

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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

**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
- FLASHING ARROW PANEL (TYPE C)
- TYPE 'B' WARNING LIGHT
- 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
- YELLOW/YELLOW PAVEMENT MARKER
- CRYSTAL/RED PAVEMENT MARKER
- PAVEMENT MARKING SYMBOLS

**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 JANUARY 2002 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
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1150.01	FLAGGERS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1250.01	PAVEMENT MARKER SPACING
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
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, LEGEND, INDEX OF SHEETS, AND FINAL PAVEMENT MARKING SCHEDULE
TCP-2	GENERAL NOTES AND PHASING
TCP-3	DETOUR ROUTE WITH SIGNING AND BARRICADE PLACEMENT
TCP-4	DETOUR SIGN DESIGN
TCP-5	DETAIL DRAWING FOR TEMPORARY SHORING
TCP-6	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS
TCP-7	REPLACEMENT DETAIL FOR RSD 1101.04
TCP-8	REPLACEMENT DETAIL FOR RSD 1130.01
TCP-9	REPLACEMENT DETAIL FOR RSD 1145.01

**FINAL PAVEMENT MARKING SCHEDULE**

SYMBOL	DESCRIPTION	PAY ITEM QUANTITY BREAKDOWN	TOTAL QUANTITY
PAVEMENT MARKING			
PAINT (4")			
PA	WHITE EDGELINE (2X)	1900 LF	TOTAL 3820 LF
PD	2 FT. WHITE MINISKIP (2X)	20 LF	
PI	YELLOW DOUBLE CENTER LINE (2X)	1900 LF	
PAINT (24")			
P4	STOPBAR (2X)	30 LF	TOTAL 30 LF
PAVEMENT MARKERS			
SNOWPLOWABLE RAISED			
ME	TYPE 2, YELLOW & YELLOW	14 EA	TOTAL 14 EA

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

APPROVED:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
DATE: Feb 22, 2006	
SEAL 	J.S. BOURNE, PE <b>TRAFFIC CONTROL ENGINEER</b>
	JOSEPH ISHAK, PE <b>TRAFFIC CONTROL PROJECT ENGINEER</b>
	BETSY L. WATSON, PE <b>TRAFFIC CONTROL PROJECT DESIGN ENGINEER</b>
	CHAD L. LANFORD, PE <b>TRAFFIC CONTROL DESIGN ENGINEER</b>

B-4240

TIP PROJECT:

# GENERAL NOTES

# PHASING

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES.

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 40 FT (12m) OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING THE REPLACEMENT DETAIL FOR ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT (1.5m) 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, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.
- F) DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT (5m) OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- G) 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 (50mm) ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.  
  
 BACKFILL DROP-OFFS THAT EXCEED 3 INCHES (75mm) 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.
- H) DO NOT EXCEED A DIFFERENCE OF 1.5 inches (40mm) IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT (150m) IN ADVANCE AND A MINIMUM OF ONCE EVERY MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

- J) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 100 FT (31m) 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.

- K) STATE FORCES WILL PROVIDE PERMANENT SIGNING WITHIN THE PROJECT LIMITS.
- L) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.
- M) COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- N) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC CONTROL DEVICES

- Q) SPACE CHANNELIZING DEVICES IN WORK AREAS IN FEET NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT (3m) ON-CENTER IN RADII, AND 3 FT (1m) OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.
- R) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW FOR INGRESS OR EGRESS.

### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
1. SR 1506 (SCREVEN ROAD)	PAINT	SNOWPLOWABLE
2. SR 1508 (MARKHAM ROAD)	PAINT	SNOWPLOWABLE

- T) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.
- U) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- V) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.

### LOCAL NOTES:

MAINTAIN VEHICULAR ACCESS TO DRIVEWAYS WITHIN PROJECT LIMITS THROUGHOUT THE DURATION OF THE PROJECT.

STEP 1: USING RSD 1101.03 AND SHEETS TCP-3 AND TCP-4, INSTALL DETOUR SIGNS, PLACE BARRICADES TO CLOSE SR 1508 (MARKHAM ROAD) TO THROUGH TRAFFIC, AND SHIFT TRAFFIC ONTO OFF-SITE DETOUR.

- USING SHEET TCP-6, INSTALL ADVANCED WORKZONE WARNING SIGNS ON -Y- (SCREVEN ROAD).

STEP 2: USING RSD 1101.02 SHEET 1 OF 7, PERFORM THE FOLLOWINGS:

- INSTALL TEMPORARY GUARDRAIL ALONG RIGHT SIDE OF -Y- FROM STAS. 12+25+/- TO 13+75+/- OR AS DIRECTED BY THE ENGINEER. SEE SHEET TCP-5.
- INSTALL TEMPORARY SHORING FROM -Y- STA.12+25+/- (OFFSET 20' RIGHT) TO -Y- STA.12+45+/- (OFFSET 20' RIGHT) AND FROM -Y- STA.13+00+/- (OFFSET 25' RIGHT) TO -Y- STA.13+30+/- (OFFSET 25' RIGHT). SEE SHEET TCP-5.

STEP 3: AWAY FROM TRAFFIC, REMOVE EXISTING STRUCTURE NO. 193 AND CONSTRUCT THE PROPOSED STRUCTURE. SEE ROADWAY PLANS.

STEP 4: USING RSD 1101.02 SHEET 1 OF 7, COMPLETE THE FOLLOWING:

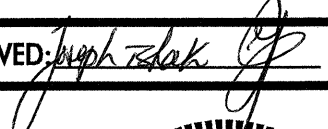

- REMOVE TEMPORARY GUARDRAIL AND TEMPORARY SHORING, INSTALLED IN THE STEP 2, AND PLACE PROPOSED GUARDRAIL ALONG -Y- AND -L-.
- CONSTRUCT PROPOSED ROADWAY FROM -L- STAS. 10+00.00 TO 12+50.00 UP TO AND INCLUDING THE FINAL SURFACE COURSE.

