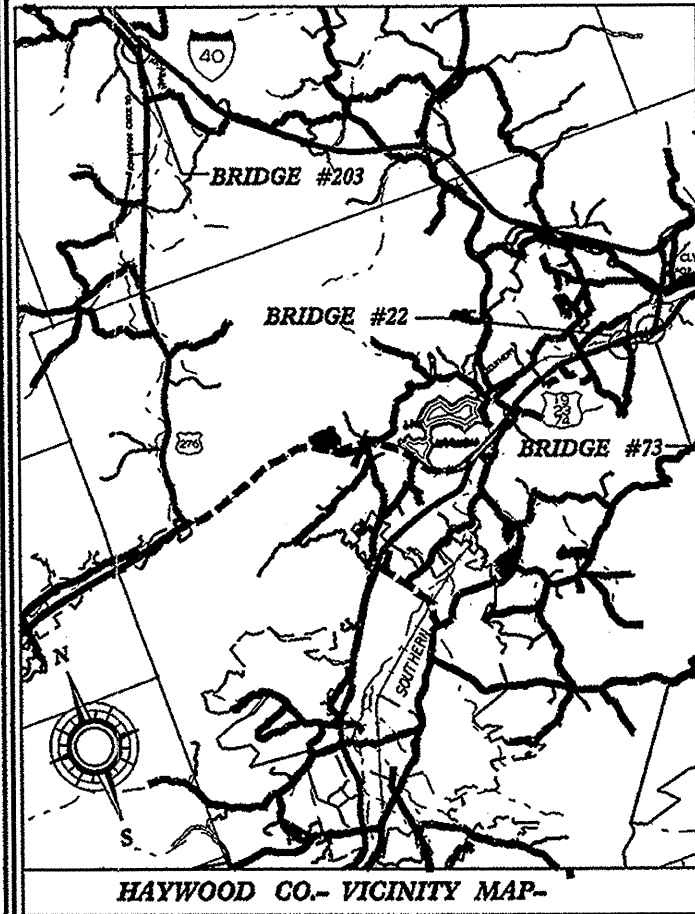


PROJECT: 17BP.14.P.6

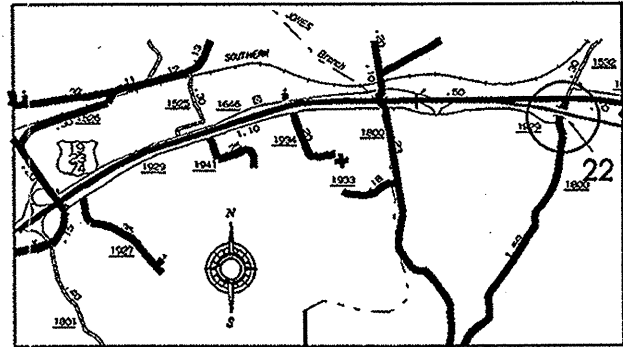
CONTRACT: C203244



HAYWOOD CO. - VICINITY MAP



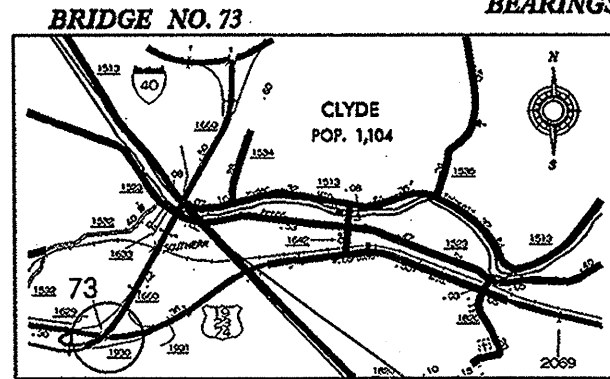
BRIDGE NO. 22



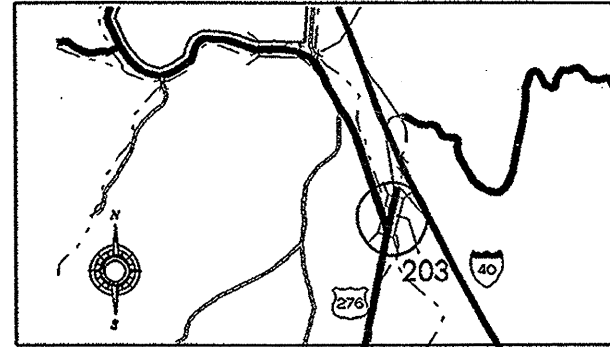
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
**HAYWOOD AND HENDERSON
COUNTIES**

LOCATION: BRIDGE #22, HAYWOOD CO., ON US 1923/74 OVER SR 1532 (JAMES COVE RD.)
BRIDGE #73, HAYWOOD CO., ON SR 1660 /US 74 (GREAT SMOKY MOUNTAIN EPY.)
OVER US 1923
BRIDGE #203, HAYWOOD CO., ON US 276 (JONATHAN CREEK ROAD) OVER
JONATHAN CREEK
BRIDGE #129, HENDERSON CO., ON NC 191 (HAYWOOD RD.) OVER FRENCH BROAD
RIVER

TYPE OF WORK: BRIDGE PRESERVATION - CLEANING AND PAINTING OF EXISTING STRUCTURES,
REPAIR OF STRUCTURAL STEEL, REPLACEMENT OF
BEARINGS.



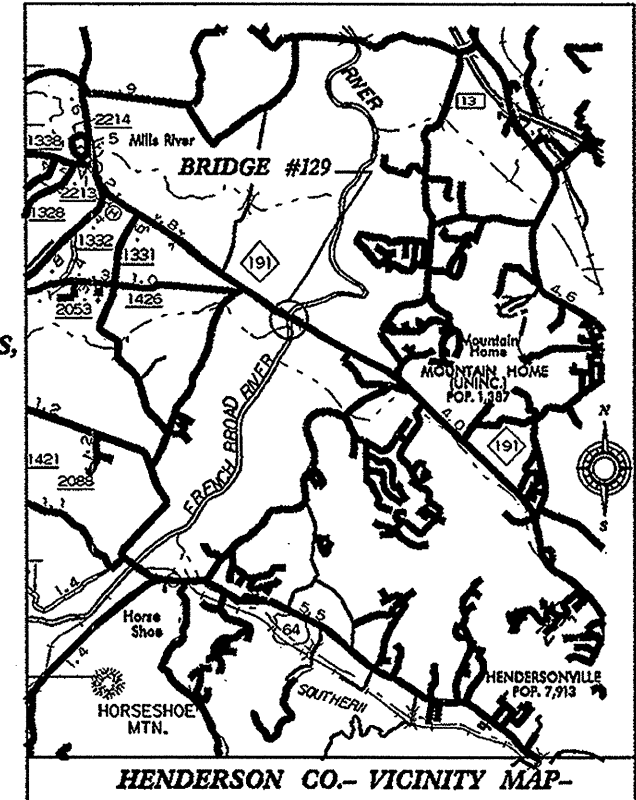
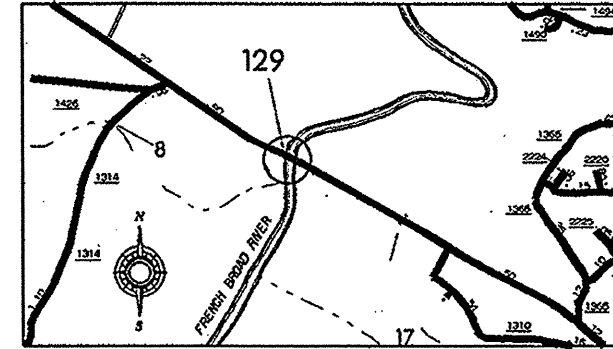
BRIDGE NO. 73



