

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO. B-4197	SHEET NO. TCP-1
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**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION**

McDOWELL COUNTY

B-4197

TIP PROJECT:

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
1101.05	WORK ZONE VEHICLE ACCESSSES
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
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
1170.01	PORTABLE CONCRETE BARRIER

INDEX OF SHEETS


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TCP-6	PHASE III, STAGE II CONSTRUCTION
TCP-7	FINAL PAVEMENT MARKING AND SCHEDULE
TCP-8	ADVANCED WORK ZONE WARNING SIGNS
TCP-9	TEMPORARY SHORING NOTES

LEGEND

- GENERAL**
- ← DIRECTION OF TRAFFIC FLOW
 - ↑ NORTH ARROW
 - PROPOSED PVMT. - - - - - EXIST. PVMT.
 - WORK AREA
 - ▨ REMOVAL OF TEMP. DETOUR
- TRAFFIC CONTROL DEVICES**
- I TYPE I BARRICADE
 - II TYPE II BARRICADE
 - III TYPE III BARRICADE
 - ▲ CONE
 - DRUM ⊙ SKINNY DRUM
 - ↻ FLASHING ARROW PANEL (TYPE C)
 - T STATIONARY SIGN
 - K 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

**TEMPORARY PAVEMENT MARKING
SCHEDULE**

SYMBOL	DESCRIPTION	PAY ITEM	QUANTITY BREAKDOWN	TOTAL QUANTITY
P4	WHITE STOPBAR	PAINT(24")	48 LF	TOTAL 48 LF
		PAINT(4")		
PA	WHITE EDGELINE		680 LF	TOTAL 680 LF
MH	CRYSTAL & CRYSTAL	MARKERS / TEMPORARY RAISED	40 EA	TOTAL 40 EA

APPROVED: <i>M. McDiarmid</i> DATE: 12/2/07	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
SEAL 	S. BOURNE, P.E. TRAFFIC CONTROL ENGINEER
	M. McDIARMID, P.E. TRAFFIC CONTROL PROJECT ENGINEER
	C. HOWARD TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	M. MANRIQUEZ TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

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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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) 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.
- B) 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.
- C) 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.
- D) 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.
- E) 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.
- F) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- G) 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) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

TRAFFIC CONTROL DEVICES

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

TRAFFIC BARRIER

- N) 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.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
SR 1552 (LAKE JAMES RD)	PAINT	PERMANENT RAISED

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

ROAD NAME	MARKING	MARKER
-DET- / SR 1552 (LAKE JAMES RD)	PAINT	TEMPORARY RAISED

- Q) 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.
- R) 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.
- S) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- T) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.



TEMPORARY SIGNAL

- U) SHIFT AND REVISE TEMPORARY SIGNAL HEADS AS SHOWN ON THE SIGNAL PLANS.

MISCELLANEOUS

- V) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAYS TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION, AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

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APPROVED: <i>M. McManis</i> DATE: 12/2/07	PROJECT NOTES	
	SCALE: NONE	
	DATE: 11/2007	
	DWG. BY: MRM	
	DESIGN BY: MRM	
REVIEWED BY: CBH	REVISIONS	

PROJECT PHASING

PHASE I

- STEP 1: INSTALL WORK ZONE WARNING SIGNS ALONG SR 1552 (LAKE JAMES RD) SEE TCP-4 AND TCP-8.
- STEP 2: USE ROADWAY STANDARD DRAWING 1101.02 SHEET 1 OF 9, CONSTRUCT PIPES, DETOUR AND APPROACHES UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE THROUGH THE FOLLOWING STATION LOCATIONS AND TIE-INS WITH THE EXISTING ROADWAY (SEE TCP-4):

-DET- STA. 10+85+/- TO -DET- STA. 13+95+/-

USING FLAGGERS CONSTRUCT DRIVEWAY -Y- IN CONJUNCTION WITH THE TEMPORARY DETOUR AT THE FOLLOWING STATIONS: (SEE TCP-4)

-Y- STA. 10+00+/- TO -Y- STA. 11+18+/-

PLACE TEMPORARY PAVEMENT MARKING PAINT (EDGELINES) AND AND TEMPORARY MARKERS ON THE TEMPORARY -L- DETOUR AND TIE-IN WITH THE EXISTING PAVEMENT USING FLAGGERS.

MAINTAIN DRIVEWAYS ACCESS AT ALL TIMES DURING CONSTRUCTION.

PHASE II

- STEP 1: INSTALL AND COVER SIGNING FOR TEMPORARY SIGNAL CONDITION AND ON-SITE DIVERSION.
- USING FLAGGERS, INSTALL TEMPORARY STOPBARS AS SHOWN ON SIGNAL PLANS AND TCP-5.
- USING FLAGGERS, INSTALL WATER FILLED BARRIER AS SHOWN ON SHEET TCP-5 AND SECTION C-C'.
- STEP 2: USE ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9 SIMULTANEOUSLY SHIFT SR 1552 (LAKE JAMES RD) TRAFFIC TO THE TEMPORARY DETOUR IN A ONE-LANE, TWO-WAY TRAFFIC PATTERN AND UNCOVER ON-SITE DETOUR SIGNING AND ACTIVATE SIGNALS (SEE SIGNAL PLANS AND TCP-5).

- STEP 3: AWAY FROM TRAFFIC CONSTRUCT TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC AT THE FOLLOWING STATIONS (SEE TCP-5):

-L- STA. 23+80+/- TO -L- STA. 24+60+/-
-L- STA. 24+85+/- TO -L- STA. 25+45+/-

REMOVE EXISTING SR 1552 (LAKE JAMES RD) STRUCTURE AND CONSTRUCT STAGE 1 OF PROPOSED STRUCTURE, GUARDRAILS AND APPROACHES UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE THROUGH THE FOLLOWING STATION LOCATION (SEE TCP-5):

-L- STA. 22+72+/- TO -L- STA. 25+50+/-

USING FLAGGERS WEDGE AND CONSTRUCT -L- TIE-INS UP TO BUT NOT INCLUDING THE FINAL LAYER COURSE FROM THE FOLLOWING STATIONS: (SEE TCP-5)

-L- STA. 21+52+/- TO 22+52+/-
-L- STA. 25+50+/- TO 27+00+/-

MAINTAIN DRIVEWAY ACCESS AT ALL TIMES DURING CONSTRUCTION.