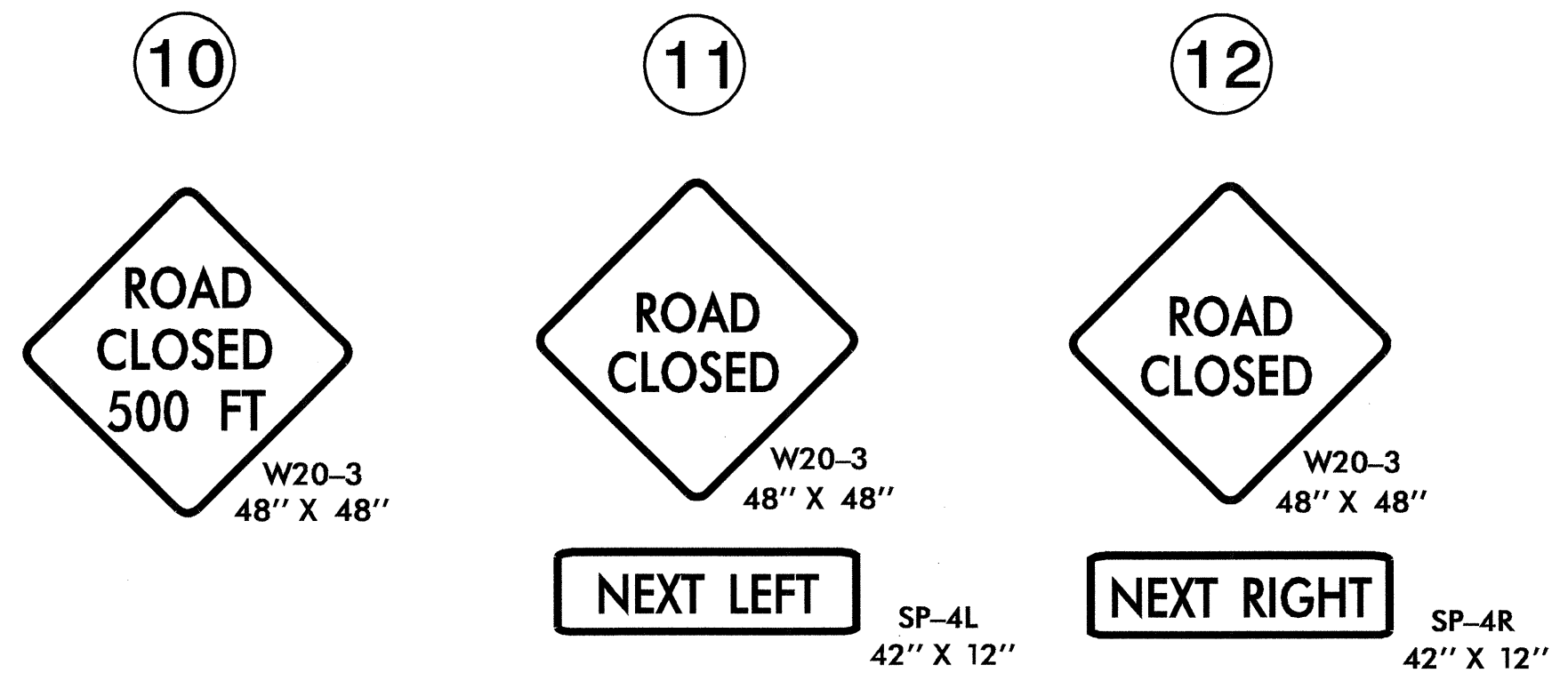
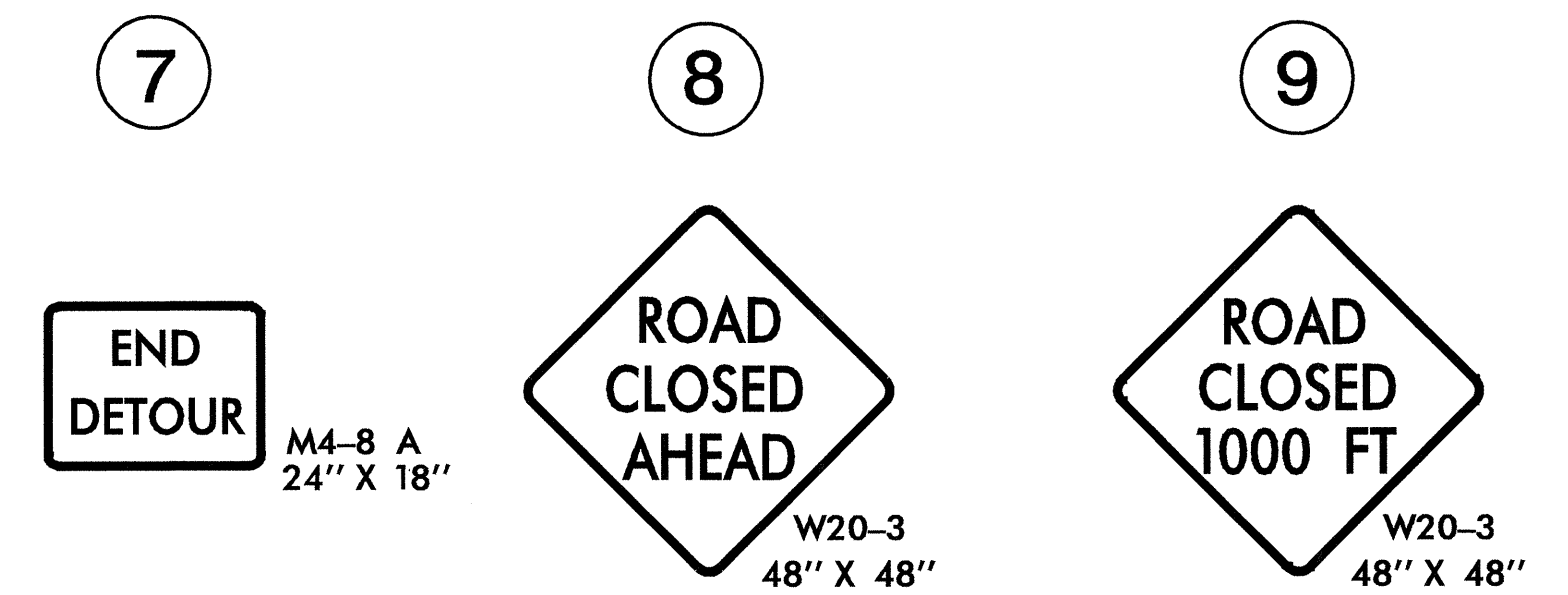
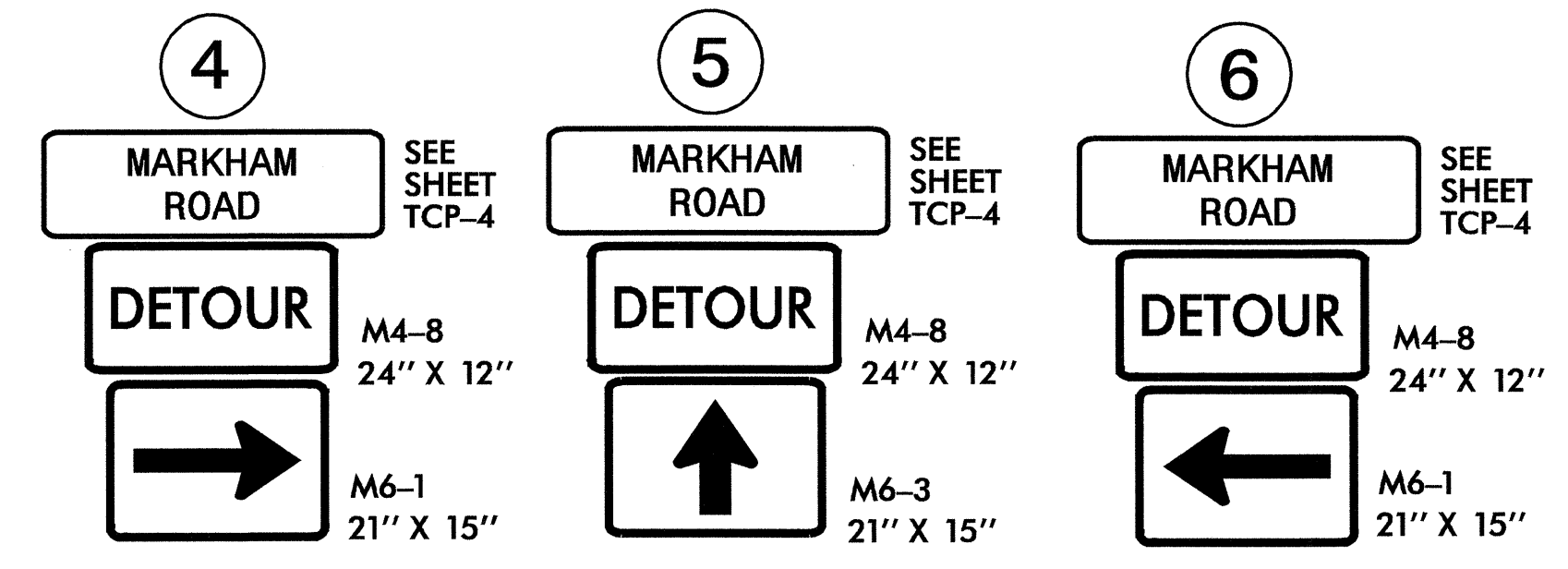
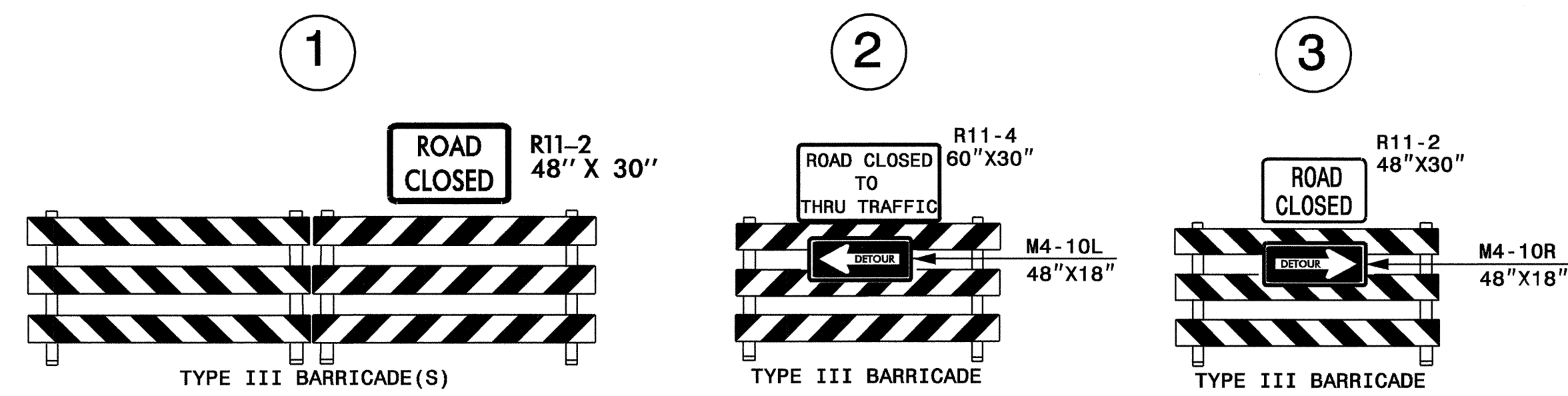
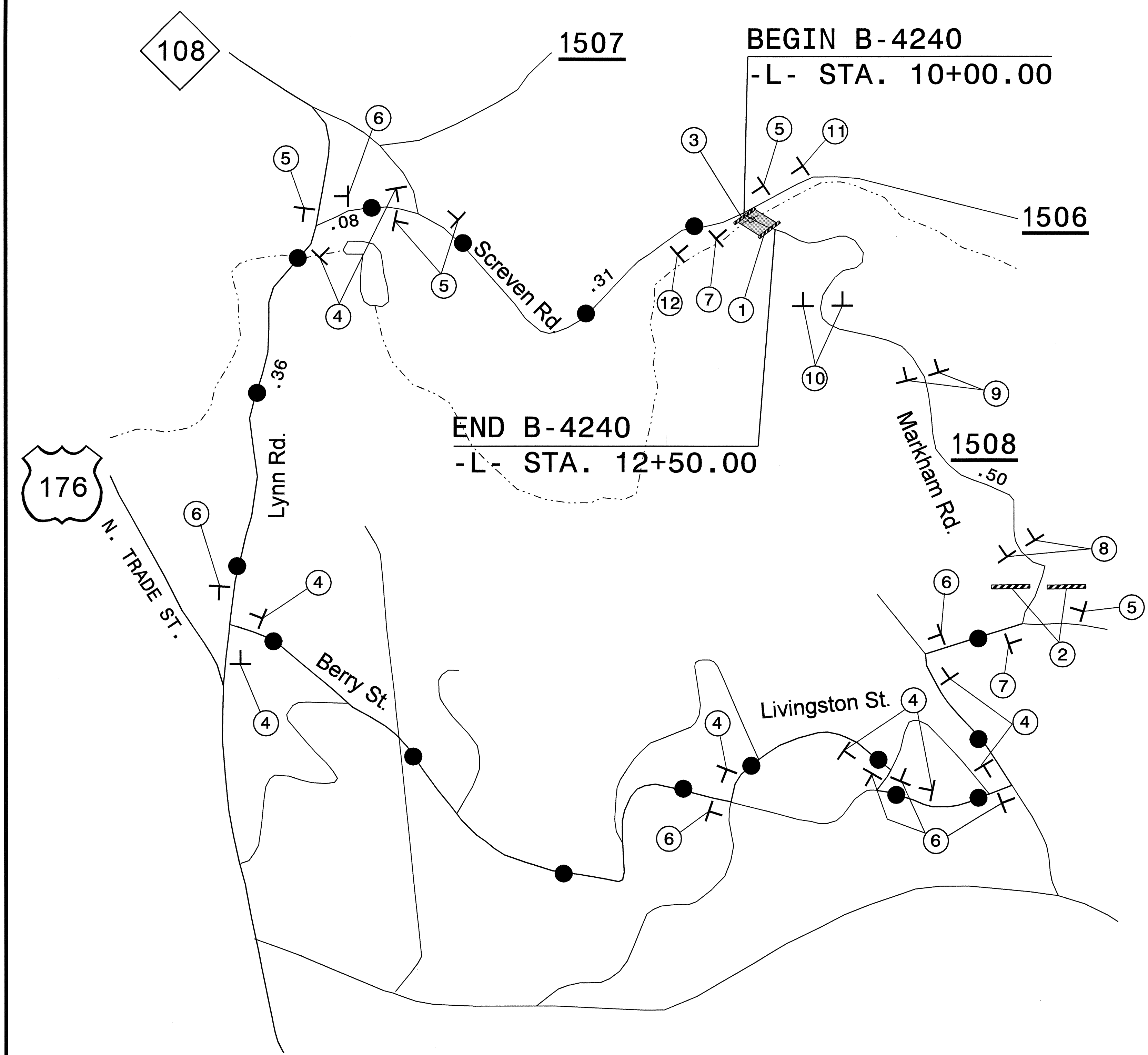
STEP 5: USING RSD 1101.02 SHEET 1 OF 7, RESURFACE -Y- FROM STAS. 11+50.00 TO 13+75.00.