BRIDGE NO. 203

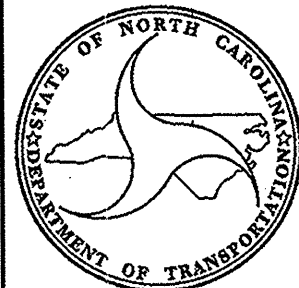


BRIDGE NO. 129



HENDERSON CO. - VICINITY MAP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.P.6	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
17BP.14.P.6		P.E.	
17BP.14.P.6		CONST.	



DESIGN DATA

HAYWOOD COUNTY
#22 ADT 2008 = 41,000
#73 ADT 2008 = 27,500
#203 ADT 2009 = 6,000

HENDERSON COUNTY
#129 ADT 2008 = 13,000

PROJECT LENGTH

BRIDGE HAYWOOD #22 = 0.03 MILE
BRIDGE HAYWOOD #73 = 0.05 MILE
BRIDGE HAYWOOD #203 = 0.05 MILE

BRIDGE HENDERSON #129 = 0.05 MILE

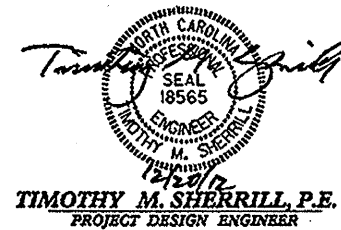
Prepared in the Office of:
**DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

STRUCTURES MANAGEMENT UNIT - PRESERVATION & REPAIR GROUP
1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

RICK NELSON, P.E.

2012 STANDARD SPECIFICATIONS

LETTING DATE:
MARCH 19, 2013



TIMOTHY M. SHERRILL, P.E.
PROJECT DESIGN ENGINEER

PROJECT: 17BP.14.P.6

CONTRACT: C203244



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.P.6	1A	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
17BP.14.P.6		P.E.	
17BP.14.P.6		CONST.	

**HAYWOOD AND HENDERSON
COUNTIES**

**LOCATION: BRIDGE #22, HAYWOOD CO., ON US 1923/74 OVER SR 1532 (JAMES COVE RD.)
BRIDGE #73, HAYWOOD CO., ON SR 1660 /US 74 (GREAT SMOKY MOUNTAIN EPY.) OVER US 1923
BRIDGE #202, HAYWOOD CO., ON US 276 (JONATHAN CREEK ROAD) OVER JONATHAN CREEK
BRIDGE #129, HENDERSON CO., ON NC 191 (HAYWOOD RD.) OVER FRENCH BROAD RIVER**

**TYPE OF WORK: BRIDGE PRESERVATION - CLEANING AND PAINTING OF EXISTING STRUCTURES,
REPAIR OF STRUCTURAL STEEL, REPLACEMENT OF BEARINGS.**

INDEX OF SHEETS

<i>1</i>	<i>TITLE SHEET</i>
<i>1A</i>	<i>INDEX OF SHEETS</i>
<i>2</i>	<i>SUMMARY OF QUANTITIES</i>
<i>S-1 THRU S-4</i>	<i>STRUCTURAL PLANS</i>
<i>TMP-1 THRU TMP-5</i>	<i>TRAFFIC MANAGEMENT PLANS</i>

PROJECT: 17BP.14.P.6

CONTRACT: C203244



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**HAYWOOD AND HENDERSON
COUNTIES**

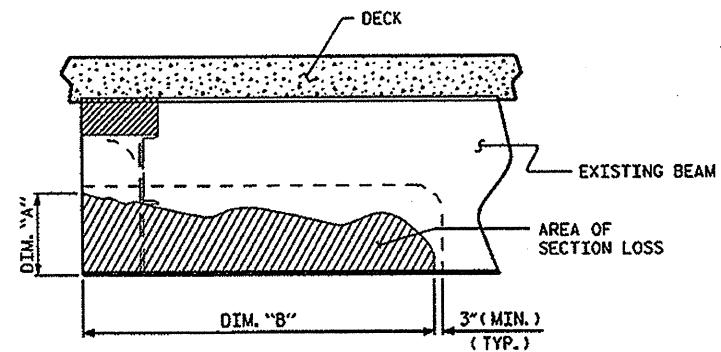
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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STATE PROJ. NO.		P.A. PROJ. NO.	
17BP.14.P.6		P.E.	
		CONST.	

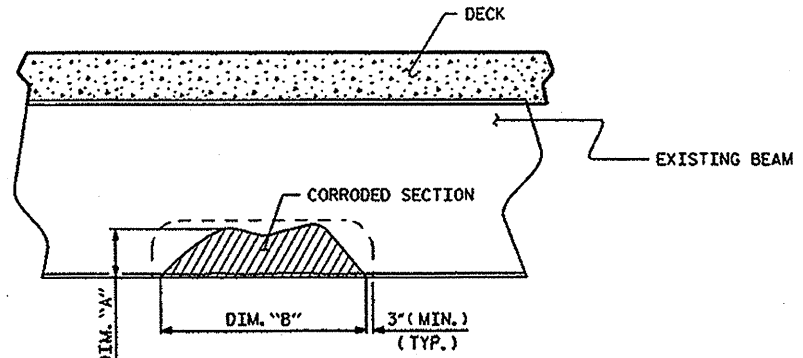
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203244

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
4400000000-E	1110	120	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	338	SF	WORK ZONE SIGNS (PORTABLE)
4415000000-N	1115	1	EA	FLASHING ARROW BOARD
4420000000-N	1120	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN
4430000000-N	1130	250	EA	DRUMS
4435000000-N	1135	20	EA	CONES
4450000000-N	1150	296	HR	FLAGGER
4480000000-N	1165	1	EA	TMA
4510000000-N	SP	192	HR	LAW ENFORCEMENT
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #129
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #203
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #22
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM BRIDGE JACKING BRIDGE #73
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #129
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #203
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #22
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PAINTING EXISTING STRUCTURE BRIDGE #73
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #129
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #203
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #22
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM POLLUTION CONTROL BRIDGE #73

