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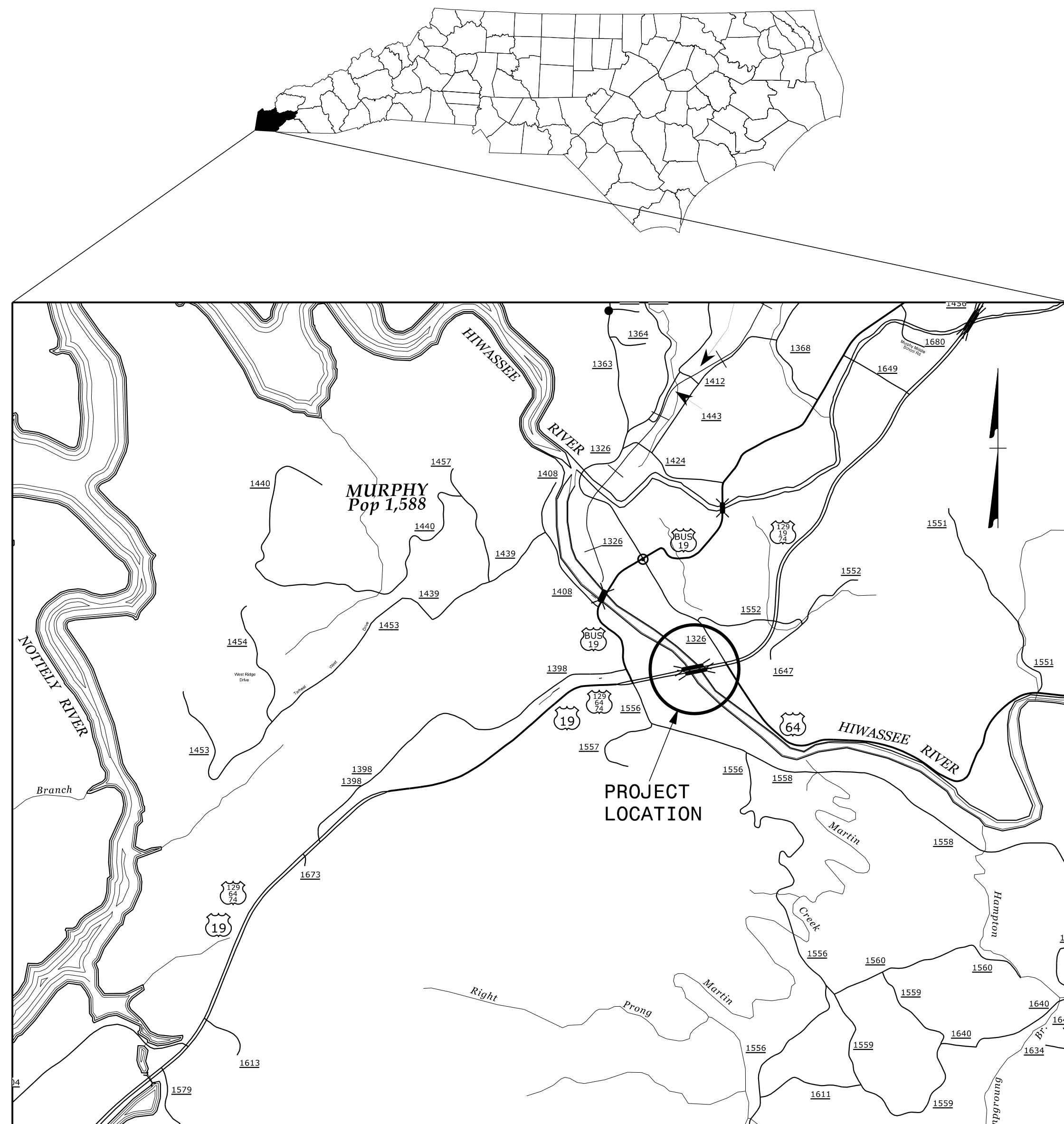
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**CHEROKEE COUNTY**



