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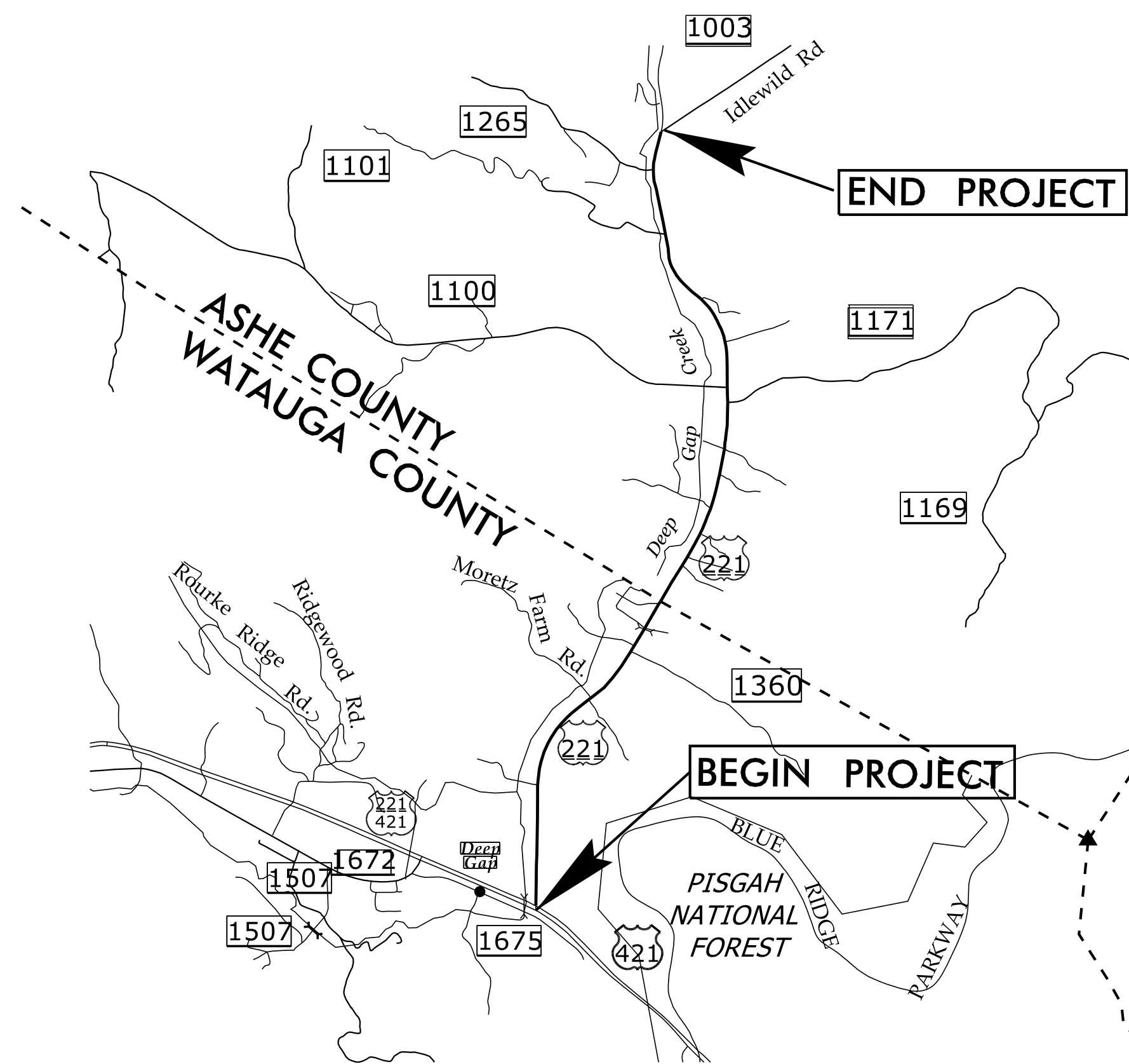
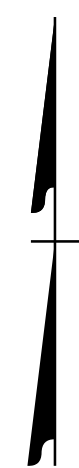
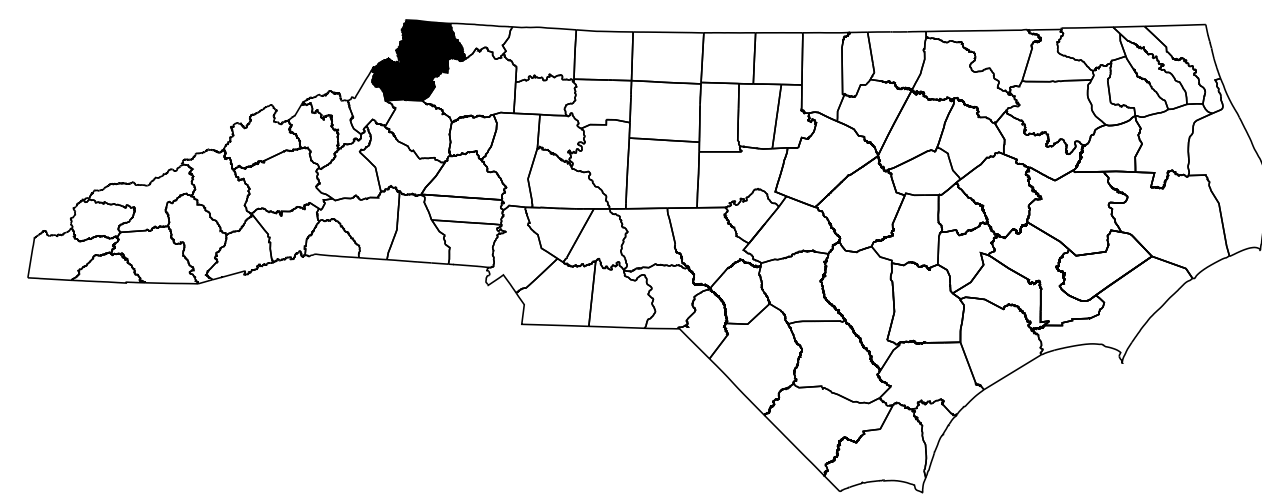
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**WATAUGA & ASHE COUNTIES**

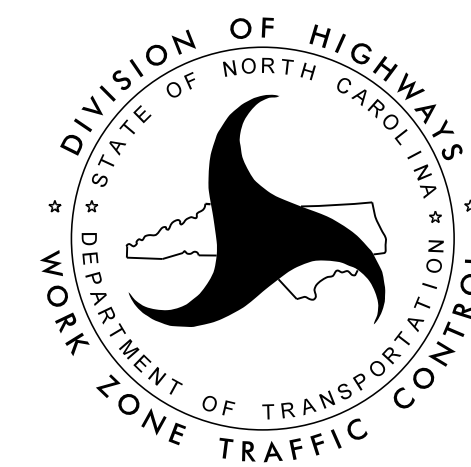


LOCATION: US 221 FROM US 421 IN WATAUGA COUNTY TO SR 1003  
(IDLEWILD RD) IN ASHE COUNTY



**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER  
JAY WOOLARD, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
L. D. STOUCHKO, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
TRAFFIC CONTROL DESIGN ENGINEER



PLAN PREPARED FOR NCDOT BY:  
**EDDIE WETHERILL, P.E.** PROJECT ENGINEER  
**CHARLES MULLEN** TRAFFIC CONTROL & PAVEMENT MARKING SPECIALIST

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_  
SEAL  
 5/26/2015

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2A	TEMPORARY SHORING DATA
TMP-3 THRU TMP-20	PHASE I TRAFFIC CONTROL DETAILS
TMP-21 THRU TMP-41	PHASE II TRAFFIC CONTROL DETAILS
TMP-42 THRU TMP-59	PHASE III (PARTS A & B) TRAFFIC CONTROL DETAILS
TMP-60 THRU TMP-65	PHASE III (PART C) TRAFFIC CONTROL DETAILS
TMP-66 THRU TMP-72	PHASE IV (PART A) TRAFFIC CONTROL DETAILS
TMP-73 THRU TMP-79	PHASE IV (PART B) TRAFFIC CONTROL DETAILS
TMP-80 THRU TMP-92	PHASE V TRAFFIC CONTROL DETAILS

SHEET NO.  
TMP-1

**R-2915A**

**TIP PROJECT:**

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# 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 JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER 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
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMP
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

## LEGEND

### GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- TEMPORARY PAVEMENT
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL
- DENOTES EXISTING PAVEMENT WEDGING

### TRAFFIC CONTROL DEVICES

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

### TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN

### SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

### PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

### PAVEMENT MARKERS

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

### PAVEMENT MARKING SYMBOLS

- TEMPORARY SYMBOLS
- EXISTING SYMBOLS

**ETHERILL ENGINEERING**  
 559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

## TEMPORARY PAVEMENT MARKING

- 4" PAINT**
- PA WHITE EDGE LINE
- PB YELLOW EDGE LINE
- PC 10FT. WHITE SKIP
- PD 3FT.-9FT./SP WHITE MINI-SKIP
- PE WHITE SOLID LANE LINE
- PF 10 FT. YELLOW SKIP
- PH YELLOW SINGLE CENTER LINE
- PI YELLOW DOUBLE CENTER LINE
- P8 2FT.-6FT./SP WHITE MINI-SKIP
- P9 2FT.-6FT./SP YELLOW MINI-SKIP
- 6" PAINT**
- PJ 10FT. WHITE SKIP
- PL WHITE SOLID LANE LINE
- 8" PAINT**
- PN WHITE GORE LINE
- PO WHITE DIAGONAL
- PP YELLOW DIAGONAL
- 12" PAINT**
- PU WHITE DIAGONAL
- PV YELLOW DIAGONAL
- 24" PAINT**
- P2 WHITE STOP-BAR
- CHARACTERS PAINT
- QI ALPHANUMERIC CHAR.
- SYMBOLS PAINT
- QA LEFT TURN ARROW
- QB RIGHT TURN ARROW
- QC STRAIGHT ARROW
- QE COMBO. STRAIGHT/RIGHT ARROW
- QP MERGE ARROW
- QT U-TURN ARROW
- 4" COLD APPLIED PLASTIC TYPE 4-REMOVABLE TAPE**
- CA WHITE EDGE LINE
- CB YELLOW EDGE LINE
- TEMPORARY RAISED MARKERS
- MH YELLOW & YELLOW
- MI CRYSTAL & RED
- MM CRYSTAL & CRYSTAL

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APPROVED: _____ DATE: _____			<h3>ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY MARKINGS</h3>
SEAL			

## 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 UNDESIRE 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
1. US 221	MONDAY THROUGH FRIDAY 6:00 AM TO 8:00 AM & 4:00 PM TO 6:00 PM AND SATURDAY, 10:00 AM TO 6:00 PM

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

ROAD NAME
1. US 221
2. US 421

### HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATE UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 AM DECEMBER 31st TO 6:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 PM THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 6:00 PM MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 6:00 PM TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 6:00 PM THE DAY AFTER INDEPENDENCE DAY.  
  
IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 6:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 6:00 PM TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY TO 6:00 PM MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR THE FALL FOLIAGE SEASON, ALL WEEKENDS IN OCTOBER, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 6:00 PM SUNDAY.
- FOR APPALACHIAN STATE UNIVERSITY HOME FOOTBALL GAMES, BETWEEN THE HOURS OF 12:00 (NOON) THE DAY BEFORE THE GAME TO 8:00 AM THE MONDAY AFTER THE GAME.
- FOR CHRISTMAS IN JULY OCCURRING IN WEST JEFFERSON BETWEEN 24 HOURS BEFORE THE START AND 24 HOURS AFTER THE END OF CHRISTMAS IN JULY.
- FOR BLUE RIDGE BRUTAL BIKE RACE EVENTS, BETWEEN 24 HOURS BEFORE THE START AND 24 HOURS AFTER THE END OF THE BLUE RIDGE BRUTAL BIKE RACE EVENTS.
- FOR BLOOD, SWEAT & GEARS BIKE RACE EVENTS, BETWEEN 24 HOURS BEFORE THE START AND 24 HOURS AFTER THE END OF THE BLOOD, SWEAT & GEARS BIKE RACE EVENTS.
- FOR BLUE RIDGE RELAYS RACE EVENTS, BETWEEN 24 HOURS BEFORE THE START AND 24 HOURS AFTER THE END OF THE BLUE RIDGE RELAYS RACE EVENTS.
- FOR MARTIN LUTHER KING JR. DAY, BETWEEN THE HOURS OF 4:00 PM FRIDAY TO 8:00 AM TUESDAY.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
1. US 221	MONDAY THROUGH FRIDAY 6:00 AM TO 8:00 AM & 4:00 PM TO 6:00 PM AND SATURDAY, 10:00 AM TO 6:00 PM	15 MINUTES, TRAFFIC OPERATIONS, BLASTING & SIGN INSTALLATIONS.
2. US 421	MONDAY THROUGH FRIDAY 6:00 AM TO 8:00 AM & 4:00 PM TO 6:00 PM AND SATURDAY, 10:00 AM TO 6:00 PM	15 MINUTES, TRAFFIC OPERATIONS & BLASTING.

D) DO NOT USE MEDIAN CROSSOVER AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. US 421	MONDAY THROUGH SUNDAY, 5:00 AM TO 9:00 PM

E) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS; INGRESS AND EGRESS FROM RAMPS WILL BE ALLOWED:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. US 221	MONDAY THROUGH FRIDAY 6:00 AM TO 8:00 AM & 4:00 PM TO 6:00 PM AND SATURDAY, 10:00 AM TO 6:00 PM

F) 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

- G) 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.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- I) 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.

J) 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.

K) 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.

L) DO NOT INSTALL MORE THAN 0.5 MILE OF LANE CLOSURE ON US 221 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

M) DO NOT INSTALL MORE THAN TWO SIMULTANEOUS LANE CLOSURES, IN ANY ONE DIRECTION, ON US 221.

N) PROVIDE A MINIMUM OF 0.5 MILES BETWEEN LANE CLOSURES, MEASURED FROM THE END OF ONE CLOSURE TO THE FIRST SIGN OF THE NEXT LANE CLOSURE.

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

### PAVEMENT EDGE DROP OFF REQUIREMENTS

P) 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 A DROP-OFF AS FOLLOWS:

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

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

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

Q) 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 ONCE EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

### TRAFFIC PATTERN ALTERATIONS

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

### SIGNING

S) 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.

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

U) 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

V) 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.

W) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

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

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

### TRAFFIC CONTROL DEVICES

X) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

Z) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
1. ALL ROADS	PAINT	TEMPORARY RAISED
2. STRUCTURES	COLD APPLIED PLASTIC, TYPE IV	TEMPORARY RAISED

BB) 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.

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

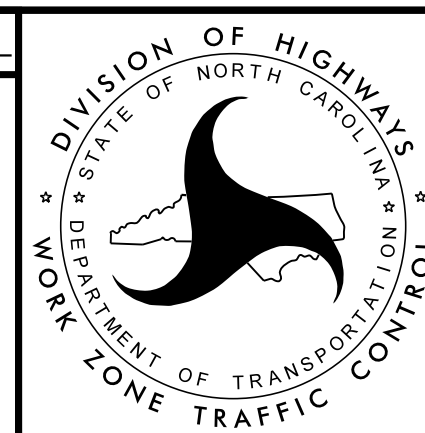
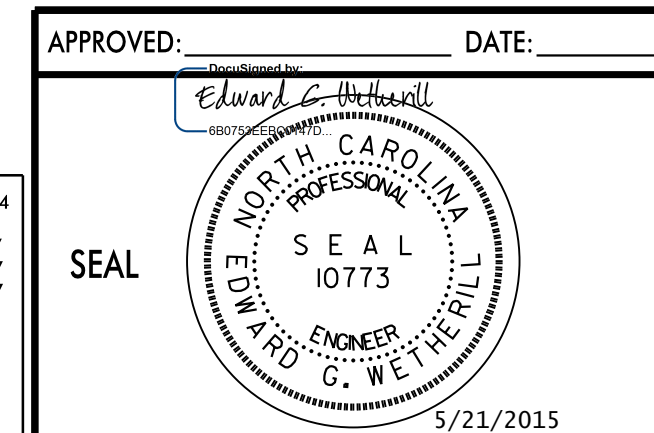
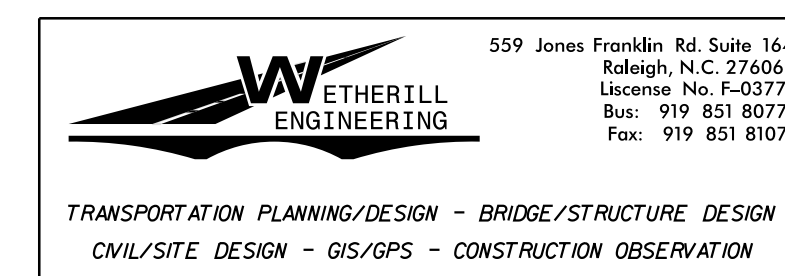
DD) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

EE) TRACE THE EXISTING AND/OR PROPOSED MONOLITHIC ISLAND LOCATIONS WITH THE PROPER COLOR PAVEMENT MARKING PRIOR TO REMOVAL AND/OR INSTALLATION. PLACE DRUMS TO DELINEATE ANY EXISTING AND/OR PROPOSED MONOLITHIC ISLANDS AFTER REMOVAL AND/OR BEFORE INSTALLATION.

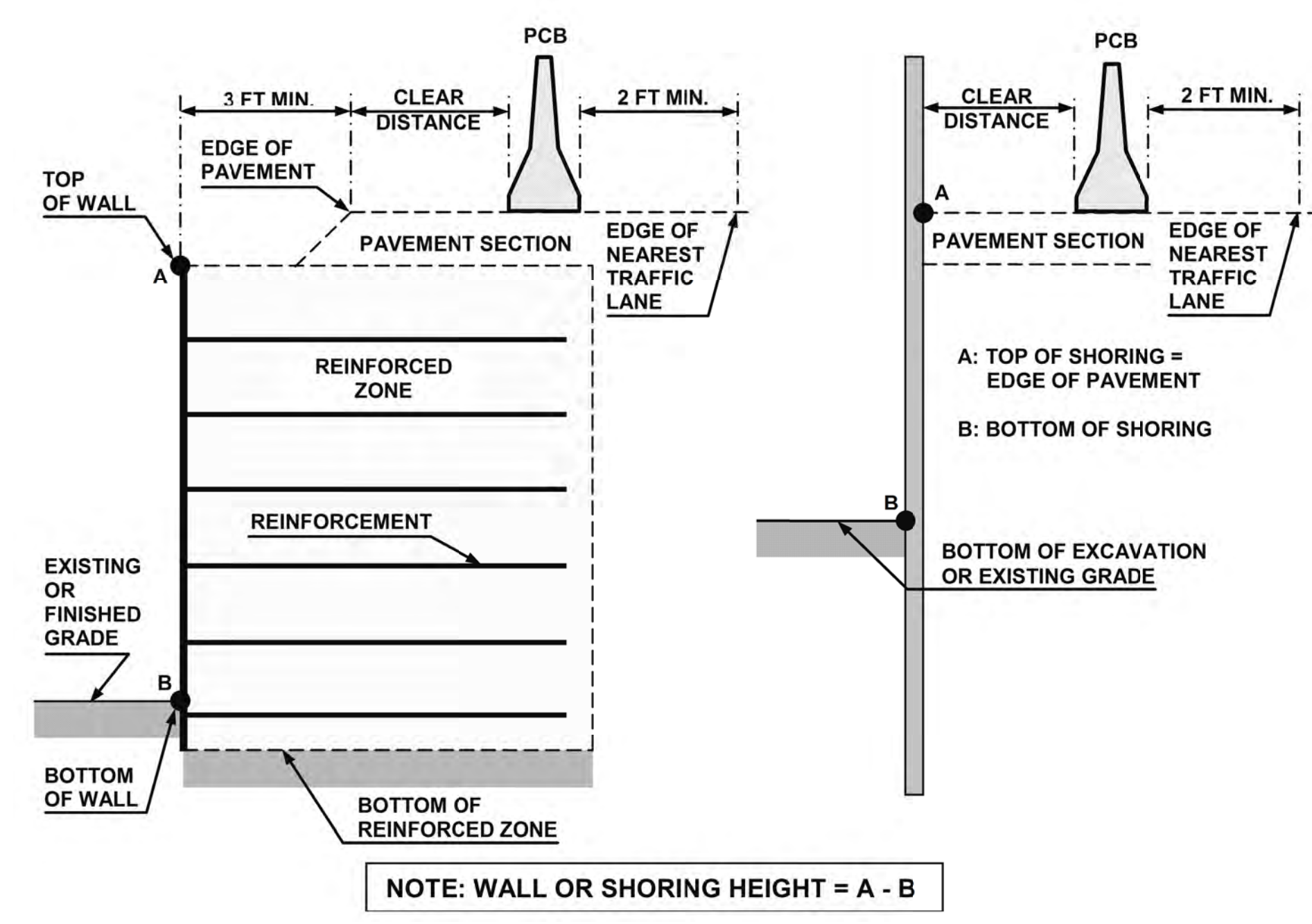
### MISCELLANEOUS

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

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## TRANSPORTATION OPERATIONS PLAN



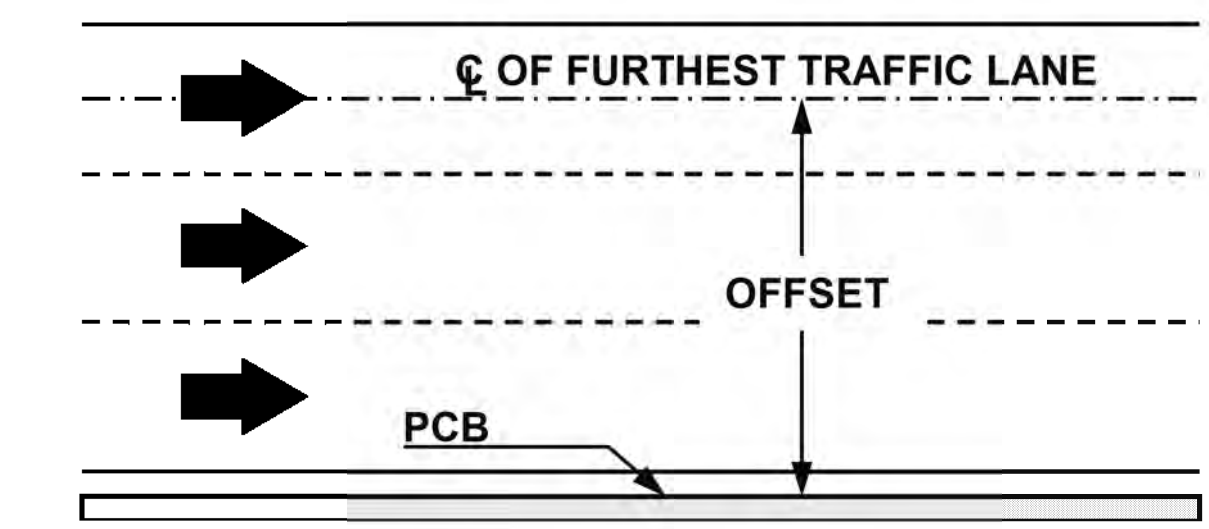
# FIGURE A

## NOTES

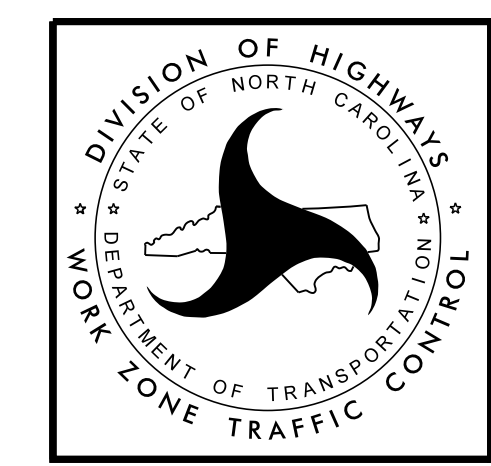
- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.
- FOR PCB ABOVE AND BEHIND TEMPORARY 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 FT IN LENGTH AND WET OR DRY PAVEMENT.

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	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

\* See Figure Below



# FIGURE B



PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

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SHORING LOCATION NO. 1

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- 65+90±, 5 FT (RT), TO STATION -L- 66+40±, 5 FT (RT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 2970 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 65+90±, 5 FT (RT), TO STATION -L- 66+40±, 5 FT (RT). THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 65+90±, 5 FT (RT), TO STATION -L- 66+40±, 5 FT (RT). SEE STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 2

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -Y1- 33+40±, 11 FT (LT), TO STATION -Y1- 34+50±, 11 FT (LT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = N/A FT

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION -Y1- 33+40±, 11 FT (LT), TO STATION -Y1- 34+50±, 11 FT (LT) MAY NOT PENETRATE BELOW ELEVATION 2,964 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y1- 33+40±, 11 FT (LT), TO STATION -Y1- 34+50±, 11 FT (LT). SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

SHORING LOCATION NO. 3

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- 16+60±, 112.8 FT (LT), TO STATION 24+00±, 65 FT (LT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

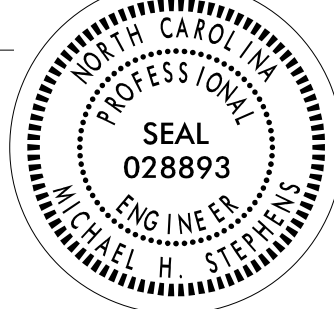
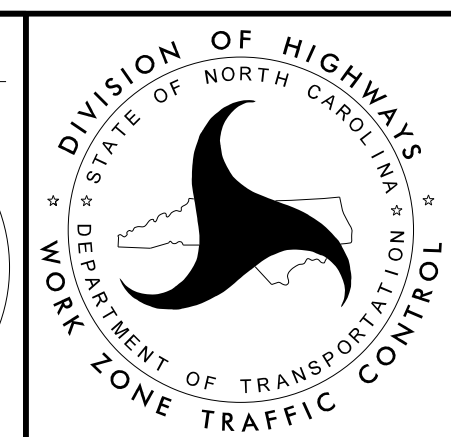
UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = N/A FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 16+60±, 112.8 FT (LT), TO STATION 24+00±, 65 FT (LT). THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 16+60±, 112.8 FT (LT), TO STATION 24+00±, 65 FT (LT). SEE STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

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APPROVED *Michael H. Stephens*  
C447882092314CC  
 DATE: 5/26/2015

COORDINATE WITH THE CONTRACTOR ON ADJACENT PROJECT R-2915B WHEN SHIFTING TRAFFIC, USING FLAGGERS, LANE CLOSURES, AND SIGNING REQUIREMENTS AT THE END PROJECT LIMITS ON ALL CONSTRUCTION PHASES AND AS DIRECTED BY THE ENGINEER.

- UPON COMPLETION OF -SR2- CONSTRUCTION AND OPENING TRAFFIC TO A TWO-LANE, TWO-WAY PATTERN, CONTRACTOR MAY CONTINUE -L- (US 221) ROADWAY AND STRUCTURE WORK FROM US 421 TO -L- STA. 60+00+/- (SEE PHASE II - TMP-21 THRU TMP-26) UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

MAINTAIN EXISTING TRAFFIC SIGNAL AT US 221/US 421 DURING PHASE I CONSTRUCTION.

**PHASE I**

STEP 1) INSTALL ADVANCE WARNING SIGNS ON US 221, US 421, AND ALL -Y- LINES ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01, SHEETS 2 AND 3 OF 3.

STEP 2) AWAY FROM TRAFFIC, BEGIN CONSTRUCTION OF PROPOSED -LPC- (INCLUDING PROPOSED BOX CULVERTS), -SR2-, -SR1-, AND -RPC- UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE (SEE TMP-4, TMP-5, TMP-17, TMP-18, AND TMP-19).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, BEGIN CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE AT THE FOLLOWING:

- 5 FT. TEMPORARY PAVEMENT PAD -L- (US 221) NB STA. 15+50+/- TO -L- STA. 25+80+/- (SEE TMP-4 AND TMP-5).
- -L- (US 221) SB FROM -L- STA. 28+00+/- TO -L- 60+00+/- (SEE TMP-5 THRU TMP-8).
- -L- (US 221) NB FROM -L- STA. 60+00+/- TO -L- STA. 113+75+/- (INCLUDING -DR2-) WHILE MAINTAINING ACCESS TO -Y2-, -Y3-, AND -Y4- AT ALL TIMES (SEE TMP-8 THRU TMP-12).
- STAGE I OF PROPOSED BOX CULVERT ON -L- (US 221) USING TEMPORARY SHORING AS NEEDED (SEE TMP-8).
- -L- (US 221) SB FROM -L- SB STA. 113+75+/- TO -L- STA. 135+00+/- (INCLUDING -DR3-) (SEE TMP-12 THRU TMP-14).
- -L- (US 221) NB FROM -L- STA. 135+00+/- TO -L- STA. 138+50+/- AND -Y7- (STONE CREST DR.) (SEE TMP-14).
- -L- (US 221) NB FROM -L- STA. 141+00+/- TO -L- STA. 156+00+/- (INCLUDING TEMPORARY PAVEMENT) (SEE TMP-14 THRU TMP-16).
- -L- (US 221) NB FROM -L- STA. 158+10+/- TO -L- STA. 160+02+/- (INCLUDING TEMPORARY MEDIAN PAVEMENT) AND -Y9- (IDLEWILD RD.) AT THE -L- (US 221) TIE-IN TO -Y9- STA. 13+10+/- (SEE TMP-16).
- PROPOSED GUARDRAIL AND RETAINING WALL ON THE EXISTING -Y7- (STONE CREST DR.) DRIVEWAY (SEE TMP-15).

PHASE I, STEP 3 AND PHASE I, STEP 4 MAY BE COMPLETED CONCURRENTLY.

STEP 3) COMPLETE CONSTRUCTION AT THE FOLLOWING:

A. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, PERFORM EXISTING OUTSIDE SHOULDER STRENGTHENING ON -Y1- (US 421) SB AND NB AS FOLLOWS:

- Y1- SB STA. 12+22+/- TO STA. 54+60+/-
- Y1- NB STA. 12+22+/- TO STA. 31+70+/-
- Y1- NB STA. 32+95+/- TO STA. 54+60+/-

B. USING ROADWAY STANDARD DRAWING NO. 1101.01, SHEET 1 OR 3 OF 15 AS NECESSARY AND TYPE III BARRICADES TO MAINTAIN TRAFFIC, COMPLETE CONSTRUCTION OF THE FOLLOWING:

- -DR5- (SEE TMP-19).
- PROPOSED DRIVE BETWEEN -Y1- (US 421) SB AND SR 1675 (DEEP GAP RD.) INCLUDING PROPOSED GUARDRAIL INSTALLATIONS (SEE TMP-19).

USING ROADWAY STANDARD DRAWING NO. 1101.01, SHEET 1 OR 3 OF 15 AS NECESSARY, INSTALL TEMPORARY PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS AT THE FOLLOWING LOCATIONS:

- -L- (US 221) SB FROM -L- STA. 12+24+/- TO -L- STA. 14+20+/- (SEE TMP-4).
- -Y1- (US 421) NB OUTSIDE SHOULDER BEGINNING AT -Y1- STA. 37+90+/- AND ENDING AT -L- (US 221) RIGHT SIDE -L- STA. 13+40+/- (SEE TMP-4 AND TMP-19).
- -Y1- (US 421) SB OUTSIDE SHOULDER FROM -Y1- STA. 25+60+/- TO -Y1- STA. 35+35+/- (SEE TMP-4 AND TMP-18).

C. OPEN -DR5- AND DRIVE BETWEEN -Y1- (US 421) SB AND SR 1675 (DEEP GAP RD.) (SEE TMP-19). CLOSE DEEP GAP RD. TO THRU TRAFFIC (SEE TMP-4 AND TMP-18) AND COMPLETE THE FOLLOWING:

- CONSTRUCT PROPOSED TURN-AROUND ON DEEP GAP RD. (SEE TMP-18).
- BEHIND BARRIER, CONTINUE -RPC- AND -LPC- CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE (SEE TMP-4).
- CONTINUE -SR2- CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE WHILE MAINTAINING ACCESS TO EXISTING DRIVEWAYS.

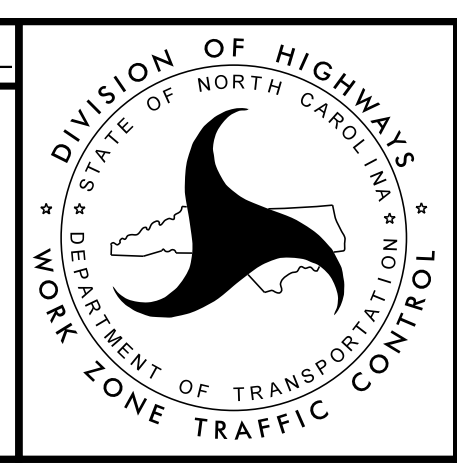
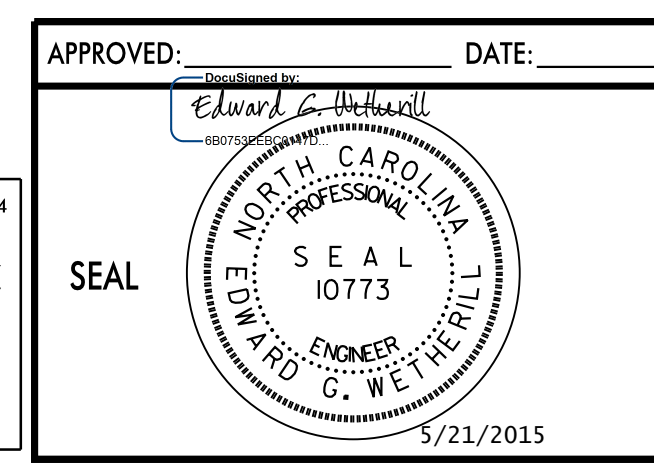
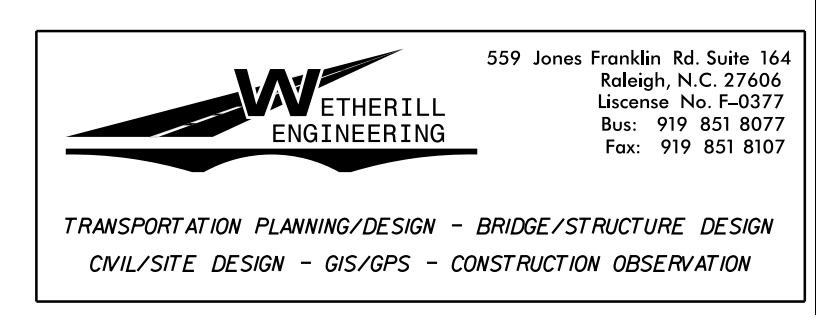
STEP 4) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND WORKING IN A CONTINUOUS MANNER AT EACH LOCATION, GRADE AND CONSTRUCT UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE UNDER TRAFFIC USING ONE-LANE, TWO-WAY TEMPORARY PATTERNS DURING FLAGGING OPERATIONS, RESTORING TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORKDAY AT THE FOLLOWING:

- -Y2- SR 1360 (HEG GREEN ROAD) INCLUDING COMPLETION OF -L- (US 221) NB FROM -L- STA. 60+00+/- TO -L- STA. 64+00+/- (SEE TMP-8).
- -Y3- (GAP CREEK ROAD) INCLUDING COMPLETION OF -L- (US 221) NB FROM -L- STA. 79+74+/- TO -L- STA. 80+80+/- (SEE TMP-9).
- -Y4- SR 1171 (WEST PINE SWAMP ROAD) INCLUDING COMPLETION OF -L- (US 221) NB FROM -L- STA. 107+00+/- TO -L- STA. 108+20+/- (SEE TMP-12).
- -DR4- MAINTAIN ACCESS TO EXISTING US 221 AT ALL TIMES IN A MANNER APPROVED BY THE ENGINEER.

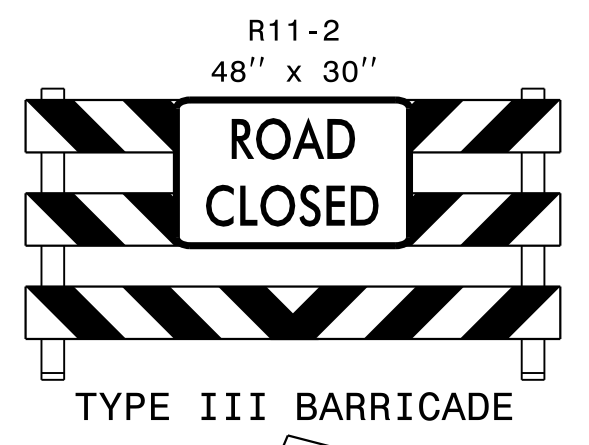
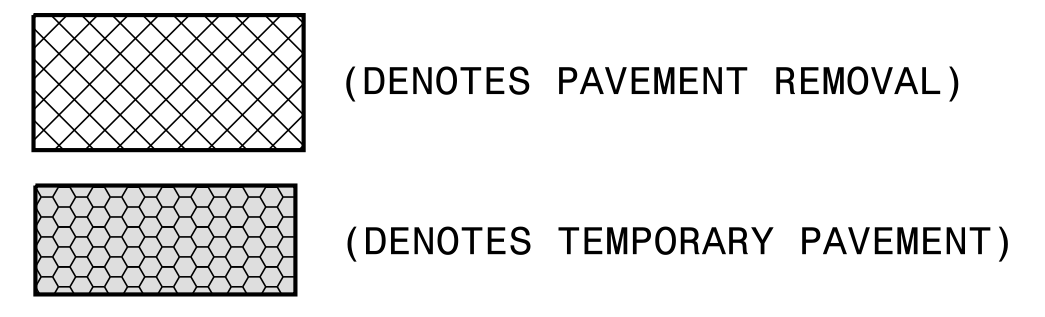
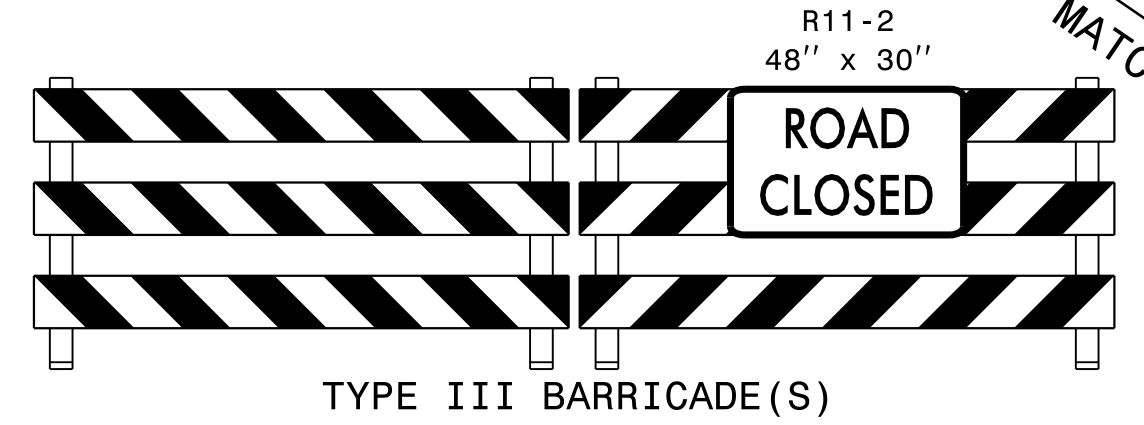
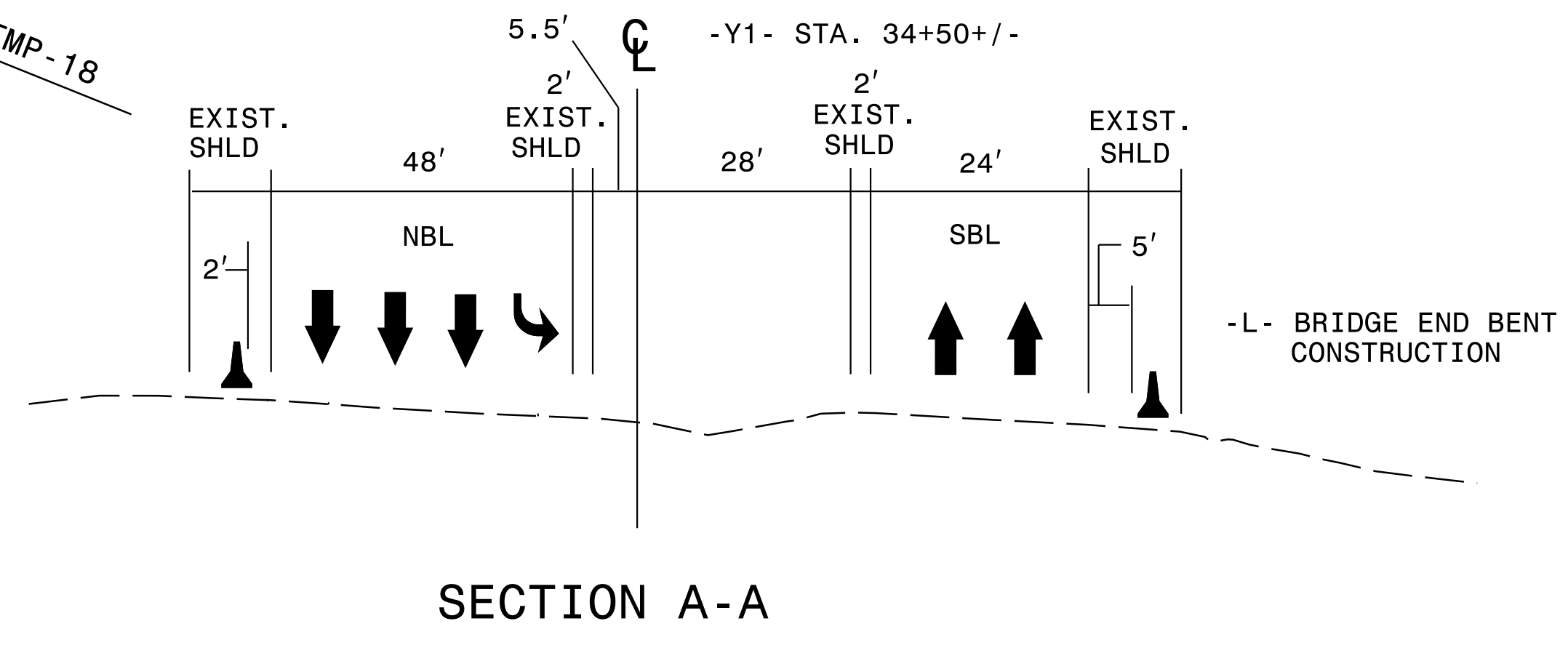
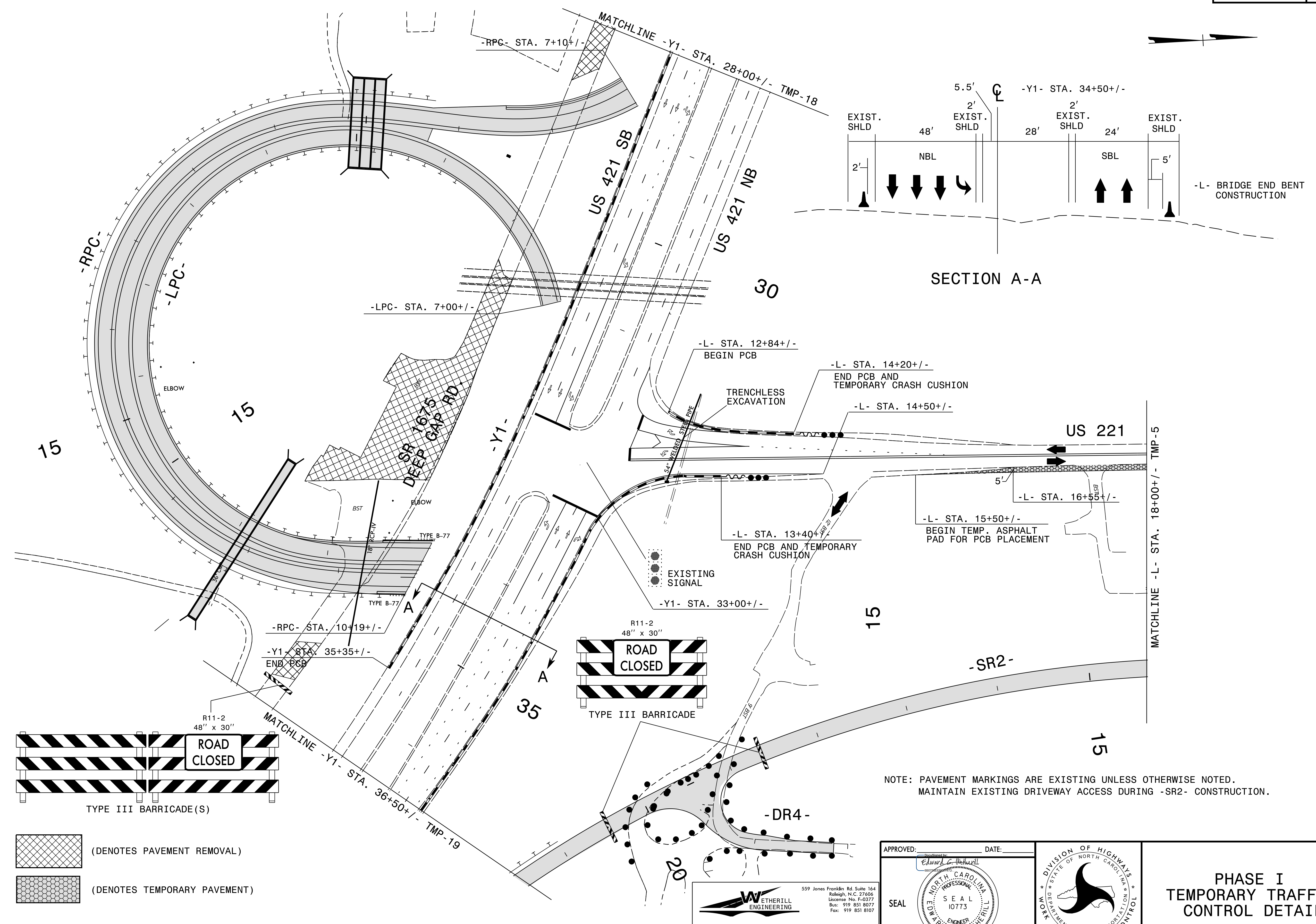
USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OR 3 OF 15, COMPLETE CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE AT THE FOLLOWING:

- -SR1- (SEE TMP-17 AND TMP-18). PLACE TEMPORARY PAVEMENT MARKINGS AND OPEN TO TRAFFIC (SEE PHASE II, TMP-35 AND TMP-36).
- -SR2- (SEE TMP-4, TMP-5, AND TMP-19). PLACE TEMPORARY PAVEMENT MARKINGS AND OPEN TO TRAFFIC WHILE MAINTAINING ACCESS AT ALL TIMES (SEE PHASE II, TMP-22, TMP-23, TMP-37).
- 5 FT. TEMPORARY PAVEMENT PAD -L- (US 221) NB STA. 15+50+/- TO -L- STA. 25+80+/- (SEE TMP-4 AND TMP-5).
- -L- (US 21) SB FROM -L- STA. 28+00+/- TO -L- 60+00+/- (SEE TMP-5 THRU TMP-8).
- -L- (US 221) SB FROM -L- STA. 113+75+/- TO -L- STA. 135+00+/- (SEE TMP-12 THRU TMP-14).
- -L- (US 221) NB FROM -L- STA. 135+00+/- TO -L- STA. 138+50+/- AND -Y7- (STONE CREST DR.) INCLUDING TEMPORARY ACCESS WITH US 221 (SEE TMP-14).
- -DR3- (SEE TMP-31).
- PROPOSED GUARDRAIL AND RETAINING WALL ON THE EXISTING -Y7- (STONE CREST DR.) DRIVEWAY (SEE TMP-15).
- -L- (US 221) NB FROM -L- STA. 158+10+/- TO -L- STA. 160+02+/- (INCLUDING TEMPORARY MEDIAN PAVEMENT) AND -Y9- (IDLEWILD RD.) FROM THE -L- (US 221) TIE-IN TO -Y9- STA. 13+10+/- (SEE TMP-16).
- -DR2- (SEE TMP-12).

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**PHASE I  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 MAINTAIN EXISTING DRIVEWAY ACCESS DURING -SR2- CONSTRUCTION.

5/20/2015 8:02:34 AM P:\2015\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_04.dgn

**ETHERILL ENGINEERING**  
 559 Jones Franklin Rd Suite 164  
 Raleigh, N.C. 27606  
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 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 G. WETHERILL  
 10773  
 5/21/2015

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

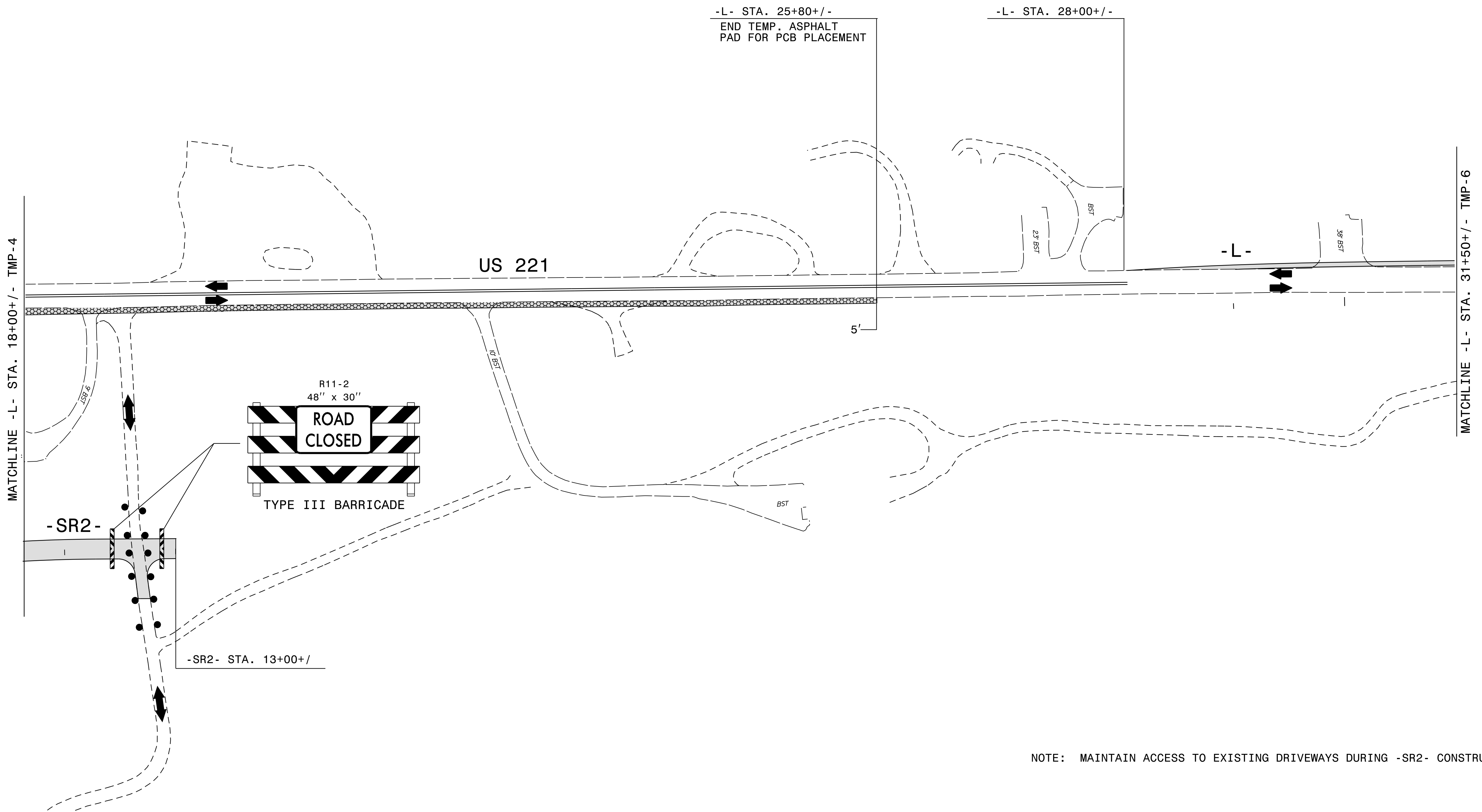
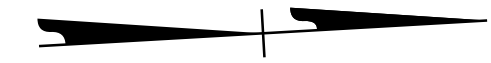
**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



20

25

30



(DENOTES TEMPORARY PAVEMENT)

NOTE: MAINTAIN ACCESS TO EXISTING DRIVEWAYS DURING -SR2- CONSTRUCTION.

