# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO. SHEET NO.  $B - 4 \ 0 \ 5 \ 4$ TCP-1

# PLAN FOR PROPOSED TRAFFIC CONTROL, MARKING & DELINEATION

# CALDWELL COUNTY

## 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 JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
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
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS (TEMPORARY & PERMANENT)
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

# INDEX OF SHEETS

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PM-1	PAVEMENT MARKING PLAN		

# LEGEND

### **GENERAL**

DIRECTION OF TRAFFIC FLOW

+ NORTH ARROW

PROPOSED PVMT.PROPOSED PVMT.

**WORK AREA** 

REMOVAL OF EXISTING PAVEMENT

### TRAFFIC CONTROL DEVICES

TYPE III BARRICADE

CONE

SKINNY DRUM

— STATIONARY SIGN

PORTABLE SIGN

STATIONARY OR PORTABLE SIGN

-~ CRASH CUSHION

TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)

FLAGGER

APPROVED:\_ DATE: 11 SEP 07

PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT

J. S. BOURNE, P.E. TRAFFIC CONTROL ENGINEER

G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER

J. W. GILSTRAP TRAFFIC CONTROL PROJECT DESIGN ENGINEER

K. P. BROADWELL TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

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 AS DIRECTED BY THE ENGINEER.

#### TIME RESTRICTIONS

A) 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

- 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.
- 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.
- 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.

- 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.
- 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

G) 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 A 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.

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) 200 FT IN ADVANCE AND A MINIMUM OF ONCE EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

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

#### SIGNING

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

#### TRAFFIC BARRIER

M) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION, PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD. OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW, BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS:

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45-50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

#### TRAFFIC CONTROL DEVICES

- O) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- P) PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R11-2 ATTACHED OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

#### PAVEMENT MARKINGS AND MARKERS

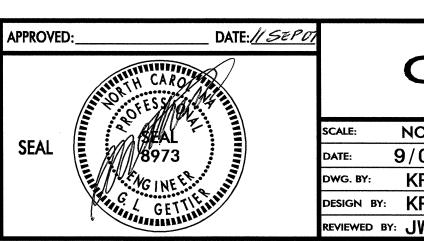
Q) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME MARKER MARKING 1. ALL PAINT NONE

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

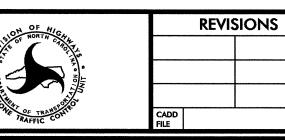
ROAD NAME MARKING MARKER TEMPORARY RAISED 1. ALL PAINT 2. STRUCTURE COLD APPLIED TEMPORARY RAISED PLASTIC TYPE IV (REMOVABLE TAPE)

- PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- 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.
- 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.



GENERAL NOTES

NONE 9/07 KPB DESIGN BY: KPB REVIEWED BY: JWG M



PROJ. REFERENCE NO. SHEET NO.

B-4054
TCP-3

# **PHASING**

#### PHASE I

- STEP 1: CONTRACTOR SHALL PLACE ADVANCE WORK ZONE WARNING SIGNS ALONG EXISTING WHISNANT ROAD (SR 1517/-L-) AND ALL -Y- LINES AS SHOWN ON SHEET TCP-6.
- STEP 2: CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 9:
  - -- CONSTRUCT THE LEFT SIDE OF PROPOSED WHISNANT ROAD (SR 1517/-L-), INCLUDING PROPOSED STRUCTURE AND TEMPORARY SHORING (MSE WALL) FROM STA. 10+10 +/- -L- TO STA. 16+70 +/- -L- (INCLUDING PROPOSED GUARDRAIL LEFT SIDE, ALL DRIVEWAYS, AND PROPOSED DRAINAGE) UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE (SEE CONSTRUCTION PLANS AND SHEET TCP-4).
    - NOTE: CONTRACTOR SHALL UTILIZED WEDGING & PAVING OPERATIONS AND TEMPORARY 2:1 SLOPES TO MAINTAIN TRAFFIC ON THE EXISTING.
    - NOTE: CONTRACTOR SHALL PLACE TYPE III BARRICADES & DRUMS TO KEEP PROPOSED CLOSE TO TRAFFIC AND DRUMS TO MAINTAIN ACCESS TO BOTH DRIVEWAYS.
  - -- INSTALL PORTABLE CONCRETE BARRIER (PCB) AND TEMPORARY CRASH CUSHIONS (TCC) ON THE RIGHT SIDE OF THE PROPOSED FROM STA. 11+50 +/- -L- TO STA. 14+50 +/- -L- (SEE SHEETS TCP-4 & TCP-5).
  - -- PLACE TEMPORARY PAVEMENT MARKINGS (PAINT ON ASPHALT AND TAPE ON STRUCTURE) AND TEMPORARY RAISED PAVEMENT MARKERS, AS MUCH AS POSSIBLE WITHOUT INTERFERING WITH TRAFFIC, ON NEWLY COMPLETED LEFT SIDE OF WHISNANT ROAD (SR 1517/-L-) FROM STA. 10+10 +/- -L- TO STA. 16+70 +/- -L- FOR AN INTERMEDIATE TWO-LANE, TWO-WAY PATTERN (SEE ROADWAY STANDARD DRAWING NO. 1205.12 AND SHEET TCP-5).

