

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4196	TCP-1

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

B-4196

TIP PROJECT:

**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 JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE  
CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1180.01	SKINNY-DRUM
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
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
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

**INDEX OF SHEETS**

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, INDEX OF SHEETS, AND LEGEND
TCP-2	GENERAL NOTES
TCP-3	PROJECT PHASING AND DETAILS
TCP-4	DETOUR ROUTE AND SIGNING
TCP-5	SIGN DESIGN
TCP-6	ADVANCE WARNING SIGNS
PM-1	PAVEMENT MARKING SCHEDULE
PM-2	FINAL PAVEMENT MARKING PLAN

**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

24-APR-2008 12:36  
\\dot\dfs\proj\0101\p\01\TIP\Projects-b\4196\Traffic\TrafficControl\Top\4196\_top-L.tsh.dgn  
akpatel AT WZ122408J

APPROVED:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
DATE: April 28, 2008	
SEAL	STUART BOURNE, P.E. TRAFFIC CONTROL ENGINEER
	J. STEVE KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
	DON PARKER TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	ASHVIN PATEL TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

## GENERAL NOTES

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

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

### TIME RESTRICTIONS

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

<u>ROAD NAME</u>	<u>DAY AND TIME RESTRICTIONS</u>
US-70/221	7:00 A.M. TO 8:00 P.M. MONDAY THRU SUNDAY

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) 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.
- C) 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 DRAWING 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 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 INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON US-70/US-221.
- F) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

- H) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- I) PROVIDE PERMANENT SIGNING.
- J) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.
- K) COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT. IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

### TRAFFIC CONTROL DEVICES

- N) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT. OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- O) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- P) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

### PAVEMENT MARKINGS AND MARKERS

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

<u>ROAD NAME</u>	<u>MARKING</u>	<u>MARKER</u>
SR 1506	PAINT	NONE
US-70/221	THERMOPLASTIC	SNOWPLOWABLE

- R) INSTALL TEMPORARY PAVEMENT MARKINGS (ONE APPLICATION ONLY) AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

<u>ROAD NAME</u>	<u>MARKING</u>	<u>MARKER</u>
US-70/221	PAINT	NONE

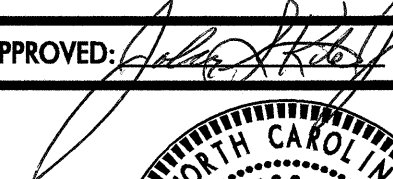
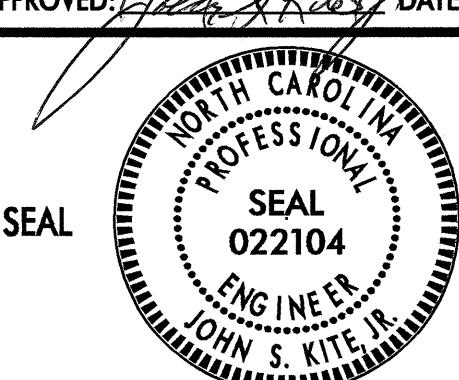
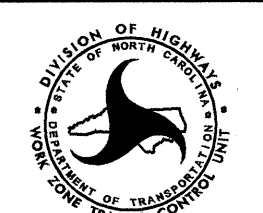
- S) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE (GARDEN CREEK ROAD). PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- U) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

### TEMPORARY / FINAL SIGNALS

- V) SHIFT AND REVISE ALL SIGNAL HEADS AS SHOWN ON THE SIGNAL PLANS.

