

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4207	TCP-01

**PLAN FOR PROPOSED  
TRAFFIC CONTROL, MARKING & DELINEATION  
MOORE COUNTY**

B-4207

**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
1101.05	WORK ZONE VEHICLE ACCESSES
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
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
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS
1264.02	PLACEMENT OF OBJECT MARKERS

**INDEX OF SHEETS**

SHEET NO.	TITLE
TCP-01	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, INDEX OF SHEETS AND PAVEMENT MARKING SCHEDULE
TCP-02	GENERAL NOTES
TCP-03	PHASING
TCP-04	TRAFFIC CONTROL DETAILS
TCP-05	ADVANCE WARNING SIGNS

**PAVEMENT MARKING/MARKER SCHEDULE**

DESCRIPTION	QUANTITY BREAKDOWN	TOTAL QUANTITY
	<u>PAINT (4")</u>	
PA WHITE EDGELINE	2450 LF	
PI YELLOW DOUBLE CENTER	2450 LF	4900 LF
	<u>COLD APPLIED PLASTIC (TYPE 2)</u>	
CA WHITE EDGELINE	450 LF	
CI YELLOW DOUBLE CENTER	450 LF	900 LF
	<u>THERMOPLASTIC (4", 90 MILS)</u>	
TA WHITE EDGELINE	4470 LF	4470 LF
	<u>THERMOPLASTIC (4", 120 MILS)</u>	
TI YELLOW DOUBLE CENTER	4470 LF	4470 LF
	<u>PERMANENT RAISED PAVEMENT MARKERS</u>	
YELLOW & YELLOW	3 EA	3 EA
	<u>SNOWPLOWABLE PAVEMENT MARKERS</u>	
YELLOW & YELLOW	13 EA	13 EA
	<u>TEMPORARY RAISED PAVEMENT MARKERS</u>	
YELLOW & YELLOW	70 EA	70 EA

**LEGEND**

- GENERAL**
- DIRECTION OF TRAFFIC FLOW
  - NORTH ARROW
  - PROPOSED PVMT. EXIST. PVMT.
  - WORK AREA
  - REMOVAL OF EXISTING PAVEMENT
- TRAFFIC CONTROL DEVICES**
- TYPE I BARRICADE
  - TYPE II BARRICADE
  - TYPE III BARRICADE
  - CONE
  - DRUM SKINNY DRUM
  - FLASHING ARROW PANEL (TYPE C)
  - STATIONARY SIGN
  - PORTABLE SIGN
  - STATIONARY OR PORTABLE SIGN
  - CRASH CUSHION
  - CHANGEABLE MESSAGE SIGN
  - TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
  - POLICE
  - FLAGGER
- PAVEMENT MARKINGS**
- CRYSTAL/CRYSTAL PAVEMENT MARKER
  - YELLOW/YELLOW PAVEMENT MARKER
  - CRYSTAL/RED PAVEMENT MARKER
  - PAVEMENT MARKING SYMBOLS

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TIP PROJECT:

APPROVED:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
DATE: January 30, 2009	
SEAL	STUART BOURNE, P.E. TRAFFIC CONTROL ENGINEER
	J. STEVE KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
	DON PARKER TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	DOUG JOYNER TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

# 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 DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

#### ROAD NAME

-L- (NC 22/24/27)

#### 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 9:00 A.M. DECEMBER 31ST TO 4:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 4:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 9:00 A.M. THURSDAY AND 4:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 9:00 A.M. FRIDAY TO 4:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 9:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 4:00 P.M. THE DAY AFTER INDEPENDENCE DAY.  
  
IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 9:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 4:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 9:00 A.M. FRIDAY AND 4:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 9:00 A.M. TUESDAY TO 4:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 9:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 4:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) 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.
- C) 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.
- D) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- E) 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 WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- F) DO NOT EXCEED A DIFFERENCE OF 1.5 inches IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING \*UNEVEN LANES\* SIGNS (W8-11) 500 FT IN ADVANCE.

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

- H) 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.  
  
WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE DEPARTMENT.
- I) PROVIDE PERMANENT SIGNING.
- J) PROVIDE DETOUR SIGNING WITH IN AND/OR OFF THE PROJECT LIMITS.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC CONTROL DEVICES

- L) WHEN USING ROADWAY STANDARD NO. 1101.02, CONES MAY BE USED IN LIEU OF DRUMS ON NC 22/24/27.
- M) 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 UNLESS SHOWN OTHERWISE IN THE PLAN.
- N) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

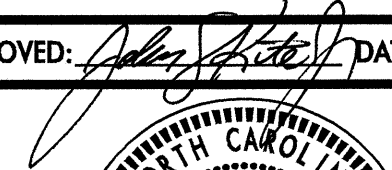
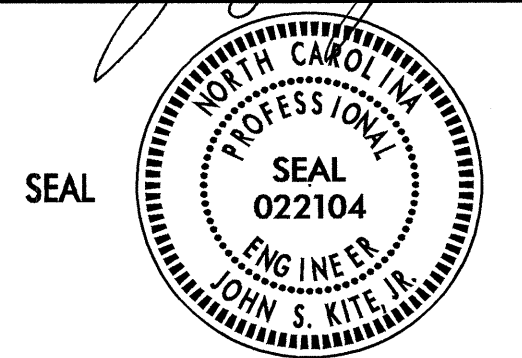
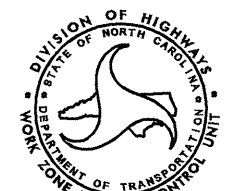
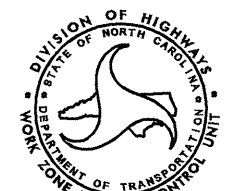
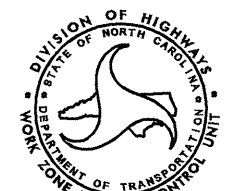
### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKERS
-L- NC 22/24/27	THERMOPLASTIC	SNOWPLOWABLE
-L- STRUCTURE	COLD APPLIED PLASTIC - TYPE 2	PERMANENT RAISED

- P) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Q) REPLACE ANY DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

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APPROVED:  DATE: 1/30/09  	<h2 style="margin: 0;">GENERAL NOTES</h2>	<table border="1" style="width: 100%;"> <tr> <td>SCALE: NONE</td> <td rowspan="4" style="text-align: center;"></td> <td>REVISIONS</td> </tr> <tr> <td>DATE: 01/09</td> <td></td> </tr> <tr> <td>DWG. BY: DVJ</td> <td></td> </tr> <tr> <td>DESIGN BY: DVJ</td> <td></td> </tr> <tr> <td>REVIEWED BY: DAP</td> <td></td> <td></td> </tr> </table>	SCALE: NONE		REVISIONS	DATE: 01/09		DWG. BY: DVJ		DESIGN BY: DVJ		REVIEWED BY: DAP		
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# PHASING

## PHASE I

STEP 1 -- INSTALL ADVANCED WORK ZONE WARNING SIGNS  
(SEE TCP-05)

STEP 2 -- CONSTRUCT DETOUR (-DET-) AND TEMPORARY BRIDGE  
FROM -DET- STA. 13+50 +/- TO 24+78 +/-  
(SEE RSD 1101.02, SHEET 1 AND TCP-4)

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK OF STEP 3 AND 4 IN A SINGLE WORK PERIOD

STEP 3 -- USING FLAGGERS, PLACE TRAFFIC IN A ONE LANE, TWO WAY PATTERN IN THE EXISTING WESTBOUND LANE OF NC 22/24/27 AND TIE IN THE DETOUR EASTBOUND LANE. PLACE TEMPORARY PAVEMENT MARKINGS (THERMOPLASTIC EDGELINE AND DOUBLE YELLOW CENTERLINE) AND TEMPORARY RAISED PAVEMENT MARKERS.  
(SEE RSD 1101.02, SHEET 1 AND SHEET TCP-4)

-- INSTALL ADVANCE WARNING SIGNS FOR ON-SITE DETOUR (SEE TCP-4)