- PLACE PERMANENT PAVEMENT MARKINGS (PAINT) AND MARKERS (SNOWPLOWABLE) ON -L- STAS. 10+00+/- TO 12+50+/- AND -Y- STAS. 11+50+/- TO 13+75+/-, AND TIE INTO EXISTING MARKINGS AND MARKERS.

STEP 6: REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1508 (MARKHAM ROAD) TO TRAFFIC.

21-FEB-2006 12:21 1:04 PM C:\30515\42408\tr\affic\tr\afficcontrol\top\tcp02.Notes.Phasing\_PVMK.dgn

APPROVED:  DATE: 9/23/05  SEAL 	<h2 style="margin: 0;">GENERAL NOTES AND PHASING</h2> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">SCALE: NONE</td> <td style="width: 70%;"></td> </tr> <tr> <td>DATE: 9/23/05</td> <td></td> </tr> <tr> <td>DWG. BY: CLL</td> <td></td> </tr> <tr> <td>DESIGN BY: CLL</td> <td></td> </tr> <tr> <td>REVIEWED BY: BLW</td> <td></td> </tr> </table>	SCALE: NONE		DATE: 9/23/05		DWG. BY: CLL		DESIGN BY: CLL		REVIEWED BY: BLW		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">REVISIONS</th> </tr> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>	REVISIONS							
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**OFF-SITE DETOUR ROUTE** ●—●—●

SEE RSD 1101.03, SHEET 1 AND 2 OF 9, FOR ALL OTHER REQUIRED SIGNS AND SIGN PLACEMENT. SEE SHEET TCP-4 FOR DETOUR SIGN DESIGN.

APPROVED: *Joseph Istaitieh* DATE: 9/23/05

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028380 JOSEPH ISTAITIEH

**DETOUR ROUTE WITH SIGNING AND BARRICADE PLACEMENT**

SCALE: NONE		REVISIONS
DATE: 9/23/05		
DWG. BY: CLL		
DESIGN BY: CLL		
REVIEWED BY: BLW		

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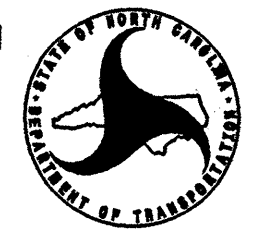
Sign Number:  
Type: D Ground  
Quantity: 1

Design By: DME  
Project ID: B-4240

Check By:  
DIV: 14

STD #: N/A  
Date: Apr 22, 2005

N. C. DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
TRAFFIC ENGINEERING BRANCH  
SIGNING DEPARTMENT



Sign Width: 4'-0"  
Height: 2'-0"  
Total Area: 8.0 Sq.Ft.

