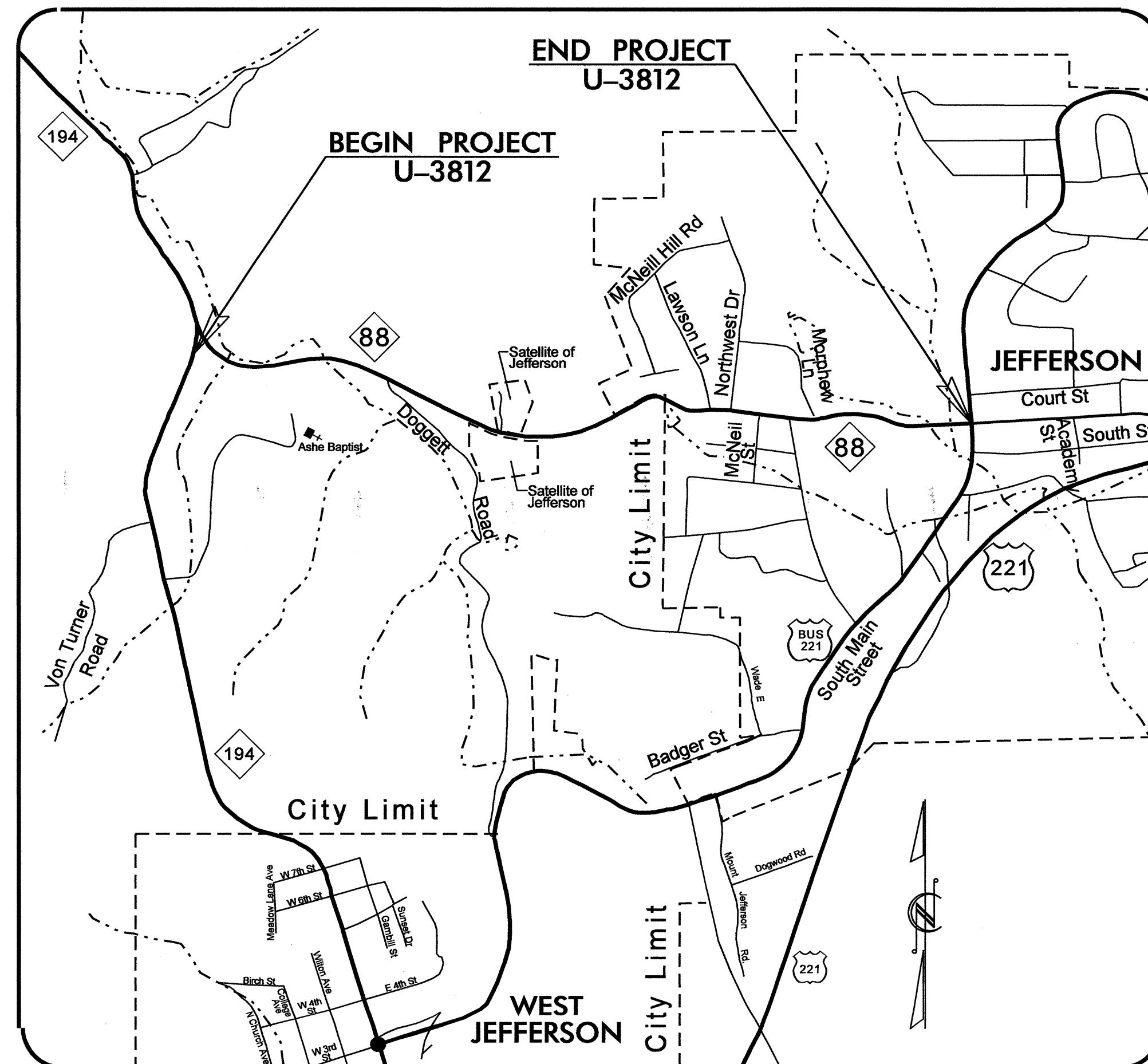
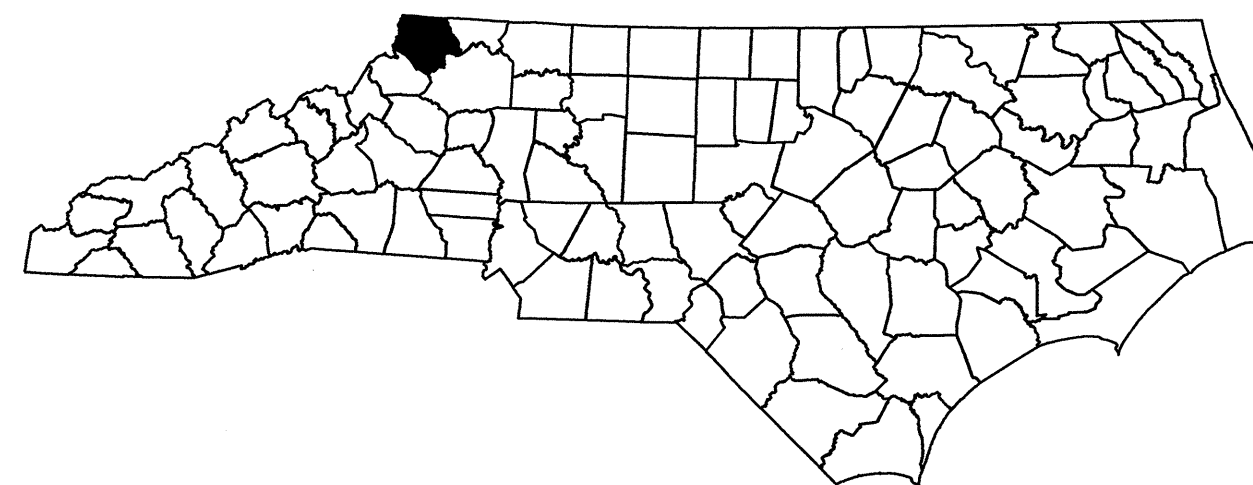


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**ASHE COUNTY**



VICINITY MAP

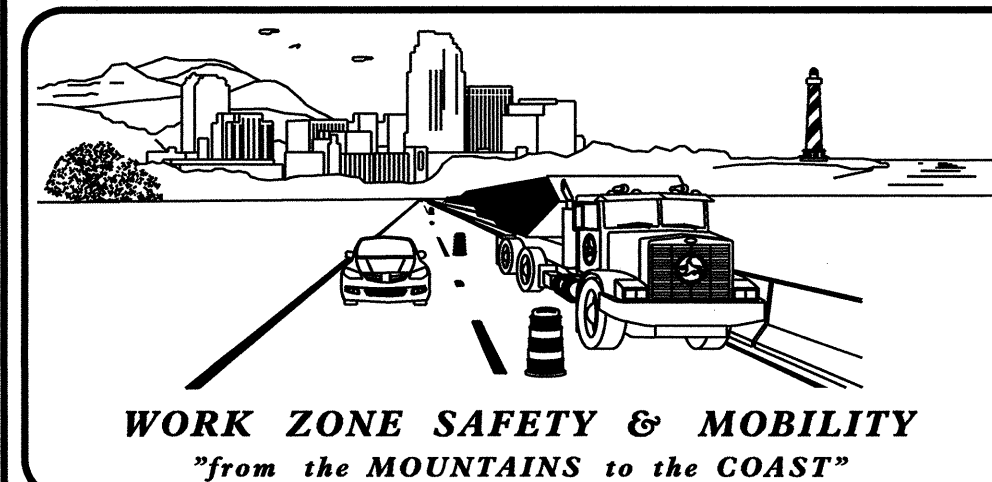
<b>INDEX OF SHEETS</b>	
SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES AND LOCAL NOTES)
TMP-2	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	AREA 1, NC-88/NC-194 PHASE I DETAILS
TMP-5 & 6	AREA 1, NC-88/NC-194 PHASE II DETAILS
TMP-7 & 8	AREA 2, NC-88/US-221BUS PHASE I DETAILS
TMP-9 THRU 14	AREA 2, NC-88/US-221BUS PHASE II DETAILS
TMP-15	OFFSITE DETOUR FOR NC-88

SHEET NO.  
TMP-1

**U-3812**

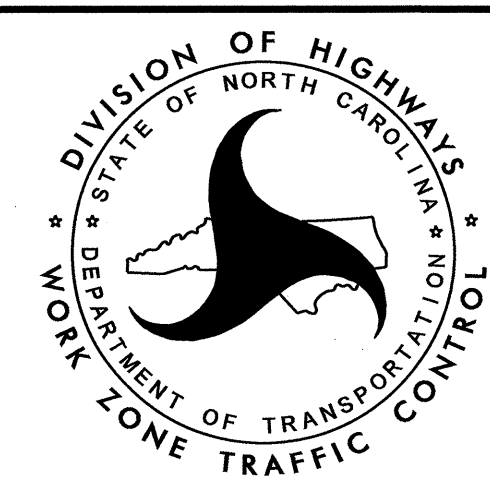
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**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1580 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1580  
1020 BIRCH RIDGE DRIVE, RALEIGH, NC 27610 (DELIVERY)  
PHONE: (919) 250-4094 FAX: (919) 250-4098

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER  
STEVE KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
DON PARKER TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
ASHVIN PATEL, P.E. TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: *[Signature]*  
DATE: August 29, 2011

SEAL

# ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN 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
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
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)
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

# LEGEND

## GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.

- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

## TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

## TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

## SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

## PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

## PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

## PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

## TEMPORARY PAVEMENT MARKING

- PAINT (4")
- PA WHITE EDGELINE
  - PD 2 FT. WHITE MINISKIP
  - PE WHITE SOLID LANE LINE
  - PI YELLOW DOUBLE CENTER

- PAINT (8")
- PV YELLOW DIAGONAL

- PAINT (24")
- P4 WHITE STOPBAR

- PAINT SYMBOLS
- QA LEFT TURN ARROW MARKING
  - QB RIGHT TURN ARROW MARKING
  - QC STRAIGHT ARROW MARKING

- TEMPORARY RAISED PAVEMENT MARKERS
- MH YELLOW & YELLOW
  - MI CRYSTAL & RED

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APPROVED: DATE: 8/29/11 		<b>ROADWAY STANDARD DRAWINGS &amp; LEGEND</b>
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## GENERAL NOTES / LOCAL 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:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC-88 (-L-) NC-194 (-Y-)	MONDAY THROUGH FRIDAY 7:00AM TO 8:30AM

B) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
NC-88 (-L-) NC-194 (-Y-)	MONDAY THRU FRIDAY 12:01AM TO 9:00AM & 2:00PM TO 12:00 MIDNIGHT AND SATURDAY 12:01AM TO SUNDAY 12:00 MIDNIGHT	20 MINUTES FOR BLASTING OPERATIONS

C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

### 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.
- 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 INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON NC-88 AND NC-194.

### 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 (W8-11) 500 FT. 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 SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
- PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- N) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
- COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- O) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- P) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500 FT. IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

### TRAFFIC BARRIER

Q) 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.

### 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 RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- S) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	TEMPORARY RAISED

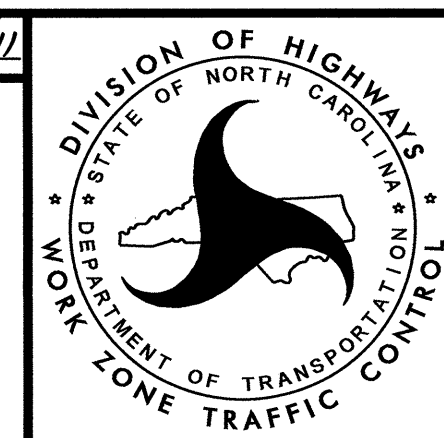
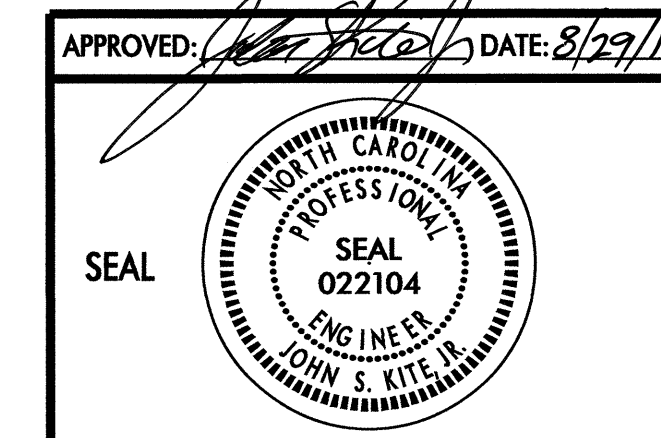
- U) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- V) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- W) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

### TEMPORARY / FINAL SIGNALS

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

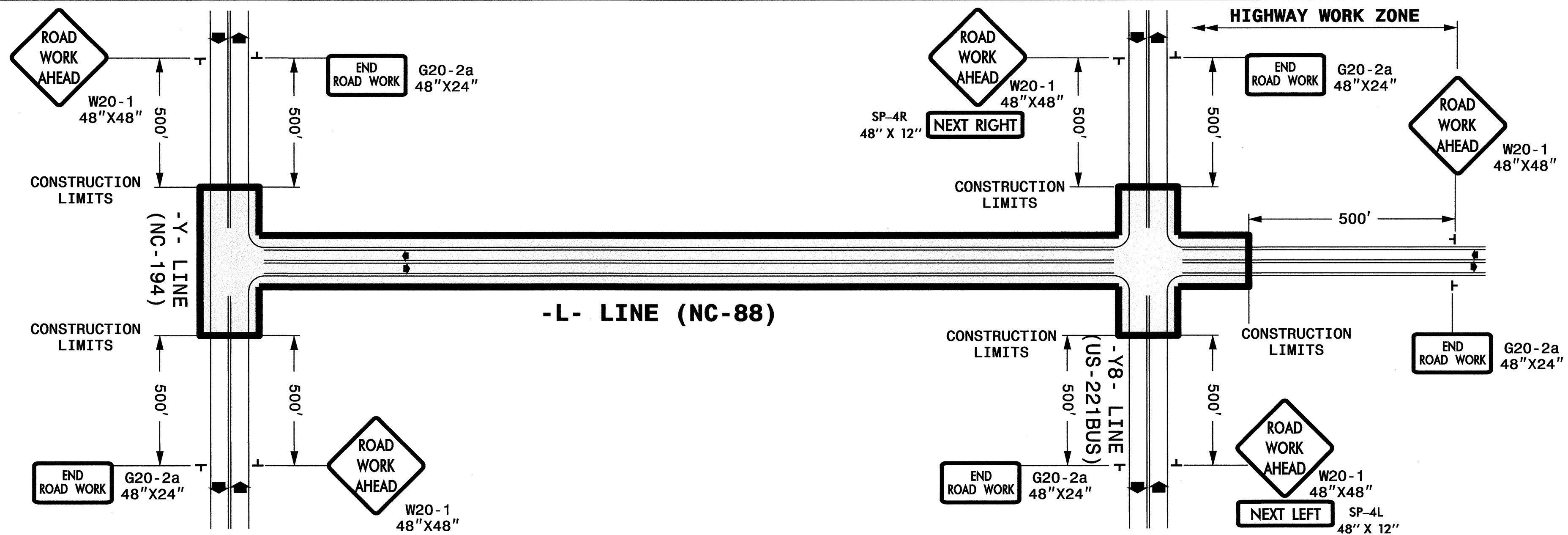
### MISCELLANEOUS

- Y) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- Z) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.
- AA) ALL WHEELCHAIR RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.