ItemNumber	Sec #	Quantity	Unit	Description
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #129
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #203
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #22
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM UNDERSTRUCTURE WORK PLATFORM BRIDGE #73
8889000000-E	SP	8,932	LB	GENERIC STRUCTURE ITEM GIRDER REPAIR
8897000000-N	SP	16	EA	GENERIC STRUCTURE ITEM REPLACE EXPANSION BEARINGS
8897000000-N	SP	12	EA	GENERIC STRUCTURE ITEM REPLACE FIXED BEARINGS

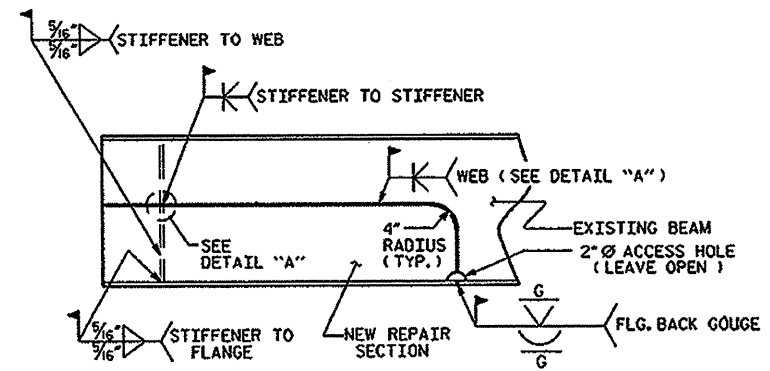


SECTION LOSS BEAM END REPAIR

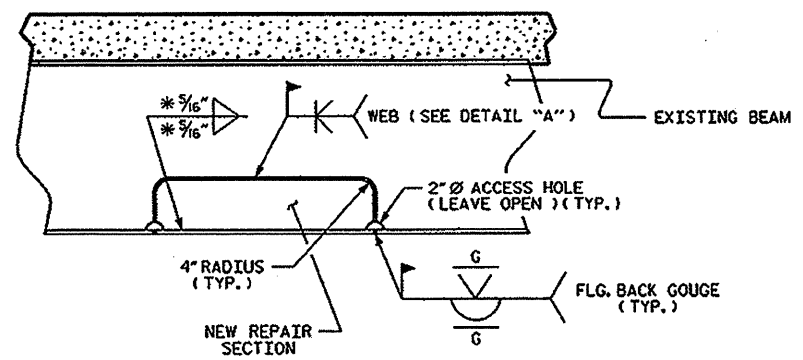


SECTION LOSS INTERMEDIATE BEAM REPAIR

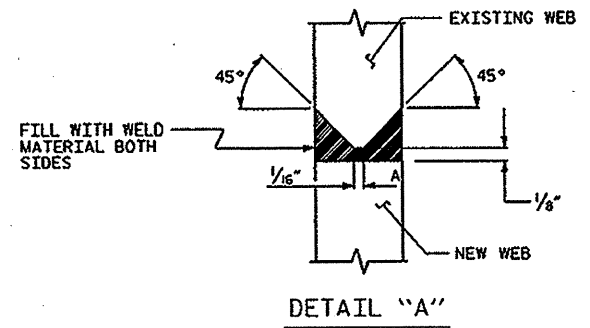
*NOT NEEDED IF REPAIRED SECTION IS CUT FROM A ROLLED BEAM



SECTION LOSS BEAM END REPAIR SECTION



SECTION LOSS INTERMEDIATE BEAM REPAIR SECTION



DETAIL "A"

TOTAL BILL OF MATERIAL			
SPAN JACKING	STRUCTURAL STEEL FOR GIRDER REPAIR	FIXED BEARING REPLACEMENT	EXPANSION BEARING REPLACEMENT
LUMP SUM	LBS.	EACH	EACH
LUMP SUM	8,932	12	16

FOR ANTICIPATED BEAM REPAIR LOCATIONS, SEE SHEET 2 OF 2.

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 CHANNELS AND/OR STIFFENERS MAY BE TEMPORARILY REMOVED, IF NECESSARY, AND REPLACED AFTER BEAM REPAIR.

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\"/>

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 SIMILAR SIZE BAR WITH AT LEAST A ONE FOOT SPICE 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.

PROJECT NO. 17BP.14.P.6
HAYWOOD COUNTY
HENDERSON

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM END AND INTERMEDIATE REPAIR DETAILS



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

DRAWN BY: P.C. BREWER DATE: 12/12
CHECKED BY: T. SHERRILL DATE: 12/12

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ANTICIPATED BEAM REPAIR LOCATIONS

COUNTY	BRIDGE	SPAN	BEAM	LOCATION	DIM. "A"	DIM. "B"
HAYWOOD	22	A	1	END BENT 1	10"	3'-0"
		A	11	END BENT 1	10"	3'-0"
		A	1	BENT 1	10"	3'-0"
		A	11	BENT 1	10"	3'-0"
		B	1	BENT 1	10"	3'-0"
		B	10	BENT 1	10"	4'-0"
		B	11	BENT 1	10"	3'-0"
		B	1	BENT 2	10"	3'-0"
		B	6	BENT 2	1'-0"	6'-0"
		B	11	BENT 2	10"	3'-0"
		C	1	BENT 2	1'-0"	4'-0"
		C	11	BENT 2	10"	3'-0"
		C	1	END BENT 2	10"	3'-0"
		C	11	END BENT 2	15"	4'-0"
HAYWOOD	73	A	1	BENT 1	1'-0"	5'-0"
		A	2	BENT 1	1'-0"	4'-0"
		A	3	BENT 1	10"	3'-0"
		A	4	BENT 1	1'-0"	4'-0"
		A	13	BENT 1	10"	4'-0"
		B	1	BENT 1	1'-0"	5'-0"
		B	2	BENT 1	1'-0"	4'-0"
		B	3	BENT 1	10"	3'-0"
		B	4	BENT 1	1'-0"	4'-0"
		B	13	BENT 1	10"	4'-0"
		B	1	BENT 2	10"	3'-0"
		B	13	BENT 2	10"	3'-0"
		B	14	BENT 2	10"	3'-0"
		C	1	BENT 2	10"	4'-0"
		C	6	BENT 2	10"	3'-0"
		C	14	BENT 2	10"	4'-0"
		C	15	BENT 2	1'-0"	5'-0"
		C	1	BENT 3	1'-0"	4'-0"
		C	7	BENT 3	1'-0"	4'-0"
		D	1	BENT 3	1'-0"	3'-0"
		D	4	BENT 3	1'-0"	3'-0"
		D	8	BENT 3	1'-0"	3'-0"
		D	13	BENT 3	1'-0"	3'-0"
		D	15	BENT 3	1'-0"	3'-0"
HAYWOOD	203	B	6	BENT 2	1'-0"	3'-0"
		C	1	BENT 2	1'-0"	4'-0"

PROJECT NO. 17BP.14.P.6
HAYWOOD COUNTY
HENDERSON

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BEAM END AND
 INTERMEDIATE
 REPAIR DETAILS



