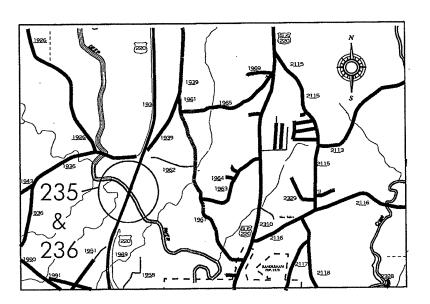


# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## RANDOLPH COUNTY

LOCATION: #235 ON 1-73 /US 220 NORTHBOUND OVER DEEP RIVER (RANDLEMAN REGIONAL RESERVOIR) #236 ON 1-73 /US 220 SOUTHBOUND OVER DEEP RIVER (RANDLEMAN REGIONAL RESERVOIR)

TYPE OF WORK: BRIDGE PRESERVATION – CLEANING AND PAINTING OF EXISTING STRUCTURES, REPAIR OF STRUCTURAL STEEL



CONTRACT: C203319

NORTH CAROLINASHOLDER TRANSPORT

DESIGN DATA

R #235 ADT 2010 = 13500 ADT 2010 = 13500 PROJECT LENGTH

#235 = 0.136 MILE #236 = 0.135 MILE Prepared in the Office of:
STRUCTURES MANAGEMENT UNIT

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

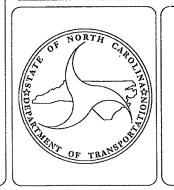
2012 STANDARD SPECIFICATIONS

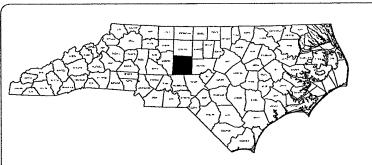
LETTING DATE:

June 18, 2013

RICK NELSON, PE







# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## RANDOLPH COUNTY

STATE	STATE PI	COLECT	REFERENCE	NO.	NO.	TOTAL SHEETS
N.C.	883	P.107	64.05		1A	
	ROJECT NO.	F. A.	PROJ. NO.	+	DESCRIP	rion
	0764.05 0764.05			上	PE CONS	TR
				-		
				-		
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LOCATION: #235 ON 1-73 /US 220 NORTHBOUND OVER DEEP RIVER (RANDLEMAN REGIONAL RESERVOIR) #236 ON 1-73 /US 220 SOUTHBOUND OVER DEEP RIVER (RANDLEMAN REGIONAL RESERVOIR)

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## INDEX OF SHEETS

1 1A 2 S-1 THRU S-3

TMP-1 THRU TMP-2

TITLE SHEET
INDEX OF SHEETS
SUMMARY OF QUANTITIES
STRUCTURAL PLANS
TRAFFIC MANAGEMENT PLANS

DESIGN DATA

R #235 ADT 2010 = 13500 R #236 ADT 2010 = 13500 PROJECT LENGTH

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

LETTING DATE:

June 18, 2013

RICK NELSON, PE

PROJECT ENGINEER

FARZIN ASEFNIA, PE

CONTRACT:

