

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
R-4430	TCP-1

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

R-4430

**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
1205.07	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)
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
1267.01	FLEXIBLE DELINEATOR INSTALLATION
1267.02	FLEXIBLE DELINEATOR SPACING
1267.03	FLEXIBLE DELINEATOR-INTERCHANGES

**INDEX OF SHEETS**

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TCP-2 & TCP-2A	PROJECT NOTES
TCP-3 & TCP-3A	PHASING
TCP-3B	TEMPORARY SHORING NOTES
TCP-3C	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TCP-4 THRU TCP-6	PHASE I TEMPORARY PAVEMENT DETAILS
TCP-7 THRU TCP-16	PHASE I DETAILS
TCP-17 THRU TCP-26	PHASE II DETAILS
TCP-27 THRU TCP-31	PHASE III DETAILS
TCP-32	DETOUR ROUTE FOR -Y7- CLOSURE
TCP-33	DETOUR ROUTE FOR -Y5- CLOSURE
TCP-34	DETOUR ROUTE FOR -Y16- CLOSURE
TCP-35	DETOUR ROUTES FOR RAMP CLOSURES
TCP-36	ADVANCED WORK ZONE WARNING SIGNS
SD-1	SPECIAL SIGN DESIGN
PM-1	FINAL PAVEMENT MARKING SCHEDULE
PM-2 THRU PM-12	FINAL 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)
  - STATIONARY SIGN
  - PORTABLE SIGN
  - STATIONARY OR PORTABLE SIGN
  - 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

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**TIP PROJECT:**

APPROVED: DATE:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
SEAL	J. S. BOURNE, PE TRAFFIC CONTROL ENGINEER
	J. S. KITE, PE TRAFFIC CONTROL PROJECT ENGINEER
	D. A. PARKER TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	D. E. RICHARDSON TRAFFIC CONTROL DESIGN ENGINEER

# PROJECT NOTES

PROJ. REFERENCE NO.	SHEET NO.
R-4430	TCP-2

## 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 UNDESIRED 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:

ROAD NAME	DAY AND TIME RESTRICTIONS
-L- UPWARD RD	MONDAY THRU SUNDAY 7AM TO 7PM
-Y1- US 176	MONDAY THRU SUNDAY 7AM TO 7PM
-Y10- I-26	MONDAY THRU SUNDAY 6AM TO 7PM

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

ROAD NAME
-L- UPWARD RD
-Y1- US 176
-Y10- I-26

### 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 6AM DECEMBER 31st TO 7PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7PM THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6AM THURSDAY AND 7PM MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6AM FRIDAY TO 7PM TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6AM THE DAY BEFORE INDEPENDENCE DAY AND 7PM THE DAY AFTER INDEPENDENCE DAY.  
  
IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 7PM THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6AM FRIDAY AND 7PM TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6AM TUESDAY TO 7PM MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
-Y10- I-26	MONDAY THRU SUNDAY 6AM TO 9PM

### 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 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.
- F) 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.
- 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.
- H) DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON UPWARD RD.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- I) 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.
- J) 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 (W8-11) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

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

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# PHASING

**PHASE I**

INSTALL ALL ADVANCED WORK ZONE WARNING SIGNS ACORDING TO TCP-35

STEP 1: USING RSD 1101.02, SHEETS 1 AND 3 OF 9, MILL AND RESURFACE -L- (UPWARD RD) AS DIRECTED BY THE ENGINEER (SEE RDY PLANS)

STEP 2: USING RSD 1101.02, SHEET 3 OF 9, INSTALL PCB ALONG I-26 AND BEGIN CONSTRUCTION OF -L- DETOUR STRUCTURE AND APPROACHES (SEE TCP-5). USE FLAGGERS TO SLOW/DIRECT RAMP TRAFFIC DURING HAULING OPERATIONS ALONG THE RAMPS.

WHEN INSTALLING TEMPORARY BRIDGE MEMBERS OVER I-26, CLOSE I-26 AND DETOUR TRAFFIC ALONG THE RAMPS. USE POLICE ASSISTANCE TO DIRECT TRAFFIC AT THE UPWARD ROAD INTERSECTIONS. (SEE RSD 1101.03, SHEET 7 OF 9)

USING FLAGGERS TO SLOW/DIRECT TRAFFIC, BEGIN CONSTRUCTION OF -Y11- DETOUR AND -Y12- DETOUR. (SEE RSD 1101.02 AND TCP-5)

USING RSD 1101.02 AND FLAGGERS, INSTALL WATERFILLED BARRIER AS SHOWN ON TCP-10. BEGIN CONSTRUCTION OF STAGE I STRUCTURE AT BAT FORK CREEK. (SEE STRUCTURE PLANS). NOTE: THE WATERFILLED BARRIER MAY BE REMOVED DURING WORK HOURS TO GAIN ACCESS TO THE BRIDGE SITE. BARRIER IS TO BE REPLACED AT THE END OF EACH WORK DAY. NO PAYMENT WILL BE MADE FOR THIS REMOVAL AND REINSTALLATION

CONSTRUCT TEMPORARY PAVEMENT UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT AS SHOWN ON TCP-4 THRU TCP-6.

STEP 3: USING POLICE ASSISTANCE AND FLAGGERS TO SLOW/DIRECT TRAFFIC, REVISE THE PAVEMENT MARKINGS FROM STA 23+81+/- TO STA 29+26+/- AND PLACE TRAFFIC IN THE PATTERN AS SHOWN ON TCP-7 AND TCP-8. (SEE SIGNAL PLANS)

STEP 4: USING RSD 1101.02 AND FLAGGERS, INSTALL PCB FROM STA 25+45 +/- TO STA 28+15 AS SHOWN ON TCP-7. BEHIND PCB, INSTALL THE TEMPORARY SHORING AND BEGIN STAGE I CONSTRUCTION OF THE PROPOSED CULVERT AS SHOWN ON TCP-7.

STEP 5: BEGIN CONSTRUCTION OF PROPOSED -L- AS SHOWN ON TCP-7 THRU TCP-16 UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE (SEE RSD 1101.02)

NOTE: WORK ALONG PORTIONS OF -L- WILL REQUIRE WEDGING AND OVERLAYING OF THE EXISTING PAVEMENT TO PREVENT DRAINAGE ISSUES. (SEE LOCAL NOTE 1 ON TCP-2A)

NOTE: -Y16- CAN BE CLOSED ONCE -L- TRAFFIC IS SHIFTED ONTO THE DETOUR STRUCTURE AT I-26.

NOTE: -Y7- WILL BE CLOSED ONCE STAGE I OF THE BAT FORK CREEK STRUCTURE IS COMPLETED.

STEP 6: COMPLETE THE WORK BEGAN IN PHASE I, STEP 2 ASSOCIATED WITH THE DETOUR STRUCTURE AND ALIGNMENTS FOR -L-, -Y11- AND -Y12-.

AWAY FROM TRAFFIC, INSTALL TEMPORARY SHORING FOR PROPOSED STRUCTURE AT THE I-26 INTERCHANGE AS SHOWN ON TCP-11 AND TCP-12.

MAJOR TRAFFIC SWITCH

COMPLETE THE WORK OF STEP 7 THROUGH STEP 9 FROM 8PM FRIDAY TO 6AM MONDAY. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 7: USING RSD 1101.02, SHEET 1 OF 9 AND POLICE ASSISTANCE AT THE I-26 INTERCHANGE, PLACE WESTBOUND -L- (UPWARD ROAD) IN A 1 LANE, 1 WAY PATTERN. WEDGE/OVELAY AND INSTALL PAVEMENT MARKING FROM STA 75+50 +/- TO STA 108+00 +/- AS SHOWN ON TCP-10 THROUGH TCP-13.

STEP 8: USING FLAGGING AND POLICE, SLOW/DIRECT -L- (UPWARD ROAD) INTO THE DETOUR ALIGNMENT AND COMPLETE THE REMAINING MARKINGS FROM STA 75+50+/- TO STA 108+00+/- (SEE TCP-10 THROUGH TCP-13)

REVISE THE TRAFFIC SIGNALS AT -Y7-, -Y8-, -Y11- AND -Y13 (SEE SIGNAL PLANS)

STEP 9: USING FLAGGERS AND POLICE ASSISTANCE, TIE-IN RAMP 'A' AND RAMP 'B' AND OPEN UPWARD ROAD AND THE I-26 RAMPS TO THE TRAFFIC PATTERNS AS SHOWN ON TCP-10 THROUGH TCP-13.

STEP 10: BEGIN CONSTRUCTION OF THE PROPOSED STRUCTURE AT THE I-26 INTERCHANGE (SEE TCP-11 AND TCP-12)

WHEN REMOVING THE EXISTING BRIDGE AND/OR INSTALLING PROPOSED BRIDGE GIRDERS OVER I-26, CLOSE I-26 AND DETOUR TRAFFIC ALONG THE RAMPS. USE POLICE ASSISTANCE TO DIRECT TRAFFIC AT THE UPWARD ROAD INTERSECTIONS. (SEE RSD 1101.03, SHEET 7 OF 9)

STEP 11: USING RSD 1101.03, SHEET 1 OF 9, CLOSE -Y16- (BALLENGER RD) AND DETOUR TRAFFIC AS SHOWN ON TCP-34.

STEP 12: CONSTRUCT -Y16- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. PLACE MARKINGS AND MARKERS AND REOPEN TO TRAFFIC.

STEP 13: COMPLETE STAGE I OF THE PROPOSED CULVERT AND COMPLETE STAGE I OF THE BAT FORK CREEK STRUCTURE

**PHASE II**

STEP 1: COMPLETE THE -L- WORK BEGAN IN PHASE I AND COMPLETE THE PROPOSED STRUCTURE AT THE I-26 INTERCHANGE AWAY FROM TRAFFIC, INSTALL PCB FOR STAGE II CULVERT CONSTRUCTION AS SHOWN ON TCP-17 AND TCP-18

MAJOR TRAFFIC SHIFT: CLOSING OF -Y7- (ALLEN ROAD) AND SHIFTING OF UPWARD ROAD TRAFFIC INTO PHASE II PATTERN

COMPLETE THE WORK OF STEP 2 THROUGH STEP 12 IN 14 CONSECUTIVE DAYS. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES

STEP 2: USING RSD 1101.03, SHEET 1 OF 9, CLOSE -Y7- (ALLEN ROAD) AND DETOUR TRAFFIC AS SHOWN ON TCP-32.

**PHASE II (CONT'D)**

STEP 3: PLACE SIGNALS IN FLASH MODE AND USING FLAGGERS, RESTRIPE -L- AS SHOWN ON TCP-19A. (SEE RSD 1101.02, SHEET 1 OF 9)

STEP 4: USING RSD 1101.02 AND FLAGGERS, INSTALL PCB AS SHOWN ON TCP-19A.

STEP 5: BEHIND PCB, INSTALL TEMPORARY SHORING AND CONSTRUCT THE REMAINING PORTION OF -Y7- (ALLEN ROAD) AND -L- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. (SEE TCP-19A)

INSTALL AS MUCH PAVEMENT MARKING AS POSSIBLE AWAY FROM TRAFFIC FOR THE PHASE II TRAFFIC SHIFT. (SEE TCP-17 THRU TCP-26)

COMPLETE THE WORK OF STEP 6 THROUGH STEP 12 FROM 8PM FRIDAY TO 6AM MONDAY. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 6: USING RSD 1101.02, SHEETS 1 AND 2 OF 9, AND POLICE ASSISTANCE AT THE INTERSECTION OF -L- (UPWARD ROAD) AND -Y- (US 176) AND AT THE I-26 INTERCHANGE, PLACE SIGNALS IN FLASH MODE AND PAVE WESTBOUND -L- (UPWARD ROAD) UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, REMOVE CONFLICTING MARKINGS AND INSTALL PAVEMENT MARKINGS FOR THE PHASE II PATTERN AS SHOWN ON TCP-17, TCP-18, TCP-21, TCP-22 AND TCP-26.

STEP 7: USING THE POLICE AND FLAGGERS, SLOW/DIRECT WESTBOUND -L- UPWARD ROAD TRAFFIC INTO THE PROPOSED WESTBOUND LANES AS SHOWN ON TCP-17 THRU TCP-26.

STEP 8: USING THE POLICE AND FLAGGERS, PAVE AND STRIPE THE REMAINING PORTION OF THE -L- TIE-IN AT THE US 176 INTERSECTION AND FROM STA 157+50+/- TO STA 161+68+/- FOR THE PHASE II PATTERN AS SHOWN ON TCP-17, TCP-21, TCP-22, AND TCP-26.

STEP 9: USING THE POLICE AND FLAGGERS, SLOW/DIRECT TRAFFIC INTO THE PHASE II PATTERNS AS SHOWN ON TCP-17 THRU TCP-26.

STEP 10: USING RSD 1101.02, SHEET 2 OF 9, AND POLICE ASSISTANCE AT THE INTERSECTION, PAVE US 176 UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AND INSTALL MARKINGS AS SHOWN ON TCP-17.

STEP 11: REVISE ALL TRAFFIC SIGNALS TO THE REQUIRED PHASE II PATTERNS AS SHOWN ON TCP-17 THROUGH TCP-26 AND PLACE TRAFFIC INTO THE PHASE II TRAFFIC PATTERN. (SEE SIGNAL PLANS AND TCP-17 THROUGH TCP-22)

STEP 12: INSTALL PCB FROM STA 64+16+/- TO STA 71+84+/- AS SHOWN ON TCP-20. RESTRIPE -Y7- (ALLEN ROAD) AS SHOWN ON TCP-20 AND REOPEN TO TRAFFIC.

STEP 13: COMPLETE THE REMAINING -L- WIDENING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. (SEE RSD 1101.02, SHEETS 1 AND 2 OF 9).




AWAY FROM TRAFFIC AS MUCH AS POSSIBLE, INSTALL PERMANENT CONCRETE ISLANDS AS SHOWN ON TCP-17, TCP-18, TCP-20, TCP-21, AND TCP-22). THE REMAINING PORTION OF THE CONCRETE ISLAND CONSTRUCTION TO TAKE PLACE IN PHASE III.

COMPLETE STAGE II OF THE PROPOSED CULVERT (SEE TCP-17)

WHEN REMOVING THE DETOUR BRIDGE OVER I-26, CLOSE I-26 AND DETOUR TRAFFIC ALONG THE RAMPS. USE POLICE TO DIRECT TRAFFIC AT THE UPWARD ROAD INTERSECTIONS. (SEE RSD 1101.03, SHEET 7 OF 9).

WHEN REMOVING THE APPROACH WORK FOR THE DETOUR BRIDGE, USE FLAGGERS TO SLOW/DIRECT RAMP TRAFFIC DURING HAULING OPERATIONS ALONG THE RAMP.

USING RSD 1101.03, SHEET 1 OF 9, CLOSE -Y5- (NELLO AVE) AND DETOUR TRAFFIC AS SHOWN ON TCP-33. CONSTRUCT -Y5- UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. INSTALL PAVEMENT MARKINGS AND REOPEN TO TRAFFIC AS SHOWN ON TCP-19.

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# PHASING

**PHASE III**

STEP 1: COMPLETE ALL WORK BEGAN IN EITHER PHASE I OR PHASE II.

STEP 2: AWAY FROM TRAFFIC AS MUCH AS POSSIBLE, INSTALL PAVEMENT MARKINGS FOR THE PHASE III TRAFFIC PATTERN AS SHOWN ON TCP-27 THROUGH TCP-31.

COMPLETE THE WORK OF STEP 3 THROUGH STEP 8 FROM 8PM FRIDAY TO 6AM MONDAY. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 3: USING RSD 1101.02, SHEET 2 OF 9, REMOVE CONFLICTING PAVEMENT MARKINGS FROM STA 100+00+/- TO STA 108+08+/- AND INSTALL THE PROPOSED MARKINGS FROM STA 100+00+/- TO STA 137+44+/-.

STEP 4: USING FLAGGERS, SLOW/DIRECT WESTBOUND -L- (UPWARD ROAD) TRAFFIC INTO A 1 LANE, 1 WAY PATTERN IN THE OUTSIDE LANE FROM STA 137+44+/- TO STA 100+00+/-

PLACE DRUMS ALONG THE DOUBLE YELLOW CENTERLINE FOR WESTBOUND -L- (UPWARD ROAD) AND KEEP IN THEIR EXISTING PATTERN.

STEP 5: USING RSD 1101.02, SHEET 2 OF 9, AND POLICE ASSISTANCE AT THE INTERSECTION OF -L- (UPWARD ROAD) AND -Y- (US 176) AND AT THE I-26 INTERCHANGE, PLACE SIGNALS IN FLASH MODE AND REMOVE CONFLICTING EASTBOUND -L- (UPWARD ROAD) PAVEMENT MARKINGS AND INSTALL THE PROPOSED PAVEMENT MARKINGS FOR THE PHASE III PATTERNS AS SHOWN ON TCP 27 THROUGH TCP-31.

USING FLAGGERS, REMOVE CONFLICTING MARKINGS AND INSTALL PROPOSED PAVEMENT MARKINGS FROM STA 100+00+/- TO STA 138+78+/- AND FROM STA 156+50+/- TO STA 161+68+/-.

STEP 6: USING THE POLICE AND FLAGGERS, SLOW/DIRECT EASTBOUND -L- (UPWARD ROAD) TRAFFIC INTO THE PROPOSED EASTBOUND OUTSIDE LANE IN A 1 LANE, 1 WAY PATTERN AS SHOWN ON TCP-27 THRU TCP-31.

PLACE DRUMS ALONG THE DOUBLE YELLOW CENTERLINE FOR WESTBOUND -L- (UPWARD ROAD) AND KEEP IN THEIR EXISTING PATTERN.

STEP 7: USING THE POLICE AND FLAGGERS, REMOVE THE CONFLICTING MARKINGS AND RESTRIPE THE REMAINING PORTION OF THE -L- TIE-IN AT THE US 176 INTERSECTION FROM STA 14+96+/- TO STA 22+50+/- . (SEE TCP-27)


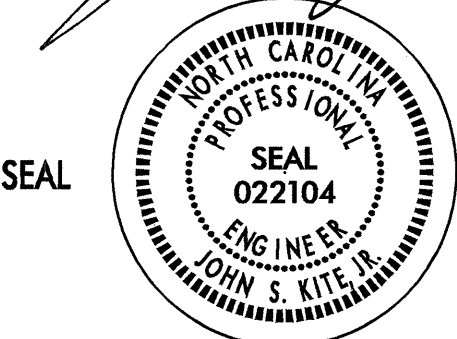
STEP 8: REVISE ALL TRAFFIC SIGNALS TO THE REQUIRED PHASE III PATTERNS AS SHOWN ON TCP-27 THROUGH TCP-31 AND PLACE TRAFFIC INTO THE PHASE III PATTERN. (SEE SIGNAL PLANS AND TCP-27 THRU TCP-31)

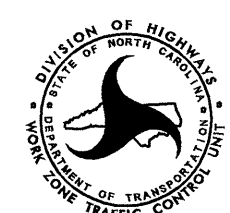
STEP 9: BEHIND DRUMS, CONSTRUCT REMAINING CONCRETE ISLANDS. (SEE TCP-27 THRU TCP-31)

STEP 10: USING RSD 1101.02 AND POLICE ASSISTANCE AT THE SIGNALIZED INTERSECTIONS, INSTALL THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS AND MARKERS. (SEE PM-1 THROUGH PM-12 AND SIGNAL PLANS)

STEP 11: PLACE TRAFFIC IN THEIR FINAL PATTERNS AND REMOVE ALL TRAFFIC CONTROL DEVICES FROM THE PROJECT.

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# TEMPORARY SHORING NOTES

PROJ. REFERENCE NO. R-4430	SHEET NO. TCP-3B
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**TEMPORARY SHORING LOCATION NO 1 (AS SHOWN ON TCP-7)**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM -L- STA 25+75.00+/-, 3 FT TO 9 FT LEFT TO -L- STA 27+05.00+/-, 3 FT TO 9 FT LEFT, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM -L- STA 25+75.00+/-, 3 FT TO 9 FT LEFT, TO -L- STA 27+05.00+/-, 3 FT TO 9 FT LEFT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

QUANTITY = 2600 SF

**TEMPORARY SHORING LOCATION NO 2 (AS SHOWN ON TCP-7)**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM -L- STA 25+70.00+/-, 21 FT LEFT TO -L- STA 27+00.00+/-, 21 FT LEFT

USE THE FOLLOWING SOIL PARAMETERS:  
 UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM -L- STA 25+70.00+/-, 21 FT LEFT, TO -L- STA 27+00.00+/-, 21 FT LEFT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

QUANTITY = 2600 SF

**TEMPORARY SHORING LOCATION NO 3 (AS SHOWN ON TCP-10A)**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM -L- STA 67+10.00+/-, 3 FT TO 13.5 FT LEFT, TO -L- STA 69+75.00+/-, 3 FT TO 13.5 FT LEFT, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM -L- STA 67+10.00+/-, 3 FT TO 13.5 FT LEFT, TO -L- STA 69+75.00+/-, 3 FT TO 13.5 FT LEFT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

QUANTITY = 1325 SF

**TEMPORARY SHORING LOCATION NO 4 (AS SHOWN ON TCP-11)**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM -L- STA 91+95.00+/-, 52 FT RIGHT, TO -L- STA 92+30.00+/-, 52 FT RIGHT, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM -L- STA 91+95.00+/-, 52 FT RIGHT, TO -L- STA 92+30.00+/-, 52 FT RIGHT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

QUANTITY = 350 SF

**TEMPORARY SHORING LOCATION NO 5 (AS SHOWN ON TCP-12)**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM -L- STA 94+60.00+/-, 52 FT RIGHT, TO -L- STA 94+95.00+/-, 52 FT RIGHT, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM -L- STA 94+60.00+/-, 52 FT RIGHT, TO -L- STA 94+95.00+/-, 52 FT RIGHT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

QUANTITY = 350 SF

**TEMPORARY SHORING LOCATION NO 6 (AS SHOWN ON TCP-11 AND TCP-12)**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM -Y10- STA 22+22.00+/-, 7.5 FT RIGHT, TO -Y10- STA 23+52.00+/-, 7.5 FT RIGHT, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM -Y10- STA 22+22+/-, 7.5 FT RIGHT, TO -Y10- STA 23+52.00+/-, 7.5 FT RIGHT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

QUANTITY = 180 SF

**TEMPORARY SHORING LOCATION NO 5 (AS SHOWN ON TCP-11 AND TCP-12)**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

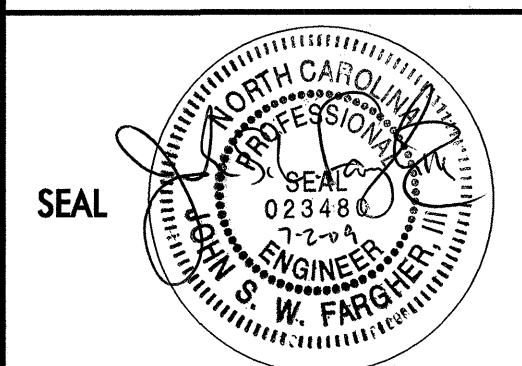

WHEN USING CONTRACTOR DESIGNED SHORING FROM -Y10- STA 22+28.00+/-, 7.5 FT LEFT, TO -Y10- STA 23+58.00+/-, 7.5 FT LEFT, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$  DEGREES  
 COHESION,  $c = 0$  PSF

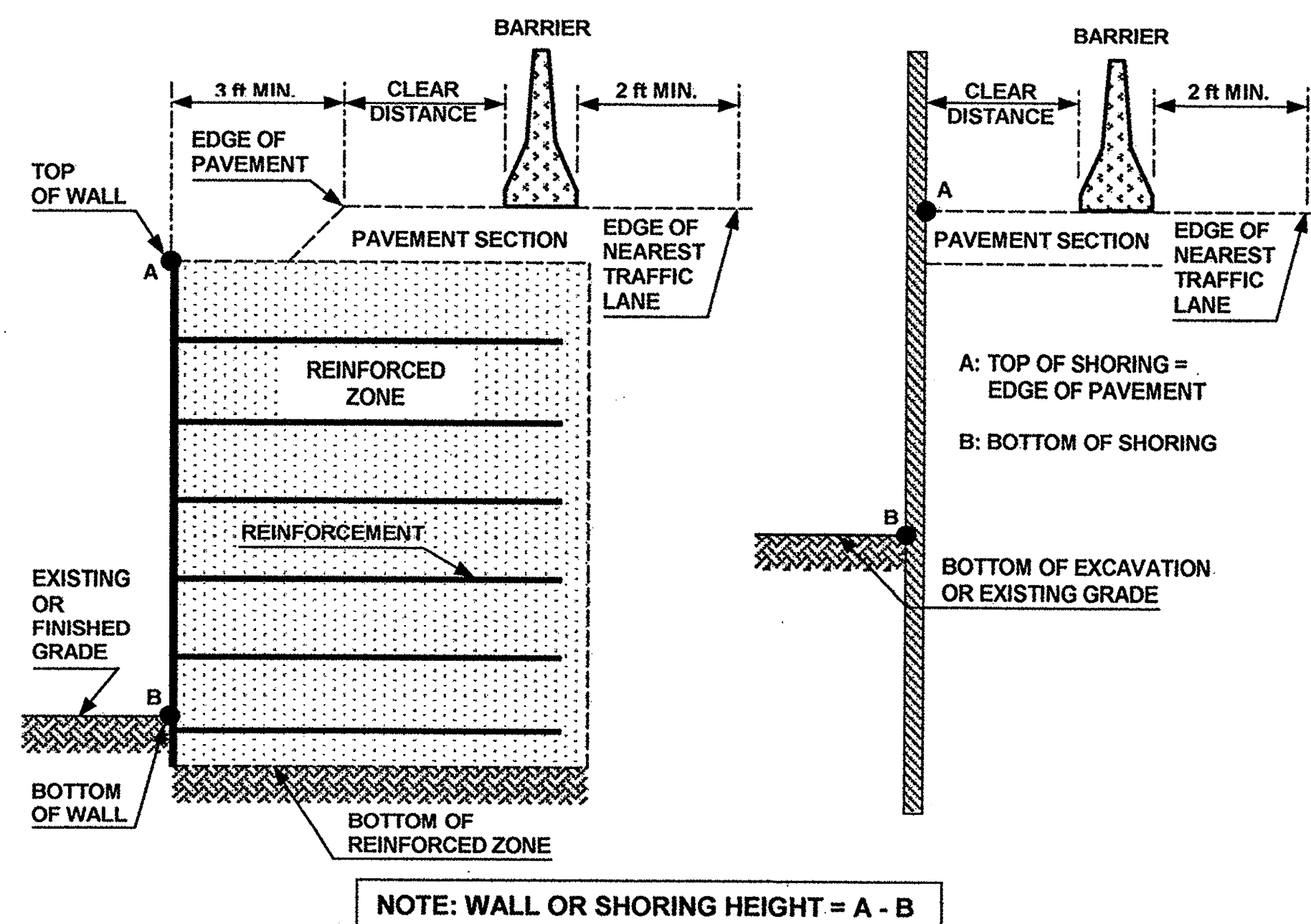
NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM -Y10- STA 22+28.00+/-, 7.5 FT LEFT, TO -Y10- STA 23+58.00+/-, 7.5 FT LEFT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

QUANTITY = 180 SF

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**FIGURE A**

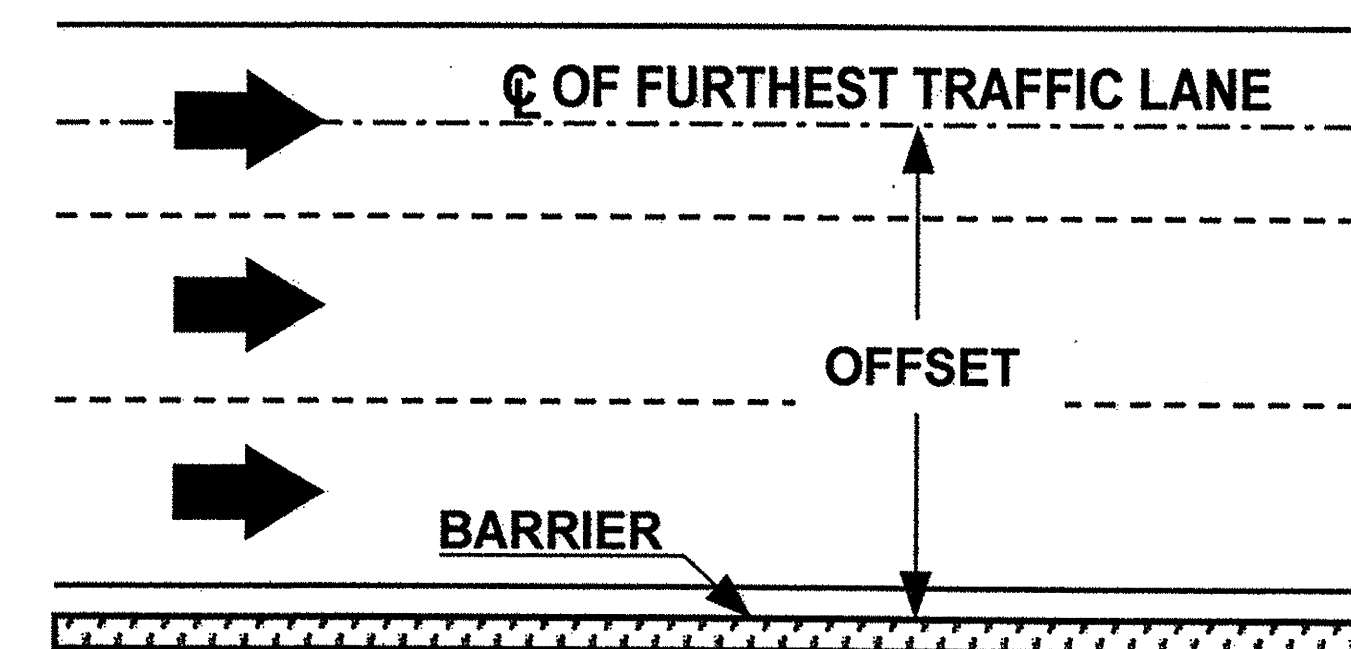
**NOTES**

- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.
- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.
- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN THE AASHTO ROADSIDE DESIGN GUIDE.
- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED PCB, ANCHORED PCB OR AN OREGON BARRIER FROM THE TABLE SHOWN IN FIGURE B. FOR TRAFFIC LANES AND PORTABLE CONCRETE BARRIER LOCATED ABOVE AND BEHIND TEMPORARY SHORING, THE FOLLOWING ARE DEFINED AS:  
  
CLEAR DISTANCE - HORIZONTAL DISTANCE FROM THE BACK FACE OF THE BARRIER TO THE EDGE OF PAVEMENT FOR TEMPORARY MSE WALL OR TO THE FACE OF NON-ANCHORED TEMPORARY SHORING AS SHOWN IN FIGURE A.  
  
