

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO. B-4449	SHEET NO. TCP-1
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**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION**

CABARRUS COUNTY

B-4449

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
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER 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
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
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

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, FINAL PAVEMENT MARKING SCHEDULE AND LEGEND AND INDEX OF SHEETS
TCP-2	PROJECT AND LOCAL NOTES
TCP-3	PHASING AND TEMPORARY PAVEMENT MARKING SCHEDULE
TCP-4	DETAIL 1
TCP-5	DETOUR ROUTE AND BARRICADE PLACEMENT
TCP-6	FINAL PAVEMENT MARKING PLAN
TCP-7	ADVANCE WORK ZONE WARNING SIGNS
SD-1	SPECIAL SIGN DESIGN

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

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM	QUANTITY BREAKDOWN	TOTAL QUANTITY
PAVEMENT MARKINGS				
TA	WHITE EDGE LINE	THERMOPLASTIC (4", 90 MILS)	3600 LF	TOTAL: 3600 LF
TD	2 FT WHITE MINISKIP	THERMOPLASTIC (4", 120 MILS)	30 LF	
TE	WHITE SOLID LANE LINE	THERMOPLASTIC (4", 120 MILS)	150 LF	TOTAL: 5180 LF
TI	YELLOW DOUBLE CENTER LINE	THERMOPLASTIC (4", 120 MILS)	5000 LF	
TT	YELLOW DIAGONAL	THERMOPLASTIC (8", 90 MILS)	150 LF	TOTAL: 150 LF
T2	WHITE STOPBAR	THERMOPLASTIC (24", 120 MILS)	40 LF	
COLD APPLIED PLASTIC (4") TYPE 3				
CA	WHITE EDGE LINE		420 LF	TOTAL: 840 LF
CI	YELLOW DOUBLE CENTER LINE		420 LF	
THERMOPLASTIC PAVEMENT MARKING SYMBOLS				
UA	LEFT TURN ARROW		2 EA	TOTAL: 4 EA
UC	STRAIGHT ARROW		2 EA	
MARKERS				
MA	YELLOW & YELLOW	PERMANENT RAISED PAVEMENT MARKERS	25 EA	TOTAL: 25 EA

- PAVEMENT MARKINGS**
- CRYSTAL/CRYSTAL PAVEMENT MARKER
 - YELLOW/YELLOW PAVEMENT MARKER
 - CRYSTAL/RED PAVEMENT MARKER
 - PAVEMENT MARKING SYMBOLS

APPROVED: DATE: 9/3/08	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
	J. STUART BORNE, PE TRAFFIC CONTROL ENGINEER
	JOSEPH ISHAK, PE TRAFFIC CONTROL PROJECT ENGINEER
	J. L. PORTANOVA, PE TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	ALLA LYUDMIRSKAYA TRAFFIC CONTROL DESIGN ENGINEER

TIP PROJECT:

PHASING

MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES AT ALL TIMES WITHIN THE PROJECT LIMITS, UNLESS OTHERWISE NOTED IN THE PHASING

STEP 1:

USING RSD 1101.02, SHEET 1 OF 9, INSTALL ADVANCE WORK ZONE WARNING SIGNS. SEE SHEET TCP-6.

STEP 2:

USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWINGS: AT THE END OF EACH WORK DAY RETURN TRAFFIC TO EXISTING PATTERN. SEE ROADWAY & SIGNAL PLANS AND SHEET TCP-4.

- INSTALL TEMPORARY GUARDRAIL ALONG EB OF EXISTING POPLAR TENT RD. FROM -L- STA.15+50+/- TO -L- STA.18+30+/-

- MAY BEGIN TO INSTALL POLES FOR AN EXISTING TRAFFIC SIGNAL RELOCATION AT INTERSECTION OF POPLAR TENT RD. AND EDUCATION WAY

- BEGIN CONSTRUCTION OF PROPOSED DRAINAGE.

STEP 3:

- AWAY FROM TRAFFIC, PERFORM THE FOLLOWING: SEE ROADWAY PLANS AND SHEET TCP-4.

1) BEGIN CONSTRUCTION UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE OF PROPOSED -L- (POPLAR TENT RD.) FROM STA.14+10+/- TO STA.23+20+/-

2) CONSTRUCT PROPOSED STRUCTURE FROM -L- STA.18+28+/- TO -L- STA.20+13+/-

3) INSTALL PROPOSED GUARDRAIL ON BOTH SIDES OF -L- EXCEPT WHERE GUARDRAIL CONFLICTS WITH EXISTING.