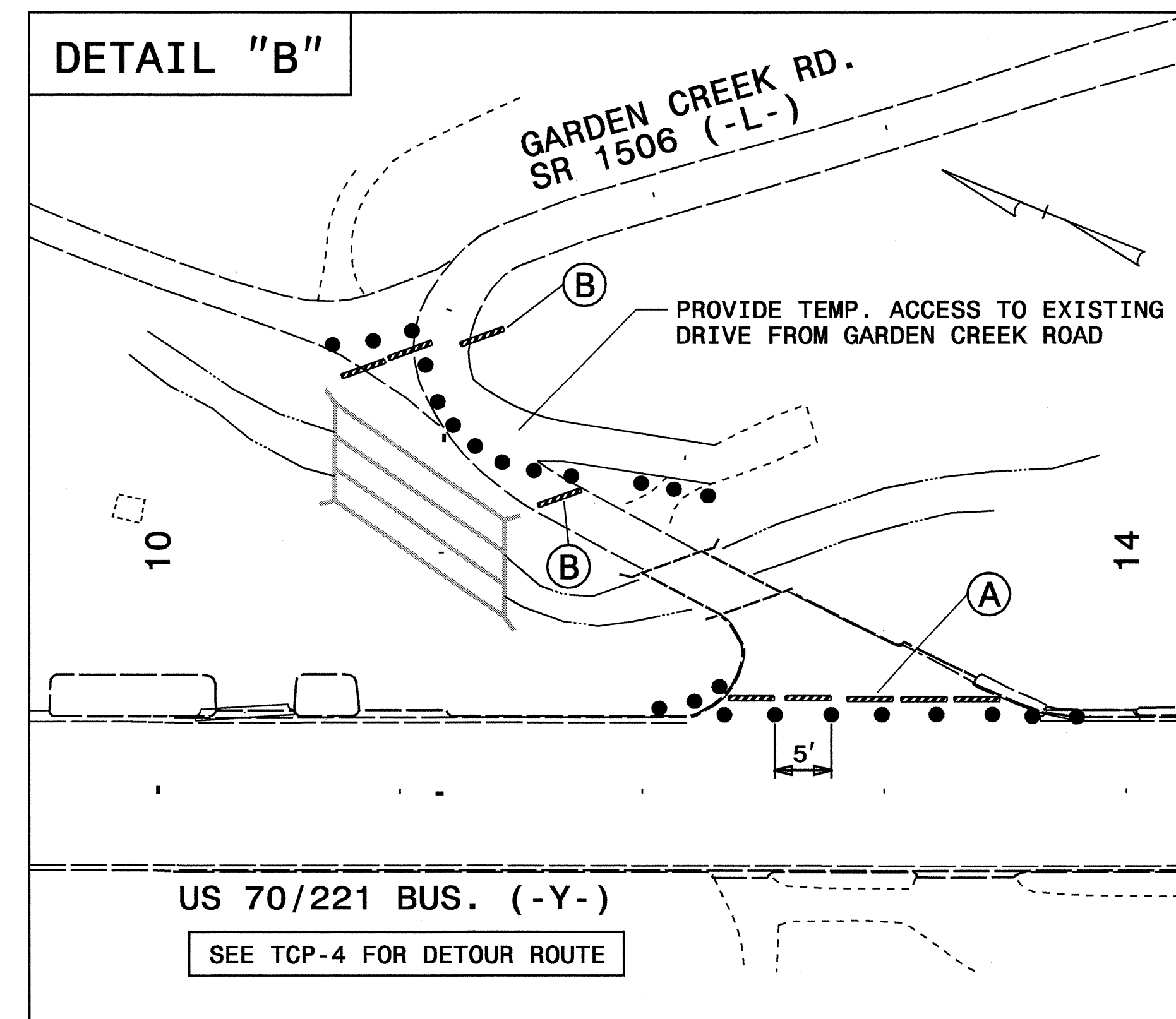
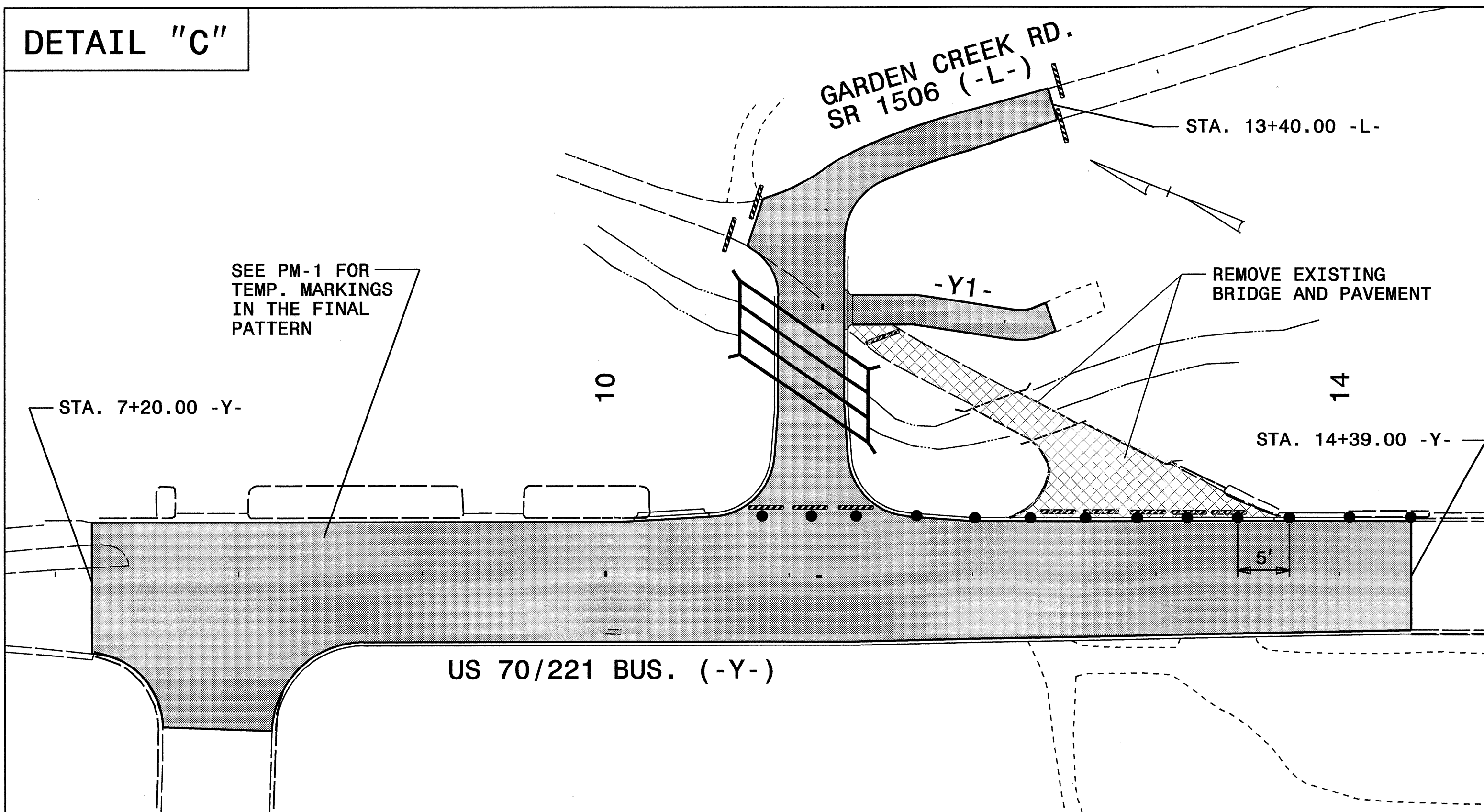
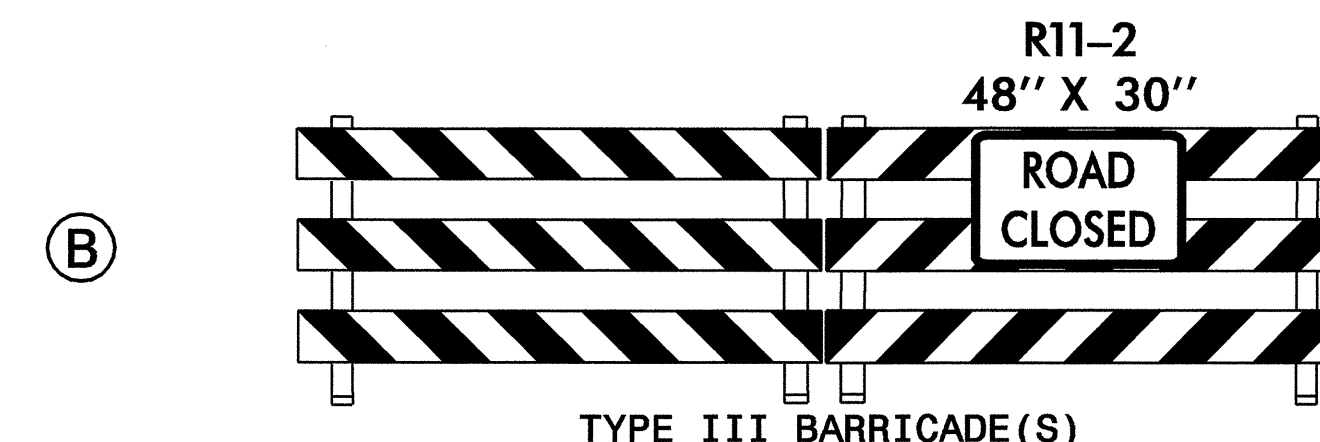
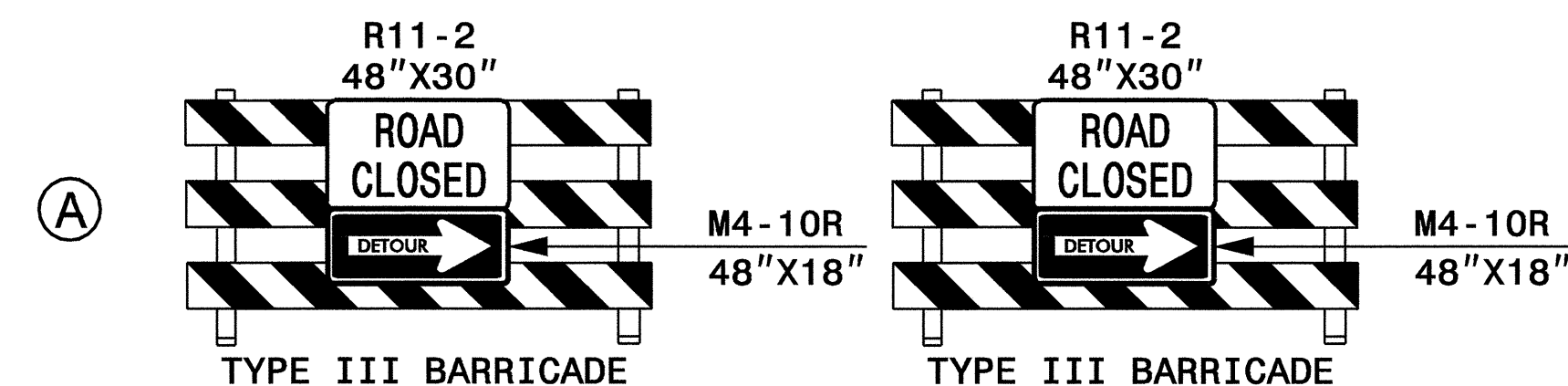
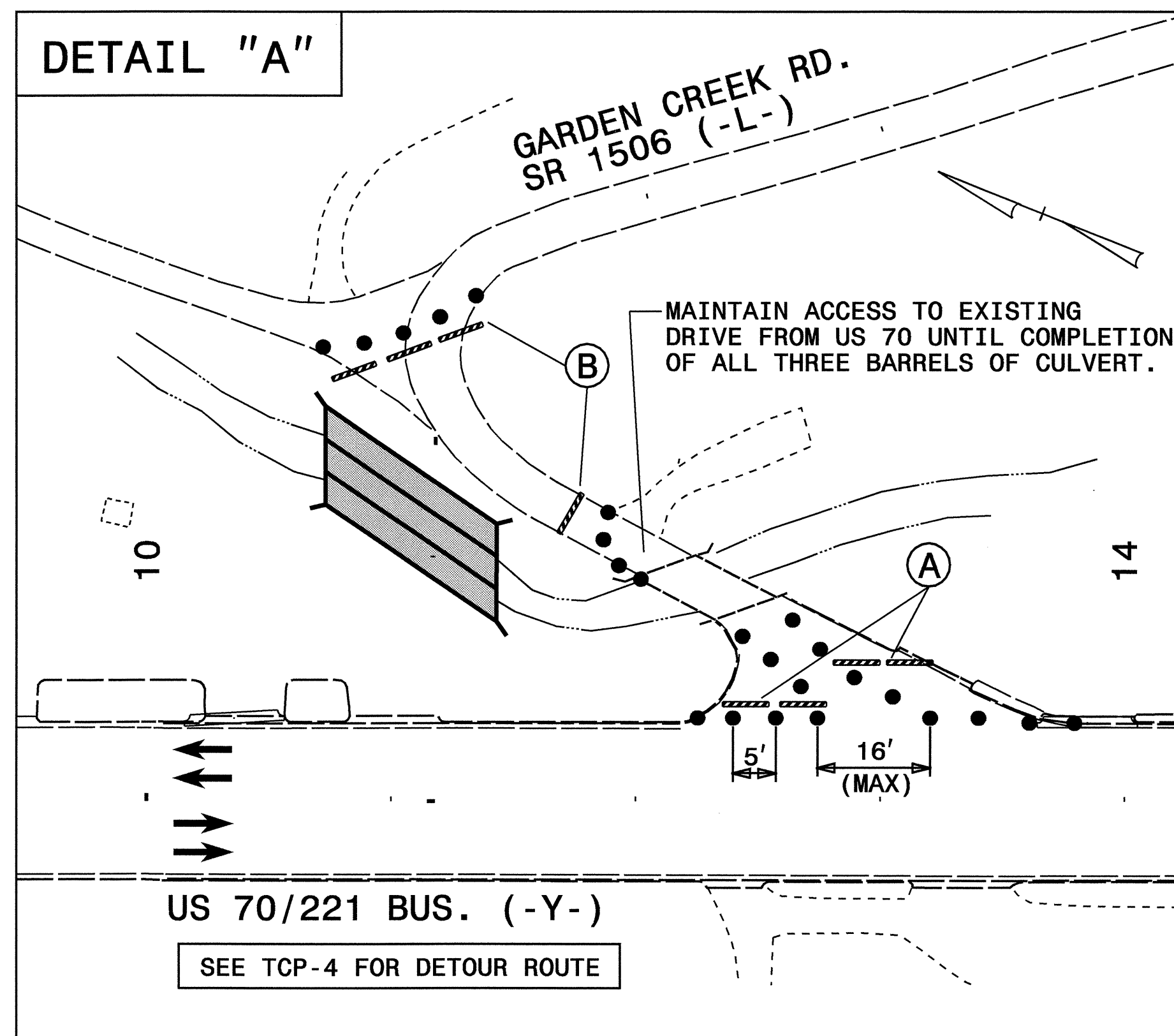
### MISCELLANEOUS

