

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
37228 /39168	TCP-1

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

**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
1115.01	FLASHING ARROW PANELS
1135.01	CONES
1150.01	FLAGGERS
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - THRU LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS (TEMPORARY & PERMANENT)
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1262.01	GUARDRAIL END DELINEATION

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PM-2 THRU PM-16	PAVEMENT MARKING PLANS

**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)
  - 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

**PROJECT: 37228 /39168**

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APPROVED: _____ DATE: _____	PLAN PREPARED BY: HDR ENGINEERING, INC OF THE CAROLINAS
SEAL 	_____ TRAFFIC CONTROL ENGINEER
	_____ TRAFFIC CONTROL PROJECT ENGINEER
	_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	_____ TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

# PROJECT NOTES

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DRAWINGS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRED 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.

### TIME RESTRICTIONS

A. DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. NC 711 AND -Y LINES-	MONDAY THRU FRIDAY, 6:00 A.M. THRU 8:30 A.M. AND 4:00 P.M. THRU 7:00 P.M.

B. DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
1. NC 711 AND -Y LINES-

### HOLIDAY

1. FOR ANY EVENT THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 4:00 P.M. DECEMBER 31ST TO 8:30 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A SATURDAY OR A SUNDAY, THEN UNTIL 8:30 A.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 8:30 A.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 8:30 A.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:30 A.M. THE DAY AFTER INDEPENDENCE DAY.  
  
IF INDEPENDENCE DAY IS ON A SATURDAY OR SUNDAY, THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:30 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 8:30 A.M. MONDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY AND 8:30 A.M. MONDAY.

8. FOR CHRISTMAS DAY, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:30 A.M. THE FOLLOWING MONDAY AFTER THE WEEK OF CHRISTMAS.

C. DO NOT STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS:

ROAD NAME	OPERATION
1. NC 711 AND -Y LINES-	ALL

### LANE AND SHOULDER CLOSURE REQUIREMENTS

D. 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.

E. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 40 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.

F. 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 DRAWINGS 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 DRAWINGS NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

G. 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.

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

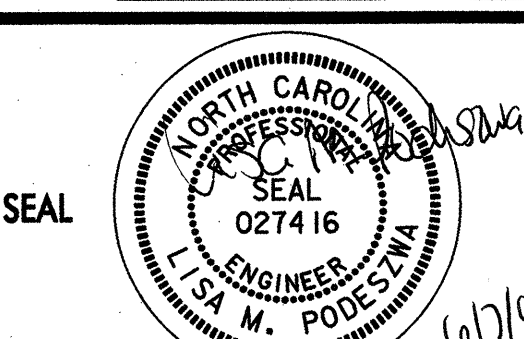
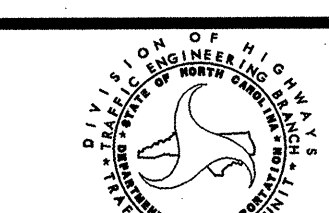
I. DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY.

J. DO NOT INSTALL MORE THAN ONE-HALF MILE OF LANE CLOSURE ON NC 711 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

K. DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON NC 711.

L. PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

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	DWG. BY: DHK		
	DESIGN BY: DHK		
REVIEWED BY: LMP			



# PROJECT NOTES

## PAVEMENT EDGE DROP-OFF REQUIREMENTS

M. BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPEN TRAVEL LANE THAT HAS A 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.

N. THE MAXIMUM ACCEPTABLE DROP-OFF BETWEEN OPEN LANES OF TRAVEL IS 2 INCHES. WHERE A DROP-OFF BETWEEN OPEN LANES OF TRAFFIC EXCEEDS 2 INCHES, THE AFFECTED LANE(S) CLOSEST TO THE DROP-OFF SHALL BE CLOSED TO TRAFFIC. FOR ALL DROP-OFFS BETWEEN OPEN LANES, ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11 AT 48" X 48") SHALL BE INSTALLED 500 FEET IN ADVANCE AND ONCE EVERY HALF MILE THROUGHOUT THE LENGTH OF THE DROP-OFF AREA.

## TRAFFIC PATTERN ALTERATIONS

O. NOTIFY THE ENGINEER 21 DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

## SIGNING

P. INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 100 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE 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.

Q. STATE FORCES WILL BE RESPONSIBLE FOR PERMANENT SIGNING.

R. STATE FORCES WILL BE RESPONSIBLE FOR DETOUR SIGNING OFF THE PROJECT LIMITS.

S. STATE FORCES WILL COVER OR REMOVE ALL DETOUR SIGNS OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.

T. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

U. INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) 500 FT IN ADVANCE OF THE UNEVEN AREA.

V. INSTALL BLACK ON ORANGE "BUMP" SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA.

## TRAFFIC BARRIERS

W. INSTALL MOVEABLE/PORTABLE CONCRETE BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF 2 WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE MOVABLE/PORTABLE CONCRETE 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 AS DIRECTED BY THE ENGINEER.

ONCE MOVEABLE/PORTABLE CONCRETE BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE MOVABLE/PORTABLE CONCRETE BARRIER FOR A PERIOD LONGER THAN 2 MONTHS, REMOVE/RESET MOVABLE/PORTABLE CONCRETE BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

X. PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR OR A TEMPORARY CRASH CUSHION.

OFFSET THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER A MINIMUM OF 40 FEET FROM ONCOMING TRAFFIC OR PROTECT AT ALL TIMES BY A TEMPORARY CRASH CUSHION.

INSTALL MOVABLE/PORTABLE CONCRETE BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE MOVABLE/PORTABLE CONCRETE BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS ON 100 FOOT CENTERS TO CLOSE OR KEEP CLOSED THE SECTION OF THE ROADWAY UNTIL THE BARRIER CAN BE PLACED OR AFTER BARRIER IS REMOVED.

## TRAFFIC CONTROL DEVICES

Y. SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT, EXCEPT 10 FEET ON-CENTER IN RADII, AND 3 FEET OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.

Z. PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN (R11-2) ATTACHED, OF SUFFICIENT LENGTH TO CLOSE THE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW INGRESS OR EGRESS.

AA. PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FOOT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

## PAVEMENT MARKINGS AND MARKERS

BB. INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
1. NC 711 AND -Y LINES-	THERMOPLASTIC	PERMANENT RAISED

CC. INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

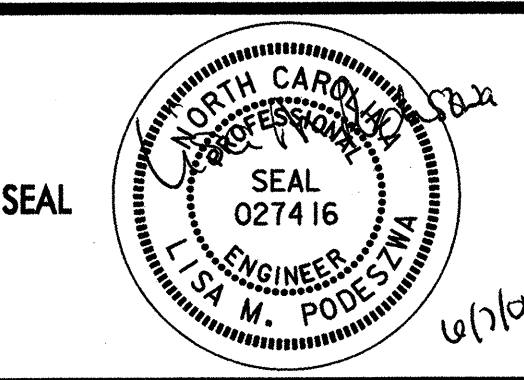
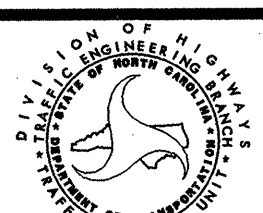
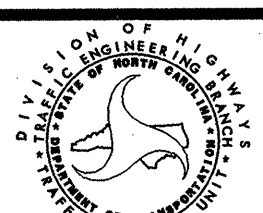
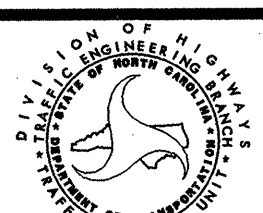
ROAD NAME	MARKING	MARKER
1. NC 711 AND -Y LINES-	PAINT	TEMPORARY RAISED

DD. 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.

EE. TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

FF. REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.

GG. PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

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# PROJECT PHASING

NOTES: USING INCIDENTAL STONE, MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

## PHASE I

WORK FOR PHASE I, STEPS 2 THROUGH 8 SHALL NOT BE COMPLETED CONCURRENTLY. NC 711 SHALL NOT BE CLOSED AT MORE THAN ONE LOCATION AT A TIME. EACH STEP MAY BEGIN ONCE WORK HAS BEEN COMPLETED FOR THE PREVIOUS STEP AND NC 711 HAS BEEN REOPENED TO TRAFFIC. WORK FOR EACH OF THESE STEPS MAY BE COMPLETED CONCURRENTLY WITH PHASE 1, STEPS 9 AND 10 AS DIRECTED BY THE ENGINEER.

STEP 1: - INSTALL ALL WORK ZONE ADVANCE WARNING SIGNS ON NC 711 (-L-) AND ALL -Y- LINES PER DETAIL DRAWING FOR TWO-WAY UNDIVIDED ADVANCE WARNING SIGNS. (SEE TCP-14)

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEP 2 IN 7 CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

STEP 2: - USING ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9, CLOSE NC 711 (-L-) AT 0.9 MILES EAST OF SR 1555 (S JONES ST) TO TRAFFIC PER CONSTRUCTION DETAIL FOR OFF-SITE DETOUR ROUTE NO. 1 (SEE SHEET TCP-6):

- INSTALL PROPOSED 42" RCP ON NC 711 (-L-) AT MP 0.9 +/- - L- AS FOLLOWS:
  - NOTIFY THE ENGINEER 48 HOURS BEFORE CLOSING NC 711 FOR THE INSTALLATION OF THE 42" RCP AT MP 0.9 +/- -L-. STATE FORCES TO INSTALL OFF-SITE DETOUR ROUTE NO. 1.
  - INSTALL PROPOSED 42" RCP AND CONSTRUCT NC 711 UP TO THE EXISTING ELEVATION OR UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
  - PLACE INTERMEDIATE PAVEMENT MARKINGS (PAINT) AND TEMPORARY RAISED PAVEMENT MARKERS IN THE EXISTING PATTERN AND OPEN NC 711 (-L-) TO TRAFFIC.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEP 3 IN 7 CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

STEP 3: - USING ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9, CLOSE NC 711 (-L-) FROM STA. 34+00 +/- -L- TO STA. 37+00 +/- -L- TO TRAFFIC PER CONSTRUCTION DETAIL FOR OFF-SITE DETOUR ROUTE NO. 2 (SEE SHEET TCP-7):

- INSTALL PROPOSED 36" RCP ON NC 711 (-L-) AT STA. 35+29 +/- - L- AS FOLLOWS:
  - NOTIFY THE ENGINEER 48 HOURS BEFORE CLOSING NC 711 FOR THE INSTALLATION OF THE 36" RCP AT STA. 35+29 +/- -L-. STATE FORCES TO INSTALL OFF-SITE DETOUR ROUTE NO. 2.
  - INSTALL PROPOSED 36" RCP AND CONSTRUCT NC 711 UP TO THE EXISTING ELEVATION OR UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
  - PLACE INTERMEDIATE PAVEMENT MARKINGS (PAINT) AND TEMPORARY RAISED PAVEMENT MARKERS IN THE EXISTING PATTERN AND OPEN NC 711 (-L-) TO TRAFFIC.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEP 4 IN 7 CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

