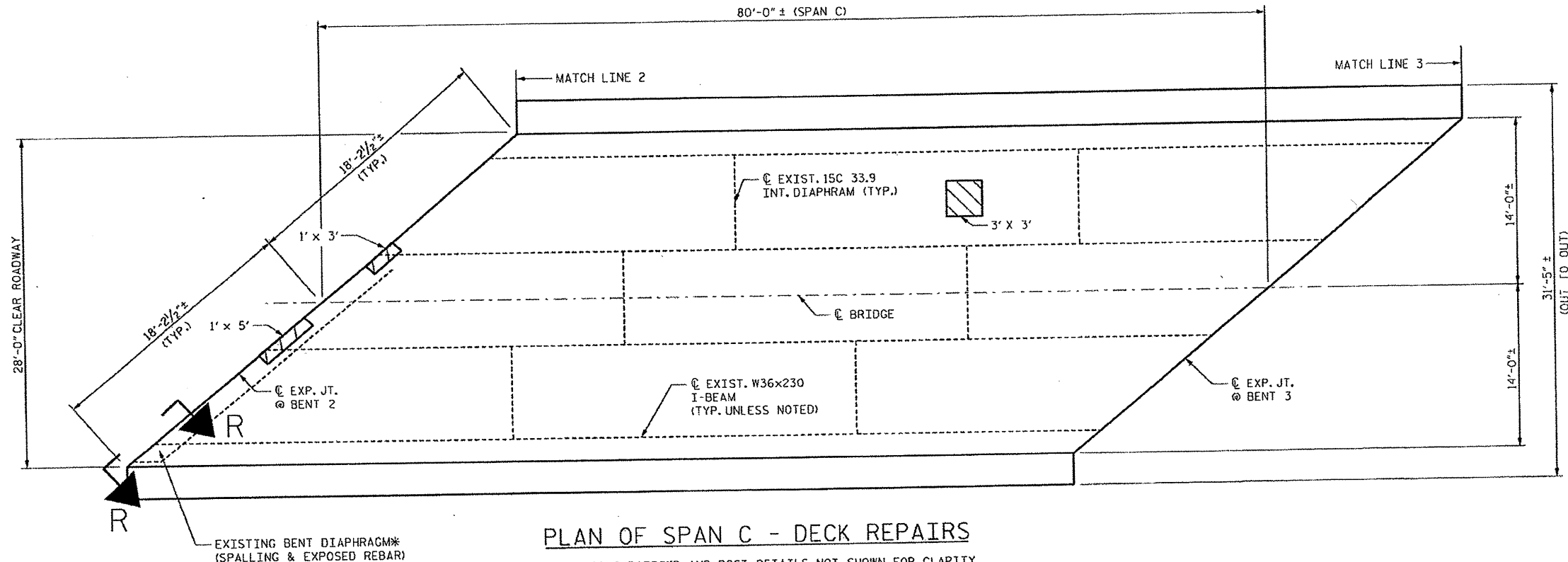
*Joseph King*  
2/23/2012  
Professional Engineer Seal

17BP.7.P.2 - A - amencana-orance-coverage-bridge-3551-drawing-17BP.7.P.2-repair-plan-2.dwg 2/23/2012 12:20:12 PM dicator

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www.stanec.com  
License No. F-0972

DRAWN BY: P. Z. ARMATA DATE: 1/12  
CHECKED BY: J. T. KELVINGTON DATE: 1/12





**PLAN OF SPAN C - DECK REPAIRS**

EXIST. CONC. BARRIER AND POST DETAILS NOT SHOWN FOR CLARITY.

**NOTES:**

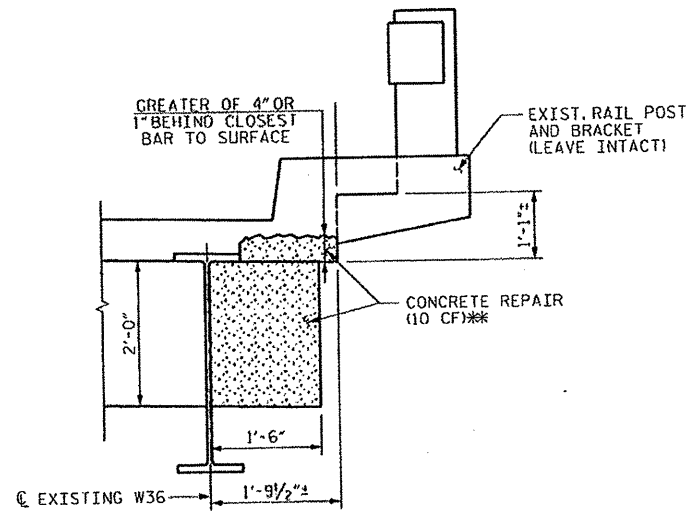
CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

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

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.



**SECTION R-R**

\* WORK REPAIRS WITH SECTION S-S (SPAN B)

REMOVE ALL EXISTING UNSOUND CONCRETE TO APPROX. LIMITS SHOWN OR AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL EXERCISE CARE TO ENSURE NO EXISTING REINF. STEEL IS CUT.

ALL EXISTING REINF. STEEL SHALL BE CLEANED AND REPAIRED AS DIRECTED BY THE ENGINEER.

\*\* REPLACE ALL CONCRETE REMOVED TO MATCH EXISTING CONCRETE SURFACES



CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

L' X W' = LENGTH OF AREA ALONG @ BRIDGE X WIDTH OF AREA NORMAL TO @ BRIDGE

ESTIMATED QUANTITIES  
SHOTCRETE REPAIR = 10 C.F.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

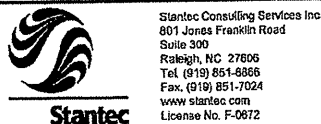
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

DECK REPAIR DETAILS  
SPAN C

DECK REHAB. FOR BRIDGE NO. 59

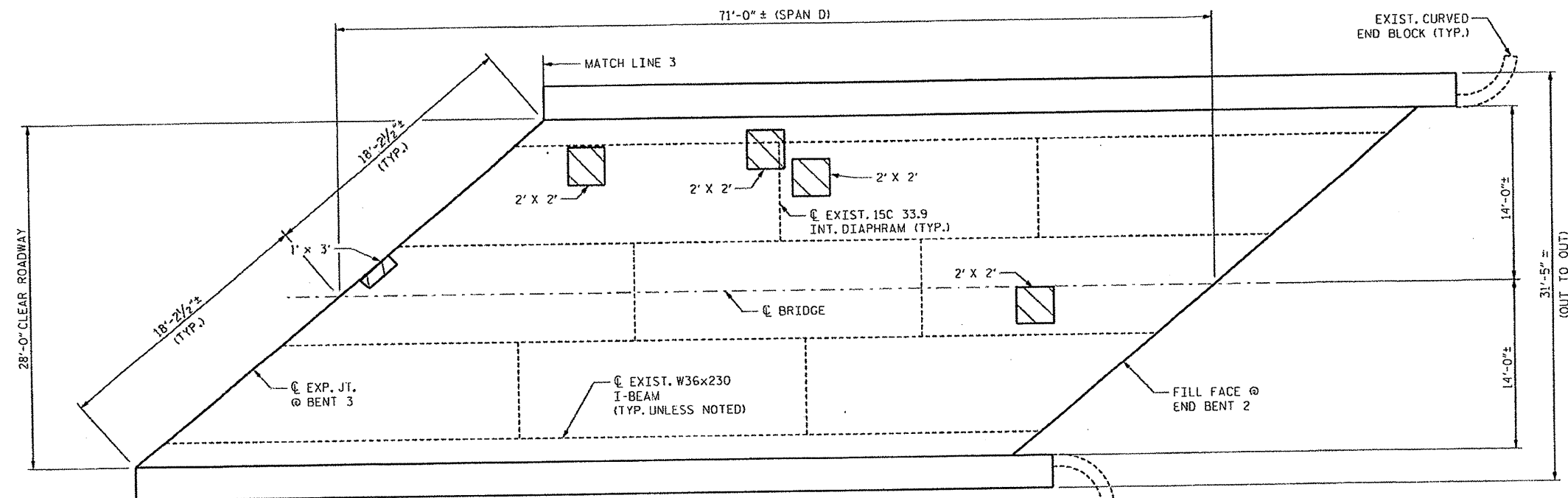
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-58
1			3			TOTAL SHEETS
2			4			83

*Joseph L. Kelvington*  
13406  
ENGINEER



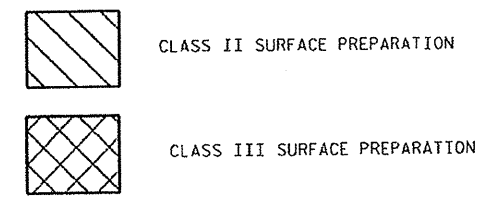
DRAWN BY : P. Z. ARMATA DATE : 1/12  
CHECKED BY : J. T. KELVINGTON DATE : 1/12

17BP.7.P.2, Alamance-Orange Co, Orange B-1, cdp, 055A, D-cw, ing, BPS9, RepairPlan2, c, dgn, 2/23/2012 12:20:42 PM, B161 on



**PLAN OF SPAN D - DECK REPAIRS**

EXIST. CONC. BARRIER AND POST DETAILS NOT SHOWN FOR CLARITY.



L' X W' = LENGTH OF AREA ALONG C BRIDGE X WIDTH OF AREA NORMAL TO C BRIDGE

**NOTES:**

- CONTRACTOR SHALL FURNISH FORM WORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.
- 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.
- COSIS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YARD OF HYDRO-DEMOLITION.
- CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN D**

**DECK REHAB. FOR BRIDGE NO. 59**

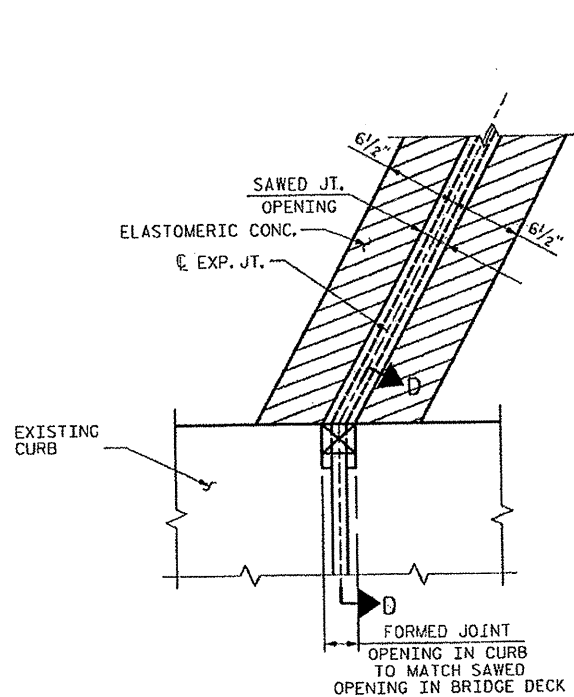
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-59
2			4			83

*Joseph Kelvington*  
 1/12/2012  
 ENGINEER  
 13406

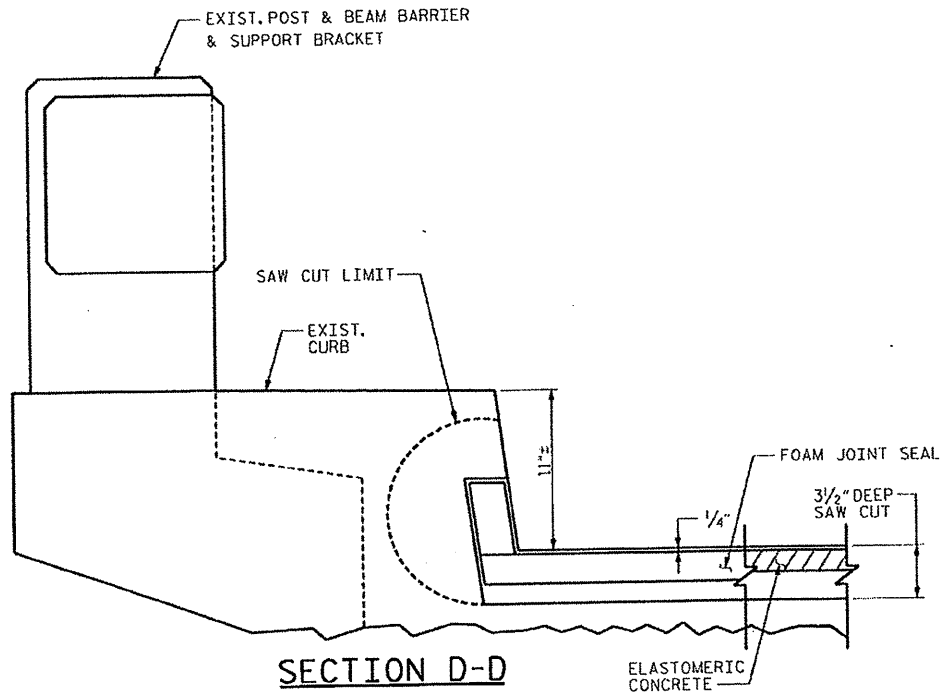
17BP\_7.P.2\_Altmanace-Durmitga Co.Orange Bridges 052012-cwings\BPS9\_RepairPlan4.D.dwg 2/23/2012 12:25:13 pm p1oran

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 Tel (919) 851-8866  
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 www.stantec.com  
 License No. F-0672

DRAWN BY : P Z ARMATA DATE : 1/12  
 CHECKED BY : J T KELVINGTON DATE : 1/12



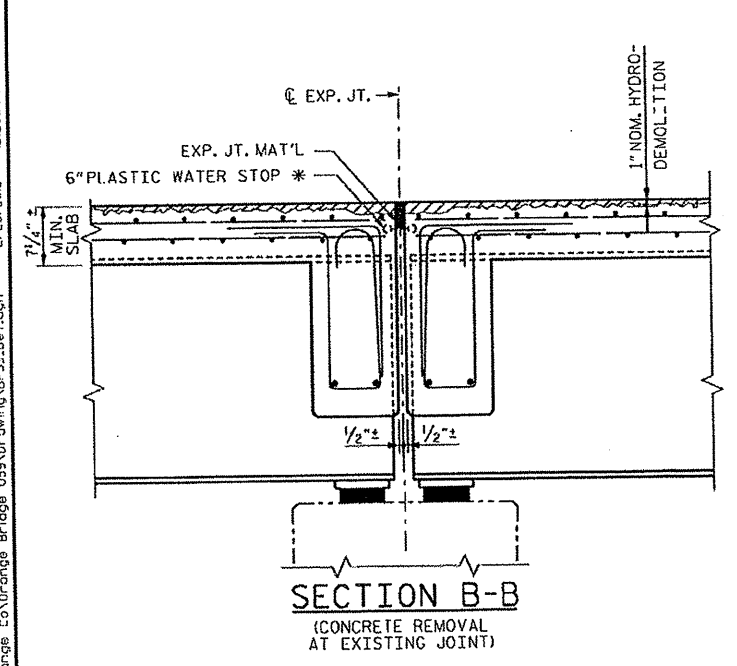
**PARTIAL PLAN @ JOINT**  
(TYP. @ BENTS 1-4)



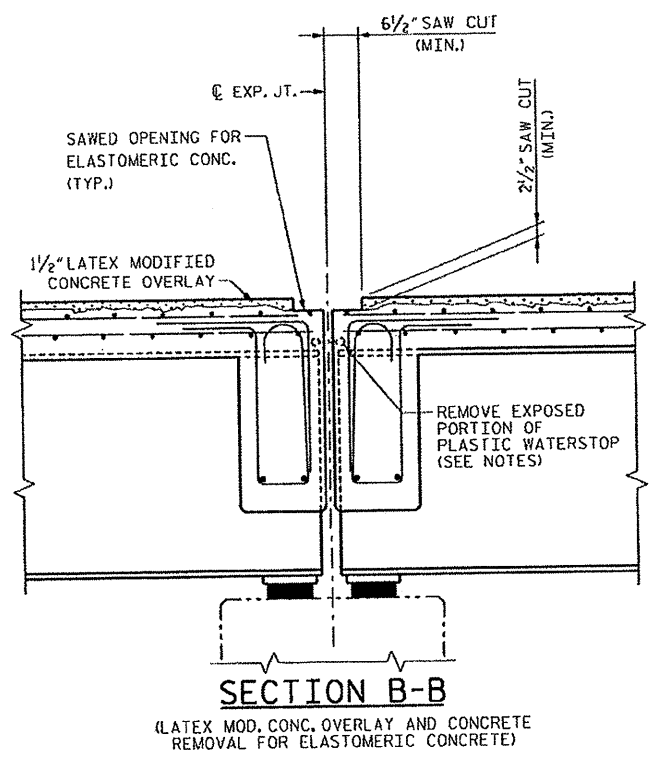
CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	7.6 C.F.
BENT 2	7.6 C.F.
BENT 3	7.6 C.F.

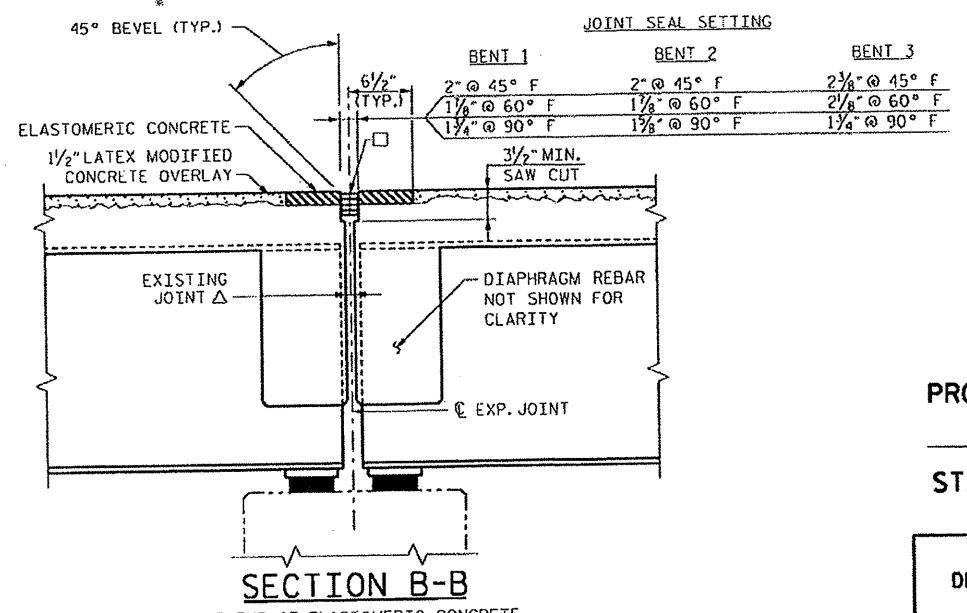
TOTAL ELASTOMERIC CONC. = 22.8 C.F.  
TOTAL ELASTOMERIC CONC. = 0.84 C.Y.



**SECTION B-B**  
(CONCRETE REMOVAL AT EXISTING JOINT)



**SECTION B-B**  
(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION B-B**  
(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

JOINT SEAL SETTING

	BENT 1	BENT 2	BENT 3
2" @ 45° F	2" @ 45° F	2 3/8" @ 45° F	
1 1/8" @ 60° F	1 1/8" @ 60° F	2 1/8" @ 60° F	
1 1/4" @ 90° F	1 1/8" @ 90° F	1 3/4" @ 90° F	

NOTE: FOR FOAM JOINT SEAL, SEE SPECIAL PROVISIONS.  
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.  
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.  
 USE 2.8125" x 2.50" UNCOMPRESSED SEAL @ BENTS 1, 2 & 3.  
 1" EXIST. JOINT OPENING @ BENTS 1, 2 & 3.

*John T. Kelvington*  
Professional Engineer  
No. 128404  
State of North Carolina

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**EXPANSION JOINT DETAILS**

DECK REHAB. FOR BRIDGE NO. 59

REVISIONS						SHEET NO. S-60
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			2			TOTAL SHEETS 83
2			3			

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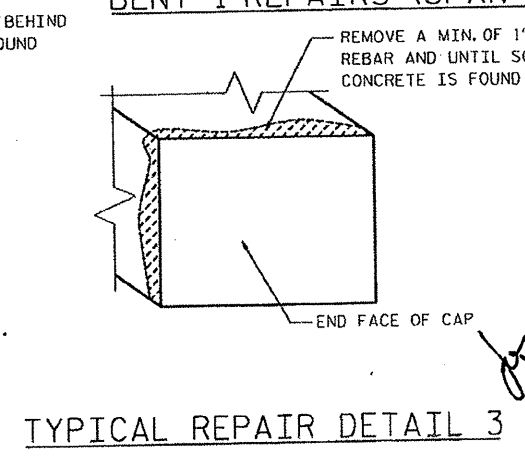
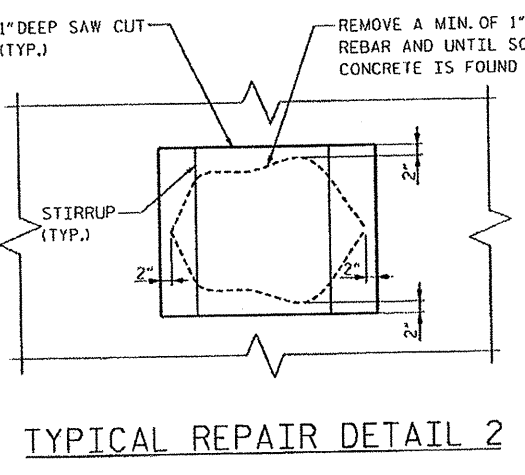
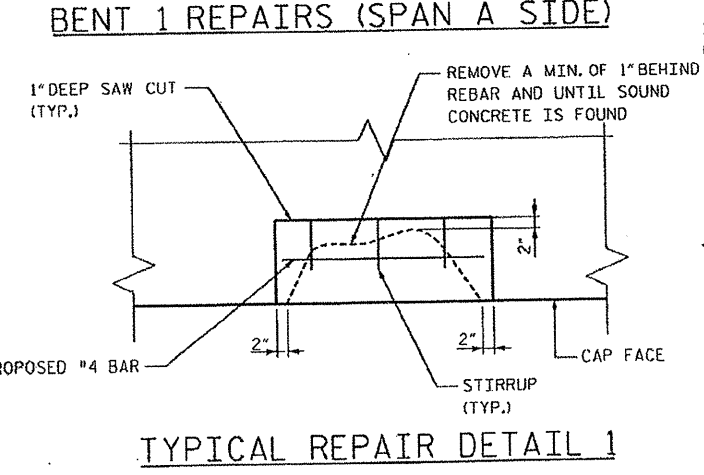
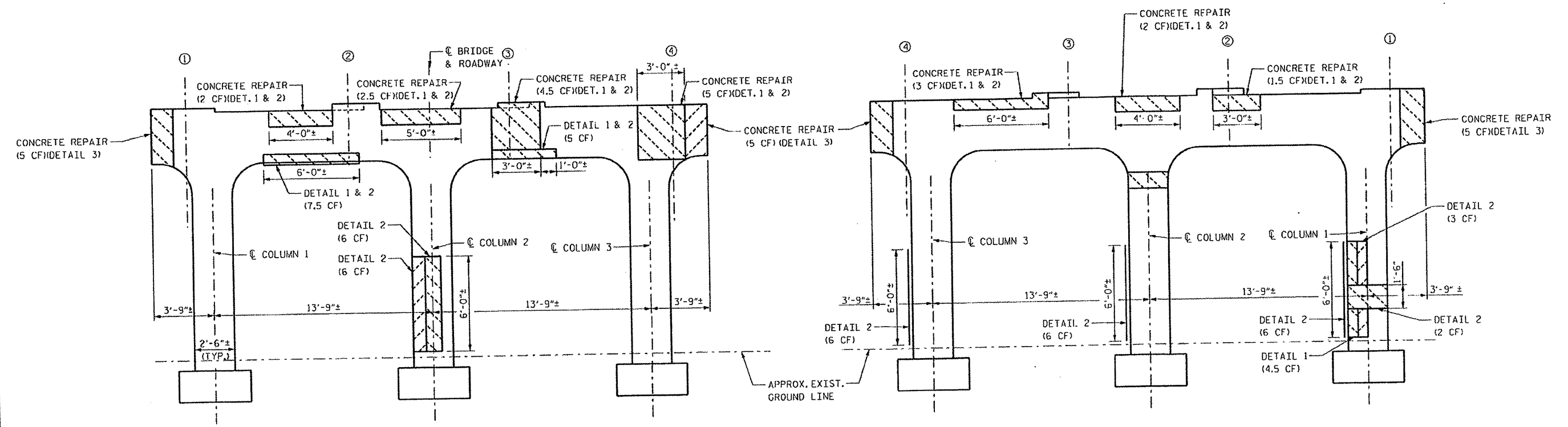
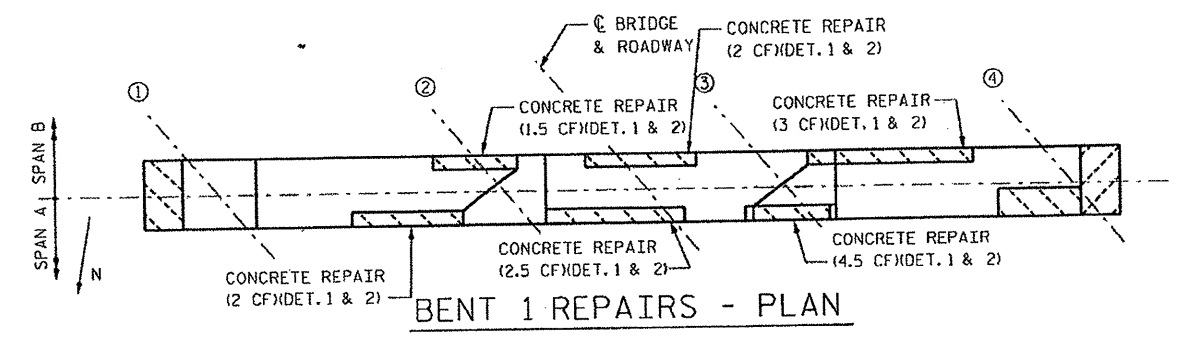
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901 Jonas Franklin Road  
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Raleigh, NC 27606  
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Fax (919) 851-7024  
www.stanlec.com  
License No. F-0872

DRAWN BY: P. Z. ARMATA DATE: 1/12  
CHECKED BY: J. T. KELVINGTON DATE: 1/12

\* FROM BEST AVAILABLE INFORMATION.  
NOTE: RETAIN ALL EXIST. REINF. STEEL, CLEAN AND REPAIR AS REQ'D.  
ALL EXPOSED EXISTING JOINT SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.

TOTAL ESTIMATED QUANTITIES:  
 CONCRETE REPAIR = 25.5 CF  
 SHOTCRETE REPAIR = 51 CF

NOTES:  
 REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.  
 ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.  
 AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION. JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.  
 THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS.  
 BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 5/8 INCH GAP TO ALLOW FOR JACKING.  
 JACK ALL GIRDERS SIMULTANEOUSLY THE SAME AMOUNT AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.  
 IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED.  
 EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.  
 PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.  
 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE CALCULATED LOADING PER AASHTO SPECIFICATIONS.



PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE REPAIRS  
 BENT 1

DECK REHAB. FOR BRIDGE NO. 59

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-61	
1			3			TOTAL SHEETS	
2			4			83	

S:\17BP.7.P.2 Alameda-Orange Co.\Orange Bridge\_059\Drawings\BP59\_RepairBent1.dgn 2/23/2012 12:20:55 PM blaton

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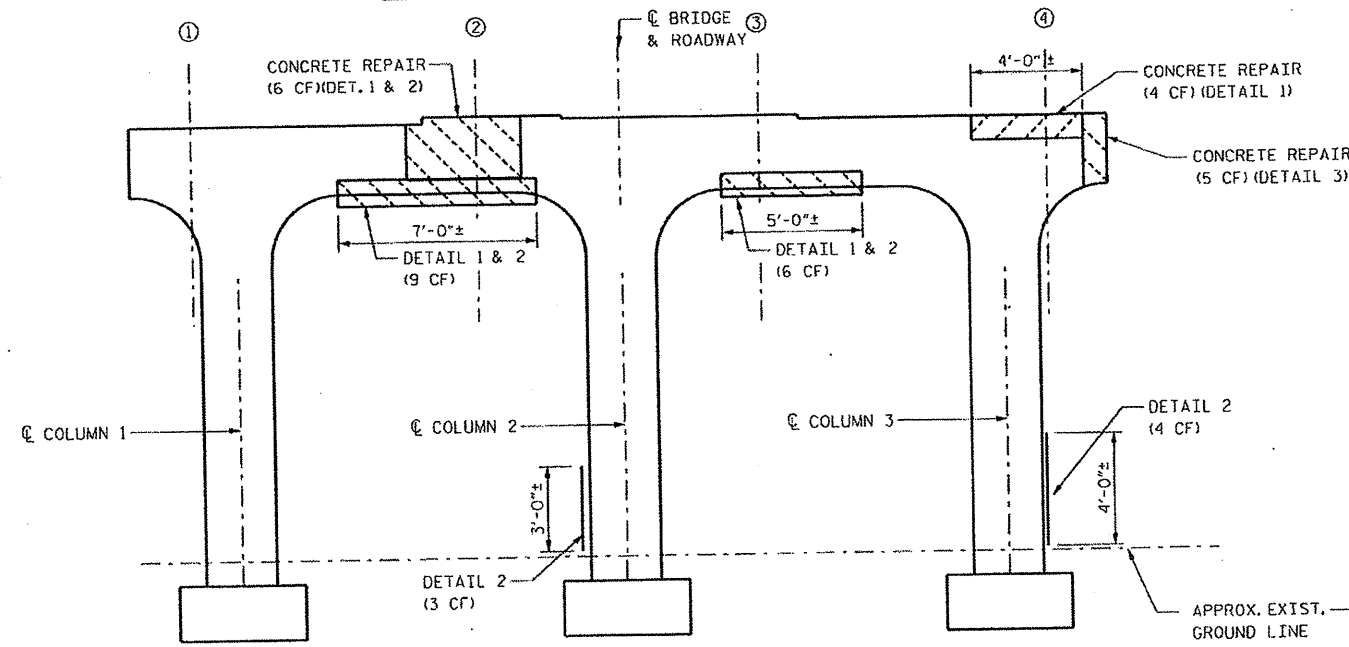
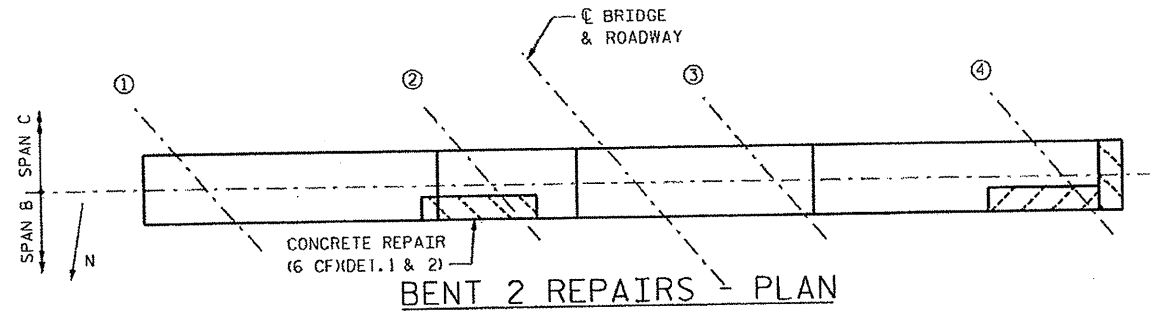
DRAWN BY: P. Z. ARMATA DATE: 1/12  
 CHECKED BY: J. T. KELVINGTON DATE: 1/12

TOTAL ESTIMATED QUANTITIES:

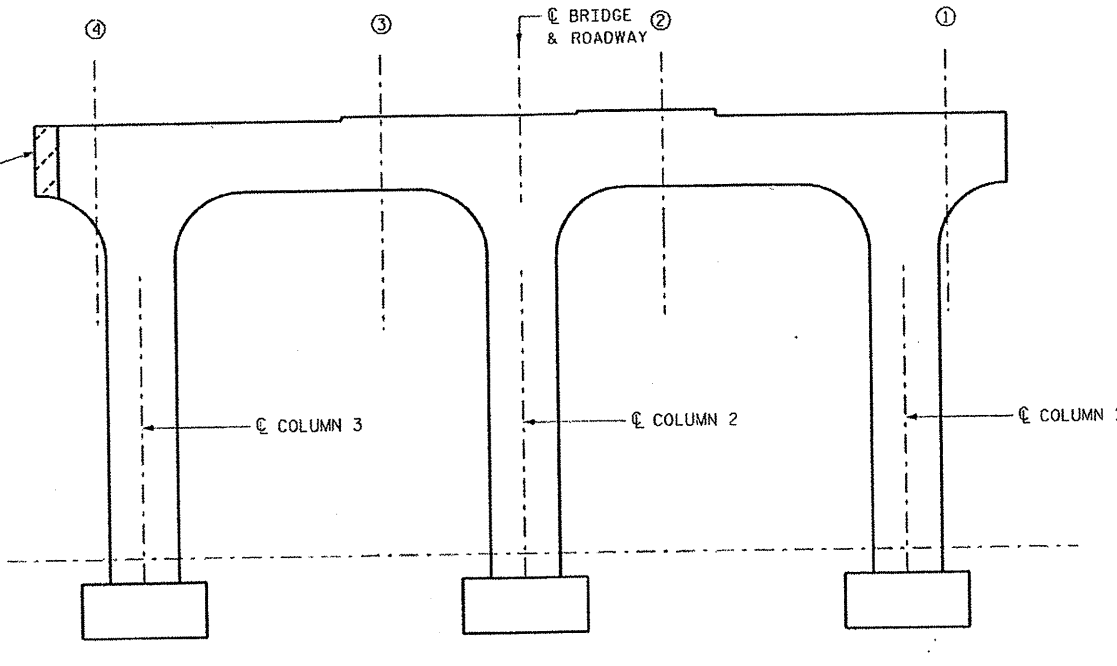
CONCRETE REPAIR = 10 CF  
 SHOTCRETE REPAIR = 27 CF

NOTES:

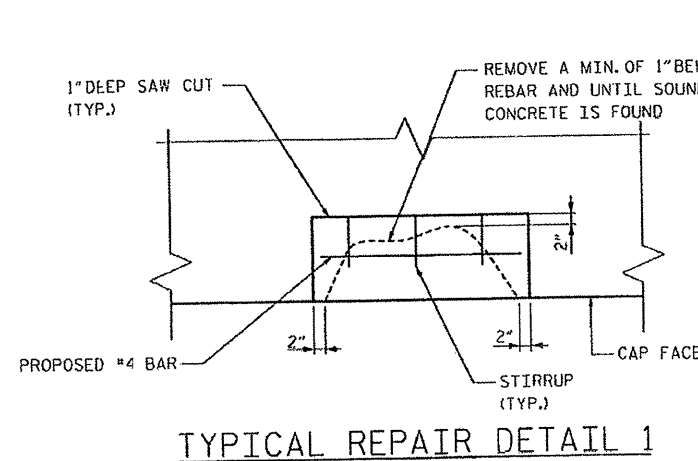
REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.  
 ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.  
 AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION. JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.  
 THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS.  
 BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 59/64 INCH GAP TO ALLOW FOR JACKING.  
 JACK ALL GIRDERS SIMULTANEOUSLY THE SAME AMOUNT AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.  
 IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED.  
 EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.  
 PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.  
 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE CALCULATED LOADING PER AASHTO SPECIFICATIONS.