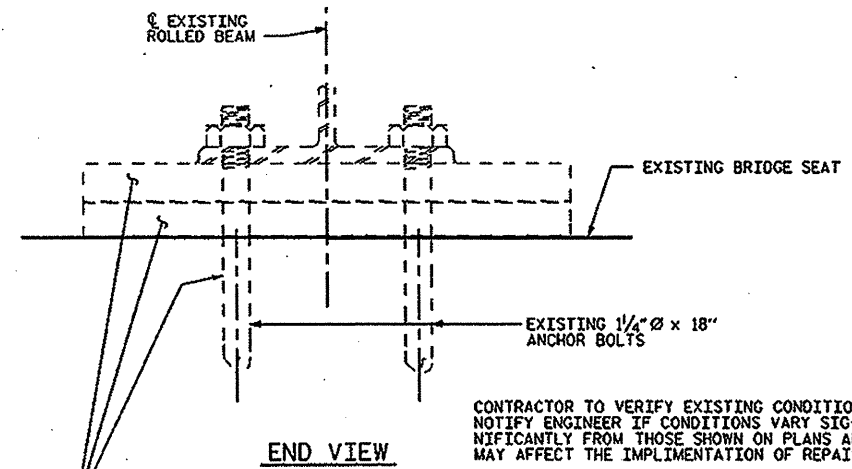
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1			3			TOTAL SHEETS
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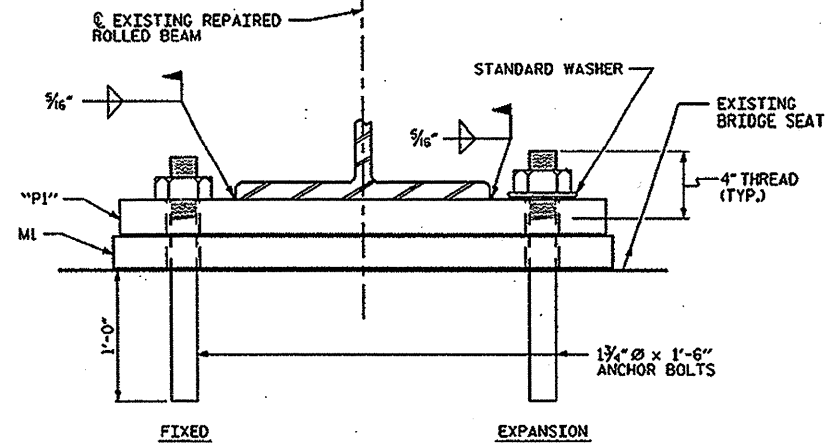
ANTICIPATED BEARING REPLACEMENT LOCATIONS

COUNTY	BRIDGE	SPAN	BEAM	LOCATION
HAYWOOD	22	A	1	END BENT 1
		A	11	END BENT 1
		A	1	BENT 1
		A	11	BENT 1
		B	1	BENT 1
		B	10	BENT 1
		B	11	BENT 1
		B	1	BENT 2
		B	6	BENT 2
		B	11	BENT 2
		C	1	BENT 2
		C	11	BENT 2
C	1	END BENT 2		
C	11	END BENT 2		
HAYWOOD	73	A	1	BENT 1
		A	4	BENT 1
		A	13	BENT 1
		B	1	BENT 1
		B	4	BENT 1
		B	13	BENT 1
		B	1	BENT 2
		C	1	BENT 2
		C	1	BENT 3
		D	8	BENT 3
		D	13	BENT 3
		D	15	BENT 3
HAYWOOD	203	B	6	BENT 2
		C	1	BENT 2

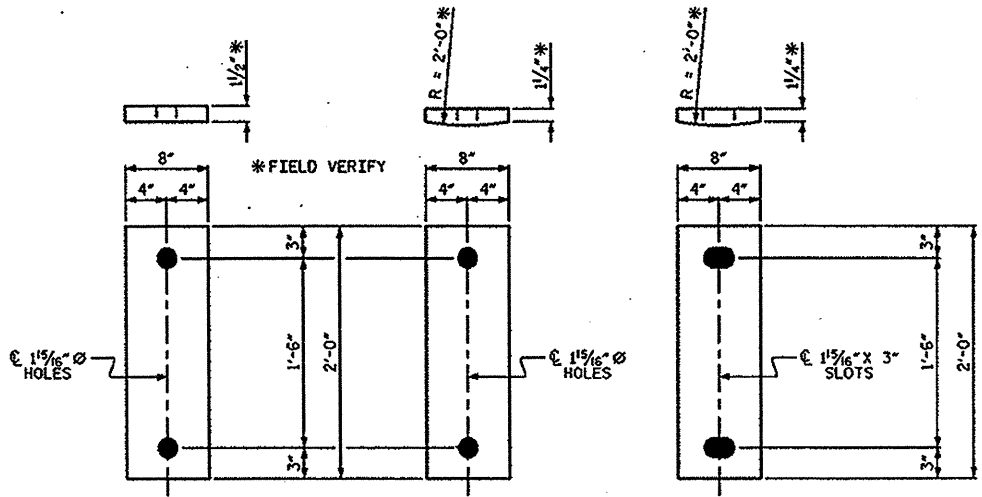


EXISTING SOLE PLATE AND MASONRY PLATE TO BE REMOVED (TYP.). EXISTING ANCHOR BOLTS TO BE CUT OFF FLUSH WITH THE TOP OF EXISTING BENT CAP.

CONTRACTOR TO VERIFY EXISTING CONDITIONS. NOTIFY ENGINEER IF CONDITIONS VARY SIGNIFICANTLY FROM THOSE SHOWN ON PLANS AND MAY AFFECT THE IMPLEMENTATION OF REPAIRS.



END VIEW (56 ANCHOR BOLTS REQUIRED)



M1 (28 REQ'D) P1 (12 REQ'D) P2 (16 REQ'D)
(FIXED) (EXPANSION)

BEARING REPAIR SEQUENCE

THE EXISTING BEARINGS DETERMINED FOR REPLACEMENT SHALL BE REMOVED AND REPLACED WITH BEARINGS AS SHOWN.

AT ALL POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS AND WASHERS. SHOP INSPECTION IS REQUIRED.