OFFSET - HORIZONTAL DISTANCE FROM THE FRONT FACE OF THE BARRIER TO CENTERLINE OF THE FURTHEST TRAFFIC LANE AS SHOWN IN FIGURE B FOR 3 TRAFFIC LANES.
- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET AN UNANCHORED PCB AGAINST THE TRAFFIC SIDE OF THE SHORING AND DESIGN SHORING FOR TRAFFIC IMPACT OR USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT" FOR THE STANDARD TEMPORARY SHORING.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- USE OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH DETAIL DRAWING AND SPECIAL PROVISION OBTAINED FROM: [HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/WZTC/DESRES/ENGLISH/DESRESENG.HTML](http://www.ncdot.org/DOH/PRECONSTRUCT/WZTC/DESRES/ENGLISH/DESRESENG.HTML)
- UNLESS NOTED OTHERWISE ON THE PLANS, SET PORTABLE CONCRETE BARRIER WITH A MINIMUM DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A.
- FOR PORTABLE CONCRETE BARRIER ABOVE AND BEHIND TEMPORARY MSE WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200' IN LENGTH AND WET OR DRY PAVEMENT.

**MINIMUM REQUIRED CLEAR DISTANCE, inches**

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
	>56	32	36	42	45	47	51	
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
50-56		26	26	28	32	35	38	
>56	26	27	29	32	36	38		
Anchored PCB or Oregon Barrier	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB or Oregon Barrier	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

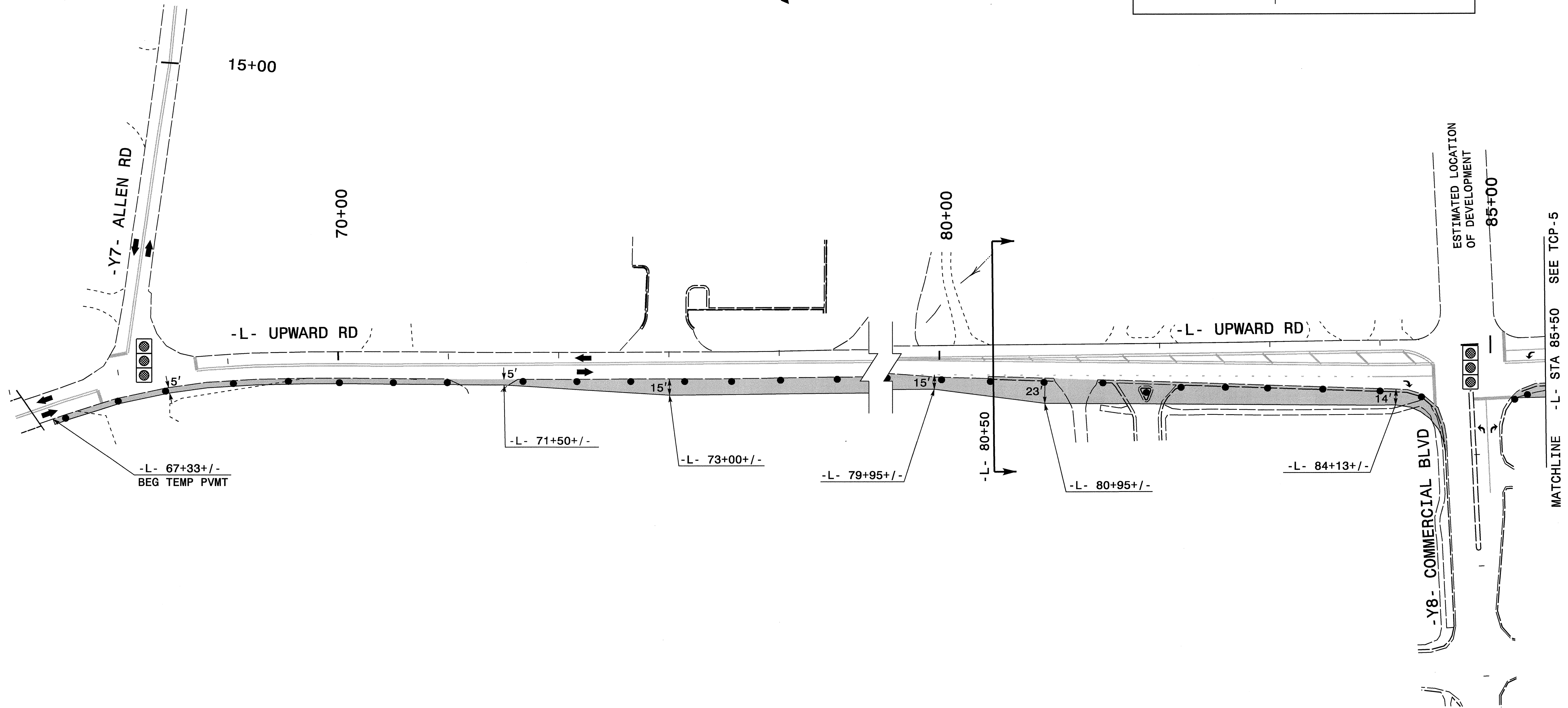
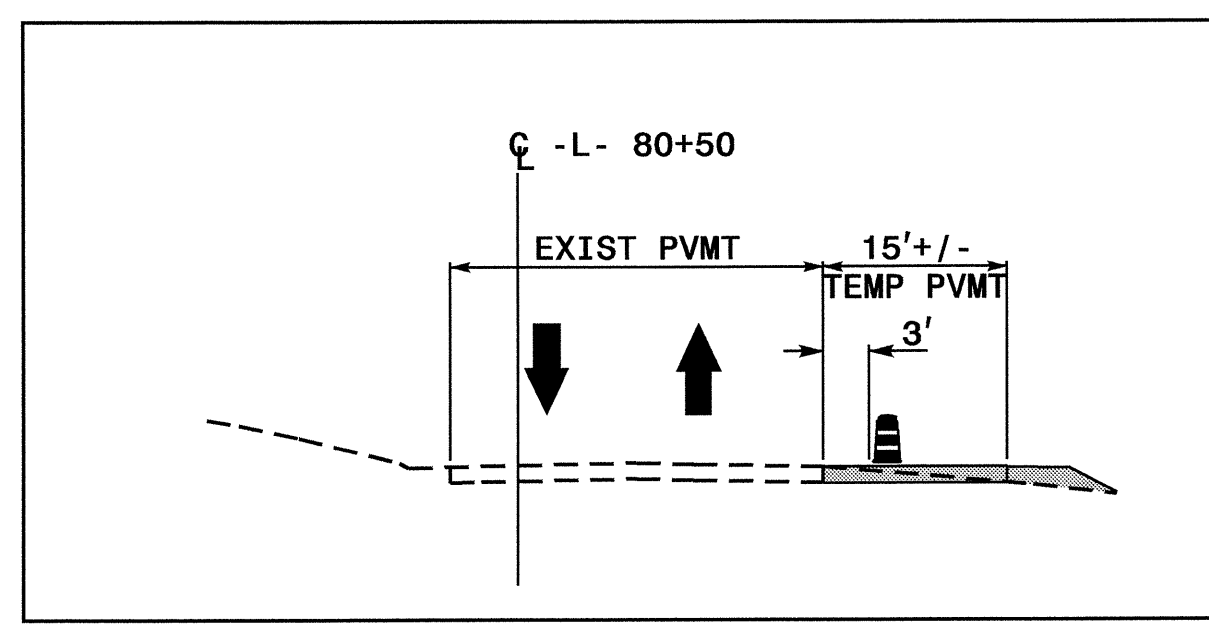
\* See Figure Below



**FIGURE B**

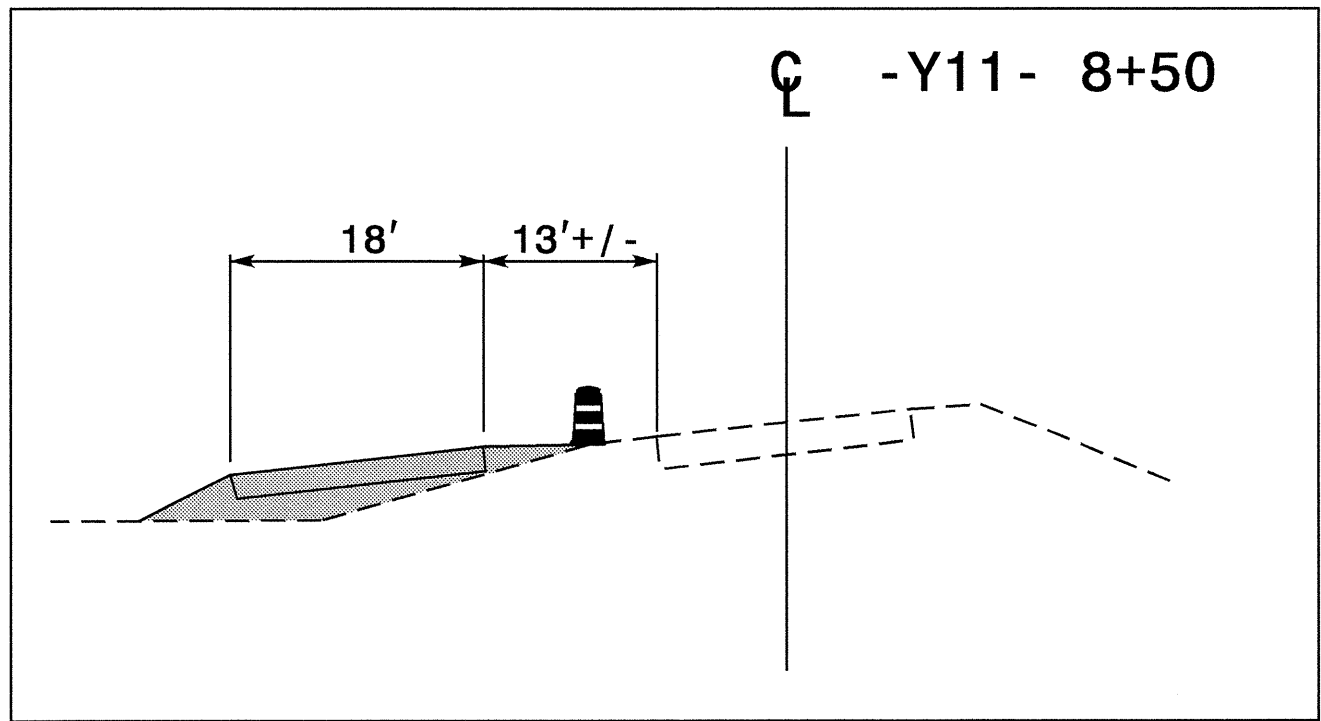
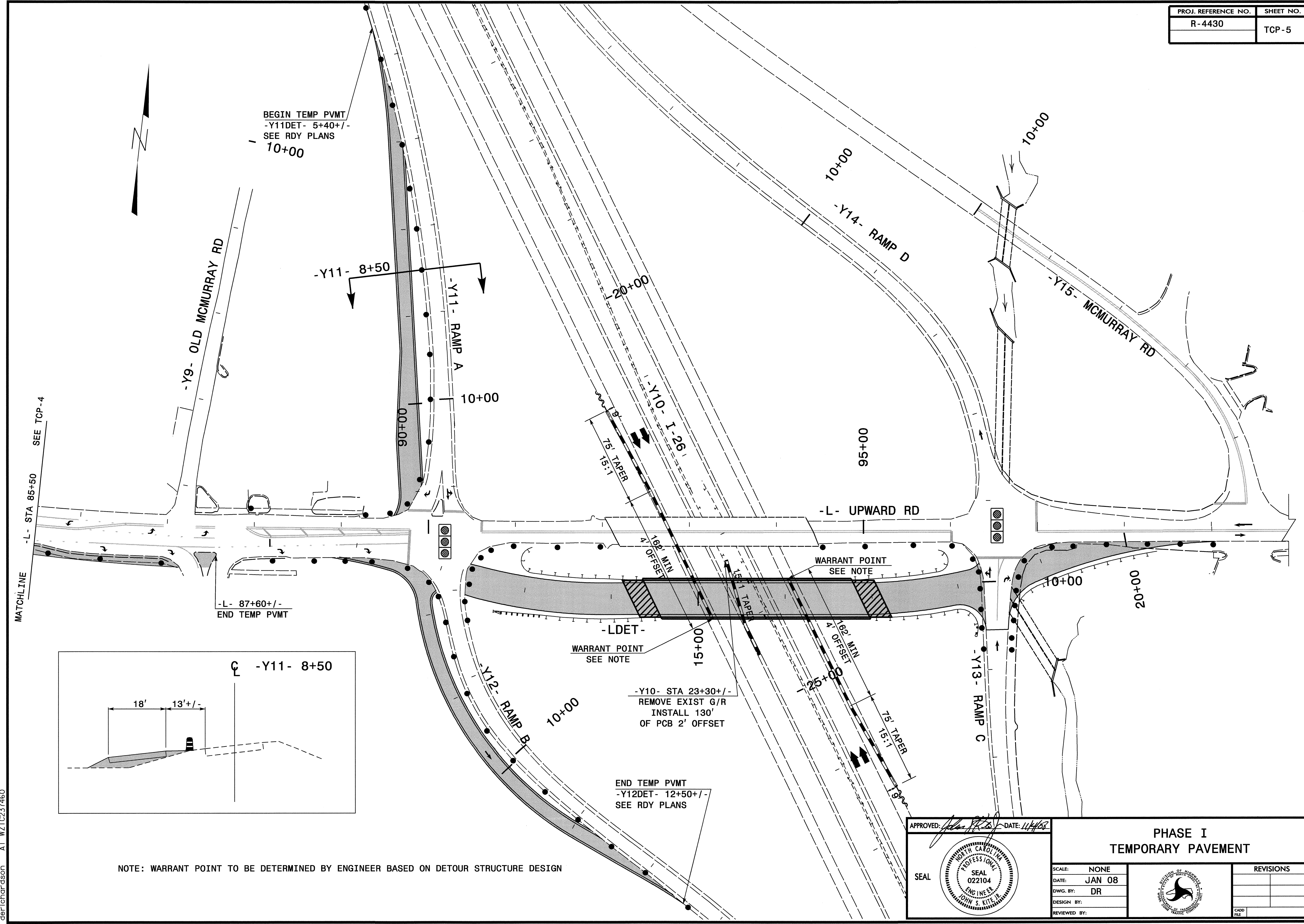
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NOTE: WARRANT POINT TO BE DETERMINED BY ENGINEER BASED ON DETOUR STRUCTURE DESIGN

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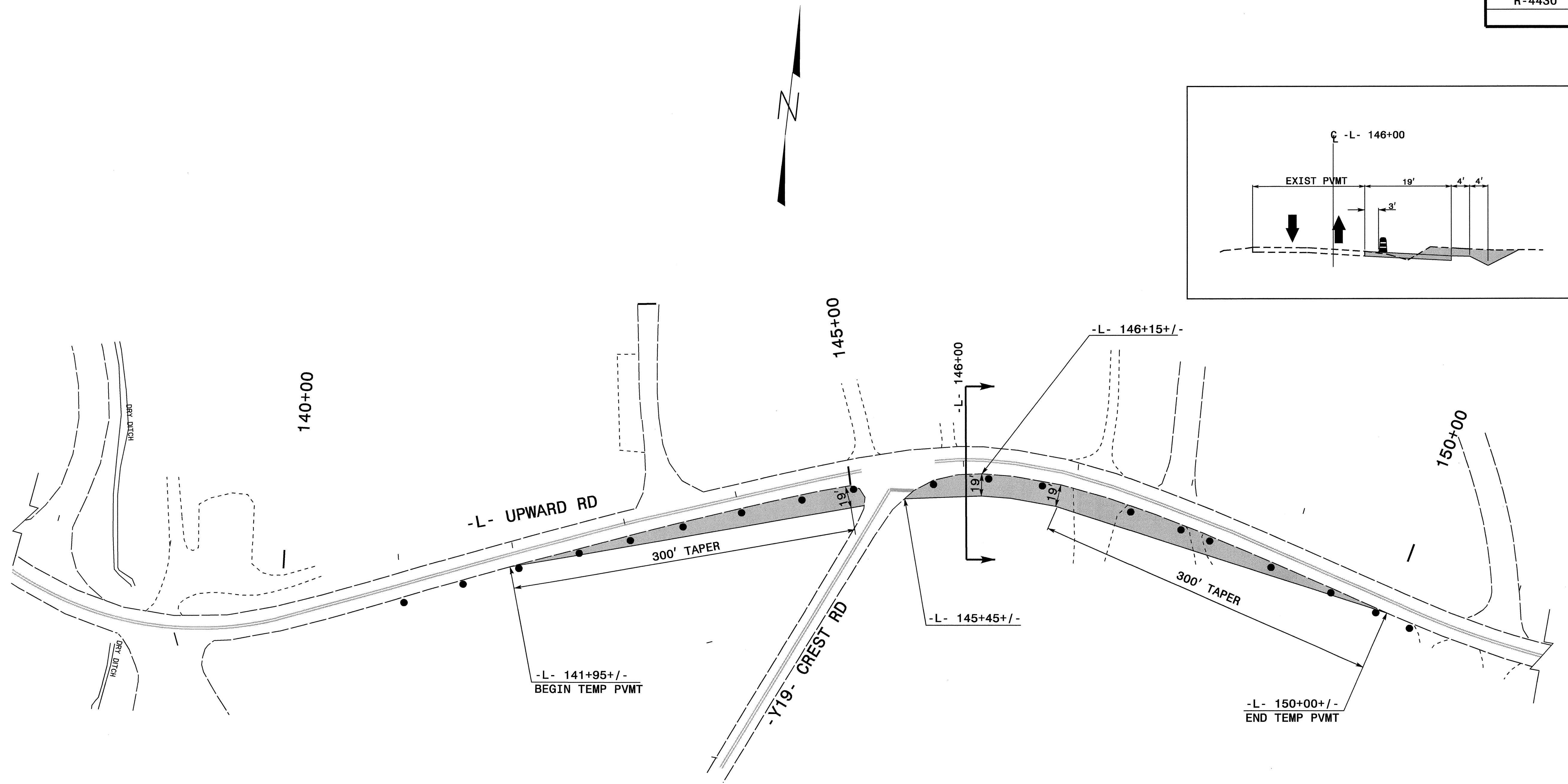
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**PHASE I  
TEMPORARY PAVEMENT**

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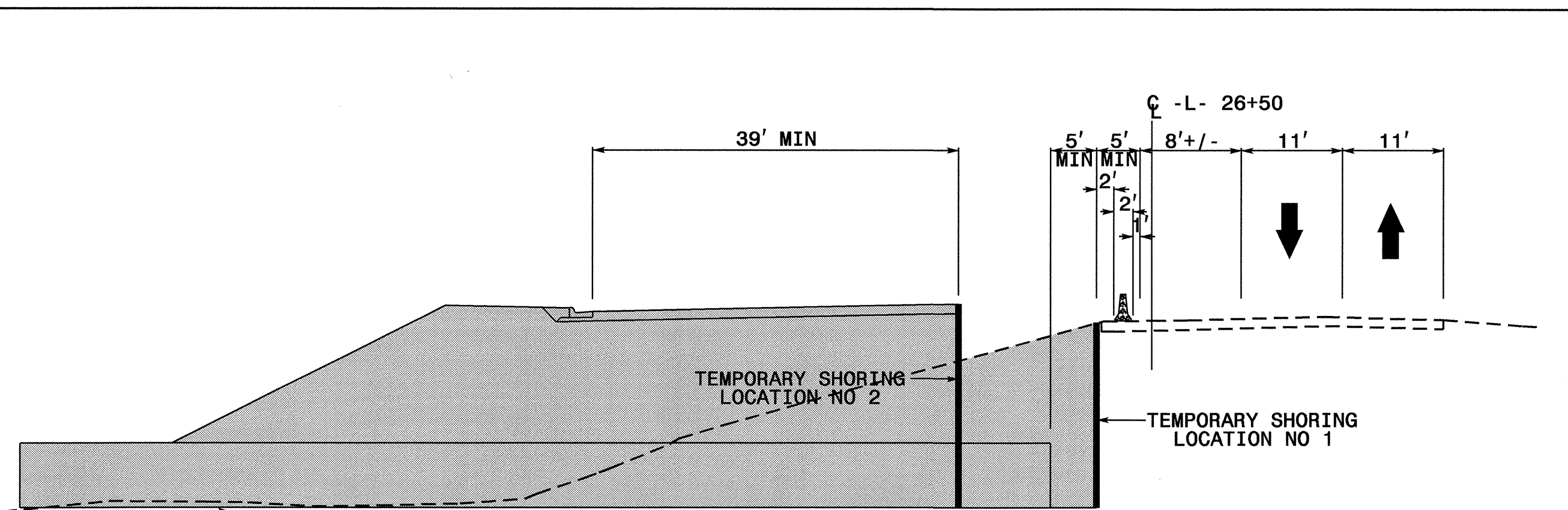
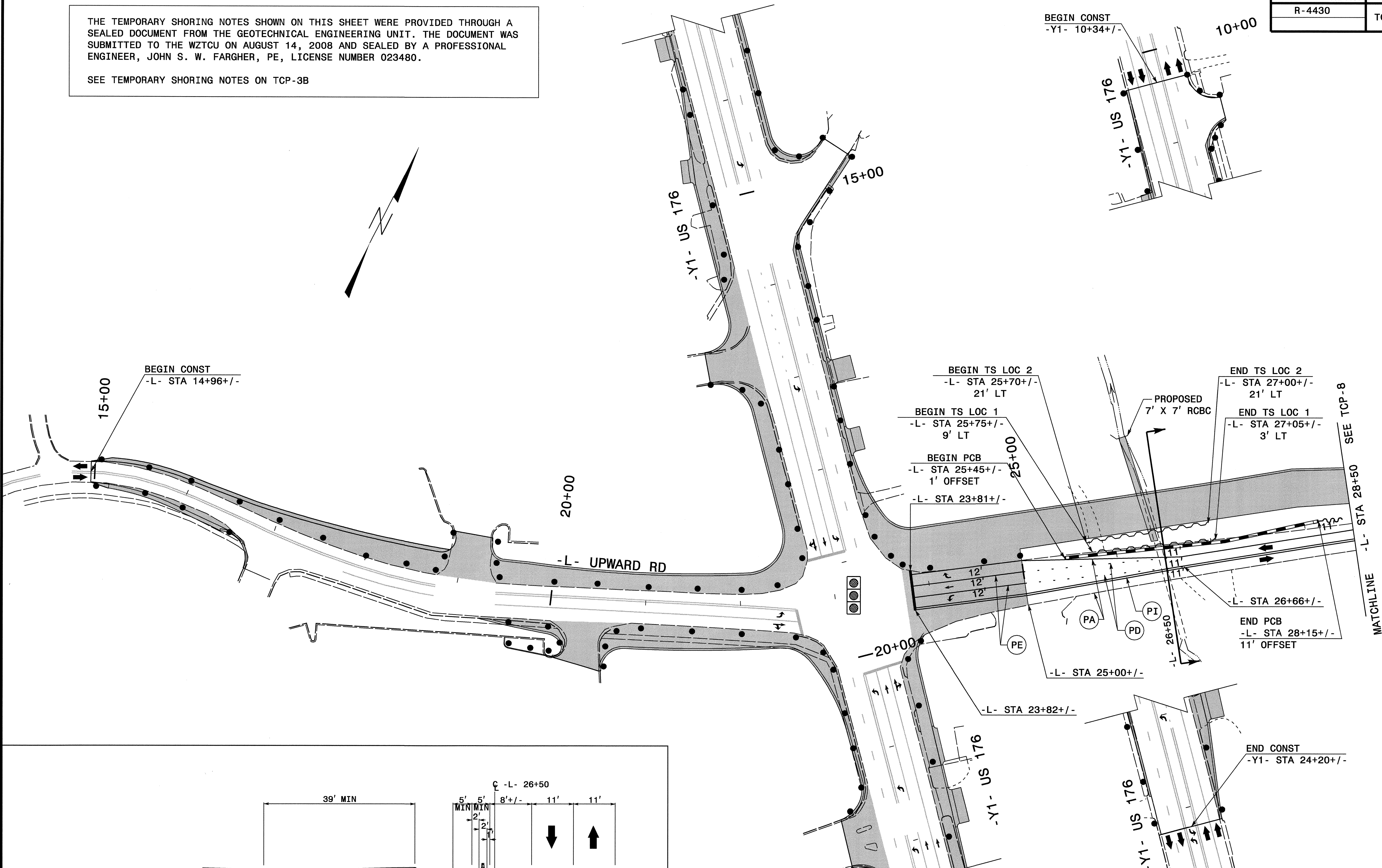
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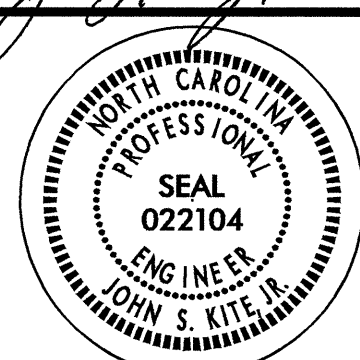
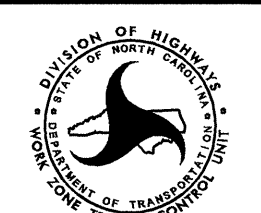


THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTCU ON AUGUST 14, 2008 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN S. W. FARGHER, PE, LICENSE NUMBER 023480.

SEE TEMPORARY SHORING NOTES ON TCP-3B

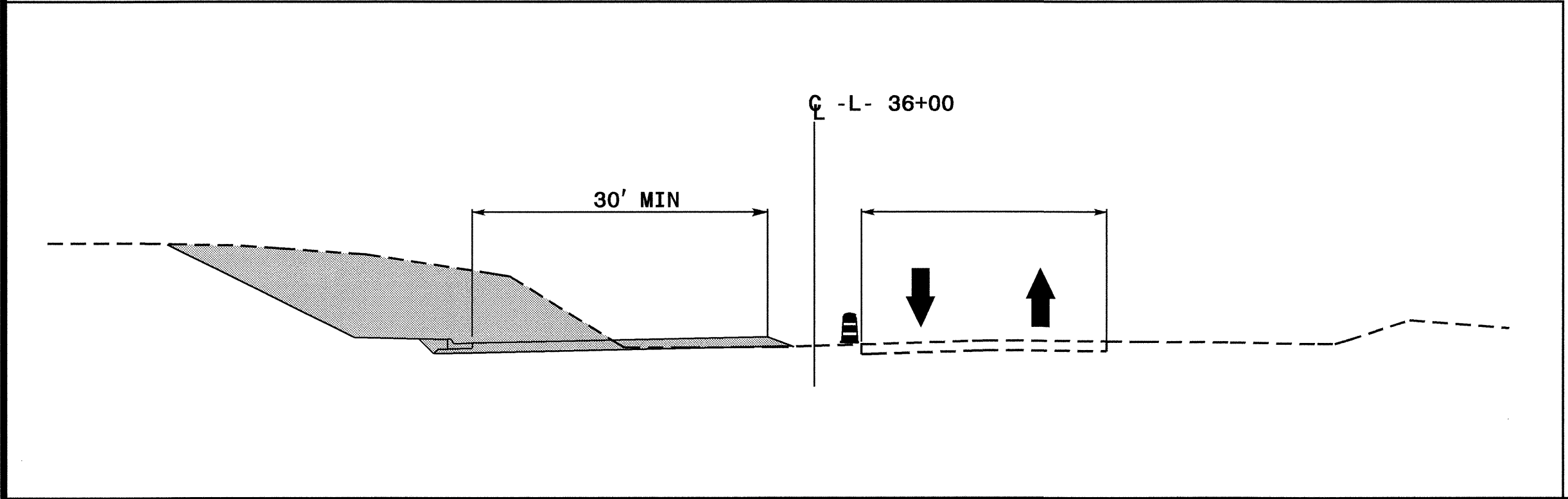
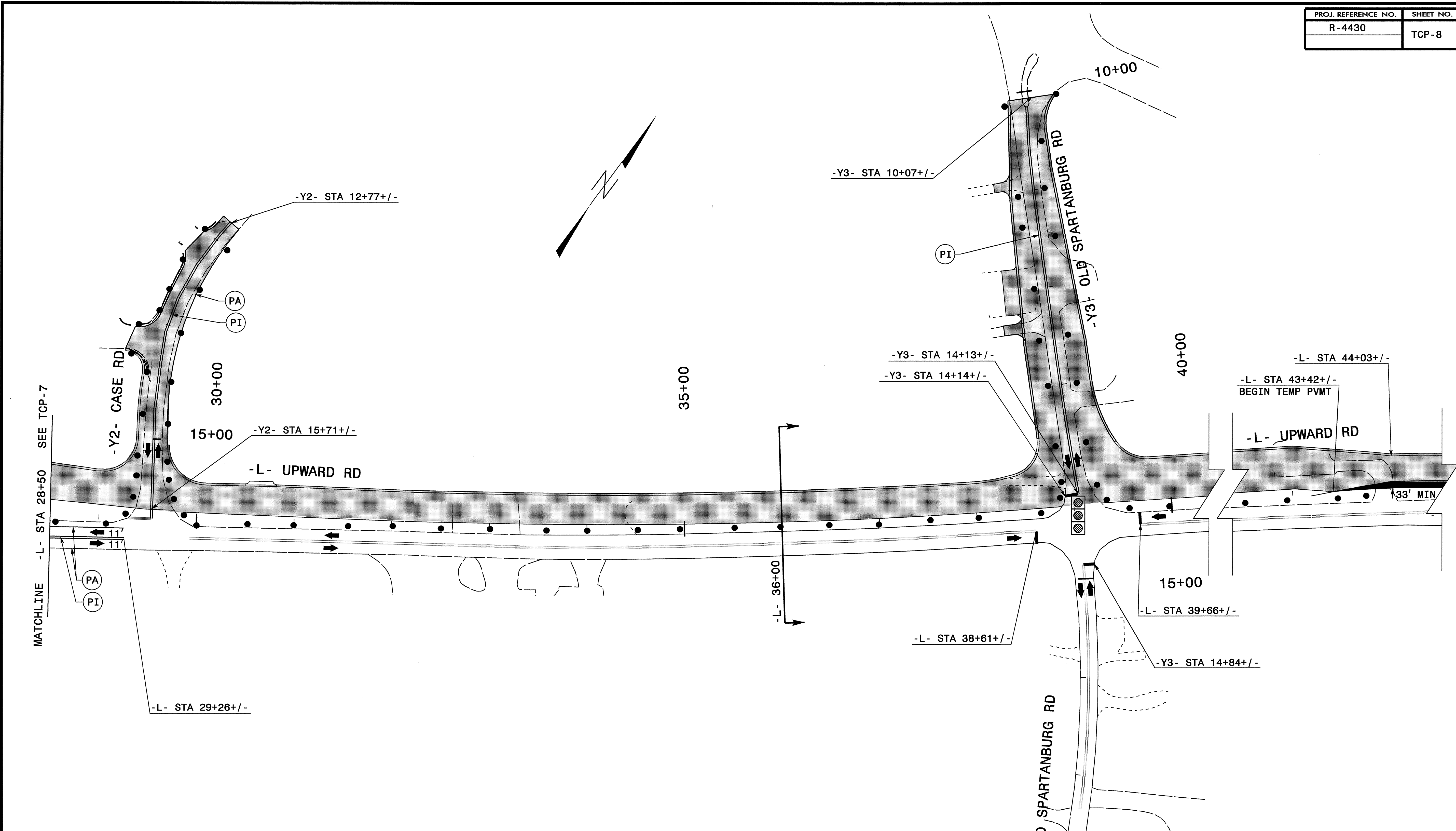