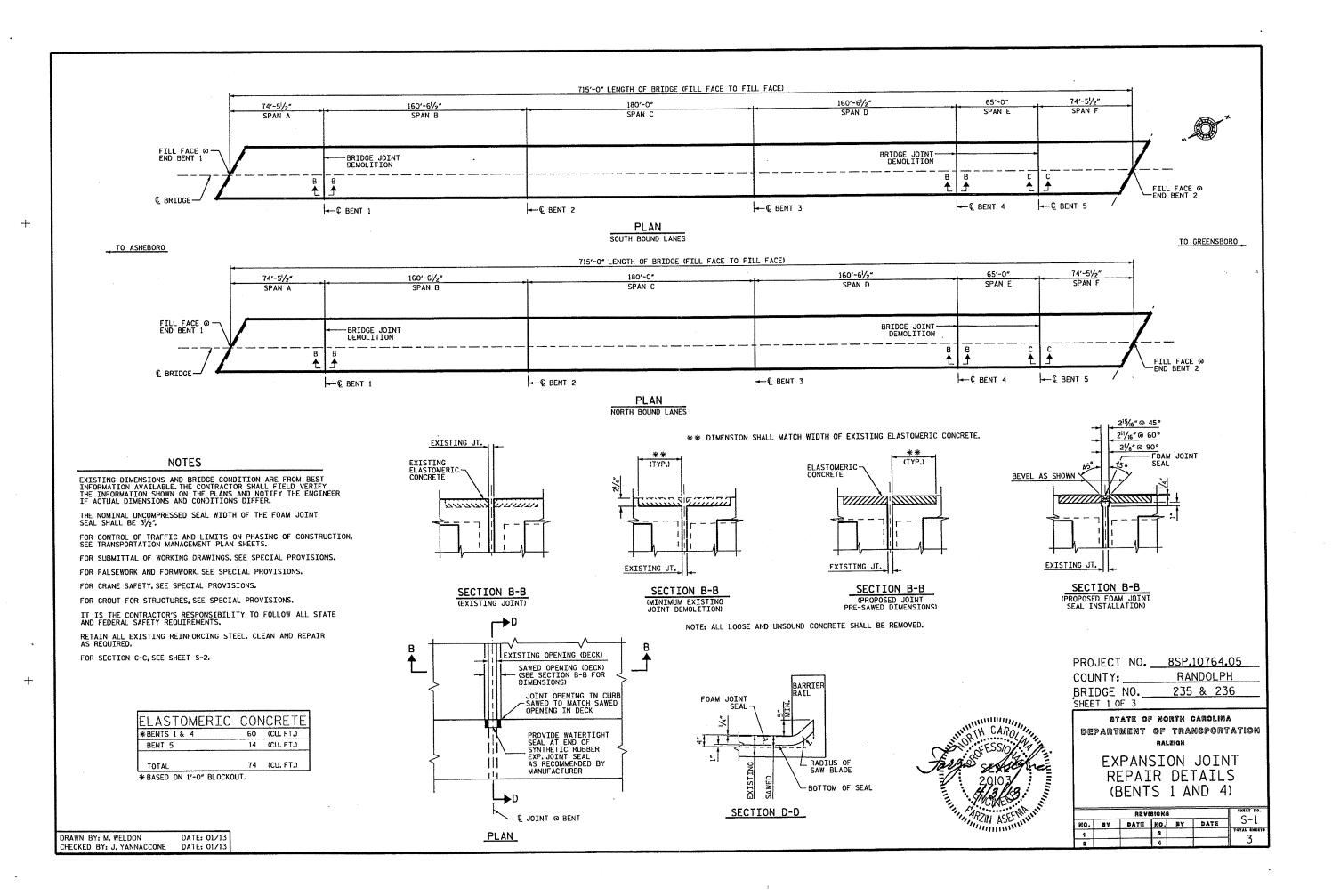
C203319

SFILES

### STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203319

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
4400000000-E	1110	96	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	192	SF	WORK ZONE SIGNS (PORTABLE)
4415000000-N	1115	2	EA	FLASHING ARROW BOARD
4420000000-N	1120	1	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	250	EA	DRUMS
4480000000-N	1165	1	EA	TMA
8296000000-N	442	Lump Sum		POLLUTION CONTROL
8692000000-N	SP	Lump Sum		FOAM JOINT SEALS
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM CLEANING & REPAINTING BRIDGE #235
886000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM CLEANING & REPAINTING BRIDGE #236
886000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PAINTING CONTAINMENT BRIDGE #235
886000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PAINTING CONTAINMENT BRIDGE #236
8889000000-E	SP	13,000	LB	GENERIC STRUCTURE ITEM STRUCTURAL STEEL GIRDER REPAIR
8892000000-E	SP	394	SF	GENERIC STRUCTURE ITEM BRIDGE JOINT DEMOLITION
8897000000-N	SP	10	EA	GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #235
8897000000-N	SP	10	EA	GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #236
8897000000-N	SP	12	EA	GENERIC STRUCTURE ITEM TEMPORARY WORK PLATFORM

