

TIP PROJECT WBS17BP.12.P.4

CONTRACT: C202986

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CLEVELAND, GASTON, AND LINCOLN COUNTIES

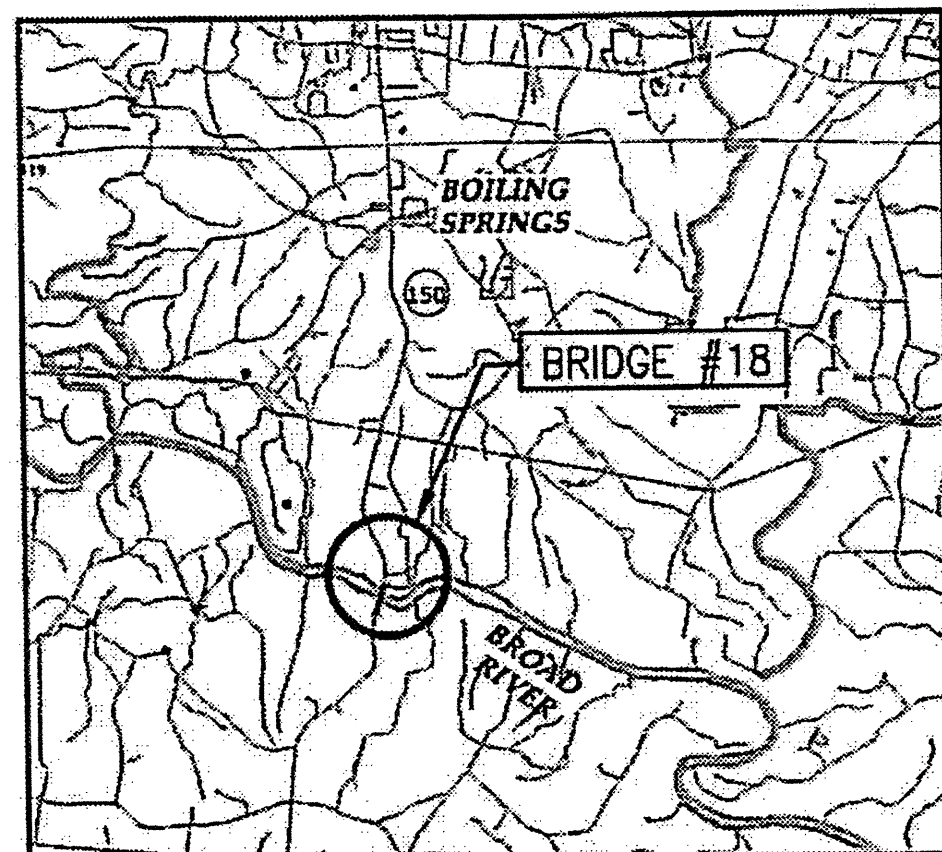
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NC	WBS 17BP.12.P.4	1	78
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
17BP.12.P.4		PE	
17BP.12.P.4		CONST	

LOCATION: CLEVELAND COUNTY
 BRIDGE #18 ON NC150, OVER BROAD RIVER.
 BRIDGE #76 ON NC150, OVER BUFFALO CREEK.
 BRIDGE #79 ON US74 EBL, OVER FIRST BROAD RIVER.
 BRIDGE #80 ON US74 WBL, OVER FIRST BROAD RIVER.

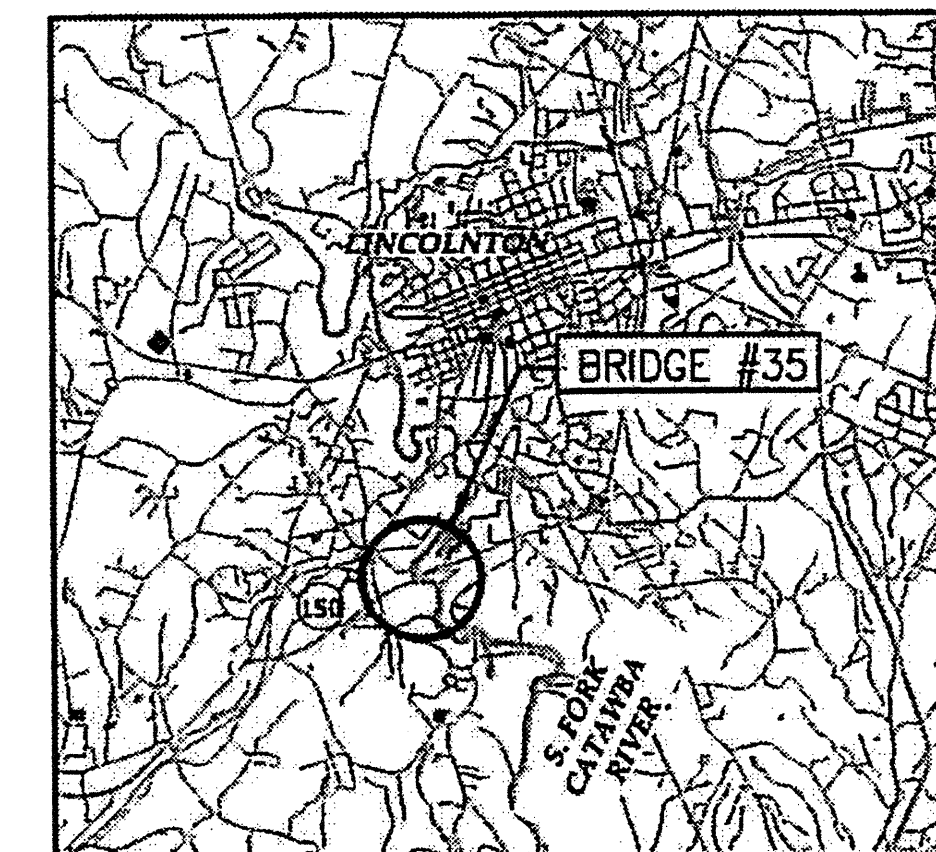
LOCATION: LINCOLN COUNTY
 BRIDGE #35 ON NC150, OVER S. FORK CATAWBA RIVER.

LOCATION: GASTON COUNTY
 BRIDGE #2 ON NC279, OVER I-85.
 BRIDGE #56 ON NC275, OVER S. FORK CATAWBA RIVER.
 BRIDGE #107 ON SR1135, OVER I-85.
 BRIDGE #133 ON ABERDEEN BLVD., OVER I-85.

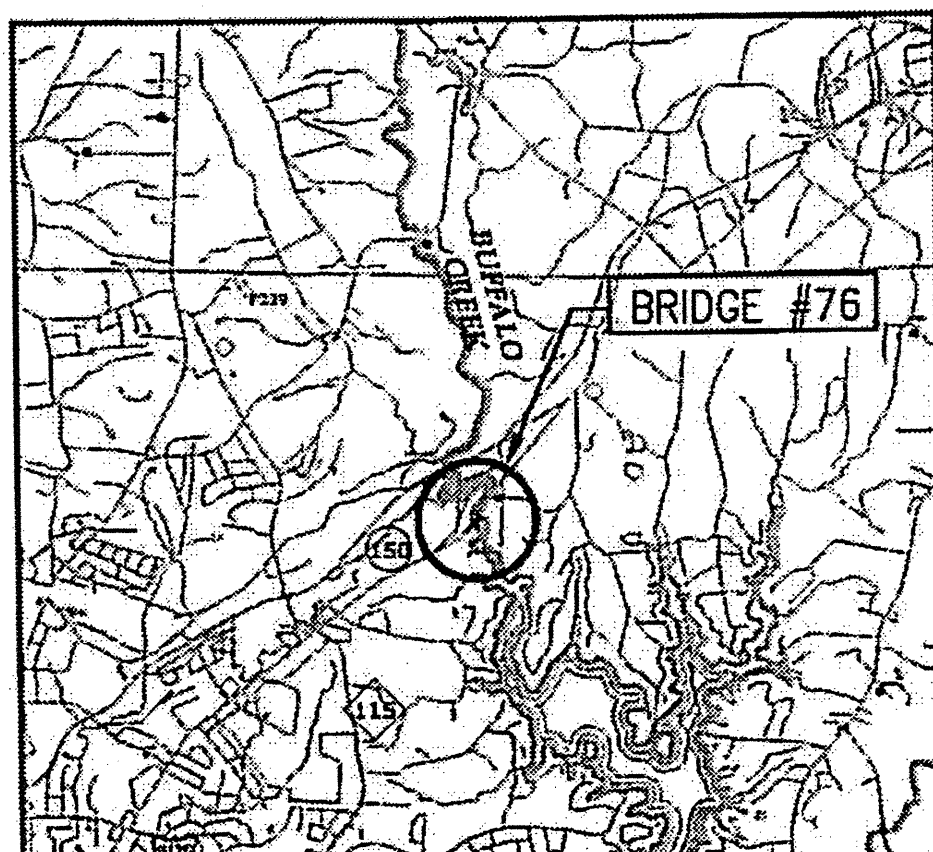
TYPE OF WORK: BRIDGE PRESERVATION: LATEX
 MODIFIED CONCRETE OVERLAYS



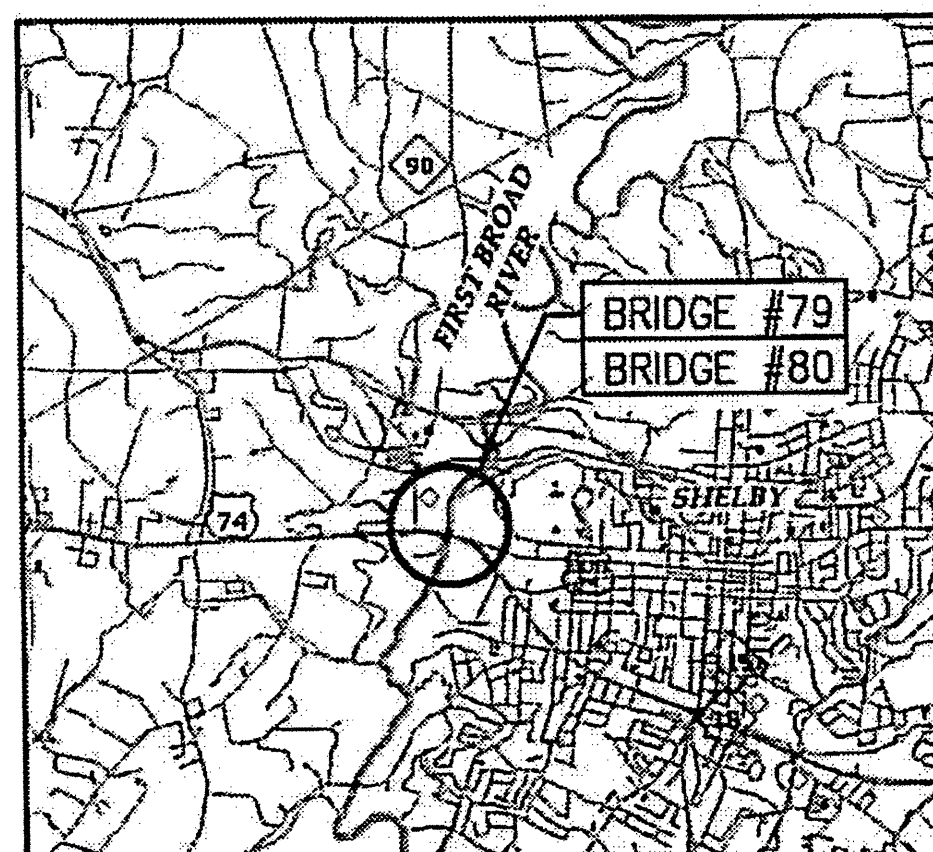
VICINITY MAP
CLEVELAND COUNTY



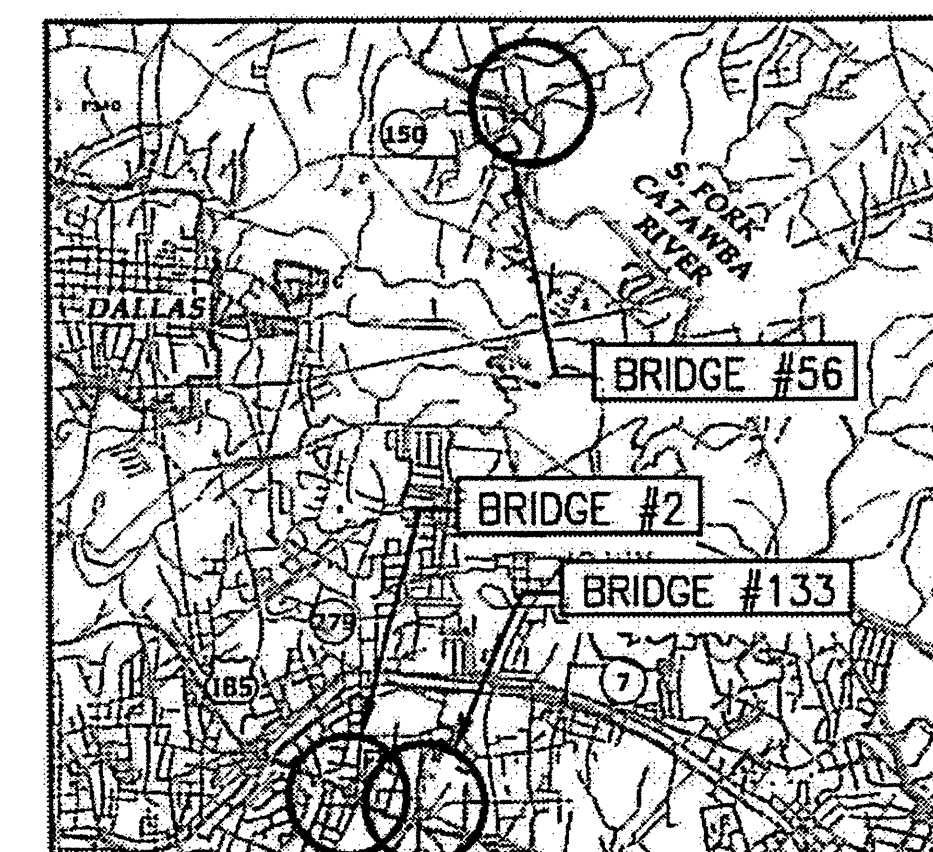
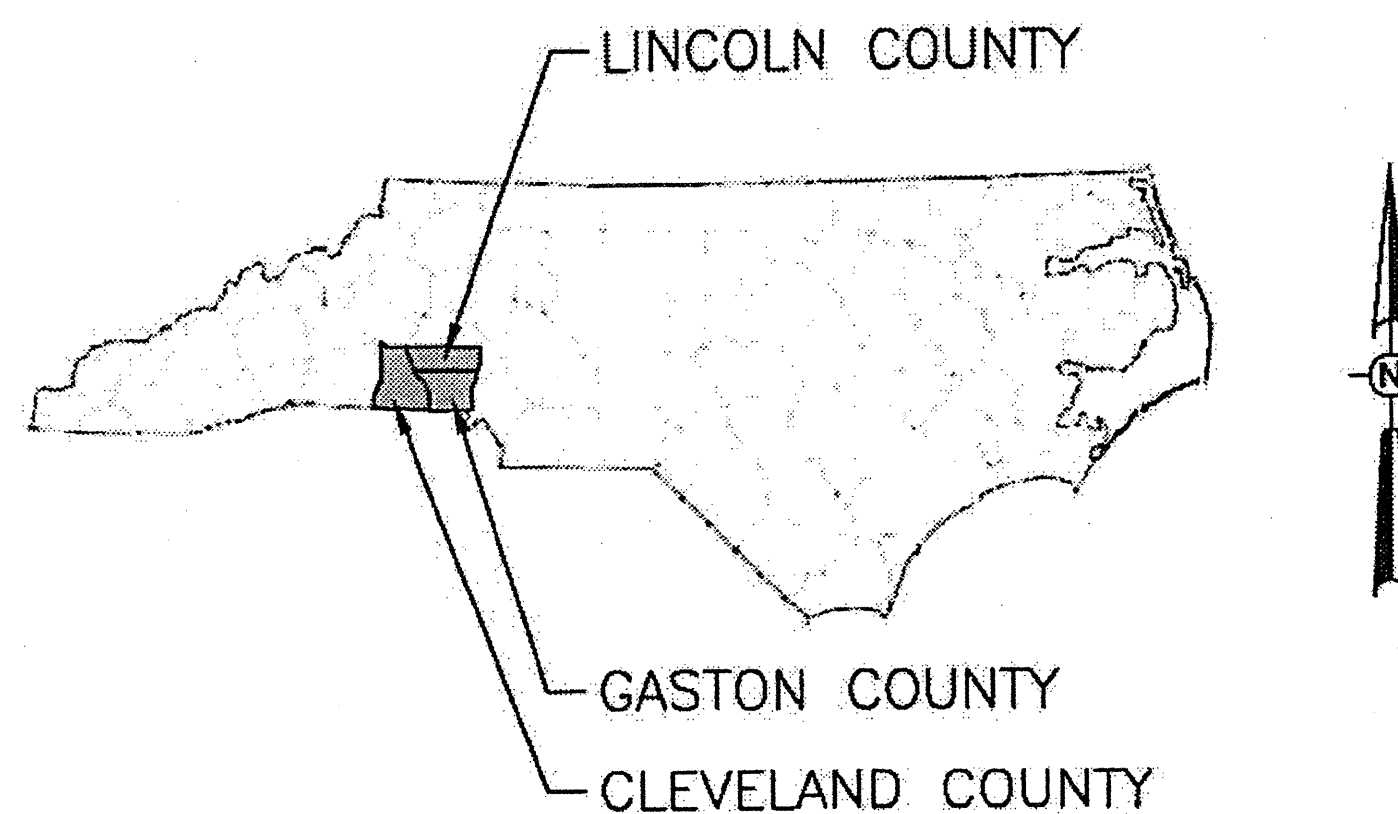
VICINITY MAP
LINCOLN COUNTY



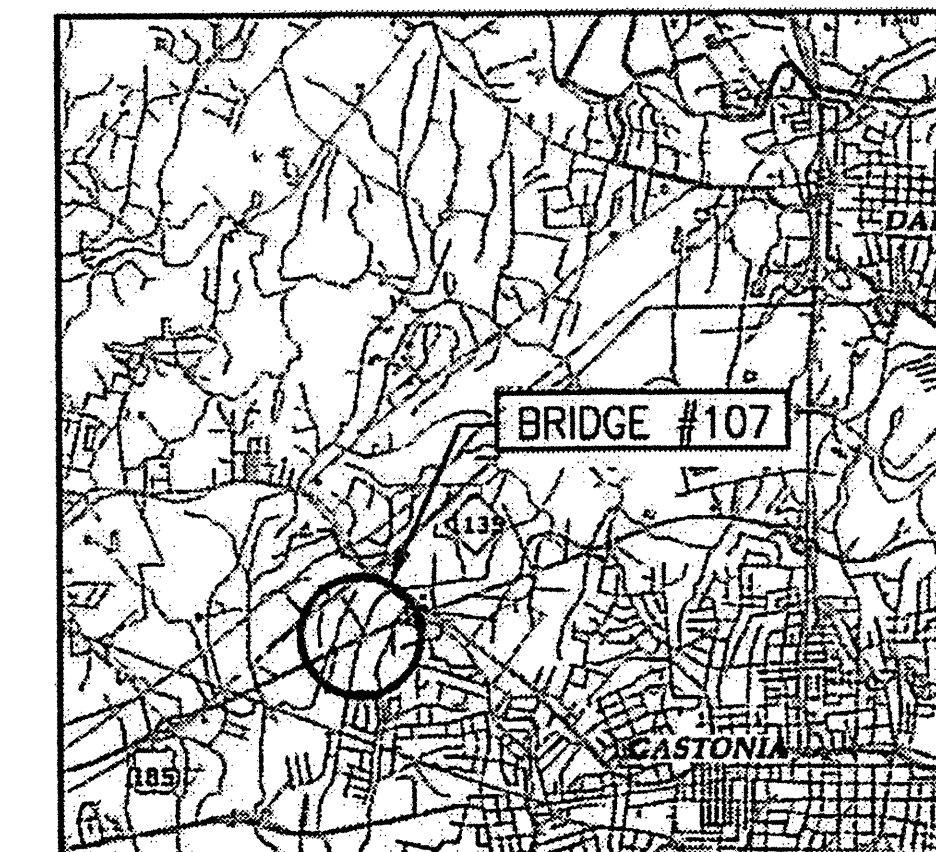
VICINITY MAP
CLEVELAND COUNTY



VICINITY MAP
CLEVELAND COUNTY

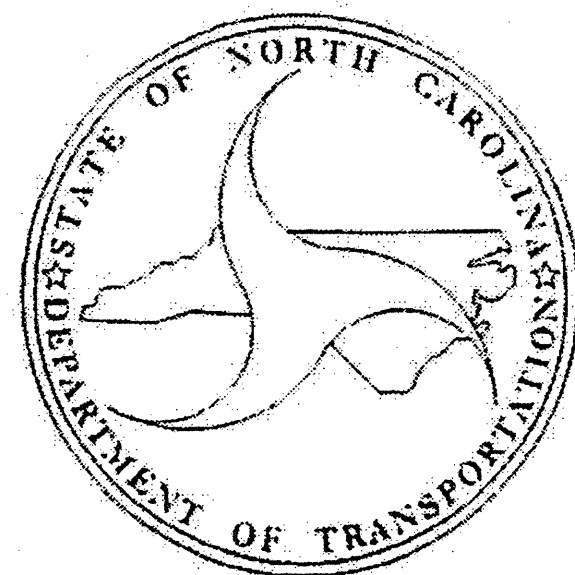


VICINITY MAP
GASTON COUNTY



VICINITY MAP
GASTON COUNTY

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA



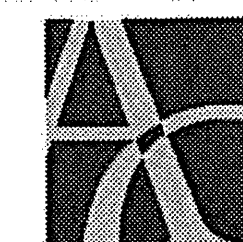
DESIGN DATA

BRIDGE #18	BRIDGE #002
ADT 2008 = 2750	ADT 2008 = 23000
BRIDGE #76	BRIDGE #035
ADT 2009 = 9800	ADT 2008 = 10000
BRIDGE #79	BRIDGE #056
ADT 2009 = 15500	ADT 2008 = 8800
BRIDGE #80	BRIDGE #107
ADT 2009 = 15500	ADT 2008 = 3300
	BRIDGE #133
	ADT 2008 = 4400

PROJECT LENGTH

BRIDGE #18 = 0.123 MILE	BRIDGE #107 = 0.055 MILE
BRIDGE #76 = 0.043 MILE	BRIDGE #133 = 0.055 MILE
BRIDGE #79 = 0.063 MILE	
BRIDGE #80 = 0.065 MILE	
BRIDGE #2 = 0.047 MILE	
BRIDGE #56 = 0.070 MILE	

PLAN PREPARED BY:



ALPHA & OMEGA GROUP

CIVIL & STRUCTURAL ENGINEERS
 4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1684 www.aogroup.com
 A & O PROJECT #: 2011.031

FOR: THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

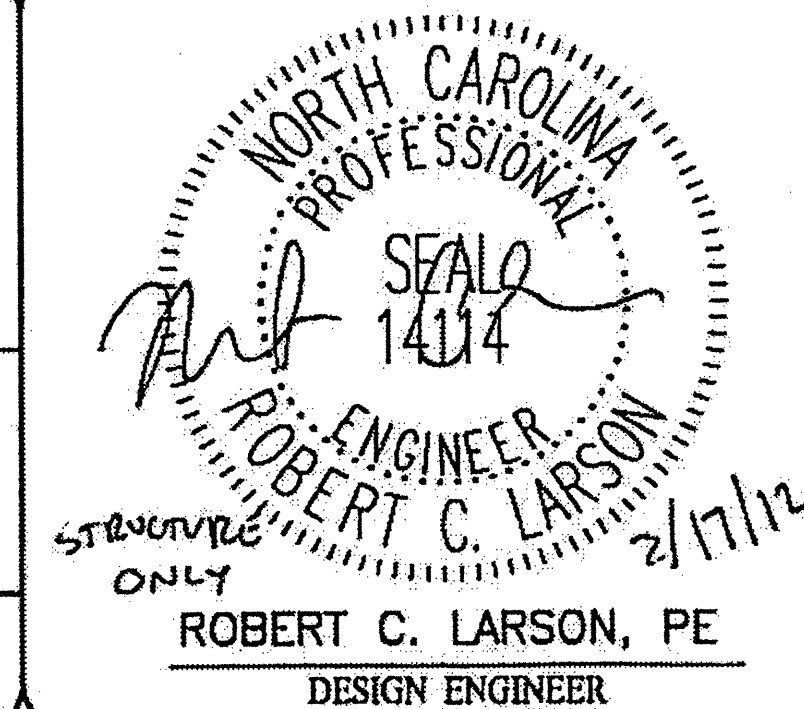
2012 STANDARD SPECIFICATIONS

LETTING DATE:
APRIL 17, 2012

R. LARSON, PE
PROJECT ENGINEER

NCDOT CONTACT:

RICK NELSON, PE
DESIGN ENGINEER



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CLEVELAND, GASTON, AND LINCOLN COUNTIES

INDEX OF SHEETS

1	TITLE SHEET	TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS,
1A	INDEX OF SHEETS		LEGEND AND INDEX OF SHEETS
2	SUMMARY OF QUANTITIES	TCP-2	GENERAL NOTES
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S-14 THRU S-18	BRIDGE #76	TCP-3A	CLEVELAND COUNTY LOCATOIN/ OVERVIEW MAP
S-19 THRU S-28	BRIDGE #79	TCP-3B	GASTON COUNTY LOCATION/ OVERVIEW MAP
S-29 THRU S-31	BRIDGE #80	TCP-4	LINCOLN COUNTY BRIDGE #35
S-32 THRU S-34	BRIDGE #2	TCP-5 THRU TCP-5A	CLEVELAND COUNTY BRIDGE #79
S-35 THRU S-37	BRIDGE #56	TCP-6 THRU TCP-6A	CLEVELAND COUNTY BRIDGE #80
S-38 THRU S-40	BRIDGE #107	TCP-7	CLEVELAND COUNTY BRIDGE #18
S-41 THRU S-43	BRIDGE #133	TCP-8	CLEVELAND COUNTY BRIDGE #76
S-44 THRU S-54	BRIDGE #35	TCP-9	GASTON COUNTY BRIDGE #107
		TCP-10 THRU TCP-10B	GASTON COUNTY BRIDGE #2
		TCP-11 THRU TCP-11B	GASTON COUNTY BRIDGE #133
		TCP-12	GASTON COUNTY BRIDGE #56
		TCP-13	SPECIAL SIGN DETAILS

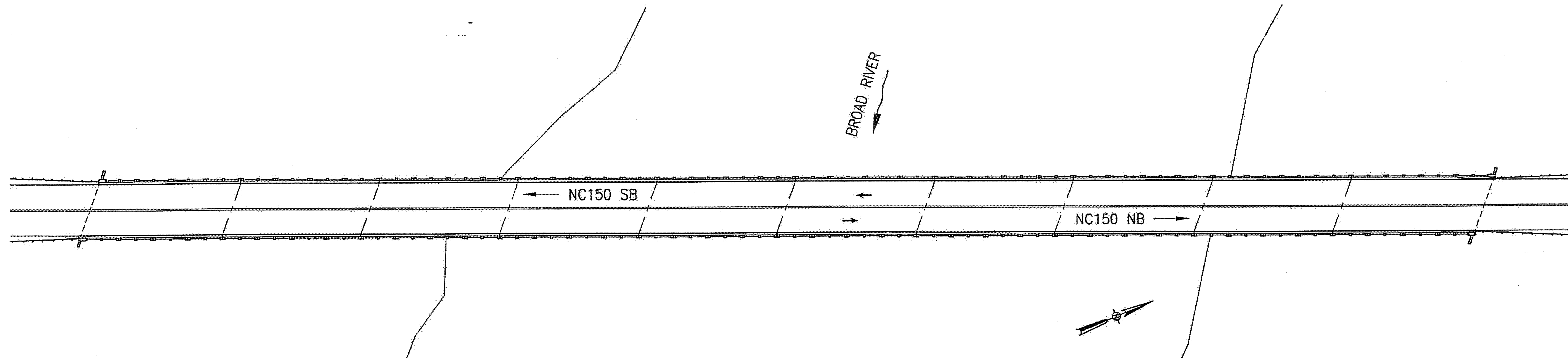
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CLEVELAND, GASTON, AND LINCOLN COUNTIES

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
1330000000-E	607	1,891	SY	INCIDENTAL MILLING
1519000000-E	610	143	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
1575000000-E	620	8	TON	ASPHALT BINDER FOR PLANT MIX
4405000000-E	1110	1,290	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	36	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	3	EA	FLASHING ARROW BOARD
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4422000000-N	1120	15	DAY	PORTABLE CHANGEABLE MESSAGE SIGN (SHORT TERM)
4430000000-N	1130	502	EA	DRUMS
4435000000-N	1135	44	EA	CONES
4445000000-E	1145	72	LF	BARRICADES (TYPE III)
4450000000-N	1150	2,760	HR	FLAGGER
4480000000-N	1165	1	EA	TMA
4510000000-N	SP	1,140	HR	LAW ENFORCEMENT
4516000000-N	1180	44	EA	SKINNY DRUM
4810000000-E	1205	23,608	LF	PAINT PAVEMENT MARKING LINES (4")
4845000000-N	1205	12	EA	PAINT PAVEMENT MARKING SYMBOL
8161000000-E	420	82,413	SF	GROOVING BRIDGE FLOORS
8660000000-E	SP	71	CF	CONCRETE REPAIRS
8664000000-E	SP	507	CF	SHOTCRETE REPAIRS
8692000000-N	SP	Lump Sum		FOAM JOINT SEALS
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM STRUCTURAL STEEL REPAIR
8881000000-E	SP	412	CY	GENERIC STRUCTURE ITEM LATEX MOD CONC OVERLAY - VERY EARLY STRENGTH
8893000000-E	SP	10,320	SY	GENERIC STRUCTURE ITEM HYDRO-DEMOLITION OF BRIDGE DECK

SUMMARY OF QUANTITIES

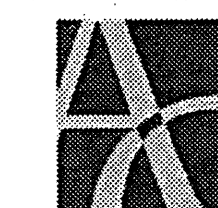
ItemNumber	Sec #	Quantity	Unit	Description
8893000000-E	SP	10,320	SY	GENERIC STRUCTURE ITEM PLACING & FINISHING LATEX MOD CONC OVERLAY - VERY EARLY STRENGTH
8893000000-E	SP	10,320	SY	GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK
8897000000-N	SP	30	EA	GENERIC STRUCTURE ITEM REPLACE BEARINGS, TYPE SPECIAL
8897000000-N	SP	16	EA	GENERIC STRUCTURE ITEM REPLACE BEARINGS, TYPE III



BRIDGE 220018 ON NC150

LOCATION: BRIDGE 220018, NC150 OVER BROAD RIVER, 0.05 MILE SOUTH OF JUNCTION WITH SR1146.

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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A&O PROJECT #: 2011.031

TOTAL BILL OF MATERIAL

SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC.OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	CONCRETE REPAIRS	SHOTCRETE REPAIRS	REPLACE BEARINGS (TYPE III)	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	CU. FT.	CU. FT.	EACH	SQ. YD.
1,735	1,735	72	1,735	13,545	L.S.	16	0	507	16	183

PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

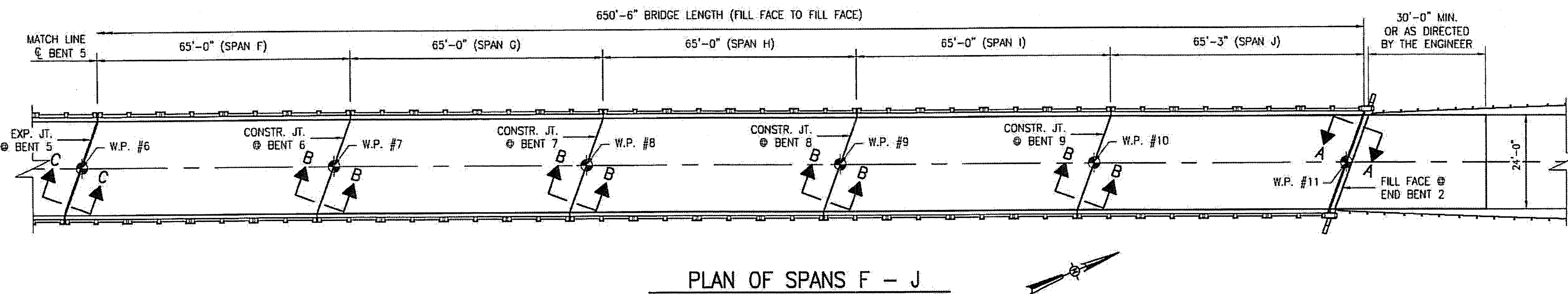
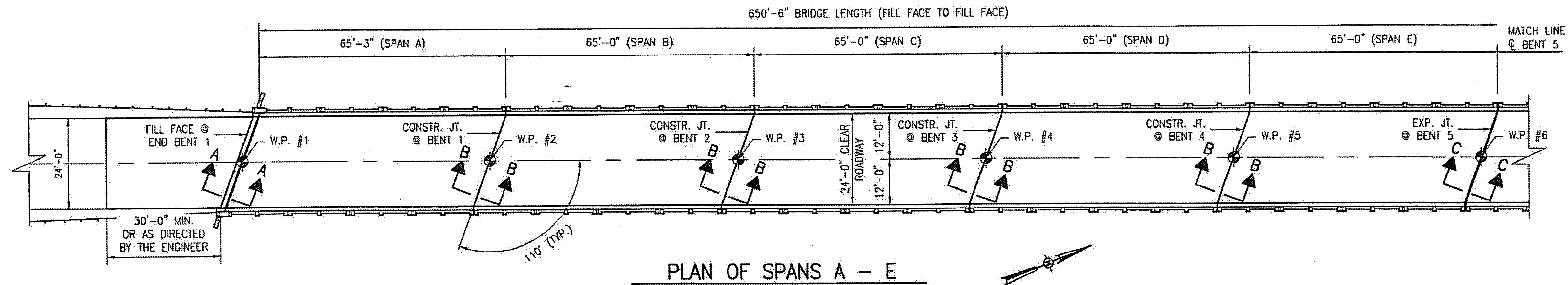


DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS

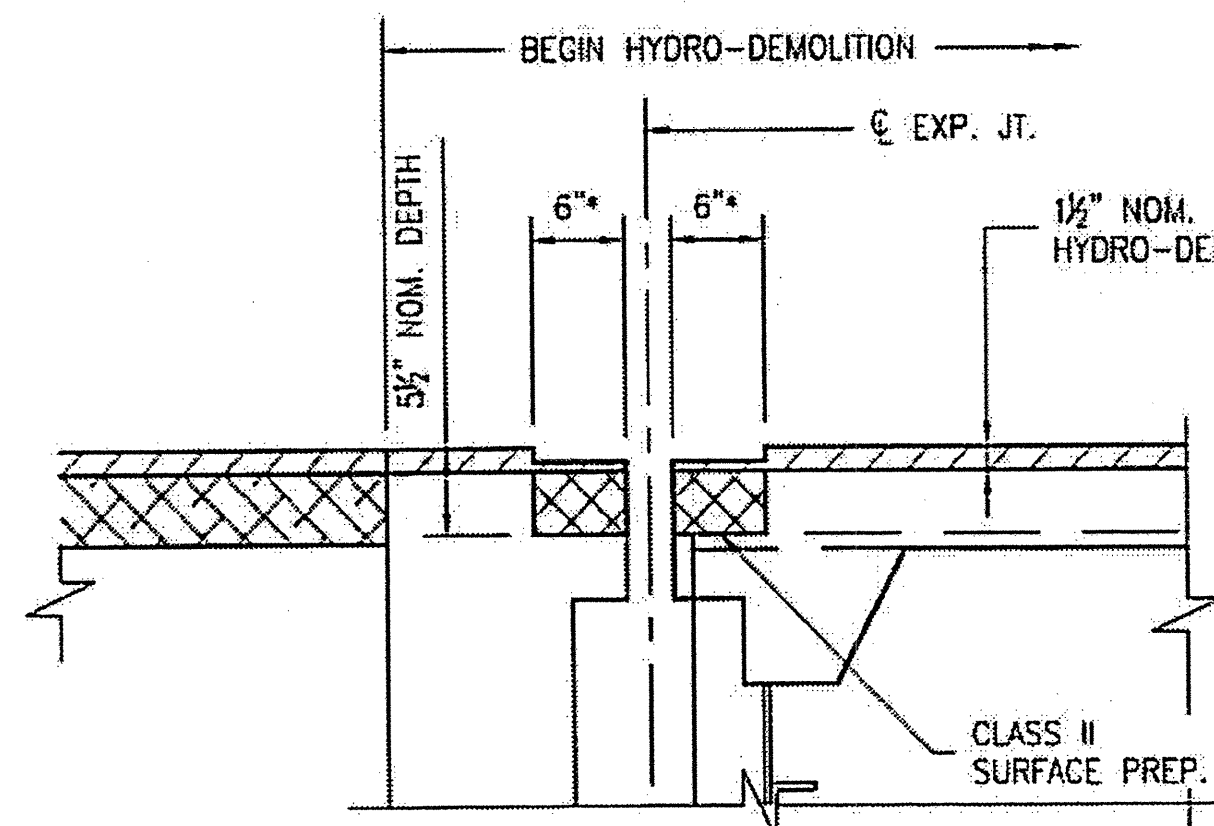
NO	BY	DATE	NO	BY	DATE
1			3		
2			4		

SHEET NO.
S-1
TOTAL SHEETS
54



NOTES:

1. EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECK WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
2. FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
3. THE CONTRACTOR MUST COLLECT, TREAT, AND DISPOSE OF RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS. SEE DETAIL, S-4.
4. FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
5. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
6. FOR SECTIONS B-B AND C-C, SEE SHEET S-3.
7. 1 1/2" BACKER ROD SHALL BE CLOSED CELL EXPANDED POLYETHYLENE FOAM TYPE L. PLACE BACKER ROD TO WITHIN 1'-0" OF EXISTING CURB FACE. NO SEPARATE PAYMENT FOR LABOR, MATERIALS, AND EQUIPMENT TO CONSTRUCT JOINT SEALS SHALL BE MADE. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

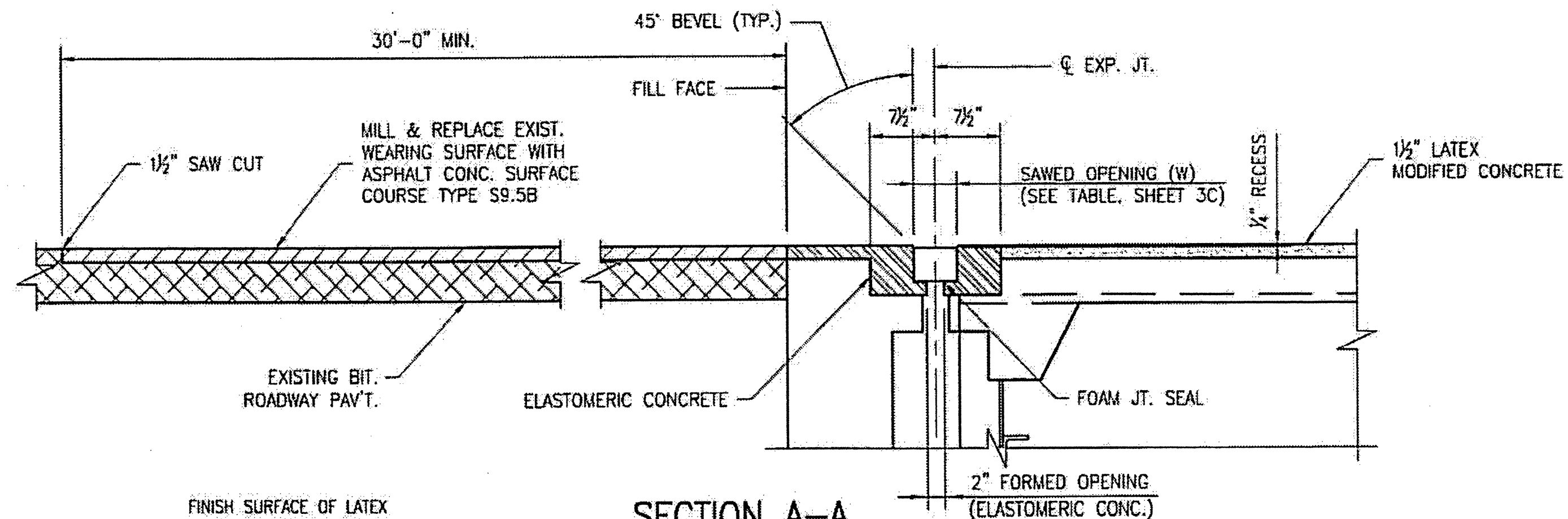


SECTION A-A

EST. MAX. EXISTING JOINT DEMOLITION

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

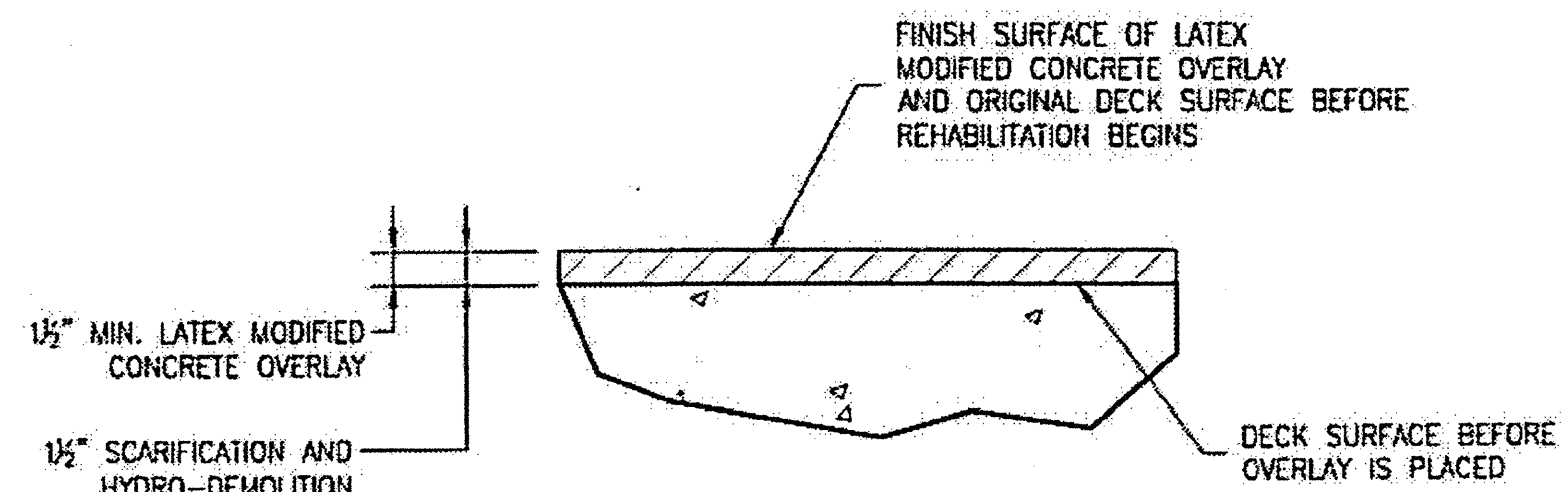
* INCREASE 6" DIMENSION IF NECESSARY TO COMPLETELY REMOVE EXISTING ELASTOMERIC CONCRETE.



SECTION A-A

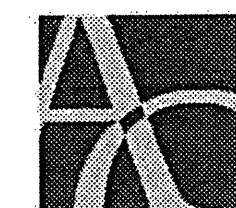
FOAM JOINT SEAL

NOTES: USE 3/4" WIDE UNCOMPRESSED FOAM JOINT SEAL MATERIAL.



DETAIL FOR LATEX MODIFIED CONC. OVERLAY

PLAN PREPARED BY:



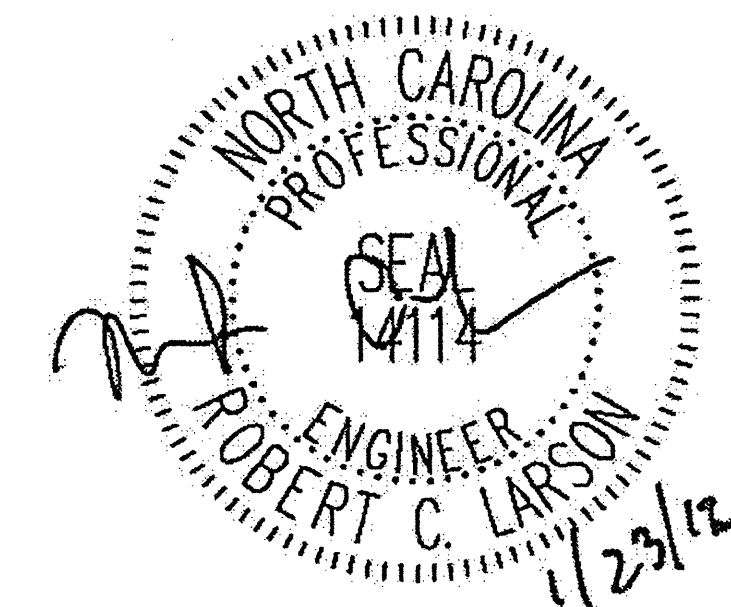
ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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Firm License No. C-1684 www.aogroup.com
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220018

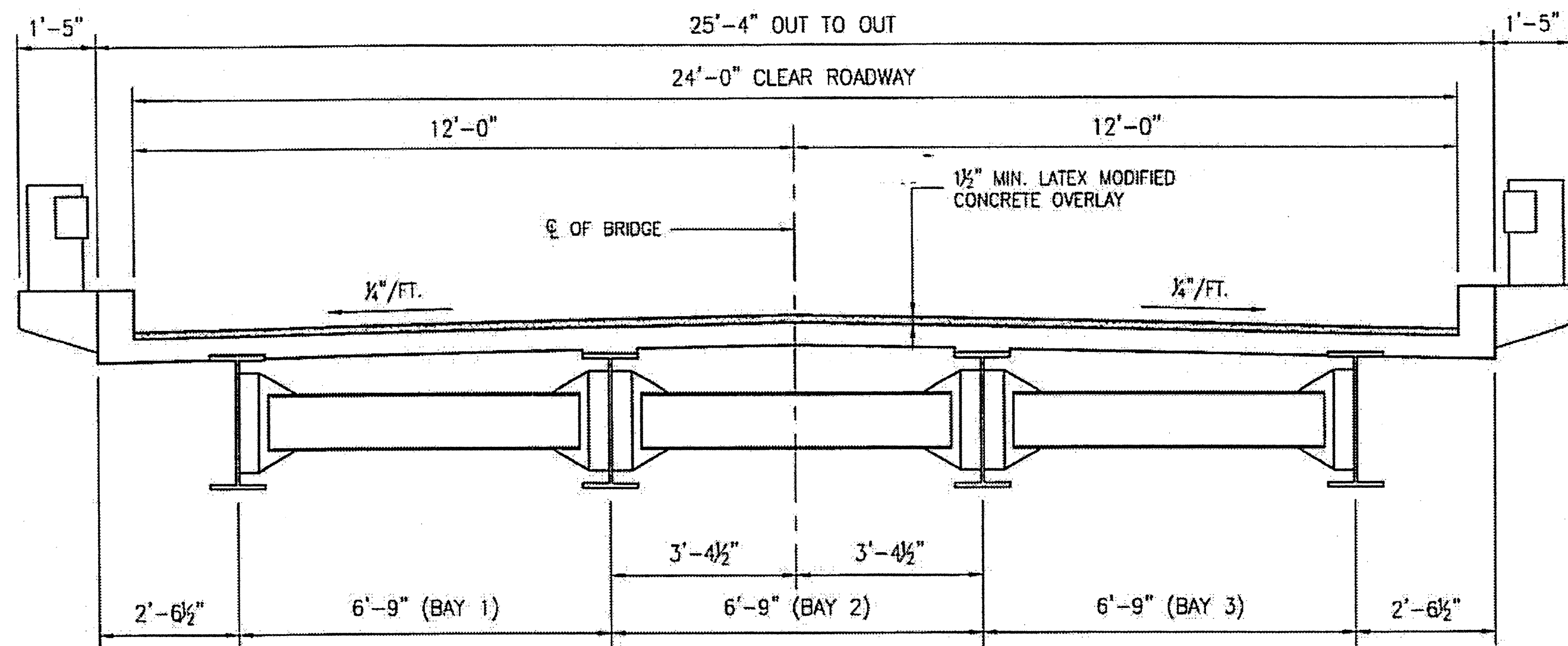
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE PLAN
AND DETAILS



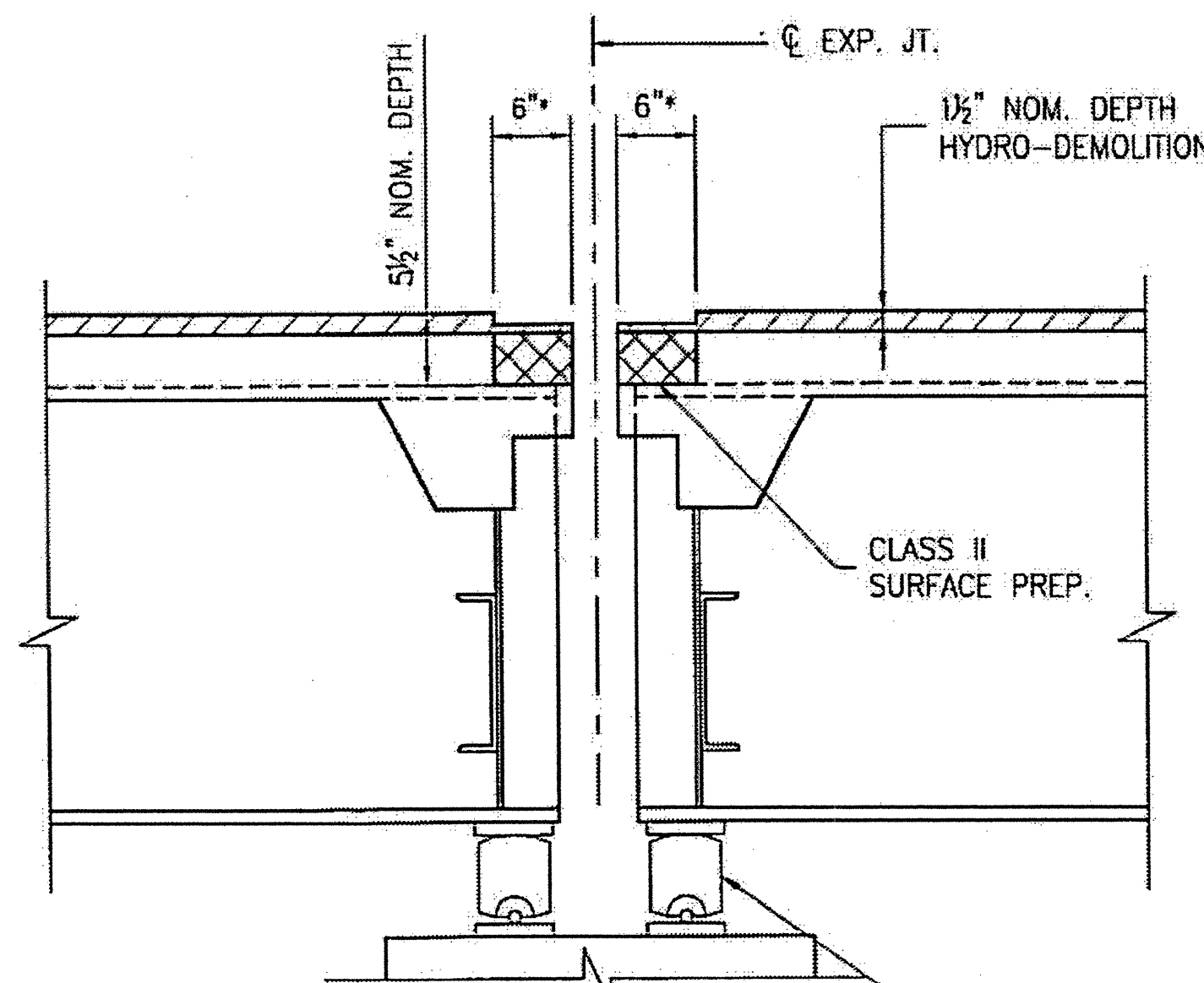
DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

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



TYPICAL SECTION SPANS A - J

JOINT SAWED OPENING (W) TABLE			
TEMP.	45° F	60° F	90° F
END BENT 1	3"	2 1/16"	2 3/16"
BENT 5	3 3/8"	3"	2 1/2"
END BENT 2	3"	2 1/16"	2 3/16"

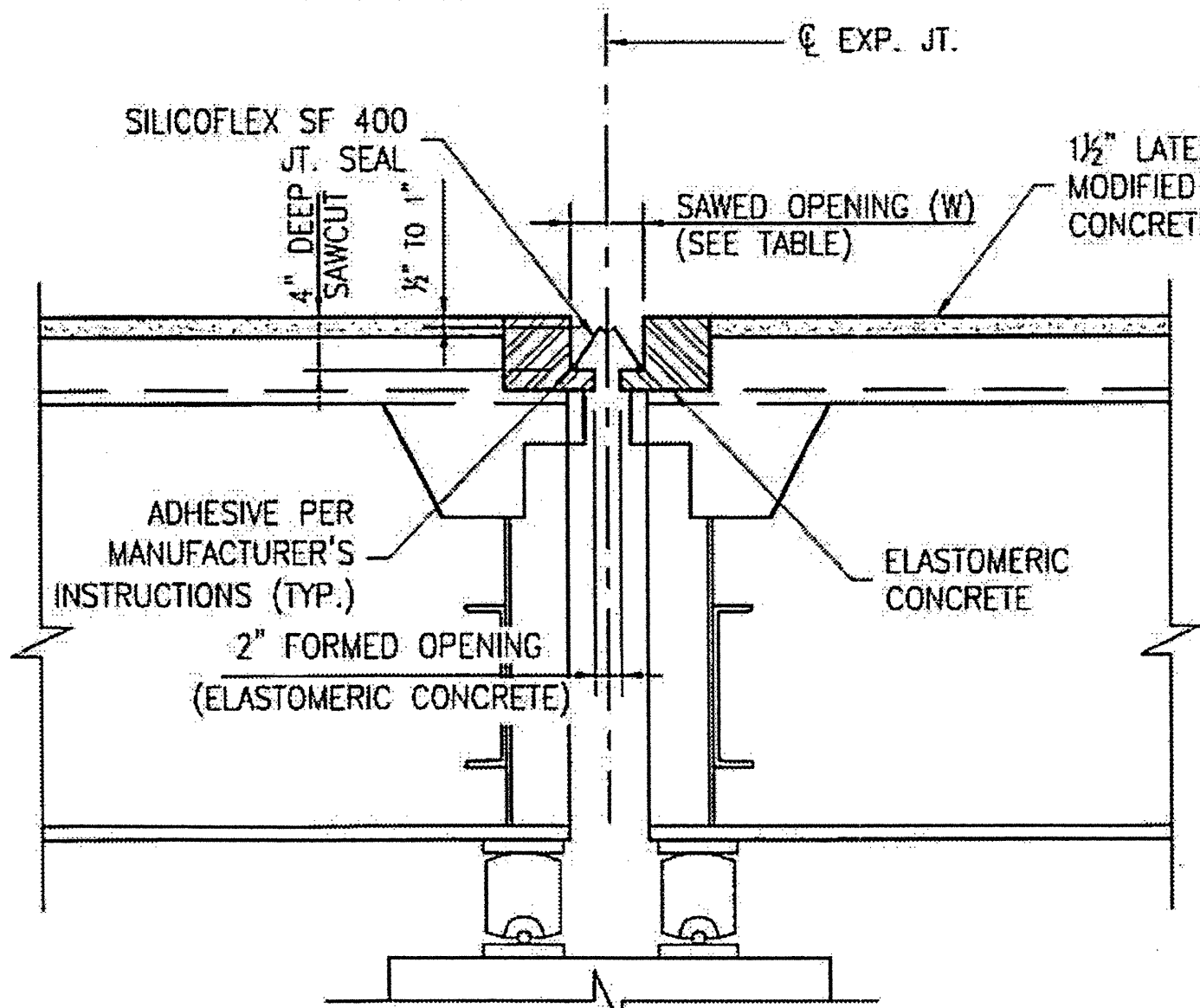


SECTION C-C

EST. MAX. EXISTING JOINT DEMOLITION

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

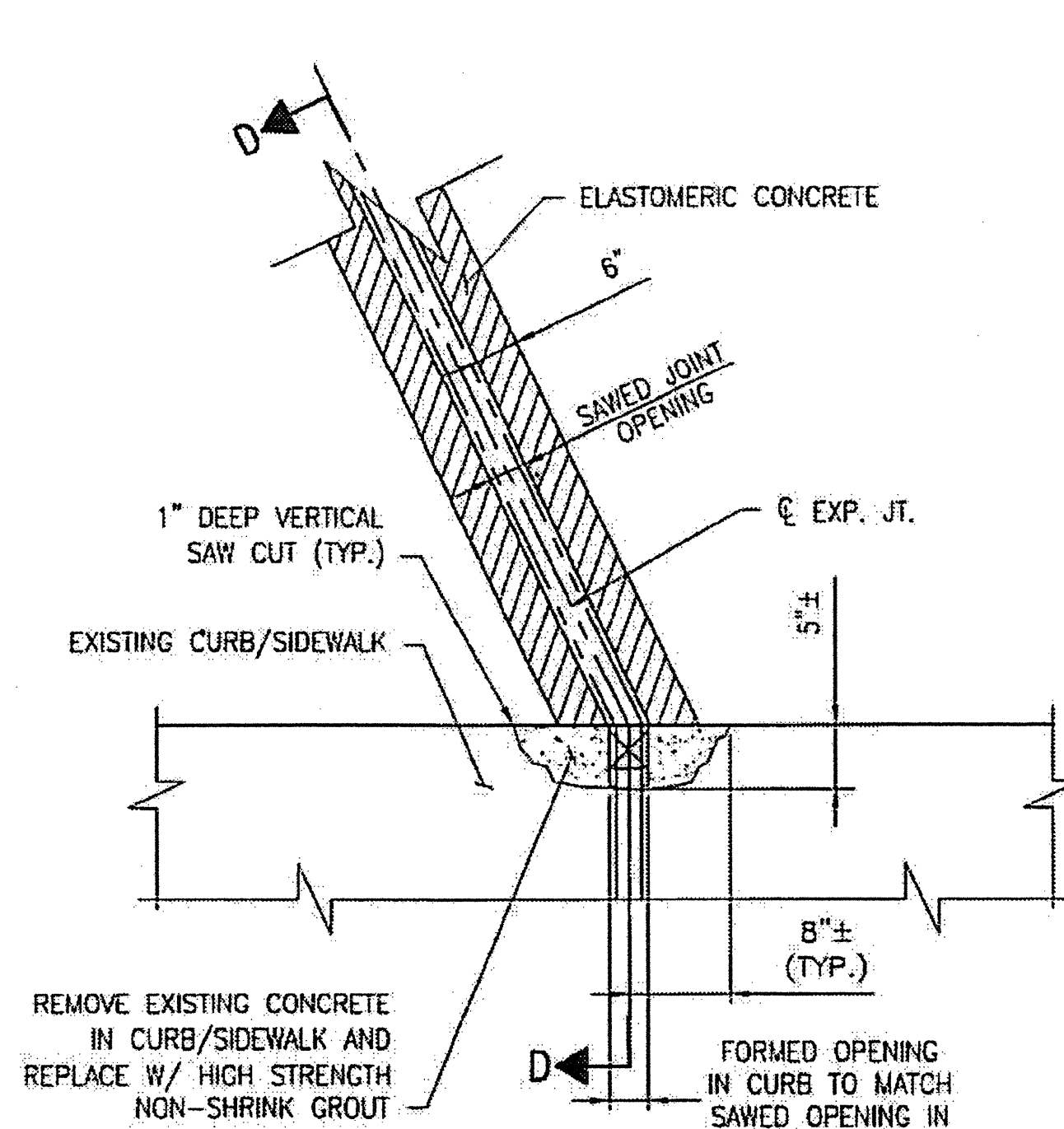
* INCREASE 6" DIMENSION IF NECESSARY TO COMPLETELY REMOVE EXISTING ELASTOMERIC CONCRETE.



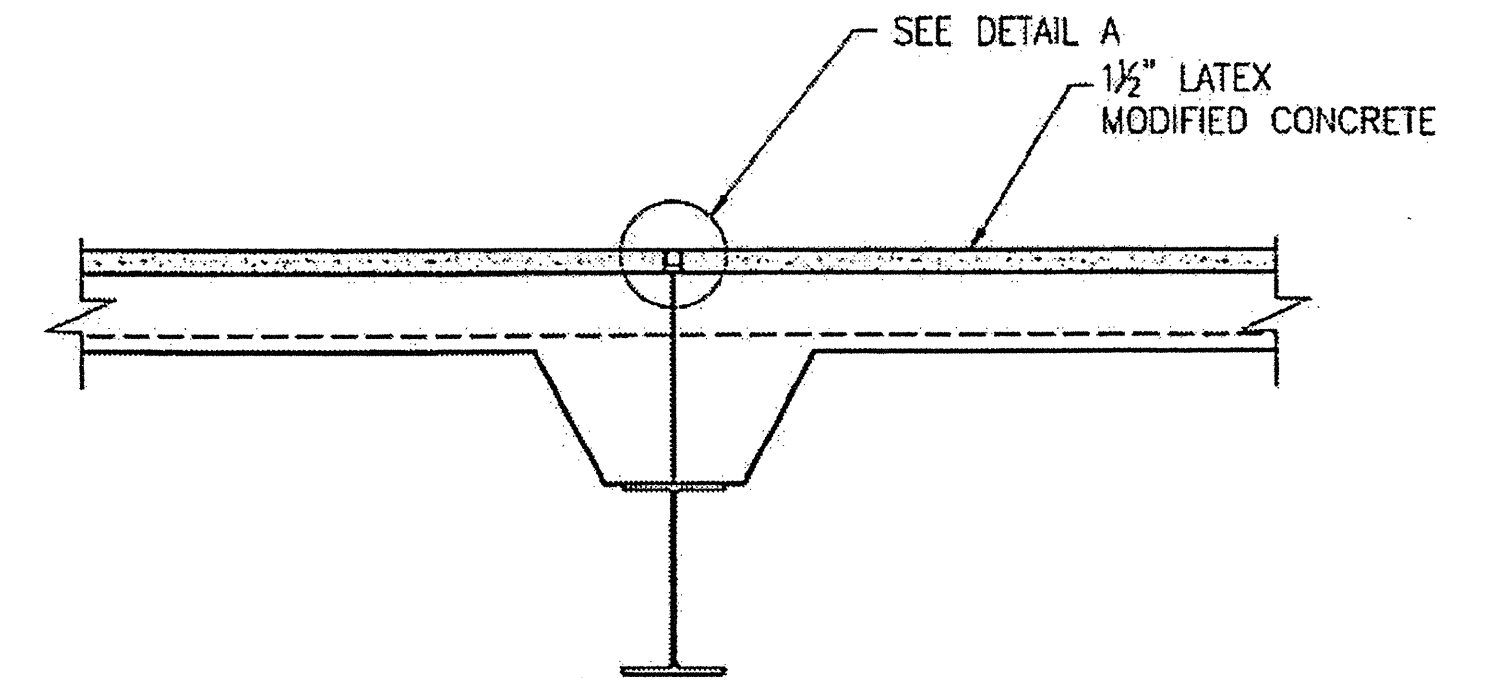
SECTION C-C

JOINT SEAL

NOTES: USE SILICOFLEX SF 400 OR APPROVED EQUIVALENT JOINT SEAL MATERIAL

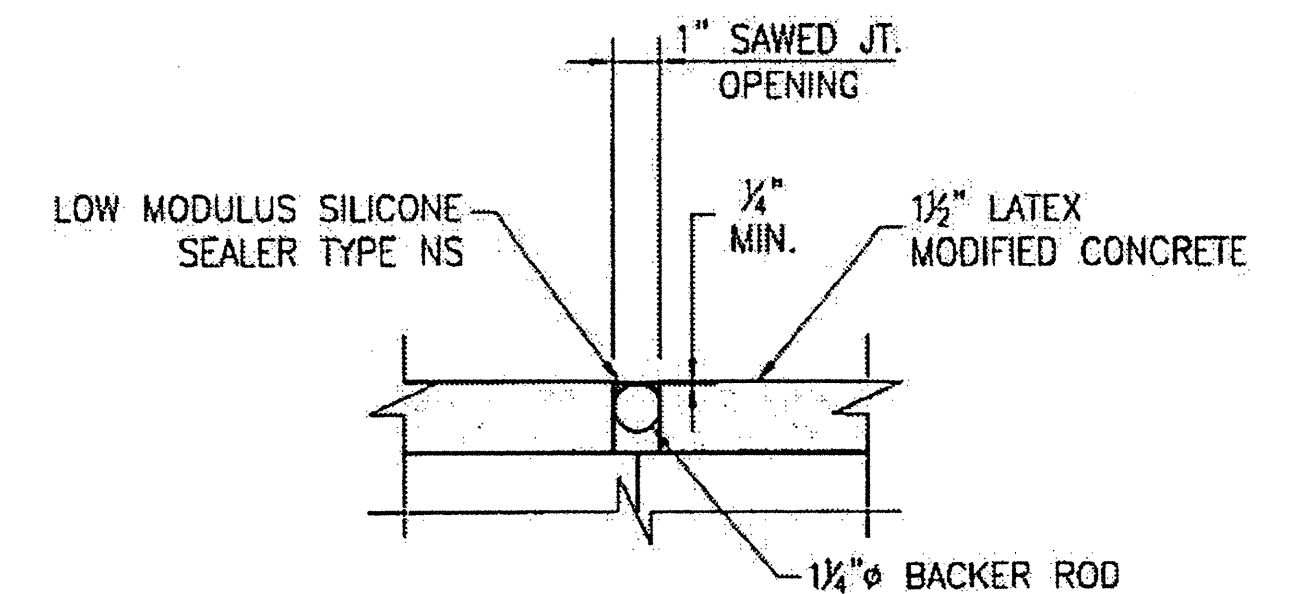


PARTIAL PLAN @ JOINT

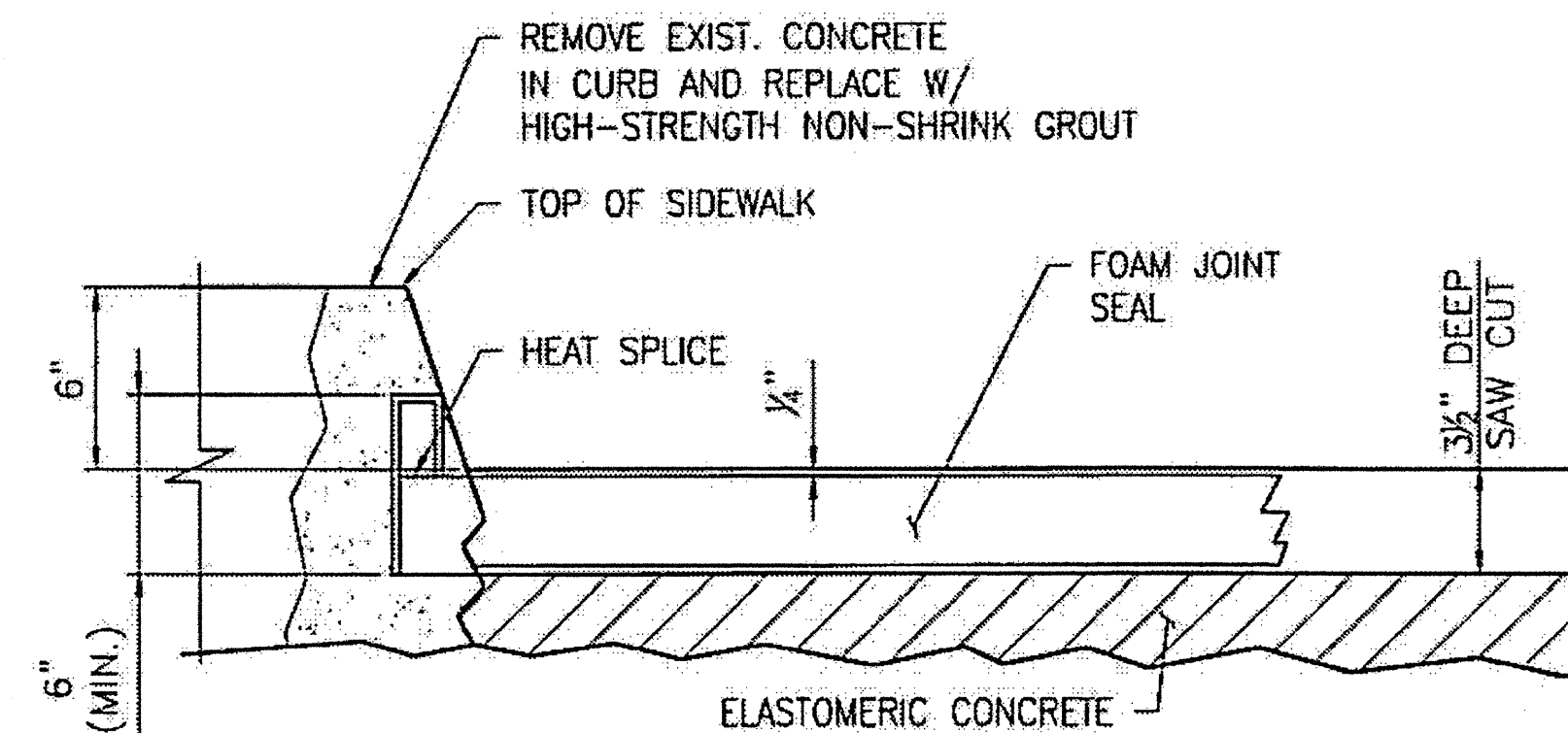


SECTION B-B

CONST. JT. SEAL.



DETAIL A

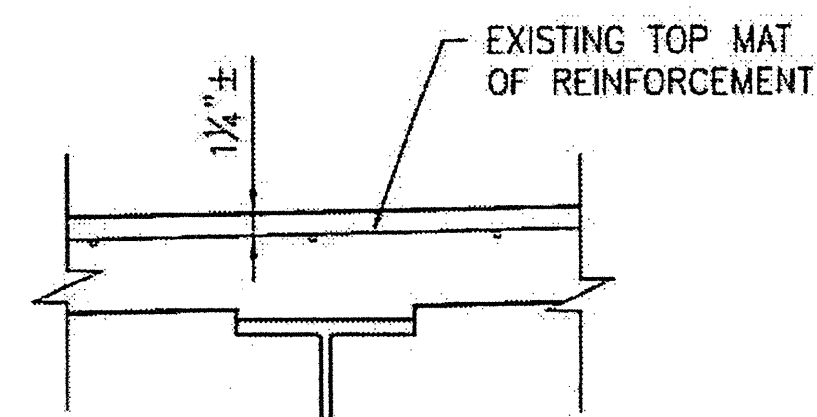


SECTION D-D

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

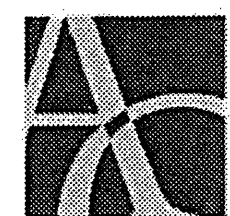
FOR HIGH STRENGTH GROUT, SEE SPECIAL PROVISIONS.

HIGH STRENGTH GROUT SHALL BE APPROVED BY THE ENGINEER.



EXISTING SLAB SECTION

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

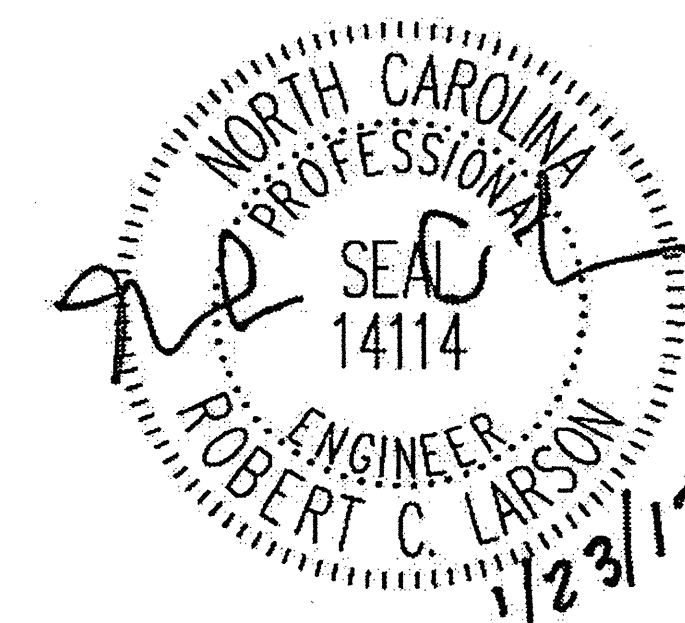
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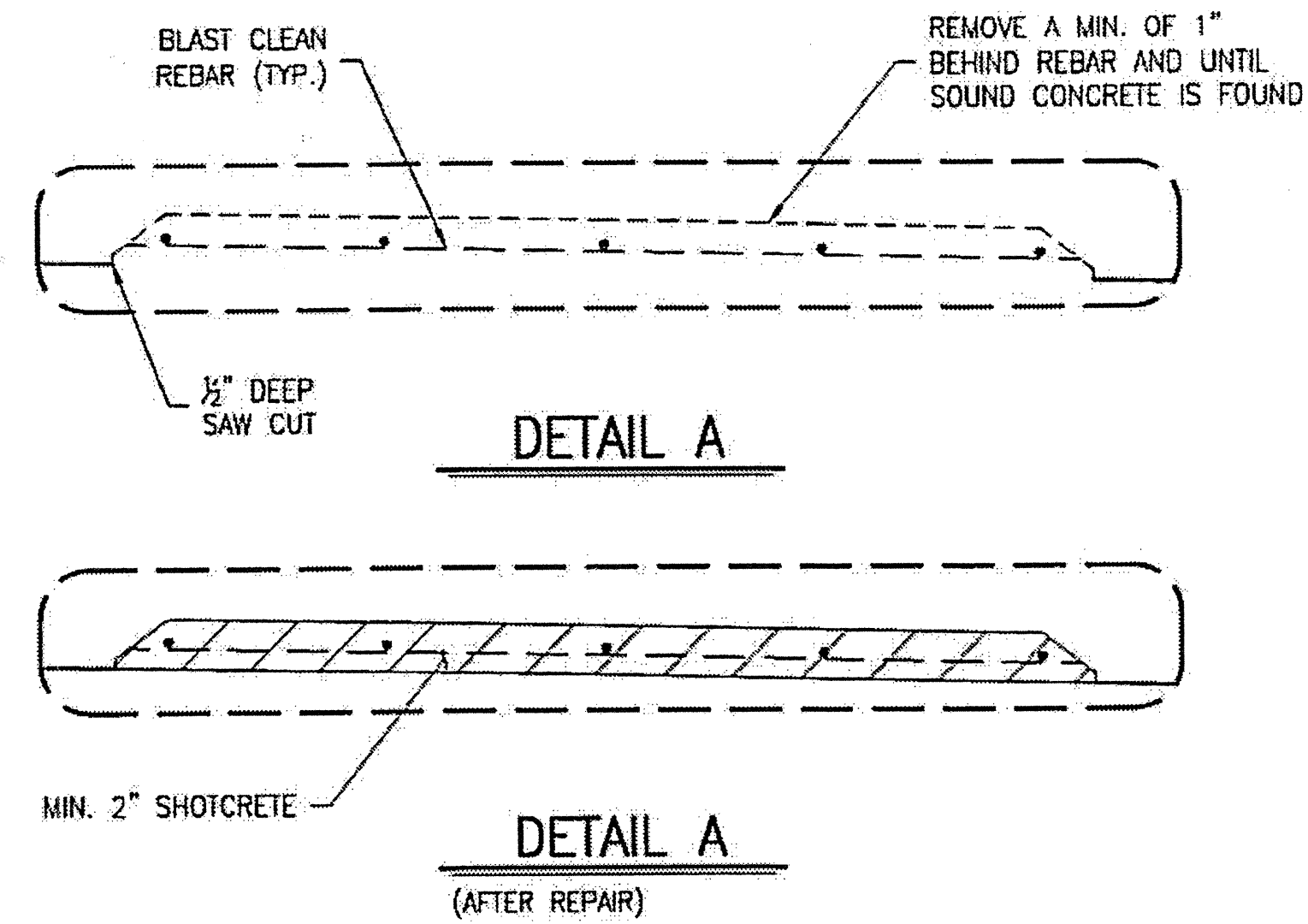
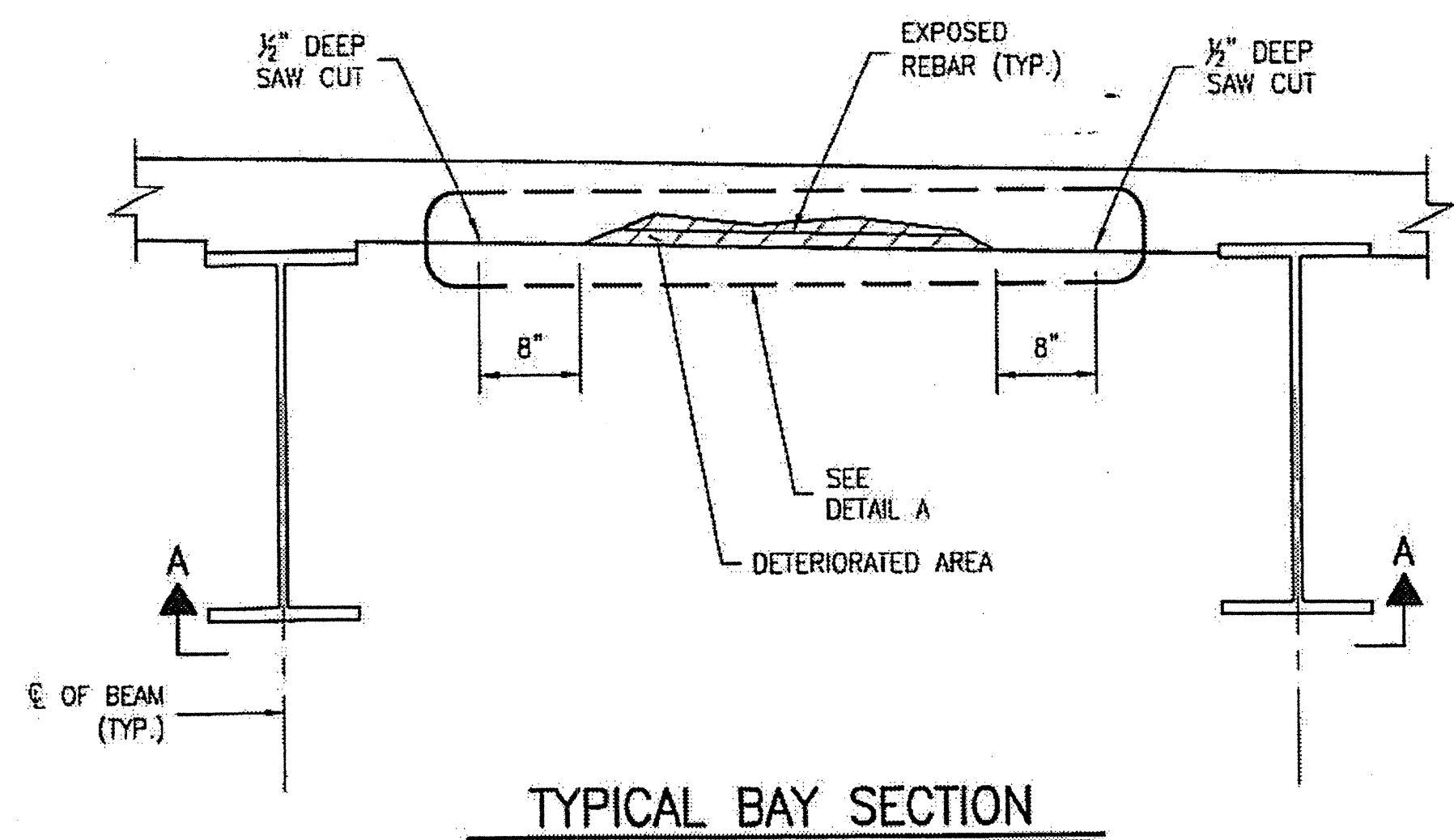
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CLEVELAND COUNTY
BRIDGE NO. 220018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

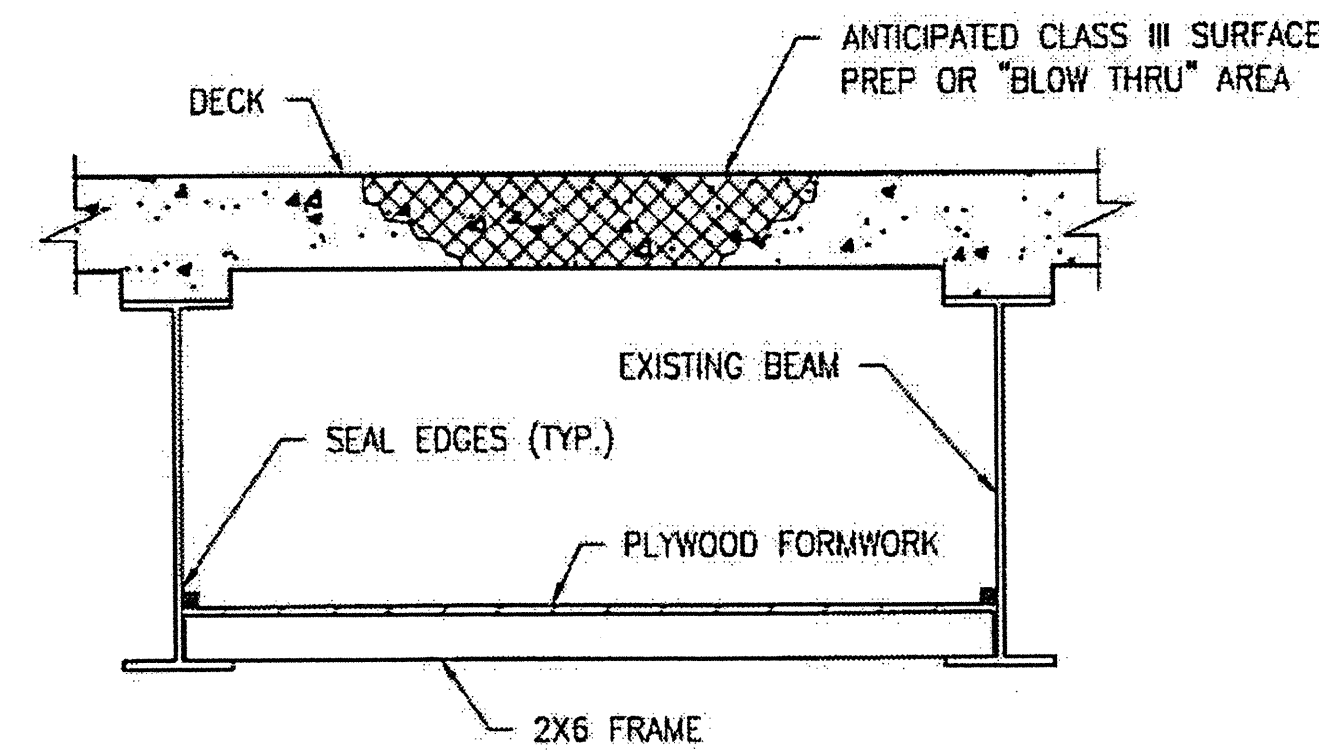
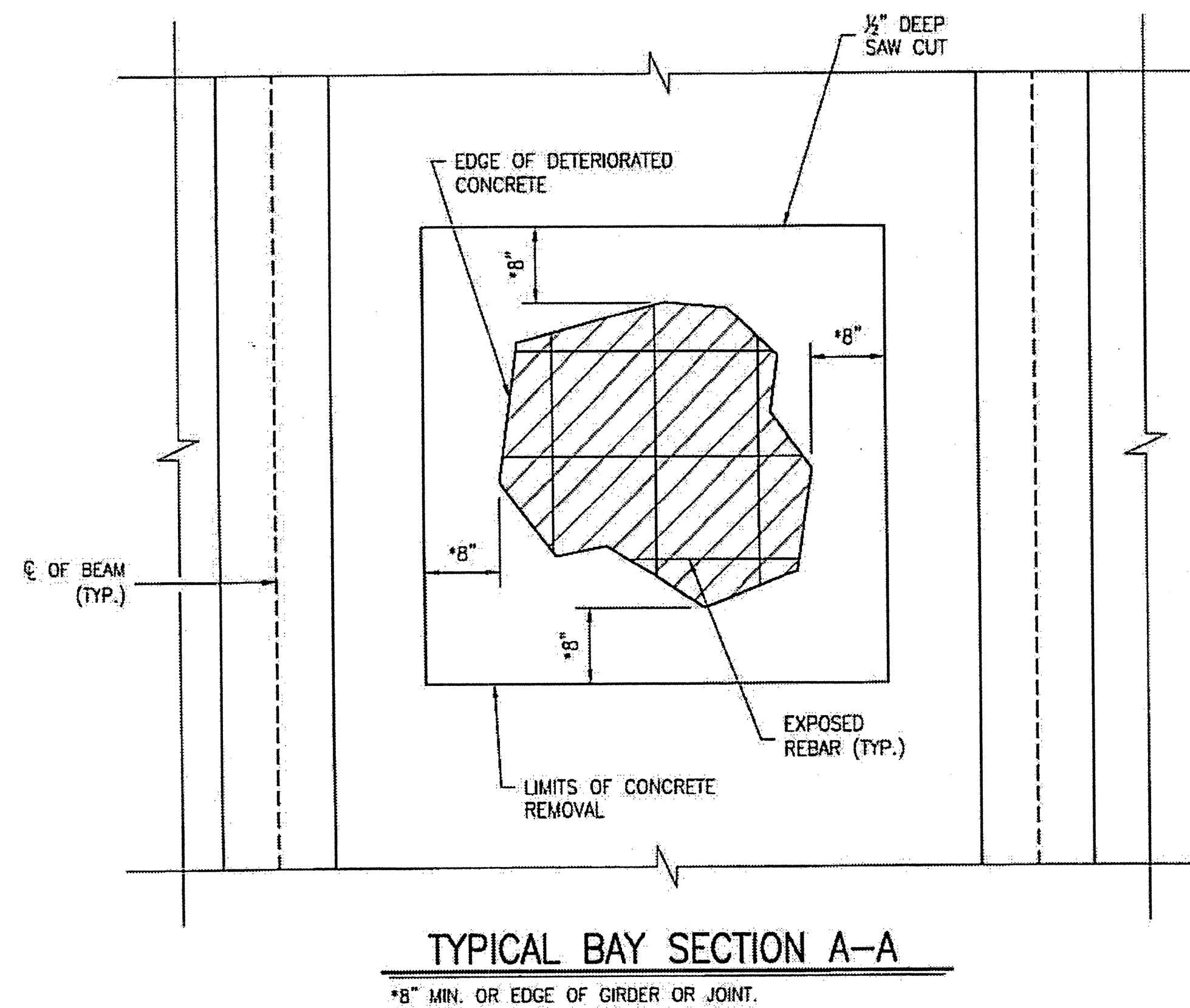
TYPICAL SECTION
AND JOINT DETAILS



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



- NOTES:**
1. SPALLS AND DAMAGED AREAS ARE APPROXIMATE.
 2. PREPARE AREAS TO BE REPAIRED BY CHIPPING AWAY ALL LOOSE MATERIAL (INCLUDING CONCRETE BACK TO SAW CUT LINES). WIRE BRUSH REBAR (BLAST IF NEEDED). REMOVE DUST IMMEDIATELY PRIOR TO PATCHING.
 3. REPAIR MATERIAL SHALL BE SHOTCRETE AND APPROVED FOR USE BY NCDOT.
 4. PROPOSED MATERIALS AND METHODS FOR REPAIRS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO BEGINNING THE WORK.



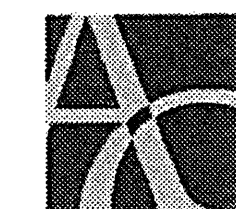
PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

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. YD. OF HYDRO-DEMOLITION.

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

PLAN PREPARED BY:



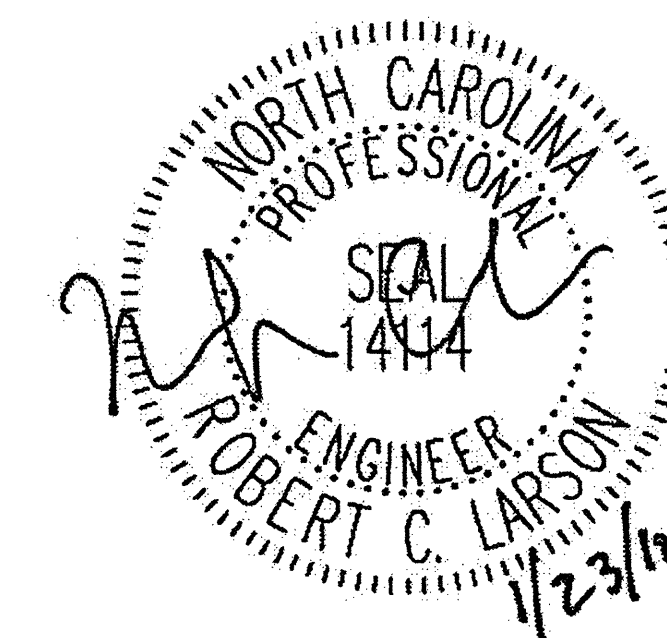
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PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220018

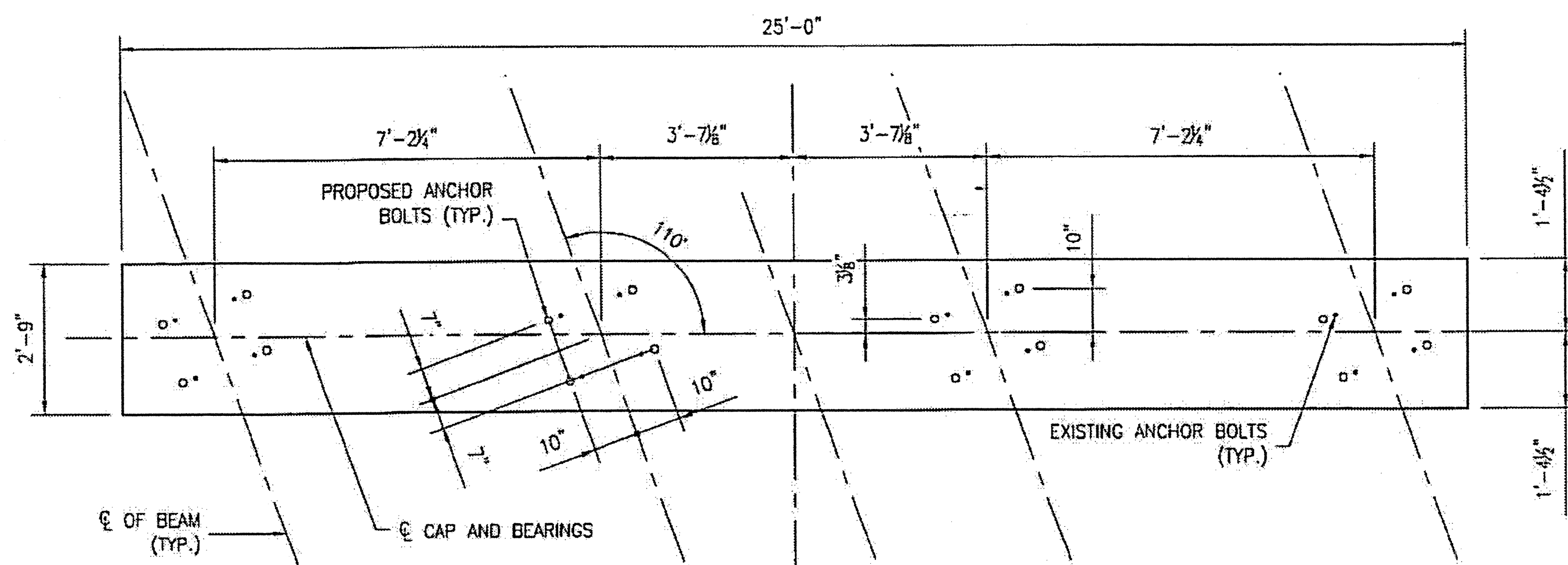
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE DECK
UNDERSIDE
REPAIRS

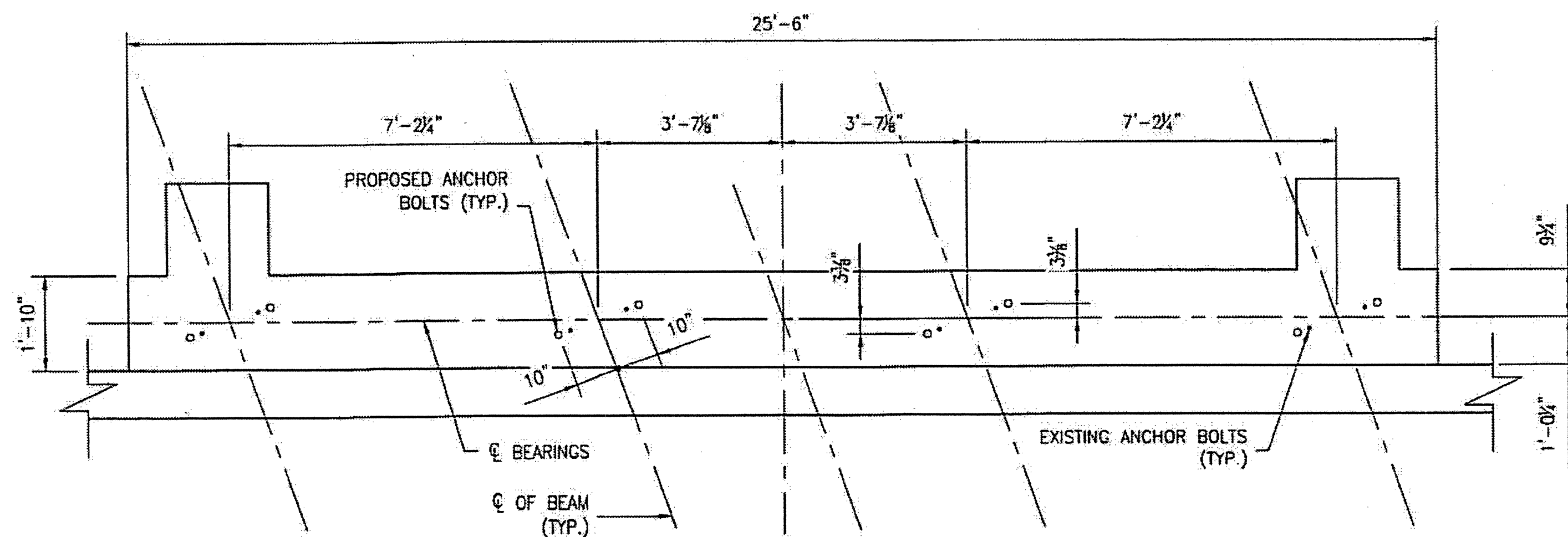


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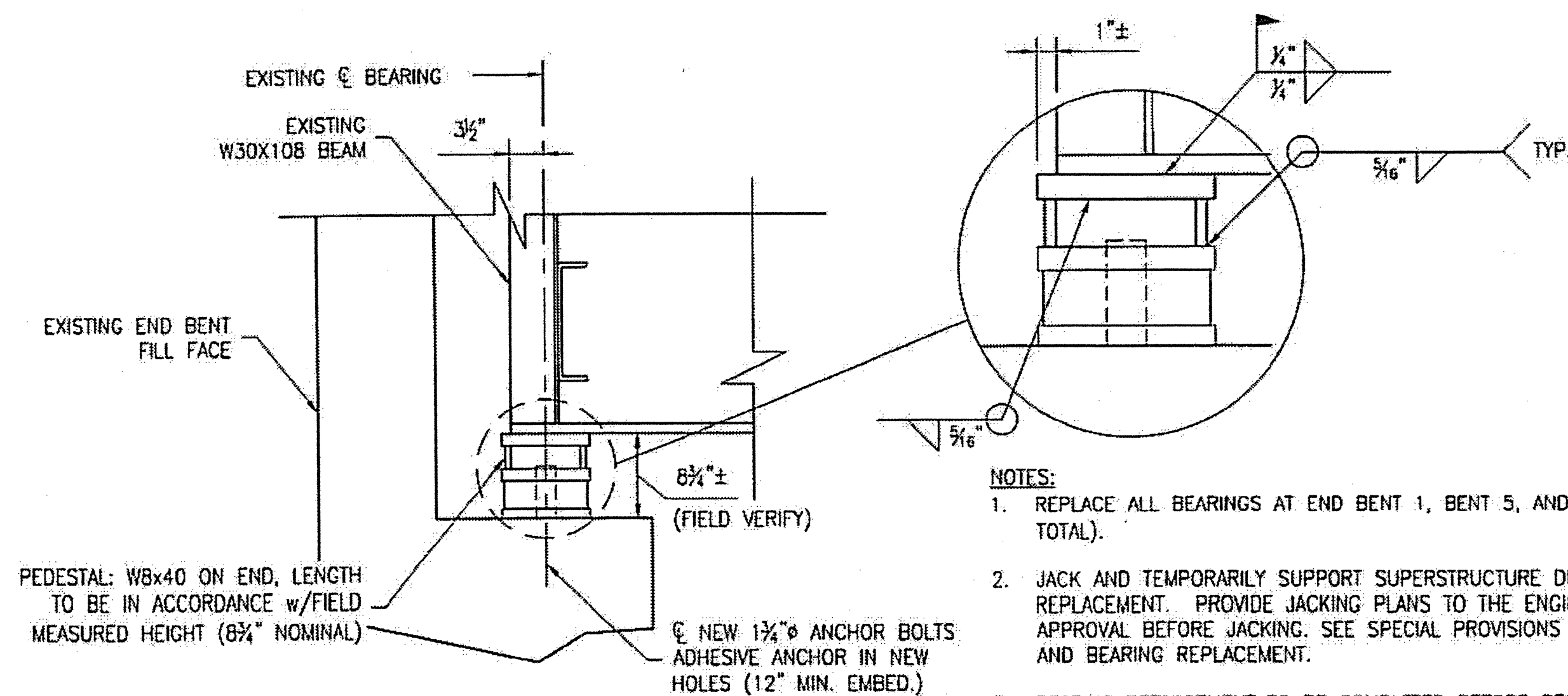
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
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PLAN OF BENT 5 CAP



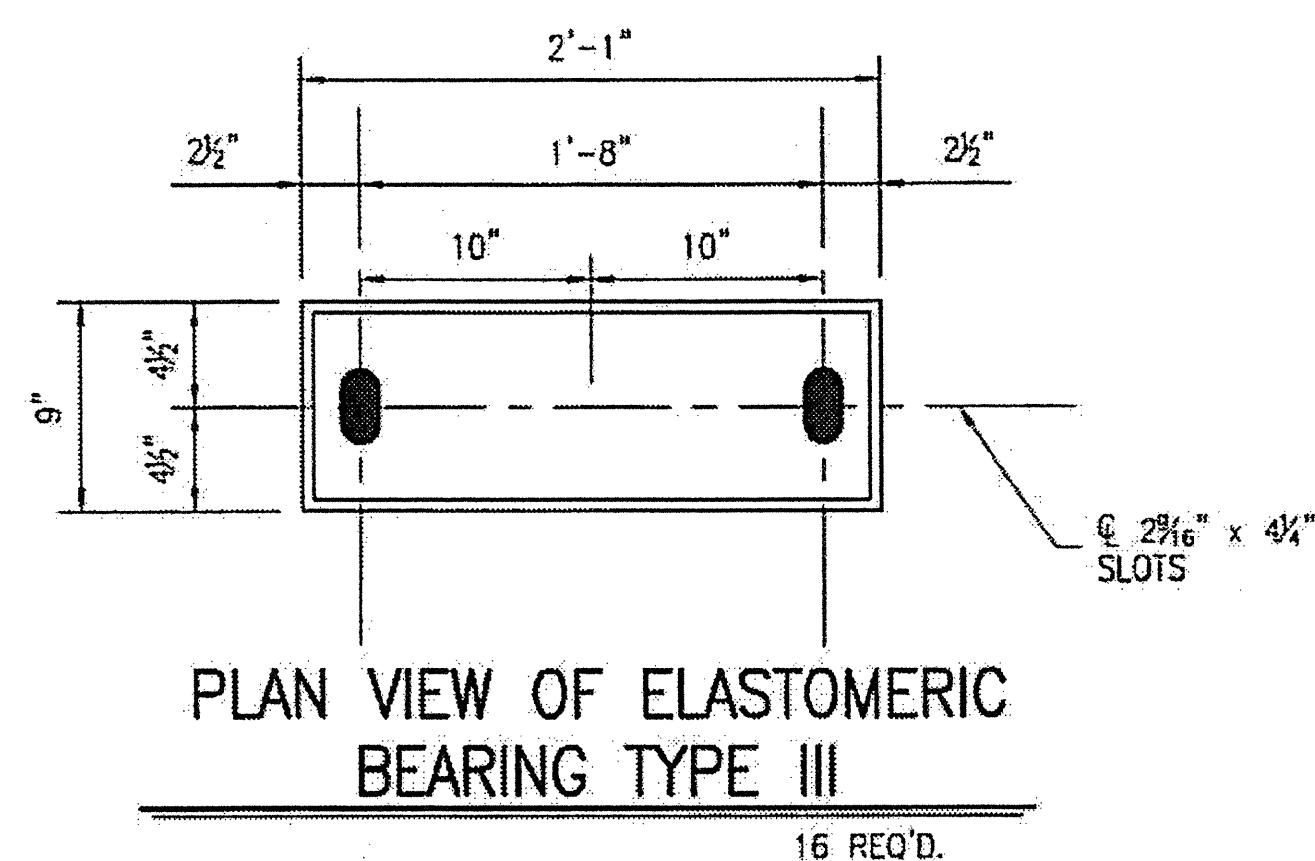
PLAN OF END BENT CAP



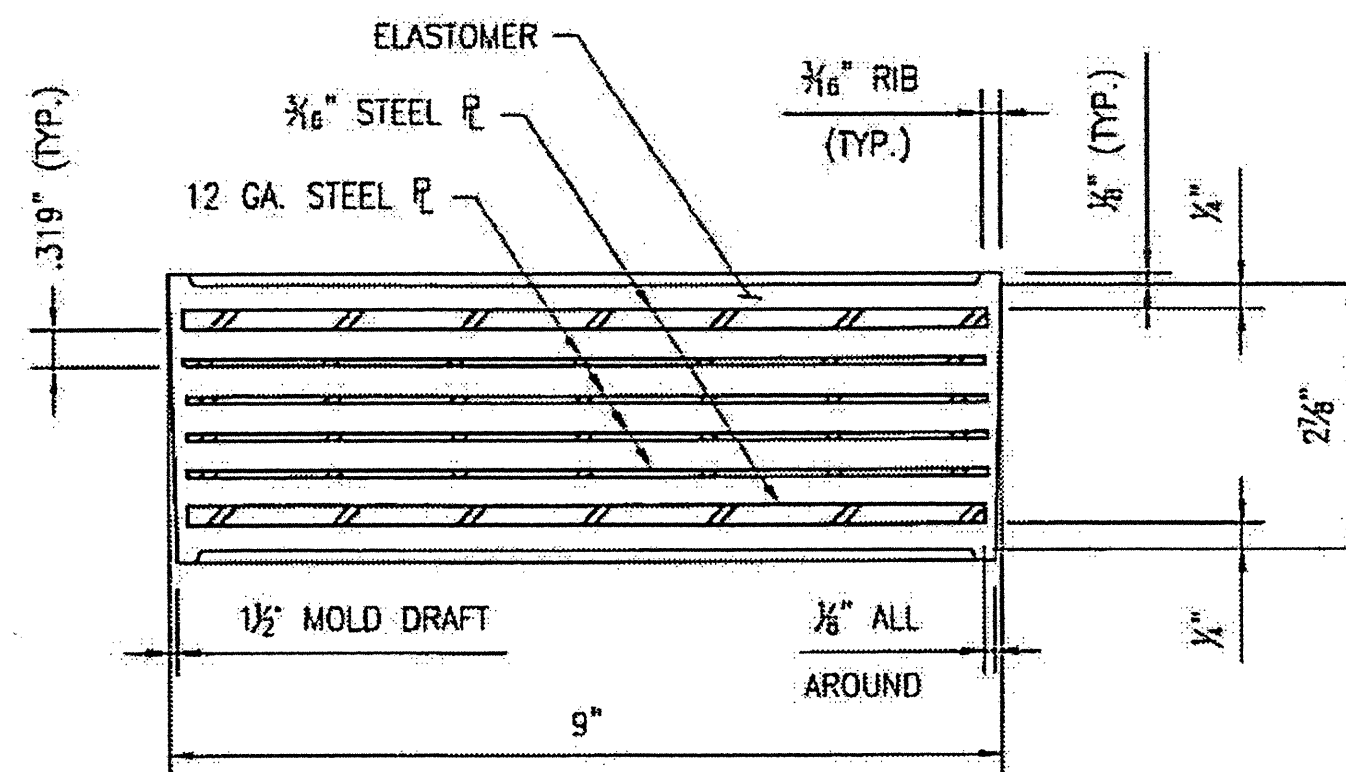
SECTION A-A

NOTES:

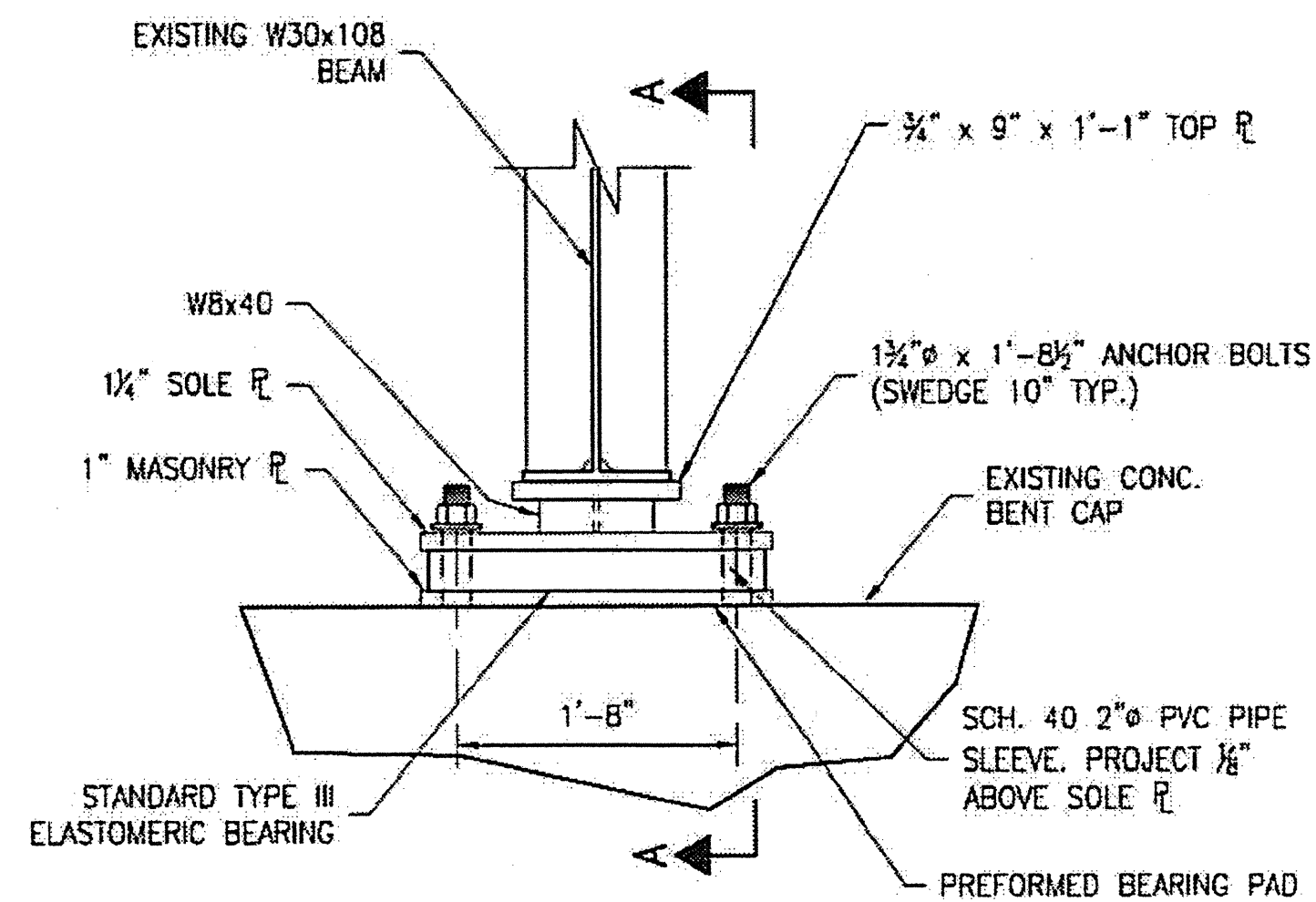
1. REPLACE ALL BEARINGS AT END BENT 1, BENT 5, AND END BENT 2 (16 TOTAL).
2. JACK AND TEMPORARILY SUPPORT SUPERSTRUCTURE DURING BEARING REPLACEMENT. PROVIDE JACKING PLANS TO THE ENGINEER AND OBTAIN APPROVAL BEFORE JACKING. SEE SPECIAL PROVISIONS FOR BRIDGE JACKING AND BEARING REPLACEMENT.
3. BEARING REPLACEMENT TO BE COMPLETED BEFORE BEGINNING DECK RESURFACING
4. CLEAN AND PAINT BEAM SURFACES DISTURBED BY INSTALLATION OF NEW BEARING. USE 2 COATS OF INORGANIC ZINC PRIMER.