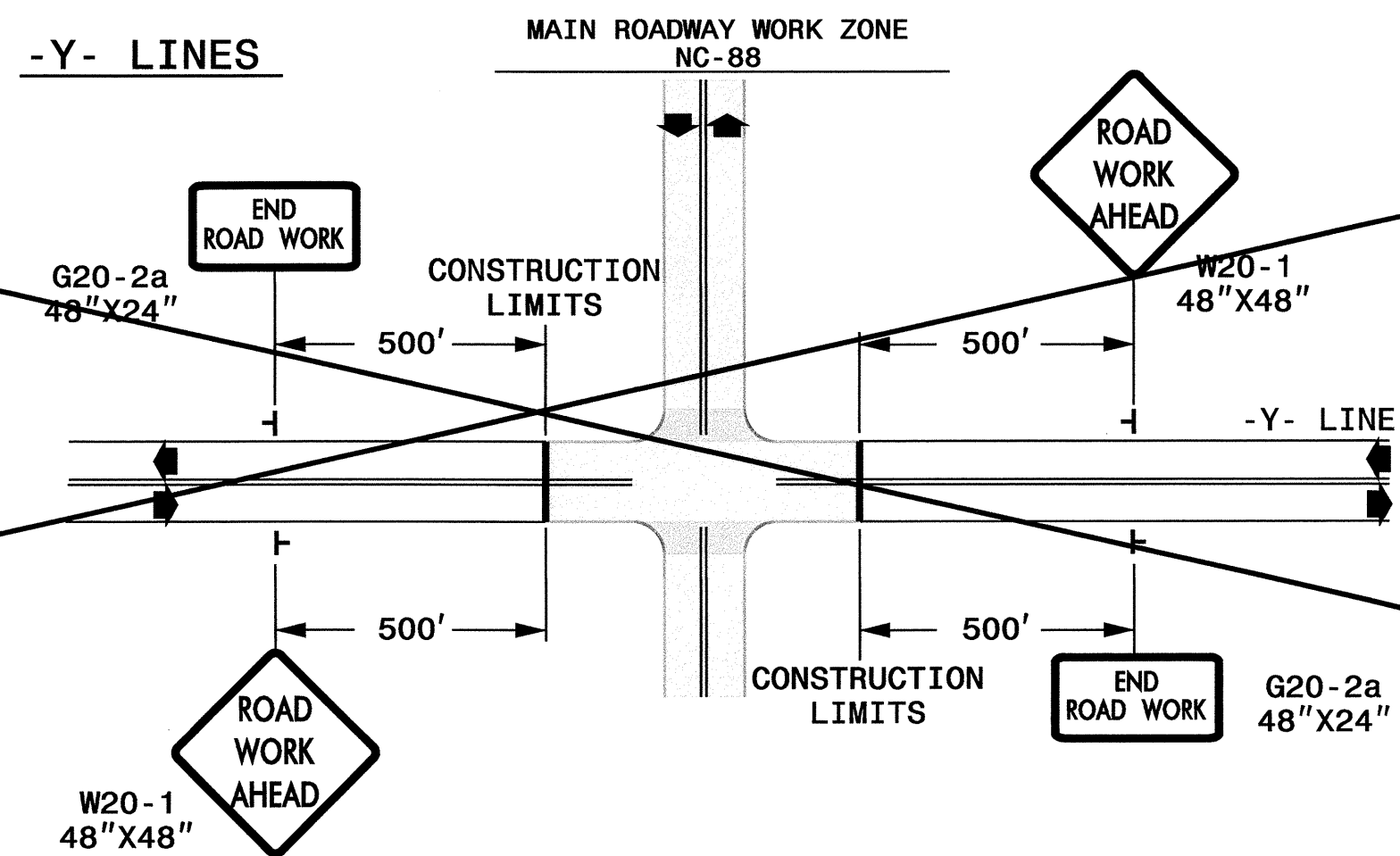
**TRANSPORTATION  
OPERATIONS  
PLAN**

**TWO-WAY UNDIVIDED (L-LINE, NC-88)**



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

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



DETAIL DRAWING FOR  
 TWO-WAY UNDIVIDED  
 WORK ZONE WARNING SIGNS

**GENERAL NOTES**

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 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.

**LEGEND**

┆ STATIONARY SIGN

◄ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

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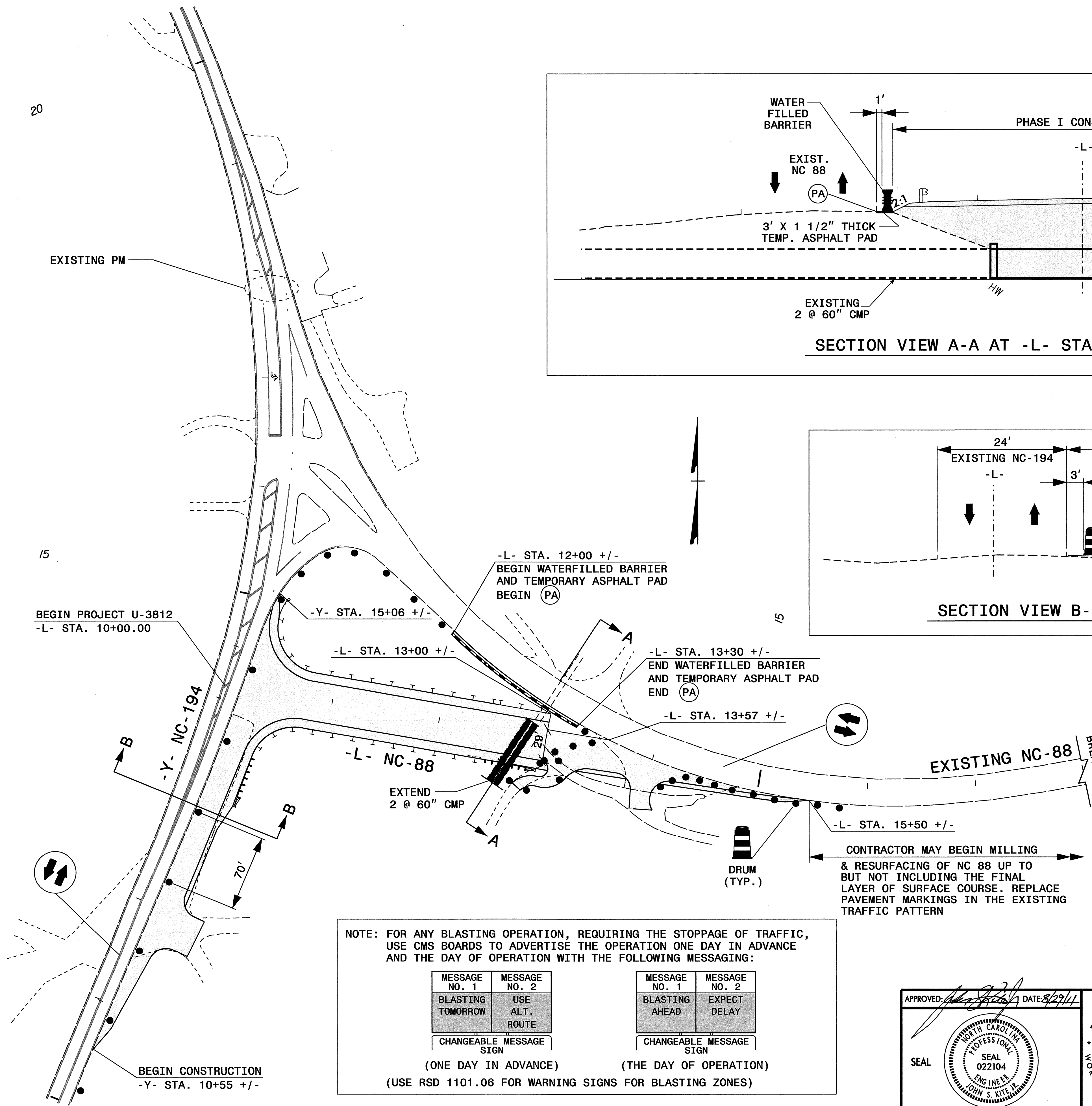
PROFESSIONAL ENGINEER  
 SEAL 022104  
 JOHN S. KITTS

DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

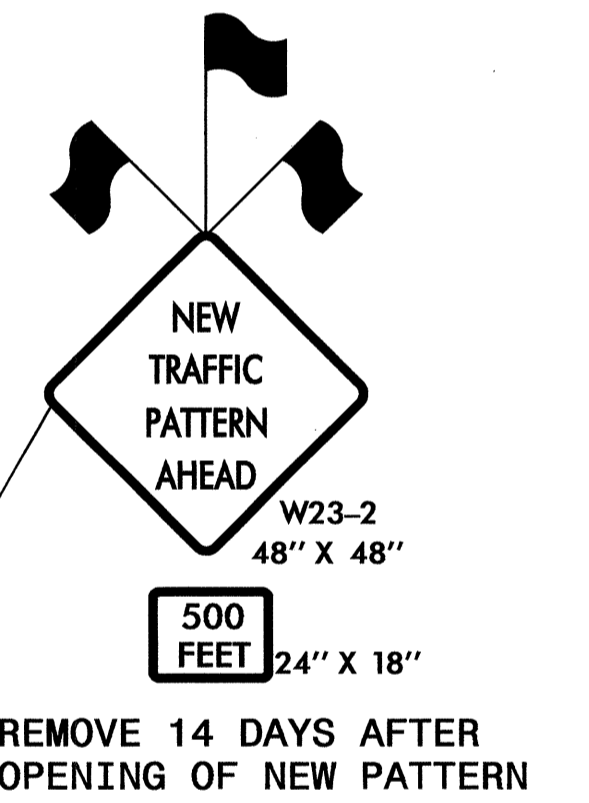
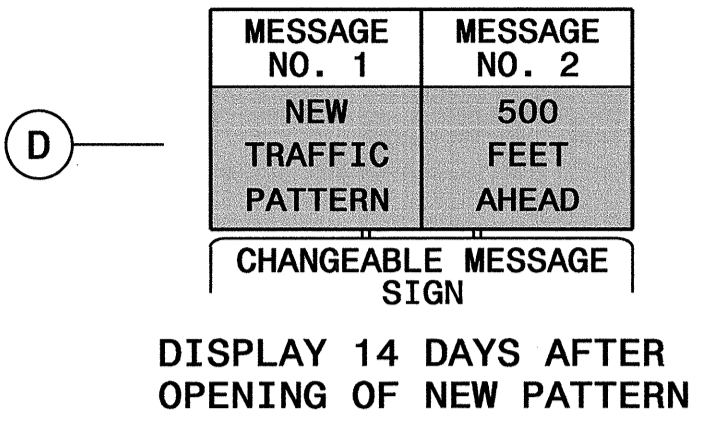
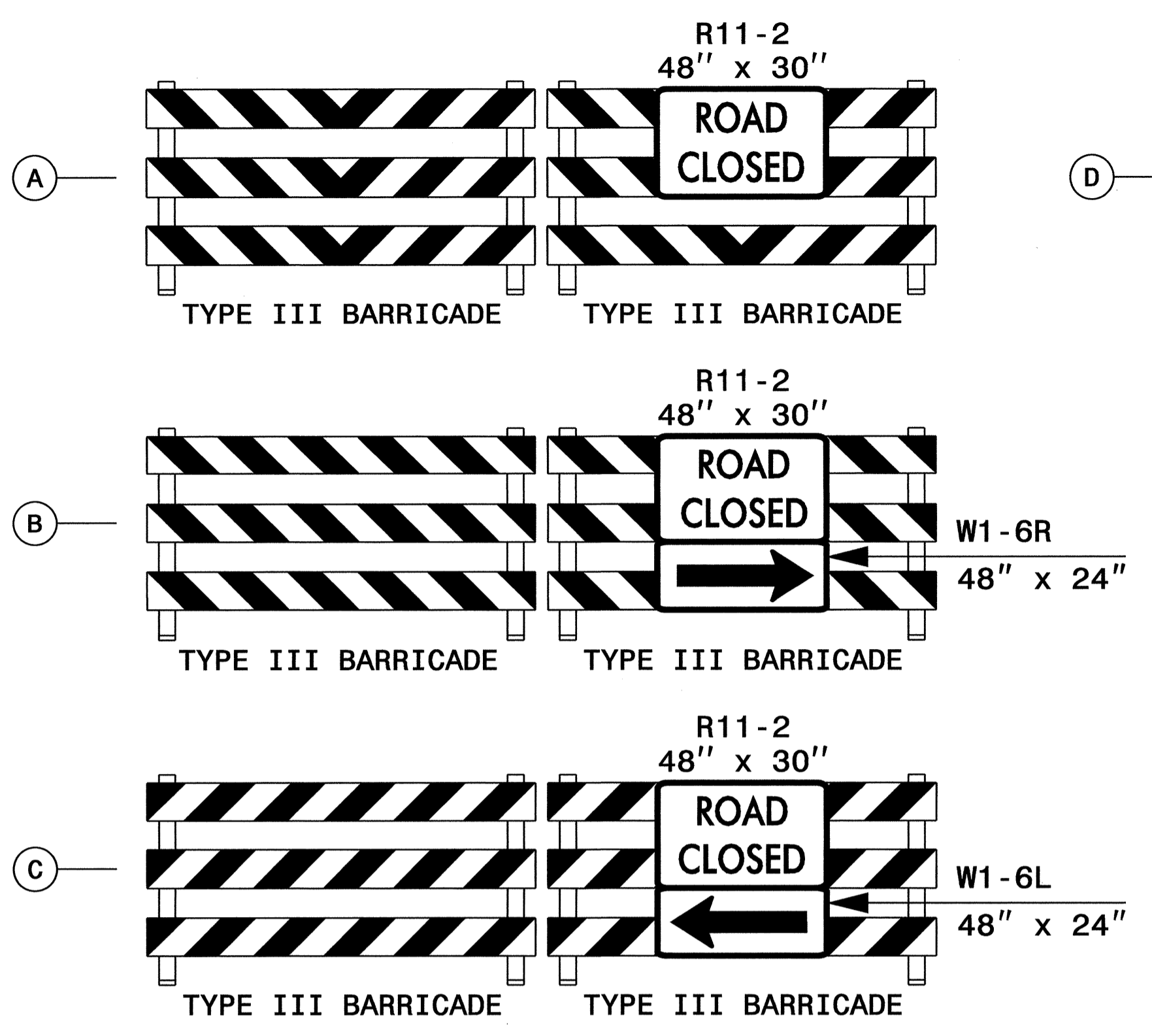
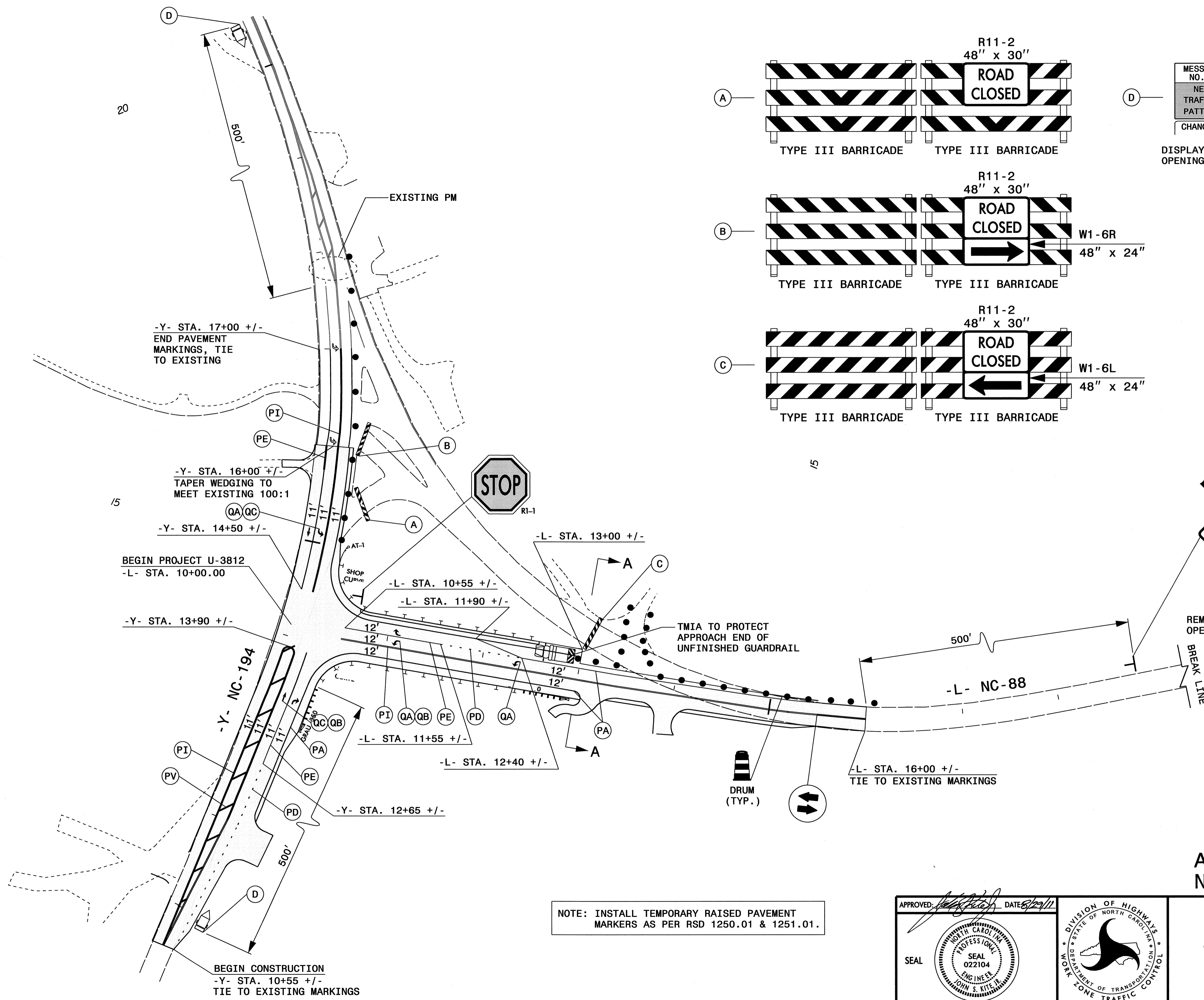
DETAIL DRAWING FOR  
 TWO-WAY UNDIVIDED  
 WORK ZONE WARNING SIGNS

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-Y- STA. 17+00 +/-  
END PAVEMENT MARKINGS, TIE TO EXISTING

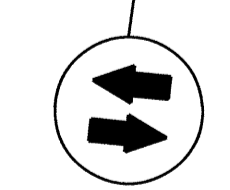
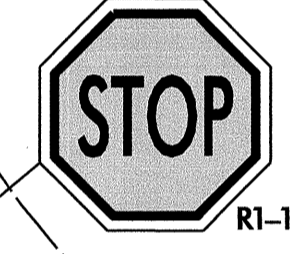
-Y- STA. 16+00 +/-  
TAPER WEDGING TO MEET EXISTING 100:1

BEGIN PROJECT U-3812  
-L- STA. 10+00.00

-Y- STA. 13+90 +/-

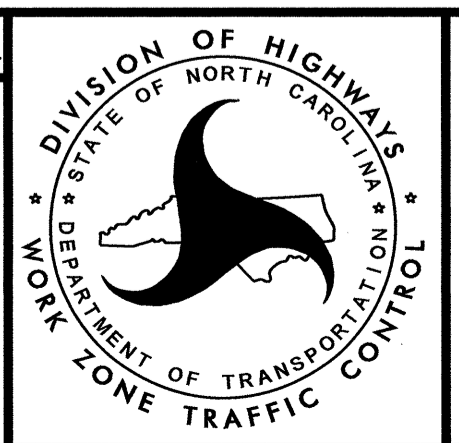
-Y- NC-194

BEGIN CONSTRUCTION  
-Y- STA. 10+55 +/-  
TIE TO EXISTING MARKINGS



NOTE: INSTALL TEMPORARY RAISED PAVEMENT MARKERS AS PER RSD 1250.01 & 1251.01.

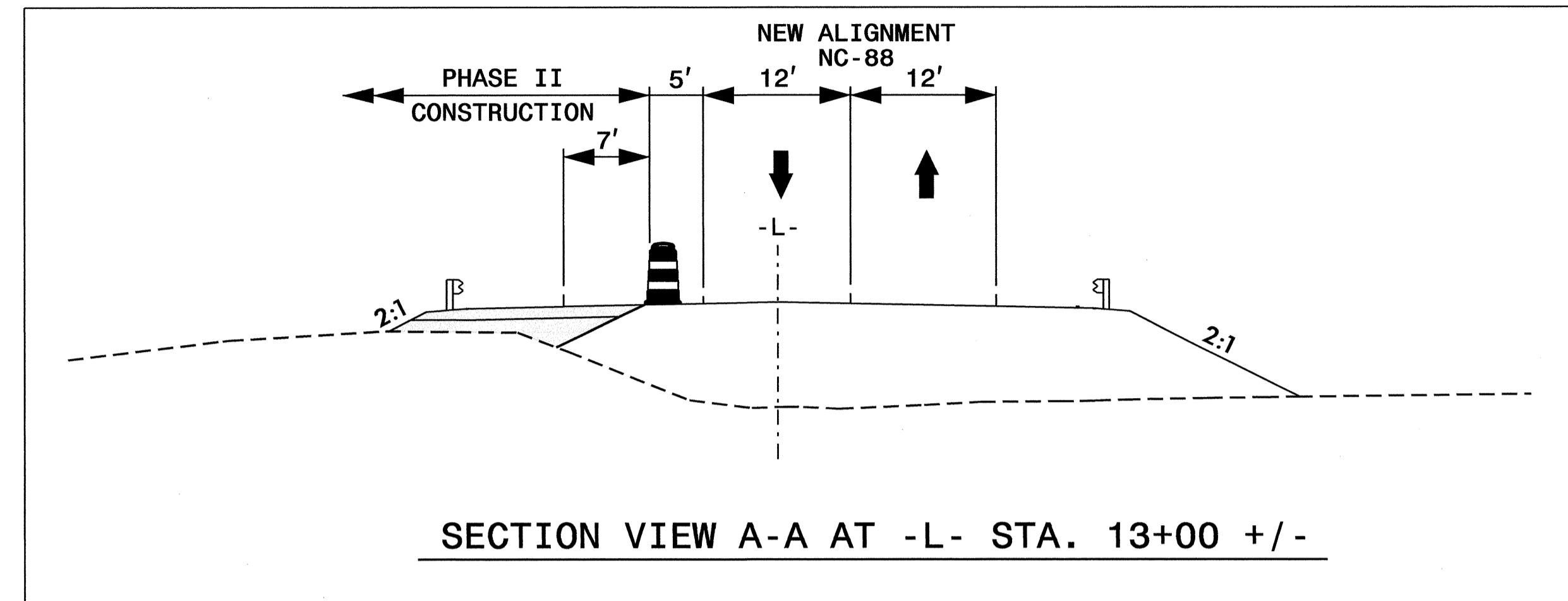
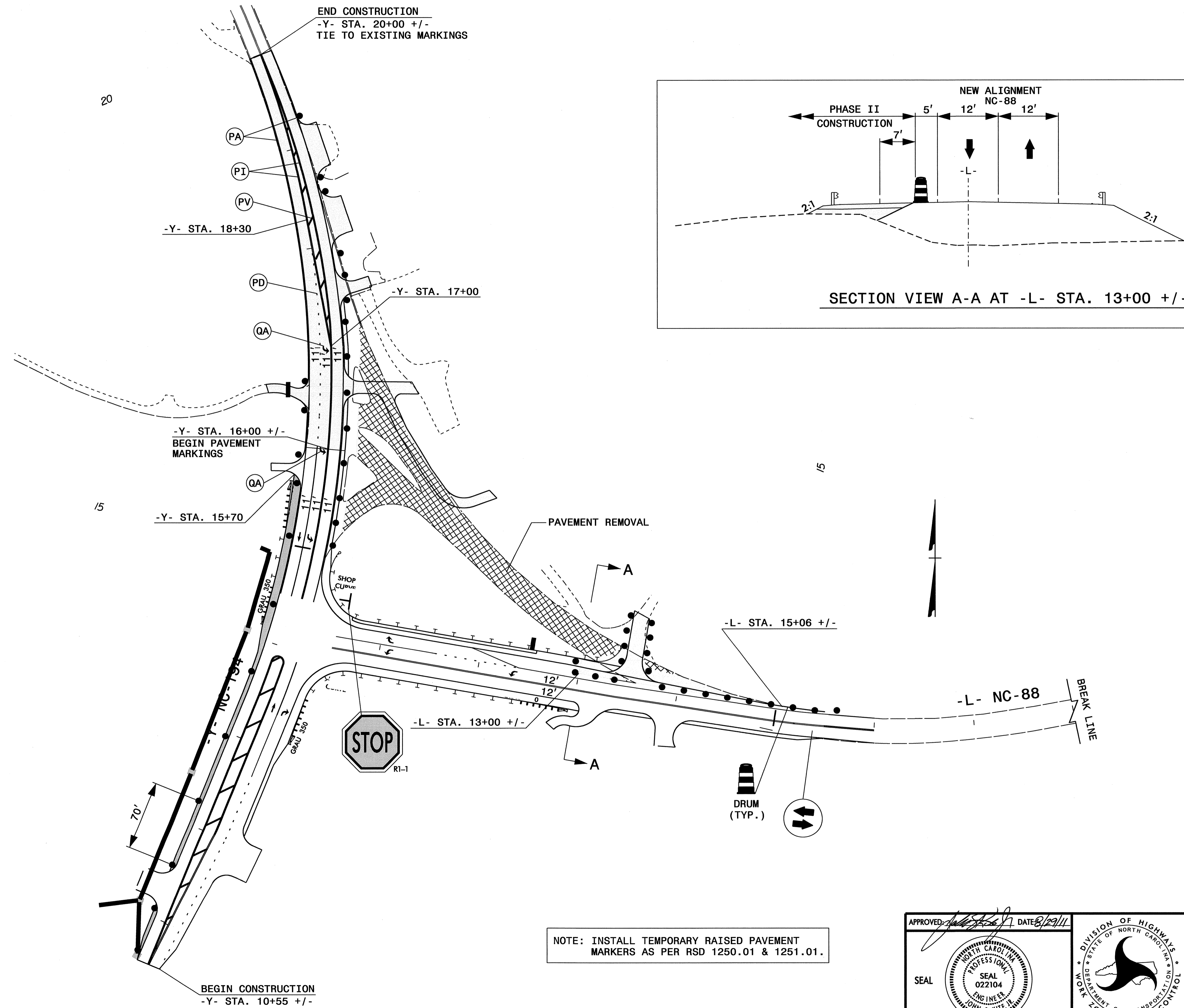
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AREA 1  
NC-88/NC-194

PHASE II  
TRAFFIC SHIFT  
STEP 1

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NOTE: INSTALL TEMPORARY RAISED PAVEMENT MARKERS AS PER RSD 1250.01 & 1251.01.