PHASE III

- STEP 1: PLACE TEMPORARY PAVEMENT MARKING (EDGELINES) AND TEMPORARY MARKERS ON THE PROPOSED -L- FOR A ONE-LANE, TWO-WAY TRAFFIC PATTERN AND TIE-IN WITH THE EXISTING PAVEMENT MARKING USING FLAGGERS (SEE TCP-6).
- STEP 2: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9, SHIFT SR 1552 (LAKE JAMES RD) TRAFFIC TO THE PROPOSED -L- IN A ONE-LANE, TWO-WAY TRAFFIC PATTERN (SEE TCP-6).

NOTE: SIGNALS, SIGNING AND STOPBAR LOCATIONS WILL REMAIN AS PER PHASE II WHEN SHIFTING TRAFFIC TO PROPOSED -L- IN A ONE-LANE, TWO-WAY TRAFFIC PATTERN.

- STEP 3: REMOVE TEMPORARY SHORING THAT WAS INSTALLED IN PHASE II AND CONSTRUCT PROPOSED -L- STAGE II OF STRUCTURE, GUARDRAIL AND APPROACHES UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE USING FLAGGERS (SEE TCP-6).

- STEP 4: REMOVE TEMPORARY -L- DETOUR AND COMPLETE FINAL SHOULDER, SLOPES, DITCHES, AND DRIVEWAYS ON LEFT SIDE OF PROPOSED -L- USING FLAGGERS (SEE TCP-6).

MAINTAIN DRIVEWAY ACCESS AT ALL TIME DURING CONSTRUCTION.



- STEP 5: OPEN SR 1552 (LAKE JAMES RD) TO FINAL TWO-LANE, TWO-WAY TRAFFIC PATTERN (SEE TCP-7)

REMOVE TEMPORARY TRAFFIC SIGNAL FROM THE PROJECT.

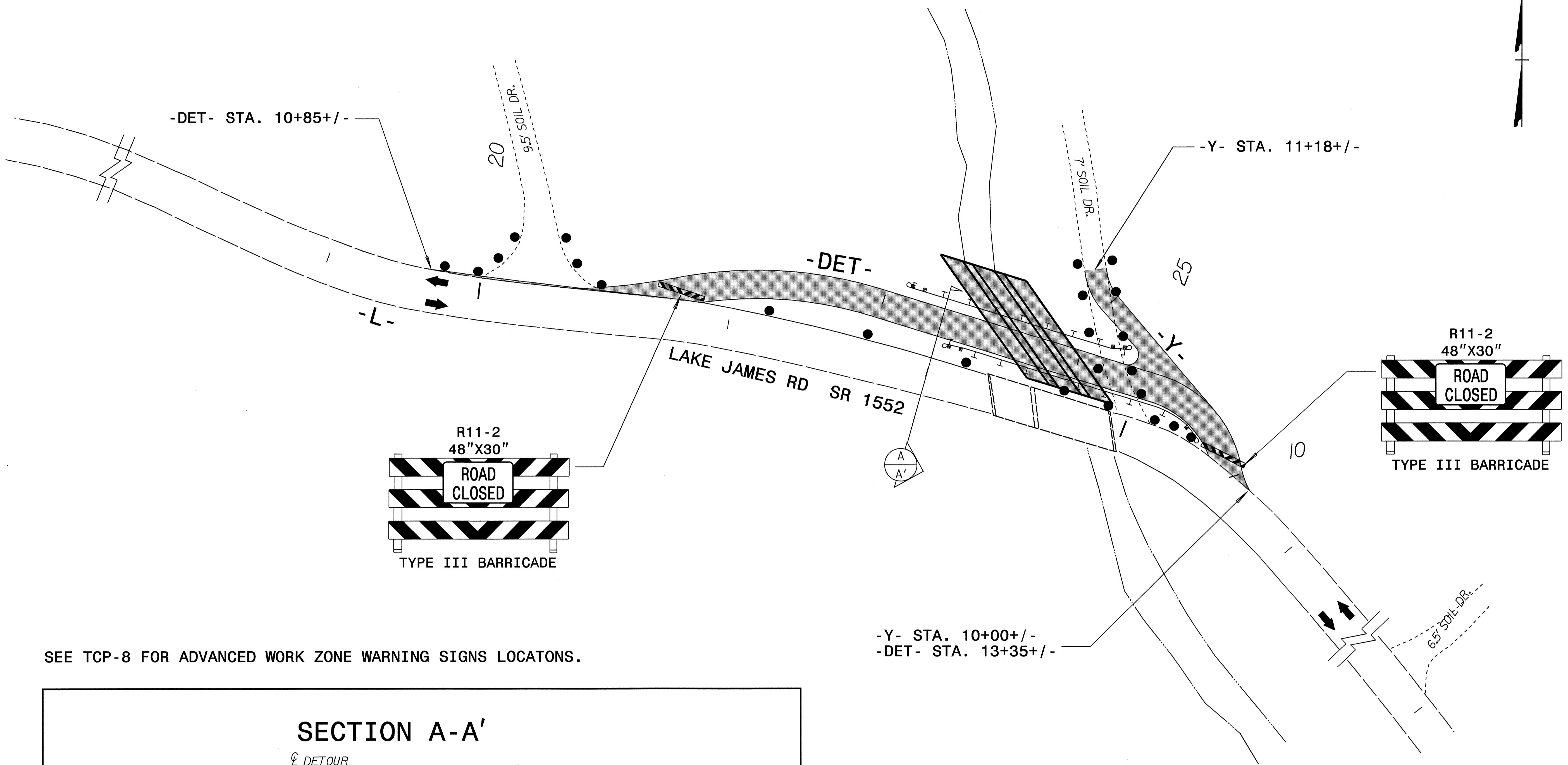
- STEP 6: USE ROADWAY STANDARD DRAWING 1101.02 SHEET 1 OF 9, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKING (PAINT) ON PROPOSED -L- AND PERMANENT MARKERS (RAISED) ON BRIDGE (SEE TCP-7).

- STEP 7: REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES AND OPEN SR 1552 (LAKE JAMES RD) TO THE FINAL TRAFFIC PATTERN.