PLAN VIEW OF ELASTOMERIC BEARING TYPE III



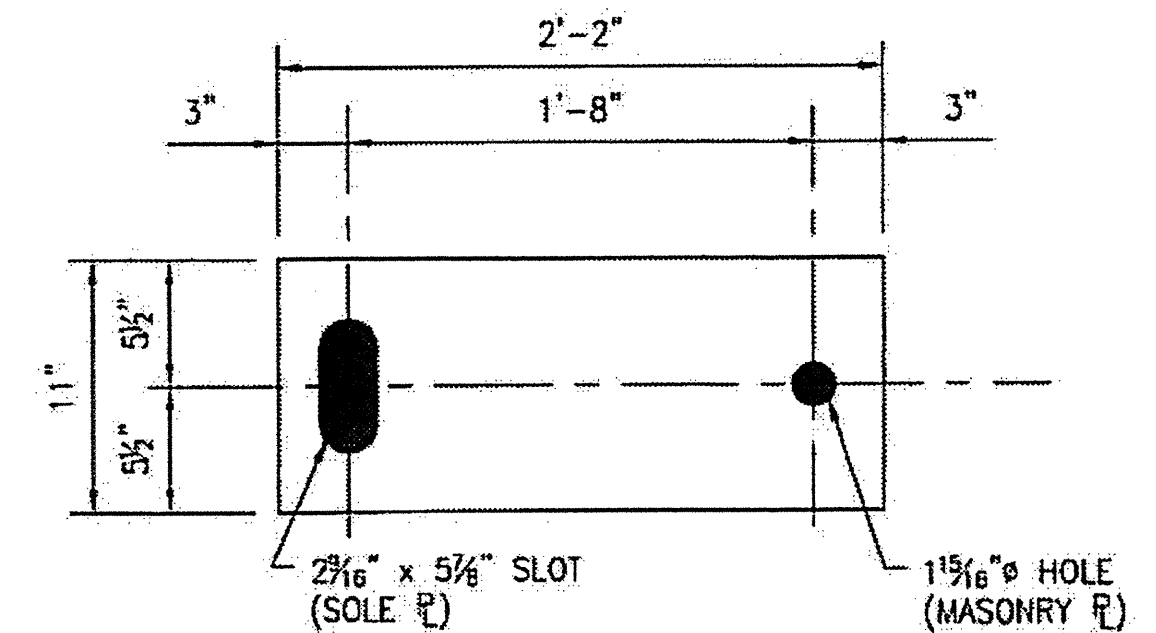
TYPICAL SECTION OF ELASTOMERIC BEARING TYPE III



BEARING ASSEMBLY END VIEW

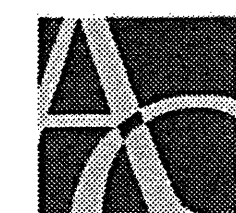
NOTES:

1. AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.
2. THE 2" PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.
3. THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.
4. ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED. ALL HARDWARE IS TO BE HOT DIPPED GALVANIZED.
5. WHEN FIELD WELDING THE SOLE PLATE TO THE BEAM FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.
6. BEARING PLATES TO BE FABRICATED FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M270 GRADE 36 AND BE HOT DIPPED GALVANIZED. ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.
7. IN WELDING SOLE PLATES TO BEAMS, LOCATE BOLT IN SLOT SO AS TO BE CENTERED AT A TEMPERATURE OF 60°F.



PLAN VIEW OF MASONRY PLATE OR SOLE PLATE

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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A & O PROJECT #: 2011.031

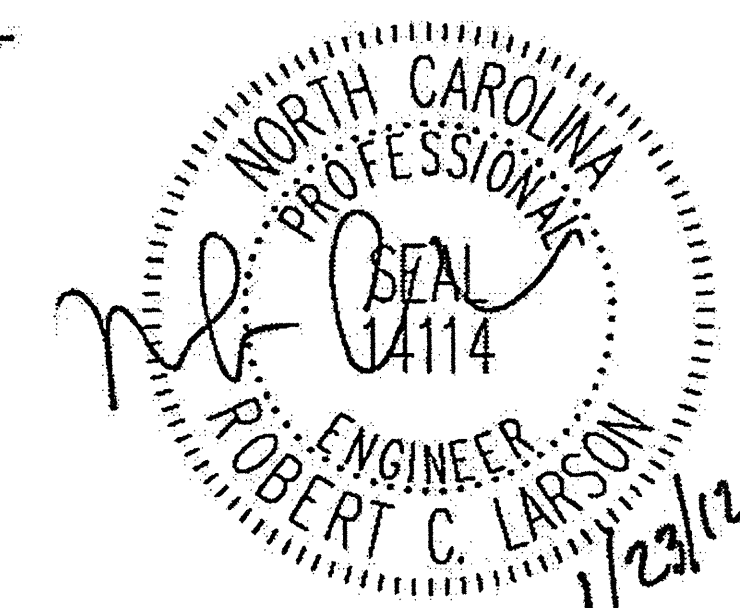
PROJECT NO. WBS 17BP.12.P.4

CLEVELAND COUNTY

BRIDGE NO. 220018

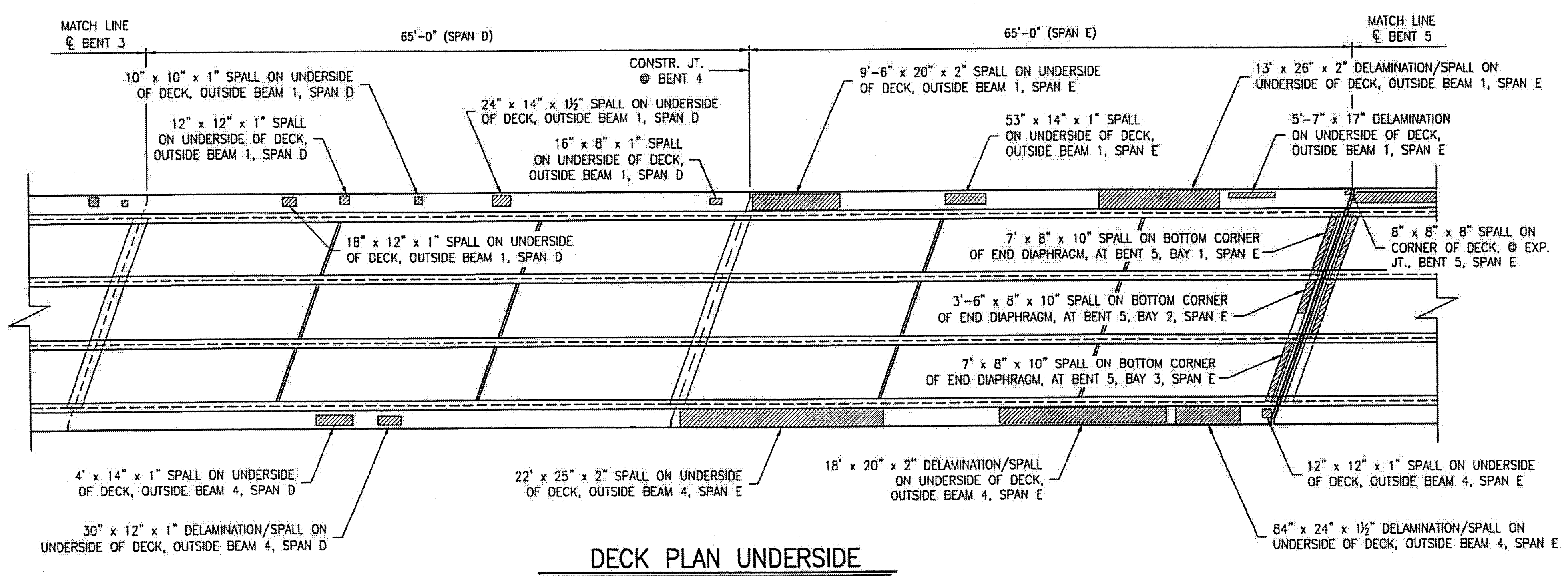
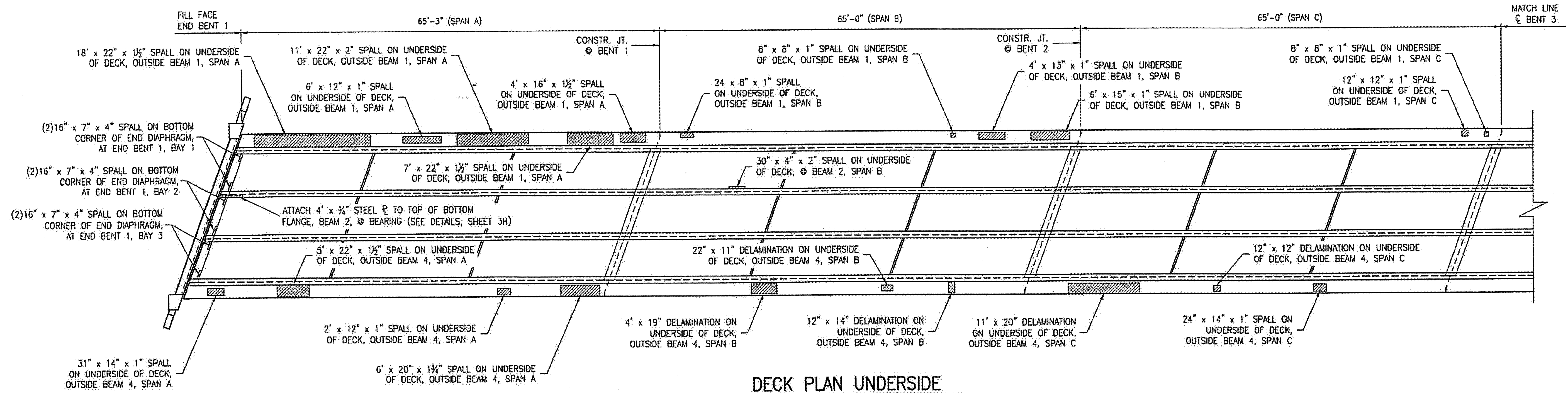
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEARING REPLACEMENT
DETAILS



DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			54

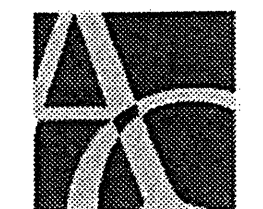


ESTIMATED SHOTCRETE REPAIRS SPANS A - E = 107 CF

AREA TO BE REPAIRED WITH SHOTCRETE. SEE DETAILS, SHEET S-9. SEE THE SPECIAL PROVISION "SHOTCRETE REPAIRS."



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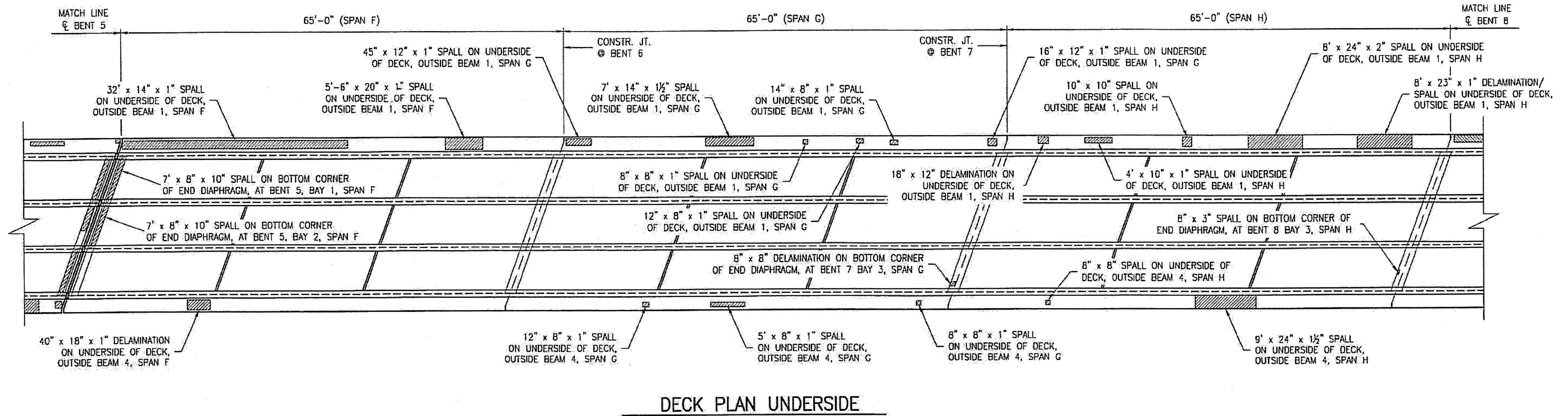
PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
 BRIDGE NO. 220018

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

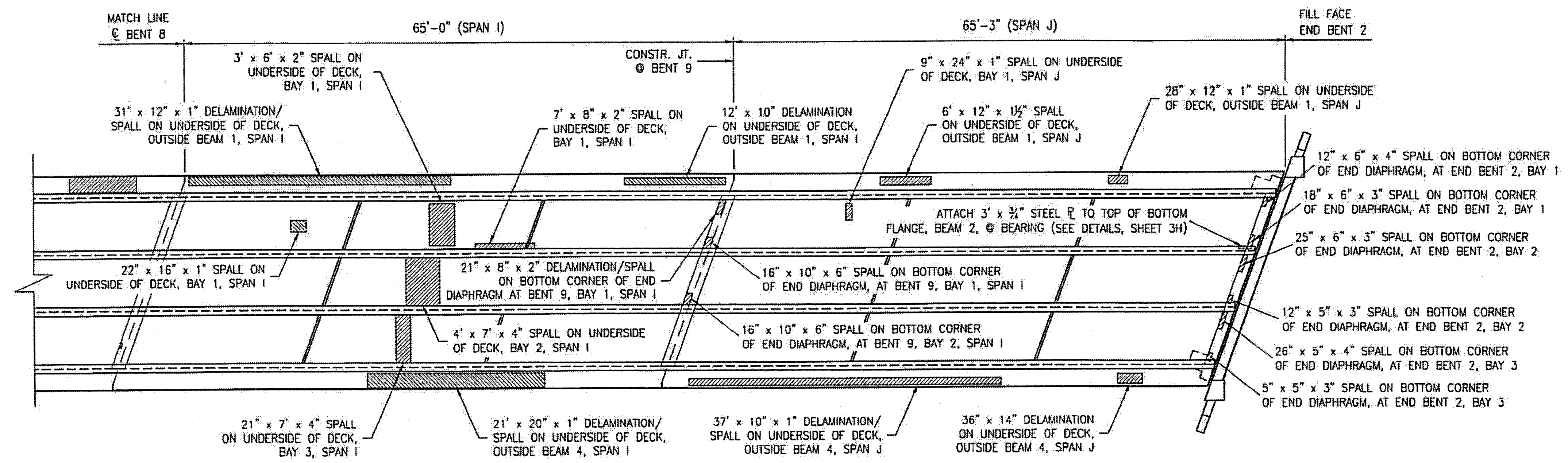
BRIDGE PLAN
 UNDERSIDE
 SPANS A-E

DRAWN BY: J.D. GOODIN DATE: 12-08-11
 CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			54



DECK PLAN UNDERSIDE



DECK PLAN UNDERSIDE

ESTIMATED SHOTCRETE REPAIRS SPANS F - J = 321 CF

AREA TO BE REPAIRED WITH SHOTCRETE. SEE DETAILS, SHEET S-9. SEE THE SPECIAL PROVISION "SHOTCRETE REPAIRS."



PLAN PREPARED BY:

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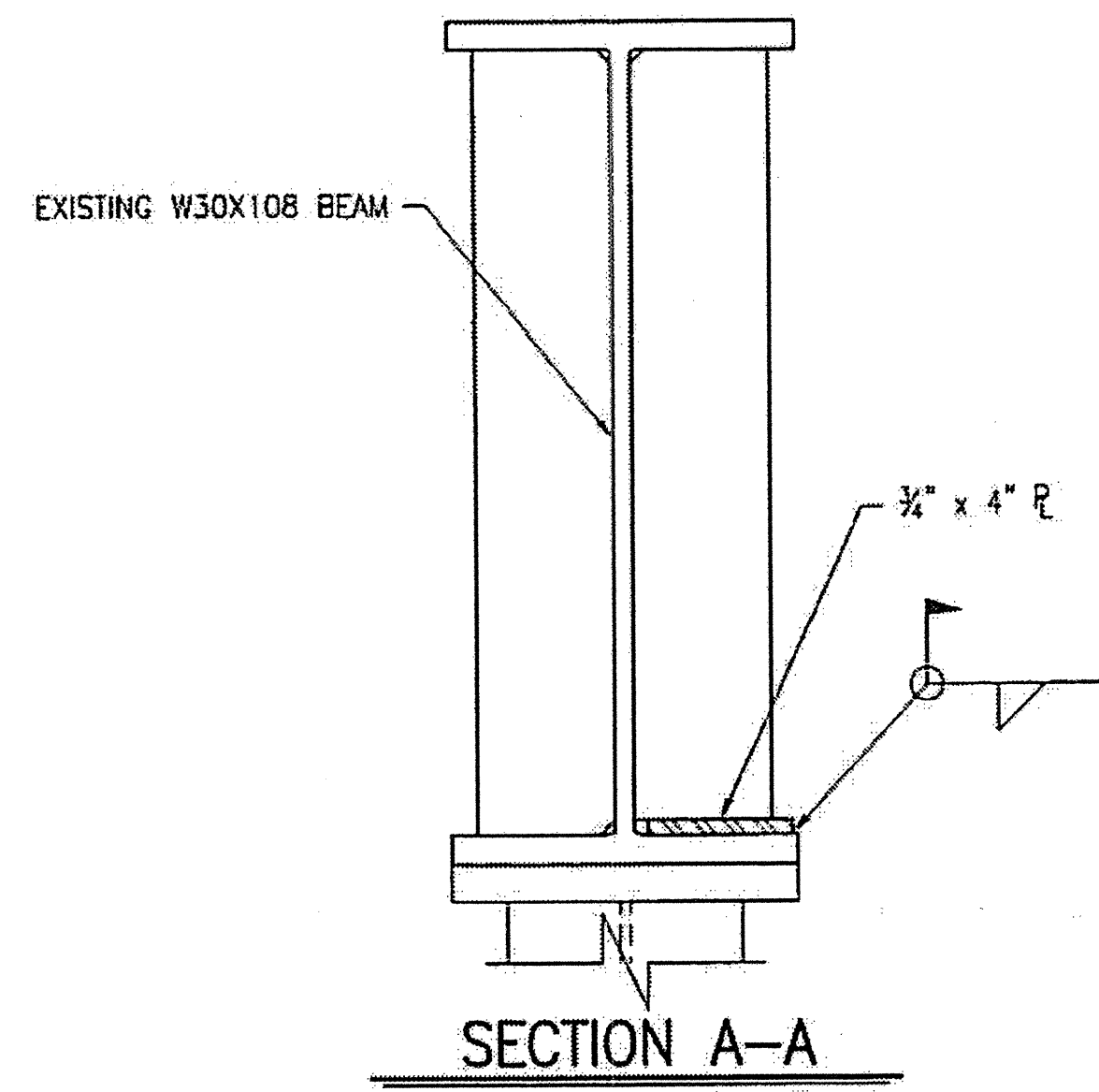
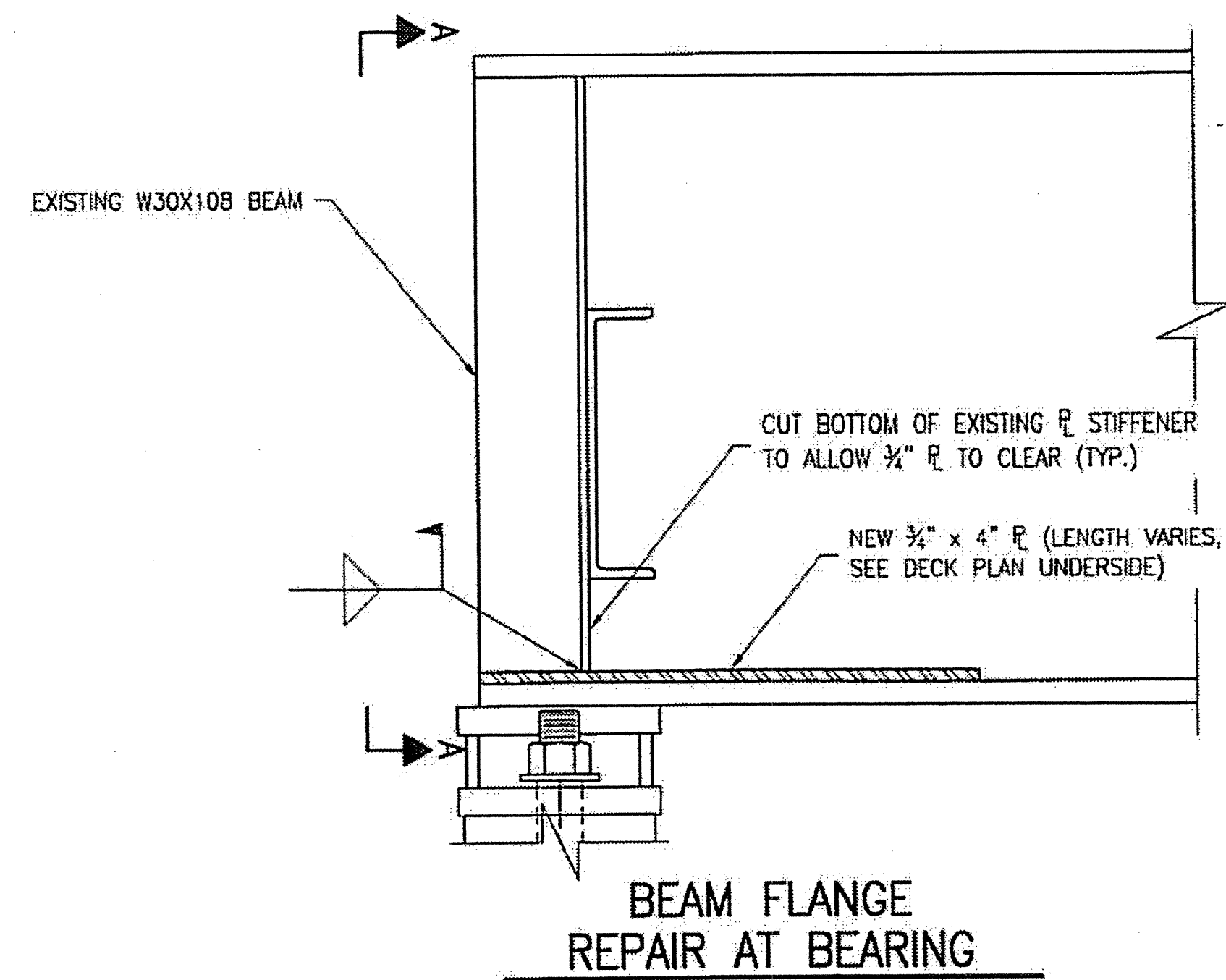
PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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BRIDGE PLAN
 UNDERSIDE
 SPANS F-J

DRAWN BY: J.D. GOODIN DATE: 12-08-11
 CHECKED BY: R.C. LARSON DATE: 12-08-11

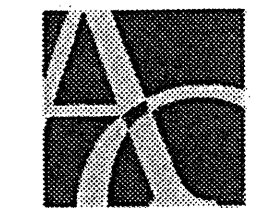
REVISIONS						SHEET NO. S-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			54



NOTES:

1. CLEAN TO BARE METAL AT ALL WELD LOCATIONS.
2. CLEAN AND PAINT THE COMPLETED REPAIR WITH 2 COATS OF INORGANIC ZINC PRIMER.

PLAN PREPARED BY:

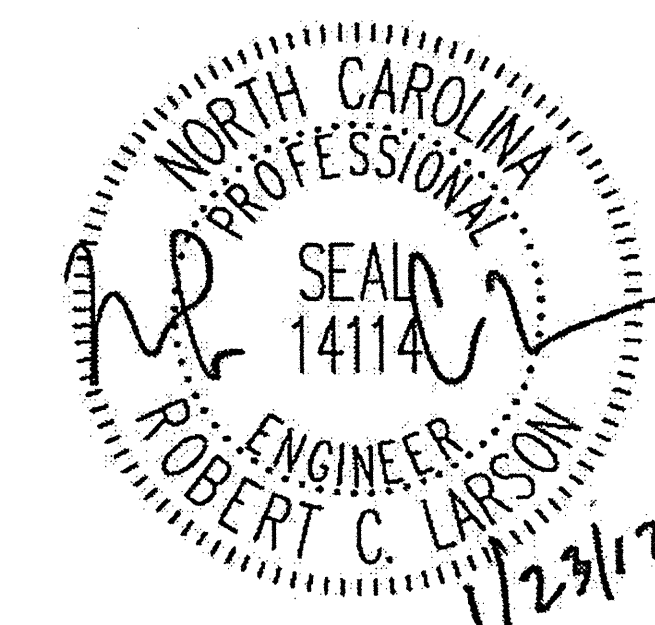


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PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
 BRIDGE NO. 220018

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STRUCTURAL STEEL
 REPAIR DETAILS

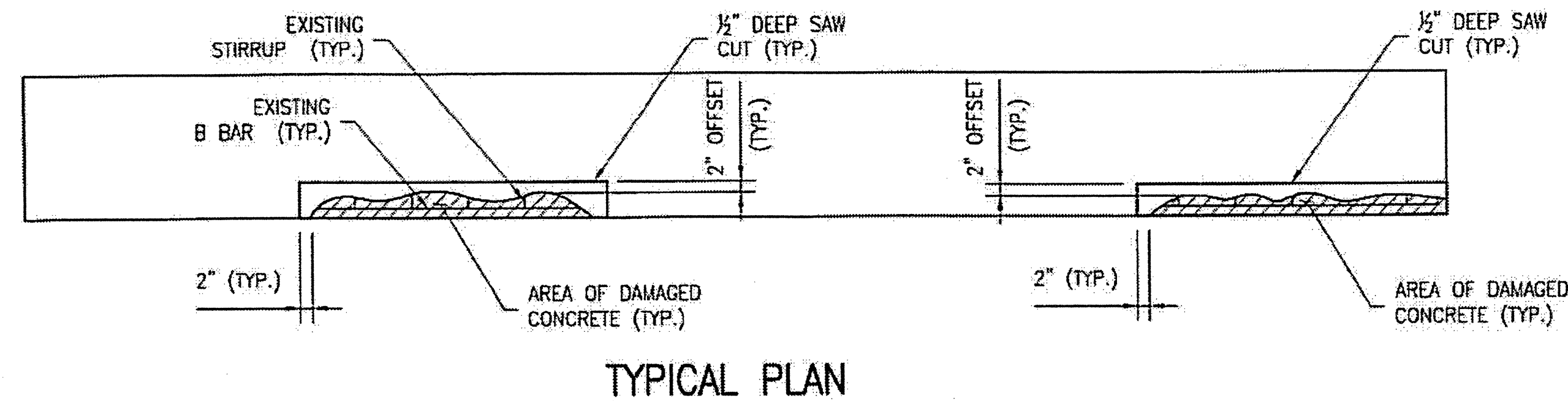


DRAWN BY: J.D. GOODIN DATE: 12-08-11
 CHECKED BY: R.C. LARSON DATE: 12-08-11

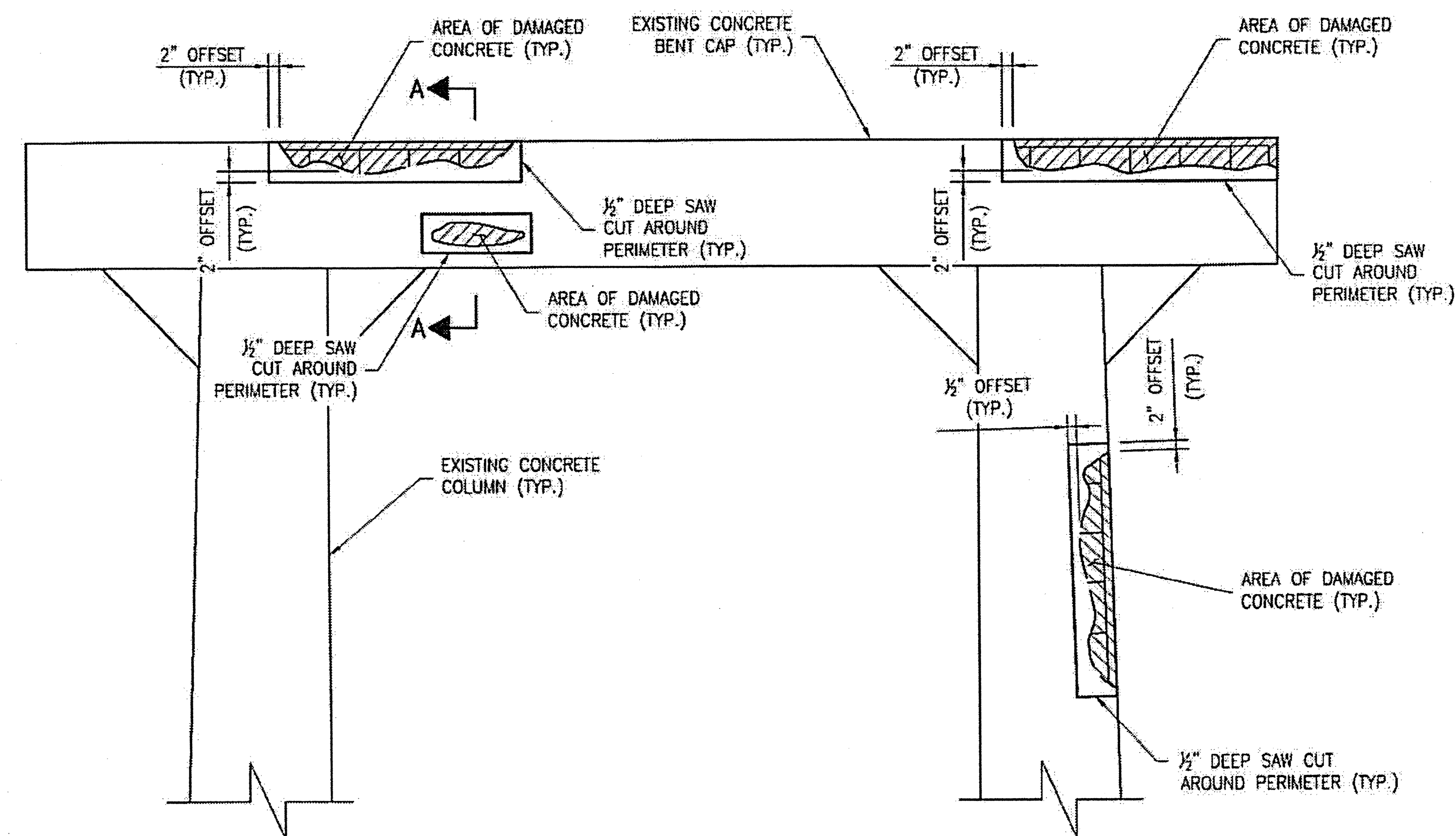
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NOTES:

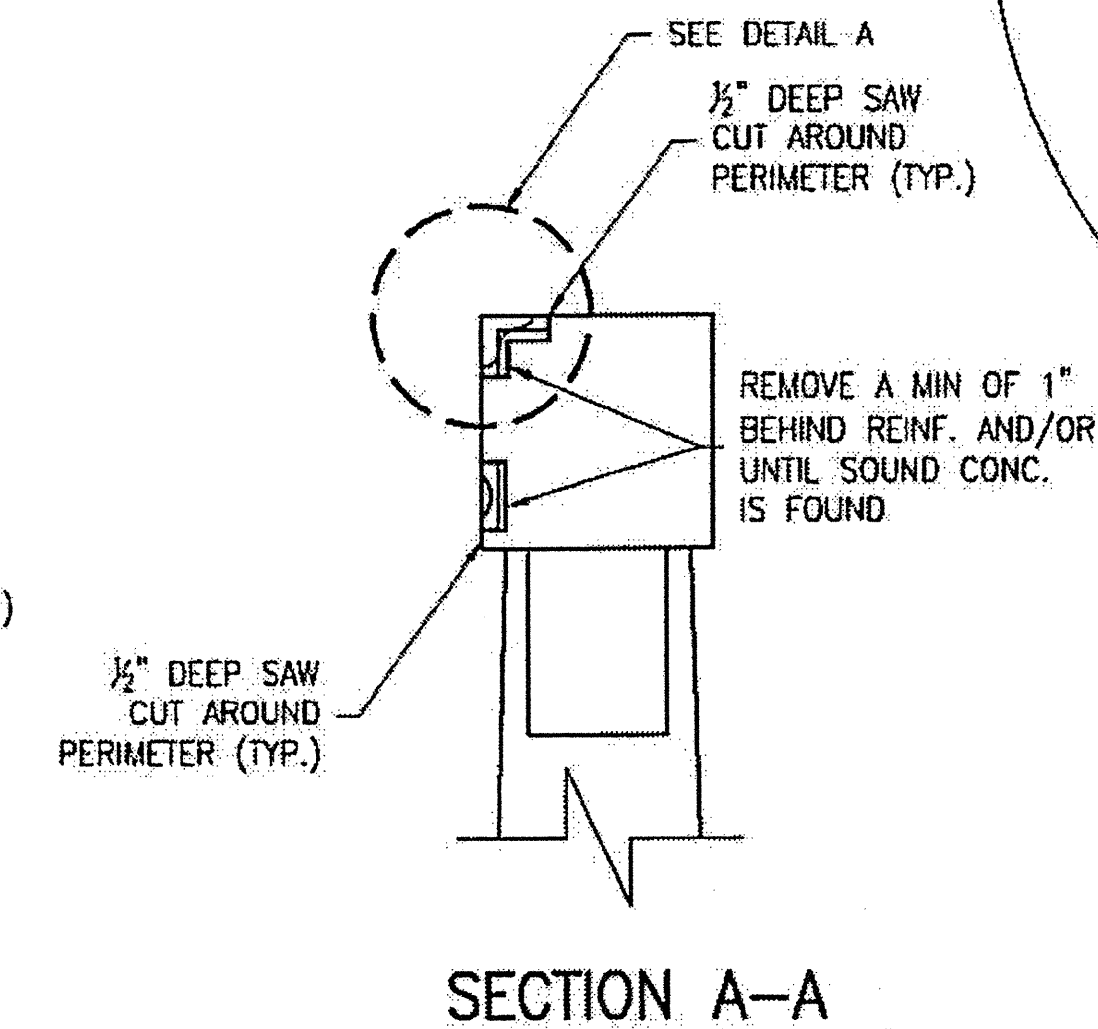
1. SPALL/DELMINATION DIMENSIONS SHOWN ARE APPROXIMATE.
2. REPAIR MATERIAL SHALL BE SHOTCRETE. SEE SPECIAL PROVISIONS.
3. REPAIRS OF SUPERSTRUCTURE UNDERSIDE, DIAPHRAGMS, ETC. SIMILAR.



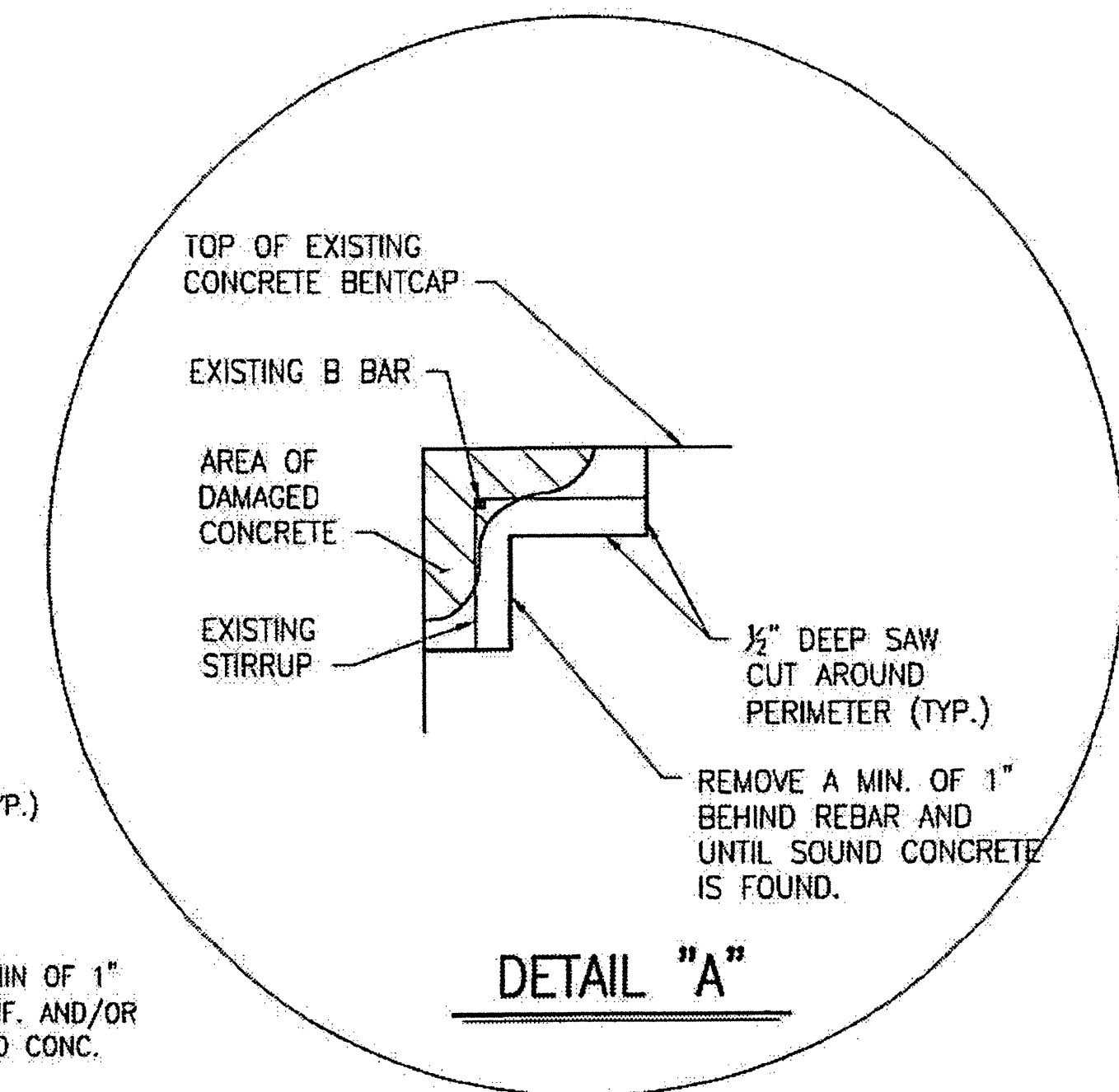
TYPICAL PLAN



TYPICAL ELEVATION

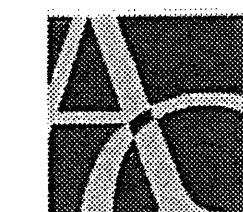


SECTION A-A



DETAIL "A"

PLAN PREPARED BY:



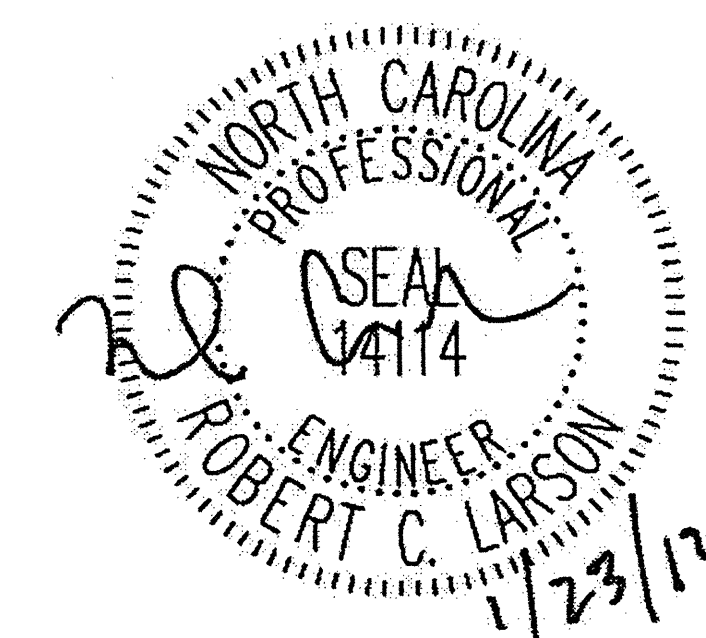
ALPHA & OMEGA GROUP
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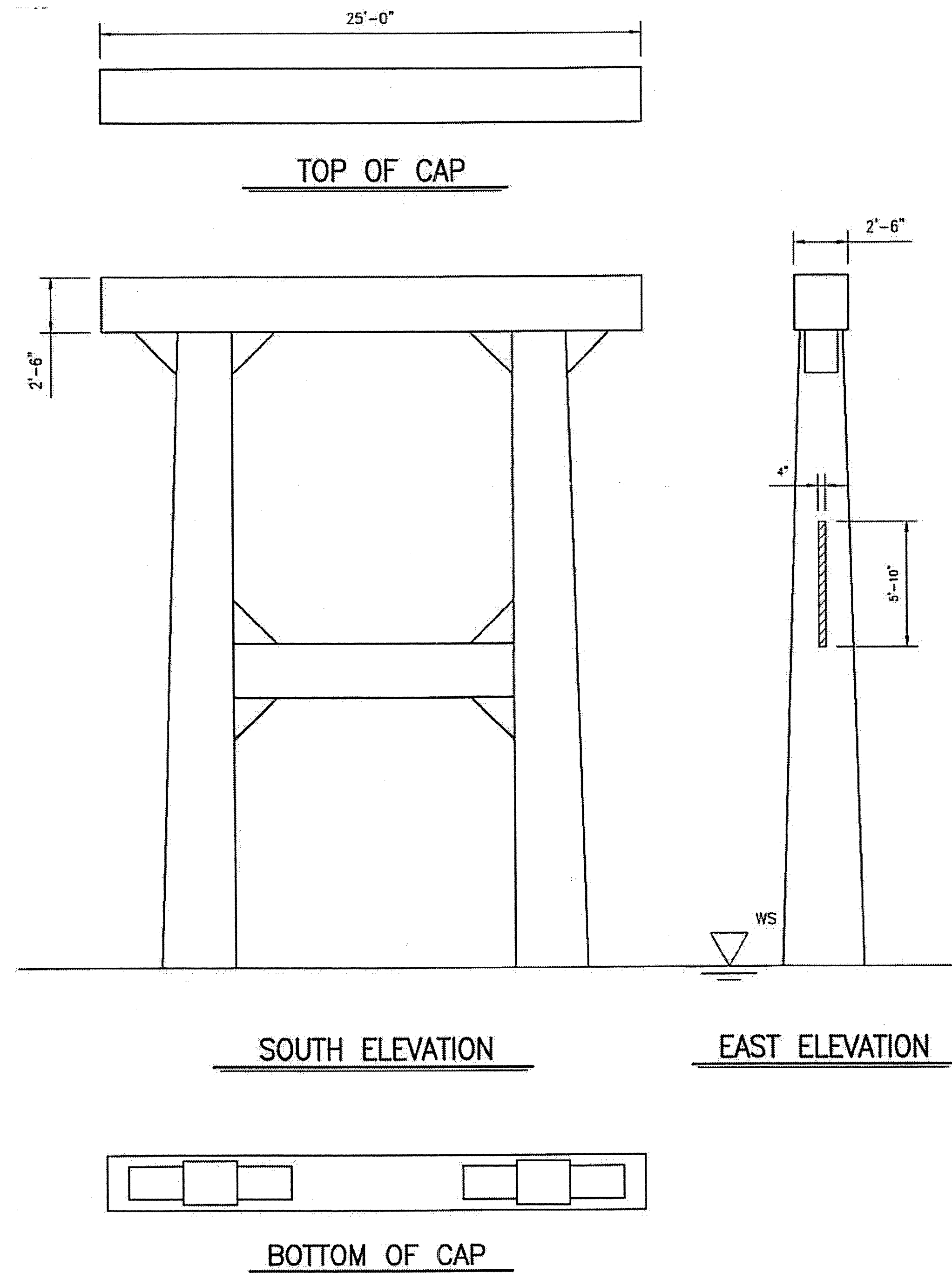
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL BENT CAP
REPAIR DETAILS




DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

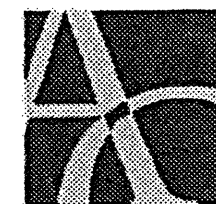
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			54



ESTIMATED SHOTCRETE REPAIRS
BENT 3 = 1 CF

 AREA TO BE REPAIRED WITH SHOTCRETE. SEE DETAILS, SHEET S-9.
SEE THE SPECIAL PROVISION "SHOTCRETE REPAIRS."

PLAN PREPARED BY:



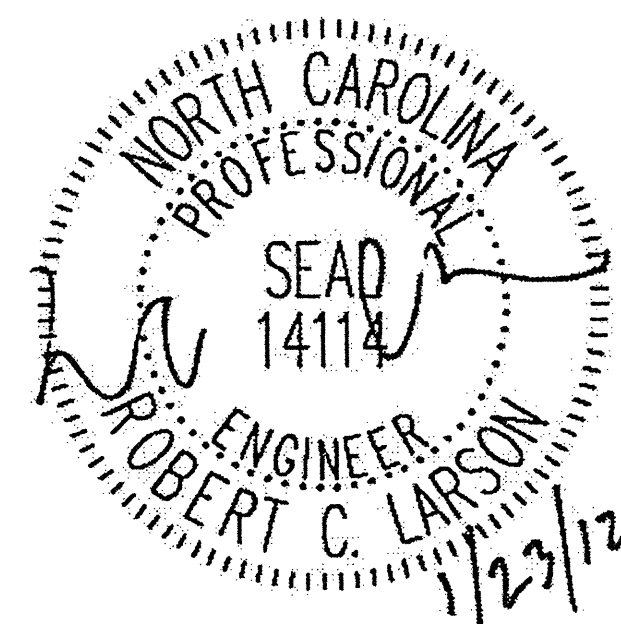
ALPHA & OMEGA GROUP
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PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220018

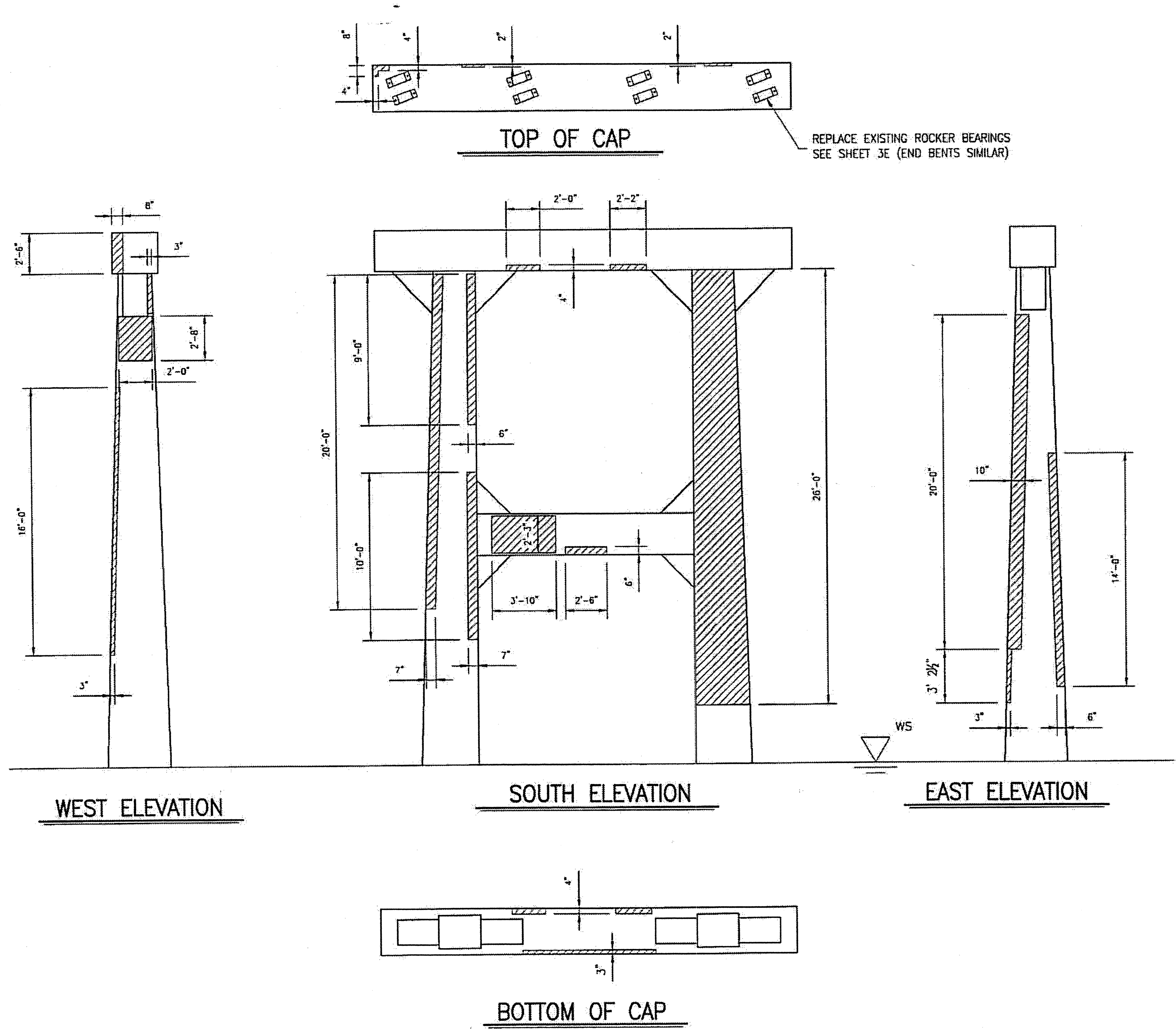
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE CAP AND
COLUMN REPAIRS
BENT 3



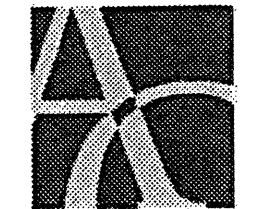
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			54

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REPLACE EXISTING ROCKER BEARINGS
SEE SHEET 3E (END BENTS SIMILAR)

PLAN PREPARED BY:



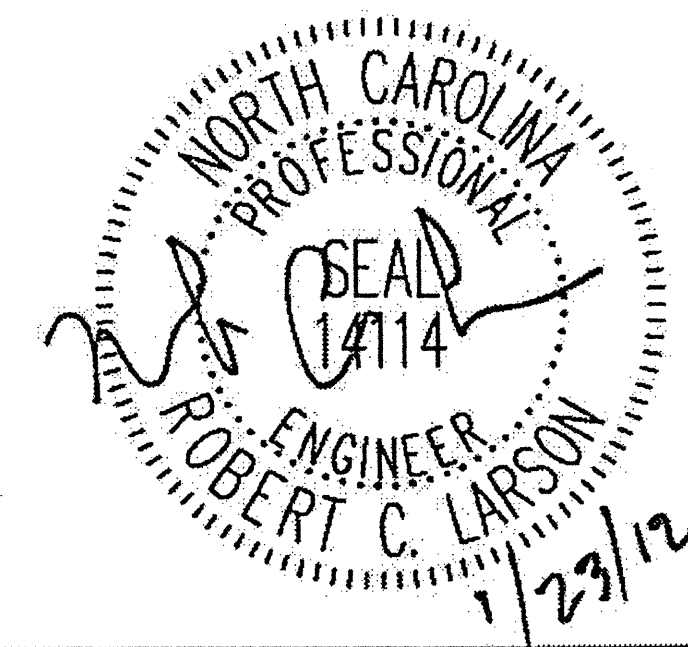
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CLEVELAND COUNTY
BRIDGE NO. 220018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE CAP AND
COLUMN REPAIRS
BENT 5

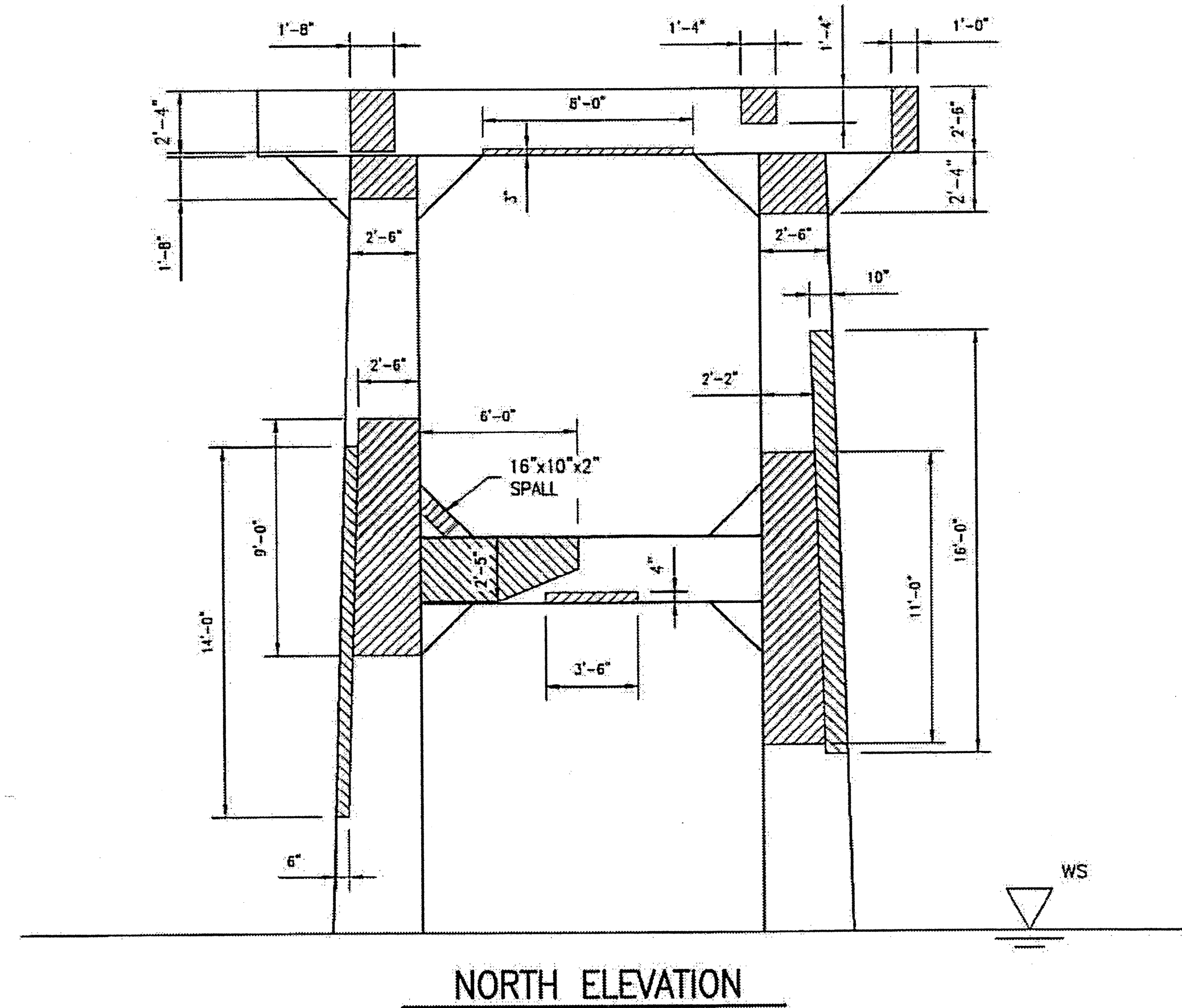



ESTIMATED SHOTCRETE REPAIRS
BENT 5 = 77 CF

AREA TO BE REPAIRED WITH SHOTCRETE. SEE DETAILS, SHEET S-9.
SEE THE SPECIAL PROVISION "SHOTCRETE REPAIRS."

DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

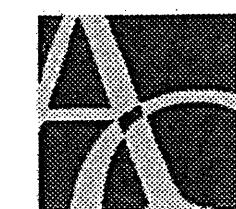
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			54




 AREA TO BE REPAIRED WITH SHOTCRETE. SEE DETAILS, SHEET S-9.
 SEE THE SPECIAL PROVISION "SHOTCRETE REPAIRS."

NOTE: QUANTITIES INCLUDED ON SHEET 3K.

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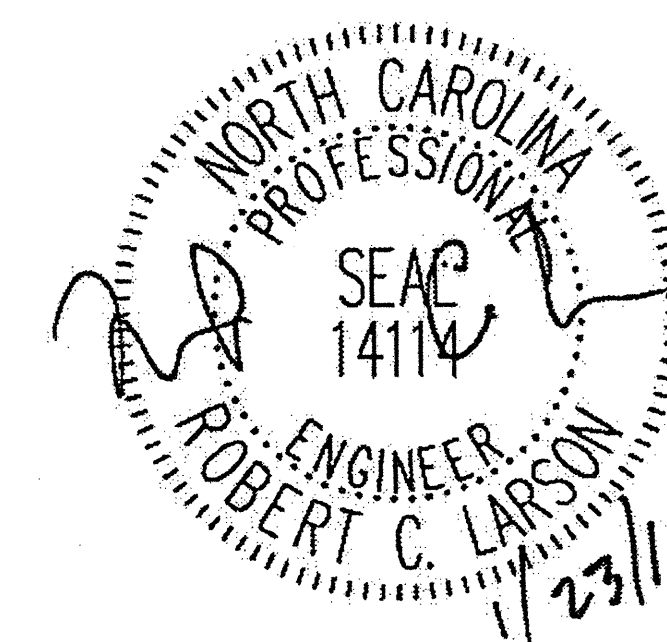
PROJECT NO. WBS 17BP.12.P.4

CLEVELAND COUNTY

BRIDGE NO. 220018

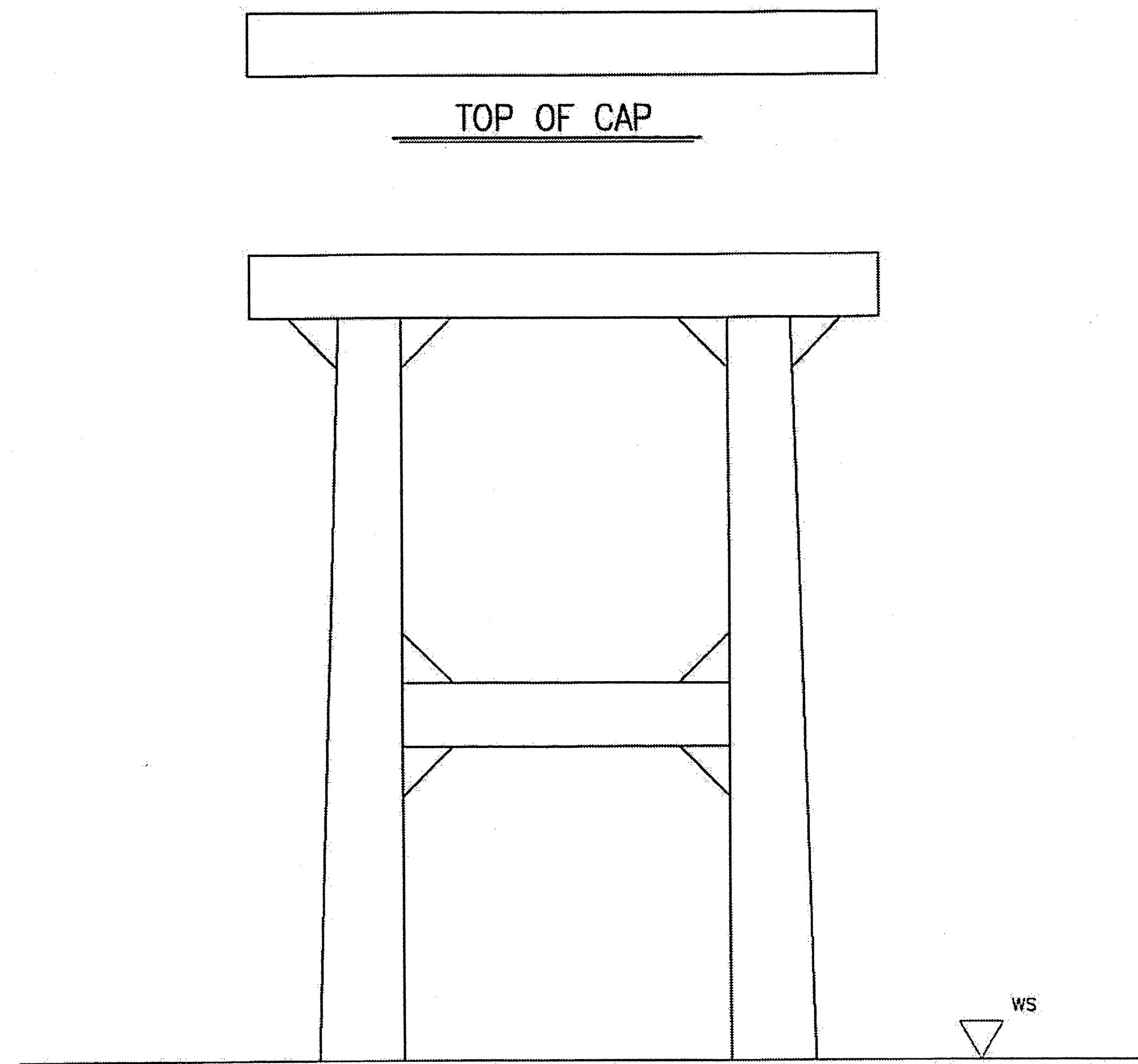
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONCRETE CAP AND
 COLUMN REPAIRS
 BENT 5

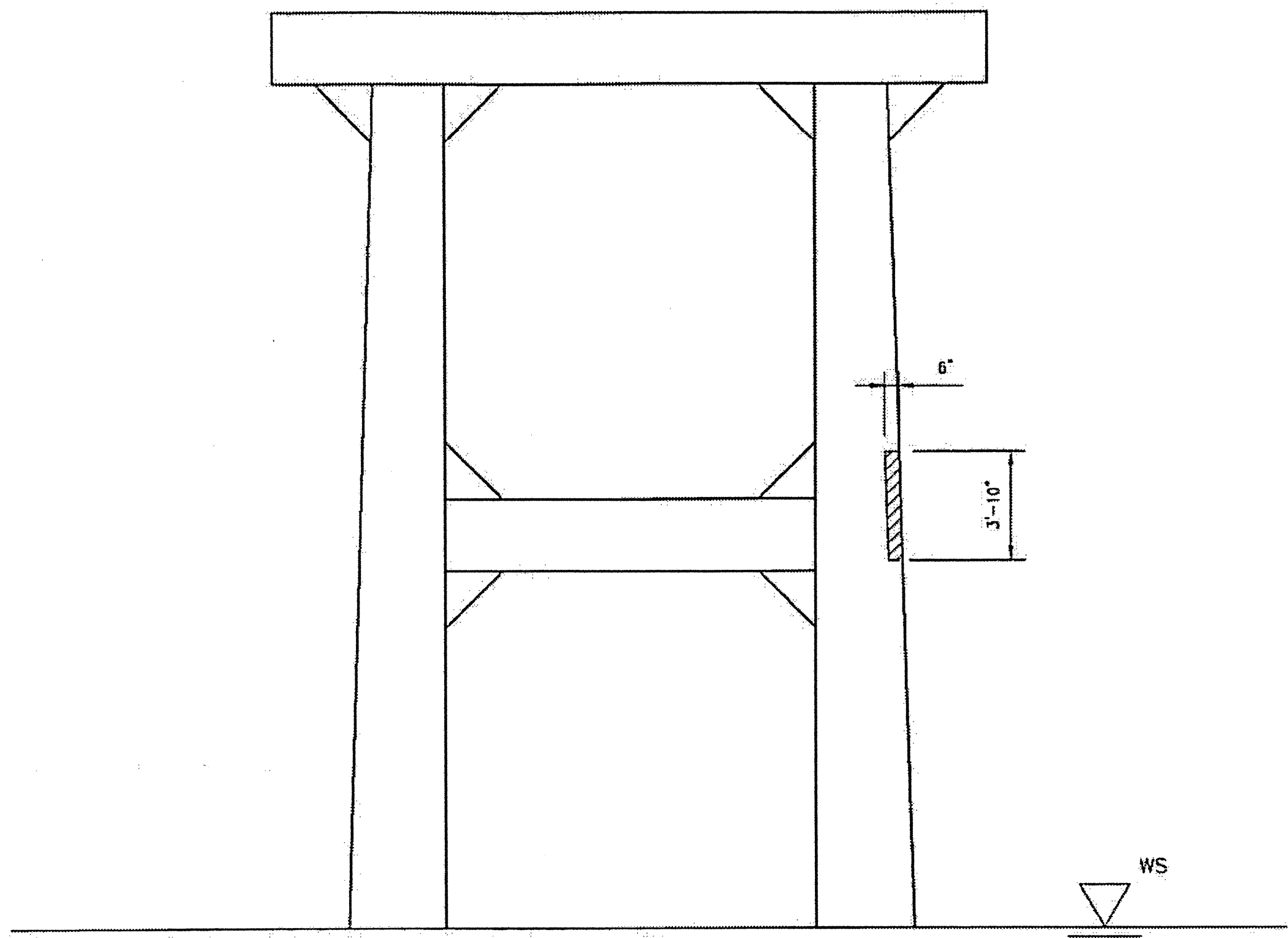


DRAWN BY: J.D. GOODIN DATE: 12-08-11
 CHECKED BY: R.C. LARSON DATE: 12-08-11

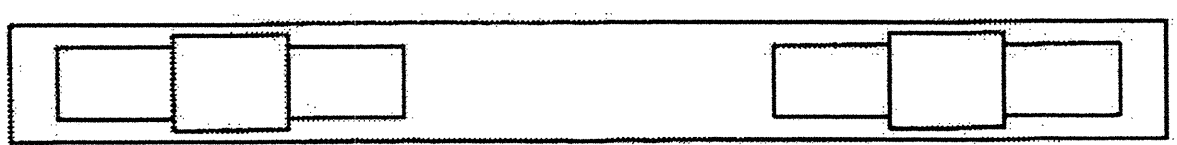
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			54



SOUTH ELEVATION




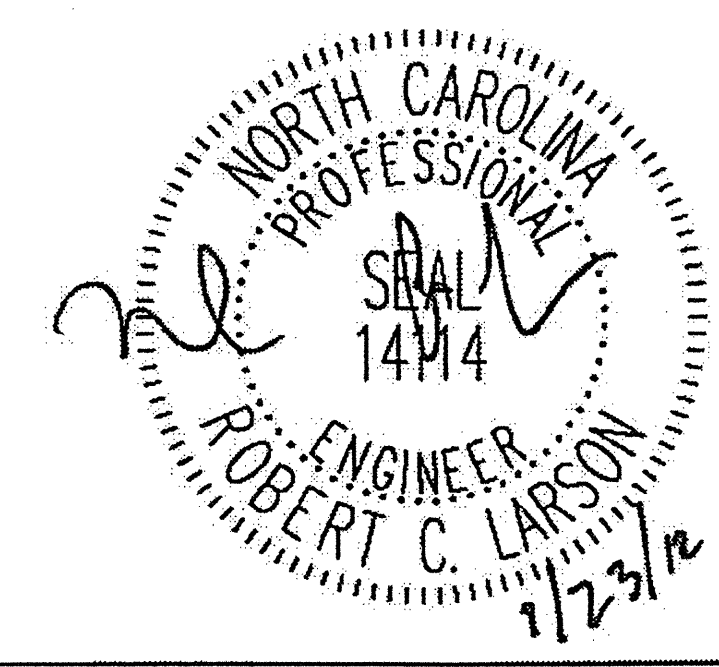
NORTH ELEVATION



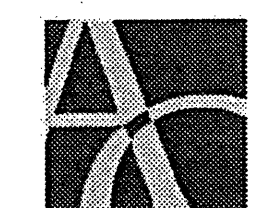
BOTTOM OF CAP

ESTIMATED SHOTCRETE REPAIRS
BENT 7 = 1 CF

 AREA TO BE REPAIRED WITH SHOTCRETE. SEE DETAILS, SHEET S-9.
SEE THE SPECIAL PROVISION "SHOTCRETE REPAIRS."



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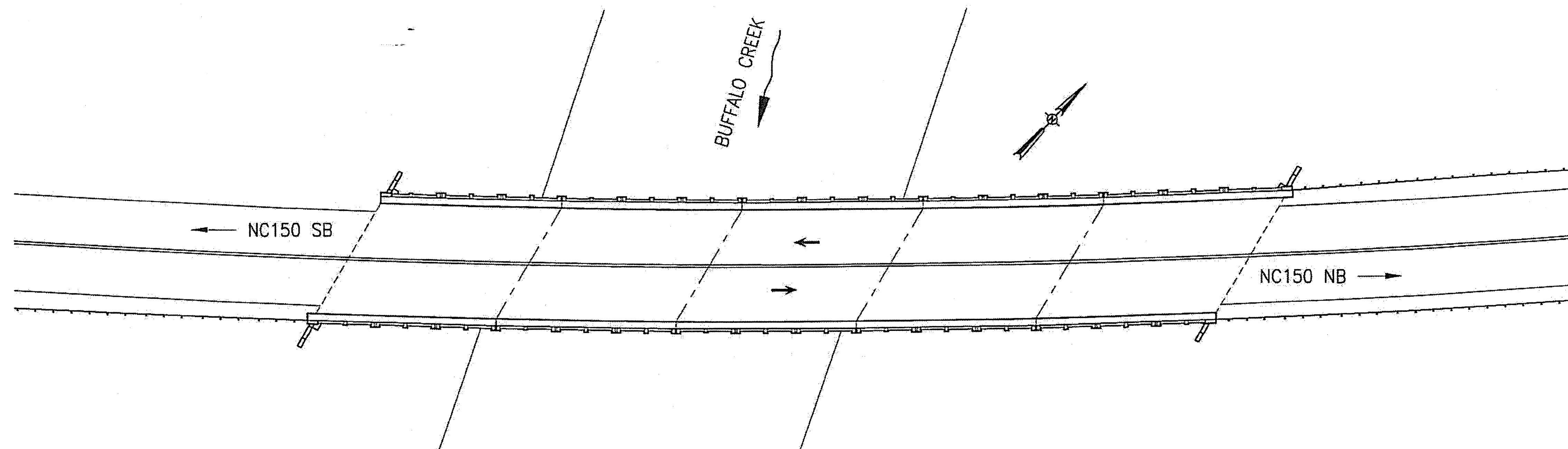
PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220018

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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CONCRETE CAP AND
COLUMN REPAIRS
BENT 7

DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

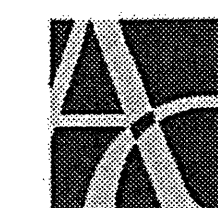
REVISIONS						SHEET NO.
NO	BY:	DATE:	NO	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			54



BRIDGE 220076 ON NC150

LOCATION: BRIDGE 220076, NC150 OVER BUFFALO CREEK,
0.4 MILE NORTH OF JUNCTION WITH SR1942.

PLAN PREPARED BY:



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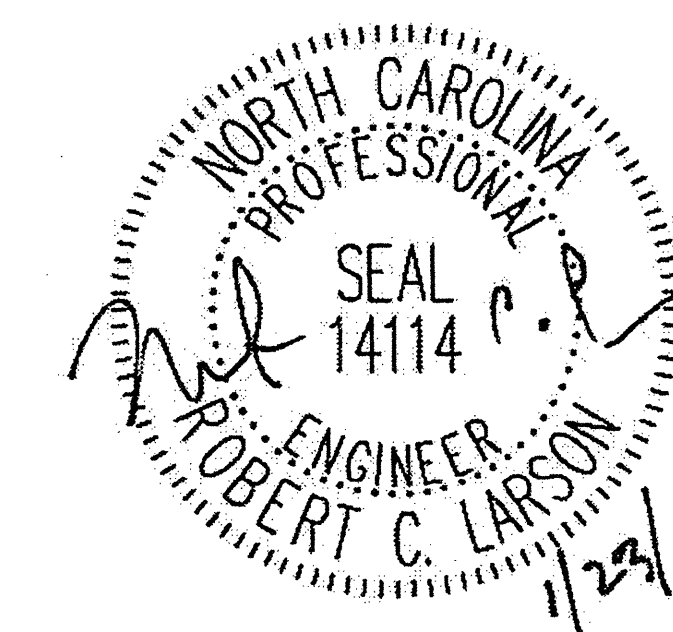
CLEVELAND COUNTY

BRIDGE NO. 220076

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

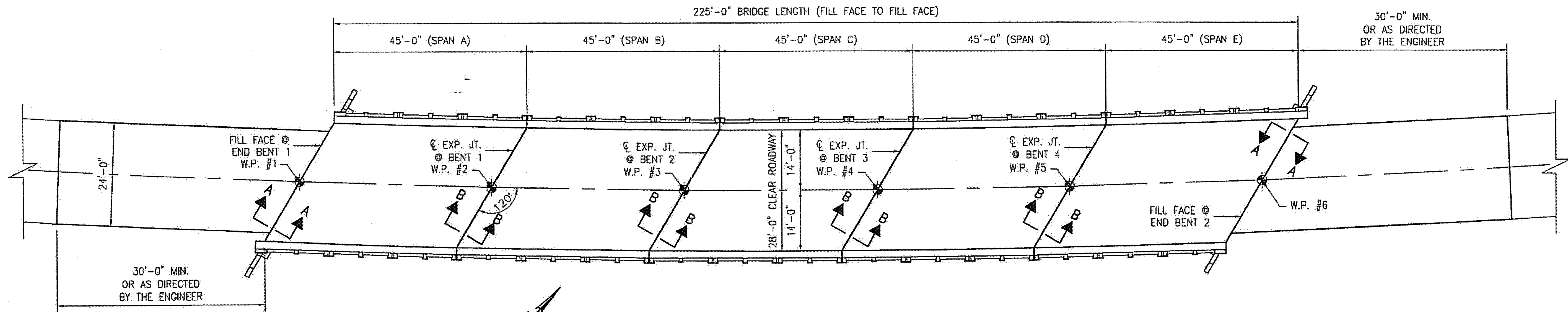
LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

TOTAL BILL OF MATERIAL								
SCARIFYNG BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY- VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	STRUCTURAL STEEL REPAIR	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	LUMP SUM	SQ. YD.
700	700	30	700	5508	L.S.	11	L.S.	197



DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

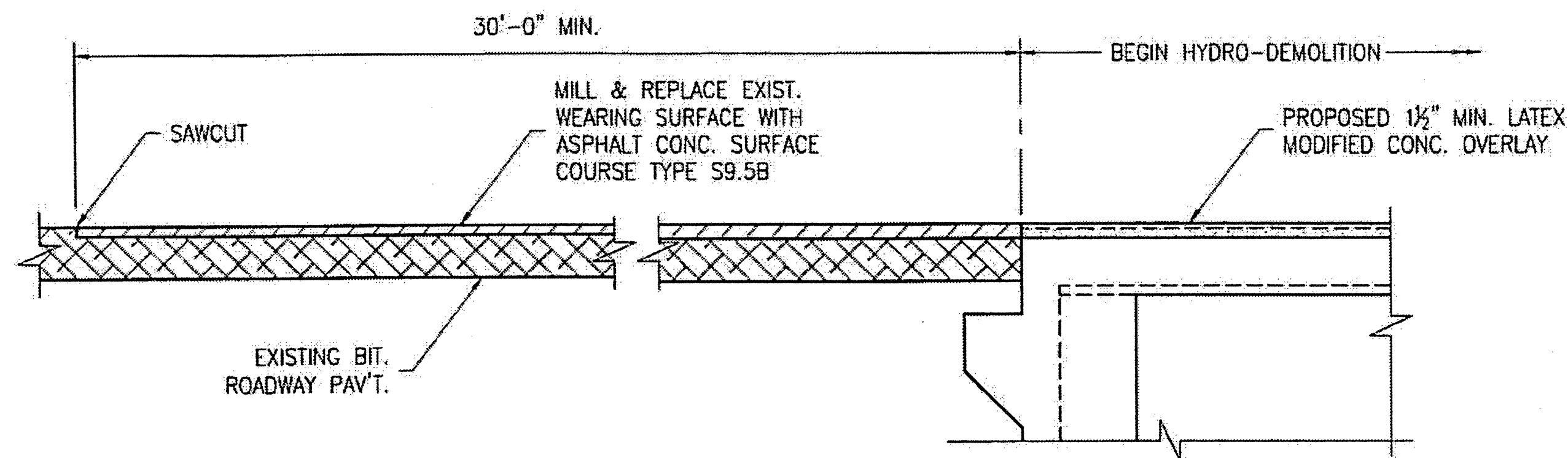
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1			3			TOTAL SHEETS
2			4			54



PLAN OF SPANS A - E

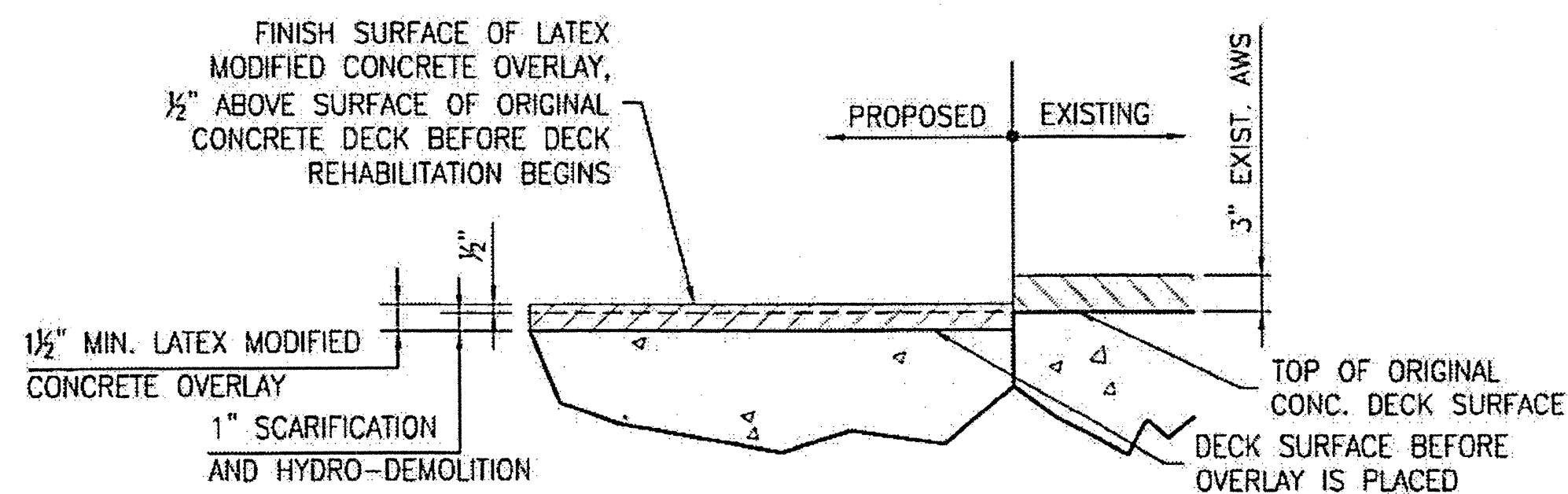
NOTES:

- EXISTING 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 RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THRU OF THE DECK. SEE DETAIL, THIS SHEET.
- FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR SECTION B-B, SEE SHEET S-16.

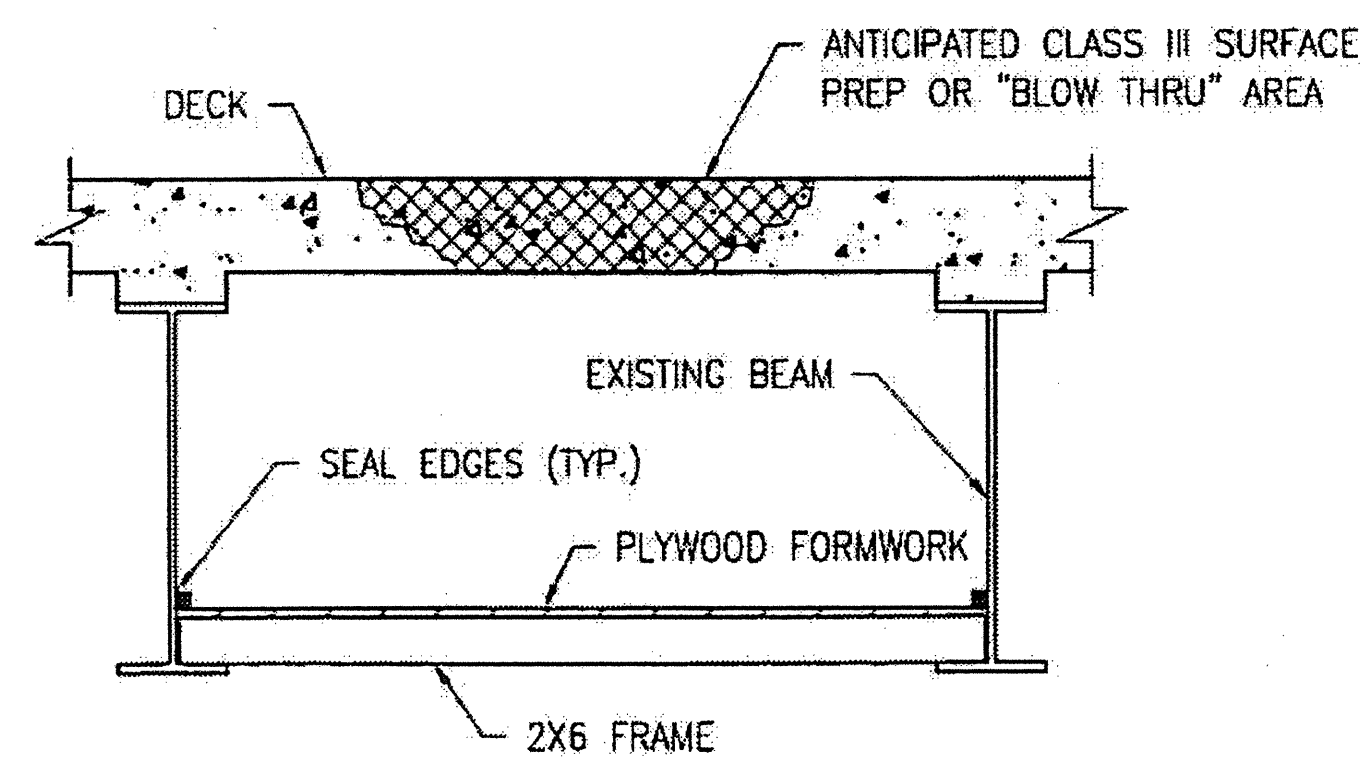


SECTION A-A

* RAISE EXISTING CONC. DECK ELEVATION BY 1/2".



DETAIL FOR LATEX MODIFIED CONC. OVERLAY



TYPICAL BLOW THRU CONTAINMENT AND FORMWORK

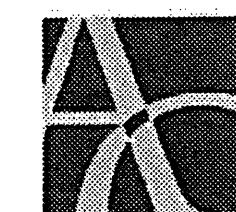
PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

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. YD. OF HYDRO-DEMOLITION.

