# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

### TRANSPORTATION MANAGEMENT PLAN

## FORSYTH COUNTY **DIVISION** 9



FORSYTH CO. BRIDGE #27 - US 52/NC 8 (JOHN GOLD MEMORIAL EXPY.) NORTHBOUND OVER OLD US 52 FORSYTH CO. BRIDGE #28 - US 52/NC 8 (JOHN GOLD MEMORIAL EXPY.) SOUTHBOUND OVER OLD US 52

#### INDEX OF SHEETS

SHEET NO.

TMP-3

TITLE

TMP-1

-5500R

80

TMP-1 TITLE SHEET AND INDEX OF SHEETS

TMP-1A

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND

TRANSPORTATION OPERATIONS PLAN: TRAFFIC MANAGEMENT STRATEGY AND GENERAL NOTES TMP-2

TEMPORARY TRAFFIC CONTROL PHASING

FORSYTH CO. BRIDGE #27 - BRIDGE CLOSURE TMP-4

TMP-5 FORSYTH CO. BRIDGE #28 - BRIDGE CLOSURE

> APPROVED: Stantec |

WORK ZONE SAFETY & MOBILITY "from the MOUNTAINS to the COAST"

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

D.W. BISSETTE, PE CENTRAL WORK ZONE TRAFFIC CONTROL ENGINEER

MIKE STEELMAN TRAFFIC CONTROL PROJECT DESIGN ENGINEER

D. ALLEN HAYES, EI TRAFFIC CONTROL DESIGN ENGINEER



SENTOR TRANSPORTATION ENGINEER
GEORGE M. KARAGEORGE, PE
SENTOR TRANSPORTATION ENGINEER



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
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND THA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

### **LEGEND**

PROJ. REFERENCE NO. SHEET NO.

BP-5500R TMP-1A

#### **GENERAL**

DIRECTION OF TRAFFIC FLOW

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

PROPOSED PVMT.

NORTH ARROW

TEMP. SHORING (LOCATION PURPOSES ONLY)

WORK AREA

CONSTRUCTION STARTED FROM PREVIOUS PHASE

PAVEMENT REMOVAL

TEMPORARY PAVEMENT

#### SIGNALS

EXISTING





#### PAVEMENT MARKINGS

----EXISTING LINES

#### TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

CONE

DRUM 

SKINNY DRUM 

TUBULAR MARKER

FLASHING ARROW BOARD

FLAGGER

LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

CHANGEABLE MESSAGE SIGN
TEMPORARY CRASH CUSHION

PORTABLE CONCRETE BARRIER

#### TEMPORARY SIGNING

PORTABLE SIGN

- STATIONARY SIGN

STATIONARY OR PORTABLE SIGN

#### PAVEMENT MARKERS

CRYSTAL/CRYSTAL

GRYSTAL/RED

♦ YELLOW/YELLOW

#### PAVEMENT MARKING SYMBOLS

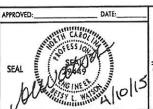
PAVEMENT MARKING SYMBOLS

A EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)

PAVEMENT MARKING ALPHANUMERIC CHARACTERS

Stantec

Stantec Consulting Services Inc. 801 Jones Frankfin Road-Suite 300 Raleigh, NC 27606 Tal. (816) 851-8856 Fax (818) 851-7024 www.stantec.com License No. F-0672





ROADWAY STANDARD DRAWINGS LEGEND

#### GENERAL NOTES

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

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

#### TIME RESTRICTIONS

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

DAY AND TIME RESTRICTIONS

US 52/OLD US 52

6:00 A.M.-8:00 P.M. MONDAY THRU SUNDAY (EVERY DAY)

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

ALL ROADS

#### 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
- 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.
- 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
- 9) FOR BB&T BALLPARK EVENTS (WINSTON-SALEM DASH GAMES), WINSTON-SALEM AIR SHOW, WAKE FOREST UNIVERSITY EVENTS, LAWRENCE JOEL VETERANS MEMORIAL COLISEUM EVENTS, BB&T FIELD EVENTS, WINSTON-SALEM STATE UNIVERSITY EVENTS, BOWMAN GREY STADIUM EVENTS, DIXIE CLASSIC FAIR, AND ANY OTHER EVENTS AS DETERMINED BY THE ENGINEER, FOR THREE (3) HOURS BEFORE THE EVENT AND THREE (3) HOURS FOLLOWING THE EVENT.
- C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME US 52

DAY AND TIME RESTRICTIONS 5:00 A.M.-B:00 P.M. MONDAY THRU SUNDAY (EVERY DAY)

**DURATION / OPERATION** 9 HOUR ALLOWABLE CLOSURE WITH "ALL TRAFFIC EXIT" CONDITION FOR LMC OVERLAY OF BRIDGES 27 AND 28 WITH ONLY ONE DIRECTION OF US 52 CLOSED AT ONE TIME.

#### LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING 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 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.

- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT 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.
- H) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

#### TRAFFIC PATTERN ALTERATIONS

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

#### SIGNING

- J) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLANS.
- K) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
- L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

#### TRAFFIC CONTROL DEVICES

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

#### PAVEMENT MARKINGS AND MARKERS

0) IF NEEDED, INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

US 52

MARKING PATNT

MARKER

TEMPORARY RAISED

- P) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING
- R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BEFORE OPENING TO TRAFFIC.

- S) ENSURE THE OVERSIZED/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.
- T) USE LAW ENFORCEMENT TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND / OR INTERSECTIONS AS SHOWN IN PLANS OR DIRECTED BY THE

#### TRAFFIC MANAGEMENT STRATEGY

BRIDGE PAINTING AND REPAIR OPERATIONS WILL BE ACCOMPLISHED USING TIME RESTRICTED LANE CLOSURES.

