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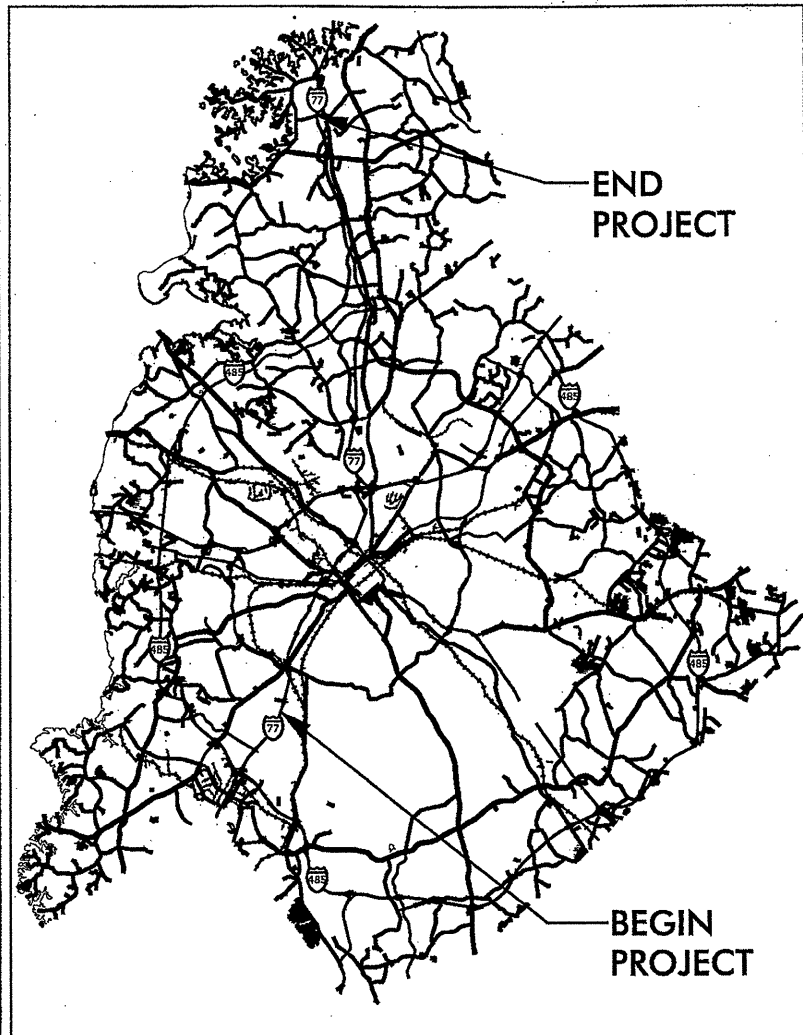
PROJECT: 17BP.10.P.3

CONTRACT: C202991

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

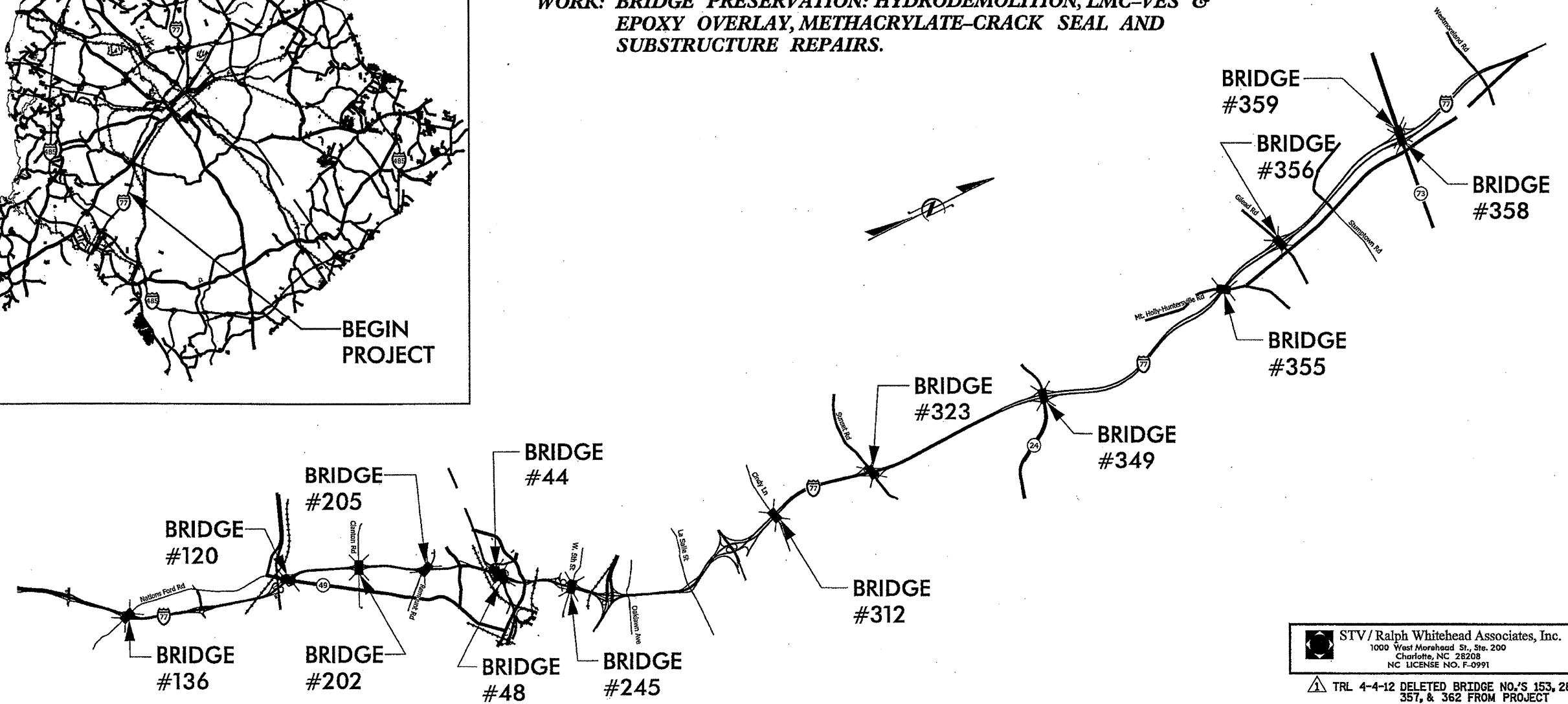
MECKLENBURG COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.10.P.3	1	106
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.10.P.3	NA	PE	
17BP.10.P.3	NA	CONSTR.	



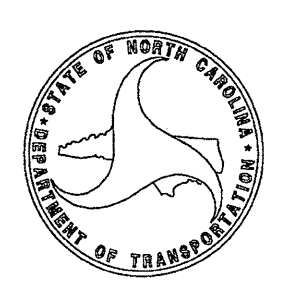
△ LOCATION: BRIDGE NO. 44, 48, 120, 136, 202, 205, 245, 312, 323, 349, 355, 356, 358 AND 359 OVER INTERSTATE 77

TYPE OF WORK: BRIDGE PRESERVATION: HYDRODEMOLITION, LMC-VES & EPOXY OVERLAY, METHACRYLATE-CRACK SEAL AND SUBSTRUCTURE REPAIRS.



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

△ TRL 4-4-12 DELETED BRIDGE NO.'S 153, 286, 357, & 362 FROM PROJECT

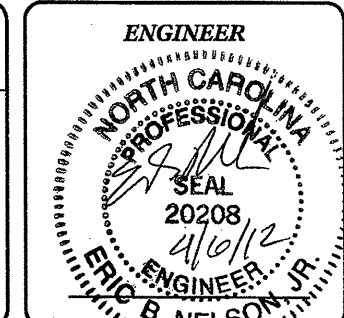


PROJECT LENGTH			
LENGTH		LENGTH	
BRIDGE	STRUCTURE PROJECT	BRIDGE	STRUCTURE PROJECT
#44	.07 MILE	#312	.06 MILE
#48	.08 MILE	#323	.06 MILE
#120	.06 MILE	#349	.07 MILE
#136	.04 MILE	#355	.07 MILE
#202	.04 MILE	#356	.07 MILE
#205	.06 MILE	#358	.03 MILE
#245	.05 MILE	#359	.03 MILE

Prepared For:
STRUCTURES MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

LETTING DATE:
APRIL 17, 2012



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP17.10.P.3	1A	106
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP17.10.P.3	NA	PE	
BP17.10.P.3	NA	CONSTR.	

MECKLENBURG COUNTY

△ LOCATION: BRIDGE NO. 44, 48, 120, 136, 202, 205, 245, 312, 323, 349, 355, 356, 358 AND 359 OVER INTERSTATE 77

TYPE OF WORK: BRIDGE PRESERVATION: HYDRODEMOLITION, LMC-VES & EPOXY OVERLAY, METHACRYLATE-CRACK SEAL AND SUBSTRUCTURE REPAIRS.

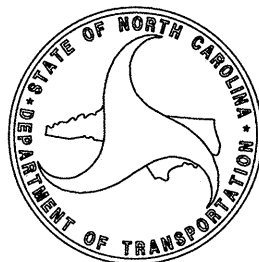
INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
△ S1-S88	STRUCTURES
TMP-1 - TMP-15	TRAFFIC MANAGEMENT PLANS

△ TRL 4-4-12 DELETED BRIDGE NO.'S 153, 286, 357, & 362 FROM PROJECT

PROJECT: BP17.10.P.3

CONTRACT: C202991



Prepared For:
STRUCTURES MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

LETTING DATE:
APRIL 17, 2011

ENGINEER

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202991

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
1330000000-E	607	1,128	SY	INCIDENTAL MILLING
1525000000-E	610	89.1	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	6	TON	ASPHALT BINDER FOR PLANT MIX
2752000000-E	SP	62	LF	GENERIC PAVING ITEM REMOVE & REPLACE 2'-6" CONC CURB & GUTTER
4400000000-E	1110	200	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	350	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	40	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4415000000-N	1115	4	EA	FLASHING ARROW BOARD
4422000000-N	1120	4	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	120	EA	DRUMS
4445000000-E	1145	40	LF	BARRICADES (TYPE III)
4455000000-N	1150	120	DAY	FLAGGER
4480000000-N	1165	1	EA	TMA
4520000000-N	1266	10	EA	TUBULAR MARKERS (FIXED)
4721000000-E	1205	8	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)
4725000000-E	1205	34	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)
4770000000-E	1205	3,340	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (II)
4770000000-E	1205	1,130	LF	COLD APPLIED PLASTIC PAVEMENT MARKING LINES, TYPE ** (4") (IV)
4847000000-E	1205	25,150	LF	POLYUREA PAVEMENT MARKING LINES (4", *****) (HIGHLY REFLECTIVE ELEMENTS)
4847110000-E	1205	380	LF	POLYUREA PAVEMENT MARKING LINES (8", *****) (HIGHLY REFLECTIVE ELEMENTS)
4900000000-N	1251	310	EA	PERMANENT RAISED PAVEMENT MARKERS

ItemNumber	Sec #	Quantity	Unit	Description
8161000000-E	420	207,807	SF	GROOVING BRIDGE FLOORS
8217000000-E	425	250	LB	REINFORCING STEEL (BRIDGE)
8660000000-E	SP	121.8	CF	CONCRETE REPAIRS
8664000000-E	SP	103	CF	SHOTCRETE REPAIRS
8678000000-E	SP	524	LF	EPOXY RESIN INJECTION
8692000000-N	SP	Lump Sum		FOAM JOINT SEALS
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING
8881000000-E	SP	884	CY	GENERIC STRUCTURE ITEM LATEX MODIFIED CONC OVERLAY - VERY EARLY STRENGTH
8892000000-E	SP	81	SF	GENERIC STRUCTURE ITEM CLASS II CONCRETE DECK REPAIR FOR EPOXY OVERLAY
8892000000-E	SP	13,638	SF	GENERIC STRUCTURE ITEM PLACEMENT OF CRACK/DECK SEALER
8892000000-E	SP	81,475	SF	GENERIC STRUCTURE ITEM PLACEMENT OF EPOXY OVERLAY
8893000000-E	SP	25,323	SY	GENERIC STRUCTURE ITEM HYDRO-DEMOLITION OF BRIDGE DECK
8893000000-E	SP	25,323	SY	GENERIC STRUCTURE ITEM PLACING & FINISHING LATEX MOD CONC OVERLAY - VERY EARLY STRENGTH
8893000000-E	SP	25,323	SY	GENERIC STRUCTURE ITEM SCARIFYING BRIDGE DECK

GENERAL NOTES (ALL BRIDGES)

EXISTING BRIDGE AND REPAIR DETAILS INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE AND REPAIR DETAILS SHOWN ON THE PLANS AND THE ACTUAL CONDITION AT THE PROJECT SITE.

THE CONTRACTOR SHALL TAKE THE NECESSARY STEPS TO PREVENT DEBRIS AND MATERIALS FROM FALLING, ROLLING OR BLOWING INTO TRAFFIC FROM THE WORK AREA. CONSIDERATION SHALL BE GIVEN TO THE USE OF SCREENS TO PROTECT TRAFFIC ADJACENT TO THE WORK AREA. FOR MAINTENANCE AND PROTECTION OF TRAFFIC BENEATH PROPOSED STRUCTURE, SEE SPECIAL PROVISIONS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL OSHA AND STATE SAFETY REQUIREMENTS.

DIMENSIONS IN THESE PLANS ARE BASED ON ORIGINAL PLANS. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

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

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

FOR SHOTCRETE REPAIRS, SEE SPECIAL PROVISIONS.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

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

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

REINFORCING STEEL SHALL BE GRADE 60.

FOR INCIDENTAL ASPHALT MILLING, SEE STANDARD SPECIFICATIONS.

FOR ASPHALT CONCRETE SURFACE TYPES SF 9.5A AND S 12.5C, SEE STANDARD SPECIFICATIONS.

FOR CONCRETE DECK REPAIRS FOR EPOXY OVERLAYS, SEE SPECIAL PROVISIONS.

MILLING ASPHALT PAVEMENT LENGTH & QUANTITY IS APPROXIMATE. THE CONTRACTOR SHALL MILL AS REQUIRED TO PROVIDE A SMOOTH TRANSITION AT EACH END OF THE BRIDGE AS DIRECTED BY THE ENGINEER.

PAYMENT FOR INSTALLATION OF BACKER RODS BETWEEN APPROACH PAVEMENT & CURTAIN WALLS SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT PAY ITEMS. ALL COSTS INCLUDING LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE VARIOUS PAY ITEMS. NO ADDITIONAL PAYMENT WILL BE MADE.

THE FOLLOWING NOTES ONLY APPLY TO BRIDGES WHERE SUBSTRUCTURE REPAIRS ARE INDICATED IN THE PLANS:

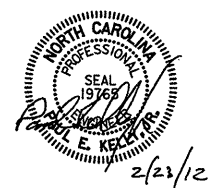
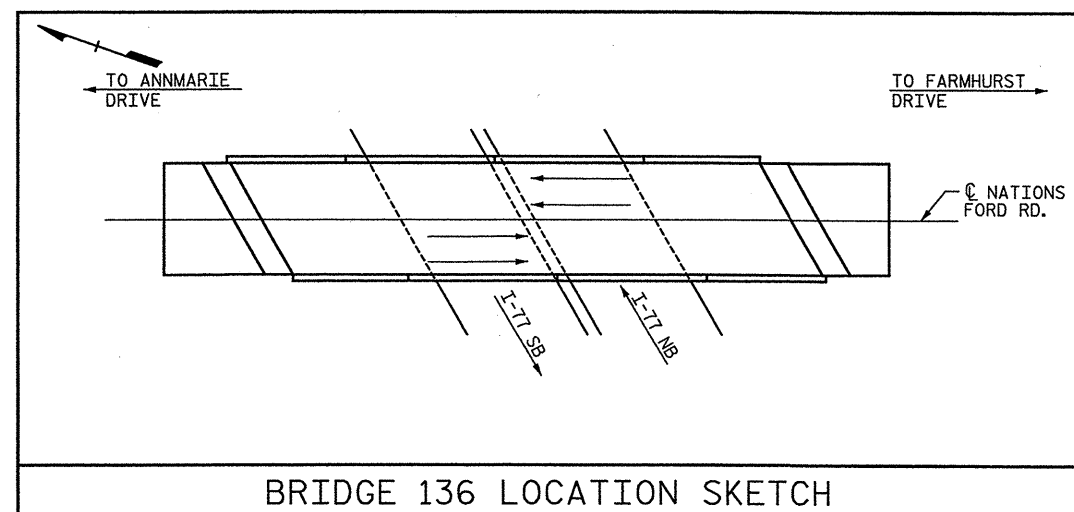
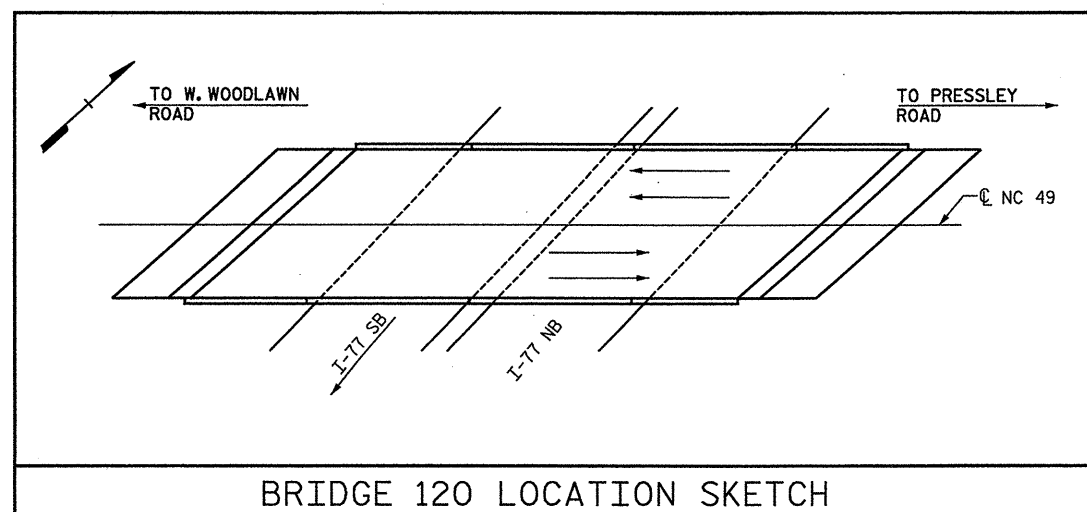
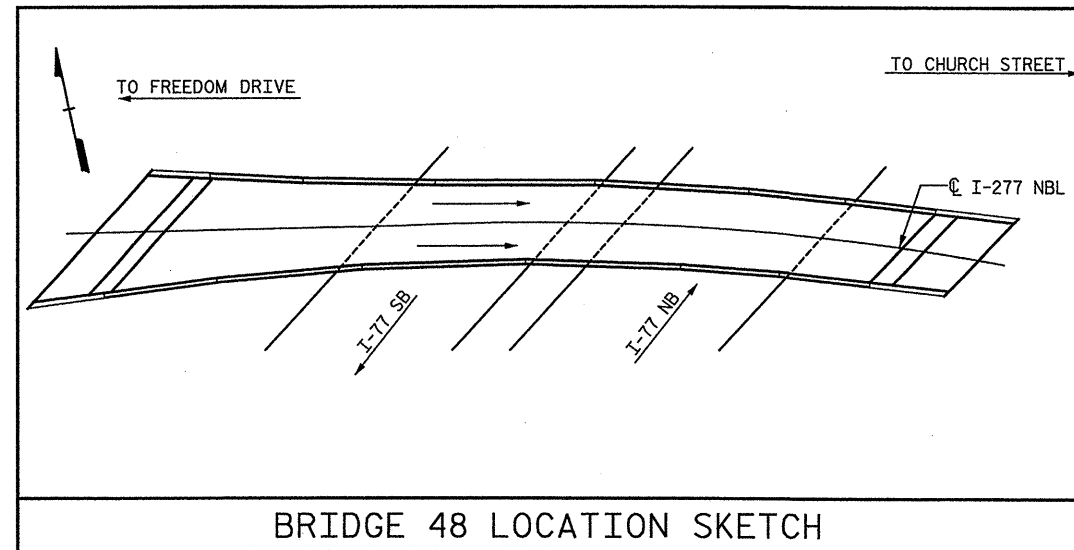
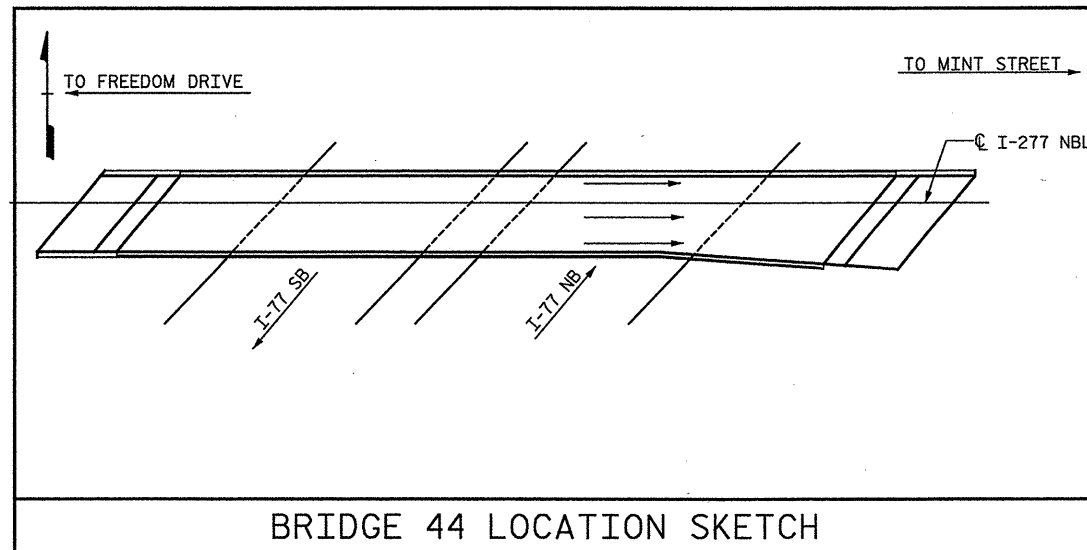
BENT CAPS SHALL BE COATED WITH EPOXY PROTECTIVE COATING. ALL COSTS ASSOCIATED WITH EPOXY PROTECTIVE COATING SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT PAY ITEM.

DEBRIS SHALL BE REMOVED FROM EXISTING BENT CAPS. ALL COST ASSOCIATED WITH DEBRIS REMOVAL SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT PAY ITEMS.

CONTRACTOR SHALL REVIEW DECK CONDITION WITH THE ENGINEER AFTER SCARIFICATION TO IDENTIFY ANY POTENTIAL CLASS III REPAIR AREAS.

IF ADDITIONAL CLASS III REPAIR AREAS ARE IDENTIFIED, THE CONTRACTOR SHALL INSTALL BLOW THROUGH CONTAINMENT.

IF DEMOLITION OPERATIONS IDENTIFY AREAS FOR POTENTIAL CLASS III REPAIRS, CONTRACTOR SHALL CEASE WORK AT THOSE LOCATIONS UNTIL SUCH TIME THAT BLOW THROUGH CONTAINMENT AND FORMWORK CAN BE INSTALLED.



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 44, 48, 120, 136

REHAB. OF MECKLENBURG CO. BRIDGES SHEET 1 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL NOTES AND
 LOCATION SKETCHES**

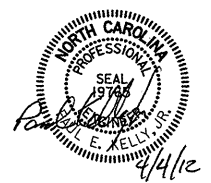
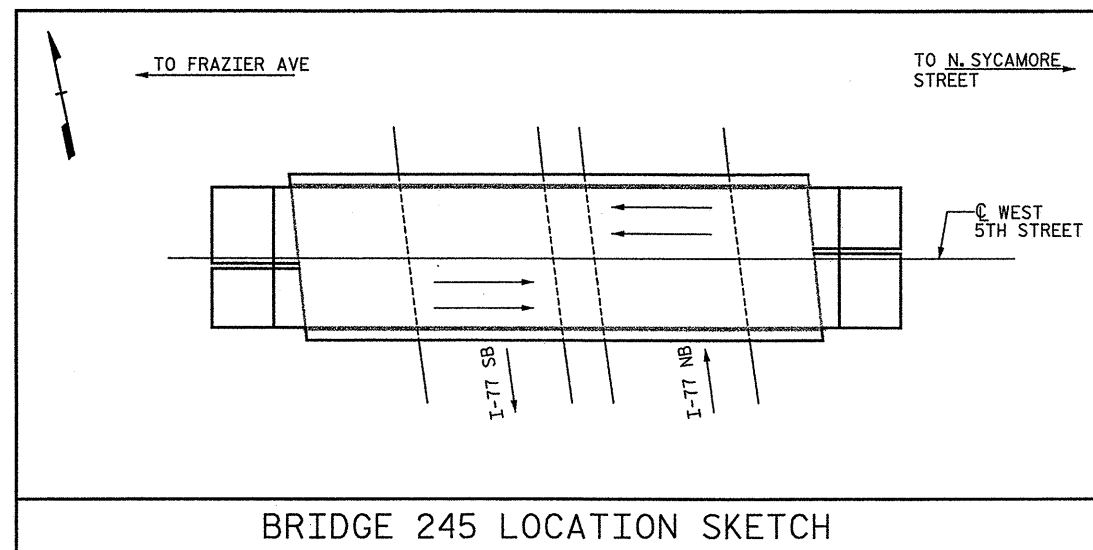
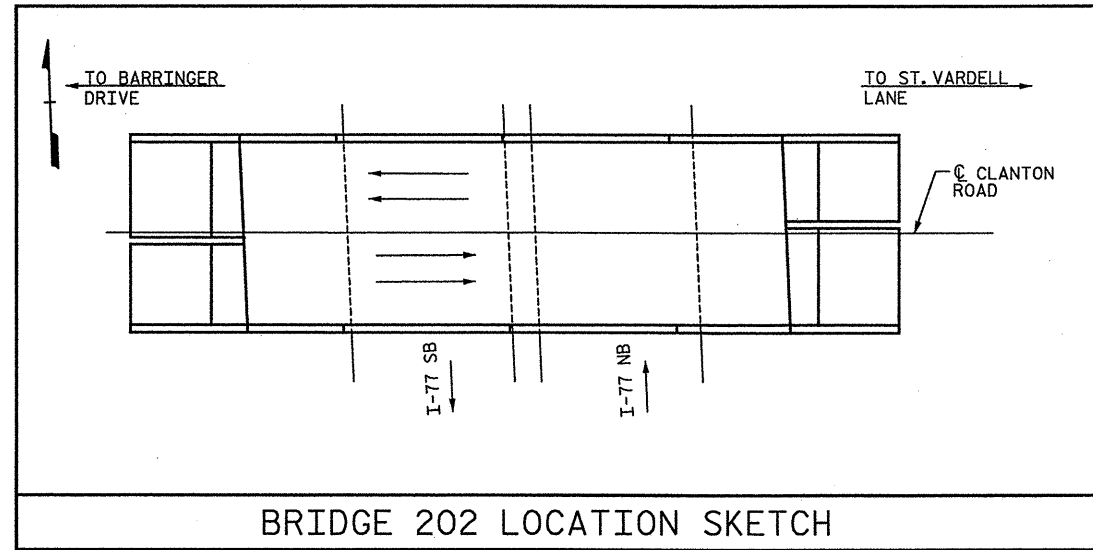
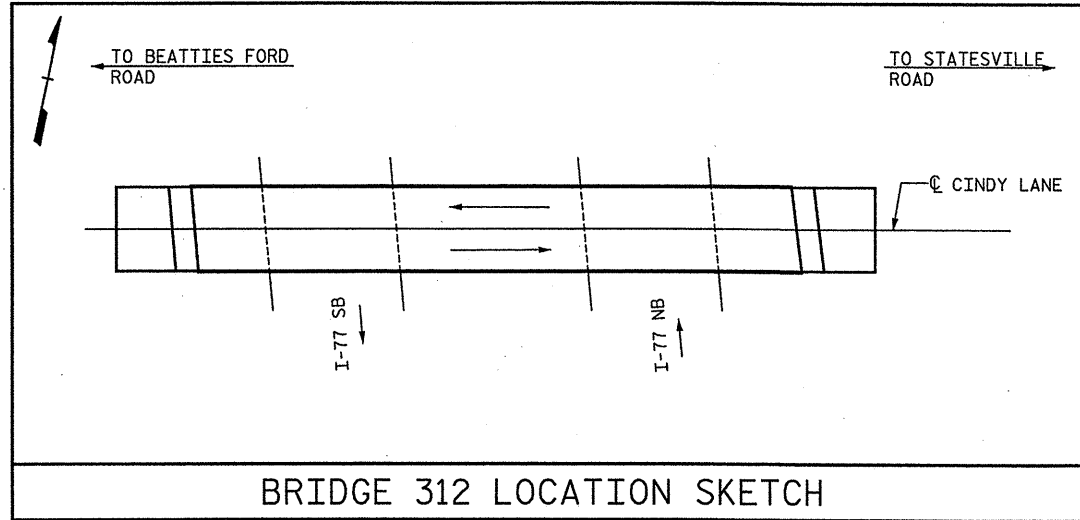
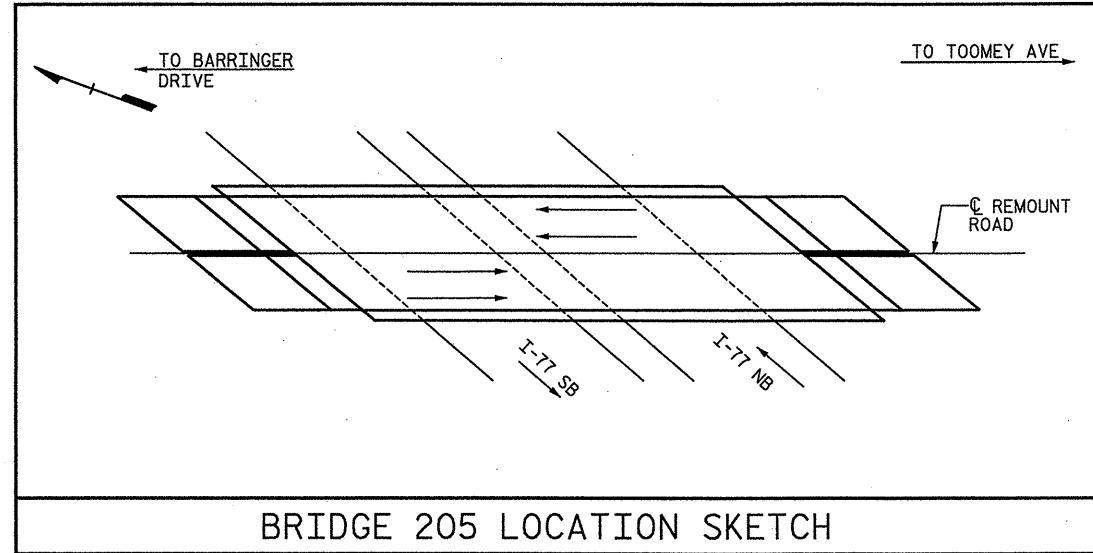
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 CHECKED BY : GKK DATE : 1/5/12

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 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
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PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 202, 205, 245, 312
 REHAB. OF MECKLENBURG CO. BRIDGES SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 LOCATION SKETCHES

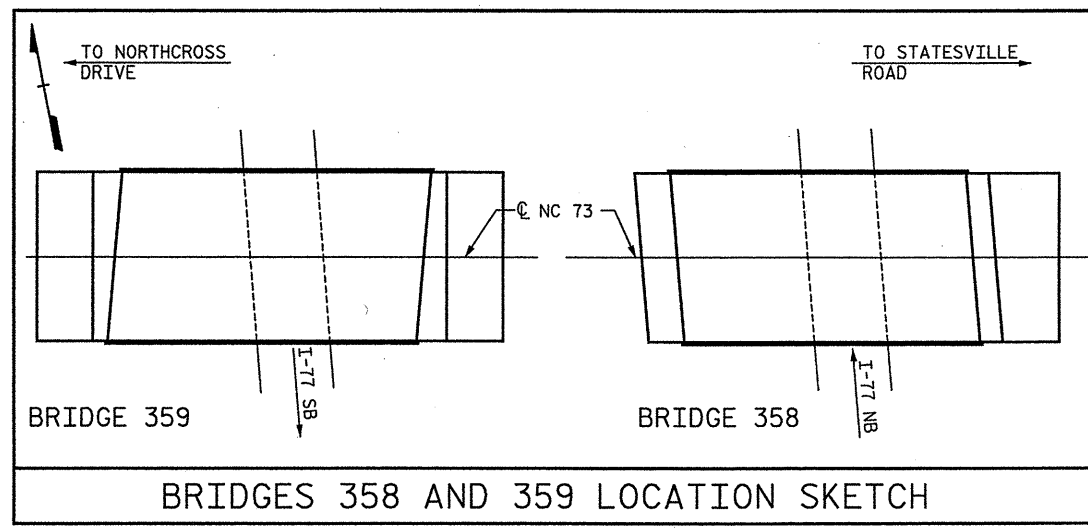
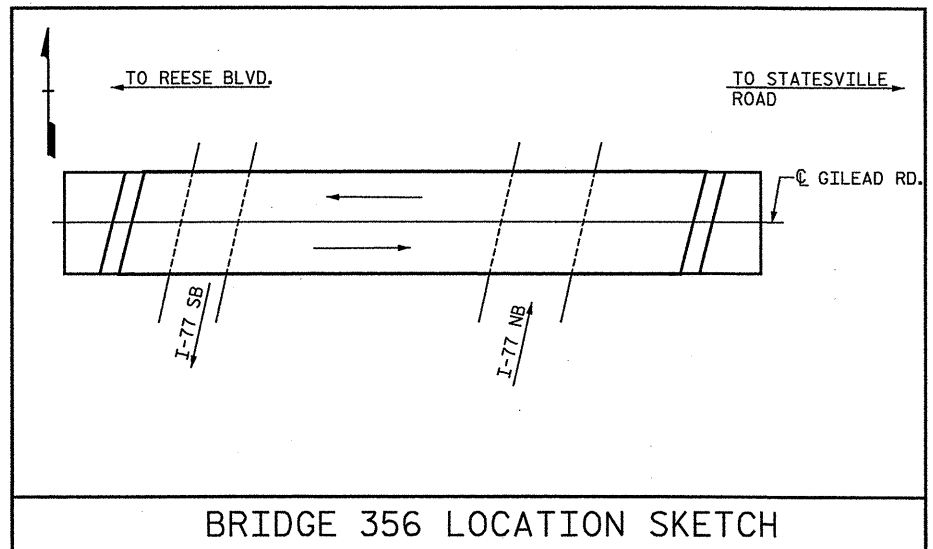
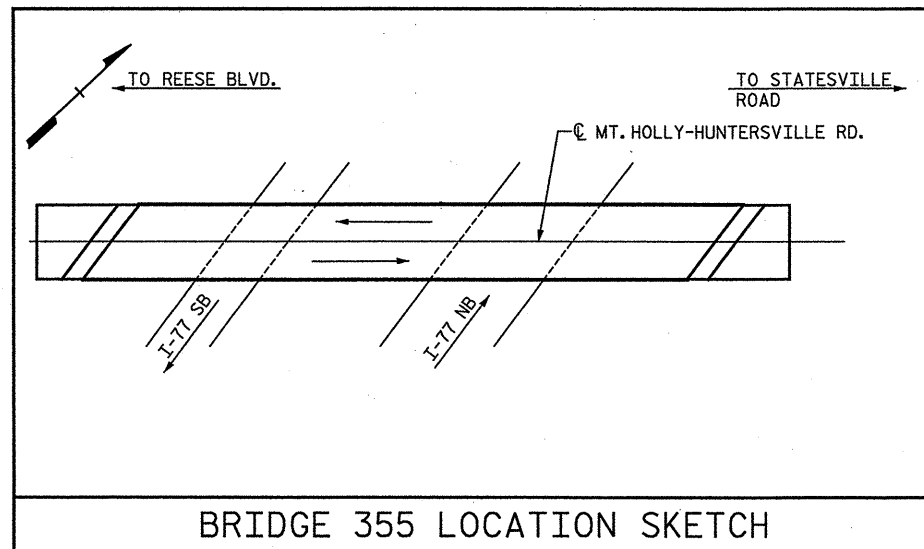
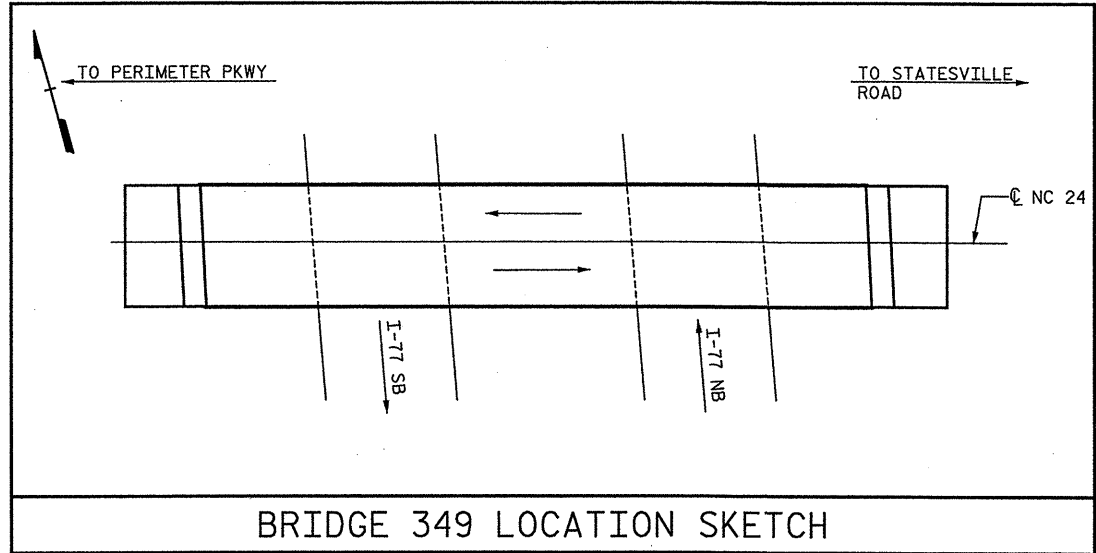
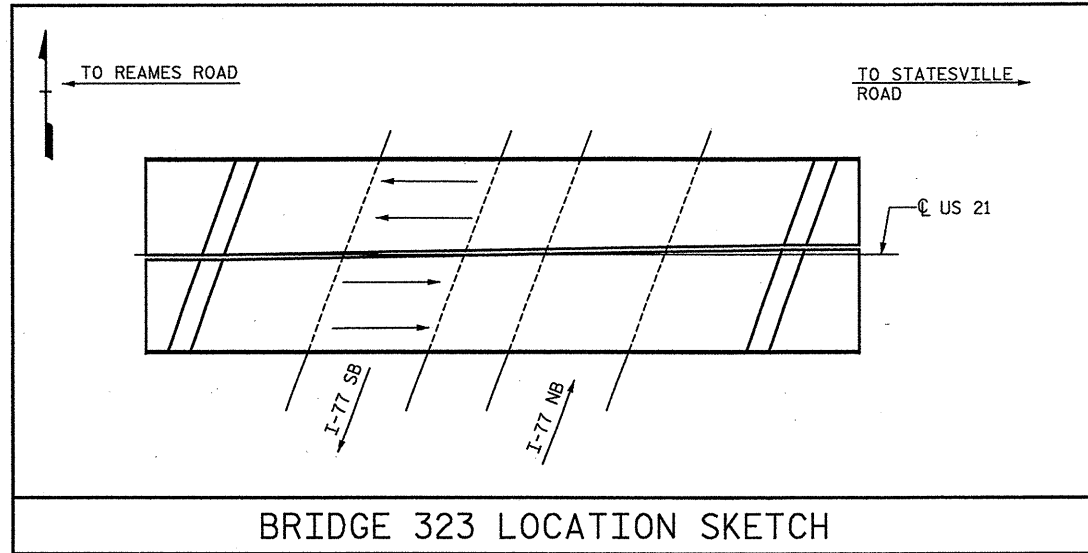
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DELETED BRIDGE NO.'S 153, 286,
 357, & 362 FROM PROJECT

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1	TRL	4-4-12	3			TOTAL SHEETS
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PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 323, 349, 355, 356, 358, 359
 REHAB. OF MECKLENBURG CO. BRIDGES SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 LOCATION SKETCHES

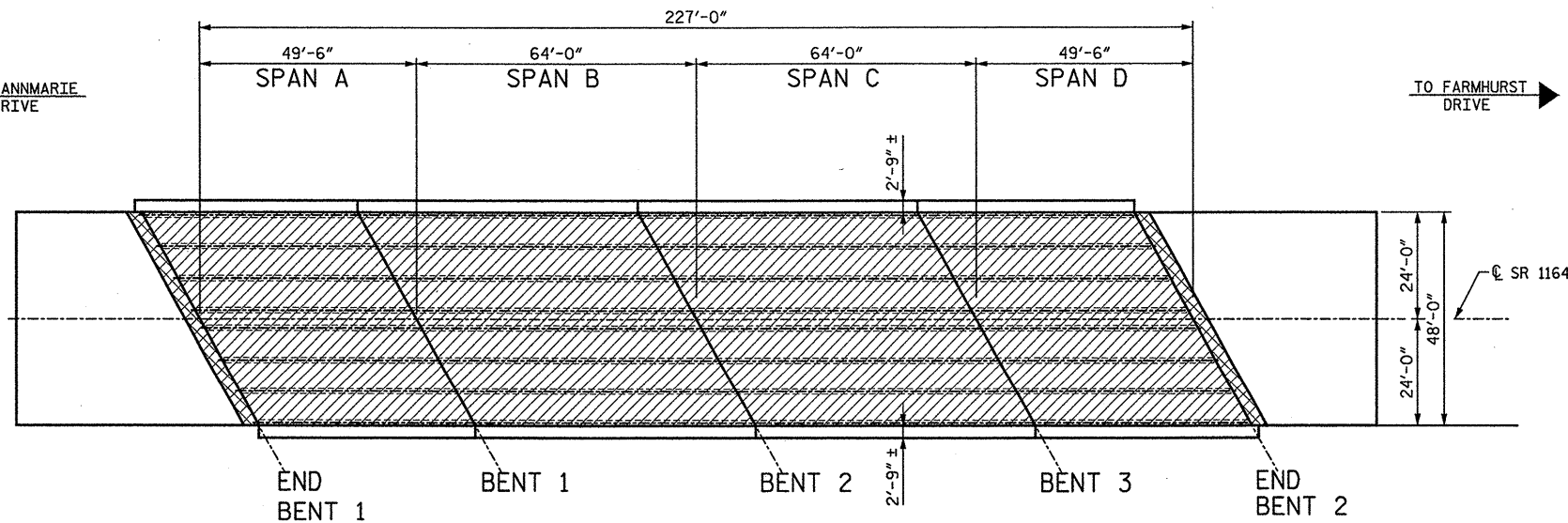
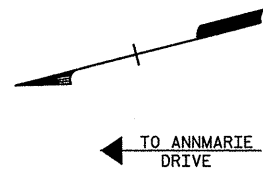
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DELETED BRIDGE NO.'S 153, 286, 357, & 362 FROM PROJECT

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1	TRL	4-4-12	3			TOTAL SHEETS S-88
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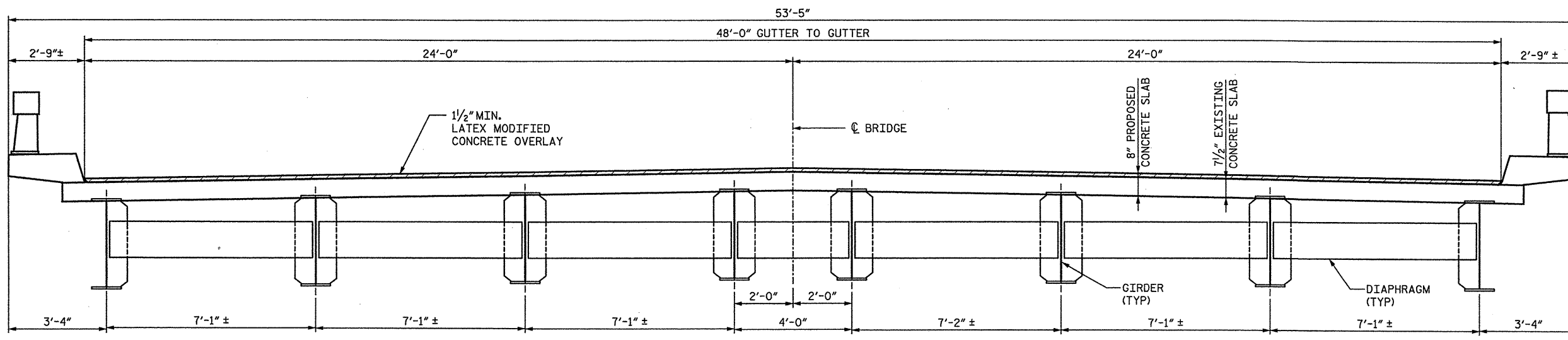


NOTES:

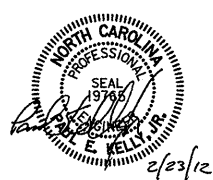
1. EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
2. FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
3. THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
4. LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
5. FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
6. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
7. FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION

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



TYPICAL SECTION



PROJECT NO. **17BP.10.P.3**
MECKLENBURG COUNTY
 BRIDGE NO.: **136**

REHAB. OF BRIDGE NO. 136 SHEET 1 OF 10

BILL OF MATERIAL

DECK SCARIFICATION	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	* CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE-VES	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	CONCRETE REPAIR	BRIDGE JACKING	REINFORCING STEEL
SQ. YDS.	SQ. YDS.	TON	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	L.F.	CU. FT.	LUMP SUM	LBS.
1211	37	2.5	857	229	125	26	1211	51	1211	LUMP SUM	10014	96	8	LUMP SUM	50

* QUANTITIES FOR INFORMATION ONLY

SHOTCRETE REPAIR
CU. FT.
11

DRAWN BY : RH DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

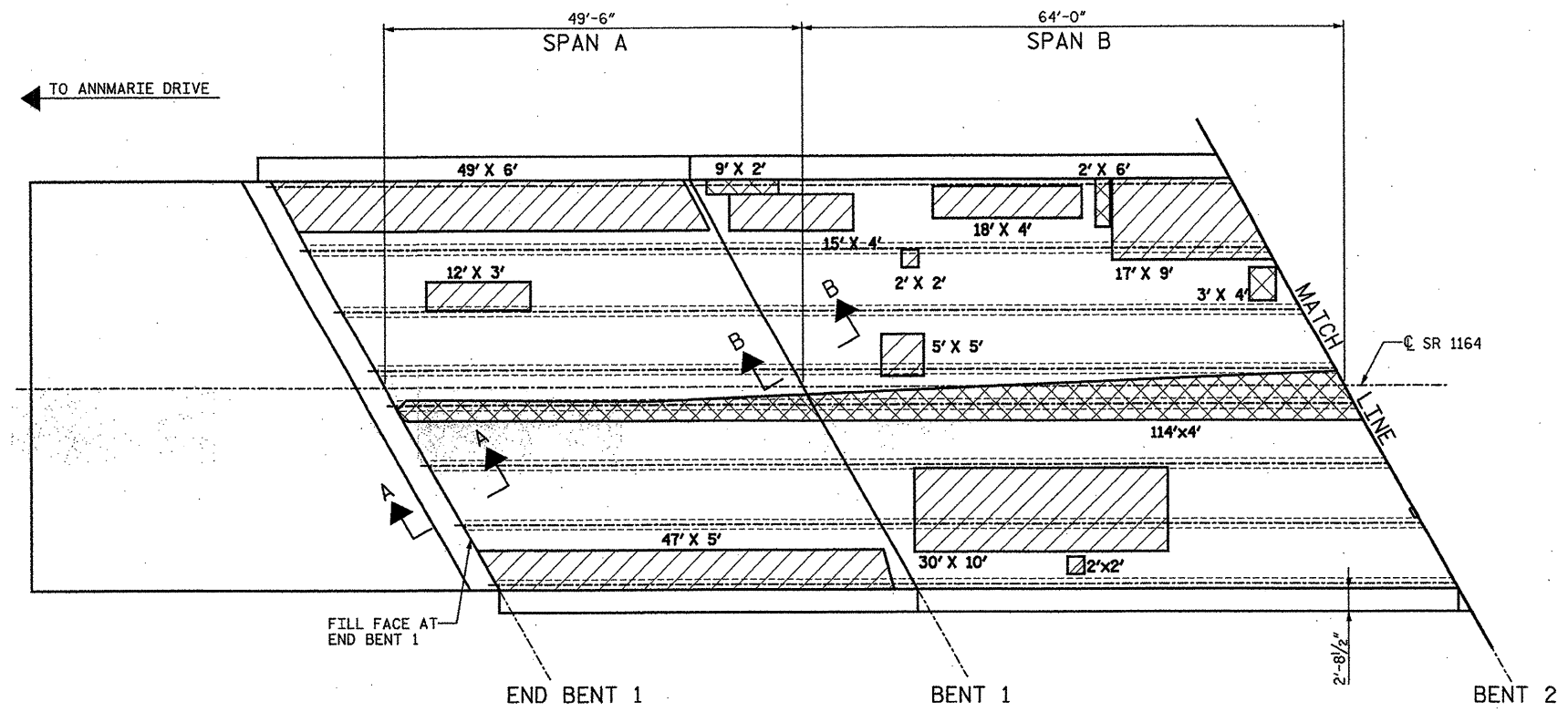
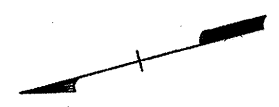
PLAN OF SPANS AND TYPICAL SECTION

BRIDGE ON SR 1164
 OVER I-77 AND US 21

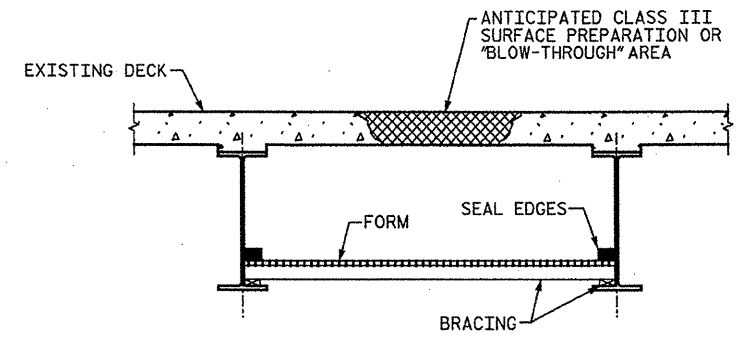
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1			3			TOTAL SHEETS
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NOTES:
FOR DETAILS SEE SHEET 4 OF 10.



PLAN OF SPANS - BRIDGE DECK REPAIRS SPANS 1 AND 2

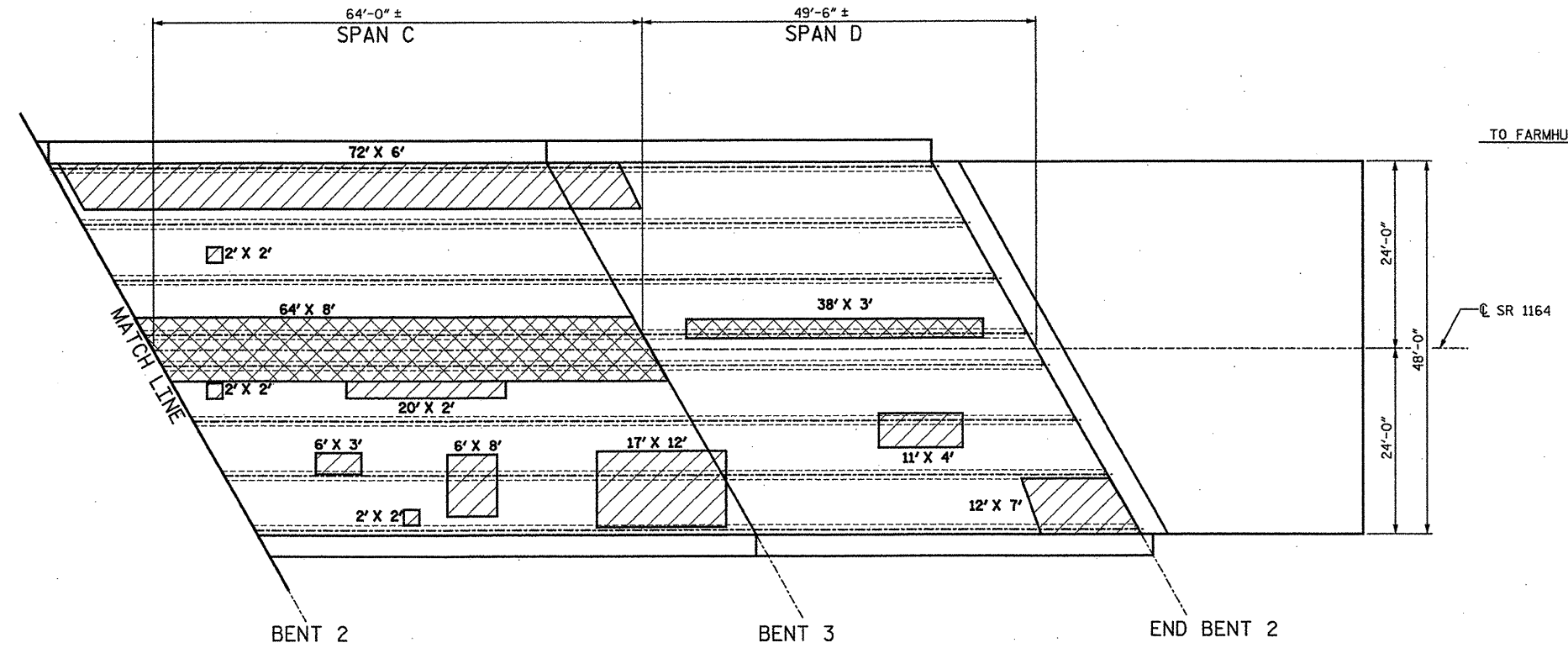


TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK DETAIL

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

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

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



PLAN OF SPANS - BRIDGE DECK REPAIRS SPANS 3 AND 4

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

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 136
 REHAB. OF BRIDGE NO. 136 SHEET 3 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLANS OF SPANS
 DECK REPAIR**
 BRIDGE ON SR 1164
 OVER I-77 AND US 21

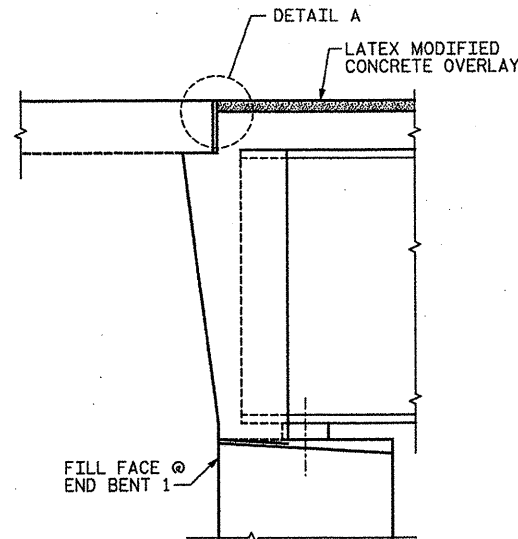


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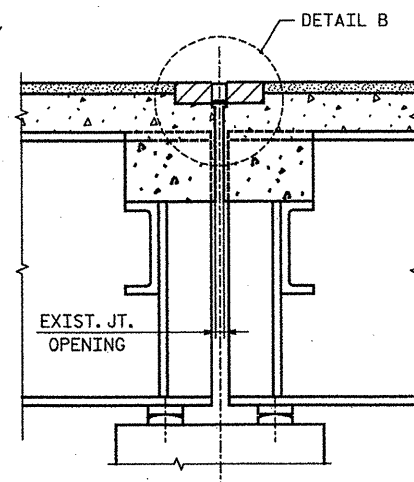
STV / Ralph Whitehead Associates, Inc.
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 Charlotte, NC 28208
 NC License No. F-0591

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			S-88

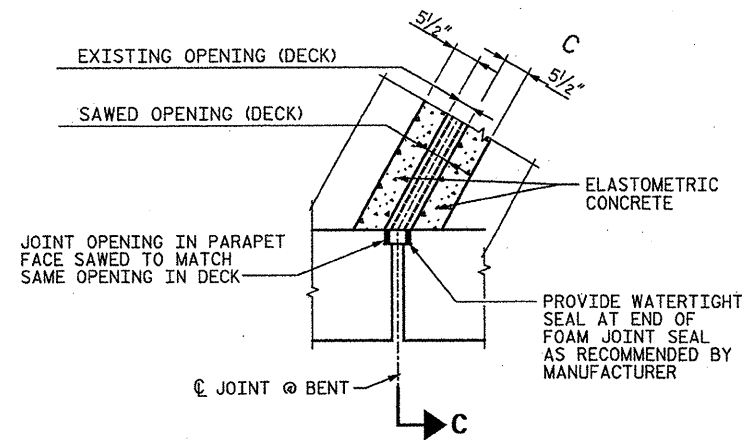
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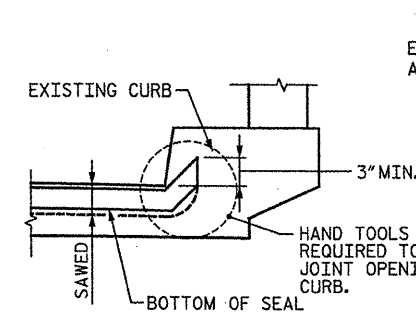
SECTION A-A
(PROPOSED JOINT @ END BENTS)



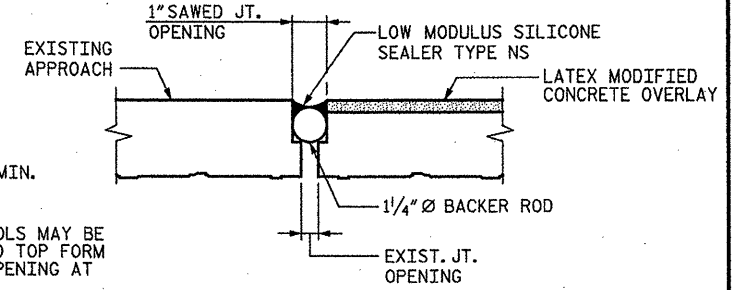
SECTION B-B
(PROPOSED JOINT @ INTERIOR BENTS)



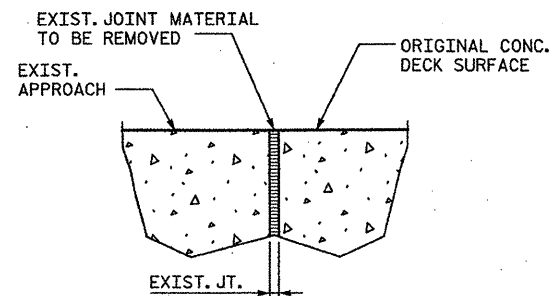
PLAN OF JOINT SEAL AT CURB



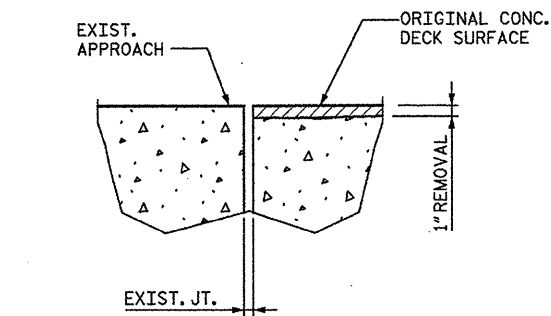
SECTION C-C



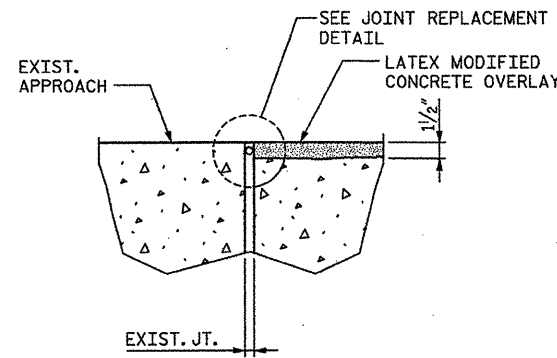
JOINT REPLACEMENT DETAIL



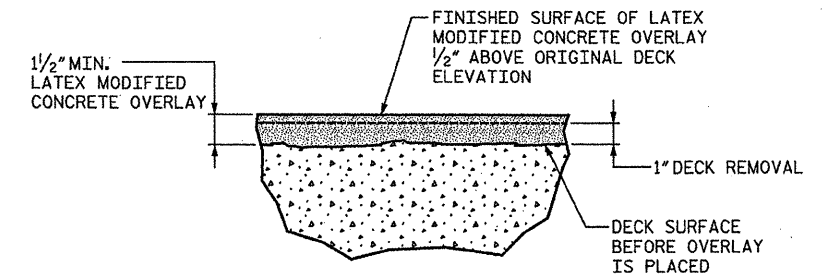
EXISTING JOINT



MIN. EXISTING JOINT DEMOLITION

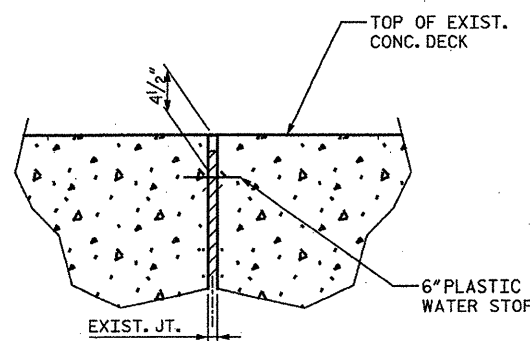


PROPOSED JOINT

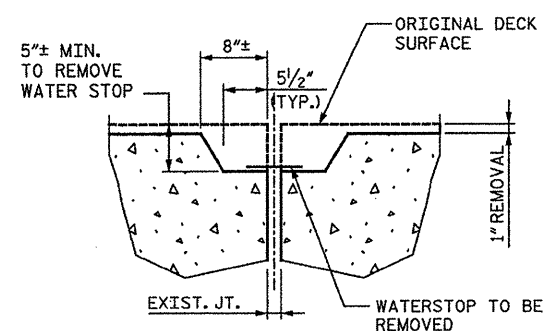


LATEX MODIFIED CONCRETE OVERLAY DETAIL

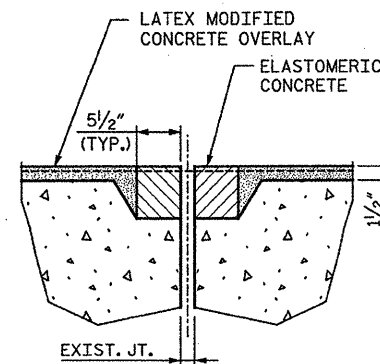
DETAIL A



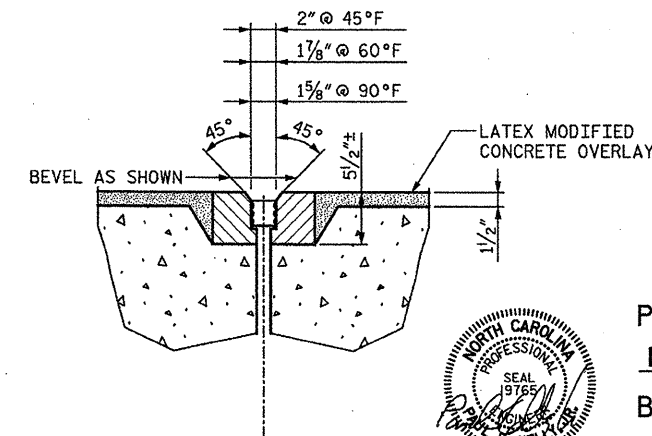
EXISTING JOINT



MINIMUM EXIST. JOINT DEMOLITION



PROPOSED JOINT PRE-SAWED



PROPOSED FOAM JOINT SEAL EXPANSION

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	23.1
2	23.1
3	23.1
TOTAL	69.3

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. **17BP.10.P.3**

MECKLENBURG COUNTY

BRIDGE NO.: **136**

REHAB. OF BRIDGE NO. 136 SHEET 4 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS

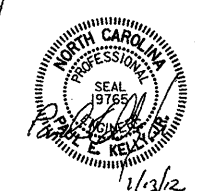
BRIDGE ON SR 1164
OVER I-77 AND US 21

NOTES:

SEE SHEET 10 OF 10 FOR JOINT NOTES.

THE CONTRACTOR SHALL TROWEL THE OVERLAY AT THE ENDS OF THE BRIDGE DECK TO MATCH THE ROADWAY GRADE TO THE DECK GRADE TO THE SATISFACTION OF THE ENGINEER.

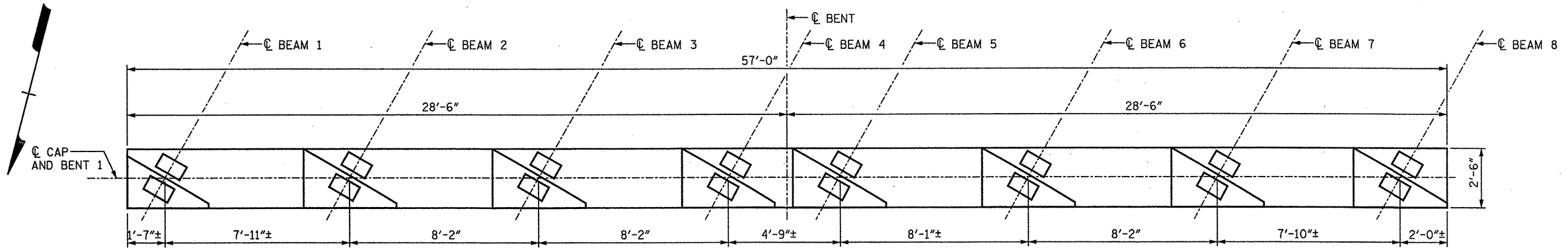
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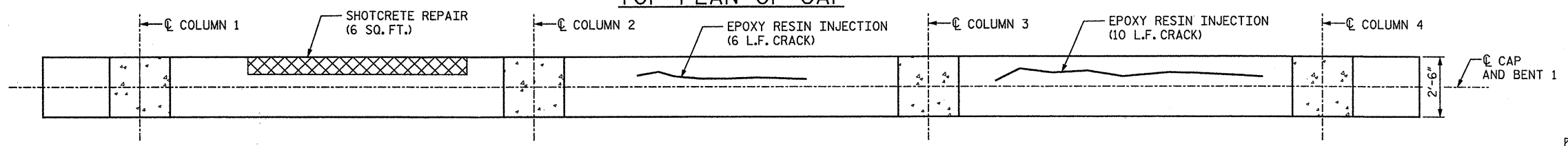
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CHECKED BY: CJ DATE: 1/5/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS S-88
2			4			

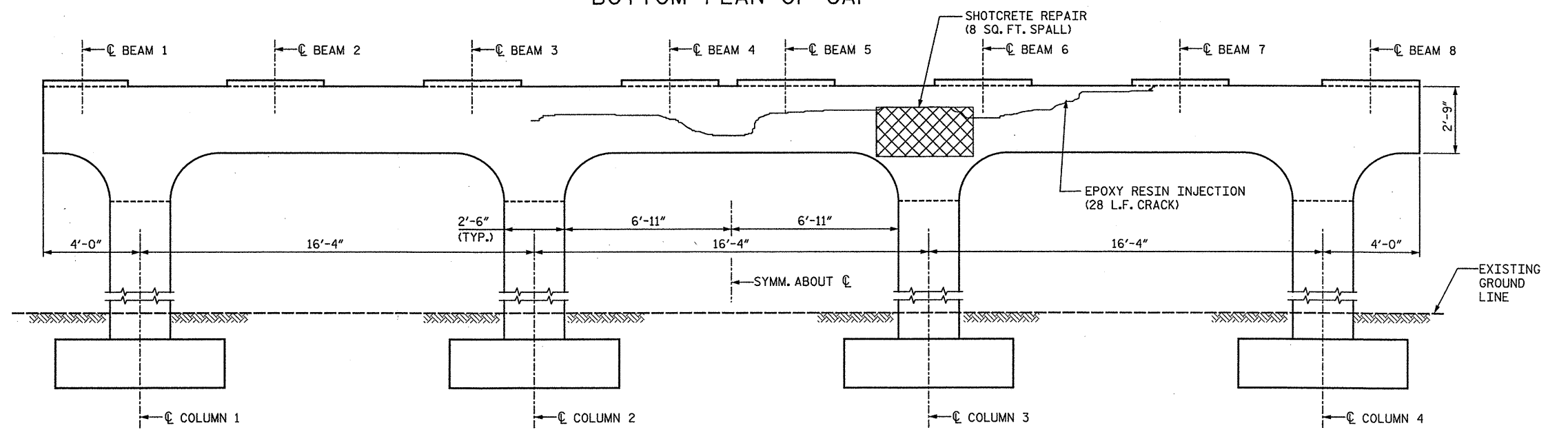
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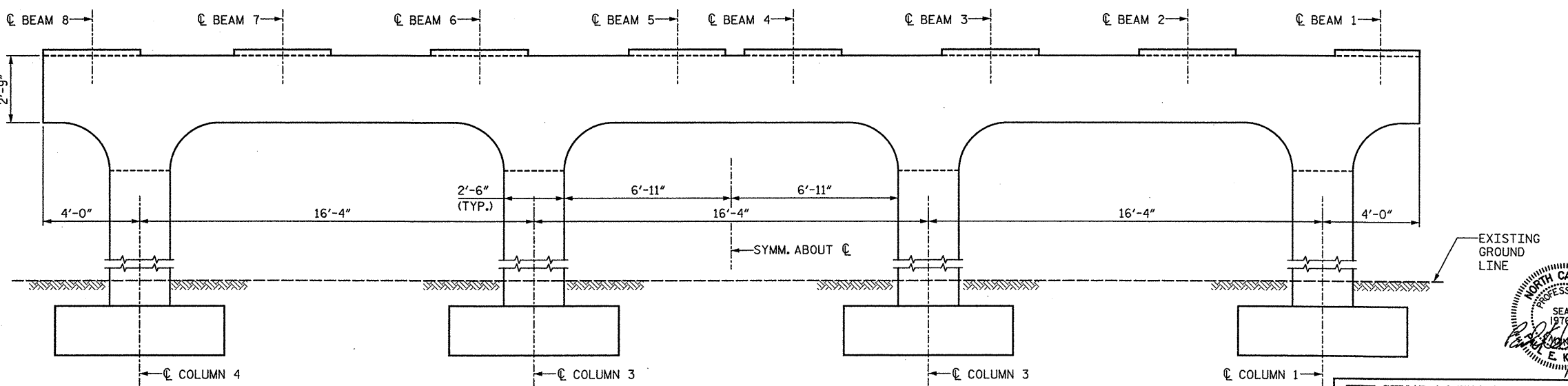
TOP PLAN OF CAP



BOTTOM PLAN OF CAP



ELEVATION OF BENT 1 - LOOKING SOUTH**



ELEVATION OF BENT 1 - LOOKING NORTH**

NOTES:

FOR CONCRETE REPAIR DETAILS, SEE SHEET 10 OF 10.

CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.

FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.

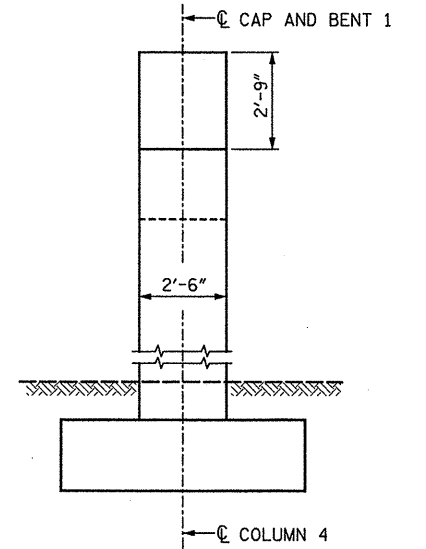
SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.

THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COST.

DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.

FOR ADDITIONAL NOTES SEE SHEET 1 OF 10.

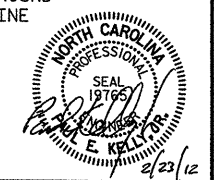
SHOTCRETE REPAIR



RIGHT END ELEVATION
(SYMM. FOR SOUTH ELEV.)

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 136
 REHAB. OF BRIDGE NO. 136 SHEET 5 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 1
 BRIDGE ON I-77 & US 21
 OVER SR 1138



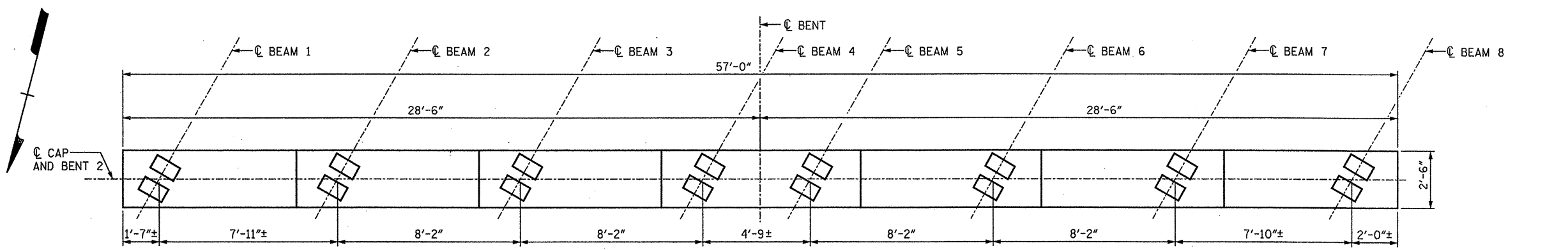
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 CHECKED BY : OA DATE : 1/5/12

**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

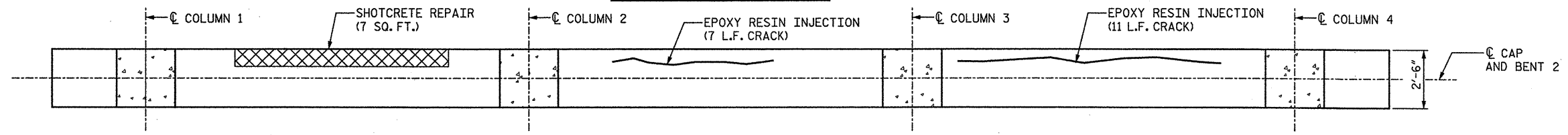
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-8
2			4			S-88

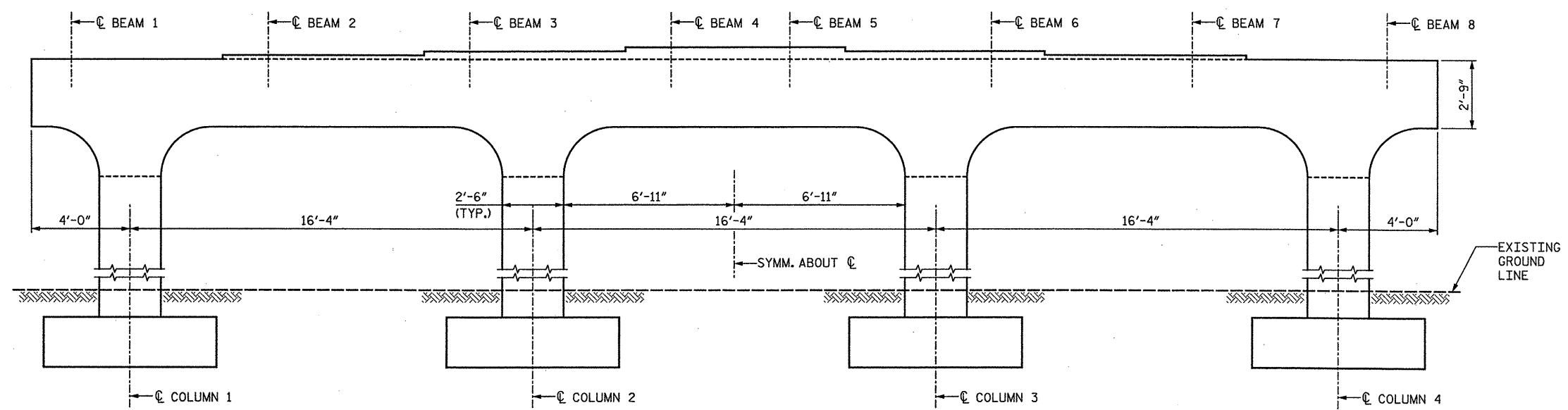
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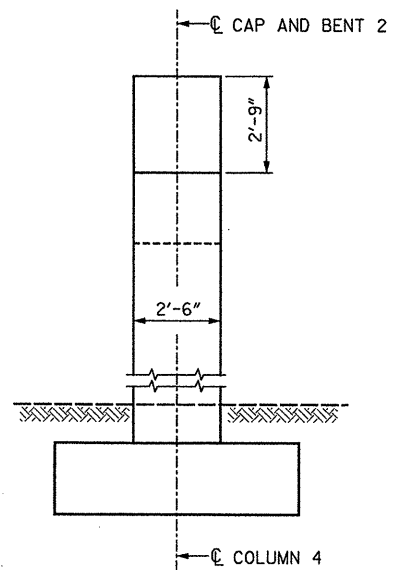
TOP PLAN OF CAP



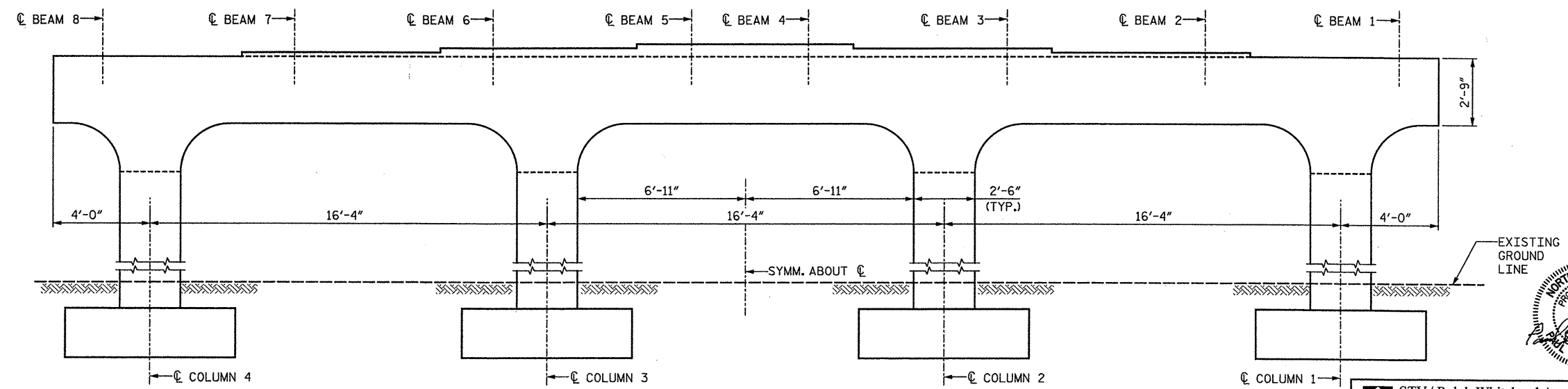
BOTTOM PLAN OF CAP



ELEVATION OF BENT 2 - LOOKING SOUTH**



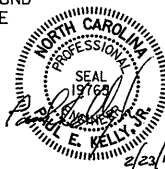
RIGHT END ELEVATION
(SYMM. FOR SOUTH ELEV.)



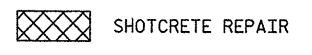
ELEVATION OF BENT 2 - LOOKING NORTH**

**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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NOTE:
FOR NOTES SEE SHEET 5 OF 10.



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
BRIDGE NO.: 136

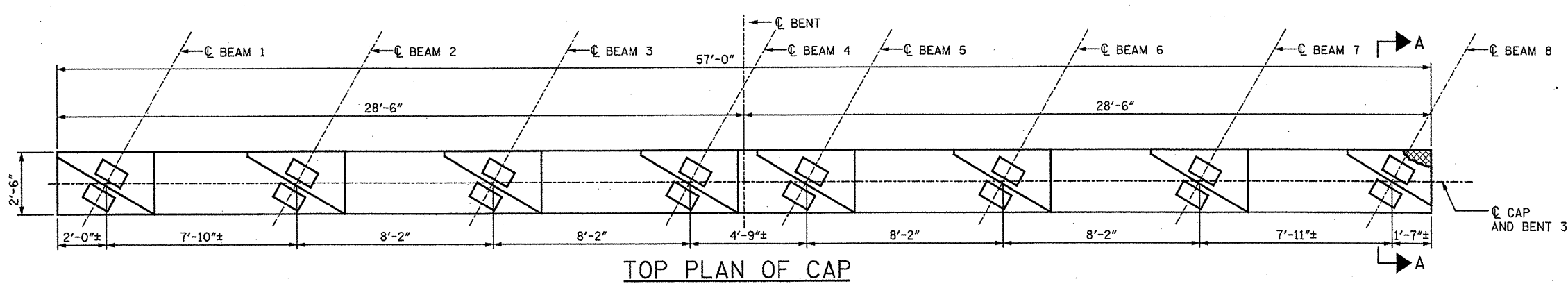
REHAB. OF BRIDGE NO. 136 SHEET 6 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE REPAIRS
BENT 2
BRIDGE ON I-77 & US 21
OVER SR 1138

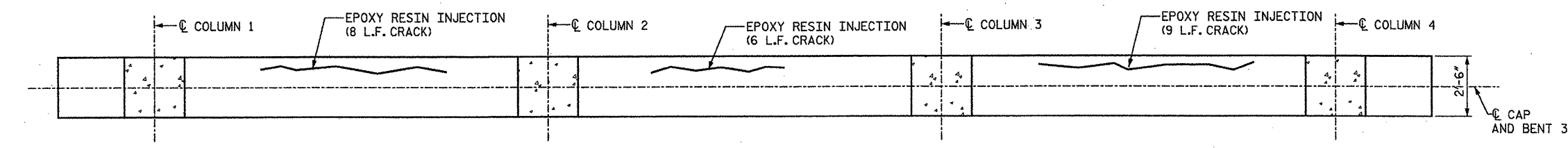
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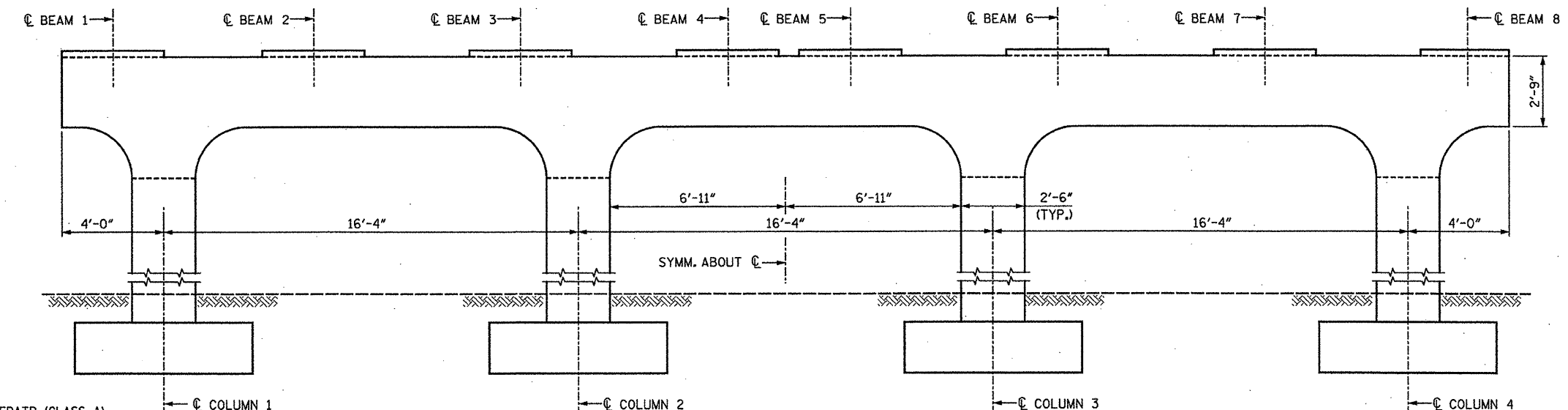
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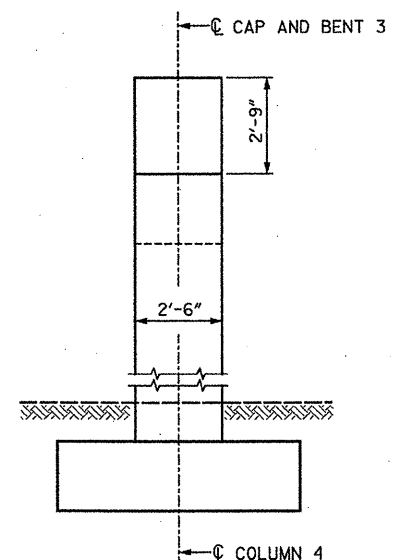
TOP PLAN OF CAP



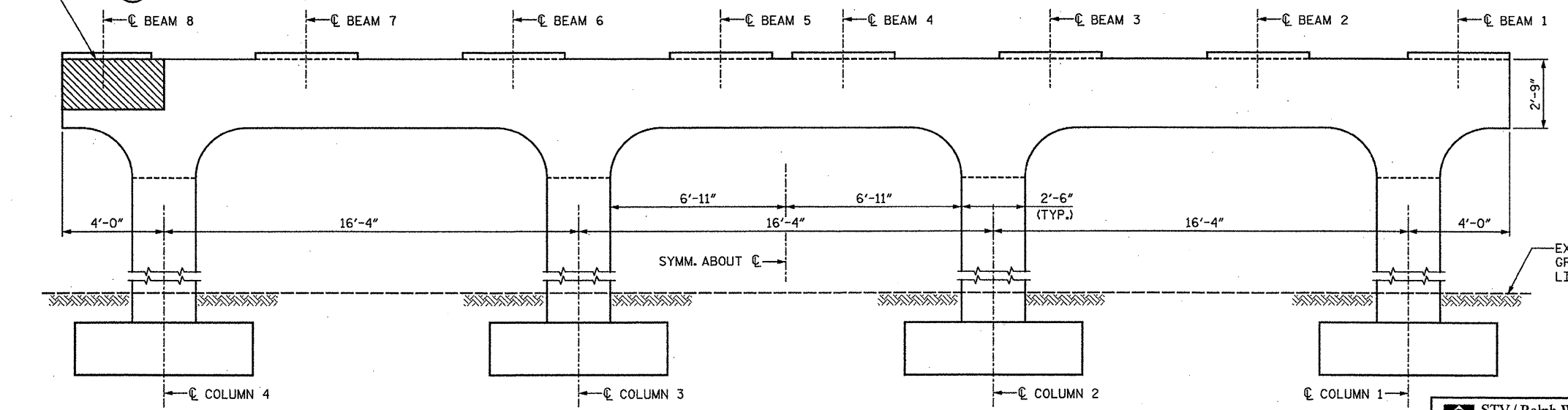
BOTTOM PLAN OF CAP



ELEVATION OF BENT 3 - LOOKING SOUTH**

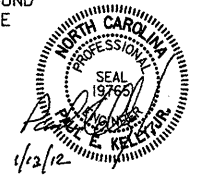


RIGHT END ELEVATION
(SYMM. FOR SOUTH ELEV.)



