

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4446	TCP-1

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

B-4446

LEGEND

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
1101.05	WORK ZONE VEHICLE ACCESSES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, INDEX OF SHEETS AND TEMPORARY PAVEMENT MARKING SCHEDULE
TCP-2	PHASING AND GENERAL NOTES
TCP-3	DETOUR ROUTE AND SIGNING
TCP-4	ONE-LANE TWO WAY TRAFFIC PATTERN
TCP-5	ADVANCED WORK ZONE WARNING SIGNS
SD-1	SIGN DESIGN

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

TEMP. PAVEMENT MARKING SCHEDULE

DESCRIPTION	QUANTITY BREAKDOWN		TOTAL QUANTITY
	PAINT (4")		
PA WHITE EDGELINE (1X)	400 LF		
PI YELLOW DOUBLE CENTER (1X)	800 LF		1200 LF
COLD APPLIED PLASTIC TYPE IV (REMOVABLE TAPE) (4")			
RA WHITE EDGELINE	1800 LF		
RI YELLOW DOUBLE CENTERLINE	800 LF		2600 LF
COLD APPLIED PLASTIC TYPE IV (REMOVABLE TAPE) (24")			
R3 WHITE STOP BAR	50 LF		50 LF

APPROVED:
DATE: October 9, 2009

SEAL



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

STUART BOURNE, P.E. TRAFFIC CONTROL ENGINEER
J. STEVE KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
DON PARKER TRAFFIC CONTROL PROJECT DESIGN ENGINEER
ASHVIN PATEL, P.E. TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

TIP PROJECT:

PHASING

- STEP 1 -- INSTALL ADVANCE WORK ZONE WARNING SIGNS ON REEMS CREEK RD. (-Y-). (SEE TCP-5)
- INSTALL ADVANCE WARNING AND TRAILBLAZING SIGNS FOR CLOSURE OF PLEASANT GROVE RD. (-L-). COVER SIGNS UNTIL READY TO CLOSE THE ROAD. (SEE RSD 1101.03, SHEET 1 AND 2 AND TCP-3)
- STEP 2 -- USING FLAGGERS, CONSTRUCT 6' TEMPORARY PAVEMENT ADJACENT TO REEMS CREEK RD. (-Y-) & INSTALL DRUMS. (SEE ROADWAY PLANS, TCP-3 AND RSD 1101.02, SHEET 1)
- STEP 3 -- USING FLAGGERS, INSTALL WATERFILLED BARRIER ON THE SHOULDER OF REEMS CREEK RD. (-Y-) AS SHOWN ON TCP-3 INSET "A". UNCOVER DETOUR SIGNING AND CLOSE PLEASANT GROVE RD. (SEE RSD 1101.02, SHEET 1)
- STEP 4 -- AWAY FROM TRAFFIC BEGIN REMOVAL OF EXISTING STRUCTURE AND BEGIN CONSTRUCTION OF PROPOSED STRUCTURE AND APPROACHES.

NOTE: COMPLETE THE WORK OF STEPS 5 THRU 7 IN FIFTEEN (15) CALENDAR DAYS. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 5 -- USING FLAGGERS AND STOPPING TRAFFIC AS NECESSARY, INSTALL THE REQUIRED TRAFFIC CONTROL DEVICES AND PLACE REEMS CREEK RD. IN A ONE LANE TWO WAY TRAFFIC PATTERN UTILIZING A TEMPORARY SIGNAL SYSTEM. (SEE TCP-4, TEMPORARY SIGNAL SYSTEM SPECIAL PROVISION AND LOCAL NOTE)
- STEP 6 -- CONDUCT PILE DRILLING/DRIVING OPERATIONS AT END BENT 2.
- STEP 7 -- USING FLAGGERS COVER SIGNAL WARNING SIGNS, RESET WATERFILLED BARRIER, REPLACE CONFLICTING PAVEMENT MARKINGS (REMOVABLE TAPE) AND RETURN REEMS CREEK RD. TO A TWO LANE TWO WAY TRAFFIC PATTERN. (SEE LOCAL NOTE)

NOTE: COMPLETE THE WORK OF STEPS 8 THRU 10 IN FIVE (5) CALENDAR DAYS. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.)

- STEP 8 -- USING FLAGGERS AND STOPPING TRAFFIC AS NECESSARY, INSTALL THE REQUIRED TRAFFIC CONTROL DEVICES AND PLACE REEMS CREEK RD. IN A ONE LANE TWO WAY TRAFFIC PATTERN UTILIZING A TEMPORARY SIGNAL SYSTEM. (SEE TCP-4, TEMPORARY SIGNAL SYSTEM SPECIAL PROVISION AND LOCAL NOTE)
- STEP 9 -- INSTALL CORED SLAB UNITS.
- STEP 10 -- USING FLAGGERS COVER OR REMOVE SIGNAL WARNING SIGNS, RESET WATERFILLED BARRIER, REPLACE CONFLICTING PAVEMENT MARKINGS (PAINT) AND RETURN REEMS CREEK RD. TO A TWO LANE TWO WAY TRAFFIC PATTERN. (SEE LOCAL NOTE)
- STEP 11 -- COMPLETE REMAINING BRIDGE/APPROACH CONSTRUCTION.
- REMOVE WATERFILLED BARRIER FROM SHOULDER AND REPLACE WITH DRUMS
- STEP 12 -- USING FLAGGERS, REMOVE TEMPORARY PAVEMENT FROM REEMS CREEK RD. AND RE-GRADE THE SHOULDERS. (SEE RSD 1101.02, SHEET 1.)
- STEP 13 -- USING FLAGGERS, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS THROUGHOUT THE PROJECT LIMITS (SEE RSD 1101.02, SHEET 1)
- STEP 14 -- RE-OPEN PLEASANT GROVE RD. TO TRAFFIC.
- STEP 15 -- REMOVE ALL TRAFFIC CONTROL DEVICES.