REMOVE EXISTING 72" CMP AND CONSTRUCT PROPOSED 7' X 7' RCBC USING IMPERVIOUS DIKES AND TEMP 24" RCP SEE ROADWAY PLANS FOR TEMP DRAINAGE

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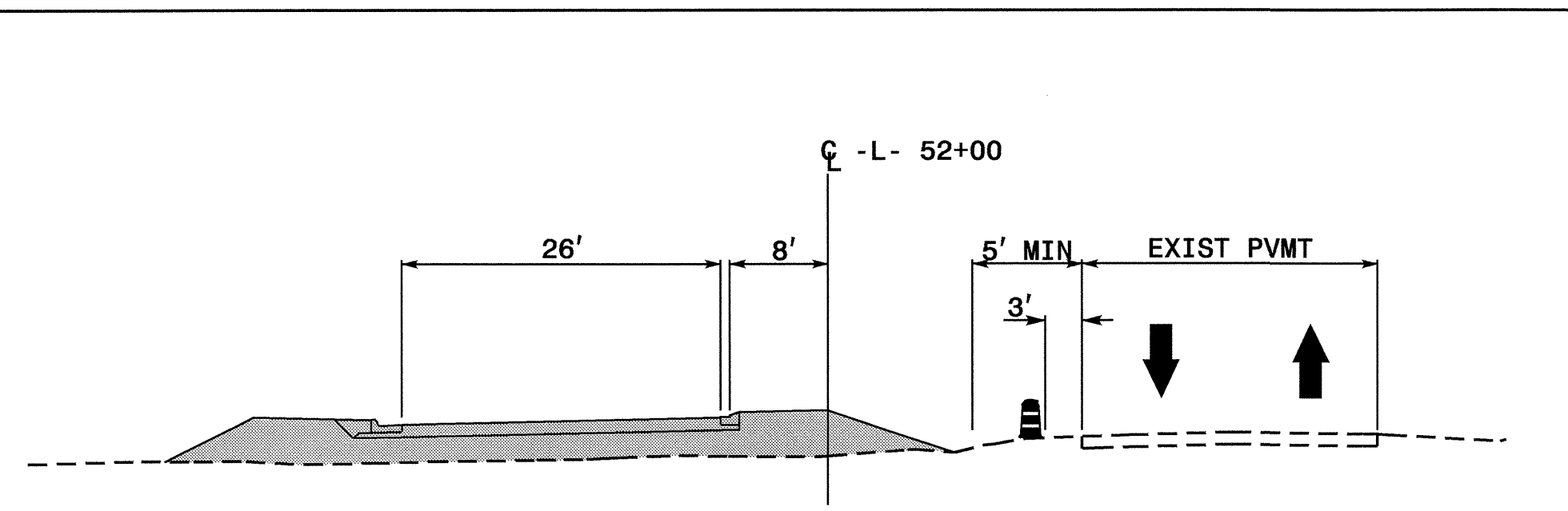
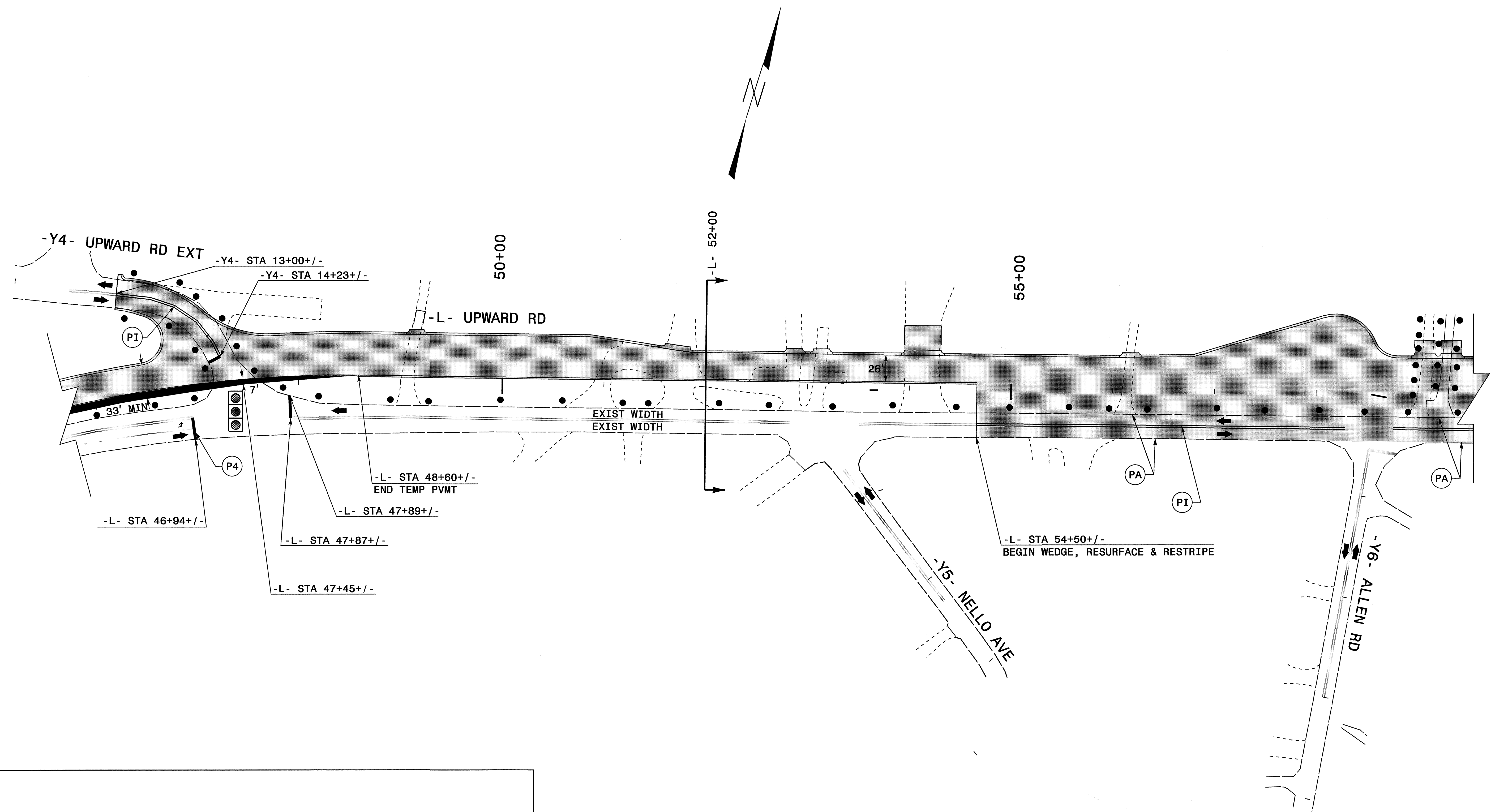
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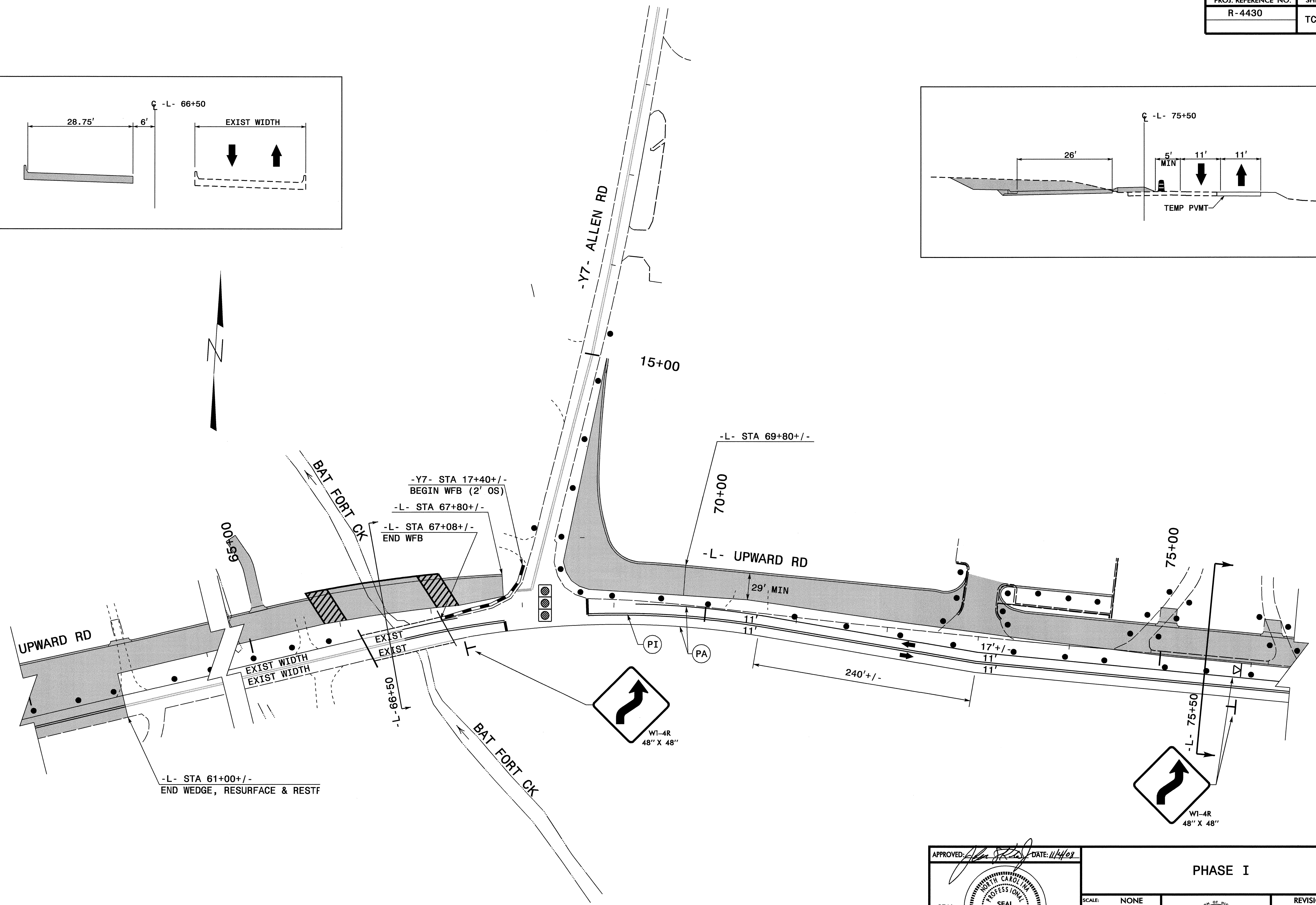
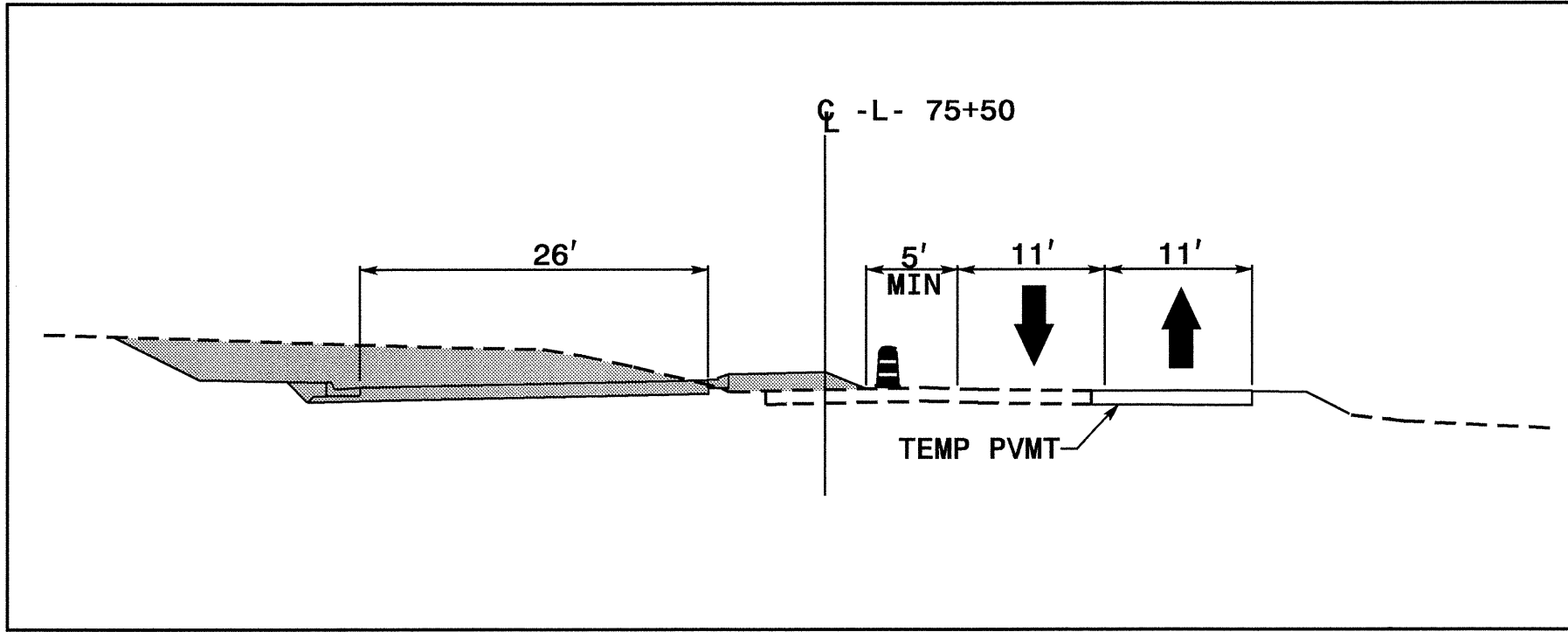
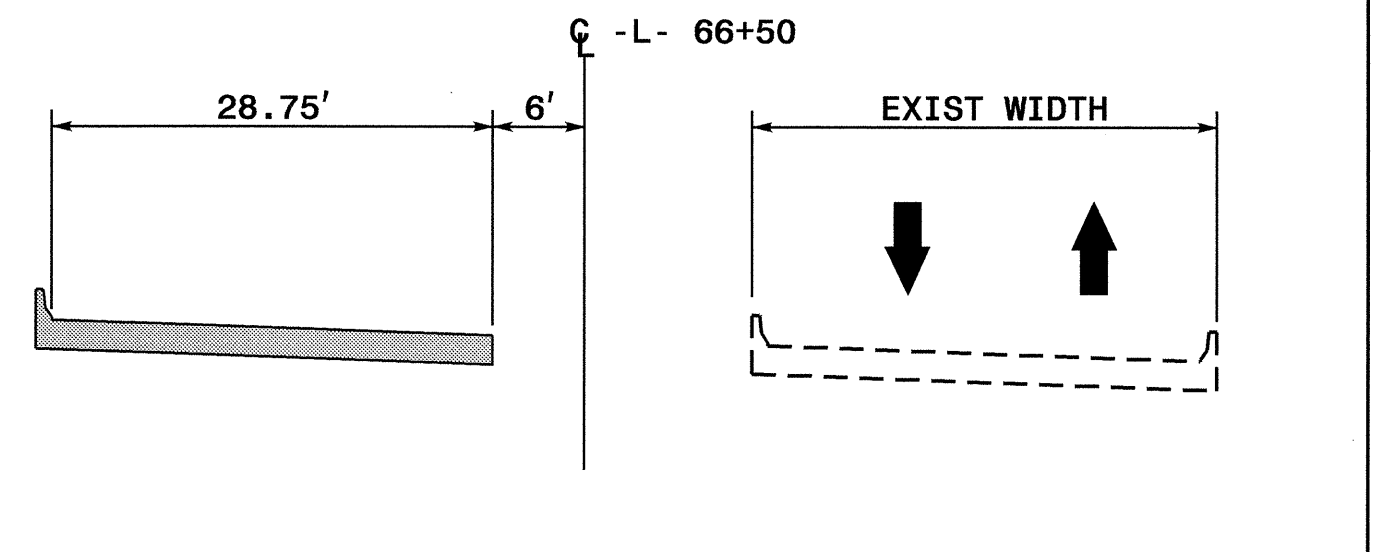
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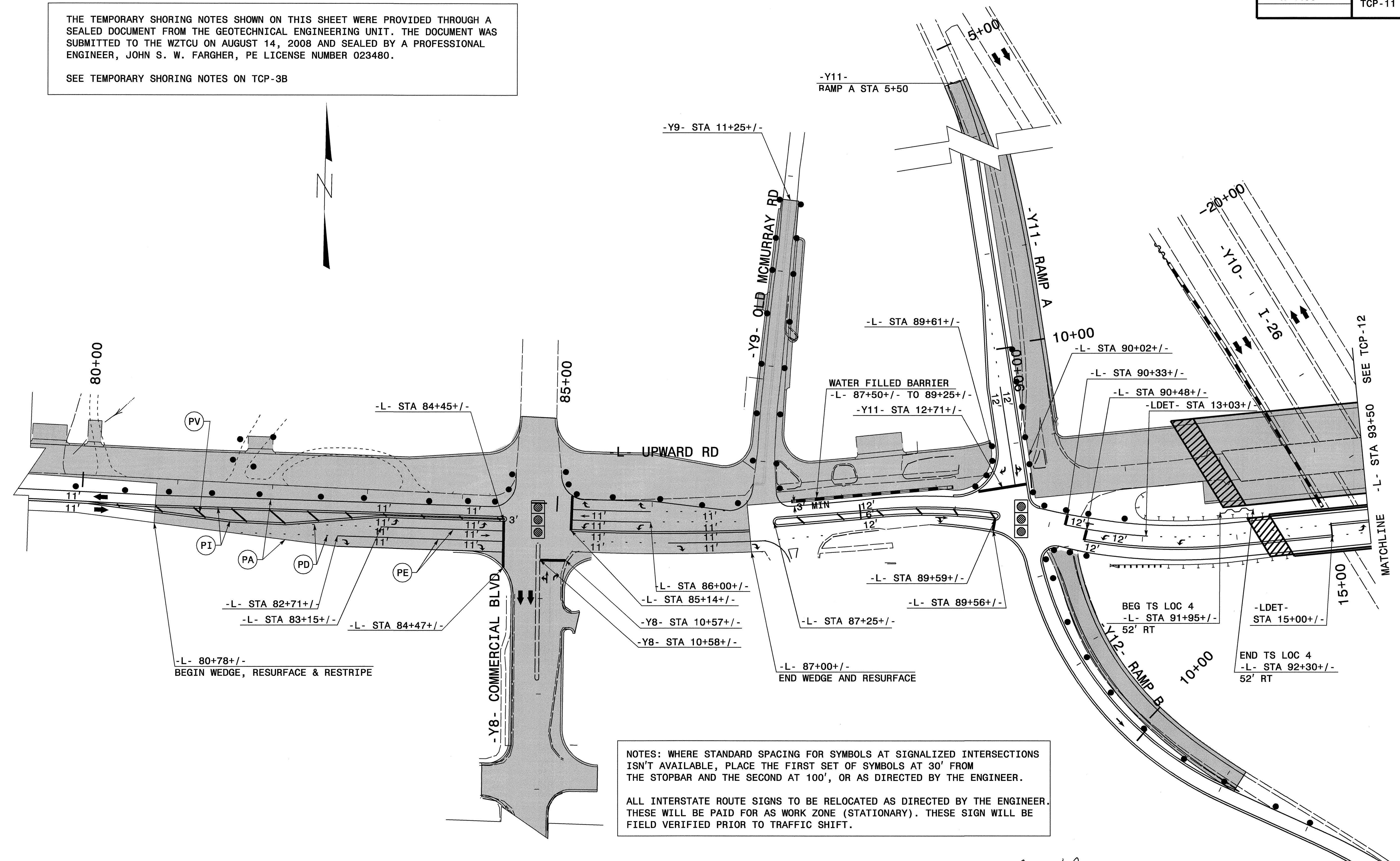
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THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTCU ON AUGUST 14, 2008 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN S. W. FARGHER, PE LICENSE NUMBER 023480.

SEE TEMPORARY SHORING NOTES ON TCP-3B



NOTES: WHERE STANDARD SPACING FOR SYMBOLS AT SIGNALIZED INTERSECTIONS ISN'T AVAILABLE, PLACE THE FIRST SET OF SYMBOLS AT 30' FROM THE STOPBAR AND THE SECOND AT 100', OR AS DIRECTED BY THE ENGINEER.

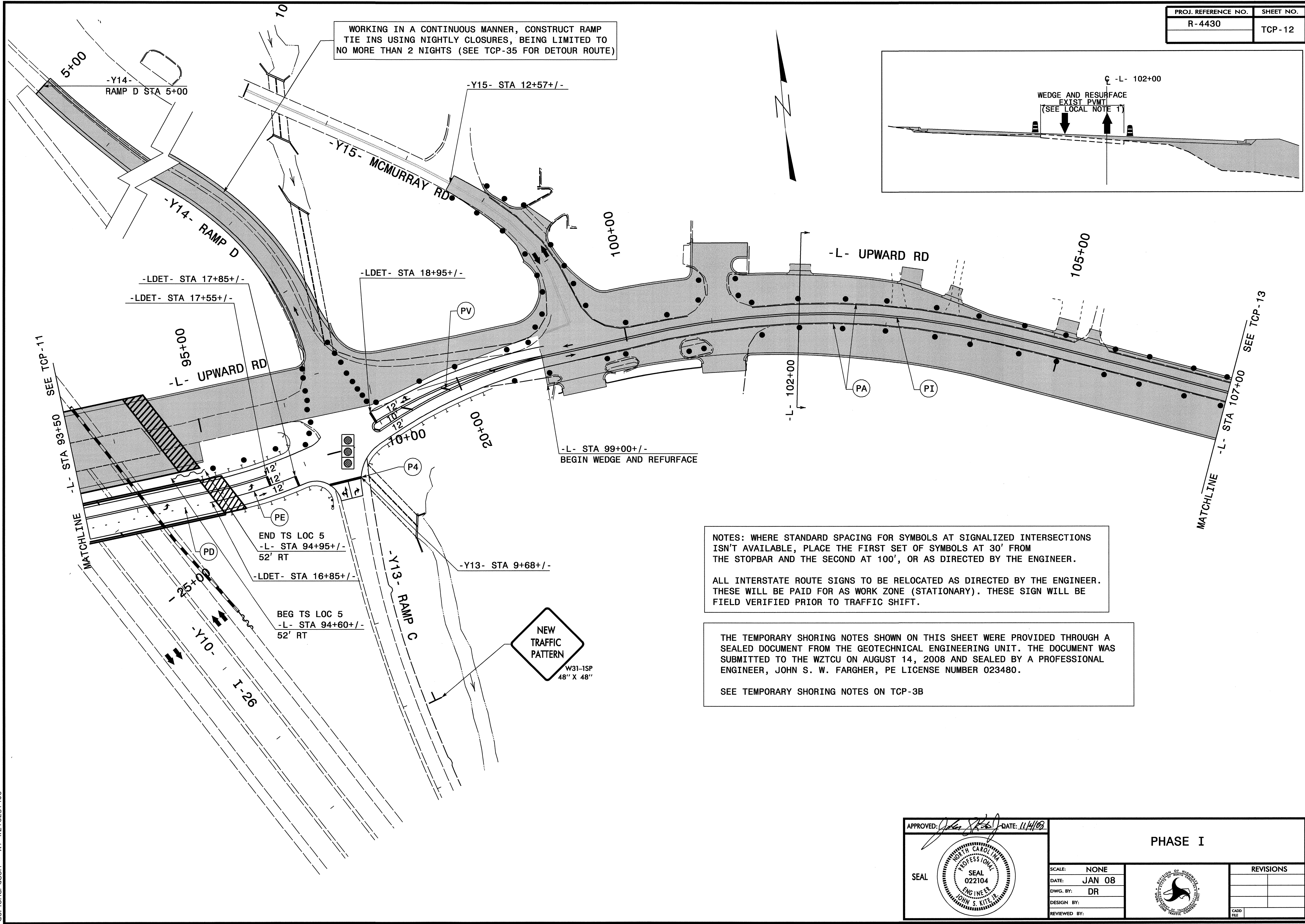
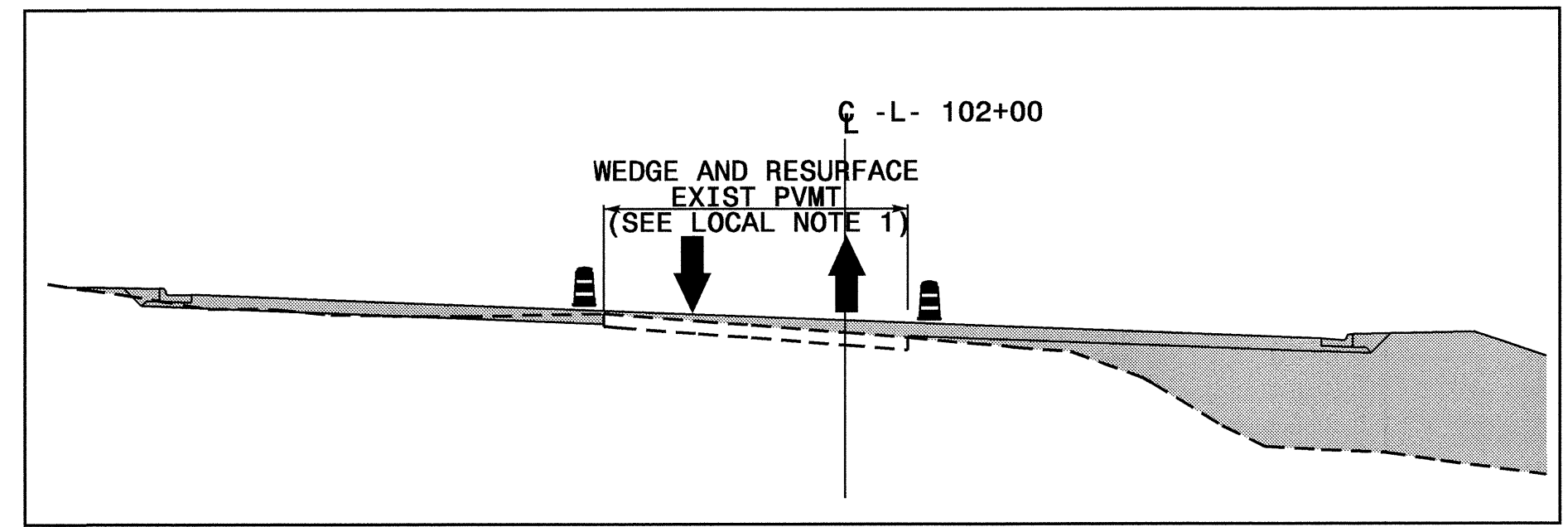
ALL INTERSTATE ROUTE SIGNS TO BE RELOCATED AS DIRECTED BY THE ENGINEER. THESE WILL BE PAID FOR AS WORK ZONE (STATIONARY). THESE SIGN WILL BE FIELD VERIFIED PRIOR TO TRAFFIC SHIFT.