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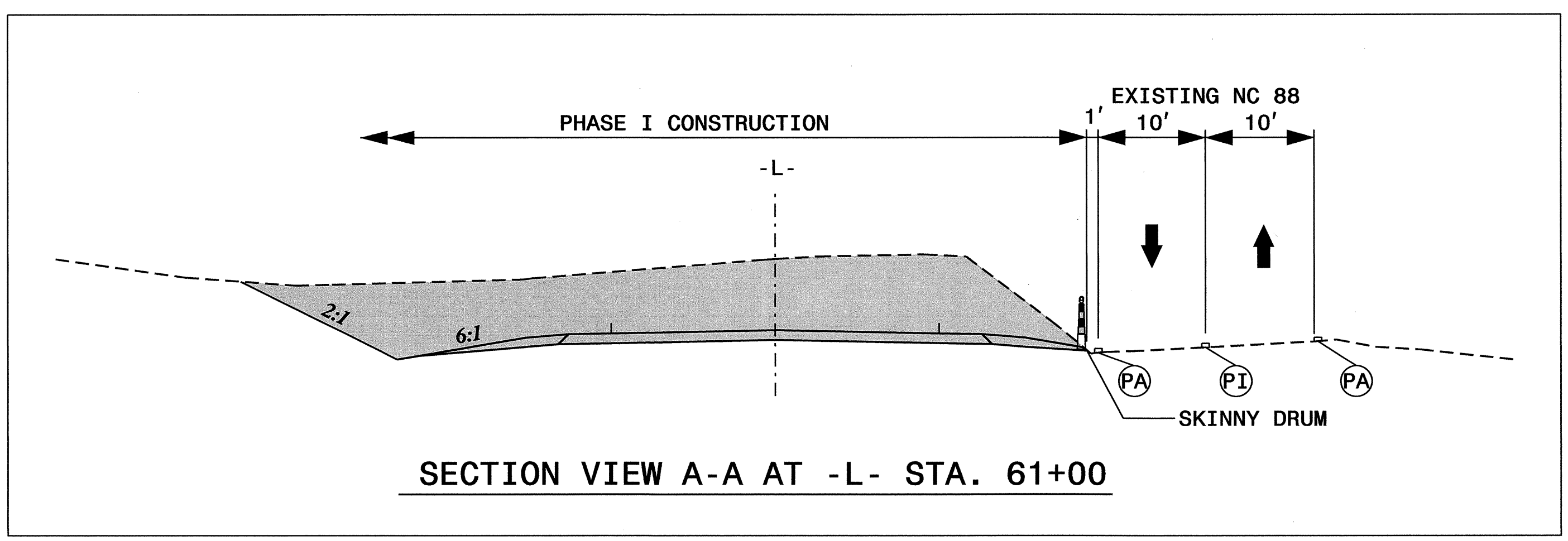
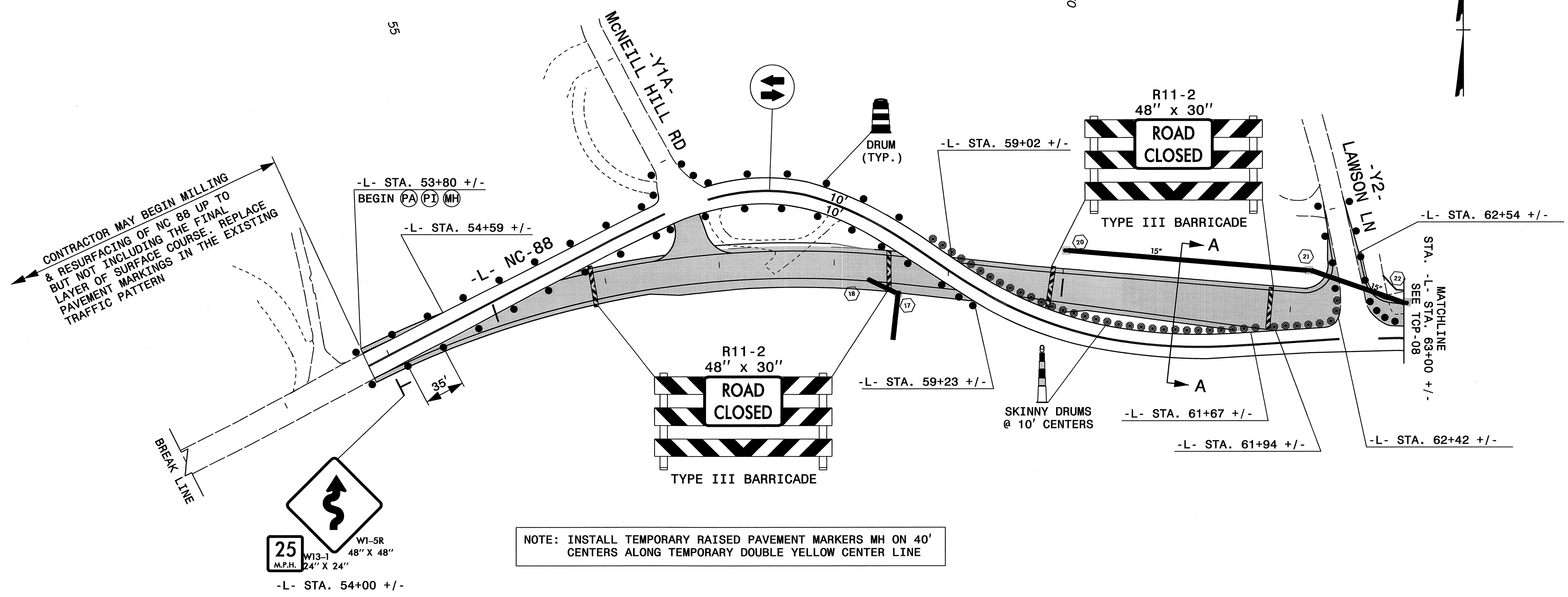
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AREA 1  
NC-88/NC-194

PHASE II

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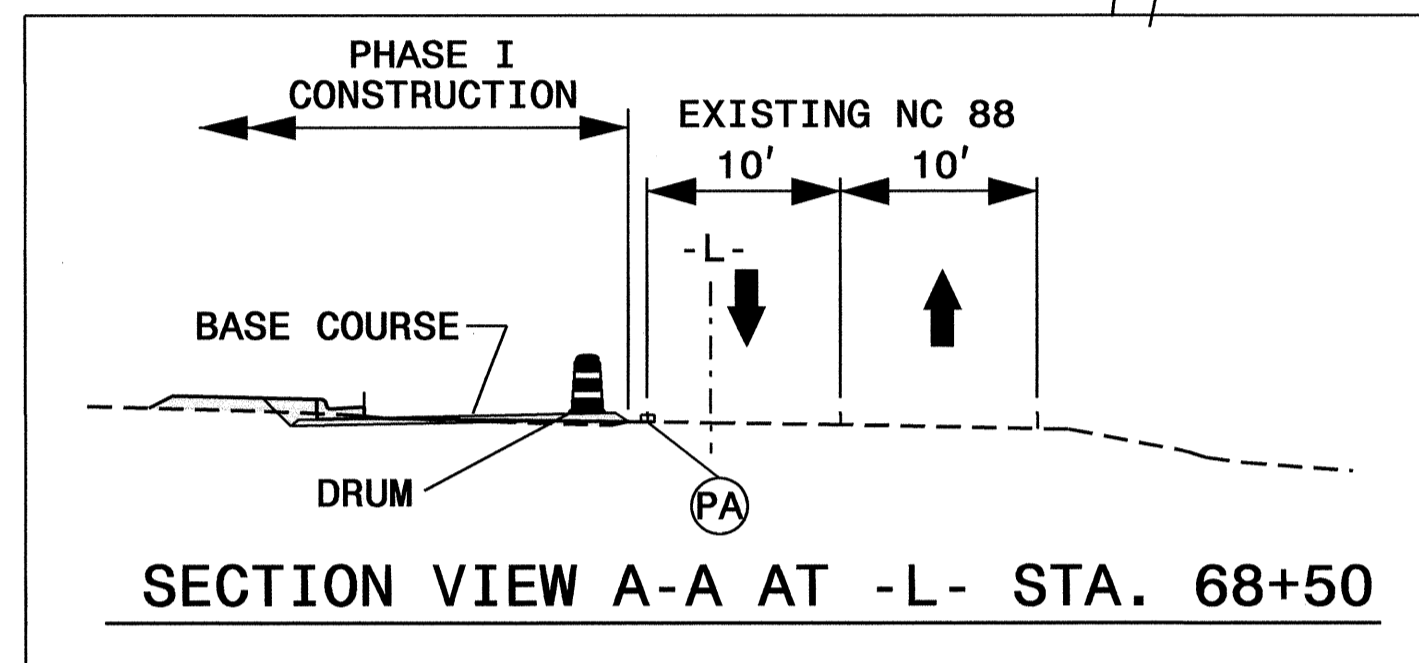
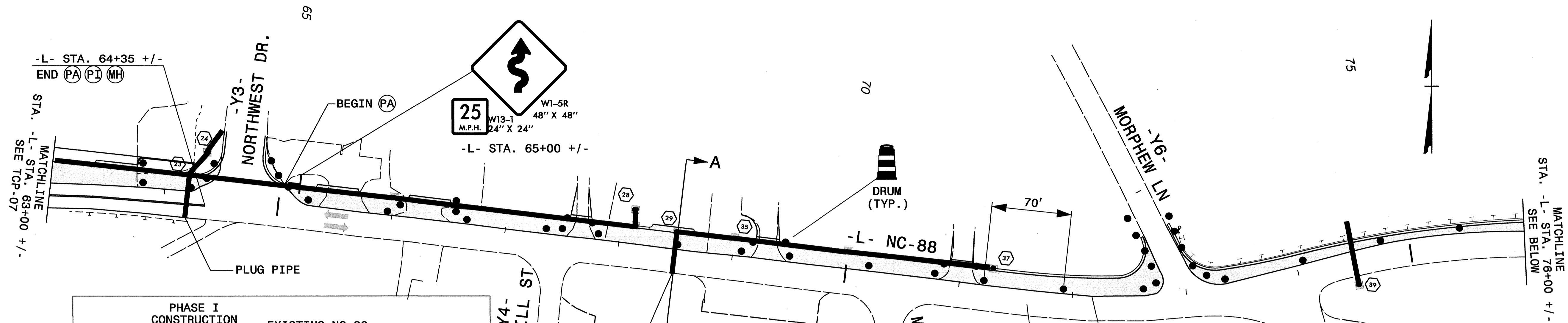
AREA 2  
NC-88/US-221BUS

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SEAL

PHASE I

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STA. -L- STA. 76+00 +/-  
MATCHLINE  
SEE ABOVE

STA. -L- STA. 63+00 +/-  
MATCHLINE  
SEE TOP-07

**TEMPORARY SHORING NOTES**

**TEMPORARY SHORING NO. 1**

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR CULVERT INSTALLATION FROM STATION 85+91 -L-, 30 FT. RT., TO STATION 86+51 -L-, 30 FT RT. SEE TEMPORARY SHORING PROVISION.

DO NOT USE A TEMPORARY MSE WALL FROM STATION 85+91 -L-, 30 FT. RT., TO STATION 86+51 -L-, 30 FT RT.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 85+91 -L-, 30 FT. RT., TO STATION 86+51 -L-, 30 FT RT., DESIGN SHORING FOR THE FOLLOWING IN-SITU ASSUMED 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

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 85+91 -L-, 30 FT. RT., TO STATION 86+51 -L-, 30 FT RT. MAY NOT PENETRATE BELOW BOTTOM OF CULVERT DUE TO THE PRESENCE OF VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK.