ELEVATION OF BENT 3 - LOOKING NORTH**

EXISTING GROUND LINE



NOTE:
FOR NOTES SEE SHEET 5 OF 10.

CONCRETE REPAIR

J JACKING REQUIRED
SEE SHEET 10 OF 10
FOR JACKING DETAILS

CONCRETE REPAIR (CLASS A)
(8 SQ. FT. SPALL)

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**LOOKING DIRECTION CORRESPONDS WITH
DIRECTION OF TRAVEL ALONG ROADWAY.

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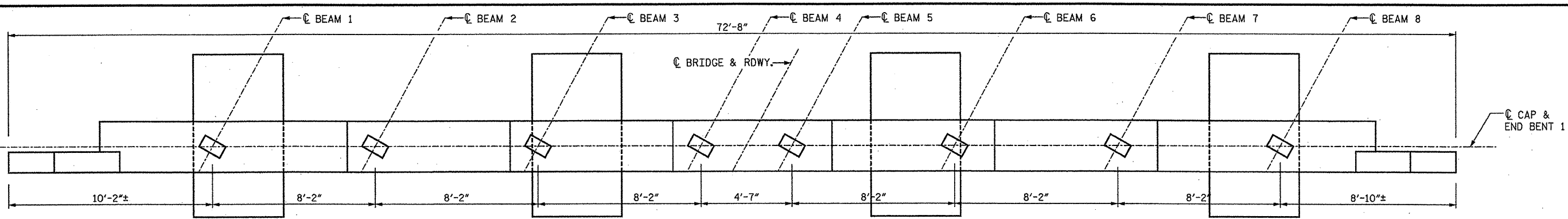
PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
BRIDGE NO.: 136

REHAB. OF BRIDGE NO. 136 SHEET 7 OF 10

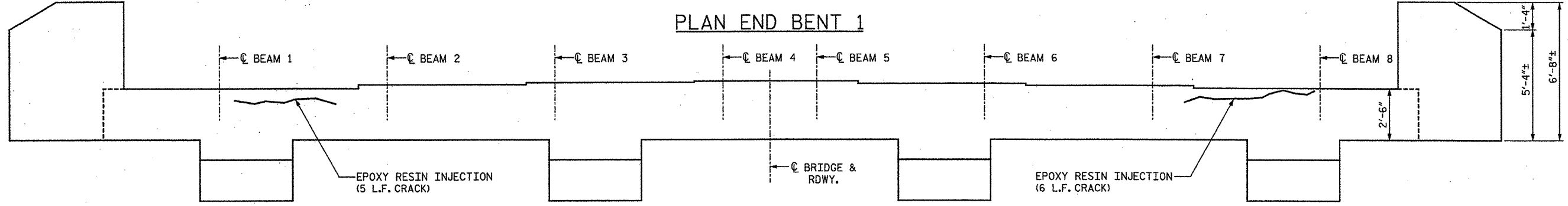
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE REPAIRS
BENT 3
BRIDGE ON I-77 & US 21
OVER SR 1138

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-10	
1			3			TOTAL SHEETS S-88	
2			4				

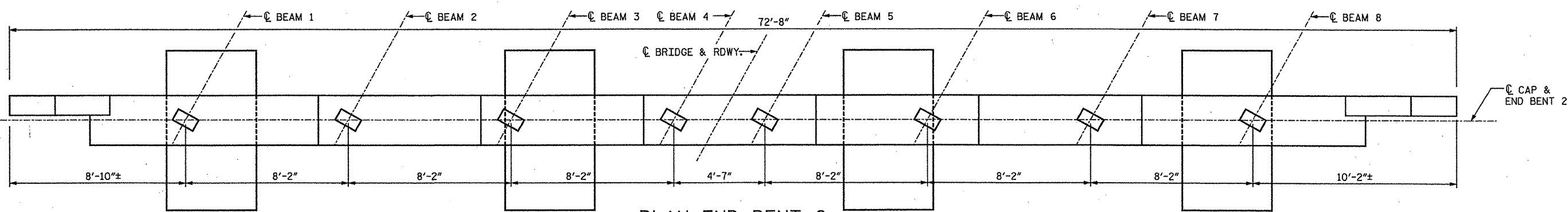
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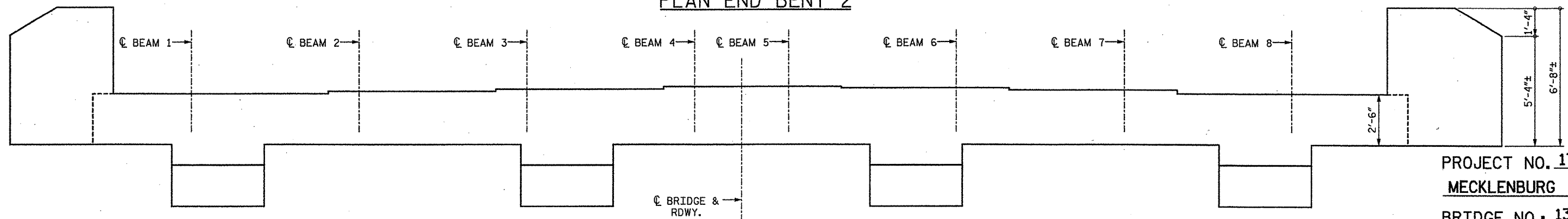
PLAN END BENT 1



ELEVATION END BENT 1



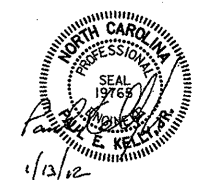
PLAN END BENT 2



ELEVATION END BENT 2

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 136
 REHAB. OF BRIDGE NO. 136 SHEET 8 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE REPAIRS
 END BENTS 1 & 2
 BRIDGE ON I-77 & US 21
 OVER SR 1138

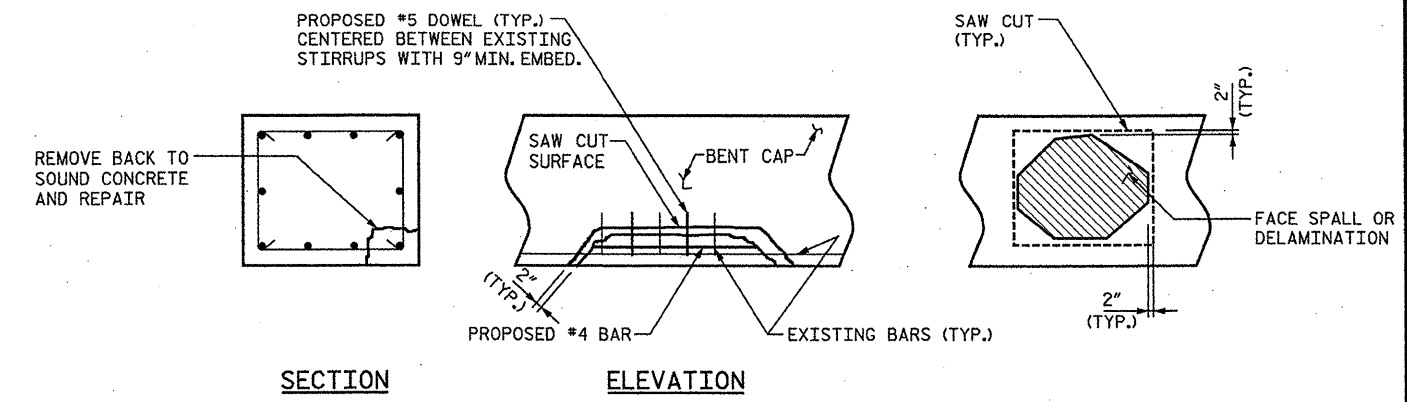


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NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
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 1/13/2012



CORNER REPAIR **FACE REPAIR**
TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTES:

1. CONTRACTOR SHALL SAWCUT TO A MAXIMUM DEPTH OF 1/2".
2. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.
3. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
4. THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.
5. THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".
6. THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 136
 REHAB. OF BRIDGE NO. 136 SHEET 9 OF 10



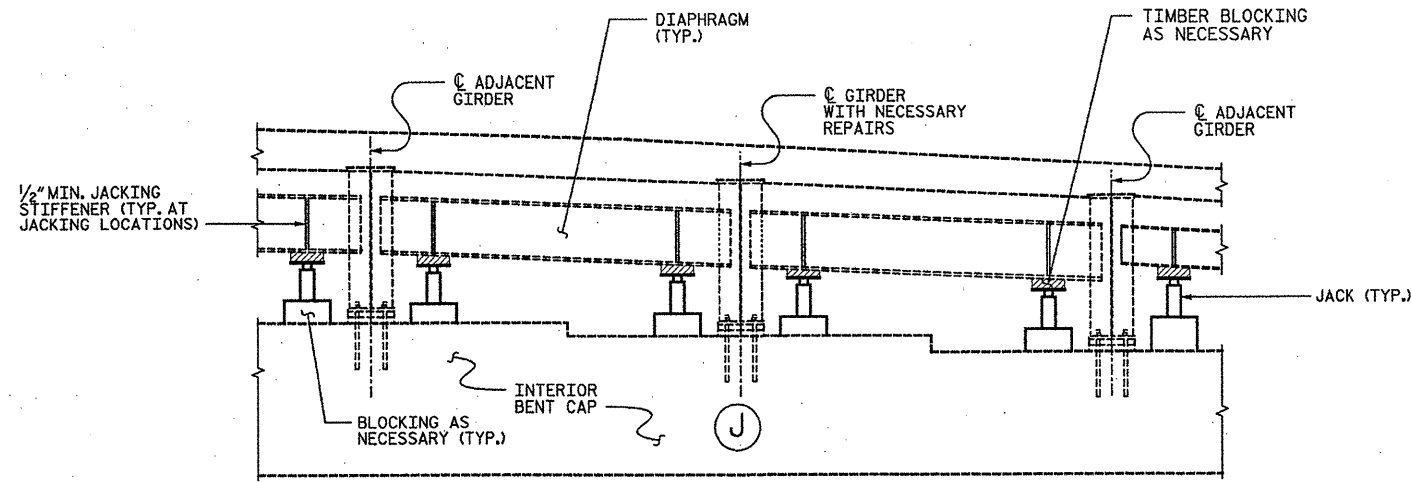
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE REPAIR
 DETAILS**
 BRIDGE ON SR 1164
 OVER I-77 AND US 21

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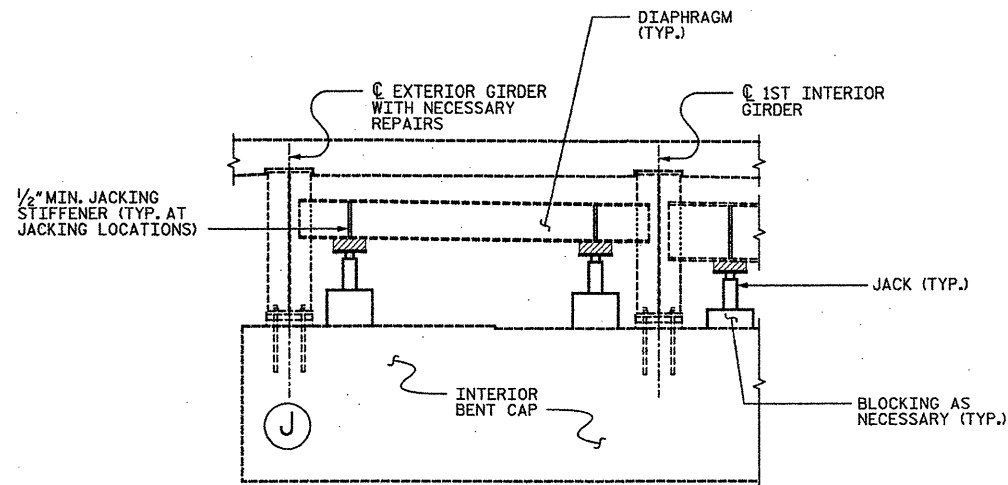
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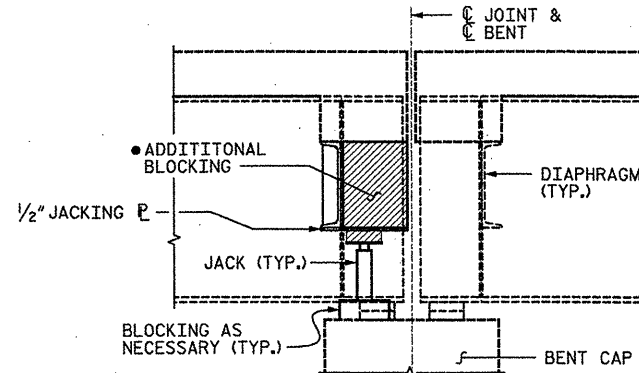


GIRDER JACKING DETAIL AT INTERIOR GIRDER

ⓐ JACKING FOR PROPOSED REPAIR LOCATION

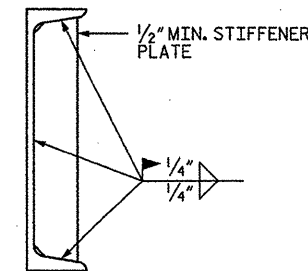


GIRDER JACKING DETAIL AT EXTERIOR GIRDER



TYPICAL SECTION @ JACKING LOCATION

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



JACKING STIFFENER TYPICAL DETAIL

CONSTRUCTION SEQUENCE:

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

NOTE: THE CONTRACTOR HAS THE OPTION TO PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE FOR APPROVAL OF THE ENGINEER.

NOTES:

1. JACKING DETAILS SHOWN ARE CONCEPTUAL AND CONSIDERED A MINIMUM. THE CONTRACTOR SHALL PROVIDE JACKING PLANS FOR ALL GIRDERS LIFTED FOR APPROVAL BY THE ENGINEER PRIOR TO ANY JACKING OPERATIONS. JACKING SHALL BE PERFORMED SUCH THAT BRIDGE CAN REMAIN OPEN TO TRAFFIC DURING JACKING OPERATIONS.
2. JACKING PLANS SHALL BE SIGNED AND SEALED BY LICENSED PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.
3. THE CONTRACTOR SHALL PROVIDE BLOCKING FOR ALL JACKS AS NECESSARY. A BLOCKING PLAN SHALL BE INCLUDED AS PART OF THE JACKING PLAN.
4. THE CONTRACTOR SHALL JACK GIRDERS ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.
5. THE CONTRACTOR SHALL MONITOR THE PLAN LOCATION OF THE GIRDERS FROM INITIAL JACKING UNTIL GIRDERS ARE SECURED ON THEIR PERMANENT BEARINGS. IF THE PLAN LOCATION OF THESE GIRDERS SHIFT FROM ITS ORIGINAL POSITION, THE CONTRACTOR SHALL SECURE FROM ADDITIONAL MOVEMENT IMMEDIATELY. NOTIFY ENGINEER PRIOR TO PROCEEDING WORK OPERATIONS.
6. EACH JACK SHALL HAVE A MINIMUM SAFE WORKING CAPACITY OF 80 TONS.
7. PRIOR TO JACKING THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.
8. ONCE SPAN HAS BEEN JACKED, CONTRACTOR SHALL INSTALL A MECHANICAL LOCKING DEVICE TO ENSURE THAT GIRDER WILL NOT BE LOWERED DURING CURING OF CONCRETE.
9. CONTRACTOR TO TAKE APPROPRIATE MEANS TO REMOVE NUT ON ANCHOR BOLT WITHOUT DAMAGING THE ANCHOR BOLT. CONTRACTOR SHALL SUBMIT NUT REMOVAL METHOD TO INCLUDE PROCEDURES THAT WILL LOOSEN BOND BETWEEN INTERLOCKING THREADS TO ENGINEER FOR APPROVAL PRIOR TO REMOVING ANCHOR BOLT NUTS.
10. IN NO CIRCUMSTANCES SHOULD THE JACKING BE SOLELY SUPPORTED BY THE DIAPHRAGM. JACKS SHOULD BE CENTERED UNDER DIAPHRAGM AND ADDITIONAL BLOCKING.

PROJECT NO. **17BP.10.P.3**
MECKLENBURG COUNTY
 BRIDGE NO.: **136**

REHAB. OF BRIDGE NO. 136 SHEET 10 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

JACKING DETAILS
 BRIDGE ON SR 1164
 OVER I-77 AND US-21

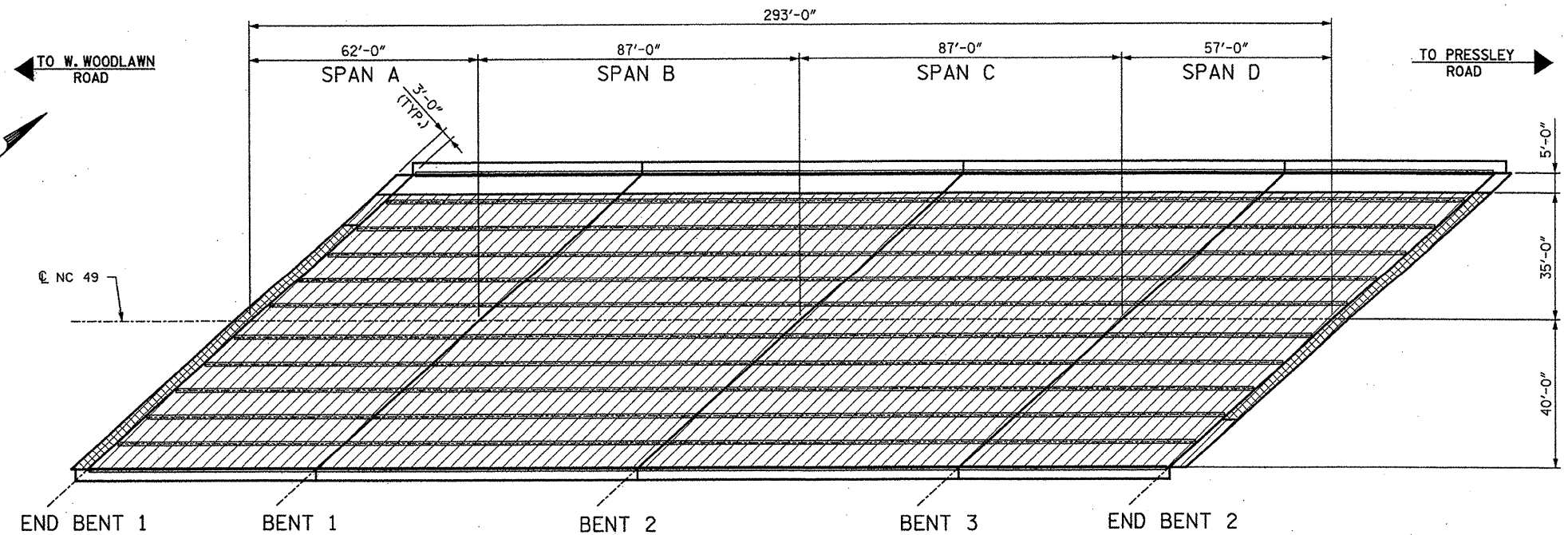


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 Charlotte, NC 28208
 NC License No. F-0991

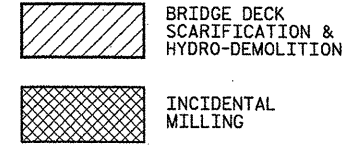
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS S-88
2			4			

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 1/13/2012



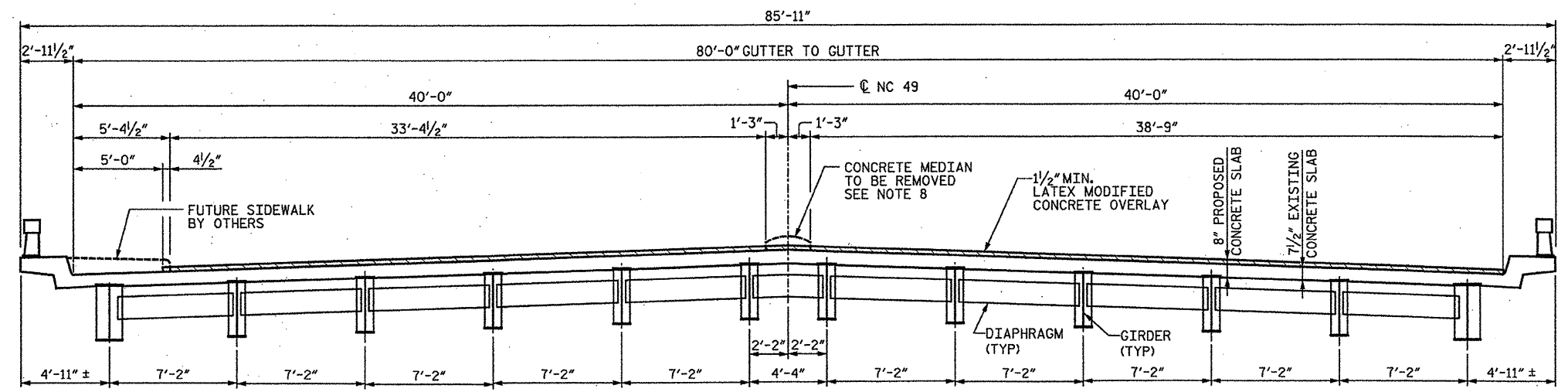
PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION

NOTE: CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS
 ** GROOVING EXTENTS SHALL INCORPORATE LOCATION OF FUTURE SIDEWALK



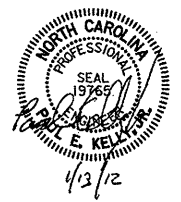
NOTES:

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 RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
4. LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
5. FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
6. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
7. REMOVAL OF EXISTING CONCRETE MEDIAN AND PLACEMENT OF TUBULAR MARKERS SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT PAY ITEMS.
8. FOR INSTALLATION OF TUBULAR MARKERS, SEE TRAFFIC MANAGEMENT PLANS.
9. CONTRACTOR SHALL COORDINATE WITH THE CITY OF CHARLOTTE DEPARTMENT OF TRANSPORTATION DUE TO SIMULTANEOUS BRIDGE/ROADWAY IMPROVEMENT PROJECTS.
10. FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



TYPICAL SECTION

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 120
 REHAB. OF BRIDGE NO. 120 SHEET 1 OF 5



BILL OF MATERIAL

INCIDENTAL MILLING	DECK SCARIFICATION	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	* CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	FOAM JOINT SEALS	** GROOVING BRIDGE FLOORS
SQ. YDS.	SQ. YDS.	TON	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.
73	2525	5.7	2299	225	1	1	2525	106	2524	LUMP SUM	19250

* QUANTITIES FOR INFORMATION ONLY
 ** GROOVING EXTENTS SHALL INCORPORATE LOCATION OF FUTURE SIDEWALK

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PLAN OF SPANS AND TYPICAL SECTIONS
 BRIDGE ON NC 49 OVER I-77

DRAWN BY: RH DATE: 1/5/12
 CHECKED BY: OA DATE: 1/5/12

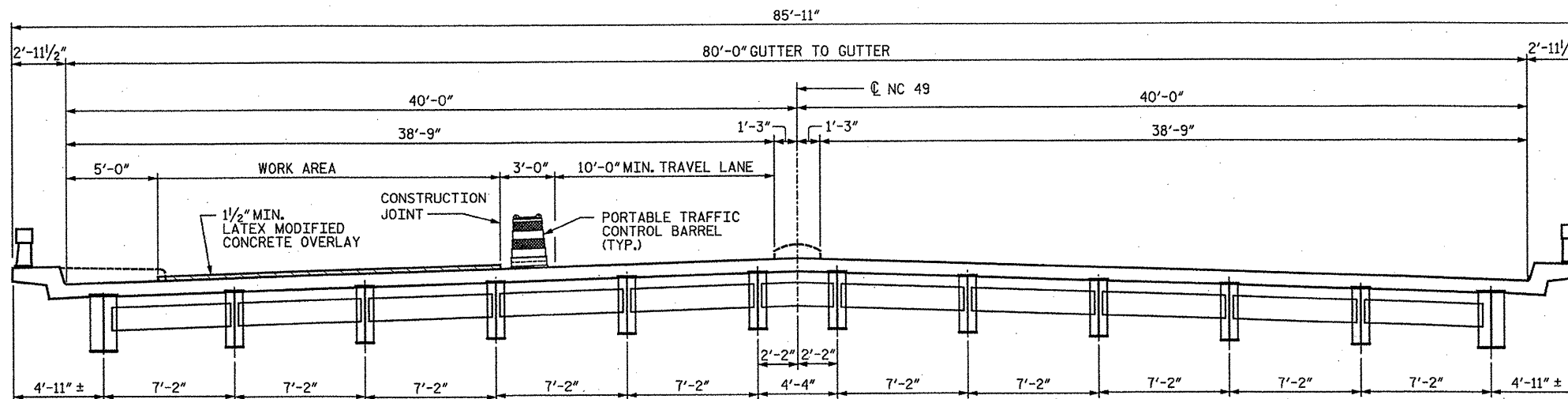
STV/Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-14
2			4			TOTAL SHEETS S-88

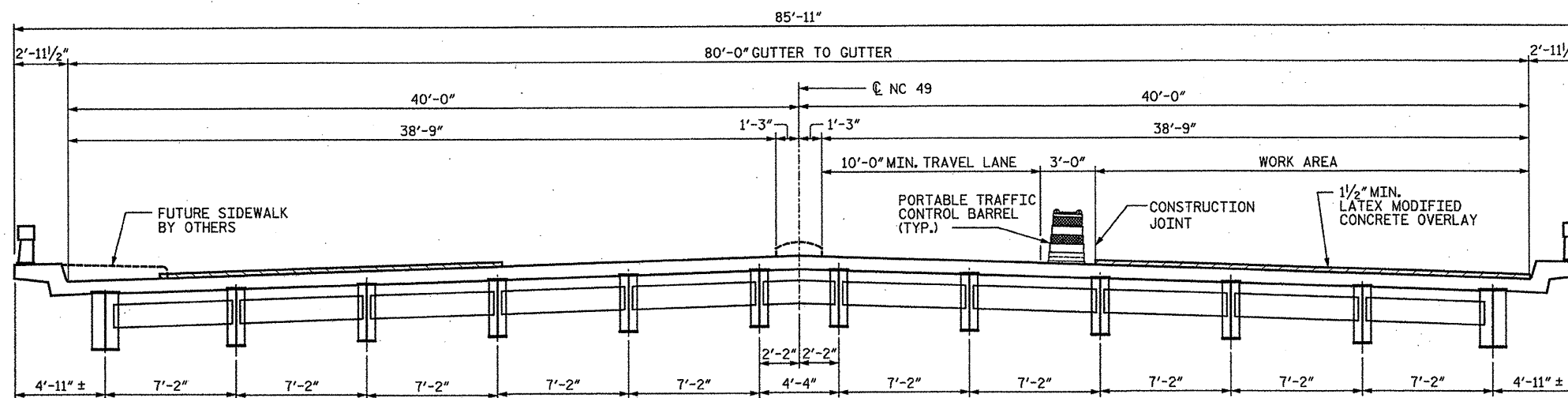
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peter.oj

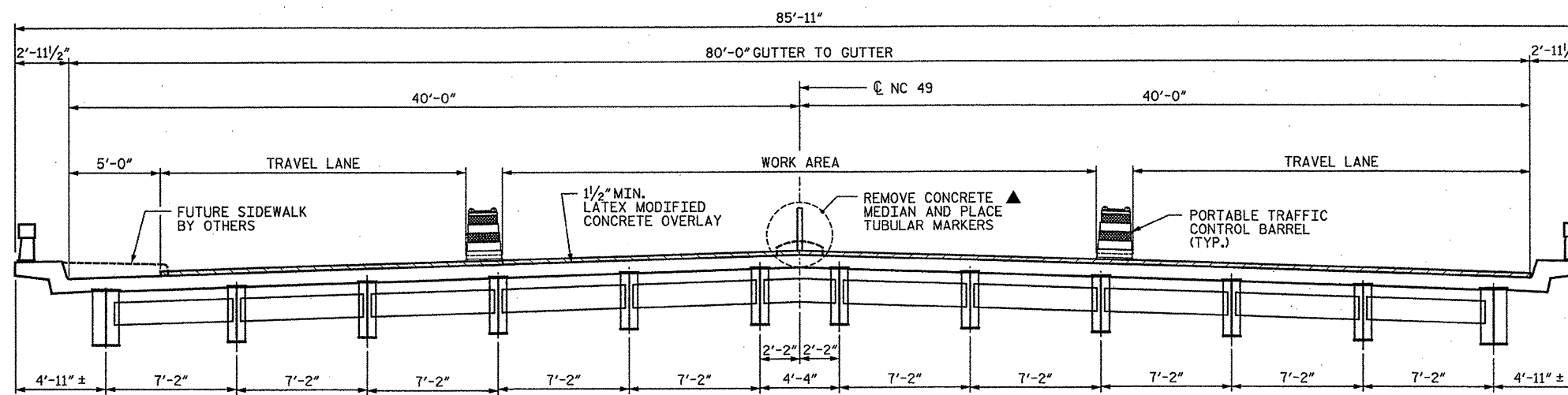
1/13/2012



SECTION - STAGE I



SECTION - STAGE II



SECTION - STAGE III

▲ LMC OVERLAY SHALL BE PLACED IN LOCATION OF REMOVED CONCRETE MEDIAN PRIOR TO TUBULAR MARKER INSTALLATION.

PROJECT NO. **17BP.10.P.3**
MECKLENBURG COUNTY
 BRIDGE NO.: **120**

REHAB. OF BRIDGE NO. 120 SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION STAGING

BRIDGE ON NC 49
 OVER I-77

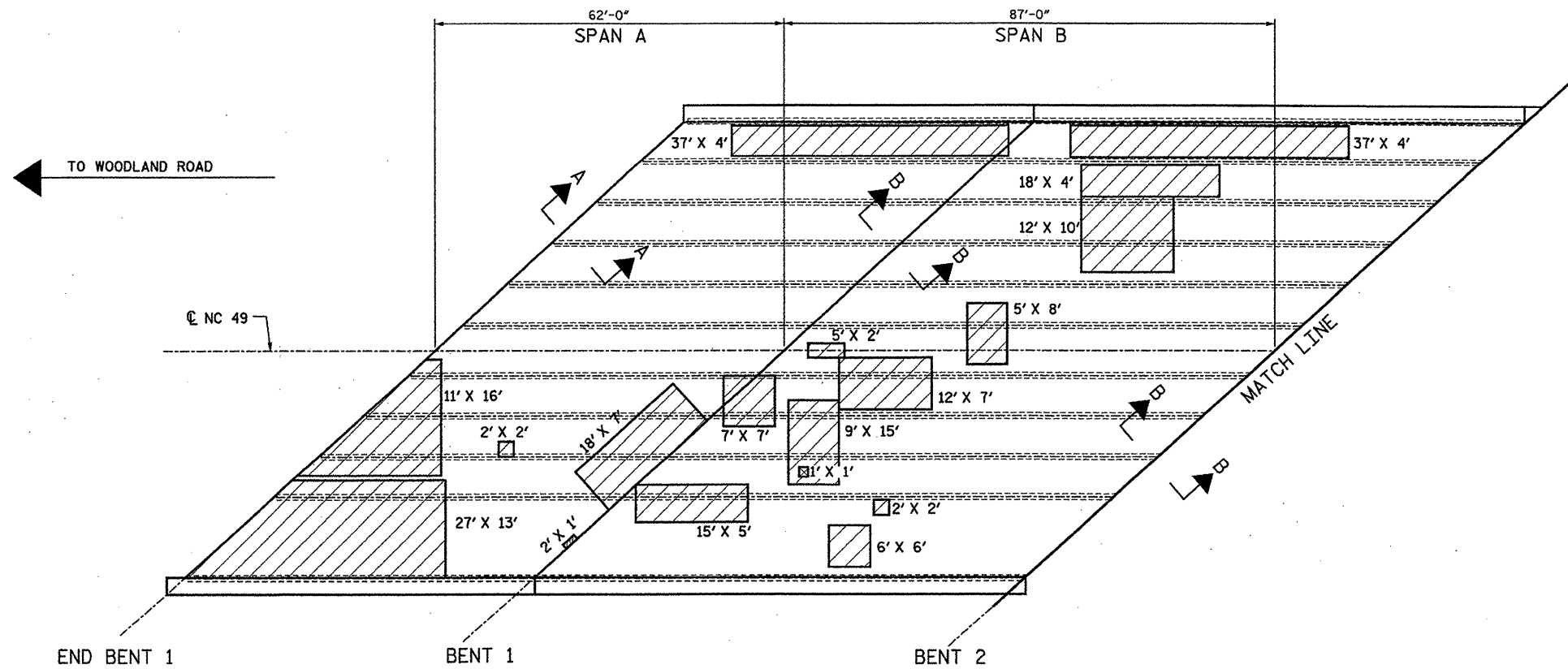


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 CHECKED BY: OA DATE: 1/5/12




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

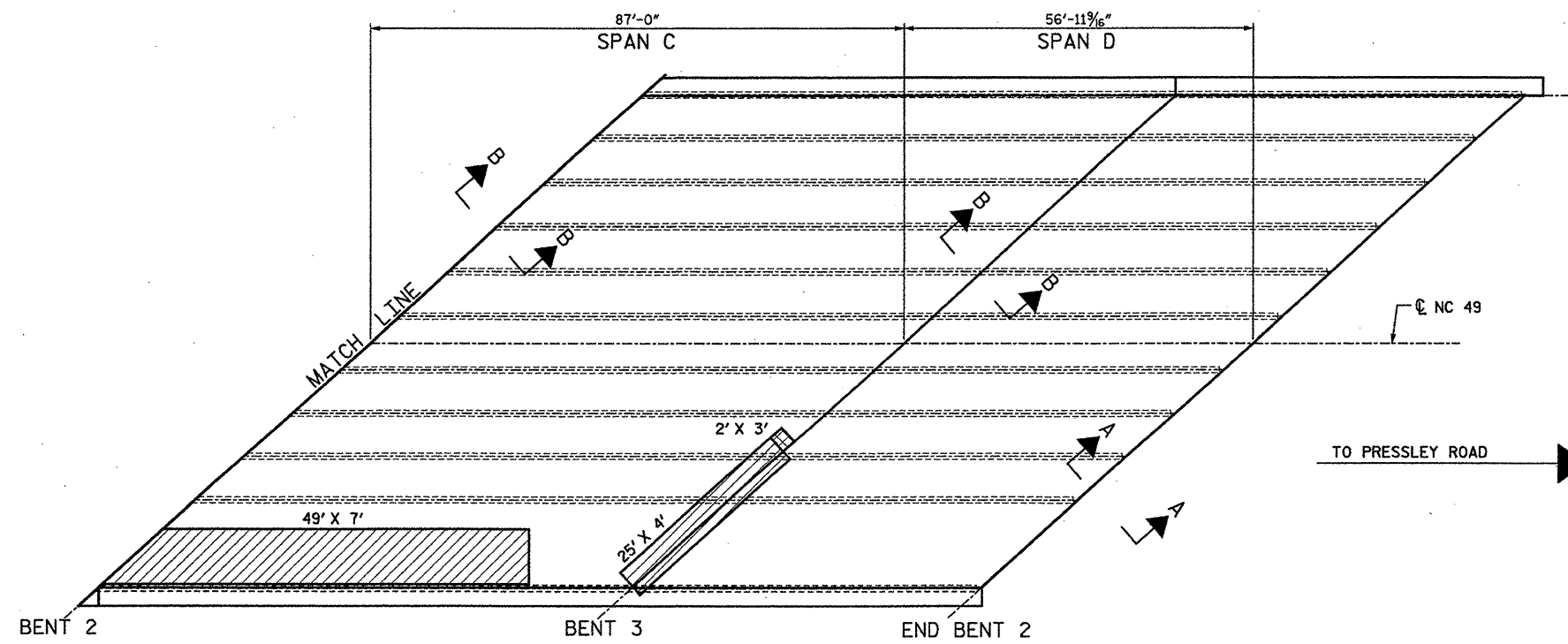
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			S-88

NOTES:
SEE SHEET 4 & 5 OF 5 FOR DETAILS.



PLAN OF SPANS - BRIDGE DECK REPAIRS SPANS 1 AND 2

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



PLAN OF SPANS - BRIDGE DECK REPAIRS SPANS 3 AND 4

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 120

REHAB. OF BRIDGE NO. 120 SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPANS
 DECK REPAIR

BRIDGE ON NC 49
 OVER I-77



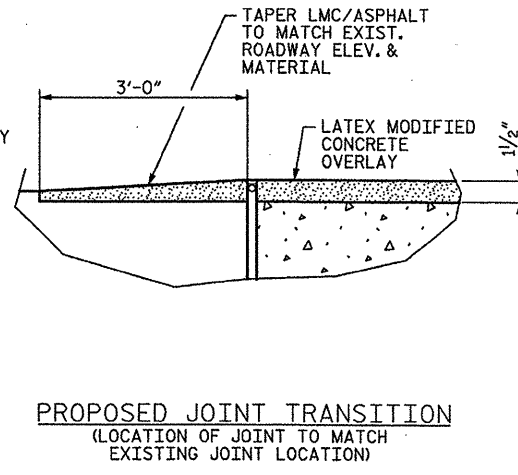
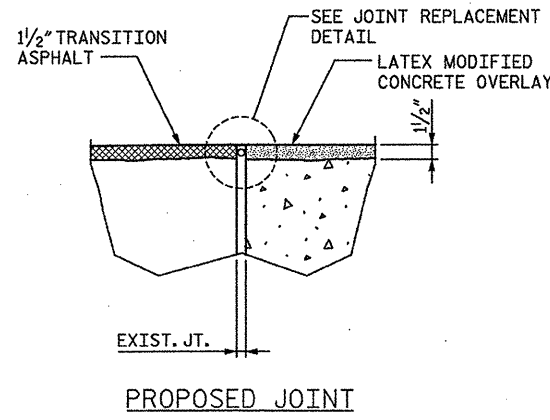
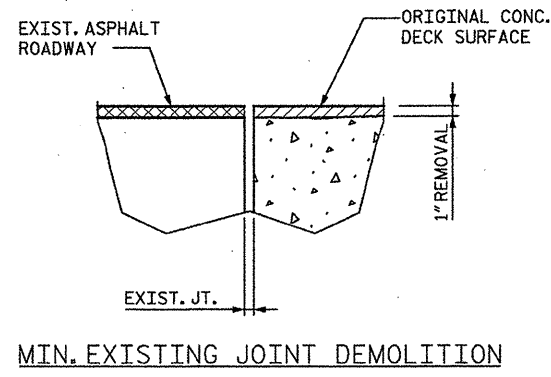
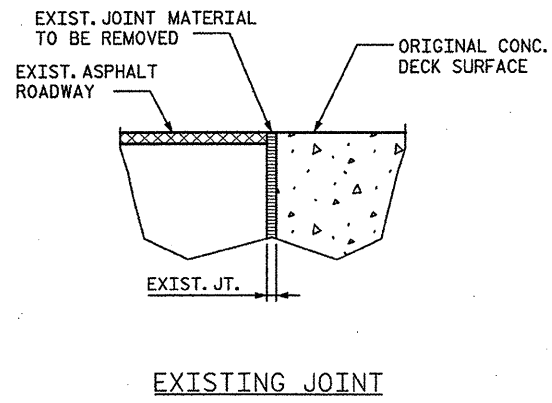
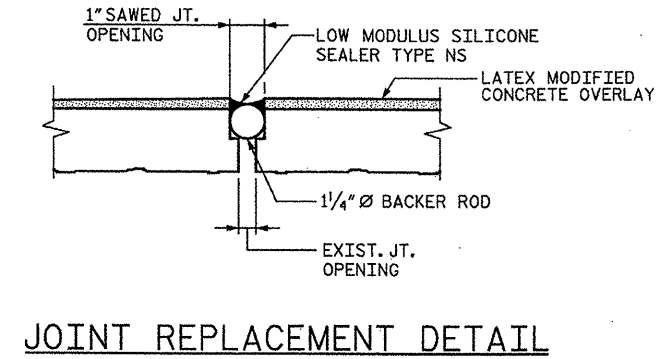
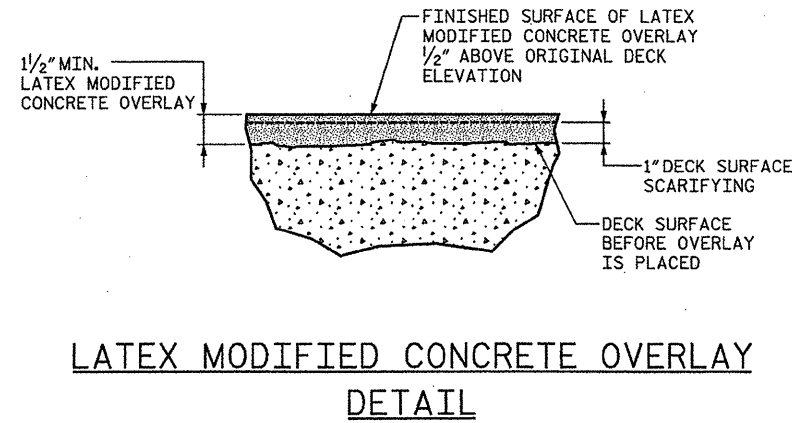
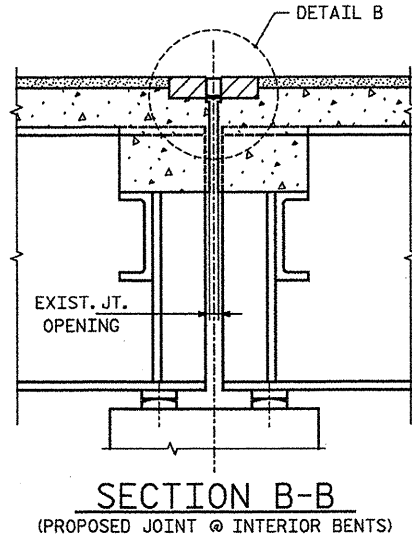
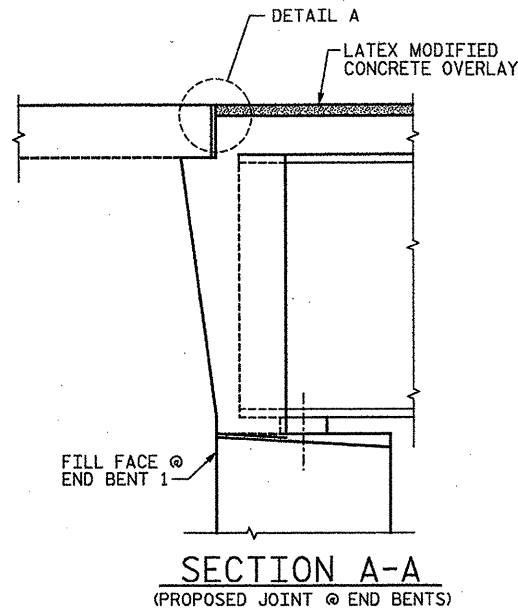
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 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

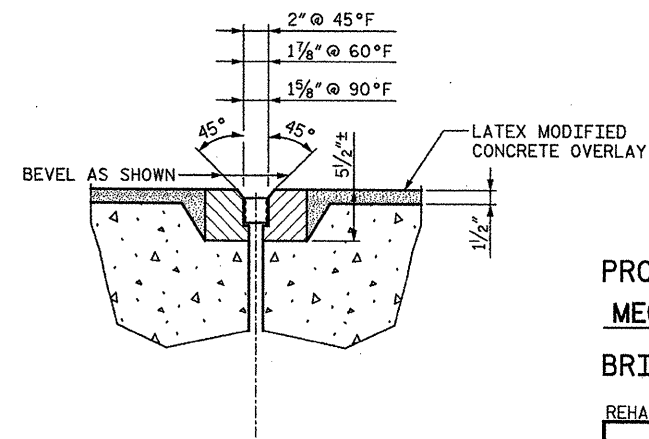
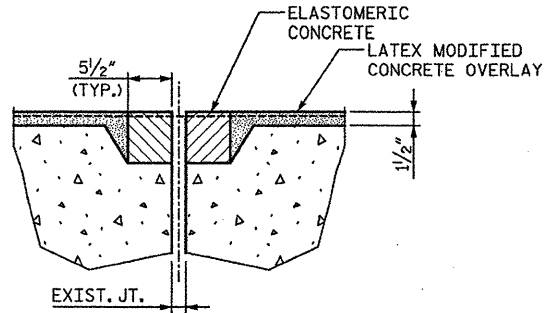
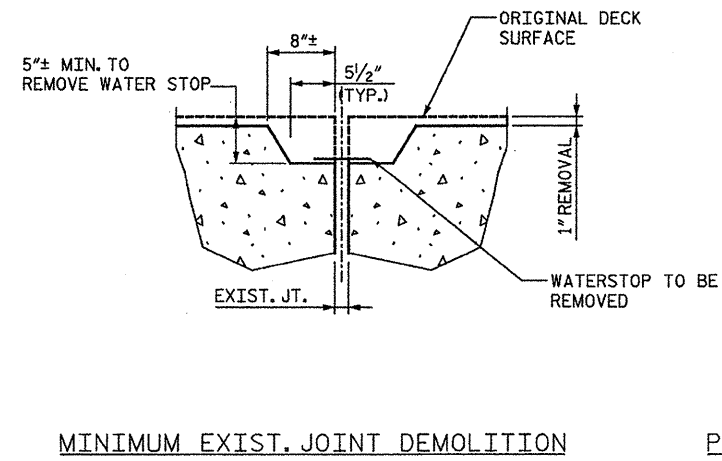
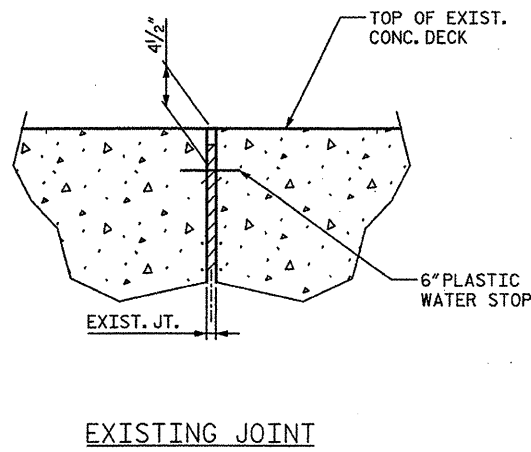
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-16
1			3			TOTAL SHEETS
2			4			S-88

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 petercj
 1/13/2012



NOTES: (FOR FOAM JT. SEAL)
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.
 THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
 FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	41.6
2	41.6
3	41.6
TOTAL	124.8

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 120

REHAB. OF BRIDGE NO. 120 SHEET 4 OF 5

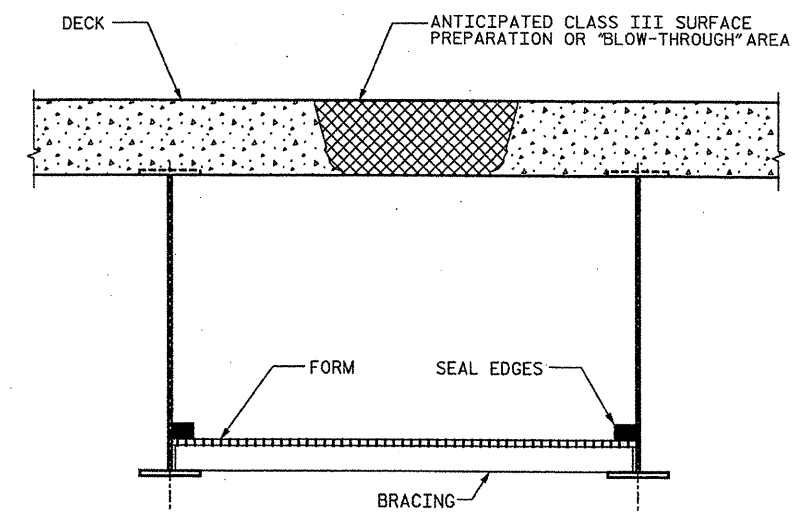
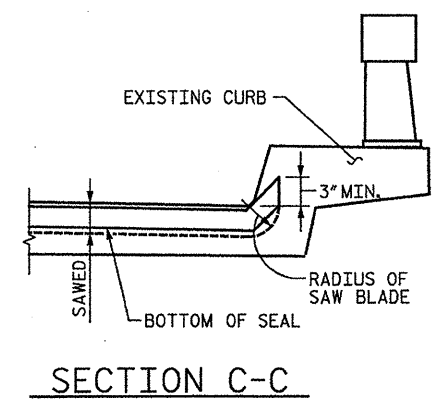
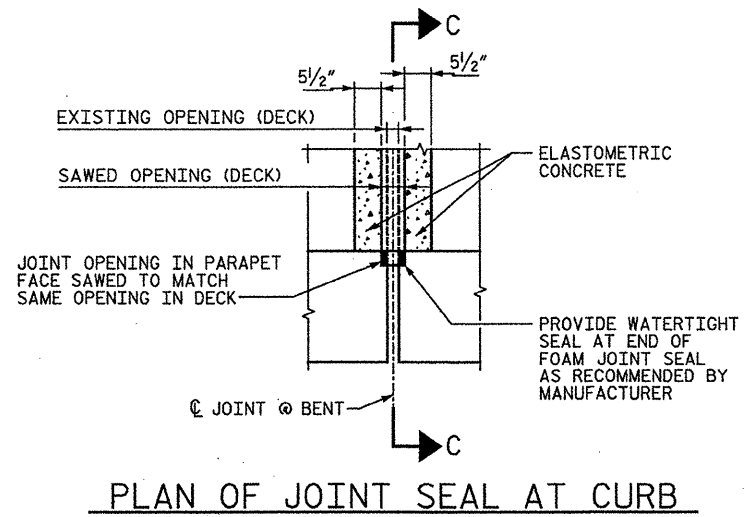
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 JOINT REPAIR DETAILS
 BRIDGE ON NC 49
 OVER I-77

DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : CJ DATE : 1/5/12

STV/Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0591

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-17
1			3			TOTAL SHEETS S-88
2			4			

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 1/13/2012
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TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK

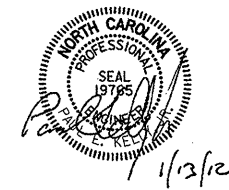
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THROUGH DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

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

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 120
 REHAB. OF BRIDGE NO. 120 SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
JOINT REPAIR DETAILS
 BRIDGE ON NC 49
 OVER I-77

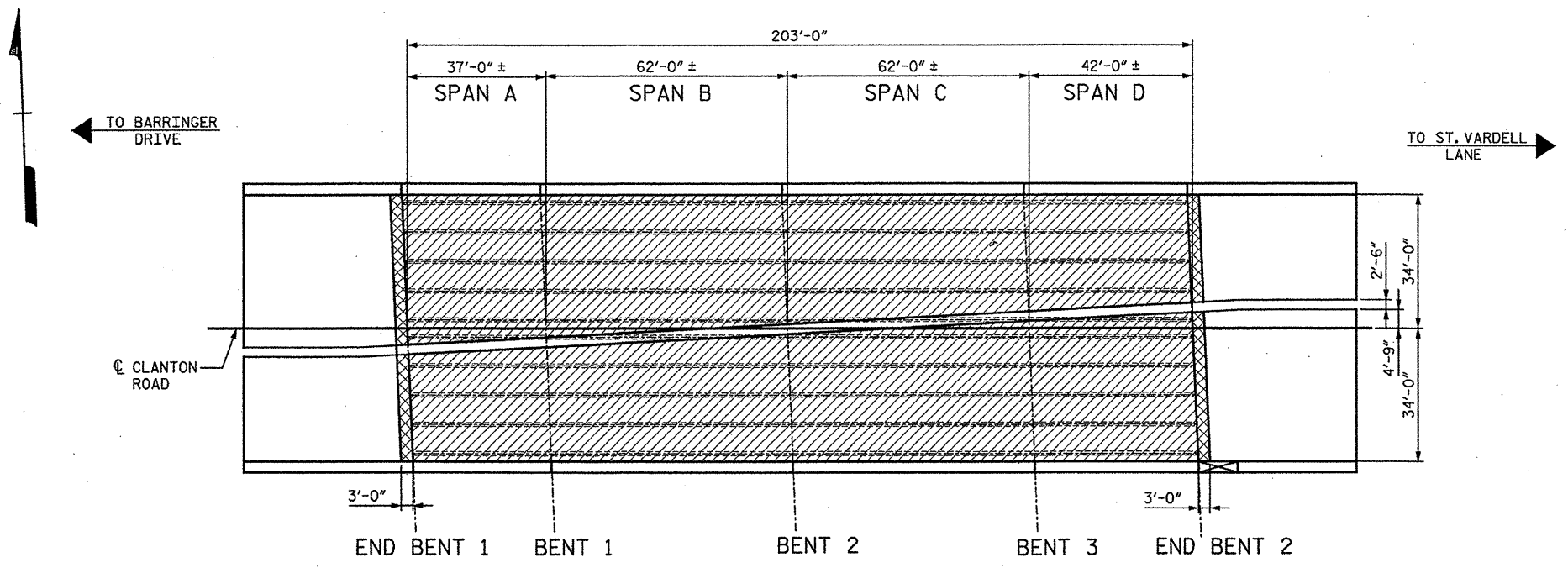


DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : CJ DATE : 1/5/12

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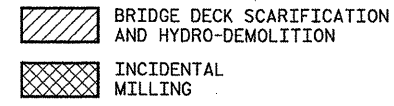
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NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-18
2			4			S-88

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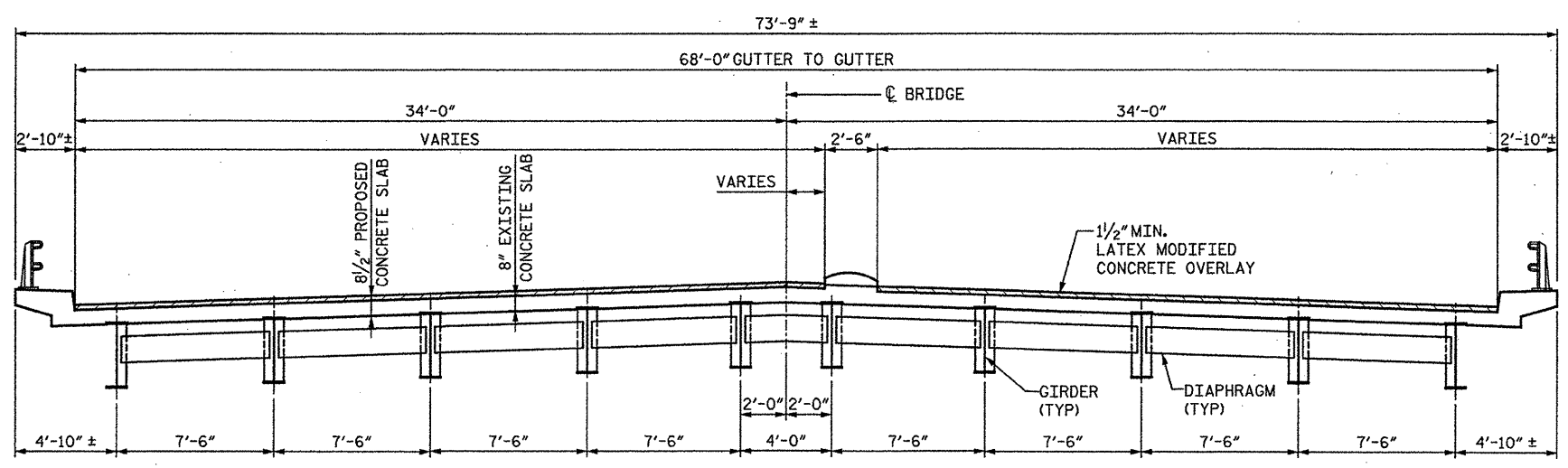
PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION

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



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 RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
- LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
- FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



TYPICAL SECTION



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 202
 REHAB. OF BRIDGE NO. 202 SHEET 1 OF 5

BILL OF MATERIAL

INCIDENTAL MILLING	DECK SCARIFICATION	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	* CLASS AA CONCRETE	CONCRETE REPAIR	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SQ. YDS.	SQ. YDS.	TON	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	CU. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.
44	1471	1	1377	26	68	15.1	15.4	1471	62	1471	LUMP SUM	12874

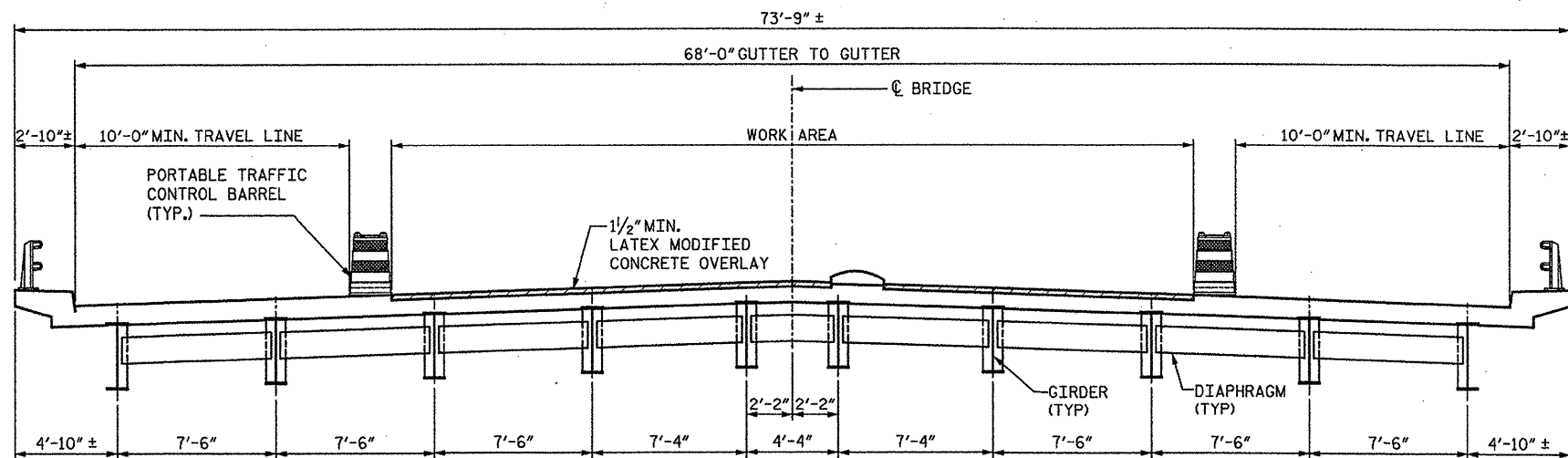
* QUANTITIES FOR INFORMATION ONLY

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 CHECKED BY : OA DATE : 1/5/12

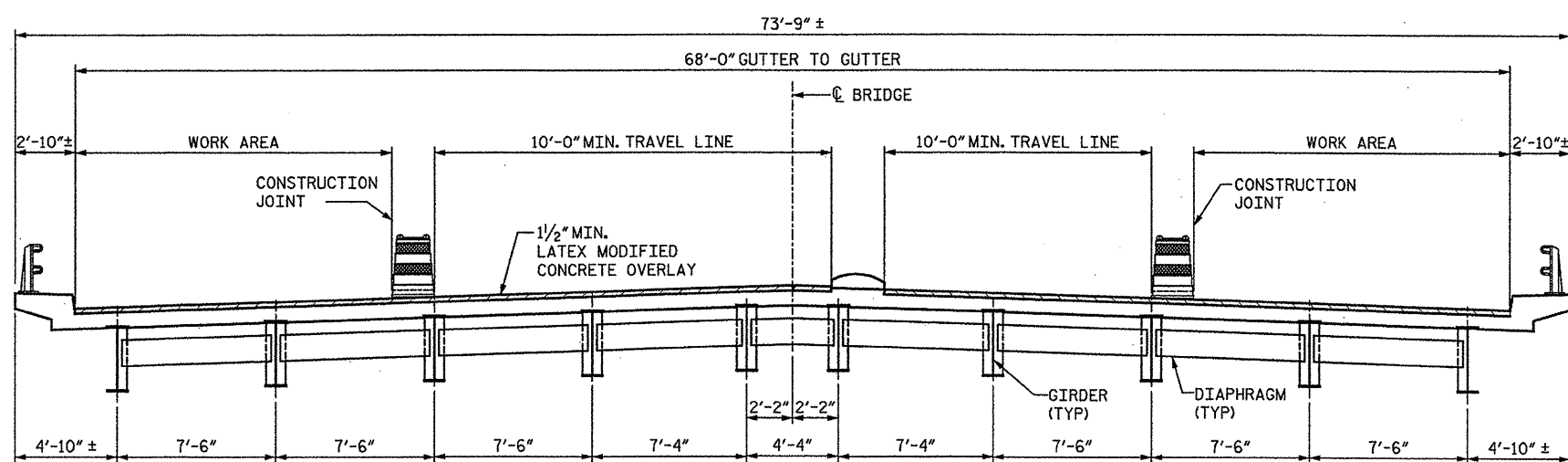
STV / Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			S-19
2			4			S-88

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SECTION - STAGE I



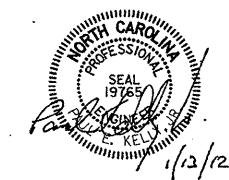
SECTION - STAGE II

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 202

REHAB. OF BRIDGE NO. 202 SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

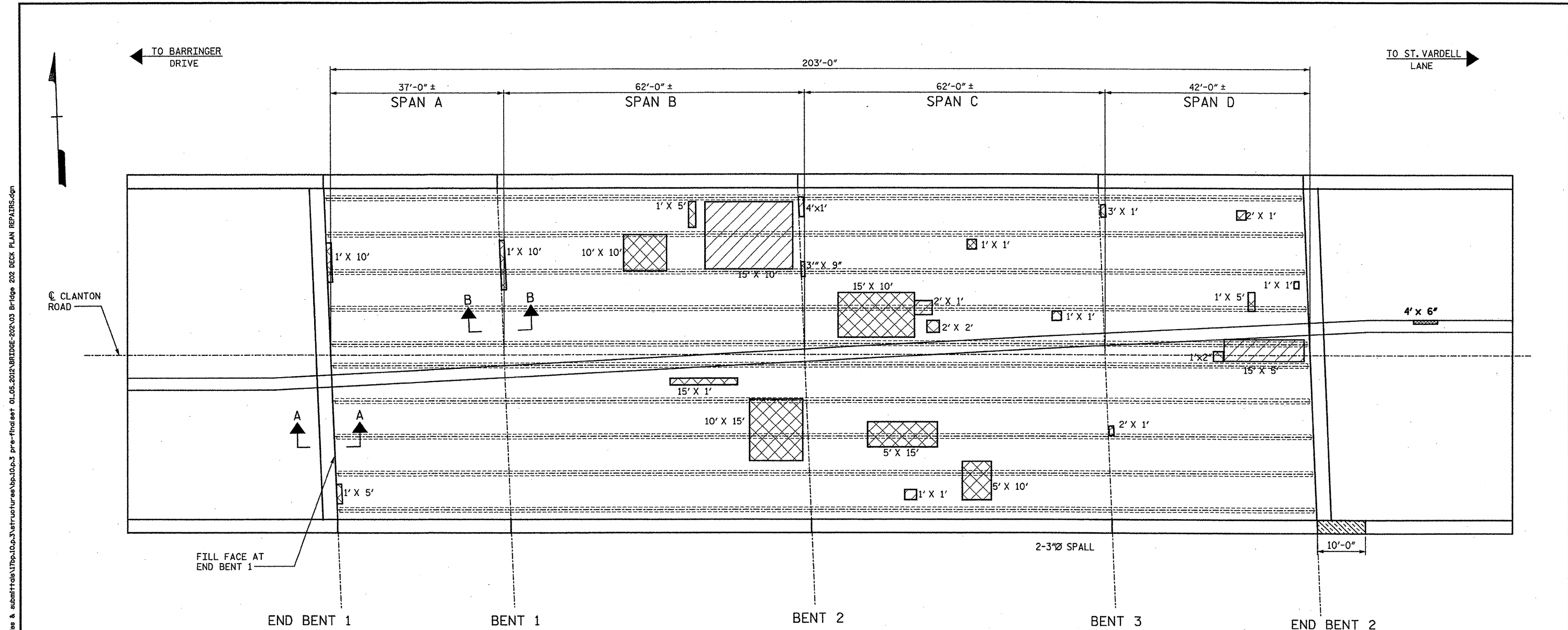
CONSTRUCTION
 STAGING
 BRIDGE ON CLANTON ROAD
 OVER I-77



DRAWN BY : RH DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

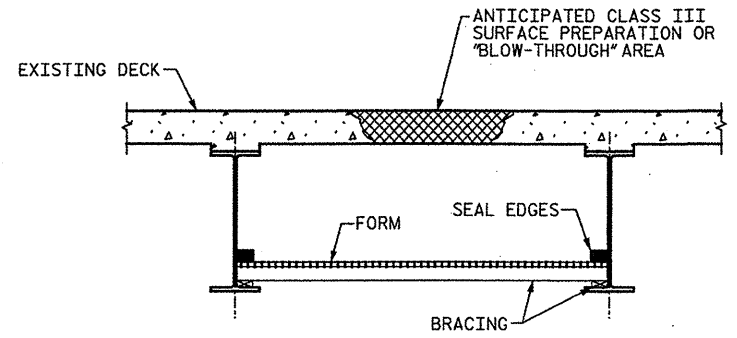
STV/ Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			S-88



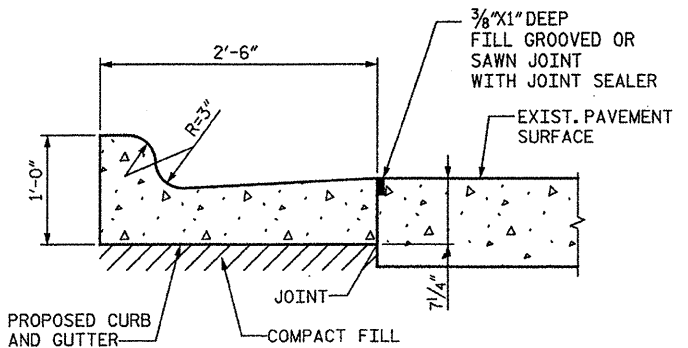
PLAN OF SPANS - BRIDGE DECK REPAIRS

NOTES:
 FOR SECTION A-A AND B-B, SEE SHEET NO. 4 OF 5.
 FOR BLOW THROUGH NOTES, SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK DETAIL

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



CURB AND GUTTER REPLACEMENT DETAIL

REMOVE EXIST. DEPRESSED GUTTER AND REPLACE IN KIND.

LEGEND:

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



PROJECT NO. **17BP.10.P.3**
 MECKLENBURG COUNTY
 BRIDGE NO.: **202**

REHAB. OF BRIDGE NO. 202 SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPANS
 DECK REPAIRS
 BRIDGE ON CLANTON ROAD
 OVER I-77

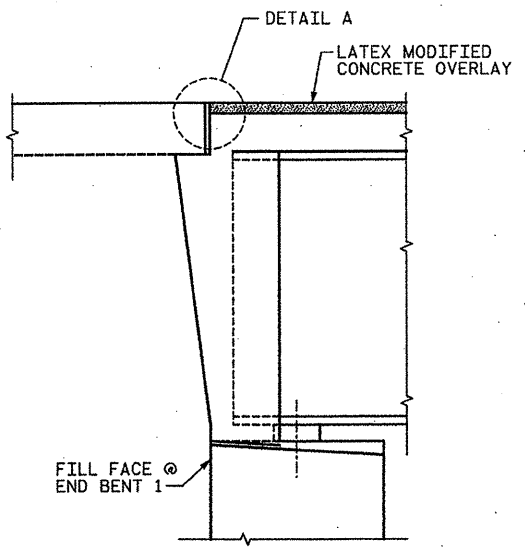
DRAWN BY : RH DATE : 1/5/12
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 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

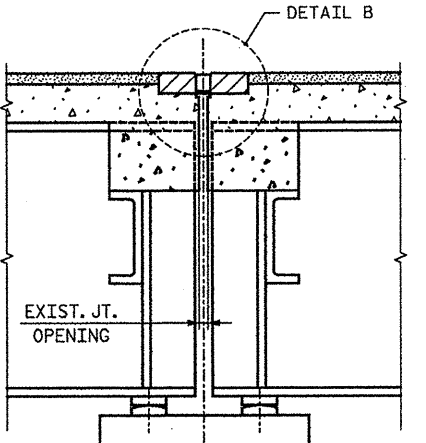
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			S-88

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 1/13/2012
 peter.dj

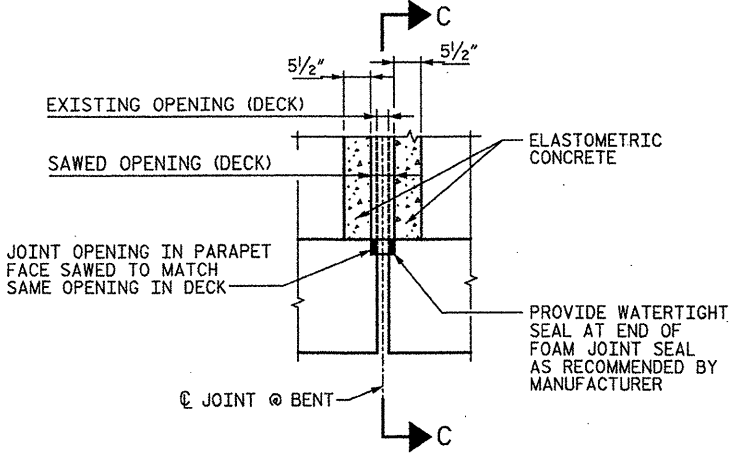
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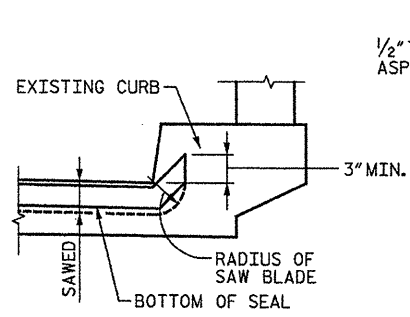
SECTION A-A
(PROPOSED JOINT @ END BENTS)



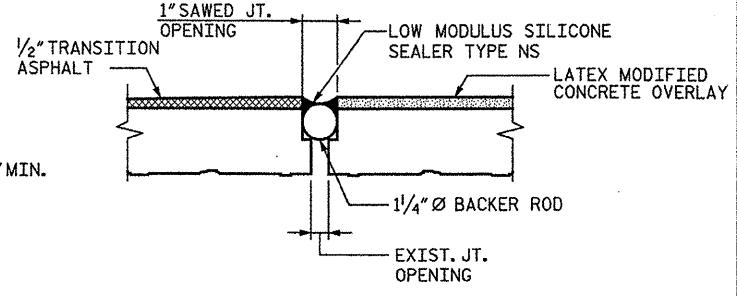
SECTION B-B
(PROPOSED JOINT @ INTERIOR BENTS)



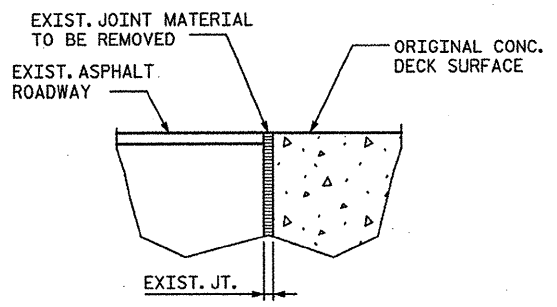
PLAN OF JOINT SEAL AT CURB



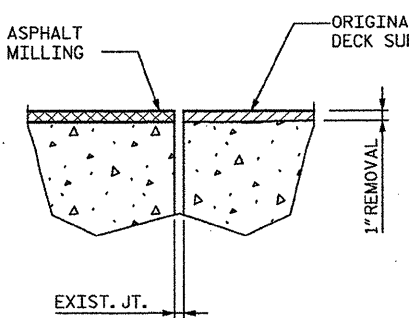
SECTION C-C



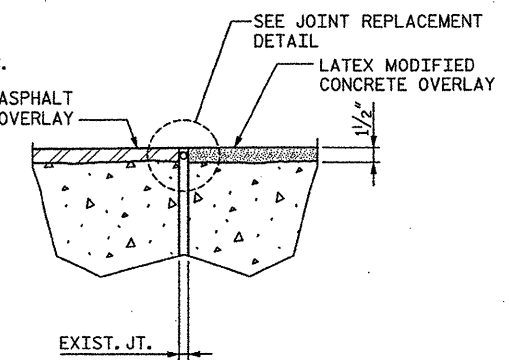
JOINT REPLACEMENT DETAIL



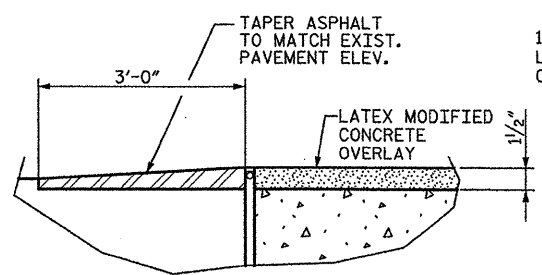
EXISTING JOINT



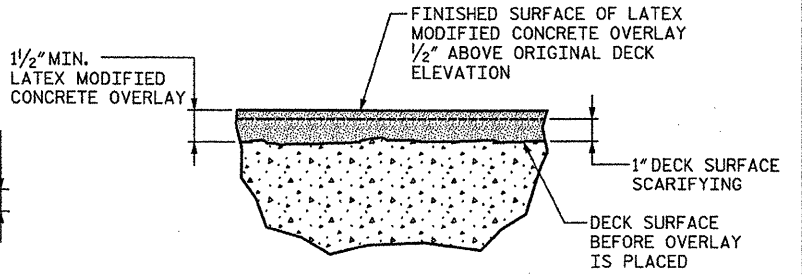
MIN. EXISTING JOINT DEMOLITION



PROPOSED JOINT

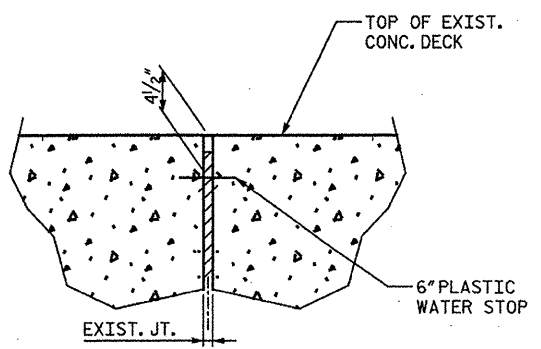


PROPOSED JOINT TRANSITION
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)

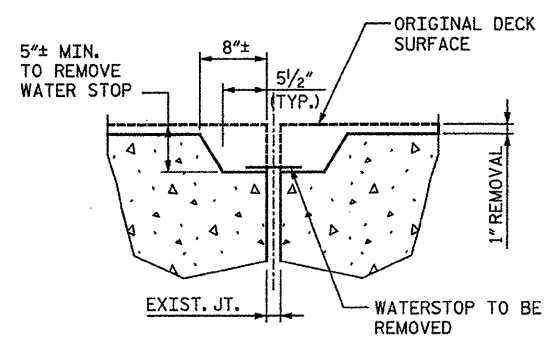


LATEX MODIFIED CONCRETE OVERLAY DETAIL

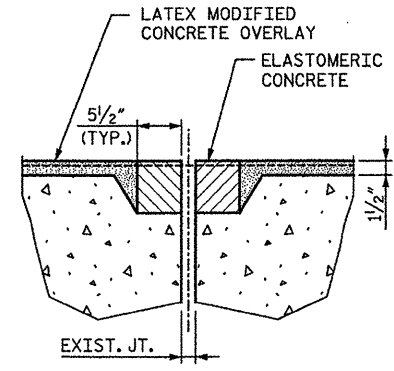
DETAIL A



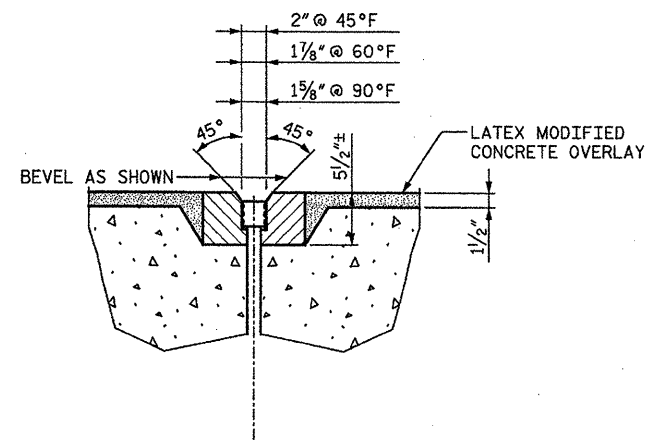
EXISTING JOINT



MINIMUM EXIST. JOINT DEMOLITION



PROPOSED JOINT PRE-SAWED



PROPOSED FOAM JOINT SEAL EXPANSION

DETAIL B

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	28.6
2	28.6
3	28.6
TOTAL	85.8

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. **17BP.10.P.3**
 MECKLENBURG COUNTY
 BRIDGE NO.: **202**
 REHAB. OF BRIDGE NO. 202 SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
DECK REPAIR DETAILS
 BRIDGE ON CLANTON ROAD
 OVER I-77



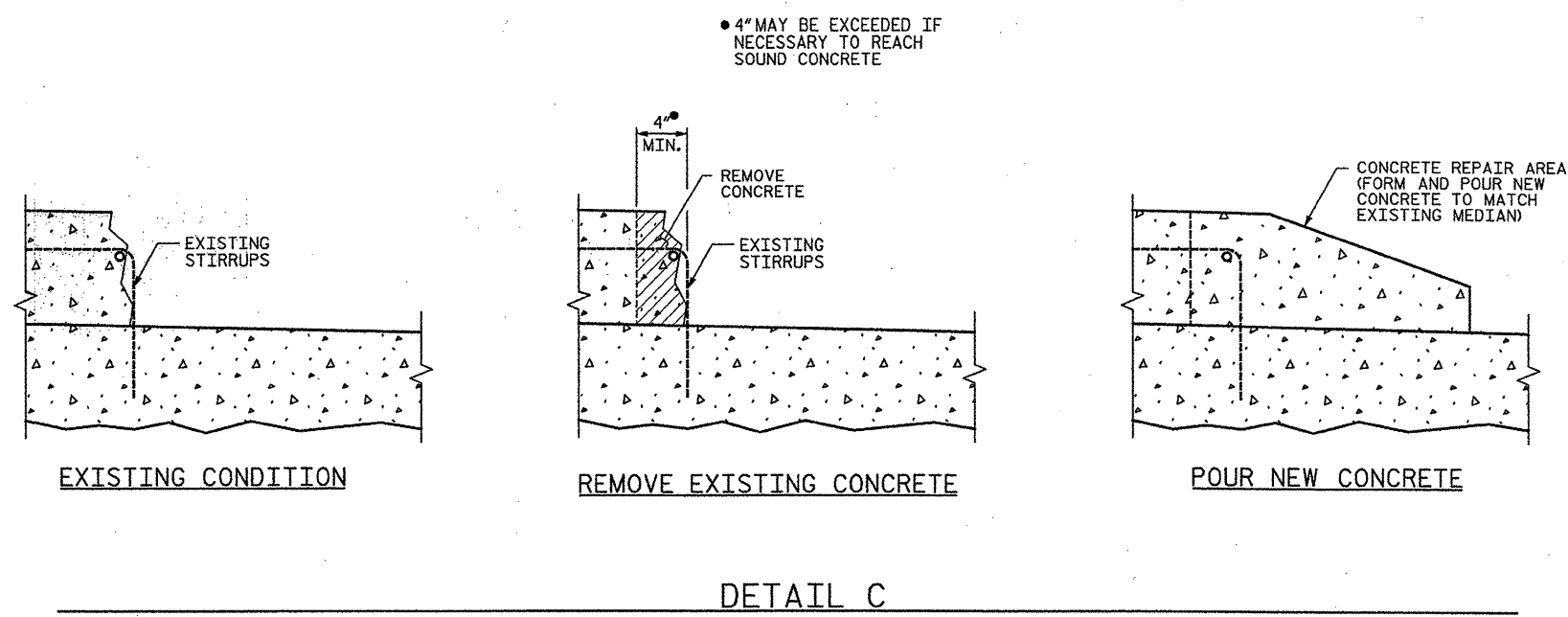
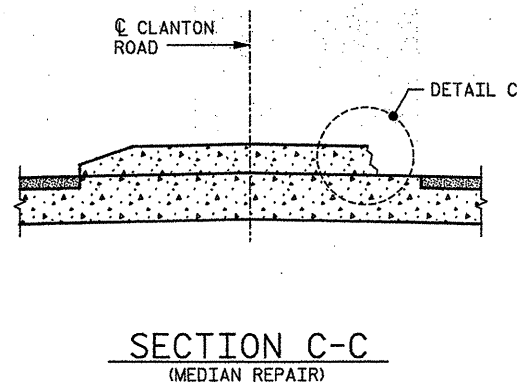
NOTES:
 SEE SHEET 5 OF 5 FOR JOINT NOTES.

DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : CJ DATE : 1/5/12

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22	
1			3			TOTAL	
2			4			SHEETS	S-88

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 peteroj
 1/13/2012



NOTE:
 IF NO REINFORCING STEEL IS FOUND IN ISLAND, CONTRACTOR SHALL REMOVE A MINIMUM OF 3 SQUARE FEET OF ISLAND SUCH THAT 3-#4 DOWELS CAN BE INSTALLED AT 12" SPACING.