STEP 4: - USING ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9, CLOSE NC 711 (-L-) FROM STA. 44+00 +/- -L- TO STA. 48+00 +/- -L- TO TRAFFIC PER CONSTRUCTION DETAIL FOR OFF-SITE DETOUR ROUTE NO. 3 (SEE SHEET TCP-8):

- INSTALL PROPOSED 36" RCP AND CONSTRUCT PROPOSED CONCRETE ENDWALL ON NC 711 (-L-) AT STA. 45+99 +/- -L- AS FOLLOWS:
  - NOTIFY THE ENGINEER 48 HOURS BEFORE CLOSING NC 711 FOR THE INSTALLATION OF THE 36" RCP AT STA. 45+99 +/- -L-. STATE FORCES TO INSTALL OFF-SITE DETOUR ROUTE NO. 3.
  - INSTALL PROPOSED 36" RCP, CONSTRUCT PROPOSED CONCRETE ENDWALL, AND CONSTRUCT NC 711 UP TO THE EXISTING ELEVATION OR UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
  - PLACE INTERMEDIATE PAVEMENT MARKINGS (PAINT) AND TEMPORARY RAISED PAVEMENT MARKERS IN THE EXISTING PATTERN AND OPEN NC 711 (-L-) TO TRAFFIC.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEP 5 IN 7 CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

STEP 5: - USING ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9, CLOSE NC 711 (-L-) FROM STA. 63+00 +/- -L- TO STA. 66+00 +/- -L- TO TRAFFIC PER CONSTRUCTION DETAIL FOR OFF-SITE DETOUR ROUTE NO. 4 (SEE SHEET TCP-9):

- INSTALL PROPOSED 36" RCP AND CONSTRUCT PROPOSED CONCRETE ENDWALL ON NC 711 (-L-) AT STA. 64+57 +/- -L- AS FOLLOWS:
  - NOTIFY THE ENGINEER 48 HOURS BEFORE CLOSING NC 711 FOR THE INSTALLATION OF THE 36" RCP AT STA. 64+57 +/- -L-. STATE FORCES TO INSTALL OFF-SITE DETOUR ROUTE NO. 4.
  - INSTALL PROPOSED 36" RCP, CONSTRUCT PROPOSED CONCRETE ENDWALL, AND CONSTRUCT NC 711 UP TO THE EXISTING ELEVATION OR UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
  - PLACE INTERMEDIATE PAVEMENT MARKINGS (PAINT) AND TEMPORARY RAISED PAVEMENT MARKERS IN THE EXISTING PATTERN AND OPEN NC 711 (-L-) TO TRAFFIC.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEP 6 IN 7 CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

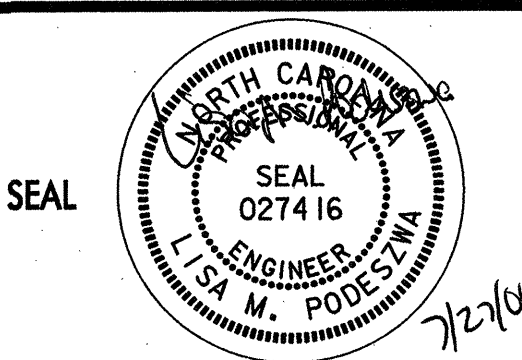
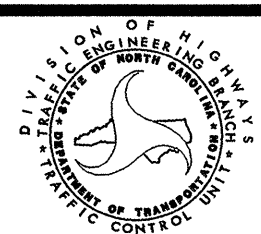
STEP 6: - USING ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9, CLOSE NC 711 (-L-) AT 3.3 MILES EAST OF SR 1555 (S JONES ST) TO TRAFFIC PER CONSTRUCTION DETAIL FOR OFF-SITE DETOUR ROUTE NO. 5 (SEE SHEET TCP-10):

- INSTALL PROPOSED 48" RCP ON NC 711 (-L-) AT MP 3.3 +/- - L- AS FOLLOWS:
  - NOTIFY THE ENGINEER 48 HOURS BEFORE CLOSING NC 711 FOR THE INSTALLATION OF THE 48" RCP AT MP 3.3 +/- -L-. STATE FORCES TO INSTALL OFF-SITE DETOUR ROUTE NO. 5.
  - INSTALL PROPOSED 48" RCP AND CONSTRUCT NC 711 UP TO THE EXISTING ELEVATION OR UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
  - PLACE INTERMEDIATE PAVEMENT MARKINGS (PAINT) AND TEMPORARY RAISED PAVEMENT MARKERS IN THE EXISTING PATTERN AND OPEN NC 711 (-L-) TO TRAFFIC.

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEP 7 IN 7 CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

STEP 7: - USING ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9, CLOSE NC 711 (-L-) AT 6.9 MILES EAST OF SR 1555 (S JONES ST) TO TRAFFIC PER CONSTRUCTION DETAIL FOR OFF-SITE DETOUR ROUTE NO. 6 (SEE SHEET TCP-11):

- INSTALL PROPOSED 36" RCP ON NC 711 (-L-) AT MP 6.9 +/- - L- AS FOLLOWS:
  - NOTIFY THE ENGINEER 48 HOURS BEFORE CLOSING NC 711 FOR THE INSTALLATION OF THE 36" RCP AT MP 6.9 +/- -L-. STATE FORCES TO INSTALL OFF-SITE DETOUR ROUTE NO. 6.
  - INSTALL PROPOSED 36" RCP AND CONSTRUCT NC 711 UP TO THE EXISTING ELEVATION OR UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
  - PLACE INTERMEDIATE PAVEMENT MARKINGS (PAINT) AND TEMPORARY RAISED PAVEMENT MARKERS IN THE EXISTING PATTERN AND OPEN NC 711 (-L-) TO TRAFFIC.

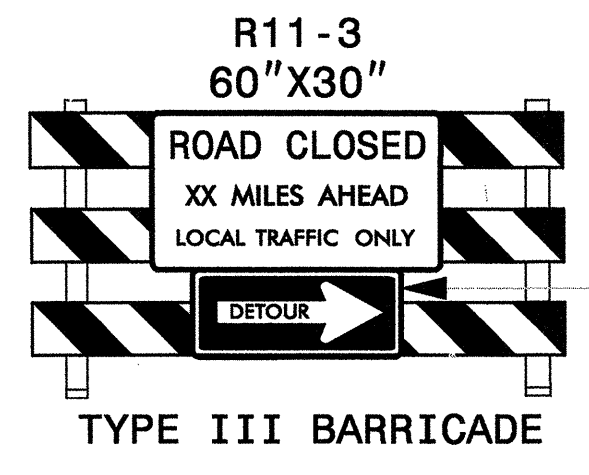
APPROVED:	DATE:	<b>PROJECT PHASING</b>	
			
SCALE:	NONE		REVISIONS
DATE:	DEC. 2004		
DESIGN BY:	DHK		
REVIEWED BY:	LMP		

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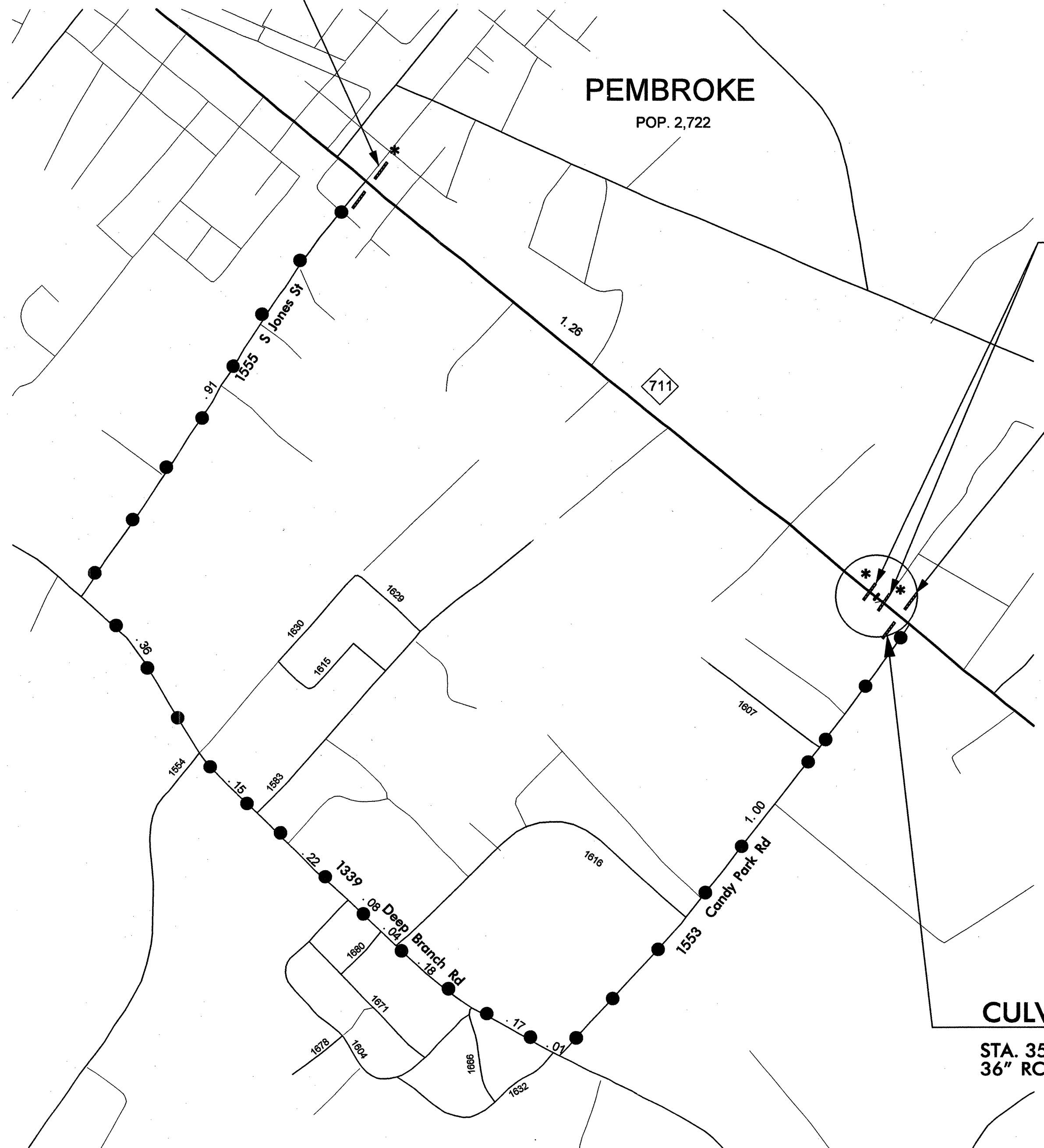