BRIDGE PRESERVATION - BRIDGES 31 & 33 OVER  
HIWASSEE RIVER ON US-19/US-64/US-74/US-129

**INDEX OF SHEETS**

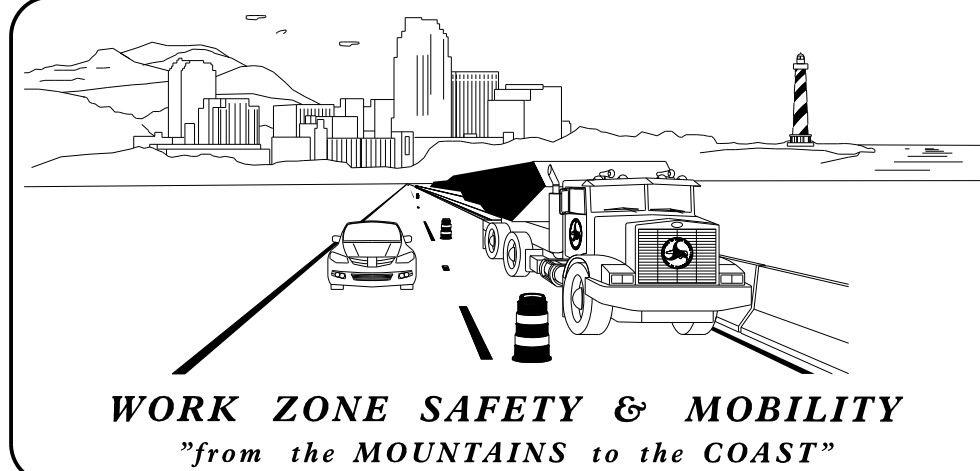
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND PHASING)
TMP-2	TRAFFIC CONTROL TYPICALS

SHEET NO.  
TMP-1

**15BPR.29**

**TIP PROJECT:**

9/5/2018  
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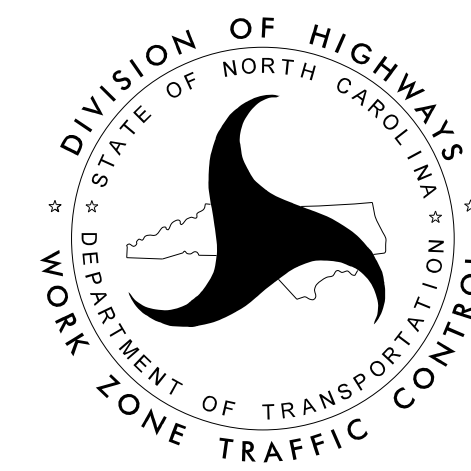
**PLANS PREPARED BY:**

KARMEN DAIS, PE

**NCDOT CONTACTS:**

DON PARKER, PE  
**PROJECT ENGINEER**

ROGER GARRETT  
**PROJECT DESIGN ENGINEER**



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APPROVED: *Don A. Parker*  
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Don A. Parker  
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DATE: 9/5/2018

SEAL



# ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 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	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE 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
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

## GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL

## SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

## PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

## 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

## PAVEMENT MARKERS

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

## PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

## TEMPORARY PAVEMENT MARKING

4" COLD APPLIED PLASTIC (TYPE IV - REMOVABLE TAPE)

- CA - WHITE EDGELINE
- CB - YELLOW EDGELINE

APPROVED: DATE: 9/4/2018			<p style="text-align: center;"><b>ROADWAY STANDARD DRAWINGS &amp; LEGEND</b></p>
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## MANAGEMENT STRATEGIES

TRAFFIC MANAGEMENT STRATEGIES RELATIVE TO THIS TMP INCLUDE:

- LANE SHIFTS
- LONG-TERM LANE CLOSURES
- TEMPORARY LANE CLOSURES
- NIGHT WORK

## 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 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 AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
US-64/19/74/129 (BETWEEN MEMORIAL DAY AND LABOR DAY)	MONDAY - FRIDAY 7:00 AM - 8:00 PM
	AND FRIDAY AT 8:00 PM UNTIL
	SUNDAY AT 8:00PM

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

ROAD NAME
US-64/19/74/129

### EVENT RESTRICTIONS

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR LEAF SEASON, FROM OCTOBER 1ST THROUGH OCTOBER 31ST.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) 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.
- D) 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.
- E) 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.

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 GUARDRAIL OR BARRIER.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

H) 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.

I) 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) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

### TRAFFIC CONTROL DEVICES

N) 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) FOR ADDITIONAL REQUIREMENTS.