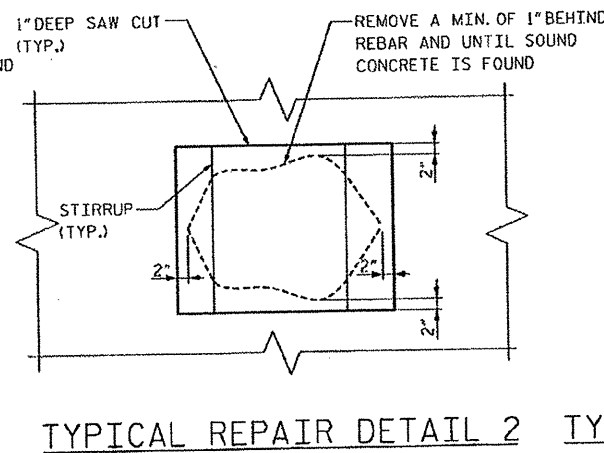
NORTH FACE  
 BENT 2 REPAIRS (SPAN B SIDE)



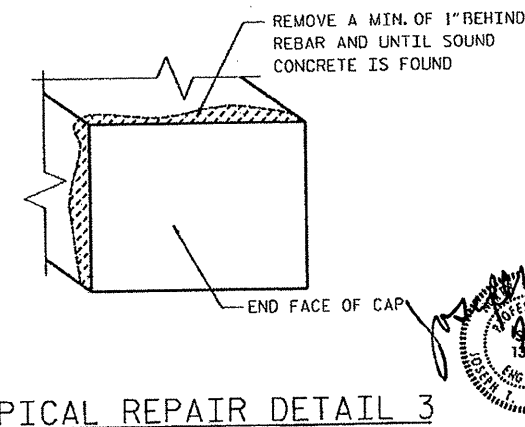
SOUTH FACE  
 BENT 2 REPAIRS (SPAN C SIDE)



TYPICAL REPAIR DETAIL 1



TYPICAL REPAIR DETAIL 2



TYPICAL REPAIR DETAIL 3

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE REPAIRS BENT 2					
DECK REHAB. FOR BRIDGE NO. 59					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-62
TOTAL SHEETS					83

*John A. King*  
 1/12/12  
 13446  
 ENGINEER  
 DESIGN & KEYSTONE

17BP.7.P.2 Almonce-Orange Co\Orange Bridge c99\drawing\BPS9\_RepairBent2.dgn 2/23/2012 12:20:46 PM b1aton

**Stantec**  
 Stantec Consulting Services Inc  
 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel: (919) 851-8888  
 Fax: (919) 851-7024  
 www.stantec.com  
 License No. F-0872

DRAWN BY: P. Z. ARMATA DATE: 1/12  
 CHECKED BY: J. T. KELVINGTON DATE: 1/12

TOTAL ESTIMATED QUANTITIES:

CONCRETE REPAIR = 11 CF  
 SHOTCRETE REPAIR = 27 CF

NOTES:

REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.

ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.

AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION. JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.

THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS. BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 59/64 INCH GAP TO ALLOW FOR JACKING.

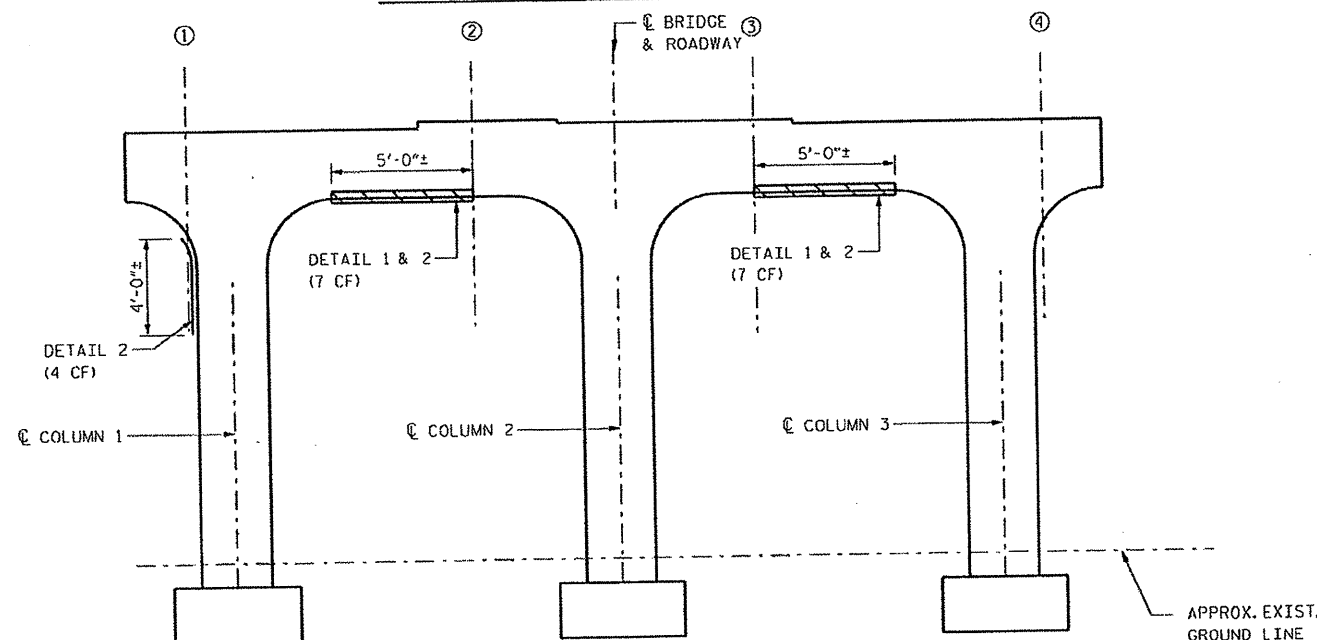
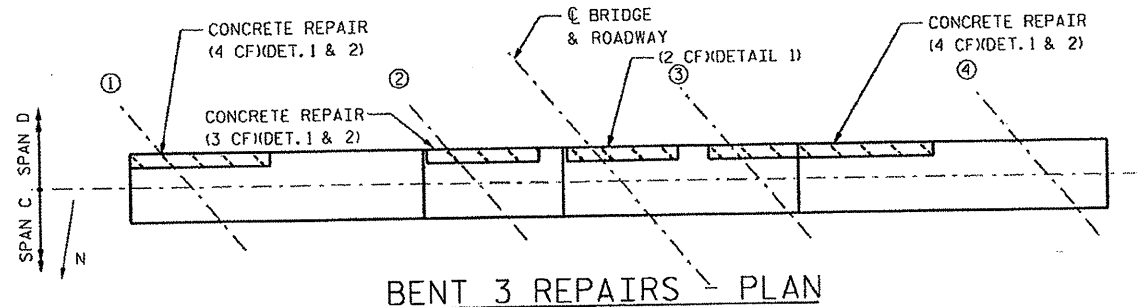
JACK ALL GIRDERS SIMULTANEOUSLY THE SAME AMOUNT AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.

IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED.

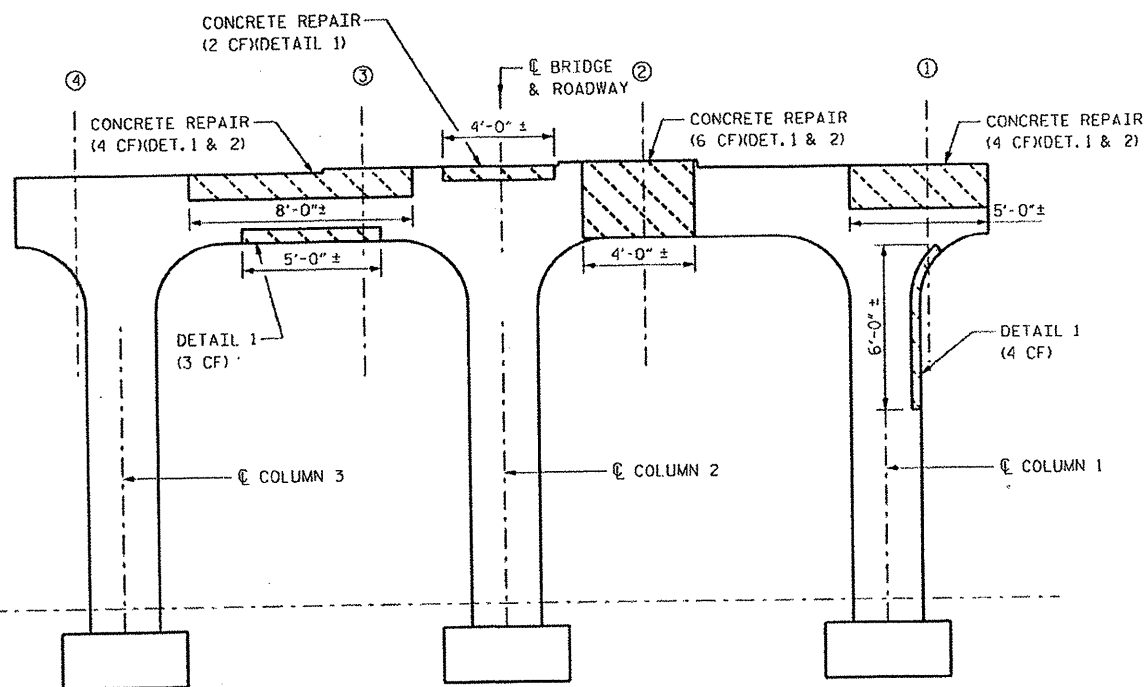
EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.

PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.

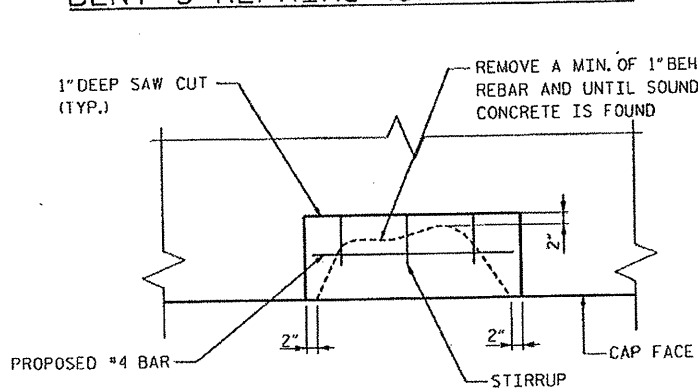
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE CALCULATED LOADING PER AASHTO SPECIFICATIONS.



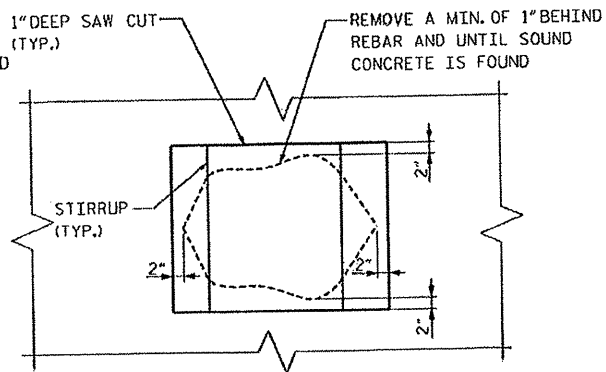
NORTH FACE  
 BENT 3 REPAIRS (SPAN C SIDE)



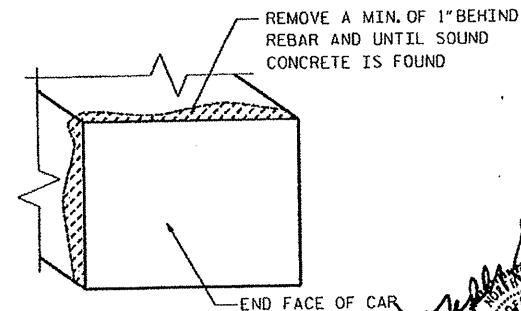
SOUTH FACE  
 BENT 3 REPAIRS (SPAN D SIDE)



TYPICAL REPAIR DETAIL 1



TYPICAL REPAIR DETAIL 2



TYPICAL REPAIR DETAIL 3

PROJECT NO. WBS 17BP.7.P.2

ORANGE COUNTY

STATION: \_\_\_\_\_

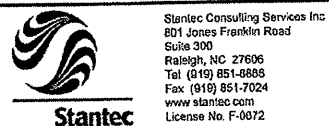
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE REPAIRS  
 BENT 3

DECK REHAB. FOR BRIDGE NO. 59

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			5-63
2			4			83

*John T. Kelvington*  
 1/12/2012  
 ENGINEER  
 5406



DRAWN BY: P. Z. ARMATA DATE: 1/12  
 CHECKED BY: J. T. KELVINGTON DATE: 1/12

17BP.7.P.2\_Altamonte-Orange\_Co\_Vicinity\_Bridge\_0593\_01.dwg 2/21/2012 12:20:17 PM bictor

NOTES:

REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.

ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.

AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION. JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.

THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS.

BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 5/8 INCH GAP TO ALLOW FOR JACKING.

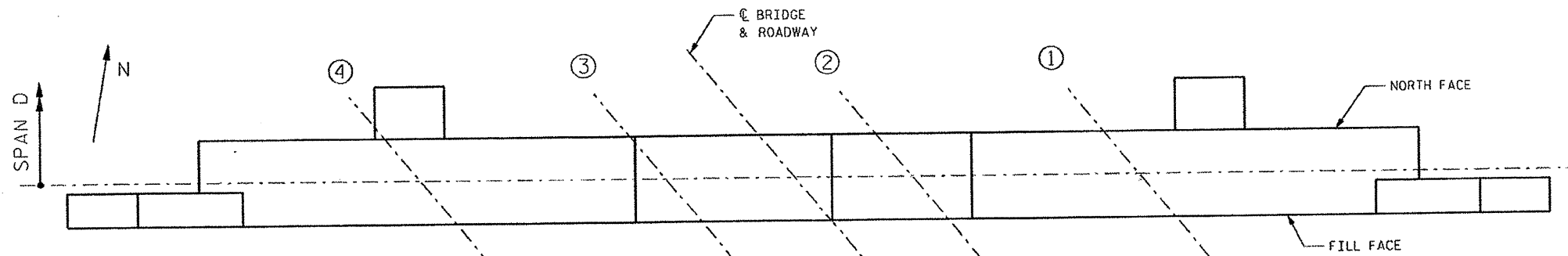
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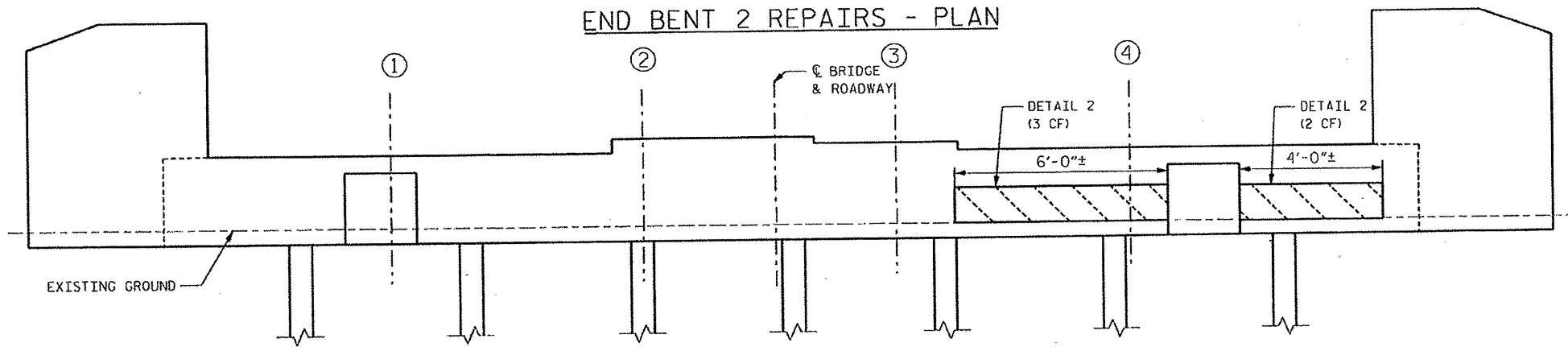
EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.

PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.

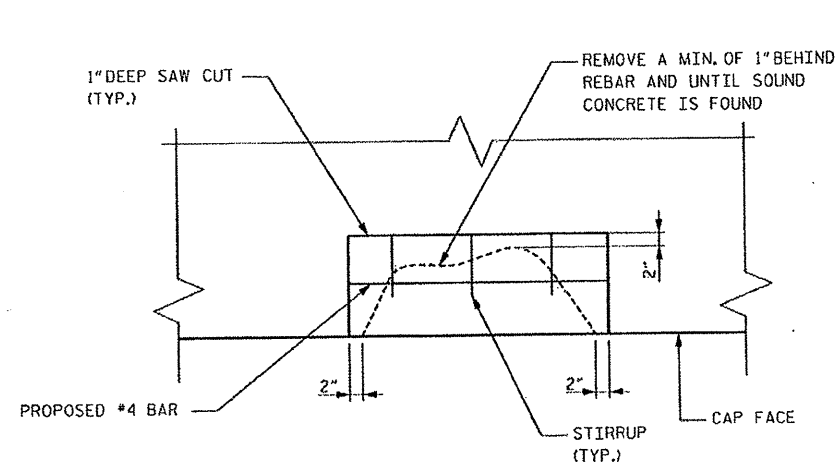
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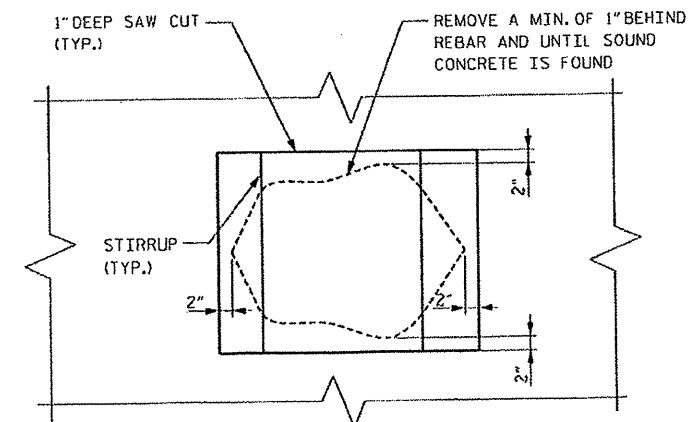
END BENT 2 REPAIRS - PLAN



NORTH FACE  
END BENT 2 REPAIRS (SPAN D SIDE)



TYPICAL REPAIR DETAIL 1



TYPICAL REPAIR DETAIL 2

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

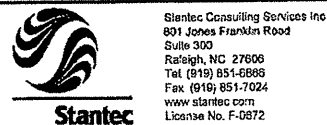
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE REPAIRS  
END BENT 2

DECK REHAB. FOR BRIDGE NO. 59

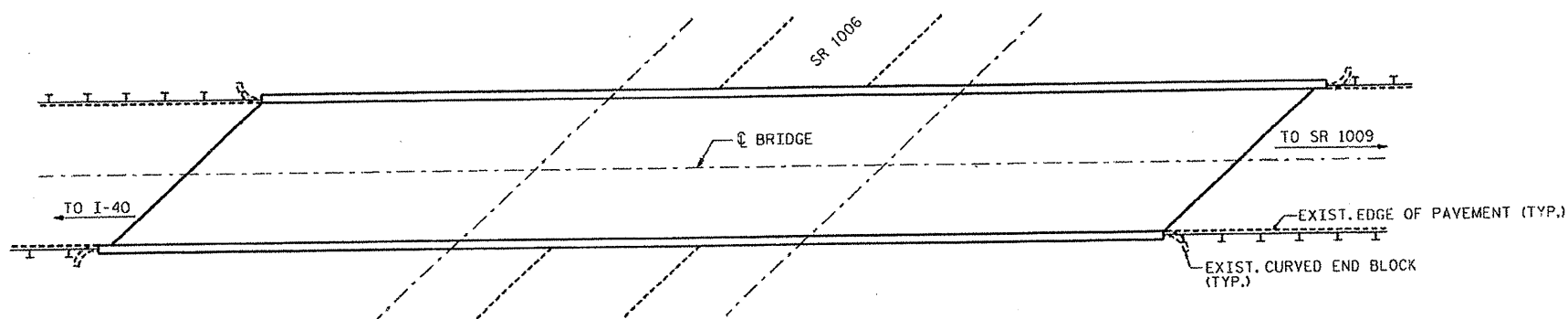
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 83

BP.1.P.2 Alamance-Orange Co\Orange Bridge 059\Drawing\BP59.RepairEndBent1.dgn 2/23/2012 12:20:18 PM bionon



DRAWN BY: C. B. BAKER DATE: 1/12  
CHECKED BY: J. I. KELVINGTON DATE: 1/12

*Joseph Kelvington*  
Professional Engineer  
No. 13542  
1/12/12



**BRIDGE 81 ON I-85 NORTH BOUND**

LOCATION: BRIDGE 670081, I-85 NORTH OVER SR 1006  
0.5 MI. SOUTH OF JCT. SR 1009

**NOTES:**  
EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

**BRIDGE 81 ON I-85 NORTH BOUND  
OVER SR 1006**

**TOTAL BILL OF MATERIAL**

SHOULDER RECONSTRUCTION	MILLING ASPHALT PAVEMENT, 4" DEPTH	INCIDENTAL MILLING	ASPHALT CONC. SURFACE COURSE TYPE S9.5C	REMOVE AND RESET EXISTING GUARDRAIL	SCARIFYING BRIDGE DECK	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	CLASS AA CONCRETE	CLASS III SURFACE PREPARATION	CLASS II SURFACE PREPARATION	CLASS I SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	CONCRETE REPAIRS	SHOTCRETE REPAIRS	SPAN JACKING ORANGE CO. BRIDGE 81
SHLDR.MI.	SO.YDS.	SO.YDS.	TONS	LIN. FT.	SO.YDS.	SO.YDS.	CU.YDS.	CU.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	SO.YDS.	LUMP SUM	SO.FT.	CU.FT.	CU.FT.	EA.
0.038	645.6	351	30	200	645.6	645.6	39.6	0	0	3.2	0	645.6	LUMP SUM	4,976	47	36	2

QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THIS ITEM SHALL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. **WBS 17BP.7.P.2**

**ORANGE** COUNTY

STATION: \_\_\_\_\_

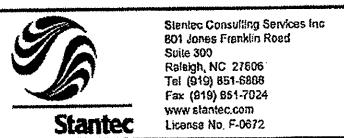
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

LOCATION SKETCH  
AND TOTAL  
BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 81

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-65
1			3			TOTAL SHEETS
2			4			83

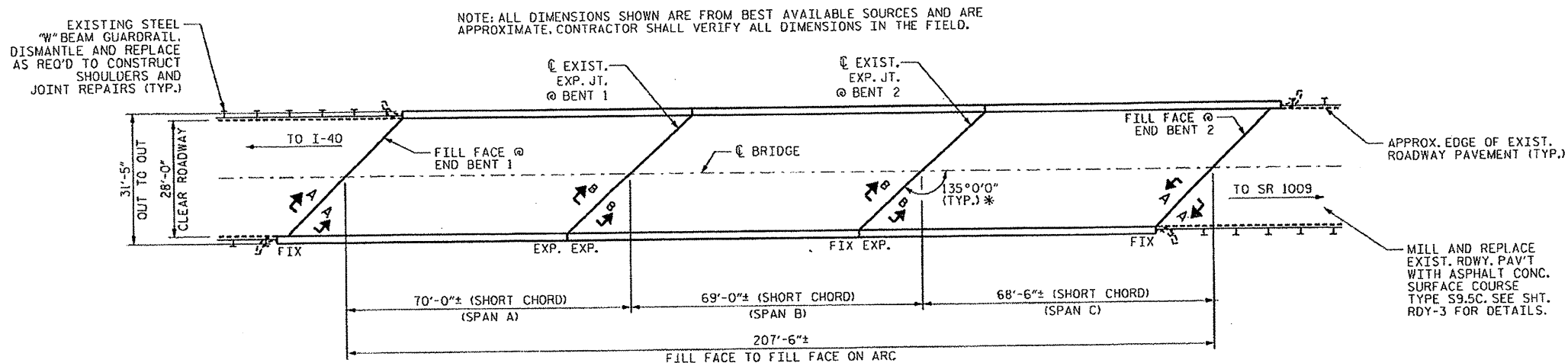
*John Kelvington*  
2/12/12  
Professional Engineer  
No. 13406  
State of North Carolina



DRAWN BY: **K. R. TYLER** DATE: **01/12**  
CHECKED BY: **J. T. KELVINGTON** DATE: **01/12**

2/23/2012 12:20:15 PM dleton  
J:\WBS\17BP.7.P.2\Attachment-Dr\mgp\Co\Dr\orange\Bridges\cbr\Drawings\B000115\_50M.dgn





**PLAN VIEW**

\* APPROXIMATE CHORD TO BENT ANGLE. ACTUAL ANGLES WILL VARY DUE TO CURVATURE OF ROADWAY.

NOTE: ALL HORIZONTAL DIMENSIONS SHOWN ARE ARC OR RADIAL DIMENSION WITH RESPECT TO BRIDGE.

RAIL POSTS AND BARRIER RAILS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

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

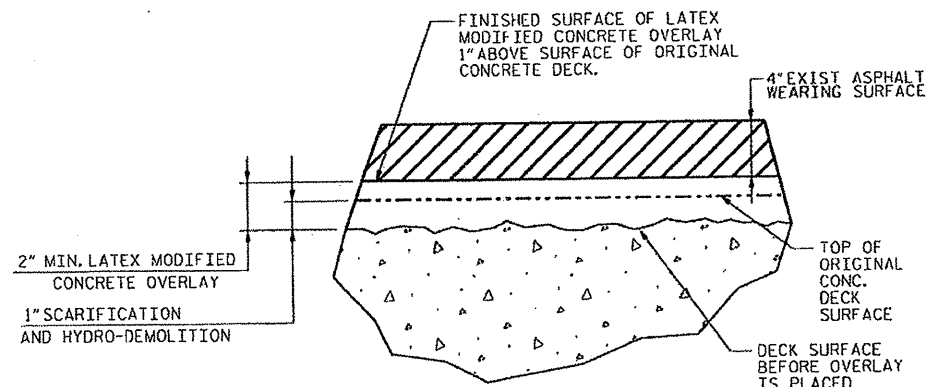
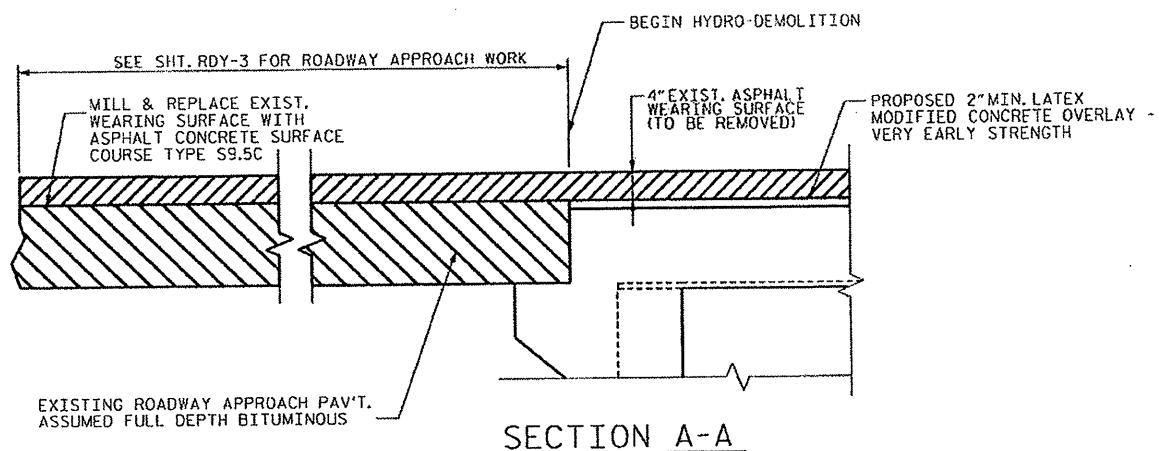
THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-68.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.

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

FOR SECTION B-B, SEE SHT. NO. S-71.

EXISTING BRIDGE HAS A 4" THICK ASPHALT WEARING SURFACE. THIS WEARING SURFACE SHALL BE REMOVED BY MILLING IN ITS ENTIRETY BEFORE DECK REHABILITATION BEGINS. COST FOR THIS WORK SHALL BE PAID FOR AS "MILLING ASPHALT PAVEMENT, 4" DEPTH." FOR ROADWAY DETAILS @ BRIDGE APPROACHES, SEE SHT. RDY-3.