- W) POLICE MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.

APPROVED:  DATE: 4/14/08	<b>GENERAL NOTES</b>								
	SCALE: NONE								
	DATE: 03/08								
	DWG. BY: AKP								
	DESIGN BY: AKP								
REVIEWED BY: DAP	<table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISIONS							
REVISIONS									
	CARD FILE								

# PROJECT PHASING

- NOTE: MAINTAIN LOCAL ACCESS TO RESIDENTS AT ALL TIME DURING CONSTRUCTION
- STEP 1) -- INSTALL OFFSITE DETOUR SIGNING IN ACCORDANCE WITH TCP-4
    - USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 OF 9, AND TCP-4 CLOSE GARDEN CREEK RD. (SR 1506) AND DETOUR TRAFFIC.
  - STEP 2) -- CONSTRUCT PROPOSED CULVERT. MAINTAIN ACCESS TO EXISTING DRIVE FROM US-70. (SEE DETAIL "A").
  - STEP 3) -- PROVIDE TEMPORARY ACCESS TO DRIVE AS PER DETAIL "B", AND CLOSE ACCESS TO DRIVE FROM US-70.
  - STEP 4) -- REMOVE EXISTING BRIDGE AND APPROACHES
  - STEP 5) -- USING LANE CLOSURES, PERFORM GRADING, INSTALL CURB AND GUTTER, AND PAVEMENT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE ON US-70/221. PLACE TEMPORARY PAINT MARKINGS IN THE FINAL PATTERN (SEE RSD 1101.02, SHEET 2 AND 3 OF 9, AND PM-2)
    - REVISE TRAFFIC SIGNAL (SEE SIGNAL PLANS)
    - COMPLETE GRADING, CURB AND GUTTER, AND PAVING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE ON GARDEN CREEK ROAD.
  - STEP 6) -- USING LANE CLOSURE, PLACE FINAL LAYER OF SURFACE COURSE, AND FINAL MARKINGS/MARKERS THROUGHOUT THE PROJECT LIMITS. (SEE RSD 1101.02, SHEET 2 AND 3 OF 9, AND PM-2)
  - STEP 7) -- REMOVE DETOUR SIGNING AND REOPEN GARDEN CREEK CHURCH ROAD
  - STEP 8) -- REMOVE ALL TRAFFIC CONTROL DEVICES.