ALL 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.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE CONTRACTOR SHALL CORE INTO EXISTING BENT CAP TO INSTALL 1 1/2\"/>

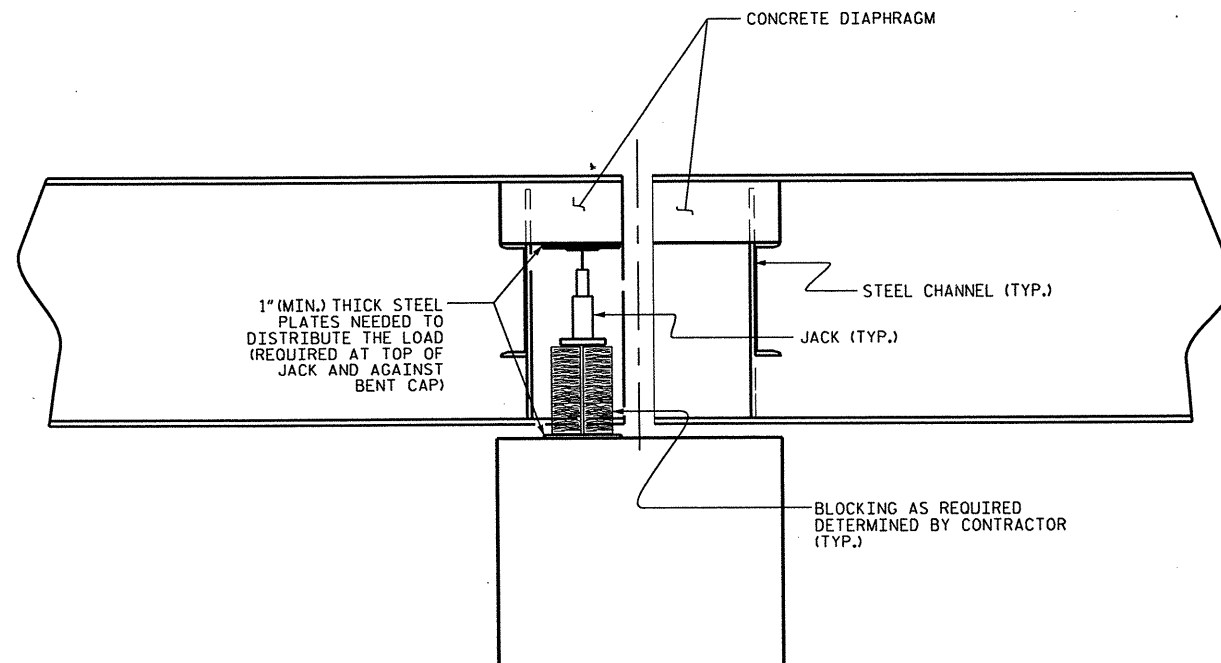


PROJECT NO. 17BP.14.P.6
HAYWOOD COUNTY
HENDERSON

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BEARING REPAIR DETAILS					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO.	
S-3	4

ASSEMBLED BY: P.C. BREWER DATE: 12/12
CHECKED BY: T. SHERRILL DATE: 12/12



SECTION THRU DIAPHRAGM

JACKING NOTES:

THE CONTRACTOR SHALL SUBMIT JACKING PLANS AND CALCULATIONS FOR REVIEW AND APPROVAL PRIOR TO MATERIAL PURCHASE OR FABRICATION OF THE JACKING SYSTEM.

THE CONTRACTOR SHALL JACK ALL GIRDERS IN A SPAN ON AN INDIVIDUAL BENT SIMULTANEOUSLY BY MEANS OF A DUAL-FLOW PRESSURIZED PUMP CONTROLLING THE JACKS.

THE SPAN SHALL BE LIFTED ENOUGH THAT THE BEAMS CLEAR THE BEARINGS AND ALL LOAD IS SUPPORTED BY THE JACKS. AFTER JACKING IS COMPLETE THE CONTRACTOR SHALL PROVIDE A METHOD TO SUPPORT THE SPAN FOR DEAD AND LIVE LOADS AND REMOVE THE JACKS DURING BEAM REPAIR OR IF JACKS REMAIN IN PLACE DURING THE ENTIRE JACKING AND REPAIR OPERATION IT SHALL HAVE MECHANICAL LOCK OFF CAPABILITIES.

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

PRIOR TO JACKING, THE CONTRACTOR SHALL ENSURE THERE ARE NO OBSTACLES PREVENTING THE SPAN FROM BEING LIFTED.

ALL ADJACENT BEARINGS OF BEAMS NOT BEING JACKED MAY BE LOOSENED TO DECREASE THE RESISTANCE OF THE DECK SLAB DURING JACKING. ALL BEARINGS LOOSENED SHALL BE TIGHTENED BACK AFTER THE BEAMS ARE REPAIRED AND THE JACKS AND BLOCKING HAVE BEEN REMOVED.

PAYMENT OF JACKING WILL BE MADE AT THE LUMP SUM PRICE BID FOR BRIDGE JACKING. SUCH LUMP SUM PRICE WILL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

PROJECT NO. 17BP.14.P.6
HAYWOOD COUNTY
HENDERSON

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BEAM END REPAIR AND
BEARING REPLACEMENT

JACKING DETAILS

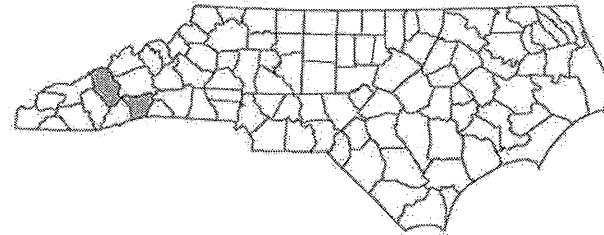
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			2			5-4
2			4			4

DRAWN BY : P.C. BREWER DATE : 12/12
CHECKED BY : T. SHERRILL DATE : 12/12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HAYWOOD & HENDERSON COUNTIES
DIVISION 14



HAYWOOD COUNTY

BRIDGE #22 – US 19/23/74 over SR 1532 (Jones Cove Rd)

BRIDGE #73 – SR 1660/US 74 (Great Smoky Mountain Expy) over US 19/23

BRIDGE #203 – US 276 (Jonathan Creek Rd) over Jonathan Creek

HENDERSON COUNTY

BRIDGE #129 – NC 191 (Haywood Rd) over French Broad River

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LEGEND AND LIST OF ROADWAY STANDARD DRAWINGS
TMP-2	GENERAL NOTES
TMP-3	PHASING
TMP-4	HAYWOOD BRIDGE #22 JONES COVE ROAD FLAGGING OPERATION
TMP-5	HAYWOOD BRIDGE #73 US 19/23/74 EB WORK AREAS

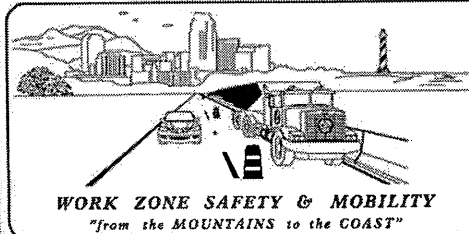
SHEET NO.

TMP-1

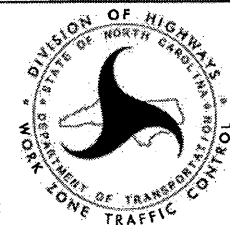
WBS 17BP.14.P.6

TRAFFIC MANAGEMENT STRATEGY

BRIDGE PAINTING OPERATIONS WILL BE ACCOMPLISHED USING TIME RESTRICTED LANE CLOSURES. REFER TO SHEET TMP-3 FOR PHASING.