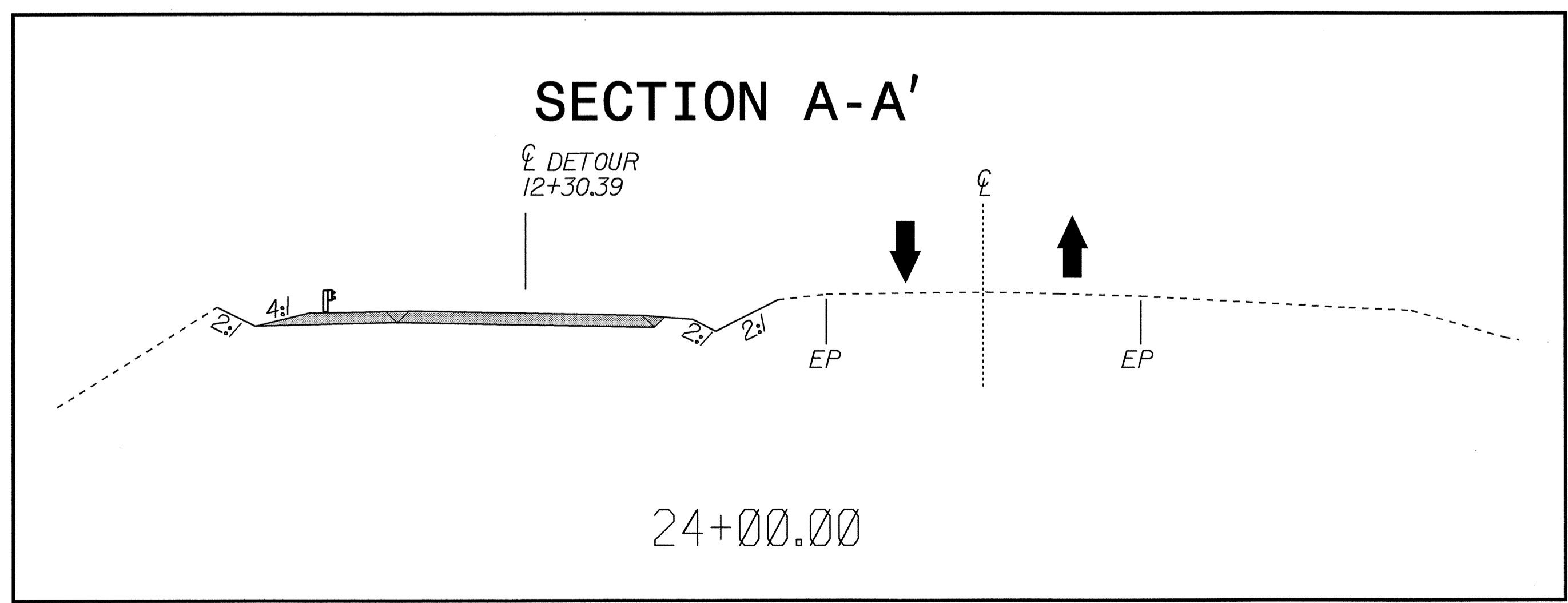
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DETOUR AND -Y- CONSTRUCTION




SEE TCP-8 FOR ADVANCED WORK ZONE WARNING SIGNS LOCATIONS.