APPROVED: *[Signature]* DATE: 4/23/08

SEAL

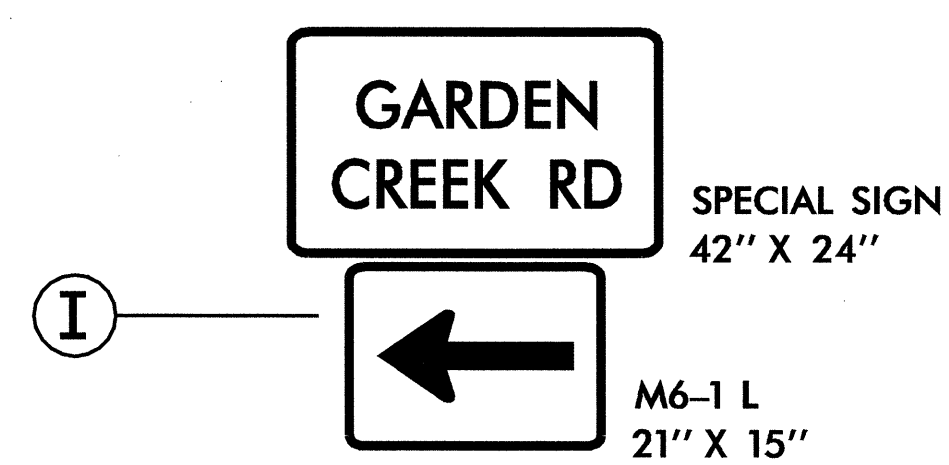
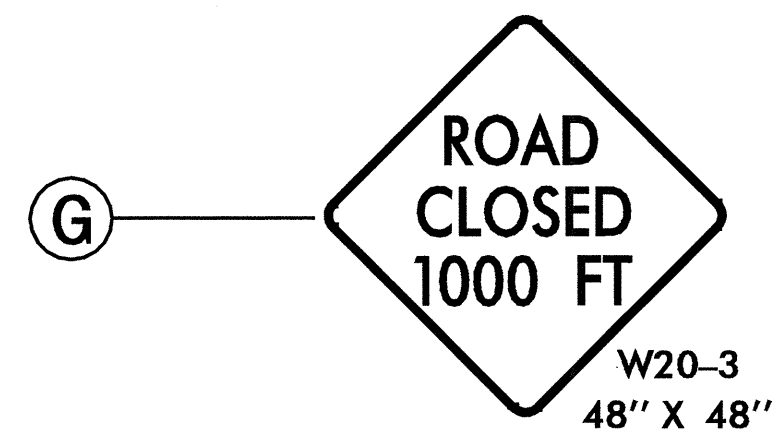
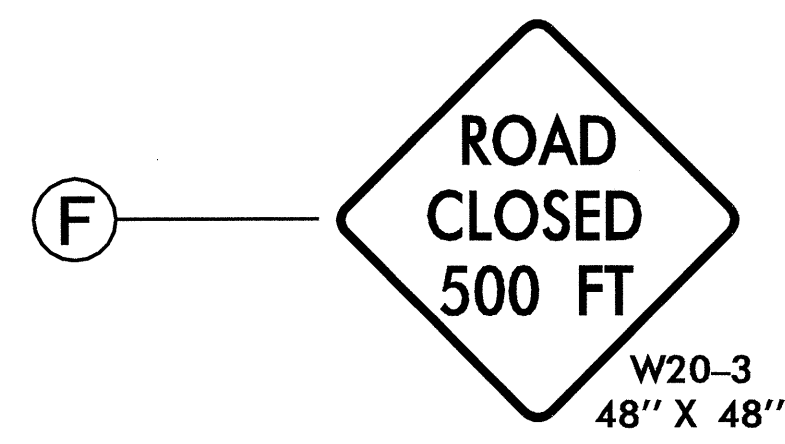
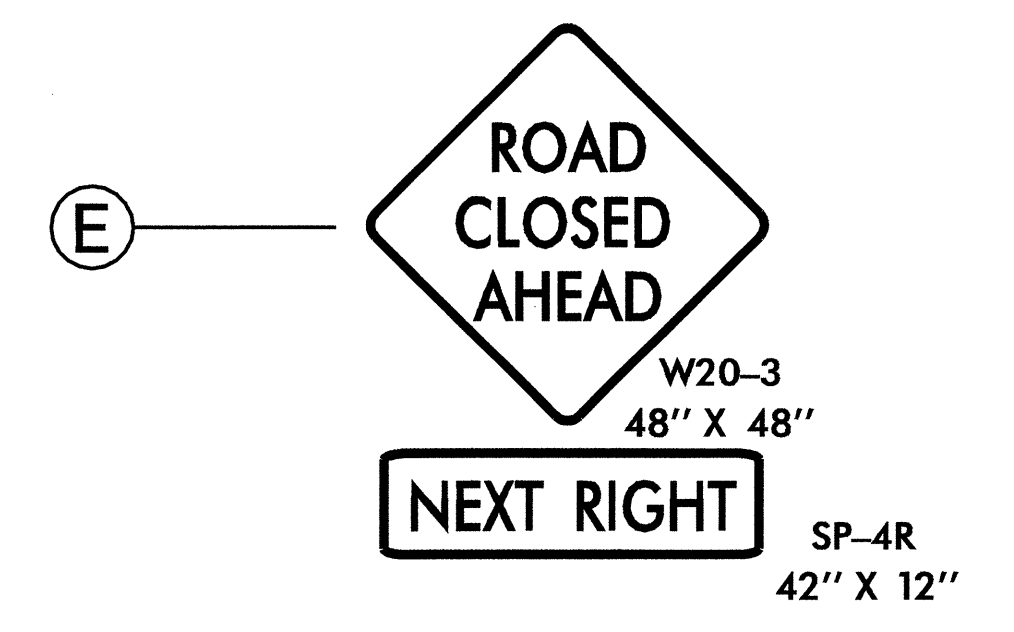
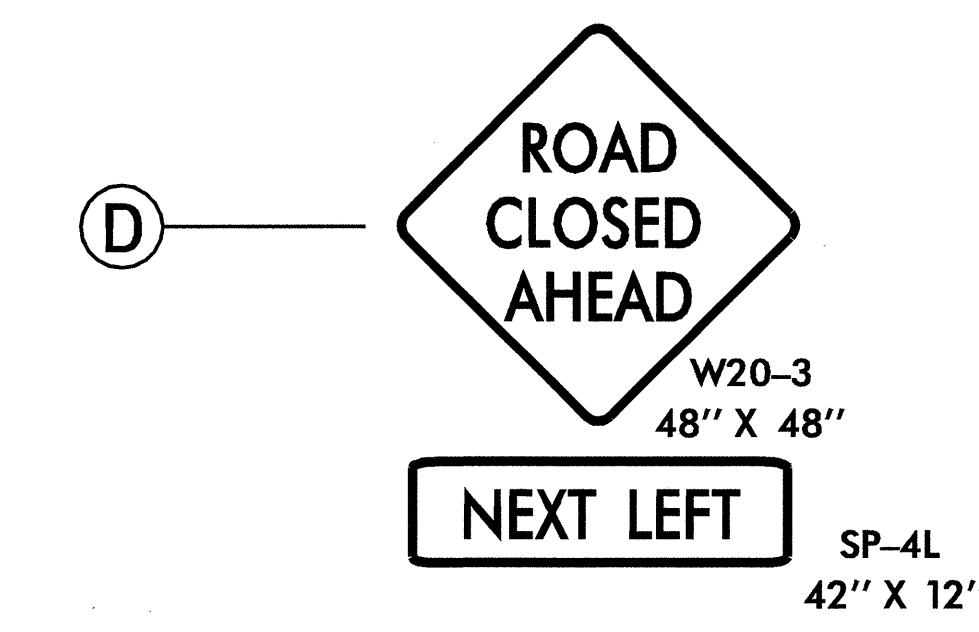
