

U-4756

TIP PROJECT:

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
U - 4 7 5 6	TCP-1

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

**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER 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
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - INTERCHANGES
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - THRU LANE DROPS
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
1267.01	FLEXIBLE DELINEATOR INSTALLATION
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  - CRASH CUSHION
  - CHANGEABLE MESSAGE SIGN
  - TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
  - POLICE
  - FLAGGER

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APPROVED: DATE: 6-25-07	PLAN PREPARED FOR: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
SEAL	<p style="text-align: center;">_____ <b>Kevin Bisby, PE</b>    WSA Traffic Control Project Manager</p> <p style="text-align: center;">_____ <b>William DeBrew</b>    WSA Traffic Control Design Technician</p>

# PROJECT NOTES

PROJ. REFERENCE NO. U-4756	SHEET NO. TCP-2
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## 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 UNLESS OTHERWISE INDICATED IN THE TRAFFIC CONTROL PLAN:

ROAD NAME	DAY AND TIME RESTRICTIONS
ALL ROADS	MONDAY THROUGH FRIDAY 6:00 AM TO 8:30 AM 4:00 PM TO 6:30 PM

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS UNLESS OTHERWISE INDICATED IN THE TRAFFIC CONTROL PLAN:

ROAD NAME
ALL ROADS

### HOLIDAY

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

C) THE CONTRACTOR WILL BE ALLOWED TO CLOSE ALL AMERICAN FREEWAY IN ORDER TO PERFORM DEMOLITION OF THE EXISTING MORGANTON ROAD STRUCTURE, HANG GIRDERS, AND DECK POUR DURING THE FOLLOWING TIMES:

FRIDAY AT 10:00 PM TO MONDAY AT 6:00 AM

### 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 15 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 OR A LANE CLOSURE IS INSTALLED.
- 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 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.

G) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

H) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (WB-11) 500 FEET IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

K) 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.

L) PROVIDE PERMANENT SIGNING.

M) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.

N) COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.

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

### TRAFFIC BARRIER

P) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY 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 OR AS DIRECTED BY THE ENGINEER.

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

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

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW, BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

Q) 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 (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS:

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

### TRAFFIC CONTROL DEVICES

R) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADIUS, 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.

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

T) 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

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

ROAD NAME	MARKING	MARKER
ALL ROADS	POLYUREA	PERMANENT RAISED

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

ROAD NAME	MARKING	MARKER
ALL ROADS STRUCTURE	PAINT REMOVABLE TAPE	TEMPORARY RAISED TEMPORARY RAISED

W) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

X) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

Y) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

### TEMPORARY / FINAL SIGNALS

Z) NOTIFY THE ENGINEER TWO (2) MONTHS BEFORE A TRAFFIC SIGNAL INSTALLATION BY OTHERS IS REQUIRED.

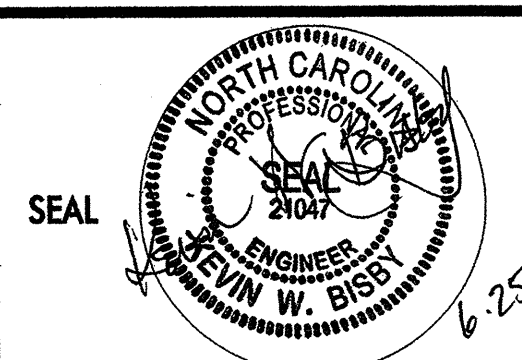
AA) SHIFT AND REVISE ALL SIGNAL HEADS AS SHOWN ON THE SIGNAL PLANS.

BB) NOTIFY THE CITY TRAFFIC ENGINEER TWO MONTHS BEFORE CLOSING MORGANTON ROAD IN ORDER TO ALLOW THE CITY AMPLE TIME TO ADJUST THE SIGNAL TIMING.

CC) MAINTAIN THE INTEGRITY OF THE LOOP DETECTORS AT ALL TIMES DURING CONSTRUCTION.

### MISCELLANEOUS

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

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**PHASE I**

**STEP 1:**  
ERECT ADVANCE WORK ZONE WARNING SIGNS IN ACCORDANCE WITH DETAIL DRAWING FOR WORK ZONE SIGNS. (SEE TCP-15 AND 16)

**STEP 2:**  
USING FLAGGERS AND FLAGGER AHEAD SYMBOL SIGNS (W20-7A) AS DIRECTED BY THE ENGINEER, PLACE PORTABLE CONCRETE BARRIER ON RAMP C TO FACILITATE CONSTRUCTION OF RETAINING WALLS. (SEE TCP-4)

**STEP 3:**  
BEGIN CONSTRUCTION OF RETAINING WALLS. THE FILL SHALL BE PLACED, AND THE PROPOSED GUARDRAIL INSTALLED AS PART OF THIS CONSTRUCTION. COMPLETE CONSTRUCTION PRIOR TO BEGINNING PHASE II STEP 2. (SEE TCP-4)

CONSTRUCT WATER LINE ALONG THE NORTH SIDE OF MORGANTON ROAD.

USING RDWY STD 1101.02 SHEET 3, PLACE PORTABLE CONCRETE BARRIER ON NB AND SB ALL AMERICAN FREEWAY TO FACILITATE CONSTRUCTION OF MORGANTON RD STRUCTURE. (SEE TCP-4)

**PHASE II**

**STEP 1:**  
USING RDWY STD 1101.03 SHEET 1, CLOSE MORGANTON ROAD AT THE ALL AMERICAN FREEWAY RAMPS. THE RAMPS SHALL REMAIN OPEN TO TRAFFIC. THE DETOUR ROUTES ARE AS FOLLOWS: (SEE TCP-6 THROUGH 10)

- \* NORTHBOUND ALL AMERICAN FREEWAY TRAFFIC DESIRING TO USE MORGANTON ROAD TO THE WEST OF THE INTERCHANGE WILL BE DETOURED VIA THE CLIFFDALE ROAD INTERCHANGE TO GLENSFORD DRIVE.
- \* SOUTHBOUND ALL AMERICAN FREEWAY TRAFFIC DESIRING TO USE MORGANTON ROAD TO THE EAST OF THE INTERCHANGE WILL BE DETOURED VIA THE CLIFFDALE ROAD INTERCHANGE TO McPHERSON CHURCH ROAD.
- \* EASTBOUND MORGANTON ROAD TRAFFIC WILL BE DETOURED VIA SOUTHBOUND GLENSFORD DRIVE TO EASTBOUND CLIFFDALE ROAD, THEN TO NORTHBOUND McPHERSON CHURCH ROAD, AND BACK TO MORGANTON ROAD.
- \* WESTBOUND MORGANTON ROAD TRAFFIC WILL BE DETOURED VIA SOUTHBOUND McPHERSON CHURCH ROAD TO WESTBOUND CLIFFDALE ROAD, THEN TO NORTHBOUND GLENSFORD DRIVE, AND BACK TO MORGANTON ROAD.

PLACE TRAFFIC CONTROL DEVICES, SIGNING, AND PAVEMENT MARKINGS ON EASTBOUND AND WESTBOUND MORGANTON RD IN ORDER TO CLOSE TRAVEL LANES SUCH THAT ONLY THE INSIDE LANES ARE OPEN APPROACHING THE INTERCHANGE RAMPS. (SEE TCP-6 THROUGH 10)

DEACTIVATE THE SIGNALS AT THE MORGANTON RD/ALL AMERICAN FREEWAY RAMP TERMINALS. STOP SIGNS SHALL BE USED ON THE RAMP TERMINALS IN LIEU OF THE SIGNALS. (SEE TCP-8 AND 9)

CONSTRUCT TEMPORARY SIGNALS AT THE MORGANTON ROAD INTERSECTIONS WITH GLENSFORD DRIVE AND SYCAMORE DAIRY ROAD.

**STEP 2:**  
REMOVE EXISTING MORGANTON ROAD STRUCTURE AND CONSTRUCT PROPOSED STRUCTURE AND APPROACHES EXCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA 41+18 TO STA 48+47. TRAFFIC SHALL BE DETOURED AROUND THE WORK AREA VIA THE RAMPS WHEN PERFORMING CONSTRUCTION OPERATIONS OVER THE ALL AMERICAN FREEWAY SUCH AS, DEMOLITION OF THE EXISTING STRUCTURE OR HANGING GIRDERS FOR THE PROPOSED STRUCTURE, THROUGH. USE RDWY STD 1101.03 SHEET 7 FOR DETOUR SIGNS AND DEVICES. (SEE TCP-13)

ACTIVATE TEMPORARY SIGNALS AT THE MORGANTON ROAD INTERSECTIONS WITH GLENSFORD DRIVE AND SYCAMORE DAIRY ROAD.

CONSTRUCT AS FOLLOWS EXCLUDING THE FINAL LAYER OF SURFACE COURSE: (SEE TCP-12 THROUGH 14)

- L- STA 27+92 TO STA 41+18
- L- STA 48+47 TO STA 59+04

USING FLAGGERS, FLAGGER AHEAD SIGNS (W20-7A), AND DRUMS AS DIRECTED BY THE ENGINEER CONSTRUCT THE RAMPS EXCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS: (SEE TCP-13 AND 14)

- RPA- STA 10+00 TO -L-
- RPB- STA 10+00 TO -L-
- RPC- STA 10+00 TO -L-
- RPD- STA 10+00 TO -L-

USING RDWY STD 1101.02 SHEET 3, CONSTRUCT SYCAMORE DAIRY RD FROM -Y3- STA 10+00 TO -L- EXCLUDING THE FINAL LAYER OF SURFACE COURSE: (SEE TCP-14)

CONSTRUCT FINAL SIGNALS AT THE MORGANTON ROAD INTERSECTIONS WITH THE RAMP TERMINALS, GLENSFORD DRIVE, AND SYCAMORE DAIRY ROAD.

COMPLETE CONSTRUCTION OF RETAINING WALLS AS BEGUN IN PHASE I STEP 3.

