## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
R-4911	TCP-1

# PLAN FOR PROPOSED TRAFFIC CONTROL, MARKING & DELINEATION

# CATAWBA COUNTY

### ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" -ROADWAY DESIGN 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
1101.03	Temporary Road 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	Drums
1145.01	Barricades
1150.01	Flaggers Devices
1180.01	Skinny - Drum
1205.01	Pavement Markings - Line Types and Offsets
1205.02	Pavement Markings - 2 Lane and Multilane Roadway
1205.04	Pavement Markings - Intersections
1205.05	Pavement Markings - Turn Lanes
1205.06	Pavement Markings - Thru Lane Drops
1205.08	Pavement Markings - Symbols and Word Messages
1205.09	Pavement Markings - Painted Islands
1205.12	Pavement Markings - Bridges
1250.01	Pavement Marker Spacing
1253.01	Snowplowable Raised Pavement Markers
1261.01	Guardrail and Barrier Delineator Spacing
1261.02	Guardrail and Barrier Delineator Types
1262.01	Guardrail End Delineation

### INDEX OF SHEETS

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TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, INDEX OF SHEETS AND TEMPORARY PAVEMENT MARKING SCHEDULE
TCP-3	PHASE I OVERVIEW
TCP-4	PHASE I OVERVEW & PHASING
TCP-5	PHASE II OVERVIEW & PHASING
TCP-6	PHASE III OVERVIEW & PHASING
TCP-7	DETOUR PLAN
TCP-8	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCE WORK ZONE WARNING SIGNS
PM-1	FINAL PAVEMENT MARKING SCHEDULE
PM-2 THRU PM-3	FINAL PAVEMENT MARKING PLAN

### TEMP. PAV'T. MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANT	TTY	PAY ITEM	TOTAL
			***************************************		***************************************
DA	WITTE FROM THE 4V	10 740			
PA	WHITE EDGELINE 1X	10,740			
PI	YELLOW DOUBLE CENTER LINE 1X	10,740	LF		
					21,480 LF
MK	YELLOW TEMP RAISED PAVEMENT MARKERS	30	EA		30 EA
NOTE	- FOR EAGU RATHE RAVEMENT MARKING T	TEM 4V	TMDL TEO	A OTNOLE ADDITOATION	

NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS, AND 3X IMPLIES THREE APPLICATIONS

### **LEGEND**

#### **GENERAL**

DIRECTION OF TRAFFIC FLOW

NORTH ARROW

 PROPOSED PVMT. ----- EXIST. PVMT.

PROPOSED CONSTRUCTION

REMOVAL OF EXISTING ROAD AND BRIDGE

### TRAFFIC CONTROL DEVICES

TYPE III BARRICADE

FLASHING ARROW PANEL (TYPE C)

— STATIONARY SIGN

PORTABLE SIGN

STATIONARY OR PORTABLE SIGN

WARNING FLAGS

- CRASH CUSHION

CHANGEABLE MESSAGE SIGN

TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)