05-NOV-2008 10:32 \\dot\dfsroot\p\proj\pgr\jects-r\4430\traffic\trafficcontrol\top\4430-1c-pl-topl.dgn derichardson AT WZTC237460

APPROVED: <i>[Signature]</i> DATE: 1/14/08	<b>PHASE I</b>	
	SCALE: NONE	
	DATE: JAN 08	
	DWG. BY: DR	
	DESIGN BY:	
REVIEWED BY:	REVISIONS	CADD FILE



WORKING IN A CONTINUOUS MANNER, CONSTRUCT RAMP TIE INS USING NIGHTLY CLOSURES, BEING LIMITED TO NO MORE THAN 2 NIGHTS (SEE TCP-35 FOR DETOUR ROUTE)

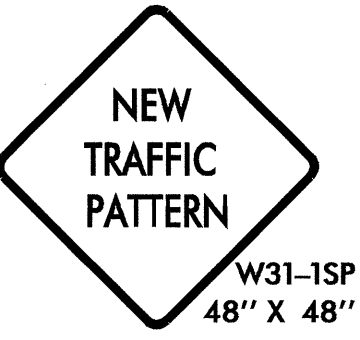


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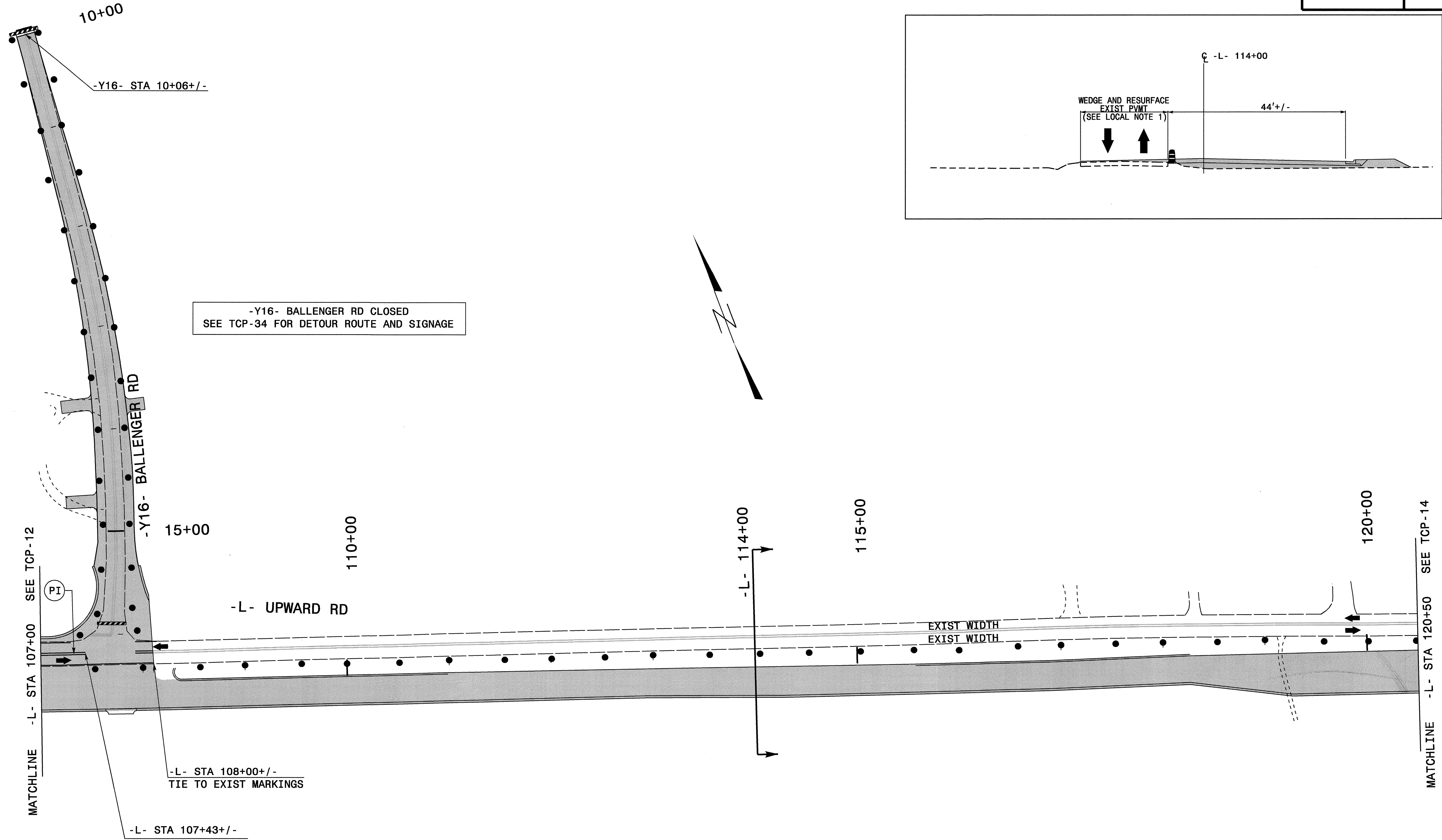
SEE TEMPORARY SHORING NOTES ON TCP-3B



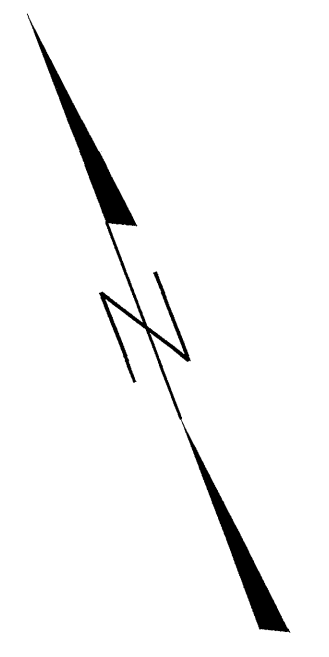
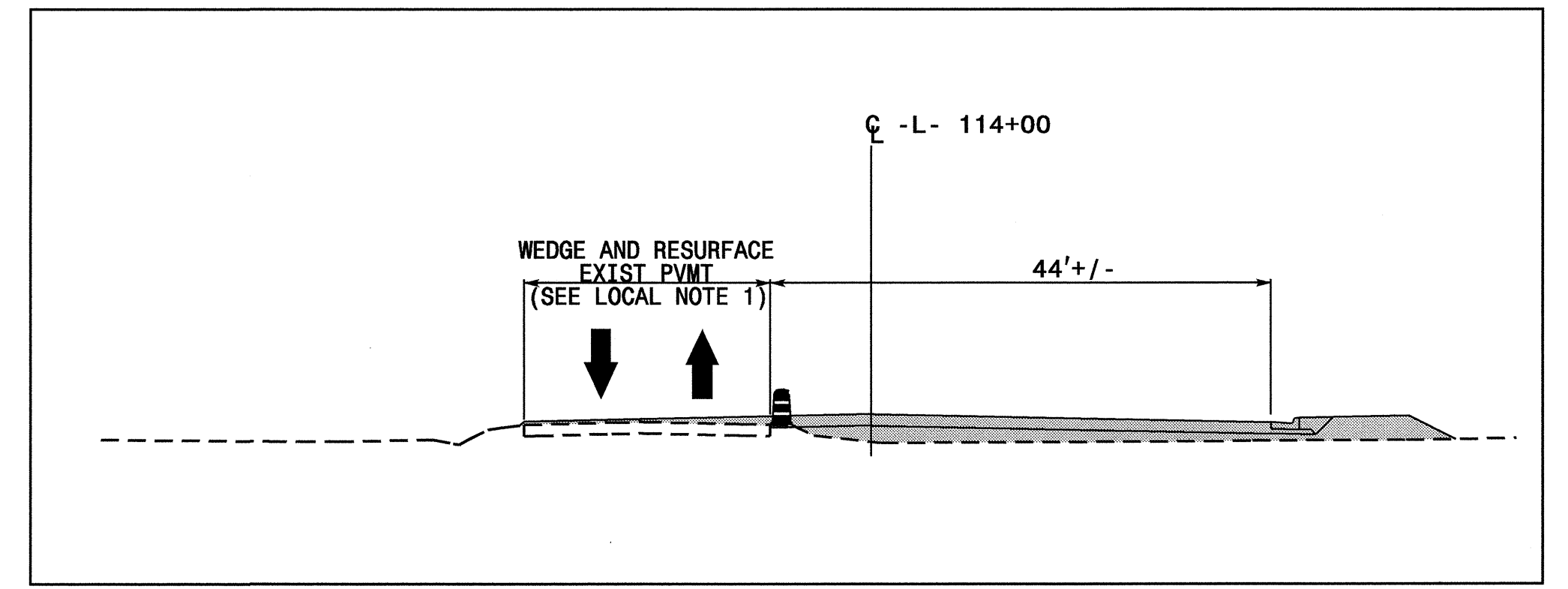
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at WZTCU\460

APPROVED:	DATE: 11/4/08	<b>PHASE I</b>	
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	DATE: JAN 08		
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REVIEWED BY:			



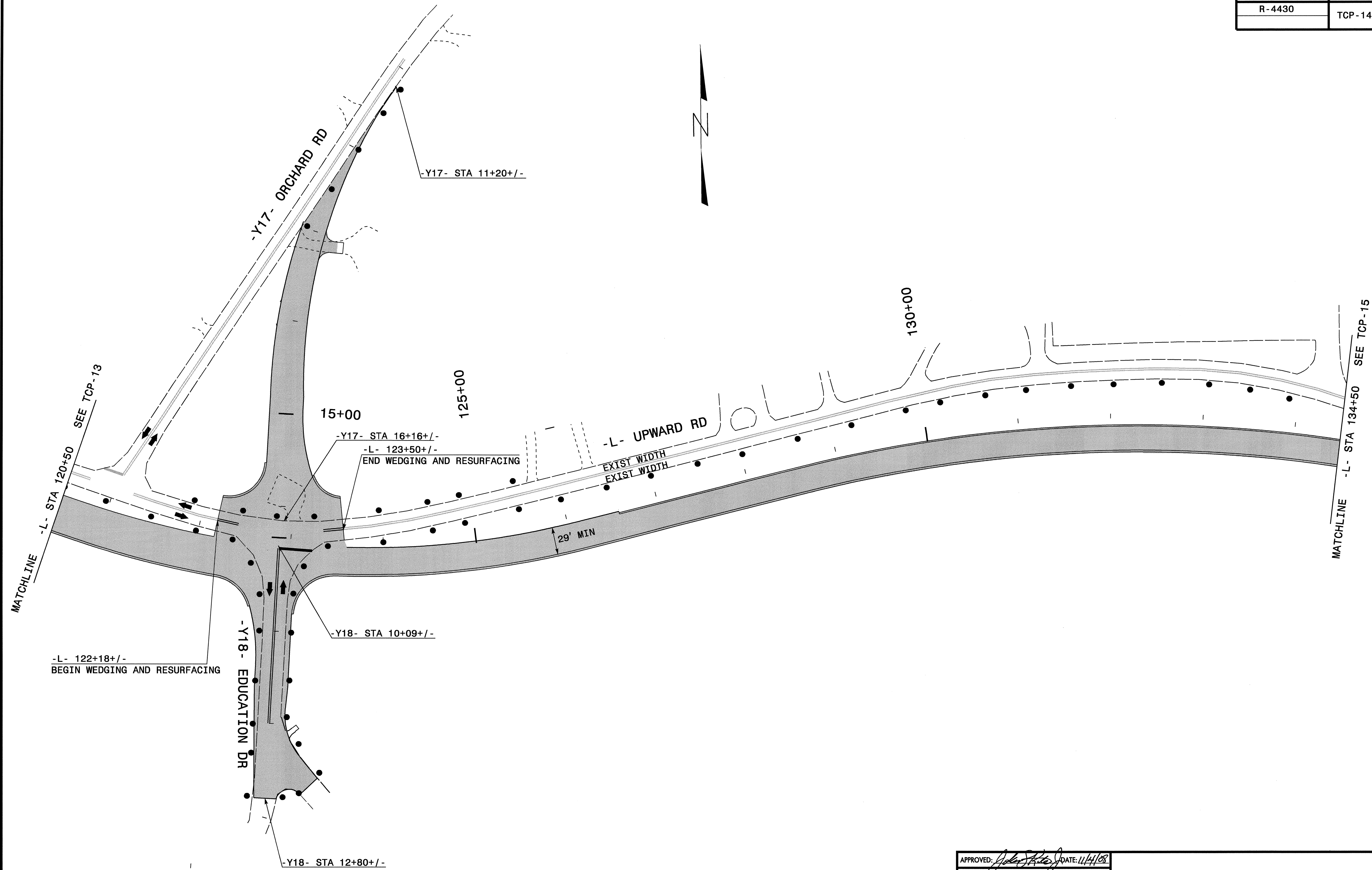


-Y16- BALLENGER RD CLOSED  
SEE TCP-34 FOR DETOUR ROUTE AND SIGNAGE



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 AT WZTC237460  
 denichardson

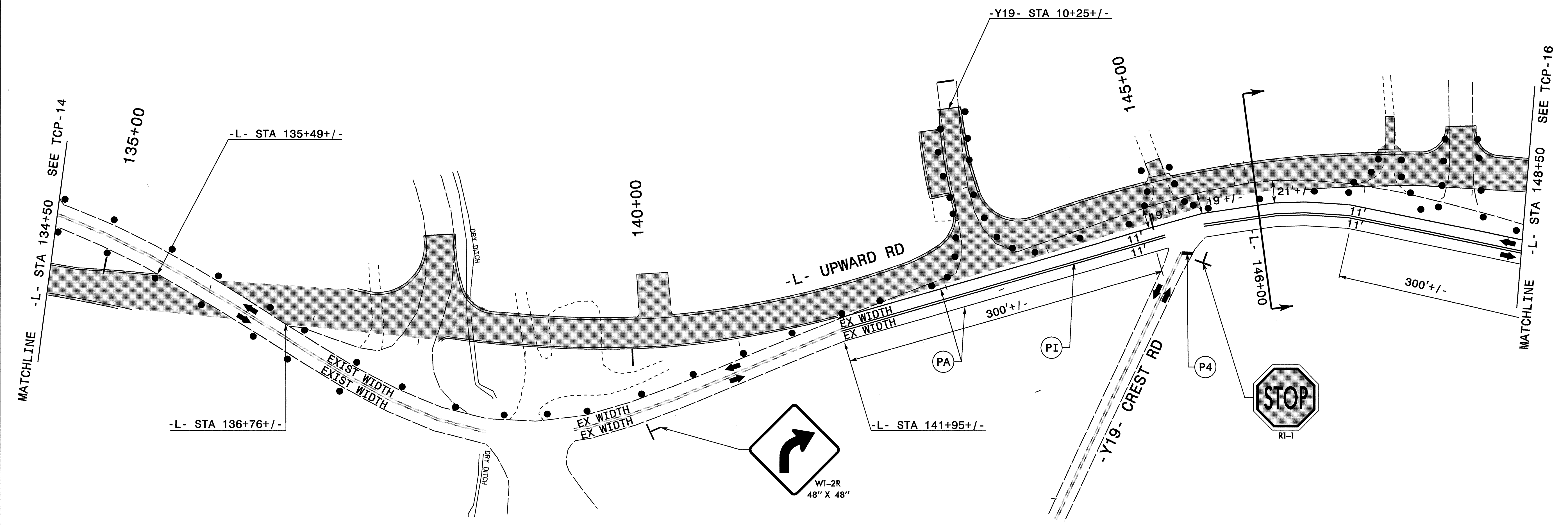
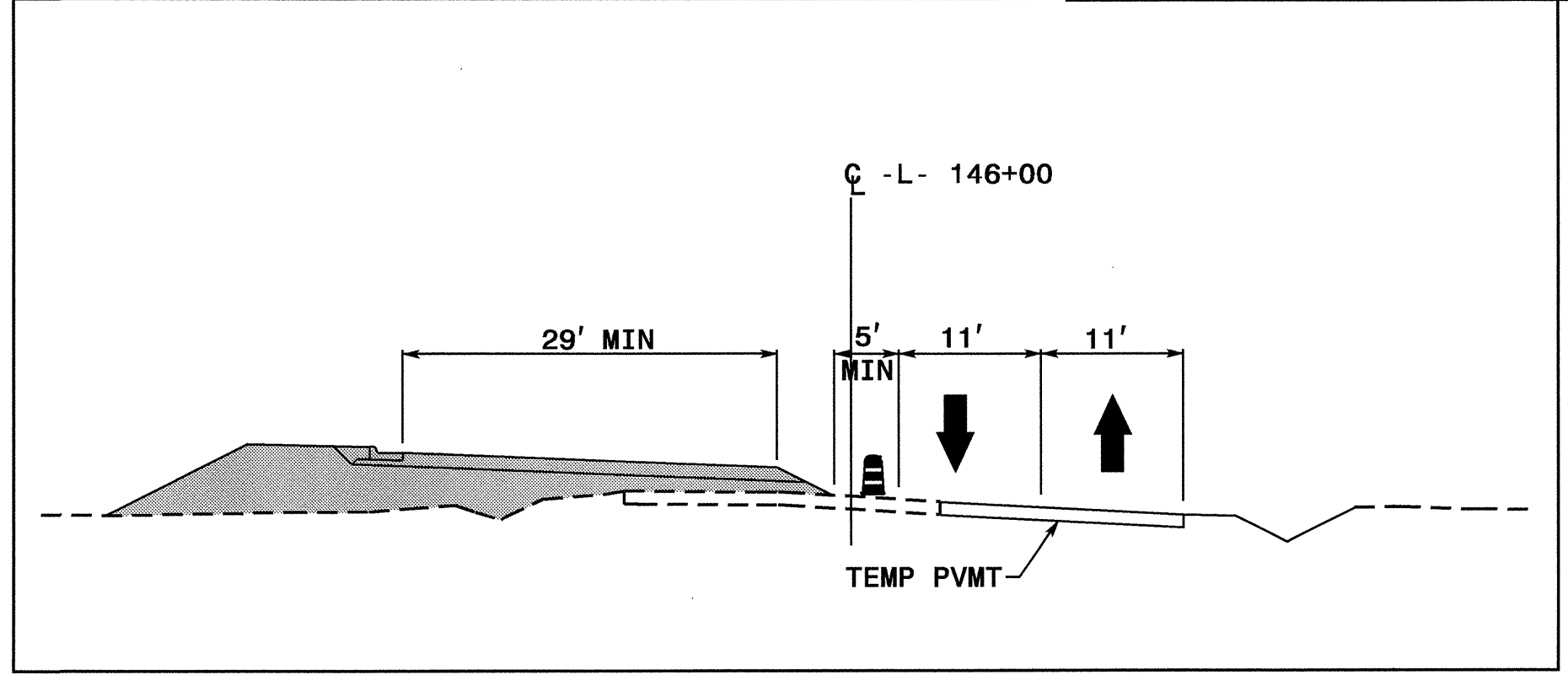
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 derichardson AT W21C237480

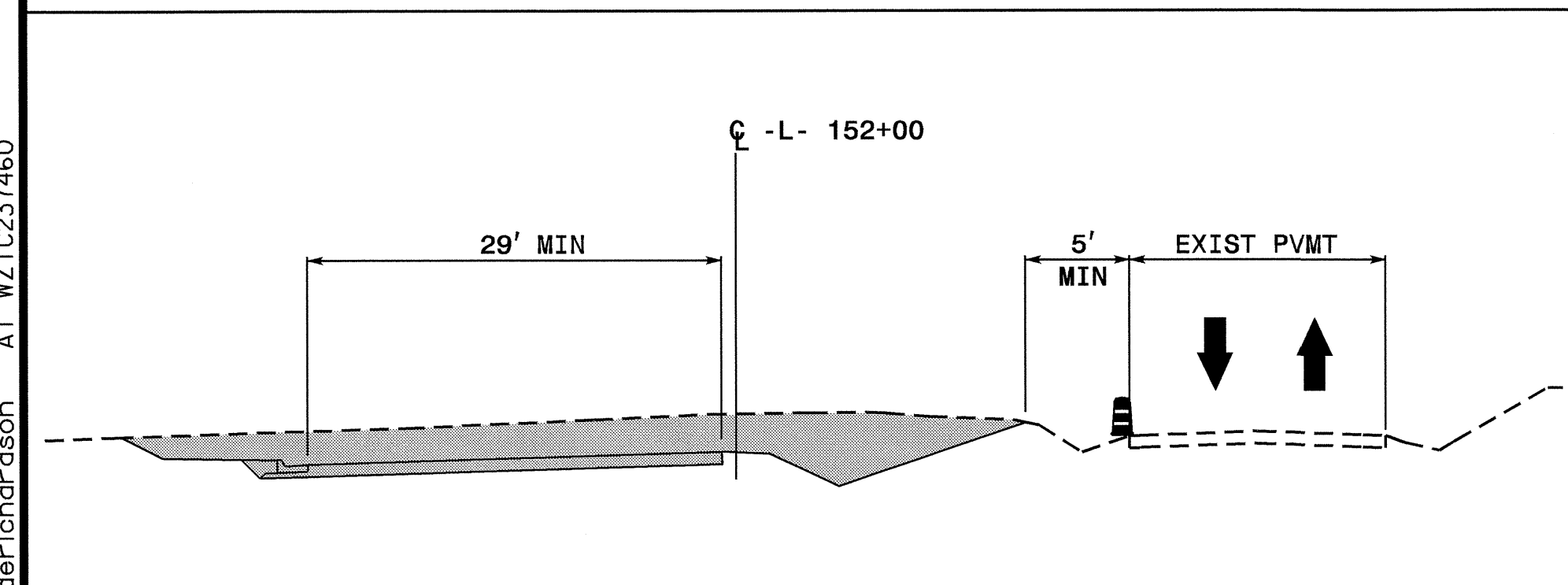
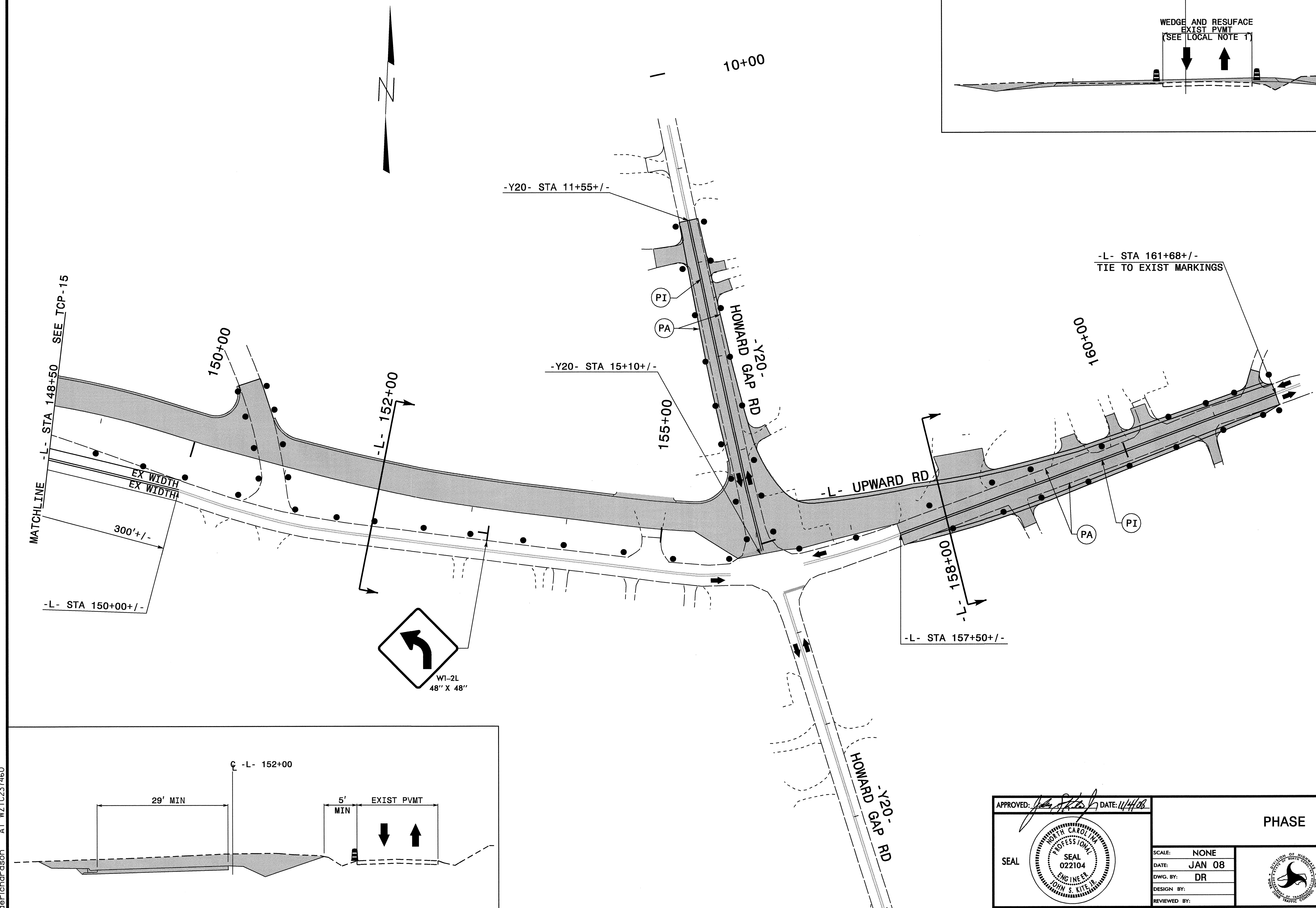
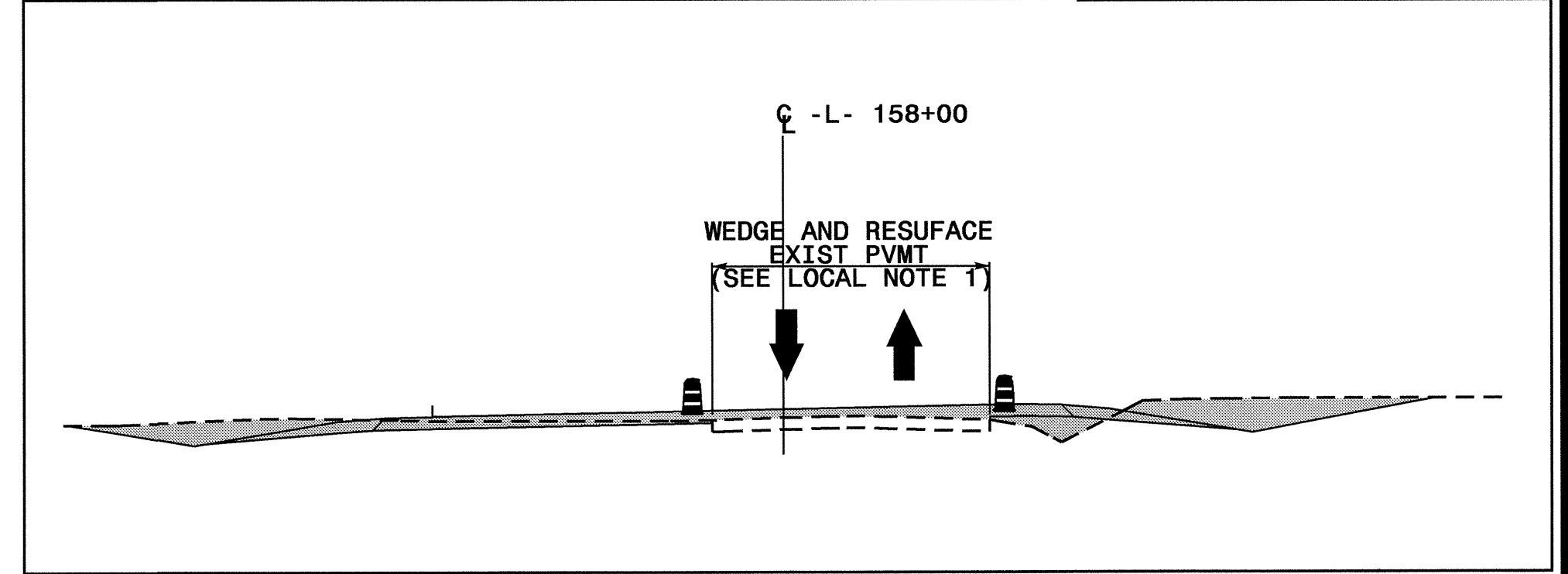
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03-NOV-2008 14:49  
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 AT WZTC237460  
 derichardson

APPROVED: <i>[Signature]</i> DATE: 1/14/08	<b>PHASE I</b>						
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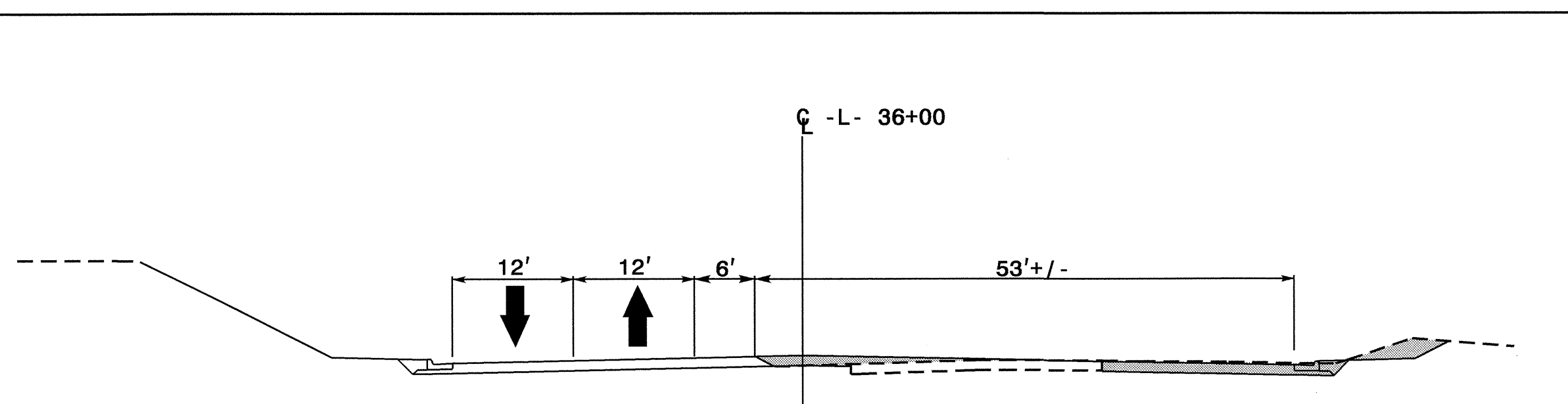
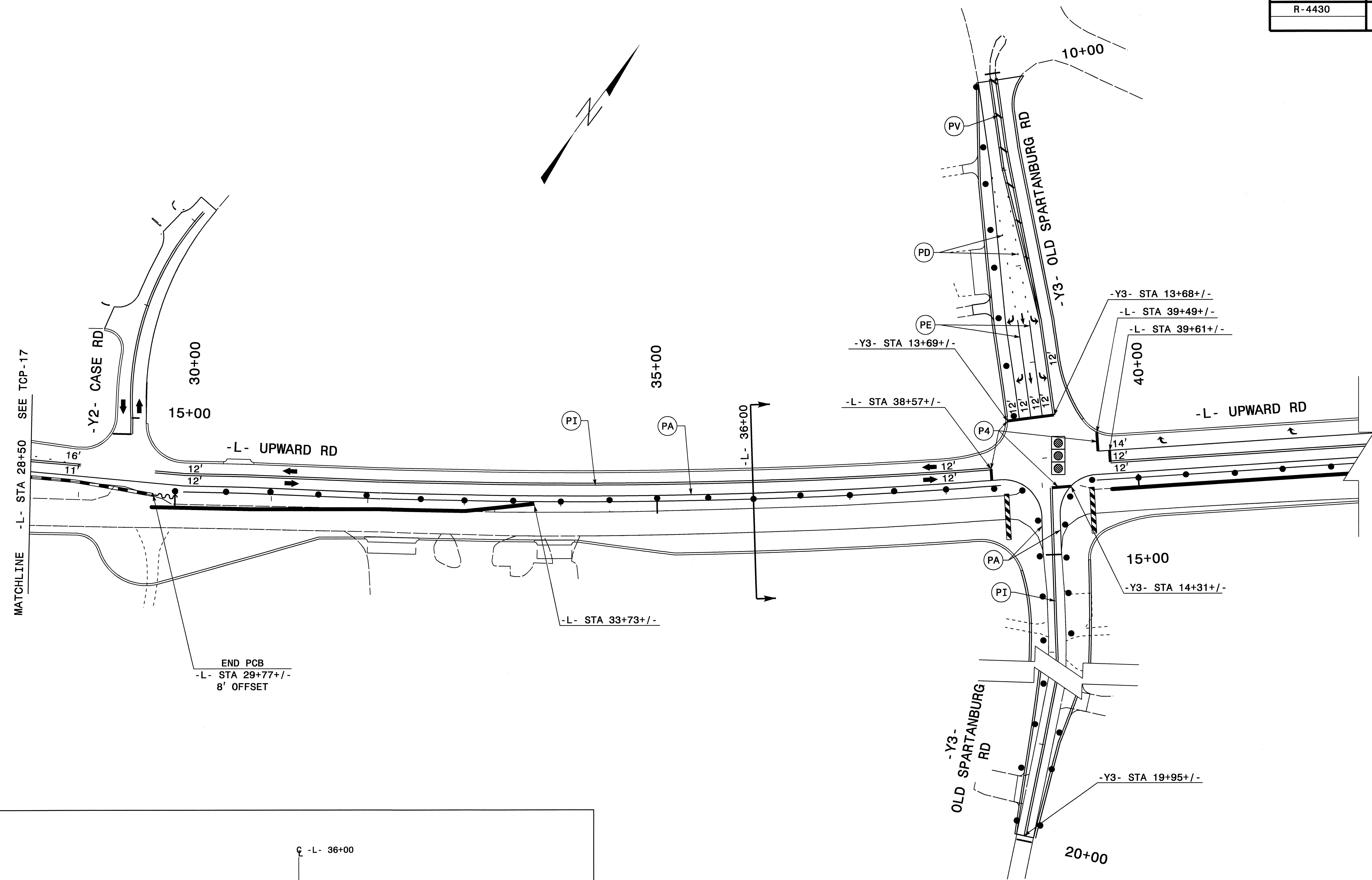