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 UNDESIRABLE 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 STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
REEMS CREEK RD (-Y-)	MONDAY-FRIDAY 7:00AM TO 9:00AM AND 3:00PM TO 6:00PM	15 MIN. FOR ONE-LANE TWO WAY TRAFFIC PATTERN INSTALLATION

- B) 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

- C) 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.
- 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.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- F) 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.

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.
- I) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
- PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- J) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
- COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC BARRIER

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

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

- N) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.
- O) INSTALL TEMPORARY PAVEMENT MARKINGS AS FOLLOWS:
- | ROAD NAME | MARKING | MARKER |
|----------------------|--------------------------------|--------|
| -Y- (REEMS CREEK RD) | COLD APPLIED PLASTIC (TYPE IV) | NONE |
| -Y- (REEMS CREEK RD) | PAINT (STEP 10) | NONE |
- P) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Q) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

TEMPORARY SIGNALS

- R) PROVIDE TEMPORARY SIGNAL SYSTEM. SEE TEMPORARY TRAFFIC SIGNAL SYSTEM SPECIAL PROVISION.

LOCAL NOTE

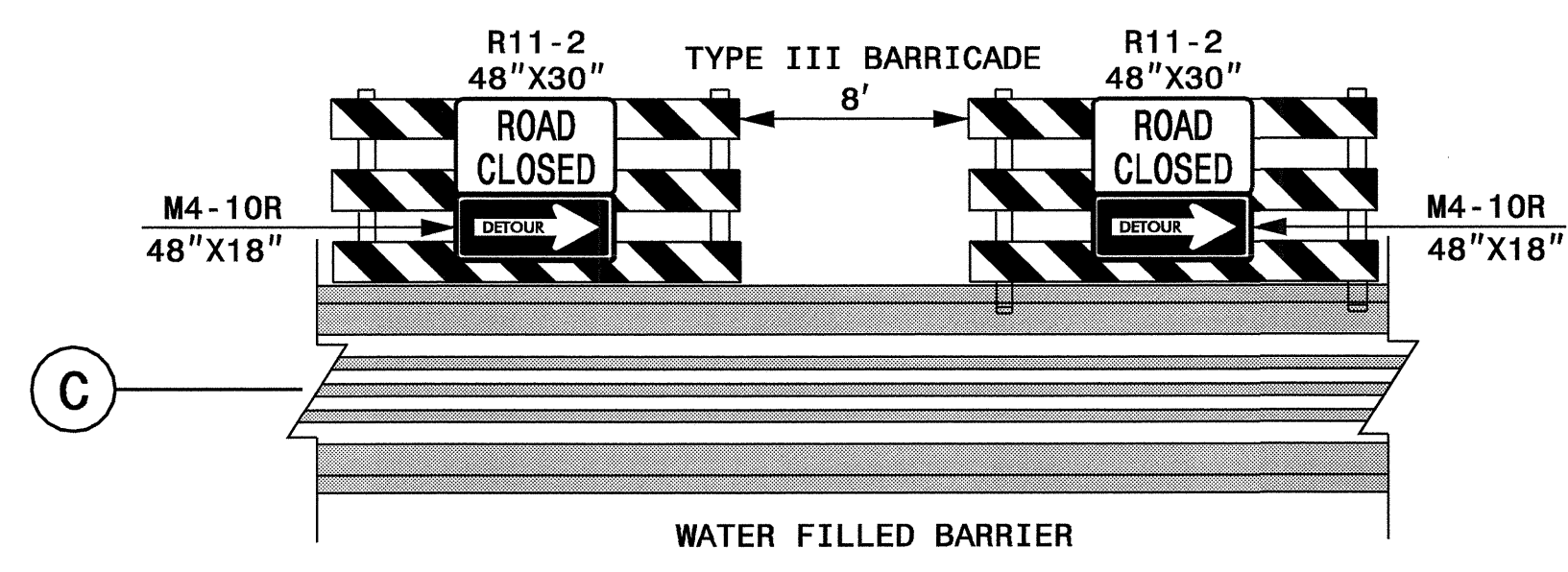
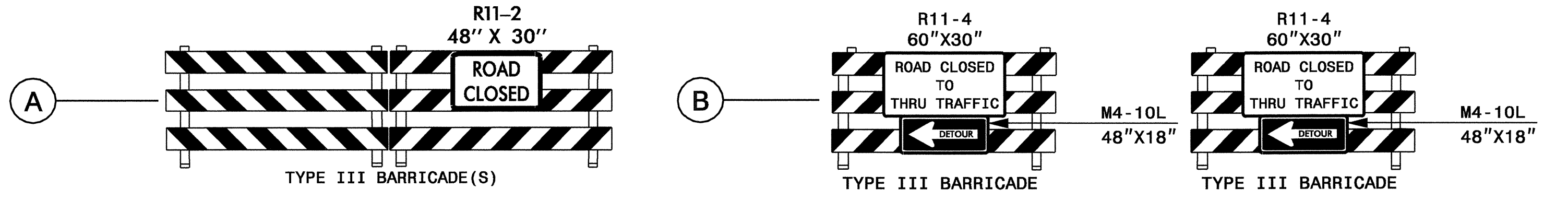
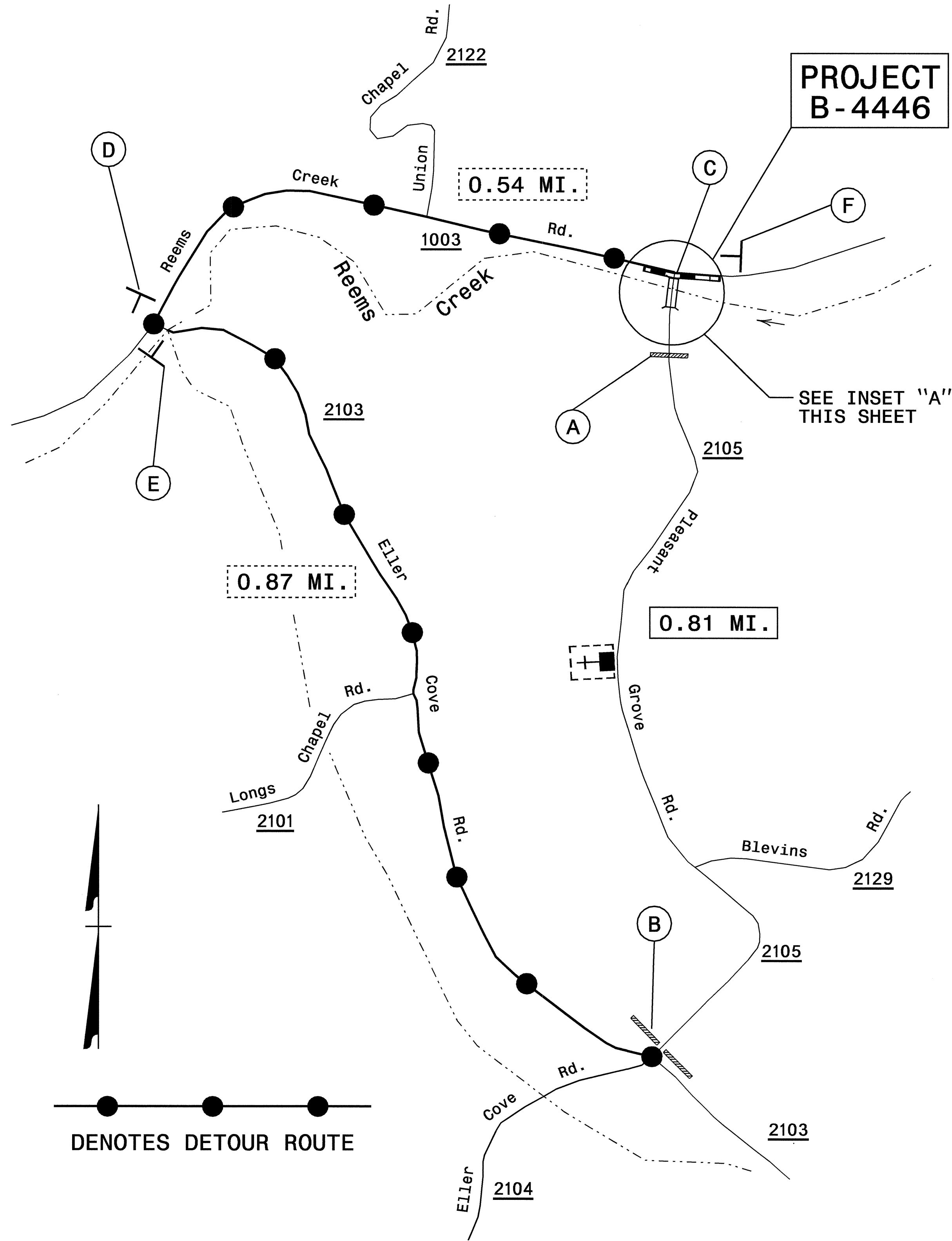
TRAFFIC MAY BE STOPPED ON REEMS CREEK RD. (-Y-) FOR A MAXIMUM OF FIFTEEN (15) MINUTES FOR THE PURPOSE OF INSTALLING THE TRAFFIC CONTROL NECESSARY FOR THE 1 LANE 2 WAY TRAFFIC PATTERN UTILIZING A TEMPORARY SIGNAL SYSTEM (SEE PHASING, STEPS 5, 7, 8 AND 10). THE CONTRACTOR SHALL THEN RE-OPEN A LANE OF TRAFFIC (FLAGGER CONTROLLED) UNTIL THE EXISTING TRAFFIC QUEUE IS DEPLETED.

