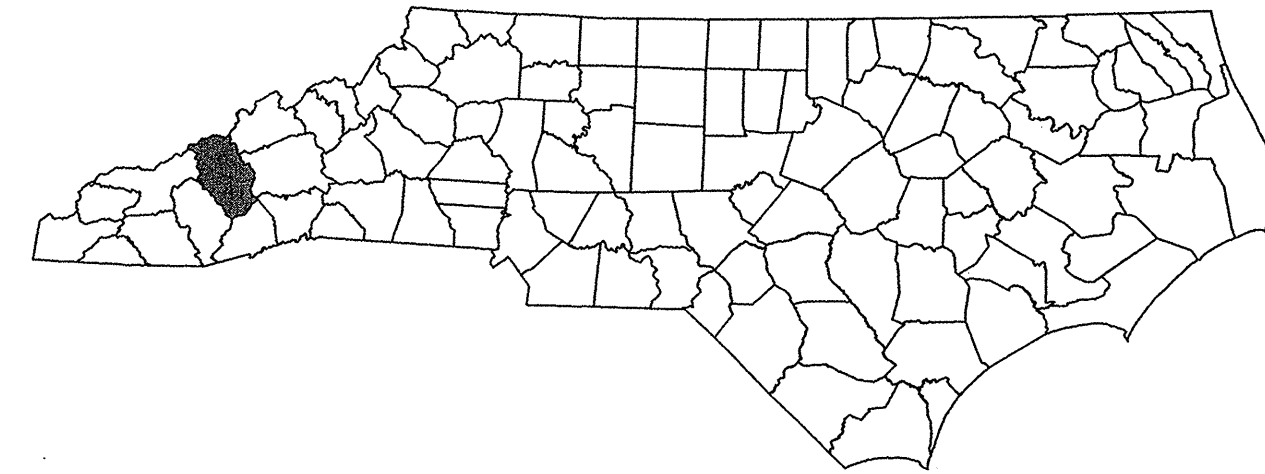


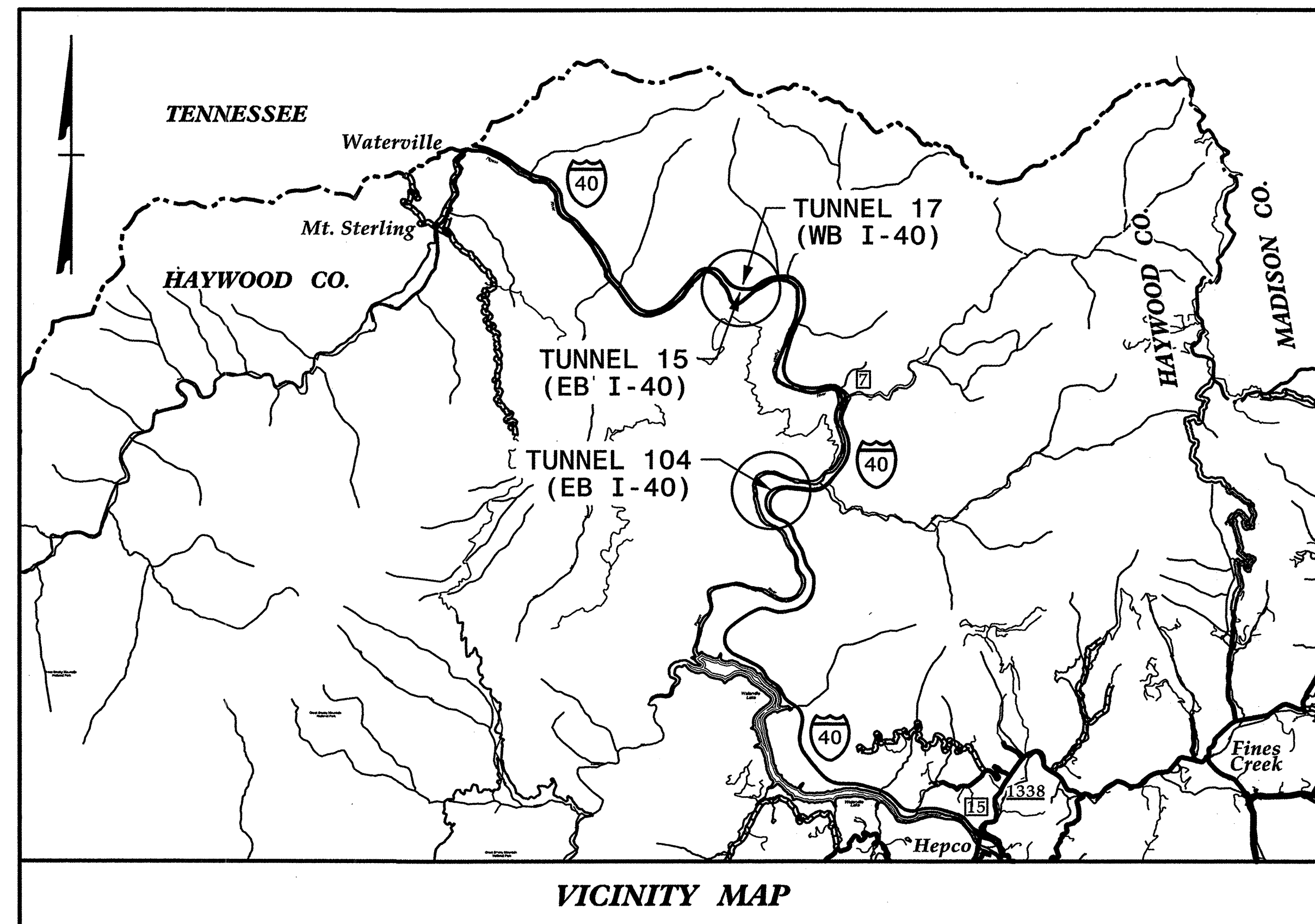
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HAYWOOD COUNTY