PROJECT NO. **WBS 17BP.7.P.2**  
**ORANGE** COUNTY  
 STATION: \_\_\_\_\_

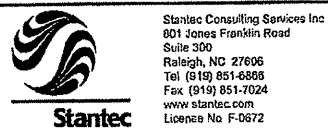
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF BRIDGE**

**DECK REHAB. FOR BRIDGE NO. 81**

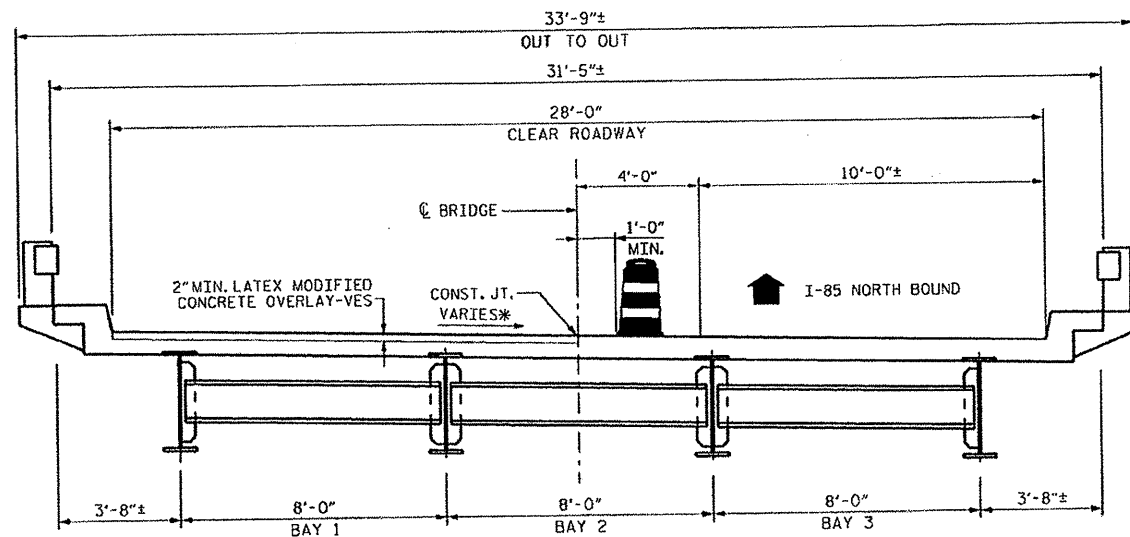
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-66
1			3			TOTAL SHEETS
2			4			83

*Joseph Kelvington*  
 01/12/2012  
 PROFESSIONAL ENGINEER  
 13406  
 KELVINGTON



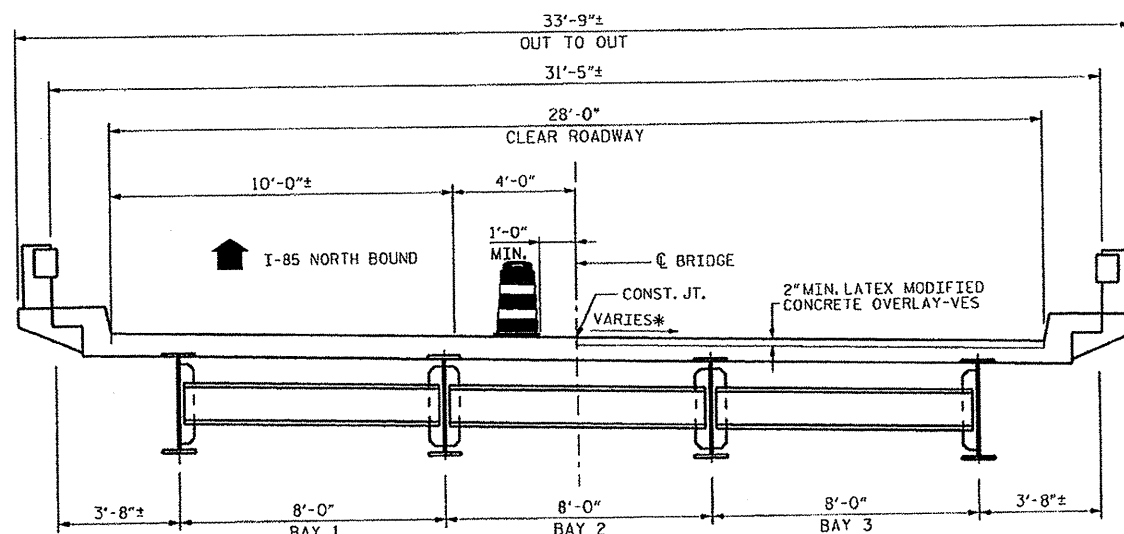
DRAWN BY: **K. R. TYLER** DATE: **01/12**  
 CHECKED BY: **J. I. KELVINGTON** DATE: **01/12**

WBS 17BP.7.P.2, Alamance-Orange Co. Orange Bridges DBA/Drawings/APP081\_DeckPlan.rvt 2/21/2012 12:20:20 PM bicton



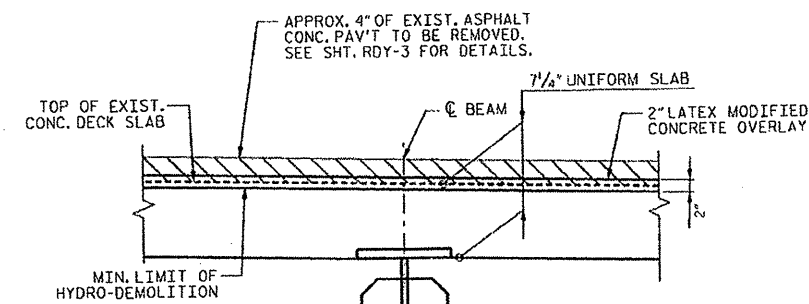
**NBL CONSTRUCTION**

SPANS A THRU C  
\* TO BE MEASURED IN THE FIELD. MATCH EXISTING SUPERELEVATION.



**NBL CONSTRUCTION**

SPANS A THRU C  
\* TO BE MEASURED IN THE FIELD. MATCH EXISTING SUPERELEVATION.



**EXIST. SLAB BUILDUP**

**NOTES:**

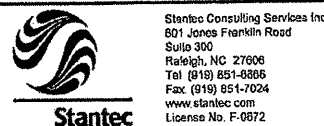
- \*VES\* DENOTES VERY EARLY STRENGTH.
- WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.
- FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRANSPORTATION MANAGEMENT PLANS.
- ALL DIMENSIONS SHOWN ARE APPROXIMATE.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**TYPICAL SECTION**  
DECK REHAB. FOR BRIDGE NO. 81

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-67
1			3			TOTAL SHEETS
2			4			83

*Joseph I. Kelvington*  
2/12/12



Stantec Consulting Services Inc  
601 Jones Franklin Road  
Suite 300  
Raleigh, NC 27606  
Tel: (919) 851-8886  
Fax: (919) 851-7024  
www.stantec.com  
License No. F-0972

DRAWN BY: K.R. TYLER DATE: 01/12  
CHECKED BY: J.I. KELVINGTON DATE: 01/12

**NOTES:**

CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

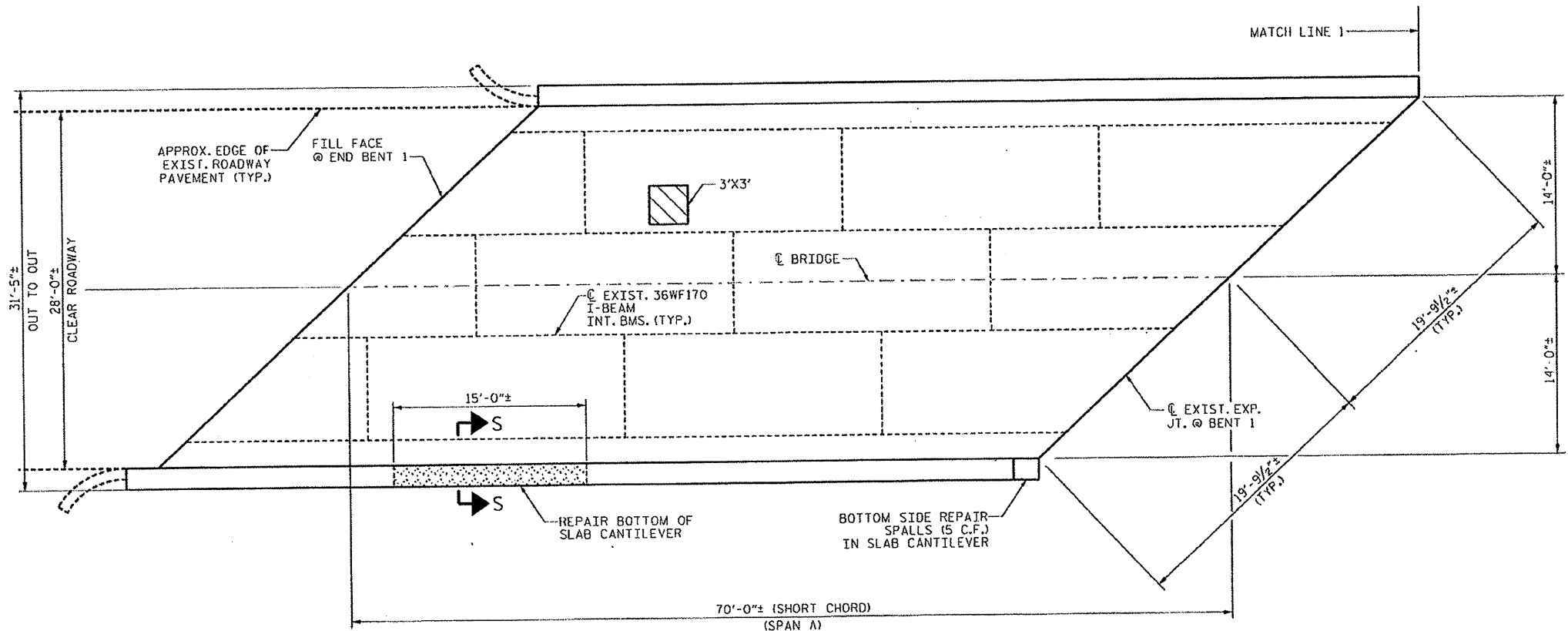


CLASS II SURFACE PREPARATION



CLASS III SURFACE PREPARATION

L X W = LENGTH OF AREA PARALLEL TO  $\phi$  BRIDGE X WIDTH OF AREA PERPENDICULAR TO  $\phi$  BRIDGE.

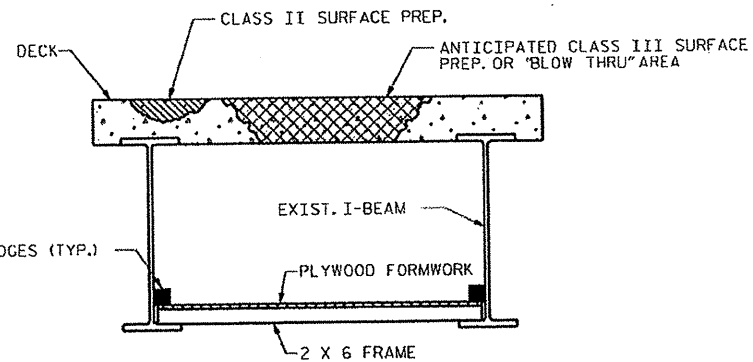


**PLAN OF SPAN A - DECK REPAIRS**

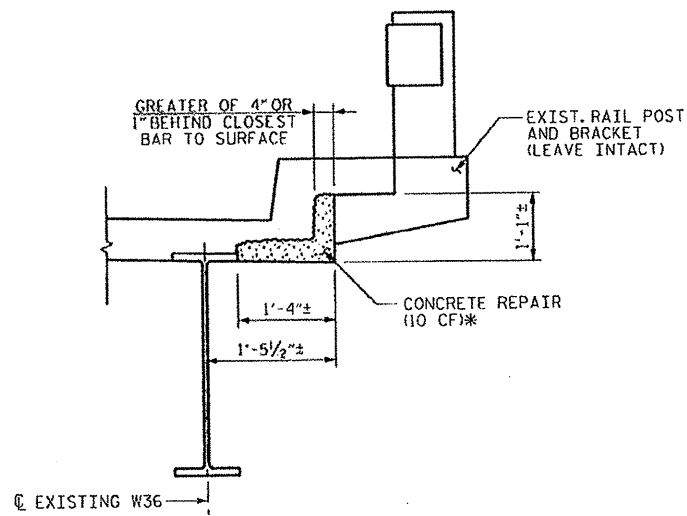
NOTE: EXIST. CONC. BARRIER, POSTS AND POST BRACKETS ARE NOT SHOWN FOR CLARITY.

ALL DIMENSIONS SHOWN ARE FROM BEST AVAILABLE SOURCES. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.

ESTIMATED QUANTITIES  
CONCRETE REPAIR= 10 CF



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK



SECTION S-S

**NOTES:**

REMOVE ALL EXISTING UNSOUND CONCRETE TO APPROX. LIMITS SHOWN OR AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL EXERCISE CARE TO ENSURE NO EXISTING REINF. STEEL IS CUT.

ALL EXISTING REINF. STEEL SHALL BE CLEANED AND REPAIRED AS DIRECTED BY THE ENGINEER.

\*REPLACE ALL CONCRETE REMOVED TO MATCH EXISTING CONCRETE SURFACES

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

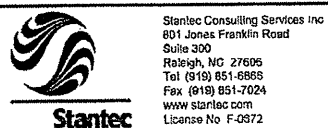
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

DECK REPAIR DETAILS  
SPAN A

DECK REHAB. FOR BRIDGE NO. 81

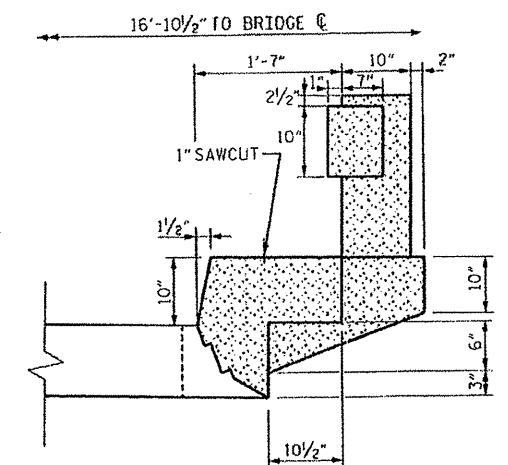
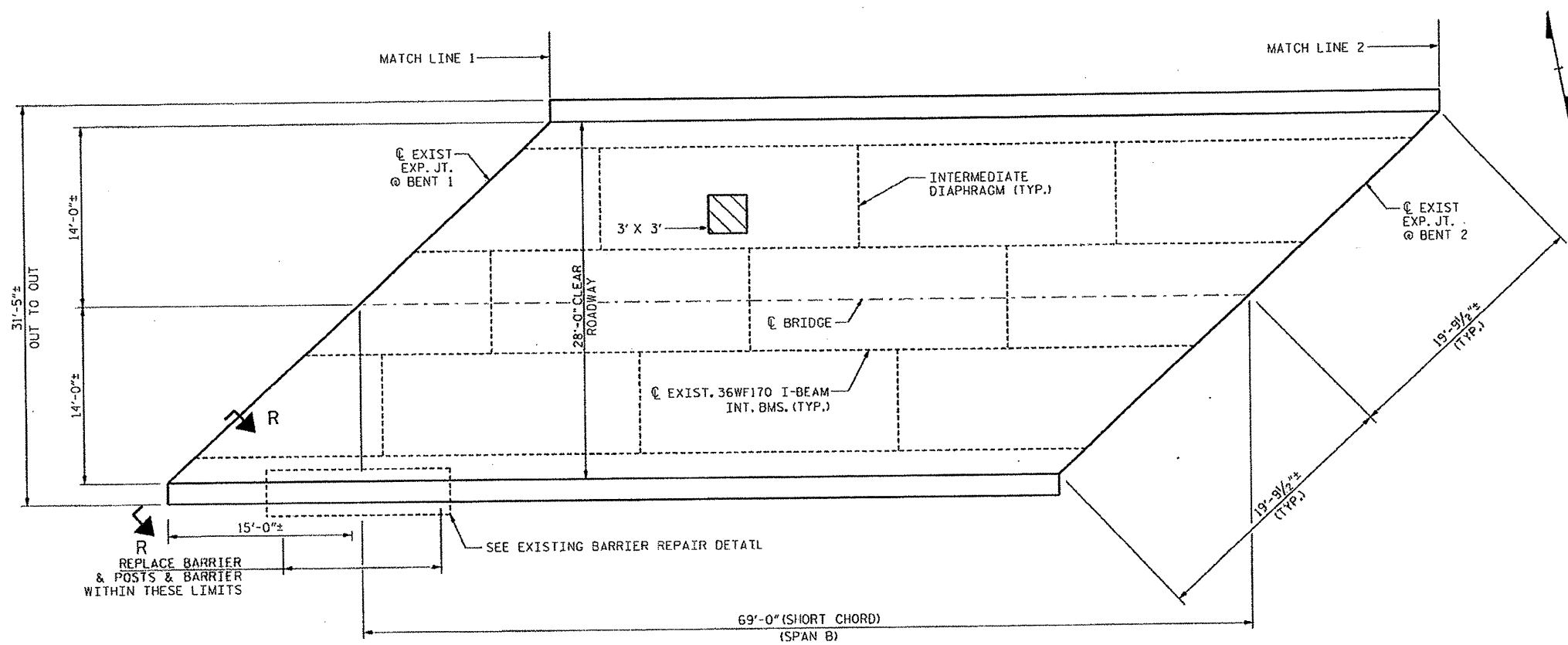
REVISIONS						SHEET NO. S-68
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

*Handwritten signature and stamp:*  
J. T. Kelvington  
Professional Engineer  
No. 22406  
State of North Carolina  
Exp. 12/31/2012



DRAWN BY: K.R. TYLER DATE: 01/12  
CHECKED BY: J.T. KELVINGTON DATE: 01/12

S:\17BP.7.P.2 Alamance-Orange Co.Orange Bridge 08\Draw\17BP.7.P.2.RepairPlan2.dgn 2/23/2012 10:20:24 AM bliston



**RAIL POST BRACKET SECTION SECTION T-T**

SAW CUT TO REMOVE EXISTING RAIL POST BRACKET AND REPLACE WITH NEW CONCRETE TO MATCH EXISTING DIMENSIONS SHOWN.

TOTAL ESTIMATED QUANTITIES:  
CONCRETE REPAIR = 19 C.F.

REMOVE ALL EXISTING CONC. TO APPROX. LIMIT SHOWN OR AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL EXERCISE CARE TO ENSURE NO EXISTING REINF. STEEL IS CUT.

ALL EXISTING REINFORCING STEEL SHALL BE CLEANED OR REPAIRED AS DIRECTED BY THE ENGINEER.

REPLACE BARRIER RAILS, POSTS AND BRACKETS TO MATCH EXISTING LINES AND GRADES.

**NOTES:**

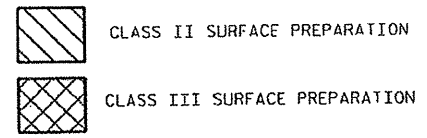
CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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

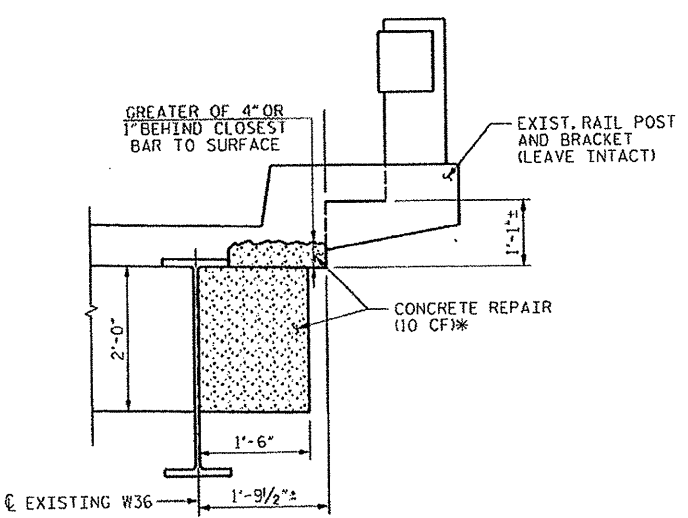
SUBMIT DETAILS OF ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.



L X W = LENGTH OF AREA PARALLEL TO C BRIDGE X WIDTH OF AREA PERPENDICULAR TO C BRIDGE.

**PLAN OF SPAN B - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER, POSTS AND PARAPET BRACKETS ARE NOT SHOWN FOR CLARITY. ALL DIMENSIONS SHOWN ARE FROM BEST AVAILABLE SOURCES CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD



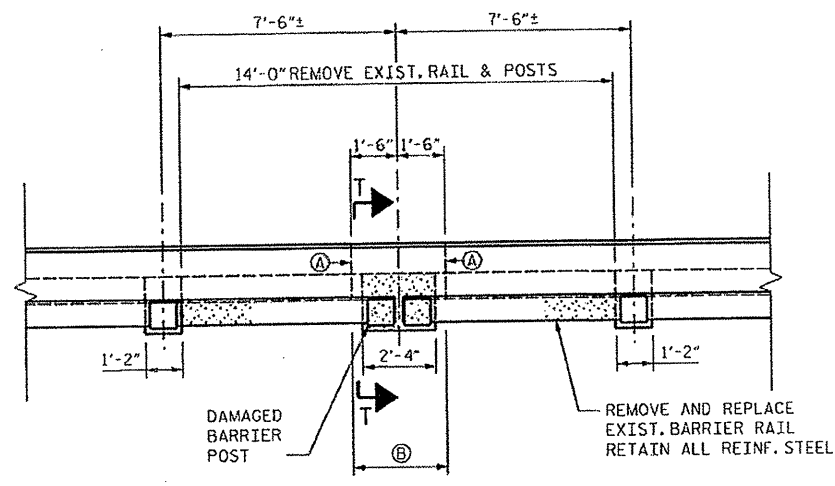
**SECTION R-R**

REMOVE ALL EXISTING UNSOUND CONCRETE TO APPROX. LIMITS SHOWN OR AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL EXERCISE CARE TO ENSURE NO EXISTING REINF. STEEL IS CUT.

ALL EXISTING REINF. STEEL SHALL BE CLEANED AND REPAIRED AS DIRECTED BY THE ENGINEER.

\* REPLACE ALL CONCRETE REMOVED TO MATCH EXISTING CONCRETE SURFACES



**EXISTING BARRIER REPAIR DETAIL PLAN**

(A) SAW CUT EXISTING CURB FACE AND SIDEWALK 1" DEEP.

(B) REMOVE EXISTING SIDEWALK BARRIER POSTS AND BARRIER POST BRACKET CONCRETE BETWEEN LIMITS OF THE SAW CUT. RETAIN ALL STEEL.

CLEAN AND REPAIR ALL REINFORCING STEEL AS DIRECTED BY THE ENGINEER.

APPROX. CONC.	RAIL	7 CF
	2 POSTS	4 CF
	CURB & S/W	4 CF
	BRACKET	4 CF

*Joseph A. Kelly*

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS SPAN B**

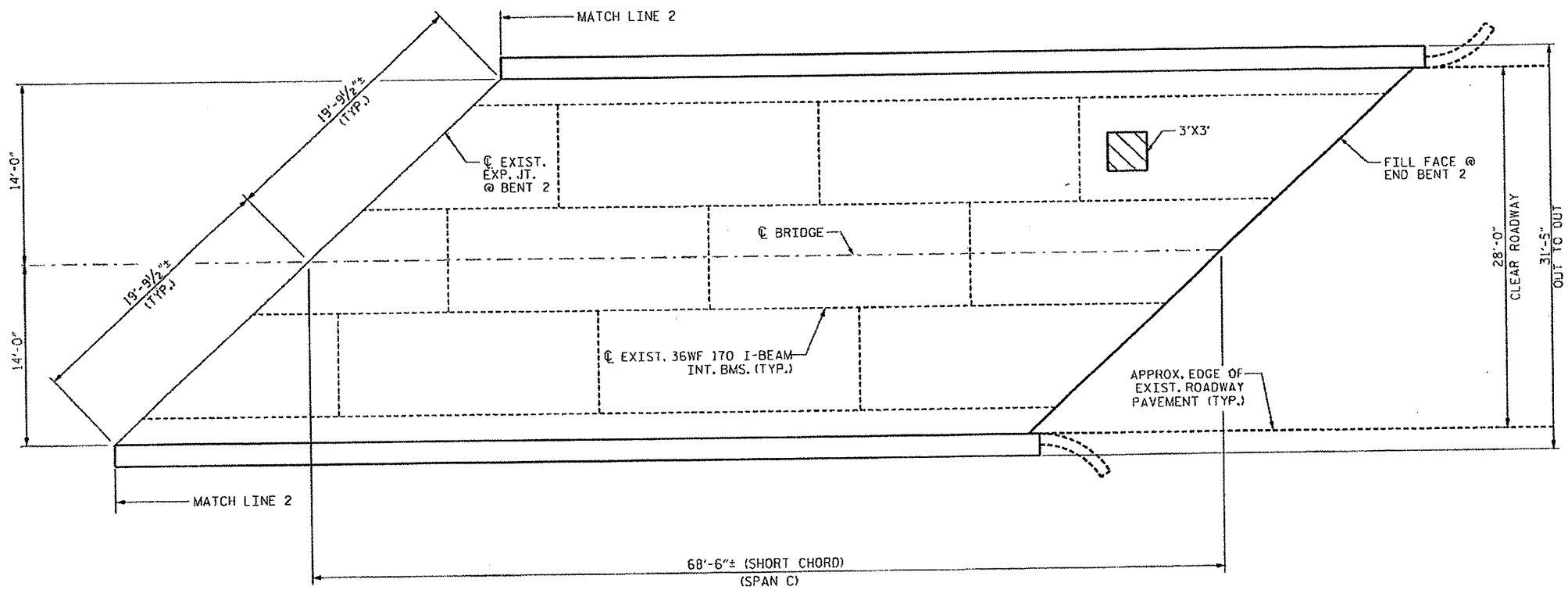
DECK REHAB. FOR BRIDGE NO. 81

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-69
1			3			TOTAL SHEETS
2			4			83

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 Fax (919) 851-7024  
 www.stantec.com  
 License No. F-0372

DRAWN BY: K R TYLER DATE: 01/12  
 CHECKED BY: J T KELVINGTON DATE: 01/12

15 17BP.T.P.2 Alamance-Orange Bridge 381-Drawing Bridge Co-Orange Co-Orange 2/23/2012 2:20:25 PM DICTOR



### PLAN OF SPAN C - DECK REPAIRS

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.

#### NOTES:



CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

-  CLASS II SURFACE PREPARATION
-  CLASS III SURFACE PREPARATION

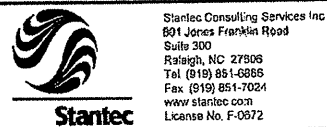
L X W = LENGTH OF AREA PARALLEL TO @ BRIDGE X  
WIDTH IF AREA PERPENDICULAR TO @ BRIDGE.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

*Joseph King*

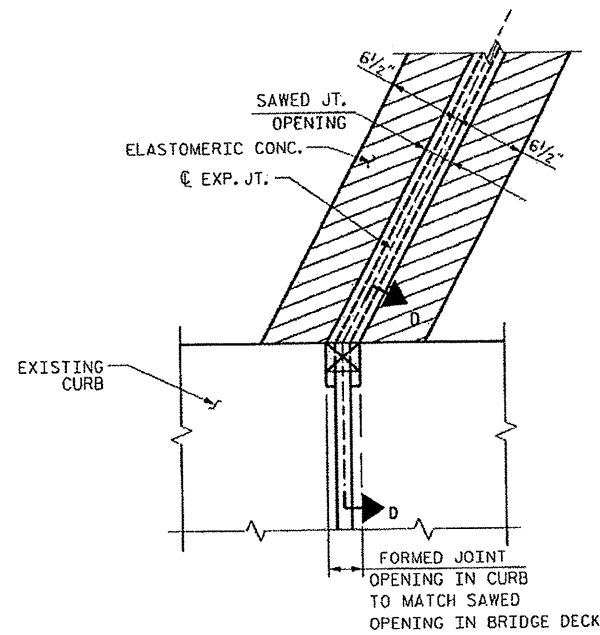


STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
DECK REPAIR DETAILS					
SPAN C					
DECK REHAB. FOR BRIDGE NO. 81					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					83

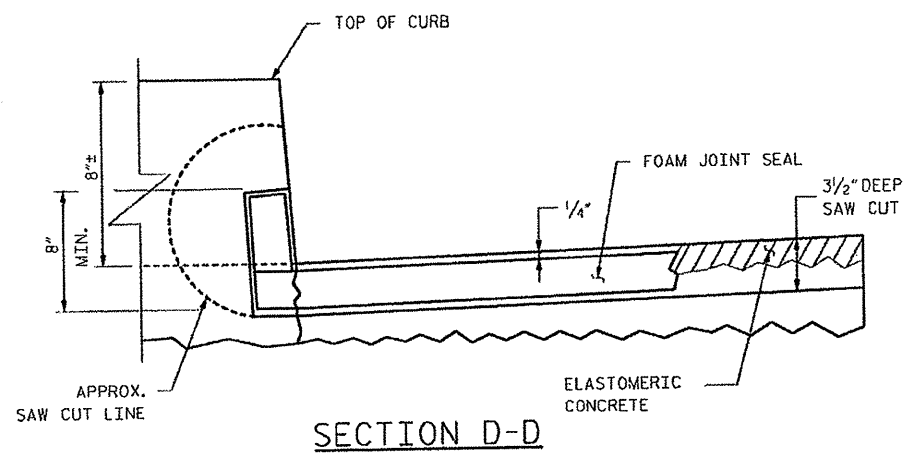


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 License No. F-0672

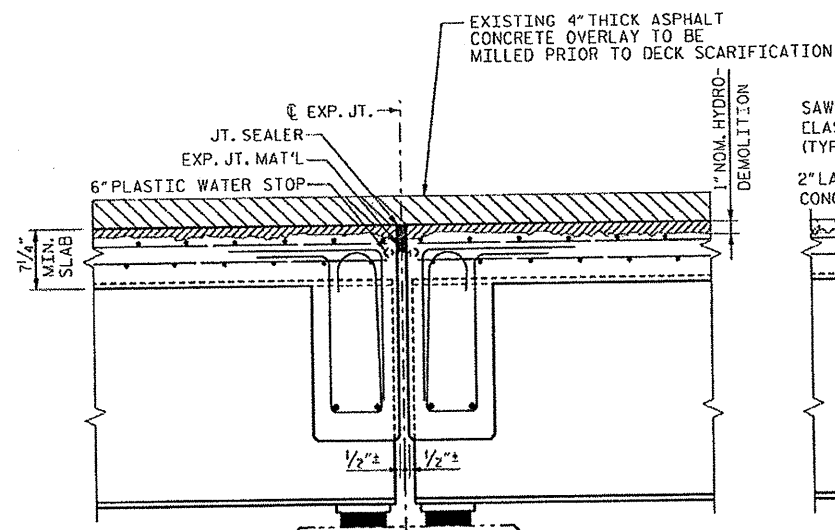
DRAWN BY : K R TYLER DATE : 01/12  
 CHECKED BY : J T KELVINGTON DATE : 01/12



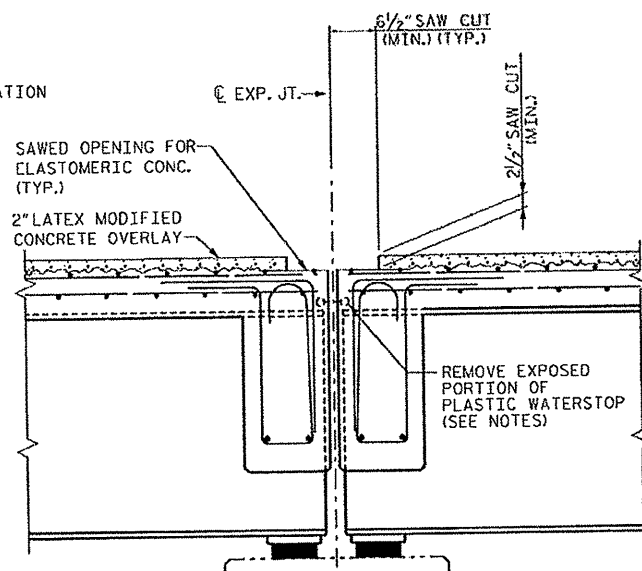
**PARTIAL PLAN @ JOINT**  
(TYP. @ BENTS 1 AND 2)



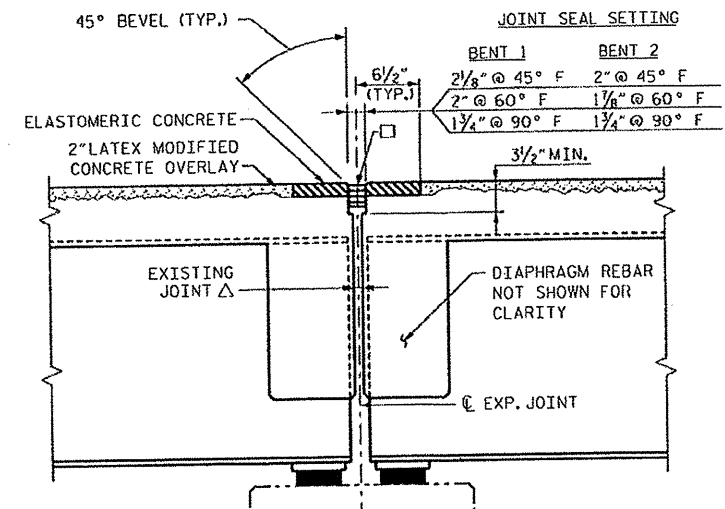
CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.



**SECTION B-B**  
(CONCRETE REMOVAL AT EXISTING JOINT)



**SECTION B-B**  
(LATEX MOD. CONC. OVERLAY AND CONCRETE REMOVAL FOR ELASTOMERIC CONCRETE)



**SECTION B-B**  
(PLACEMENT OF ELASTOMERIC CONCRETE AND SAW CUT FOR FOAM JOINT SEAL)

- USE 2.8125" X 2.5" UNCOMPRESSED FOAM JT. SEAL MATERIAL FOR BENTS 1 AND 2.
- △ EXISTING 1" FORMED OPENING

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	8.3 C.F.
BENT 2	8.3 C.F.

TOTAL ELASTOMERIC CONC. = 16.6 C.F.  
TOTAL ELASTOMERIC CONC. = 0.61 C.Y.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						INTERIOR BENT JOINT SEAL DETAILS	
DECK REHAB. FOR BRIDGE NO. 81						SHEET NO.	
REVISIONS						TOTAL SHEETS	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-71	
1			3			83	
2			4				

*Joseph Kelvington*  
2012



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www.stantec.com  
License No. F-0572

DRAWN BY: K R TYLER DATE: 01/12  
CHECKED BY: J T KELVINGTON DATE: 01/12

TOTAL ESTIMATED QUANTITIES:  
 CONCRETE REPAIR = 5 CF  
 SHOTCRETE REPAIR = 21 CF

NOTES:

REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.

ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.

AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION.

JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.

THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS.

BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 5/8 INCH GAP TO ALLOW FOR JACKING.