#### PHASE II

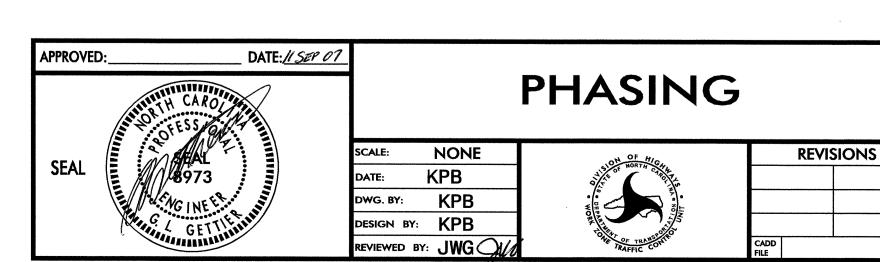
CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE II, STEPS 1 IN ONE WORK PERIOD.

- STEP 1: CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 9:
  - -- PLACE REMAINDER OF TEMPORARY PAVEMENT MARKINGS (PAINT ON ASPHALT AND TAPE ON STRUCTURE) AND TEMPORARY RAISED PAVEMENT MARKERS ON NEWLY COMPLETED LEFT SIDE OF WHISNANT ROAD (SR 1517/-L-) FROM STA. 10+10 +/- -L- TO STA. 16+70 +/- -L- AND OPEN FOR AN INTERMEDIATE TWO-LANE, TWO-WAY PATTERN (SEE ROADWAY STANDARD DRAWING NO. 1205.12 AND SHEET TCP-5).
    - NOTE: CONTRACTOR SHALL PLACE TYPE III BARRICADES & DRUMS TO CLOSE EXISTING TO TRAFFIC AND DRUMS TO MAINTAIN ACCESS TO BOTH DRIVEWAYS.
- STEP 2: CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 9:
  - -- CONSTRUCT THE RIGHT SIDE OF PROPOSED WHISNANT ROAD (SR 1517/-L-) FROM STA. 10+10 +/- -L- TO STA. 16+70 +/- -L- (INCLUDING PROPOSED GUARDRAIL RIGHT SIDE, ALL DRIVEWAYS AND PROPOSED DRAINAGE) UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE (SEE CONSTRUCTION PLANS AND SHEET TCP-5).
  - -- AS DIRECTED BY THE ENGINEER, REMOVE AND REPLACE PORTABLE CONCRETE BARRIER (PCB) & TEMPORARY CRASH CUSHIONS (TCC) WITH DRUMS AND COMPLETE CONSTRUCTION OF PROPOSED WHISNANT ROAD (SR 1517/-L-) (SEE CONSTRUCTION PLANS AND SHEET TCP-5).