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

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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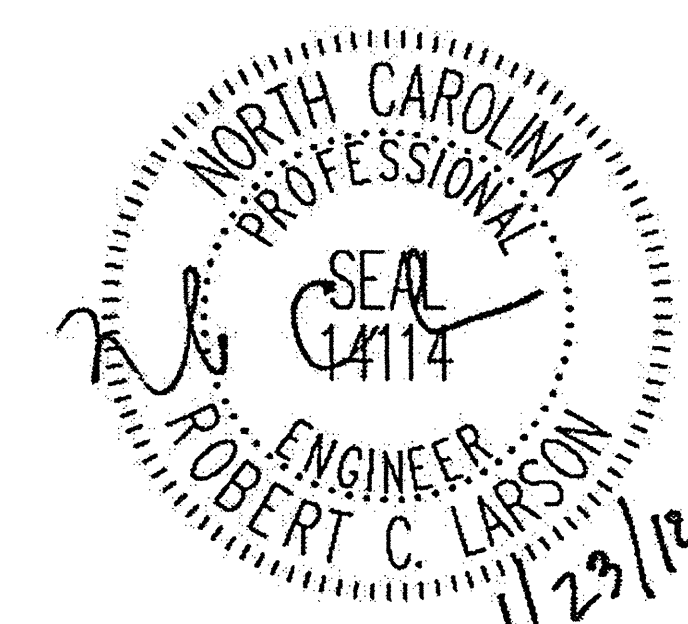
PROJECT NO. WBS 17BP.12.P.4

CLEVELAND COUNTY

BRIDGE NO. 220076

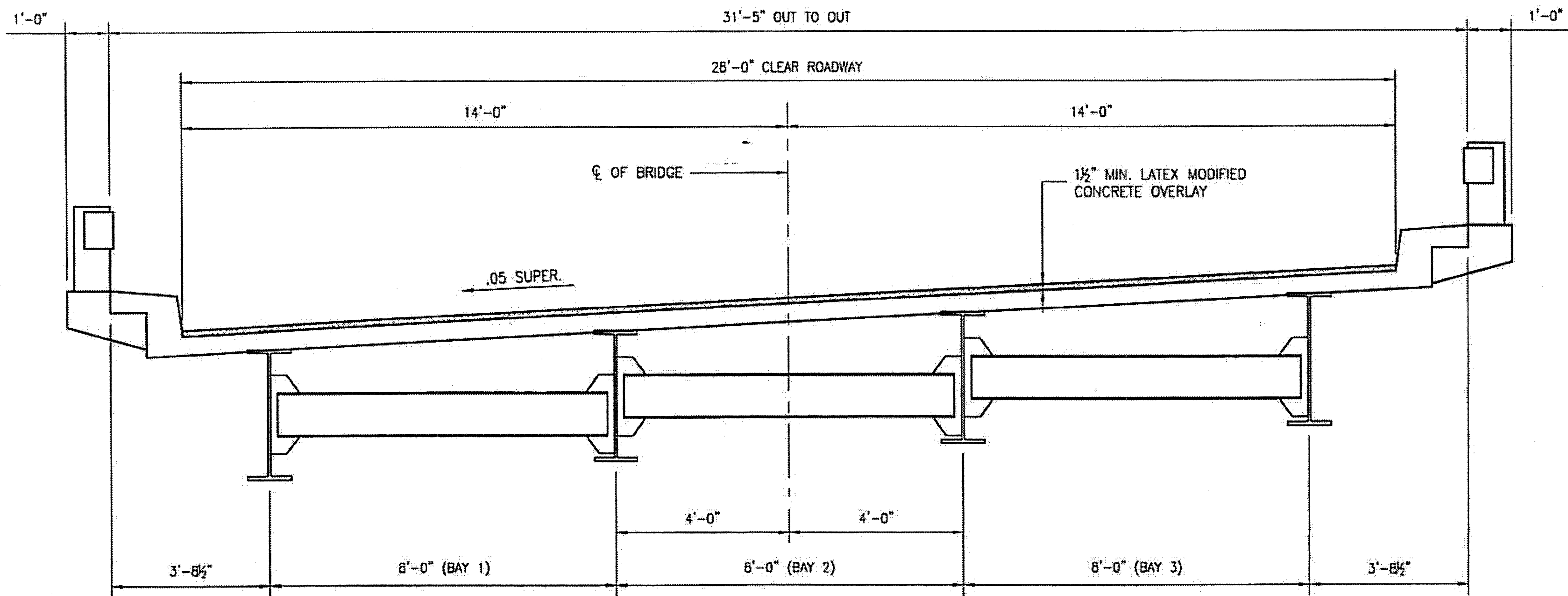
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE PLAN
AND DETAILS

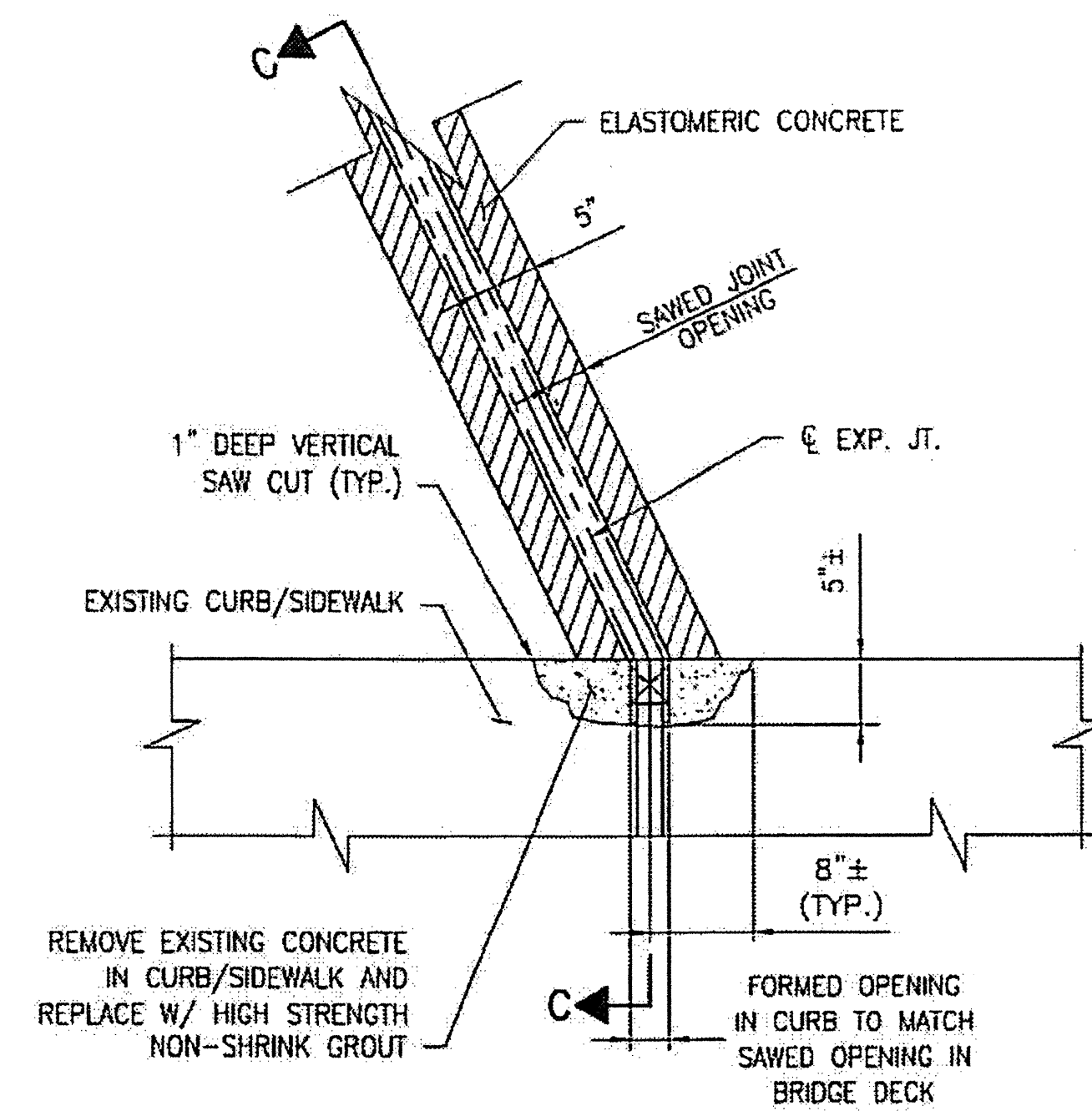


DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

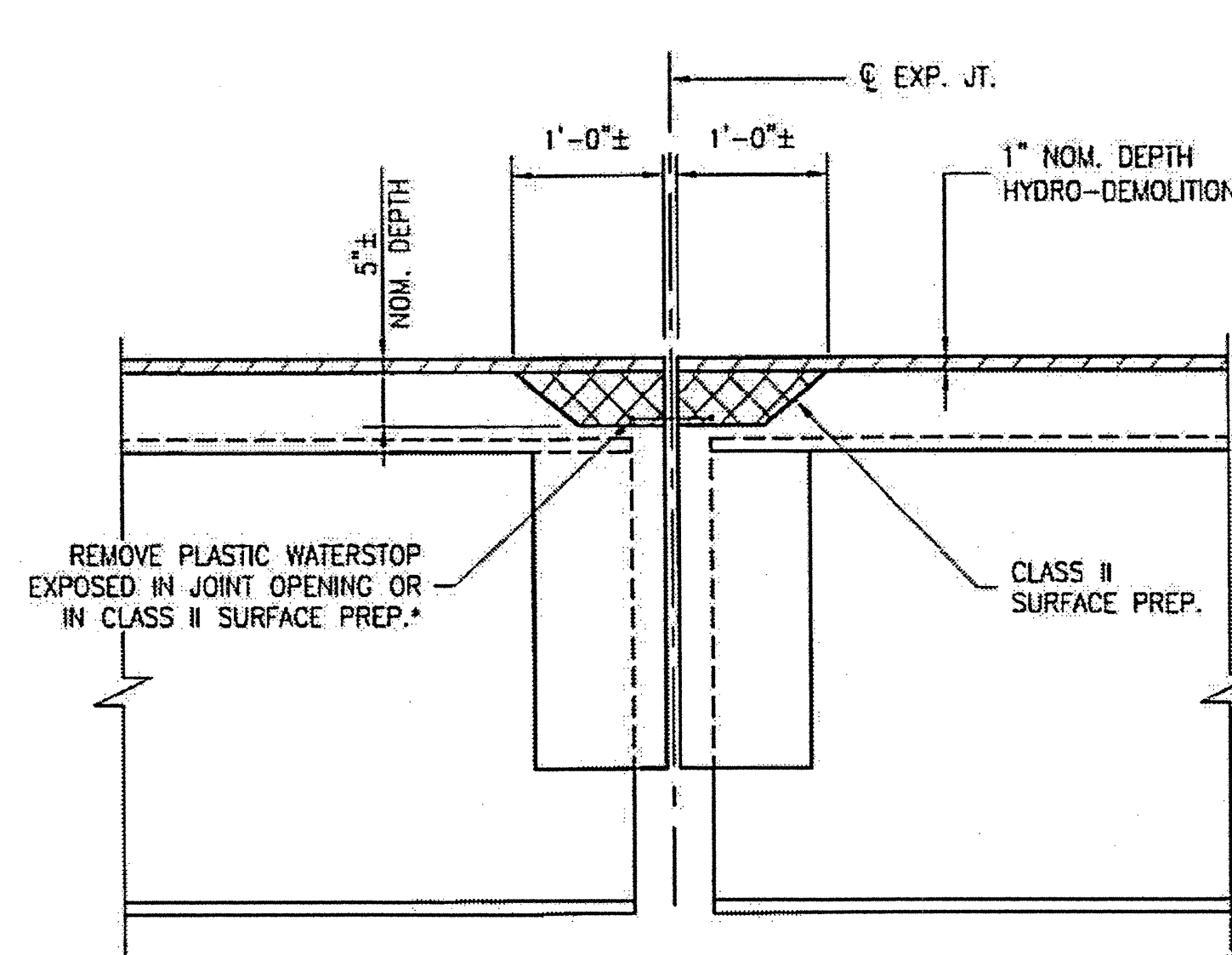
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			54



TYPICAL SECTION SPANS A - E



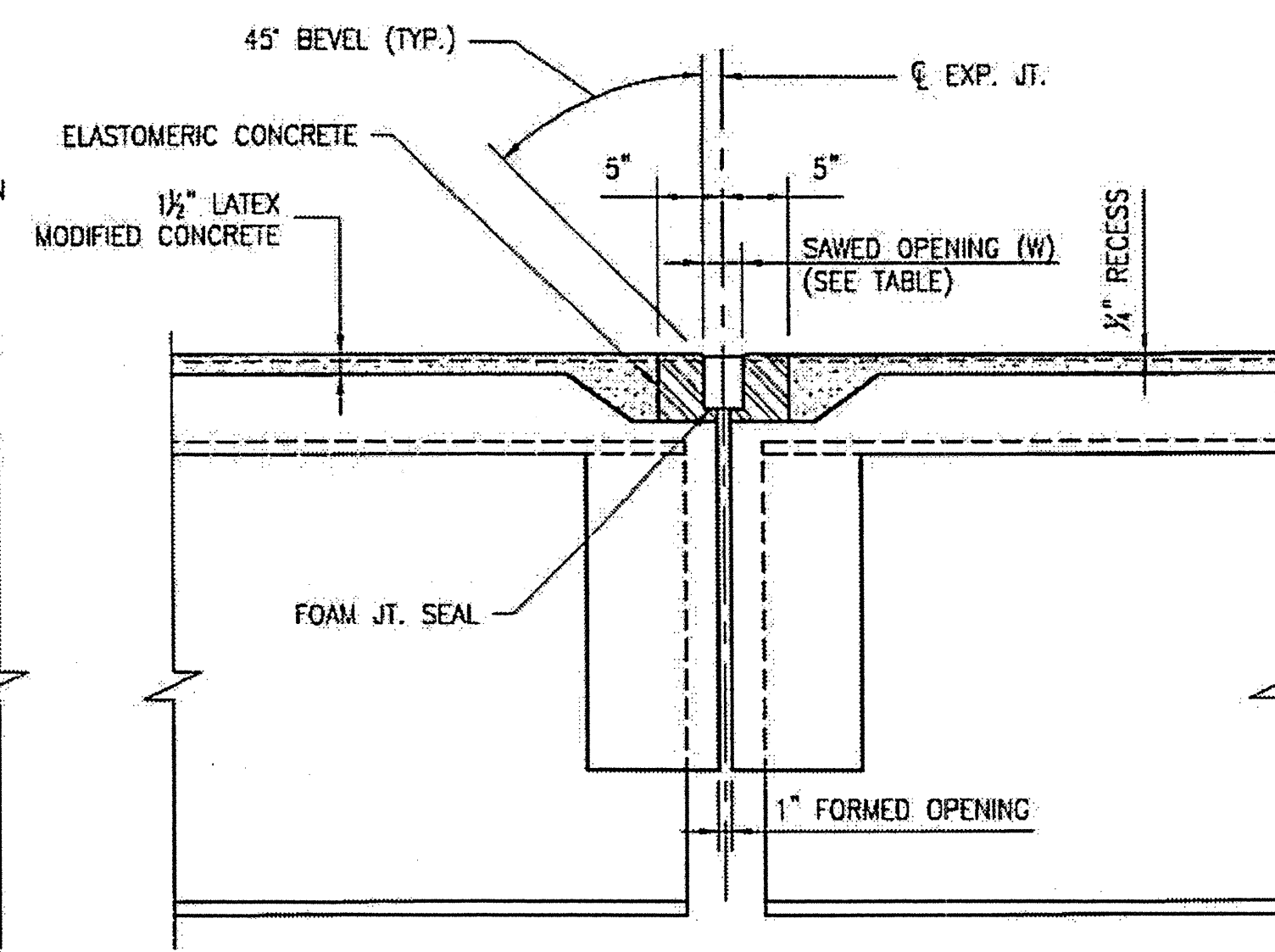
PARTIAL PLAN @ JOINT



SECTION B-B

EST. MAX. EXISTING JOINT DEMOLITION
 NOTES: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D. ALL EXISTING JT. SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.

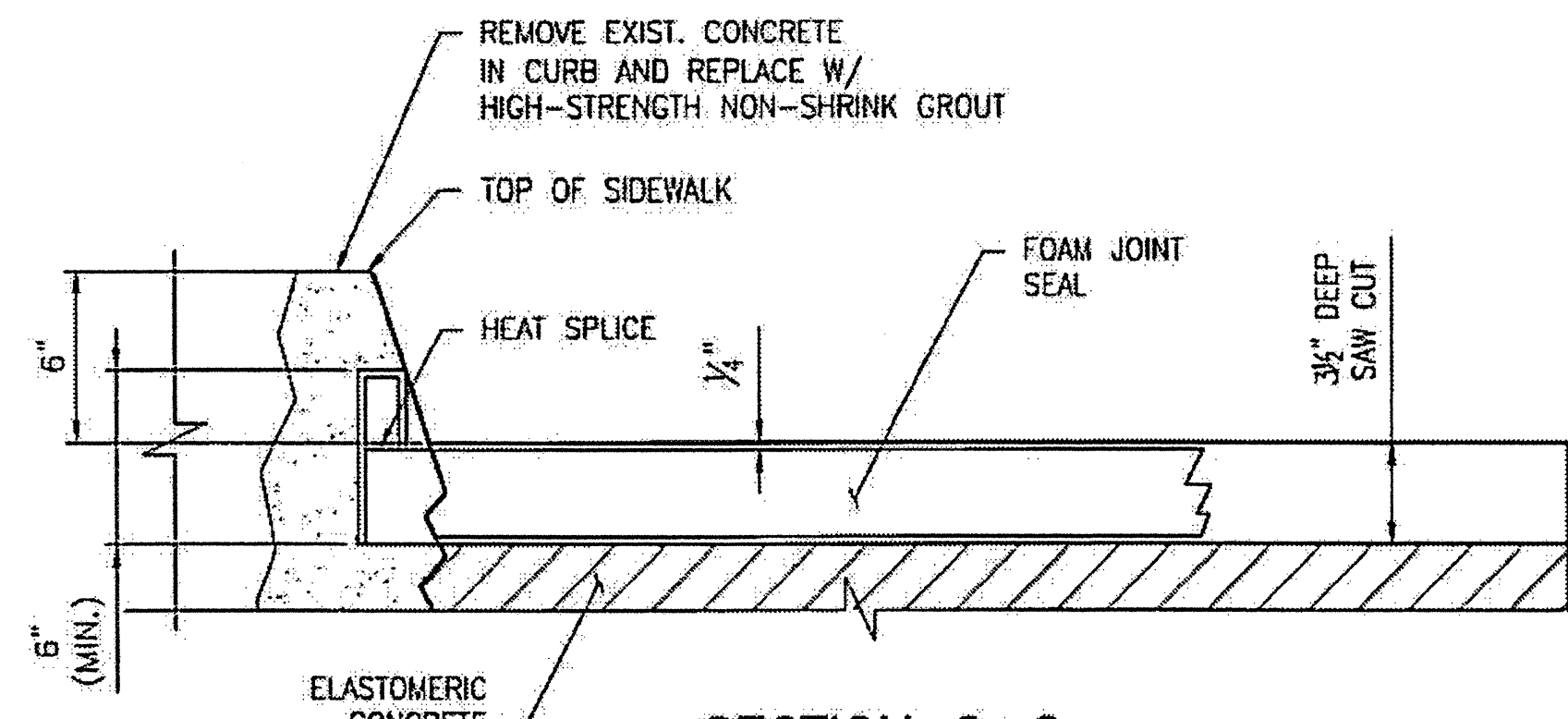
* FROM BEST AVAILABLE INFORMATION.



SECTION B-B

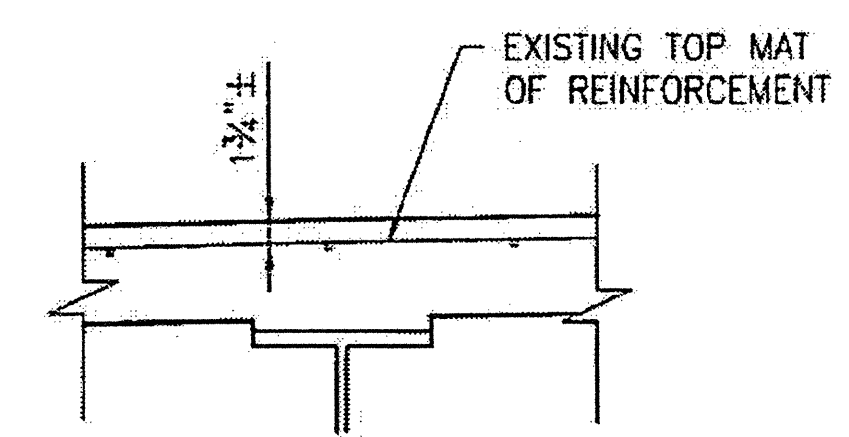
FOAM JOINT SEAL
 NOTES: USE 2 1/2" WIDE UNCOMPRESSED FOAM JOINT SEAL MATERIAL.

FOAM JOINT SAWED OPENING (W) TABLE			
TEMP.	45° F	60° F	90° F
BENT 1	2"	1 3/8"	1 5/8"
BENTS 2-4	1 3/8"	1 3/8"	1 3/4"



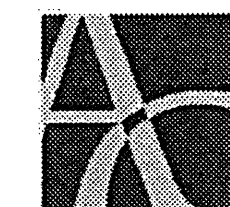
SECTION C-C

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



EXISTING SLAB SECTION

PLAN PREPARED BY:



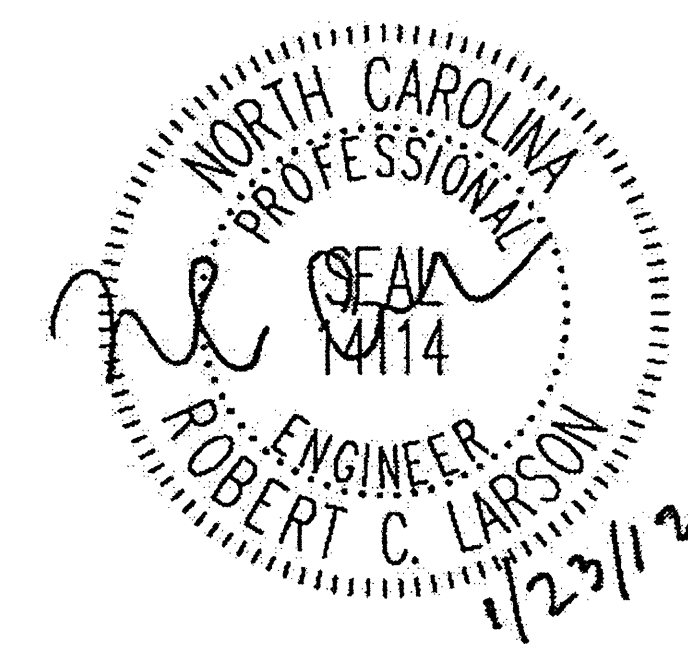
ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS

1601 Lake Boone Trail, Ste. 3C, Raleigh, NC 27607
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 A & O PROJECT #: 2011.031

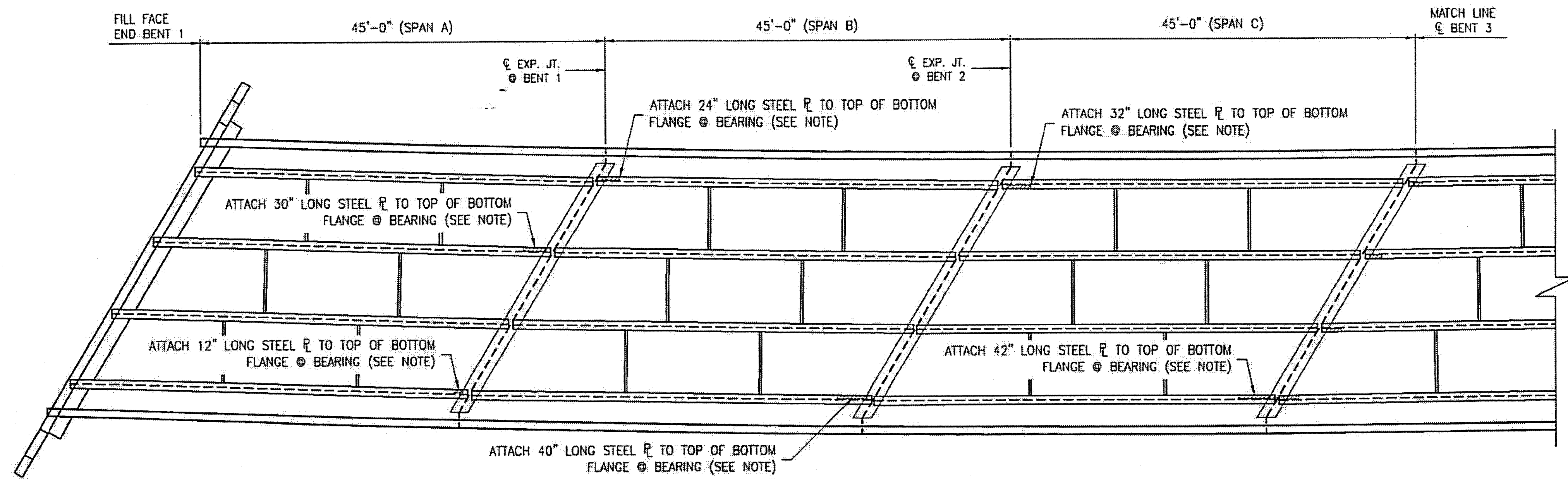
PROJECT NO. WBS 17BP.12.P.4
 CLEVELAND COUNTY
 BRIDGE NO. 220076

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION AND JOINT DETAILS

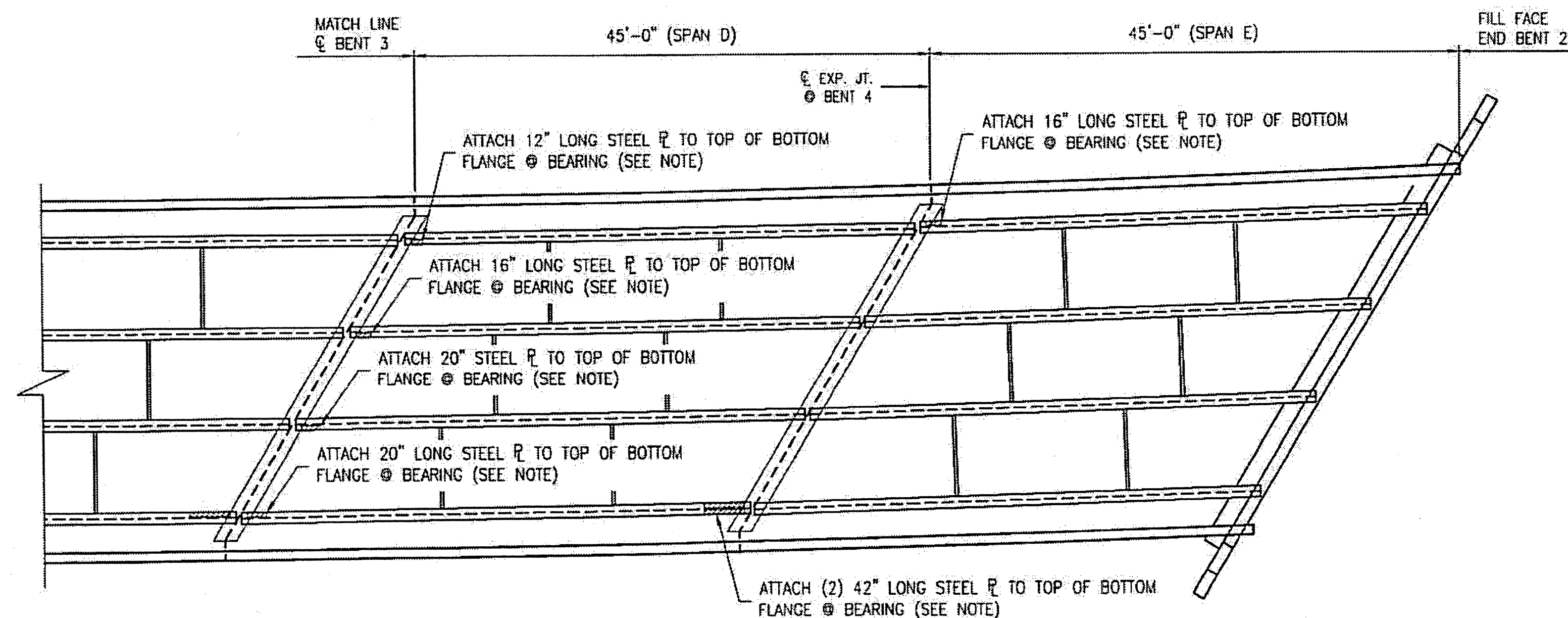


REVISIONS						SHEET NO. S-16
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 54
2			4			



DECK PLAN UNDERSIDE

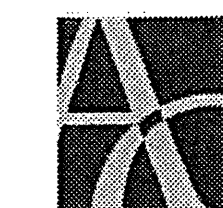
NOTE: SEE BEAM FLANGE REPAIR AT BEARING DETAIL, SHEET 4E



DECK PLAN UNDERSIDE

NOTE: SEE BEAM FLANGE REPAIR AT BEARING DETAIL, SHEET S-18.

PLAN PREPARED BY:



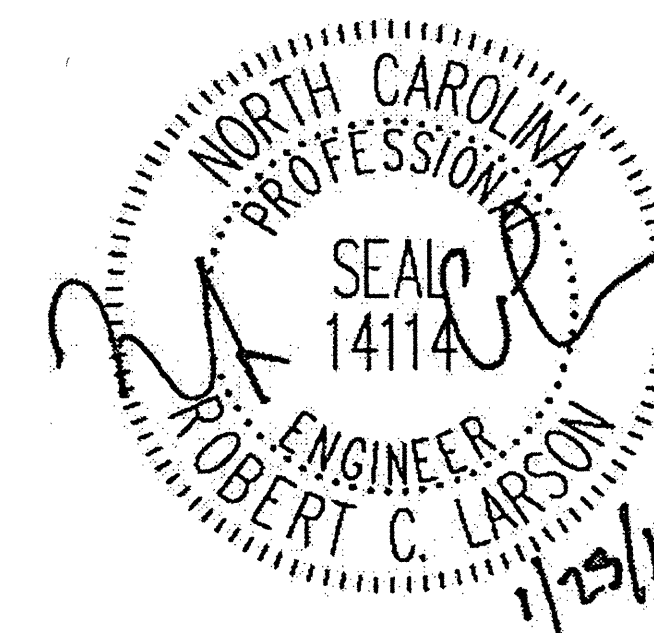
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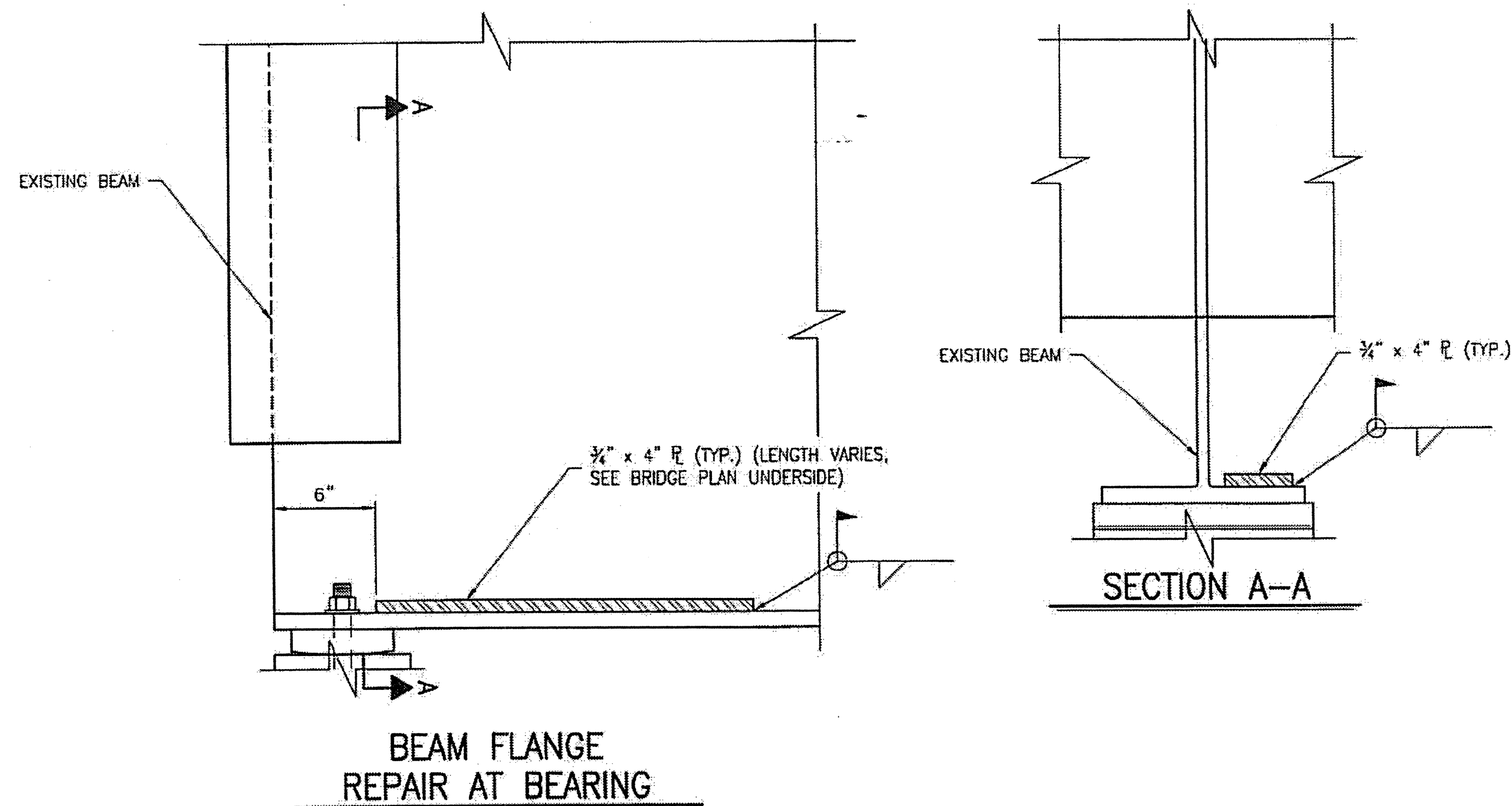
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RALEIGH

BRIDGE PLAN
UNDERSIDE
SPANS A-E



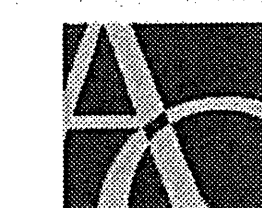
DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17	
1			3			TOTAL SHEETS	
2			4			54	



- NOTES:**
1. CLEAN TO BARE METAL AT ALL WELD LOCATIONS.
 2. CLEAN AND PAINT THE COMPLETED REPAIR WITH 2 COATS OF INORGANIC ZINC PRIMER.
 3. FOR STRUCTURAL STEEL REPAIR, SEE SPECIAL PROVISIONS.
 4. FOR LOCATION OF REPAIRS, SEE SHEET S-17.

PLAN PREPARED BY:



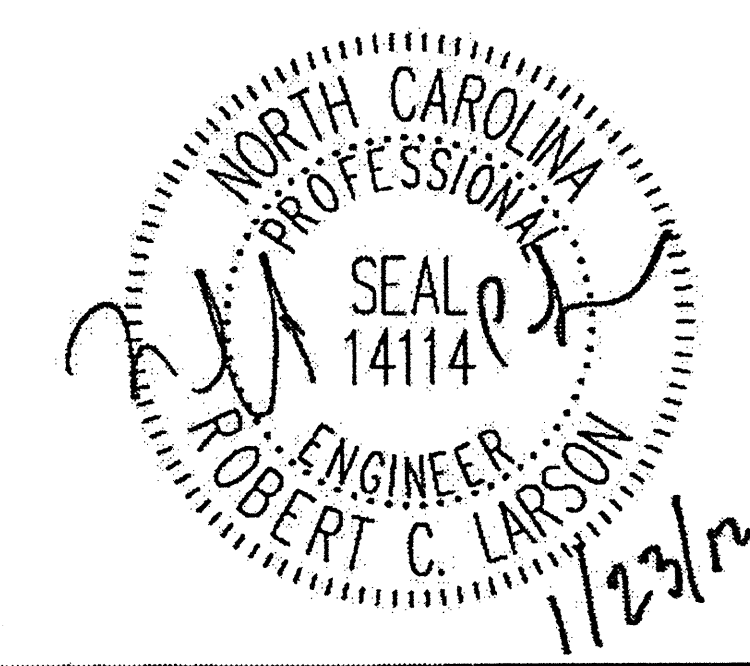
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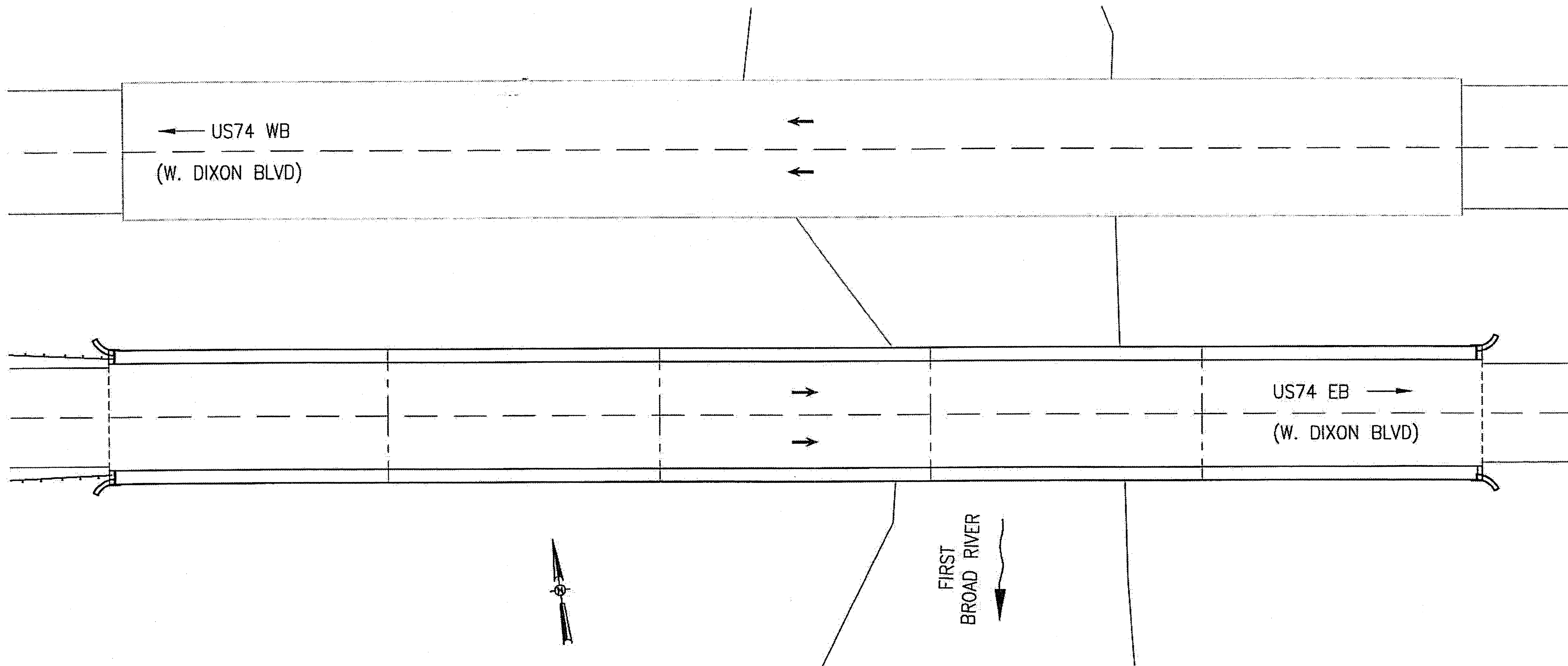
STATE OF NORTH CAROLINA
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BEAM REPAIR
 AND JOINT DETAILS



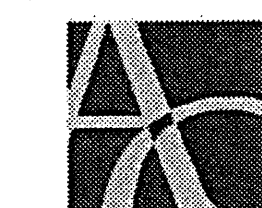
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			54



BRIDGE 220079 ON US74
 LOCATION: BRIDGE 220079, EB US74 OVER FIRST BROAD RIVER,
 0.1 MILE WEST OF JUNCTION WITH US74 BUS.

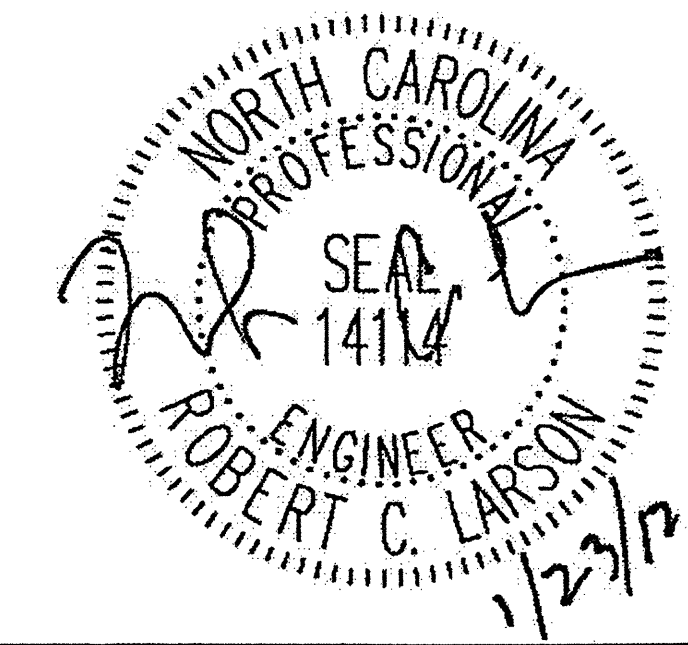
PLAN PREPARED BY:



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PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
 BRIDGE NO. 220079

TOTAL BILL OF MATERIAL									
SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY- VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	CONCRETE REPAIRS	REPLACE BEARINGS (TYPE SPECIAL)	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	CU. FT.	EACH	SQ. YD.
965	965	40	965	7,544	L.S.	13	28	30	160

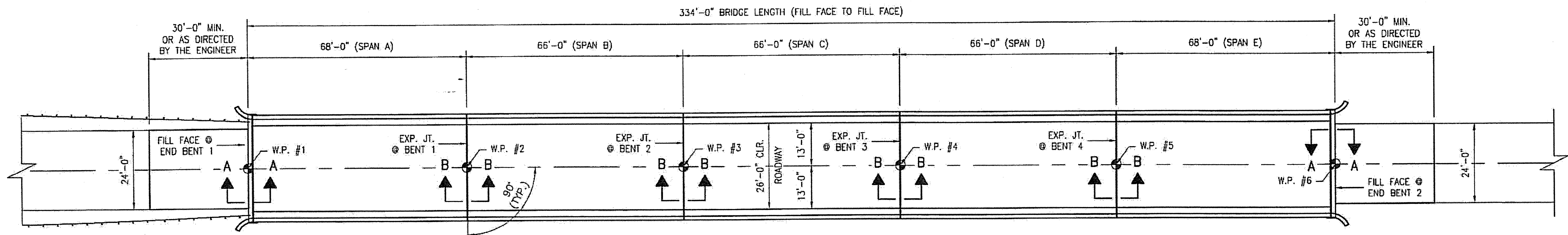


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LOCATION SKETCH
 AND TOTAL
 BILL OF MATERIAL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-19
1			3			TOTAL SHEETS
2			4			54

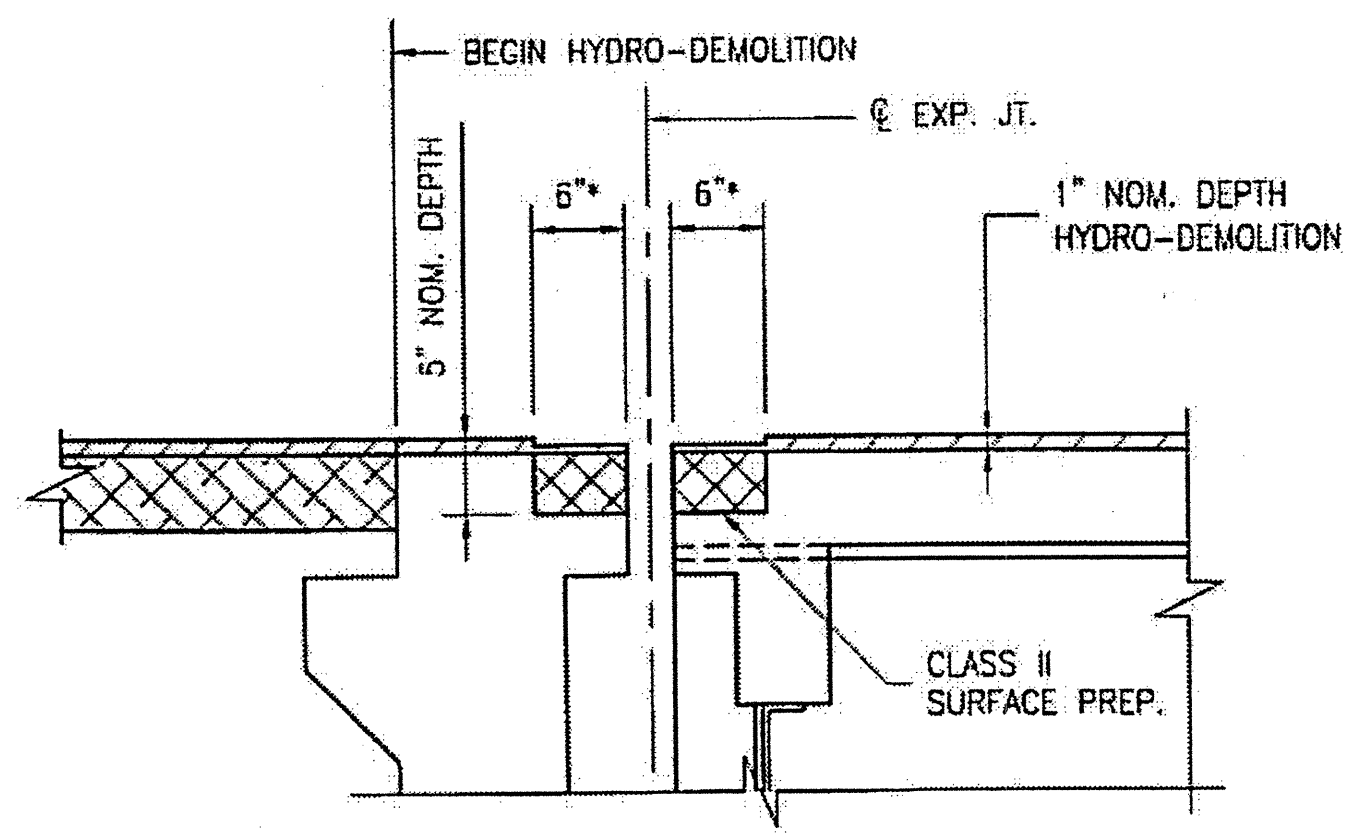
DRAWN BY: J.D. GOODIN DATE: 12-08-11
 CHECKED BY: R.C. LARSON DATE: 12-08-11



PLAN OF SPANS A - E

TEMP.	45° F	60° F	90° F
END BENT 1	2 1/8"	2 3/8"	2 1/2"
END BENT 2	2 1/8"	2 3/8"	2 1/2"

- NOTES:
- EXISTING 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 RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THRU OF THE DECK, SEE DETAIL SHEET S-21.
 - FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR SECTION B-B, SEE SHEET S-21.
 - 1 1/2" BACKER ROD SHALL BE CLOSED CELL EXPANDED POLYETHYLENE FOAM TYPE L. PLACE BACKER ROD TO WITHIN 1'-0" OF EXISTING CURB FACE. NO SEPARATE PAYMENT FOR LABOR, MATERIALS, AND EQUIPMENT TO CONSTRUCT JOINT SEALS SHALL BE MADE. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

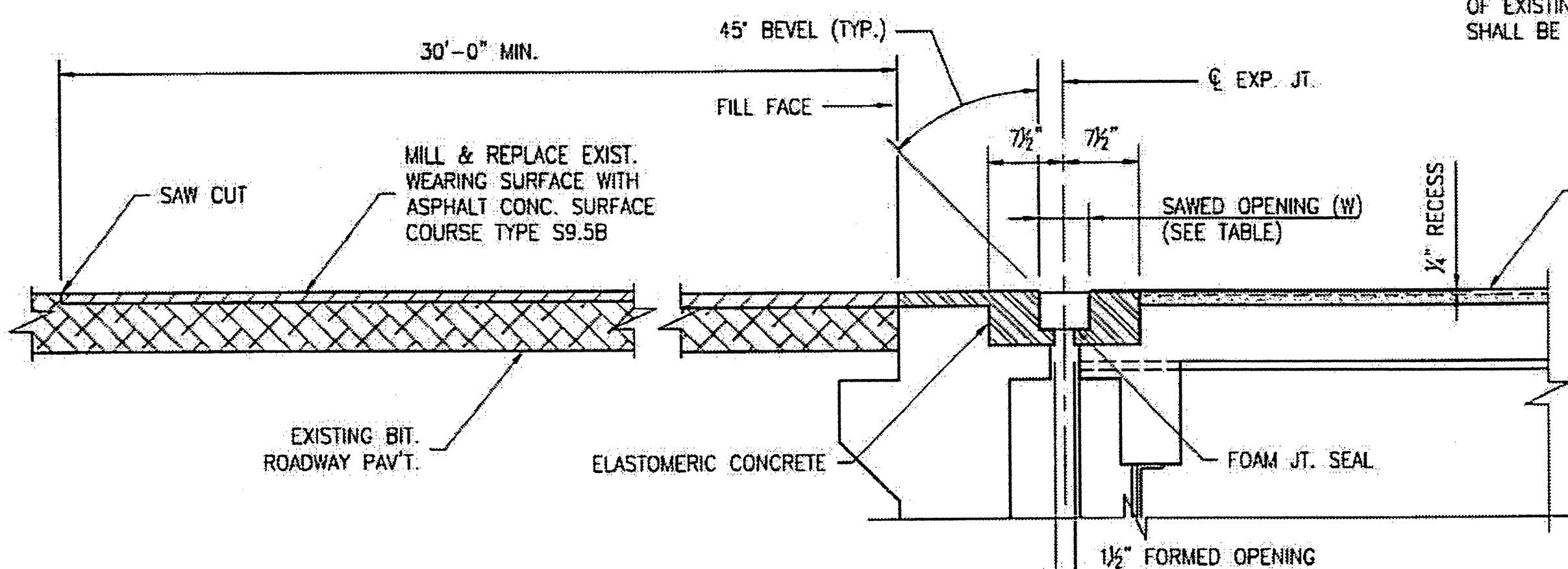


SECTION A-A

EST. MAX. EXISTING JOINT DEMOLITION

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

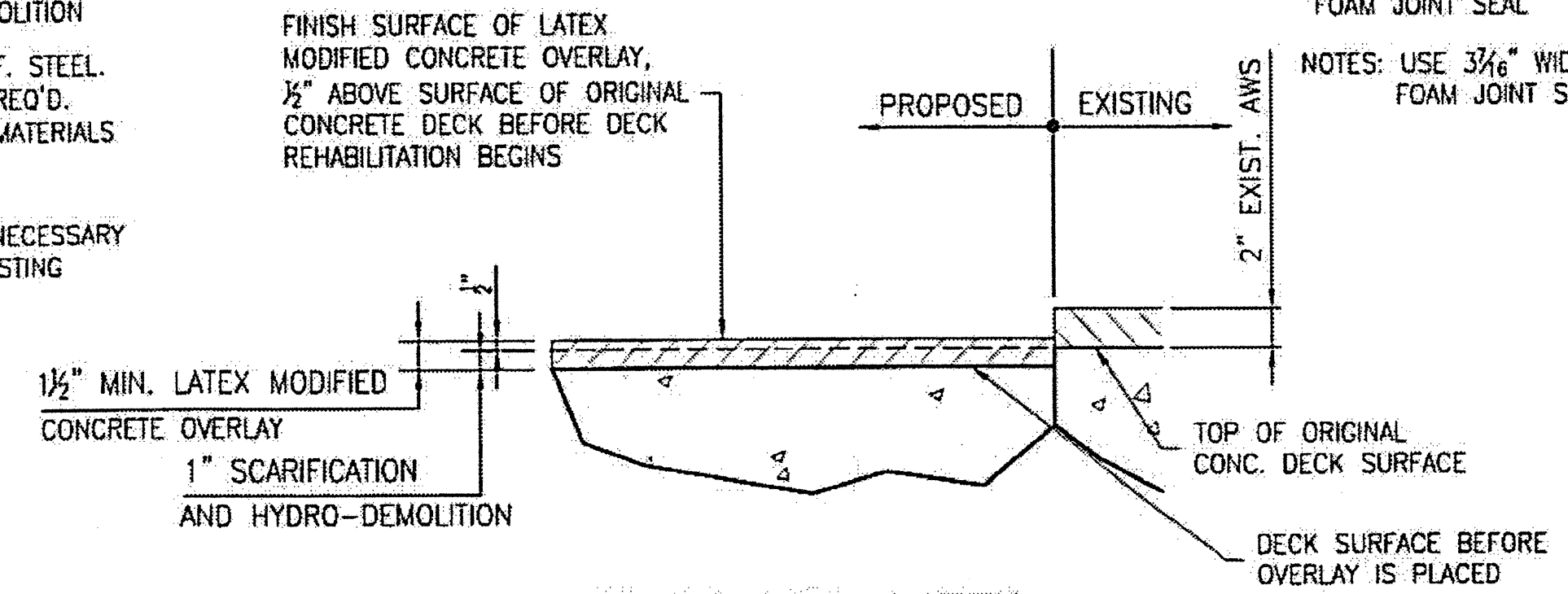
* INCREASE 6" DIMENSION IF NECESSARY TO COMPLETELY REMOVE EXISTING ELASTOMERIC CONCRETE.



SECTION A-A

FOAM JOINT SEAL

NOTES: USE 3/16" WIDE UNCOMPRESSED FOAM JOINT SEAL MATERIAL.



DETAIL FOR LATEX MODIFIED CONC. OVERLAY

PLAN PREPARED BY:

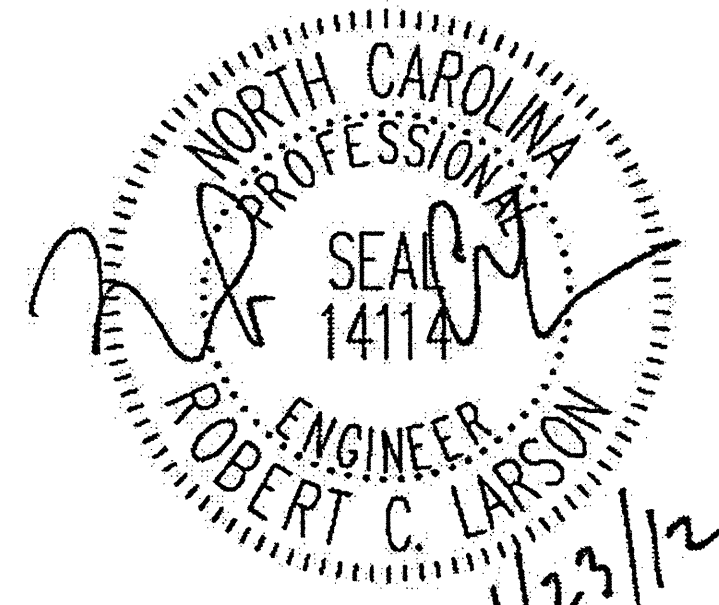


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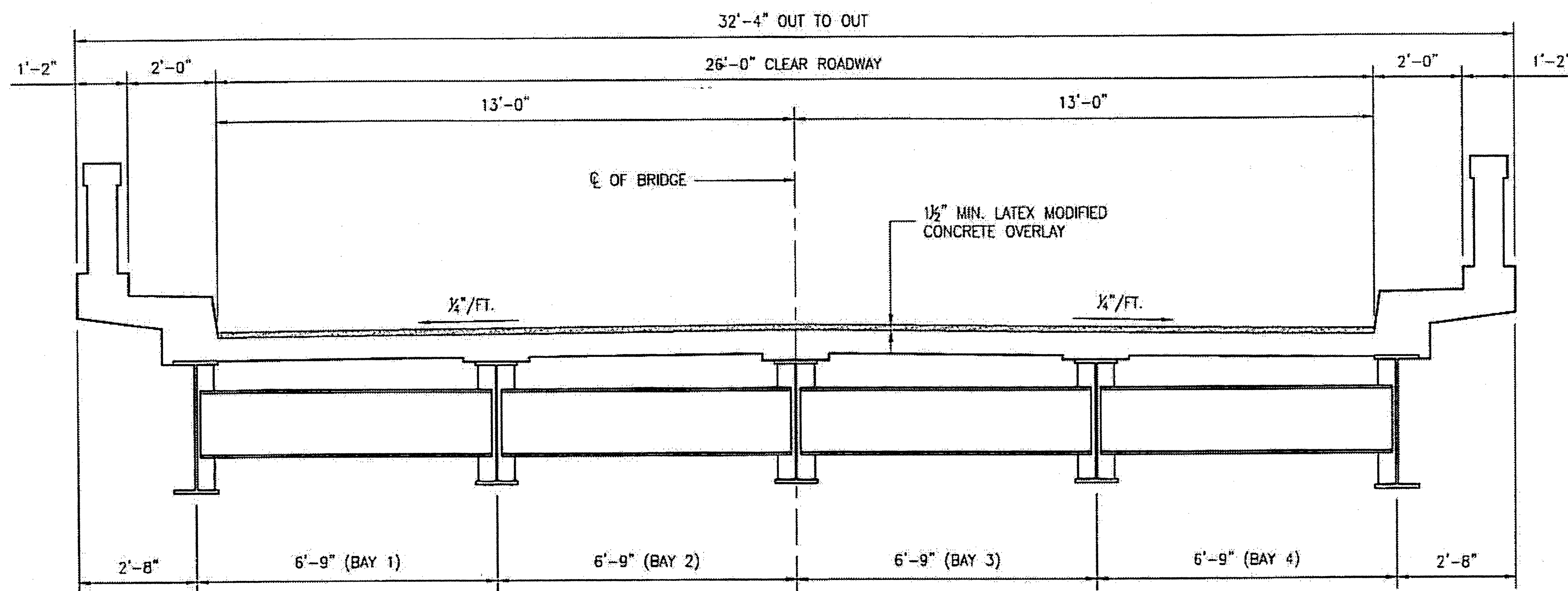
PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
 BRIDGE NO. 220079

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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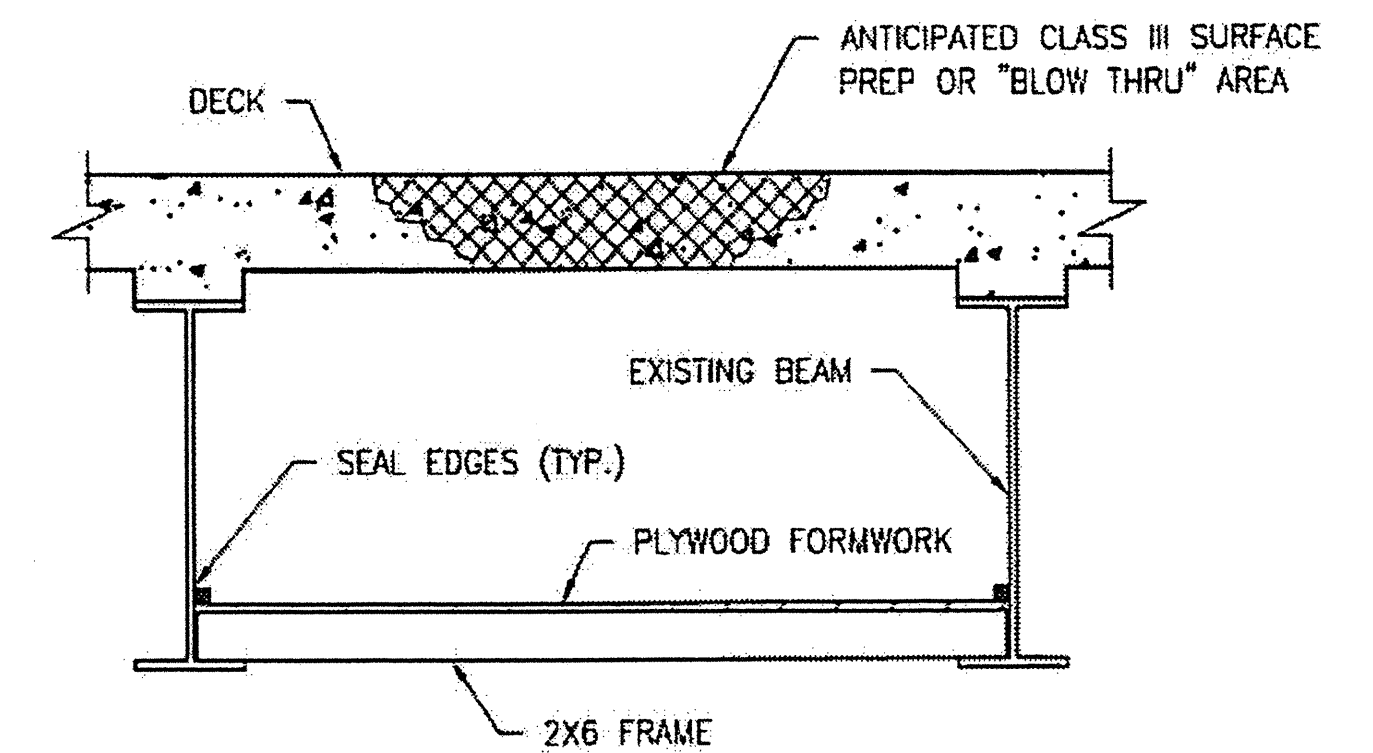
BRIDGE PLAN
 AND JOINT DETAILS



REVISIONS						SHEET NO. S-20
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			54



TYPICAL SECTION SPANS A - E



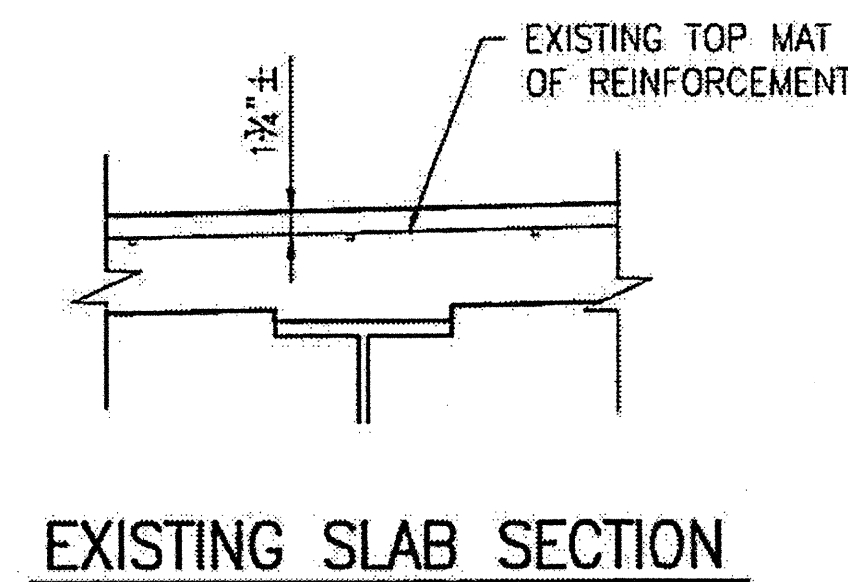
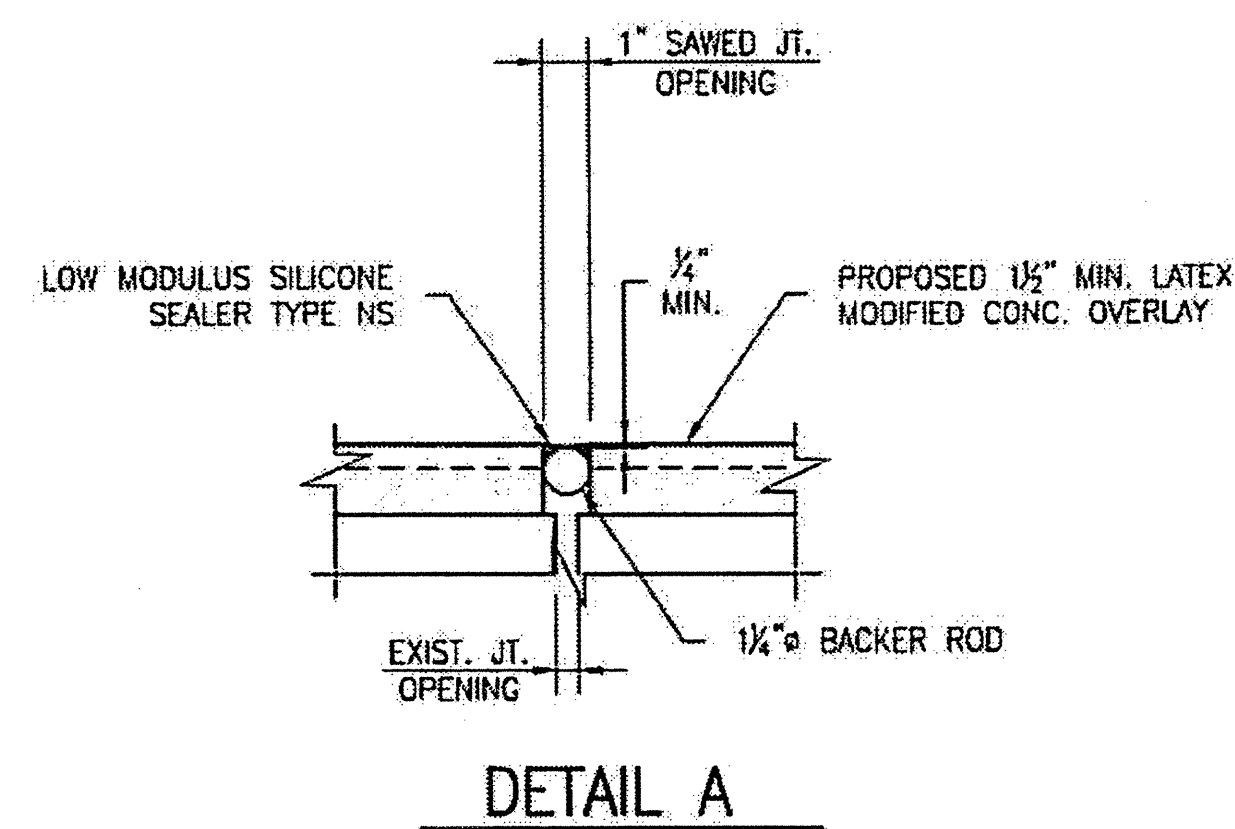
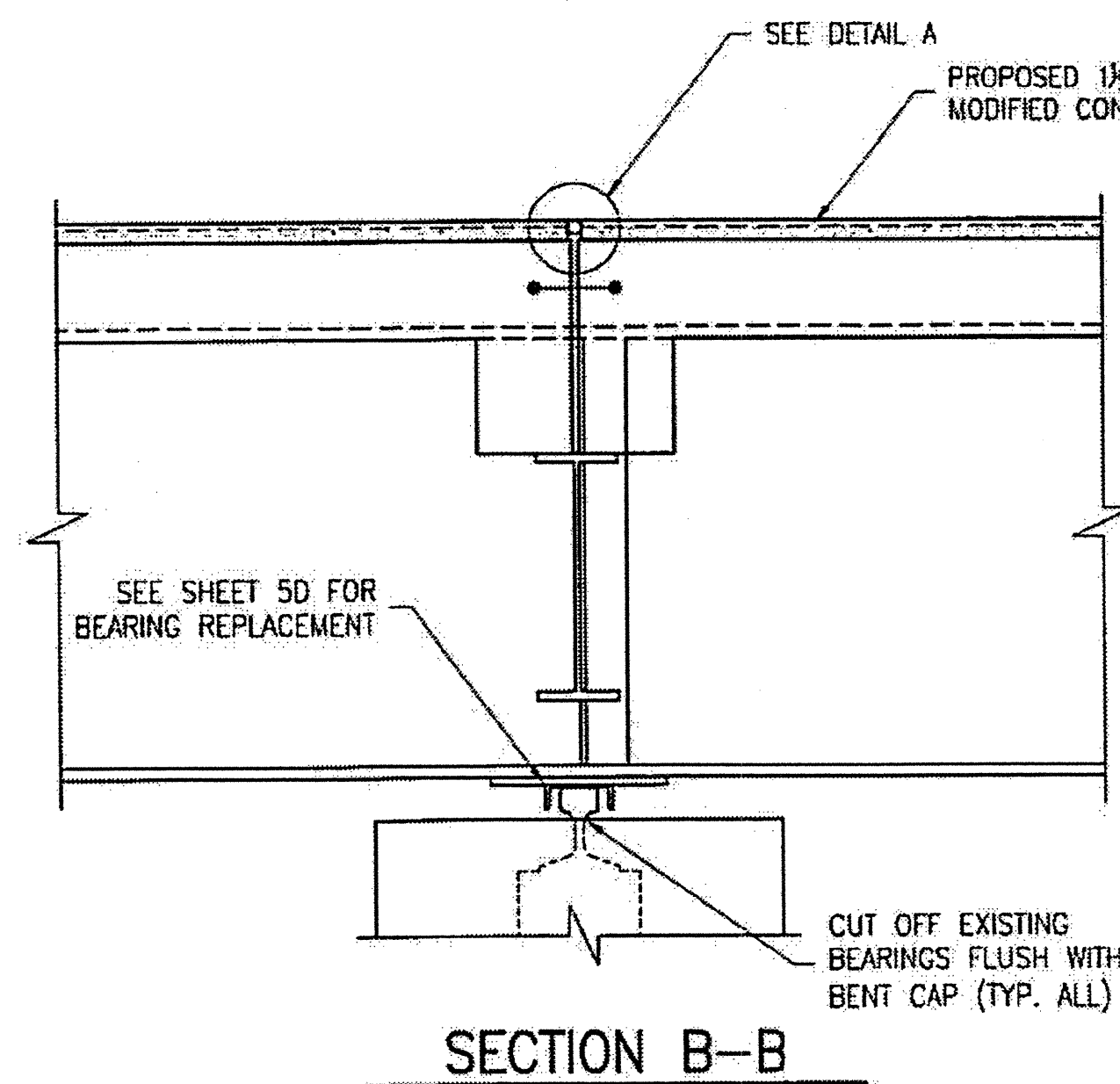
TYPICAL BLOW THRU CONTAINMENT AND FORMWORK

PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

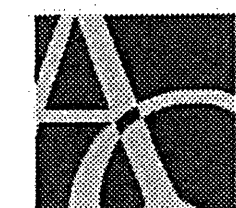
SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

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

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



PLAN PREPARED BY:



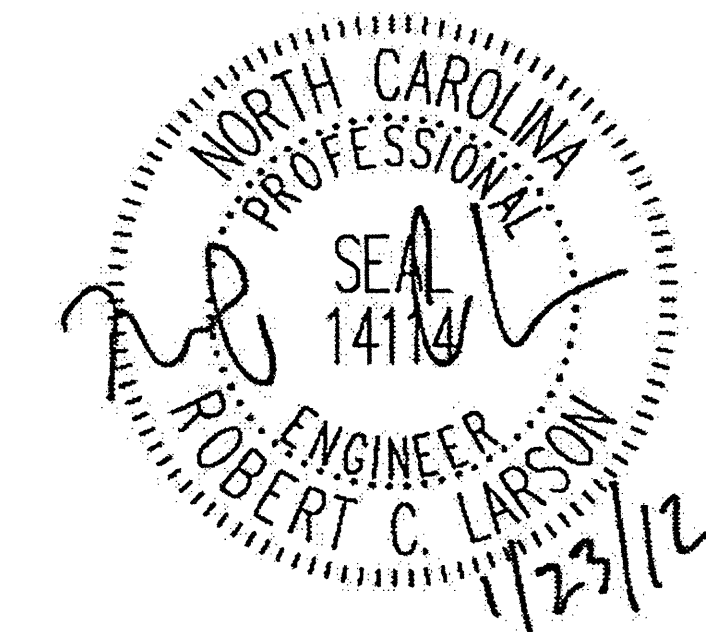
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CLEVELAND COUNTY
BRIDGE NO. 220079

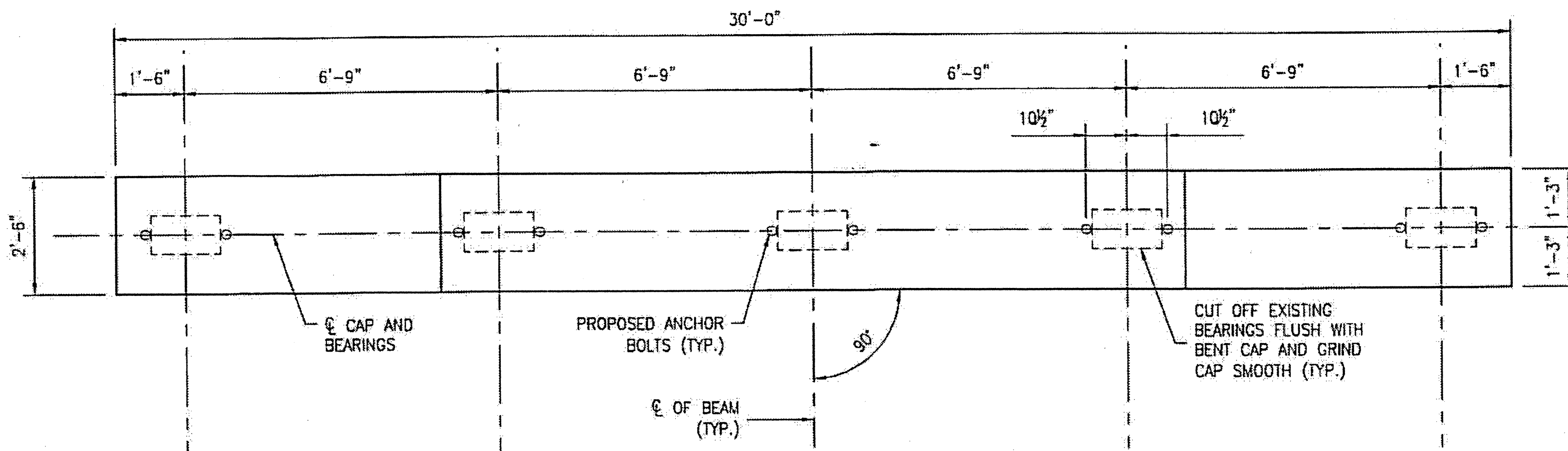
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL SECTION
AND DETAILS

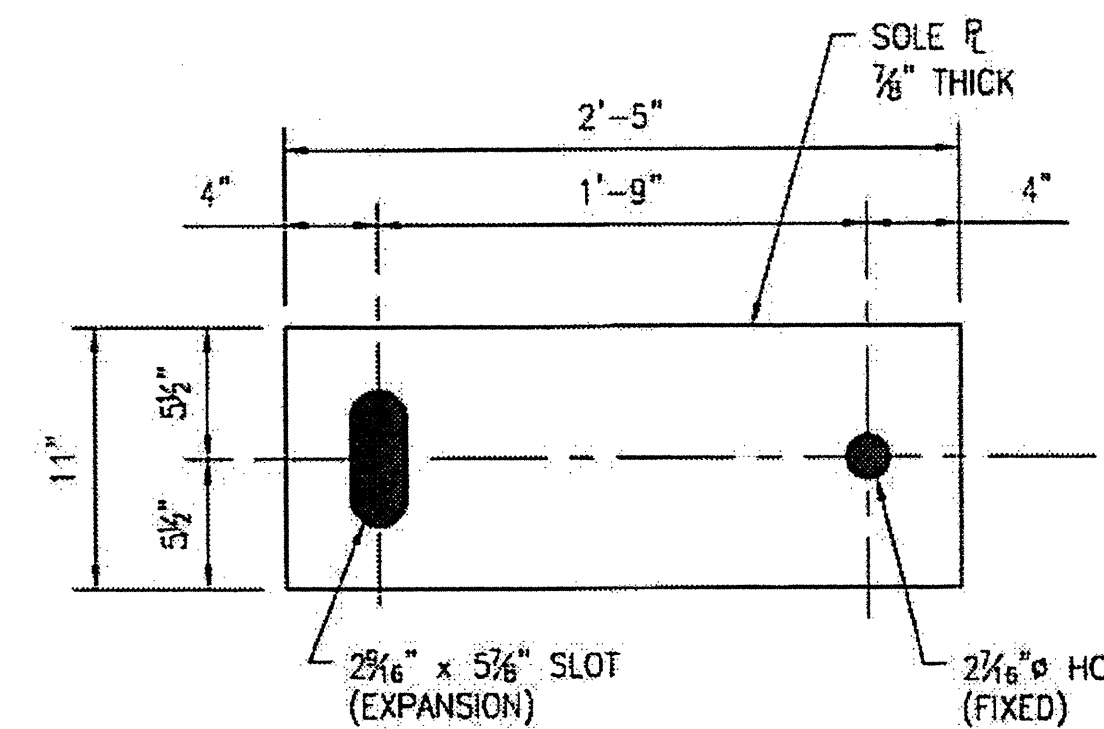


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1			3			TOTAL SHEETS 54
2			4			



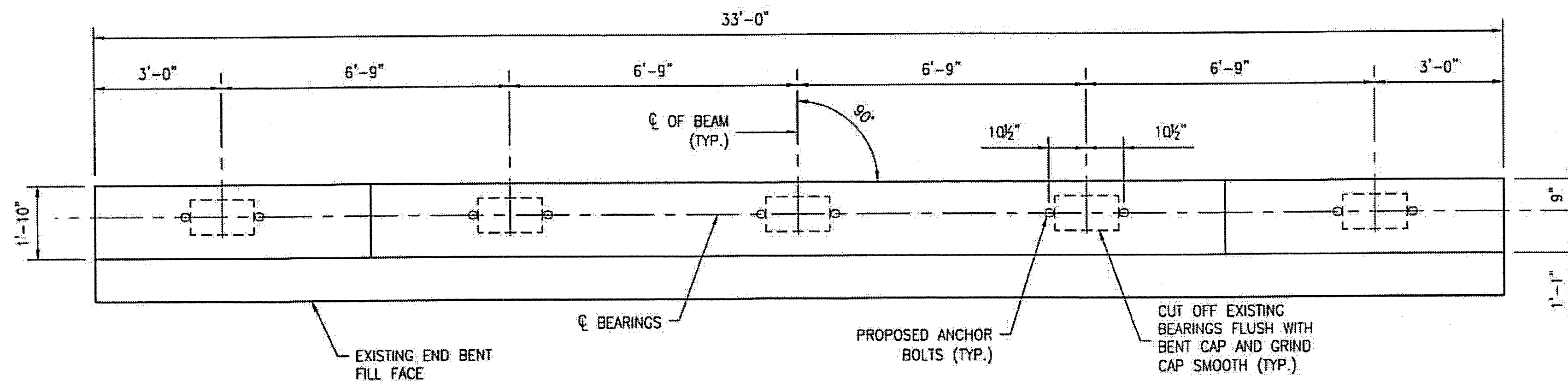
PLAN OF BENT CAPS



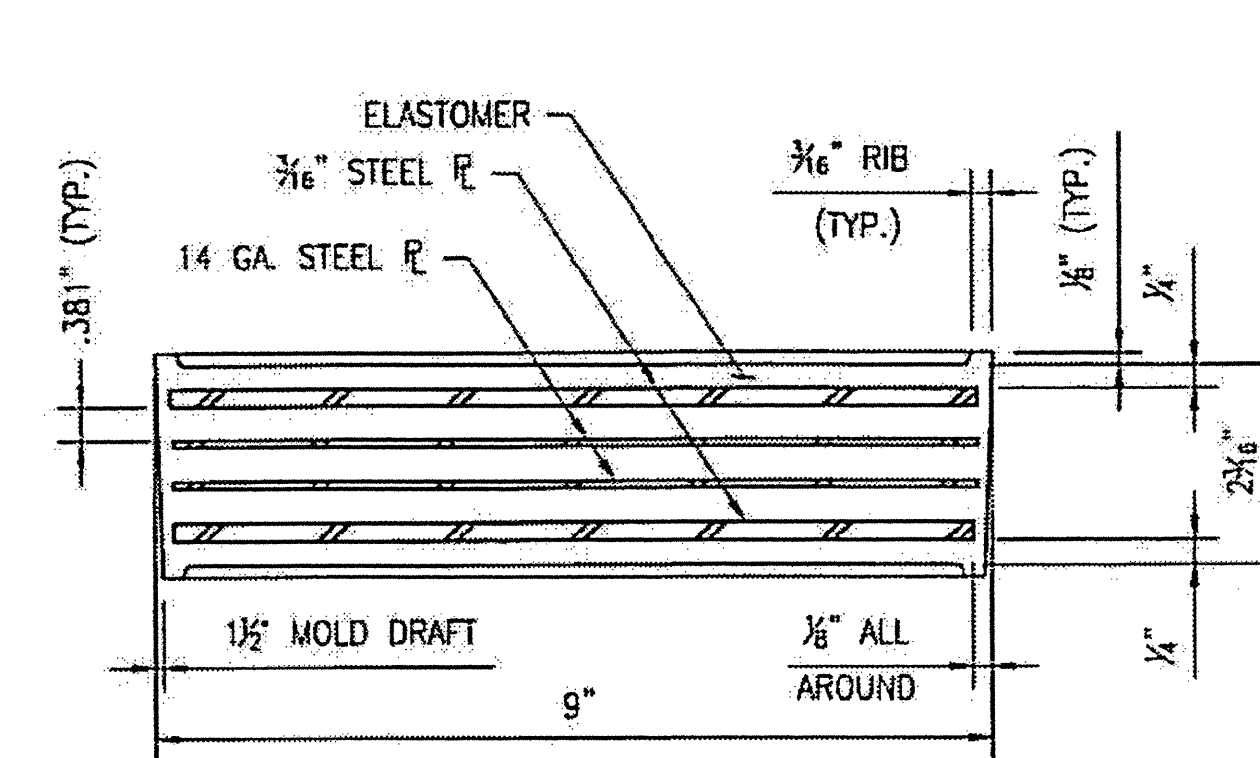
PLAN VIEW OF SOLE PLATE

NOTES:

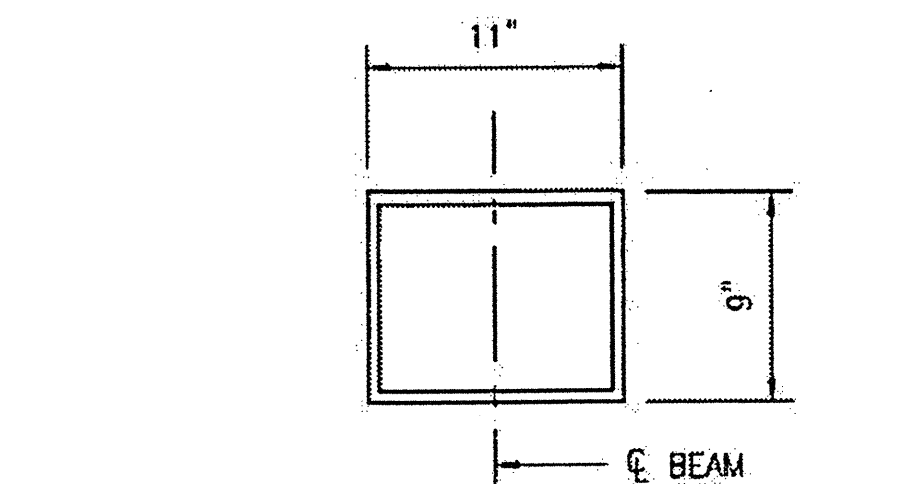
1. AT ALL FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.
2. THE 2" PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.
3. THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.
4. ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED. ALL HARDWARE IS TO BE HOT DIP GALVANIZED.
5. WHEN FIELD WELDING THE SOLE PLATE TO THE BEAM FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.
6. BEARING PLATES TO BE FABRICATED FROM STEEL MEETING THE REQUIREMENTS OF AASHTO M270 GRADE 36 AND BE HOT DIP GALVANIZED. ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.
7. IN WELDING SOLE PLATES TO BEAMS, LOCATE BOLT IN SLOT SO AS TO BE CENTERED AT A TEMPERATURE OF 60°F.



PLAN OF END BENT CAPS



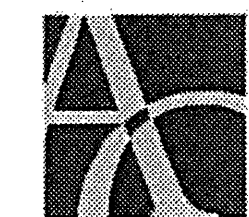
TYPICAL SECTION OF ELASTOMERIC BEARING (SPECIAL)



PLAN VIEW OF ELASTOMERIC BEARING (SPECIAL)

30 REQ'D.

PLAN PREPARED BY:



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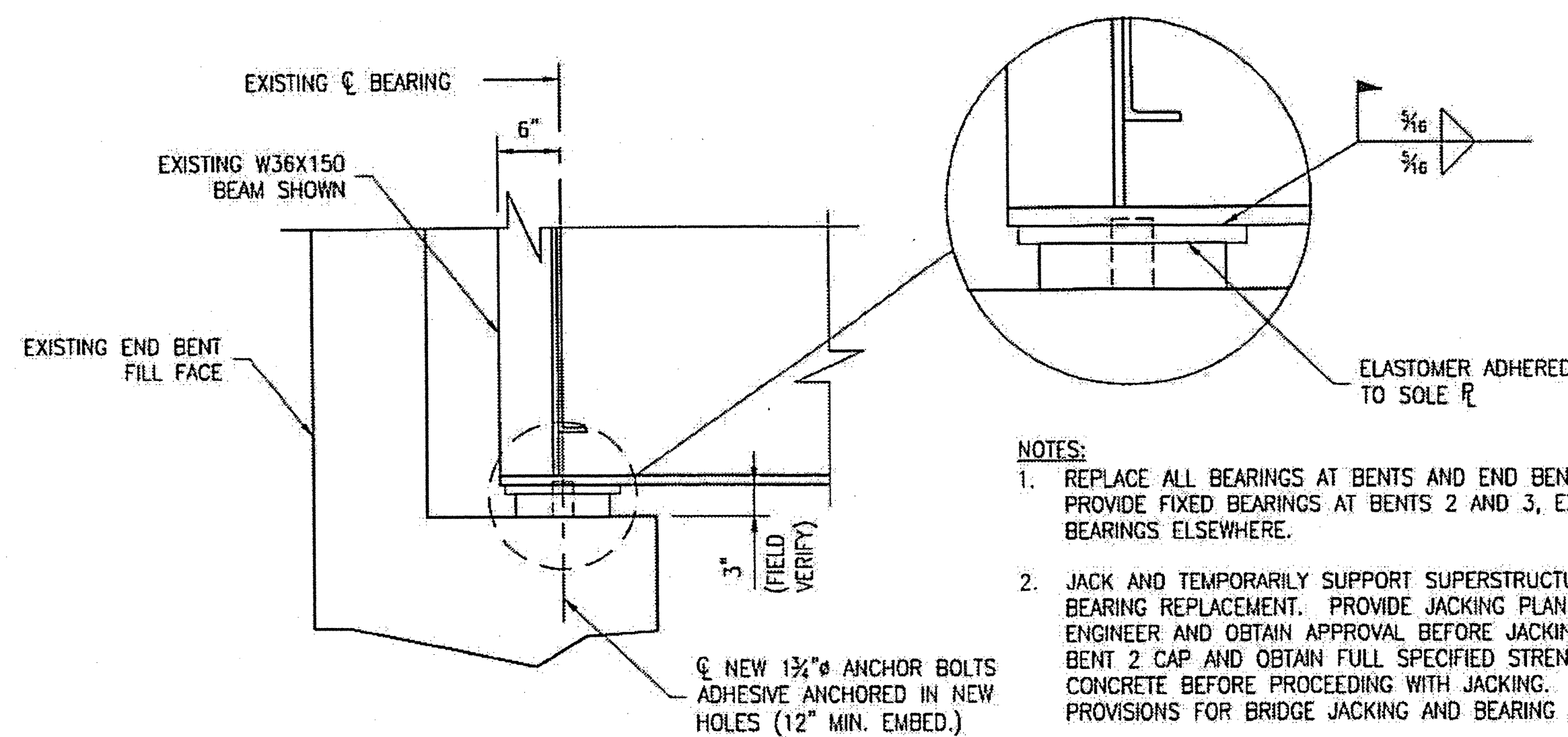
PROJECT NO. WBS 17BP.12.P.4

CLEVELAND COUNTY

BRIDGE NO. 220079

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

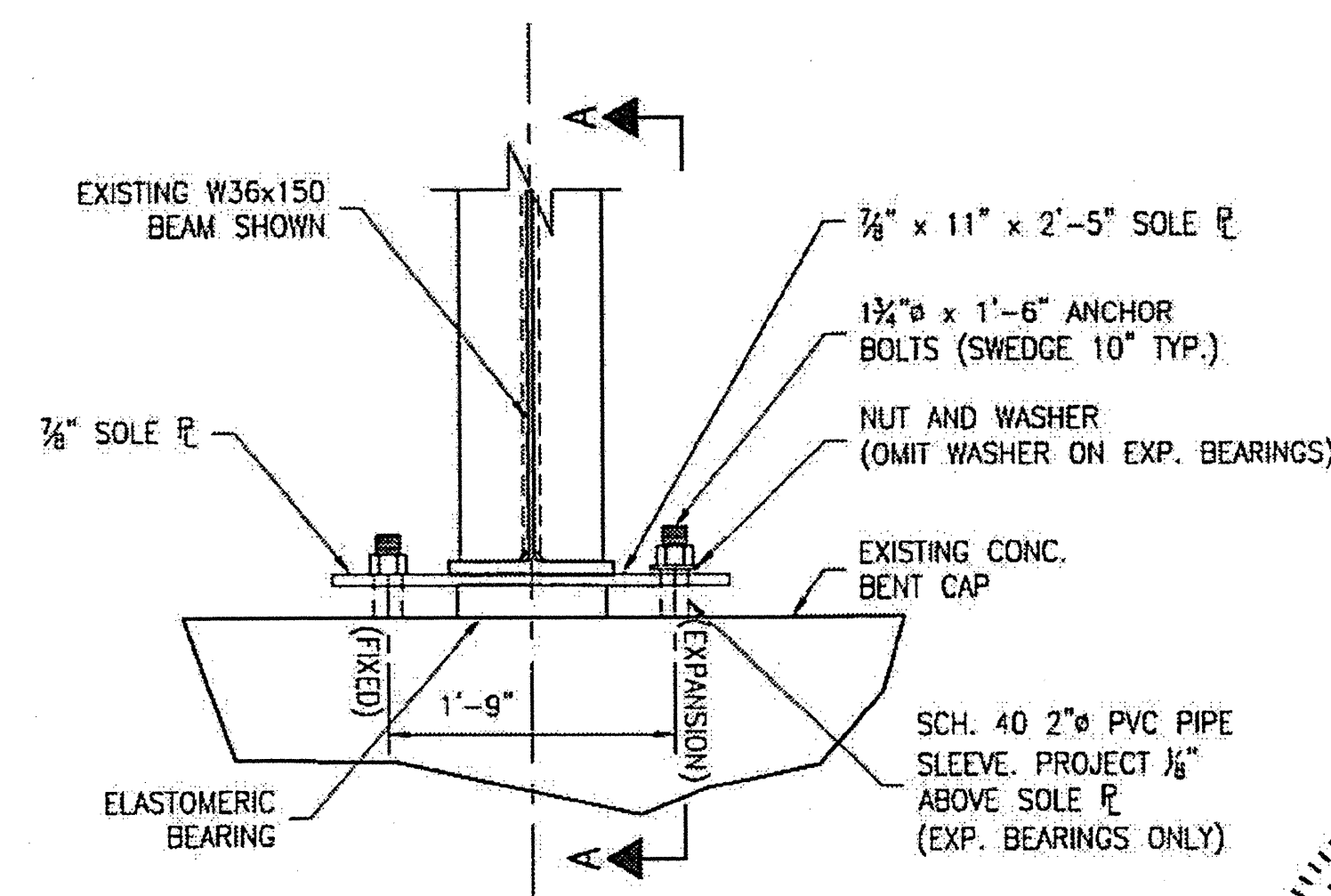
BEARING REPLACEMENT
DETAILS



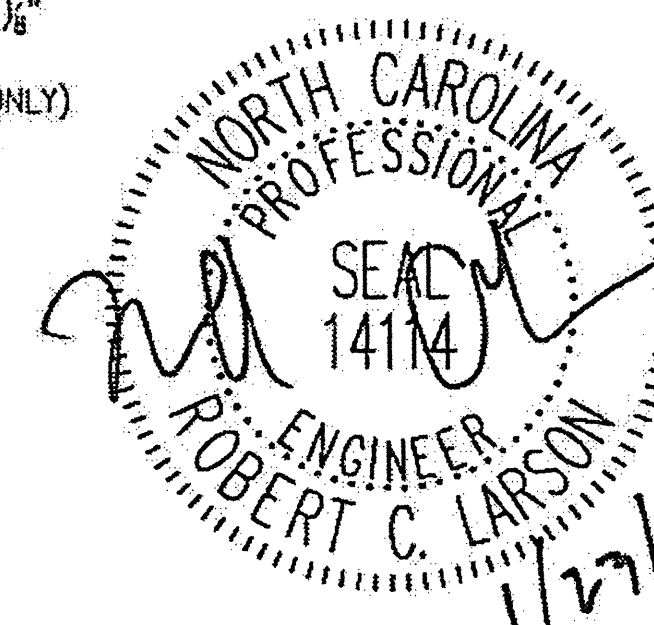
SECTION A-A
(END BENT SHOWN, BENT SIMILAR)

NOTES:

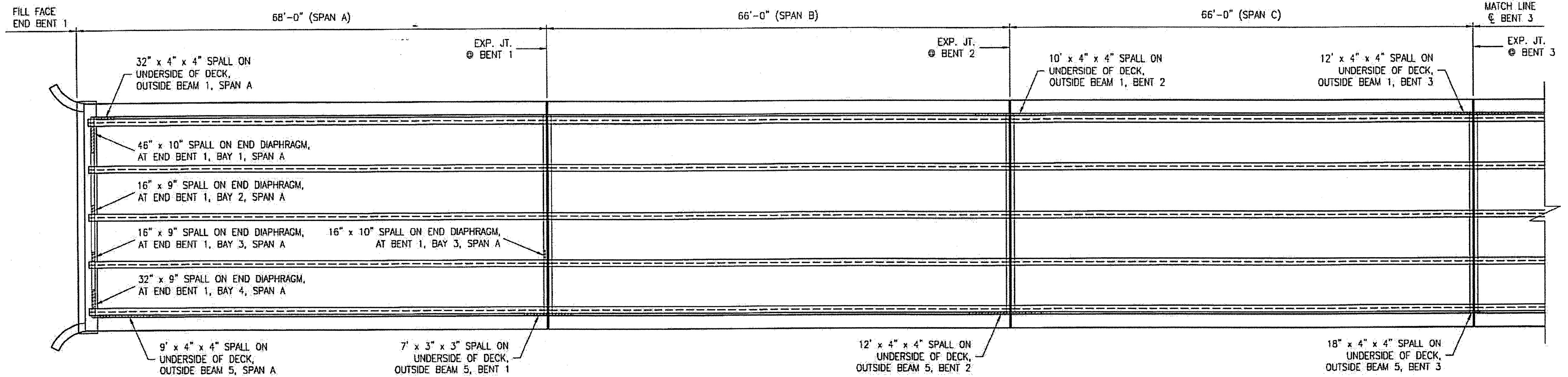
1. REPLACE ALL BEARINGS AT BENTS AND END BENTS (30 TOTAL) PROVIDE FIXED BEARINGS AT BENTS 2 AND 3, EXPANSION BEARINGS ELSEWHERE.
2. JACK AND TEMPORARILY SUPPORT SUPERSTRUCTURE DURING BEARING REPLACEMENT. PROVIDE JACKING PLANS TO THE ENGINEER AND OBTAIN APPROVAL BEFORE JACKING. REPAIR END BENT 2 CAP AND OBTAIN FULL SPECIFIED STRENGTH OF CONCRETE BEFORE PROCEEDING WITH JACKING. SEE SPECIAL PROVISIONS FOR BRIDGE JACKING AND BEARING REPLACEMENT.
3. REMOVE EXISTING BEARING FLUSH WITH CAP SURFACE. GRIND CONCRETE TO A SMOOTH SURFACE UNDER NEW BEARINGS.
4. BEARING REPLACEMENT TO BE COMPLETED BEFORE BEGINNING DECK RESURFACING
5. CLEAN AND PAINT BEAM SURFACES DISTURBED BY INSTALLATION OF NEW BEARING. USE 2 COATS OF INORGANIC ZINC PRIMER.



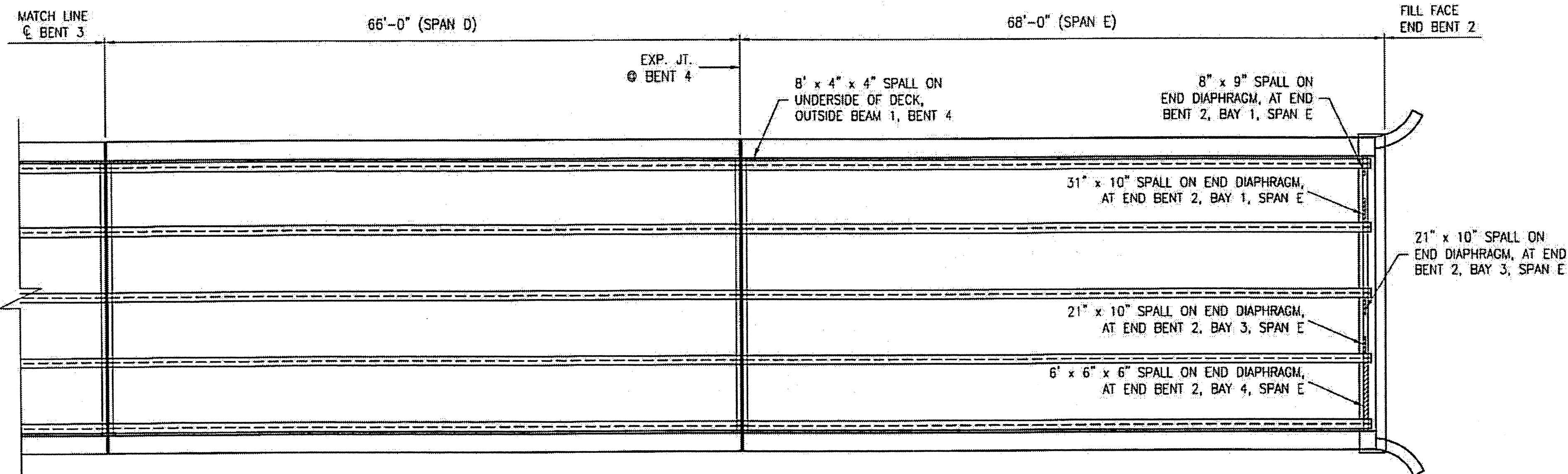
BEARING ASSEMBLY END VIEW



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			54



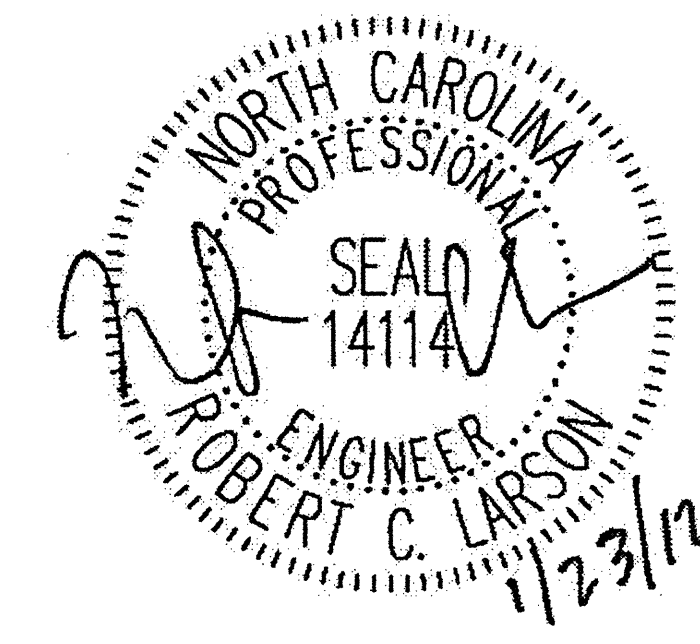
DECK PLAN UNDERSIDE



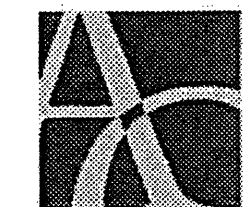
DECK PLAN UNDERSIDE

ESTIMATED CONCRETE REPAIRS
SPANS A - E = 11 CF

AREA TO BE REPAIRED WITH CONCRETE REPAIR MATERIAL. SEE DETAILS, SHEET S-24.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."