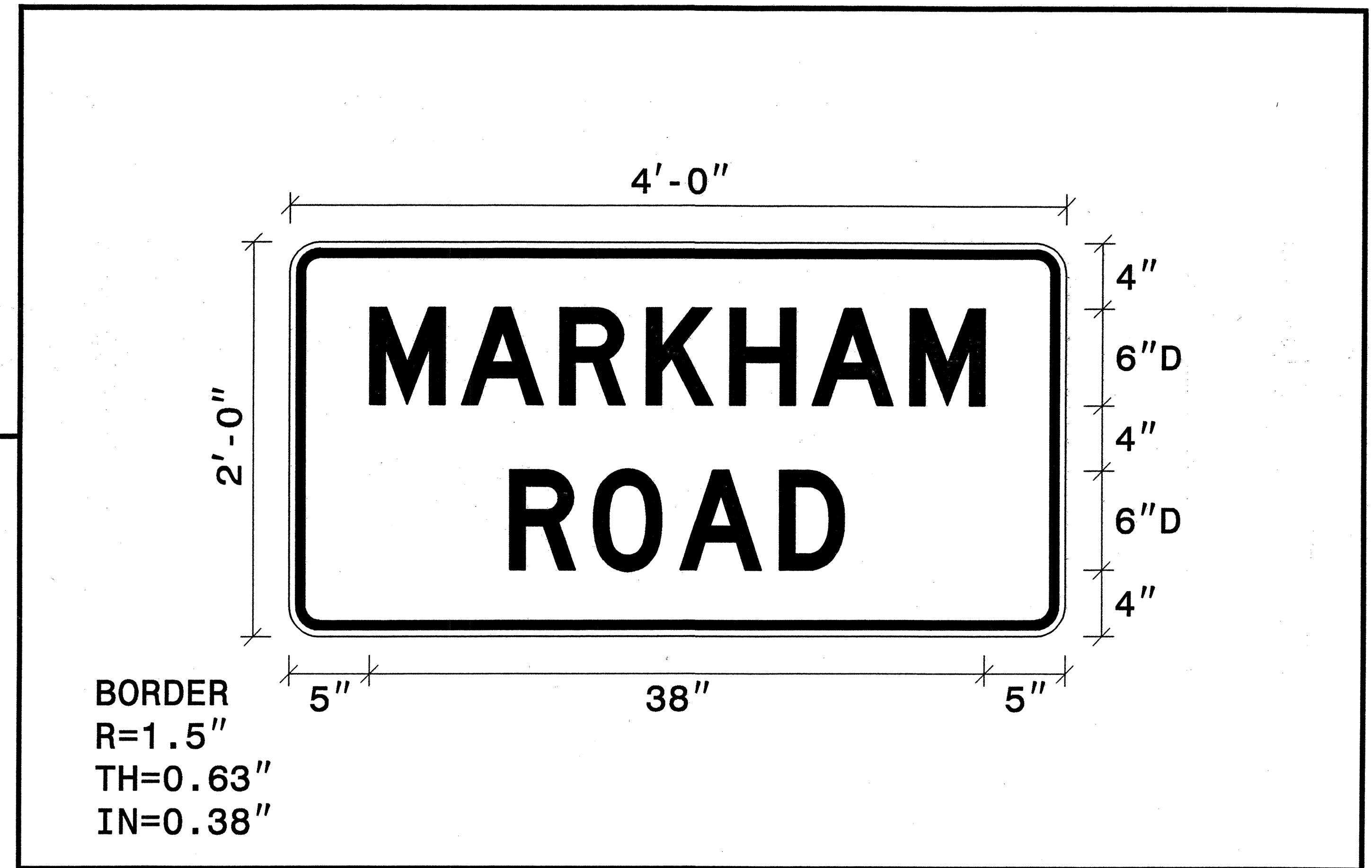
Background Color: Fluorescent Orange  
Legend & Border Color: Black

Border Type: Recessed  
Recess: 0.38"  
Width: 0.63"  
Radii: 1.5"

Backing Material: 0.125 in. Aluminum  
0.079 in. Composite

NOTES:

- Legend and border shall be direct applied non-reflective sheeting.
- Background shall be Type VII, VIII, or IX (prismatic) retroreflective sheeting.

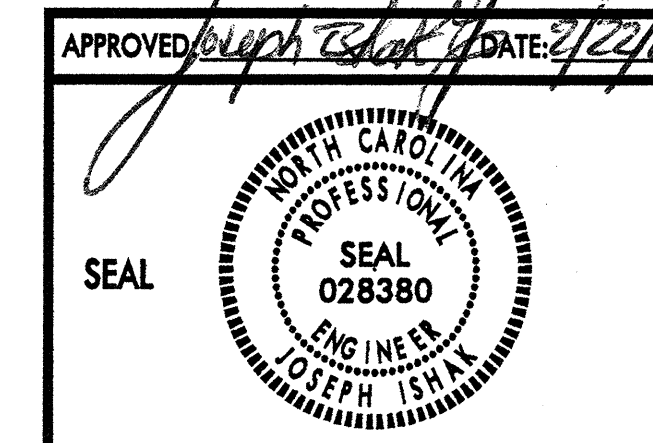


BORDER  
R=1.5"  
TH=0.63"  
IN=0.38"

Letter spacings are to start of next letter

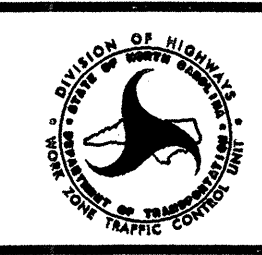
Letter spacings are to start of next letter																	Series/Size Text Length
			M	A	R	K	H	A	M								D6
	5	5.7	6.1	5.3	5.2	5.1	6.1	4.6	5								38
			R	O	A	D											D6
	13.7	5.2	5.4	6.1	4	13.7											20.7