PLAN PREPARED FOR NCDOT STRUCTURES MANAGEMENT UNIT
RALEIGH, NC



PLAN PREPARED BY:
Stantec Consulting Services Inc.
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BETSY L. WATSON, P.E. TRAFFIC ENGINEER
GEORGE KARAGEORGE SR. TRANSPORTATION DESIGNER




































APPROVED *Betsy L. Watson*
DATE: 12/19/12

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LEGEND


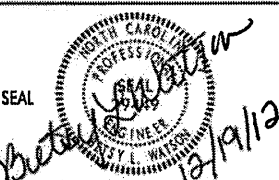

-  DIRECTION OF TRAFFIC FLOW
 -  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
 -  WORK AREA
 -  PAVEMENT REMOVAL
 -  NORTH ARROW
 -  TYPE III BARRICADE
 -  CONE
 -  DRUM
 -  SKINNY DRUM
 -  TUBULAR MARKER
 -  CHANGEABLE MESSAGE SIGN (CMS)
 -  FLAGGER
 -  AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)
 -  FLASHING ARROW BOARD (TYPE C)
 -  LAW ENFORCEMENT
 -  TRUCK MOUNTED ATTENUATOR (TMA)
 -  PORTABLE CONCRETE BARRIER (PCB)
 -  TEMPORARY CRASH CUSHION
 -  TEMPORARY SHORING
 -  WORK ZONE SIGN-PORTABLE
 -  WORK ZONE SIGN-STATIONARY
 -  WORK ZONE SIGN-STATIONARY OR PORTABLE
- SIGNALS**
-  EXISTING
 -  PROPOSED
 -  TEMPORARY
- PAVEMENT MARKINGS**
-  EXISTING PAVEMENT MARKING (GRAY)
 -  SKIP LINES
 -  MINI-SKIP LINES
 -  SOLID LINES
- PAVEMENT MARKING SYMBOLS**
-  PAVEMENT MARKING SYMBOLS
 -  EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)
 -  ONLY PAVEMENT MARKING ALPHANUMERIC CHARACTERS
- PAVEMENT MARKERS**
-  CRYSTAL / CRYSTAL
 -  CRYSTAL / RED
 -  YELLOW / YELLOW

ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION

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 <p>Stantec Consulting Services Inc. 601 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	<p>APPROVED: _____ DATE: _____</p> <p>SEAL</p> 		<p>LEGEND & ROADWAY STANDARD DRAWINGS</p>
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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 A LANE OF TRAFFIC DURING THE FOLLOWING TIME RESTRICTIONS:

ROAD NAME	COUNTY	BRIDGE NUMBER
US 19/US 23/US 74	HAYWOOD	22
US 19/US 23	HAYWOOD	73
SR 1660/US 74	HAYWOOD	73
US 276 (JONATHAN CREEK RD)	HAYWOOD	203

DAY AND TIME RESTRICTIONS
 6:00 A.M.-7:00 P.M. MONDAY THRU THURSDAY
 6:00 A.M. FRIDAY - 7:00 P.M. SUNDAY

ROAD NAME	COUNTY	BRIDGE NUMBER
NC 191	HENDERSON	129

DAY AND TIME RESTRICTIONS
 6:00 A.M.-9:00 A.M. MONDAY THRU FRIDAY AND
 4:00 P.M.-7:00 P.M. MONDAY THRU FRIDAY

ROAD NAME	COUNTY	BRIDGE NUMBER
SR 1532 (JONES COVE RD.)	HAYWOOD	22

DAY AND TIME RESTRICTIONS
 7:00 A.M.-7:30 P.M. MONDAY THRU FRIDAY

HOLIDAY, HOLIDAY WEEKEND AND SPECIAL EVENT LANE CLOSURE AND ROAD CLOSURE TIME RESTRICTIONS

B) DO NOT CLOSE A ROADWAY, 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
- 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 7:30 P.M. JANUARY 2nd. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:30 P.M. THE FOLLOWING TUESDAY.
 - 3) FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:30 P.M. MONDAY.
 - 4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:30 P.M. TUESDAY.
 - 5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:30 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 7:30 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
 - 6) FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:30 P.M. TUESDAY.
 - 7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:30 P.M. MONDAY.
 - 8) FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:30 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
JONATHAN CREEK RD SOUTHBOUND	6:00 A.M.-9:00 A.M. MONDAY-FRIDAY 4:00 P.M.-7:00 P.M. MONDAY-FRIDAY	5 MINUTES MAX STOPPAGE TO HANG CONTAINMENT

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) LANE CLOSURES ARE REQUIRED WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN ANY PORTION OF A TRAVEL LANE. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) INSTALL ALL LANE CLOSURES ACCORDING TO THE PLANS, ROADWAY STANDARD DRAWINGS (1101.02), OR AS DIRECTED BY THE ENGINEER.
- F) 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 SIGNS.
- G) INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- H) 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.
- I) 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.
- J) 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.
- K) UNLESS OTHERWISE SHOWN IN THE PLANS, PLACE ARROW BOARDS ON THE ROADWAY SHOULDER. IF SHOULDERS DO NOT EXIST, PLACE ARROW BOARDS WITHIN THE MERGE TAPER BEHIND THE CHANNELIZING DEVICES OF THE LANE CLOSURE. IF NEEDED, EXTEND LANE CLOSURES TO PROVIDE STOPPING SIGHT DISTANCE TO THE ARROW BOARD (REFER TO ROADWAY STANDARD DRAWING 1101.11 SHEET 2).
- L) PLACE LANE CLOSURE DRUMS IN TAPERS AT A MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT (MPH). ALONG BUFFER SPACES AND WORK AREAS SPACE DRUMS AT A MAXIMUM SPACING EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT (MPH). IN ALL CASES, CHANNELIZING DEVICES ARE TO BE SPACED IN SUCH A MANNER AS TO POSITIVELY ACHIEVE THE INTENDED VISUAL CHANNELIZATION. CHANNELIZING DEVICES SHOULD BE Laterally OFFSET 3 FT INSIDE THE CLOSED LANE AS ROOM PERMITS.
- M) WHENEVER TAPERS ARE TO BE USED IN CLOSE PROXIMITY TO AN INTERCHANGE RAMP, CROSSROADS, CURVES, OR OTHER INFLUENCING FACTORS, THE LENGTH OF STANDARD TAPERS MAY BE ADJUSTED, IF APPROVED BY THE ENGINEER.