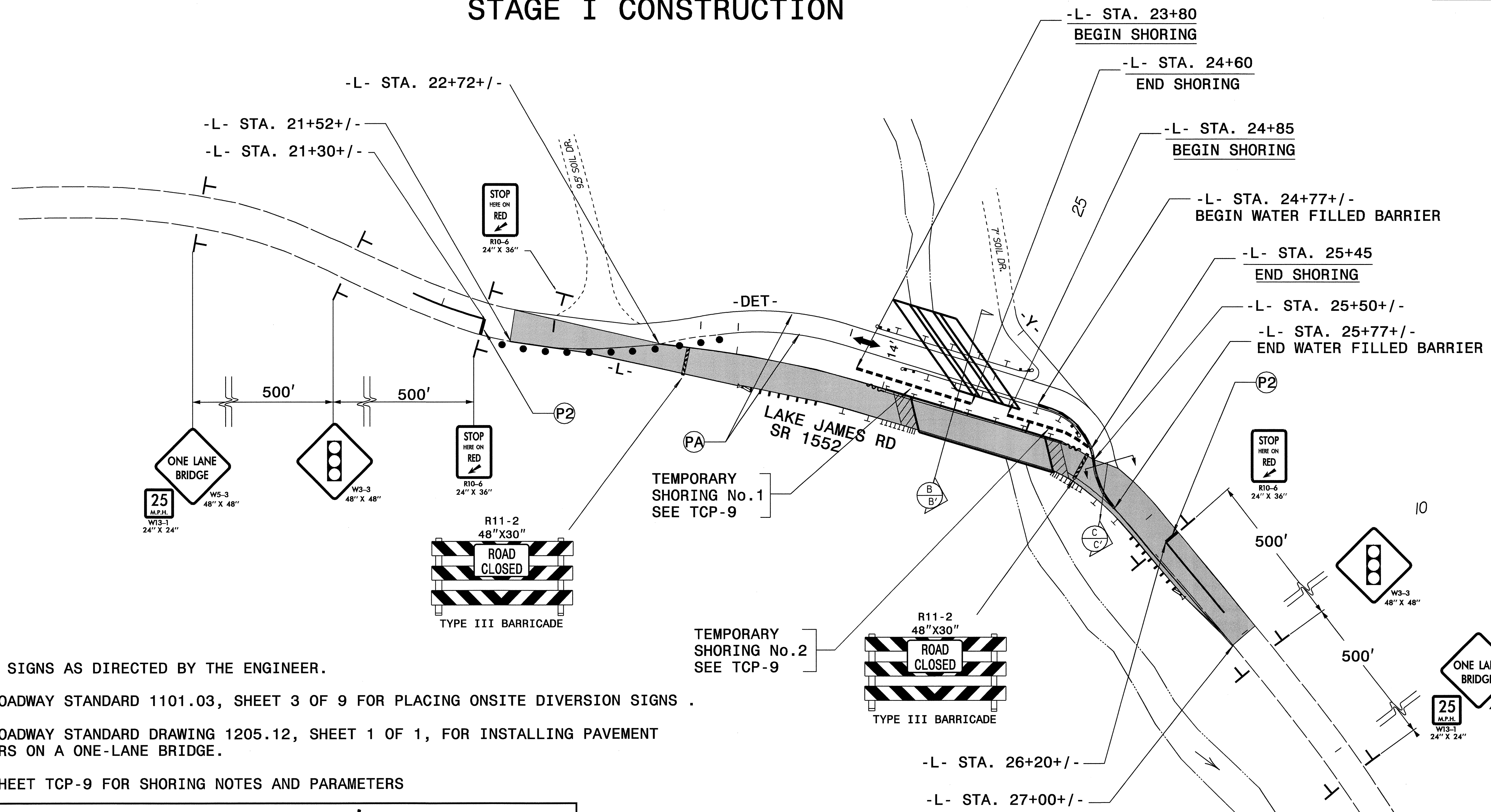


 WORK AREA

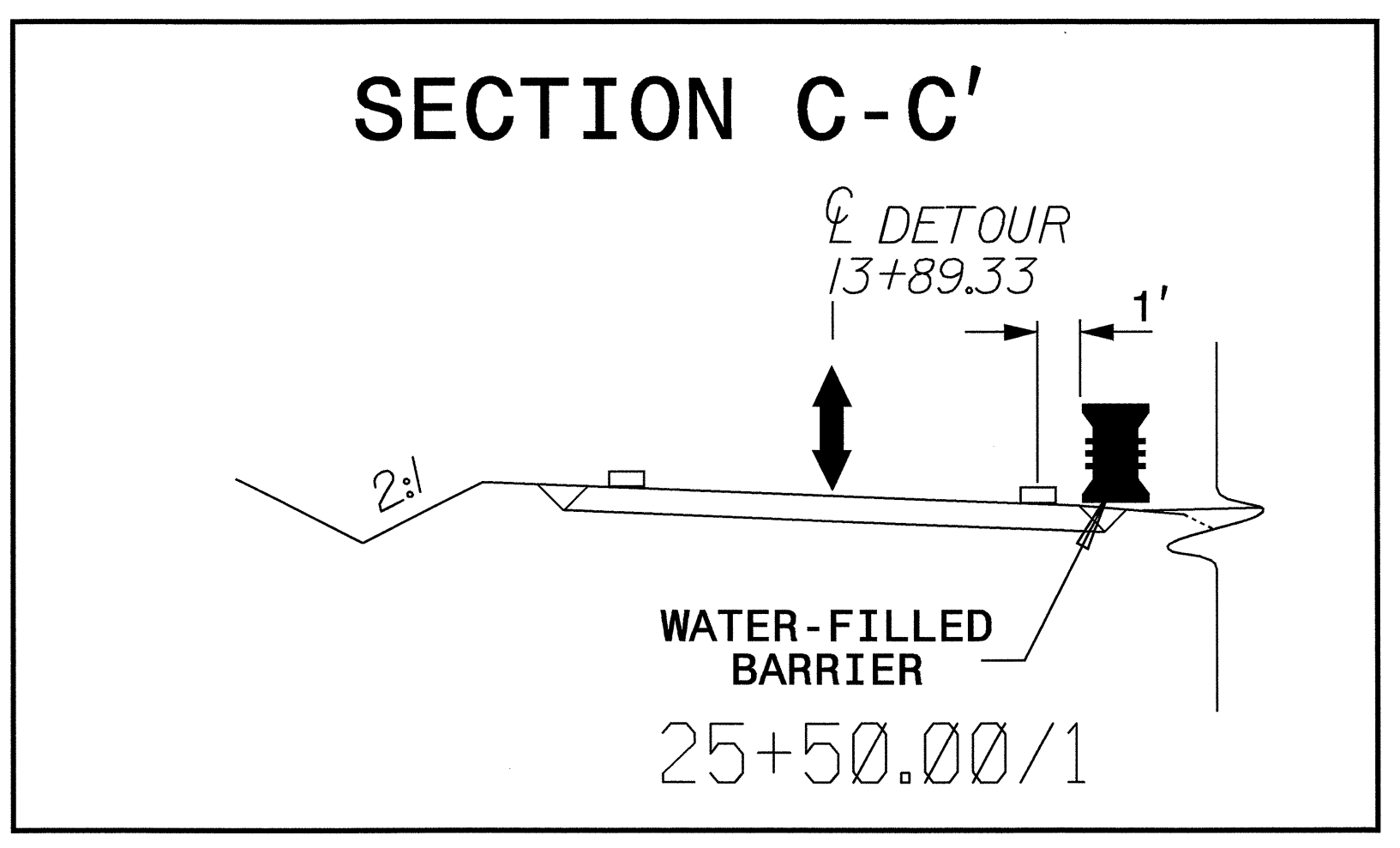
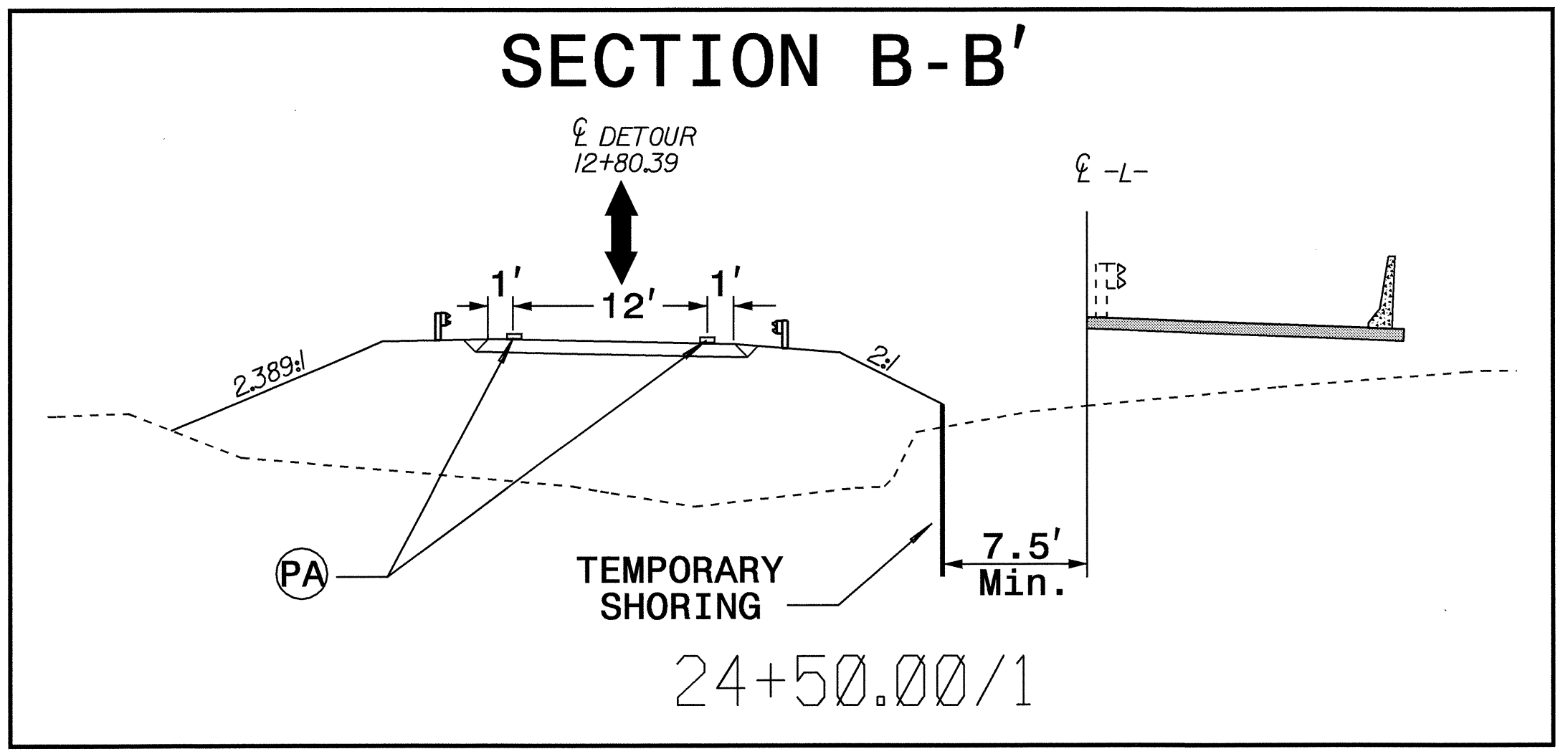
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APPROVED: <i>M. Medina</i> DATE: 12/12/07	PHASE I, STEP 2																			
																				