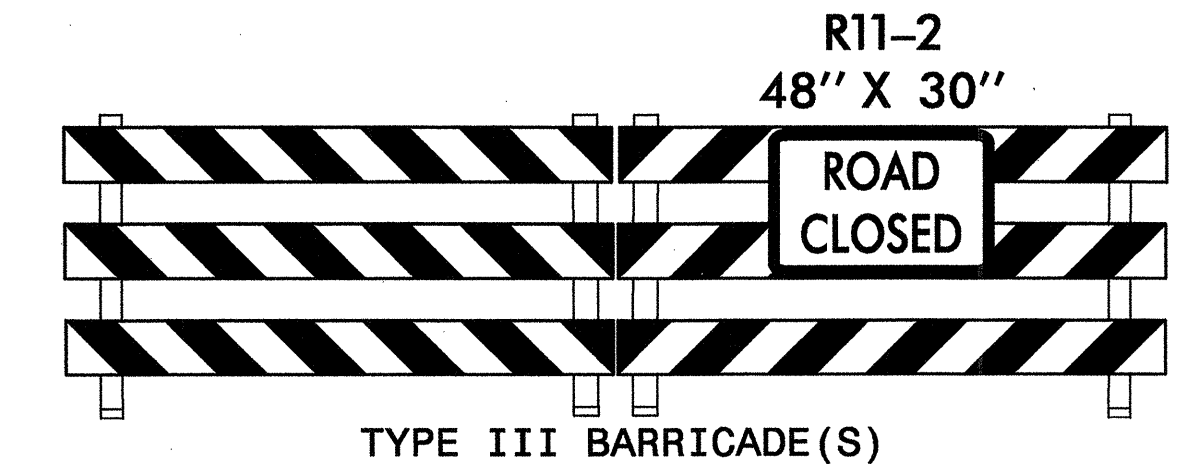
M4-10R  
48"X18"

TYPE III BARRICADE

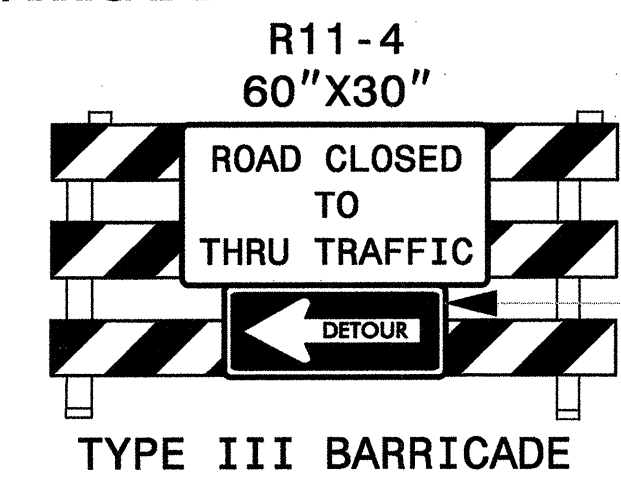


PEMBROKE  
POP. 2,722

**CULVERT SITE**  
STA. 35+29 +/- -L-  
36" RCP



TYPE III BARRICADE(S)



M4-10L  
48"X18"

TYPE III BARRICADE

●●●●● DETOUR ROUTE

**NOTE:** ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.

\* SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 AND 2 OF 9, FOR TYPE III BARRICADES LOCATIONS, ADDITIONAL SIGNS MOUNTED ON TYPE III BARRICADES AND ADDITIONAL WORK ZONE SIGNS.

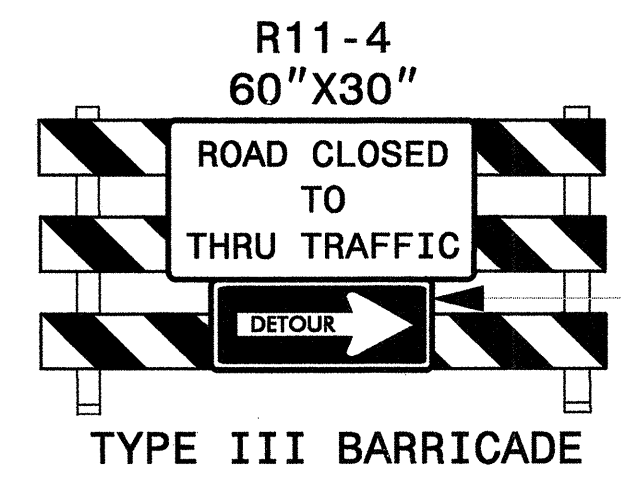
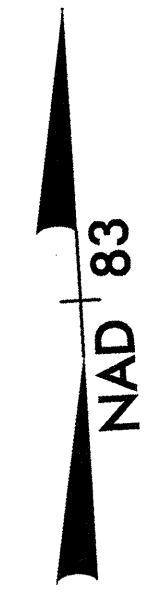
STATE FORCES WILL INSTALL ALL DETOUR SIGNS OUTSIDE PROJECT LIMITS.

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SCALE: NONE	DATE: JULY 2006		REVISIONS
DWG. BY: DHK	DESIGN BY: DHK		
REVIEWED BY: LMP			

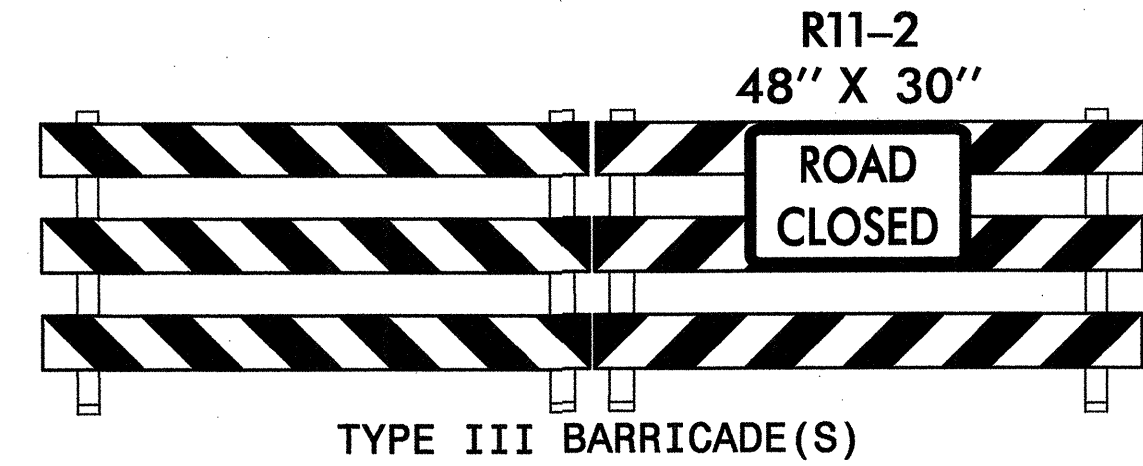




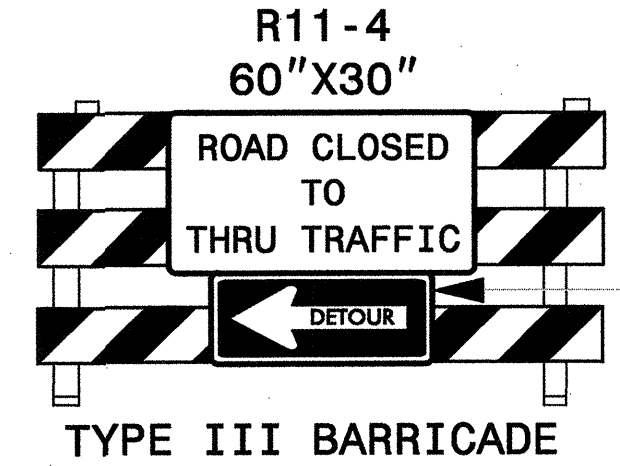


M4-10R  
48"X18"

TYPE III BARRICADE

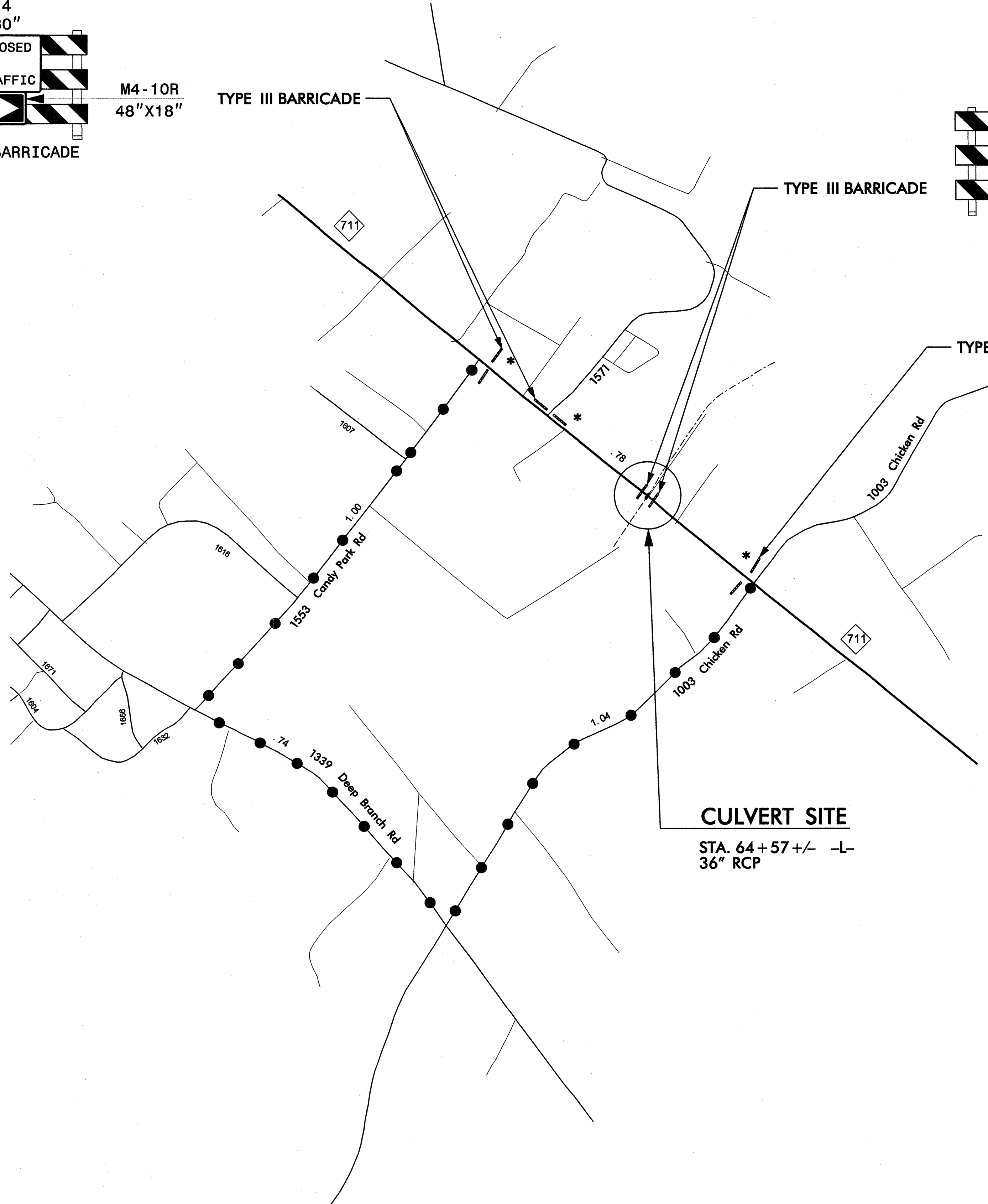


TYPE III BARRICADE(S)



M4-10L  
48"X18"

TYPE III BARRICADE



**CULVERT SITE**  
STA. 64+57 +/- -L-  
36" RCP

●●●●● DETOUR ROUTE

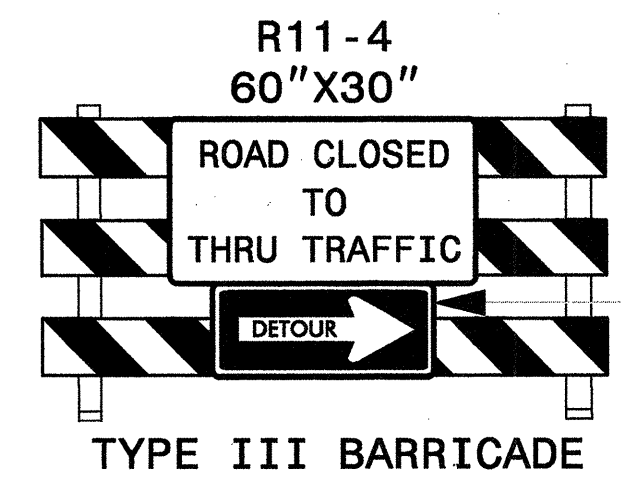
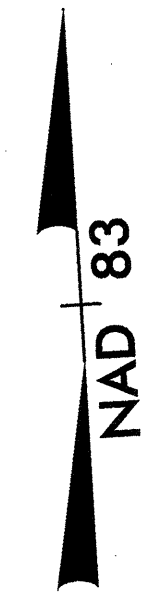
**NOTE:** ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.

\* SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 AND 2 OF 9, FOR TYPE III BARRICADES LOCATIONS, ADDITIONAL SIGNS MOUNTED ON TYPE III BARRICADES AND ADDITIONAL WORK ZONE ZONE SIGNS.

STATE FORCES WILL INSTALL ALL DETOUR SIGNS OUTSIDE PROJECT LIMITS.

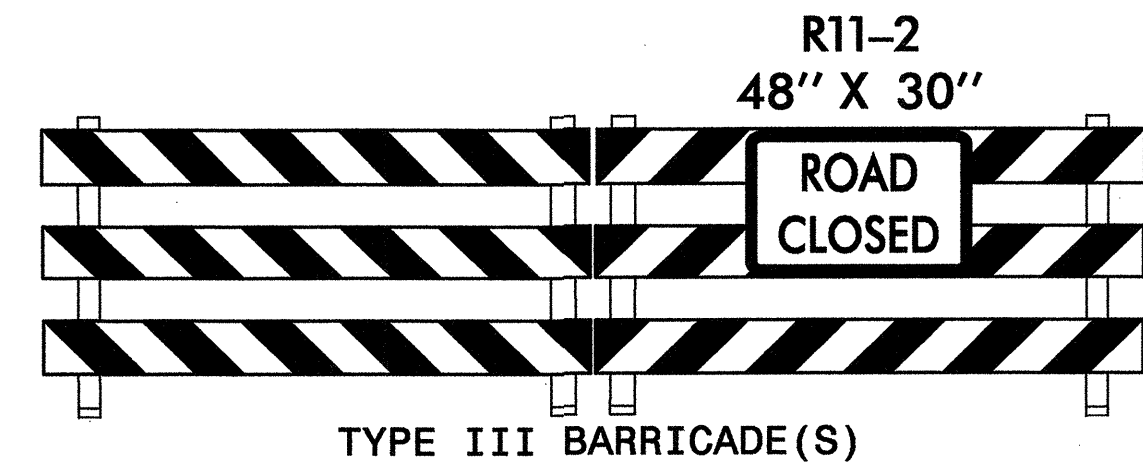
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REVISIONS										
DWG. BY: DHK	DESIGN BY: DHK	REVIEWED BY: LMP	CADD FILE							

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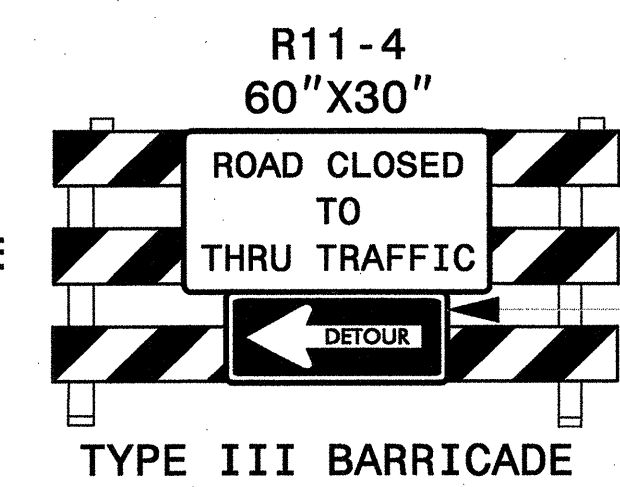


M4-10R  
48"X18"

TYPE III BARRICADE

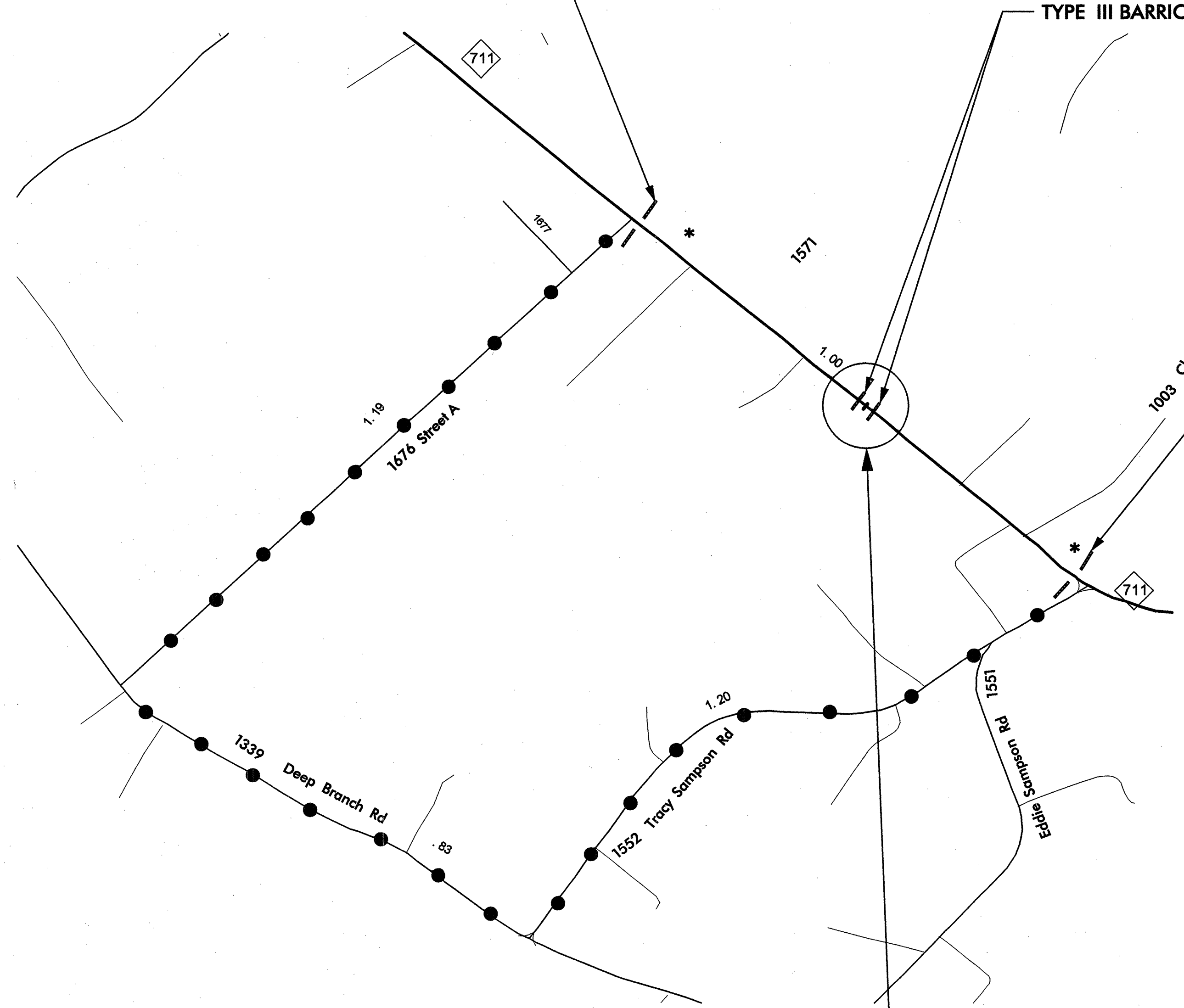


TYPE III BARRICADE(S)



M4-10L  
48"X18"