- USING RSD 1101.03, SHEET 1 OF 9, AND SHEETS TCP-5 & SD-1, INSTALL AND COVER DETOUR SIGNS.

COMPLETE THE WORK REQUIRED IN STEP 4 IN ONE WEEKEND FROM 7:00 P.M. FRIDAY TO 7:00 A.M. THE FOLLOWING MONDAY. SEE ICT FOR LIQUIDATED DAMAGES.

STEP 4:

1. UNCOVER DETOUR SIGNS, PLACE TYPE III BARRICADES TO CLOSE POPLAR TENT RD. TO TRAFFIC. DETOUR TRAFFIC OFFSITE.

2. AWAY FROM TRAFFIC, PERFORM THE FOLLOWINGS: SEE ROADWAY & SIGNAL PLANS.

1)- COMPLETE CONSTRUCTION OF PROPOSED DRAINAGE

- COMPLETE RELOCATION OF EXISTING TRAFFIC SIGNAL AT INTERSECTION OF POPLAR TENT RD. AND EDUCATION WAY

- REMOVE TEMPORARY GUARDRAIL INSTALLED IN STEP 2 FROM -L- STA.15+50+/- TO -L- STA.17+80+/-

2)- COMPLETE CONSTRUCTION OF PROPOSED -L- UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM STA.10+00+/- TO STA.26+85+/- AND TIE IN TO EXISTING POPLAR TENT RD. AND EDUCATION WAY

- CONSTRUCT PROPOSED ACCESSES TO ALL BUSINESSES AND PARKING AREA

3) PLACE TEMPORARY PAVEMENT MARKING (PAINT) AND TEMPORARY PAVEMENT MARKERS (TEMPORARY RAISED) FROM STA.10+00+/- TO STA.26+85+/- AS SHOWN ON SHEET TCP-6.

3. REMOVE ALL TRAFFIC CONTROL DEVICES AND DETOUR SIGNS. OPEN -L- (POPLAR TENT RD.) TO PROPOSED TRAFFIC PATTERN.

NOTE: WORKING IN CONTINUOUS MANNER, COMPLETE STEP 5 AFTER STEP 4 IS COMPLETED

STEP 5:

USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWINGS: SEE ROADWAY PLANS.

1)- BEGIN TO REMOVE EXISTING ROADWAY

- COMPLETE REMOVAL OF REMAINING TEMPORARY GUARDRAIL INSTALLED IN STEP 2

2) COMPLETE INSTALLATION OF PROPOSED GUARDRAIL ALONG WB OF PROPOSED -L-.

STEP 6:

AWAY FROM TRAFFIC, COMPLETE TO REMOVE EXISTING ROADWAY AND EXISTING STRUCTURE. SEE ROADWAY PLANS.

STEP 7:

USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWINGS: SEE SHEET TCP-6.

1) PLACE FINAL LAYER OF SURFACE COURSE FROM -L- STA.10+00+/- TO -L- STA.26+85+/-

2) PLACE FINAL PAVEMENT MARKINGS (THERMOPLASTIC) AND MARKERS (PERMANENT RAISED) ON -L- STA.10+00+/- TO -L- STA.26+85+/- INCLUDING COLD APPLIED PLASTIC TYPE 3 ON CONCRETE BRIDGE DECK FROM -L- STA.18+28+/- TO -L- STA.20+13+/-.

3) REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES AND SIGNS.

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM	QUANTITY BREAKDOWN	TOTAL QUANTITY	
PAVEMENT MARKINGS					
PA	WHITE EDGE LINE (1X)	PAINT (4")	3600 LF	3600 LF	
PD	2 FT WHITE MINISKEIP (1X)	PAINT (4")	30 LF	30 LF	
PE	WHITE SOLID LANE LINE (1X)	PAINT (4")	150 LF	150 LF	
PI	YELLOW DOUBLE CENTER LINE (1X)	PAINT (4")	5000 LF	5000 LF	
		TOTAL:		8780 LF	
PV	YELLOW DIAGONAL (1X)	PAINT (8")	150 LF	150 LF	
		TOTAL:		150 LF	
P4	WHITE STOPBAR (1X)	PAINT (24")	40 LF	40 LF	
		TOTAL:		40 LF	
PAINT MARKING SYMBOLS					
QA	LEFT TURN ARROW (1X)		2 EA	2 EA	
QC	STRAIGHT ARROW (1X)		2 EA	2 EA	
		TOTAL:		4 EA	
MARKERS					
TEMPORARY RAISED PAVEMENT MARKERS					
MH	YELLOW & YELLOW		25 EA	25 EA	