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STAGE I CONSTRUCTION



PLACE SIGNS AS DIRECTED BY THE ENGINEER.
 SEE ROADWAY STANDARD 1101.03, SHEET 3 OF 9 FOR PLACING ONSITE DIVERSION SIGNS .
 SEE ROADWAY STANDARD DRAWING 1205.12, SHEET 1 OF 1, FOR INSTALLING PAVEMENT MARKERS ON A ONE-LANE BRIDGE.
 SEE SHEET TCP-9 FOR SHORING NOTES AND PARAMETERS



- TEMPORARY SHORING
- █ WORK AREA

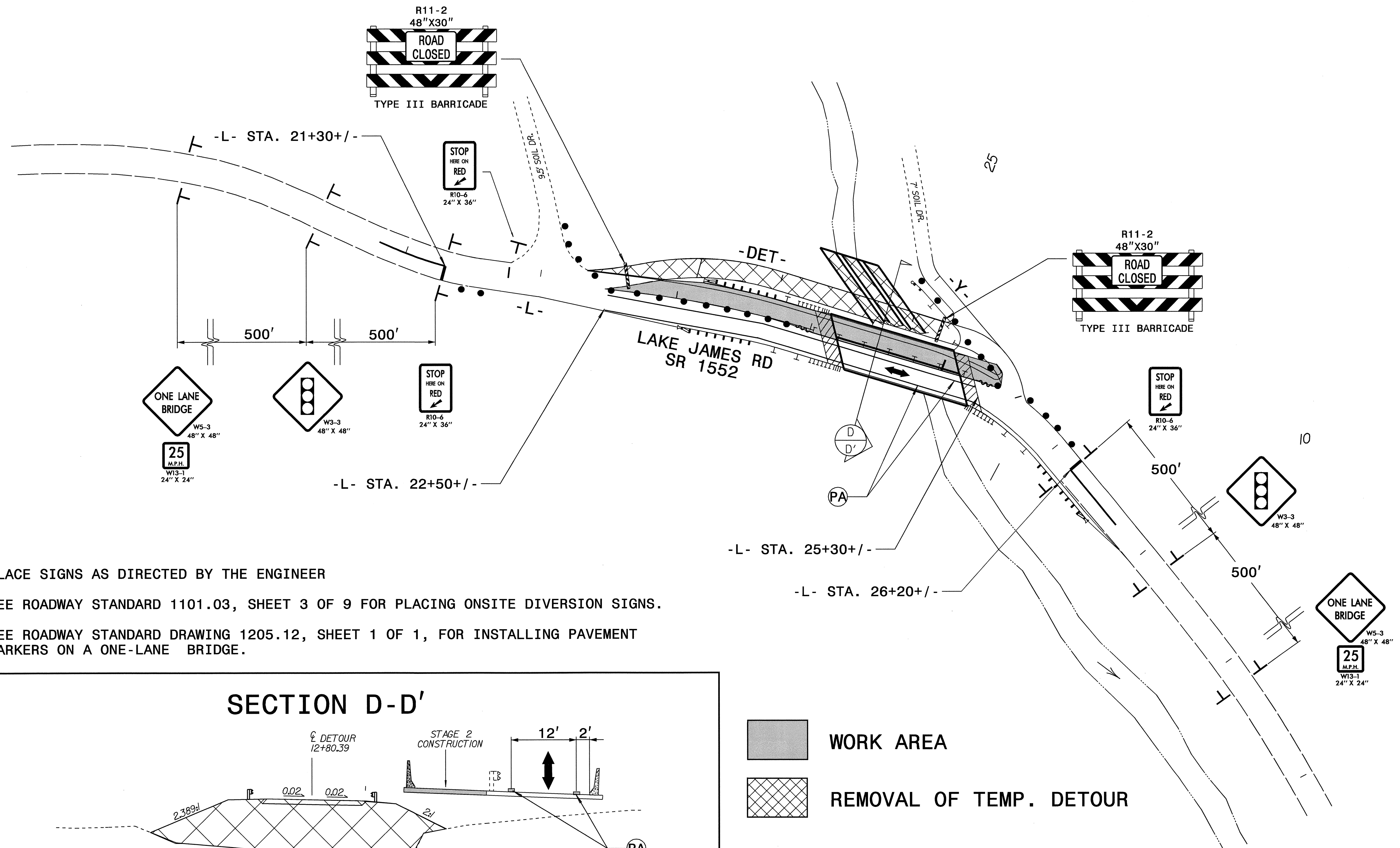
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PHASE II, STEPS 1, 2 & 3