PLAN PREPARED BY:



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CIVIL & STRUCTURAL ENGINEERS

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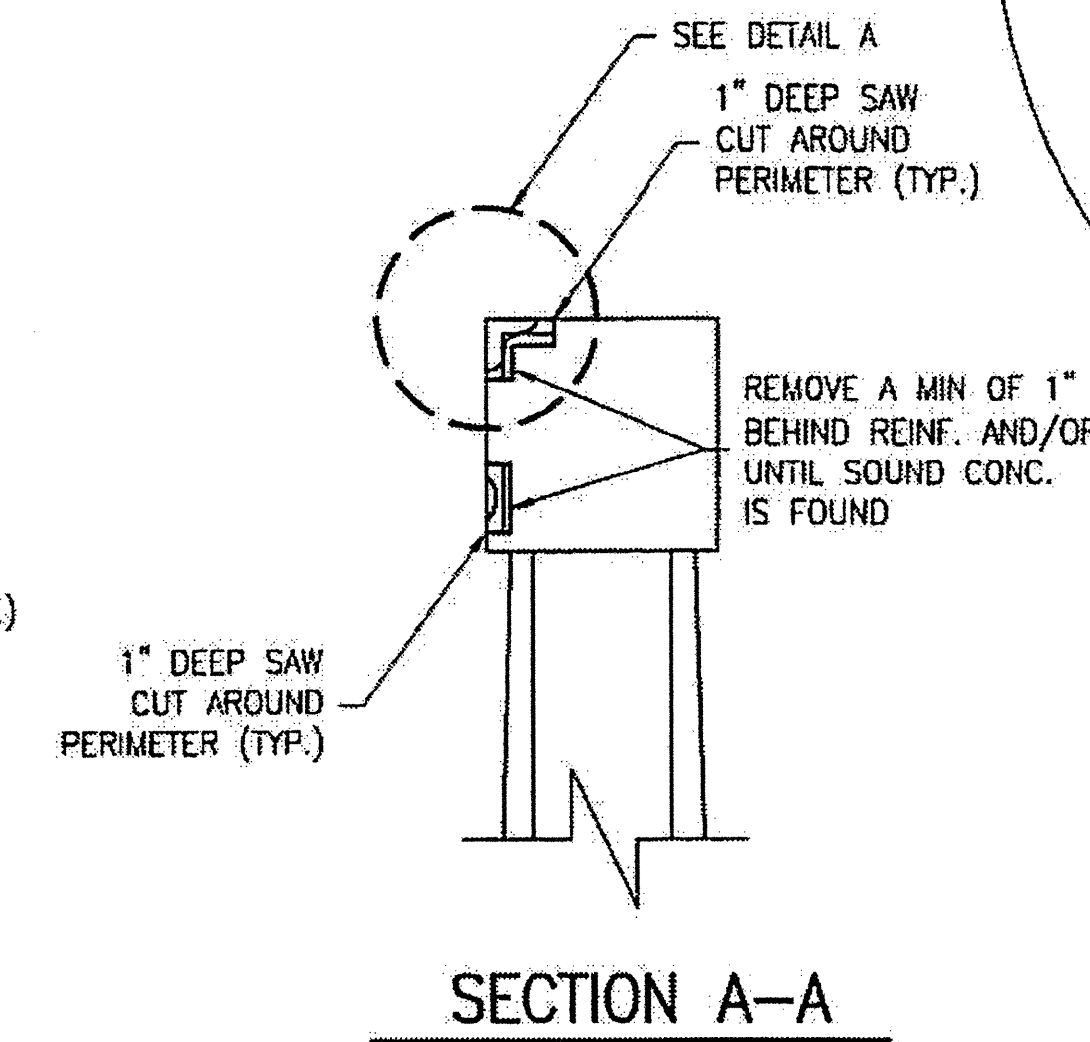
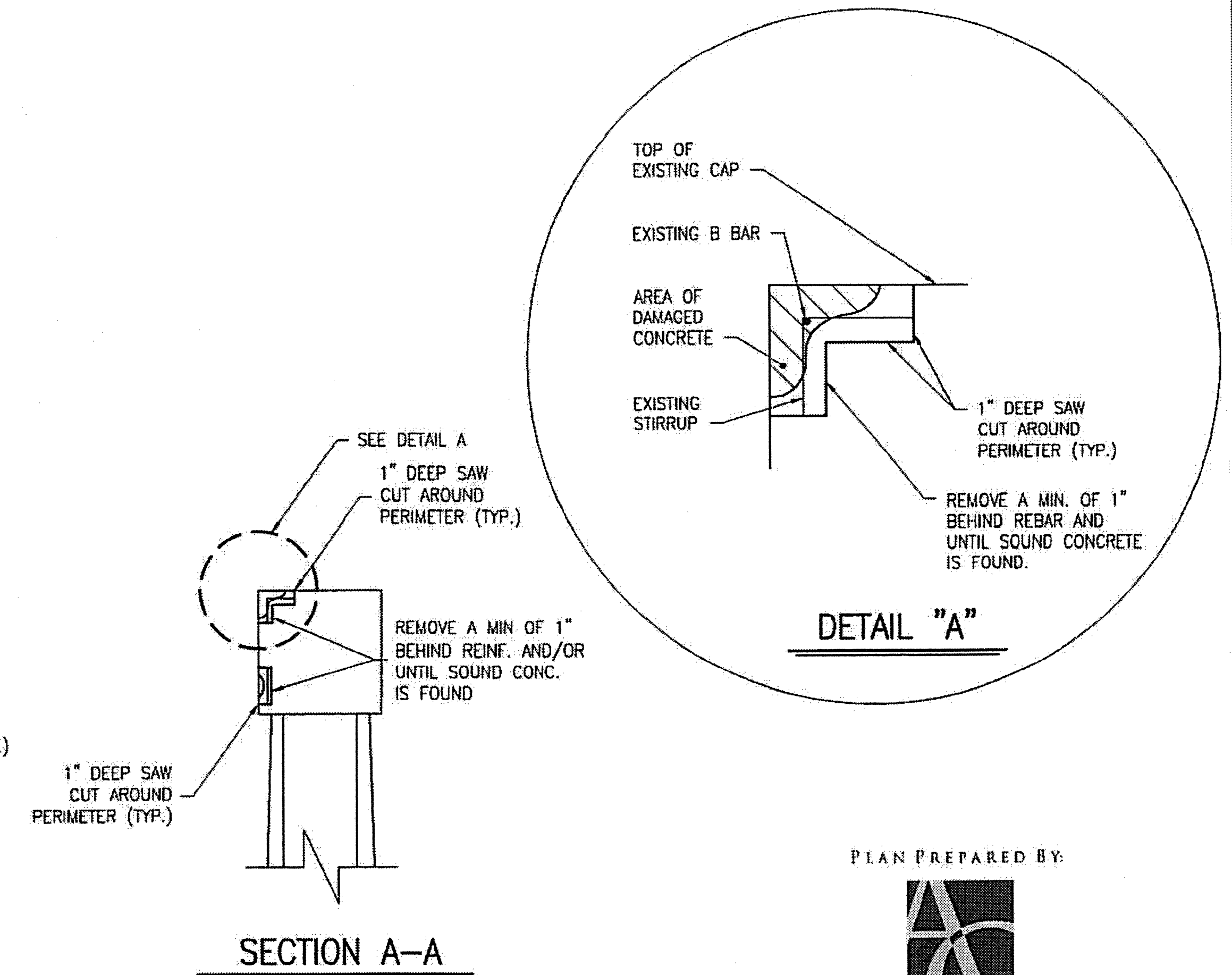
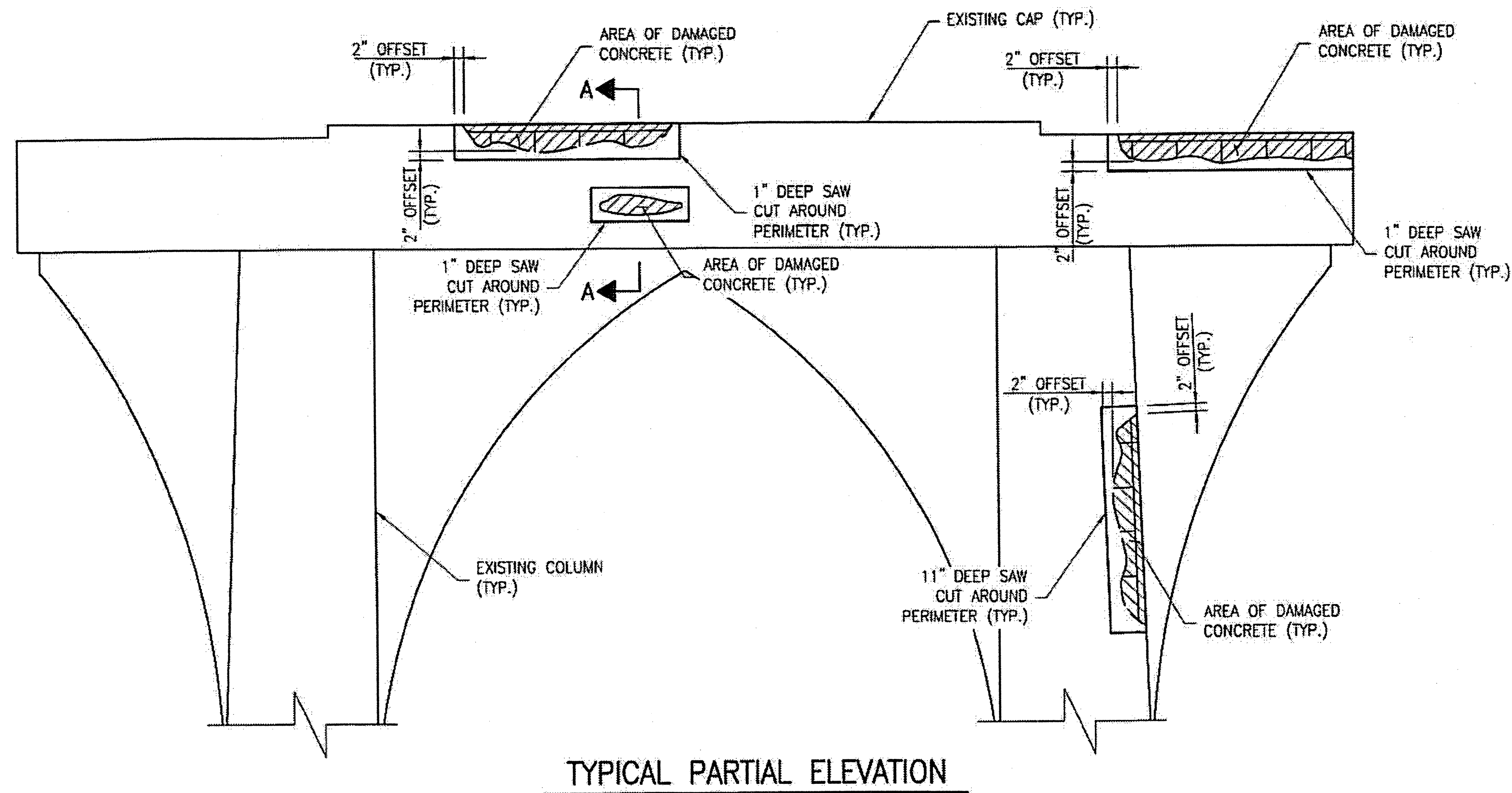
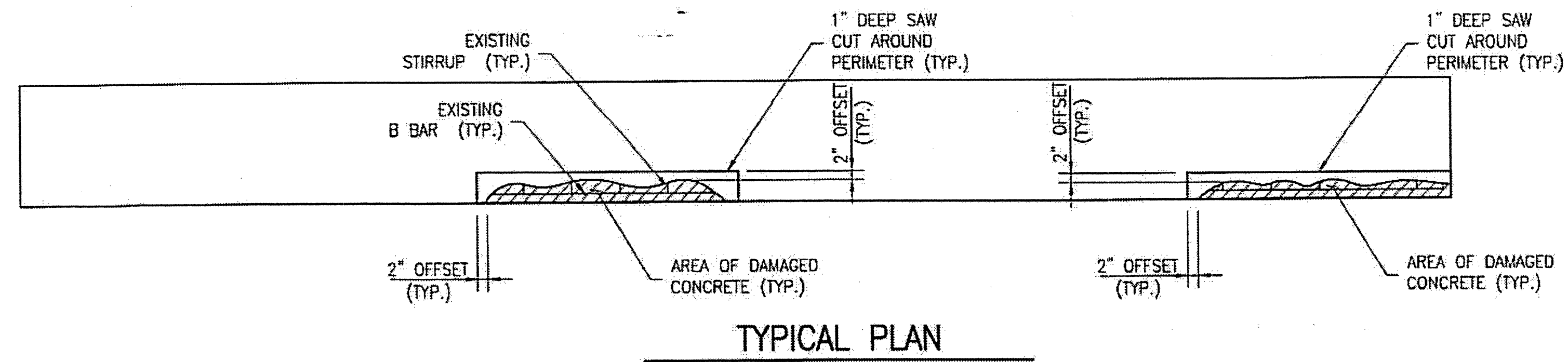
BRIDGE DECK
UNDERSIDE
REPAIRS

DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

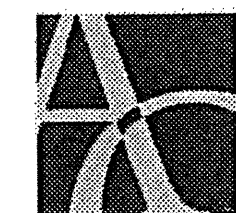
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			54

NOTES:

1. SPALL/DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE.
2. REPAIR MATERIAL SHALL BE CONCRETE. SEE SPECIAL PROVISIONS.
3. REPAIRS OF SUPERSTRUCTURE UNDERSIDE, DIAPHRAGMS, ETC. SIMILAR.



PLAN PREPARED BY:



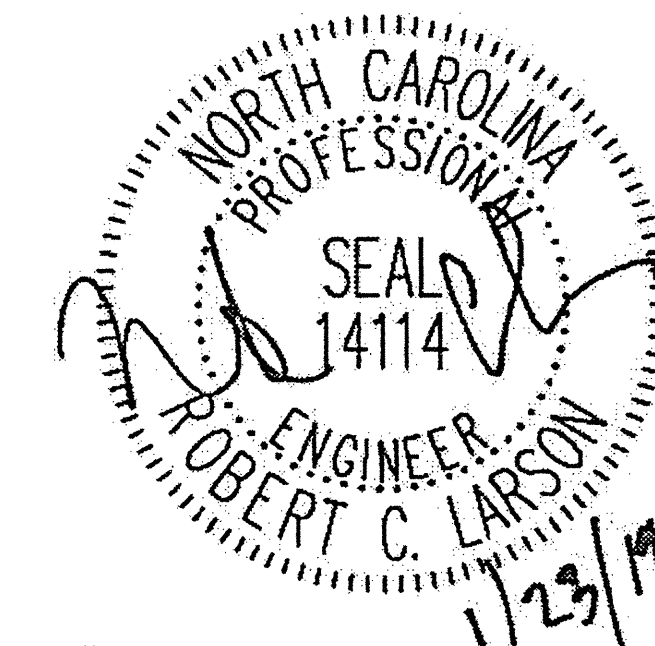
ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220079

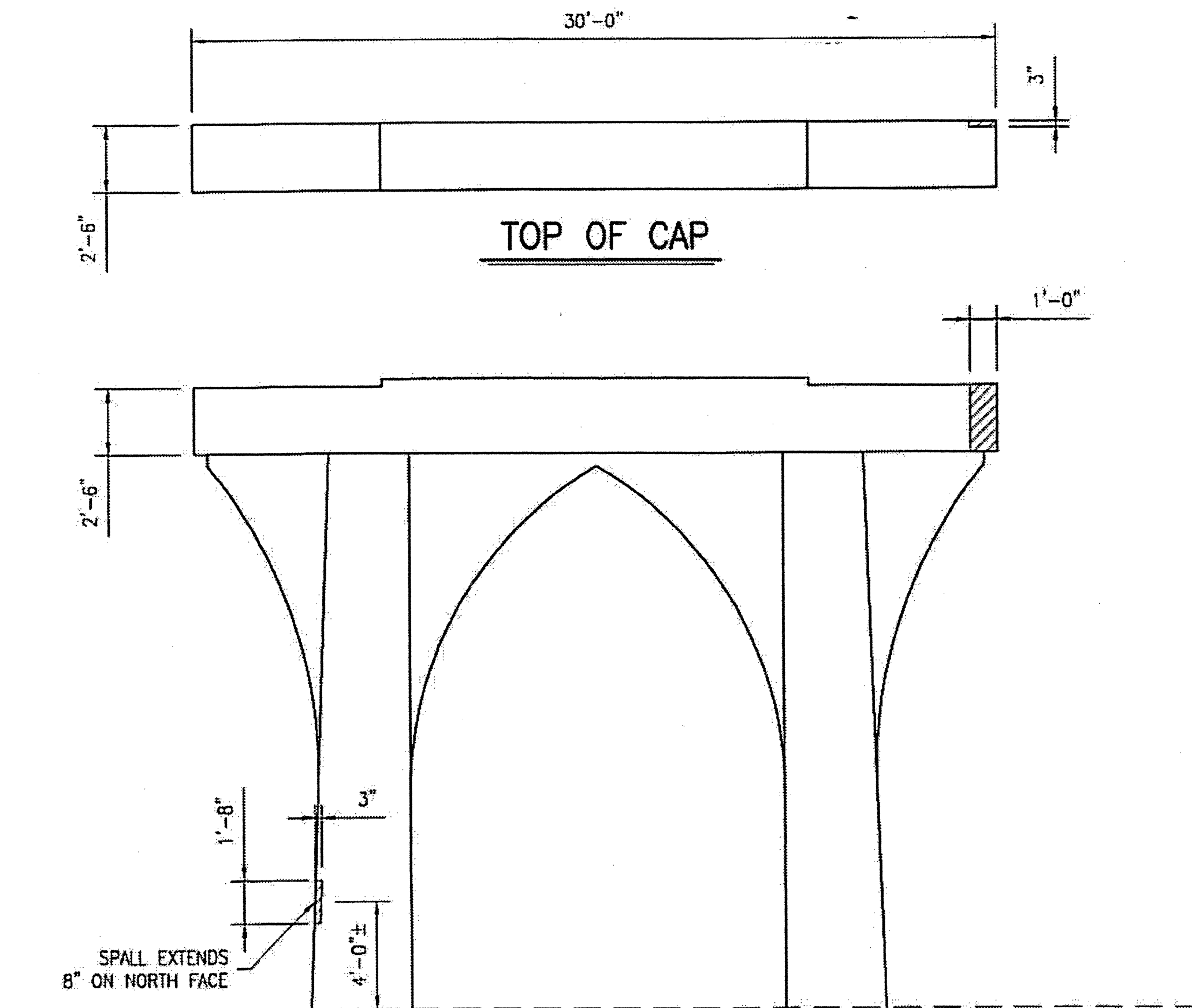
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL BENT CAP
REPAIR DETAILS



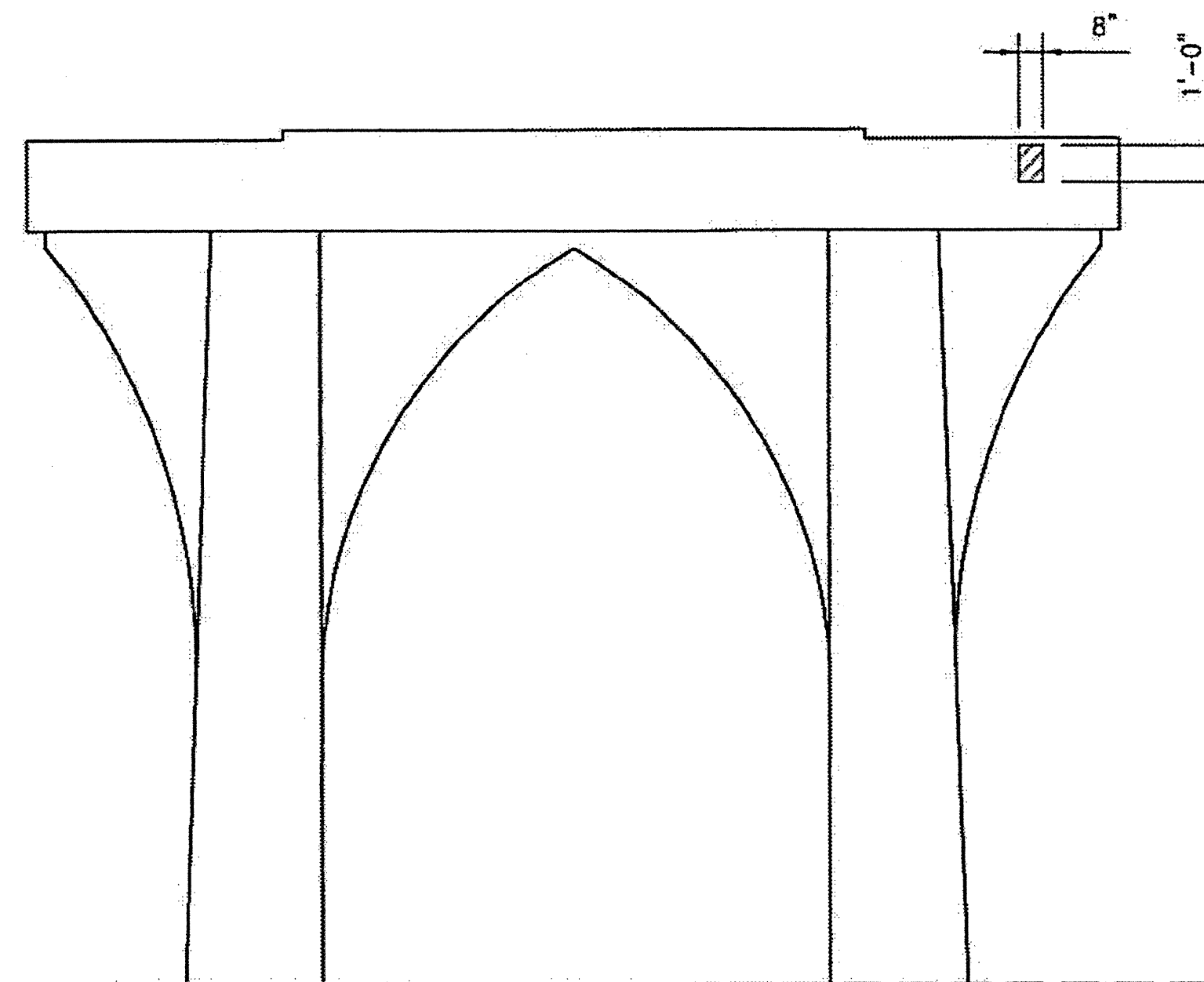
DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS						SHEET NO.
NO	BY	DATE	NO	BY	DATE	S-24
1			3			TOTAL SHEETS
2			4			54

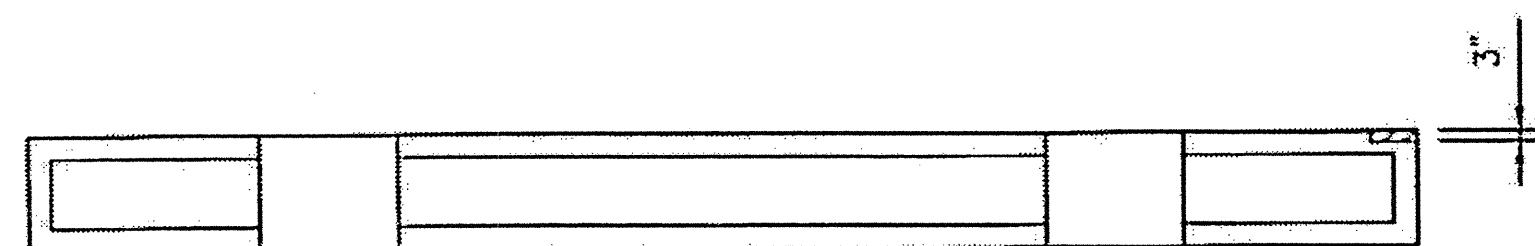


TOP OF CAP

WEST ELEVATION



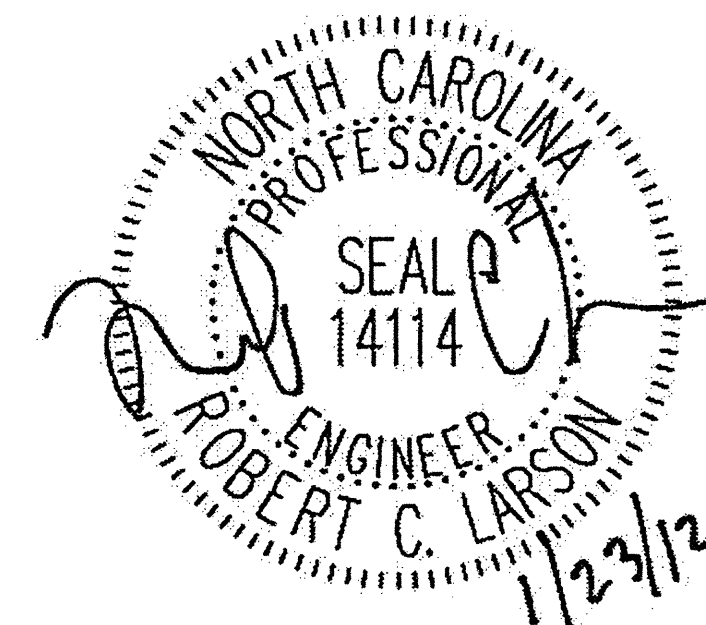
EAST ELEVATION



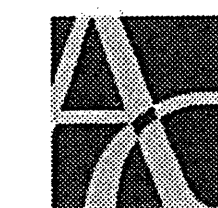
BOTTOM OF CAP

ESTIMATED CONCRETE REPAIRS
BENT 1 = 2 CF

AREA TO BE REPAIRED WITH CONCRETE REPAIR MATERIAL. SEE DETAILS, SHEET S-24.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."



PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4

CLEVELAND COUNTY

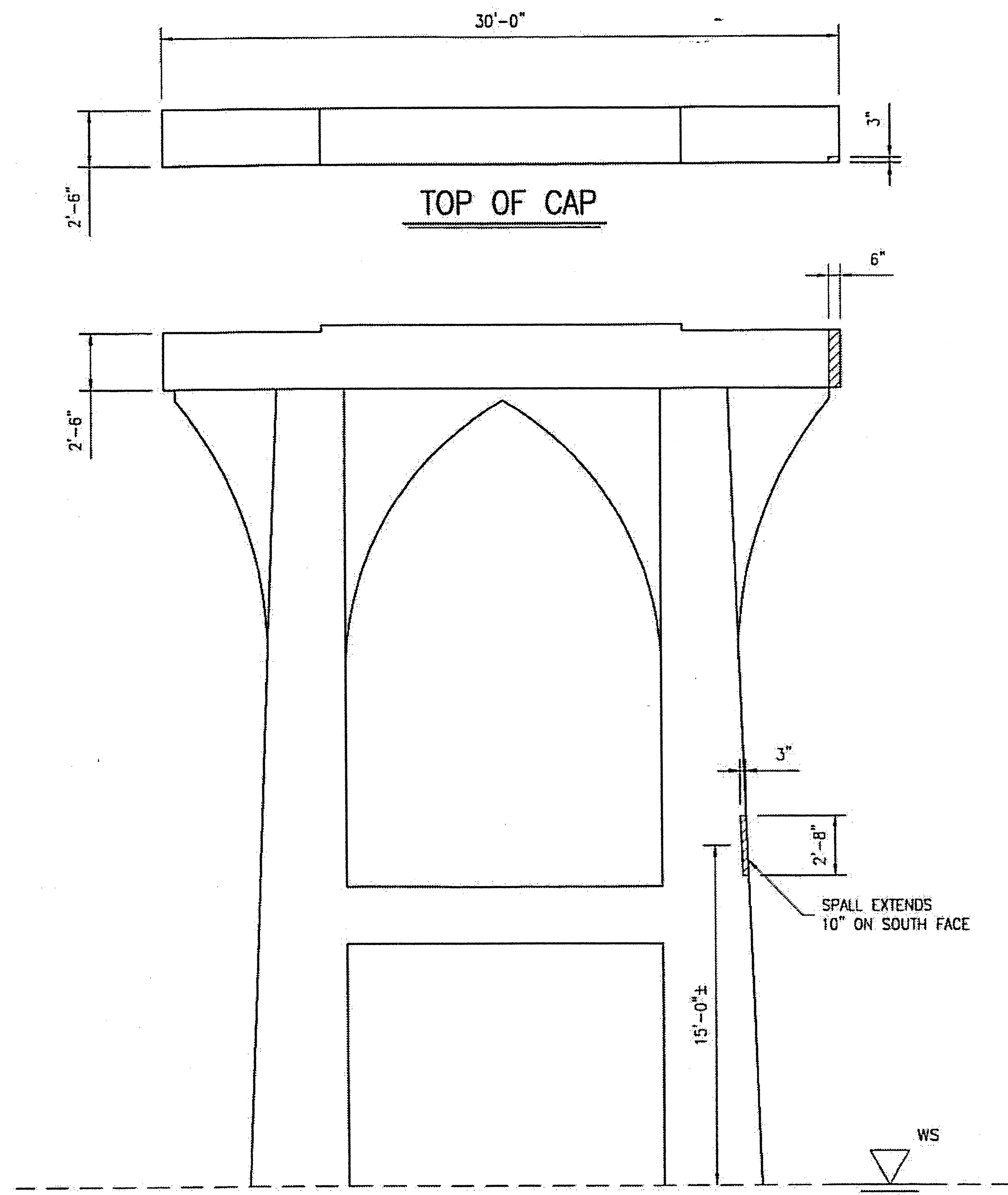
BRIDGE NO. 220079

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

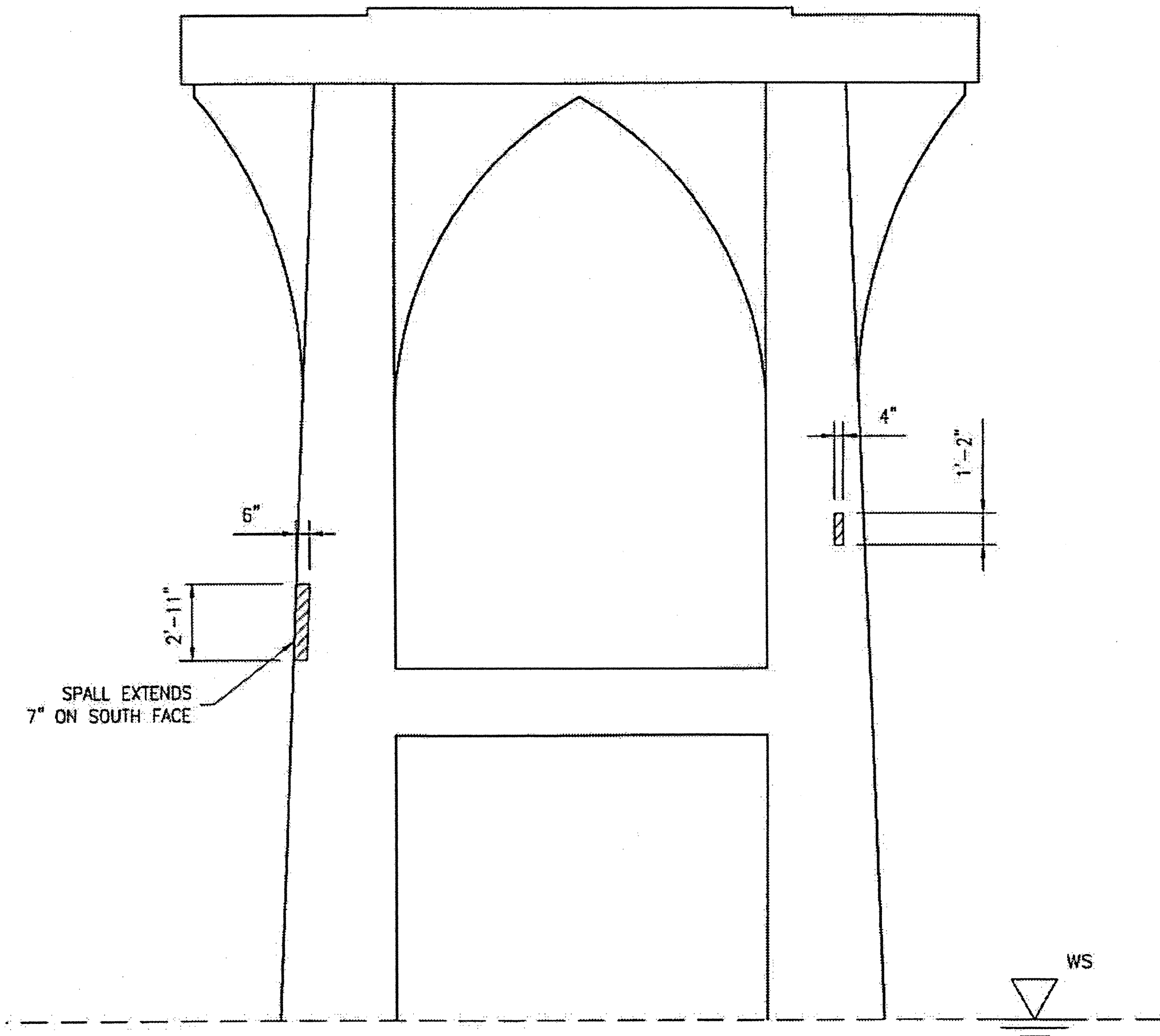
CONCRETE CAP
AND COLUMN REPAIRS
BENT 1

DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

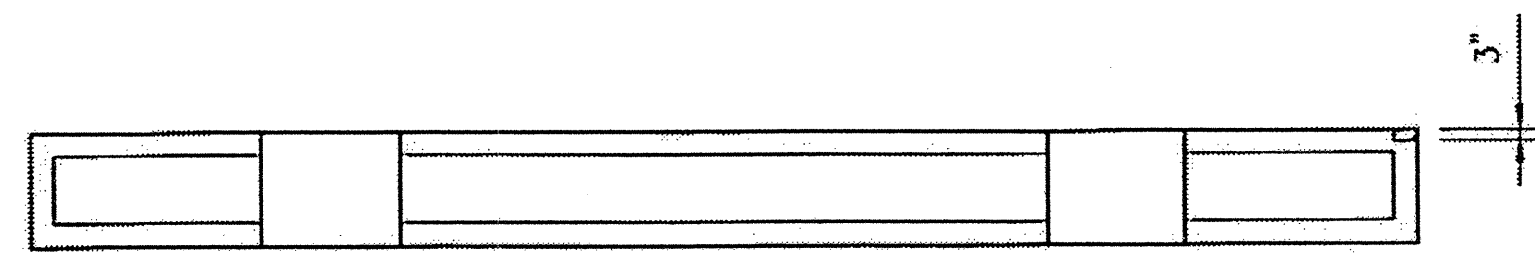
REVISIONS						SHEET NO.
NO	BY:	DATE:	NO	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			54



WEST ELEVATION



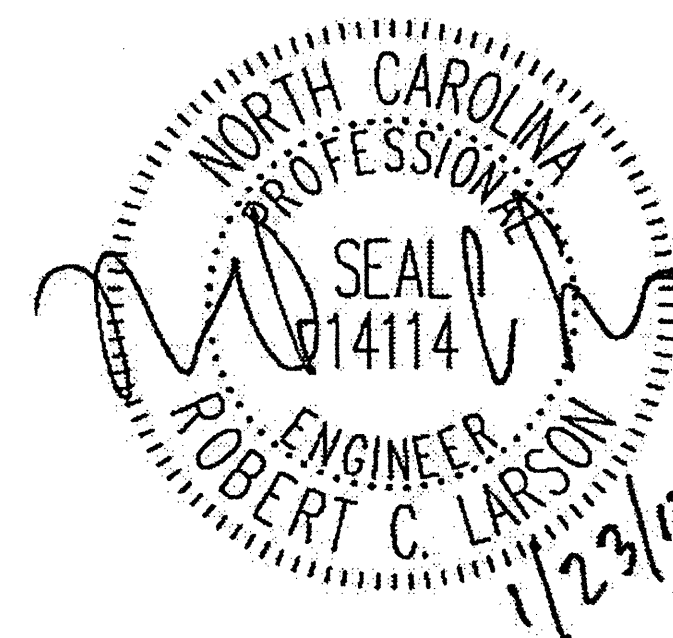
EAST ELEVATION



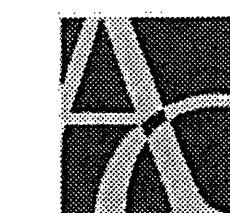
BOTTOM OF CAP

ESTIMATED CONCRETE REPAIRS
BENT 3 = 2 CF

AREA TO BE REPAIRED WITH CONCRETE REPAIR MATERIAL. SEE DETAILS, SHEET S-24.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."



PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS
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A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4

CLEVELAND COUNTY

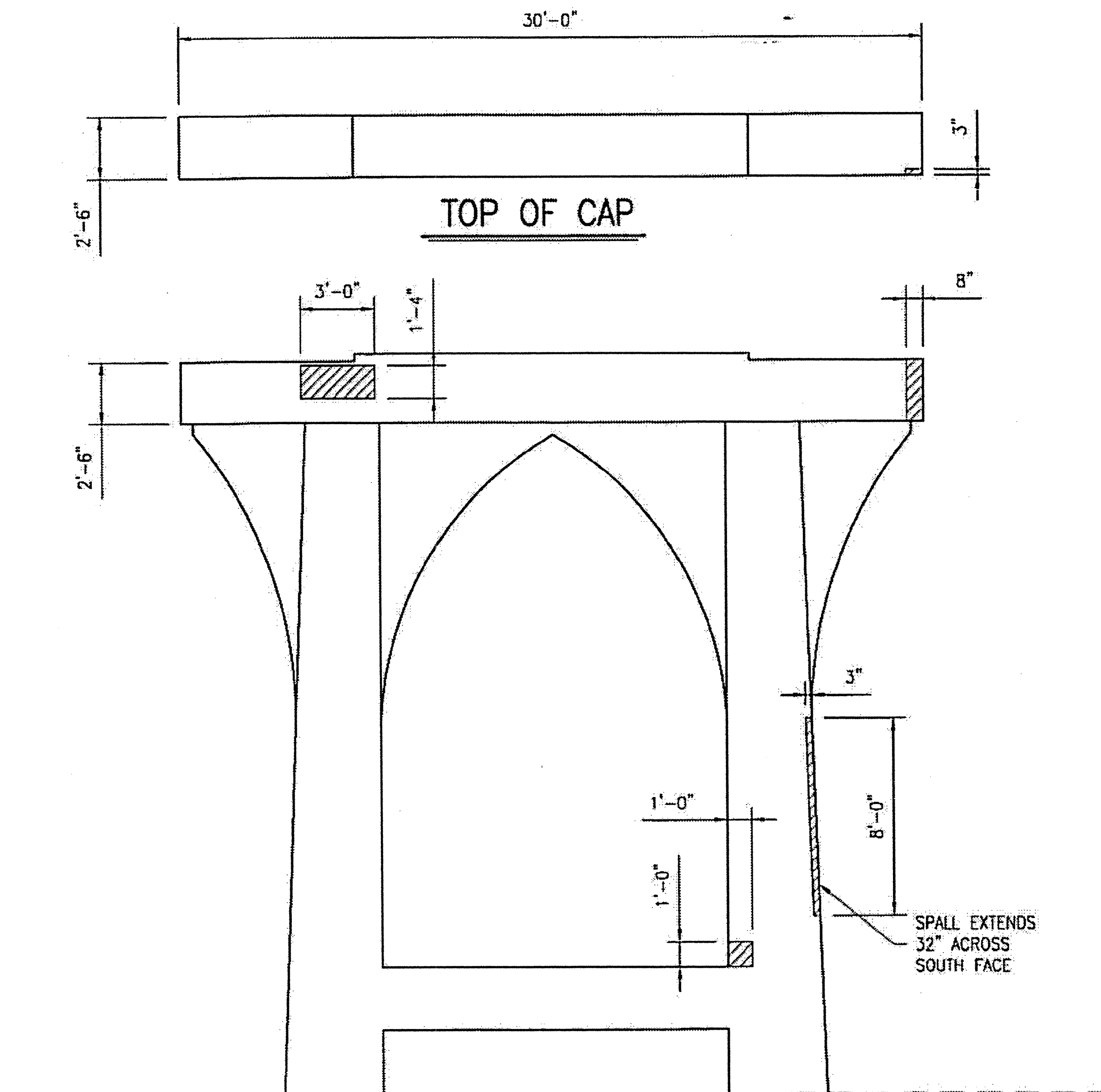
BRIDGE NO. 220079

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE CAP
AND COLUMN REPAIRS
BENT 3

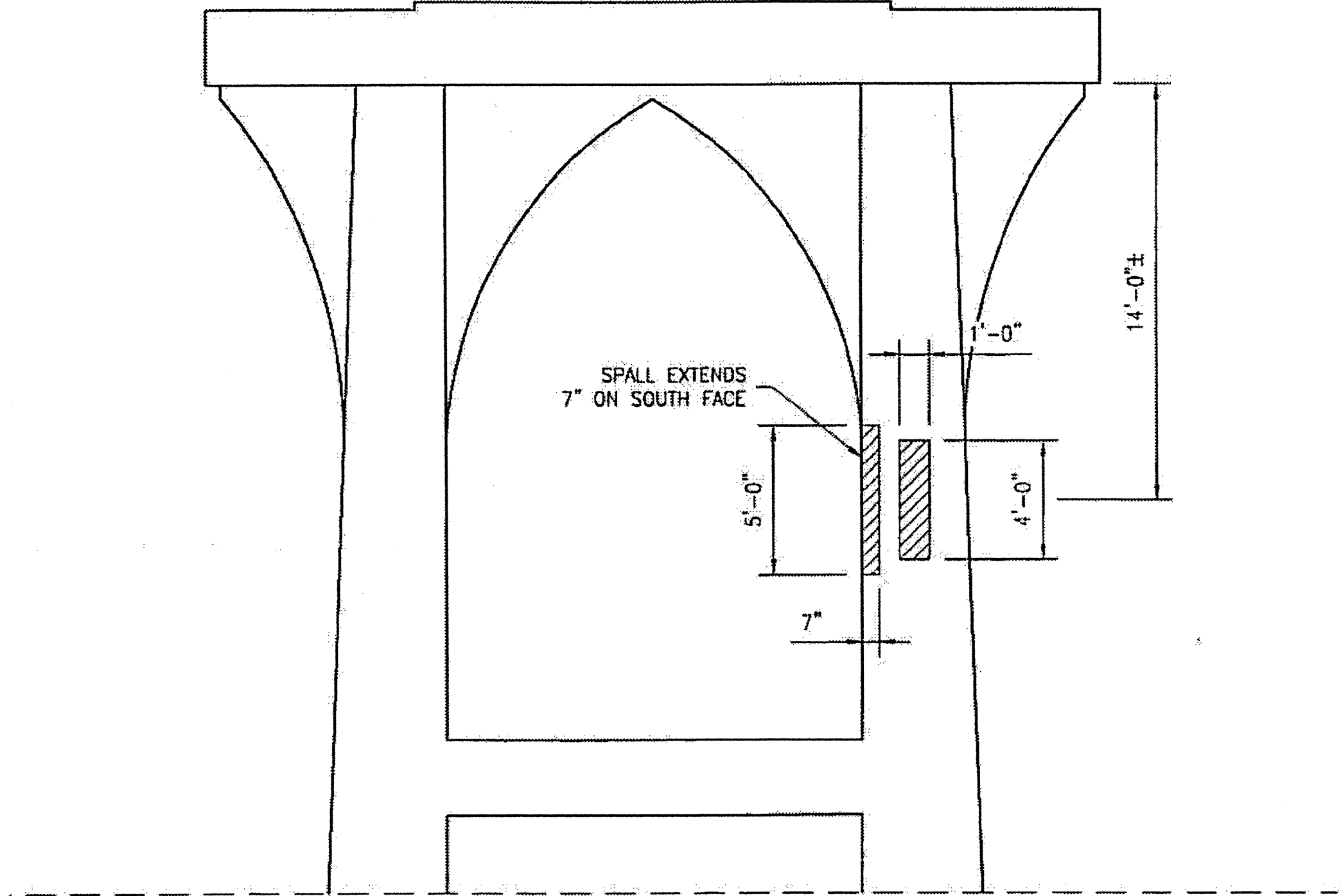
DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-26
1			3			TOTAL SHEETS
2			4			54

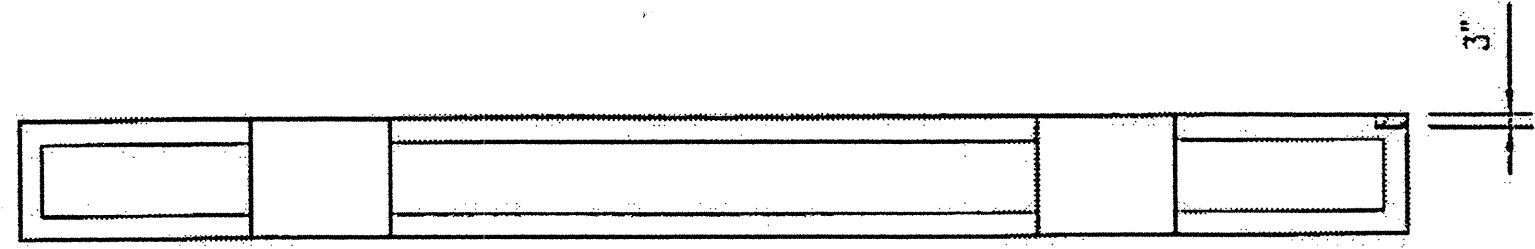


TOP OF CAP

WEST ELEVATION



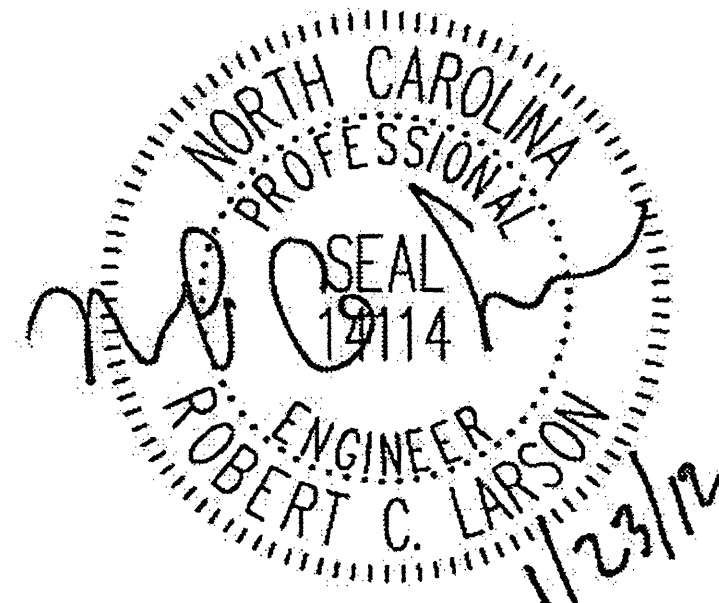
EAST ELEVATION



BOTTOM OF CAP

ESTIMATED CONCRETE REPAIRS
BENT 4 = 12 CF

AREA TO BE REPAIRED WITH CONCRETE REPAIR MATERIAL. SEE DETAILS, SHEET S-24.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."



PLAN PREPARED BY:
ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS
4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com
A & O PROJECT #: 2011.031

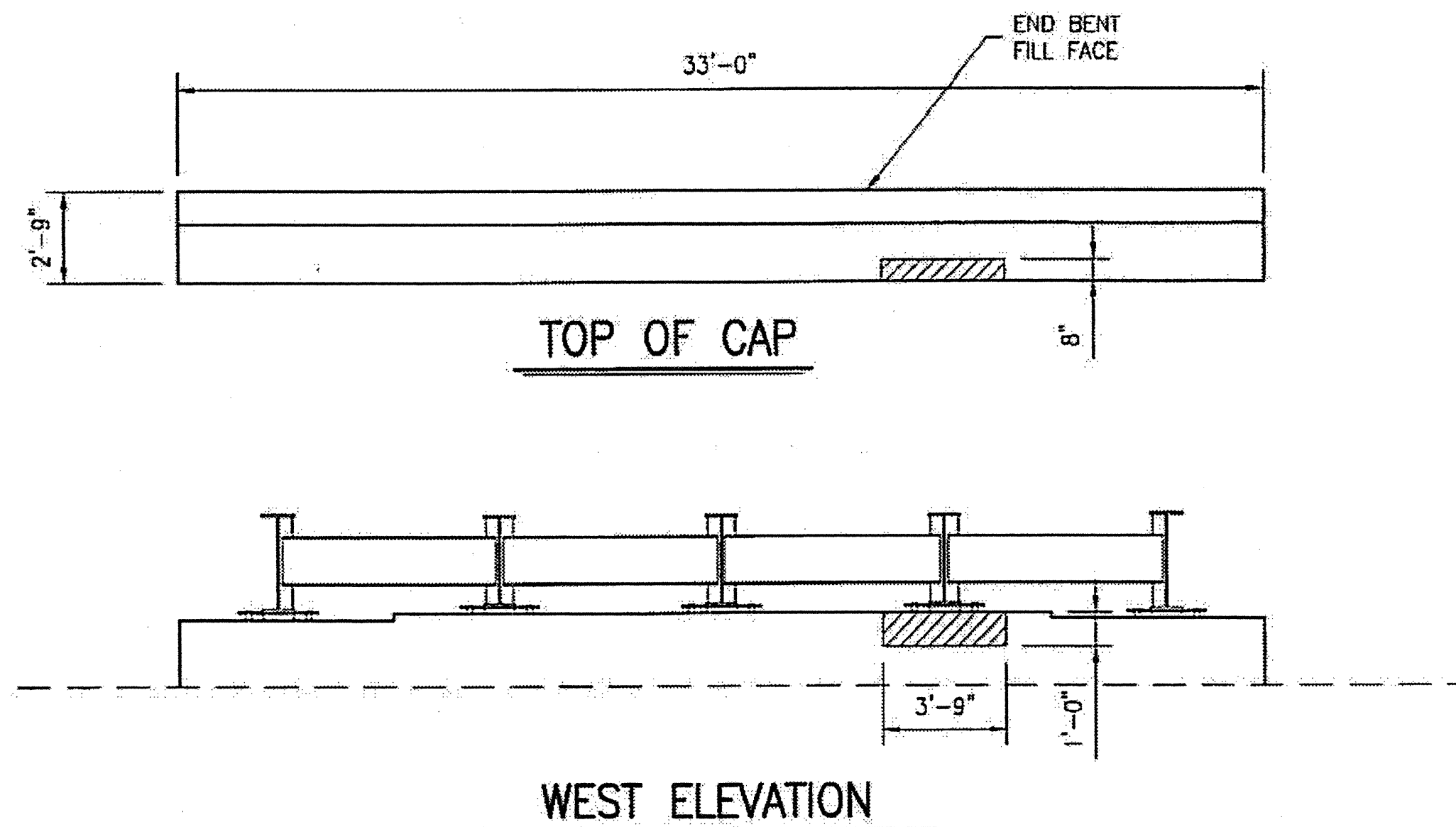
PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220079

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE CAP
AND COLUMN REPAIRS
BENT 4

DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-27
1			3			TOTAL SHEETS
2			4			54



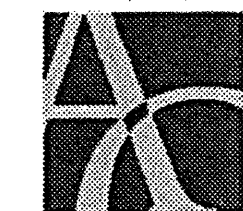
ESTIMATED CONCRETE REPAIRS
END BENT 2 = 1 CF



AREA TO BE REPAIRED WITH CONCRETE REPAIR MATERIAL. SEE DETAILS, SHEET S-24.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."



PLAN PREPARED BY:



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CIVIL & STRUCTURAL ENGINEERS

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A & O PROJECT #: 2011.031

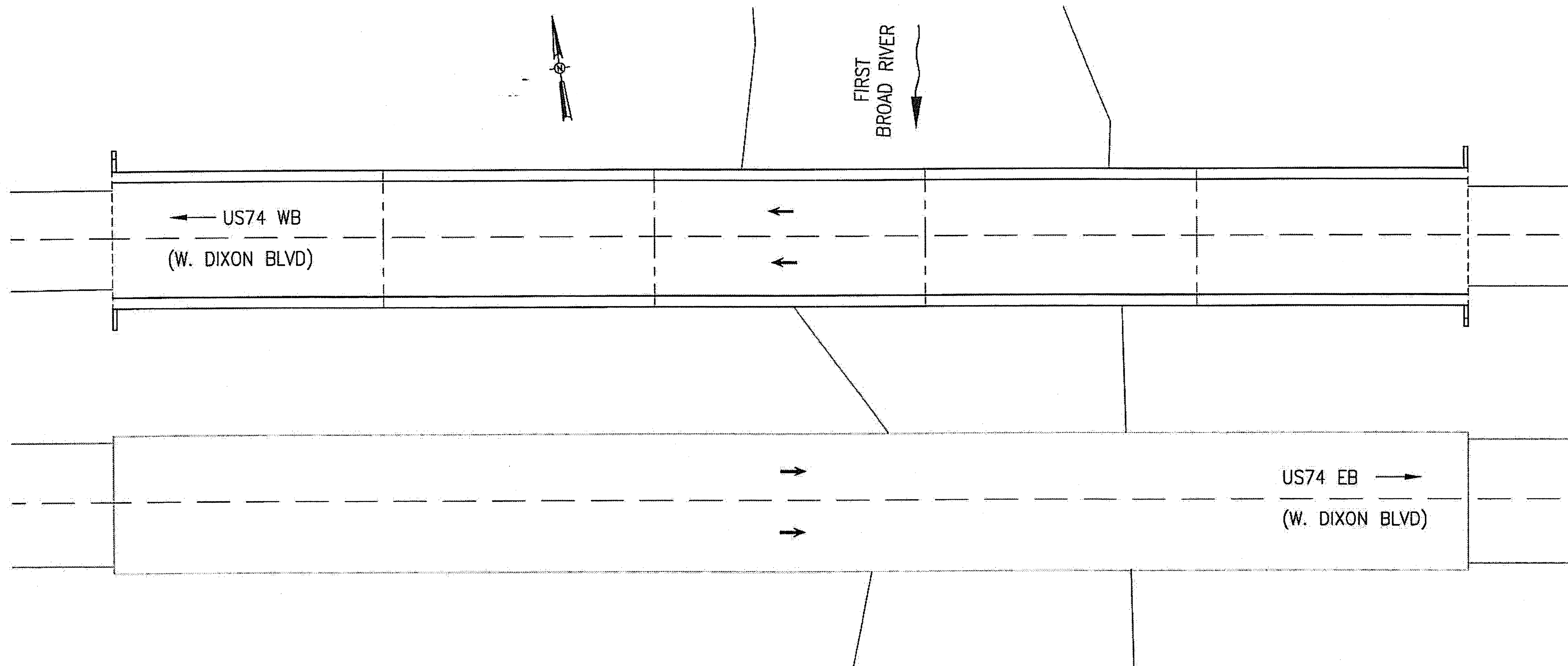
PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220079

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE CAP
REPAIR
END BENT 2

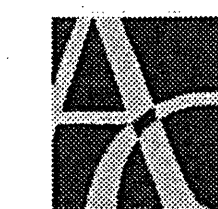
DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-28
1			3			TOTAL SHEETS
2			4			54



BRIDGE 220080 ON NC74
 LOCATION: BRIDGE 220080, WB NC 74 OVER THE FIRST BROAD RIVER, 0.1 MILE WEST OF JUNCTION WITH US74 BUS.

PLAN PREPARED BY:

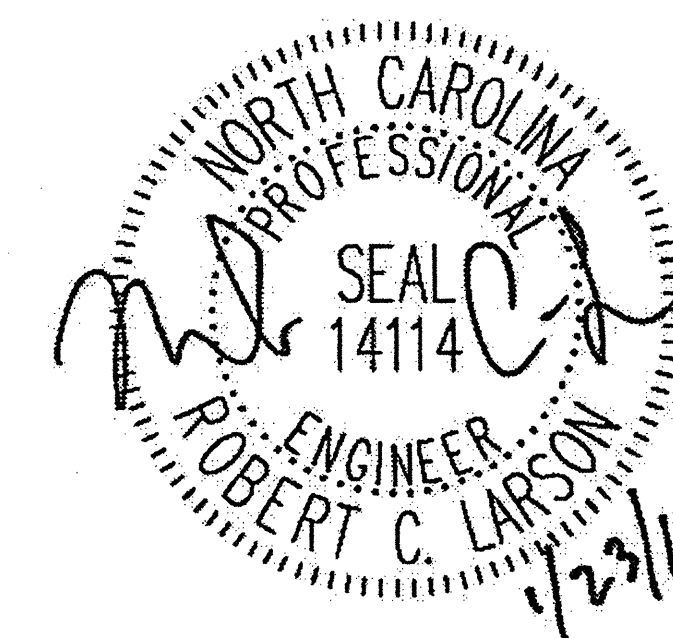


ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS

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 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1688 www.aogroup.com
 A & O PROJECT #: 2011.031

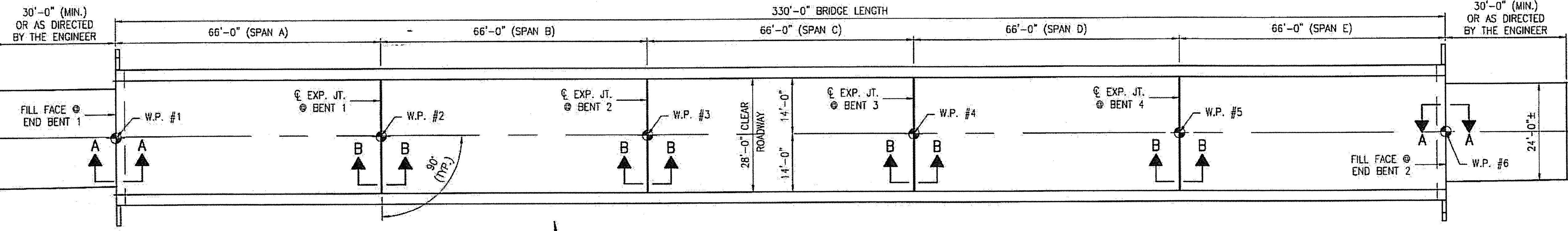
PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
 BRIDGE NO. 220080

TOTAL BILL OF MATERIAL							
SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	SQ. YD.
1,027	1,027	43	1,027	8,133	L.S.	13	160



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
LOCATION SKETCH AND TOTAL BILL OF MATERIAL					
REVISIONS					
NO	BY:	DATE:	NO	BY:	DATE:
1			3		
2			4		
SHEET NO. S-29					TOTAL SHEETS 54

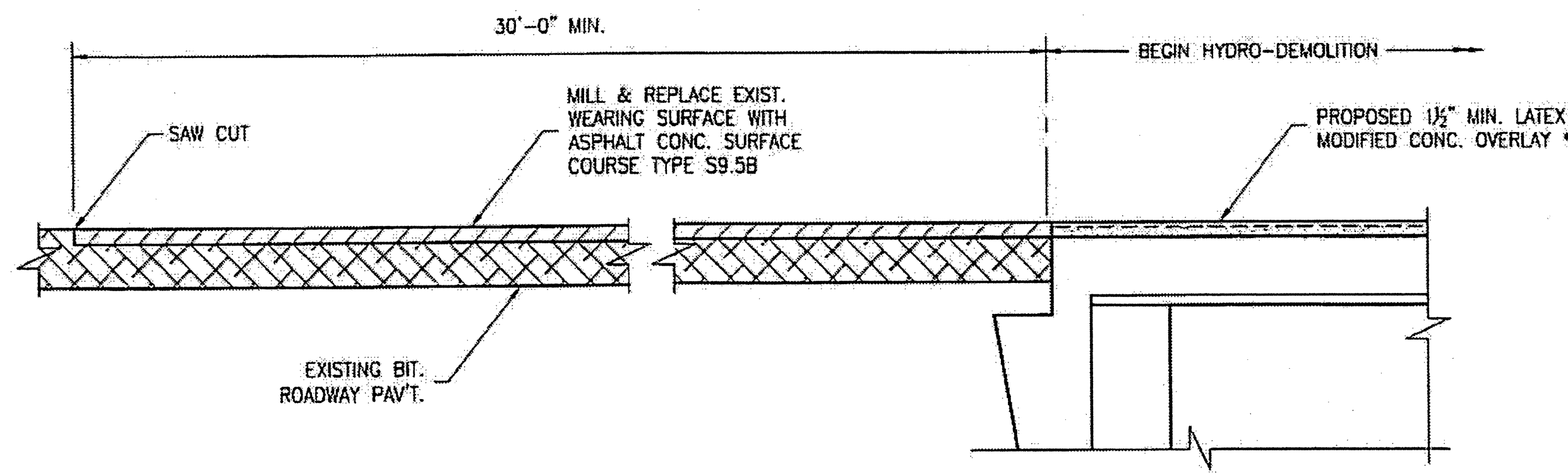
DRAWN BY: J.D. GOODIN DATE: 12-08-11
 CHECKED BY: R.C. LARSON DATE: 12-08-11



PLAN OF SPANS A - E

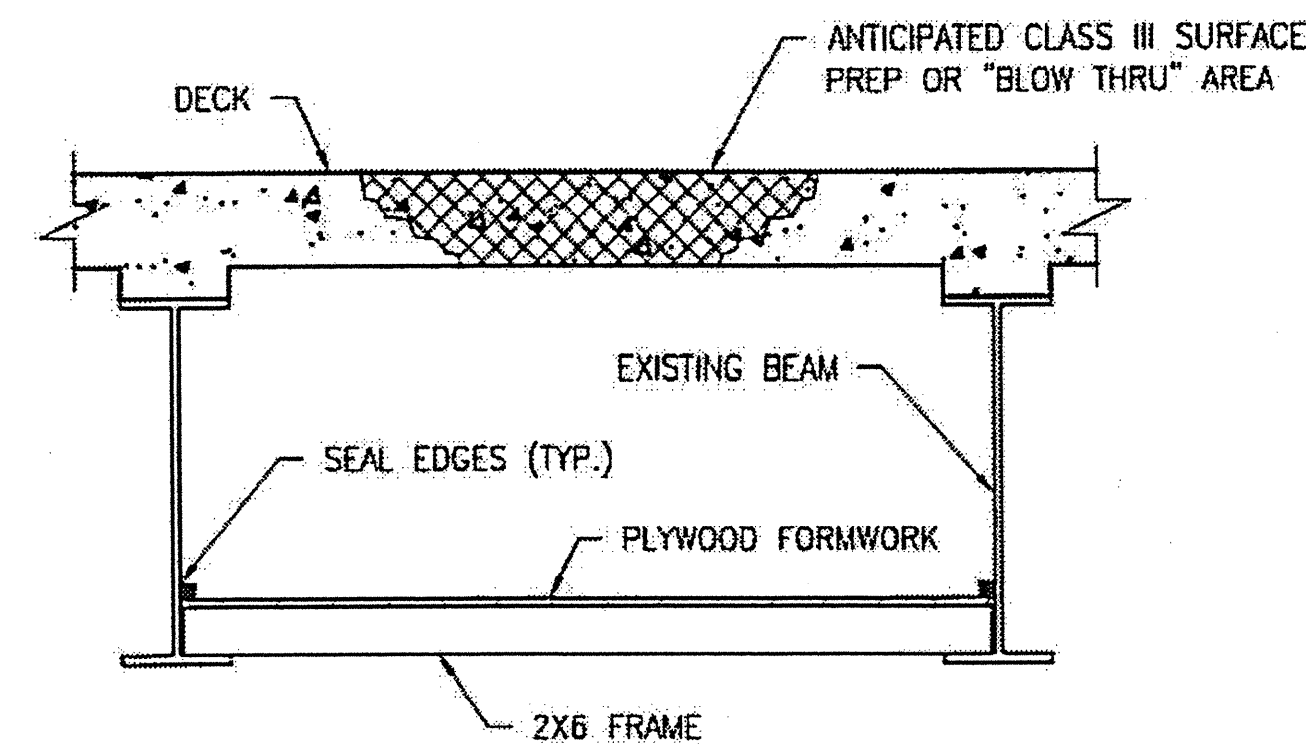
NOTES:

1. EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
2. FOR HYDRO DEMOLITION, SEE SPECIAL PROVISIONS.
3. THE CONTRACTOR MUST COLLECT, TREAT, AND DISPOSE OF RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
4. THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, THIS SHEET.
5. FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
6. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
7. FOR SECTION B-B, SEE SHEET S-31.



SECTION A-A

* RAISE EXISTING CONC. DECK ELEVATION BY 1/2".



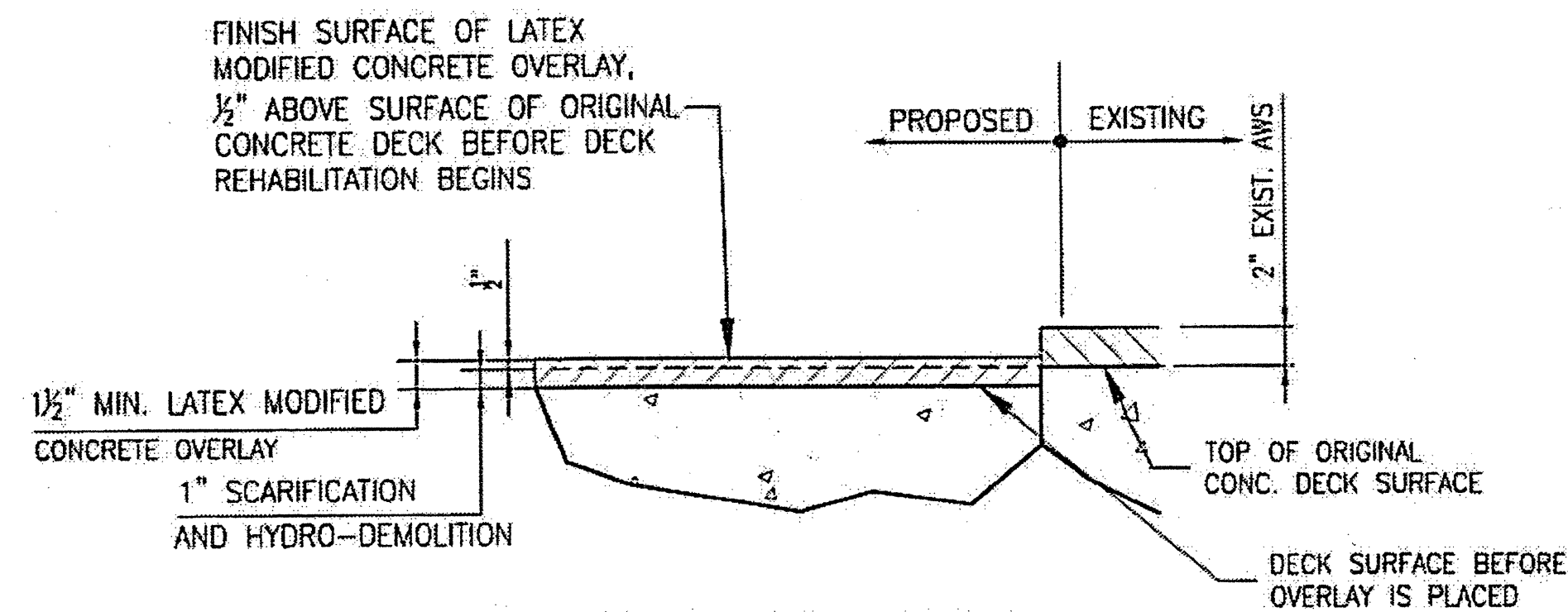
TYPICAL BLOW THRU CONTAINMENT AND FORMWORK

PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

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

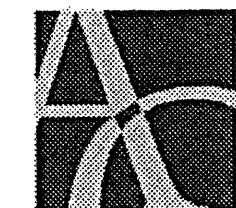
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YD. OF HYDRO-DEMOLITION.

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



DETAIL FOR LATEX MODIFIED CONC. OVERLAY

PLAN PREPARED BY:



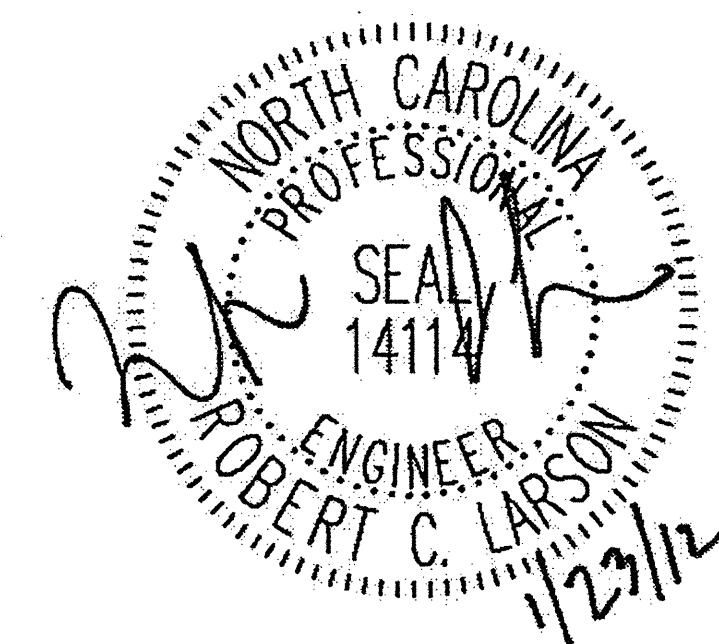
ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
BRIDGE NO. 220080

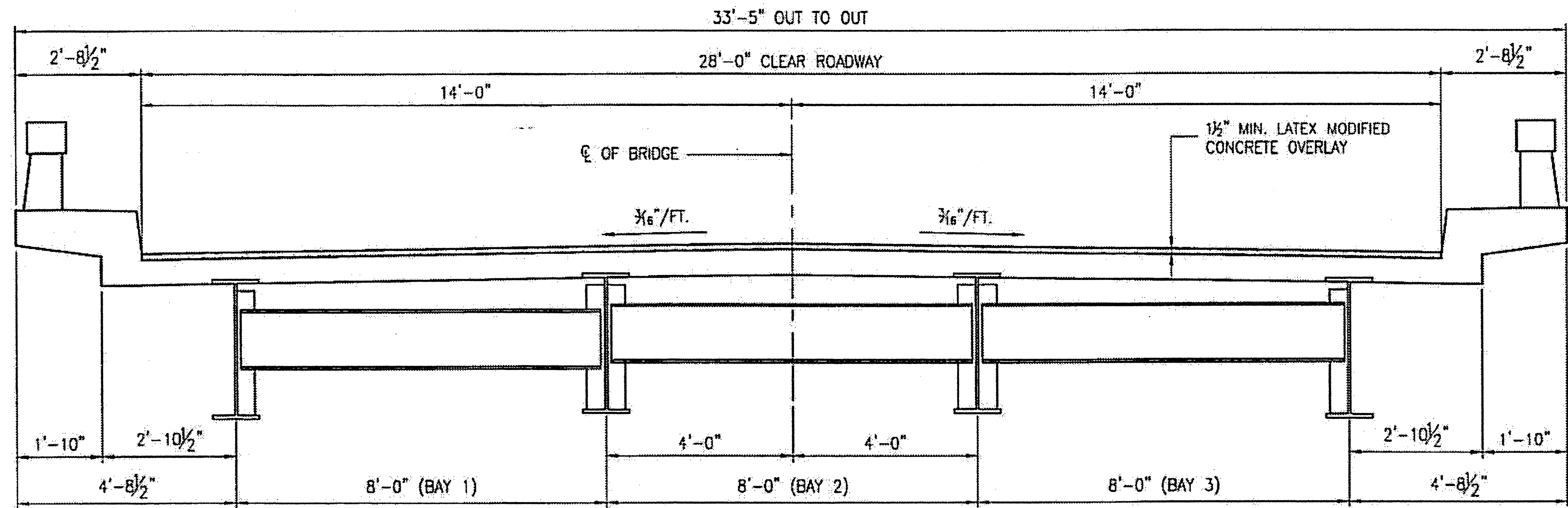
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE PLAN
AND DETAILS

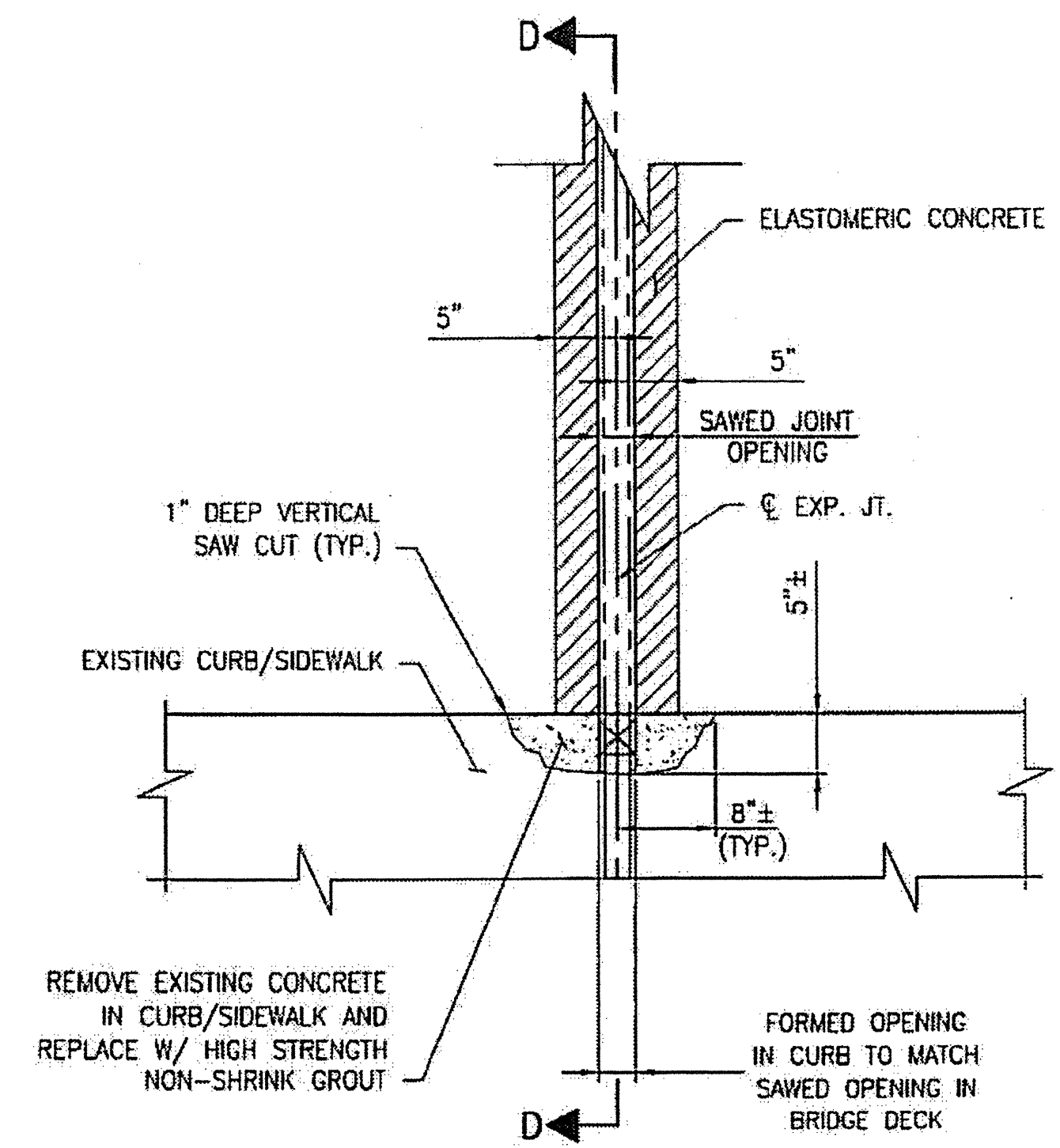


DRAWN BY: J.D. GOODIN DATE: 12-08-11
CHECKED BY: R.C. LARSON DATE: 12-08-11

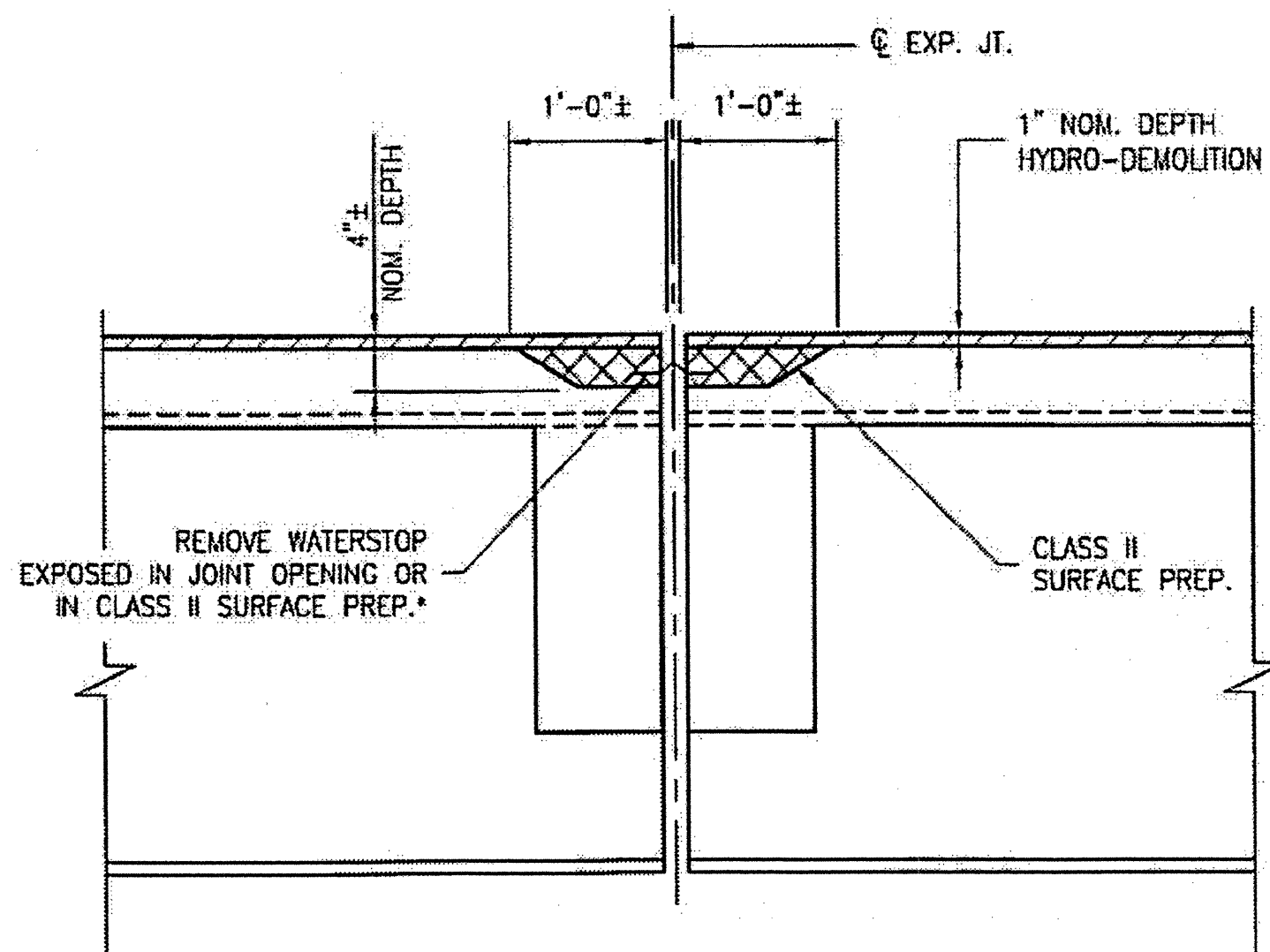
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-30
1			3			TOTAL SHEETS
2			4			54



TYPICAL SECTION SPANS A - D

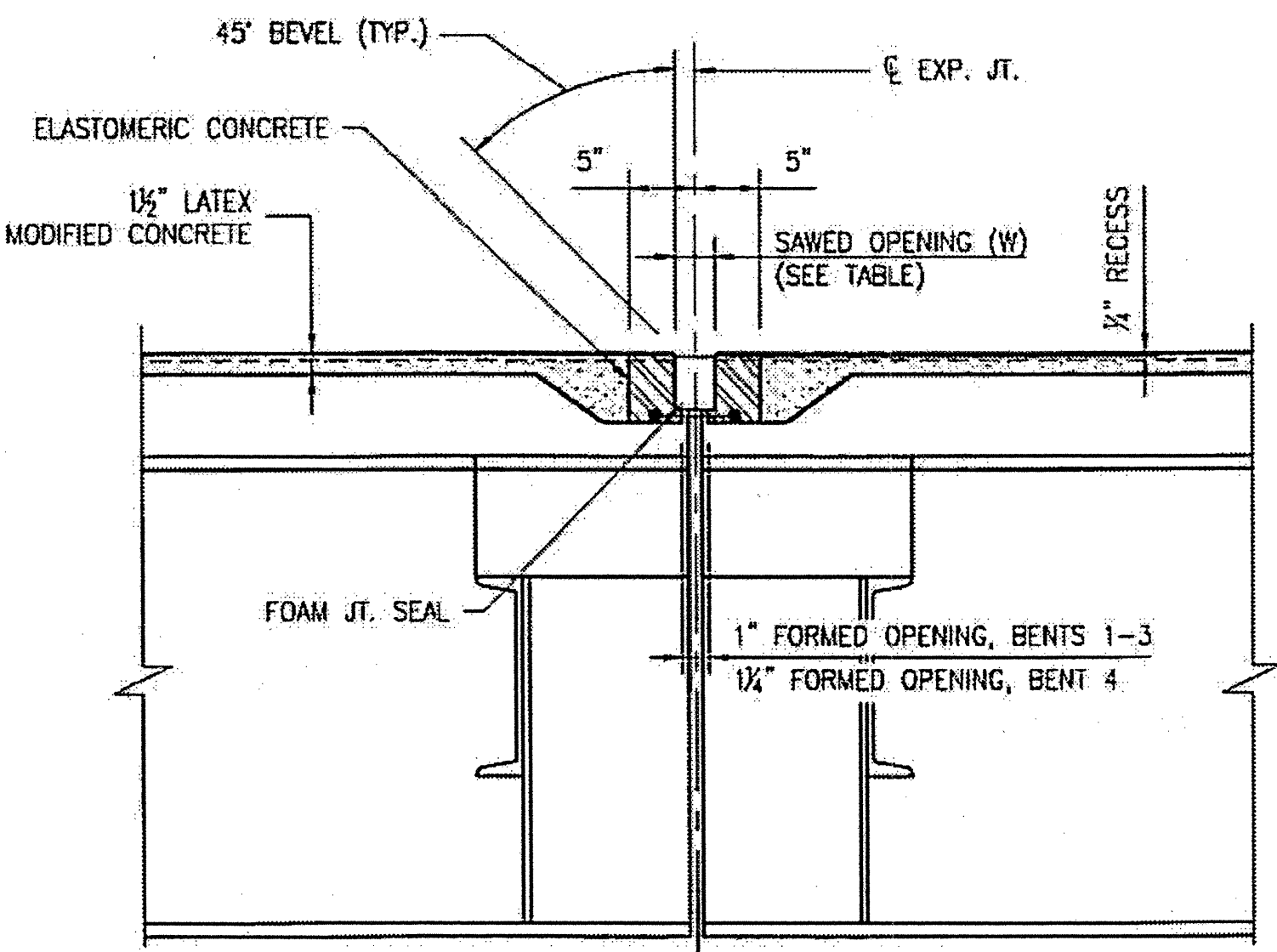


PARTIAL PLAN @ JOINT



SECTION B-B

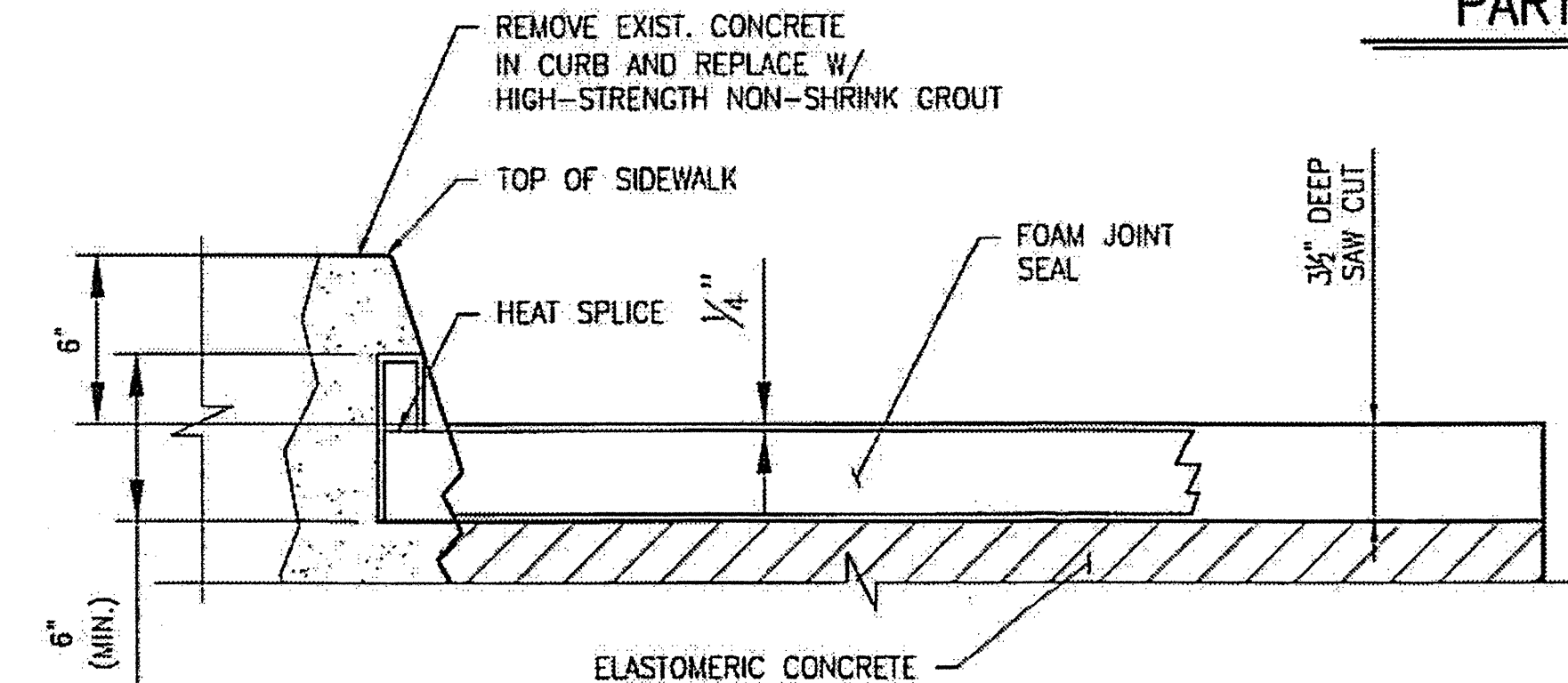
EST. MAX. EXISTING JOINT DEMOLITION
 NOTES: RETAIN ALL EXIST. REINF. STEEL.
 CLEAN AND REPAIR AS REQ'D.
 ALL EXISTING JT. SEAL MATERIALS
 ARE TO BE COMPLETELY REMOVED.
 * FROM BEST AVAILABLE INFORMATION.



SECTION B-B

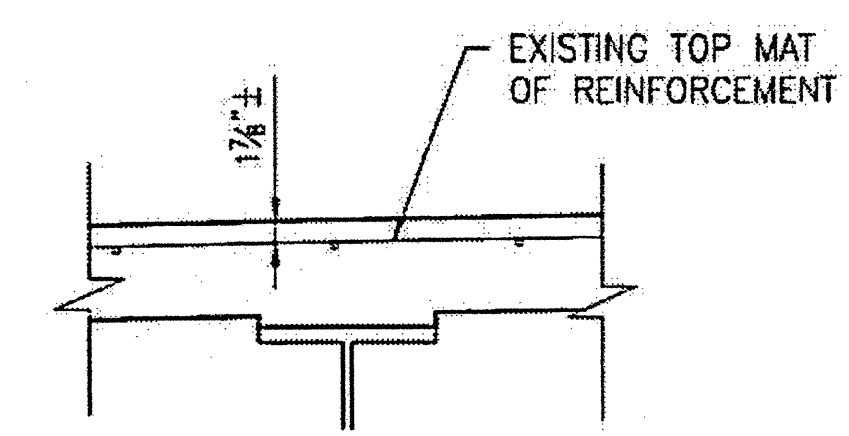
FOAM JOINT SEAL
 NOTES: USE 2 1/2" WIDE UNCOMPRESSED
 FOAM JOINT SEAL MATERIAL @
 BENTS 1-3.
 USE 2 3/16" WIDE UNCOMPRESSED
 FOAM JOINT SEAL MATERIAL @
 BENT 4.

FOAM JOINT SAWED OPENING (W) TABLE			
TEMP	45° F	60° F	90° F
BENTS 1-3	2"	1 7/8"	1 1/2"
BENT 4	2 5/16"	2"	1 3/4"



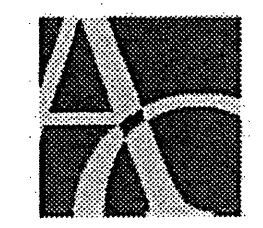
SECTION D-D

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



EXISTING SLAB SECTION

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS

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 Phone 919 981 0310 Fax 919 981 0451
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 A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
CLEVELAND COUNTY
 BRIDGE NO. 220080

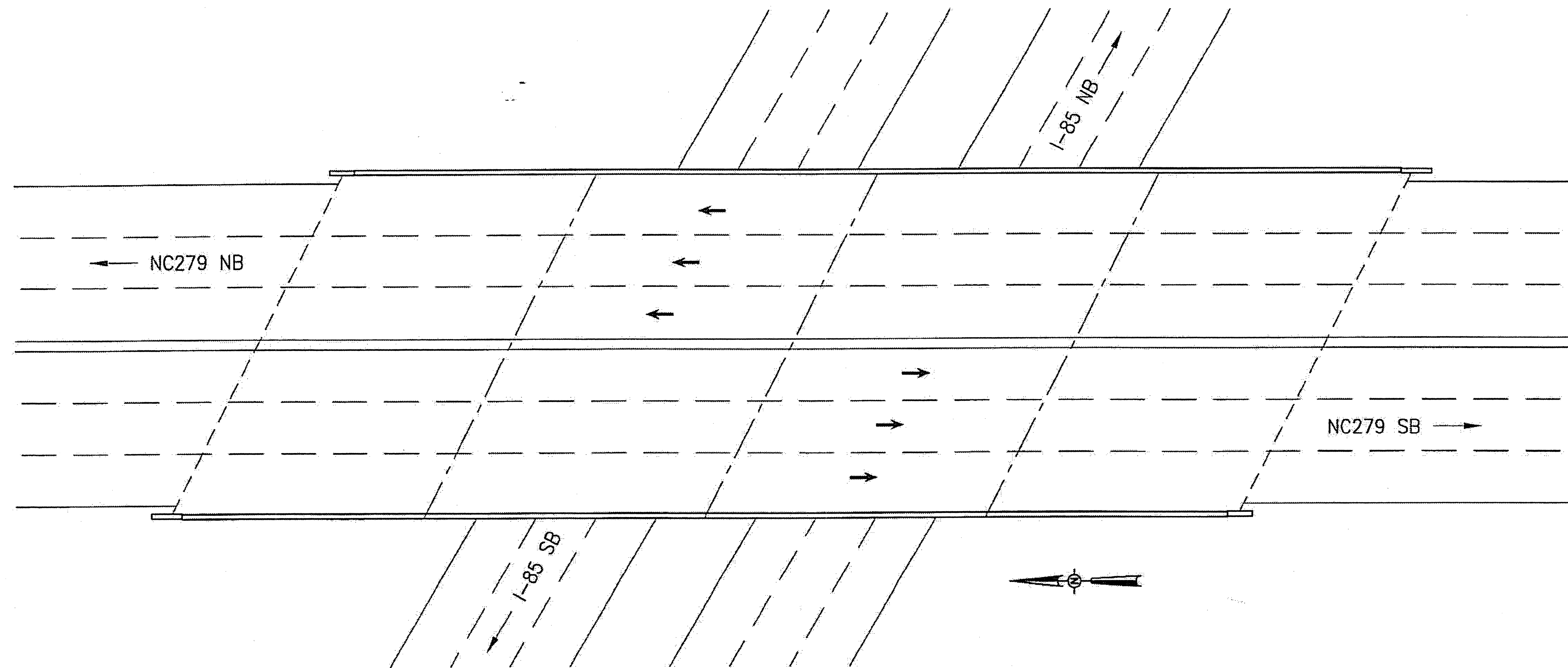
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION
 AND DETAILS



DRAWN BY: J.D. GOODIN DATE: 12-08-11
 CHECKED BY: R.C. LARSON DATE: 12-08-11

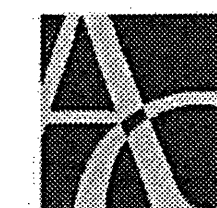
REVISIONS						SHEET NO.
NO	BY	DATE	NO	BY	DATE	S-31
1			3			TOTAL SHEETS
2			4			54



BRIDGE 350002 ON NC279

LOCATION: BRIDGE 350002 ACROSS I-85, 0.5 MILE WEST OF JUNCTION WITH US29 & US74.

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
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A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4

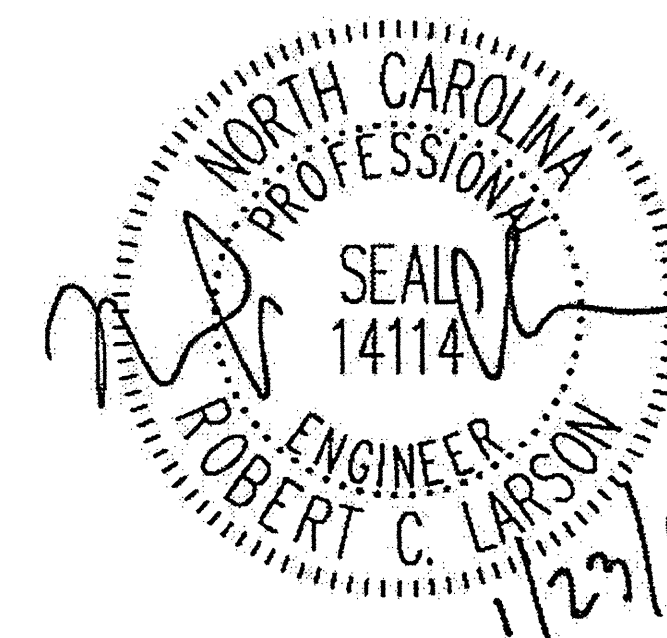
GASTON COUNTY

BRIDGE NO. 350002

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

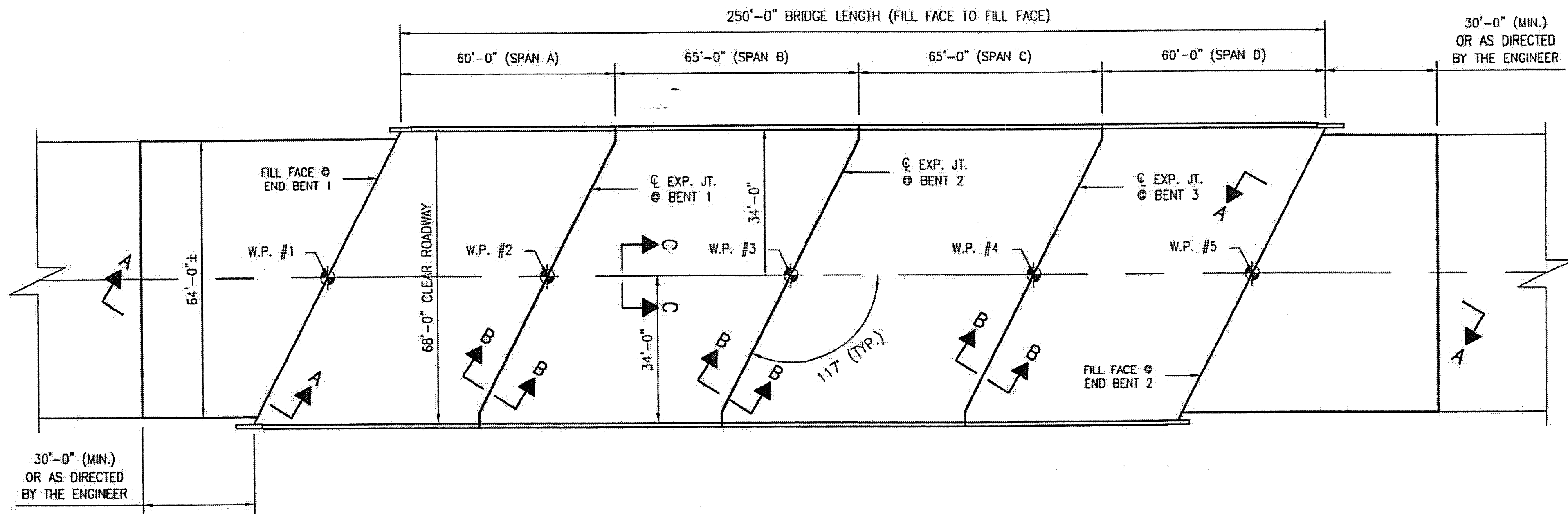
LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

TOTAL BILL OF MATERIAL							
SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	SQ. FT.
1,889	1,889	66	1,889	16,064	L.S.	46	659



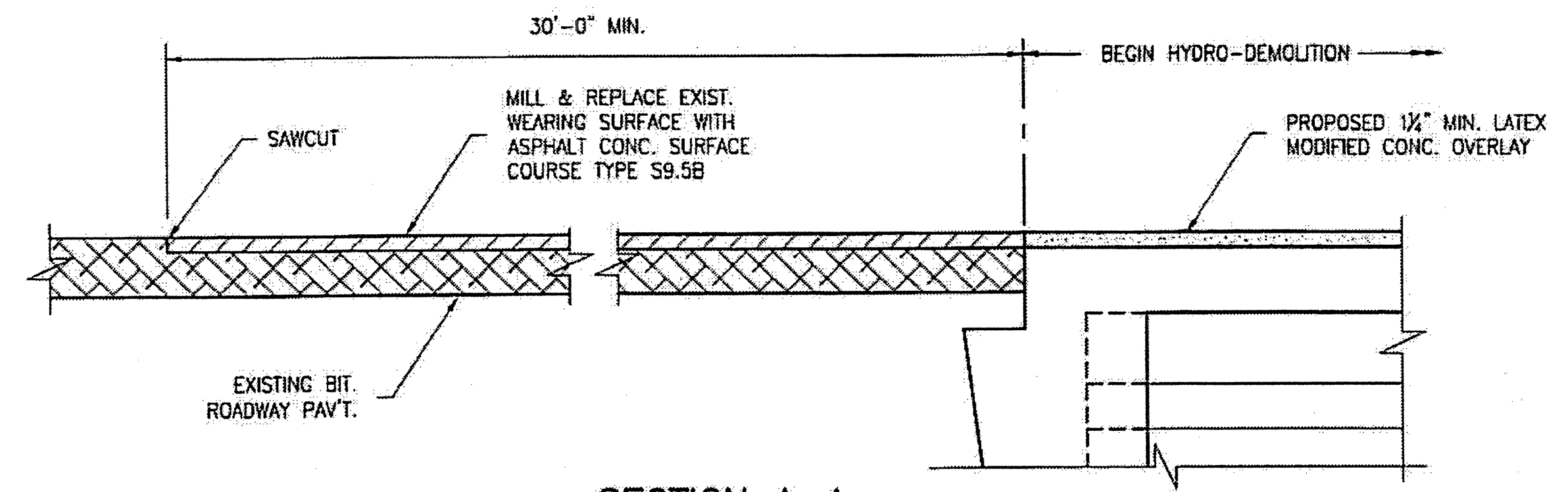
DRAWN BY: J.D. GOODIN DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-32
1			3			TOTAL SHEETS
2			4			54

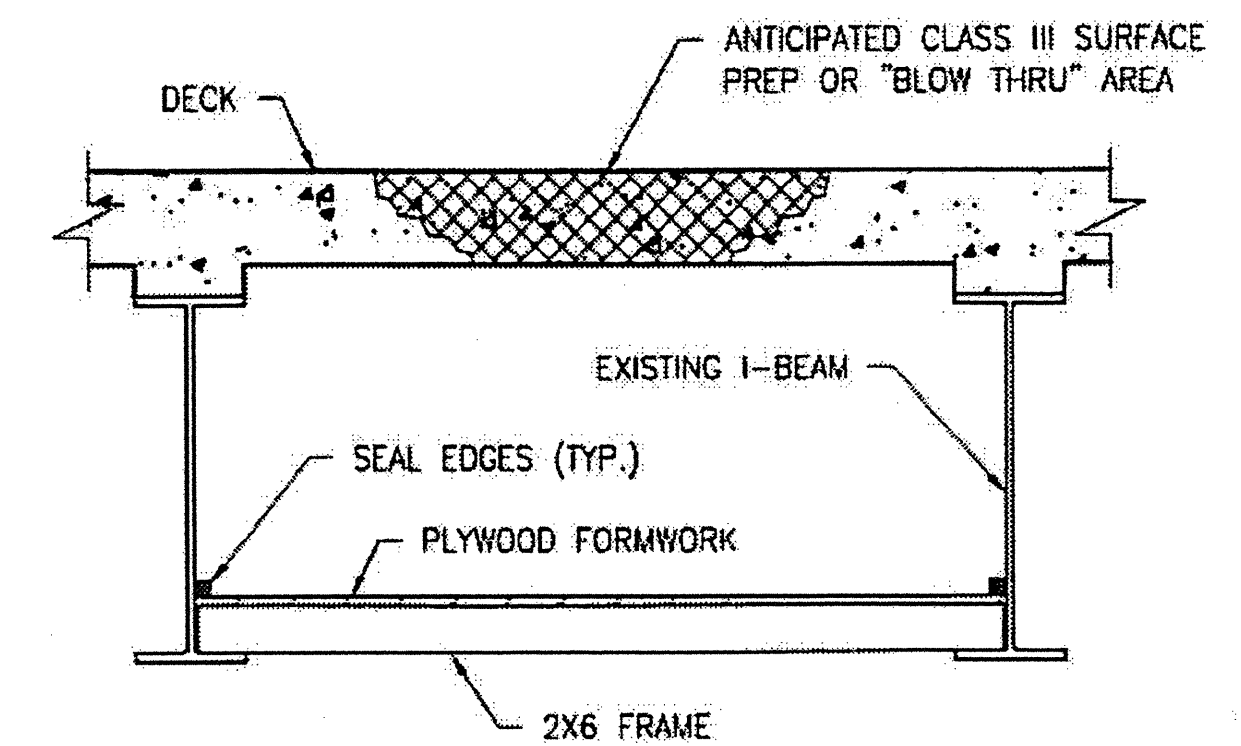


PLAN OF SPANS A - D

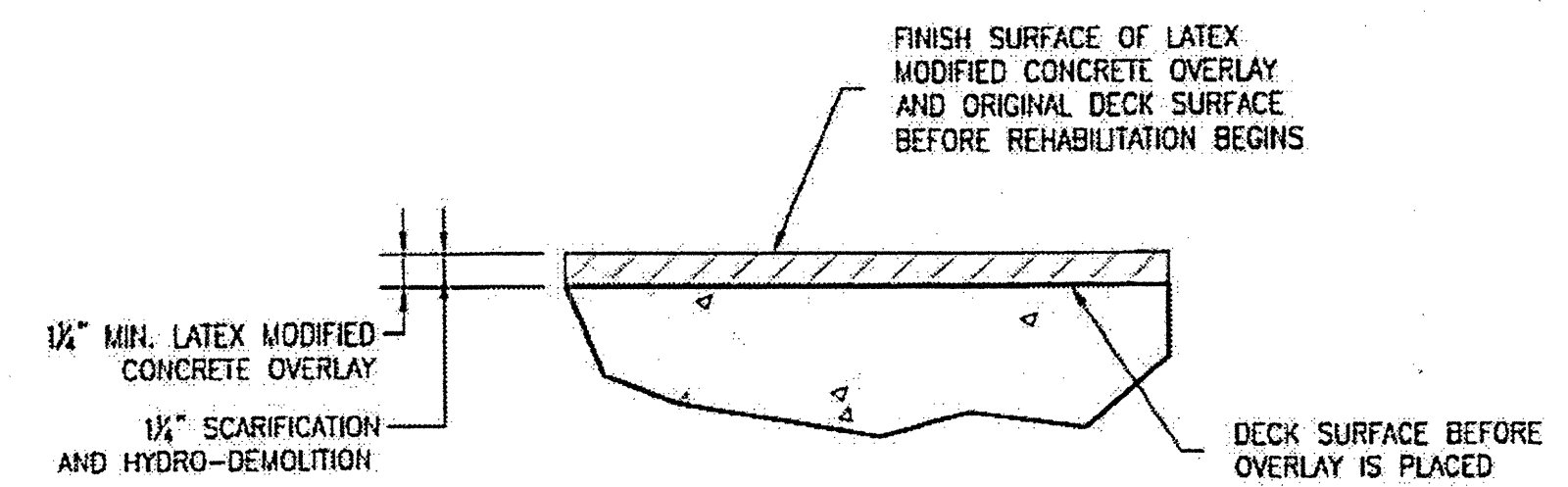
- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
 - FOR HYDRO DEMOLITION, SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR MUST COLLECT, TREAT, AND DISPOSE OF RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THRU OF THE DECK. SEE DETAIL, THIS SHEET.
 - FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR SECTION C-C, SEE SHEET S-34.
 - 1 1/2" BACKER ROD SHALL BE CLOSED CELL EXPANDED POLYETHYLENE FOAM TYPE L. PLACE BACKER ROD TO WITHIN 1'-0" OF EXISTING CURB FACE. NO SEPARATE PAYMENT FOR LABOR, MATERIALS, AND EQUIPMENT TO CONSTRUCT JOINT SEALS SHALL BE MADE. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.