POLICE

**FLAGGER** 

#### PAVEMENT MARKINGS

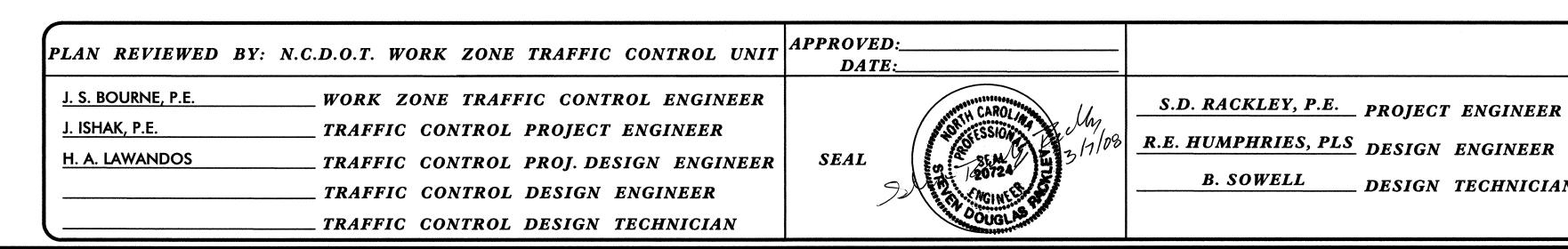
CRYSTAL/CRYSTAL PAVEMENT MARKER

DESIGN TECHNICIAN

YELLOW/YELLOW PAVEMENT MARKER

CRYSTAL/RED PAVEMENT MARKER

PAVEMENT MARKING SYMBOLS



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### 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

NC 10

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

- 6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
- 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

### 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 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.

#### PROJECT NOTES

E) 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.
- DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON NC 10.

#### PAVEMENT EDGE DROP OFF REQUIREMENTS

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.

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

#### TRAFFIC PATTERN ALTERATIONS

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

#### SIGNING

- 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.
- M) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.
- COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 200 FT. IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

#### TRAFFIC CONTROL DEVICES

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

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	107-2

#### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME

**MARKING** 

**MARKER** 

ALL ROADS

THERMOPLASTIC

SNOWPLOWABLE

T) INSTALL TEMPORARY PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE

INTERMEDIATE SURFACE AS DIRECTED:

ROAD NAME

MARKING

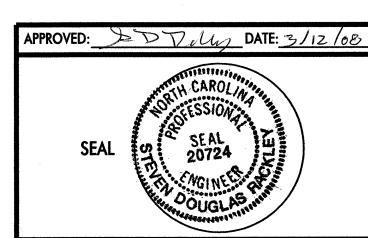
MARKER

ALL ROADS

PAINT

TEMPORARY RAISED

- U) 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.
- V) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- W) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.