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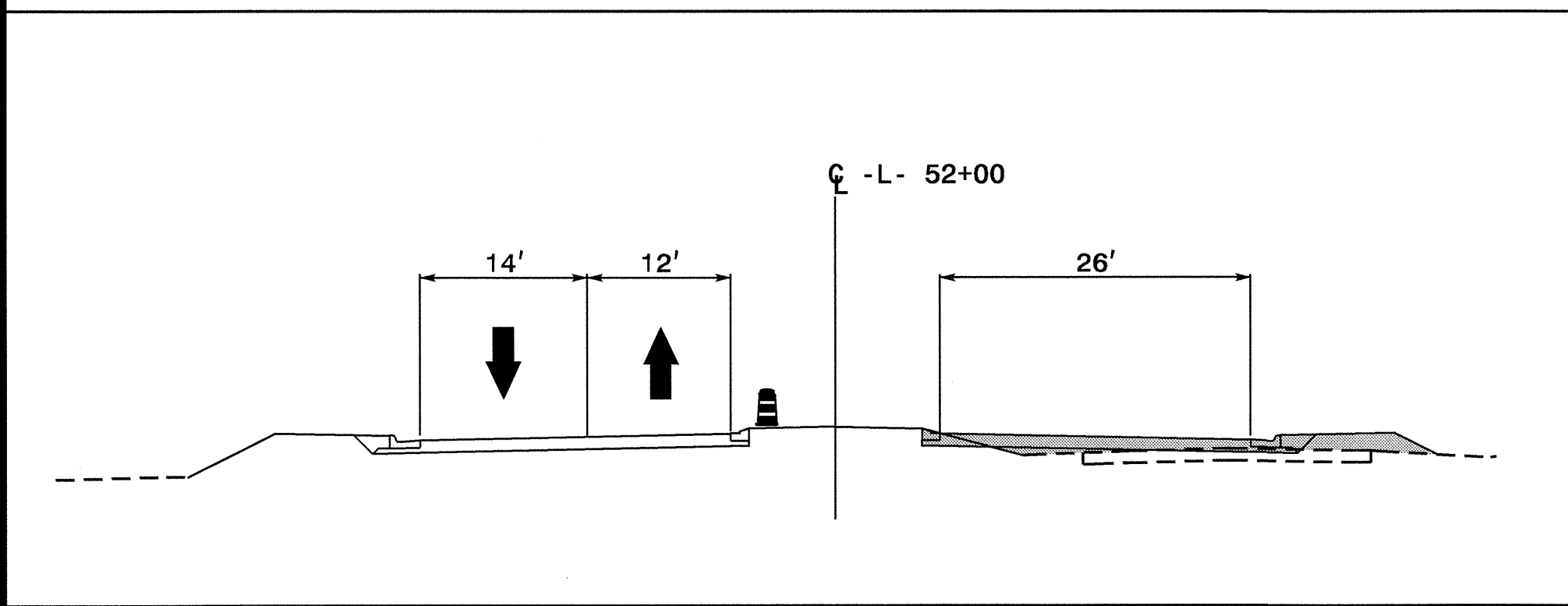
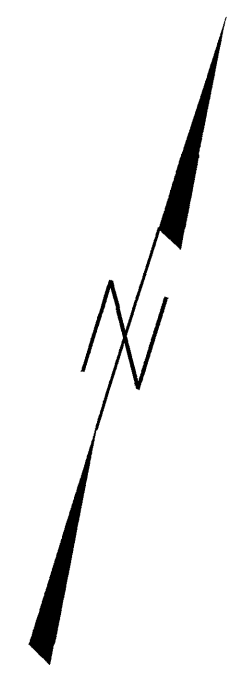
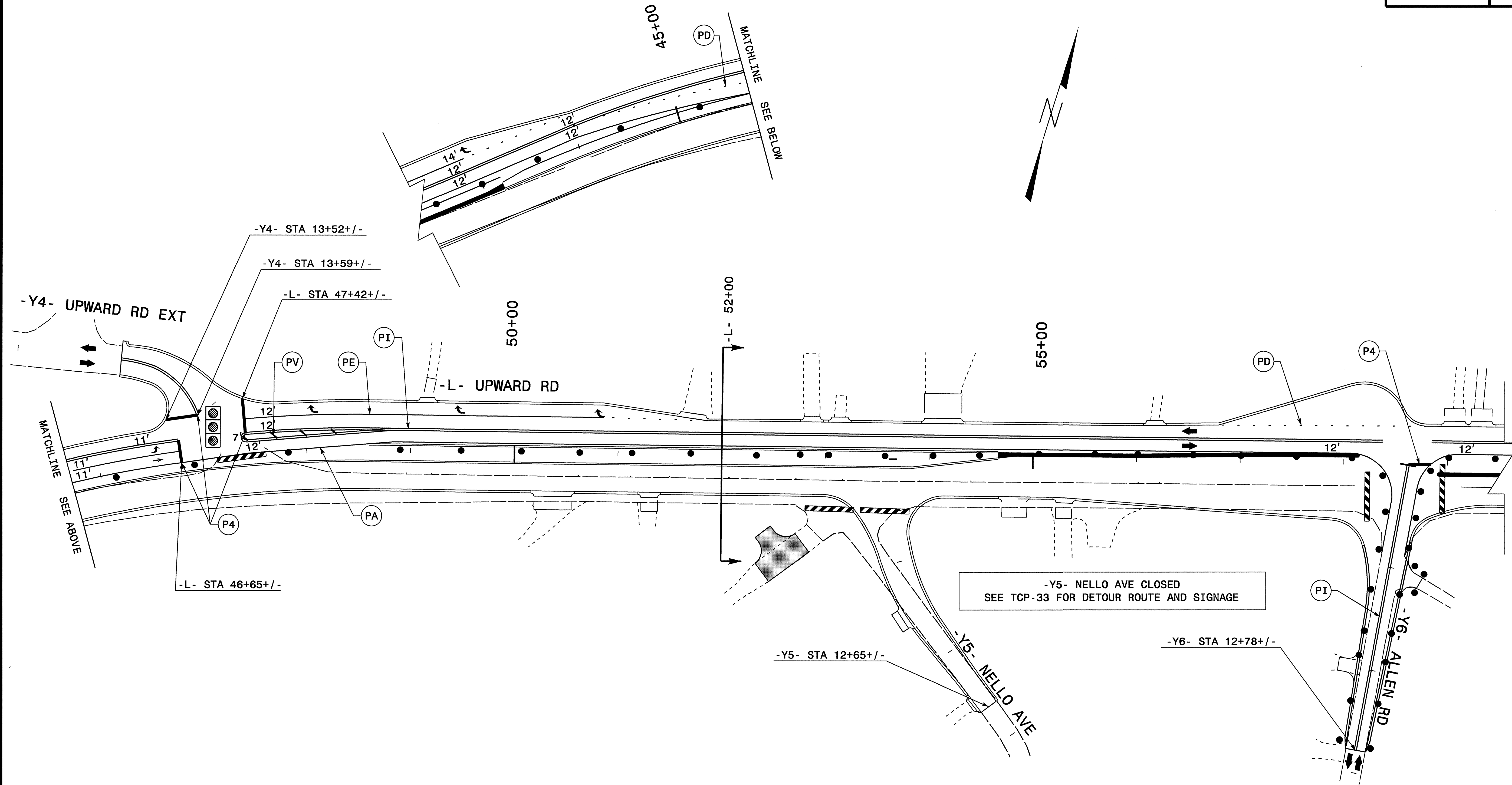




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 AT W7TC237460  
 derchar-dson

APPROVED:  DATE: 11/14/08	<b>PHASE II</b>	
SCALE: NONE		REVISIONS
DATE: JAN 08		
DWG. BY: DR		
DESIGN BY:		
REVIEWED BY:		CADD FILE



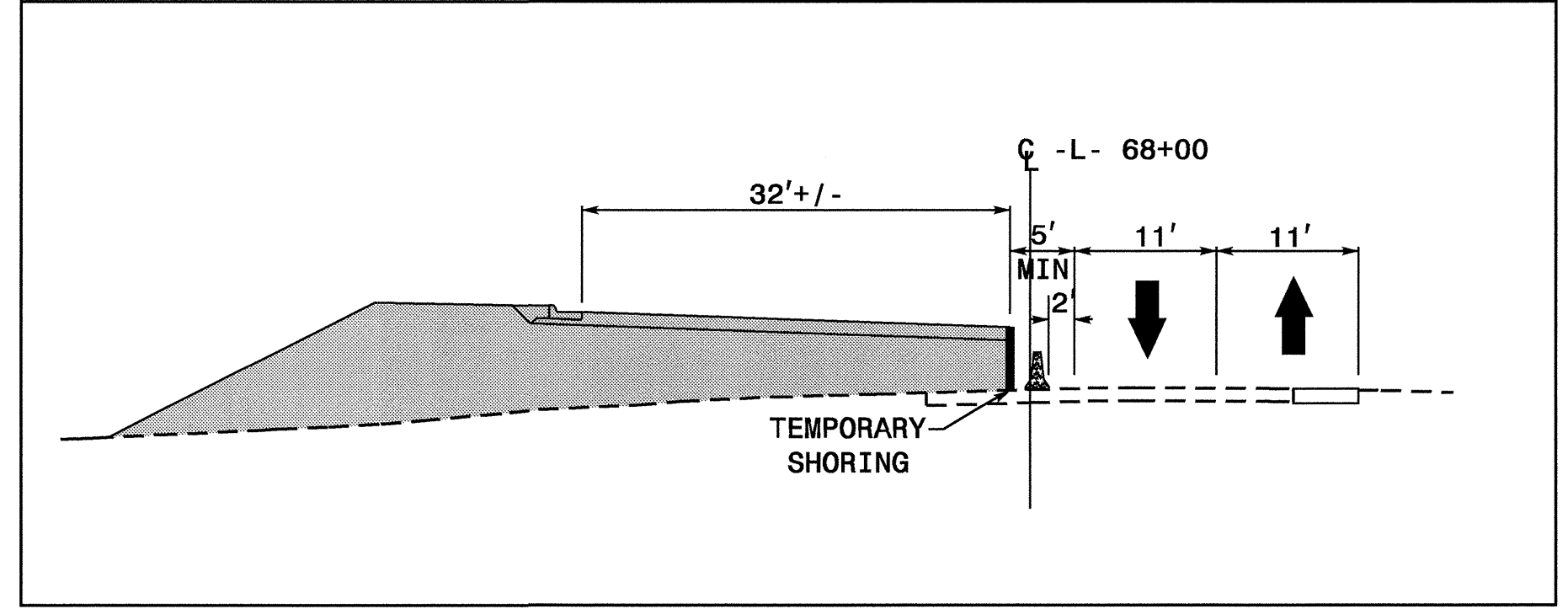
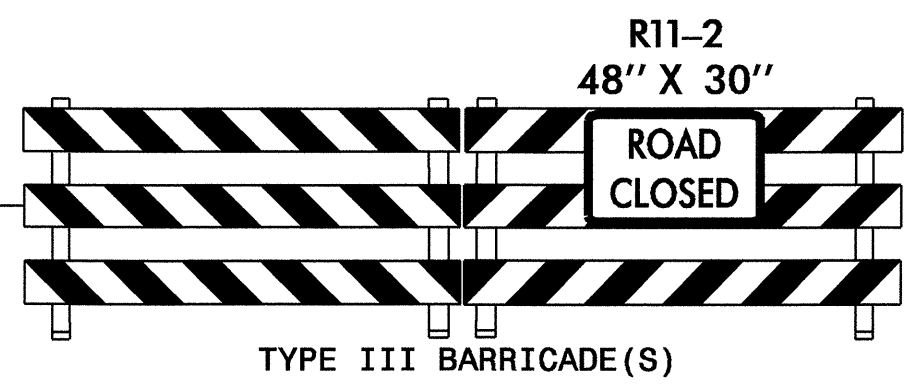


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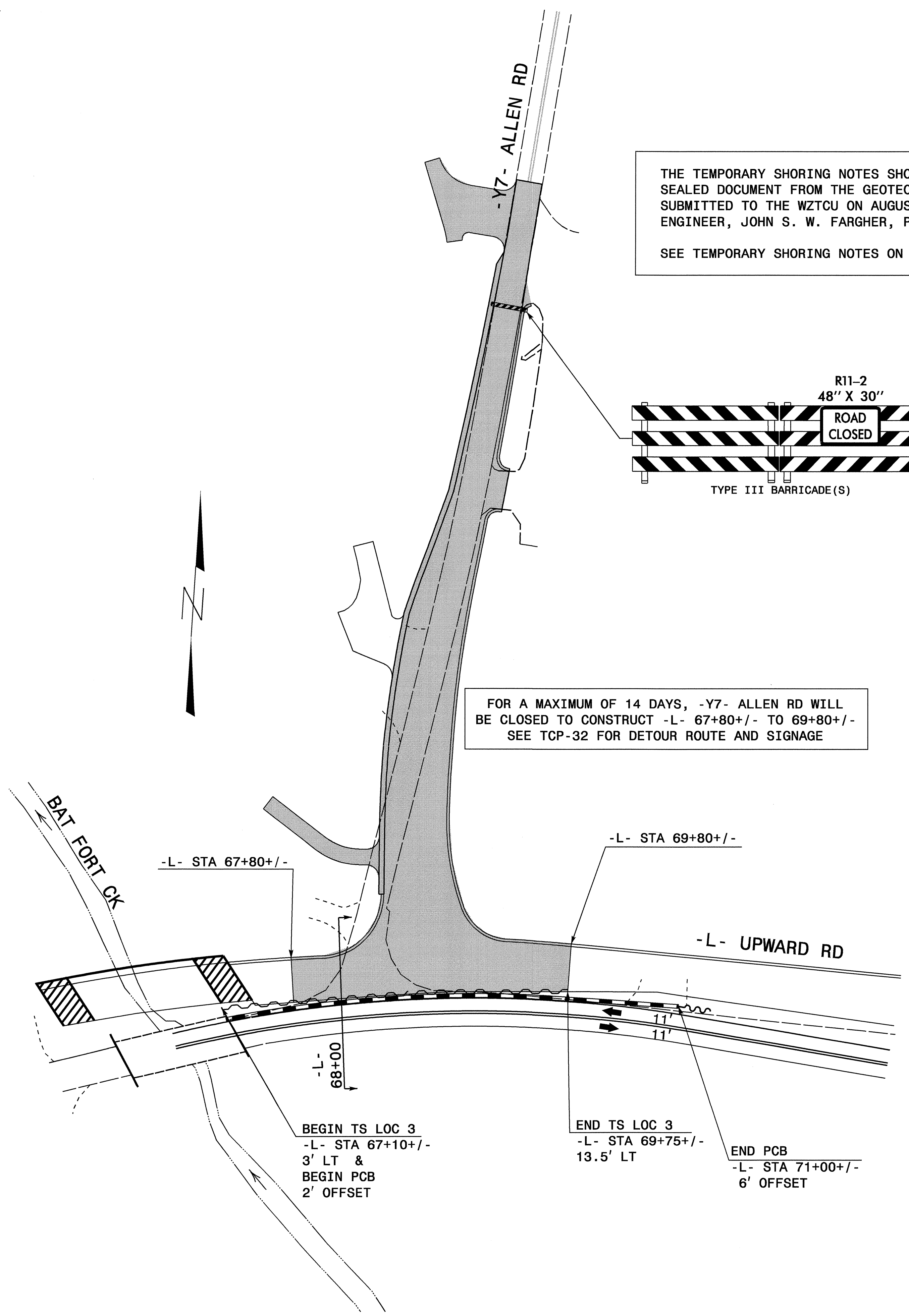
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REVIEWED BY:	REVISIONS	

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SEE TEMPORARY SHORING NOTES ON TCP-3B



FOR A MAXIMUM OF 14 DAYS, -Y7- ALLEN RD WILL BE CLOSED TO CONSTRUCT -L- 67+80+/- TO 69+80+/- SEE TCP-32 FOR DETOUR ROUTE AND SIGNAGE

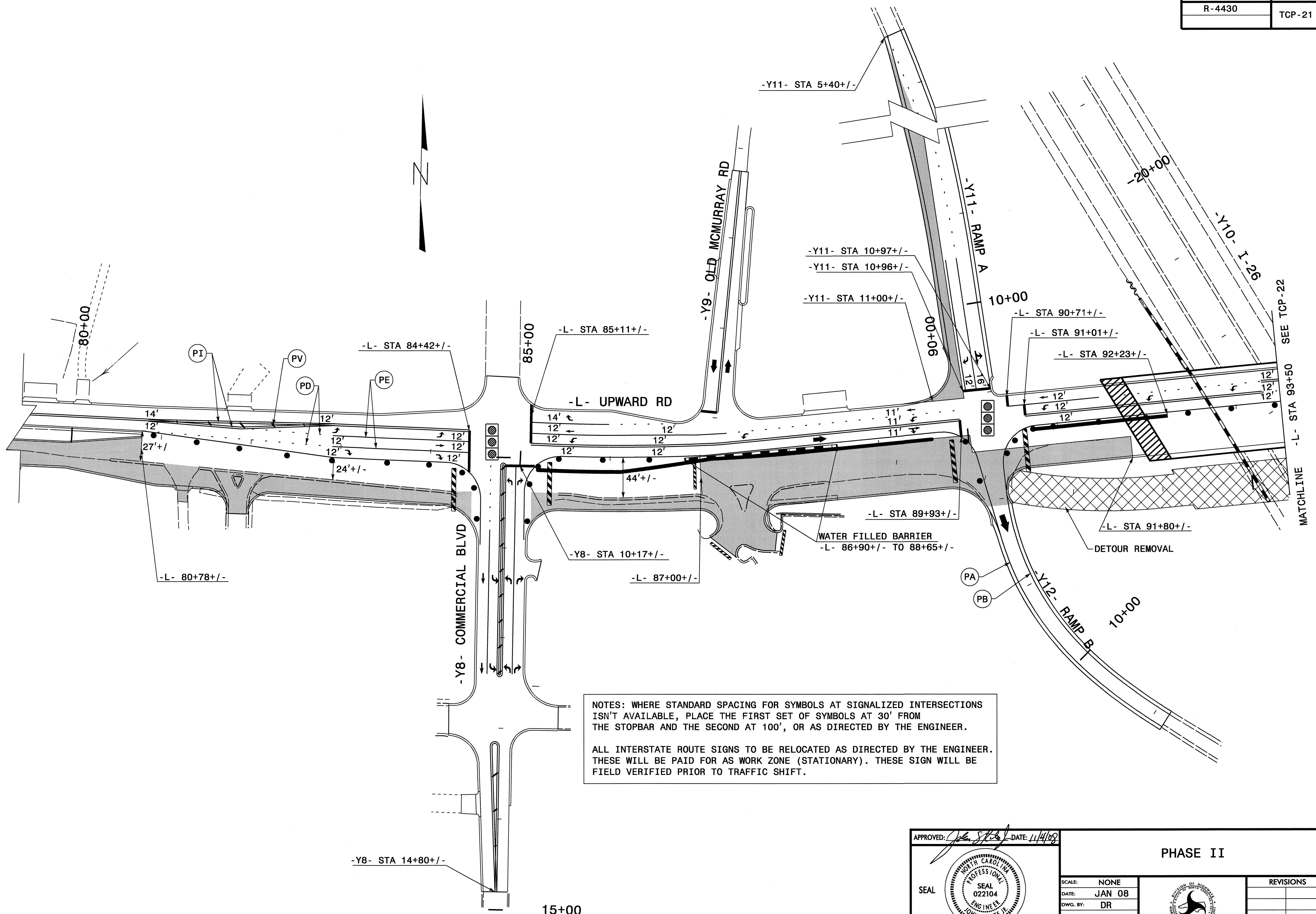


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 AT WZTC237460  
 derichardson

APPROVED:	DATE: 1/14/08	<b>PHASE II</b>	
	SCALE: NONE		REVISIONS
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REVIEWED BY:			







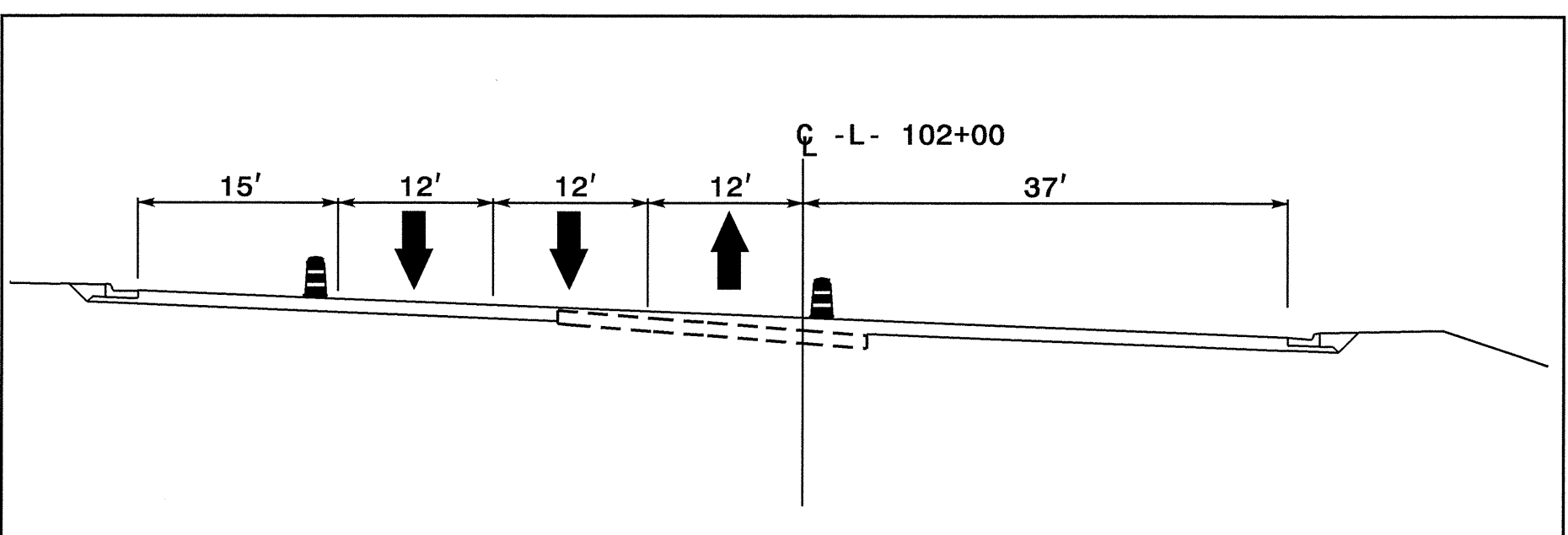
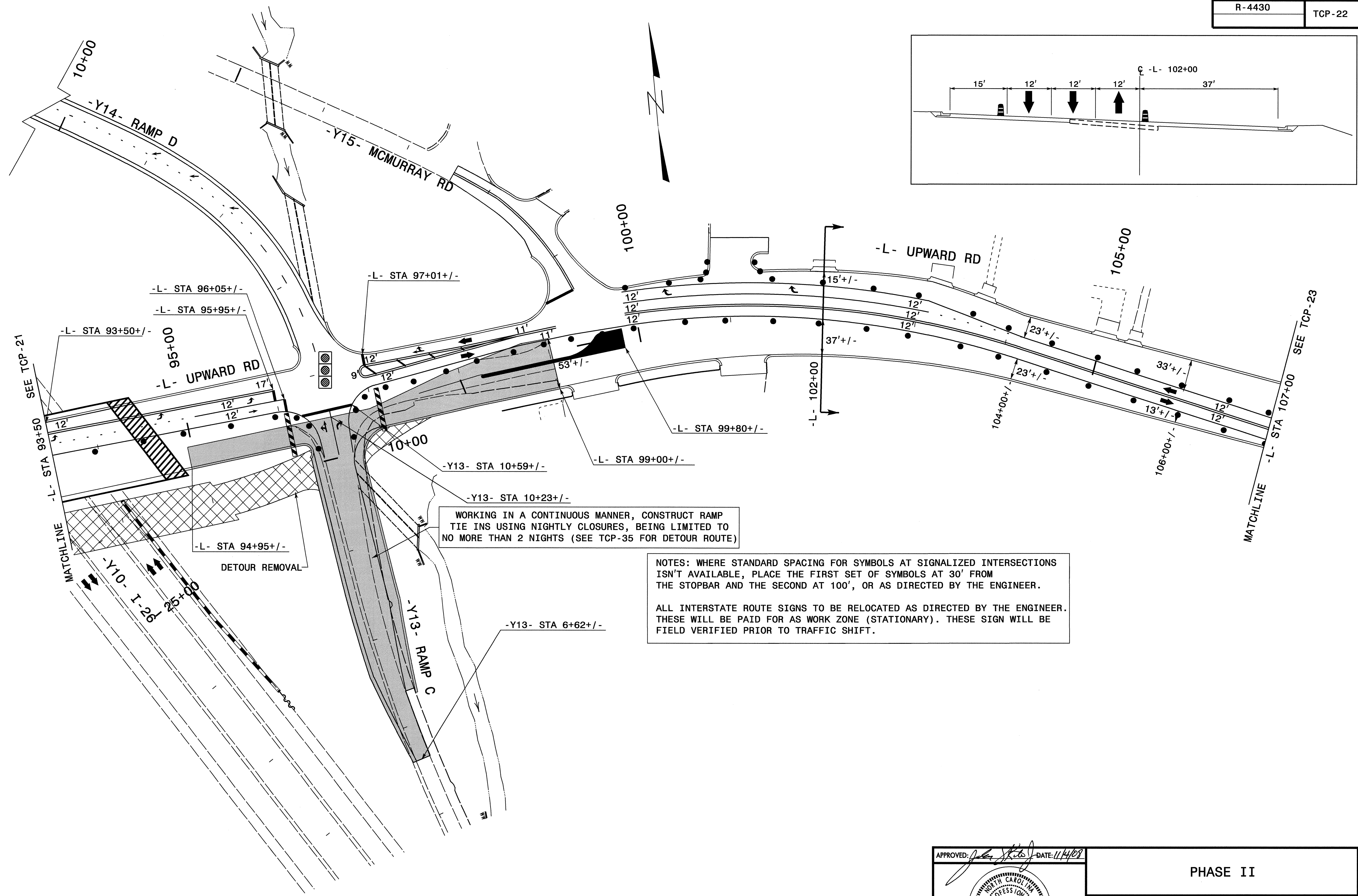
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05-NOV-2008 10:32  
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 derichardson AT WZTC237460

APPROVED: <i>John S. Kite</i> DATE: 11/4/08	<b>PHASE II</b>	
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	DWG. BY: DR	
	DESIGN BY:	
REVIEWED BY:	REVISIONS	





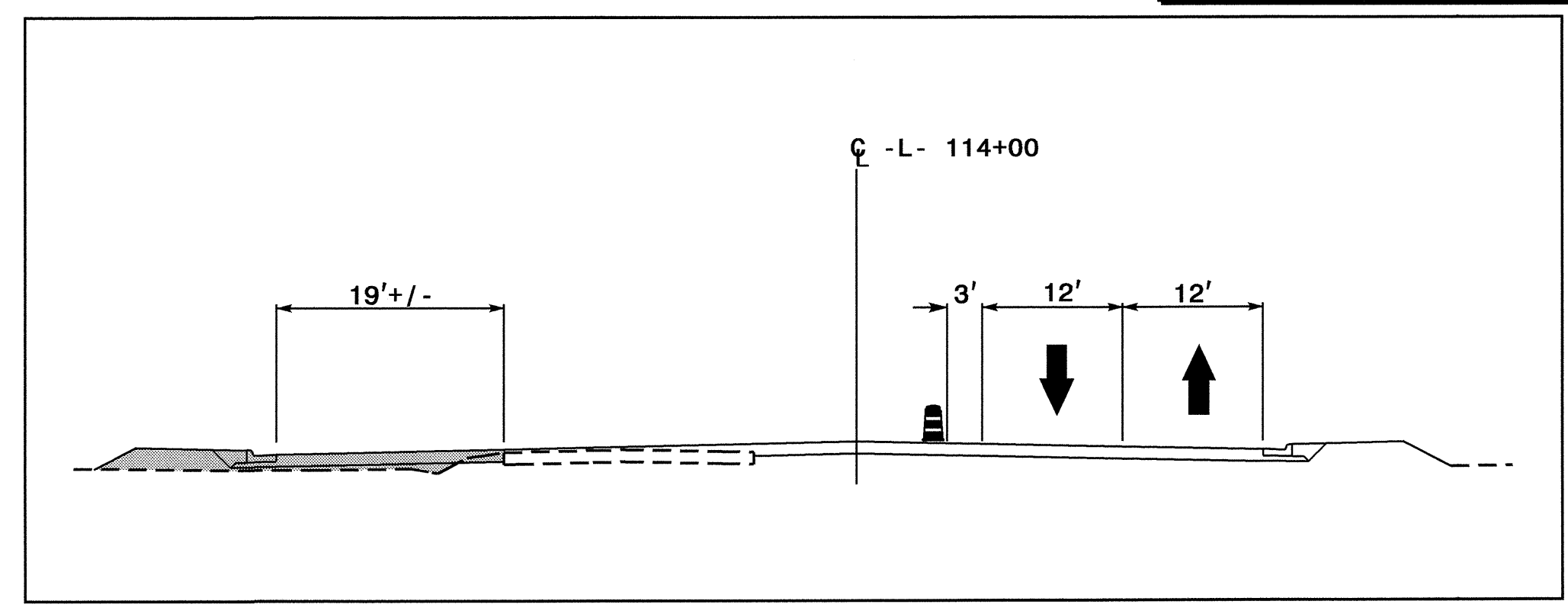
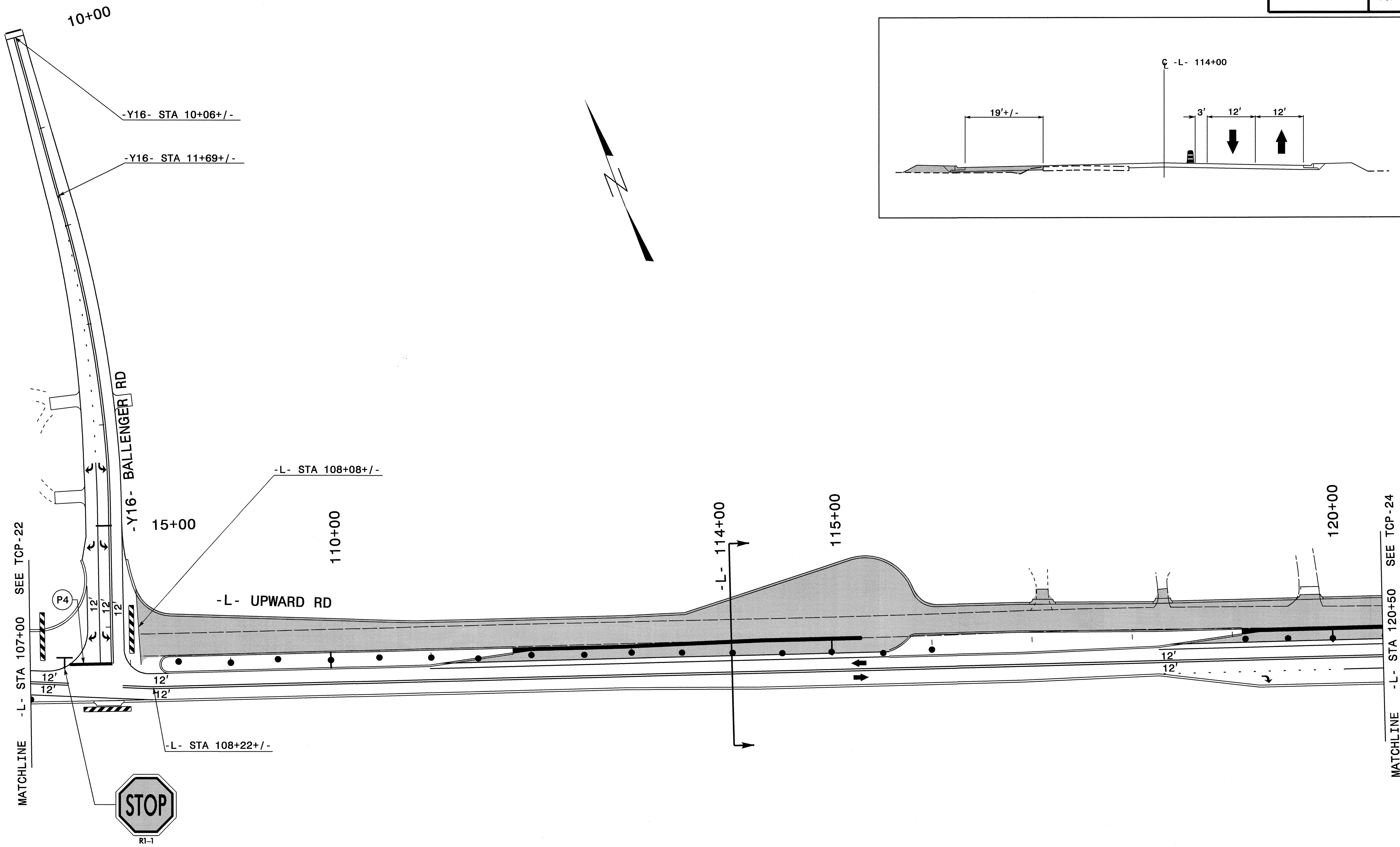
WORKING IN A CONTINUOUS MANNER, CONSTRUCT RAMP TIE INS USING NIGHTLY CLOSURES, BEING LIMITED TO NO MORE THAN 2 NIGHTS (SEE TCP-35 FOR DETOUR ROUTE)

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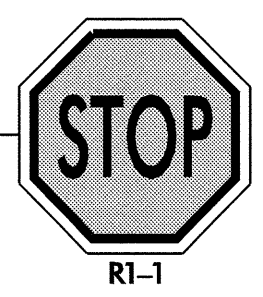
ALL INTERSTATE ROUTE SIGNS TO BE RELOCATED AS DIRECTED BY THE ENGINEER. THESE WILL BE PAID FOR AS WORK ZONE (STATIONARY). THESE SIGN WILL BE FIELD VERIFIED PRIOR TO TRAFFIC SHIFT.