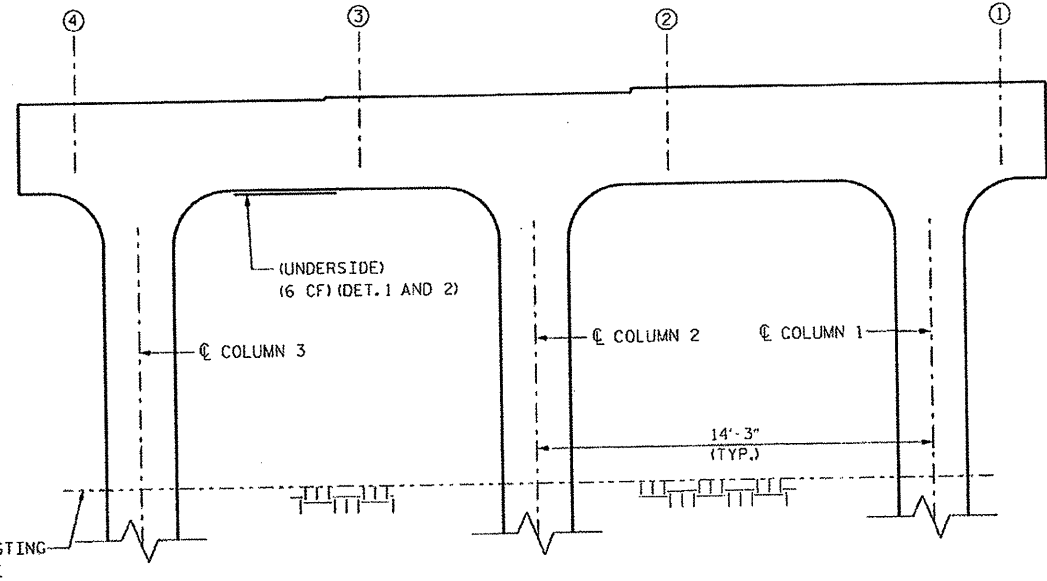
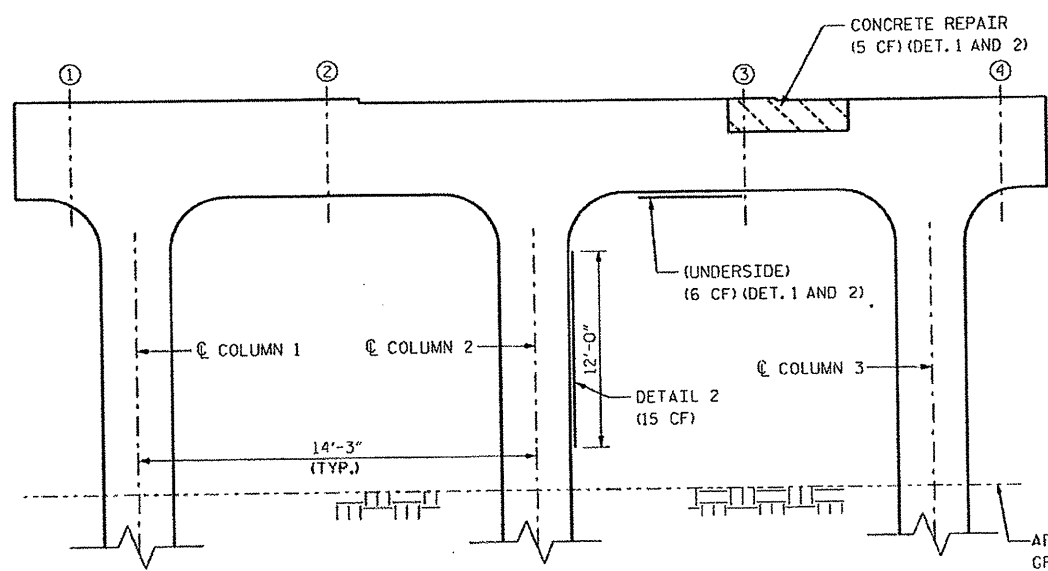
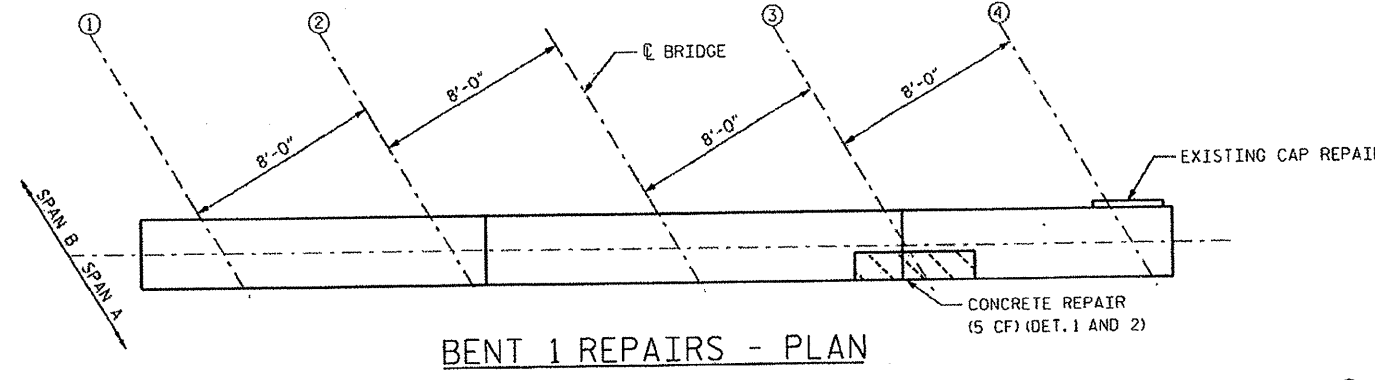
JACK ALL GIRDERS SIMULTANEOUSLY, THE SAME AMOUNT, AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.

IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED.

EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.

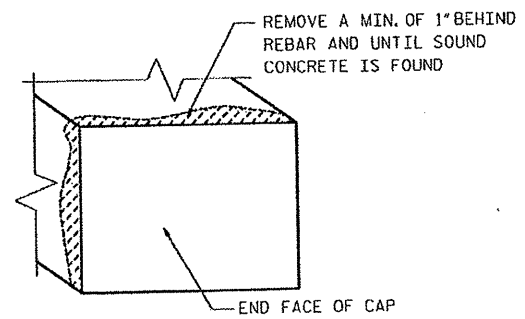
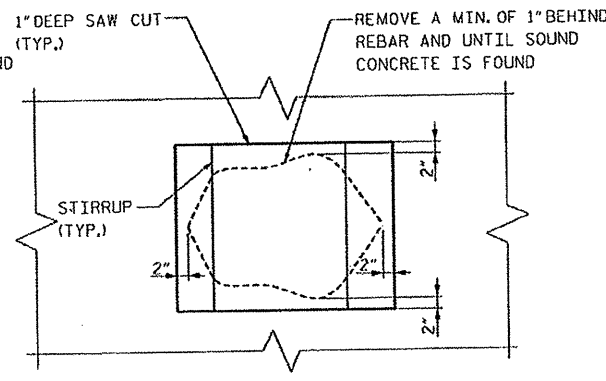
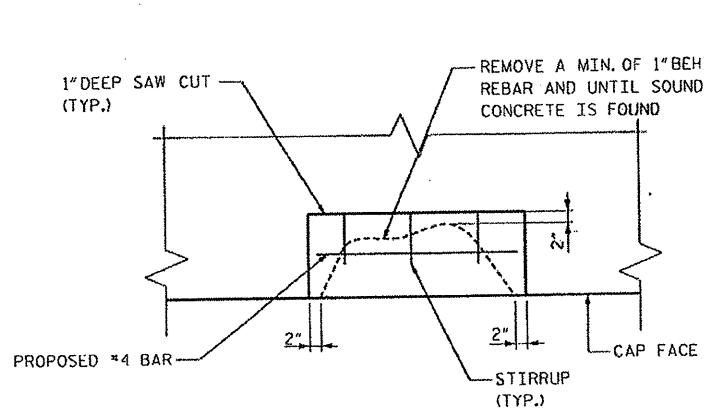
PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE CALCULATED LOADING PER AASHTO SPECIFICATIONS.



SOUTH FACE (WEST)  
 BENT 1 REPAIRS (SPAN B SIDE)

NORTH FACE (EAST)  
 BENT 1 REPAIRS (SPAN C SIDE)



TYPICAL REPAIR DETAIL 1

TYPICAL REPAIR DETAIL 2

TYPICAL REPAIR DETAIL 3

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

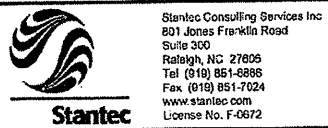
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE REPAIRS  
 BENT 1

DECK REHAB. FOR BRIDGE NO. 81

REVISIONS						SHEET NO. S-72
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

*Joseph Kelvington*  
 12/21/12  
 ENGINEER  
 JOSEPH L. KELVINGTON  
 13406



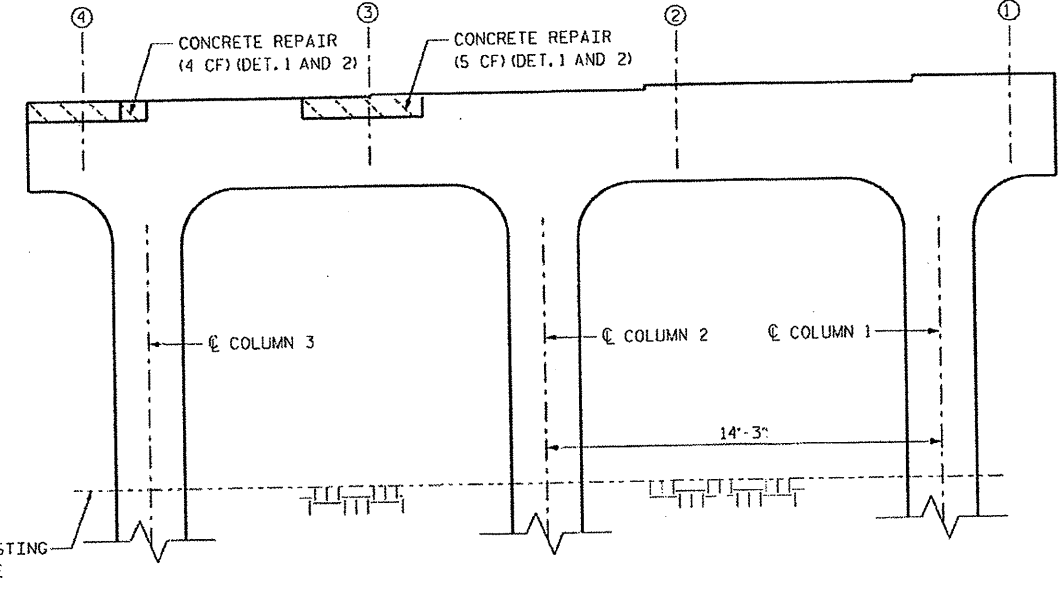
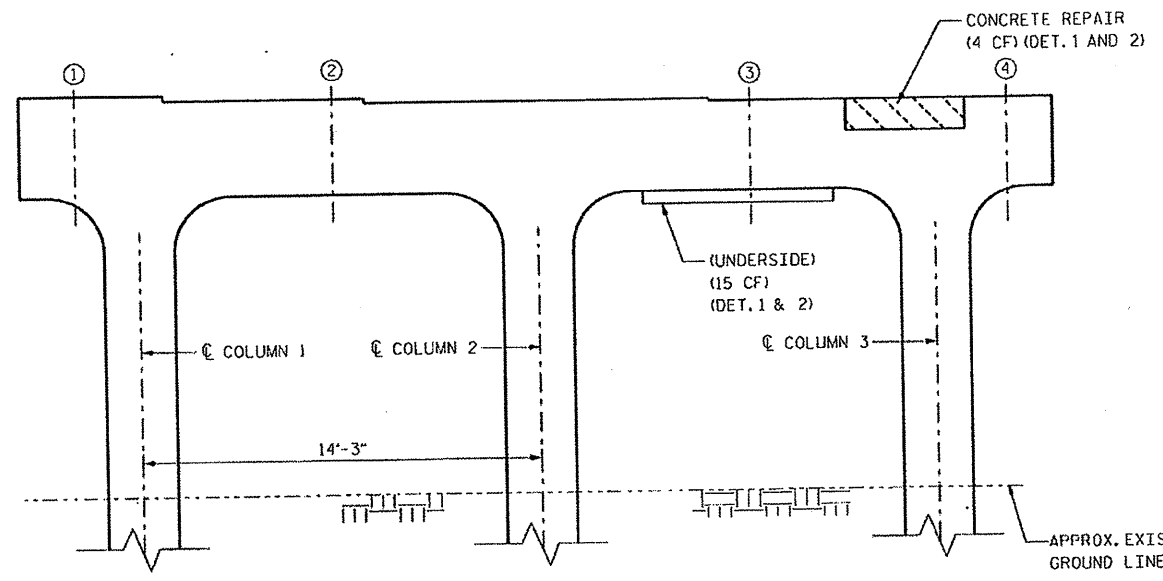
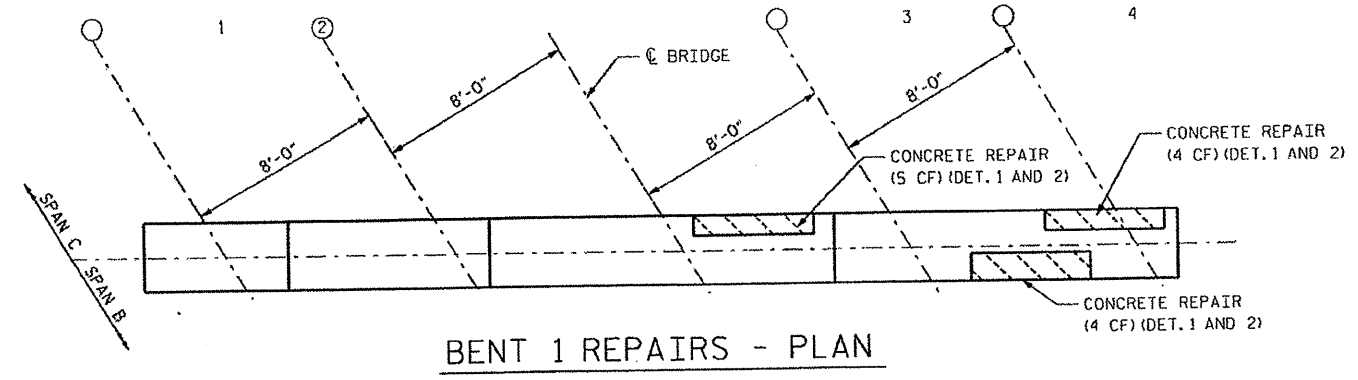
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 Fax (919) 851-7024  
 www.stantec.com  
 License No. F-0672

DRAWN BY: C B BAKER DATE: 01/12  
 CHECKED BY: J T KELVINGTON DATE: 01/12

2/23/2012 2:20:26 PM barten  
 BS: 17BP.7.P.2 Alamance-Orange Co\Orange Bridge 081\Dr-ewing\BPA-Repoc-Bent1.dgn

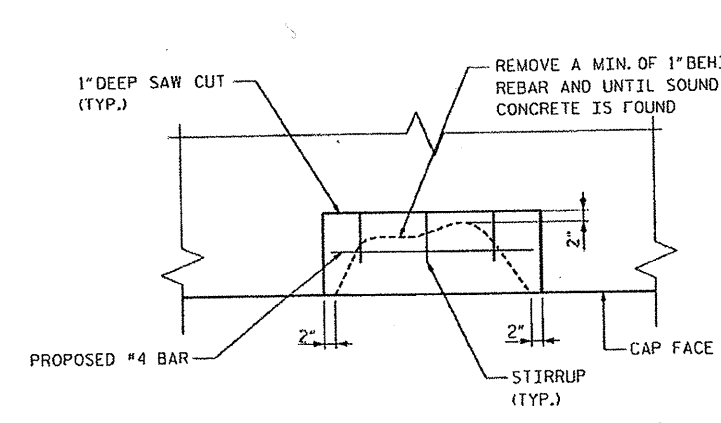
TOTAL ESTIMATED QUANTITIES:  
 CONCRETE REPAIR = 13 CF  
 SHOTCRETE REPAIR = 15 CF

NOTES:  
 REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.  
 ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.  
 AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION.  
 JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.  
 THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS.  
 BEARING NUTS SHALL BE LOOSENED TO PROVIDE A MINIMUM OF 5/8 INCH GAP TO ALLOW FOR JACKING.  
 JACK ALL GIRDERS SIMULTANEOUSLY, THE SAME AMOUNT, AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.  
 IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED.  
 EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.  
 PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.  
 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE CALCULATED LOADING PER AASHTO SPECIFICATIONS.

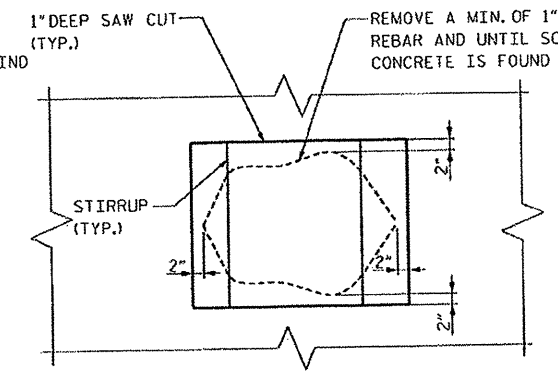


SOUTH FACE (WEST)  
 BENT 2 REPAIRS (SPAN A SIDE)

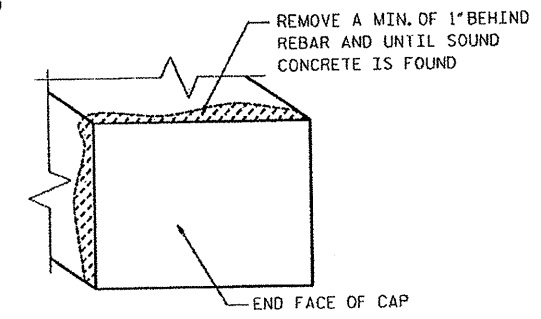
NORTH FACE (EAST)  
 BENT 2 REPAIRS (SPAN B SIDE)



TYPICAL REPAIR DETAIL 1



TYPICAL REPAIR DETAIL 2



TYPICAL REPAIR DETAIL 3

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-73
SUBSTRUCTURE REPAIRS BENT 2						TOTAL SHEETS 83
DECK REHAB. FOR BRIDGE NO. 81						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

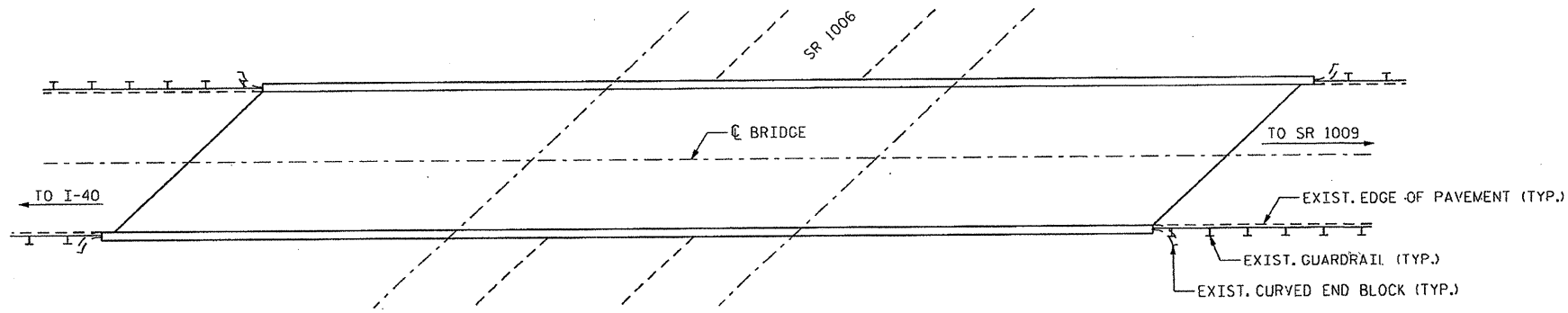
*J. Kelvington*  
 1/13/12



DRAWN BY: C. B. BAKER DATE: 01/12  
 CHECKED BY: J. T. KELVINGTON DATE: 01/12

35 17BP.7.P.2 Alignment-Orange Co-Orange Bridge DBA/Drawings/BPEL/Repair/8e-12.dgn 2/23/2012 12:20:21 PM diction





**BRIDGE 82 ON I-85 SOUTH BOUND**

LOCATION: BRIDGE 670082, I-85 SOUTH OVER SR 1006  
3.5 MILES NORTH OF JCT. SR 1239

NOTES:  
EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS. THE CONTRACTOR SHALL FIELD VERIFY THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

ROADWAY SCARIFICATION IS INCLUDED TO ENSURE A SMOOTH TRANSITION ONTO THE BRIDGE FLOOR. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL SCARIFY AS REQUIRED TO PROVIDE A SMOOTH TRANSITION TO THE ROADWAY AT BOTH ENDS OF THE BRIDGE.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

**BRIDGE 82 ON I-85 SOUTH BOUND  
OVER SR 1006**

**TOTAL BILL OF MATERIAL**

SHOULDER RECONSTRUCTION	MILLING ASPHALT PAVEMENT, 3" DEPTH	INCIDENTAL MILLING	ASPHALT CONC. SURFACE COURSE TYPE S3.5C	REMOVE & RESET EXISTING GUARDRAIL	SCARIFYING BRIDGE DECK	PLACING & FINISHING LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	LATEX MODIFIED CONCRETE OVERLAY - VERY EARLY STRENGTH	CLASS AA CONCRETE *	CLASS III SURFACE PREPARATION *	CLASS II SURFACE PREPARATION *	CLASS I SURFACE PREPARATION *	HYDRO-DEMOLITION OF BRIDGE DECK	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	CONCRETE REPAIRS	SHOTCRETE REPAIRS	SPAN JACKING ORANGE CO. BRIDGE 82
SHLDR.MI.	SQ.YDS.	SQ.YDS.	TONS	LIN. FT.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.	CU.FT.	CU.FT.	EA.
0.038	645.6	351	30	200	645.6	645.6	39.6	0	0	3.2	0	645.6	LUMP SUM	4,976	7.5	30	1

\*QUANTITIES ARE ESTIMATES FROM BEST AVAILABLE DATA, AND SHOULD BE CONSIDERED FOR INFORMATION PURPOSES ONLY. IF ANY CLASS III LOCATIONS ARE ENCOUNTERED PRIOR TO OR DURING HYDRO-DEMOLITION, SEE "TYP. BLOW THRU CONTAINMENT AND FORMWORK" DETAIL. NO SEPARATE MEASUREMENT OR PAYMENT FOR THIS ITEM SHALL BE MADE. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR HYDRO-DEMOLITION.

PROJECT NO. WBS 17BP.7.P.2

ORANGE COUNTY

STATION: \_\_\_\_\_

*Joseph M. Kelvington*  
12/23/2012

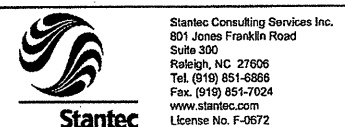


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

LOCATION SKETCH  
AND TOTAL  
BILL OF MATERIAL

DECK REHAB. FOR BRIDGE NO. 82

REVISIONS						SHEET NO. S-74
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

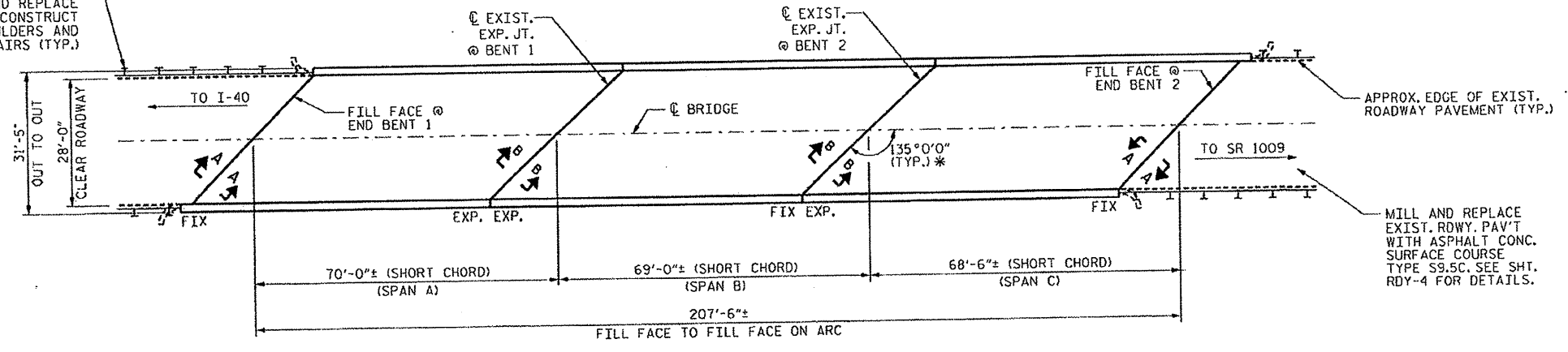


DRAWN BY : K. R. TYLER DATE : 01/12  
CHECKED BY : J. T. KELVINGTON DATE : 01/12

2011 WBS 17BP.7.P.2 Alamance-Orange Co. Orange Bridge 082.Drwing\BP082.LS.BOM.dgn 2/23/2012 2:50:27 PM 40584\*

EXISTING STEEL "W" BEAM GUARDRAIL. DISMANTLE AND REPLACE AS REQ'D TO CONSTRUCT SHOULDERS AND JOINT REPAIRS (TYP.)

NOTE: ALL DIMENSIONS SHOWN ARE FROM BEST AVAILABLE SOURCES AND ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.



**PLAN VIEW**

\* APPROXIMATE CHORD TO BENT ANGLE. ACTUAL ANGLES WILL VARY DUE TO CURVATURE OF ROADWAY.

NOTE: ALL HORIZONTAL DIMENSIONS SHOWN ARE ARC OR RADIAL DIMENSION WITH RESPECT TO @ BRIDGE.

RAIL POSTS AND BARRIER RAILS ARE NOT SHOWN FOR CLARITY.

**NOTES:**

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.

FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.

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

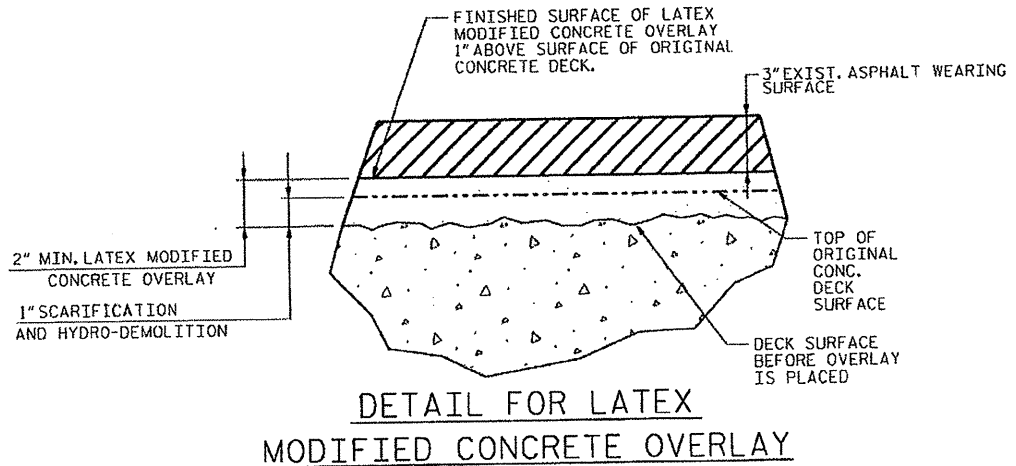
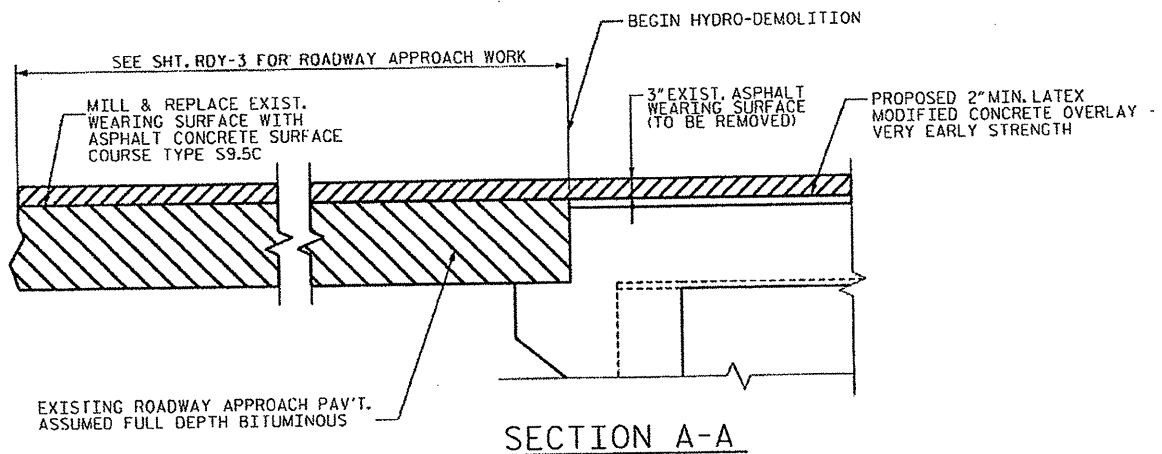
THE BOUNDARIES OF AREAS IDENTIFIED FOR CLASS III SURFACE PREPARATION ARE APPROXIMATE. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, SHT. NO. S-77.

LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.

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

FOR SECTION B-B, SEE SHT. NO. S-80.

EXISTING BRIDGE HAS A 3" THICK ASPHALT WEARING SURFACE. THIS WEARING SURFACE SHALL BE REMOVED BY MILLING IN ITS ENTIRETY BEFORE DECK REHABILITATION BEGINS. COST FOR THIS WORK SHALL BE PAID FOR AS "MILLING ASPHALT PAVEMENT, 3" DEPTH." FOR ROADWAY DETAILS @ BRIDGE APPROACHES, SEE SHT. RDY-4.



PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**PLAN OF BRIDGE**

DECK REHAB. FOR BRIDGE NO. 82

REVISIONS						SHEET NO. S-75
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

*Joseph H. Kelvington*

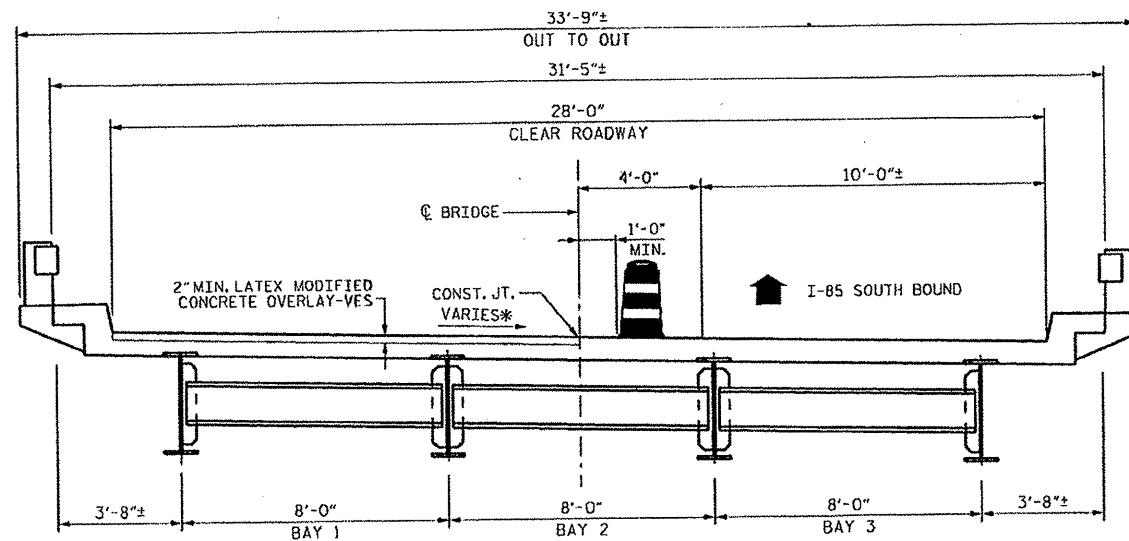
Professional Engineer Seal  
 STATE OF NORTH CAROLINA  
 ENGINEER  
 NO. 13406  
 J. KELVINGTON

05 17BP.7.P.2 Almonte-Orange Bridge 082\Dr.cw\ing\BP082.Dwg on: dgn 2/23/2012 2:26:23 pm victor

**Stantec**

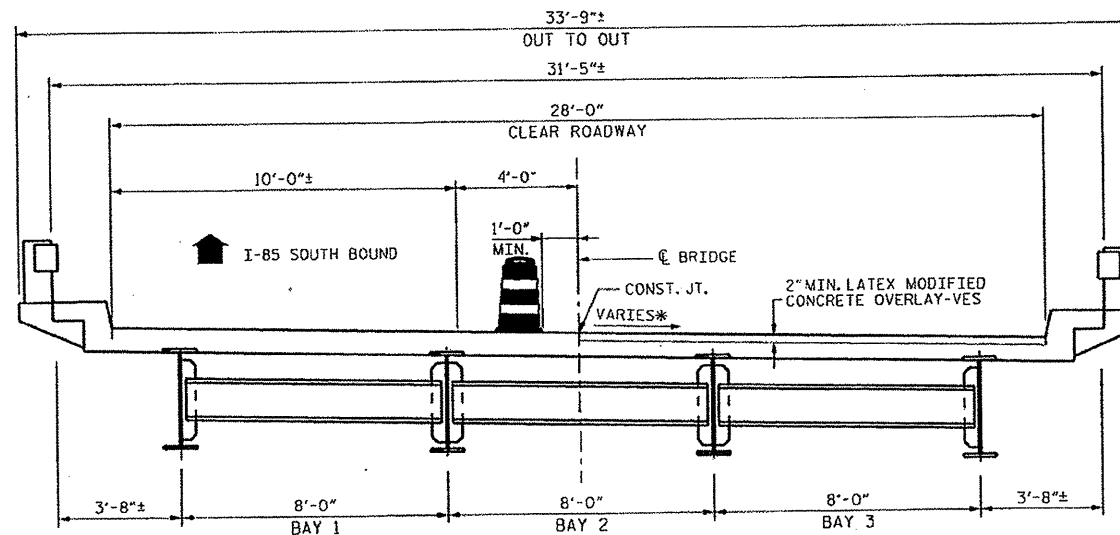
Stantec Consulting Services Inc.  
 891 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel (919) 851-8888  
 Fax (919) 851-7024  
 www.stantec.com  
 License No. F-0672

DRAWN BY: K. R. TYLER DATE: 01/12  
 CHECKED BY: J. T. KELVINGTON DATE: 01/12



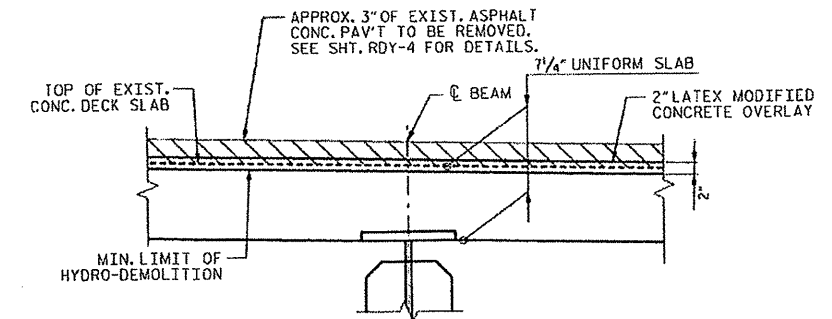
**SBL CONSTRUCTION**

SPANS A THRU C  
\* TO BE MEASURED IN THE FIELD. MATCH EXISTING SUPERELEVATION.