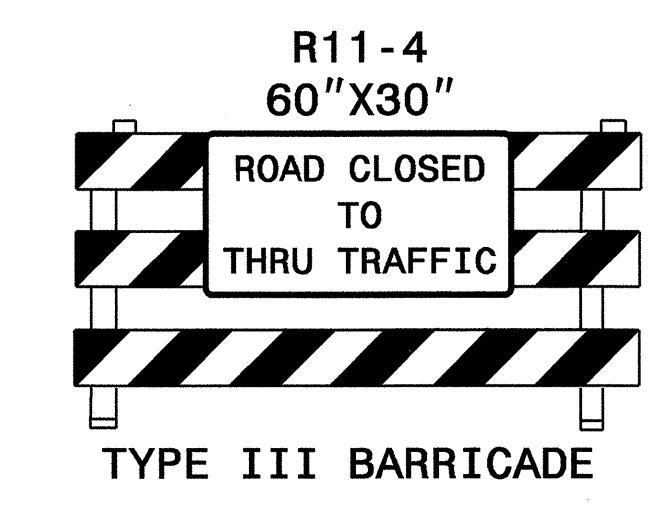
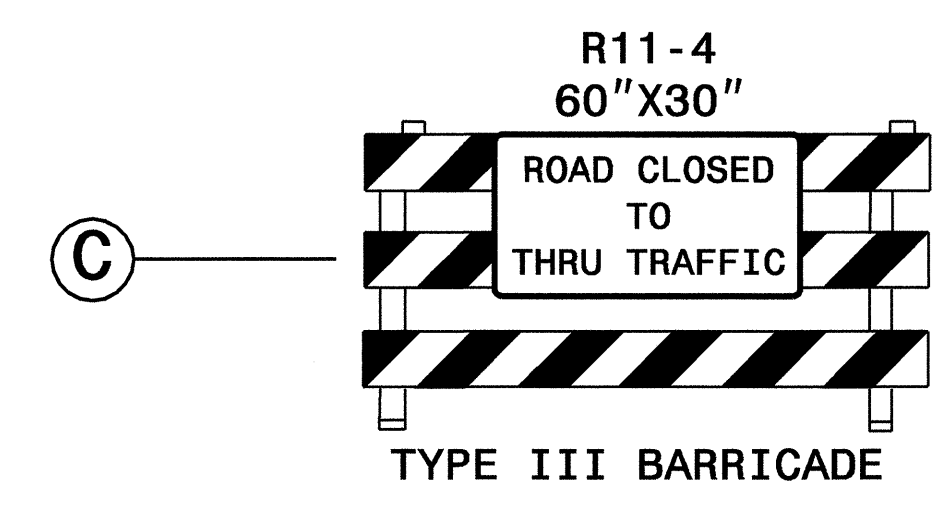
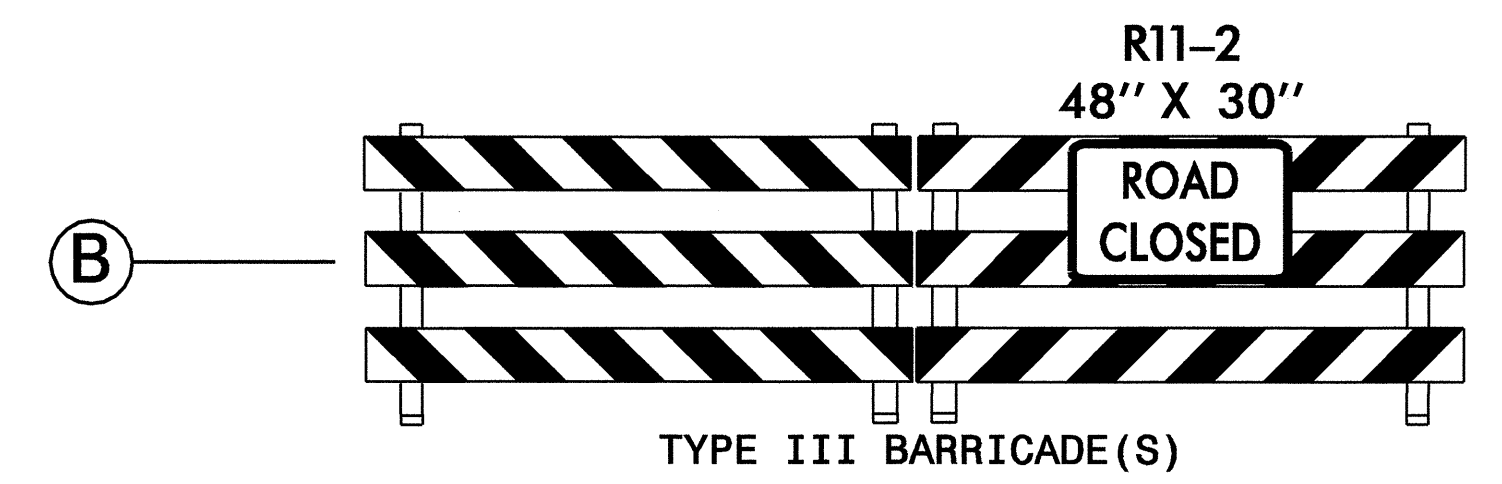
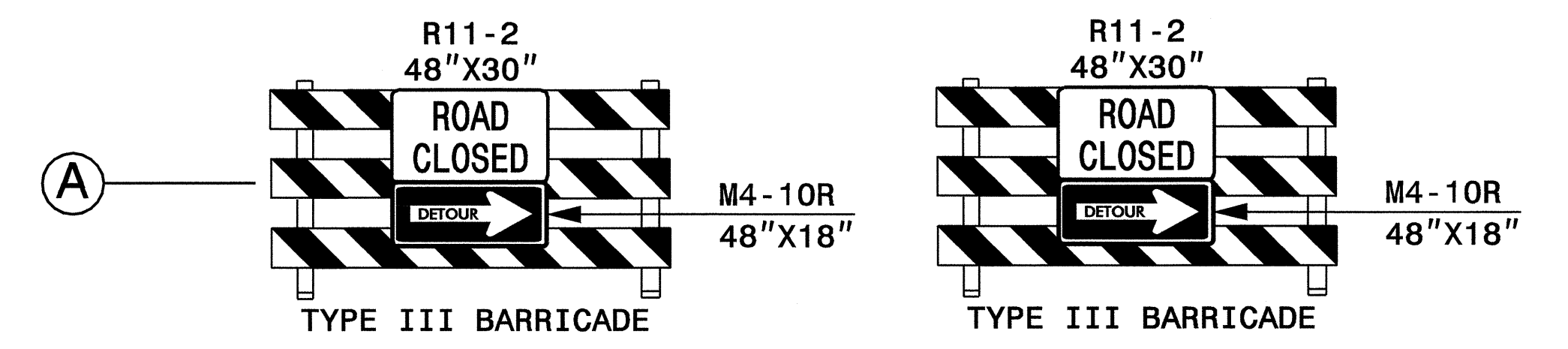
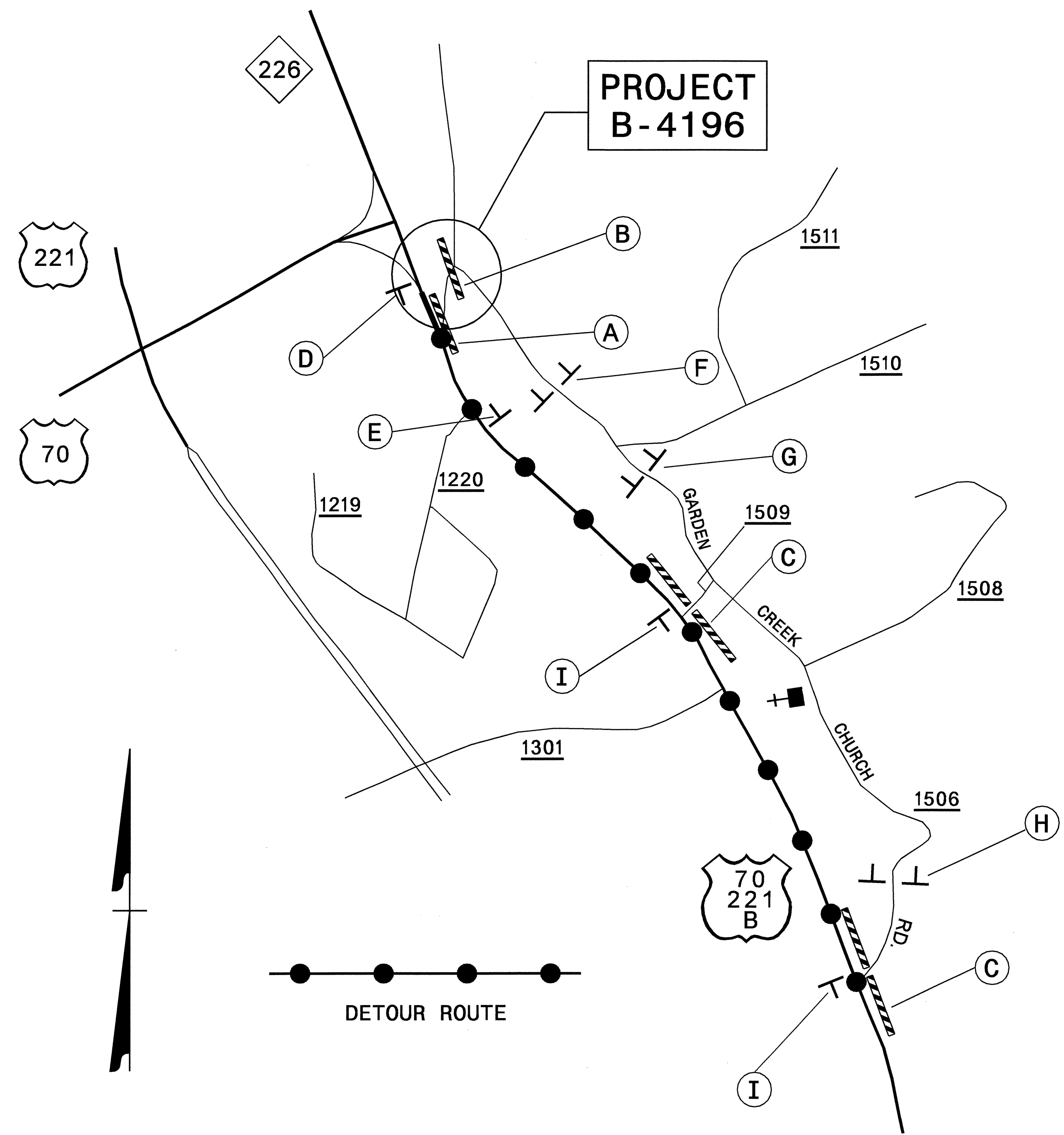
SEAL 022104  
ENGINEER  
JOHN S. KITE, JR.