STEP 4 -- USING FLAGGERS, PLACE TRAFFIC IN A ONE LANE, TWO WAY PATTERN IN THE DETOUR EASTBOUND LANE AND TIE IN THE DETOUR WESTBOUND LANE. PLACE TEMPORARY PAVEMENT MARKINGS (THERMOPLASTIC EDGELINE).  
(SEE RSD 1101.02, SHEET 1 AND SHEET TCP-4)

STEP 5 -- OPEN THE DETOUR TO A TWO LANE, TWO WAY PATTERN AND CLOSE THE EXISTING ALIGNMENT OF NC 22/24/27

## PHASE II

STEP 1 -- CONSTRUCT PROPOSED BRIDGE AND APPROACHES UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, FROM -L- STA. 9+00 +/- TO STA. 21+25 +/-  
(SEE RSD 1101.02, SHEET 1 AND TCP-4)

-- INSTALL PROPOSED GUARDRAIL USING TEMPORARY GRAU 350 END UNITS ON BOTH APPROACHES AS SHOWN IN THE ROADWAY PLANS

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK OF STEP 2 AND 3 IN A SINGLE WORK PERIOD

STEP 2 -- USING FLAGGERS, PLACE TRAFFIC IN A ONE LANE, TWO WAY PATTERN IN THE DETOUR EASTBOUND LANE AND TIE IN THE PROPOSED WESTBOUND LANE. PLACE TEMPORARY PAVEMENT MARKINGS (PAINT EDGELINE AND DOUBLE YELLOW CENTERLINE, SINGLE APPLICATION) AND TEMPORARY RAISED PAVEMENT MARKERS.  
(SEE RSD 1101.02, SHEET 1)

STEP 3 -- USING FLAGGERS, PLACE TRAFFIC IN A ONE LANE, TWO WAY PATTERN IN THE PROPOSED WESTBOUND LANE OF NC 22/24/27 AND TIE IN THE PROPOSED EASTBOUND LANE. PLACE TEMPORARY PAVEMENT MARKINGS (PAINT EDGELINE, SINGLE APPLICATION) (SEE RSD 1101.02, SHEET 1)

STEP 4 -- OPEN PROPOSED NC 22/24/27 TO A TWO LANE, TWO WAY PATTERN AND CLOSE THE DETOUR.

## PHASE III

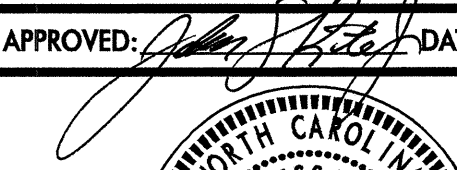

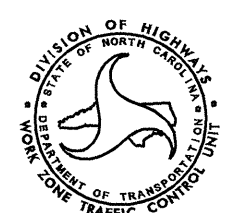
STEP 1 -- REMOVE THE TEMPORARY DETOUR  
(SEE RSD 1101.02, SHEET 1)

STEP 2 -- USING FLAGGERS, REMOVE THE TEMPORARY GRAU 350 UNITS AND COMPLETE FINAL GUARDRAIL INSTALLATION ON BOTH APPROACHES. WORK IN A CONTINUOUS MANNER TO COMPLETE EACH APPROACH WITHIN A SINGLE WORK PERIOD. (SEE RSD 1101.02, SHEET 1)

