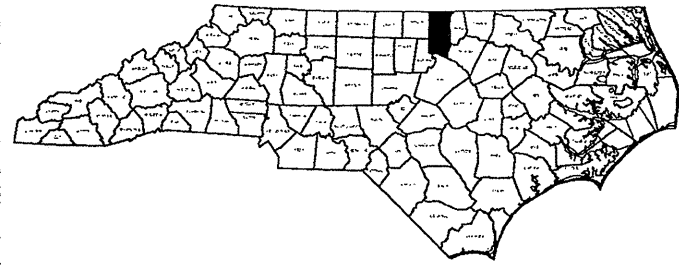


TIP PROJECT I-5205B

CONTRACT: C203453



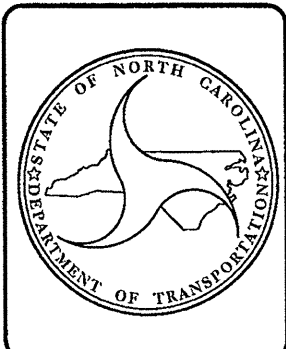
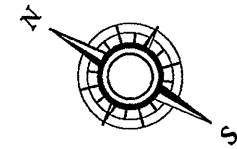
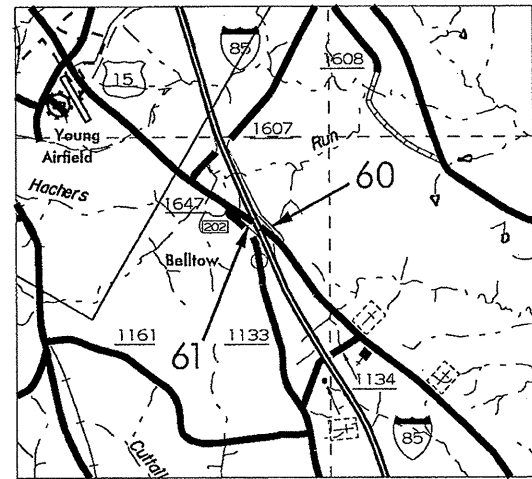
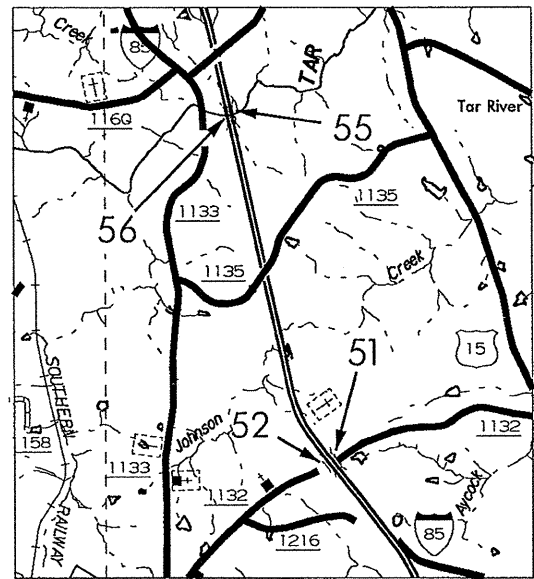
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRANVILLE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5205B	1	
STATE PROJECT NO.	F.A. PROJ. NO.	DESCRIPTION	
47051.1.3	IMPP-085-4(122)	PE	
47051.2.3	IMPP-085-4(122)	R / W	
47051.3.3	IMPP-085-4(122)	CONSTR	

LOCATION: BRIDGE #51 ON I-85 NBL OVER SR 1132 (SANDERS ROAD)
 BRIDGE #52 ON I-85 SBL OVER SR 1132 (SANDERS ROAD)
 BRIDGE #55 ON I-85 NBL OVER TAR RIVER
 BRIDGE #56 ON I-85 SBL OVER TAR RIVER
 BRIDGE #60 ON I-85 NBL OVER US 15
 BRIDGE #61 ON I-85 SBL OVER US 15

TYPE OF WORK: BRIDGE PRESERVATION- SUBSTRUCTURE AND DECK REPAIR OF EXISTING BRIDGE STRUCTURES (ALL BRIDGES)



DESIGN DATA

#51 ADT 2010	= 15,000
#52 ADT 2010	= 15,000
#55 ADT 2010	= 15,000
#56 ADT 2010	= 15,000
#60 ADT 2010	= 15,000
#61 ADT 2010	= 15,000

PROJECT LENGTH

PROJECT LENGTH #51	= 0.030 MI
PROJECT LENGTH #52	= 0.030 MI
PROJECT LENGTH #55	= 0.060 MI
PROJECT LENGTH #56	= 0.060 MI
PROJECT LENGTH #60	= 0.080 MI
PROJECT LENGTH #61	= 0.080 MI

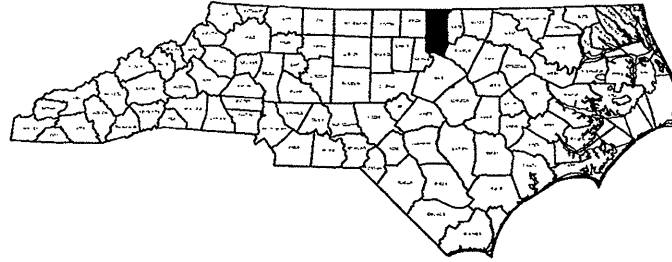
Prepared in the Office of:
STRUCTURES MANAGEMENT UNIT
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS	
LETTING DATE: FEBRUARY 18, 2014	RICK NELSON, PE PROJECT ENGINEER

NORTH CAROLINA
PROFESSIONAL ENGINEER
SEAL
2013
FEB 21 2013
FARZIN ASEFANIA
PROJECT DESIGN ENGINEER

TIP PROJECT I-5205B

CONTRACT NO: C203453



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

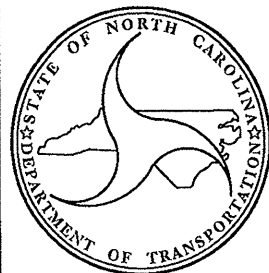
GRANVILLE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5205B	1A	
STATE PROJECT NO.	F.A. PROJ. NO.	DESCRIPTION	
47051.1.3	IMPP-085-4(122)	PE	
47051.2.3	IMPP-085-4(122)	R / W	
47051.3.3	IMPP-085-4(122)	CONSTR	

LOCATION: BRIDGE #51 ON I-85 NBL OVER SR 1132 (SANDERS ROAD)
 BRIDGE #52 ON I-85 SBL OVER SR 1132 (SANDERS ROAD)
 BRIDGE #55 ON I-85 NBL OVER TAR RIVER
 BRIDGE #56 ON I-85 SBL OVER TAR RIVER
 BRIDGE #60 ON I-85 NBL OVER US 15
 BRIDGE #61 ON I-85 SBL OVER US 15

TYPE OF WORK: BRIDGE PRESERVATION- SUBSTRUCTURE AND DECK REPAIR OF
 EXISTING BRIDGE STRUCTURES (ALL BRIDGES)

<u>SHT#</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
1A	INDEX OF SHEETS
2	SUMMARY OF QUANTITIES
S-1 THRU S-41	STRUCTURAL REHABILITATION PLANS
SN	STANDARD NOTES
TMP-1 THRU TMP-4	TRAFFIC CONTROL PLANS



Prepared In the Office of:
STRUCTURES MANAGEMENT UNIT
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS	
LETTING DATE: FEBRUARY 18, 2014	RICK NELSON, PE PROJECT ENGINEER

FARZIN ASEFNIA P.E.
DESIGN ENGINEER

NOTE:

THIS WORK WILL INCLUDE LATEX MODIFIED CONCRETE OVERLAY OF EXISTING BRIDGE DECKS, REPAIR OF SUBSTRUCTURES, REPLACEMENT AND REPAIR OF JOINT MATERIAL.

THE CONTRACTOR SHALL PROVIDE ACCESS FOR ENTIRE UNDERDECK AREA OF BRIDGES 55 & 56 FOR IDENTIFICATION AND REPAIR OF AFFECTED AREAS.

AS PART OF THIS PROJECT, THE CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ANY AREAS IDENTIFIED BY THE ENGINEER.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

JURISDICTIONAL RESOURCES (WETLAND, STREAM AND REGULATED RIPARIAN BUFFER) ARE PRESENT AT BRIDGE 55 & 56. IMPACT TO THESE RESOURCES ARE NOT ALLOWED FROM ANY ACTIVITY ASSOCIATED WITH WORK AT THESE BRIDGES.

NO DISCHARGE OF WATER, CONCRETE DEBRIS, SLURRY, OR ANY REPAIR MATERIAL IS ALLOWED TO ENTER THE WATERCOURSE. THE CONTRACTOR SHALL COLLECT, CONTAIN AND REMOVE ALL DEBRIS RESULTING FROM REPAIR ACTIVITIES. A DETAILED PLAN FOR COLLECTION, CONTAINMENT AND DISPOSAL OF DEBRIS AS WELL AS STAGING THE EQUIPMENT, INCLUDING DRAWINGS, AND NARRATIVES MUST BE PROVIDED TO AND APPROVED BY THE ASSISTANT STATE STRUCTURES MANAGEMENT ENGINEER-OPERATIONS AND THE NCDOT DIVISION 5 ENVIRONMENTAL SUPERVISOR. THE SUBMITTAL SHALL BE MADE AT LEAST 30 DAYS PRIOR TO OCCURRENCE OF ANY ACTIVITY AT BRIDGES 55 & 56.

TOTAL BILL OF MATERIAL

BRIDGE NO.	1.5" MILLING	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	MILLED RUMBLE STRIPS (ASPHALT CONCRETE)	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	EPOXY COATED REINFORCING STEEL	CLASS II, SURFACE PREPARATION	LATEX MODIFIED CONCRETE OVERLAY	PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY
	SO. YDS.	TONS	LIN. FT.	SO. FT.	CU. YDS.	LBS.	SO. YDS.	CU. YDS.	SO. YDS.
51	360	32	1,200	5,700	—	—	1	47.5	855
52	360	32	1,200	5,700	—	—	2	47.5	855
55	360	32	1,200	12,220	—	—	3	81.4	1,465
56	360	32	1,200	12,220	—	—	11	81.4	1,465
60	500	65	1,200	16,900	6.8	608	48	111.4	2,005
61	440	40	1,200	17,065	—	—	0	113.1	2,035
TOTAL	2,380	233	7,200	69,805	6.8	608	65	482.3	8,680

BRIDGE NO.	CONCRETE REPAIRS	SHOTCRETE REPAIRS	EPOXY RESIN INJECTION	FOAM JOINT SEALS	EPOXY COATING	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK
	CU. FT.	CU. FT.	LIN. FT.	LUMP SUM	SO. FT.	SO. FT.	SO. YDS.	SO. YDS.
51	0.3	0.3	22.0	LUMP SUM	351	149	855	855
52	0.7	7.1	18.5	LUMP SUM	351	149	855	855
55	22.4	51.6	46.3	LUMP SUM	488	220	1,465	1,465
56	7.4	23.2	5.0	LUMP SUM	244	220	1,465	1,465
60	1.8	2.0	48.0	LUMP SUM	877	71	2,005	2,005
61	1.4	2.4	8.0	LUMP SUM	877	143	2,035	2,035
TOTAL	34.0	486.6***	147.8	LUMP SUM	3,188	952	8,680	8,680

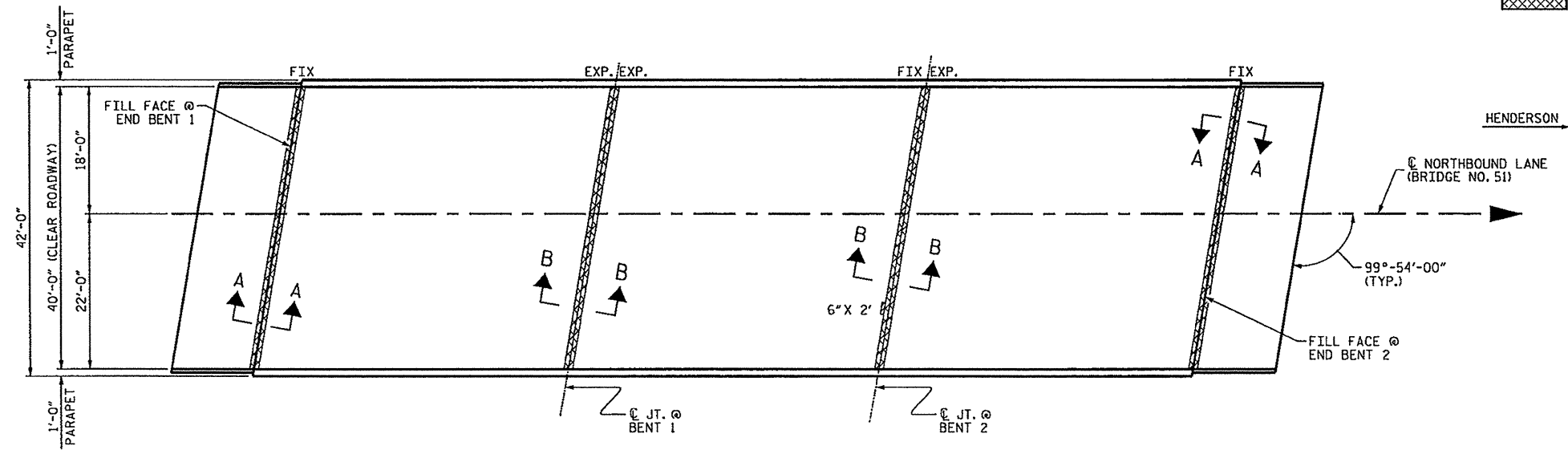
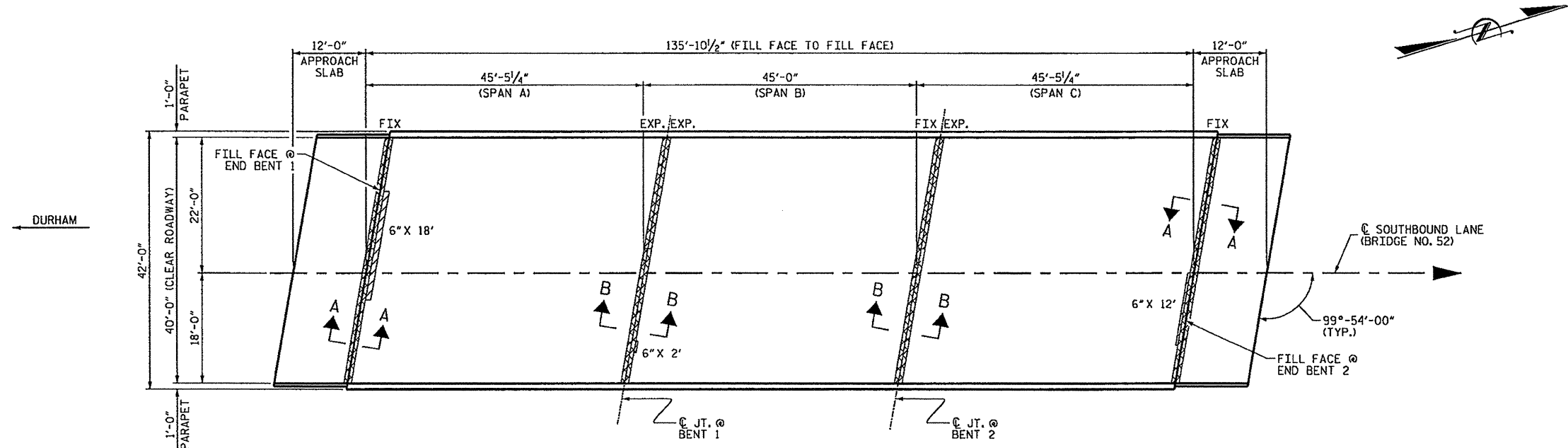
*** TOTAL QUANTITY INCLUDES AN ADDITIONAL 400 CU. FT. FOR REPAIR OF DAMAGED AREAS OF THE CONCRETE GIRDERS AND UNDERSIDE OF THE DECK OVERHANGS. THE CONTRACTOR SHALL IDENTIFY THE DAMAGED AREAS AND MAKE SHOTCRETE REPAIRS AT THE DIRECTION OF THE ENGINEER.



PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
STRUCTURE TOTAL BILL OF MATERIAL			
REVISIONS			
NO.	BY:	DATE:	SHEET NO.
1			S-1
2			TOTAL SHEETS
			41



DRAWN BY : D. PLATICA DATE : 06/13
 CHECKED BY : J. YANNACCONE DATE : 06/13



 APPROX. AREA: CLASS II REPAIR
 BRIDGE JOINT DEMOLITION

PLAN OF SPANS
 (DIMENSIONS TYPICAL FOR BOTH BRIDGES)

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 51 & 52

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**PLAN VIEW OF
 BRIDGE 51 & 52
 ON I-85 OVER
 SR 1132 (SANDERS RD.)**



DRAWN BY : D. PLATICA DATE : 6/2013
 CHECKED BY : J. YANACCONI DATE : 6/2013

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

NOTES

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

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK, SEE "TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

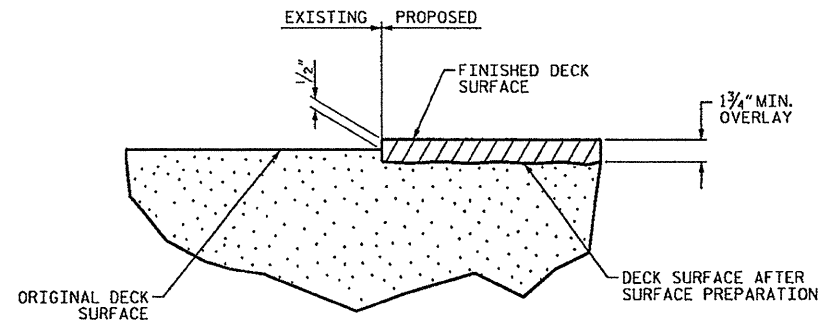
IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN SHEETS.

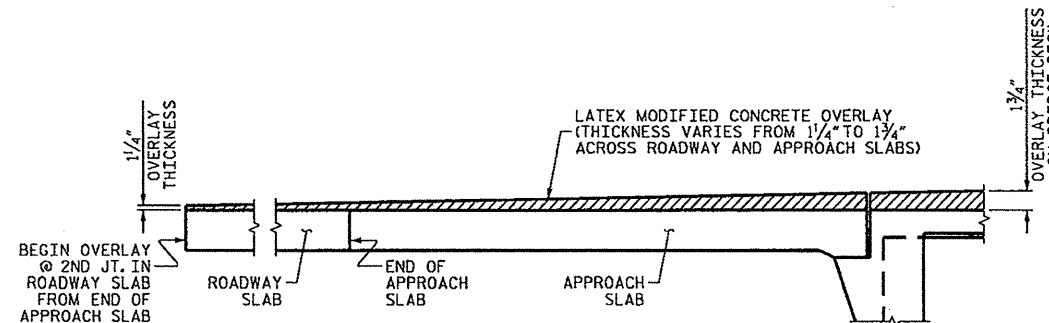
LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES SHALL BE USED TO ENSURE HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

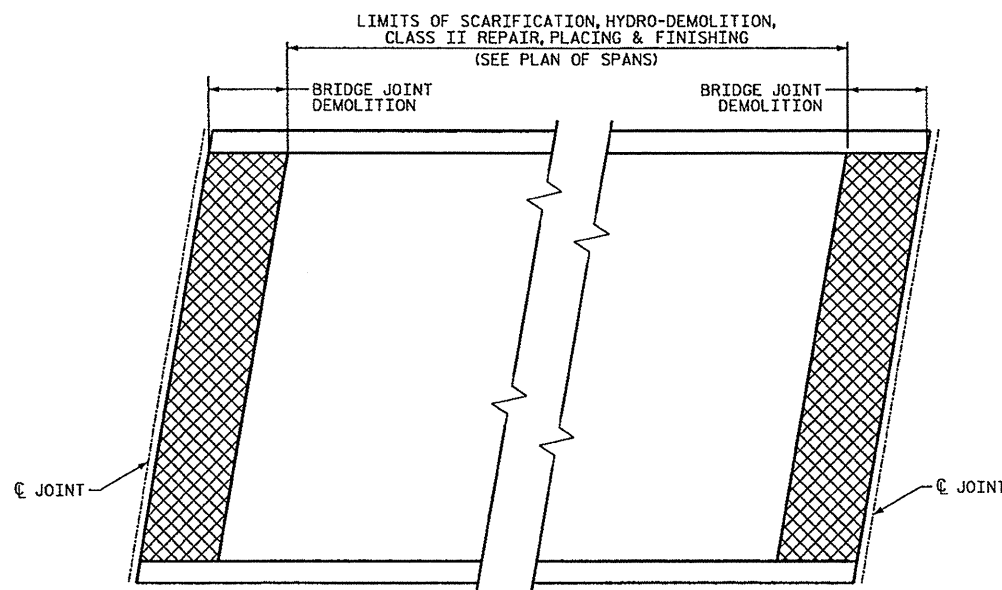
THE CONTRACTOR SHALL IDENTIFY DAMAGED AREAS OF THE CONCRETE GIRDERS AND THE UNDERSIDE OF THE DECK OVERHANGS AND MAKE SHOTCRETE REPAIRS OF THOSE AREAS AT THE DIRECTION OF THE ENGINEER.



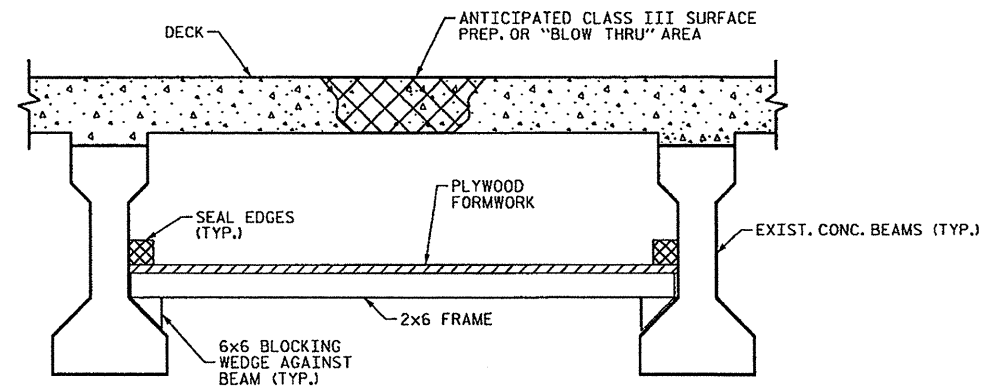
DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



OVERLAY THICKNESS DETAIL



PLAN



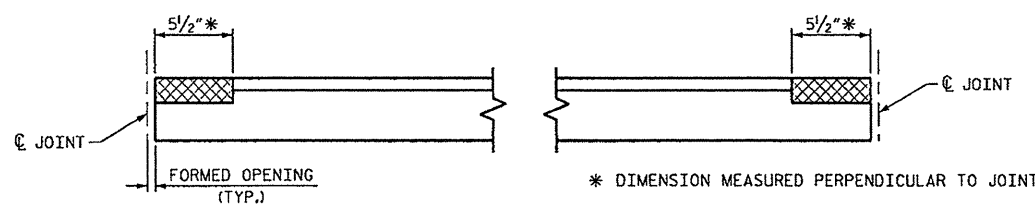
TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED.

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

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

PLACE PLYWOOD AND FRAMING TO CLEAR INTERMEDIATE CONCRETE DIAPHRAGMS.

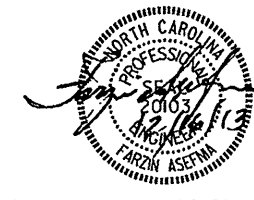


ELEVATION

BRIDGE JOINT DEMOLITION

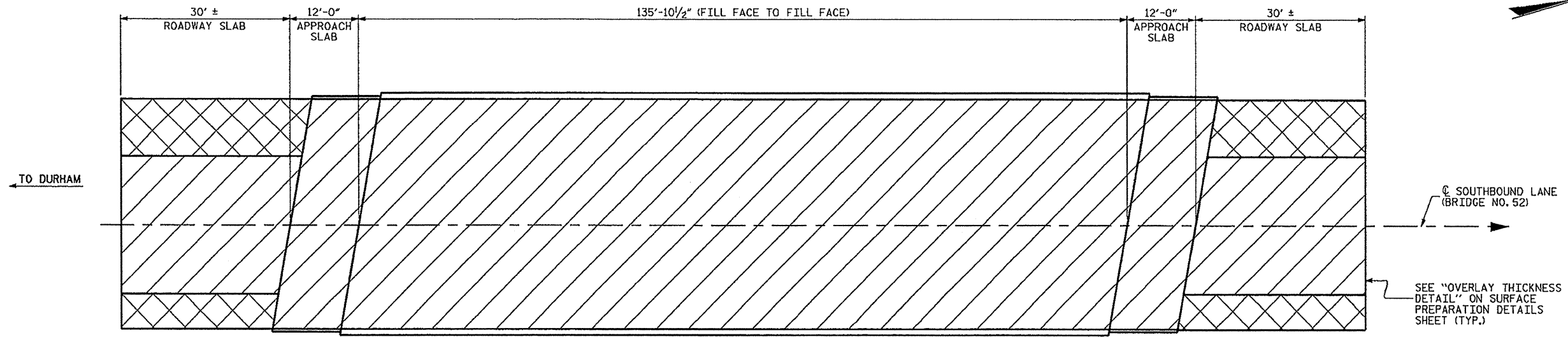
PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 51 & 52

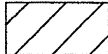

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 DETAILS**

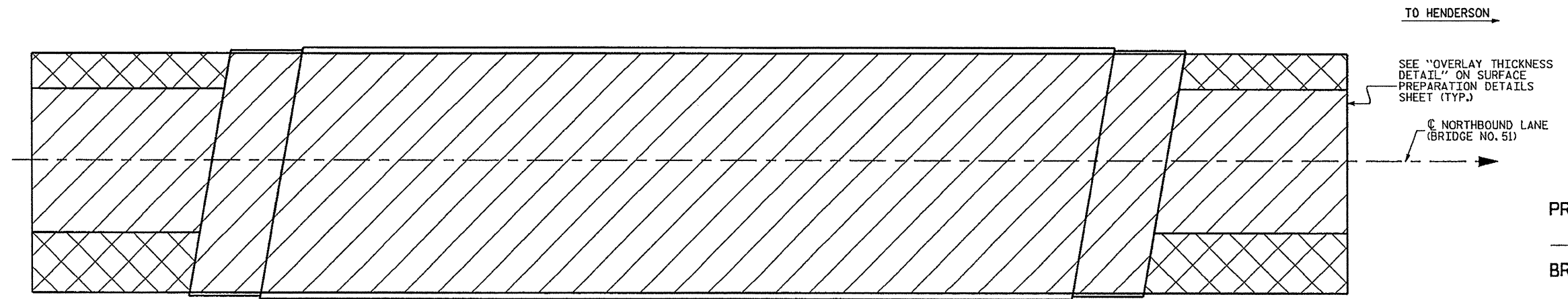


DRAWN BY : D. PLATICA DATE : 6/2013
 CHECKED BY : J. YANACCONI DATE : 6/2013

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



-  DECK SCARIFICATION AND HYDRODEMOLITION
-  1.5" MILLING



PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 51 & 52

PLAN
 (DIMENSIONS TYPICAL FOR BOTH BRIDGES)



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-4
SURFACE PREPARATION PLAN						TOTAL SHEETS 41
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

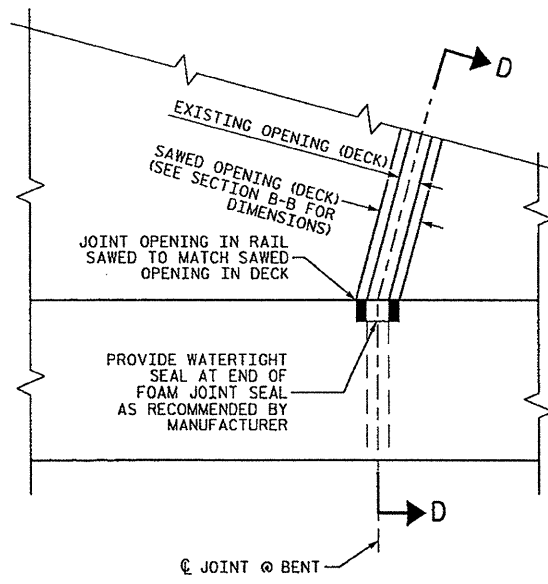
DRAWN BY : DAN PLATICA DATE : 6/2013
 CHECKED BY : JOHN YANNACONE DATE : 6/2013

NOTES

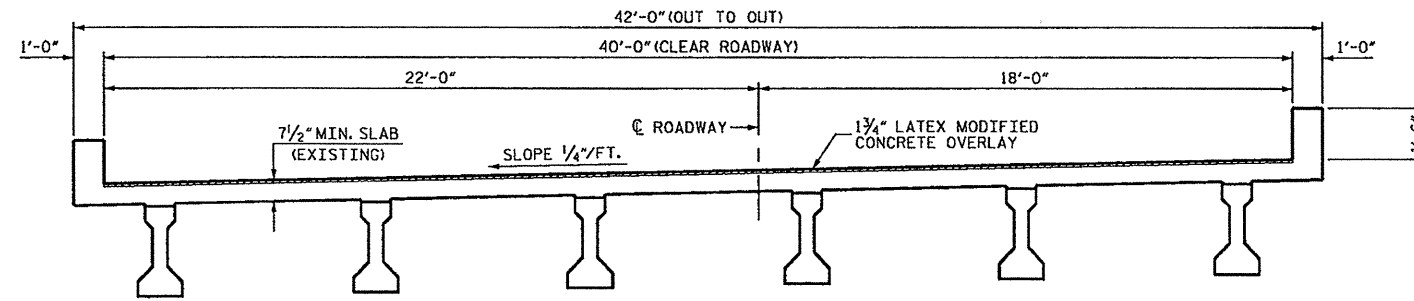
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 2" AT BENTS AND 3 1/2" AT END BENTS FOR BRIDGE NO. 51 AND 4" AT END BENTS FOR BRIDGE NO. 52.