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APPROVED:  DATE: 1/4/08	<b>PHASE II</b>	
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REVIEWED BY:	REVISIONS	

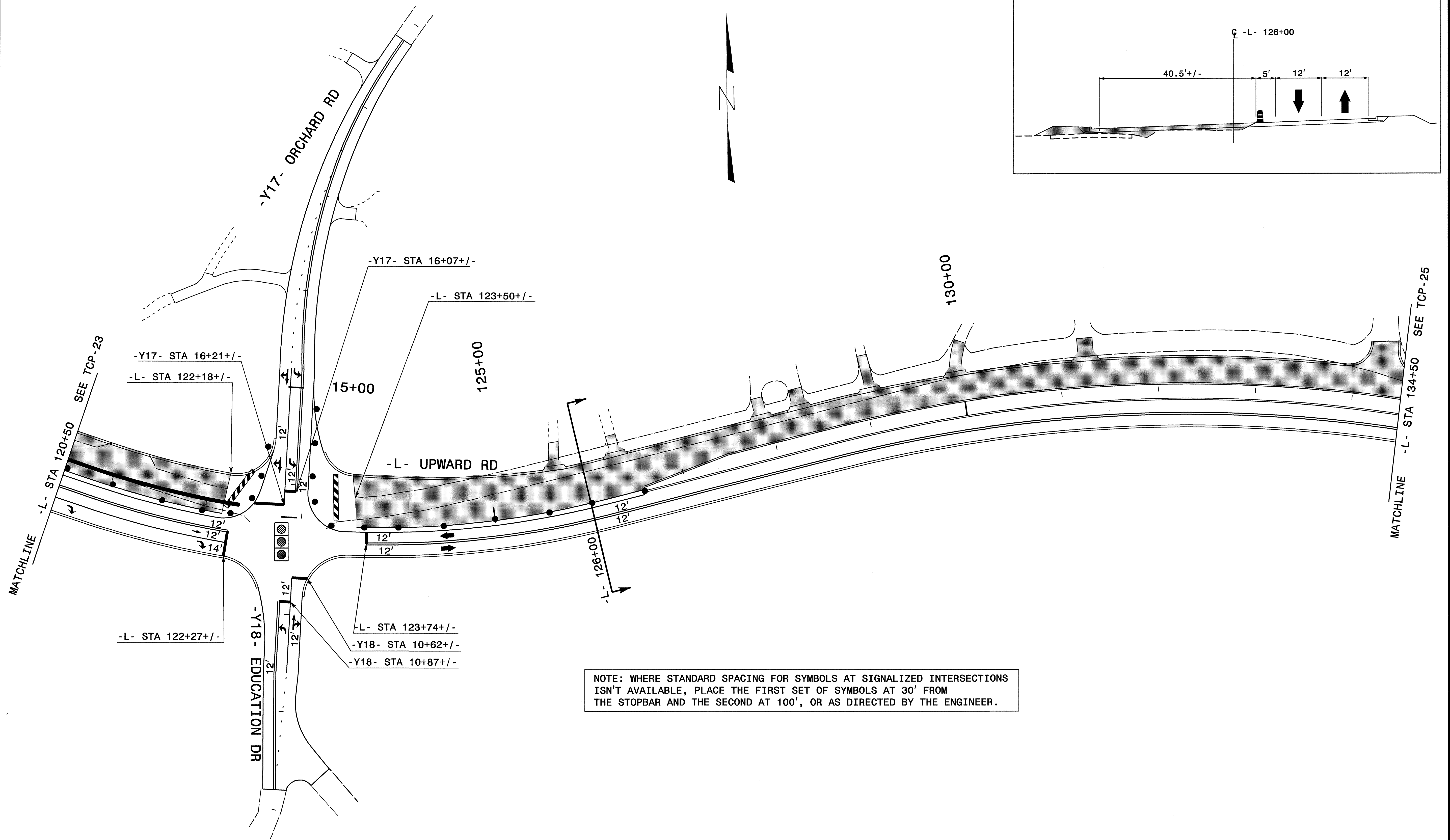
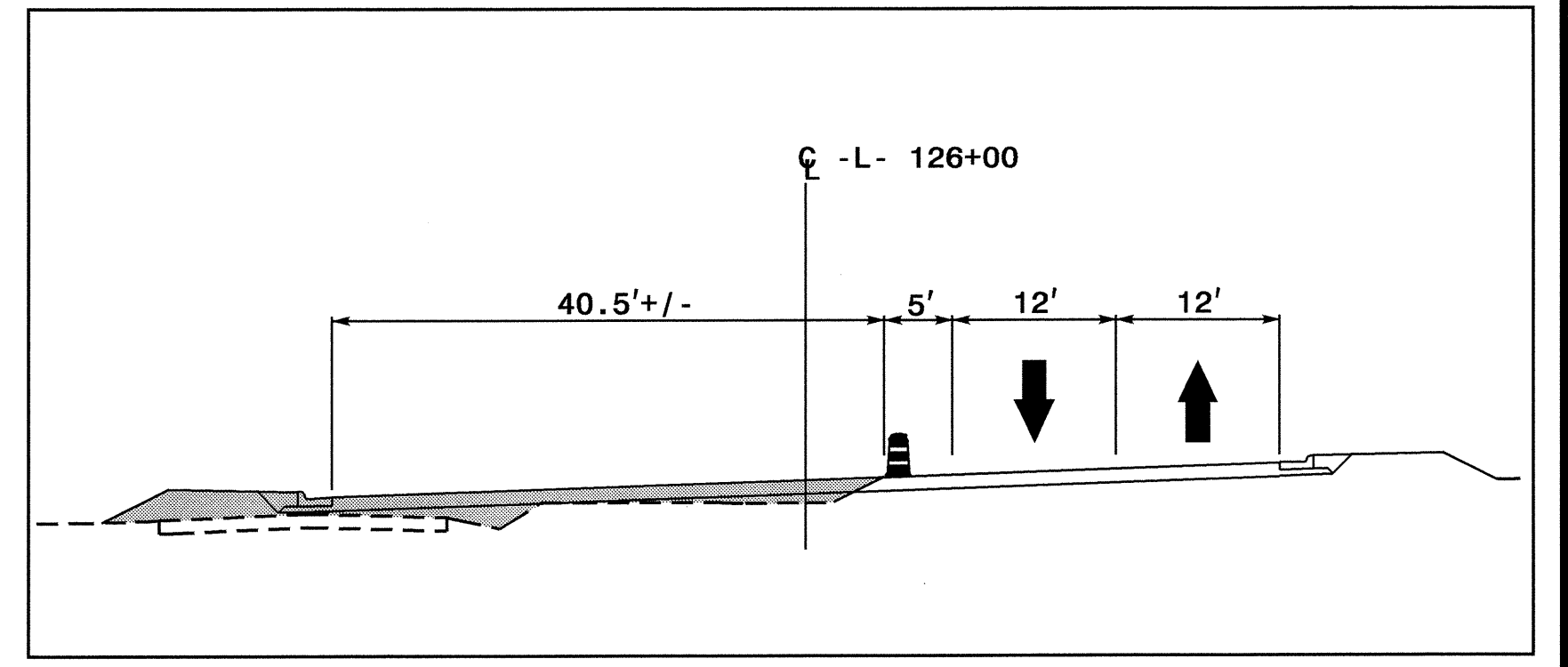


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 derichardson AT WZTC237460



APPROVED: <i>[Signature]</i> DATE: 1/4/08	<b>PHASE II</b>										
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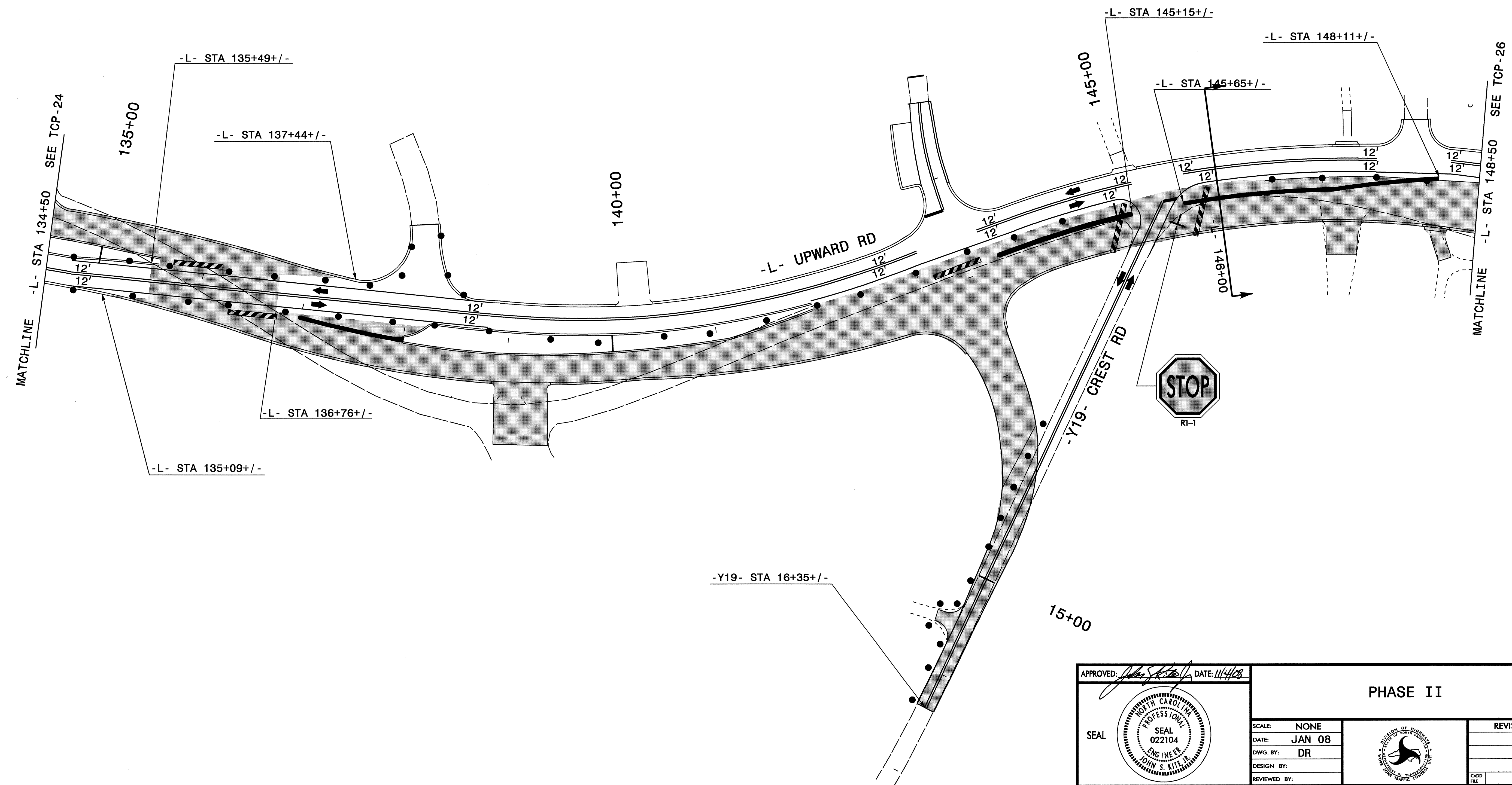
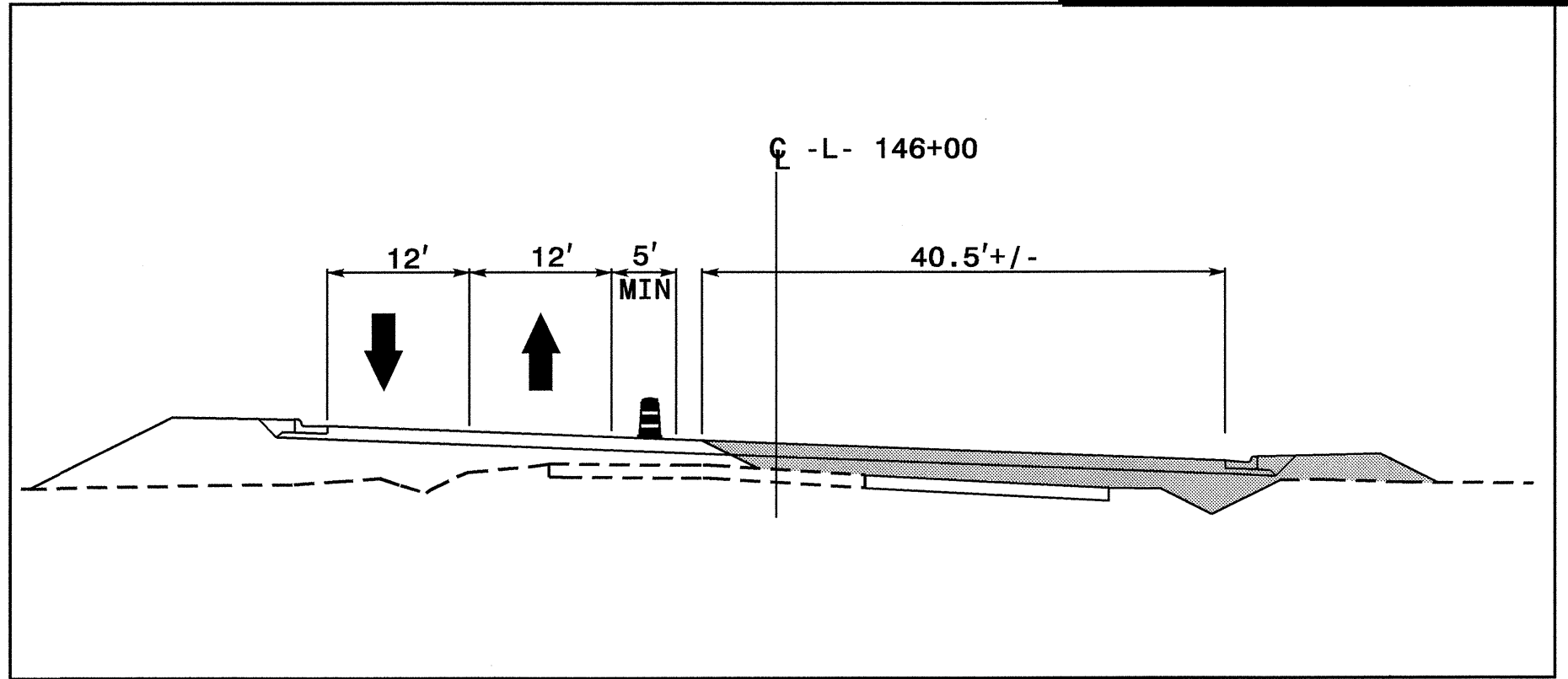




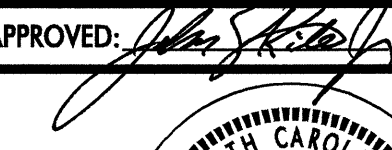
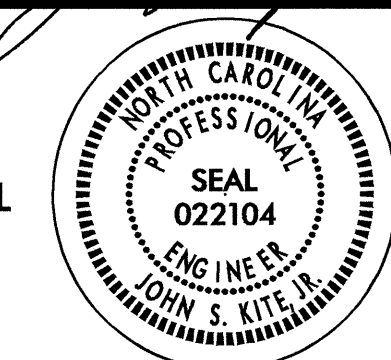

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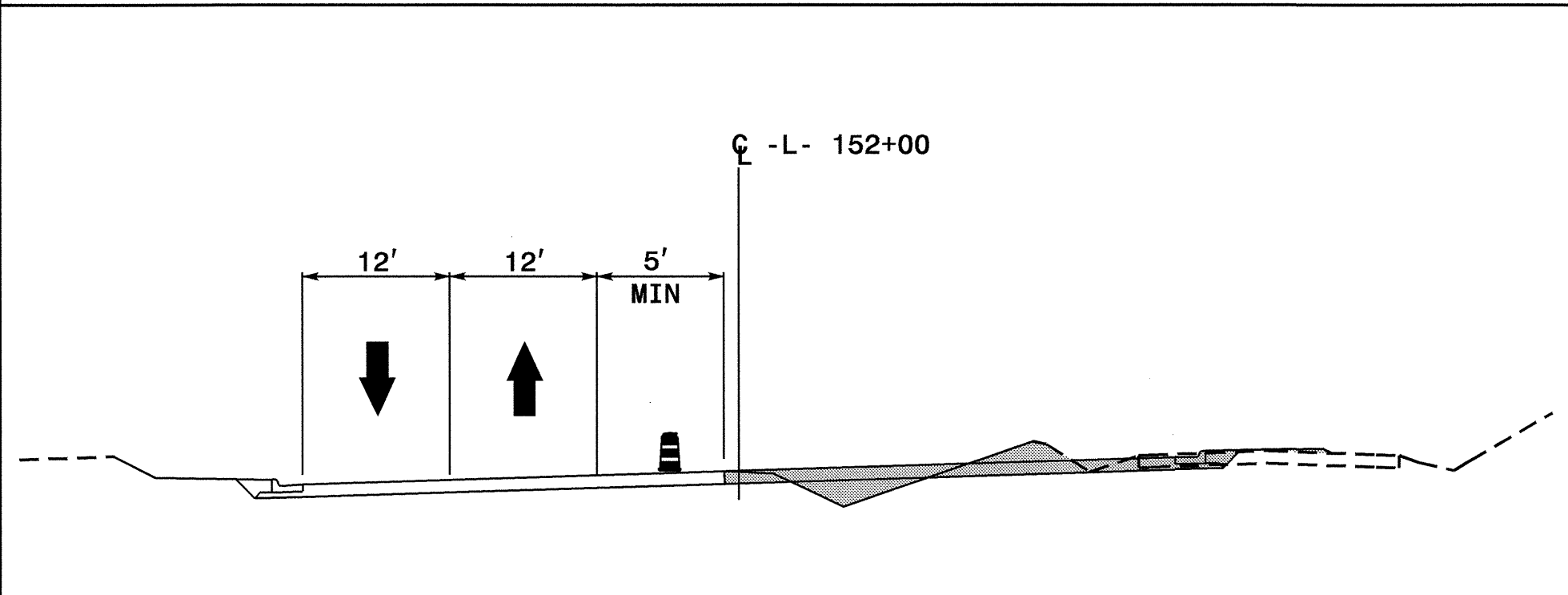
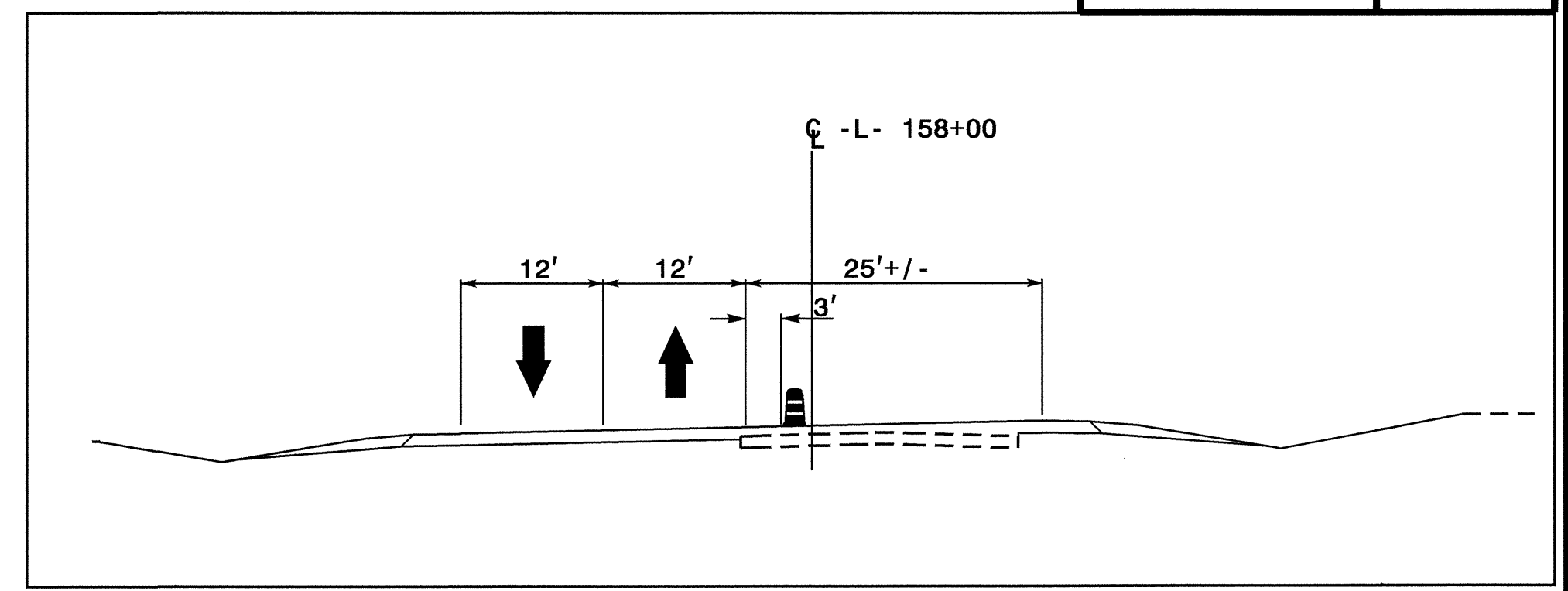
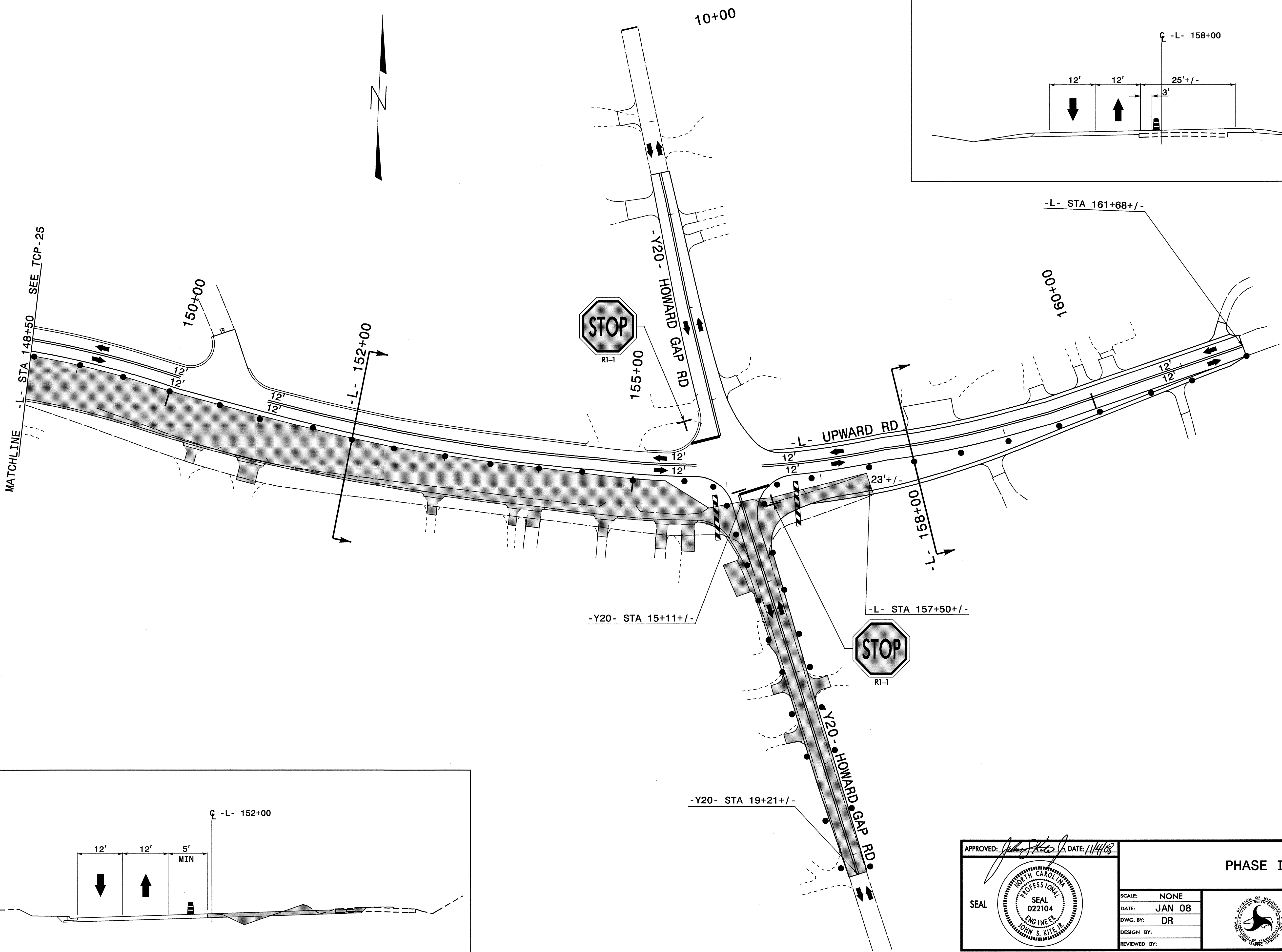
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	DESIGN BY:	
REVIEWED BY:	REVISIONS	