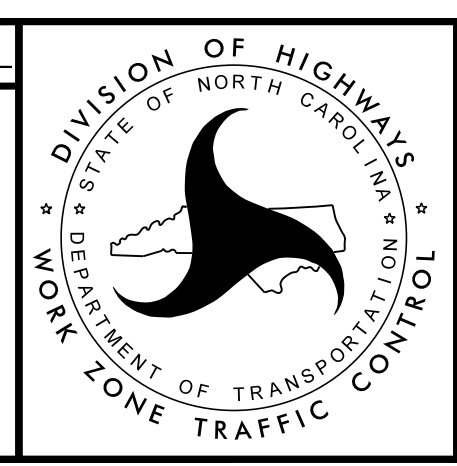
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 Fax: 919 851 8107

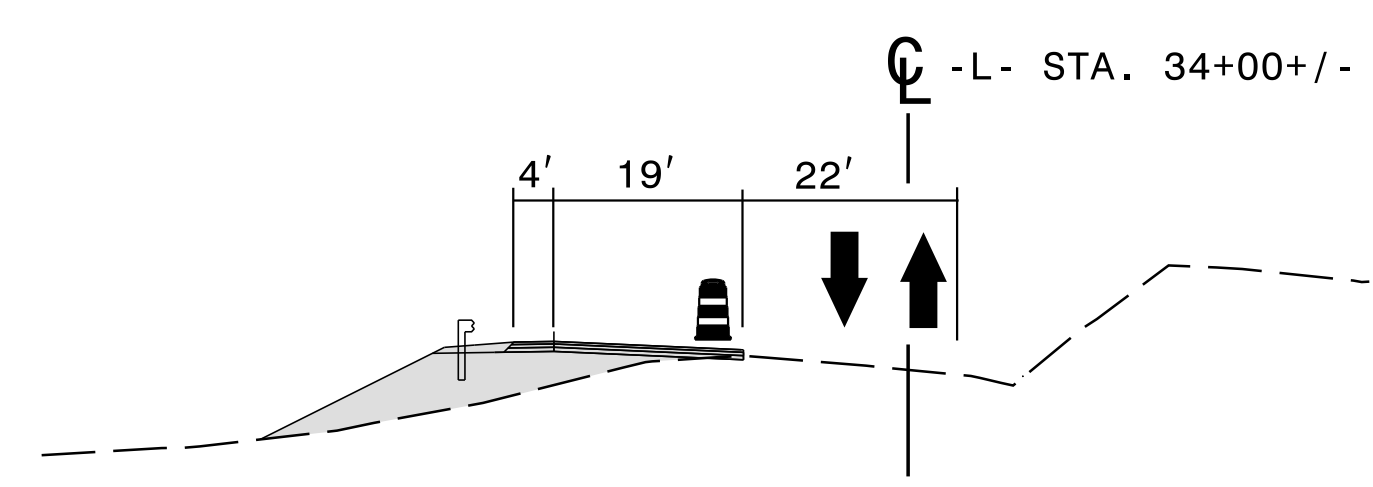
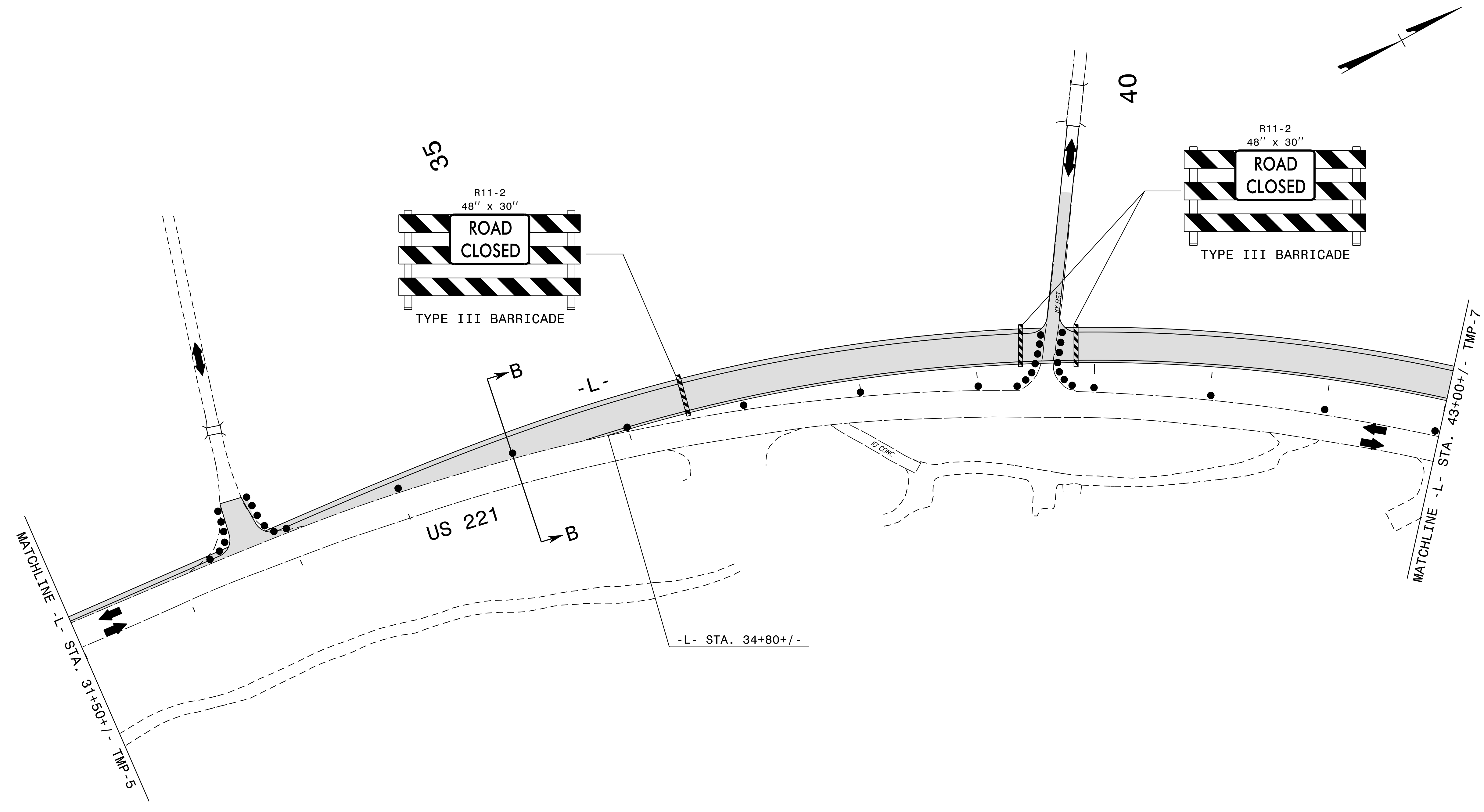
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Edward G. Wetherill* DATE: 5/21/2015

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 10773  
 G. WETHERILL



PHASE I  
TEMPORARY TRAFFIC CONTROL DETAIL



SECTION B-B

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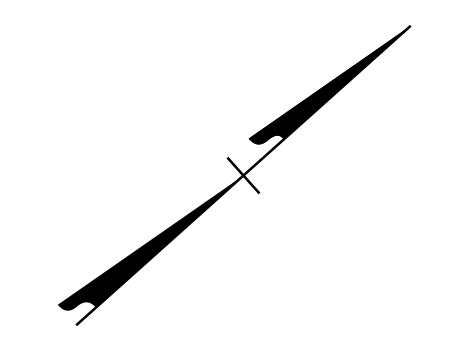
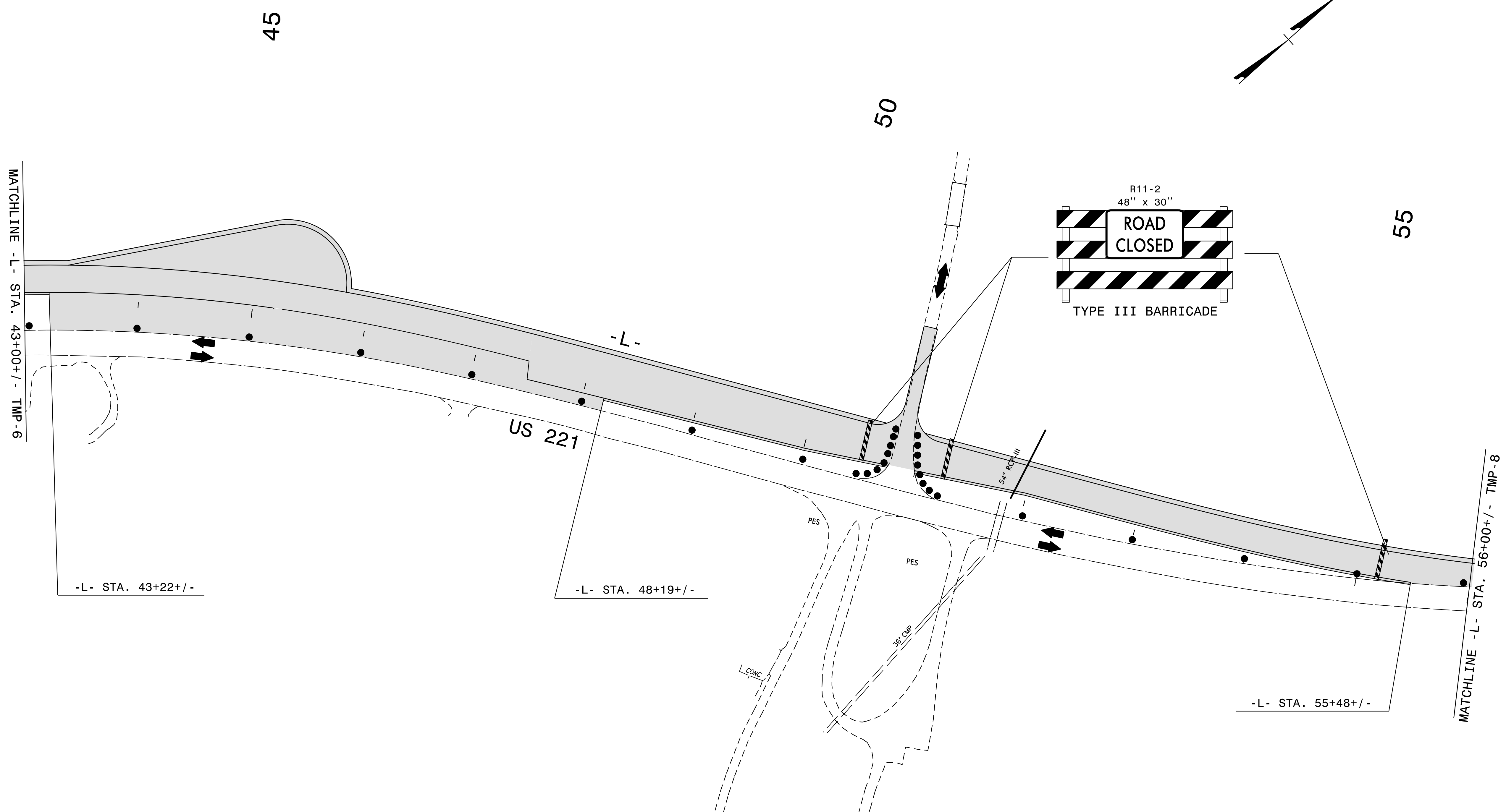
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Edward G. Wetherill* DATE: 5/21/2015


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 NORTH CAROLINA PROFESSIONAL ENGINEER  
 EDWARD G. WETHERILL  
 10773

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

PHASE I  
TEMPORARY TRAFFIC CONTROL DETAIL

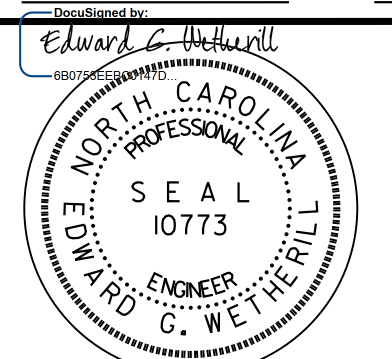


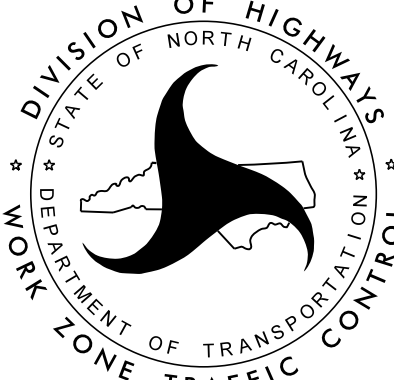
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 Fax: 919 851 8107

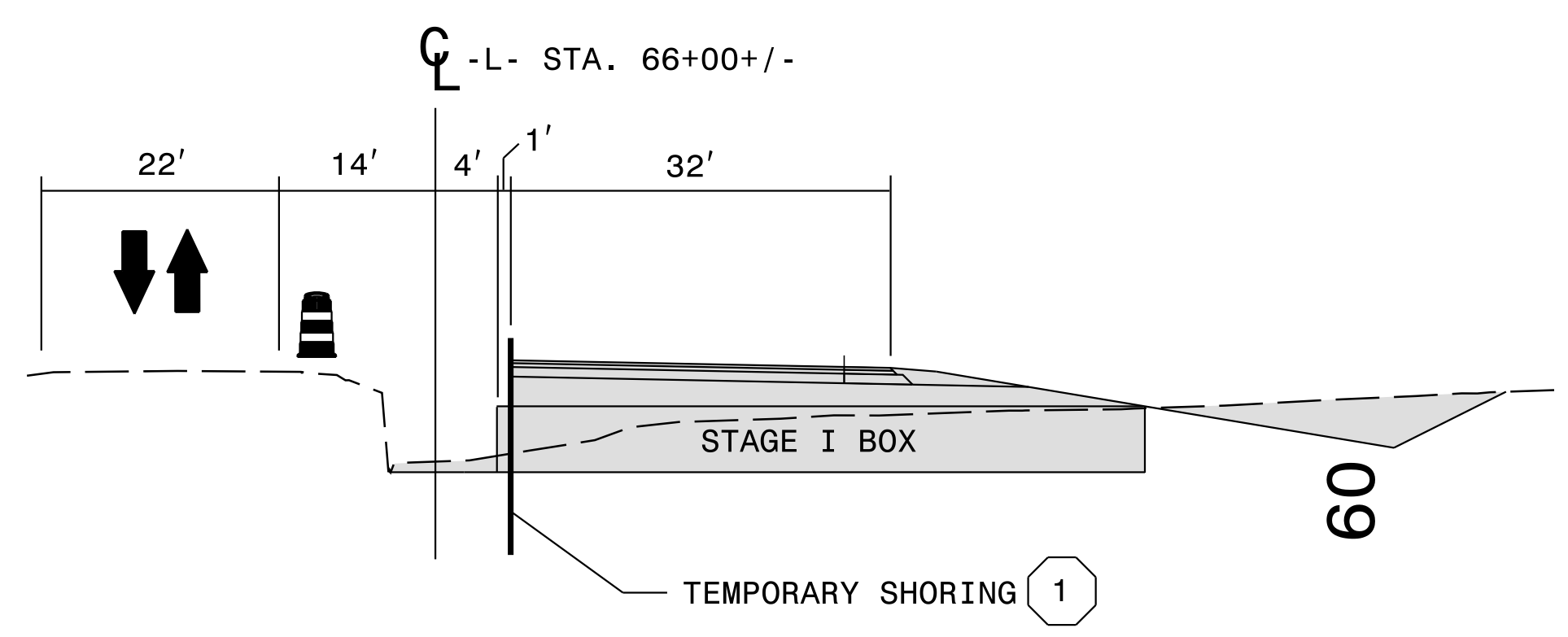
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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


  
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 NORTH CAROLINA PROFESSIONAL ENGINEER  
 EDWARD G. WETHERILL  
 10773  
 5/21/2015

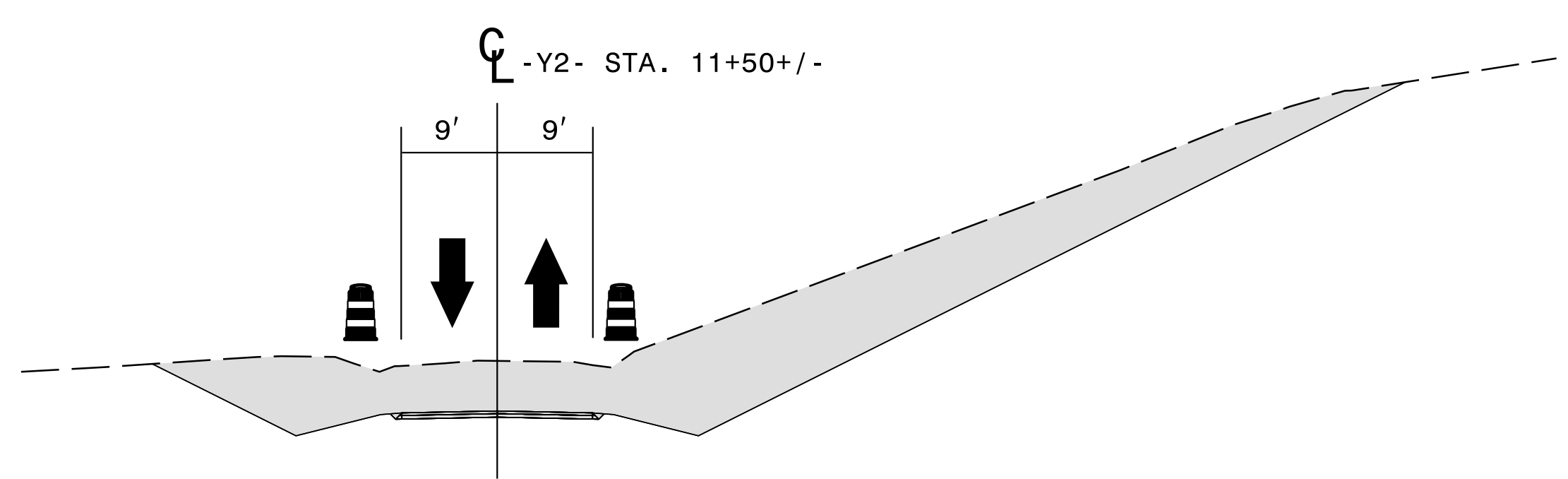
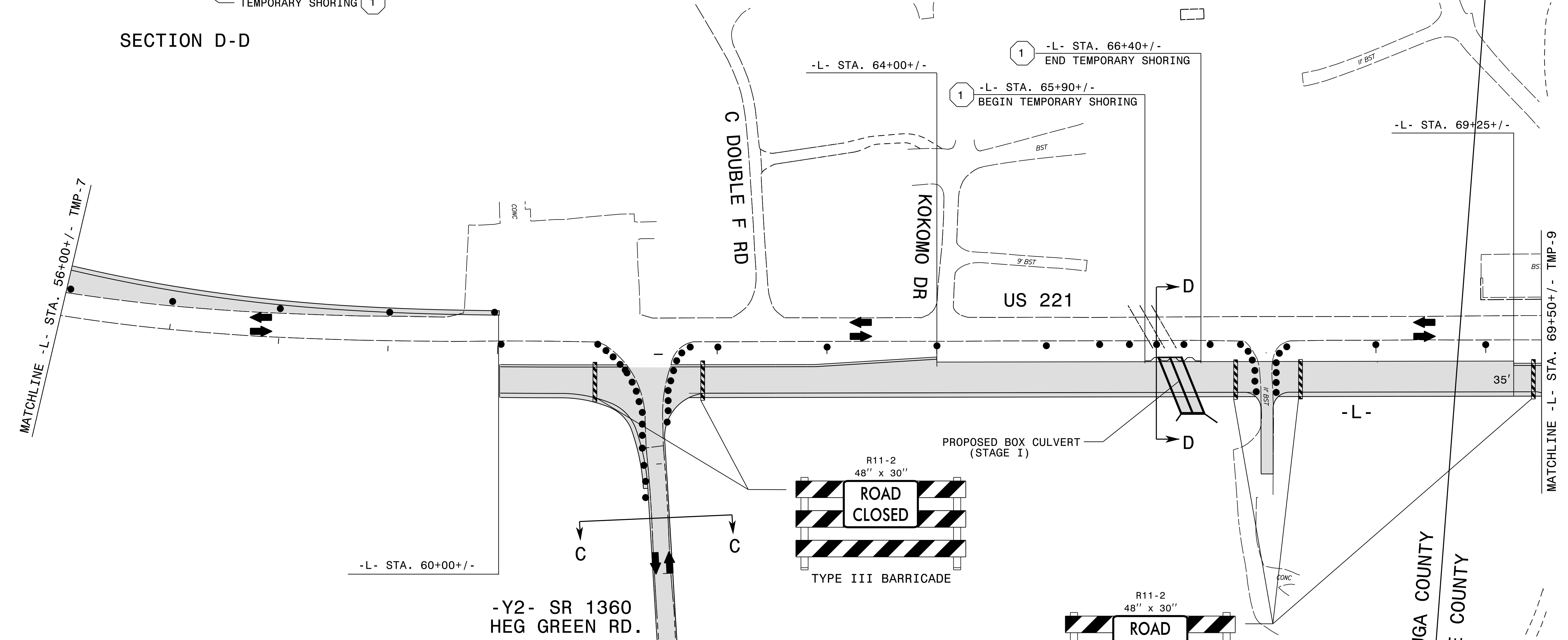

  
 DIVISION OF HIGHWAYS & WORK ZONE TRAFFIC CONTROL

**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



1 QUANTITY = 200 SF  
 TEMPORARY SHORING  
 FROM STA. 65+90+/-, 5' RT. -L- CENTERLINE  
 TO STA. 66+40+/-, 5' RT. -L- CENTERLINE  
 (SEE SHEET TMP-2A FOR  
 TEMPORARY SHORING NOTES)

SECTION D-D



SECTION C-C

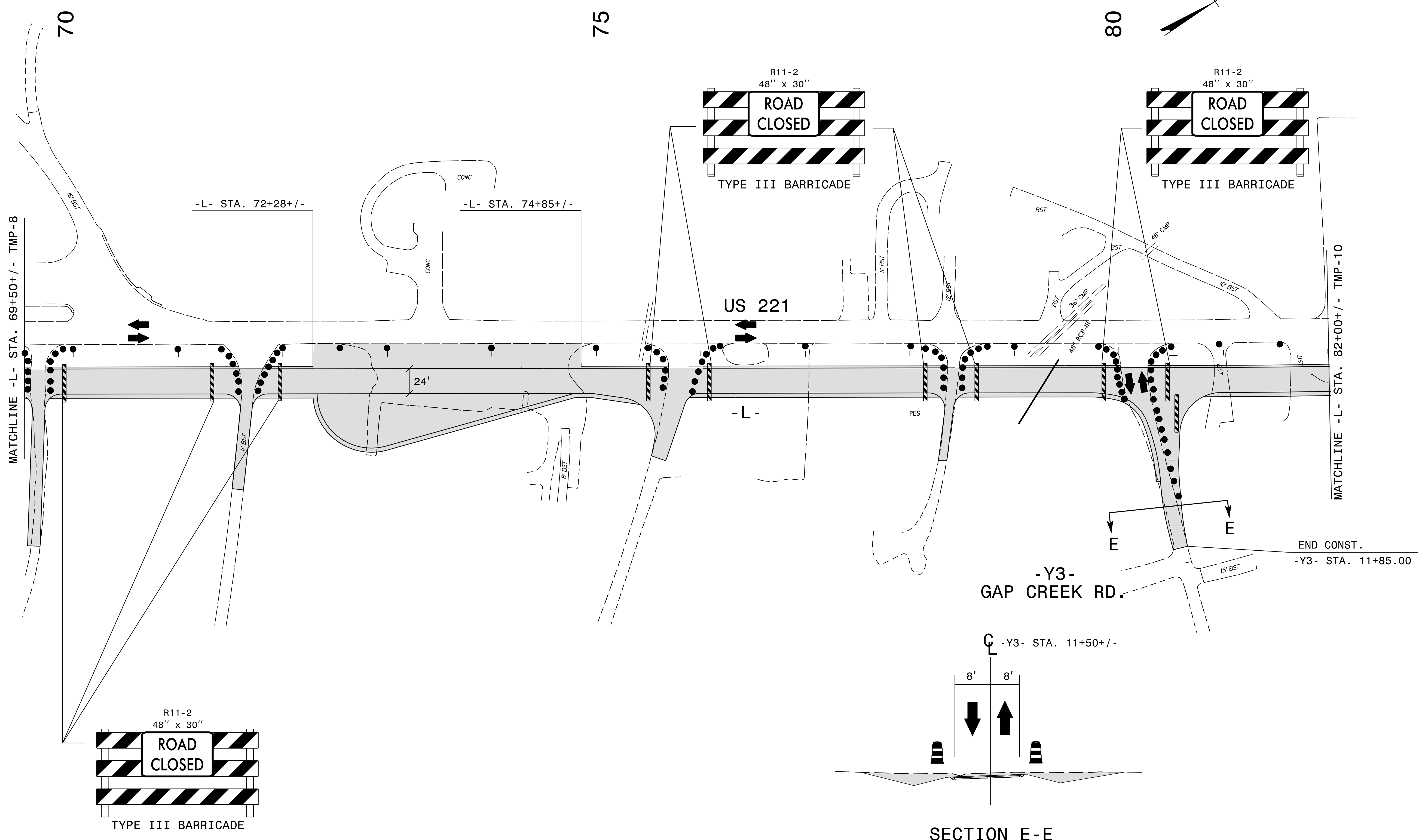
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 Raleigh, N.C. 27606  
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 Fax: 919 851 8107

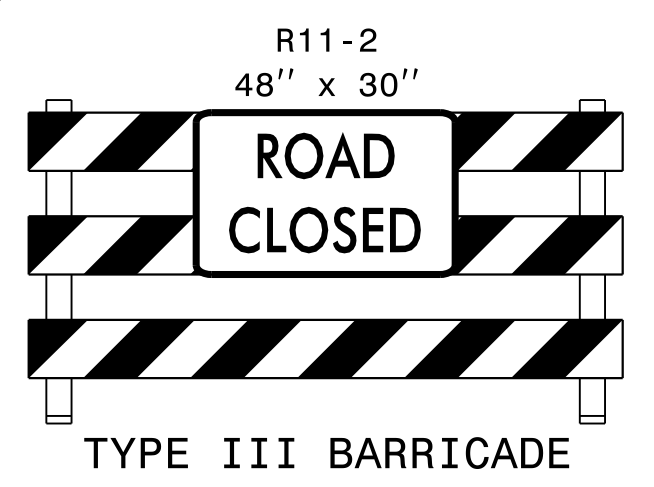
APPROVED: *Edward G. Wetherill* DATE: 5/21/2015

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


**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



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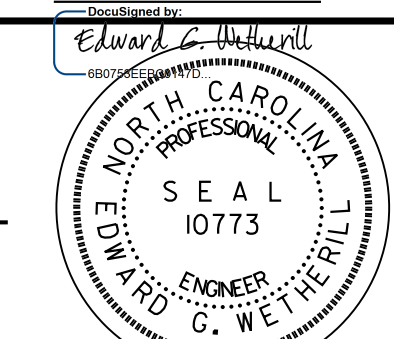


SECTION E-E


 559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-25377  
 Bus: 919 851 8077  
 Fax: 919 851 8107


TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

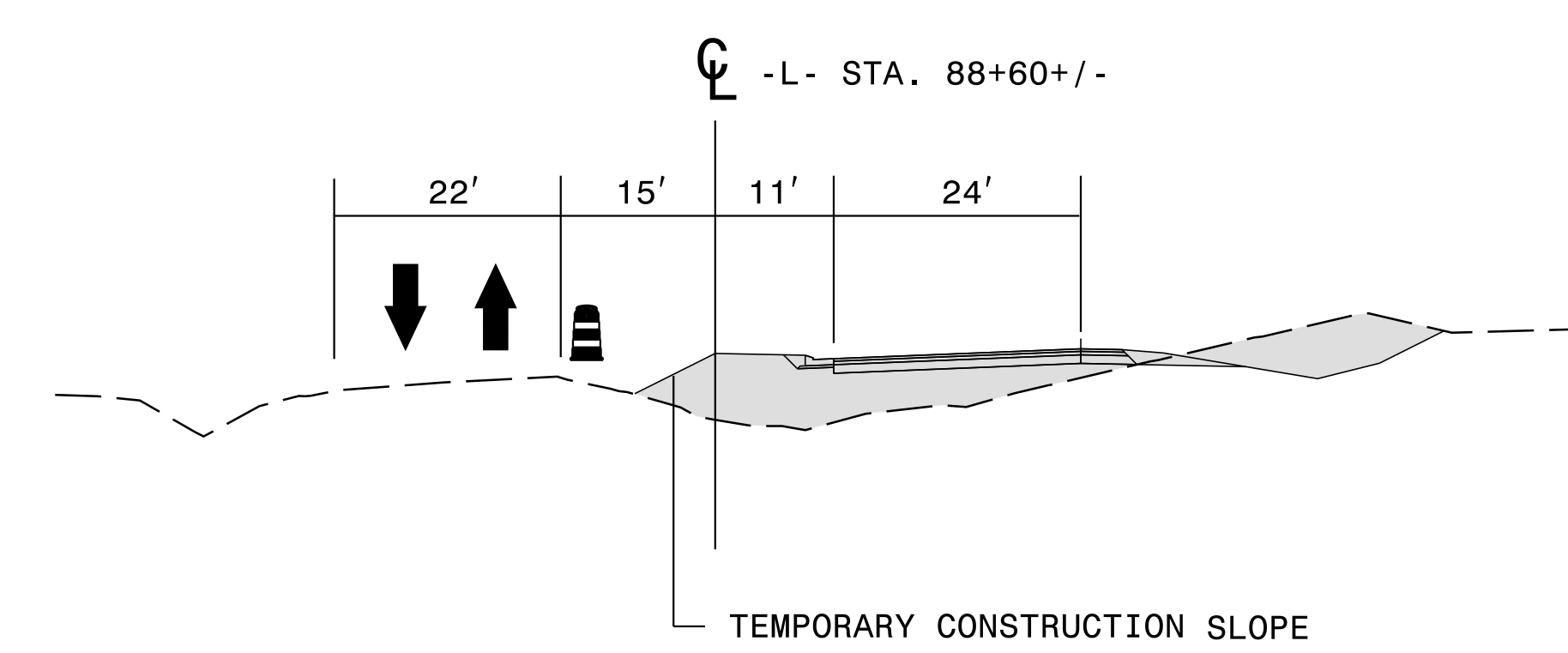
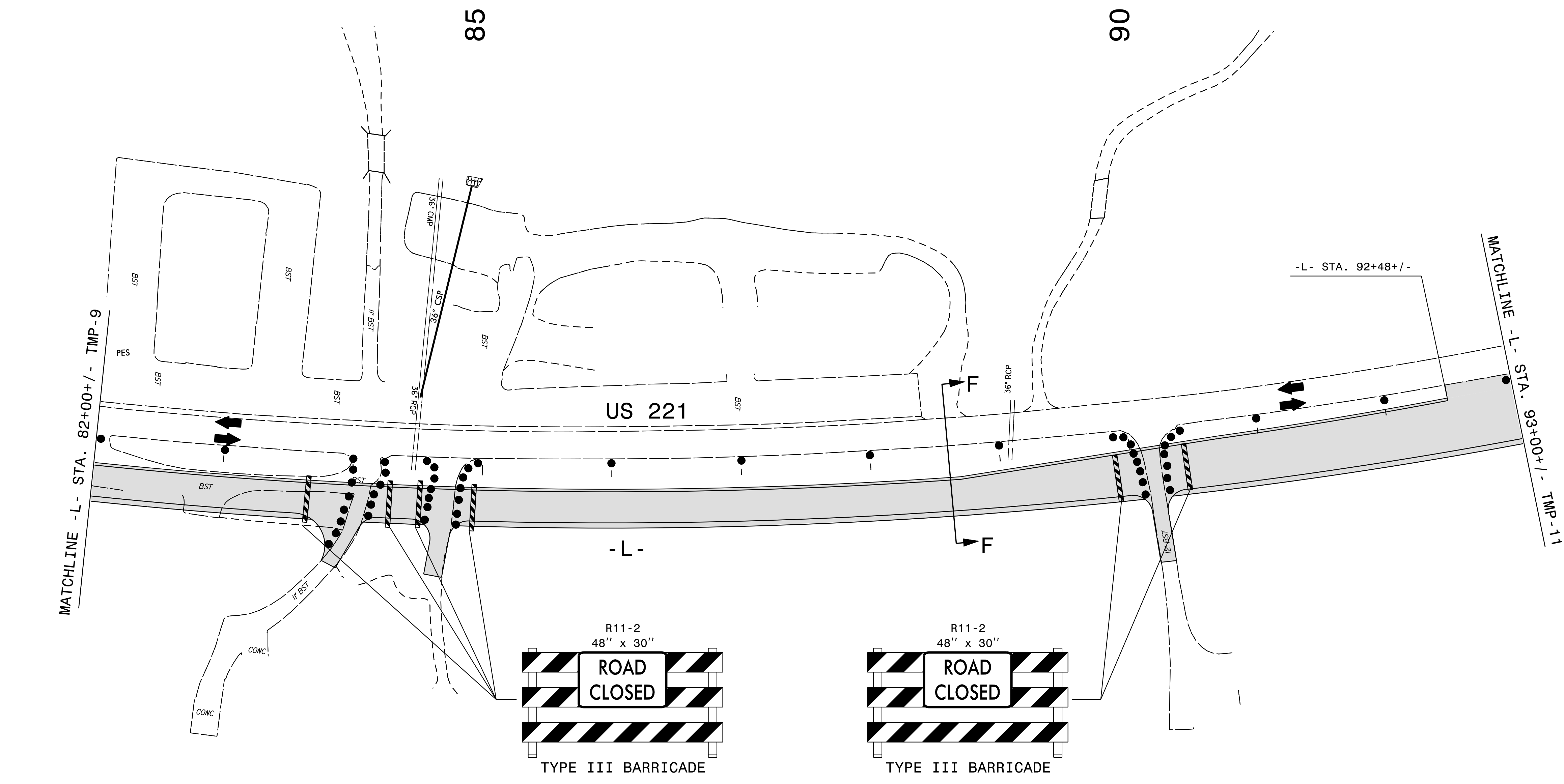
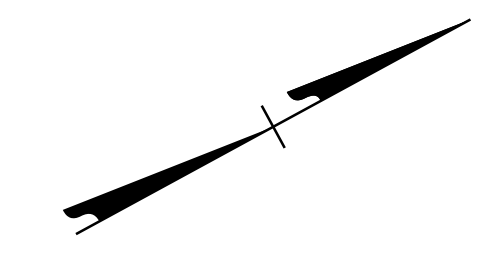

  
 SEAL

5/21/2015

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



**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

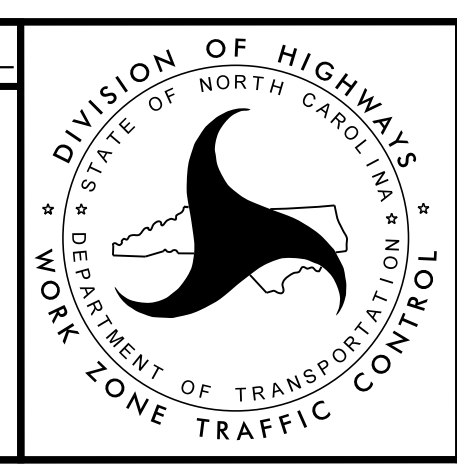


SECTION F-F

**WETHERILL ENGINEERING**  
 559 Jones Franklin Rd Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

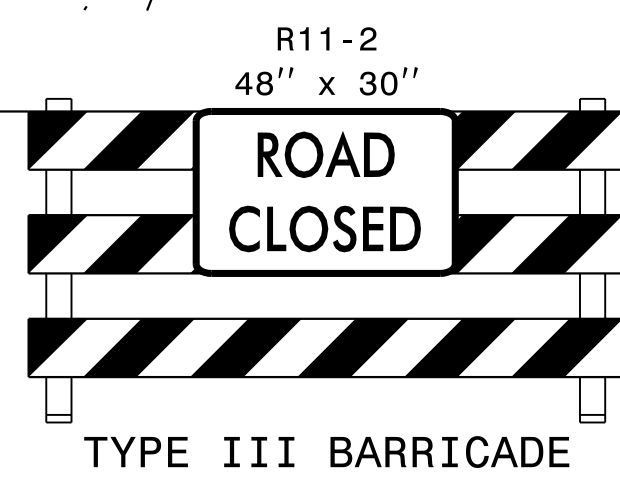
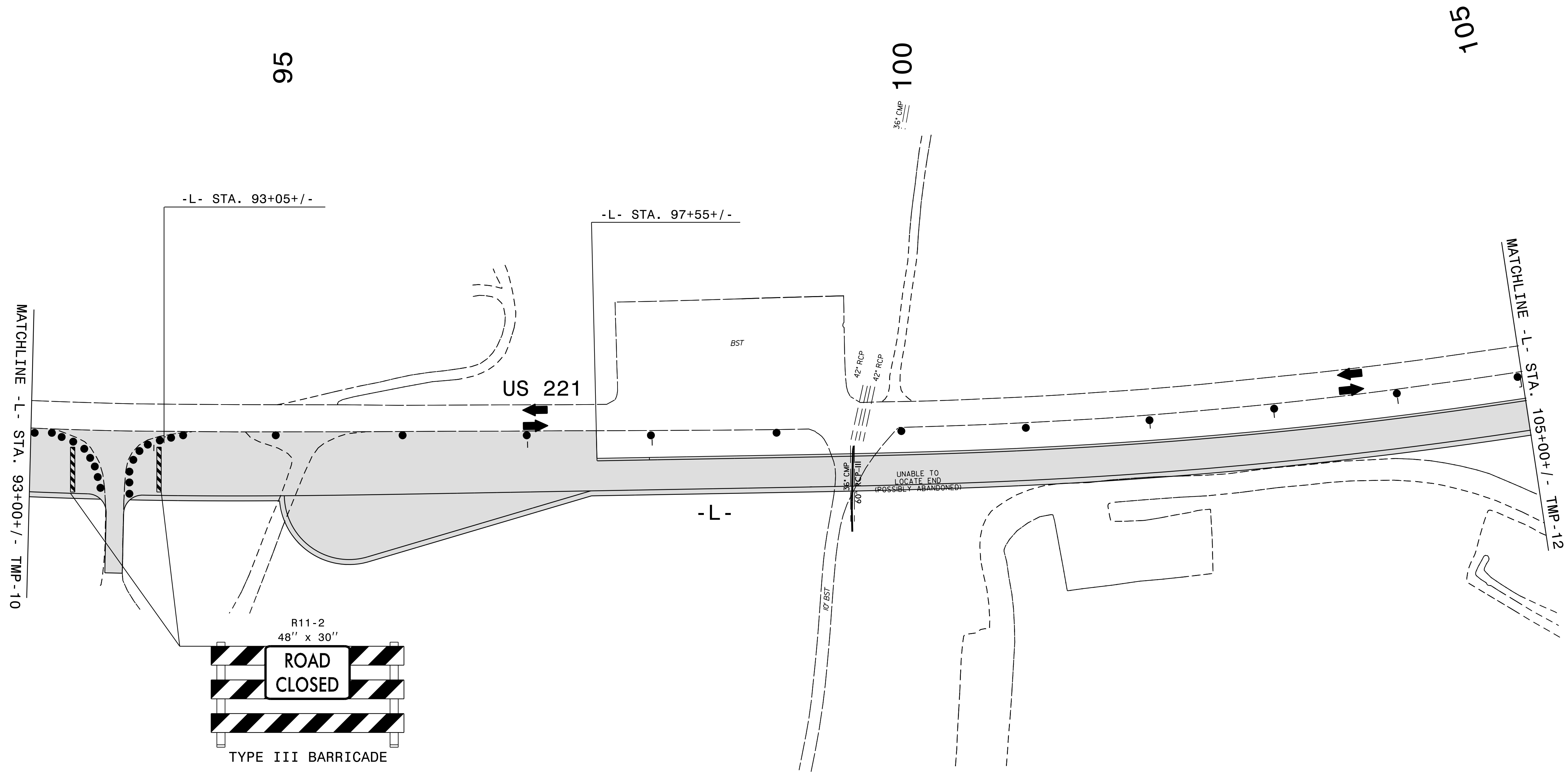
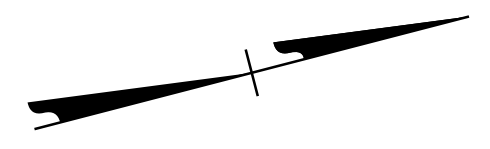
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 Edward G. Wetherill  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 10773  
 G. WETHERILL  
 5/21/2015



**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

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5/20/2015 8:08:57 AM  
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559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-6377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

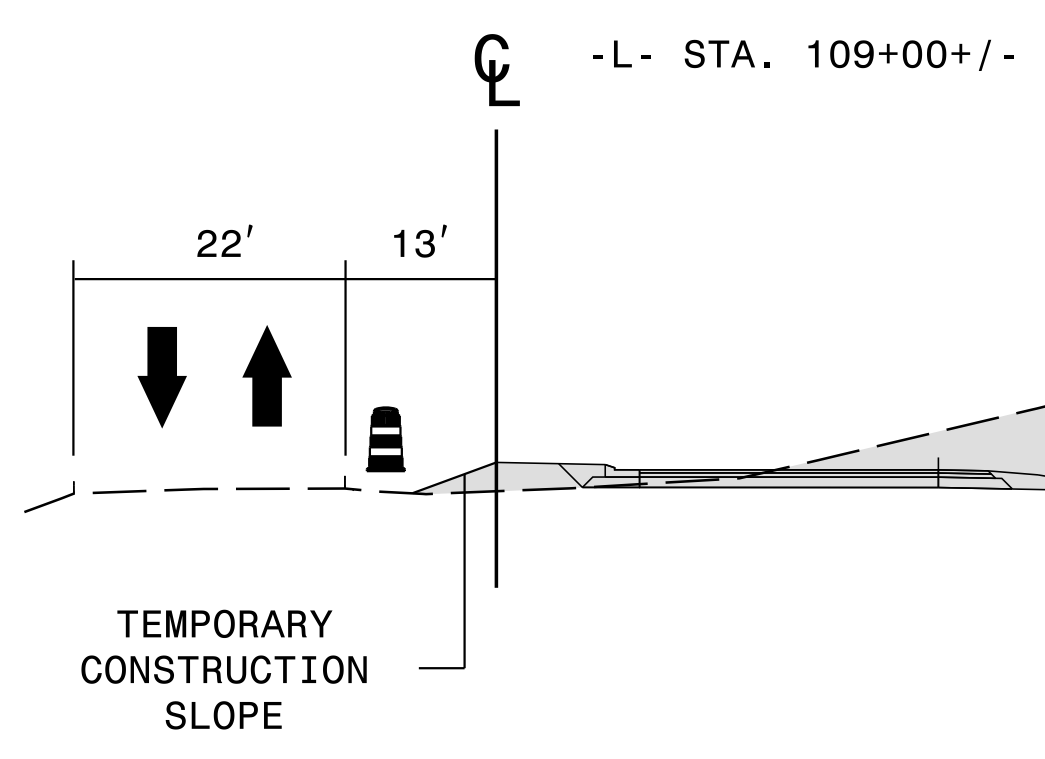
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

SEAL  
 EDWARD C. WETHERILL  
 PROFESSIONAL ENGINEER  
 STATE OF NORTH CAROLINA  
 LICENSE NO. 10773

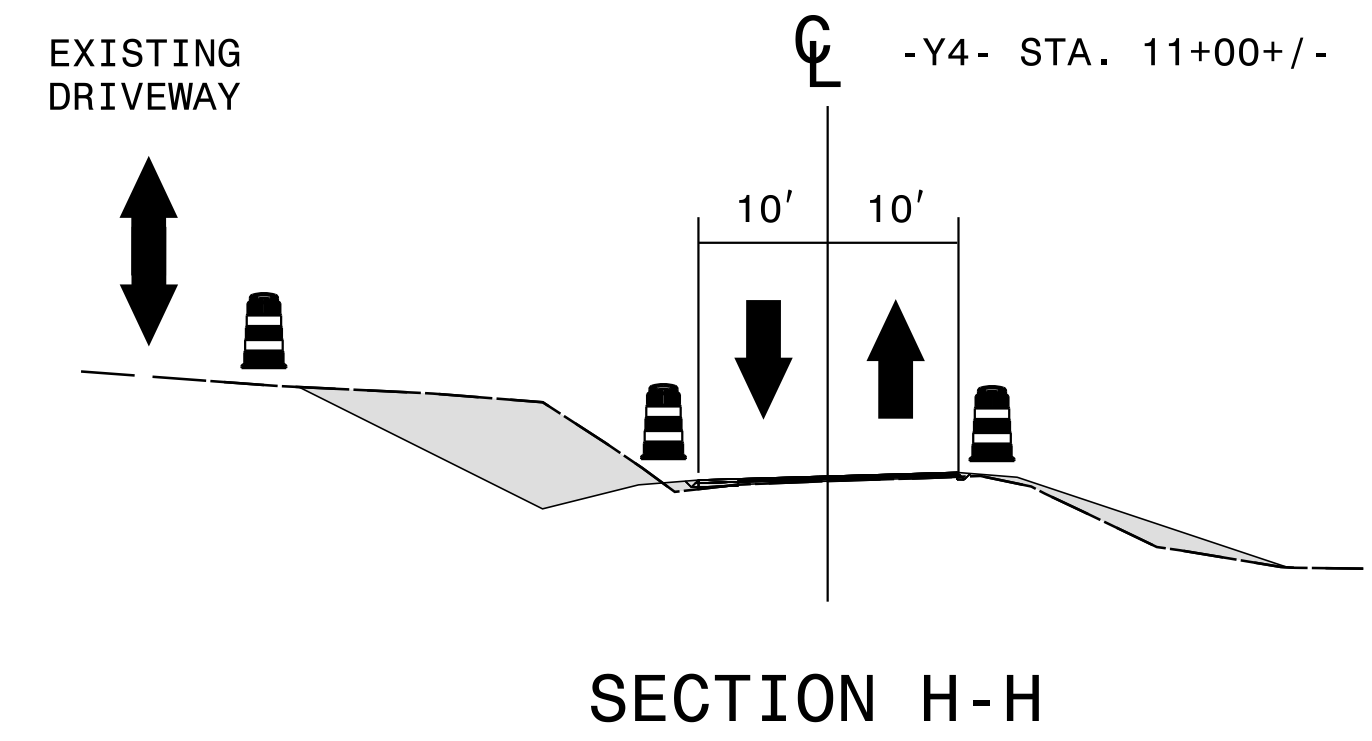
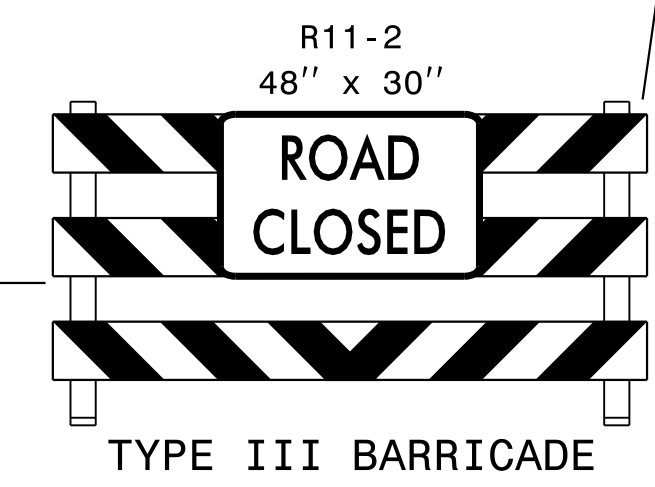
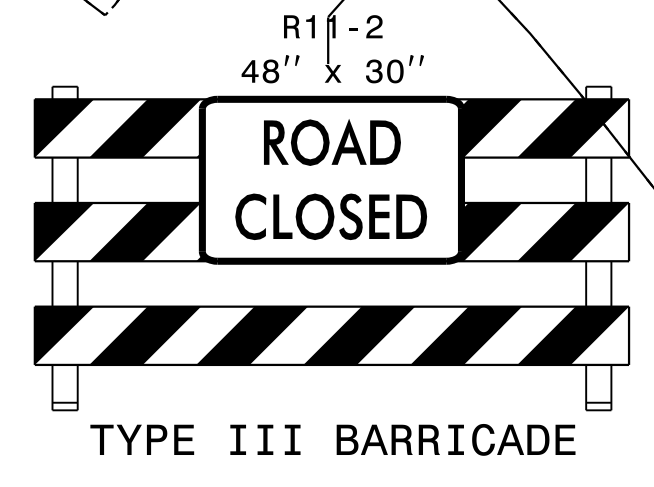
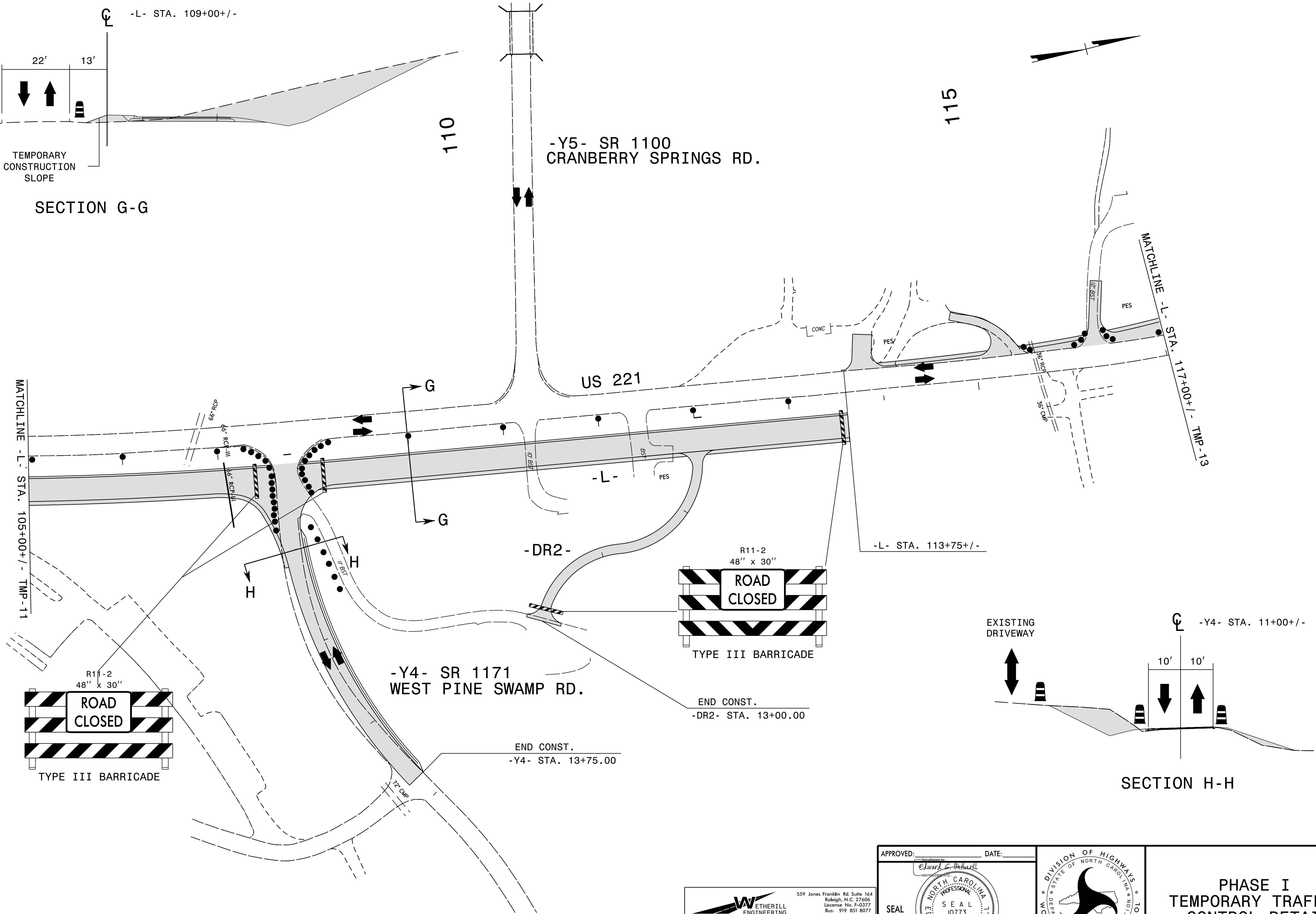
3/21/2015

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

**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



SECTION G-G



5/20/2015 8:05:31 AM  
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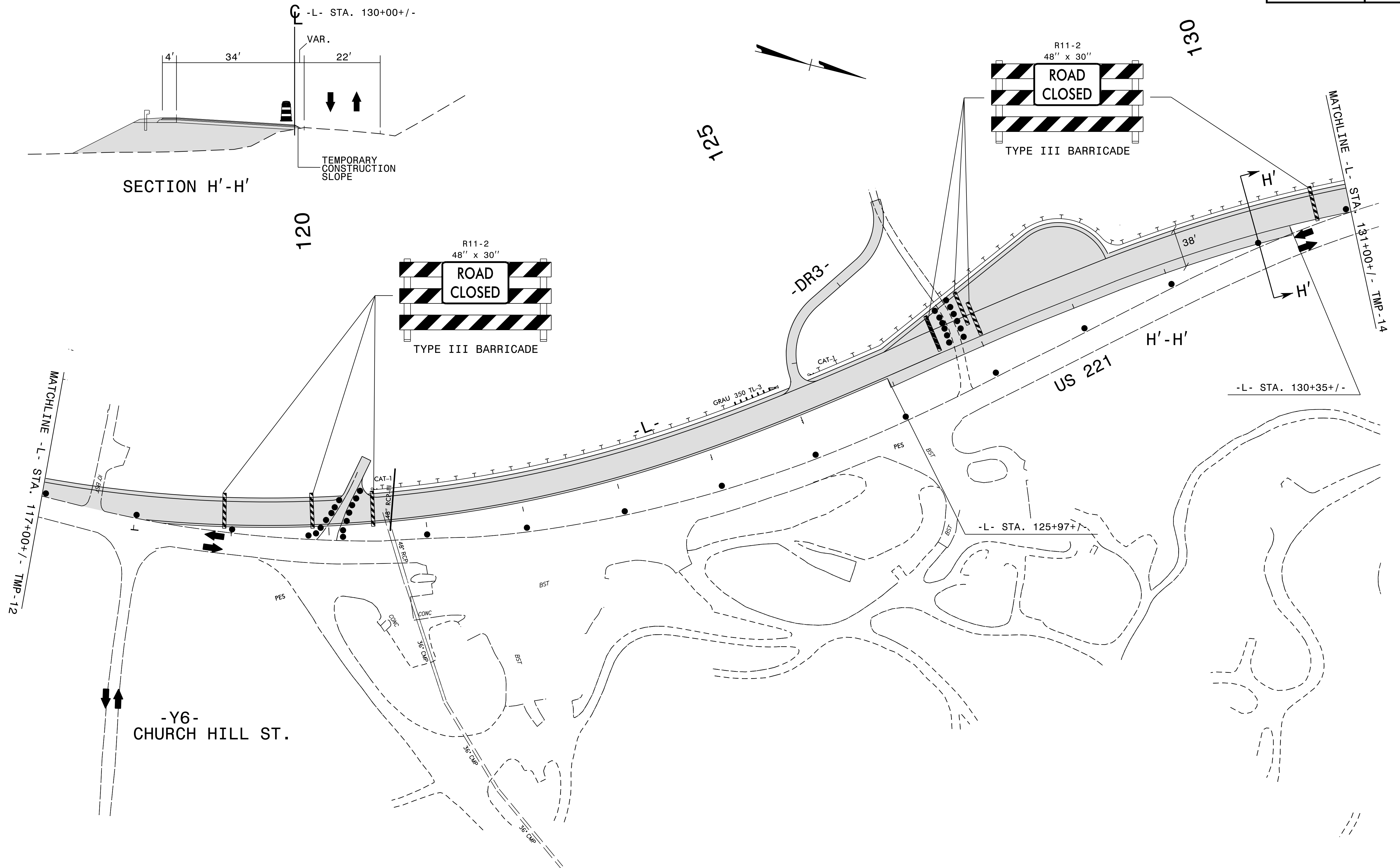
559 Jones Franklin Rd Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107  
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DATE: 5/21/2015  
 SEAL


DIVISION OF HIGHWAYS  
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 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

PHASE I  
 TEMPORARY TRAFFIC CONTROL DETAIL



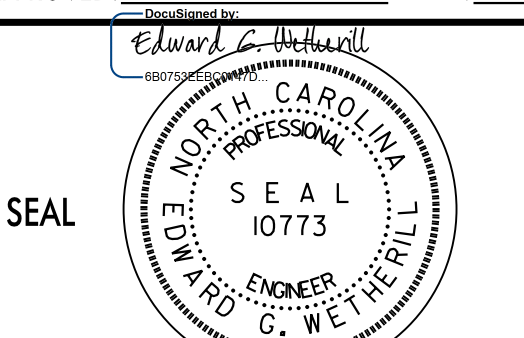


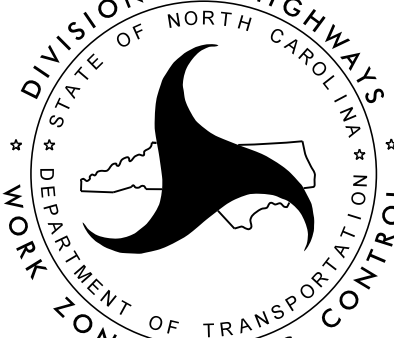
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 Raleigh, N.C. 27606  
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 Fax: 919 851 8107

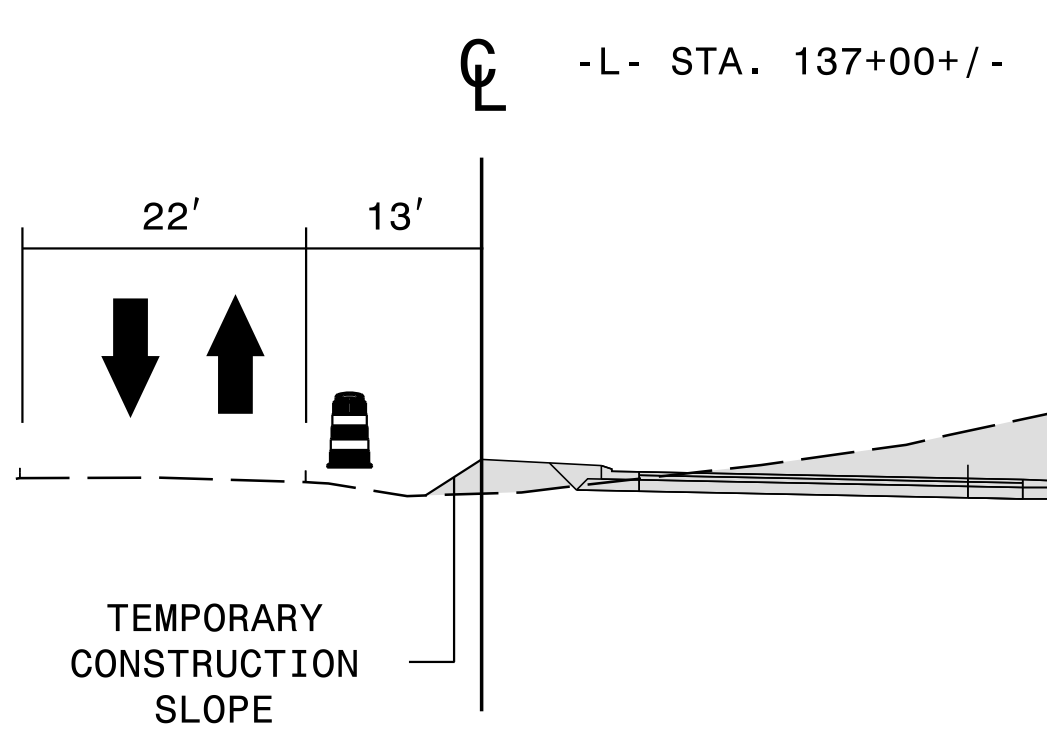
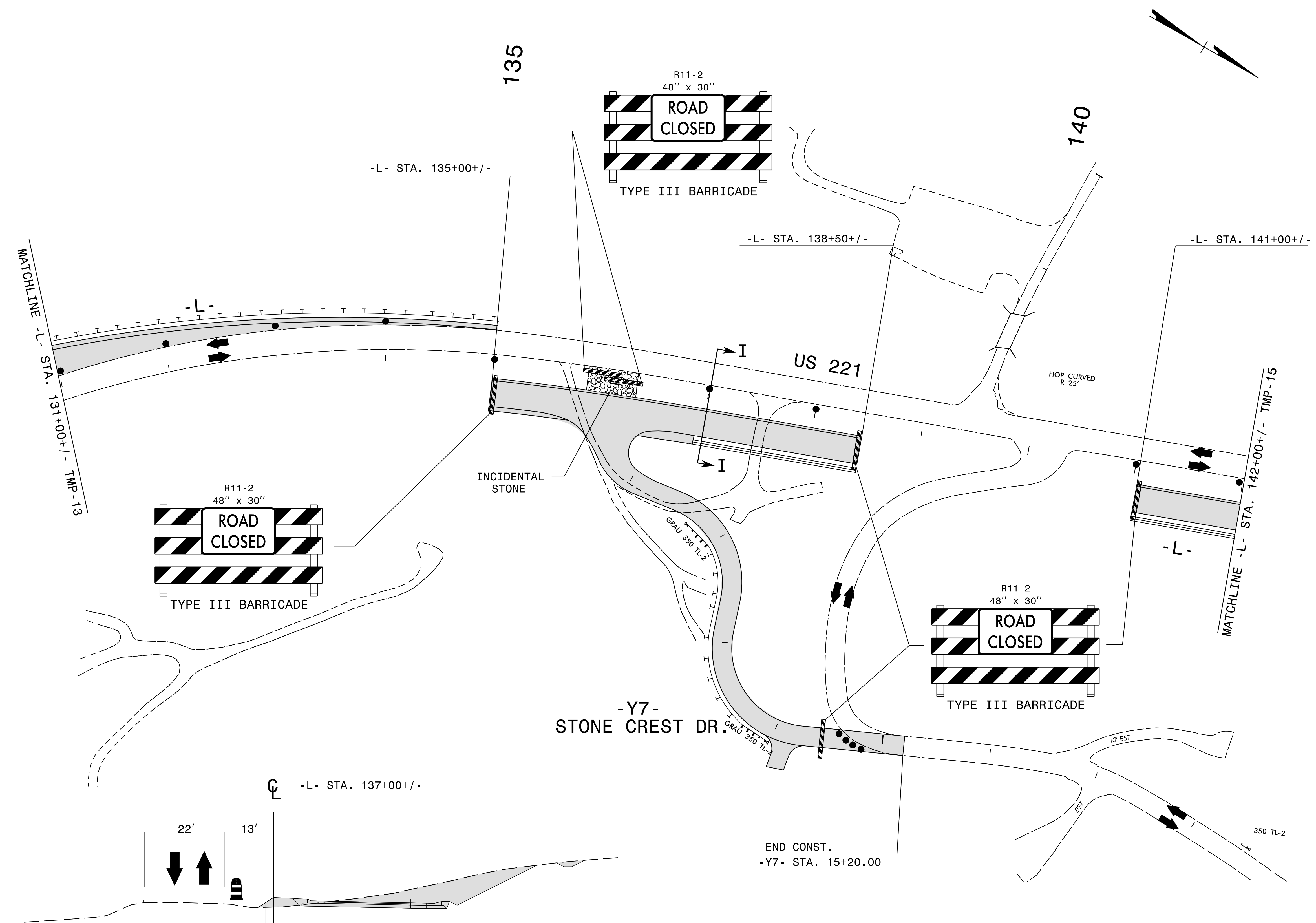
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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