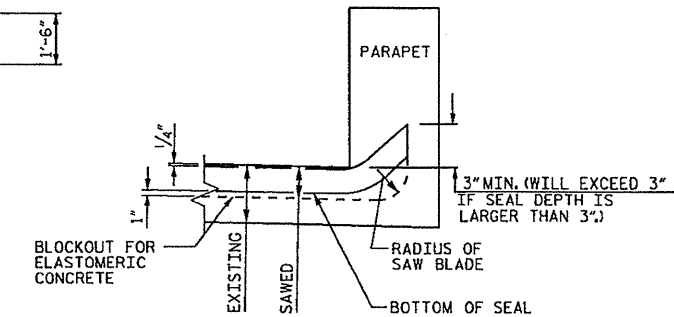
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.



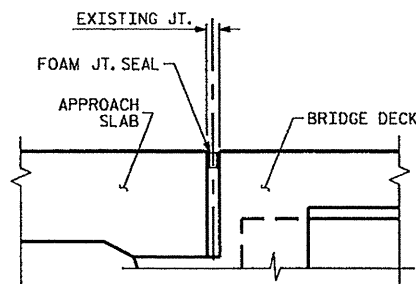
PLAN



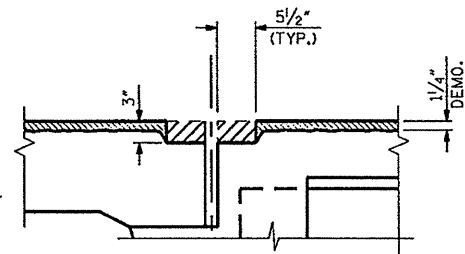
TYPICAL SECTION



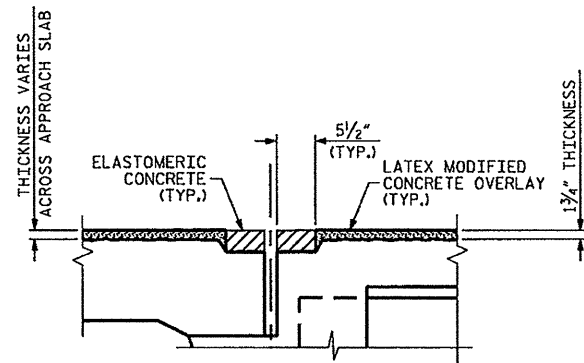
SECTION D-D



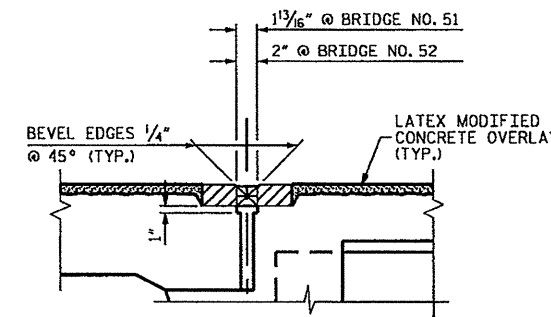
**SECTION A-A
(EXISTING JOINT)**



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



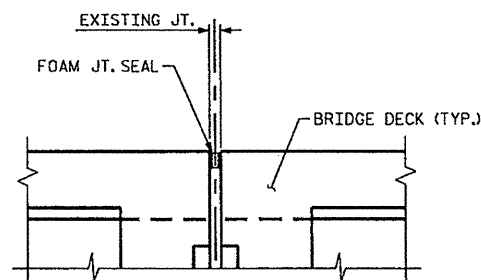
**SECTION A-A
(PROPOSED FOAM JOINT SEAL PRE-SAWED DIMENSIONS)**



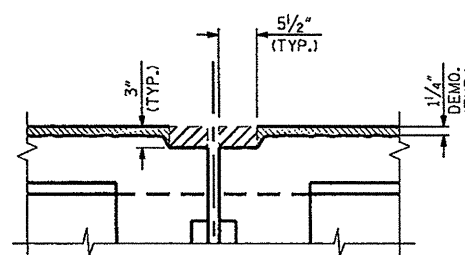
**SECTION A-A
(PROPOSED FOAM JOINT SEAL FIXED)**

ELASTOMERIC CONCRETE	
END BENTS AND BENTS	74.4 (CU. FT.)
* TOTAL	74.4 (CU. FT.)

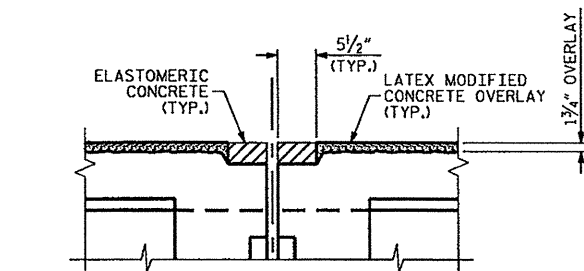
* BASED ON THE MINIMUM BLOCKOUT SHOWN.



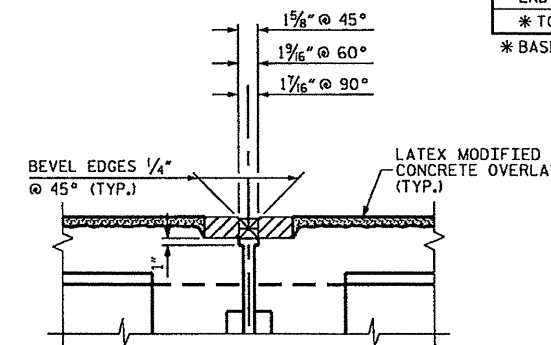
**SECTION B-B
(EXISTING JOINT)**



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



**SECTION B-B
(PROPOSED FOAM JOINT SEAL PRE-SAWED DIMENSIONS)**



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

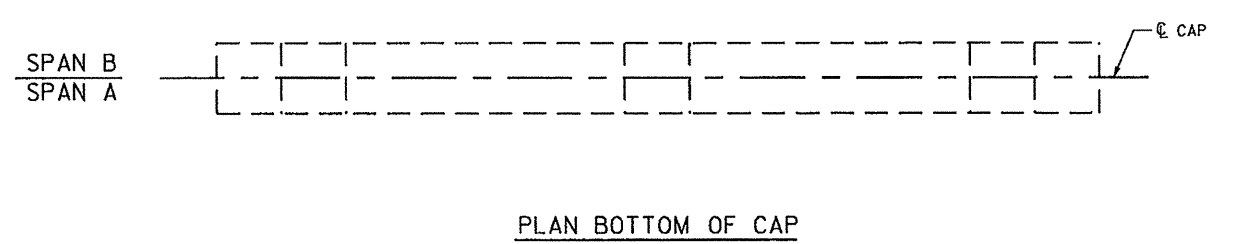
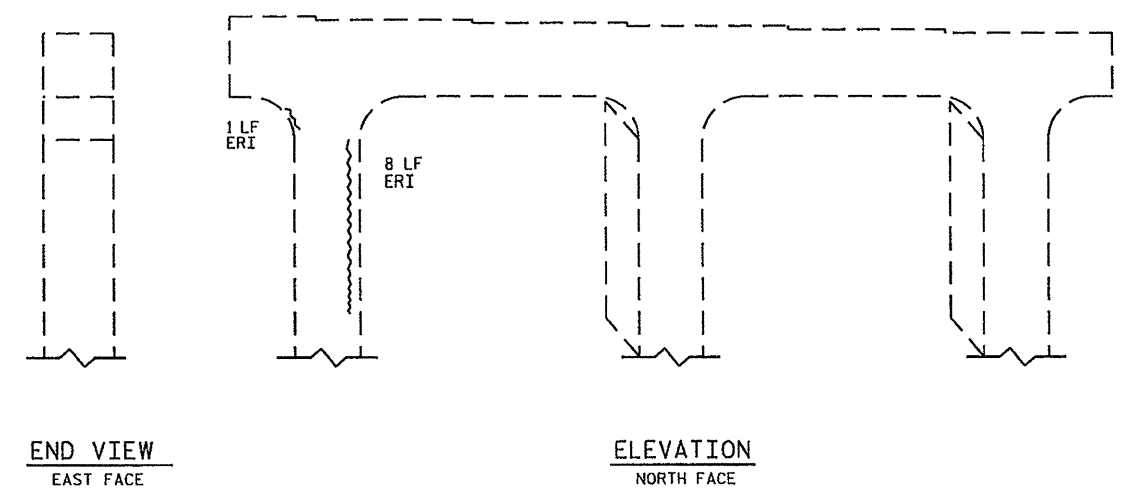
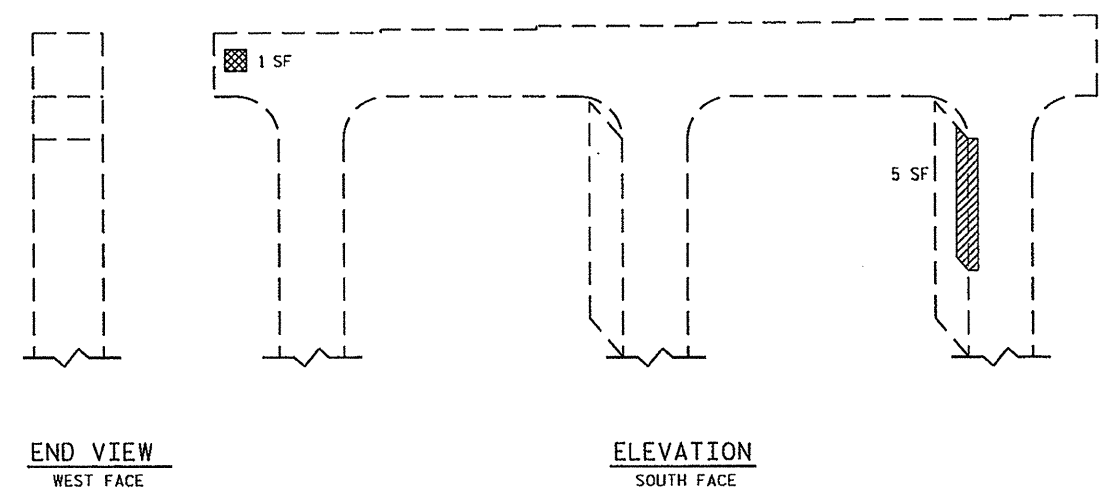
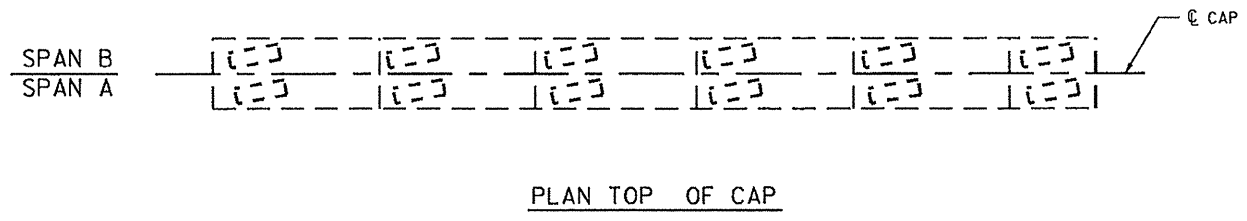
PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 51 & 52

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**TYPICAL SECTION
 &
 JOINT DETAILS**



DRAWN BY : DAN PLATICA DATE : 6/2013
 CHECKED BY : JOHN YANACCONI DATE : 6/2013

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			41



NOTE:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
 FOR STRUCTURE REPAIRS, SEE SHEET S-41.
 EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

END VIEW
WEST FACE

ELEVATION
SOUTH FACE

END VIEW
EAST FACE

ELEVATION
NORTH FACE

CONCRETE REPAIR
 SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	5.0	1.6		
CONCRETE REPAIRS	1.0	0.3		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		1.0		
COLUMN		8.0		
EPOXY COATING		SQ. FT.		LN. FT.
TOP BENT CAP		133		

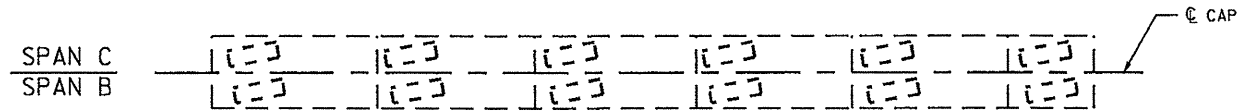
PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 51

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUBSTRUCTURE BENT 1

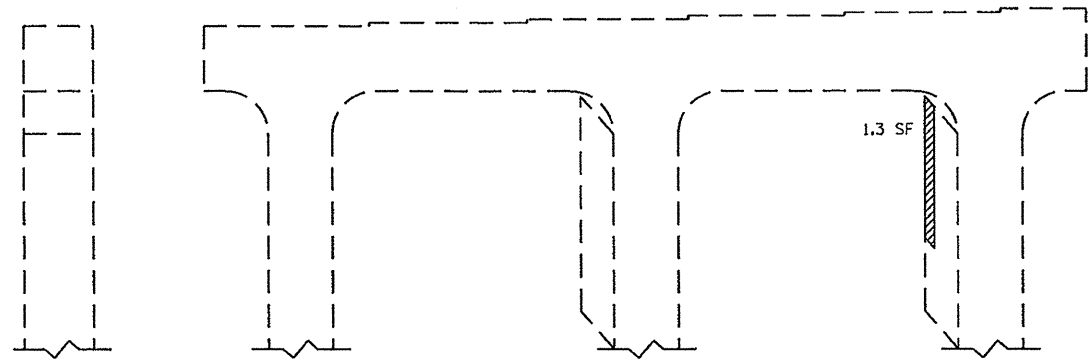


DRAWN BY : M. WELDON DATE : 1/2013
 CHECKED BY : J. YANACONE DATE : 1/2013

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-6
1			3			TOTAL SHEETS
2			4			41

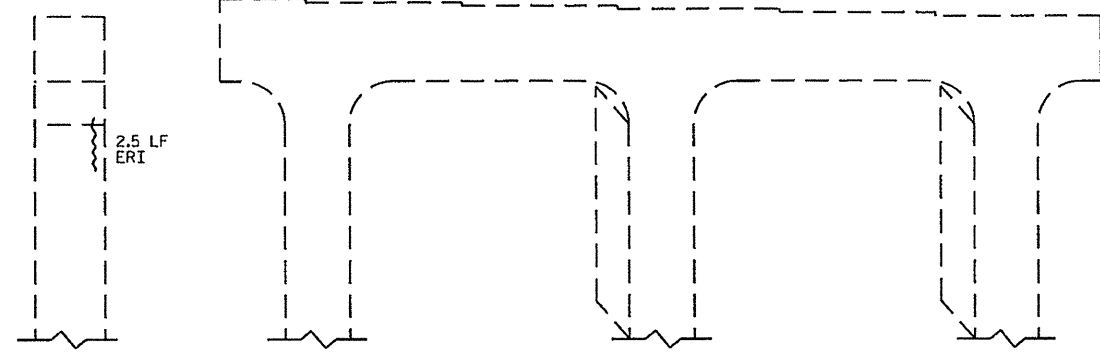


PLAN TOP OF CAP



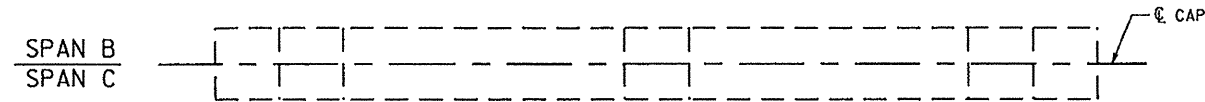
END VIEW
WEST FACE

ELEVATION
SOUTH FACE



END VIEW
EAST FACE

ELEVATION
NORTH FACE



PLAN BOTTOM OF CAP

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	1.3	0.5		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION				
CAP		0.0		LN. FT.
COLUMN		2.5		LN. FT.
EPOXY COATING				LN. FT.
TOP BENT CAP		133		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 51

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 2**



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			41

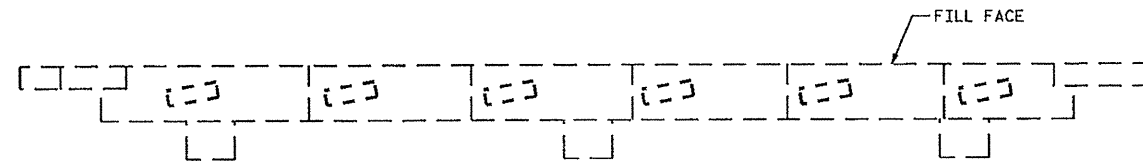
DRAWN BY : M. WELDON DATE : 7/2013
 CHECKED BY : J. YANACCONI DATE : 7/2013

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

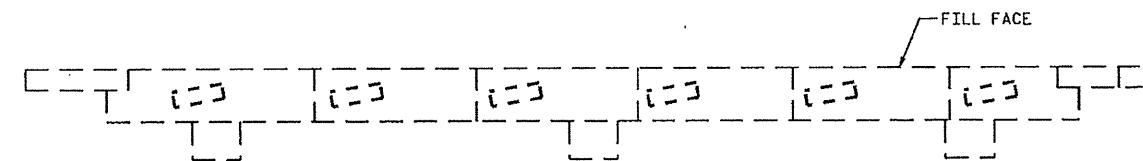
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE END BENT 2 CAP AND PILE CAPS.



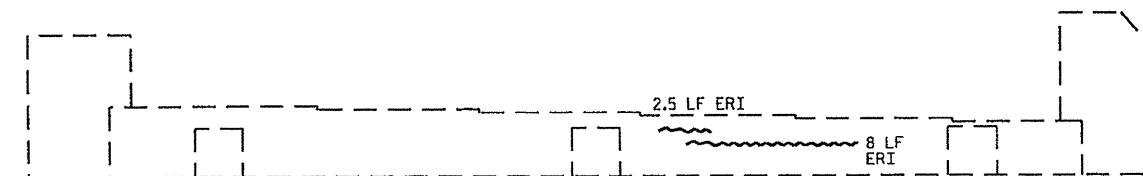
PLAN
END BENT 1



ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

- ☒ CONCRETE REPAIR
- ▨ SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS END BENT 1 AND 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
CURTAIN WALL (VERT. FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		10.5		
CURTAIN WALL		0.0		
EPOXY COATING		SQ. FT.		LN. FT.
TOP OF END BENT CAP & PILE CAPS		85		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 51

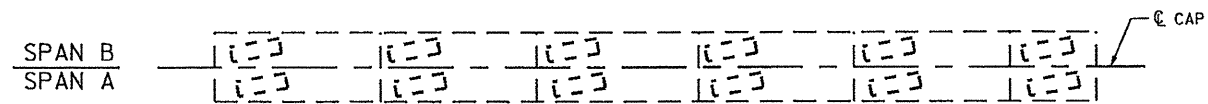
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT 1
 &
 END BENT 2**

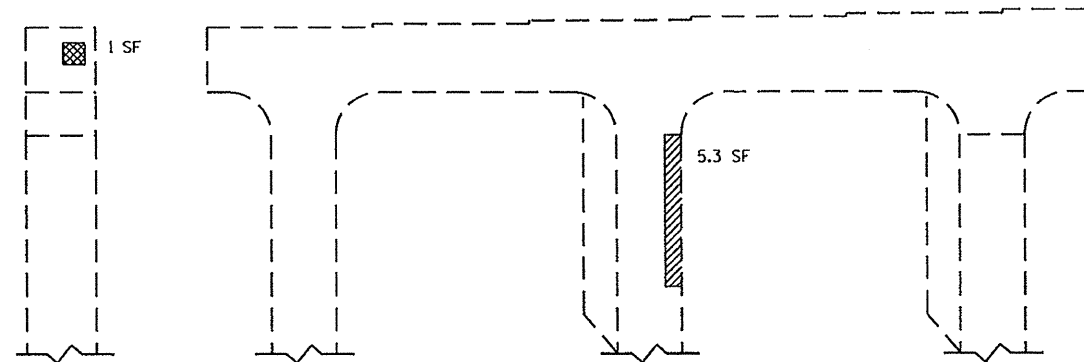
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			41
2			4			



DRAWN BY : M.WELDON DATE : 7/2013
 CHECKED BY : J. YANNACONE DATE : 7/2013

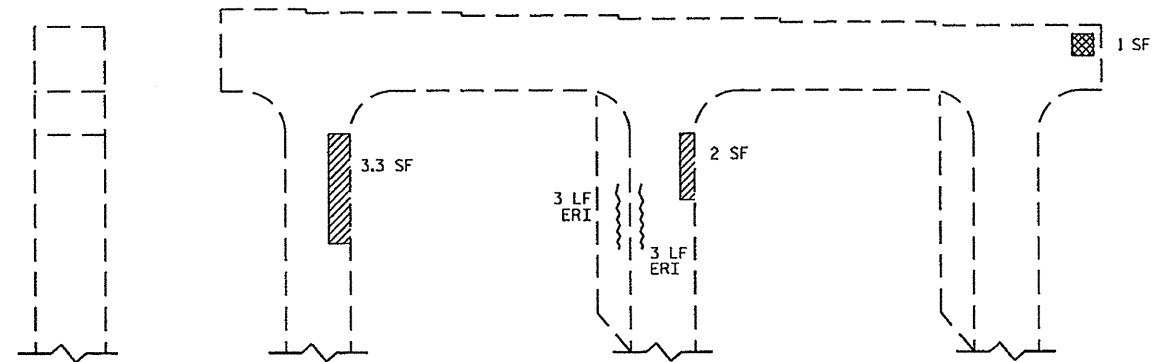


PLAN TOP OF CAP



END VIEW
WEST FACE

ELEVATION
SOUTH FACE



END VIEW
EAST FACE

ELEVATION
NORTH FACE



PLAN BOTTOM OF CAP

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	10.6	3.4		
CONCRETE REPAIRS	2.0	0.4		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		6.0		
EPOXY COATING		SQ. FT.		LN. FT.
TOP BENT CAP		133		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 52

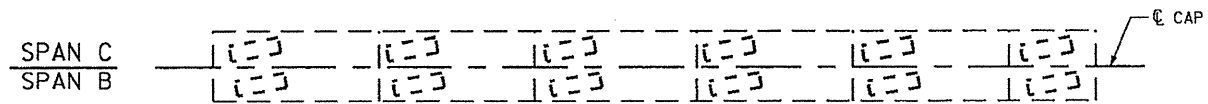
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 1**

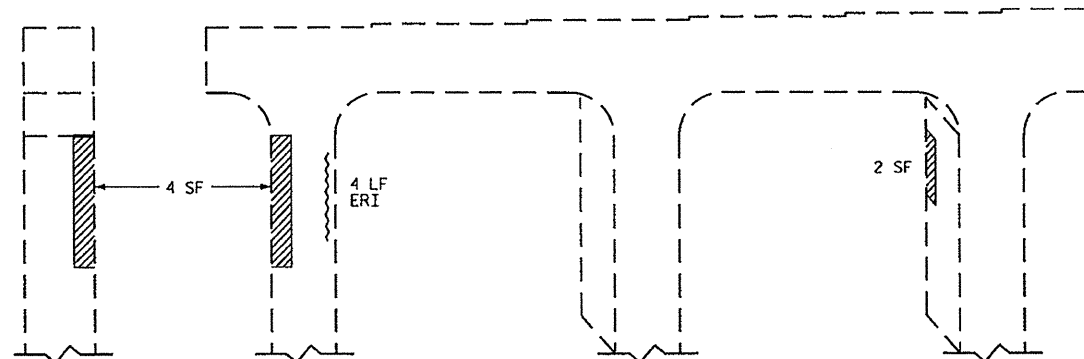
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			41



DRAWN BY: M. WELDON DATE: 7/2013
 CHECKED BY: J. YANNAKONE DATE: 7/2013

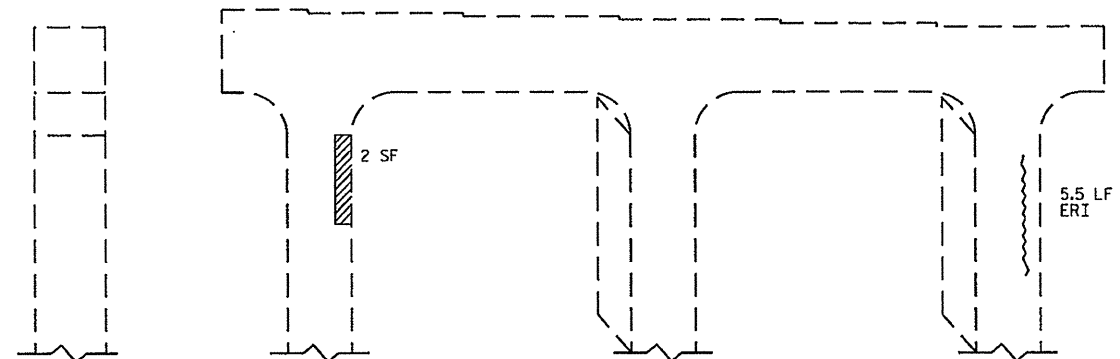


PLAN TOP OF CAP



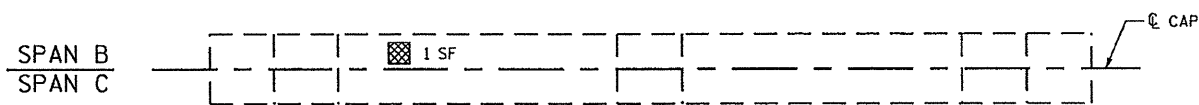
END VIEW
WEST FACE

ELEVATION
SOUTH FACE



END VIEW
EAST FACE

ELEVATION
NORTH FACE



PLAN BOTTOM OF CAP

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

NOTE:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
FOR STRUCTURE REPAIRS, SEE SHEET S-41.
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	12.0	3.7		
CONCRETE REPAIRS	1.0	0.3		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		9.5		
EPOXY COATING		SQ. FT.		LN. FT.
TOP BENT CAP		133		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
BRIDGE NO.: 52

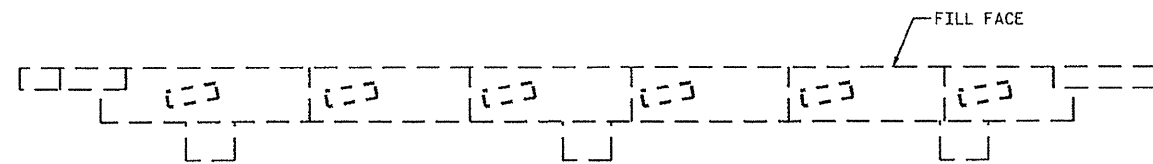
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUBSTRUCTURE
BENT 2**

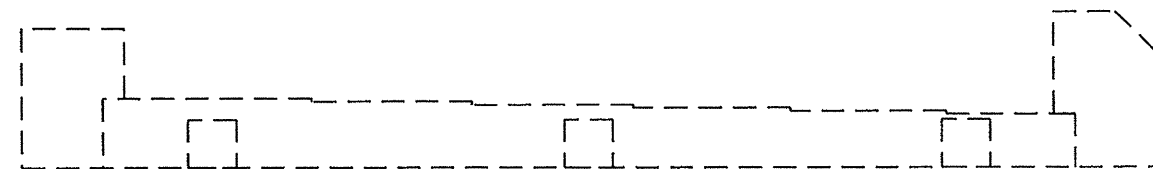


DRAWN BY : M. WELDON DATE : 7/2013
CHECKED BY : J. YANACCONI DATE : 7/2013

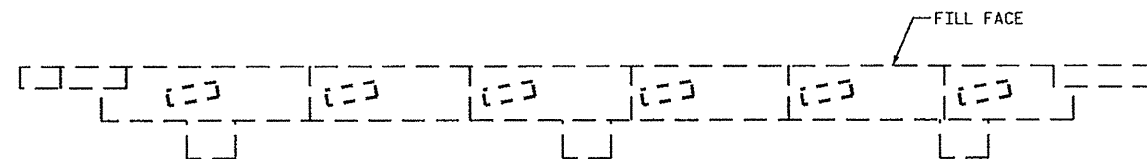
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-10
2			4			41



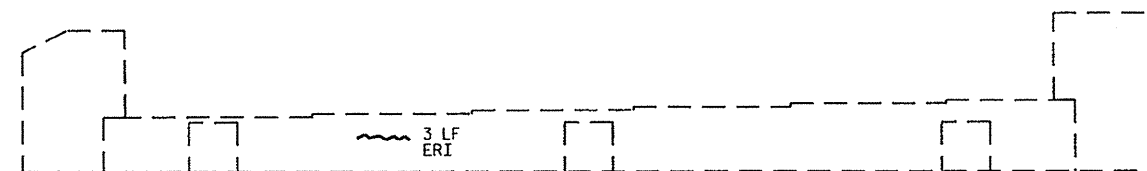
PLAN
END BENT 1



ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

- ☒ CONCRETE REPAIR
- ▨ SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

DRAWN BY : M.WELDON DATE : 7/2013
 CHECKED BY : J. YANACCONI DATE : 7/2013

12-DEC-2013 11:55
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 mweldon

NOTE:

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FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE END BENT 2 CAP AND PILE CAPS.