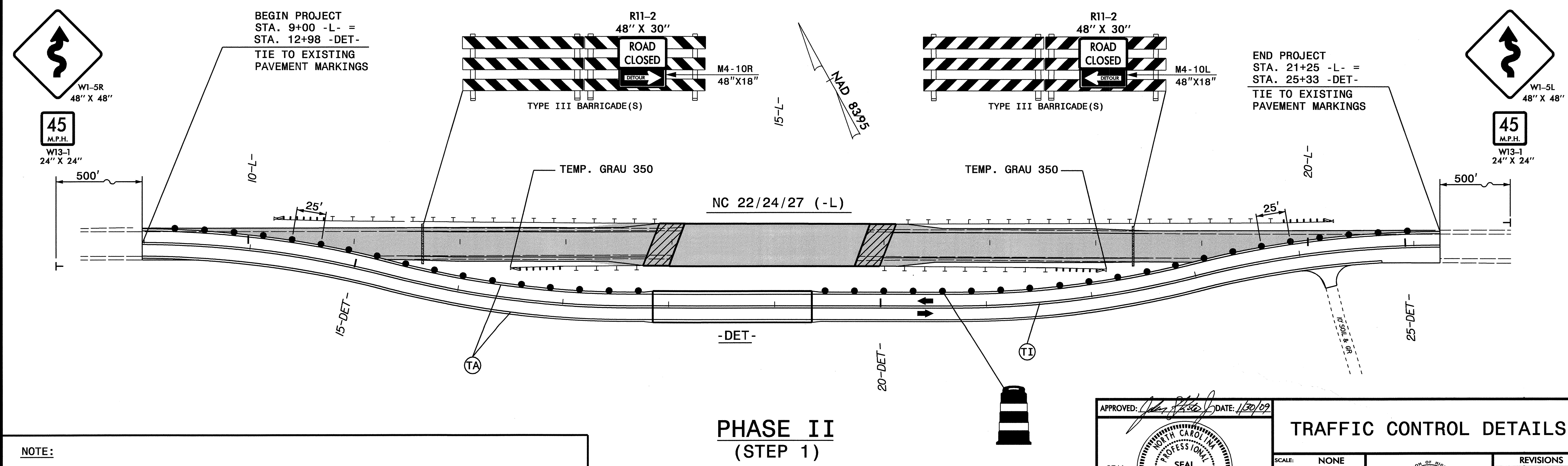
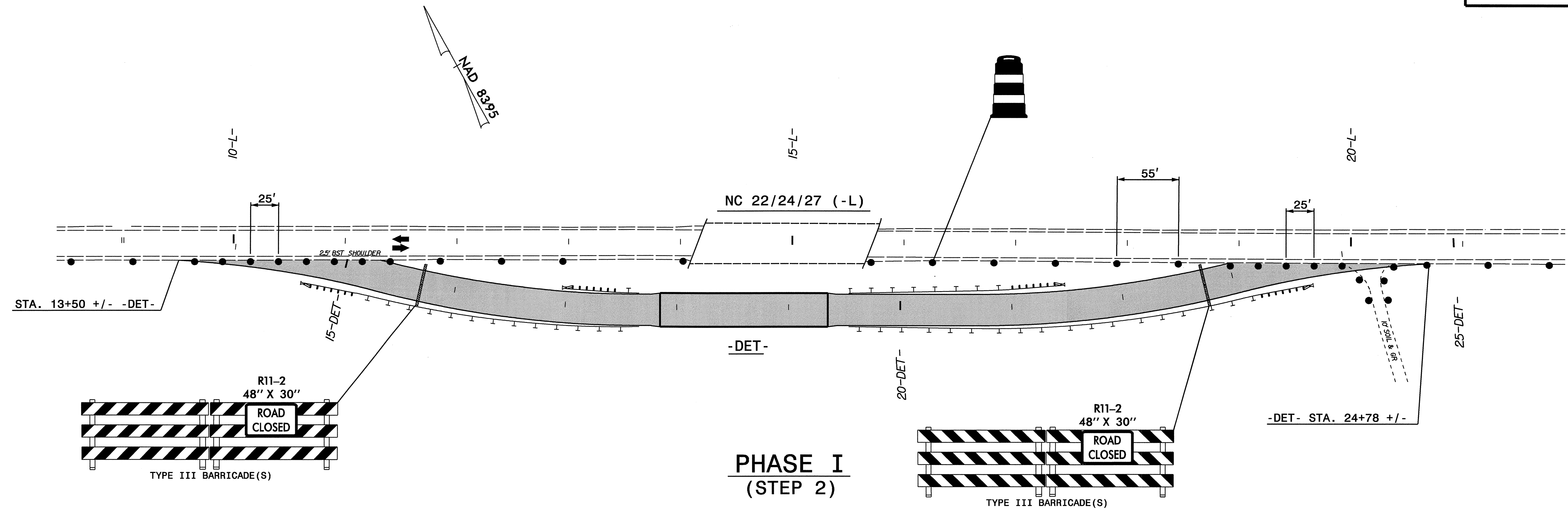
STEP 3 -- USING FLAGGERS, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL MARKINGS (THERMOPLASTIC ON APPROACHES, COLD APPLIED PLASTIC TYPE 2 ON THE BRIDGE) (SEE RSD 1101.02, SHEET 1)