Sheet 2 Page 1 of 1

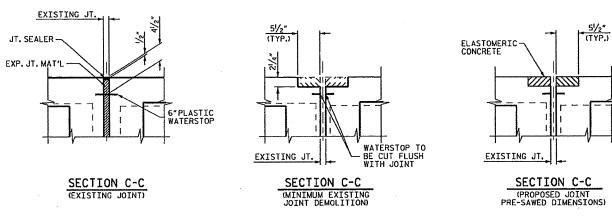


### NOTES

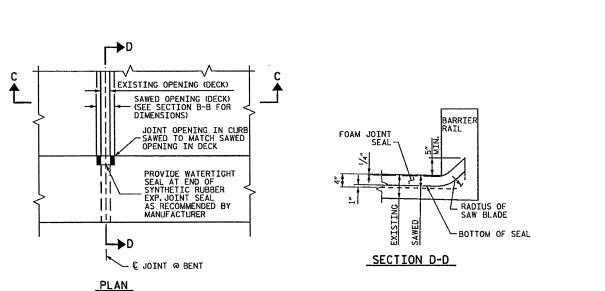
EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE, THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS REQUIRED.

THE NOMINAL UNCOMPRESSED WIDTH OF THE FOAM JOINT SEAL SHALL BE 24.



NOTE: ALL LOOSE AND UNSOUND CONCRETE SHALL BE REMOVED.



TOTAL BILL OF MATERIAL											
POLLUTION FOAM JOINT CLEANING AND REPAINTING OF BRIDGE "235 BRIDGE "235 BRIDGE "235 BRIDGE "235 BRIDGE "236 BRIDGE							TEMPORARY WORK PLATFORM				
LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	EACH	LUMP SUM	LUMP SUM	EACH	LBS.	SQ. FT.	EACH	
LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	10	LUMP SUM	LUMP SUM	10	13,000	394	12	

A FOR INFORMATION ONLY. ACTUAL QUANTITY WILL BE DETERMINED IN THE FIELD.



PROJECT NO	8SP.10764.05
COUNTY:	RANDOLPH
BRIDGE NO	235 & 236
SHEET 2 OF 3	

1%"@ 45° 1%"@ 60° 1%"@ 90°

BEVEL AS SHOWN X

EXISTING JT.

(PROPOSED FOAM JOINT SEAL INSTALLATION)

—FOAM JOINT SEAL

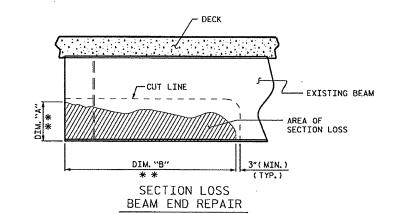
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGN

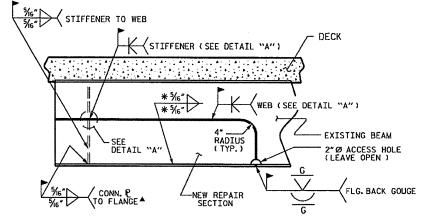
> EXPANSION JOINT REPAIR DETAILS (BENT 5)

	SHEET NO.					
RO.	2 Y	DATE	NO.	BY	DATE	2-2
1			3			TOTAL SHERYS
2			4			3

DRAWN BY: M. WELDON DATE: 01/13 CHECKED BY: J. YANNACCONE DATE: 01/13

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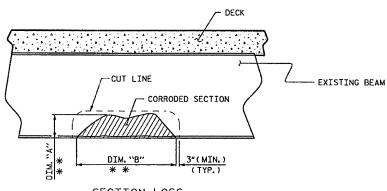




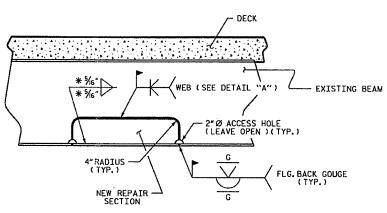
SECTION LOSS BEAM END REPAIR SECTION

▲FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD \* NOT NEEDED IF REPAIRED SECTION IS CUT FROM A ROLLED BEAM

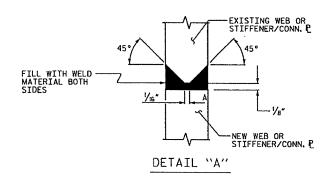
\*\* DIMENSION TO BE DETERMINED IN THE FIELD