REPAIR QUANTITY TABLE				
REPAIRS END BENT 1 AND 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
CURTAIN WALL (VERT. FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		3.0		
CURTAIN WALL		0.0		
EPOXY COATING		SO. FT.		LN. FT.
TOP OF END BENT CAP & PILE CAPS		85		

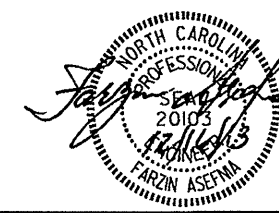
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

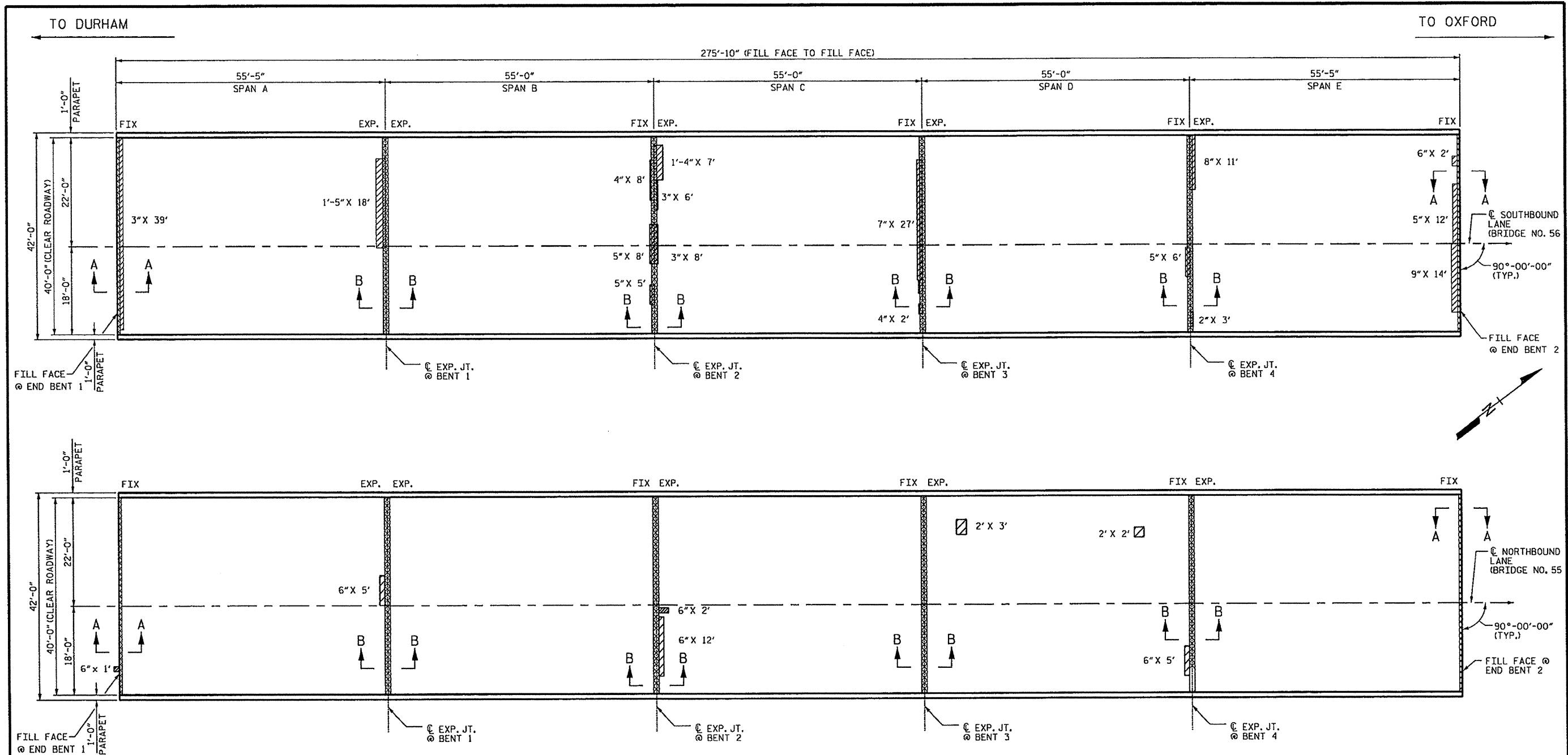
PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 52

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT 1
 &
 END BENT 2**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-11
2			4			TOTAL SHEETS 41





PLAN OF SPANS
(DIMENSIONS TYP. FOR BOTH BRIDGES)

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 55 & 56

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**PLAN VIEW OF
 BRIDGE 55 & 56
 ON I-85 OVER
 TAR RIVER**

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

SHEET NO. S-12



APPROX. AREA: CLASS II REPAIR

BRIDGE JOINT DEMOLITION

DRAWN BY: M. WELDON DATE: 8/13
 CHECKED BY: J. YANACCONE DATE: 8/13

NOTES

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

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK, SEE "TYPICAL "BLOW THRU" CONTAINMENT AND FORMWORK" DETAIL.

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

FOR SUBMITTAL OF WORKING DRAWINGS; SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

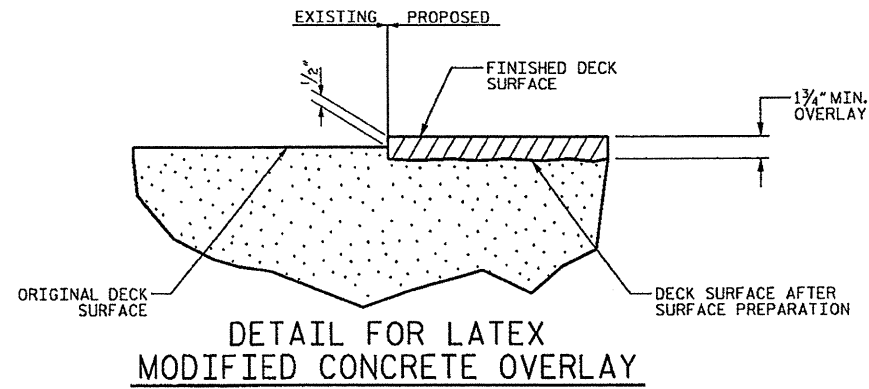
IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN SHEETS.

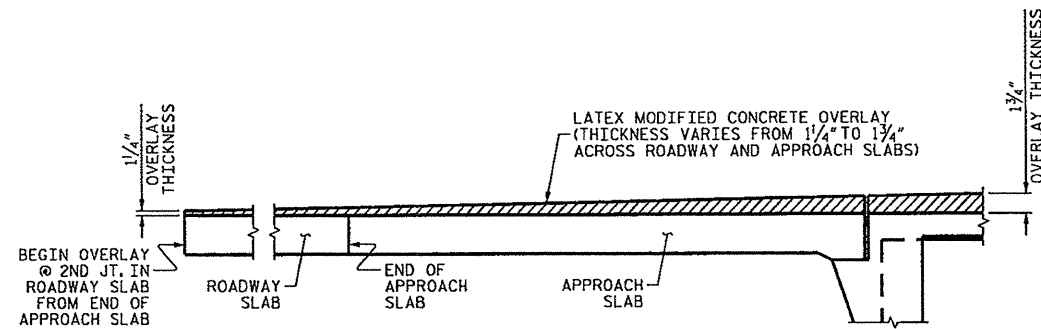
LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES SHALL BE USED TO ENSURE HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

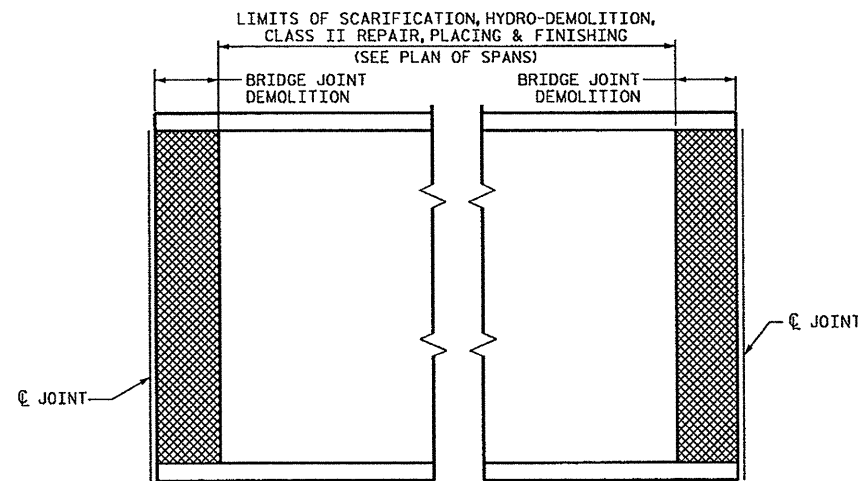
THE CONTRACTOR SHALL IDENTIFY DAMAGED AREAS OF THE CONCRETE GIRDERS AND THE UNDERSIDE OF THE DECK OVERHANGS AND MAKE SHOTCRETE REPAIRS OF THOSE AREAS AT THE DIRECTION OF THE ENGINEER.



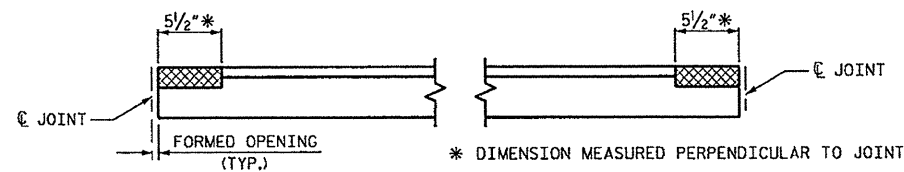
DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



OVERLAY THICKNESS DETAIL

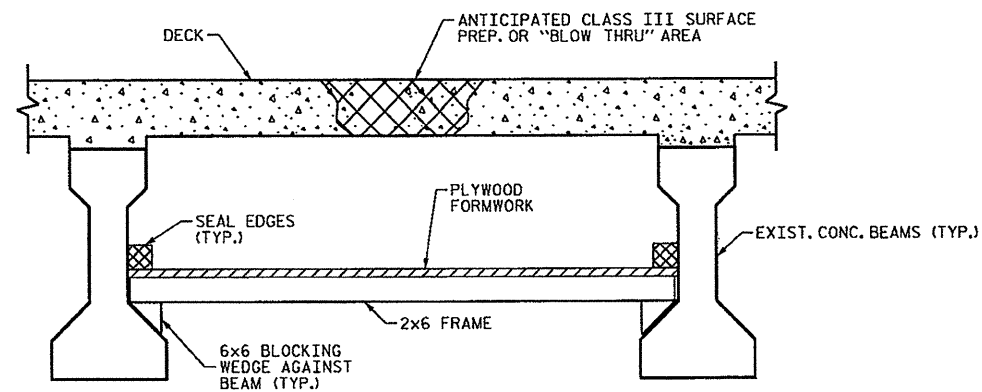


PLAN



ELEVATION

BRIDGE JOINT DEMOLITION



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

A METHOD TO CAPTURE WATER AND DEBRIS FROM BLOW THRU DURING HYDRO-DEMOLITION SHALL BE INSTALLED.

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

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

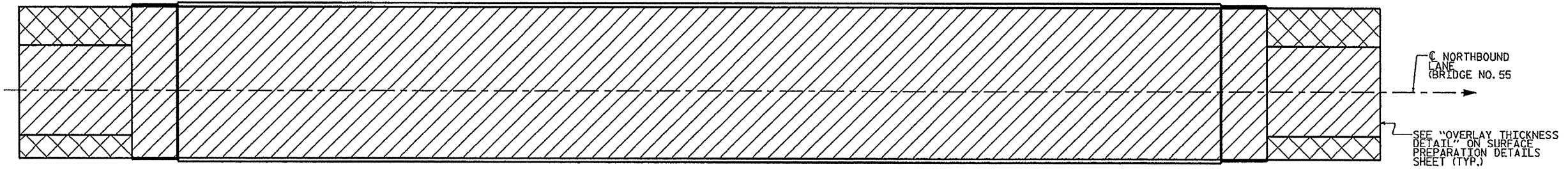
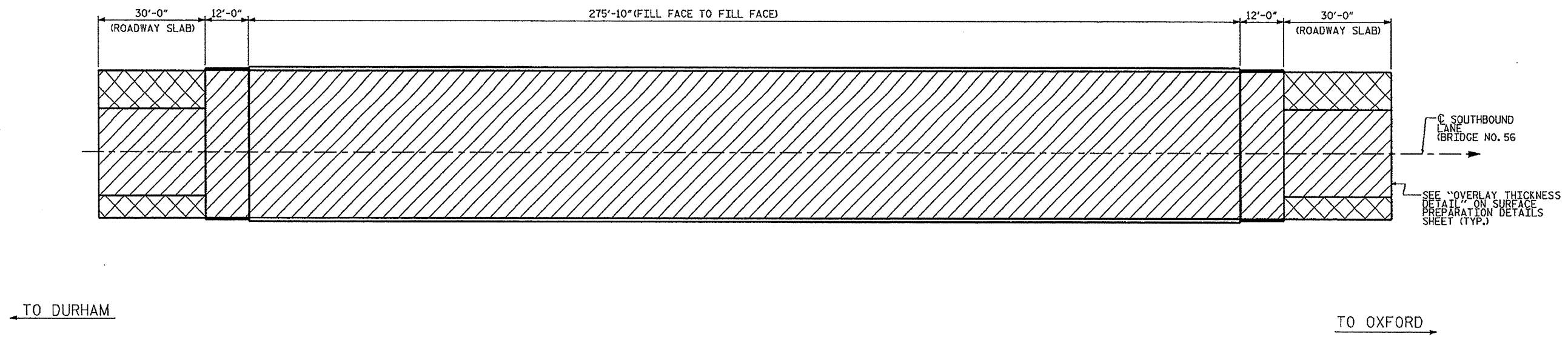
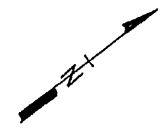
PLACE PLYWOOD AND FRAMING TO CLEAR INTERMEDIATE CONCRETE DIAPHRAGMS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE: 55 & 56

STATE OF NORTH CAROLINA					
DEPARTMENT OF TRANSPORTATION					
RALEIGH					
SURFACE PREPARATION DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. 5-13 TOTAL SHEETS 41

DRAWN BY : DAN PLATICA DATE : 6/2013
 CHECKED BY : JOHN YANACCONO DATE : 6/2013





PLAN
(DIMENSIONS TYP. FOR BOTH BRIDGES)

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE: 55 & 56

- DECK SCARIFICATION AND HYDRODEMOLITION
- 1.5" MILLING



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 PLAN**

DRAWN BY : DAN PLATICA DATE : 6/2013
 CHECKED BY : JOHN YANNAKONE DATE : 6/2013

REVISIONS						SHEET NO. S-14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 41
2			4			

18-DEC-2013 13:31
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 dougjoynes

NOTES

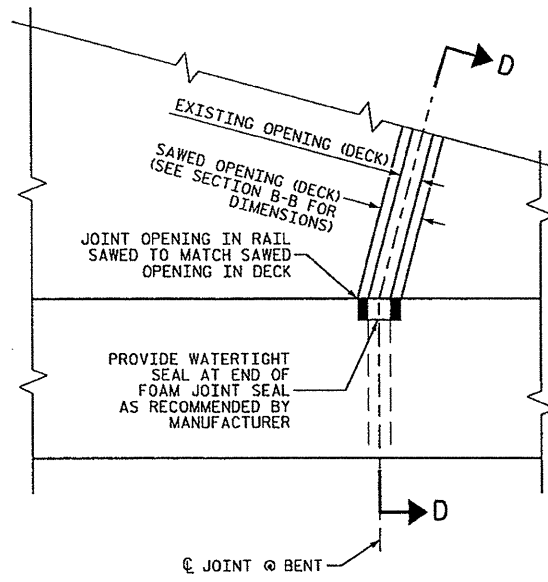
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.

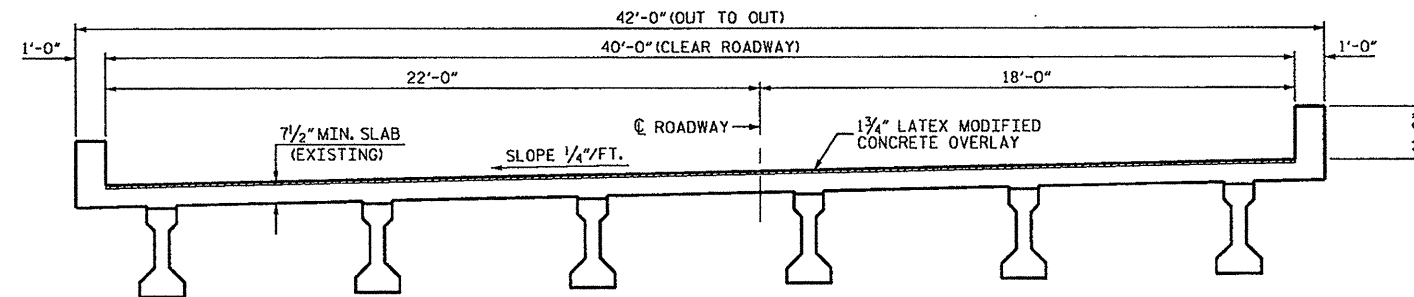
NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 3" AT BENT 1 AND 2" AT BENT 2, 3 AND 4.

NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 3 1/2" AT END BENTS FOR BRIDGE NO. 55 AND 4" AT END BENTS FOR BRIDGE NO. 56.

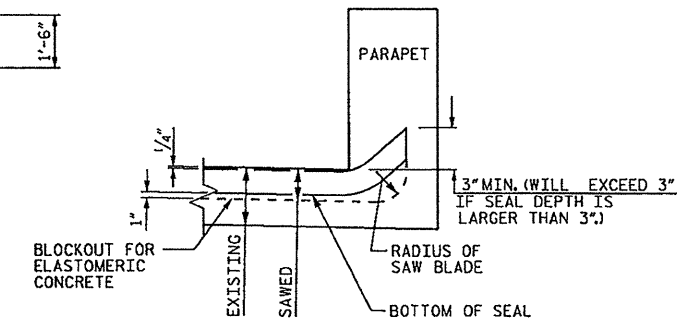
THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.



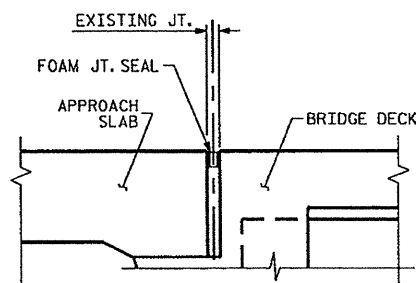
PLAN



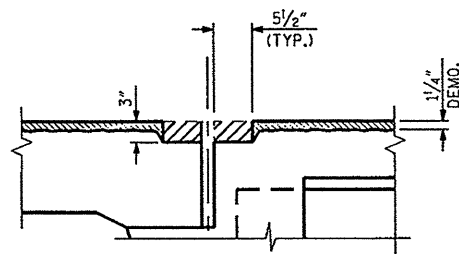
TYPICAL SECTION



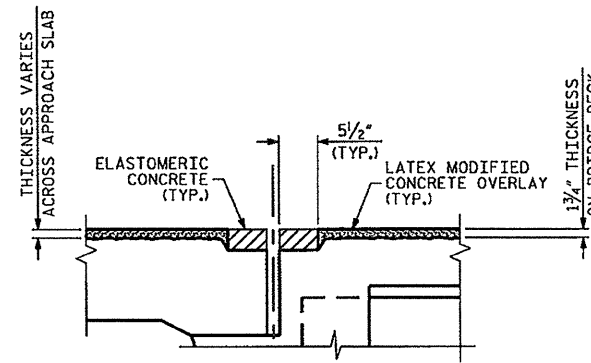
SECTION D-D



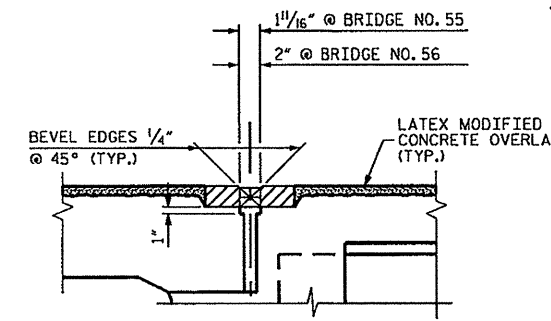
SECTION A-A
(EXISTING JOINT)



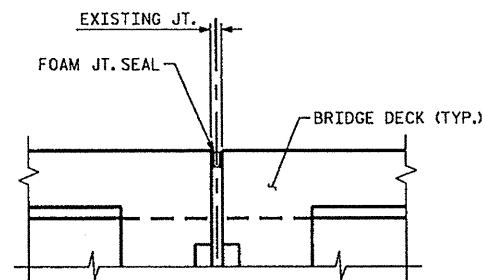
SECTION A-A
(MINIMUM EXISTING JOINT DEMOLITION)



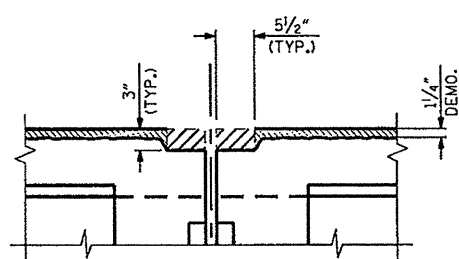
SECTION A-A
(PROPOSED FOAM JOINT SEAL PRE-SAWED DIMENSIONS)



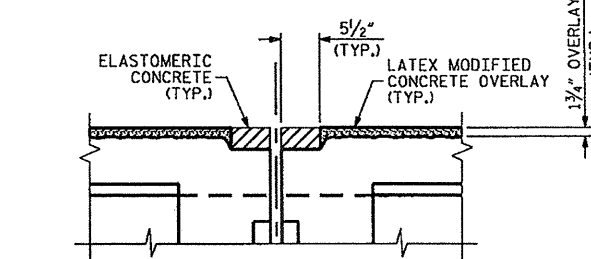
SECTION A-A
(PROPOSED FOAM JOINT SEAL FIXED)



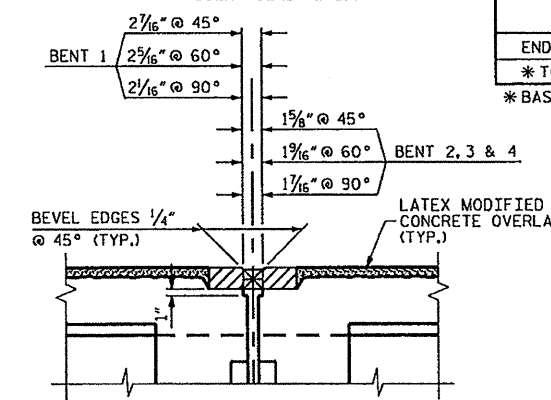
SECTION B-B
(EXISTING JOINT)



SECTION B-B
(MINIMUM EXISTING JOINT DEMOLITION)



SECTION B-B
(PROPOSED FOAM JOINT SEAL PRE-SAWED DIMENSIONS)



SECTION B-B
(PROPOSED FOAM JOINT SEAL EXPANSION)

ELASTOMERIC CONCRETE

END BENTS AND BENTS	110.0 (CU. FT.)
* TOTAL	110.0 (CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 55 & 56

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

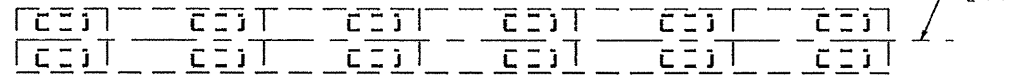
TYPICAL SECTION
 &
 JOINT DETAILS



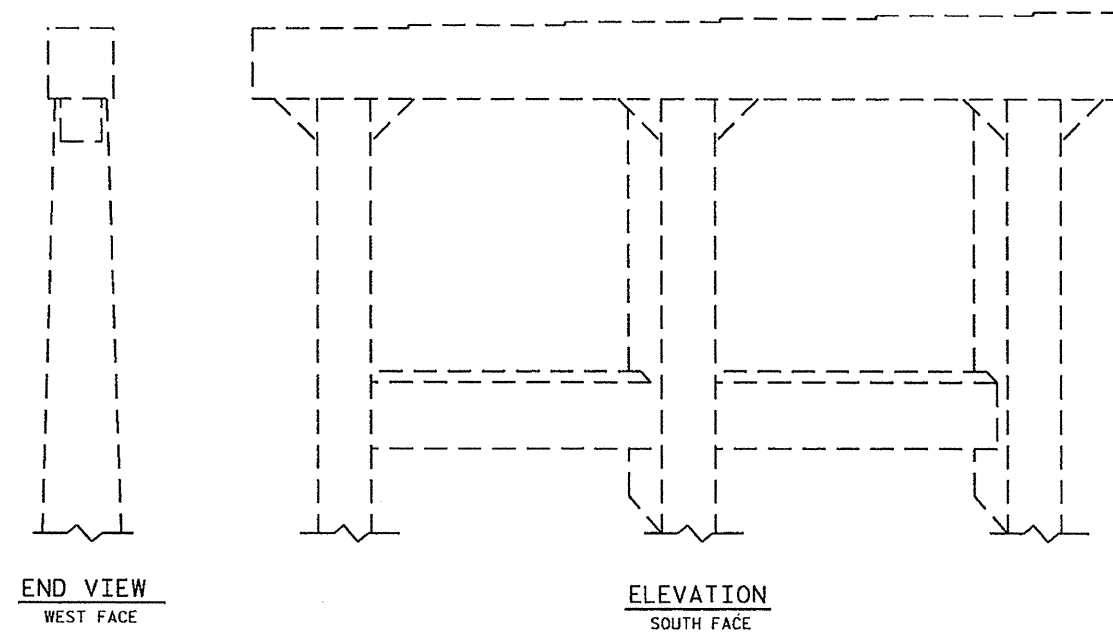
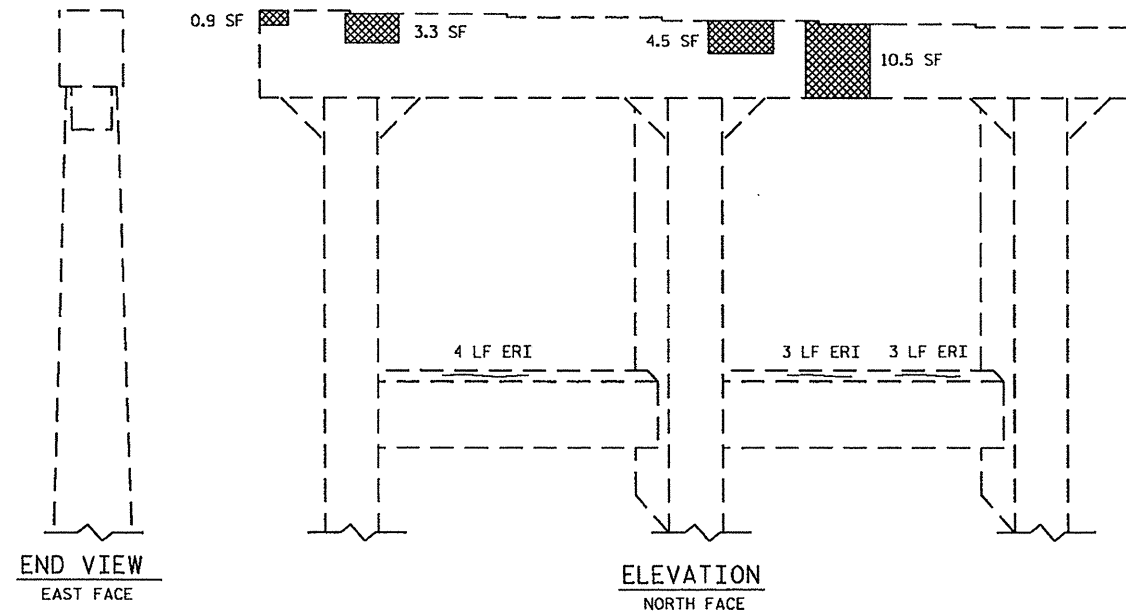
DRAWN BY : DAN PLATICA DATE : 6/2013
 CHECKED BY : JOHN YANNACCONE DATE : 6/2013

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			41

SPAN A
SPAN B



PLAN TOP OF CAP



SPAN B
SPAN A



PLAN BOTTOM OF CAP

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

JURISDICTIONAL RESOURCES (WETLAND, STREAM AND REGULATED RIPARIAN BUFFER) ARE PRESENT AT BRIDGE 55 & 56. IMPACT TO THESE RESOURCES ARE NOT ALLOWED FROM ANY ACTIVITY ASSOCIATED WITH WORK AT THESE BRIDGES.

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CONCRETE REPAIR
 SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	1.5	0.5		
COLUMN (VERTICAL FACE)	0.0	0.0		
STRUT (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIRS	19.2	7.7		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
STRUT		10.0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF CAP		122		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 55

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

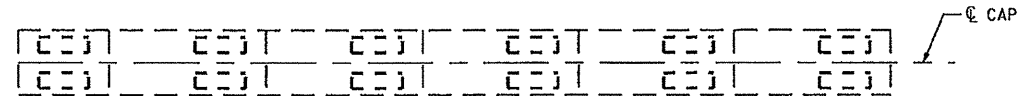
SUBSTRUCTURE BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			41

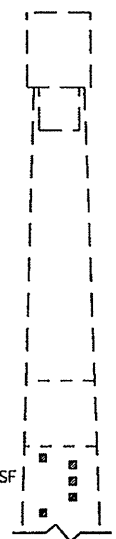


DRAWN BY: M. WELDON DATE: 7/2013
 CHECKED BY: J. YANNACONE DATE: 7/2013

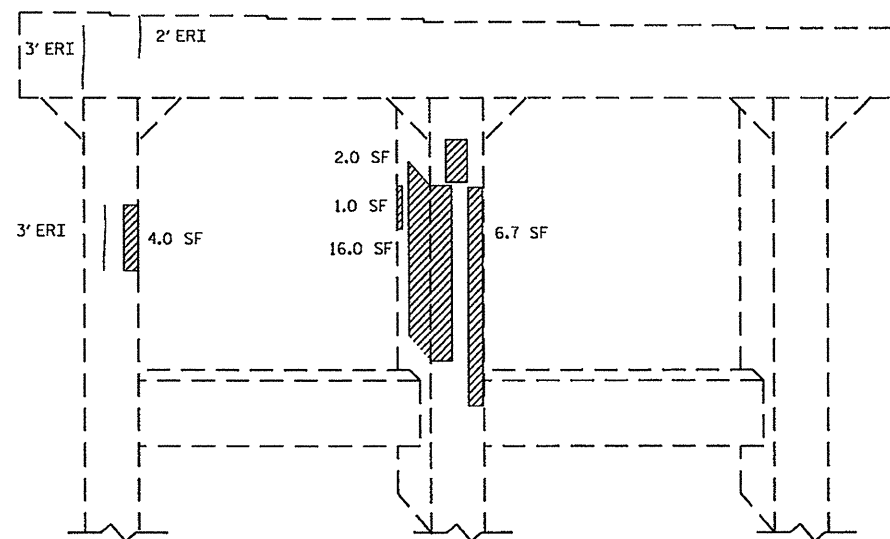
SPAN B
SPAN C



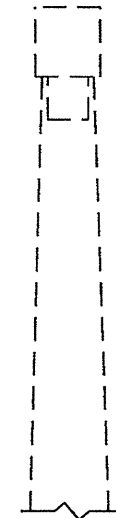
PLAN TOP OF CAP



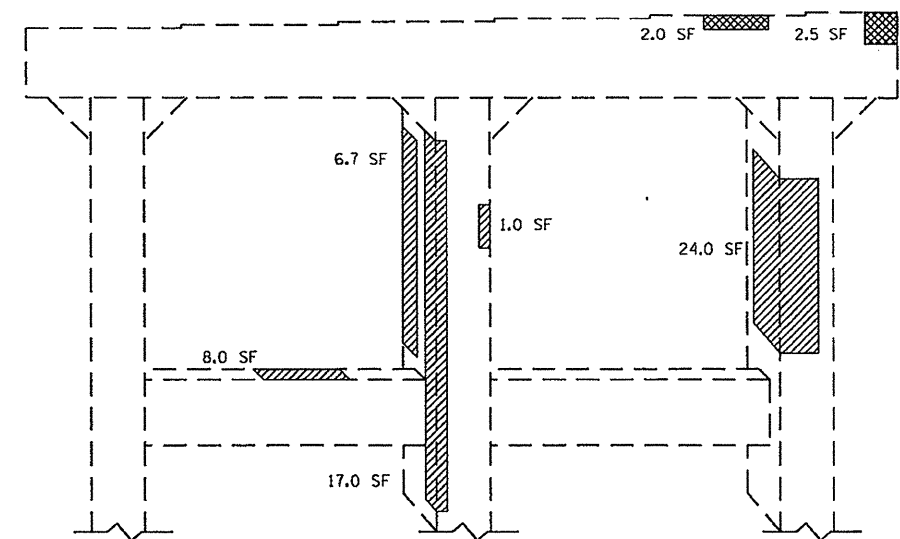
END VIEW
EAST FACE



ELEVATION
NORTH FACE

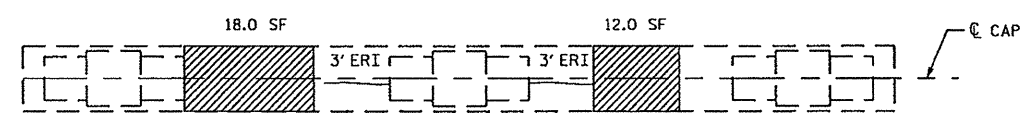


END VIEW
WEST FACE



ELEVATION
SOUTH FACE

SPAN C
SPAN B



PLAN BOTTOM OF CAP

CONCRETE REPAIR
 SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

JURISDICTIONAL RESOURCES (WETLAND, STREAM AND REGULATED RIPARIAN BUFFER) ARE PRESENT AT BRIDGE 55 & 56. IMPACT TO THESE RESOURCES ARE NOT ALLOWED FROM ANY ACTIVITY ASSOCIATED WITH WORK AT THESE BRIDGES.