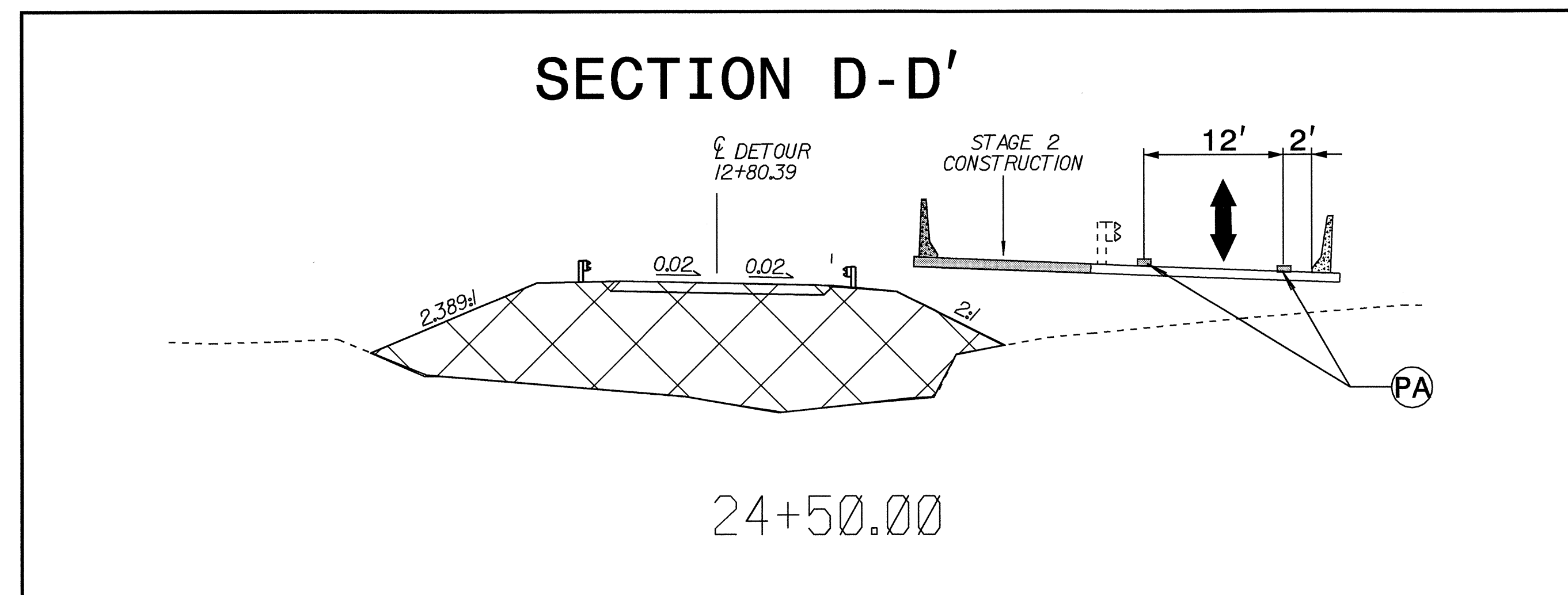
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STAGE II CONSTRUCTION AND DETOUR REMOVAL



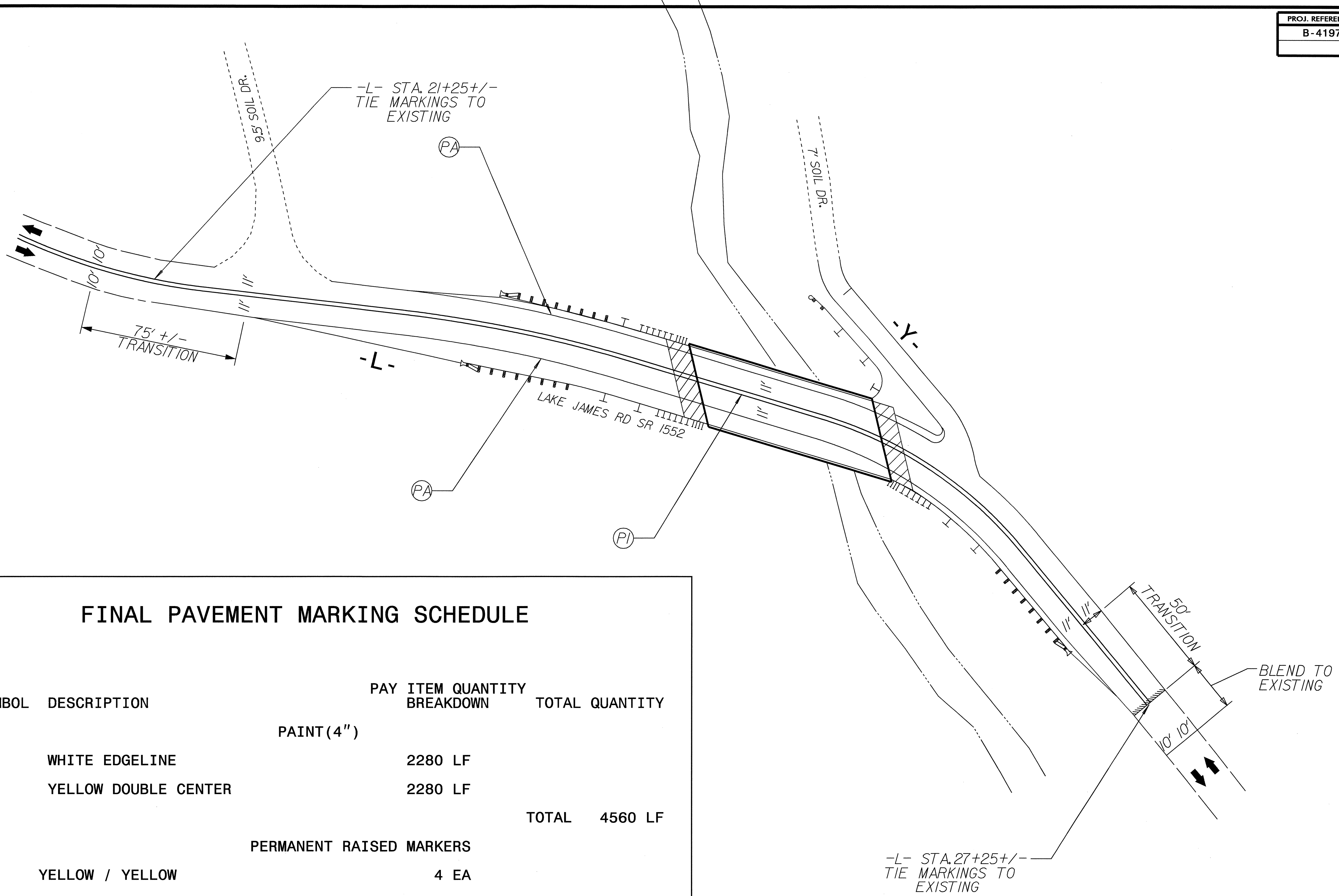
PLACE SIGNS AS DIRECTED BY THE ENGINEER
 SEE ROADWAY STANDARD 1101.03, SHEET 3 OF 9 FOR PLACING ONSITE DIVERSION SIGNS.
 SEE ROADWAY STANDARD DRAWING 1205.12, SHEET 1 OF 1, FOR INSTALLING PAVEMENT MARKERS ON A ONE-LANE BRIDGE.