FOAM JOINT NOTES:
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.
 THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
 FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 202
 REHAB. OF BRIDGE NO. 202 SHEET 5 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
DECK REPAIR DETAILS
 BRIDGE ON CLANTON ROAD
 OVER I-77

DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : CJ DATE : 1/5/12

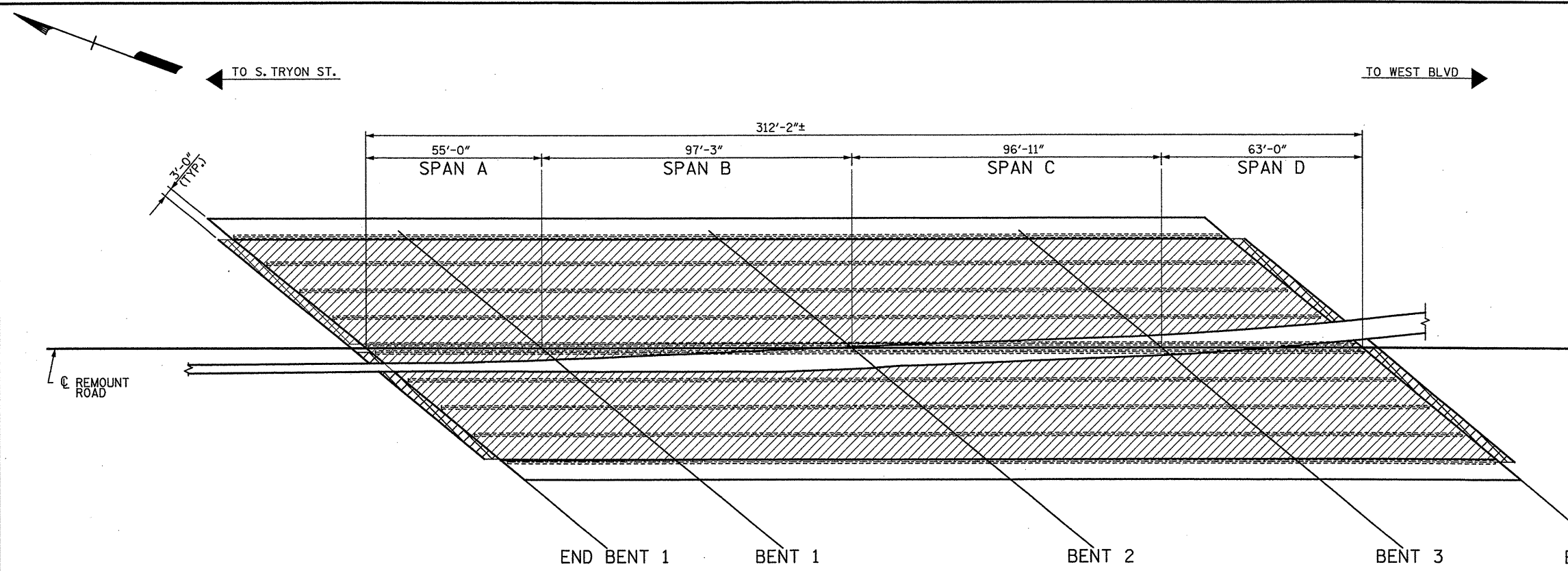
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			S-88

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2/23/2012

guitool

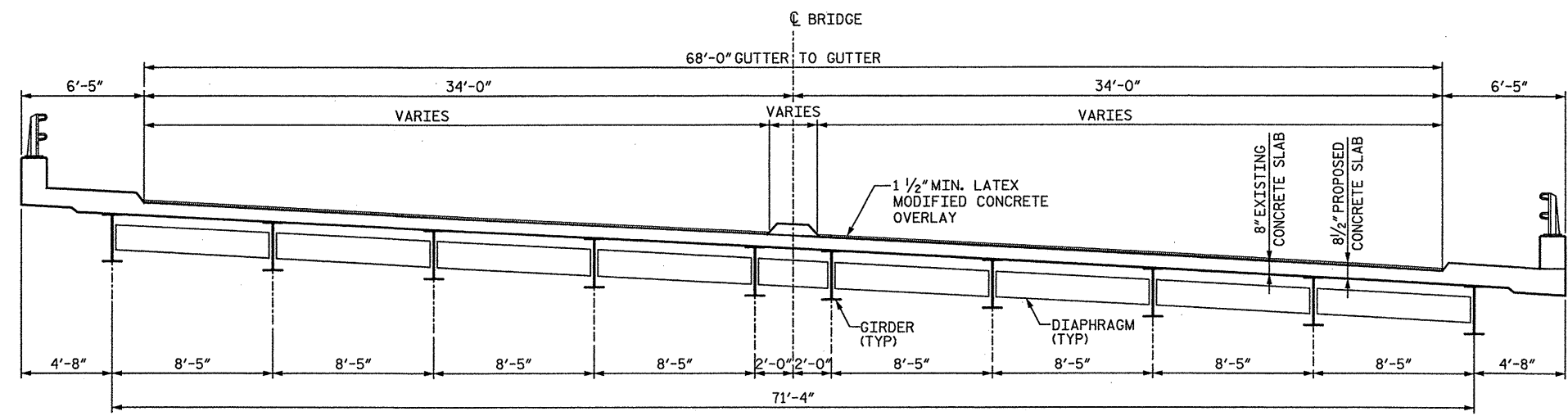


- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
 - FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
 - LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
 - FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PLAN OF SPANS - BRIDGE DECK SCARIFICATION AND HYDRO-DEMOLITION

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

BRIDGE DECK SCARIFICATION AND HYDRO-DEMOLITION
 INCIDENTAL MILLING



TYPICAL SECTION

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 205
 REHAB. OF BRIDGE NO.205 SHEET 1 OF 10



BILL OF MATERIAL

DECK SCARIFICATION	INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	* CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY -VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE -VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	SHOTCRETE REPAIR	CONCRETE REPAIR	BRIDGE JACKING	REINFORCING STEEL
SQ.YDS.	SQ.YDS.	TON	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	SQ.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.	L.F.	CU.FT.	CU.FT.	LUMP SUM	LBS.
2272	40	3.1	1685	566	21	5	2272	95	2272	LUMP SUM	20449	42	29	52	LUMP SUM	50

* QUANTITIES FOR INFORMATION ONLY

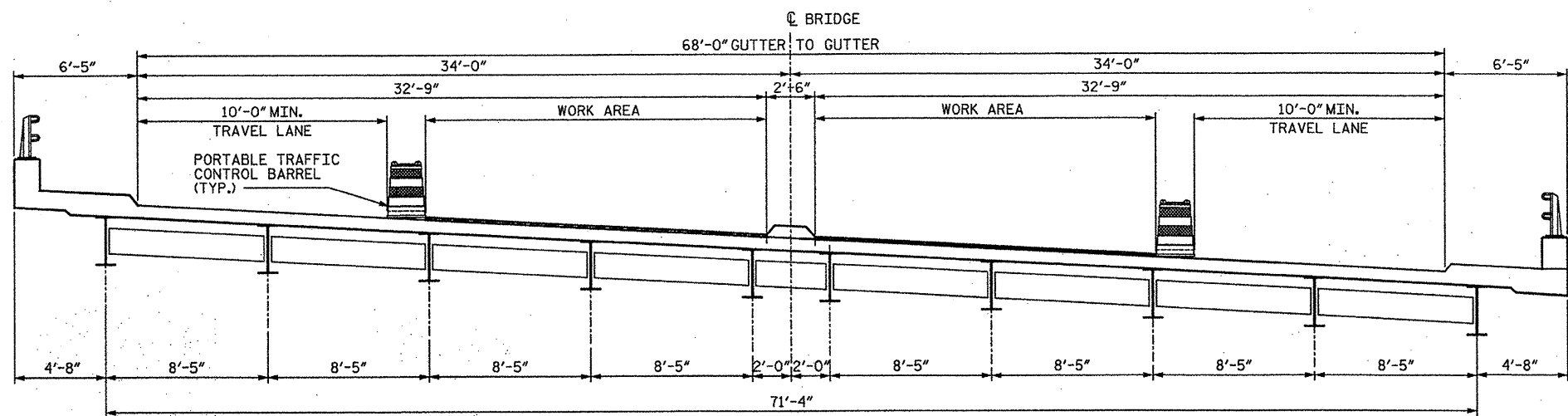
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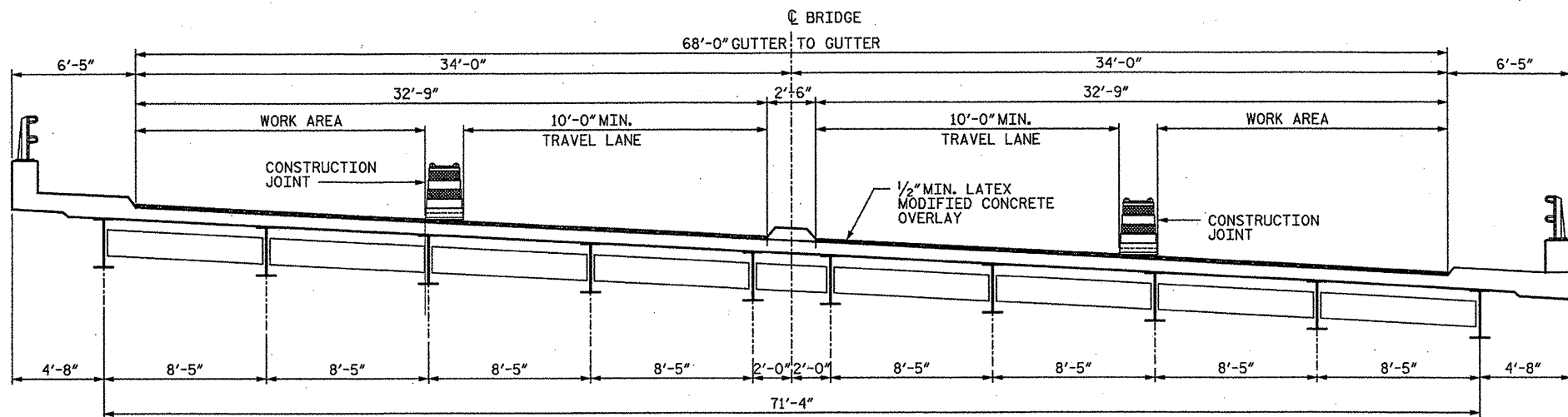
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PLAN OF SPANS AND TYPICAL SECTION
 BRIDGE ON REMOUNT ROAD OVER I-77

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS S-88
2			4			

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SECTION - STAGE I



SECTION - STAGE II

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 205

REHAB. OF BRIDGE NO.205 SHEET 2 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON REMOUNT ROAD
 OVER I-77

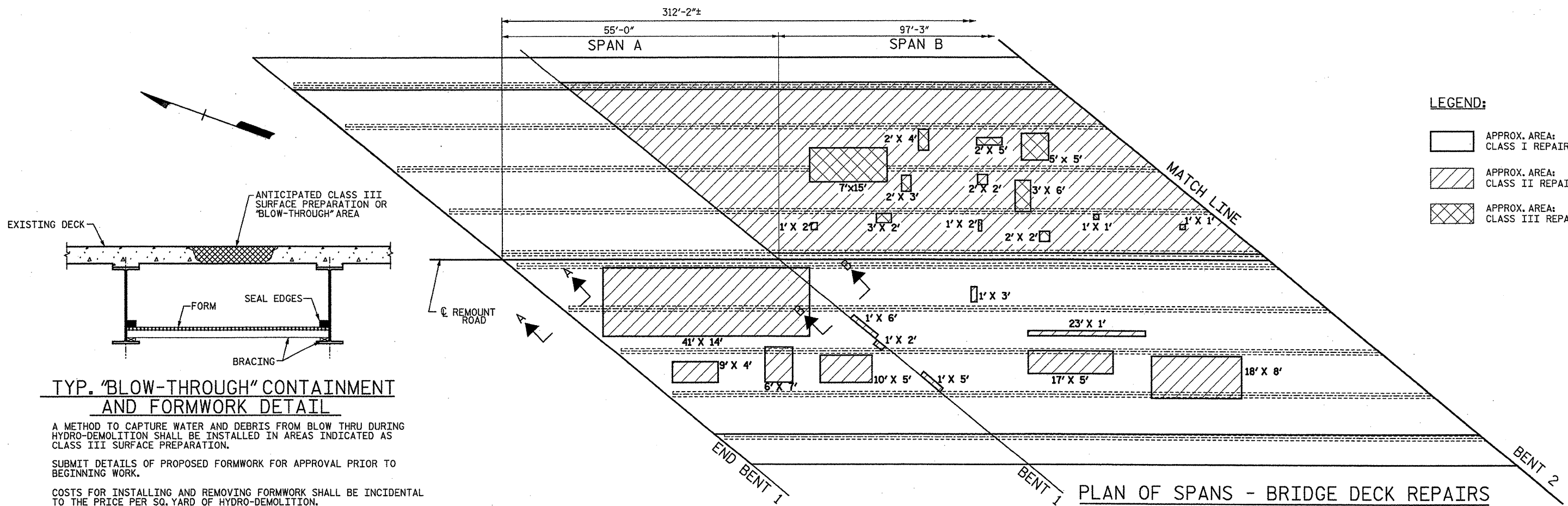


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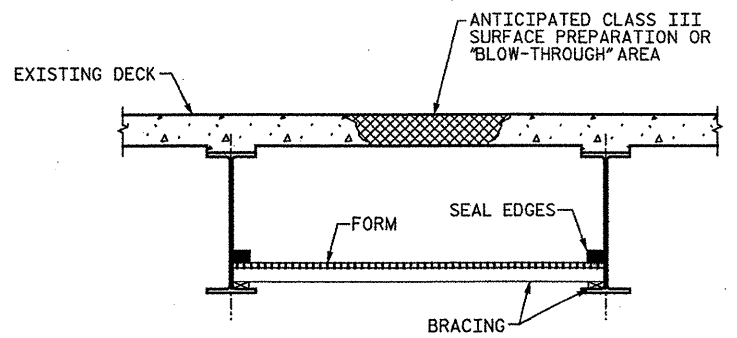
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			S-25
2			4			S-88

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 peter@j
 1/13/2012



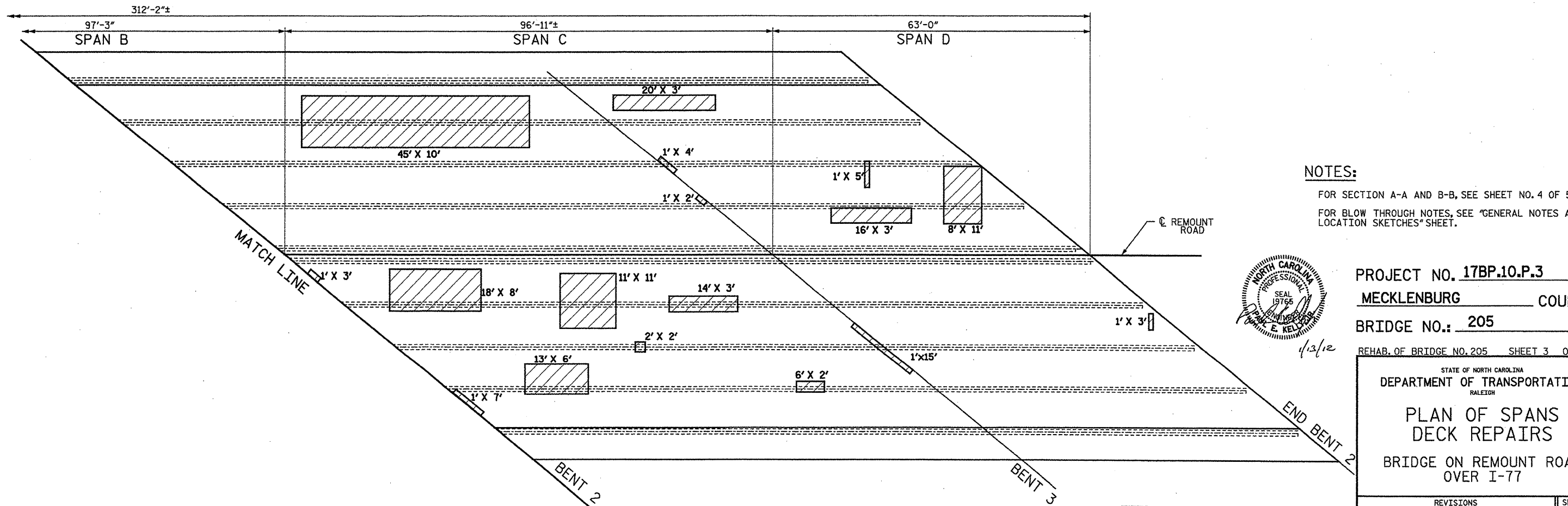
LEGEND:

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



TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK DETAIL

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



NOTES:
 FOR SECTION A-A AND B-B, SEE SHEET NO. 4 OF 5.
 FOR BLOW THROUGH NOTES, SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 205
 REHAB. OF BRIDGE NO. 205 SHEET 3 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF SPANS
 DECK REPAIRS**
 BRIDGE ON REMOUNT ROAD
 OVER I-77

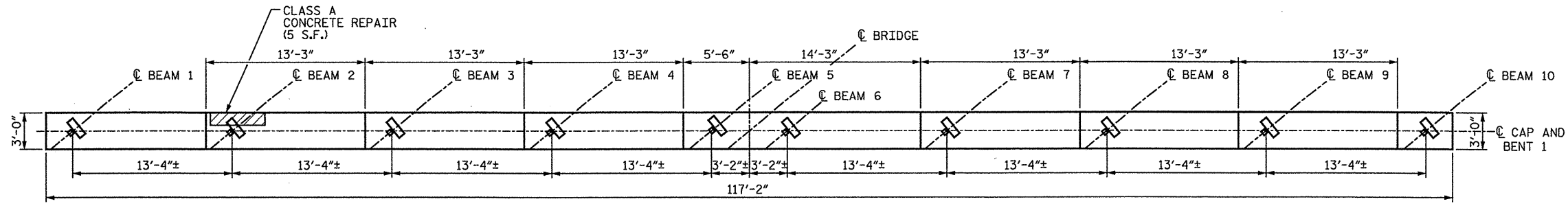
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PLAN OF SPANS - BRIDGE DECK REPAIRS

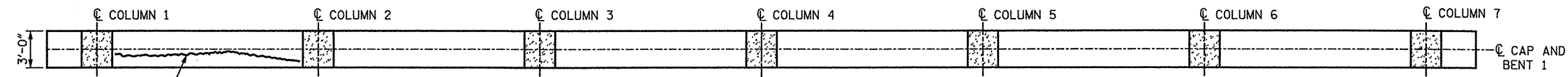
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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1			3			5-26	
2			4			S-88	

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TOP PLAN OF CAP



BOTTOM PLAN OF CAP

NOTES:
 CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.

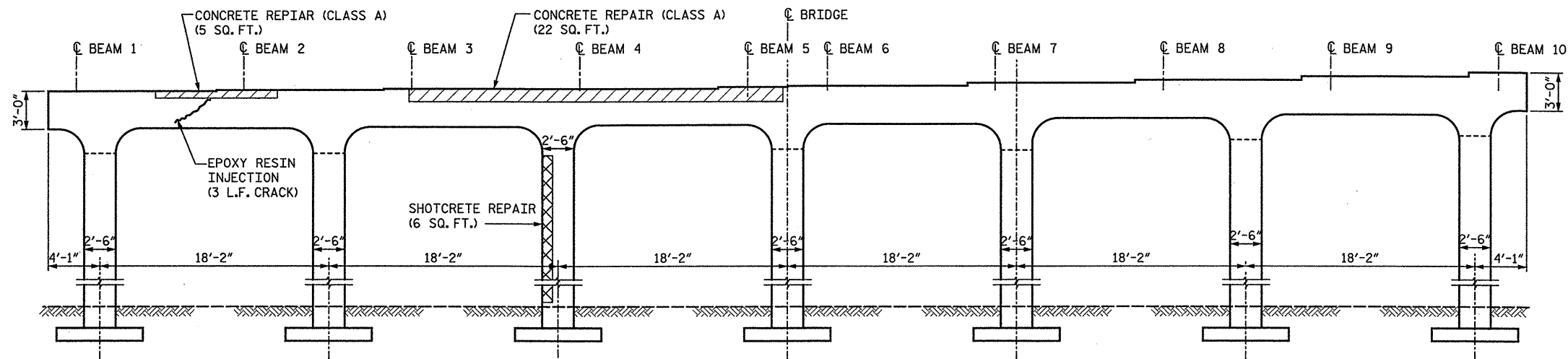
FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.

SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.

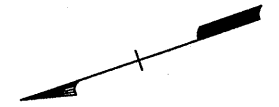
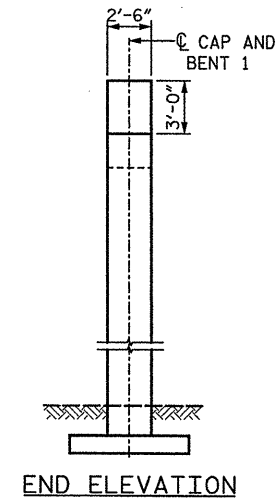
THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COST.

DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.

FOR ADDITIONAL NOTES, SEE SHEET 1 OF 10.

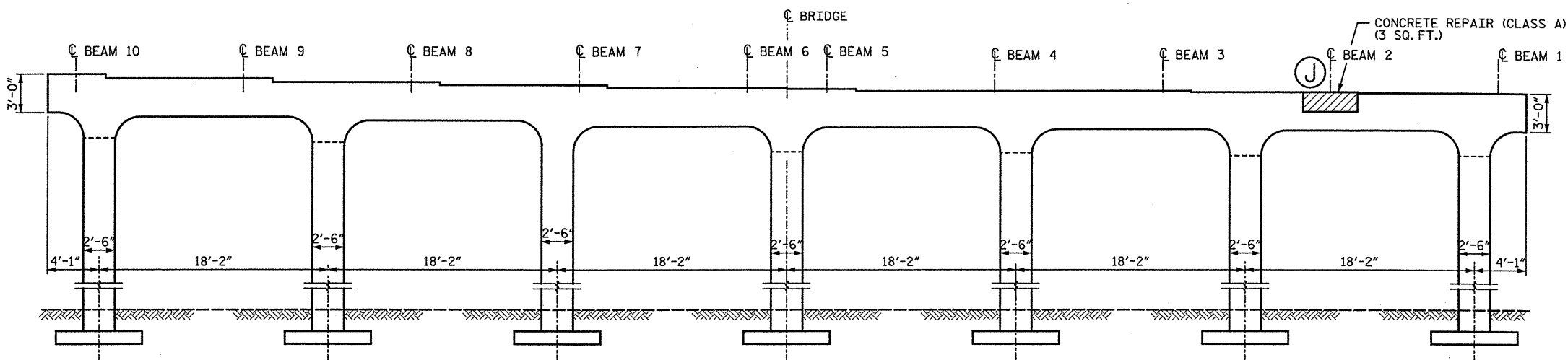


ELEVATION OF BENT 1 - LOOKING EAST**



- EPOXY RESIN INJECTION
- CONCRETE REPAIR (CLASS A)
- SHOTCRETE REPAIR

(J) JACKING REQUIRED
 SEE SHEET 10 OF 10 FOR JACKING DETAILS



ELEVATION OF BENT 1 - LOOKING WEST**

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 205

REHAB. OF BRIDGE NO. 205 SHEET 5 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE REPAIRS

BENT 1
 BRIDGE ON REMOUNT ROAD
 OVER I-77



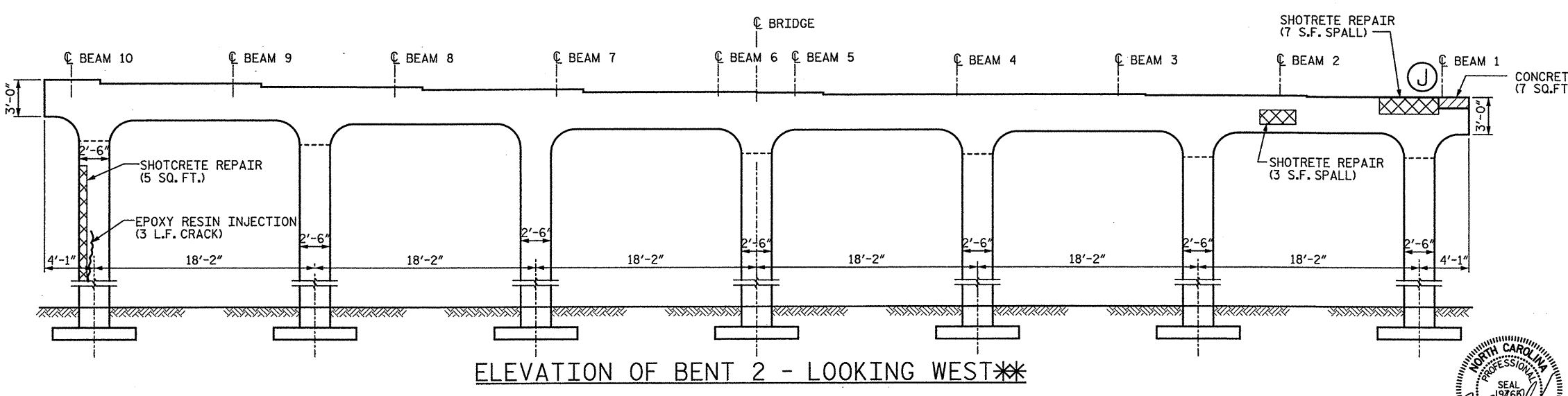
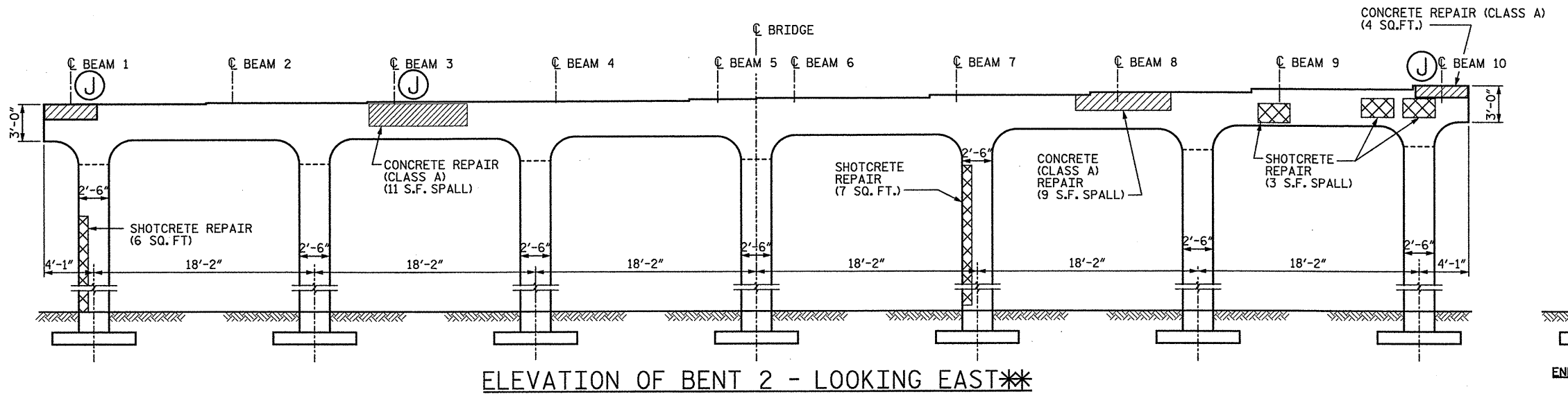
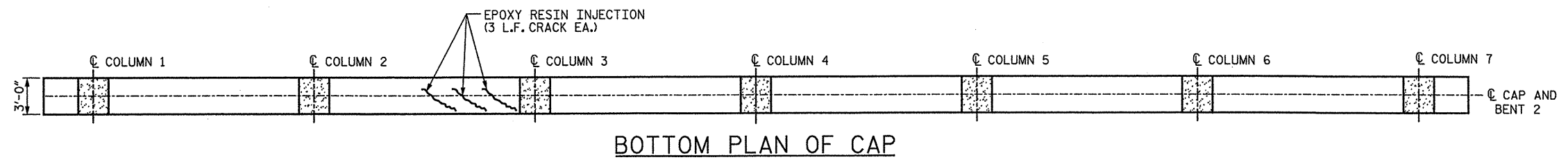
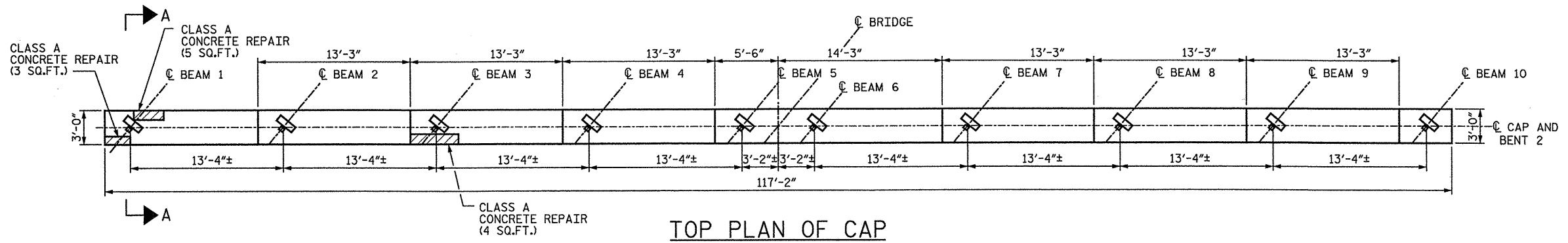
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 CHECKED BY: OA DATE: 1/5/12

**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

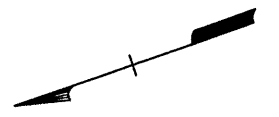
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-28
2			4			TOTAL SHEETS S-88

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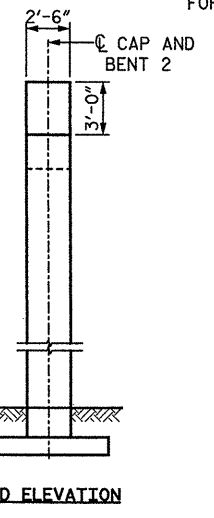


NOTE:
FOR NOTES SEE SHEET 5 OF 10.



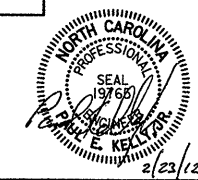
- EPOXY RESIN INJECTION
- CONCRETE REPAIR (CLASS A)
- SHOTCRETE REPAIR

(J) JACKING REQUIRED
SEE SHEET 10 OF 10 FOR JACKING DETAILS



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 205
 REHAB. OF BRIDGE NO. 205 SHEET 6 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 2
 BRIDGE ON REMOUNT ROAD
 OVER I-77

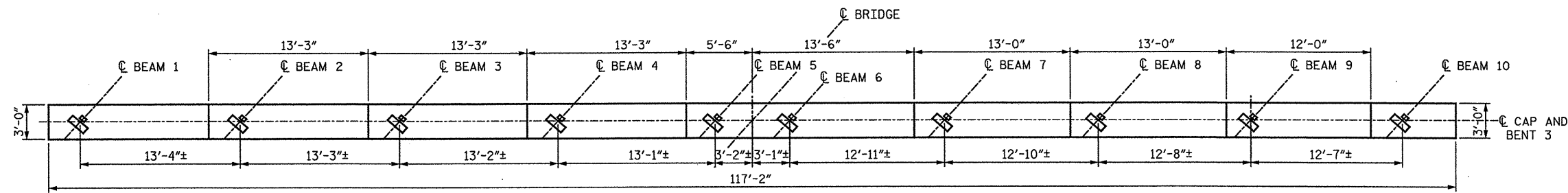


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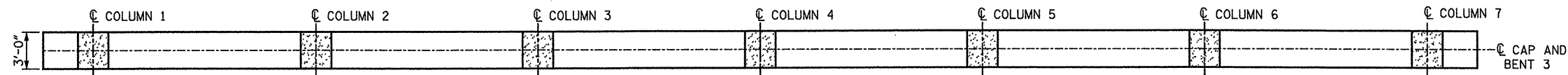
**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL
2			4			S-88

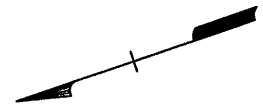


TOP PLAN OF CAP

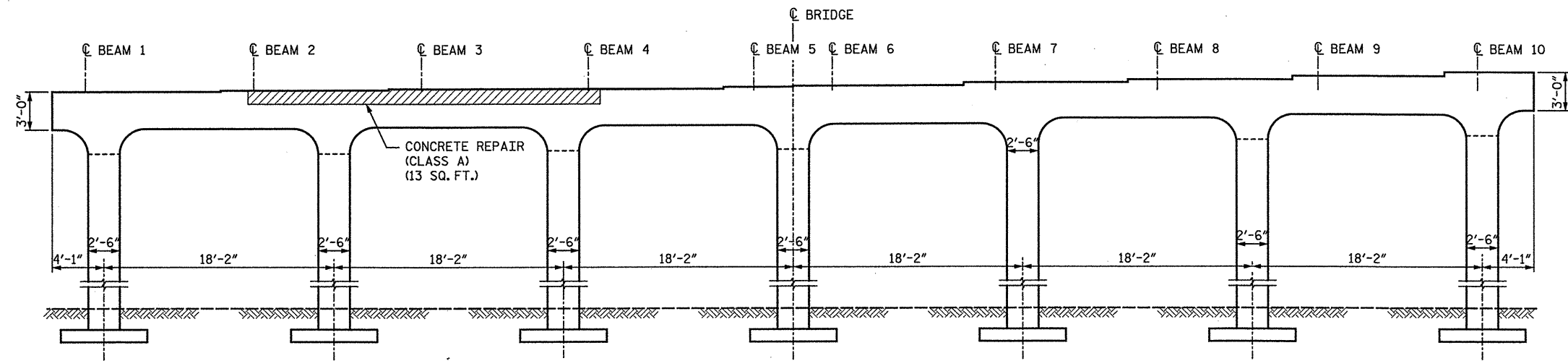


BOTTOM PLAN OF CAP

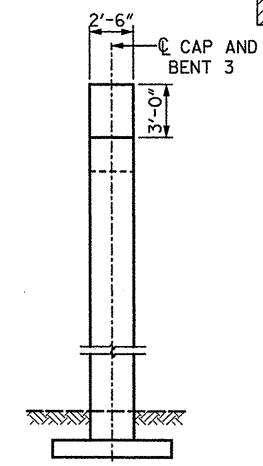
NOTE:
FOR NOTES SEE SHEET 5 OF 10.



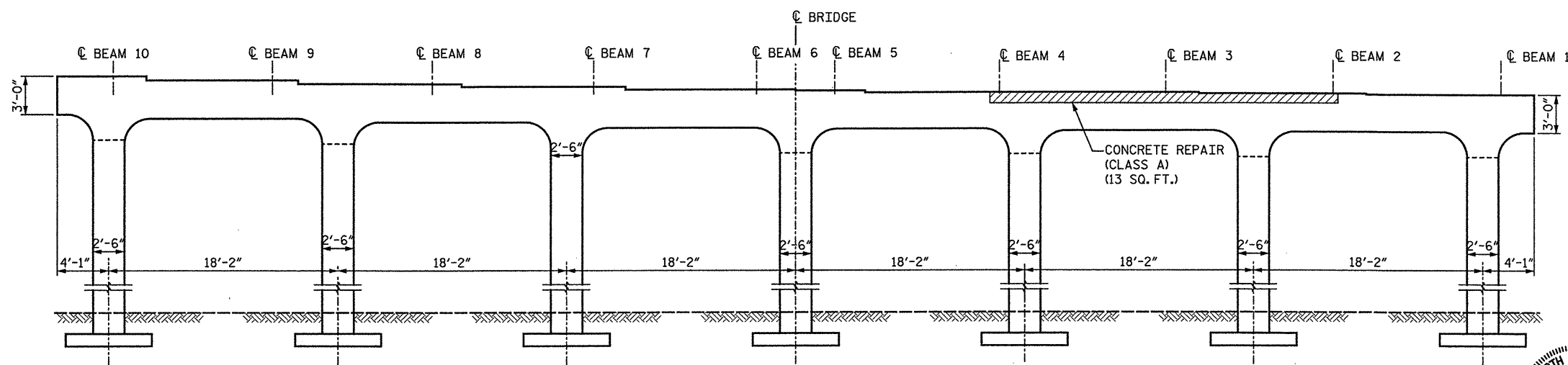
EPOXY RESIN INJECTION
 CONCRETE REPAIR (CLASS A)



ELEVATION OF BENT 3 - LOOKING EAST*



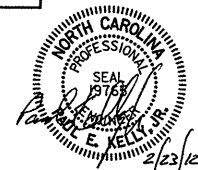
END ELEVATION



ELEVATION OF BENT 3 - LOOKING WEST*

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 205
 REHAB. OF BRIDGE NO. 205 SHEET 7 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 3
 BRIDGE ON REMOUNT ROAD
 OVER I-77



REVISIONS						SHEET NO. S-30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			S-88

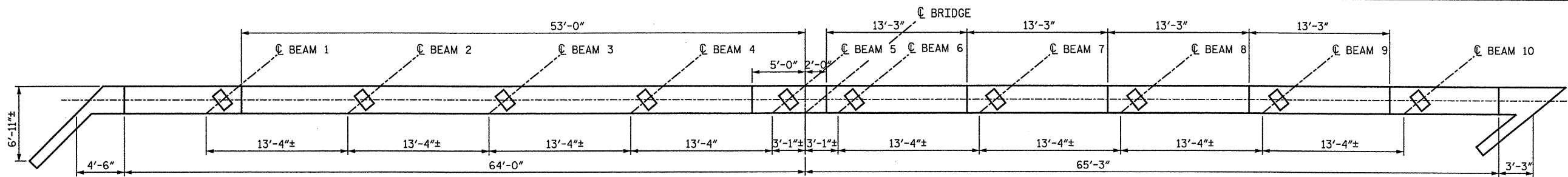
*LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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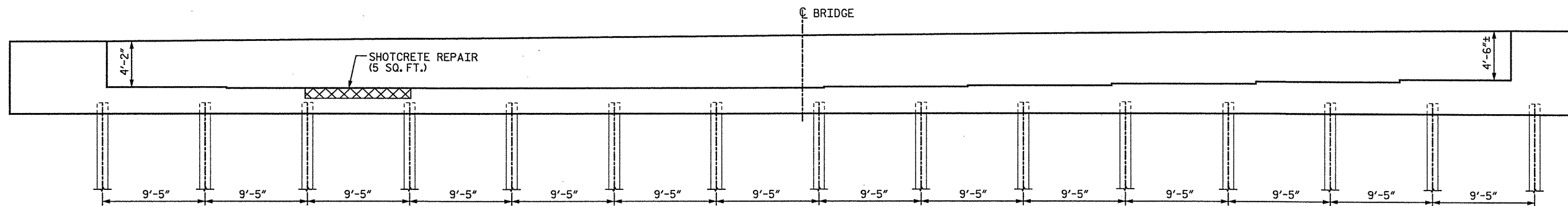
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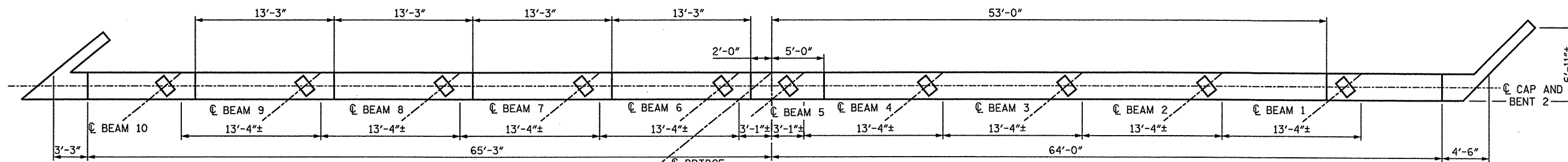
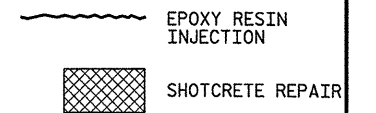


TOP PLAN END BENT 1

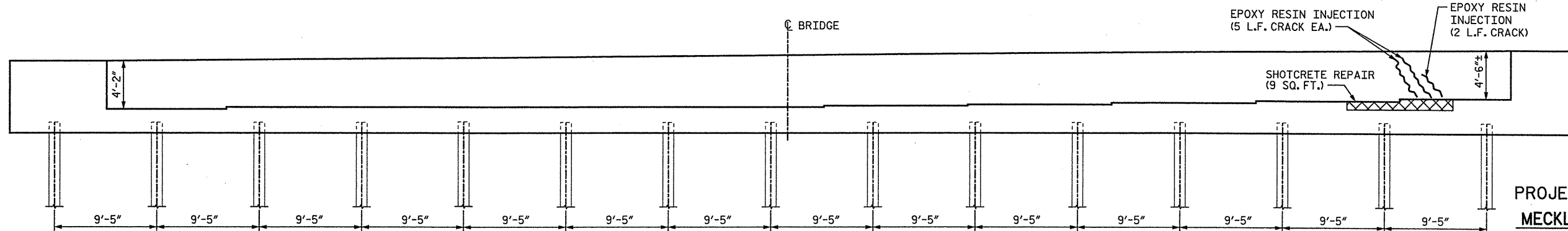


ELEVATION END BENT 1

(FILL FACE SHOWN, REPAIRS SHOWN ON FRONT FACE)



BOTTOM PLAN END BENT 2



ELEVATION END BENT 2

PROJECT NO. 17BP.10.P.3

MECKLENBURG COUNTY

BRIDGE NO.: 205

REHAB. OF BRIDGE NO. 205 SHEET 8 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE REPAIRS

END BENTS 1 AND 2
BRIDGE ON REMOUNT ROAD
OVER I-77



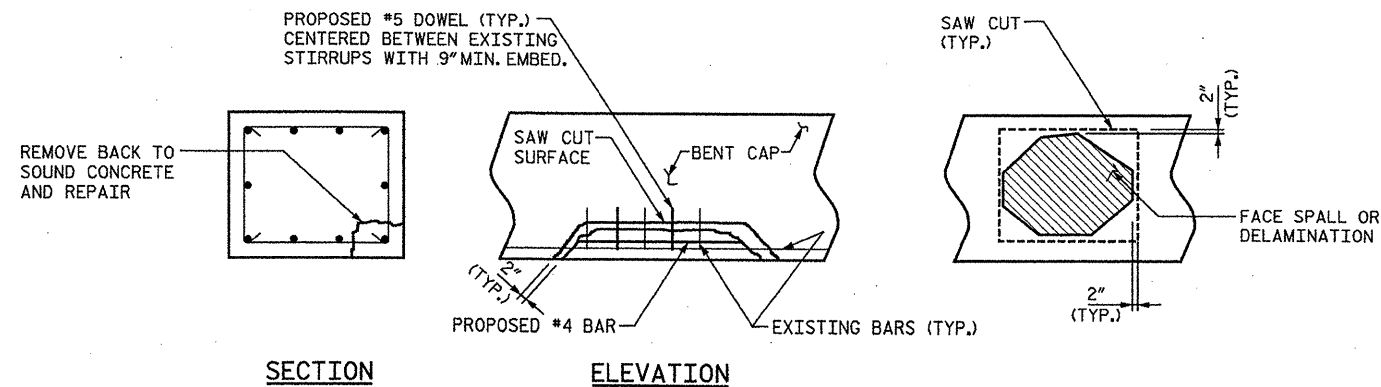
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NC License No. F-0991

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1			3			S-31	
2			4			S-88	

FOAM JOINT NOTES:

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.
 THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
 FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



CORNER REPAIR

FACE REPAIR

TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTES:

1. CONTRACTOR SHALL SAWCUT TO A MAXIMUM DEPTH OF 1/2".
2. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.

PROJECT NO. 17BP.10.P.3

MECKLENBURG COUNTY

BRIDGE NO.: 205

REHAB. OF BRIDGE NO. 205 SHEET 9 OF 10

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE REPAIR
 DETAILS**

BRIDGE ON REMOUNT ROAD
 OVER I-77



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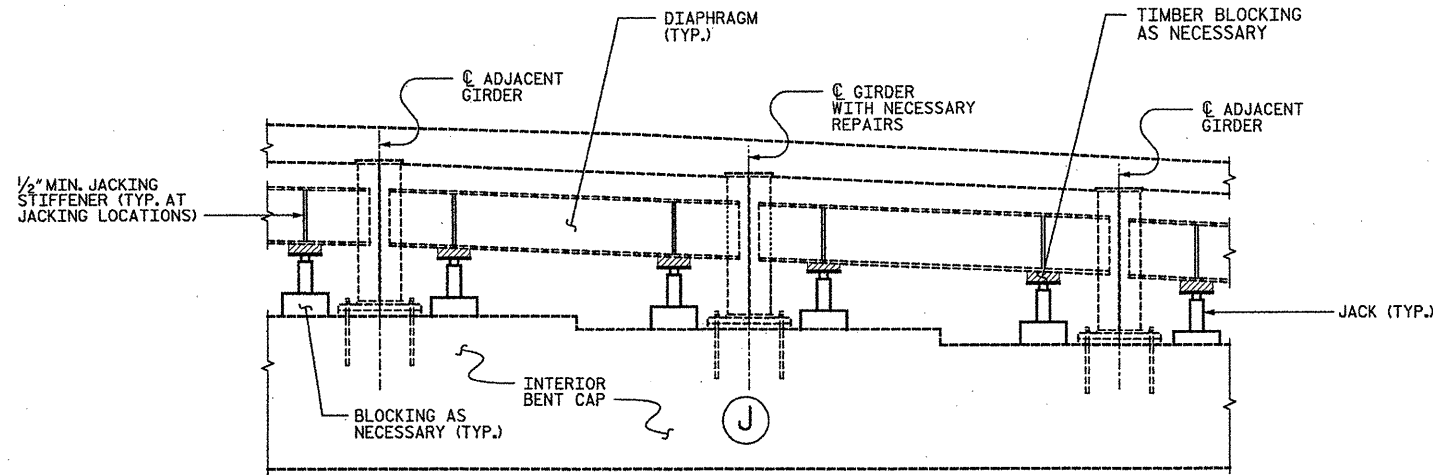
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2			4			S-88

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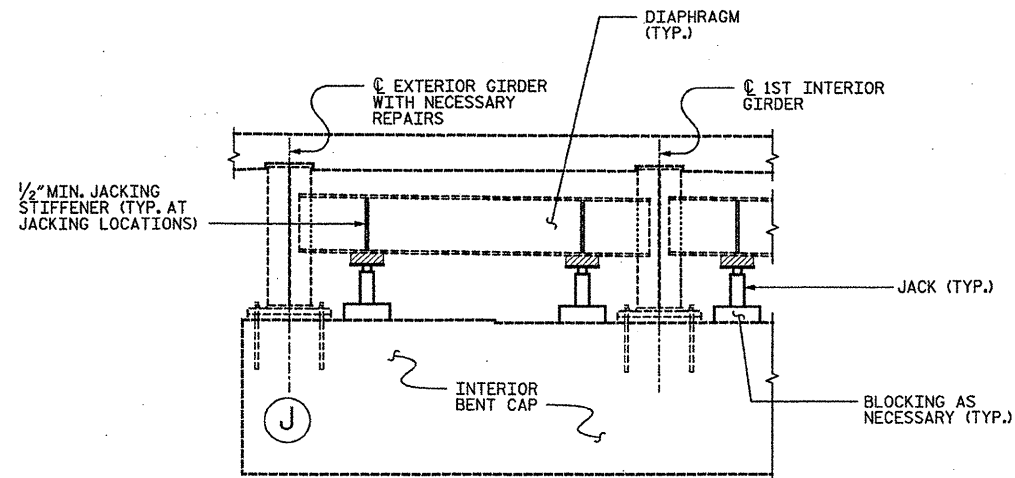
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1/13/2012

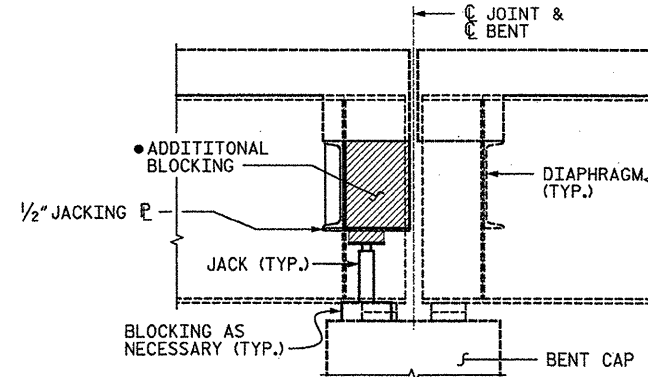


GIRDER JACKING DETAIL AT INTERIOR GIRDER

J JACKING FOR PROPOSED REPAIR LOCATION

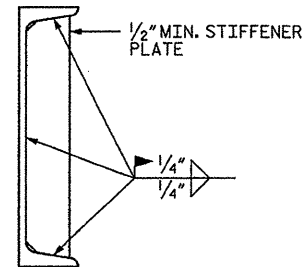


GIRDER JACKING DETAIL AT EXTERIOR GIRDER



TYPICAL SECTION @ JACKING LOCATION

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



JACKING STIFFENER TYPICAL DETAIL

CONSTRUCTION SEQUENCE:

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

NOTE: THE CONTRACTOR HAS THE OPTION TO PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE PER THE APPROVAL OF THE ENGINEER.

NOTES:

1. JACKING DETAILS SHOWN ARE CONCEPTUAL AND CONSIDERED A MINIMUM. THE CONTRACTOR SHALL PROVIDE JACKING PLANS FOR ALL GIRDERS LIFTED FOR APPROVAL BY THE ENGINEER PRIOR TO ANY JACKING OPERATIONS. JACKING SHALL BE PERFORMED SUCH THAT BRIDGE CAN REMAIN OPEN TO TRAFFIC DURING JACKING OPERATIONS.
2. JACKING PLANS SHALL BE SIGNED AND SEALED BY LICENSED PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.
3. THE CONTRACTOR SHALL PROVIDE BLOCKING FOR ALL JACKS AS NECESSARY. A BLOCKING PLAN SHALL BE INCLUDED AS PART OF THE JACKING PLAN.
4. THE CONTRACTOR SHALL JACK GIRDERS ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.
5. THE CONTRACTOR SHALL MONITOR THE PLAN LOCATION OF THE GIRDERS FROM INITIAL JACKING UNTIL GIRDERS ARE SECURED ON THEIR PERMANENT BEARINGS. IF THE PLAN LOCATION OF THESE GIRDERS SHIFT FROM ITS ORIGINAL POSITION, THE CONTRACTOR SHALL SECURE FROM ADDITIONAL MOVEMENT IMMEDIATELY. NOTIFY ENGINEER PRIOR TO PROCEEDING WORK OPERATIONS.
6. EACH JACK SHALL HAVE A MINIMUM SAFE WORKING CAPACITY OF 80 TONS.
7. PRIOR TO JACKING THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.
8. ONCE SPAN HAS BEEN JACKED, CONTRACTOR SHALL INSTALL A MECHANICAL LOCKING DEVICE TO ENSURE THAT GIRDER WILL NOT BE LOWERED DURING CURING OF CONCRETE.
9. CONTRACTOR TO TAKE APPROPRIATE MEANS TO REMOVE NUT ON ANCHOR BOLT WITHOUT DAMAGING THE ANCHOR BOLT. CONTRACTOR SHALL SUBMIT NUT REMOVAL METHOD TO INCLUDE PROCEDURES THAT WILL LOOSEN BOND BETWEEN INTERLOCKING THREADS TO ENGINEER FOR APPROVAL PRIOR TO REMOVING ANCHOR BOLT NUTS.
10. IN NO CIRCUMSTANCES SHOULD THE JACKING BE SOLELY SUPPORTED BY THE DIAPHRAGM. JACKS SHOULD BE CENTERED UNDER DIAPHRAGM AND ADDITIONAL BLOCKING.

PROJECT NO. **17BP.10.P.3**

MECKLENBURG COUNTY

BRIDGE NO.: **205**

REHAB. OF BRIDGE NO. 205 SHEET 10 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

JACKING DETAILS
BRIDGE ON REMOUNT ROAD
OVER I-77

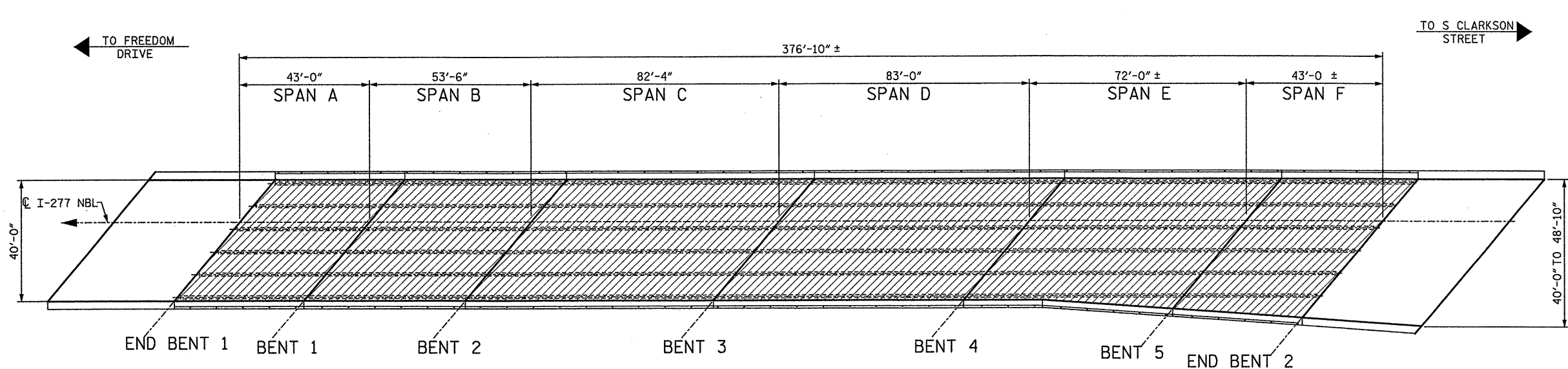


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2			4			S-88

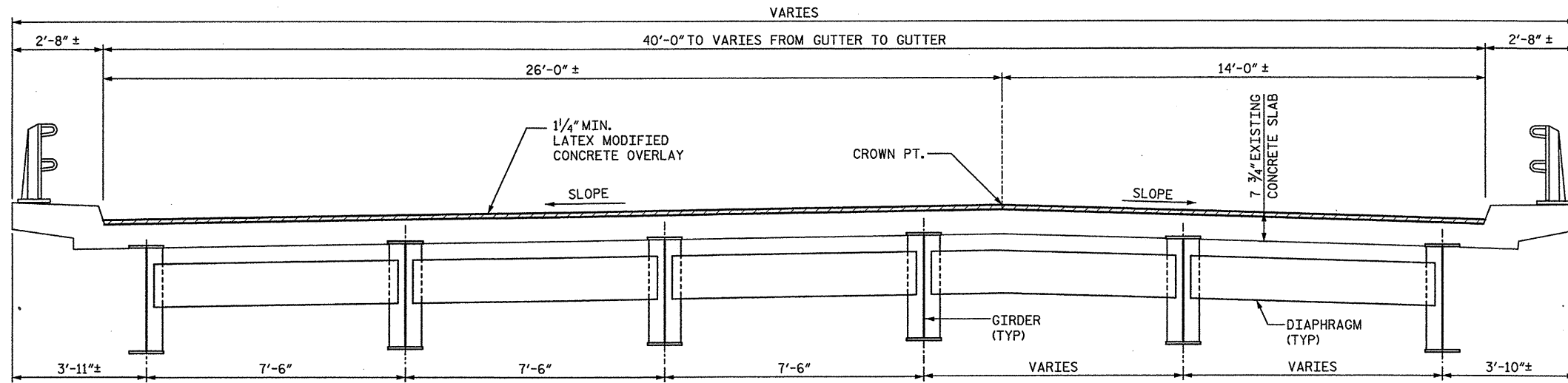
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PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION

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

BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION



TYPICAL SECTION

(SHOWN IN DIRECTION OF TRAVEL)

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 RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
4. LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
5. FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
6. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
7. FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



PROJECT NO. 17BP.10.P.3

MECKLENBURG COUNTY

BRIDGE NO.: 44

REHAB. OF BRIDGE NO. 44 SHEET 1 OF 11

BILL OF MATERIAL

DECK SCARIFICATION	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	* CLASS AA CONCRETE	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	SHOTCRETE REPAIR	CONCRETE REPAIR	REINFORCING STEEL
SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YD.	LUMP SUM	SQ. FT.	L.F.	CU. FT.	CU. FT.	LBS.
1719	1646	33	40	1719	60	1719	8.6	LUMP SUM	14002	185	19	11	50

* QUANTITIES FOR INFORMATION ONLY

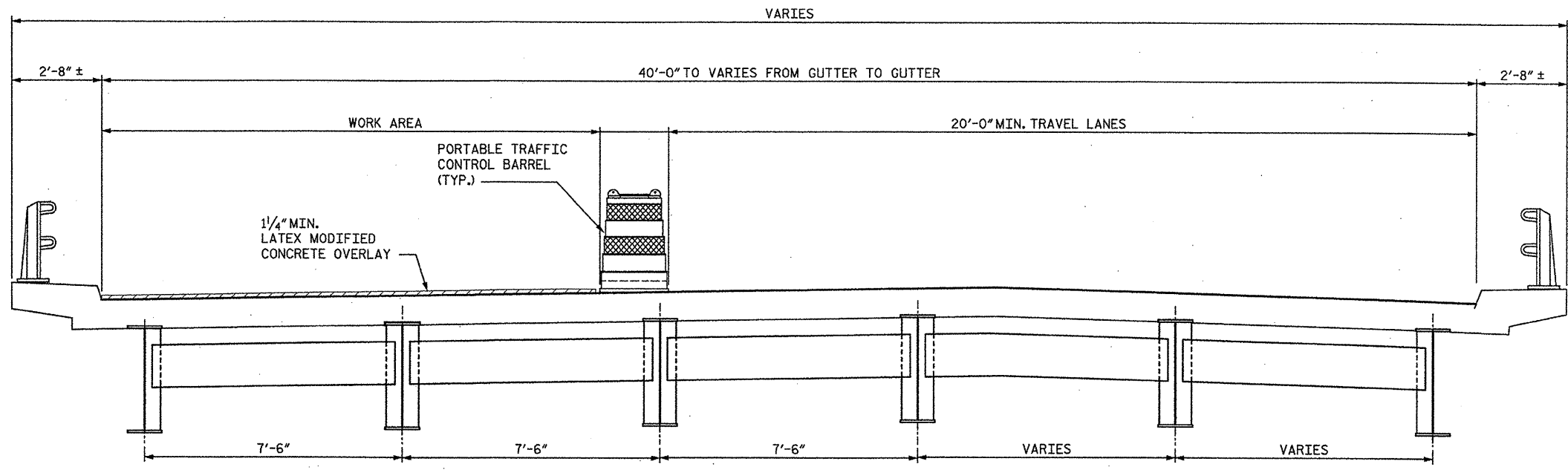
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PLAN OF SPANS & TYPICAL SECTION
BRIDGE ON I-277 NBL OVER I-77

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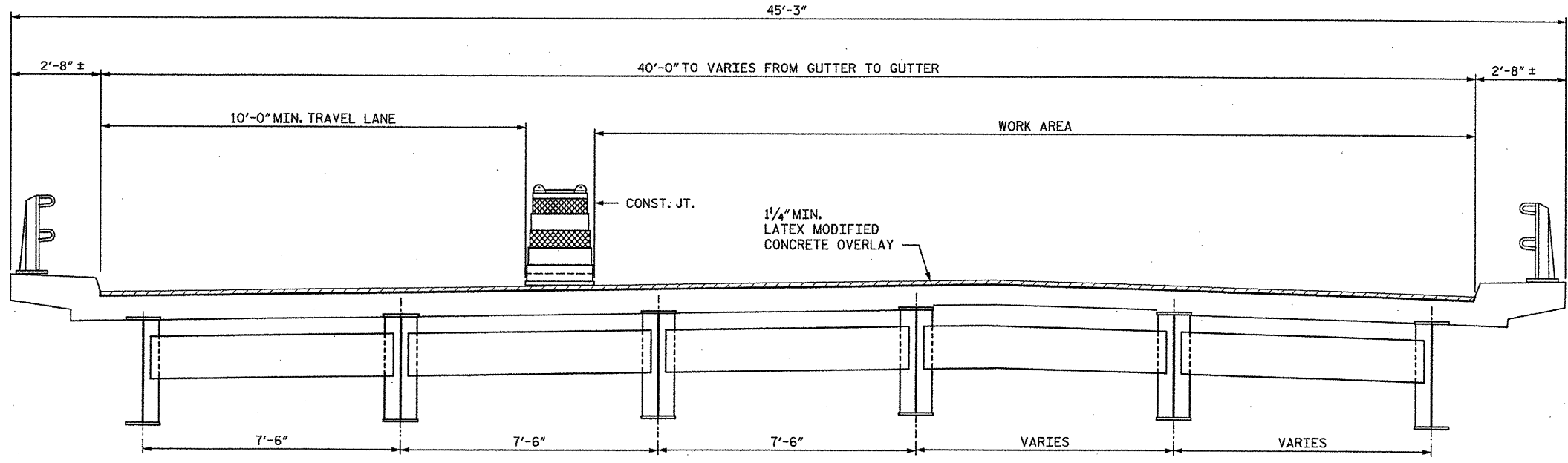
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			S-88

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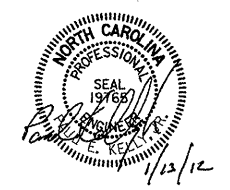
STAGE I - SECTION



STAGE II - SECTION

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 2 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON I-277 NBL
 OVER I-77

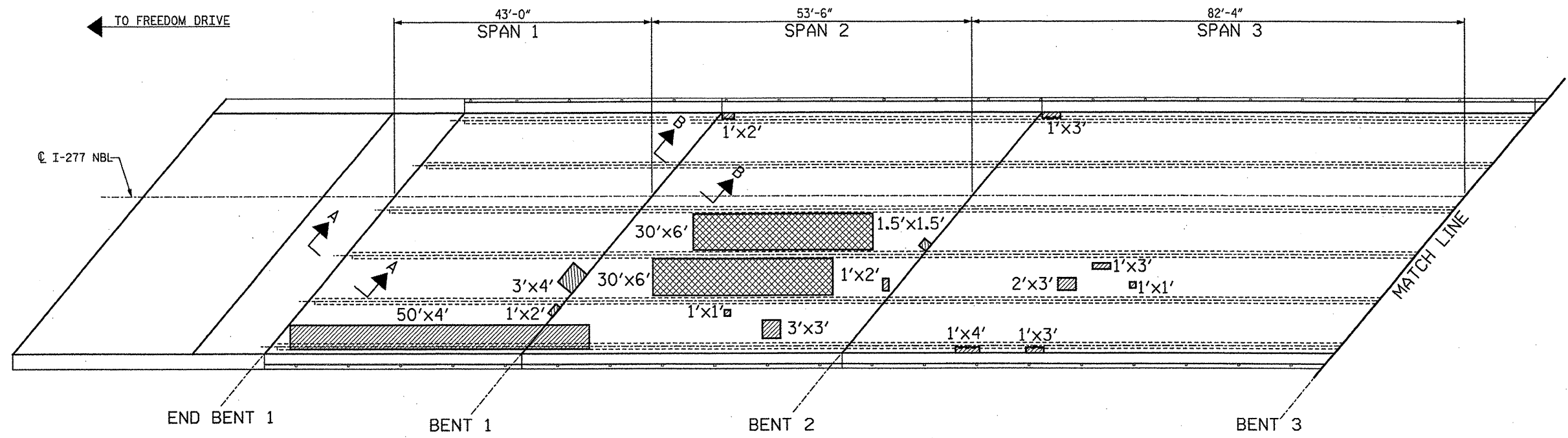


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
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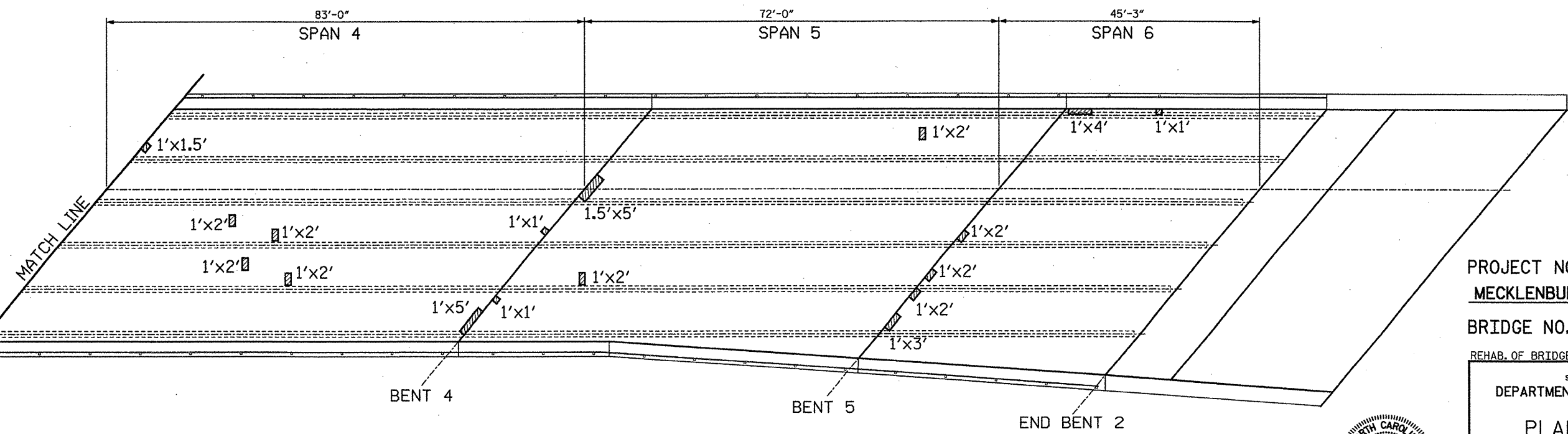
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 1/13/2012



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

PLAN OF SPANS - BRIDGE DECK REPAIRS SPANS 1 TO 3

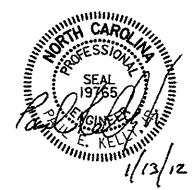
NOTE:
 SEE SHEET 11 OF 11 FOR BLOW-THRU CONTAINMENT DETAIL
 FOR BLOW THROUGH NOTES, SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



PLAN OF SPANS - BRIDGE DECK REPAIRS SPANS 4 TO 6

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 3 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PLAN OF SPANS
 DECK REPAIRS
 BRIDGE ON I-277 NBL
 OVER I-77

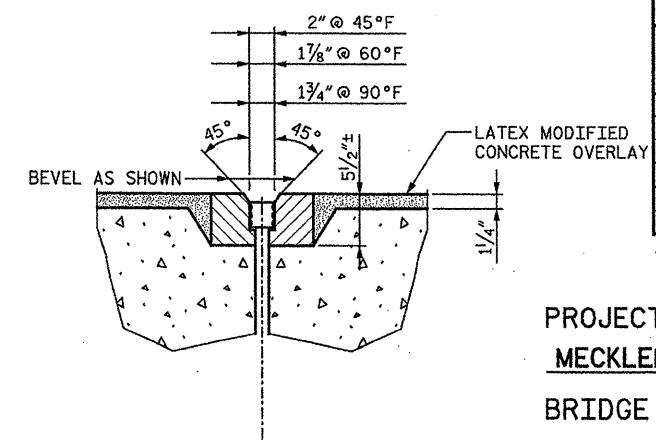
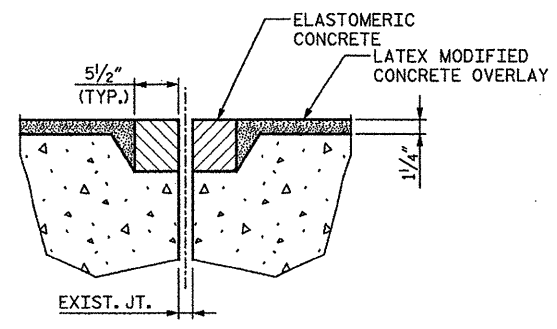
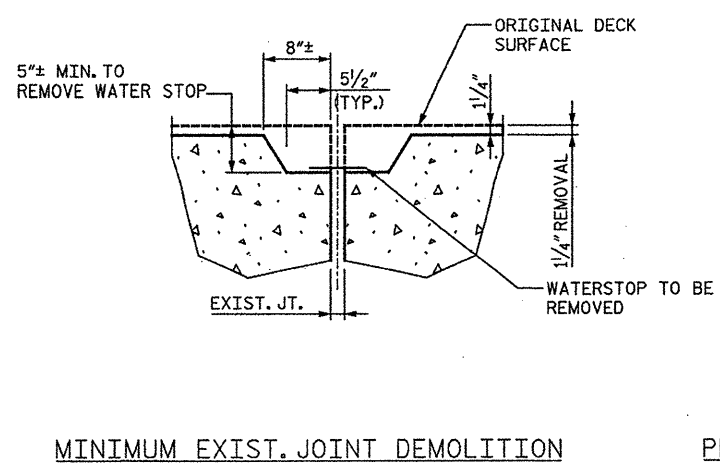
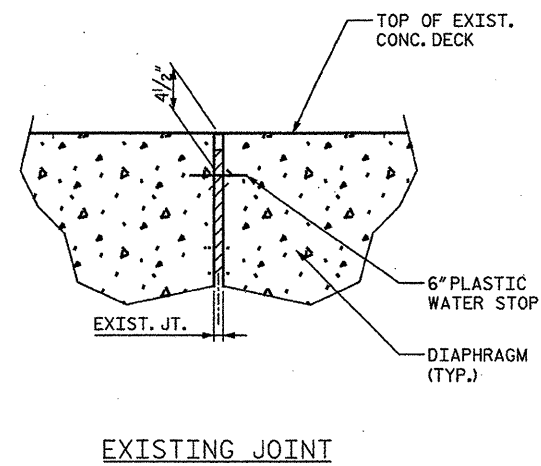
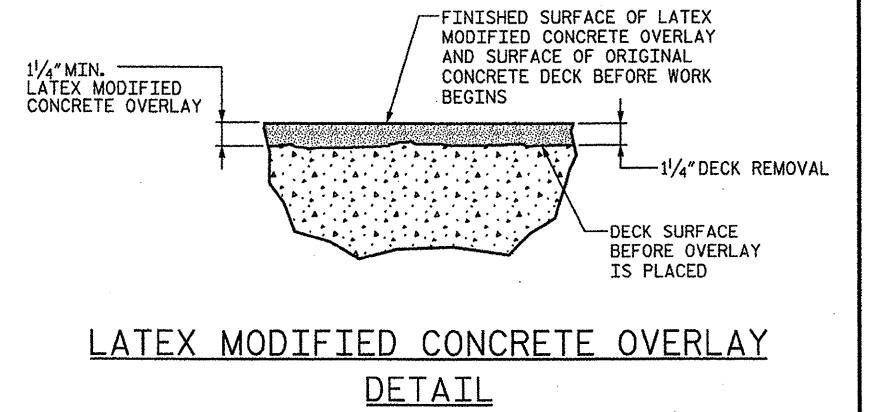
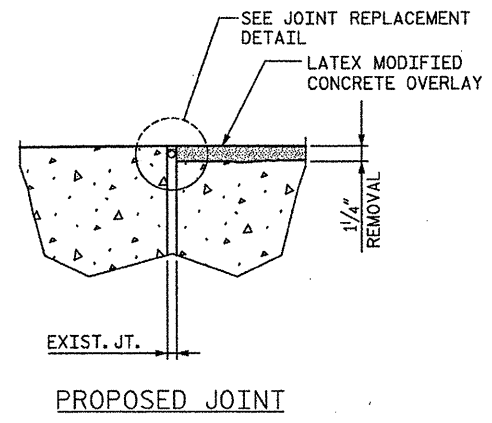
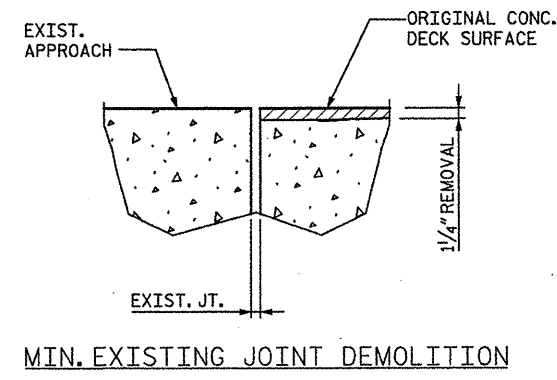
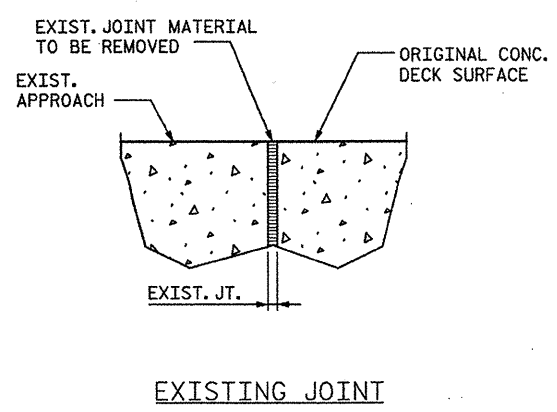
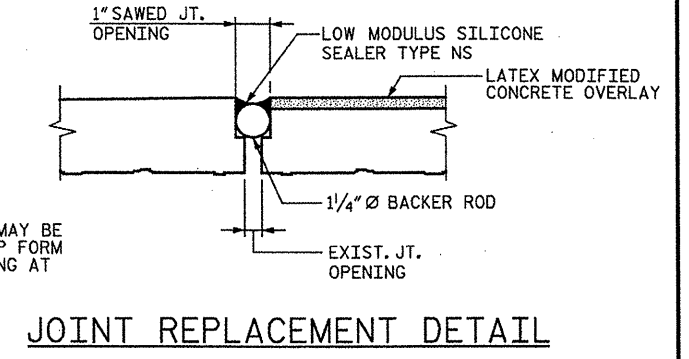
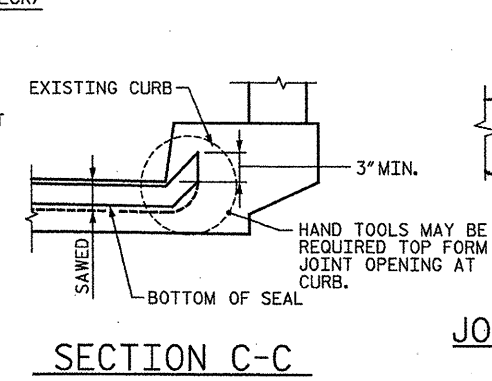
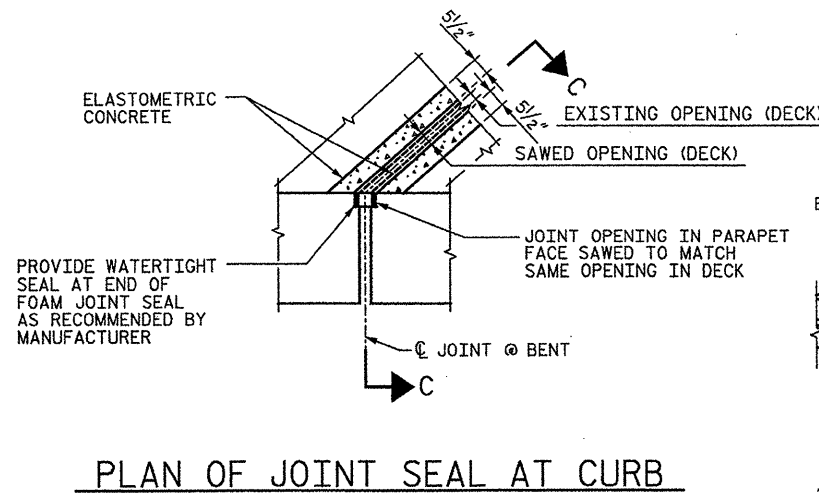
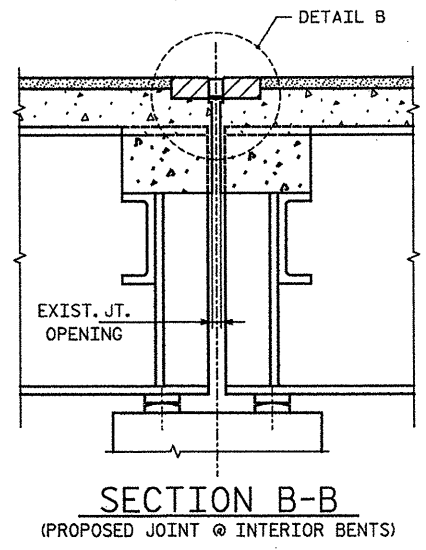
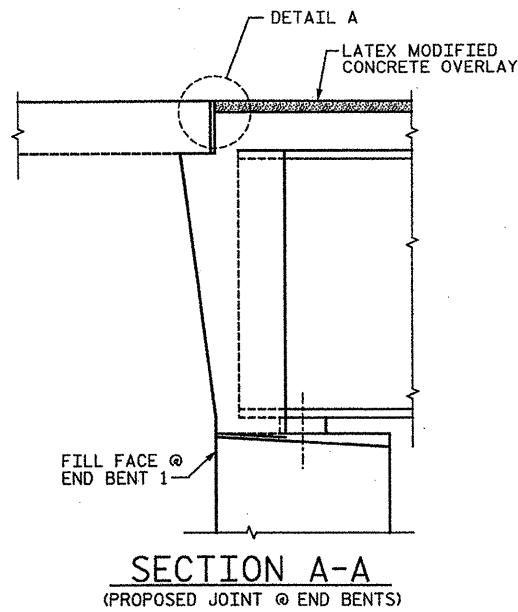


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			S-88

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ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	20.3
2	20.3
3	20.3
4	20.3
5	20.4
TOTAL	101.6

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 4 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
JOINT REPAIR DETAILS
 BRIDGE ON I-277 NBL
 OVER I-77

NOTES:
 SEE SHEET 11 OF 11 FOR JOINT NOTES.



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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS S-88
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NOTES:

FOR CONCRETE REPAIR DETAILS, SEE SHEET 11 OF 11.

CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.

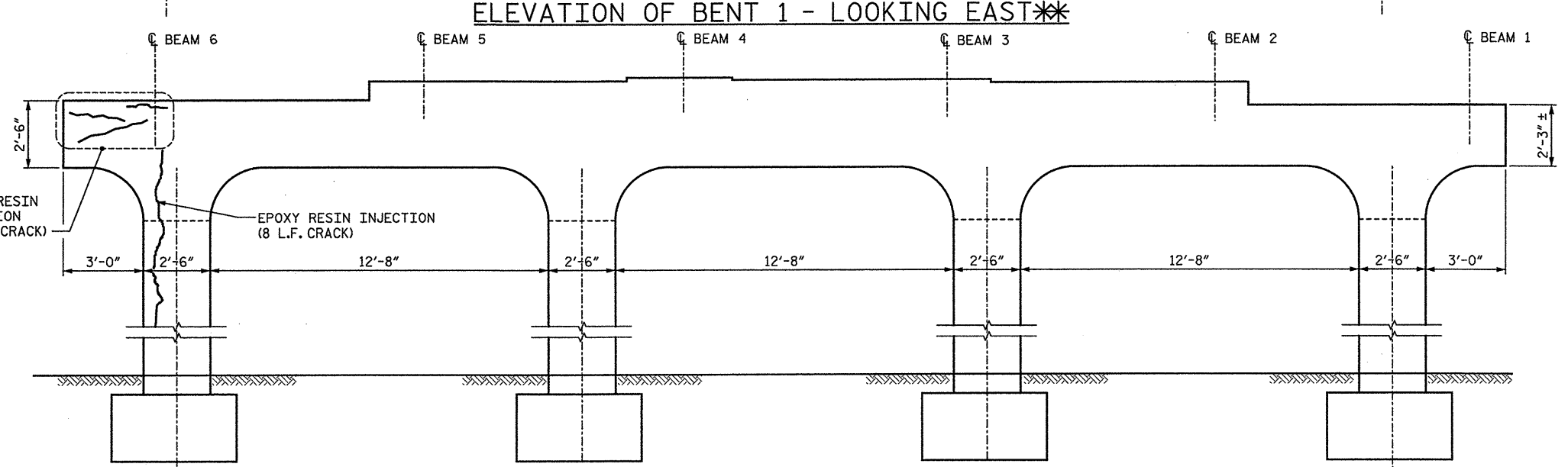
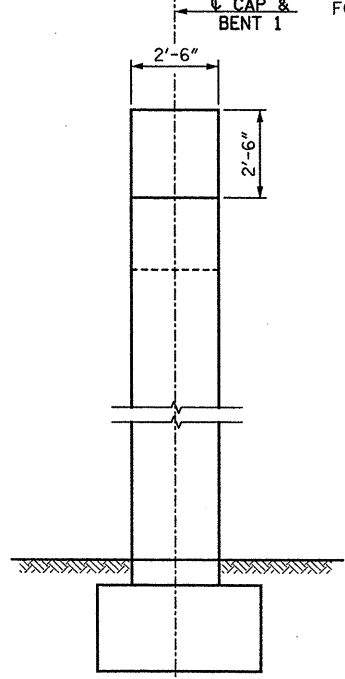
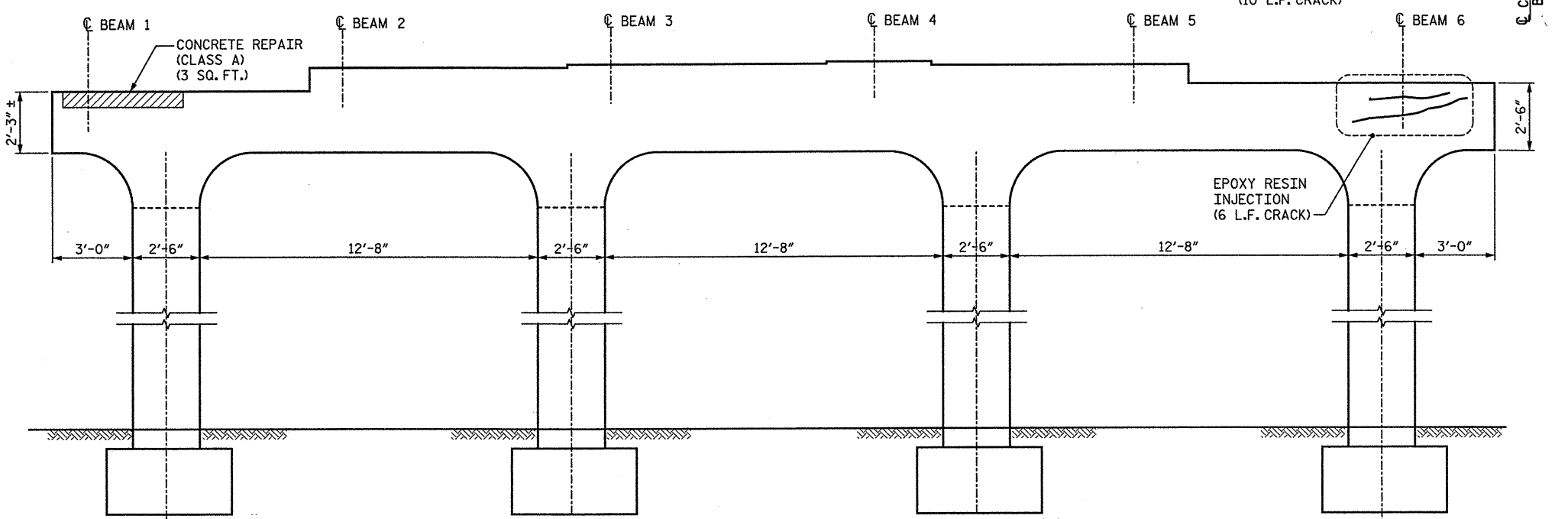
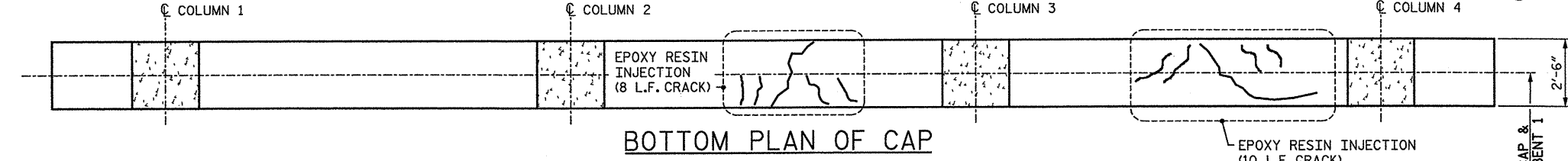
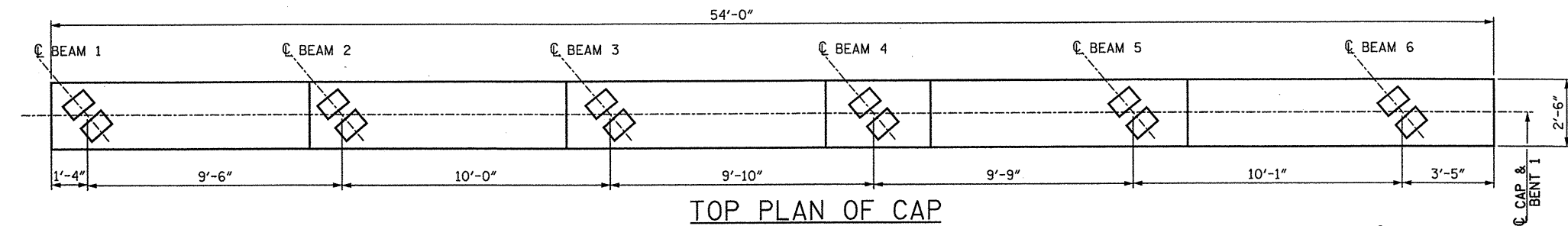
FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.

SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.

THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COST.

DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.

FOR ADDITIONAL NOTES, SEE SHEET 1 OF 11.



CONCRETE REPAIR (CLASS A)

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 5 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 1
 BRIDGE ON I-277 NBL
 OVER I-77



2/23/12

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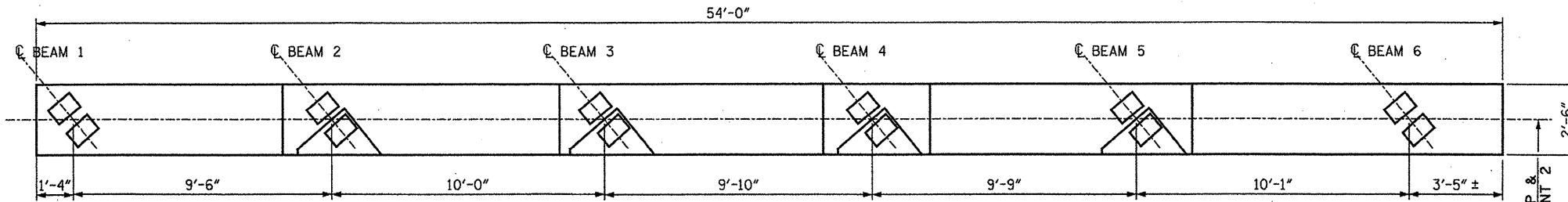
**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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 NC License No. F-0991

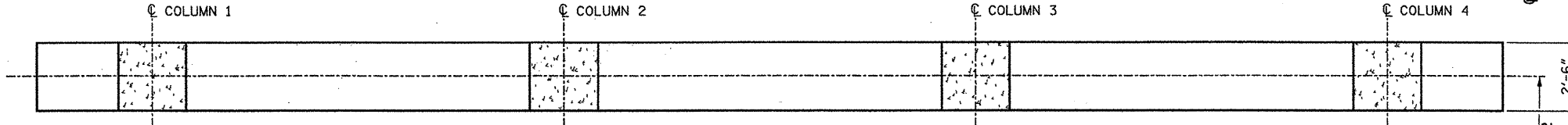
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 1/13/2012

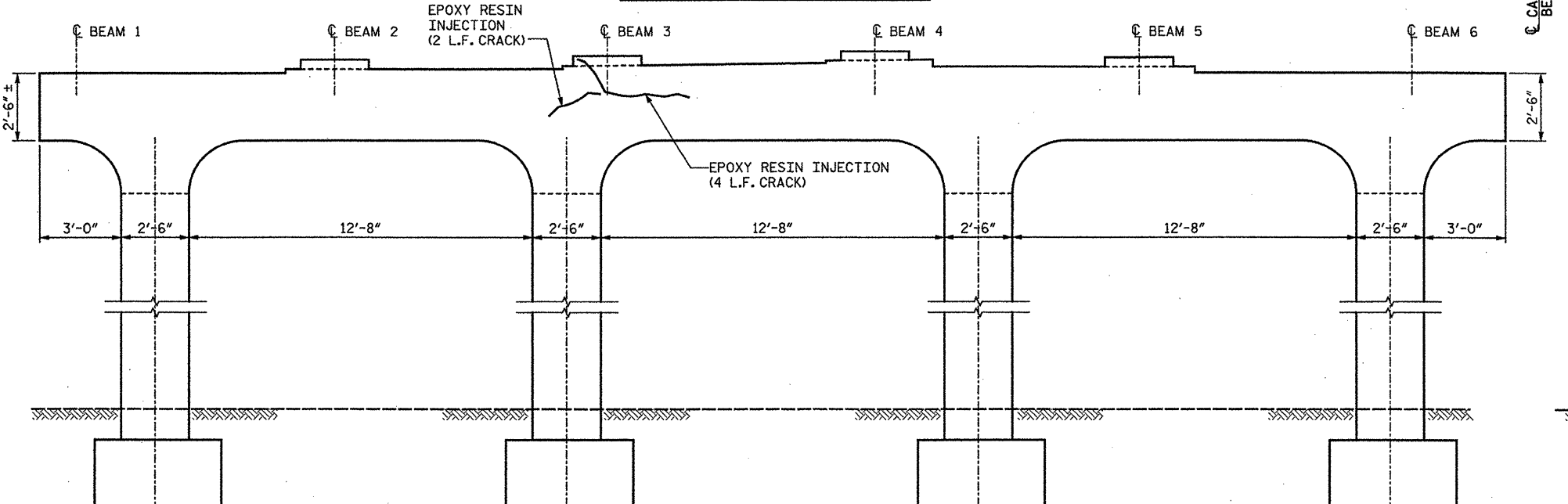
NOTES:
 FOR NOTES SEE SHEET 5 OF 11.



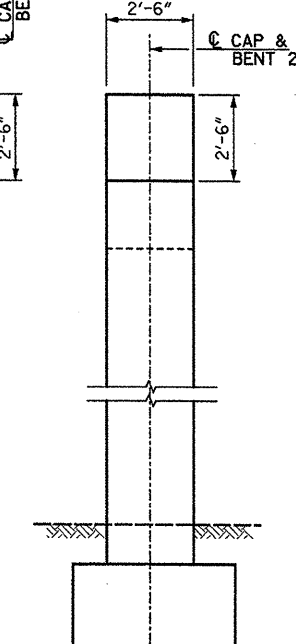
TOP PLAN OF CAP



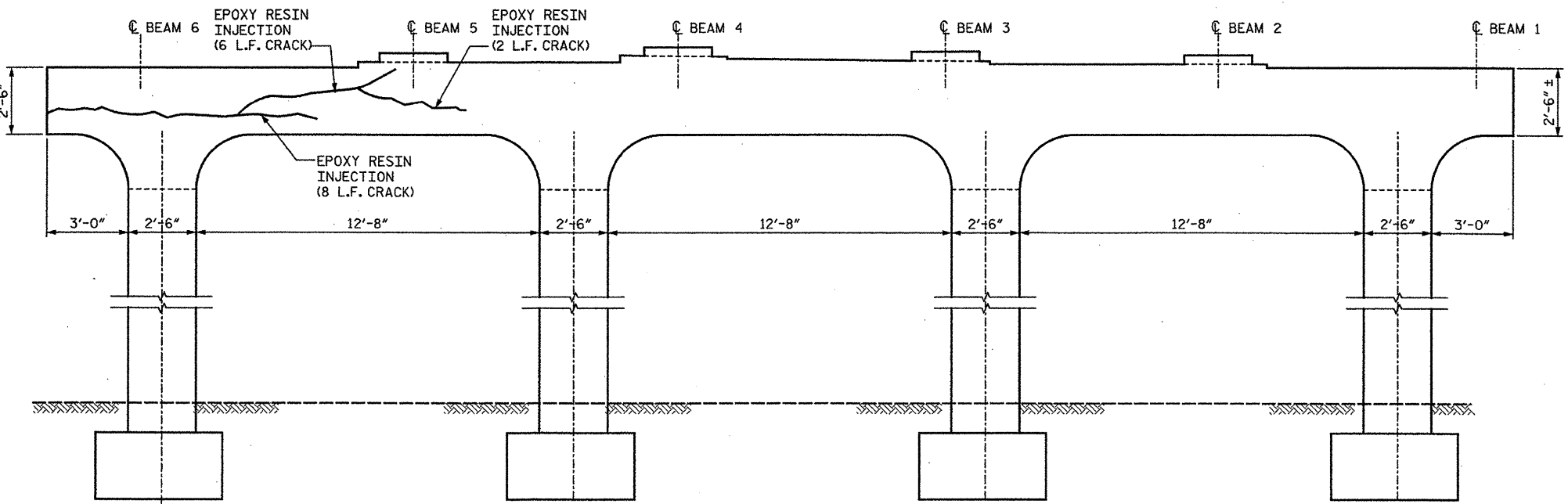
BOTTOM PLAN OF CAP



ELEVATION OF BENT 2 - LOOKING EAST**



END ELEVATION



ELEVATION OF BENT 2 - LOOKING WEST**

DRAWN BY : RH DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

**LOOKING DIRECTION CORRESPONDS WITH
 DIRECTION OF TRAVEL ALONG ROADWAY.

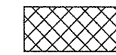
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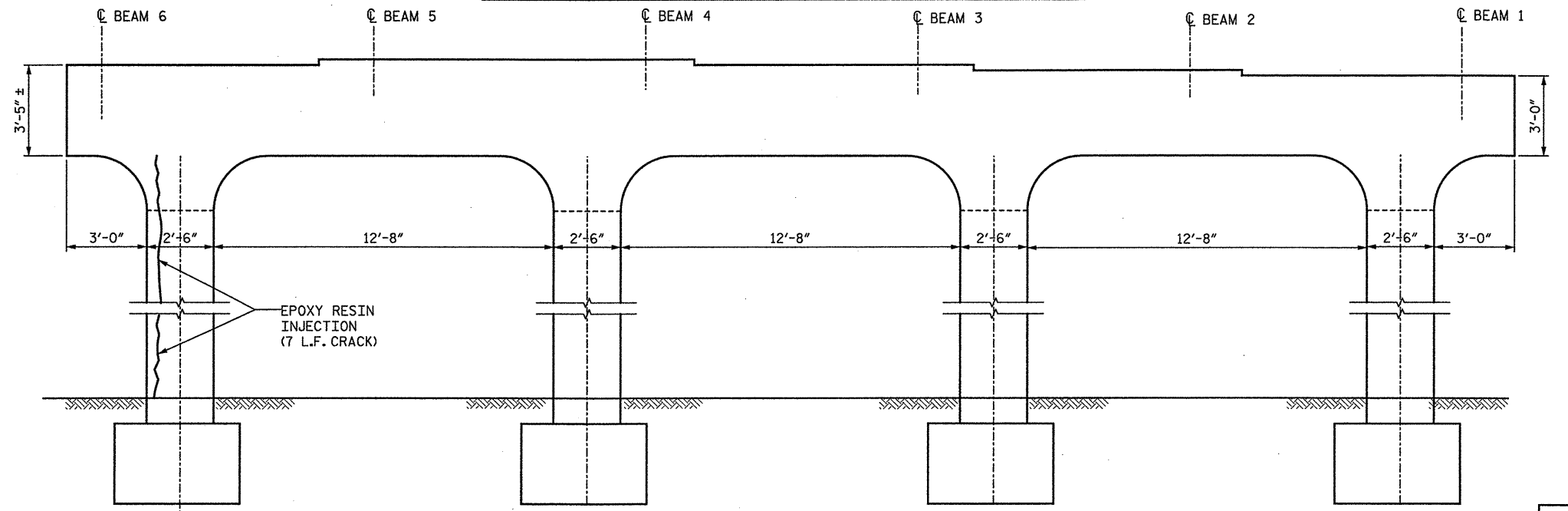
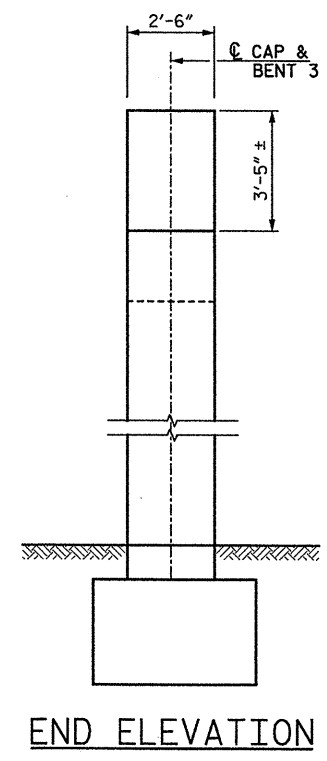
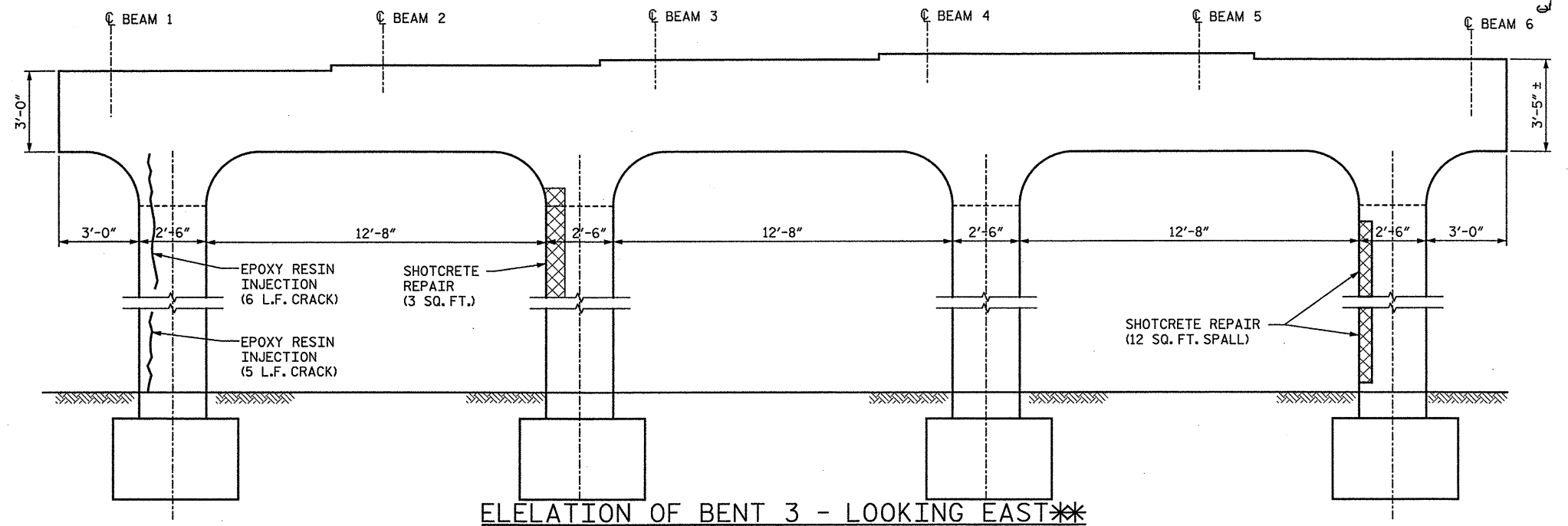
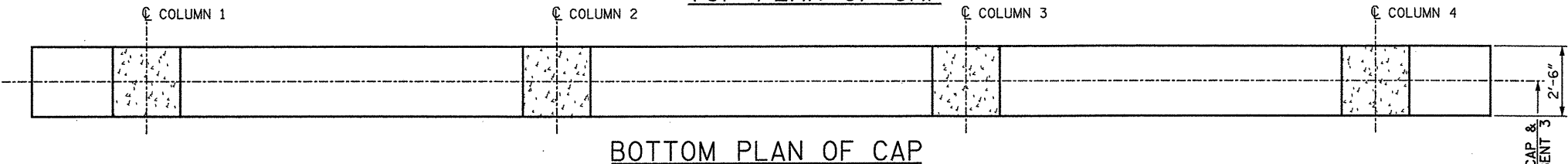
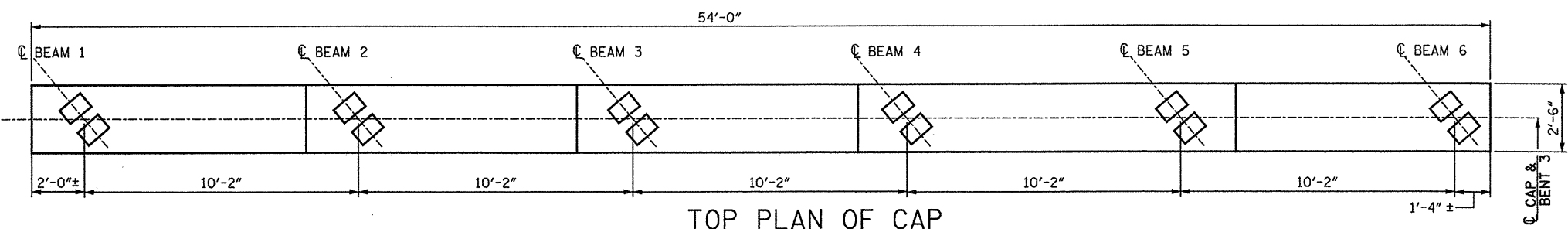


PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 6 OF 11
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE REPAIRS
 BENT 2
 BRIDGE ON I-277 NBL
 OVER I-77

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1			3			S-39	
2			4			S-88	

NOTES:
FOR NOTES SEE SHEET 5 OF 11.

 SHOTCRETE REPAIR



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 7 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 3
 BRIDGE ON I-277 NBL
 OVER I-77



DRAWN BY : RH DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

ELEVATION OF BENT 3 - LOOKING WEST**

** LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

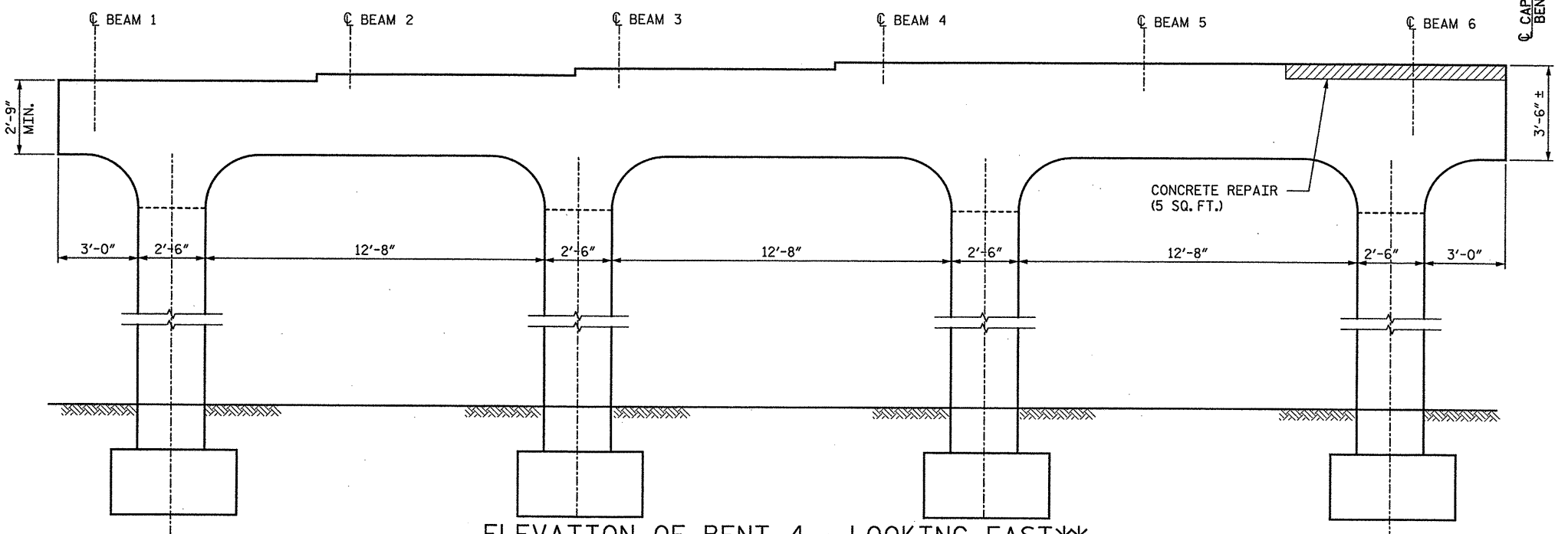
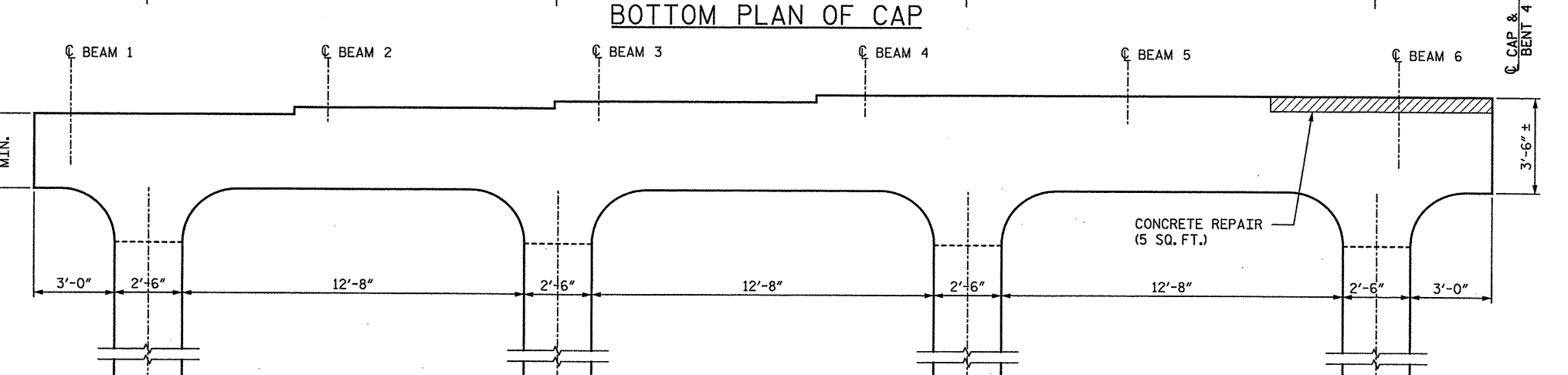
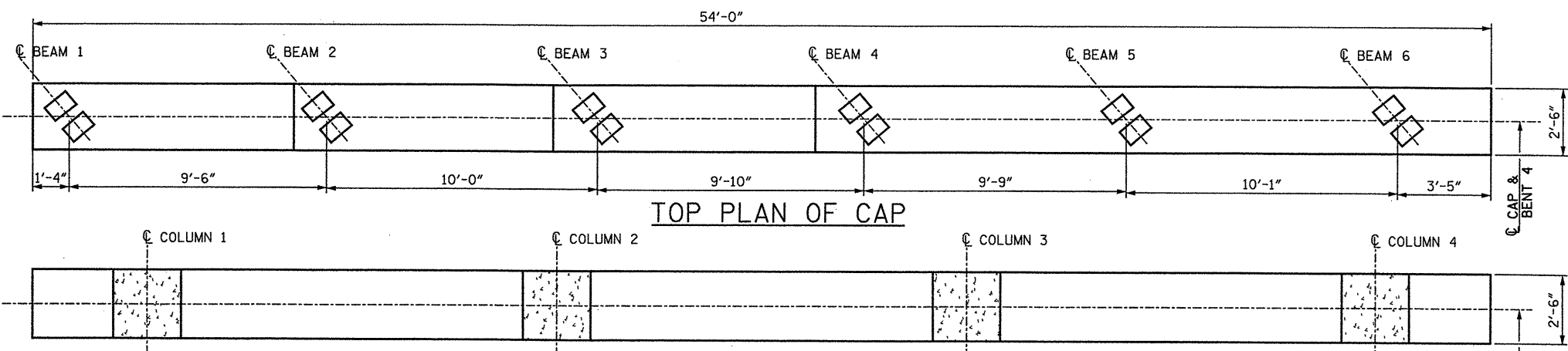
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REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

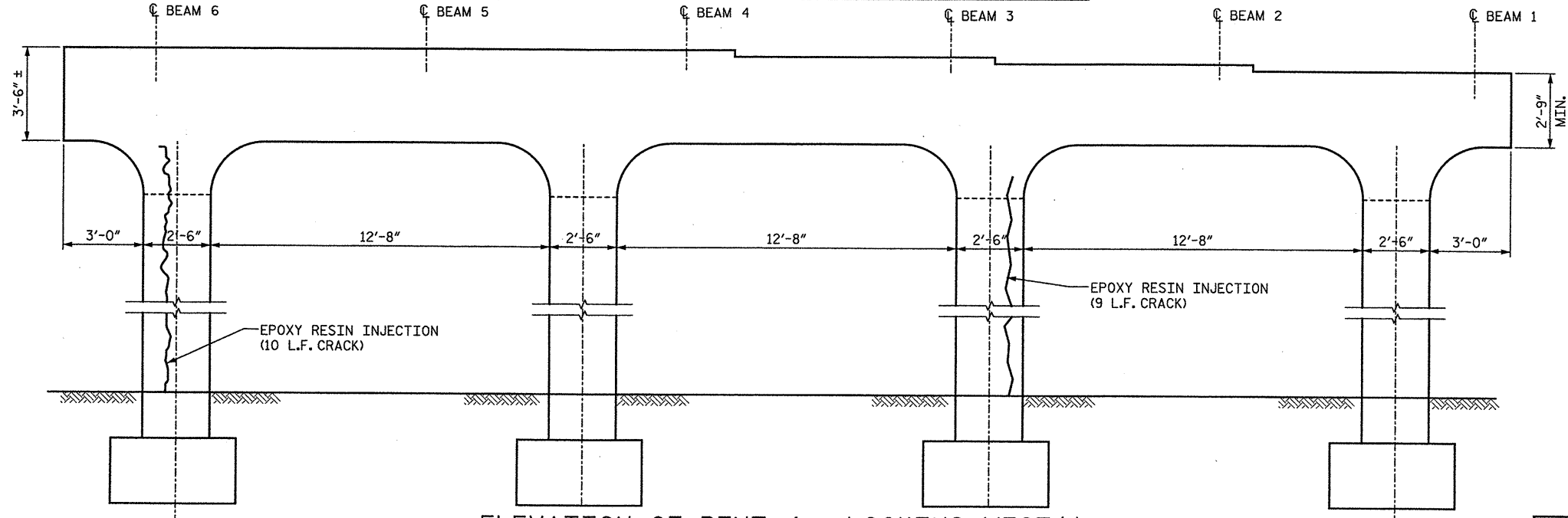
TOTAL SHEETS: S-88

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 2/22/2012



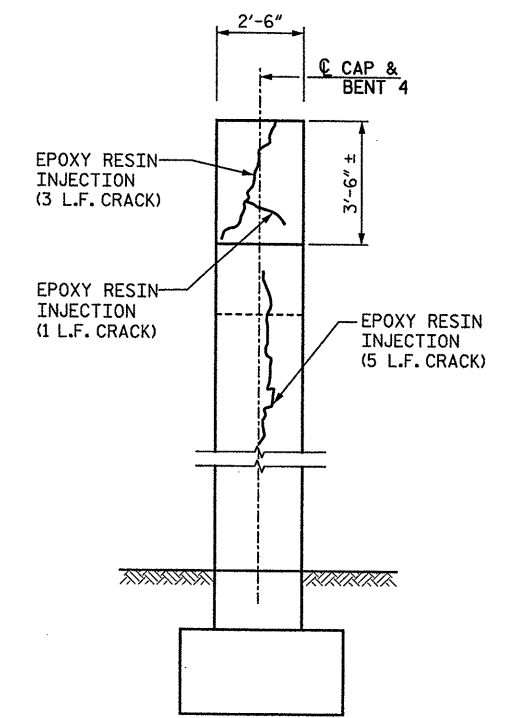
ELEVATION OF BENT 4 - LOOKING EAST**



ELEVATION OF BENT 4 - LOOKING WEST**



NOTES:
FOR NOTES SEE SHEET 5 OF 11.



END ELEVATION

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 8 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 4
 BRIDGE ON I-277 NBL
 OVER I-77



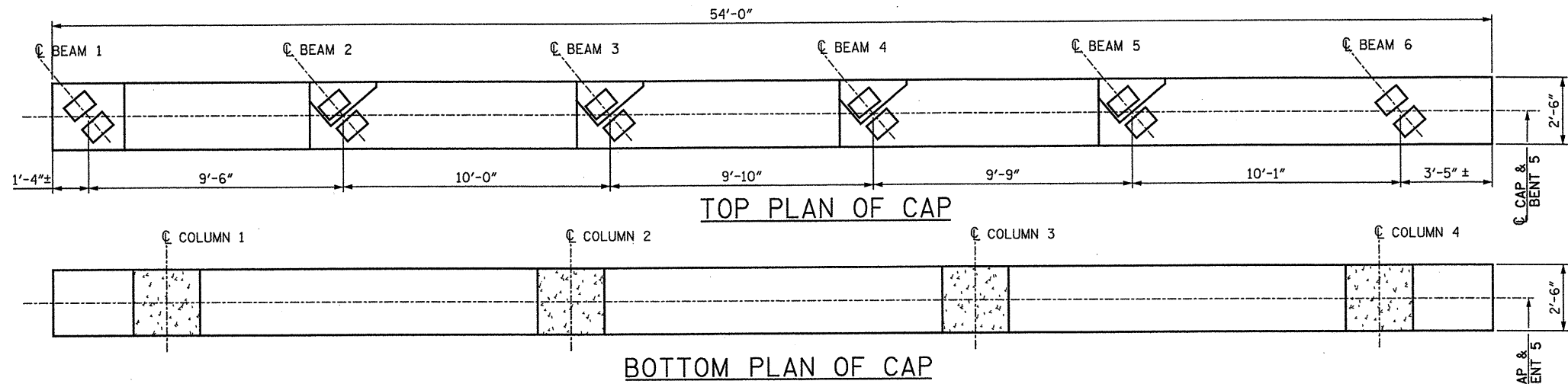
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 CHECKED BY : OA DATE : 1/5/12

** LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-41	
1			3			TOTAL SHEETS	
2			4			S-88	

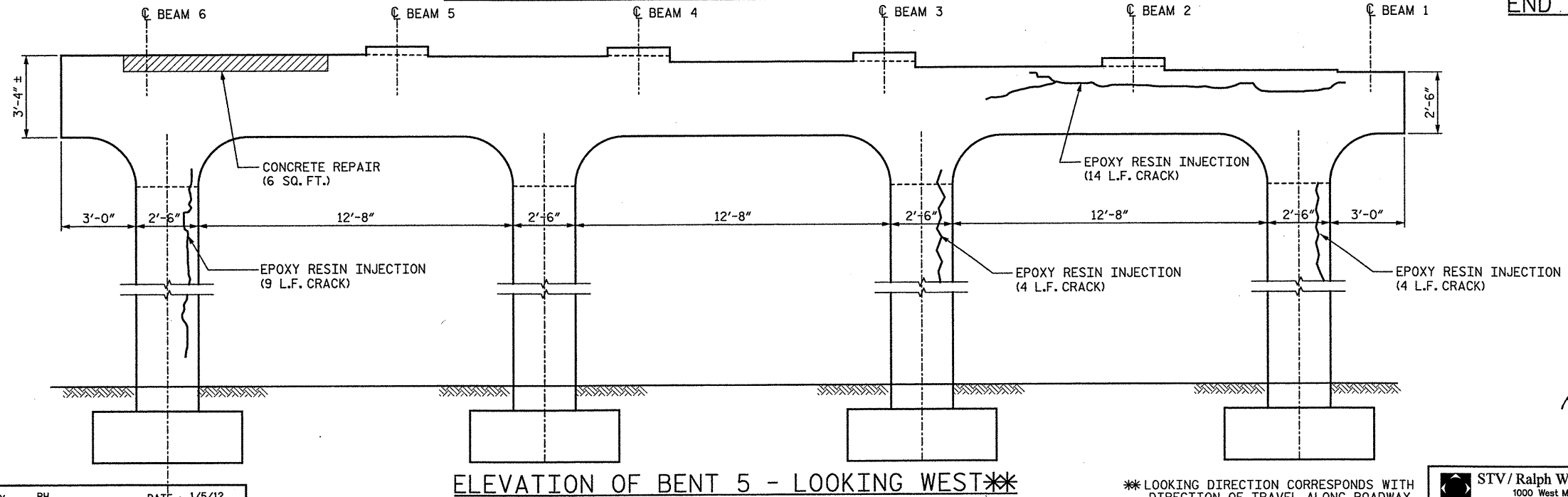
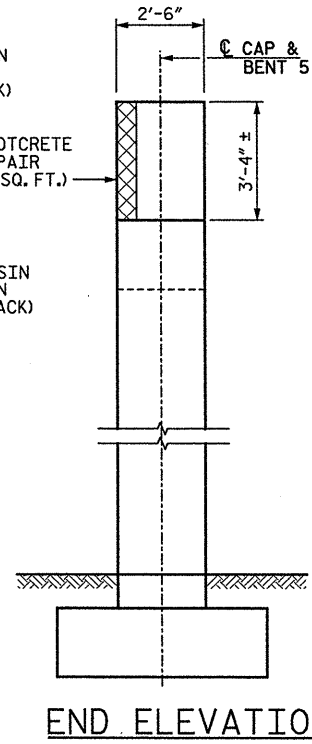
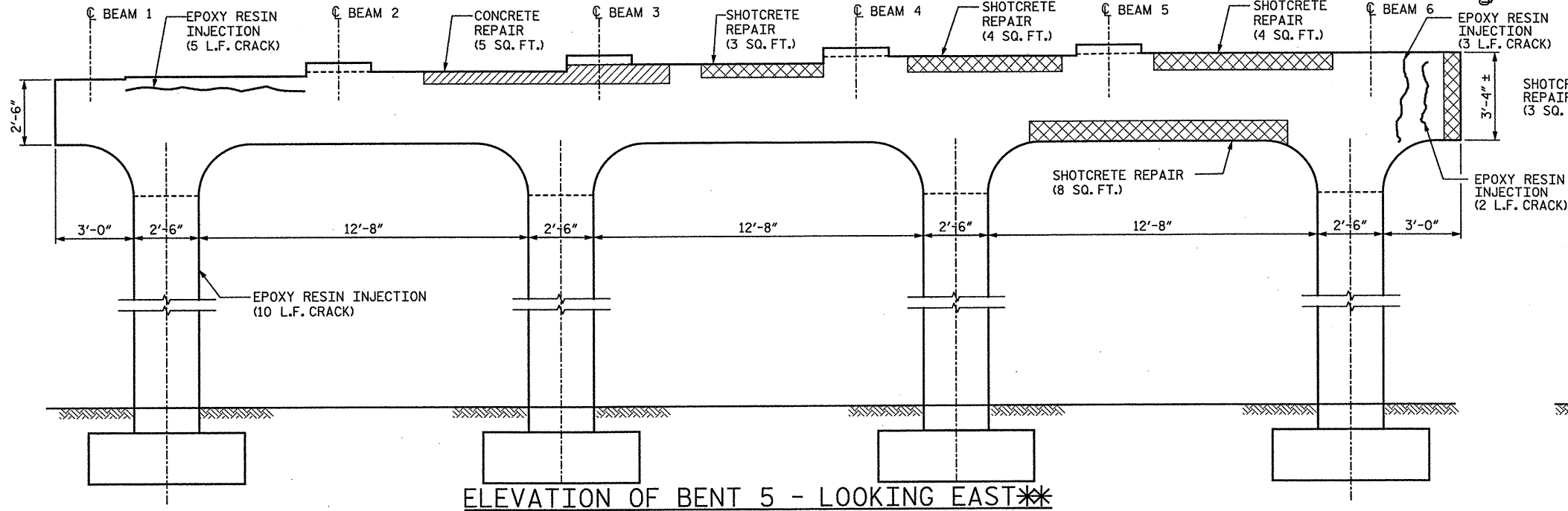
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2/23/2012
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NOTES:

FOR NOTES SEE SHEET 5 OF 11.

- CONCRETE REPAIR (CLASS A)
- SHOTCRETE REPAIR



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
BRIDGE NO.: 44
REHAB. OF BRIDGE NO. 44 SHEET 9 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE REPAIRS
BENT 5
BRIDGE ON I-277 NBL
OVER I-77



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CHECKED BY : OA DATE : 1/5/12

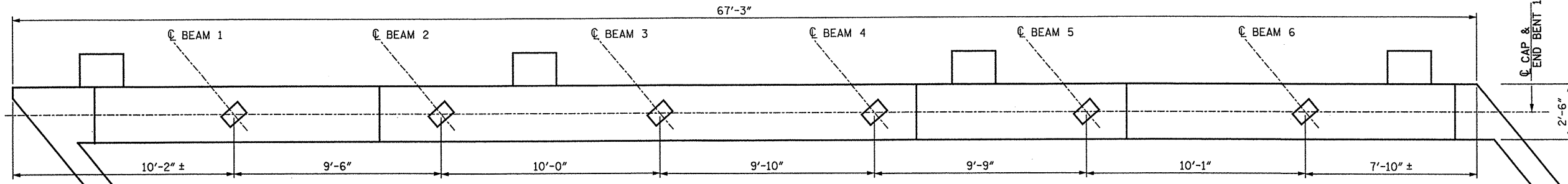
**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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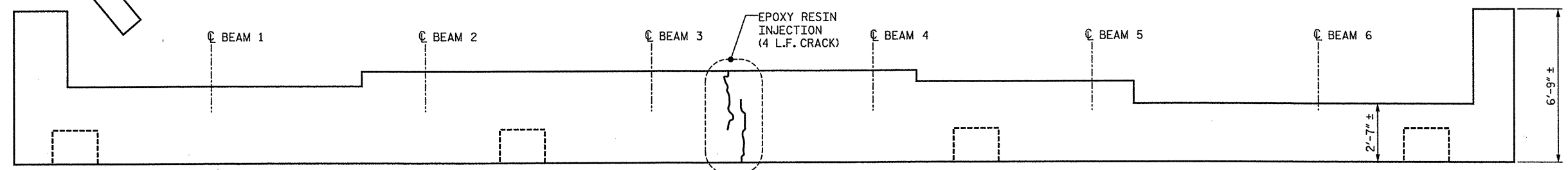
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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TOTAL SHEETS S-88

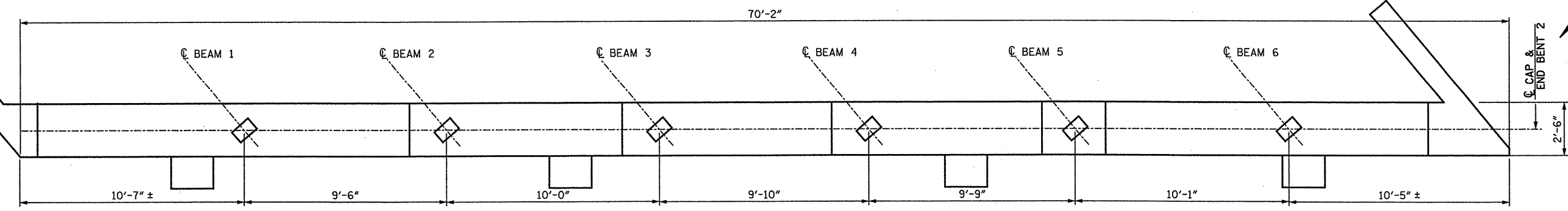
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2/23/2012



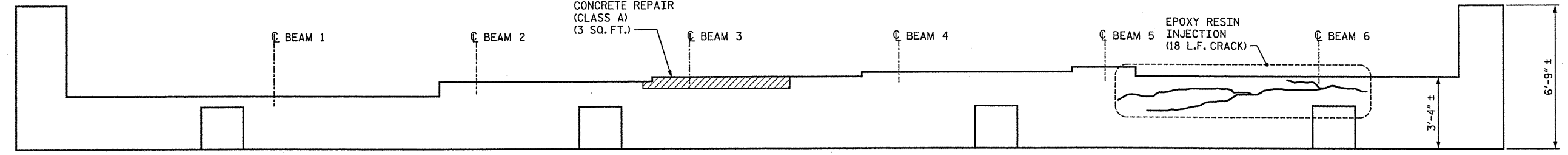
PLAN END BENT 1



ELEVATION END BENT 1



PLAN END BENT 2



ELEVATION END BENT 2

CONCRETE REPAIR

NOTES:
FOR NOTES SEE SHEET 5 OF 11.

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 10 OF 11



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 END BENTS 1 & 2
 BRIDGE ON I-277 NBL
 OVER I-77

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-43
1			3			TOTAL SHEETS
2			4			S-88

FOAM JOINT NOTES:

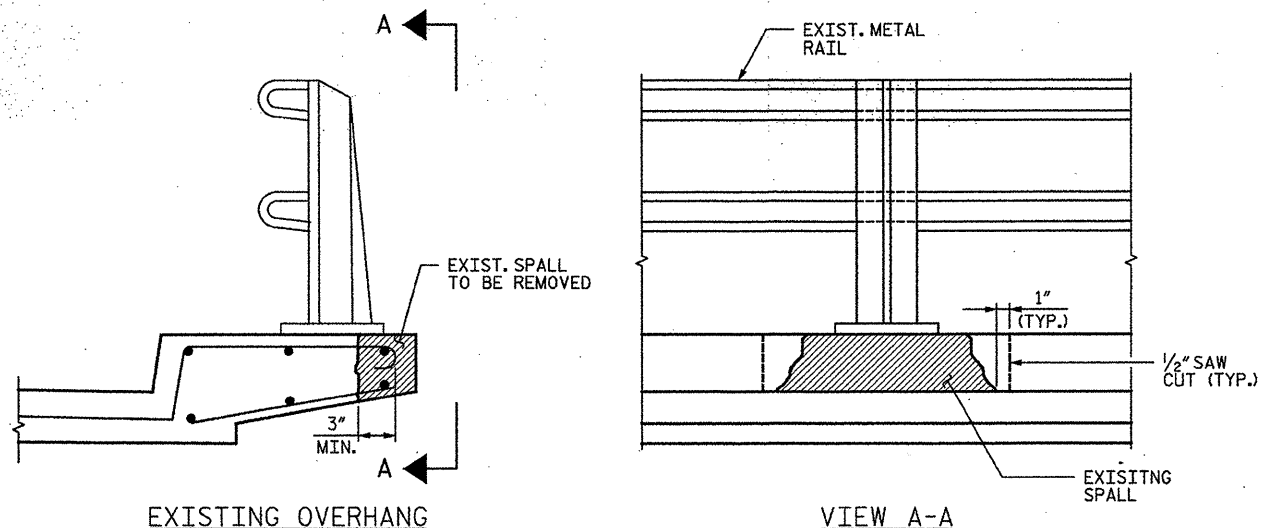
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.

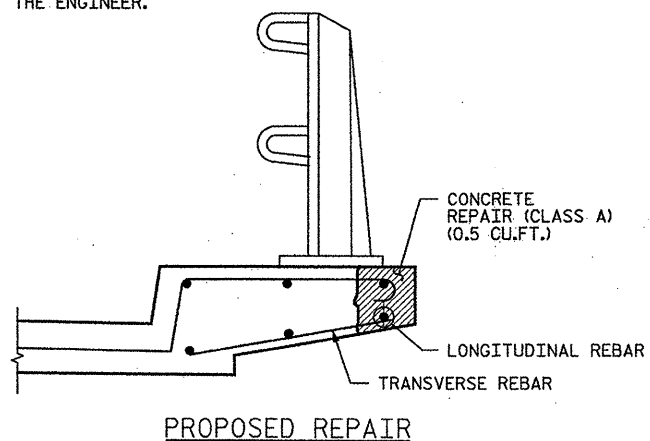
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



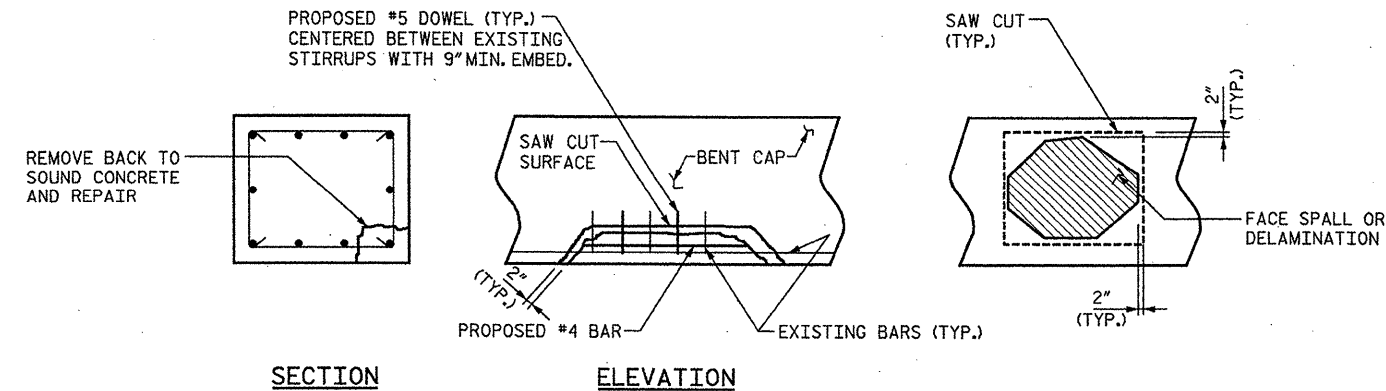
EXISTING OVERHANG
(REMOVE CONCRETE A MINIMUM 3" DEPTH BEYOND EXISTING REINFORCEMENT. REMOVAL DEPTH SHALL BE INCREASED AS NECESSARY TO REACH SOUND CONCRETE, OR AS DIRECTED BY THE ENGINEER.)



DECK REPAIR UNDER RAILING POST

NOTE: PAYMENT FOR DECK REPAIR UNDER RAILING POST SHALL BE MADE UNDER THE CONTRACT PAY ITEM FOR CONCRETE REPAIR.

REPAIR AREAS SHALL EXPOSE A MINIMUM OF FOUR TRANSVERSE BARS AND TWO LONGITUDINAL BARS WITHIN THE REPAIR ZONE. IF EXISTING STEEL IS NOT ENCOUNTERED AS NOTED ABOVE, CONTRACTOR SHALL INSTALL ADHESIVELY ANCHORED REINFORCING AND LONGITUDINAL STEEL AS NOTED.



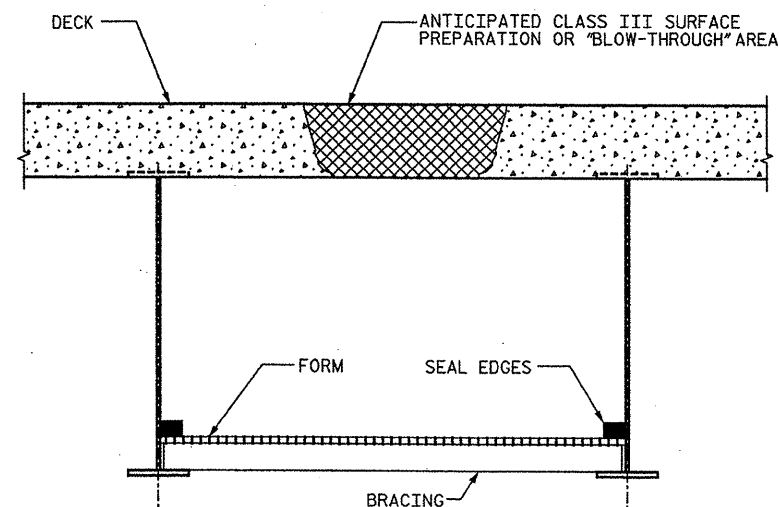
CORNER REPAIR

FACE REPAIR

TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTES:

1. CONTRACTOR SHALL SAWCUT TO A MAXIMUM DEPTH OF 1/2".
2. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.
3. FOR ADDITIONAL NOTES, SEE SHEET 5 OF 11.



TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK

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

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

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



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 44
 REHAB. OF BRIDGE NO. 44 SHEET 11 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

REPAIR DETAILS

BRIDGE ON I-277 NBL
 OVER I-77

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

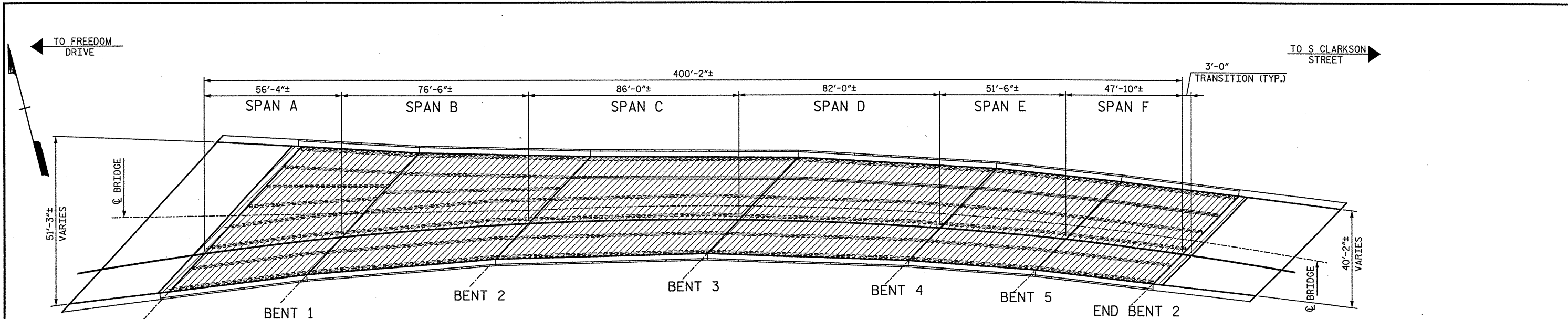
TOTAL SHEETS: S-88

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 1/13/2012
 peter.j

DRAWN BY: SC DATE: 1/5/12
 CHECKED BY: CJ DATE: 1/5/12

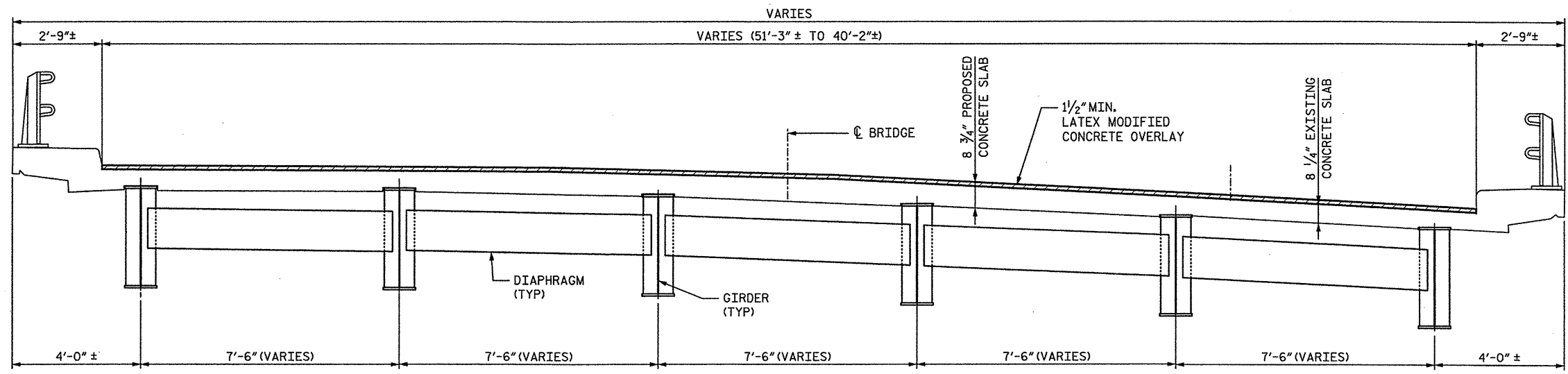
STV/Ralph Whitehead Associates, Inc.
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 NC License No. F-0991

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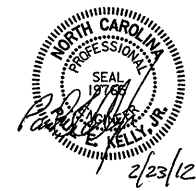
PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION
 NOTE: CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS

BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION



TYPICAL SECTION
 (DIMENSIONS SHOWN ARE RADIAL)

- 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 RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
 - LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
 - FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 48
 REHAB. OF BRIDGE NO. 48 SHEET 1 OF 11

BILL OF MATERIAL													
DECK SCARIFICATION	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	EPOXY RESIN INJECTION	SHOTCRETE REPAIR	CONCRETE REPAIR	BRIDGE JACKING	REINFORCING STEEL
SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	L.F.	CU. FT.	CU. FT.	LUMP SUM	LBS.
2076	1902	174	15.1	2076	87	2076	LUMP SUM	16726	201	44	5	LUMP SUM	50

* QUANTITIES FOR INFORMATION ONLY

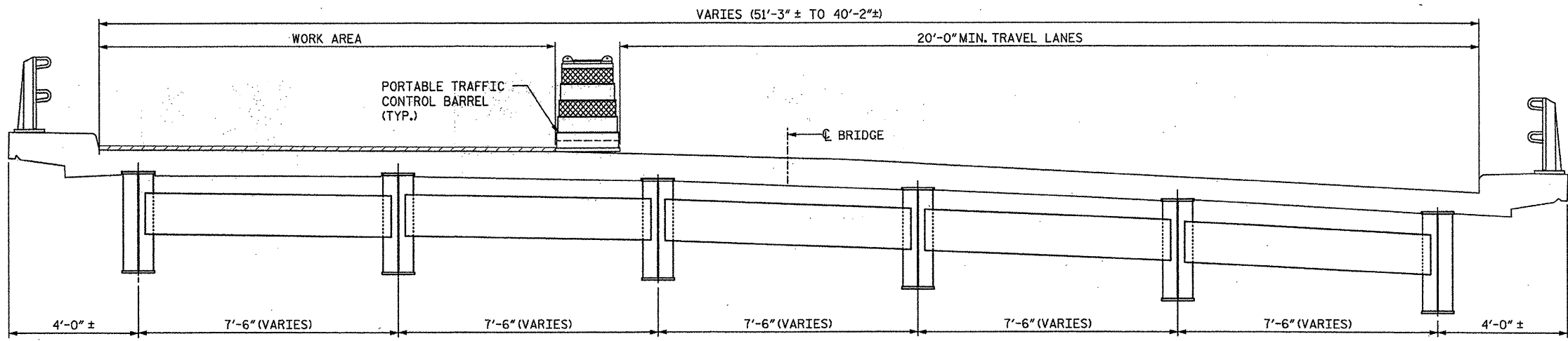
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PLAN OF SPANS & TYPICAL SECTION
 BRIDGE ON I-277 SBL OVER I-77

DRAWN BY: RH DATE: 1/5/12
 CHECKED BY: QA DATE: 1/5/12

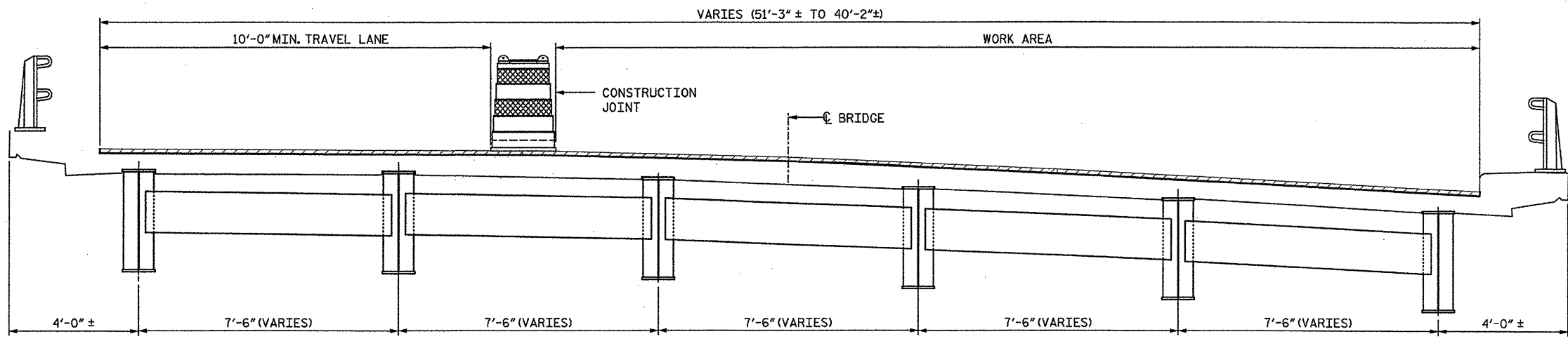
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 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-45
1			3			TOTAL SHEETS
2			4			S-88

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 1/13/2012
 peterj



SECTION - STAGE I



SECTION - STAGE II

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 48
 REHAB. OF BRIDGE NO. 48 SHEET 2 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON I-277 SBL
 OVER I-77

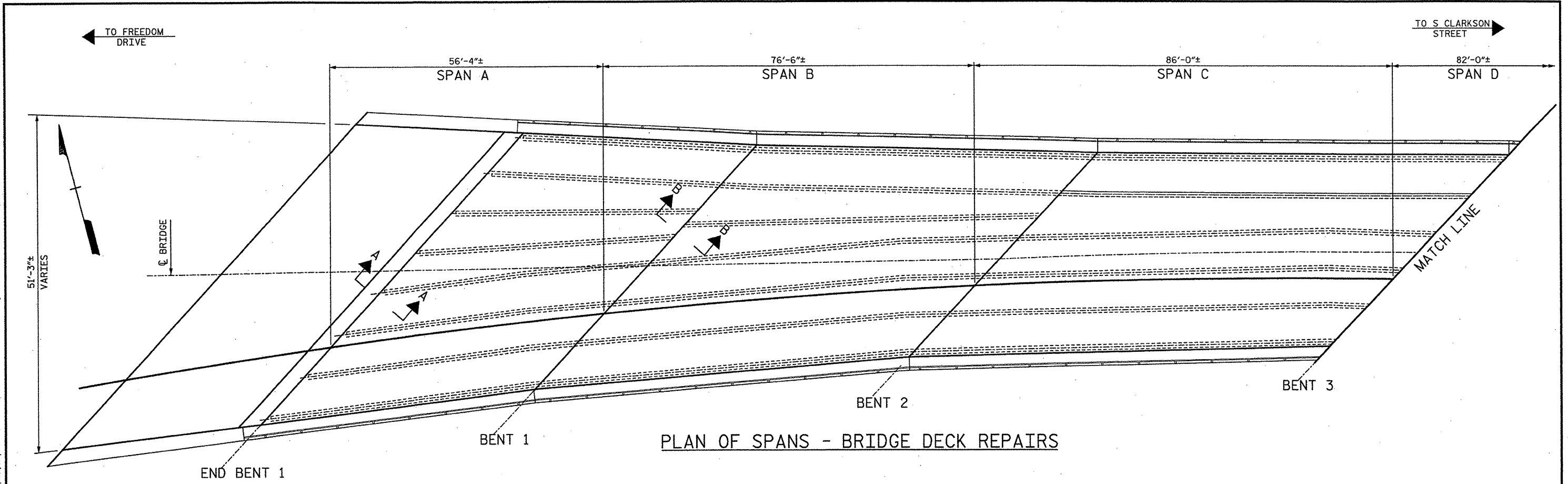


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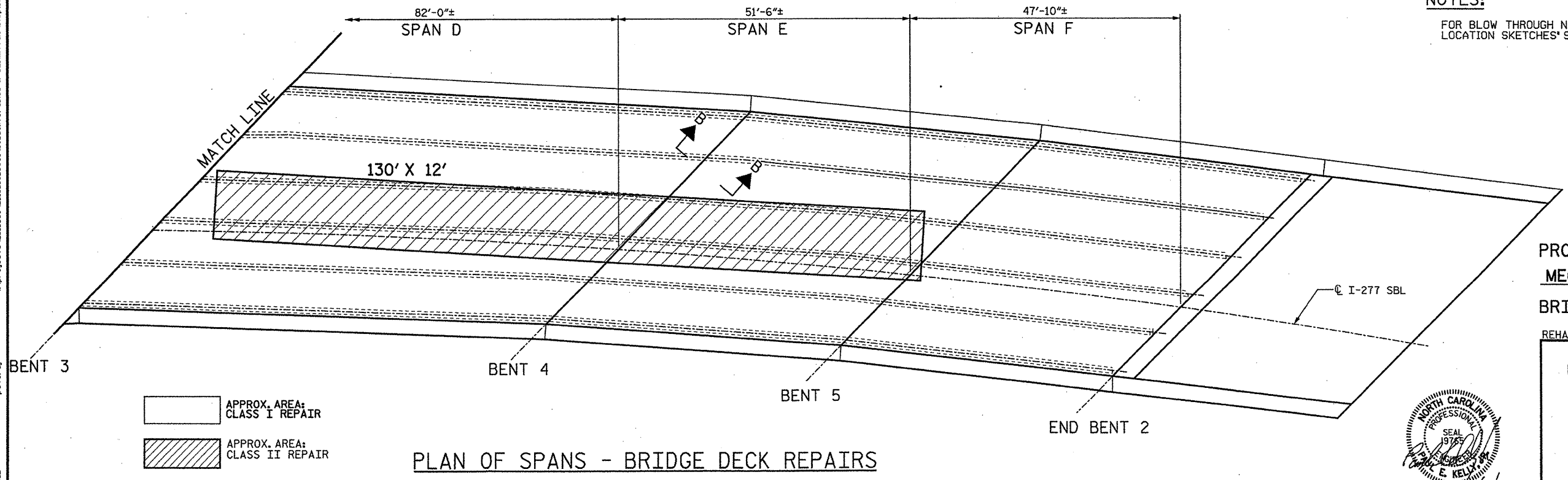
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-46
1			3			TOTAL SHEETS
2			4			S-88

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 1/13/2012



PLAN OF SPANS - BRIDGE DECK REPAIRS



PLAN OF SPANS - BRIDGE DECK REPAIRS

NOTES:
 FOR BLOW THROUGH NOTES, SEE 'GENERAL NOTES AND LOCATION SKETCHES' SHEET.

[White Box] APPROX. AREA: CLASS I REPAIR
 [Hatched Box] APPROX. AREA: CLASS II REPAIR

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 48
 REHAB. OF BRIDGE NO. 48 SHEET 3 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF SPANS
 DECK REPAIRS**
 BRIDGE ON I-277 SBL
 OVER I-77

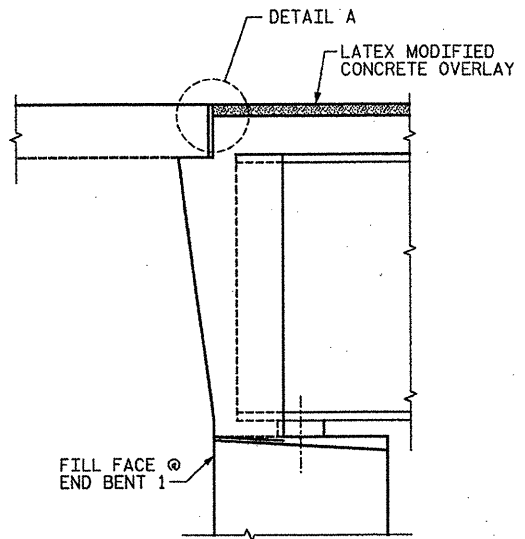


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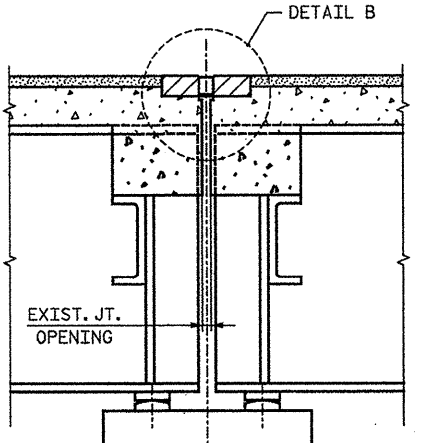
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTAL SHEETS S-88
2			4			

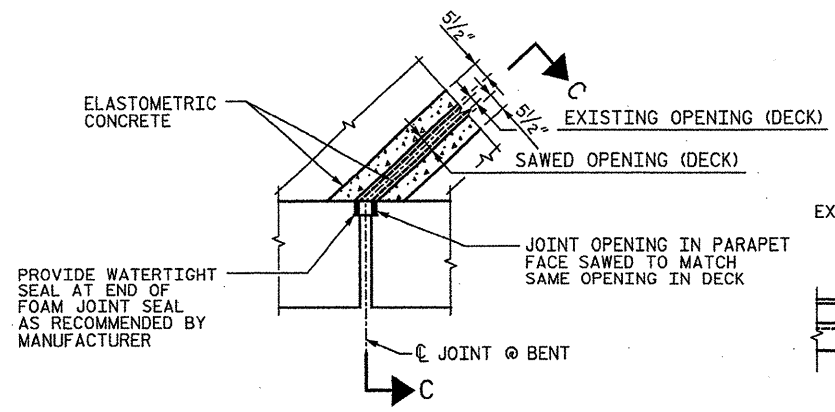
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 1/13/2012
 peter-j



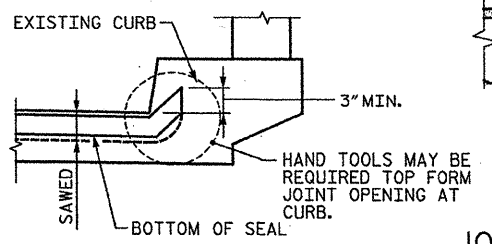
SECTION A-A
(PROPOSED JOINT @ END BENTS)



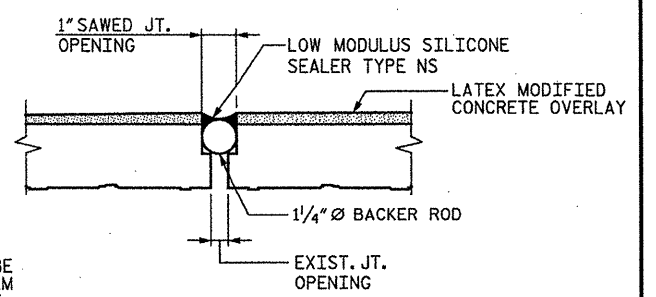
SECTION B-B
(PROPOSED JOINT @ INTERIOR BENTS)



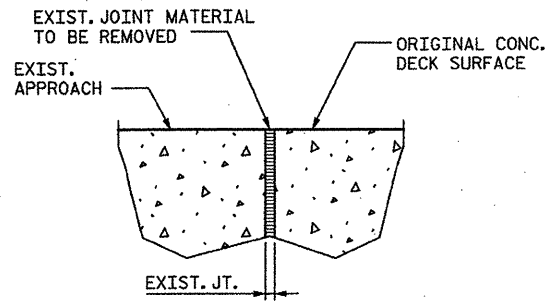
PLAN OF JOINT SEAL AT CURB



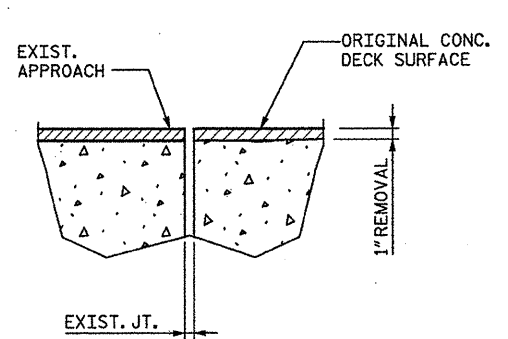
SECTION C-C



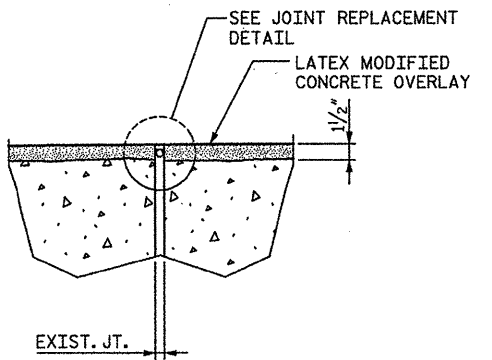
JOINT REPLACEMENT DETAIL



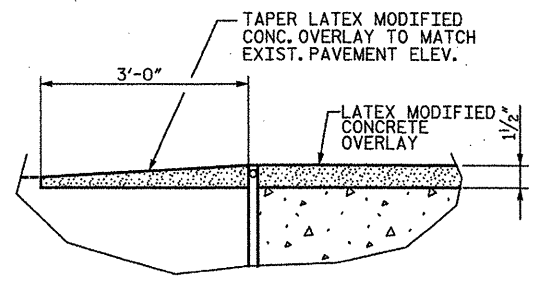
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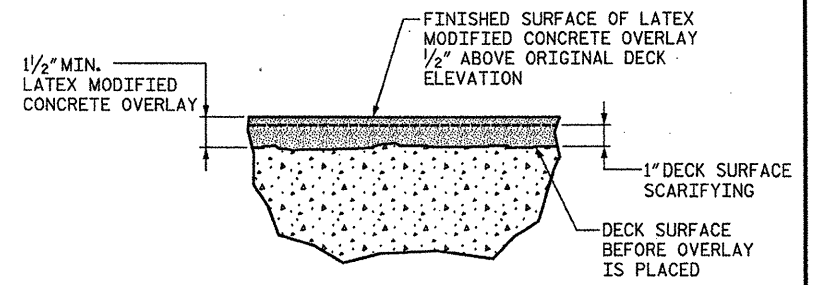
MIN. EXISTING JOINT DEMOLITION



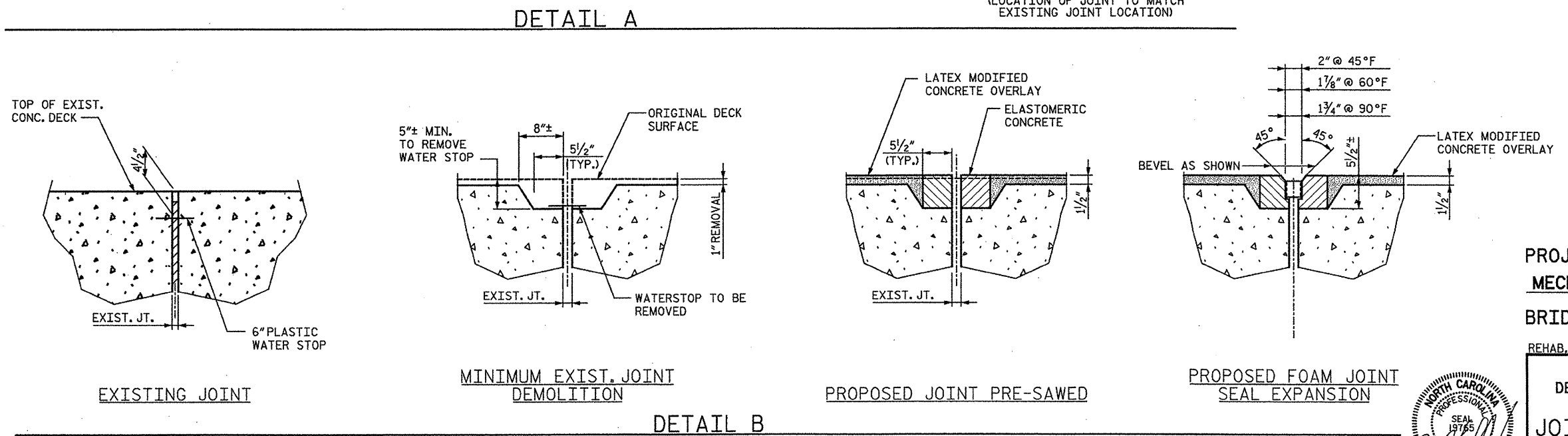
PROPOSED JOINT



PROPOSED JOINT TRANSITION
(LOCATION OF JOINT TO MATCH EXISTING JOINT LOCATION)



LATEX MODIFIED CONCRETE OVERLAY DETAIL



DETAIL A

DETAIL B

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	29.2
2	24.4
3	22.6
4	21.6
5	21.1
TOTAL	118.9

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
BRIDGE NO.: 48
 REHAB. OF BRIDGE NO. 48 SHEET 4 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
JOINT REPAIR DETAILS
 BRIDGE ON I-277 SBL
 OVER I-77



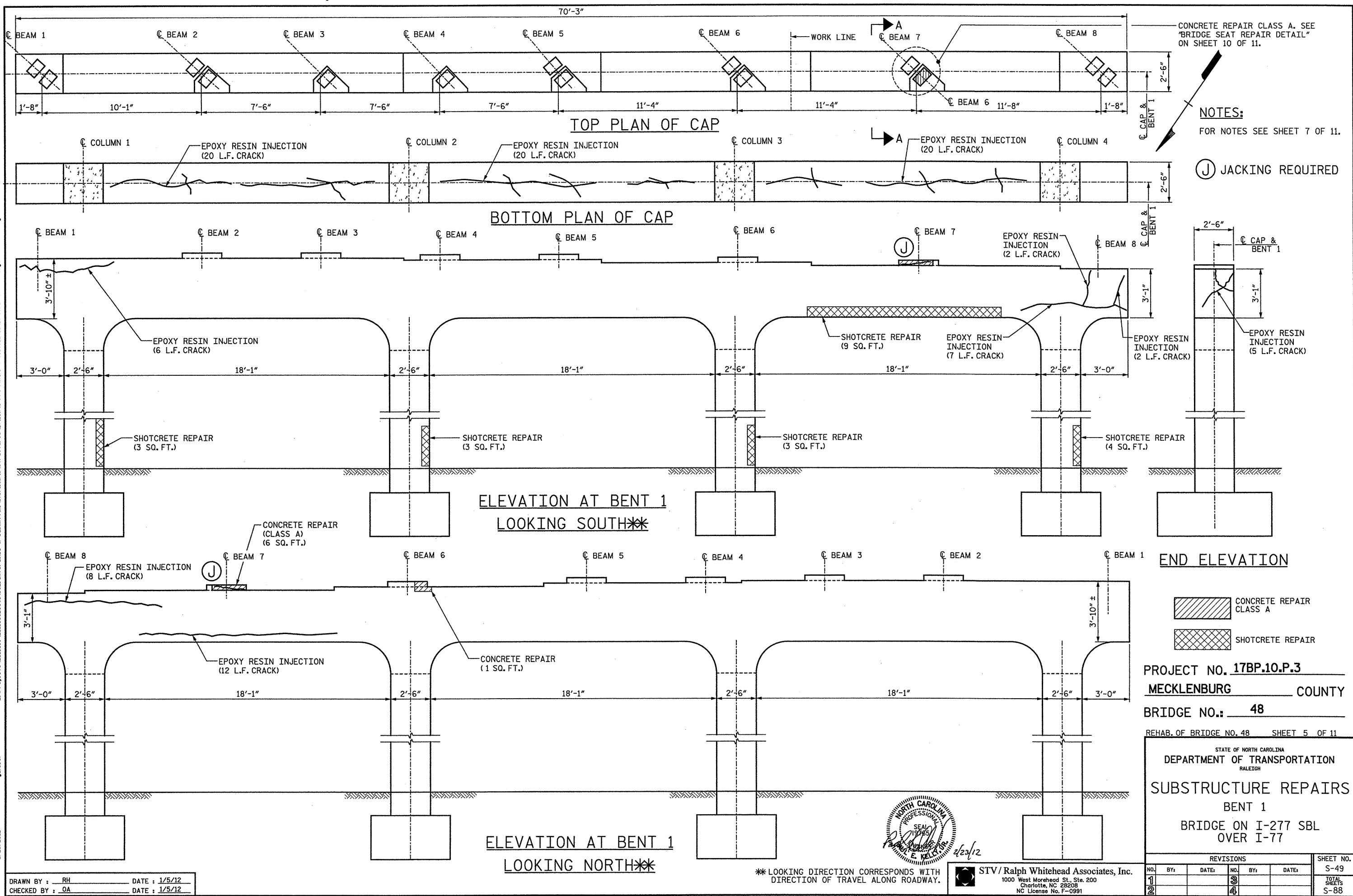
NOTES:
 SEE SHEET 10 OF 11 FOR JOINT NOTES.

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1			3	
2			4	

TOTAL SHEETS: S-88



CONCRETE REPAIR CLASS A. SEE "BRIDGE SEAT REPAIR DETAIL" ON SHEET 10 OF 11.

NOTES:
FOR NOTES SEE SHEET 7 OF 11.

(J) JACKING REQUIRED

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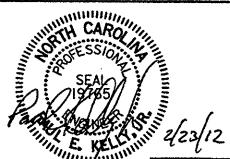
- CONCRETE REPAIR CLASS A
- SHOTCRETE REPAIR

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 48
 REHAB. OF BRIDGE NO. 48 SHEET 5 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 1
 BRIDGE ON I-277 SBL
 OVER I-77

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-49	
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2			4				

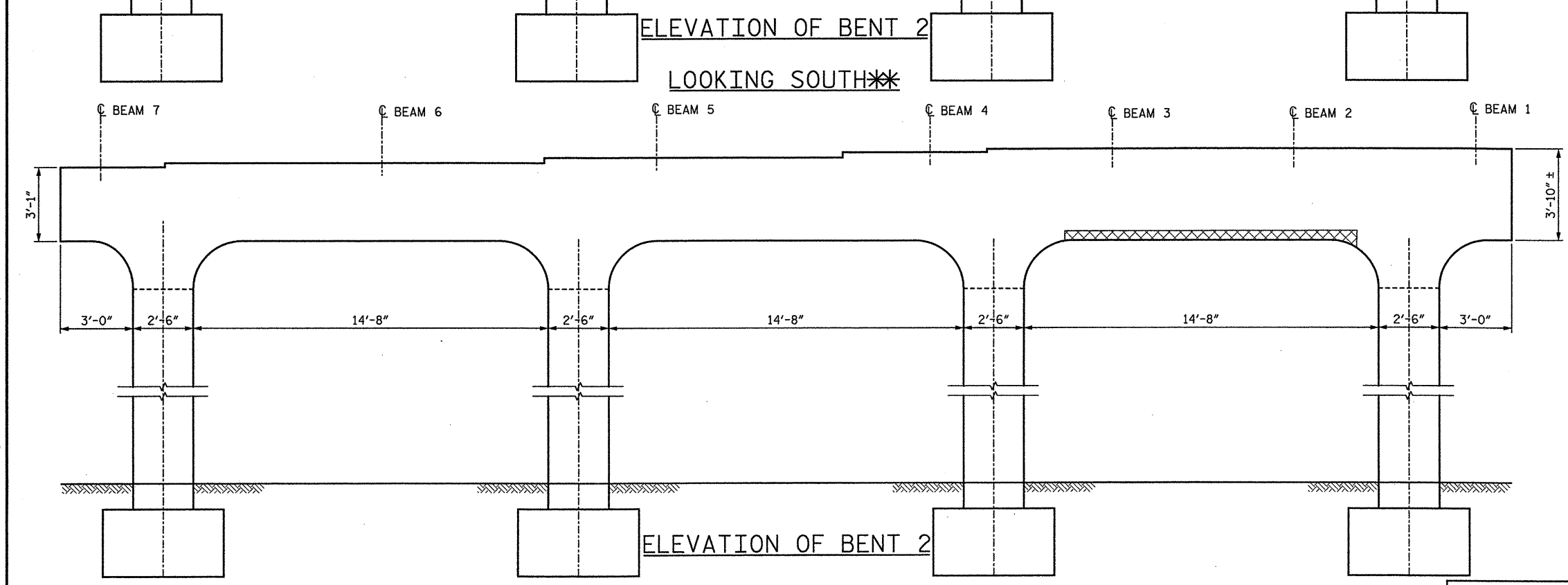
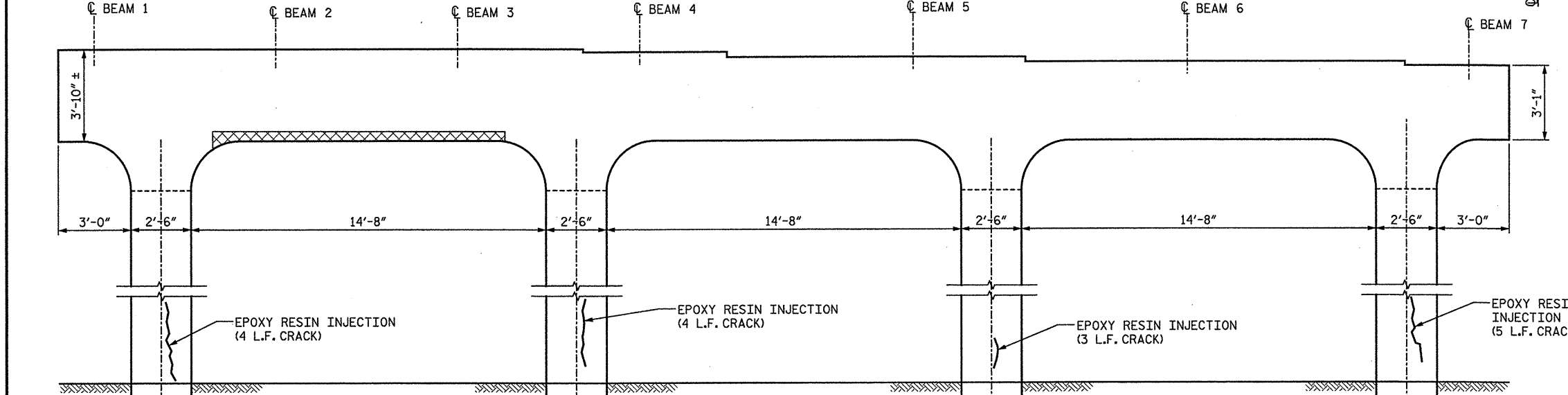
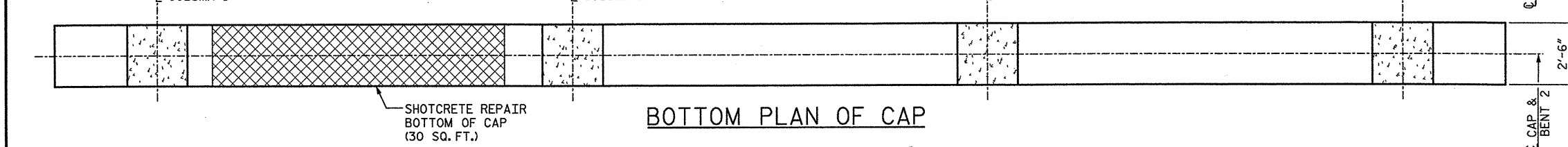
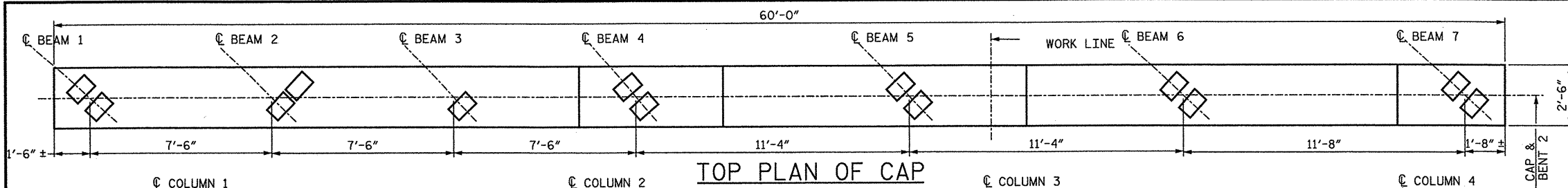
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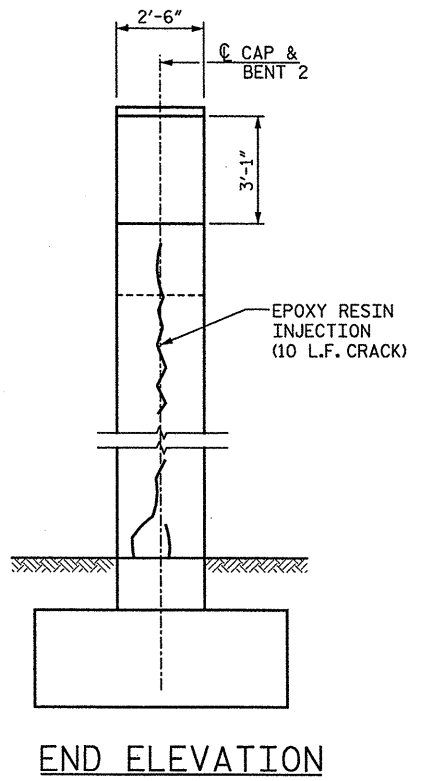
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2/23/2012



NOTES:
FOR NOTES SEE SHEET 7 OF 11.