THE CONTRACTOR SHALL NOT STOP TRAFFIC ON REEMS CREEK RD. (-Y-) AS DESCRIBED ABOVE DURING THE FOLLOWING TIMES:

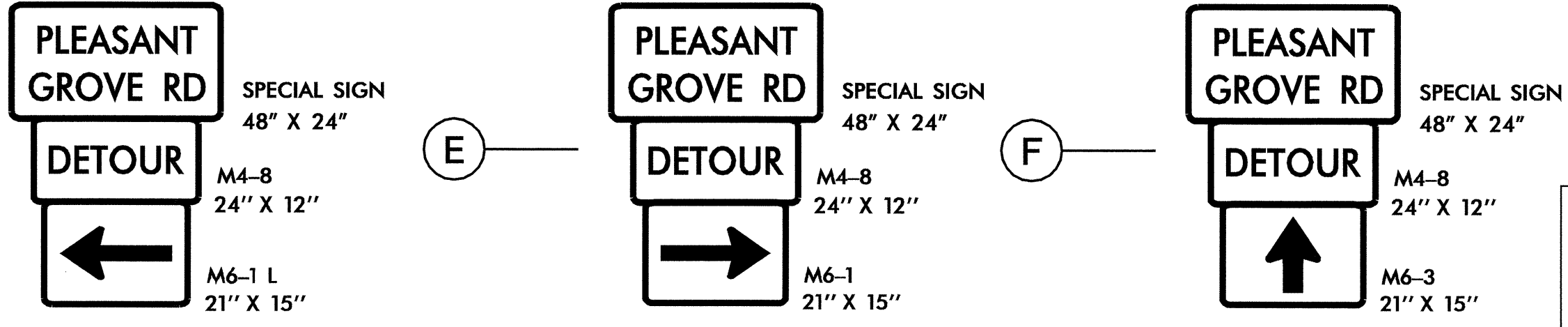
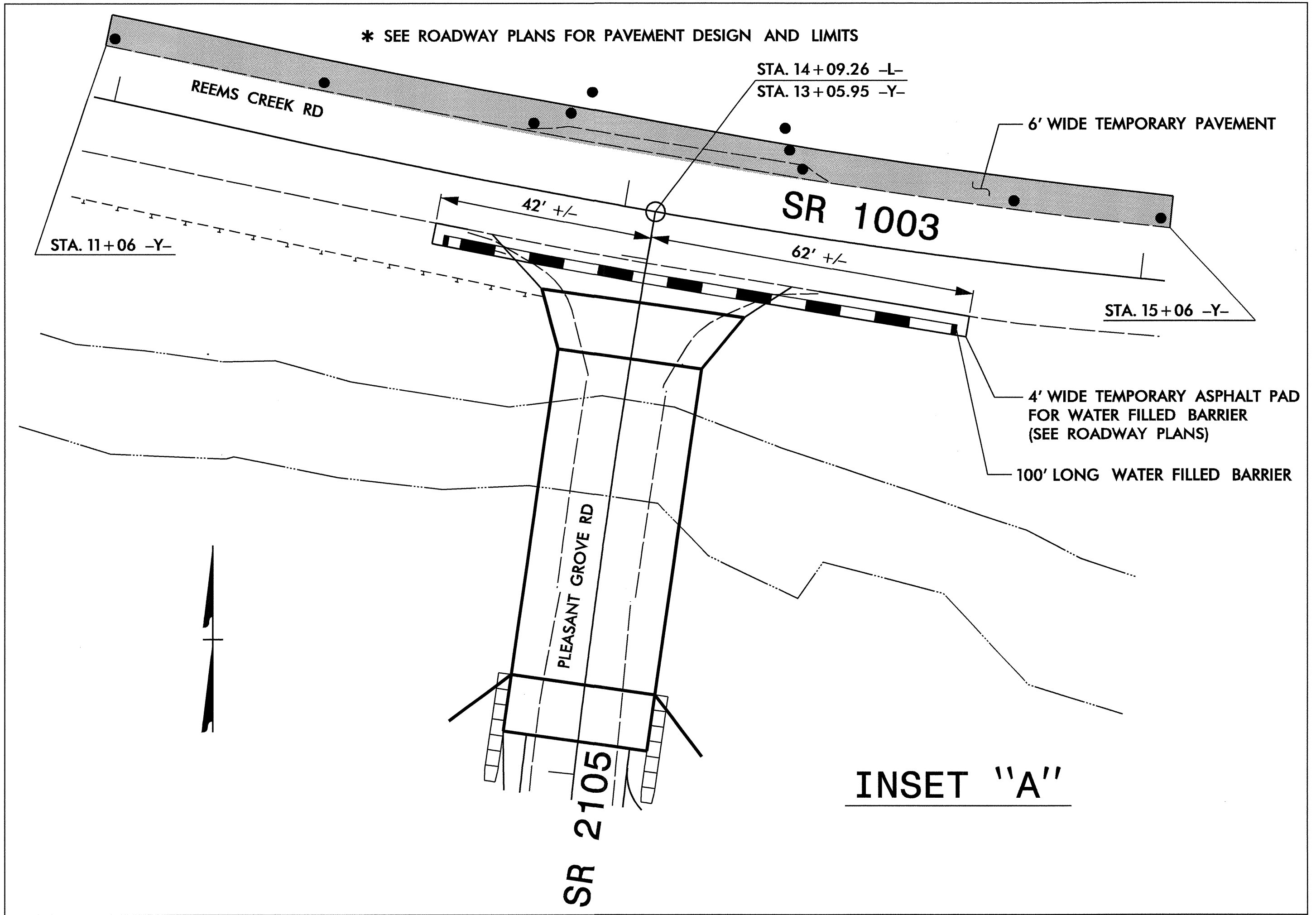
MONDAY THRU FRIDAY 7:00AM TO 9:00AM AND 3:00PM TO 6:00PM