LOCATION: TUNNEL 15, TUNNEL 17 AND TUNNEL 104 ON I-40 BETWEEN THE TENNESSEE STATE LINE AND SR 1338 (FINES CREEK ROAD - EXIT 15)



VICINITY MAP

INDEX OF SHEETS	
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-2	PROJECT NOTES
TMP-3	PHASING
TMP-4	TUNNEL 17/104 - TYPICAL SECTIONS

SHEET NO.
TMP-1

I-5512

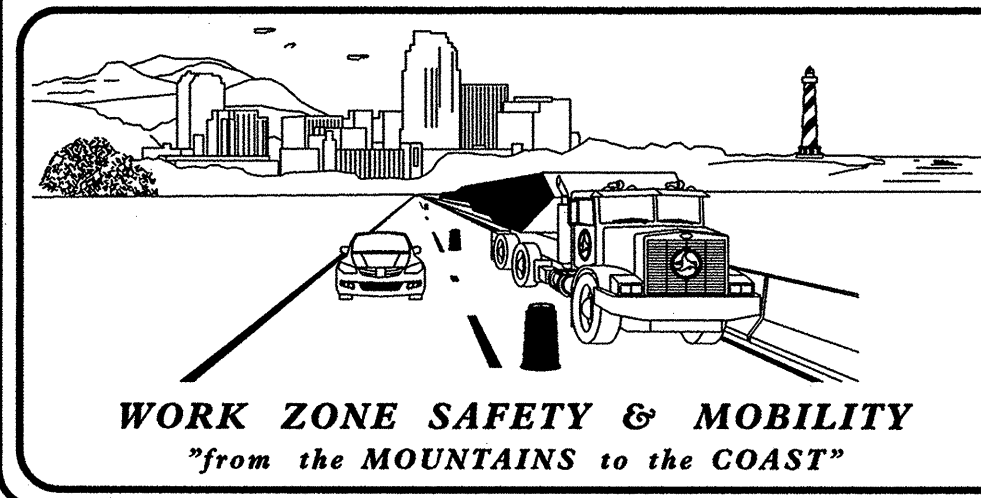
TIP PROJECT:

PLAN PREPARED BY: HDR ENGINEERING, INC. OF THE CAROLINAS
 MATTHEW MOYER, P.E. STRUCTURE PROJECT MANAGER
 MICHELLE WARD, P.E. TRAFFIC CONTROL PROJECT ENGINEER
 CHRIS HARNDEN TRAFFIC CONTROL DESIGN ENGINEER