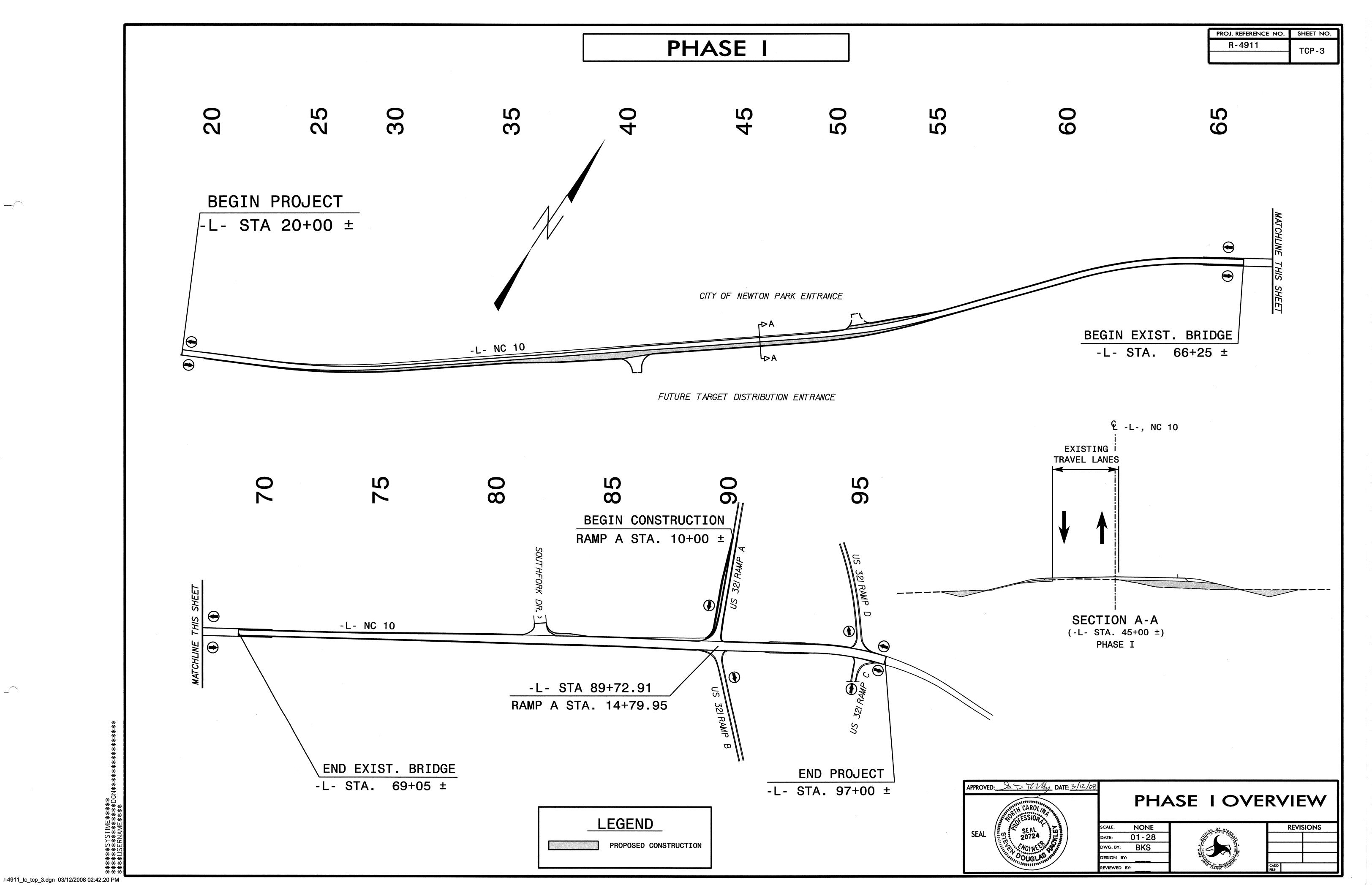
## PROJECT NOTES

NONE 01-28

BKS

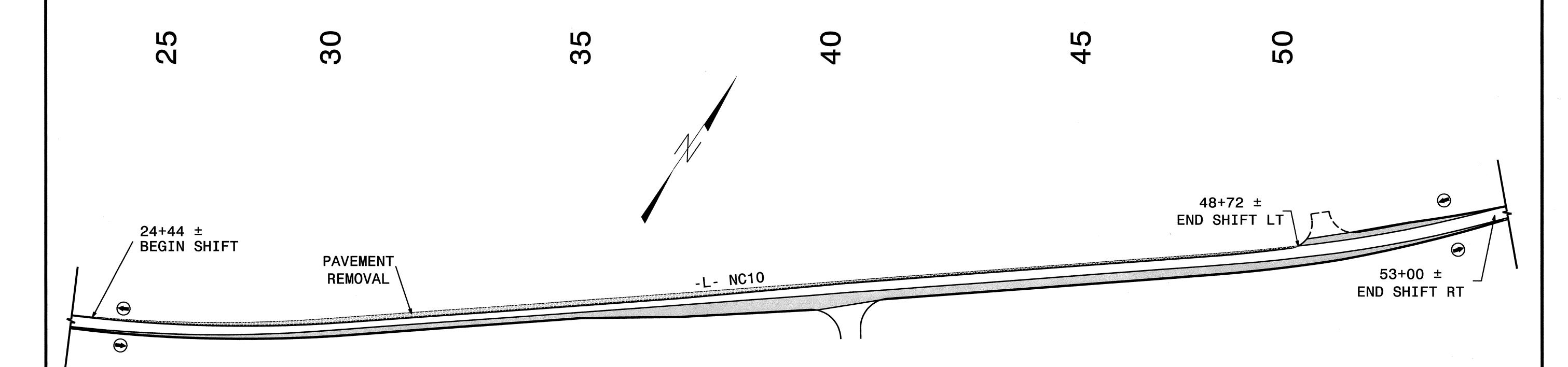
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**PHASE** 

PROJ. REFERENCE NO. SHEET NO. R-4911 TCP-4



PHASE I

STEP 1

INSTALL ALL ADVANCED WORK ZONE WARNING SIGNS (SEE SHEET TCP-6).