<p>APPROVED: DATE: 10/9/09</p> <p style="text-align: center;">SEAL</p> <div style="text-align: center;"> </div>	<h2 style="margin: 0;">GENERAL NOTES AND PHASING</h2>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>SCALE:</td> <td>NONE</td> </tr> <tr> <td>DATE:</td> <td>09/09</td> </tr> <tr> <td>DWG. BY:</td> <td>AKP</td> </tr> <tr> <td>DESIGN BY:</td> <td>AKP</td> </tr> <tr> <td>REVIEWED BY:</td> <td>DAP</td> </tr> </table>	SCALE:	NONE	DATE:	09/09	DWG. BY:	AKP	DESIGN BY:	AKP	REVIEWED BY:	DAP
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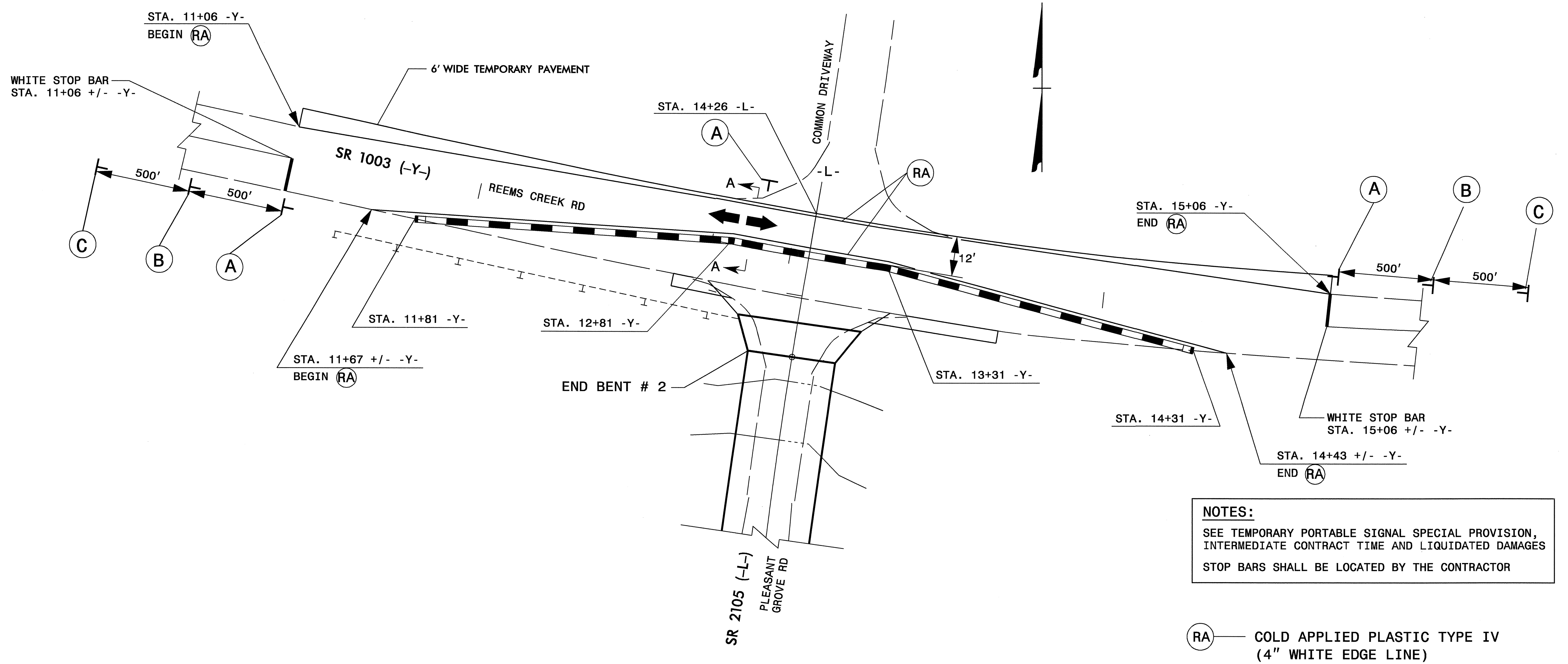
NOTE:
 POSITION THE TYPE III BARRICADE AT LOCATION C BEHIND THE WATER FILLED BARRIER SUCH THAT THE BARRIER MAY ALSO BALLAST THE BARRICADE. INCREASE THE HEIGHT OF THE BARRICADE SO THAT THE BARRICADE MOUNTED SIGNS ARE CLEARLY VISIBLE TO MOTORISTS ON REEMS CREEK RD.