**PHASE III**

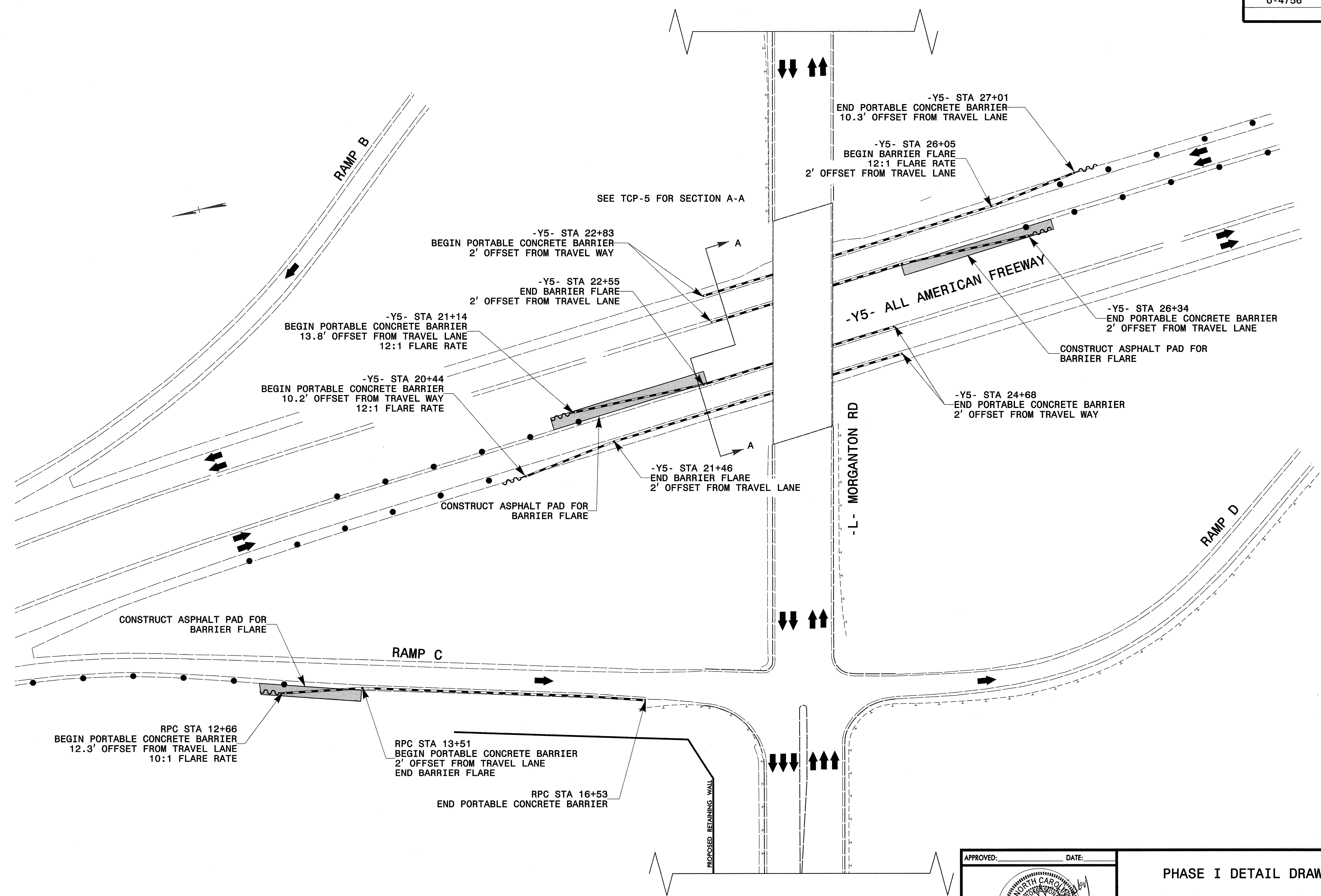
**STEP 1:**  
USING RDWY STD 1101.02 SHEET 3 AND THE FINAL PAVEMENT MARKING PLAN, PLACE PAVEMENT MARKINGS ON -L- MORGANTON ROAD, RAMPS A, B, C, D, AND -Y3- SYCAMORE DAIRY ROAD. THE PAVEMENT MARKING MATERIAL SHALL BE PAINT ON ASHPALT SURFACES AND REMOVABLE TAPE ON THE STRUCTURE. (SEE PM-1 THRU 4)


ACTIVATE THE FINAL SIGNALS AT THE RAMP TERMINALS, GLENSFORD DRIVE, AND SYCAMORE DAIRY ROAD. REMOVE THE DETOUR SIGNING, AND OPEN MORGANTON ROAD TO TRAFFIC IN ITS FINAL TRAFFIC PATTERN.

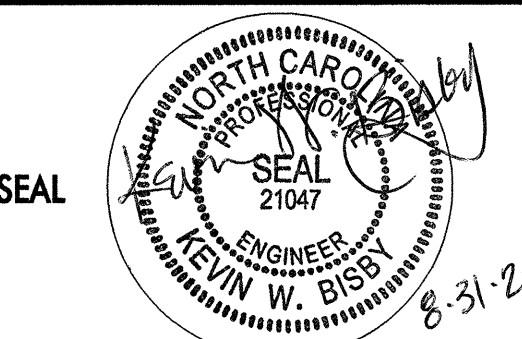

REMOVE PORTABLE CONCRETE BARRIER FROM ALL AMERICAN FREEWAY USING RDWY STD 1101.02 SHEET 3.

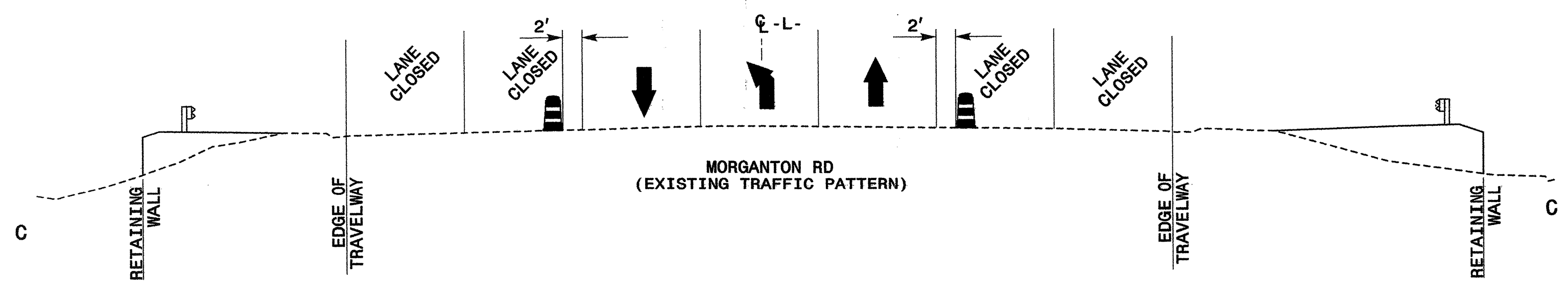
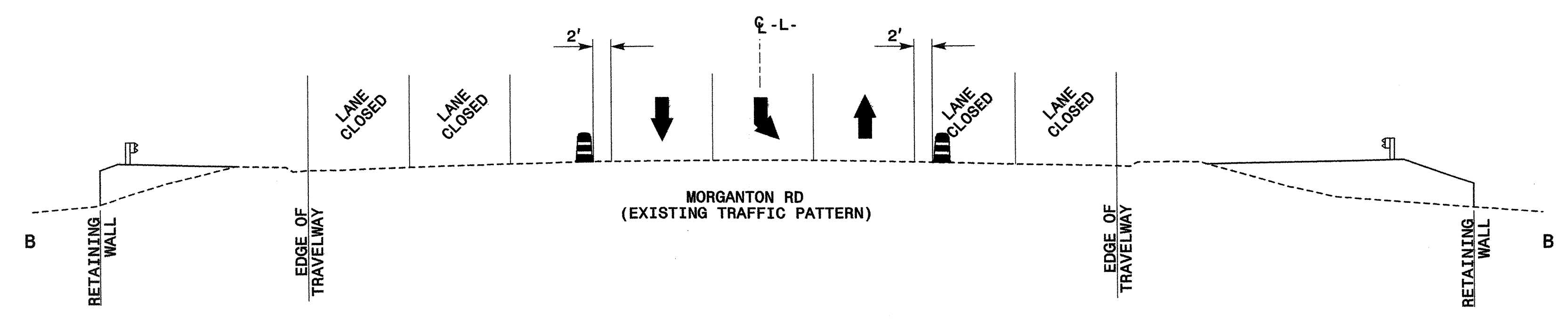
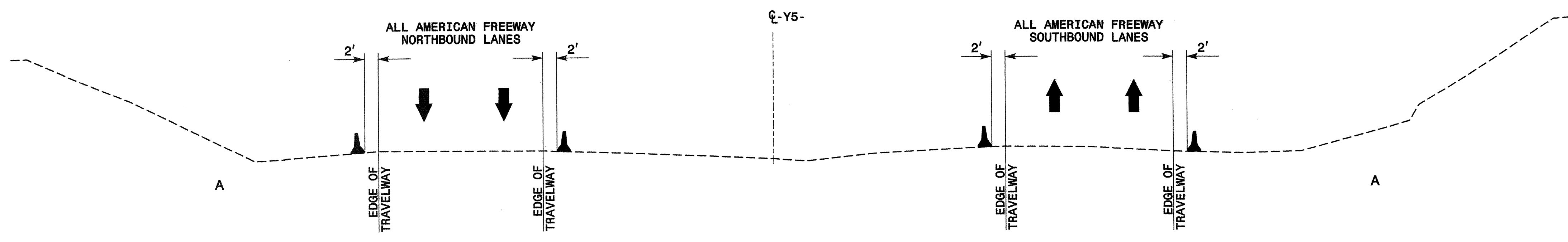
**STEP 2:**  
USING RDWY STD 1101.02 SHEETS 3, 6, AND 7, PLACE THE FINAL LAYER OF SURFACE COURSE, FINAL PAVEMENT MARKINGS, AND FLEXIBLE DELINEATORS ON THE ENTIRE PROJECT.