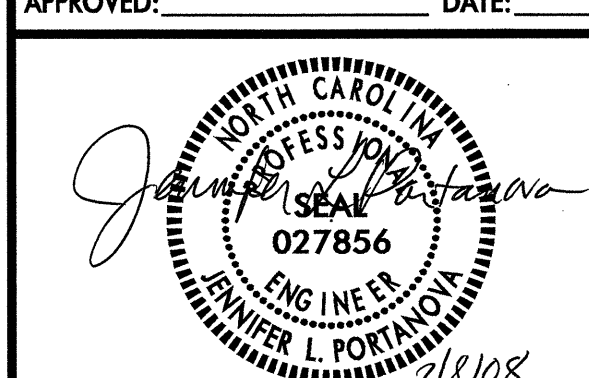
NOTE:

AS DIRECTED BY THE ENGINEER, TEMPORARY PAVEMENT MARKING (PAINT) MAY BE USED TO STRIPE THE FINAL TRAFFIC PATTERN ON -L-. THIS SCHEDULE INCLUDES QUANTITIES FOR PLACING TWO APPLICATIONS OF PAINT ON THE FINAL SURFACE OF NEW ASPHALT WITH PERMANENT TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE UNTIL THE PROPOSED FINAL PAVEMENT MARKING (THERMOPLASTIC) MAY BE APPLIED.

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

APPROVED: _____ DATE: _____

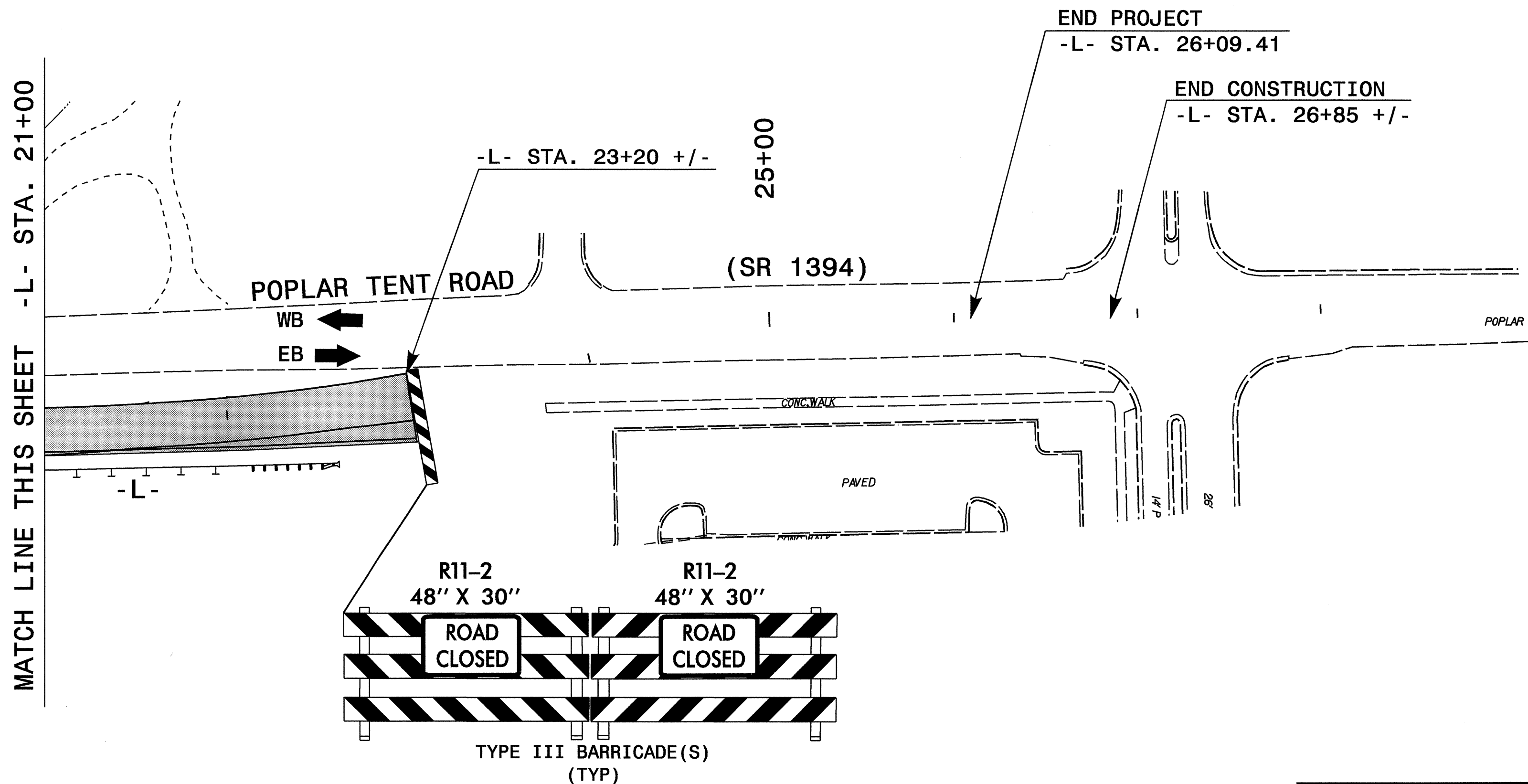
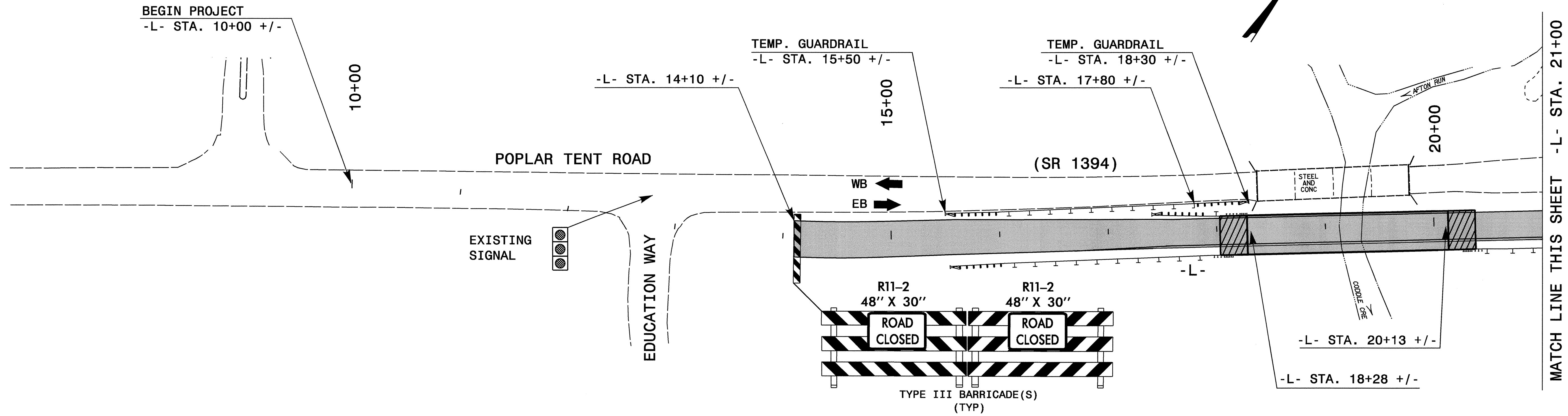
PHASING AND TEMPORARY PAVEMENT MARKING SCHEDULE