NOTE: SEE RSD 1101.03, SHEET 1 AND 2 OF 9 FOR ADVANCE WARNING SIGNAGE AND BARRICADE PLACEMENT.

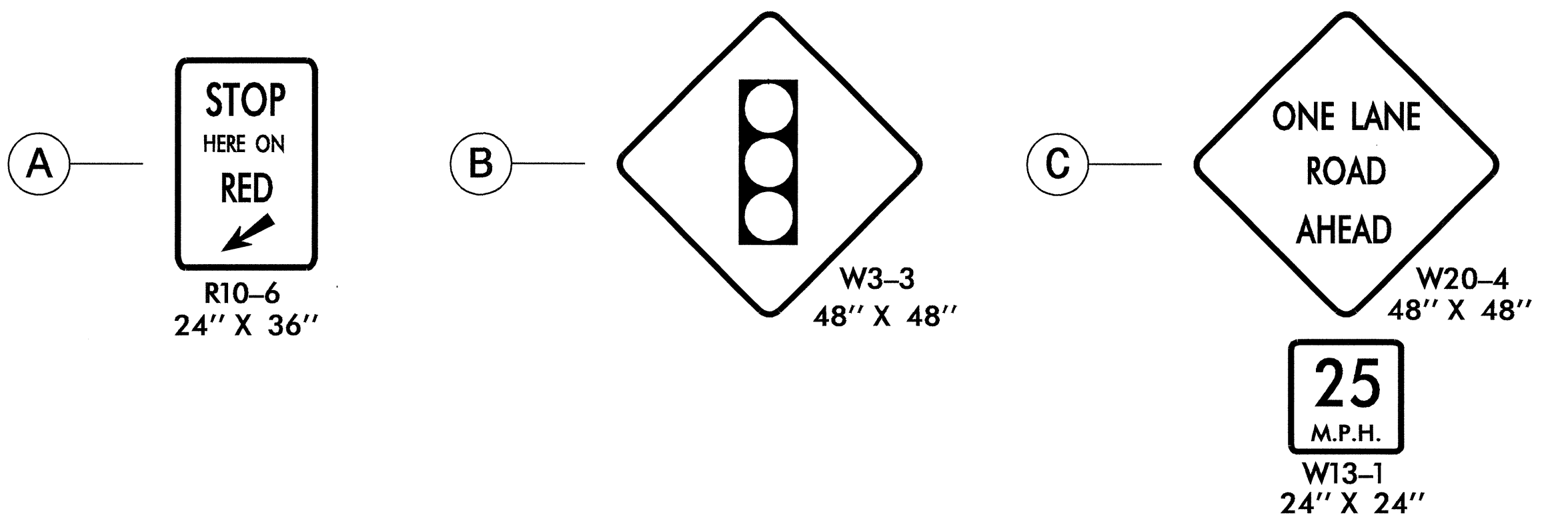
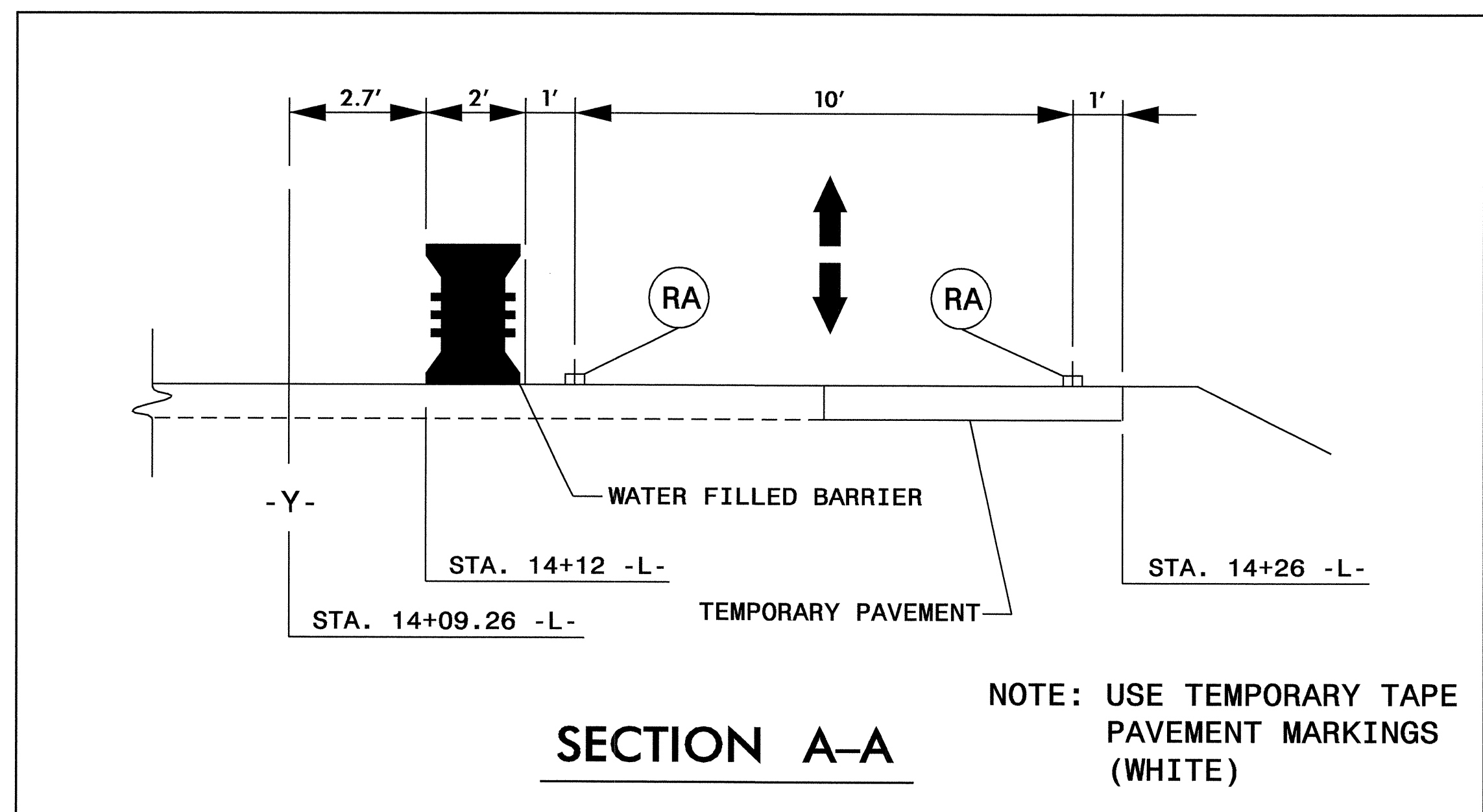
APPROVED: <i>[Signature]</i> DATE: 10/9/09	DETOUR ROUTE AND SIGNING									
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NOTES:
 SEE TEMPORARY PORTABLE SIGNAL SPECIAL PROVISION,
 INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES
 STOP BARS SHALL BE LOCATED BY THE CONTRACTOR