FLAGGER OPERATIONS

- N) DURING FLAGGER OPERATIONS DO NOT STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME.
- O) LOCATE FLAGGER STATIONS SUCH THAT APPROACHING TRAFFIC WILL HAVE SUFFICIENT DISTANCE TO STOP AT THE INTENDED STOPPING POINT. IF NEEDED, EXTEND THE LANE CLOSURE SUCH THAT THE FLAGGER STATION IS POSITIONED BEFORE A HORIZONTAL OR CREST VERTICAL CURVE WHERE ADEQUATE STOPPING SIGHT DISTANCE TO THE FLAGGER IS PROVIDED. REFER TO ROADWAY STANDARD DRAWING 1101.11 SHEET 2.
- P) FLAGGERS SHALL NOT STAND IN THE ROADWAY.
- Q) USE FLAGGERS TO CONTROL VEHICLES AT INTERSECTIONS OR RAILROAD GRADE CROSSINGS AFFECTED BY THE LANE CLOSURE. USE FLAGGER SIGN W20-7A IN ADVANCE OF ALL FLAGGER STATIONS. WHEN AN INTERSECTION IS SIGNALIZED HAVE AUTHORIZED PERSONNEL PLACE THE SIGNAL IN FLASH MODE WHEN DIRECTED BY THE ENGINEER.
- R) PROVIDE ILLUMINATION FOR FLAGGER STATIONS DURING NIGHT HOURS. ILLUMINATION FOR FLAGGER STATIONS WILL NOT BE PAID FOR SEPARATELY AND WILL BE CONSIDERED INCIDENTAL TO OTHER ITEMS IN THE CONTRACT.
- S) PLACE CHANNELIZING DEVICES FOR FLAGGER OPERATION LANE CLOSURES AT A MAXIMUM SPACING OF 20 FEET IN TAPERS AND AT A MAXIMUM SPACING OF 80 FEET ALONG THE BUFFER SPACE AND WORK AREA.
- T) DRUMS OR SKINNY DRUMS MAY BE USED INSTEAD OF CONES AT NO ADDITIONAL COST.
- U) USE PILOT VEHICLES IN CONJUNCTION WITH FLAGGERS WHEN SHOWN IN THE PLAN OR WHEN DIRECTED BY THE ENGINEER. MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A VISIBLE LOCATION ON THE REAR OF PILOT VEHICLES.
- V) ADVISE RESIDENTS AND BUSINESSES AFFECTED BY THE LANE CLOSURE ABOUT METHODS OF SAFE INGRESS AND EGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.


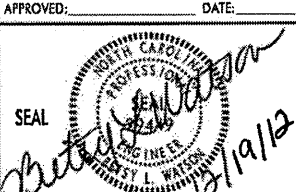

MISCELLANEOUS

- W) USE LAW ENFORCEMENT TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER. LOCATIONS SHOWN IN THE PLANS ARE APPROXIMATE AND MAY BE REVISED AS THE OFFICER OR THE ENGINEER DEEM NECESSARY.
- X) ALL DIMENSIONS AND STATIONS IN THE TRAFFIC MANAGEMENT PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- Y) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.
- Z) CHANGEABLE MESSAGE SIGN MESSAGES SHOWN ARE EXAMPLES. OTHER MESSAGES MAY BE USED AS CONDITIONS WARRANT. ALL MESSAGES AND LOCATIONS MUST BE APPROVED BY THE ENGINEER PRIOR TO INCORPORATING.
- AA) DO NOT PERFORM WORK FROM THE ROADWAY ON TOP OF ANY BRIDGE EXCEPT HAYWOOD 203 AND HENDERSON 129, UNLESS SPECIFICALLY ALLOWED IN THE PLAN OR BY THE ENGINEER.

TRAFFIC SIGNALS

- BB) COORDINATE WITH LAW ENFORCEMENT IF TRAFFIC SIGNALS ARE TO BE PLACED IN FLASH MODE.

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 <p style="font-size: 8px;">Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27605 Tel. (919) 851-6066 Fax. (919) 851-7024 www.stantec.com License No. F-0572</p>	APPROVED: _____ DATE: _____ 		<h2 style="margin: 0;">GENERAL NOTES</h2>
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PHASING

PERFORM BRIDGE PAINTING OPERATIONS USING THE TRAFFIC CONTROL METHODS
OUTLINED BELOW:

HAYWOOD COUNTY

BRIDGE #22 - US 19/23/74 OVER SR 1532 (JONES COVE RD)
USE FLAGGING OPERATIONS WITH LAW ENFORCEMENT ON JONES COVE ROAD PER SHEET
TMP-4.

BRIDGE #73 - SR 1660/US 74 (GREAT SMOKY MOUNTAIN EXPY) OVER US 19/23/74
USE LANE CLOSURES ON US 19/23/74 WB PER ROADWAY STANDARD DRAWING 1101.02
SHEETS 3 OR 5.

FOR WORK AREAS ON US 19/23/74 EB, SEE SHEET TMP-5.


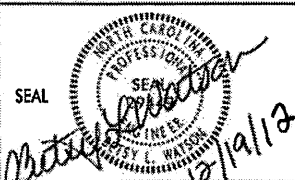
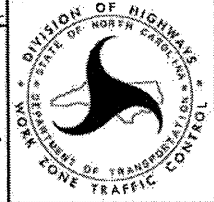
BRIDGE #203 - US 276 (JONATHAN CREEK RD) OVER JONATHAN CREEK
FOR HANGING CONTAINMENT OR PAINTING OPERATIONS ON JONATHAN CREEK ROAD NB
USE RIGHT LANE CLOSURE PER ROADWAY STANDARD DRAWING 1101.02 SHEET 3.