TYPE III BARRICADE



**CULVERT SITE**  
MP 3.3 +/- -L-  
48" RCP

●●●●● DETOUR ROUTE

**NOTE:** ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.

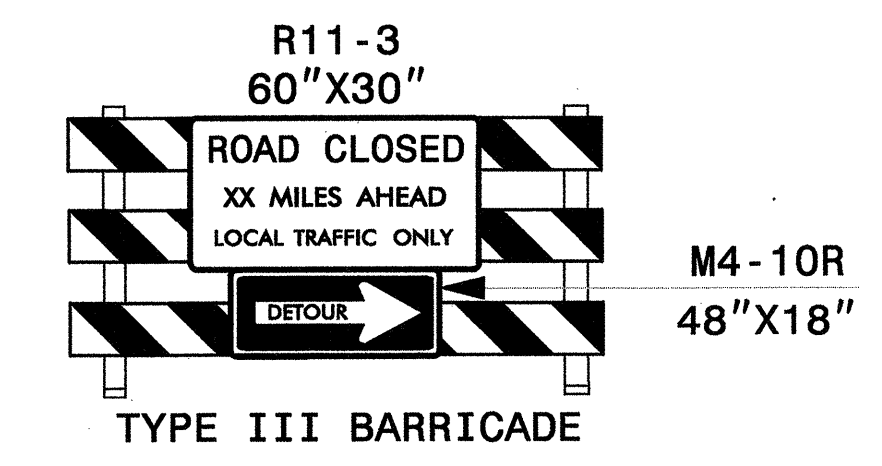
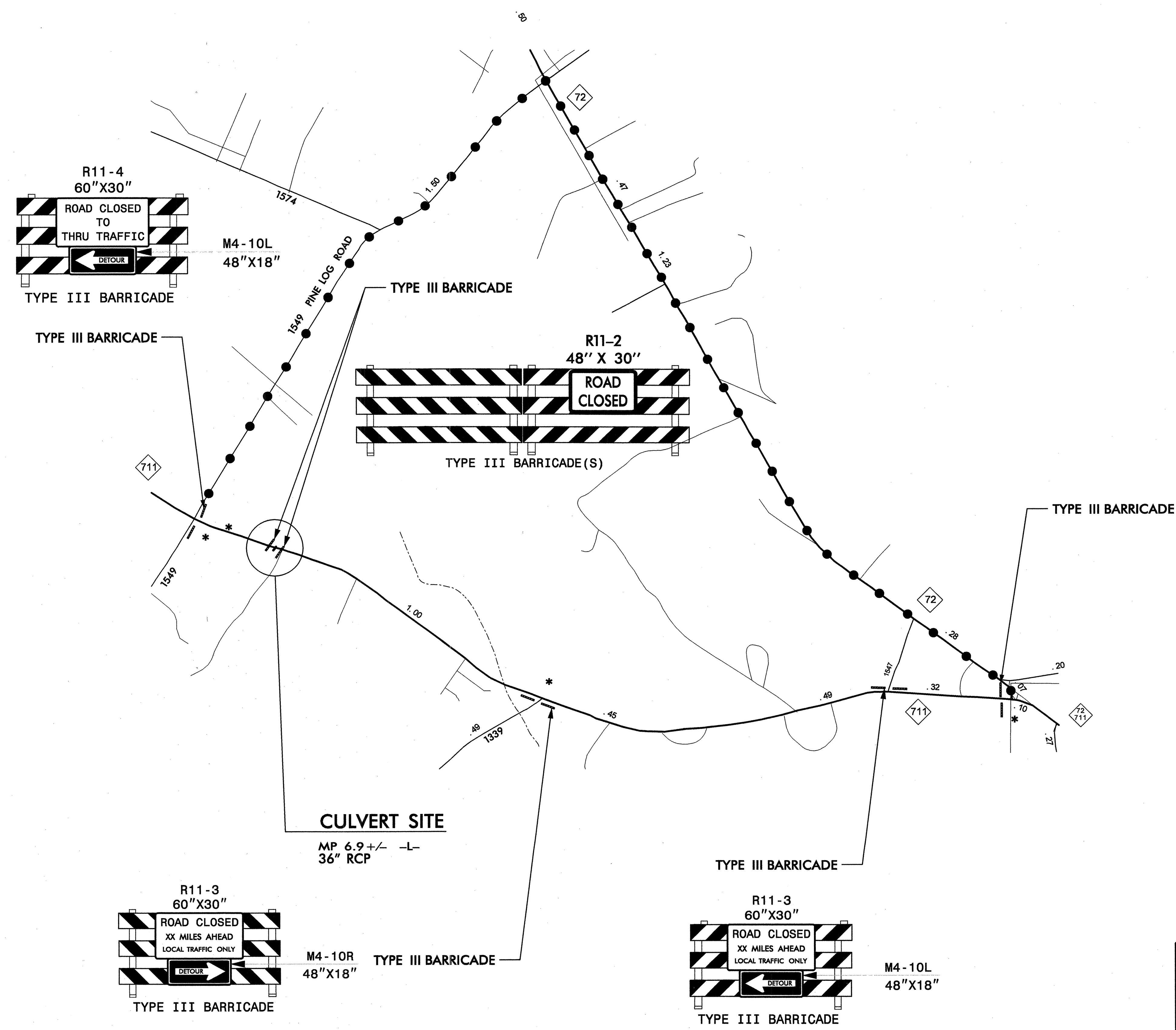
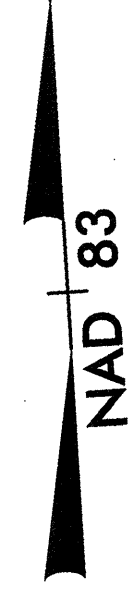
\* SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 AND 2 OF 9, FOR TYPE III BARRICADES LOCATIONS, ADDITIONAL SIGNS MOUNTED ON TYPE III BARRICADES AND ADDITIONAL WORK ZONE ZONE SIGNS.

STATE FORCES WILL INSTALL ALL DETOUR SIGNS OUTSIDE PROJECT LIMITS.

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APPROVED:	DATE:	<b>CONSTRUCTION DETAIL</b> OFF-SITE DETOUR ROUTE NO. 5	
SCALE: NONE	DATE: JULY 2006		REVISIONS
DWG. BY: DHK	DESIGN BY: DHK		
REVIEWED BY: LMP			





**NOTE:** ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.

\* SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEETS 1 AND 2 OF 9, FOR TYPE III BARRICADES LOCATIONS, ADDITIONAL SIGNS MOUNTED ON TYPE III BARRICADES AND ADDITIONAL WORK ZONE ZONE SIGNS.

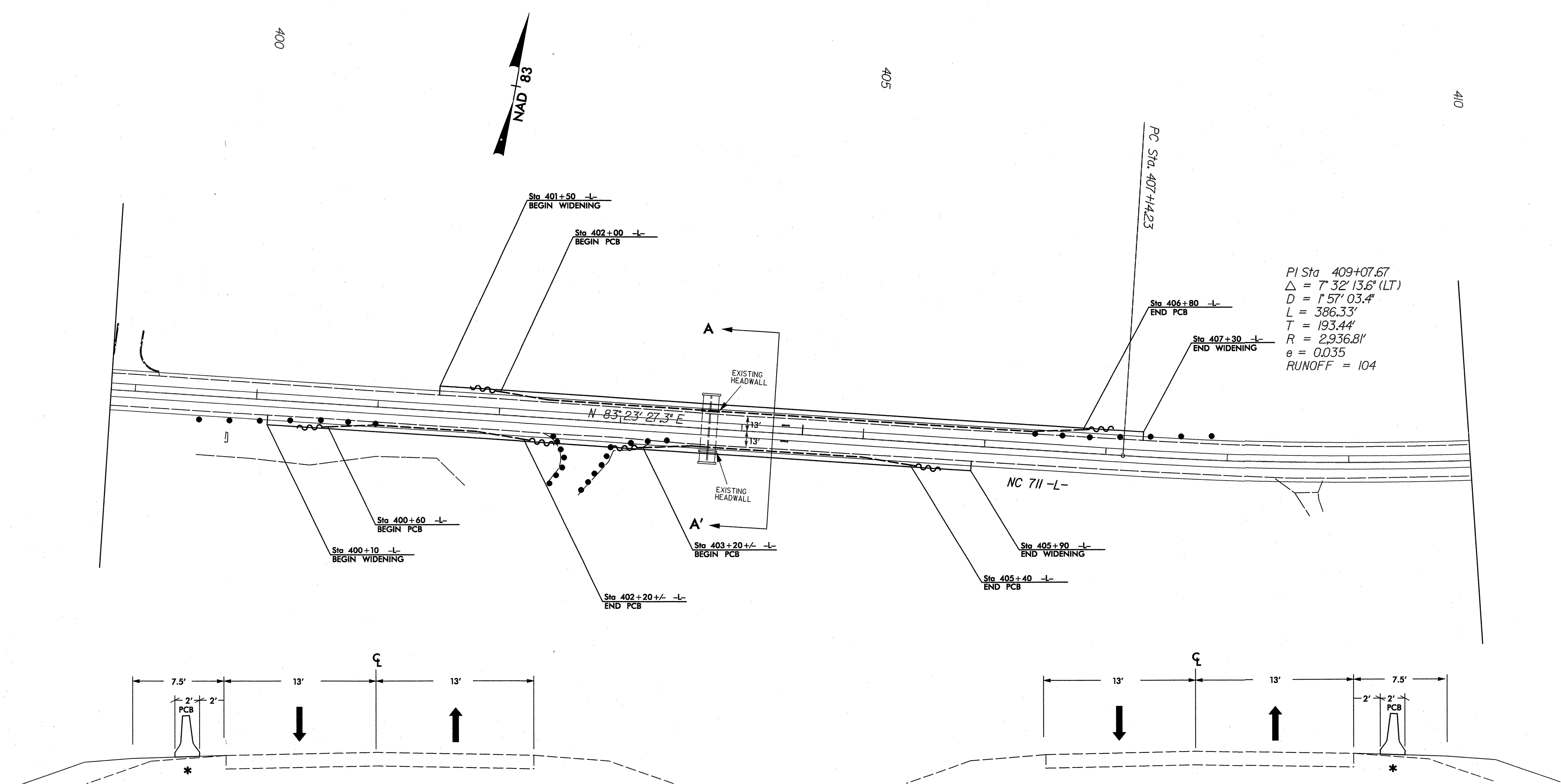
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SCALE: NONE	DATE: JULY 2006		REVISIONS
DWG. BY: DHK	DESIGN BY: DHK		
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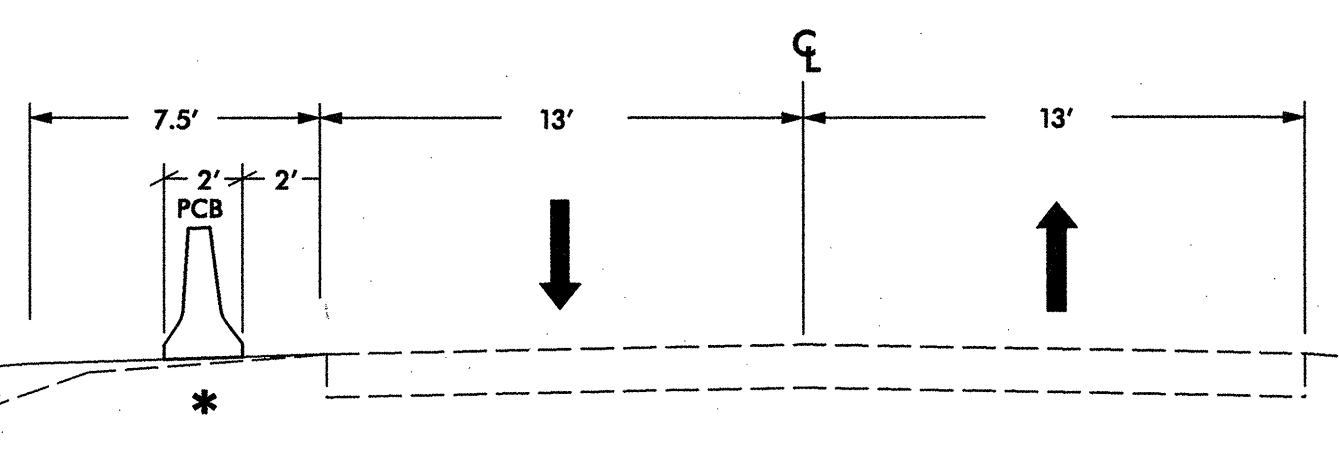
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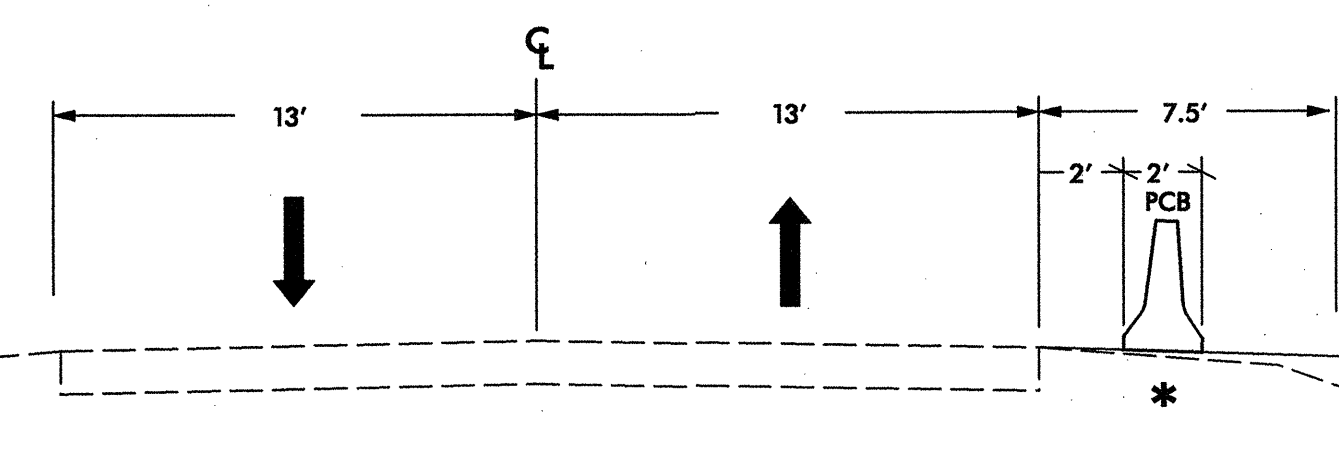