WORK AREA
 REMOVAL OF TEMP. DETOUR

APPROVED: <i>M. McDaniel</i> DATE: 12/12/07	PHASE III					
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FINAL PAVEMENT MARKING SCHEDULE

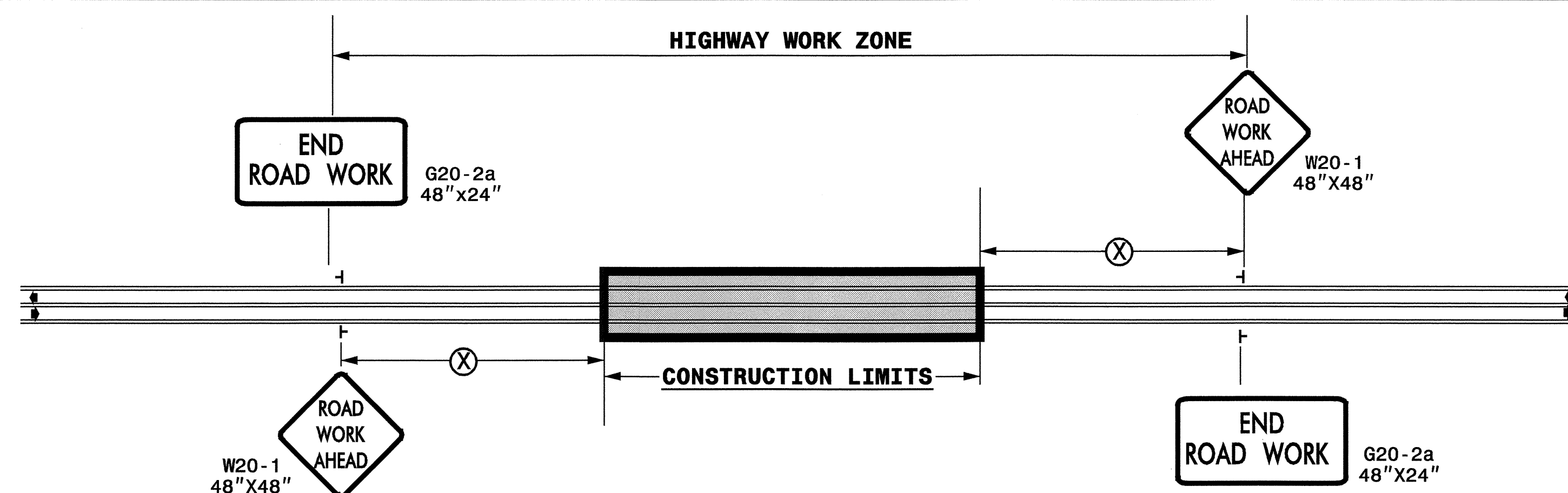
SYMBOL	DESCRIPTION	PAY ITEM	QUANTITY BREAKDOWN	TOTAL QUANTITY
PAINT (4")				
PA	WHITE EDGELINE		2280 LF	
PI	YELLOW DOUBLE CENTER		2280 LF	
			TOTAL	4560 LF
PERMANENT RAISED MARKERS				
MA	YELLOW / YELLOW		4 EA	
			TOTAL	4 EA