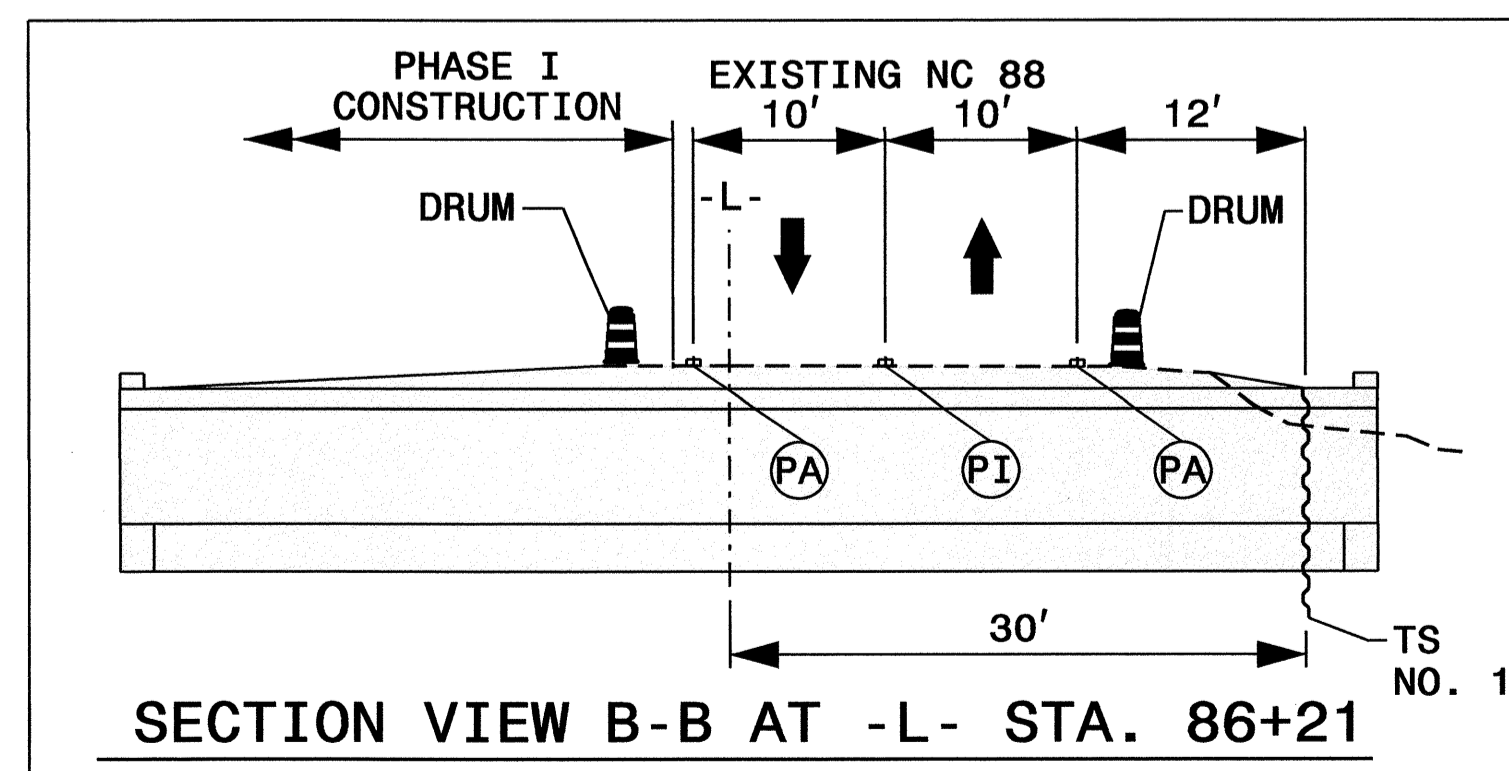
FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

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.

THE TEMPORARY SHORING NOTES SHOWN ABOVE WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTCU ON 09-20-2011 AND SEALED BY A PROFESSIONAL ENGINEER, ERIC WILLIAMS, LICENSE #26962.

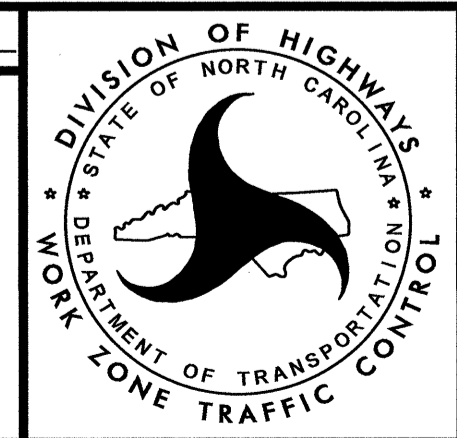
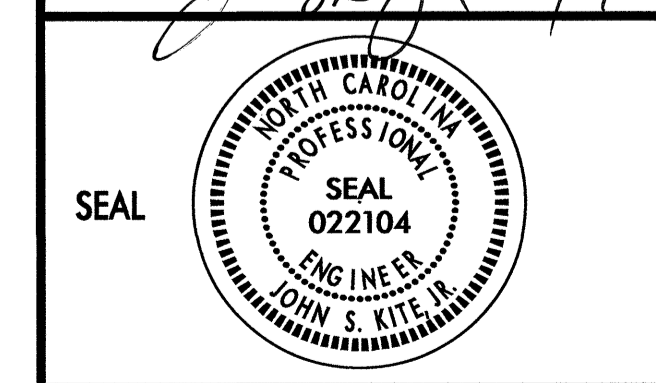
**TEMPORARY SHORING**

- (A) BEGIN TS NO. 1  
-L- STA. 85+91 +/-, 30' RT.
- (B) END TS NO. 1  
-L- STA. 86+51 +/-, 30' RT.



**NOTE "A":**  
INSTALL PRE-FABRICATED BOX CULVERT, CONNECTING PIPES AND TEMPORARY SHORING DURING A CLOSURE OF NC 88. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES. SEE TMP-15 FOR OFFSITE DETOUR.

APPROVED: [Signature] DATE: 9/29/11



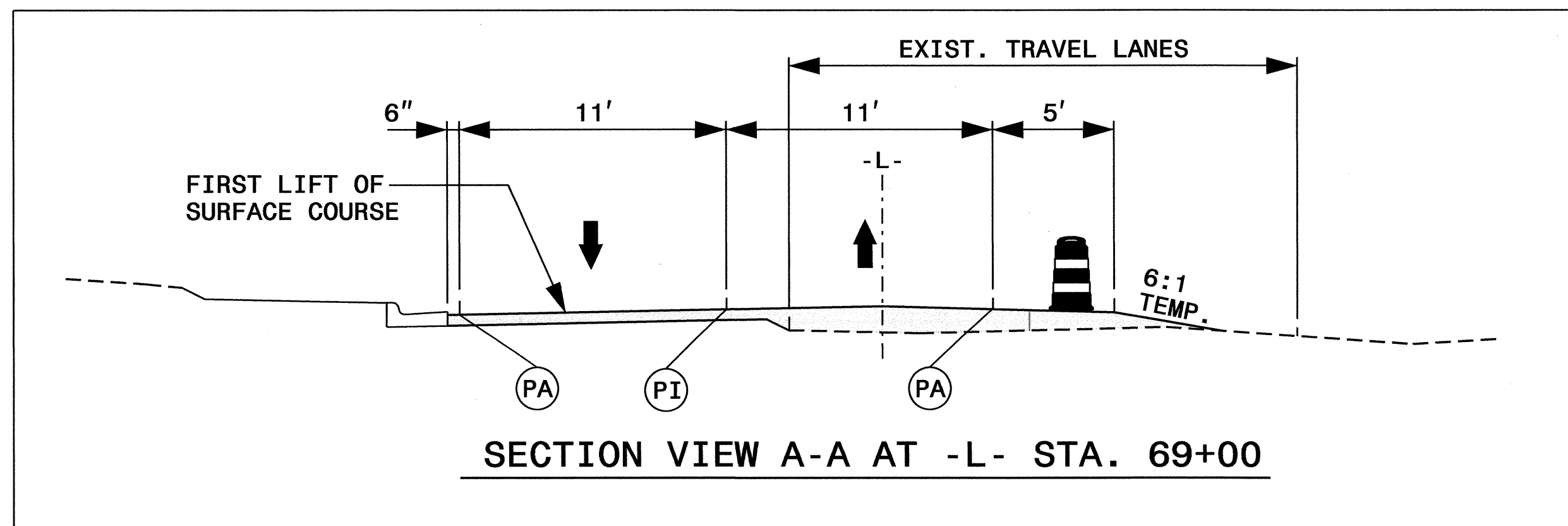
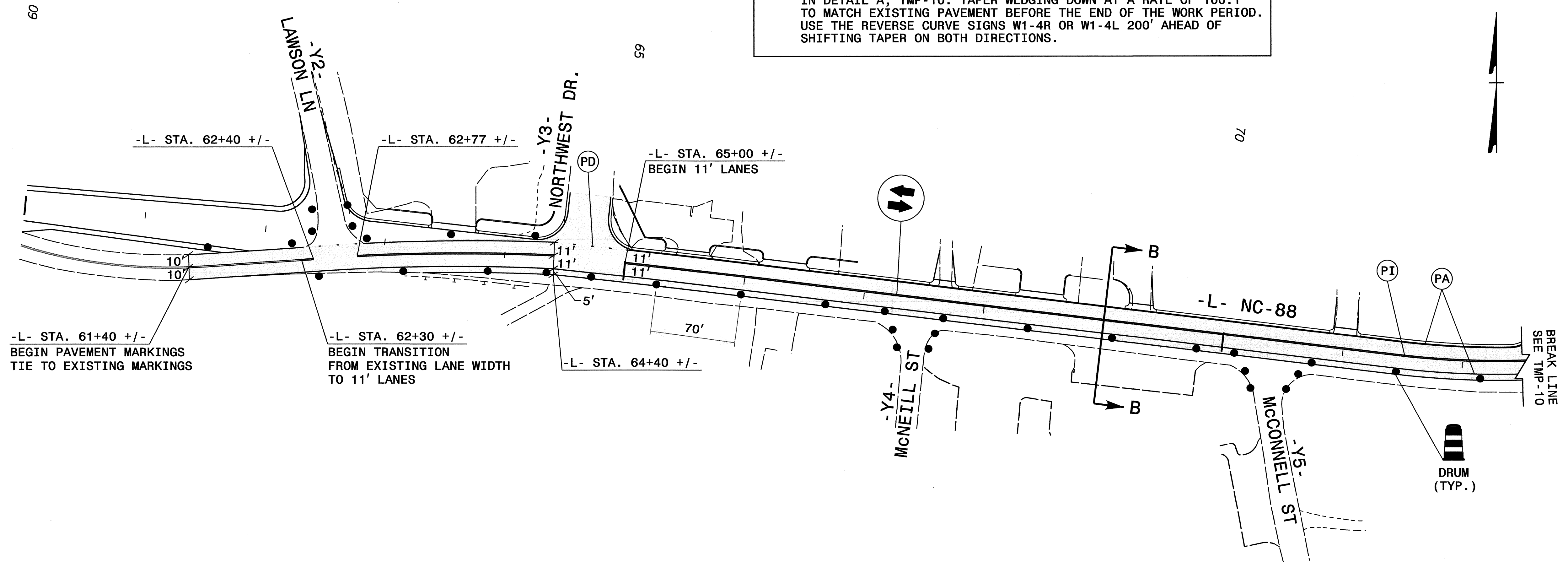
**AREA 2  
NC-88/US-221BUS**

**PHASE I**

29-SEP-2011 10:37 AM \\DOT-STOR06\proj\proj\18\Pro\TIP\Projects-u\3812\TrafficControl\Top\U-3812.TC.TMP-8.dgn okdote1 AT 12:44:48

**PHASE II, TRAFFIC SHIFT NO. 1 SEQUENCE:**

- 1) USING FLAGGERS, MAINTAIN 1L 2W TRAFFIC IN THE EXISTING EAST BOUND TRAVEL LANE.
- 2) PAVE/WEDGE THE PROPOSED WEST BOUND TRAVEL LANE BETWEEN -L- STA. 61+40 +/- TO 88+00 UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE.
- 3) USING FLAGGERS, SWITCH AND MAINTAIN 1L 2W TRAFFIC IN THE PROPOSED WEST BOUND TRAVEL LANE.
- 4) WEDGE THE PROPOSED EAST BOUND TRAVEL LANE BETWEEN -L- STA. 61+40 +/- TO 88+00 UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE.
- 5) IF THE ENTIRE TRAFFIC PATTERN CAN NOT BE COMPLETED IN A SINGLE WORK PERIOD THEN USE A 115' SHIFTING TAPER TO SHIFT 2L 2W TRAFFIC BACK INTO THE EXISTING TRAVEL LANES AS SHOWN IN DETAIL A, TMP-10. TAPER WEDGING DOWN AT A RATE OF 100:1 TO MATCH EXISTING PAVEMENT BEFORE THE END OF THE WORK PERIOD. USE THE REVERSE CURVE SIGNS W1-4R OR W1-4L 200' AHEAD OF SHIFTING TAPER ON BOTH DIRECTIONS.