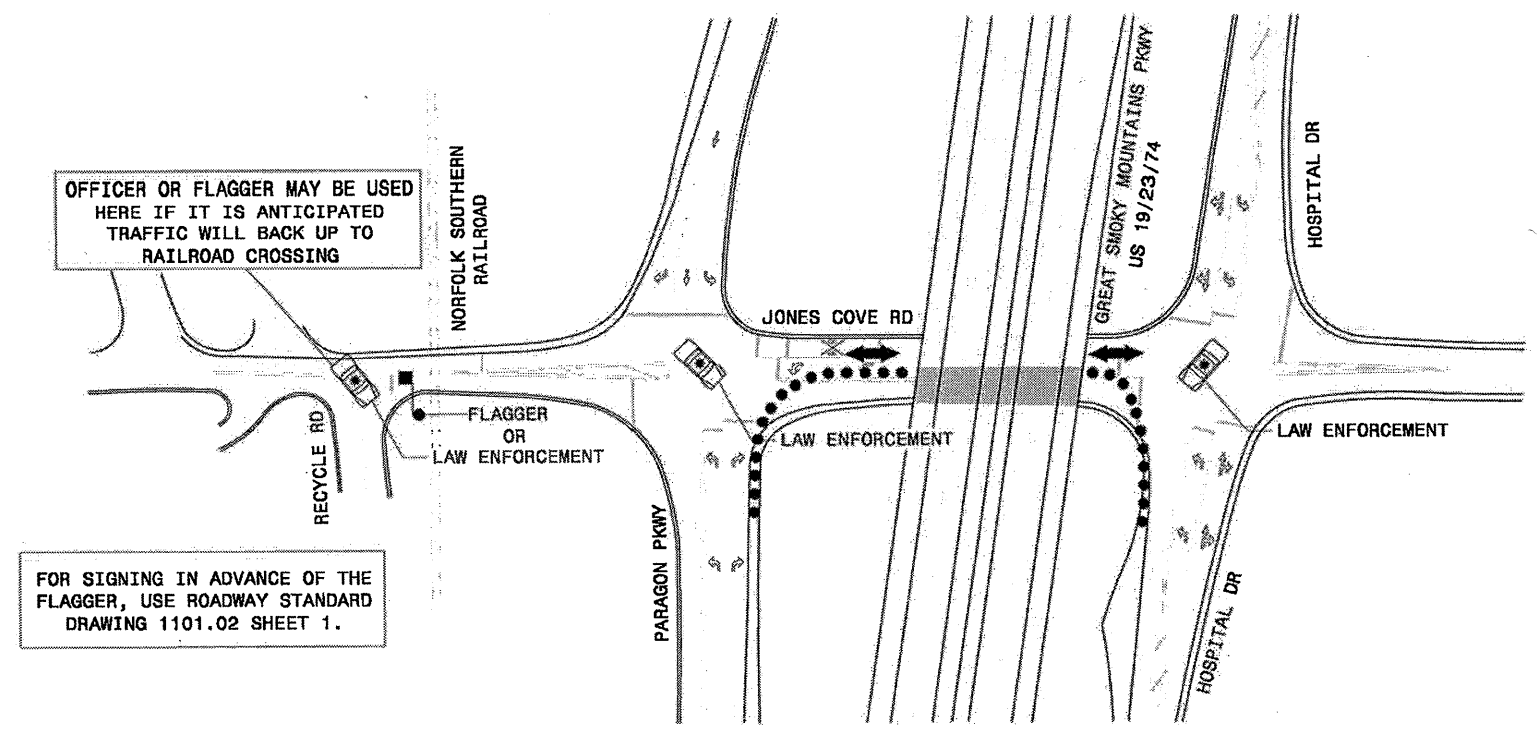
TRAFFIC ON JONATHAN CREEK ROAD SB MAY BE STOPPED A MAXIMUM OF 5 MINUTES TO
INSTALL AND REMOVE CONTAINMENT. USE FLAGGER WITH "FLAGGER AHEAD" (W20-7A)
SIGN, WHEN STOPPING TRAFFIC.

HENDERSON COUNTY


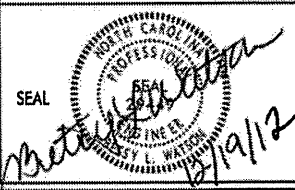
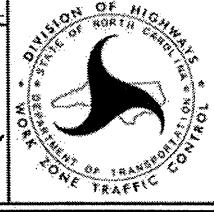
BRIDGE #129 - NC 191 (HAYWOOD RD) OVER FRENCH BROAD RIVER
USE FLAGGING OPERATIONS ON HAYWOOD ROAD PER ROADWAY STANDARD DRAWING
1101.02 SHEET 1.

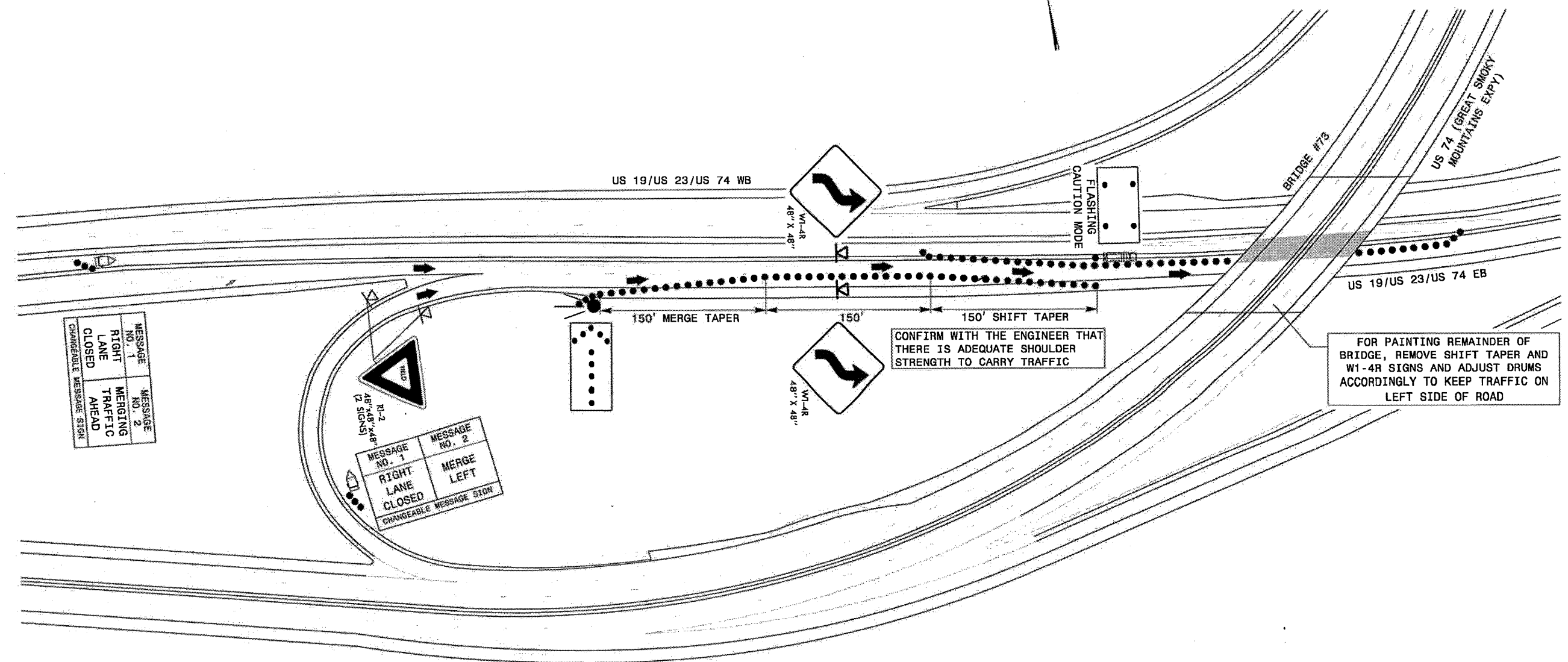
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 Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel: (919) 851-8866 Fax: (919) 851-7024 www.stantec.com License No. P-3972	APPROVED: _____ DATE: _____  <i>Gregory L. Watson</i> 2/19/12		HAYWOOD BRIDGE #22 JONES COVE ROAD FLAGGING OPERATION
	SEAL		



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<p>Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672</p>	APPROVED: _____ DATE: _____ 	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TRUCK ZONE TRAFFIC CONTROL</p>	<p>HAYWOOD BRIDGE #73</p> <p>US 19/23/74 EB WORK AREAS</p>