SCALE:	NONE
DATE:	JAN - 08
DWG. BY:	AYL
DESIGN BY:	AYL
REVIEWED BY:	JLP

REVISIONS	

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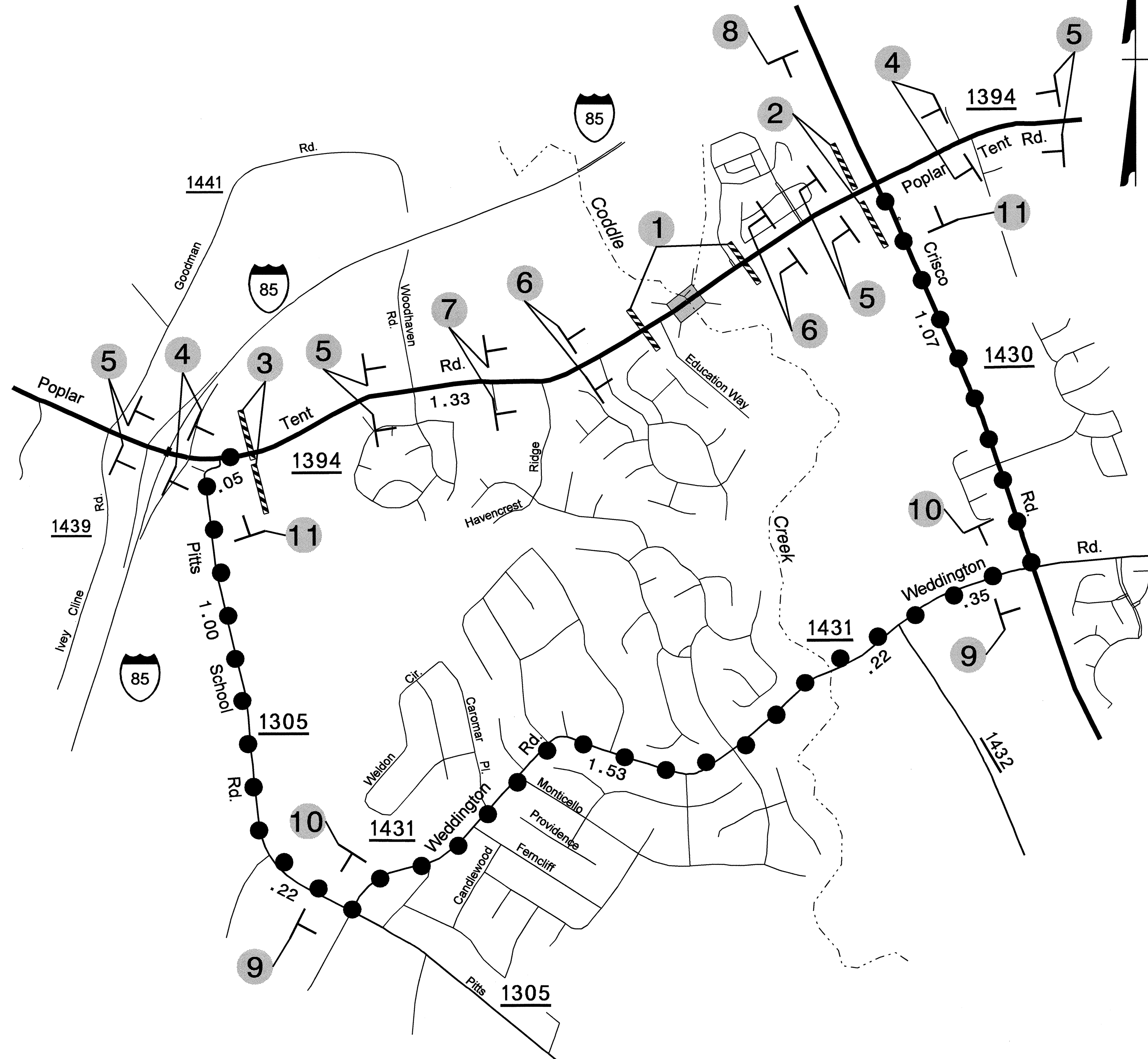


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 alyudmi AT WZ1237440

APPROVED:	DATE:	DETAIL I	
SCALE:	NONE		REVISIONS
DATE:	01/08		
DWG. BY:	EKG		
DESIGN BY:	EKG		
REVIEWED BY:	JLP		CADD FILE