APPROVED: *Michelle Ward*
 DATE: 7/2/2014

SEAL

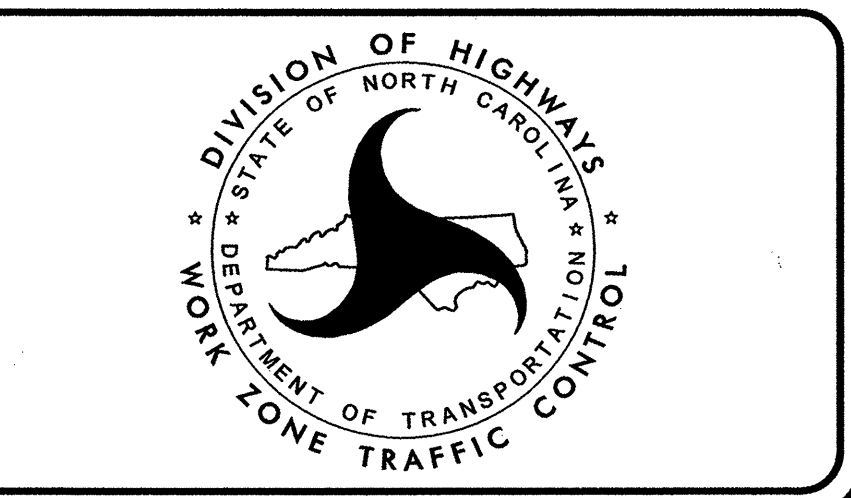
PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
 USER: charnden
 FILE: P:\WPAPP\PA01\SouthEast\Tempa\Documents\000166\CON0060564\000000000187101\13.00.CAD\TMP\17BP14P10_TMP_TMP-01.dgn
 PENTABLE: NCDOT_tcp.tbl
 DATE: 7/2/2014
 TIME: 1:31:50 PM



REVIEWED BY:


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
 JAY WOOLARD, P.E. TRAFFIC CONTROL PROJECT ENGINEER
 _____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER
 _____ TRAFFIC CONTROL DESIGN ENGINEER



HDR HDR Engineering, Inc. of the Carolinas
 3733 National Drive, Suite 307 Raleigh, N.C. 27612
 N.C.B.E.L.S. License Number: F-0116

GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
I-5512	TMP-2
 HDR Engineering, Inc. of the Carolinas 3733 National Drive, Suite 207 Raleigh, N.C. 27612 N.C.B.E.L.S. License Number: F-0116	

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. MODIFICATIONS 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 PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR AS DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

ROAD NAME	DAY & TIME RESTRICTIONS
I-40	MONDAY-SUNDAY: 6:00 AM TO 9:00 PM

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

- | ROAD NAME | DAY & TIME RESTRICTIONS |
|-----------|-------------------------|
| I-40 | |
- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
 - FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 9:00 P.M. JANUARY 2ND. IF NEW YEARS DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OF MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
 - FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
 - FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
 - FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
 - FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
 - FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY AND 9:00 P.M. MONDAY.
 - FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CLOSE ROAD AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-40 AT TUNNEL 15	MONDAY-SUNDAY: 6:00 AM TO 9:00 PM

D) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
1.) I-40 (TUNNEL (17 AND 104)	MONDAY-SUNDAY: 4:00 A.M. TO 12:00 A.M. (MIDNIGHT)	30 MINUTES FOR TUNNEL REPAIRS AS SHOWN ON TYPICAL SECTION 3 ON SHEET TMP-4 (CENTER OF TUNNEL)
2.) I-40 (ALL TUNNEL LOCATIONS)	MONDAY - SUNDAY: 4:00 A.M. TO 12:00 A.M. (MIDNIGHT)	15 MINUTES FOR MATERIAL DELIVERY

E) 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

- 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.
- G) 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.
- H) 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.
- I) 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.
- J) 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.
- K) DO NOT INSTALL MORE THAN 2 MILES OF LANE CLOSURE ON I-40 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

PAVEMENT EDGE DROPOFF REQUIREMENTS

- L) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED 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.
- M) 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 (W8-11) OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

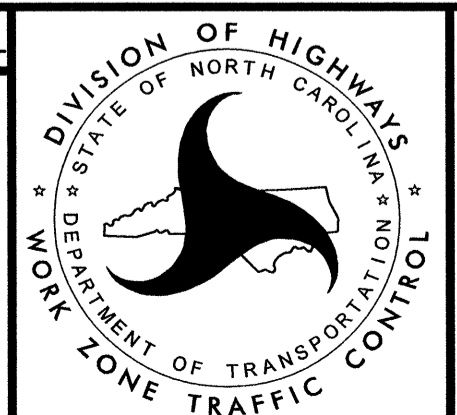
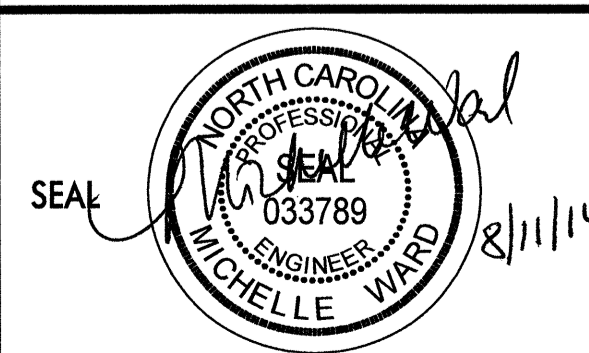
- U) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- V) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- W) INSTALL PROPOSED PAVEMENT MARKINGS & MARKERS ON THE FINAL SURFACE COURSE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
I-40	POLYUREA	NONE

MISCELLANEOUS

X) COORDINATE WITH THE ENGINEER TO INFORM THE OVERSIZE/OVERWEIGHT PERMIT UNIT AND THE TMC OF ALL LANE CLOSURE OPERATIONS.

