

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS



STATE PROJECT REFERENCE NO.	SHEET NO.
B-3119	TCP-1

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

B-3119

**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 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
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1150.01	FLAGGING DEVICES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS (TEMPORARY & PERMANENT)
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS
1264.02	PLACEMENT OF OBJECT MARKERS

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PM-1	FINAL PAVEMENT MARKING

**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
- 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

TIP PROJECT:

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APPROVED:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
DATE: October 19, 2006	
SEAL	J. S. BOURNE, P.E. TRAFFIC CONTROL ENGINEER
	J. S. KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
	J. S. KUSE, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	R. M. GARRETT TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN



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# PROJECT NOTES

## GENERAL NOTES

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 UNDESIRE 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.

- A) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR OTHERWISE DIRECTED BY THE ENGINEER.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 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.

- C) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- D) 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 50mm ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 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.

- E) DO NOT EXCEED A DIFFERENCE OF 40mm IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING UNEVEN LANES SIGNS (W8-11) 150m IN ADVANCE AND A MINIMUM OF ONCE EVERY MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

- G) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 31m FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- H) PROVIDE PERMANENT SIGNING.
- I) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.
- J) THE CONTRACTOR WILL COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- L) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) 150m IN ADVANCE OF THE UNEVEN AREA.
- M) INSTALL BLACK ON ORANGE "BUMP" SIGNS (W8-1) 150m IN ADVANCE OF THE UNEVEN AREA.

### TRAFFIC CONTROL DEVICES

- N) WHEN USING ROADWAY STANDARD NO. 1101.02, SHEET 1 OF 7 DRUMS MAY BE USED IN LIEU OF CONES ON NC 9.
- O) 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

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

ROAD NAME	MARKING	MARKER
MORGAN HILL RD	PAINT	NONE
LOWER SAND BRANCH RD	PAINT	NONE
NC 9	THERMO	SNOWPLOWABLE

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

ROAD NAME	MARKING	MARKER
MORGAN HILL RD	PAINT	TEMPORARY RAISED
LOWER SAND BRANCH RD	PAINT	NONE
NC 9	PAINT	NONE

- R) 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.
- S) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- T) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- U) PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE (3) MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

### 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) 150m AND 300m RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

## LOCAL NOTES

- 1) MAINTAIN ACCESS TO ALL DRIVEWAYS.

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PROJ. REFERENCE NO.	SHEET NO.
B-3119	TCP-3

# PHASING

## PHASE I

- STEP 1 INSTALL ADVANCE WORK ZONE WARNING SIGNS FOR -Y1- (MORGAN HILL RD. / LOWER SAND BRANCH RD.) AND -Y- (NC 9) ACCORDING TO TCP-11.
- STEP 2 USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 7, AND ROADWAY STANDARD DRAWING NUMBER 1101.06, SHEET 1 OF 1, AS NEEDED, CONSTRUCT THE FOLLOWING:
- BEGIN CONSTRUCTION OF THE PROPOSED DRAINAGE ACROSS -Y1- AND COMPLETE CONSTRUCTION OF THE RETAINING WALL AS SHOWN ON ROADWAY PLANS AND SHEET TCP-5.
  - CONSTRUCT TEMPORARY PAVEMENT ALONG -Y1- FROM STATION 11+25+/- TO STA. 12+40+/- UP TO THE EDGE AND ELEVATION OF EXISTING -Y1- ROADWAY SURFACE. (SEE ROADWAY PLANS AND SHEET TCP-5)
- STEP 3 INSTALL OFFSITE DETOUR SIGNS AND BARRICADES TO CLOSE -L- SR 2804 (LOWER SAND BRANCH RD.) AT -Y- (NC 9) AND -Y1- (MORGAN HILL RD. / LOWER SAND BRANCH RD.) AND DETOUR TRAFFIC AS SHOWN ON SHEET TCP-8.
- STEP 4 INSTALL TEMPORARY SIGNALS (SEE SIGNAL PLANS)
- PLACE TEMPORARY PAVEMENT MARKINGS AND DEVICES, ACTIVATE TEMPORARY SIGNALS AND SHIFT TRAFFIC INTO A 1-LANE, 2-WAY PATTERN (SEE SHEET TCP-6)

## PHASE II

- STEP 1 AWAY FROM TRAFFIC, REMOVE EXISTING BRIDGE 653 AND CONSTRUCT PROPOSED REPLACEMENT BRIDGE ALONG ALIGNMENT -L-. (SEE ROADWAY, STRUCTURE PLANS AND SHEET TCP-7)
- STEP 2 COMPLETE PROPOSED DRAINAGE BEGUN DURING PHASE I, STEP 2. (SEE ROADWAY PLANS)
- USING FLAGGERS, AS NEEDED COMPLETE PROPOSED -Y1- GRADE AND ELEVATION UP TO BUT, NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE.
- STEP 3 USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 7, CONSTRUCT THE FOLLOWING INCLUDING THE FINAL LAYER OF SURFACE COURSE:
- L- FROM STA. 10+15+/- TO STA. 10+63+/-
  - Y- FROM STA. 11+00+/- TO STA. 12+20+/-
  - Y1- FROM STA. 10+43+/- TO STA. 12+90+/-
- PLACE FINAL PAVEMENT MARKINGS AND MARKERS. (SEE SHEET PM-1)
  - REMOVE ALL DETOUR SIGNING AND BARRICADES INSTALLED DURING PHASE II, STEP 1 AND OPEN ROADWAYS IN THEIR FINAL PATTERNS.

## PHASE III

- STEP 1 INSTALL OFFSITE DETOUR SIGNS AND BARRICADES TO CLOSE -L2- SR 2786 (LOWER SAND BRANCH RD.) AND DETOUR TRAFFIC AS SHOWN ON SHEET TCP-9.
- STEP 2 CONSTRUCT -L2- SR 2876 (LOWER SAND BRANCH RD.) INCLUDING THE PROPOSED CULVERT AND PAVEMENT UP TO THE FINAL LAYER OF SURFACE COURSE. (SEE ROADWAY, STRUCTURE PLANS)
- PLACE FINAL MARKINGS. (SEE SHEET PM-1)
  - REMOVE ALL DETOUR SIGNS AND TRAFFIC CONTROL DEVICES AND OPEN -L2- TO TRAFFIC IN THE FINAL PATTERN. STRUCTURE AND REPLACING EXISTING BRIDGE NUMBER 654.

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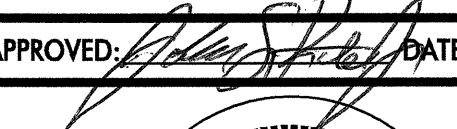
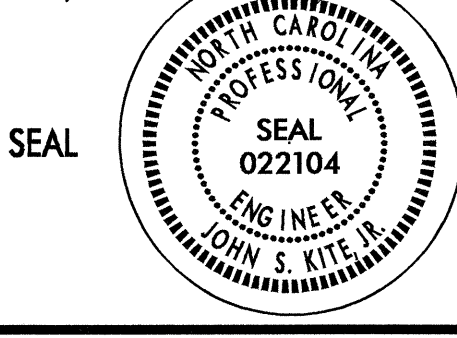
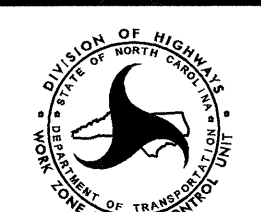