 Edward C. Wetherill  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 License No. 10773  
 G. WETHERILL


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 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



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 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

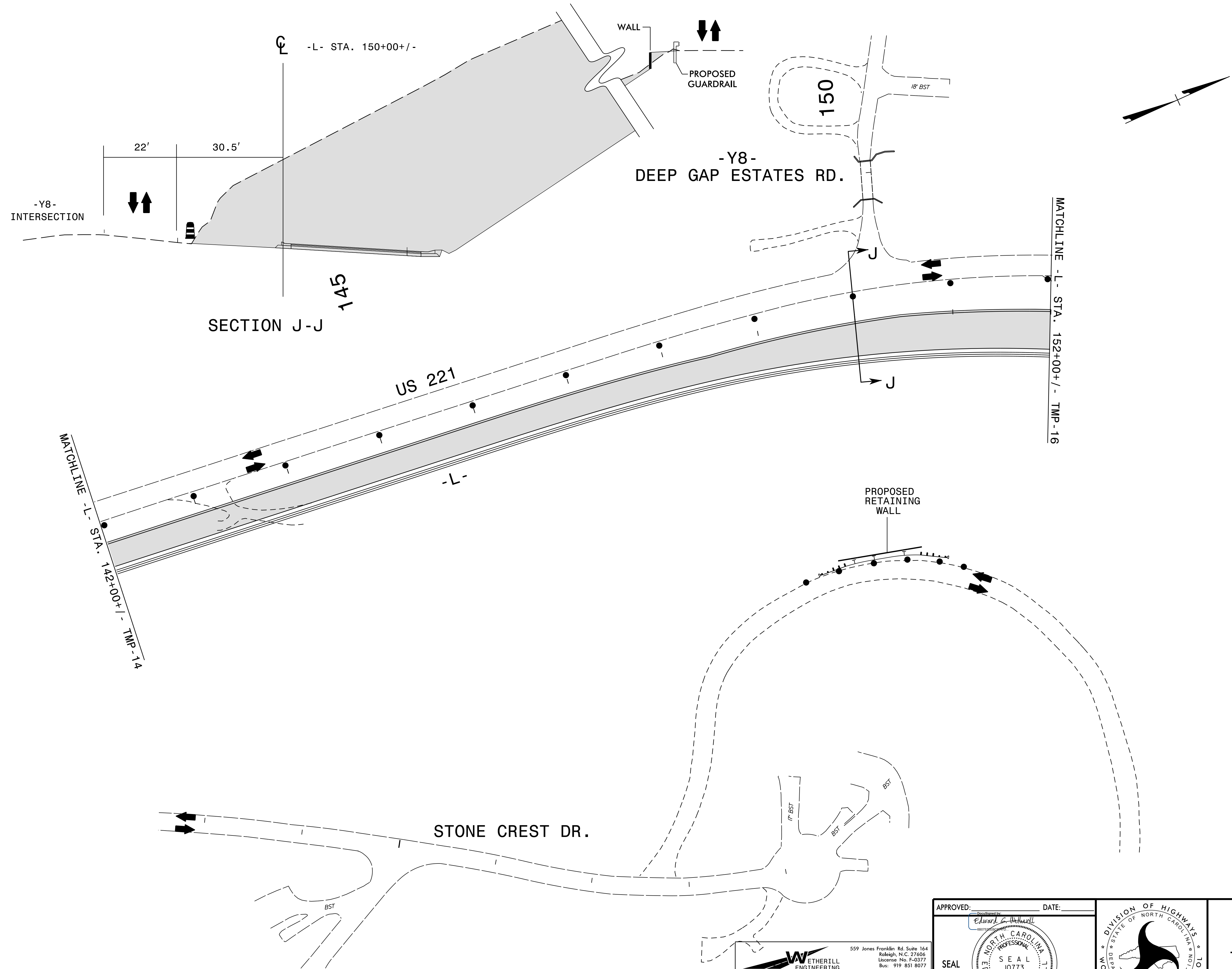
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 Edward G. Wetherill  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL  
 10773  
 G. WETHERILL  
 5/21/2015


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

**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

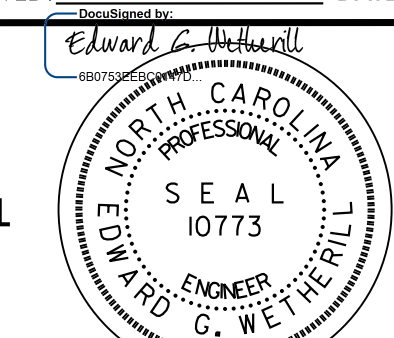
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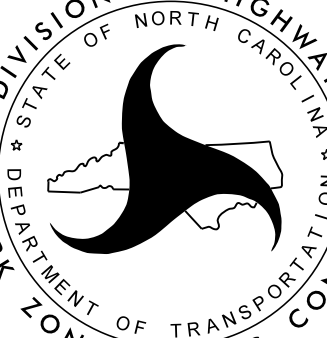
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 559 Jones Franklin Rd. Suite 164  
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 Fax: 919 851 8107

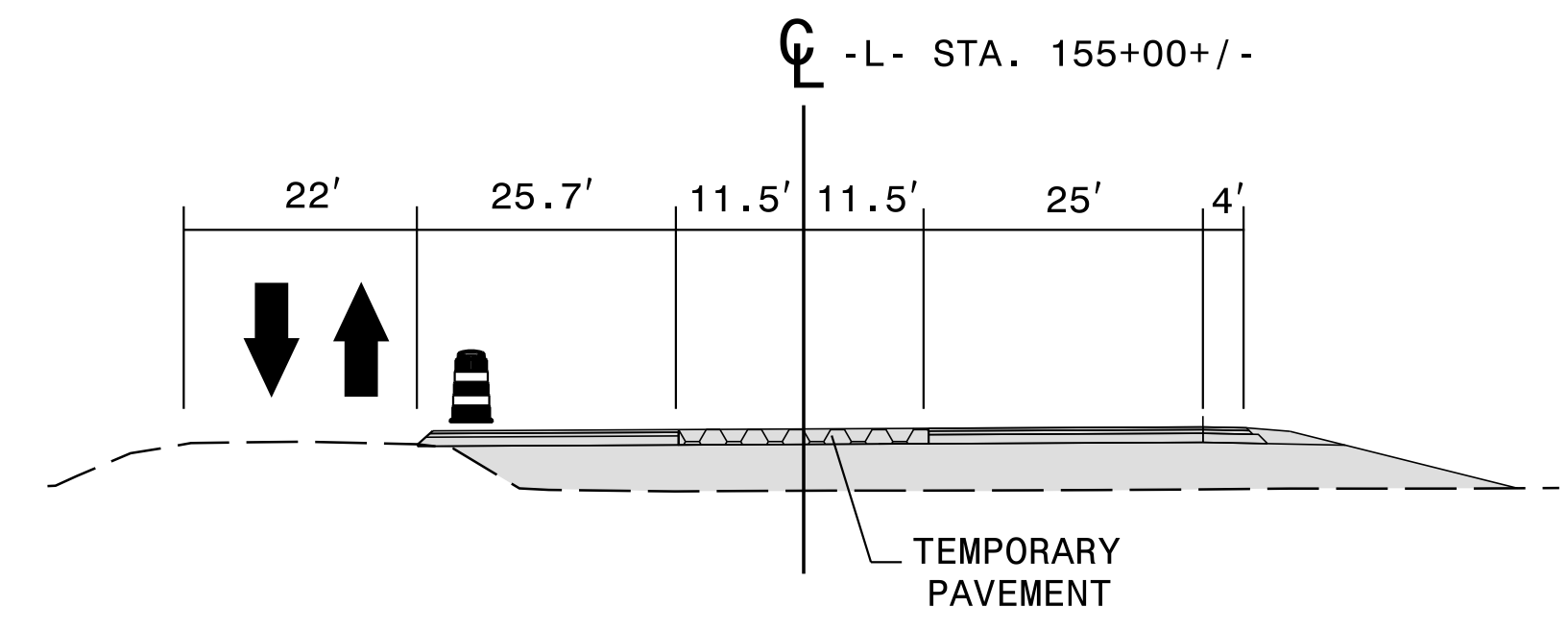
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
  
 SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 EDWARD S. McNeill  
 10773  
 G. WETHERILL  
 5/21/2015

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

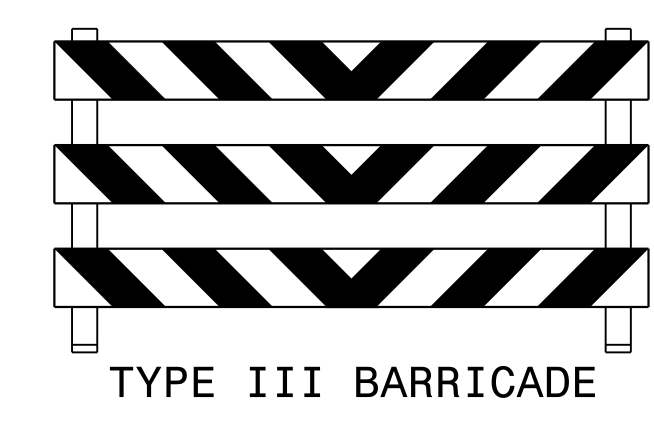
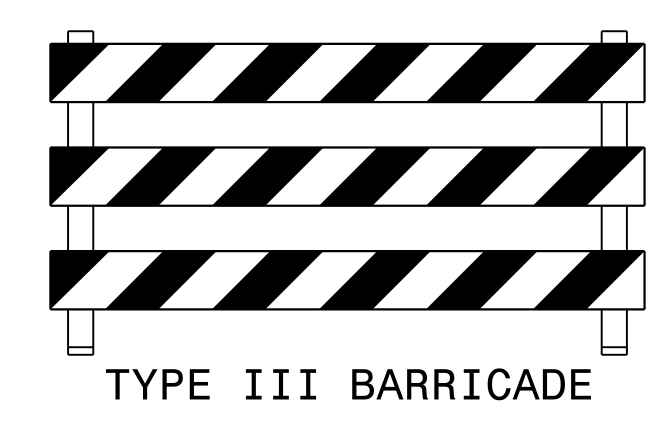


**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



SECTION K-K

MATCHLINE -L- STA. 152+00+/- - TMP-15



155

-L- STA. 156+00+/-  
END TEMP. PAV'T

-L- STA. 154+83+/-  
BEGIN TEMP. PAV'T

-L- STA. 152+90+/-

US 221

K

-L-

K

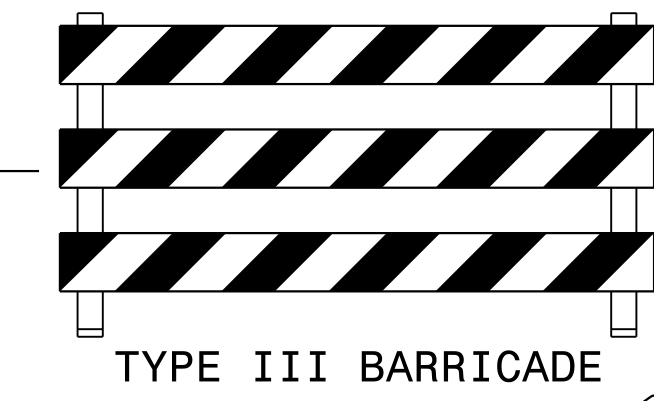
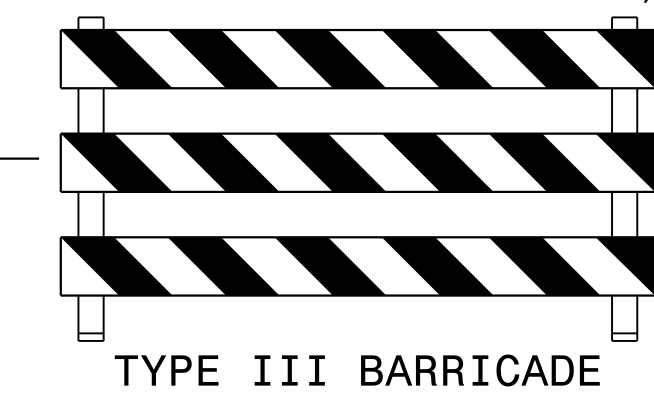


160

-L- STA. 158+10+/-  
BEGIN TEMP. PAV'T

-L- STA. 158+38+/-  
END TEMP. PAV'T

-L- STA. 160+01.83  
END PROJECT R-2915A  
BEGIN PROJECT R-2915B

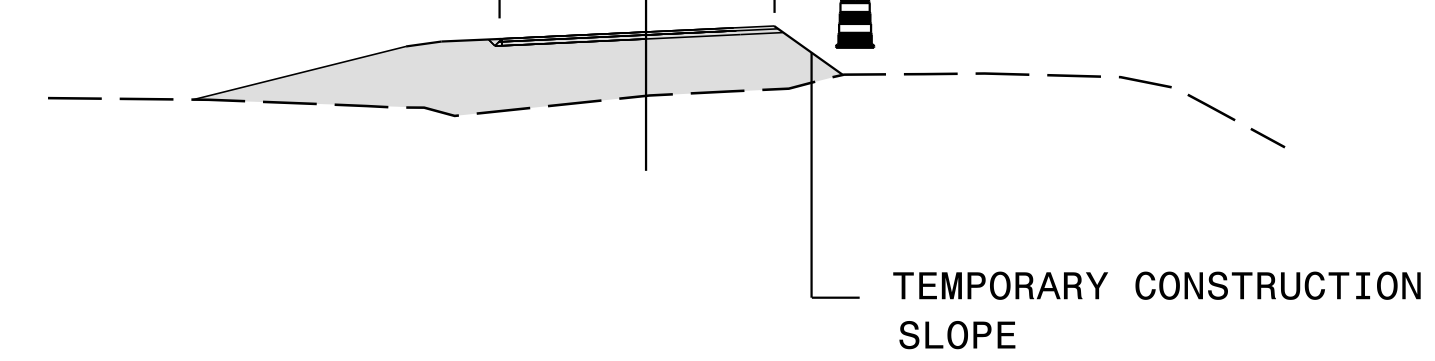


-Y9- SR 1003  
IDLEWILD RD.

END CONST.  
-Y9- STA. 13+10.00

-Y9- STA. 11+50+/-

VAR  
12' 8' 22'



(DENOTES TEMPORARY PAVEMENT)

**WETHERILL ENGINEERING**

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

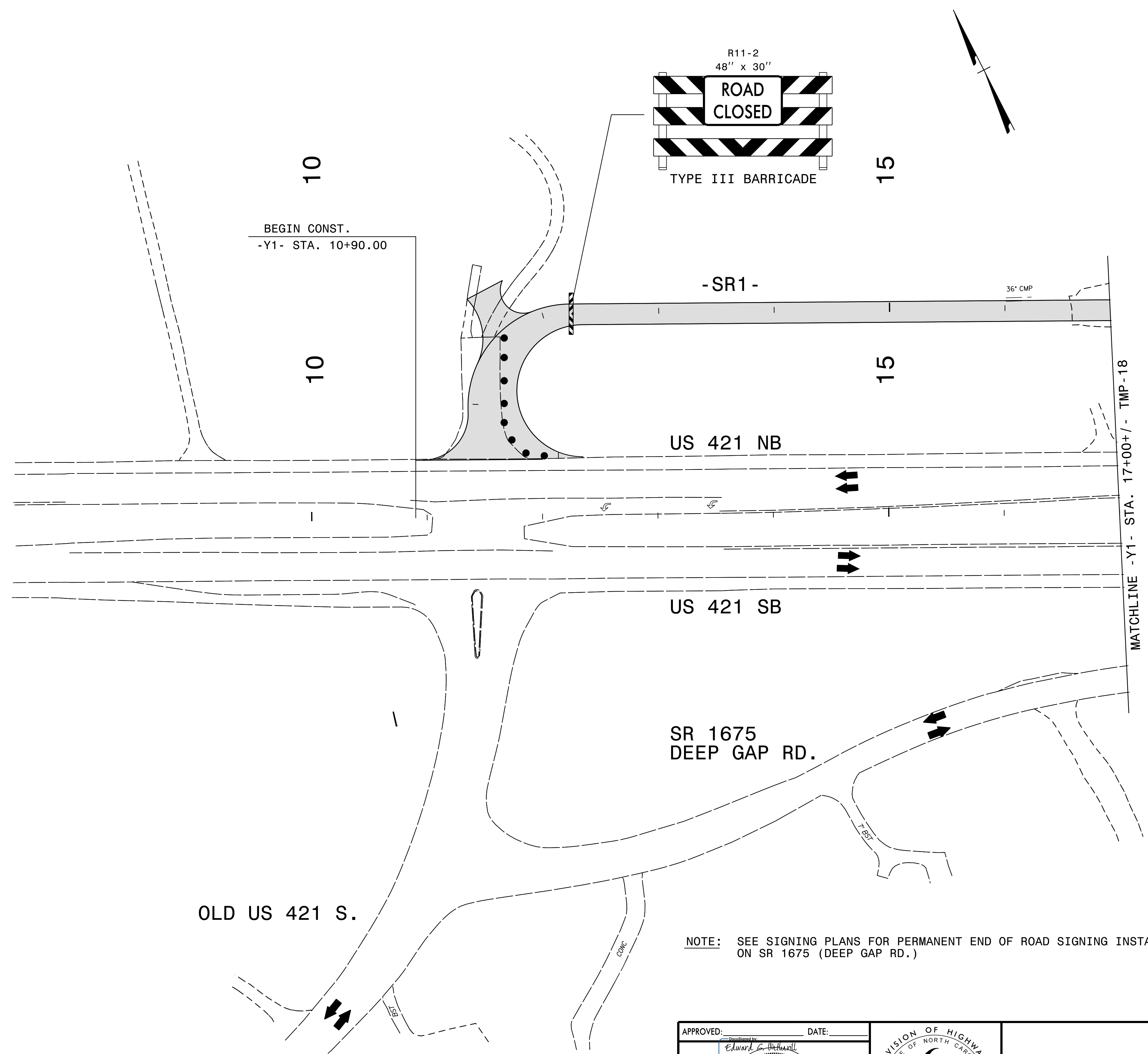
SEAL

EDWARD G. WETHERILL  
PROFESSIONAL ENGINEER  
10773  
7/21/2015

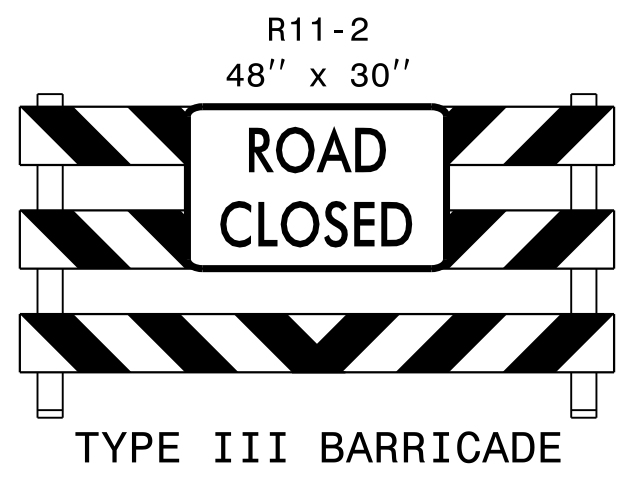
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
WORK ZONE TRAFFIC CONTROL

PHASE I  
TEMPORARY TRAFFIC  
CONTROL DETAIL

5/20/2015 8:23:35 AM P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_16.dgn



BEGIN CONST.  
-Y1- STA. 10+90.00



-SR1-

US 421 NB


US 421 SB

SR 1675  
DEEP GAP RD.

OLD US 421 S.

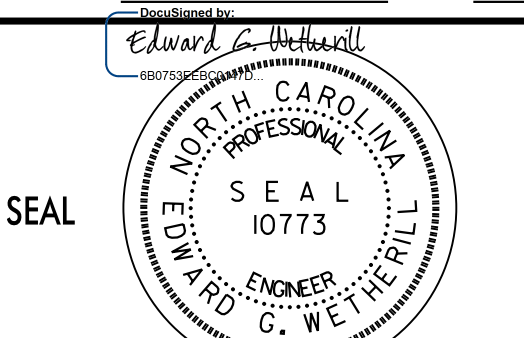
NOTE: SEE SIGNING PLANS FOR PERMANENT END OF ROAD SIGNING INSTALLATIONS ON SR 1675 (DEEP GAP RD.)

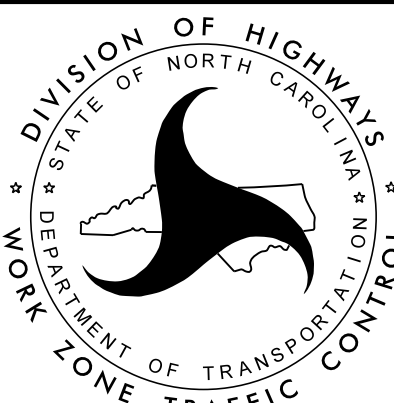
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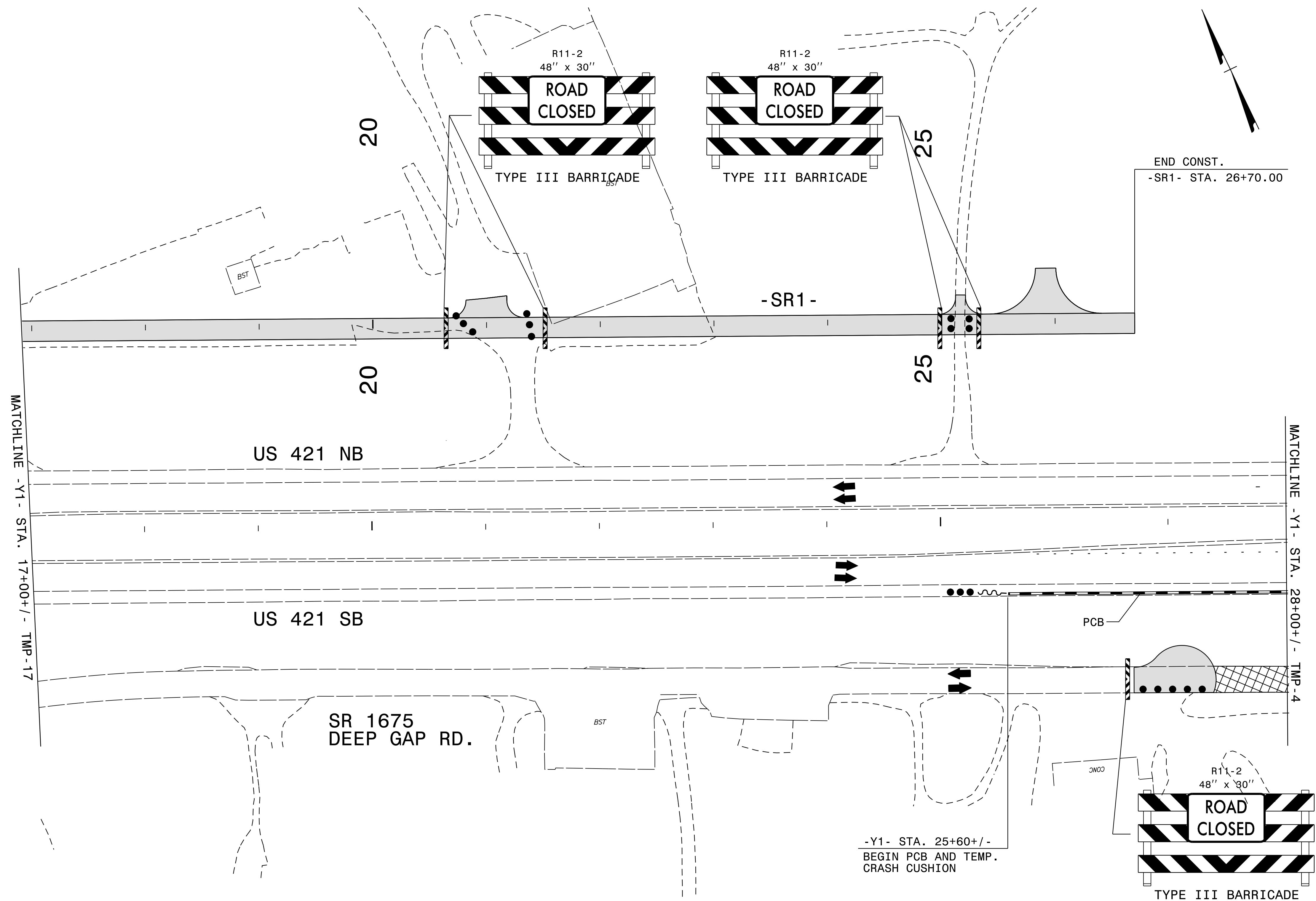
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

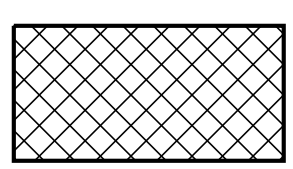

  
 SEAL  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 EDWARD G. WETHERILL  
 F-0377  
 5/21/2015


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

**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



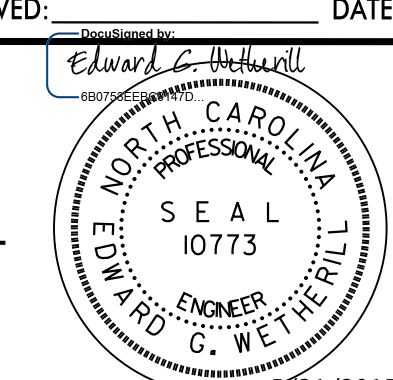
NOTE: SEE SIGNING PLANS FOR PERMANENT END OF ROAD SIGNING INSTALLATIONS ON SR 1675 (DEEP GAP RD.)

 (DENOTES PAVEMENT REMOVAL)

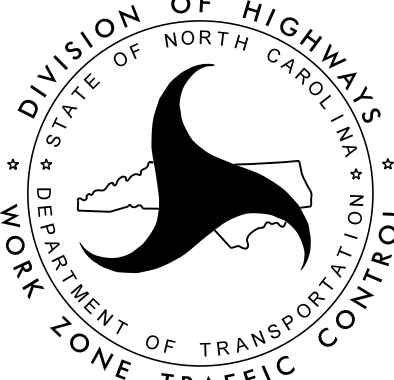
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 559 Jones Franklin Rd. Suite 164  
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

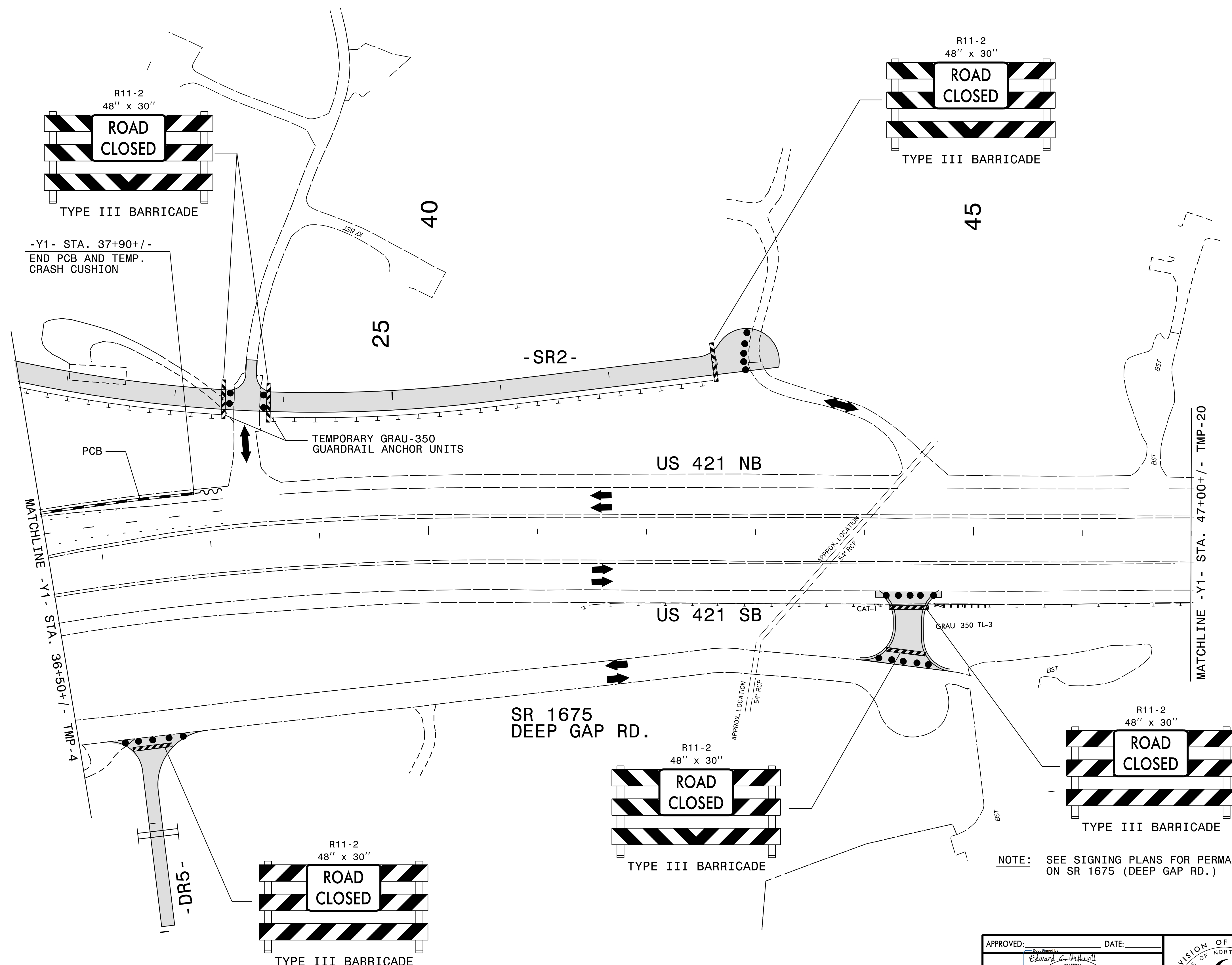
APPROVED:  DATE: 5/21/2015

SEAL



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

**PHASE I  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



NOTE: SEE SIGNING PLANS FOR PERMANENT END OF ROAD SIGNING INSTALLATIONS ON SR 1675 (DEEP GAP RD.)

5/20/2015 8:42:22 AM  
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 Raleigh, N.C. 27606  
 License No. F-0377  
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 Fax: 919 851 8107

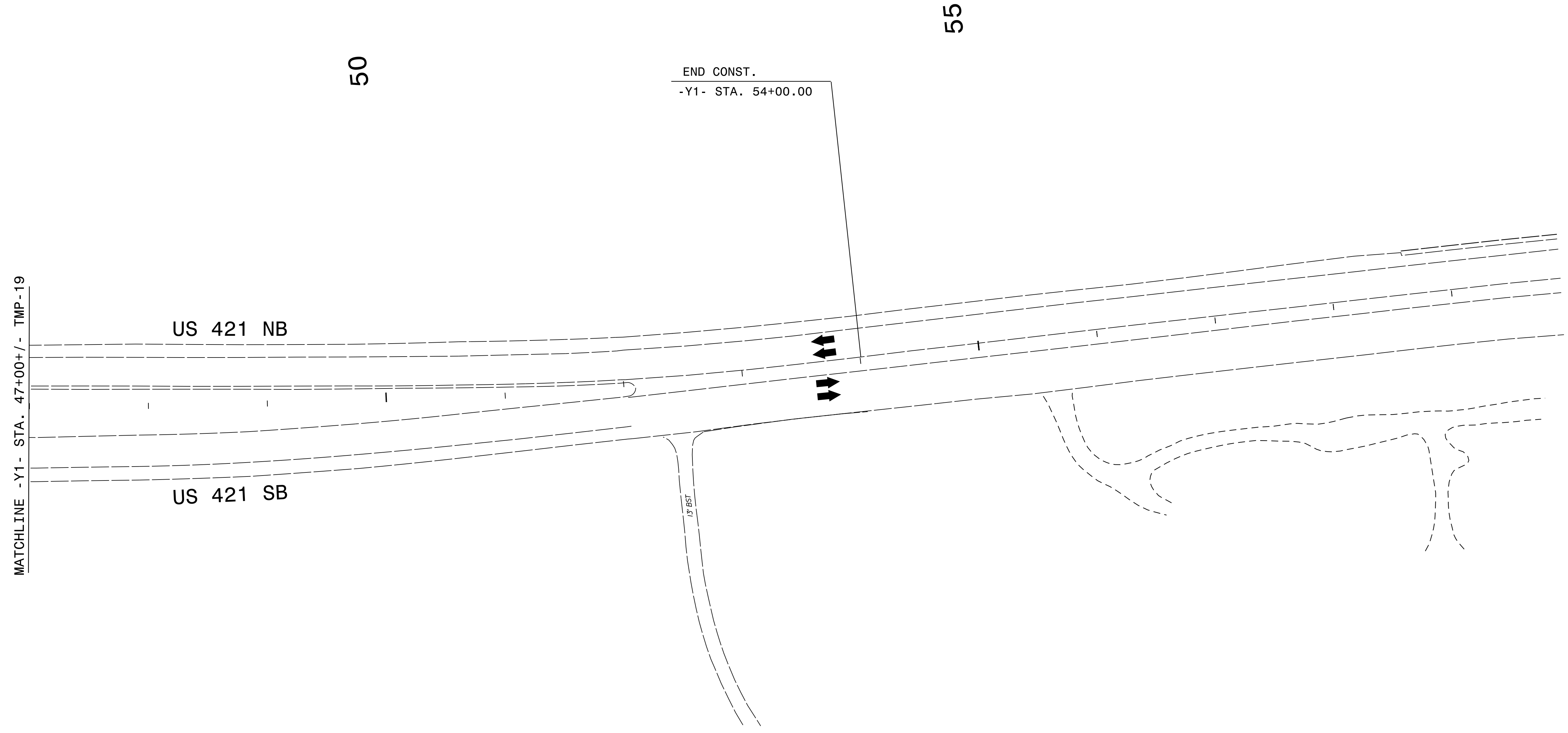
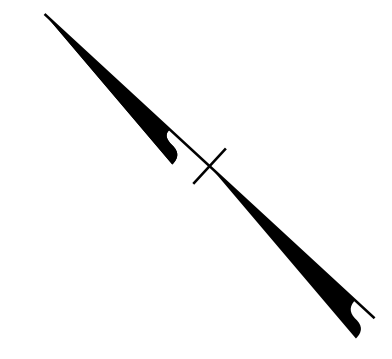
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

SEAL  
 EDWARD G. WETHERILL  
 ENGINEER  
 NORTH CAROLINA  
 LICENSE NO. F-0377  
 5/21/2015

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

**PHASE I**  
**TEMPORARY TRAFFIC**  
**CONTROL DETAIL**



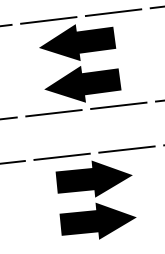
MATCHLINE -Y1- STA. 47+00+/- - TMP-19

US 421 NB

US 421 SB

END CONST.  
-Y1- STA. 54+00.00

13' BST



5/20/2015 8:45:22 AM  
P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_20.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

*Edward C. Wetherill*

SEAL

5/21/2015

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

**PHASE I  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



**PHASE II**

MAINTAIN INGRESS/EGRESS FOR EXISTING DRIVEWAYS AT -Y1- (US 421) NB STA. 38+50+/- AND STA. 44+50+/- AT ALL TIMES DURING CONSTRUCTION (SEE TMP-37).

STEP 1) AWAY FROM TRAFFIC, PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS AT THE FOLLOWING:

- -L- (US 221) SB LANES -L- STA. 28+10+/- TO -L- STA. 60+00+/- (SEE TMP-23 THRU TMP-26).
- -L- (US 221) SB LANES -L- STA. 114+05+/- TO -L- STA. 131+00+/- (SEE TMP-30 AND TM-32).

STEP 2) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, WEDGE EXISTING US 221 PAVEMENT FROM -L- STA. 131+00+/- TO STA. 135+00+/- AND SHIFT US 221 TRAFFIC ONTO -L- SB LANES AS MARKED IN PHASE II, STEP 1, IN A TEMPORARY TWO-LANE, TWO-WAY PATTERN BY THE END OF THE WORKDAY. INSTALL TYPE III BARRICADES TO CLOSE EXISTING SECTIONS OF US 221 ROADWAY TO TRAFFIC (SEE TMP-23 THRU TMP-26, TMP-30 THRU THRU TMP-32, AND TMP-41).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, INSTALL ADDITIONAL TEMPORARY PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHION AS FOLLOWS:

- -L- (US 221) FROM -L- STA. 13+40+/- TO -L- STA. 25+80+/- RIGHT SIDE (SEE TMP-22 AND TMP-23).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS AND PLACE TEMPORARY MARKINGS AND MARKERS FOR A TEMPORARY SHIFTED PATTERN ON US 421 SB (SEE TMP-22). INSTALL PORTABLE CONCRETE BARRIER AND CRASH CUSHION ON THE EXISTING MEDIAN SHOULDER OF US 421 SB AS FOLLOWS:

- -Y1- (US 421) SB FROM -Y1- STA. 33+40+/- TO -Y1- STA. 34+90+/- (SEE TMP-22).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, CLOSE THE US 421 NB EXISTING LEFT TURN LANE AT EXISTING US 221/US 421 SIGNALIZED INTERSECTION. REMOVE CONFLICTING MARKINGS AND PLACE A TEMPORARY YELLOW MEDIAN EDGELINE (SEE TMP-21 AND TMP-22). INSTALL PORTABLE CONCRETE BARRIER AND A TEMPORARY CRASH CUSHION AS FOLLOWS:

- -Y1- (US 421) NB (INSIDE EXISTING LEFT TURN LANE) FROM -Y1- STA. 33+40+/- TO -Y1- STA. 35+40+/- (SEE TMP-22).

STEP 3) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, BEGIN CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE AT THE FOLLOWING:

- -L- (US 221) NB LANES TO STA. 60+00+/- (SEE TMP-22 THRU TMP-26).
- -L- (US 221) NB LANES STA. 113+75+/- TO STA. 135+00+/- (SEE TMP-30 THRU TMP-32).
- -L- (US 221) NB LANES STA. 138+50+/- TO STA. 141+00+/- (SEE TMP-32).
- -L- (US 221) NB LANES STA. 156+00+/- TO STA. 158+10+/- (SEE TMP-34).
- -L- (US 221) SB FROM -Y1 (US 421) TO -L- STA. 25+00+/- (SEE TMP-22).
- -L- TEMPORARY PAVEMENTS FOR -LSHIFT2-/-XOVER1- FROM -L- STA. 21+40+/- TO -L- STA. 26+00+/- (SEE TMP-23).
- -L- TEMPORARY PAVEMENT FOR -LSHIFT1- FROM -L- STA. 25+80+/- TO -L- STA. 32+75+/- (SEE TMP-23 AND TMP-24).
- -RPA- (SEE TMP-22 AND TMP-37).
- -RPB- (INCLUDING TEMPORARY SHORING AND RETAINING WALL) AS SHOWN FROM -L- STA. 16+60+/- TO -L- STA. 24+00+/- (SEE TMP-22, TMP-23, AND TMP-37).
- -SR2- FROM -SR2- STA. 13+00+/- TO INTERSECTION TIE WITH PROPOSED -L- (US 221) NB LANES (SEE TMP-23).

USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 6 OF 9 AND LAW ENFORCEMENT, BEGIN PROPOSED -L- STRUCTURE OVER -Y1- (US 421) (SEE TMP-22, TMP-39, TMP-39A, TMP-40, AND TMP-40A).

PHASE II, STEP 4 AND PHASE II, STEP 5 MAY BE COMPLETED CONCURRENTLY.

STEP 4) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND WORKING IN A CONTINUOUS MANNER, GRADE AND CONSTRUCT UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE UNDER TRAFFIC USING ONE-LANE, TWO-WAY TEMPORARY PATTERNS DURING FLAGGING OPERATIONS, AND RESTORING TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORKDAY AT THE FOLLOWING:

- -Y6- (CHURCH HILL ST.) (SEE TMP-31).

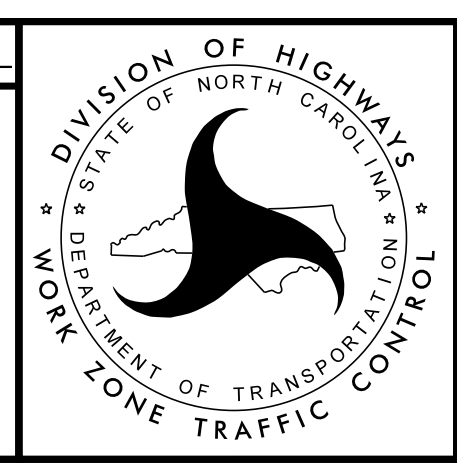
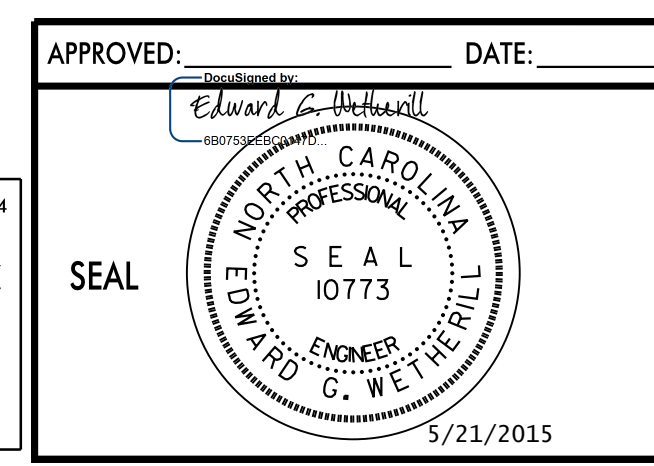
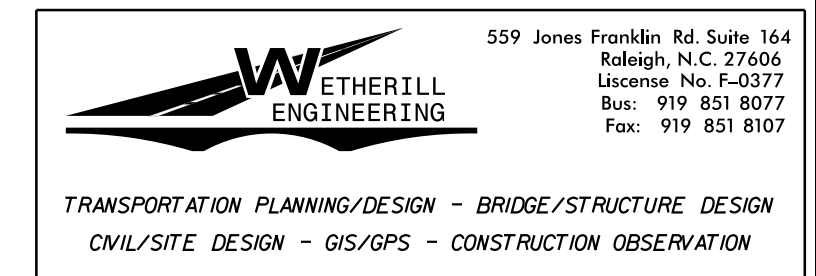
USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, CONSTRUCT -Y7- (STONE CREST DR.) TIE-IN AND OPEN TO A TWO-LANE, TWO-WAY PATTERN AT THE END OF THE WORKDAY (SEE TMP-32).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND WORKING IN A CONTINUOUS MANNER, WEDGE AND CONSTRUCT -Y9- (IDLEWILD RD.) TIE-IN AND OPEN TO A TWO-LANE, TWO-WAY PATTERN AT THE END OF THE WORKDAY (SEE TMP-34). COMPLETE REMAINING -Y9- RIGHT SIDE ROADWAY SLOPE WORK AND PAVEMENT REMOVAL.

STEP 5) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, COMPLETE CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE AT THE FOLLOWING:

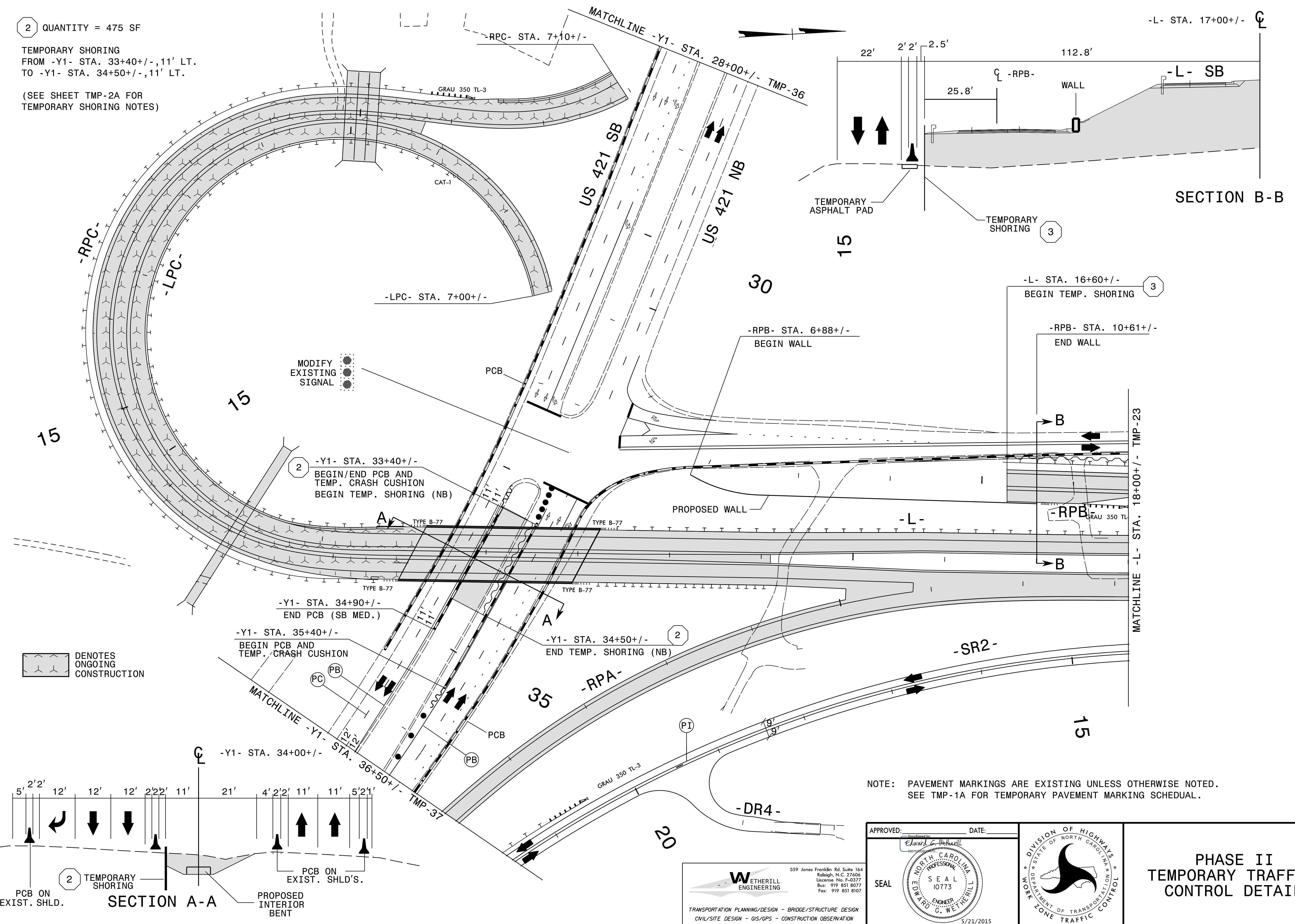
- -L- (US 221) NB FROM -Y1- (US 421) TO -L- STA. 60+00+/- (SEE TMP-22 THRU TMP-26).
- -L- (US 221) NB FROM -L- STA. 64+00+/- TO -L- STA. 79+74+/- (SEE TMP-26 AND TMP-27).
- -L- (US 221) NB FROM -L- STA. 80+80+/- TO 107+00+/- WHILE MAINTAINING -Y3- AND -Y4- AT ALL TIMES (SEE TMP-27 THRU TMP-30).
- -L- (US 221) NB FROM -L- STA. 108+20+/- TO 113+75+/- (SEE TMP-30).
- -L- (US 221) NB FROM -L- STA. 113+75+/- TO 135+00+/- WHILE MAINTAINING -Y6- AT ALL TIMES (SEE TMP-30 THRU TMP-32).
- -L- (US 221) NB FROM -L- STA. 138+50+/- TO 141+00+/- WHILE MAINTAINING -Y7- AT ALL TIMES (SEE TMP-32).
- -L- (US 221) NB FROM -L- STA. 141+00+/- TO 156+00+/- (SEE TMP-32 THRU TMP-34).
- -L- (US 221) NB FROM -L- STA. 156+00+/- TO 158+10+/- WHILE MAINTAINING -Y9- AT ALL TIMES (SEE TMP-34).
- -L- (US 221) SB FROM -Y1 (US 421) TO -L- STA. 25+00+/- (SEE TMP-22).
- -L- TEMPORARY PAVEMENTS FOR -LSHIFT2-/-XOVER1- FROM -L- STA. 21+40+/- TO -L- STA. 26+00+/- (SEE TMP-23).
- -L- TEMPORARY PAVEMENT FOR -LSHIFT1- FROM -L- STA. 25+80+/- TO -L- STA. 32+75+/- (SEE TMP-23 AND TMP-24).
- -RPA- AS SHOWN (SEE TMP-22 AND TMP-37).
- -RPB- AS SHOWN (INCLUDING TEMPORARY SHORING AND RETAINING WALL) FROM -L- STA. 16+60+/- TO -L- STA. 24+00+/- (SEE TMP-22 AND TMP-23).
- -RPC-/-LPC- AS SHOWN (INCLUDING PROPOSED BOX CULVERTS) (SEE TMP-22).
- -SR2- FROM -SR2- STA. 13+00+/- TO INTERSECTION TIE WITH PROPOSED -L- (US 221) NB LANES (SEE TMP-23).

5/20/2015 8:15:44 AM P:\2012\NR-2915A\TrafficControl\TC\R2915A\_TC\_IPSH.L21.dgn

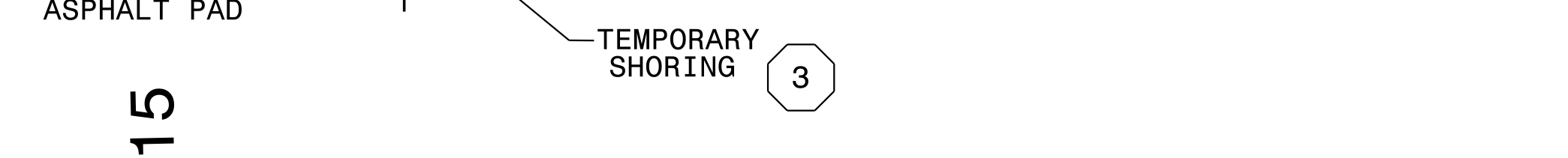
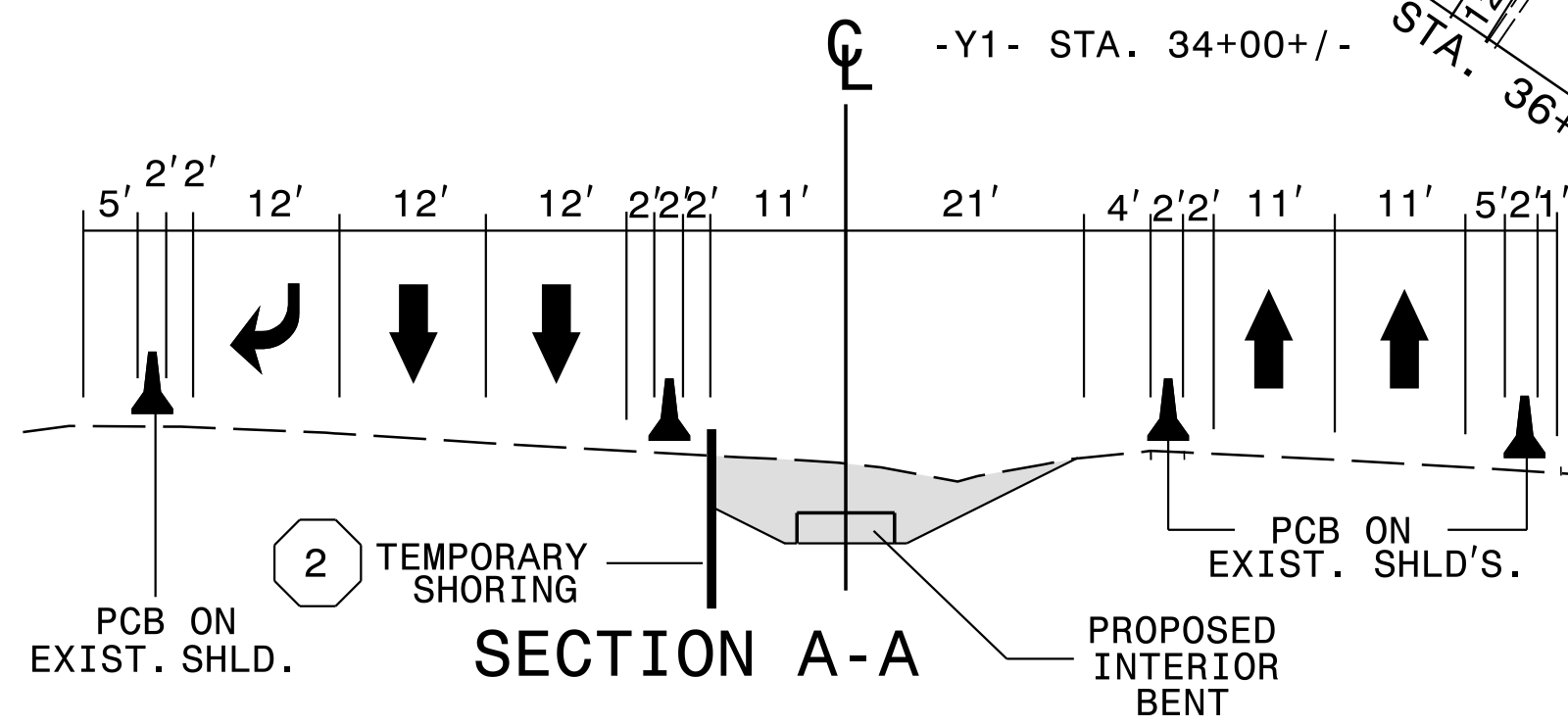


**PHASE II  
TEMPORARY TRAFFIC  
CONTROL DETAIL**

2 QUANTITY = 475 SF  
 TEMPORARY SHORING  
 FROM -Y1- STA. 33+40+/-, 11' LT.  
 TO -Y1- STA. 34+50+/-, 11' LT.  
 (SEE SHEET TMP-2A FOR  
 TEMPORARY SHORING NOTES)



DENOTES ONGOING CONSTRUCTION



NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED. SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:16:20 AM P:\2012\2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_22.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

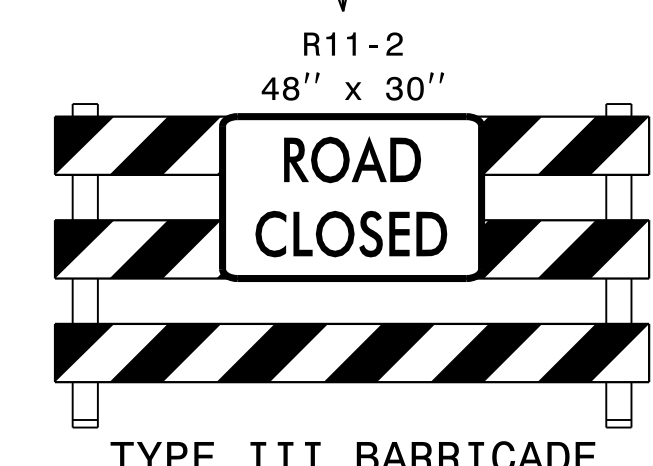
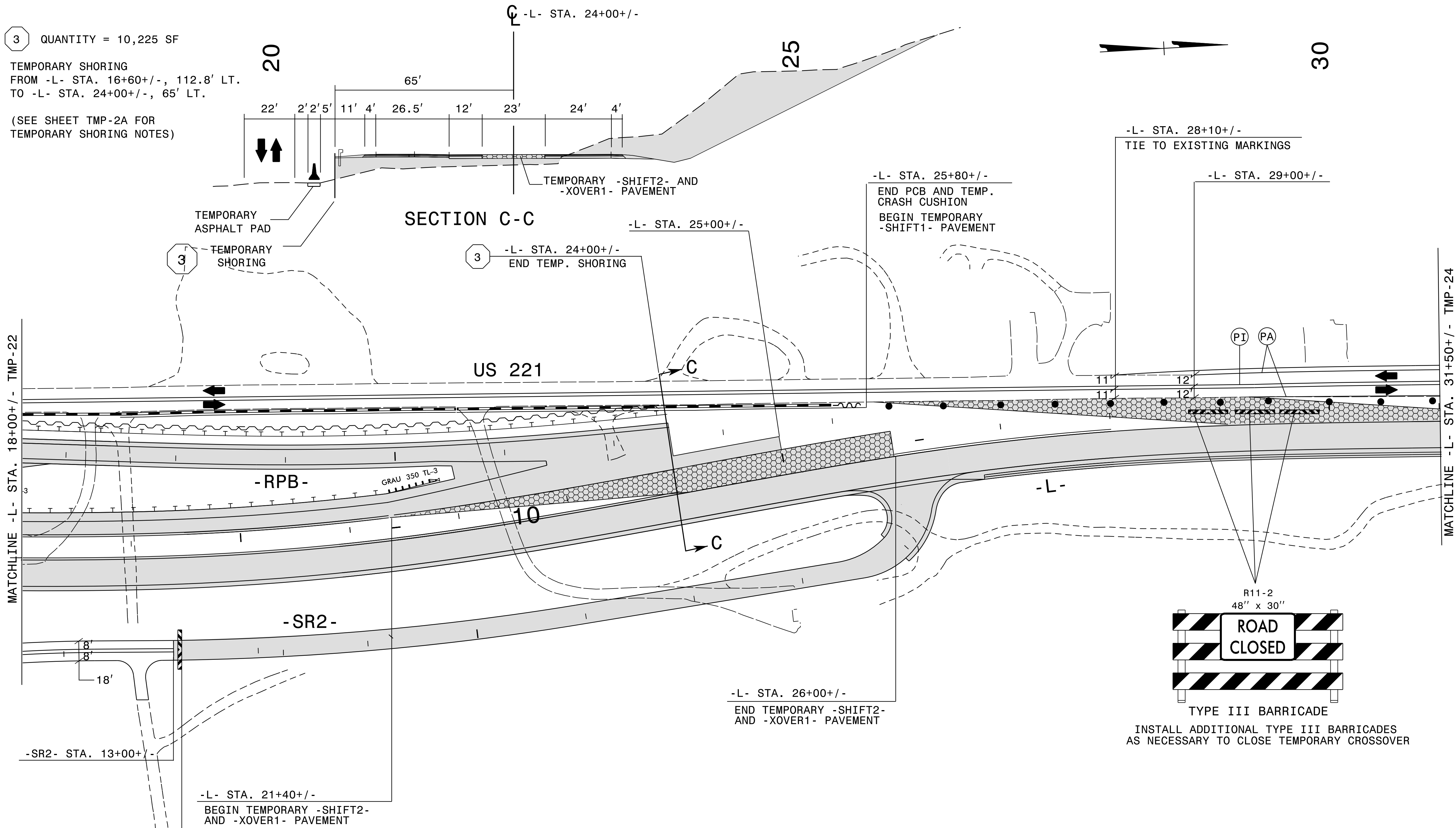
APPROVED: *Edward C. Wetherill* DATE: 5/21/2015

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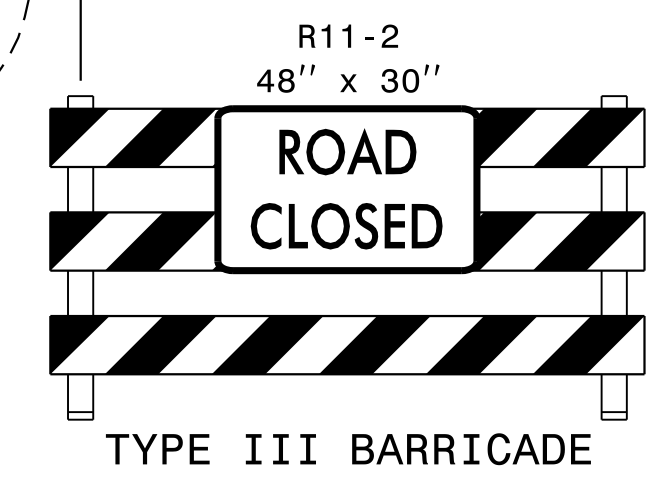
DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PHASE II  
 TEMPORARY TRAFFIC CONTROL DETAIL**

3 QUANTITY = 10,225 SF  
 TEMPORARY SHORING  
 FROM -L- STA. 16+60+/-, 112.8' LT.  
 TO -L- STA. 24+00+/-, 65' LT.  
 (SEE SHEET TMP-2A FOR  
 TEMPORARY SHORING NOTES)



INSTALL ADDITIONAL TYPE III BARRICADES AS NECESSARY TO CLOSE TEMPORARY CROSSOVER



NOTE: SEE ROADWAY PLANS FOR TEMPORARY ALIGNMENTS ON -SHIFT1-, -SHIFT2-, AND -XOVER1-.  
 PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP - 1A FOR TEMPORARY PAVEMENT MARKING SCHEDULEL.