STEP 2

USING ROADWAY STANDARD DRAWING 1101.02 (SHEET 1 OF 9) AND AWAY FROM TRAFFIC, BEGIN INSTALLATION OF PROPOSED DRAINAGE INCLUDING CROSS PIPES.

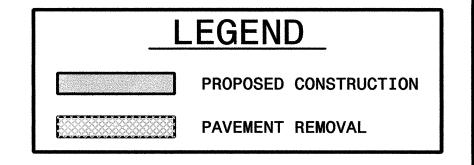
USING ROADWAY STANDARD DRAWING 1101.02 (SHEET 1 OF 9), BEGIN PROPOSED WIDENING UP TO EDGE AND ELEVATION OF EXISTING PAVEMENT AT THE FOLLOWING LOCATIONS (SEE SHEET TCP-3 & TCP-4):

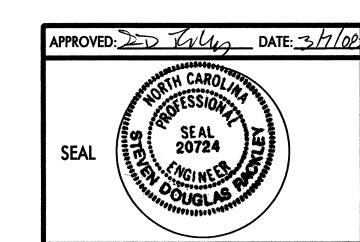
- -L- STA BEGIN CONSTRUCTION 20+00 TO STA 66+25 BEGIN BRIDGE LT & RT
- -L- STA END BRIDGE 69+05 TO STA 97+00 END CONSTRUCTION LT & RT
- -RAMP A- STA BEGIN CONSTRUCTION 10+00 TO END CONSTRUCTION 14+79.85 LT & RT

STEP 3

USING ROADWAY STANDARD DRAWING 1101.02 (SHEET 1 OF 9), COMPLETE THE FOLLOWING:

- COMPLETE PROPOSED GRADING / WEDGING UP TO ELEVATION OF EXISTING RD BEGUN IN STEP 2
- RESURFACE/WEDGE EXISTING PAVEMENT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA 20+00 TO STA 64+50 AND FROM 72+00 TO 97+00.
- PLACE TEMPORARY PAINT PAVEMENT MARKINGS AS REQUIRED.
- SHIFT TRAFFIC TO NEW ALIGNMENT -L- STA 24+44 TO 53+00.
- REMOVE EXISTING PAVEMENT REMAINING BETWEEN -L- STA 24+44 TO 48+72 RT.
- COMPLETE INSTALLATION OF DRAINAGE BEGUN IN STEP 2