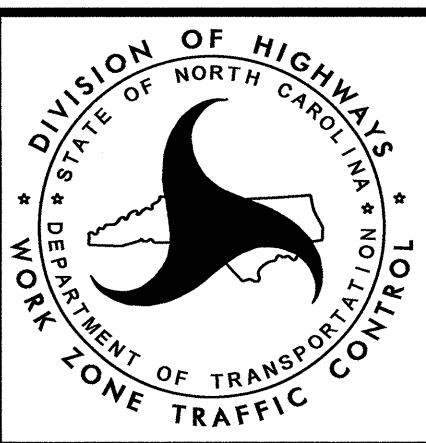
NOTE: INSTALL TEMPORARY RAISED PAVEMENT MARKERS MH ON 80' CENTERS ALONG TEMPORARY DOUBLE YELLOW CENTER LINE

AREA 2  
NC-88/US-221BUS

APPROVED: [Signature] DATE: 8/29/11

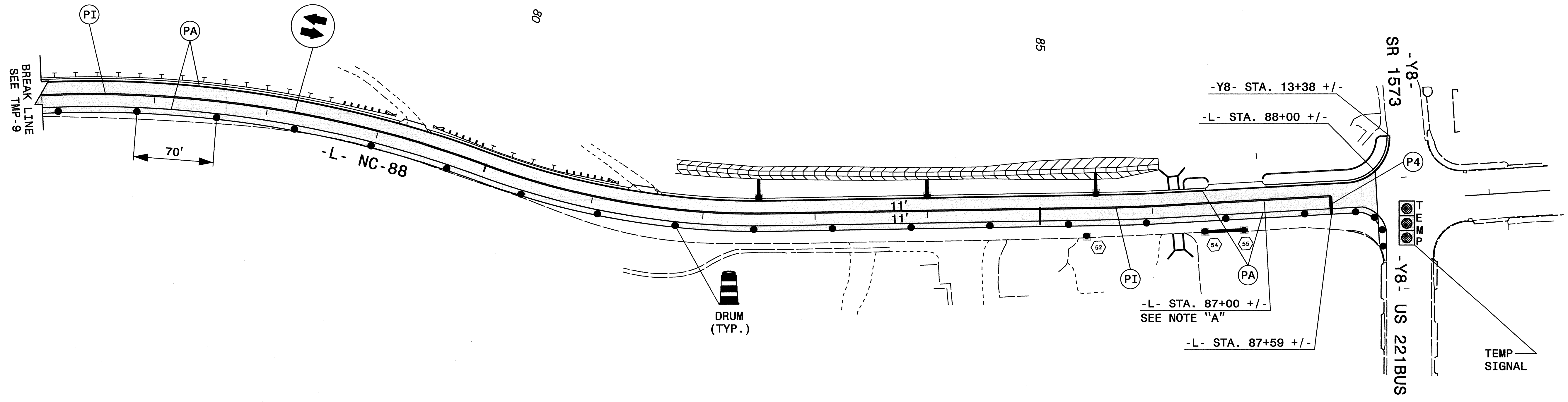
SEAL

PROFESSIONAL ENGINEER  
SEAL 022104  
JOHN S. KITLER, P.E.



PHASE II  
SHIFT No. 1

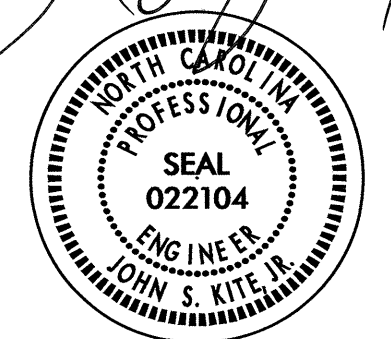
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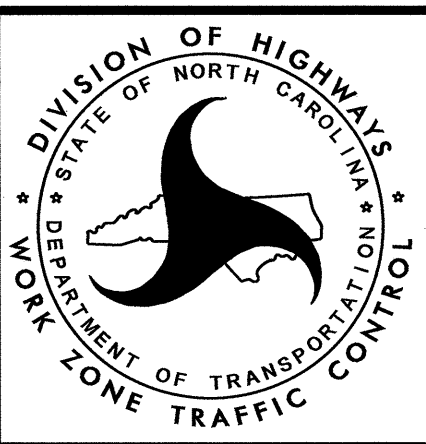


NOTE "A":  
 TAPER WEDGING DOWN AT A RATE OF 100:1 TO  
 MATCH EXISTING PAVEMENT AT -L- STA. 88+00 +/-

NOTE: INSTALL TEMPORARY RAISED PAVEMENT MARKERS MH ON 80'  
 CENTERS ALONG TEMPORARY DOUBLE YELLOW CENTER LINE

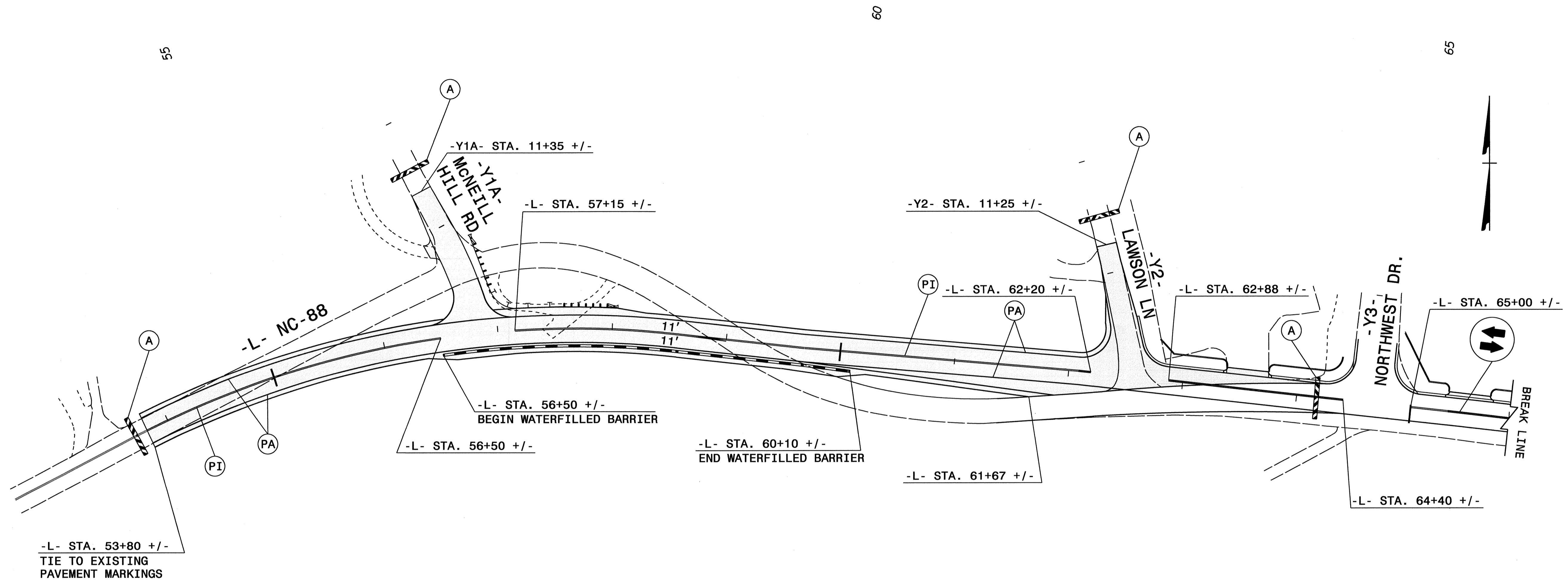
AREA 2  
 NC-88/US-221BUS

APPROVED: *[Signature]* DATE: 8/22/11  
 SEAL  




TRAFFIC  
 SHIFT No. 1

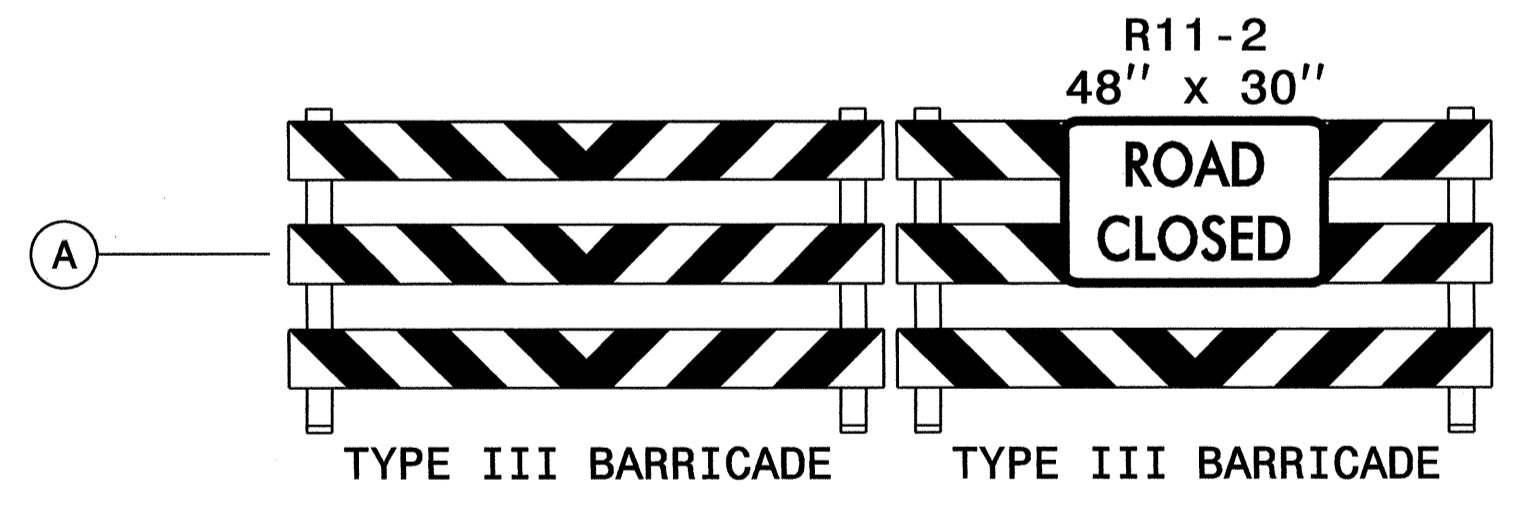
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 chp01el AL 1E24746



**PHASE II, TRAFFIC SHIFT NO. 2 SEQUENCE:**

COMPLETE THE WORK OF STEP 1 THRU 4 BETWEEN FRIDAY AT 8:00PM AND THE FOLLOWING MONDAY AT 6:00AM. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES)

- 1) CLOSE NC 88 BETWEEN STA. 53+30 +/- AND STA. 63+00 +/- - SEE TMP-15 FOR DETOUR.  
CLOSE -Y1A- AND -Y2-. (BOTH LOCAL ROADS CAN ACCESS NC 88 VIA -Y3-, NORTH WEST BLVD.)
- 2) PAVE UP TO, BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA. 53+80 +/- TO -L- STA. 64+40 +/-.
- 3) PLACE TEMPORARY PAINT PAVEMENT MARKINGS AND WATERFILLED BARRIER AS SHOWN.
- 4) RE-OPEN NC 88 TO THE TRAFFIC PATTERN DETAILED ON THIS SHEET.
- 5) USING FLAGGERS ON NC 88 COMPLETE TIE IN OF -Y2- AND RE-OPEN TO TRAFFIC.
- 6) USING FLAGGERS ON NC 88 COMPLETE TIE IN OF -Y1A- INCLUDING PROPOSED GUARDRAIL AND RE-OPEN TO TRAFFIC.