PLOT DRIVER: NCDOT1.pdf_color_eng_50.pit
 USER: ofaulkne
 FILE: p:\PWAPP\TPA04\SouthEast-Tampa\Documents\000166\CON060564\00000000018101\13.00_CAD\TMP\17BP14P10_TMP_TMP-02.dgn
 REVISIONS
 PENTABLE: NCDOT1_top.tbl
 TIME: 2:28:31 PM
 DATE: 8/11/2014

APPROVED: _____ DATE: _____	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	PROJECT NOTES
 NORTH CAROLINA PROFESSIONAL ENGINEER MICHELLE WARD 033789 8/11/14		

PHASING

NOTES:

LANE CLOSURES (RSD 1101.02, SHEET 4 OF 15) OR ROLLING ROAD BLOCK (RSD 1101.03, SHEET 9 OF 9) MAY BE USED FOR DELIVERY OF MATERIALS AND EQUIPMENT, IF NEEDED.

EQUIPMENT MAY BE STORED ON I-40 EB SERVICE ROAD, ADJACENT TO TUNNEL 15, UNLESS SERVICE ROAD IS IN USE AS I-40 EB DETOUR DURING TUNNEL 15 NIGHTLY ROAD CLOSURES.

APPROVED STAGING AREA FOR CONSTRUCTION AT TUNNEL 17 IS LOCATED ALONG I-40 WB AT APPROXIMATELY MILEPOST 5.0.

AT ALL TUNNEL LOCATIONS, REMOVE ALL TRAFFIC CONTROL DEVICES FROM TRAVEL LANES AT THE END OF EACH WORK PERIOD.

MAINTAIN EXISTING OR PROPOSED LIGHTING ALONG I-40 AT ALL TIMES, INCLUDING LIGHTING ALONG SERVICE ROAD TO BE USED AS DETOUR FOR I-40 EB TRAFFIC FOR WORK AT TUNNEL 15.

PROTECT EXISTING AND PROPOSED LIGHTING DURING SHOTCRETE OPERATIONS AND OTHER OPERATIONS, AS DIRECTED BY THE ENGINEER.

PROTECT OPEN TRAVEL LANES FROM DEBRIS DURING SHOTCRETE OPERATIONS AND OTHER OPERATIONS, AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR MAY CONDUCT WORK AT ALL TUNNEL LOCATIONS SIMULTANEOUSLY.

PROVIDE TWO (2) ADDITIONAL CHANGEABLE MESSAGE SIGNS (CMS), ONE AT EACH END OF THE TUNNEL WHERE WORK IS TAKING PLACE. IF LANE CLOSURES EXIST DURING PERMITTED TRAVEL TIMES FOR OVERSIZE/OVERWEIGHT VEHICLES, CMSs ARE TO BE USED FOR ADDITIONAL MESSAGING TO ALERT OVERSIZE/OVERWEIGHT VEHICLES OF LANE CLOSURES THROUGH THE TUNNEL. CMS SHOULD ADVISE OVERSIZE/OVERWEIGHT VEHICLES TO PULL OVER TO THE SHOULDER IF LANE CLOSURES ARE PRESENT. ONCE LANE CLOSURE IS REMOVED (OR DRUMS MOVED TO ACCOMMODATE THE WIDTH OF THE WIDE LOAD), THOSE VEHICLES MAY PROCEED THROUGH THE TUNNEL. CMS MAY ALSO BE USED TO NOTIFY MOTORISTS OF GENERAL TRAFFIC CONDITIONS, ETC., AS DIRECTED BY THE ENGINEER.

TUNNEL 15

STEP 1: USING RSD 1101.03, SHEET 7 OF 9, INSTALL NIGHTLY ROAD CLOSURE, DETOUR I-40 EB TRAFFIC ONTO SERVICE ROAD ADJACENT TO TUNNEL 15, AND COMPLETE WORK INSIDE TUNNEL 15. (SEE NOTE BELOW)

USING LANE CLOSURES (RSD 1101.02, SHEET 4 OF 15) ON I-40 EB, COMPLETE ROADWAY WORK ON APPROACH OF TUNNEL AND ON SERVICE ROAD ADJACENT TO TUNNEL 15. (SEE ROADWAY PLANS) (SEE NOTE BELOW)

NOTE: EXTEND LANE CLOSURE BEYOND THE TUNNEL APPROACH SO THAT THE MERGE TAPER OF THE LANE CLOSURE IS LOCATED IN A TANGENT SECTION NEAREST TO THE TUNNEL, AS DIRECTED BY THE ENGINEER.