SECTION A-A



TYPICAL BLOW THRU CONTAINMENT AND FORMWORK



DETAIL FOR LATEX MODIFIED CONC. OVERLAY

PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

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. YD. OF HYDRO-DEMOLITION.

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

PLAN PREPARED BY:

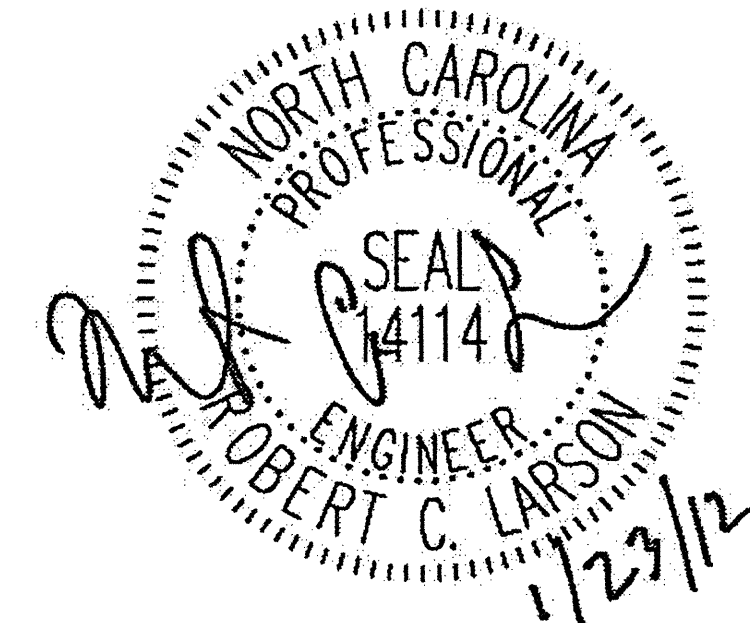


ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS
 4601 Lake Boone Trail, Ste. 300 Raleigh, NC 27607
 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1684 www.aogroup.com
 A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
 BRIDGE NO. 350002

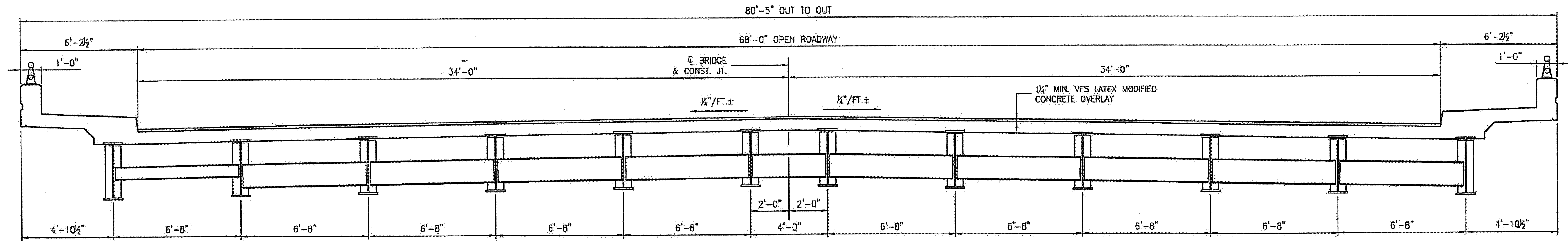
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DECK PLAN
 AND
 DETAILS

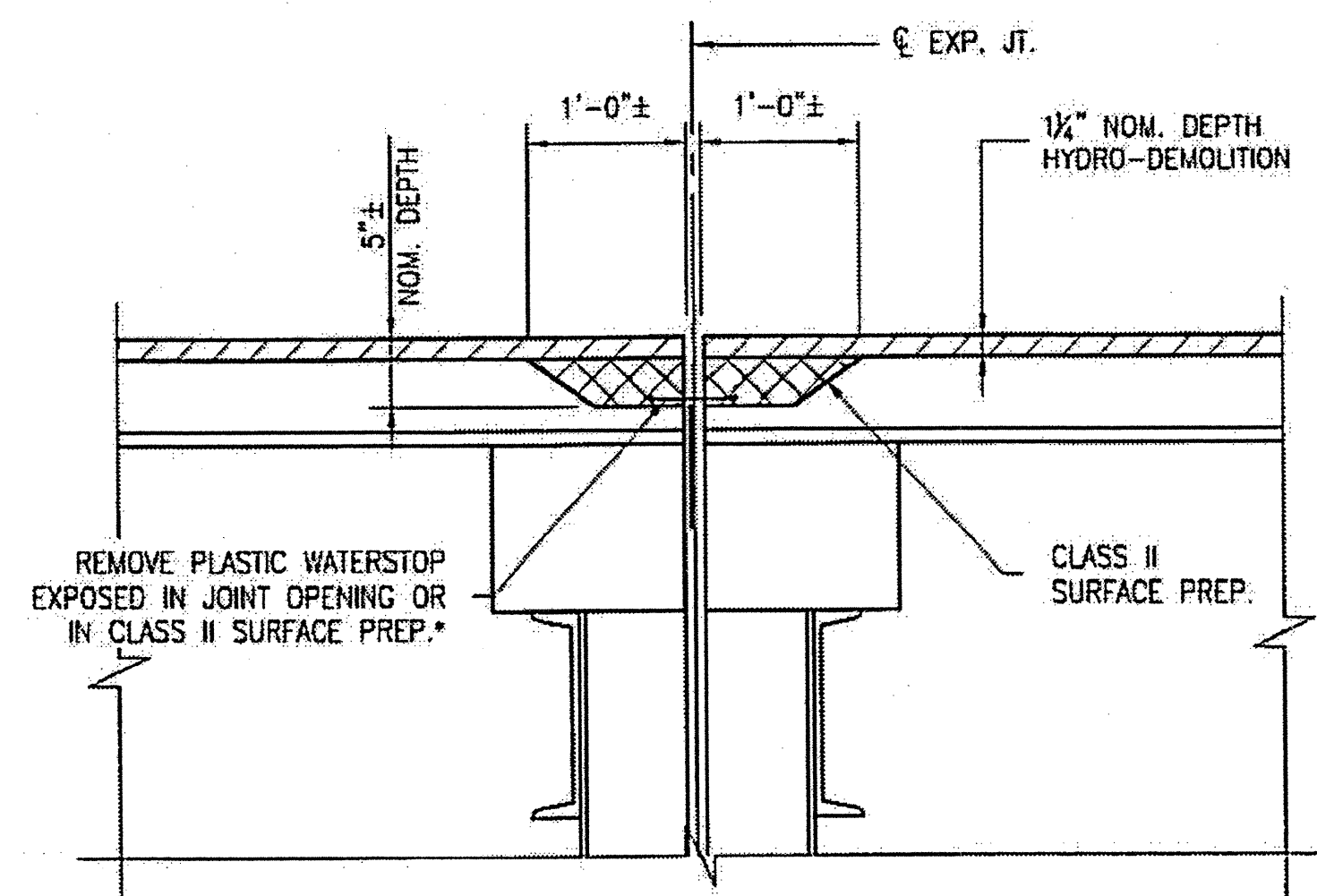


DRAWN BY: J.D. GOODIN DATE: 11-24-11
 CHECKED BY: R.C. LARSON DATE: 11-24-11

REVISIONS						SHEET NO. S-33
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			54



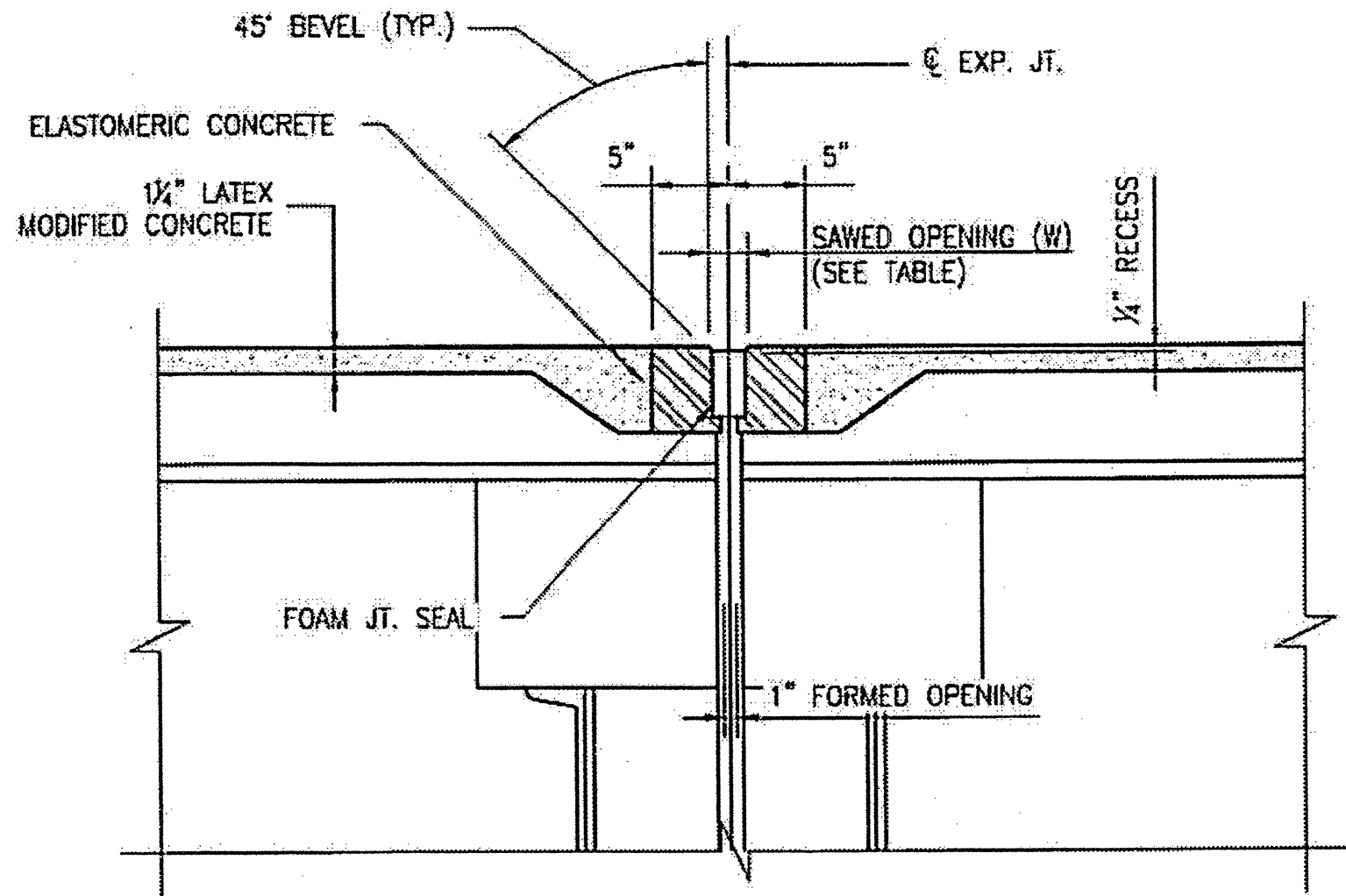
TYPICAL SECTION SPANS A - D



SECTION B-B

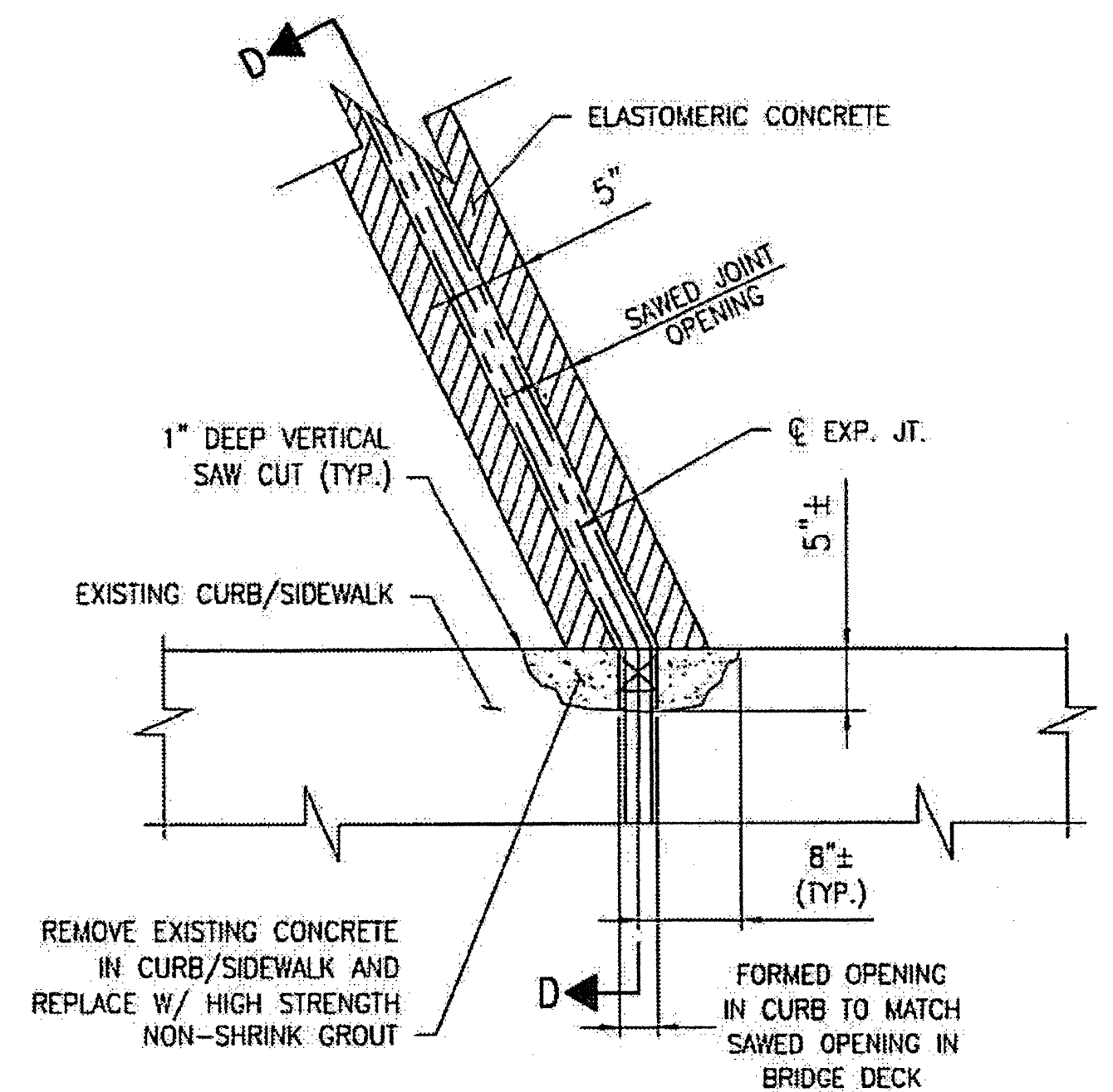
EST. MAX. EXISTING JOINT DEMOLITION
 NOTES: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D. ALL EXISTING JT. SEAL MATERIALS ARE TO BE COMPLETELY REMOVED. * FROM BEST AVAILABLE INFORMATION.

FOAM JOINT SAWED OPENING (W) TABLE			
TEMP.	45° F	60° F	90° F
BENTS 1-2	1 1/8"	1 7/8"	1 1/2"
BENT 3	2 1/8"	1 7/8"	1 1/2"

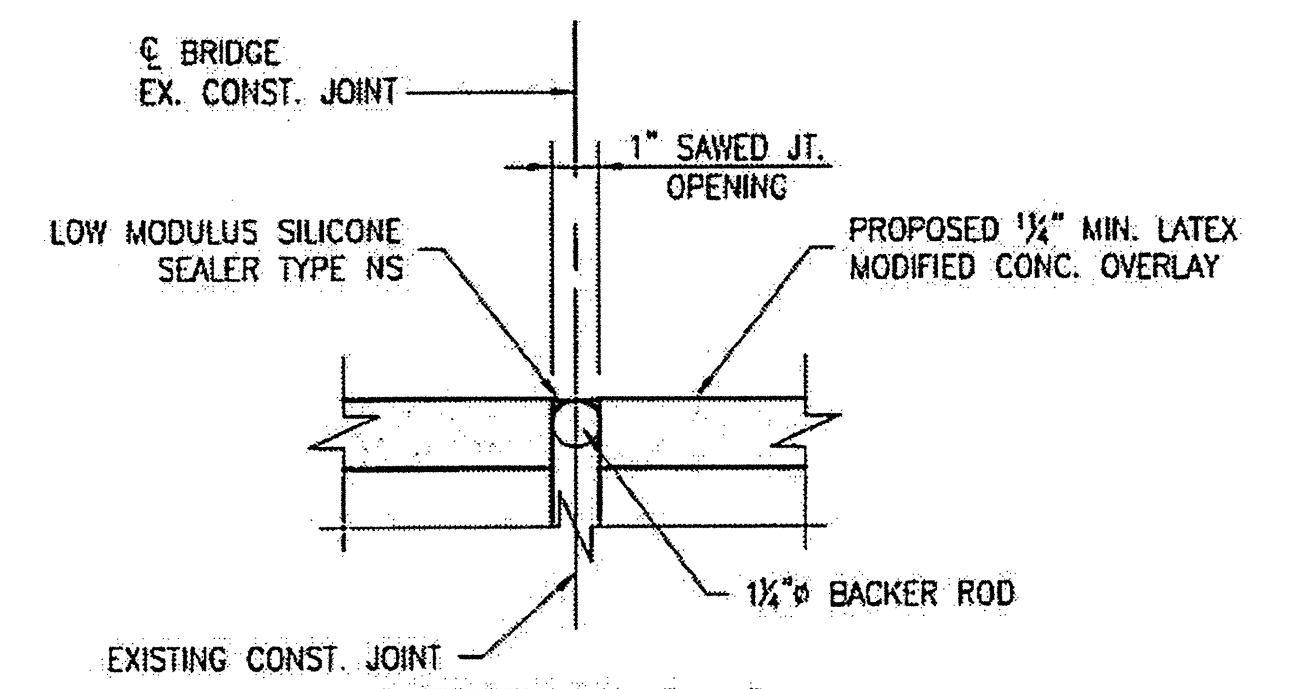


SECTION B-B

NOTES: USE 2 1/2" UNCOMPRESSED FOAM JOINT SEAL MATERIAL.



PARTIAL PLAN @ JOINT



SECTION C-C

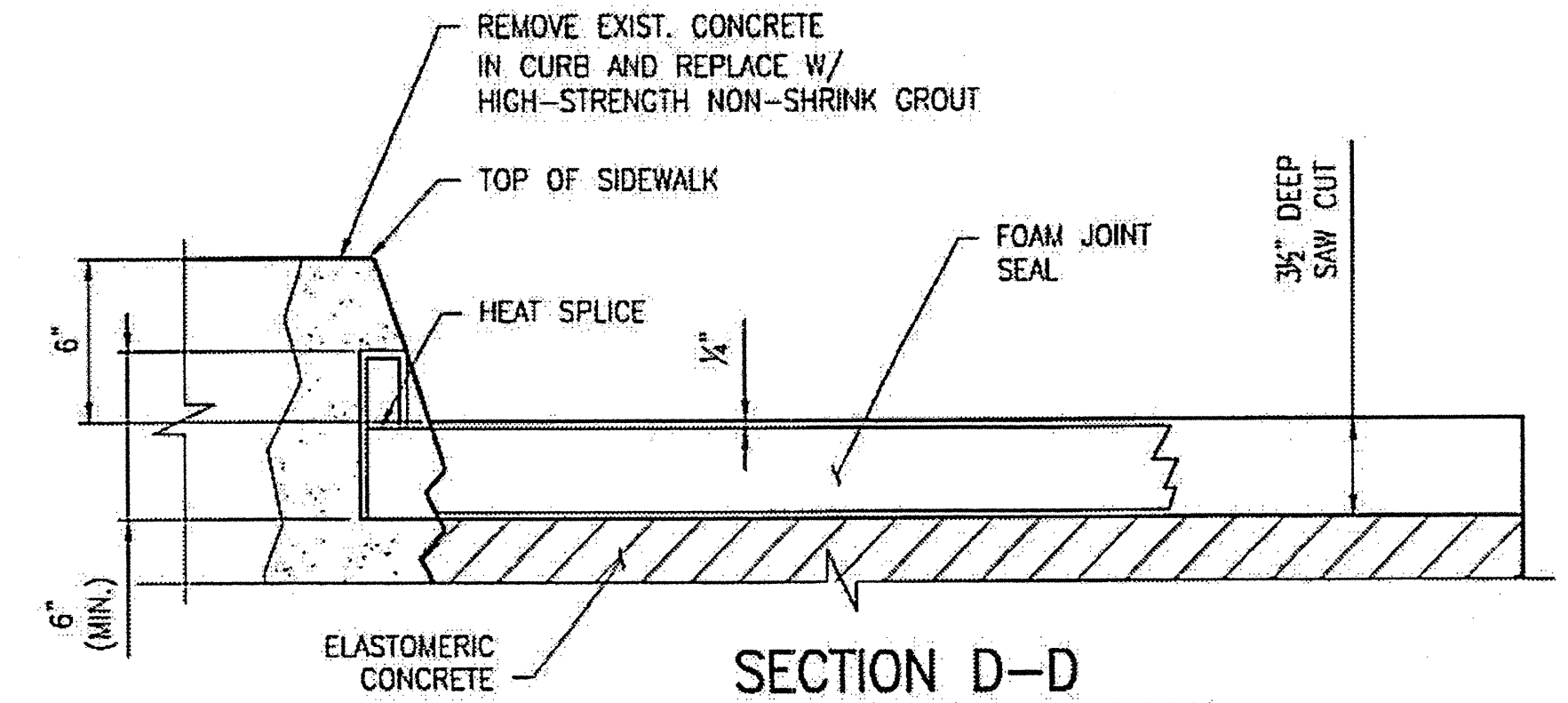
PLAN PREPARED BY:

ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS
 4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1684 www.aogroup.com
 A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
 BRIDGE NO. 350002

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION AND DETAILS

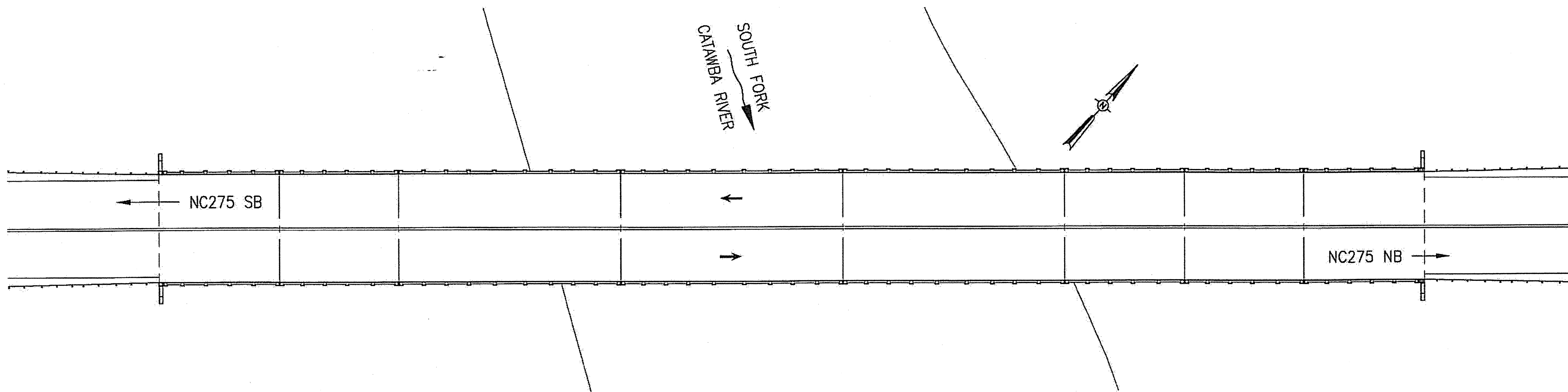


SECTION D-D

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

NORTH CAROLINA PROFESSIONAL SEAL
 14114
 ENGINEER
 ROBERT C. LARSON
 11/23/12

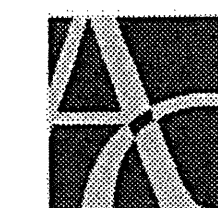
REVISIONS						SHEET NO. S-34
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 54
2			4			



BRIDGE 350056 ON NC275

LOCATION: BRIDGE 350056 ACROSS S. FORK CATAWBA RIVER,
0.1 MI. WEST OF JUNCTION OF SR1836.

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4

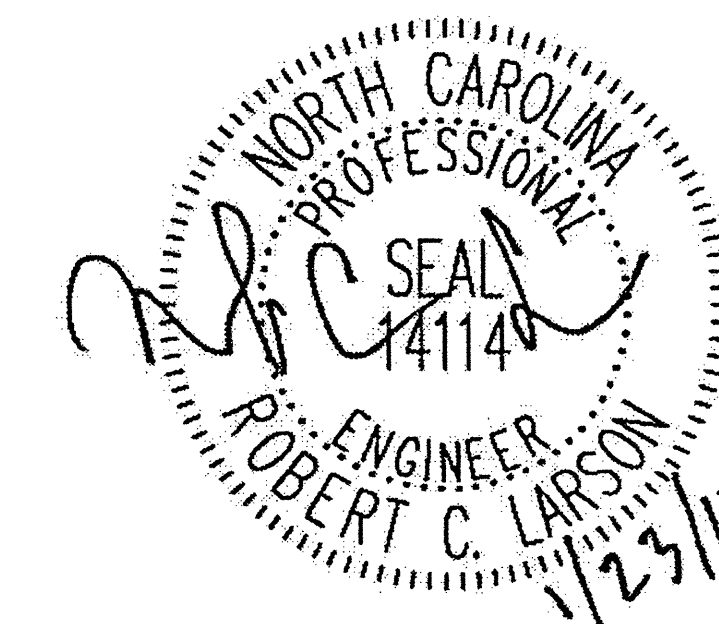
GASTON COUNTY

BRIDGE NO. 350056

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

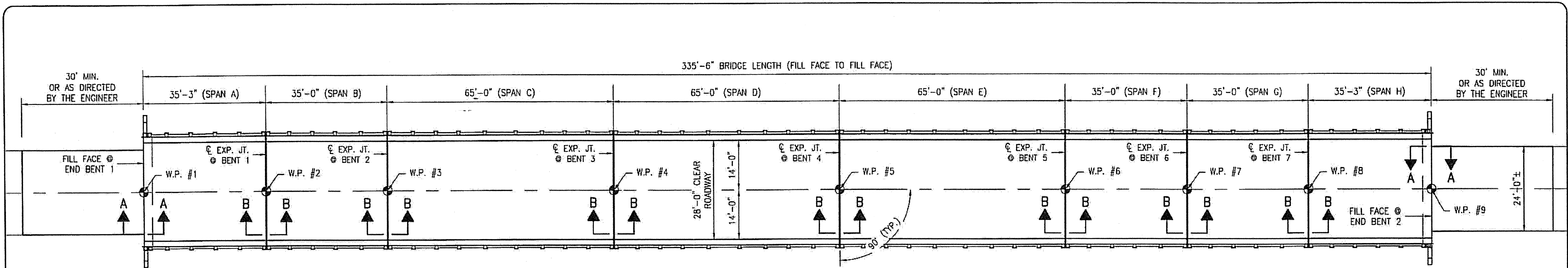
LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

TOTAL BILL OF MATERIAL							
SCARIFYING OF BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY- VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	SQ. YD.
1,044	1,044	44	1,044	8,183	L.S.	13	160



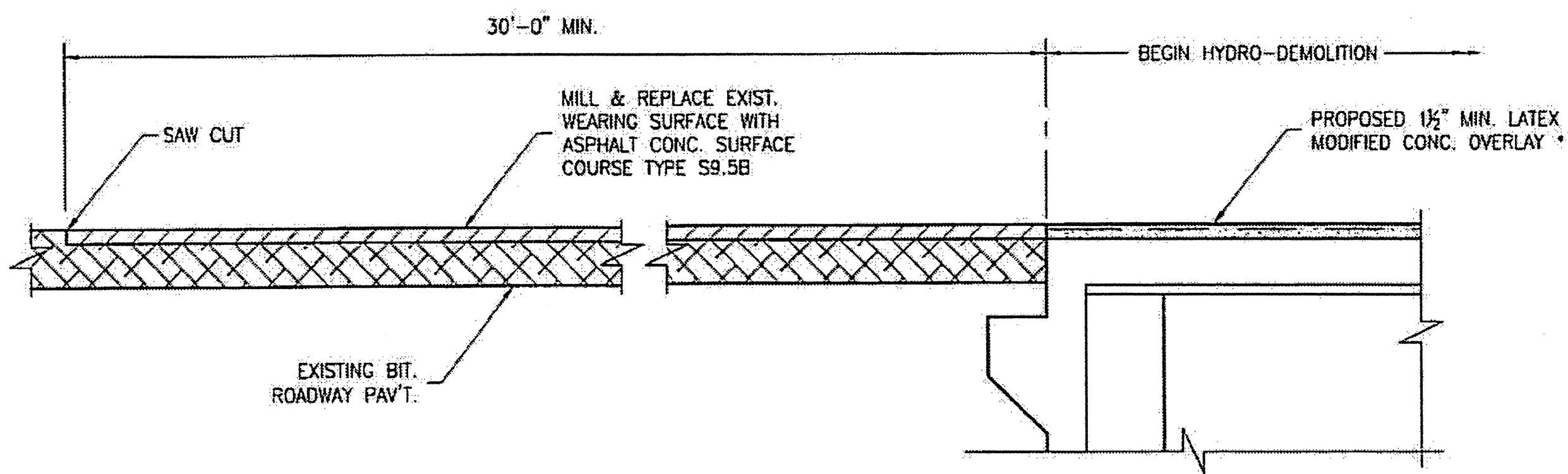
DRAWN BY: J.D. GOODIN DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

REVISIONS						SHEET NO.
NO	BY:	DATE:	NO	BY:	DATE:	S-35
1			3			TOTAL SHEETS
2			4			54



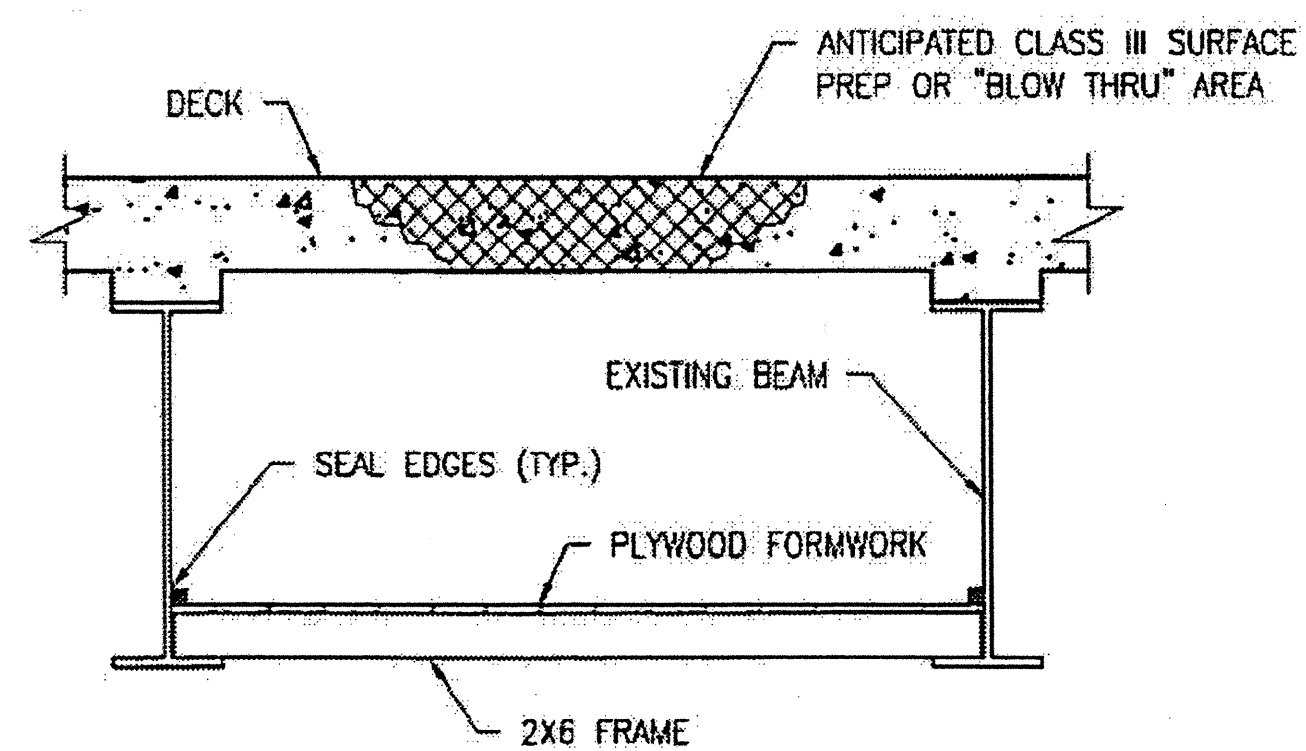
BRIDGE 350056 ON NC275

- NOTES:**
- EXISTING 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 RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK. SEE DETAIL, THIS SHEET.
 - FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR SECTION B-B, SEE SHEET S-37.



SECTION A-A

• RAISE EXISTING CONC. DECK ELEVATION BY 1/2"



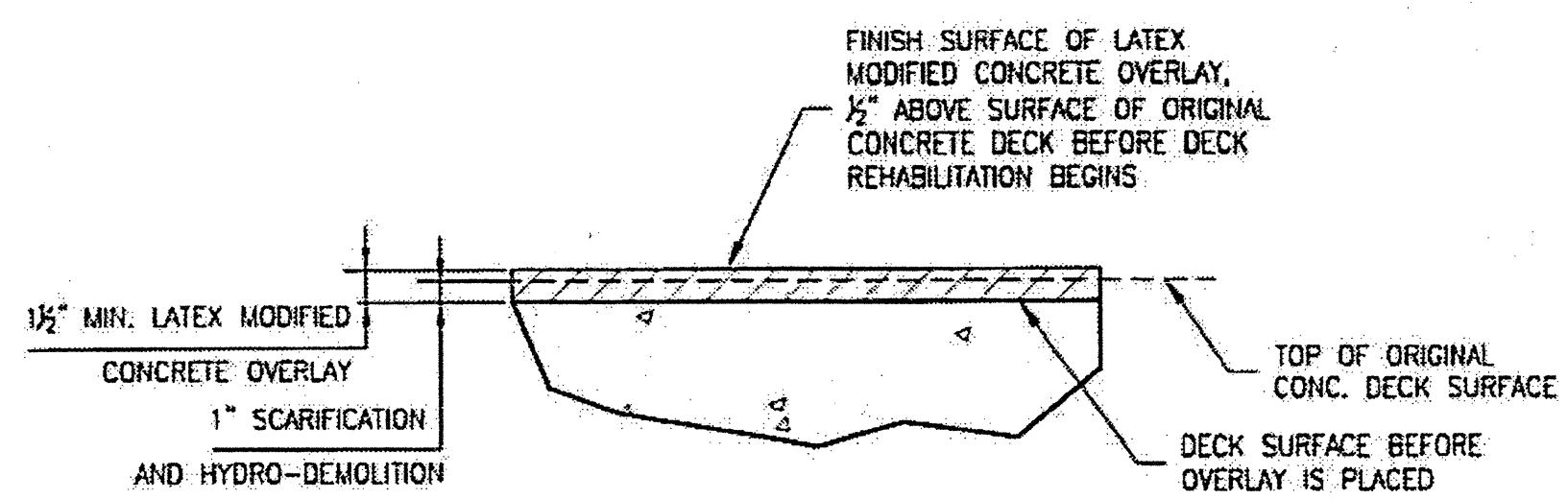
TYPICAL BLOW THRU CONTAINMENT AND FORMWORK

PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

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

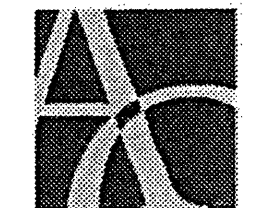
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YD. OF HYDRO-DEMOLITION.

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



DETAIL FOR LATEX MODIFIED CONC. OVERLAY

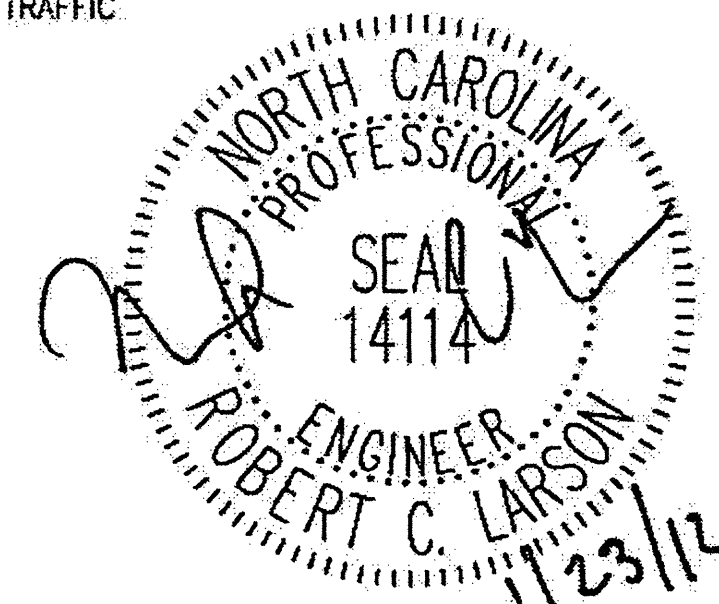
PLAN PREPARED BY:



ALPHA & OMEGA GROUP
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 4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1684 www.aogroup.com
 A & O PROJECT #: 2011.031

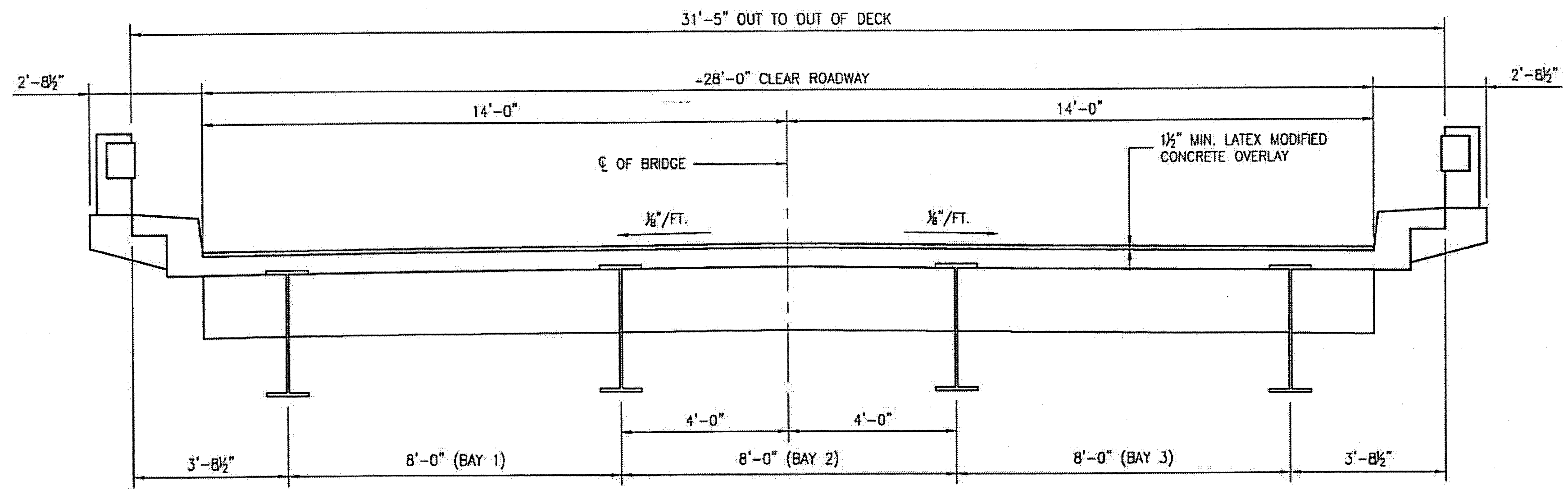
PROJECT NO. WBS 17BP.12P.4
GASTON COUNTY
 BRIDGE NO. 350056

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE PLAN
 AND DETAILS

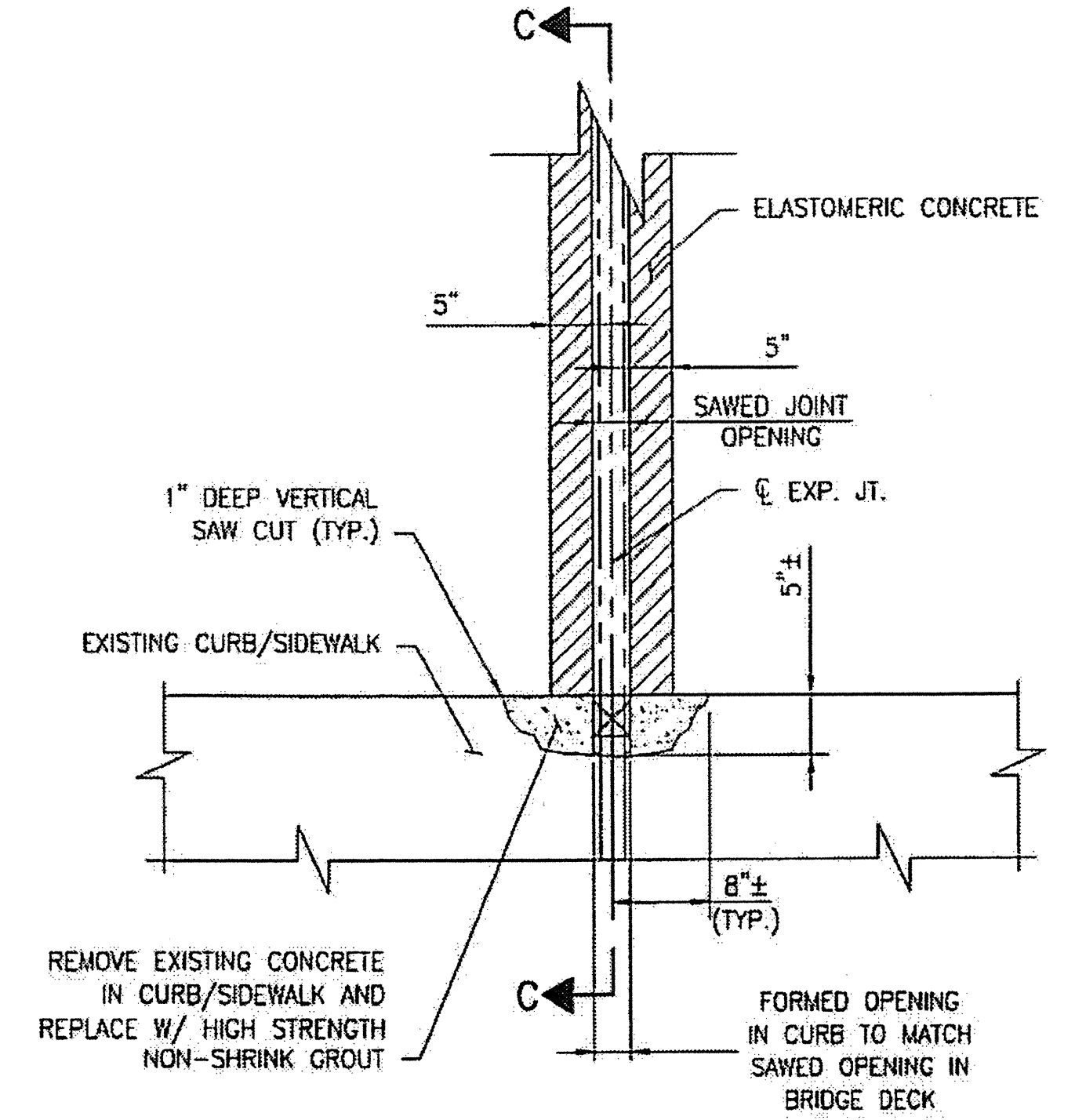


DRAWN BY: J.D. GOODIN DATE: 11-24-11
 CHECKED BY: R.C. LARSON DATE: 11-24-11

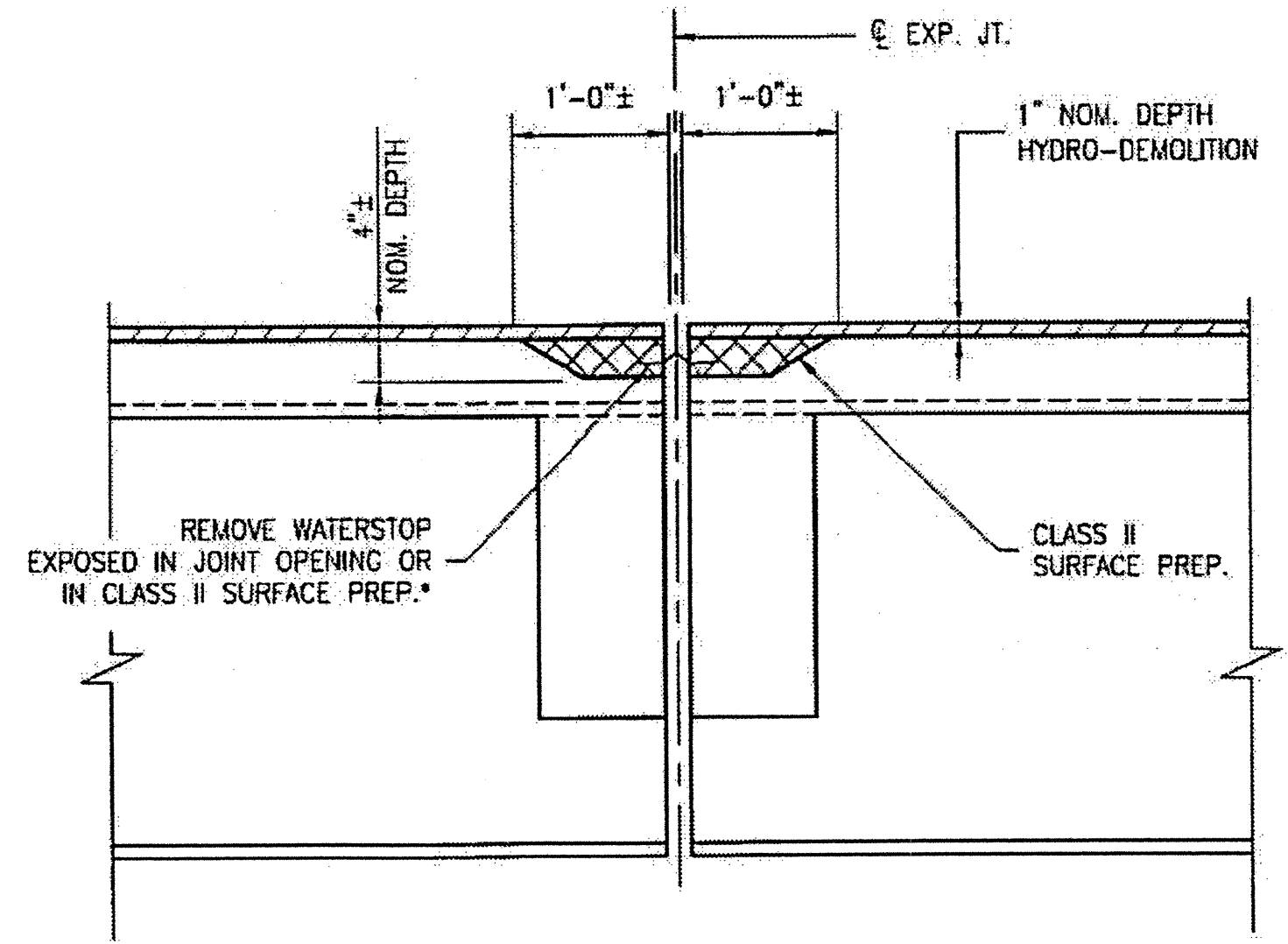
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36	
1			3			TOTAL SHEETS	
2			4			54	



TYPICAL SECTION SPANS A - D

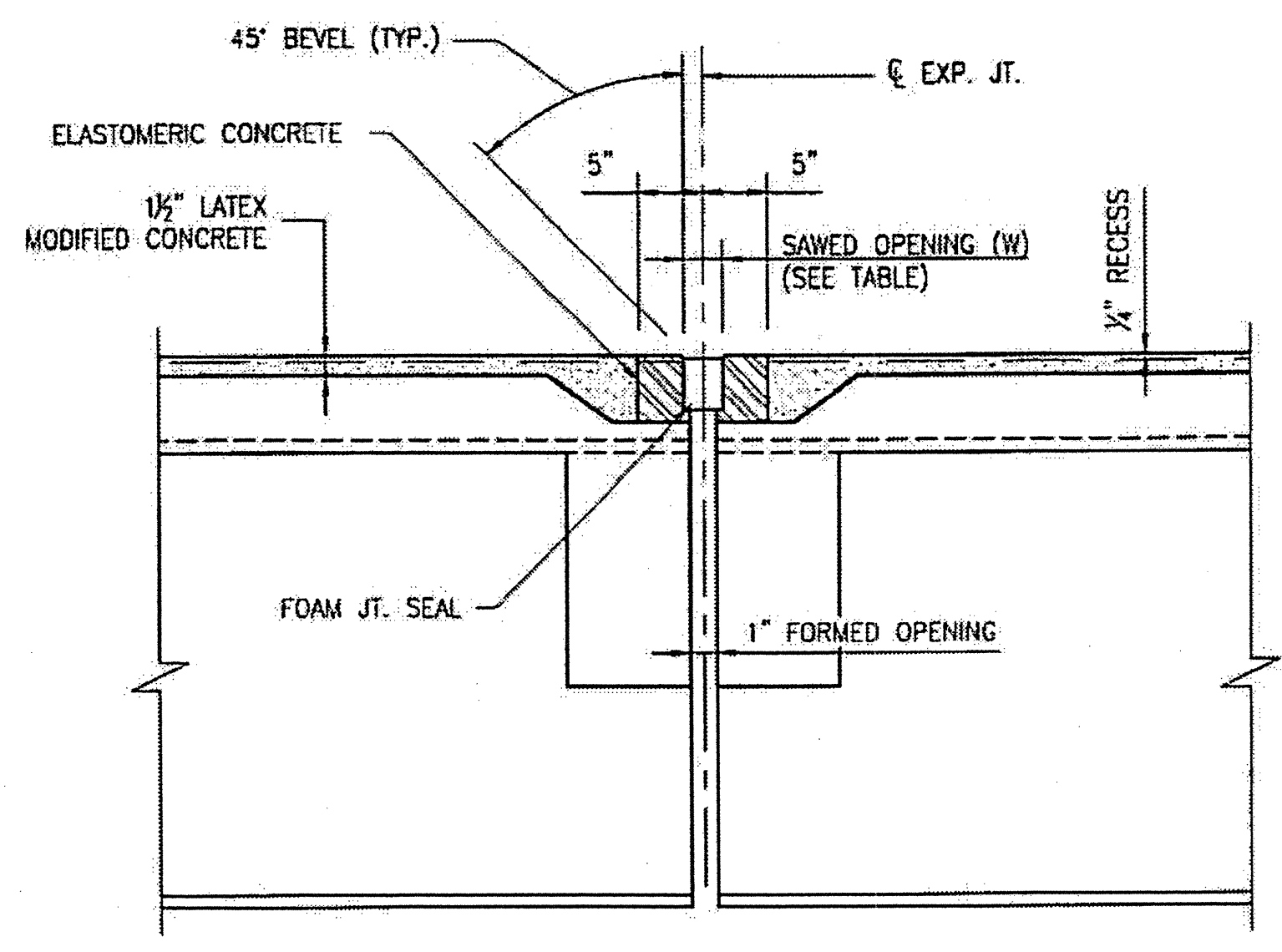


PARTIAL PLAN @ JOINT



SECTION B-B

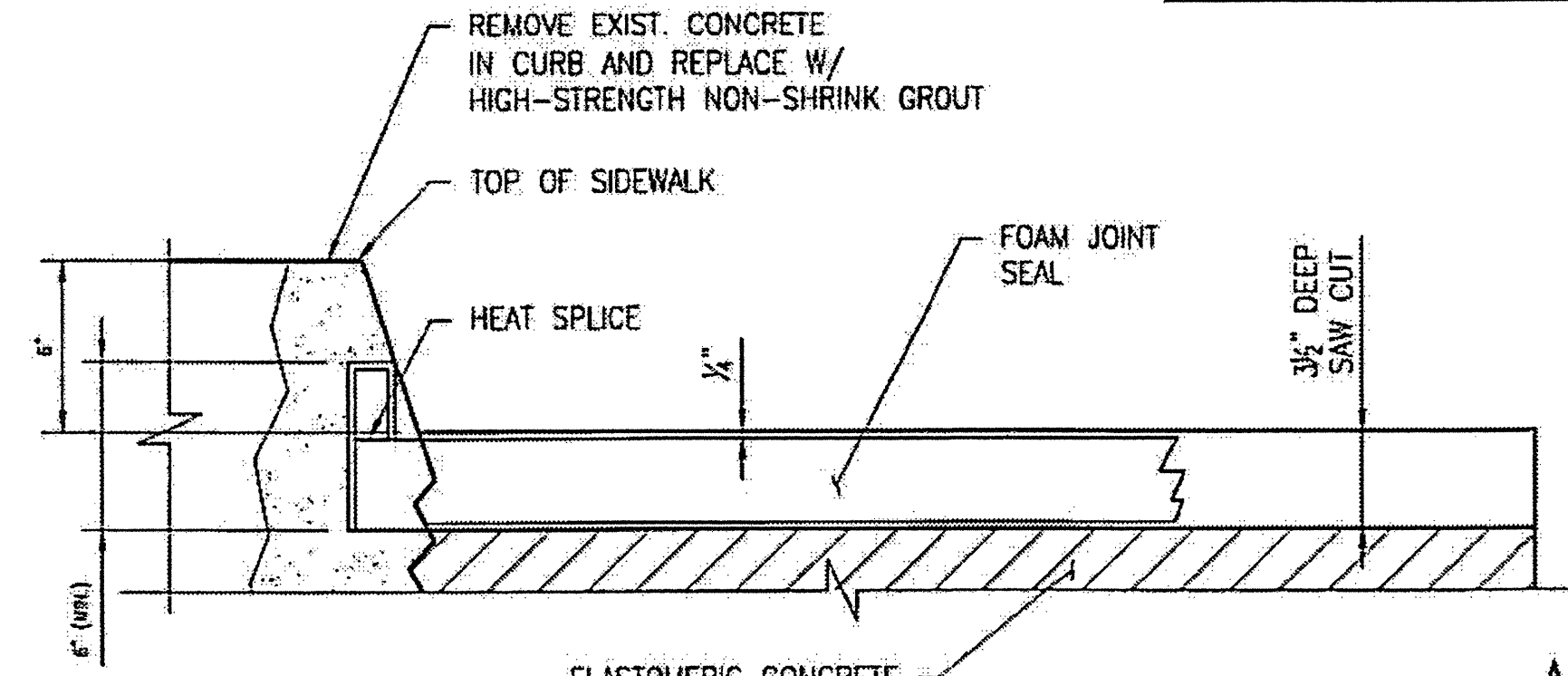
EST. MAX. EXISTING JOINT DEMOLITION
 NOTES: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D. ALL EXISTING JT. SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.
 * FROM BEST AVAILABLE INFORMATION.



SECTION B-B

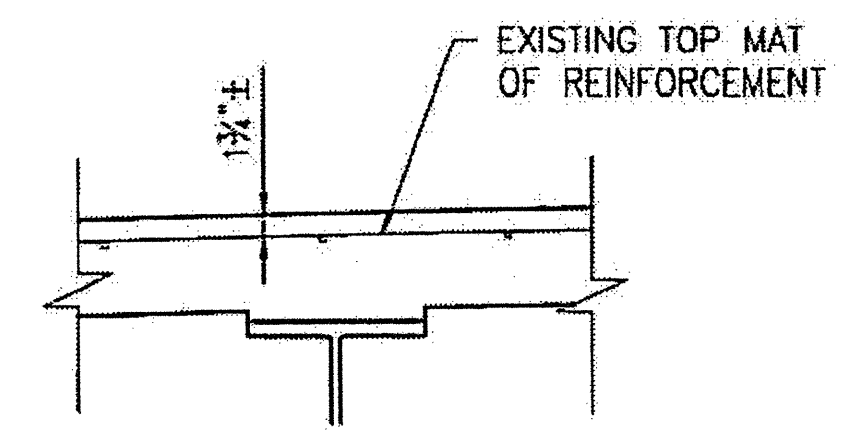
FOAM JOINT SEAL
 NOTES: USE 2 1/2" WIDE UNCOMPRESSED FOAM JOINT SEAL MATERIAL.

FOAM JOINT SAWED OPENING (W) TABLE			
TEMP	45° F	60° F	90° F
BENTS 1-2	1 1/4"	1 7/8"	1 3/4"
BENTS 3-5	2"	1 7/8"	1 1/2"
BENT 6	1 3/4"	1 7/8"	1 3/4"
BENT 7	2"	1 7/8"	1 1/2"



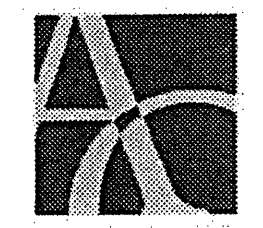
SECTION C-C

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



EXISTING SLAB SECTION

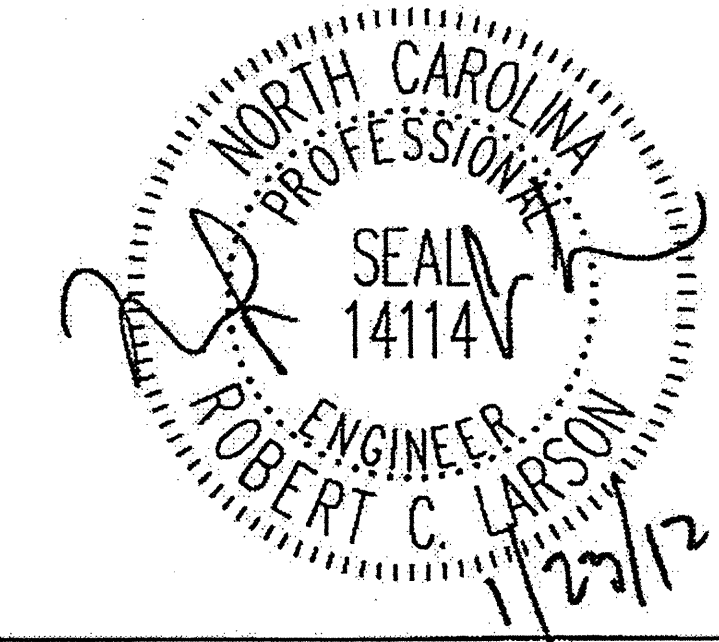
PLAN PREPARED BY:



ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS
 1601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1684 www.aogroup.com
 A & O PROJECT #: 2011.031

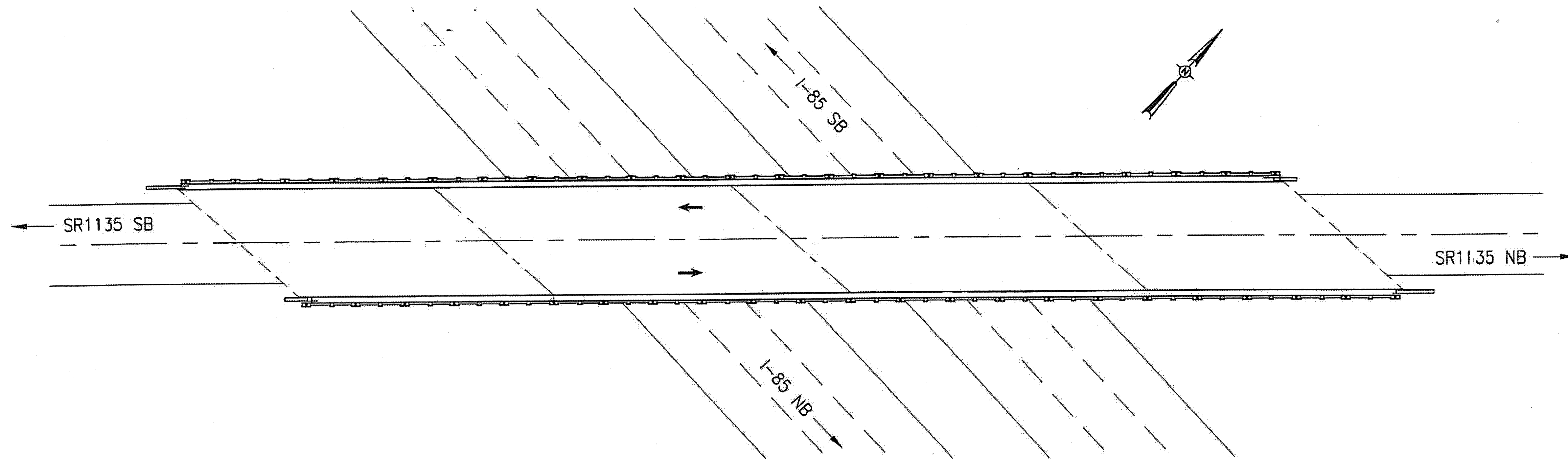
PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
 BRIDGE NO. 350056

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 TYPICAL SECTION AND DETAILS



DRAWN BY: J.D. GOODIN DATE: 11-24-11
 CHECKED BY: R.C. LARSON DATE: 11-24-11

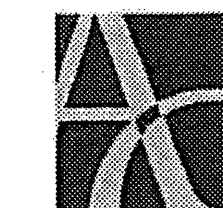
REVISIONS						SHEET NO.	
NO	BY	DATE	NO	BY	DATE	S-37	
1			3			TOTAL SHEETS	
2			4			54	



BRIDGE 350107 ON SR1335

LOCATION: BRIDGE 350107 ACROSS I-85, 0.4 MI. SOUTH OF JUNCTION OF NC274.

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com

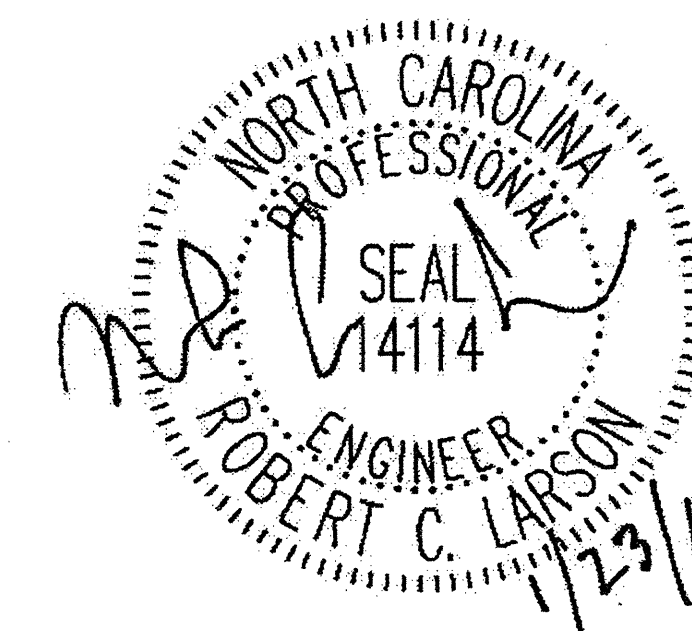
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
BRIDGE NO. 350107

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

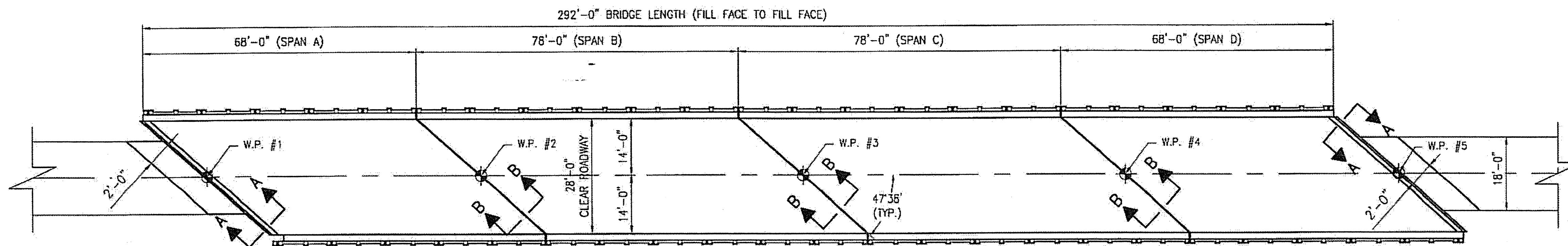
LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

TOTAL BILL OF MATERIAL							
SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	SQ. YD.
908	908	32	908	7,212	L.S.	1	12



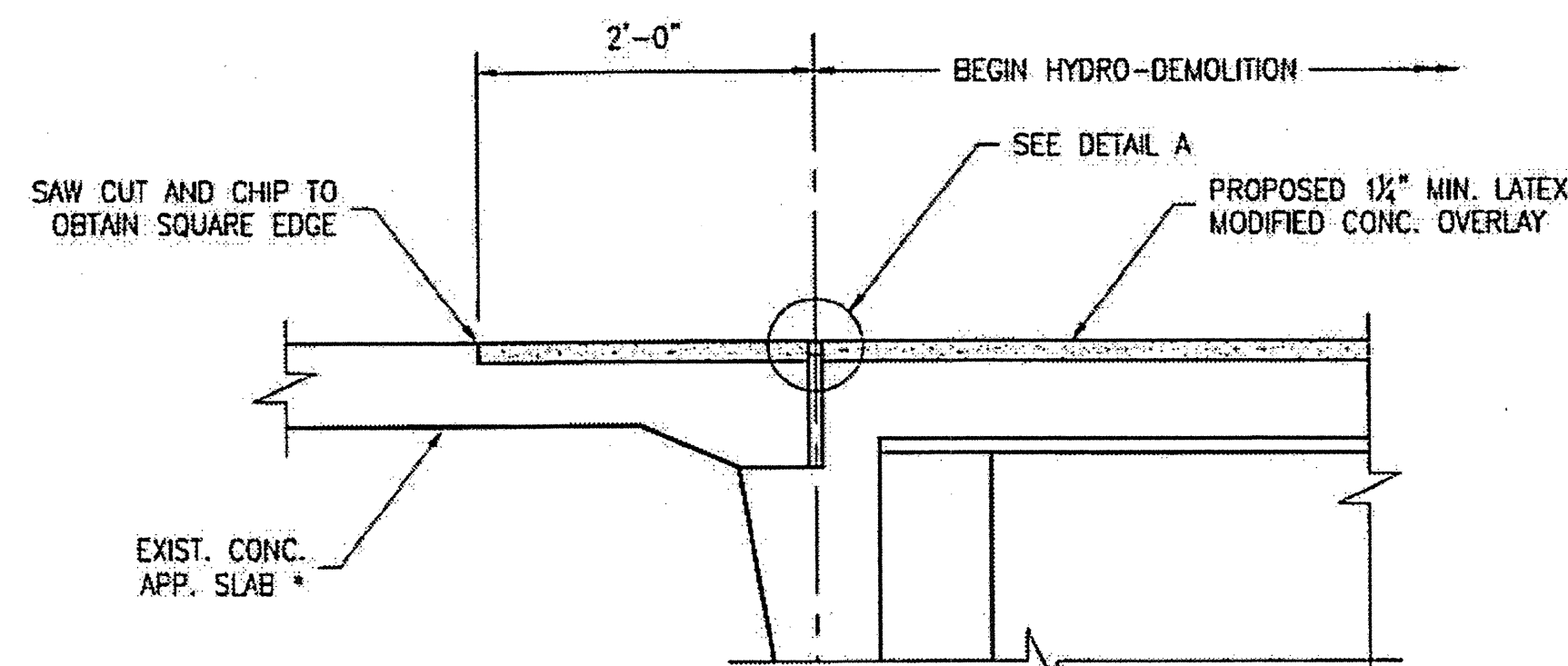
DRAWN BY: J.D. GOODIN DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS
2			4			54



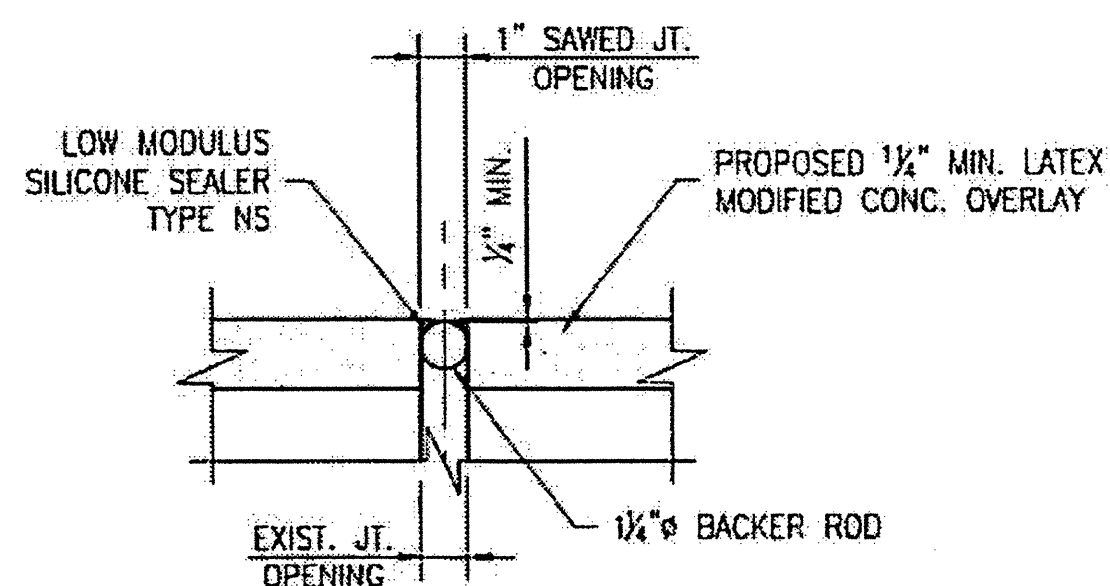
PLAN OF SPANS A - D

- NOTES:
- EXISTING 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 RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THRU OF THE DECK. SEE DETAIL, THIS SHEET.
 - FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR SECTION B-B SEE SHEET S-40.
 - 1 1/4" BACKER ROD SHALL BE CLOSED CELL EXPANDED POLYETHYLENE FOAM TYPE L. PLACE BACKER ROD TO WITHIN 1'-0" OF EXISTING CURB FACE. NO SEPARATE PAYMENT FOR LABOR, MATERIALS, AND EQUIPMENT TO CONSTRUCT JOINT SEALS SHALL BE MADE. COSTS FOR THIS WORK SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

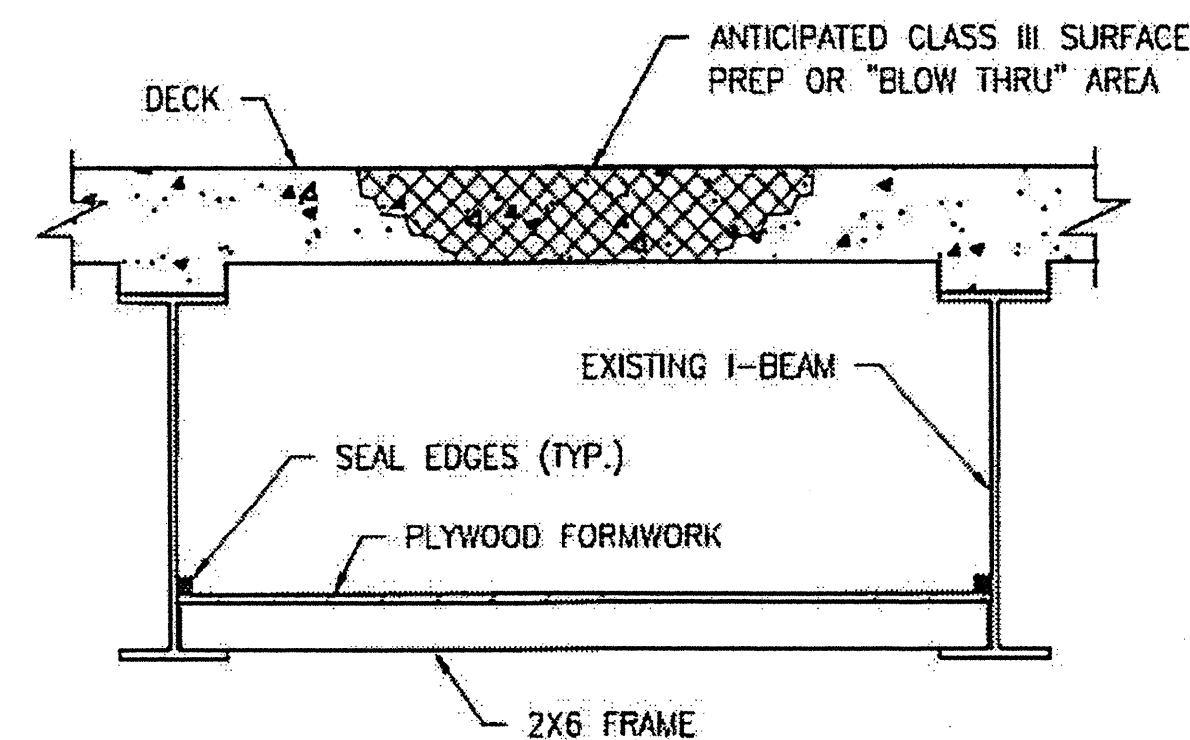


SECTION A-A

* MILL EXIST. BRIDGE APPROACH SLAB AND OVERLAY W/ 1/4" OF LATEX MODIFIED CONCRETE.



DETAIL A



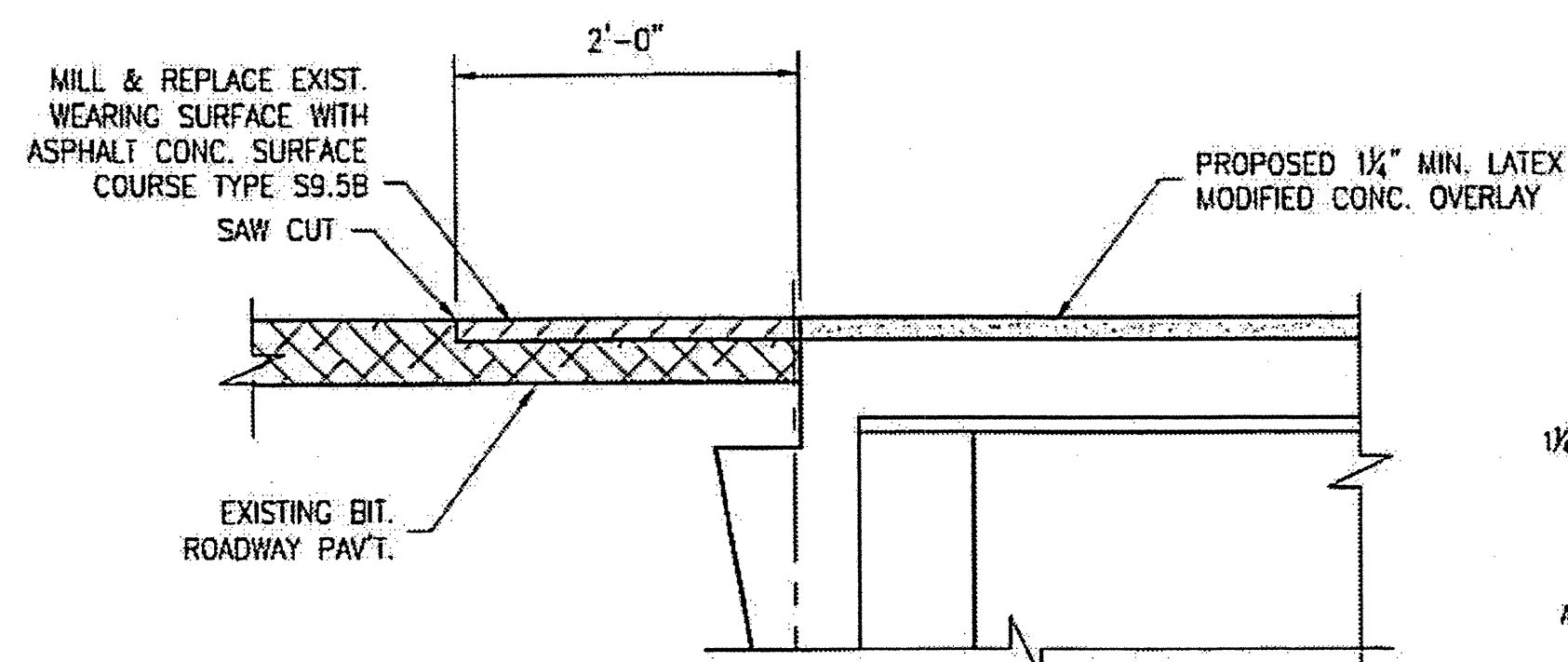
TYPICAL BLOW THRU CONTAINMENT AND FORMWORK

PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

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

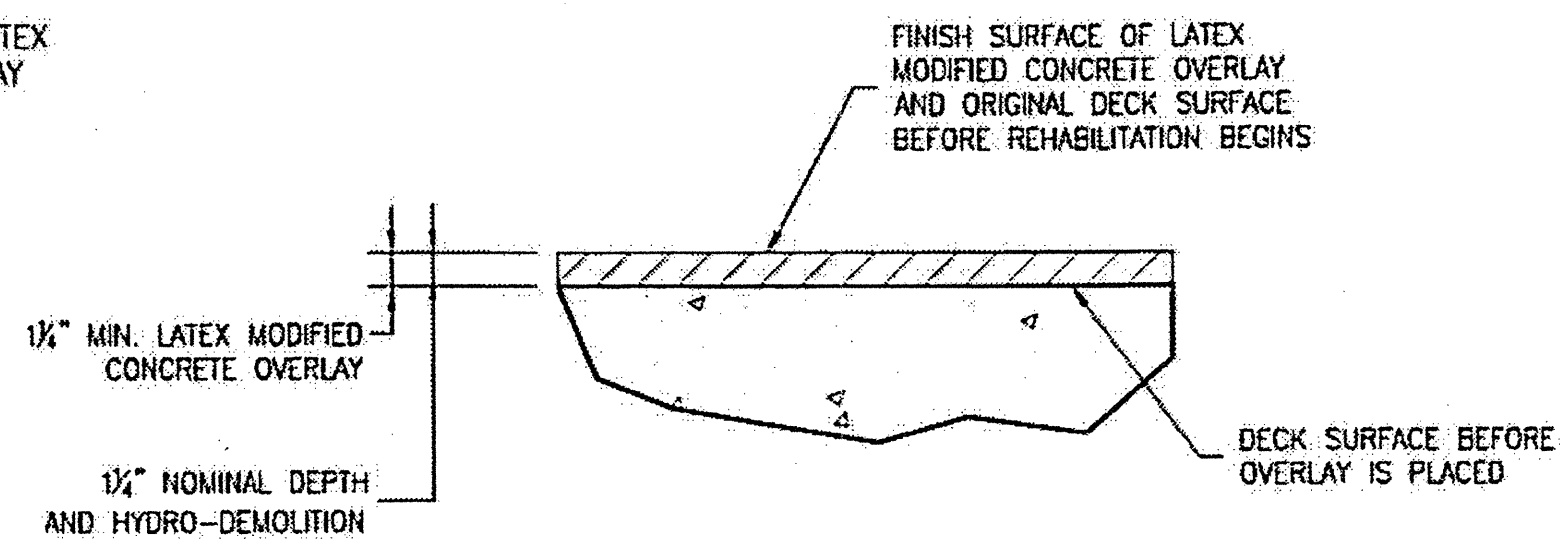
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YD. OF HYDRO-DEMOLITION.

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



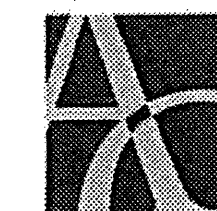
SECTION A-A

SECTION AT PAVED SHOULDERS.



DETAIL FOR LATEX MODIFIED CONC. OVERLAY

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

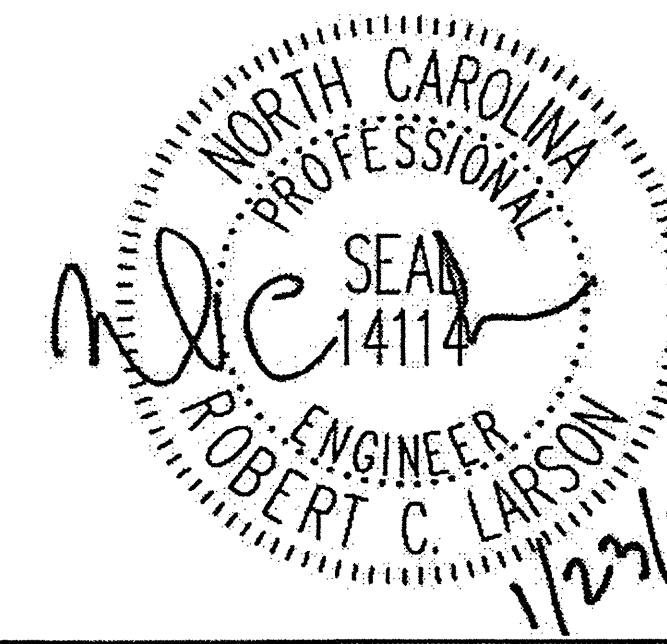
4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.dogroup.com

A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
BRIDGE NO. 350107

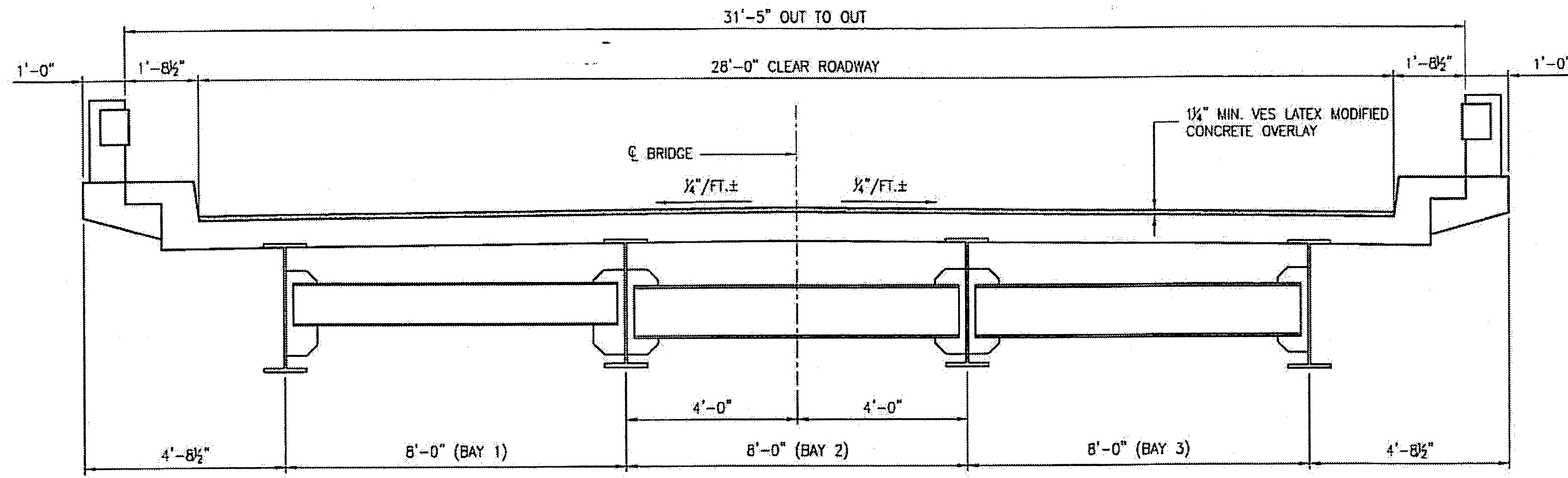
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE PLAN
AND DETAILS

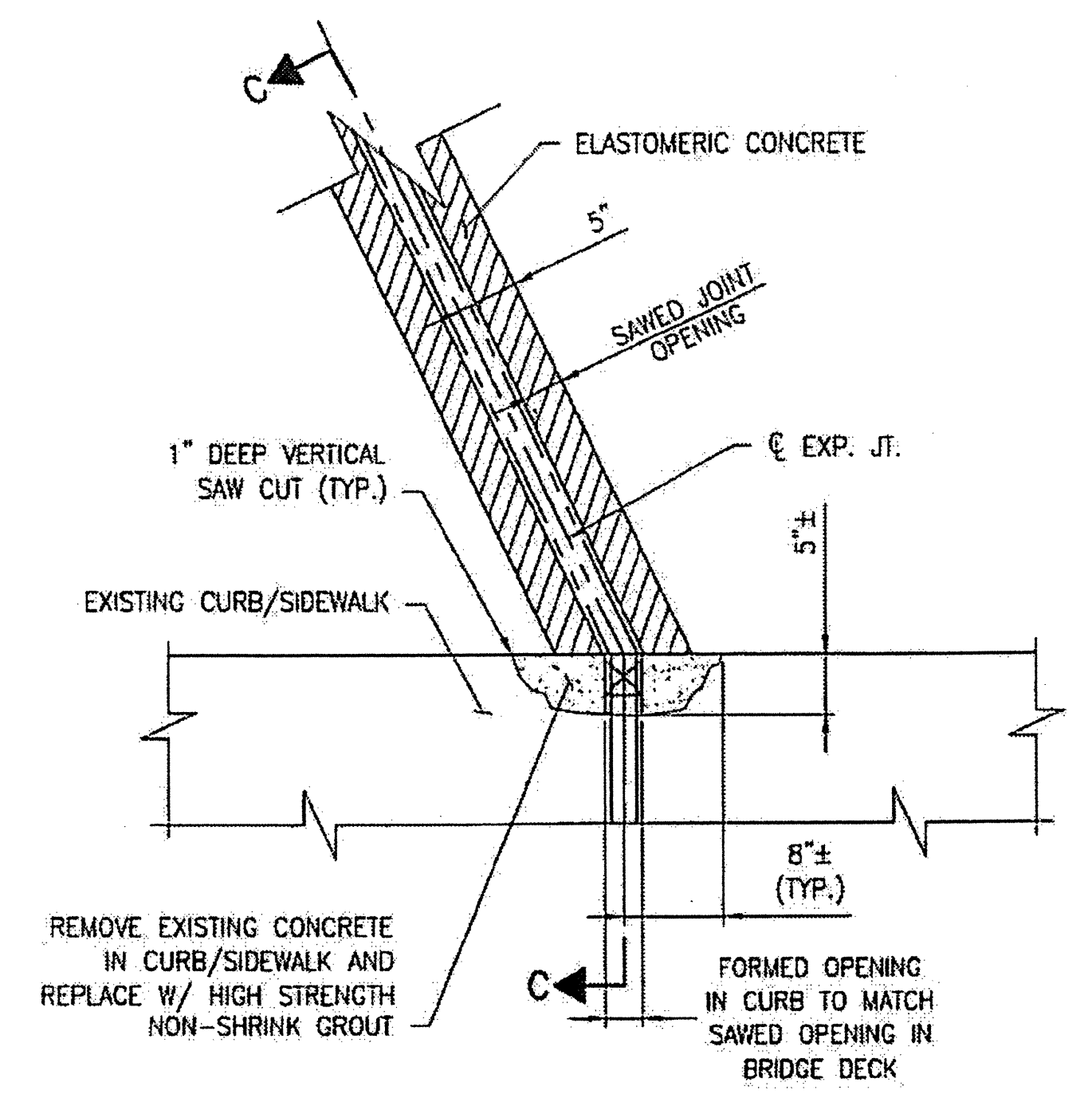


DRAWN BY: J.D. GOODIN DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

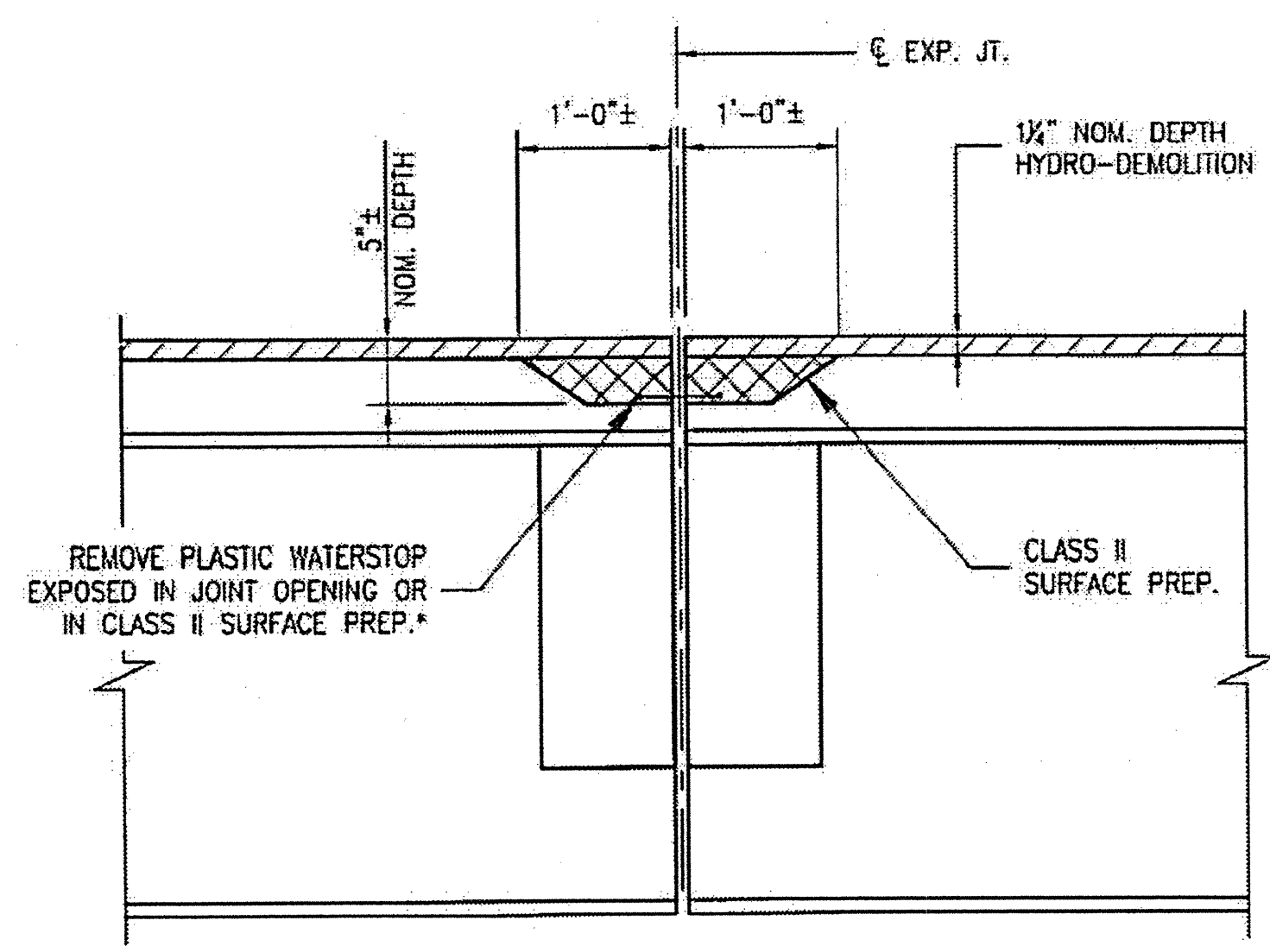
REVISIONS						SHEET NO. S-39
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			54



TYPICAL SECTION SPANS A - C



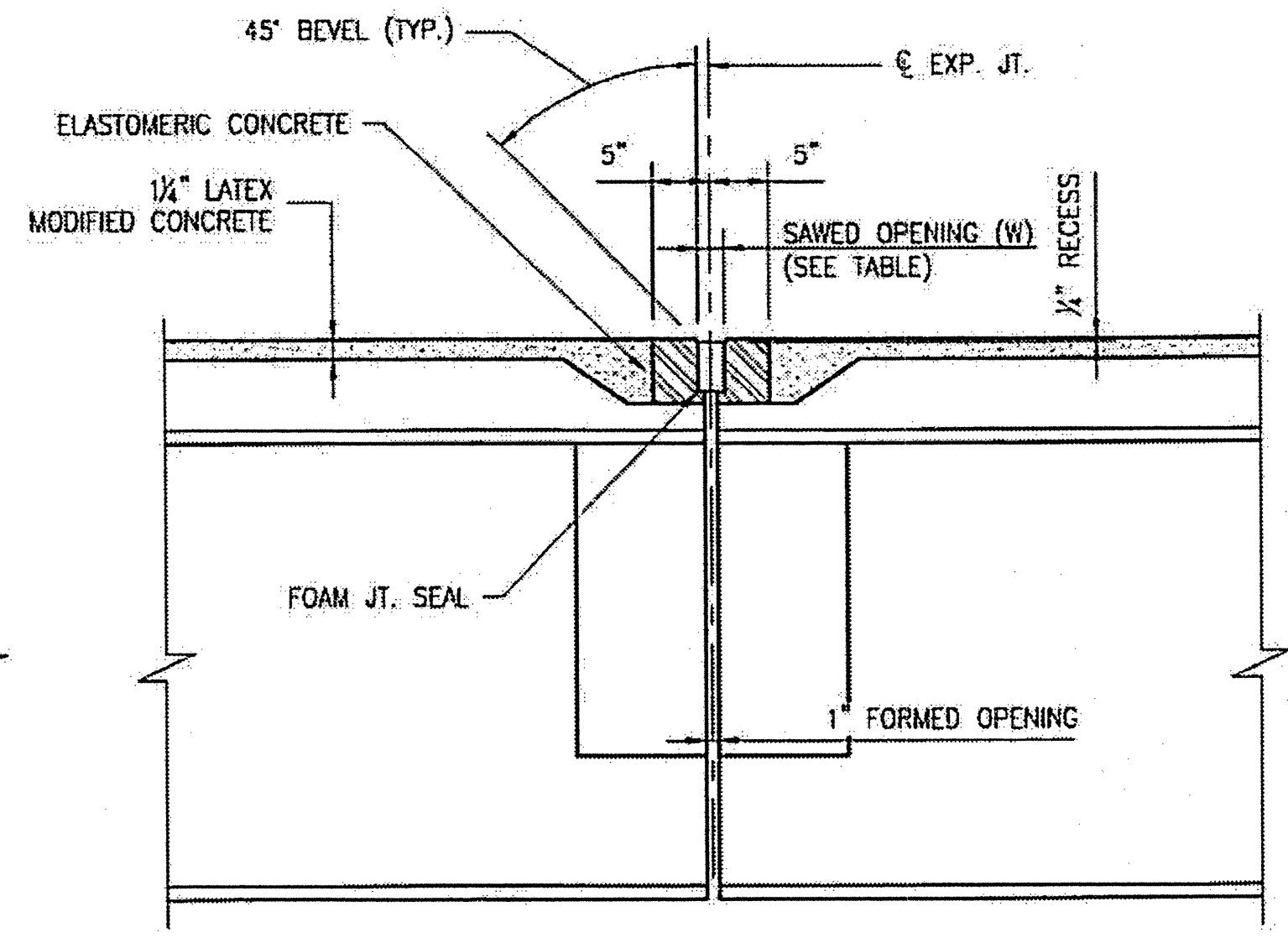
PARTIAL PLAN @ JOINT



SECTION B-B

EST. MAX. EXISTING JOINT DEMOLITION
 NOTES: RETAIN ALL EXIST. REINF. STEEL.
 CLEAN AND REPAIR AS REQ'D.
 ALL EXISTING JT. SEAL MATERIALS
 ARE TO BE COMPLETELY REMOVED.

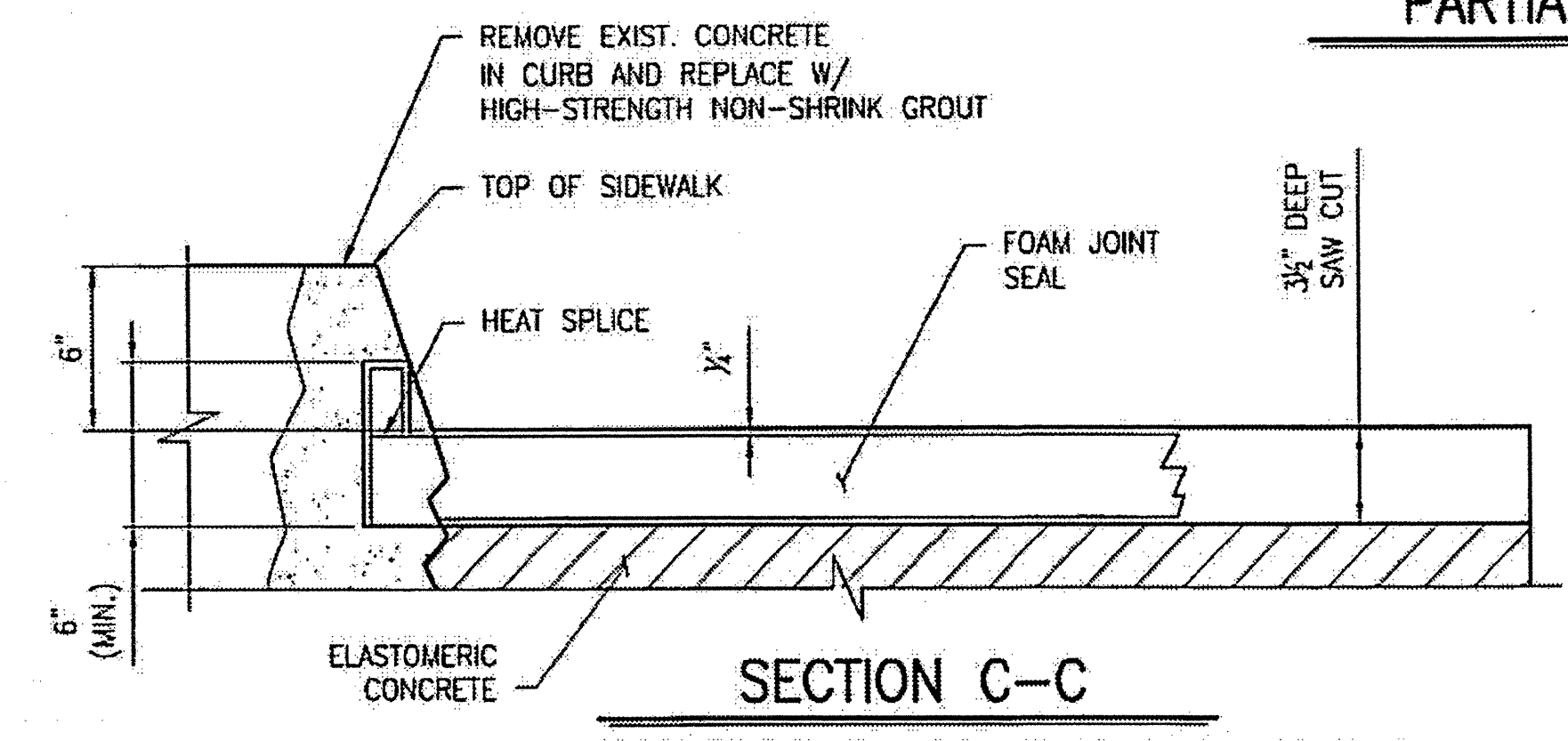
* FROM BEST AVAILABLE INFORMATION.