**SBL CONSTRUCTION**

SPANS A THRU C  
\* TO BE MEASURED IN THE FIELD. MATCH EXISTING SUPERELEVATION.



**EXIST. SLAB BUILDUP**

**NOTES:**

"VES" DENOTES VERY EARLY STRENGTH.

WATER & CONCRETE SLURRY FROM HYDRO-DEMOLITION SHALL NOT BE ALLOWED TO DRAIN ACROSS TRAVEL LANES. CONTRACTOR SHALL PROVIDE A METHOD TO CONTROL THE WATER.

FOR TRAFFIC CONTROL AND CONSTRUCTION PHASING, SEE TRANSPORTATION MANAGEMENT PLANS.

ALL DIMENSIONS SHOWN ARE APPROXIMATE.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**TYPICAL SECTION**

DECK REHAB. FOR BRIDGE NO. 82

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-76
1			3			TOTAL SHEETS
2			4			83

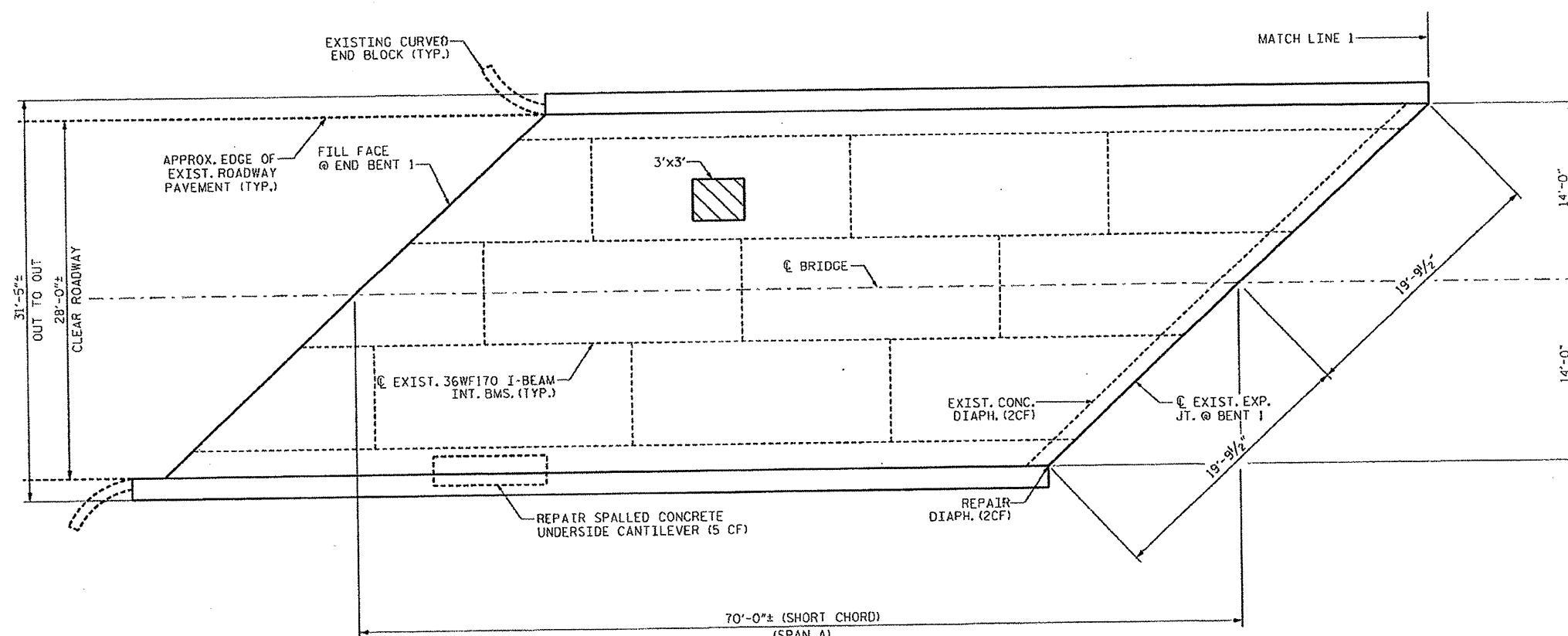
*Joseph Kelvington*  
Professional Engineer  
No. 17032  
State of North Carolina



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801 Jones Franklin Road  
Suite 300  
Raleigh, NC 27606  
Tel: (919) 851-6868  
Fax: (919) 851-7024  
www.stantec.com  
License No. F-0672

DRAWN BY: K.R. TYLER DATE: 01/12  
CHECKED BY: J.T. KELVINGTON DATE: 01/12

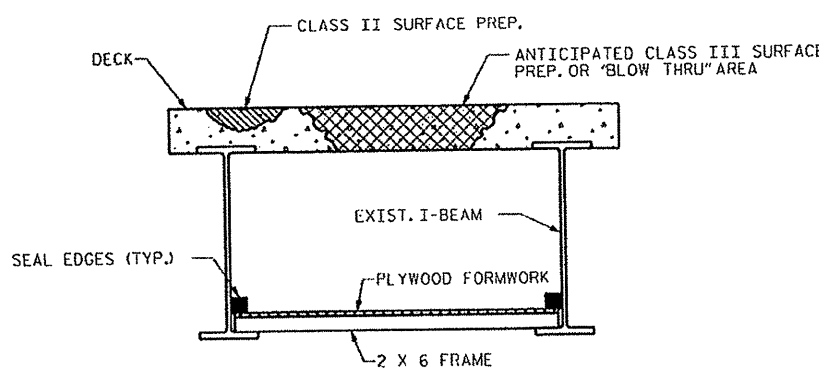
WBS 17BP.7.P.2 Alamance-Orange Co. Orange Bridge 082 Drawing BP082\_Typ Sect.dgn 2/23/2012 2:20:30 PM Deltor



**PLAN OF SPAN A - DECK REPAIRS**  
 NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY. ALL DIMENSIONS SHOWN ARE FROM BEST AVAILABLE SOURCES. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.

ESTIMATED CONCRETE REPAIR  
 CONCRETE REPAIR= 7 CF  
 SHOTCRETE REPAIR= 7 CF

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

**NOTES:**  
 CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.  
 COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO-DEMOLITION.  
 CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.  
 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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

L X W = LENGTH OF AREA PARALLEL TO @ BRIDGE X WIDTH OF AREA PERPENDICULAR TO @ BRIDGE.

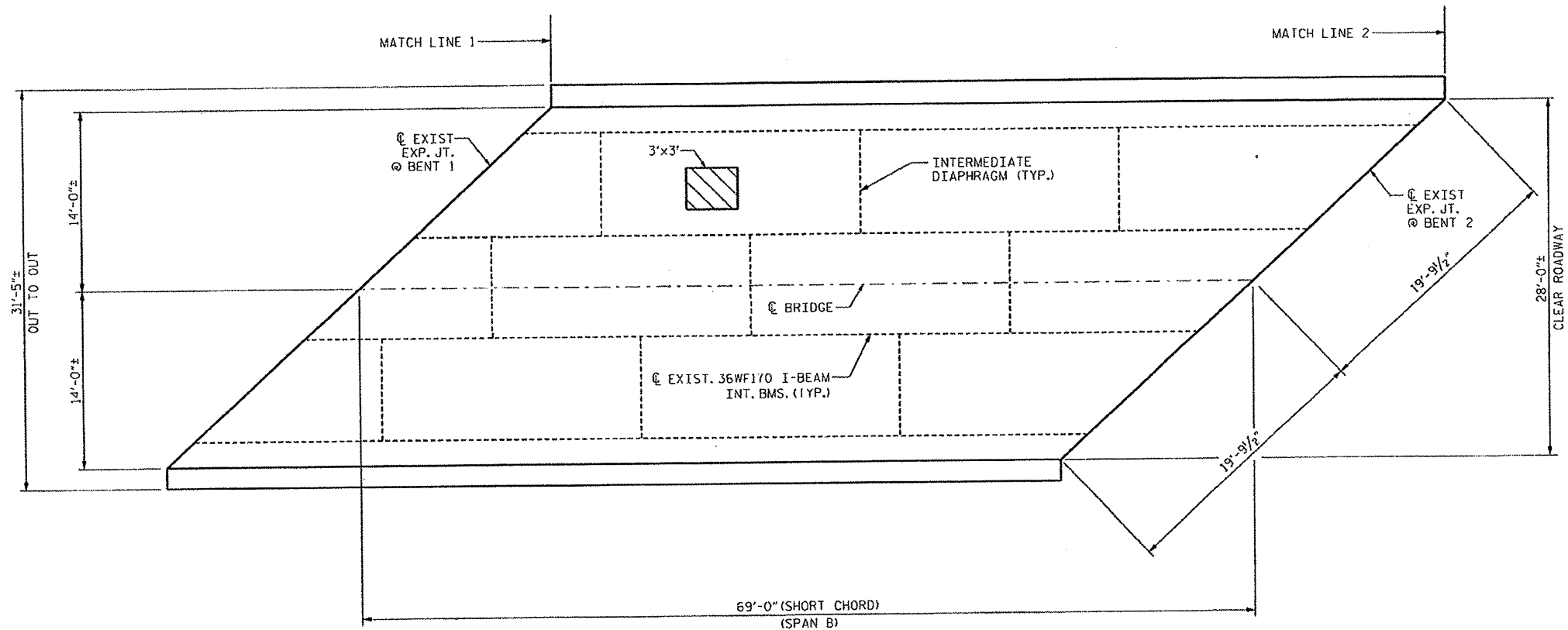
*John Kelvington*  
 1/23/2012  
 1523  
 15306  
 PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>DECK REPAIR DETAILS SPAN A</b>					
<b>DECK REHAB. FOR BRIDGE NO. 82</b>					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-77
					TOTAL SHEETS 83

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 www.stantec.com  
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DRAWN BY : K R TYLER DATE : 01/12  
 CHECKED BY : J T KELVINGTON DATE : 01/12

2/23/2012 12:20:31PM station  
 I:\BP.7.P.2\A\omance-Cr\cadd Co\Orange\17BP.7.P.2\Drawings\17BP.7.P.2\Repro\17BP.7.P.2.dgn



**PLAN OF SPAN B - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.  
 ALL DIMENSIONS SHOWN ARE FROM BEST AVAILABLE SOURCES  
 CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD

**NOTES:**

- CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.
- COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE BID PER SQ. YD. OF HYDRO-DEMOLITION.
- CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.
- 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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**DECK REPAIR DETAILS  
 SPAN B**

DECK REHAB. FOR BRIDGE NO. 82

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-78
1			3			TOTAL SHEETS
2			4			83

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

L X W = LENGTH OF AREA PARALLEL TO  $\text{C}$  BRIDGE X  
 WIDTH OF AREA PERPENDICULAR TO  $\text{C}$  BRIDGE.

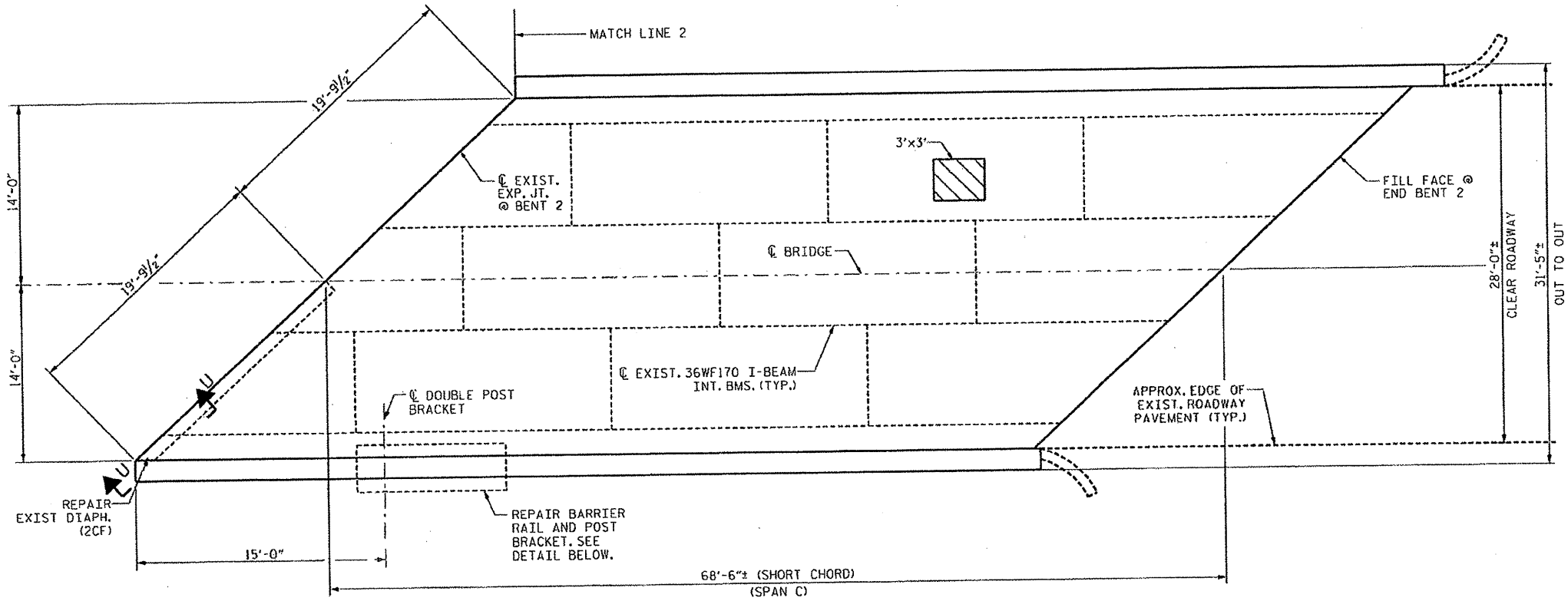
*Joseph King*  
 PROFESSIONAL ENGINEER  
 01/12/12

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 Tel. (919) 851-6865  
 Fax (919) 851-7024  
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DRAWN BY : K R TYLER DATE : 01/12  
 CHECKED BY : J T KELVINGTON DATE : 01/12

17BP.7.P.2 Atteridge-Orange Co. Orange Bridge 082.Drawing.BP082.Repair-Plan.s.dgn 2/23/2012 2:20:32 PM 610109

12:20:33 PM BOSTON  
 2/23/2012  
 I:\BP-7.P.2 Alamance-Orange Co\Orange Bridge 082-Drawing\BP082-RepairPlan3.dgn



**PLAN OF SPAN C - DECK REPAIRS**

NOTE: EXIST. CONC. BARRIER AND POSTS ARE NOT SHOWN FOR CLARITY.  
 ALL DIMENSIONS SHOWN ARE FROM BEST AVAILABLE SOURCES.  
 CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD.

**NOTES:**

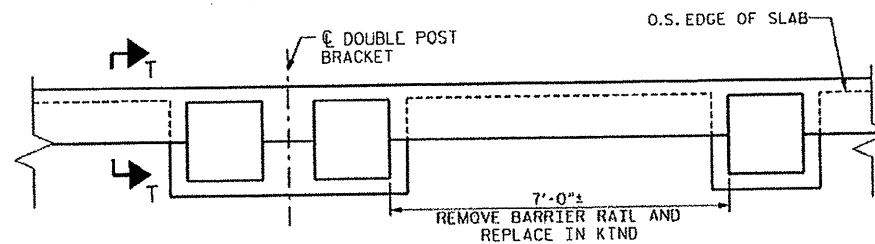
CONTRACTOR SHALL FURNISH FORMWORK TO SUPPORT SLAB OVERHANG REGIONS WITH EXTENSIVE CLASS III SURFACE PREPARATION.

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

CLASS II AND CLASS III SURFACE PREPARATION SHOWN IS REPRESENTATIVE AND DOES NOT REFLECT ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED @ THE PROJECT SITE.

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 ALL PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.



**BARRIER RAIL AND BRACKET REPAIR PLAN**

- CLASS II SURFACE PREPARATION
- CLASS III SURFACE PREPARATION

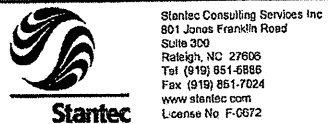
L X W = LENGTH OF AREA PARALLEL TO  $\text{\textcircled{C}}$  BRIDGE X  
 WIDTH OF AREA PERPENDICULAR TO  $\text{\textcircled{C}}$  BRIDGE.

ESTIMATED CONCRETE REPAIR  
 CONCRETE REPAIR= 7 CF

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>DECK REPAIR DETAILS SPAN C</b>					
<b>DECK REHAB. FOR BRIDGE NO. 82</b>					
REVISIONS					
NO	BY:	DATE:	NO	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-79
					TOTAL SHEETS 83

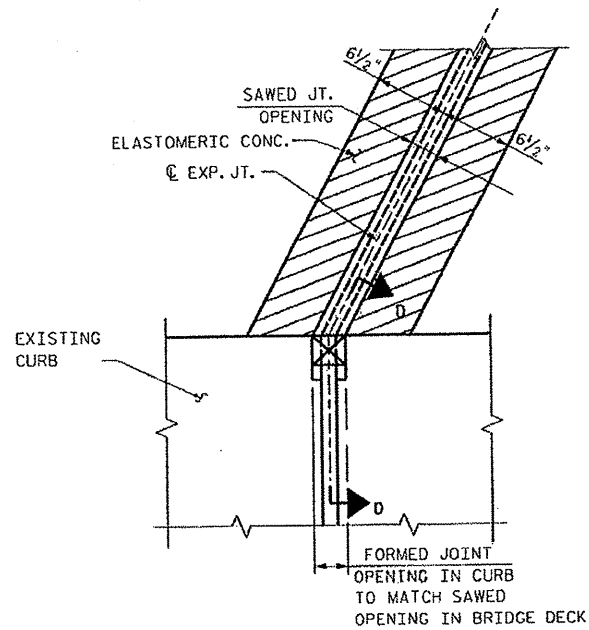
*Joseph Kelvington*  
 PROJECT ENGINEER  
 2/23/2012



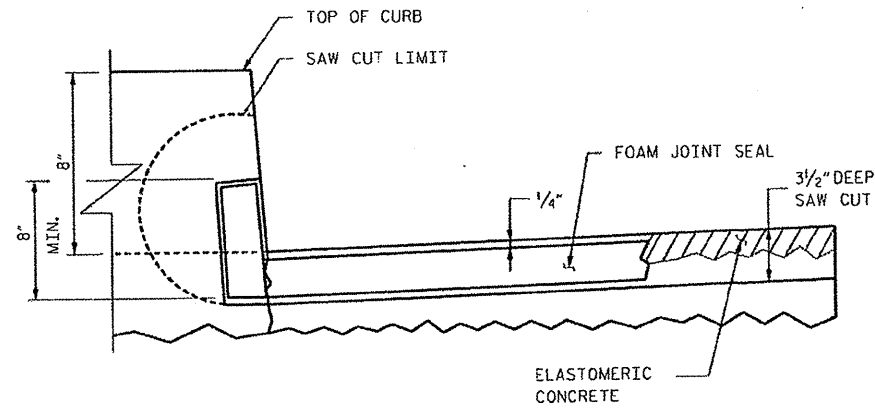
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 801 Jones Franklin Road  
 Suite 300  
 Raleigh, NC 27606  
 Tel: (919) 851-6886  
 Fax: (919) 851-7024  
 www.stantec.com  
 License No F-0672

DRAWN BY : K R TYLER DATE : 01/12  
 CHECKED BY : J T KELVINGTON DATE : 01/12

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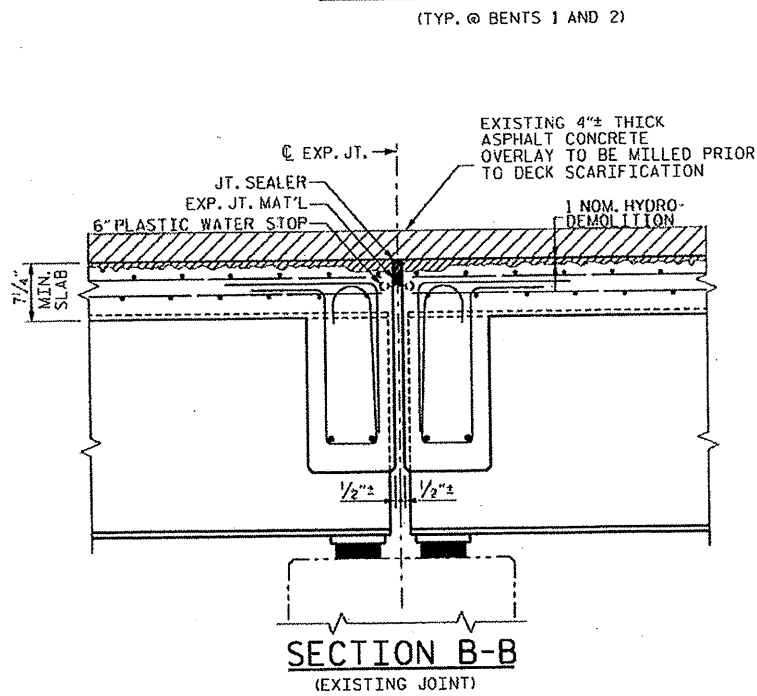


**PARTIAL PLAN @ JOINT**  
(TYP. @ BENTS 1 AND 2)



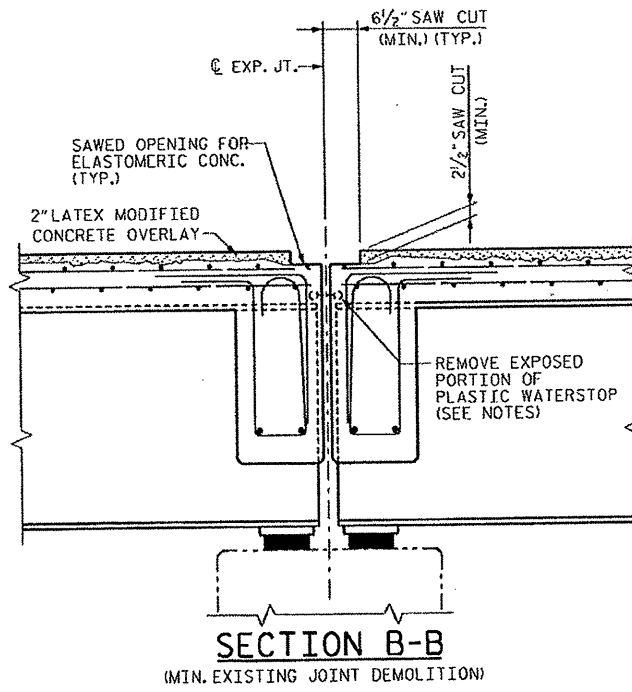
**SECTION D-D**

CONTRACTOR SHALL EXERCISE CARE TO AVOID CUTTING OR DAMAGING EXISTING REINF. STEEL.



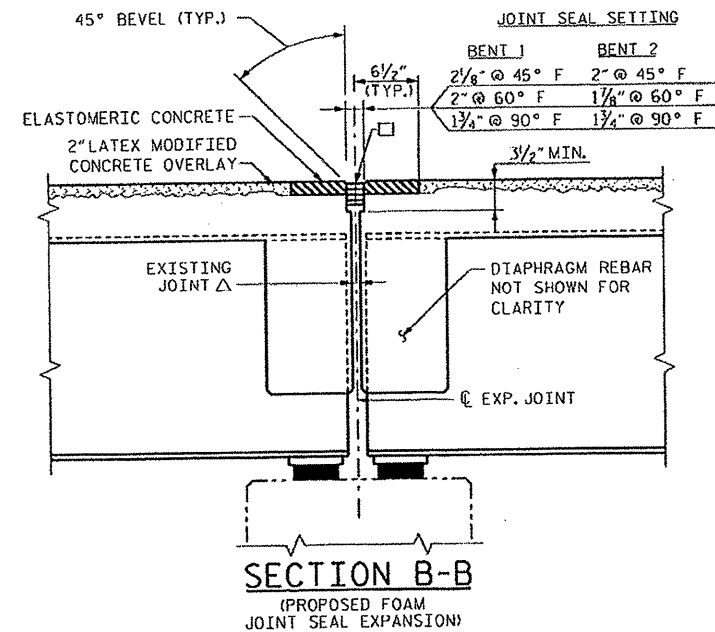
**SECTION B-B**  
(EXISTING JOINT)

FOR MILLING EXISTING OVERLAY, SEE SHT. RDY-4.



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

**NOTES:**  
1. ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED. IF THE EMBEDDED PORTION OF THE EXISTING PLASTIC WATERSTOP IS EXPOSED DURING REMOVAL OF UNSOUND CONCRETE, THE ENTIRE WATERSTOP SHALL BE REMOVED.  
2. RETAIN ALL EXIST. REINF. STEEL CLEAN AND REPAIR AS REQUIRED.



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

□ USE 2,8125" X 2.5" UNCOMPRESSED FOAM JT. SEAL MATERIAL FOR BENTS 1 AND 2.  
△ EXISTING 1" FORMED OPENING

ELASTOMERIC CONCRETE	
LOCATION	QTY
BENT 1	8.3 C.F.
BENT 2	8.3 C.F.

TOTAL ELASTOMERIC CONC. = 16.6 C.F.  
TOTAL ELASTOMERIC CONC. = 0.61 C.Y.

PROJECT NO. **WBS 17BP.7.P.2**  
**ORANGE** COUNTY  
STATION: \_\_\_\_\_

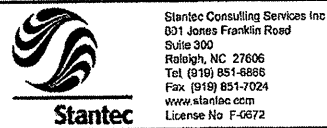
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**INTERIOR BENT JOINT SEAL DETAILS**

DECK REHAB. FOR BRIDGE NO. 82

REVISIONS						SHEET NO. S-80
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 83
2			4			

*Joseph Kelvington*  
Professional Engineer  
No. 37202



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www.stantec.com  
License No. F-0672

DRAWN BY: **K.R. TYLER** DATE: **01/12**  
CHECKED BY: **J.T. KELVINGTON** DATE: **01/12**

TOTAL ESTIMATED QUANTITIES:  
SHOTCRETE REPAIR = 15 CF

NOTES:  
REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.  
ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.  
AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION.

JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.  
THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS.  
BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 5/8 INCH GAP TO ALLOW FOR JACKING.

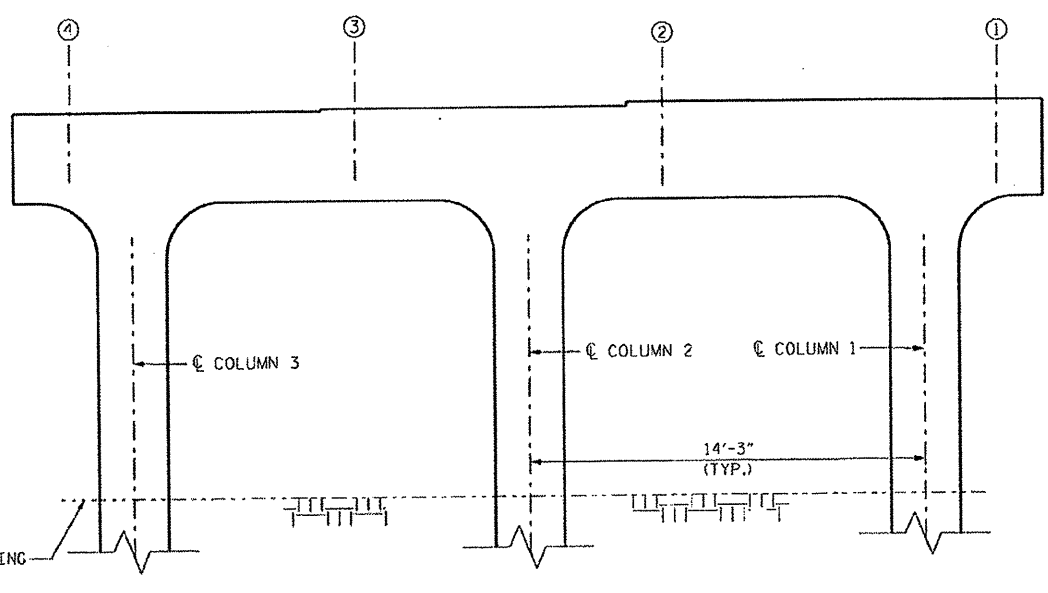
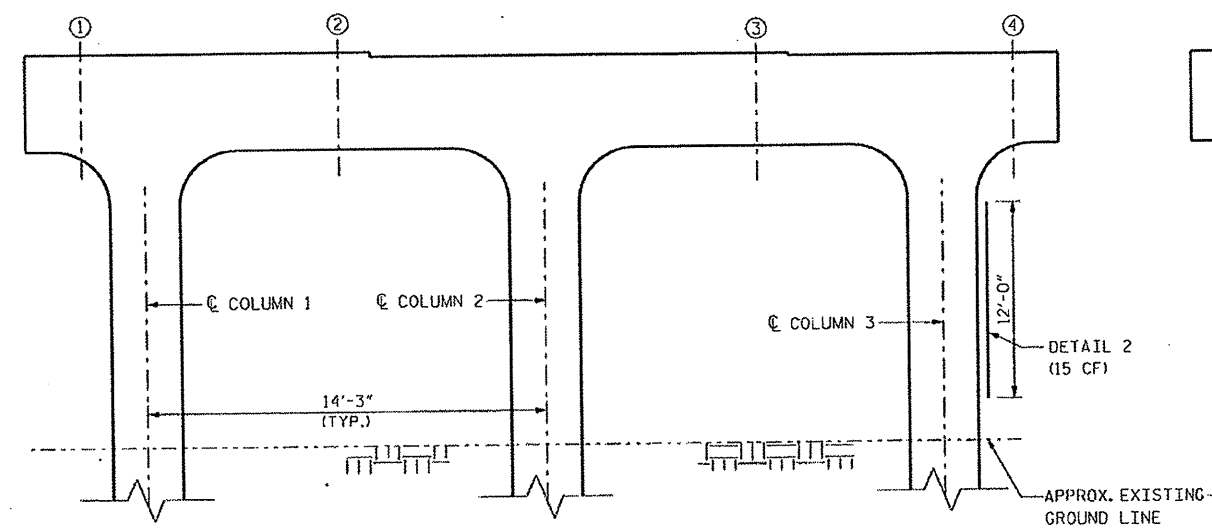
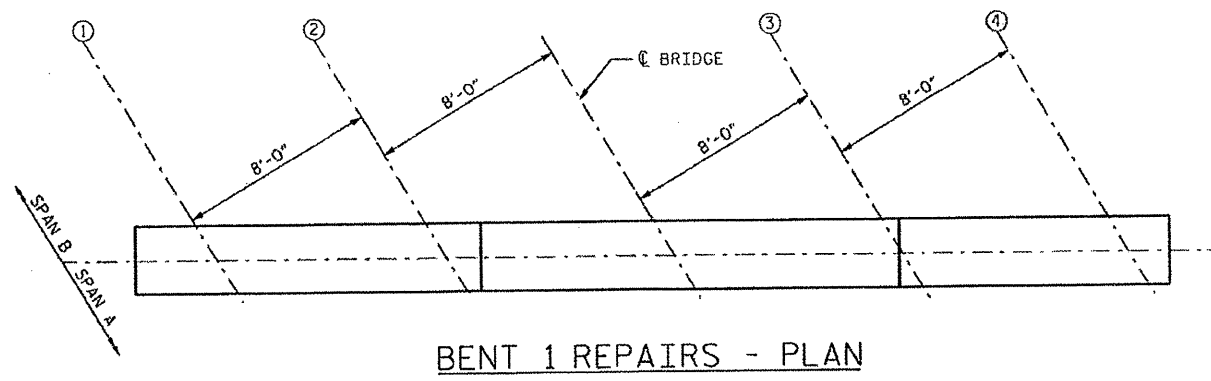
JACK ALL GIRDERS SIMULTANEOUSLY, THE SAME AMOUNT, AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.

IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED.

EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.