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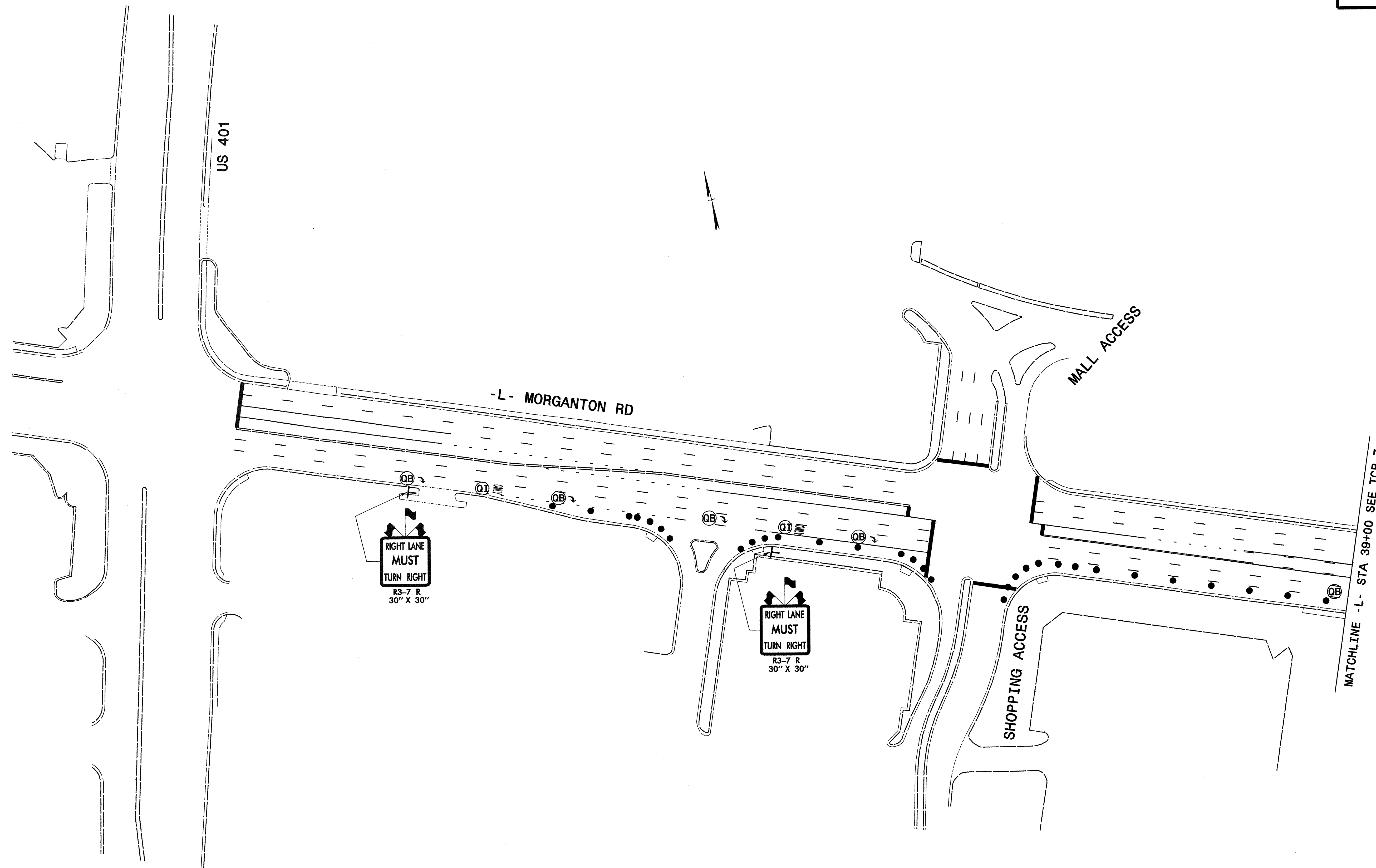



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APPROVED: _____	DATE: _____	<b>PHASE I DETAIL DRAWING</b>	
			
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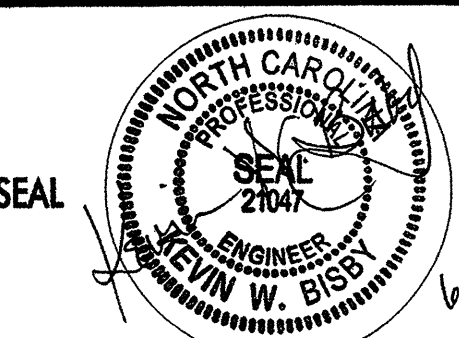
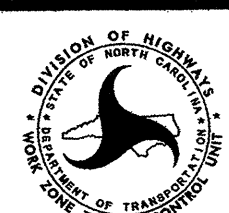


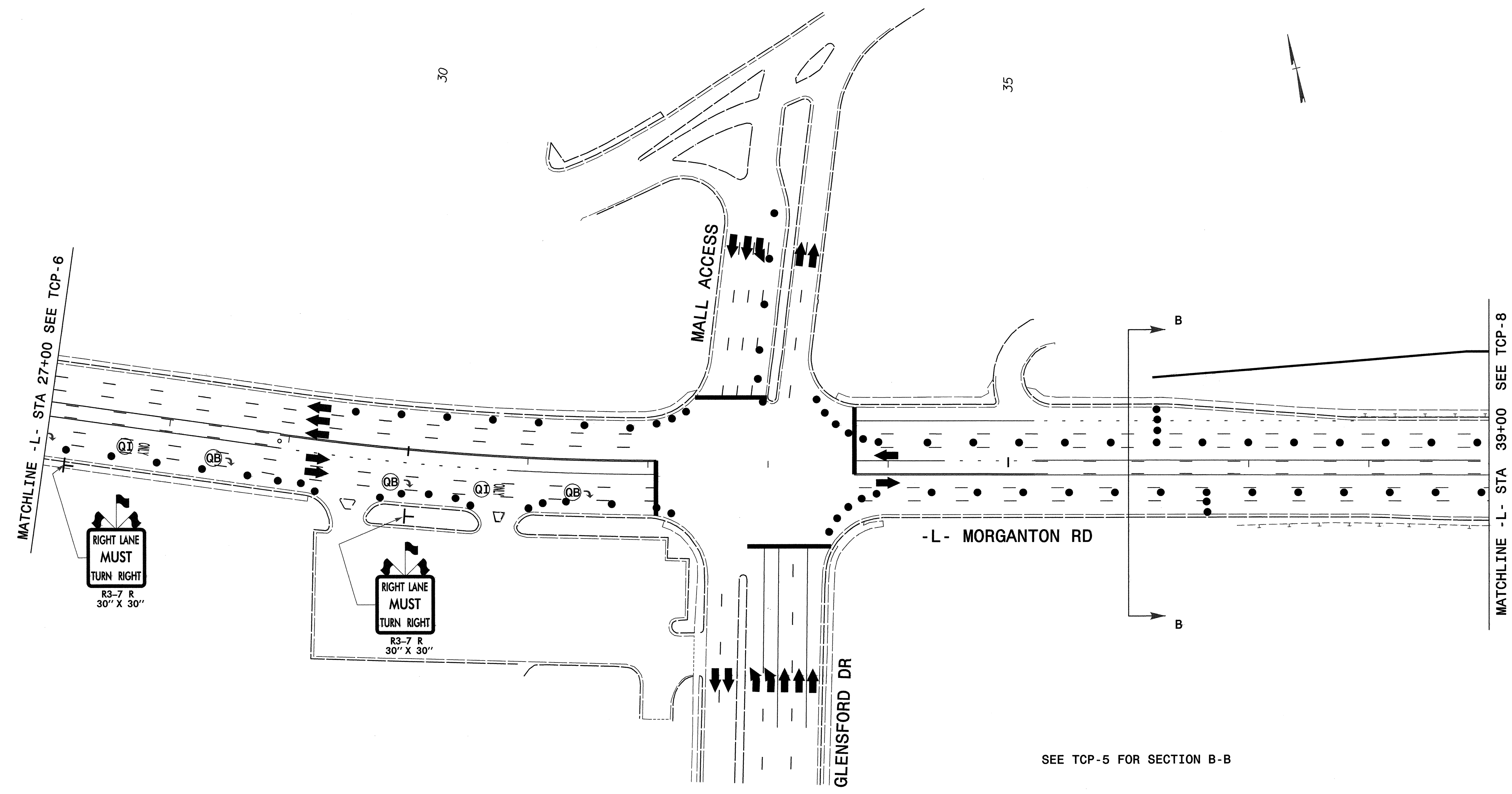
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UNLESS OTHERWISE NOTED, PAVEMENT MARKINGS ARE EXISTING.


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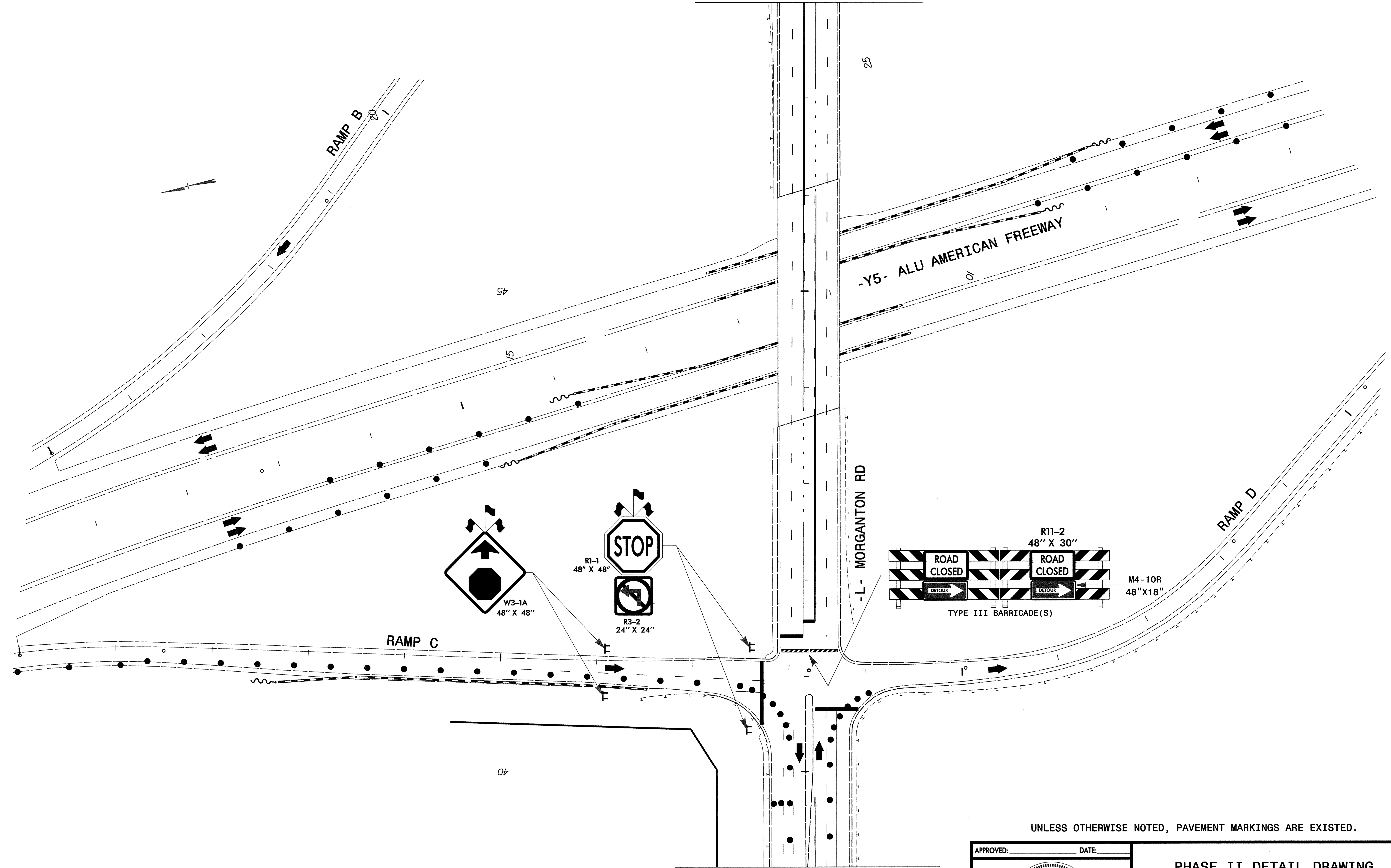
SEE TCP-5 FOR SECTION B-B

UNLESS OTHERWISE NOTED, PAVEMENT MARKINGS ARE EXISTED.