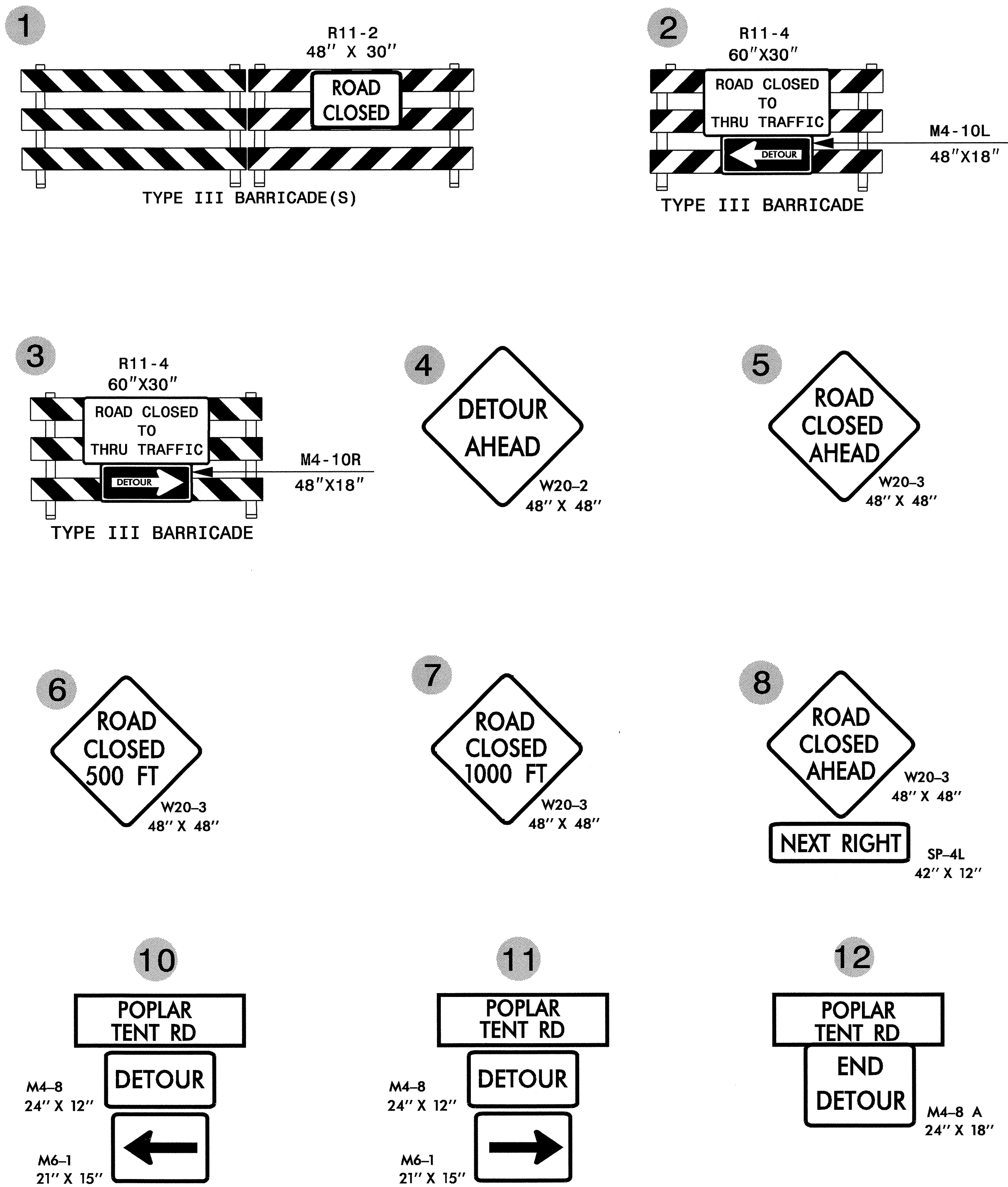
CABARRUS COUNTY

PROJ. REFERENCE NO. B-4449	SHEET NO. TCP-5