SHOTCRETE REPAIR



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 48

REHAB. OF BRIDGE NO. 48 SHEET 6 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 2
 BRIDGE ON I-277 SBL
 OVER I-77



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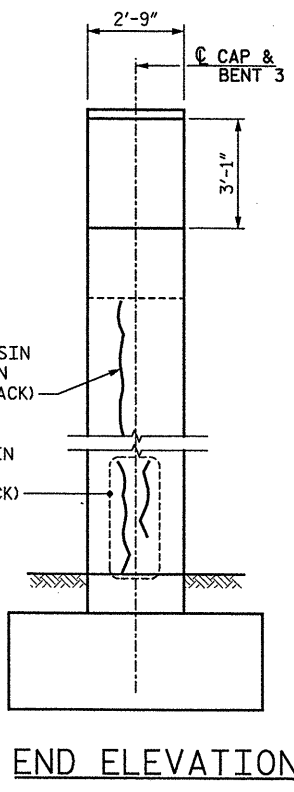
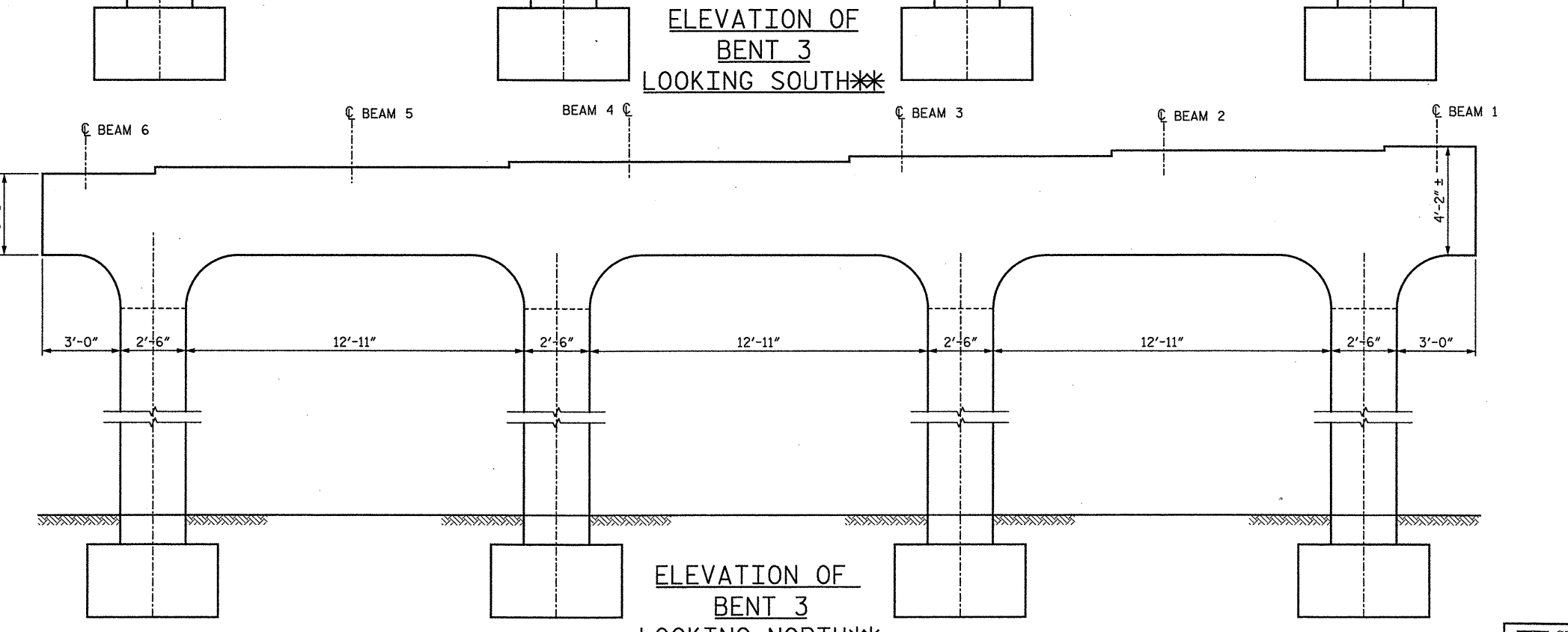
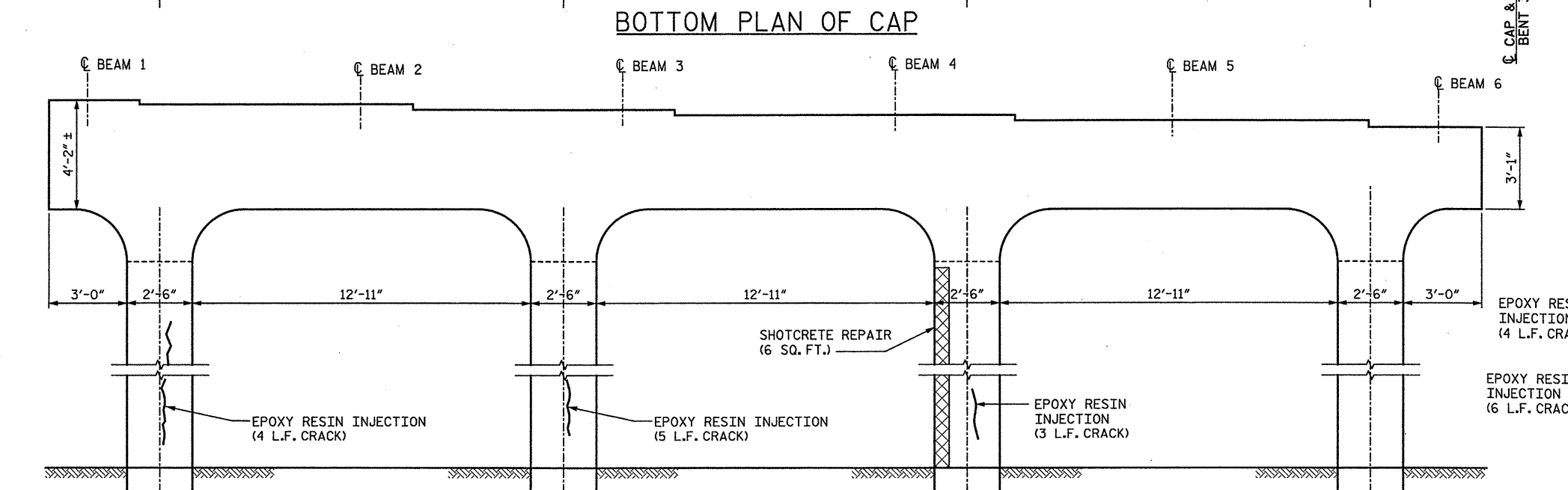
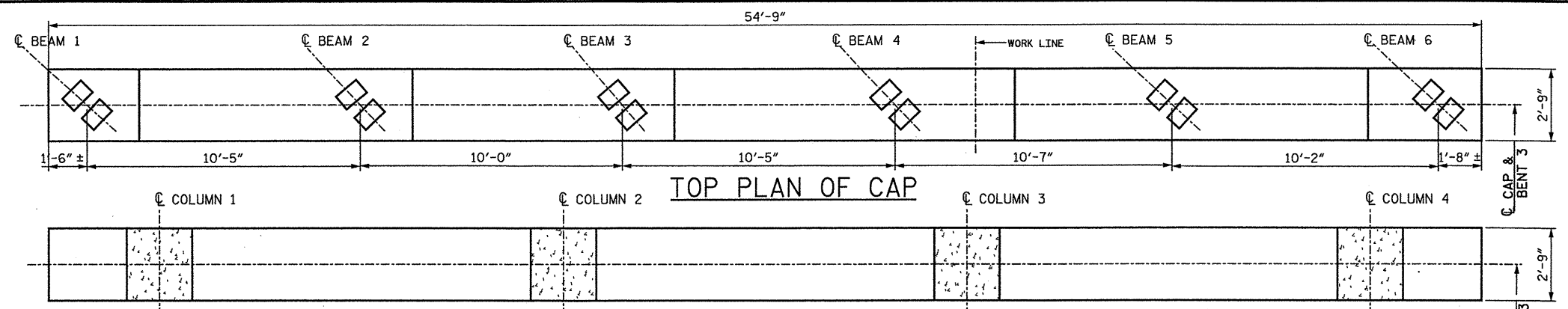
LOOKING NORTH**

**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-50
1			3			TOTAL SHEETS
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NOTES:
 FOR CONCRETE REPAIR DETAILS, SEE SHEET 10 OF 11.
 CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
 FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
 SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.
 THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COST.
 DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.
 FOR ADDITIONAL NOTES SEE SHEET 1 OF 11.

SHOTCRETE REPAIR

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 48
 REHAB. OF BRIDGE NO. 48 SHEET 7 OF 11
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BENT 3
 BRIDGE ON I-277 SBL
 OVER I-77



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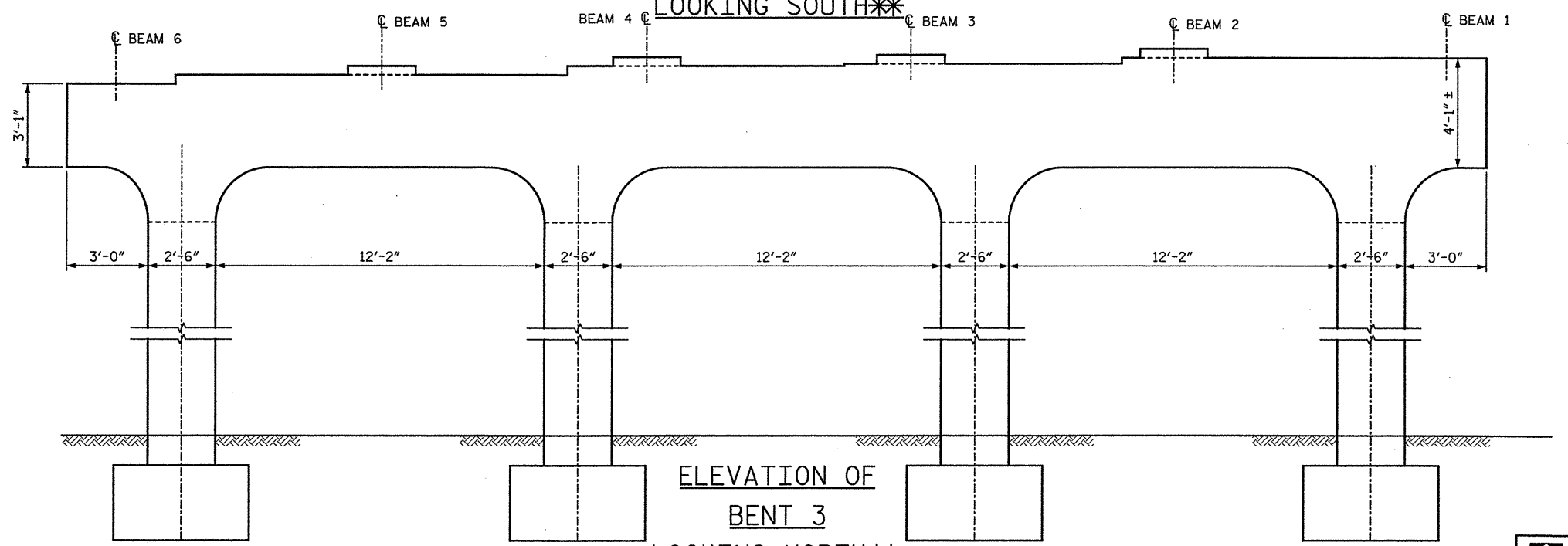
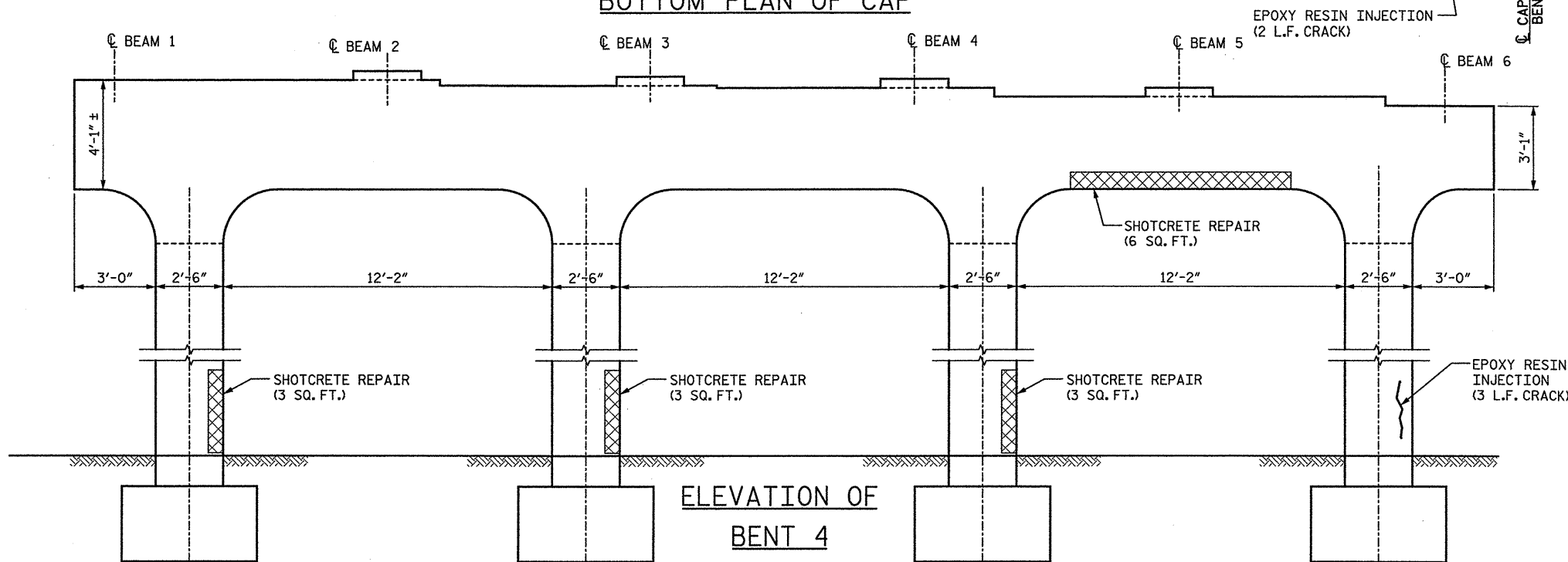
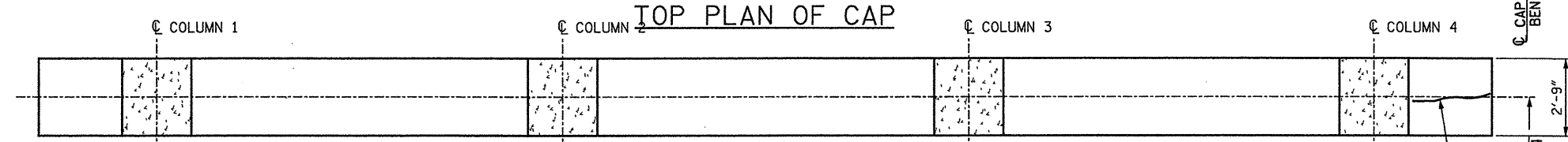
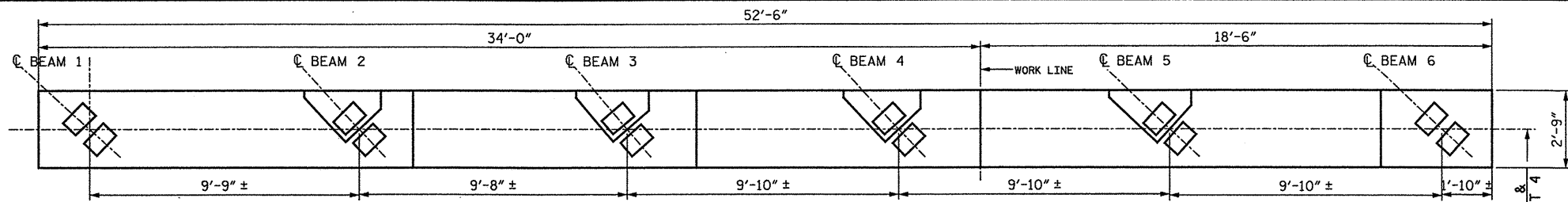
**LOOKING DIRECTION CORRESPONDS WITH DIRECTION OF TRAVEL ALONG ROADWAY.

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REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
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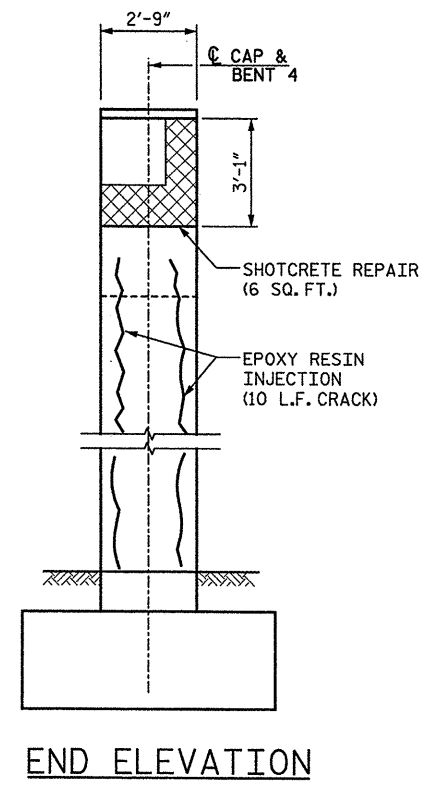
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NOTES:
FOR NOTES SEE SHEET 7 OF 11.

SHOTCRETE REPAIR



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
BRIDGE NO.: 48

REHAB. OF BRIDGE NO. 48 SHEET 8 OF 11

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE REPAIRS
BENT 4
BRIDGE ON I-277 SBL
OVER I-77



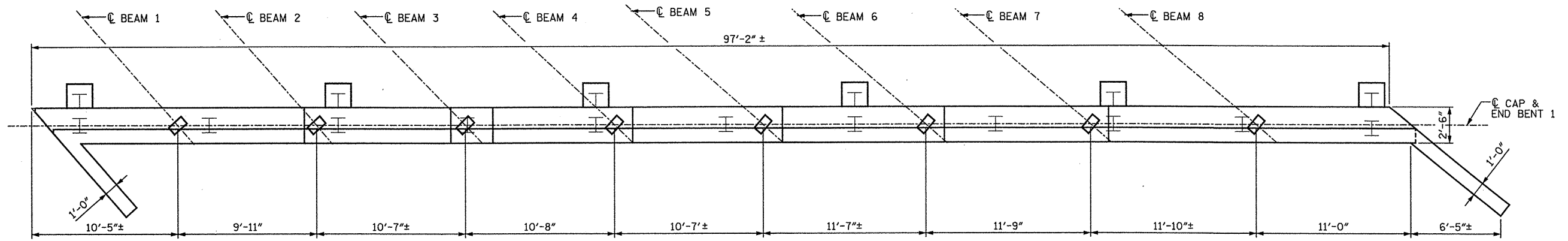
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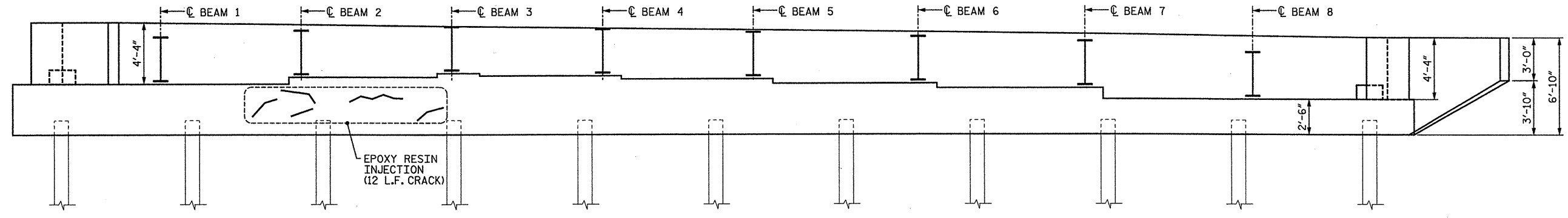
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Charlotte, NC 28208
NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			S-88

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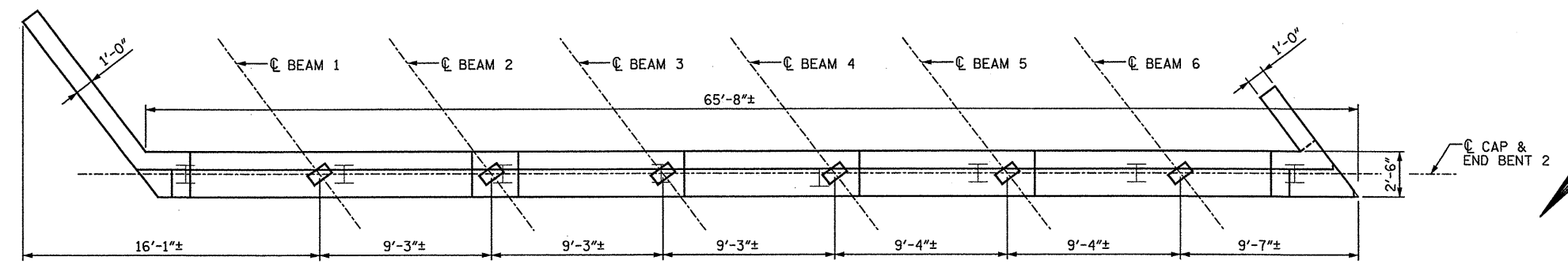


PLAN END BENT 1

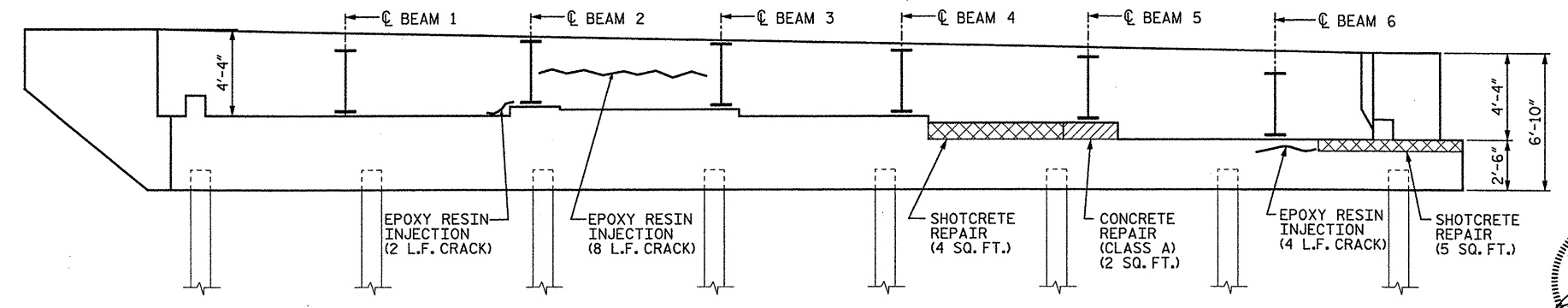


ELEVATION END BENT 1

- SHOTCRETE REPAIR
- CONCRETE REPAIR (CLASS A)



PLAN END BENT 2



ELEVATION END BENT 2

PROJECT NO. **17BP.10.P.3**
MECKLENBURG COUNTY
 BRIDGE NO.: **48**
 REHAB. OF BRIDGE NO. 48 SHEET 9 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 END BENTS 1 & 2
 BRIDGE ON I-277 SBL
 OVER I-77

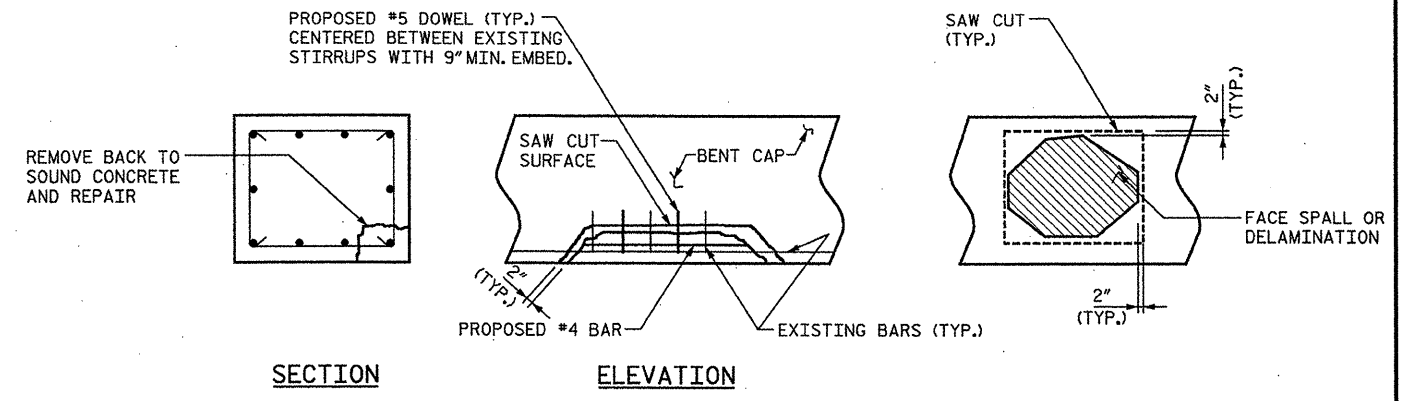


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REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-53
1			3			TOTAL SHEETS
2			4			S-88

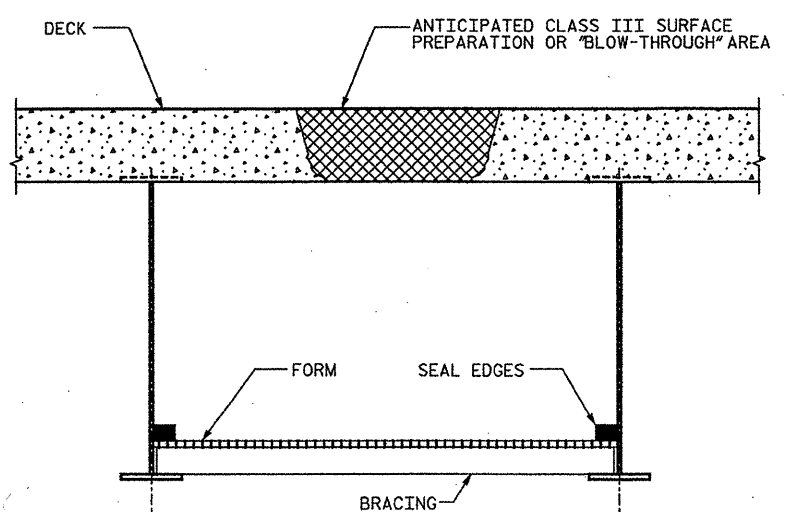
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CORNER REPAIR **FACE REPAIR**
TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTES:

1. CONTRACTOR SHALL SAWCUT TO A MAXIMUM DEPTH OF 1/2".
2. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.
3. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
4. THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.
5. THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2".
6. THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
7. FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK

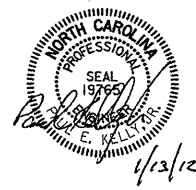
A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THROUGH DURING HYDRO-DEMOLITION SHALL BE INSTALLED IN AREAS INDICATED AS CLASS III SURFACE PREPARATION.

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

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

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 48
 REHAB. OF BRIDGE NO. 48 SHEET 10 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIRS
 BRIDGE ON I-277 NBL
 OVER I-77



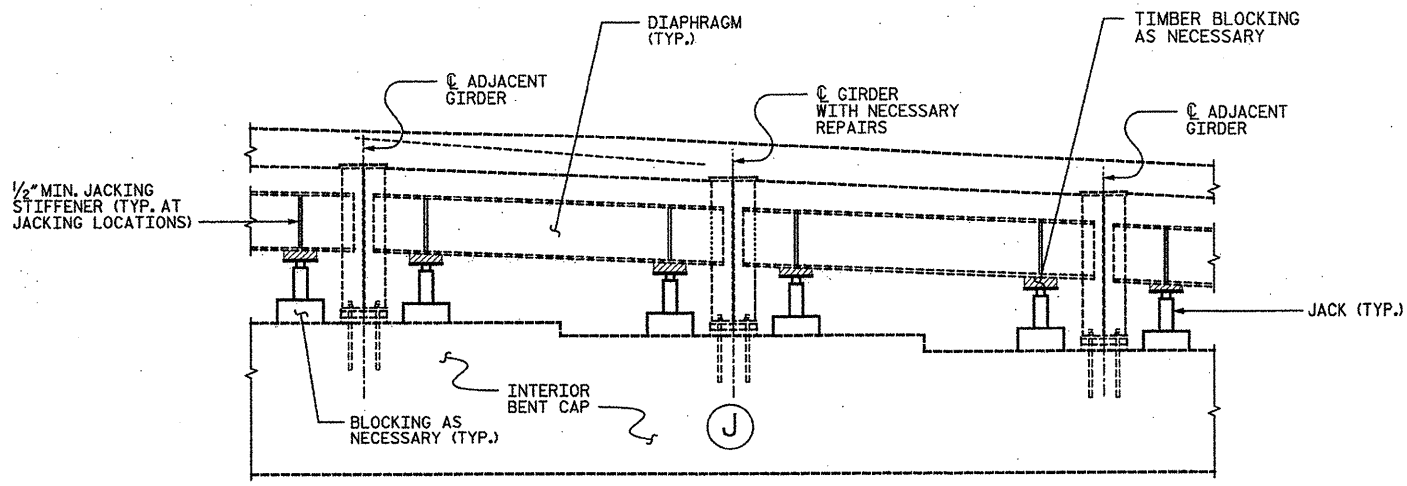
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REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
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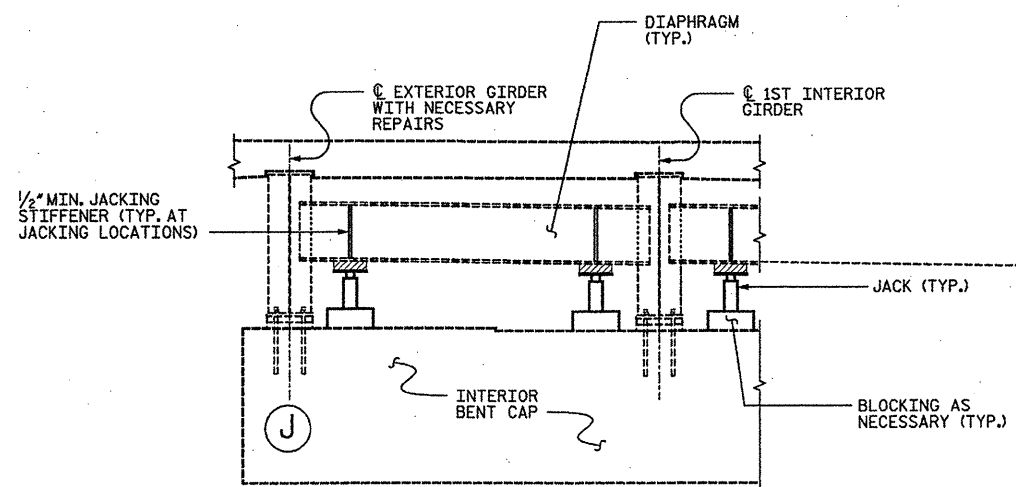
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TOTAL SHEETS
S-88

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 1/13/2012
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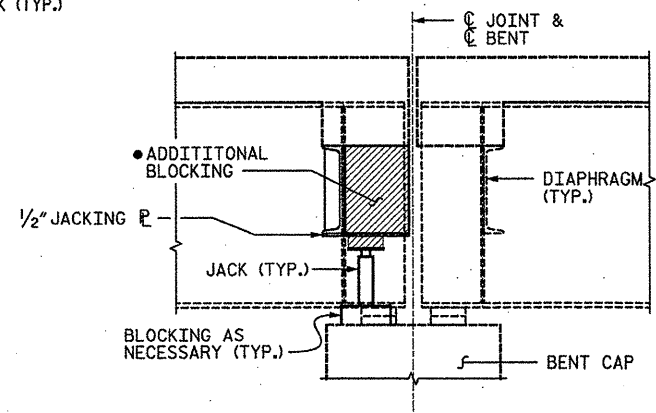


GIRDER JACKING DETAIL AT INTERIOR GIRDER

J JACKING FOR PROPOSED REPAIR LOCATION

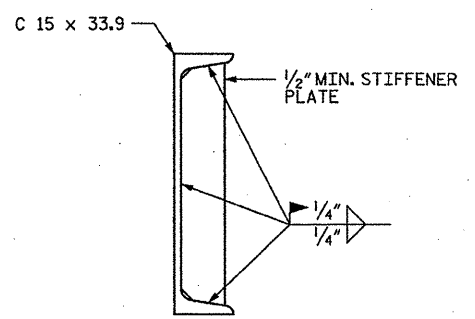


GIRDER JACKING DETAIL AT EXTERIOR GIRDER



TYPICAL SECTION @ JACKING LOCATION

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



JACKING STIFFENER DETAIL

CONSTRUCTION SEQUENCE:

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

NOTE: THE CONTRACTOR HAS THE OPTION TO PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE PER THE APPROVAL OF THE ENGINEER.

NOTES:

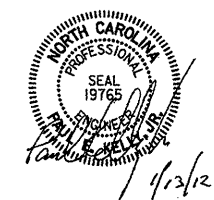
1. JACKING DETAILS SHOWN ARE CONCEPTUAL AND CONSIDERED A MINIMUM. THE CONTRACTOR SHALL PROVIDE JACKING PLANS FOR ALL GIRDERS LIFTED FOR APPROVAL BY THE ENGINEER PRIOR TO ANY JACKING OPERATIONS. JACKING SHALL BE PERFORMED SUCH THAT BRIDGE CAN REMAIN OPEN TO TRAFFIC DURING JACKING OPERATIONS.
2. JACKING PLANS SHALL BE SIGNED AND SEALED BY LICENSED PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.
3. THE CONTRACTOR SHALL PROVIDE BLOCKING FOR ALL JACKS AS NECESSARY. A BLOCKING PLAN SHALL BE INCLUDED AS PART OF THE JACKING PLAN.
4. THE CONTRACTOR SHALL JACK GIRDERS ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.
5. THE CONTRACTOR SHALL MONITOR THE PLAN LOCATION OF THE GIRDERS FROM INITIAL JACKING UNTIL GIRDERS ARE SECURED ON THEIR PERMANENT BEARINGS. IF THE PLAN LOCATION OF THESE GIRDERS SHIFT FROM ITS ORIGINAL POSITION, THE CONTRACTOR SHALL SECURE FROM ADDITIONAL MOVEMENT IMMEDIATELY. NOTIFY ENGINEER PRIOR TO PROCEEDING WORK OPERATIONS.
6. EACH JACK SHALL HAVE A MINIMUM SAFE WORKING CAPACITY OF 80 TONS.
7. PRIOR TO JACKING THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.
8. ONCE SPAN HAS BEEN JACKED, CONTRACTOR SHALL INSTALL A MECHANICAL LOCKING DEVICE TO ENSURE THAT GIRDER WILL NOT BE LOWERED DURING CURING OF CONCRETE.
9. CONTRACTOR TO TAKE APPROPRIATE MEANS TO REMOVE NUT ON ANCHOR BOLT WITHOUT DAMAGING THE ANCHOR BOLT. CONTRACTOR SHALL SUBMIT NUT REMOVAL METHOD TO INCLUDE PROCEDURES THAT WILL LOOSEN BOND BETWEEN INTERLOCKING THREADS TO ENGINEER FOR APPROVAL PRIOR TO REMOVING ANCHOR BOLT NUTS.
10. IN NO CIRCUMSTANCES SHOULD THE JACKING BE SOLELY SUPPORTED BY THE DIAPHRAGM. JACKS SHOULD BE CENTERED UNDER DIAPHRAGM AND ADDITIONAL BLOCKING.

PROJECT NO. **17BP.10.P.3**
 MECKLENBURG COUNTY
 BRIDGE NO.: **48**

REHAB. OF BRIDGE NO. 48 SHEET 11 OF 11

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

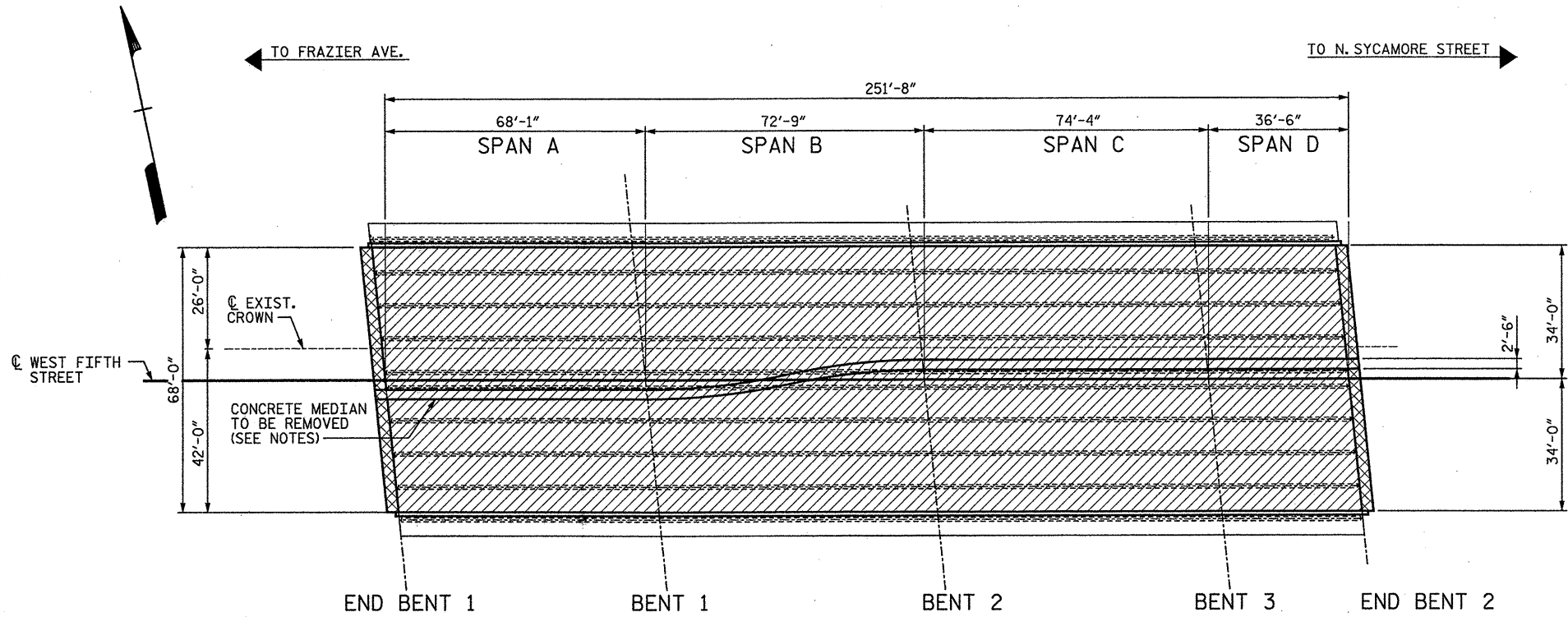
JACKING DETAILS
 BRIDGE ON I-277 SBL
 OVER I-77



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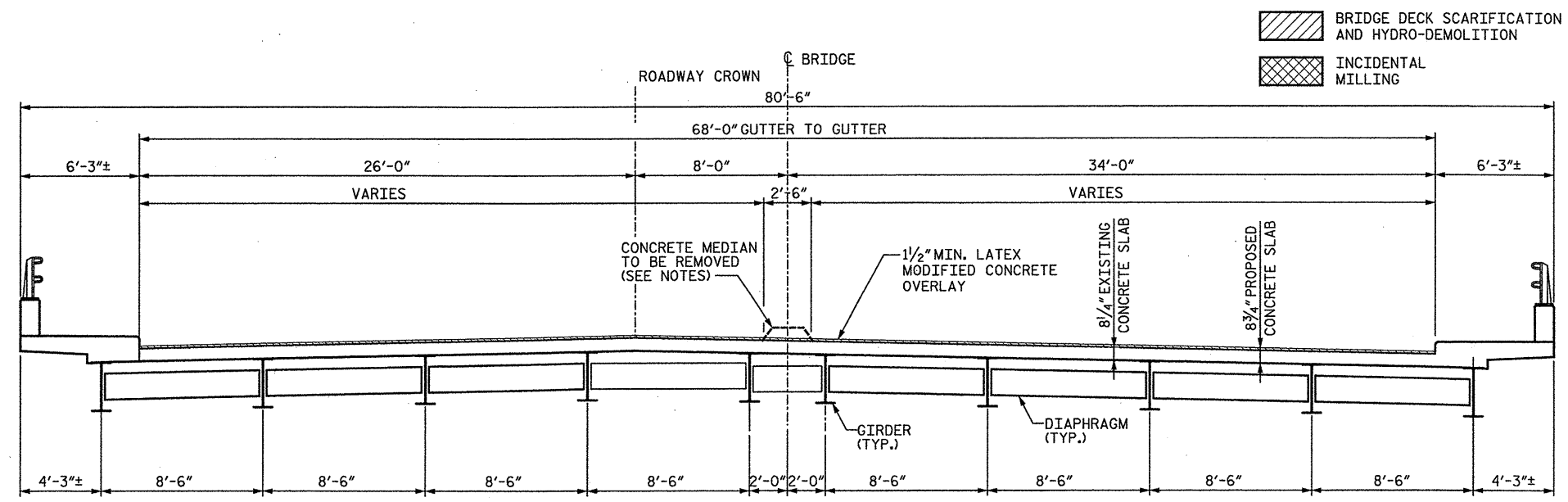


NOTES:

- 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 RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
- LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
- FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- REMOVAL OF EXISTING CONCRETE MEDIAN SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT PAY ITEMS FOR BRIDGE 245.
- FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PLAN OF SPANS - BRIDGE DECK SCARIFICATION AND HYDRO-DEMOLITION

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



BRIDGE DECK SCARIFICATION AND HYDRO-DEMOLITION
 INCIDENTAL MILLING

TYPICAL SECTION

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 245

REHAB. OF BRIDGE NO. 245 SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPANS AND TYPICAL SECTION

BRIDGE ON WEST FIFTH STREET OVER I-77



BILL OF MATERIAL									
INCIDENTAL MILLING	DECK SCARIFICATION	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SQ.YDS.	SQ. YDS.	TON	SQ. YDS.	SQ. YDS.	SQ.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.
46	1832	4	1795	37	1832	77	1832	LUMP SUM	14958

* QUANTITIES FOR INFORMATION ONLY

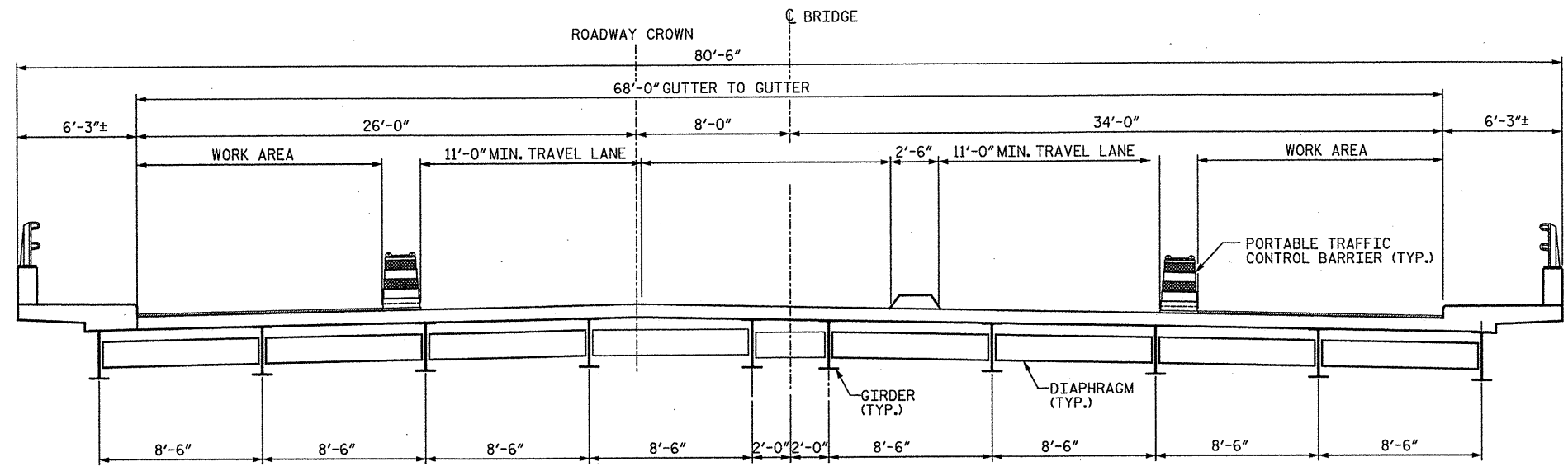
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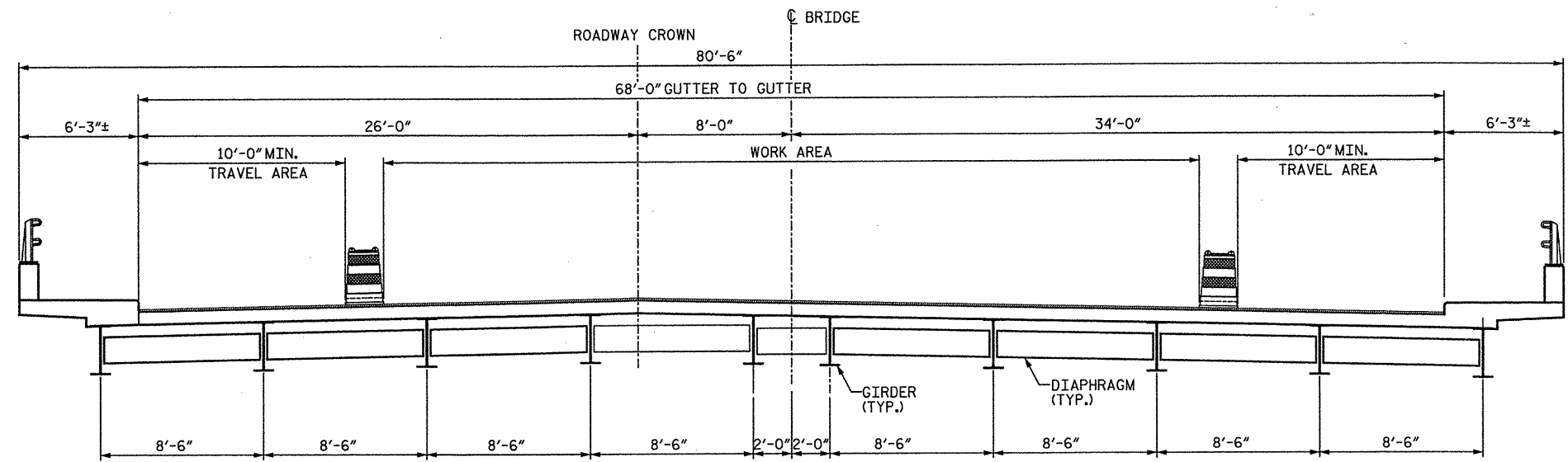
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1			3			TOTAL SHEETS
2			4			S-88

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SECTION - STAGE I
(AT BEGINNING OF BRIDGE)



SECTION - STAGE II
(AT BEGINNING OF BRIDGE)

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 245

REHAB. OF BRIDGE NO. 245 SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON WEST FIFTH STREET OVER I-77

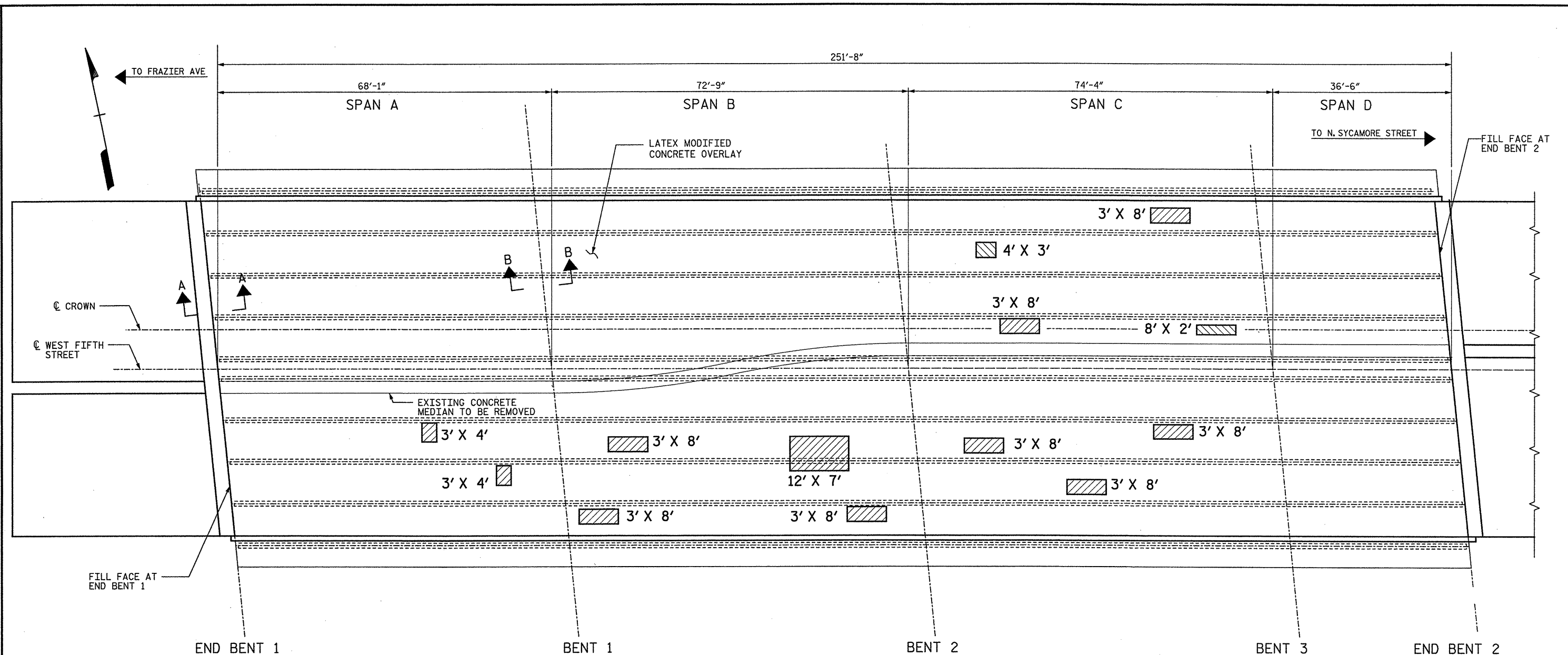


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-57
1			3			TOTAL SHEETS
2			4			S-88

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PLAN OF SPANS - BRIDGE DECK REPAIRS

NOTE:
 FOR SECTION A-A AND B-B, SEE SHEET 3 OF 3.
 FOR BLOW THROUGH NOTES, SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

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

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 245
 REHAB. OF BRIDGE NO. 245 SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF SPANS
 DECK REPAIRS**
 BRIDGE ON WEST FIFTH STREET
 OVER I-77

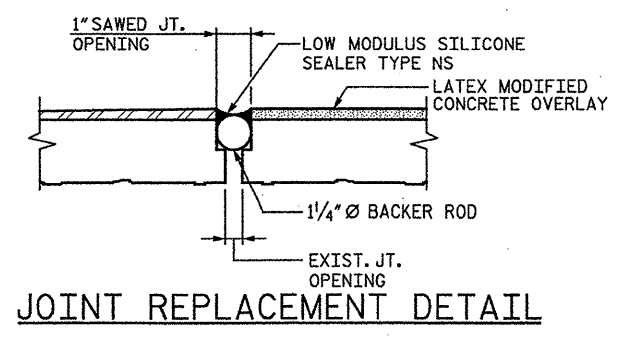
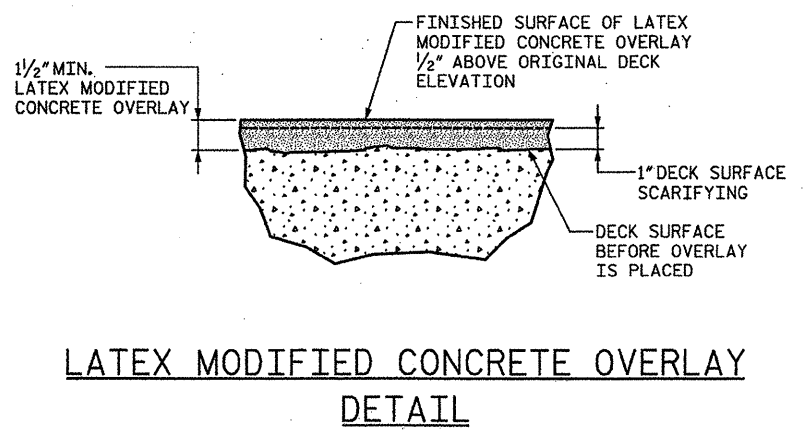
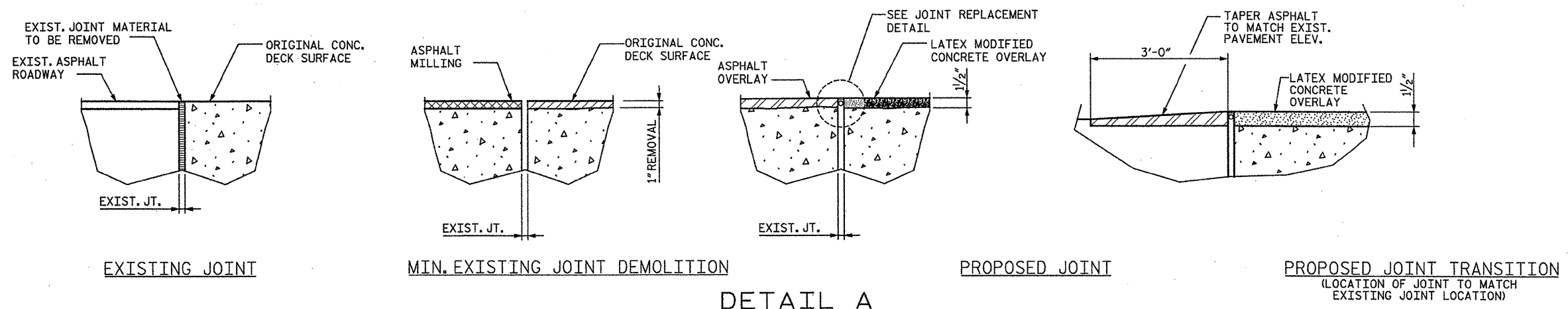


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-58
1			3			TOTAL SHEETS
2			4			S-88

DRAWN BY : BE DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

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PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 245
 REHAB. OF BRIDGE NO. 245 SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**DECK AND JOINT
 REPAIR DETAILS**
 BRIDGE ON WEST FIFTH STREET
 OVER I-77

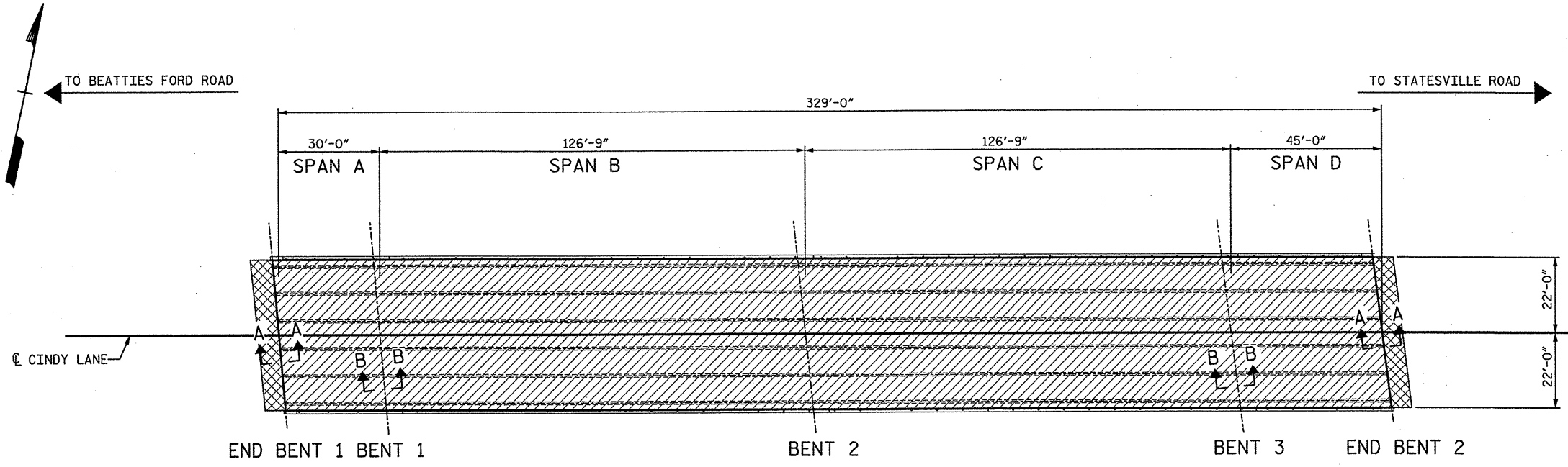


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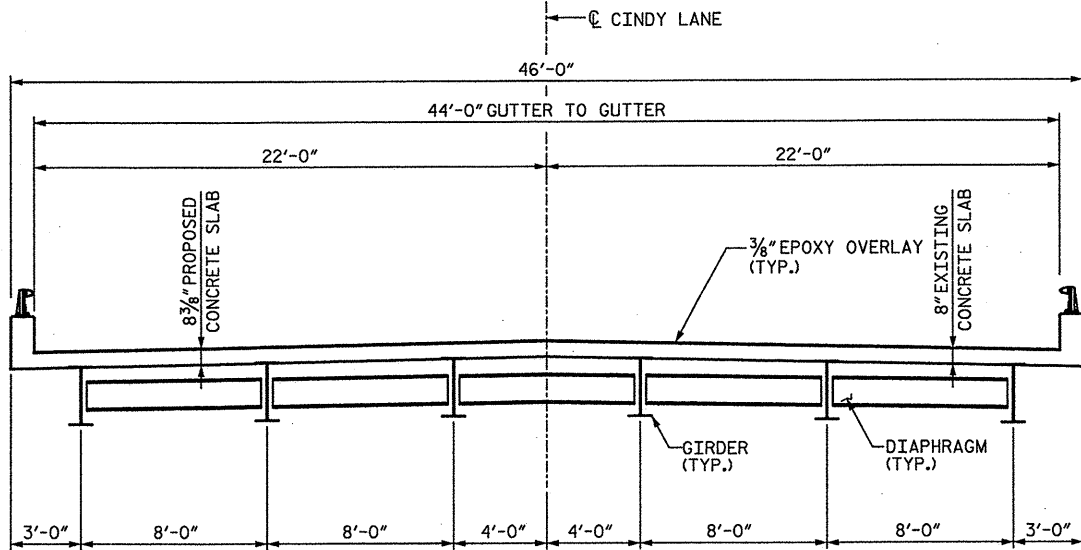
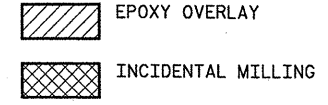
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-59
1			3			TOTAL SHEETS
2			4			S-88

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PLAN OF SPANS - EPOXY OVERLAY



TYPICAL SECTION

- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS SEE SPECIAL PROVISIONS.
 - FOR REPAIR OF BRIDGE DECK USING EPOXY OVERLAY, SEE SPECIAL PROVISIONS.
 - FOR CONCRETE DECK REPAIRS FOR EPOXY OVERLAY, SEE SPECIAL PROVISIONS.
 - ALL COSTS ASSOCIATED WITH CONCRETE DECK REPAIRS FOR EPOXY OVERLAYS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT PAY ITEM PLACEMENT OF EPOXY OVERLAY.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - CURB AND GUTTER REPLACEMENT SHALL BE DONE IN ACCORDANCE WITH SECTION 846 FOR NCDOT STANDARD SPECIFICATIONS.
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

BILL OF MATERIAL					
INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	PLACEMENT OF EPOXY OVERLAY	FOAM JOINT SEALS	CONCRETE REPAIR	REINFORCING STEEL
SQ. YDS.	TON	SQ. FT.	LUMP SUM	CU. FT.	LBS.
30	2.5	14487	LUMP SUM	7	50



⚠️ UPDATED CONCRETE REPAIR QUANTITY AND UNITS

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PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 312
 REHAB. OF BRIDGE NO. 312 SHEET 1 OF 4

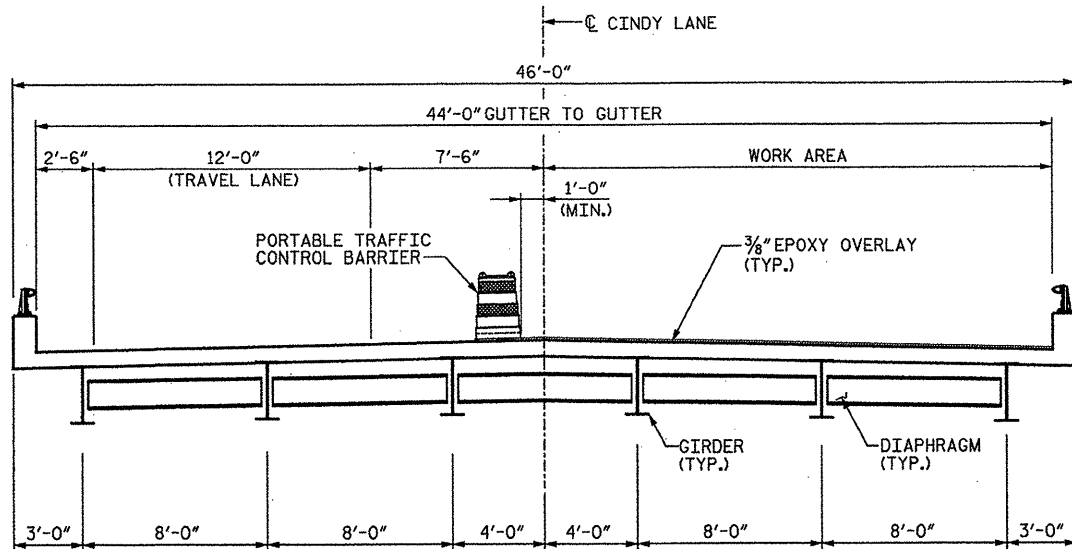
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PLAN OF SPANS & TYPICAL SECTION
 BRIDGE ON CINDY LANE OVER I-77

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1	TRL	4-4-12	3	
2			4	

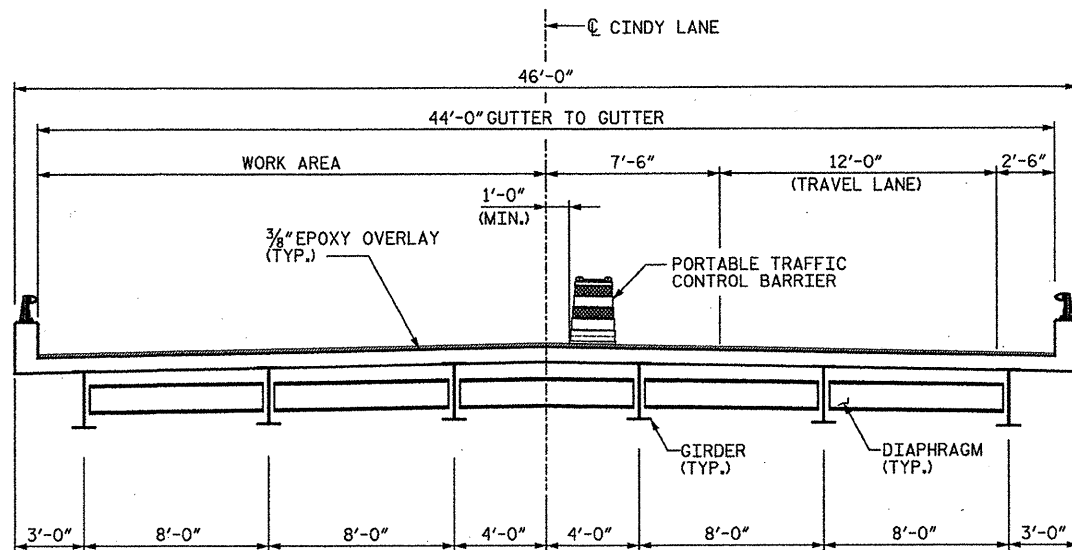
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SECTION - STAGE I



SECTION - STAGE II

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 312
 REHAB. OF BRIDGE NO. 312 SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON CINDY LANE
 OVER I-77

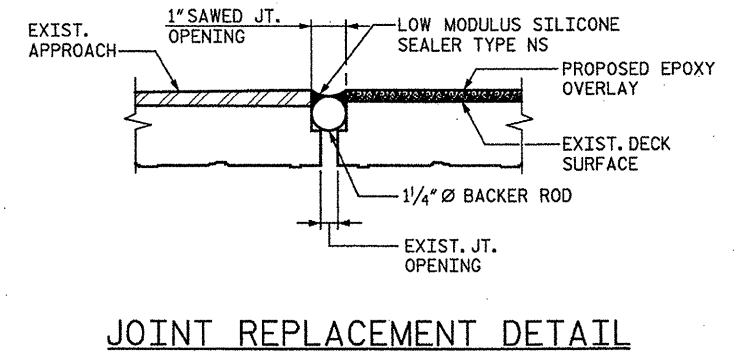
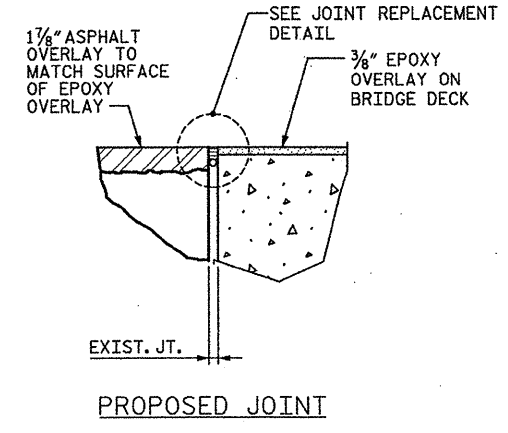
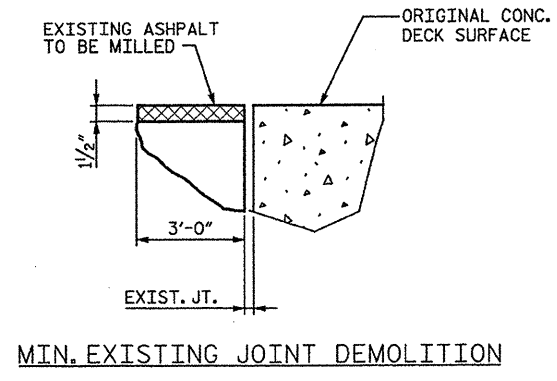
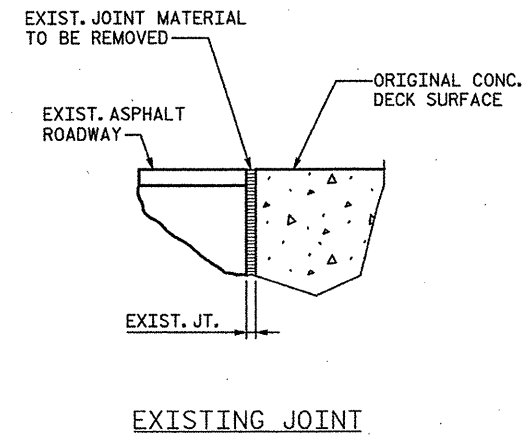
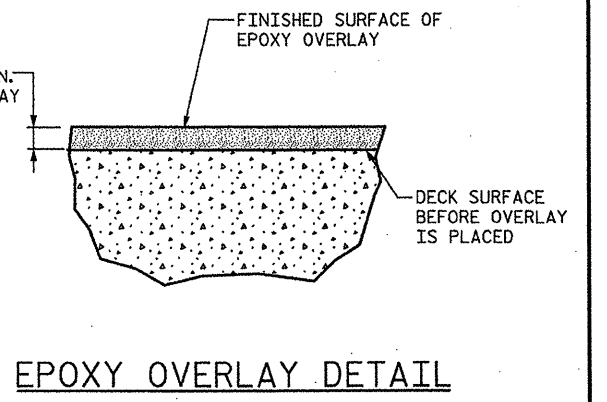
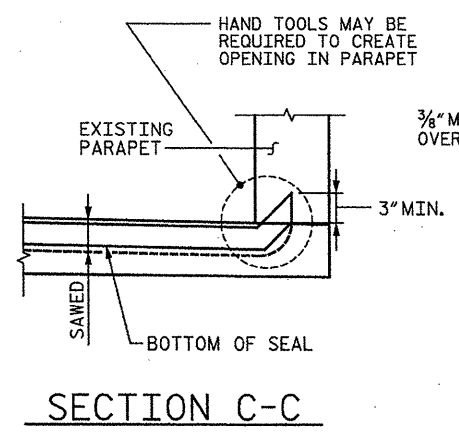
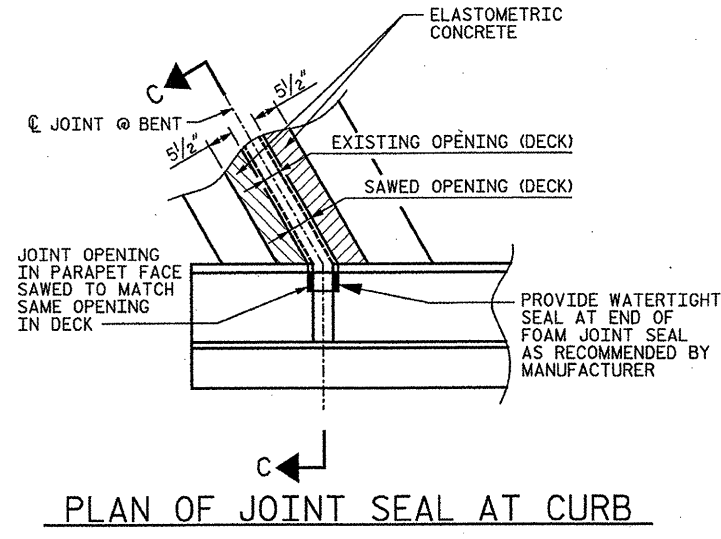
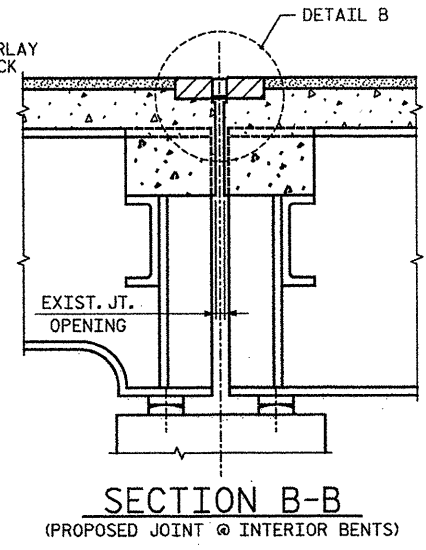
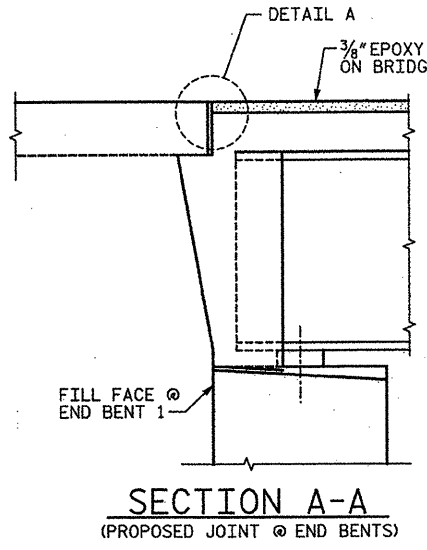


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-61
1			3			TOTAL SHEETS
2			4			S-88

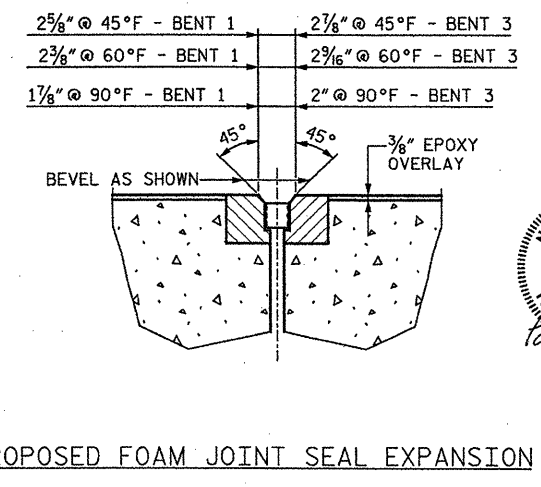
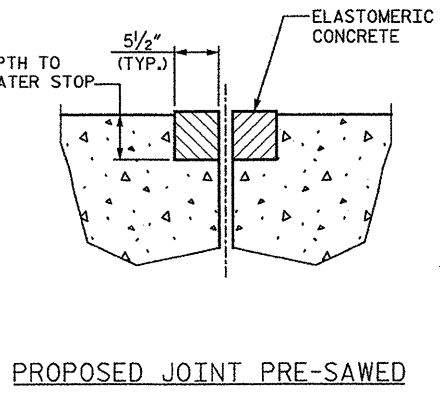
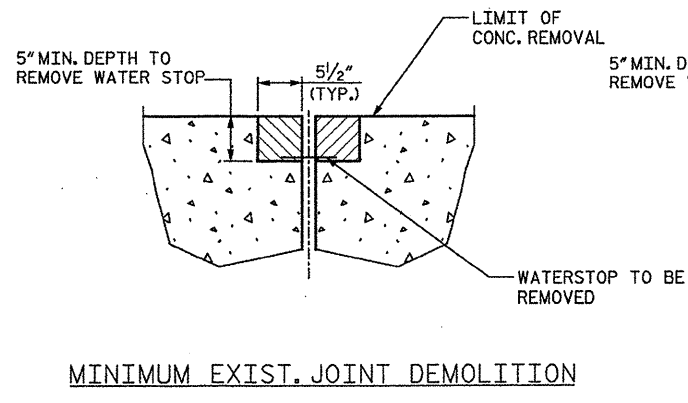
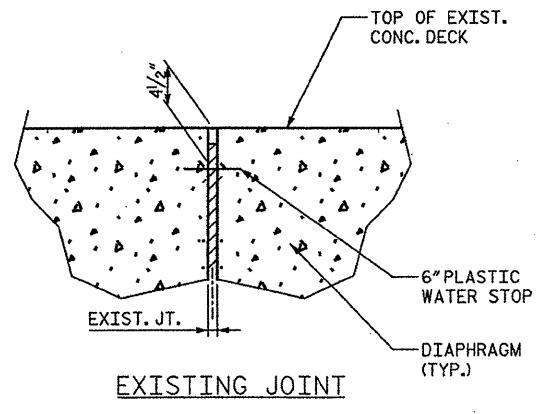
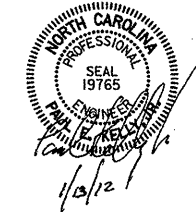
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ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	18.6
3	18.6
TOTAL	37.2

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 312
 REHAB. OF BRIDGE NO. 312 SHEET 3 OF 4



NOTES:
 SEE SHEET 4 OF 4 FOR JOINT NOTES.

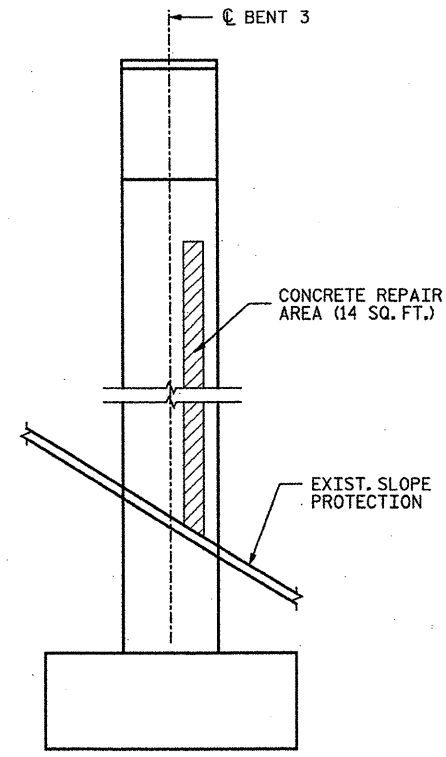
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
DECK & JOINT REPAIR DETAILS
 BRIDGE ON CINDY LANE OVER I-77

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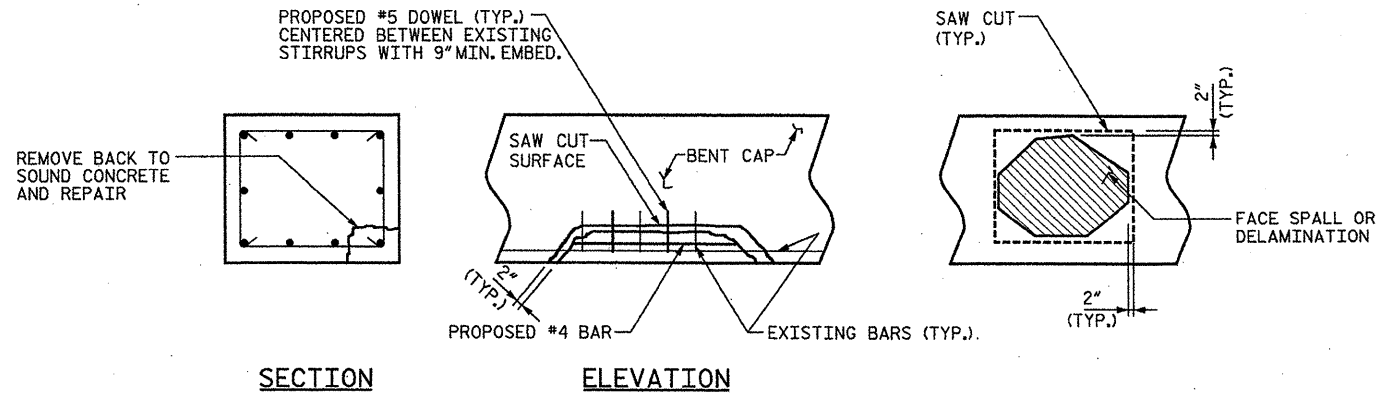
REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	S-62
1			3			3	S-62
2			4			4	S-88

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 1/13/2012



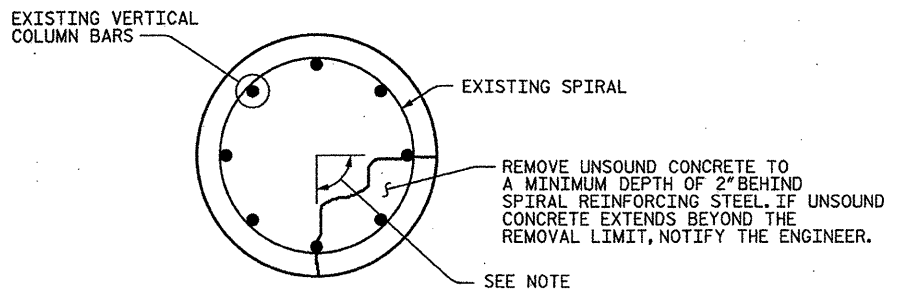
COLUMN REPAIR DETAIL
(BENT 3 COLUMN 4)

NOTES:
 CONCRETE SHALL BE SOUNDED TO DETERMINE THE EXTENT OF ALL CONCRETE REPAIRS.
 FOR CRACKS REQUIRING EPOXY RESIN INJECTION, SOUNDING MAY PROVE THAT A CONCRETE REPAIR IS NECESSARY.
 SPALL, CRACK, AND DELAMINATION DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE ACTUAL SPALL, CRACK, AND DELAMINATION DIMENSIONS PRIOR TO MAKING REPAIRS.
 THE ENGINEER SHALL BE NOTIFIED OF ANY BARS DAMAGED DURING THE CONCRETE REMOVAL PROCESS. REPAIRS TO DAMAGED BARS SHALL BE DIRECTED BY THE ENGINEER AND COMPLETED AT NO ADDITIONAL COST.
 DOWEL LENGTH SHALL BE BASED ON A 9" EMBEDMENT INTO EXISTING CONCRETE AND MAY BE ADJUSTED BASED ON THE MINIMUM EMBEDMENT SPECIFIED BY THE MANUFACTURER OF THE EPOXY ADHESIVE BONDING SYSTEM.
 FOR ADDITIONAL NOTES SEE SHEET 1 OF 4.



CORNER REPAIR **FACE REPAIR**
TYPICAL SUBSTRUCTURE REPAIR DETAILS

NOTES:
 1. CONTRACTOR SHALL SAWCUT TO A MAXIMUM DEPTH OF 1/2".
 2. CONTRACTOR SHALL REMOVE SURFACE CONCRETE TO VERIFY THAT SAWCUT DEPTH WILL NOT DAMAGE EXISTING REINFORCING STEEL.



COLUMN SECTION

NOTE:
 CONCRETE REPAIR AREA SHALL NOT EXCEED 90° DEGREE ARC OF THE COLUMN AT ONE TIME. IF UNSOUND CONCRETE EXTENDS BEYOND 90 DEGREE OF THE COLUMN CONTACT THE ENGINEER FOR DIRECTION.