**PROJECT PHASING AND DETAILS**

SCALE: NONE		REVISIONS
DATE: 03/08		
DWG. BY: AKP		
DESIGN BY: AKP		
REVIEWED BY: DAP		

CARD FILE

30-APR-2008 11:00  
 \\dot\dfs\proj\01\Proj\TIP\Projects-b\4196\tr\af\io\trafficocontrol\tcp\4196-tcp-3-phasing.dgn  
 akp\at WZTC224097



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

APPROVED: *[Signature]* DATE: 4/23/08  
 SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 022104  
 JOHN S. WITTE, II

SCALE: NONE DATE: 03/08 DWG. BY: AKP DESIGN BY: AKP REVIEWED BY: DAP		DETOUR ROUTE AND SIGNING		REVISIONS	

24-APR-2008 12:34  
 \\dot\dfs\0010\22\proj\projects-b\4196\traffic\control\top\4196\_tcp-4\_detour.dgn  
 kdp\bl AT MZ1C224091

SIGN NUMBER: SP07001 TYPE: D QUANTITY: 1 SIGN WIDTH: 42" HEIGHT: 24" TOTAL AREA: 7.0 Sq.Ft. BORDER TYPE: FLUSH RECESS: 0.38" WIDTH: 0.63" RADII: 1.5" NO. Z BARS: LENGTH:	BACKG COLOR: Fluorescent Orange COPY COLOR: Black <table border="1" style="width: 100%;"> <thead> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table> MAT'L: 0.080" (2.0 mm) ALUMINUM 0.079" COMPOSITE	SYMBOL	X	Y	WID	HT																															DESIGN BY: R. HENNEIN PROJECT ID: B-4196	CHECKED BY: DIV: 13	STD #: N/A DATE: Jan 04, 2007
SYMBOL	X	Y	WID	HT																																			

2'-0"

14"

6"C

4"

4"

6"C

4"

6"C

4"

3'-6"

4.15"

33.7"

4.15"

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

**LETTER POSITIONS**

Letter spacings are to start of next letter

	G	A	R	D	E	N											Series/Size
	9.2	3.9	4.4	4.1	4.2	3.8	3.4	9.2									C 2000
																	23.7
																	C 2000
	4.2	4.4	4.3	4	4	3.4	6	4.3	3.4	4.2							33.7