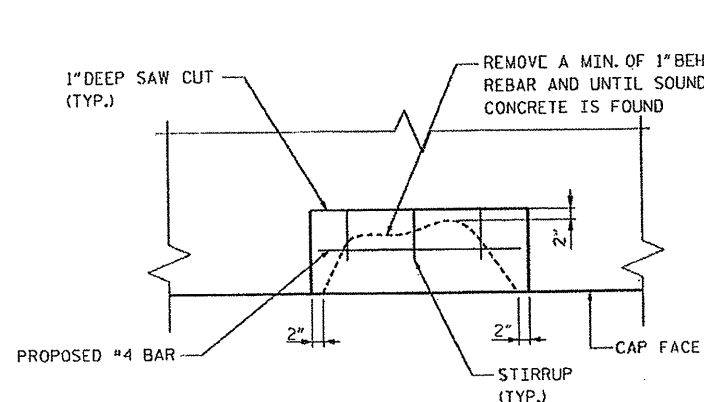
PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE CALCULATED LOADING PER AASHTO SPECIFICATIONS.

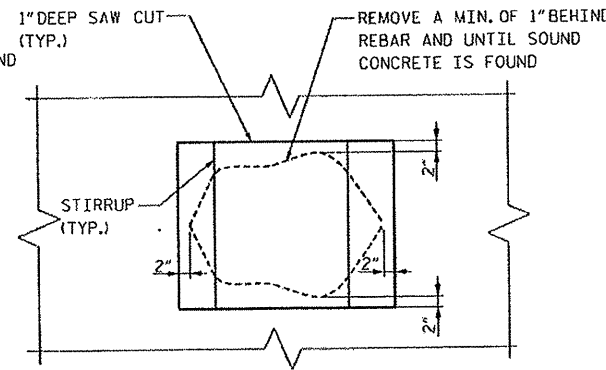


SOUTH FACE (WEST)  
BENT 1 REPAIRS (SPAN B SIDE)

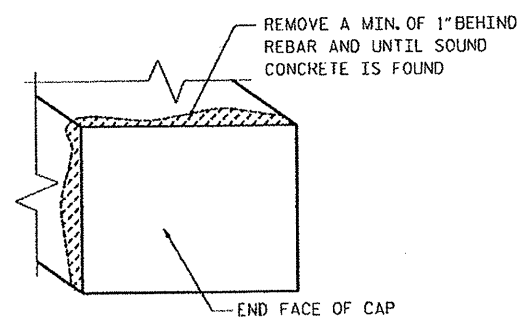
NORTH FACE (EAST)  
BENT 1 REPAIRS (SPAN C SIDE)



TYPICAL REPAIR DETAIL 1



TYPICAL REPAIR DETAIL 2



TYPICAL REPAIR DETAIL 3

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE REPAIRS BENT 1					
DECK REHAB. FOR BRIDGE NO. 82					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-81					83

*Joseph Kelvington*  
Professional Engineer  
No. 28572  
2/23/2012

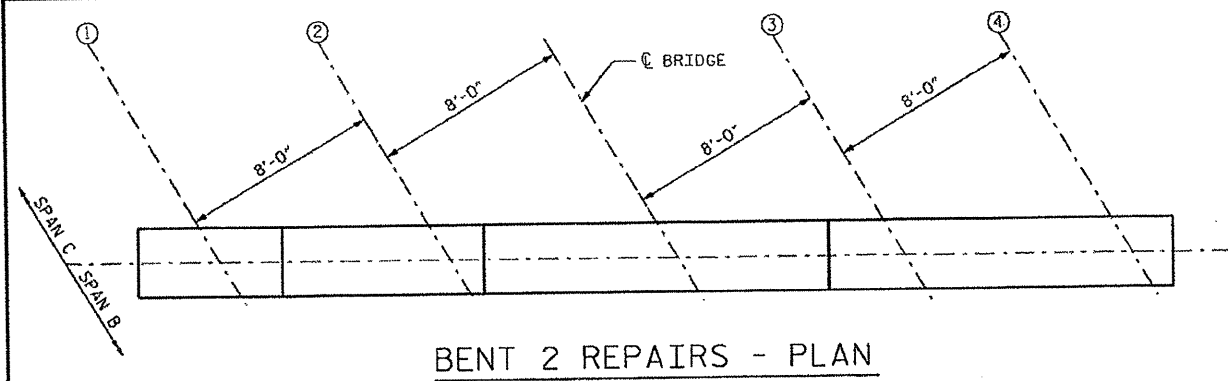
**Stantec**  
Stantec Consulting Services Inc.  
801 Jones Franklin Road  
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Raleigh, NC 27606  
Tel. (919) 851-6860  
Fax (919) 851-7024  
www.stantec.com  
License No. F-0672

DRAWN BY: C. B. BAKER DATE: 01/12  
CHECKED BY: J. T. KELVINGTON DATE: 01/12

S:\7BP.7.P.2\_Alanonca-Orange Co\Orange Bridge\_082\Drawings\BP.7.P.2\_Repair\Bent1.dgn 2/23/2012 2:20:34 PM bictor



12:20:35 PM b101an  
 2/23/2012  
 C:\Orange\Bridges\082\Drawings\B992\Repairs\Bent2.dgn  
 ITBP.7.P.2 Alamance-Orange Co\Orange



TOTAL ESTIMATED QUANTITIES:  
 SHOTCRETE REPAIR = 15 CF

**NOTES:**

REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.

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BEARING NUTS SHALL BE LOOSENED TO PROVIDE A MINIMUM OF 5/8 INCH GAP TO ALLOW FOR JACKING.

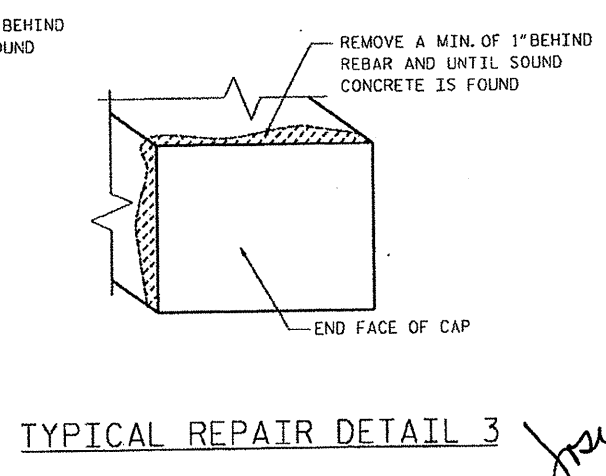
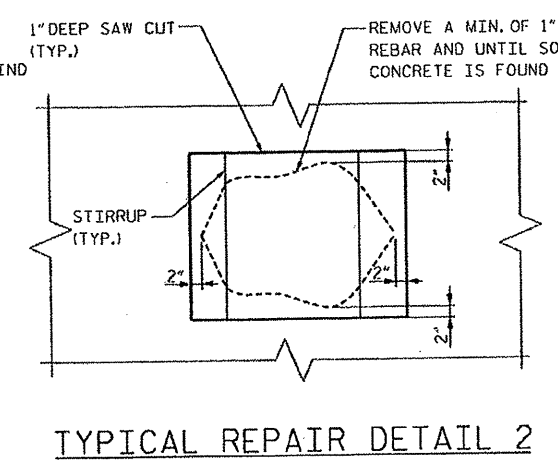
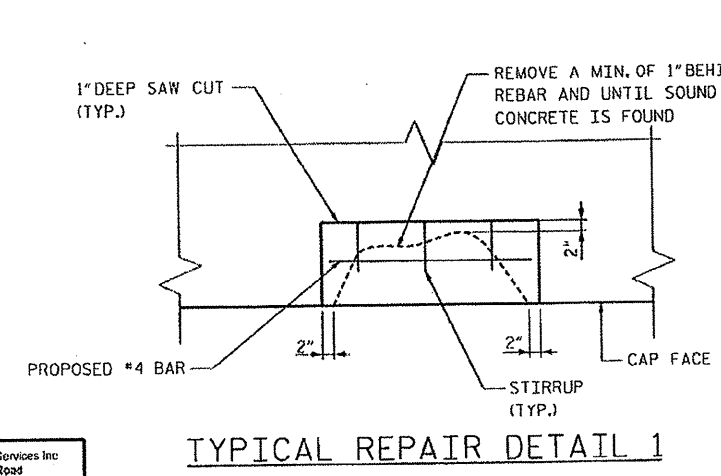
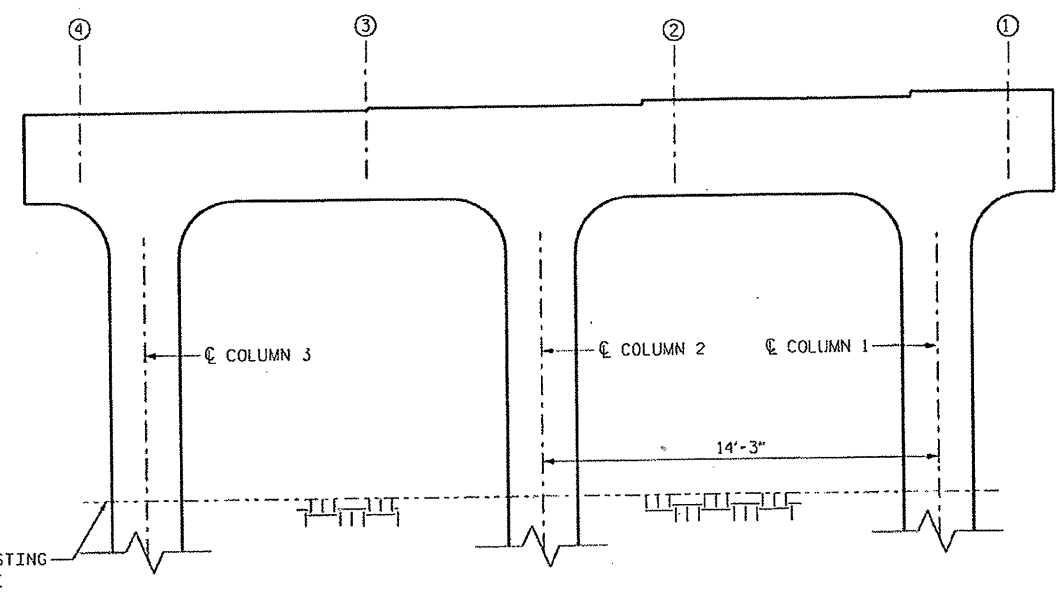
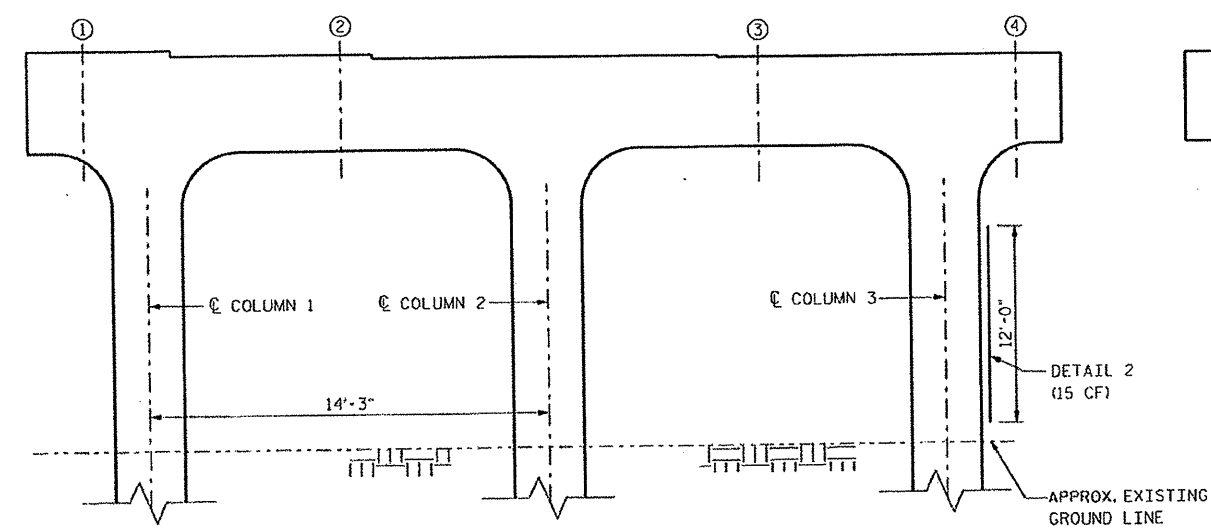
JACK ALL GIRDERS SIMULTANEOUSLY, THE SAME AMOUNT, AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.

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PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
<b>SUBSTRUCTURE REPAIRS BENT 2</b>					
<b>DECK REHAB. FOR BRIDGE NO. 82</b>					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					5-82
					TOTAL SHEETS 83

Stantec Consulting Services Inc.  
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 Fax: (919) 851-7024  
 www.stantec.com  
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DRAWN BY: C. B. BAKER DATE: 01/12  
 CHECKED BY: J. T. KELVINGTON DATE: 01/12

*Joseph J. Kelvington*  
 2/23/2012

NOTES:

REPAIR AREA DIMENSIONS SHOWN ARE APPROXIMATE BASED ON BEST AVAILABLE INFORMATION.

ALL REINFORCEMENT TO BE PROVIDED IS INCIDENTAL TO THE SUBSTR. REPAIR AND SHALL BE GRADE 60.

AREAS NOT OTHERWISE SPECIFIED FOR CONCRETE REPAIR MAY BE REPAIRED WITH SHOTCRETE, CLASS A CONC. OR POLYMER CONC. AT THE CONTRACTORS' OPTION.

JACKING SHALL BE CONDUCTED IN A MANNER SUCH THAT THE SUPERSTRUCTURE WILL NOT BE DAMAGED AND THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.

THE MAXIMUM ALLOWABLE VERTICAL JACKING DISPLACEMENT SHALL BE 1/2 INCH WITH RESPECT TO THE BEARINGS OF ADJACENT PIERS.

BEARING NUTS SHALL BE LOOSENEED TO PROVIDE A MINIMUM OF 59/64 INCH GAP TO ALLOW FOR JACKING.

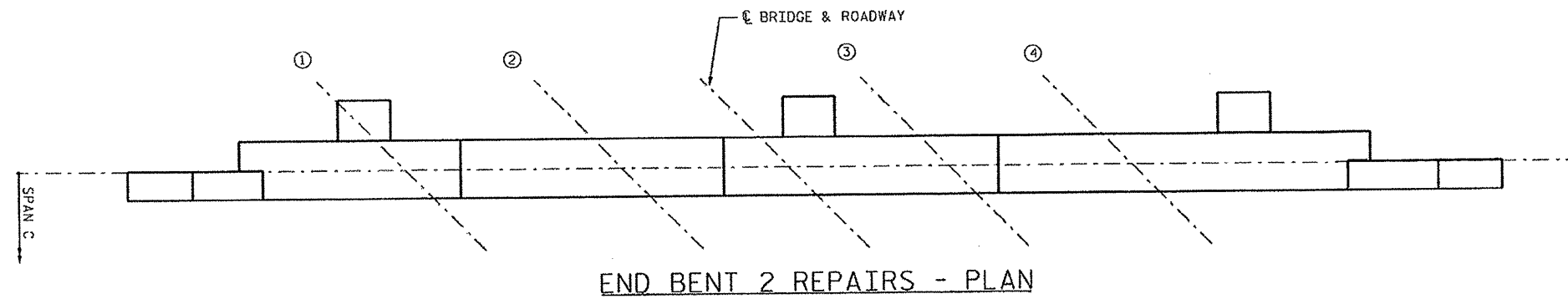
JACK ALL GIRDERS SIMULTANEOUSLY, THE SAME AMOUNT, AND AT THE SAME RATE. AFTER JACKING MAKE SURE ALL JACKS ARE LOCKED.

IF DURING THE JACKING PROCESS OR WHILE THE SPAN IS BEING SUPPORTED THE BEAMS SHIFT FROM THEIR ORIGINAL POSITION, ALL WORK WILL CEASE AND THE ENGINEER SHALL BE NOTIFIED.

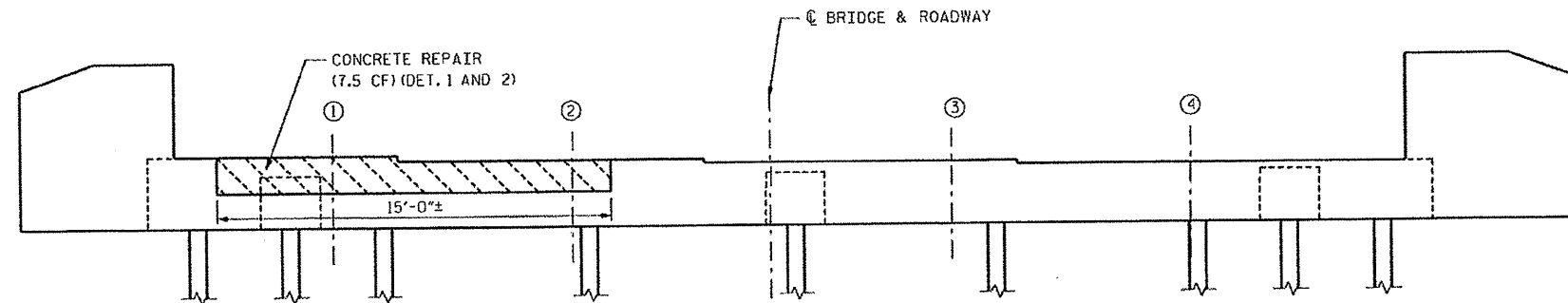
EFFECT OF VIBRATIONS FROM TRAFFIC SHOULD BE CONSIDERED DURING JACKING AND WHEN JACKS ARE LOCKED.

PROVISIONS SHALL BE MADE TO ACCOUNT FOR THERMAL MOVEMENTS DURING THE PERIOD THAT THE STRUCTURE IS RESTING ON TEMPORARY SUPPORTS.

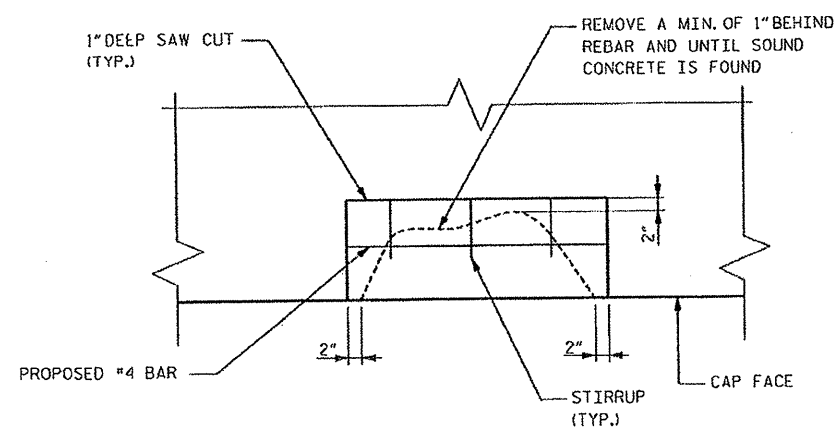
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE JACKING TO DETERMINE A JACKING LOCATION AT EACH BEARING AND PROVIDE A DESIGN FOR THE JACKING LOADS. JACKS SHALL HAVE A MINIMUM SAFE LOAD CAPACITY OF 125% OF THE CALCULATED LOADING PER AASHTO SPECIFICATIONS.



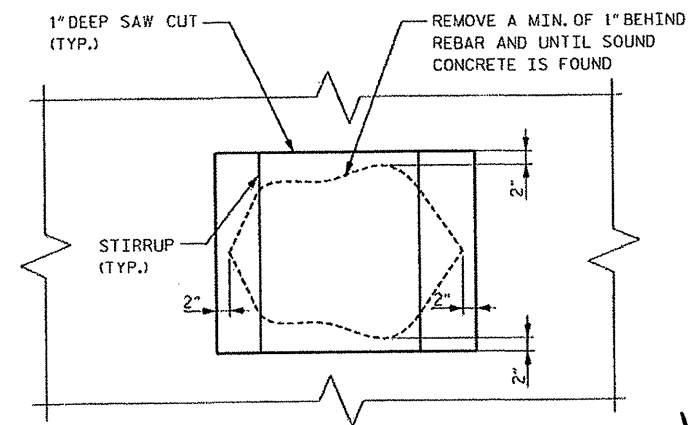
END BENT 2 REPAIRS - PLAN



SOUTH FACE  
END BENT 2 REPAIRS (SPAN C SIDE)



TYPICAL REPAIR DETAIL 1



TYPICAL REPAIR DETAIL 2

PROJECT NO. WBS 17BP.7.P.2  
ORANGE COUNTY  
STATION: \_\_\_\_\_

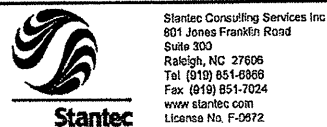
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE REPAIRS  
END BENT 2

DECK REHAB. FOR BRIDGE NO. 82

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-83
1			3			TOTAL SHEETS 83
2			4			

*Handwritten signature and stamp*



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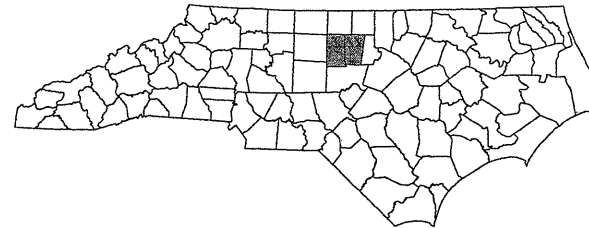
DRAWN BY: C. B. BAKER DATE: 01/12  
CHECKED BY: J. T. KELVINGTON DATE: 01/12

3P.7.P.2 Alamance-Orange Co\Drngge Bridge 082\Drawing\BPP2\_Repair\EndBent2.dgn 2/23/2012 2:23:46 PM Diction

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

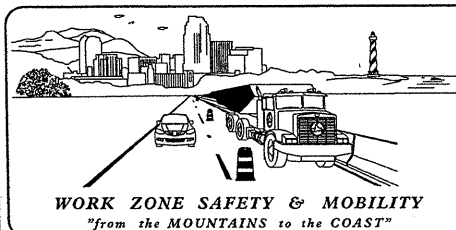
**TRANSPORTATION MANAGEMENT PLAN  
ALAMANCE & ORANGE COUNTIES**

**DIVISION 7**

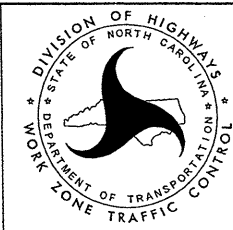


**BRIDGE PRESERVATION**

- ALAMANCE #38 – SR 1611 (SARTIN RD.) OVER STONEY CREEK**  
**ALAMANCE #41 – SR 1002 OVER STONEY CREEK**  
**ALAMANCE #51 – SR 1712 (LOWER HOPEDALE RD.) OVER HAW RIVER**  
**ALAMANCE #52 – SR 1729 (CAROLINA MILL RD.) OVER STONEY CREEK**  
**ALAMANCE #121 – SR 1136 OVER BIG STINKING QUARTER CREEK**  
**ALAMANCE #293 – SR 2123 (CHERRY LANE RD.) OVER BACK CREEK**
- ORANGE #6 – US 70 BUS/NC 86 (N. CHURTON ST.) OVER ENO RIVER**  
**ORANGE #59 – NC 86 OVER I-85**  
**ORANGE #81 – I-85 NORTHBOUND OVER SR 1006 (ORANGE GROVE RD.)**  
**ORANGE #82 – I-85 SOUTHBOUND OVER SR 1006 (ORANGE GROVE RD.)**



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	LIST OF ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	GENERAL NOTES
TMP-3	PHASING
TMP-4	ALAMANCE #38 - ROAD CLOSURE & DETOUR ROUTE
TMP-5	ALAMANCE #51 - SB WORK AREA
TMP-5A	ALAMANCE #51 - NB WORK AREA
TMP-6	ALAMANCE #121 - ROAD CLOSURE & DETOUR ROUTE
TMP-7	ORANGE #6 - US 70 BUS WB WORK AREA
TMP-7A	ORANGE #6 - US 70 BUS EB WORK AREA
TMP-8	ORANGE #59 - ROAD CLOSURE
TMP-8A	ORANGE #59 - DETOUR ROUTE
TMP-9,9A	ORANGE #81 - RIGHT LANE WORK AREA
TMP-10,10A	ORANGE #82 - RIGHT LANE WORK AREA

**TRAFFIC MANAGEMENT STRATEGY**

BRIDGE WORK WILL BE PERFORMED USING TIME RESTRICTED LANE CLOSURES OR ROAD CLOSURES. REFER TO SHEET TMP-3 FOR PHASING.



PLAN PREPARED BY:  
Stantec Consulting Services Inc.  
801 Jones Franklin Road-Suite 300  
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www.stantec.com

BETSY L. WATSON, P.E. *TRAFFIC ENGINEER*  
GEORGE KARAGEORGE *SR. TRANSPORTATION DESIGNER*

APPROVED *Betsy L. Watson*  
DATE: *2/23/12*

SEAL






































SHEET NO.

TMP-1

**WBS 17BP.7.P.2**

## LEGEND


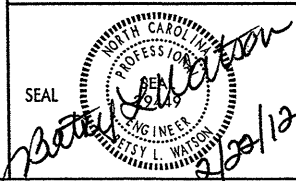

-  DIRECTION OF TRAFFIC FLOW
  -  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
  -  WORK AREA
  -  PAVEMENT REMOVAL
  -  NORTH ARROW
  -  TYPE III BARRICADE
  -  CONE
  -  DRUM
  -  SKINNY DRUM
  -  TUBULAR MARKER
  -  CHANGEABLE MESSAGE SIGN (CMS)
  -  FLAGGER
  -  AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)
  -  FLASHING ARROW BOARD (TYPE C)
  -  LAW ENFORCEMENT
  -  TRUCK MOUNTED ATTENUATOR (TMA)
  -  PORTABLE CONCRETE BARRIER (PCB)
  -  TEMPORARY CRASH CUSHION
  -  TEMPORARY SHORING
  -  WORK ZONE SIGN-PORTABLE
  -  WORK ZONE SIGN-STATIONARY
  -  WORK ZONE SIGN-STATIONARY OR PORTABLE
- SIGNALS**
-  EXISTING
  -  PROPOSED
  -  TEMPORARY
- PAVEMENT MARKINGS**
-  EXISTING PAVEMENT MARKING (GRAY)
  -  SKIP LINES
  -  MINI-SKIP LINES
  -  SOLID LINES
- PAVEMENT MARKING SYMBOLS**
-  PAVEMENT MARKING SYMBOLS
  -  EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)
  -  ONLY PAVEMENT MARKING ALPHANUMERIC CHARACTERS
- PAVEMENT MARKERS**
-  CRYSTAL / CRYSTAL
  -  CRYSTAL / RED
  -  YELLOW / YELLOW

## ROADWAY STANDARD DRAWINGS

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

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

2/20/2012 U:\TrafficControl\TCP\WBS 17BP.7.P.2 Alcancee Orange\TCP\Plan Sheets\WBS 17BP.7.P.2.TC.TMP-01A.RDWYSTDSLEGEND.dgn

 <b>Stantec</b>	Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	APPROVED: _____ DATE: _____ 	
<b>LEGEND &amp; ROADWAY STANDARD DRAWINGS</b>			

## GENERAL NOTES

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

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.

### LANE CLOSURE TIME RESTRICTIONS

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

ROAD NAME/BRIDGE #	DAY AND TIME RESTRICTIONS
I-85 NC 86 US 70 BUSINESS AT BRIDGES #6,59,81,82	6:00 A.M. - 7:00 P.M. MONDAY THRU SUNDAY (EVERY DAY)
SR 1712 BR #51 SR 1729 BR #52 SR 1002 BR #41 SR 1136 BR #121 SR 2123 BR #293 SR 1006 BR #81/82	6:00 A.M.-9:00 A.M. MONDAY THRU FRIDAY 4:00 P.M.-7:00 P.M. MONDAY THRU FRIDAY

### HOLIDAY & HOLIDAY WEEKEND LANE & ROAD CLOSURE TIME RESTRICTIONS

B) DO NOT CLOSE OR NARROW TRAVEL LANES AND DO NOT CLOSE ROADWAYS DURING HOLIDAYS AND HOLIDAY WEEKENDS AS FOLLOWS:

ROAD NAME
I-85, NC 86, US 70, SR 1712, SR 1611, SR 1006, SR 1729, SR 1002, SR 1138.

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

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 86 BRIDGE #59	6:00 A.M. - 7:00 P.M. MONDAY THRU SUNDAY

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) LANE CLOSURES ARE REQUIRED WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN ANY PORTION OF A TRAVEL LANE. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) INSTALL ALL LANE CLOSURES ACCORDING TO THE PLANS, ROADWAY STANDARD DRAWINGS (1101.02), OR AS DIRECTED BY THE ENGINEER.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- G) 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 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) 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 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

### FLAGGER CONTROLLED LANE CLOSURES

- I) DURING FLAGGER OPERATIONS DO NOT STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME.
- J) LOCATE FLAGGER STATIONS SUCH THAT APPROACHING TRAFFIC WILL HAVE SUFFICIENT DISTANCE TO STOP AT THE INTENDED STOPPING POINT. IF NEEDED, EXTEND THE LANE CLOSURE SUCH THAT THE FLAGGER STATION IS POSITIONED BEFORE A HORIZONTAL OR CREST VERTICAL CURVE WHERE ADEQUATE STOPPING SIGHT DISTANCE TO THE FLAGGER IS PROVIDED. REFER TO ROADWAY STANDARD DRAWING 1101.11 SHEET 2.
- K) FLAGGERS SHALL NOT STAND IN THE ROADWAY.
- L) USE FLAGGERS TO CONTROL VEHICLES AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. USE FLAGGER SIGN W20-7A IN ADVANCE OF ALL FLAGGER STATIONS. WHEN AN INTERSECTION IS SIGNALIZED HAVE AUTHORIZED PERSONNEL PLACE THE SIGNAL IN FLASH MODE WHEN DIRECTED BY THE ENGINEER.
- M) PROVIDE ILLUMINATION FOR FLAGGER STATIONS DURING NIGHT HOURS. ILLUMINATION FOR FLAGGER STATIONS WILL NOT BE PAID FOR SEPARATELY AND WILL BE CONSIDERED INCIDENTAL TO OTHER ITEMS IN THE CONTRACT.
- N) PLACE CHANNELIZING DEVICES FOR FLAGGER OPERATION LANE CLOSURES AT A MAXIMUM SPACING OF 20 FEET IN TAPERS AND AT A MAXIMUM SPACING OF 80 FEET ALONG THE BUFFER SPACE AND WORK AREA.
- O) USE PILOT VEHICLES IN CONJUNCTION WITH FLAGGERS WHEN SHOWN IN THE PLAN OR WHEN DIRECTED BY THE ENGINEER. MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A VISIBLE LOCATION ON THE REAR OF PILOT VEHICLES.
- P) ADVISE RESIDENTS AND BUSINESSES AFFECTED BY THE LANE CLOSURE ABOUT METHODS OF SAFE INGRESS AND EGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

### ROAD CLOSURES

- Q) PROVIDE SIGNING AND DEVICES FOR ROAD CLOSURES ACCORDING TO THE TRAFFIC MANAGEMENT PLAN. COVER OR REMOVE ALL SIGNS AND DEVICES FOR ROAD CLOSURES WHEN NOT IN EFFECT.
- R) PROVIDE OFFSITE DETOUR ROUTE SIGNING AS SHOWN IN THE TRAFFIC MANAGEMENT PLAN. COVER OR REMOVE OFFSITE DETOUR SIGNING WHEN THE DETOUR IS NOT IN OPERATION. ALL OFFSITE DETOUR ROUTES MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTING.
- S) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- T) WHEN CLOSING A ROADWAY OR DRIVEWAY PLACE TYPE III BARRICADES COMPLETELY ACROSS THE ROADWAY OR FROM CURB TO CURB. ATTACH BARRICADE MOUNTED "ROAD CLOSED" SIGN R11-2 AT ALL CLOSURE LOCATIONS. IF LOCAL TRAFFIC IS TO BE MAINTAINED STAGGER THE BARRICADES TO ALLOW ACCESS.
- U) INSTALL SIGNS BEFORE BARRICADES WHEN CLOSING A ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING A ROADWAY TO TRAFFIC. INSTALL/REMOVE ROAD CLOSURE SIGNS AND BARRICADES IN A CONTINUOUS OPERATION AND WITHIN THE SAME CALENDAR DAY.

### PAVEMENT MARKINGS AND MARKERS

- V) RECORD ALL LOCATIONS AND TYPES OF EXISTING PAVEMENT MARKINGS AS THEY WILL BE REPLACED IN THE SAME LOCATION ON THE NEW SURFACE.
- W) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- X) UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:


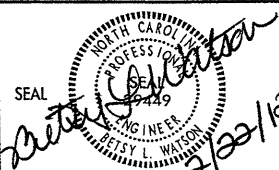

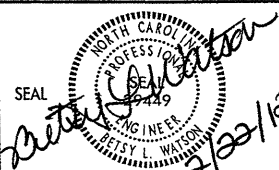
ROAD NAME	MARKING	PAVEMENT MARKER
ALAMANCE CO. ALL ROADS	PAINT	NONE
ORANGE CO. ALL ROADS	POLYUREA	RAISED PERMANENT

- Y) REPLACE ANY PAVEMENT MARKINGS ERADICATED OR DAMAGED BY CONSTRUCTION OPERATIONS BEFORE OPENING LANES TO TRAFFIC. A THIN LAYER OF PAINT MAY BE USED INITIALLY UNTIL FINAL MARKINGS ARE PLACED.

### MISCELLANEOUS

- Z) ALL DIMENSIONS AND STATIONS IN THE TRAFFIC MANAGEMENT PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- AA) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.