### PAVEMENT MARKINGS AND MARKERS

O) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
US-64/19/74/129	COLD APPLIED PLASTIC (TYPE IV - REMOVABLE TAPE)	NONE

P) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

Q) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

### MISCELLANEOUS

R) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

## PHASING FOR BRIDGE 31

STEP 1: USING RSD 1101.01, SHEET 2, INSTALL ADVANCE WARNING SIGNS.

STEP 2: INSTALL RSD 1101.02, SHEET 3, WITH THE FOLLOWING MODIFICATIONS:

- A. USE STATIONARY SIGNS INSTEAD OF PORTABLE SIGNS.
- B. INITIAL CHANGEABLE MESSAGE SIGN FOR LANE CLOSURE 1/2 MILE FROM FIRST STATIONARY ADVANCE WARNING SIGN. ADJUST LOCATION AS REQUIRED BY NOTE 8.

STEP 3: PLACE TEMPORARY PAVEMENT MARKINGS PER TMP-2 AND SHIFT TRAFFIC.

STEP 4: COMPLETE BRIDGE DECK REHABILITATION INSIDE SINGLE CLOSED LANE.

STEP 5: REVERSE LANE CLOSURE AND SHIFT TRAFFIC TO THE OTHER SIDE.

STEP 6: COMPLETE BRIDGE DECK REHABILITATION INSIDE SINGLE CLOSED LANE.

STEP 7: PLACE FINAL PAVEMENT MARKINGS AND OPEN EASTBOUND TRAFFIC TO FINAL PATTERN.

STEP 8: USING RSD 1101.02, SHEET 3, AS NECESSARY, COMPLETE BRIDGE SUBSTRUCTURE WORK PER STRUCTURE PLANS.

STEP 9: REMOVE ALL TRAFFIC CONTROL DEVICES.

## PHASING FOR BRIDGE 33

STEP 1: USING RSD 1101.01, SHEET 2, INSTALL ADVANCE WARNING SIGNS.

STEP 2: INSTALL RSD 1101.02, SHEET 3, WITH THE FOLLOWING MODIFICATIONS:

- A. USE STATIONARY SIGNS INSTEAD OF PORTABLE SIGNS.
- B. INSTALL MERGE TAPER THAT ENDS 100 FT EAST OF THE BRIDGE WORK.
- C. INSTALL CHANGEABLE MESSAGE SIGN FOR LANE CLOSURE 1/2 MILE FROM FIRST STATIONARY ADVANCE WARNING SIGN. ADJUST LOCATION AS REQUIRED BY NOTE 8.

STEP 3: PLACE TEMPORARY PAVEMENT MARKINGS PER TMP-2 AND SHIFT TRAFFIC. USE DRUMS TO CLOSE THE INSIDE LEFT TURNING LANE FROM US-64.

STEP 4: COMPLETE BRIDGE DECK REHABILITATION INSIDE SINGLE CLOSED LANE.

STEP 5: REVERSE LANE CLOSURE AND SHIFT TRAFFIC TO THE OTHER SIDE.

STEP 6: COMPLETE BRIDGE DECK REHABILITATION INSIDE SINGLE CLOSED LANE.


STEP 7: PLACE FINAL PAVEMENT MARKINGS AND OPEN WESTBOUND TRAFFIC TO FINAL PATTERN. OPEN THE INSIDE LEFT TURNING LANE FROM US-64.

STEP 8: USING RSD 1101.02, SHEET 3, AS NECESSARY, COMPLETE BRIDGE SUBSTRUCTURE WORK PER STRUCTURE PLANS.

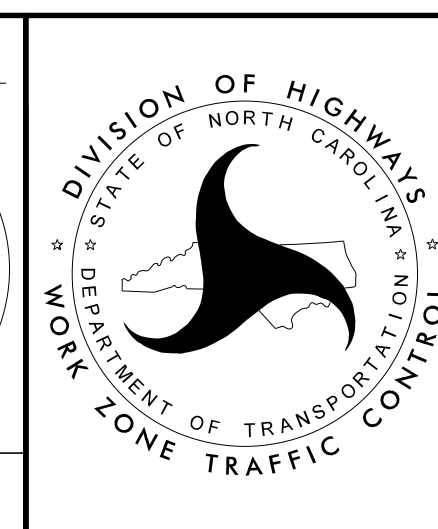
STEP 9: REMOVE ALL TRAFFIC CONTROL DEVICES.