Spacing Factor is 1 unless specified otherwise

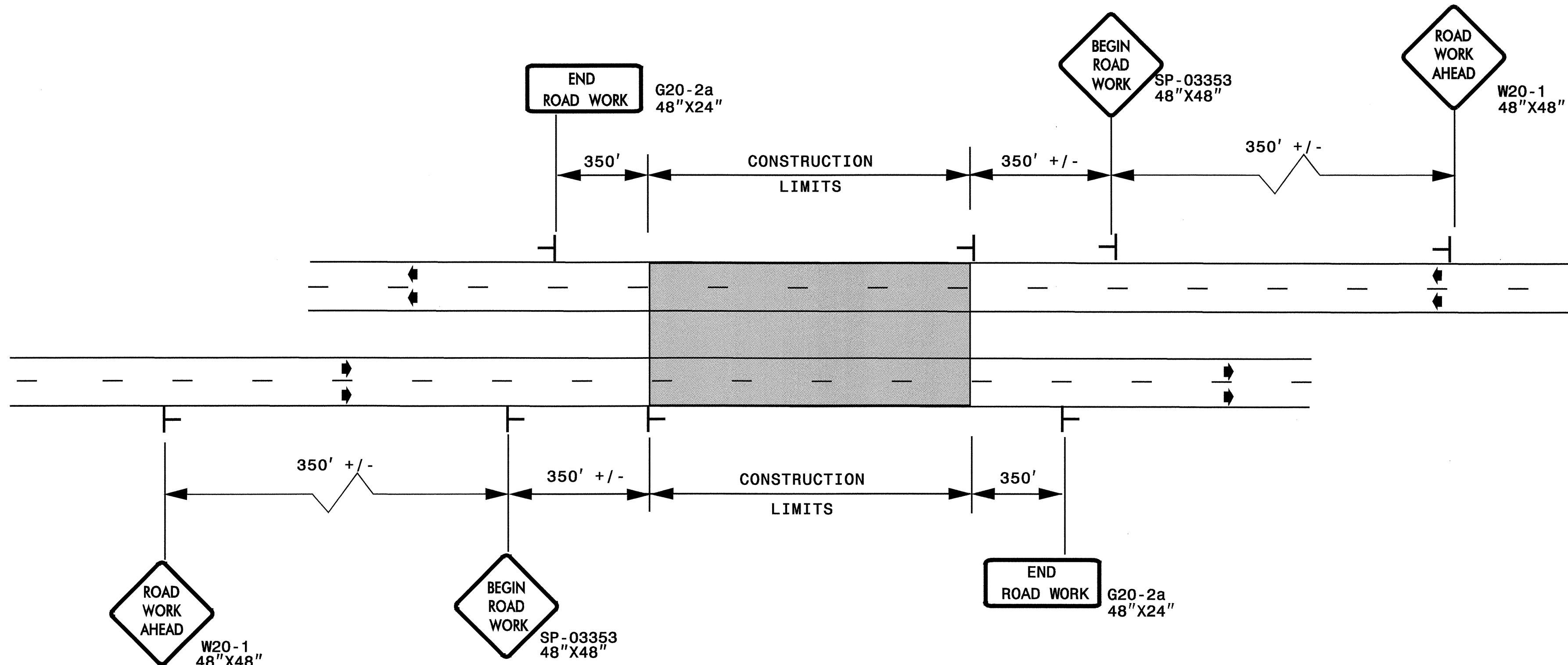
24-APR-2008 12:34  
 \DDT\dfs\09101010\p\TIPProjects-b\4196\traffic\trafficcontrol\top\b4196\_top-5\_sd.dgn  
 okpanel AT WZTC224037

APPROVED: DATE: 4/23/08	<p><b>SIGN DESIGN</b></p>								
	SCALE: NONE DATE: 03/08 DWG. BY: AKP DESIGN BY: AKP REVIEWED BY: DAP								
<table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>		REVISIONS							
REVISIONS									

# ADVANCED WORK ZONE WARNING SIGNING FOR US-70/221 BUS

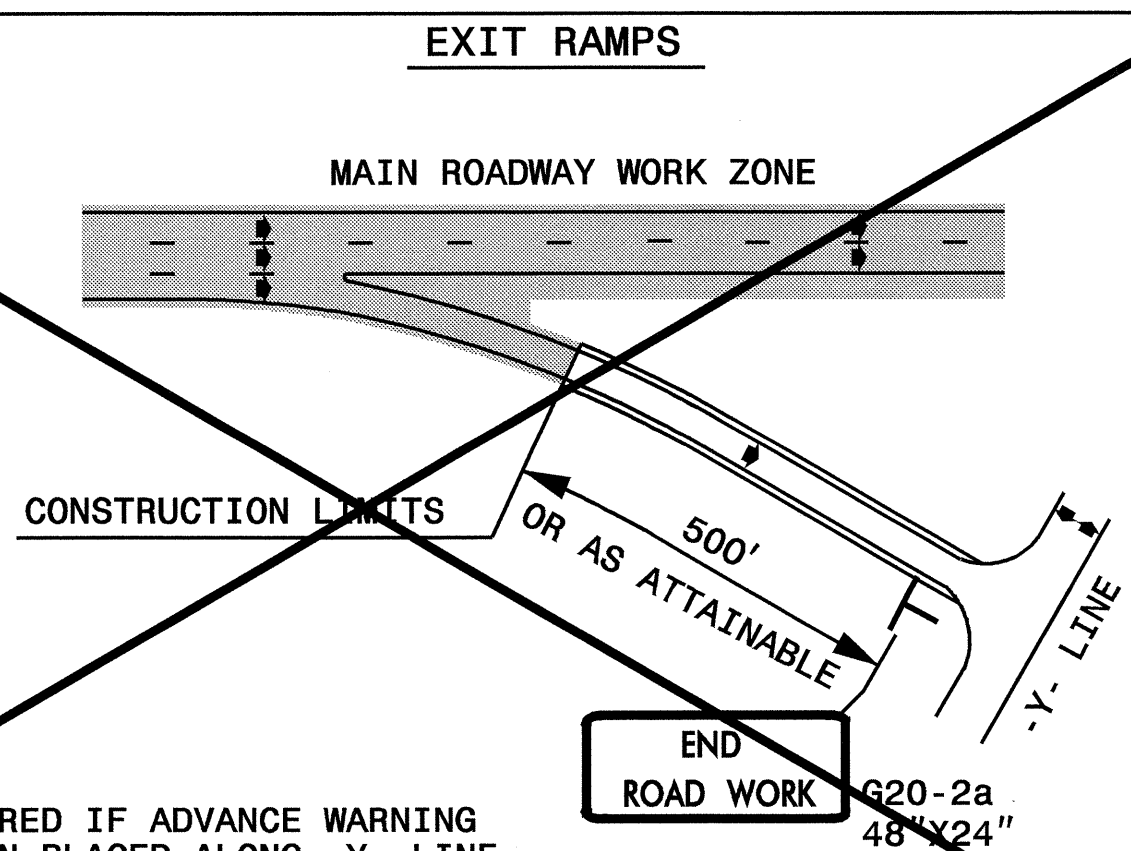
PROJ. REFERENCE NO.	SHEET NO.
B-4196	TCP-6
MCDOWELL	