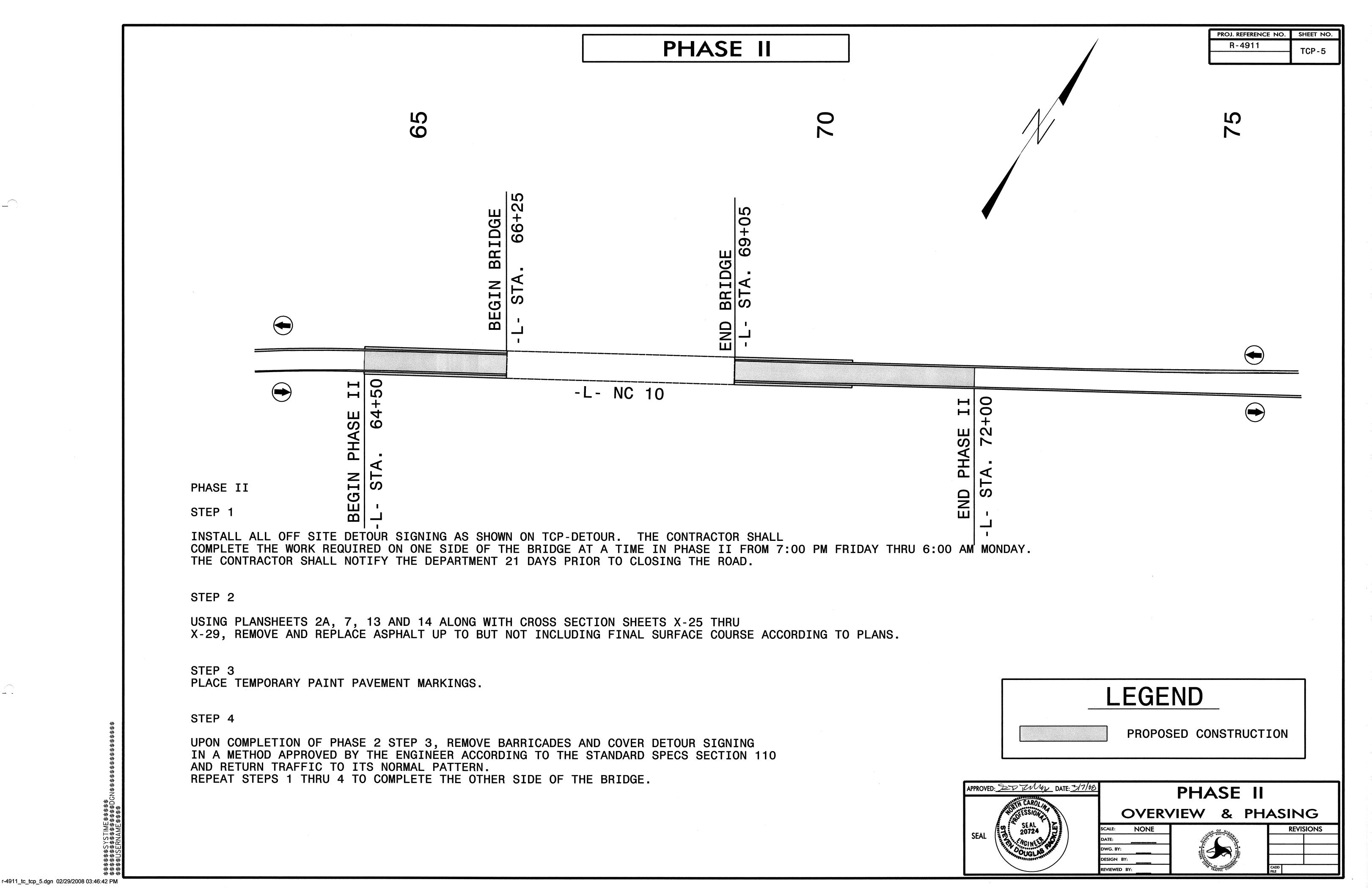
## PHASE I OVERVIEW AND PHASING

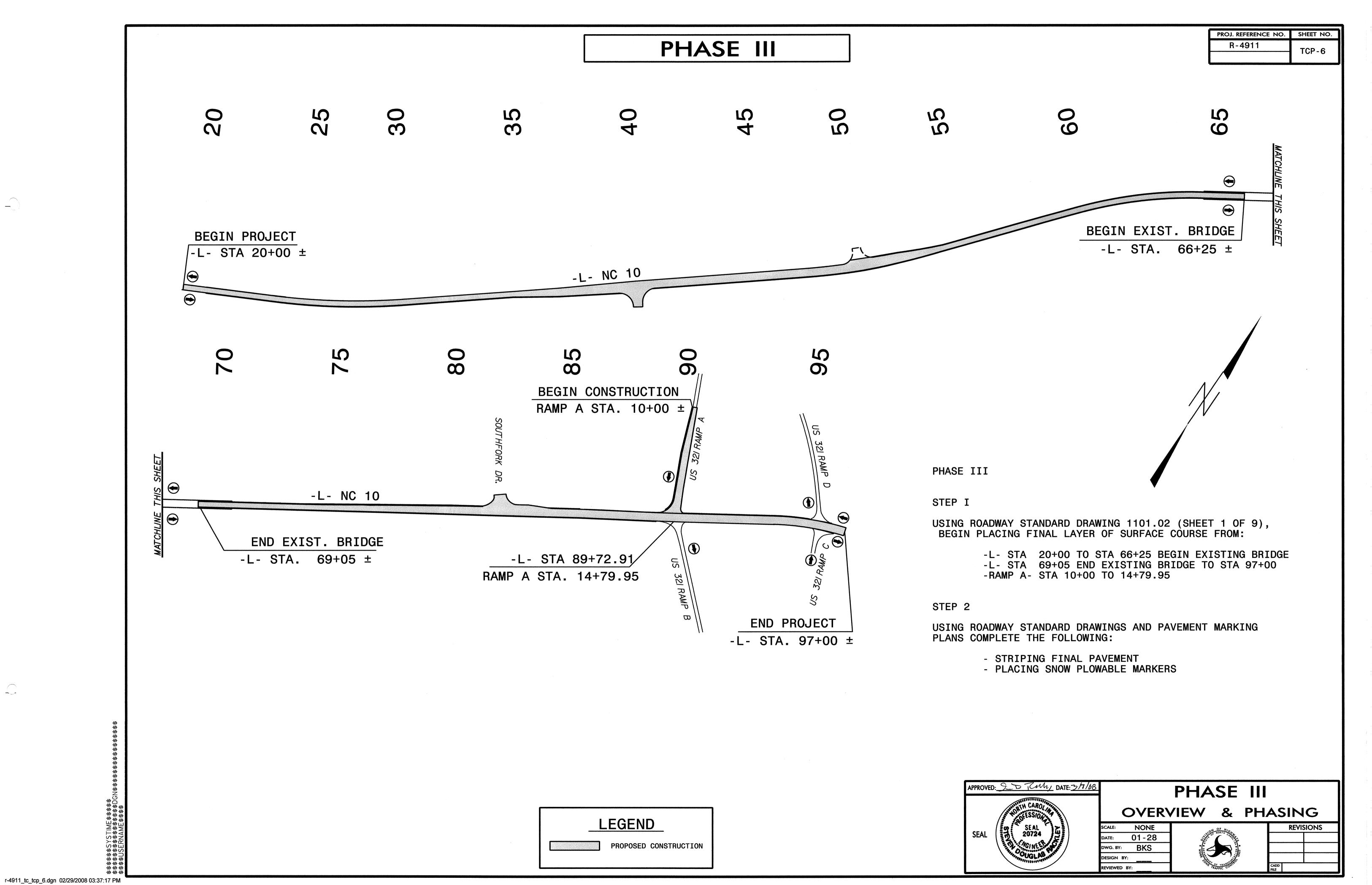