PI Sta 409+07.67  
 $\Delta = 7^\circ 32' 13.6''$  (LT)  
 $D = 1^\circ 57' 03.4''$   
 $L = 386.33'$   
 $T = 193.44'$   
 $R = 2,936.81'$   
 $e = 0.035$   
 RUNOFF = 104



TYPICAL SECTION A - A'



TYPICAL SECTION A - A'

\* NOTES: PROPOSED WIDENING SHALL TAKE PLACE PRIOR TO INSTALLATION OF PORTABLE CONCRETE BARRIER.  
 ONLY ONE SIDE OF THE PROPOSED CULVERT EXTENSION CAN BE CONSTRUCTED AT A TIME.  
 SEE PROJECT PHASING PHASE I, STEP 4 FOR DETAILS.

NOTE: SEE ROADWAY STANDARD DRAWING NO. 1101.04 AND 1101.11 FOR PORTABLE CONCRETE BARRIER, DRUM, AND SIGN PLACEMENT.

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

SEAL

**CONSTRUCTION DETAIL**  
BOX CULVERT EXTENSION

SCALE: 1" = 50'

DATE: DEC. 2004

DWG. BY: DHK

DESIGN BY: DHK

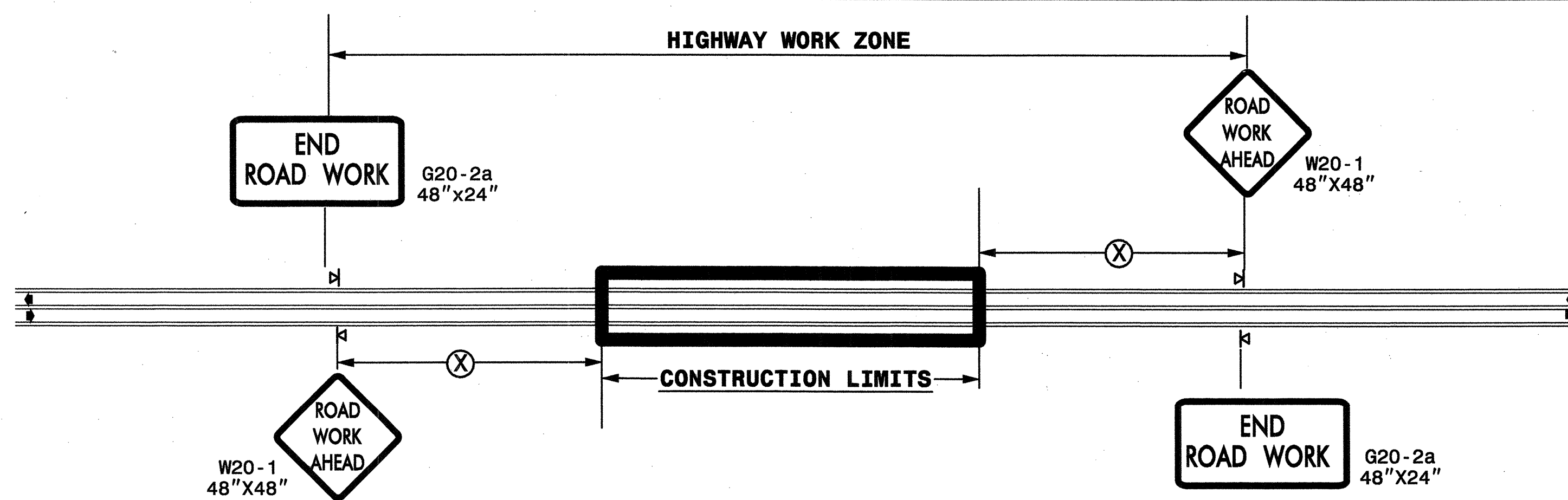
REVIEWED BY: LMP

REVISIONS

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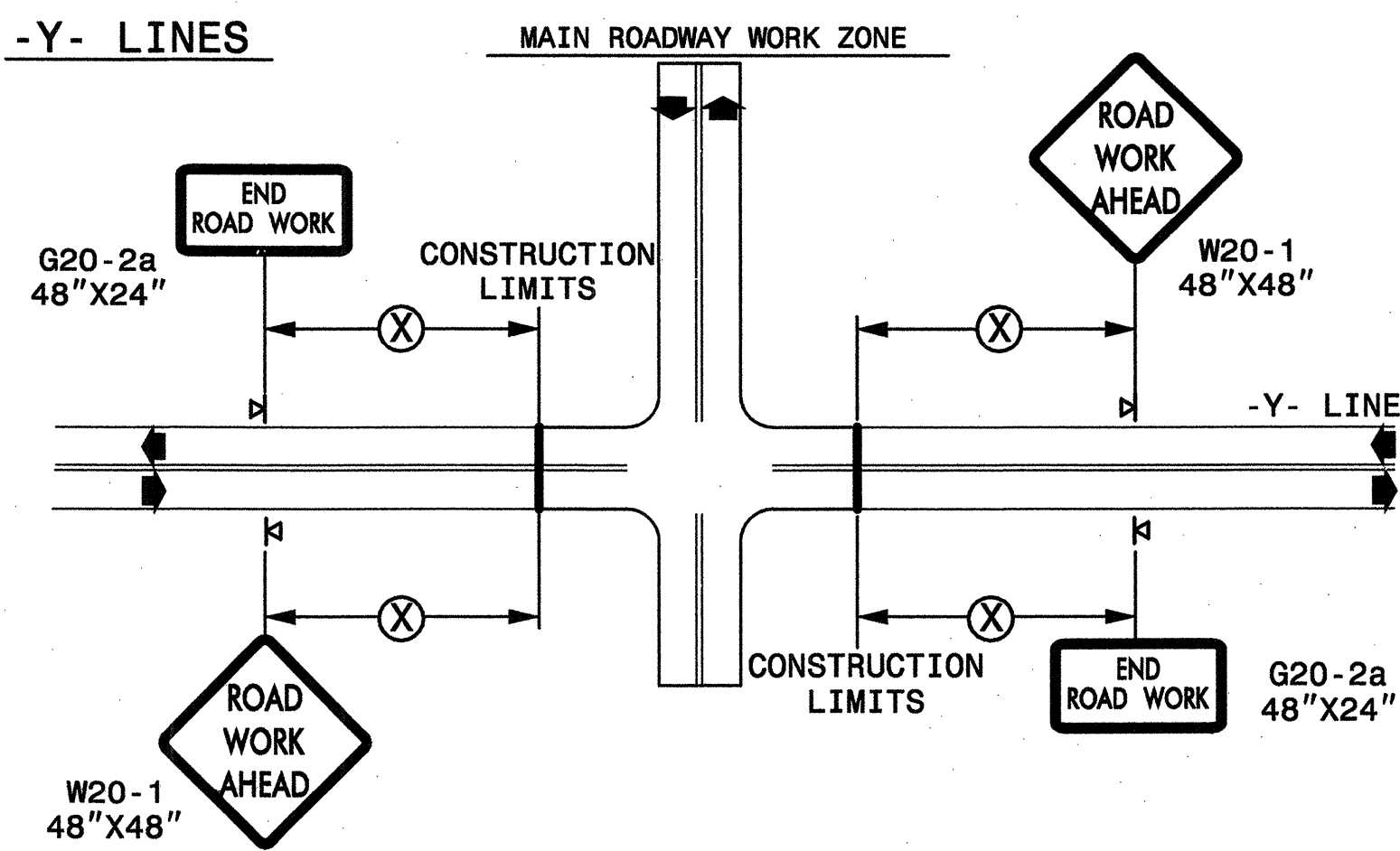
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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**

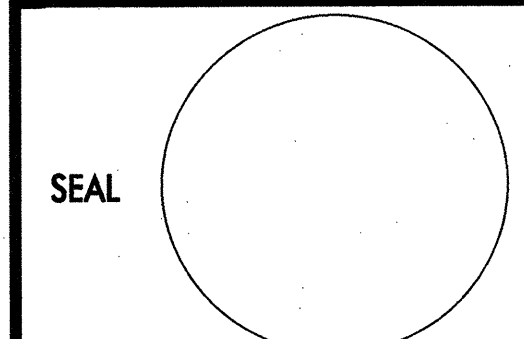
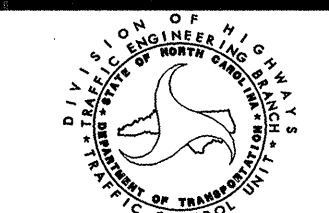
- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE PORTABLE WORK ZONE SIGNS ONLY WITH PORTABLE WORK ZONE SIGN STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER. PORTABLE WORK ZONE SIGNS MAY BE ROLL UP OR APPROVED COMPOSITE.
- PROVIDE PORTABLE WORK ZONE SIGN STANDS, PORTABLE SIGNS AND SIGN SHEETING WHICH ARE LISTED ON THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCT LIST OR ACCEPTED AS TRAFFIC QUALIFIED BY THE TRAFFIC CONTROL UNIT.
- \*\* 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**

◁ PORTABLE SIGN

← DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

APPROVED: _____	DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED ADVANCED WORK ZONE WARNING SIGNS	
			
SCALE: NONE		REVISIONS	
DATE: _____		7-98	10/01
DESIGN BY: _____		10-98	03/04
REVIEWED BY: _____		01/01	11/04

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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**