LMC OVERLAY OF BRIDGES 27 AND 28 WILL BE ACCOMPLISHED USING 9-HOUR OVERNIGHT BRIDGE CLOSURES, USING THE INTERCHANGE RAMPS AS A TEMPORARY ON-SITE DETOUR.

Stantec

Stantec Consulting Services Inc 801 Jones Franklin Road-Suite 300 Raleigh NC 27806 Tal (010) 851\_8866 www.stantec.com License No. F-0872





TRANSPORTATION OPERATIONS PLAN

TRAFFIC MANAGEMENT STRATEGY **GENERAL NOTES** 

PROJ. REFERENCE NO. SHEET NO. BP - 5500R TMP - 3

#### PHASING

FOR BOTH BRIDGES, IF LANE CLOSURES ARE NECESSARY ON OLD US 52, USE RSD 1101.02 SHEET 7 OF 15. IF LANE CLOSURES ARE NECESSARY ON US 52, USE RSD 1101.02 SHEETS 3, 6, AND / OR 10 OF 15. REFER TO LANE CLOSURE TIME RESTRICTIONS ON SHEET TMP-2.

DO NOT CLOSE BOTH DIRECTIONS OF US 52 AT THE SAME TIME.

FORSYTH COUNTY BRIDGE #27 - US 52 NORTHBOUND OVER OLD US 52

STEP 1.

BEGIN BRIDGE REPAIRS AND SECURE CONTAINMENT. IF NECESSARY, USE LANE CLOSURES ON OLD US 52 PER RSD 1101.02 SHEET 7 OF 15; AND LANE CLOSURES ON US 52 PER RSD 1101.02 SHEETS 3, 6, AND /OR 10 OF 15.

STEP 2.

INSTALL ROAD CLOSURE SIGNING ACCORDING TO TMP-4 AND RSD 1101.03 SHEET 7 OF 9, AND COVER SIGNS AS APPROPRIATE.

STEP 3.

IN ONE CONTINUOUS WORK PERIOD, UNCOVER ROAD CLOSURE SIGNING, AND INSTALL DEVICES TO CLOSE US 52 NORTHBOUND AND IMPLEMENT "ALL TRAFFIC EXIT CONDITION" PER SHEET TMP-4 AND RSD 1101.03 SHEET 7 OF 9.

STEP 4.

WITH US 52 NORTHBOUND CLOSED TO TRAFFIC, PERFORM LMC OVERLAY AND REPLACE PAVEMENT MARKINGS AND MARKERS FOR A PORTION OF THE BRIDGE THAT CAN BE COMPLETED IN ONE OVERNIGHT WORK PERIOD.

STEP 5.

REMOVE DEVICES AND COVER OR REMOVE SIGNS CLOSING US 52 NORTHBOUND, AND RE-OPEN BRIDGE #27 TO TRAFFIC.

STEP 6.

REPEAT STEPS 3, 4 AND 5 TO COMPLETE LMC OVERLAY OF THE ENTIRE BRIDGE.

STEP 7.

COMPLETE STEEL BEAM REPAIR, GIRDER PAINTING, AND ANY REMAINING WORK USING LANE CLOSURES ON US 52 AND / OR OLD US 52.

STEP 8.

REMOVE ALL WORK ZONE TRAFFIC CONTROL SIGNING AND DEVICES.

FORSYTH COUNTY BRIDGE #28 - US 52 SOUTHBOUND OVER OLD US 52

STEP 1

BEGIN BRIDGE REPAIRS AND SECURE CONTAINMENT. IF NECESSARY, USE LANE CLOSURES ON OLD US 52 PER RSD 1101.02 SHEET 7 OF 15; AND LANE CLOSURES ON US 52 PER RSD 1101.02 SHEETS 3, 6, AND /OR 10 OF 15.

STEP 2.

INSTALL ROAD CLOSURE SIGNING ACCORDING TO TMP-5 AND RSD 1101.03 SHEET 7 OF 9, AND COVER SIGNS AS APPROPRIATE.

STEP 3.

IN ONE CONTINUOUS WORK PERIOD, UNCOVER ROAD CLOSURE SIGNING, AND INSTALL DEVICES TO CLOSE US 52 SOUTHBOUND AND IMPLEMENT "ALL TRAFFIC EXIT CONDITION" PER SHEET TMP-5 AND RSD 1101.03 SHEET 7 OF 9.

STEP 4.

WITH US 52 SOUTHBOUND CLOSED TO TRAFFIC, PERFORM LMC OVERLAY AND REPLACE PAVEMENT MARKINGS AND MARKERS FOR A PORTION OF THE BRIDGE THAT CAN BE COMPLETED IN ONE OVERNIGHT WORK PERIOD.

STEP 5

REMOVE DEVICES AND COVER OR REMOVE SIGNS CLOSING US 52 SOUTHBOUND, AND RE-OPEN BRIDGE #28 TO TRAFFIC.

STEP 6

REPEAT STEPS 3, 4 AND 5 TO COMPLETE LMC OVERLAY OF THE ENTIRE BRIDGE.

STEP 7.

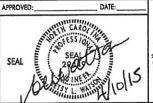
COMPLETE STEEL BEAM REPAIR, GIRDER PAINTING, AND ANY REMAINING WORK USING LANE CLOSURES ON US 52 AND / OR OLD US 52.

STEP 8.

REMOVE ALL WORK ZONE TRAFFIC CONTROL SIGNING AND DEVICES.



Stantac Consulting Services Inc. 801 Jones Franklin Road-Suite 300 Raleigh, NC 27806 Tel. (819) 851-8866 Fax. (919) 851-7024 www.stantac.com Licones No. F-0872





PHASING