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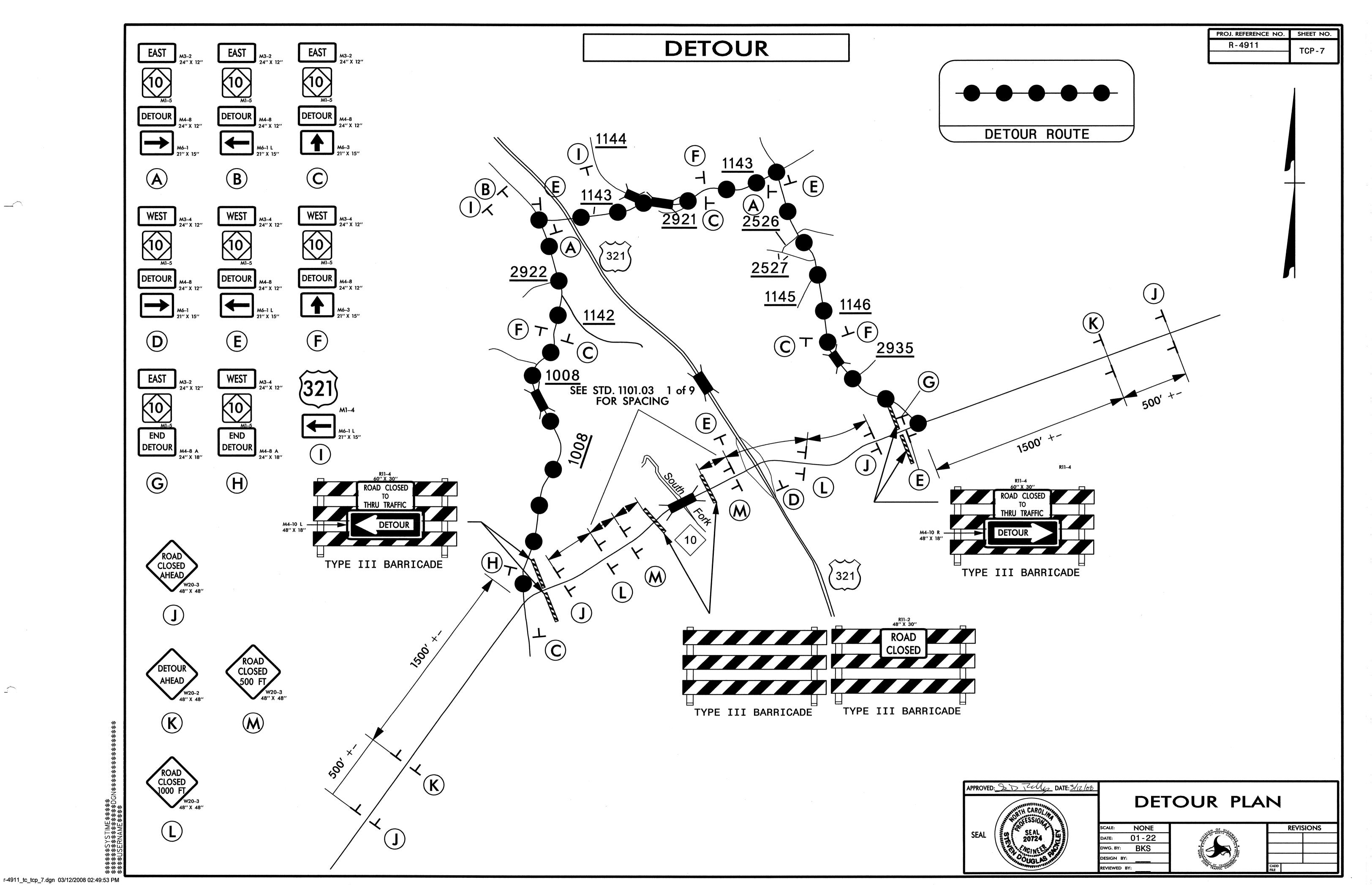
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PROJ. REFERENCE NO. SHEET NO.