SECTION B-B

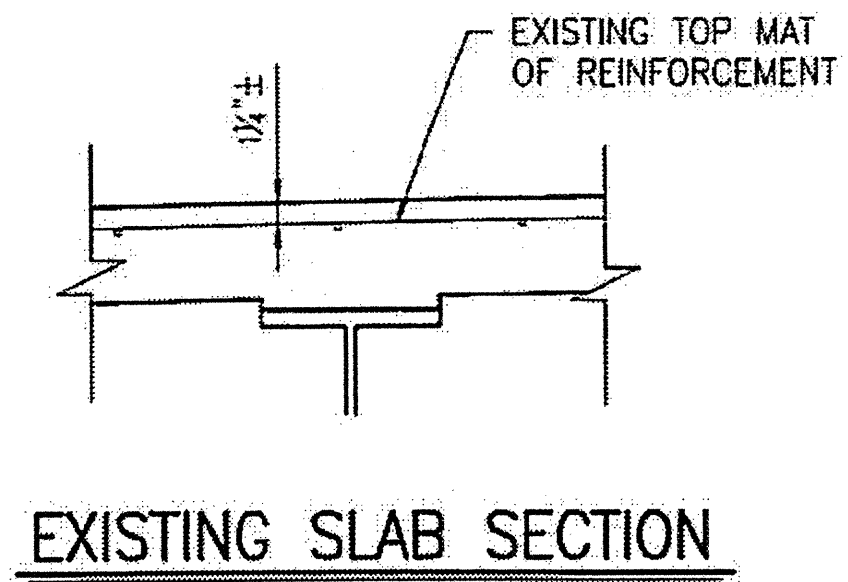
JOINT SEAL
 NOTES: USE 2 1/2" WIDE UNCOMPRESSED
 FOAM JOINT SEAL MATERIAL.

FOAM JOINT SAWED OPENING (W) TABLE			
TEMP.	45° F	60° F	90° F
BENT 1	1 1/8"	1 1/8"	1 1/4"
BENT 2	1 1/8"	1 1/8"	1 1/8"
BENT 3	2 1/8"	1 1/8"	1 1/8"



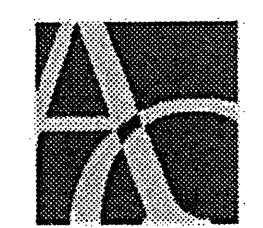
SECTION C-C

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



EXISTING SLAB SECTION

PLAN PREPARED BY:

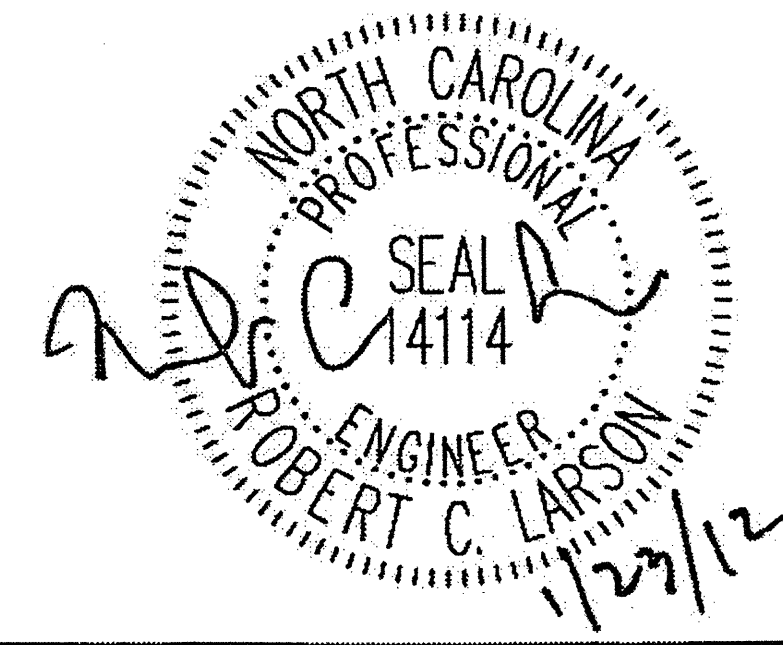


ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS
 4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-168# www.aogroup.com
 A&O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
 BRIDGE NO. 350107

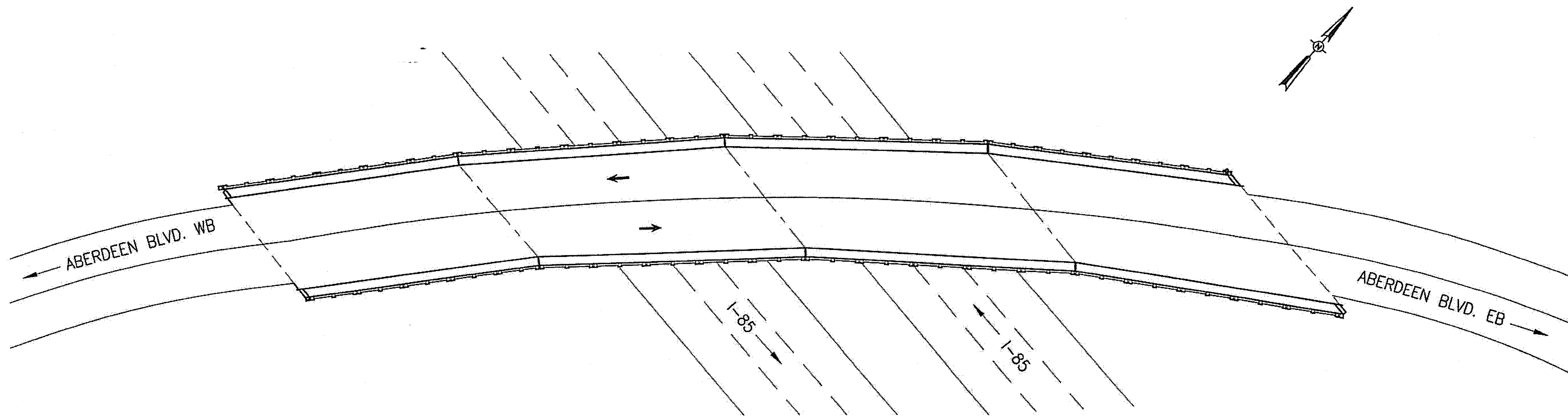
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION
 AND DETAILS



DRAWN BY: J.D. GOODIN DATE: 11-24-11
 CHECKED BY: R.C. LARSON DATE: 11-24-11

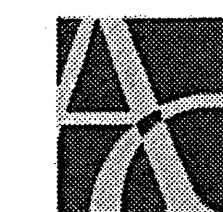
REVISIONS						SHEET NO.
NO	BY	DATE	NO	BY	DATE	S-40
1			3			TOTAL SHEETS
2			4			54



BRIDGE 350133 ON ABERDEEN BLVD.

LOCATION: BRIDGE 350133 ACROSS I-85 0.5 MI. NORTH OF JUNCTION WITH NC279.

PLAN PREPARED BY:



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CIVIL & STRUCTURAL ENGINEERS

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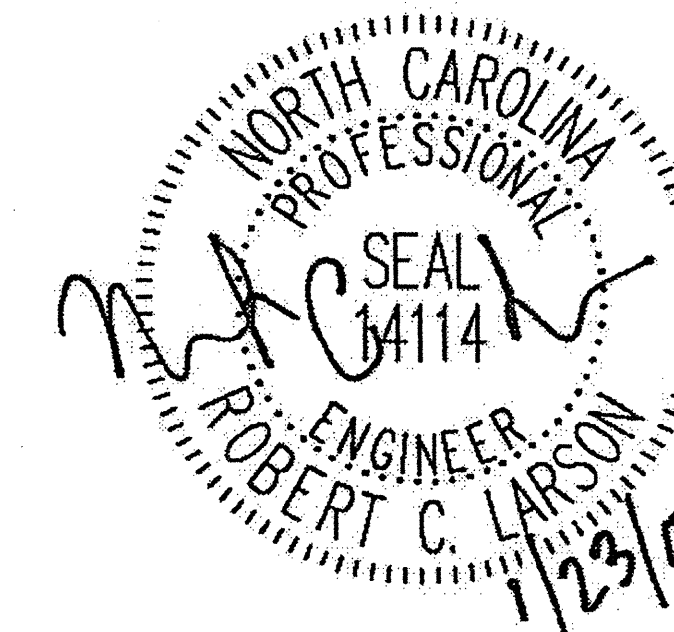
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
BRIDGE NO. 350133

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

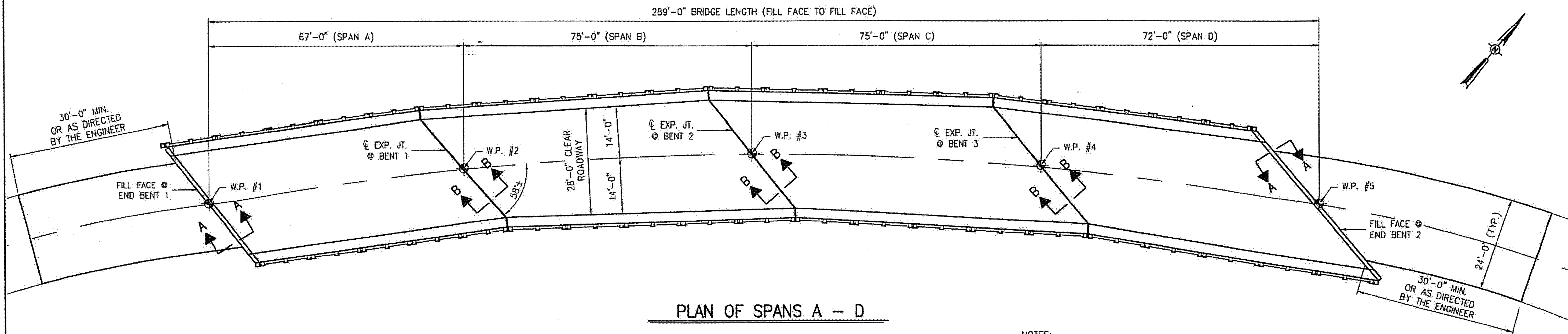
LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

TOTAL BILL OF MATERIAL							
SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY- VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEAL	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	INCIDENTAL MILLING
SQ. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	SQ. YD.
899	899	37	899	7,137	L.S.	17	200



DRAWN BY: J.D. GOODIN DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41
1			3			TOTAL SHEETS
2			4			54

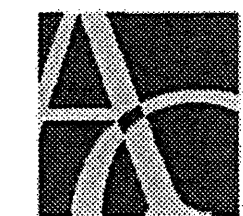


PLAN OF SPANS A - D

NOTES:

- EXISTING 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 RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THRU OF THE DECK. SEE DETAIL, THIS SHEET.
- FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR SECTION B-B, SEE SHEET S-43.

PLAN PREPARED BY:



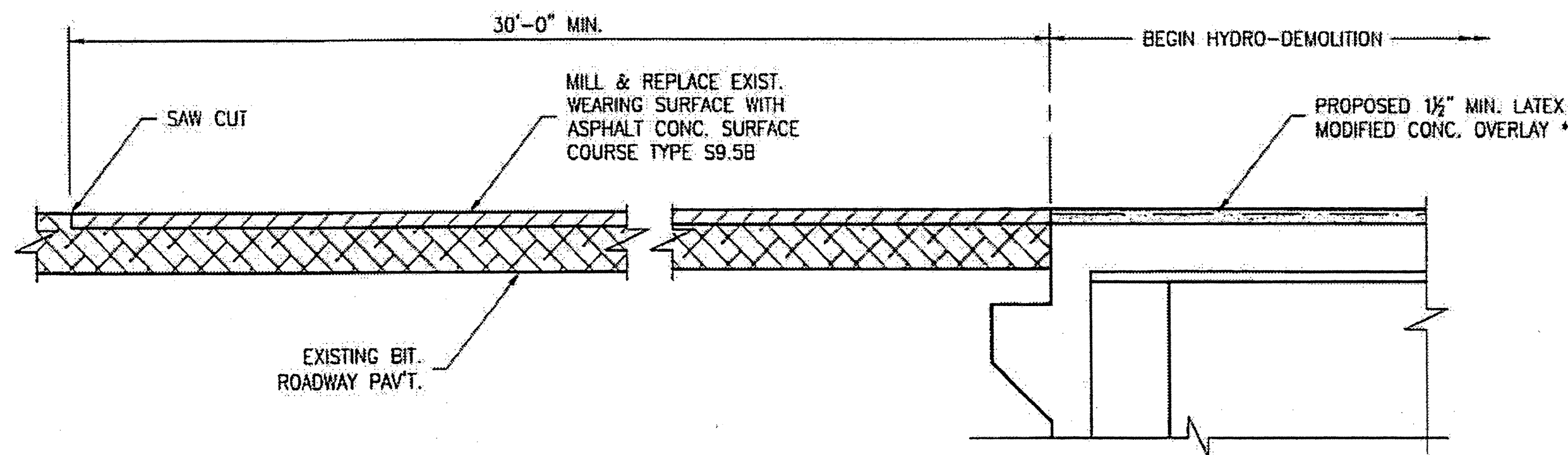
ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
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A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
BRIDGE NO. 350133

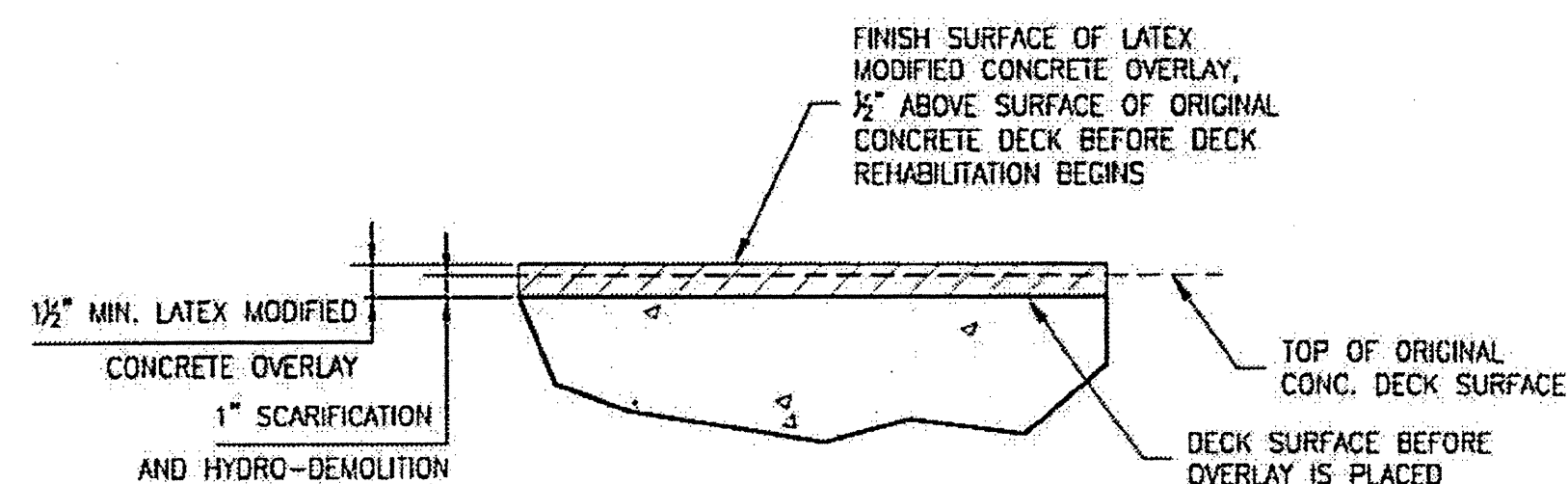
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK PLAN
AND
DETAILS

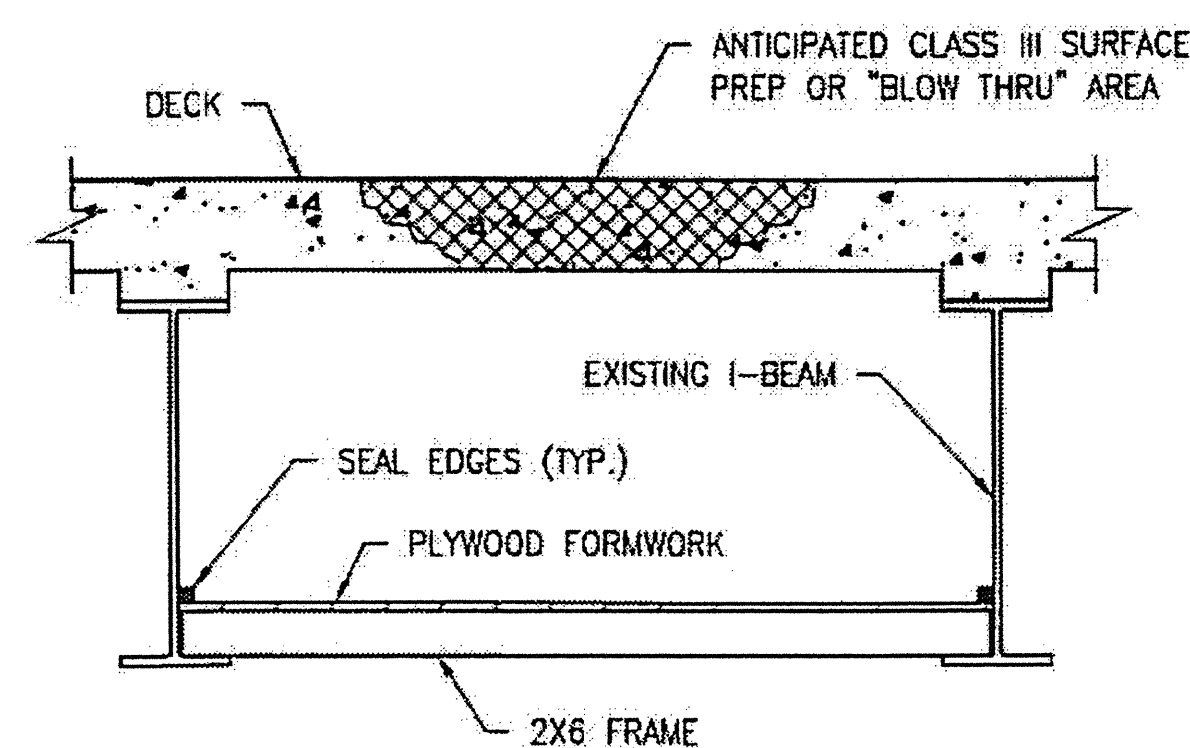


SECTION A-A

* RAISE EXISTING CONC. DECK ELEVATION BY 1/2".



DETAIL FOR LATEX MODIFIED CONC. OVERLAY



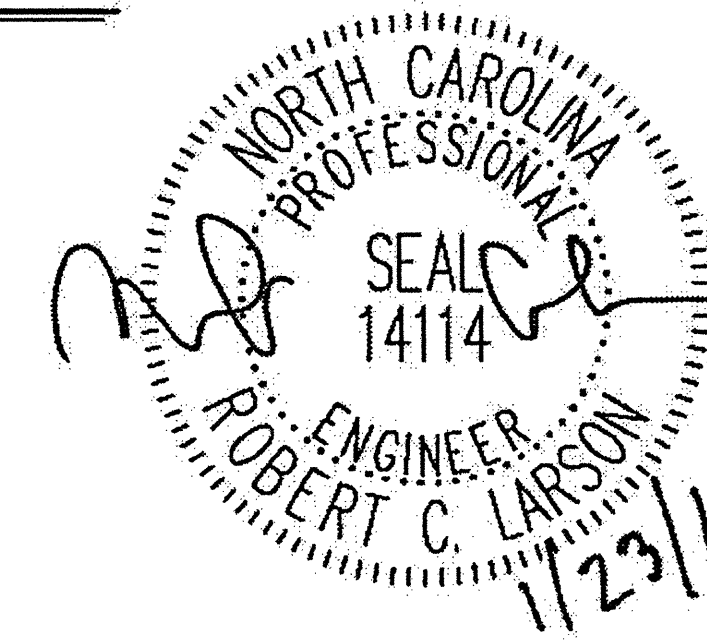
TYPICAL BLOW THRU CONTAINMENT AND FORMWORK

PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

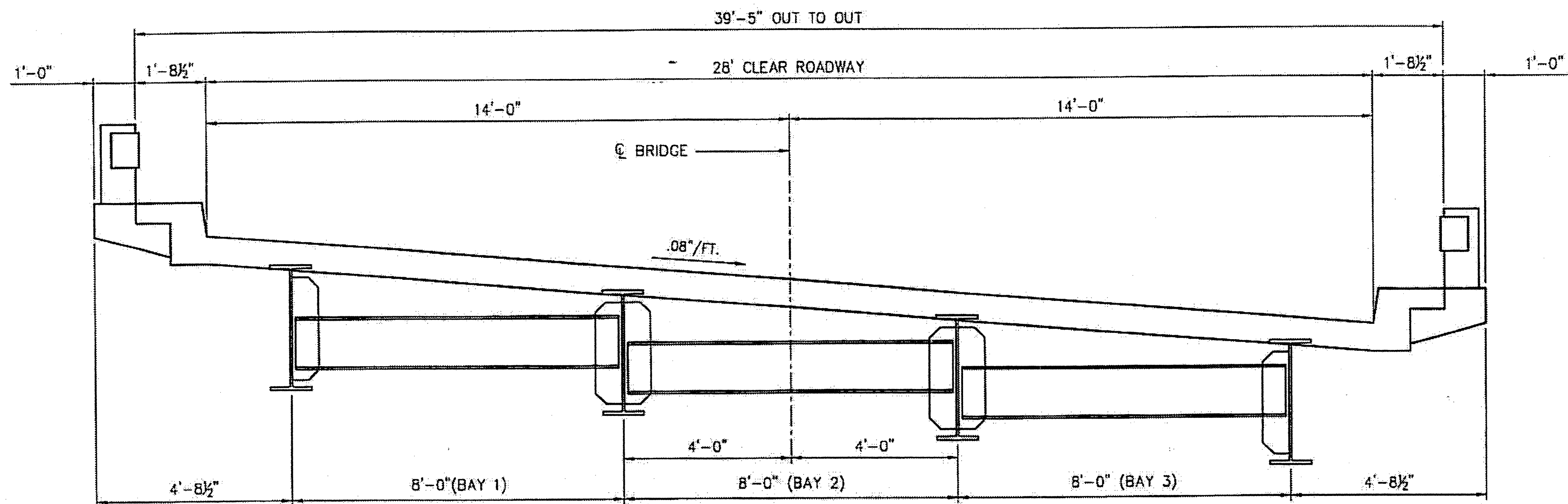
SUBMIT DETAILS OF PROPOSED FORMWORK FOR APPROVAL PRIOR TO BEGINNING WORK.

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

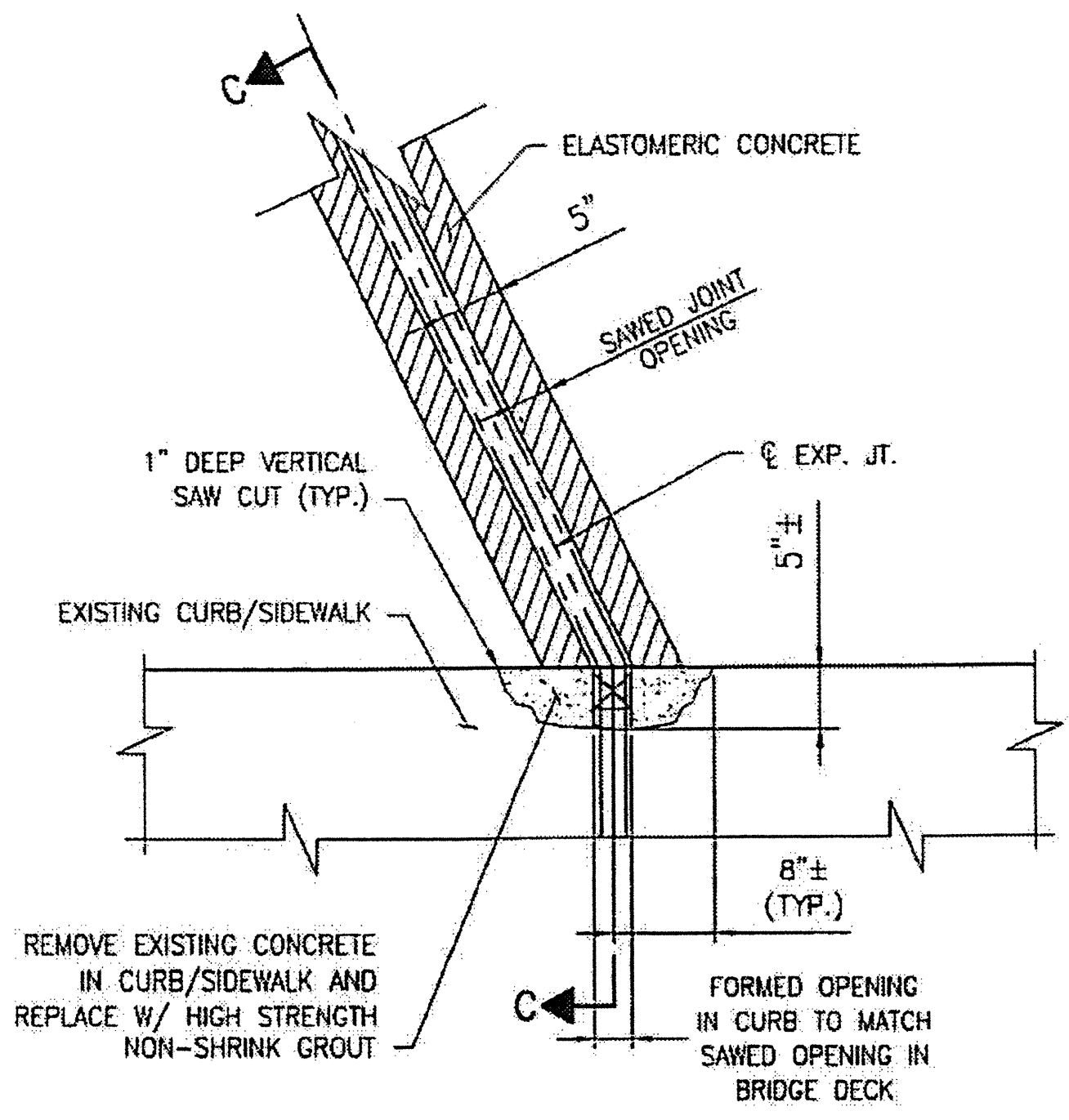
CONTRACTOR, AT HIS OPTION, MAY CHOOSE TO MONITOR HYDRO-DEMOLITION WORK AND CONTROL TRAFFIC UNDER THE BRIDGE IN LIEU OF BLOW THRU CONTAINMENT. SEE TRAFFIC MANAGEMENT PLANS.



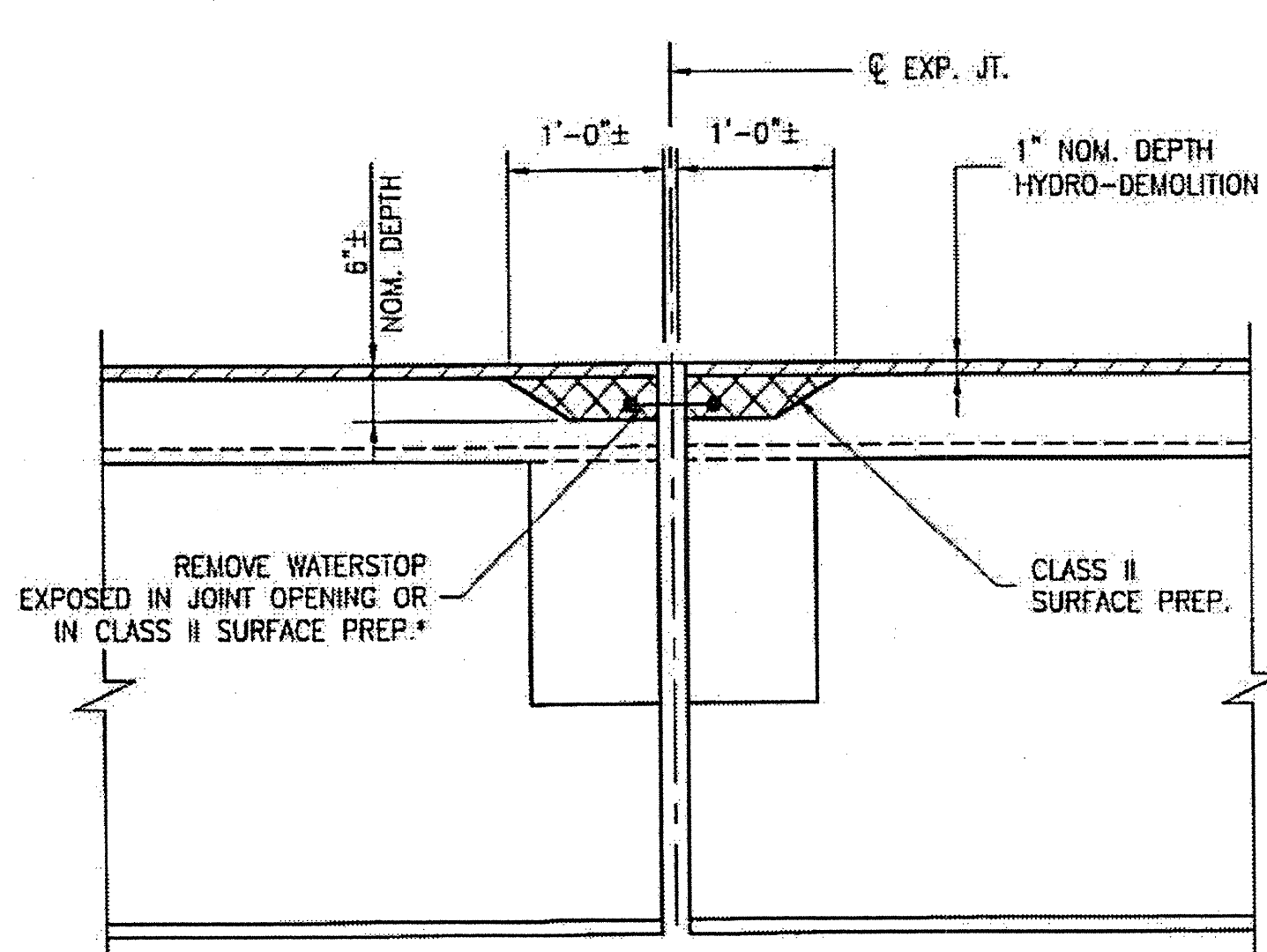
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-42
1			3			TOTAL SHEETS
2			4			54



TYPICAL SECTION SPANS A - D

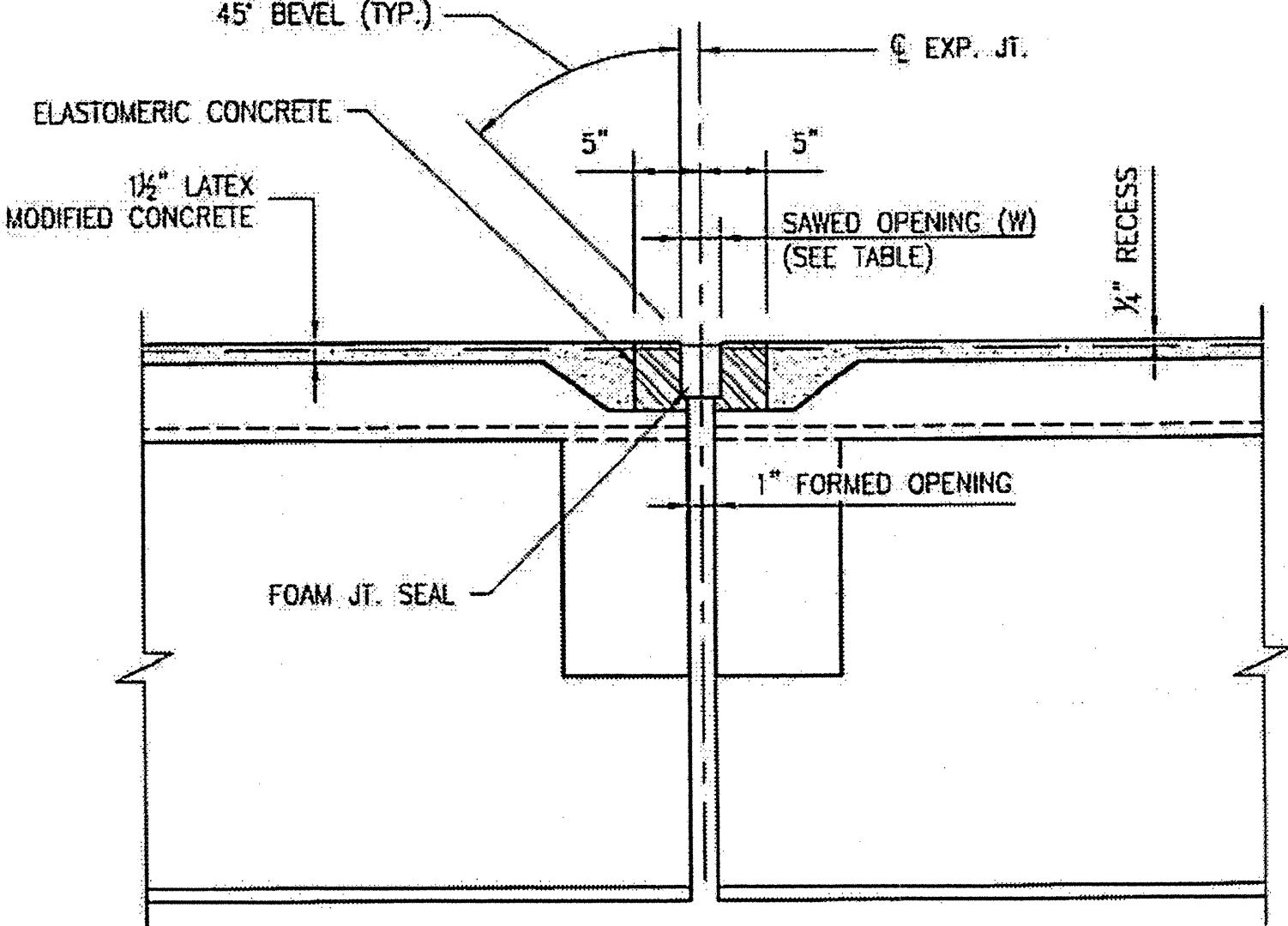


PARTIAL PLAN @ JOINT



SECTION B-B

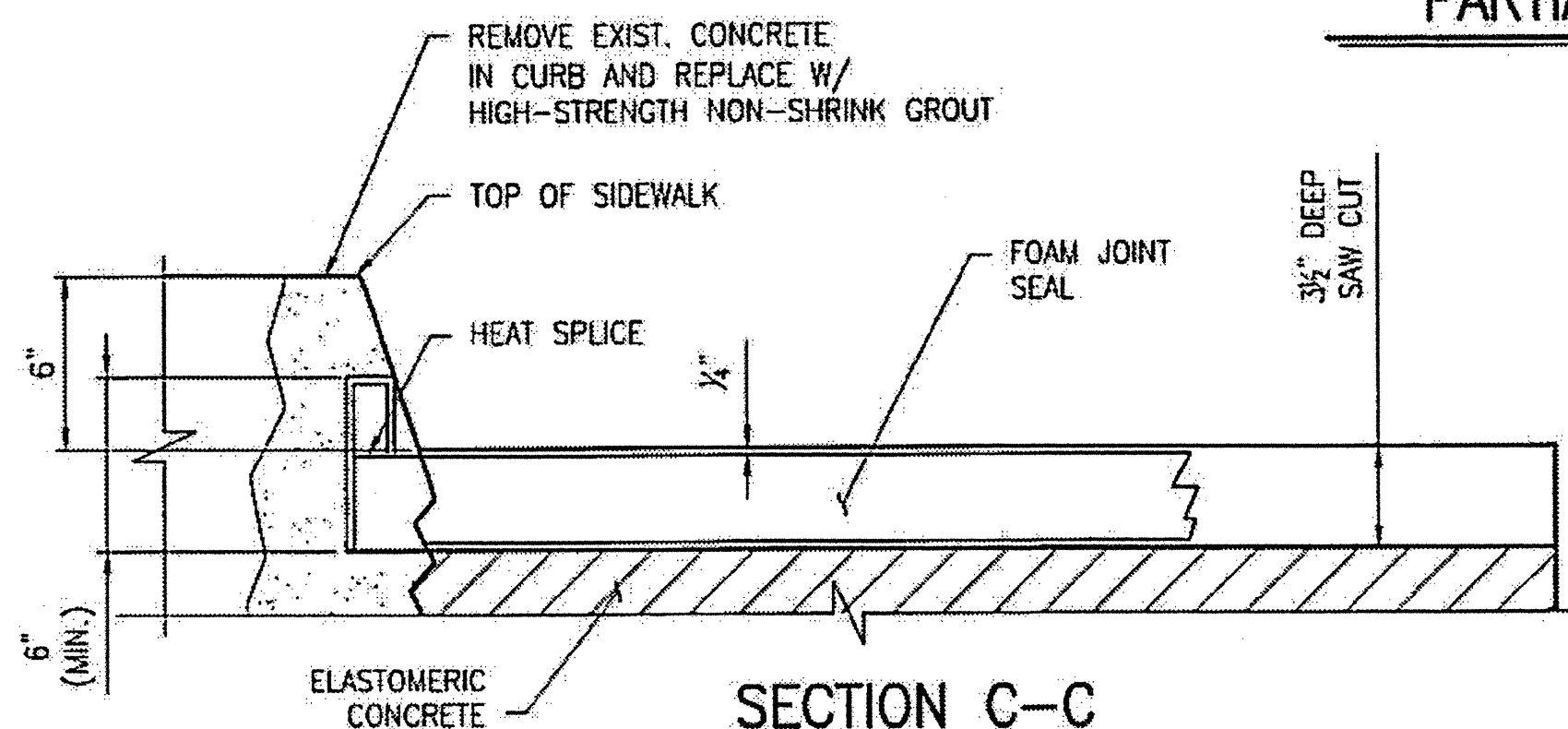
EST. MAX. EXISTING JOINT DEMOLITION
 NOTES: RETAIN ALL EXIST. REINF. STEEL. CLEAN AND REPAIR AS REQ'D. ALL EXISTING JT. SEAL MATERIALS ARE TO BE COMPLETELY REMOVED.
 * FROM BEST AVAILABLE INFORMATION.



SECTION B-B

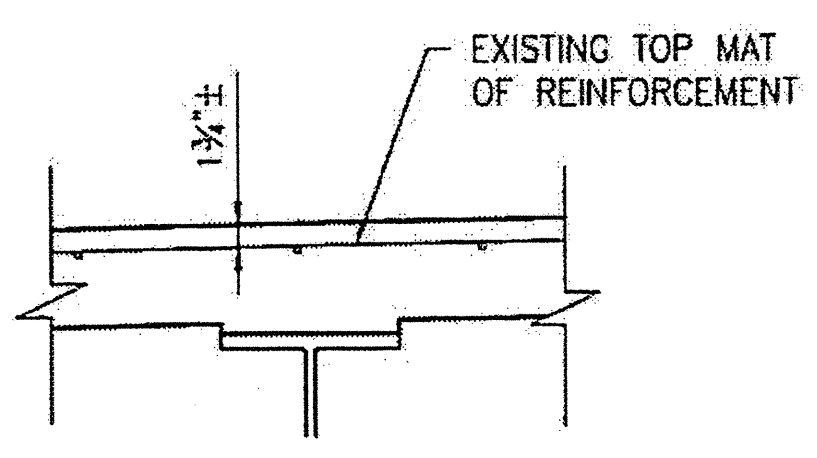
JOINT SEAL
 NOTES: USE 2 1/2" WIDE UNCOMPRESSED FOAM JOINT SEAL MATERIAL.

FOAM JOINT SAWED OPENING (W) TABLE			
TEMP	45° F	60° F	90° F
BENT 1	2 1/8"	1 7/8"	1 1/2"
BENT 2 OR 3	1 5/8"	1 3/8"	1 1/4"



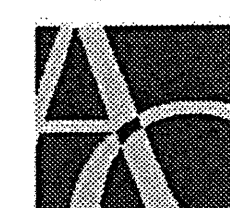
SECTION C-C

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



EXISTING SLAB SECTION

PLAN PREPARED BY:



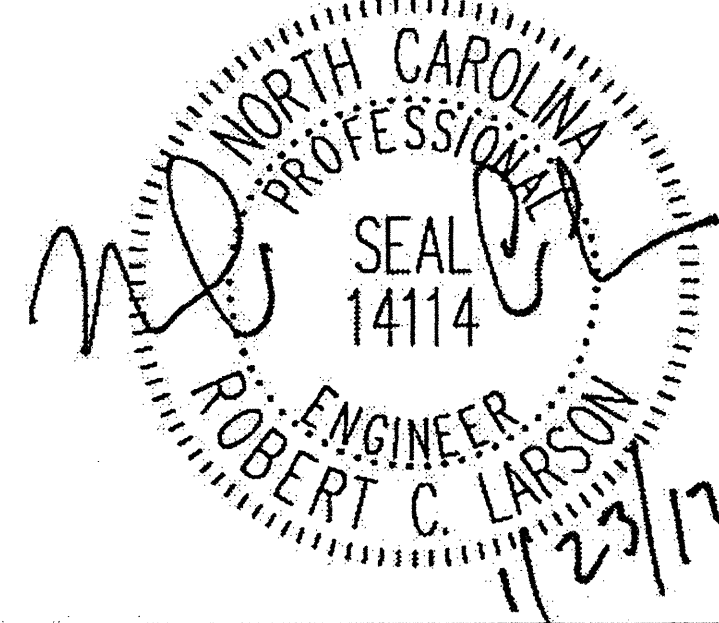
ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS

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 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1684 www.aogroup.com
 A & O PROJECT #: 2011.031

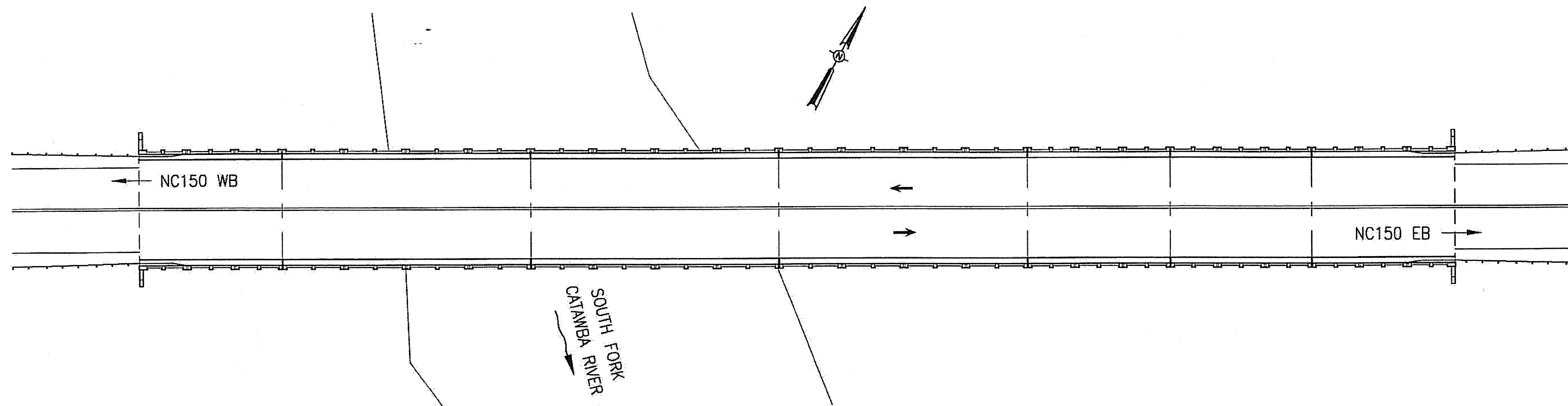
PROJECT NO. WBS 17BP.12.P.4
GASTON COUNTY
 BRIDGE NO. 350133

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL
 SECTION AND
 DETAILS



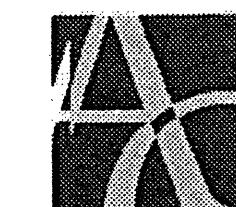
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-43
1			3			TOTAL SHEETS
2			4			54



BRIDGE 540035 ON NC150

LOCATION: BRIDGE 540035, NC150 OVER S. FORK CATAWBA RIVER, 0.2 MILE EAST OF JUNCTION WITH SR1222.

PLAN PREPARED BY:

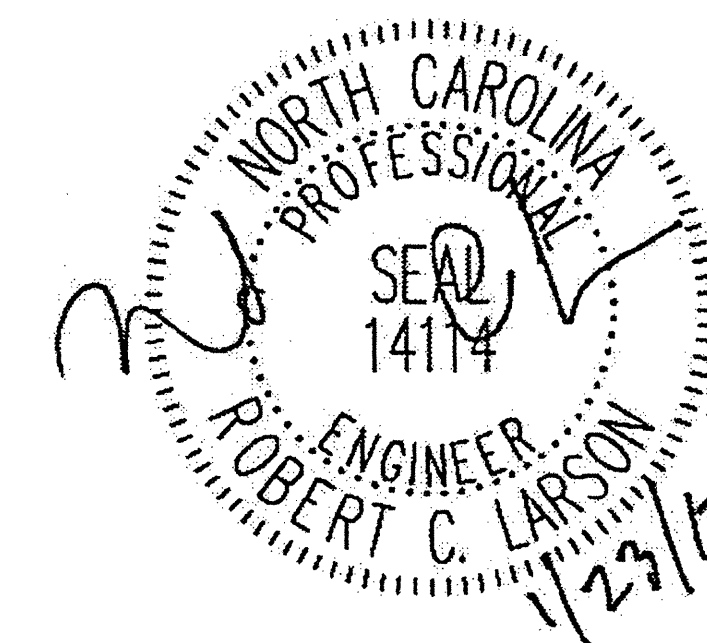


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A&O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
BRIDGE NO. 540035

TOTAL BILL OF MATERIAL								
SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONC. OVERLAY-VERY EARLY STRENGTH	GROOVING BRIDGE FLOORS	FOAM JOINT SEALS	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	CONCRETE REPAIRS	INCIDENTAL MILLING
SO. YD.	SQ. YD.	CU. YD.	SQ. YD.	SQ. FT.	LUMP SUM	TON	CU. FT.	SQ. YD.
1,153	1,153	48	1,153	9,087	L.S.	13	43	160

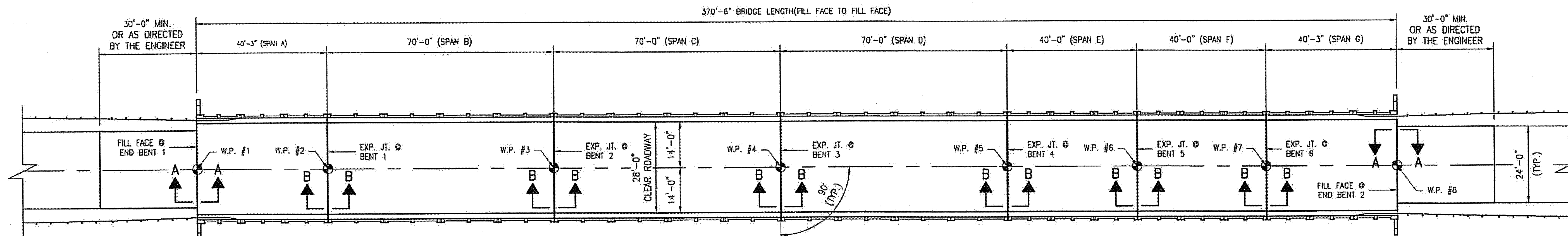


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LOCATION SKETCH
AND TOTAL
BILL OF MATERIAL

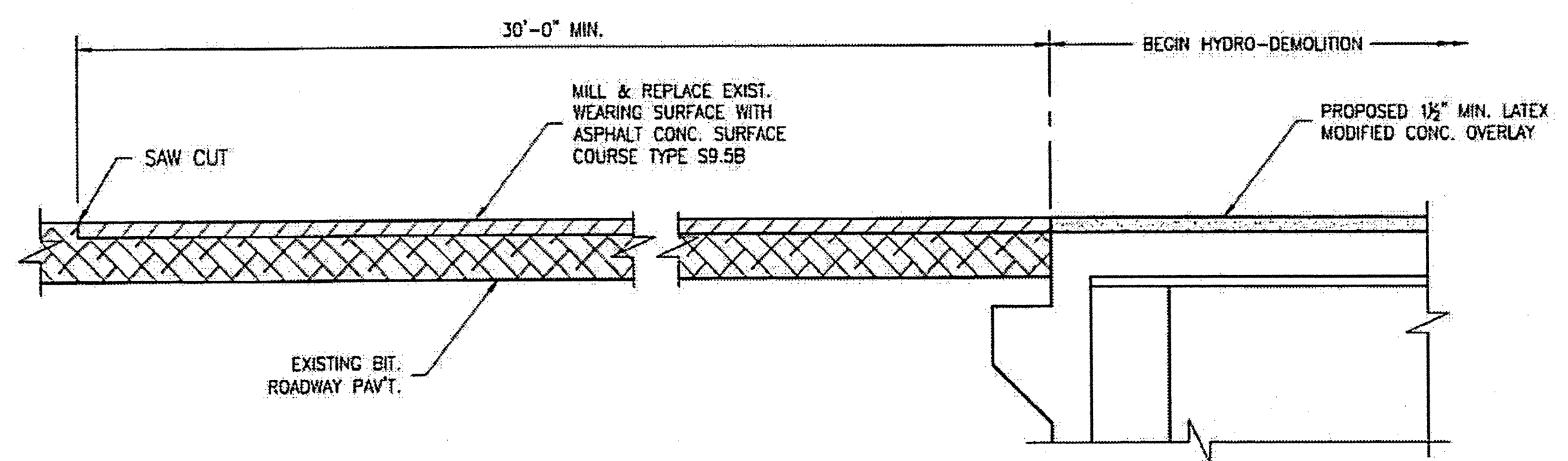
DRAWN BY: F.F. ROBBINS DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-44
1			3			TOTAL SHEETS
2			4			54

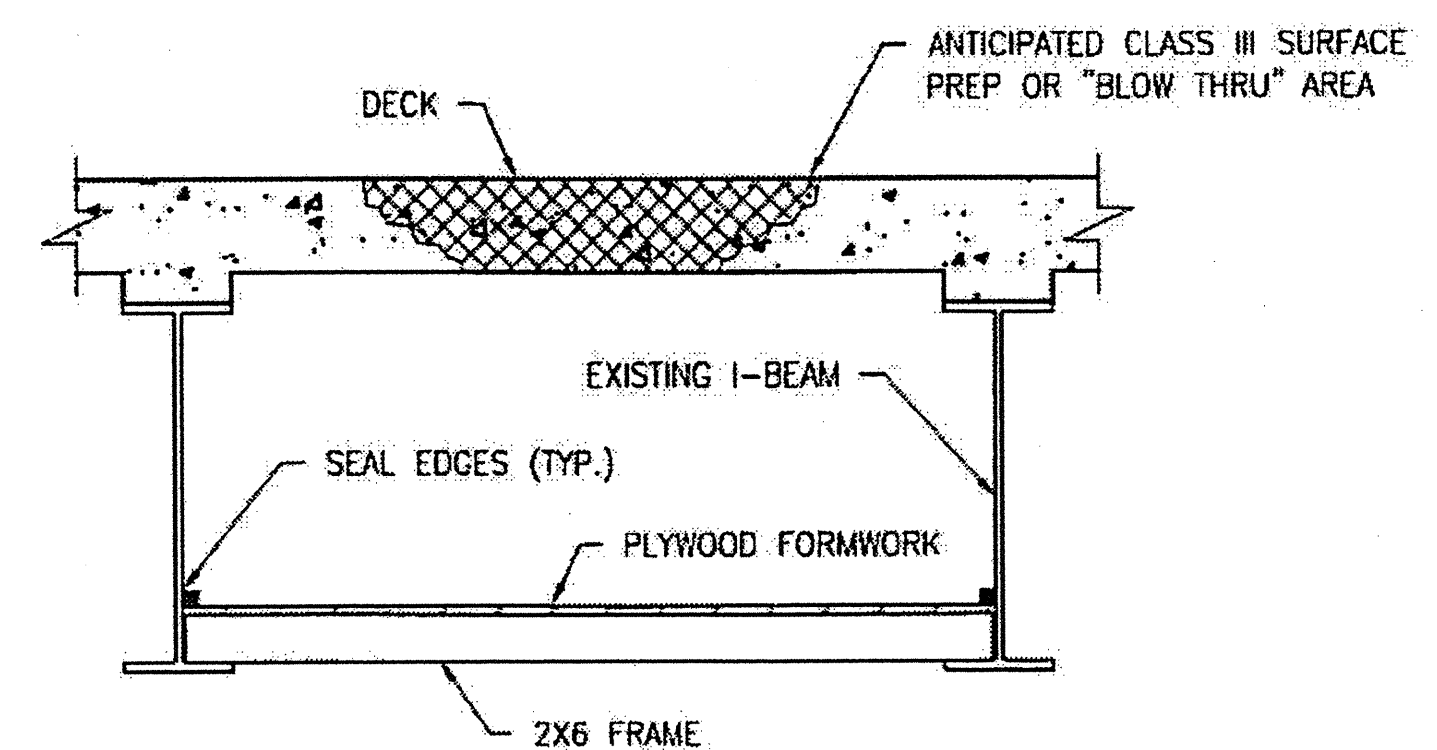


PLAN OF SPANS A - E

- NOTES:
- EXISTING 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 RUNOFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THRU OF THE DECK. SEE DETAIL, THIS SHEET.
 - FOR VERY EARLY STRENGTH LATEX MODIFIED CONCRETE, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR SECTION B-B, SEE SHEET S-46.



SECTION A-A



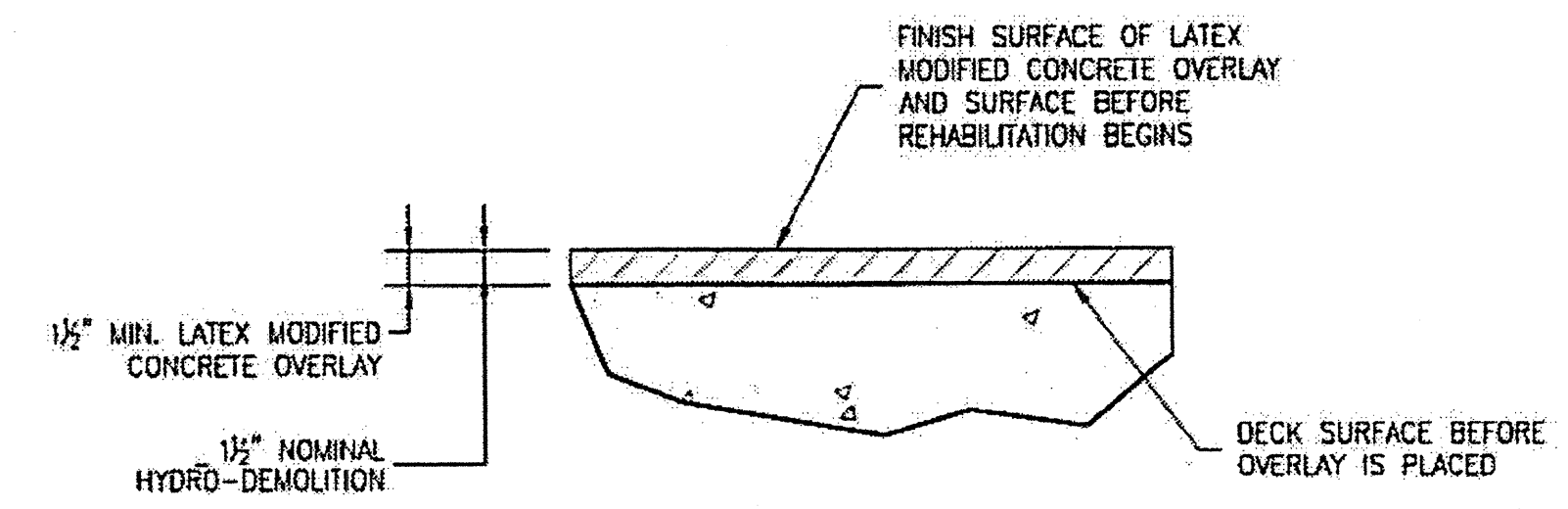
TYPICAL BLOW THRU CONTAINMENT AND FORMWORK

PROVIDE A METHOD TO CAPTURE WATER AND DEBRIS FROM UNEXPECTED BLOW THRU DURING HYDRO-DEMOLITION.

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

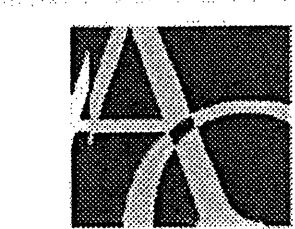
COSTS FOR INSTALLING AND REMOVING FORMWORK SHALL BE INCIDENTAL TO THE PRICE PER SQ. YD. OF HYDRO-DEMOLITION.

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



DETAIL FOR LATEX MODIFIED CONC. OVERLAY

PLAN PREPARED BY:



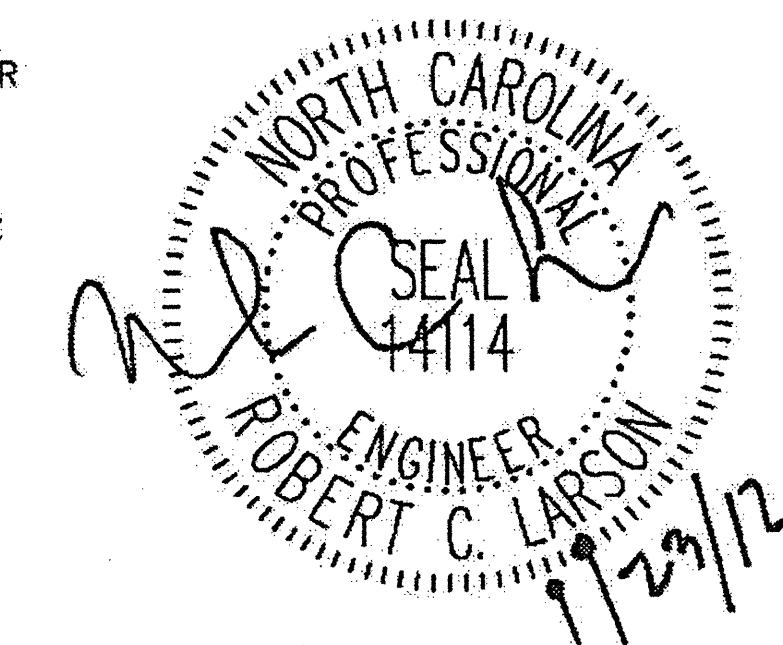
ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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Phone 919 981 0310 Fax 919 981 0451
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A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
BRIDGE NO. 540035

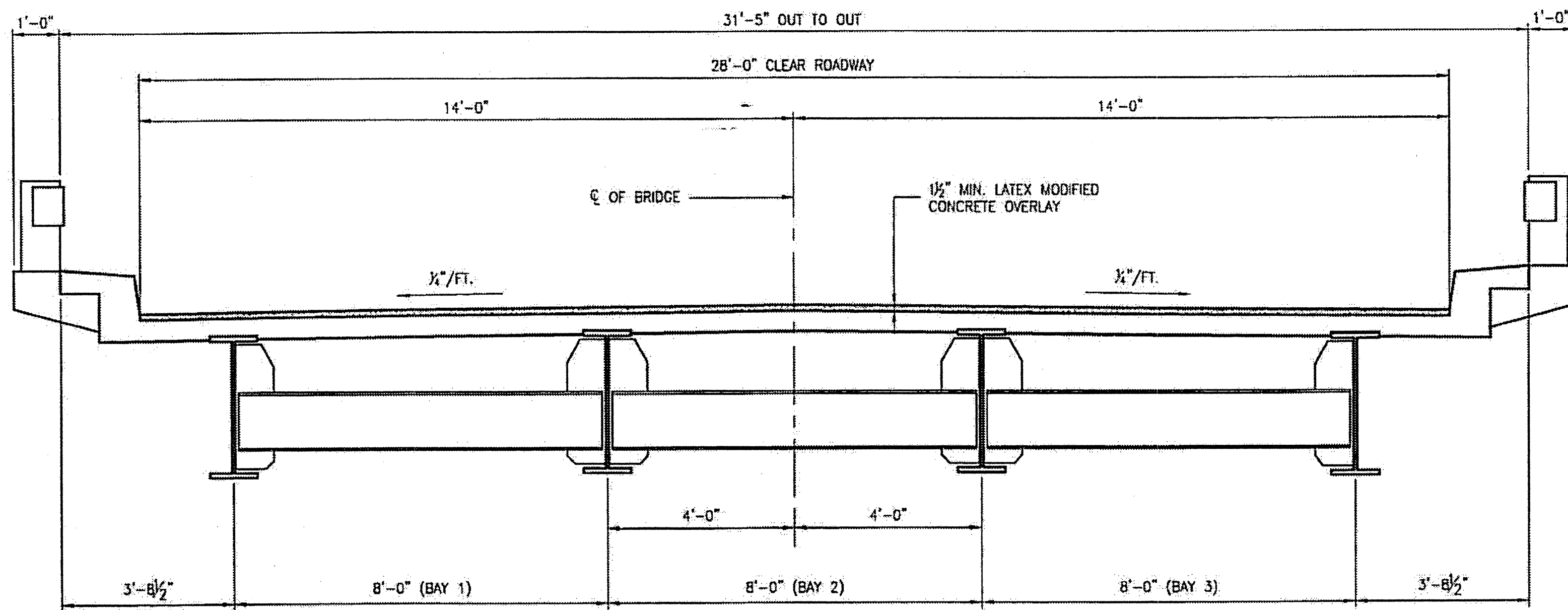
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE PLAN
AND DETAILS

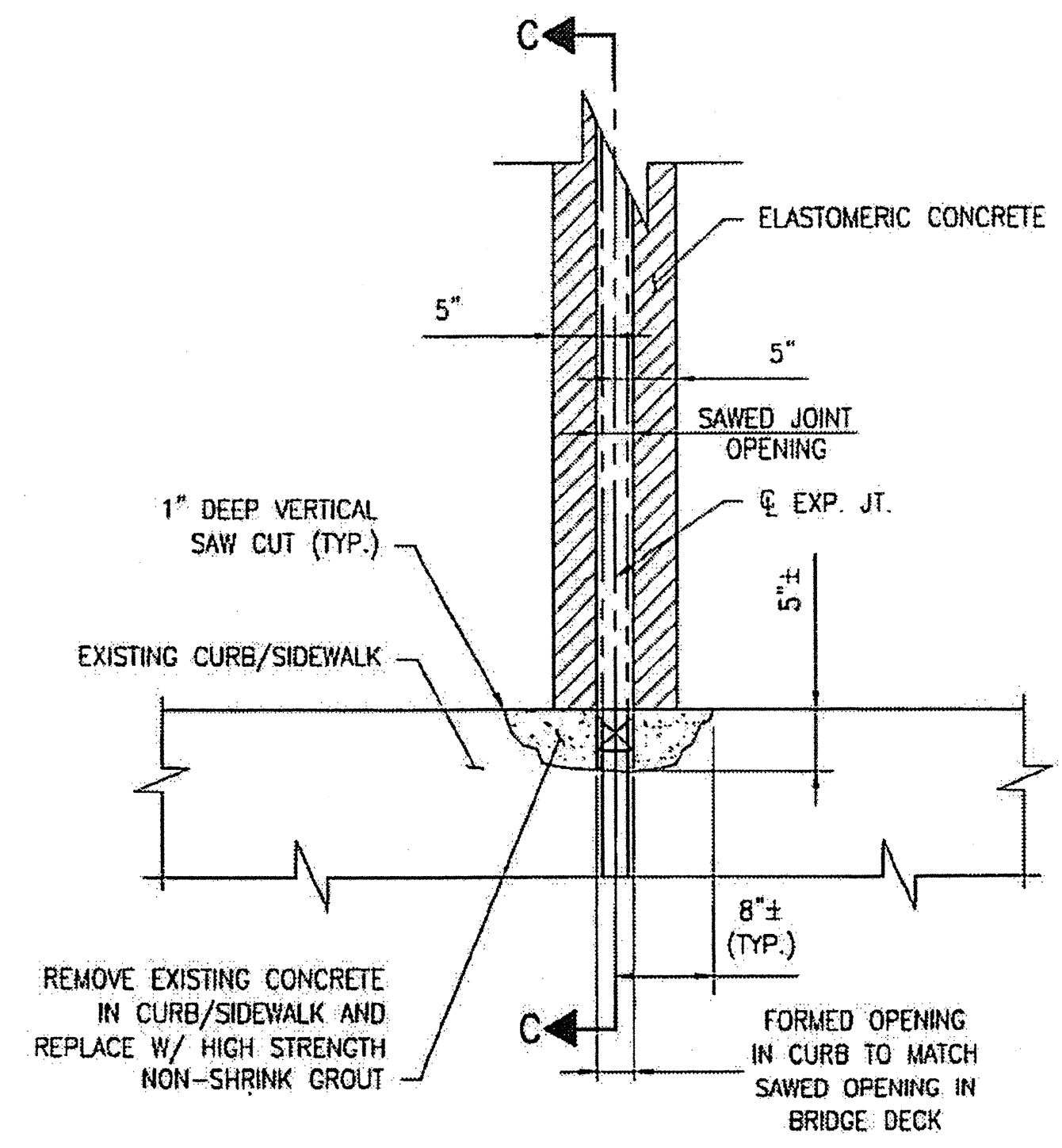


DRAWN BY: F.E. ROBBINS DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

REVISIONS						SHEET NO. S-45
NO	BY:	DATE:	NO	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			54

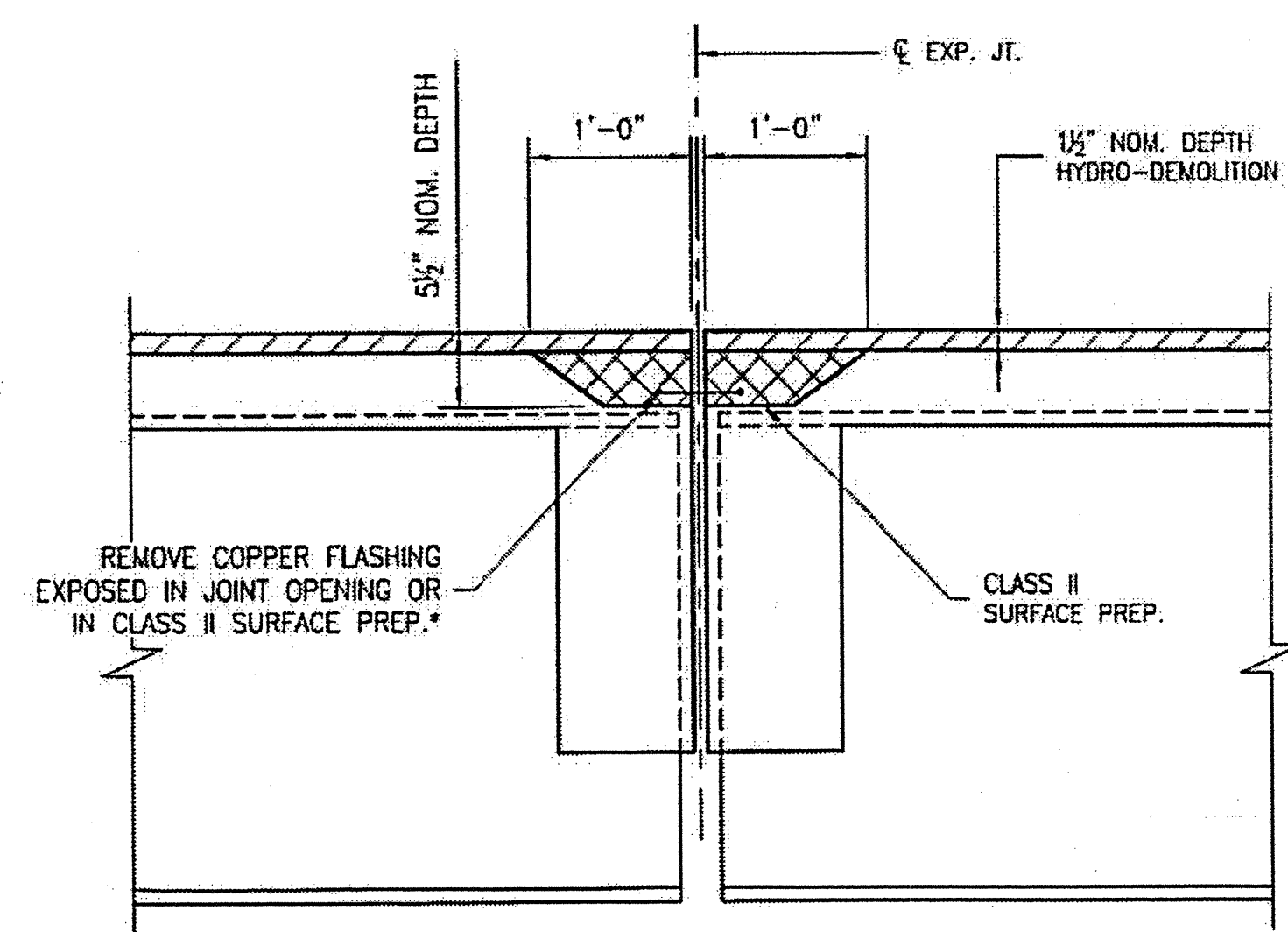


TYPICAL SECTION SPANS A - J



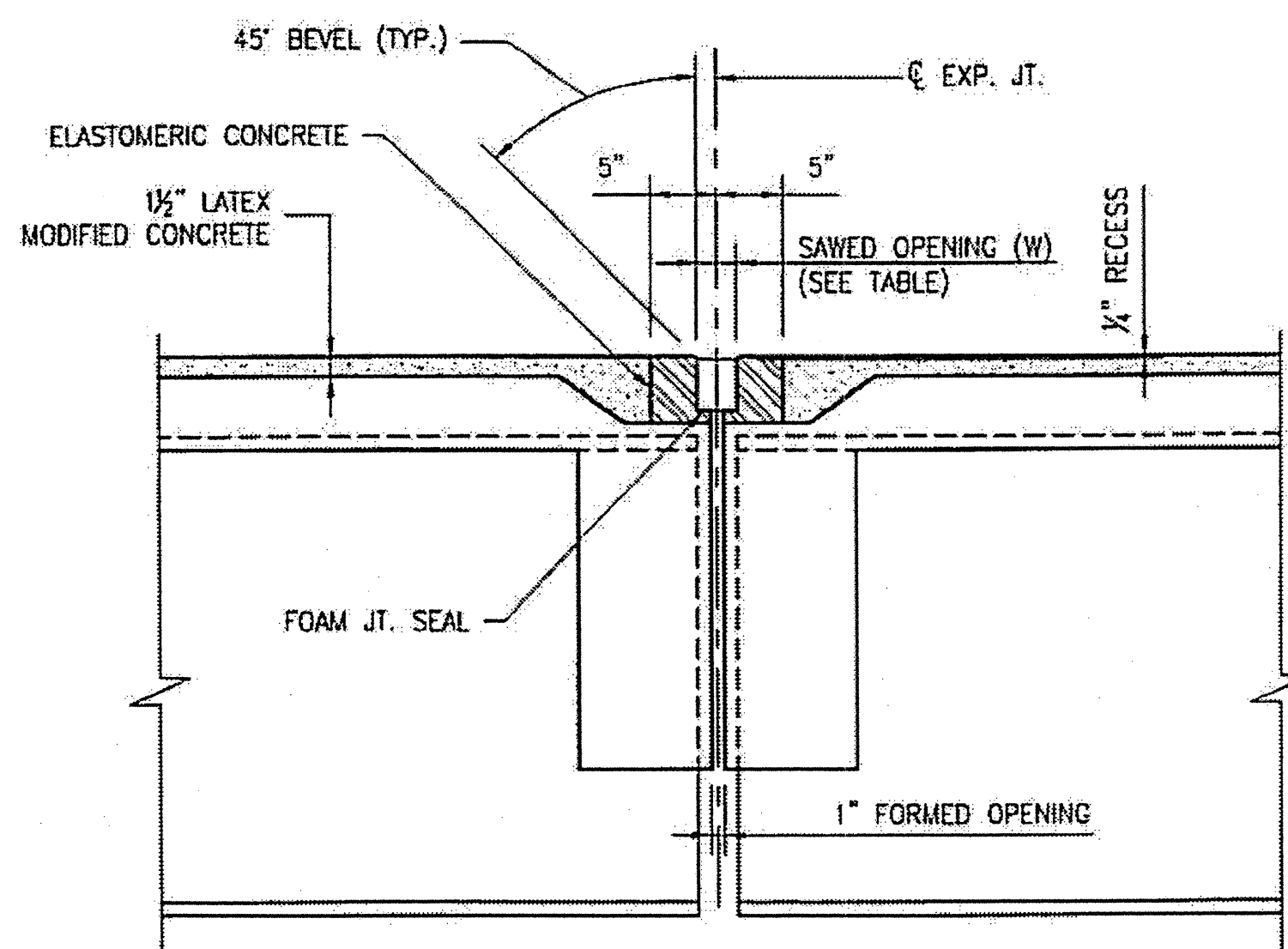
PARTIAL PLAN @ JOINT

SCALE: N.T.S.



SECTION B-B

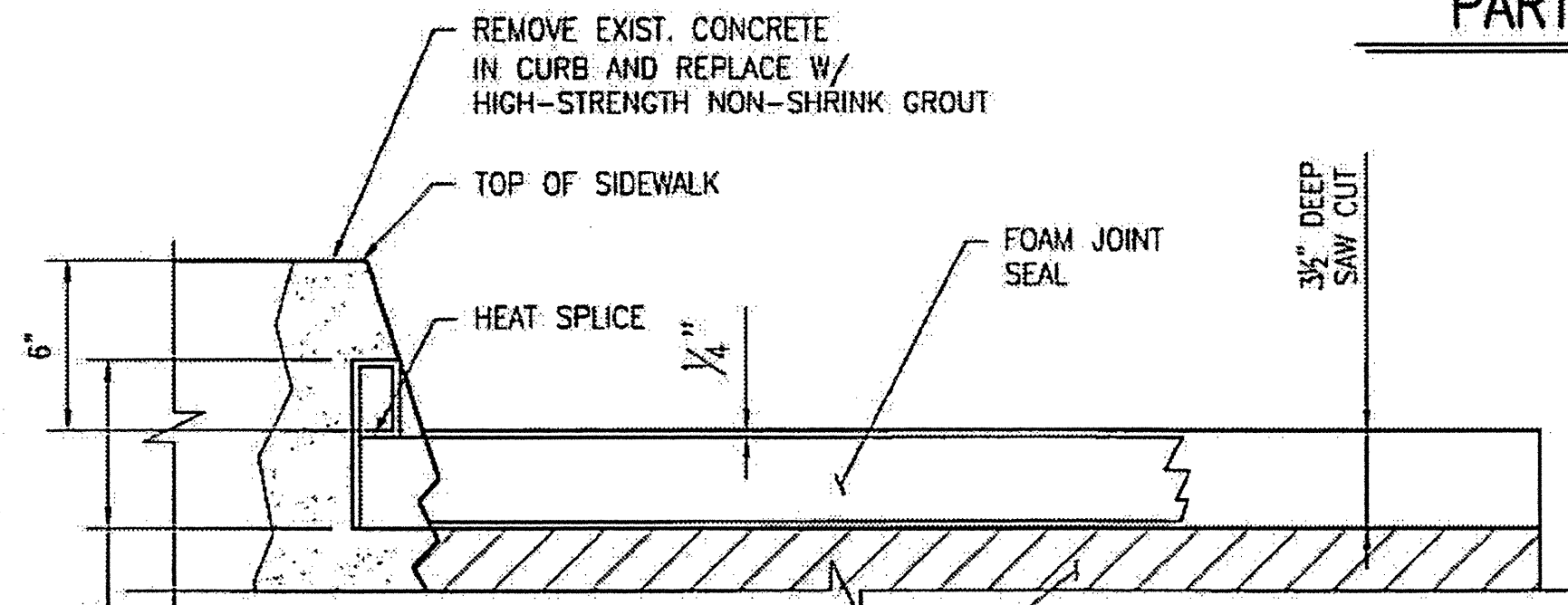
EST. MAX. EXISTING JOINT DEMOLITION
 NOTES: RETAIN ALL EXIST. REINF. STEEL.
 CLEAN AND REPAIR AS REQ'D.
 ALL EXISTING JT. SEAL MATERIALS
 ARE TO BE COMPLETELY REMOVED.



SECTION B-B

JOINT SEAL
 NOTES: USE 1 1/2\"/>

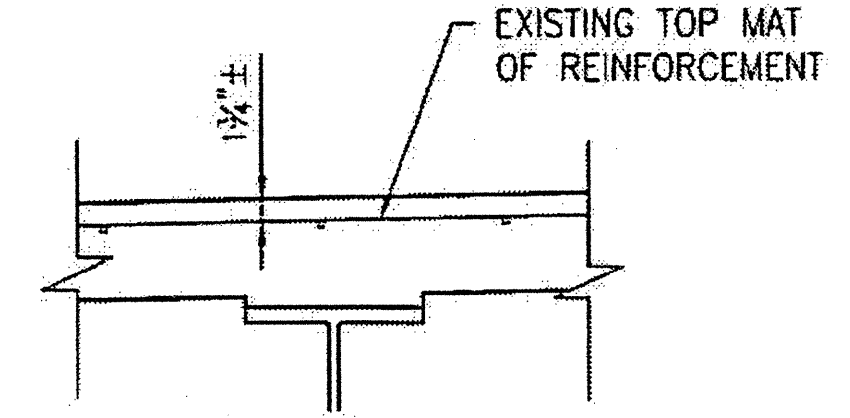
FOAM JOINT SAWS OPENING (W) TABLE			
TEMP.	45° F	60° F	90° F
BENT 1	1 15/16"	1 7/8"	1 3/4"
BENTS 2-4	2"	1 7/8"	1 13/16"
BENT 5	1 15/16"	1 7/8"	1 3/4"
BENT 6	2"	1 7/8"	1 5/8"



SECTION C-C

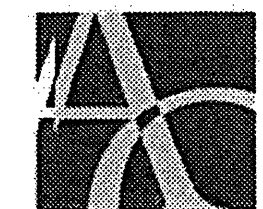
SCALE: N.T.S.

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



EXISTING SLAB SECTION

PLAN PREPARED BY:



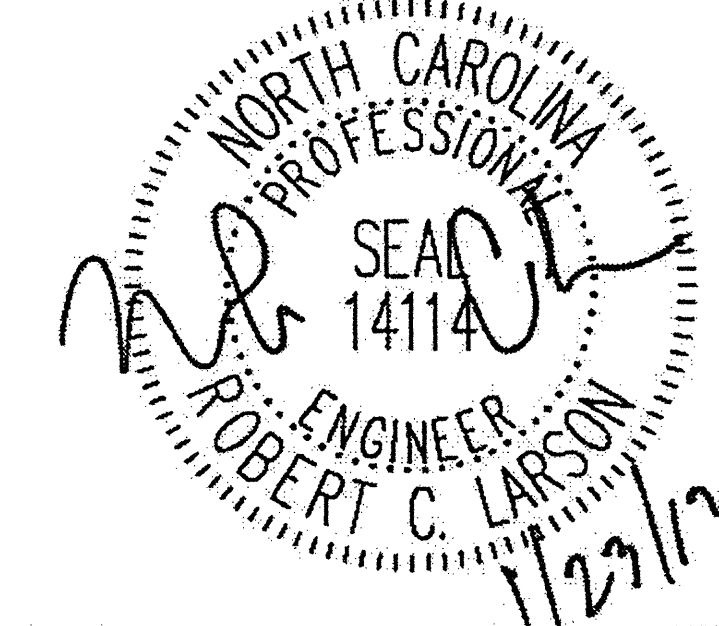
ALPHA & OMEGA GROUP
 CIVIL & STRUCTURAL ENGINEERS

1601 Lake Boone Trail, Ste. 3C, Raleigh, NC 27607
 Phone 919 981 0310 Fax 919 981 0451
 Firm License No. C-1684 www.aogroup.com
 A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
 BRIDGE NO. 540035

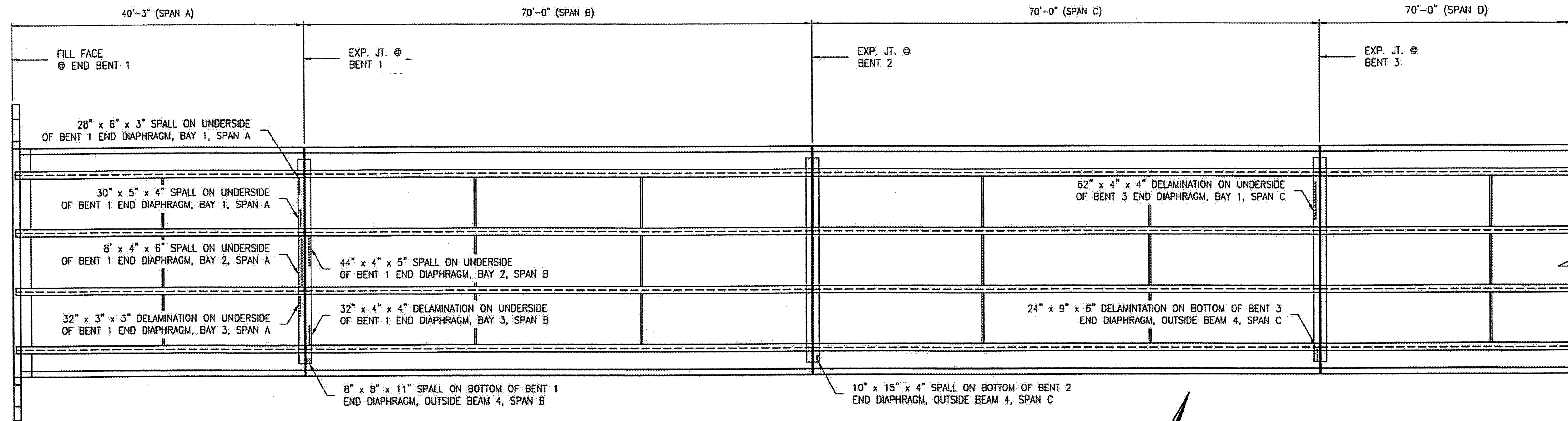
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL SECTION
 AND DETAILS

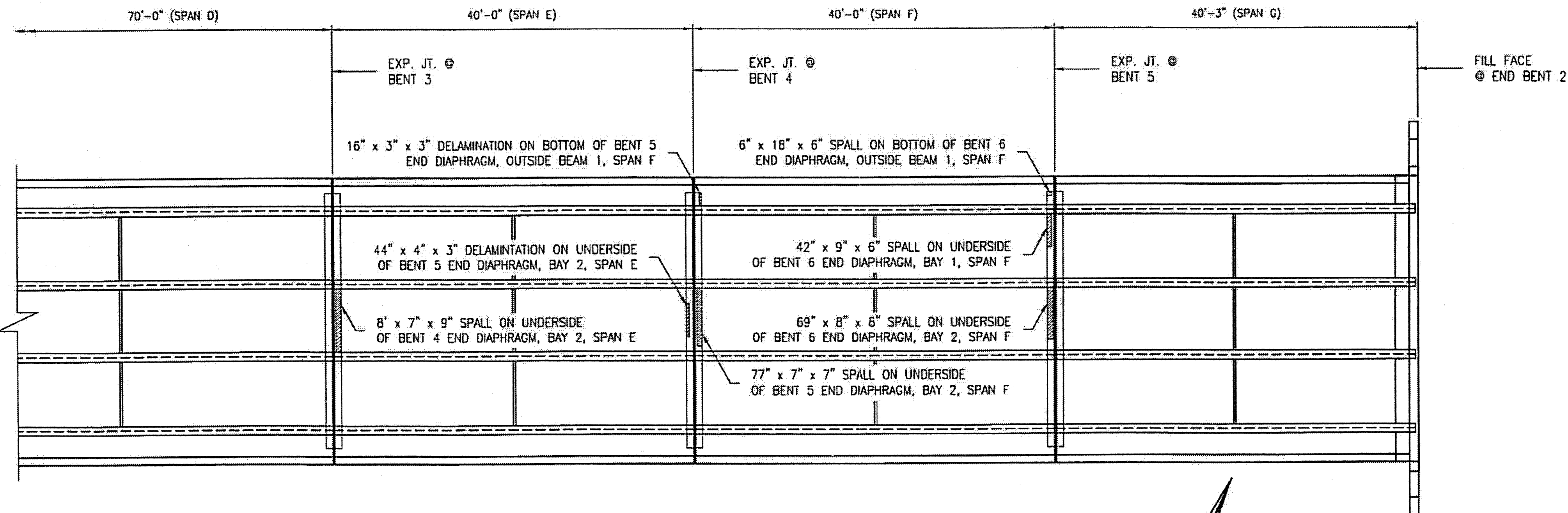
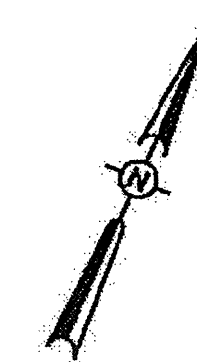


DRAWN BY: F.E. ROBBINS DATE: 11-24-11
 CHECKED BY: R.C. LARSON DATE: 11-24-11

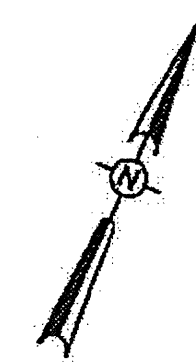
REVISIONS						SHEET NO. S-46
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 54
2			4			



DECK PLAN UNDERSIDE



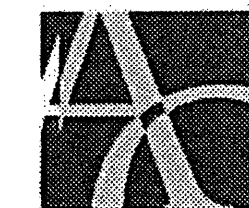
DECK PLAN UNDERSIDE



ESTIMATED CONCRETE REPAIRS
SPANS A-G = 16 CF

AREA TO BE REPAIRED WITH CONCRETE. SEE DETAILS, SHEET S-48.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

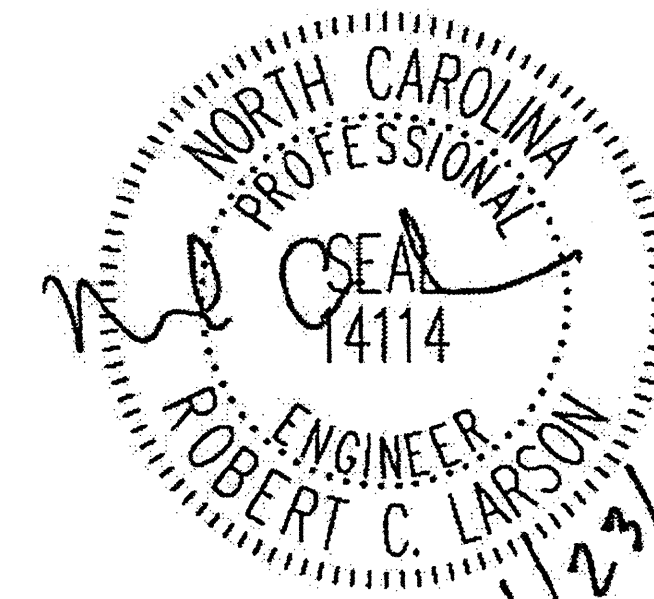
1601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com

A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
BRIDGE NO. 540035

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE PLAN
UNDERSIDE
SPANS A-G

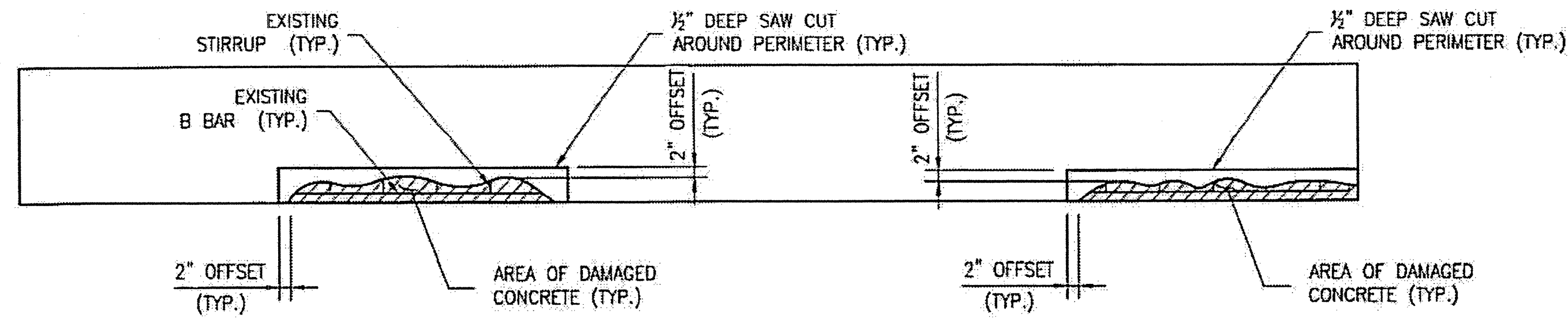


DRAWN BY: F.F. ROBBINS DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

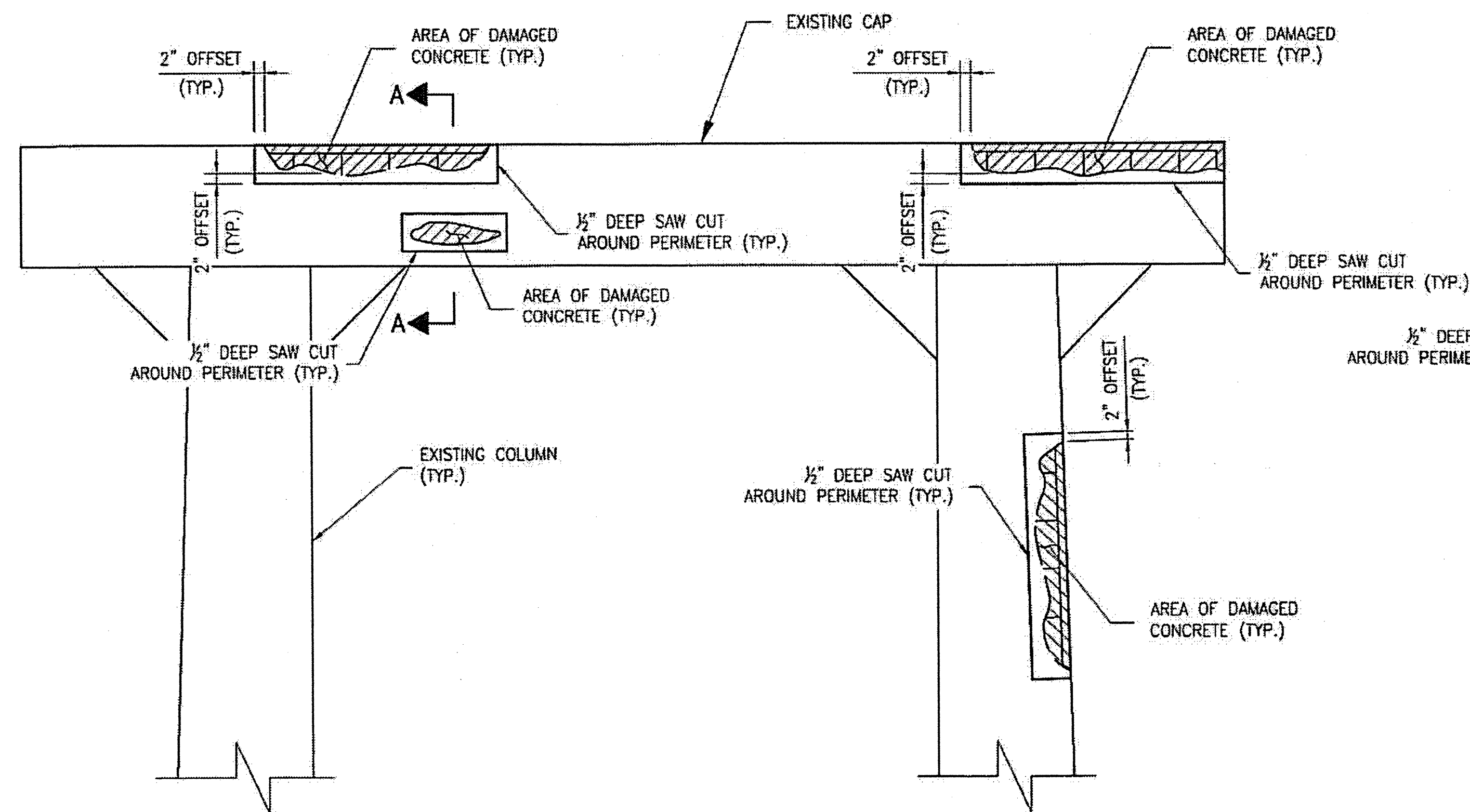
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47	
1			3			TOTAL SHEETS	
2			4			54	

NOTES:

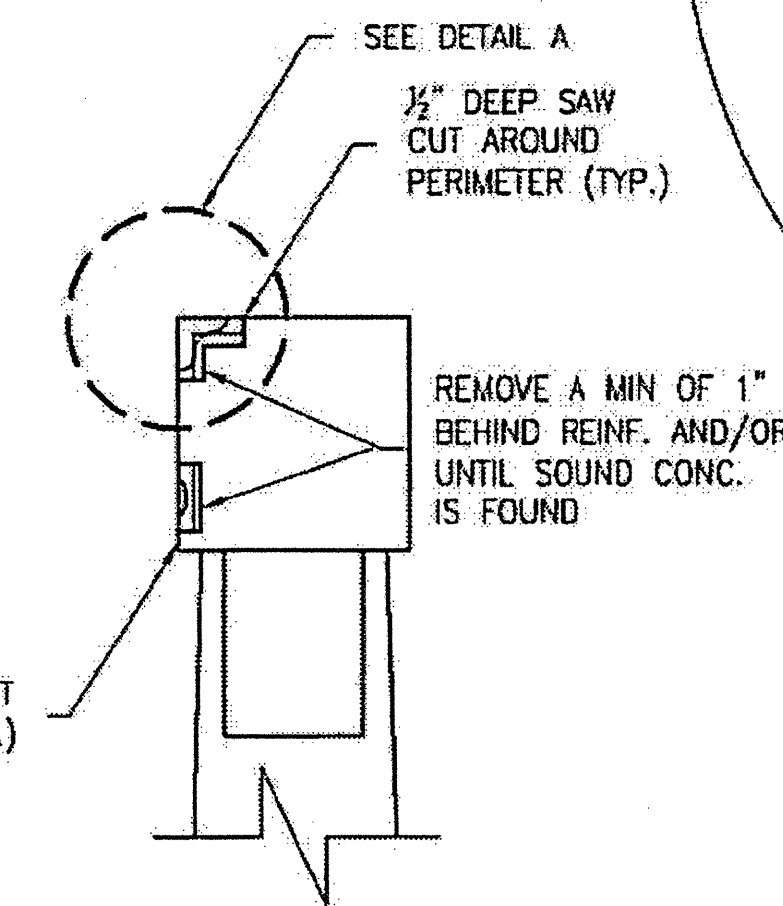
1. SPALL/DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE.
2. REPAIR MATERIAL SHALL BE CONCRETE. SEE SPECIAL PROVISIONS.
3. REPAIRS OF SUPERSTRUCTURE UNDERSIDE, DIAPHRAGMS, ETC. SIMILAR.