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APPROVED:	DATE:	<b>PHASE II DETAIL DRAWING</b>									
SCALE:	NONE										
DATE:	6/2007										
DWG. BY:	KWB										
DESIGN BY:	WMD										
REVIEWED BY:	WEL	<table border="1"> <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											

MATCHLINE -L- STA 48+00 SEE TCP-9



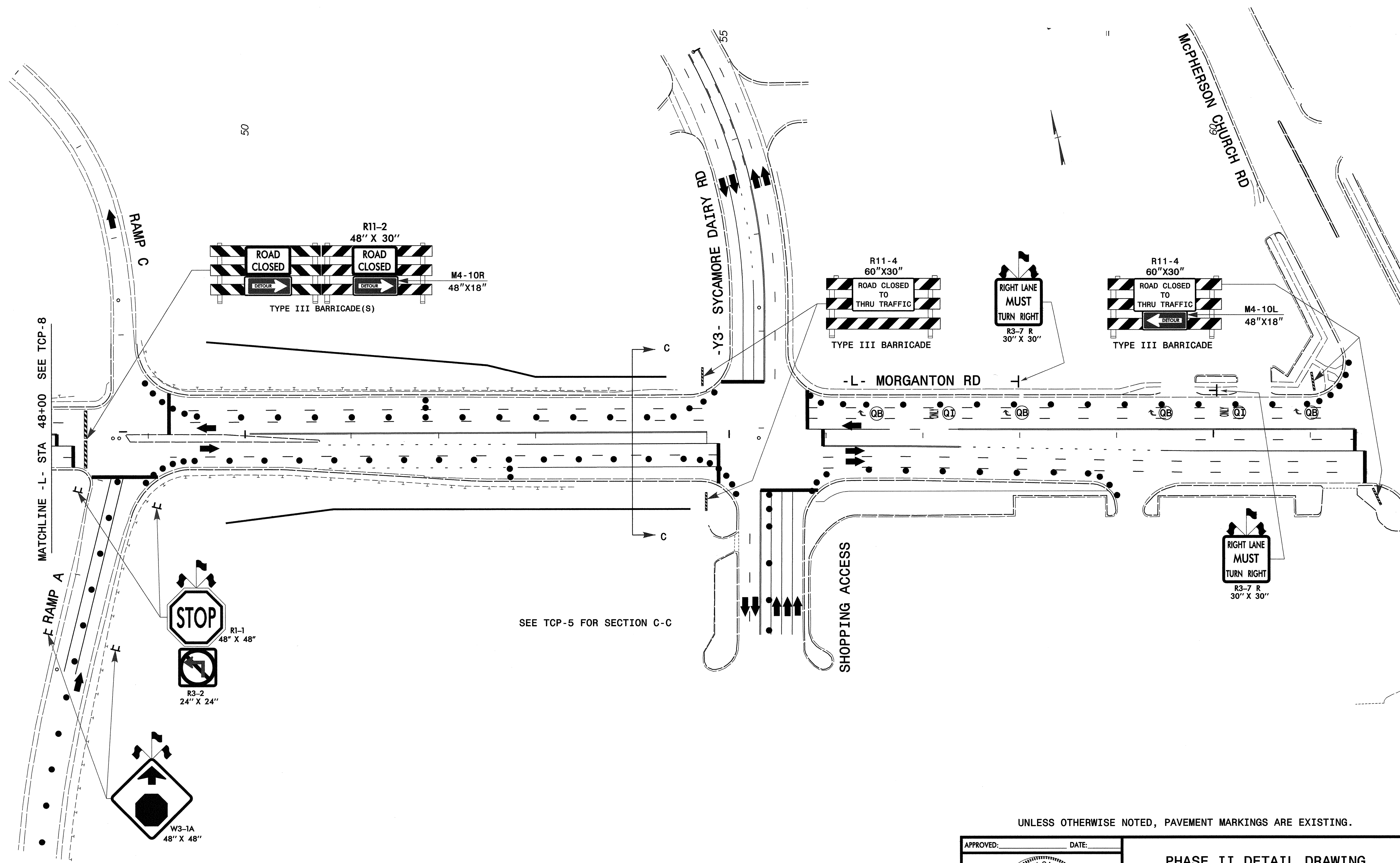
MATCHLINE -L- STA 39+00 SEE TCP-7

UNLESS OTHERWISE NOTED, PAVEMENT MARKINGS ARE EXISTED.

**WilburSmith**  
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 ENGINEERS  
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 ECONOMISTS  
 421 Fayetteville Street  
 Suite 1303  
 Raleigh, North Carolina 27601  
 phone: (919) 755-0583  
 fax: (919) 832-8798

APPROVED:	DATE:	<b>PHASE II DETAIL DRAWING</b>									
SCALE: NONE											
DATE: 6/2007											
DWG. BY: KWB											
DESIGN BY: WMD											
REVIEWED BY: WEL		<table border="1"> <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											

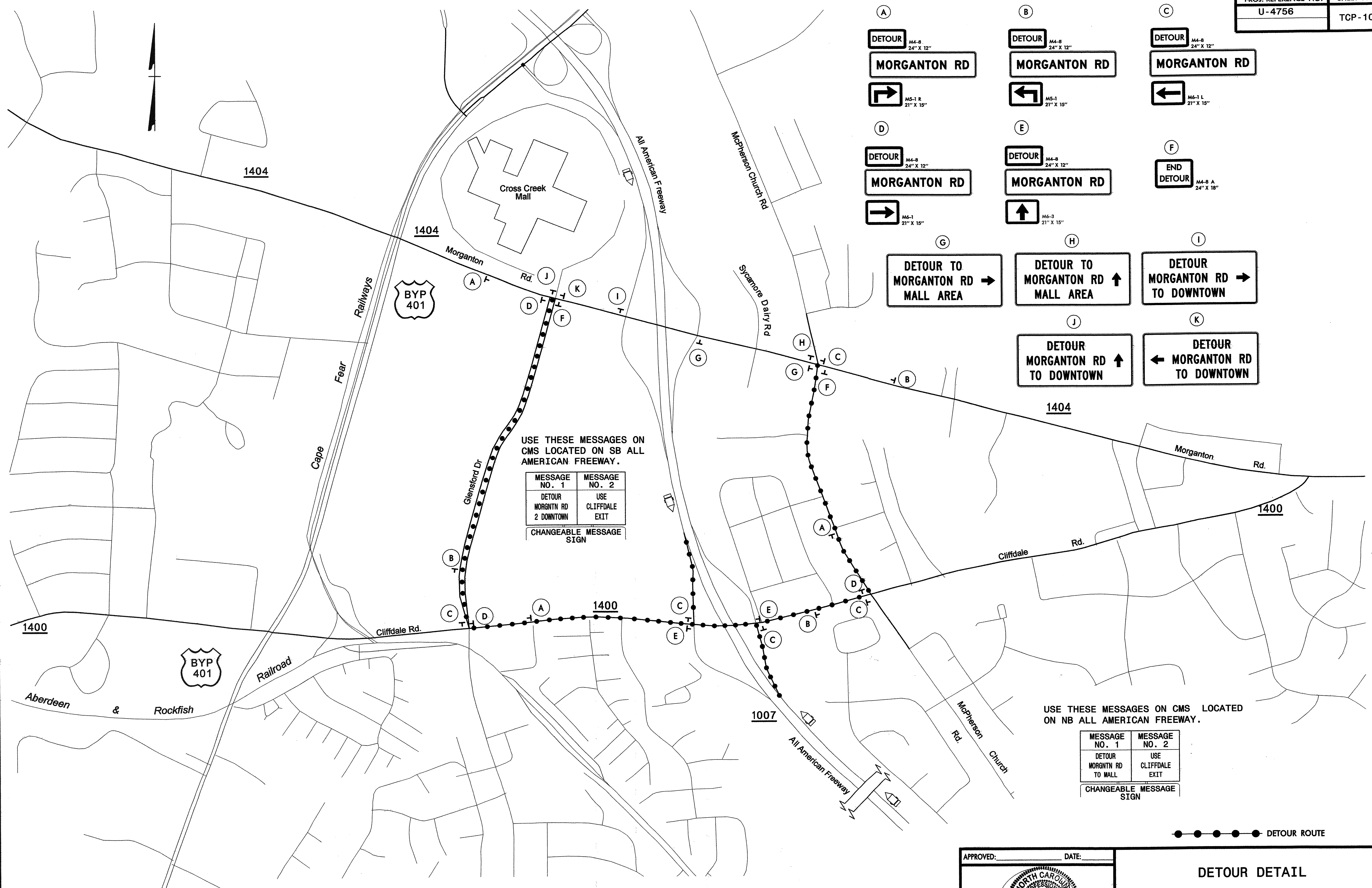




UNLESS OTHERWISE NOTED, PAVEMENT MARKINGS ARE EXISTING.

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Raleigh, North Carolina 27601  
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APPROVED: _____	DATE: _____	<b>PHASE II DETAIL DRAWING</b>									
SCALE: NONE	DATE: 6/2007										
DWG. BY: KWB	DESIGN BY: WMD										
REVIEWED BY: WEL											
		<table border="1"> <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											



USE THESE MESSAGES ON CMS LOCATED ON SB ALL AMERICAN FREEWAY.

MESSAGE NO. 1 DETOUR MORGANTN RD 2 DOWNTOWN	MESSAGE NO. 2 USE CLIFFDALE EXIT
CHANGEABLE MESSAGE SIGN	

USE THESE MESSAGES ON CMS LOCATED ON NB ALL AMERICAN FREEWAY.

MESSAGE NO. 1 DETOUR MORGANTN RD TO MALL	MESSAGE NO. 2 USE CLIFFDALE EXIT
CHANGEABLE MESSAGE SIGN	

●●●●● DETOUR ROUTE

NOTES:  
LOCATE CHANGEABLE MESSAGE BOARDS AS DIRECTED BY THE ENGINEER.  
DISPLAY MESSAGES AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
SEE TCP-11 FOR SIGN DESIGNS.