(DENOTES TEMPORARY PAVEMENT)

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

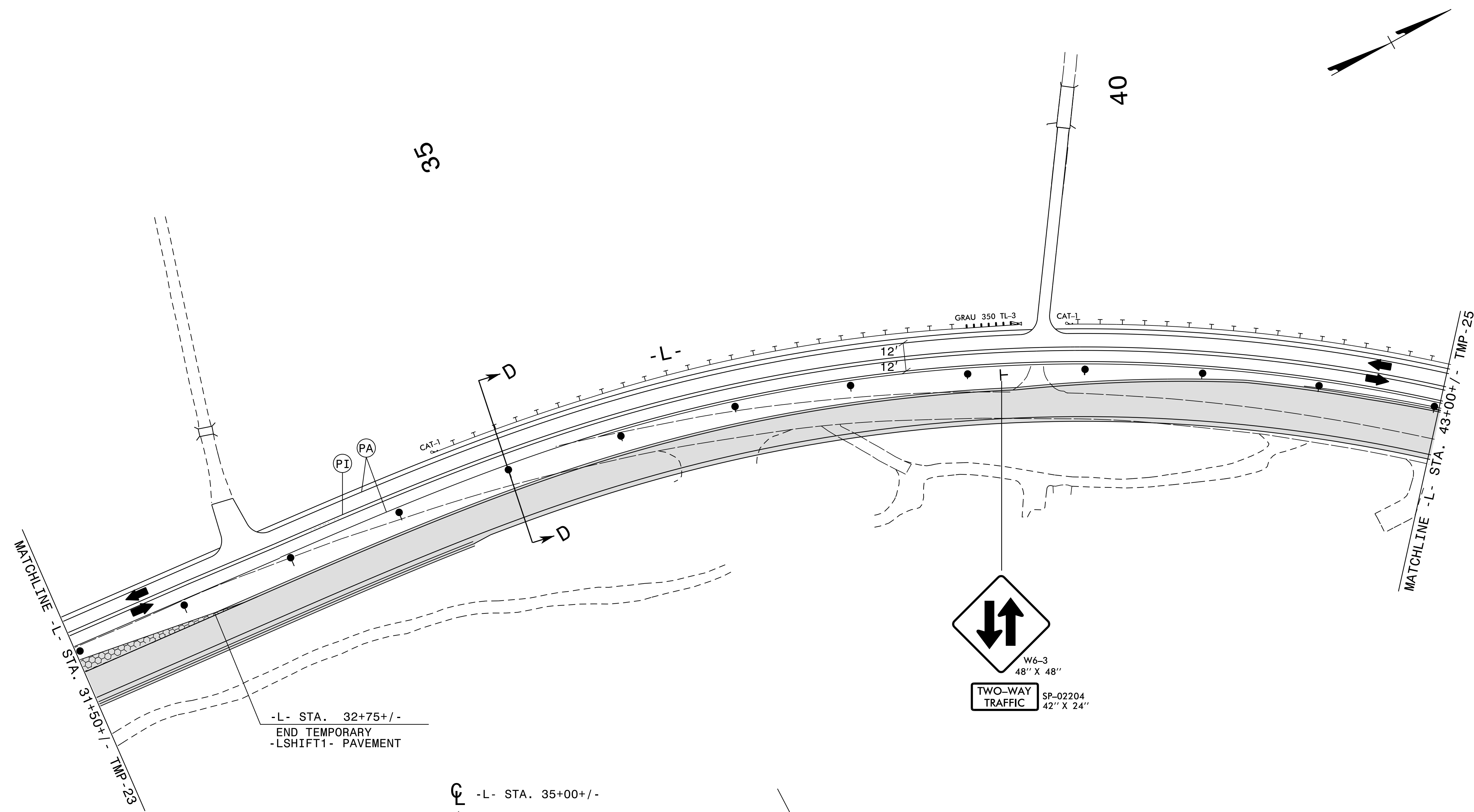
APPROVED: *Edward C. Wetherill* DATE: 5/21/2015

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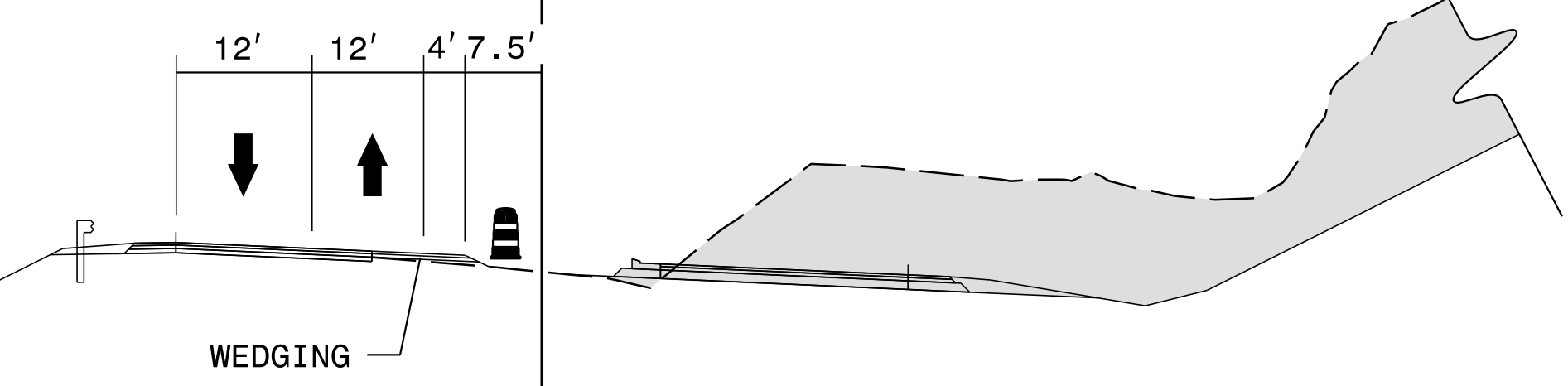
**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 8:17:30 AM P:\2012\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_23.dgn



-L- STA. 32+75+/-  
END TEMPORARY  
-LSHIFT1- PAVEMENT

-L- STA. 35+00+/-



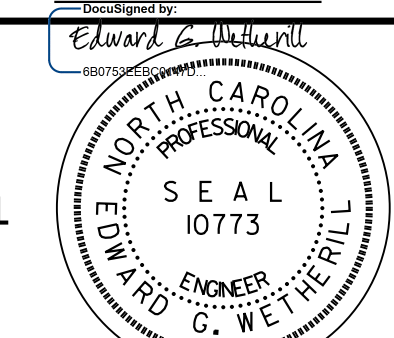
SECTION D-D

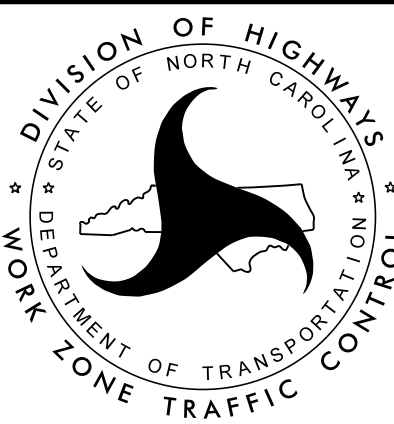
NOTE: SEE ROADWAY PLANS FOR TEMPORARY ALIGNMENT ON -LSHIFT1-.  
PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

 (DENOTES TEMPORARY PAVEMENT)

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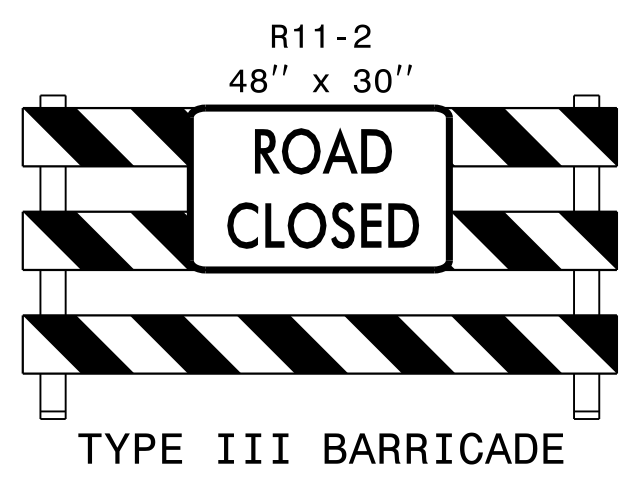
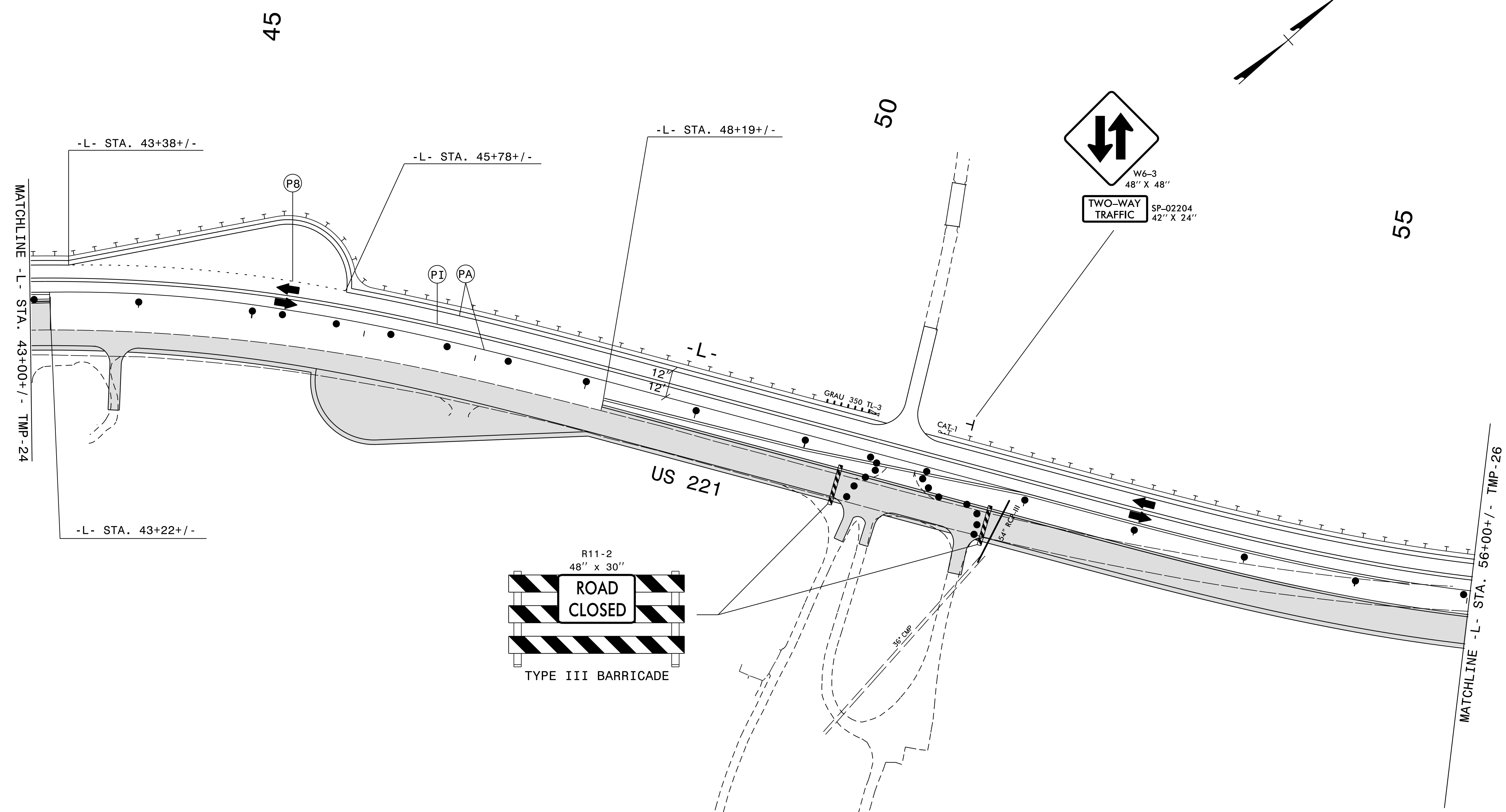
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED:  DATE: 5/21/2015




**PHASE II  
TEMPORARY TRAFFIC  
CONTROL DETAIL**

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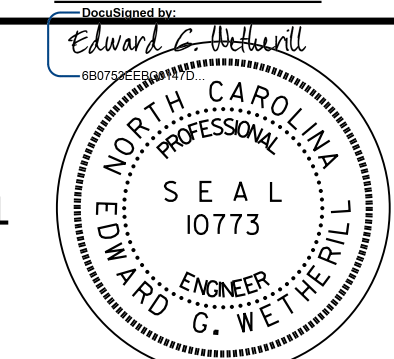
NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

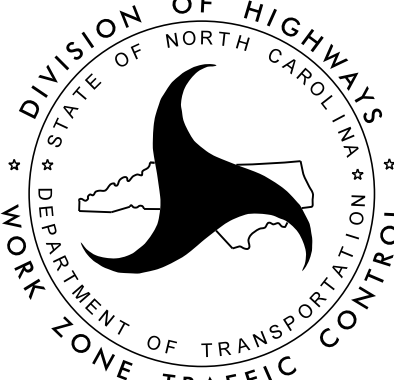
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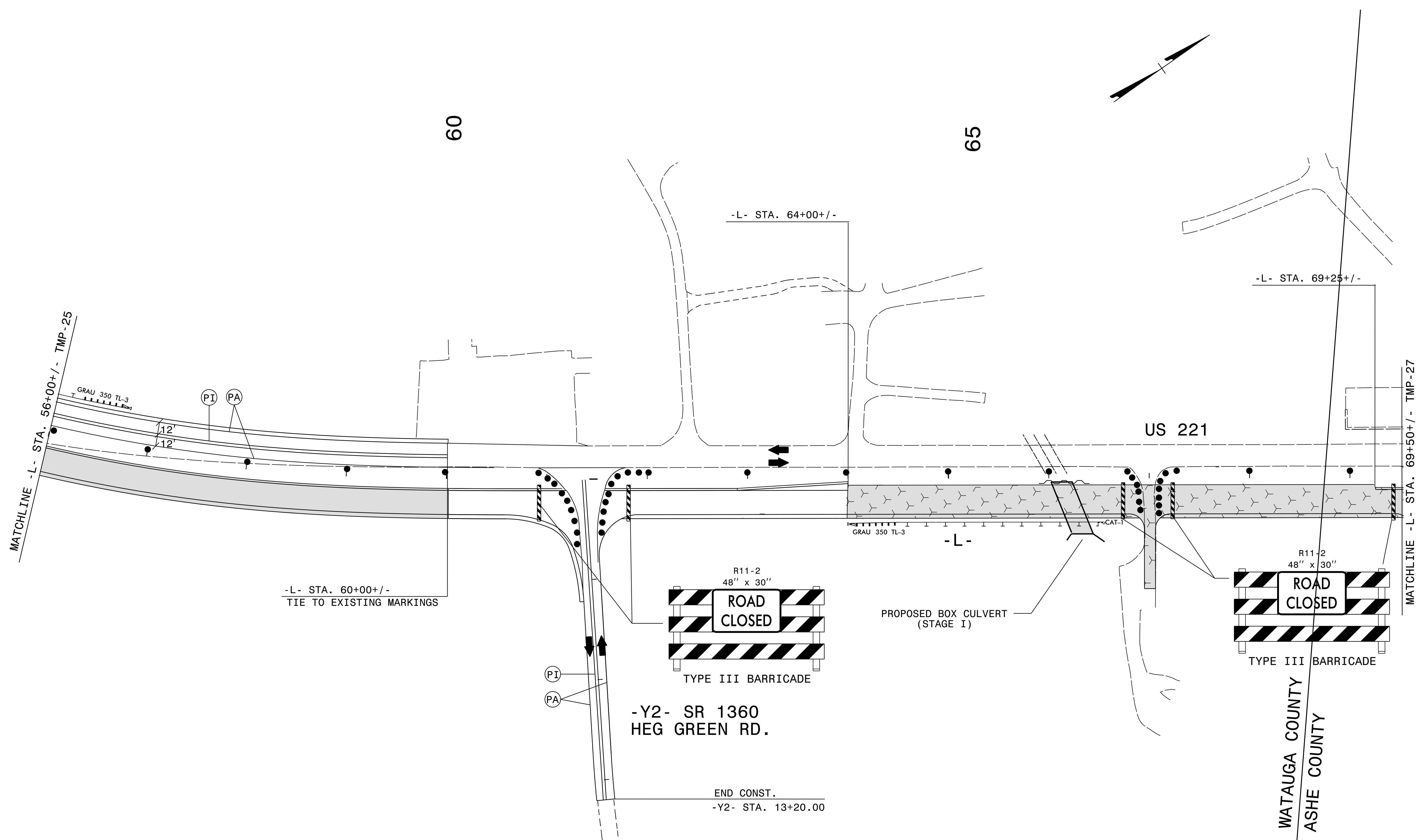
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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


  
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 5/21/2015


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

**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

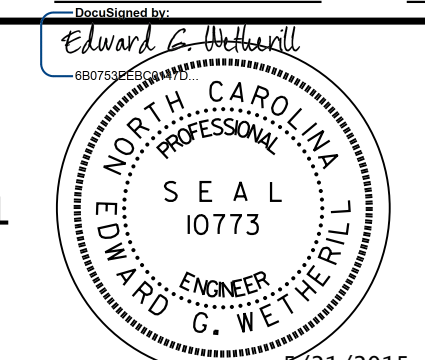


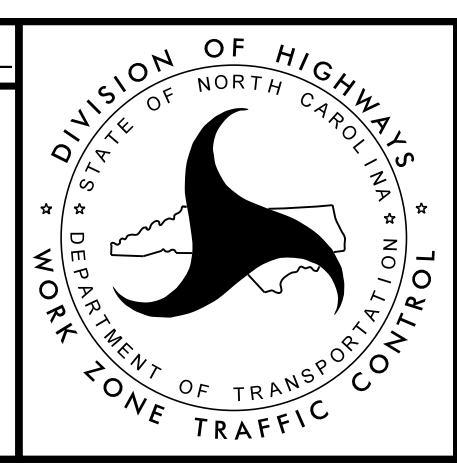
NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULEL.

 DENOTES ONGOING CONSTRUCTION

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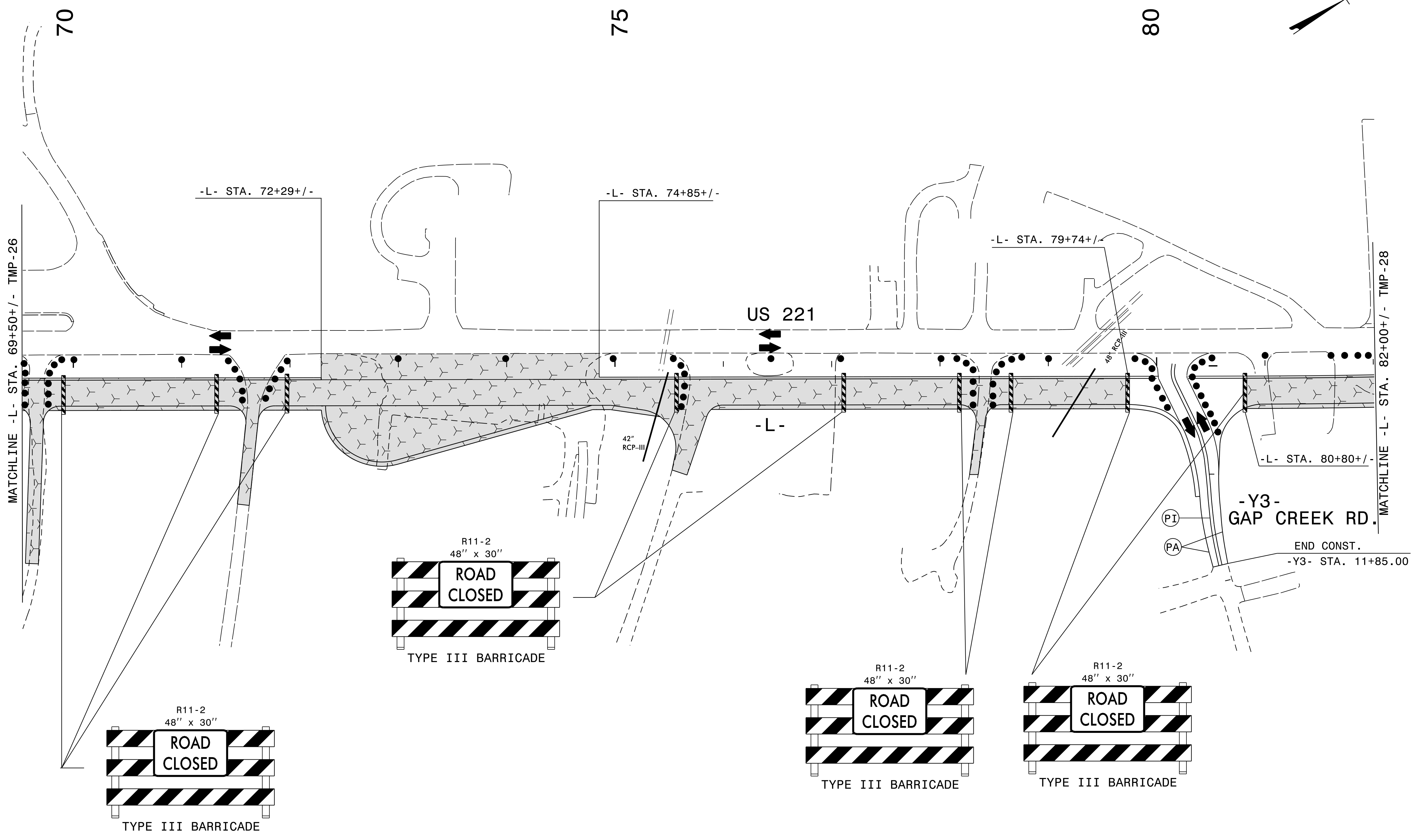
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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**PHASE II  
TEMPORARY TRAFFIC  
CONTROL DETAIL**

5/20/2015 8:19:41 AM  
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NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED. SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULEL.

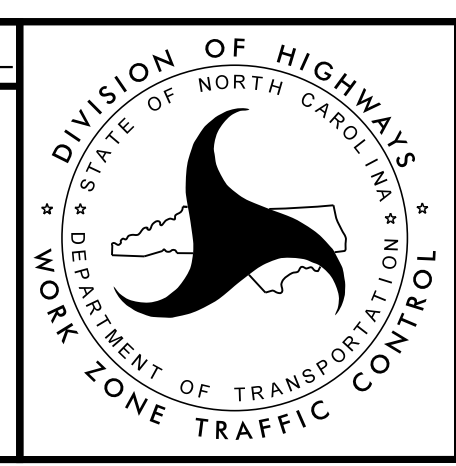
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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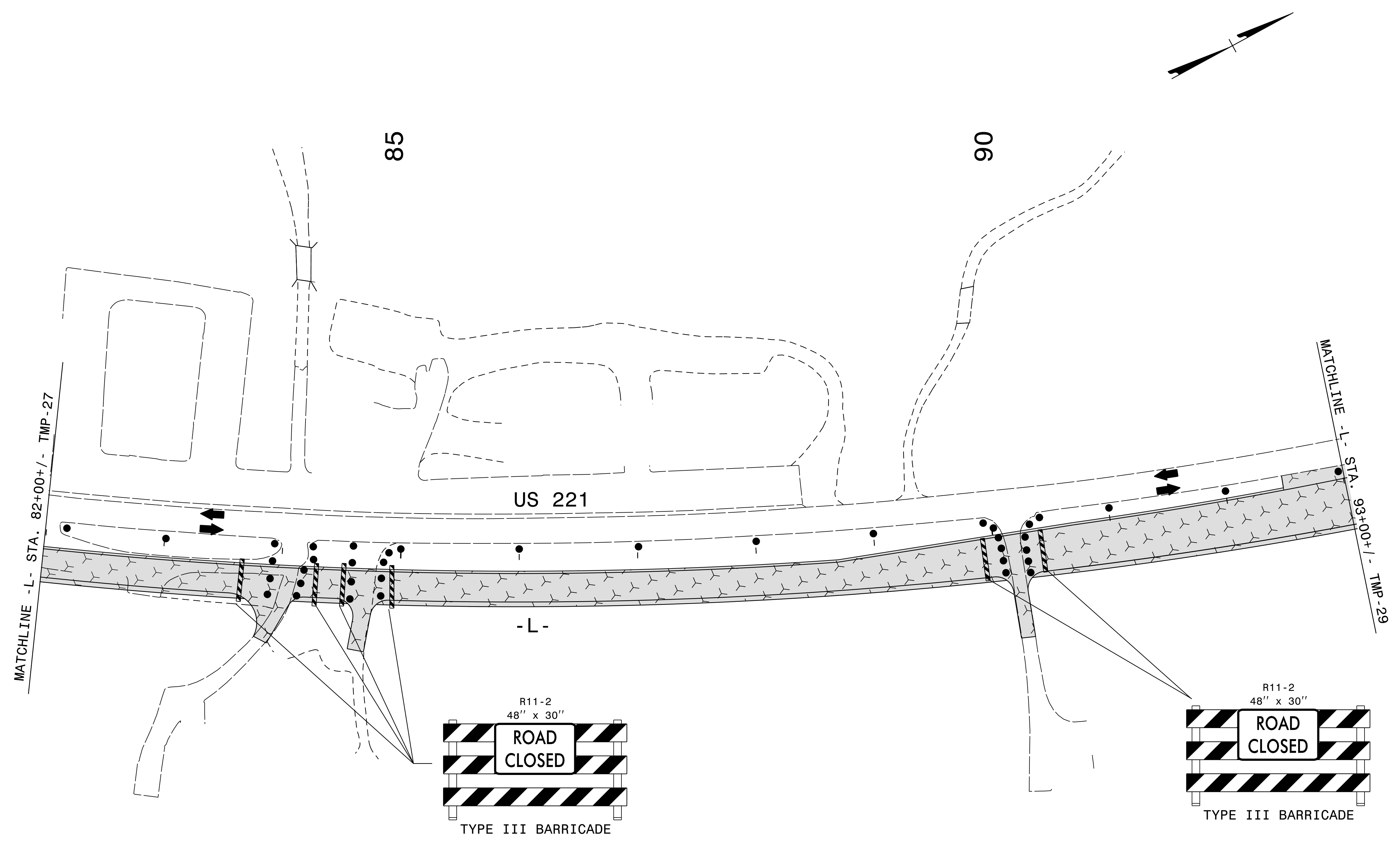
*Edward G. Wetherill*  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 10773  
 G. WETHERILL  
 5/21/2015

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**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 8:19:38 AM P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_27.dgn



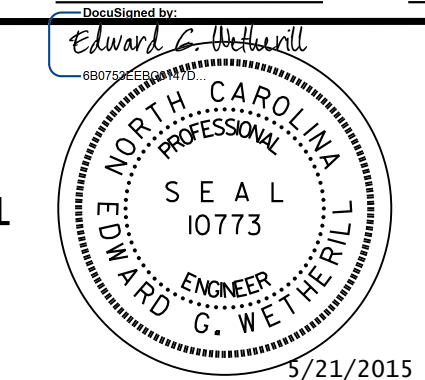
 DENOTES  
 ONGOING  
 CONSTRUCTION

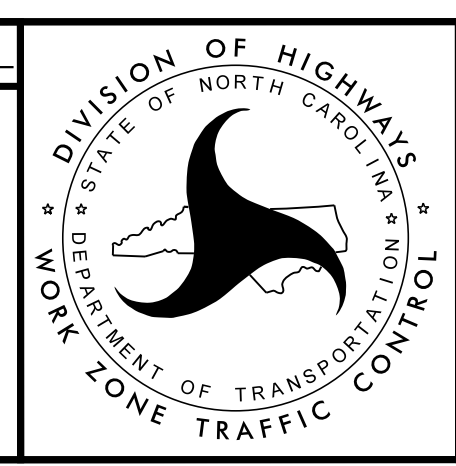
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

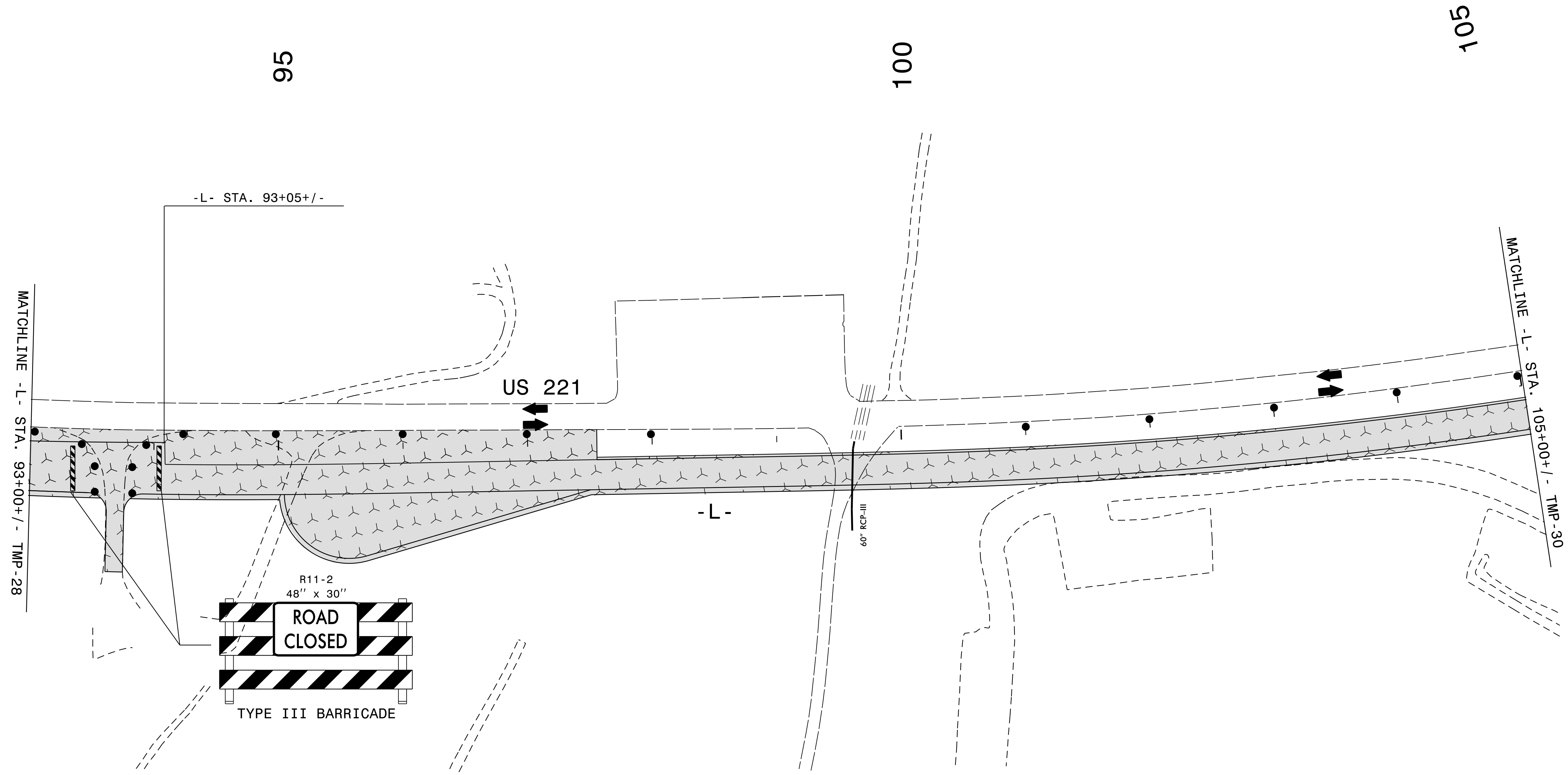
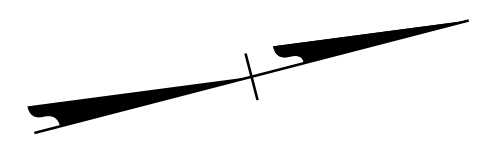
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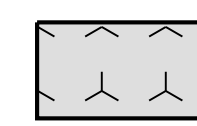

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 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION

**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

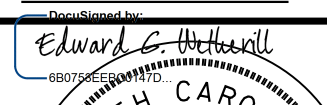




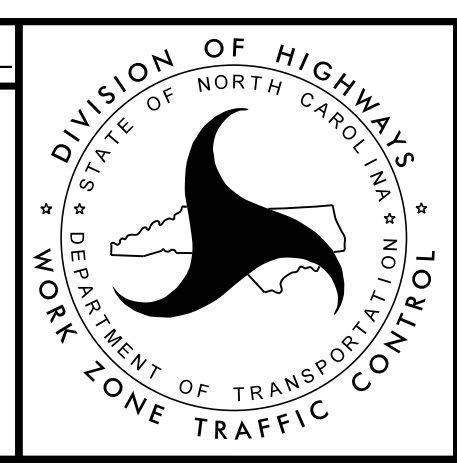
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

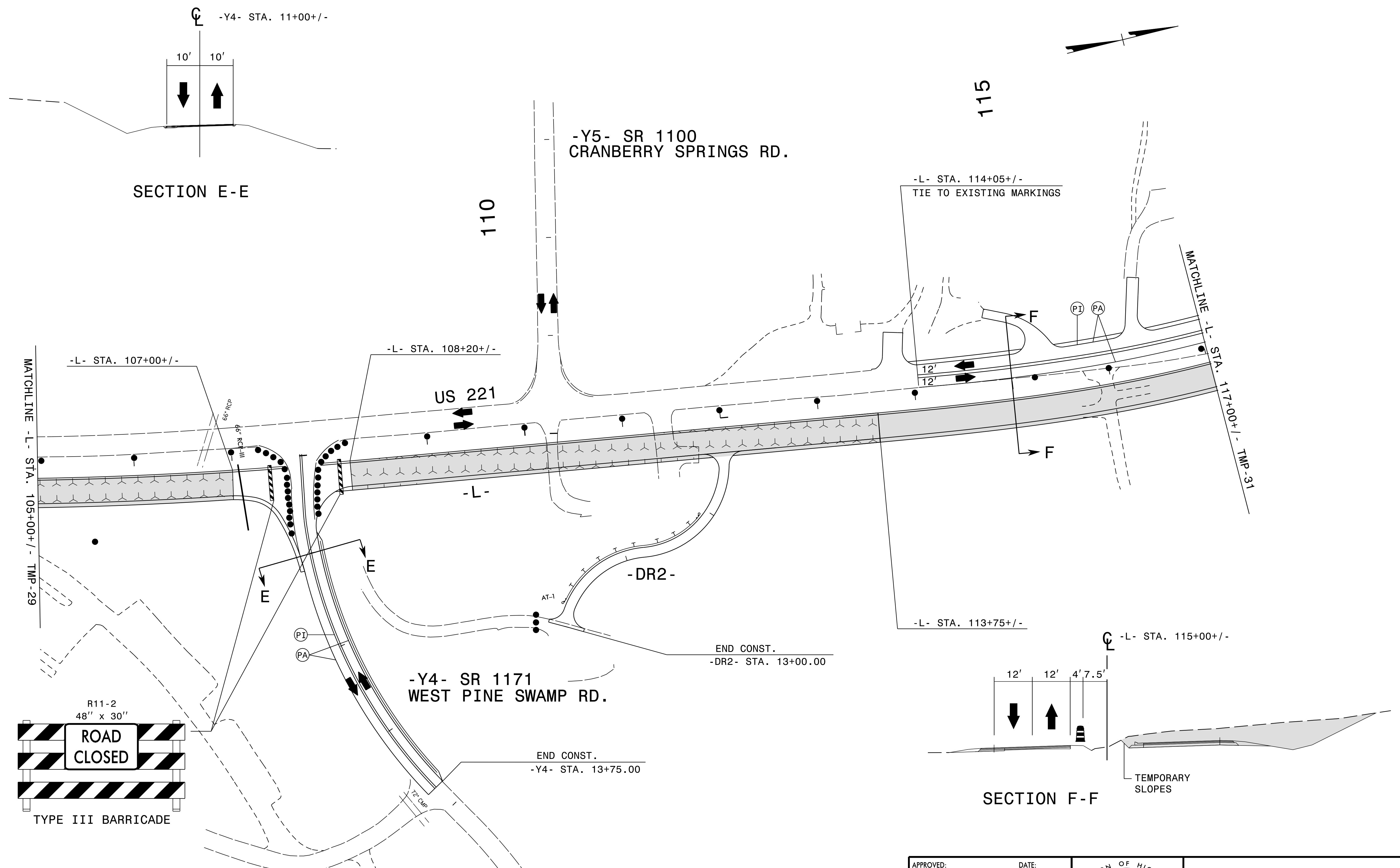
APPROVED:  DATE: 5/21/2015

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**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

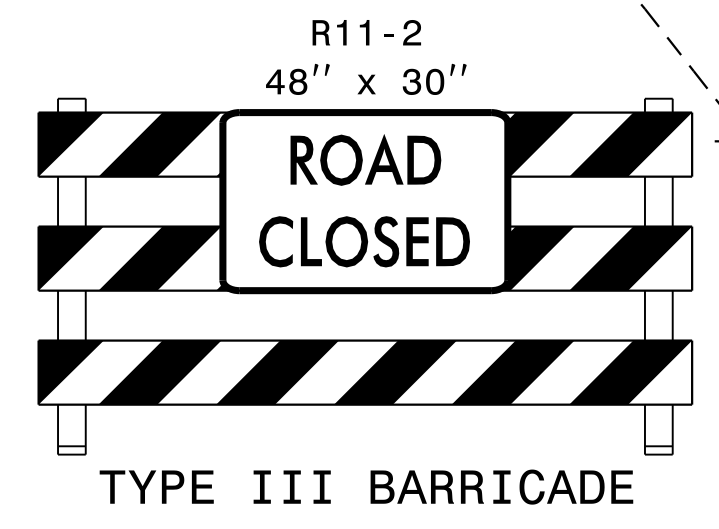
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SECTION E-E

115

SECTION F-F



DENOTES ONGOING CONSTRUCTION

NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED. SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

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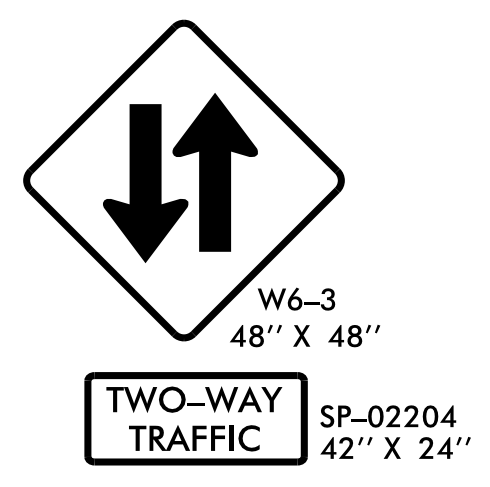
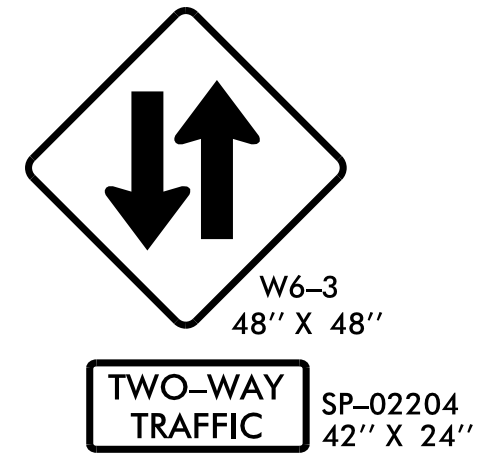
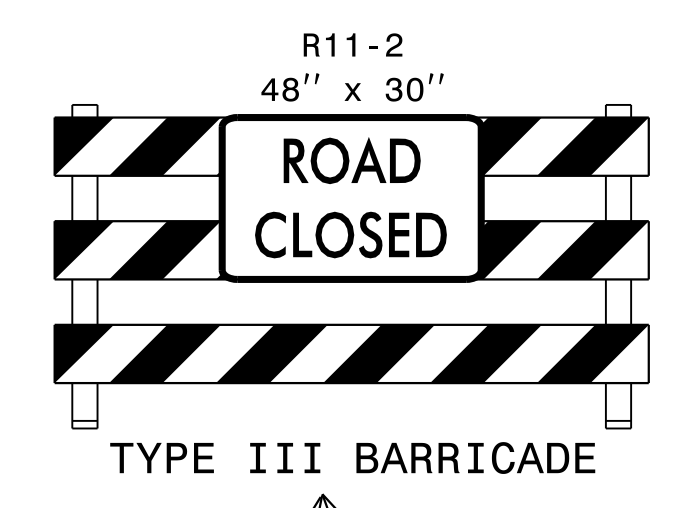
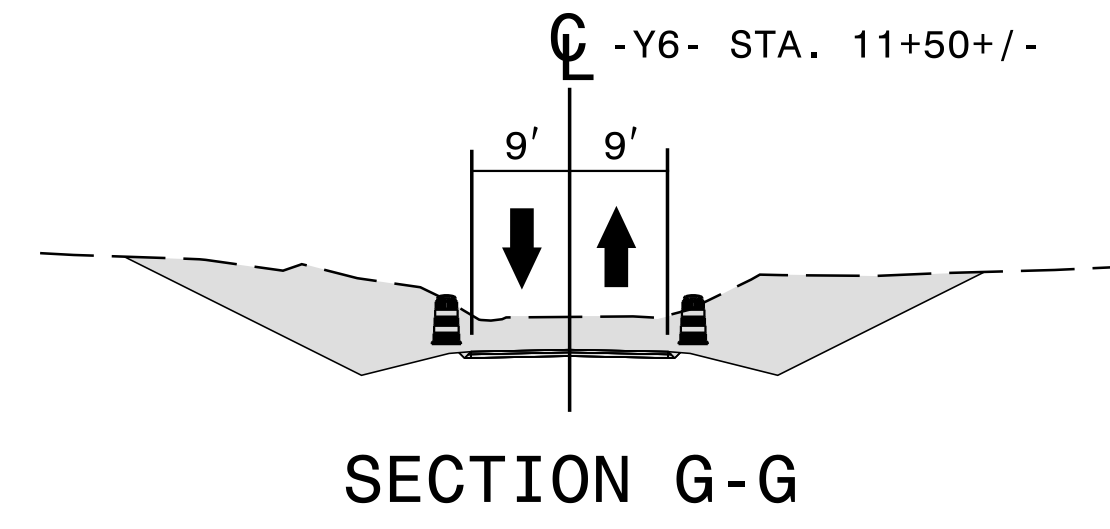
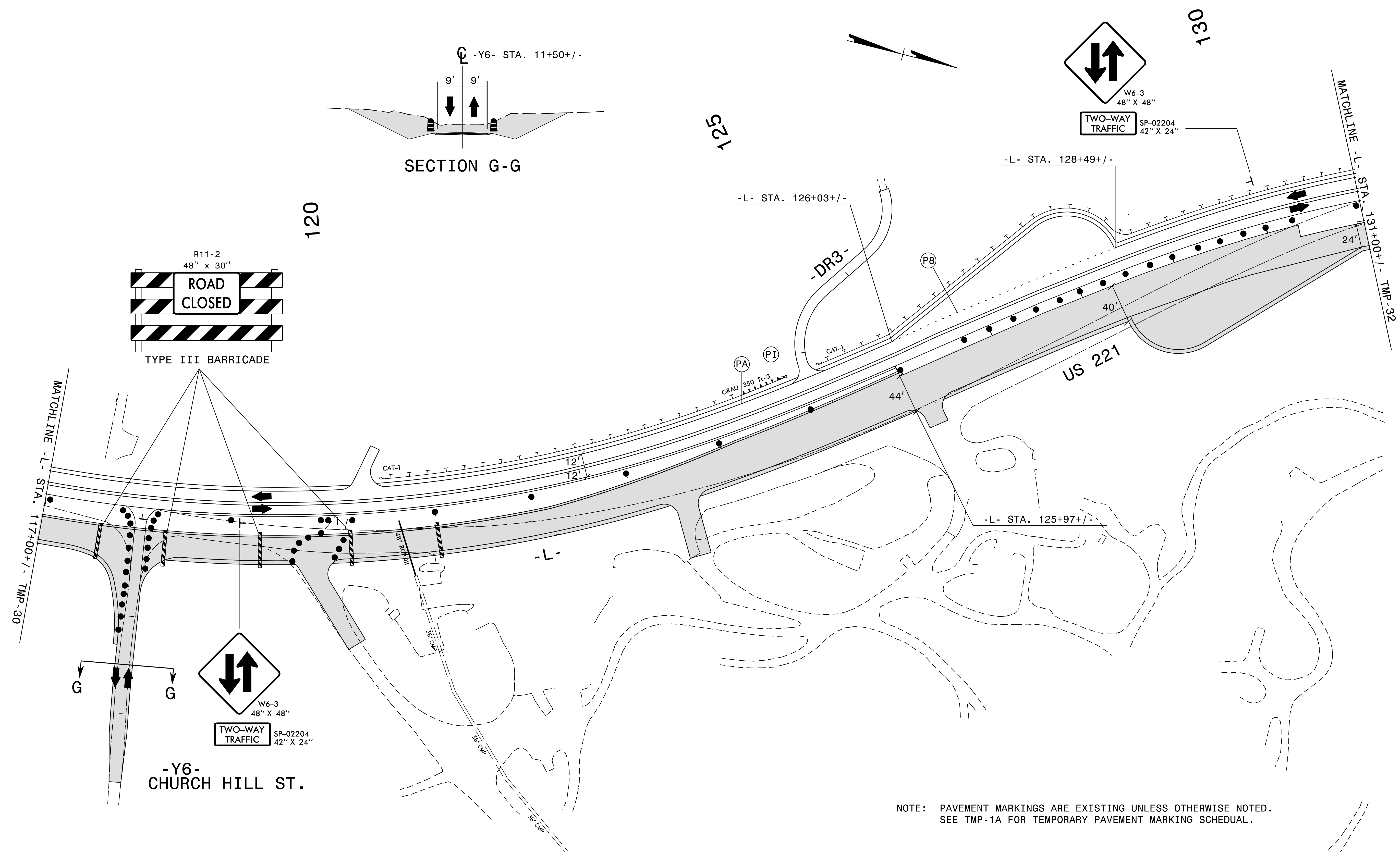
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DATE: 3/21/2015

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA  
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WORK ZONE TRAFFIC CONTROL

**PHASE II TEMPORARY TRAFFIC CONTROL DETAIL**

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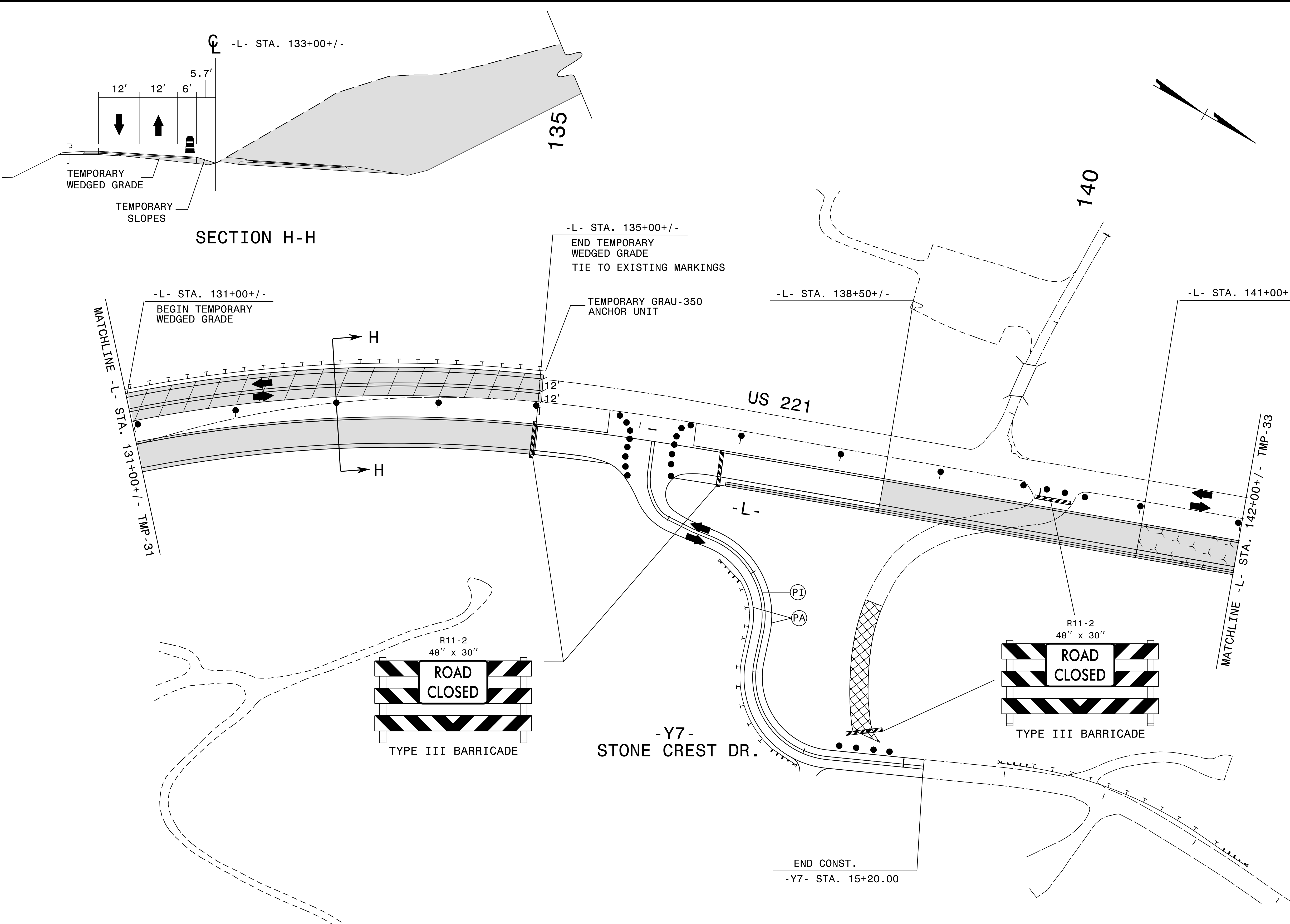
NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULEL.