FOAM JOINT NOTES:
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.
 THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 3/8" AT BENT 1 AND 3/16" AT BENT 3.
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
 FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 312
 REHAB. OF BRIDGE NO. 312 SHEET 4 OF 4



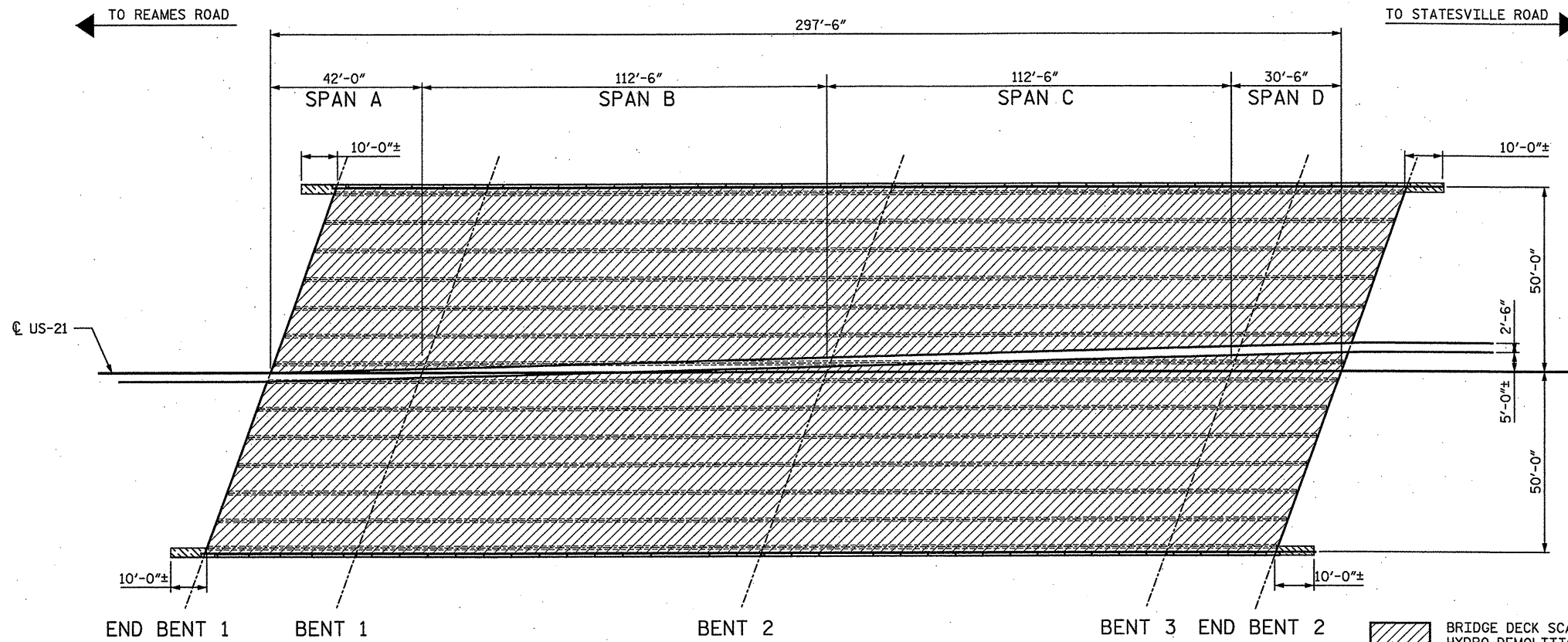
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE REPAIR
 BENT 3
 BRIDGE ON CINDY LANE
 OVER I-77

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-63
2			4			S-88

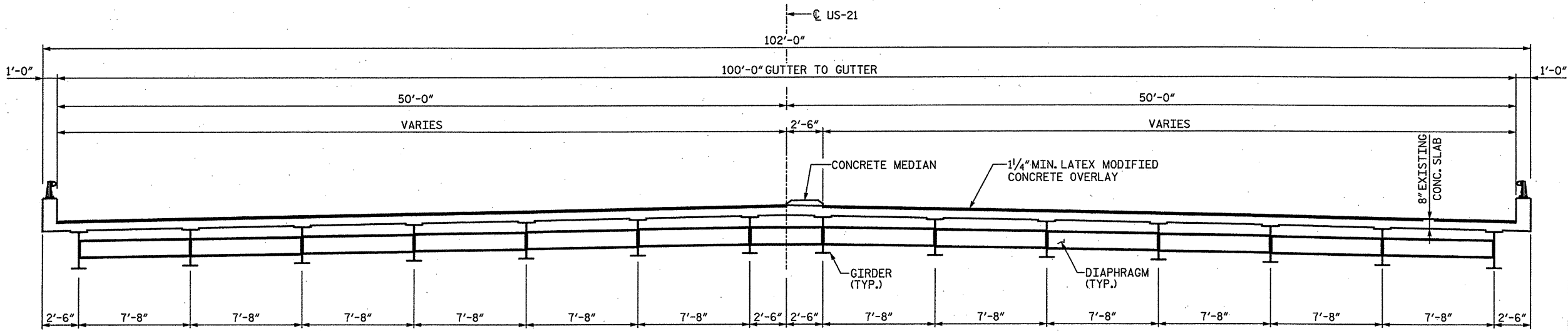
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- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
 - FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
 - LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
 - FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

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

BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION
 GUTTER REPLACEMENT



TYPICAL SECTION

BILL OF MATERIAL								
DECK SCARIFICATION	CONCRETE REPAIR	* CLASS I SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS	REMOVE & REPLACE 2'-6" CURB & GUTTER
SQ. YDS.	CU. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.	L.F.
3223	15.4	3223	3223	112	3223	LUMP SUM	26830	42

* QUANTITIES FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 323
 REHAB. OF BRIDGE NO. 323 SHEET 1 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PLAN OF SPANS & TYPICAL STAGING
 BRIDGE ON US 21
 OVER I-77

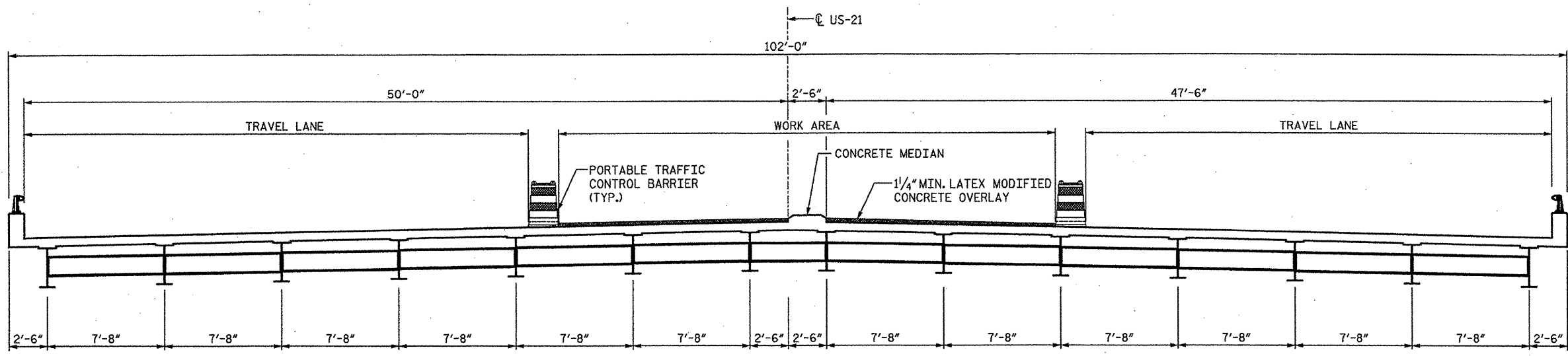


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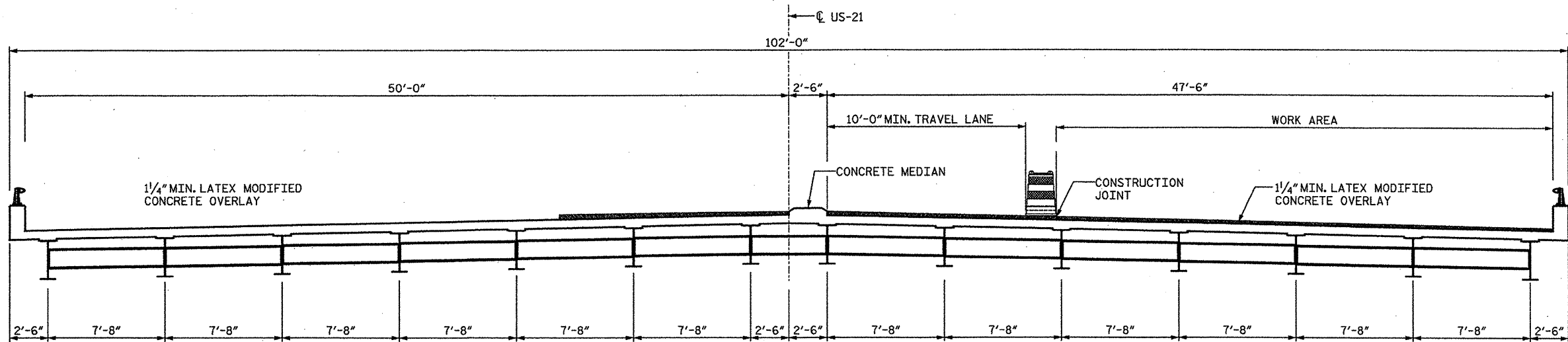
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-64
1			3			TOTAL SHEETS
2			4			S-88

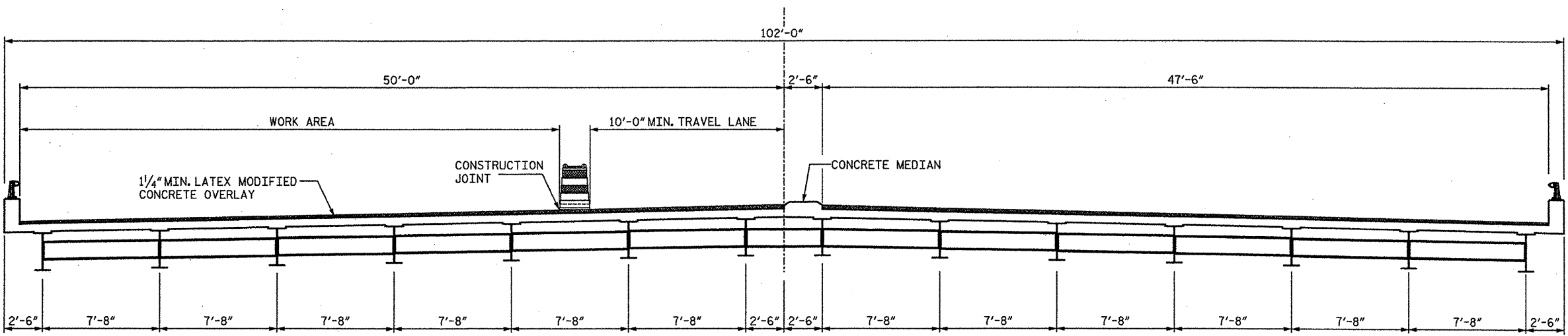
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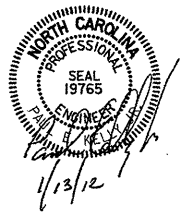
SECTION - STAGE I



SECTION STAGE II



SECTION - STAGE III



PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 323
 REHAB. OF BRIDGE NO. 323 SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON US 21
 OVER I-77

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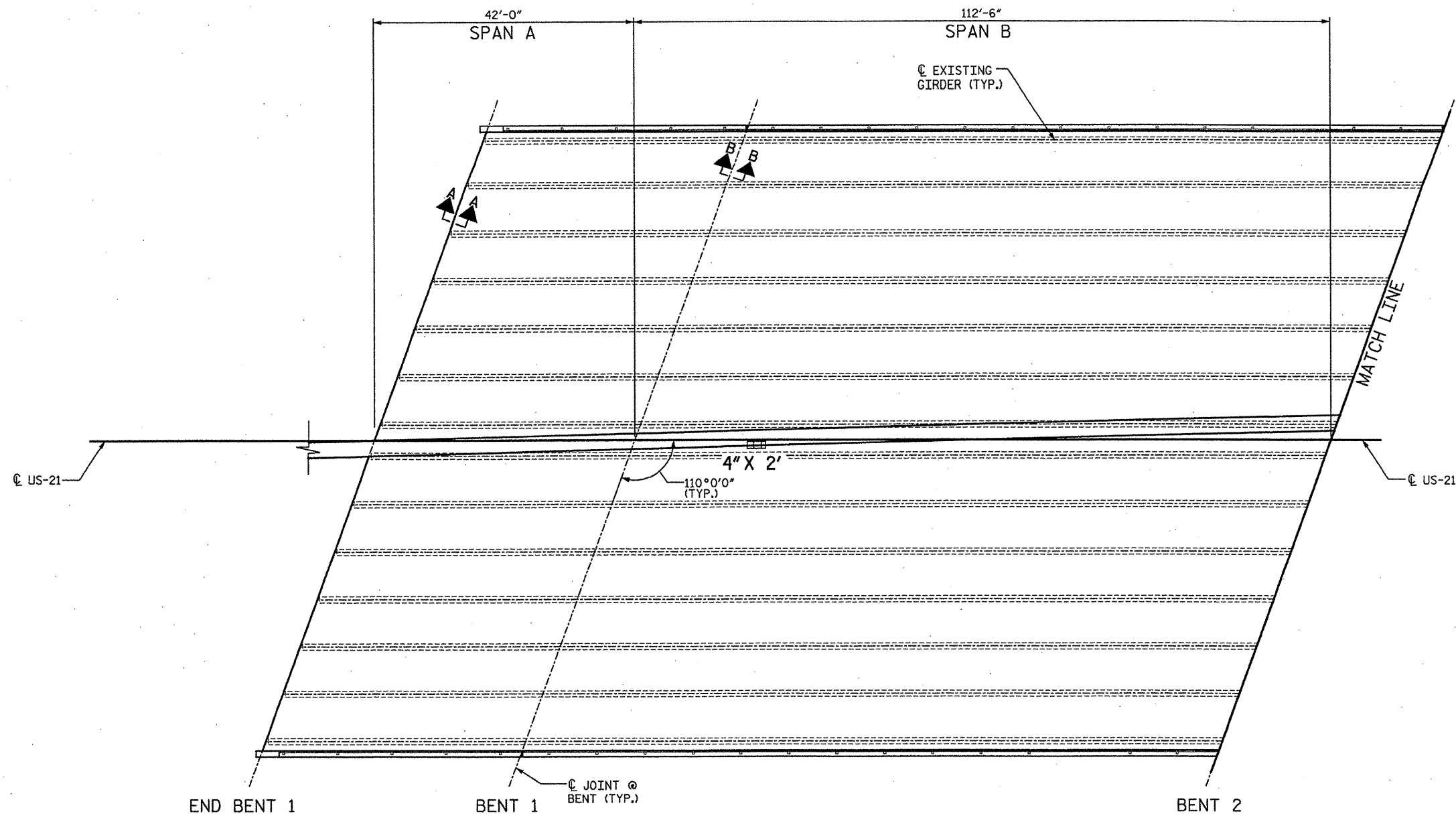
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 NC License No. F-0991

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-65	
1			3			TOTAL SHEETS	
2			4			S-88	

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1/13/2012



PLAN OF SPANS - DECK REPAIRS
(SEE SHEET 5 OF 6 FOR SECTIONS A-A AND B-B)

- APPROX. AREA:
CLASS I REPAIR
- APPROX. AREA:
CONCRETE REPAIR AREA
(SEE SHEET 6 OF 6 FOR DETAILS)

DRAWN BY : SC DATE : 1/5/12
CHECKED BY : QA DATE : 1/5/12

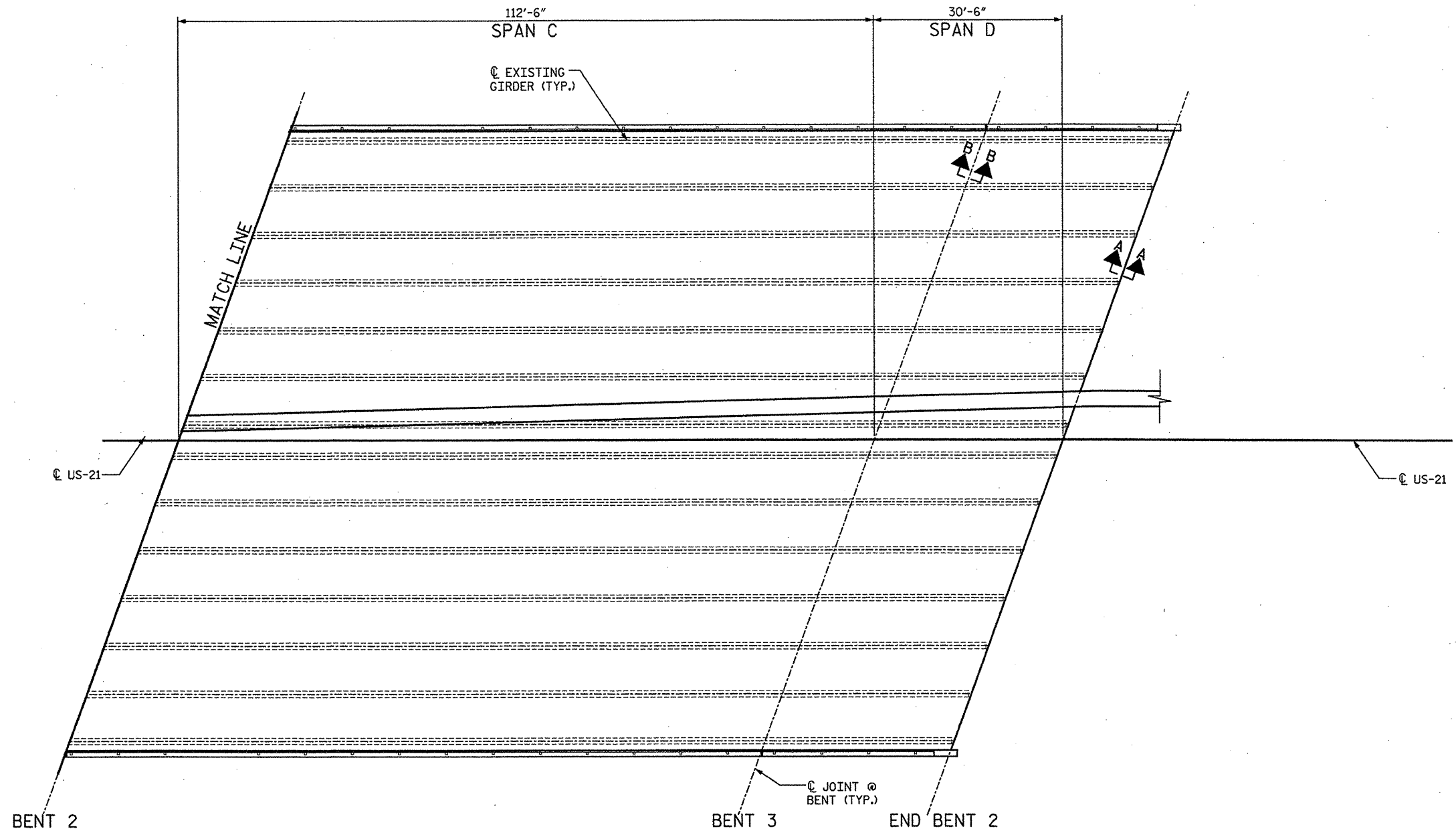
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Charlotte, NC 28208
NC License No. F-0991



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
BRIDGE NO.: 323
REHAB. OF BRIDGE NO. 323 SHEET 3 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLANS OF SPANS 1 & 2 DECK REPAIRS					
BRIDGE ON US 21 OVER I-77					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-66
					TOTAL SHEETS S-88

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 1/13/2012



PLAN OF SPANS - DECK REPAIRS
 (SEE SHEET 5 OF 6 FOR SECTIONS A-A AND BB)

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 323
 REHAB. OF BRIDGE NO. 323 SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLANS OF SPANS 3 & 4
 DECK REPAIRS**
 BRIDGE ON US 21
 OVER I-77

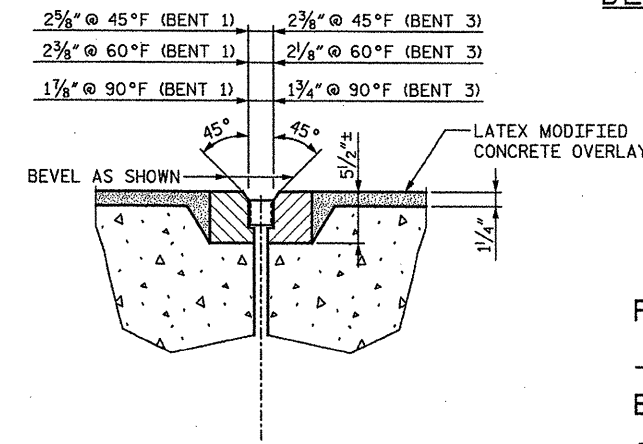
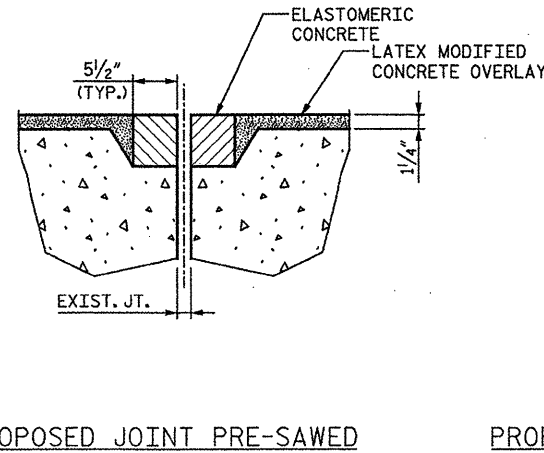
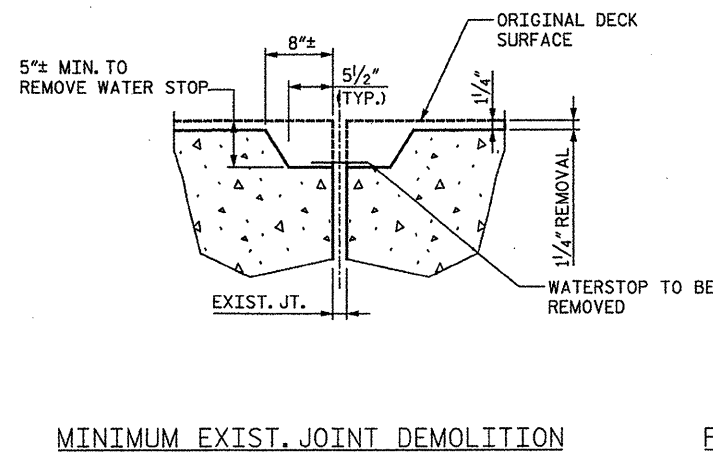
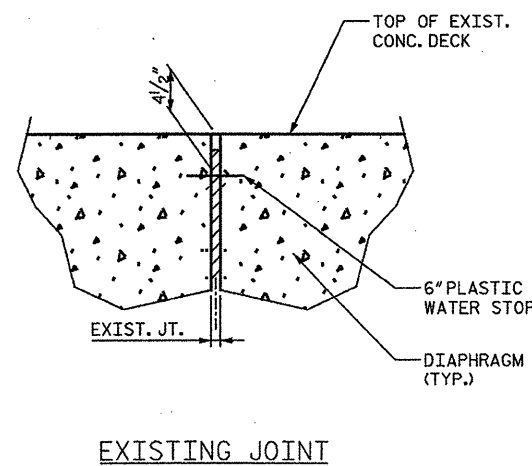
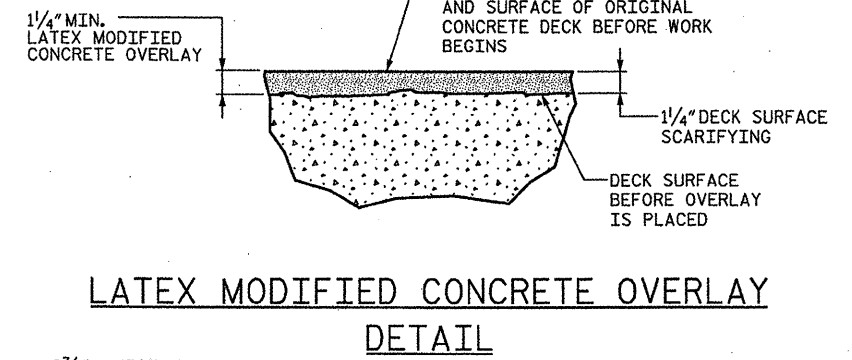
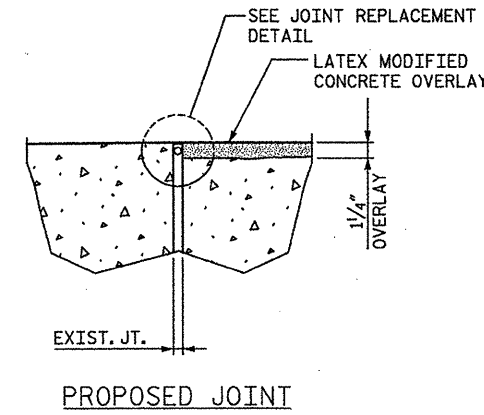
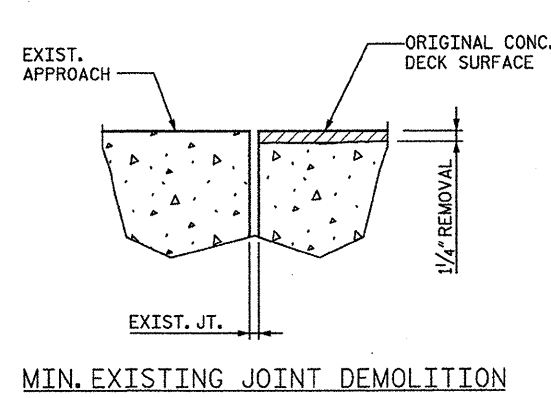
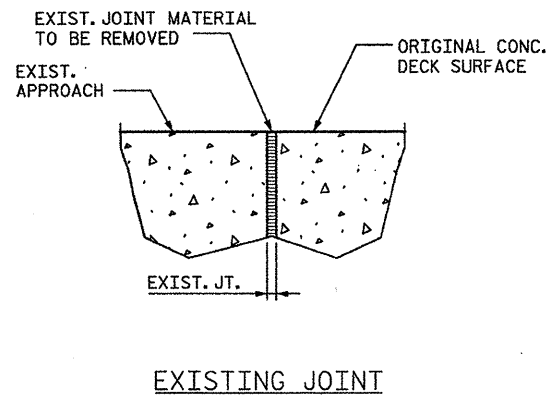
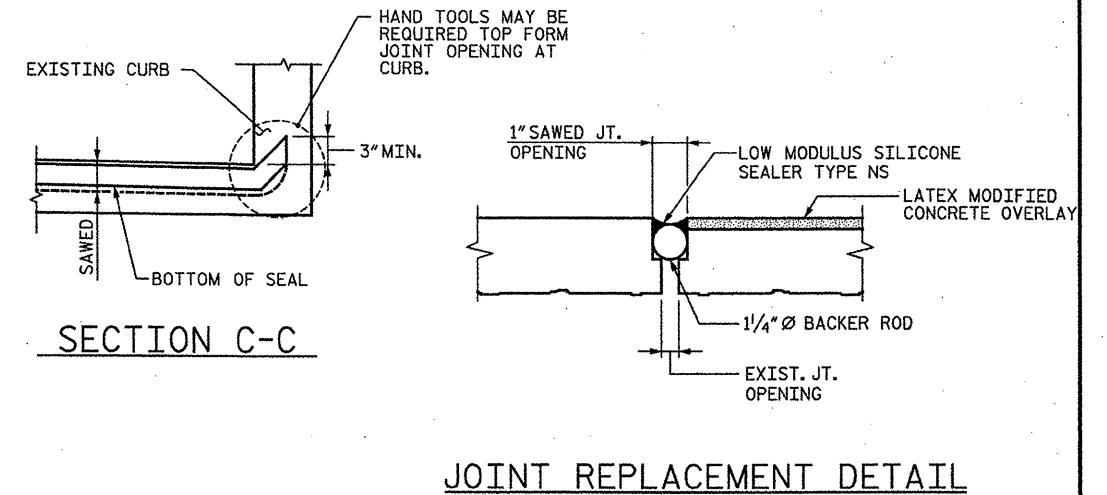
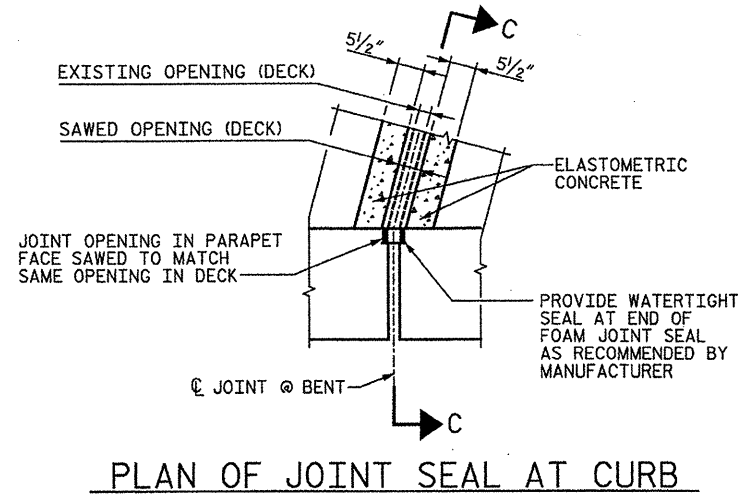
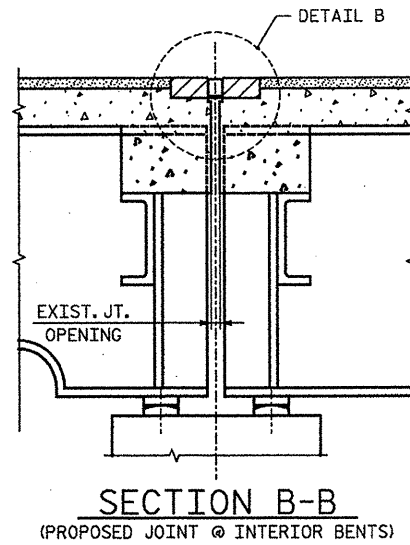
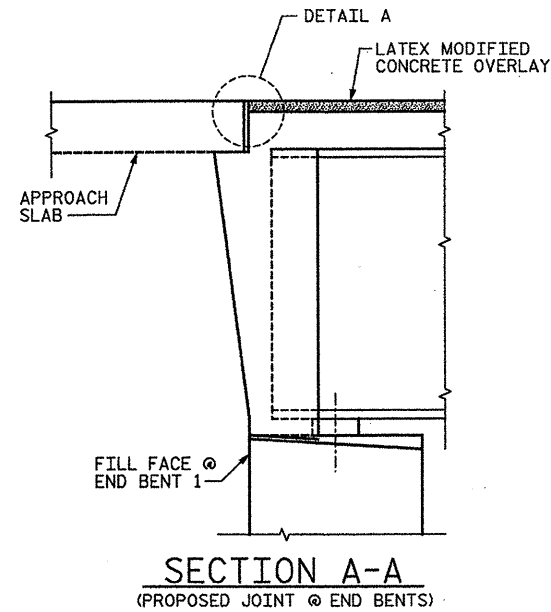


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 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0891

DRAWN BY : SC DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-67
1			3			TOTAL SHEETS
2			4			S-88

I:\projects\2515386\2515386_0001\50_deliverables & submittals\17bp.10.p.3\structure\17bp.10.p.3_pre-final\set 01.05.2012\BRI106-323\05 Bridge 323 Details 1.dgn
 peterj
 1/13/2012



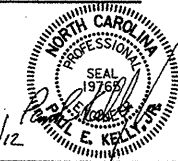
ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	44.7
3	44.7
TOTAL	89.4

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 323
 REHAB. OF BRIDGE NO. 323 SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 JOINT REPAIR DETAILS
 BRIDGE ON US 21
 OVER I-77

NOTES:
 SEE SHEET 6 OF 6 FOR JOINT NOTES.



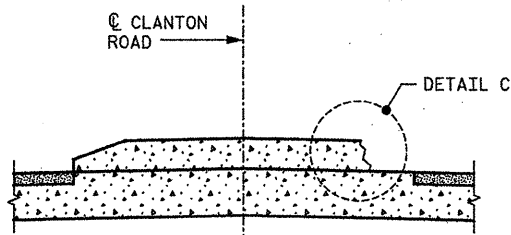
DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : CJ DATE : 1/5/12

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 NC License No. F-0991

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

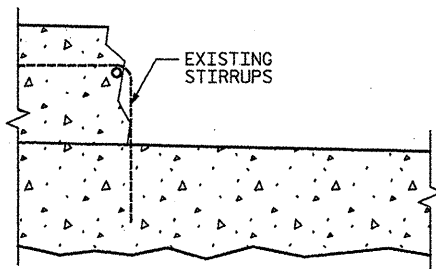
SHEET NO. S-68
 TOTAL SHEETS S-88

1/13/2012 petraaj h:\project\2315386\2515386_0001\50_deliverables & submittals\17bp-10.p.3\structure\17bp-10.p.3_pre-final\set 01_05_2012\BRIDGE-323\06 Bridge 323 Details 2.dgn

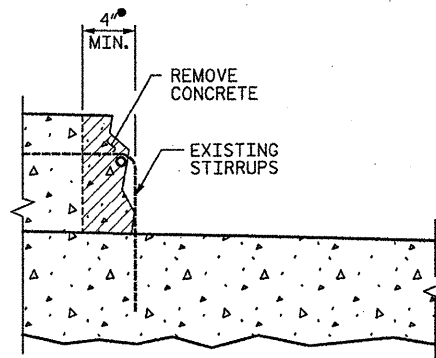


MEDIAN REPAIR DETAIL

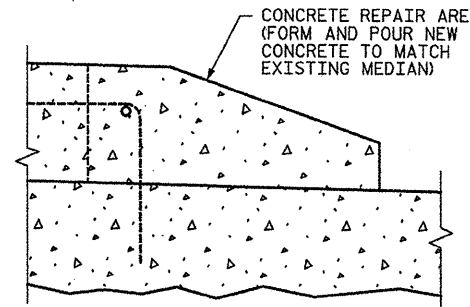
(PAYMENT FOR MEDIAN REPAIR SHALL BE MADE UNDER CLASS AA CONCRETE.)



EXISTING CONDITION



REMOVE EXISTING CONCRETE



POUR NEW CONCRETE

• 4" MAY BE EXCEEDED IF NECESSARY TO REACH SOUND CONCRETE

DETAIL C

NOTE:

IF NO REINFORCING STEEL IS FOUND IN ISLAND, CONTRACTOR SHALL REMOVE A MINIMUM OF 3 SQUARE FEET OF ISLAND SUCH THAT 3-#4 DOWELS CAN BE INSTALLED AT 12" SPACING.

FOAM JOINT NOTES:

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 3/8" AT BENT 1 AND 2 9/16" AT BENT 3.

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

PROJECT NO. 17BP.10.P.3

MECKLENBURG COUNTY

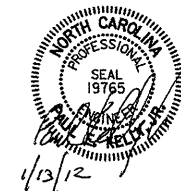
BRIDGE NO.: 323

REHAB. OF BRIDGE NO. 323 SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

MEDIAN REPAIR
DETAILS

BRIDGE ON US 21
OVER I-77

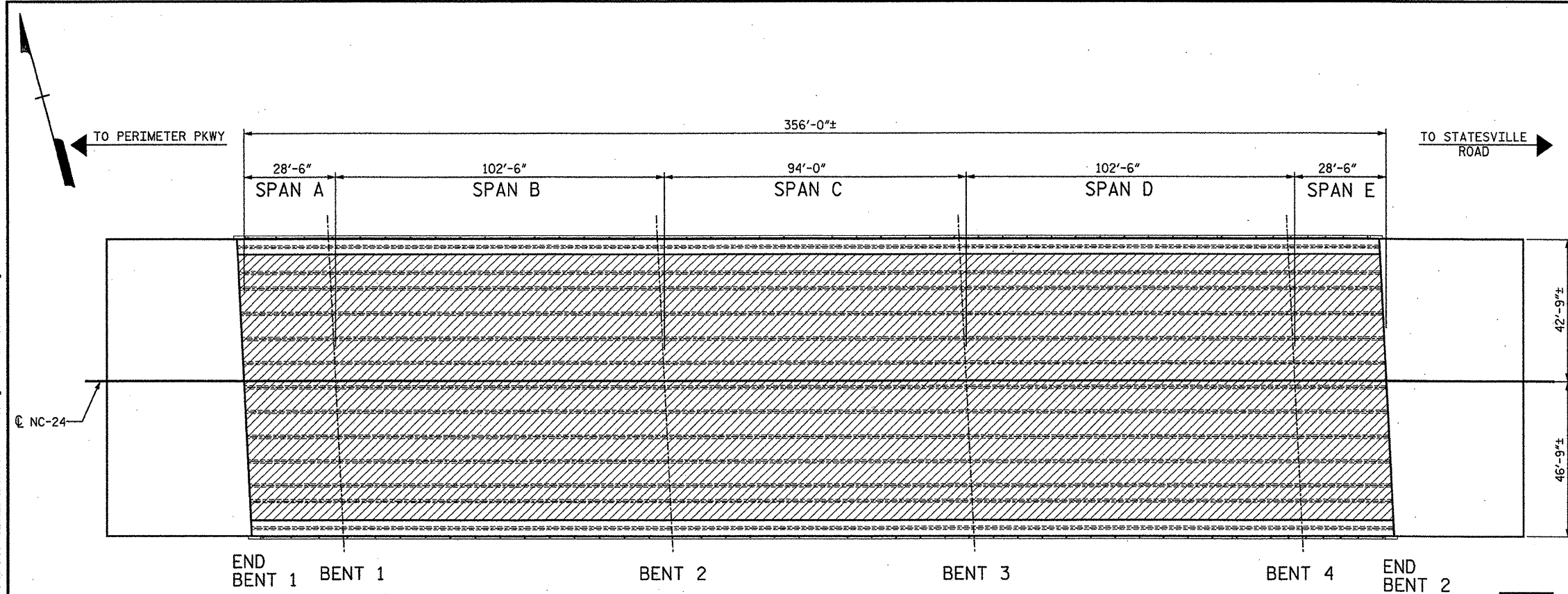


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CHECKED BY : CJ DATE : 1/5/12

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-69
2			4			S-88

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1/13/2012
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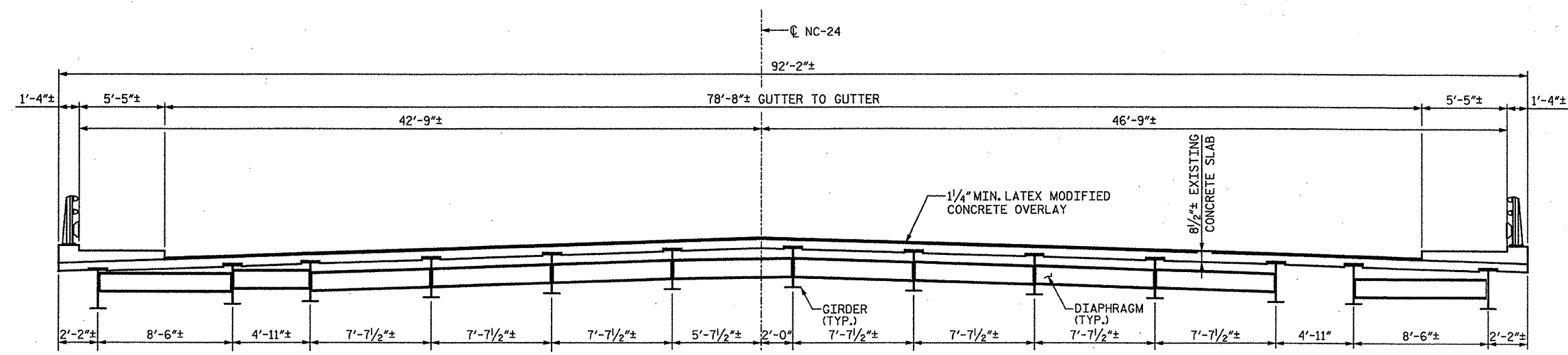


- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
 - FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
 - LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH.
 - FOR LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION

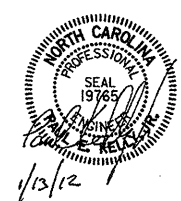
(CONCRETE BRIDGE FLOORS SHALL BE GROOVED IN ACCORDANCE WITH SECTION 420-14 OF THE STANDARD SPECIFICATIONS)

BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION



TYPICAL SECTION

BILL OF MATERIAL						
DECK SCARIFICATION	* CLASS I SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE VERY-EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SQ. YDS.	SQ. YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.
3113	3113	3113	109	3113	LUMP SUM	26540



PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 349

REHAB. OF BRIDGE NO. 349 SHEET 1 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PLAN OF SPANS & TYPICAL SECTION
 BRIDGE ON NC 24
 OVER I-77

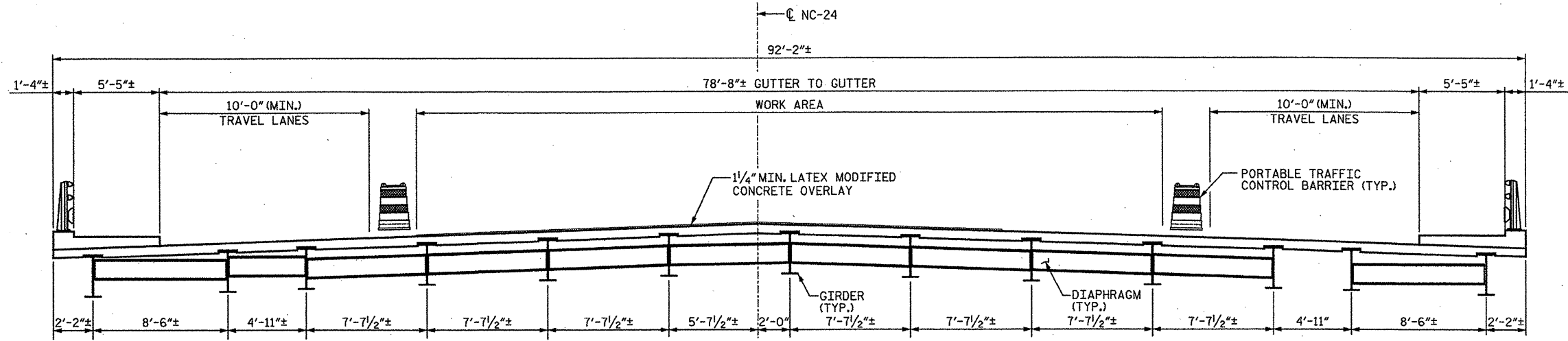
DRAWN BY : SC DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

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 NC License No. F-0991

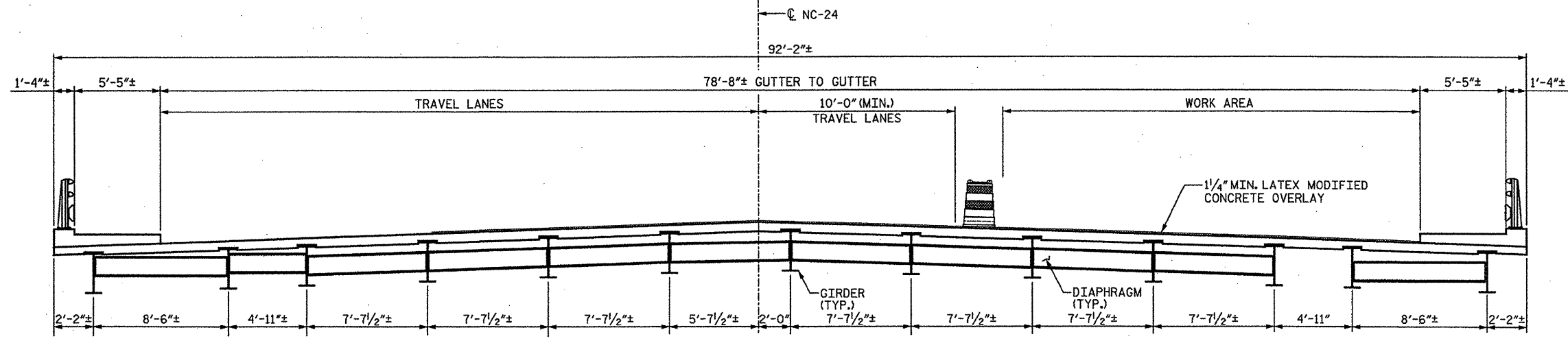
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS: S-70, S-88

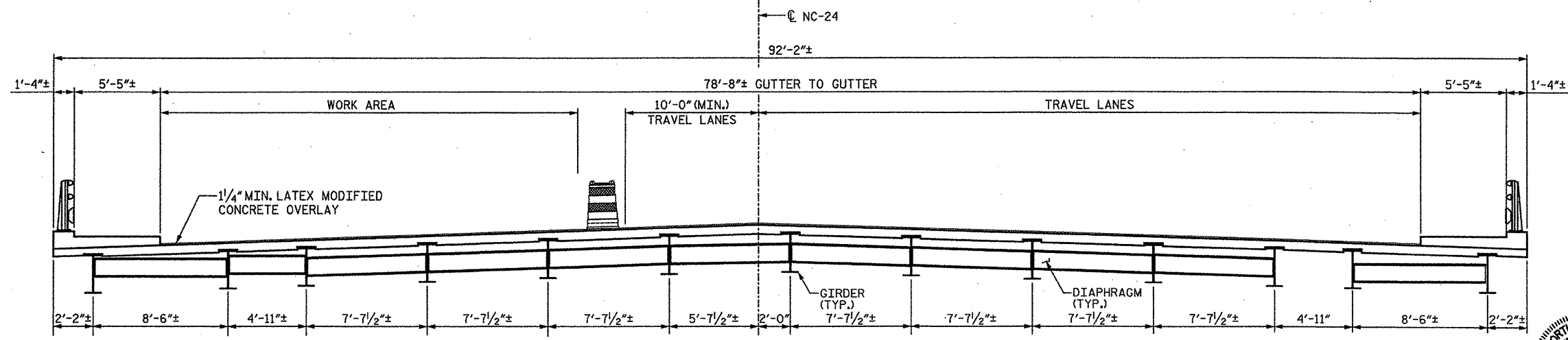
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 1/13/2012



SECTION STAGING I



SECTION STAGING II



SECTION STAGING III

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 349

REHAB. OF BRIDGE NO. 349 SHEET 2 OF 4

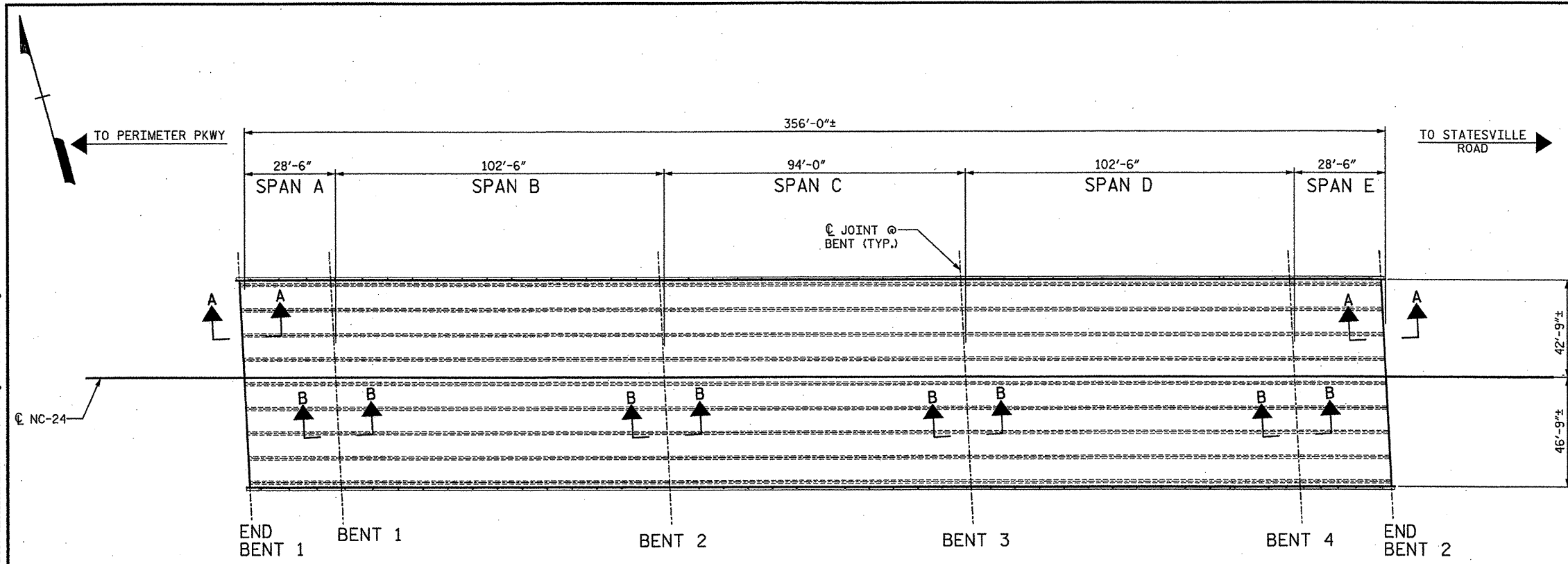
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON NC 24 OVER I-77



DRAWN BY : SC DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

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 NC License No. F-0591

REVISIONS						SHEET NO. S-71
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS S-88
2			4			



PLAN OF SPANS - DECK REPAIRS

NOTE:
 1. FOR SECTIONS A-A AND B-B, SEE SHEET 4 OF 4.

FOAM JOINT NOTES:
 FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.
 THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 3 3/4" AT BENT 1 AND 2 3/16" AT BENT 4.
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

i:\projects\2815386\51515386_0001\50_deliverables & submittals\17bp.10.p.3\structure\17bp.10.p.3\structure\17bp.10.p.3_pre-final\set 01.05.2012\BRIDGE-349\03 Bridge 349 PLAN.LMC.dgn
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 1/13/2012

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 349
 REHAB. OF BRIDGE NO. 349 SHEET 3 OF 4

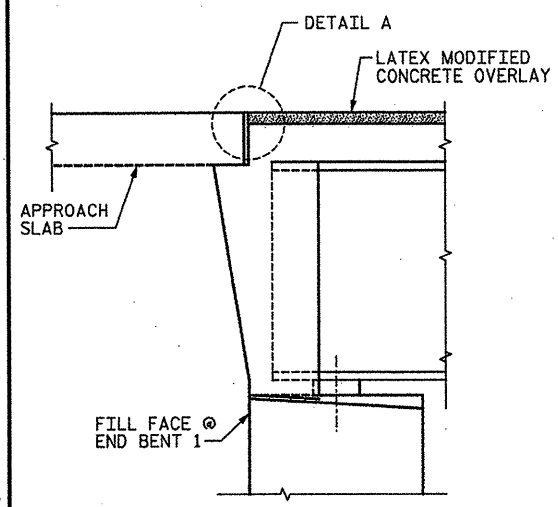
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF SPANS &
 TYPICAL SECTION**
 BRIDGE ON NC 24
 OVER I-77



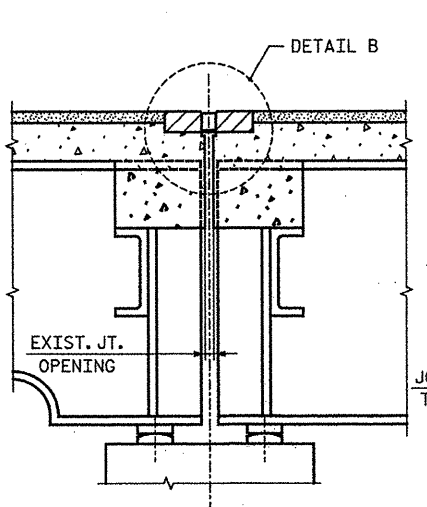
STV/ Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License No. F-0991						REVISIONS <table border="1"> <tr> <th>NO.</th> <th>BY:</th> <th>DATE:</th> <th>NO.</th> <th>BY:</th> <th>DATE:</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </table>			NO.	BY:	DATE:	NO.	BY:	DATE:	1			3			2			4			SHEET NO. S-72 TOTAL SHEETS S-88
NO.	BY:	DATE:	NO.	BY:	DATE:																						
1			3																								
2			4																								

DRAWN BY : SC DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

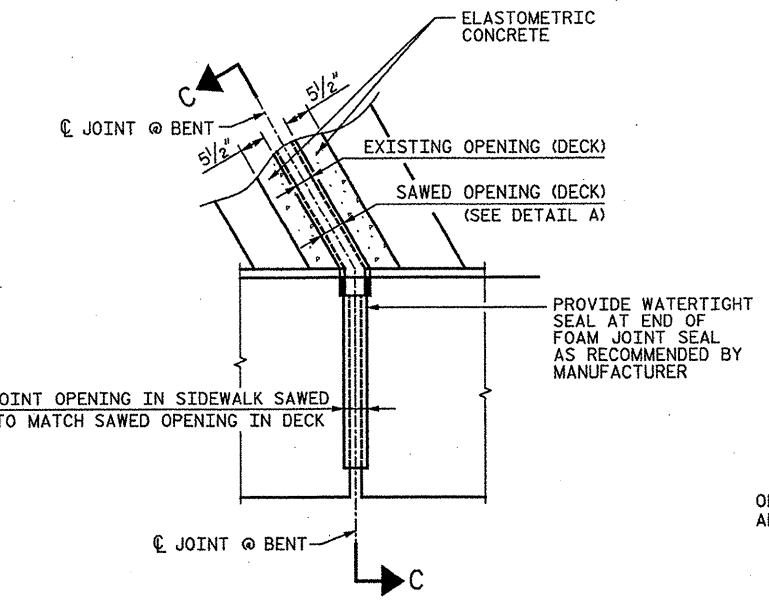
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 1/13/2012
 peteroj



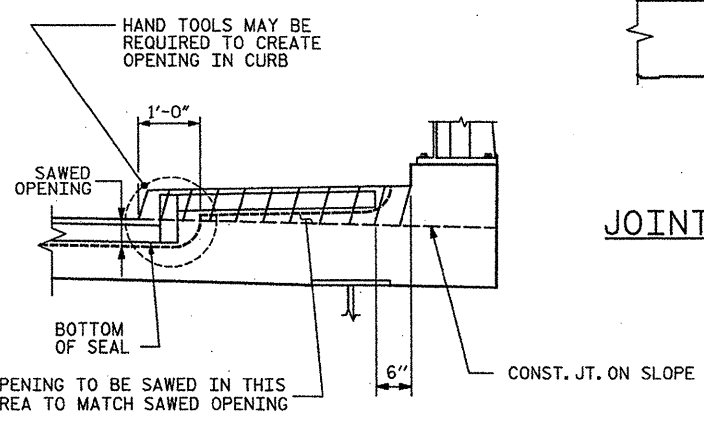
SECTION A-A
(PROPOSED JOINT @ END BENTS)



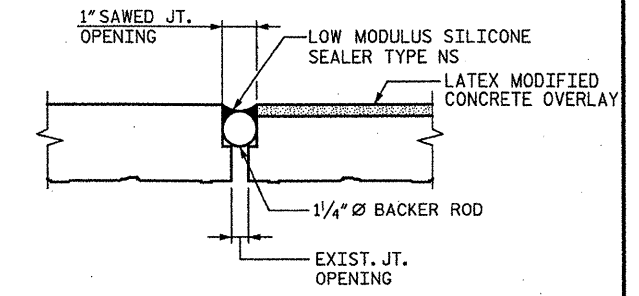
SECTION B-B
(PROPOSED JOINT @ INTERIOR BENTS)



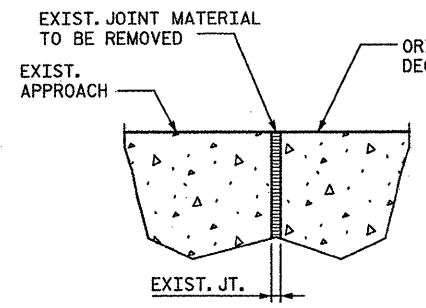
PLAN OF JOINT SEAL AT SIDEWALK



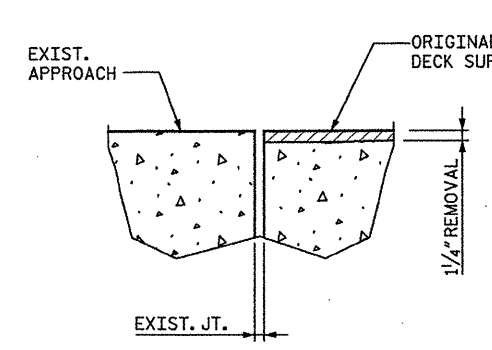
SECTION C-C



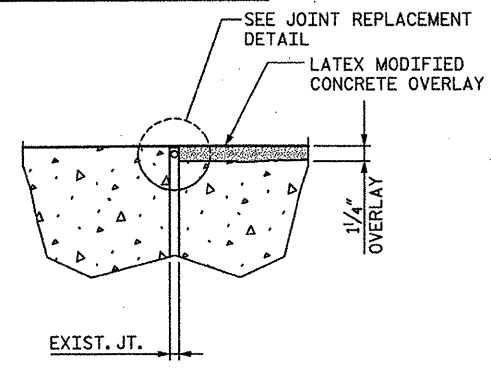
JOINT REPLACEMENT DETAIL



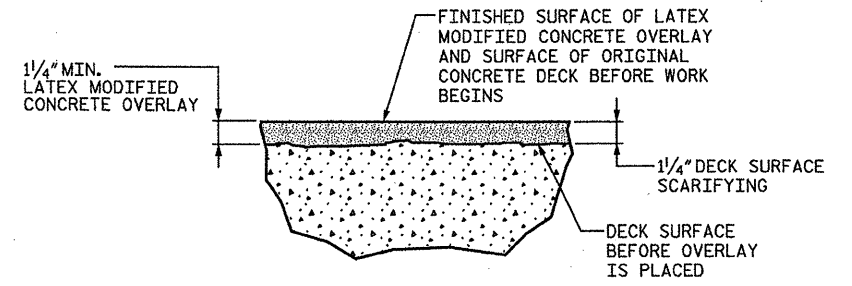
EXISTING JOINT



MIN. EXISTING JOINT DEMOLITION

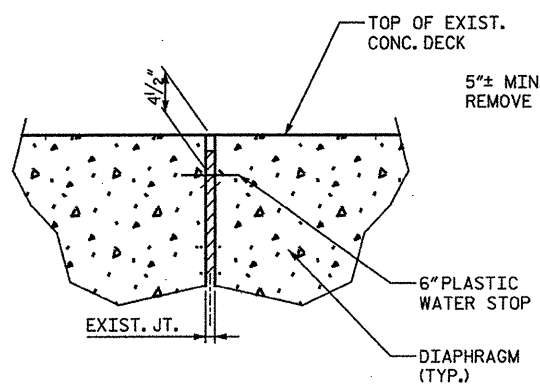


PROPOSED JOINT

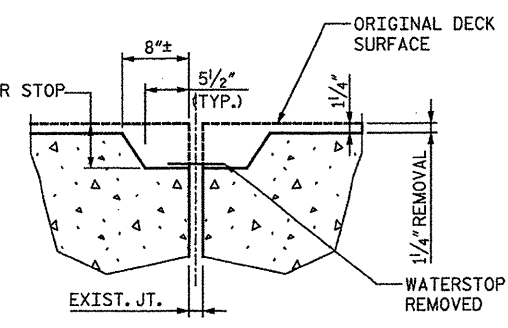


LATEX MODIFIED CONCRETE OVERLAY DETAIL

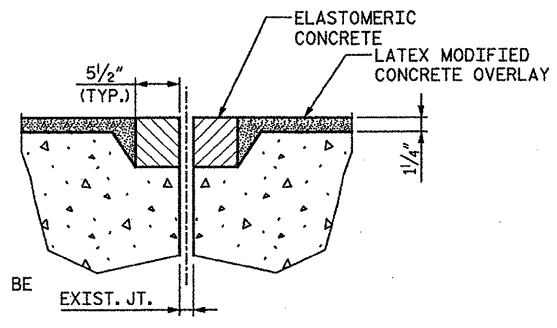
DETAIL A



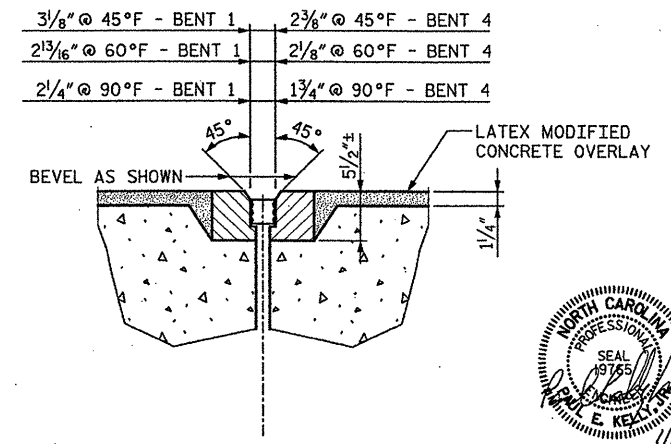
EXISTING JOINT



MINIMUM EXIST. JOINT DEMOLITION



PROPOSED JOINT PRE-SAWED



PROPOSED FOAM JOINT SEAL EXPANSION

DETAIL B

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	34.3
4	34.3
TOTAL	68.6

* QUANTITY FOR INFORMATION ONLY



PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 349
 REHAB. OF BRIDGE NO. 349 SHEET 4 OF 4

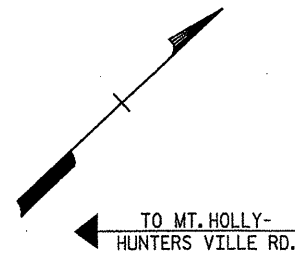
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
DECK & JOINT REPAIR DETAILS
 BRIDGE ON NC 24 OVER I-77

DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : CJ DATE : 1/5/12

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 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-73	
1			3			TOTAL SHEETS	S-88
2			4				

NOTES:
 SEE SHEET 3 OF 4 FOR JOINT NOTES.



- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS SEE SPECIAL PROVISIONS.
 - FOR REPAIR OR BRIDGE DECK USING EPOXY OVERLAY, SEE SPECIAL PROVISION.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

FOAM JOINT NOTES:

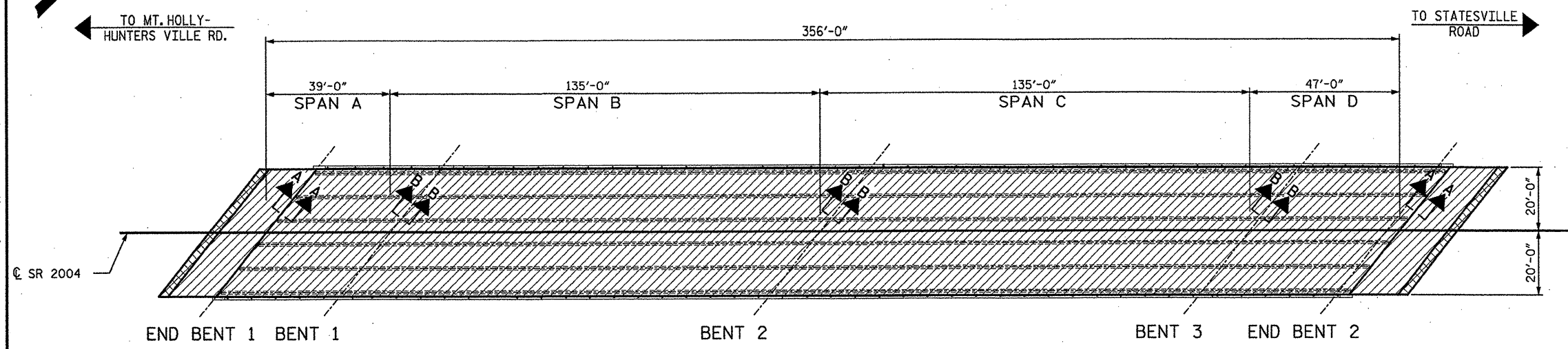
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.

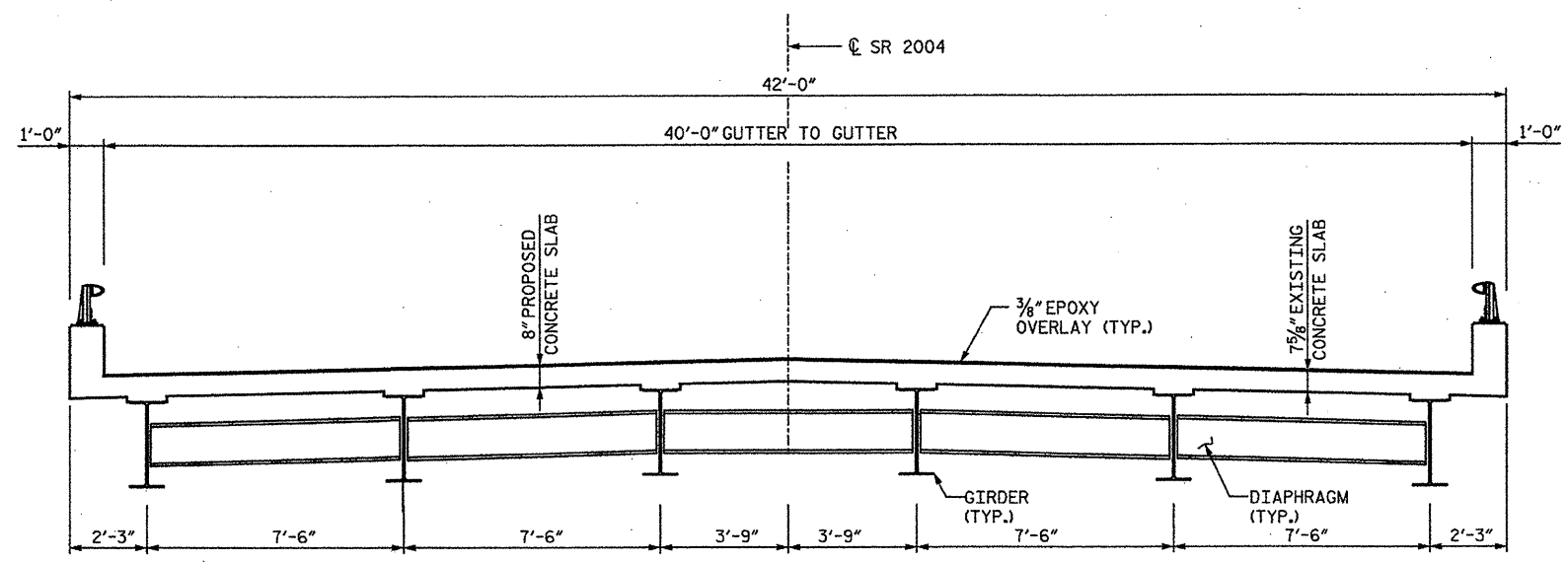
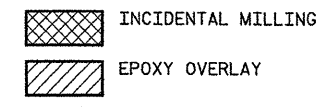
THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE $2\frac{13}{16}$ ".

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



PLAN OF SPANS - EPOXY OVERLAY

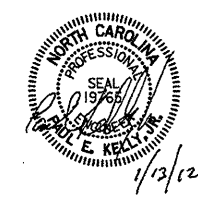


TYPICAL SECTION

BILL OF MATERIAL			
INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A	PLACEMENT OF EPOXY OVERLAY	FOAM JOINT SEALS
SQ.YDS	TON	SQ.FT.	LUMP SUM
15	3.5	15440	LUMP SUM

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 355

REHAB. OF BRIDGE NO. 355 SHEET 1 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPANS & TYPICAL SECTION

BRIDGE ON SR 2004
 OVER I-77

DRAWN BY : SC DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

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

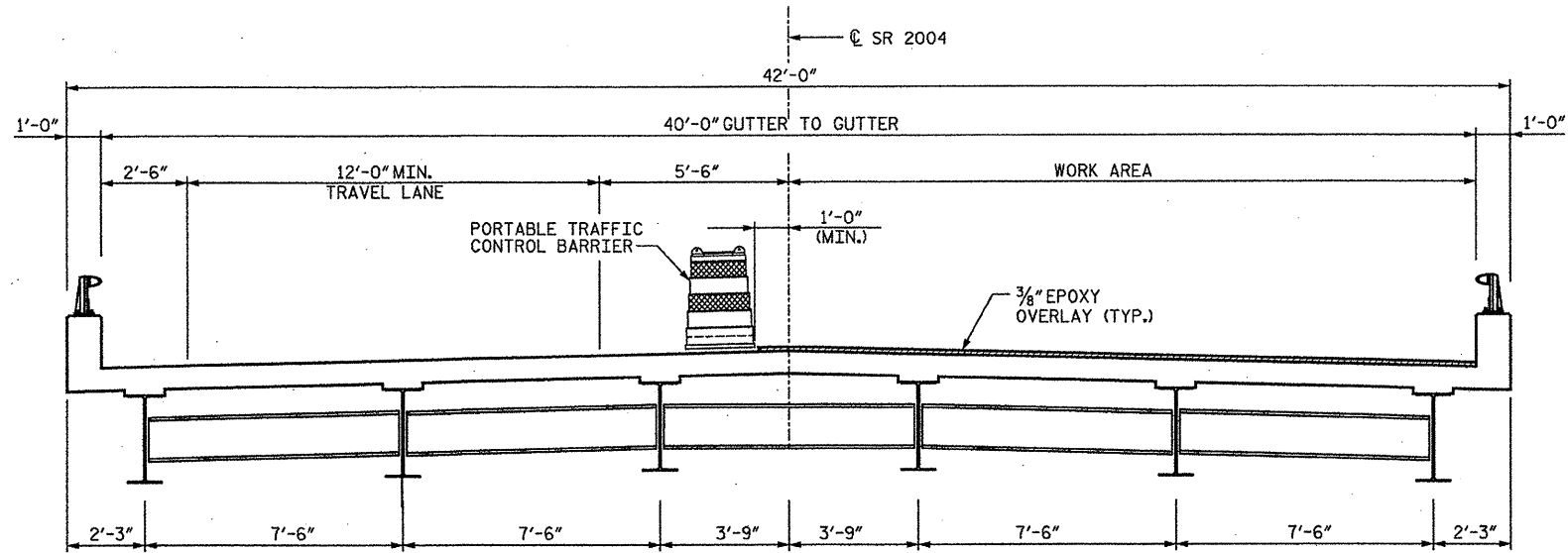
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-74
1			3			TOTAL SHEETS
2			4			S-88

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 1/13/2012 peteroj

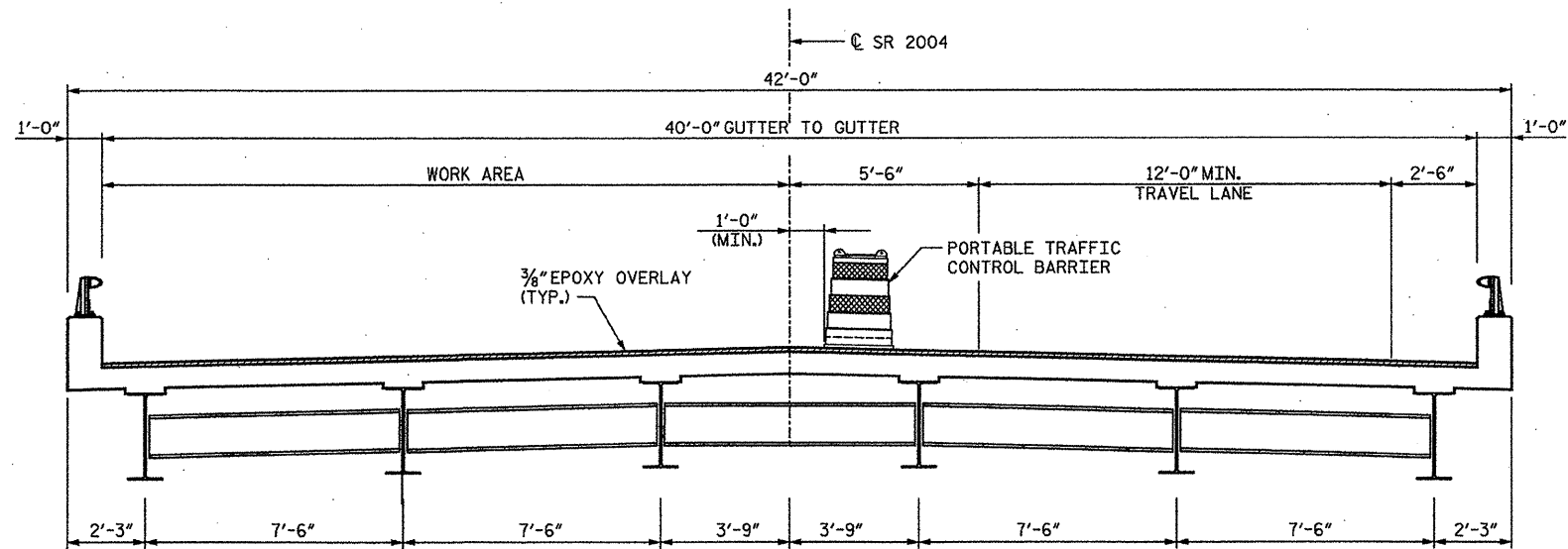
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petarj

1/13/2012



SECTION - STAGE I



SECTION - STAGE II

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 355

REHAB. OF BRIDGE NO. 355 SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION
 STAGING
 BRIDGE ON SR 2004
 OVER I-77

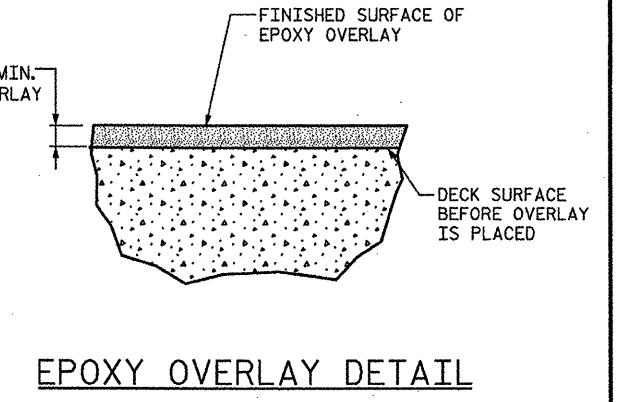
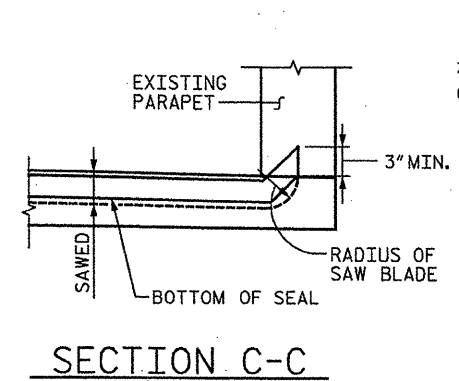
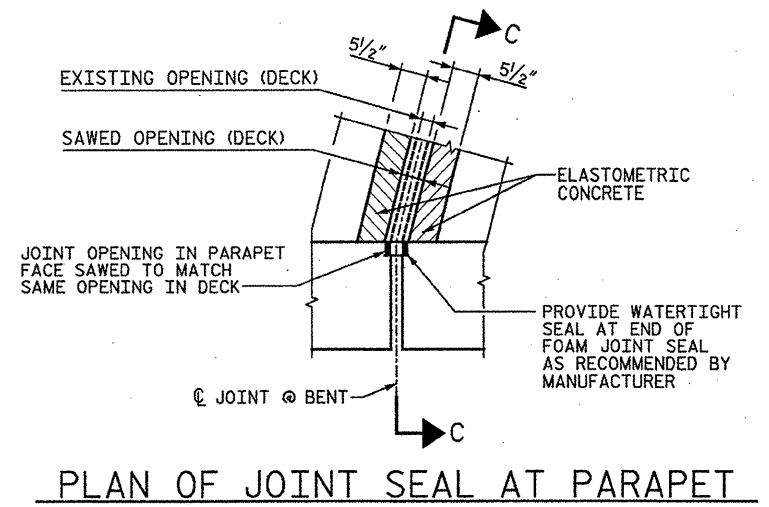
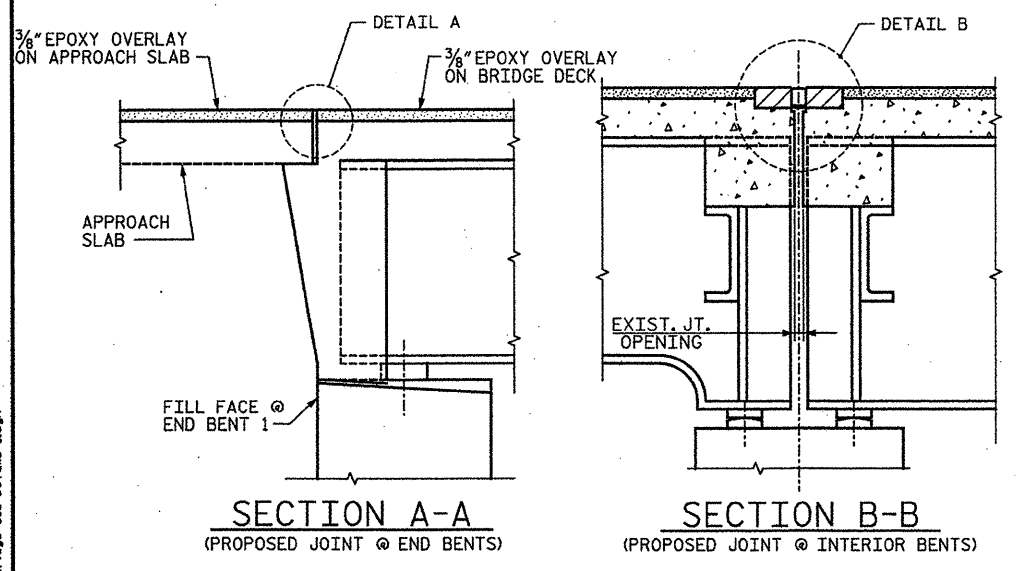


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 CHECKED BY: QA DATE: 1/5/12

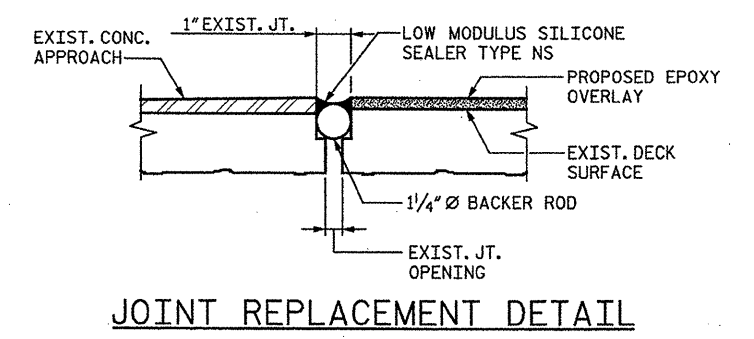
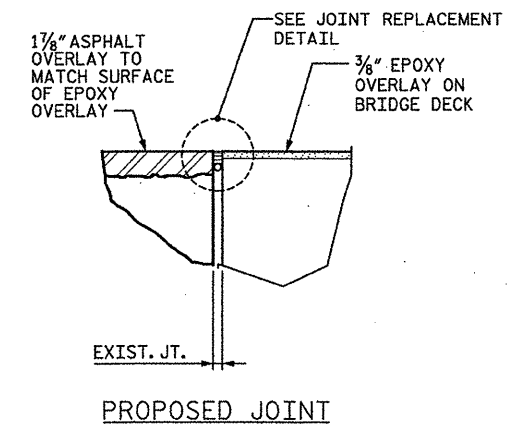
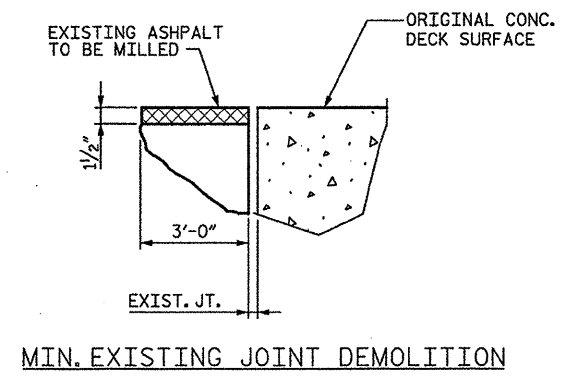
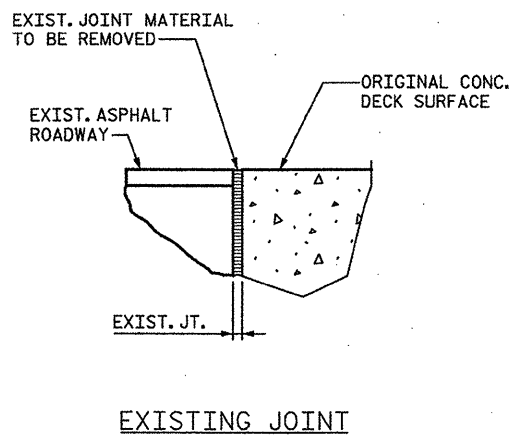
STV/Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-75
2			4			S-88

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 1/13/2012
 peter.j



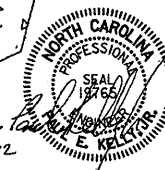
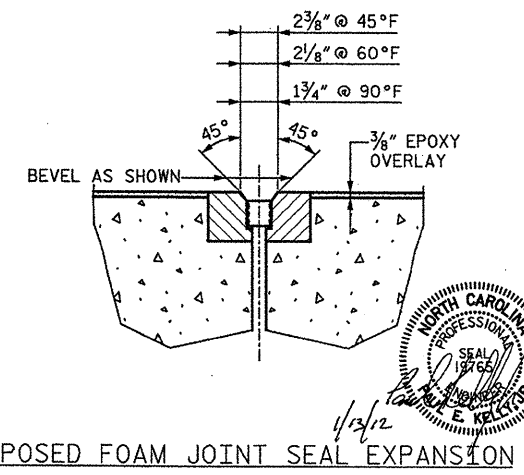
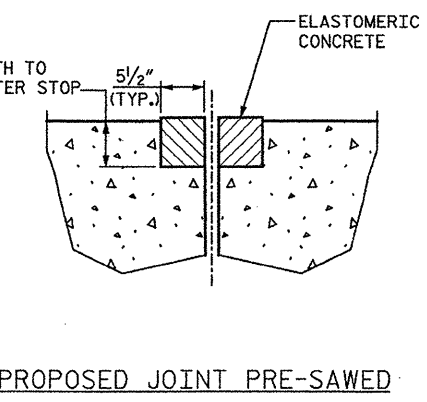
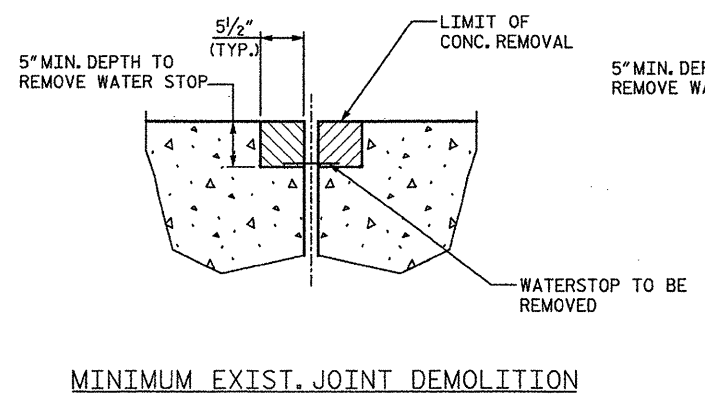
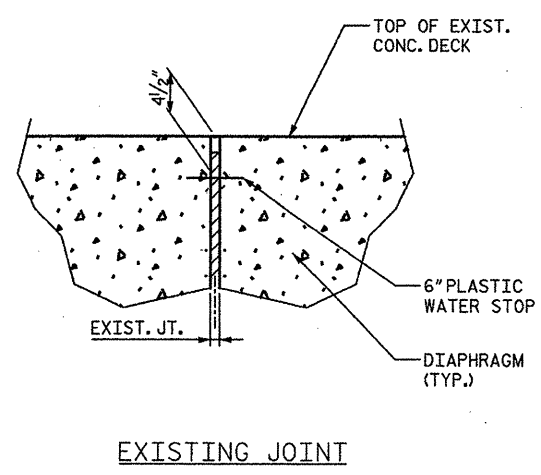
NOTES:
 SEE SHEET 1 OF 3 FOR JOINT NOTES.



ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	21.5
3	21.5
TOTAL	43.0

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 355
 REHAB. OF BRIDGE NO. 355 SHEET 3 OF 3



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
JOINT REPAIR DETAILS
 BRIDGE ON SR 2004
 OVER I-77

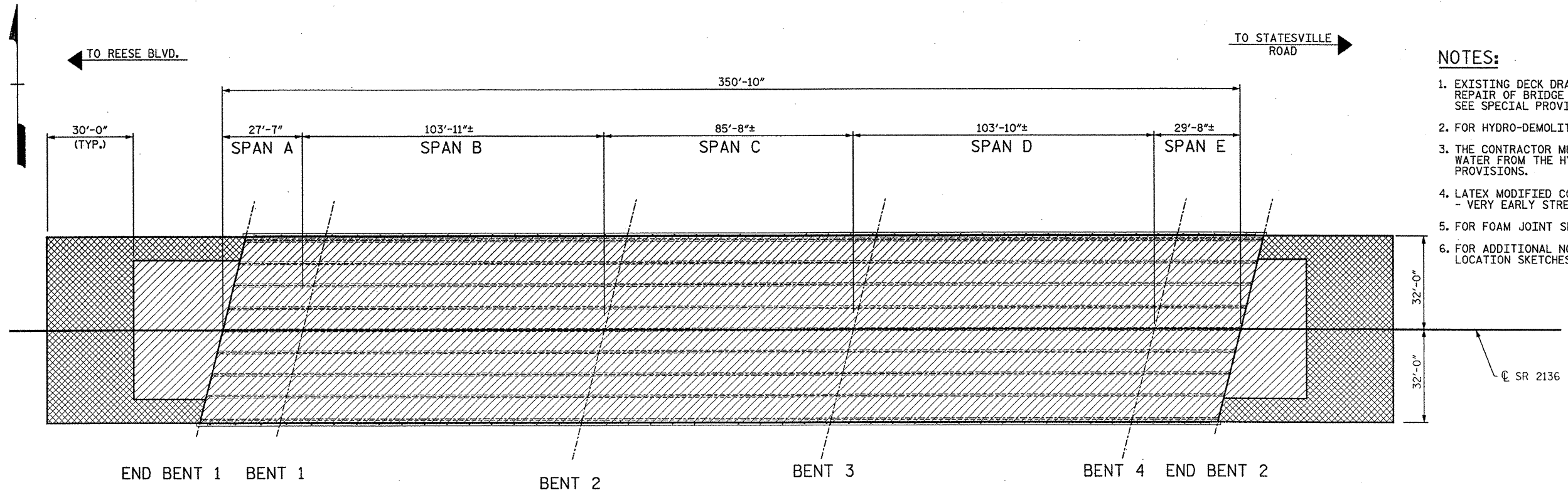
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 CHECKED BY : CJ DATE : 1/5/12

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

TOTAL SHEETS: 5-76
 SHEET: S-88

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 1/15/2012 peterj

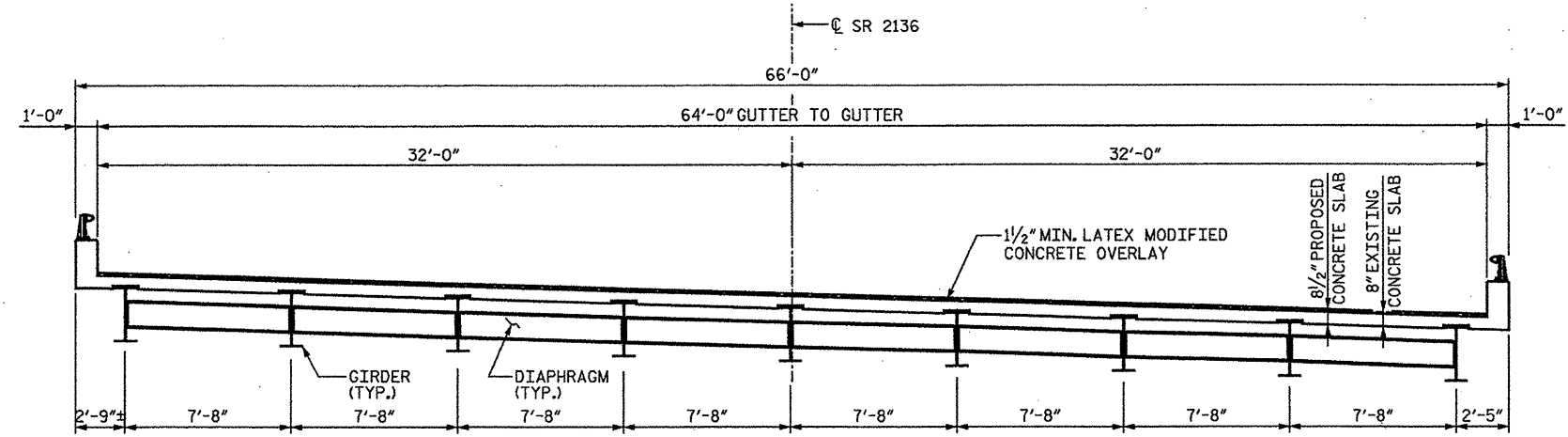


- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS WITH LATEX MODIFIED CONCRETE. SEE SPECIAL PROVISIONS.
 - FOR HYDRO-DEMOLITION, SEE SPECIAL PROVISIONS.
 - THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
 - LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PLAN OF SPANS - BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION

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

BRIDGE DECK SCARIFICATION & HYDRO-DEMOLITION
 INCIDENTAL MILLING



TYPICAL SECTION



PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY

BRIDGE NO.: 356

REHAB. OF BRIDGE NO. 356 SHEET 1 OF 6

BILL OF MATERIAL											
INCIDENTAL MILLING	DECK SCARIFICATION	ASPHALT CONCRETE SURFACE COURSE TYPE SF 9.5A	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	* CLASS AA CONCRETE	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SQ. YDS.	SQ. YDS.	TON	SQ. YDS.	SQ. YDS.	SQ. YDS.	CU YDS.	SQ. YDS.	CU. YDS.	SQ. YDS.	LUMP SUM	SQ. FT.
492	2780	41	2716	4	60	12	2780	16	2780	LUMP SUM	21071

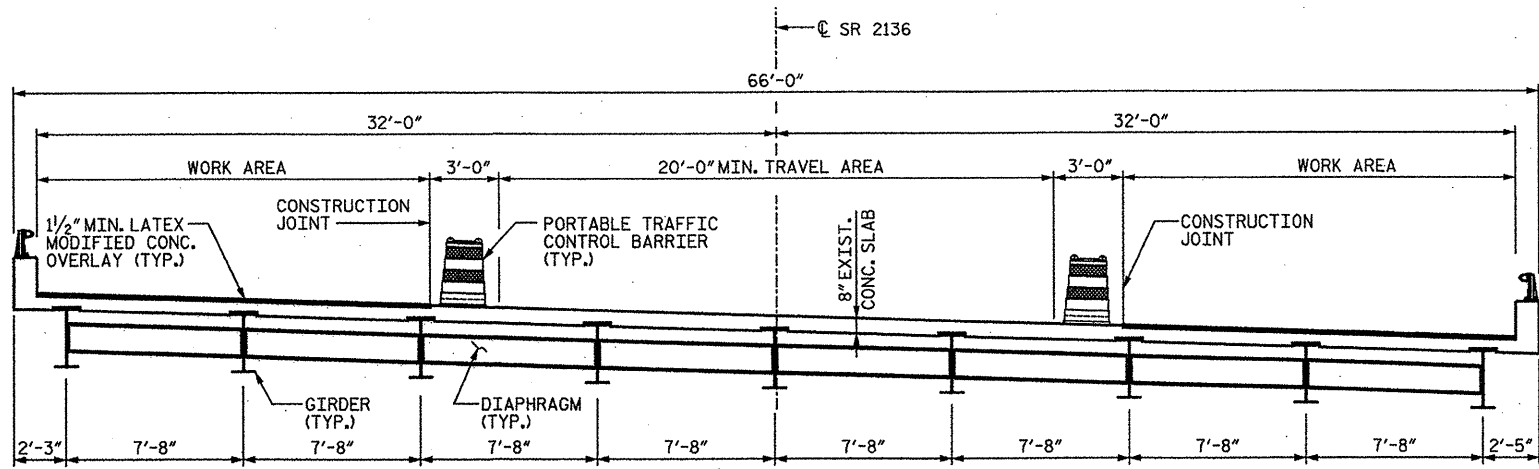
* QUANTITIES FOR INFORMATION ONLY

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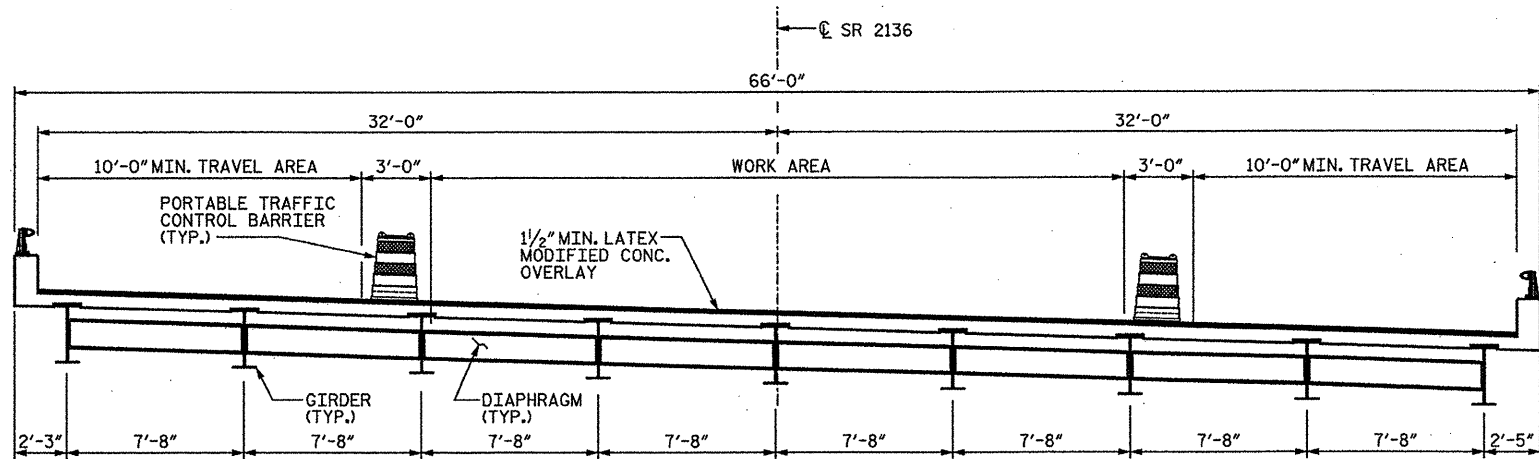
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 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-77
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2			4			S-88

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SECTION - STAGE I



SECTION - STAGE II

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 356

REHAB. OF BRIDGE NO. 356 SHEET 2 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

CONSTRUCTION
 STAGING
 BRIDGE ON SR 2136
 OVER I-77

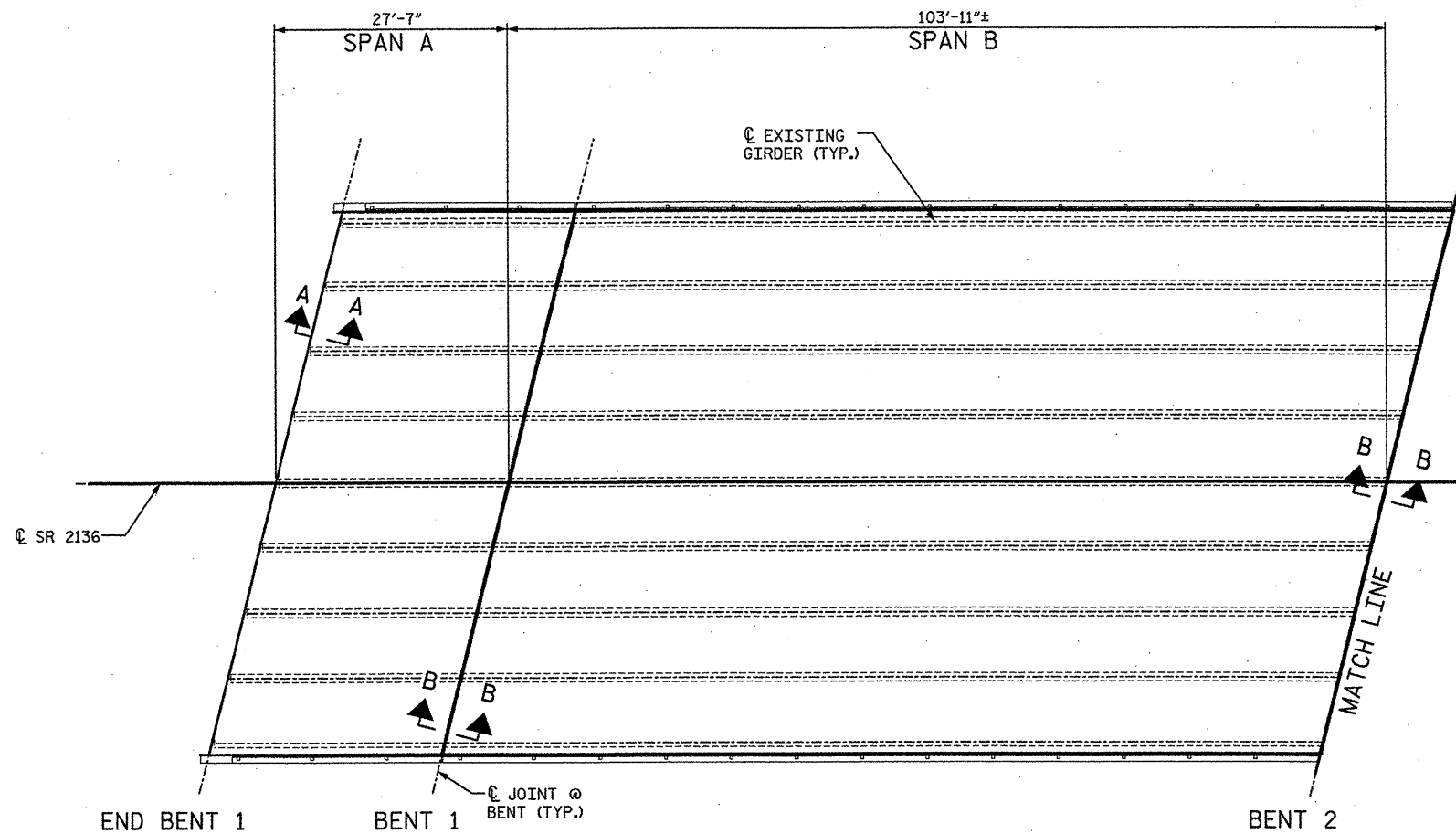


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 CHECKED BY : QA DATE : 1/5/12

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-78
1			3			TOTAL SHEETS
2			4			S-88

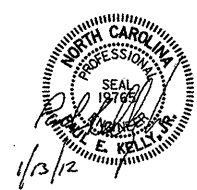
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 peteroj
 1/13/2012



PLAN OF SPANS - DECK REPAIRS
 (SEE SHEET 5 OF 6 FOR SECTIONS A-A AND B-B)

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

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 356
 REHAB. OF BRIDGE NO. 356 SHEET 3 OF 6



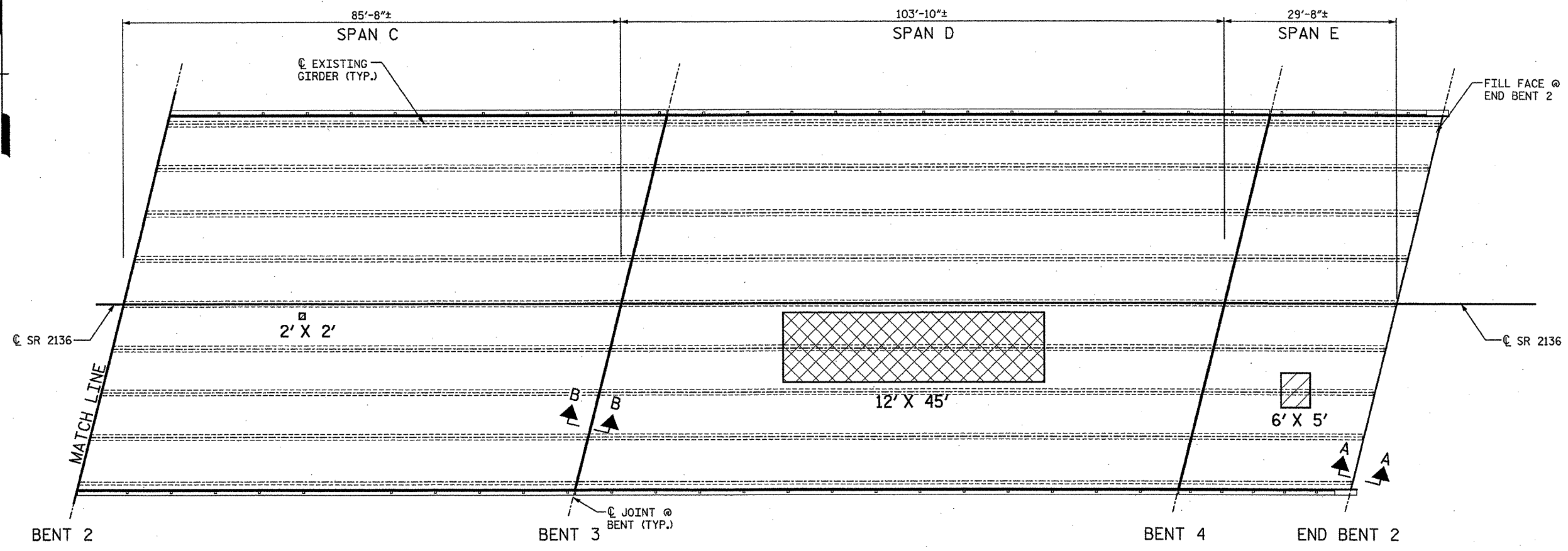
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF SPANS 1 & 2
 DECK REPAIR**
 BRIDGE ON SR 2136
 OVER I-77

DRAWN BY : SC DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-79
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2			4			S-88

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 1/13/2012



PLAN OF SPANS - DECK REPAIRS
 (FOR SECTIONS A-A AND B-B SEE SHEET 5 OF 6.)

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

NOTES:
 FOR LATEX MODIFIED CONCRETE OVERLAY, SEE SPECIAL PROVISIONS.
 FOR HYDRO-DEMOLITION OF BRIDGE DECK, SEE SPECIAL PROVISIONS.
 THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS. SEE SPECIAL PROVISIONS.
 EXISTING BRIDGE INFORMATION BASED ON BEST AVAILABLE DATA.
 FOR BLOW THROUGH NOTES, SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 356
 REHAB. OF BRIDGE NO. 356 SHEET 4 OF 6



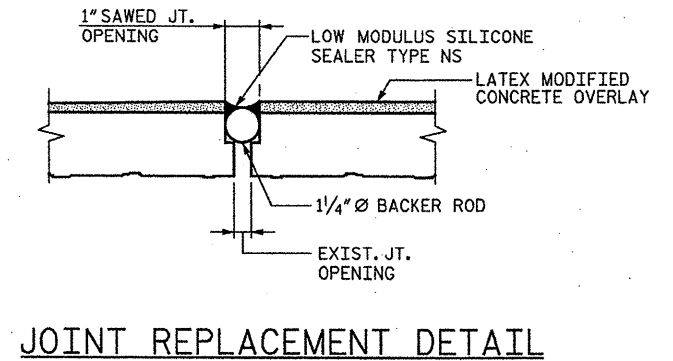
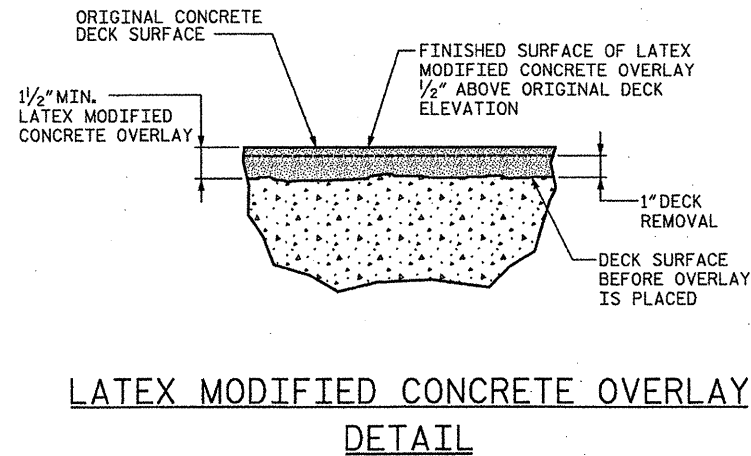
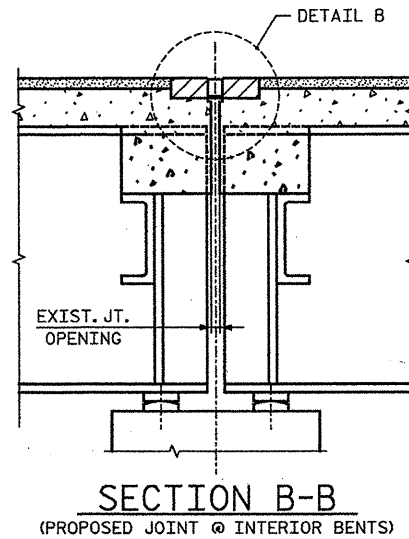
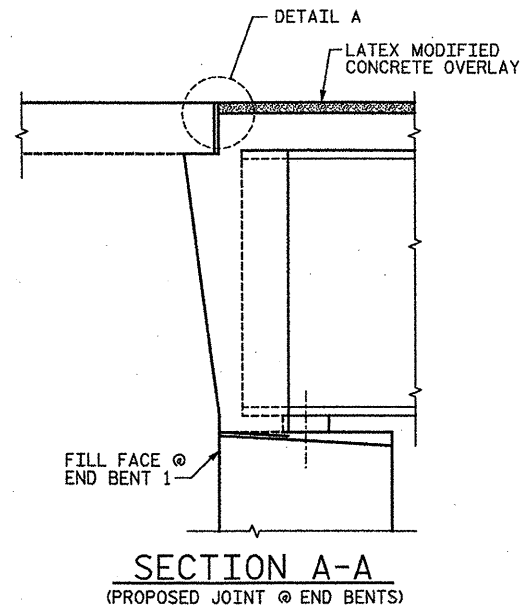
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF SPANS 3, 4 & 5
 DECK REPAIR**
 BRIDGE ON SR 2136
 OVER I-77

DRAWN BY : SC DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-80
1			3			TOTAL SHEETS
2			4			S-88

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 1/13/2012
 petercj



NOTES: (FOR FOAM JT. SEAL)

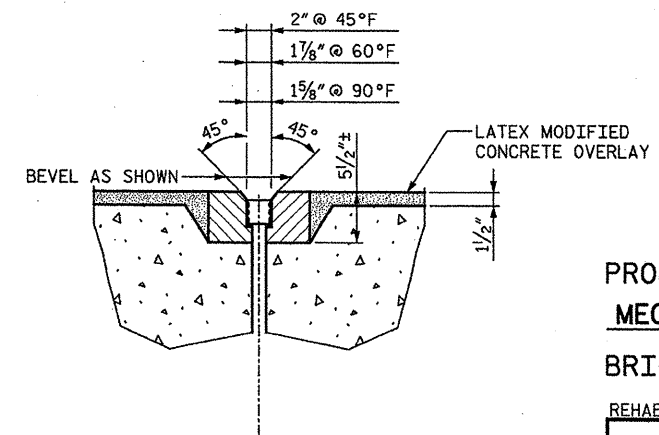
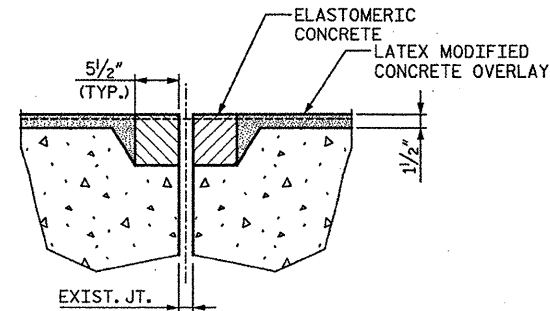
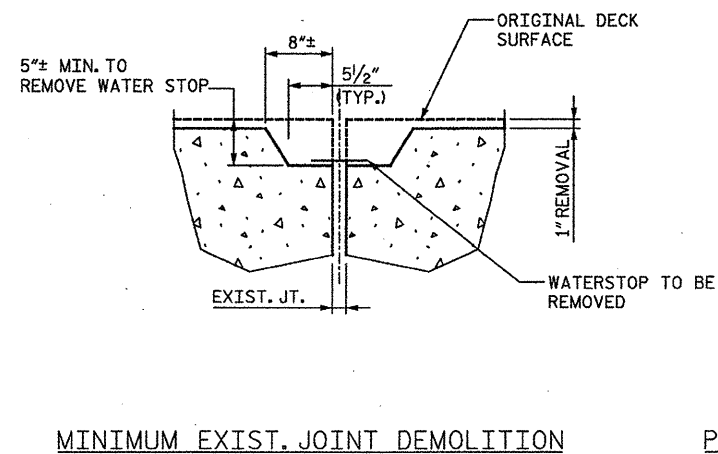
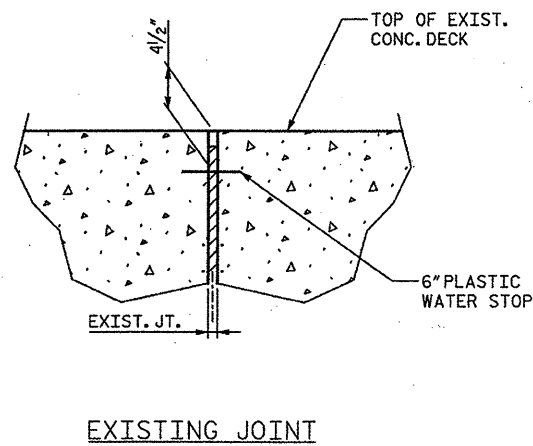
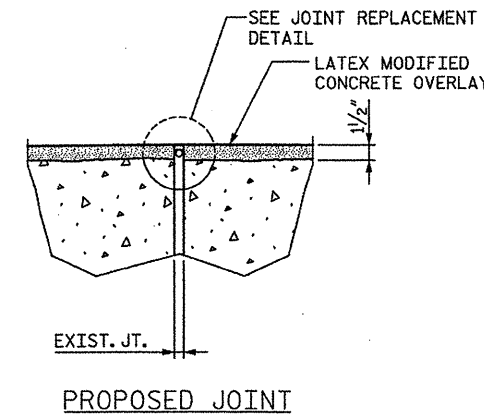
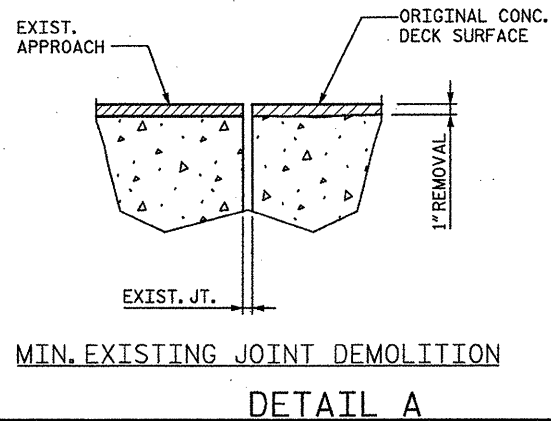
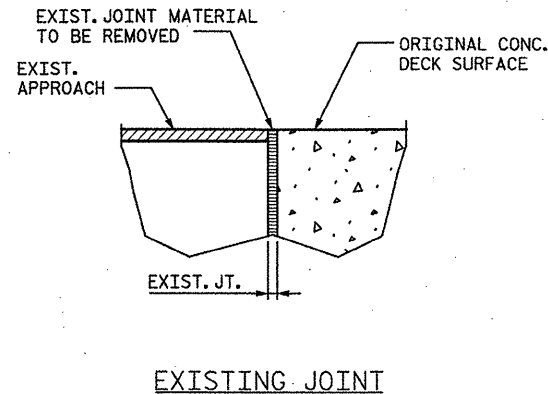
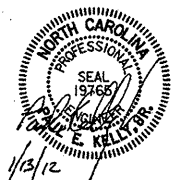
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT.

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

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

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	16.9
3	16.9
TOTAL	33.8

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3

MECKLENBURG COUNTY

BRIDGE NO.: 356

REHAB. OF BRIDGE NO. 356 SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK & JOINT
REPAIR DETAILS

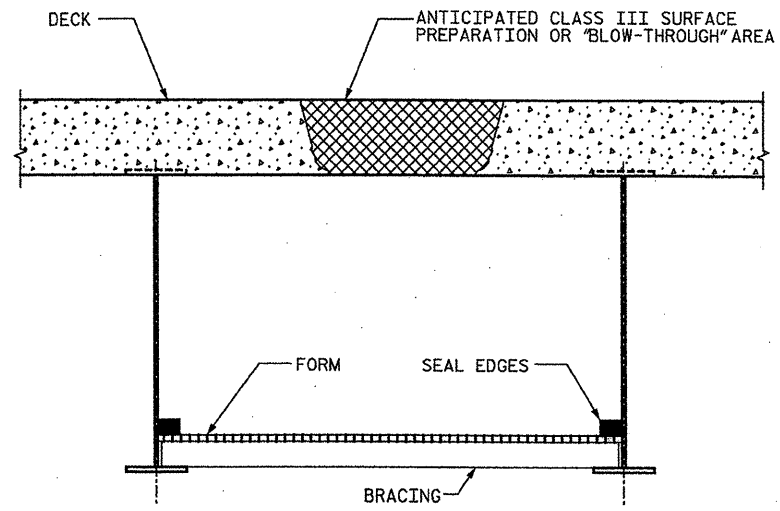
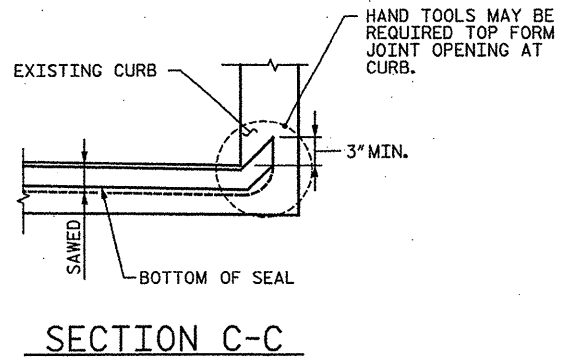
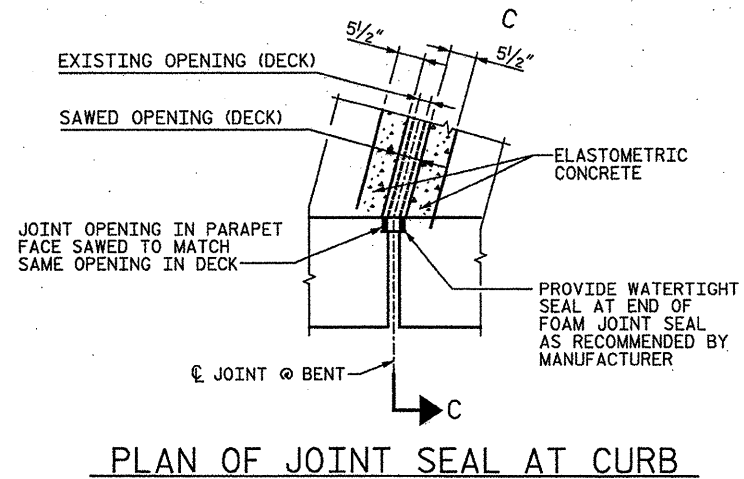
BRIDGE ON SR 2136
OVER I-77

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NC License No. F-0991

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-81	
1			3			TOTAL SHEETS	
2			4			S-88	

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TYP. "BLOW-THROUGH" CONTAINMENT AND FORMWORK

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

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

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

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 356
 REHAB. OF BRIDGE NO. 356 SHEET 6 OF 6



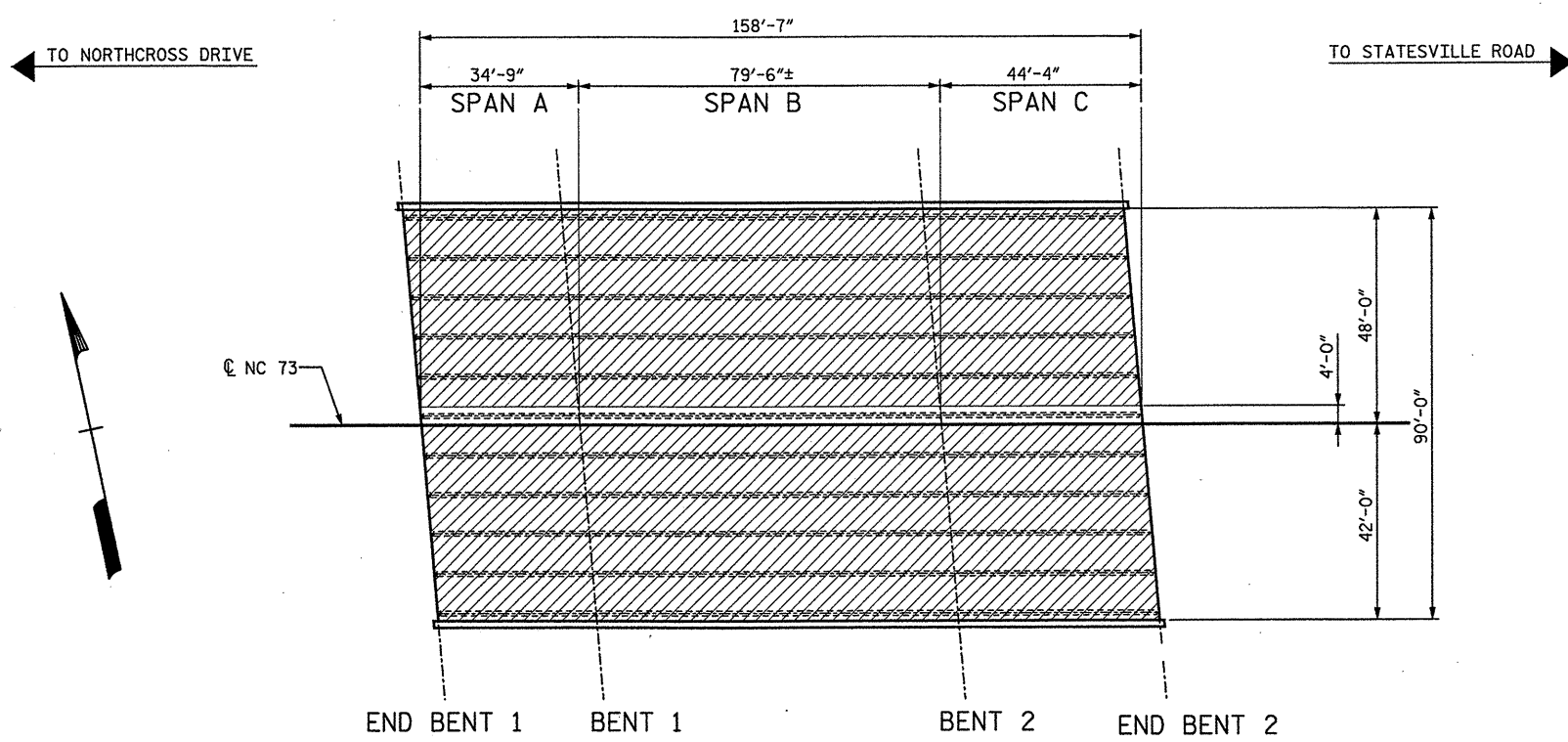
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
JOINT REPAIR DETAILS
 BRIDGE ON SR 2136
 OVER I-77

DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : CJ DATE : 1/5/12

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 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
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2			4			S-88

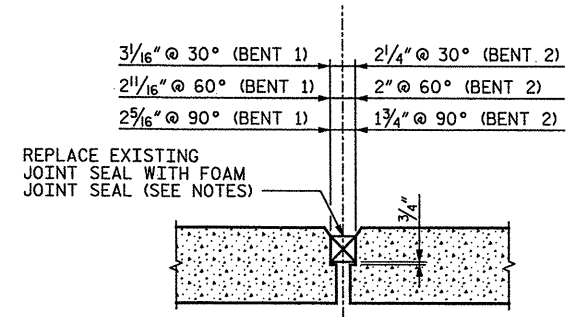
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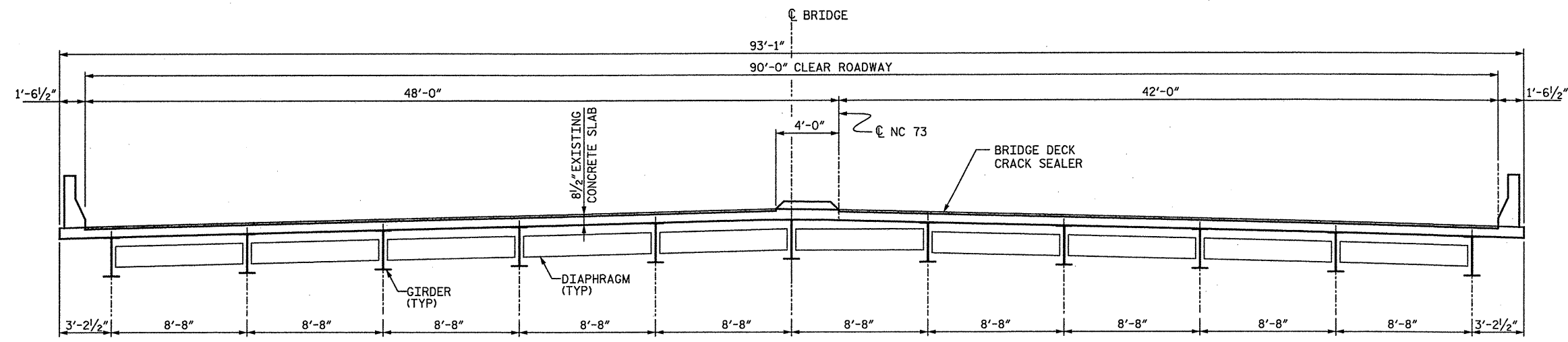
PLAN OF SPANS - BRIDGE DECK CRACK SEALER

BRIDGE DECK CRACK SEALER

- NOTES:**
- EXISTING DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING REPAIR OF BRIDGE DECKS, SEE SPECIAL PROVISIONS.
 - FOR BRIDGE DECK CRACK SEALER, SEE SPECIAL PROVISIONS.
 - FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 - THE INSTALLED FOAM JOINTS SEALS SHALL BE WATERTIGHT.
 - THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SHALL BE 2 1/2".
 - FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.



JOINT SEAL REPLACEMENT DETAIL



TYPICAL SECTION

BILL OF MATERIAL	
PLACEMENT OF CRACK/DECK SEALER	FOAM JOINT SEALS
SQ. FT.	LUMP SUM
13,638	LUMP SUM

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 358

REHAB. OF BRIDGE NO. 358 SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PLAN OF SPANS &
 TYPICAL SECTION

BRIDGE ON NC 73
 OVER I-77NBL



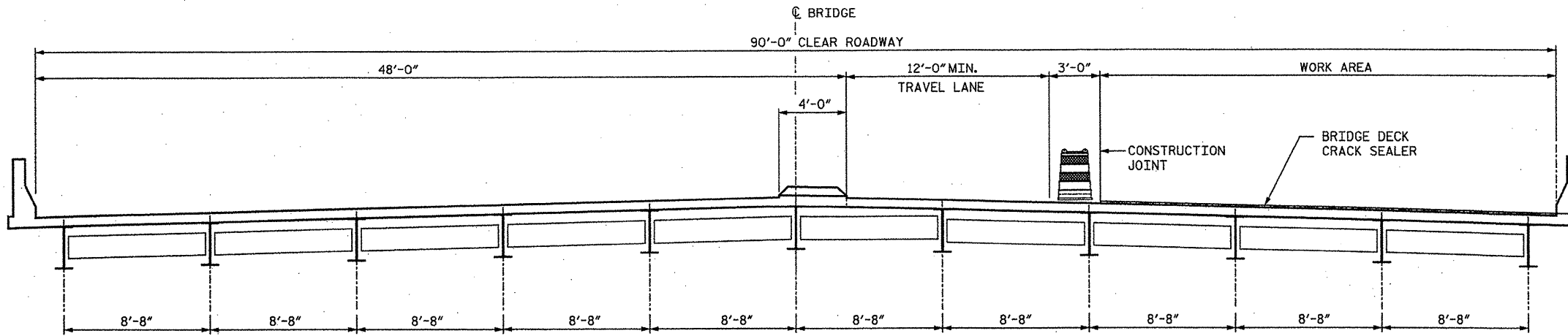
STV/Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

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

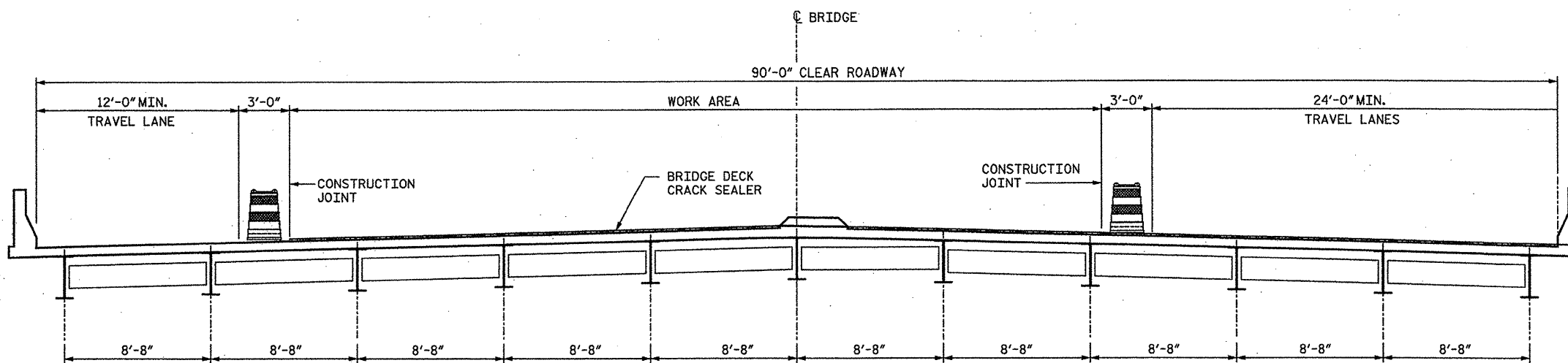
TOTAL SHEETS: S-88

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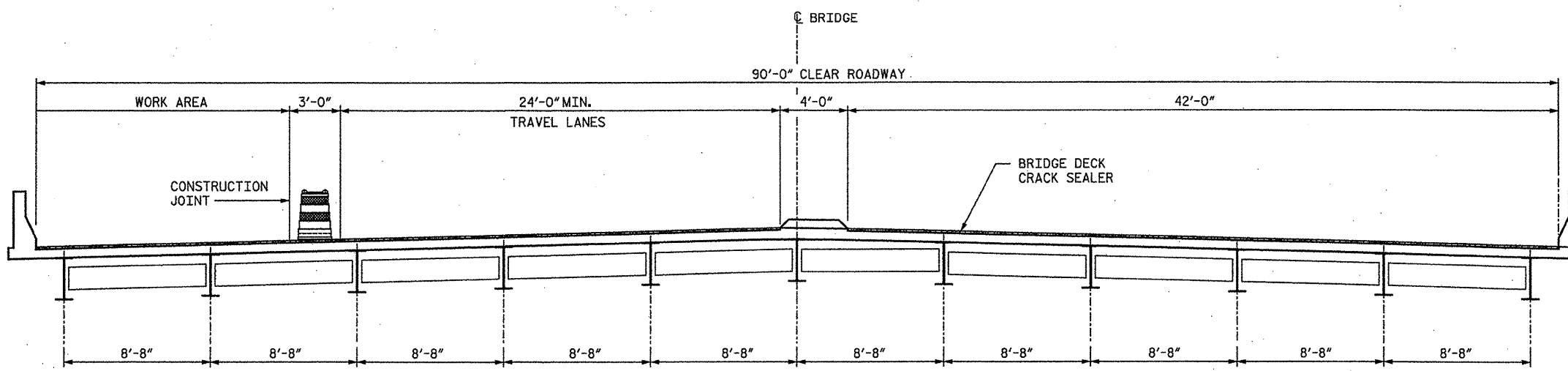
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 petercj
 1/13/2012



SECTION - STAGE I



SECTION - STAGE II



SECTION - STAGE III

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 358
 REHAB. OF BRIDGE NO. 358 SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON NC 73
 OVER I-77NBL

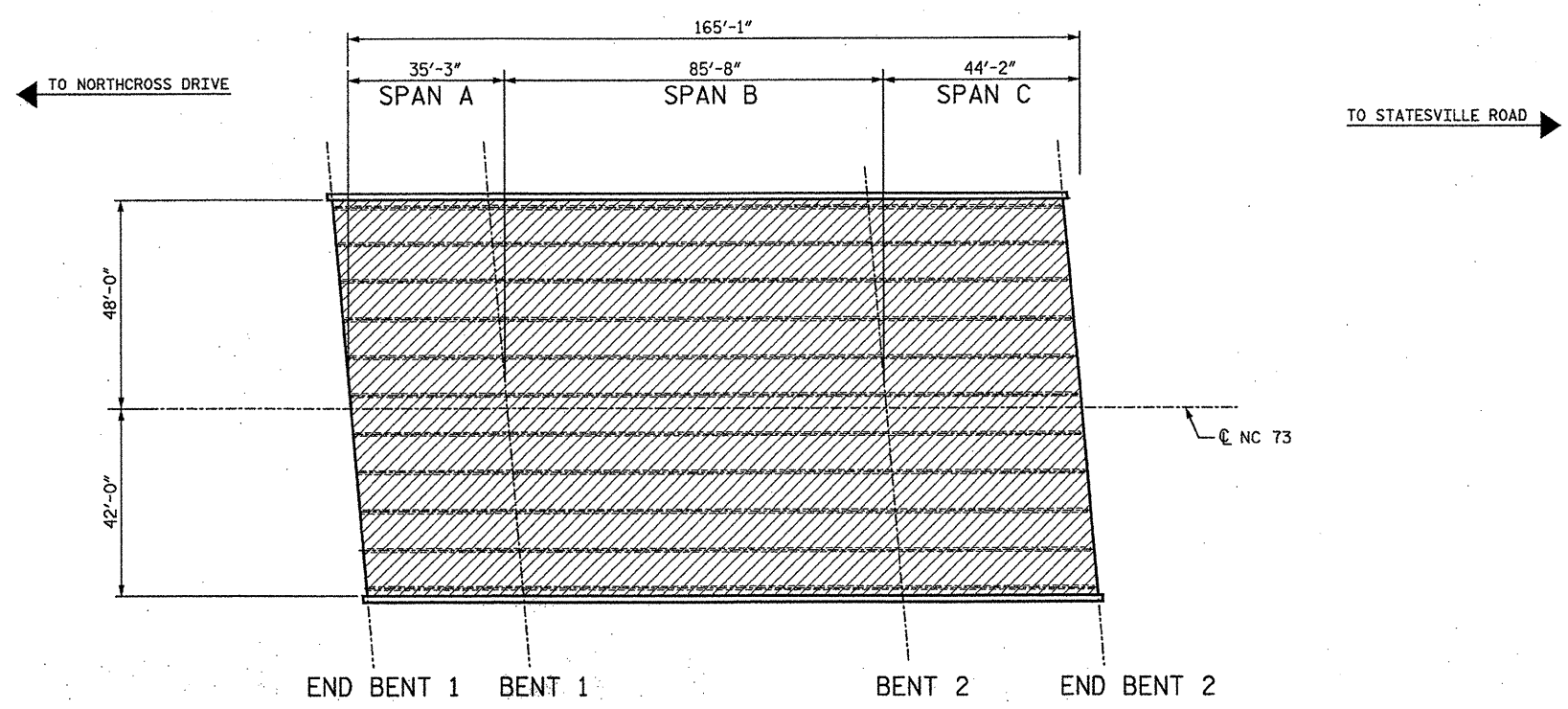


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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-84
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1/13/2012

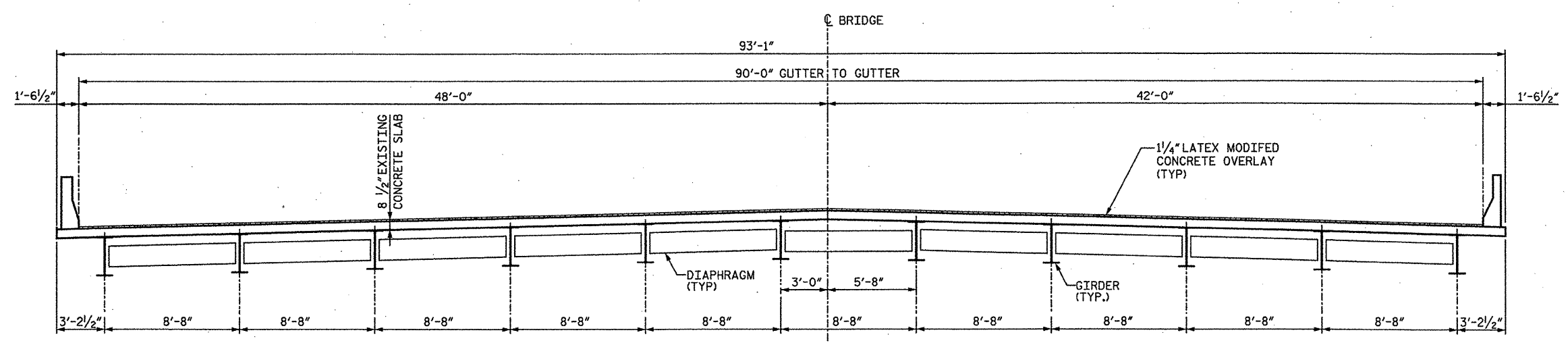
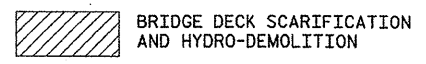


NOTES:

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 RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE SPECIAL PROVISIONS.
4. LATEX MODIFIED CONCRETE SHALL BE LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.
5. FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
6. FOR ADDITIONAL NOTES SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PLAN OF SPANS - BRIDGE DECK SCARIFICATION AND HYDRO-DEMOLITION

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

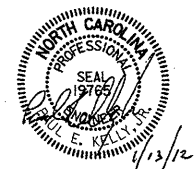


TYPICAL SECTION

PROJECT NO. 17BP.10.P.3
MECKLENBURG COUNTY
 BRIDGE NO.: 359
 REHAB. OF BRIDGE NO. 359 SHEET 1 OF 4

BILL OF MATERIAL							
DECK SCARIFICATION	* CLASS I SURFACE PREPARATION	* CLASS II SURFACE PREPARATION	HYDRO-DEMOLITION OF BRIDGE DECK	LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH	PLACING AND FINISHING LATEX MODIFIED CONCRETE -VERY EARLY STRENGTH	FOAM JOINT SEALS	GROOVING BRIDGE FLOORS
SQ. YDS.	SQ. YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	SQ.YDS.	LUMP SUM	SQ.FT.
1651	1588	63	1651	58	1651	LUMP SUM	14118

* QUANTITIES FOR INFORMATION ONLY



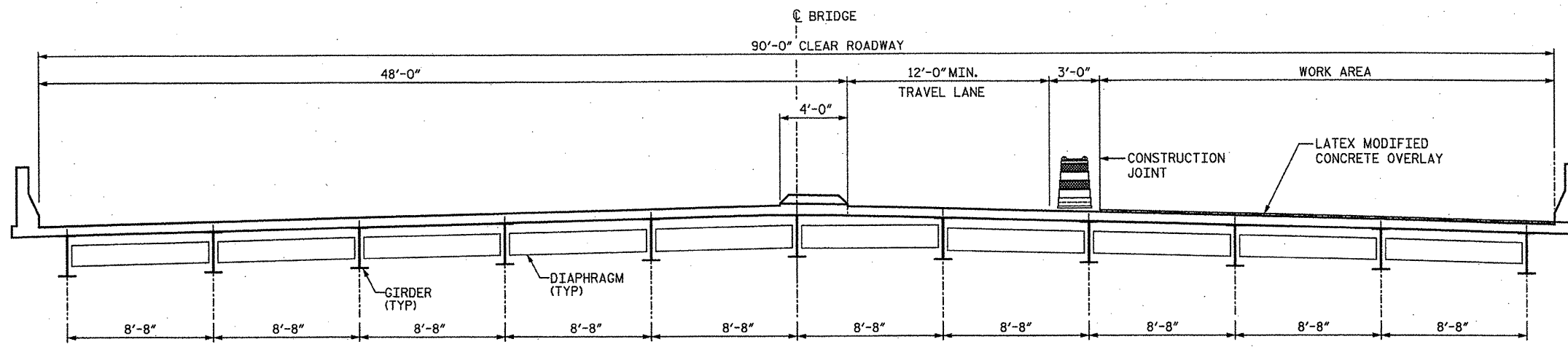
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
PLAN OF SPANS & TYPICAL SECTION
 BRIDGE ON NC 73
 OVER I-77SBL

DRAWN BY : BE DATE : 1/5/12
 CHECKED BY : OA DATE : 1/5/12

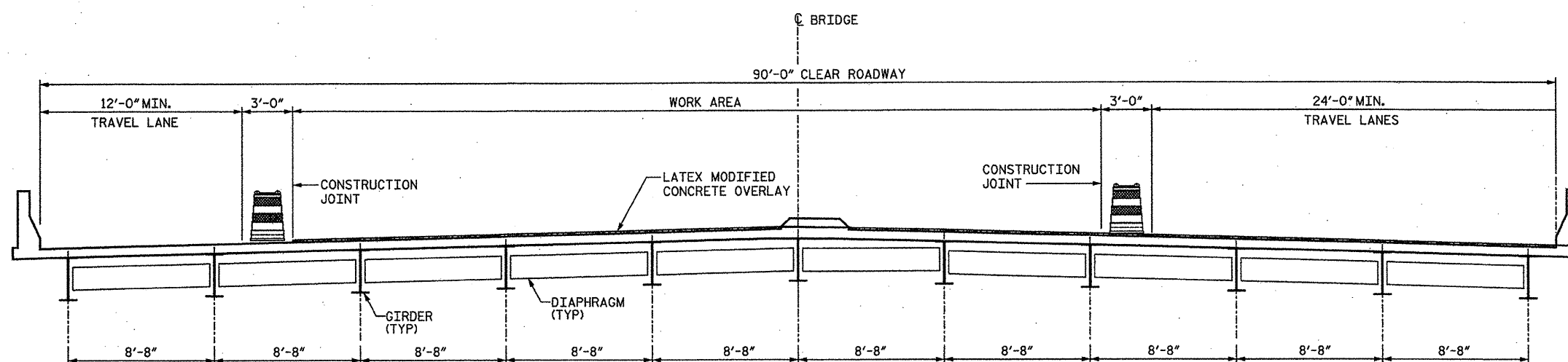
STV / Ralph Whitehead Associates, Inc.
 1000 West Morehead St., Ste. 200
 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-85
2			4			S-88

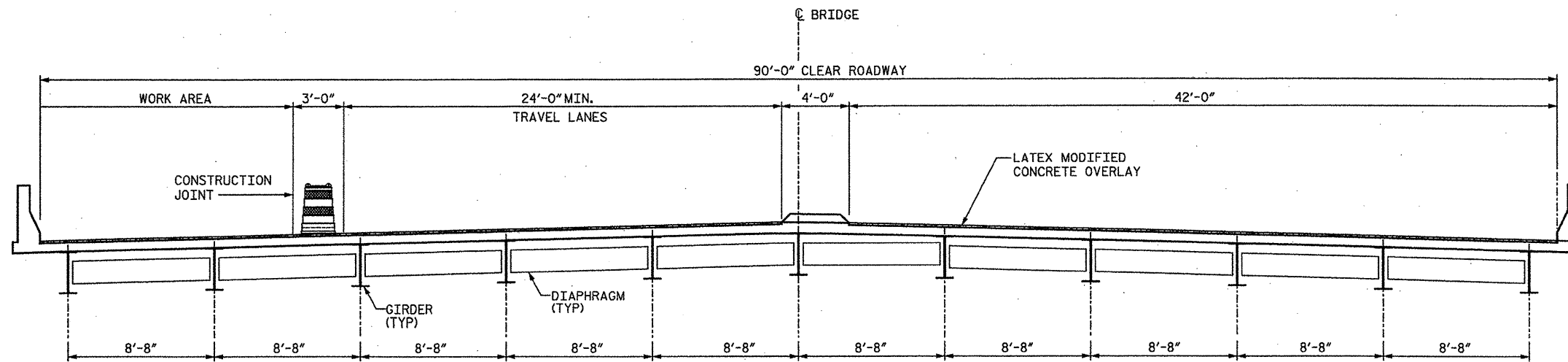
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 1/13/2012
 petercj



SECTION - STAGE I



SECTION - STAGE II



SECTION - STAGE III

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 359

REHAB. OF BRIDGE NO. 359 SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
CONSTRUCTION STAGING
 BRIDGE ON NC 73
 OVER I-77SBL

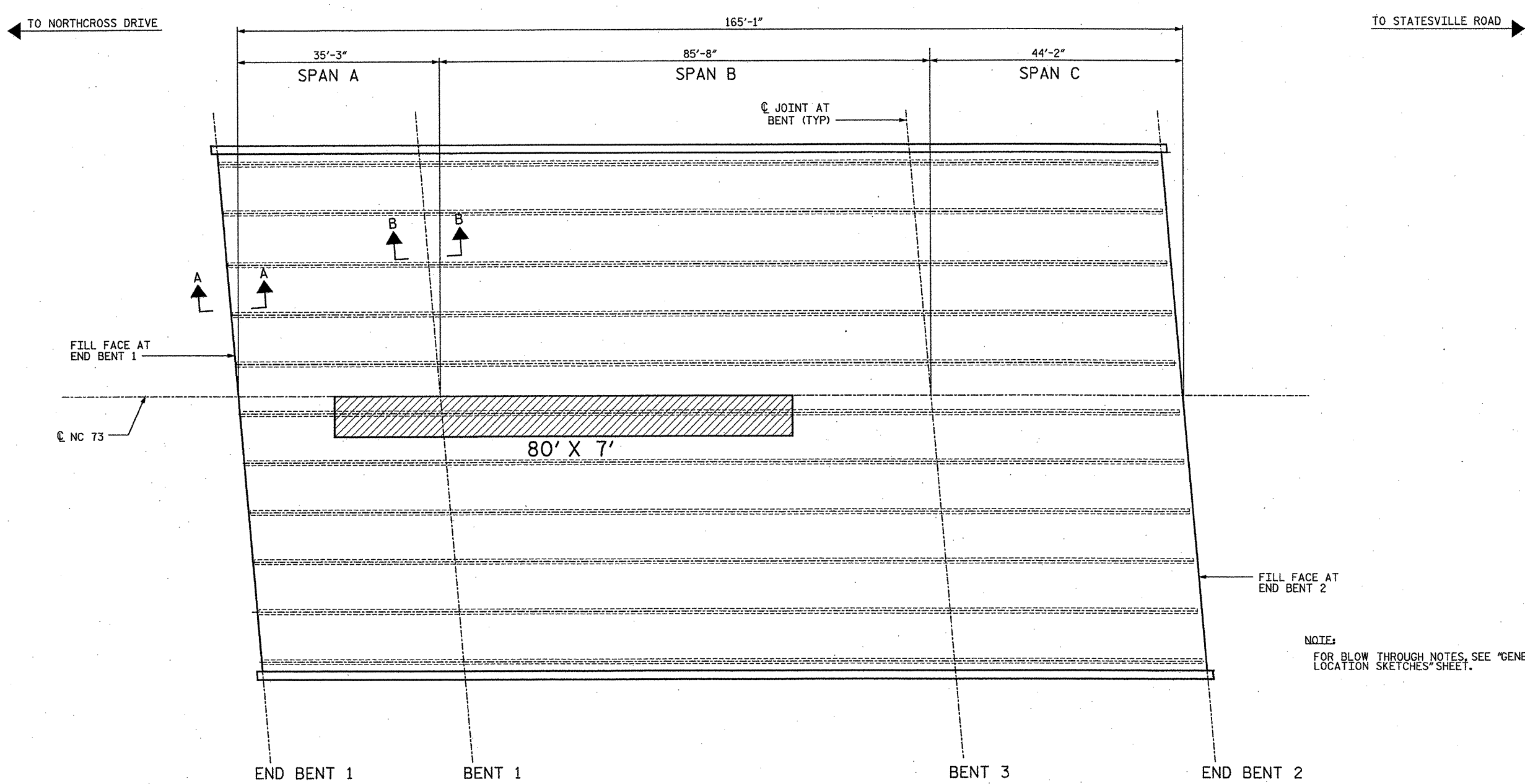


DRAWN BY : AA DATE : 1/5/12
 CHECKED BY : QA DATE : 1/5/12

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 Charlotte, NC 28208
 NC License No. F-0991

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-86
1			3			TOTAL SHEETS
2			4			S-88

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 1/13/2012
 petercj



NOTE:
 FOR BLOW THROUGH NOTES, SEE "GENERAL NOTES AND LOCATION SKETCHES" SHEET.

PLAN OF SPANS - BRIDGE DECK REPAIR
 (FOR SECTIONS A-A & B-B, SEE SHEET 4 OF 4)

[White Box] APPROX. AREA: CLASS I REPAIR
 [Hatched Box] APPROX. AREA: CLASS II REPAIR

PROJECT NO. 17BP.10.P.3
 MECKLENBURG COUNTY
 BRIDGE NO.: 359
 REHAB. OF BRIDGE NO. 359 SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN OF SPANS
 DECK REPAIRS**
 BRIDGE ON NC 73
 OVER I-77SBL

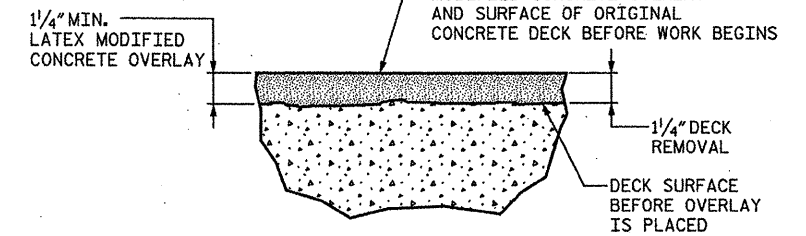
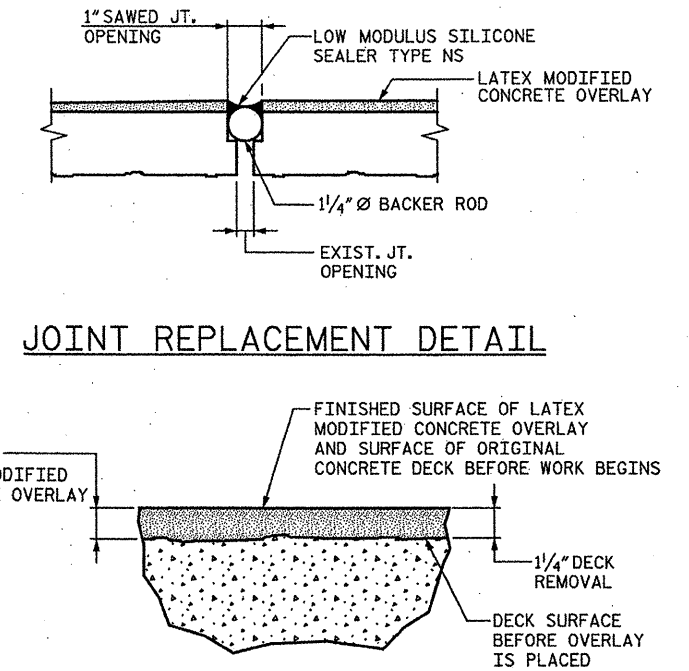
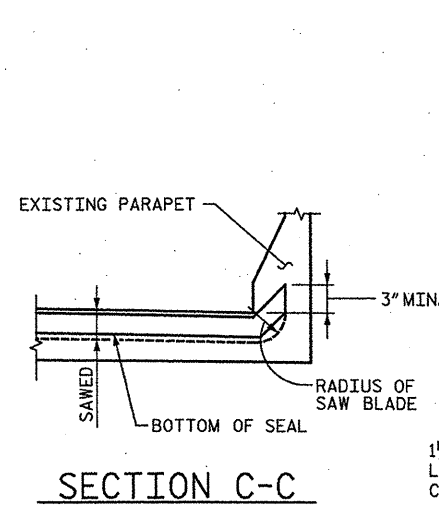
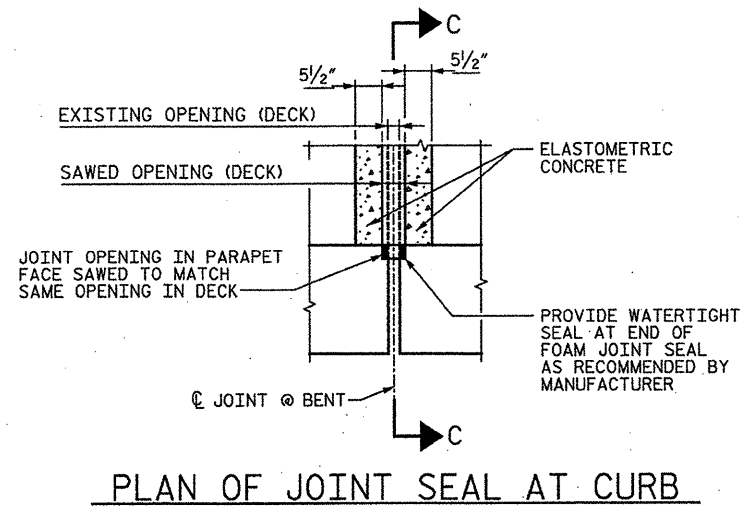
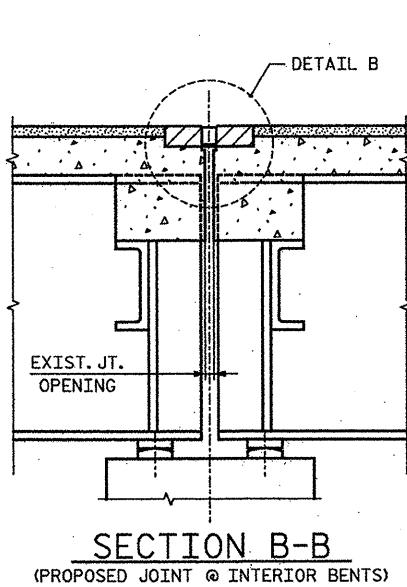
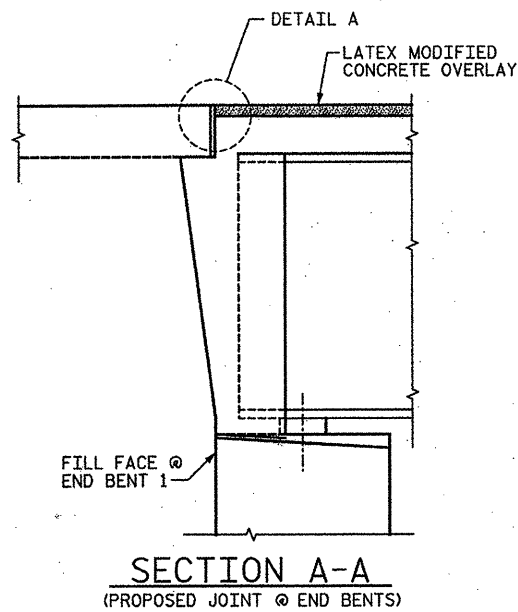


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 CHECKED BY: OA DATE: 1/5/12

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-87
1			3			TOTAL SHEETS
2			4			S-88

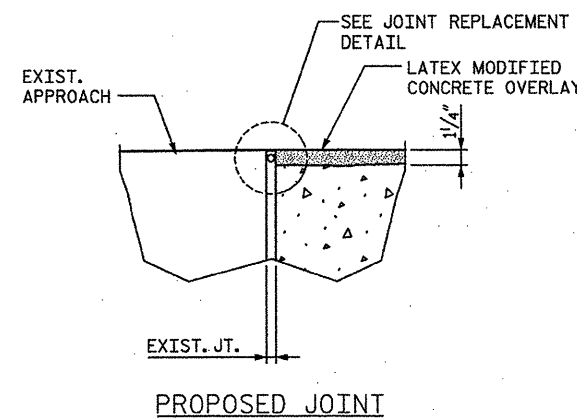
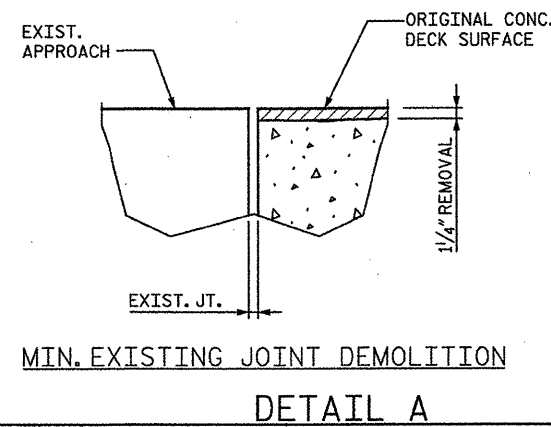
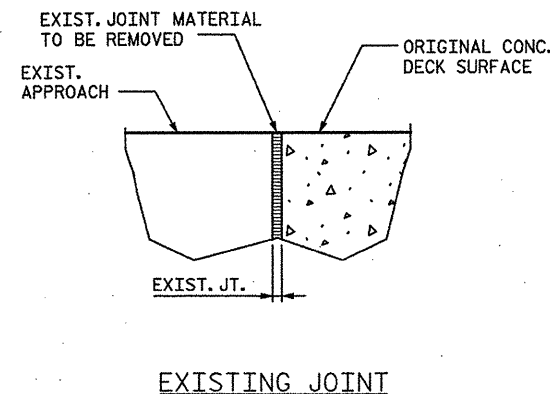
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 1/13/2012



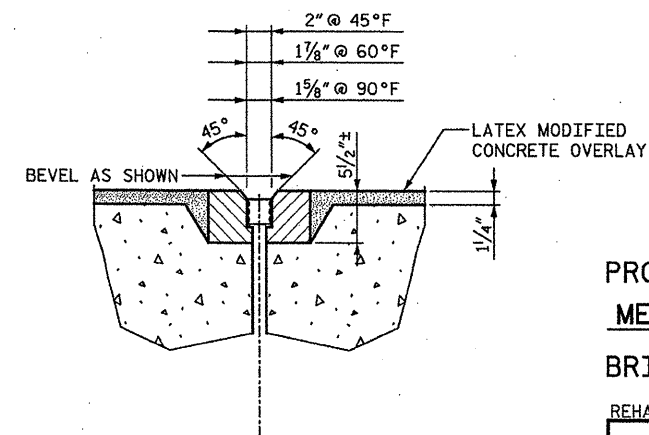
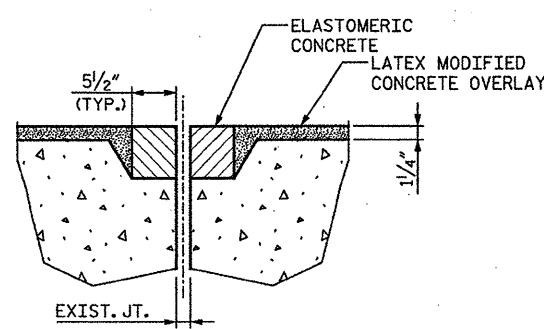
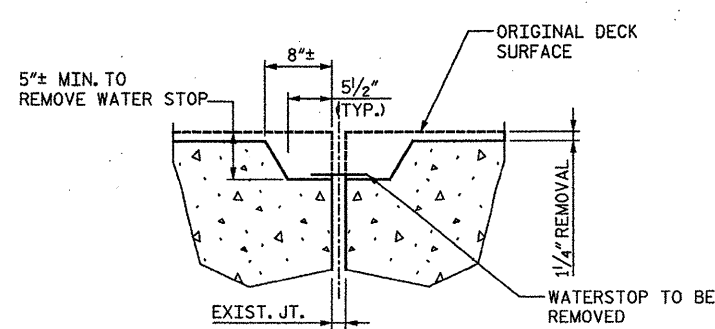
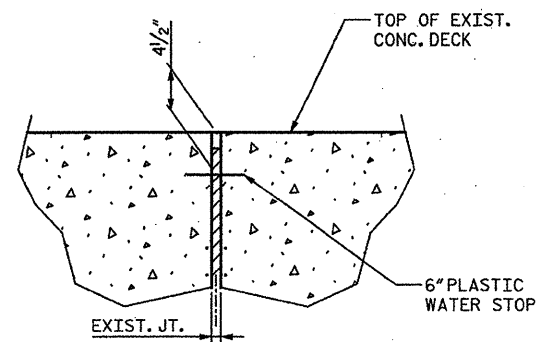
LATEX MODIFIED CONCRETE OVERLAY DETAIL

NOTES: (FOR FOAM JT. SEAL)

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS. THE INSTALLED FOAM JOINT SHALL BE WATERTIGHT. THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 2 1/2". THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT. FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



DETAIL A



MINIMUM EXIST. JOINT DEMOLITION

PROPOSED JOINT PRE-SAWED

PROPOSED FOAM JOINT SEAL EXPANSION

DETAIL B

ELASTOMERIC CONCRETE	
BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	34.4
2	34.4
TOTAL	68.8

* QUANTITY FOR INFORMATION ONLY

PROJECT NO. 17BP.10.P.3

MECKLENBURG COUNTY

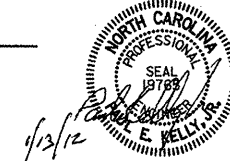
BRIDGE NO.: 359

REHAB. OF BRIDGE NO. 359 SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DECK REPAIR DETAILS

BRIDGE ON NC 73
OVER I-77SBL



DRAWN BY: AA DATE: 1/5/12
CHECKED BY: CJ DATE: 1/5/12

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

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

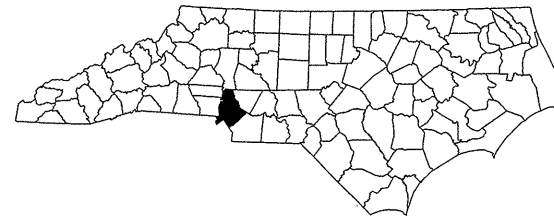
S-88
TOTAL SHEETS: S-88

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MECKLENBURG COUNTY

DIVISION 10



LOCATION 1: BRIDGE #44 I-277 OUTER OVER I-77

TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR

LOCATION 2: BRIDGE #48 I-277 INNER OVER I-77

TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR

LOCATION 3: BRIDGE #120 NC 49 OVER I-77

TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR

LOCATION 4: BRIDGE #136 SR 1164 OVER I-77

TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR

LOCATION 5: BRIDGE #202 CLANTON RD. OVER I-77

TYPE OF WORK: OVERLAY

LOCATION 6: BRIDGE #205 REMOUNT RD. OVER I-77

TYPE OF WORK: OVERLAY AND SUBSTRUCTURE REPAIR

LOCATION 7: BRIDGE #245 WEST 5TH ST. OVER I-77

TYPE OF WORK: OVERLAY

LOCATION 8: BRIDGE #312 CINDY LN. OVER I-77

TYPE OF WORK: OVERLAY

LOCATION 9: BRIDGE #323 US 21 OVER I-77

TYPE OF WORK: OVERLAY

LOCATION 10: BRIDGE #349 NC 24 OVER I-77

TYPE OF WORK: OVERLAY

LOCATION 11: BRIDGE #355 SR 2004 OVER I-77

TYPE OF WORK: OVERLAY

LOCATION 12: BRIDGE #356 SR 2136 OVER I-77

TYPE OF WORK: OVERLAY

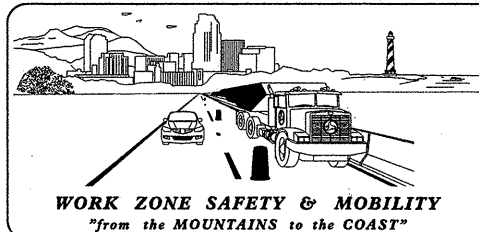
LOCATION 13: BRIDGE #358 NC 73 OVER I-77 NB

TYPE OF WORK: OVERLAY AND JOINT REPAIR

LOCATION 14: BRIDGE #359 NC 73 OVER I-77 SB

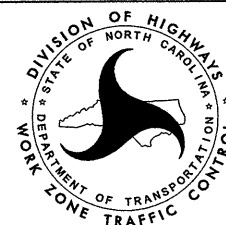
TYPE OF WORK: OVERLAY

SEE SHEET 1 FOR VICINITY MAPS



PLAN PREPARED FOR NCDOT BRIDGE MANAGEMENT UNIT

RALEIGH, NC



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	GENERAL NOTES
TMP-1C TO 1G	PHASING NOTES
TMP-2	OFFSITE DETOUR A
TMP-3	OFFSITE DETOUR B
TMP-4	OFFSITE DETOUR C
TMP-5	OFFSITE DETOUR D
TMP-6	OFFSITE DETOUR E
TMP-7	OFFSITE DETOUR F
TMP-8	OFFSITE DETOUR G
TMP-9	OFFSITE DETOUR H
TMP-10	LANE CLOSURE DETAIL A
TMP-11	LANE CLOSURE DETAIL B
TMP-12	LANE CLOSURE DETAIL C
TMP-13	LANE CLOSURE DETAIL D
TMP-14	LANE CLOSURE DETAIL E
TMP-15	LANE CLOSURE DETAIL F

SHEET NO.

TMP-1

PROJECT: 17BP.10.P.3

APPROVED: _____
DATE: _____

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

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

SEAL



4/3/2012
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odynskrr

ROADWAY STANDARD DRAWINGS

REV. SEPTEMBER 2011








ROADWAY STANDARD DRAWINGS

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












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1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMP
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

LEGEND




GENERAL

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

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN




SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

PAVEMENT MARKINGS

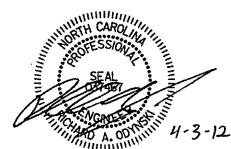

-  EXISTING LINES
-  TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

APPROVED:	DATE:		
		4-3-12	ROADWAY STANDARD DRAWINGS & LEGEND

GENERAL NOTES

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

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

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
I-277	6:00 A.M. TO 7:00 P.M., MONDAY TO FRIDAY 9:00 A.M. TO 6:00 P.M., SATURDAY AND SUNDAY
I-77	6:00 A.M. TO 9:00 P.M., MONDAY TO FRIDAY 9:00 A.M. TO 6:00 P.M., SATURDAY AND SUNDAY
NC 49	6:00 A.M. TO 7:00 P.M., MONDAY TO FRIDAY 10:00 A.M. TO 6:00 P.M., SATURDAY AND SUNDAY
SR 1164	6:00 A.M. TO 7:00 P.M., MONDAY TO FRIDAY
CLANTON RD.	6:00 A.M. TO 7:00 P.M., MONDAY TO FRIDAY 10:00 A.M. TO 6:00 P.M., SATURDAY AND SUNDAY
REMOUNT RD.	6:00 A.M. TO 7:00 P.M., MONDAY TO FRIDAY
WEST 5TH ST.	6:00 A.M. TO 7:00 P.M., MONDAY TO FRIDAY
CINDY LN.	6:00 A.M. TO 9:00 P.M., MONDAY TO FRIDAY
US 21	6:00 A.M. TO 8:00 P.M., MONDAY TO FRIDAY 10:00 A.M. TO 6:00 P.M., SATURDAY AND SUNDAY
NC 24	6:00 A.M. TO 9:00 P.M., MONDAY TO FRIDAY 10:00 A.M. TO 9:00 P.M., SATURDAY 10:00 A.M. TO 7:00 P.M., SUNDAY
SR 2004	6:00 A.M. TO 9:00 P.M., MONDAY TO FRIDAY 10:00 A.M. TO 9:00 P.M., SATURDAY 10:00 A.M. TO 7:00 P.M., SUNDAY
SR 2136	6:00 A.M. TO 9:00 P.M., MONDAY TO FRIDAY 10:00 A.M. TO 9:00 P.M., SATURDAY 10:00 A.M. TO 7:00 P.M., SUNDAY
NC 73	6:00 A.M. TO 9:00 P.M., MONDAY TO FRIDAY 10:00 A.M. TO 9:00 P.M., SATURDAY 10:00 A.M. TO 7:00 P.M., SUNDAY

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

ROAD NAMES
ALL ROADS

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY.
IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR ANY NASCAR EVENT AT THE LOWES MOTOR SPEEDWAY, BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY THE WEEK OF THE EVENT UNTIL 9:00 P.M. THE FOLLOWING MONDAY.
- FOR ANY CAROLINA PANTHERS GAME IN CHARLOTTE AND ANY GAMES AT BOBCATS ARENA, FROM THREE HOURS BEFORE THE GAME UNTIL THREE HOURS AFTER THE GAME.
- FOR THE DEMOCRATIC NATIONAL CONVENTION, BETWEEN AUGUST 27TH AT 6:00 A.M. UNTIL SEPTEMBER 8TH AT 6:00 A.M.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

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

TRAFFIC PATTERN ALTERATIONS

- H) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.
- I) THE CONTRACTOR MAY CHOOSE TO CLOSE AND DETOUR LOCATION 8 ON THE WEEKEND UPON APPROVAL BY THE ENGINEER.

SIGNING

- J) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- K) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- L) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- 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 RADIUS, 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 PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.
- Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- S) UPON COMPLETION OF ALL OTHER CONSTRUCTION OPERATIONS, REPLACE PAVEMENT MARKINGS ON THE FINAL SURFACE WITH CONTRAST TAPE FOR SKIP LINES, RAISED PAVEMENT MARKERS, AND POLYUREA FOR ALL OTHER LINE TYPES EXCEPT FOR BRIDGE 120. INSTALL REMOVABLE TAPE FOR ALL PAVEMENT MARKINGS ON BRIDGE 120.

MISCELLANEOUS

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



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PHASING

USE NCDOT RSD. 1101.01 SHEETS 1 THRU 3 OF 3 TO INSTALL WORK ZONE ADVANCE WARNING SIGNS.
 CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

LOCATION 1 (BRIDGE #44):

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANE OF BRIDGE 44, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANE OF BRIDGE 44, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 4: USING TMP-2, AND TMP-3 FOR THE OFFSITE DETOUR OF LOOPS C AND D, PLACE DETOUR SIGNING FOR CLOSURES ALONG I-277, I-77, AND US 74. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 AND 8 OF 15, CLOSE THE OUTSIDE LANE OF BRIDGE 44. USING TMP-2 AND TMP-3, CLOSE LOOPS C AND D. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 6: REPEAT STEP 4 UNTIL ALL WORK IS COMPLETED.
- STEP 7: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, CLOSE THE OUTSIDE LANE OF BRIDGE 44. USING TMP-2 AND TMP-3, CLOSE LOOPS C AND D. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

LOCATION 2 (BRIDGE #48):

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANE OF BRIDGE 48, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANE OF BRIDGE 48, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 4: USING TMP-4, AND TMP-5 FOR THE OFFSITE DETOUR OF LOOPS A AND B, PLACE DETOUR SIGNING FOR CLOSURES ALONG I-277, I-77, US 29, US 74, AND TRADE ST. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OR 4 AND 8 OF 15, CLOSE THE OUTSIDE LANE OF BRIDGE 48. USING TMP-4 AND TMP-5, CLOSE LOOPS A AND B. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 6: REPEAT STEP 4 UNTIL ALL WORK IS COMPLETED.
- STEP 7: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, CLOSE THE OUTSIDE LANE OF BRIDGE 48. USING TMP-4 AND TMP-5, CLOSE LOOPS A AND B. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

LOCATIONS 1 & 2 (BRIDGES #44 AND 48):

- STEP 1: USING TMP-6 FOR THE OFFSITE DETOUR OF I-77 NORTHBOUND EXIT TO I-277, PLACE DETOUR SIGNING FOR CLOSURE ALONG I-77 AND TRADE ST. USING TMP-2, PLACE DETOUR SIGNING FOR CLOSURE OF LOOP C. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 2: USING TMP-6 AND NCDOT RSD. 1101.02 SHEETS 3 AND 9 OF 15, CLOSE THE I-77 NORTHBOUND EXIT TO I-277 AND USING TMP-2, CLOSE LOOP C. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 3: USING TMP-7 FOR THE OFFSITE DETOUR OF I-77 SOUTHBOUND EXIT TO I-277, PLACE DETOUR SIGNING FOR CLOSURE ALONG I-77, US 29, AND US 74. USING TMP-4, PLACE DETOUR SIGNING FOR CLOSURE OF LOOP A. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 4: USING TMP-7, CLOSE THE I-77 SOUTHBOUND EXIT TO I-277 AND USING TMP-4, CLOSE LOOP A. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 5: USING RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANE OF I-77. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 6: USING RSD. 1101.02 SHEETS 3 AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-77. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.


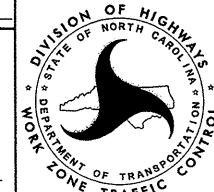
LOCATION 3 (BRIDGE #120):

INTERMEDIATE CONTRACT TIME NUMBER 10: COMPLETE THE WORK REQUIRED OF PHASE 1, STEP 1 TO STEP 11 BY JULY 23RD 2012. (SEE SPECIAL PROVISIONS, INTERMEDIATE CONTRACT TIME NUMBER 10, AND LIQUIDATED DAMAGES)

PHASE 1:

- STEP 1: USING TMP-8 FOR THE OFFSITE DETOUR OF THE NC 49 RAMP TO I-77 SOUTH, PLACE DETOUR SIGNING FOR CLOSURE ALONG NC 49 AND WOODLAWN RD. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 2: USING TMP-8, CLOSE THE NC 49 RAMP TO I-77 SOUTH. USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE TWO LANES OF NC 49 SOUTHBOUND. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 3: REPEAT STEP 2 UNTIL ALL WORK IS COMPLETED.
- STEP 4: USING TMP-8, CLOSE THE NC 49 RAMP TO I-77 SOUTH. USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE TWO LANES OF NC 49 SOUTHBOUND. INSTALL TEMPORARY PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

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PHASING (CONT.)

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

CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

LOCATION 3 (BRIDGE #120) CONT.:

- STEP 5: USING TMP-9 FOR THE OFFSITE DETOUR OF THE NC 49 RAMP TO I-77 NORTH, PLACE DETOUR SIGNING FOR CLOSURE ALONG NC 49 AND CLANTON RD. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 6: USING TMP-9, CLOSE THE NC 49 RAMP TO I-77 NORTH. USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE TWO LANES OF NC 49 NORTHBOUND. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 7: REPEAT STEP 6 UNTIL ALL WORK IS COMPLETED.
- STEP 8: USING TMP-9, CLOSE THE NC 49 RAMP TO I-77 NORTH. USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE TWO LANES OF NC 49 NORTHBOUND. INSTALL TEMPORARY PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 9: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF NC 49. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 10: REPEAT STEP 9 UNTIL ALL WORK IS COMPLETED.
- STEP 11: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF NC 49. INSTALL TEMPORARY PAVEMENT MARKINGS AND YELLOW TUBULAR MARKERS AS DIRECTED BY THE ENGINEER.

PHASE 2:

- STEP 1: USING TMP-8 FOR THE OFFSITE DETOUR OF THE NC 49 RAMP TO I-77 SOUTH, PLACE DETOUR SIGNING FOR CLOSURE ALONG NC 49 AND WOODLAWN RD. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 2: USING TMP-8, CLOSE THE NC 49 RAMP TO I-77 SOUTH. USING NCDOT RSD. 1101.02 SHEETS 3 AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-77 SOUTHBOUND. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED.
- STEP 3: USING TMP-9 FOR THE OFFSITE DETOUR OF THE NC 49 RAMP TO I-77 NORTH, PLACE DETOUR SIGNING FOR CLOSURE ALONG NC 49 AND CLANTON RD. COVER SIGNS UNTIL OFFSITE DETOUR IS READY FOR OPERATION.
- STEP 4: USING TMP-9, CLOSE THE NC 49 RAMP TO I-77 NORTH. USING NCDOT RSD. 1101.02 SHEETS 3 AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-77 NORTHBOUND. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 AND 8 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF I-77. PERFORM BRIDGE SUBSTRUCTURE REPAIRS AS REQUIRED.

LOCATION 4 (BRIDGE #136):



PHASE 1:

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF EASTBOUND BRIDGE 136, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE LEFT LANE OF EASTBOUND BRIDGE 136, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 4: USING TMP-10, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF WESTBOUND BRIDGE 136, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 5: REPEAT STEP 4 UNTIL ALL WORK IS COMPLETED.
- STEP 6: USING TMP-10, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF WESTBOUND BRIDGE 136, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 7: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGE 136, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC. CONTRACTOR SHALL KEEP WB LANE OPEN.
- STEP 8: REPEAT STEP 7 UNTIL ALL WORK IS COMPLETED.
- STEP 9: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGE 136, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL KEEP WB LANE OPEN.