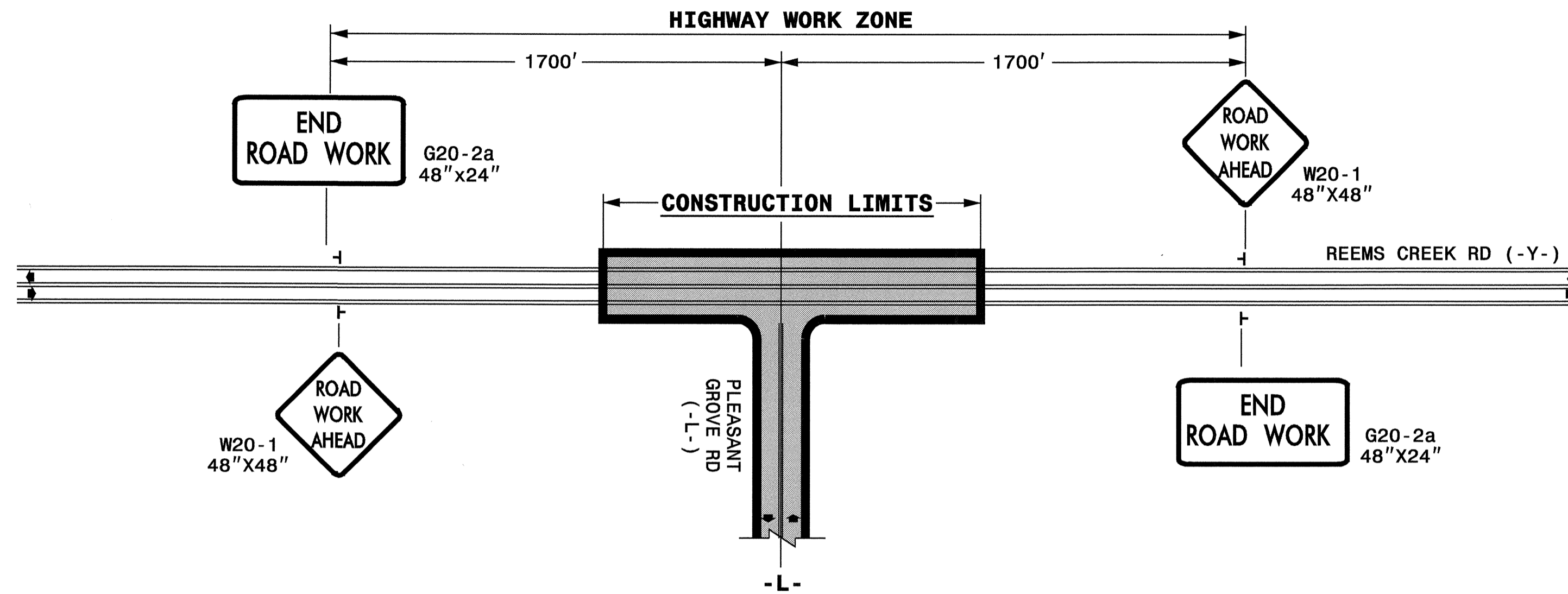
(RA) — COLD APPLIED PLASTIC TYPE IV
 (4" WHITE EDGE LINE)