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 <b>Stantec</b> <small>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</small>	APPROVED: _____ DATE: _____ 		<h2 style="margin: 0;">GENERAL NOTES</h2>
			

## PHASING

PERFORM BRIDGE WORK USING THE FOLLOWING TRAFFIC CONTROL METHODS:

### ALAMANCE COUNTY

BRIDGE #38 - SR 1611 (SARTIN RD.) OVER STONEY CREEK

PROVIDE OFFSITE DETOUR AND CLOSE SR 1611 PER ROADWAY STANDARD DRAWING 1101.03-SHEET 1 (SEE SHEET TMP-4).

WORK ON THIS BRIDGE IS REQUIRED TO BE PERFORMED WITHIN A TWENTY ONE (21) CONTINUOUS CALENDAR DAY ROAD CLOSURE PERIOD. REFER TO PROJECT SPECIAL PROVISIONS INTERMEDIATE CONTRACT TIMES.

IF FLAGGING OPERATIONS ARE REQUIRED USE FLAGGER CONTROLLED TEMPORARY LANE CLOSURES PER ROADWAY STANDARD DRAWING 1101.02-SHEET 1.

BRIDGE #41-SR 1002 (ALTAMAHAW UNION RIDGE RD.) OVER STONEY CREEK

USE FLAGGER CONTROLLED TEMPORARY LANE CLOSURES PER ROADWAY STANDARD DRAWING 1101.02-SHEET 1.

BRIDGE #51 - SR 1712 (LOWER HOPEDALE RD.) OVER HAW RIVER

USE FLAGGER CONTROLLED TEMPORARY LANE CLOSURES PER SHEETS TCP-5,5A.

BRIDGE #52 - SR 1729 (CAROLINA MILL RD.) OVER STONEY CREEK

USE FLAGGER CONTROLLED TEMPORARY LANE CLOSURES PER ROADWAY STANDARD DRAWING 1101.02-SHEET 1.

BRIDGE #121 - SR 1136 (BELLMONT-MT HERMAN RD.) OVER BIG STINKING QUARTER CREEK

USE FLAGGER CONTROLLED TEMPORARY LANE CLOSURES PER ROADWAY STANDARD DRAWING 1101.02-SHEET 1.

BRIDGE #293 - SR 2123 (CHERRY LANE RD.) OVER BACK CREEK

PROVIDE OFFSITE DETOUR AND CLOSE SR 2123 IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.03-SHEET 1 (SEE SHEET TMP-6).

WORK ON THIS BRIDGE IS REQUIRED TO BE PERFORMED BETWEEN JUNE 13 AND AUGUST 20 WITHIN A TWENTY ONE (21) CONTINUOUS CALENDAR DAY ROAD CLOSURE PERIOD. REFER TO PROJECT SPECIAL PROVISIONS INTERMEDIATE CONTRACT TIMES.

IF FLAGGING OPERATIONS ARE REQUIRED USE FLAGGER CONTROLLED TEMPORARY LANE CLOSURES PER ROADWAY STANDARD DRAWING 1101.02-SHEET 1.

### ORANGE COUNTY

BRIDGE #6 - US 70 BUS/NC 86 OVER ENO RIVER

USE FLAGGER/LAW ENFORCEMENT CONTROLLED TEMPORARY LANE CLOSURES PER SHEETS TMP-7,7A.

BRIDGE #59 - NC 86 OVER I-85

PERFORM WORK ON BRIDGE #59 USING NIGHTLY ROAD CLOSURES. PROVIDE OFFSITE DETOUR AND CLOSE NC 86 PER SHEETS TMP-8,8A.

FOR LANE CLOSURES ON I-85 REFER TO ROADWAY STANDARD DRAWING 1101.02, SHEET 4.

BRIDGE #81 - I-85 NORTHBOUND OVER SR 1006 (ORANGE GROVE RD.)

FOR RIGHT LANE WORK AREA, USE RIGHT LANE CLOSURES PER SHEETS TMP-9,9A.

FOR LEFT LANE WORK AREA, USE LEFT LANE CLOSURES PER ROADWAY STANDARD 1101.02, SHEET 4.

FOR LANE CLOSURES ON ORANGE GROVE RD. REFER TO ROADWAY STANDARD DRAWING 1101.02, SHEET 1.




BRIDGE #82 - I-85 SOUTHBOUND OVER SR 1006 (ORANGE GROVE RD.)

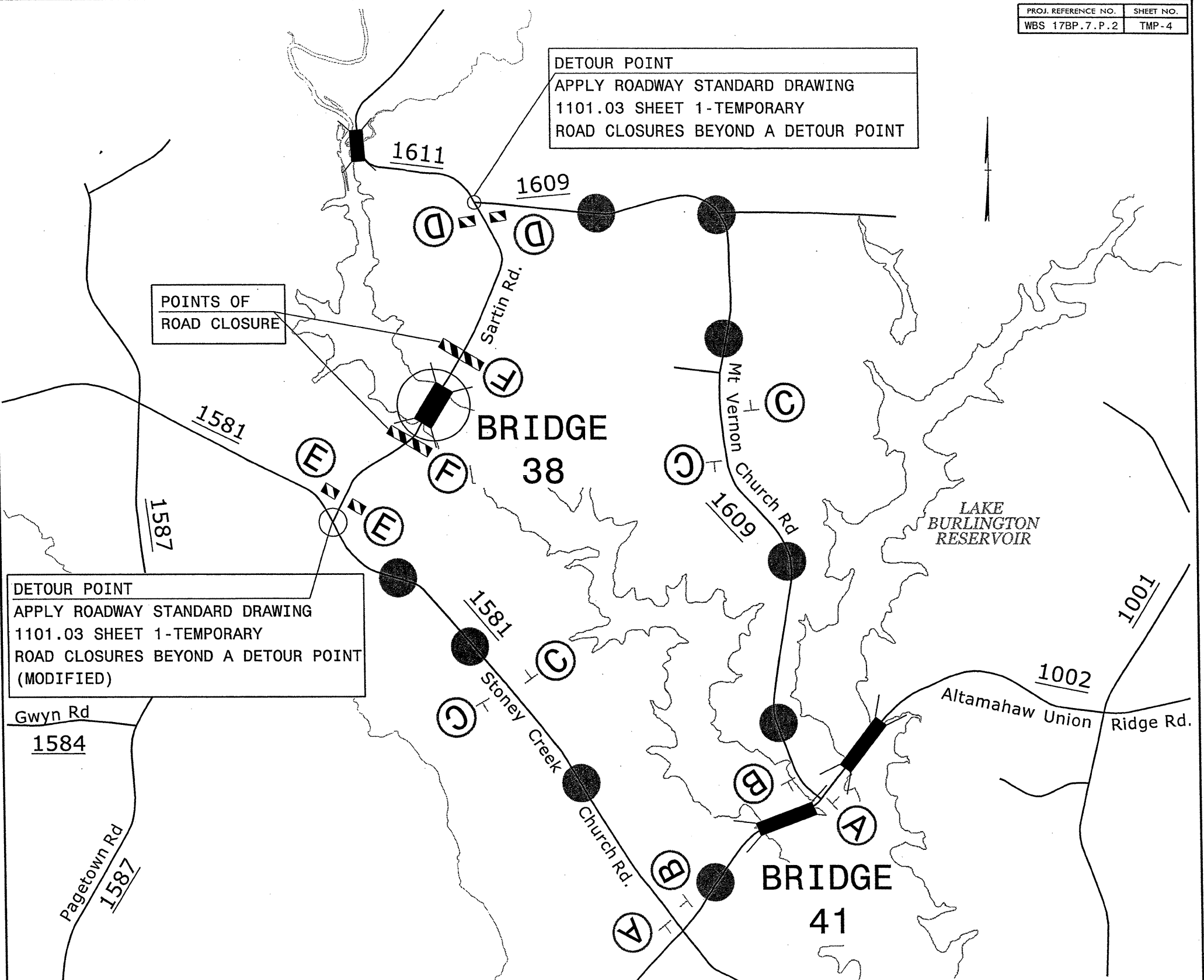
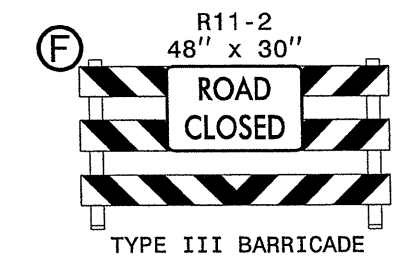
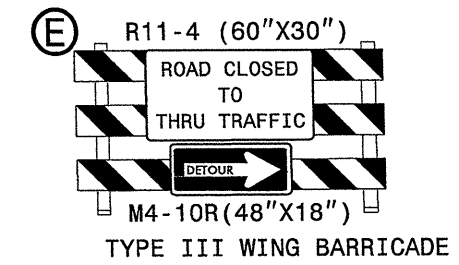
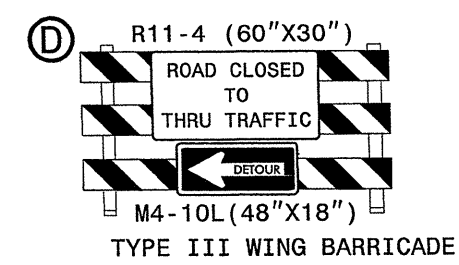
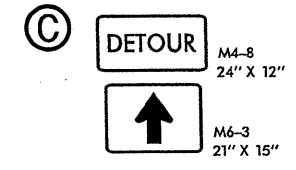
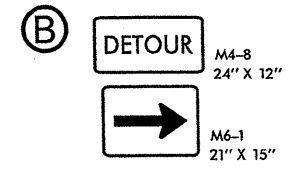
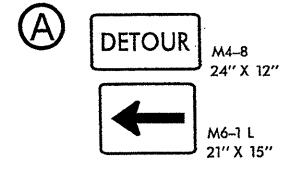
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FOR LEFT LANE WORK AREA, USE LEFT LANE CLOSURES PER ROADWAY STANDARD 1101.02, SHEET 4.


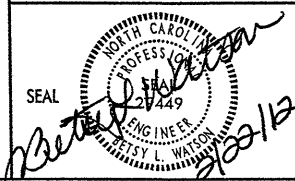

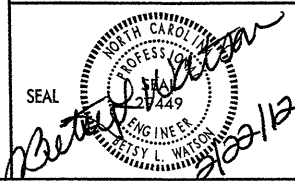
FOR LANE CLOSURES ON ORANGE GROVE RD. REFER TO ROADWAY STANDARD DRAWING 1101.02, SHEET 1.

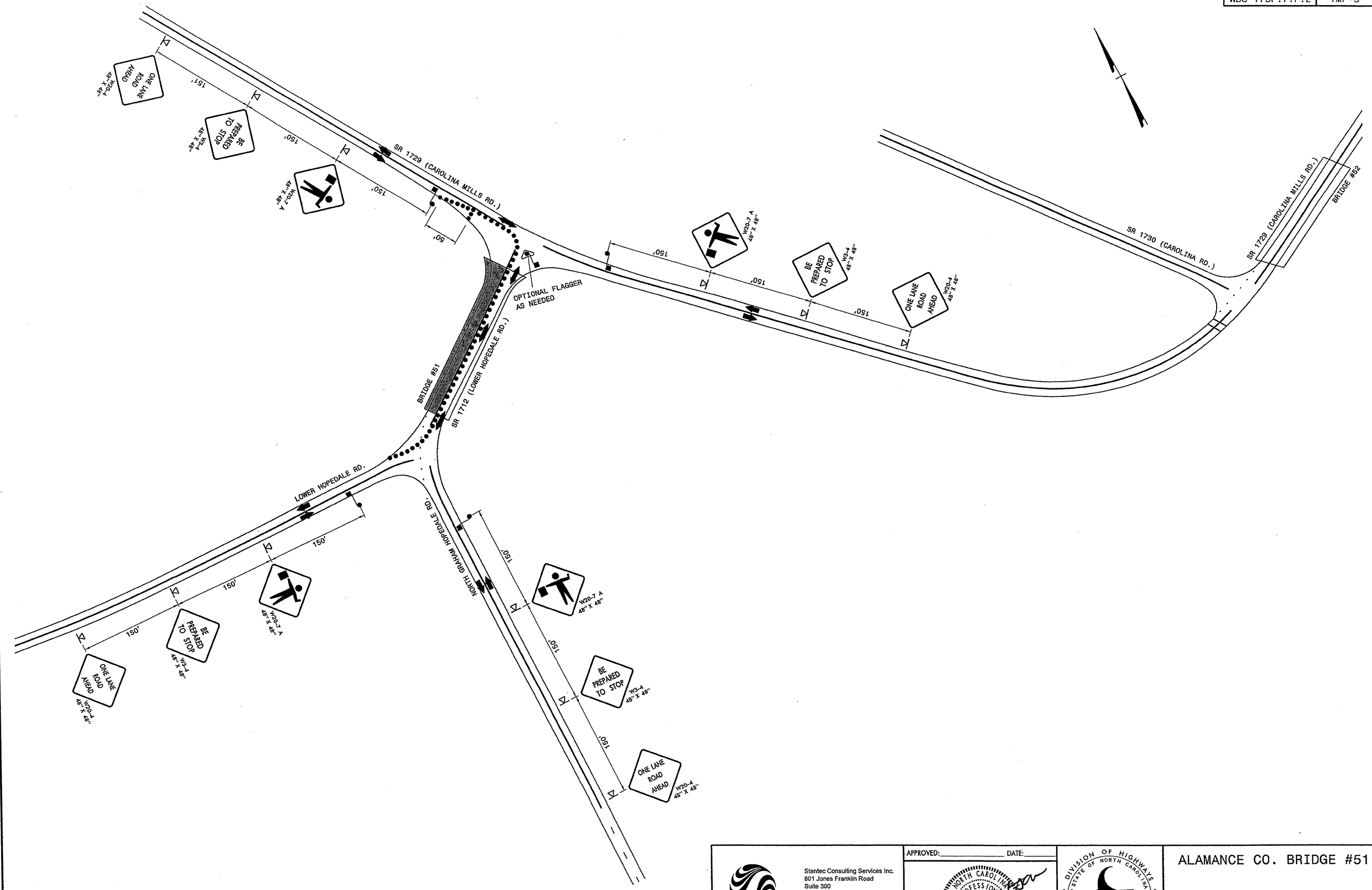
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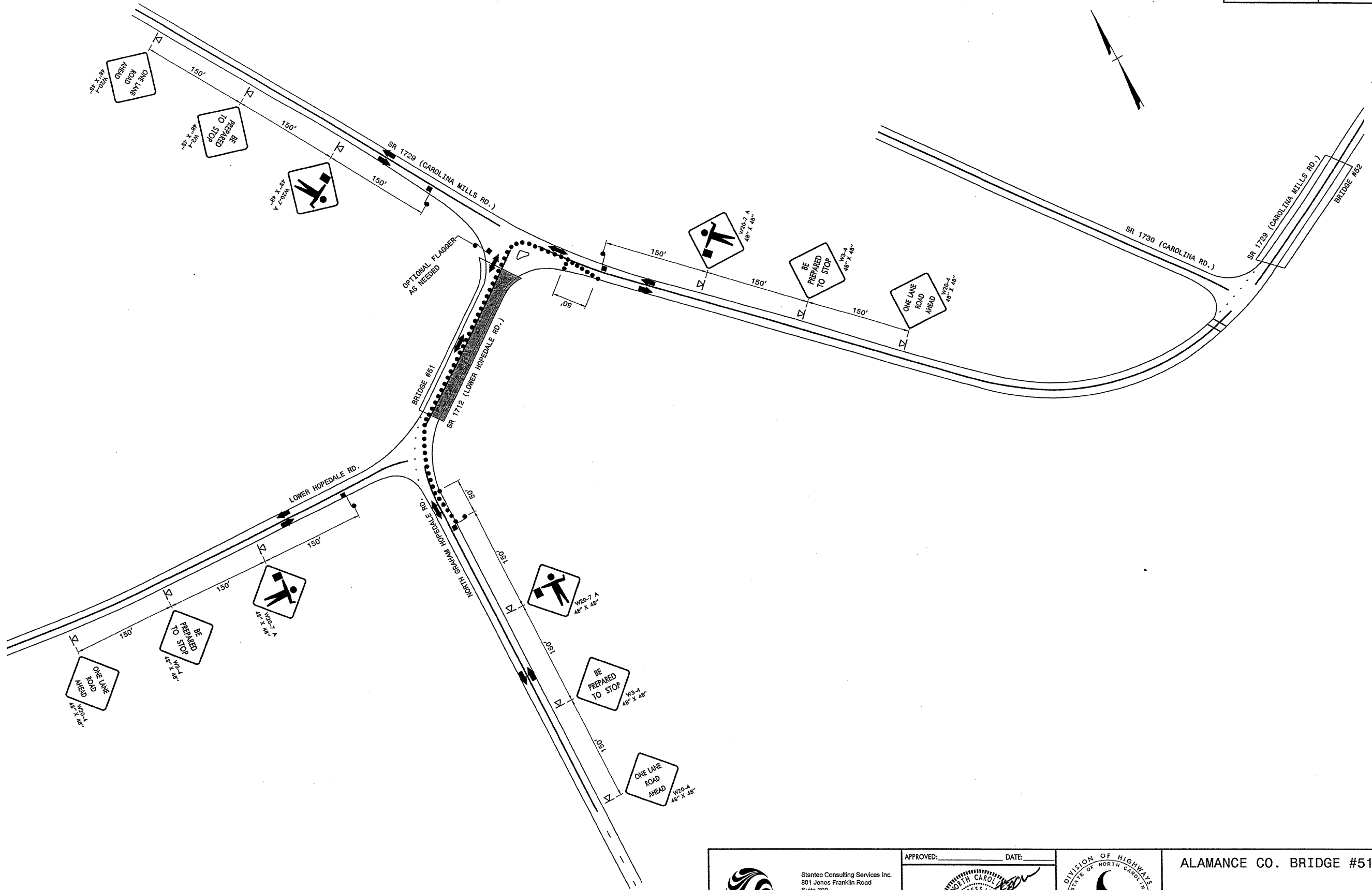
 Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	APPROVED: _____ DATE: _____ 		ALAMANCE CO. BRIDGE #38  ROAD CLOSURE & DETOUR ROUTE
	SEAL 		




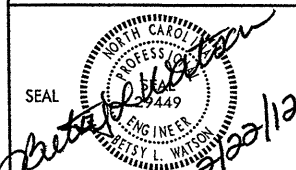

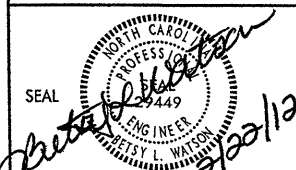
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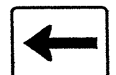
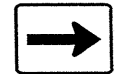


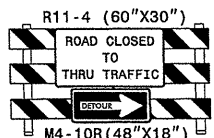

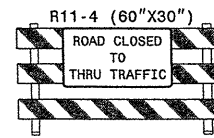

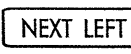
 Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	APPROVED: _____ DATE: _____ 		ALAMANCE CO. BRIDGE #51  SR 1712 SOUTHBOUND WORK AREA
	SEAL Patsy L. Watson 2/20/12		

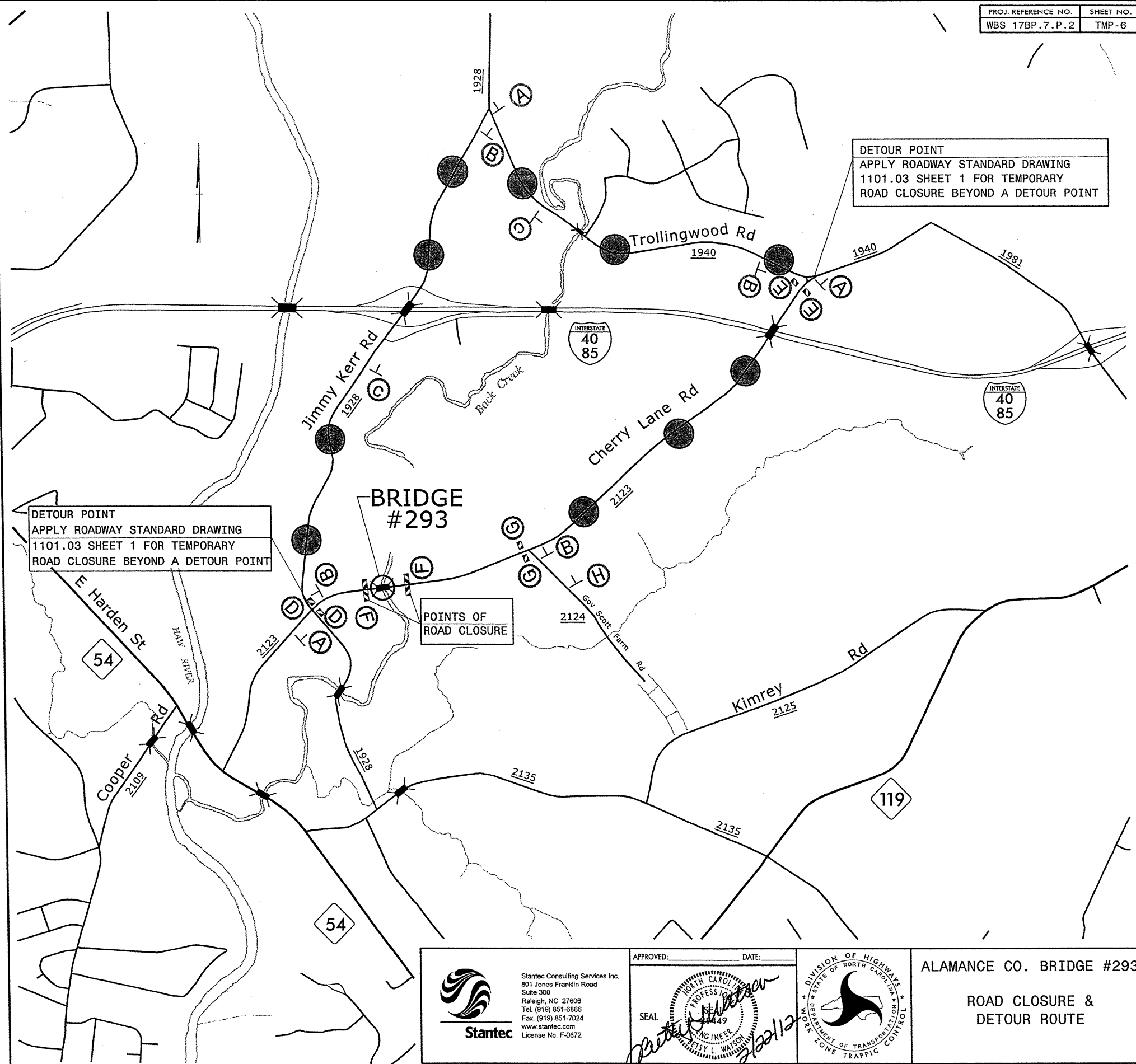




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- (A) **DETOUR** M4-8 24" X 12"  
 M6-1 L 21" X 15"
- (B) **DETOUR** M4-8 24" X 12"  
 M6-1 21" X 15"
- (C) **DETOUR** M4-8 24" X 12"  
 M6-3 21" X 15"
- (D)  R11-4 (60"X30")  
ROAD CLOSED TO THRU TRAFFIC  
M4-10L (48"X18")  
TYPE III BARRICADE
- (E)  R11-4 (60"X30")  
ROAD CLOSED TO THRU TRAFFIC  
M4-10R (48"X18")  
TYPE III BARRICADE
- (F)  R11-2 48" x 30"  
ROAD CLOSED  
TYPE III BARRICADE
- (G)  R11-4 (60"X30")  
ROAD CLOSED TO THRU TRAFFIC  
TYPE III BARRICADE
- (H)  W20-3 48" X 48"  
 SP-4L 48" X 12"




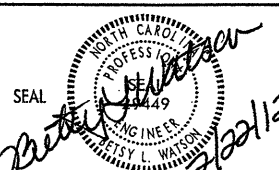

DETOUR POINT  
 APPLY ROADWAY STANDARD DRAWING  
 1101.03 SHEET 1 FOR TEMPORARY  
 ROAD CLOSURE BEYOND A DETOUR POINT

DETOUR POINT  
 APPLY ROADWAY STANDARD DRAWING  
 1101.03 SHEET 1 FOR TEMPORARY  
 ROAD CLOSURE BEYOND A DETOUR POINT

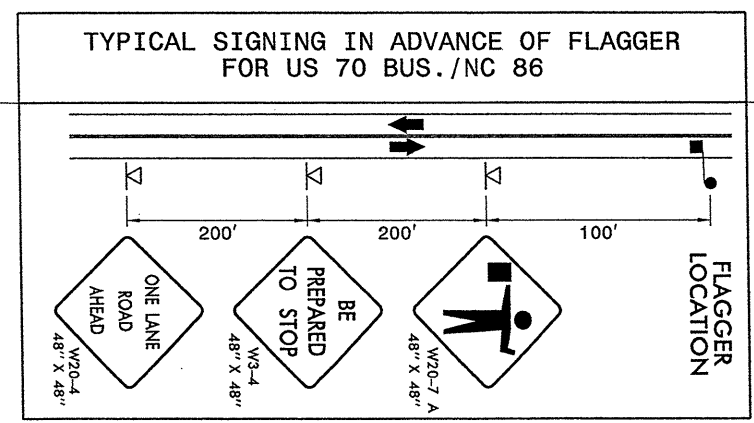
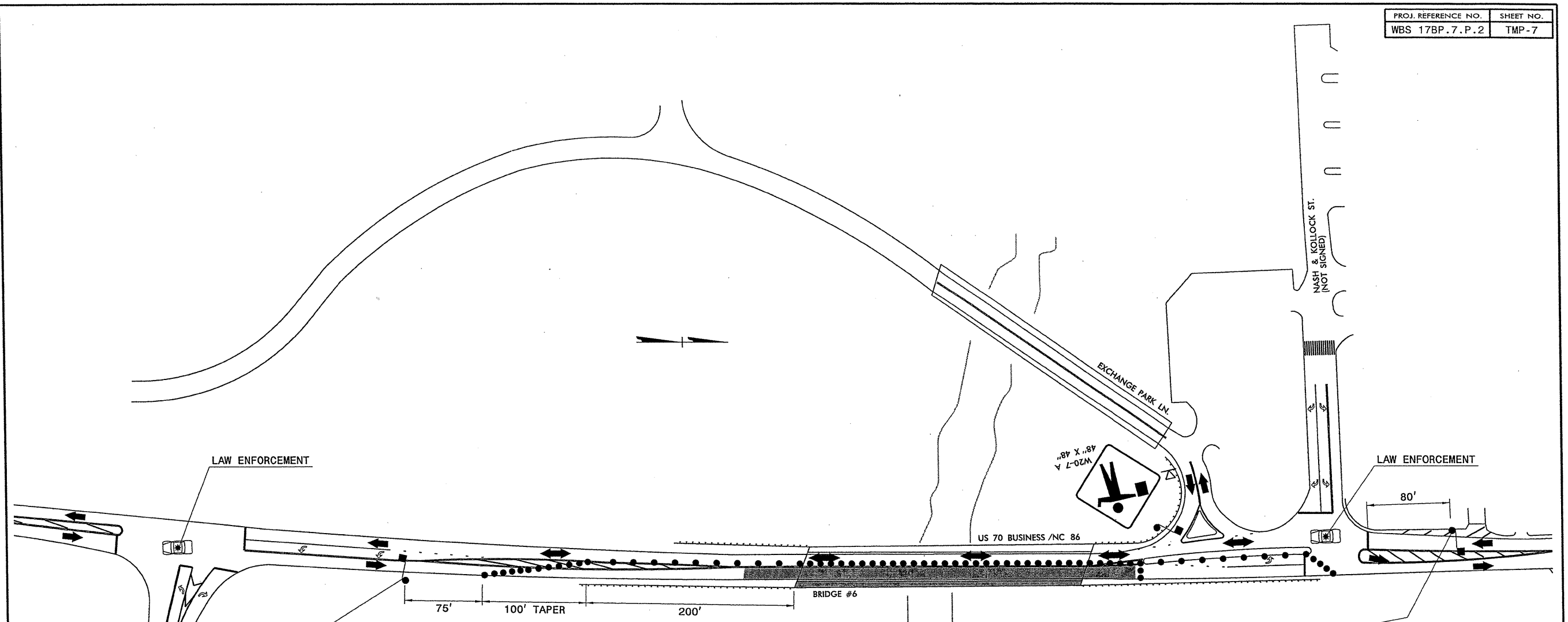
POINTS OF  
 ROAD CLOSURE


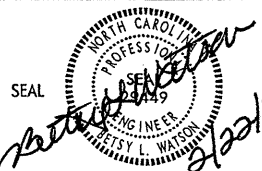

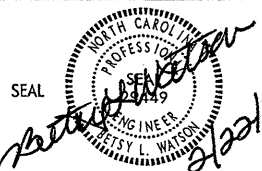
BRIDGE  
 #293

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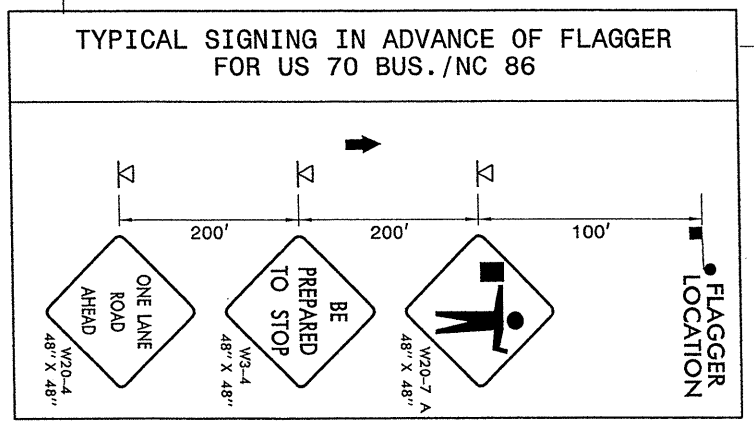
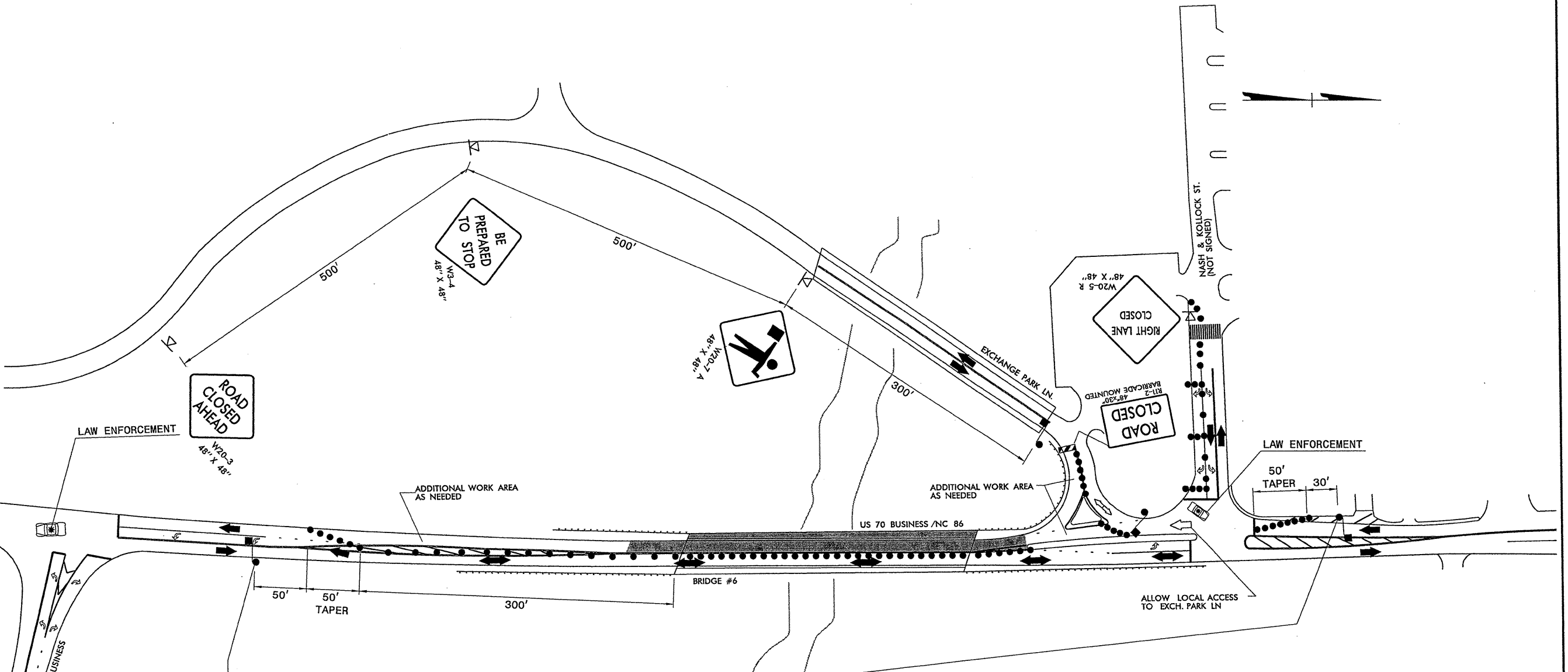
 Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672	APPROVED: _____ DATE: _____ 		ALAMANACE CO. BRIDGE #293  ROAD CLOSURE & DETOUR ROUTE
	SEAL: _____ _____ _____		