PROJ. REFERENCE NO.	SHEET NO.
B-3119	TCP-4

## PAVEMENT MARKING SCHEDULE

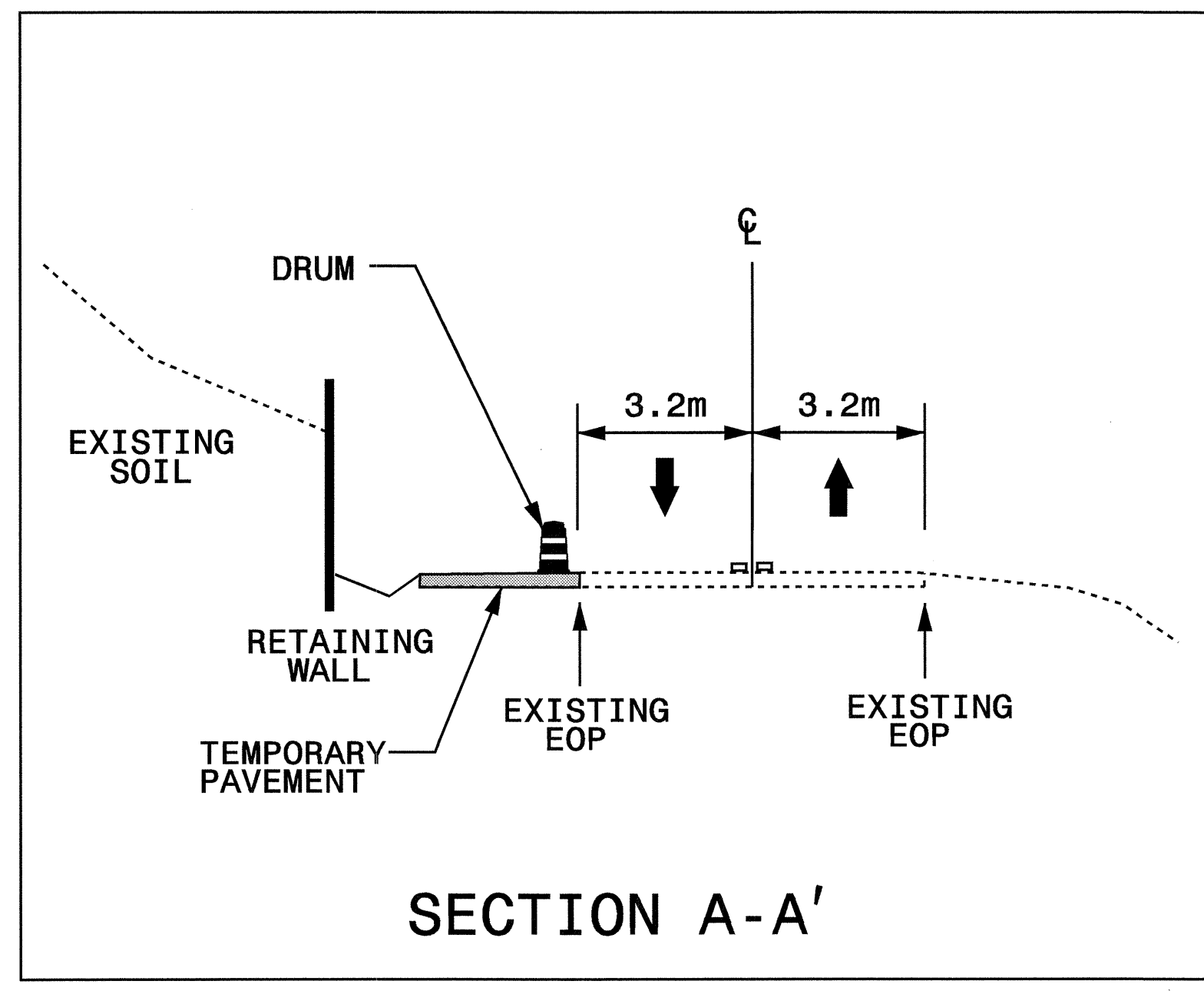
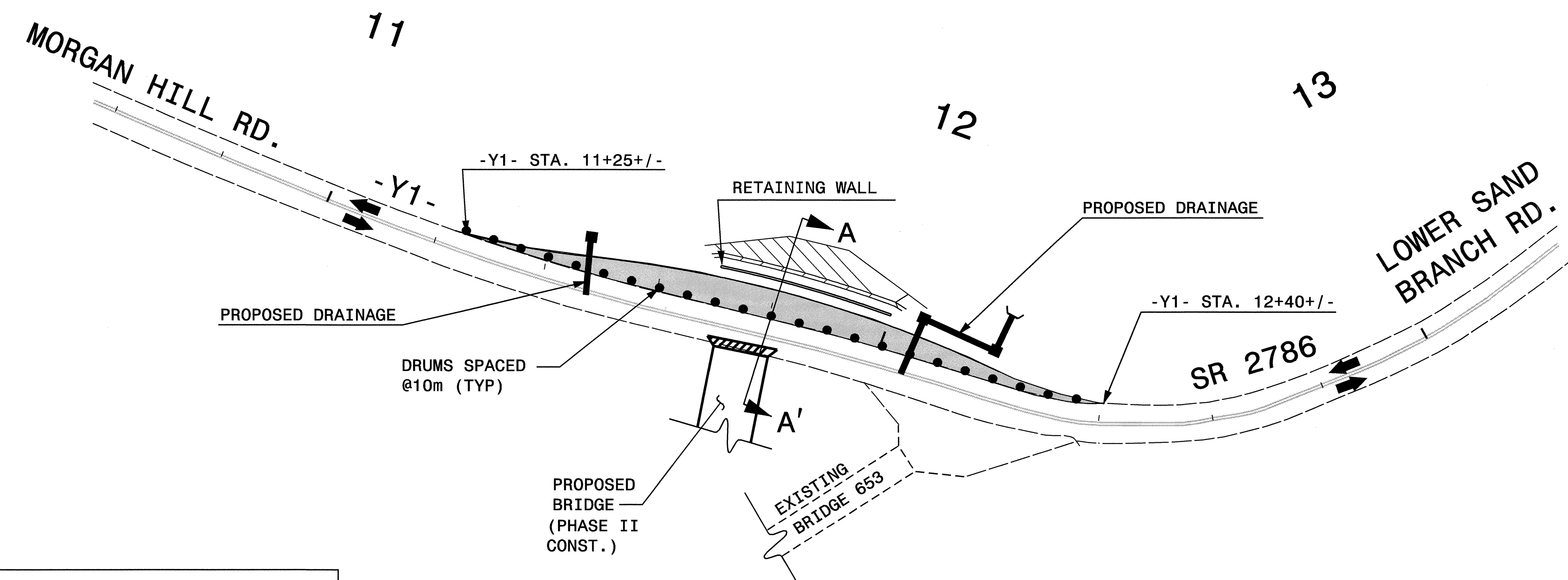
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<b>FINAL</b>				
PAVEMENT MARKINGS				
		THERMOPLASTIC (100MM, 2.3MM)		
TA	WHITE EDGELINE		327 M	TOTAL 327 M
		THERMOPLASTIC (100MM, 3.1MM)		
TI	YELLOW DOUBLE CENTER		338 M	TOTAL 338 M
		THERMOPLASTIC (600MM, 3.1MM)		
T2	WHITE STOPBAR		16 M	TOTAL 16 M
		PAINT (100MM)		
PA	WHITE EDGELINE (2X)		888 M	TOTAL 1980 M
PI	YELLOW DOUBLE CENTER (2X)		1092 M	
MARKERS				
SNOWPLOWABLE RAISED PAVEMENT MARKERS				
ME	YELLOW & YELLOW		6 EA	TOTAL 6 EA
<b>TEMPORARY</b>				
PAVEMENT MARKINGS				
		PAINT (100MM)		
PA	WHITE EDGELINE (2X)		1374 M	TOTAL 2174 M
PI	YELLOW DOUBLE CENTER (2X)		800 M	
		PAINT (600MM)		
P4	WHITE STOPBAR (2X)		13 M	TOTAL 13 M
MARKERS				
TEMPORARY RAISED PAVEMENT MARKERS				
	CRYSTAL & CRYSTAL		22 EA	TOTAL 22 EA

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B-3119	TCP-5

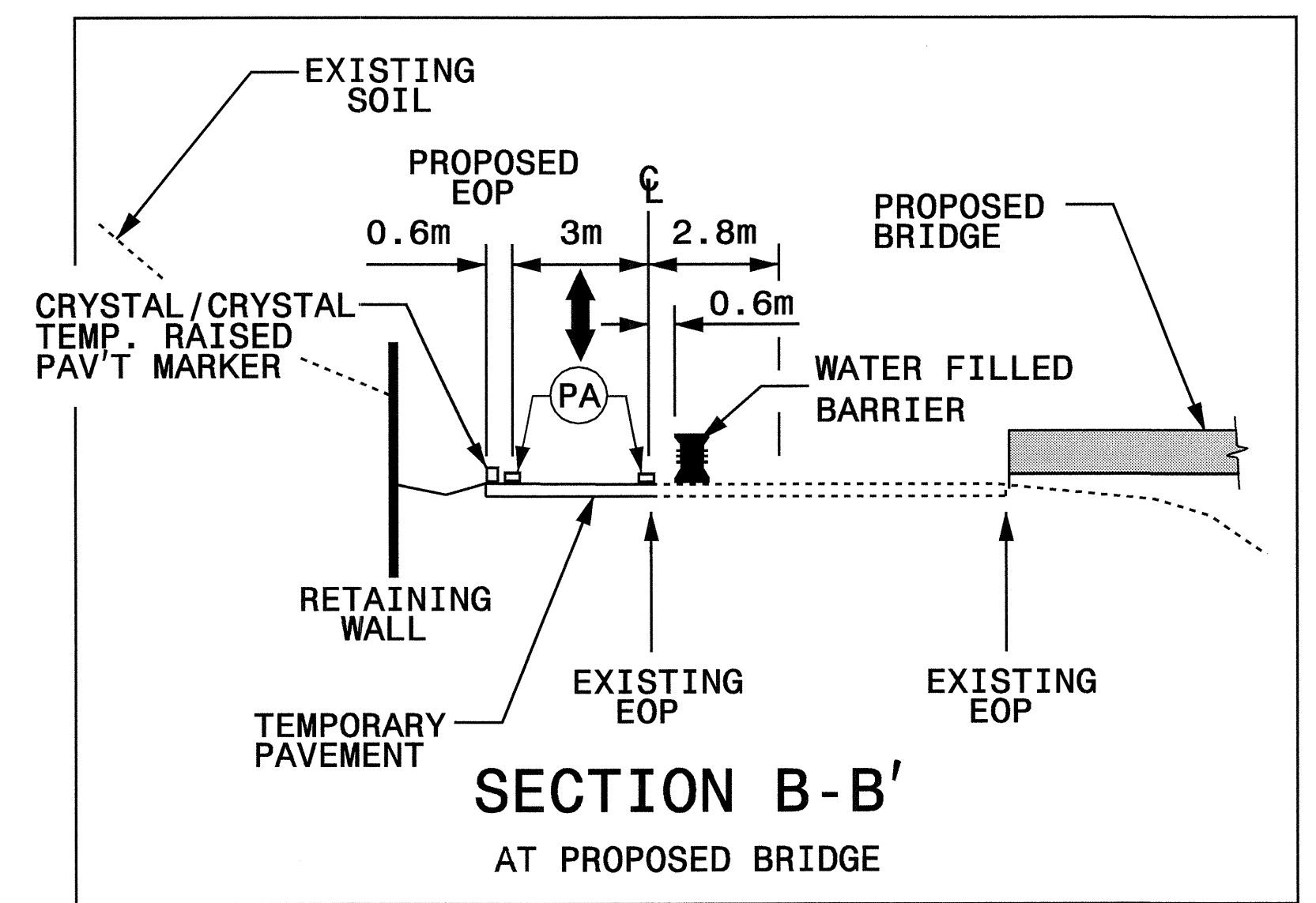
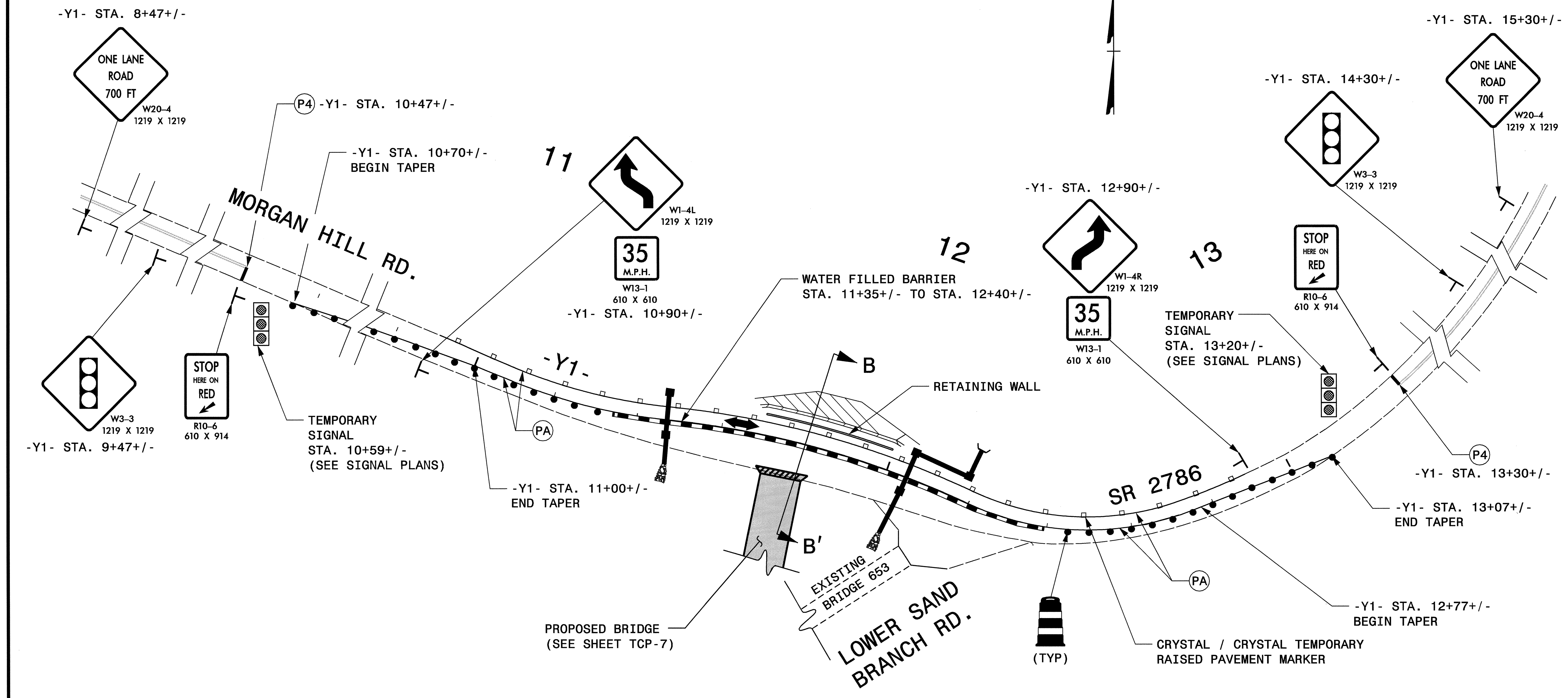