Spacing Factor is 1 unless specified otherwise  
FILENAME: GS40\_ENGL

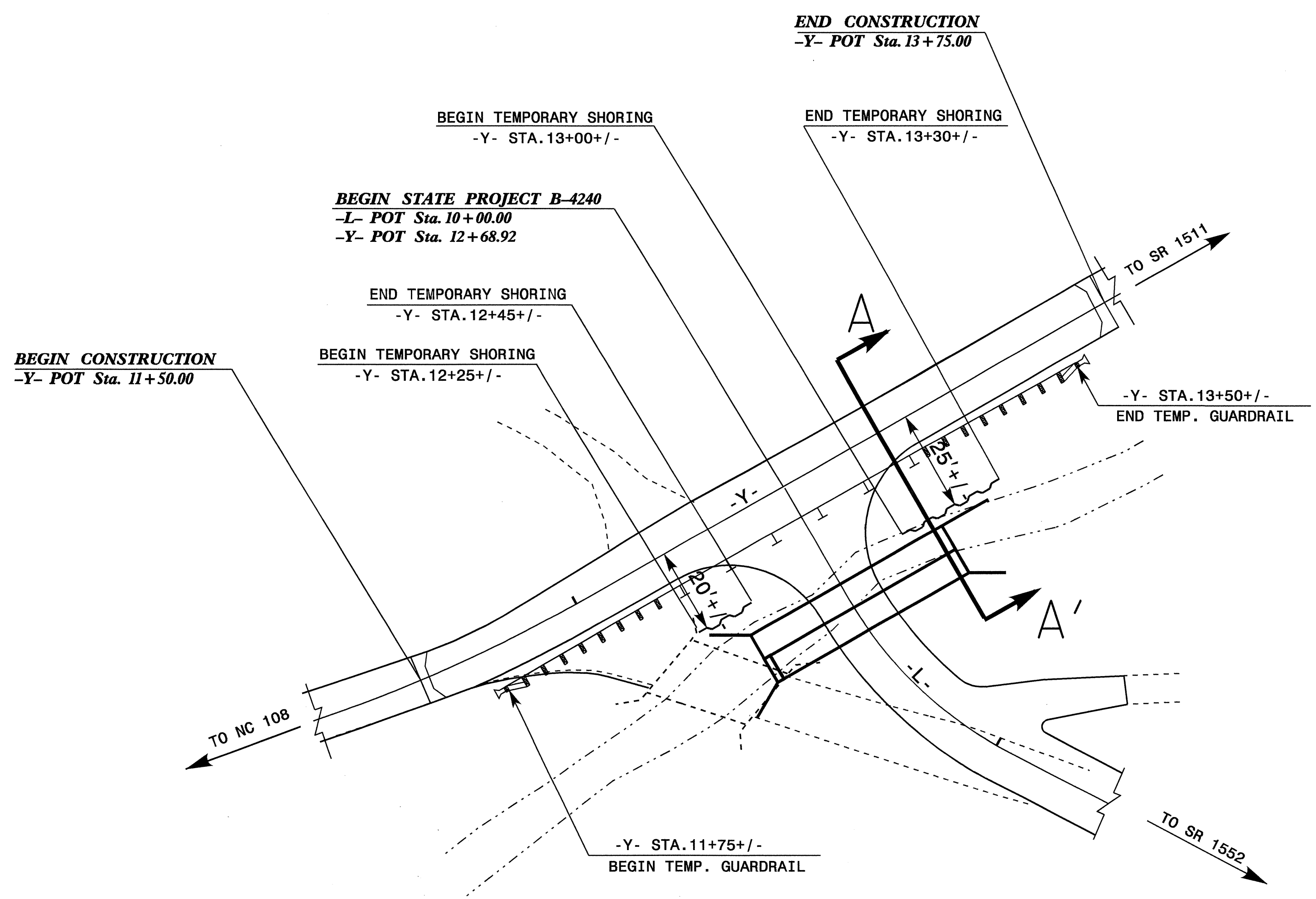


DETOUR SIGN DESIGN

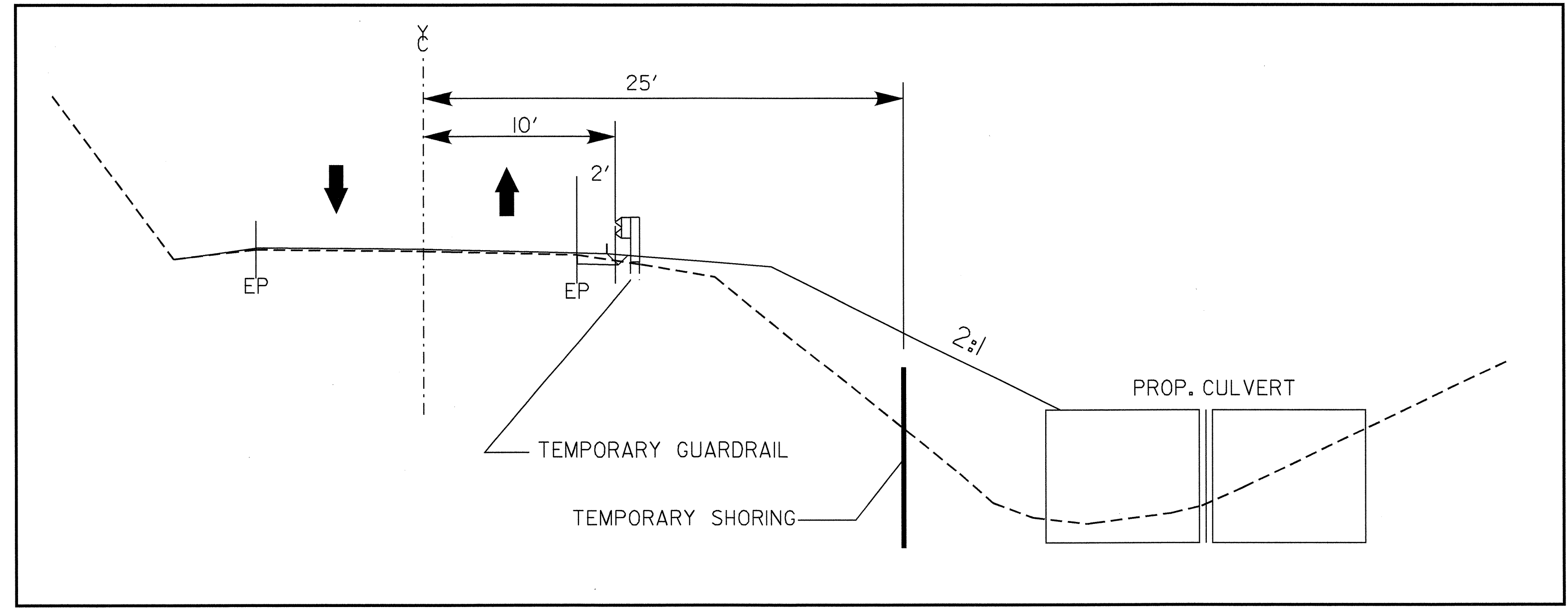
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DWG. BY: CLL  
DESIGN BY: CLL  
REVIEWED BY: BLW



REVISIONS



A - A'



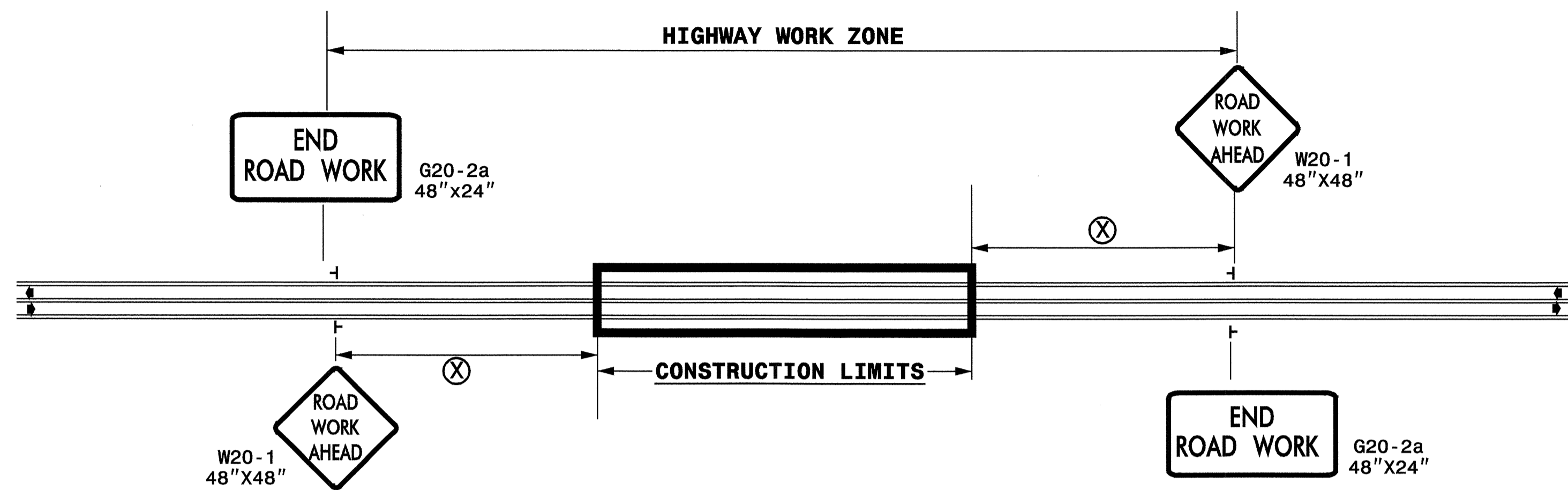
NOTES:

1. THE LOCATION OF THE TEMPORARY SHORING, LABELED "TEMPORARY SHORING, NOT BARRIER SUPPORTED".
2. FOR DESIGN OF TEMPORARY SHORING, USE THE FOLLOWING SOIL PARAMETERS:  
 UNIT WT. OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  psf,  
 UNIT WT. OF SOIL BELOW WATER TABLE,  $\gamma' = 60$  psf,  
 FRICTION ANGLE,  $\phi = 30^\circ$ ,  
 COHESION,  $C = 0$  pcf.