2/20/2012  
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 gkar agbarge



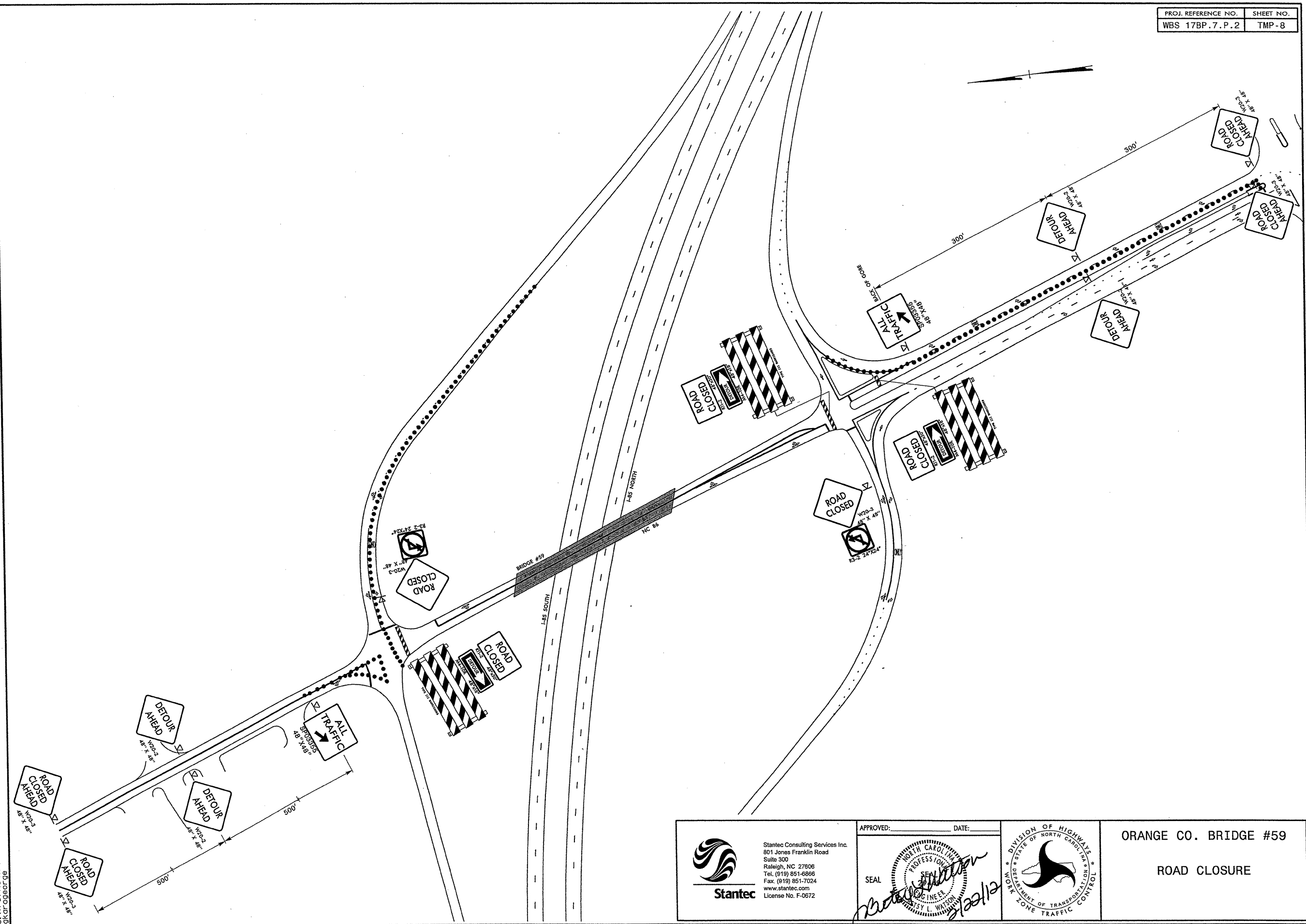
 <p>Stantec Consulting Services Inc.        801 Jones Franklin Road        Suite 300        Raleigh, NC 27606        Tel. (919) 851-6866        Fax. (919) 851-7024        www.stantec.com        License No. F-0672</p>	APPROVED: _____ DATE: _____ 		<p><b>ORANGE CO. BRIDGE #6</b></p> <p><b>US 70 BUS WB WORK AREA</b></p>
			





2/20/2012  
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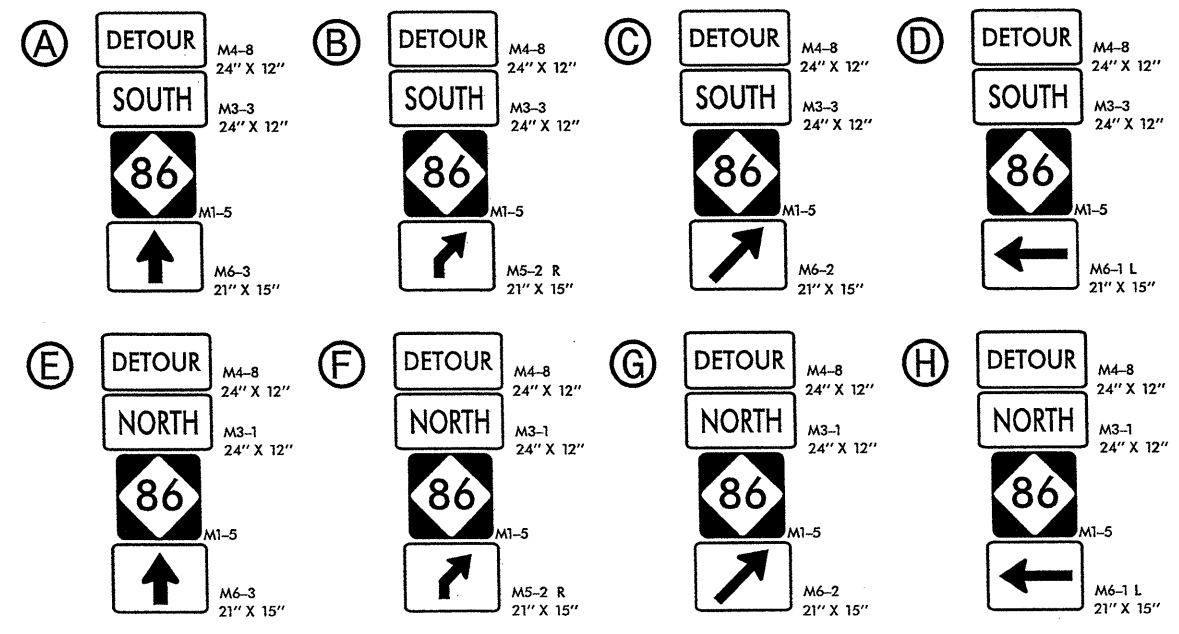
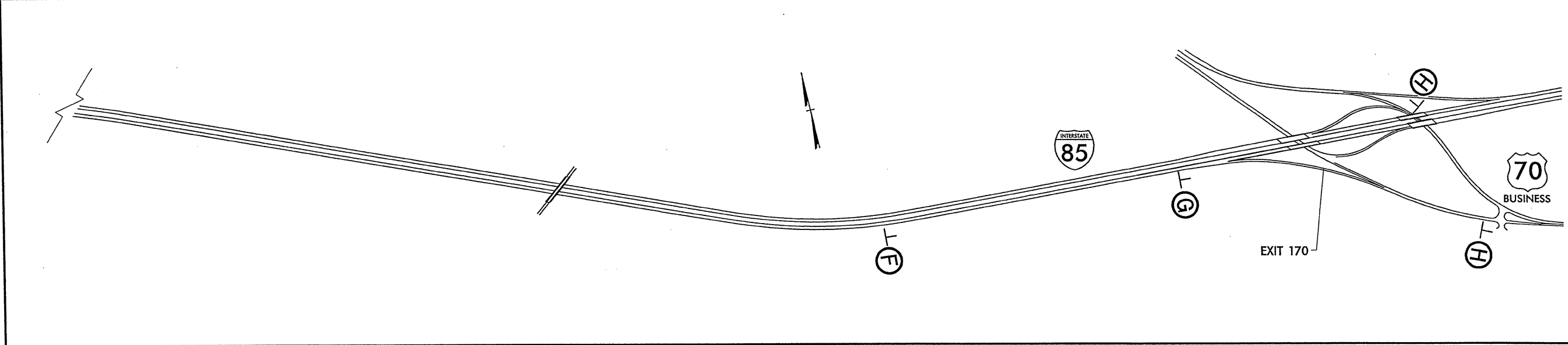
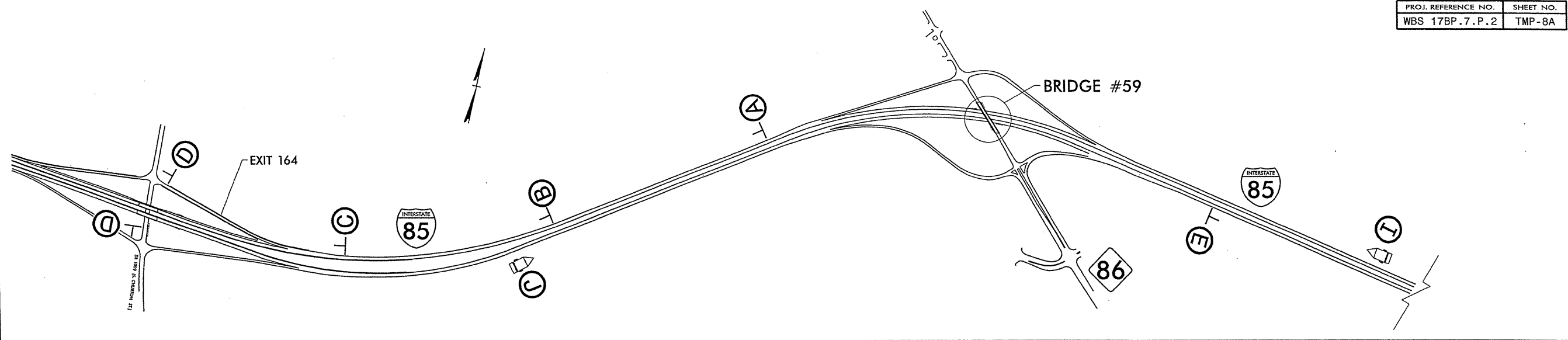


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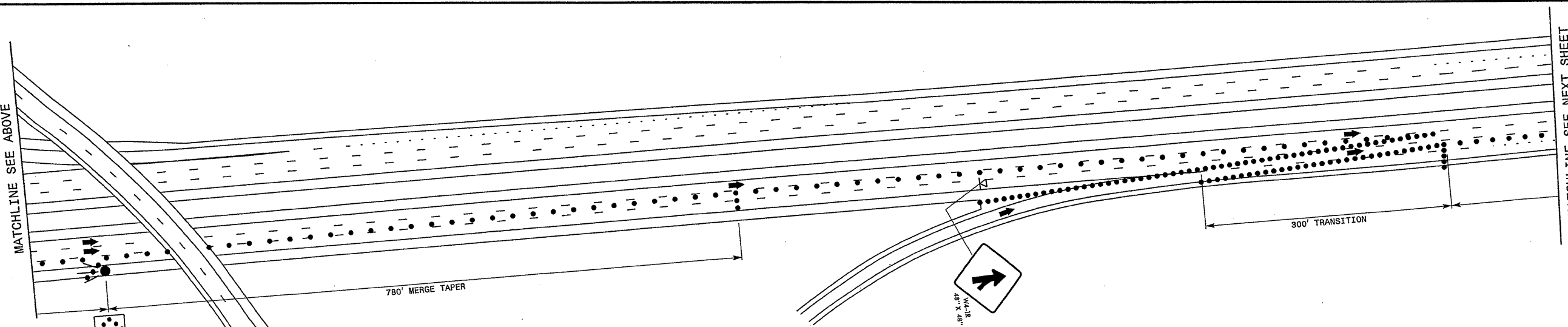
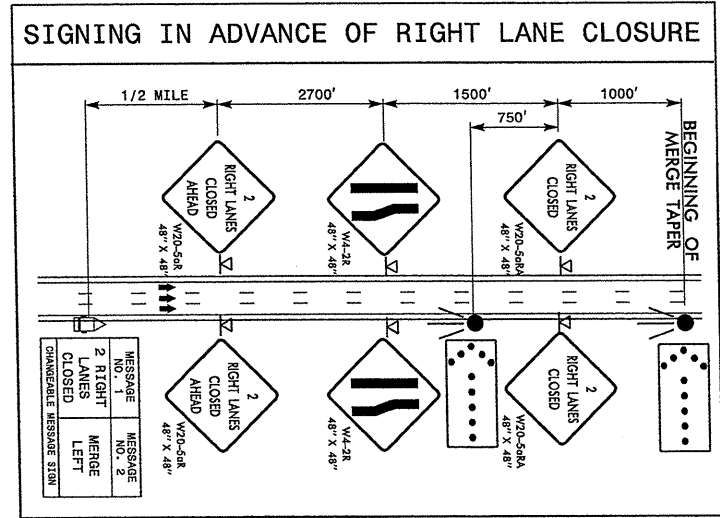
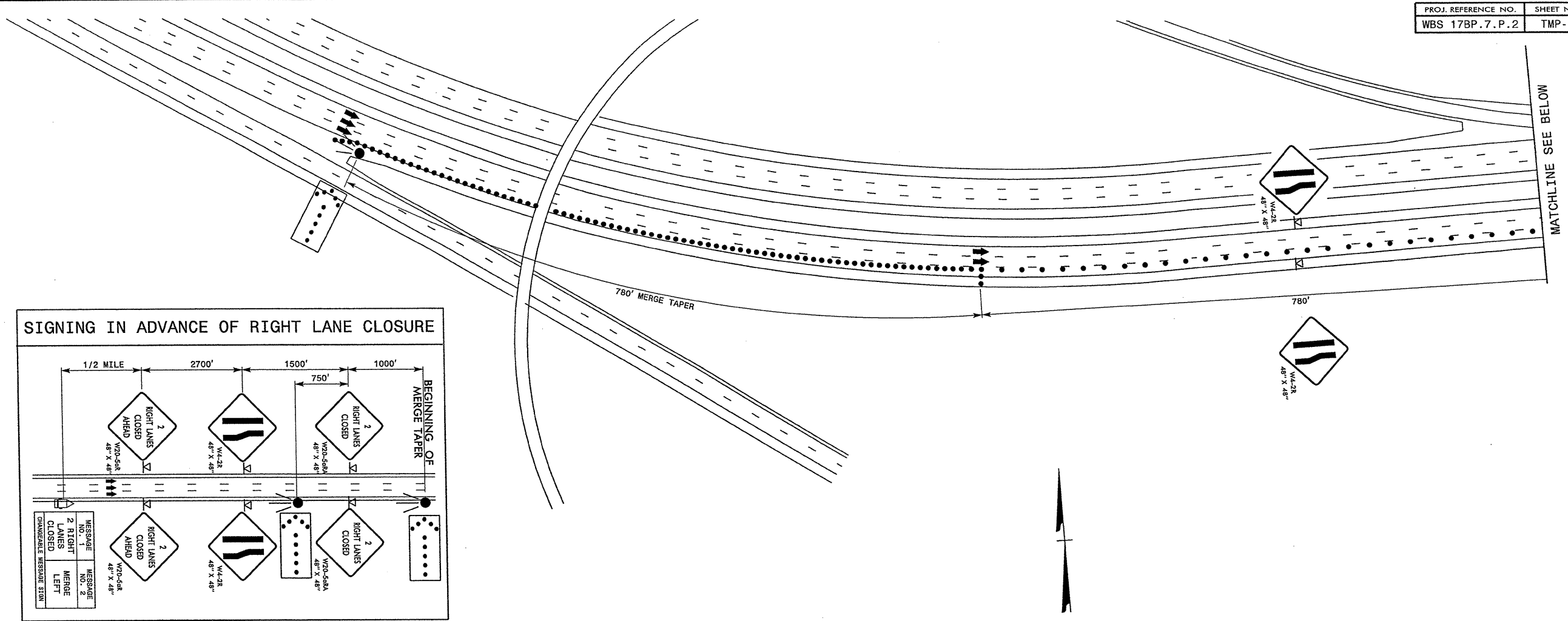


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	86 SOUTH CLOSED	86 SOUTH USE EXIT 164
	CHANGEABLE MESSAGE SIGN	

<b>J</b>	MESSAGE NO. 1	MESSAGE NO. 2
	86 NORTH CLOSED	86 NORTH USE EXIT 170
	CHANGEABLE MESSAGE SIGN	

2/20/2014 11:41:00 AM C:\Users\jgibson\Documents\Projects\17BP.7.P.2\17BP.7.P.2.TC.TMP\_08A\_ORANGE\_BRIDGE\_59\_DETOUT.dgn

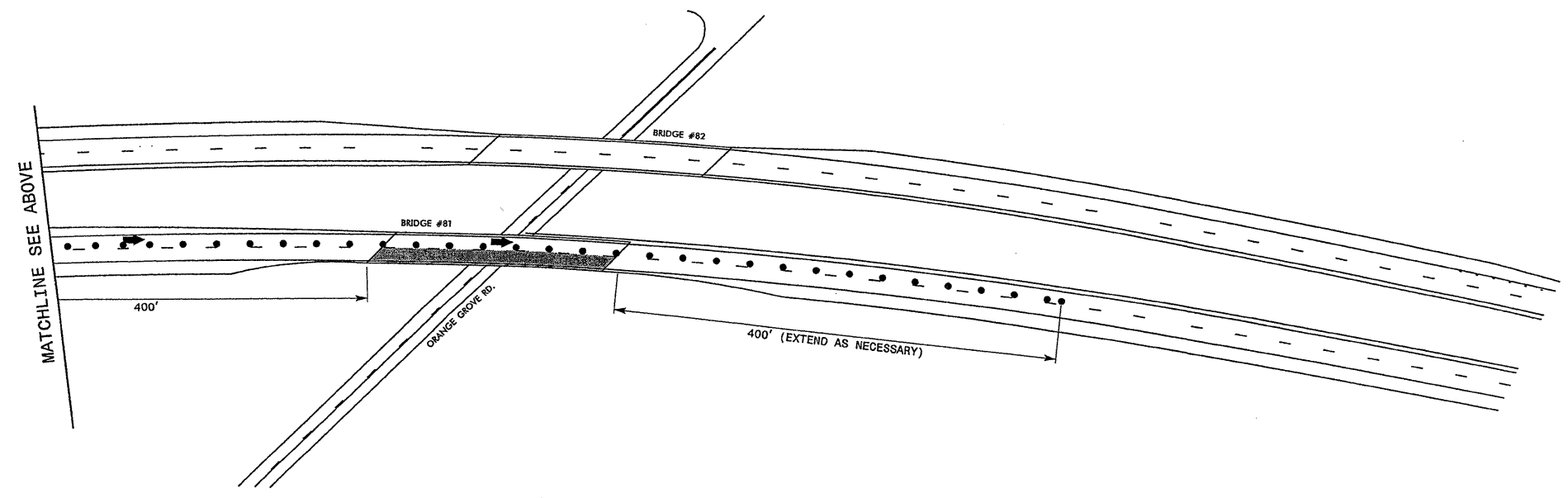
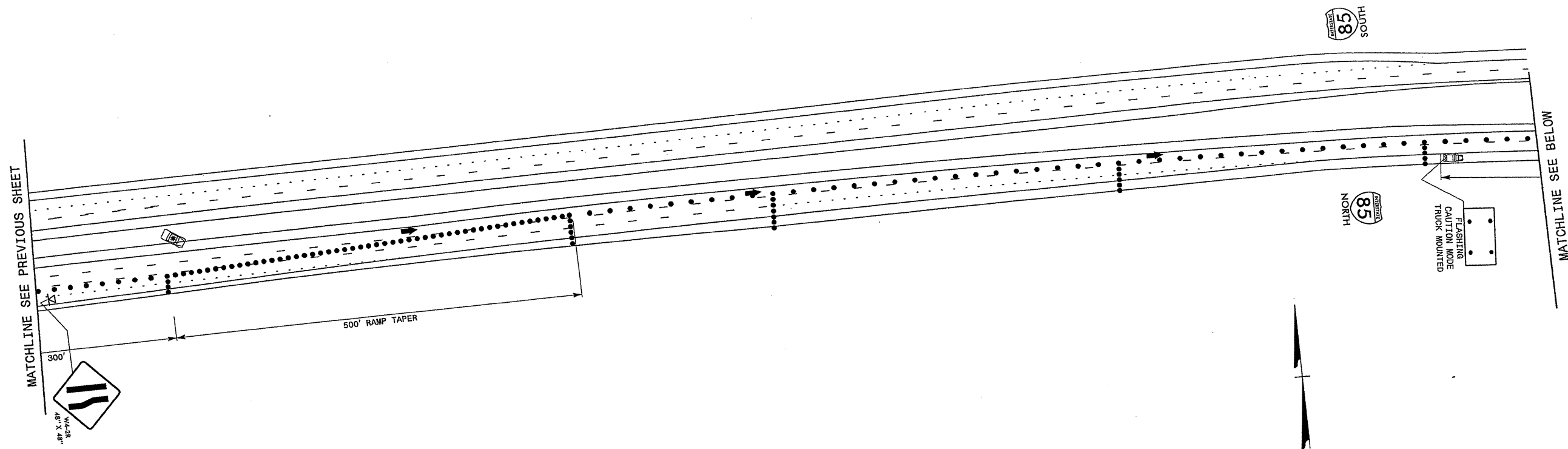
<p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	APPROVED: _____ DATE: _____ 		ORANGE CO. BRIDGE #59  DETOUR ROUTE


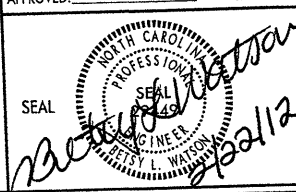
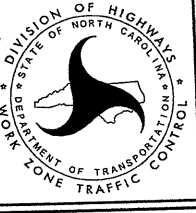


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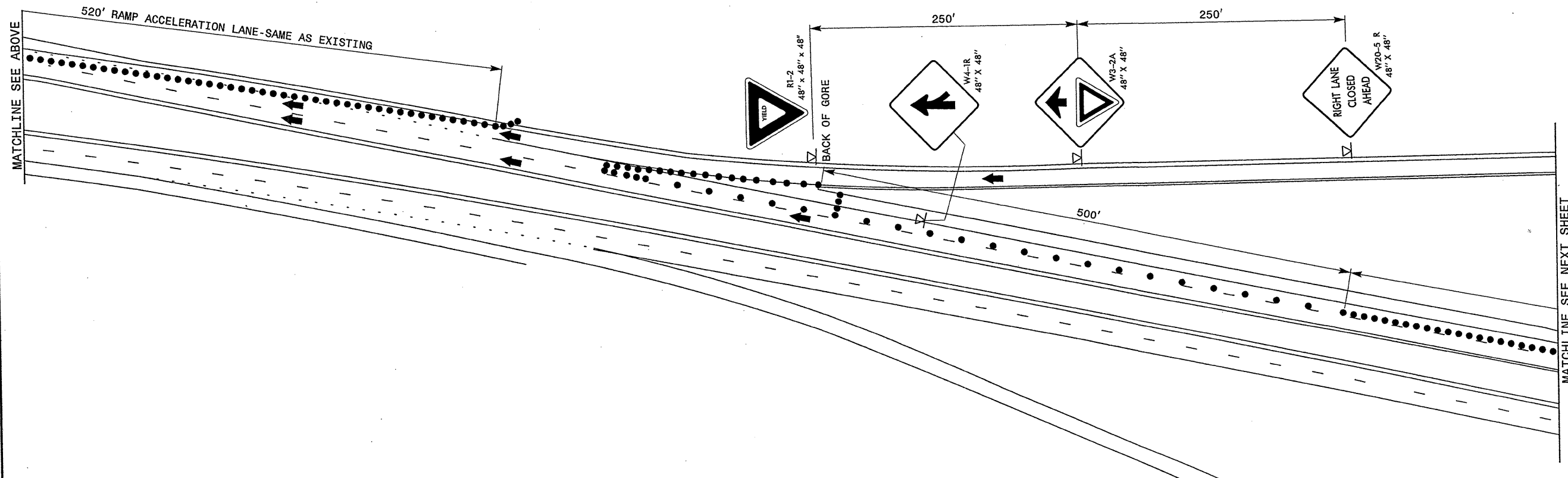
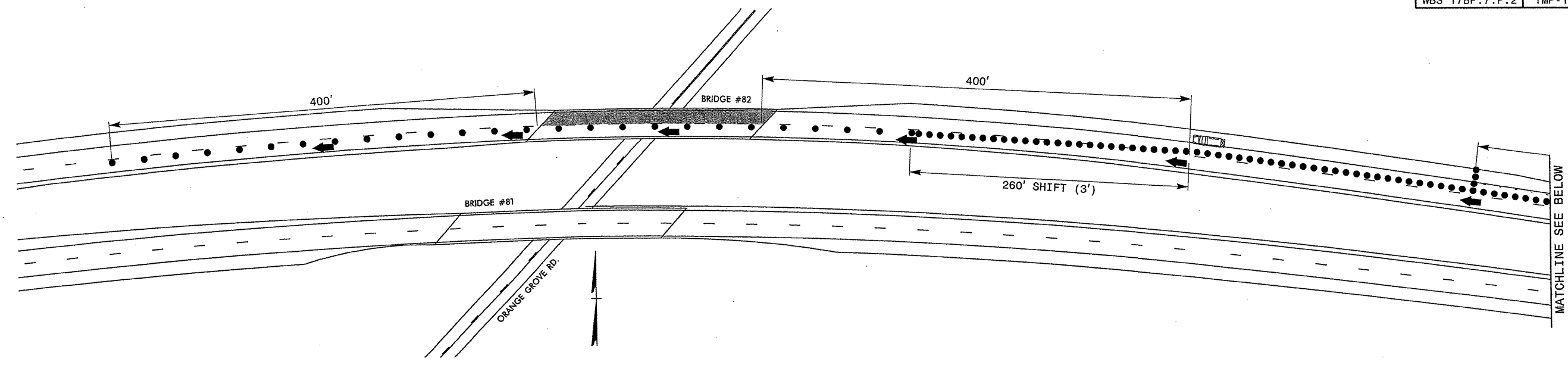
<p>Stantec Consulting Services Inc.        801 Jones Franklin Road        Suite 300        Raleigh, NC 27606        Tel. (919) 851-6866        Fax. (919) 851-7024        www.stantec.com        License No. F-0672</p>	APPROVED: _____ DATE: _____ 	<p>DIVISION OF HIGHWAYS        DEPARTMENT OF TRANSPORTATION        NORTH CAROLINA</p>	<p>ORANGE CO. BRIDGE #81</p> <p>RIGHT LANE WORK AREA</p>
	<p>SEAL</p> <p><i>Robert Watson</i> 2/20/12</p>		

2/20/2016  
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 gncr@stantec.com



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	SEAL		



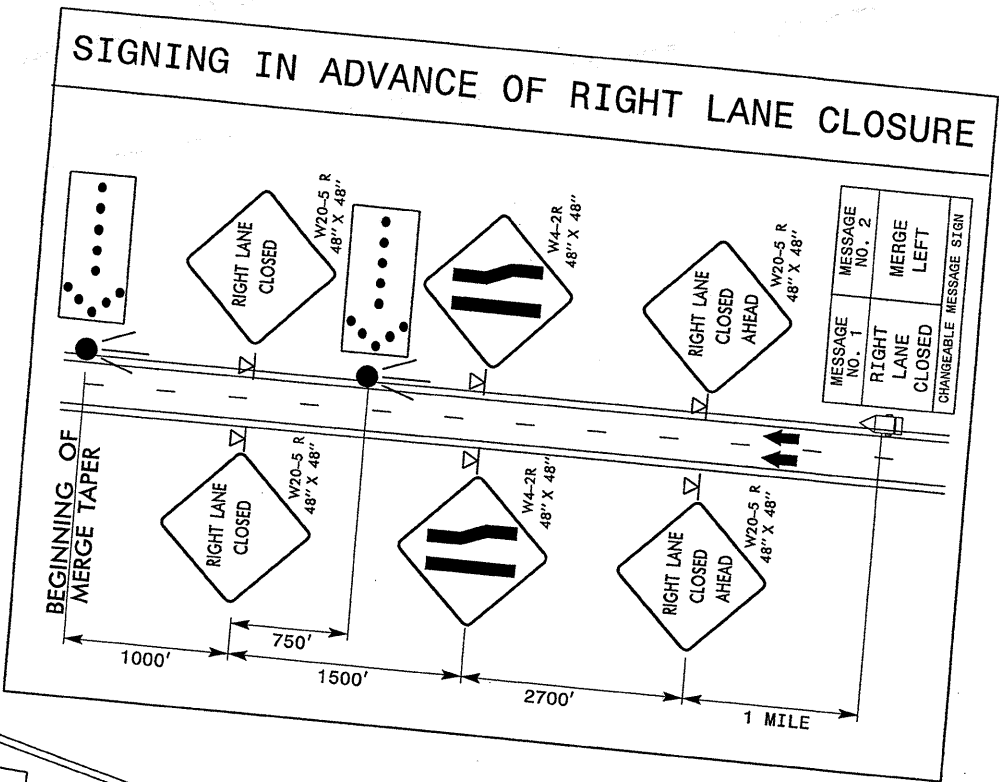
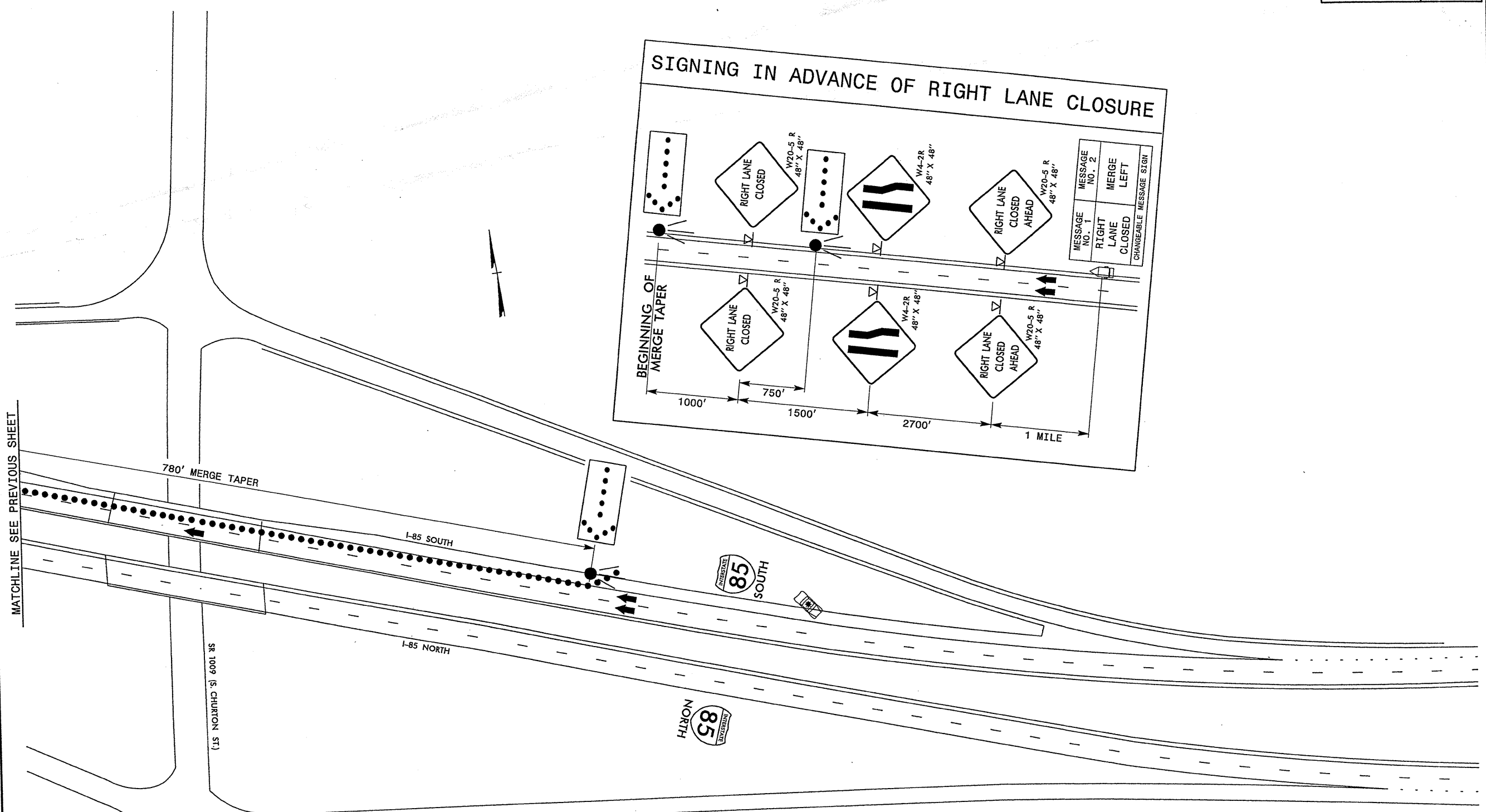



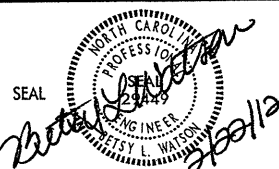

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	SEAL 		

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MATCHLINE SEE PREVIOUS SHEET



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	SEAL		

## STANDARD NOTES

### 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.

WHERE 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 SHAPERS AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR 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.

### 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.

ENGLISH

JANUARY, 1990

STD. NO. SN