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 rmgarrett

APPROVED: <i>John S. Kite, Jr.</i> DATE: 11/30/06	<b>PHASE I</b>					
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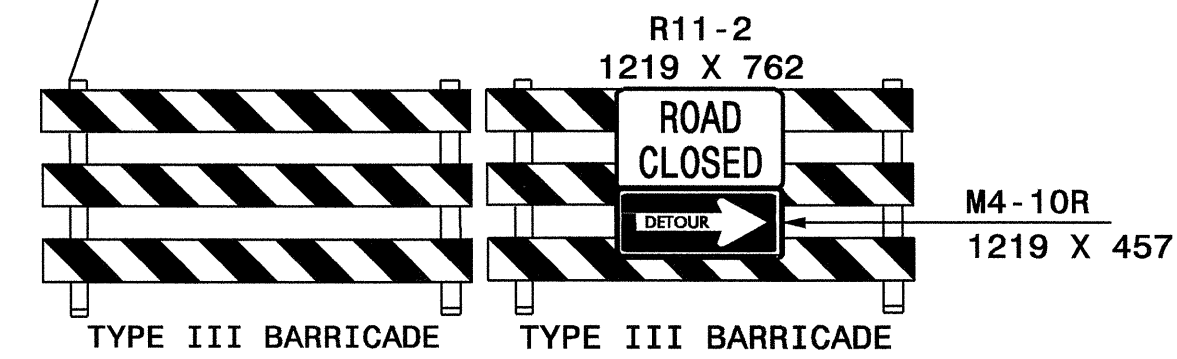
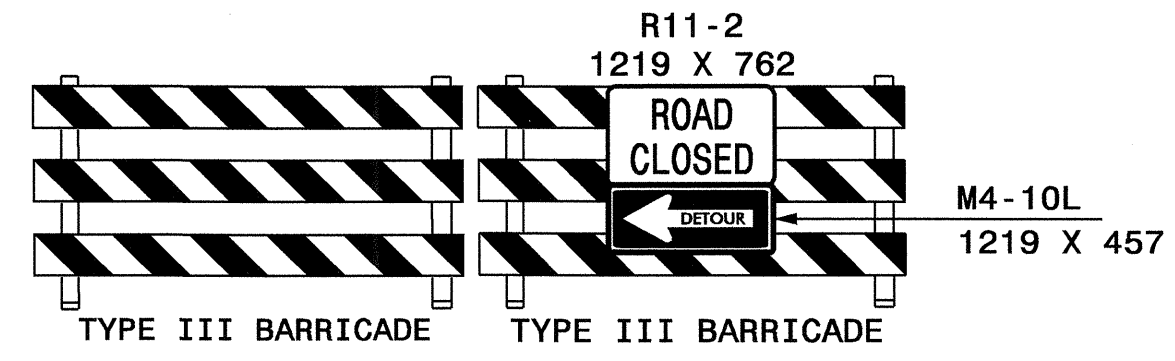
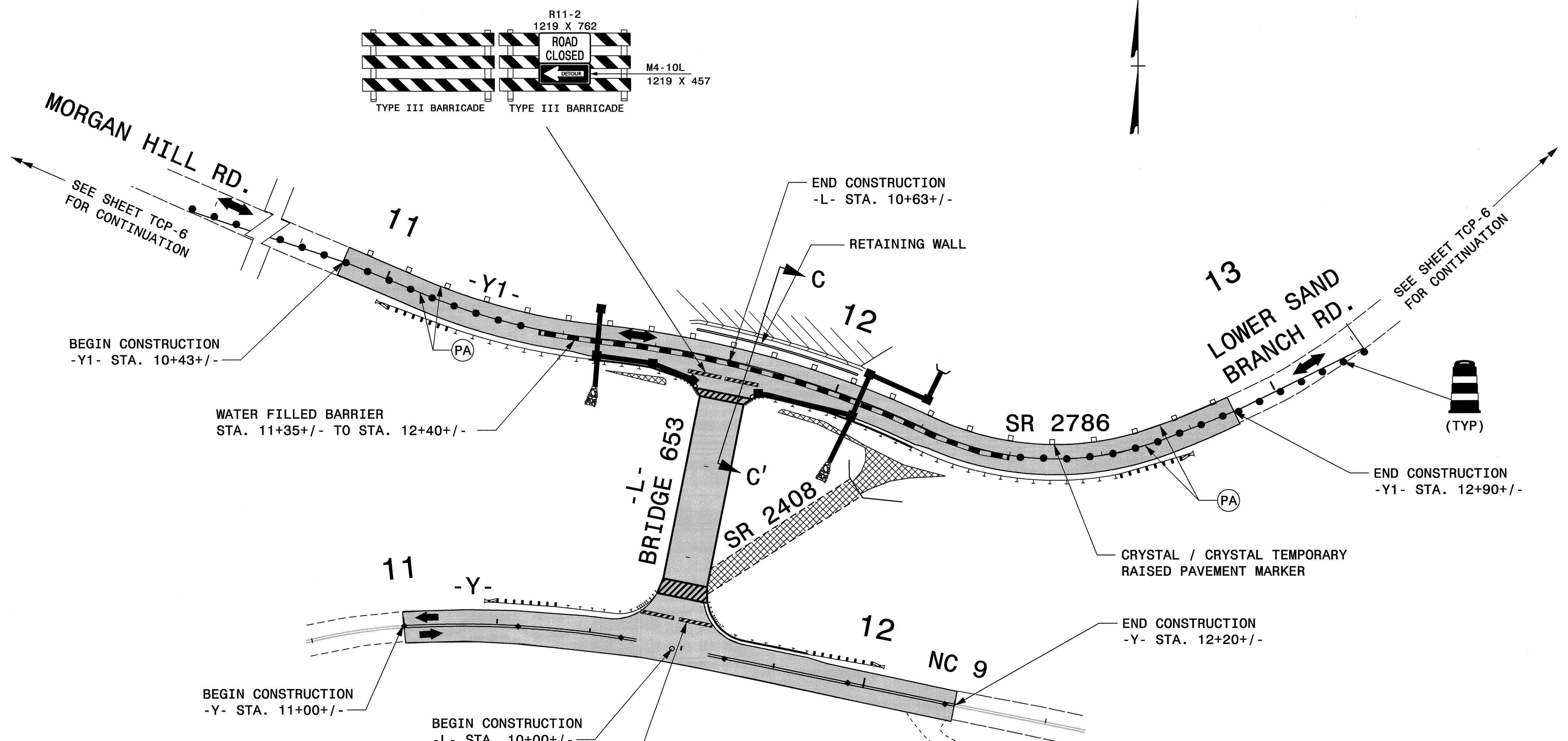
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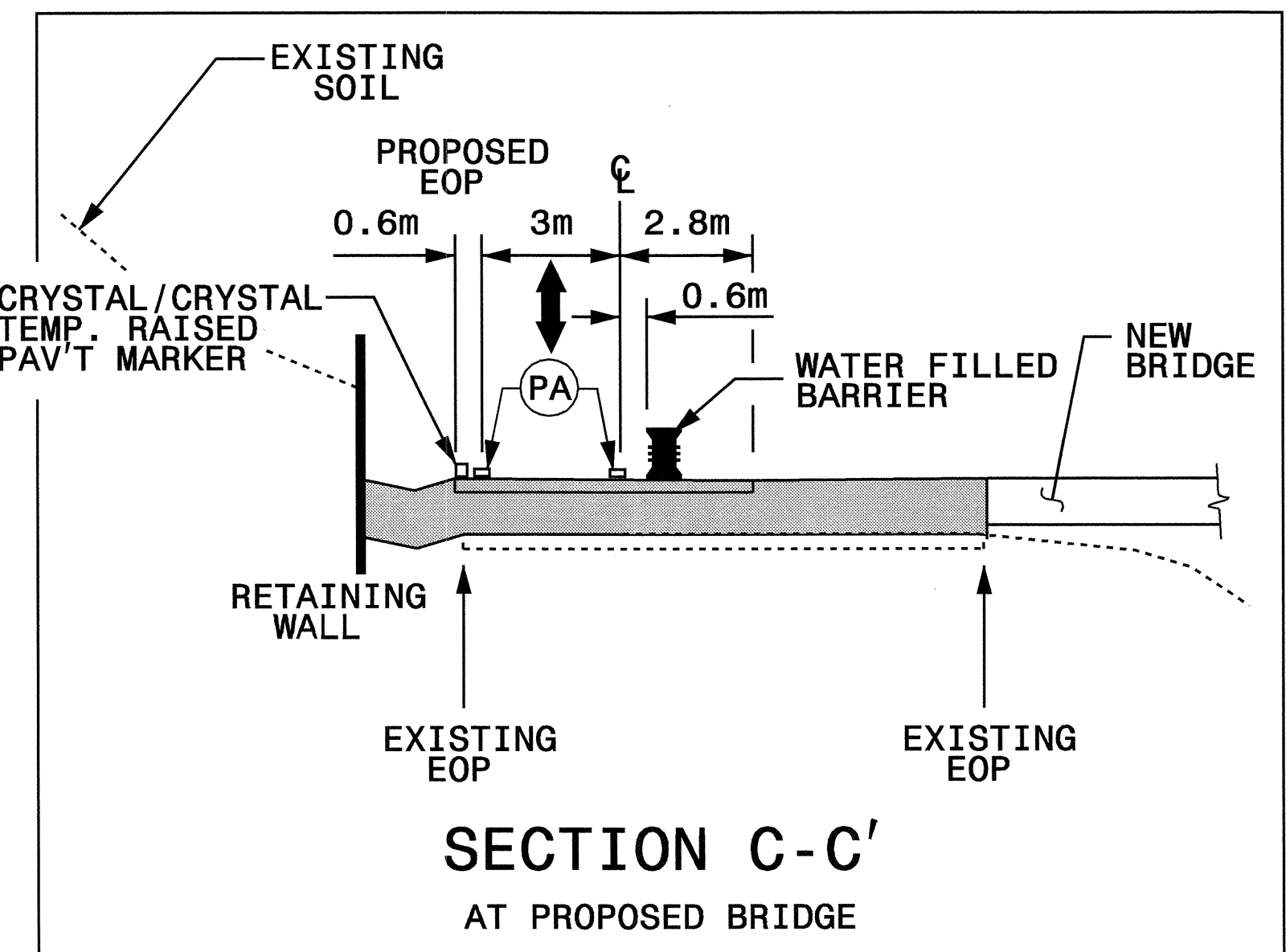
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PROJ. REFERENCE NO.	SHEET NO.
B-3119	TCP-7