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

SEAL

6-25-07

**DETOUR DETAIL**

SCALE: NONE		REVISIONS
DATE: 6/2007		
DWG. BY: KWB		
DESIGN BY: WMD		
REVIEWED BY: WEL		

**DESIGN BY: K. Bisy** **CHECKED BY: W. Letchworth** **STD #:** **DATE: Jun 05, 2007**

**PROJECT ID: U-4756** **DIV: 6**

**SIGN NUMBER: name** **BACKG COLOR: Orange** **COPY COLOR: Black**

**TYPE: D**

**QUANTITY: 1**

SYMBOL	X	Y	WID	HT
ARUP	63.0	15	6	9

**SIGN WIDTH: 6'-6"** **HEIGHT: 3'-0"**

**TOTAL AREA: 19.0 Sq.Ft.**

**BORDER TYPE: FLUSH** **RECESS: 0.47"** **WIDTH: 0.63"** **RADII: 1.5"**

**MAT'L: 0.063" (1.6 mm) ALUMINUM**  
**0.080" (2.0 mm) ALUMINUM**  
**0.125" (3.2 mm) ALUMINUM**

**NO. Z BARS: LENGTH:**

**USE NOTES: 2, 4**

- Legend and border shall be direct applied Type III reflective sheeting.
- Legend and border shall be direct applied non-reflective sheeting.
- Shields shall be Type III reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
- Background shall be Type III reflective sheeting.
- Background shall be Type I reflective sheeting.
- Center arrow(s) vertically on sign.
- Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

**LETTER POSITIONS**

Letter locations are panel edge to lower left corner

Series/Size	Text Length
D	2000
E	61.7

Spacing Factor is 1 unless specified otherwise

FILENAME: U-4756\_TC\_DETURNS NORTH CAROLINA D.O.T. SIGN DETAIL

**DESIGN BY: K. Bisy** **CHECKED BY: W. Letchworth** **STD #:** **DATE: Jun 05, 2007**

**PROJECT ID: U-4756** **DIV: 6**

**SIGN NUMBER: name** **BACKG COLOR: Orange** **COPY COLOR: Black**

**TYPE: D**

**QUANTITY: 1**

SYMBOL	X	Y	WID	HT
ARUP	63.0	15	6	9

**SIGN WIDTH: 6'-6"** **HEIGHT: 3'-0"**

**TOTAL AREA: 19.0 Sq.Ft.**

**BORDER TYPE: FLUSH** **RECESS: 0.47"** **WIDTH: 0.63"** **RADII: 1.5"**

**MAT'L: 0.063" (1.6 mm) ALUMINUM**  
**0.080" (2.0 mm) ALUMINUM**  
**0.125" (3.2 mm) ALUMINUM**

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- Legend and border shall be direct applied Type III reflective sheeting.
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- Shields shall be Type III reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
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- Background shall be Type I reflective sheeting.
- Center arrow(s) vertically on sign.
- Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

**LETTER POSITIONS**

Letter locations are panel edge to lower left corner

Series/Size	Text Length
D	2000
E	38
F	2000
G	52.7
H	2000
I	38.9

Spacing Factor is 1 unless specified otherwise

FILENAME: U-4756\_TC\_DETURNS NORTH CAROLINA D.O.T. SIGN DETAIL

**DESIGN BY: K. Bisy** **CHECKED BY: W. Letchworth** **STD #:** **DATE: Jun 05, 2007**

**PROJECT ID: U-4756** **DIV: 6**

**SIGN NUMBER: name** **BACKG COLOR: Orange** **COPY COLOR: Black**

**TYPE: D**

**QUANTITY: 1**

SYMBOL	X	Y	WID	HT
ARUP	65.4	13.6	6	9

**SIGN WIDTH: 6'-6"** **HEIGHT: 3'-0"**

**TOTAL AREA: 18.6 Sq.Ft.**

**BORDER TYPE: FLUSH** **RECESS: 0.47"** **WIDTH: 0.63"** **RADII: 1.5"**

**MAT'L: 0.063" (1.6 mm) ALUMINUM**  
**0.080" (2.0 mm) ALUMINUM**  
**0.125" (3.2 mm) ALUMINUM**

**NO. Z BARS: LENGTH:**

**USE NOTES: 2, 4, 6**

- Legend and border shall be direct applied Type III reflective sheeting.
- Legend and border shall be direct applied non-reflective sheeting.
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**LETTER POSITIONS**

Letter locations are panel edge to lower left corner

Series/Size	Text Length
D	2000
E	38
F	2000
G	52.7
H	2000
I	38.9

Spacing Factor is 1 unless specified otherwise

FILENAME: U-4756\_TC\_DETURNS NORTH CAROLINA D.O.T. SIGN DETAIL

**DESIGN BY: K. Bisy** **CHECKED BY: W. Letchworth** **STD #:** **DATE: Jun 05, 2007**

**PROJECT ID: U-4756** **DIV: 6**

**SIGN NUMBER: name** **BACKG COLOR: Orange** **COPY COLOR: Black**

**TYPE: D**

**QUANTITY: 1**

SYMBOL	X	Y	WID	HT
ARUP	63.0	15	6	9

**SIGN WIDTH: 6'-6"** **HEIGHT: 3'-0"**

**TOTAL AREA: 19.5 Sq.Ft.**

**BORDER TYPE: FLUSH** **RECESS: 0.47"** **WIDTH: 0.63"** **RADII: 1.5"**

**MAT'L: 0.063" (1.6 mm) ALUMINUM**  
**0.080" (2.0 mm) ALUMINUM**  
**0.125" (3.2 mm) ALUMINUM**

**NO. Z BARS: LENGTH:**

**USE NOTES: 2, 4, 6**

- Legend and border shall be direct applied Type III reflective sheeting.
- Legend and border shall be direct applied non-reflective sheeting.
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**LETTER POSITIONS**

Letter locations are panel edge to lower left corner

Series/Size	Text Length
D	2000
E	24.7
F	2000
G	52.7
H	2000
I	48.4

Spacing Factor is 1 unless specified otherwise

FILENAME: U-4756\_TC\_DETURNS NORTH CAROLINA D.O.T. SIGN DETAIL

**DESIGN BY: K. Bisy** **CHECKED BY: W. Letchworth** **STD #:** **DATE: Jun 05, 2007**

**PROJECT ID: U-4756** **DIV: 6**

**SIGN NUMBER: name** **BACKG COLOR: Orange** **COPY COLOR: Black**

**TYPE: D**

**QUANTITY: 1**

SYMBOL	X	Y	WID	HT
ARUP	51.1	15	6	9

**SIGN WIDTH: 6'-6"** **HEIGHT: 3'-0"**

**TOTAL AREA: 19.5 Sq.Ft.**

**BORDER TYPE: FLUSH** **RECESS: 0.47"** **WIDTH: 0.63"** **RADII: 1.5"**

**MAT'L: 0.063" (1.6 mm) ALUMINUM**  
**0.080" (2.0 mm) ALUMINUM**  
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Letter locations are panel edge to lower left corner

Series/Size	Text Length
D	2000
E	24.7
F	2000
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Spacing Factor is 1 unless specified otherwise

FILENAME: U-4756\_TC\_DETURNS NORTH CAROLINA D.O.T. SIGN DETAIL

**DESIGN BY: K. Bisy** **CHECKED BY: W. Letchworth** **STD #:** **DATE: Jun 05, 2007**

**PROJECT ID: U-4756** **DIV: 6**

**SIGN NUMBER: name** **BACKG COLOR: Orange** **COPY COLOR: Black**

**TYPE: D**

**QUANTITY: 1**

SYMBOL	X	Y	WID	HT
ARUP	65.4	13.6	6	9

**SIGN WIDTH: 6'-6"** **HEIGHT: 3'-0"**

**TOTAL AREA: 19.5 Sq.Ft.**

**BORDER TYPE: FLUSH** **RECESS: 0.47"** **WIDTH: 0.63"** **RADII: 1.5"**

**MAT'L: 0.063" (1.6 mm) ALUMINUM**  
**0.080" (2.0 mm) ALUMINUM**  
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**USE NOTES: 2, 4, 6**

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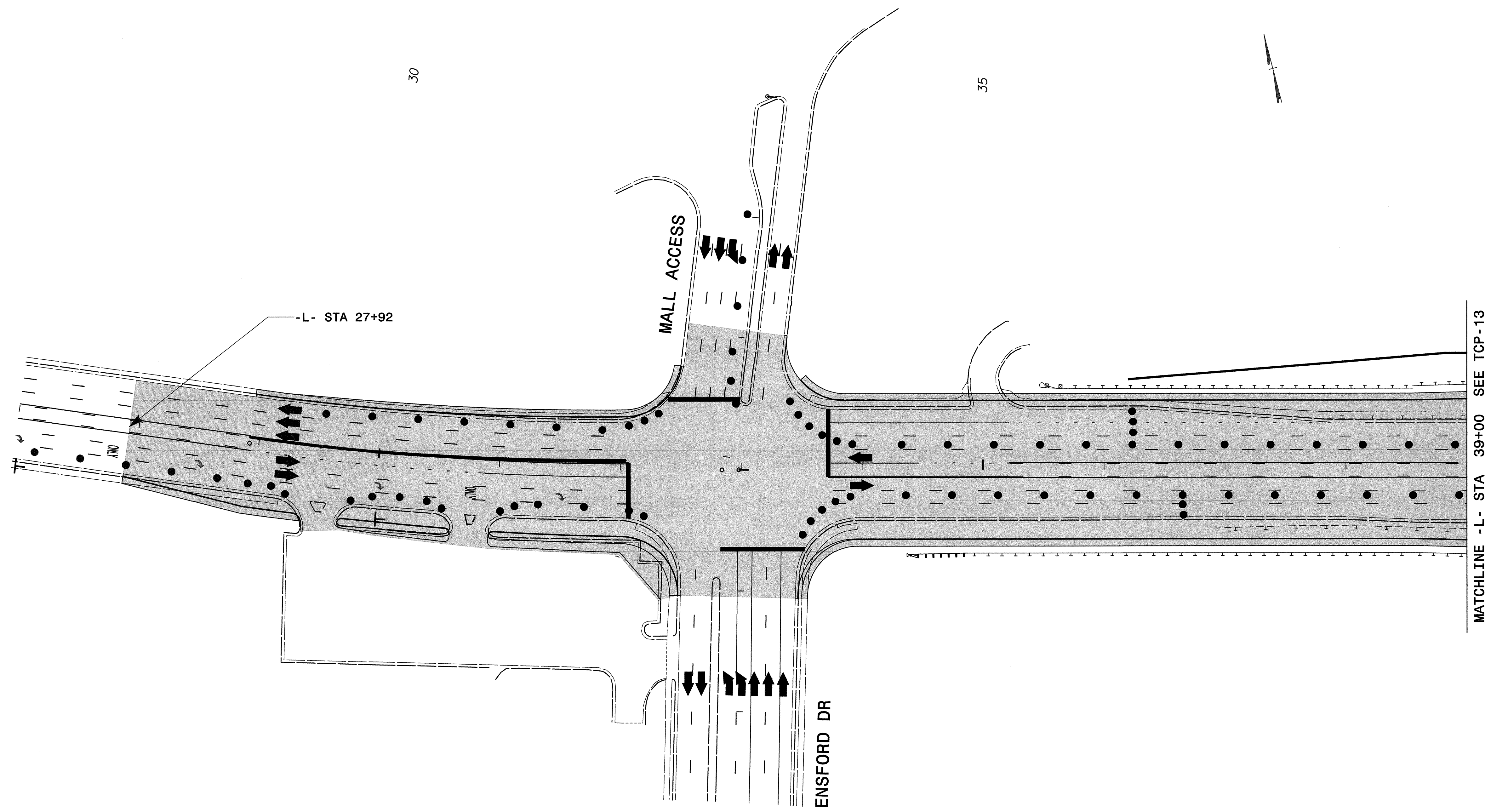
**LETTER POSITIONS**