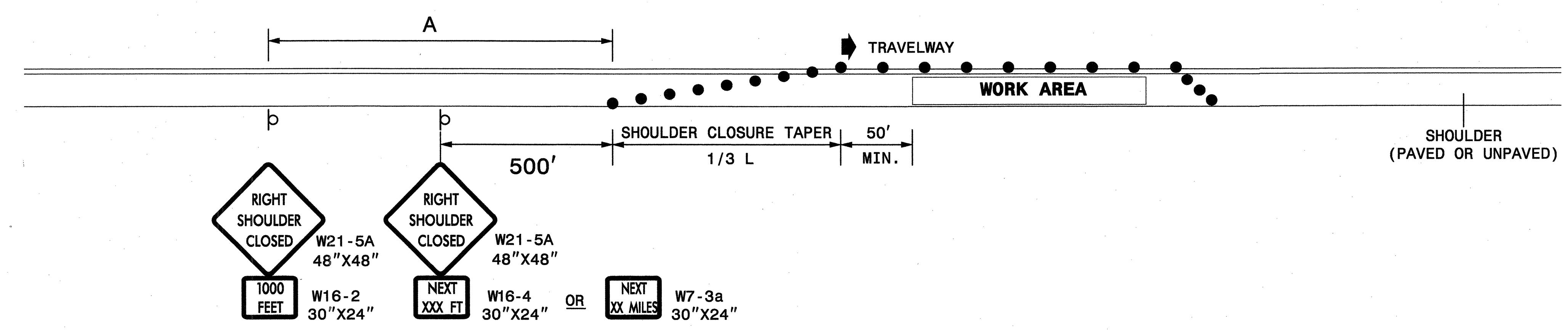
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

1-05

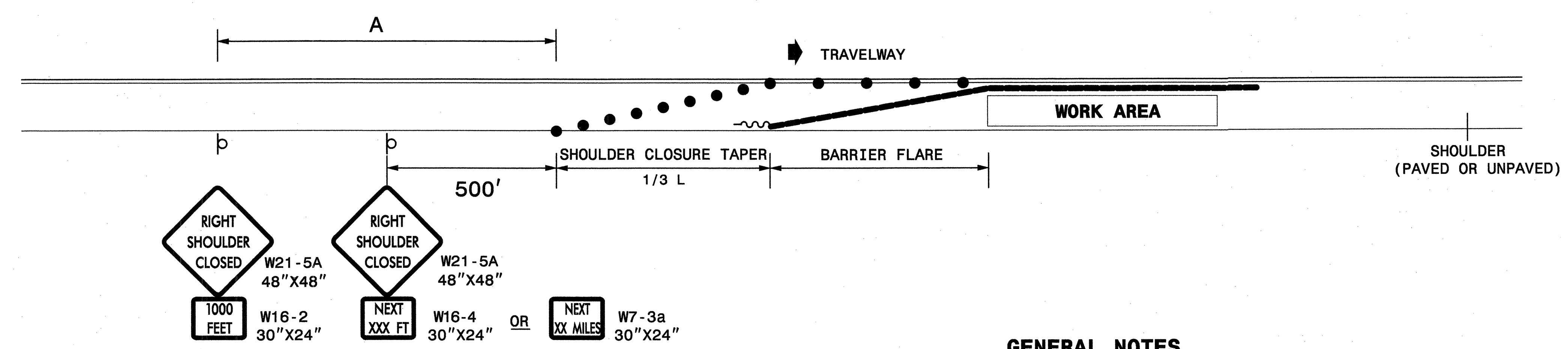
ENGLISH STANDARD DRAWING FOR  
**TEMPORARY SHOULDER CLOSURES**

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

APPROVED:	DATE:	<b>REPLACEMENT DETAIL FOR RSD 1101.04</b>	
SEAL			
SCALE: NONE	DATE: 11/04		REVISIONS
DWG. BY: PS	DESIGN BY: JPG		08/05
REVIEWED BY: MMM			

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

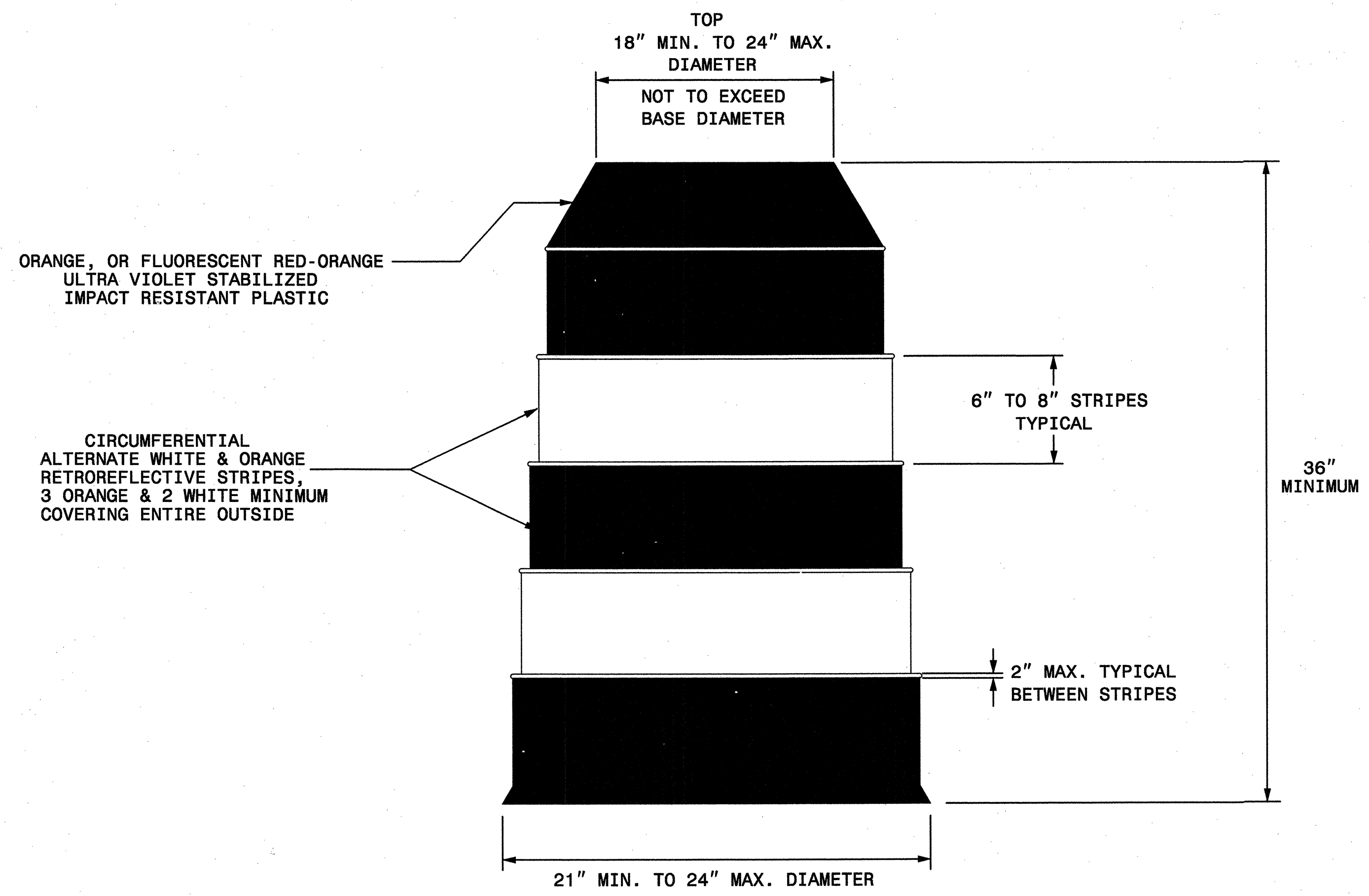
ENGLISH STANDARD DRAWING FOR  
**DRUMS**

SHEET 1 OF 1  
**1130D01**

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

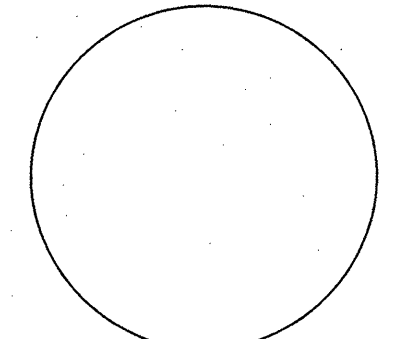
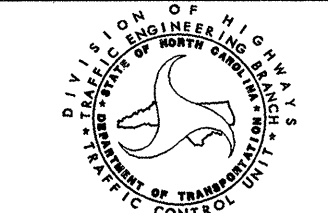
ENGLISH STANDARD DRAWING FOR  
**DRUMS**

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: _____	DATE: _____	<b>REPLACEMENT DETAIL FOR RSD 1130.01</b>	
			
		DATE: 4/02	11/02
DWG. BY: MMM	DESIGN BY: MMM		
REVIEWED BY: MMM	REVIEWED BY: MMM		

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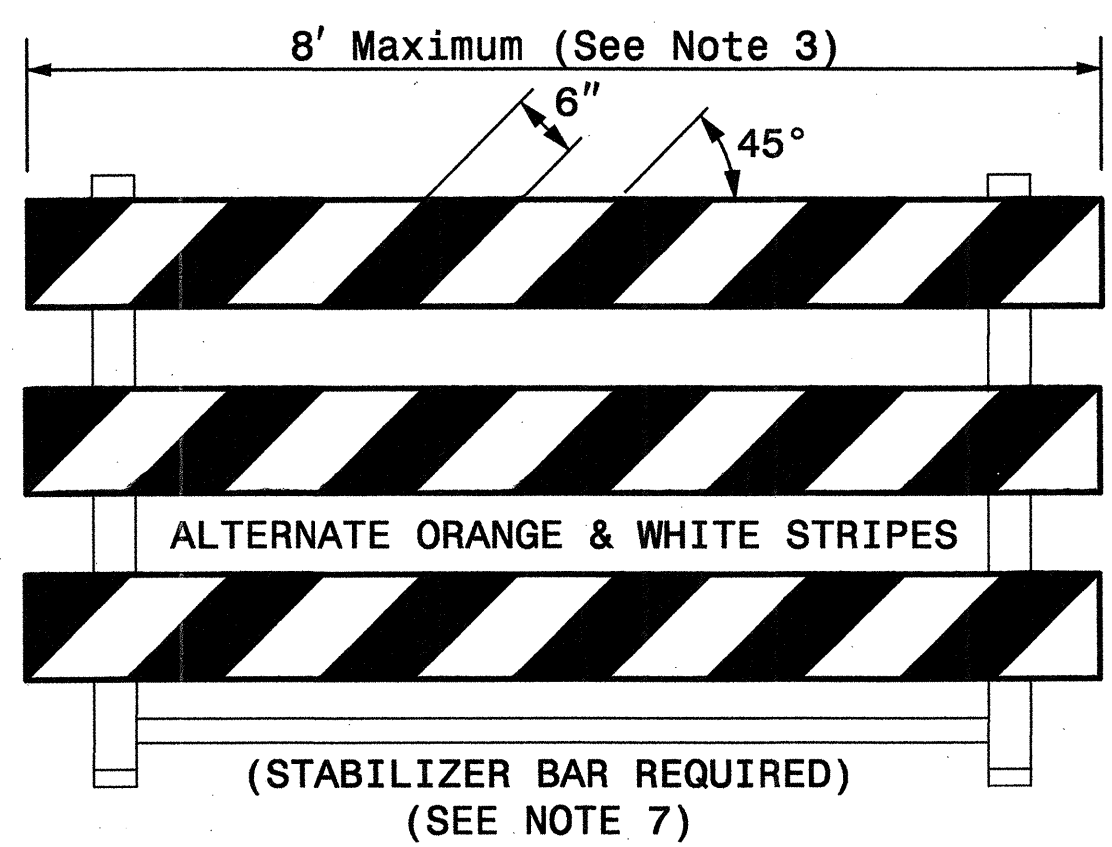
STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