NOTE: INSTALL TEMPORARY RAISED PAVEMENT MARKERS MH ON 40' CENTERS ALONG TEMPORARY DOUBLE YELLOW CENTER LINE

**AREA 2  
NC-88/US-221BUS**

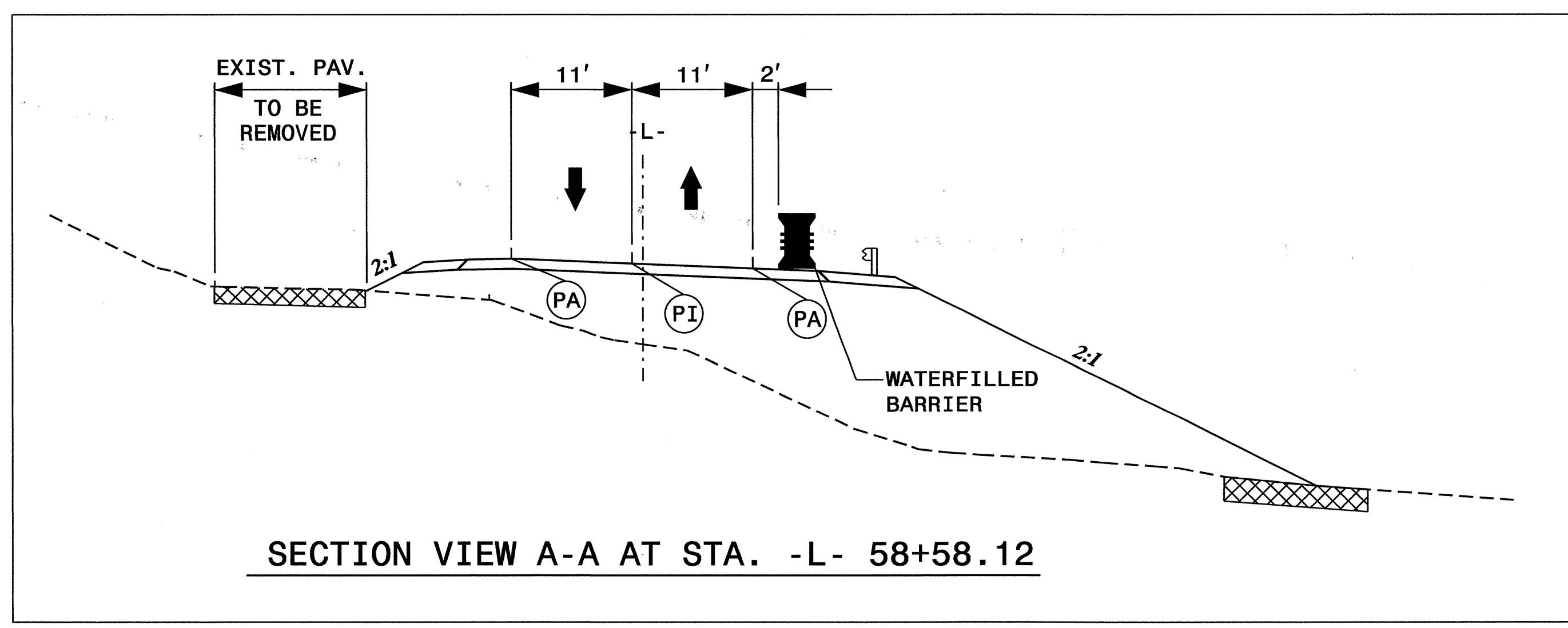
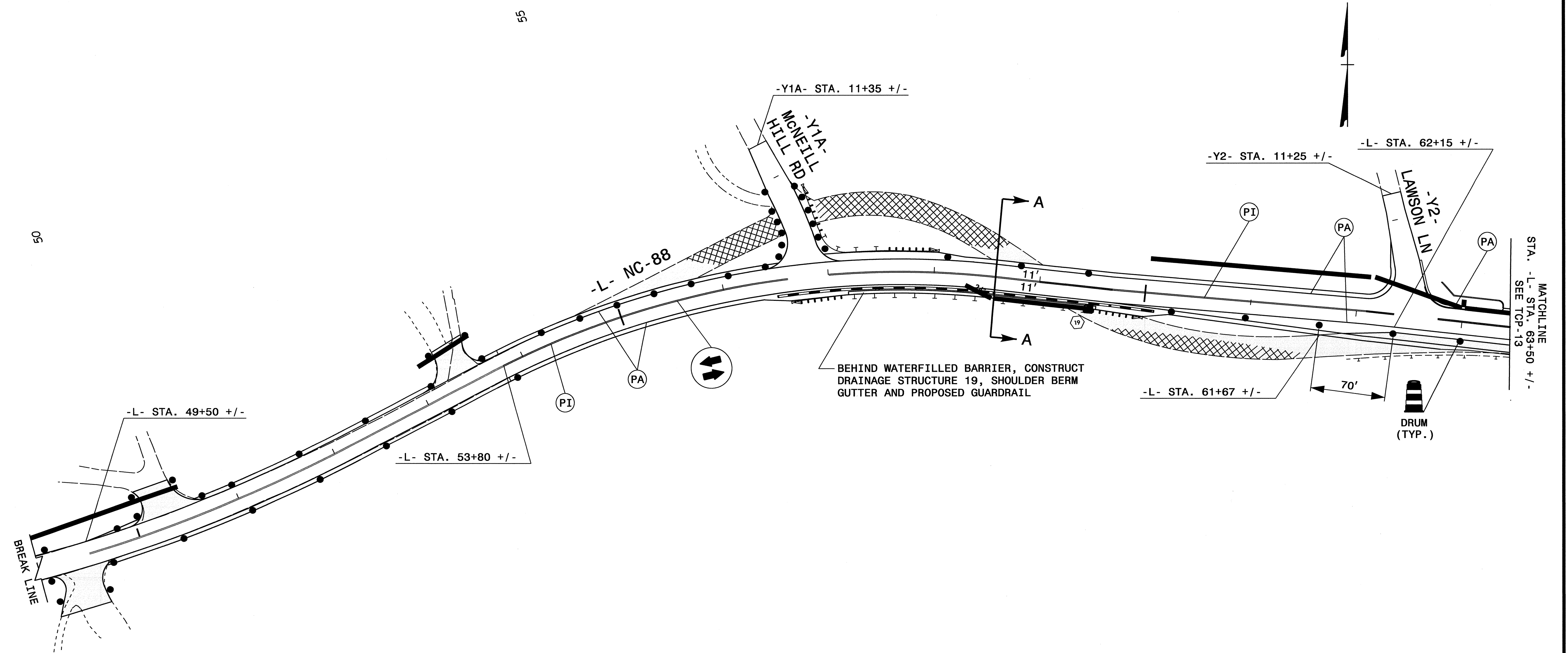
APPROVED: *[Signature]* DATE: 8/29/11

SEAL

**PHASE II  
SHIFT No.2**

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 chp01el AT 12:47:48

60



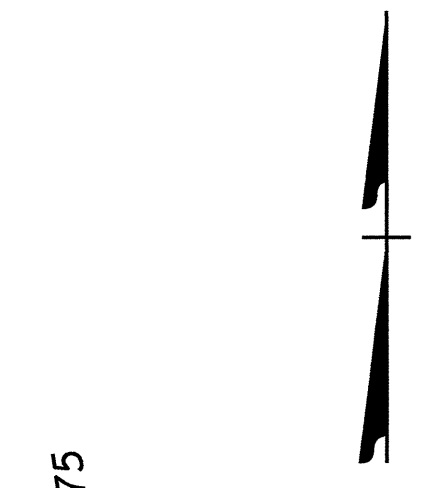
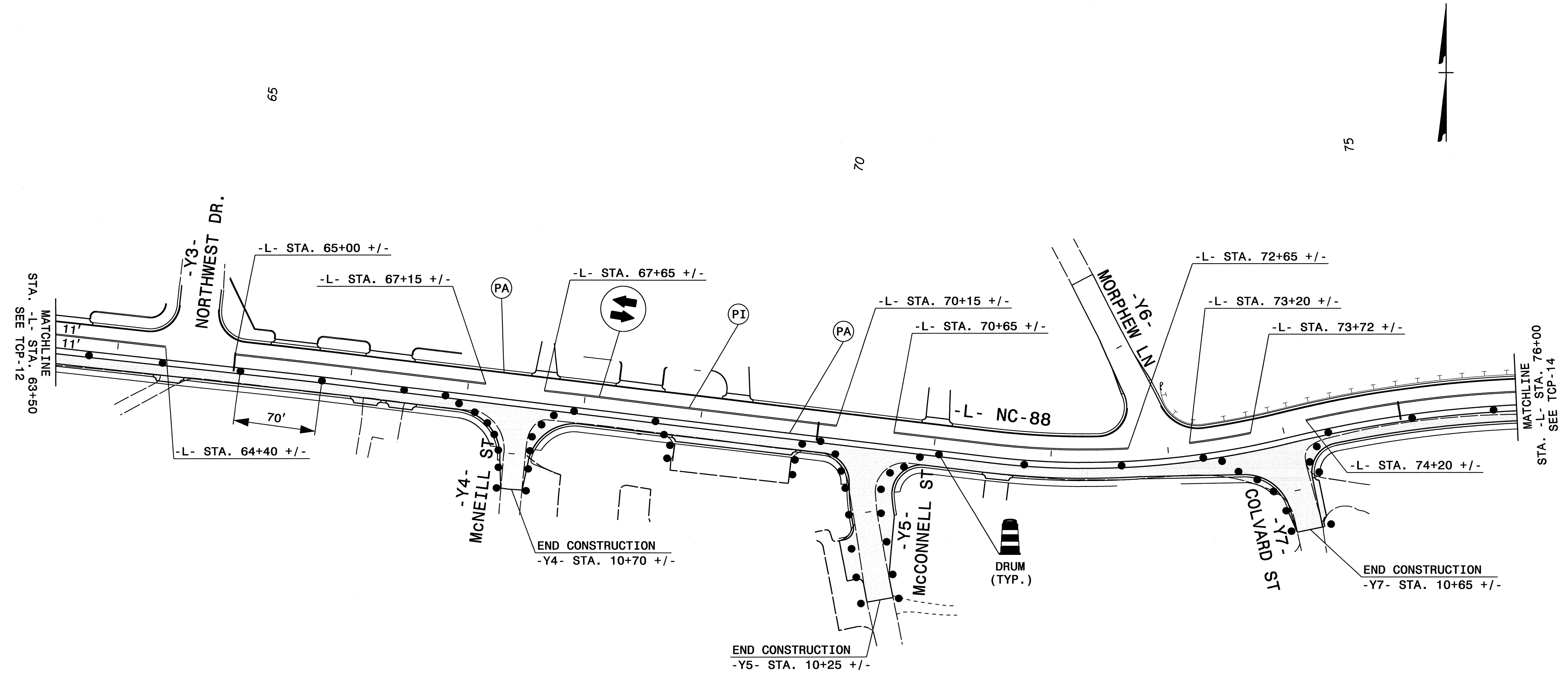
AREA 2  
NC-88/US-221BUS

APPROVED: *[Signature]* DATE: 8/27/11

SEAL

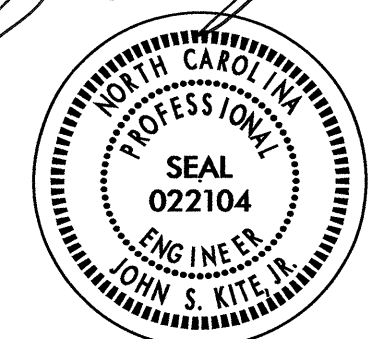
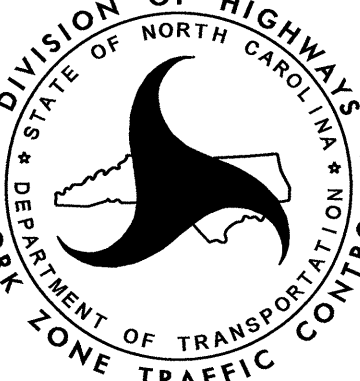
PHASE II

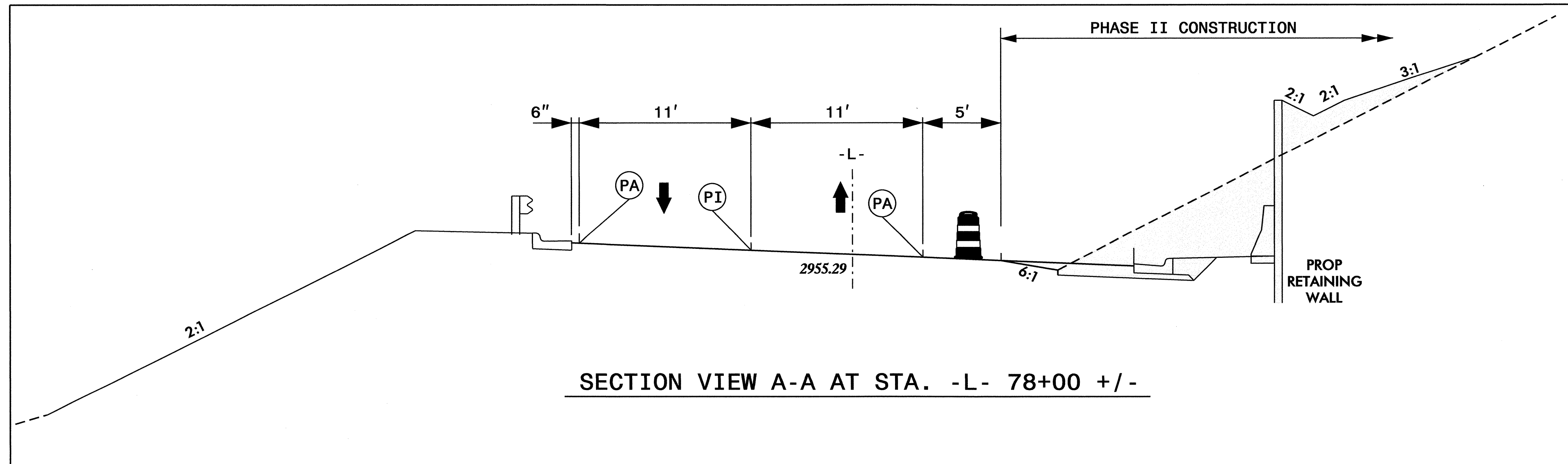
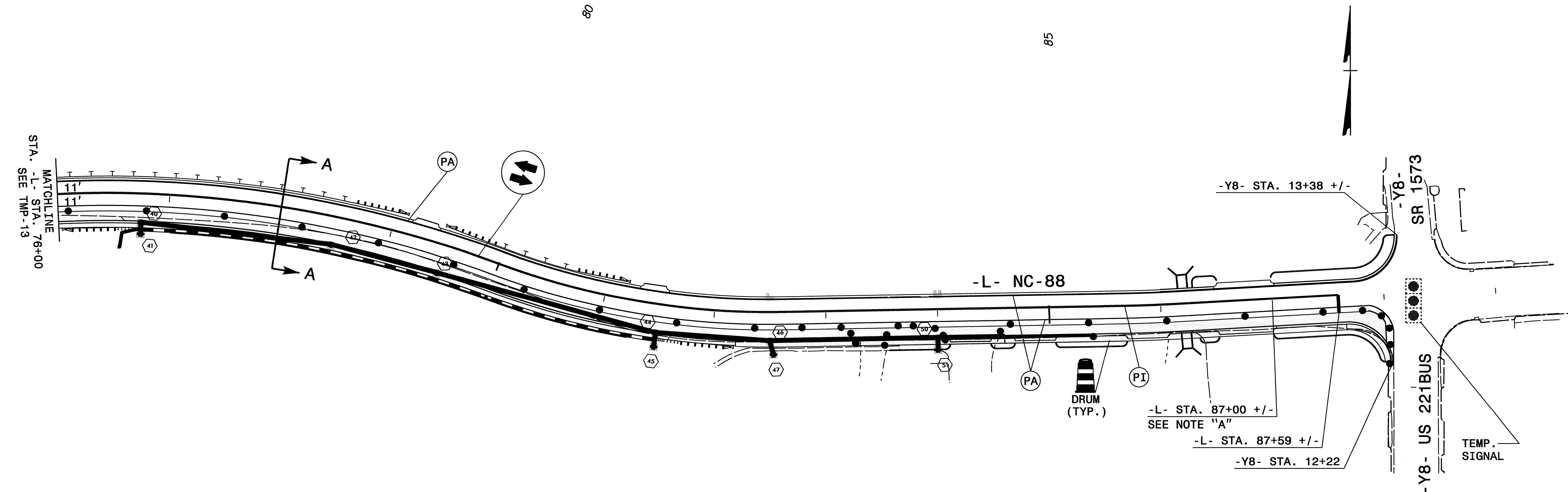
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AREA 2  
NC-88/US-221BUS

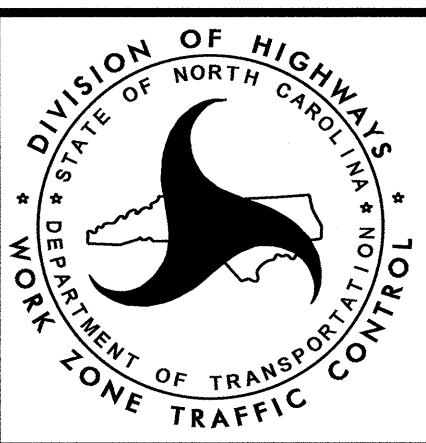
APPROVED: <i>[Signature]</i> DATE: 8/29/11 		<p>PHASE II</p>
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NOTE "A":  
 TAPER WEDGING DOWN AT A RATE OF 100:1 TO  
 MATCH EXISTING PAVEMENT AT -L- STA. 88+00 +/-

AREA 2  
 NC-88/US-221BUS

APPROVED: [Signature] DATE: 8/29/11  
 SEAL  
 NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 022104  
 ENGINEER  
 JOHN S. KITE, P.E.