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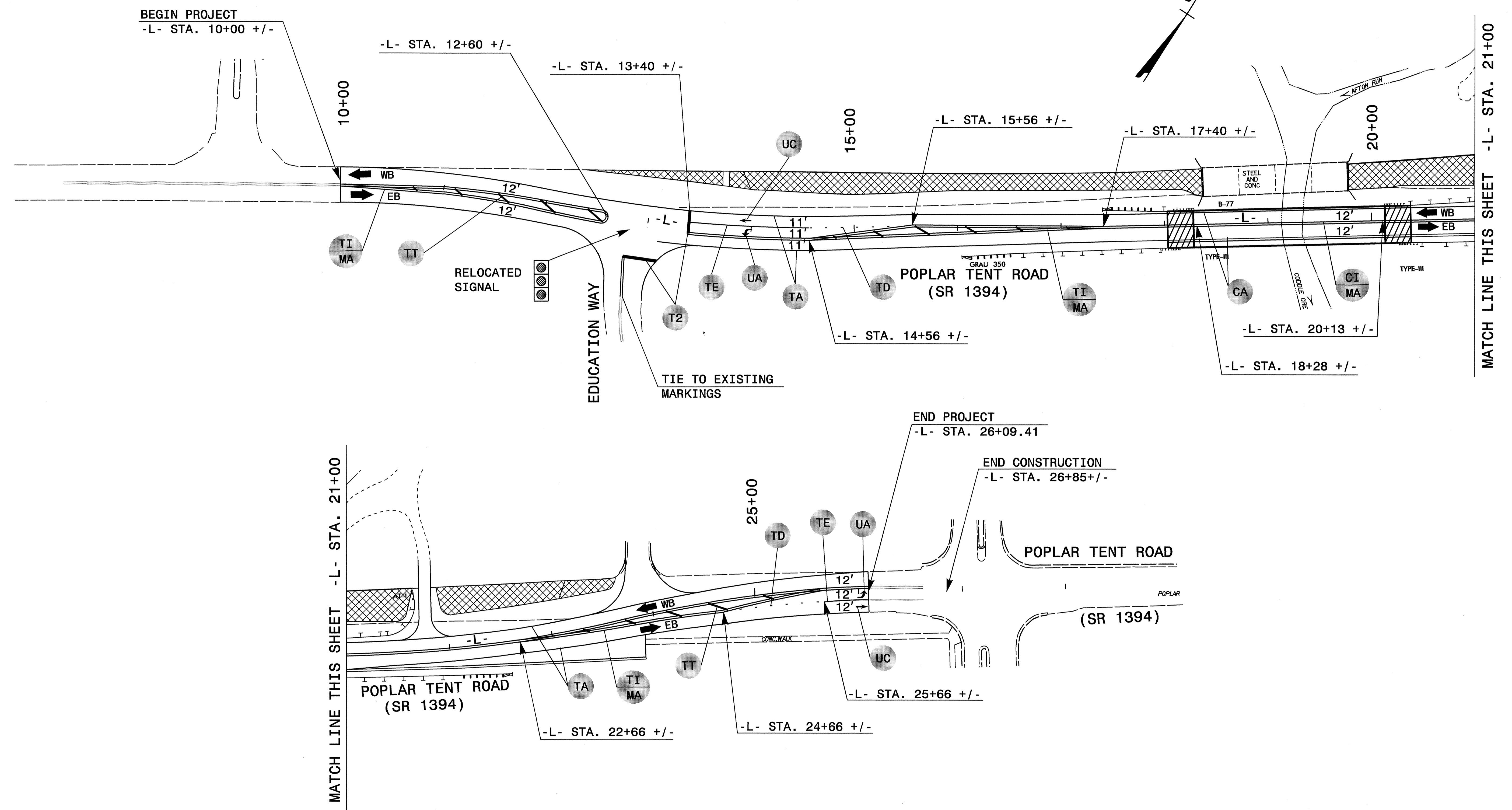
OFF-SITE DETOUR ROUTE ● — ● — ●