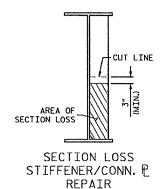


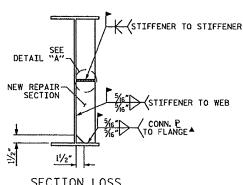
SECTION LOSS
INTERMEDIATE BEAM REPAIR



SECTION LOSS INTERMEDIATE
BEAM REPAIR SECTION







SECTION LOSS STIFFENER/CONN. P REPAIR SECTION

FOR STIFFENERS, MILL TO BEAR AND DO NOT WELD

### BEAM REPAIR

AFTER THE STRUCTURAL STEEL HAS BEEN BLASTED AND PRIMED, THE STRUCTURAL STEEL AND BEARING SHALL BE INSPECTED FOR EXCESSIVE SECTION LOSS, AREAS THAT EXHIBIT AN EXCESS OF 35% SECTION LOSS SHALL BE REVIEWED BY THE ENGINEER TO DETERMINE IF AREA OF SECTION LOSS SHOULD BE REPAIRED,

AS DETERMINED BY THE ENGINEER, AREAS WITH EXCESSIVE SECTION LOSS OR AREAS WITH TEMPORARY REPAIRS SHALL BE REMOVED AND THE BEAMS SHALL BE REPAIRED AS INDICATED ON THIS PLAN SHEET. CONTRACTOR AND ENGINEER TO DETERMINE ACTUAL DIMENSIONS OF AREA TO BE REMOVED AND REPLACED. REMOVE CONCRETE BENT DIAPHRAGMS AS NEEDED TO EVALUATE LIMITS OF REPAIR.

PAYMENT FOR THE SECTION REPAIR SHALL BE BASED ON THAT AMOUNT OF REPAIR ACTUALLY PERFORMED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

GOUGES AND INDENTIONS FROM IMPACT ON GIRDERS SHALL BE GROUND SMOOTH PRIOR TO BLASTING AND PAINTING OPERATION.

#### REPAIR SEQUENCE:

REMOVE LIVE LOAD FROM REPAIR AREA BY EITHER CLOSING BRIDGE TO TRAFFIC OR SHIFTING TRAFFIC AWAY FROM REPAIR AREA.

REMOVE DEAD LOAD FROM BEAM BY JACKING AND BLOCKING.

STEEL DIAPHRAGM MEMBERS AND LATERAL BRACING MAY BE TEMPORARILY REMOVED, IF NECESSARY, AND REPLACED AFTER BEAM REPAIR.

BOLT HOLES FOR THE NEW STIFFENER/CONNECTOR PLATES AND GUSSET PLATES SHALL BE FIELD DRILLED AND MATCH THE BOLT PATTERN OF THE EXISTING DIAPHRAGM MEMBERS AND LATERAL BRACING.

IF BEAM DETERIORATION EXTENDS INTO THE CONCRETE DIAPHRAGM THEN CHIP AWAY CONCRETE TO DETERMINE THE EXTENT OF THE DAMAGE CUT OUT BY APPROPRIATE MEANS THE DAMAGED BEAM AREA AND/OR BEARING STIFFENER.

MECHANICALLY CLEAN RUST, SCALE, AND EXISTING PAINT TO AT LEAST  $3^{\prime\prime}$  BEYOND REPAIR AREA.

REPLACEMENT CUT-TO-FIT BEAM SECTION SHALL BE NEW AND FROM SIMILAR SIZE ROLLED BEAM OR APPROVED EQUIVALENT PLATES. THE GRADE OF STEEL SHALL BE AASHTO M270, GRADE 36 OR BETTER.

INSTALL THE CUT-TO-FIT SECTION, FULLY WELD ALONG TOP AND SIDES OF PLATE USING FULL PENETRATION WELDS.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE AWS AND NCDOT STANDARD SPECIFICATIONS.