Letter locations are panel edge to lower left corner


Series/Size	Text Length
D	2000
E	24.7
F	2000
G	52.7
H	2000
I	48.4

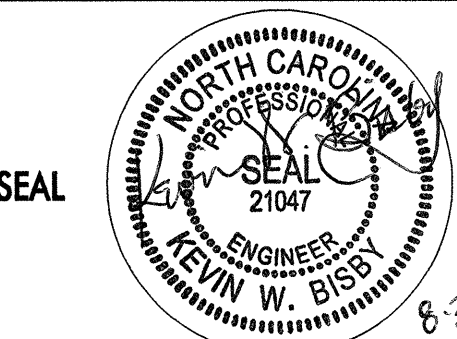
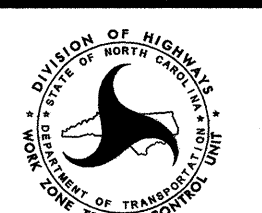
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FILENAME: U-4756\_TC\_DETURNS NORTH CAROLINA D.O.T. SIGN DETAIL



PAVEMENT MARKINGS ARE EXISTING

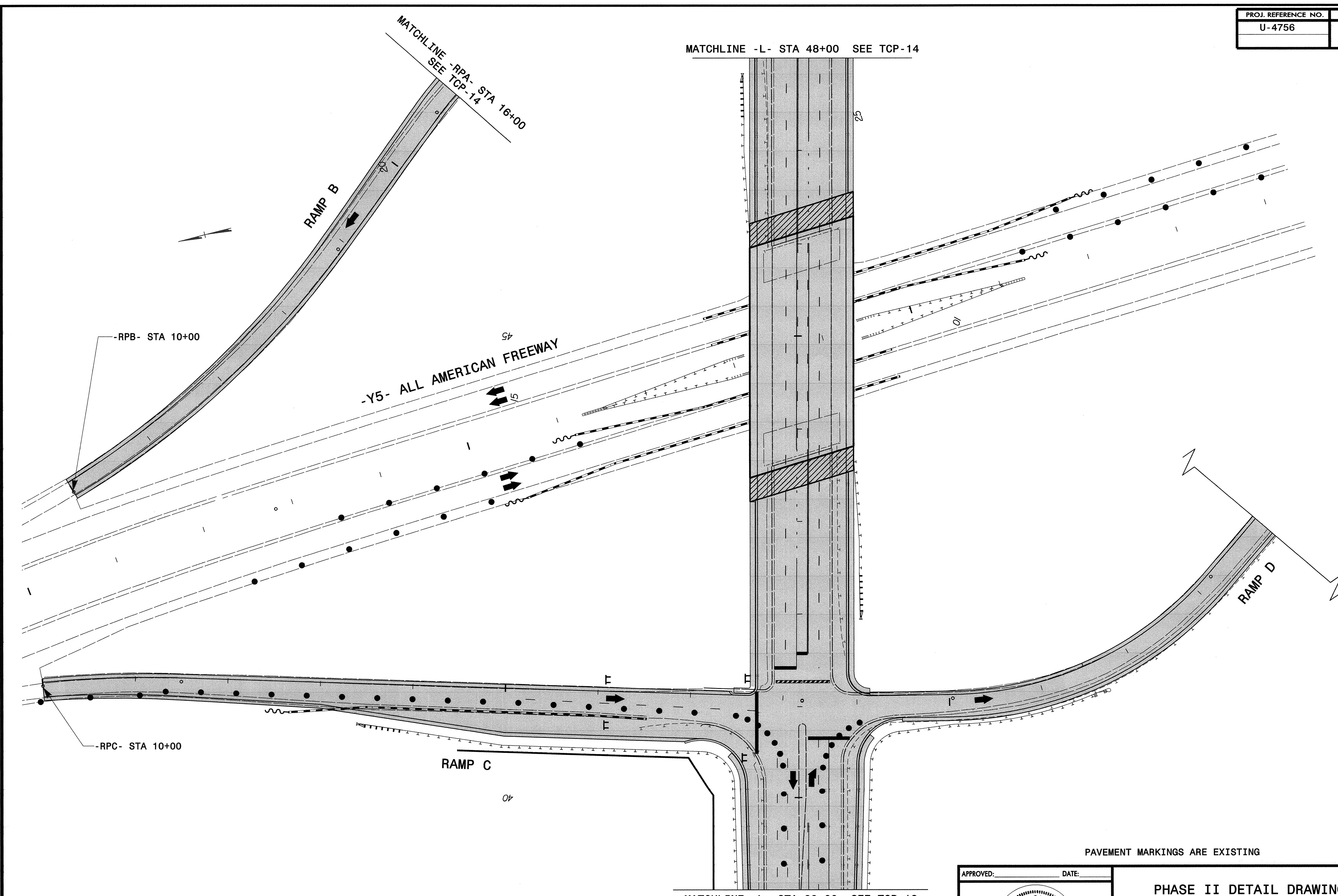

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APPROVED:	DATE:	<b>PHASE II DETAIL DRAWING</b>	
			
SCALE:	NONE		REVISIONS
DATE:	6/2007		
DWG. BY:	KWB		
DESIGN BY:	WMD		
REVIEWED BY:	WEL		

PROJ. REFERENCE NO.	SHEET NO.
U-4756	TCP-13

MATCHLINE -L- STA 48+00 SEE TCP-14

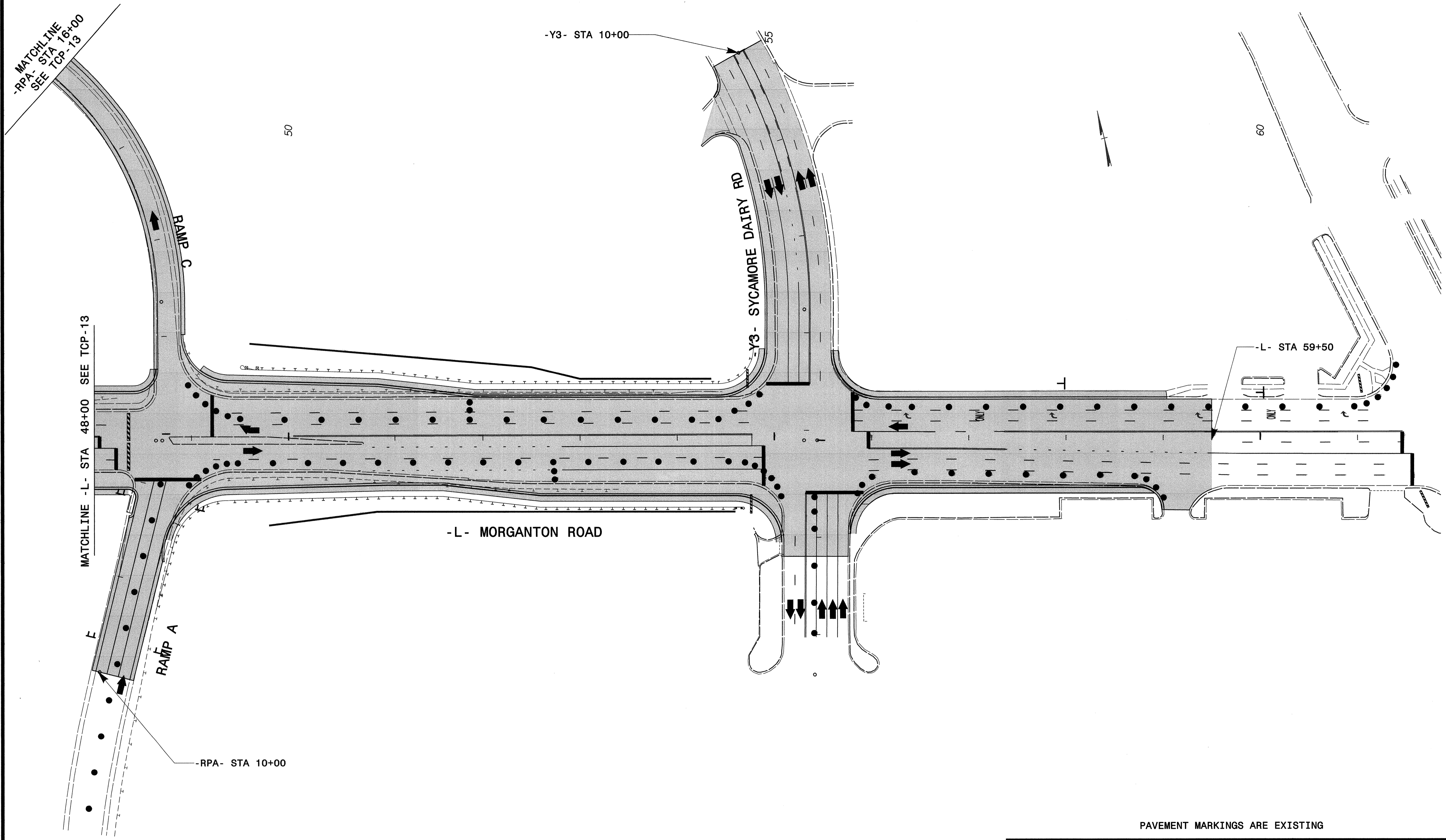
MATCHLINE -RPA- STA 16+00  
SEE TCP-14



PAVEMENT MARKINGS ARE EXISTING

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APPROVED:	DATE:	<b>PHASE II DETAIL DRAWING</b>									
SCALE:	NONE										
DATE:	6/2007										
DWG. BY:	KWB										
DESIGN BY:	WMD										
REVIEWED BY:	WEL	<table border="1"> <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											