R-4911
TCP-8

TRANSPORTATION

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DEPT.

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IGH

**0F** 

DED S SIGNS

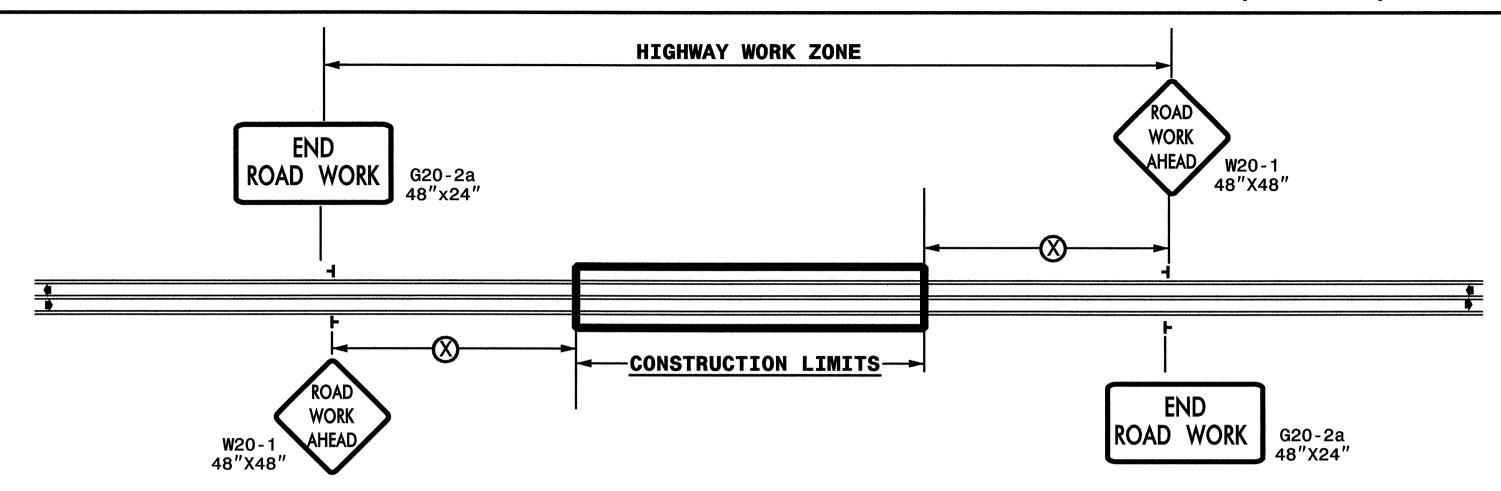
CAROLINA

NORTH

OF.

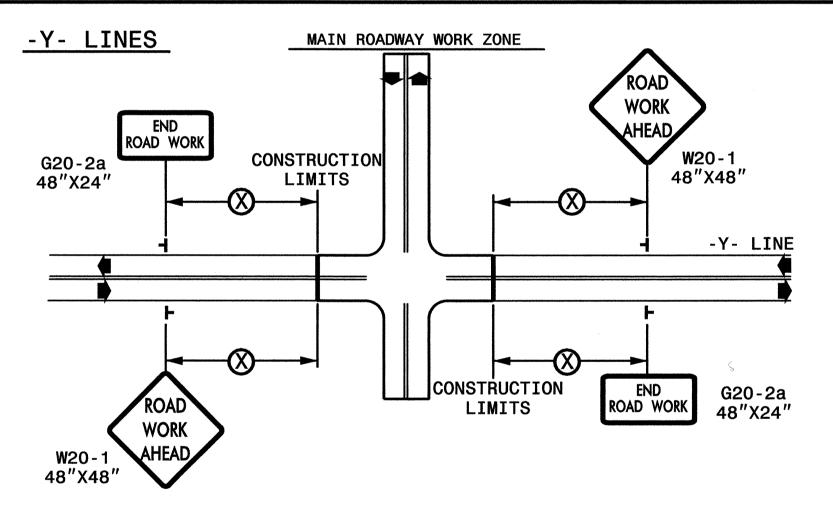
STATE





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

### 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.

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- \*\* 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.

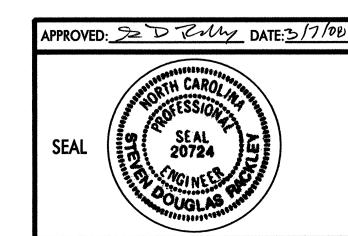
### **LEGEND**

├ STATIONARY SIGN

■ DIRECTION OF TRAFFIC FLOW

DESIGN BY:

SHEET 1 OF 1



DETAI UNDIVII ADVANCED	 D UR	BAN	FREE	WAYS
NONE	 HO F	<u>′</u> e		REVI

CHGINEER W	
14	
CONTROL	

ı	REVISIONS			
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	CADD FILE			

TWO WORK Z