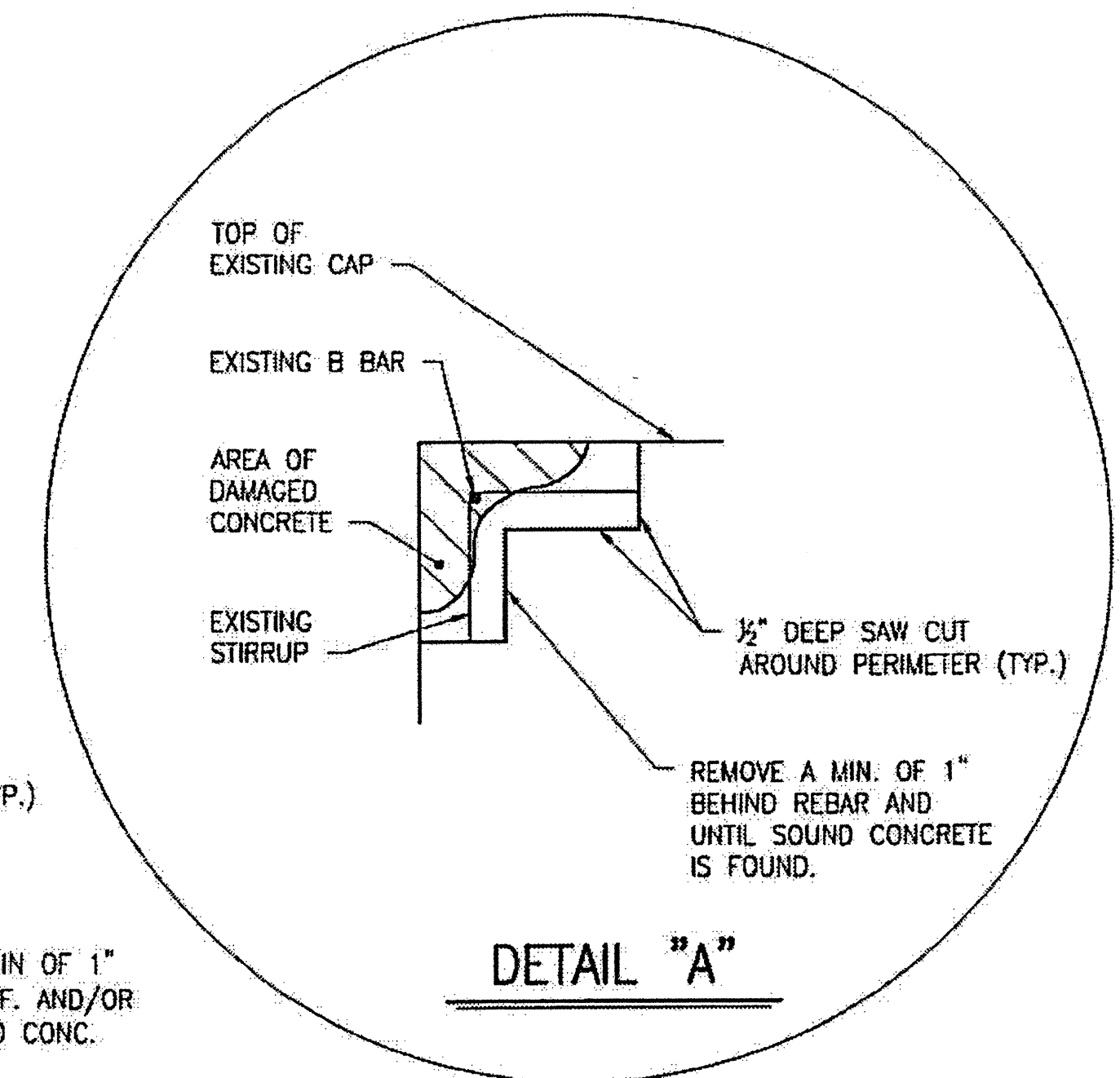
TYPICAL PLAN



TYPICAL PARTIAL ELEVATION

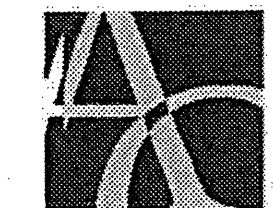


SECTION A-A



DETAIL "A"

PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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A & O PROJECT #: 2011.031

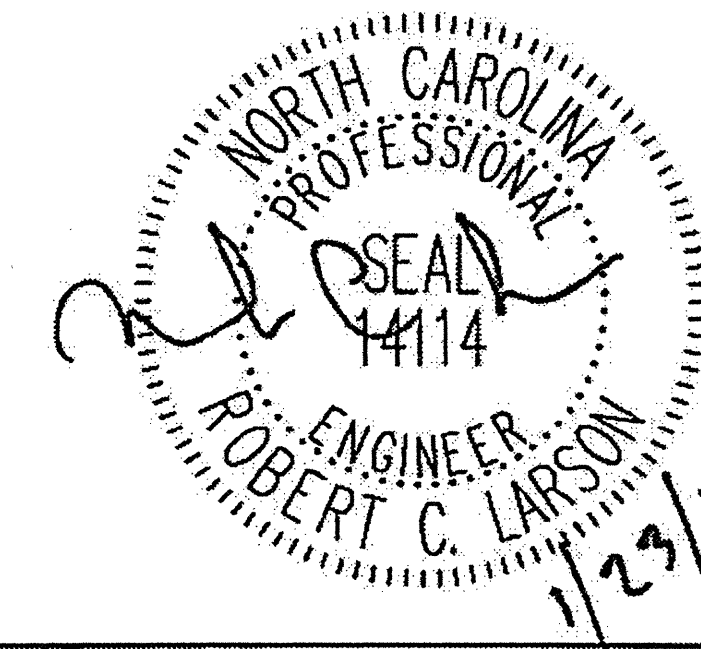
PROJECT NO. WBS 17BP.12.P.4

LINCOLN COUNTY

BRIDGE NO. 540035

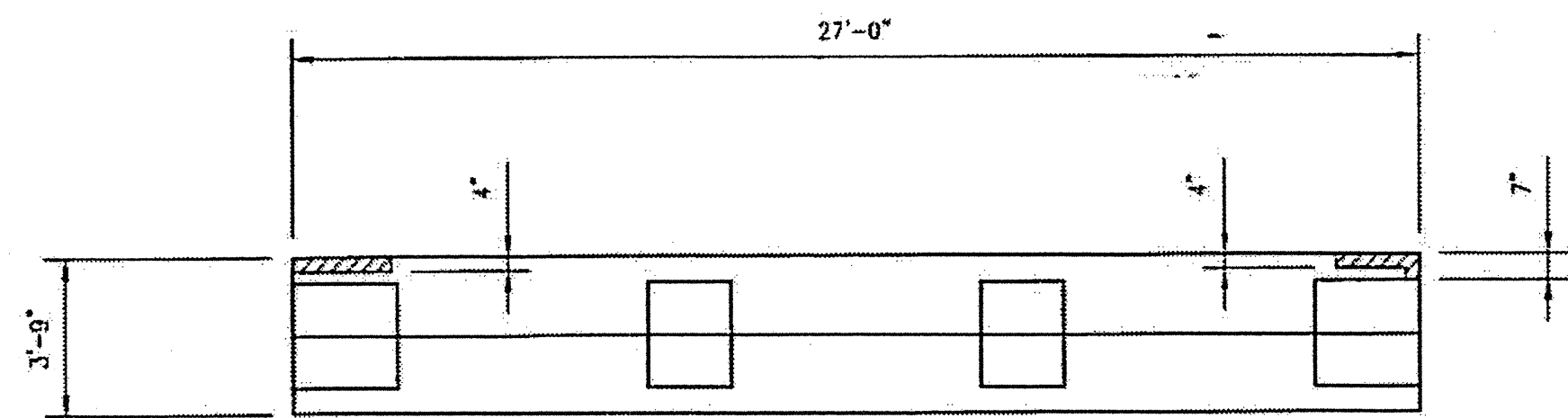
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TYPICAL BENT CAP
AND COLUMN
REPAIR DETAILS

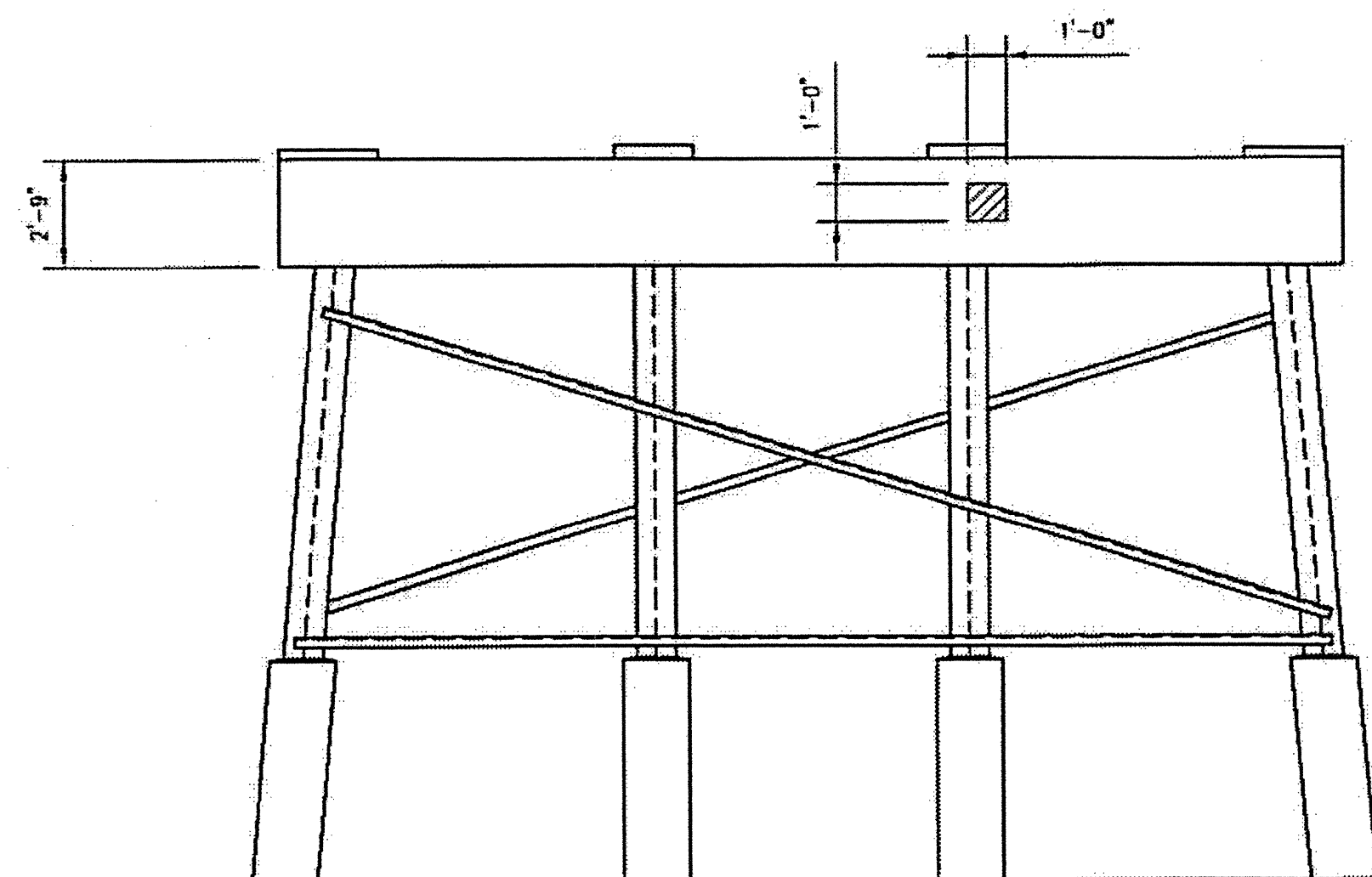


DRAWN BY: F.E. ROBBINS DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

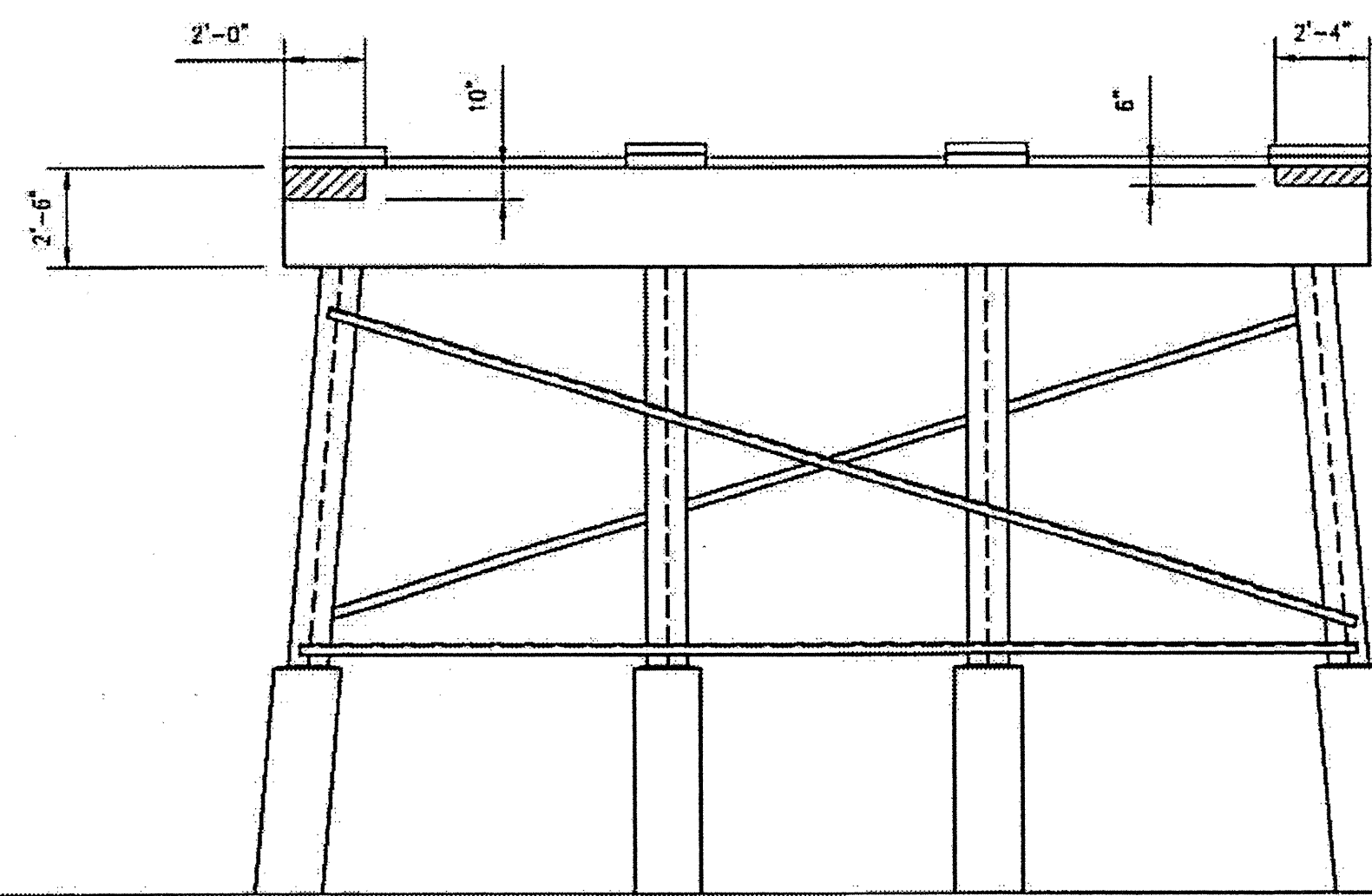
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-48
1			3			TOTAL SHEETS
2			4			54



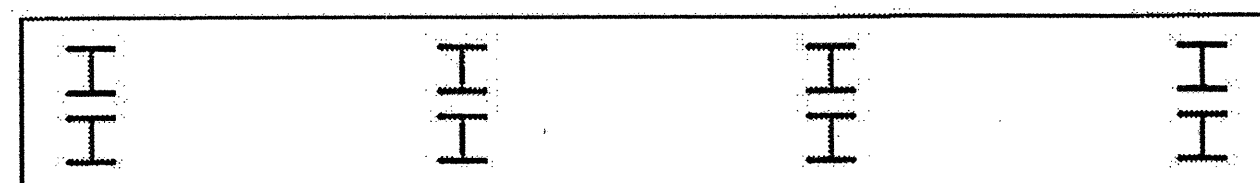
TOP OF CAP



WEST ELEVATION



EAST ELEVATION



BOTTOM OF CAP

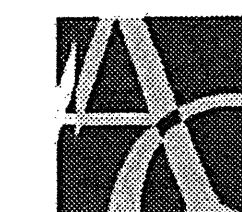


AREA TO BE REPAIRED WITH CONCRETE. SEE DETAILS, SHEET S-48.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."

ESTIMATED CONCRETE REPAIRS
BENT 1 = 2 CF



PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

4601 Lake Boone Trail, Ste. 3C Raleigh, NC 27607
Phone 919 981 0310 Fax 919 981 0451
Firm License No. C-1684 www.aogroup.com
A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4

LINCOLN COUNTY

BRIDGE NO. 540035

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE CAP
REPAIRS
BENT 1

REVISIONS

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

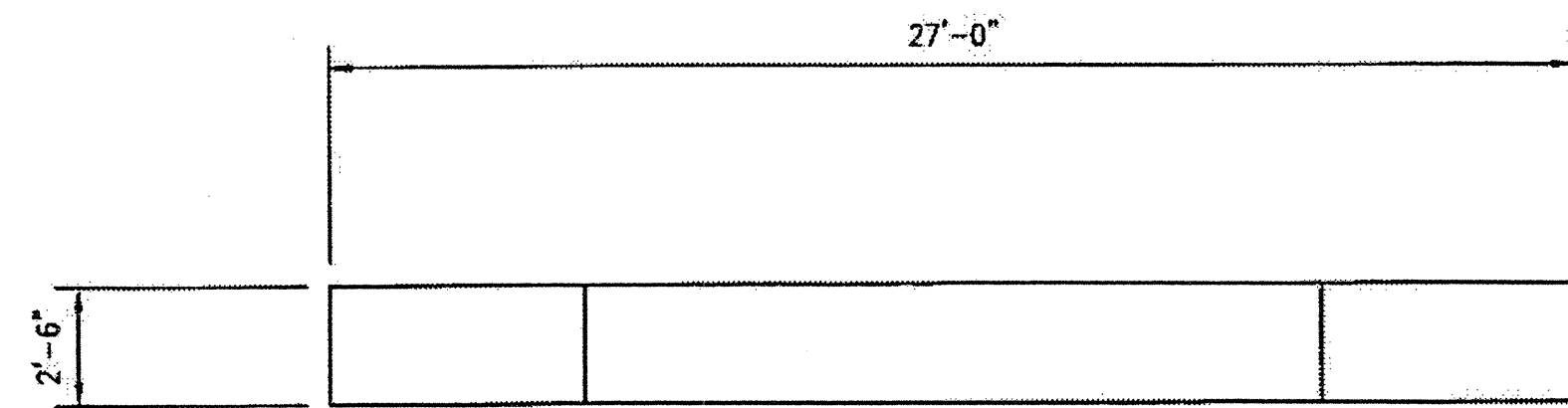
SHEET NO.

S-49

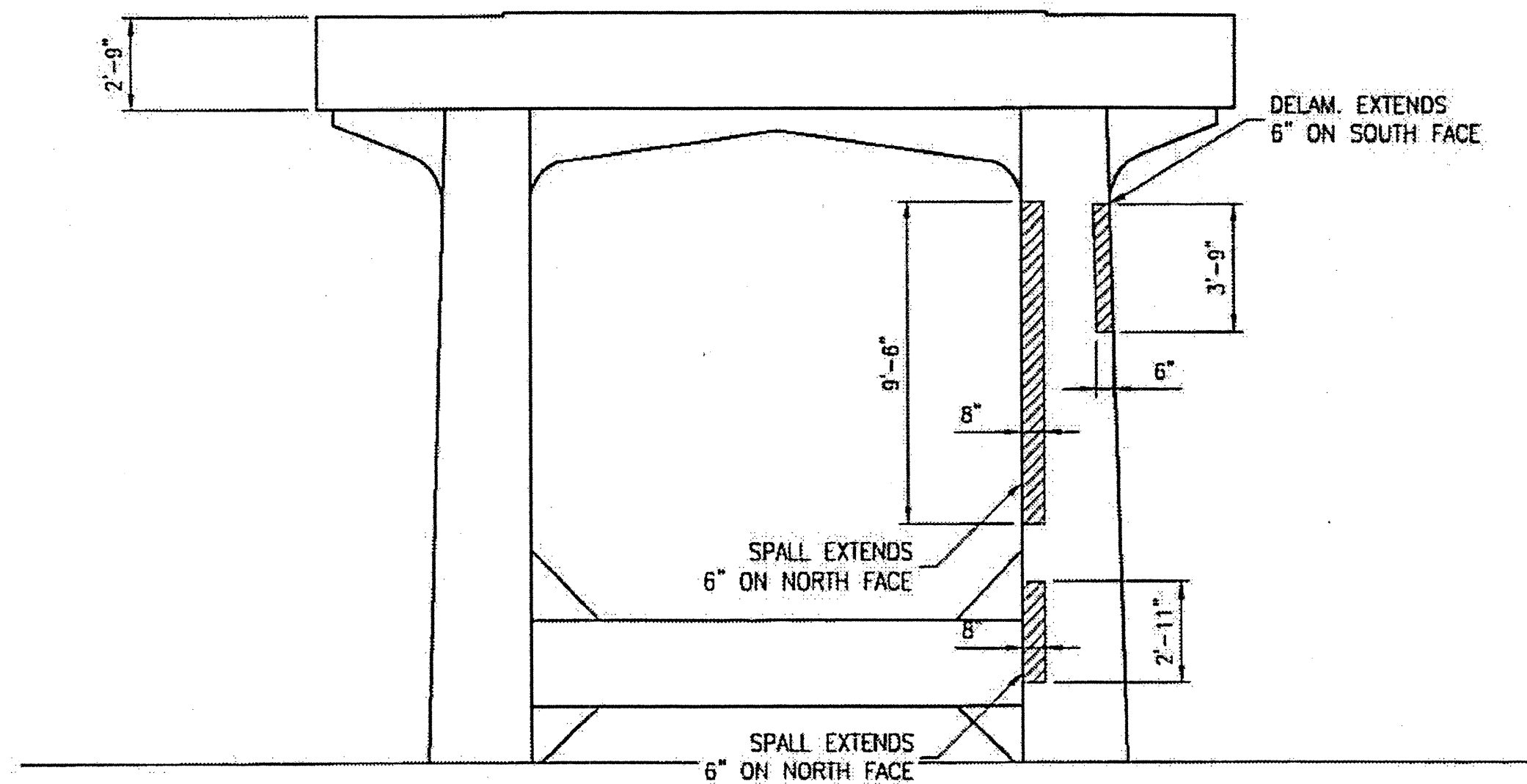
TOTAL SHEETS

54

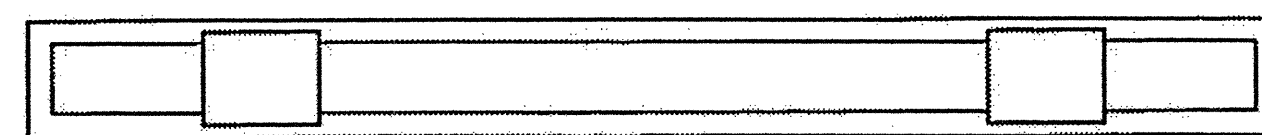
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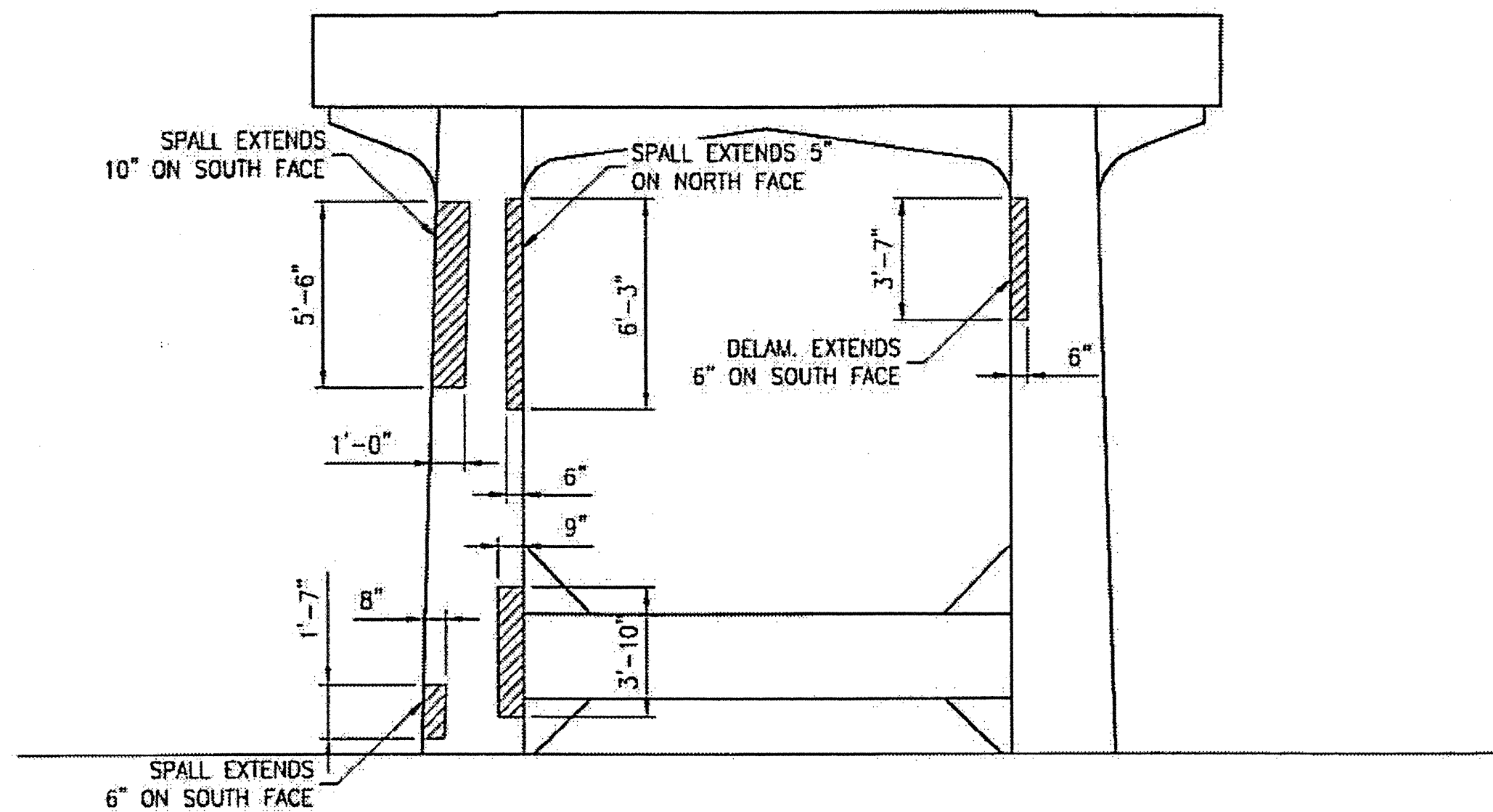
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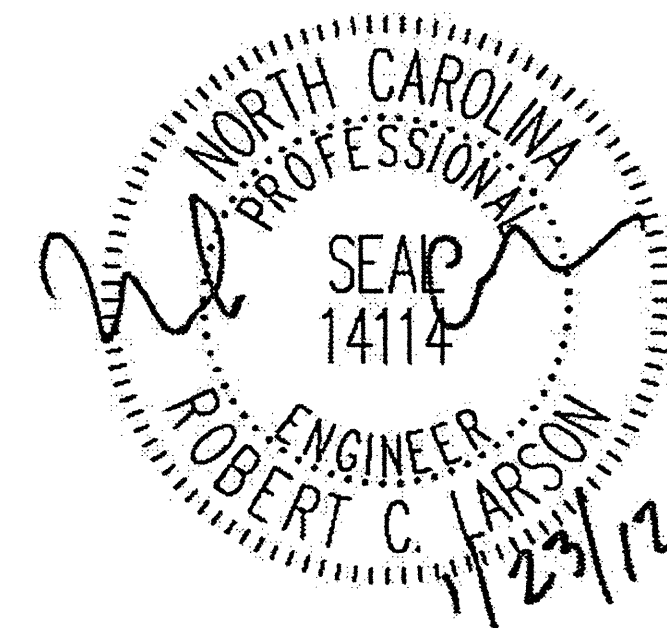
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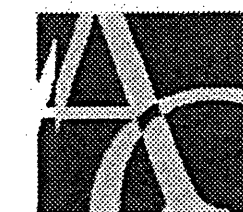
EAST ELEVATION

▨ AREA TO BE REPAIRED WITH CONCRETE. SEE DETAILS, SHEET S-48. SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."

ESTIMATED CONCRETE REPAIRS
BENT 2 = 14 CF



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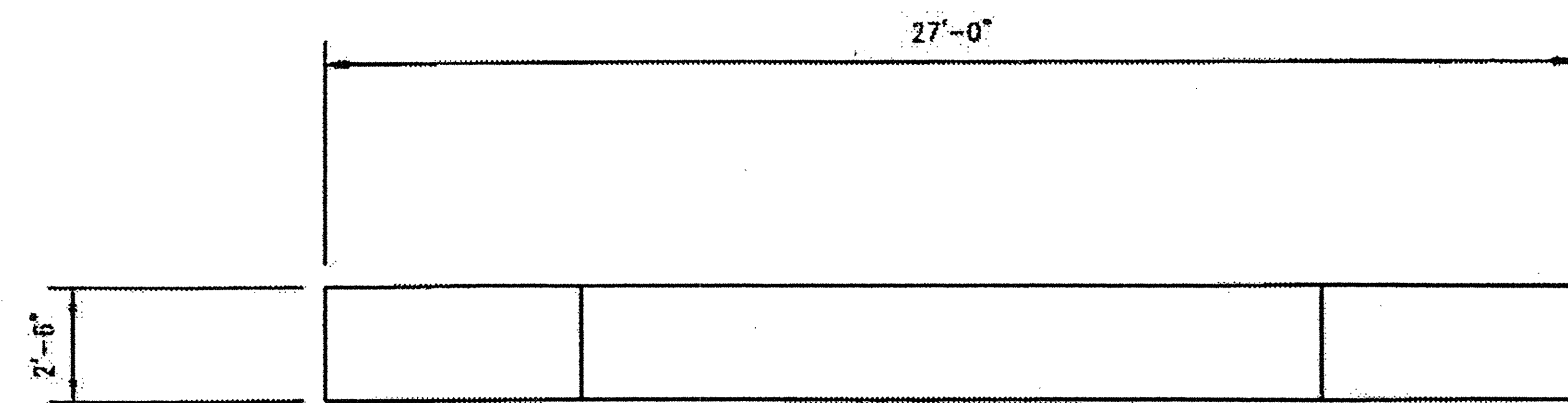
PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
BRIDGE NO. 540035

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

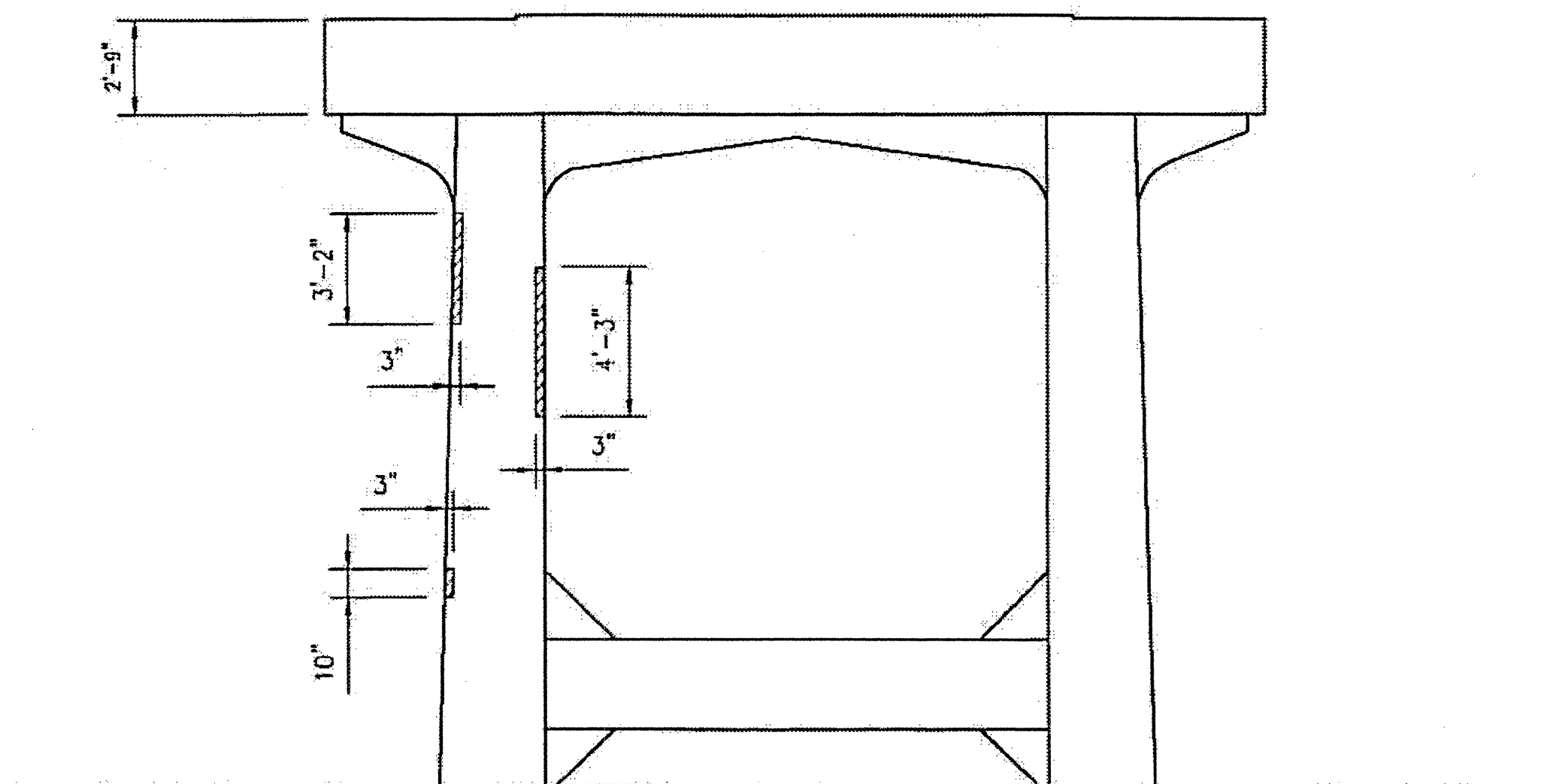
CONCRETE CAP
AND COLUMN REPAIRS
BENT 2

DRAWN BY: F.E. ROBBINS DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

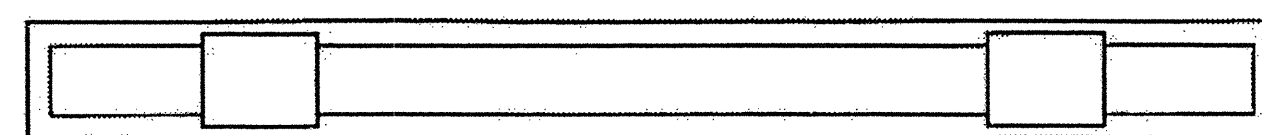
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-50
1			3			TOTAL SHEETS
2			4			54



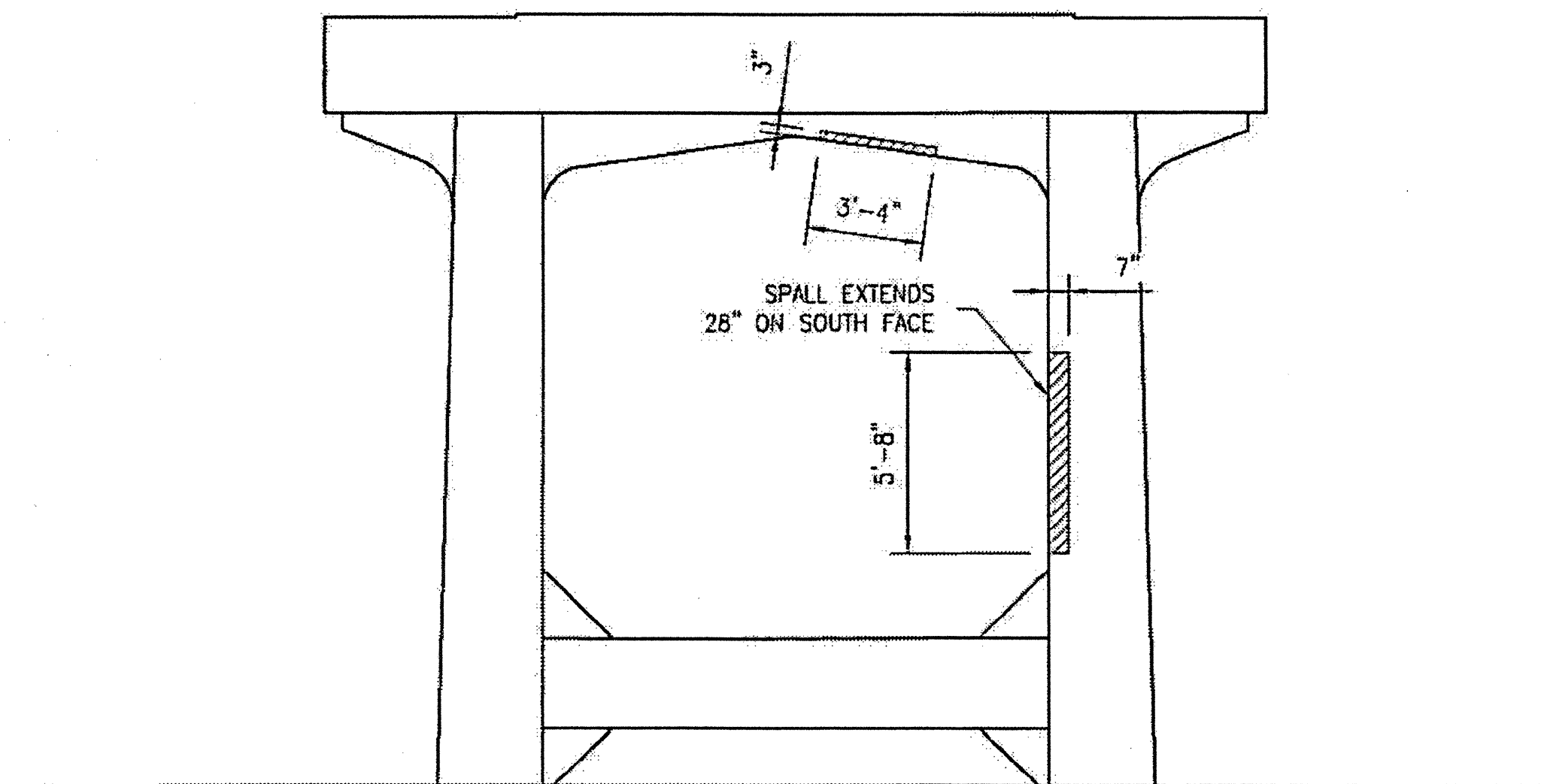
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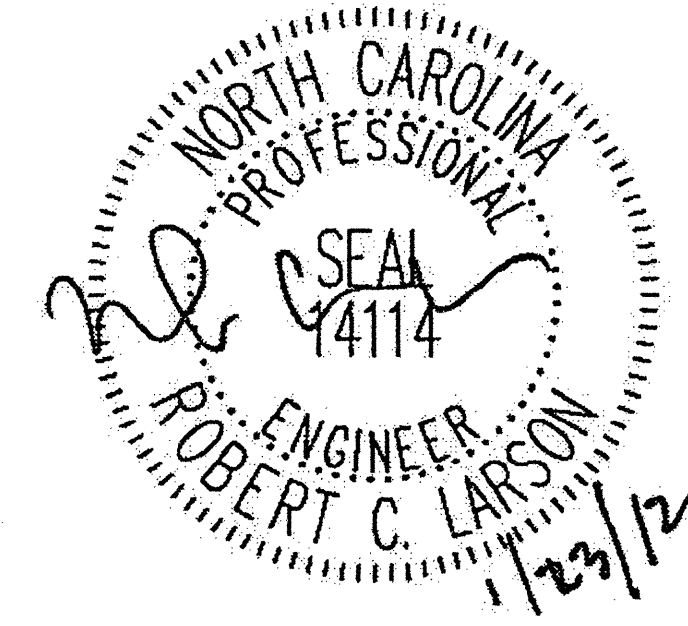
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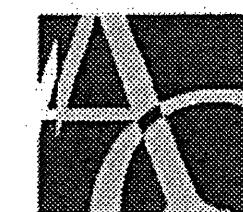
EAST ELEVATION

AREA TO BE REPAIRED WITH CONCRETE. SEE DETAILS, SHEET S-48.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."

ESTIMATED CONCRETE REPAIRS
BENT 3 = 6 CF



PLAN PREPARED BY:



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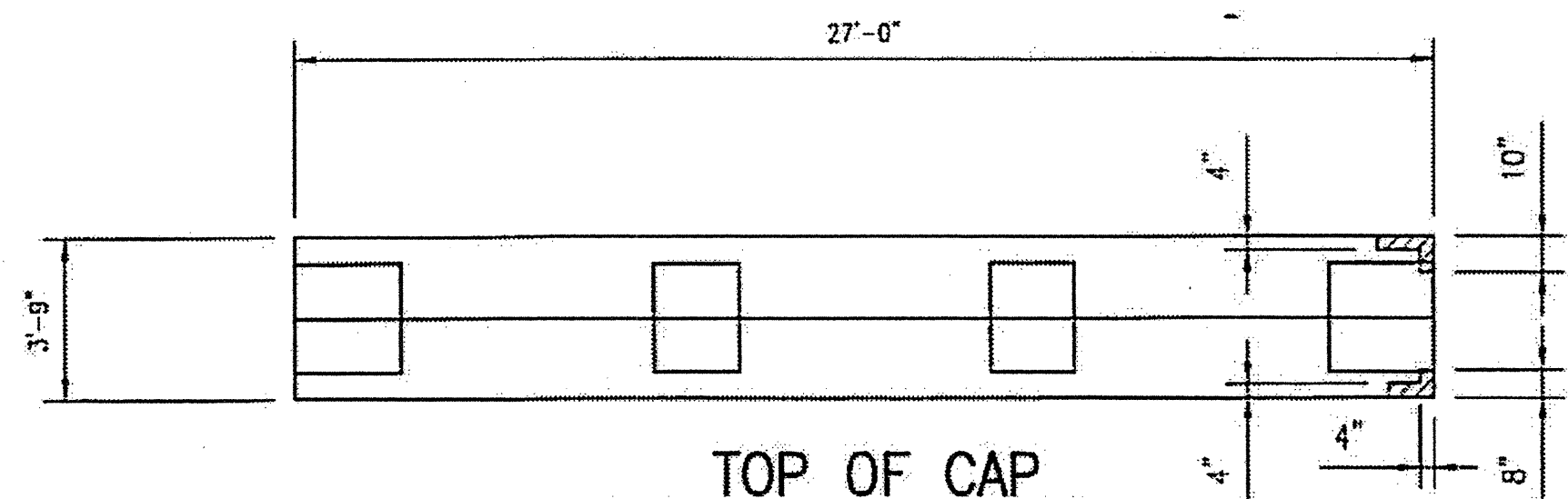
PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
BRIDGE NO. 540035

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

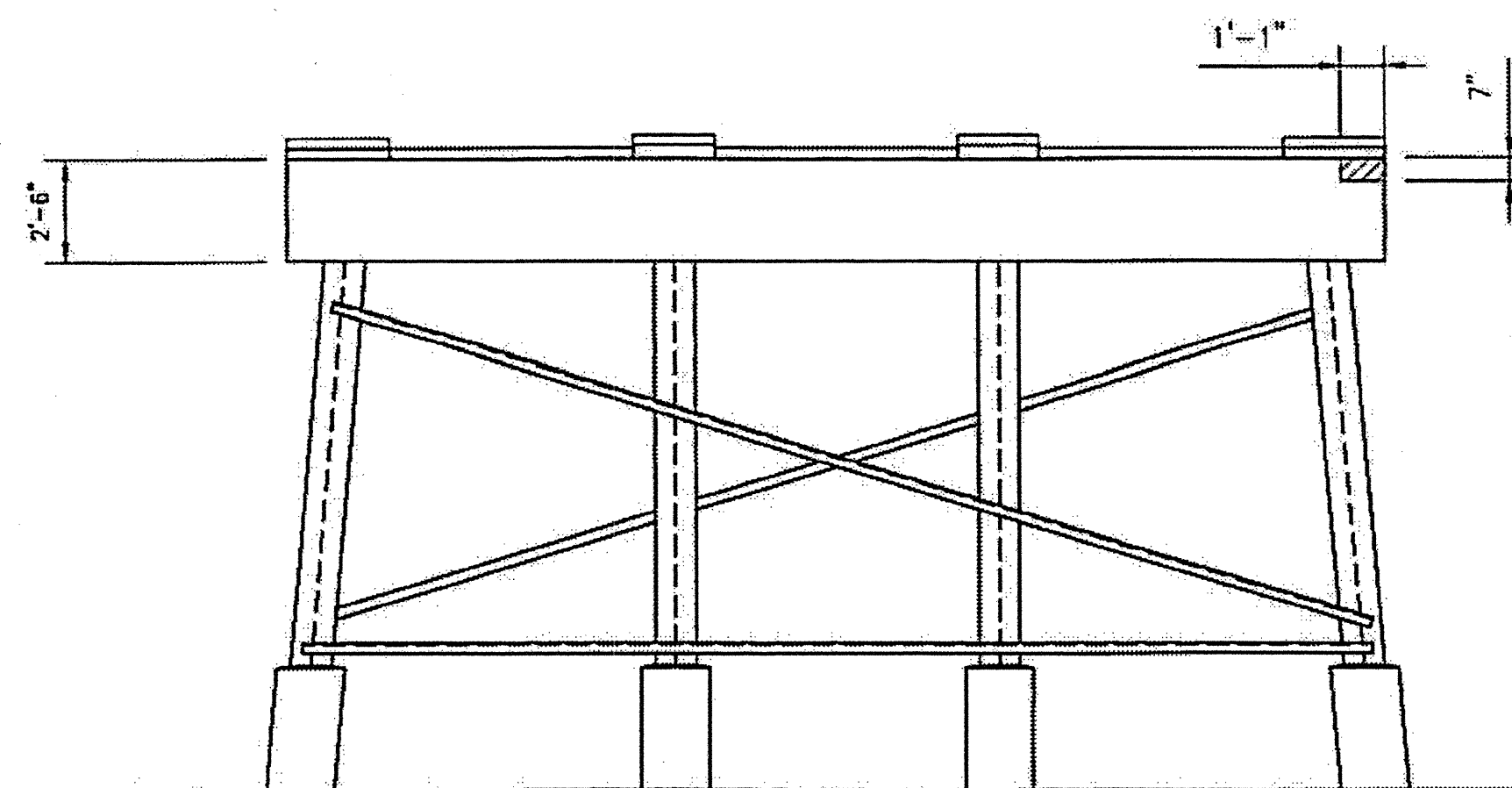
CONCRETE CAP
AND COLUMN REPAIRS
BENT 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-51
1			3			TOTAL SHEETS
2			4			54

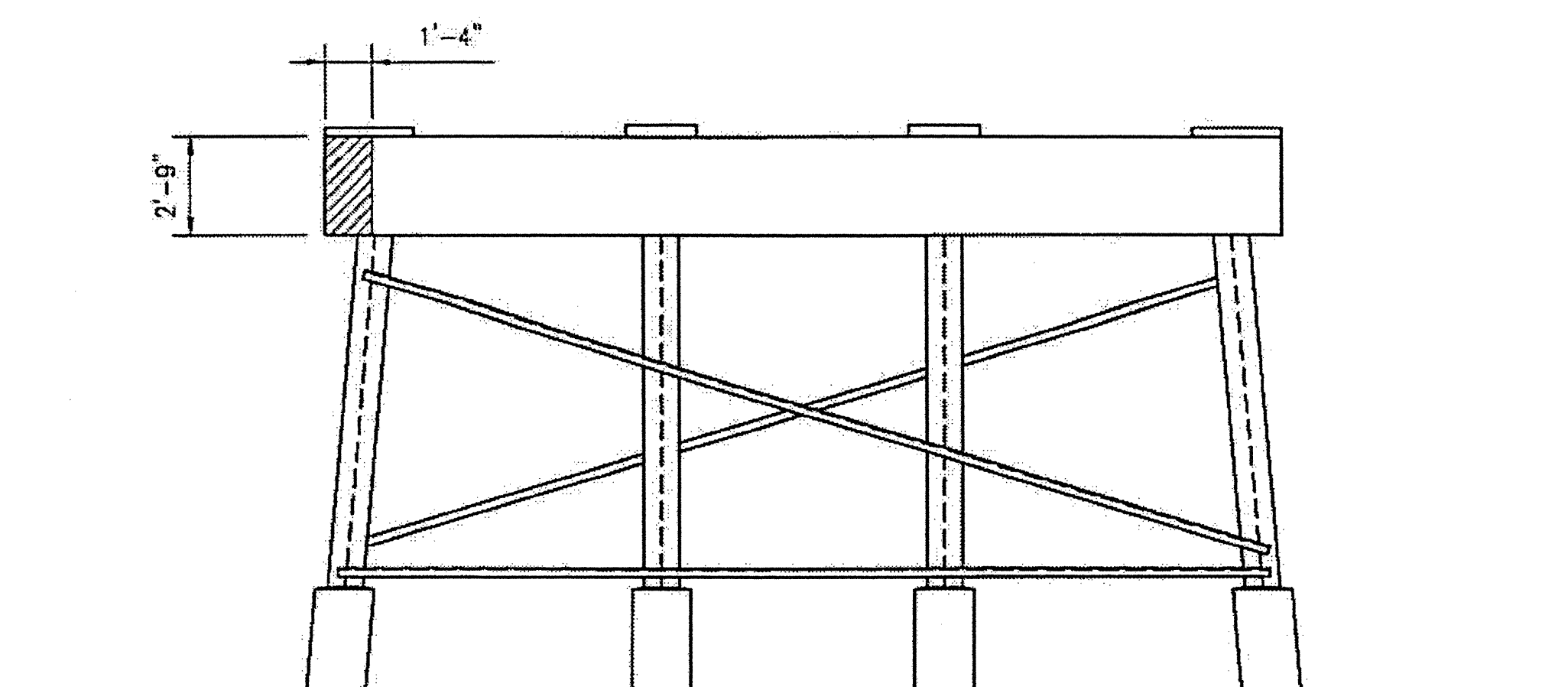
DRAWN BY: F.E. ROBBINS DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11



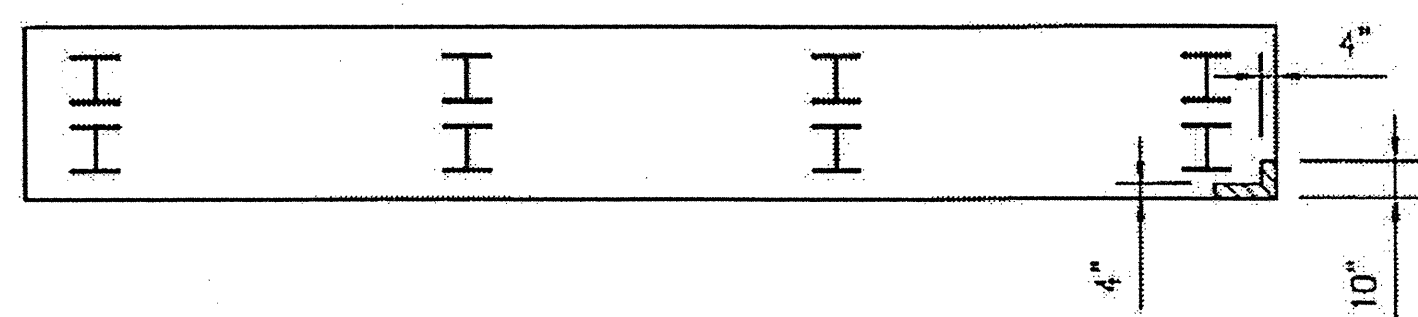
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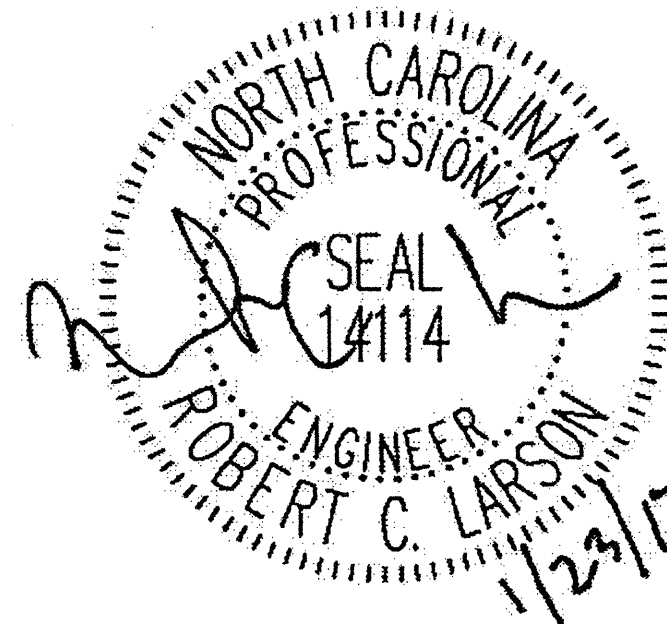
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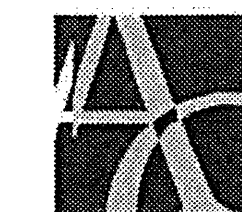
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AREA TO BE REPAIRED WITH CONCRETE. SEE DETAILS, SHEET S-48.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."

ESTIMATED CONCRETE REPAIRS
BENT 4 = 2 CF



PLAN PREPARED BY:



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A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4

LINCOLN COUNTY

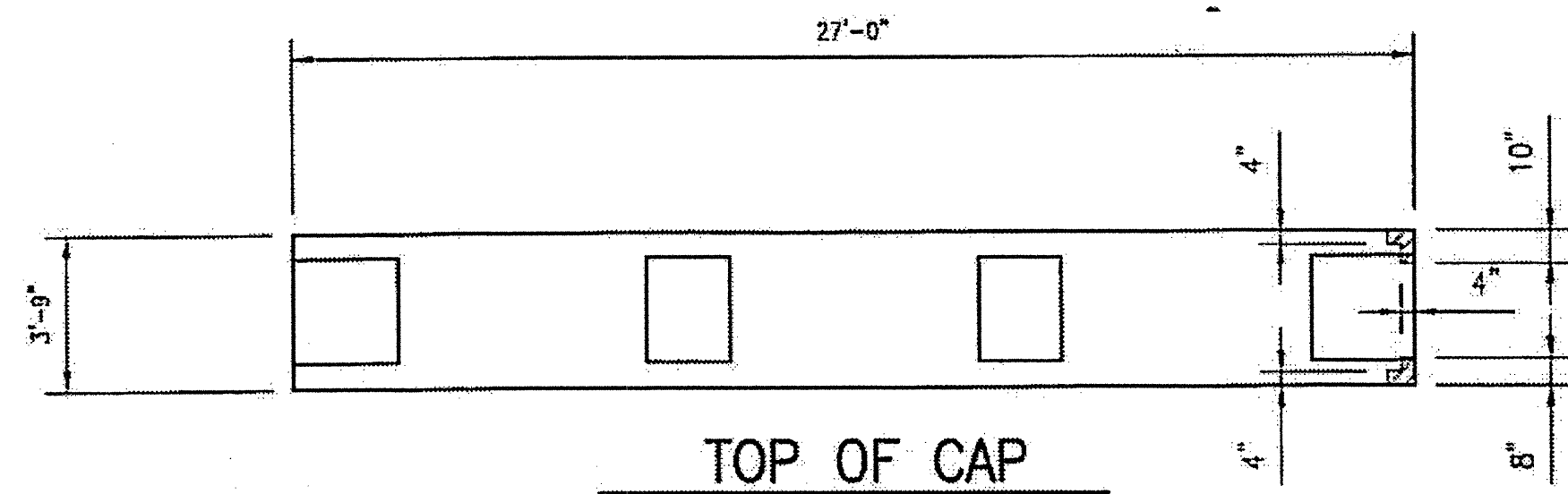
BRIDGE NO. 540035

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

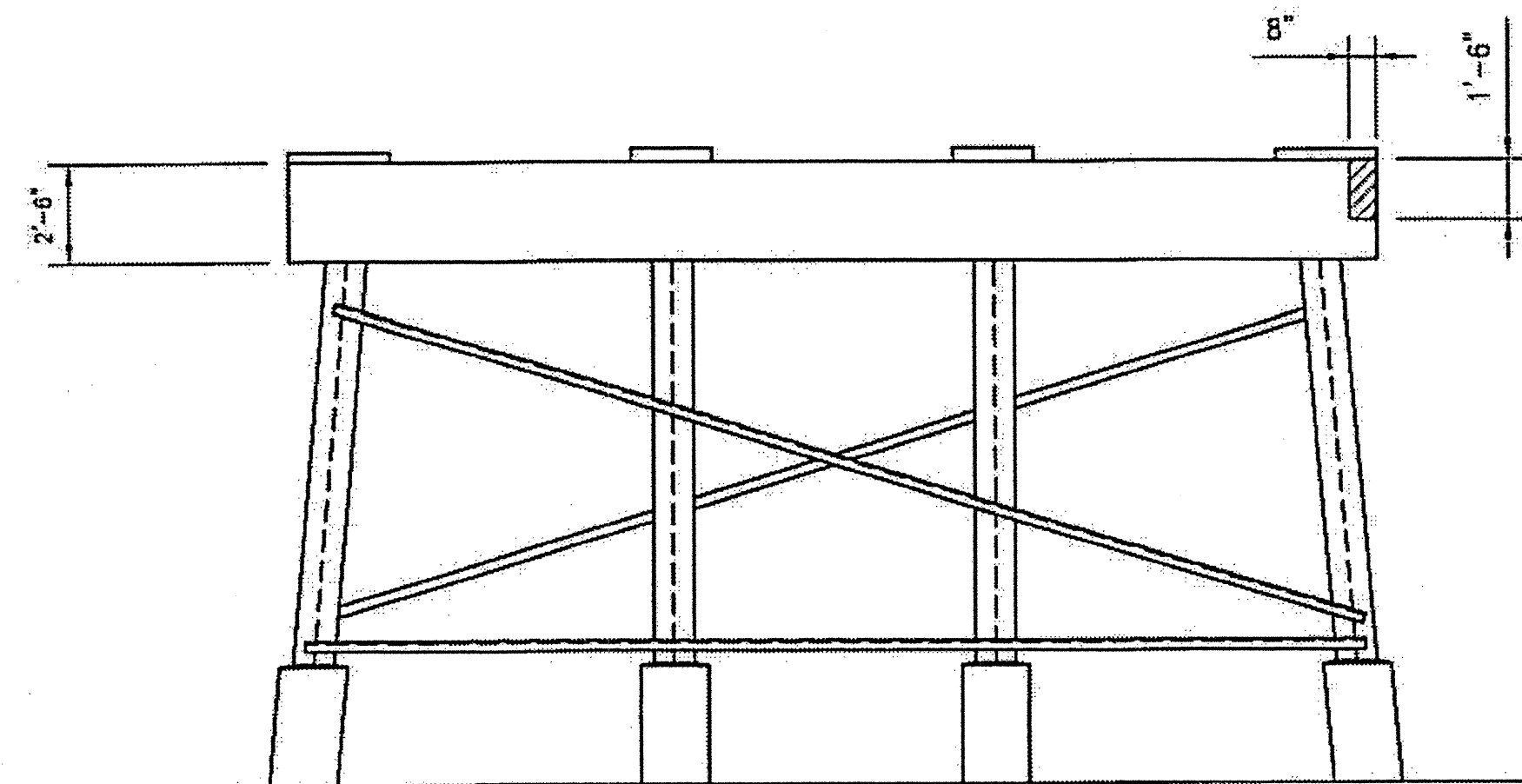
CONCRETE CAP
REPAIRS
BENT 4

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			54

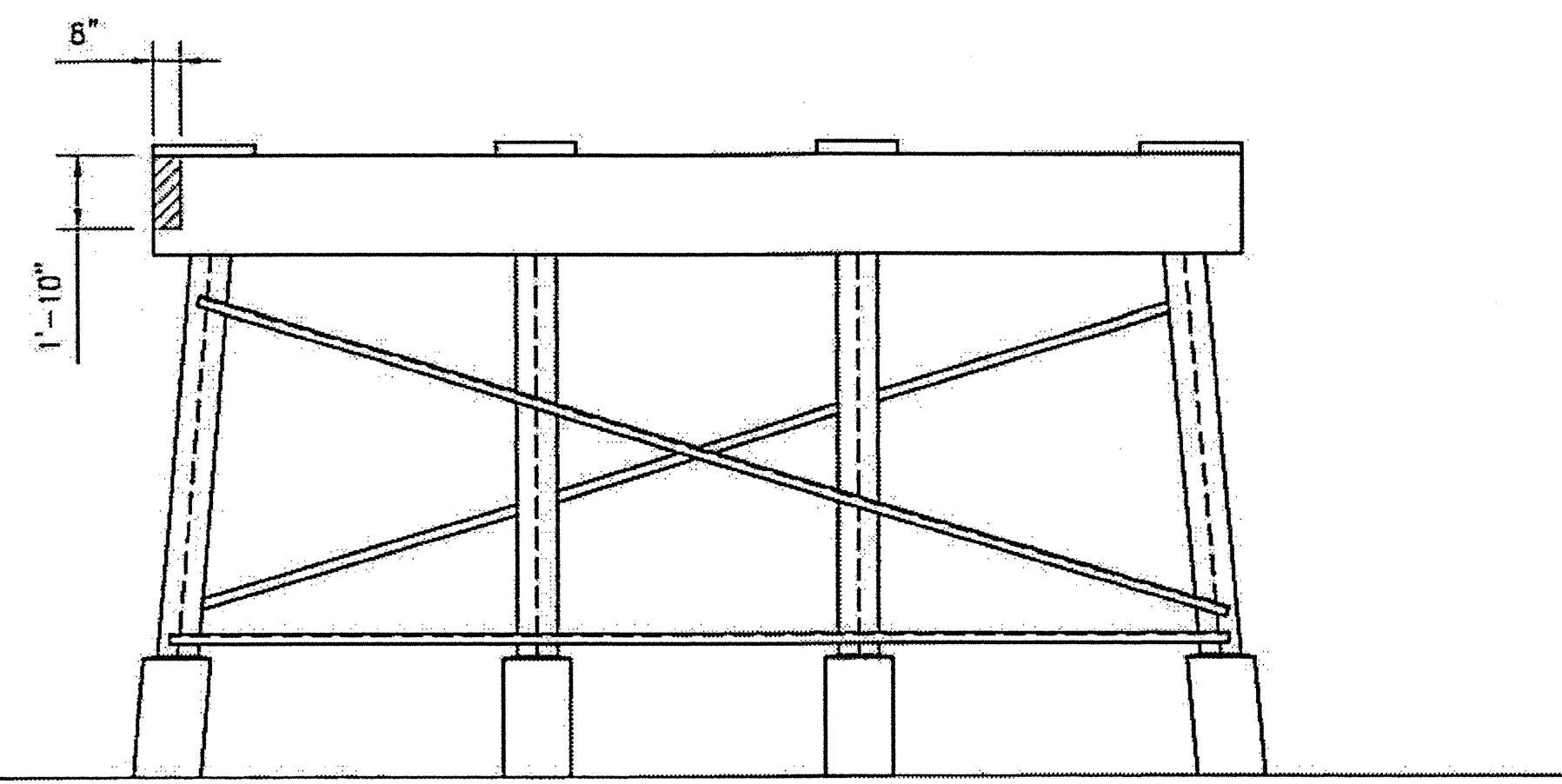
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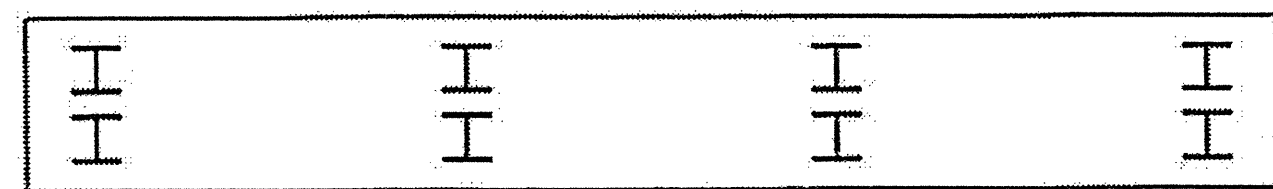
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WEST ELEVATION



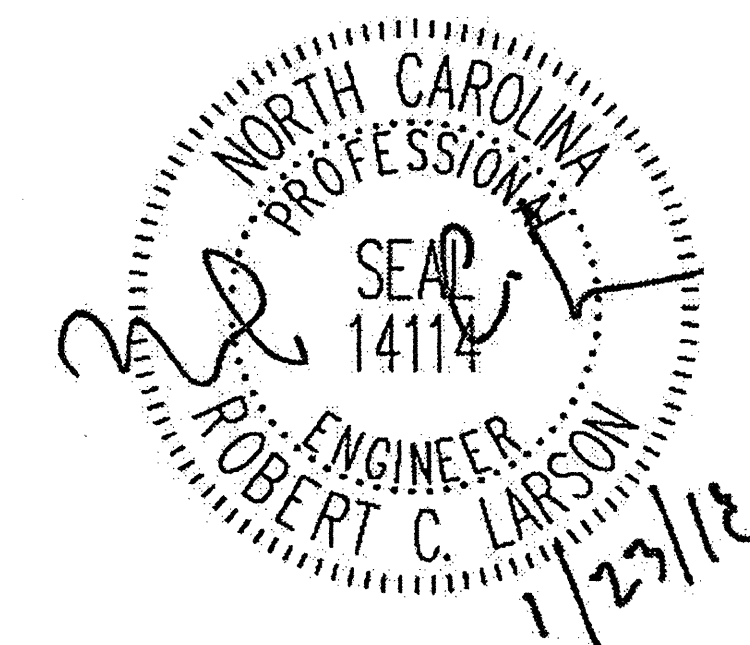
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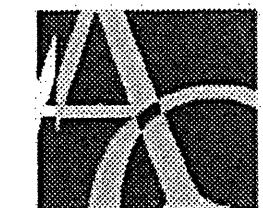
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AREA TO BE REPAIRED WITH CONCRETE. SEE DETAILS, SHEET S-48.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."

ESTIMATED CONCRETE REPAIRS
BENT 5 = 2 CF



PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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A & O PROJECT #: 2011.031

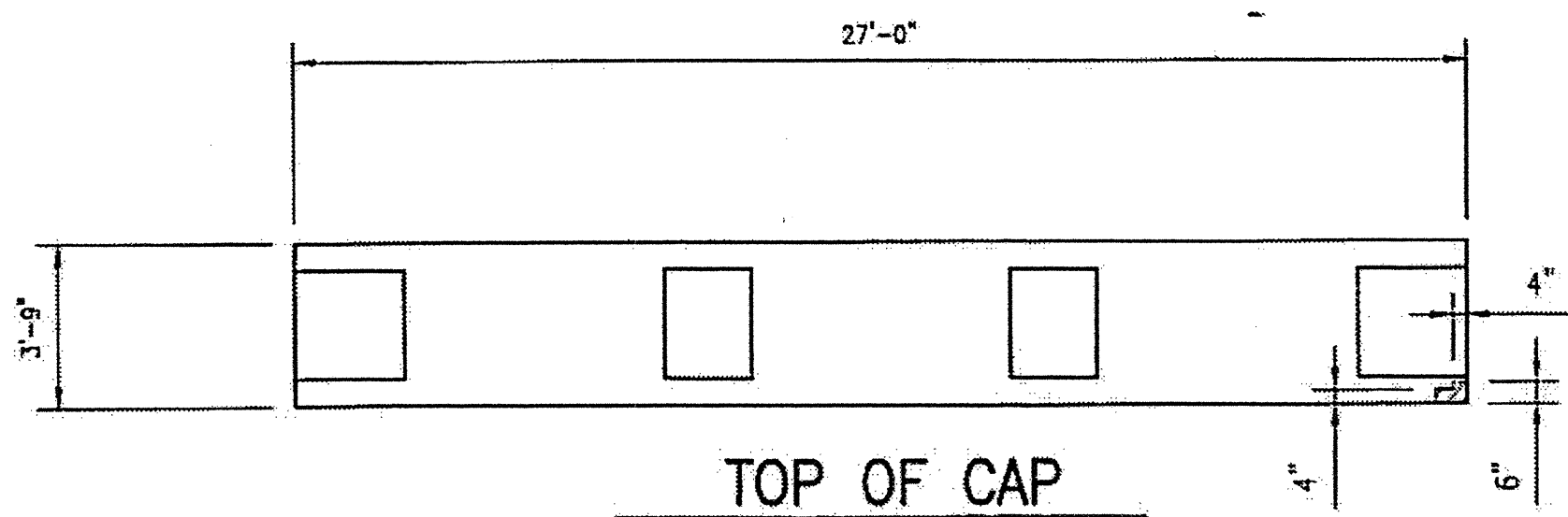
PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
BRIDGE NO. 540035

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

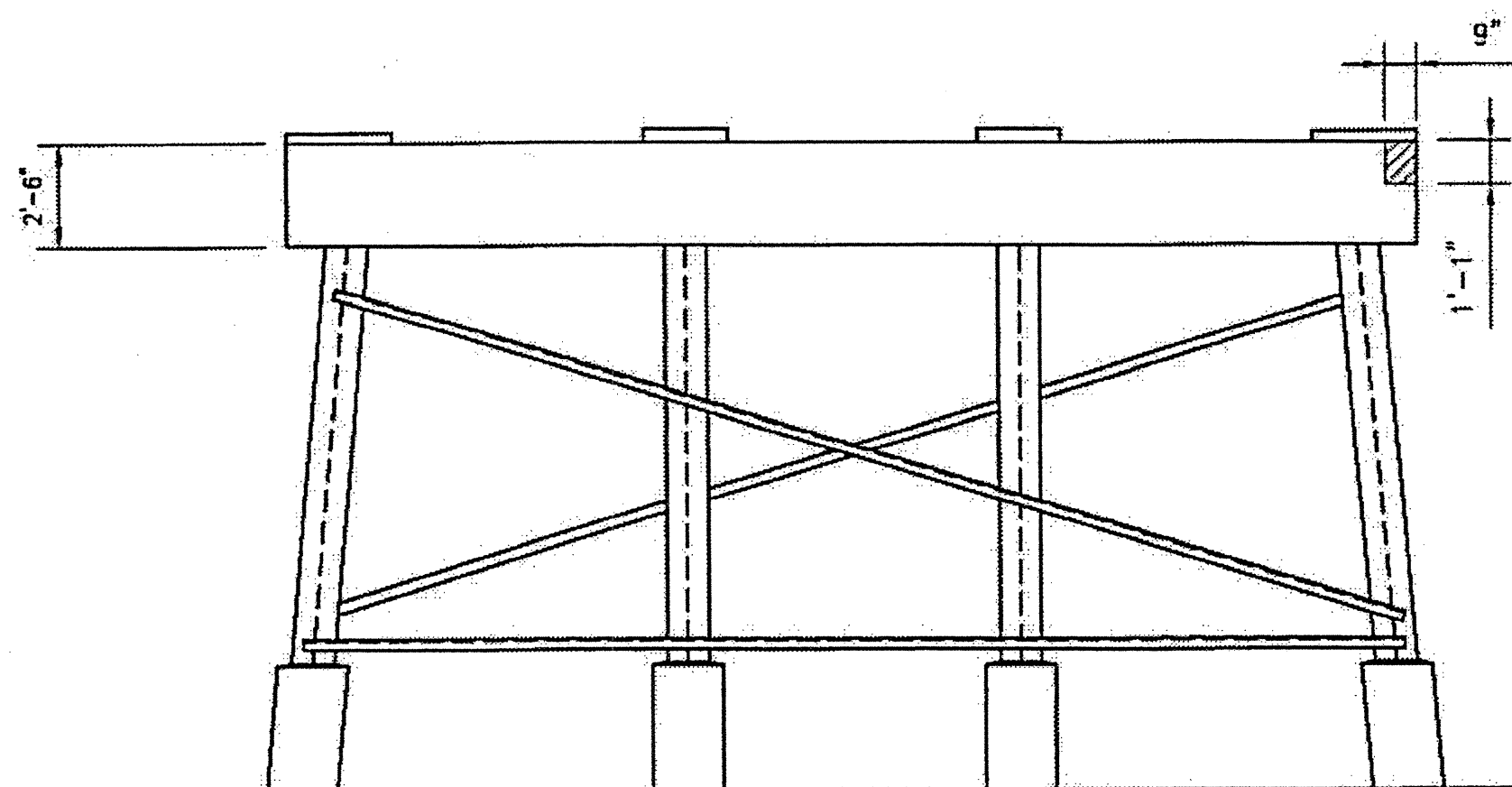
CONCRETE CAP
REPAIRS
BENT 5

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-53
1			3			TOTAL SHEETS
2			4			54

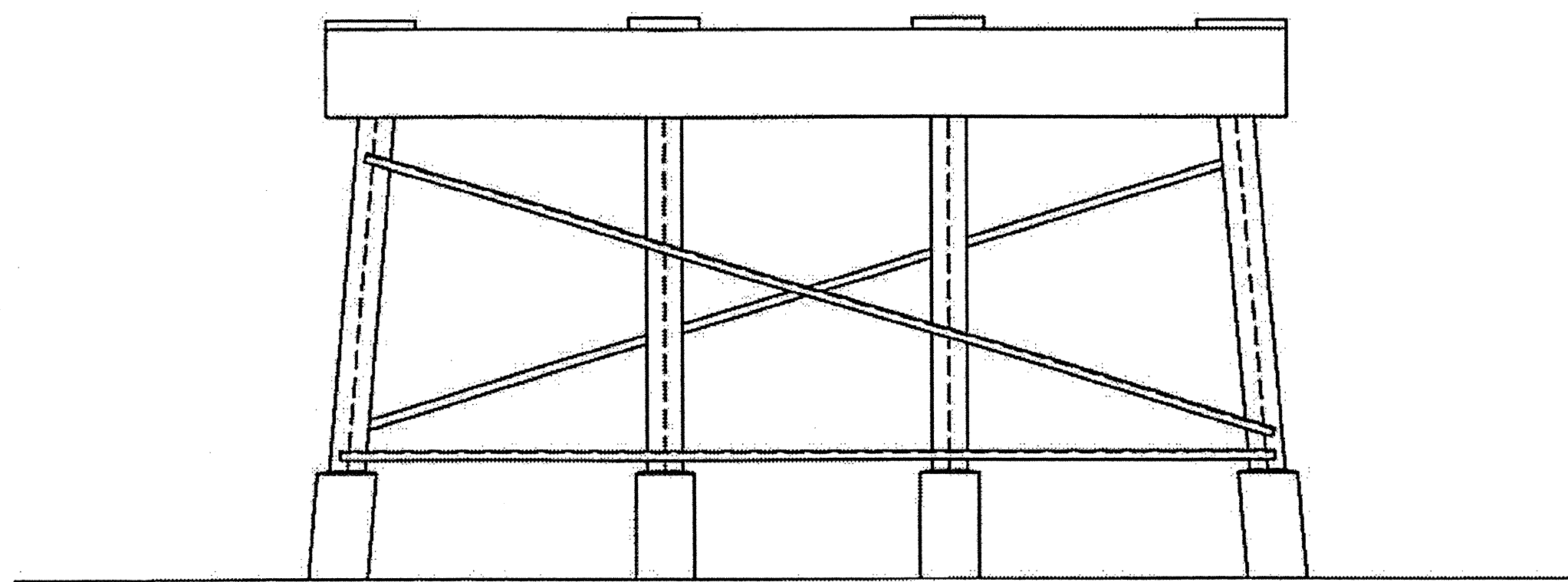
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CHECKED BY: R.C. LARSON DATE: 11-24-11



TOP OF CAP



WEST ELEVATION



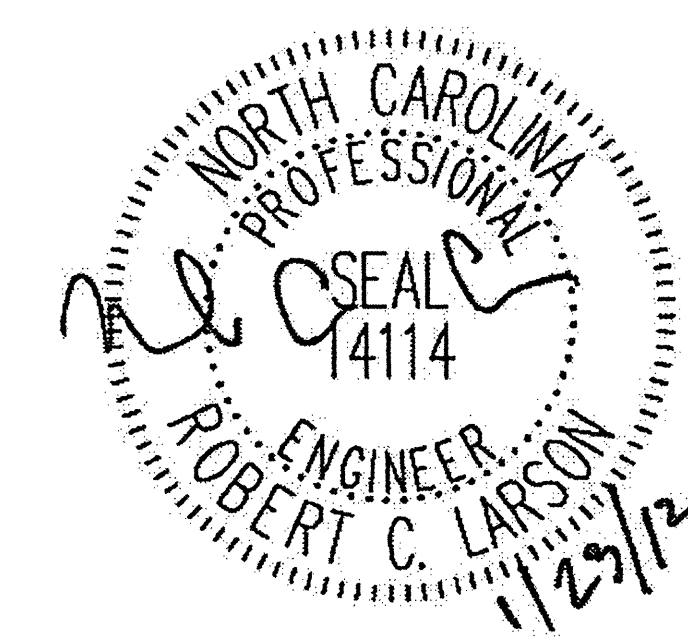
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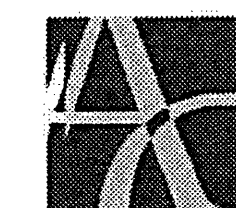
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AREA TO BE REPAIRED WITH CONCRETE. SEE DETAILS, SHEET S-46.
SEE THE SPECIAL PROVISION "CONCRETE REPAIRS."

ESTIMATED CONCRETE REPAIRS
BENT 6 = 1 CF



PLAN PREPARED BY:



ALPHA & OMEGA GROUP
CIVIL & STRUCTURAL ENGINEERS

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Phone 919 981 0310 Fax 919 981 0451
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A & O PROJECT #: 2011.031

PROJECT NO. WBS 17BP.12.P.4
LINCOLN COUNTY
BRIDGE NO. 540035

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE CAP
REPAIRS
BENT 6

DRAWN BY: F.F. ROBBINS DATE: 11-24-11
CHECKED BY: R.C. LARSON DATE: 11-24-11

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
17BP.12.P.4	TCP-1

**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
GASTON, CLEVELAND & LINCOLN COUNTIES**

17BP.12.P.4

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
1101.04	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
1205.12	PAVEMENT MARKINGS - BRIDGES

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TCP-2	GENERAL NOTES
TCP-3	LINCOLN COUNTY LOCATION/OVERVIEW MAP
TCP-3A	CLEVELAND COUNTY LOCATION/OVERVIEW MAP
TCP-3B	GASTON COUNTY LOCATION/OVERVIEW MAP
TCP-4	LINCOLN COUNTY BRIDGE #35
TCP-5 THRU TCP-5A	CLEVELAND COUNTY BRIDGE #79
TCP-6 THRU TCP-6A	CLEVELAND COUNTY BRIDGE #80
TCP-7	CLEVELAND COUNTY BRIDGE #18
TCP-8	CLEVELAND COUNTY BRIDGE #76
TCP-9	GASTON COUNTY BRIDGE #107
TCP-10 THRU TCP-10B	GASTON COUNTY BRIDGE #2
TCP-11 THRU TCP-11B	GASTON COUNTY BRIDGE #H133
TCP-12	GASTON COUNTY BRIDGE #56
TCP-13	SPECIAL SIGN DETAILS

LEGEND

- GENERAL**
- DIRECTION OF TRAFFIC FLOW
 - NORTH ARROW
 - WORK AREA
- TRAFFIC CONTROL DEVICES**
- TYPE III BARRICADE
 - CONE
 - DRUM SKINNY DRUM
 - FLASHING ARROW PANEL (TYPE C)
 - PORTABLE SIGN
 - CHANGEABLE MESSAGE SIGN
 - TRUCK MOUNTED ATTENUATOR (TMA)
 - POLICE
 - FLAGGER

03-NOV-2011 11:32 O:\DOT\OFFSHO...ON\GROUPS-WZTC\CC\TMU\WZTC\DesignGroup3\Squad3B\SpecialProjects\17BP.12.P.4 (BM 9 Bridge Rehab-Div (2)\TMP\Plans\TC Plan Sheets\TCP-land TCP-2.dgn Kbr Roadwell AT 12241739

TIP PROJECT:

APPROVED: DATE:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
SEAL 	J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
	G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER
	J. W. GILSTRAP TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	KEN BROADWELL TRAFFIC CONTROL DESIGN ENGINEER

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

CLEVELAND COUNTY ROAD NAME/BRIDGE#	DAY AND TIME RESTRICTIONS
1. US 74/BRIDGE #79	MON. - SUN. 6:00AM - 7:00PM
2. US 74/BRIDGE #80	MON. - SUN. 6:00AM - 7:00PM
3. NC 150/BRIDGE #76	MON. - SUN. 6:00AM - 7:00PM
4. NC 150/BRIDGE #18	MON. - SUN. 7:00AM - 7:00PM

GASTON COUNTY ROAD NAME/BRIDGE#	DAY AND TIME RESTRICTIONS
1. NC 275/BRIDGE #56	MON. - SUN. 6:00AM - 8:00PM
2. NC 279/BRIDGE #2	MON. - SUN. 6:00AM - 9:00PM
3. SR 1135/BRIDGE #107	MON. - SUN. 6:00AM - 8:00PM
4. ABERDEEN BLVD./#H133	MON. - SUN. 6:00AM - 8:00PM
5. SB I-85/BR. #H133 (STEEL REPAIR)	MON. - FRI. 6:00AM - 9:00PM SAT. - SUN. 10:00AM - 9:00PM

LINCOLN COUNTY ROAD NAME/BRIDGE#	DAY AND TIME RESTRICTIONS
1. NC 150/BRIDGE #35	MON. - SUN. 6:00AM - 7:00PM

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

- ROAD NAME**
- ALL ROADS
- HOLIDAY**
- FOR ANY UNEXPECTED OCCURRENCE THAT CREATE UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
 - FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00AM DECEMBER 31st TO 9:00PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00PM THE FOLLOWING TUESDAY.
 - FOR EASTER, BETWEEN THE HOURS OF 6:00AM THURSDAY AND 9:00PM MONDAY.

4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00AM FRIDAY TO 9:00PM TUESDAY.

5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00AM THE DAY BEFORE INDEPENDENCE DAY AND 9:00PM THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 6:00AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00PM THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00AM FRIDAY AND 9:00PM TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00AM TUESDAY TO 9:00PM MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT STOP TRAFFIC AS FOLLOWS

ROAD NAME	DAY AND TIME RESTRICTIONS
1. ALL ROADS	ANYTIME

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.

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 AS SHOWN IN THE TRAFFIC CONTROL PLANS.

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 AS SHOWN IN THE TRAFFIC CONTROL PLANS.

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE TRAFFIC CONTROL PLANS.

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

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

TRAFFIC CONTROL DEVICES

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

O) PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R11-2 ATTACHED OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

P) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

Q) INSTALL FINAL PAVEMENT MARKINGS AND FINAL PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
1. ALL BRIDGES	PAINT	NONE

R) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

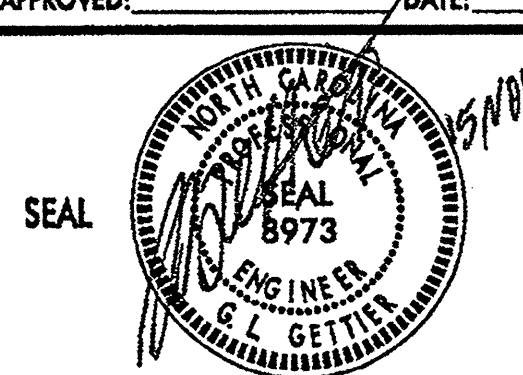

S) REPLACE ANY MISSING OR DAMAGED PAVEMENT MARKINGS BY THE END OF EACH DAY'S OPERATION.

T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

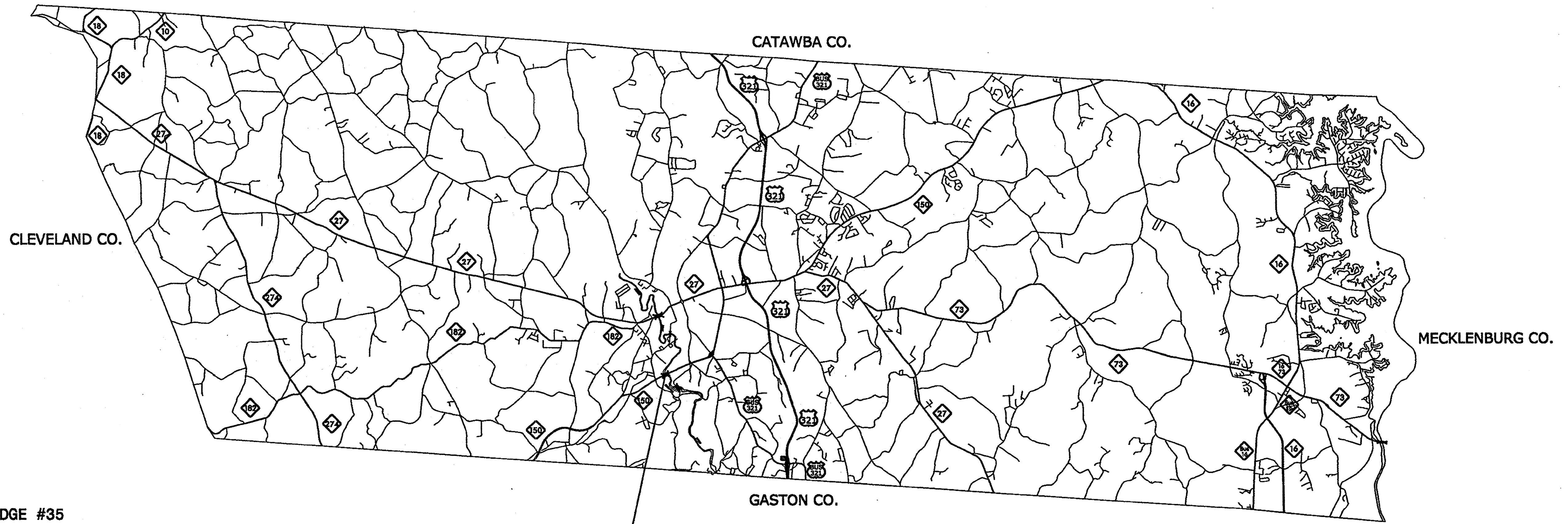
U) RECORD EXISTING PAVEMENT MARKING CONFIGURATION PRIOR TO PERFORMING BRIDGE DECK REPAIRS. THIS RECORD SHALL BE UTILIZED TO PLACE THE FINAL PAVEMENT MARKINGS.

MISCELLANEOUS

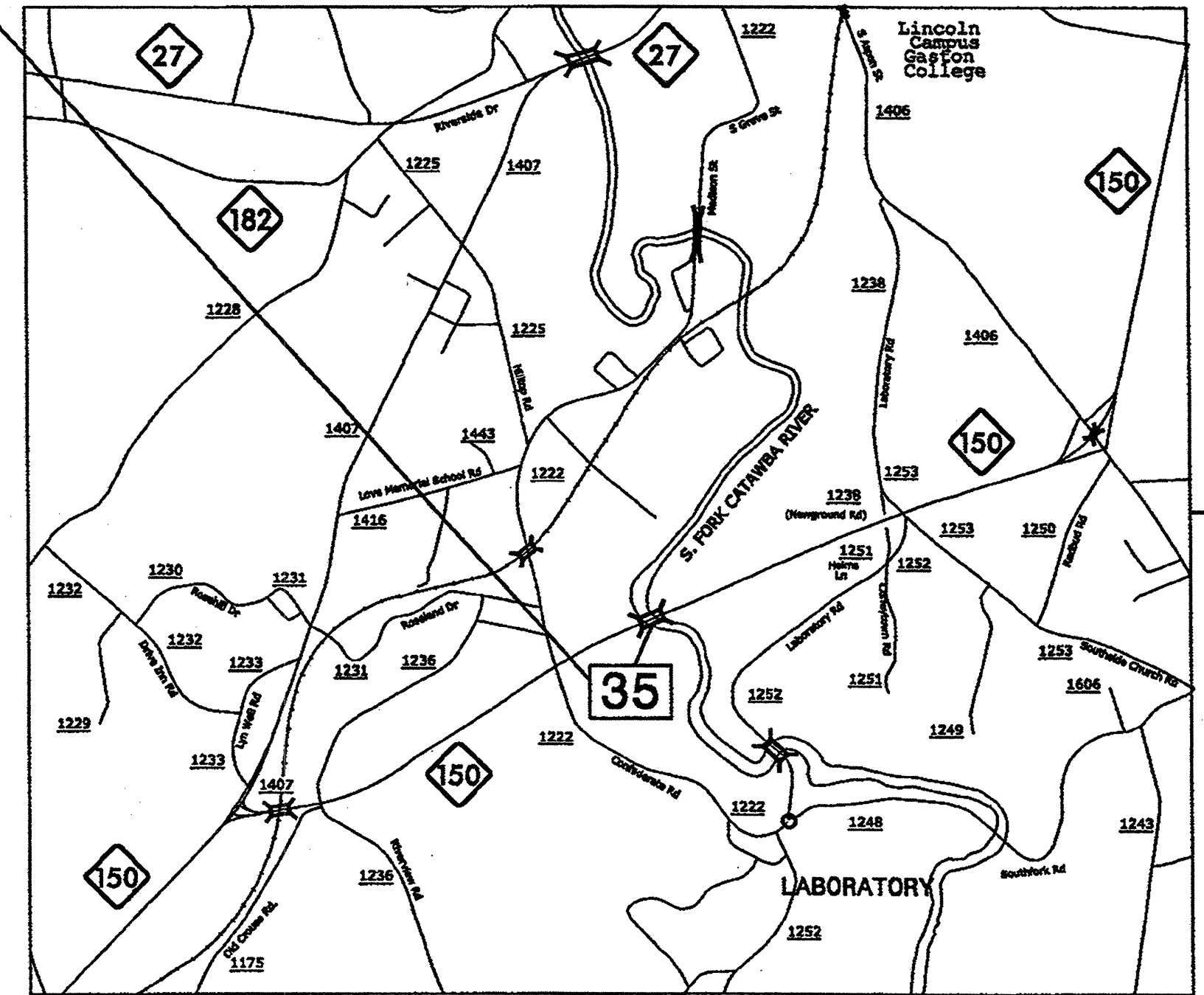
V) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.

APPROVED: 	DATE: 9/11/11	GENERAL NOTES							
SCALE: NONE	DATE: 09/11	<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>		REVISIONS					
REVISIONS									
DWG. BY: KPB	DESIGN BY: KPB								
REVIEWED BY: JWG		<small> </small>							

04-NOV-2011 09:57
 \\DDOT\UP\SHOOTING\GROUPS-WZTCC\TMUN\WZTC\Design\Group3\Squad3B\Special Projects\17BP\12.P.4 (BM 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\TCP-land TCP-2.dgn
 For Docuwell AT 12244123



BRIDGE #35
SEE SHEET TCP-4



03 NOV 2011 11:36
 C:\PROJ\17BP\12\17BP.12.P.4\17BP.12.P.4 (BM) 9 Bridge Rehab-Div 12\TMAP\Plans\TC Plan Sheets\TCP-3 overview.dgn
 K:\CADD\17BP\12\17BP.12.P.4\17BP.12.P.4 (BM) 9 Bridge Rehab-Div 12\TMAP\Plans\TC Plan Sheets\TCP-3 overview.dgn

APPROVED: _____ DATE: _____

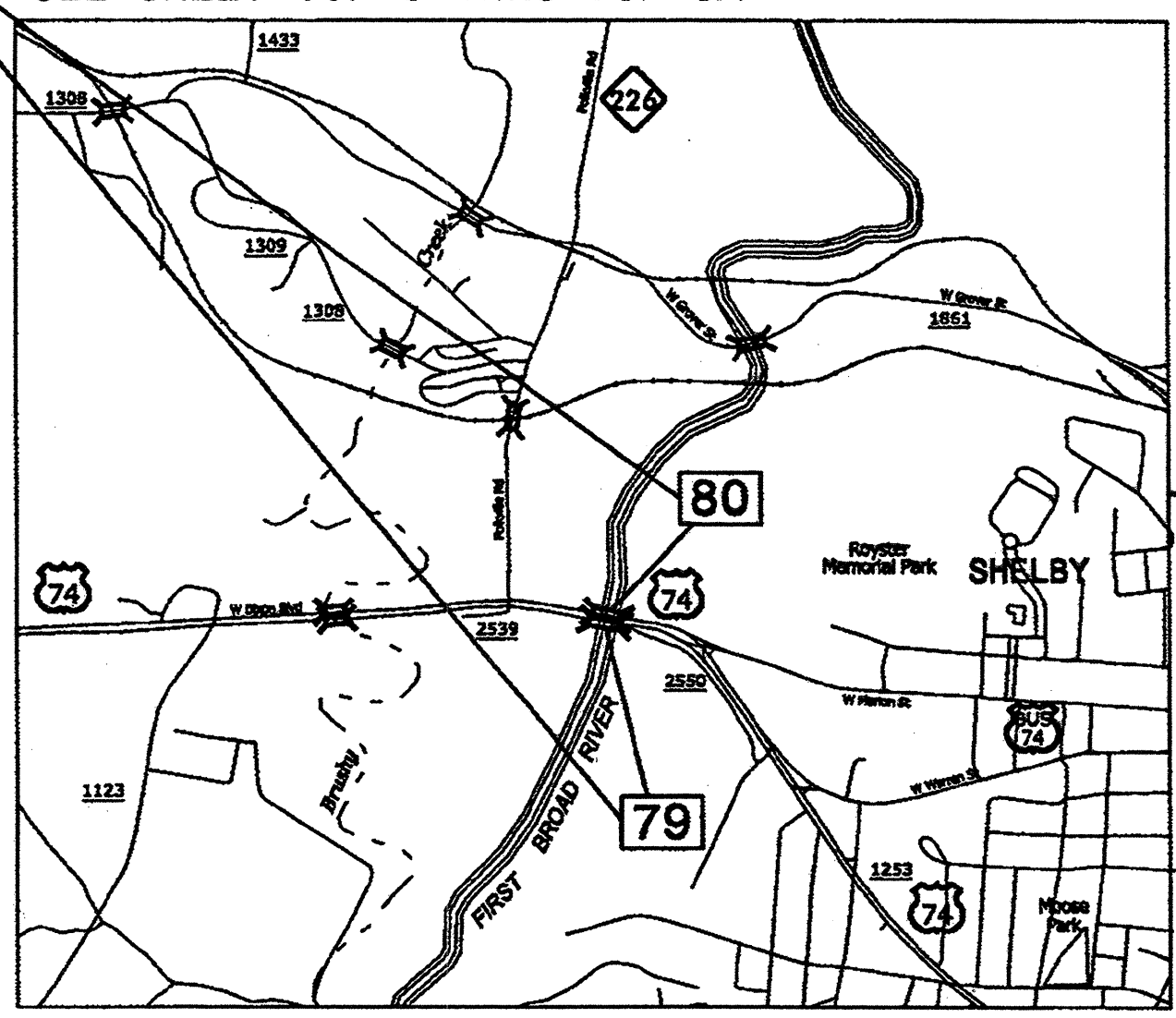
SEAL

LINCOLN COUNTY
LOCATION / OVERVIEW MAP

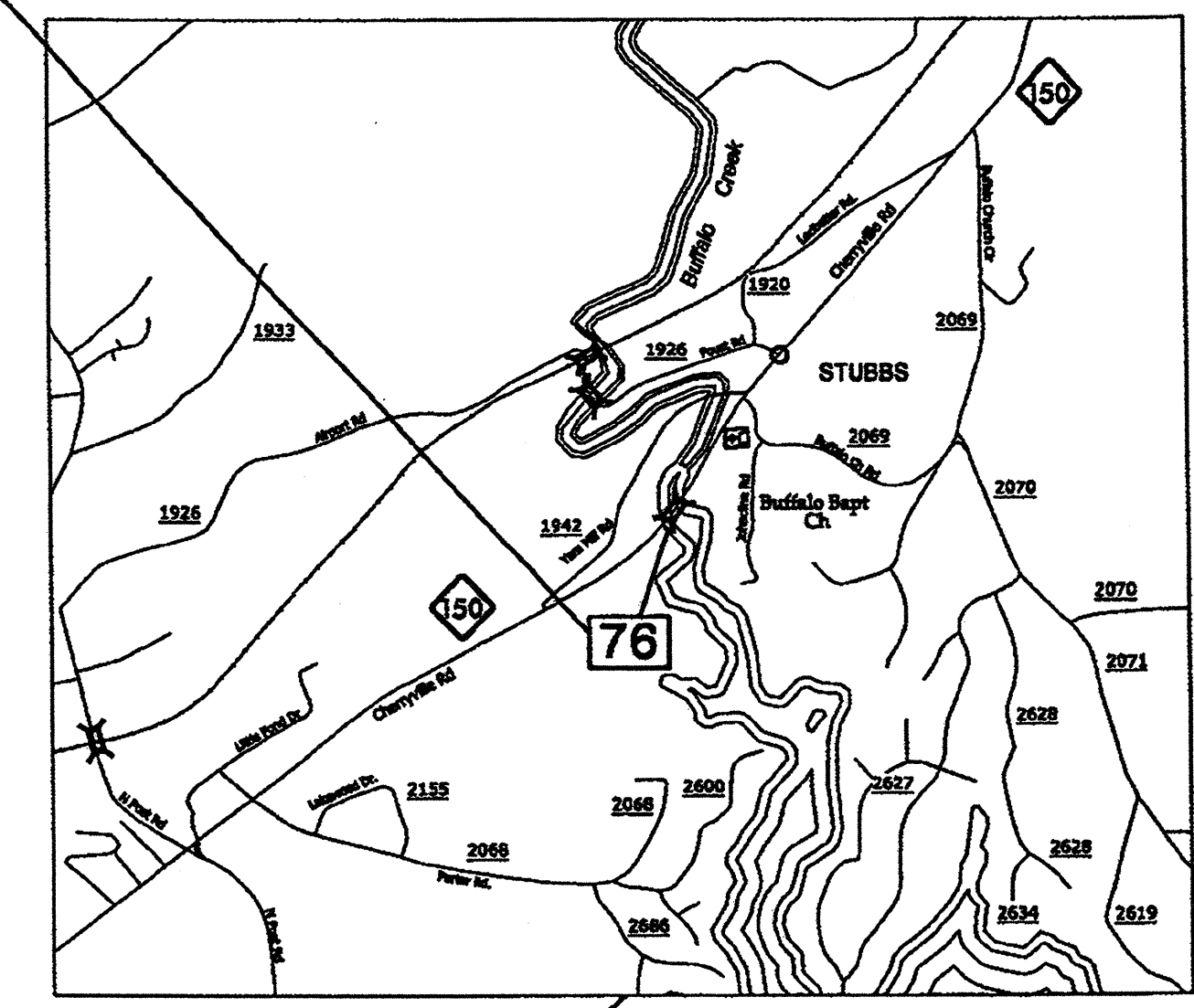
SCALE: NONE		REVISIONS
DATE: 09/11		
DWG. BY: KPB		
DESIGN BY: KPB		
REVIEWED BY: JWG		

BRIDGE #79
SEE SHEET TCP-5 THRU TCP-5A

BRIDGE #80
SEE SHEET TCP-6 THRU TCP-6A



BRIDGE #76
SEE SHEET TCP-8



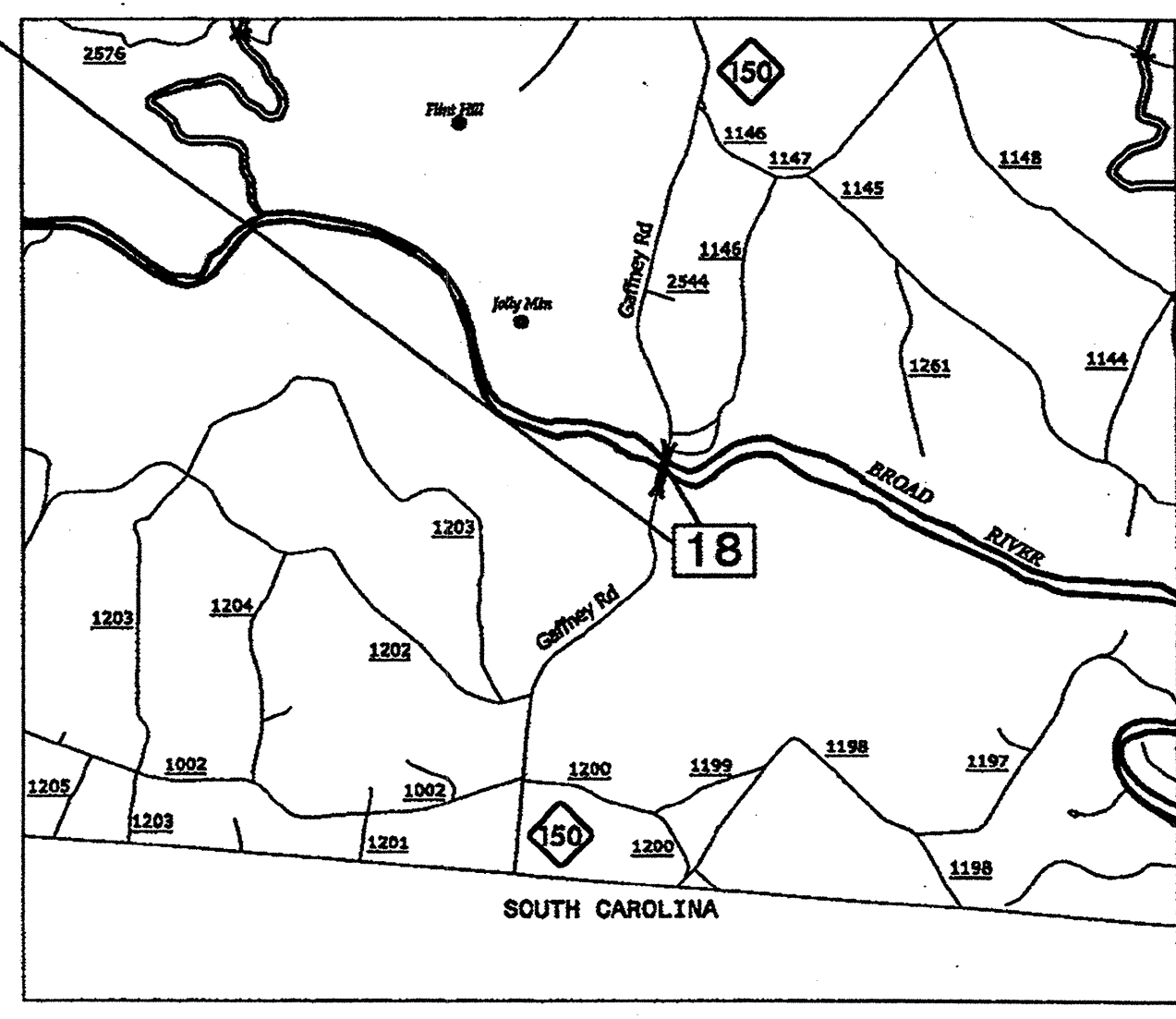
RUTHERFORD CO.