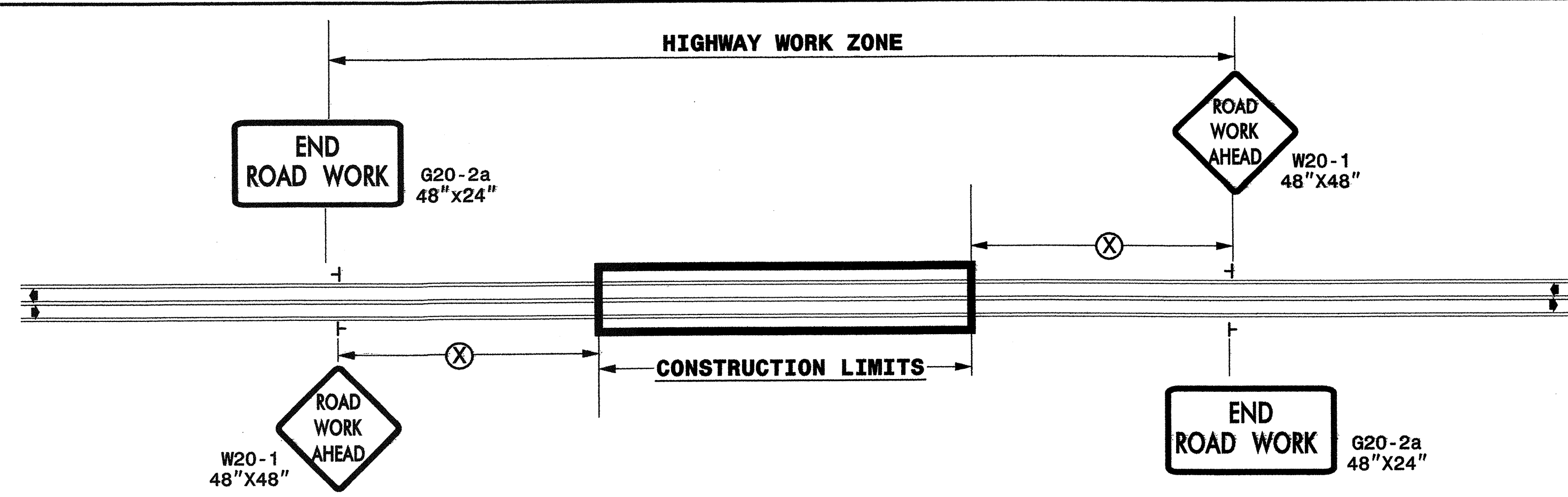


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APPROVED:	DATE:	<b>PHASE II DETAIL DRAWING</b>									
				SCALE: NONE	<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS					
		REVISIONS									
		DATE: 6/2007									
		DWG. BY: KWB									
		DESIGN BY: WMD									
		REVIEWED BY: WEL									

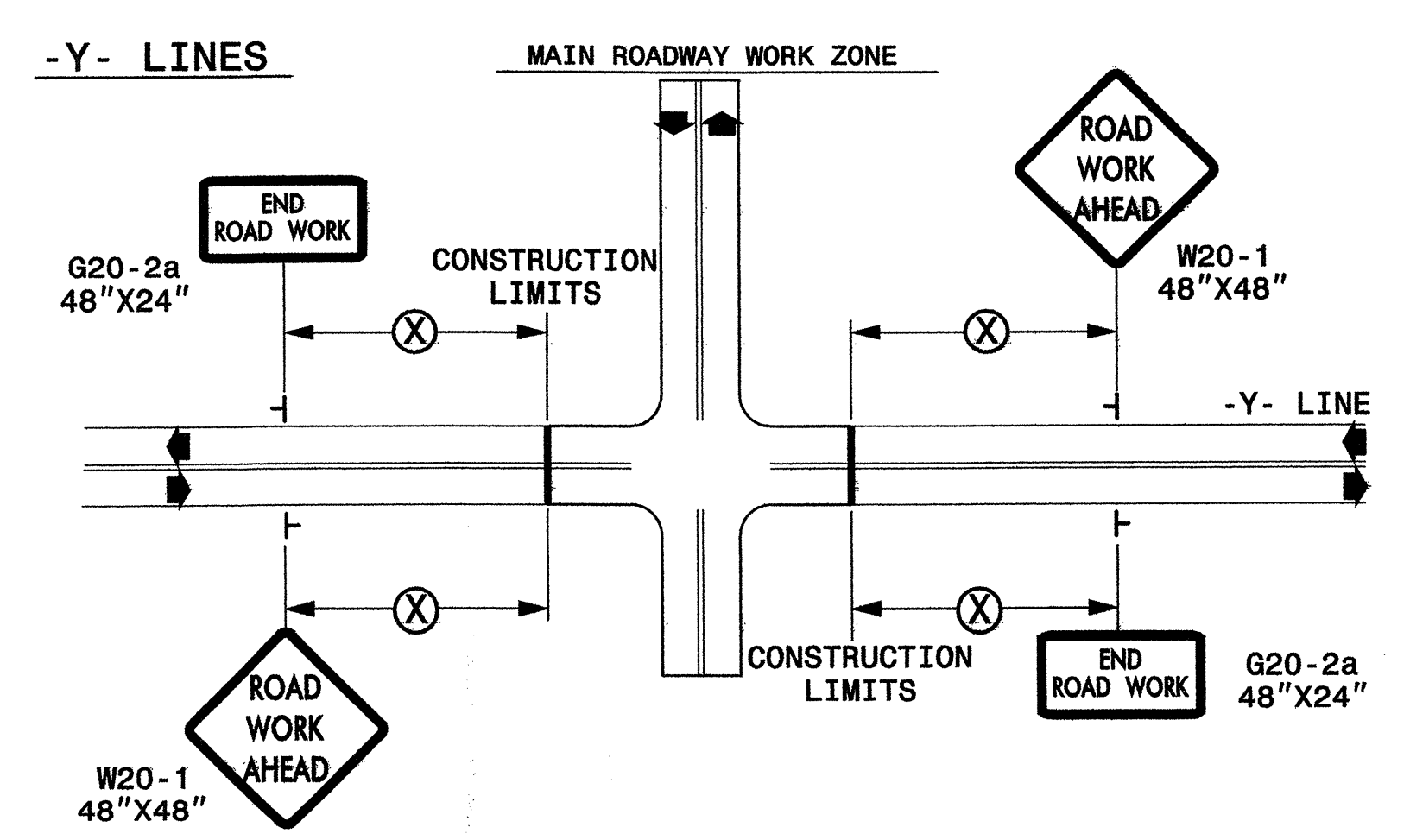
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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

**LEGEND**

┆ STATIONARY SIGN

◀ DIRECTION OF TRAFFIC FLOW

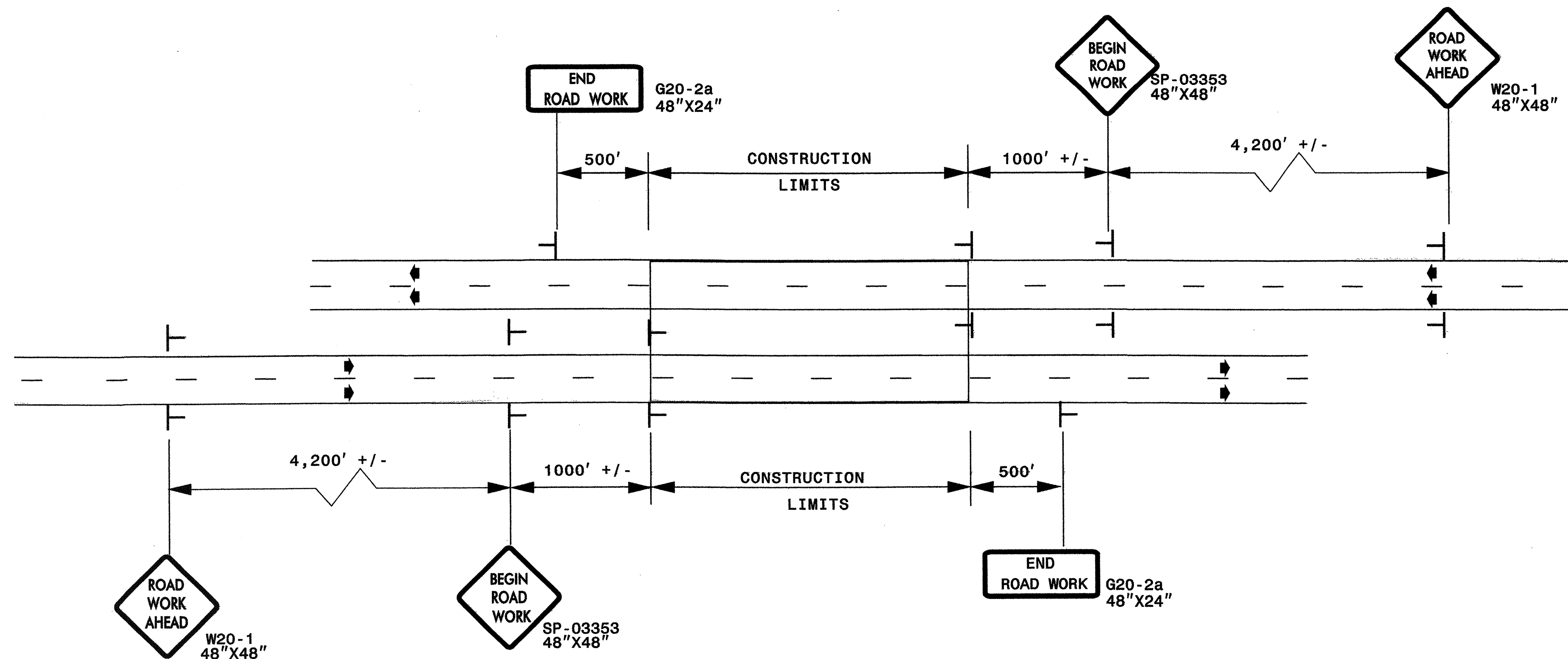
APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
	SCALE: NONE	REVISIONS
	DATE: 10/01	7-98 10/01
	DESIGN BY:	10-98 03/04
	REVIEWED BY:	01/01 11/04