(SEE SHEET TCP-8 FOR DETOUR ROUTE DURING THIS PHASE OF CONSTRUCTION)



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SEAL

PHASE II

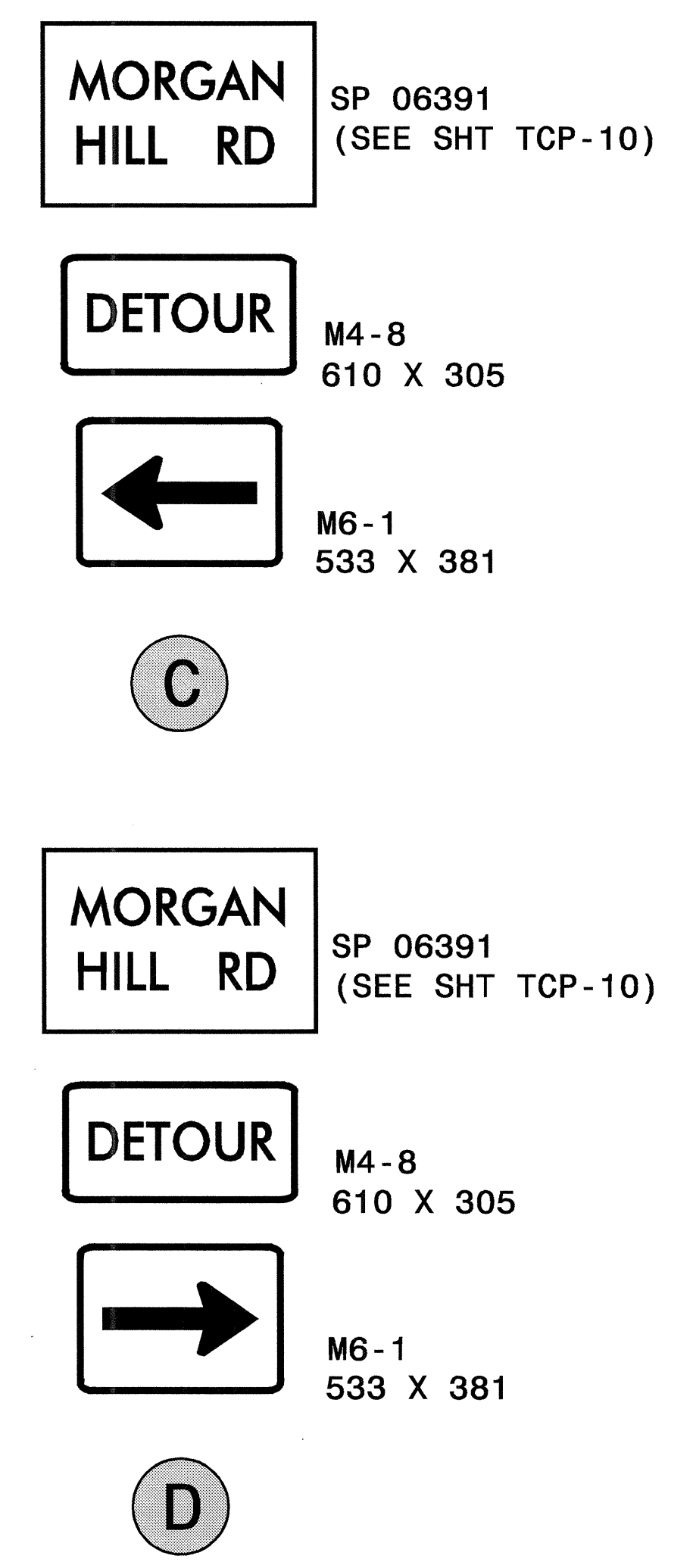
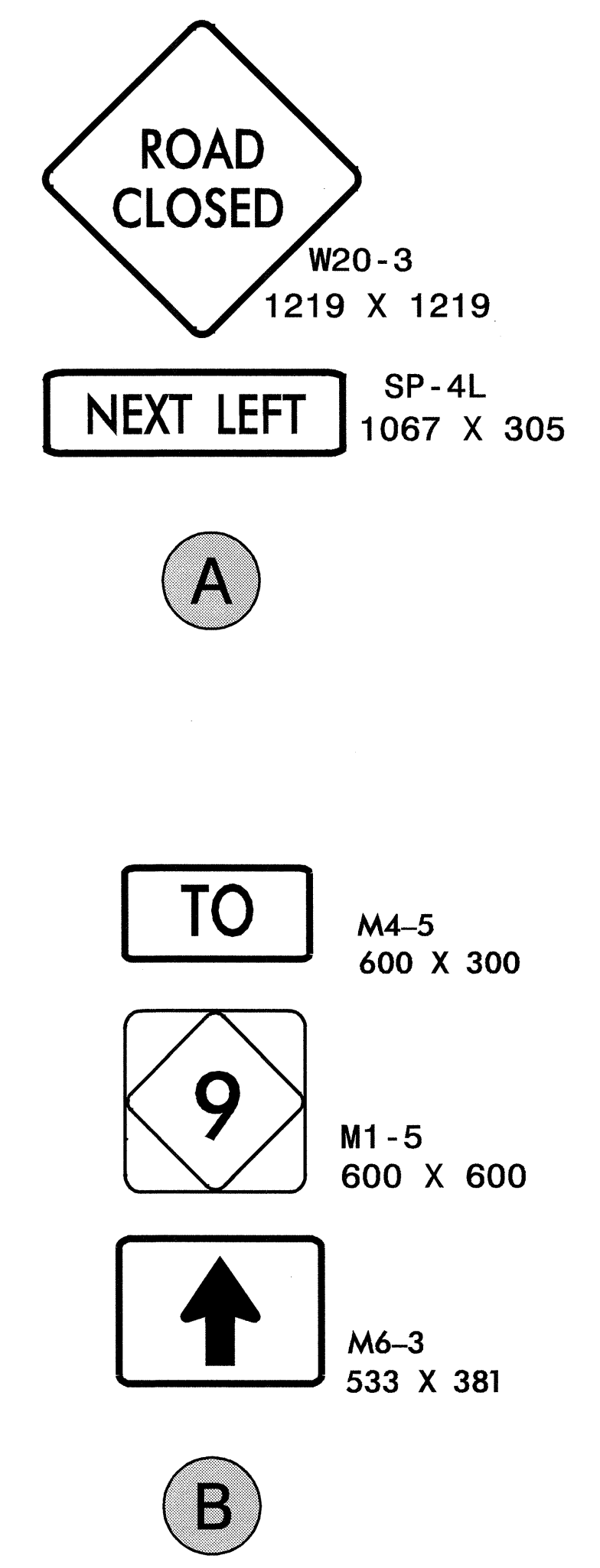
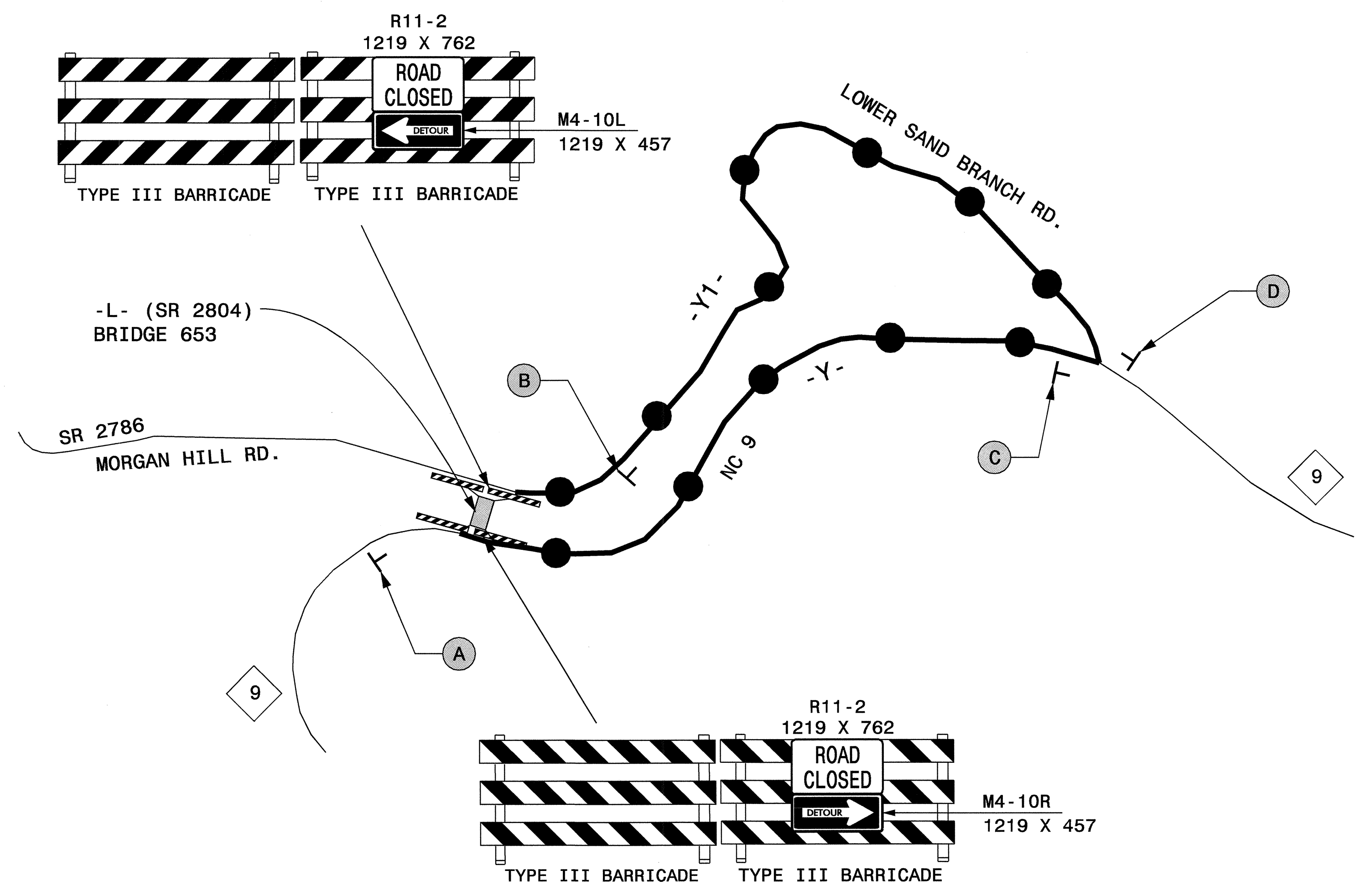
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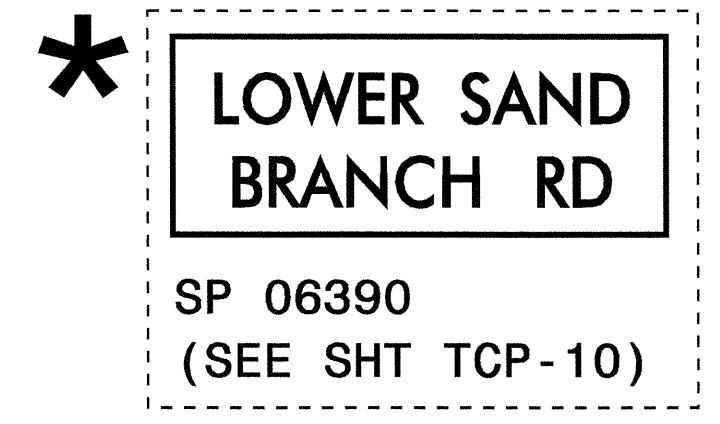