STEP 2: ONCE ALL CONSTRUCTION IS COMPLETE, REMOVE ALL REMAINING WORK ZONE SIGNS AND TRAFFIC CONTROL DEVICES.

TUNNEL 17

STEP 1: CONDUCT WORK AT TUNNEL 17 USING LEFT OR RIGHT LANE CLOSURES (RSD 1101.02, SHEET 4 OF 15), AND 30 MINUTE ROAD CLOSURES AS SHOWN ON TYPICAL SECTIONS 1, 2 AND 3 ON SHEET TMP-4 FOR EACH WORK AREA. (SEE NOTE BELOW)

NOTE: EXTEND LANE CLOSURE BEYOND THE TUNNEL APPROACH SO THAT THE MERGER TAPER FOR THE LANE CLOSURE IS LOCATED IN THE TANGENT SECTION ON I-40 WB BEFORE MILEPOST 5.0, AS DIRECTED BY THE ENGINEER.

STEP 2: ONCE ALL CONSTRUCTION IS COMPLETE, REMOVE ALL REMAINING WORK ZONE SIGNS AND TRAFFIC CONTROL DEVICES.

TUNNEL 104

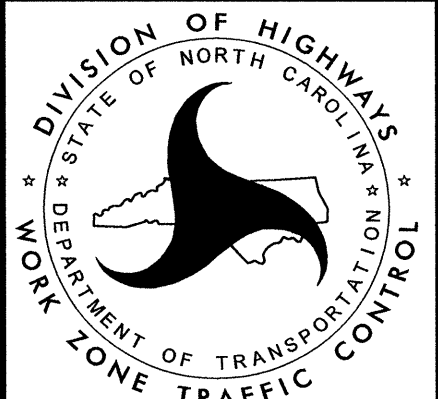

STEP 1: CONDUCT WORK AT TUNNEL 104, INCLUDING ROADWAY AND DRAINAGE WORK, USING LEFT OR RIGHT LANE CLOSURES (RSD 1101.02, SHEET 4 OF 15), AND 30 MINUTE ROAD CLOSURES AS SHOWN ON TYPICAL SECTIONS 1, 2 AND 3 ON SHEET TMP-4 FOR EACH WORK AREA. (SEE NOTE BELOW)