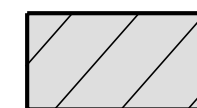
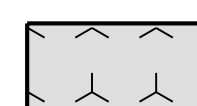
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 Raleigh, N.C. 27606  
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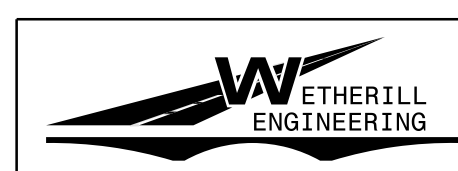
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

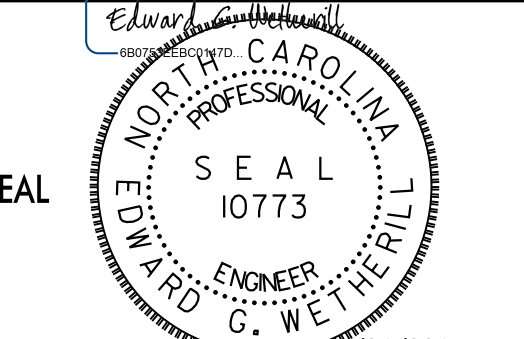
**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

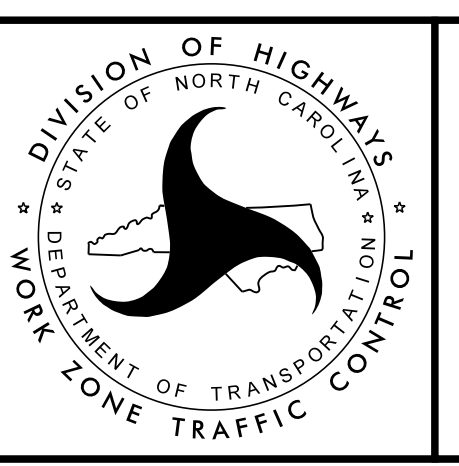


 DENOTES EXISTING PAVEMENT WEDGING  
 DENOTES ONGOING CONSTRUCTION

NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED. SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

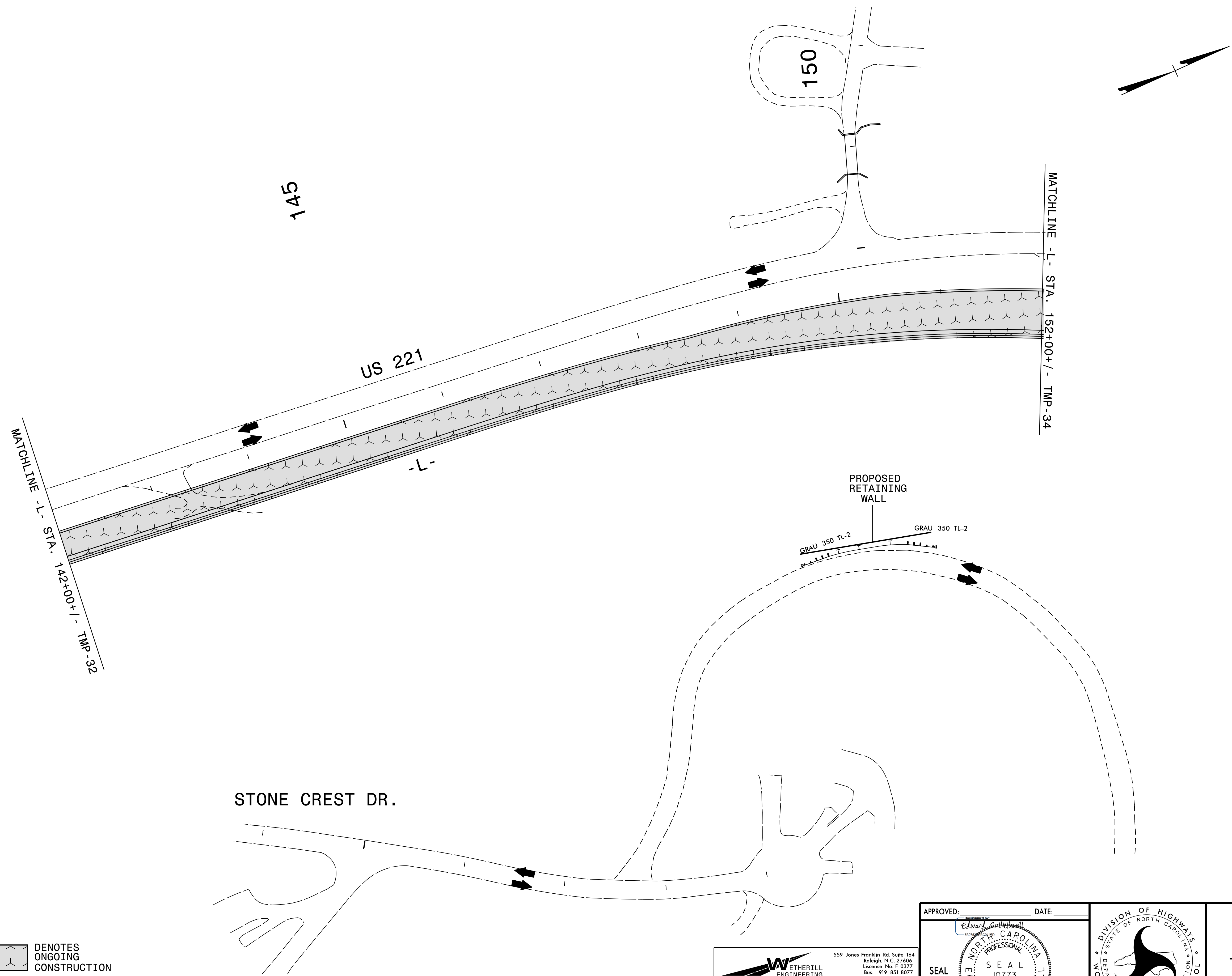
  
 WETHERILL ENGINEERING  
 559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107  
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
  
 SEAL  
 EDWARD G. WETHERILL  
 ENGINEER  
 9/21/2015

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

**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 8:22:34 AM P:\2012\R-2915A\TrafficControl\TC\CPAR2915A\_TC\_TCP\_PSH\_32.dgn



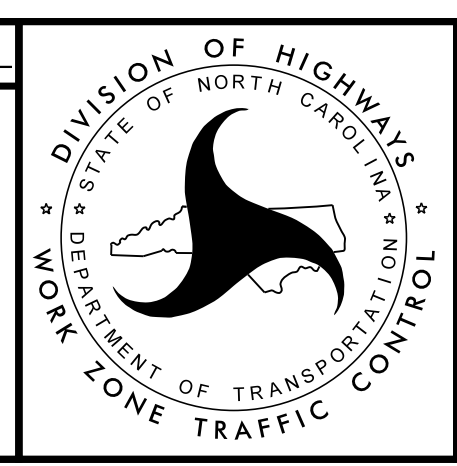
 DENOTES ONGOING CONSTRUCTION

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 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

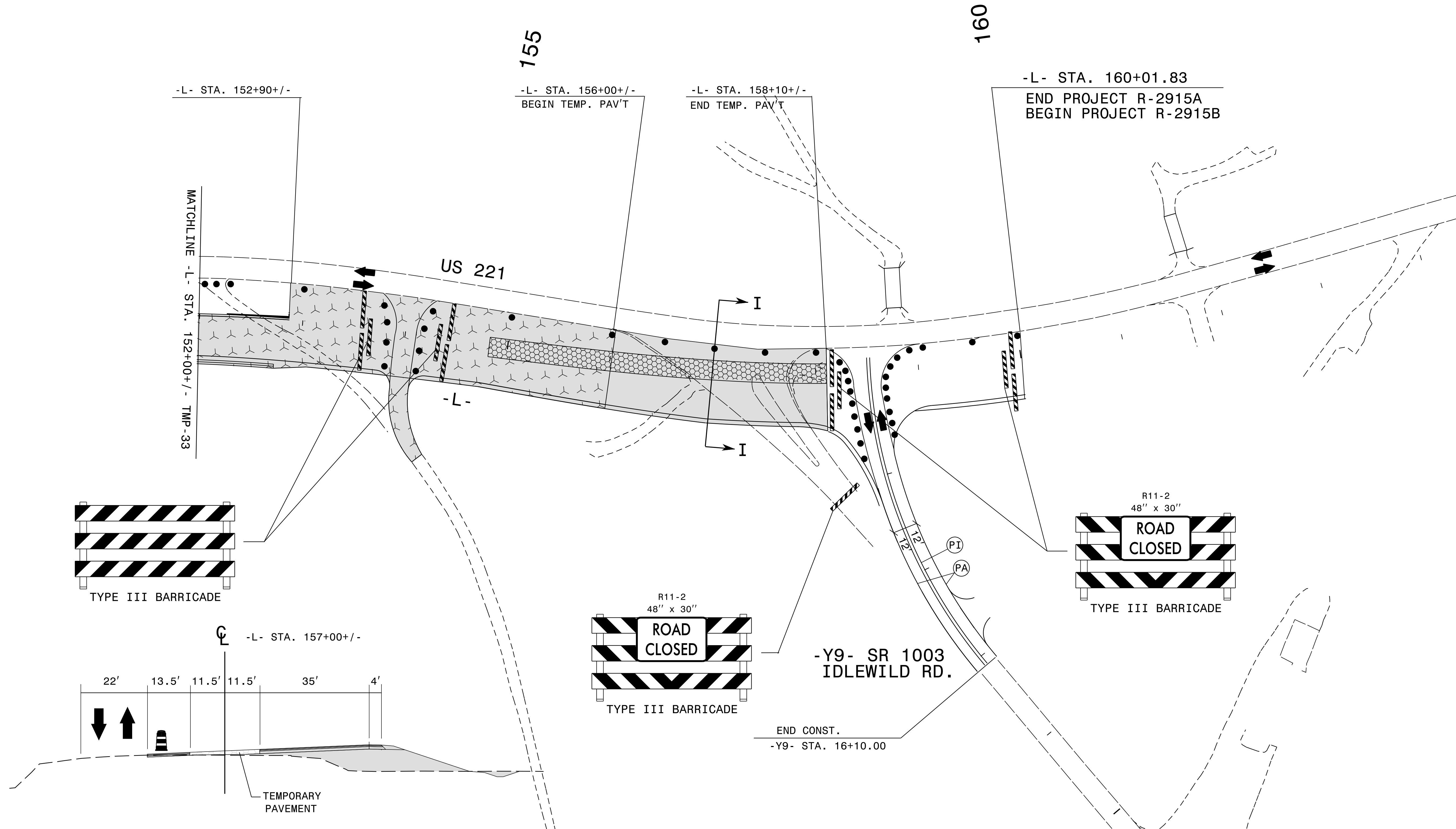
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

*Edward G. Wetherill*  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 SEAL 10773  
 G. WETHERILL  
 5/21/2015



**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 8:23:09 AM P:\2012\R-2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_33.dgn



5/20/2015 8:23:48 AM  
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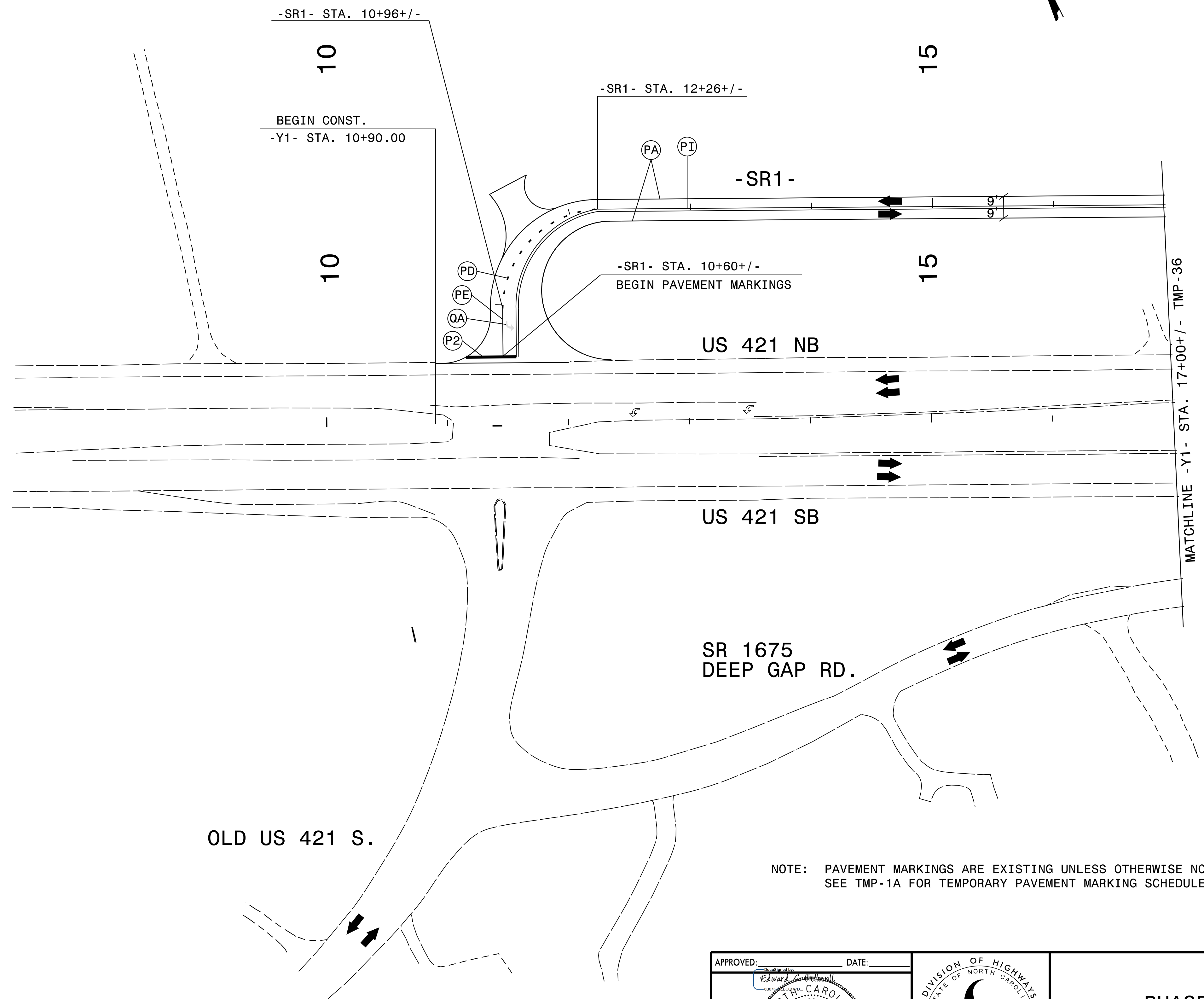
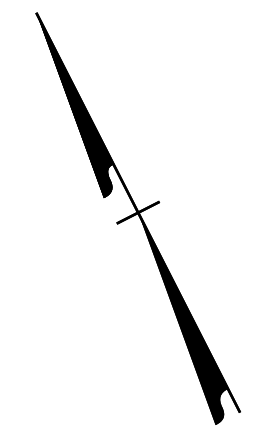
DENOTES ONGOING CONSTRUCTION  
 DENOTES TEMPORARY PAVEMENT

NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED. SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION


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

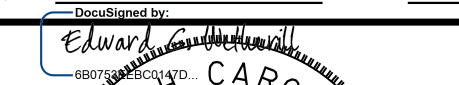

PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL

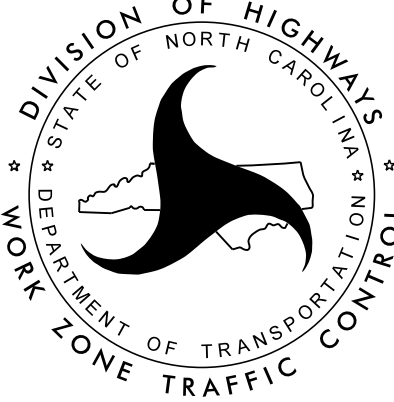


NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

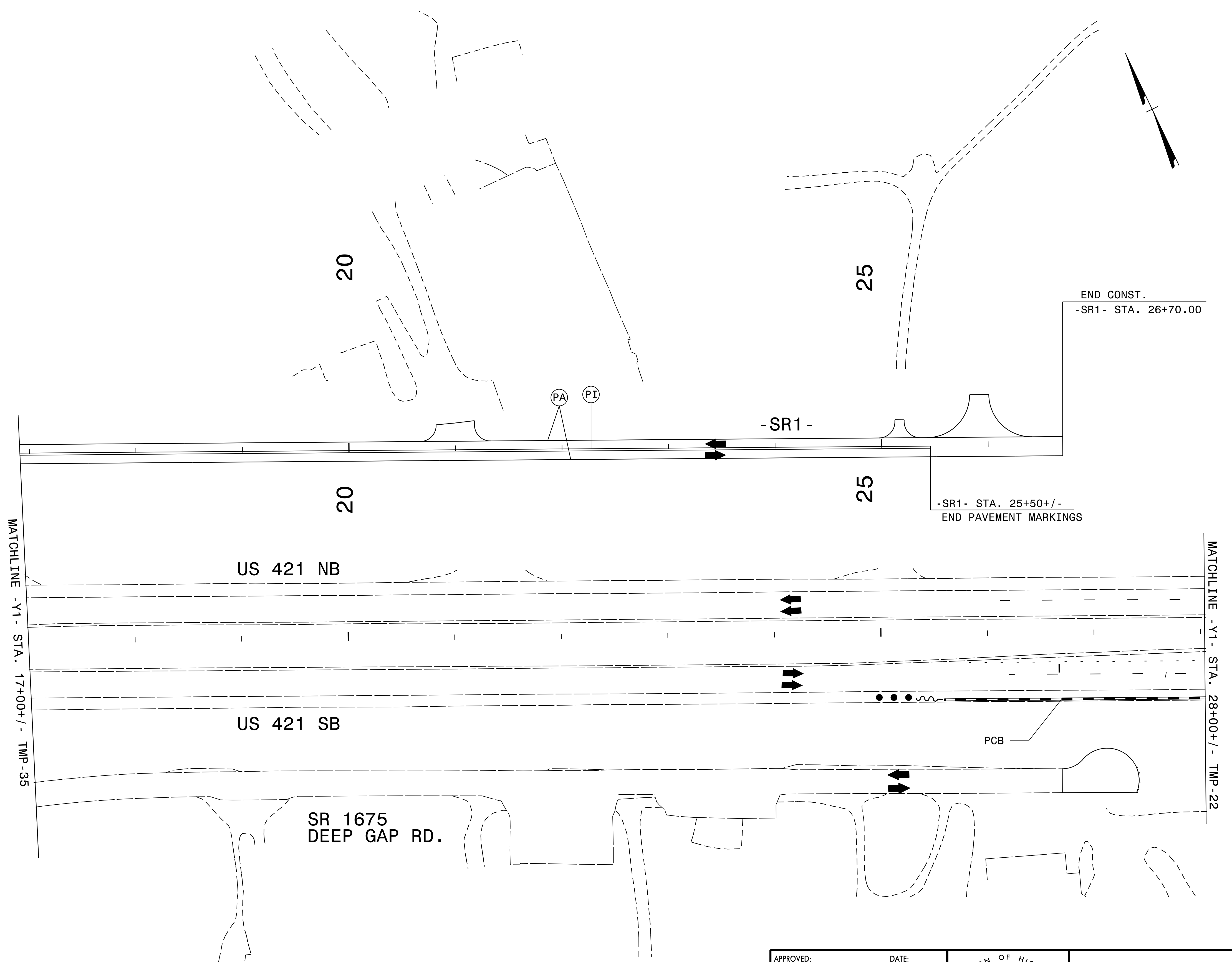
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 559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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




**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

SEAL

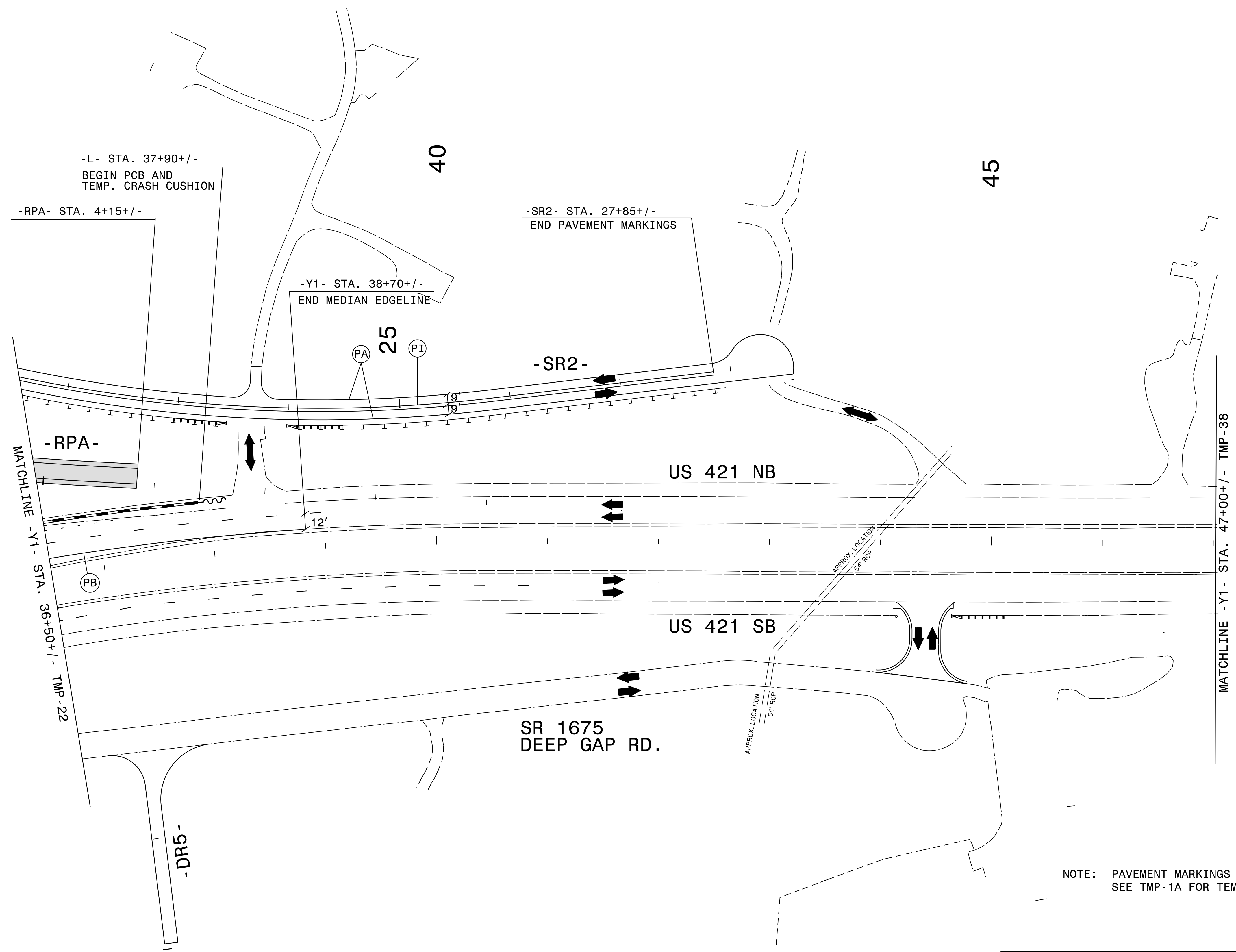
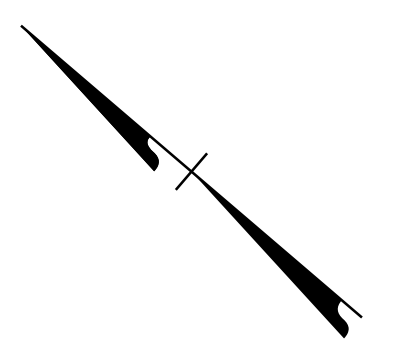
**EDWARD G. WETHERILL**  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 10773  
 5/21/2015

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**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 8:28:56 AM  
 P:\2012\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_36.dgn





NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

PAVEMENT REMOVAL

5/20/2015 8:29:34 AM  
 P:\2012\R-2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_37.dgn

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 Bus: 919 851 8077  
 Fax: 919 851 8107

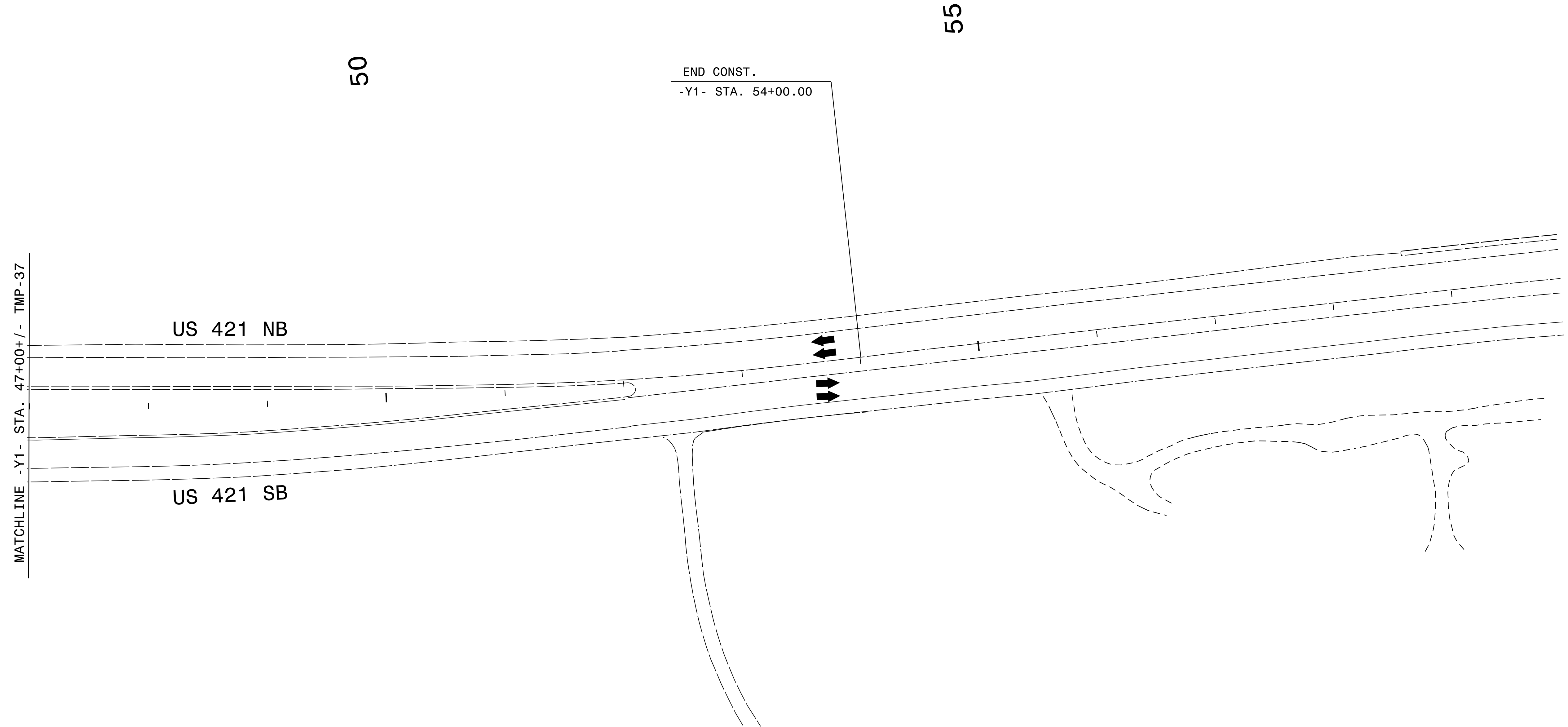
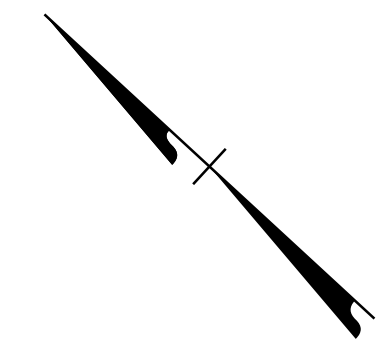
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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


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PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL




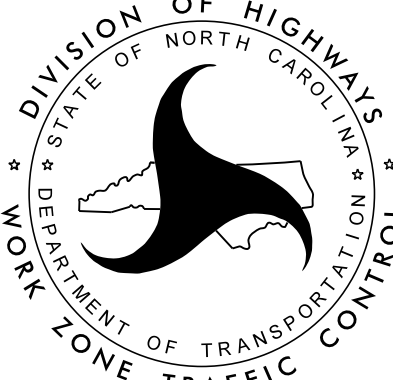
5/20/2015 8:30:11 AM  
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

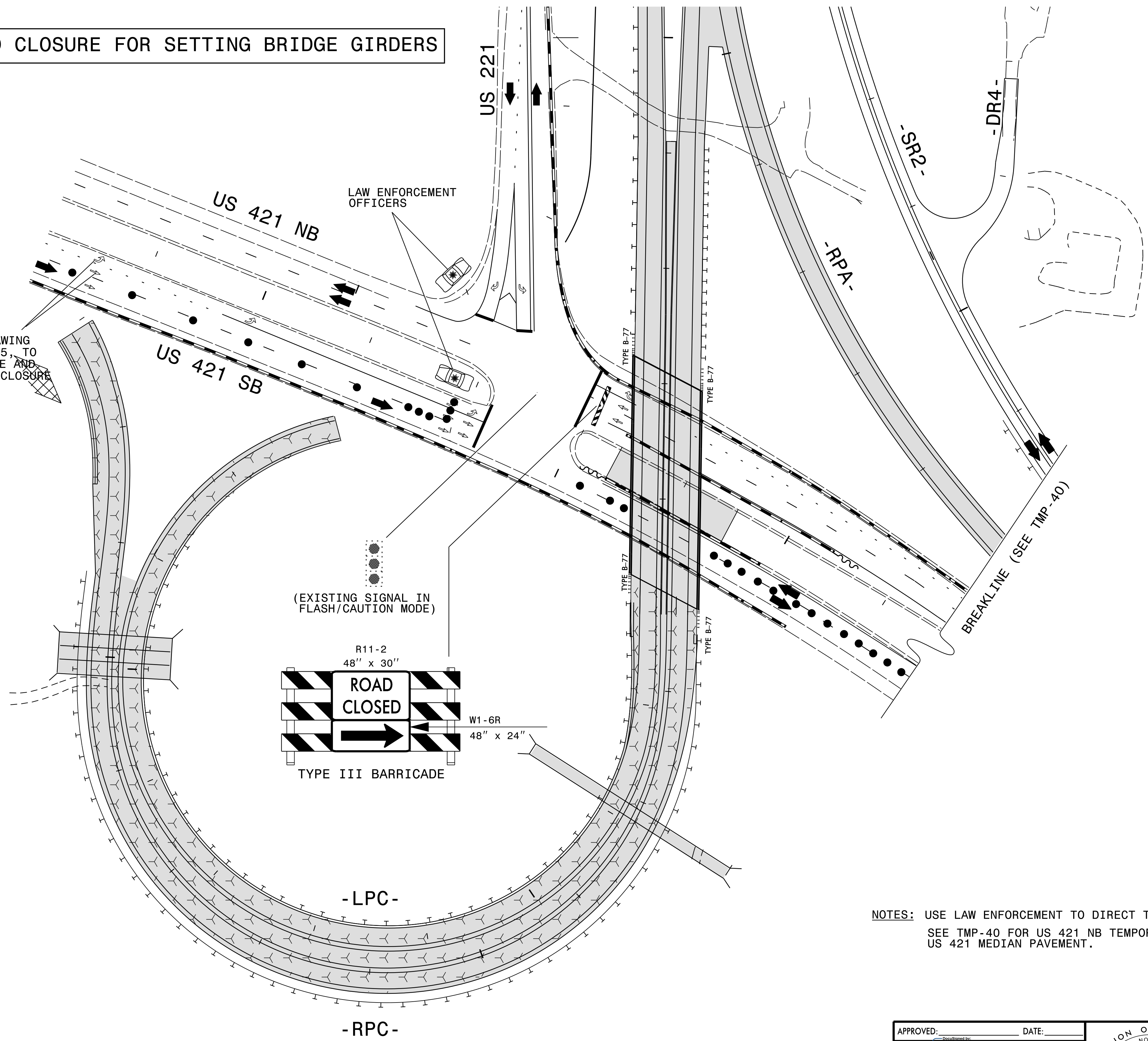

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**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

**US 421 NB ROAD CLOSURE FOR SETTING BRIDGE GIRDERS**

(USE ROADWAY STANDARD DRAWING NO. 1101.02, SHT. 3 OF 15, TO INSTALL LEFT LANE CLOSURE AND EXISTING LEFT TURN LANE CLOSURE ON US 421 SB.)



**NOTES:** USE LAW ENFORCEMENT TO DIRECT TRAFFIC MOVEMENTS WITHIN INTERSECTION.  
SEE TMP-40 FOR US 421 NB TEMPORARY ALIGNMENT USING THE EXISTING US 421 MEDIAN PAVEMENT.

5/20/2015 8:30:45 AM  
 P:\2012\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_39.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

SEAL

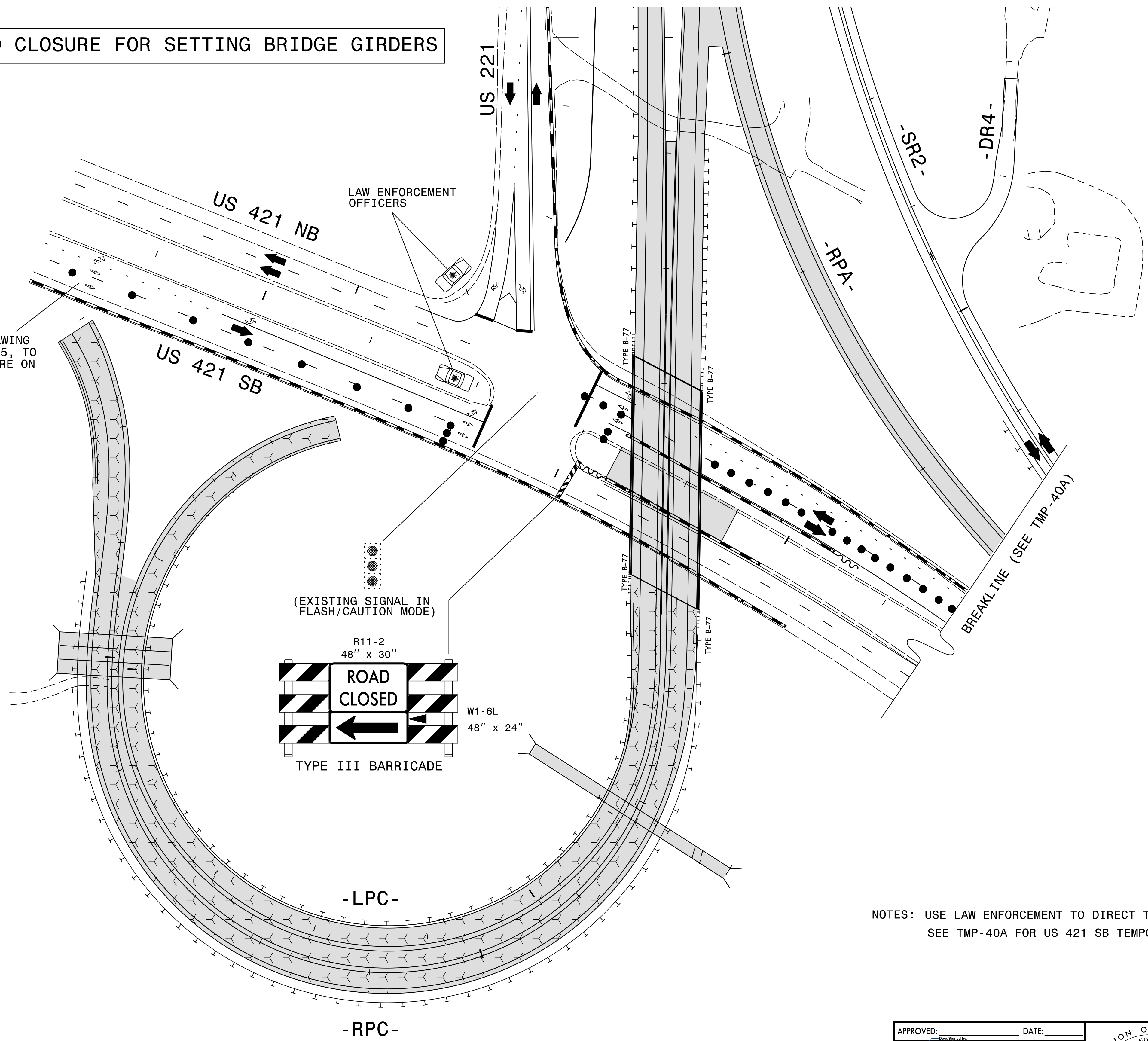
**EDWARD G. WETHERILL**  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 10773  
 5/21/2015

DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA  
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**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

**US 421 SB ROAD CLOSURE FOR SETTING BRIDGE GIRDERS**

(USE ROADWAY STANDARD DRAWING NO. 1101.02, SHT. 3 OF 15, TO INSTALL RIGHT LANE CLOSURE ON US 421 SB)



**NOTES:** USE LAW ENFORCEMENT TO DIRECT TRAFFIC MOVEMENTS WITHIN INTERSECTION.  
SEE TMP-40A FOR US 421 SB TEMPORARY CROSSOVER ALIGNMENT.

5/20/2015 8:31:05 AM  
 P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_39A.dgn

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 Raleigh, N.C. 27606  
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 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

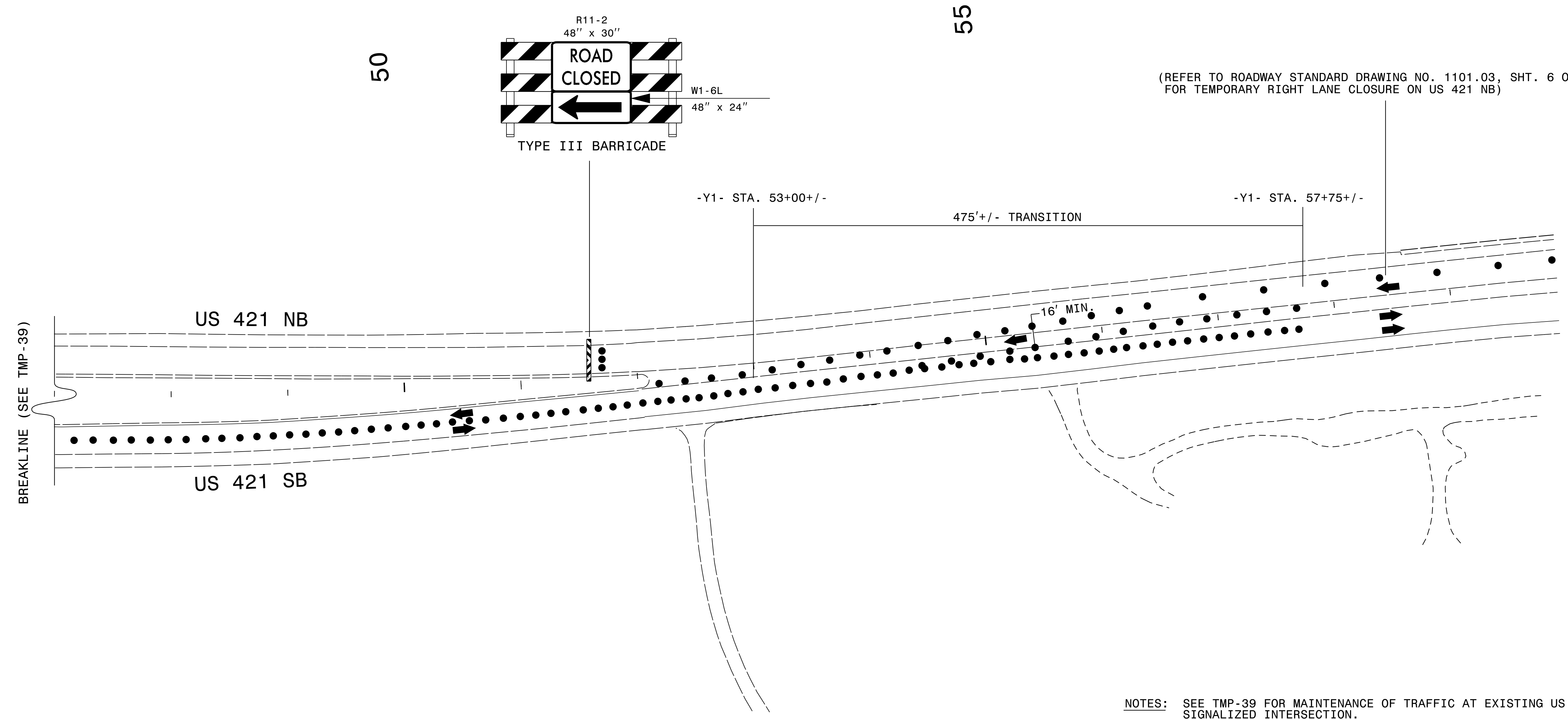
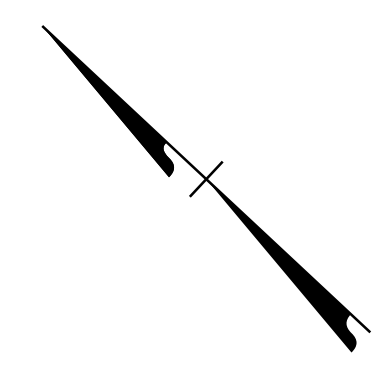
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

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**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

US 421 NB ROAD CLOSURE FOR SETTING BRIDGE GIRDERS



(REFER TO ROADWAY STANDARD DRAWING NO. 1101.03, SHT. 6 OF 9, FOR TEMPORARY RIGHT LANE CLOSURE ON US 421 NB)

NOTES: SEE TMP-39 FOR MAINTENANCE OF TRAFFIC AT EXISTING US 421/US 221 SIGNALIZED INTERSECTION.

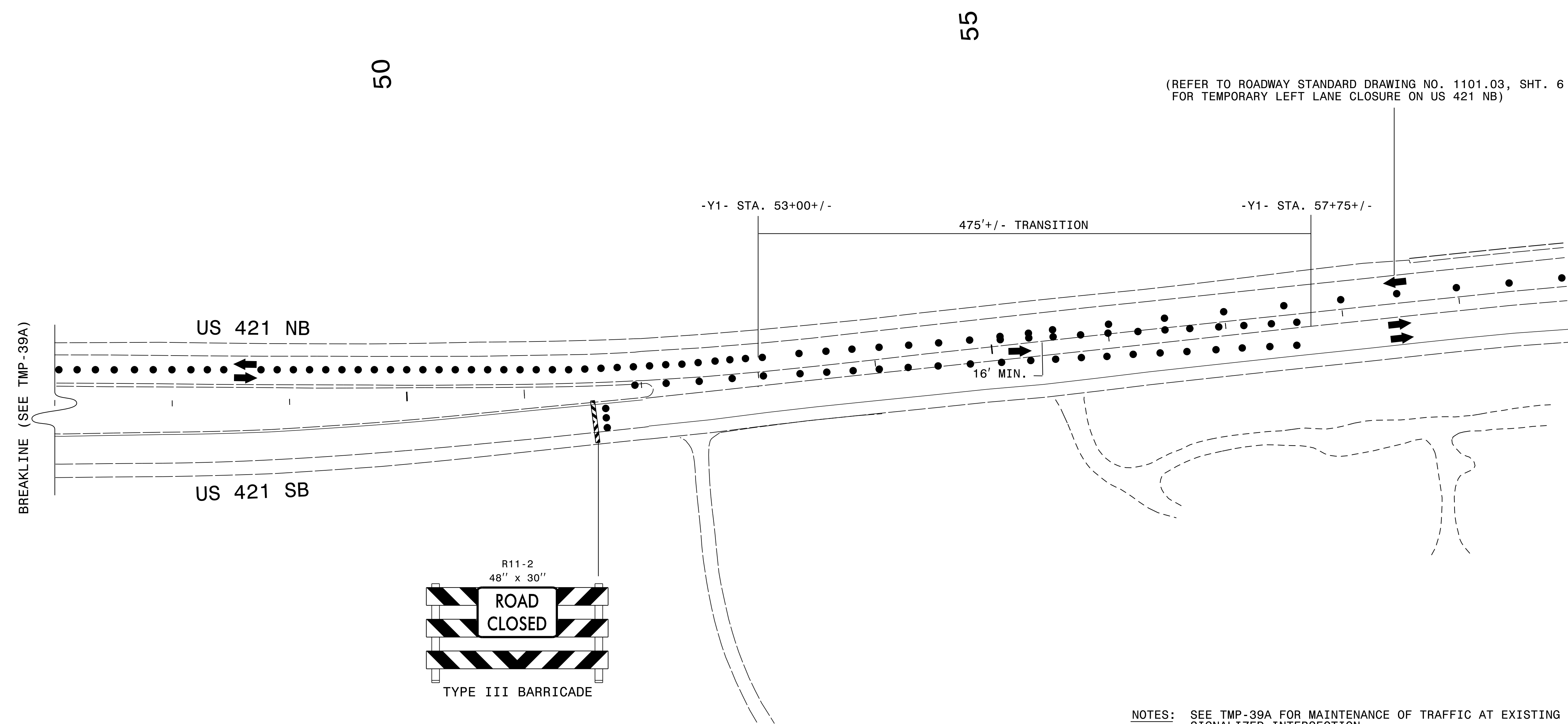
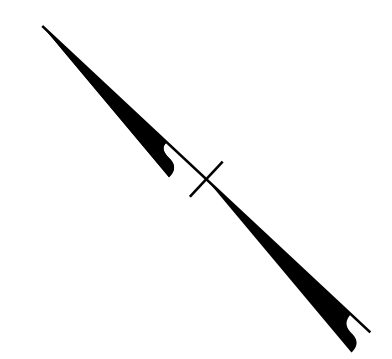
5/20/2015 8:32:28 AM  
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 Raleigh, N.C. 27606  
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 Fax: 919 851 8107  
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

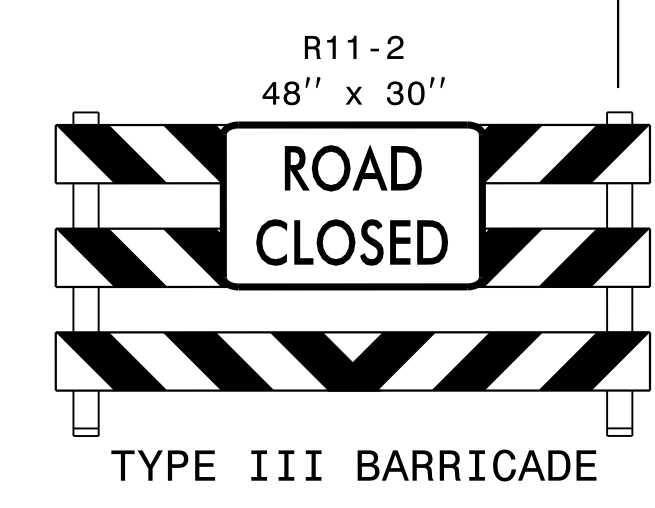
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

US 421 SB ROAD CLOSURE FOR SETTING BRIDGE GIRDERS



(REFER TO ROADWAY STANDARD DRAWING NO. 1101.03, SHT. 6 OF 9, FOR TEMPORARY LEFT LANE CLOSURE ON US 421 NB)



NOTES: SEE TMP-39A FOR MAINTENANCE OF TRAFFIC AT EXISTING US 421/US 221 SIGNALIZED INTERSECTION.

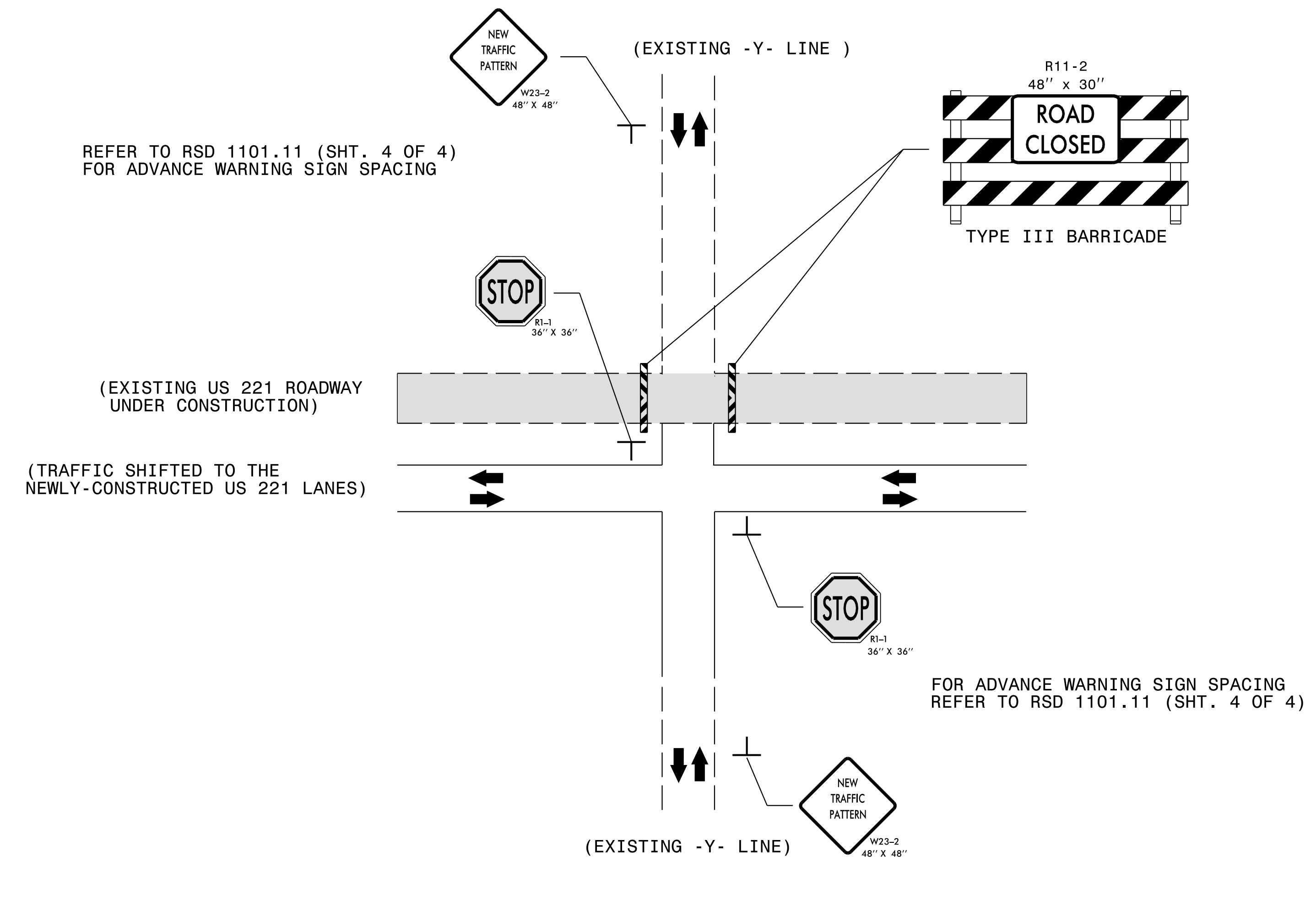
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 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107  
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

**PHASE II  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

TEMPORARY TRAFFIC CONTROL TREATMENT FOR NEW -Y- INTERSECTION STOP LOCATIONS DUE TO MAINLINE TRAFFIC SHIFTS.



DETAIL 'A'

NOTE: EXISTING STOP SIGN AND ROAD/STREET NAME SIGNS MAY BE REINSTALLED AT THE NEW STOP LOCATION AS DIRECTED BY THE ENGINEER.

5/20/2015 8:33:34 AM P:\2015\2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_41.dgn

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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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**EDWARD G. WETHERILL**  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 10773  
 5/21/2015

DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA  
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PHASE II  
 TEMPORARY TRAFFIC CONTROL DETAIL

**PHASE III (PART A)**

PHASE III (PART A) MAY BE COMPLETED CONCURRENTLY WITH PHASE III (PART B) OR PHASE III (PART C)

STEP 1) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, PLACE PAVEMENT MARKINGS AND MARKERS AS MUCH AS POSSIBLE FOR THE TEMPORARY TWO-LANE, TWO-WAY PATTERN ON -L- (US 221) NEW NB LANES AND ON TEMPORARY -LSHIFT1- AND -LSHIFT3- (SEE TMP-43 THRU TMP-55).

INSTALL ANCHORED PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS AT THE FOLLOWING:  
- -L- (US 221) SB FROM -L- STA. 64+00+/- TO -L- STA. 69+00+/- (SEE TMP-47).

INSTALL TEMPORARY SIGNING ON -L- (US 221) NB FOR PHASE III, STEP 2 TRAFFIC SHIFT (SEE TMP-43 THRU TMP-55).

WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK IN PHASE III (PART A) STEP 2:

STEP 2) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND WORKING IN A CONTINUOUS MANNER, SHIFT US 221 TRAFFIC TO THE NEW NB LANES IN A TWO-LANE, TWO-WAY PATTERN AND COMPLETE MARKINGS (SEE TMP-43 THRU TMP-55, AND TMP-59A FOR -Y- LINE INTERSECTION MARKING AND SIGNING ADJUSTMENTS AT -Y2-, -Y3-, -Y4-, -Y6-, -Y7-, AND -Y9-). INSTALL TYPE III BARRICADES TO CLOSE OFF SECTIONS OF EXISTING US 221 ROADWAY WHERE NECESSARY.

STEP 3) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, BEGIN THE FOLLOWING:  
- -L- (US 221) SB STA. 60+00+/- TO STA. 113+75+/- (INCLUDING STAGE II BOX CULVERT AT STA 66+00+/-) (SEE TMP-47 THRU TMP-51).  
- -L- STA. 130+35+/- TO STA. 158+00+/- (SEE TMP-52 THRU TMP-55).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, BEGIN CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE UNDER TRAFFIC USING ONE-LANE, TWO-WAY TEMPORARY PATTERNS DURING FLAGGING OPERATIONS, RESTORING TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORKDAY AT THE FOLLOWING:

- -Y5- SR 1100 (CRANBERRY SPRINGS RD.) (SEE TMP-51).
- -Y8- (DEEP GAP ESTATES RD.) (SEE TMP-54).

**PHASE III (PART B)**

STEP 1) INSTALL/COVER TEMPORARY SIGNING ON US 421 SB AND NB FOR TEMPORARY SHIFTED FOUR-LANE, TWO-WAY TRAFFIC (SEE TMP-56 THRU TMP-59, AND TMP-43).

WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK IN PHASE III (PART B) STEPS 2 AND 3:

STEP 2) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, AND LAW ENFORCEMENT, MODIFY THE EXISTING US 221/US 421 TRAFFIC SIGNAL (SEE TMP-43 AND SIGNAL PLANS).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 SB AND PLACE PAVEMENT MARKINGS AND MARKERS FOR THE TEMPORARY -Y1- (US 421) SB SHIFTED TRAFFIC PATTERN (SEE TMP-56 THRU TMP-59, AND TMP-43).

SHIFT US 421 SB TRAFFIC TO THE TEMPORARY TWO-LANE, ONE-WAY SHIFTED PATTERN (SEE TMP-56 THRU TMP-59, AND TMP-43). INSTALL DRUMS ALONG US 421 SB MEDIAN UNTIL PORTABLE CONCRETE MEDIAN CAN BE INSTALLED.

STEP 3) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 NB AND PLACE PAVEMENT MARKINGS AND MARKERS FOR THE TEMPORARY -Y1- (US 421) NB SHIFTED TRAFFIC PATTERN (SEE TMP-56 THRU TMP-59, AND TMP-43).

SHIFT US 421 NB TRAFFIC TO THE TEMPORARY TWO-LANE, ONE-WAY SHIFTED PATTERN. INSTALL DRUMS ALONG THE NB MEDIAN UNTIL PORTABLE CONCRETE MEDIAN CAN BE INSTALLED.

STEP 4) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE/RESET AND INSTALL ADDITIONAL PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS AS NECESSARY FOR PROPOSED MEDIAN CONSTRUCTION ALONG US 421 SB AND NB.

STEP 5) BEHIND BARRIER, CONSTRUCT PROPOSED -Y1- (US 421) MEDIAN AS FOLLOWS:

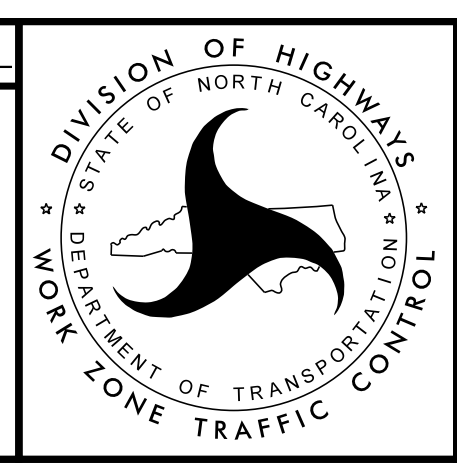
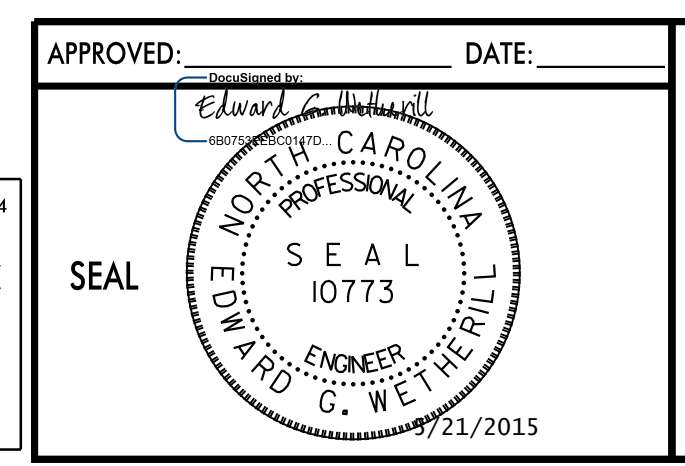
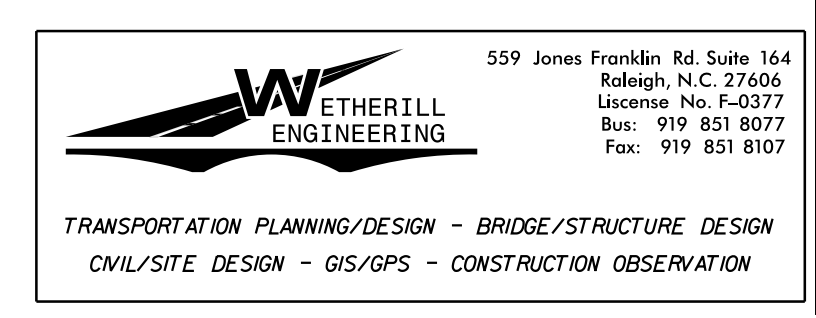
- -Y1- (US 421) STA. 12+22+/- TO STA. 23+50+/- (PERMANENT MEDIAN PAVEMENT INCLUDING PERMANENT MEDIAN BARRIER) (SEE TMP-56 AND TMP-57). CONSTRUCT UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE.
- -Y1- (US 421) STA. 23+50+/- TO STA. 32+16+/- (TEMPORARY WEDGED PERMANENT MEDIAN PAVEMENT EXCLUDING PERMANENT MEDIAN BARRIER) (SEE TMP-57 AND TMP-43, AND ROADWAY PLANS).
- -Y1- (US 421) STA. 33+00+/- TO STRUCTURE INTERIOR BENT (PERMANENT MEDIAN PAVEMENT EXCLUDING PERMANENT MEDIAN BARRIER) (SEE TMP-43).
- -Y1- (US 421) STA. 33+50+/- (INTERIOR BRIDGE BENT) TO STA. 52+10+/- (PERMANENT MEDIAN PAVEMENT INCLUDING PERMANENT MEDIAN BARRIER) (SEE TMP-57 AND TMP-43). CONSTRUCT UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, CONSTRUCT PROPOSED MEDIAN AREAS ON US 421 NB AND SB THAT ARE NOT BEHIND BARRIER AS FOLLOWS:

- -Y1- (US 421) STA. 11+85+/- TO STA. 12+22+/- (SEE TMP-56).