21-FEB-2006 12:48  
 \\efs-cctfs03\B2408\Traffic\Trafficcontrol\Top\TCP05\_Shorings.dgn  
 ayudml AT WZTC224239

APPROVED: <i>Joseph Isak</i> DATE: 2/20/06	<b>DETAIL DRAWING FOR TEMPORARY SHORING</b>		REVISIONS	
SEAL 			SCALE: NONE	
	DATE: 02/20/06			
	DESIGN BY: AYL			
REVIEWED BY: JI				

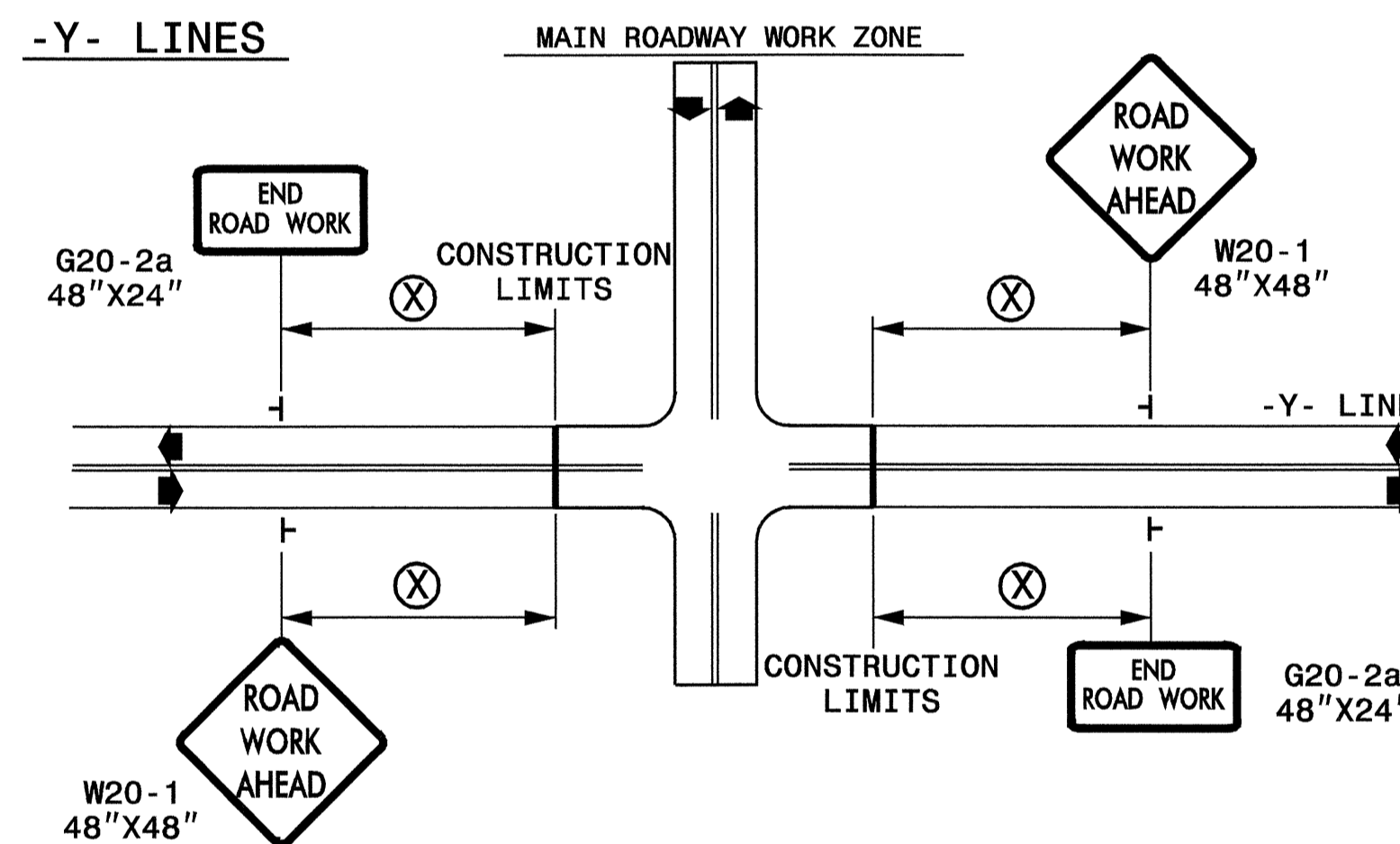
**TWO-WAY UNDIVIDED & URBAN FREEWAYS (L-LINES)**



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 IX) 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.

**LEGEND**

- └ STATIONARY SIGN
- ◀ DIRECTION OF TRAFFIC FLOW

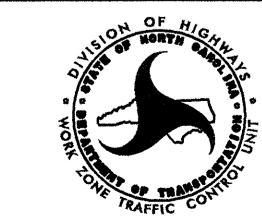
SHEET 1 OF 1

APPROVED: *Joseph Ishak* DATE: 2/24/06



DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS

SCALE: NONE	REVISIONS
DATE: 12/02/04	7-98 10/01
DWG. BY: MMM	10-98 03/04
DESIGN BY: MMM	01/01
REVIEWED BY: MMM	



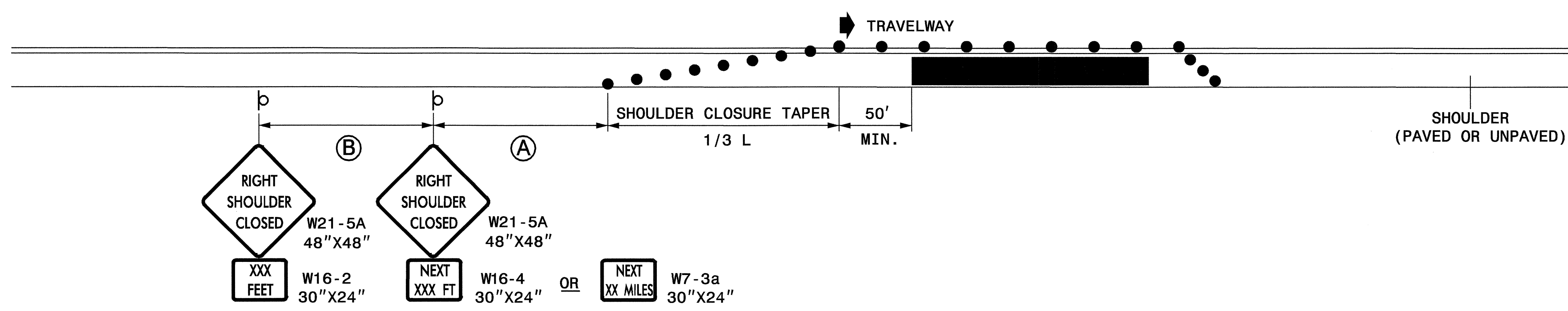
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

1-05

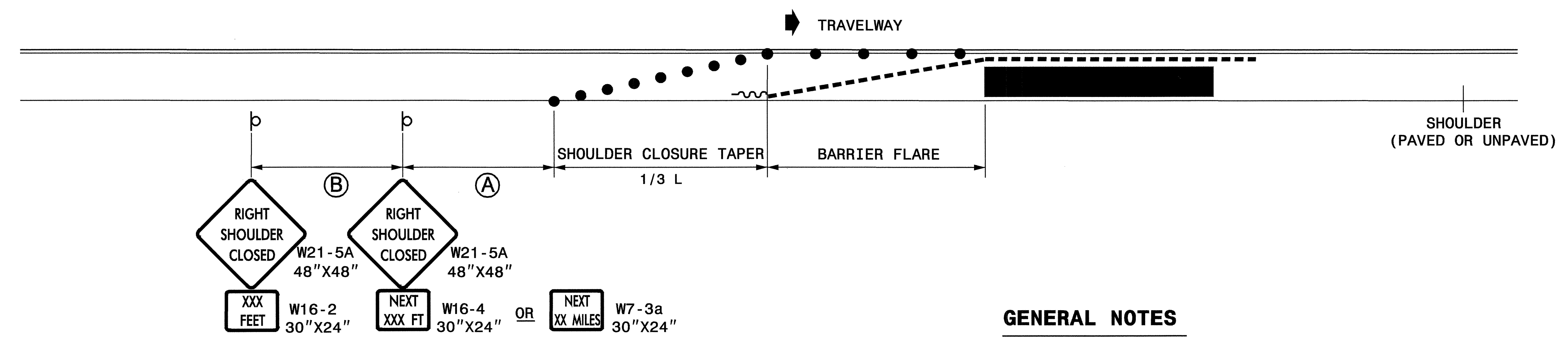
ENGLISH STANDARD DRAWING FOR  
**TEMPORARY SHOULDER CLOSURES**

SHEET 1 OF 1  
**1101D04**

**SHOULDER CLOSURES UTILIZING DRUMS**



**SHOULDER CLOSURES UTILIZING TEMPORARY BARRIER**



**GENERAL NOTES**

- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.
- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA AND BARRIER FLARE IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- FLARE THE APPROACH END OF PORTABLE CONCRETE BARRIER BEYOND THE SHOULDER AND USE A CRASH CUSHION FOR PROTECTION IF THE EXPOSED END OF THE BARRIER IS WITHIN THE "CLEAR ZONE".
- USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).
- REFER TO STD. 1101.11 SHEETS 1, 3, & 4, FOR "L" DISTANCE, BARRIER FLARE RATES, AND SIGN SPACING.