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REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	30.0	9.2		
COLUMN (VERTICAL FACE)	79.9	32.0		
STRUT (HORIZONTAL FACE)	8.0	2.5		
CONCRETE REPAIRS	4.5	1.4		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		11.0		
COLUMN		3.0		
STRUT		0.0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF CAP		122		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 55

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 2**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			41

DRAWN BY: M. WELDON DATE: 7/2013
 CHECKED BY: J. YANNACCONE DATE: 7/2013

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

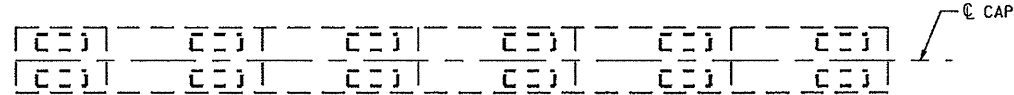
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

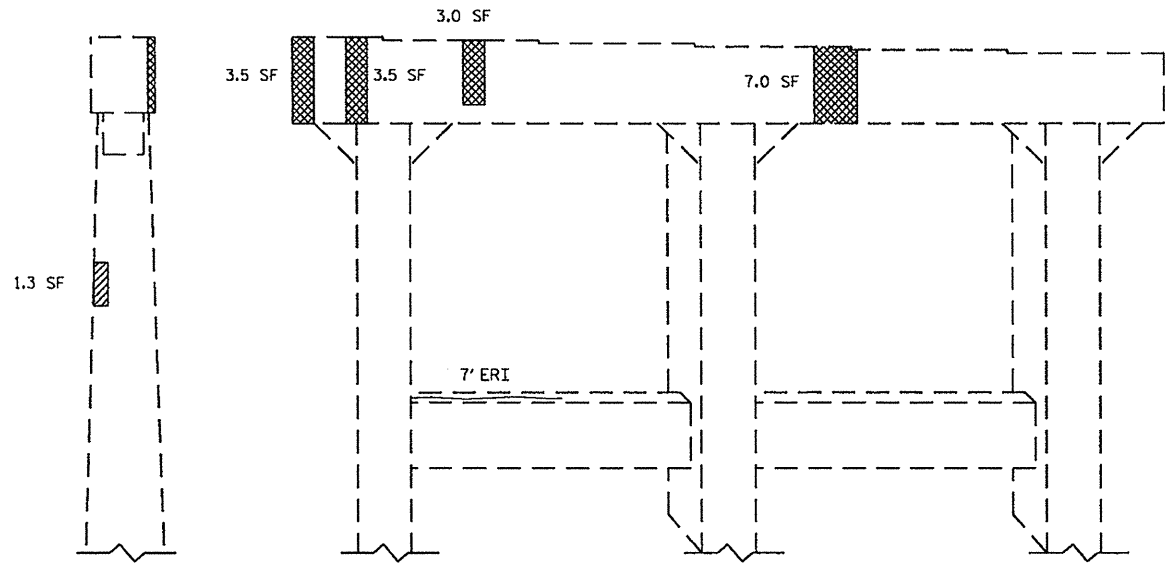
JURISDICTIONAL RESOURCES (WETLAND, STREAM AND REGULATED RIPARIAN BUFFER) ARE PRESENT AT BRIDGE 55 & 56. IMPACT TO THESE RESOURCES ARE NOT ALLOWED FROM ANY ACTIVITY ASSOCIATED WITH WORK AT THESE BRIDGES.

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SPAN C
SPAN D



PLAN TOP OF CAP



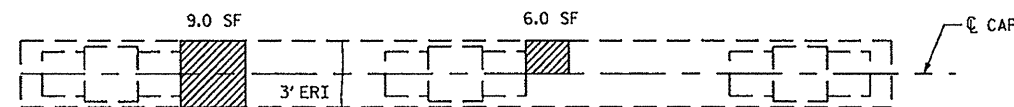
END VIEW
EAST FACE

ELEVATION
NORTH FACE

END VIEW
WEST FACE

ELEVATION
SOUTH FACE

SPAN D
SPAN C



PLAN BOTTOM OF CAP

- ▨ CONCRETE REPAIR
- ▩ SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	1.0	0.3		
CAP (HORIZONTAL FACE)	15.0	4.6		
COLUMN (VERTICAL FACE)	2.8	1.1		
STRUT (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIRS	17.0	5.2		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		3.0		
COLUMN		0.0		
STRUT		17.3		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF CAP		122		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
BRIDGE NO.: 55

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

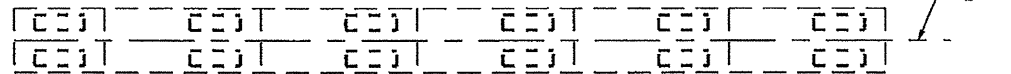
**SUBSTRUCTURE
BENT 3**



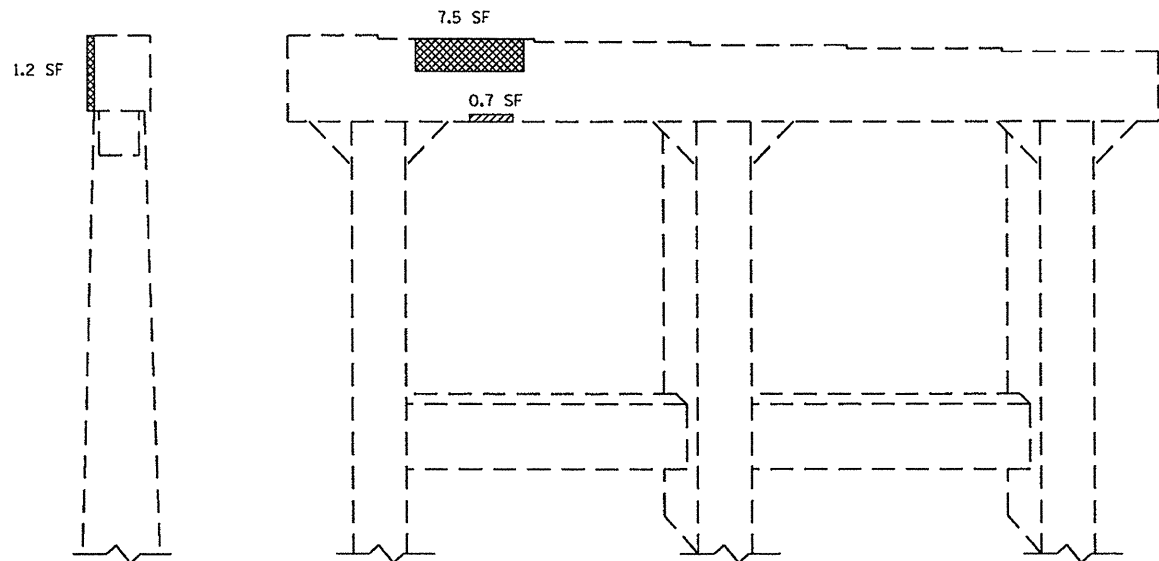
DRAWN BY: M. WELDON DATE: 7/2013
CHECKED BY: J. YANNACCONE DATE: 7/2013

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			41

SPAN D
SPAN E

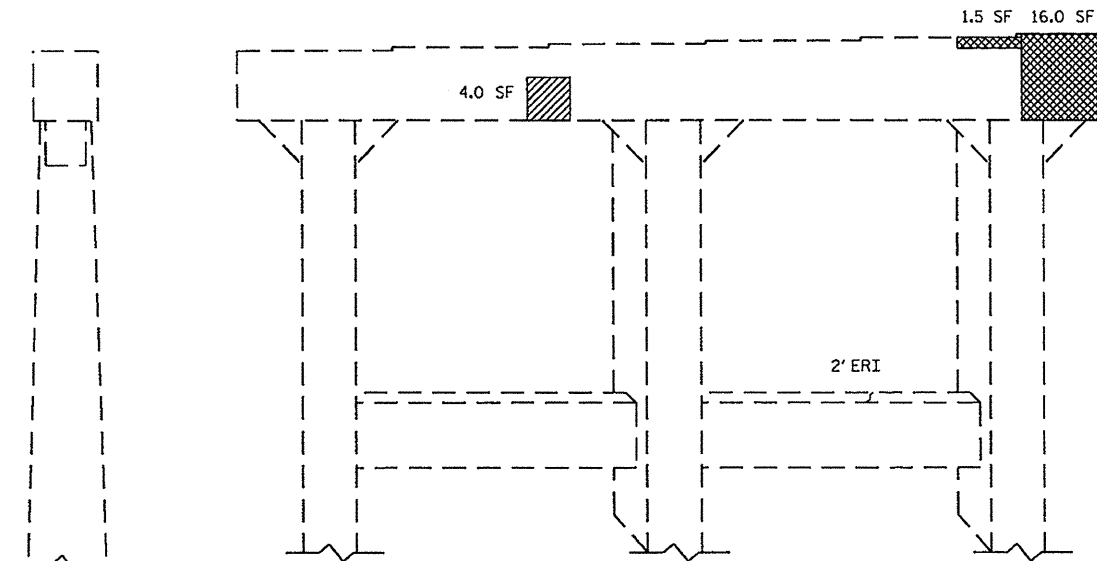


PLAN TOP OF CAP



END VIEW
EAST FACE

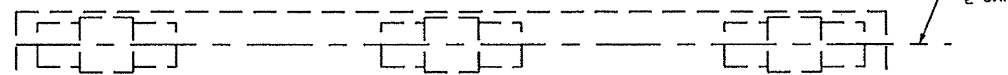
ELEVATION
NORTH FACE



END VIEW
WEST FACE

ELEVATION
SOUTH FACE

SPAN E
SPAN D



PLAN BOTTOM OF CAP

CONCRETE REPAIR
 SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

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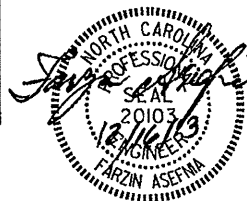
REPAIR QUANTITY TABLE				
REPAIRS BENT 4	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	4.7	1.4		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	0.0	0.0		
STRUT (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIRS	26.2	8.1		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
STRUT		2.0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF CAP		122		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 55

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 4**



DRAWN BY: M. WELDON DATE: 7/2013
 CHECKED BY: J. YANNAKONE DATE: 7/2013

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			41

NOTES:

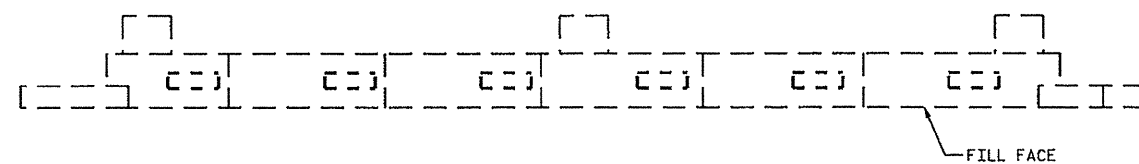
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FOR STRUCTURE REPAIRS, SEE SHEET S-41.

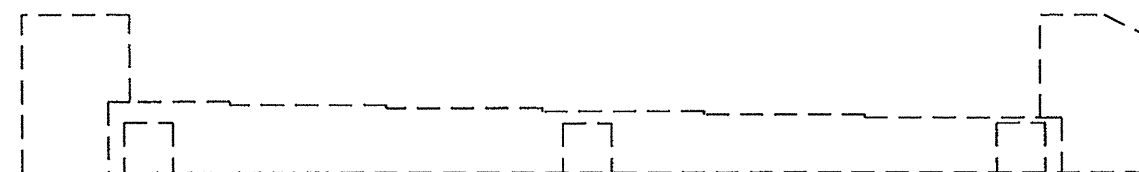
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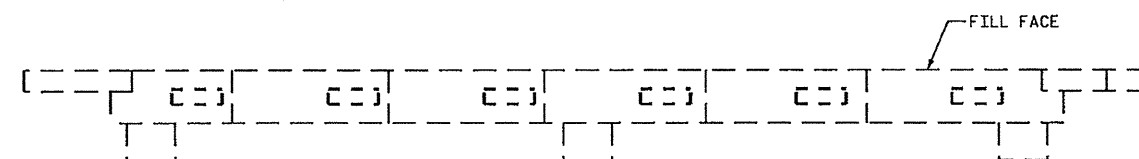
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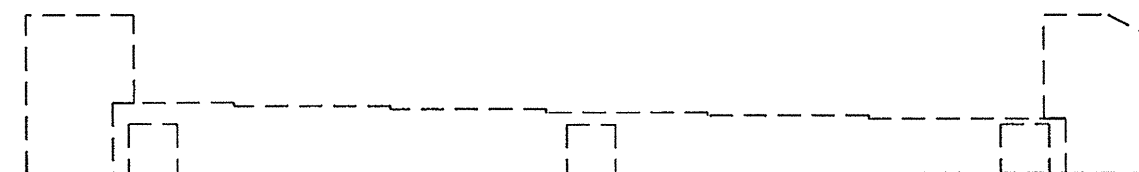
PLAN
END BENT 1



ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

REPAIR QUANTITY TABLE				
REPAIRS END BENT 1 AND 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
CURTAIN WALL (VERT. FACE)	0.0	0.0		
	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
CURTAIN WALL		0.0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF CAP		0		

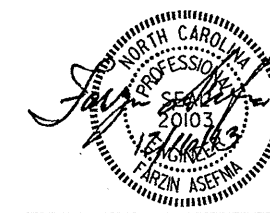
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 55

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 END BENT 1
 &
 END BENT 2**

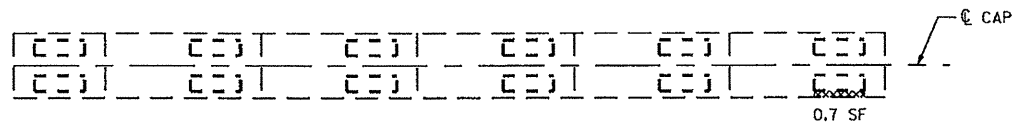
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-20
2			4			TOTAL SHEETS 41



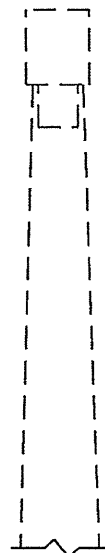
NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.

DRAWN BY : M. WELDON DATE : 7/2013
 CHECKED BY : J. YANACCONI DATE : 7/2013

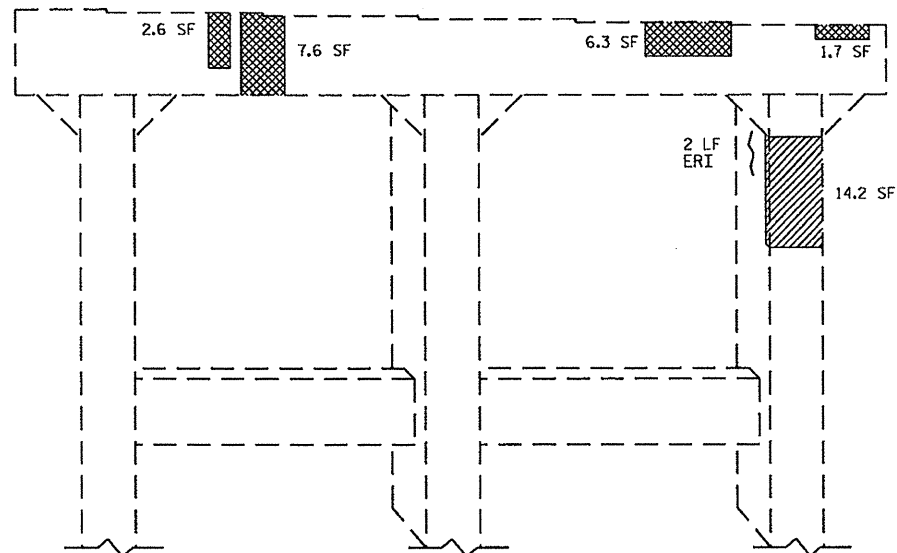
SPAN B
SPAN A



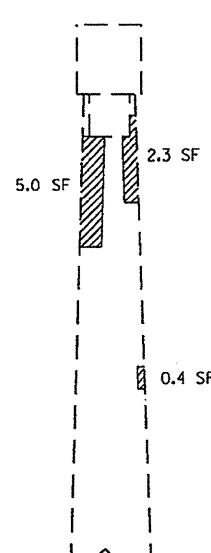
PLAN TOP OF CAP



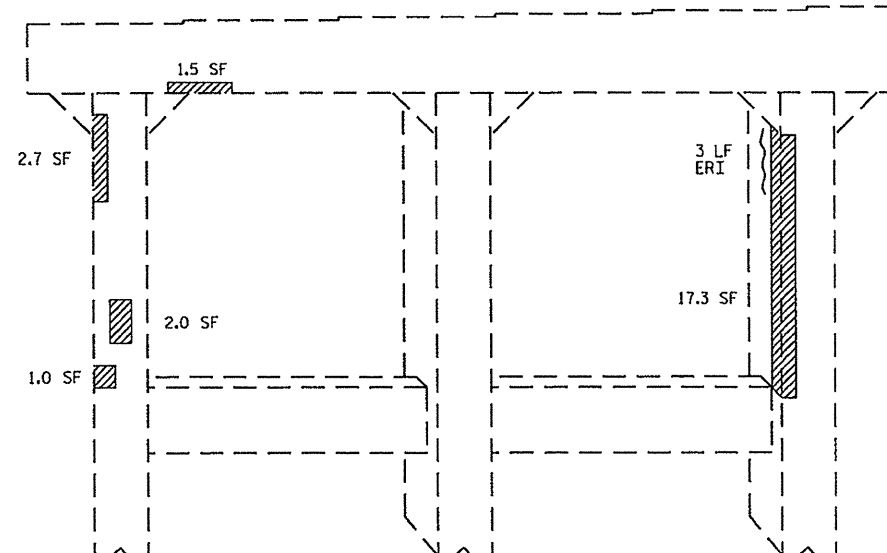
END VIEW
EAST FACE



ELEVATION
NORTH FACE

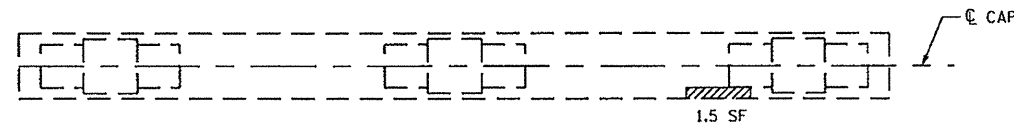


END VIEW
WEST FACE



ELEVATION
SOUTH FACE

SPAN B
SPAN A



PLAN BOTTOM OF CAP

CONCRETE REPAIR
 SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

NOTES:

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FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

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REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	1.5	0.5		
CAP (HORIZONTAL FACE)	1.5	0.5		
COLUMN (VERTICAL FACE)	44.9	18.0		
STRUT (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIRS	18.9	5.8		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		5.0		
STRUT		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF CAP		122		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 56

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

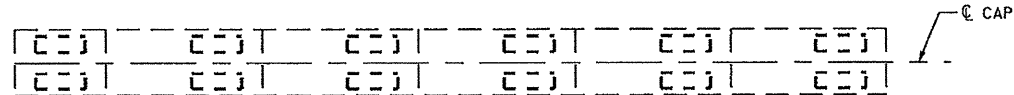
SUBSTRUCTURE BENT 1

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-21
1			3			TOTAL SHEETS
2			4			41



DRAWN BY : M. WELDON DATE : 7/2013
 CHECKED BY : J. YANNAKONE DATE : 7/2013

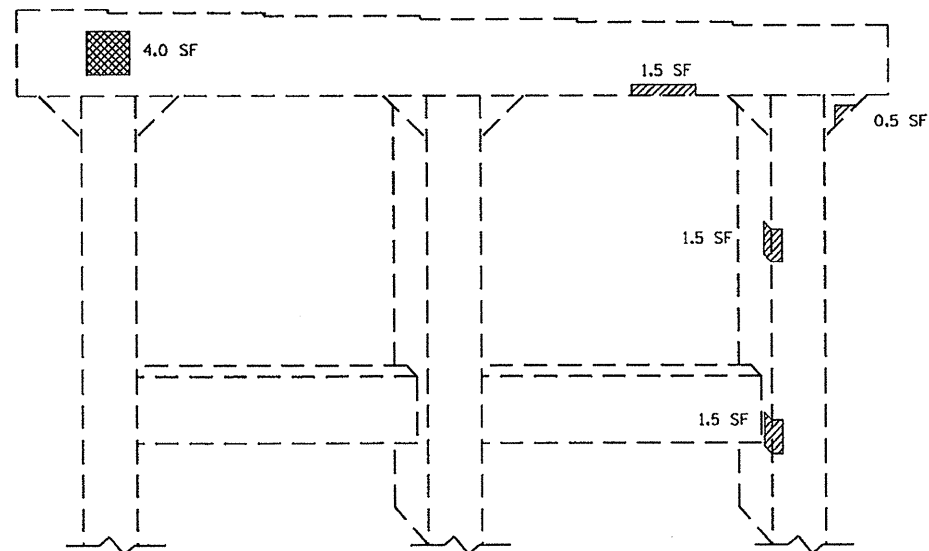
SPAN C
SPAN B



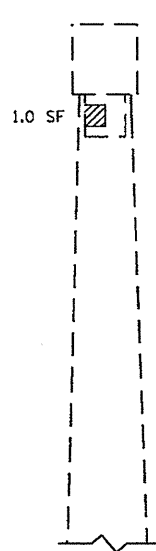
PLAN TOP OF CAP



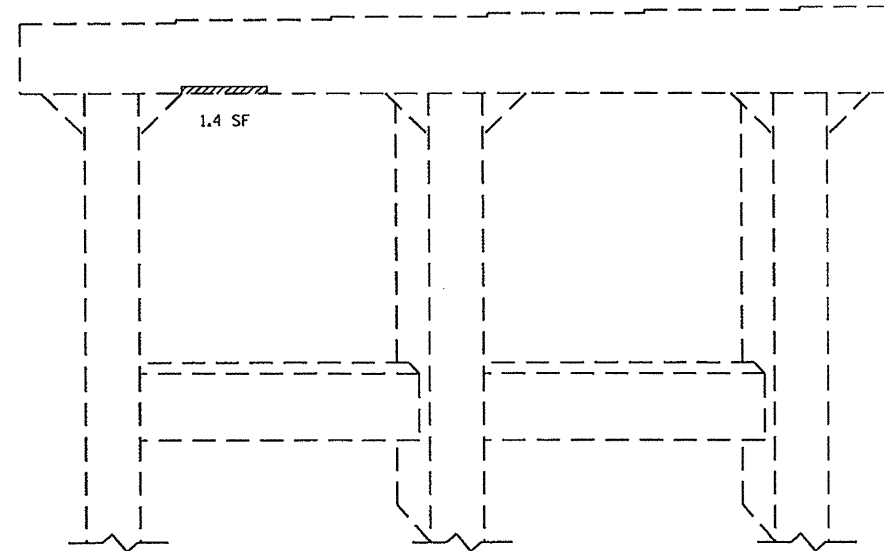
END VIEW
EAST FACE



ELEVATION
NORTH FACE

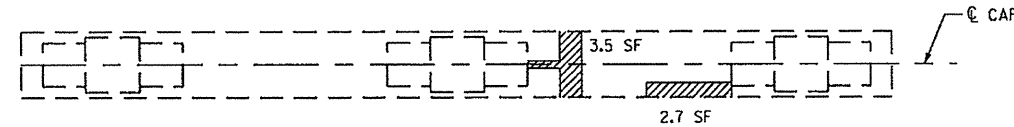


END VIEW
WEST FACE



ELEVATION
SOUTH FACE

SPAN C
SPAN B



PLAN BOTTOM OF CAP

CONCRETE REPAIR
SHOTCRETE REPAIR
ERI - EPOXY RESIN INJECTION

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

JURISDICTIONAL RESOURCES (WETLAND, STREAM AND REGULATED RIPARIAN BUFFER) ARE PRESENT AT BRIDGE 55 & 56. IMPACT TO THESE RESOURCES ARE NOT ALLOWED FROM ANY ACTIVITY ASSOCIATED WITH WORK AT THESE BRIDGES.

NO DISCHARGE OF WATER, CONCRETE DEBRIS, SLURRY, OR ANY REPAIR MATERIAL IS ALLOWED TO ENTER THE WATERCOURSE. THE CONTRACTOR SHALL COLLECT, CONTAIN AND REMOVE ALL DEBRIS RESULTING FROM REPAIR ACTIVITIES. A DETAILED PLAN FOR COLLECTION, CONTAINMENT AND DISPOSAL OF DEBRIS AS WELL AS STAGING THE EQUIPMENT, INCLUDING DRAWINGS, AND NARRATIVES MUST BE PROVIDED TO AND APPROVED BY THE ASSISTANT STATE STRUCTURES MANAGEMENT ENGINEER-OPERATIONS AND THE NCDOT DIVISION 5 ENVIRONMENTAL SUPERVISOR. THE SUBMITTAL SHALL BE MADE AT LEAST 30 DAYS PRIOR TO OCCURRENCE OF ANY ACTIVITY AT BRIDGES 55 & 56.

REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	2.9	0.9		
CAP (HORIZONTAL FACE)	6.2	1.9		
COLUMN (VERTICAL FACE)	4.5	1.4		
STRUT (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIRS	4.0	1.6		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
STRUT		0.0		
EPOXY COATING		SO. FT.		SO. FT.
TOP OF CAP		122		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
BRIDGE NO.: 56

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

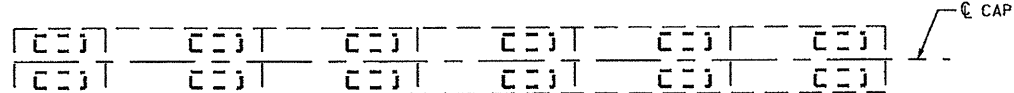
SUBSTRUCTURE BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			41



DRAWN BY: M. WELDON DATE: 7/2013
CHECKED BY: J. YANACCONO DATE: 7/2013

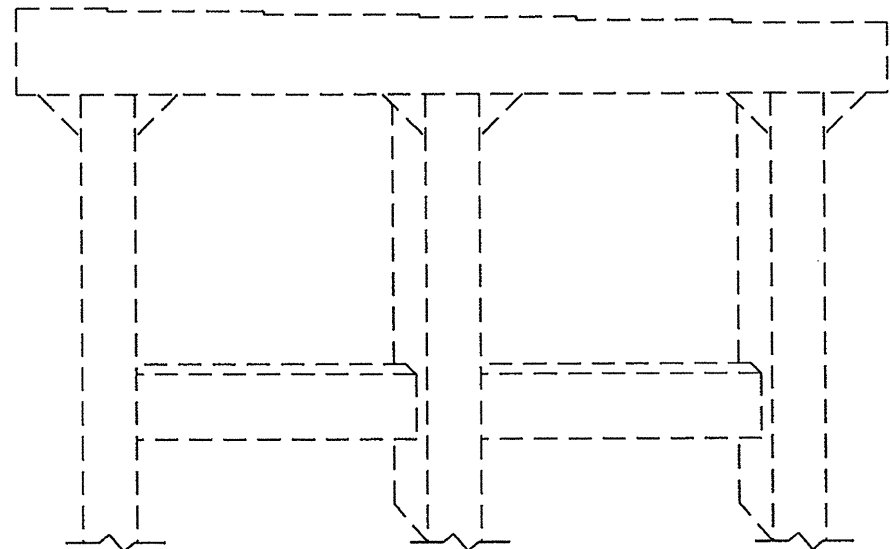
SPAN D
SPAN C



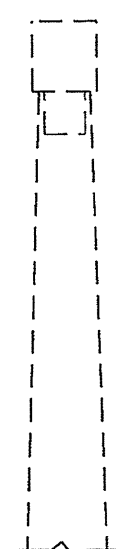
PLAN TOP OF CAP



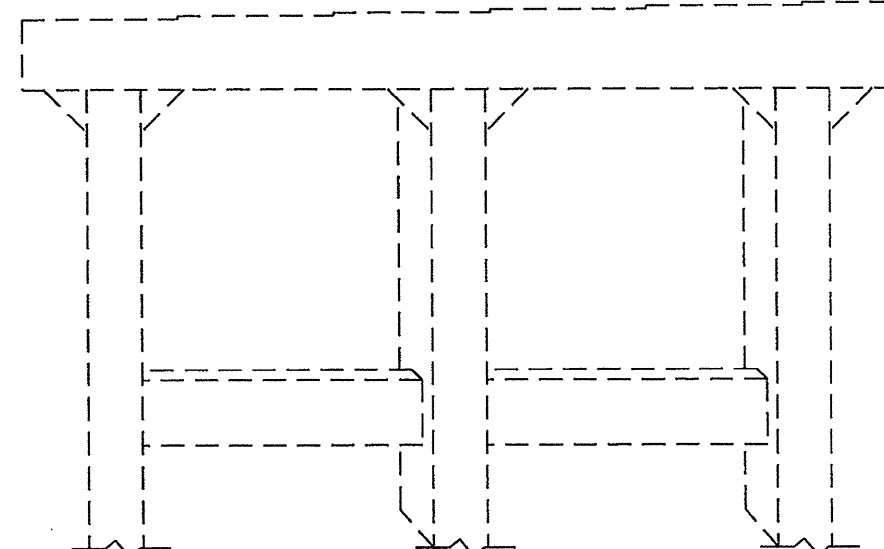
END VIEW
EAST FACE



ELEVATION
NORTH FACE

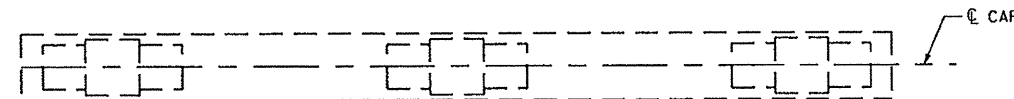


END VIEW
WEST FACE



ELEVATION
SOUTH FACE

SPAN D
SPAN C



PLAN BOTTOM OF CAP

CONCRETE REPAIR
 SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

JURISDICTIONAL RESOURCES (WETLAND, STREAM AND REGULATED RIPARIAN BUFFER) ARE PRESENT AT BRIDGE 55 & 56. IMPACT TO THESE RESOURCES ARE NOT ALLOWED FROM ANY ACTIVITY ASSOCIATED WITH WORK AT THESE BRIDGES.