ALL WELDS WILL BE INSPECTED AND TESTED BY THE NCDOT MATERIALS AND TEST UNIT IN ACCORDANCE WITH THE CURRENT AWS BRIDGE WELDING CODE AND STANDARD SPECIFICATIONS.

IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AFTER REPAIR, GRIND ALL WELDS FLUSH, THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM REPAIR PROCESS,

CLEANING AND PAINTING OF REPAIRED STRUCTURAL STEEL SHALL BE PERFORMED AS PART OF THE OVERALL CLEANING AND PAINTING CONTRACT.

FOR CLEANING AND PAINTING, SEE PROJECT SPECIAL PROVISIONS.

AFTER GIRDERS ARE REPAIRED AND PAINTED, ANY CONCRETE REMOVED FROM THE BENT DIAPHRAGMS SHALL BE CAST BACK. ANY REINFORCING STEEL CUT DURING THE REMOVAL PROCESS SHALL BE SPLICED WITH A SIMLAR SIZE BAR WITH AT LEAST A ONE FOOT SPLICE TO THE EXISTING STEEL. NO SEPARATE PAYMENT SHALL BE MADE FOR CONCRETE AND REINFORCING STEEL AS THIS IS CONSIDERED INCIDENTAL TO THE PAY ITEM "GIRDER REPAIR."

LOWER SPAN TO BEAR; CHECK FOR DISTRESS.

REMOVE JACKING EQUIPMENT AND TEMPORARY SUPPORTS.

REMOVE ALL TRAFFIC CONTROL DEVICES.

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PROJECT NO. <u>8SP.10764.05</u>
COUNTY: <u>RANDOLPH</u>
BRIDGE NO. <u>235 & 236</u>
SHEET 3 OF 3

STATE OF HORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STRUCTURAL STEEL REPAIR DETAILS

١		SHEET NO.					
1	NO.	BY:	DATE:	NO.	BYt	DATE	S-3
ı	1			3			TOTAL SHEETS
	2			4			3

DRAWN BY: M. WELDON DATE: 01/13
CHECKED BY: J. YANNACCONE DATE: 01/13

+

# TRANSPORTATION MANAGEMENT PLAN

# RANDOLPH COUNTY

**DIVISION** 8



### **BRIDGE PAINTING**

BRIDGE #235 - I-73 North/US 220 Bypass over Randleman Lake

BRIDGE #236 - I-73 South/US 220 Bypass over Randleman Lake

### INDEX OF SHEETS

SHEET NO.

TITLE

TMP-1 TITLE SHEET AND INDEX OF SHEETS

LEGEND AND LIST OF ROADWAY STANDARD DRAWINGS

GENERAL NOTES & PHASING

# 8SP.10764.05

SHEET NO.

TMP-1

### TRAFFIC MANAGEMENT STRATEGY

PROPOSED BRIDGE PAINTING WILL REQUIRE SECUREMENT OF CONTAINMENT USING DAY AND TIME RESTRICTED LANE CLOSURES. REFER TO SHEET TMP-2 FOR PHASING.



PLAN PREPARED FOR NCDOT STRUCTURES MANAGEMENT UNIT RALEIGH, NC





BETSY L. WATSON, P.E.

GEORGE KARAGEORGE



APPROVED BUTELL MATSON

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

WORK AREA

PAVEMENT REMOVAL

NORTH ARROW

TYPE III BARRICADE

▲ CONE

DRUM

CHANGEABLE MESSAGE SIGN (CMS)

FLAGGER

AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

FLASHING ARROW BOARD (TYPE C)

\* LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

WORK ZONE SIGN-PORTABLE

- WORK ZONE SIGN-STATIONARY

WORK ZONE SIGN-STATIONARY OR PORTABLE

TEMPORARY SHORING

TEMPORARY CRASH CUSHION

TEMPORARY BARRIERS

ABBREVIATIONS: PORTABLE CONCRETE BARRIER (PCB) WATER-FILLED BARRIER (WFB)