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

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 mmamriquez AT WZTC24099

APPROVED: <i>[Signature]</i> DATE: 12/12/07		FINAL PAVEMENT MARKING								
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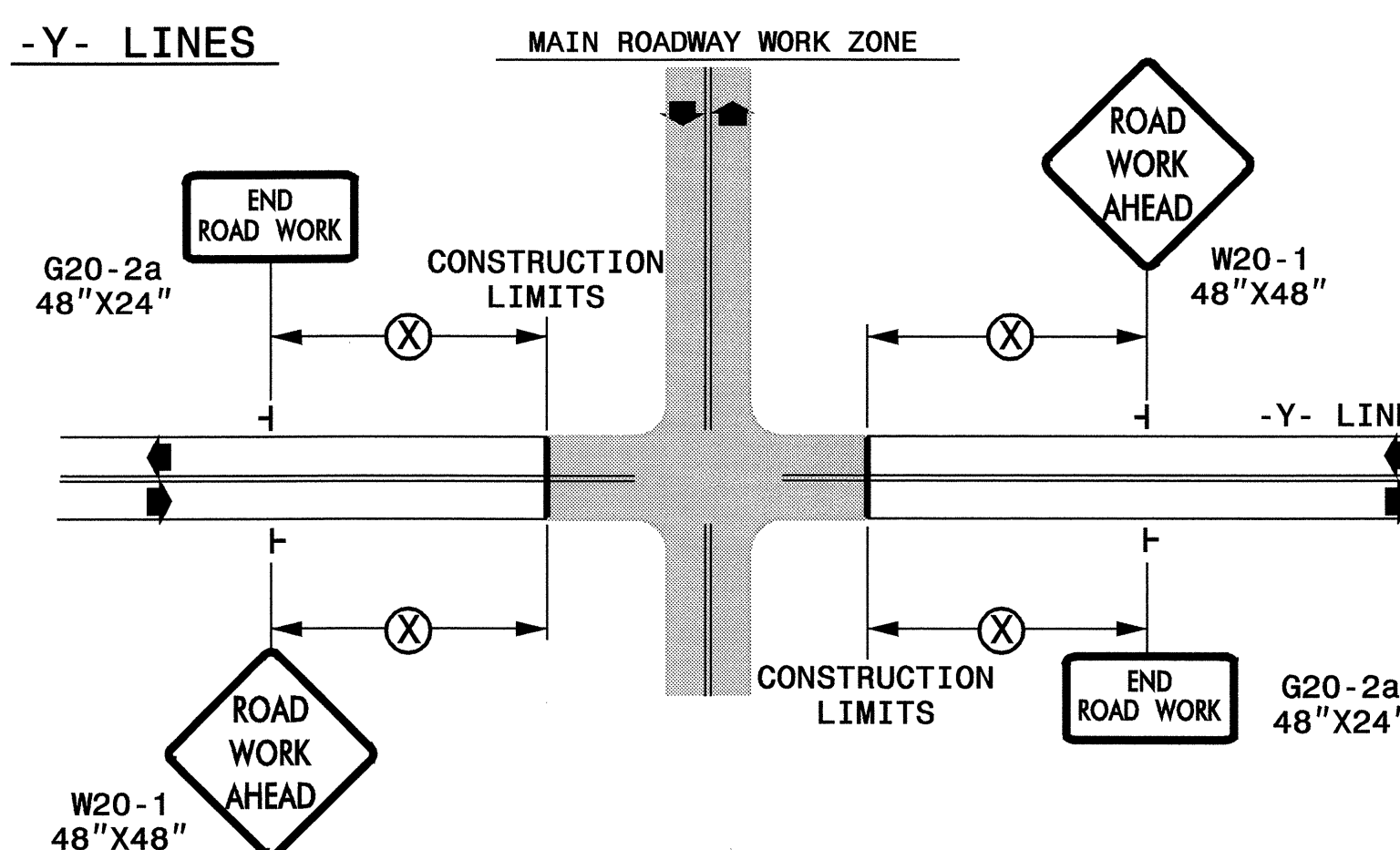
TWO-WAY UNDIVIDED ** (L-LINES)



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

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

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 DRAWING FOR
TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

APPROVED: <i>M. M. [Signature]</i> DATE: 12/12/07	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
	SCALE: NONE	REVISIONS
	DATE: 11/07	7-98 10/01
	DESIGN BY:	10-98 03/04
	REVIEWED BY:	01/01 11/04

TEMPORARY SHORING NOTES

Temporary Shoring No. 1

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

DO NOT USE A TEMPORARY MSE WALL FROM STATION 23+80.00-L-, 7.5 FT. LEFT OF- L-, TO STATION 24+60.00-L-, 7.5 FT. LEFT OF- L-.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 23+80.00-L-, 7.5 FT. LEFT OF- L-, TO STATION 24+60.00-L-, 7.5 FT. LEFT OF- L-, USE THE FOLLOWING SOIL PARAMETERS:
 UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $g = 120$ PCF
 UNIT WEIGHT OF SOIL BELOW WATER TABLE, $g = 60$ PCF
 FRICTION ANGLE, $f = 30$ DEGREES
 COHESION, $c = 0$ PSF

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 23+80.00-L-, 7.5 FT. LEFT OF- L-, TO STATION 24+60.00-L-, 7.5 FT. LEFT OF- L-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 23+80.00-L-, 7.5 FT. LEFT OF -L-, TO STATION 24+60.00-L-, 7.5 FT. LEFT OF- L-. MAY NOT PENETRATE BELOW ELEVATION 1230 FT. DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK.

Temporary Shoring No. 2

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

DO NOT USE A TEMPORARY MSE WALL FROM STATION 24+85.00-L-, 7.5 FT. LEFT OF- L-, TO STATION 25+45.00-L-, 7.5 FT. LEFT OF -L-.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

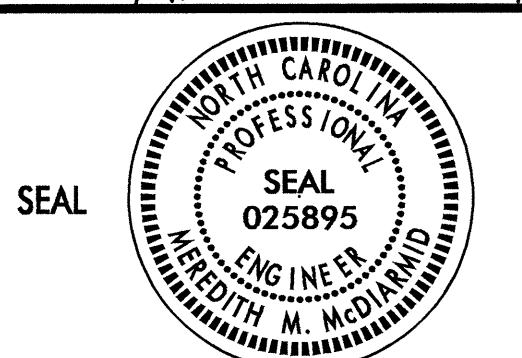
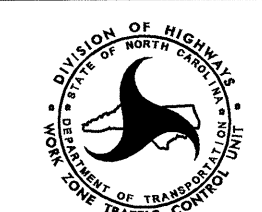
WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 24+85.00-L-, 7.5 FT. LEFT OF- L-, TO STATION 25+45.00-L-, 7.5 FT. LEFT OF -L-, USE THE FOLLOWING SOIL PARAMETERS:
 UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $g = 120$ PCF
 UNIT WEIGHT OF SOIL BELOW WATER TABLE, $g = 60$ PCF
 FRICTION ANGLE, $f = 30$ DEGREES
 COHESION, $c = 0$ PSF

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 24+85.00-L-, 7.5 FT. LEFT OF -L-, TO STATION 25+45.00-L-, 7.5 FT. LEFT OF -L-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 24+85.00-L-, 7.5 FT. LEFT OF -L-, TO STATION 25+45.00-L-, 7.5 FT. LEFT OF- L-. MAY NOT PENETRATE BELOW ELEVATION 1235 FT. DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK.

* THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTCU ON DECEMBER 11, 2007 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN FARHER PE (license # 023480)

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APPROVED: <i>M. McDiarmid</i> DATE: 12/11/07	TEMP. SHORING	
	SCALE: NONE	
	DATE: 11/2007	
	DWG. BY: MRM	
	DESIGN BY: MRM	
REVIEWED BY: CBH	REVISIONS	