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REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	0.0	0.0		
STRUT (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
STRUT		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 56

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

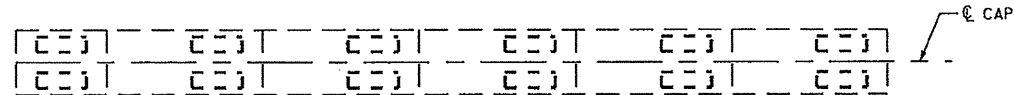
SUBSTRUCTURE BENT 3



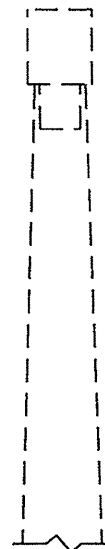
DRAWN BY : M. WELDON DATE : 7/2013
 CHECKED BY : J. YANACCONO DATE : 7/2013

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-23
2			4			41

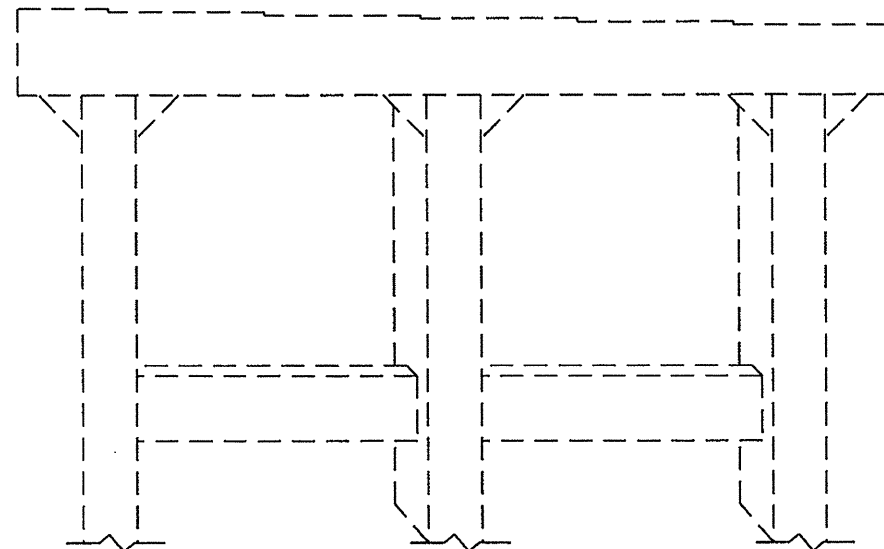
SPAN E
SPAN D



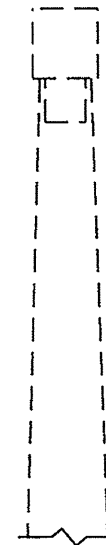
PLAN TOP OF CAP



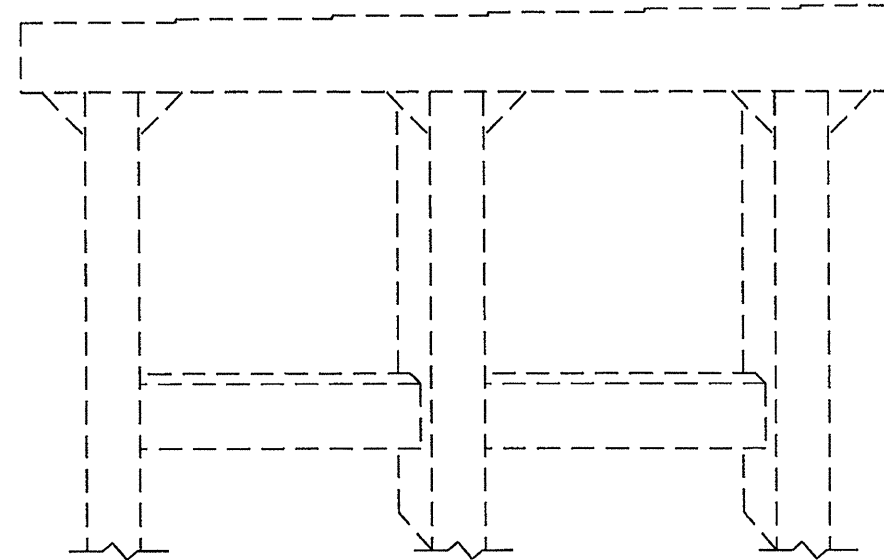
END VIEW
EAST FACE



ELEVATION
NORTH FACE

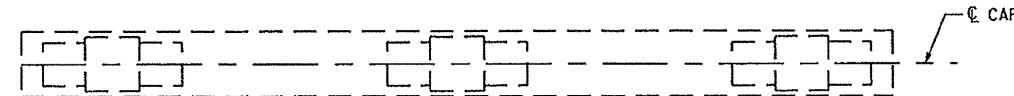


END VIEW
WEST FACE



ELEVATION
SOUTH FACE

SPAN E
SPAN D



PLAN BOTTOM OF CAP

CONCRETE REPAIR
 SHOTCRETE REPAIR
 ERI - EPOXY RESIN INJECTION

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT, THE CONTRACTOR AND ENGINEER SHALL INSPECT THE BENT PRIOR TO BEGINNING WORK.

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

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REPAIR QUANTITY TABLE				
REPAIRS BENT 4	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	0.0	0.0		
STRUT (HORIZONTAL FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
STRUT		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 56

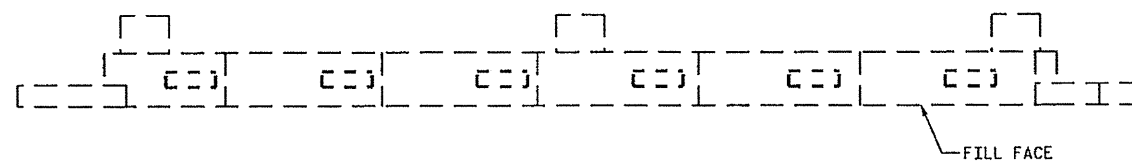
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 4**



DRAWN BY : M. WELDON DATE : 7/2013
 CHECKED BY : J. YANNAKONE DATE : 7/2013

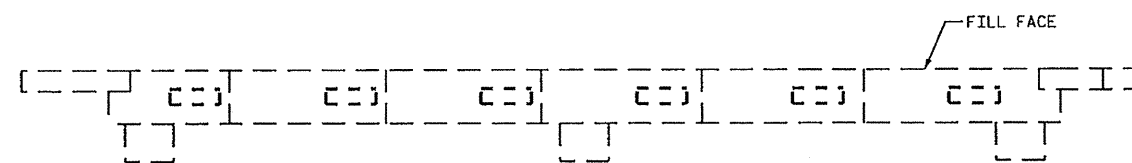
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			41



PLAN
END BENT 1



ELEVATION
END BENT 1



PLAN
END BENT 2



ELEVATION
END BENT 2

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.

DRAWN BY : M. WELDON DATE : 7/2013
CHECKED BY : J. YANNACONE DATE : 7/2013

12-DEC-2013 11:56
S:\PRJ\POC\Squad C\Preservation\Projects\I-5205B\Final\Granville_55&56\brldge_55_56_SD_B*.dgn
mweldon

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWING THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIR AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

ACCESS FOR REPAIRS TO ALL BRIDGE ELEMENTS OF BRIDGES 55 & 56 MUST BE STAGED FROM THE BRIDGE SUPERSTRUCTURE AND NOT FROM THE GROUND OR WATERWAY.

JURISDICTIONAL RESOURCES (WETLAND, STREAM AND REGULATED RIPARIAN BUFFER) ARE PRESENT AT BRIDGE 55 & 56. IMPACT TO THESE RESOURCES ARE NOT ALLOWED FROM ANY ACTIVITY ASSOCIATED WITH WORK AT THESE BRIDGES.

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REPAIRS END BENT 1 AND 2	QUANTITIES			
	ESTIMATE		ACTUAL	
	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS				
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
CURTAIN WALL (VERT. FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
CURTAIN WALL		0.0		
EPOXY COATING		SQ. FT.		SQ. FT.
TOP OF CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

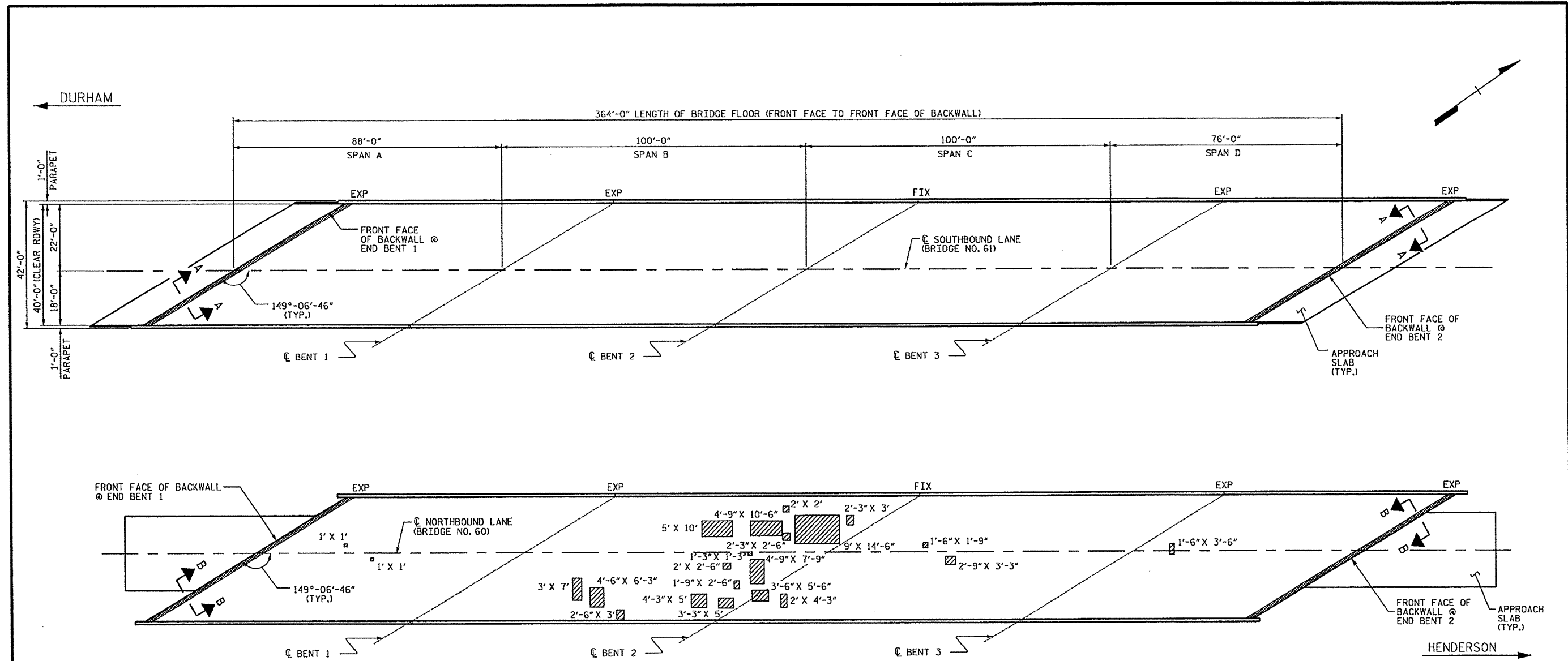
PROJECT NO. I-5205B
GRANVILLE COUNTY
BRIDGE NO.: 56

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1
&
END BENT 2

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-25
2			4			TOTAL SHEETS 41





PLAN OF SPANS
(DIMENSIONS TYPICAL FOR BOTH BRIDGES)

- APPROX. AREA: CLASS II REPAIR
- BRIDGE JOINT DEMOLITION

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60 & 61

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN VIEW OF
BRIDGE 60 & 61
ON I-85 OVER
US HWY 15

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-26
2			4			TOTAL SHEETS 41



DRAWN BY: D. V. JOYNER DATE: 8/2013
 CHECKED BY: J. YANNACCONE DATE: 8/2013

NOTES

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

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

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

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK, SEE "TYPICAL 'BLOW THRU' CONTAINMENT AND FORMWORK" DETAIL.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

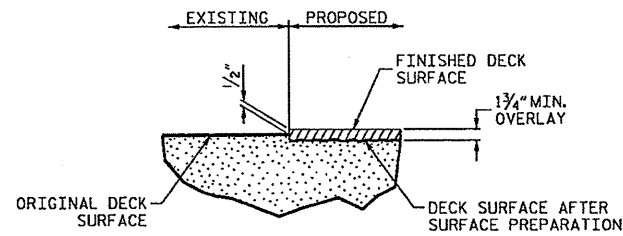
IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN SHEET.

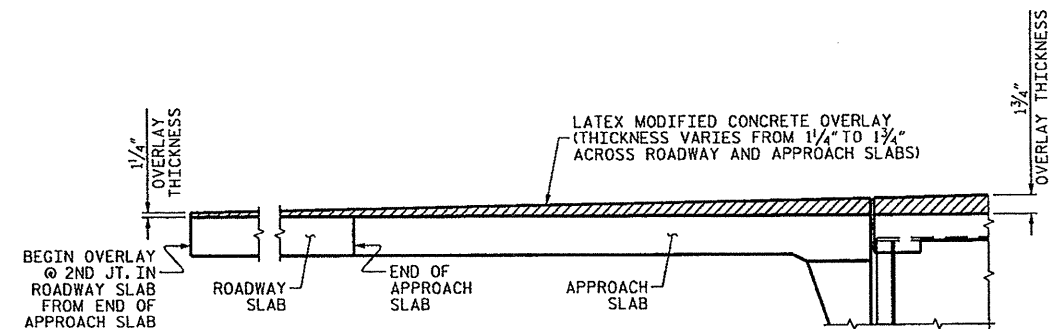
LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES SHALL BE USED TO ENSURE HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

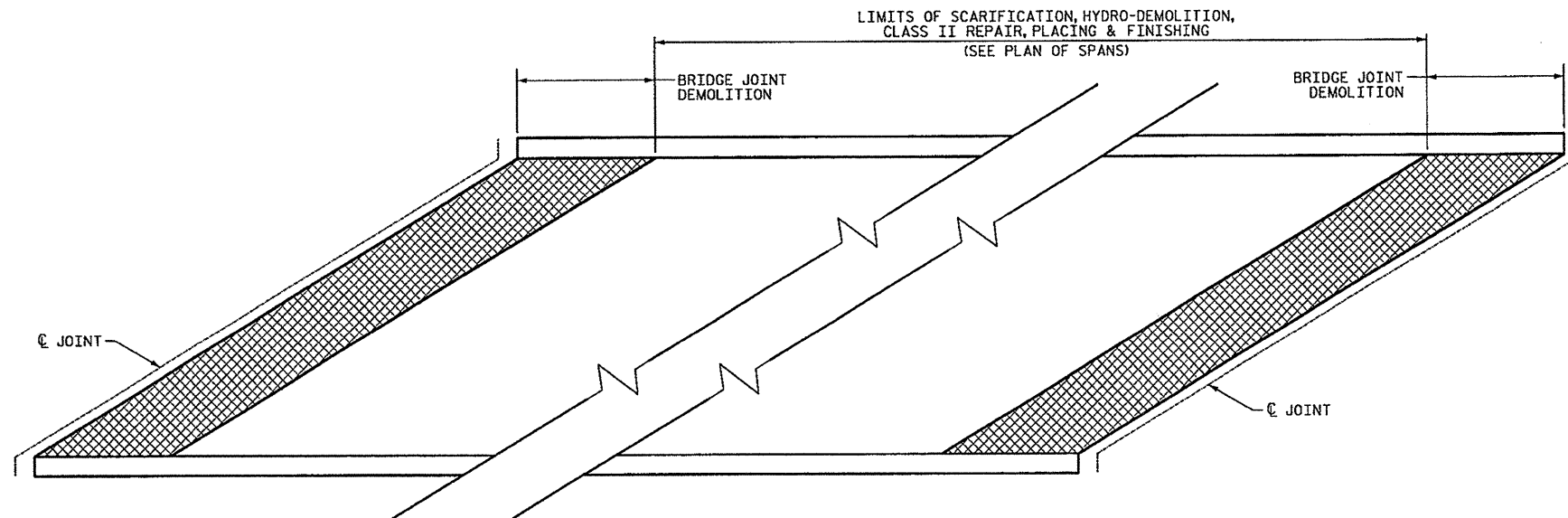
THE CONTRACTOR SHALL IDENTIFY DAMAGED AREAS OF THE UNDERSIDE OF THE DECK OVERHANGS AND MAKE SHOTCRETE REPAIRS OF THOSE AREAS AT THE DIRECTION OF THE ENGINEER.



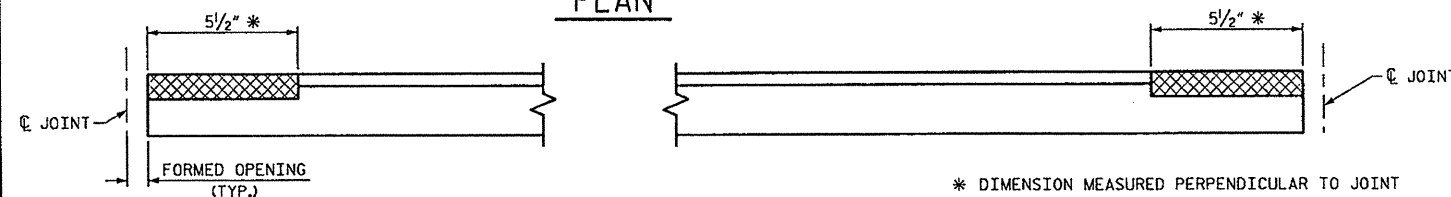
DETAIL FOR LATEX MODIFIED CONCRETE OVERLAY



OVERLAY THICKNESS DETAIL



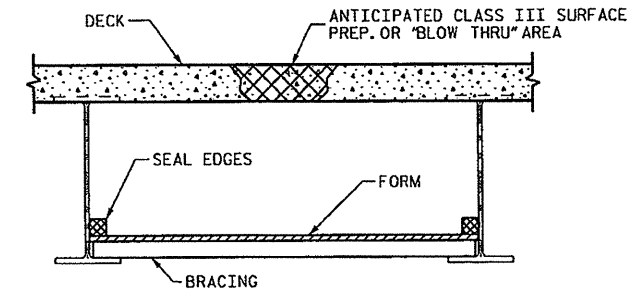
PLAN



ELEVATION

* DIMENSION MEASURED PERPENDICULAR TO JOINT

BRIDGE JOINT DEMOLITION



TYP. "BLOW THRU" CONTAINMENT AND FORMWORK

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

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

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

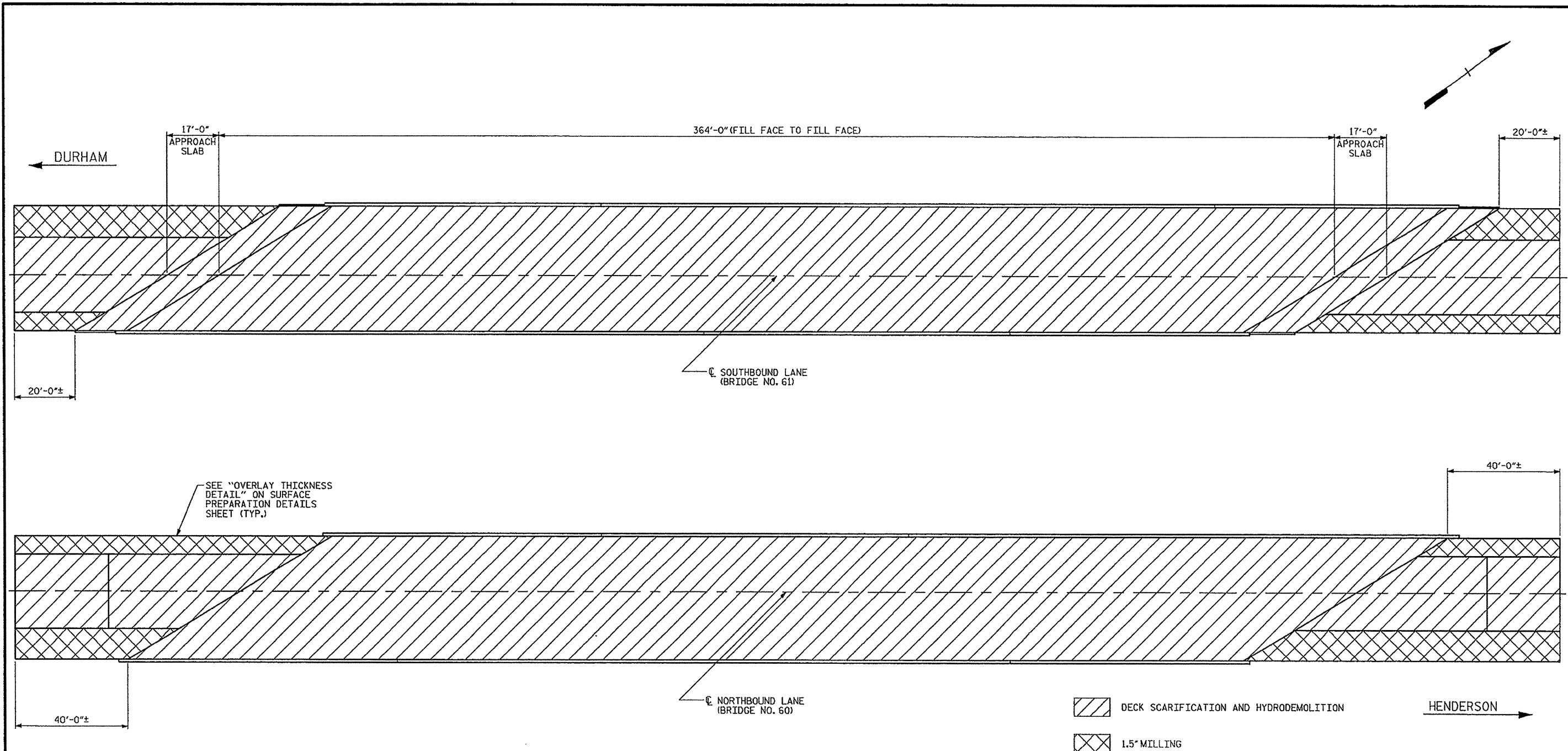
PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60 & 61

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SURFACE PREPARATION
 DETAILS**



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5-27
1			3			TOTAL SHEETS
2			4			41

DRAWN BY : D. V. JOYNER DATE : 8/2013
 CHECKED BY : J. YANNACCONE DATE : 8/2013



PLAN
(DIMENSIONS TYPICAL FOR BOTH BRIDGES)

- DECK SCARIFICATION AND HYDRODEMOLITION
- 1.5" MILLING

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60 & 61

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SURFACE PREPARATION
 PLAN**

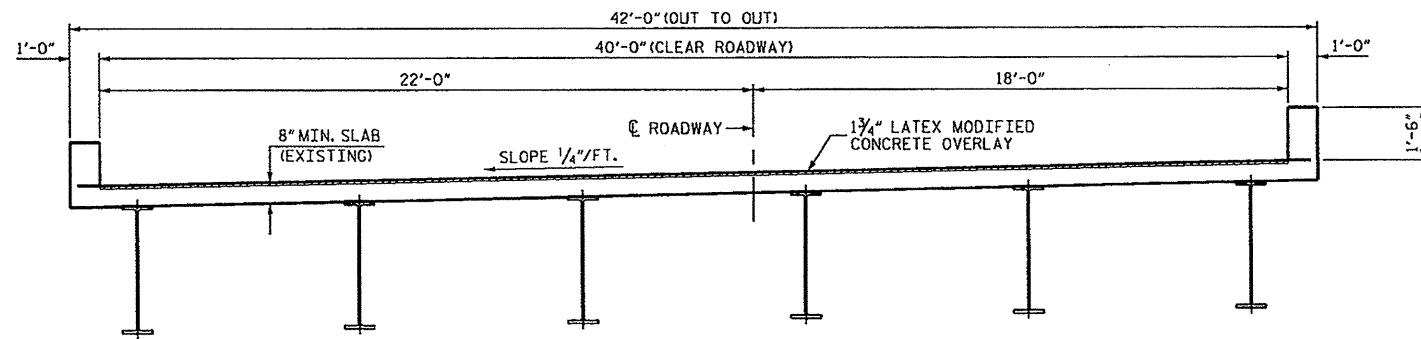
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS	41
SHEET NO.	S-28



DRAWN BY : D. V. JOYNER DATE : 8/2013
 CHECKED BY : J. YANACCONO DATE : 8/2013

18-DEC-2013 13:27
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 dougjoyner



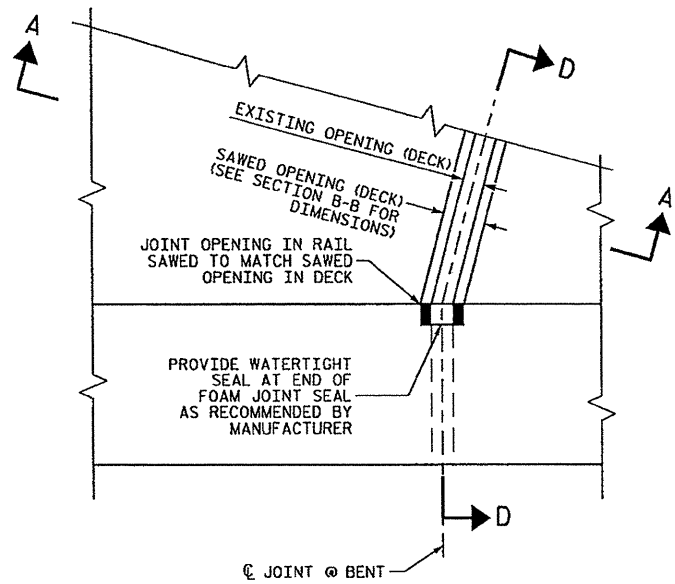
TYPICAL SECTION

NOTES

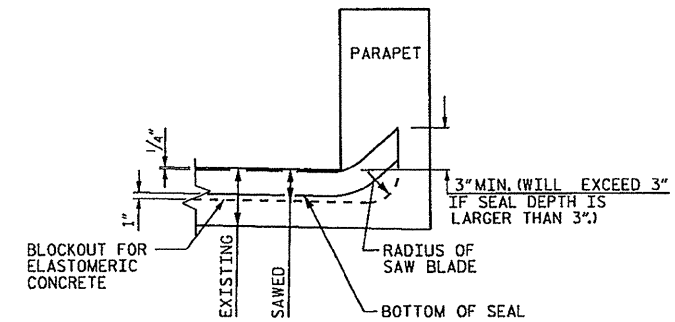
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 3" AT END BENTS.
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.

ELASTOMERIC CONCRETE		
END BENTS (BRIDGE NO. 61)	35.7	(CU. FT.)
* TOTAL	35.7	(CU. FT.)

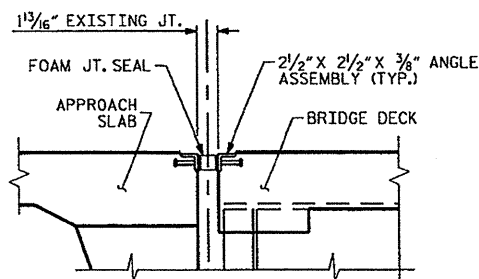
* BASED ON THE MINIMUM BLOCKOUT SHOWN.