## DETAIL A

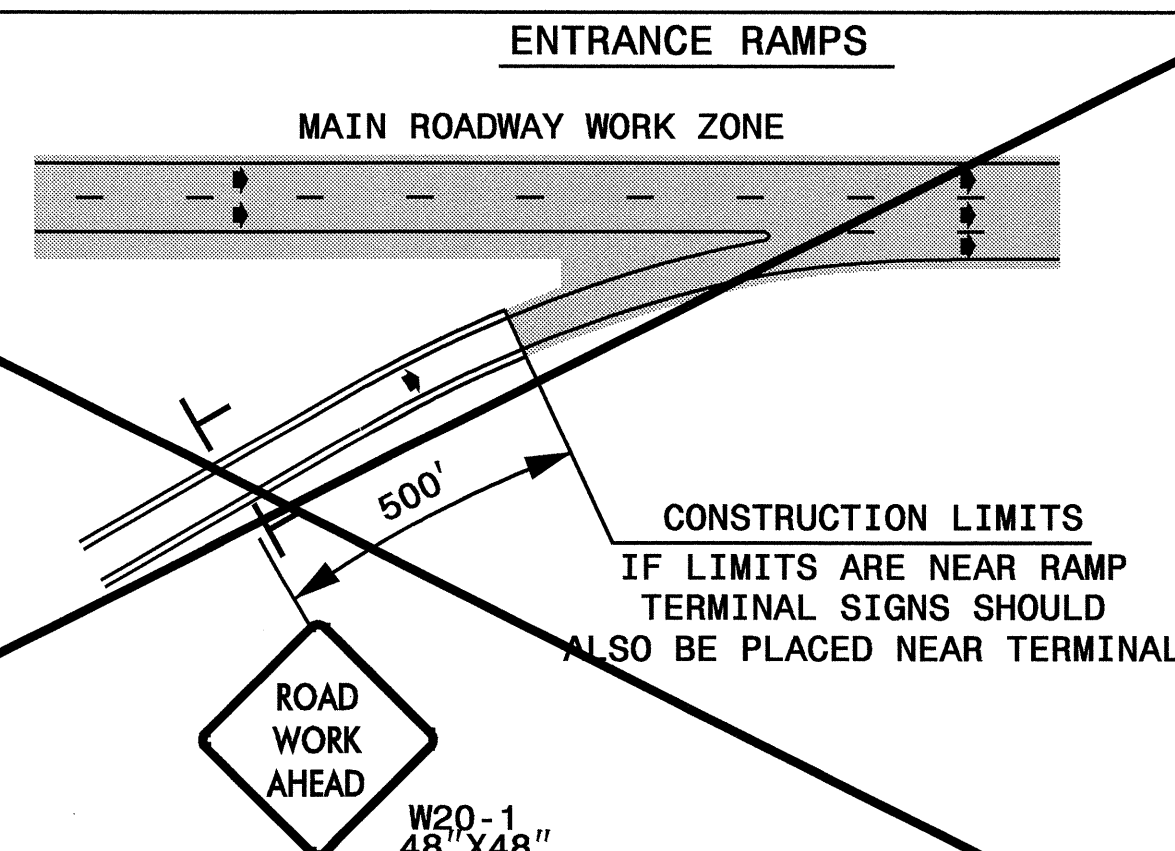


LEGEND	
└	STATIONARY SIGN
➔	DIRECTION OF TRAFFIC FLOW

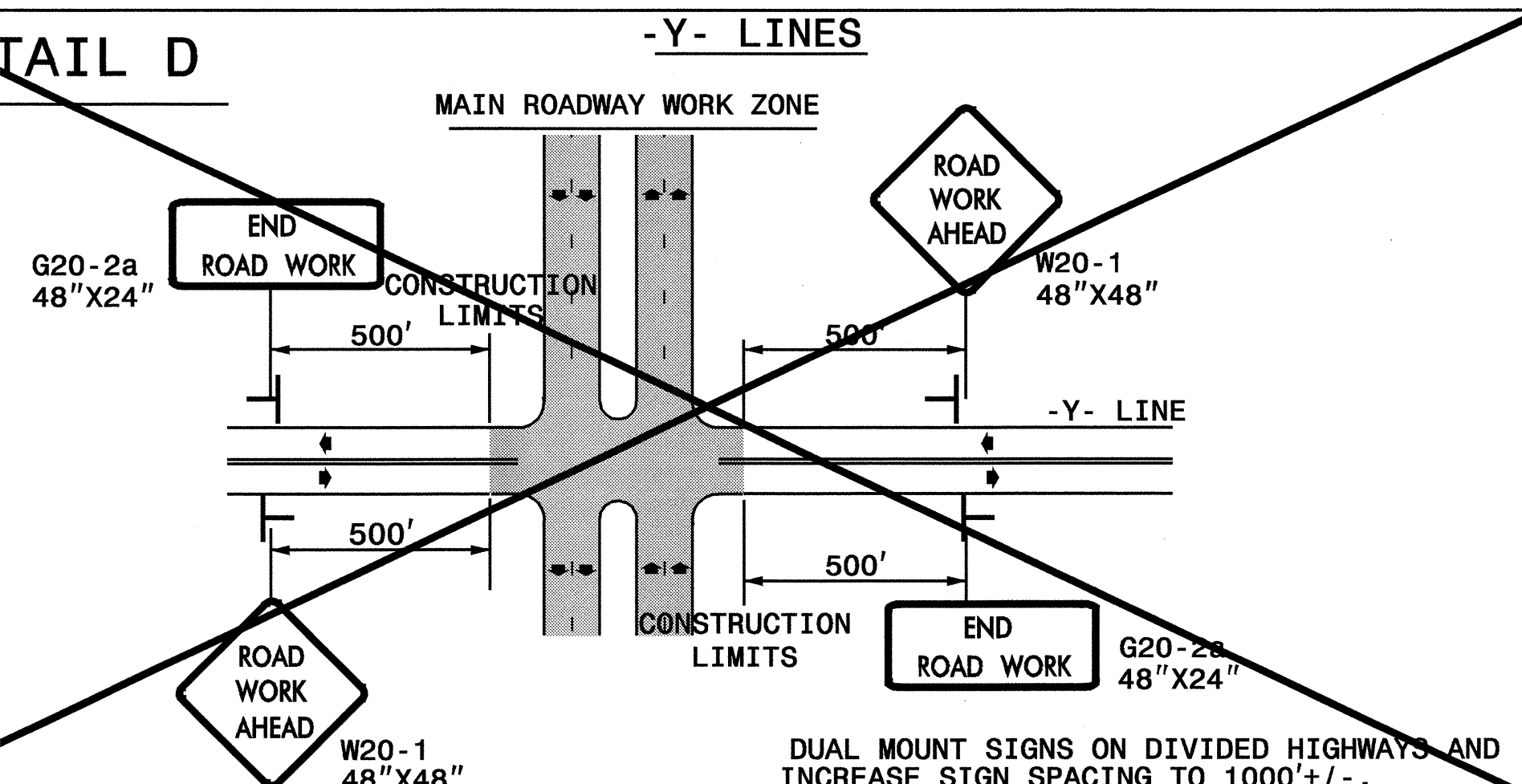
## DETAIL B



## DETAIL C



## DETAIL D



NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

### GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.

APPROVED: *[Signature]* DATE: 4/26/08

SEAL

PROFESSIONAL ENGINEER  
JOHN S. RITTE, III  
022104

<b>ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)</b>	
SCALE: NONE	REVISIONS
DATE: 03/08	03/04
DWG. BY: AKP	
DESIGN BY: AKP	
REVIEWED BY: DAP	

24-APR-2008 12:37 \\dot\dfs\03101\p\co\N\TIPPro\jects-b\4196\tr\offic\tr\ffico\tr\top\bd4196\_tcp-6\_awzws.dgn