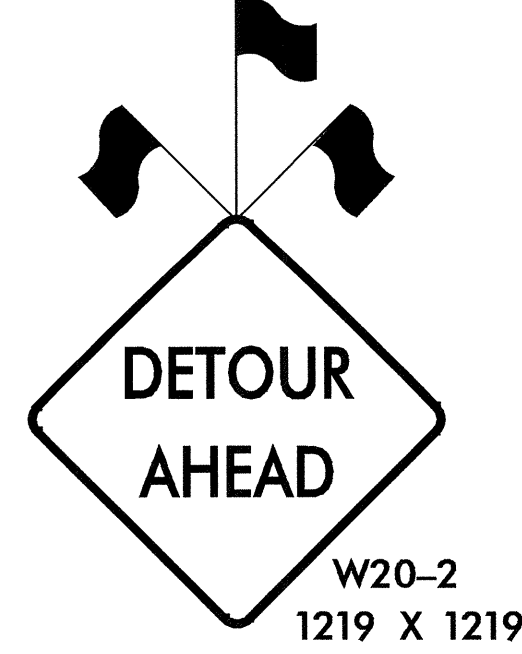
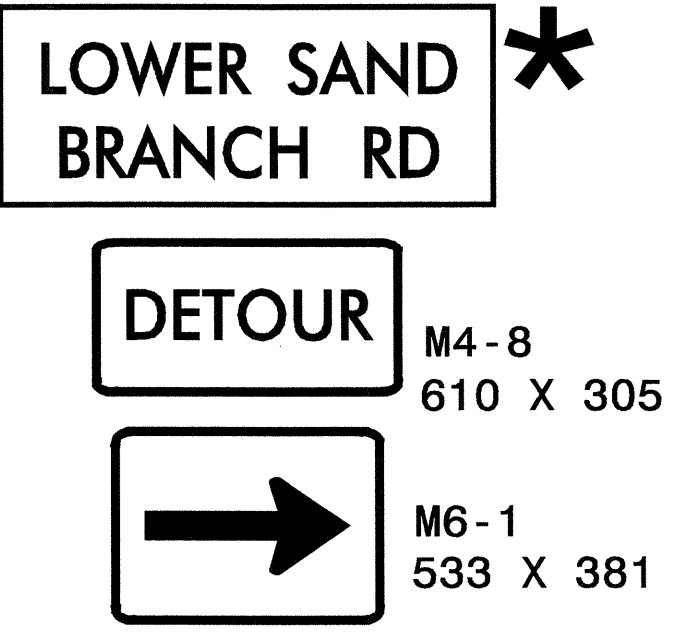
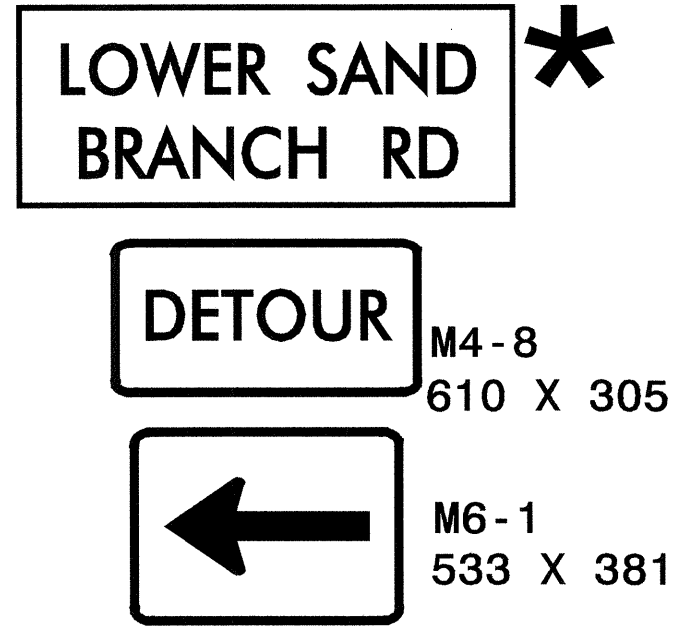
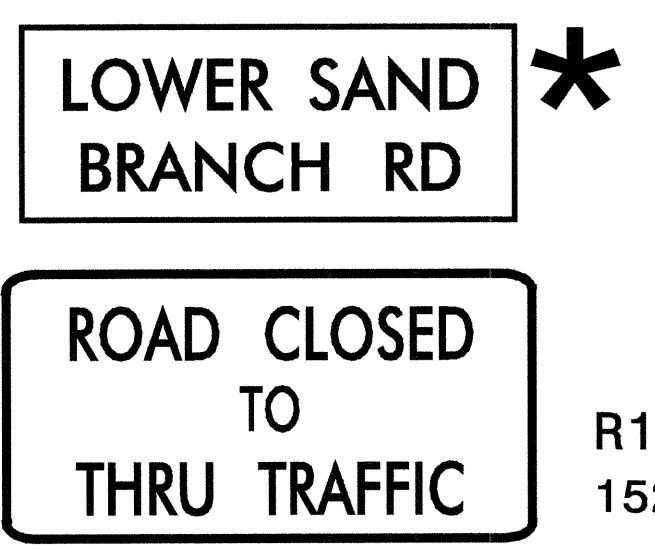
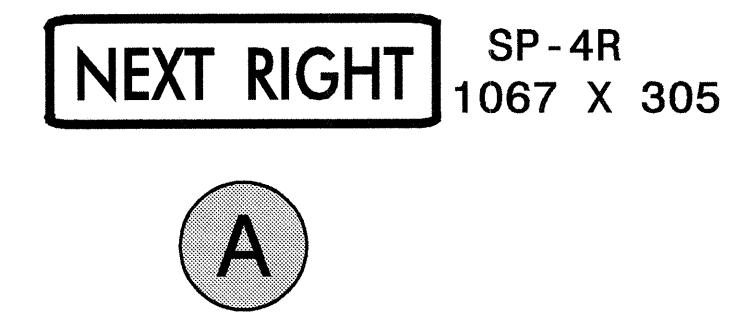
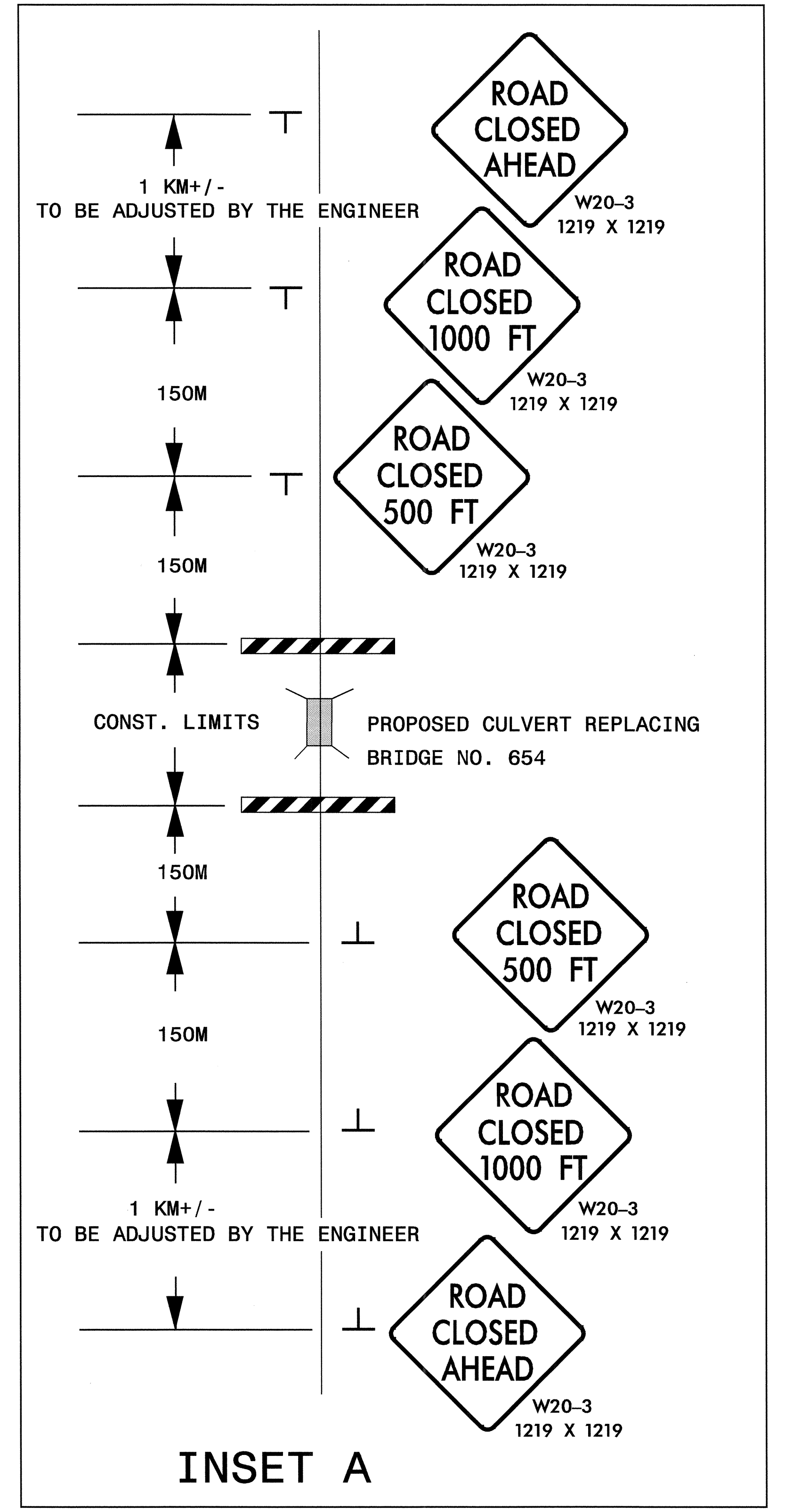
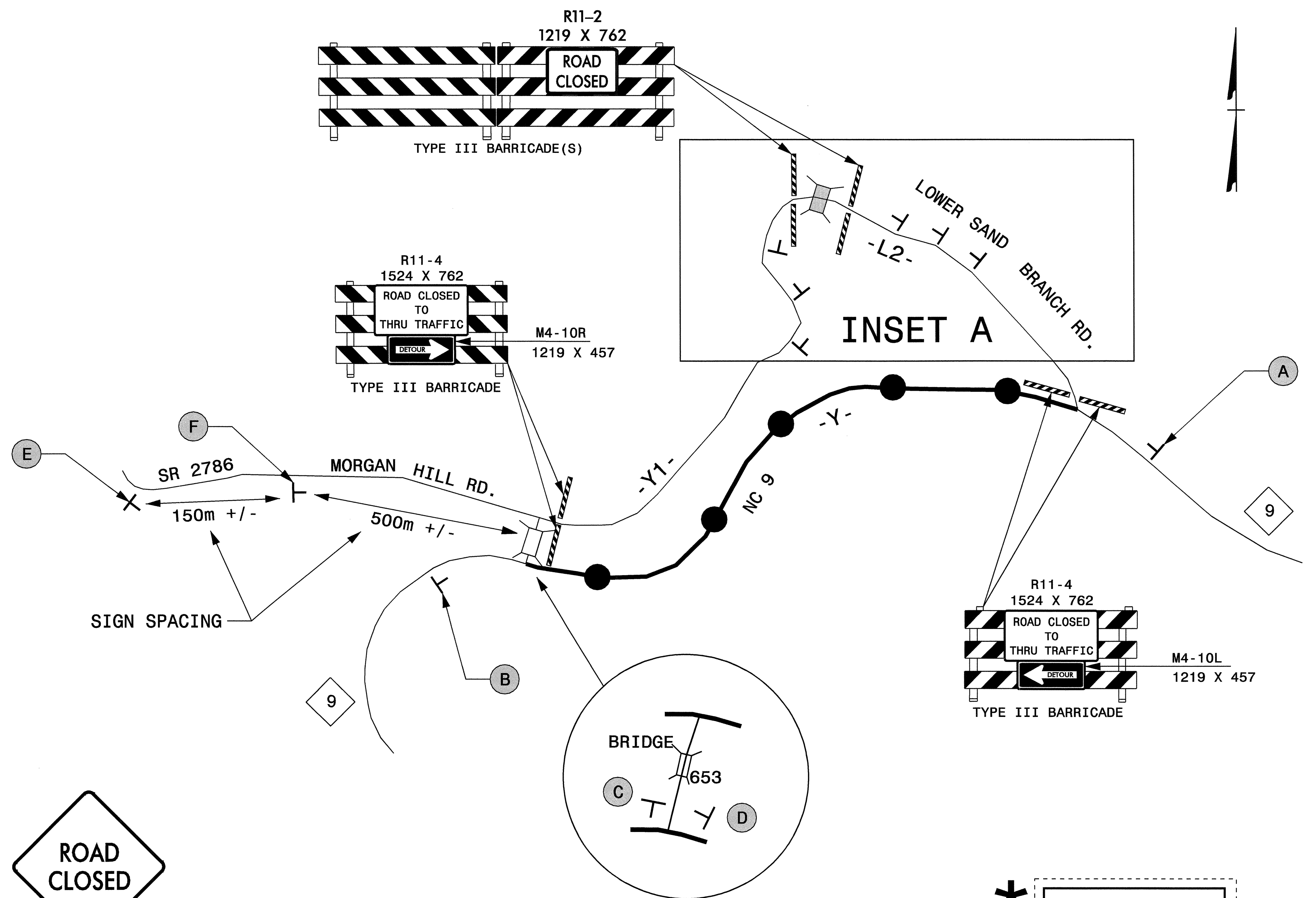
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 rmdrrett AT W2102229