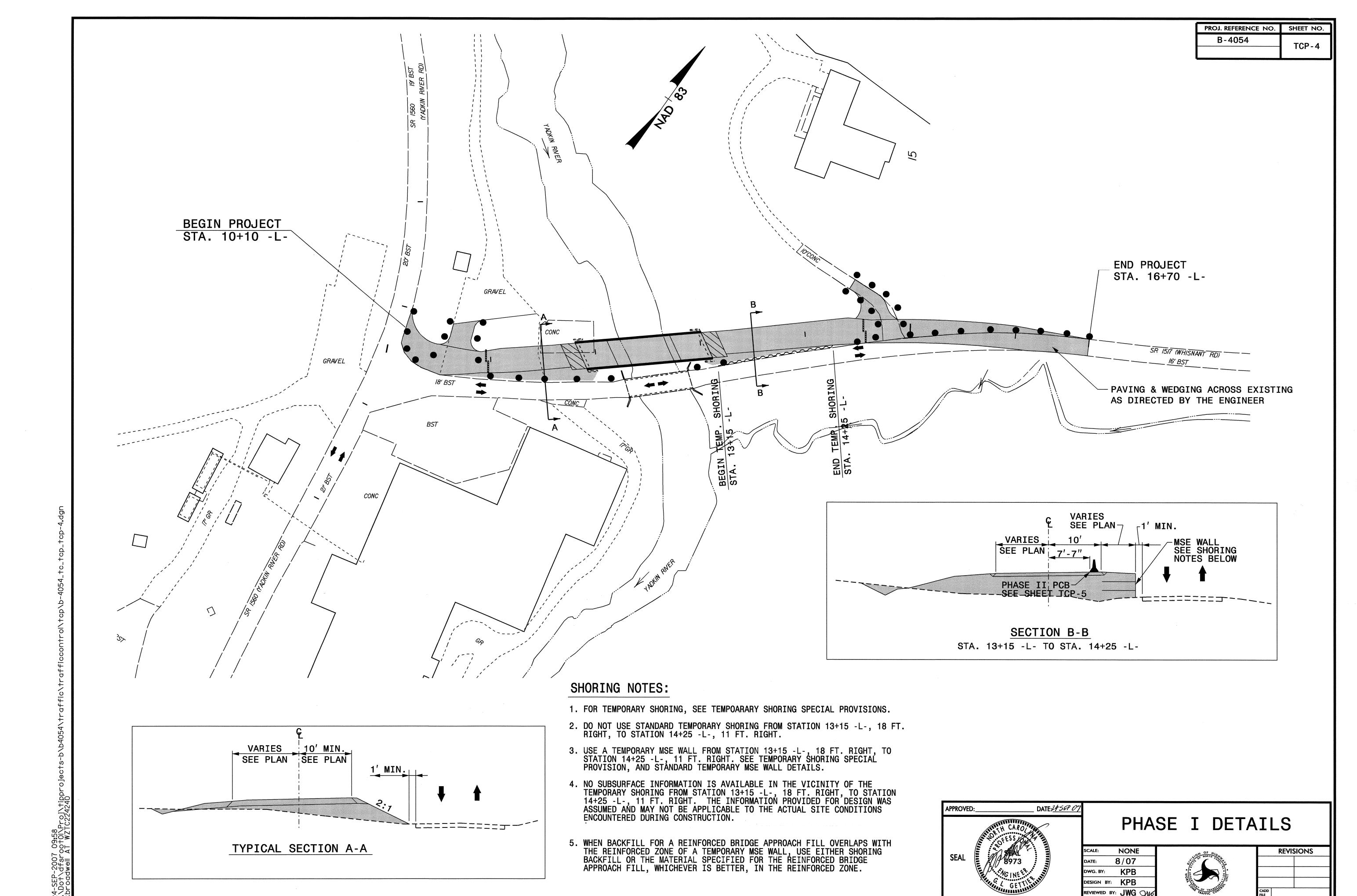
NOTE: KEEP TRAFFIC IN THE INTERMEDIATE TWO-LANE, TWO-WAY PATTERN (SEE SHEET TCP-5).