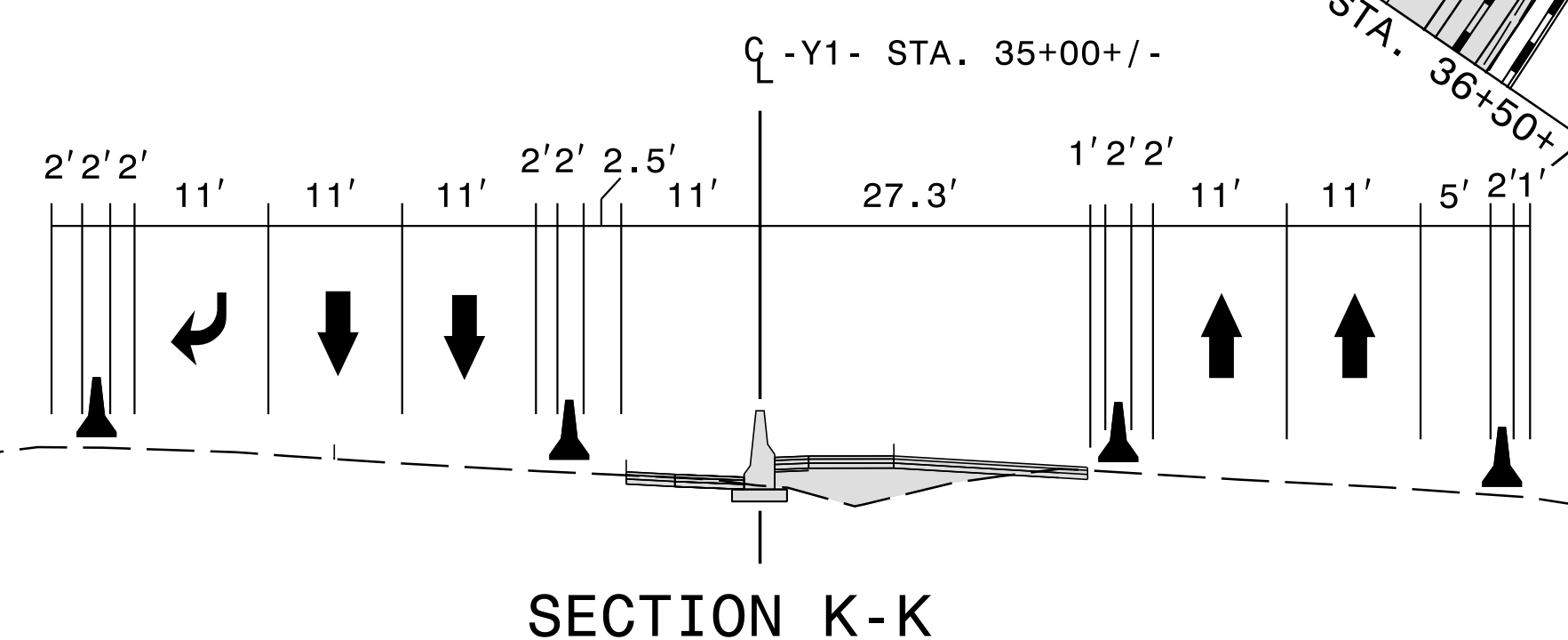
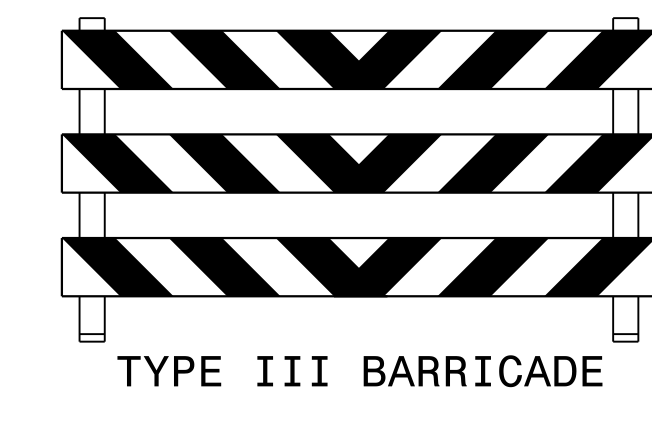
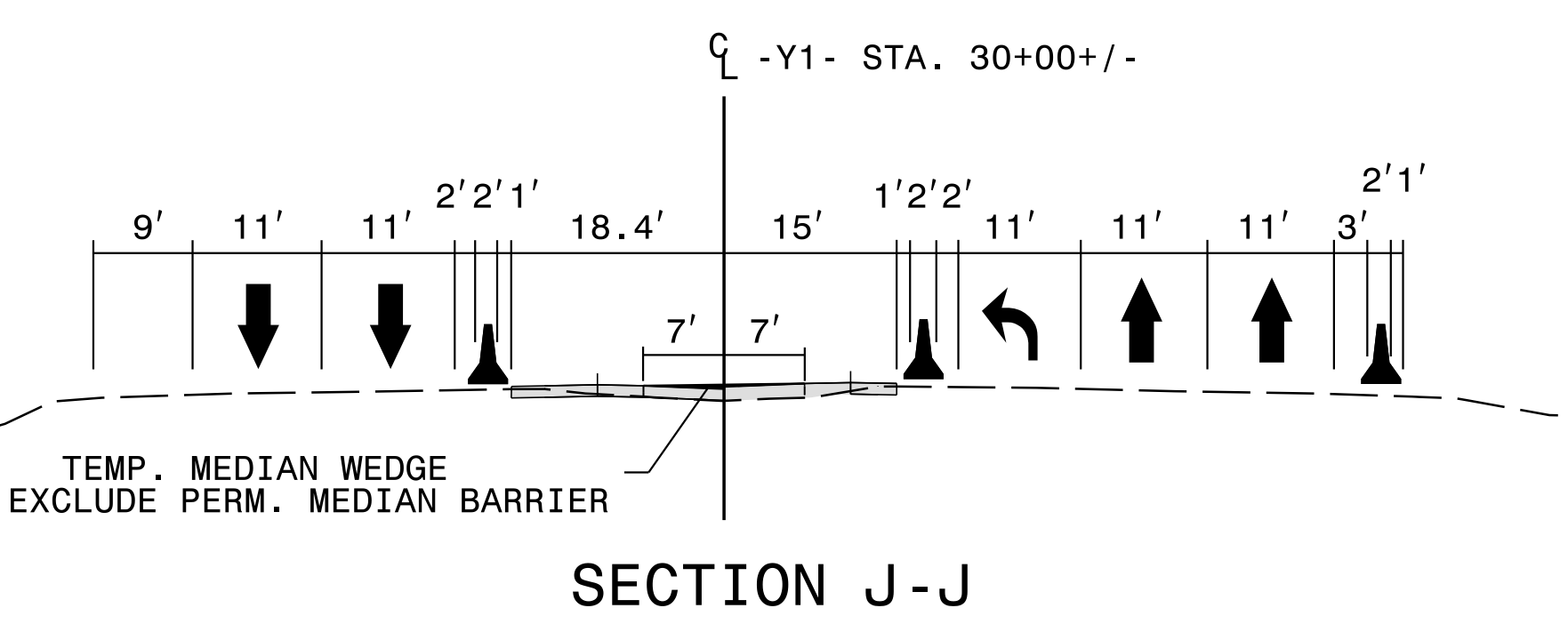
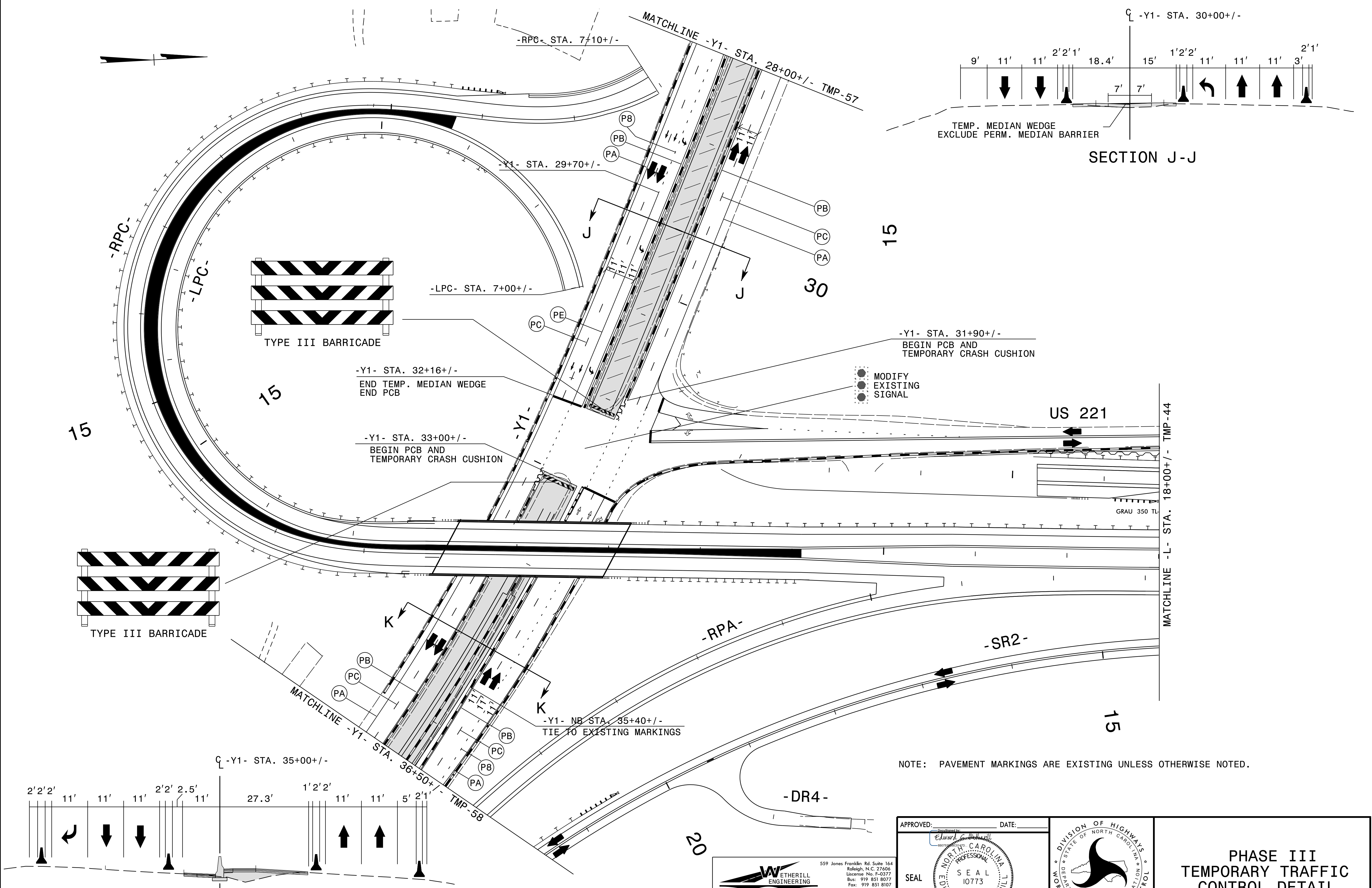
SEE TMP-60 FOR PHASE III (PART C) CONSTRUCTION.

5/20/2015 8:34:36 AM P:\2012\AR-2915A\TrafficControl\TrafficControl\TCP\AR2915A\_TC\_TCP\_PSH\_42.dgn



**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**





NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.

5/20/2015 8:35:15 AM P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH-43.dgn

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 559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-6377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

SEAL

**EDWARD G. WETHERILL**  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 10773  
 5/21/2015

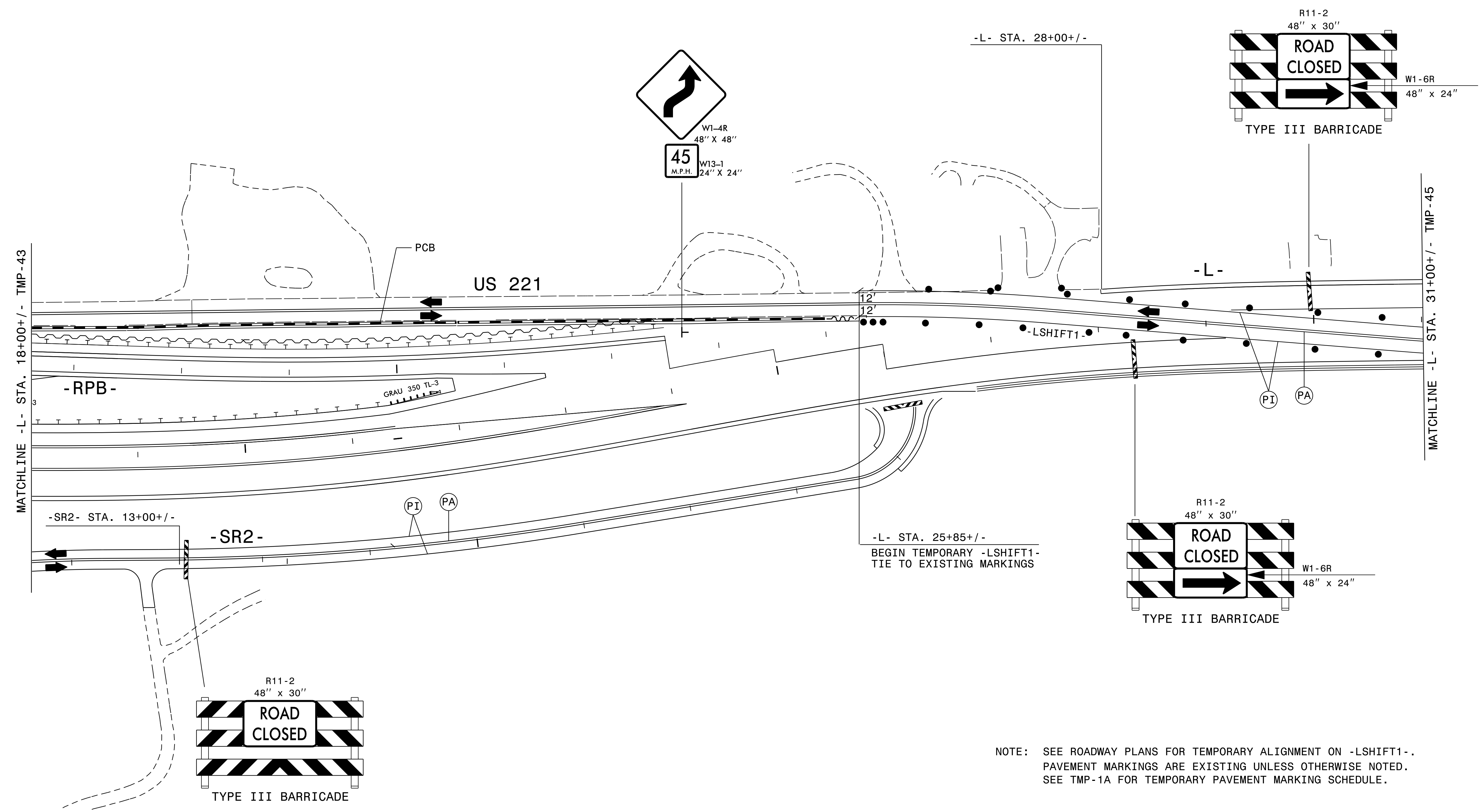
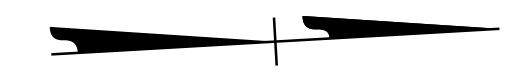
DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

20

25

30



NOTE: SEE ROADWAY PLANS FOR TEMPORARY ALIGNMENT ON -LSHIFT1-.  
 PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:35:46 AM  
 P:\2015\AR-2915A\TrafficControl\TCP\AR2915A\_TC\_TCP\_PSH\_44.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

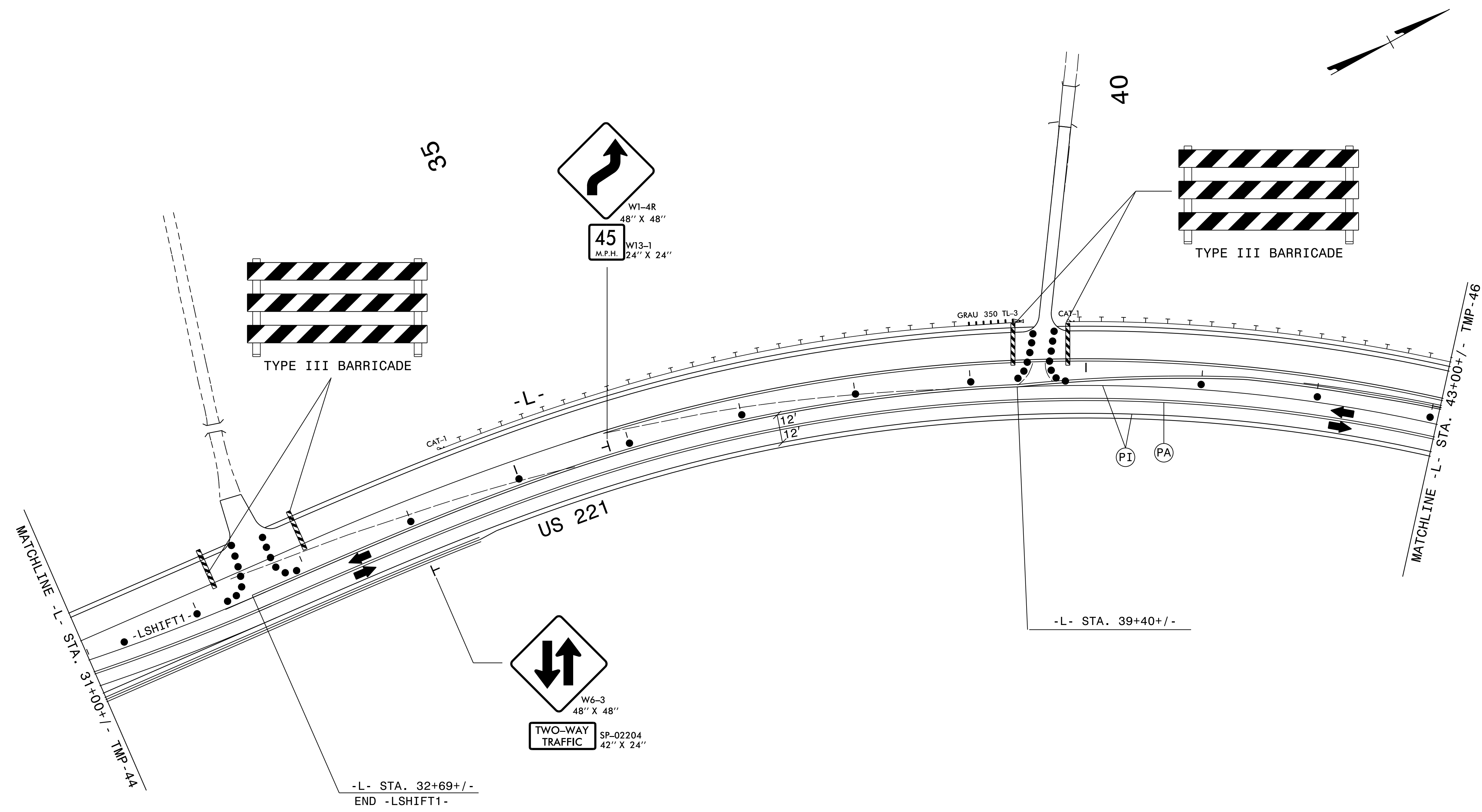
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

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EDWARD G. WETHERILL  
 ENGINEER  
 3/21/2015

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

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



NOTES: LANE WIDTHS ON -LSHIFT1- ARE 12' UNLESS OTHERWISE NOTED.  
 SEE ROADWAY PLANS FOR TEMPORARY ALIGNMENT ON -LSHIFT1-.  
 PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

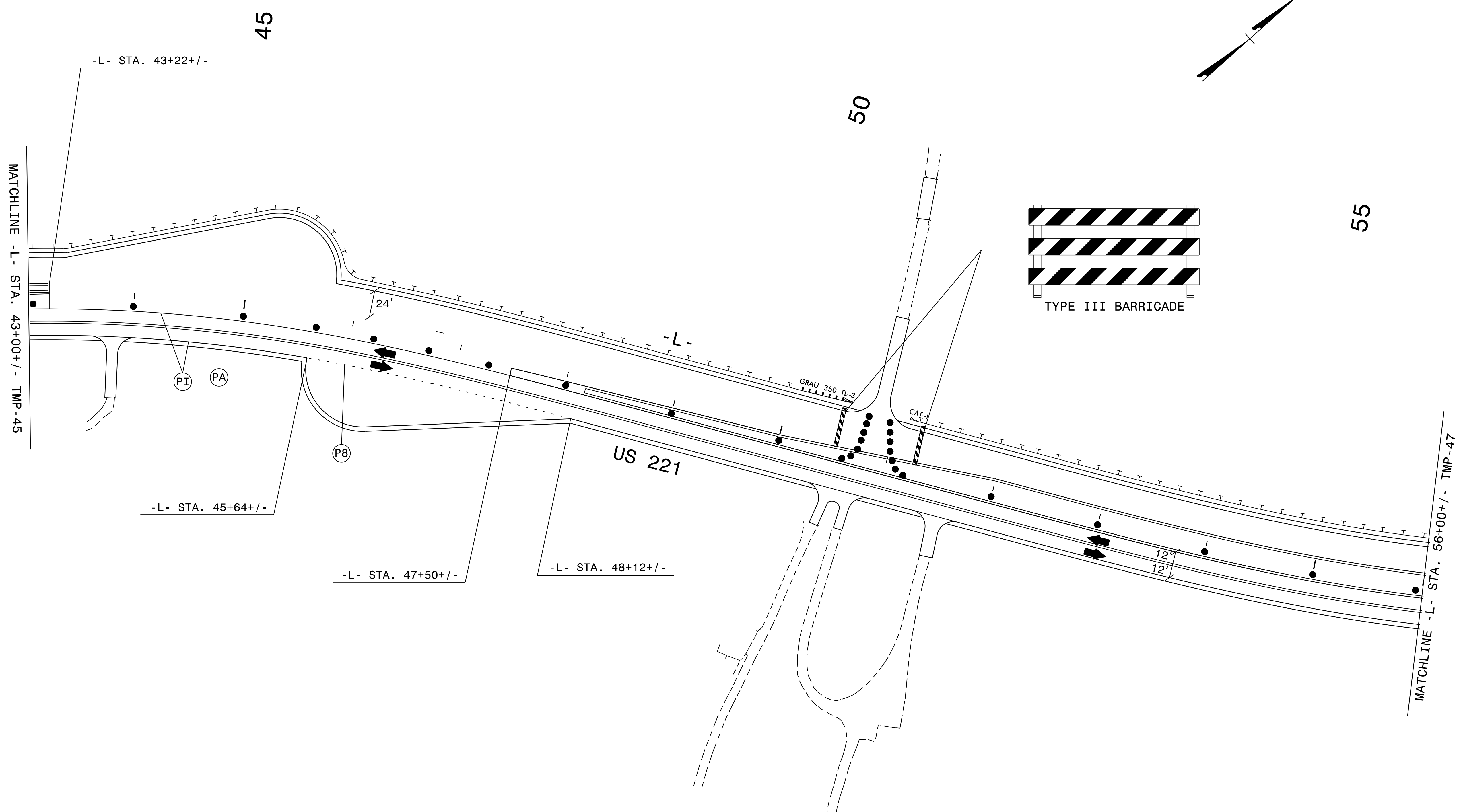
5/20/2015 8:36:35 AM P:\2015\AR-2915A\TrafficControl\TCP\AR2915A\_TC\_TCP\_PSH\_45.dgn

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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION  
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 License No. F-0377  
 Bus: 919 851 8077  
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 SEAL  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 EDWARD G. WETHERILL  
 10773  
 5/20/2015

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 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



NOTES: LANE WIDTHS ON -L- ARE 12' UNLESS OTHERWISE NOTED.  
 PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:37:08 AM  
 P:\2012\AR-2915A\TrafficControl\TCP\AR2915A\_TC\_TCP\_PSH\_46.dgn

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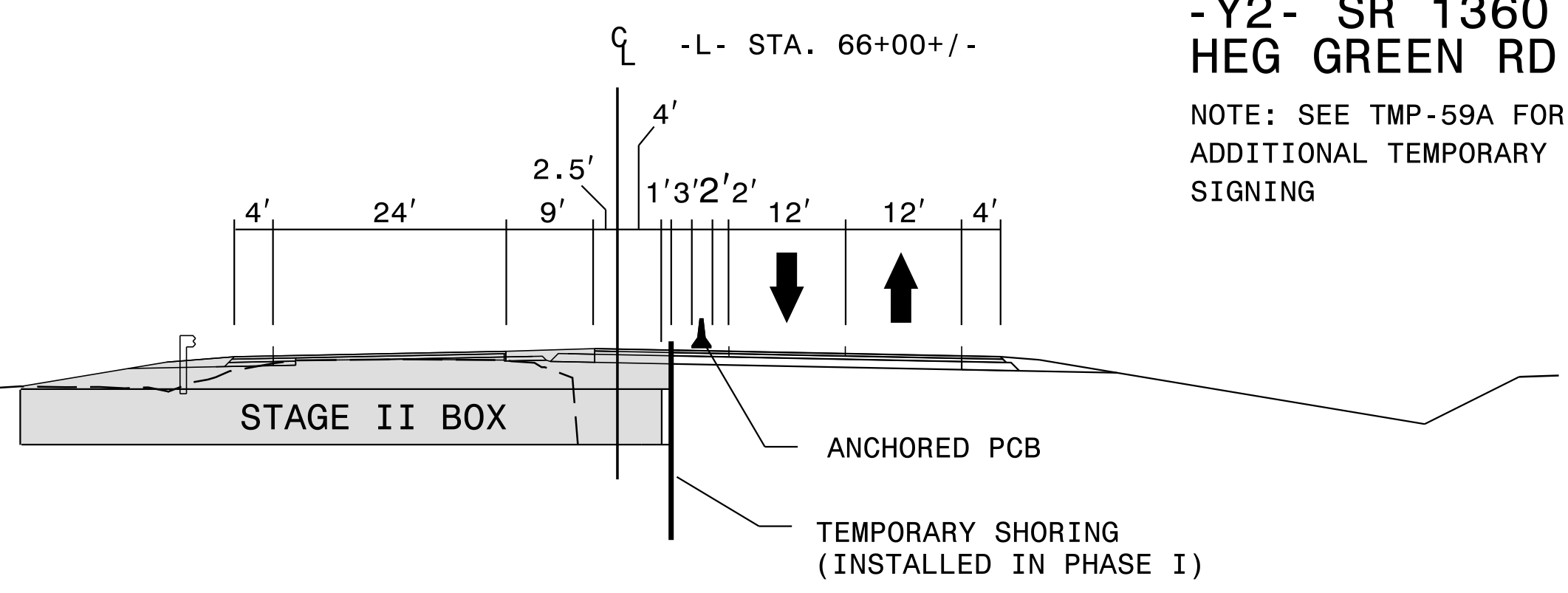
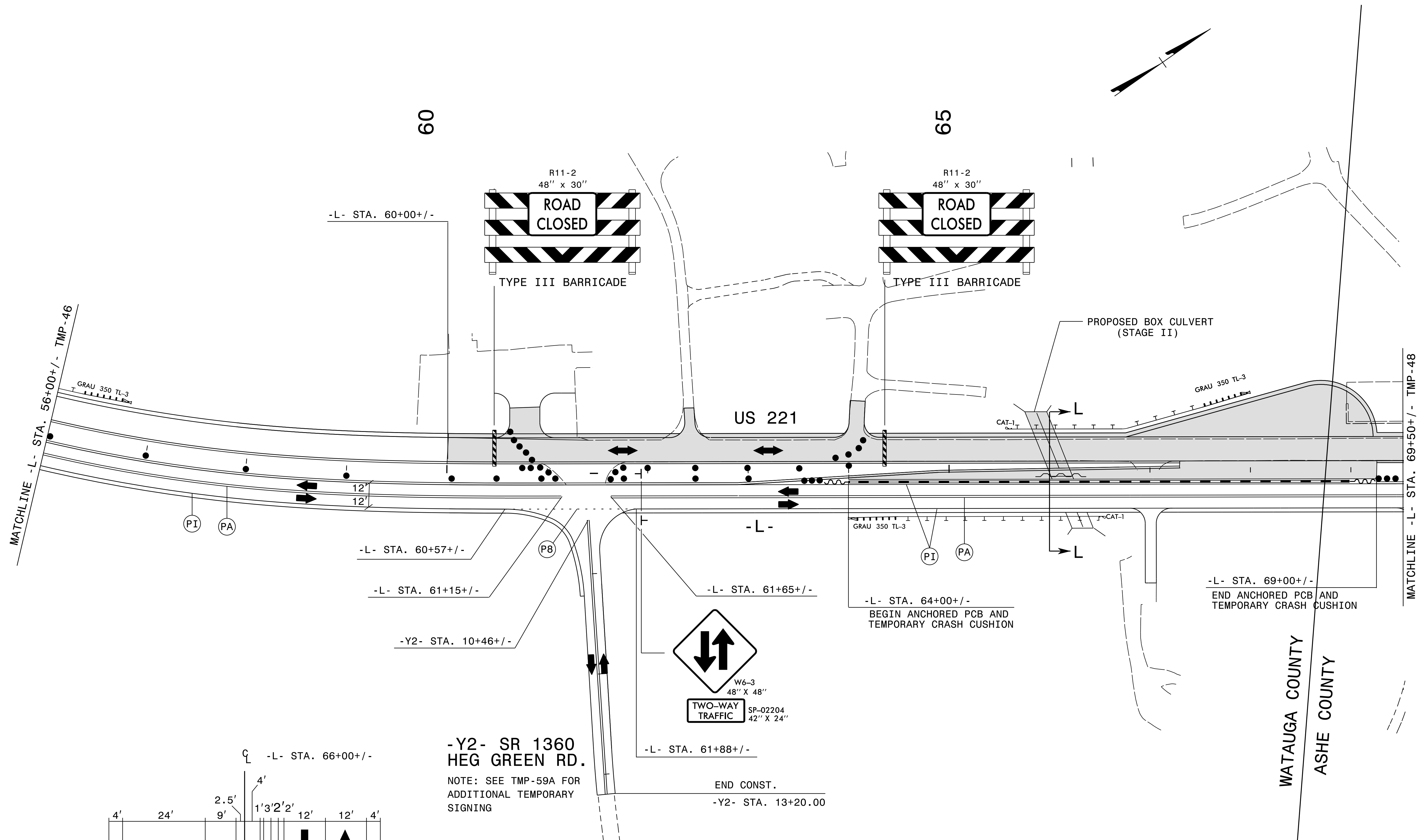
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Edward G. Wetherill* DATE: 5/20/2015

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 EDWARD G. WETHERILL  
 10773


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 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



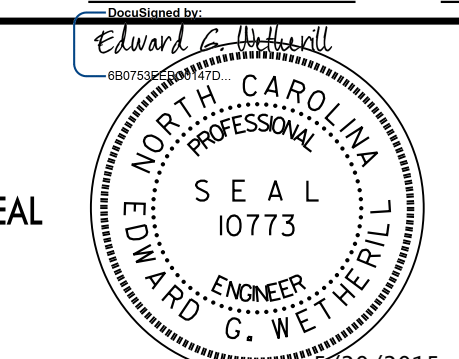
PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

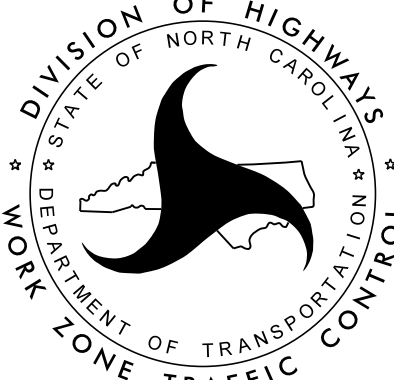
5/20/2015 8:37:44 AM  
 P:\2015\TrafficControl\TCP\2915A.TC.TCP\_PSHL47.dgn


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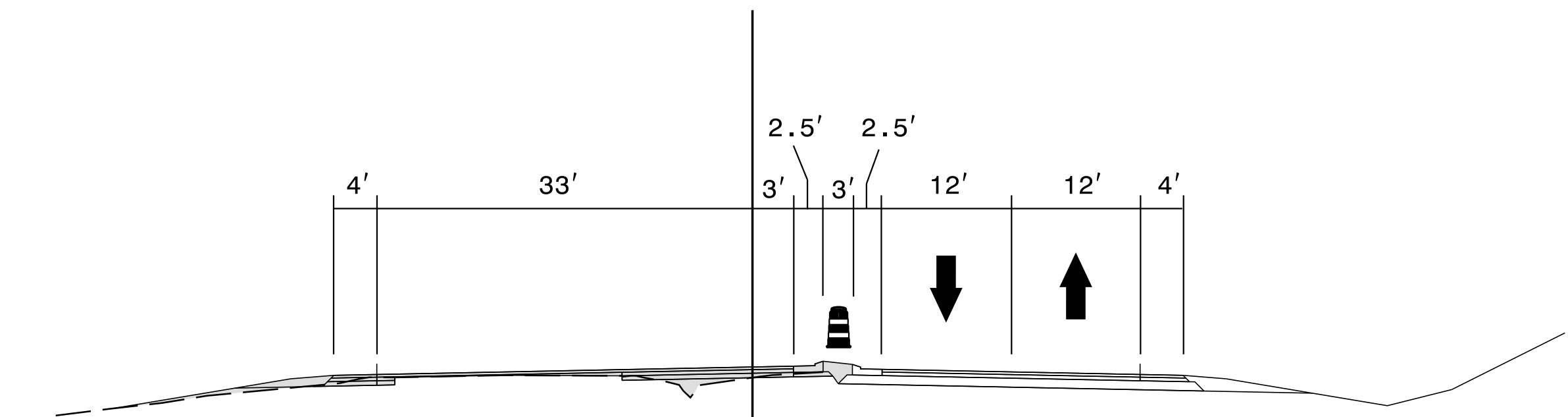
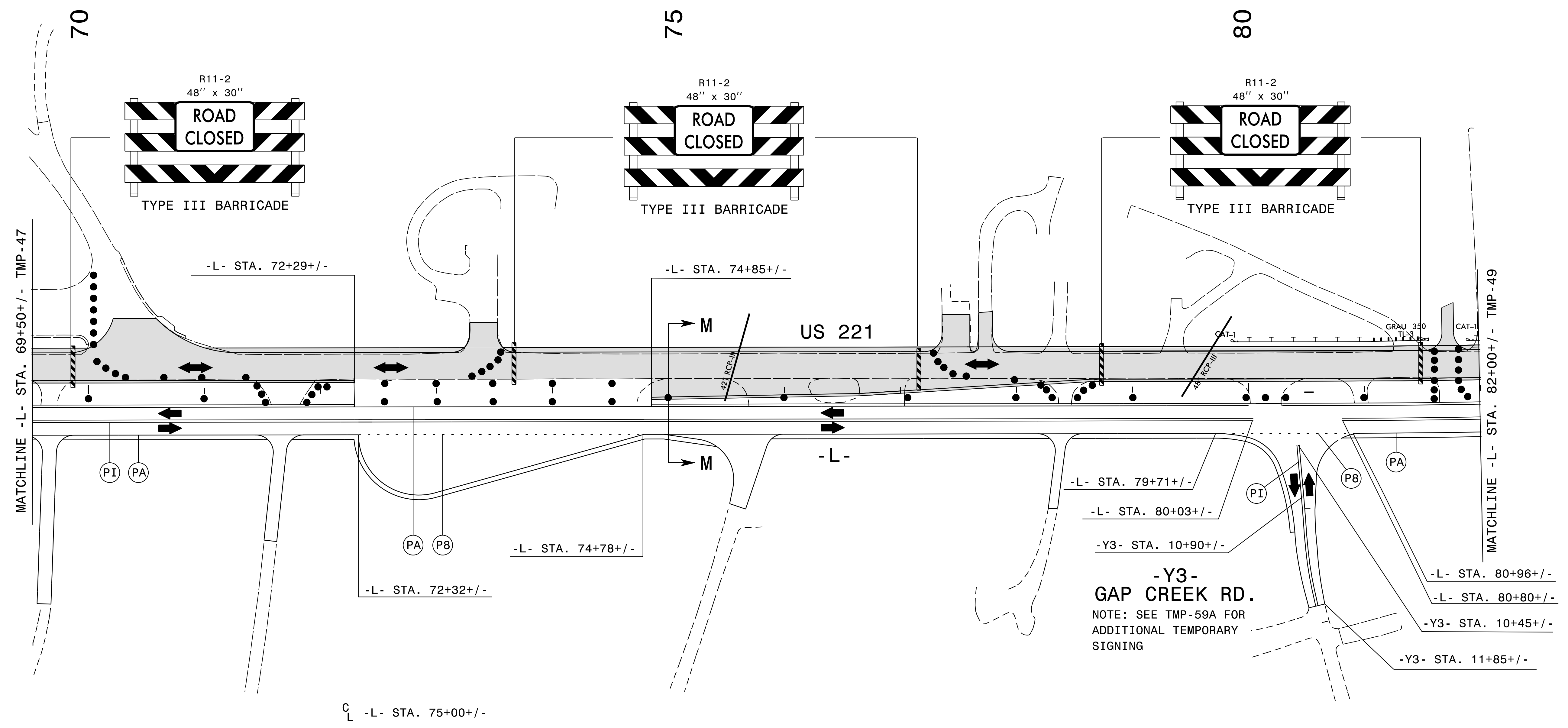
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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




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 STATE OF NORTH CAROLINA  
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**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

**SECTION M-M**

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

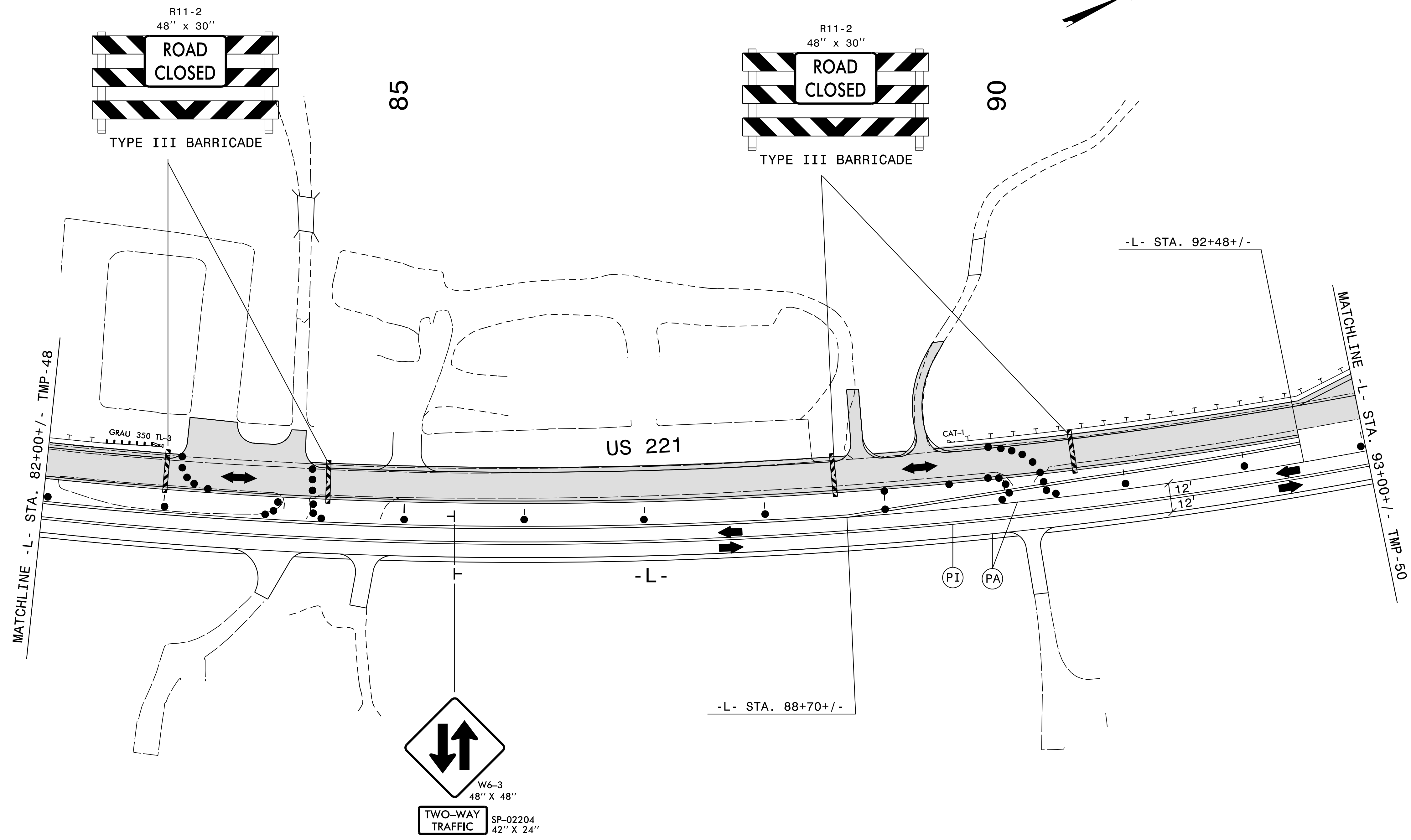
SEAL

EDWARD G. WETHERILL  
 PROFESSIONAL ENGINEER  
 10773  
 9/20/2015

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


**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 8:38:13 AM  
 P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_48.dgn



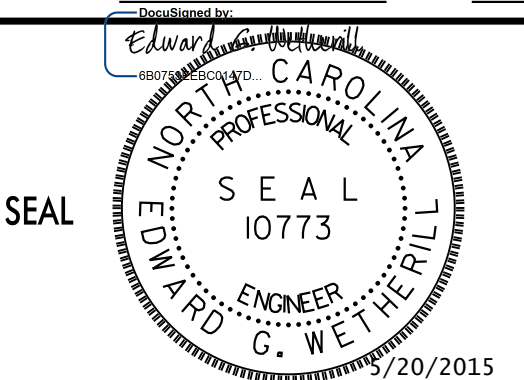
PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

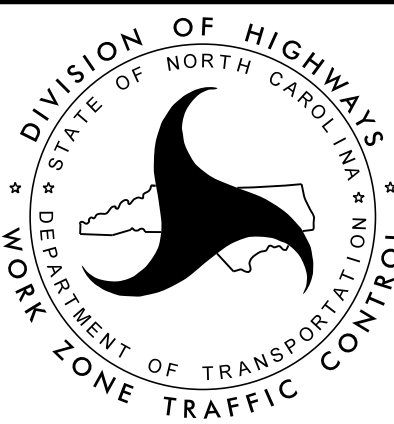
5/20/2015 8:40:12 AM  
 P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_49.dgn


 559 Jones Franklin Rd. Suite 164  
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 Fax: 919 851 8107

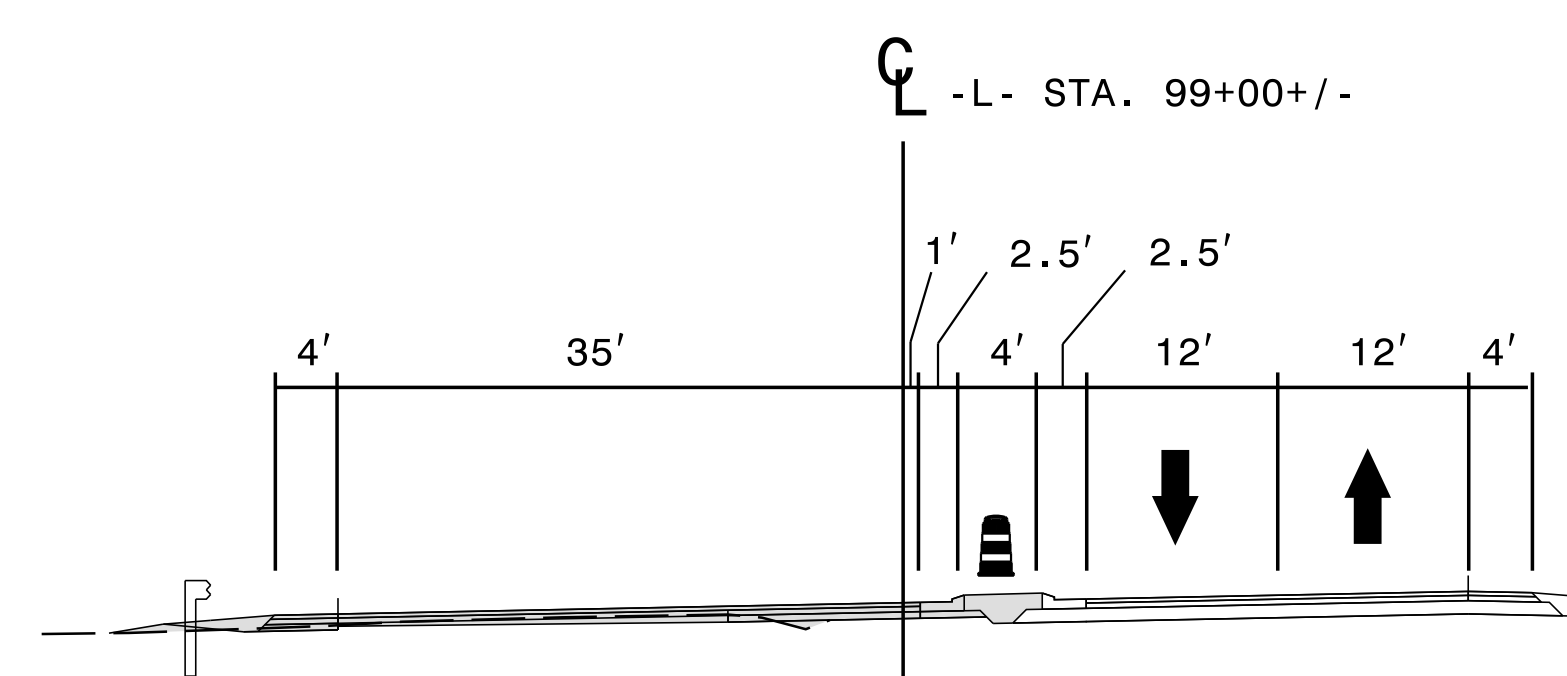
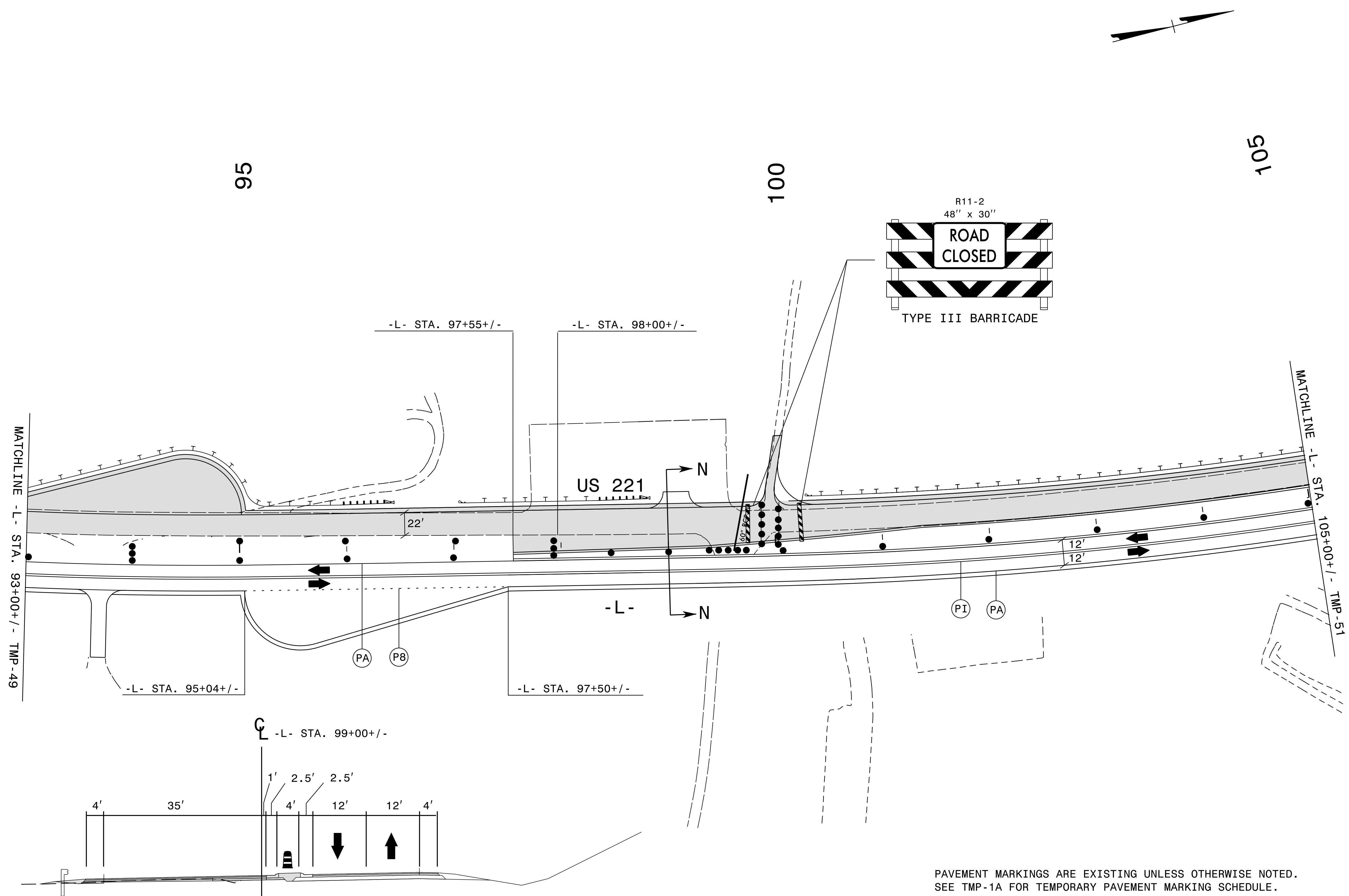
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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


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 EDWARD G. WETHERILL  
 ENGINEER  
 5/20/2015


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 STATE OF NORTH CAROLINA  
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 WORK ZONE TRAFFIC CONTROL

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



SECTION N-N

PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:38:44 AM P:\2015\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_50.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

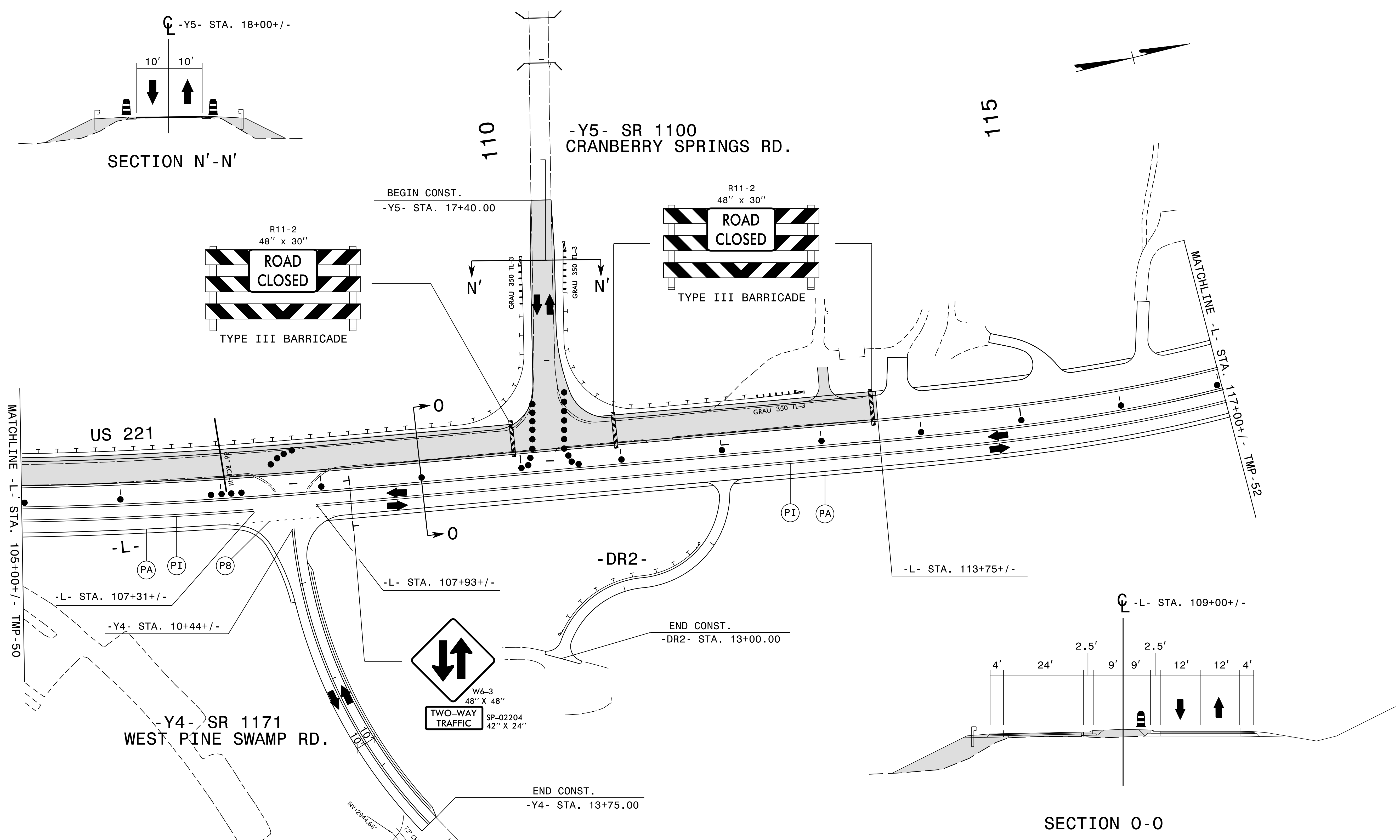
SEAL

EDWARD G. WETHERILL  
 PROFESSIONAL ENGINEER  
 10773  
 5/20/2015

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

PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL

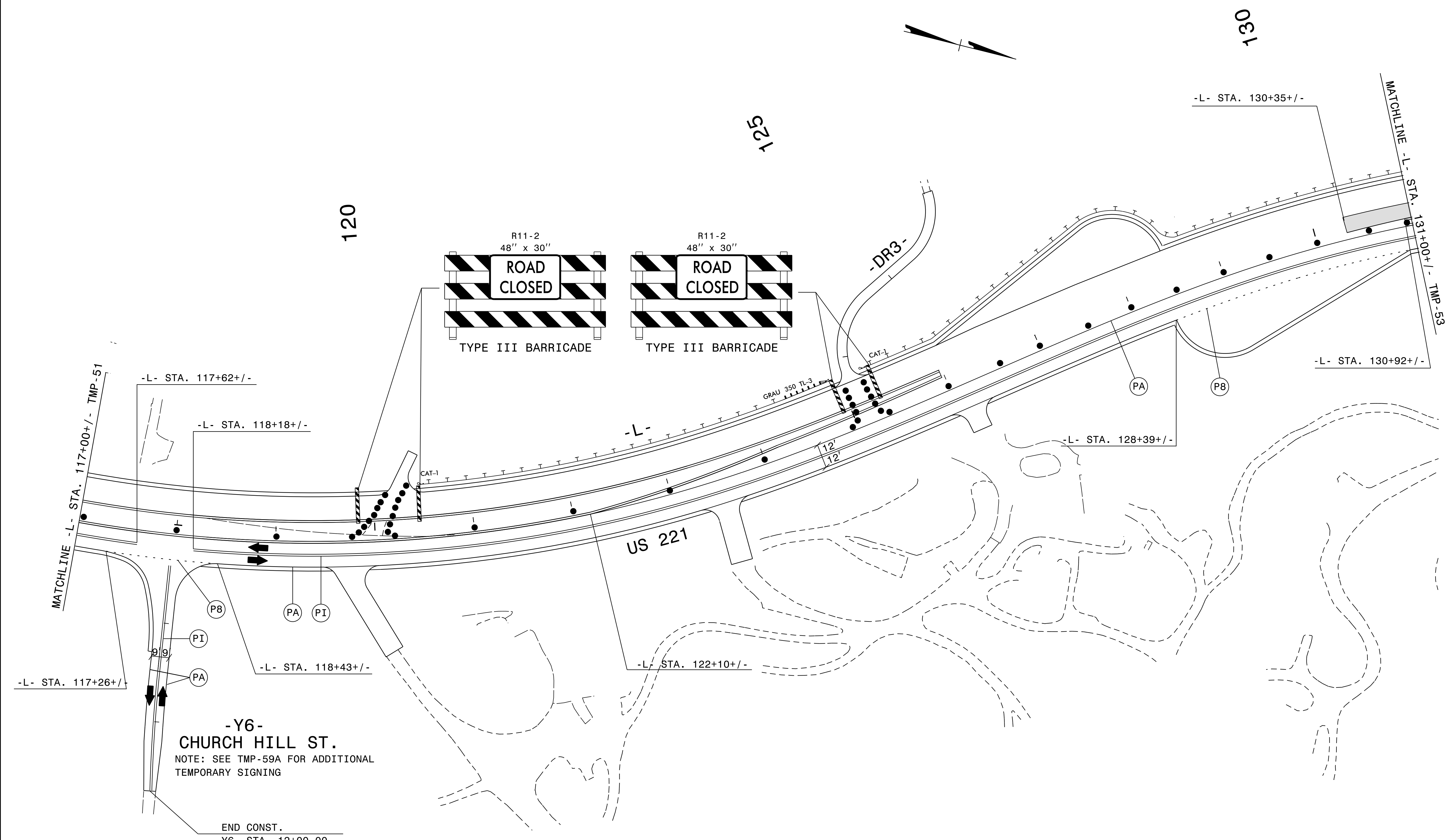




PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

APPROVED: _____ DATE: _____			<p><b>PHASE III TEMPORARY TRAFFIC CONTROL DETAIL</b></p>
<p>559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107</p> <p>TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION</p>			