SYSTEMS TIME \$\$\$\$\$\$  
DUPLICATE \$\$\$\$\$\$  
SERIAL \$\$\$\$\$\$

# ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS (4 LANES OR GREATER)

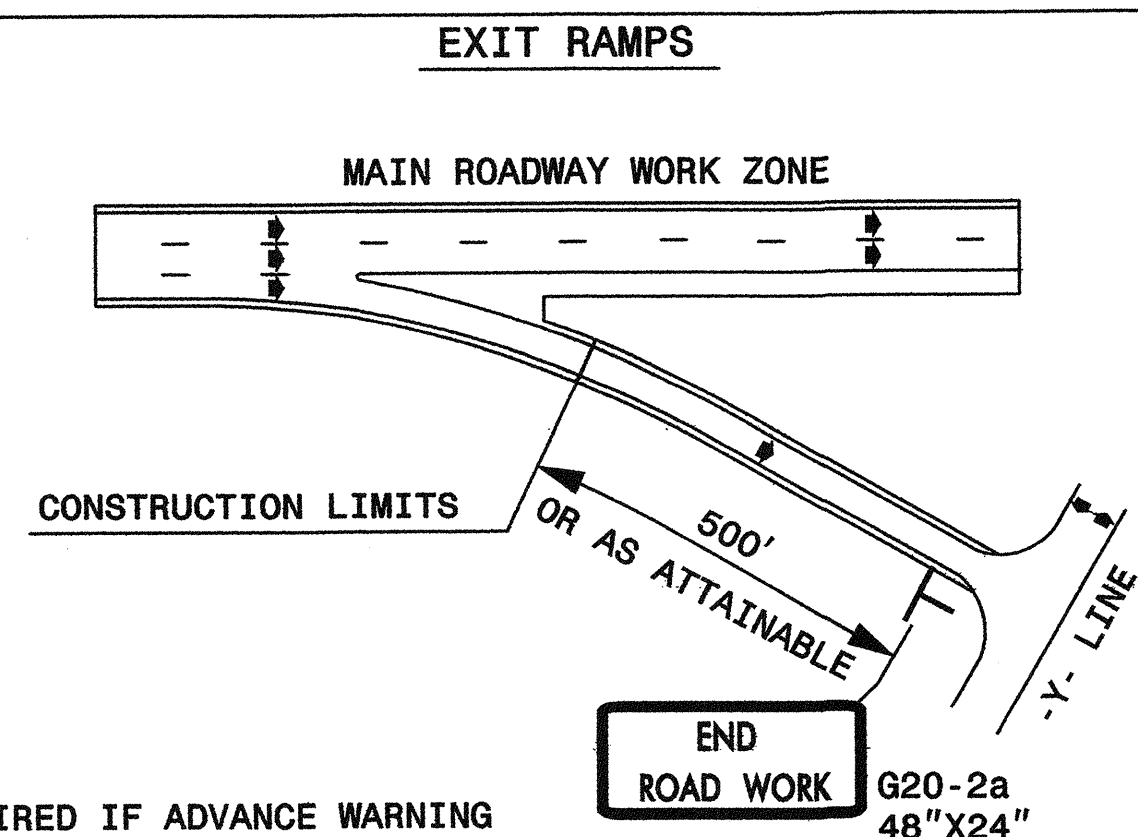
PROJ. REFERENCE NO.	SHEET NO.
U-4756	TCP-16

## DETAIL A



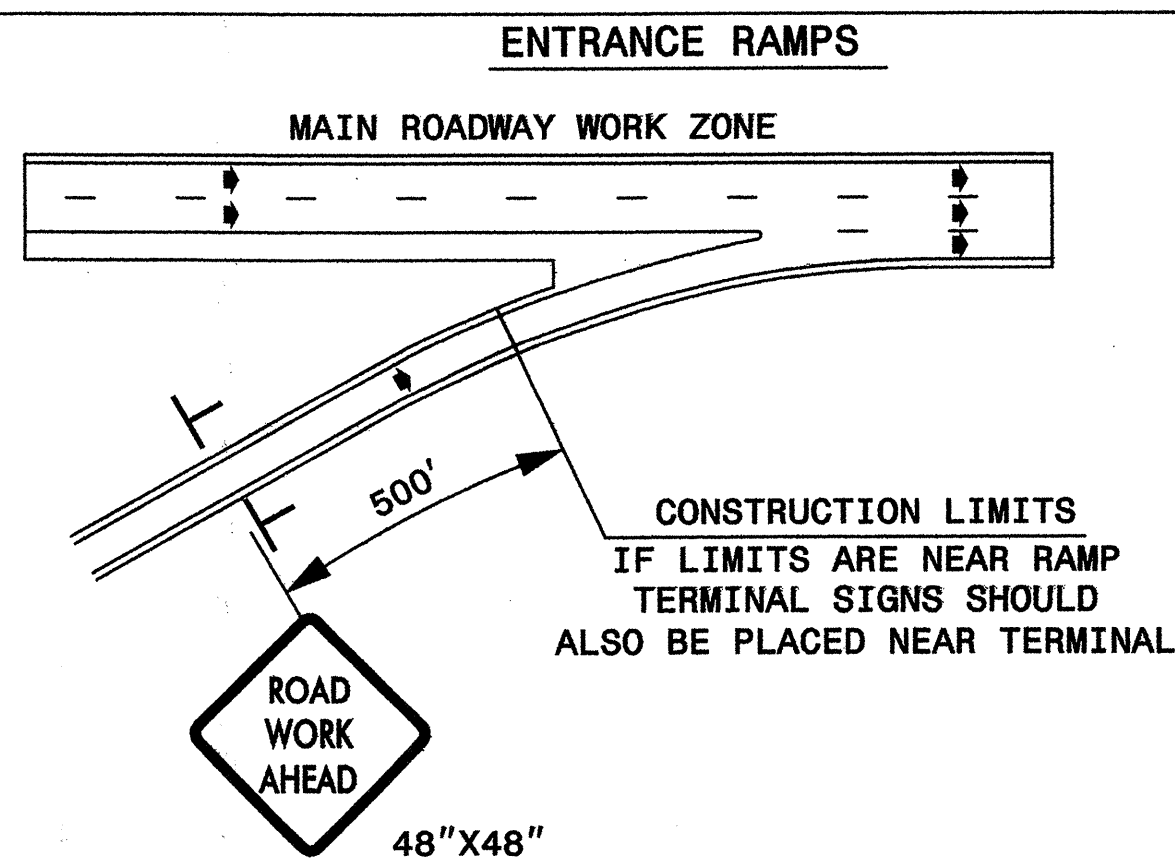
LEGEND	
	STATIONARY SIGN
▶	DIRECTION OF TRAFFIC FLOW

## DETAIL B

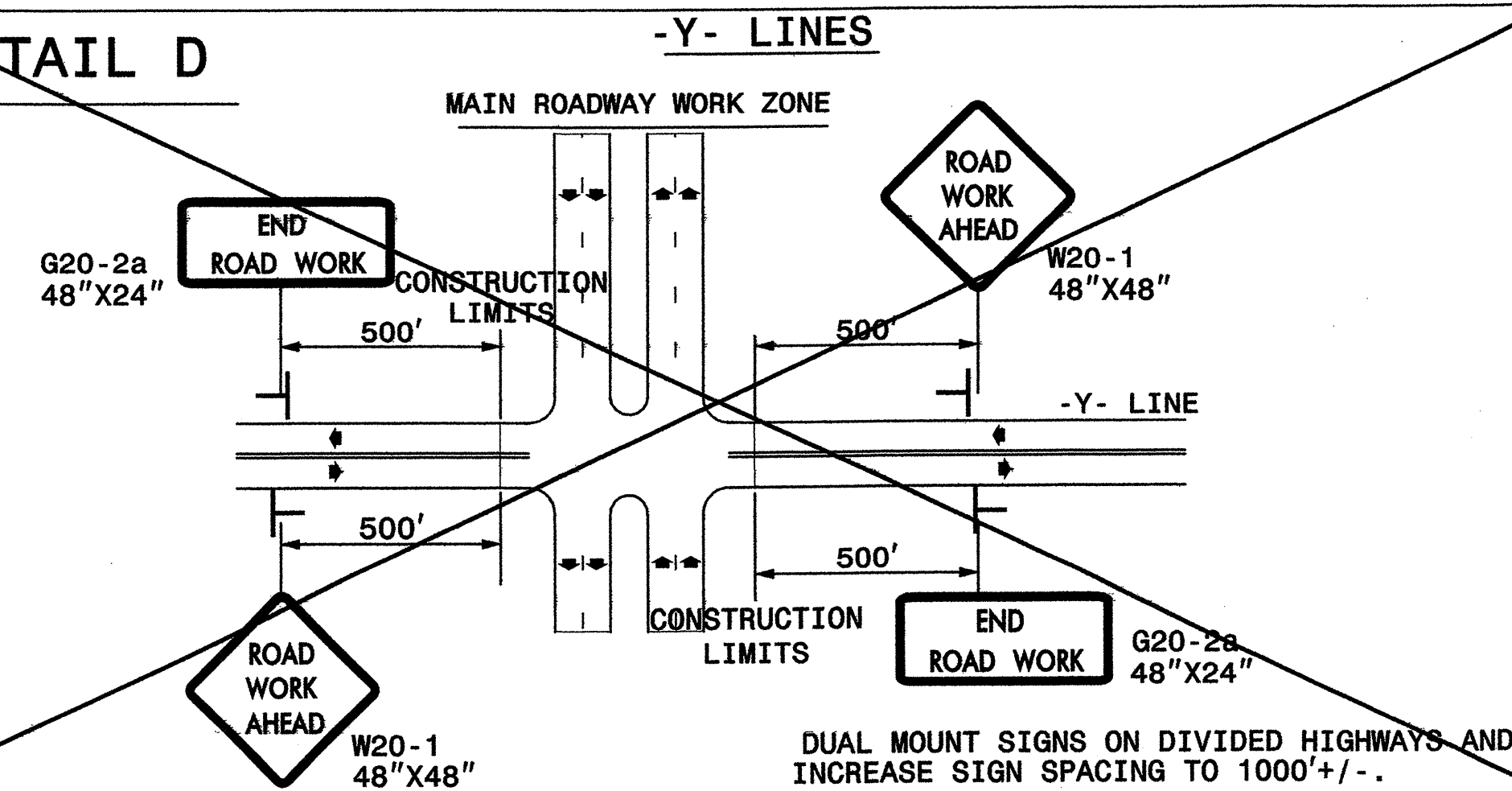


NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

## DETAIL C



## DETAIL D



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND INCREASE SIGN SPACING TO 1000'+/-.

## 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: _____ DATE: _____	ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)		
	SCALE: NONE		
	DATE: 8/03		REVISIONS
	DWG. BY: JI		03/04
	DESIGN BY: JI		CADD FILE
REVIEWED BY: _____			

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$JUSERNAME\$\$\$\$\$  
\$\$\$\$\$DONS\$\$\$\$\$