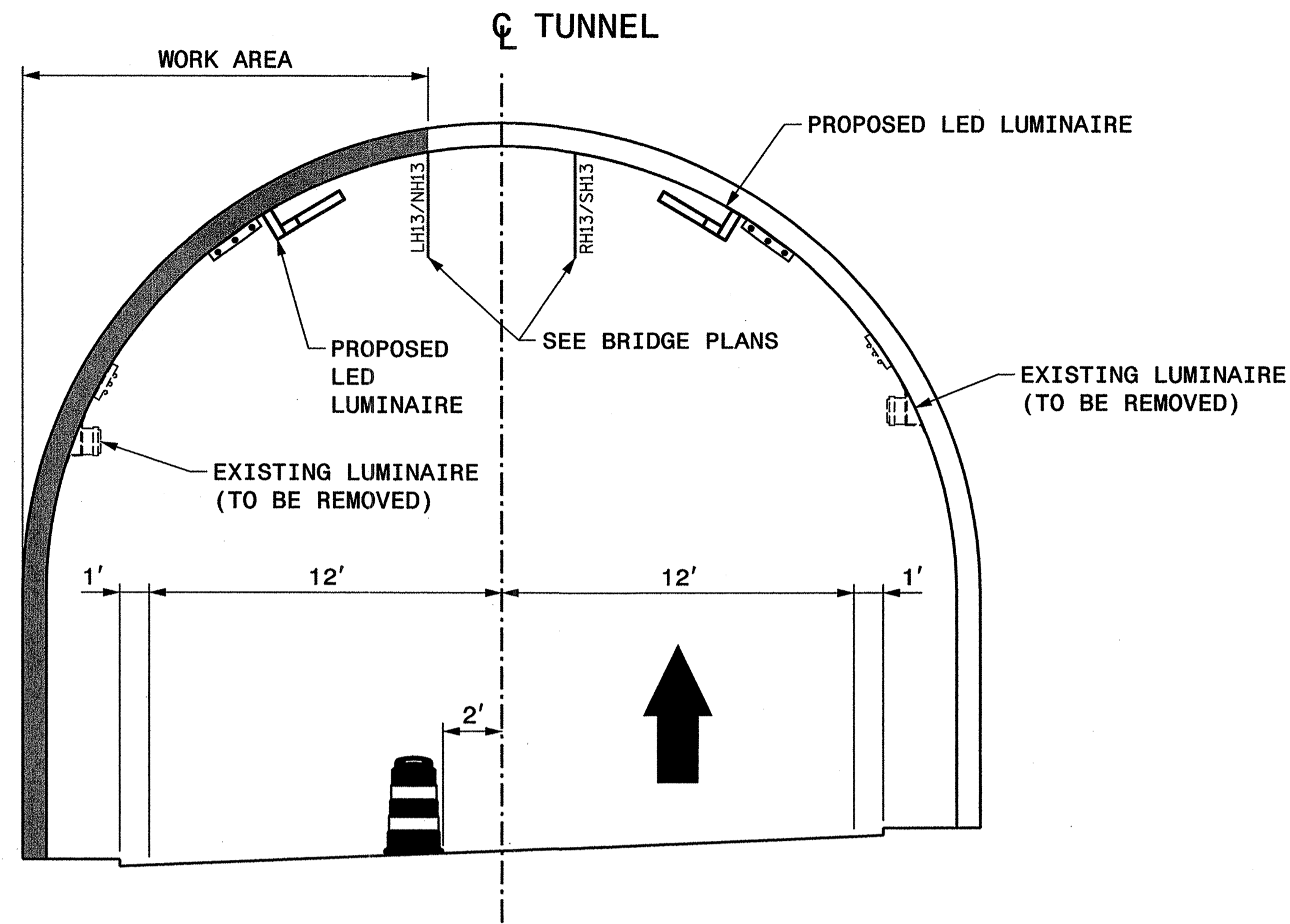
NOTE: EXTEND LANE CLOSURE BEYOND THE TUNNEL APPROACH SO THAT THE MERGER TAPER FOR THE LANE CLOSURE IS LOCATED IN A TANGENT SECTION NEAREST THE TUNNEL, AS DIRECTED BY THE ENGINEER.

STEP 2: ONCE ALL CONSTRUCTION IS COMPLETE, USING RIGHT AND LEFT LANE CLOSURES (RSD 1101.02, SHEET 4 OF 15), PLACE FINAL MARKINGS (POLYUREA) ON NEW PAVEMENT, PER RSD 1205.01 AND 1205.02.

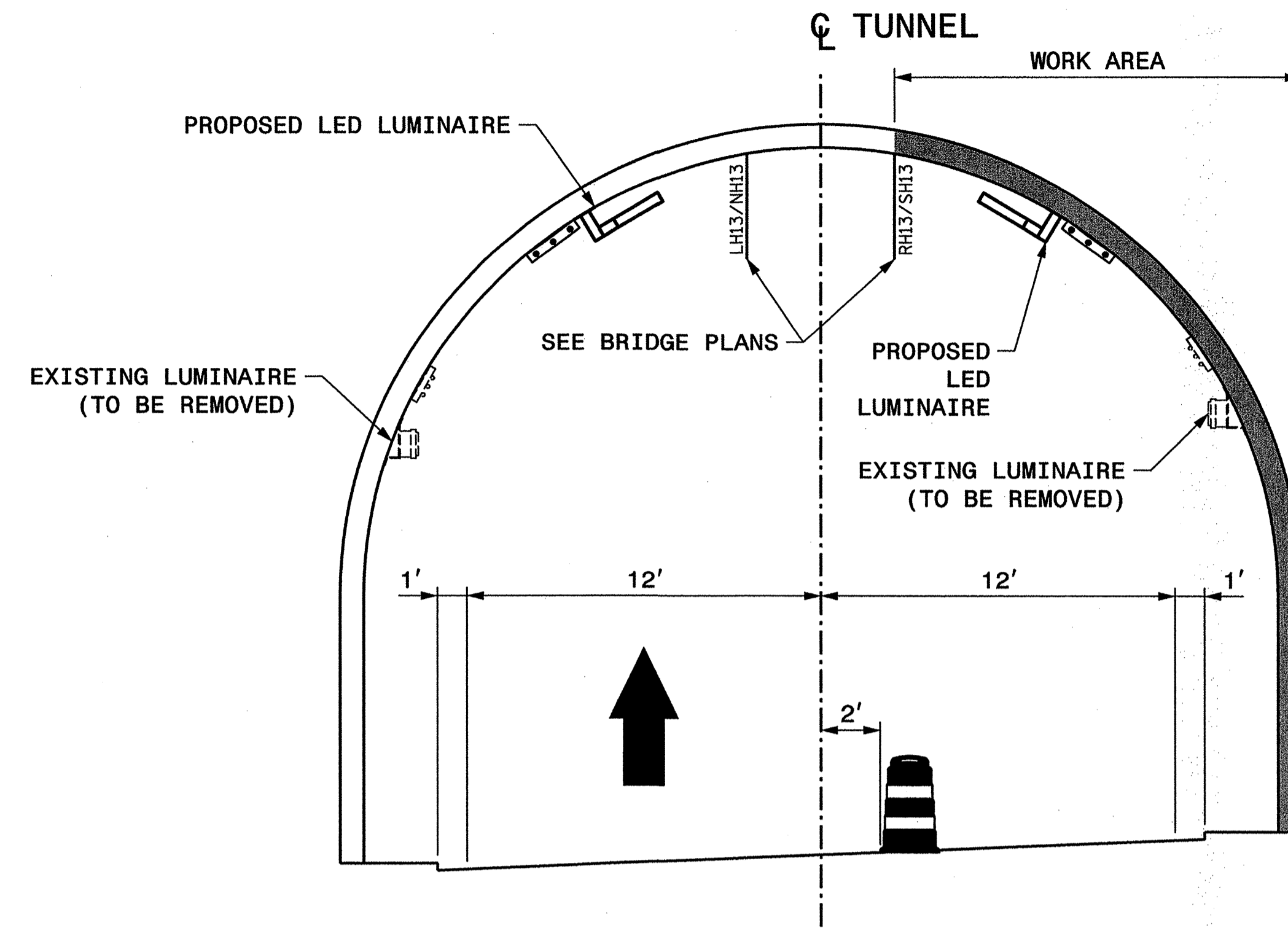
STEP 3: REMOVE ALL REMAINING WORK ZONE SIGNS AND TRAFFIC CONTROL DEVICES.