5/20/2015 8:41:58 AM  
 P:\2012\NR-2915A\TrafficControl\TCP\2915A\_TCP\_PSH\_51.dgn



**-Y6-  
CHURCH HILL ST.**  
NOTE: SEE TMP-59A FOR ADDITIONAL  
TEMPORARY SIGNING

END CONST.  
-Y6- STA. 12+00.00

PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:42:42 AM P:\2012\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH-52.dgn

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Raleigh, N.C. 27606  
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

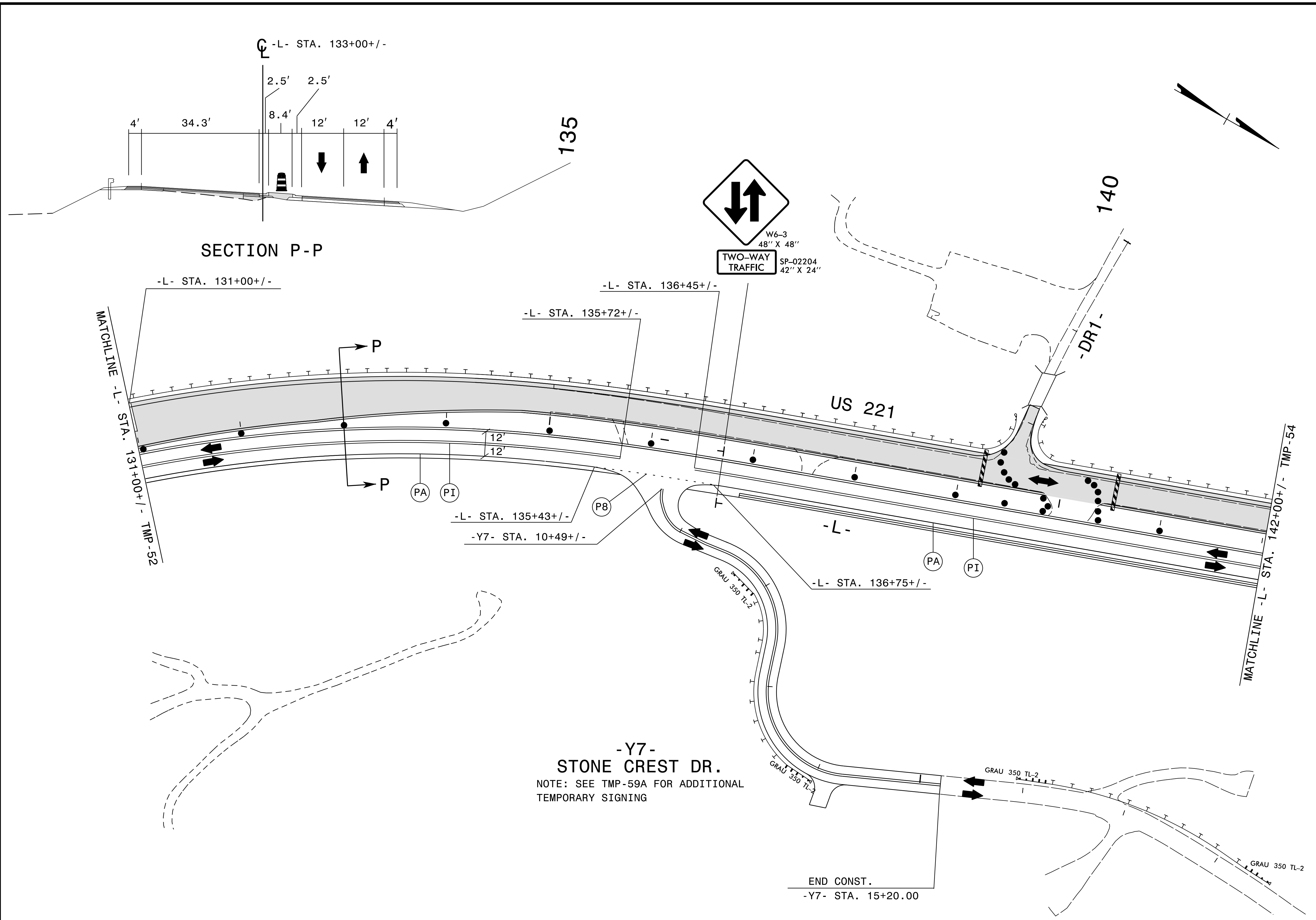
SEAL

**EDWARD G. WETHERILL**  
NORTH CAROLINA  
PROFESSIONAL ENGINEER  
10773

5/20/2015

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

**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



**-Y7-  
STONE CREST DR.**  
NOTE: SEE TMP-59A FOR ADDITIONAL  
TEMPORARY SIGNING

PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:43:25 AM P:\2012\NR-2915A\TrafficControl\TCP\R2915A.TCP.PSH.53.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

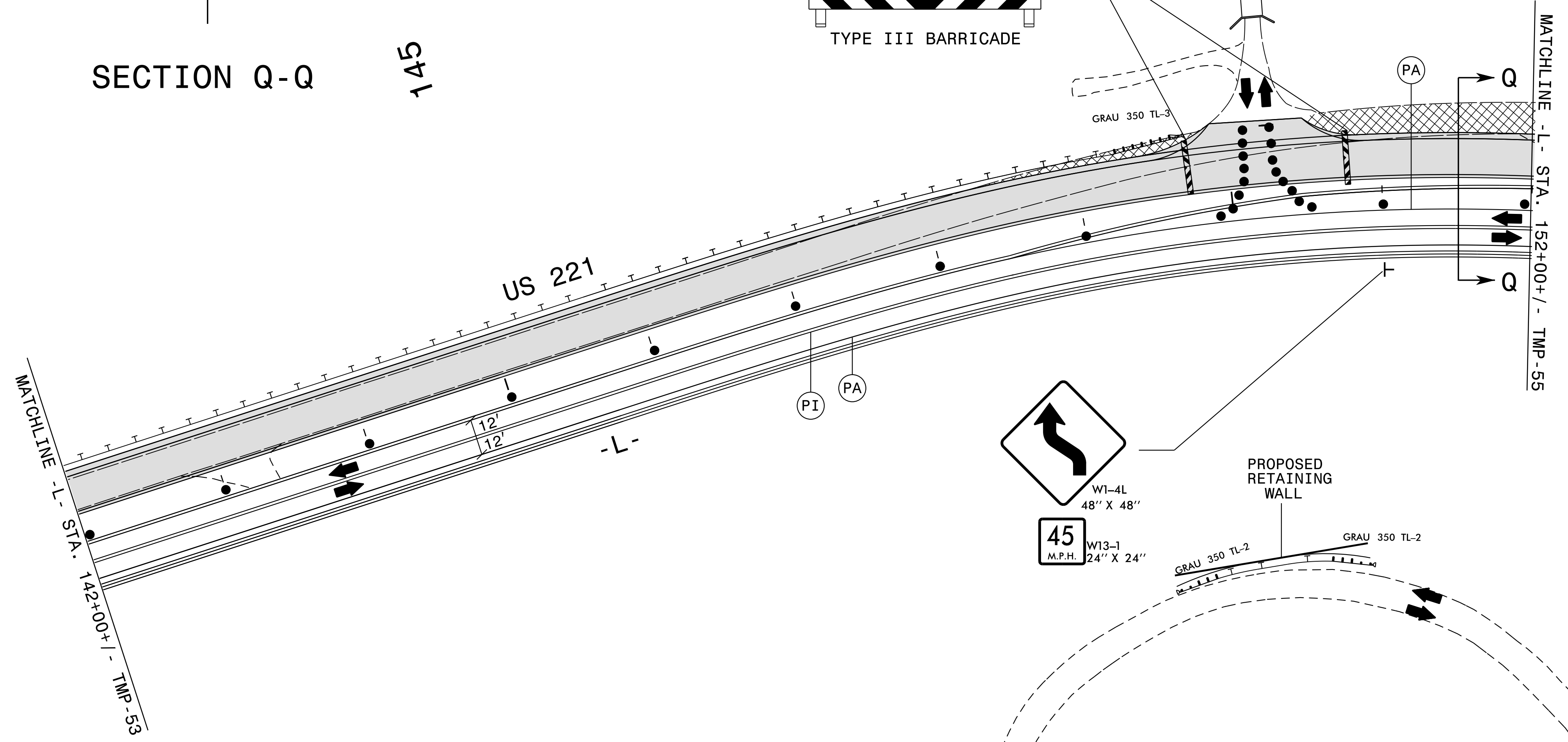
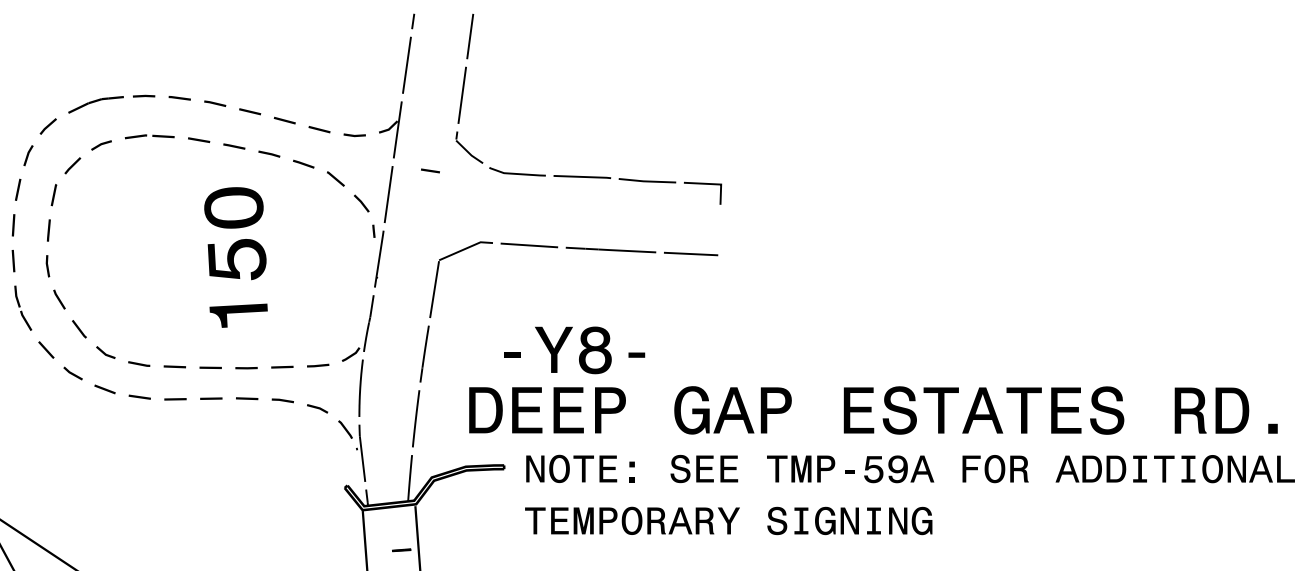
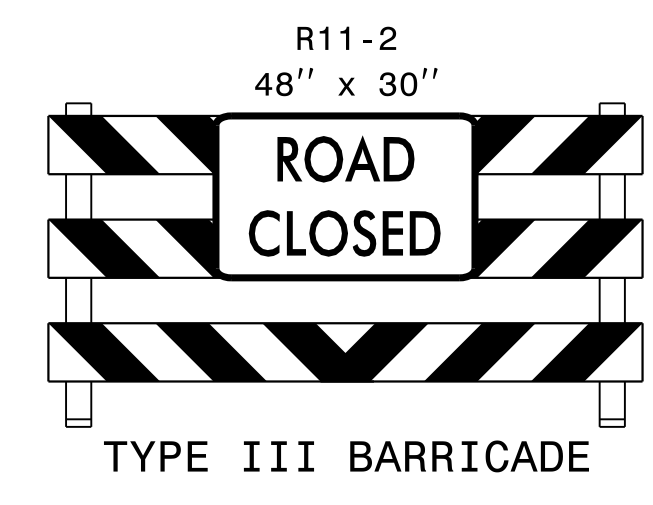
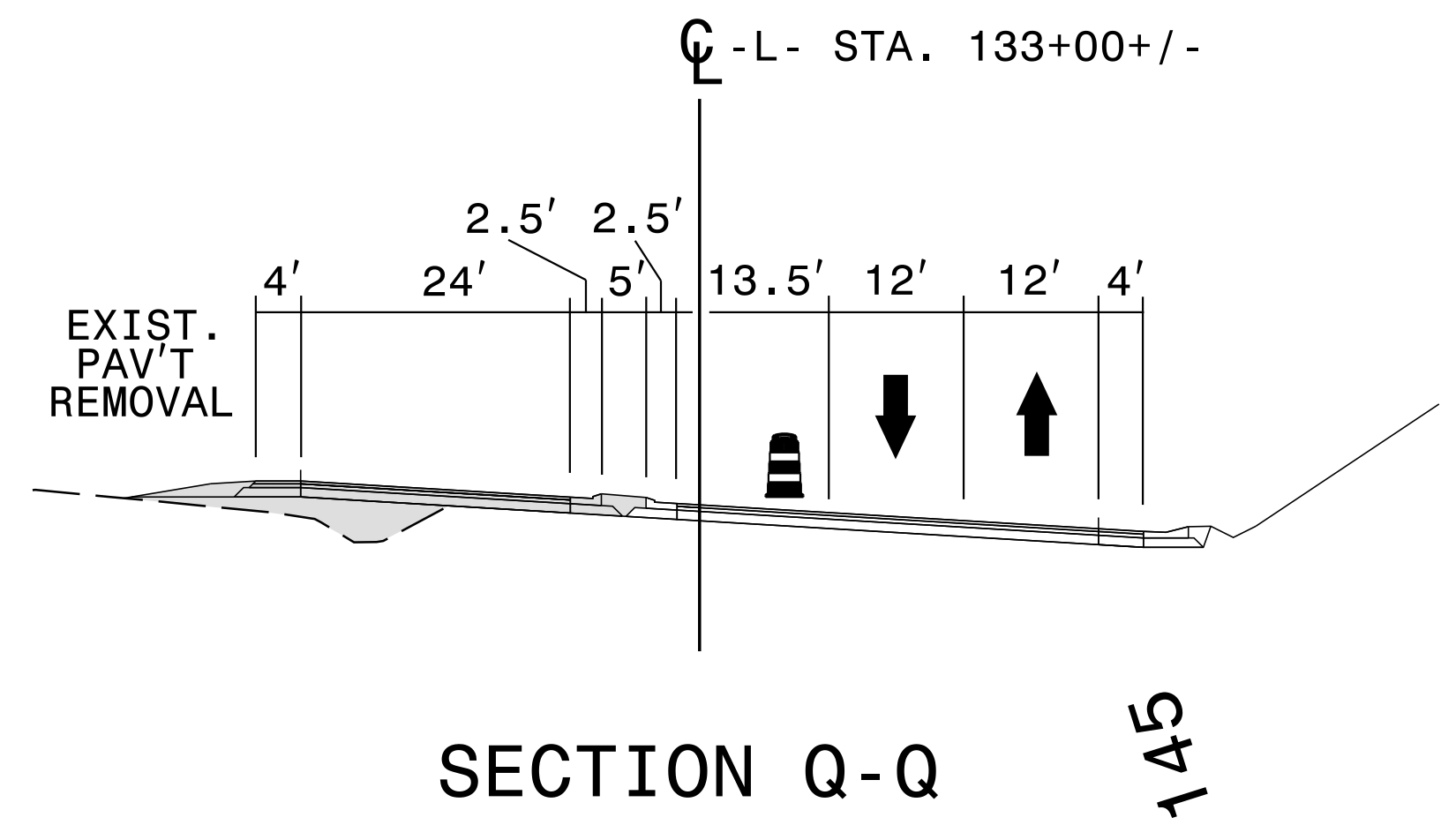
SEAL

**EDWARD G. WETHERILL**  
NORTH CAROLINA  
PROFESSIONAL ENGINEER  
10773

2015

**DEPARTMENT OF TRANSPORTATION**  
DIVISION OF HIGHWAYS  
WORK ZONE TRAFFIC CONTROL

**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015  
 8:44:17 AM  
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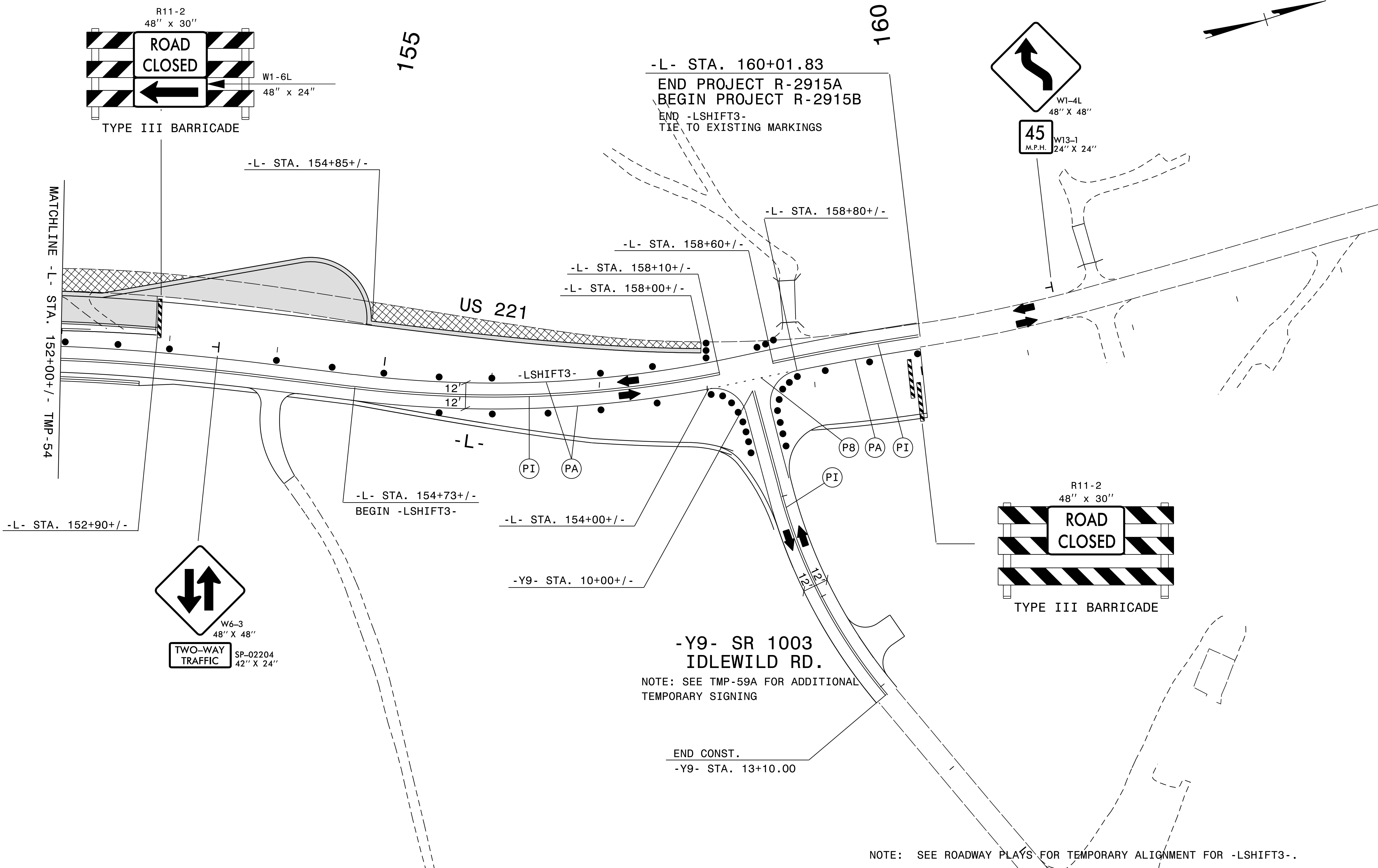
559 Jones Franklin Rd. Suite 104  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

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**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**




**-Y9- SR 1003  
IDLEWILD RD.**  
NOTE: SEE TMP-59A FOR ADDITIONAL  
TEMPORARY SIGNING

END CONST.  
-Y9- STA. 13+10.00

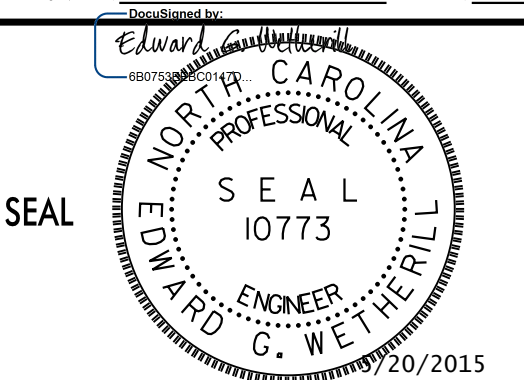
NOTE: SEE ROADWAY PLAYS FOR TEMPORARY ALIGNMENT FOR -LSHIFT3-.

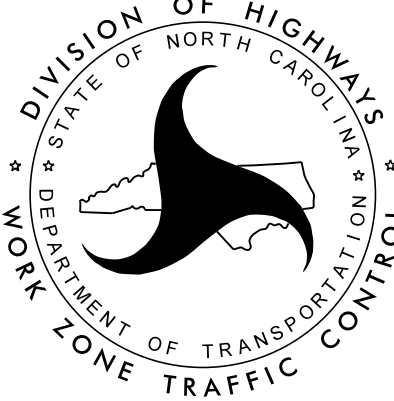
5/20/2015 8:44:45 AM  
 P:\2012\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_55.dgn


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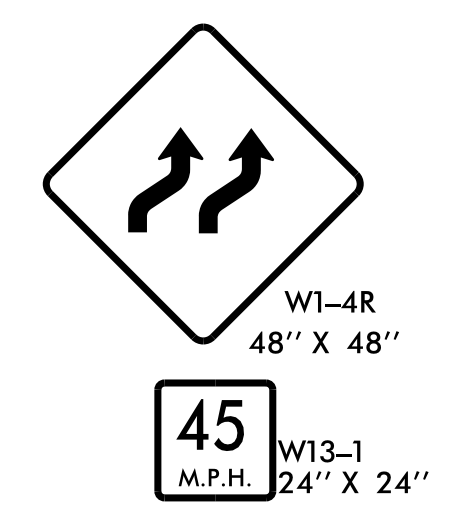
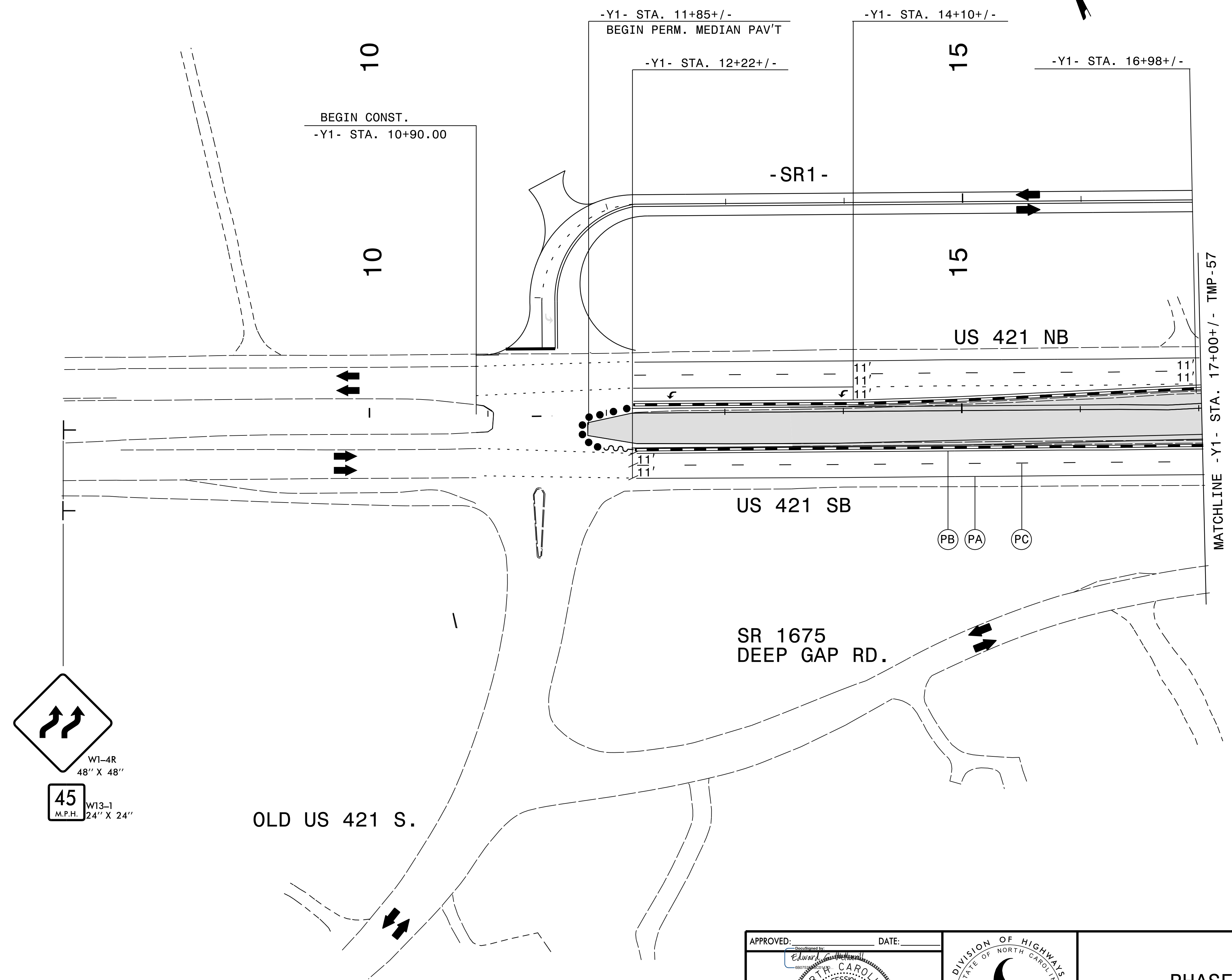
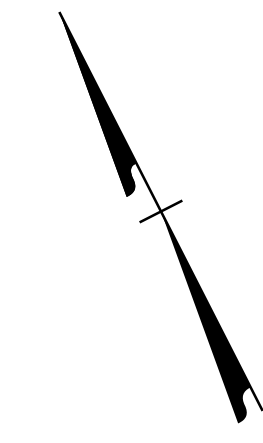
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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





**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**

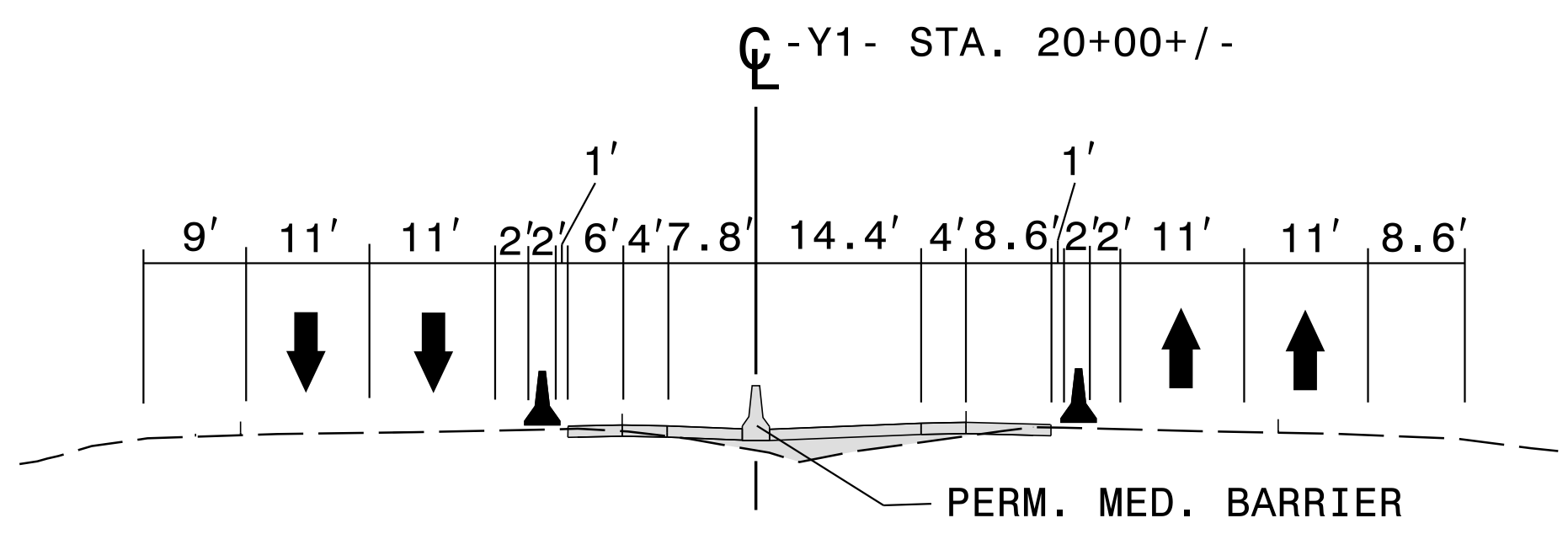


5/20/2015 8:45:27 AM  
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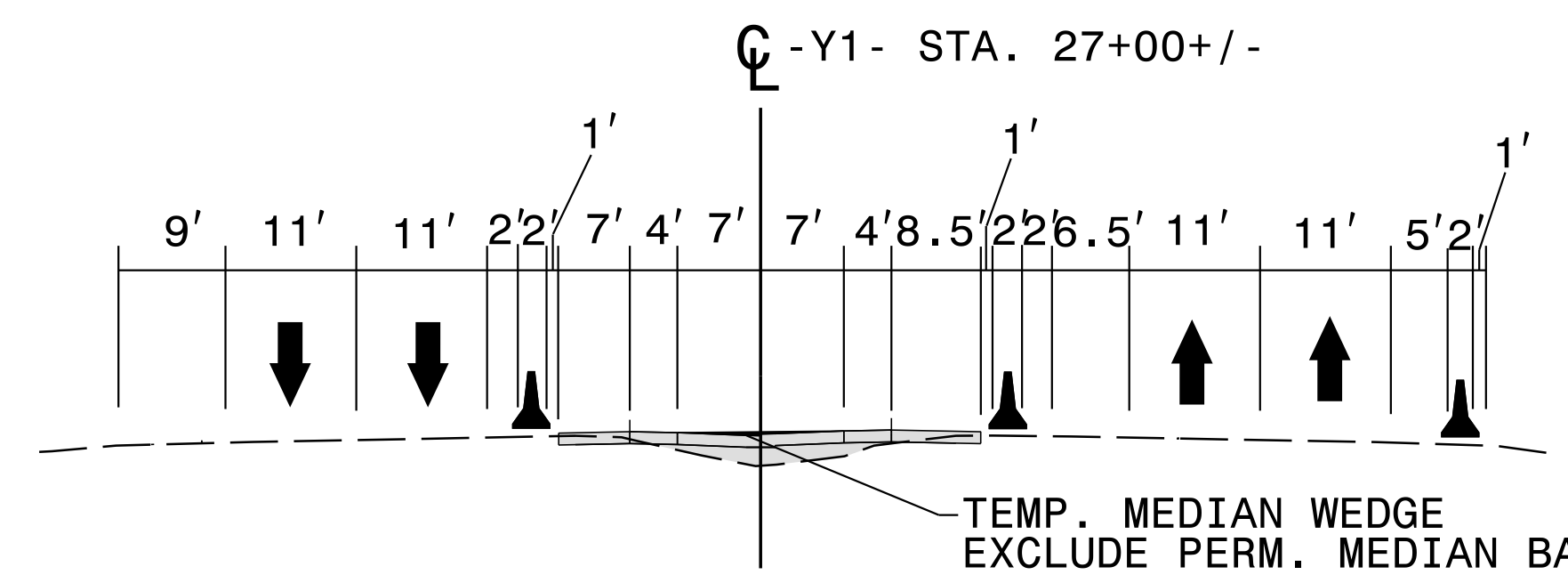
559 Jones Franklin Rd Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 831 8077  
 Fax: 919 831 8107

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

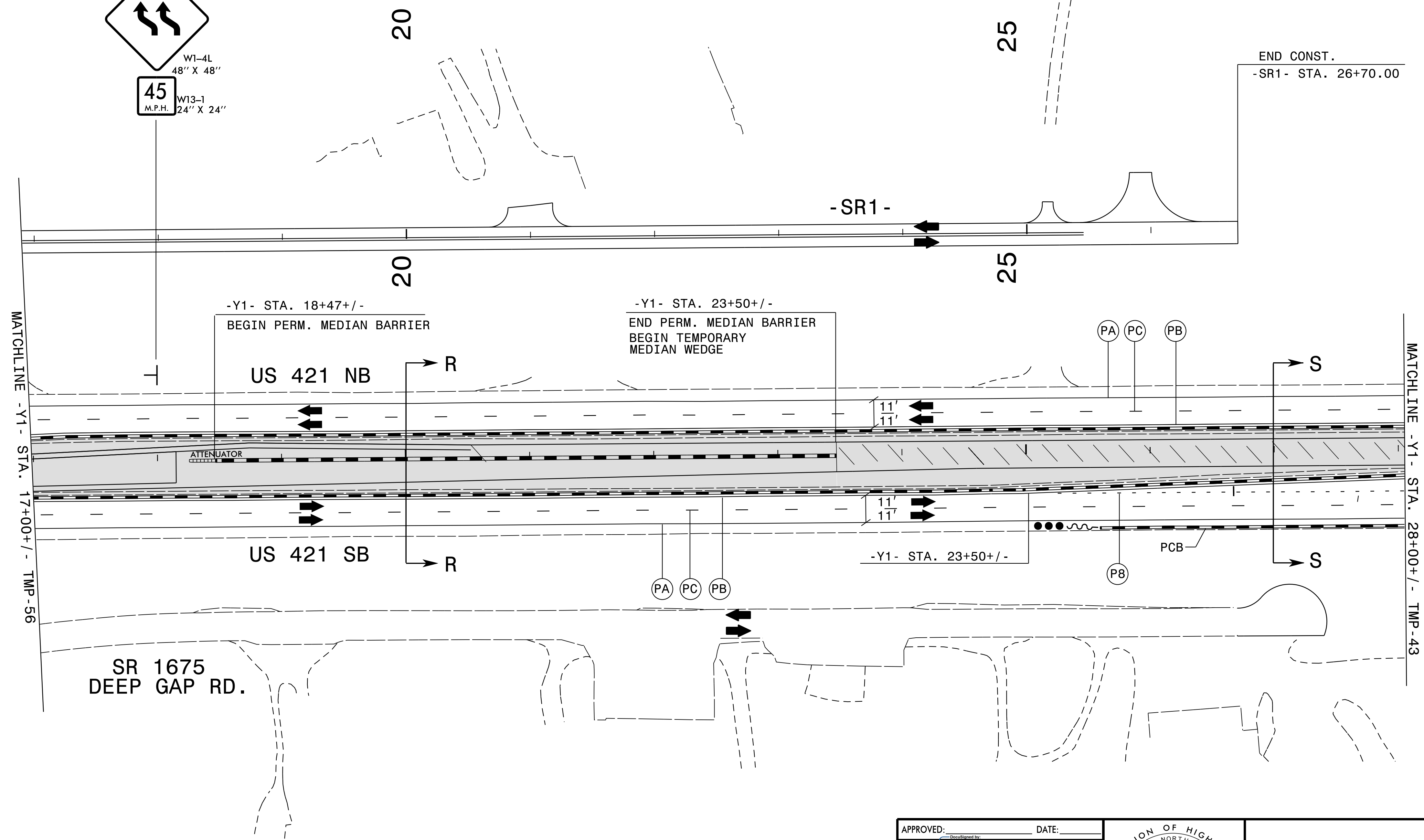
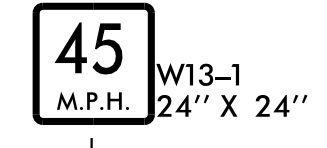
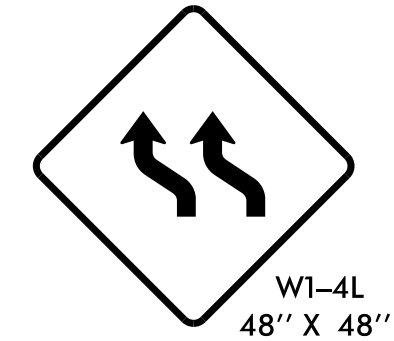
**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



SECTION R-R



SECTION S-S



END CONST.  
-SR1- STA. 26+70.00

5/20/2015 8:46:04 AM P:\2015\TrafficControl\TCP\2915A.TC.TCP\_PSH-57.dgn

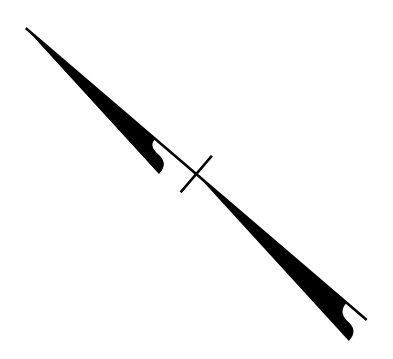
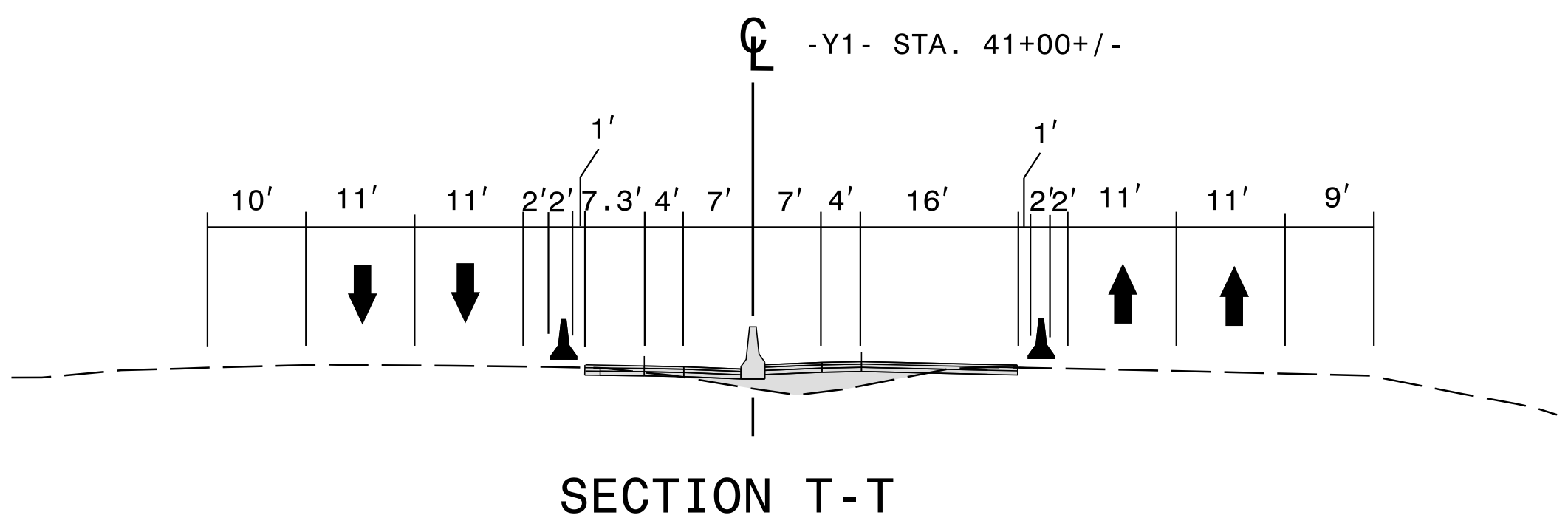
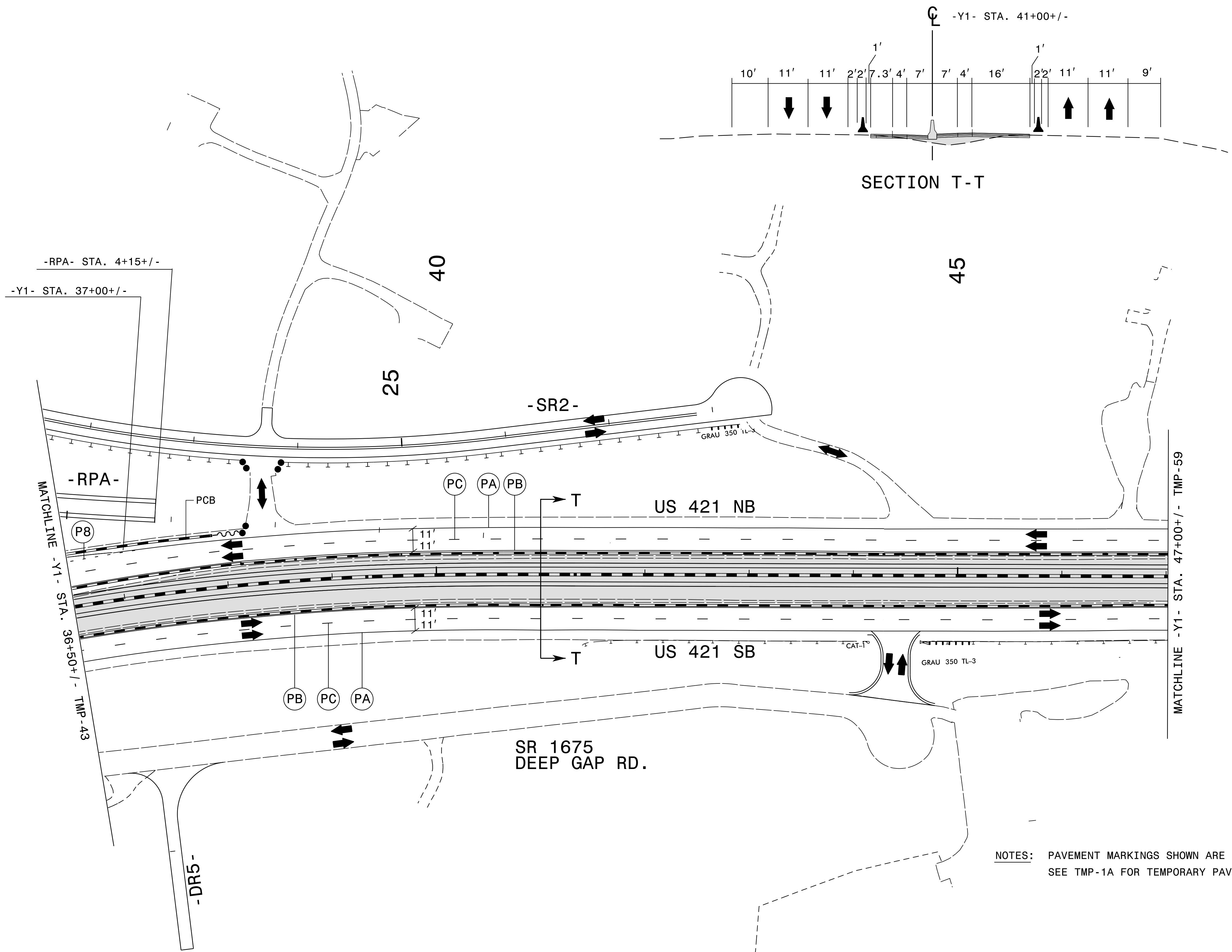
**W ETHERILL ENGINEERING**  
 559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

SEAL

**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



NOTES: PAVEMENT MARKINGS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:46:37 AM  
 P:\2015\2915A\Traffic\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_58.dgn

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 Raleigh, N.C. 27606  
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 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

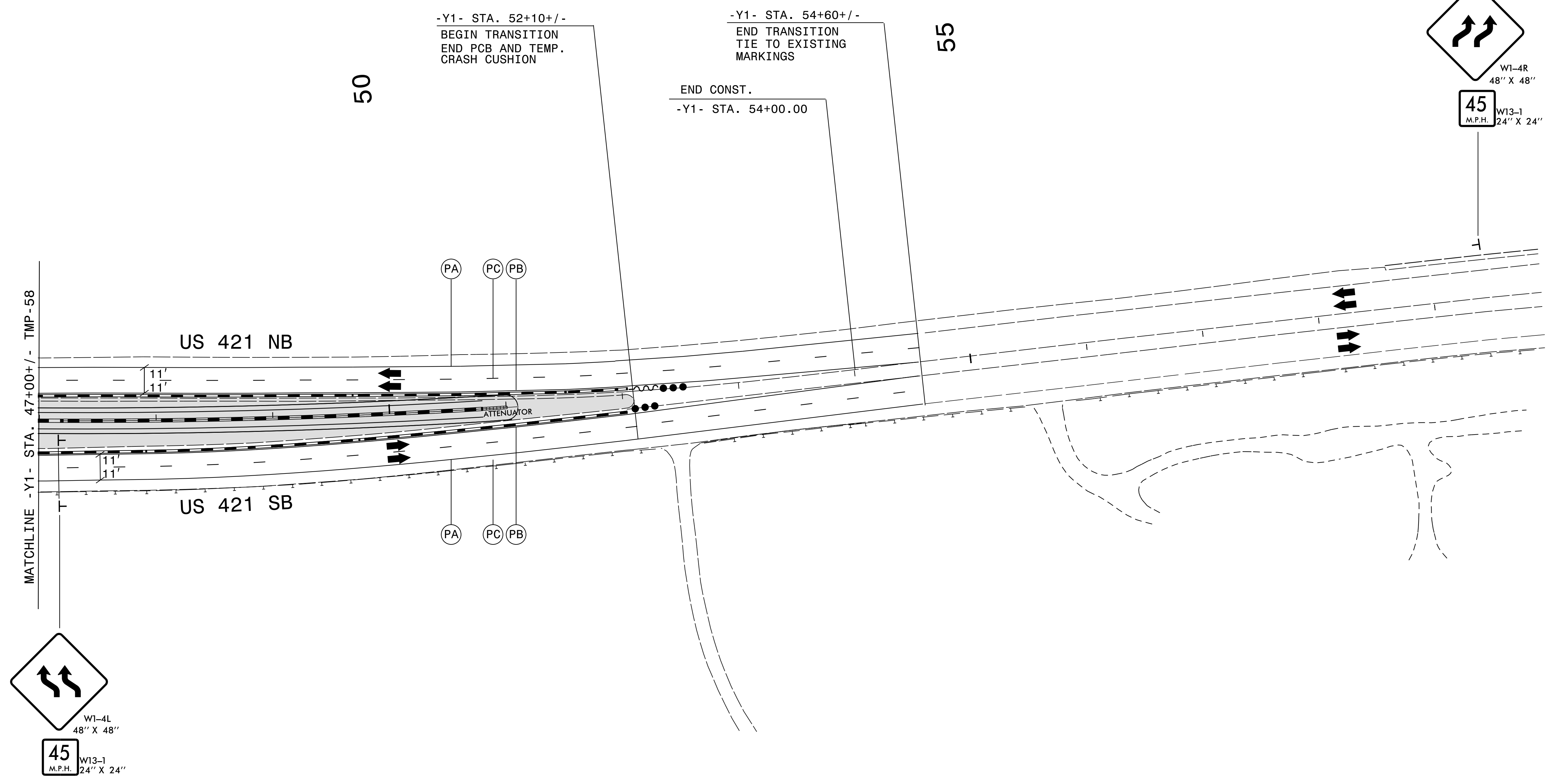
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

SEAL  
 EDWARD G. WETHERILL  
 ENGINEER  
 5/20/2015

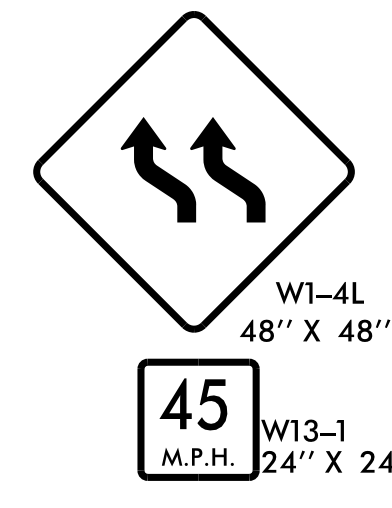
DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**





5/20/2015 8:47:10 AM  
 P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_59.dgn



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 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

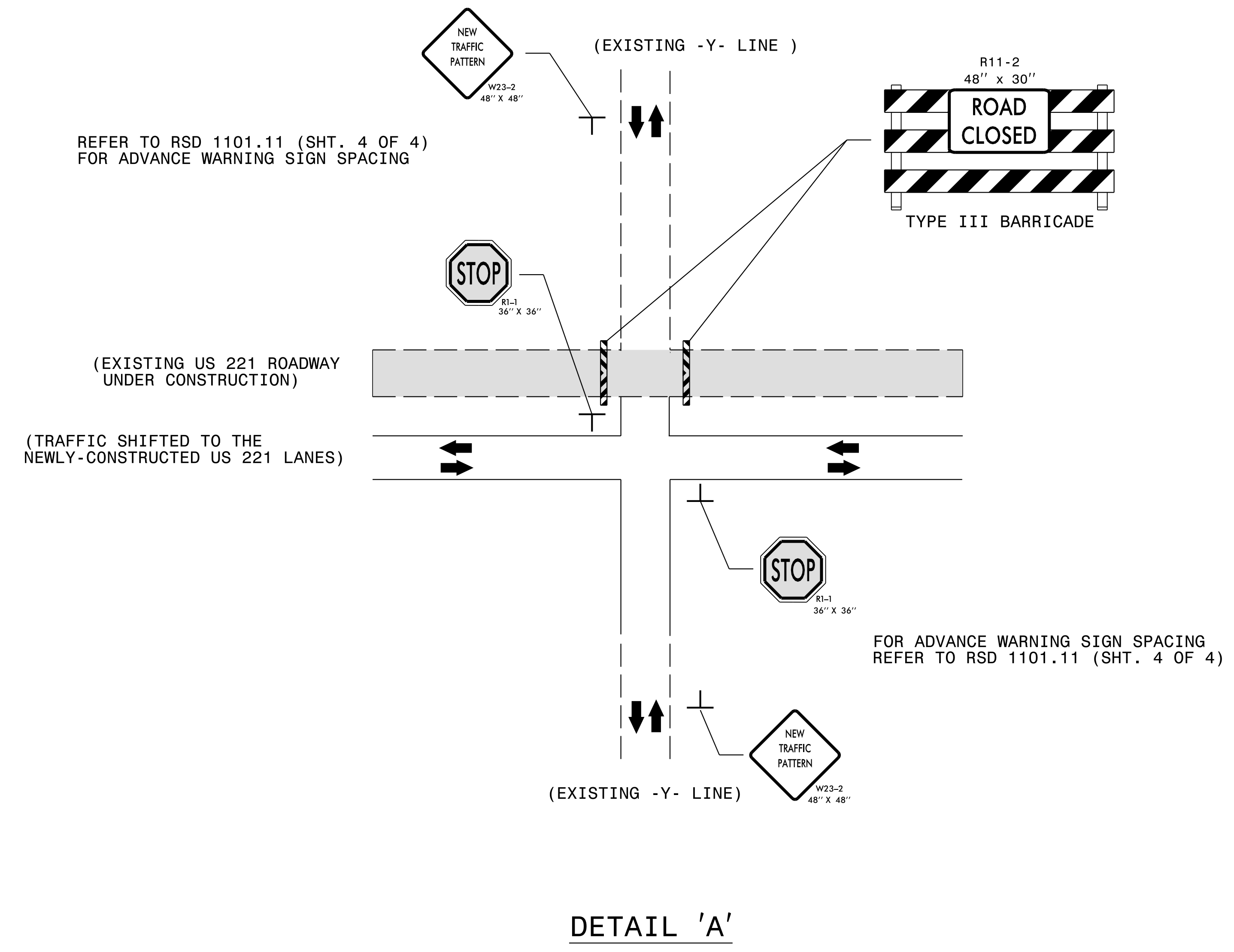
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

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 EDWARD G. WETHERILL  
 ENGINEER  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 10773

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

PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL

TEMPORARY TRAFFIC CONTROL TREATMENT FOR NEW -Y- INTERSECTION STOP LOCATIONS DUE TO MAINLINE TRAFFIC SHIFTS.



NOTE: EXISTING STOP SIGN AND ROAD/STREET NAME SIGNS MAY BE REINSTALLED AT THE NEW STOP LOCATION AS DIRECTED BY THE ENGINEER.