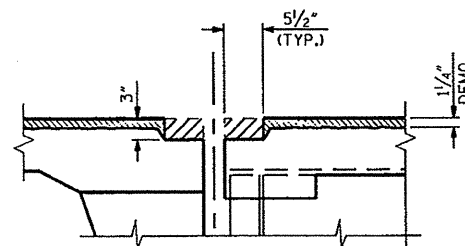
PLAN



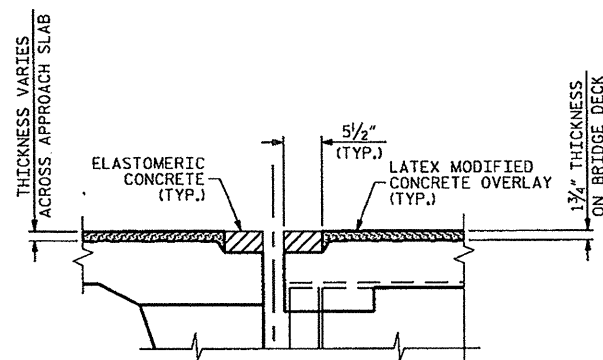
SECTION D-D



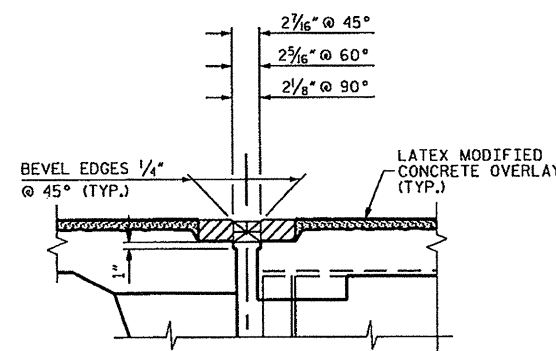
SECTION A-A
(EXISTING JOINT)



SECTION A-A
(MINIMUM EXISTING JOINT DEMOLITION)



SECTION A-A
(PROPOSED FOAM JOINT SEAL PRE-SAWED DIMENSIONS)



SECTION A-A
(PROPOSED FOAM JOINT SEAL EXPANSION)

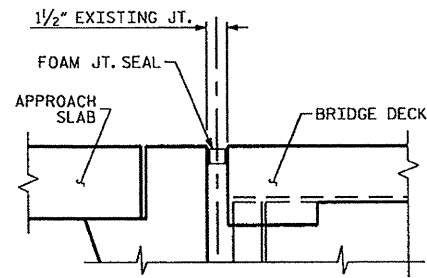
PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 61

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 TYPICAL SECTION
 &
 JOINT DETAILS

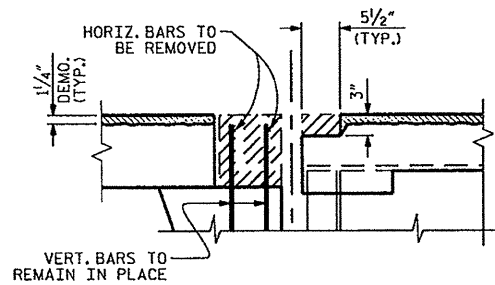
DRAWN BY : D. PLATICA DATE : 6/2013
 CHECKED BY : J. YANNACONE DATE : 6/2013



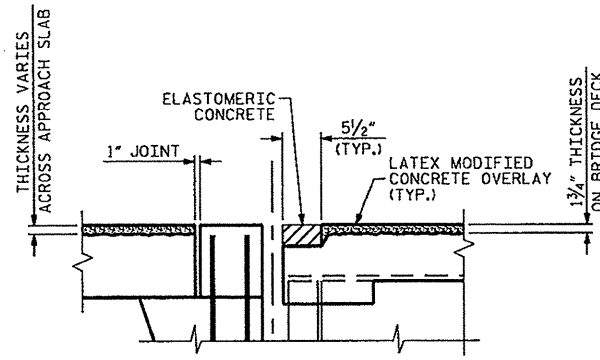
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-29
1			3			TOTAL SHEETS
2			4			41



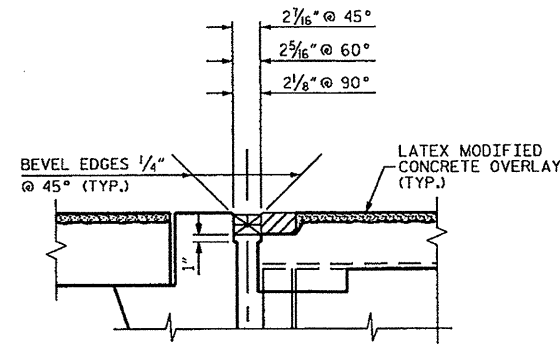
SECTION B-B
(EXISTING JOINT)



SECTION B-B
(MINIMUM EXISTING
BACKWALL AND
JOINT DEMOLITION)



SECTION B-B
(PROPOSED FOAM JOINT SEAL
PRE-SAWED DIMENSIONS)

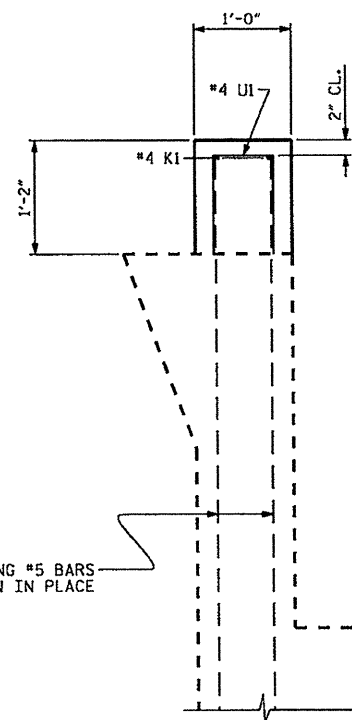


SECTION B-B
(PROPOSED FOAM
JOINT SEAL EXPANSION)

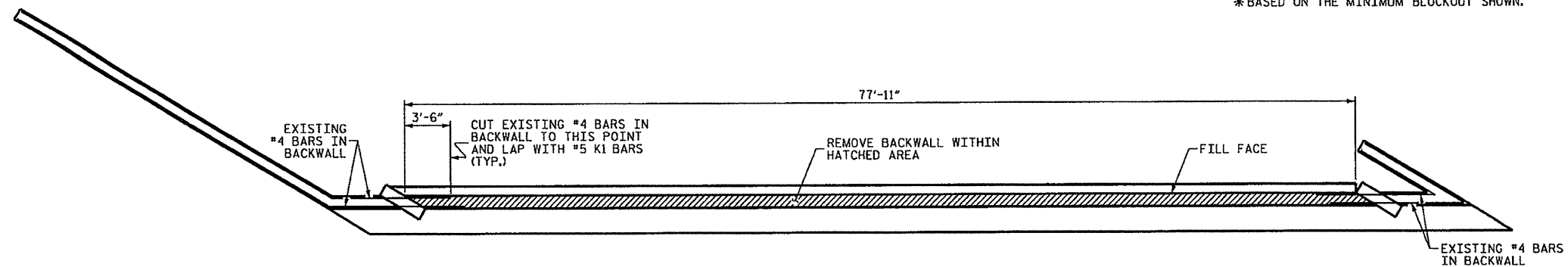
BILL OF MATERIAL FOR ONE END BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* K1	4	5	STR	40'-9"	170
* U1	80	4	1	2'-6"	134
* EPOXY COATED REINFORCING STEEL					304 LBS
CLASS A CONCRETE (SEE NOTES)					3.4 CY
BAR TYPES					
ALL BAR DIMENSIONS ARE OUT TO OUT.					

ELASTOMERIC CONCRETE		
END BENTS (BRIDGE NO. 60)	17.9	(CU. FT.)
* TOTAL	17.9	(CU. FT.)

* BASED ON THE MINIMUM BLOCKOUT SHOWN.



SECTION THRU
END BENT BACKWALL



PLAN VIEW
OF END BENT

NOTES

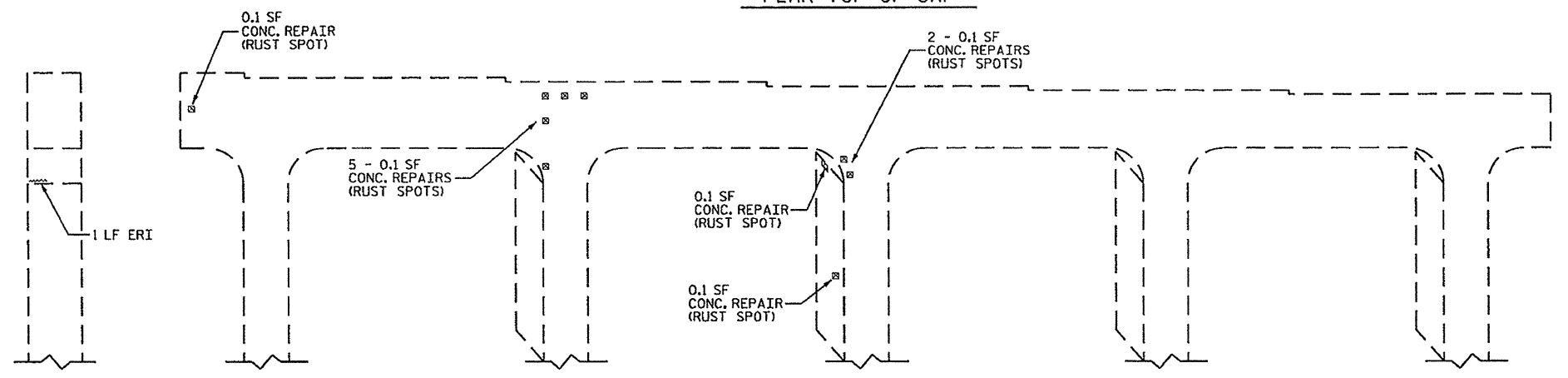
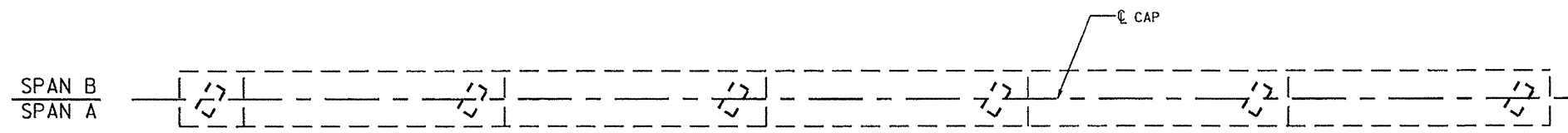
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
- NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SEAL SHALL BE 3" AT END BENTS.
- THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
- FOR TYPICAL SECTION, ELASTOMERIC CONCRETE QUANTITY AND JOINT DETAILS AT PARAPET, SEE SHEET S-29.
- CLASS A CONCRETE IN BACKWALL SHALL CONFORM TO ARTICLE 1000-5 OF THE STANDARD SPECIFICATIONS FOR HIGH EARLY STRENGTH PORTLAND CEMENT CONCRETE.
- STRAIGHTEN AND CLEAN THE EXISTING #5 VERTICAL BARS IN THE BACKWALL.
- PLACE #4 U1 BARS WITH EXISTING #5 VERTICAL BARS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**BACKWALL &
 JOINT DETAILS
 (BRIDGE #60)**

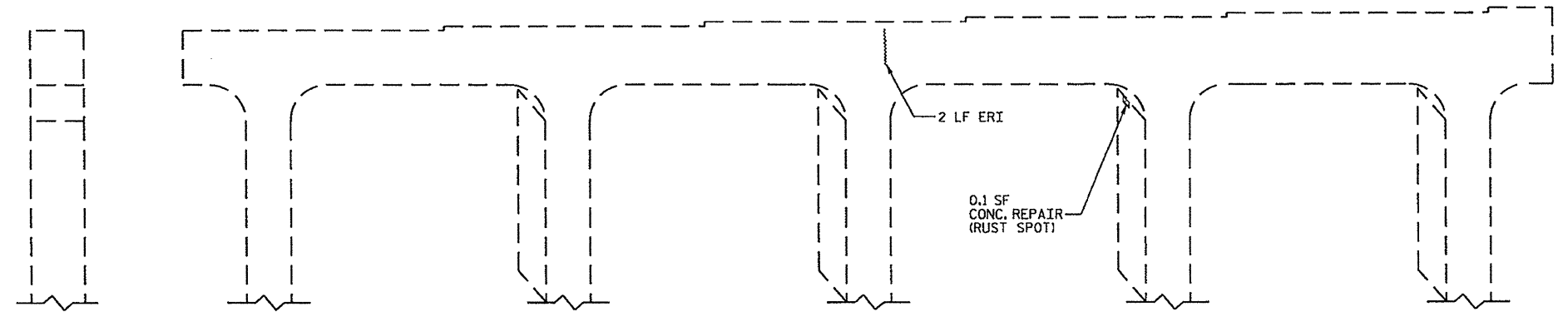
DRAWN BY : J. YANACCONO DATE : 9/2013
 CHECKED BY : F. ASEFNIA DATE : 9/2013

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-30
1			3			TOTAL SHEETS
2			4			41



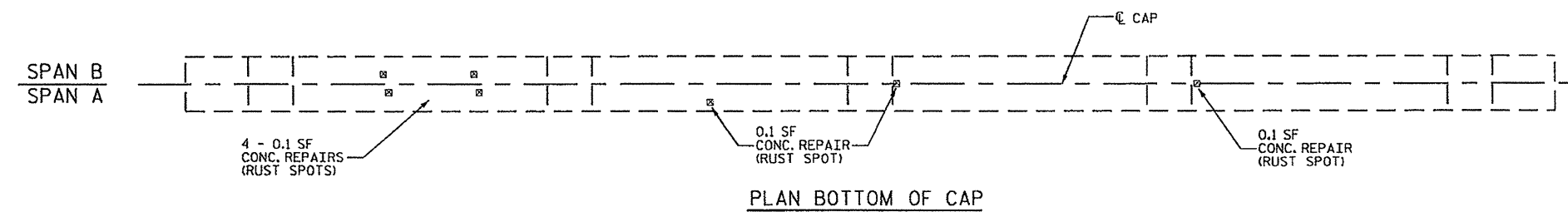
END VIEW
NORTH FACE

ELEVATION
WEST FACE



END VIEW
SOUTH FACE

ELEVATION
EAST FACE



PLAN BOTTOM OF CAP

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	0.0	0.0		
CONCRETE REPAIRS	1.8	0.6		
EPOXY RESIN INJECTION			LN. FT.	LN. FT.
CAP		2.0		
COLUMN		1.0		
EPOXY COATING		SQ. FT.		LN. FT.
TOP OF CAP		230		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60

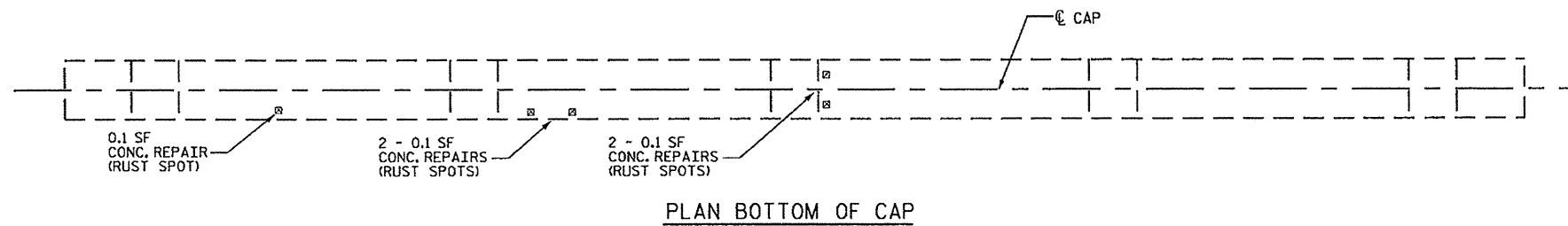
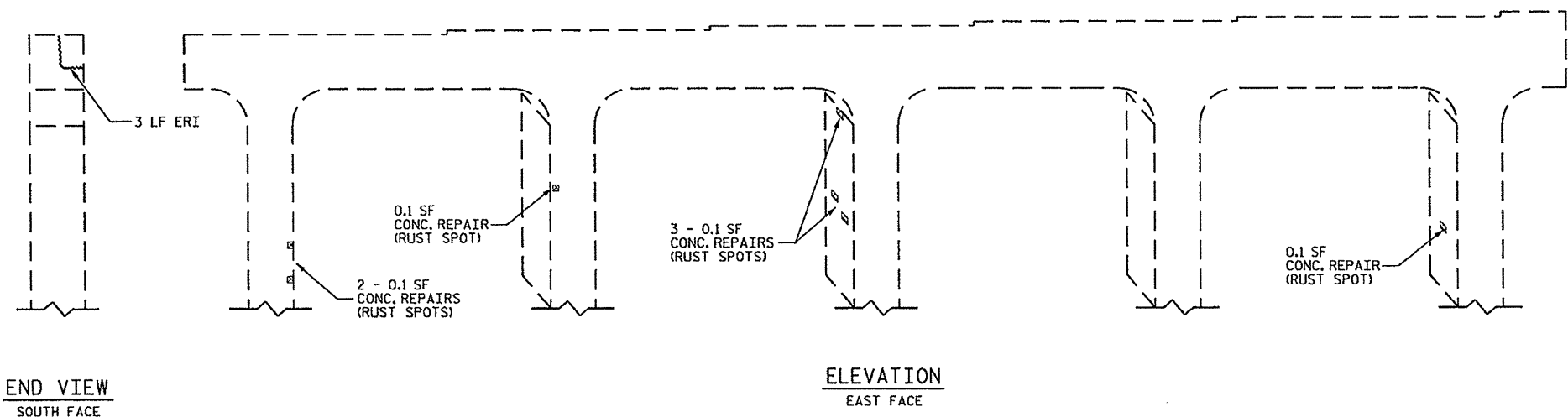
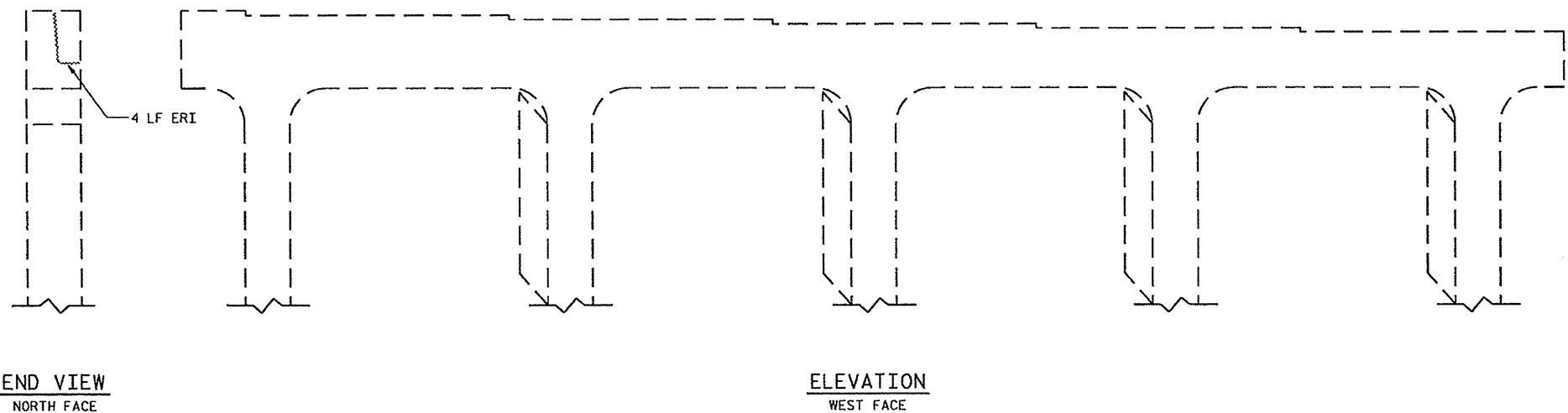
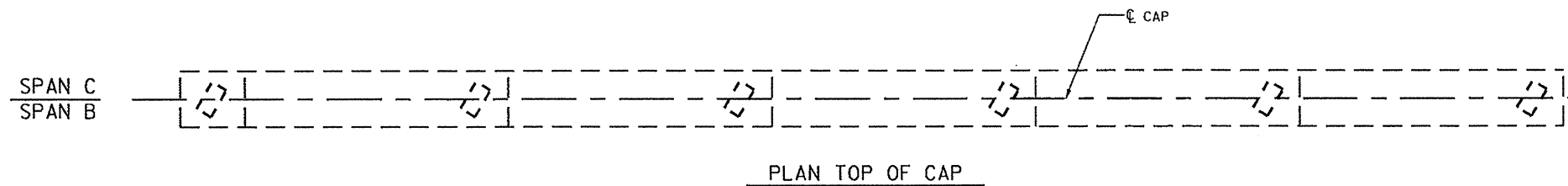
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 1**



REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-31
2			4			TOTAL SHEETS 41

DRAWN BY: D.V. JOYNER DATE: 7/2013
 CHECKED BY: J. YANACCONI DATE: 8/2013



NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	0.0	0.0		
CONCRETE REPAIRS	1.2	0.4		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		7.0		
COLUMN		0.0		
EPOXY COATING		SQ. FT.		LN. FT.
TOP OF CAP		230		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT, SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

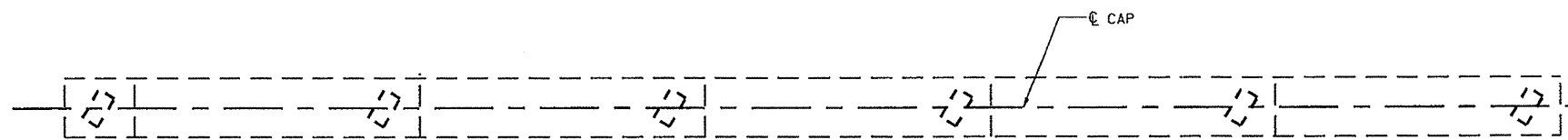
**SUBSTRUCTURE
 BENT 2**



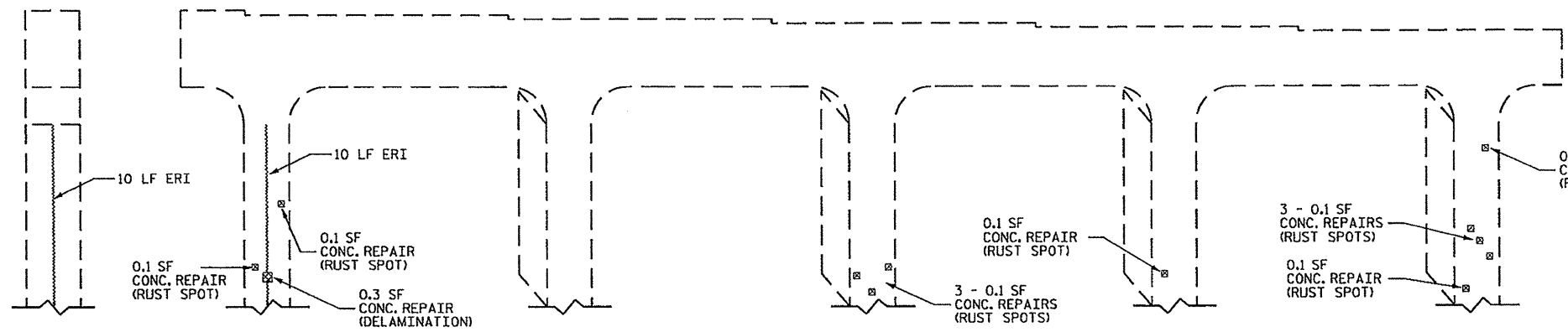
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NO.	BY	DATE	NO.	BY	DATE	
1			3			S-32
2			4			TOTAL SHEETS 41

DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANACONE DATE : 8/2013

SPAN D
SPAN C

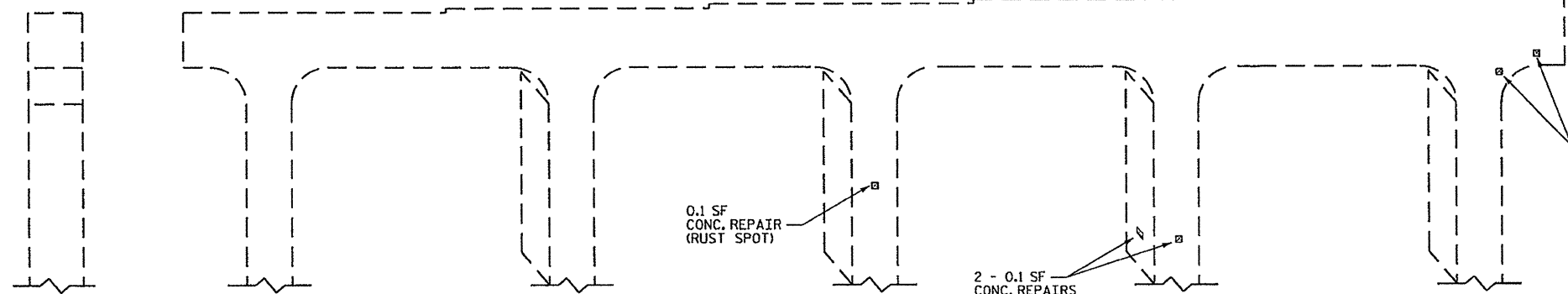


PLAN TOP OF CAP



ELEVATION
WEST FACE

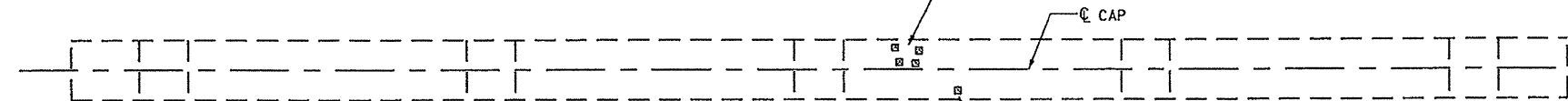
END VIEW
NORTH FACE



ELEVATION
EAST FACE

END VIEW
SOUTH FACE

SPAN D
SPAN C



PLAN BOTTOM OF CAP

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

CONCRETE REPAIR

SHOTCRETE REPAIR

ERI - EPOXY RESIN INJECTION

REPAIRS BENT 3		QUANTITIES			
		ESTIMATE		ACTUAL	
REPAIRS		AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
SHOTCRETE REPAIRS					
CAP (VERTICAL FACE)		0.0	0.0		
CAP (HORIZONTAL FACE)		0.0	0.0		
COLUMN (VERTICAL FACE)		0.0	0.0		
CONCRETE REPAIRS					
		2.4	0.8		
EPOXY RESIN INJECTION					
CAP			LN. FT.		LN. FT.
COLUMN			20.0		
EPOXY COATING					
TOP OF CAP			SO. FT.		LN. FT.
			230		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60

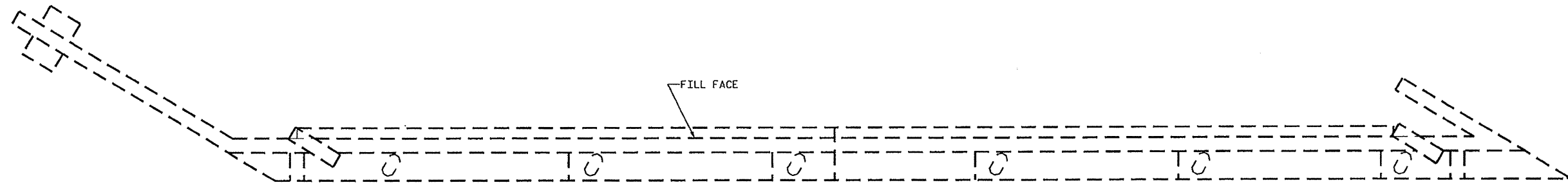
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUBSTRUCTURE
 BENT 3**

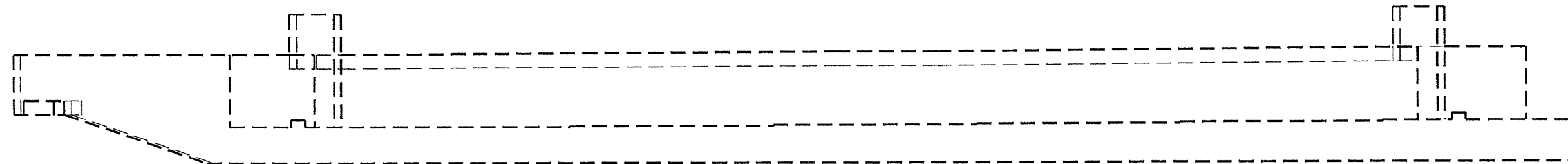


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			41
2			4			

DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANNAKONE DATE : 8/2013



PLAN





ELEVATION

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE END BENT CAP.

-  CONCRETE REPAIR
-  SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
BACKWALL (VERTICAL FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
BACKWALL		0.0		
EPOXY COATING		SO. FT.		LN. FT.
TOP OF CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60

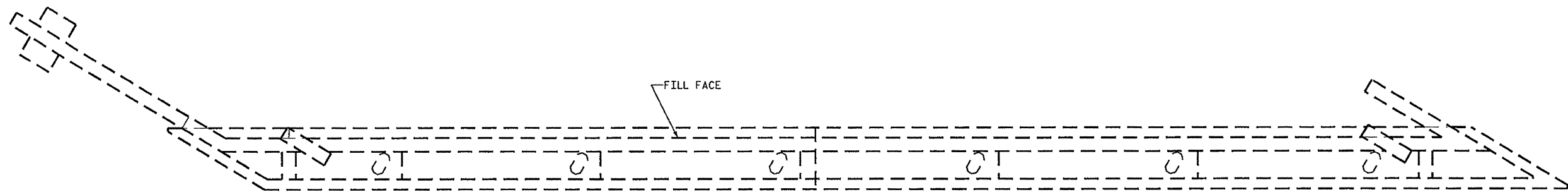
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1

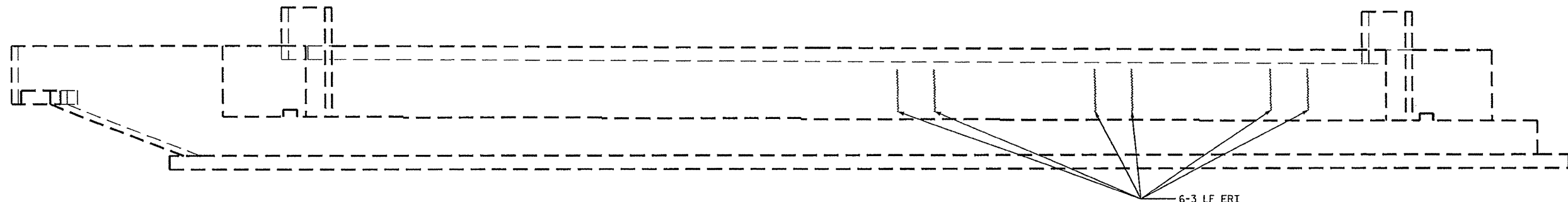
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS
2			4			41



DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANACCONO DATE : 8/2013



PLAN





ELEVATION

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE END BENT CAP.