**LEGEND**

- ~ TEMPORARY CRASH CUSHION
- - - PORTABLE CONCRETE BARRIER
- DRUM
- ⊥ STATIONARY OR PORTABLE SIGN
- ➔ DIRECTION OF TRAFFIC FLOW

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

1-05

ENGLISH STANDARD DRAWING FOR  
**TEMPORARY SHOULDER CLOSURES**

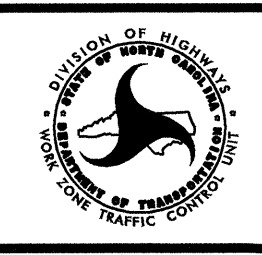
SHEET 1 OF 1  
**1101D04**

APPROVED: *Joseph Tshak* DATE: 2/22/04

SEAL

**REPLACEMENT DETAIL FOR  
RSD 1101.04**

SCALE: NONE  
DATE: 11/04  
DWG. BY: MMM  
DESIGN BY: MMM  
REVIEWED BY: MMM



REVISIONS	

21-FEB-2006 12:17  
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DIVISION OF HIGHWAYS  
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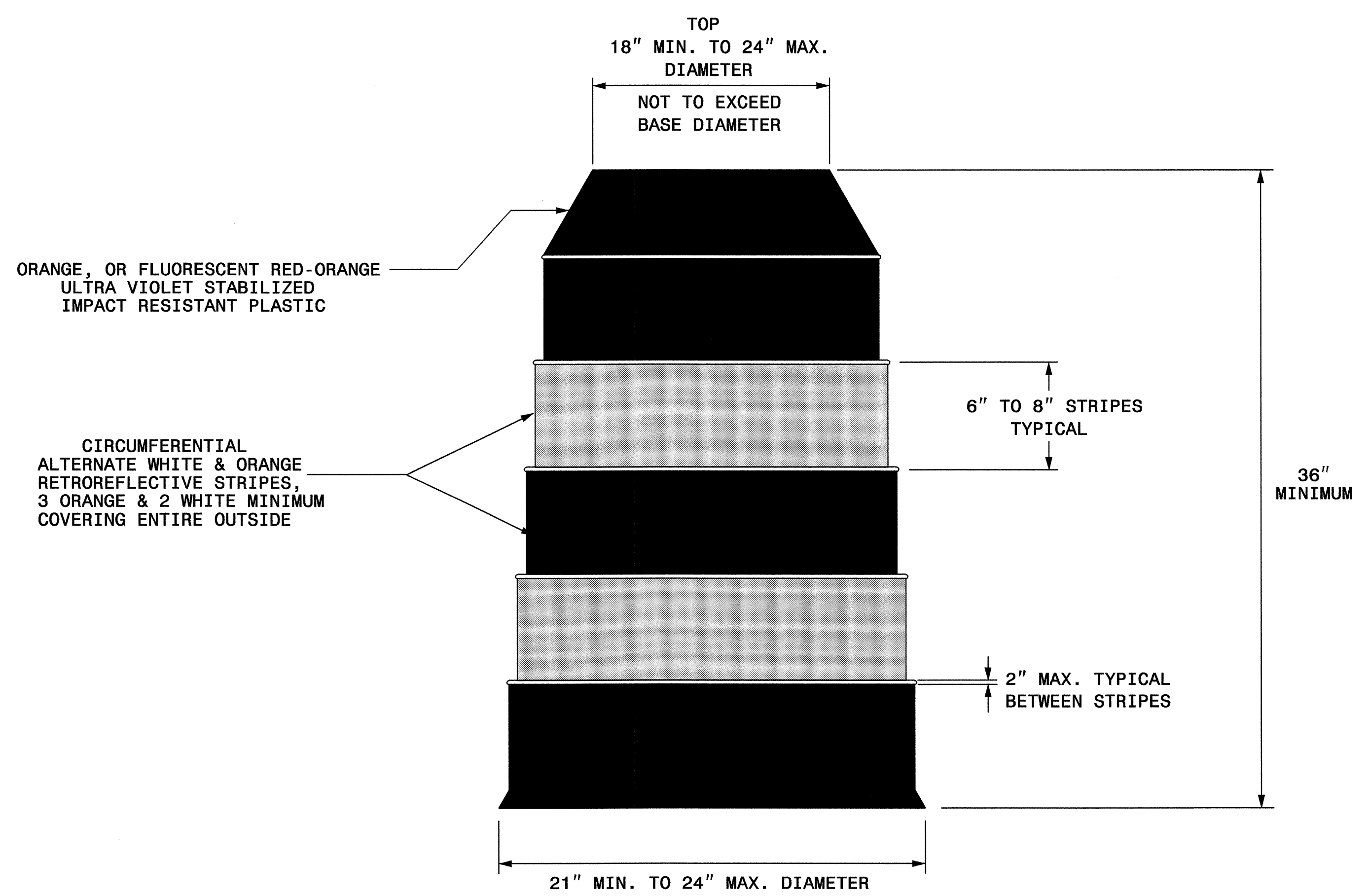
ENGLISH STANDARD DRAWING FOR  
**DRUMS**

SHEET 1 OF 1  
**1130D01**

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RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR  
**DRUMS**

SHEET 1 OF 1  
**1130D01**



**GENERAL NOTES**

- BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL BALLAST, OR PREFORMED WEIGHTED BASE BALLASTING METHODS. DO NOT PLACE BALLAST ON TOP OF THE DRUM, NOR AS TO PRESENT A HAZARD WHEN STRUCK.
- IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