APPROVED: <i>[Signature]</i> DATE: 7/10/06	<b>PHASE II DETOUR</b>	
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DWG. BY: RMG		
DESIGN BY: RMG		
REVIEWED BY: JSK		





APPROVED: [Signature] DATE: 10/7/06

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 022104  
JOHN S. KITE, JR.

**PHASE III OFFSITE DETOUR**

SCALE: NONE	REVISIONS
DATE: 07/06	
DWG. BY: RMG	
DESIGN BY: RMG	
REVIEWED BY: JSK	

DIVISION OF HIGHWAY CONSTRUCTION AND MAINTENANCE  
STATE OF NORTH CAROLINA  
TRAFFIC CONTROL

I7-OCT-2006 09:47  
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 rmgarratt AT W21222291



PROJ. REFERENCE NO.	SHEET NO.
B-3119	TCP-10

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

SIGN NUMBER: SP06390    BACKG COLOR: Fluorescent Orange  
TYPE: D    COPY COLOR: Black

DESIGN BY: MJH    CHECKED BY: JGM    STD #:     
PROJECT ID: B-3119    DIV: 13    DATE: Aug 23, 2006

QUANTITY: 1

SYMBOL	X	Y	WID	HT

SIGN WIDTH: 1200mm  
HEIGHT: 600mm  
TOTAL AREA: 0.7 Sq.m

BORDER TYPE: FLUSH  
RECESS: 10mm  
WIDTH: 15mm  
RADIO: 40mm

NO. Z BARS:    MAT'L: 0.125" (3.2 mm) ALUMINUM  
LENGTH:    0.075" (2.0 mm) COMPOSITE

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

BORDER  
R=40mm  
TH=15mm  
IN=10mm

LETTER POSITIONS

Letter locations are panel edge to lower left corner											Series/Size
L	O	W	E	R	S	A	N	D			Text Length
84	181	289	424	521	704	808	923	1032			C
											1031
B	R	A	N	C	H	R	D				C
149	258	362	477	586	690	873	982				917

Spacing Factor is 1 unless specified otherwise

FILENAME: B-3119\_SP    NORTH CAROLINA D.O.T. SIGN DETAIL

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

SIGN NUMBER: SP06391    BACKG COLOR: Fluorescent Orange  
TYPE: D    COPY COLOR: Black