PHASE 2:

- STEP 1: USING NCDOT RSD. 1101.02 SHEETS 9 AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-77 SOUTHBOUND, DURING NIGHT OPERATIONS. PERFORM SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: USING NCDOT RSD. 1101.02 SHEETS 9 AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-77 NORTHBOUND, DURING NIGHT OPERATIONS. PERFORM SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 AND 8 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF I-77, DURING NIGHT OPERATIONS. PERFORM SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

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

USE NCDOT RSD. 1101.01 SHEETS 1 THRU 3 OF 3 TO INSTALL WORK ZONE ADVANCE WARNING SIGNS.
CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

LOCATION 5 (BRIDGE #202):

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES AND TURN LANES OF BRIDGE 202, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETE.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF BRIDGE 202, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETE.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGE 202, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 6: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF BRIDGE 202, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

LOCATION 6 (BRIDGE #205):

PHASE 1:

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES AND TURN LANES OF BRIDGE 205, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETE.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF BRIDGE 205, DURING NIGHT OPERATIONS. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETE.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES AND TURN LANES OF BRIDGE 205, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 6: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF BRIDGE 205, DURING NIGHT OPERATIONS. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

PHASE 2:

- STEP 1: USING NCDOT RSD. 1101.02 SHEETS 3 AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-77 SOUTHBOUND, DURING NIGHT OPERATIONS. PERFORM SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: USING NCDOT RSD. 1101.02 SHEETS 3 AND 10 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF I-77 NORTHBOUND, DURING NIGHT OPERATIONS. PERFORM SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 AND 8 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF I-77, DURING NIGHT OPERATIONS. PERFORM SUBSTRUCTURE REPAIRS AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

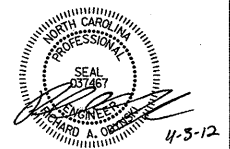
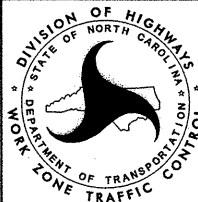
LOCATION 7 (BRIDGE #245):

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF BRIDGE 245. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE LEFT LANE AND TURN LANES OF BRIDGE 245. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF BRIDGE 245. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 6: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE LEFT LANE AND TURN LANES OF BRIDGE 245. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

LOCATION 8 (BRIDGE #312):

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE A LANE OF BRIDGE 312. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE A LANE OF BRIDGE 312. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.

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PHASING (CONT.)

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

CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

LOCATION 9 (BRIDGE #323):

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 7 OF 10, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGE 323, DURING NIGHT OPERATIONS. PERFORM THE BRIDGE DECK PRESERVATION WORK AS REQUIRED. AFTER ALL OTHER CONSTRUCTION IS COMPLETE INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING TMP-11, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF EASTBOUND BRIDGE 323, DURING NIGHT OPERATIONS. PERFORM THE BRIDGE DECK PRESERVATION WORK AS REQUIRED. AFTER ALL OTHER CONSTRUCTION IS COMPLETE INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.
- STEP 5: USING TMP-12, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANE OF WESTBOUND BRIDGE 323, DURING NIGHT OPERATIONS. PERFORM THE BRIDGE DECK PRESERVATION WORK AS REQUIRED. AFTER ALL OTHER CONSTRUCTION IS COMPLETE INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 6: REPEAT STEP 5 UNTIL ALL WORK IS COMPLETED.

LOCATION 10 (BRIDGE #349):


- STEP 1: USING NCDOT RSD. 1101.02 SHEET 7 OF 10, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGE 349, DURING NIGHT OPERATIONS. PERFORM THE BRIDGE DECK PRESERVATION WORK AS REQUIRED. AFTER ALL OTHER CONSTRUCTION IS COMPLETE INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING TMP-13, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF EASTBOUND BRIDGE 349, DURING NIGHT OPERATIONS. PERFORM THE BRIDGE DECK PRESERVATION WORK AS REQUIRED. AFTER ALL OTHER CONSTRUCTION IS COMPLETE INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.
- STEP 5: USING TMP-14, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF WESTBOUND BRIDGE 349, DURING NIGHT OPERATIONS. PERFORM THE BRIDGE DECK PRESERVATION WORK AS REQUIRED. AFTER ALL OTHER CONSTRUCTION IS COMPLETE INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 6: REPEAT STEP 5 UNTIL ALL WORK IS COMPLETED.

LOCATION 11 (BRIDGE #355):

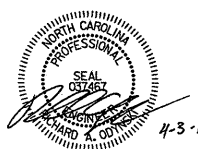

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE A LANE OF BRIDGE 355. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL FLAGGER OPERATION SIGNS AND DEVICES TO CLOSE A LANE OF BRIDGE 355. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.


LOCATION 12 (BRIDGE #356):

- STEP 1: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF BRIDGE 356. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGE 356. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE OUTSIDE LANES OF BRIDGE 356. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 6: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGE 356. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

PROJ. REFERENCE NO.	SHEET NO.
17BP.10.P.3	TMP-1F
 STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28208 NC License Number F-0991	

4/3/2012 F:\Traffic\TrafficControl\top\microrotation set\TOP3_TCP_IC_4-3-12.dgn odymskrd

APPROVED: _____ DATE: _____ <div style="text-align: center;">  SEAL 4-3-12 </div>	<div style="text-align: center;">  </div>	<h2 style="margin: 0;">PHASING NOTES</h2>
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PROJ. REFERENCE NO.	SHEET NO.
17BP.10.P.3	TMP-1G
 STV/Ralph Whitehead Associates, Inc. 1000 West Morehead St., Ste. 200 Charlotte, NC 28203 NC License Number F-0991	



PHASING (CONT.)

USE NCDOT RSD. 1101.01 SHEETS 1 THRU 3 OF 3 TO INSTALL WORK ZONE ADVANCE WARNING SIGNS.
 CONTRACTOR MAY WORK ON MULTIPLE PHASES OR LOCATIONS SIMULTANEOUSLY IF APPROVED BY THE ENGINEER.

LOCATIONS 13 AND 14 (BRIDGES #358 & 359):

- STEP 1: USING TMP-15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANES OF WESTBOUND BRIDGES 358 AND 359. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 2: REPEAT STEP 1 UNTIL ALL WORK IS COMPLETED.
- STEP 3: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE THRU LANES OF WESTBOUND AND EASTBOUND BRIDGES 358 AND 359. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 4: REPEAT STEP 3 UNTIL ALL WORK IS COMPLETED.
- STEP 5: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF EASTBOUND BRIDGES 358 AND 359. PERFORM BRIDGE DECK PRESERVATION WORK AS REQUIRED. AT THE END OF EACH WORK PERIOD REOPEN THE ROADWAY TO TRAFFIC.
- STEP 6: REPEAT STEP 5 UNTIL ALL WORK IS COMPLETED.
- STEP 7: USING TMP-15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANES OF WESTBOUND BRIDGES 358 AND 359. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 8: USING NCDOT RSD. 1101.02 SHEET 7 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE INSIDE LANES OF BRIDGES 358 AND 359. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
- STEP 9: USING NCDOT RSD. 1101.02 SHEET 3 OF 15, INSTALL LANE CLOSURE SIGNS AND DEVICES TO CLOSE THE RIGHT LANE OF EASTBOUND BRIDGES 358 AND 359. INSTALL FINAL PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

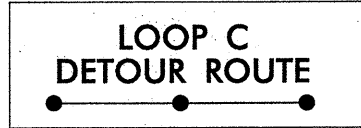
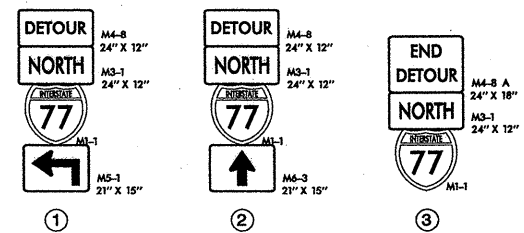
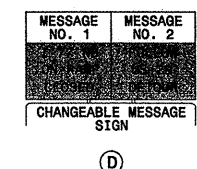
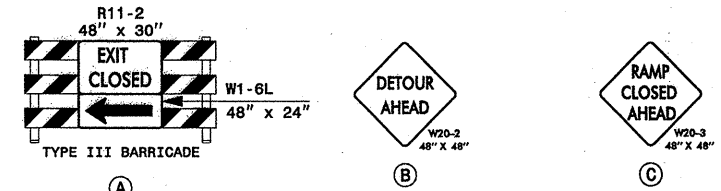
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APPROVED:	DATE:	 4-3-12		PHASING NOTES
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INTERCHANGE QUADRANT DESIGNATIONS

- A** - NORTH-WEST QUADRANT
- B** - NORTH-EAST QUADRANT
- C** - SOUTH-EAST QUADRANT
- D** - SOUTH-WEST QUADRANT

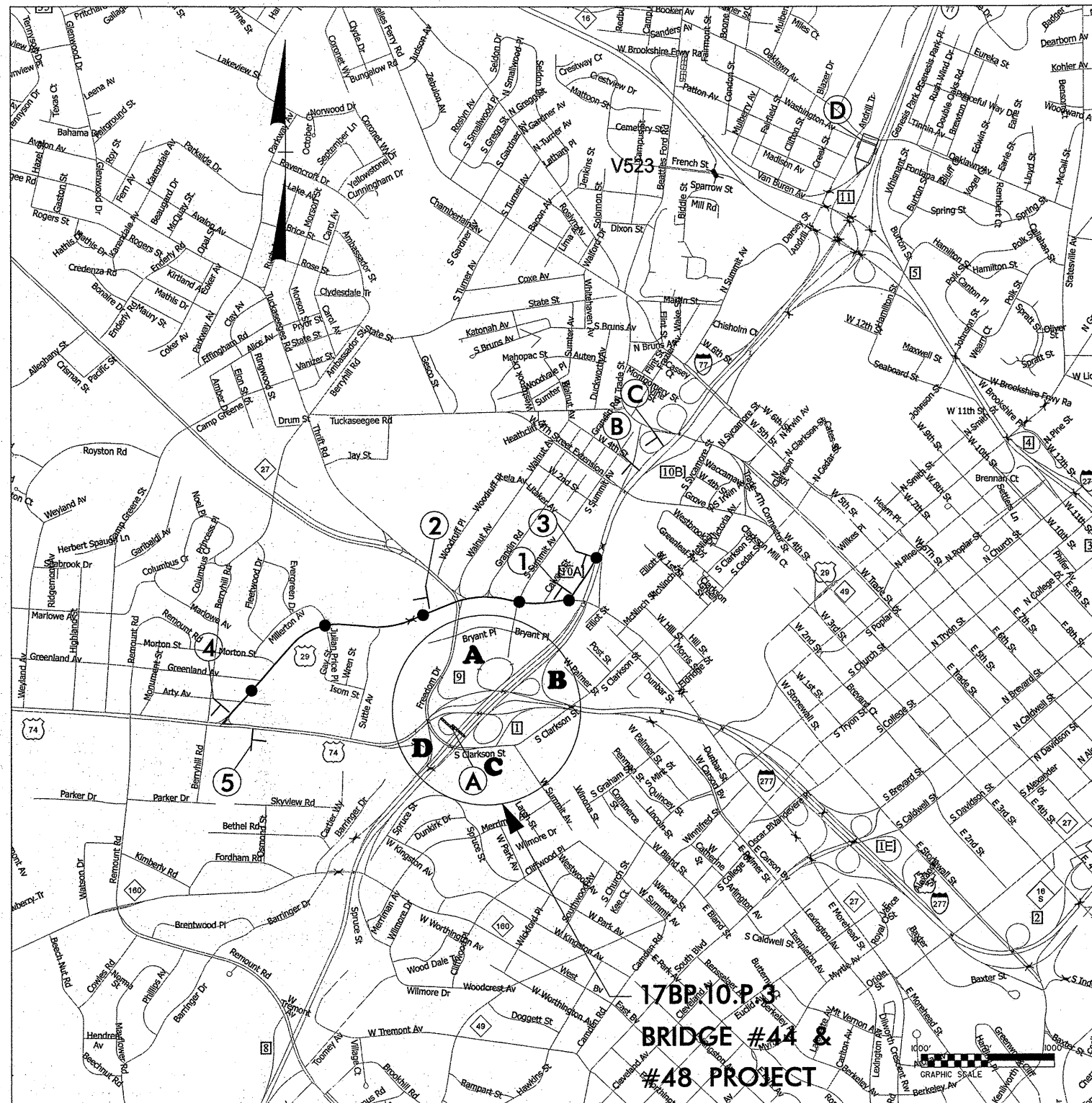


**17BP.10.P.3
BRIDGE #44 &
#48 PROJECT**

NOTES:
 TRAFFIC CONTROL DEVICES ① THRU ③ AND A THRU D SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.
 USE DRUMS IN CONJUNCTION WITH TYPE III BARRICADES TO CLOSE RAMP.

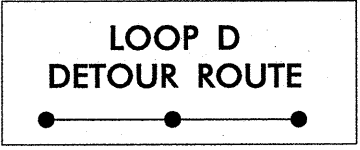
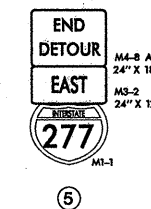
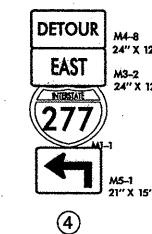
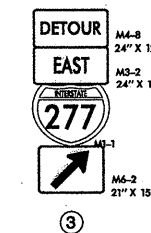
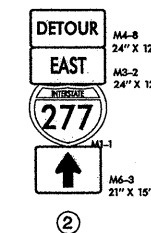
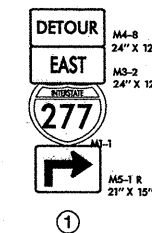
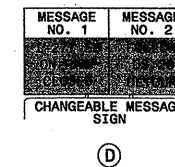
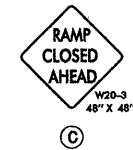
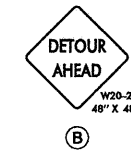
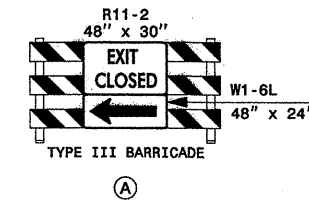
APPROVED: _____ DATE: _____	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	OFFSITE DETOUR A SIGNING AND ROAD CLOSURE SIGNING
 SEAL 4-3-12		

4/3/2012 4:31:23 PM trafficcontrol\top\microstation set\10P3.TCP.2.dgn odynskrc




INTERCHANGE QUADRANT DESIGNATIONS

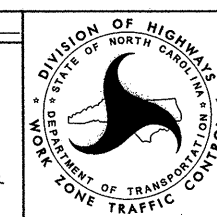
- A** - NORTH-WEST QUADRANT
- B** - NORTH-EAST QUADRANT
- C** - SOUTH-EAST QUADRANT
- D** - SOUTH-WEST QUADRANT



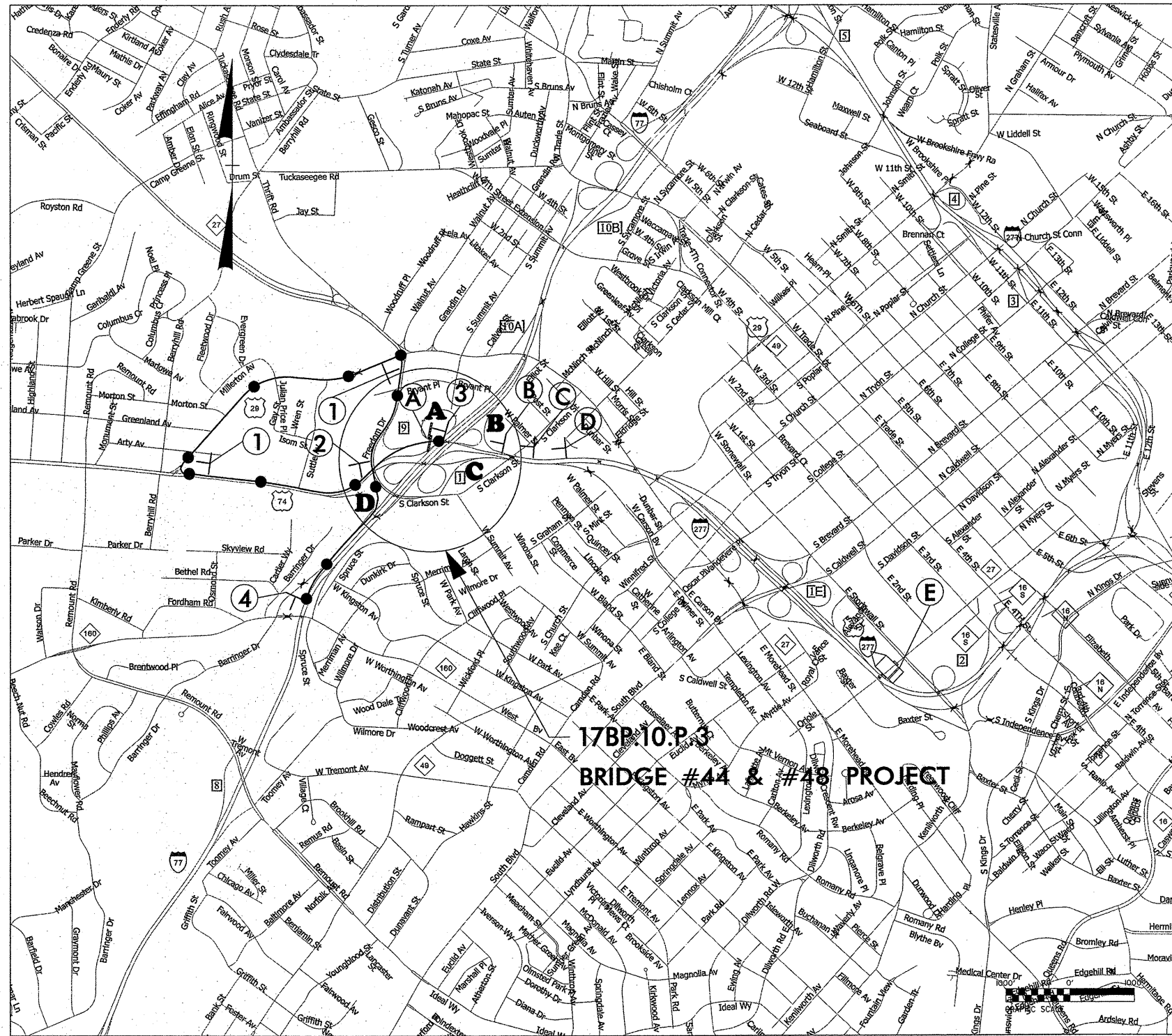
NOTES:

TRAFFIC CONTROL DEVICES ① THRU ⑤ AND A THRU D SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.
 USE DRUMS IN CONJUNCTION WITH TYPE III BARRICADES TO CLOSE RAMP.

APPROVED: _____ DATE: _____

 SEAL

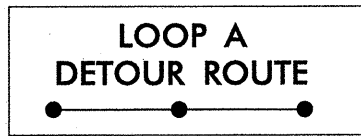
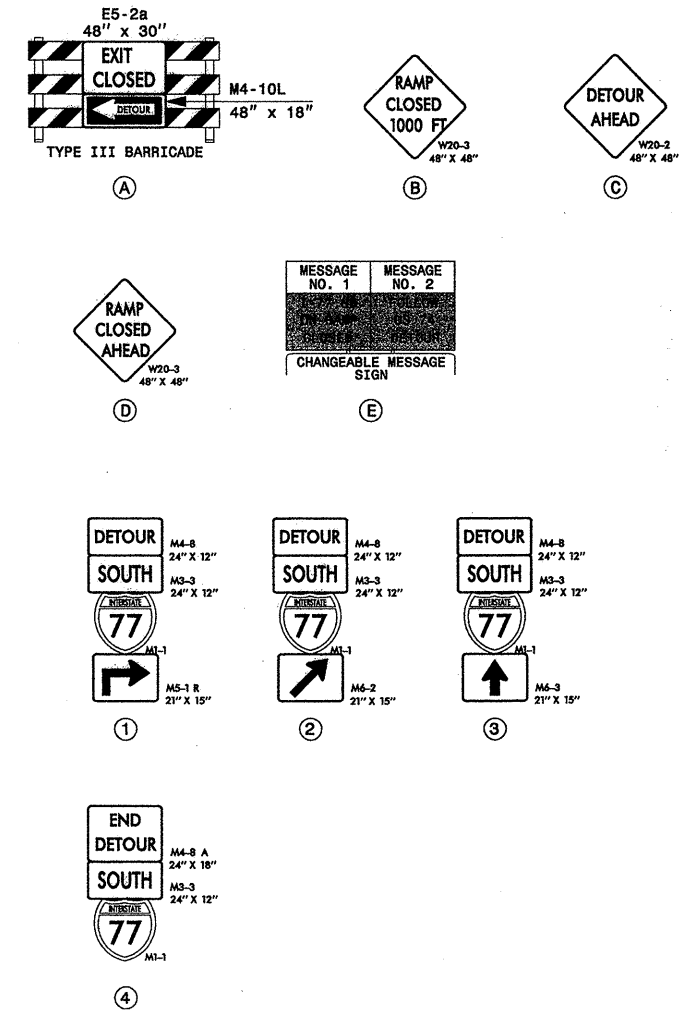


**OFFSITE DETOUR B
 SIGNING AND ROAD
 CLOSURE SIGNING**



INTERCHANGE QUADRANT DESIGNATIONS



- A** - NORTH-WEST QUADRANT
- B** - NORTH-EAST QUADRANT
- C** - SOUTH-EAST QUADRANT
- D** - SOUTH-WEST QUADRANT



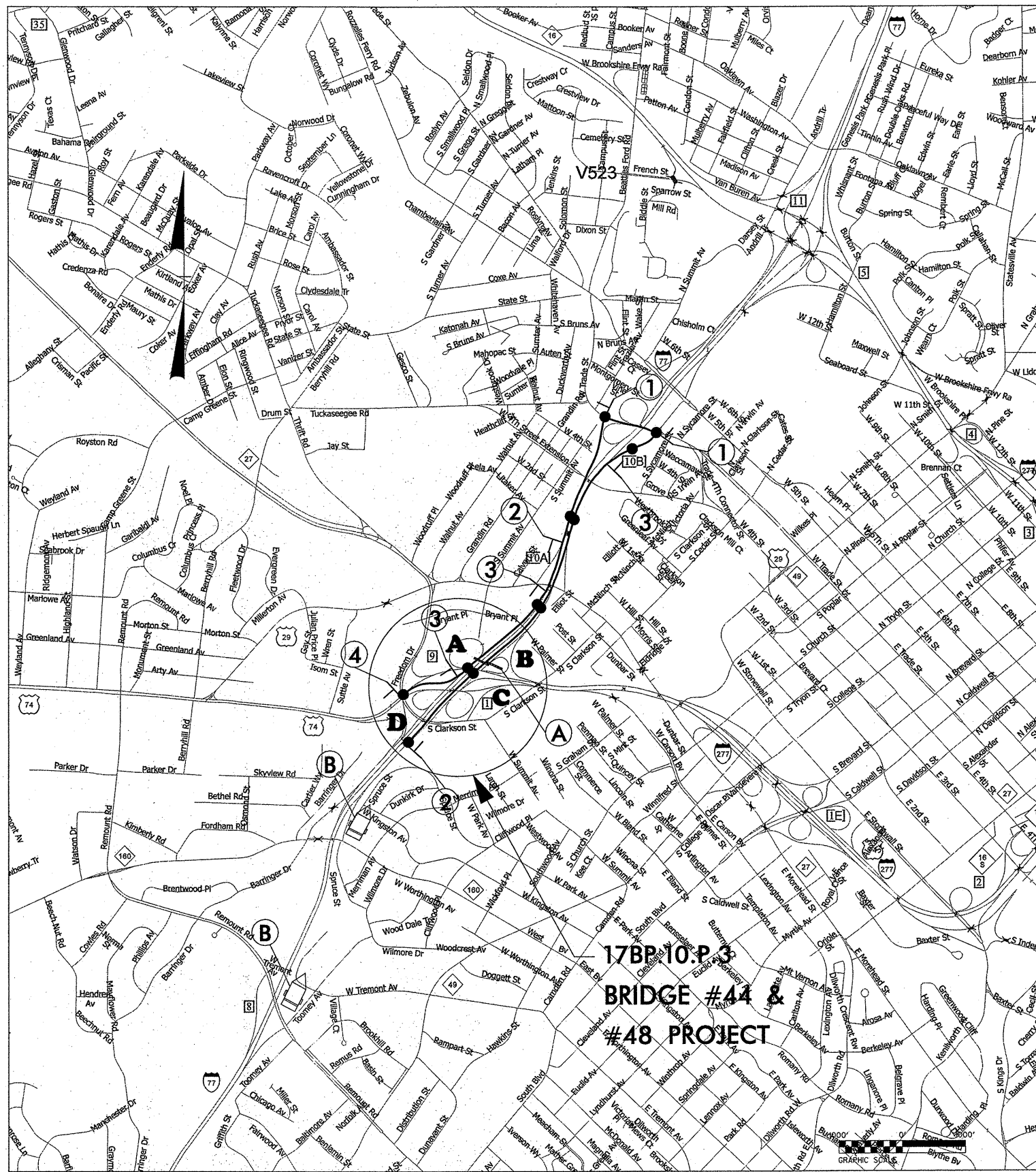
NOTES:

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

USE DRUMS IN CONJUNCTION WITH TYPE III BARRICADES TO CLOSE RAMP.

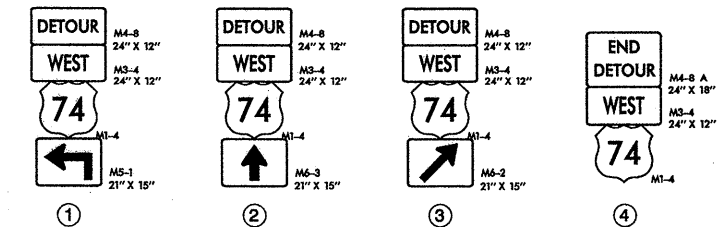
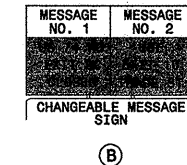
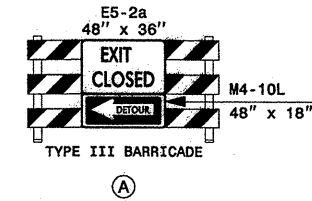
APPROVED: _____ DATE: _____	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	OFFSITE DETOUR C SIGNING AND ROAD CLOSURE SIGNING
 SEAL RICHARD S. GONZALES 4-3-12		

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INTERCHANGE QUADRANT DESIGNATIONS

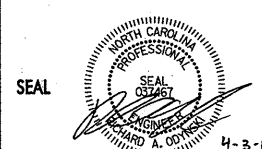

- A** - NORTH-WEST QUADRANT
- B** - NORTH-EAST QUADRANT
- C** - SOUTH-EAST QUADRANT
- D** - SOUTH-WEST QUADRANT



NOTES:
 TRAFFIC CONTROL DEVICES ① THRU ④ AND A THRU D SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.
 USE DRUMS IN CONJUNCTION WITH TYPE III BARRICADES TO CLOSE RAMP.

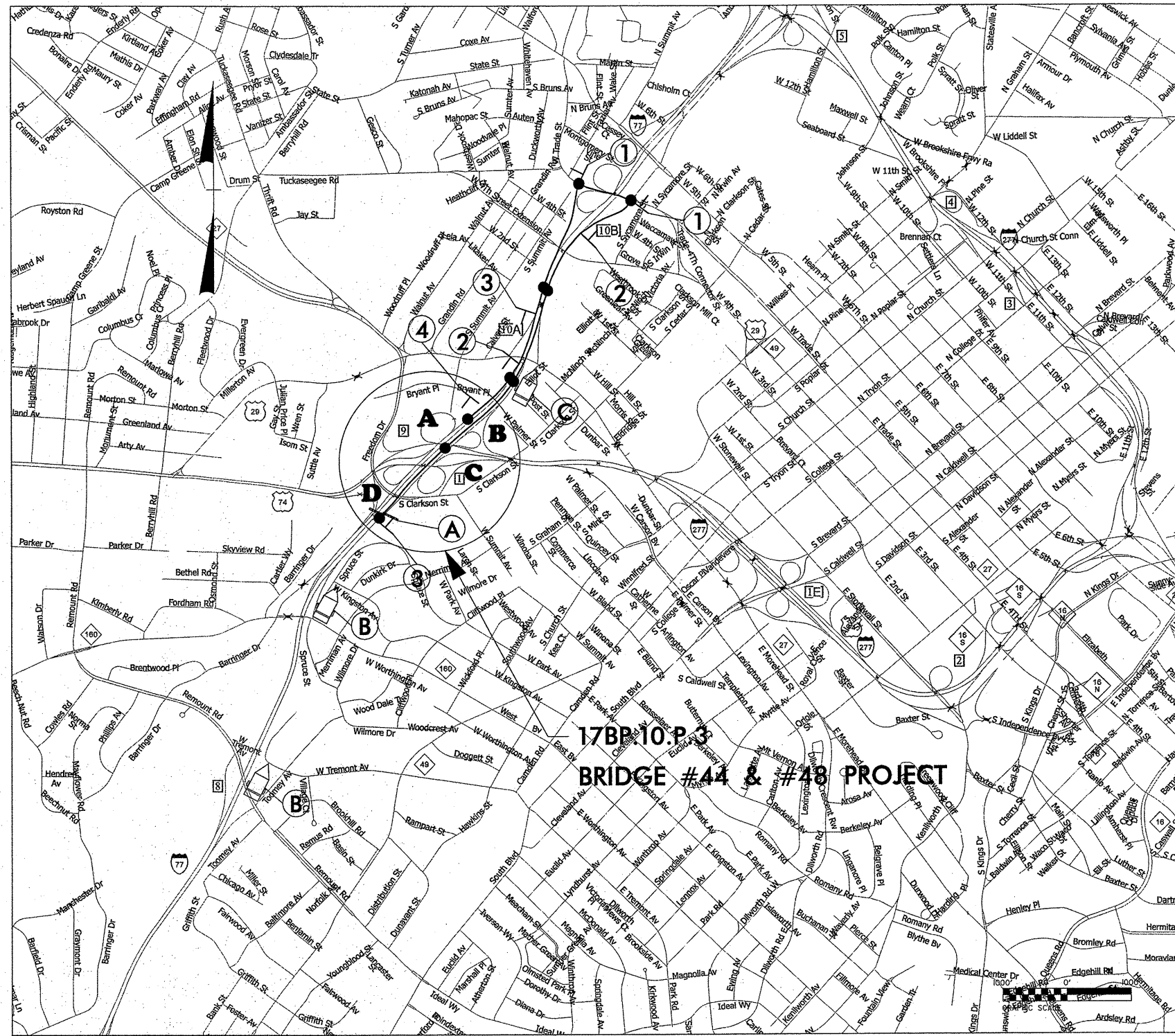
**LOOP B
 DETOUR ROUTE**

**17BP.10.P.3
 BRIDGE #44 &
 #48 PROJECT**

APPROVED: _____ DATE: _____ 		OFFSITE DETOUR D SIGNING AND ROAD CLOSURE SIGNING
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4/3/2012 11:58:13 AM trafficcontrol\top\microrotation set\10P3_TCP_5.dgn

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC License Number F-0291

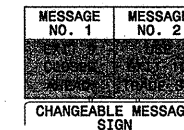


INTERCHANGE QUADRANT DESIGNATIONS

- A** - NORTH-WEST QUADRANT
- B** - NORTH-EAST QUADRANT
- C** - SOUTH-EAST QUADRANT
- D** - SOUTH-WEST QUADRANT



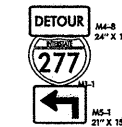
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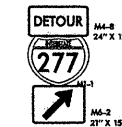
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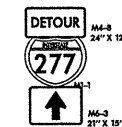
(C)



(1)



(2)



(3)



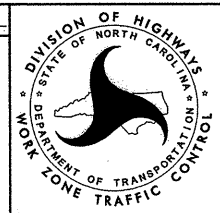
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17BP.10.P.3
BRIDGE #44 & #48 PROJECT

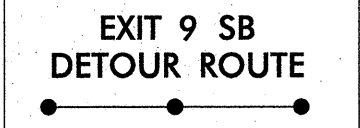
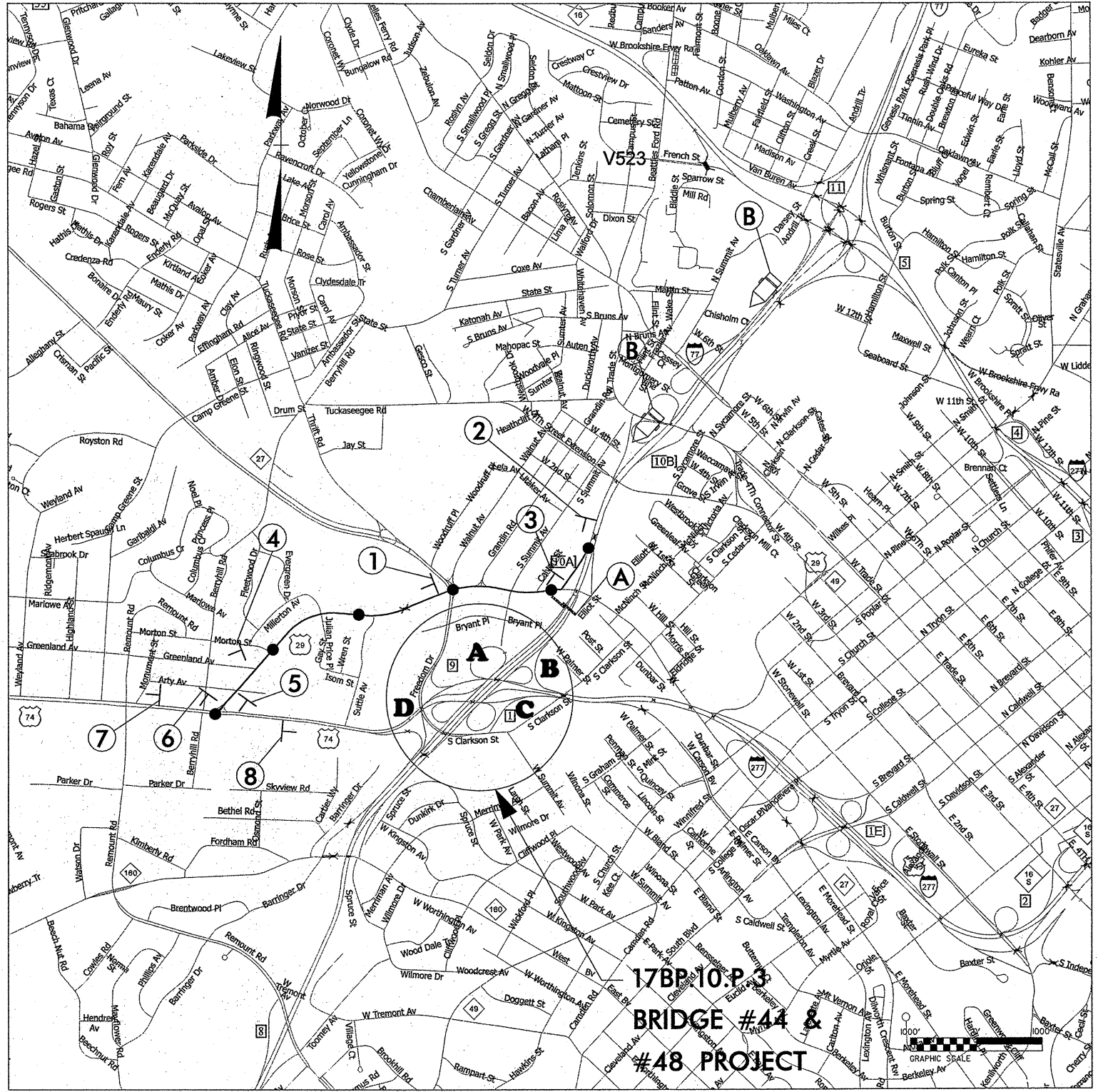
EXIT 9 NB
DETOUR ROUTE

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

APPROVED: _____ DATE: _____
SEAL
4-3-12

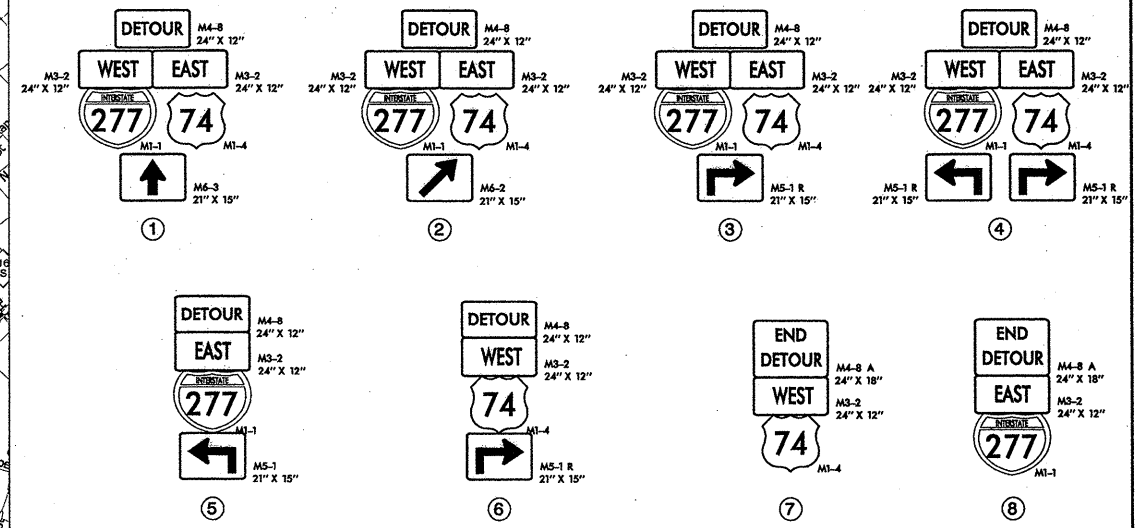
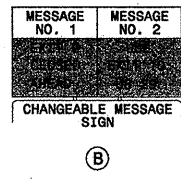
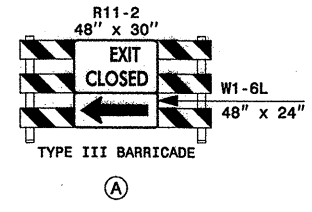


OFFSITE DETOUR E
SIGNING AND ROAD
CLOSURE SIGNING



INTERCHANGE QUADRANT DESIGNATIONS

A - NORTH-WEST QUADRANT
B - NORTH-EAST QUADRANT
C - SOUTH-EAST QUADRANT
D - SOUTH-WEST QUADRANT



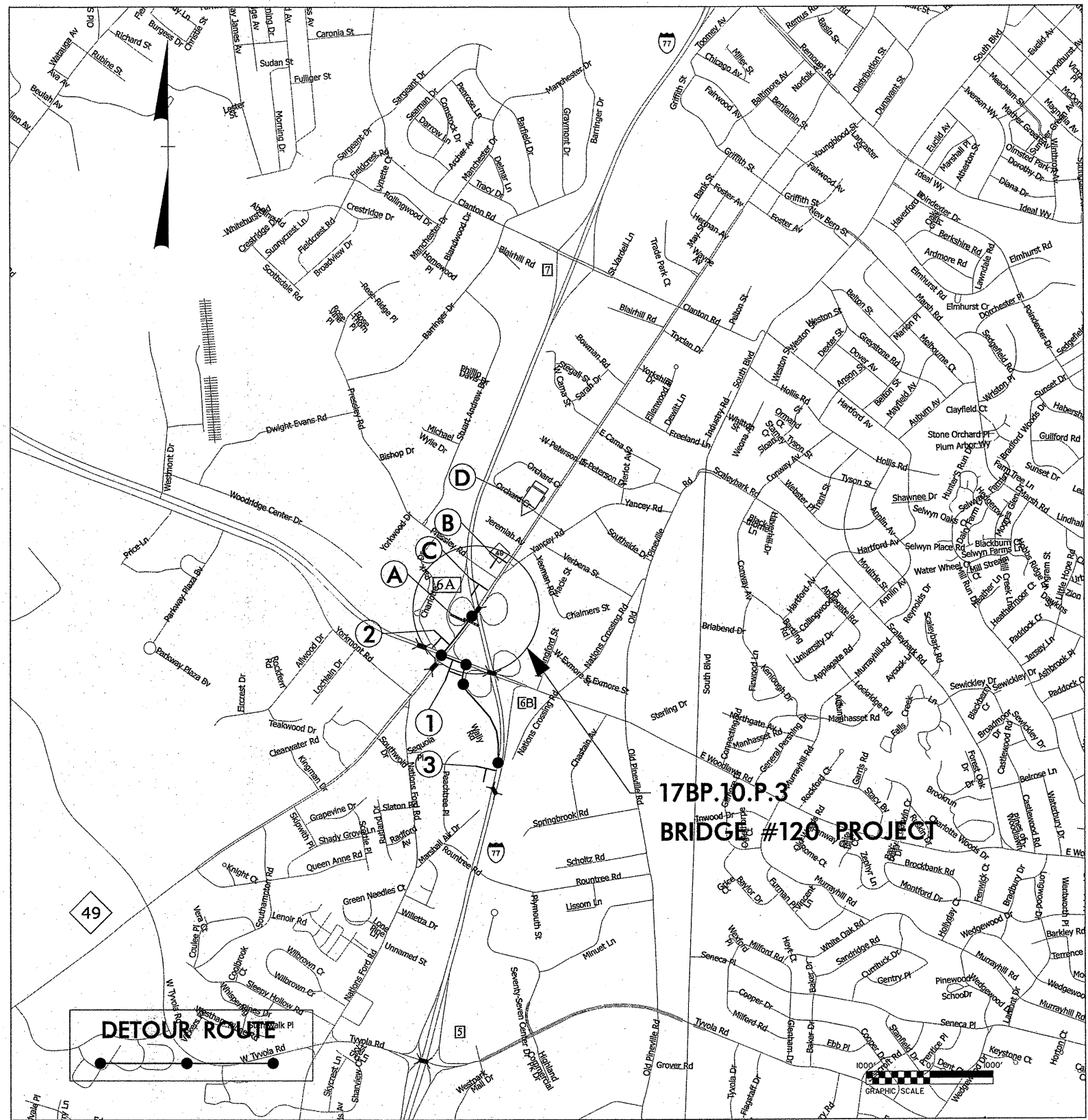
NOTES:

TRAFFIC CONTROL DEVICES ① THRU ⑧ AND A THRU B SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.

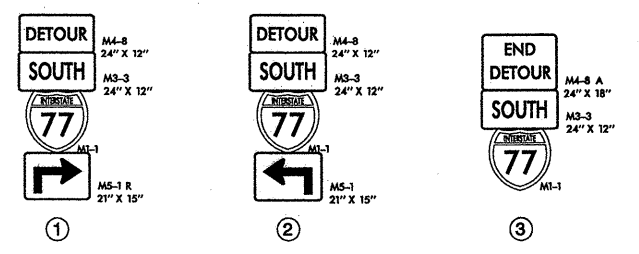
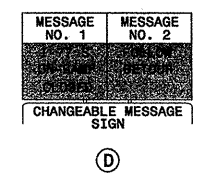
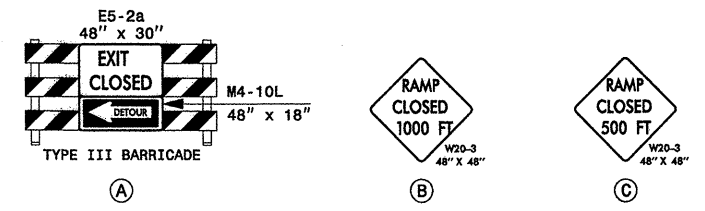
USE DRUMS IN CONJUNCTION WITH TYPE III BARRICADES TO CLOSE RAMP.

APPROVED:	DATE:		OFFSITE DETOUR F SIGNING AND ROAD CLOSURE SIGNING
	4-3-12		

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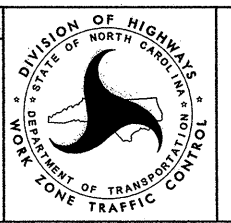
17BP.10.P.3
 BRIDGE #120 PROJECT



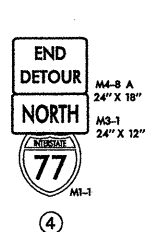
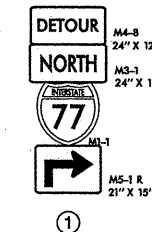
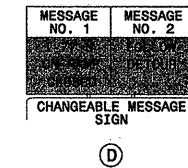
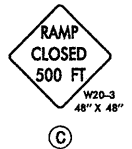
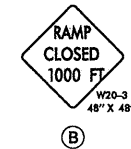
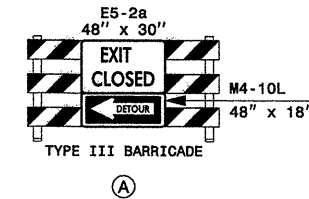
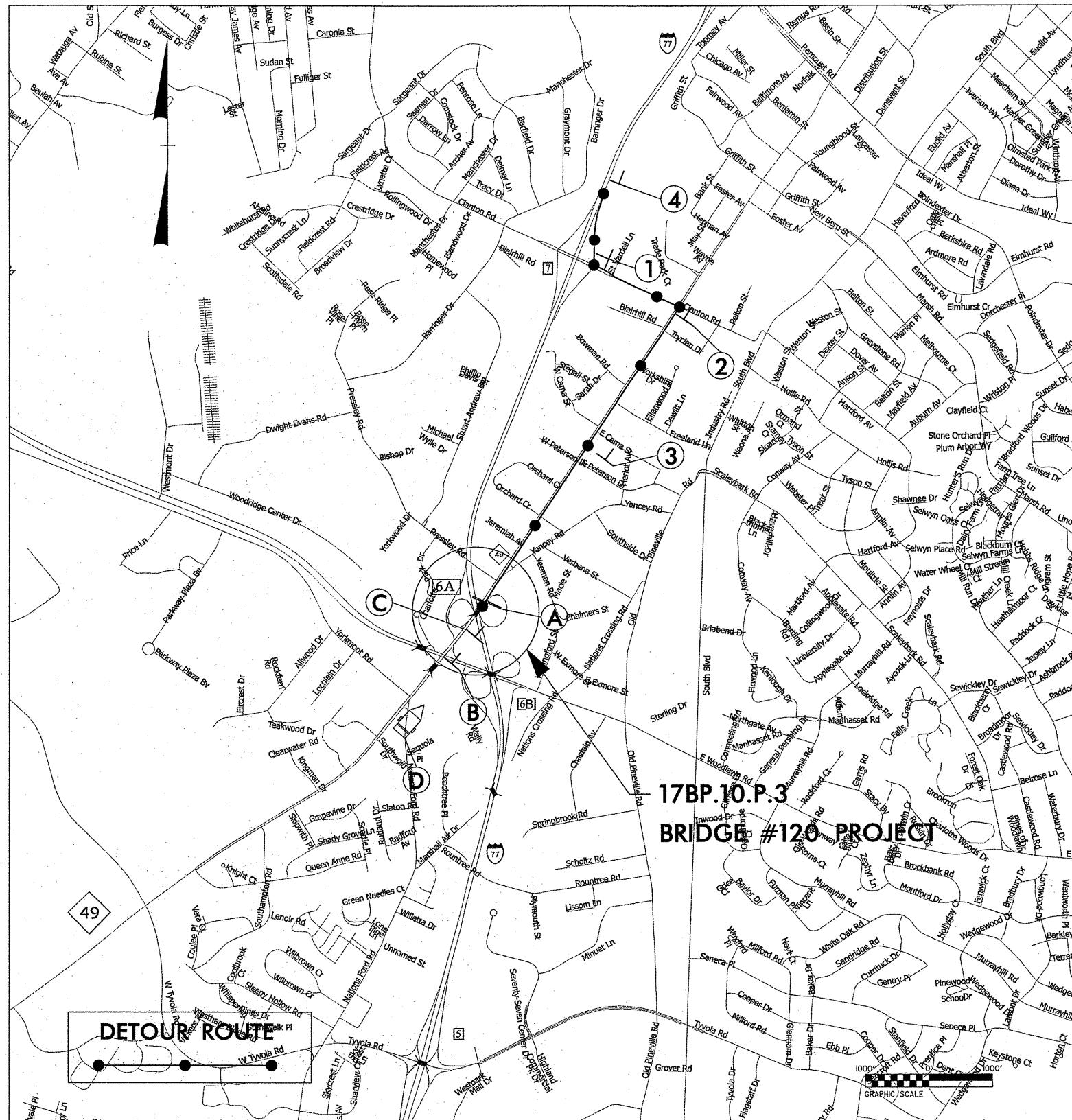
NOTES:
 TRAFFIC CONTROL DEVICES ① THRU ③ AND ④ THRU ⑥ SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.
 USE DRUMS IN CONJUNCTION WITH TYPE III BARRICADES TO CLOSE RAMP.

APPROVED: _____ DATE: _____
 SEAL

 4-3-12



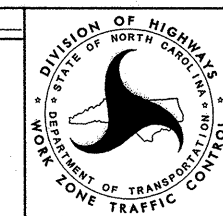
OFFSITE DETOUR G
 SIGNING AND ROAD
 CLOSURE SIGNING



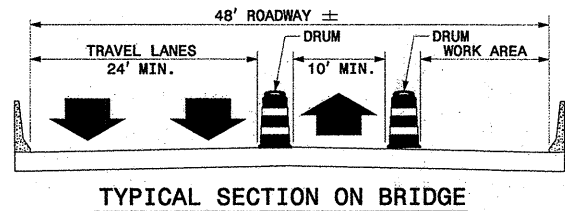
17BP.10.P.3
 BRIDGE #120 PROJECT

NOTES:
 TRAFFIC CONTROL DEVICES ① THRU ④ AND ① THRU ④ SHALL BE INSTALLED AS PER ENGINEER'S INSTRUCTION.
 USE DRUMS IN CONJUNCTION WITH TYPE III BARRICADES TO CLOSE RAMP.

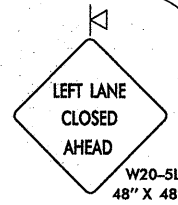
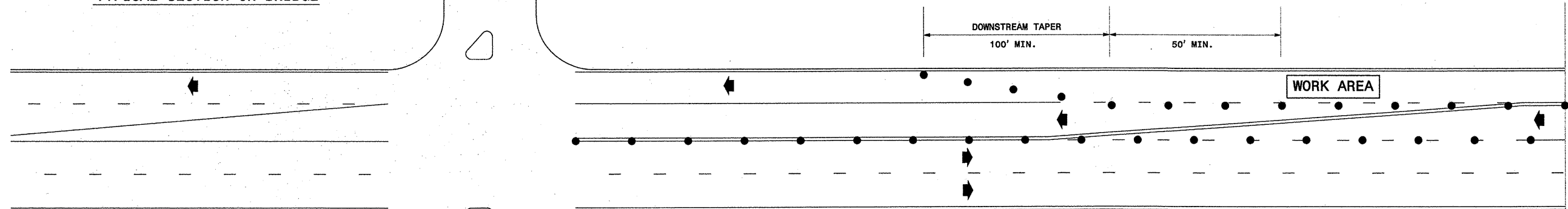
APPROVED: _____ DATE: _____
 SEAL



OFFSITE DETOUR H
 SIGNING AND ROAD
 CLOSURE SIGNING

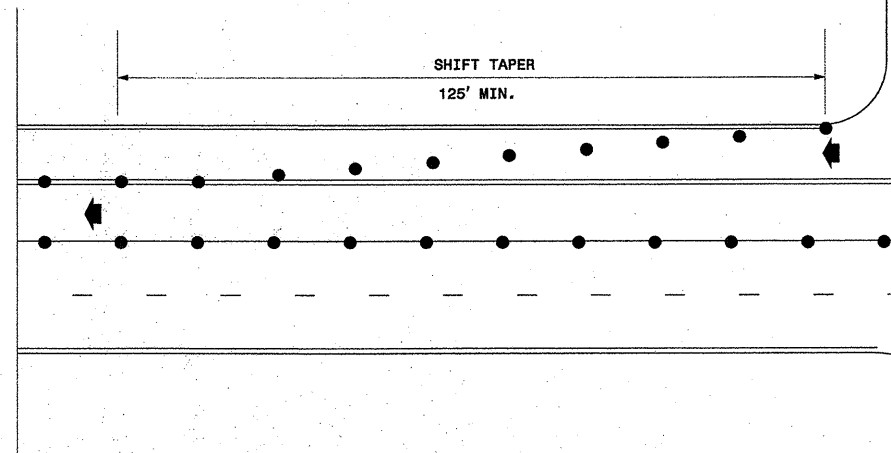


I-77 SB OFF-RAMP

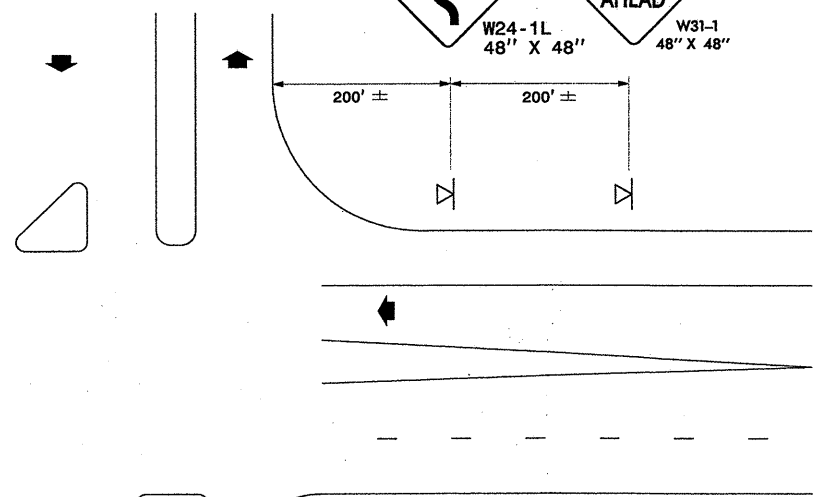
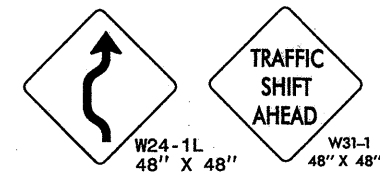


I-77 SB ON-RAMP

MATCHLINE SEE THIS SHEET










I-77 NB ON-RAMP



I-77 NB OFF-RAMP


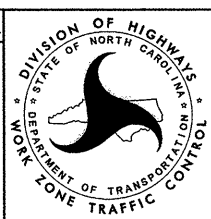
GENERAL NOTES

1. 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.
2. PLACE DRUMS ADJACENT TO WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT. PLACE DRUMS SEPARATING OPPOSING TRAFFIC AT THE MAXIMUM SPACING OF 25 FEET.
3. TMA'S ARE REQUIRED WHEN A BUFFER SPACE CANNOT BE ATTAINED, OR WHEN DIRECTED BY THE ENGINEER OR AS SHOWN IN THE PLANS. WHEN USED, POSITION TMA'S TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER.
4. CONES OR SKINNY-DRUMS MAY BE USED IN LIEU OF DRUMS. REFER TO ROADWAY STANDARD DRAWINGS FOR CONE AND SKINNY-DRUM REQUIREMENTS.

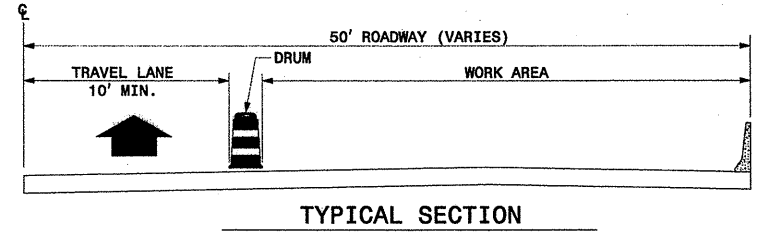
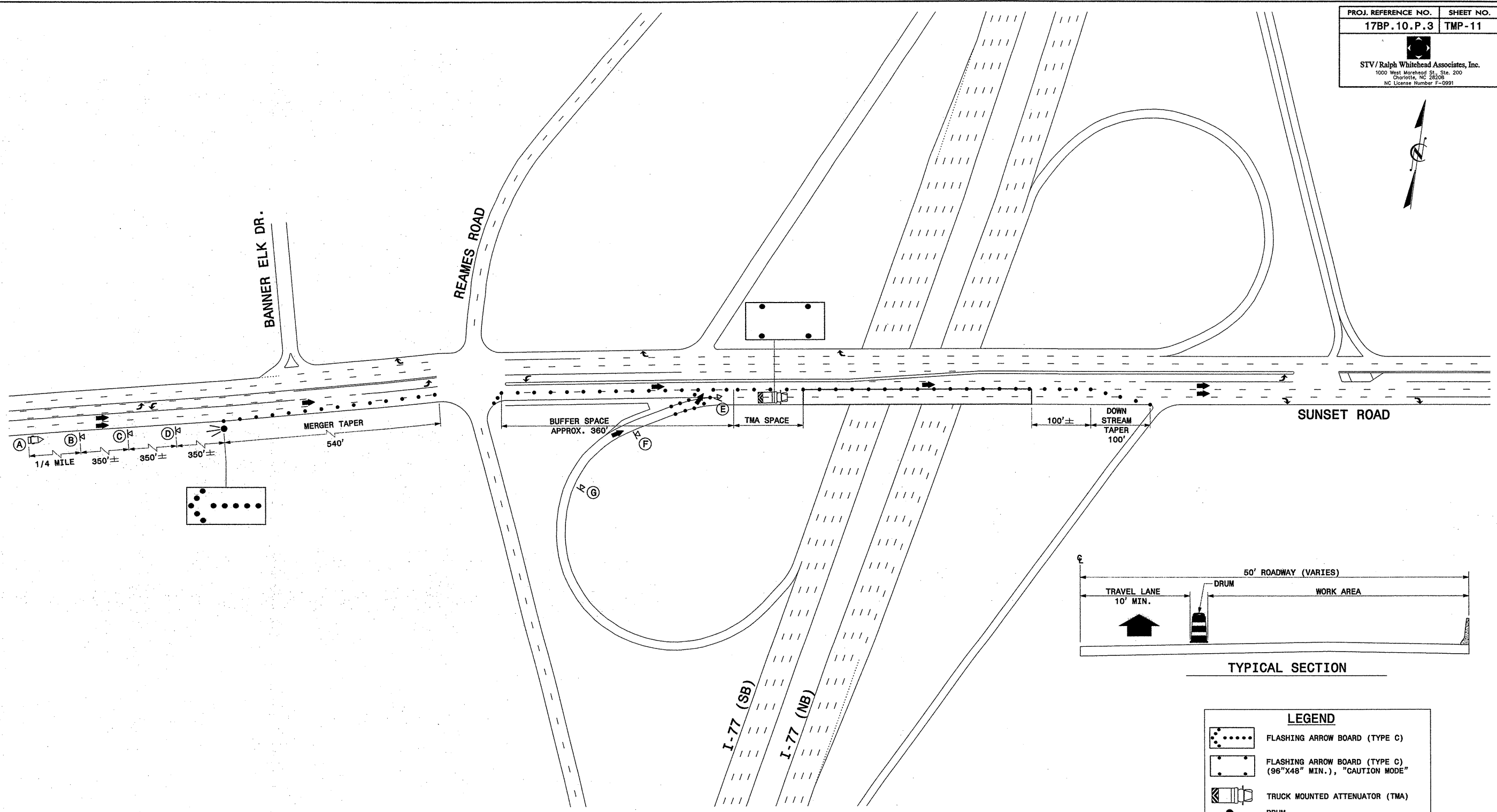
LEGEND	
	FLASHING ARROW BOARD (TYPE C)
	FLASHING ARROW BOARD (TYPE C) (96"X48" MIN.), "CAUTION MODE"
	TRUCK MOUNTED ATTENUATOR (TMA)
	DRUM
	PORTABLE SIGN
	DIRECTION OF TRAFFIC FLOW
	CHANGEABLE MESSAGE SIGN (CMS)








APPROVED: _____ DATE: _____

SEAL

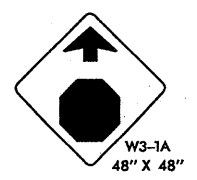
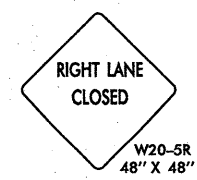
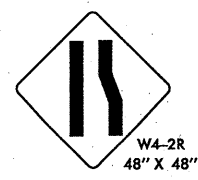



LANE CLOSURE DETAIL A
SR 1164 (NATIONS FORD RD)
POSTED SPEED = 35 MPH




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

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

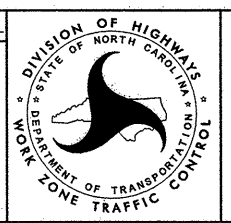


APPROVED: _____ DATE: _____

SEAL

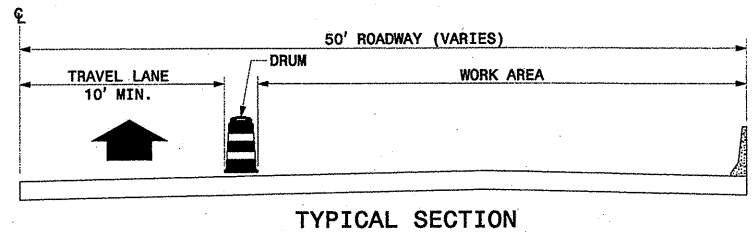
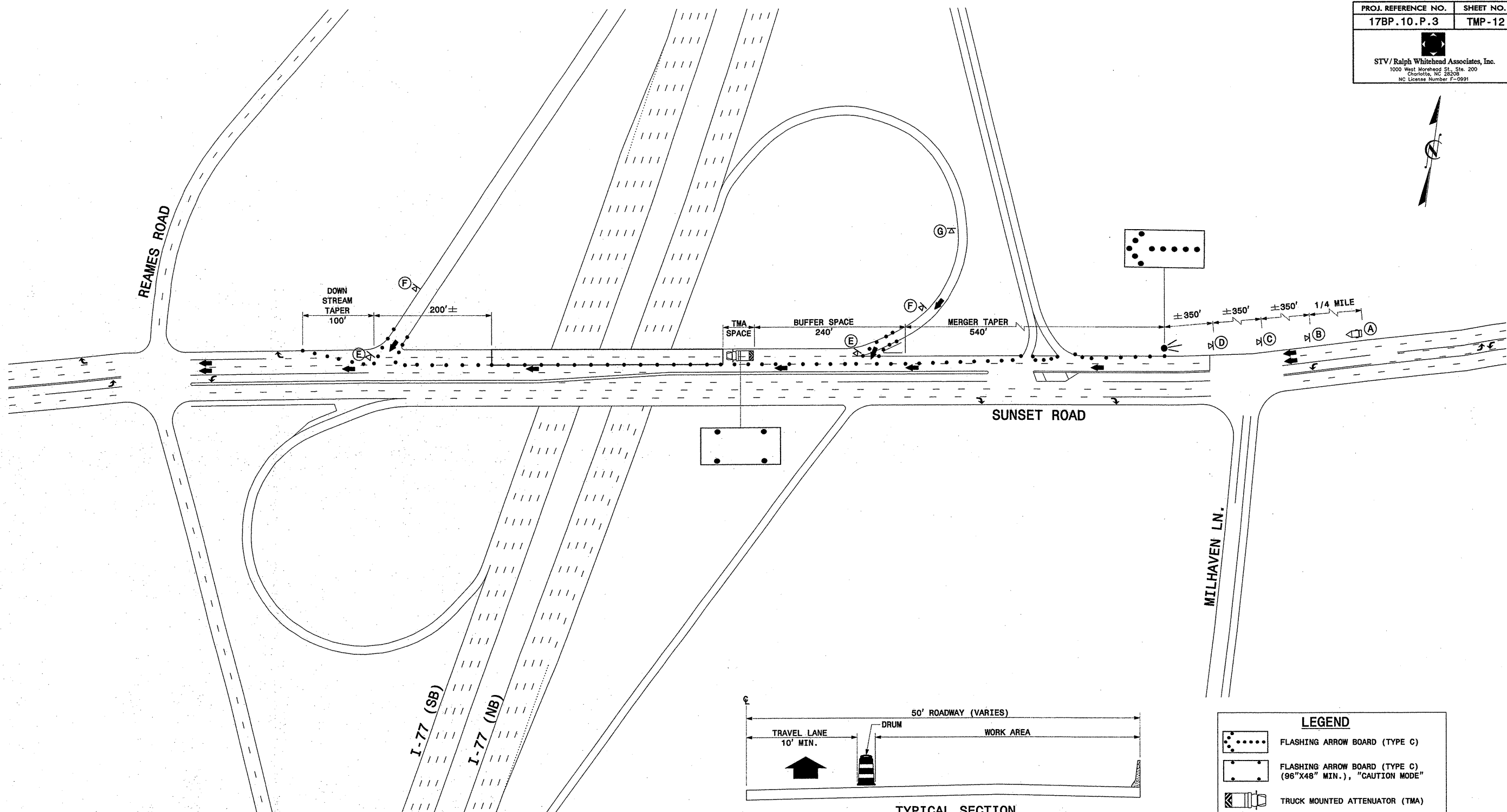









4-3-12




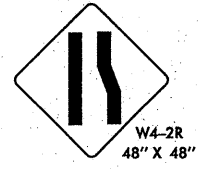
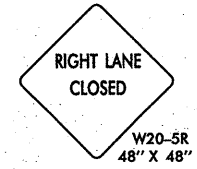

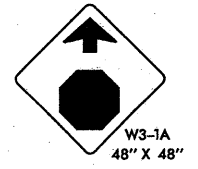
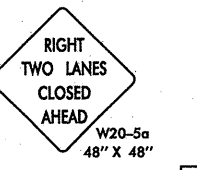
LANE CLOSURE DETAIL B
SUNSET ROAD (US 21)
POSTED SPEED = 45 MPH

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

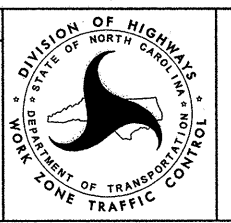
MESSAGE NO. 1	MESSAGE NO. 2
RIGHT LANE CLOSED	MERGE LEFT
CHANGEABLE MESSAGE SIGN	

- 
 W20-5R
 48" X 48"
 (B)
- 
 W4-2R
 48" X 48"
 (C)
- 
 W20-5R
 48" X 48"
 (D)
- 
 R1-1
 (E)
- 
 W3-1A
 48" X 48"
 (F)
- 
 W20-5a
 48" X 48"
 (G)

APPROVED: _____ DATE: _____

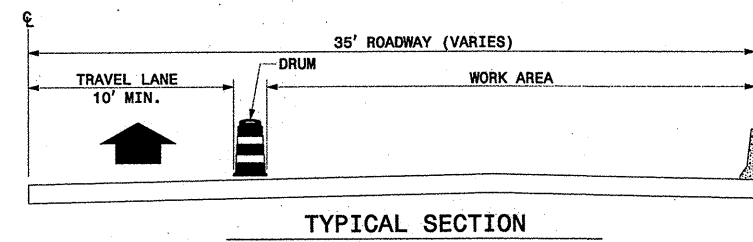
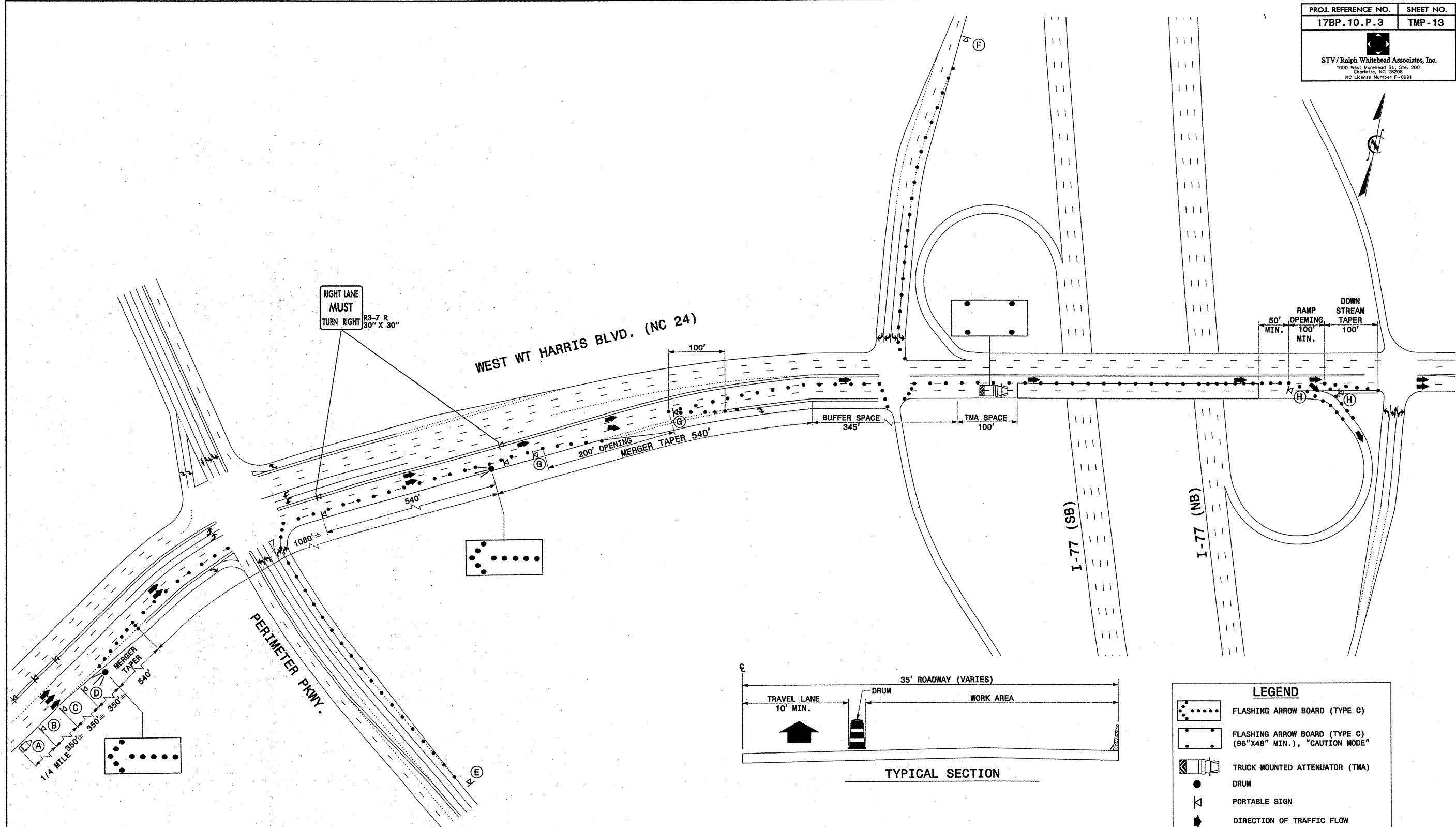
SEAL








1-3-12



LANE CLOSURE DETAIL C
SUNSET ROAD (US 21)
POSTED SPEED = 45 MPH

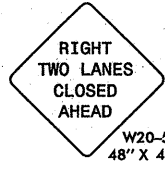
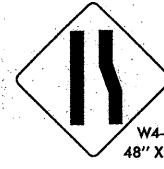

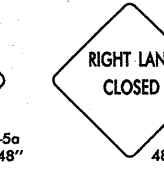
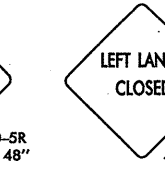
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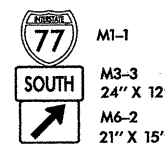
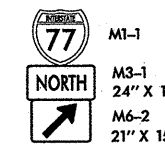


LEGEND	
	FLASHING ARROW BOARD (TYPE C)
	FLASHING ARROW BOARD (TYPE C) (96"X48" MIN.), "CAUTION MODE"
	TRUCK MOUNTED ATTENUATOR (TMA)
	DRUM
	PORTABLE SIGN
	DIRECTION OF TRAFFIC FLOW
	CHANGEABLE MESSAGE SIGN (CMS)

MESSAGE NO. 1	MESSAGE NO. 2
RIGHT TWO LANES CLOSED AHEAD	CLOSED NEXT 2 MILES

CHANGEABLE MESSAGE SIGN

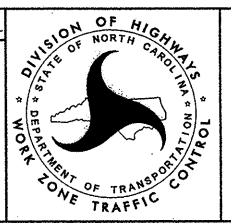
- 
 B
 W20-5a
 48" X 48"
- 
 C
 W4-2R
 48" X 48"
- 
 D
 W20-5a
 48" X 48"
- 
 E
 W20-5R
 48" X 48"
- 
 F
 W20-5L
 48" X 48"

- 
 G
 M1-1
 M3-3
 24" X 12"
 M6-2
 21" X 15"
- 
 H
 M1-1
 M3-1
 24" X 12"
 M6-2
 21" X 15"

APPROVED: _____ DATE: _____

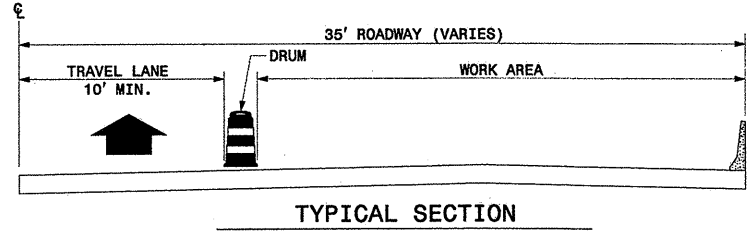
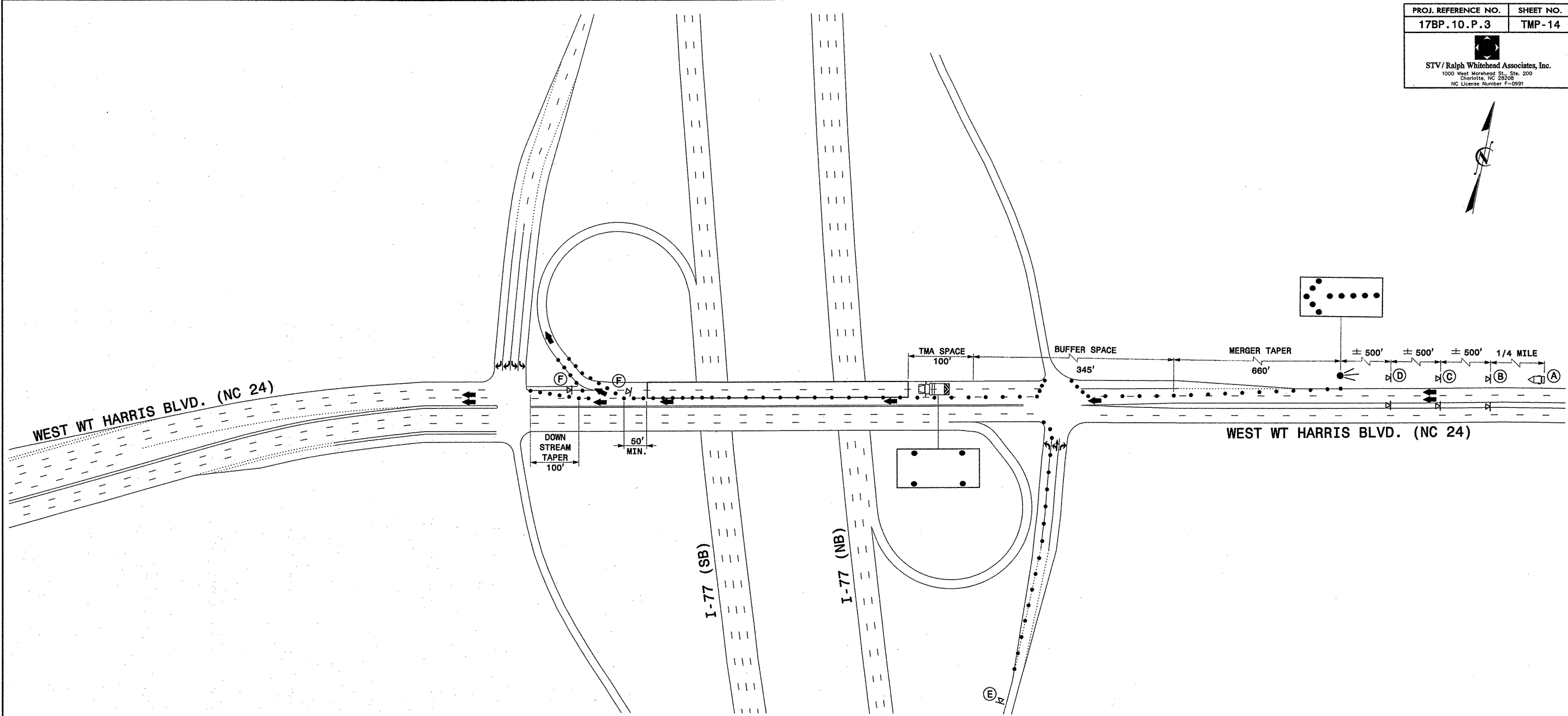
SEAL








9-3-12







LANE CLOSURE DETAIL D
WEST WT HARRIS BLVD. (NC 24)
POSTED SPEED = 45 MPH


4/3/2012
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 odynskrg




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

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

- 
 B
 W20-5R
 48" X 48"
- 
 C
 W4-2R
 48" X 48"
- 
 D
 W20-5R
 48" X 48"
- 
 E
 W20-5L
 48" X 48"

- 
 F
 M1-1
 M3-3
 24" X 12"
 M6-2
 21" X 15"

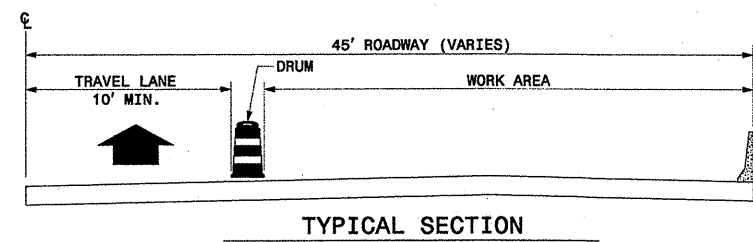
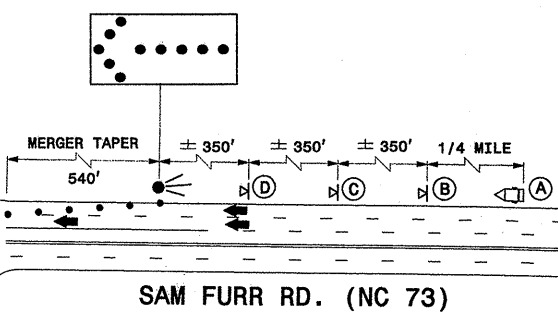
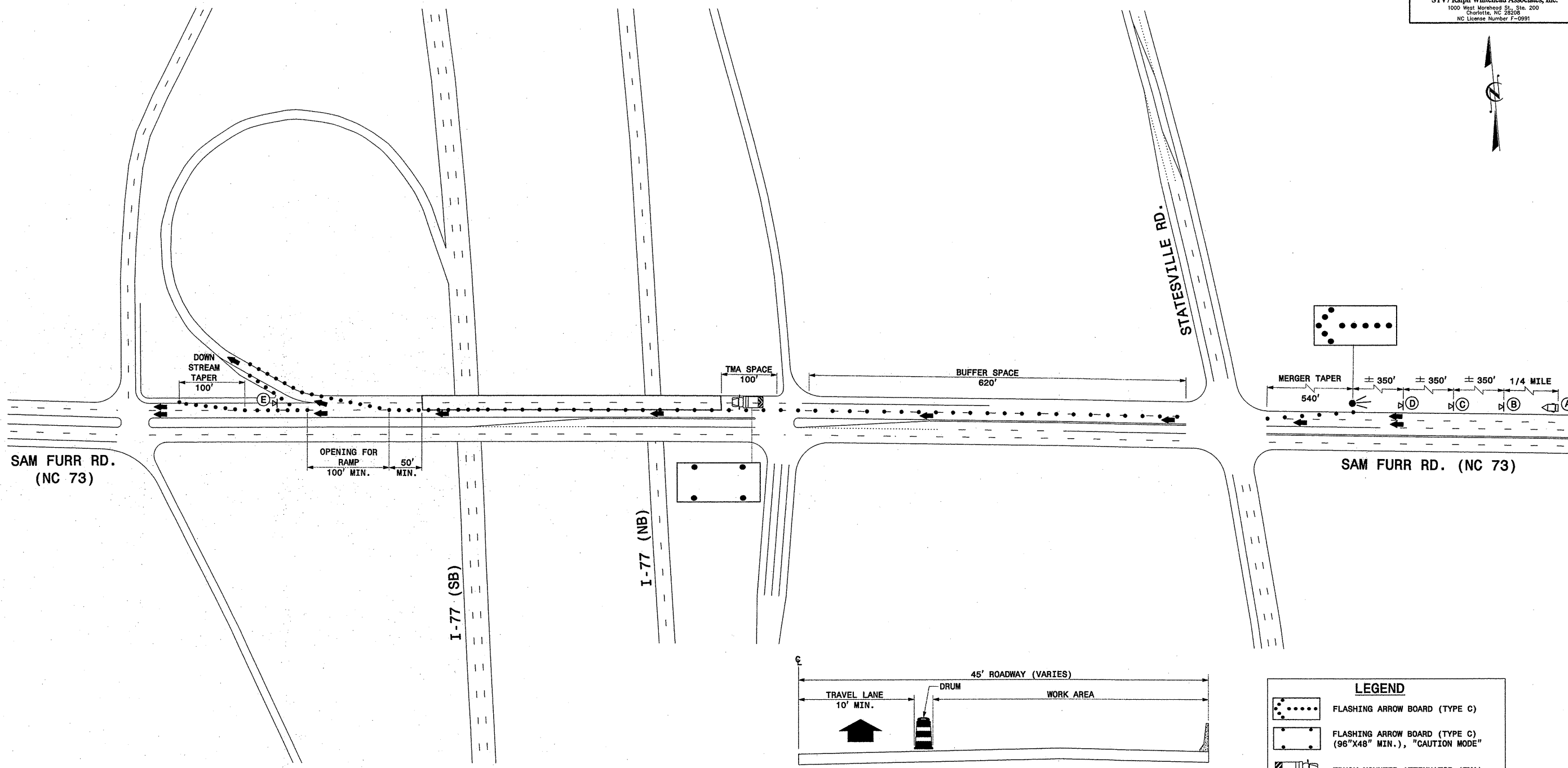
APPROVED: _____ DATE: _____









 SEAL
 RICHARD A. ODION
 4-3-12

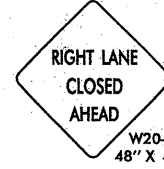
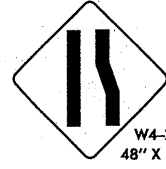





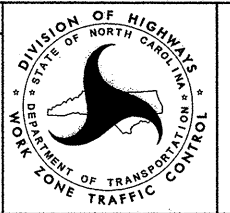
LANE CLOSURE DETAIL E
 WEST WT HARRIS BLVD. (NC 24)
 POSTED SPEED = 55 MPH

4/3/2012 1:14:11 PM C:\Traffic\trfficoctrl\top\microstation set\N0P3_TCP_14.dgn
 02jmskrg



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

<table border="1"> <tr> <td>MESSAGE NO. 1</td> <td>MESSAGE NO. 2</td> </tr> <tr> <td>RIGHT LANE CLOSED</td> <td>MERGE LEFT</td> </tr> </table> <p>CHANGEABLE MESSAGE SIGN A</p>	MESSAGE NO. 1	MESSAGE NO. 2	RIGHT LANE CLOSED	MERGE LEFT	 <p>RIGHT LANE CLOSED AHEAD W20-5R 48" X 48" B</p>	 <p>W4-2R 48" X 48" C</p>	 <p>RIGHT LANE CLOSED W20-5R 48" X 48" D</p>	 <p>M1-1 M3-3 24" X 12" M6-2 21" X 15" E</p>
MESSAGE NO. 1	MESSAGE NO. 2							
RIGHT LANE CLOSED	MERGE LEFT							

APPROVED: _____ DATE: _____			LANE CLOSURE DETAIL F SAM FURR ROAD (NC 73) POSTED SPEED = 45 MPH
SEAL			

4/3/2012
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 odyaskra

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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