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APPROVED: <i>[Signature]</i> DATE: 2/2/06	REPLACEMENT DETAIL FOR RSD 1130.01	
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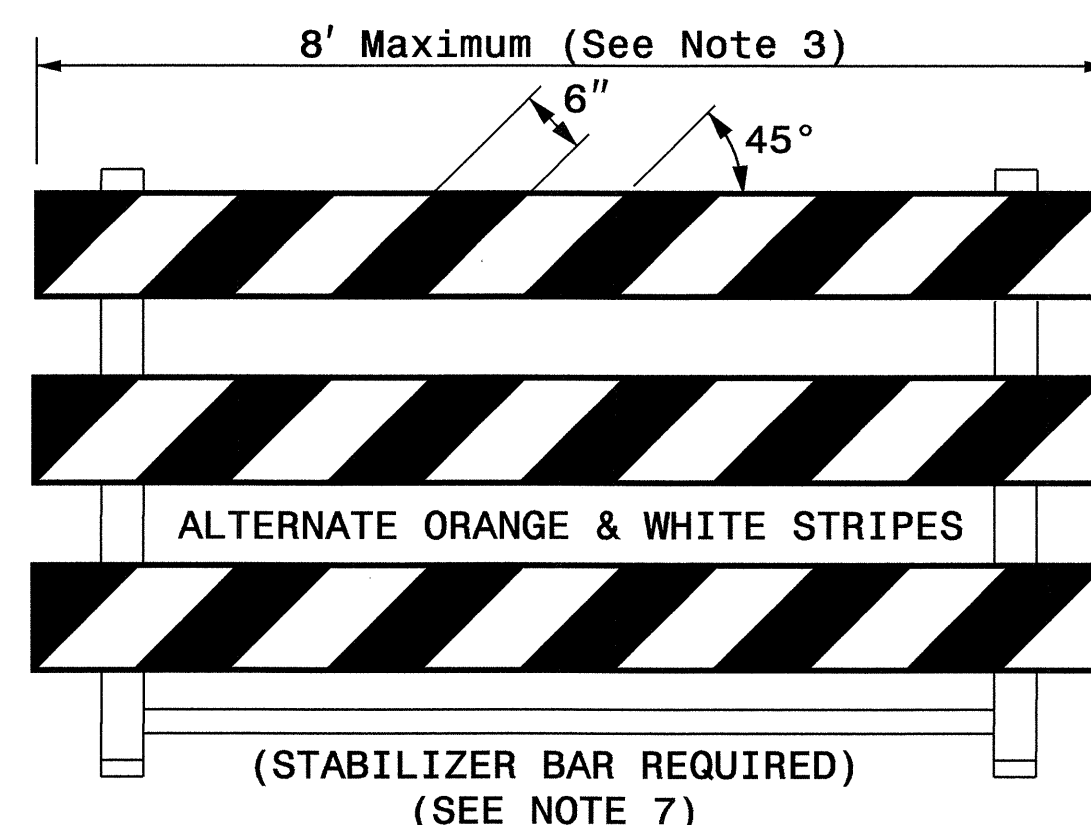
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RALEIGH, N.C.

1-05

ENGLISH STANDARD DRAWING FOR  
**BARRICADES**  
TYPE-III

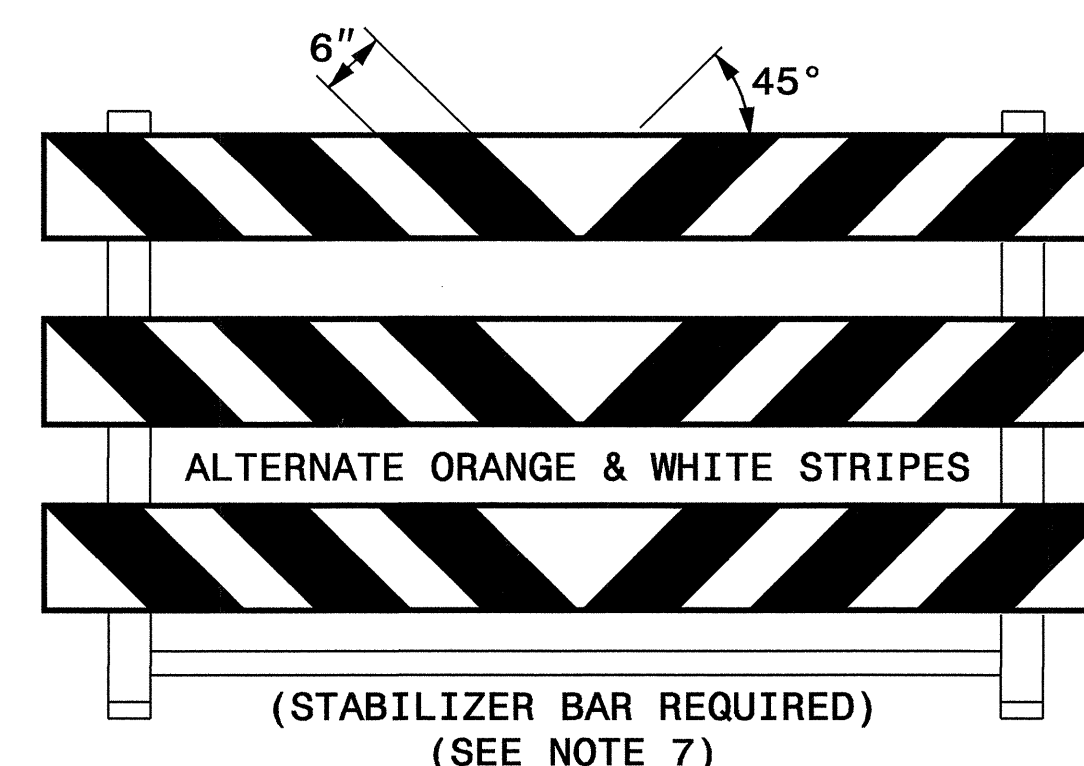
SHEET 1 OF 1  
**1145D01**

**TYPE III BARRICADE**



**TYPE III BARRICADE**

END-OF-ROADWAY APPLICATIONS



**GENERAL NOTES**

- 1) HORIZONTAL RAILS FOR TYPE-III BARRICADES MAY BE HOLLOW/CORRUGATED EXTRUDED RIGID POLYOLEFIN, HIGH DENSITY POLYETHYLENE, OR OTHER NCDOT APPROVED RAILS. BARRICADE RAILS OF FRANGIBLE PLASTICS SUCH AS PVC MAY NOT BE USED. IF APPROVED PLASTIC TYPE RAILS ARE USED, THEY MUST BE FLAME TREATED BY THE MANUFACTURER SO THAT REFLECTIVE SHEETING MAY ADHERE PROPERLY.
- 2) BARRICADES AND BARRICADE RAILS ARE APPROVED AS A SINGLE UNIT.
- 3) BARRICADE SHALL BE LIMITED TO A MAXIMUM LENGTH OF 8 FT UNLESS NCHRP 350 CRASH TESTED AND NCDOT APPROVED.
- 4) ONLY NCDOT APPROVED COMPOSITE AND ROLL-UP SIGNS MAY BE MOUNTED ON THE BARRICADE.
- 5) SIGNS MOUNTED ON BARRICADES SHOULD NOT COVER MORE THAN 50 PERCENT OF THE TOP TWO RAILS OR 33 PERCENT OF THE TOTAL AREA OF THE THREE RAILS.
- 6) USE TYPE VII, VIII OR IX SHEETING ON BOTH SIDES OF THE RAILS.
- 7) BARRICADE MUST BE NCHRP 350 AND NCDOT APPROVED WITH STABILIZER BAR OR ADEQUATE LATERAL BRACING.
- 8) ASSEMBLY OF THE GENERIC BARRICADES MUST BE SELF CERTIFIED BY THE ASSEMBLER.
- 9) BARRICADES USED TO CLOSE A ROADWAY SHALL EXTEND ACROSS THE ENTIRE ROADWAY. WHERE LOCAL TRAFFIC MUST BE MAINTAINED, THEY MAY BE PLACED IN A STAGGERED PATTERN.
- 10) STRIPES ON WORK ZONE BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE RETROREFLECTIVE STRIPES, SLOPED DOWNWARD TOWARDS THE SIDE WHICH TRAFFIC IS TO PASS OR TURN IN DETOURING. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES. USE RED AND WHITE STRIPES FOR PERMANENT BARRICADES.
- 11) SEE APPROVED PRODUCTS LIST FOR MANUFACTURERS OF APPROVED BARRICADES.
- 12) PLACE MANUFACTURER'S NAME AND FEDERAL HIGHWAY ADMINISTRATION'S NCHRP 350 APPROVAL LETTER NUMBER ON BARRICADE.
- 13) USE SANDBAGS PLACED ON THE LOWER PART OF THE FRAME FOR BALLASTING. DO NOT PLACE SANDBAGS ON TOP OF A STRIPED RAIL. DO NOT BALLAST BARRICADES BY HEAVY OBJECTS SUCH AS ROCKS, CHUNKS OF CONCRETE OR OTHER ITEMS THAT WOULD CAUSE DAMAGE IF THE BARRICADE IS STRUCK BY A VEHICLE.

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ENGLISH STANDARD DRAWING FOR  
**BARRICADES**  
TYPE-III

SHEET 1 OF 1  
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diyudini AT WZ1C224239

APPROVED: <i>Joseph Ishak</i> DATE: 11/22/04	<b>REPLACEMENT DETAIL FOR RSD 1145.01</b>									
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