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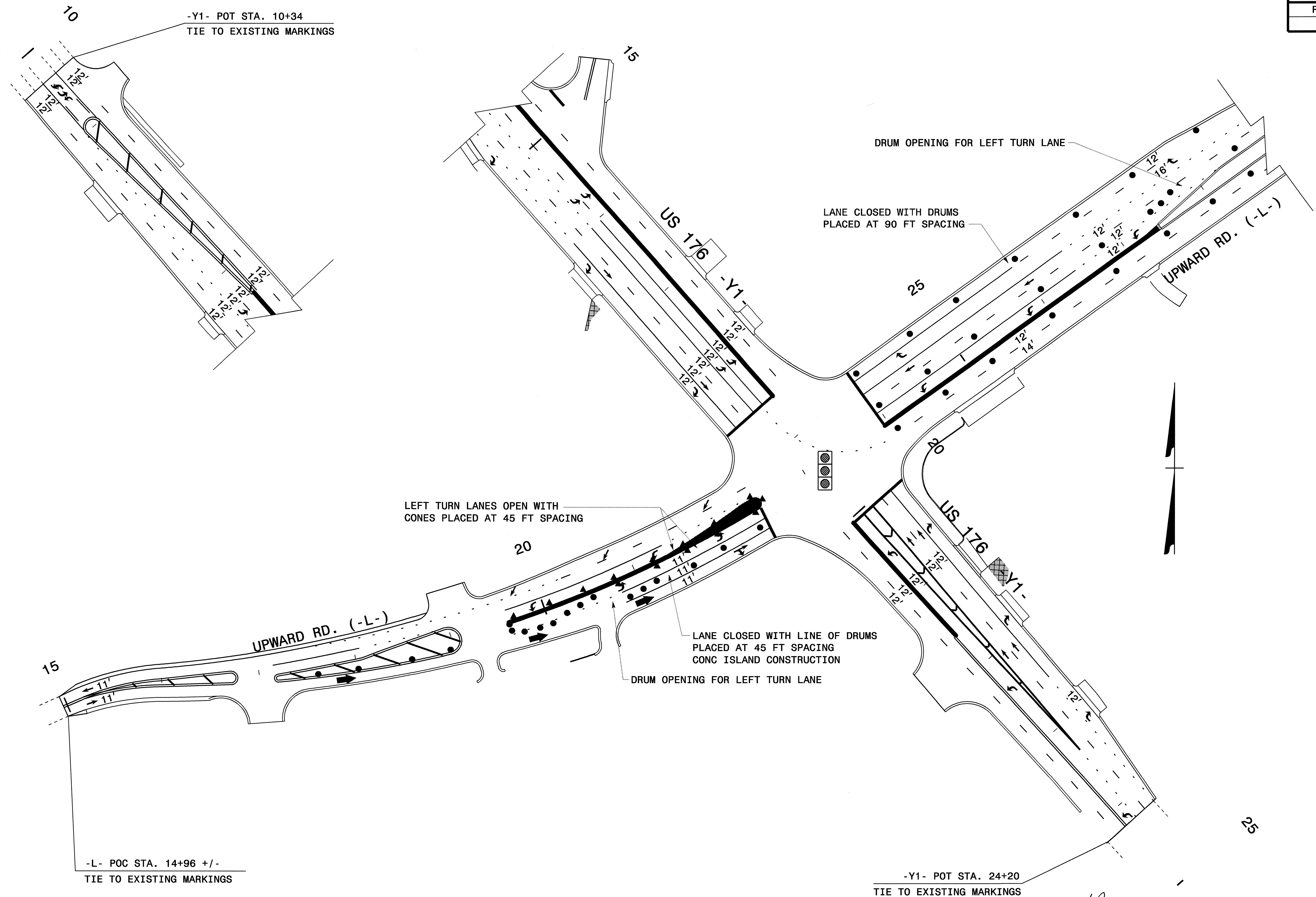
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 AT WZTC237460  
 derichardson

APPROVED:  DATE: 1/14/08	<b>PHASE II</b>	
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REVIEWED BY:	REVISIONS	



LEFT TURN LANES OPEN WITH CONES PLACED AT 45 FT SPACING

LANE CLOSED WITH DRUMS PLACED AT 90 FT SPACING

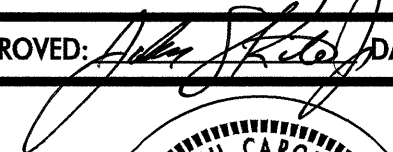
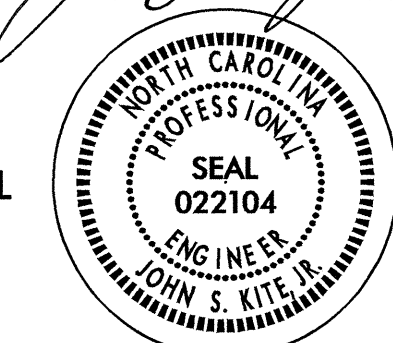

LANE CLOSED WITH LINE OF DRUMS PLACED AT 45 FT SPACING CONC ISLAND CONSTRUCTION

-L- POC STA. 14+96 +/-  
TIE TO EXISTING MARKINGS

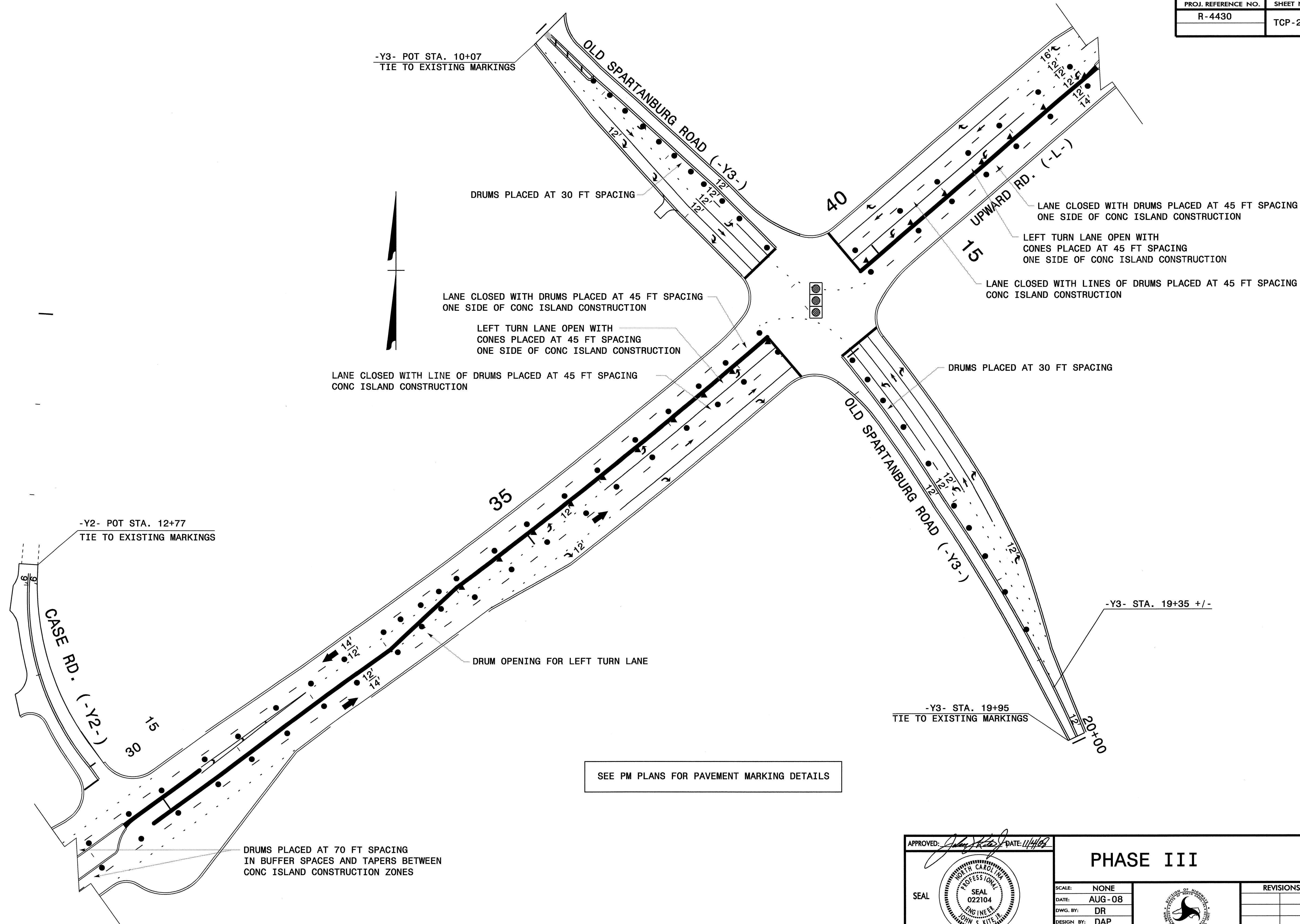
-Y1- POT STA. 24+20  
TIE TO EXISTING MARKINGS

SEE PM PLANS FOR PAVEMENT MARKING DETAILS

30-OCT-2009 14:02  
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 AT WZTC237460  
 derichardson

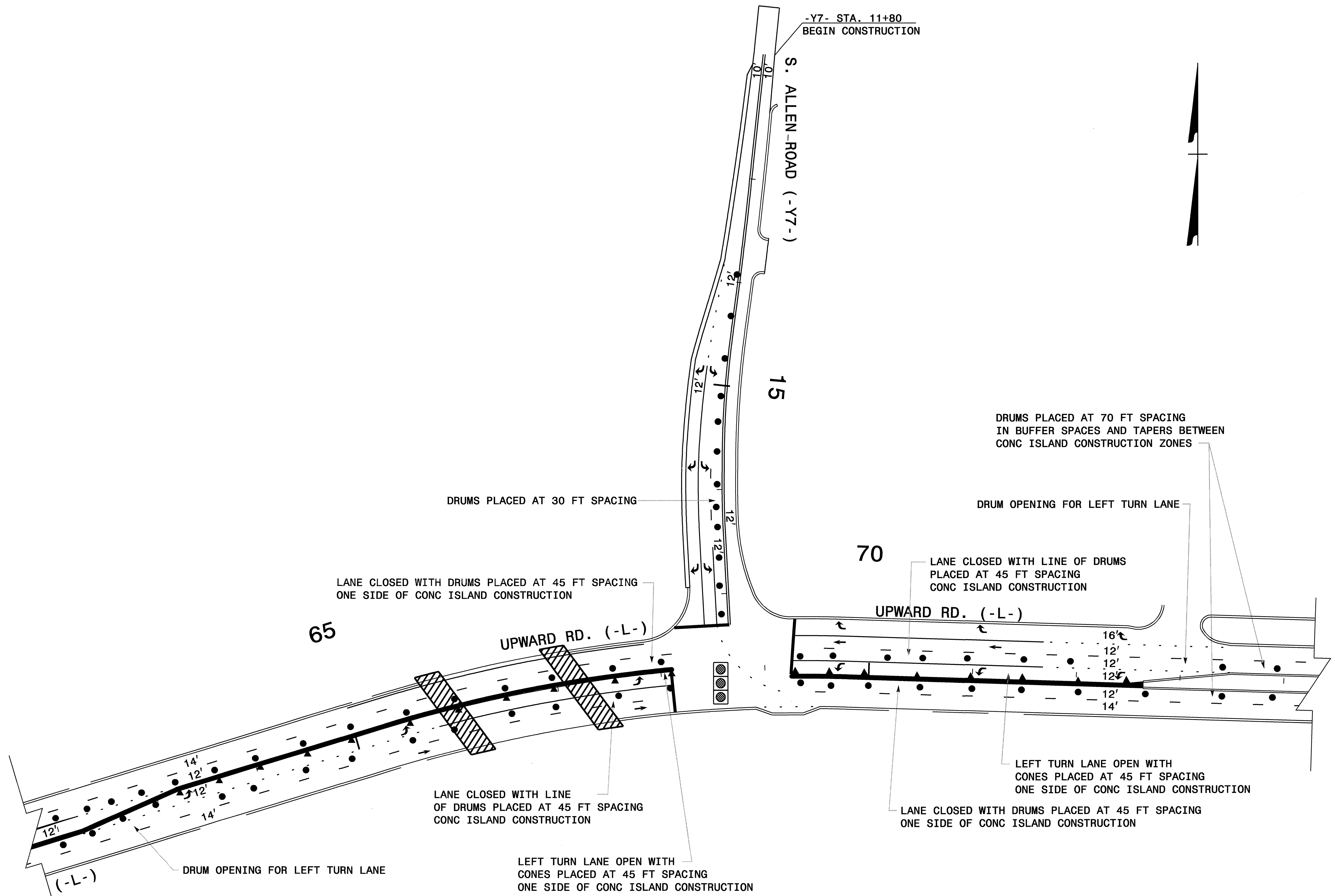
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REVIEWED BY: DAP	REVISIONS	CAAD FILE





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APPROVED: <i>[Signature]</i> DATE: 11/4/08	<b>PHASE III</b>	REVISIONS	
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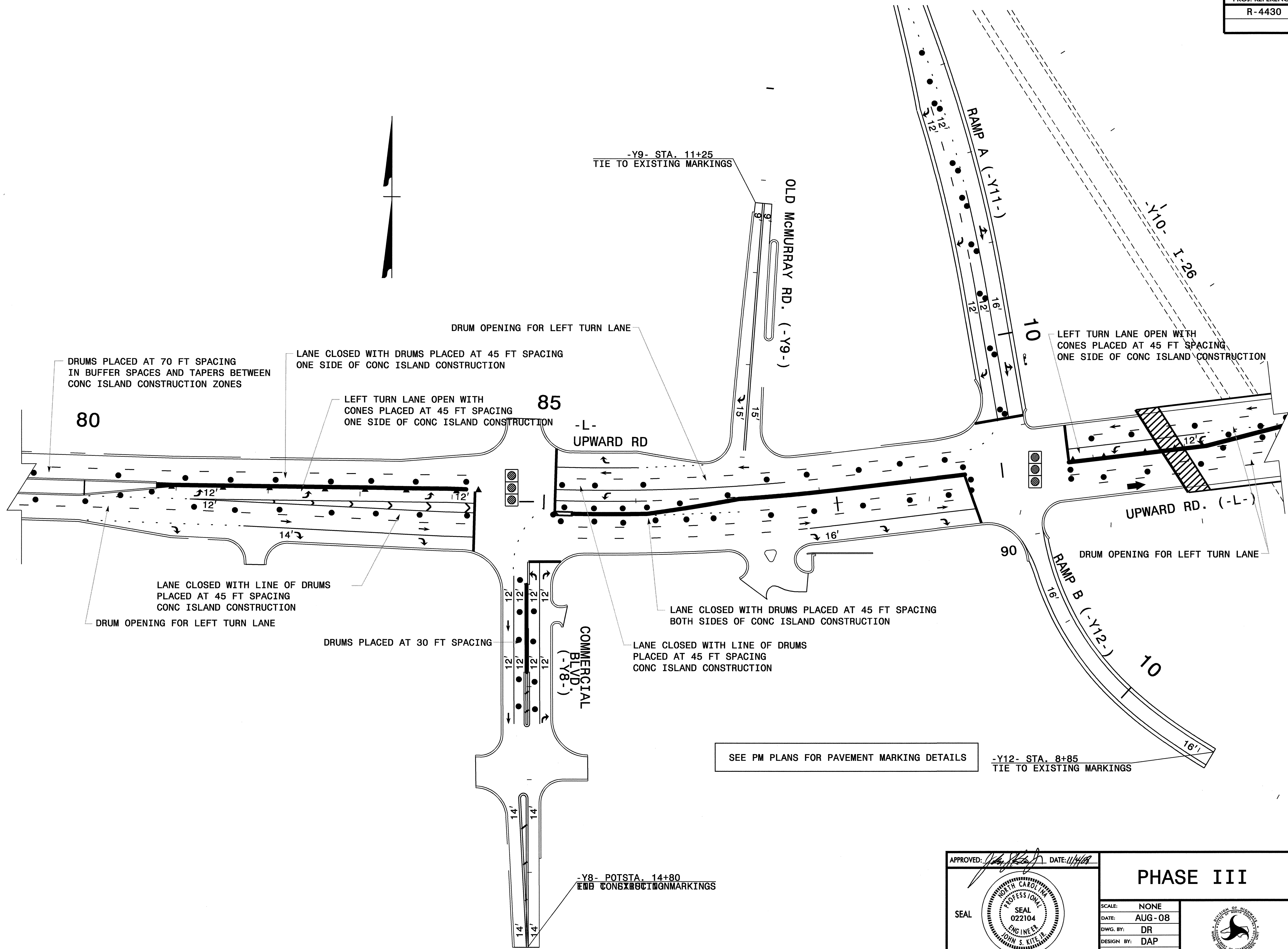


SEE PM PLANS FOR PAVEMENT MARKING DETAILS

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REVIEWED BY: DAP													

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 AT WZTC237460  
 derichardson





DRUMS PLACED AT 70 FT SPACING  
IN BUFFER SPACES AND TAPERS BETWEEN  
CONC ISLAND CONSTRUCTION ZONES

LANE CLOSED WITH DRUMS PLACED AT 45 FT SPACING  
ONE SIDE OF CONC ISLAND CONSTRUCTION

LEFT TURN LANE OPEN WITH  
CONES PLACED AT 45 FT SPACING  
ONE SIDE OF CONC ISLAND CONSTRUCTION

LEFT TURN LANE OPEN WITH  
CONES PLACED AT 45 FT SPACING  
ONE SIDE OF CONC ISLAND CONSTRUCTION

80

85

10

UPWARD RD. (-L-)

90

RAMP B (-Y12-)

10

LANE CLOSED WITH LINE OF DRUMS  
PLACED AT 45 FT SPACING  
CONC ISLAND CONSTRUCTION

DRUM OPENING FOR LEFT TURN LANE

DRUMS PLACED AT 30 FT SPACING

COMMERCIAL  
BLVD.  
(-Y8-)

LANE CLOSED WITH DRUMS PLACED AT 45 FT SPACING  
BOTH SIDES OF CONC ISLAND CONSTRUCTION


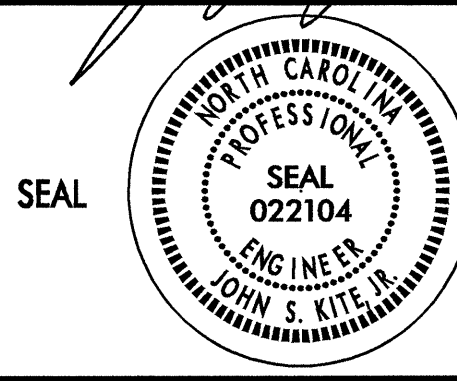

LANE CLOSED WITH LINE OF DRUMS  
PLACED AT 45 FT SPACING  
CONC ISLAND CONSTRUCTION

SEE PM PLANS FOR PAVEMENT MARKING DETAILS

-Y12- STA. 8+85  
TIE TO EXISTING MARKINGS

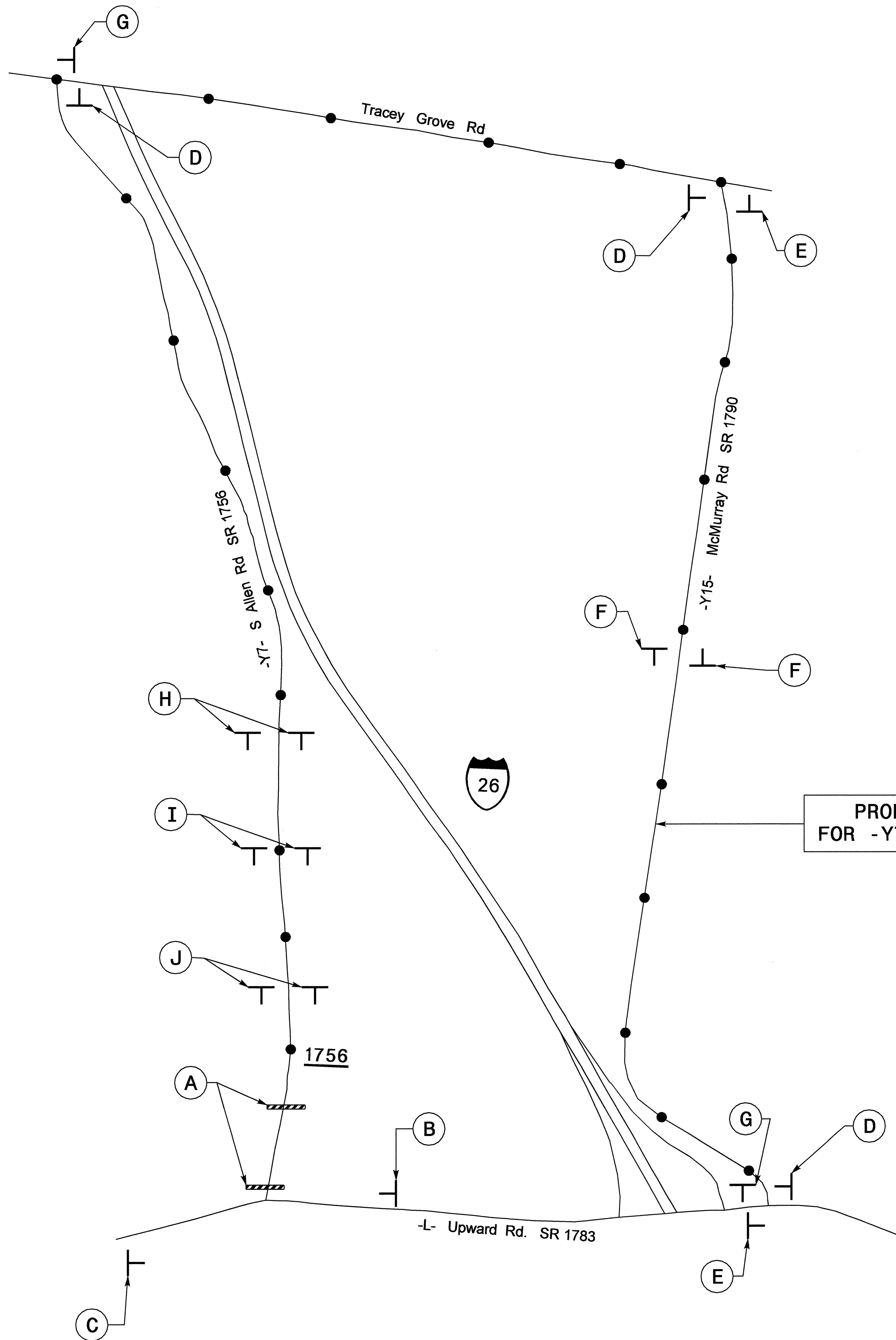
-Y8- POTSTA. 14+80  
TIE TO EXISTING MARKINGS

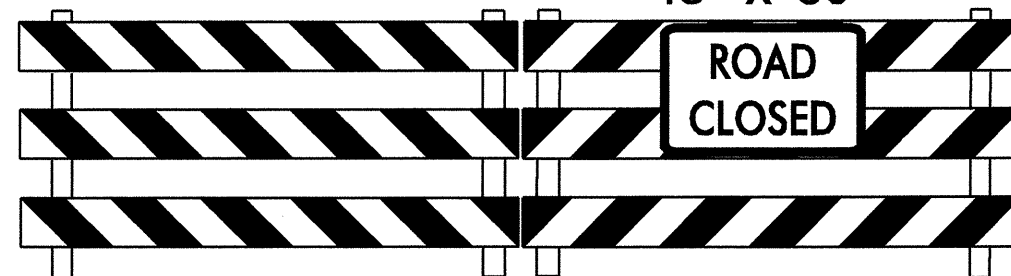


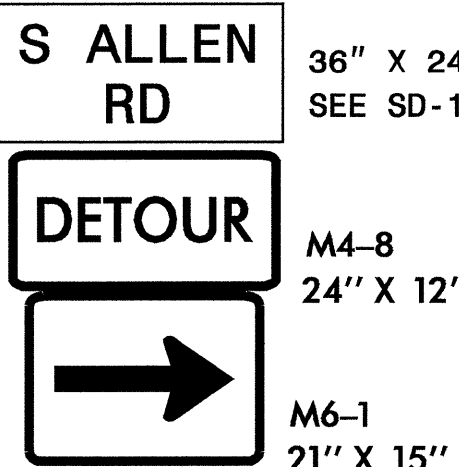
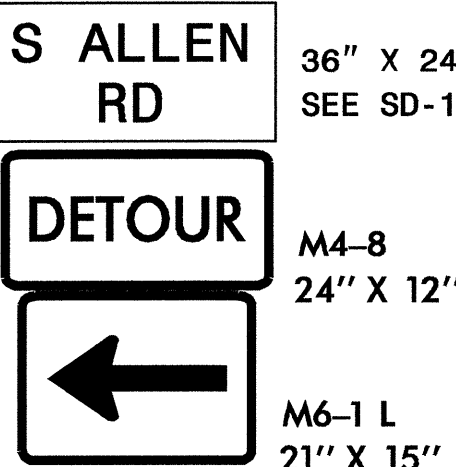
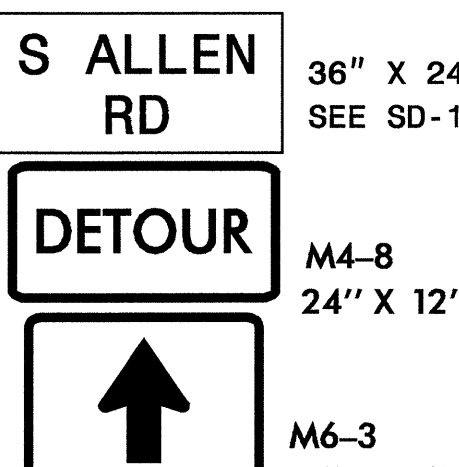
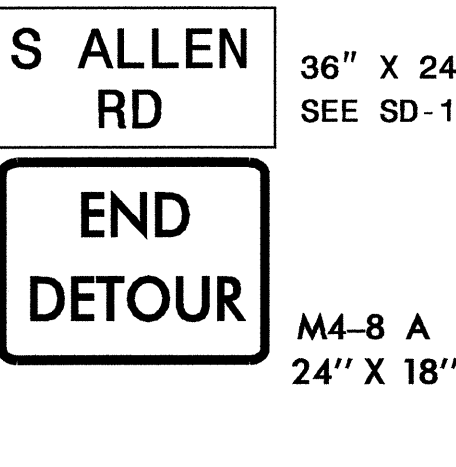

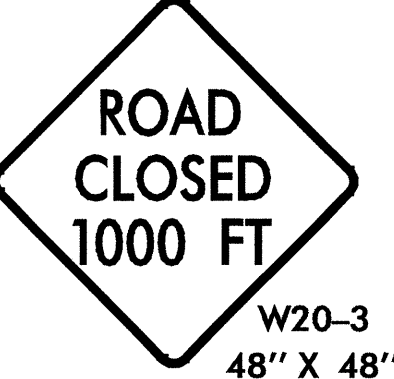

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 derichardson AT WZ12317480

APPROVED:  DATE: 11/18/08	<b>PHASE III</b>		REVISIONS
	SCALE: NONE		
	DATE: AUG-08		
	DWG. BY: DR		
	DESIGN BY: DAP		
REVIEWED BY: DAP			



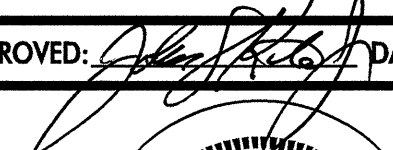
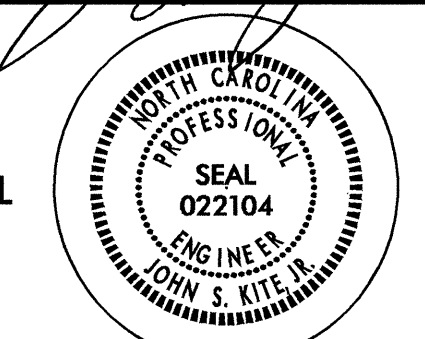
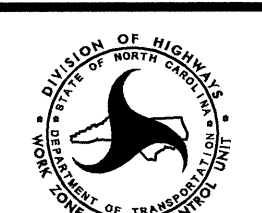