#### PHASE III

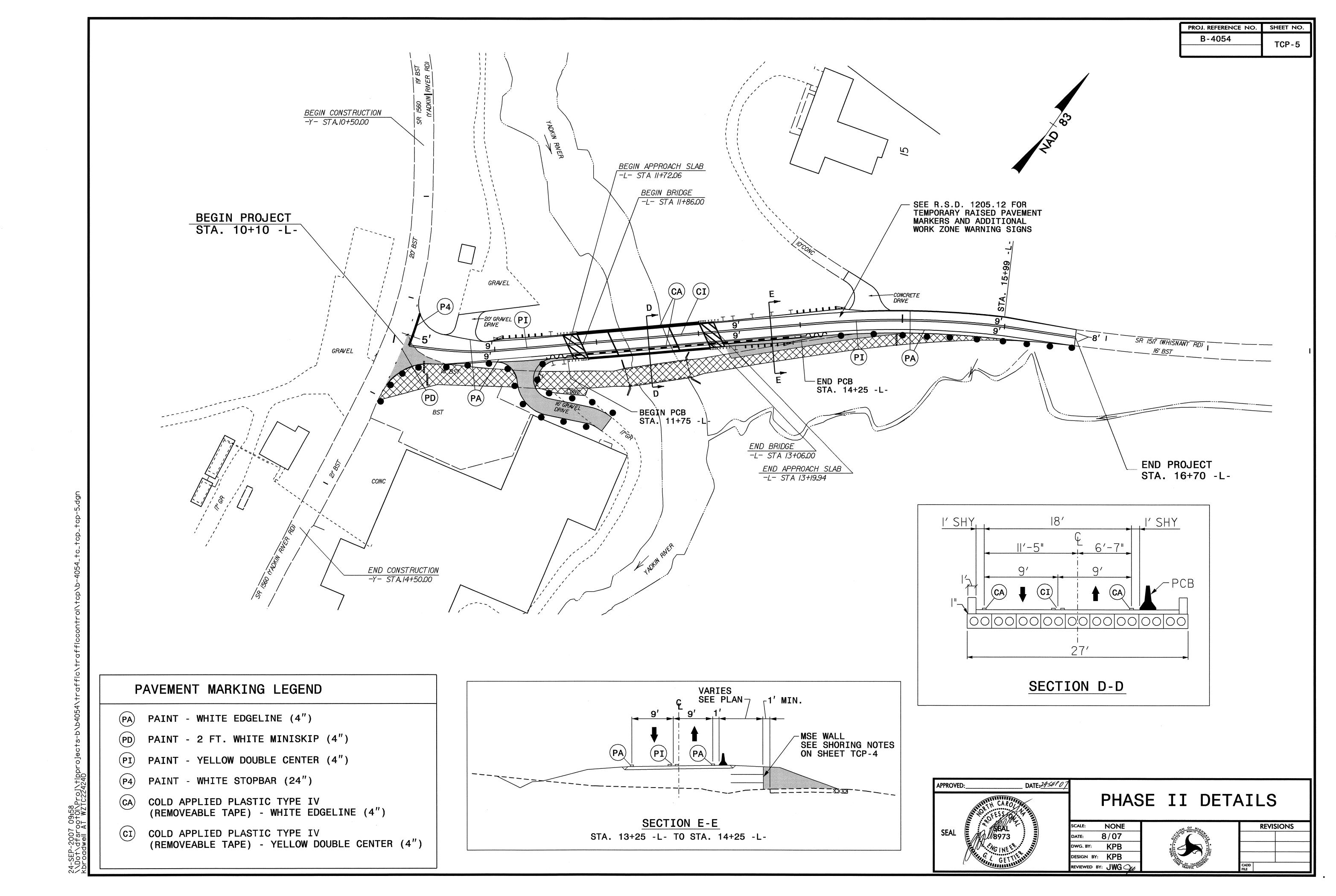
- STEP 1: CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 9:
  - -- PAVE THE FINAL LAYER OF SURFACE COURSE/RESURFACE AND PLACE THE FINAL PAVEMENT MARKINGS (PAINT) ON PROPOSED WHISNANT ROAD (SR 1517/-L-), YADKIN ROAD (SR 1560/-Y-) AND PROPOSED STRUCTURE FOR THE FINAL PATTERN (SEE CONSTRUCTION PLANS).
  - -- OPEN PROPOSED WHISNANT ROAD (SR 1517/-L-) TO THE FINAL PATTERN (SEE SHEET PM-1).
- STEP 2: CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES FROM THE PROJECT.