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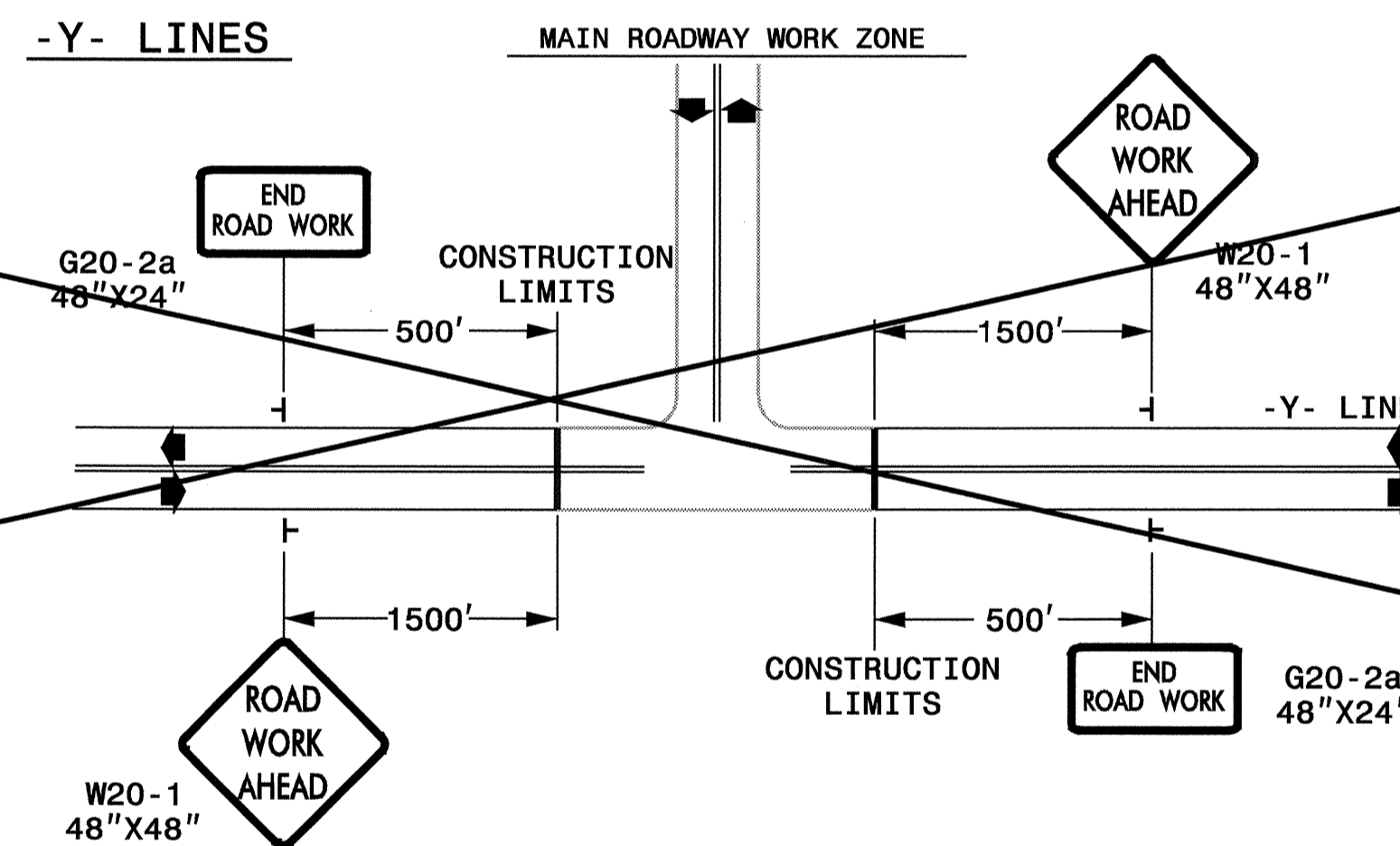
APPROVED: <i>[Signature]</i> DATE: 10/9/09	ONE-LANE TWO WAY TRAFFIC PATTERN (PORTABLE SIGNAL)		
	SCALE: NONE		
	DATE: 10/09		REVISIONS
	DWG. BY: AKP		
	DESIGN BY: AKP		
	REVIEWED BY: DAP		

ADVANCED WORK ZONE WARNING SIGNS ON REEMS CREEK RD (-Y-)



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>[Signature]</i> DATE: 10/1/09	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
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