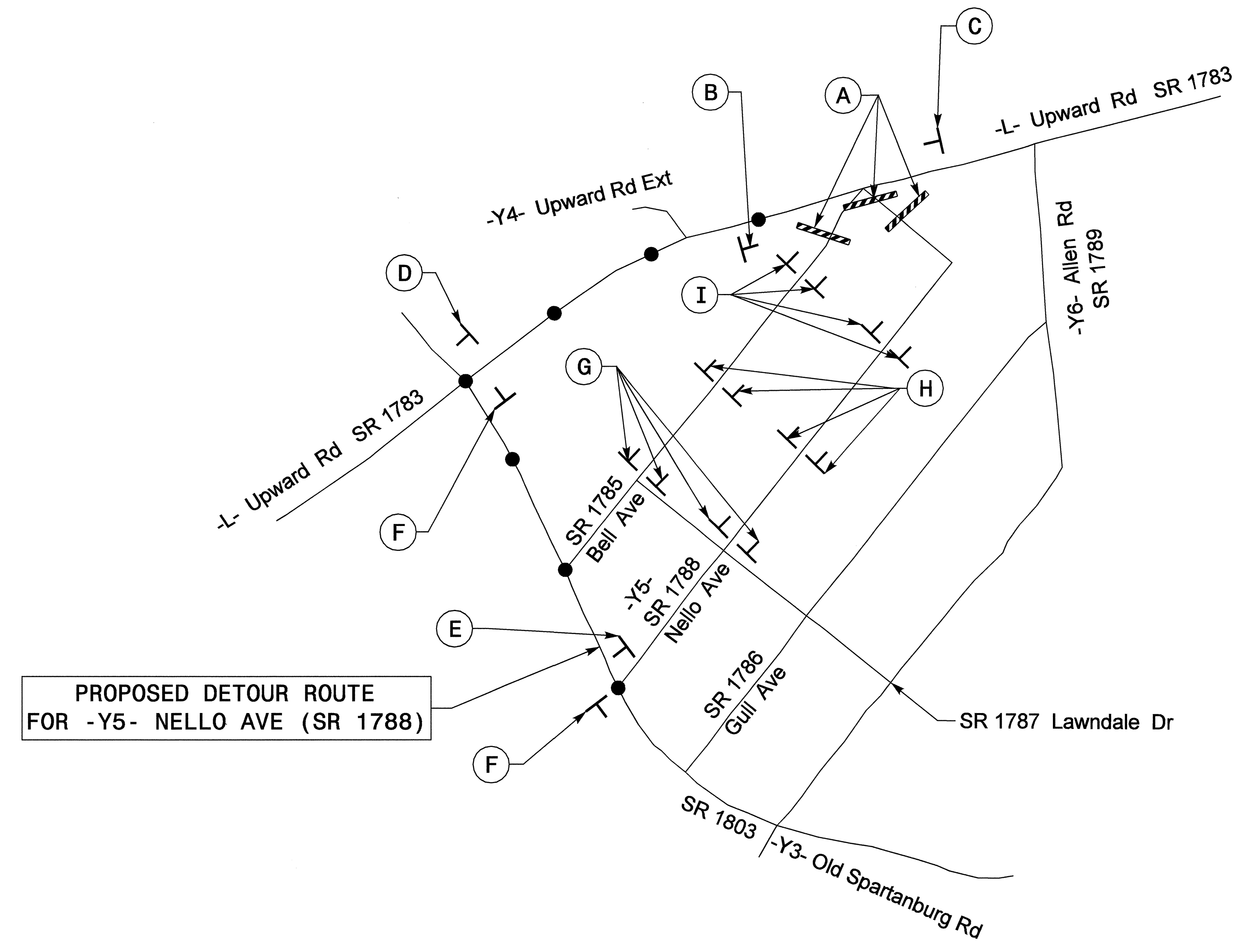


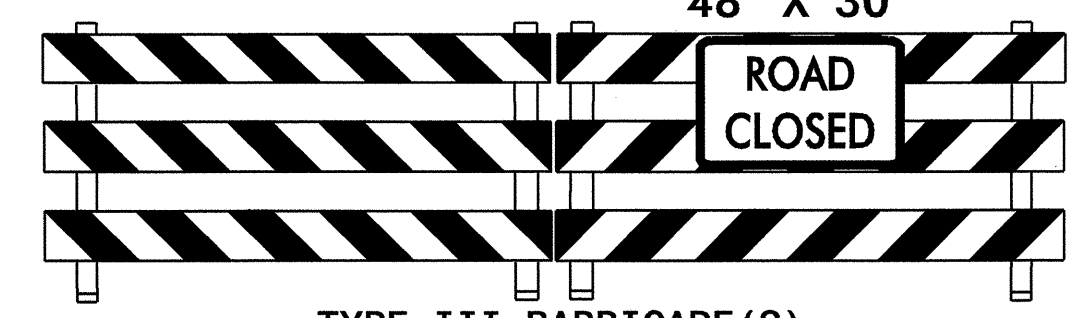
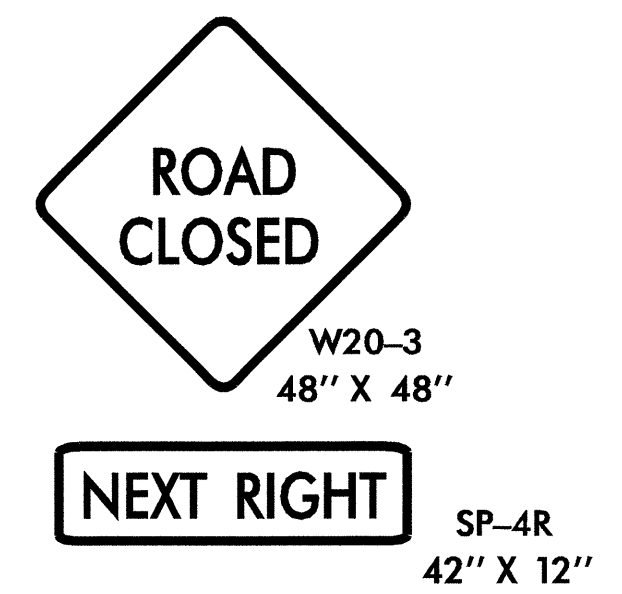
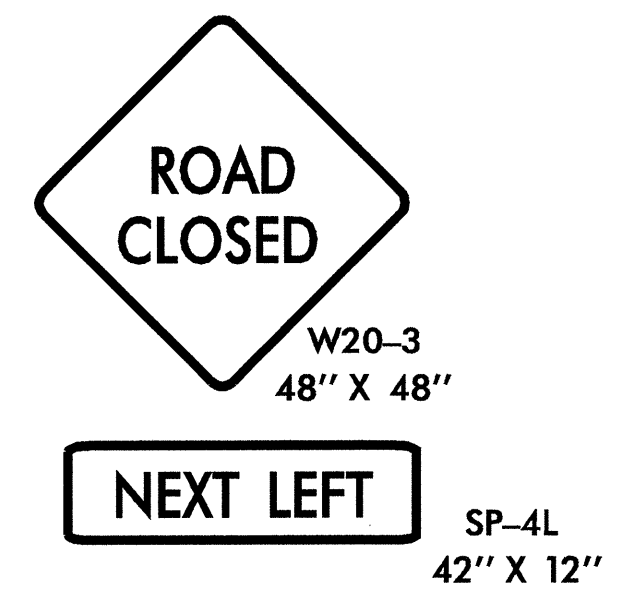
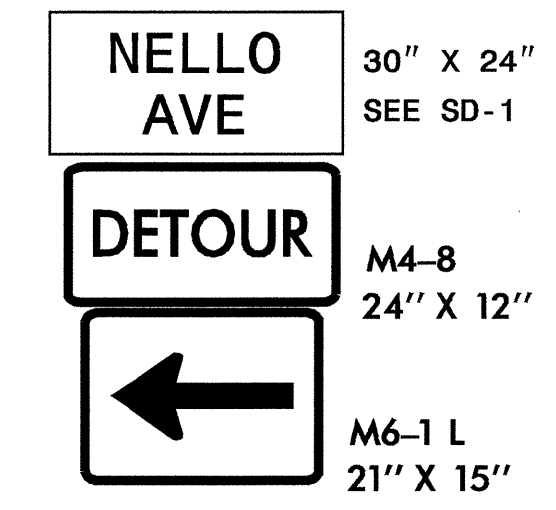
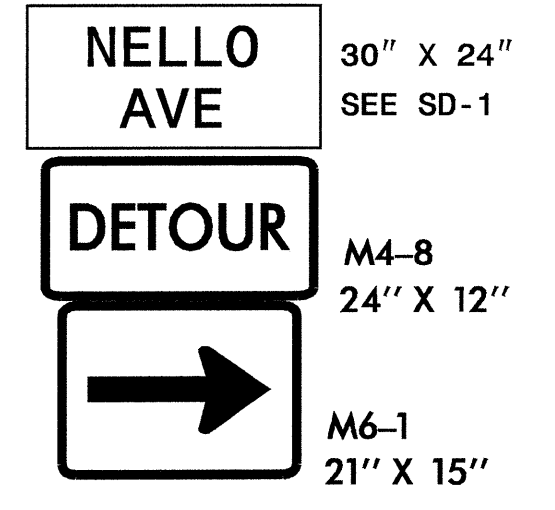
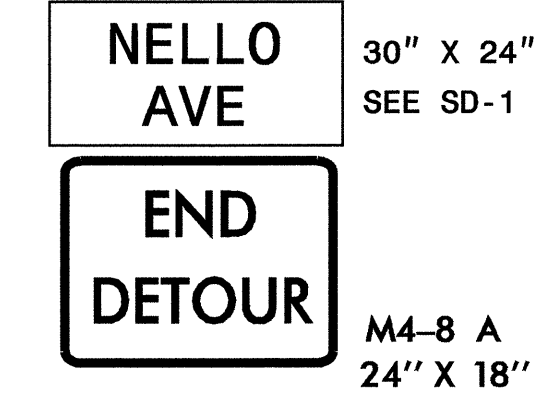

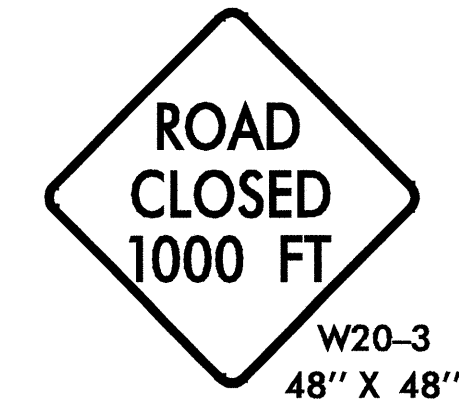

- (A) =  R11-2 48" X 30"  
TYPE III BARRICADE(S)
- (B) =  W20-3 48" X 48"  
NEXT RIGHT SP-4R 42" X 12"
- (C) =  W20-3 48" X 48"  
NEXT LEFT SP-4L 42" X 12"
- (D) =  S ALLEN RD 36" X 24" SEE SD-1  
DETOUR M4-8 24" X 12"  
M6-1 21" X 15"
- (E) =  S ALLEN RD 36" X 24" SEE SD-1  
DETOUR M4-8 24" X 12"  
M6-1 L 21" X 15"
- (F) =  S ALLEN RD 36" X 24" SEE SD-1  
DETOUR M4-8 24" X 12"  
M6-3 21" X 15"
- (G) =  S ALLEN RD 36" X 24" SEE SD-1  
END DETOUR M4-8 A 24" X 18"
- (H) =  W20-3 48" X 48"
- (I) =  W20-3 48" X 48"
- (J) =  W20-3 48" X 48"

PROPOSED DETOUR ROUTE FOR -Y7- ALLEN RD (SR 1756)

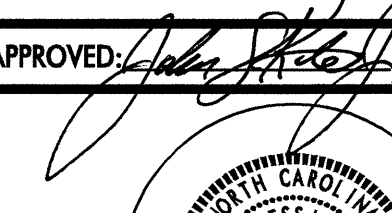
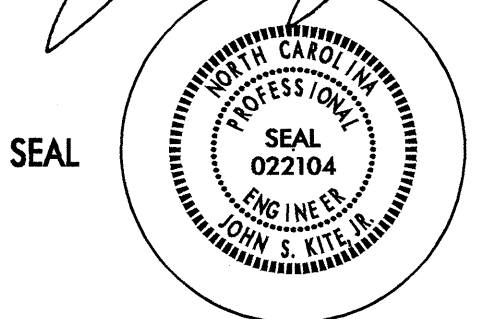

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 der\charlson AT WZTC237460

APPROVED:  DATE: 11/14/08	<b>DETOUR ROUTE FOR -Y7- CLOSURE</b>	
	SCALE: NONE	
	DATE: JUNE 08	
	DWG. BY: DR	
	DESIGN BY:	
REVIEWED BY:	REVISIONS	

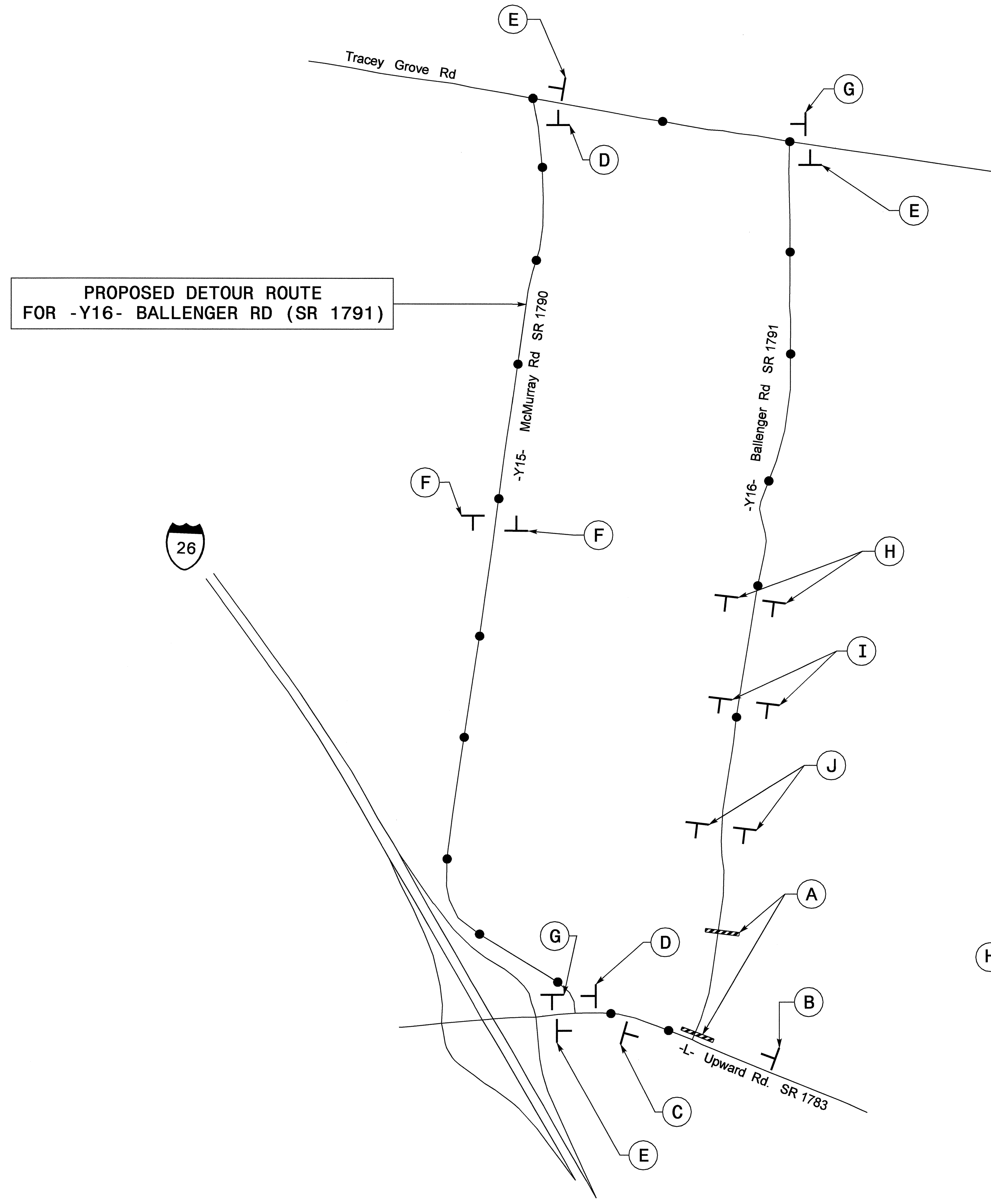


- (A) =  TYPE III BARRICADE(S)
- (B) =  (C) = 
- (D) =  (E) = 
- (F) =  (G) = 
- (H) =  (I) = 

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APPROVED:  DATE: 11/4/08 	<b>DETOUR ROUTE FOR -Y5- CLOSURE</b>							
	SCALE: NONE DATE: JUNE 08 DWG. BY: DR DESIGN BY: REVIEWED BY:		REVISIONS <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>					



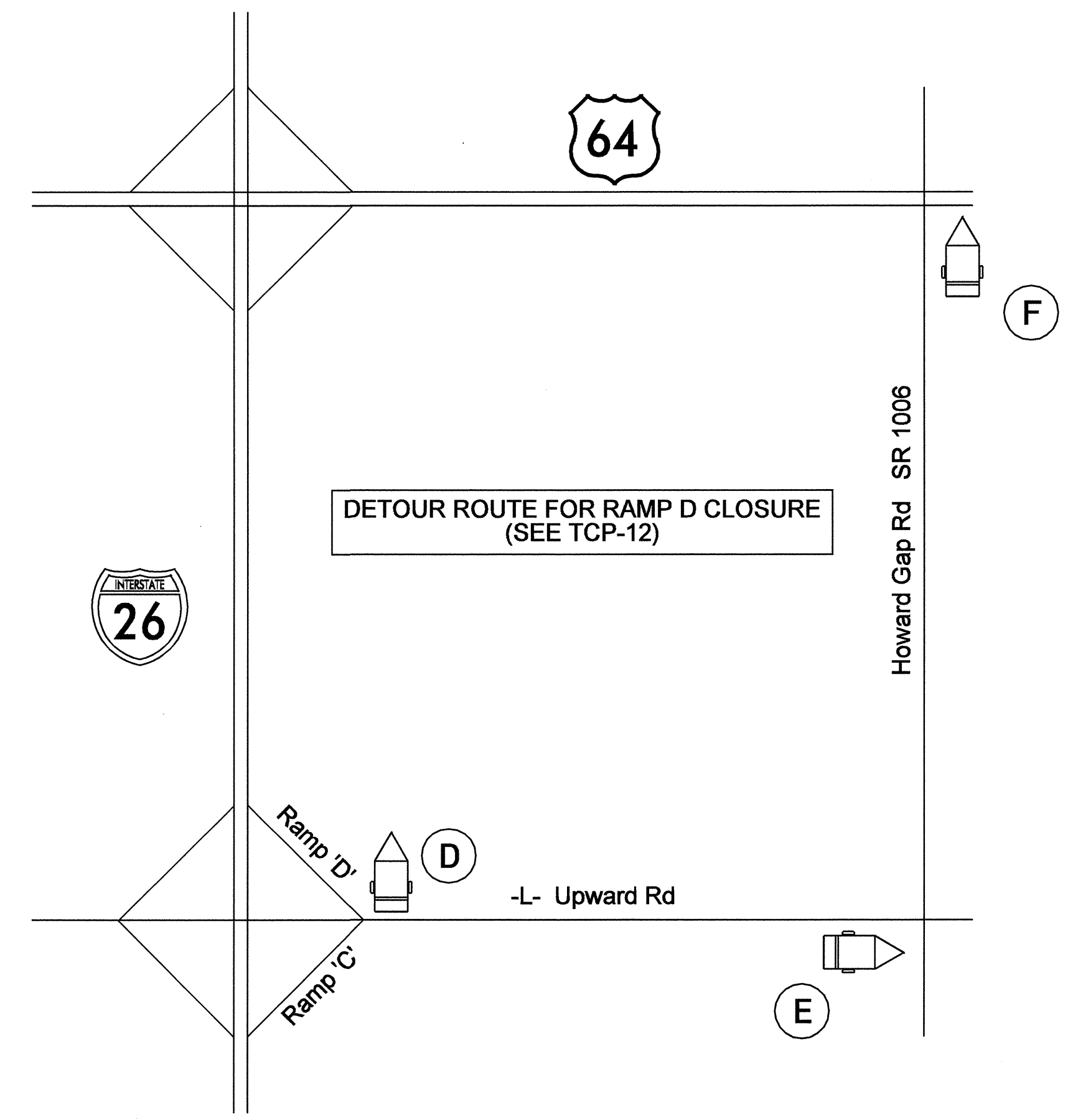
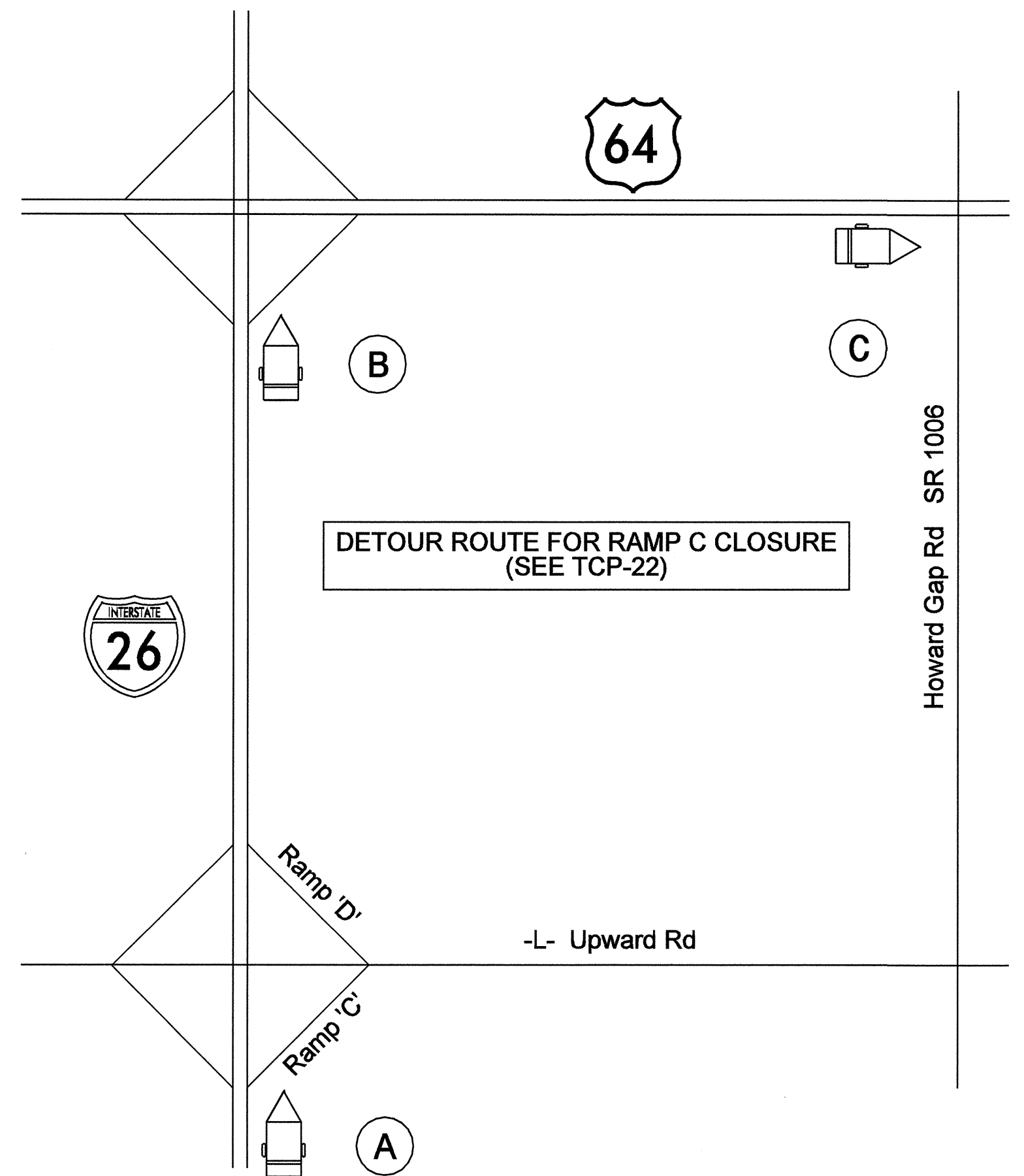


PROPOSED DETOUR ROUTE FOR -Y16- BALLENGER RD (SR 1791)

- (A) = TYPE III BARRICADE(S)
- (B) = ROAD CLOSED (W20-3 48" X 48")  
 NEXT RIGHT (SP-4R 42" X 12")
- (C) = ROAD CLOSED (W20-3 48" X 48")  
 NEXT LEFT (SP-4L 42" X 12")
- (D) = BALLENGER ROAD DETOUR (M4-8 24" X 12")  
 (M6-1 21" X 15")
- (E) = BALLENGER ROAD DETOUR (M4-8 24" X 12")  
 (M6-1 L 21" X 15")
- (F) = BALLENGER ROAD DETOUR (M4-8 24" X 12")  
 (M6-3 21" X 15")
- (G) = BALLENGER ROAD END DETOUR (M4-8 A 24" X 18")
- (H) = ROAD CLOSED AHEAD (W20-3 48" X 48")
- (I) = ROAD CLOSED 1000 FT (W20-3 48" X 48")
- (J) = ROAD CLOSED 500 FT (W20-3 48" X 48")

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 derichardson AT WZTC237460

APPROVED:	DATE: 11/1/08	<b>DETOUR ROUTE FOR -Y16- CLOSURE</b>									
	SCALE: NONE										
	DATE: JUNE 08	<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> </tbody> </table>				REVISIONS					
	REVISIONS										
DWG. BY: DR	REVIEWED BY:	CADD FILE									



Ⓐ = CMS LOCATED AT ACCESS POINT TO RAMP 'C' FROM I-26 NB

UPWARD RD RAMP CLOSED	USE NEXT EXIT
-----------------------------	---------------------

Ⓑ = CMS LOCATED AT ACCESS POINT TO RAMP TO US 64 EB FROM I-26 NB

UPWARD RD DETOUR EXIT
-----------------------------

Ⓒ = CMS LOCATED AT INTERSECTION OF HOWARD GAP RD AND US 64 EB (FACING US 64 EB TRAFFIC)

UPWARD RD DETOUR	TURN RIGHT HERE
---------------------	-----------------------

Ⓓ = CMS LOCATED AT ACCESS POINT TO RAMP 'D' FROM -L- UPWARD RD

RAMP CLOSED	DETOUR HOWARD GAP RD
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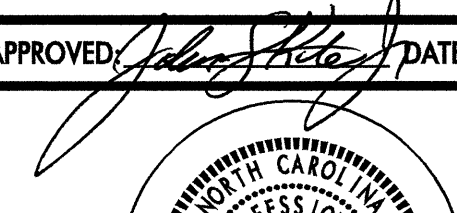
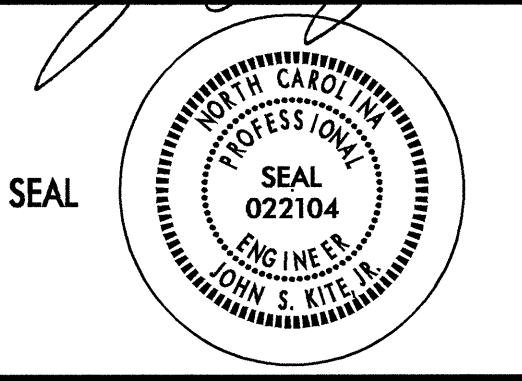
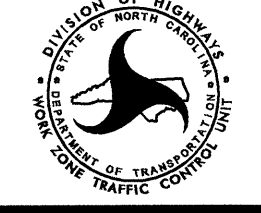
Ⓔ = CMS LOCATED ON UPWARD RD 500' WEST OF HOWARD GAP RD INTERSECTION (FACING EB TRAFFIC)

I-26 NB DETOUR	TURN LEFT HERE
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Ⓕ = CMS LOCATED ON HOWARD GAP RD 500' SOUTH OF US 64 EB INTERSECTION (FACING NB TRAFFIC)

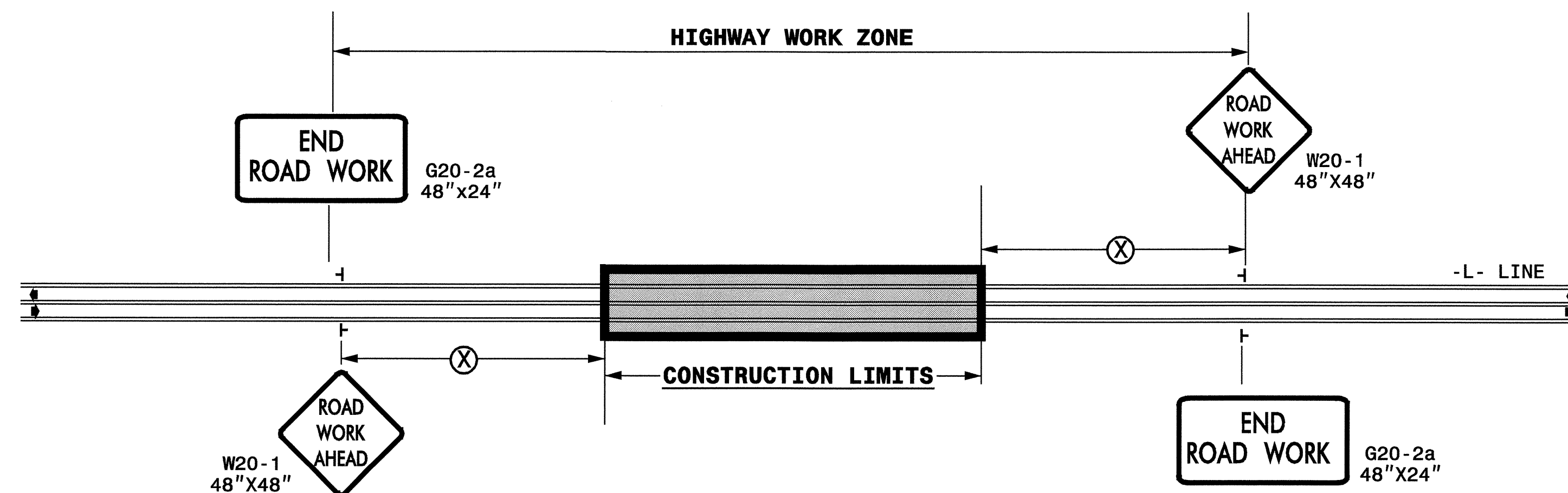
I-26 NB DETOUR	TURN LEFT HERE
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03-NOV-2008 14:42 \\dot\dfsroot\01\Projects-R-4430\trafficcontrol\tcp-r-4430-rc-top35.dgn AT WZTC237460 derichardson

APPROVED:  DATE: 11/4/08	<b>DETOUR ROUTES FOR RAMP CLOSURES</b>	
	SCALE: NONE	
	DATE: JUNE 08	
	DWG. BY: DR	
	DESIGN BY:	
REVIEWED BY:	REVISIONS	



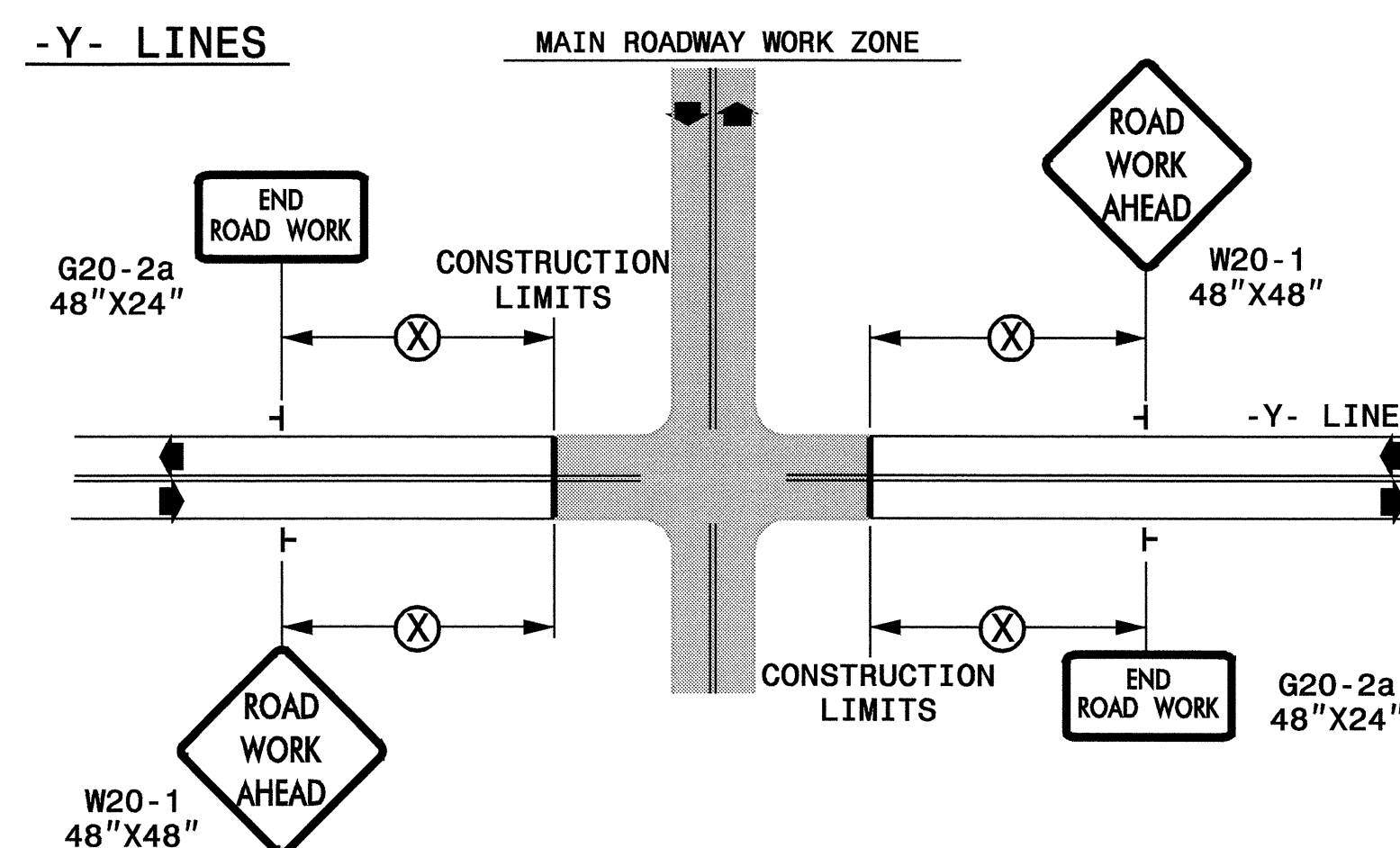
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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

SHEET 1 OF 1

APPROVED: <i>John S. Kitt</i> DATE: 11/4/08	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
	SCALE: NONE	REVISIONS
	DATE:	7-98 10/01
	DWG. BY:	10-98 03/04
	DESIGN BY:	01/01 11/04
REVIEWED BY:		CADD FILE

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 der\charlson AT WZTC237460