LINCOLN CO.

GASTON CO.

SOUTH CAROLINA

BRIDGE #18
SEE SHEET TCP-7



03-NOV-2011 11:39
 \\DOT\OFF-SR001\GROUFS-WZTCC\TMUNWZTC\DesignGroup3\Squad3B\SpecialProjects\17BP.12.P.4 (BM 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\TCP-3 overview.dgn
 kbradwell AT TE24739

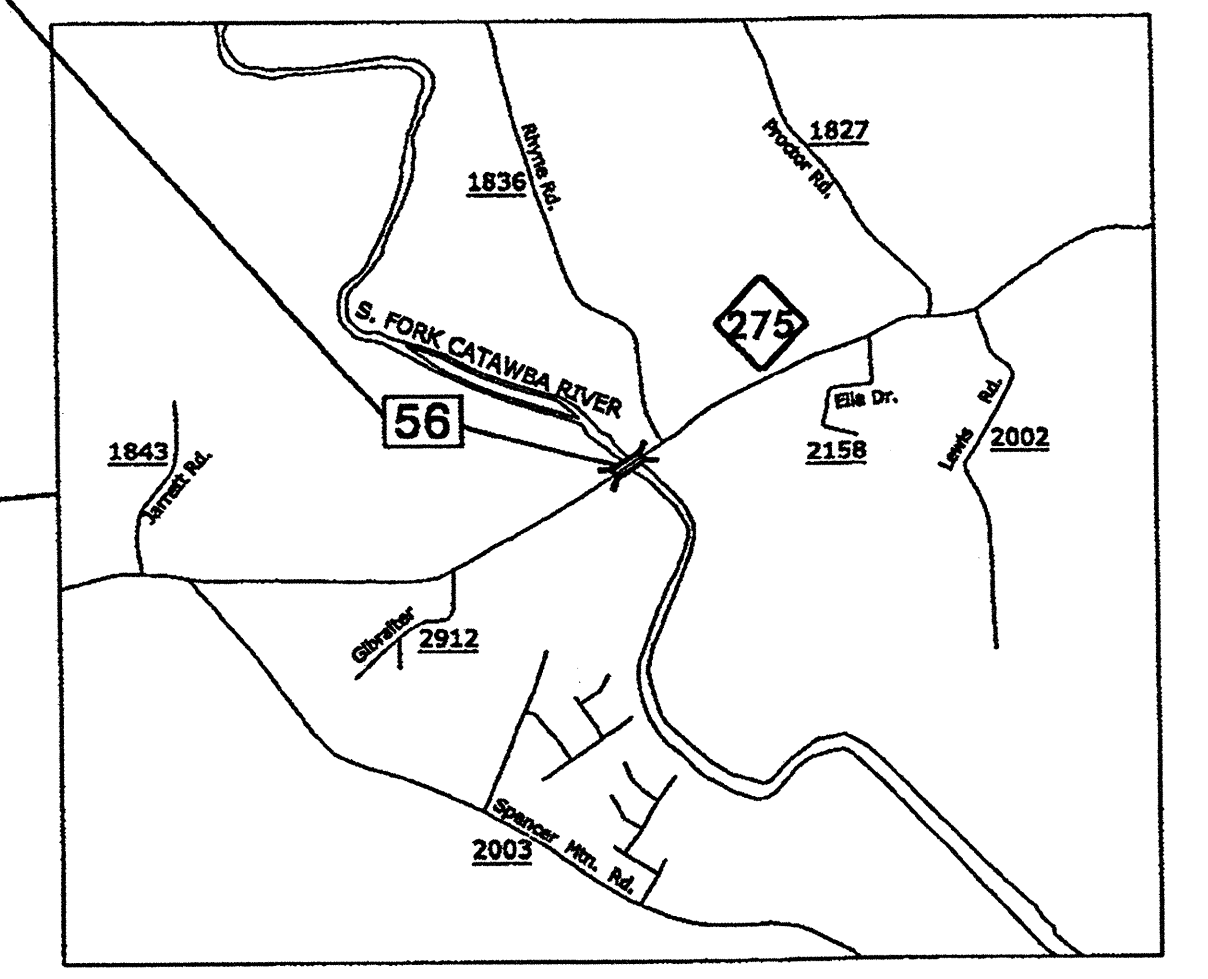
APPROVED: _____ DATE: _____

SEAL

**CLEVELAND COUNTY
LOCATION / OVERVIEW MAP**

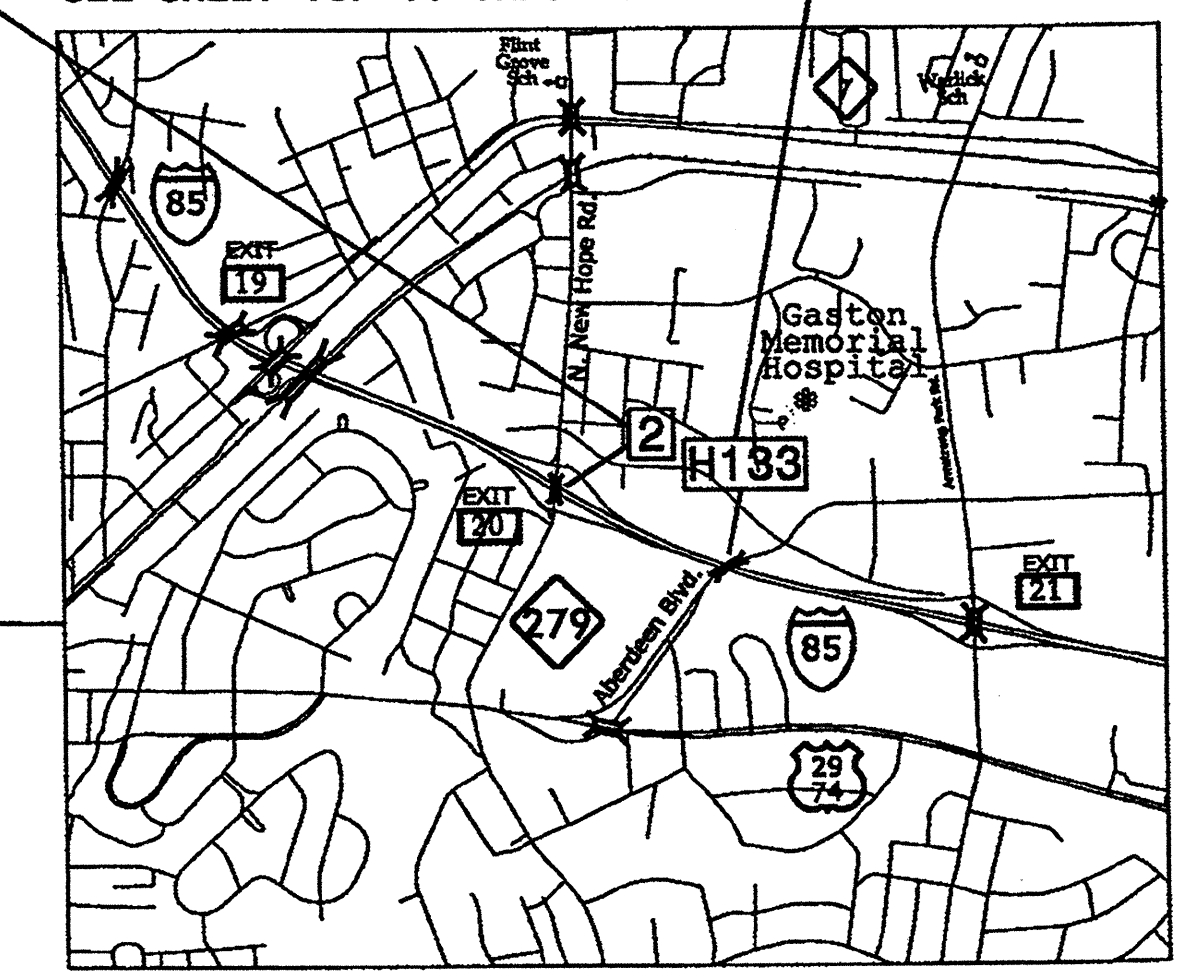
SCALE: NONE		REVISIONS
DATE: 09/11		
DWG. BY: KPB		
DESIGN BY: KPB		
REVIEWED BY: JWG		

BRIDGE #56
SEE SHEET TCP-12

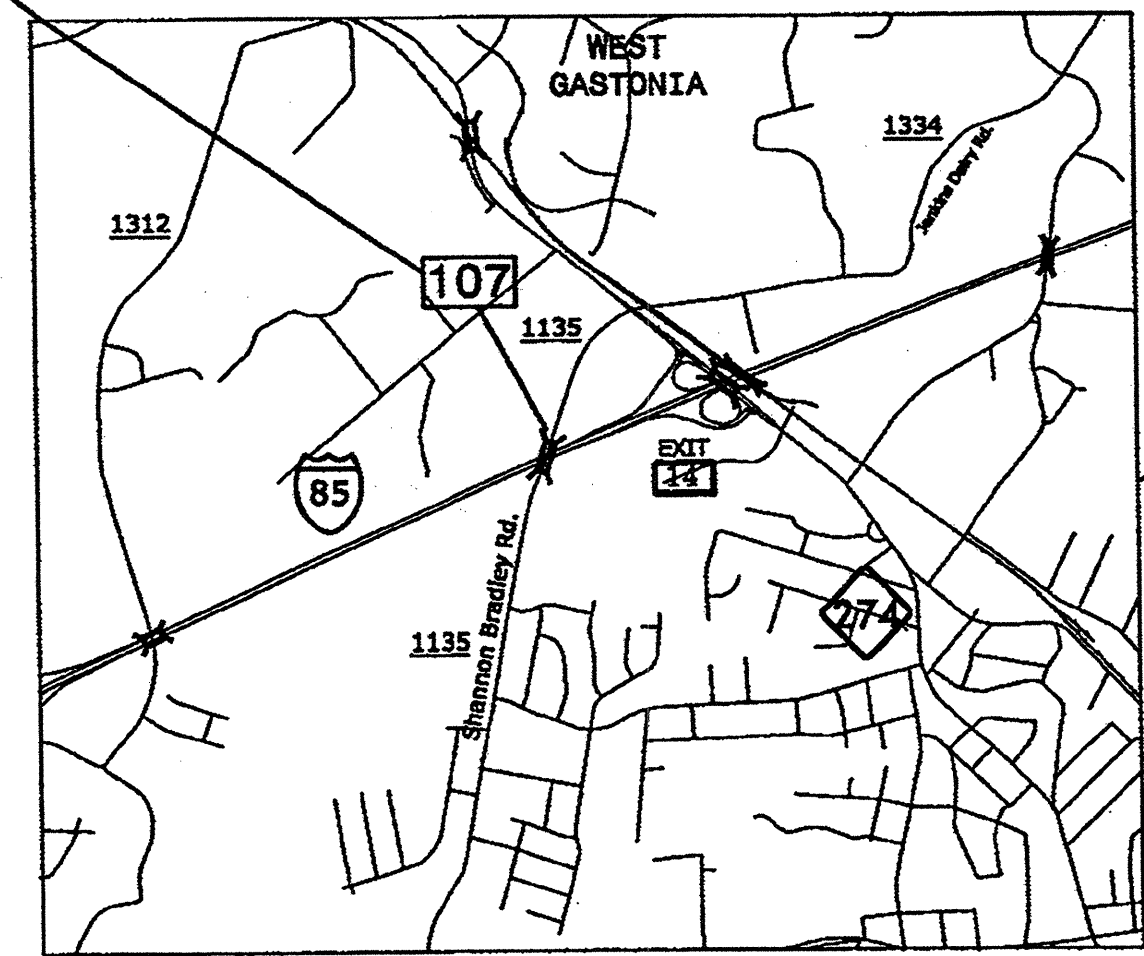


BRIDGE #2
SEE SHEET TCP-10 THRU TCP-10B

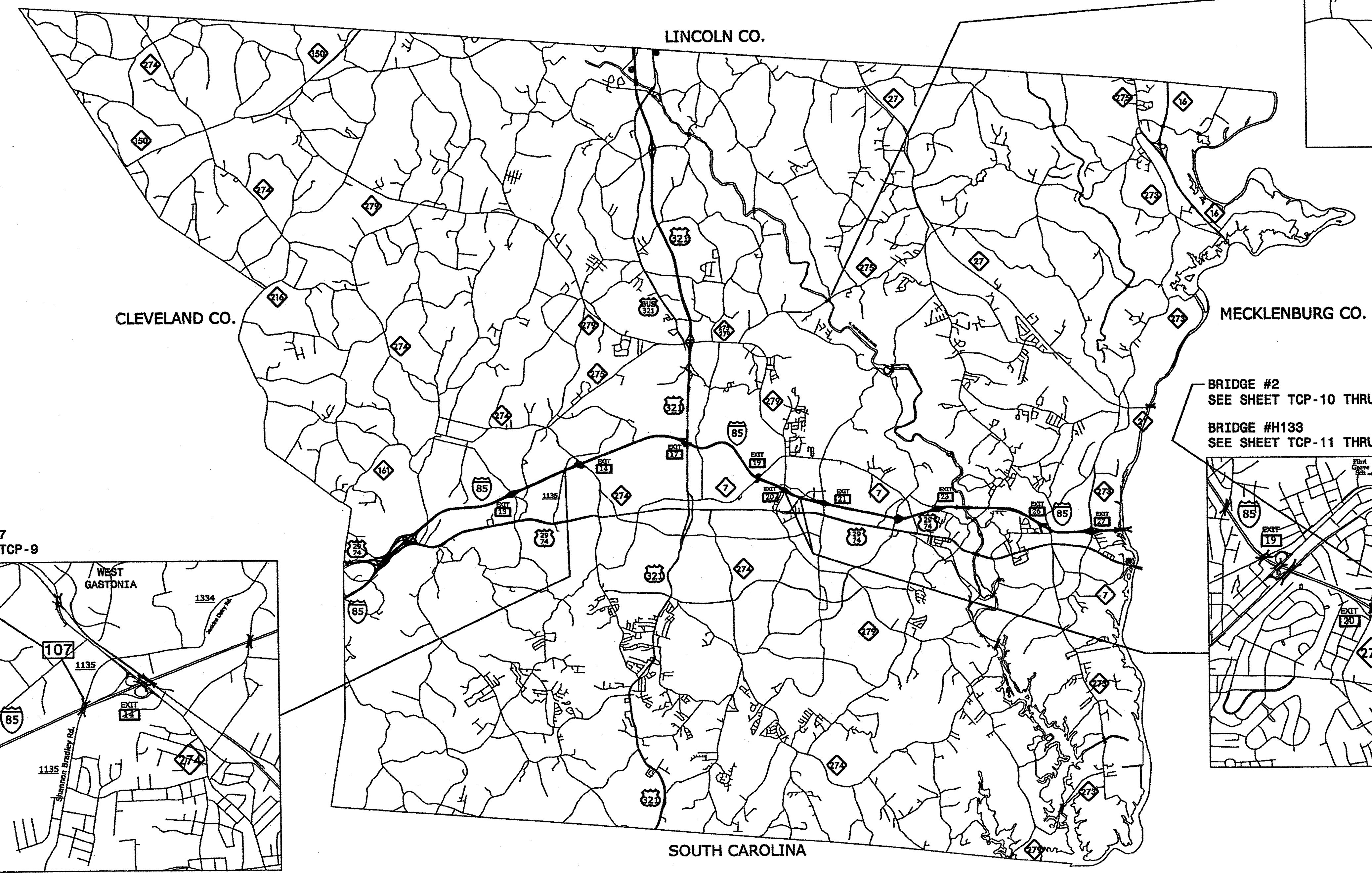
BRIDGE #H133
SEE SHEET TCP-11 THRU TCP-11B



BRIDGE #107
SEE SHEET TCP-9

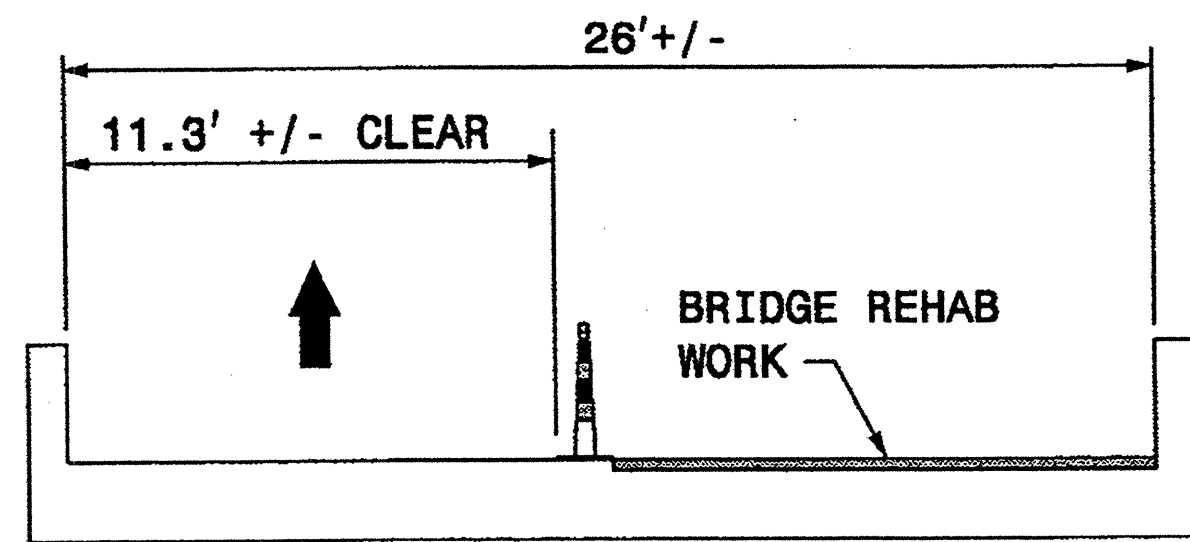


03-NOV-2011 11:40 \\dot\dfsroot\groups\wz\cc\TMU\WZTC\DesignGroup3\Squad3B\SpecialProjects\17BP.12.P.4 (BM. 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\TCP-3 overview.dgn kbroodwell AT 1224739

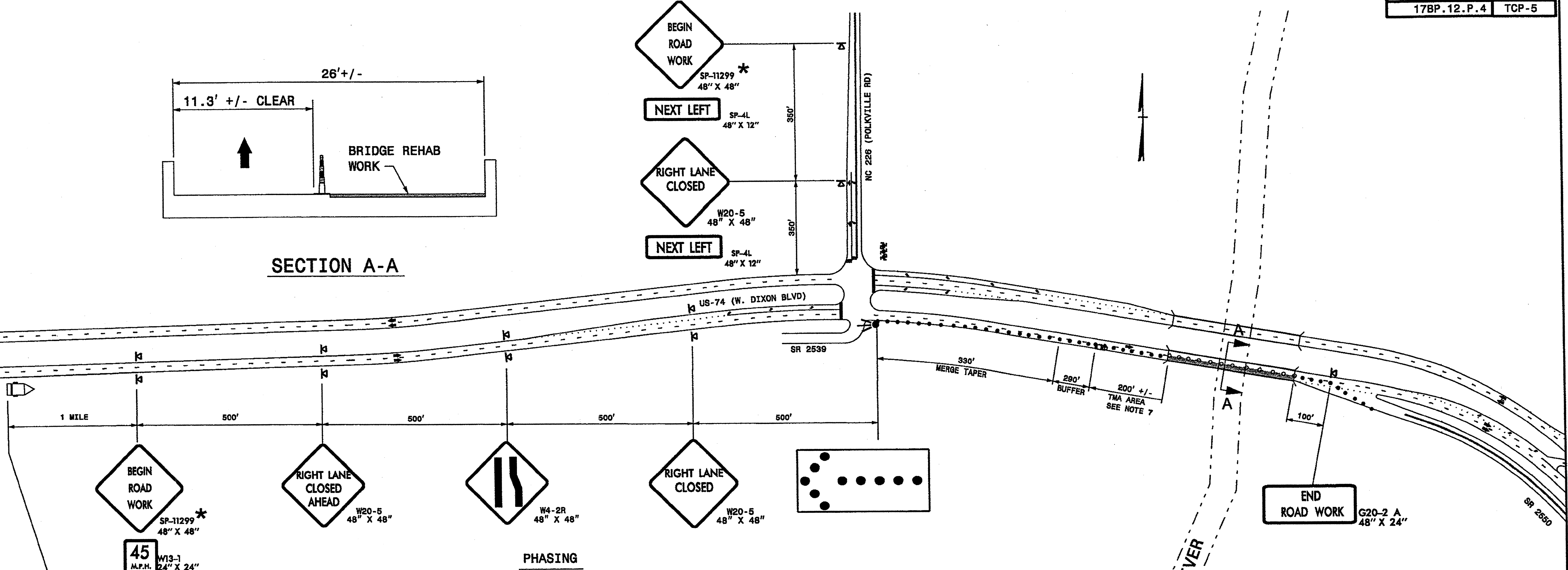


APPROVED: _____ DATE: _____	GASTON COUNTY LOCATION / OVERVIEW MAP		REVISIONS	
			SCALE: NONE	
	DATE: 09/11			
	DWG. BY: KPB DESIGN BY: KPB REVIEWED BY: JWG			

03-NOV-2011 11:43
C:\DOT\SR001\GROUPS-WZTC\CC\TMU\WZTC\Design\Group3\Squad3B\Special\Projects\17BP.12.P.4 (BM 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\Cleveland Co Bridges 79 80.dgn
kbroodwell AT TE244739



SECTION A-A



MESSAGE NO. 1	MESSAGE NO. 2
RIGHT LANE CLOSED	MERGE LEFT

CHANGEABLE MESSAGE SIGN

PHASING

PHASE I
PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

STEP 1: CLOSE RIGHT LANE ON EB US-74 USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

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

PHASE II

STEP 1: CLOSE RIGHT LANE ON EB US-74 USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT).

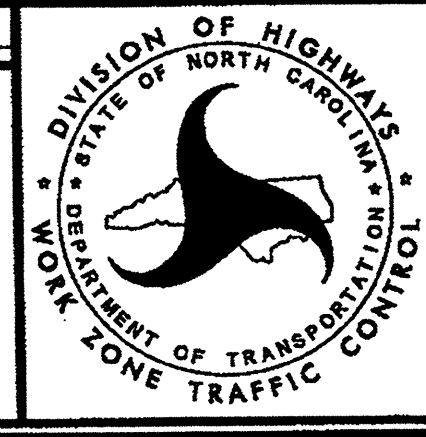
NOTES:

- SKINNY-DRUMS ARE SHOWN AS THEY ALLOW FOR MAXIMUM VEHICLE CLEARANCE. REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY-DRUM REQUIREMENTS. CONES OR DRUMS MAY BE SUBSTITUTED FOR SKINNY-DRUMS AS DIRECTED BY THE ENGINEER. REFER TO ROADWAY STANDARD DRAWING 1135.01 FOR CONES AND ROADWAY STANDARD DRAWING 1130.01 FOR DRUMS.
- THE EXISTING SPEED LIMIT ON US-74 IS 55 MPH.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF THE ANTICIPATED BACKUP.

LEGEND

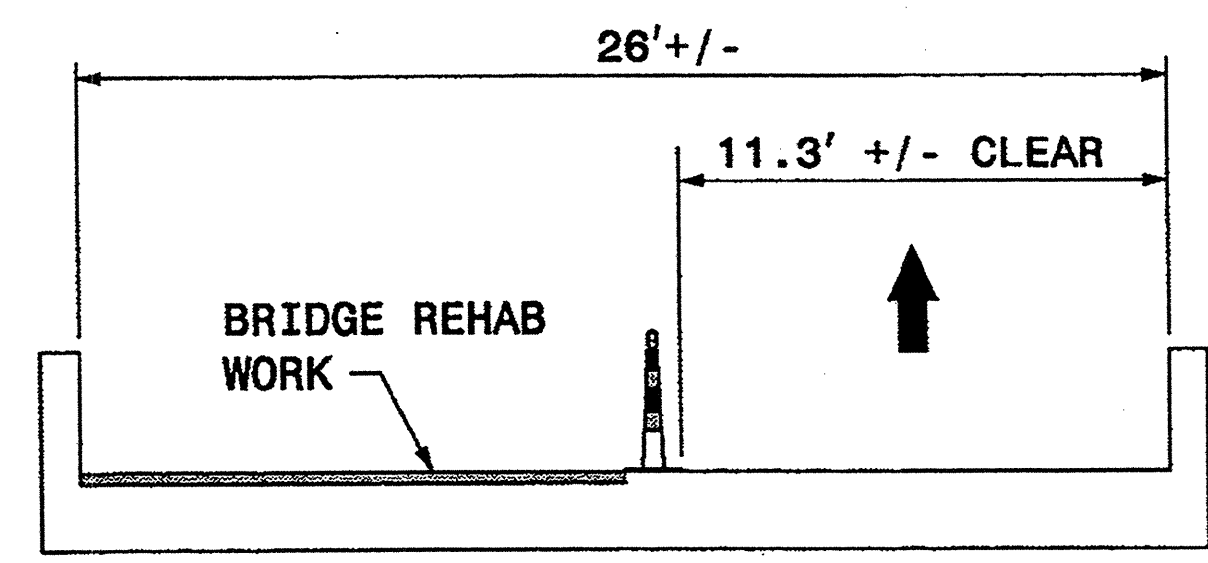
- TRUCK MOUNTED ATTENUATOR
- DRUM
- SKINNY-DRUM (SECTION)
- SKINNY-DRUM (PLAN)
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- * SEE SHEET TCP-13 FOR SIGN DESIGN

APPROVED: _____ DATE: 5/20/11
SEAL: [Professional Engineer Seal for G.L. Gettys, No. 13973, State of North Carolina]

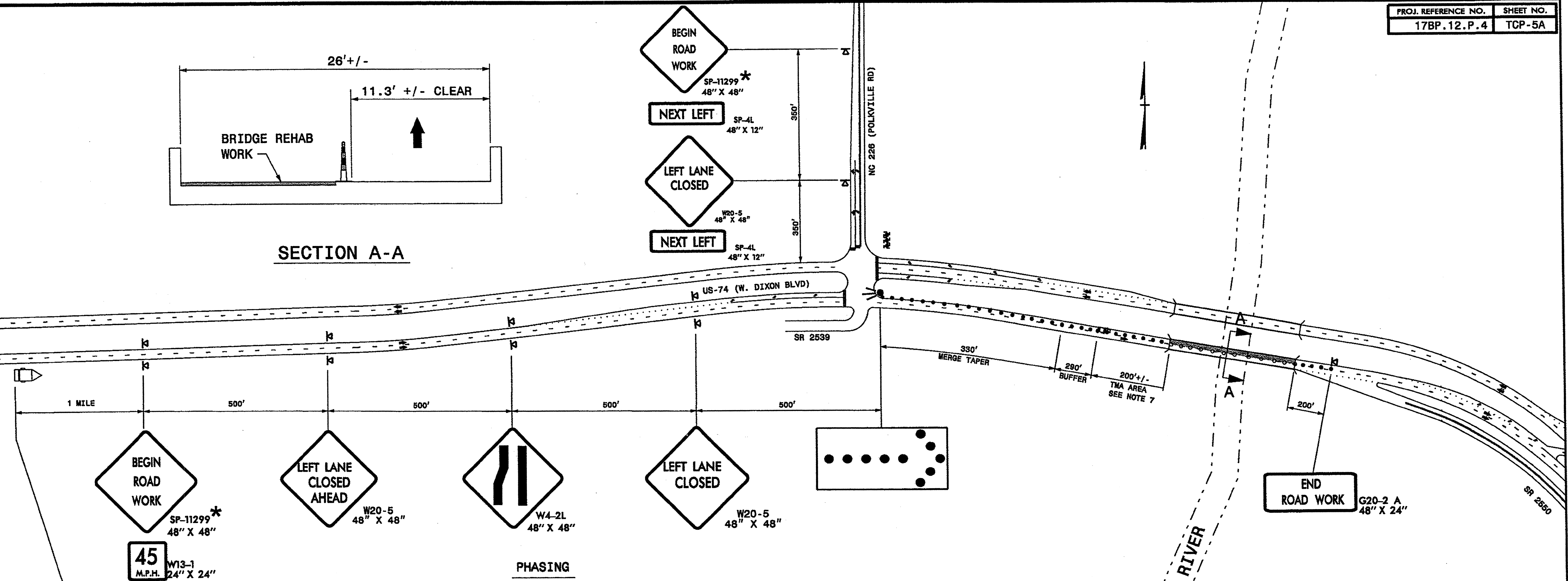


CLEVELAND COUNTY
BRIDGE #79 DETAILS
EB RIGHT LANE CLOSURE

03-NOV-2011 11:43 \\dot\dfs\001\01\groups-wz\ccc\TMU\WZTC\Design\Group3\Squad3B\SpecialProjects\17BP.12.P.4 (BM 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\Cleveland Co Bridges 79 80.dgn
 Kbr\codwell AT 1E244739



SECTION A-A



MESSAGE NO. 1	MESSAGE NO. 2
LEFT LANE CLOSED	MERGE RIGHT

CHANGEABLE MESSAGE SIGN

PHASE I

PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

- STEP 1:** CLOSE RIGHT LANE ON EB US-74 USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2:** REPEAT STEP 1 UNTIL ALL REQUIRED WORK IS COMPLETED.

PHASE II

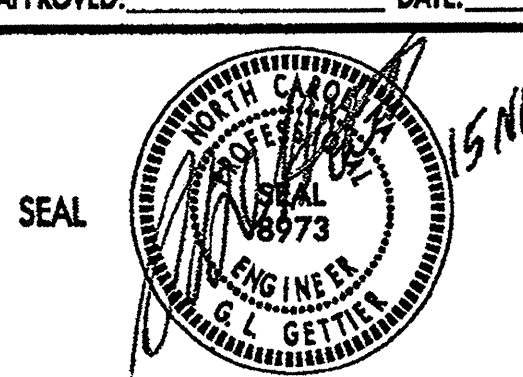
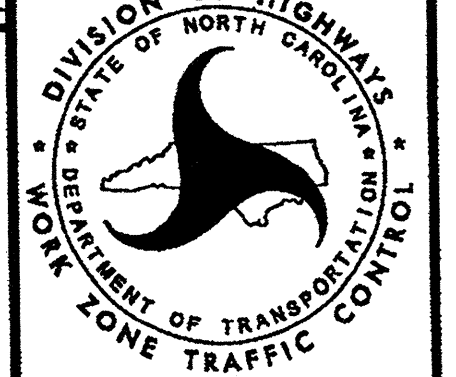
- STEP 1:** CLOSE LEFT LANE ON EB US-74 USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT).

NOTES:

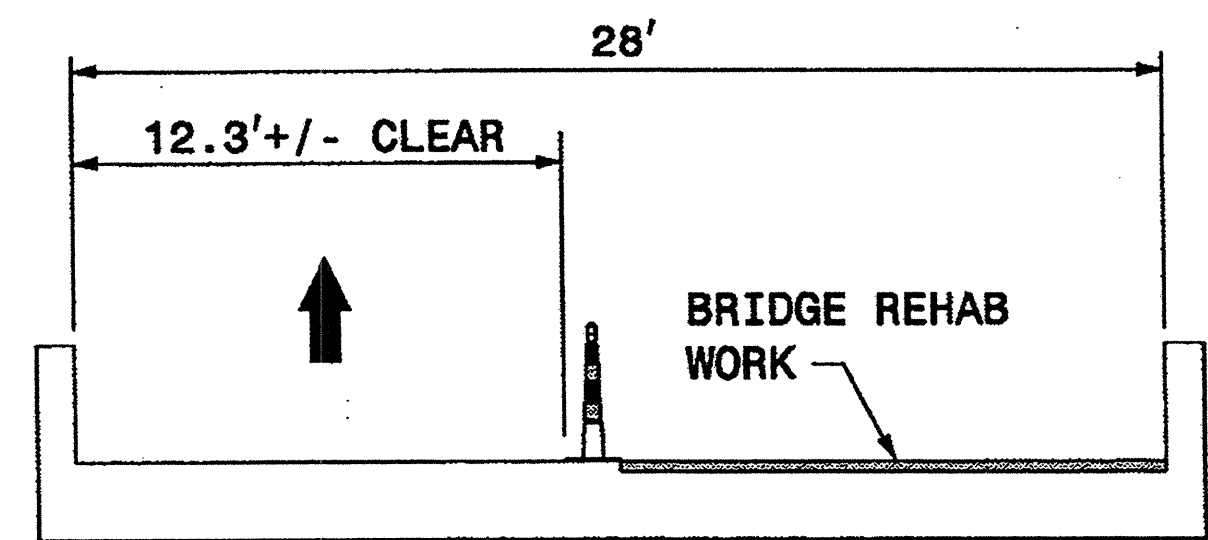
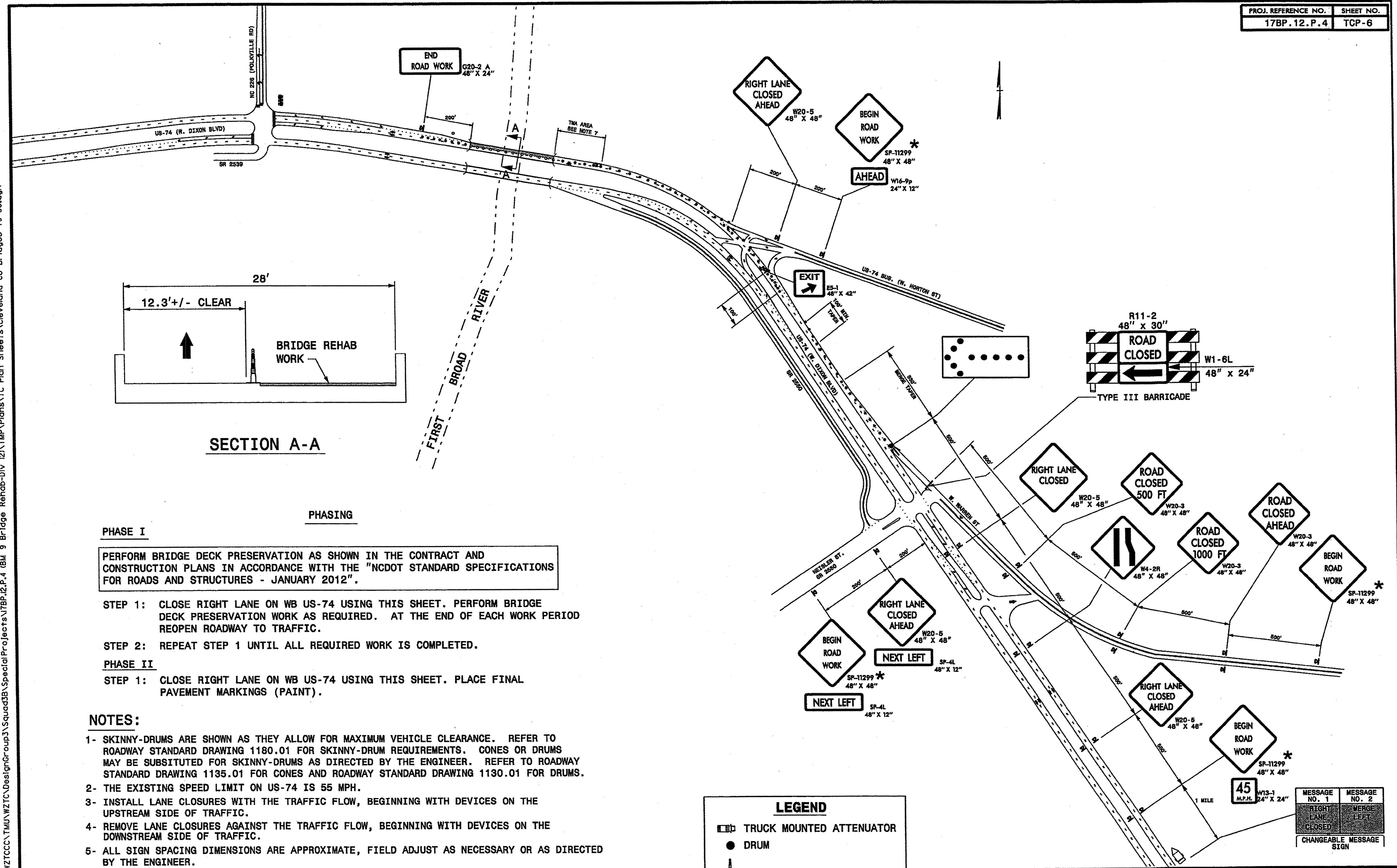
- 1- SKINNY-DRUMS ARE SHOWN AS THEY ALLOW FOR MAXIMUM VEHICLE CLEARANCE. REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY-DRUM REQUIREMENTS. CONES OR DRUMS MAY BE SUBSTITUTED FOR SKINNY-DRUMS AS DIRECTED BY THE ENGINEER. REFER TO ROADWAY STANDARD DRAWING 1135.01 FOR CONES AND ROADWAY STANDARD DRAWING 1130.01 FOR DRUMS.
- 2- THE EXISTING SPEED LIMIT ON US-74 IS 55 MPH.
- 3- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- 4- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- 5- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- 6- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- 7- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.
- 8- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF THE ANTICIPATED BACKUP.

LEGEND

	TRUCK MOUNTED ATTENUATOR
	DRUM
	SKINNY-DRUM (SECTION)
	SKINNY-DRUM (PLAN)
	PORTABLE SIGN
	DIRECTION OF TRAFFIC FLOW
	* SEE SHEET TCP-13 FOR SIGN DESIGN

APPROVED: 	DATE: 15 NOV 11		CLEVELAND COUNTY BRIDGE #79 DETAILS EB LEFT LANE CLOSURE
SEAL			

03-NOV-2011 11:44
 \\DOT\DFSR001\GROUPS-WZTCCC\TMU\WZTC\DesignGroup3\Squad3B\SpecialProjects\17BP.12.P.4 (BM - 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\Cleveland Co Bridges 79 80.dgn
 kbr\oadwell AT 12/24/13



SECTION A-A

PHASING

PHASE I

PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

STEP 1: CLOSE RIGHT LANE ON WB US-74 USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

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

PHASE II

STEP 1: CLOSE RIGHT LANE ON WB US-74 USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT).

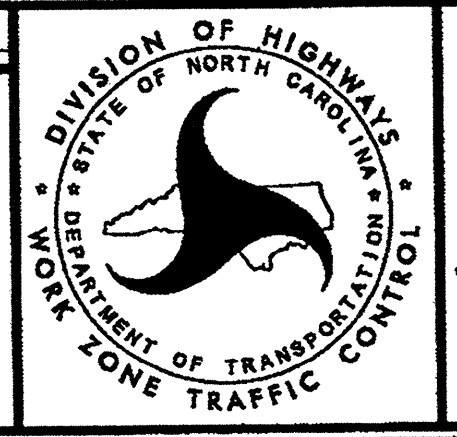
NOTES:

- 1- SKINNY-DRUMS ARE SHOWN AS THEY ALLOW FOR MAXIMUM VEHICLE CLEARANCE. REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY-DRUM REQUIREMENTS. CONES OR DRUMS MAY BE SUBSTITUTED FOR SKINNY-DRUMS AS DIRECTED BY THE ENGINEER. REFER TO ROADWAY STANDARD DRAWING 1135.01 FOR CONES AND ROADWAY STANDARD DRAWING 1130.01 FOR DRUMS.
- 2- THE EXISTING SPEED LIMIT ON US-74 IS 55 MPH.
- 3- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- 4- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- 5- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- 6- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- 7- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.
- 8- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF THE ANTICIPATED BACKUP.

LEGEND

- TRUCK MOUNTED ATTENUATOR
- DRUM
- SKINNY-DRUM (SECTION)
- SKINNY-DRUM (PLAN)
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- * SEE SHEET TCP-13 FOR SIGN DESIGN

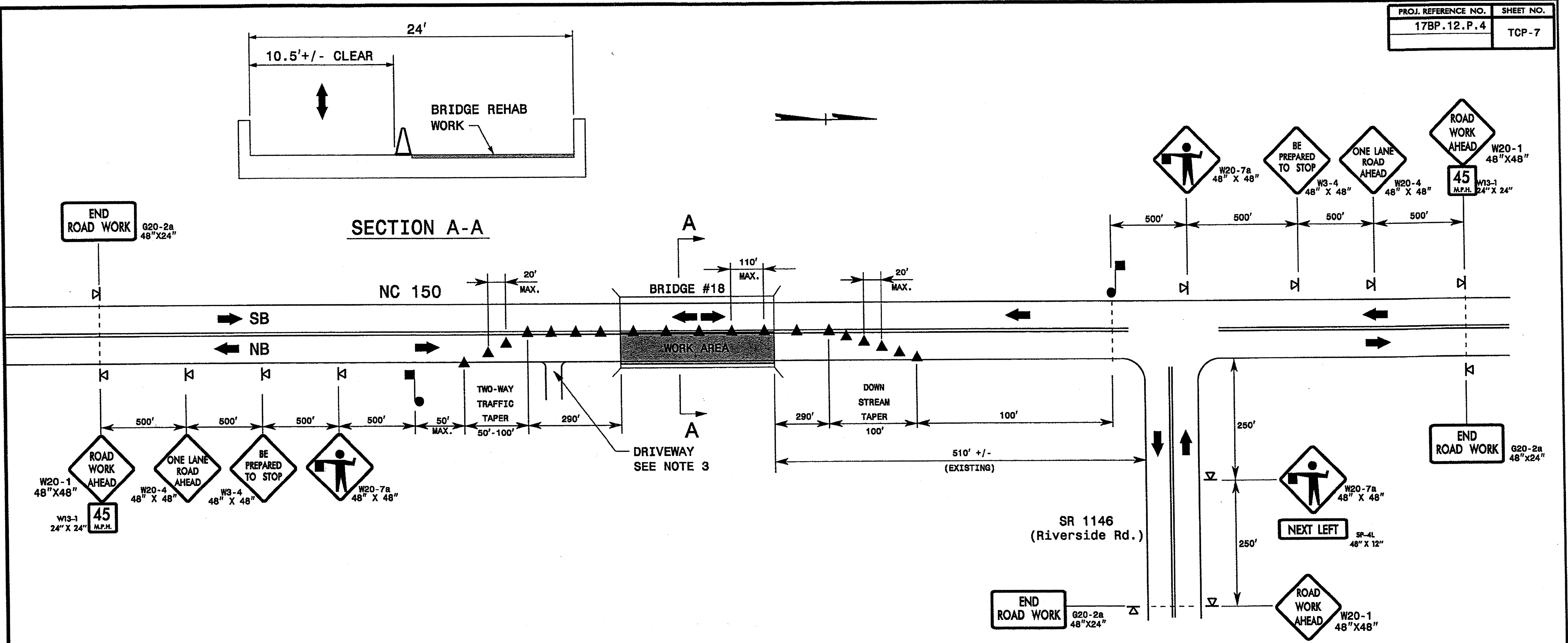
APPROVED: DATE: 5 NOV 11



**CLEVELAND COUNTY
BRIDGE #80 DETAILS
WB RIGHT LANE CLOSURE**

MESSAGE NO. 1	MESSAGE NO. 2
RIGHT LANE CLOSED	MERGE LEFT
CHANGEABLE MESSAGE SIGN	

03-NOV-2011 11:46
 \\DOT\DFSROOT\GROUPS-WZTCCC\T.MU\WZTC\Design\Group3\Squad3B\SpecialProjects\17BP.12.P.4 (BM) 9 Bridge Rehab-Div 12\TMP\Plans\TC Plan Sheets\TCP-7 Bridge 18.dgn
 kbr:ocswell AT 12/24/11



NOTES:

- 1- ADAPT THIS DRAWING FOR SB LANE CLOSURE.
- 2- THE EXISTING SPEED LIMIT ON NC-150 IS 55 MPH.
- 3- AN ADDITIONAL FLAGGER MAY BE REQUIRED AT DRIVEWAY AS DIRECTED BY THE ENGINEER.
- 4- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- 5- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- 6- REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- 7- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO STD. 1101.11 SHEET 2).
- 8- REFER TO ROADWAY STANDARD DRAWING 1150.01 FOR FLAGGING DEVICES.
- 9- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
- 10- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- 11- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- 12- REFER TO ROADWAY STANDARD DRAWING 1135.01 FOR CONE REQUIREMENTS.
- 13- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES. REFER TO ROADWAY STANDARD DRAWING 1130.01 FOR DRUM REQUIREMENTS AND 1180.01 FOR SKINNY-DRUM REQUIREMENTS.

PHASE I

PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

STEP 1: CLOSE A LANE ON NC-150 USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.


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

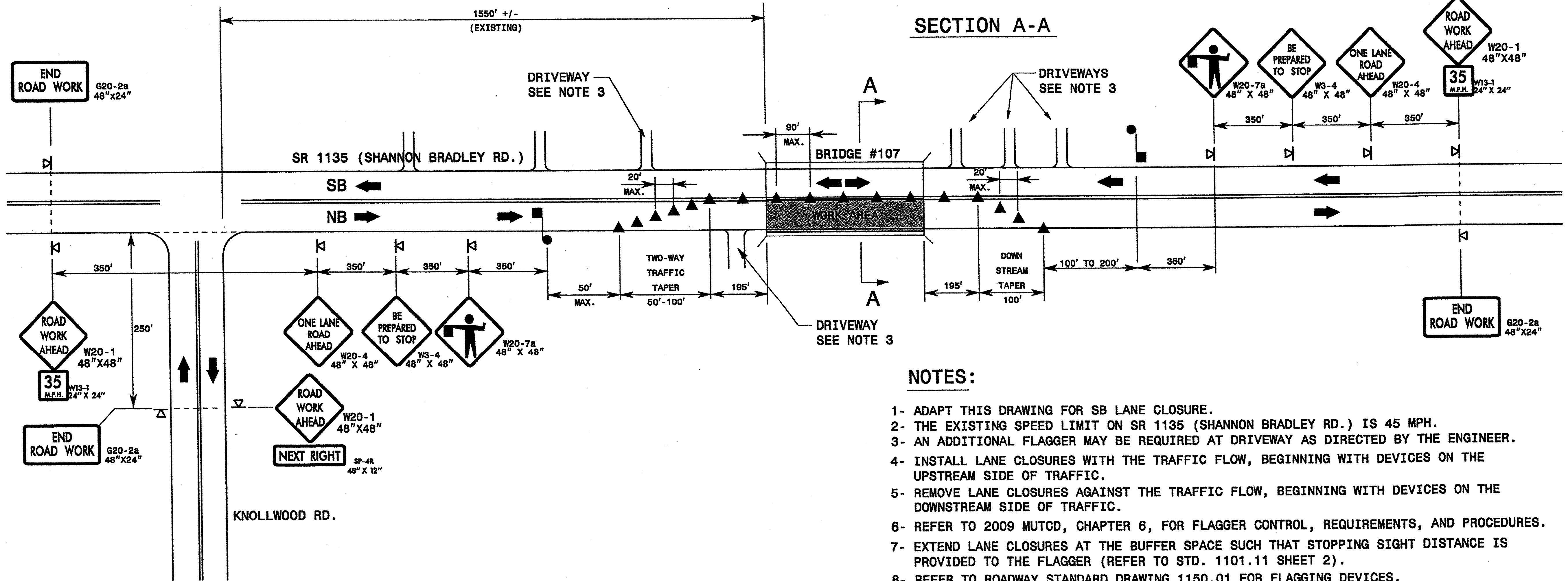
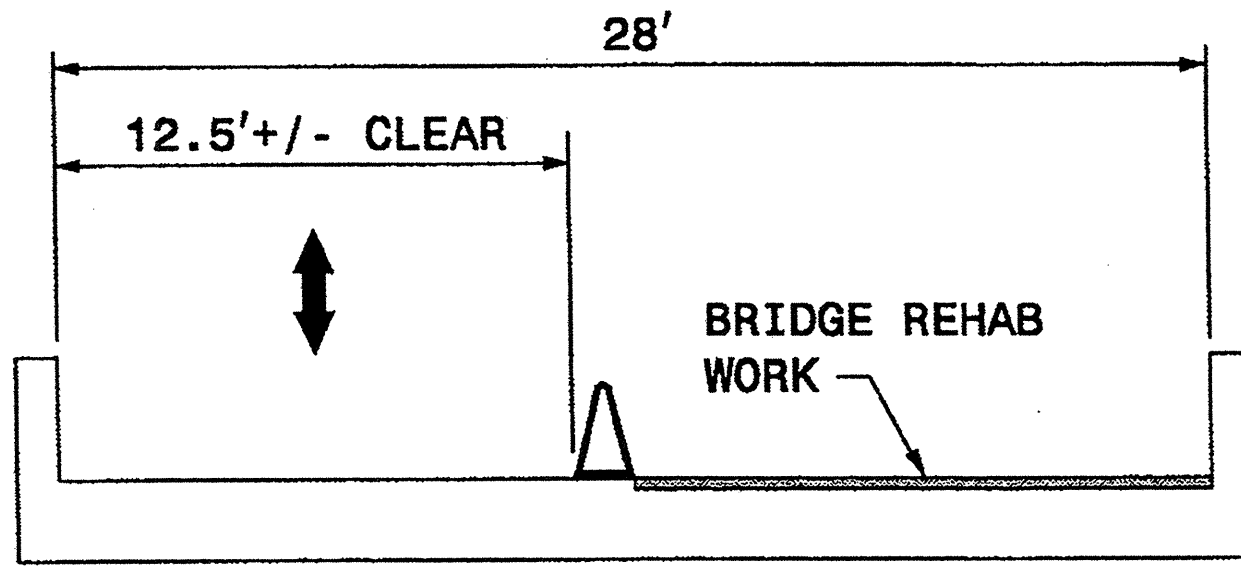
PHASE II

STEP 1: CLOSE A LANE ON NC-150 USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT).

LEGEND

- FLAGGER
- ▲ CONE (SECTION)
- ▲ CONE (PLAN)
- ◀ PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

APPROVED: 	DATE: 10/11	CLEVELAND COUNTY BRIDGE #18 TEMPORARY LANE CLOSURES	
SCALE: NONE	DESIGN BY: KPB		
DESIGNED BY: KPB	REVIEWED BY: JWG		



NOTES:

- ADAPT THIS DRAWING FOR SB LANE CLOSURE.
- THE EXISTING SPEED LIMIT ON SR 1135 (SHANNON BRADLEY RD.) IS 45 MPH.
- AN ADDITIONAL FLAGGER MAY BE REQUIRED AT DRIVEWAY AS DIRECTED BY THE ENGINEER.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO STD. 1101.11 SHEET 2).
- REFER TO ROADWAY STANDARD DRAWING 1150.01 FOR FLAGGING DEVICES.
- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- REFER TO ROADWAY STANDARD DRAWING 1135.01 FOR CONE REQUIREMENTS.
- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES. REFER TO ROADWAY STANDARD DRAWING 1130.01 FOR DRUM REQUIREMENTS AND 1180.01 FOR SKINNY-DRUM REQUIREMENTS.

PHASING

PHASE I

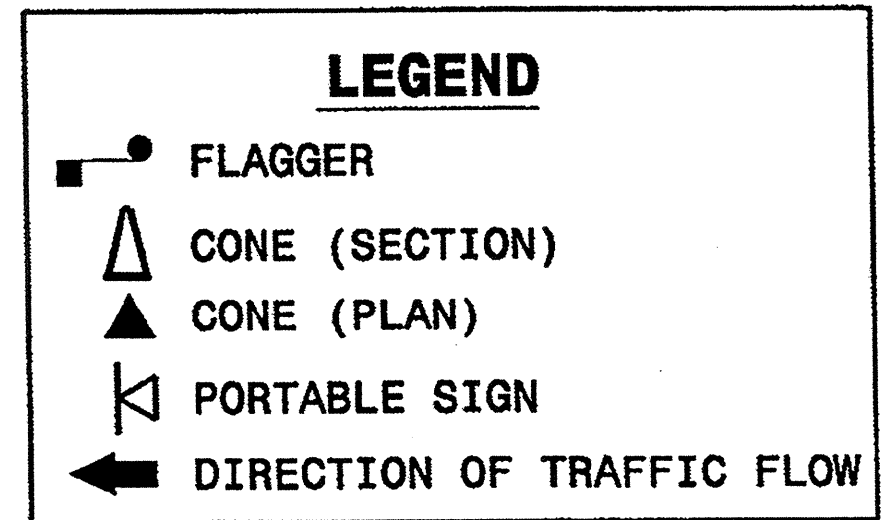
PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

STEP 1: CLOSE A LANE ON SR 1135 (SHANNON BRADLEY RD.) USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.

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

PHASE II

STEP 1: CLOSE A LANE ON SR 1135 (SHANNON BRADLEY RD.) USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT).



APPROVED: _____ DATE: _____	GASTON COUNTY BRIDGE #107 TEMPORARY LANE CLOSURES	
SEAL:		
SCALE: NONE		REVISIONS
DATE: 10/11		
DWG. BY: KPB		
DESIGN BY: KPB		
REVIEWED BY: JWG		

03-NOV-2011 12:08 \\dot\dfsroot\101\groups\wztc\design\group3\Squad3B\SpecialProjects\7BP.12.P.4 (BM 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\TCP-9 Bridge 107.dgn

PHASE I

PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

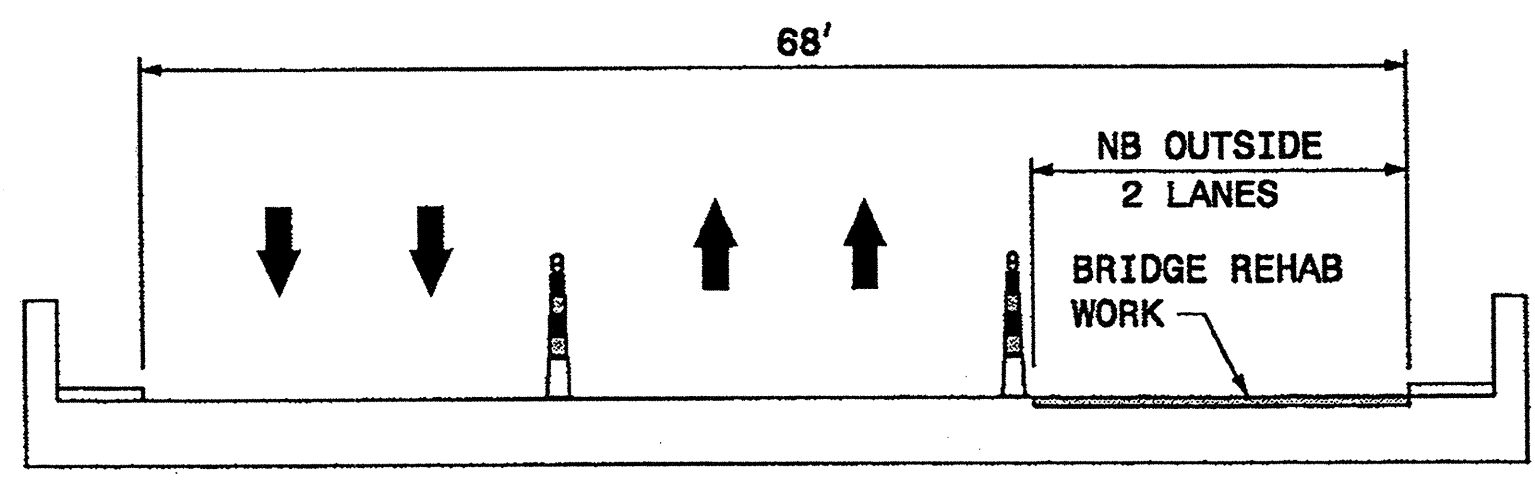
* STEP 1: PLACE SIGNALS AT TWO RAMP IN RED FLASHING MODE THEN CLOSE OUTSIDE TWO LANES ON NB NC 279 (N. NEW HOPE RD.) USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED.

STEP 2: RETURN SIGNALS TO NORMAL OPERATION AND REMOVE TRAFFIC CONTROL DEVICES AND REOPEN TO TRAFFIC AT THE END OF EACH WORK PERIOD.

STEP 3: REPEAT STEPS 1 & 2 UNTIL ALL REQUIRED WORK IS COMPLETED.

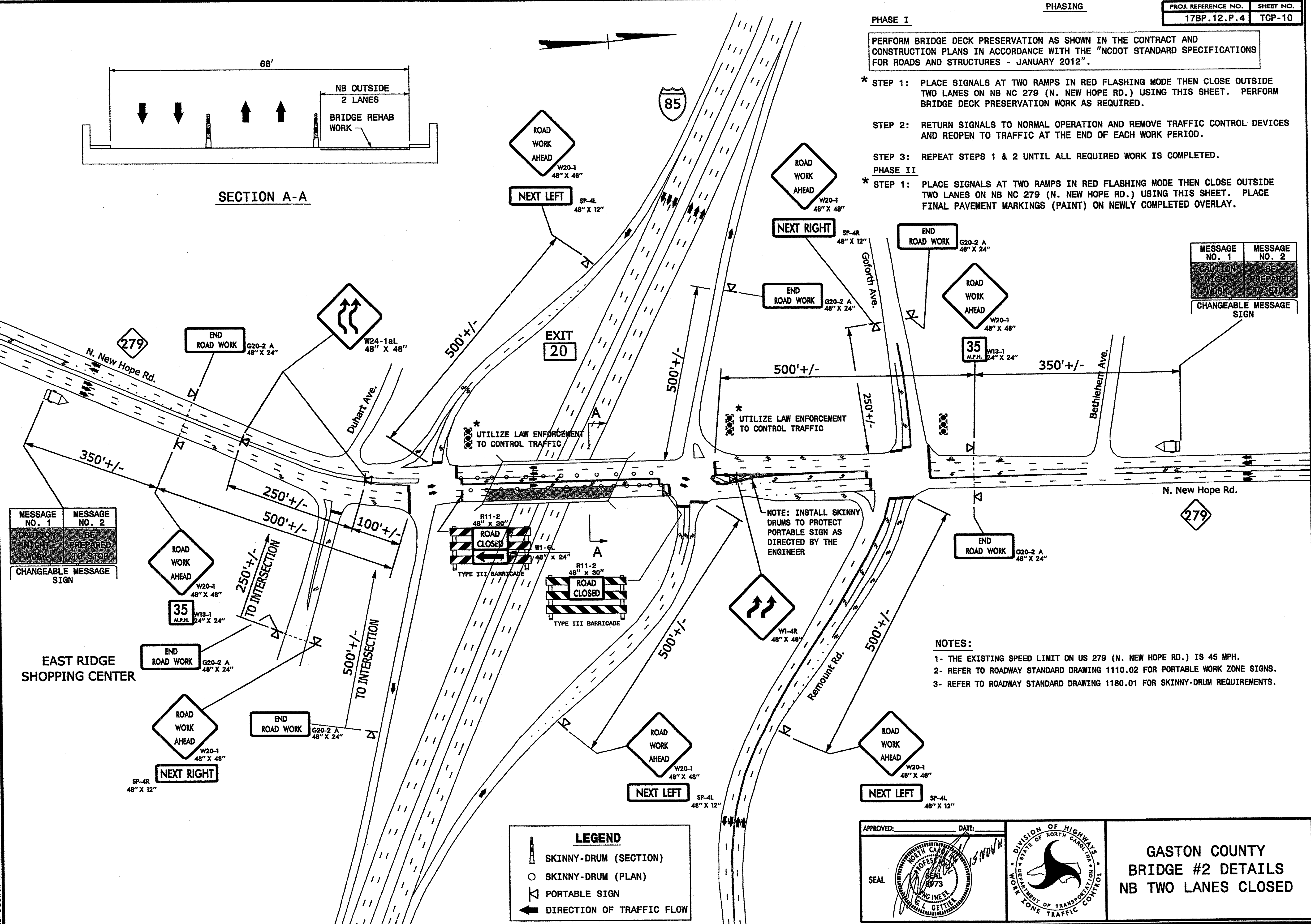
PHASE II

* STEP 1: PLACE SIGNALS AT TWO RAMP IN RED FLASHING MODE THEN CLOSE OUTSIDE TWO LANES ON NB NC 279 (N. NEW HOPE RD.) USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT) ON NEWLY COMPLETED OVERLAY.



SECTION A-A

03-NOV-2011 11:52 \\DOT\DFSR001\GROUPLS-WZT\CCC.TMU\WZTC.DesignGroup\3\Squad3B\Special\Projects\7BP.12.P.4 (BM) 9 Bridge Rehab-Div 12\TMP\Plans\TC Plan Sheets\TCP-10 Bridge 2.dgn kbr\roadwell AT 12/24/13



MESSAGE NO. 1	MESSAGE NO. 2
CAUTION NIGHT WORK	BE PREPARED TO STOP
CHANGEABLE MESSAGE SIGN	

MESSAGE NO. 1	MESSAGE NO. 2
CAUTION NIGHT WORK	BE PREPARED TO STOP
CHANGEABLE MESSAGE SIGN	

LEGEND

- SKINNY-DRUM (SECTION)
- SKINNY-DRUM (PLAN)
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

NOTES:

- 1- THE EXISTING SPEED LIMIT ON US 279 (N. NEW HOPE RD.) IS 45 MPH.
- 2- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- 3- REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY-DRUM REQUIREMENTS.

APPROVED: _____ DATE: _____

SEAL

**GASTON COUNTY
BRIDGE #2 DETAILS
NB TWO LANES CLOSED**

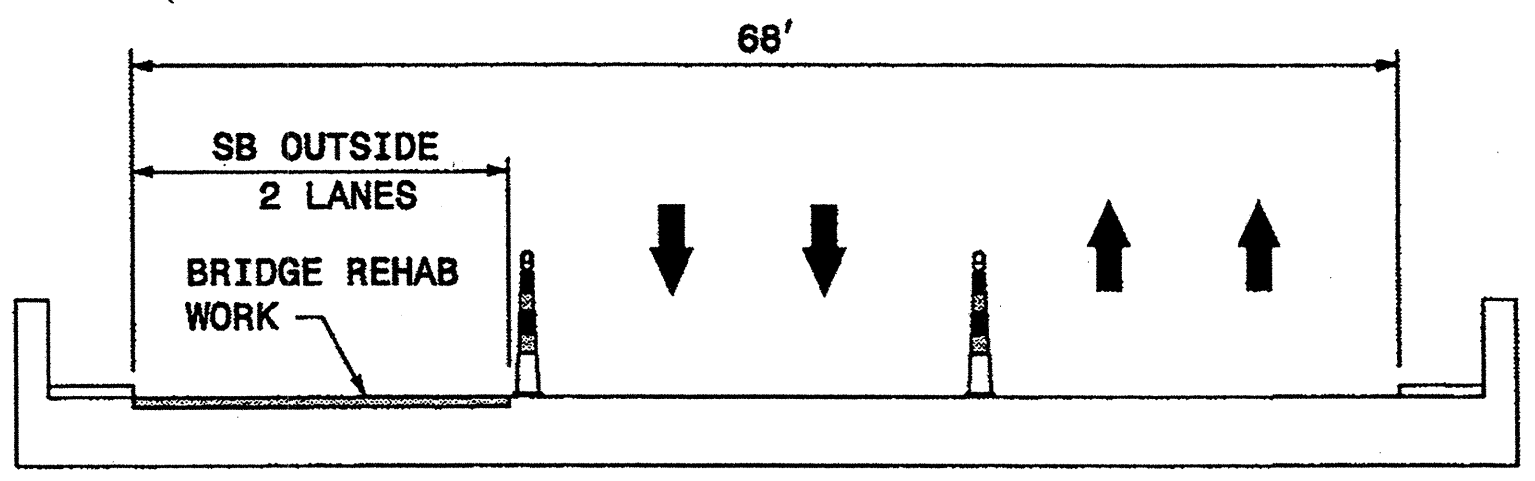
PHASE I

PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

- * STEP 1: PLACE SIGNALS AT TWO RAMP IN RED FLASHING MODE THEN CLOSE OUTSIDE TWO LANES ON SB NC 279 (N. NEW HOPE RD.) USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED.
- STEP 2: RETURN SIGNALS TO NORMAL OPERATION AND REMOVE TRAFFIC CONTROL DEVICES AND REOPEN TO TRAFFIC AT THE END OF EACH WORK PERIOD.
- STEP 3: REPEAT STEPS 1 & 2 UNTIL ALL REQUIRED WORK IS COMPLETED.

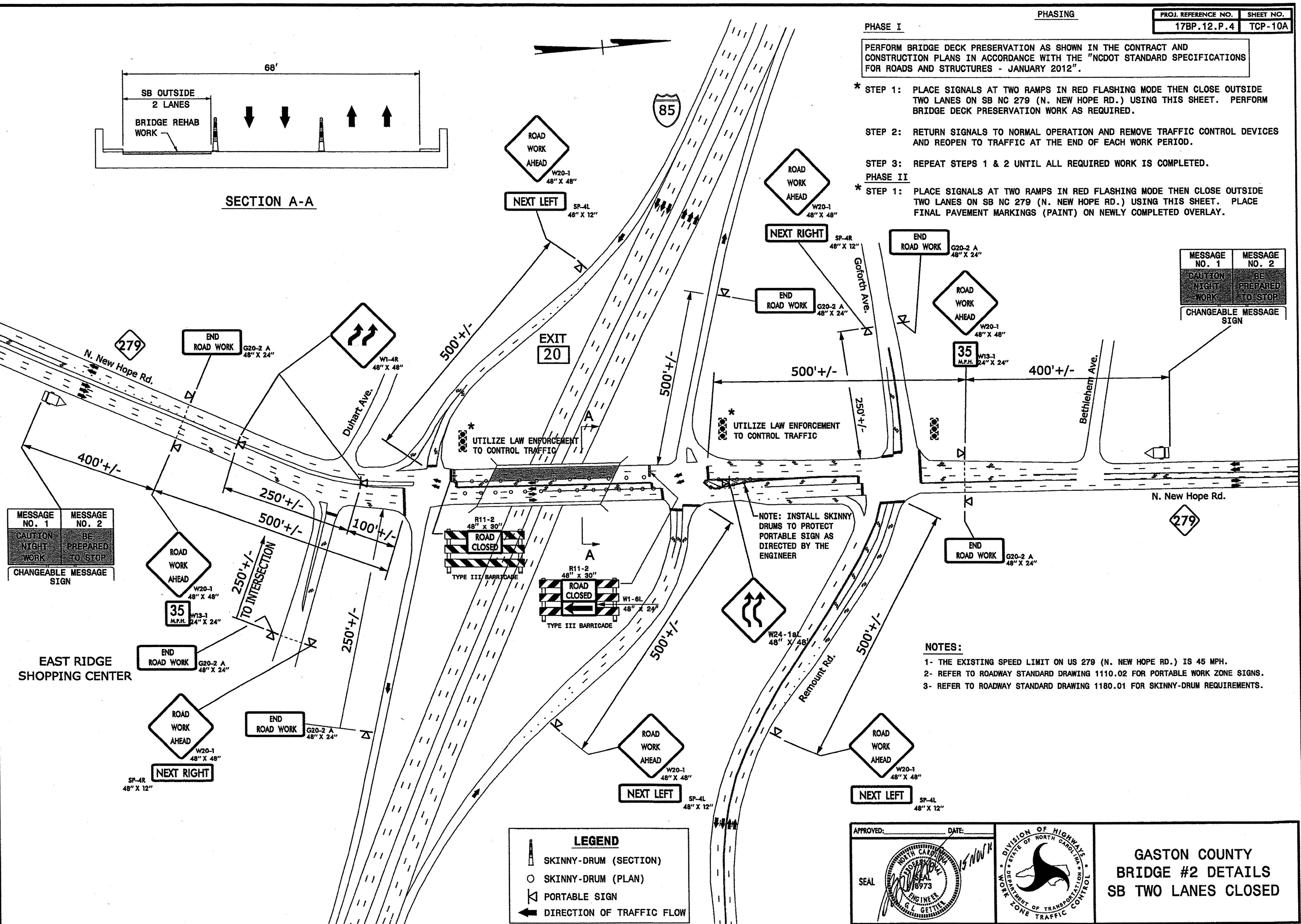
PHASE II

- * STEP 1: PLACE SIGNALS AT TWO RAMP IN RED FLASHING MODE THEN CLOSE OUTSIDE TWO LANES ON SB NC 279 (N. NEW HOPE RD.) USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT) ON NEWLY COMPLETED OVERLAY.



SECTION A-A

Q:\NOV-2011\1153\NCDOT\DESIGN\GROUPS-WZT\CC\TMUNWZTC\Design\Group3\Squad3B\Special\Projects\17BP.12.P.4 (BM 9 Bridge Rehab-Div 12)\TMP\Plans\TCP-10 Bridge 2.dgn
 kbr.coodwell AT 12/24/13



MESSAGE NO. 1	MESSAGE NO. 2
CAUTION NIGHT WORK	BE PREPARED TO STOP

CHANGEABLE MESSAGE SIGN

MESSAGE NO. 1	MESSAGE NO. 2
CAUTION NIGHT WORK	BE PREPARED TO STOP

CHANGEABLE MESSAGE SIGN

LEGEND

- SKINNY-DRUM (SECTION)
- SKINNY-DRUM (PLAN)
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

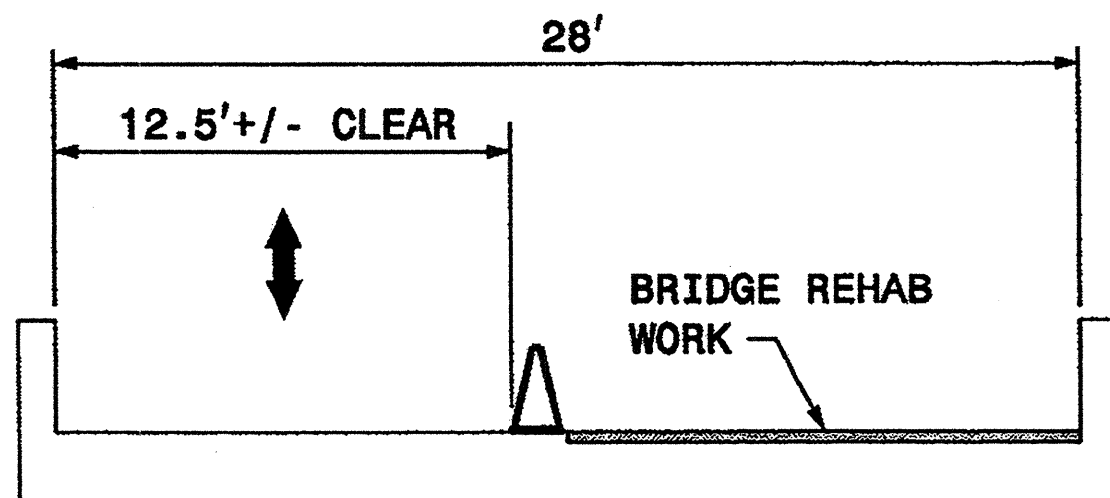
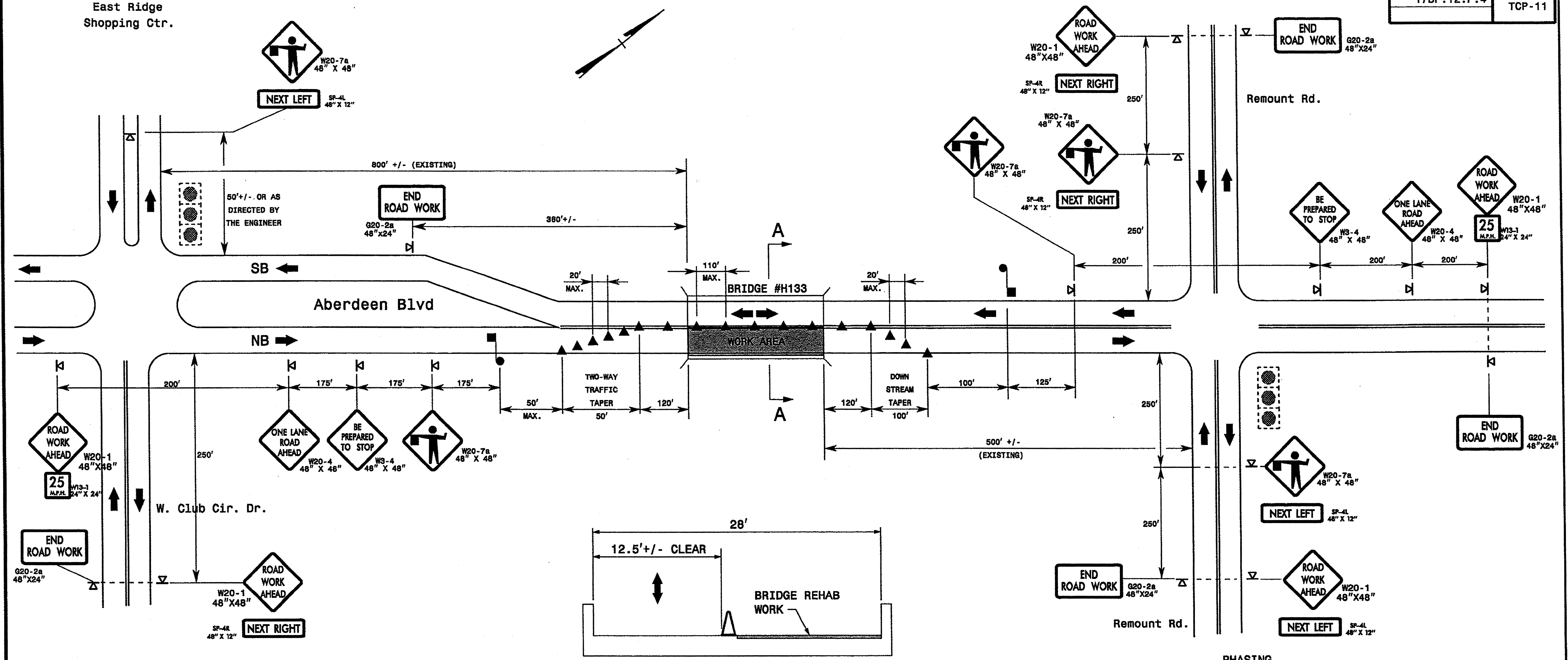
NOTES:

- 1- THE EXISTING SPEED LIMIT ON US 279 (N. NEW HOPE RD.) IS 45 MPH.
- 2- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- 3- REFER TO ROADWAY STANDARD DRAWING 1180.01 FOR SKINNY-DRUM REQUIREMENTS.

APPROVED: _____ DATE: _____

**GASTON COUNTY
BRIDGE #2 DETAILS
SB TWO LANES CLOSED**

East Ridge Shopping Ctr.



SECTION A-A

NOTES:

- ADAPT THIS DRAWING FOR SB LANE CLOSURE.
- THE EXISTING SPEED LIMIT ON ABERDEEN BLVD. IS 35 MPH.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO STD. 1101.11 SHEET 2).
- REFER TO ROADWAY STANDARD DRAWING 1150.01 FOR FLAGGING DEVICES.
- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- REFER TO ROADWAY STANDARD DRAWING 1135.01 FOR CONE REQUIREMENTS.
- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES. REFER TO ROADWAY STANDARD DRAWING 1130.01 FOR DRUM REQUIREMENTS AND 1180.01 FOR SKINNY-DRUM REQUIREMENTS.
- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. FOR SIGNALIZED INTERSECTIONS PLACE SIGNALS IN THE FLASH MODE AND RECOMMEND THE USE OF LAW ENFORCEMENT.

PHASE I

PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

- STEP 1:** - CLOSE A LANE ON ABERDEEN BLVD. USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED.
- USE SHEETS TCP-11A & TCP-11B TO PERFORM STEEL GIRDER REPAIRS.
 - AT THE END OF EACH WORK PERIOD REOPEN ROADWAYS TO TRAFFIC.

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

PHASE II

- STEP 1:** - CLOSE A LANE ON ABERDEEN BLVD. USING THIS SHEET. PLACE FINAL PAVEMENT MARKINGS (PAINT).

LEGEND

- FLAGGER
- CONE (SECTION)
- CONE (PLAN)
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

APPROVED: _____ DATE: _____

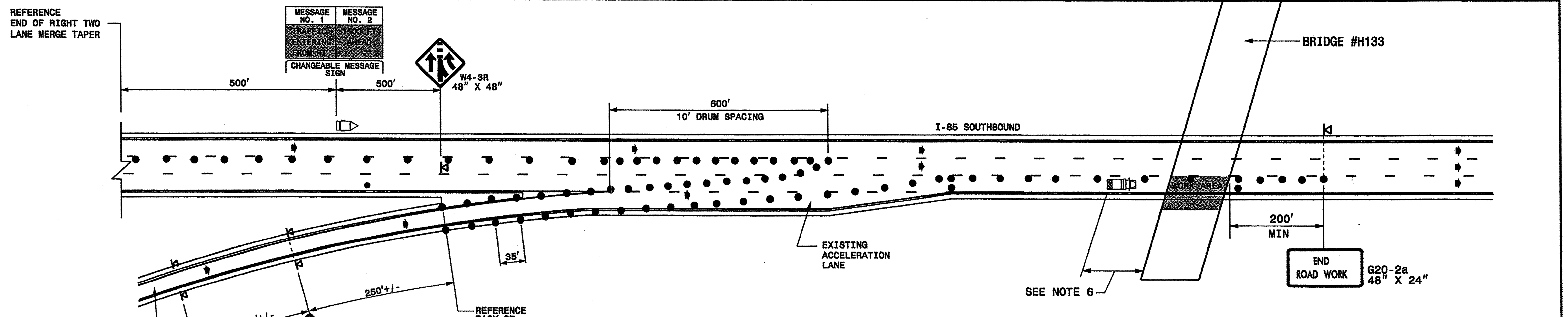
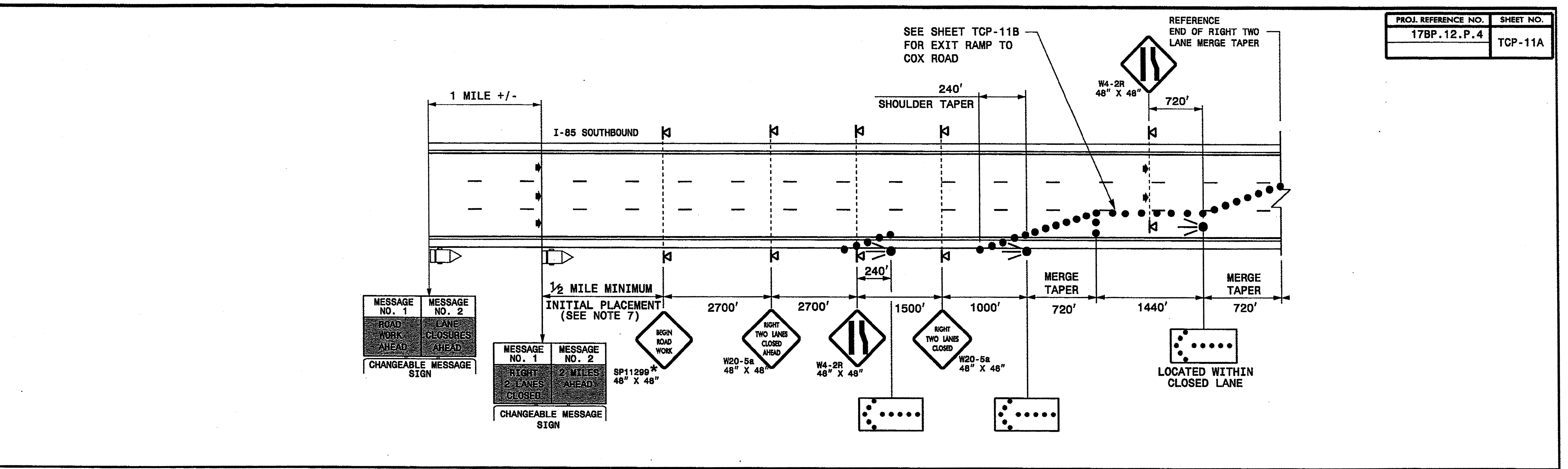
SEAL

GASTON COUNTY BRIDGE #H133 TEMPORARY LANE CLOSURES

SCALE: NONE	REVISIONS
DATE: 10/11	
DWG. BY: KPB	
DESIGN BY: KPB	
REVIEWED BY: JWG	

03 NOV 2011 11:54 AM
 C:\DOT\DESIGN\PROJECTS\17BP.12.P.4\17BP.12.P.4 (BM) 9 Bridge Rehab-Div 12\TWP\Plans\TC Sheets\TCP-11 Bridge H133.dgn
 KDR\GAWWELL AT 12/24/13

03-NOV-2011 11:58 \\dot\dfsroot\ol\groups-wztc\cc\TMU\WZTC\DesignGroup\3\Squad3B\Special\Projects\17BP.12.P.4\BM 9 Bridge Rehab-Div 12\TMP\Plans\TC Plan Sheets\TCP-11A Bridge H133.dgn



NOTES

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

LEGEND

- FLASHING ARROW BOARD (TYPE C)
- TRUCK MOUNTED ATTENUATOR (TMA)
- DRUM
- PORTABLE SIGN
- CHANGEABLE MESSAGE SIGN (CMS)
- DIRECTION OF TRAFFIC FLOW
- * SEE SHEET TCP-13 FOR SIGN DETAILS

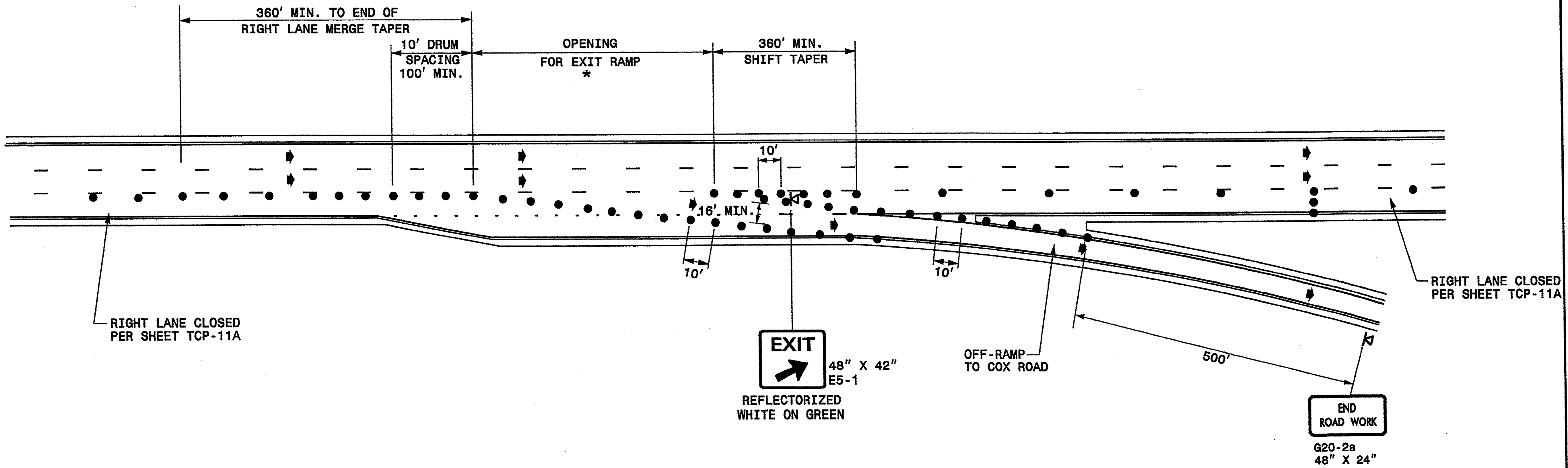
APPROVED: _____ DATE: _____

SEAL

GASTON COUNTY
BRIDGE #H133 OVER SB I-85
RIGHT TWO LANES CLOSED

SCALE: NONE		REVISIONS
DATE: 10/11		
DWG. BY: KPB		
DESIGN BY: KPB		
REVIEWED BY: JWG		

03-101V-201159
 \DOT\UP\OUT\CONTRACTS\WZTCCC\TMUN\WZTCC\Design\Group3\Squad3B\Special Projects\17BP.12.P.4 (BM 9 Bridge Rehab-Div 12)\TMP\Plans\TC Plan Sheets\TCP-11B Bridge H133.dgn
 KPR 09/28/11 AT 12:44:33



*** NOTE:**

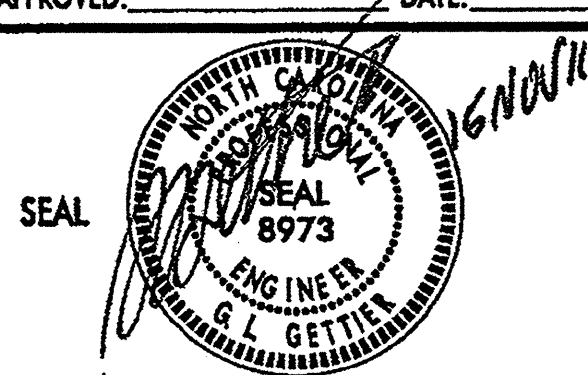

- 1- IF POSSIBLE, USE EXISTING RAMP OPENING LENGTH, BUT NO LESS THAN 1/2 ORIGINAL LENGTH.
- 2- CONSIDER CLOSING RAMP IF LESS THAN 1/2 ORIGINAL LENGTH CANNOT BE OBTAINED.

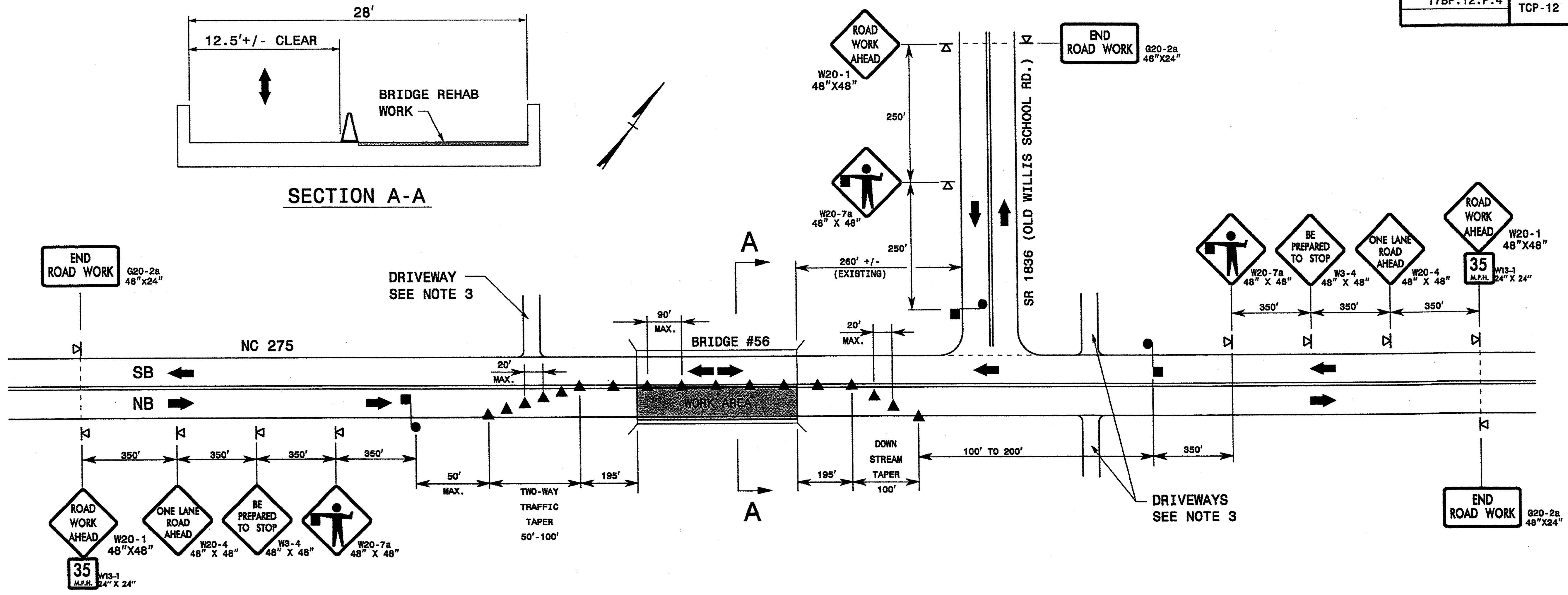
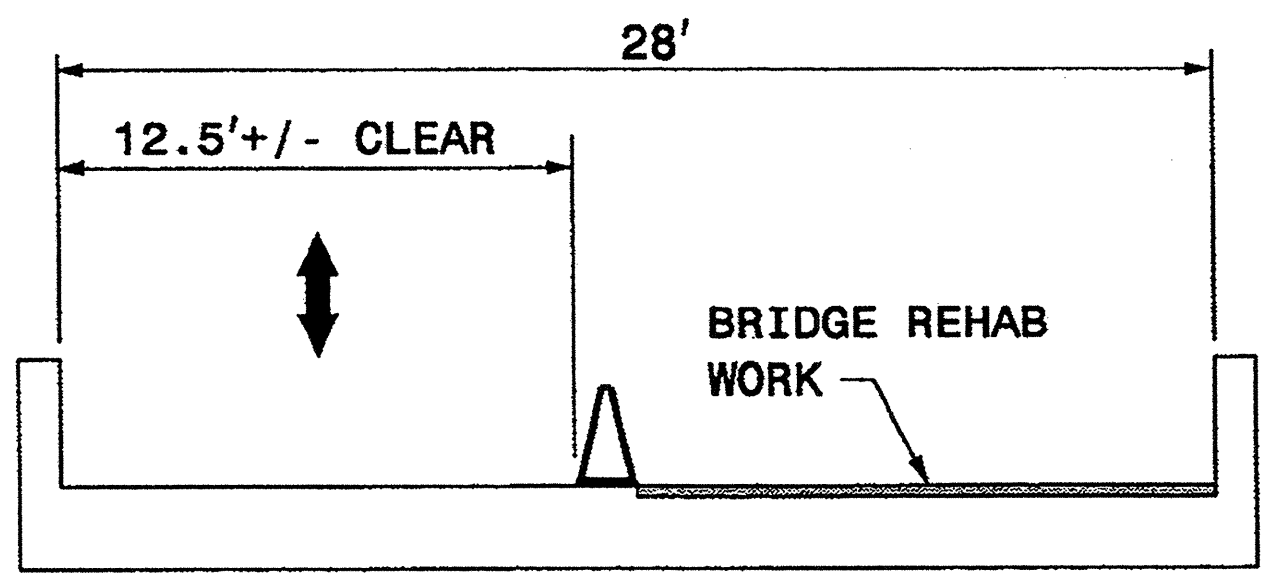
LEGEND

- DRUM
- ▣ PORTABLE SIGN
- ↔ DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

1-MOUNT EXIT SIGNS A MINIMUM OF 5 FEET ABOVE THE PAVEMENT ELEVATION.

APPROVED:	DATE:	GASTON COUNTY BRIDGE #H133 OVER SB I-85 TEMPORARY LANE CLOSURE THRU EXIT RAMP							
									
SCALE: NONE	DATE: 10/11	<table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>		REVISIONS					
REVISIONS									
DWG. BY: KPB	DESIGN BY: KPB	<table border="1"> <tr> <td> </td> <td> </td> </tr> </table>							
REVIEWED BY: JWG		<table border="1"> <tr> <td> </td> <td> </td> </tr> </table>							



PHASING

PHASE I

PERFORM BRIDGE DECK PRESERVATION AS SHOWN IN THE CONTRACT AND CONSTRUCTION PLANS IN ACCORDANCE WITH THE "NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES - JANUARY 2012".

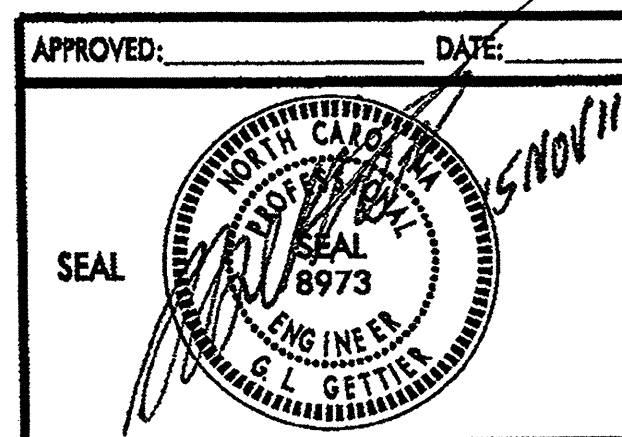
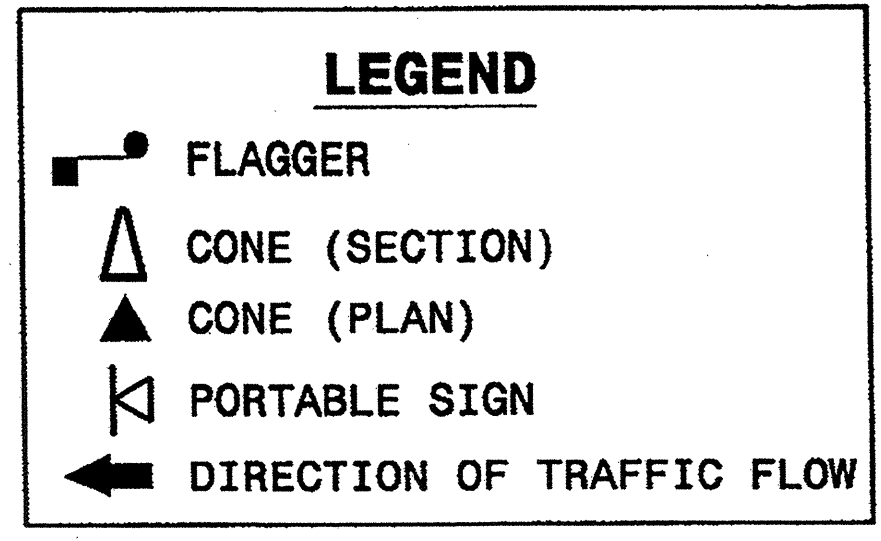
- STEP 1:** CLOSE A LANE ON NC-275 USING THIS SHEET. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2:** REPEAT STEP 1 UNTIL ALL REQUIRED WORK IS COMPLETED.

PHASE II

- STEP 1:** CLOSE A LANE ON NC-275 USING THIS SHEET, PLACE FINAL PAVEMENT MARKINGS (PAINT).

NOTES:

- ADAPT THIS DRAWING FOR SB LANE CLOSURE.
- THE EXISTING SPEED LIMIT ON NC-275 IS 45 MPH.
- AN ADDITIONAL FLAGGER MAY BE REQUIRED AT DRIVEWAY.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- REFER TO 2009 MUTCD, CHAPTER 6, FOR FLAGGER CONTROL, REQUIREMENTS, AND PROCEDURES.
- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER (REFER TO STD. 1101.11 SHEET 2).
- REFER TO ROADWAY STANDARD DRAWING 1150.01 FOR FLAGGING DEVICES.
- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- REFER TO ROADWAY STANDARD DRAWING 1110.02 FOR PORTABLE WORK ZONE SIGNS.
- REFER TO ROADWAY STANDARD DRAWING 1135.01 FOR CONE REQUIREMENTS.
- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES. REFER TO ROADWAY STANDARD DRAWING 1130.01 FOR DRUM REQUIREMENTS AND 1180.01 FOR SKINNY-DRUM REQUIREMENTS.



APPROVED: _____ DATE: _____		GASTON COUNTY BRIDGE #56 TEMPORARY LANE CLOSURES	
SCALE: NONE	DATE: 10/11		
DWG. BY: KPB	DESIGN BY: KPB		REVISIONS
REVIEWED BY: JWG			

03-NOV-2011 12:06
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03-NOV-2011 12:01
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 Rbradwell AT 12:44:39

<p> SIGN NUMBER: SP-11290 BAGGS COLOR: Fluorescent Orange TYPE: PORTABLE COPY COLOR: Black QUANTITY: SEE PLANS </p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table> <p> SIGN WIDTH: 4'-0" HEIGHT: 4'-0" TOTAL AREA: 16.0 Sq.Ft. </p> <p> BORDER TYPE: FLUSH RECESS: 0.69" WIDTH: 0.75" RADII: 1.38" </p> <p> NO. Z BARS: N/A MAT'L: composite or substrate roll-up. LENGTH: N/A </p>	SYMBOL	X	Y	WID	HT																																														<p> DESIGN BY: CL DOWNEY CHECKED BY: CHECKED STD #: W20-1 PROJECT ID: ALL PROJECTS DIV: DIV DATE: Aug 20, 2009 </p> <div style="text-align: center;"> </div> <p> BORDER R=1.38" TH=0.75" IN=0.59" </p> <p> LETTER POSITIONS </p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="10">Letter spacings are to start of next letter</th> <th>Series/Size</th> </tr> <tr> <th colspan="10"></th> <th>Text Length</th> </tr> </thead> <tbody> <tr> <td></td><td>B</td><td>E</td><td>G</td><td>I</td><td>N</td><td></td><td></td><td></td><td></td> <td></td> <td>C7</td> </tr> <tr> <td>22.4</td><td>5.3</td><td>4.6</td><td>5.4</td><td>2.5</td><td>3.8</td><td>22.4</td><td></td><td></td><td></td> <td></td> <td>21.6</td> </tr> <tr> <td></td><td>R</td><td>O</td><td>A</td><td>D</td><td></td><td></td><td></td><td></td><td></td> <td></td> <td>C7</td> </tr> <tr> <td>23.4</td><td>5</td><td>5.2</td><td>5.6</td><td>3.8</td><td>23.4</td><td></td><td></td><td></td><td></td> <td></td> <td>18.8</td> </tr> <tr> <td></td><td>W</td><td>O</td><td>R</td><td>K</td><td></td><td></td><td></td><td></td><td></td> <td></td> <td>C7</td> </tr> <tr> <td>22.6</td><td>6.4</td><td>5.6</td><td>5.2</td><td>4</td><td>22.6</td><td></td><td></td><td></td><td></td> <td></td> <td>21.2</td> </tr> </tbody> </table> <p>Spacing Factor is 1 unless specified otherwise</p>	Letter spacings are to start of next letter										Series/Size											Text Length		B	E	G	I	N						C7	22.4	5.3	4.6	5.4	2.5	3.8	22.4					21.6		R	O	A	D							C7	23.4	5	5.2	5.6	3.8	23.4						18.8		W	O	R	K							C7	22.6	6.4	5.6	5.2	4	22.6						21.2
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<p>APPROVED: _____ DATE: _____</p> <p style="text-align: center;"> </p>	<h2 style="margin: 0;">SPECIAL SIGN DETAILS</h2>	<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>								
<p>SCALE: NONE</p> <p>DATE: 10/11</p> <p>DWG. BY: KPB</p> <p>DESIGN BY: KPB</p> <p>REVIEWED BY: JWG</p>		<p>CAD: _____</p> <p>PLA: _____</p>								

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN		
OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

SPECIAL NOTES:

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

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