NOTES:
 1. SEE SHEET SD-1 FOR DETOUR SIGN DESIGN
 2. REFER TO RSD 1101.03, SHEET 1 OF 9, FOR SIGN DISTANCES.



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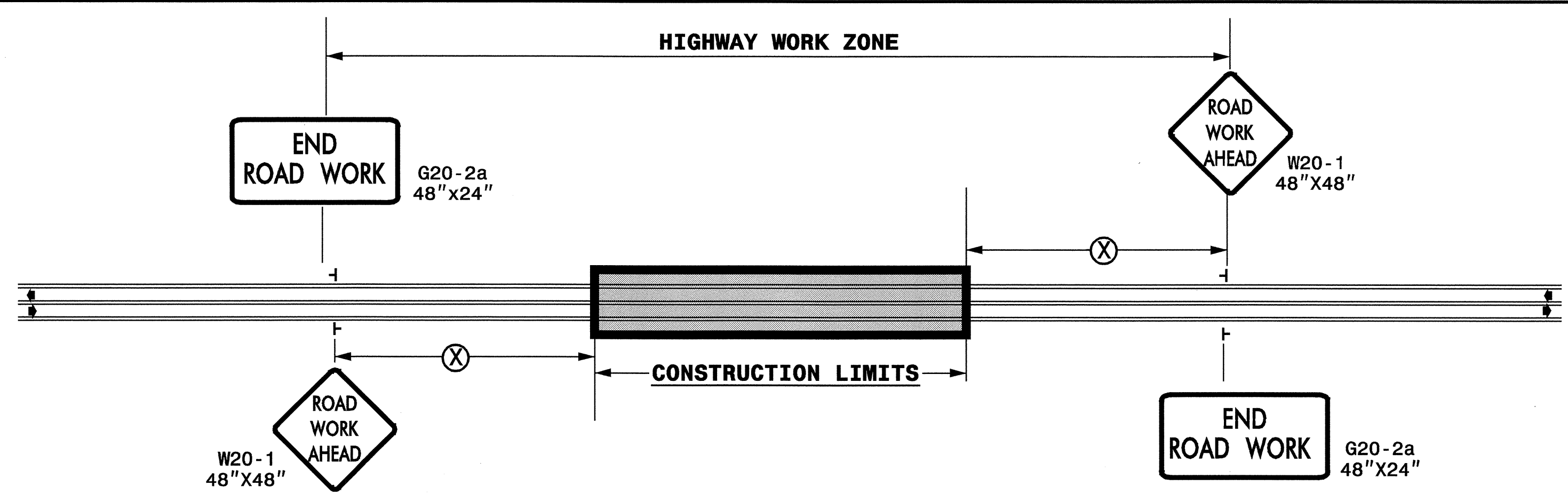
APPROVED: _____ DATE: _____	DETOUR ROUTE AND BARRICADE PLACEMENT							
			SCALE: NONE DATE: 01/08 DWG. BY: EKG DESIGN BY: EKG REVIEWED BY: JLP	REVISIONS <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>				