PLOT DRIVER: NCDOT_pdf_color_eng_50.ppt
 USER: qfaulkne
 FILE: pw\1\PMAPPTPA01:SouthEast_Tampa\Documents\000166\CON060564\000000000187101\13.00_CAD\TMP\17BP14P10_TMP_TMP-03.dgn
 PENTABLE: NCDOT_tcp.tbl
 TIME: 2:09:21 PM
 DATE: 8/11/2014
 REVISIONS

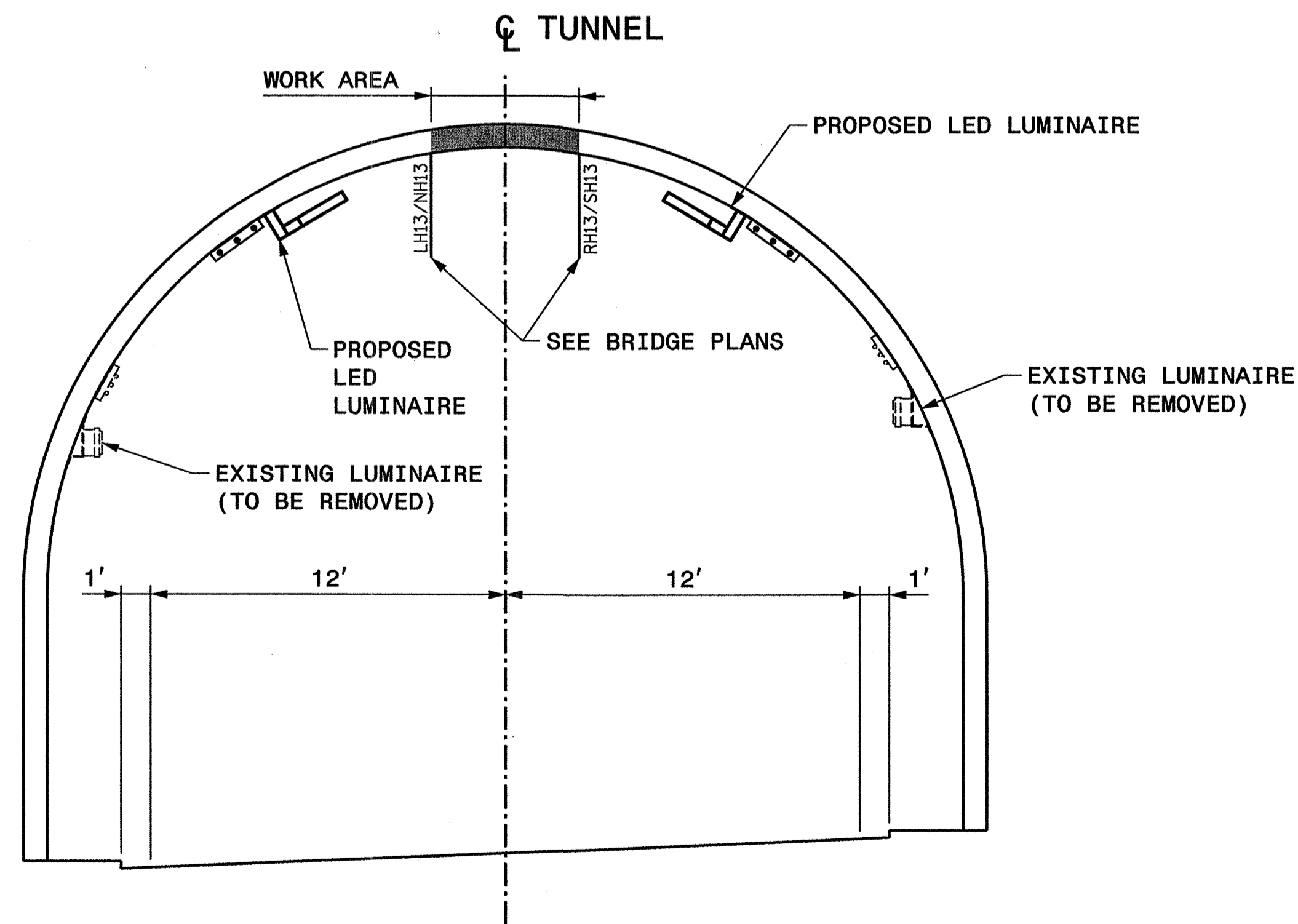
APPROVED: _____	DATE: _____	 DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	PHASING
 NORTH CAROLINA PROFESSIONAL ENGINEER 033789 MICHELLE WARD 8/11/14			