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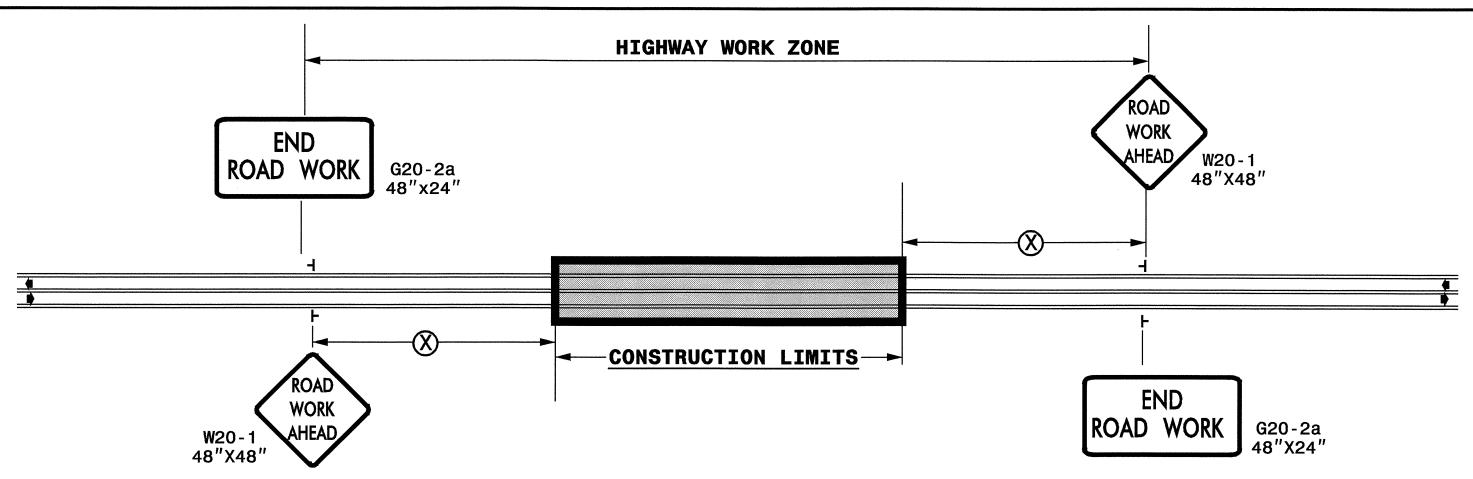
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PROJ. REFERENCE NO. SHEET NO.

B-4054
TCP-6

TWO-WAY UNDIVIDED \*\* (L-LINES)

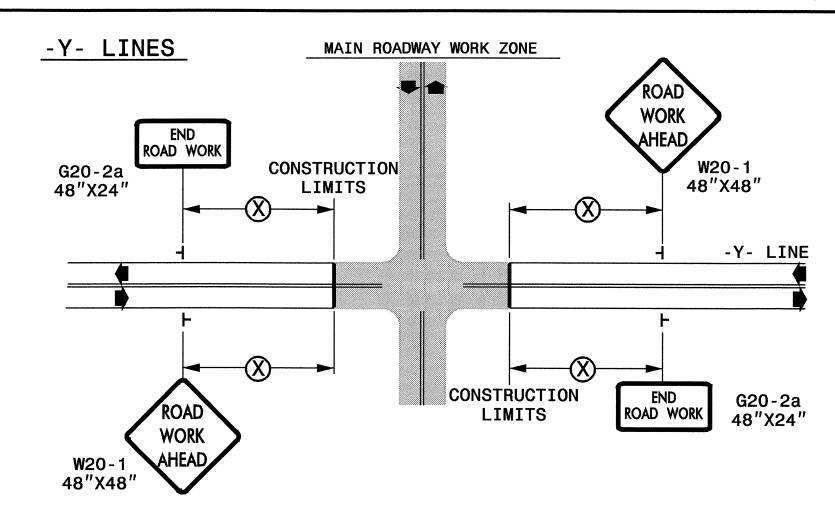


	RECOMMENDED MINIMUM SIGN SPACING
POSTED SPEED LIMIT (M.P.H.)	⊗
≤ 50	500′
≥ 55	1000′

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

DRAWING FOR UNDIVIDED WARNING SIGNS

## ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



### **GENERAL NOTES**

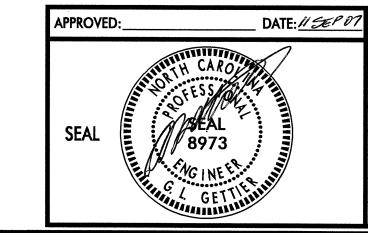
- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- \*\* TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

- STATIONARY SIGN

■ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1



DETAIL	_ DRAV	VING	FOR	TWO-V	VAY
UNDIVID	ED A	ND UF	RBAN	FREE'	WAYS
ADVANCED	WORK	ZONE	WAF	RNING	SIGNS

NONE	, 0,
9/09	2 L
KPB	0 L
· KPB	
BY: JWG	***

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