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APPROVED:	DATE:	FINAL PAVEMENT MARKING PLAN							
SCALE:	NONE								
DATE:	01/08								
DWG. BY:	EKG								
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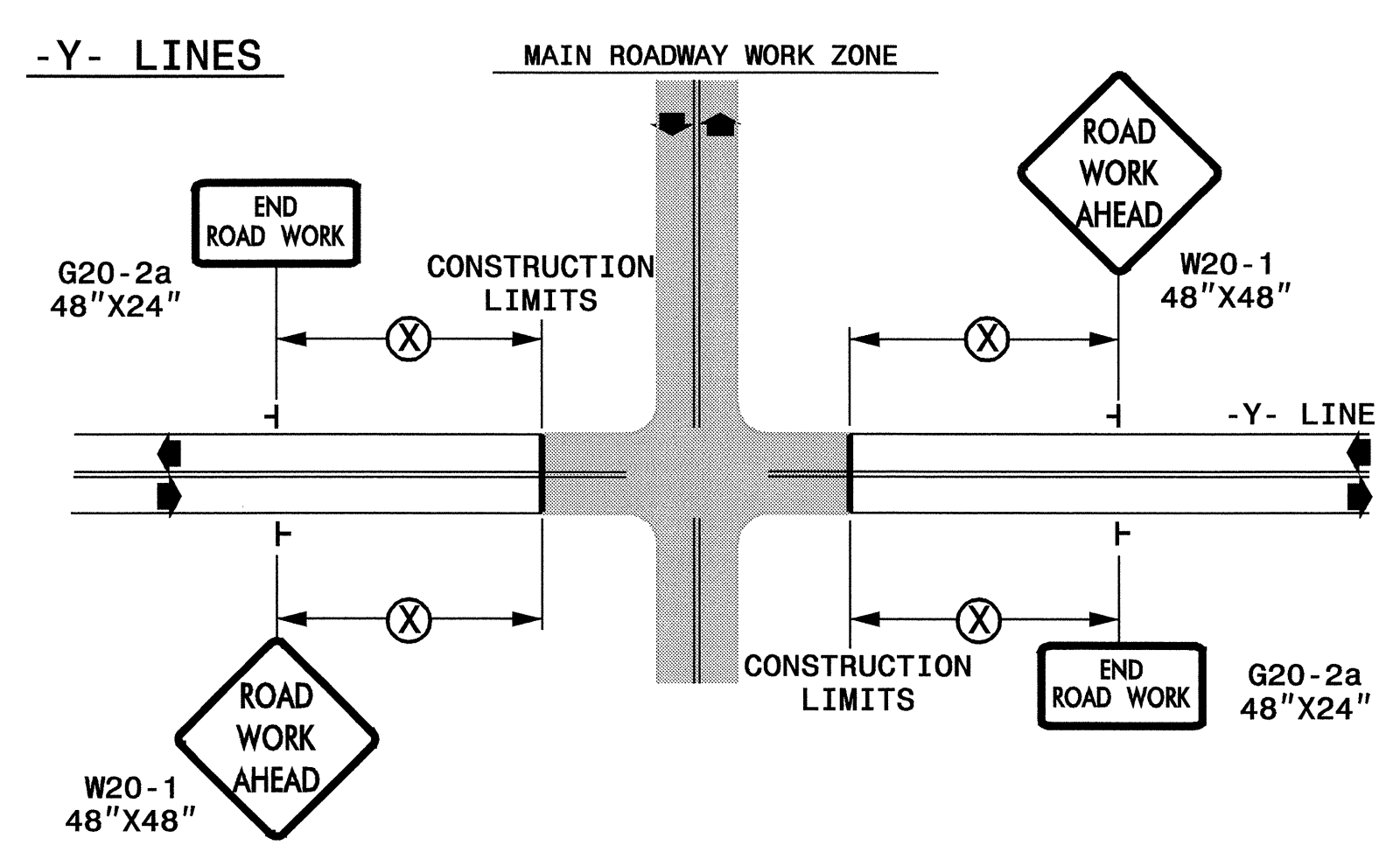
TWO-WAY UNDIVIDED ** (L-LINES)



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)



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: _____	DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS			
	SCALE: NONE				
	DATE: JAN-08			REVISIONS	
	DWG. BY: AYL			7-98	10/01
	DESIGN BY: AYL			10-98	03/04
REVIEWED BY: JLP	01/01	11/04	CADD FILE		

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