DESIGN BY: MJH    CHECKED BY: JGM    STD #:     
PROJECT ID: B-3119    DIV: 13    DATE: Aug 23, 2006

QUANTITY: 1

SYMBOL	X	Y	WID	HT

SIGN WIDTH: 1000mm  
HEIGHT: 600mm  
TOTAL AREA: 0.6 Sq.m

BORDER TYPE: FLUSH  
RECESS: 10mm  
WIDTH: 15mm  
RADIO: 40mm

NO. Z BARS:    MAT'L: 0.125" (3.2 mm) ALUMINUM  
LENGTH:    0.075" (2.0 mm) COMPOSITE

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

BORDER  
R=40mm  
TH=15mm  
IN=10mm

LETTER POSITIONS

Letter locations are panel edge to lower left corner											Series/Size
M	O	R	G	A	N						Text Length
164	295	415	524	632	753						C
											673
H	I	L	L	R	D						C
177	292	346	448	624	740						646

Spacing Factor is 1 unless specified otherwise

FILENAME: B-3119\_SP    NORTH CAROLINA D.O.T. SIGN DETAIL

26-SEP-2006 08:40  
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C:\Users\jgarrett\AT\WZTC2229

APPROVED: *[Signature]* DATE: 7/26/06

**SPECIAL SIGN DESIGNS**

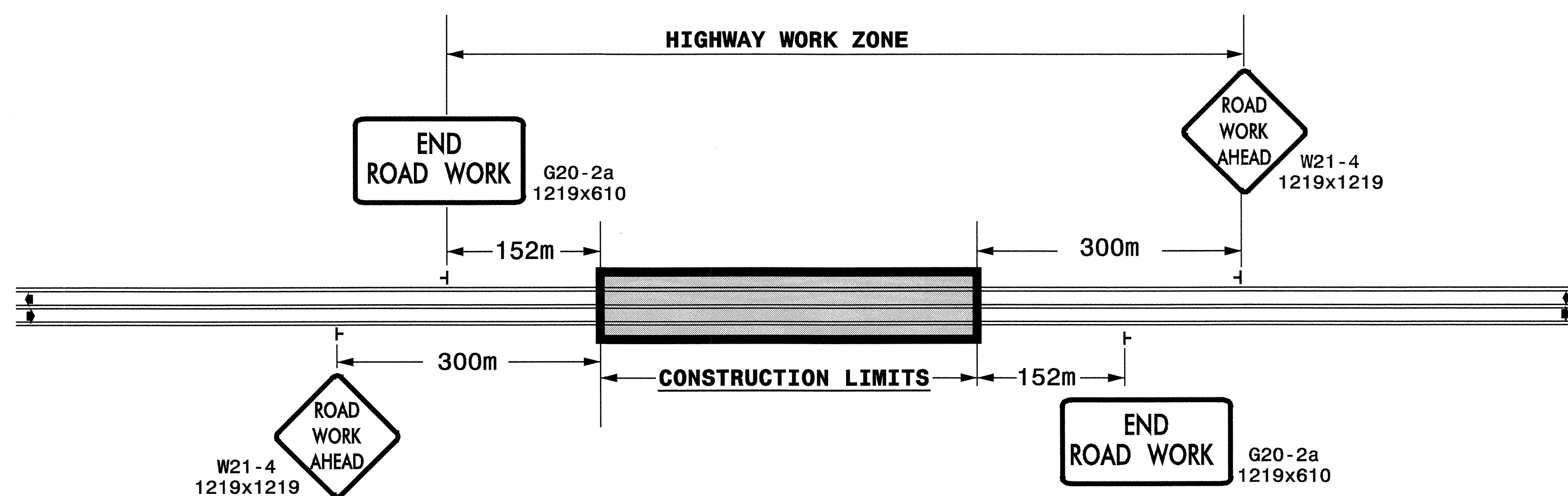
SCALE: NONE  
DATE: 07/06  
DWG. BY: RMG  
DESIGN BY: RMG  
REVIEWED BY: JSK

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL  
028387  
TAMM I. ALQUDHBI

REVISIONS

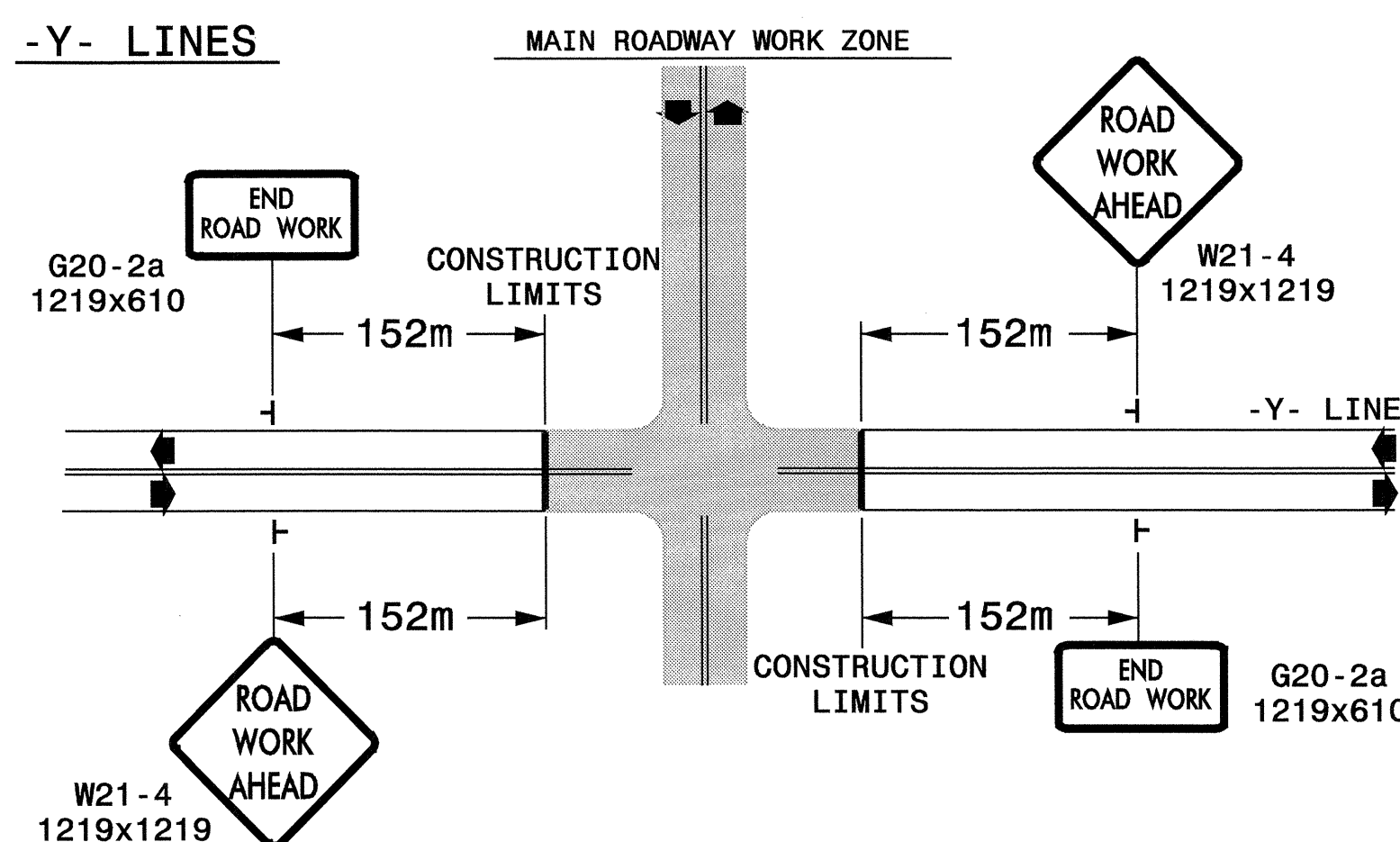

CADD FILE

**TWO-WAY UNDIVIDED (-Y1-) MORGAN HILL RD. / LOWER SAND BRANCH RD.**



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

**ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE -Y- (NC 9 )**



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 1.4Kg STEEL U-CHANNEL POST OR 90mm X 90mm WOOD POST FOR ALL WORK ZONE SIGNS. 1.4Kg 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 1.4Kg STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 1.4Kg 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: <i>[Signature]</i> DATE: 10/19/06	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
	SCALE: NONE	REVISIONS
	DATE: 07/06	7-98 10/01
	DWG. BY: RMG	10-98 03/04
	DESIGN BY: RMG	01/01
REVIEWED BY: JSK	CADD FILE	

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 At W:\222229  
 rmgarrett



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

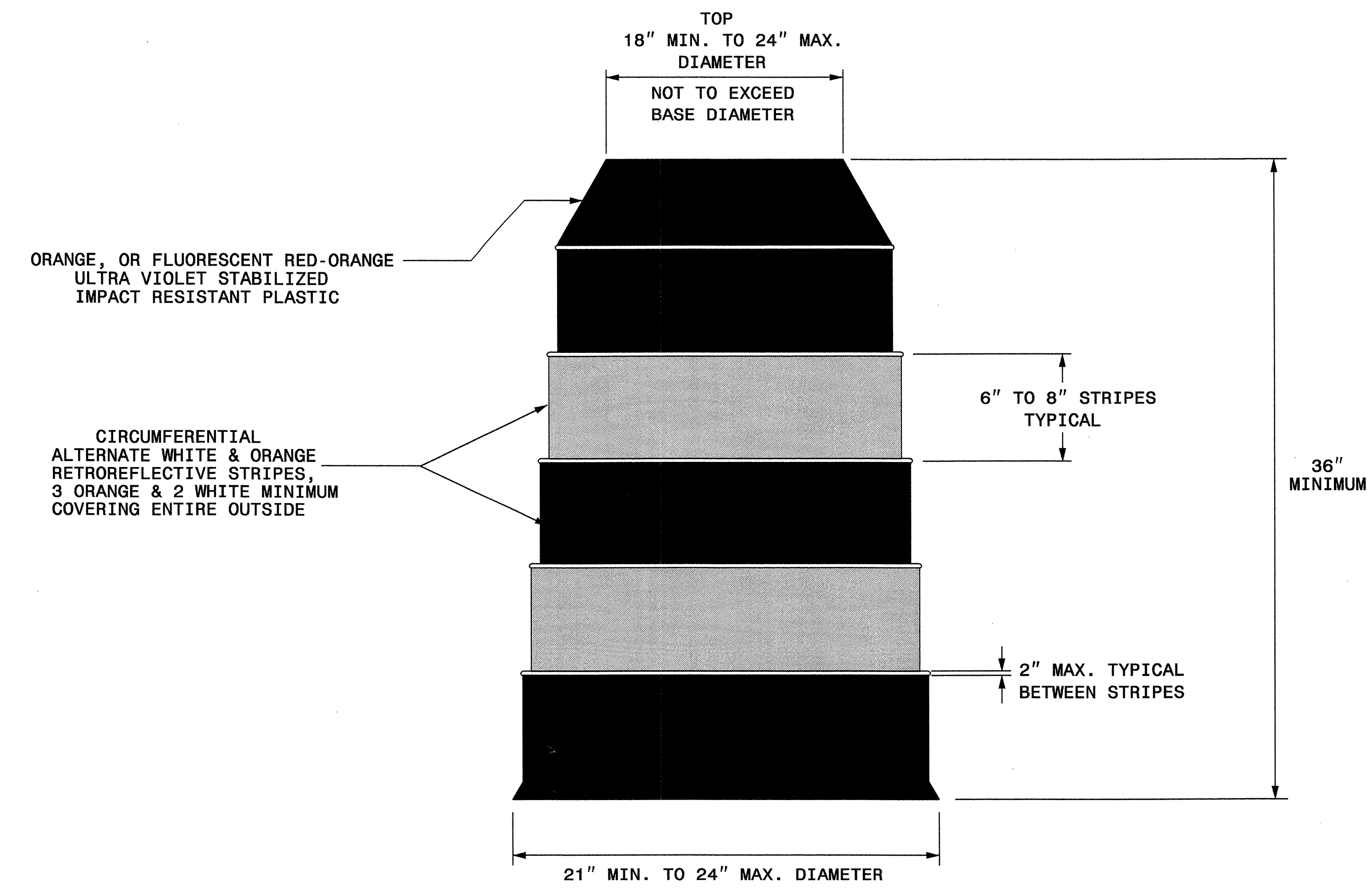
ENGLISH STANDARD DRAWING FOR  
**DRUMS**