STEP 4 -- REMOVE ALL TRAFFIC CONTROL DEVICES

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**NOTE:**  
PLACE TEMPORARY RAISED PAVEMENT MARKERS FROM A POINT 500 FT. PRIOR TO THE BEGINNING OF THE TEMPORARY DETOUR, ALONG THE TEMPORARY DETOUR, AND END APPROXIMATELY 500 FT. PAST THE END OF THE TEMPORARY DETOUR (PLACE MARKERS ON 20' SPACING).

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**TRAFFIC CONTROL DETAILS**

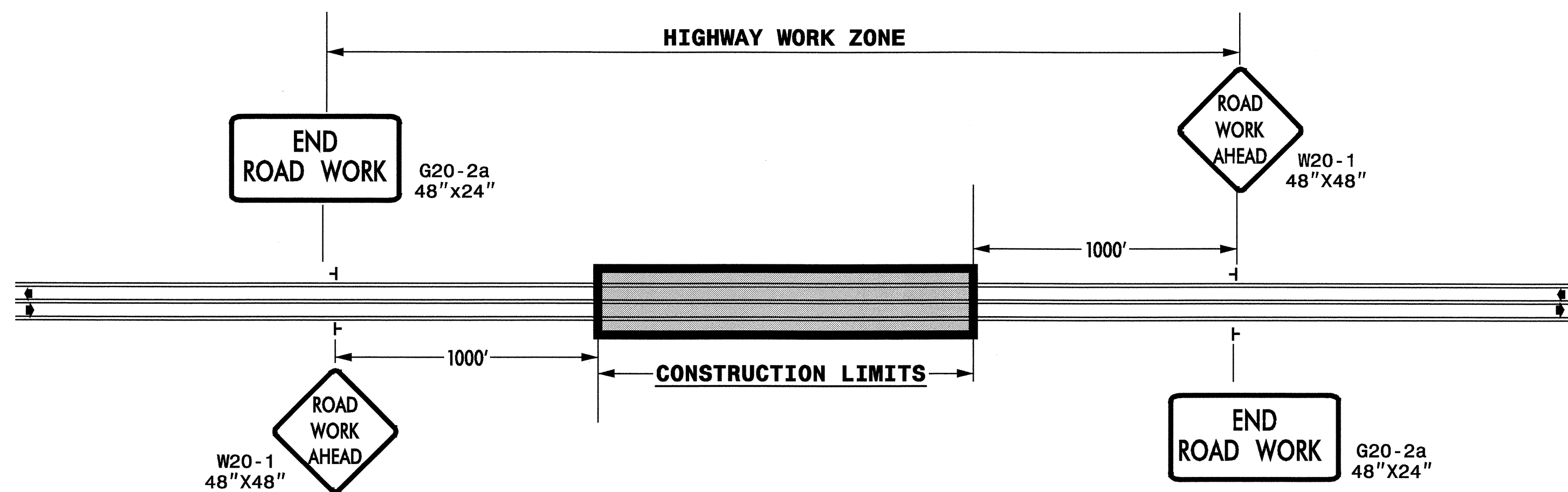
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SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 022104  
JOHN S. KITE JR.