-  CONCRETE REPAIR
-  SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
BACKWALL (VERTICAL FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
BACKWALL		18.0		
EPOXY COATING		SO. FT.		LN. FT.
TOP OF CAP		187		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 60

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

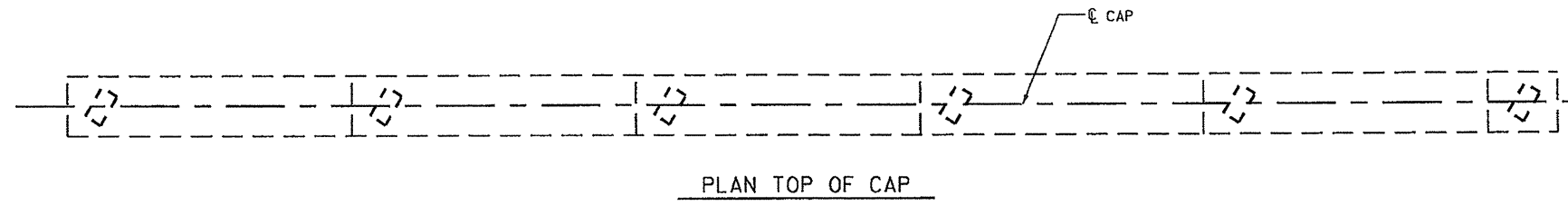
SUBSTRUCTURE
END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-35
2			4			TOTAL SHEETS 41



DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANACCONO DATE : 8/2013

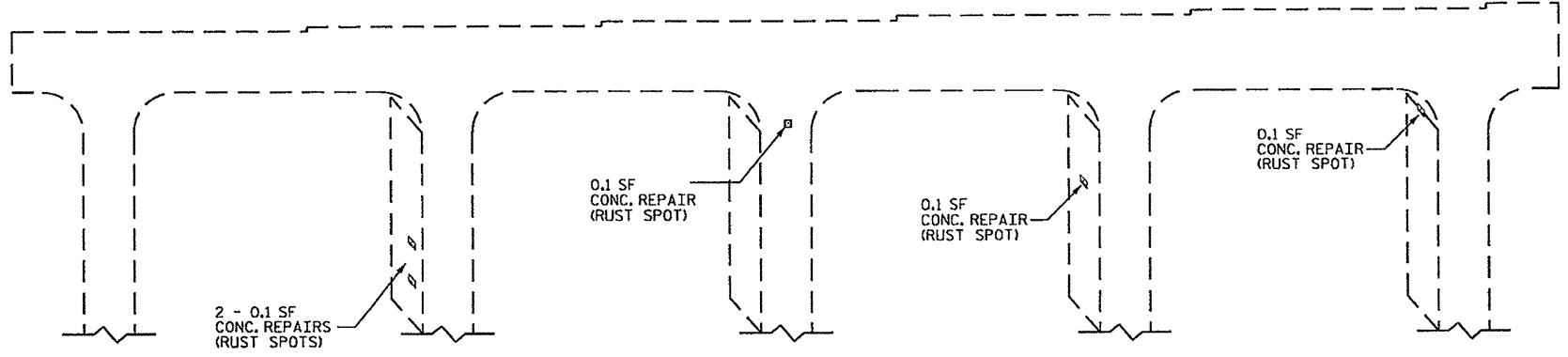
SPAN B
SPAN A



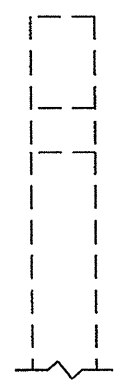
PLAN TOP OF CAP



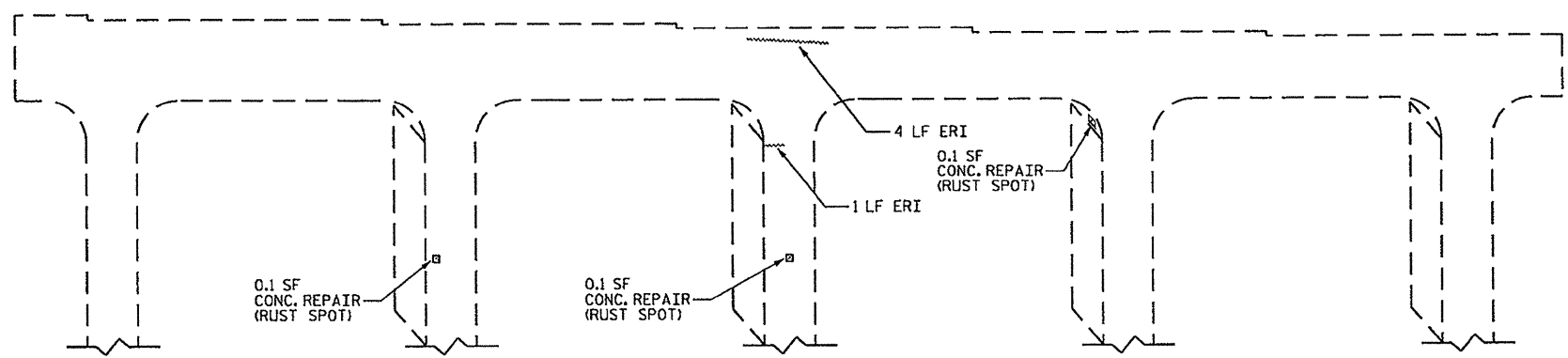
END VIEW
NORTH FACE



ELEVATION
WEST FACE

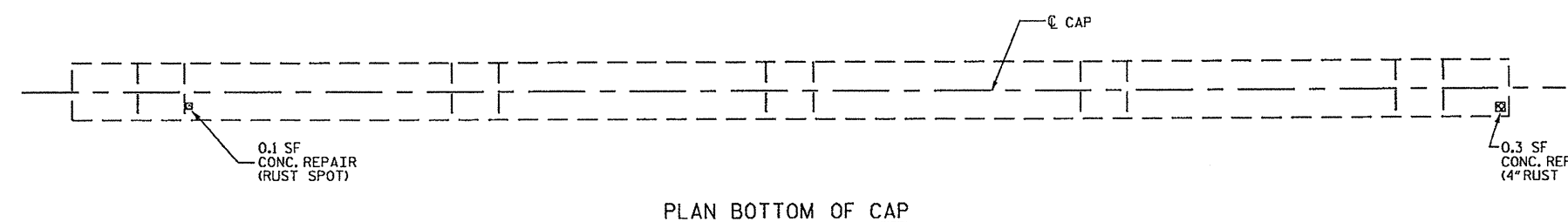


END VIEW
SOUTH FACE



ELEVATION
EAST FACE

SPAN B
SPAN A



PLAN BOTTOM OF CAP

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIRS BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	0.0	0.0		
CONCRETE REPAIRS	1.2	0.4		
EPOXY RESIN INJECTION			LN. FT.	LN. FT.
CAP		4.0		
COLUMN		1.0		
EPOXY COATING		50. FT.		LN. FT.
TOP OF CAP		230		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 61

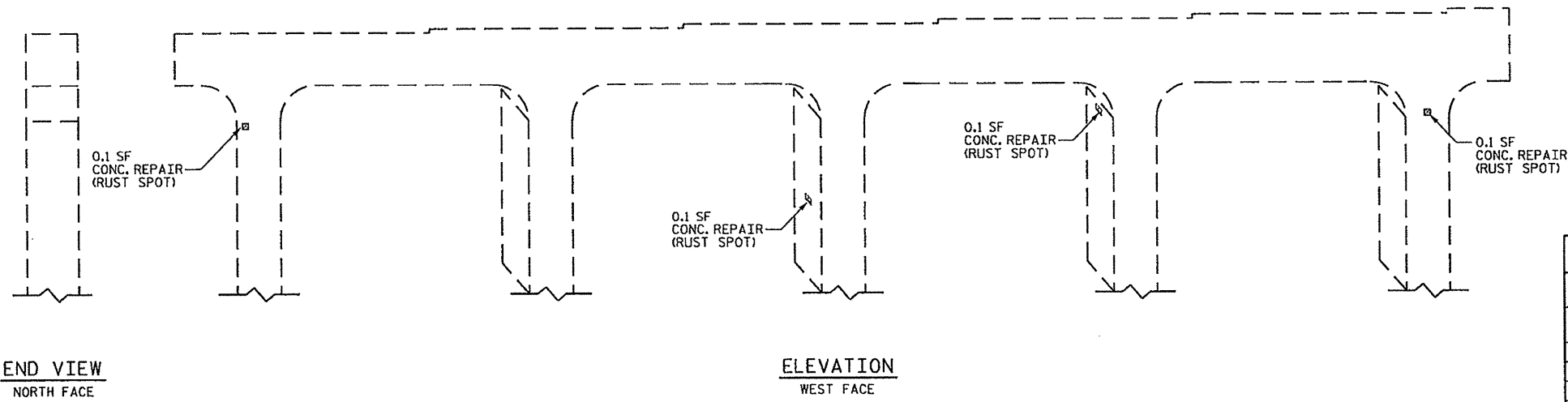
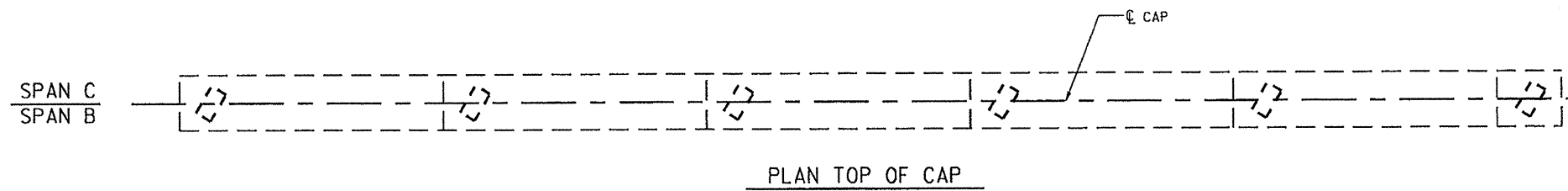
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT 1

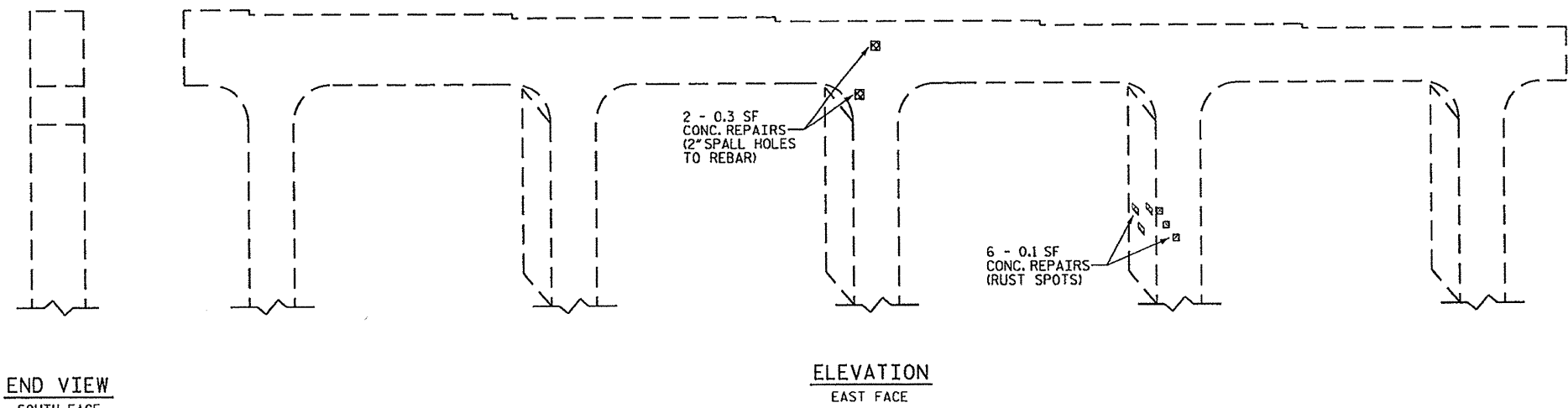


REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-36
2			4			TOTAL SHEETS 41

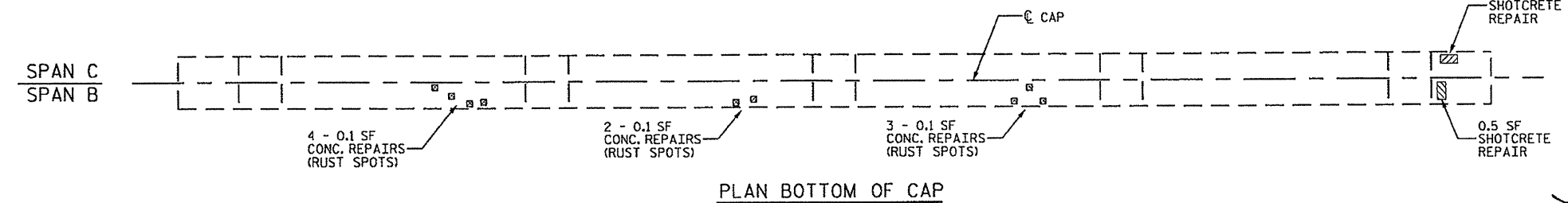
DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANNACCONE DATE : 8/2013



END VIEW
NORTH FACE



END VIEW
SOUTH FACE



NOTE:
REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
FOR STRUCTURE REPAIRS, SEE SHEET S-41.
EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIRS BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	1.0	0.3		
COLUMN (VERTICAL FACE)	0.0	0.0		
CONCRETE REPAIRS	2.5	0.8		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
COLUMN		0.0		
EPOXY COATING		SO. FT.		LN. FT.
TOP OF CAP		230		

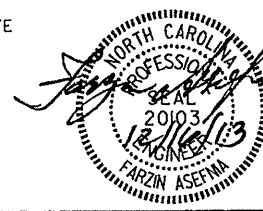
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
BRIDGE NO.: 61

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

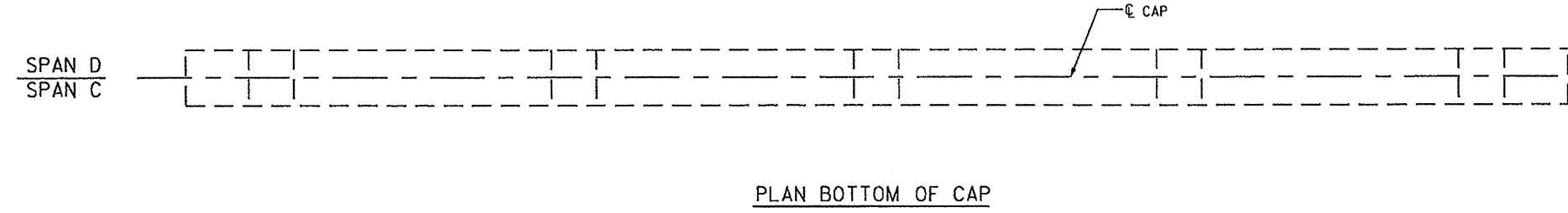
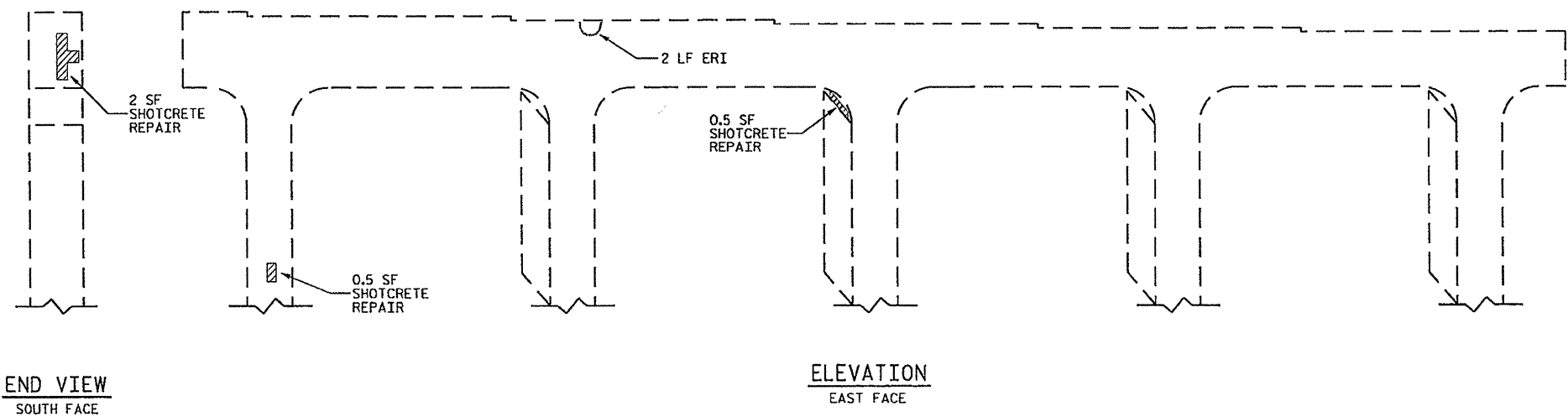
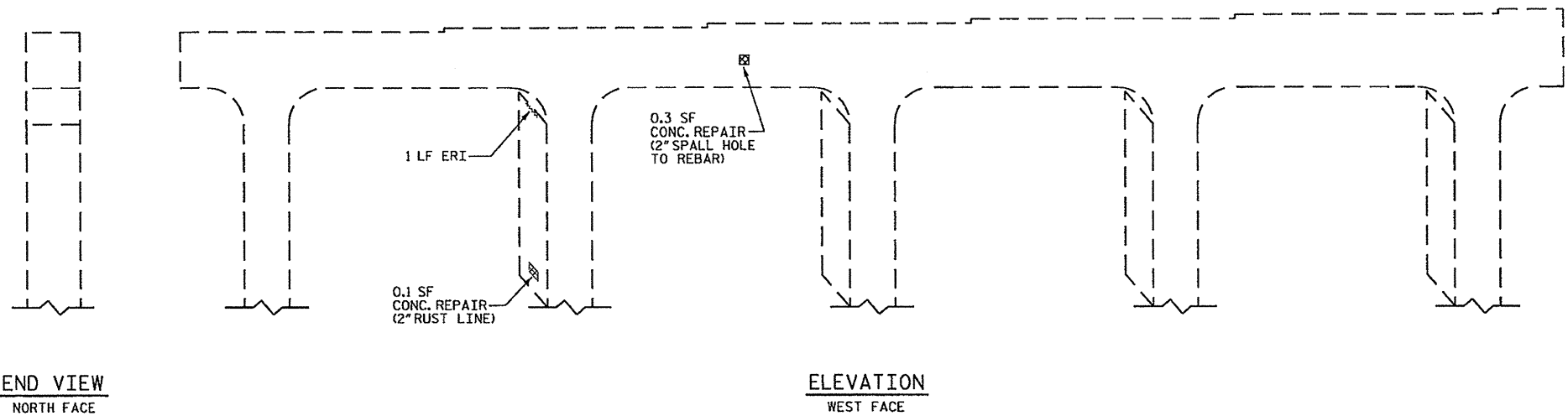
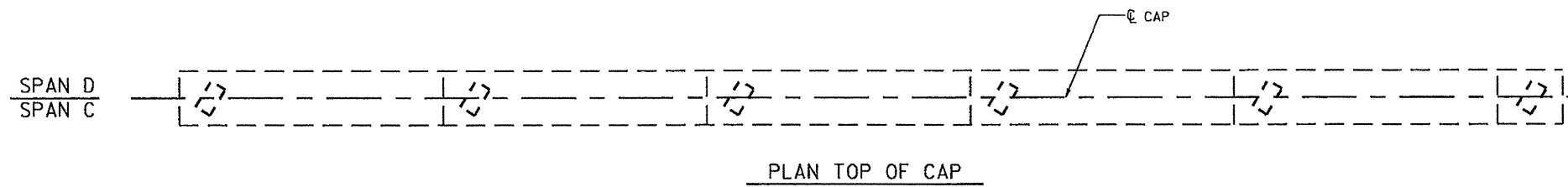
SUBSTRUCTURE BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-37
2			4			TOTAL SHEETS 41



DRAWN BY : D.V. JOYNER DATE : 7/2013
CHECKED BY : J. YANACCONO DATE : 8/2013

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mweldon



NOTE:
 REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.
 FOR STRUCTURE REPAIRS, SEE SHEET S-41.
 EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE BENT CAP.

- CONCRETE REPAIR
- SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS BENT 3	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	2.0	0.6		
CAP (HORIZONTAL FACE)	0.0	0.0		
COLUMN (VERTICAL FACE)	1.0	0.3		
CONCRETE REPAIRS	0.4	0.2		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		2.0		
COLUMN		1.0		
EPOXY COATING		SQ. FT.		LN. FT.
TOP OF CAP		230		

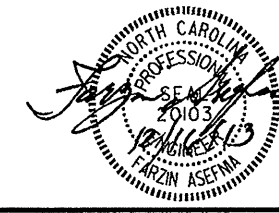
VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 61

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

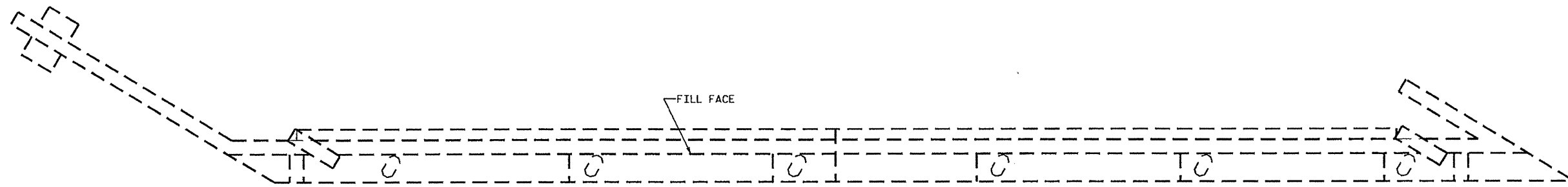
**SUBSTRUCTURE
 BENT 3**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-38
2			4			TOTAL SHEETS 41

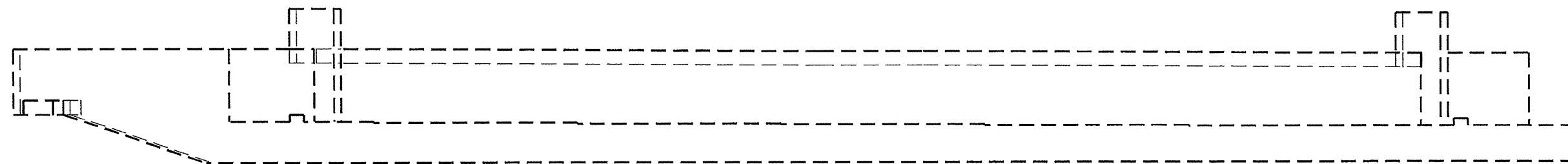


DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANNAKONE DATE : 8/2013

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 mvelton



PLAN



ELEVATION

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.



FOR STRUCTURE REPAIRS, SEE SHEET S-41.

REPAIR QUANTITY TABLE				
REPAIRS END BENT 1	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
BACKWALL (VERTICAL FACE)	0.0	0.0		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
BACKWALL		0.0		
EPOXY COATING		SQ. FT.		LN. FT.
TOP OF CAP		0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

NO REPAIRS NOTED DURING INSPECTION BY STRUCTURES MANAGEMENT UNIT. THE CONTRACTOR AND ENGINEER SHALL INSPECT THE END BENT PRIOR TO BEGINNING WORK.

PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 61

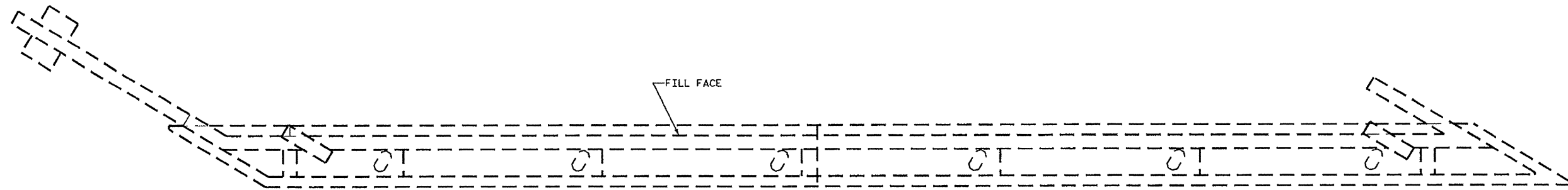
-  CONCRETE REPAIR
-  SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE
 END BENT 1**

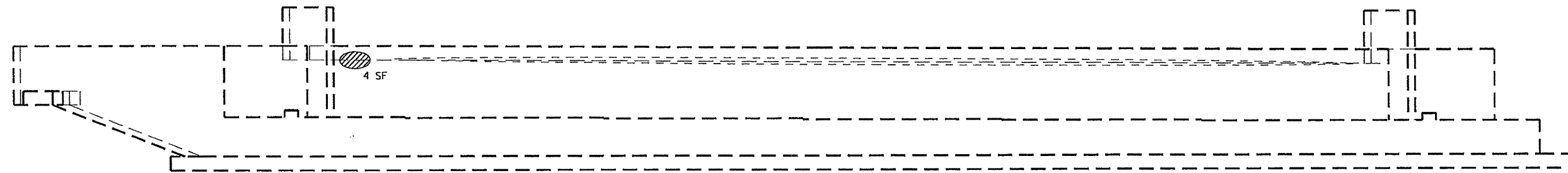


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-39
2			4			TOTAL SHEETS 41

DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANACCONE DATE : 8/2013



PLAN





ELEVATION

NOTE:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER SHALL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

FOR STRUCTURE REPAIRS, SEE SHEET S-41.

EPOXY COATING SHALL BE APPLIED TO THE TOP FACE OF THE END BENT CAP.

-  CONCRETE REPAIR
-  SHOTCRETE REPAIR
- ERI - EPOXY RESIN INJECTION

REPAIR QUANTITY TABLE				
REPAIRS END BENT 2	QUANTITIES			
	ESTIMATE		ACTUAL	
SHOTCRETE REPAIRS	AREA SF.	VOLUME CF.	AREA SF.	VOLUME CF.
CAP (VERTICAL FACE)	0.0	0.0		
CAP (HORIZONTAL FACE)	0.0	0.0		
BACKWALL (VERTICAL FACE)	4.0	1.2		
CONCRETE REPAIRS	0.0	0.0		
EPOXY RESIN INJECTION		LN. FT.		LN. FT.
CAP		0.0		
BACKWALL		0.0		
EPOXY COATING		SO. FT.		LN. FT.
TOP OF CAP		187		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MIN. OF 1" BEHIND REBAR AND MIN. 1" CL TO SAWCUT. SEE REPAIR DETAILS.