1-05

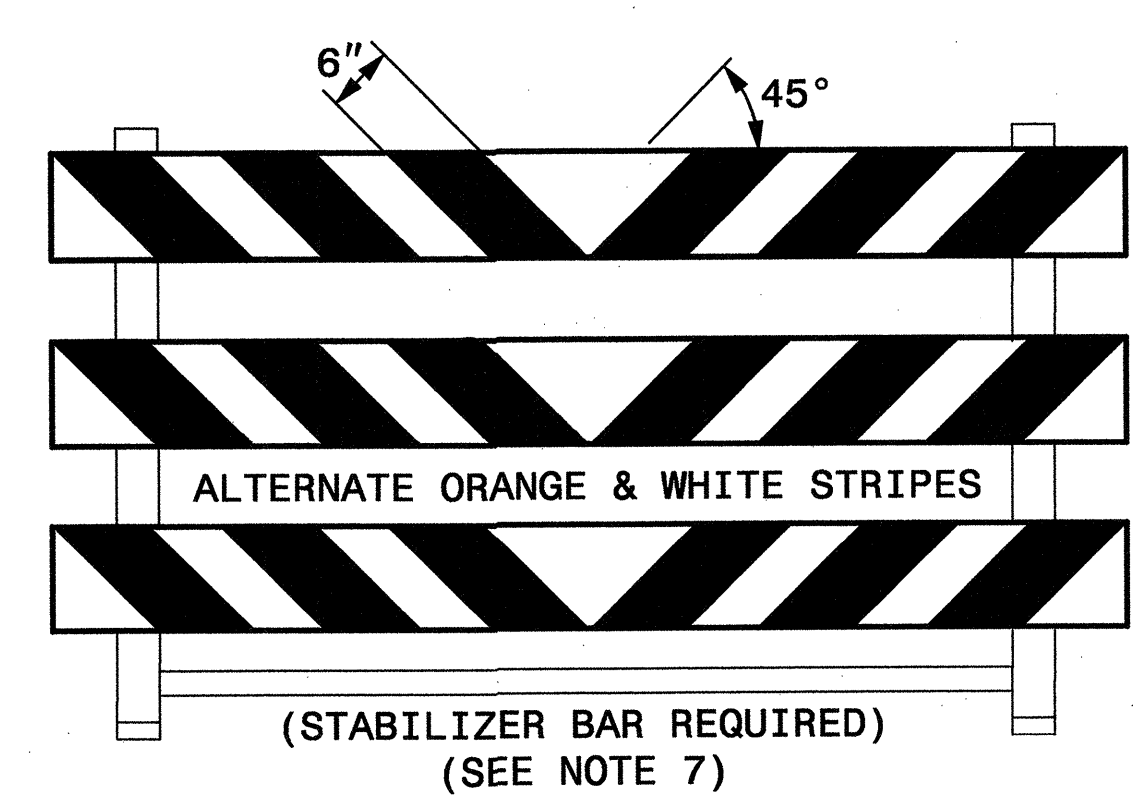
ENGLISH STANDARD DRAWING FOR  
**BARRICADES**  
 TYPE - III

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  
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1-05

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

SHEET 1 OF 1  
**1145D01**





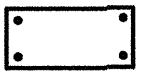
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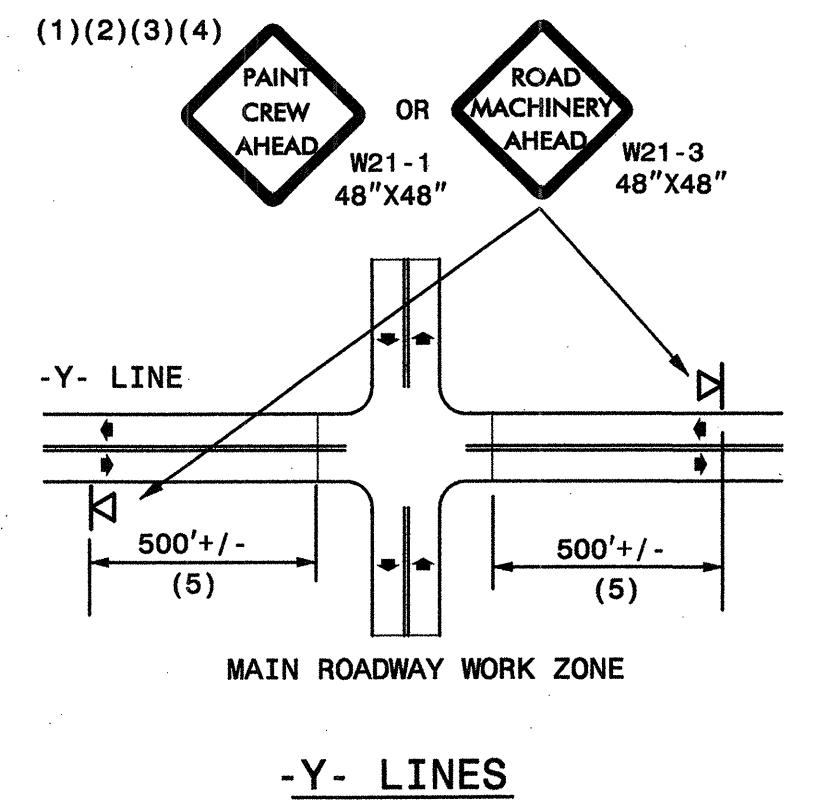
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	REVIEWED BY: MMM			

### GENERAL NOTES

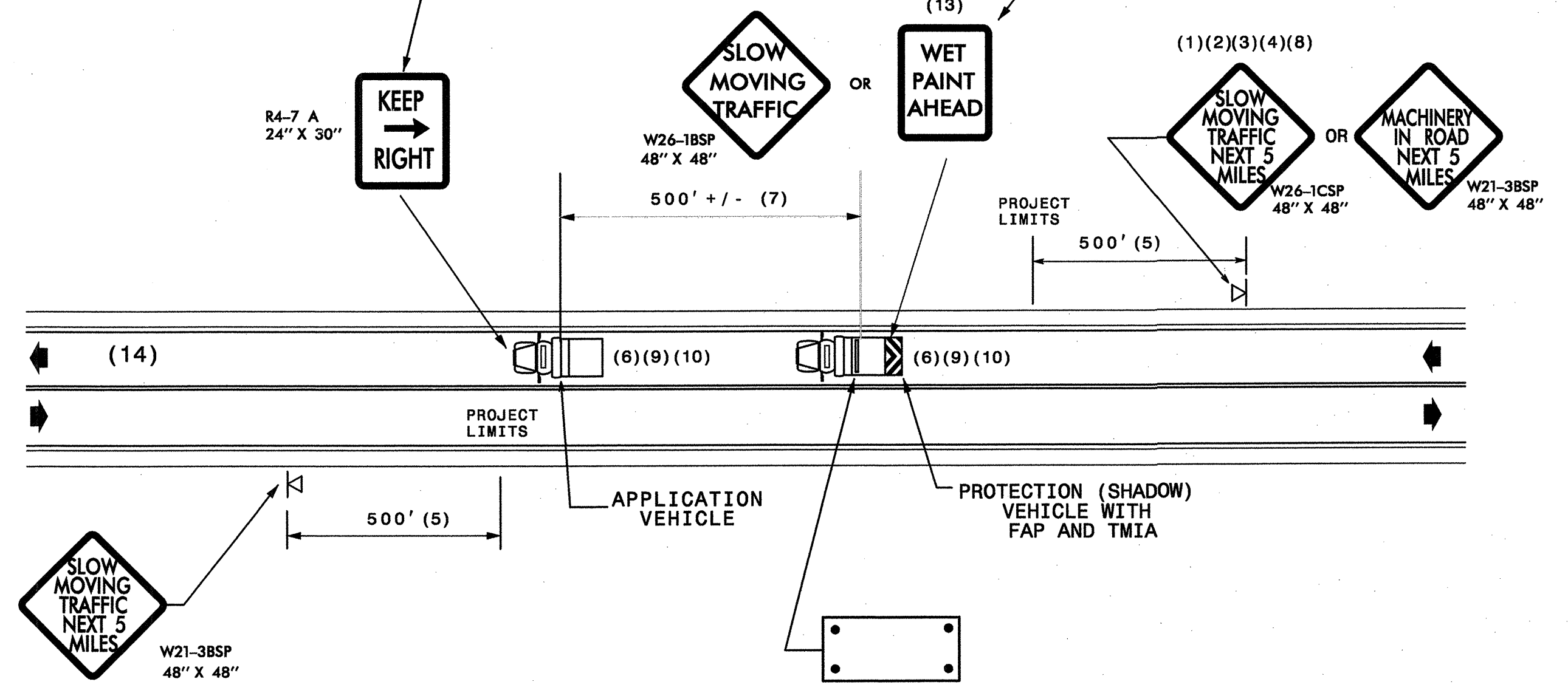
- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
  - A. TRUCK MOUNTED SIGNS
  - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
  - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
  - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, I.E. "PAINT CREW IN ROAD". SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN SIZE SHOULD BE BASED ON THE MOTORIST ABILITY TO RECOGNIZE SIGN WHEN TRAVELING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.
- (14) IF A LEAD VEHICLE IS ADDED TO OPERATION, IT SHOULD HAVE THE SAME ADVANCE WARNING SIGNS AS THE APPLICATION VEHICLE SHOWN BELOW.

### LEGEND

-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1165.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (60+MPH) APPROVED.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), "CAUTION MODE"



SIGN SHOULD BE ATTACHED TO THE FRONT OF THE APPLICATION VEHICLE

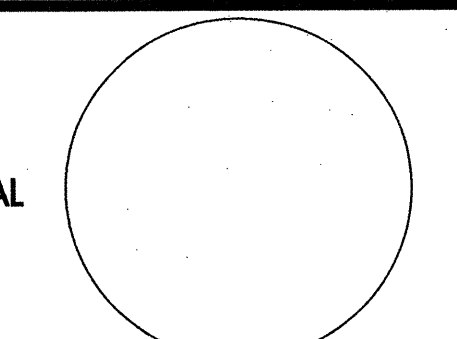


## MOVING OPERATION CARAVAN

(OPERATIONS TRAVELING 3 MPH OR FASTER)  
PLACING PAVEMENT MARKING OR MARKERS  
ON TWO-LANE TWO-WAY ROADWAYS

**DRAWING NUMBER 6**  
IMPLEMENTATION DATE: 07/01/97  
REVISED: 11/03/04

7/27/2006 2:51:09 PM P:\00166225\08\NCDOT\_NC\_711\TC-PM\_Mark-ups-05-01-06\37228\_top\_markingsmarker\37228\_top\_markingsmarker\37228\_top\_markingsmarker\37228\_top\_markingsmarker.dgn

APPROVED: _____ DATE: _____		DETAIL DRAWING #6 FOR MOVING OPERATION CARAVAN ON TWO-LANE TWO-WAY ROADWAYS	
SCALE: NONE		REVISIONS	
DATE: _____			
DESIGN BY: _____			
REVIEWED BY: _____			