REVISIONS	

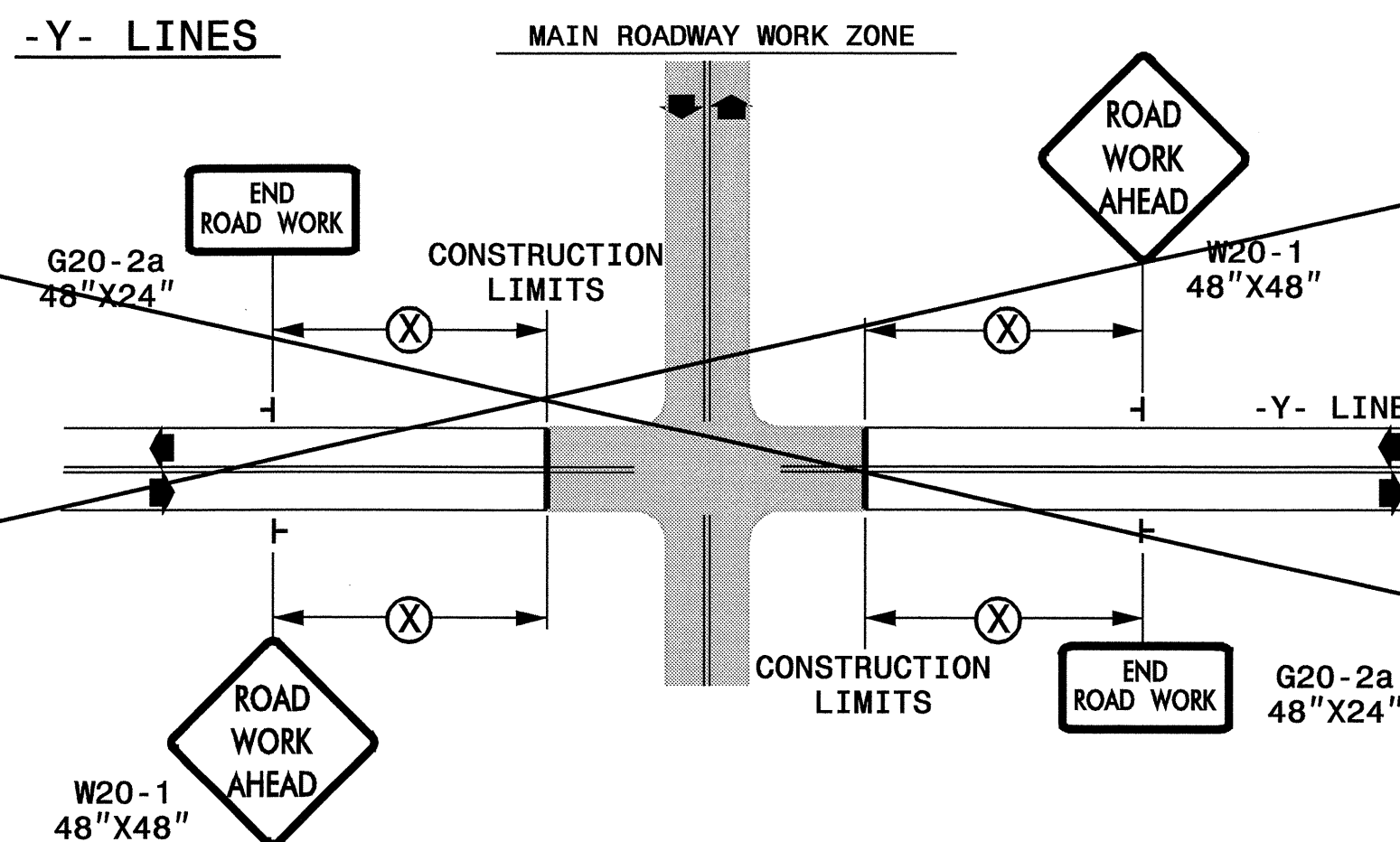
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**TWO-WAY UNDIVIDED \*\* (L-LINES)**



STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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



DETAIL DRAWING FOR  
TWO-WAY UNDIVIDED  
WORK ZONE WARNING SIGNS

**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

APPROVED: <i>John S. Kite, Jr.</i> DATE: 1/30/09	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
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