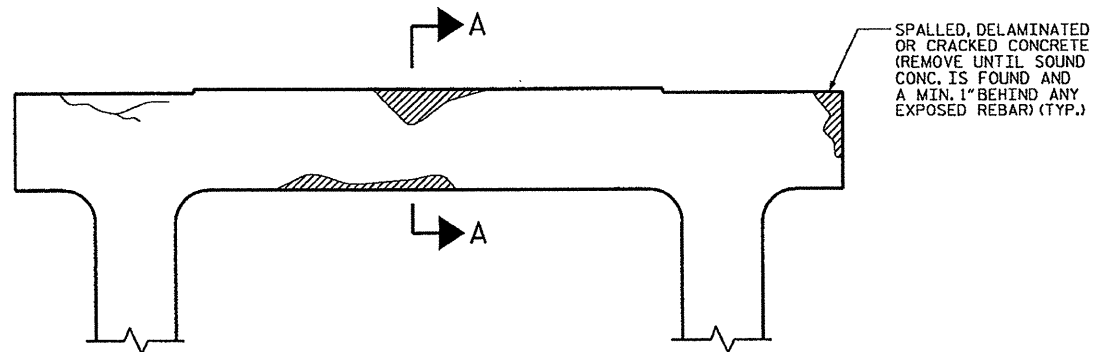
PROJECT NO. I-5205B
GRANVILLE COUNTY
 BRIDGE NO.: 61

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**SUBSTRUCTURE
 END BENT 2**

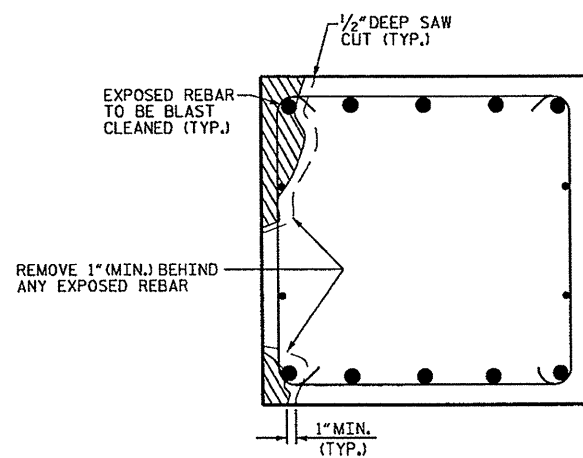


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-40
2			4			TOTAL SHEETS 41

DRAWN BY : D.V. JOYNER DATE : 7/2013
 CHECKED BY : J. YANNAKONE DATE : 8/2013

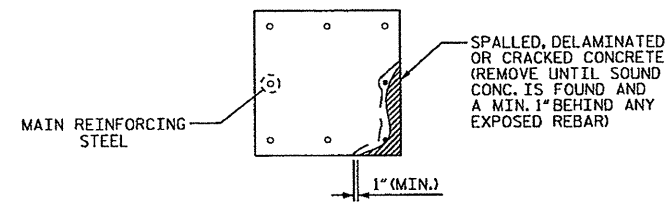


BENT CAP REPAIRS

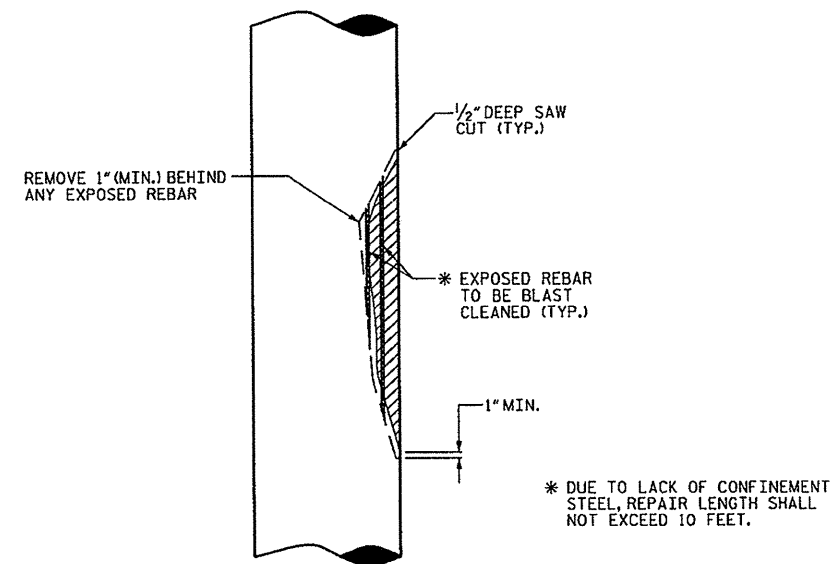


SECTION THRU CAP

CAP REPAIR



PLAN OF COLUMN



ELEVATION OF CAP

COLUMN REPAIR

PROJECT NO. I-5205B
 COUNTY: GRANVILLE
 BRIDGE NO. _____

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TYPICAL
 CAP AND COLUMN
 REPAIR DETAILS



DRAWN BY : J. YANACCONO DATE : 5/13
 CHECKED BY : F. ASEFNIA DATE : 5/13

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

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 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

ENGLISH

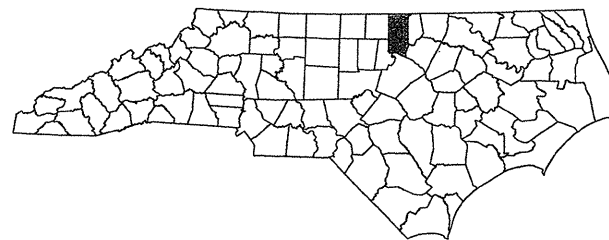
JANUARY, 1990

STD. NO. SN

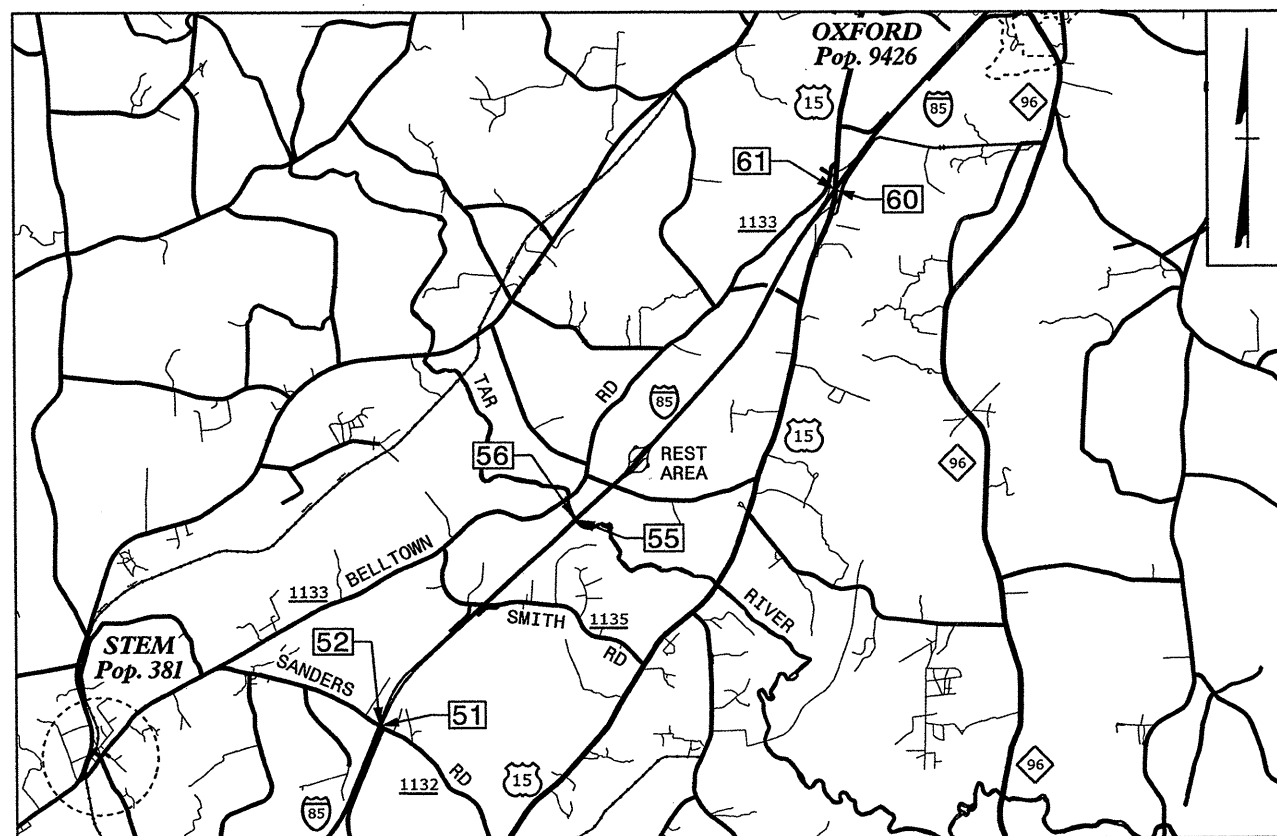
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

GRANVILLE COUNTY



LOCATION: BRIDGE 51 & 52 ON I-85 OVER SR 1132 (SANDERS RD), BRIDGE 55 & 56 ON I-85 OVER THE TAR RIVER, BRIDGE 60 & 61 ON I-85 OVER US 15



INDEX OF SHEETS	
SHEET NO.	TITLE
TMP-1	TITLE SHEET & INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS & LEGEND
TMP-2	GENERAL NOTES
TMP-3	PHASING
TMP-4	TYPICAL SECTIONS & PLAN VIEW

SHEET NO.
TMP-1

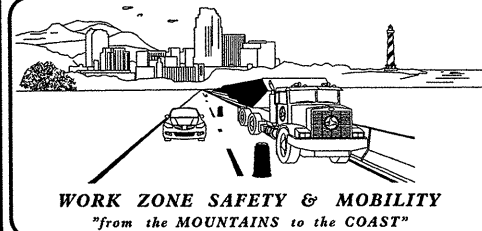
TIP PROJECT: I-5205B (WBS# 47051.1.3)

PLAN PREPARED BY:

HDR HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, NC 27612
N.C.B.E.L.S. License Number: F-0116

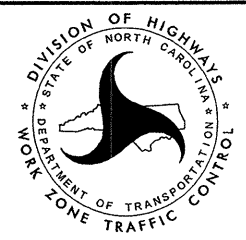
MICHELLE WARD, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER

CHRIS HARNDEN TRAFFIC CONTROL DESIGN ENGINEER



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
JOSEPH ISHAK, P.E. PROJECT MANAGER
BEN SCHOENBAUER, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
TRAFFIC CONTROL DESIGN ENGINEER



SEAL

 MICHELLE WARD
 9/3/13

PLOT DRIVER: NCDOT_pdr_color_eng_50.pit
 USER: dward
 PENTABLE: NCDOT_top.tbl
 DATE: 9/3/2013
 TIME: 3:54:10 PM
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



ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
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
1205.12	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.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)
-  WORK AREA


PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES












PAVEMENT MARKERS

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




PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

TRAFFIC CONTROL DEVICES

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

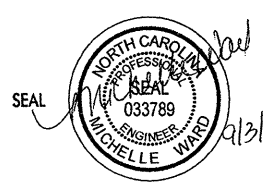

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY

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		ROADWAY STANDARD DRAWINGS & LEGEND
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GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
I-5205B	TMP-2
HDR Engineering, Inc. of the Carolinas <small>333 National Drive, Suite 207 Raleigh, N.C. 27612 N.C.B.E.L.S. License Number: F-0116</small>	

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 UNDESIRABLE 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 DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

I-85

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 8:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 8:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 8:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

B) 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

C) 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.

- 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 WITHIN 15 FT. OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- 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 BARRIER OR GUARDRAIL.
- H) DO NOT INSTALL MORE THAN ONE MILE OF LANE CLOSURE ON I-85 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- I) DO NOT INSTALL MORE THAN TWO SIMULTANEOUS LANE CLOSURES IN ANY ONE DIRECTION ON I-85.
- J) PROVIDE A MINIMUM OF TWO MILES BETWEEN LANE CLOSURES, MEASURED FROM THE END OF ONE CLOSURE TO THE FIRST SIGN OF THE NEXT LANE CLOSURE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- K) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREA ADJACENT TO AN OPEN TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- L) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (WB-11) 500 FT. IN ADVANCE AND A MINIMUM OF ONCE EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- N) INSTALL ADVANCE WORK ZONE SIGNS WHEN WORK IS WITHIN 40 FT. FROM THE EDGE OF TRAVEL LANE AND NO MORE THAT THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- O) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE OR NARROW THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
- P) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE OR NARROW THE ROAD WHEN ROAD CLOSURE OR LANE CLOSURE IS NOT IN OPERATION.
- Q) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- R) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- S) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 200 FT. CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

T) INSTALL FINAL PAVEMENT MARKINGS AND PAVEMENT MARKERS AS FOLLOWS:

ROAD NAME	MARKING	MARKER
I-85	POLYUREA	PERMANENT RAISED

U) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS AS FOLLOWS:

ROAD NAME	MARKING	MARKER
I-85	PAINT	NONE

- V) TIE PROPOSED MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- W) REMOVE/REPLACE ANY CONFLICTING OR DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATIONS, WITH ONE APPLICATION OF PAINT.

MISCELLANEOUS

- X) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA, INCLUDING ROADS UNDER BRIDGES, AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.
- Y) DO NOT ALLOW WATER AND CONCRETE SLURRY FROM HYDRO-DEMOLITION TO DRAIN ACROSS TRAVEL LANES.
- Z) COMPLETE PROPOSED CONSTRUCTION IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE TRAVEL LANES.
- AA) RECORD ALL EXISTING MARKINGS ON BRIDGE AND APPROACHES IN ORDER TO REPLACE MARKINGS AT THE END OF THE WORK DAY AND ONCE CONSTRUCTION IS COMPLETE.
- BB) ENSURE THAT THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919-733-4740) IS NOTIFIED AT LEAST TWO WEEKS PRIOR TO TRAFFIC BEING PLACED IN A ONE-LANE TRAFFIC PATTERN AND WHEN TRAFFIC IS RESTORED TO THE EXISTING PATTERN.

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		GENERAL NOTES
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NOTES:

INSTALL ADVANCE WORK ZONE WARNING SIGNS AS SHOWN ON RSD 1101.01, SHEETS 1, 2 OR 3, PRIOR TO BEGINNING WORK AT ANY BRIDGE LOCATION.

THE CONTRACTOR MAY BEGIN WORK ON STAGE 1 OR STAGE 2, FIRST, FOR ALL BRIDGE LOCATIONS.

INSTALL CMS AT EACH END OF THE PROJECT (OR BRIDGE LOCATION UNDER CONSTRUCTION), AS DIRECTED BY THE ENGINEER, TO ALERT TRAFFIC (INCLUDING OVERSIZE VEHICLES) TO CURRENT TRAFFIC PATTERNS. FOR OVERSIZE VEHICLES, DISPLAY MESSAGE AS "OVERSIZE VEHICLES/16 FT (OR 18 FT) LANE AHEAD", OR ALTERNATE MESSAGE, AS DIRECTED BY THE ENGINEER.

USING RSD 1101.02, SHEET 4 OF 15, REMOVE/FILL-IN EXISTING RUMBLE STRIPS ON INSIDE AND OUTSIDE SHOULDERS OF I-85 PRIOR TO PLACING TRAFFIC IN THE ONE-LANE PATTERN IN EITHER DIRECTION, AS DESCRIBED IN THE PHASING.

ONCE THE LANE CLOSURE HAS BEEN INSTALLED ON I-85 AT ANY BRIDGE LOCATION, WORK IN A CONTINUOUS MANNER TO COMPLETE THE REQUIRED WORK TO OPEN TRAFFIC BACK UP TO THE EXISTING TRAFFIC PATTERN.

IF NO WORK HAS OCCURRED WITHIN 24 HOURS AT EACH BRIDGE LOCATION AND/OR OVERLAY HAS REACHED MINIMUM STRENGTH REQUIREMENTS, OPEN ALL LANES TO TRAFFIC.

PHASING – BRIDGE NO. 51

STAGE 1

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE OUTSIDE LANE OF I-85 NB AND PLACE TRAFFIC AS SHOWN IN STAGE 1 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE OUTSIDE OF THE BRIDGE. (NOTE: RELOCATE DRUMS TO MAINTAIN A MINIMUM 16' TRAVEL WAY DURING DAYTIME HOURS FOR OVERSIZE VEHICLES.)

USING RSD 1101.02, SHEET 1 OF 15, AS NECESSARY, ON SR 1132 (SANDERS RD), COMPLETE THE SUBSTRUCTURE WORK.

NOTE: SUBSTRUCTURE WORK MAY CONTINUE THRU STAGE 2.

STAGE 2

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE INSIDE LANE OF I-85 NB AND PLACE TRAFFIC AS SHOWN IN STAGE 2 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE INSIDE OF THE BRIDGE.

STEP 2:
USING RSD 1101.02, SHEET 4 OF 15, PLACE TEMPORARY MARKINGS AND OPEN TO TRAFFIC.

STAGE 3

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, PLACE FINAL MARKINGS AND MARKERS, RE-INSTALL RUMBLE STRIPS ON INSIDE AND OUTSIDE SHOULDERS, AND OPEN TO TRAFFIC.

STEP 2:
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

PHASING – BRIDGE NO. 52

STAGE 1

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE OUTSIDE LANE OF I-85 SB AND PLACE TRAFFIC AS SHOWN IN STAGE 1 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE OUTSIDE OF THE BRIDGE. (NOTE: RELOCATE DRUMS TO MAINTAIN A MINIMUM 16' TRAVEL WAY DURING DAYTIME HOURS FOR OVERSIZE VEHICLES.)

USING RSD 1101.02, SHEET 1 OF 15, AS NECESSARY, ON SR 1132 (SANDERS RD), COMPLETE THE SUBSTRUCTURE WORK.

NOTE: SUBSTRUCTURE WORK MAY CONTINUE THRU STAGE 2.

STAGE 2

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE INSIDE LANE OF I-85 SB AND PLACE TRAFFIC AS SHOWN IN STAGE 2 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE INSIDE OF THE BRIDGE.

STEP 2:
USING RSD 1101.02, SHEET 4 OF 15, PLACE TEMPORARY MARKINGS AND OPEN TO TRAFFIC.

STAGE 3

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, PLACE FINAL MARKINGS AND MARKERS, RE-INSTALL RUMBLE STRIPS ON INSIDE AND OUTSIDE SHOULDERS AND OPEN TO TRAFFIC.

STEP 2:
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

PHASING – BRIDGE NO. 55

STAGE 1

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE OUTSIDE LANE OF I-85 NB AND PLACE TRAFFIC AS SHOWN IN STAGE 1 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE OUTSIDE OF THE BRIDGE. (NOTE: RELOCATE DRUMS TO MAINTAIN A MINIMUM 16' TRAVEL WAY DURING DAYTIME HOURS FOR OVERSIZE VEHICLES.)

AWAY FROM TRAFFIC, COMPLETE THE SUBSTRUCTURE WORK.

NOTE: SUBSTRUCTURE WORK MAY CONTINUE THRU STAGE 2.

STAGE 2

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE INSIDE LANE OF I-85 NB AND PLACE TRAFFIC AS SHOWN IN STAGE 2 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE INSIDE OF THE BRIDGE.

STEP 2:
USING RSD 1101.02, SHEET 4 OF 15, PLACE TEMPORARY MARKINGS AND OPEN TO TRAFFIC.

STAGE 3

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, PLACE FINAL MARKINGS AND MARKERS, RE-INSTALL RUMBLE STRIPS ON INSIDE AND OUTSIDE SHOULDERS, AND OPEN TO TRAFFIC.

STEP 2:
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

PHASING – BRIDGE NO. 56

STAGE 1

STEP 1:
USING RSD 1101.02, SHEET 4 AND 9 OF 15, CLOSE THE OUTSIDE LANE OF I-85 SB AND PLACE TRAFFIC AS SHOWN IN STAGE 1 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE OUTSIDE OF THE BRIDGE. (NOTE: RELOCATE DRUMS TO MAINTAIN A MINIMUM 16' TRAVEL WAY DURING DAYTIME HOURS FOR OVERSIZE VEHICLES.)

AWAY FROM TRAFFIC, COMPLETE THE SUBSTRUCTURE WORK.

NOTE: SUBSTRUCTURE WORK MAY CONTINUE THRU STAGE 2.

STAGE 2

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE INSIDE LANE OF I-85 SB AND PLACE TRAFFIC AS SHOWN IN STAGE 2 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE INSIDE OF THE BRIDGE.

STEP 2:
USING RSD 1101.02, SHEET 4 OF 15, PLACE TEMPORARY MARKINGS AND OPEN TO TRAFFIC.

STAGE 3

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, PLACE FINAL MARKINGS AND MARKERS, RE-INSTALL RUMBLE STRIPS ON INSIDE AND OUTSIDE SHOULDERS, AND OPEN TO TRAFFIC.

STEP 2:
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

PHASING – BRIDGE NO. 60

STAGE 1

STEP 1:
USING RSD 1101.02, SHEET 4 AND 10 OF 15, CLOSE THE OUTSIDE LANE OF I-85 NB AND PLACE TRAFFIC AS SHOWN IN STAGE 1 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE OUTSIDE OF THE BRIDGE. (NOTE: RELOCATE DRUMS TO MAINTAIN A MINIMUM 16' TRAVEL WAY DURING DAYTIME HOURS FOR OVERSIZE VEHICLES.)

USING RSD 1101.02, SHEET 3 OF 15, OR 1101.04, SHEET 1 OF 1, ON US 15, COMPLETE THE SUBSTRUCTURE WORK.

NOTE: SUBSTRUCTURE WORK MAY CONTINUE THRU STAGE 2.

STAGE 2

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, CLOSE THE INSIDE LANE OF I-85 NB AND PLACE TRAFFIC AS SHOWN IN STAGE 2 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE INSIDE OF THE BRIDGE.

STEP 2:
USING RSD 1101.02, SHEET 4 OF 15, PLACE TEMPORARY MARKINGS AND OPEN TO TRAFFIC.

STAGE 3

STEP 1:
USING RSD 1101.02, SHEET 4 OF 15, PLACE FINAL MARKINGS AND MARKERS, RE-INSTALL RUMBLE STRIPS ON INSIDE AND OUTSIDE SHOULDERS, AND OPEN TO TRAFFIC.

STEP 2:
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

PHASING – BRIDGE NO. 61

STAGE 1

STEP 1:
USING RSD 1101.02, SHEET 4 AND 10 OF 15, CLOSE THE OUTSIDE LANE OF I-85 SB AND PLACE TRAFFIC AS SHOWN IN STAGE 1 TYPICAL ON TMP-4, THEN COMPLETE BRIDGE WORK ON THE OUTSIDE OF THE BRIDGE. (NOTE: RELOCATE DRUMS TO MAINTAIN A MINIMUM 16' TRAVEL WAY DURING DAYTIME HOURS FOR OVERSIZE VEHICLES.)

USING RSD 1101.02, SHEET 3 OF 15, OR 1101.04, SHEET 1 OF 1, ON US 15, COMPLETE THE SUBSTRUCTURE WORK.

NOTE: SUBSTRUCTURE WORK MAY CONTINUE THRU STAGE 2.

STAGE 2

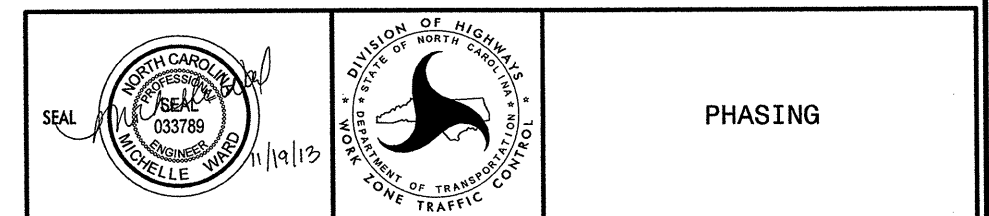
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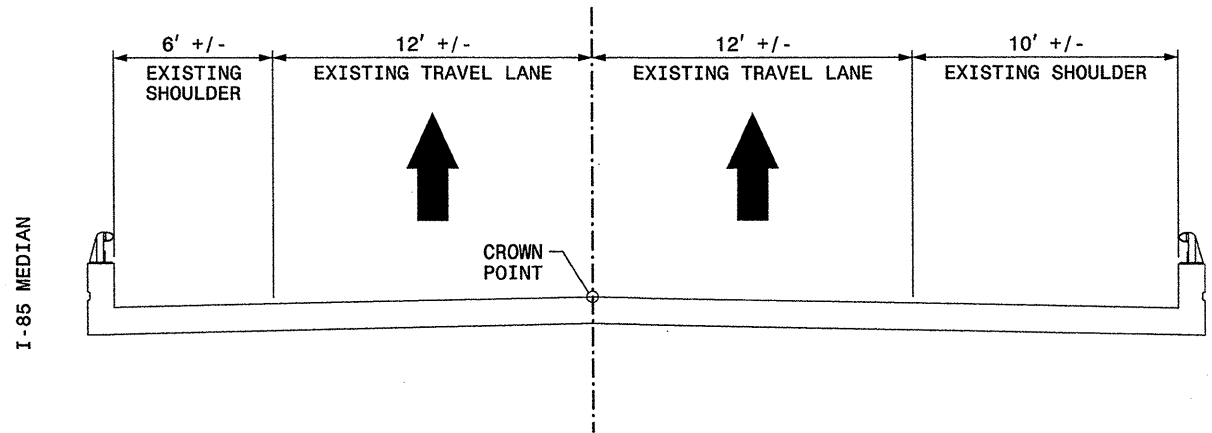
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STAGE 3

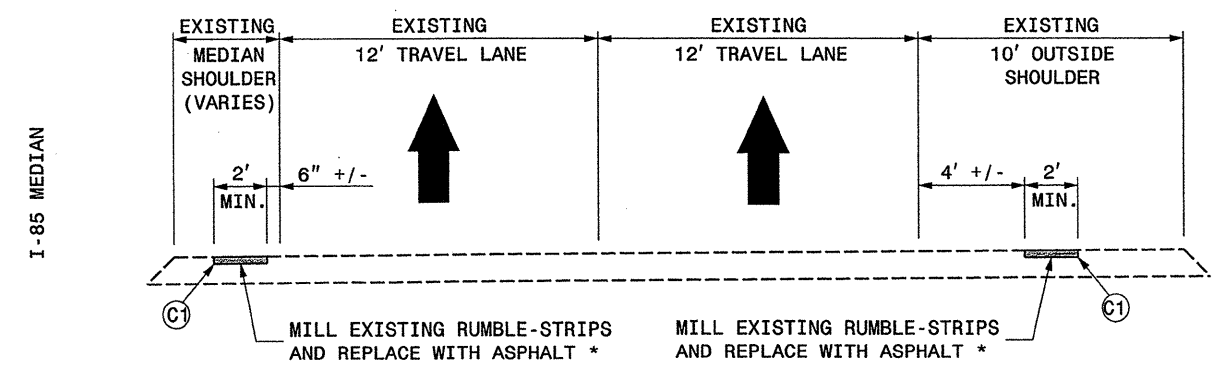
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STEP 2:
REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.





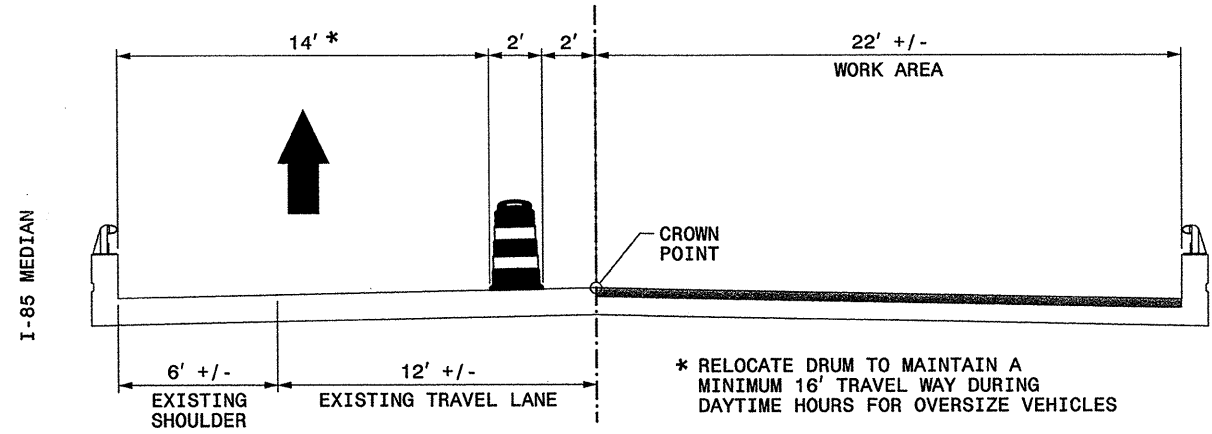
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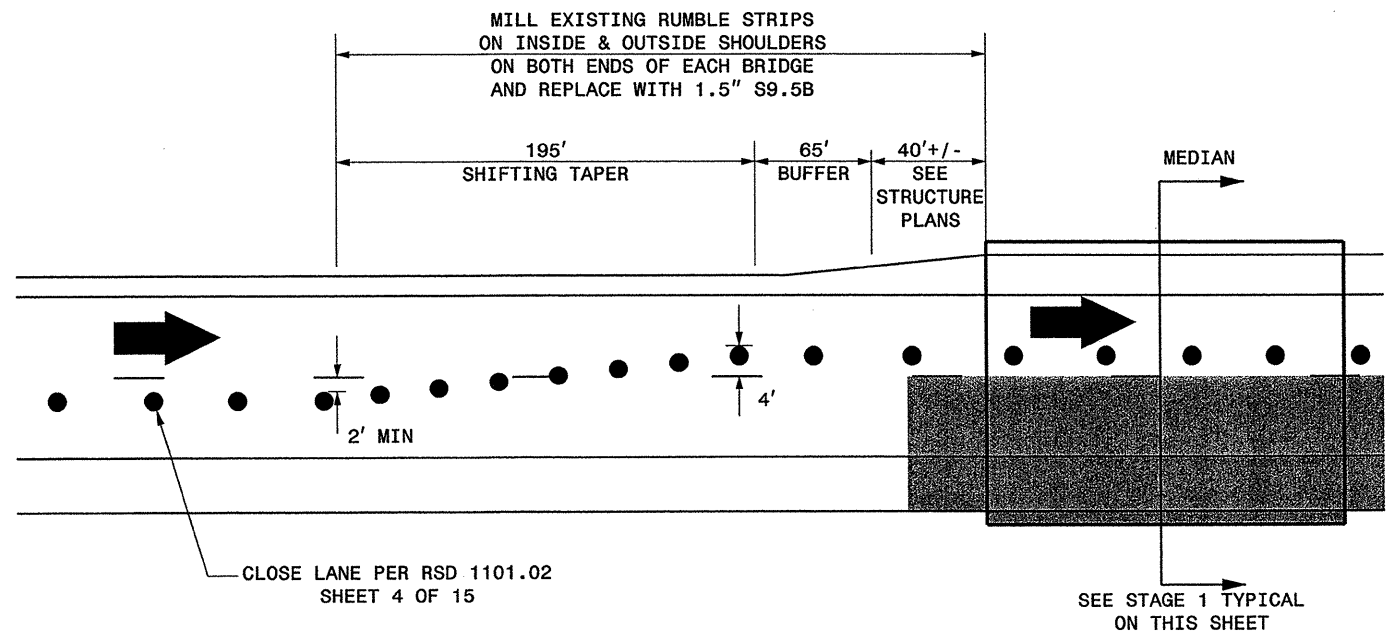
APPROACH ROADWAY TYPICAL

* REPLACE MILLED RUMBLE STRIPS WHEN CALLED FOR IN THE PHASING, ACCORDING TO RSD 665.01, AND AS DIRECTED BY THE ENGINEER.

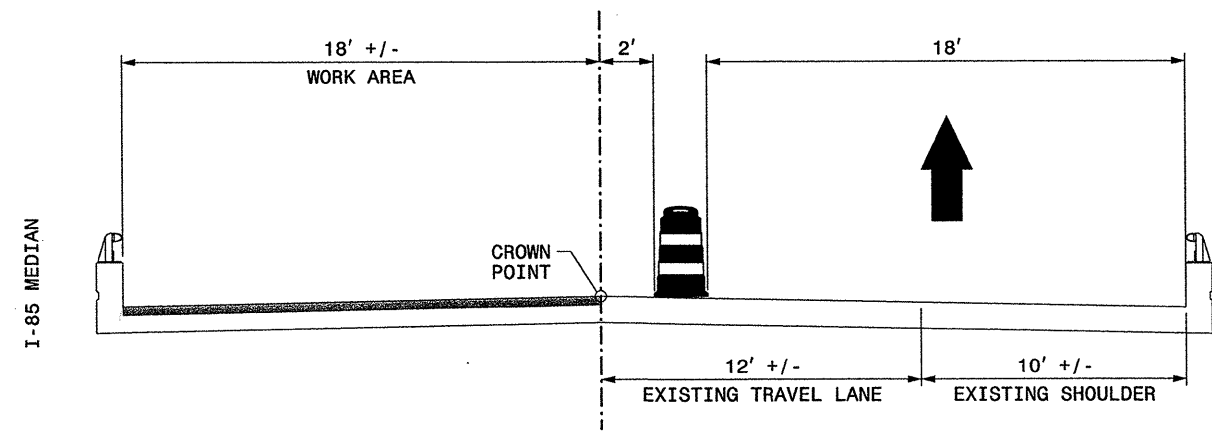
C1 PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.



TYPICAL SECTION - STAGE I



PLAN VIEW TYPICAL LANE CLOSURE (LEFT OR RIGHT)



TYPICAL SECTION - STAGE II

		<p>TYPICAL SECTIONS AND PLAN VIEW</p>
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