- UN-ANCHORED PORTABLE CONCRETE BARRIER

- ANCHORED PORTABLE CONCRETE BARRIER

WATER-FILLED BARRIER

### SIGNALS







TEMPORARY

PAVEMENT MARKINGS

EXISTING PAVEMENT MARKING (GRAY)

- SKIP LINES

- - - MINI-SKIP LINES

SOLID LINES

### PAVEMENT MARKING SYMBOLS



PAVEMENT MARKING SYMBOLS



EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)

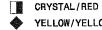


PAVEMENT MARKING ALPHANUMERIC CHARACTERS

# PAVEMENT MARKERS



CRYSTAL/CRYSTAL



YELLOW/YELLOW

PROJ. REFERENCE NO. SHEET NO.

8SP.10764.05 TMP-1A

### ROADWAY STANDARD DRAWINGS

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

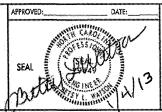
TITLE STD. NO. WORK ZONE ADVANCE WARNING SIGNS 1101.01 TEMPORARY LANE CLOSURES 1101.02 TEMPORARY SHOULDER CLOSURES 1101.04 1101.11 TRAFFIC CONTROL DESIGN TABLES 1110.01 STATIONARY WORK ZONE SIGNS 1110.02 PORTABLE WORK ZONE SIGNS FLASHING ARROW BOARDS 1115.01

DRUMS

1130.01



Stantec Consulting Savyce
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Sulle 300
Raleigh, NC 27806
Tel. (819) 851-4886
Tel. (819) 851-4024
www.spate-com
License No. F-6672





LEGEND ROADWAY STANDARD DRAWINGS

### GENERAL NOTES

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

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

### LANE CLOSURE TIME RESTRICTIONS

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

ROAD NAME

DAY AND TIME RESTRICTIONS

ALL ROADS 6:00 A.M. - 7:00 P.M. MONDAY THRU SUNDAY (EVERY DAY)

B) DO NOT CLOSE OR NARROW A LANE OF TRAFFIC, DETAIN AND/OR ALTER THE TRAFFIC FLOW ON OR DURING HOLIDAYS, HOLIDAY WEEKENDS, OR ANY OTHER TIME WHEN TRAFFIC IS UNUSUALLY HEAVY, INCLUDING THE FOLLOWING SCHEDULES:

ROAD NAME

ALL ROADS

### HOLIDAY & HOLIDAY WEEKEND LANE CLOSURE TIME RESTRICTIONS

- 1) FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- 2) FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
- 3) FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
- 4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
- 5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY; THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- 6) FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- 7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
- 8) FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) LANE CLOSURES ARE REQUIRED WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN ANY PORTION OF A TRAVEL LANE. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE
- D) INSTALL ALL LANE CLOSURES ACCORDING TO THE PLANS, ROADWAY STANDARD DRAWINGS (1101.02), OR AS DIRECTED BY THE ENGINEER.
- E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER. COVER OR LAY DOWN SIGNS, AND TURN OFF ARROW BOARDS AND MESSAGE BOARDS.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

### MISCELLANEOUS

- I) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.
- J) DO NOT PERFORM WORK FROM THE ROADWAY ON TOP OF ANY BRIDGE, UNLESS SPECIFICALLY ALLOWED IN THE PLAN OR BY THE ENGINEER.

### PHASING

PAINTING OF BRIDGES 235 AND 236 WILL BE DONE FROM BELOW THE BRIDGE.

RANDOLPH CO. BRIDGE #235 - I-73 NORTH/US 220 BYP. OVER RANDLEMAN LAKE
USE LEFT AND RIGHT LANE CLOSURES TO SECURE CONTAINMENT, PER ROADWAY

STANDARD DRAWING 1101.02 SHEET 4.

RANDOLPH CO. BRIDGE #236 - I-73 SOUTH/US 220 BYP. OVER RANDLEMAN LAKE

USE LEFT AND RIGHT LANE CLOSURES TO SECURE CONTAINMENT, PER ROADWAY STANDARD DRAWING 1101.02 SHEET 4.