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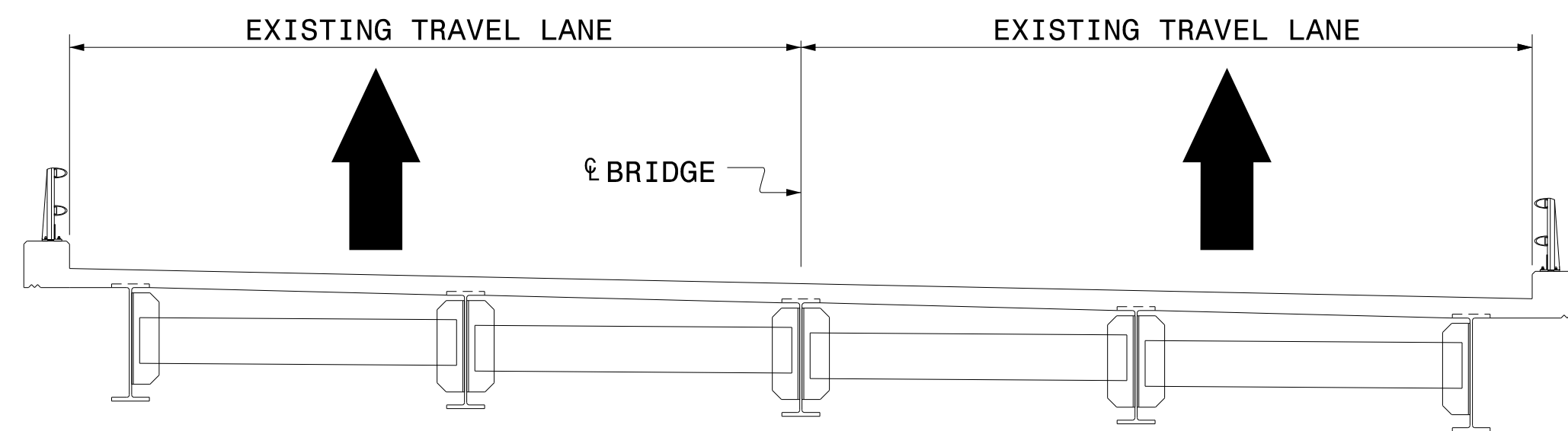
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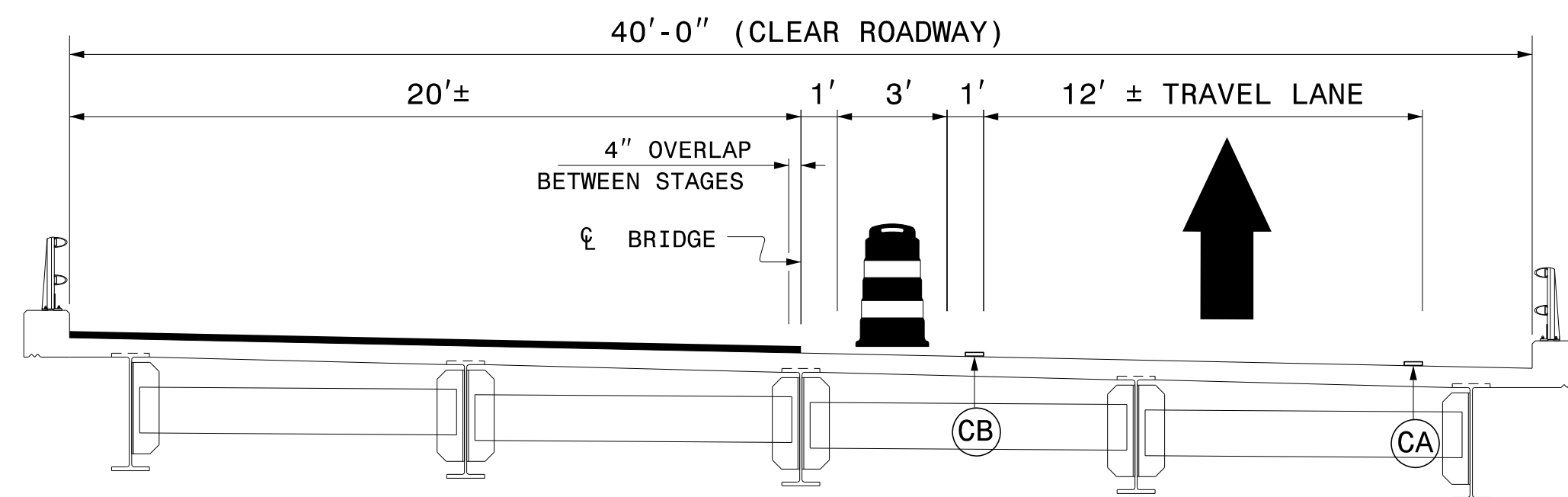
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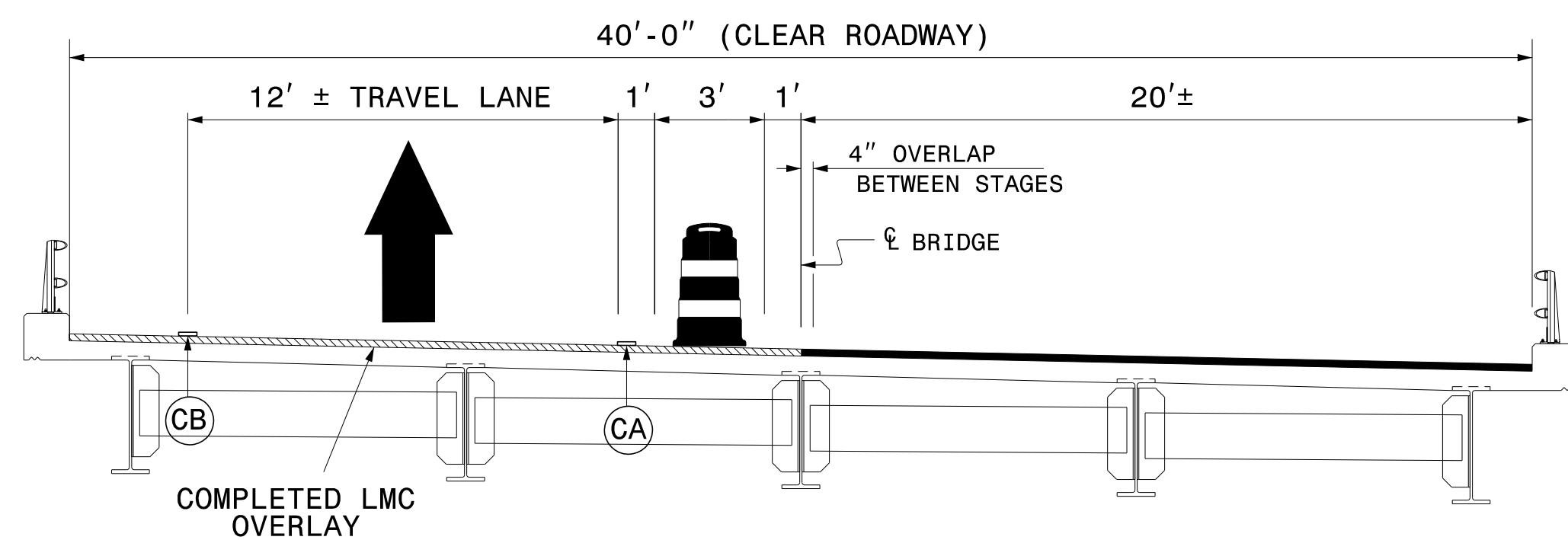
**TRANSPORTATION  
OPERATIONS  
PLAN**



**TYPICAL SECTION**  
(EXISTING TRAFFIC PATTERN ON EACH BRIDGE)



**TYPICAL SECTION**  
(STEP 4)



**TYPICAL SECTION**  
(STEP 6)

**NOTES**

1. THESE TYPICALS INDICATE THE TRAFFIC PATTERNS FOR EACH BRIDGE, AS BRIDGES 31 AND 33 CAN BE WORKED ON CONCURRENTLY.
2. THE CONTRACTOR MAY ELECT TO CLOSE EITHER SINGLE LANE FIRST, HOWEVER, THE CONTRACTOR SHALL SUBMIT A WRITTEN CONSTRUCTION SEQUENCE FOR TRAFFIC CONTROL TO THE ENGINEER AT THE PRECONSTRUCTION MEETING AND THE SEQUENCE MUST BE APPROVED BEFORE CLOSING A LANE OF TRAFFIC.

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DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
WORK ZONE TRAFFIC CONTROL

TRAFFIC CONTROL  
TYPICALS

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