PHASE II

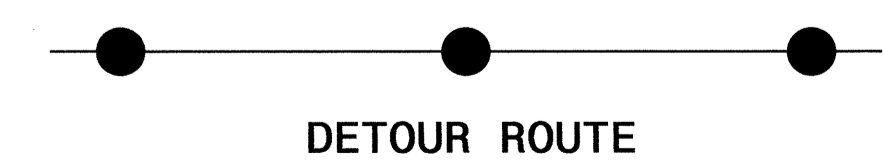
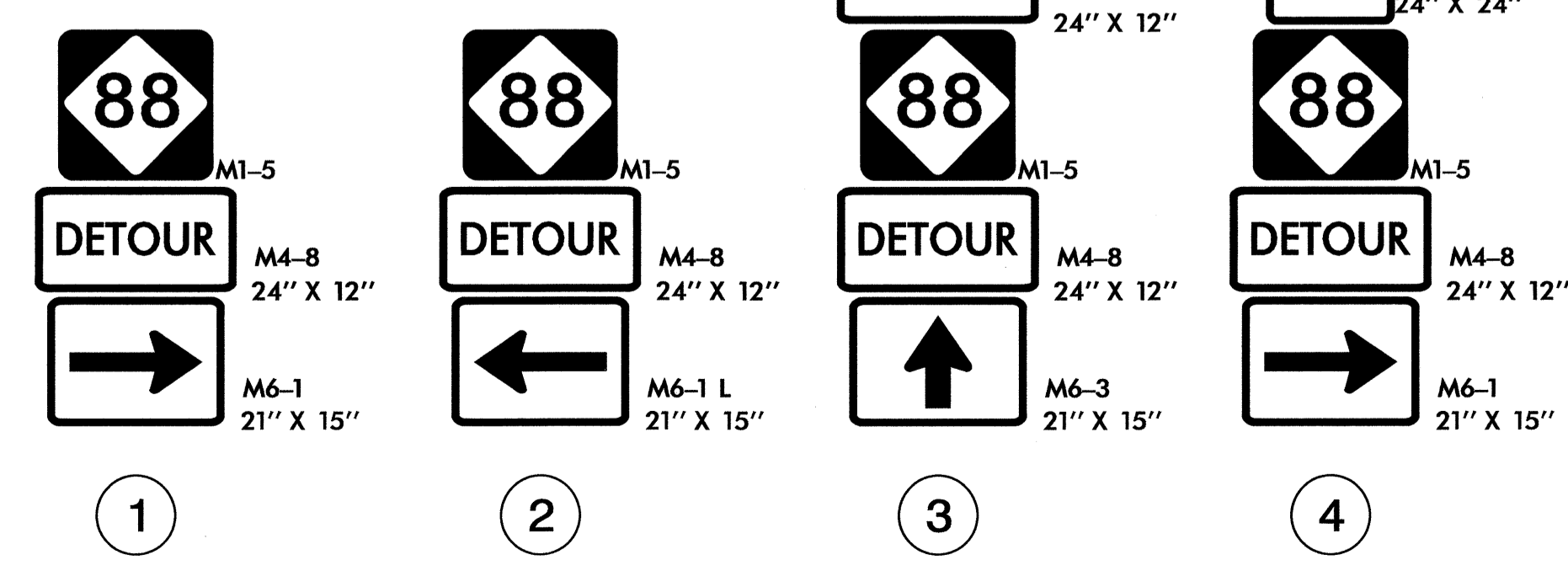
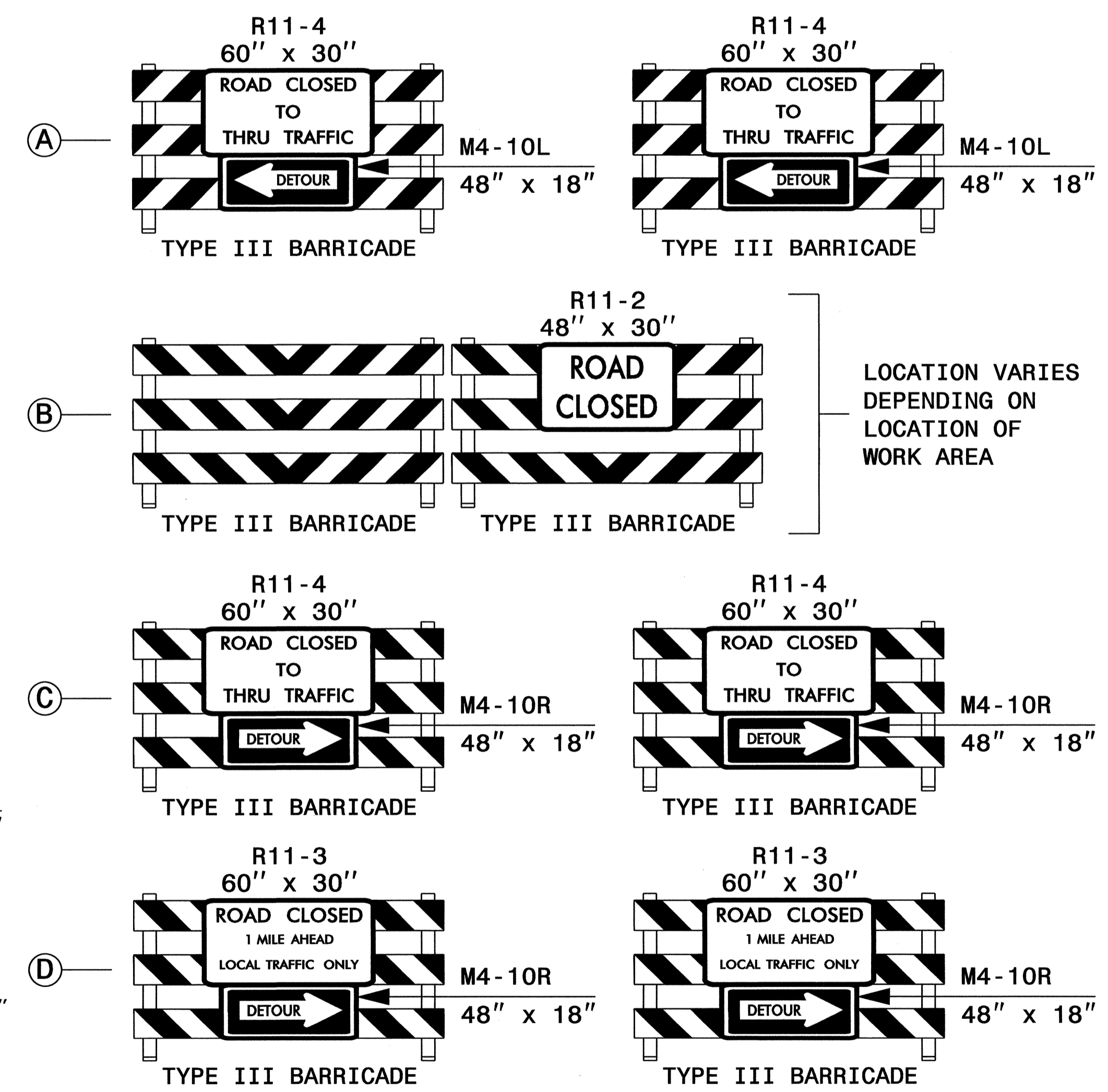
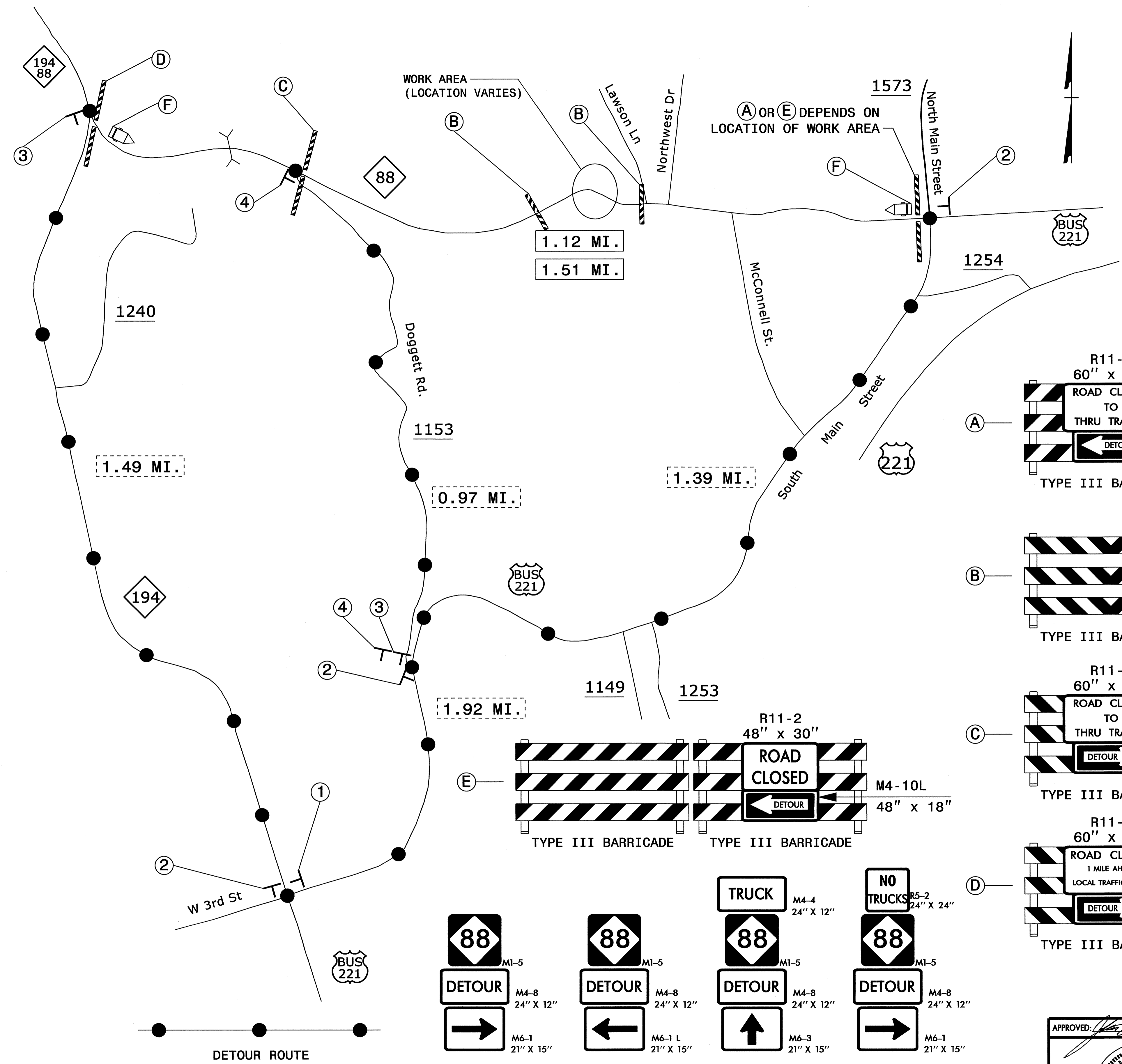
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REFER TO ROADWAY STANDARD DRAWING 1101.03, SHEET 1 AND 2 OF 9 FOR ADVANCED WARNING SIGNS AND APPLICABLE NOTES.

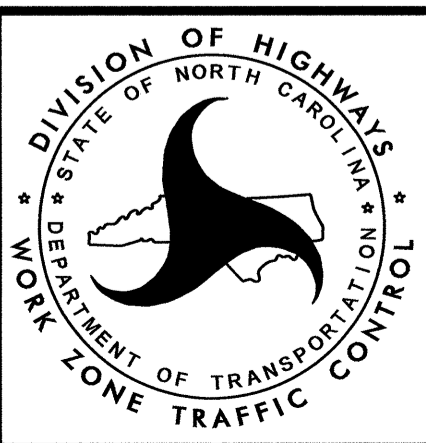
NOTE: BEFORE OFFSITE DETOUR IMPLEMENTATION, USE CMS BOARD ON EACH END TO ADVERTISE THE ROAD CLOSURE THREE DAYS IN ADVANCE WITH THE FOLLOWING MESSAGING:

F	MESSAGE NO. 1	MESSAGE NO. 2	OR	MESSAGE NO. 1	MESSAGE NO. 2
	NC-88 WILL BE CLOSED	FOR WEEK STARTING . . . DAY		NC-88 WILL BE CLOSED	FOR WKND STARTING FRIDAY
	CHANGEABLE MESSAGE SIGN			CHANGEABLE MESSAGE SIGN	
	FOR AREA 2, PHASE I, STEPS 2 TO 4			FOR AREA 2, PHASE II, STEPS 2 TO 4	



AREA 2  
NC-88/US-221BUS

APPROVED: *[Signature]* DATE: 8/22/11  
SEAL



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
WORK ZONE TRAFFIC CONTROL  
**NC 88  
OFFSITE DETOUR**

24-AUG-2011 14:02  
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