SHEET 1 OF 1  
**1130D01**

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

ENGLISH STANDARD DRAWING FOR  
**DRUMS**

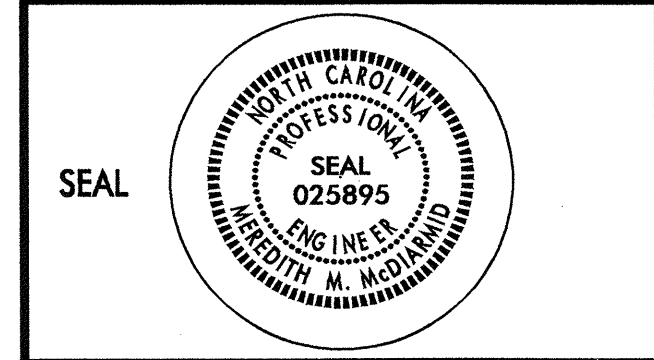
SHEET 1 OF 1  
**1130D01**



**GENERAL NOTES**

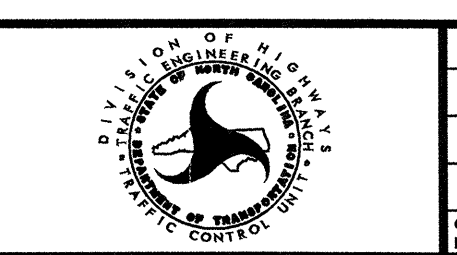
- BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL BALLAST, OR PREFORMED WEIGHTED BASE BALLASTING METHODS. DO NOT PLACE BALLAST ON TOP OF THE DRUM.
- IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

APPROVED: *MMM* DATE: 9/2/05



**REPLACEMENT DETAIL FOR  
RSD 1130.01**

SCALE: NONE  
DATE: 4/02  
DWG. BY: MMM  
DESIGN BY: MMM  
REVIEWED BY: MMM



REVISIONS	
11/02	
09/05	

CADD FILE

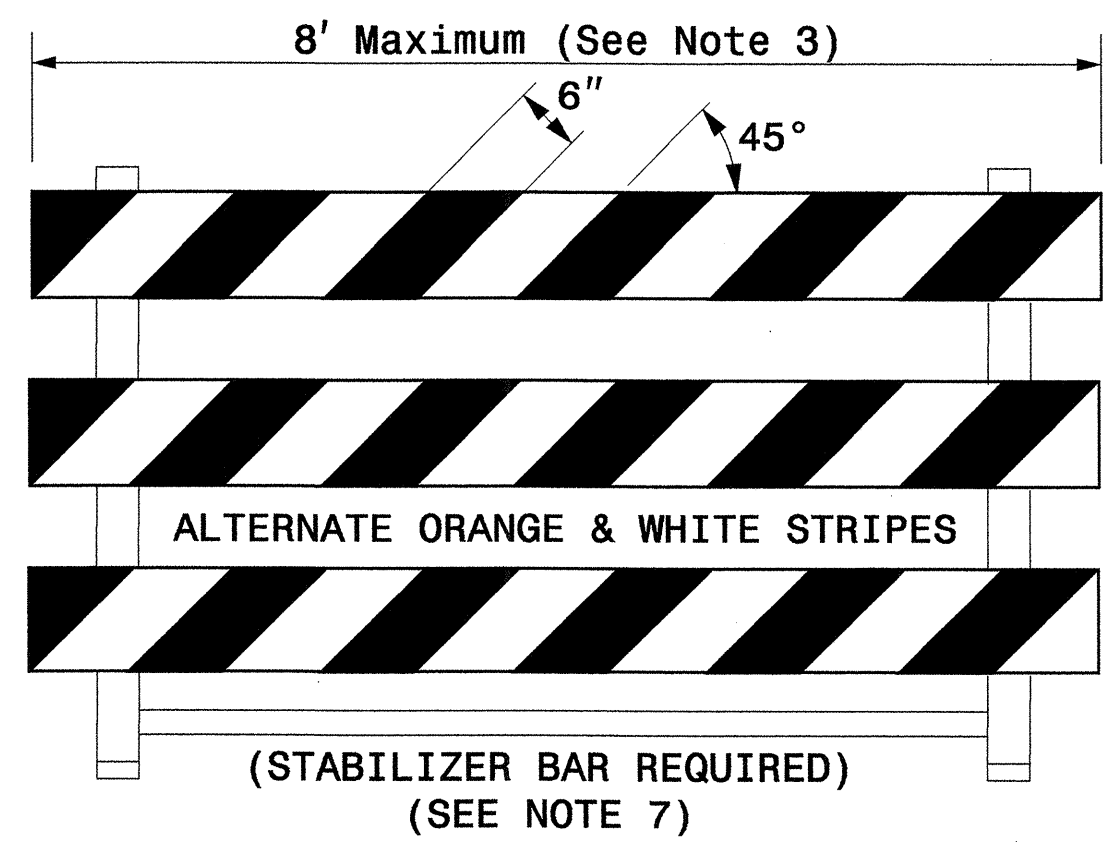
STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

1-05

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

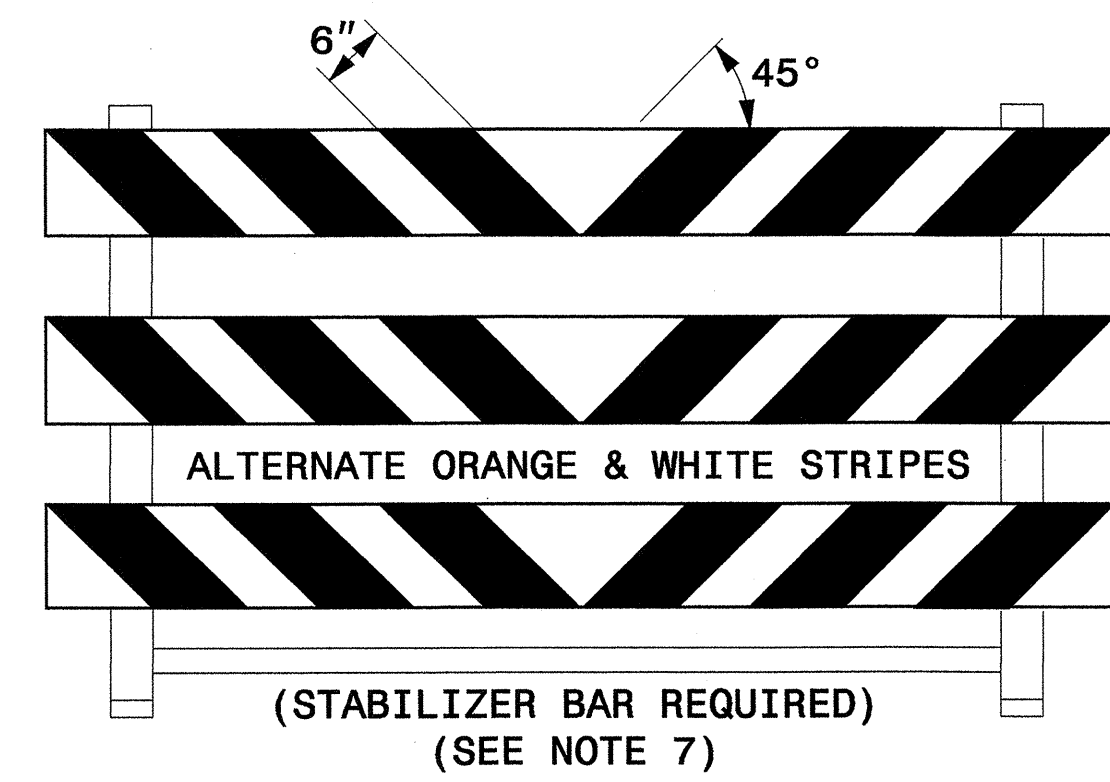
SHEET 1 OF 1  
**1145D01**

**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.

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

1-05

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

SHEET 1 OF 1  
**1145D01**

25-APR-2005 17:00  
 da\_barr\codes\typeiii.dgn  
 wjacobs AT TFC22240

APPROVED: <i>MM McDermid</i> DATE: 5/16/05		<b>REPLACEMENT DETAIL FOR RSD 1145.01</b>	
	SCALE: NONE		REVISIONS
	DATE: 11/04		
	DWG. BY: MMM		
	DESIGN BY: MMM		
	REVIEWED BY: MMM		