TYPICAL SECTION 1
LEFT LANE CLOSURE



TYPICAL SECTION 2
RIGHT LANE CLOSURE



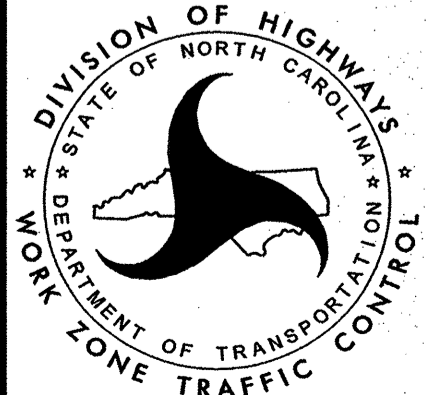
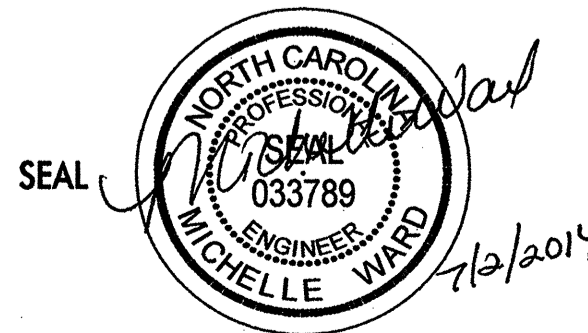
TYPICAL SECTION 3
30 MINUTE ROAD CLOSURE

NOTES:

COMPLETE WORK AT TUNNELS 17 AND 104, INCLUDING ROADWAY WORK, USING LEFT OR RIGHT LANE CLOSURES AND 30 MINUTE ROAD CLOSURES FOR EACH WORK AREA, AS SHOWN ON THE TYPICAL SECTIONS AND AS DIRECTED IN THE PHASING.

EXTEND LANE CLOSURE BEYOND THE TUNNEL APPROACH SO THAT THE MERGE TAPER FOR THE LANE CLOSURE IS LOACTED IN A TANGENT SECTION NEAREST THE TUNNEL, AS DIRECTED BY THE ENGINEER.

PLOT DRIVER: NCD001_pcf_color_eng_50.plt
 USER: charnden
 FILE: pw:\PWAPPTPA01\SouthEast_Tampca\Documents\000166\CON060564\CON000000187101\13.00_CAD\TMP\17BP14P10_TMP_TMP-04.dgn
 PENTABLE: NCD001_top.tbl
 TIME: 11:55:24 AM
 DATE: 7/2/2014
 REVISIONS

APPROVED:	DATE:		TUNNEL 17/104 TYPICAL SECTIONS
	7/2/2014		