5/20/2015 8:47:39 AM P:\2012\2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_59A.dgn

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 License No. F-0377  
 Bus: 919 851 8077  
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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 WORK ZONE TRAFFIC CONTROL

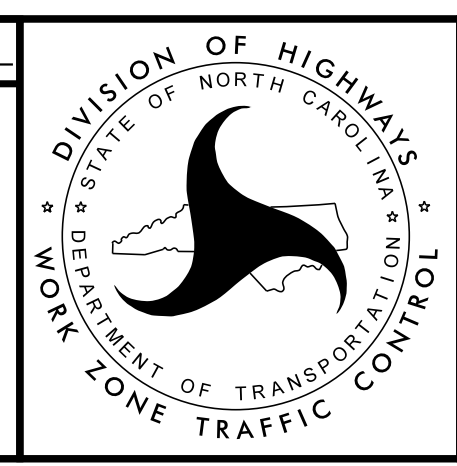
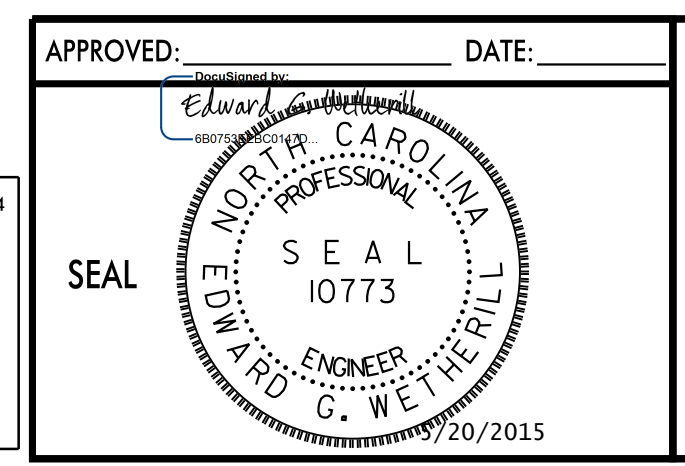
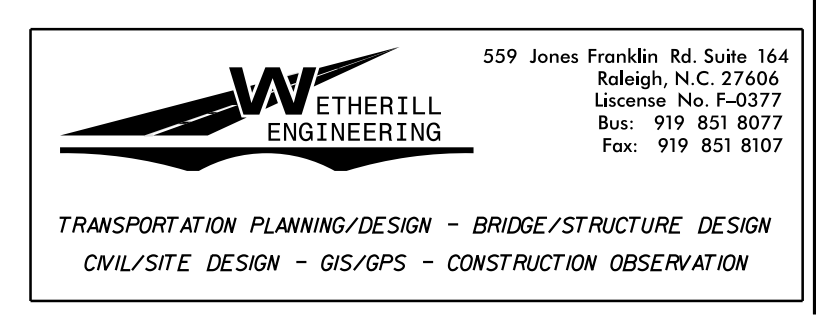
**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

**PHASE III (PART C)**

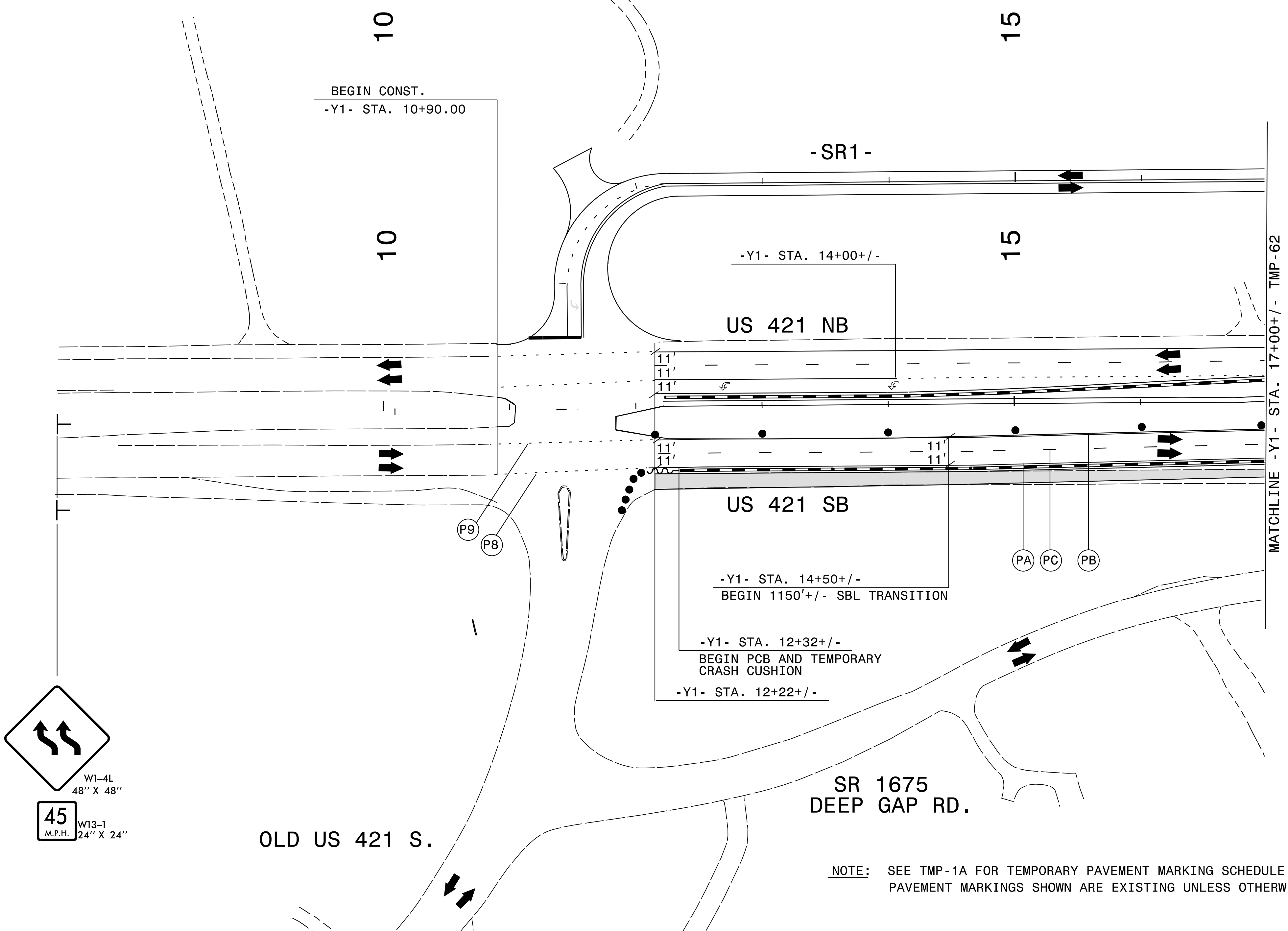
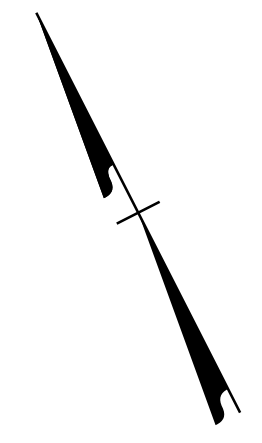
- STEP 1) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE US 421 NB/SB MEDIAN PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS AND REPLACE WITH DRUMS AS FOLLOWS:
- -Y1- (US 421) SB MEDIAN FROM -Y1- STA. 12+22+/- TO STA. 32+16+/- (SEE TMP-61 THRU TMP-63).
  - -Y1- (US 421) SB MEDIAN FROM -Y1- STA. 34+65+/- TO STA. 52+10+/- (SEE TMP-63 THRU TMP-65).
  - -Y1- (US 421) NB FROM -Y1- STA. 33+00+/- TO STA. 52+10+/- (SEE TMP-43, AND TMP-58 AND TMP-59).
- STEP 2) WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING:
- A. ADJUST TEMPORARY SIGNING ON US 421 SB FOR TEMPORARY SHIFTED TWO-LANE, ONE-WAY TRAFFIC PATTERN.
    - USING LAW ENFORCEMENT, MODIFY THE US 421/US 221 INTERSECTION TRAFFIC SIGNAL.
    - USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 SB AND PLACE MARKINGS AND MARKERS FOR THE TEMPORARY SHIFTED MEDIAN TRAFFIC PATTERN (SEE TMP-61 THRU TMP-65).
  - B. SHIFT US 421 SB TRAFFIC TO THE TEMPORARY TWO-LANE, ONE-WAY SHIFTED PATTERN AND COMPLETE PLACEMENT OF REMAINING PAVEMENT MARKINGS AND MARKERS.
  - C. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 NB AND PLACE MARKINGS AND MARKERS FOR THE TEMPORARY SHIFTED MEDIAN TRAFFIC PATTERN (SEE TMP-61 THRU TMP-65).
  - D. SHIFT US 421 NB TRAFFIC TO THE TEMPORARY TWO-LANE, ONE-WAY SHIFTED PATTERN AND COMPLETE PLACEMENT OF REMAINING PAVEMENT MARKINGS AND MARKERS.
- STEP 3) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, RESET PORTABLE CONCRETE AND TEMPORARY CRASH CUSHIONS AS NECESSARY FOR PROPOSED -LPC-/-RPC- TIE-IN CONSTRUCTION ALONG US 421 SB AND FOR PROPOSED -RPA- TIE-IN CONSTRUCTION ALONG US 421 NB AS FOLLOWS:
- -Y1- SB STA. 12+32+/- TO STA. 41+00+/- (SEE TMP-61 THRU TMP-64).
  - -Y1- NB STA. 34+75+/- TO STA. 43+95+/- (SEE TMP-63 AND TMP-64).
- STEP 4) COMPLETE THE FOLLOWING UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE:
- -LPC-/-RPC- AND -RPA- TIE-INS (SEE TMP-62 THRU TMP-64).
  - -Y1- SB OUTSIDE SHOULDER STA. 12+22+/- TO STA. 54+00+/- (SEE TMP-61 AND TMP-65).
  - -Y1- NB OUTSIDE SHOULDER STA. 37+00+/- TO STA. 54+00+/- (SEE TMP-64 AND TMP-65).
- STEP 5) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE US 421 SB PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHIONS (INSTALLED IN PHASE III, STEP 3) AND REPLACE WITH DRUMS AS FOLLOWS. INSTALL TYPE III BARRICADES TO CLOSE OFF -RPC TO TRAFFIC:
- -Y1- SB STA. 12+32+/- TO STA. 41+00+/-
- USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE US 421 NB PORTABLE CONCRETE BARRIER FROM OUTSIDE SHOULDER AND CRASH CUSHION (INSTALLED IN PHASE III - PART C, STEP 3) AND REPLACE WITH DRUMS AS FOLLOWS:
- -Y1- NB STA. 12+22+/- TO STA. 23+50+/-
  - -Y1- NB STA. 34+75+/- TO STA. 43+95+/- (RESET TEMPORARY CRASH CUSHION AT STA. 34+75+/-).

SEE TMP-42 FOR PHASE III (PART A) AND PHASE III (PART B) CONSTRUCTION.

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**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



NOTE: SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
PAVEMENT MARKINGS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.

5/20/2015 8:48:45 AM  
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

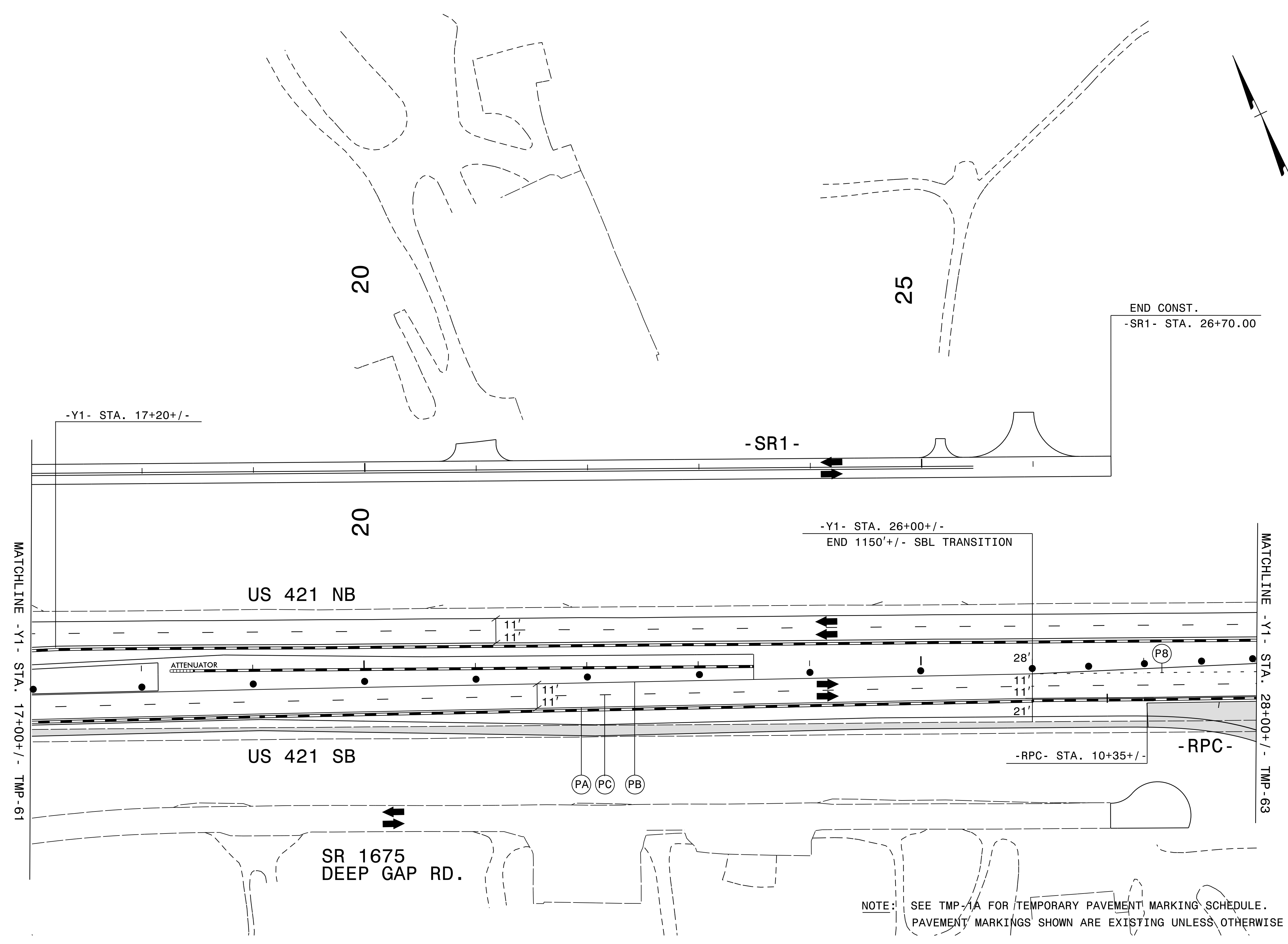
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 ENGINEER  
 5/20/2015

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 WORK ZONE TRAFFIC CONTROL

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

PROJ. REFERENCE NO.	SHEET NO.
R-2915A	TMP-62



5/20/2015  
8:49:23 AM  
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Fax: 919 851 8107

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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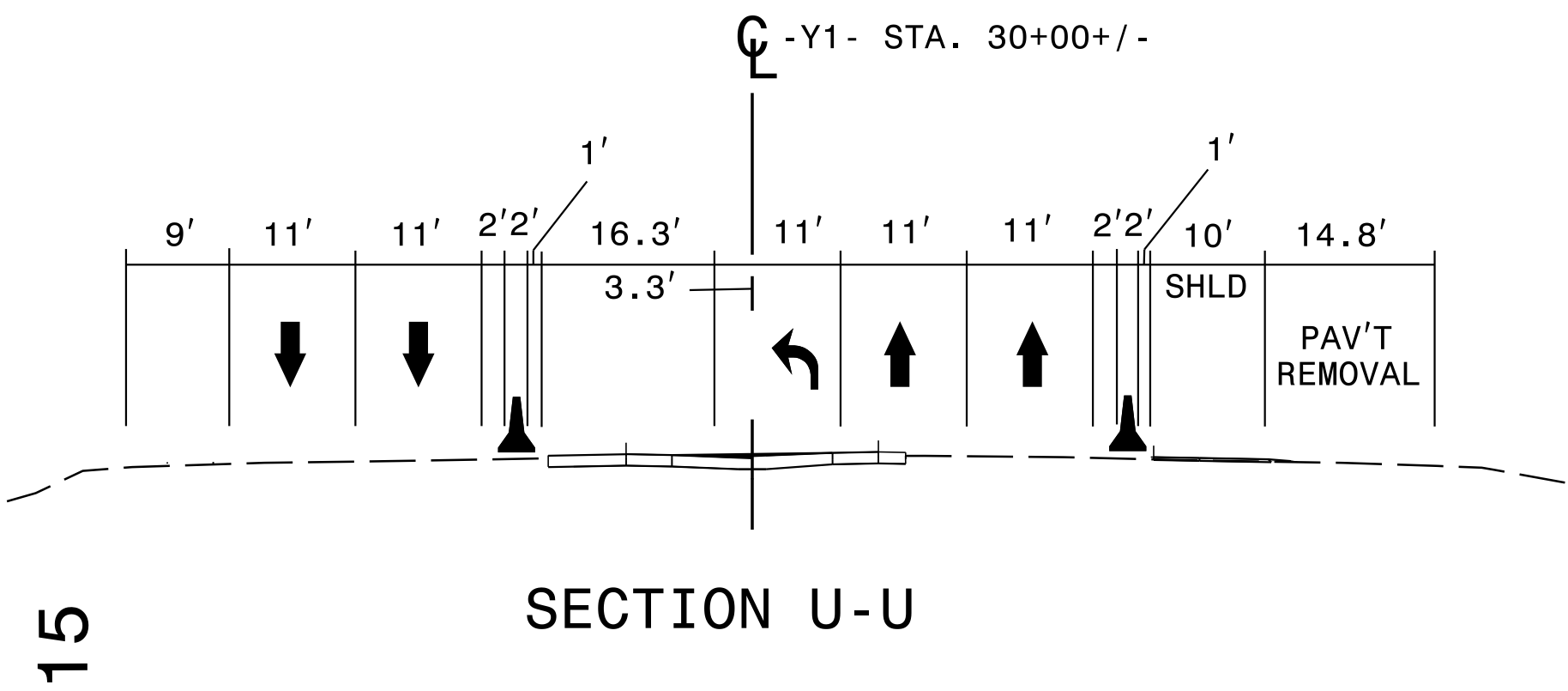
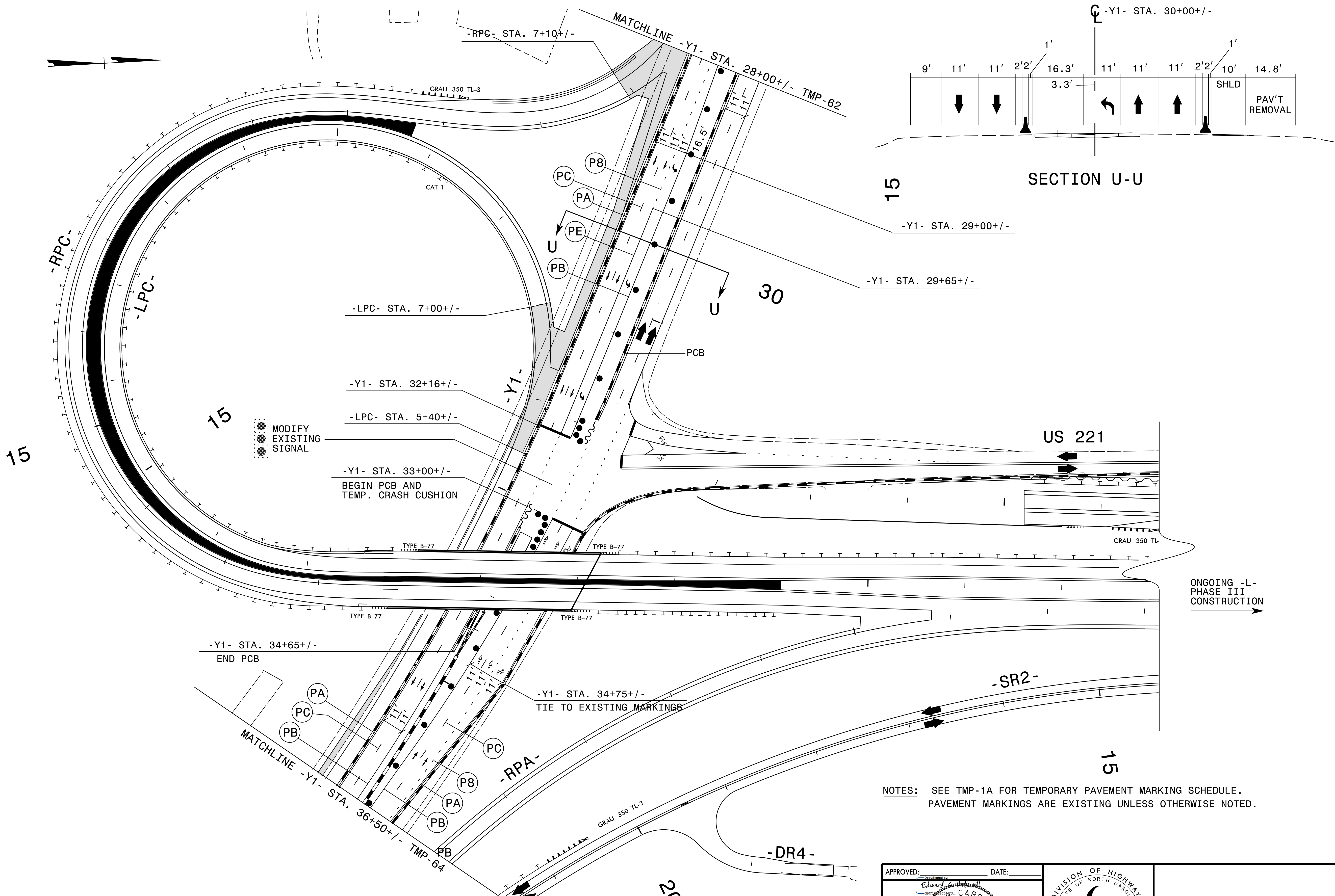
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EDWARD G. WETHERILL  
PROFESSIONAL ENGINEER  
10773  
NORTH CAROLINA

5/20/2015

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WORK ZONE TRAFFIC CONTROL

**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



ONGOING -L-  
PHASE III  
CONSTRUCTION

NOTES: SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.

5/20/2015 8:49:54 AM P:\2012\R-2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_63.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

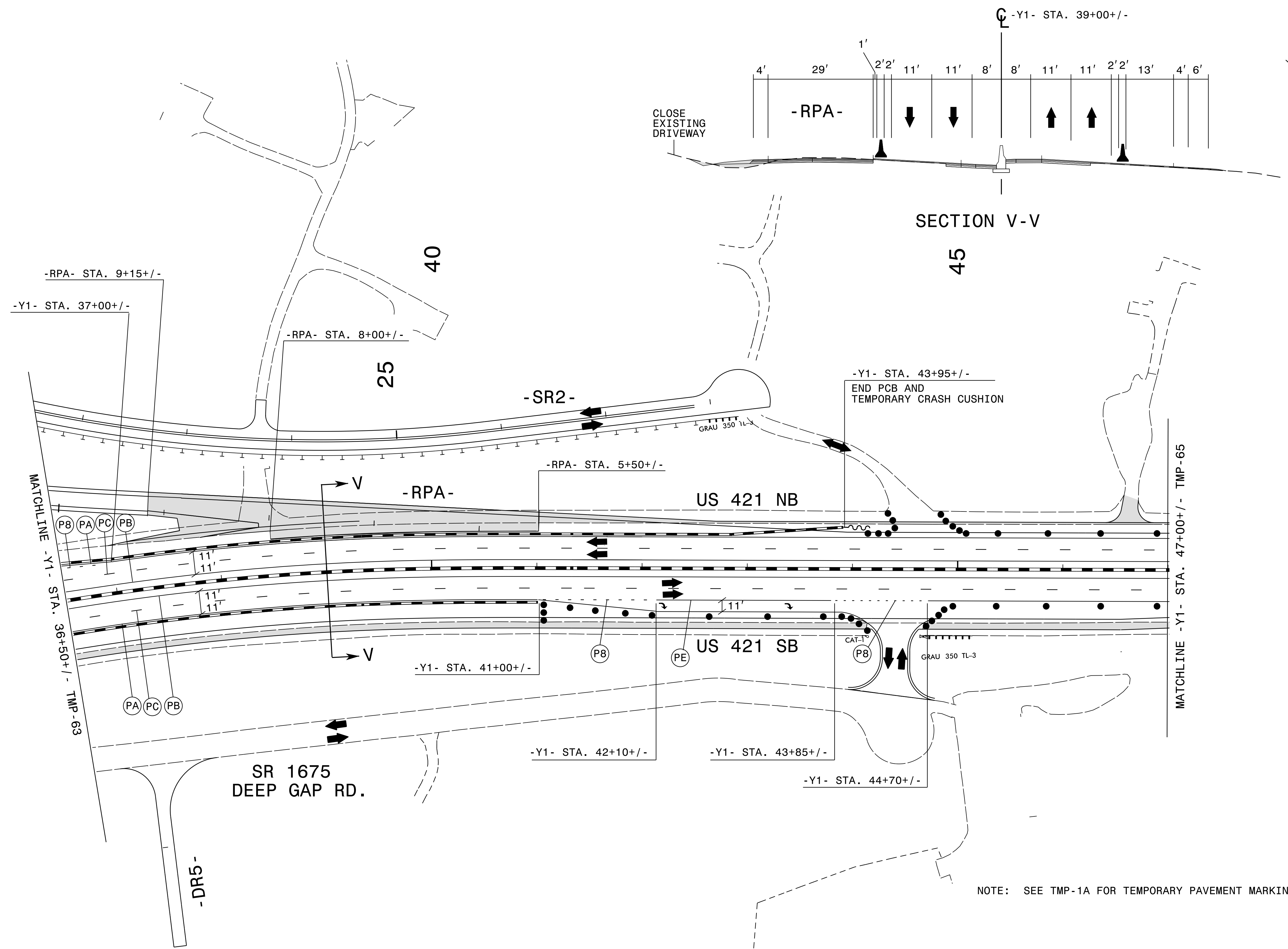
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**EDWARD G. WETHERILL**  
NORTH CAROLINA PROFESSIONAL ENGINEER  
10773  
7/20/2015

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STATE OF NORTH CAROLINA  
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**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



NOTE: SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:50:21 AM P:\2012\2915A\Traffic\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_64.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

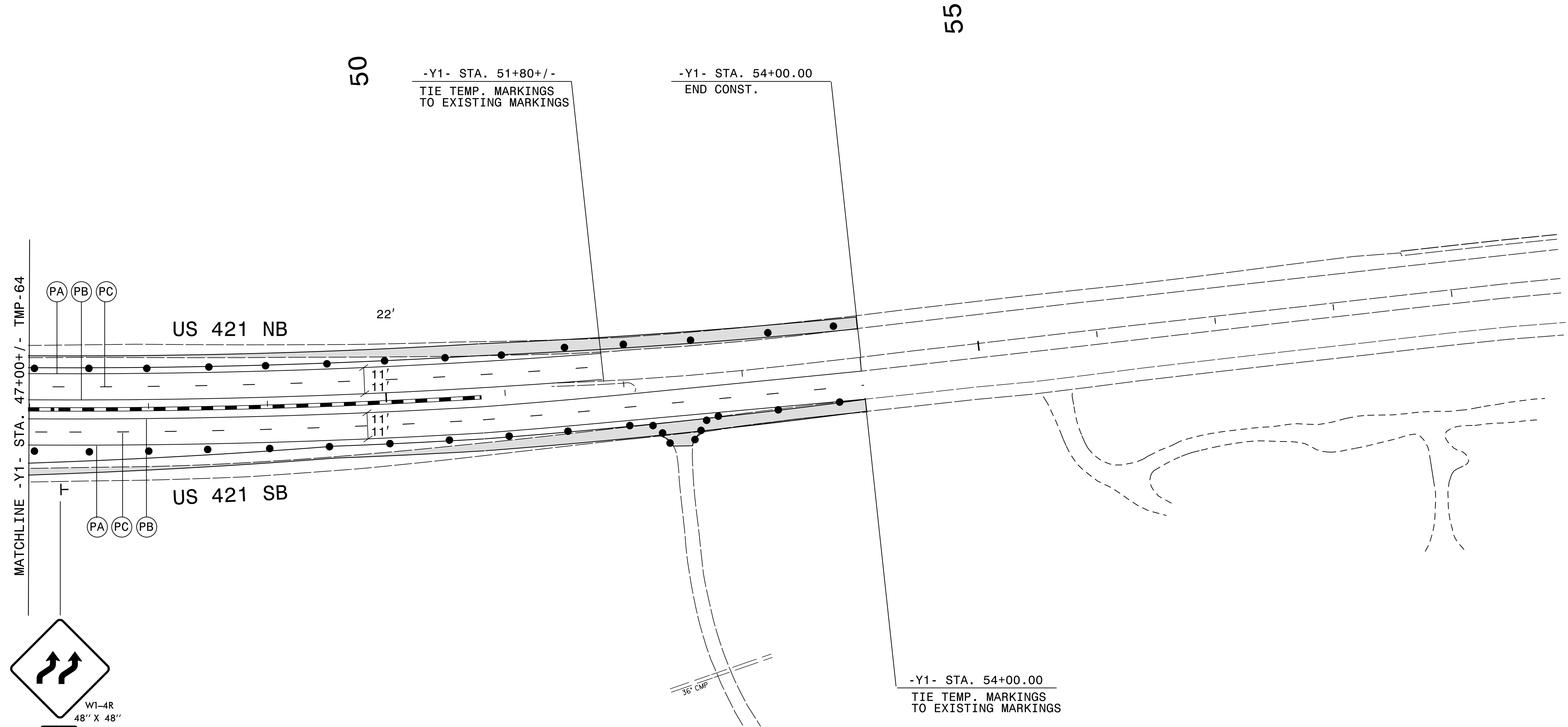
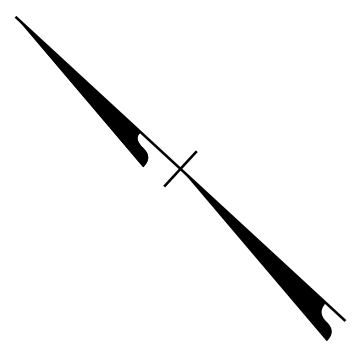
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 WORK ZONE TRAFFIC CONTROL

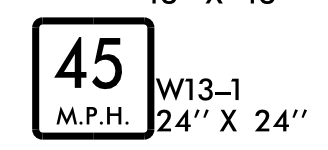
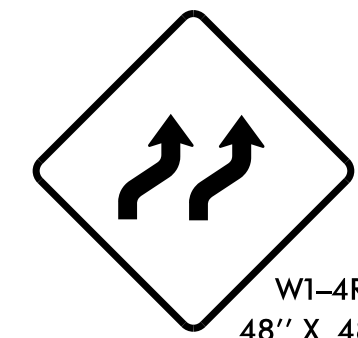
**PHASE III  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



MATCHLINE -Y1- STA. 47+00+/- - TMP-64

PA PB PC

PA PC PB



NOTE: SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:50:54 AM  
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 WORK ZONE TRAFFIC CONTROL

**PHASE III  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



**PHASE IV (PART A)**

STEP 1) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, PLACE TEMPORARY MARKINGS AND PAVEMENT MARKERS AS MUCH AS POSSIBLE ON -L- (US 221) SB, -LSHIFT2-, -LPC-, -RPC-, AND -RPA- (SEE TMP-68 THRU TMP-72).

AS DIRECTED BY THE ENGINEER, INSTALL AND COVER APPLICABLE GROUND-MOUNTED INTERCHANGE SIGNING FOR TEMPORARY INTERCHANGE MOVEMENTS (SEE SIGNING PLANS).

STEP 2) WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING:

- A. USING LAW ENFORCEMENT AND CHANGEABLE MESSAGE BOARDS, PLACE EXISTING TRAFFIC SIGNAL IN FLASH OR CAUTION MODE. INSTALL DRUMS TO SIMULTANEOUSLY CLOSE BOTH THE EXISTING US 421 SB LEFT TURN LANE AND US 421 NB RIGHT TURN LANE TO US 221 NB.
- B. OPEN -LPC-, -RPC-, -RPA-, AND THE -SR2- INTERSECTION WITH US 221 NB.
- C. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, PLACE REMAINING PAVEMENT MARKINGS AND MARKERS AS NECESSARY ON -L- (US 221) AND TEMPORARY -LSHIFT1- AND -LSHIFT2- FOR TEMPORARY TRAFFIC PATTERNS (SEE TMP-72).
- D. DEACTIVATE/REMOVE THE TRAFFIC SIGNAL AT THE EXISTING US 421/US 221 INTERSECTION. MAINTAIN EXISTING US 221 SB RIGHT TURN LANE TO US 421 NB UNDER STOP SIGN CONTROL (SEE TMP-69).
- E. USING FLAGGERS AS NECESSARY, RESET PORTABLE CONCRETE BARRIER ON EXISTING US 221 SB AT THE INTERSECTION WITH US 421 NB AS FOLLOWS:  
AS FOLLOWS:  
- RPB- STA. 6+15+/- TO STA. 11+25+/- (SEE TMP-69).

PHASE IV (PART A), STEPS 3 AND STEP 4 MAY BE PERFORMED CONCURRENTLY:

STEP 3) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 SB AND PLACE MARKINGS AND MARKERS FOR THE TEMPORARY SHIFTED TRAFFIC PATTERN (SEE TMP-67 THRU TMP-71).

SHIFT US 421 SB TRAFFIC TO THE TEMPORARY TWO-LANE, ONE-WAY SHIFTED PATTERN AND COMPLETE PLACEMENT OF REMAINING PAVEMENT MARKINGS AND MARKERS.

INSTALL PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHION ON -Y1- (US 421) SB MEDIAN FROM -Y1- STA. 17+35+/- TO -Y1- STA. 33+50+/- (SEE TMP-68 AND TMP-69)

STEP 4) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 NB AND PLACE MARKINGS AND MARKERS FOR THE TEMPORARY SHIFTED TRAFFIC PATTERN (SEE TMP-67 THRU TMP-71).

SHIFT US 421 NB TRAFFIC TO THE TEMPORARY TWO-LANE, ONE-WAY SHIFTED PATTERN AND COMPLETE PLACEMENT OF REMAINING PAVEMENT MARKINGS AND MARKERS.

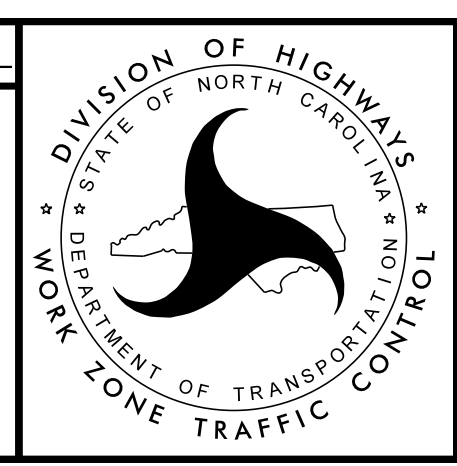
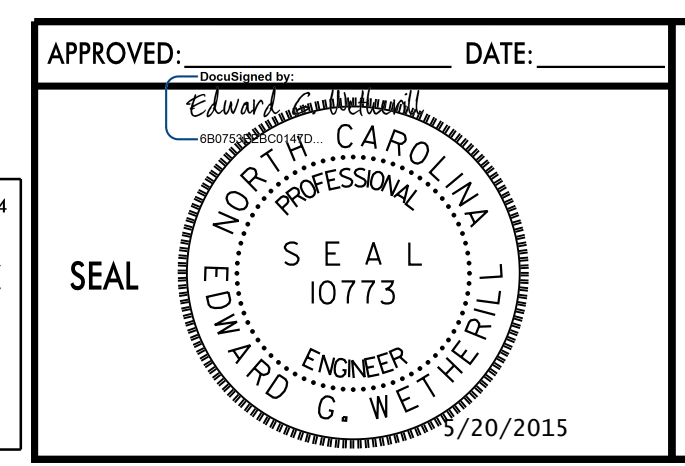
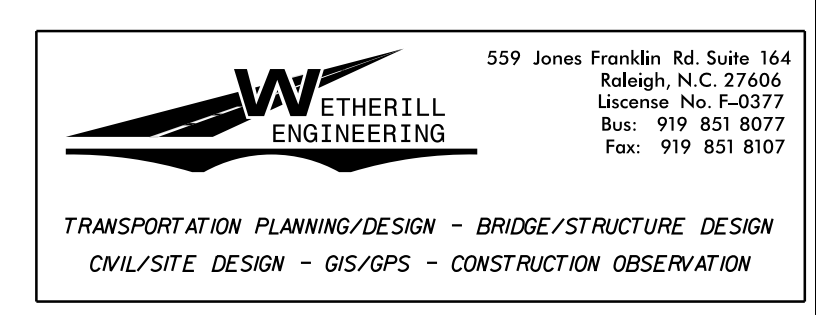
INSTALL ADDITIONAL PORTABLE CONCRETE BARRIER ON -Y1- (US 421) NB MEDIAN TO CLOSE THE US 421 INTERSECTION FROM -Y1- STA. 31+70+/- TO 34+40+/- AND RESET TEMPORARY CRASH CUSHION (SEE TMP-69).

STEP 5) COMPLETE THE FOLLOWING UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE:

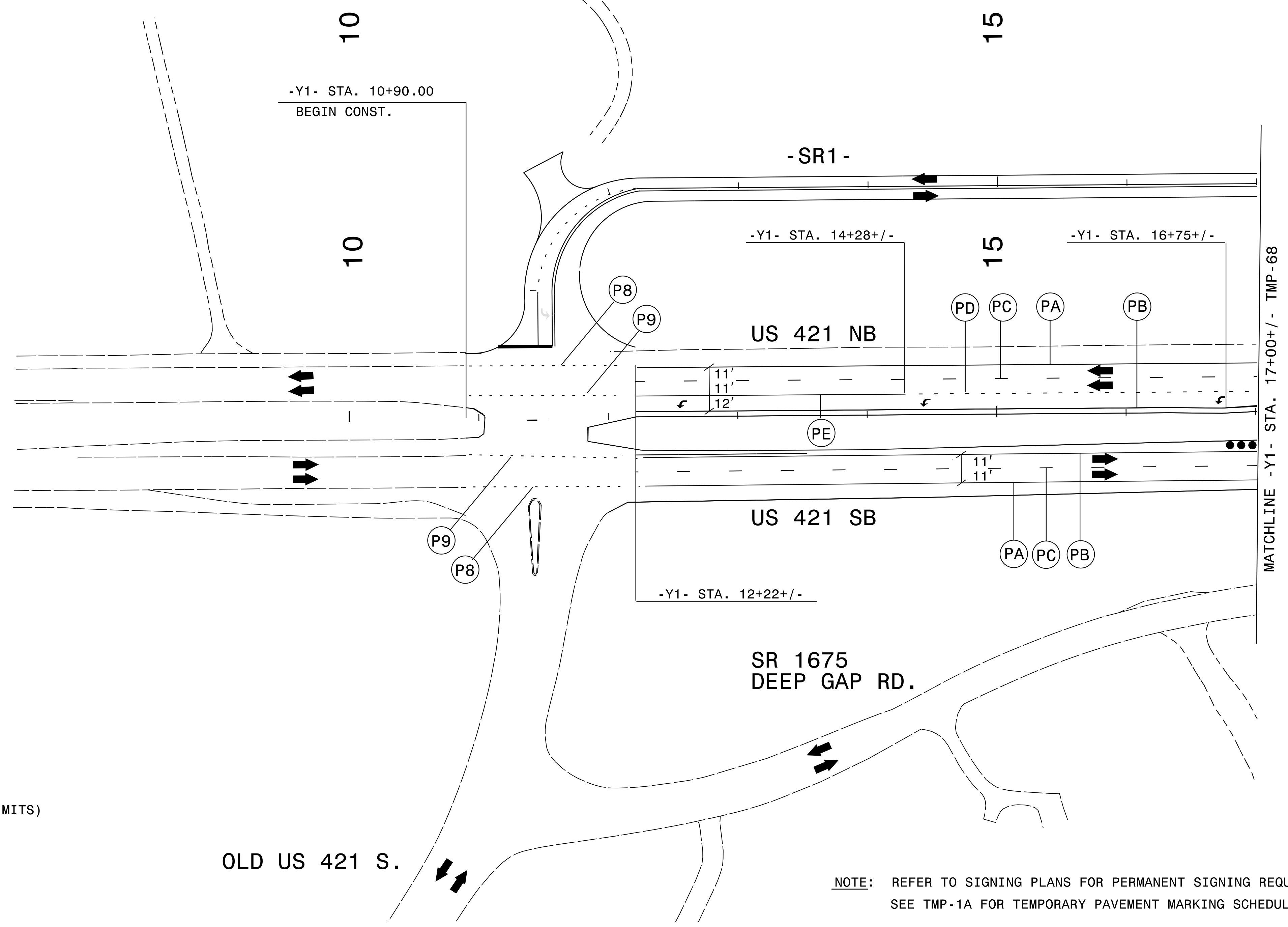
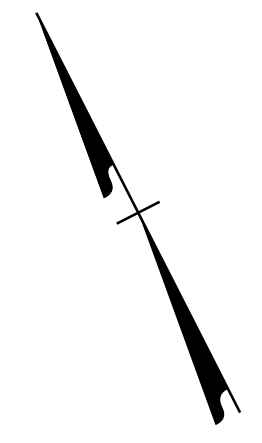
- -Y1- (US 421) MEDIAN CONSTRUCTION INCLUDING PERMANENT MEDIAN BARRIER FROM -Y1- STA. 23+50+/- TO -Y1- STA. 33+50+/- (SEE TMP-68 AND TMP-69).
- -RPB- FROM STA. 6+70+/- TO STA. 10+20+/- . ALSO, CONSTRUCT TEMPORARY PAVEMENT AREA FROM -RPB- STA. 6+60+/- TO STA. 6+85+/- (SEE TMP-69 AND "INSET A").

SEE TMP-73 FOR PHASE IV (PART B) CONSTRUCTION

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**PHASE IV  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAFFIC PATTERN	US 221 N THIS EXIT

CHANGEABLE MESSAGE SIGN

(INSTALL 1/2 MILE +/- FROM US 421 PROJECT LIMITS)

NOTE: REFER TO SIGNING PLANS FOR PERMANENT SIGNING REQUIREMENTS.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

5/20/2015 8:52:27 AM  
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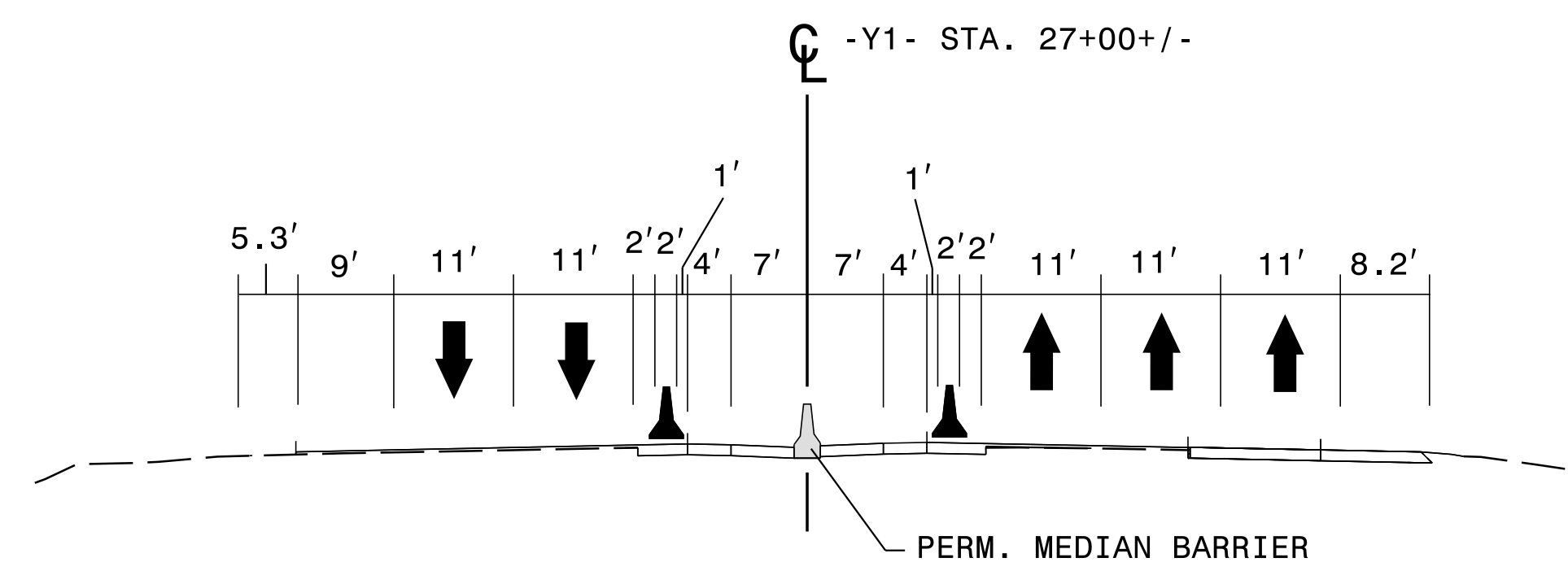
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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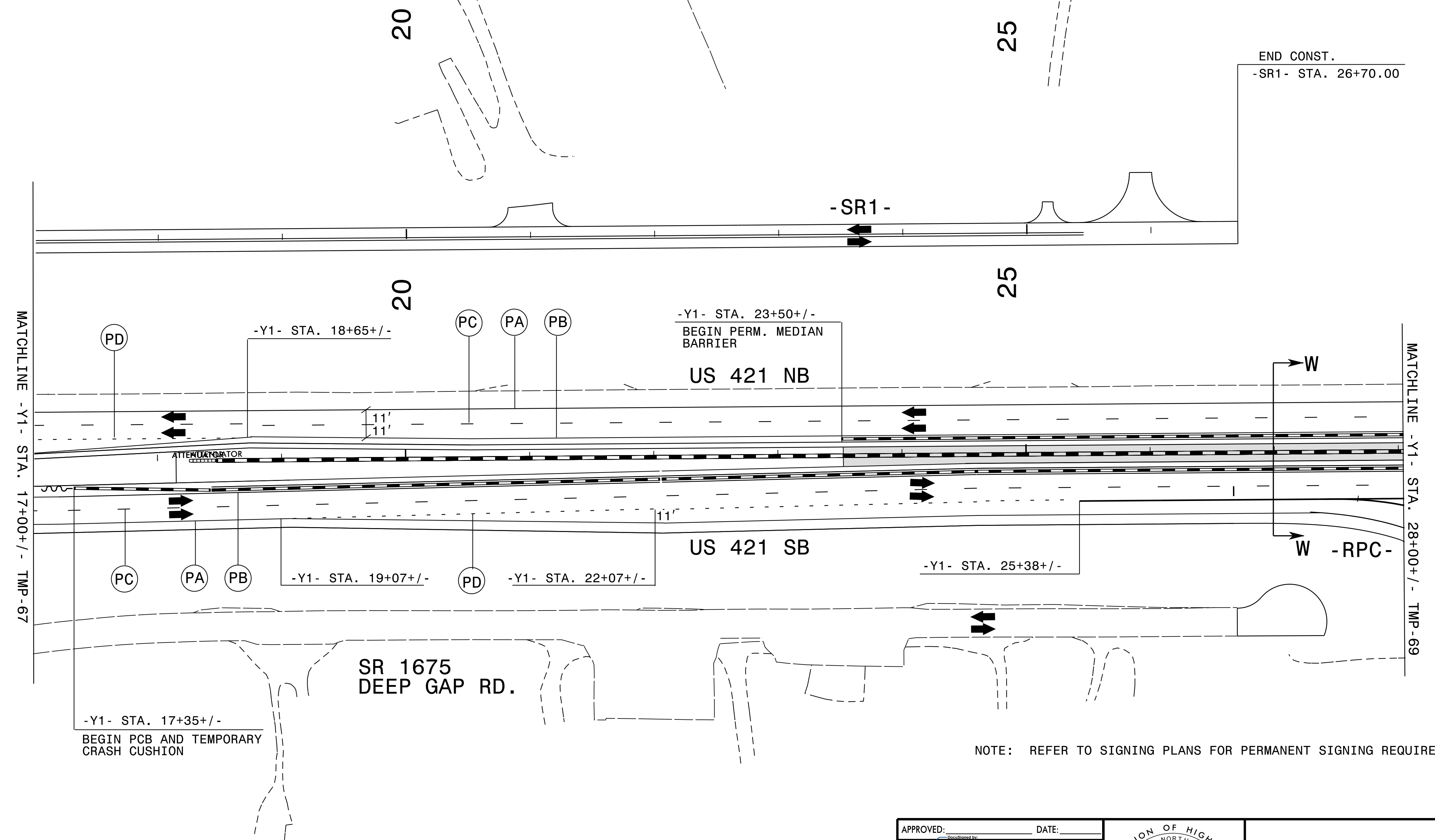
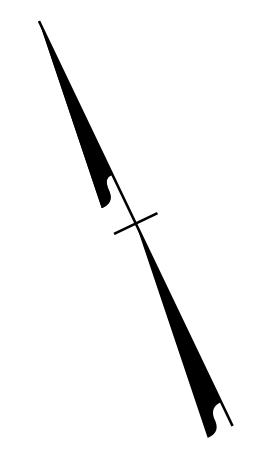
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EDWARD G. WETHERILL  
 ENGINEER  
 5/20/2015

**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



SECTION W-W



NOTE: REFER TO SIGNING PLANS FOR PERMANENT SIGNING REQUIREMENTS.

5/20/2015 8:53:06 AM P:\2015\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_68.dgn

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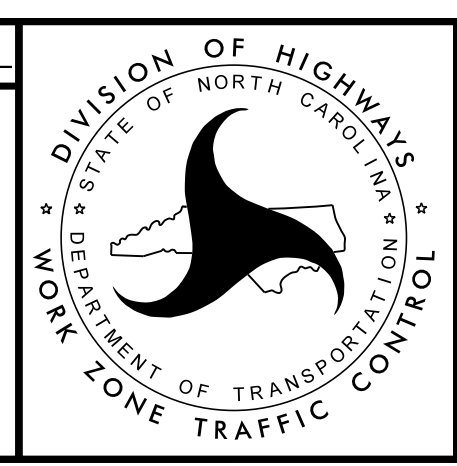
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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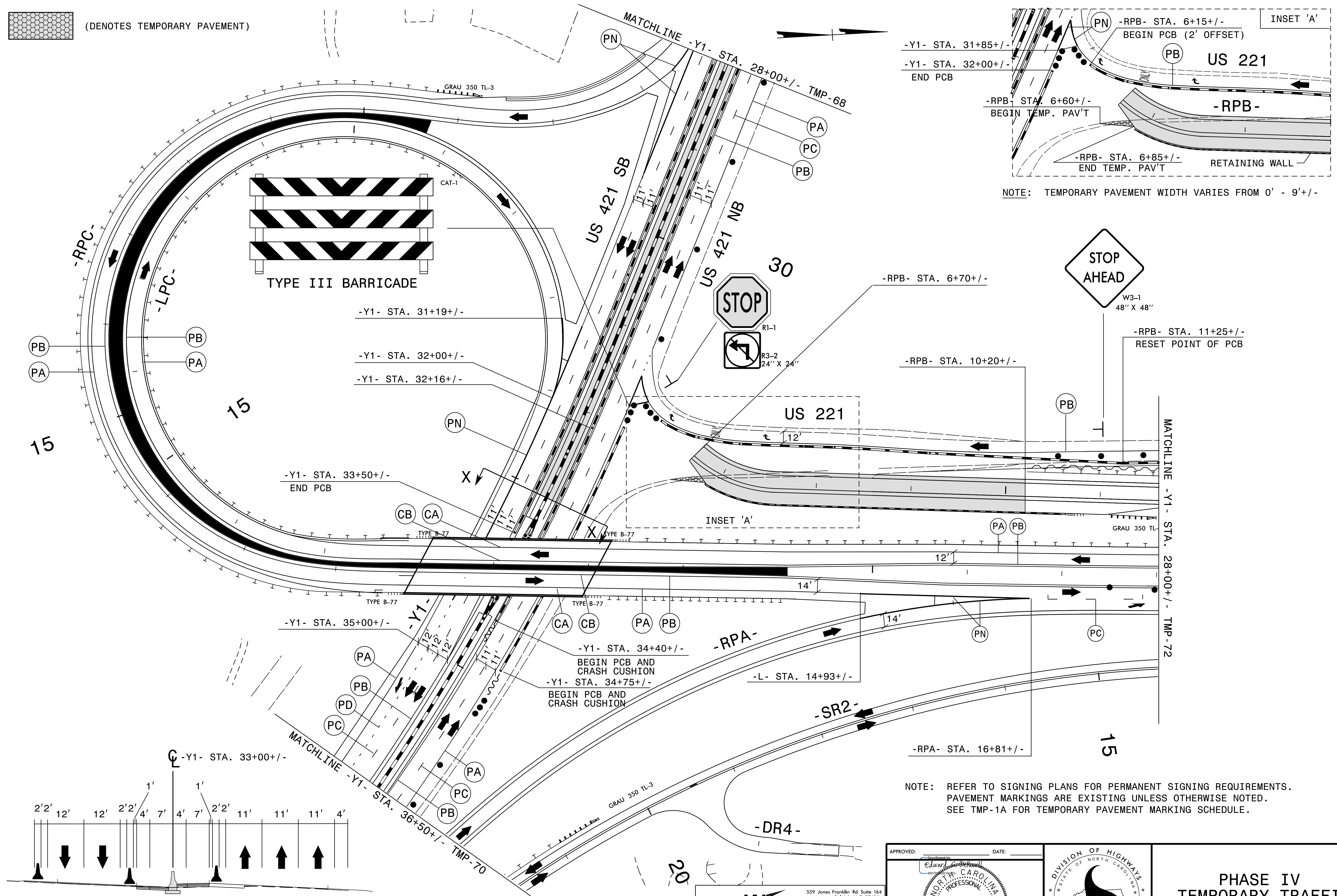
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 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
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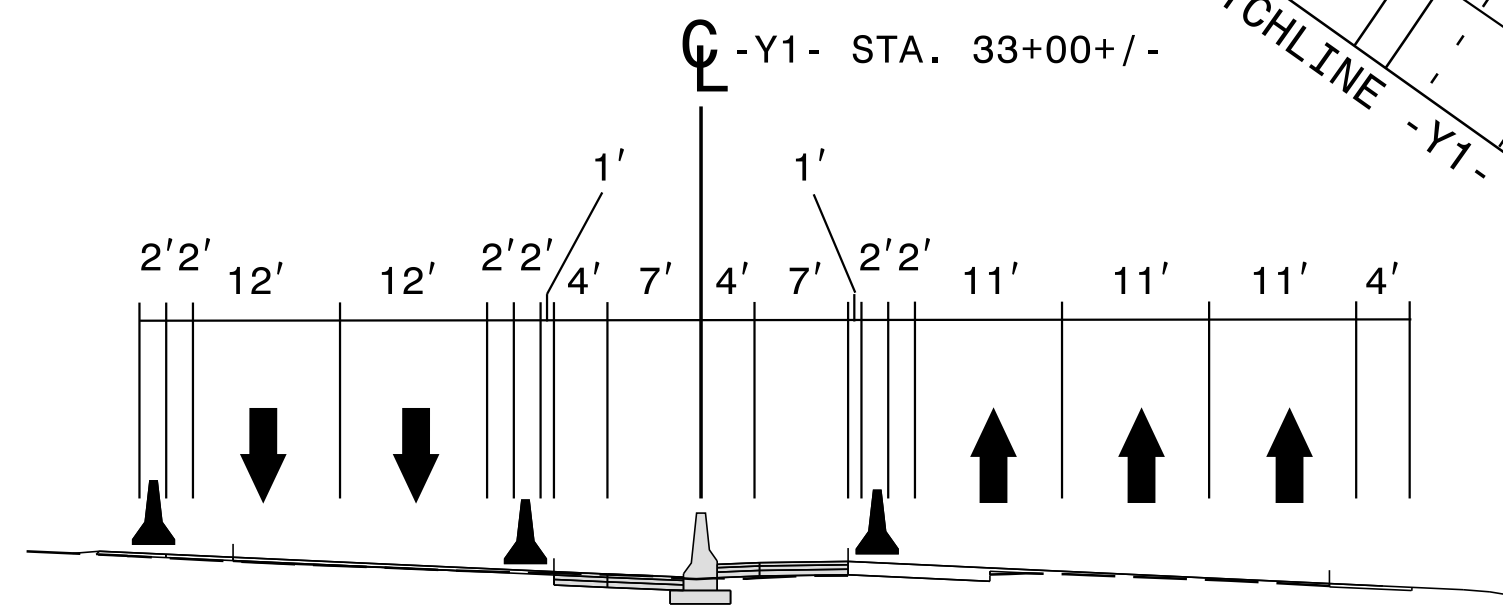
**PHASE IV  
TEMPORARY TRAFFIC CONTROL DETAIL**

 (DENOTES TEMPORARY PAVEMENT)



NOTE: TEMPORARY PAVEMENT WIDTH VARIES FROM 0' - 9'+/-

NOTE: REFER TO SIGNING PLANS FOR PERMANENT SIGNING REQUIREMENTS. PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED. SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

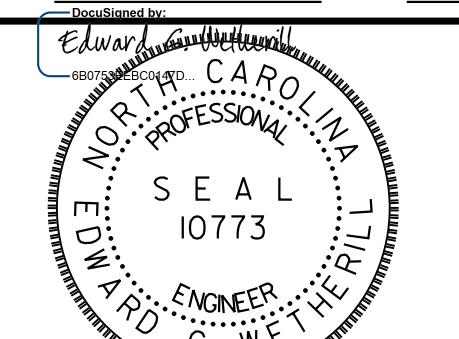


SECTION X-X

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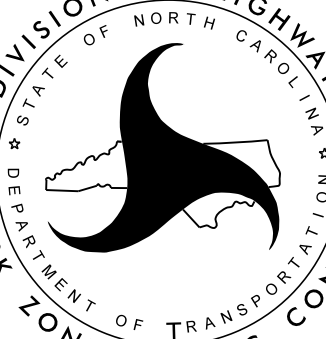
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
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APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

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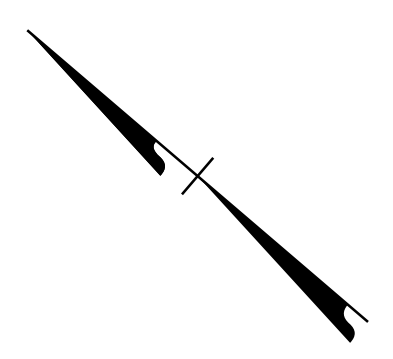
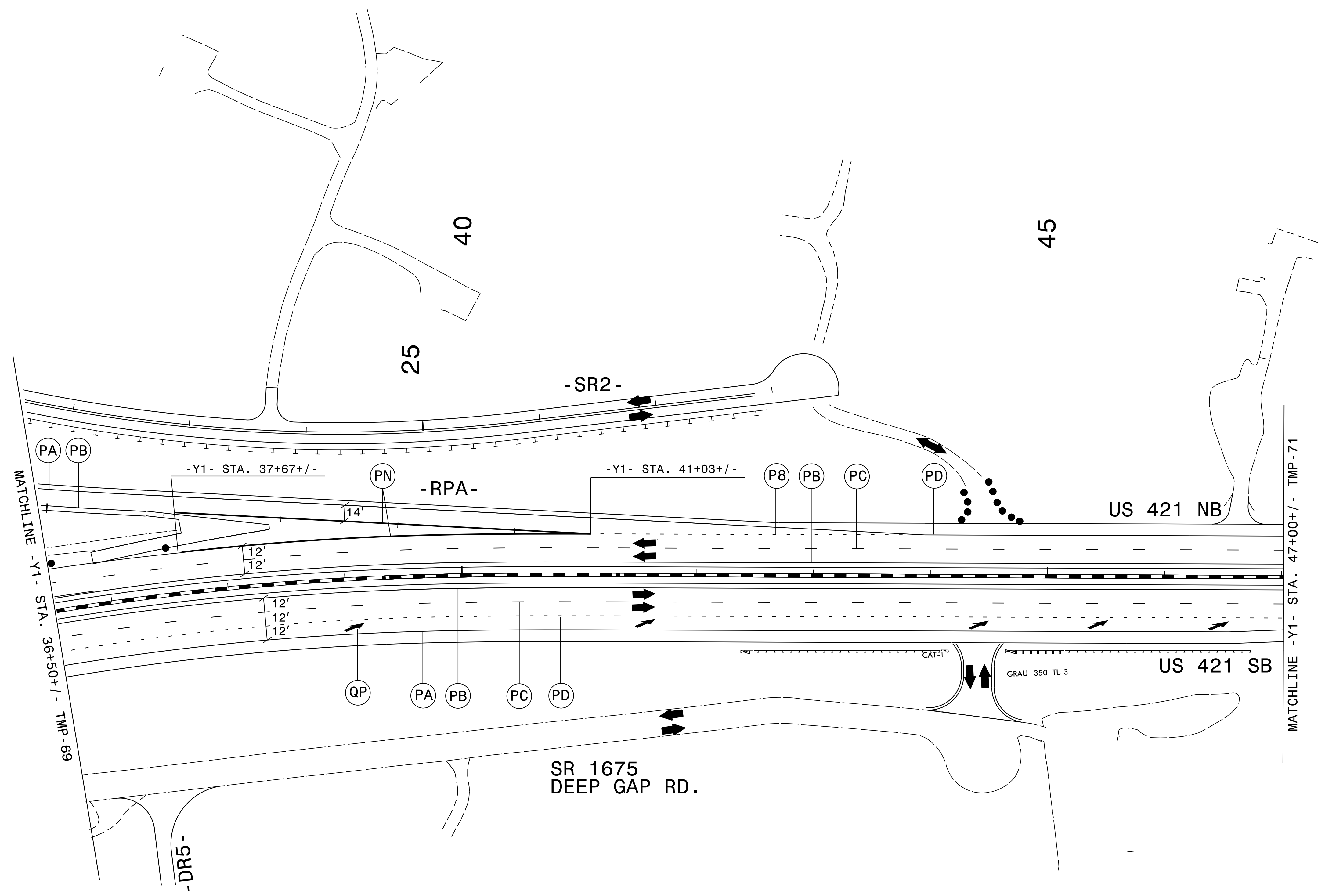
20/2015

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**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

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NOTE: REFER TO SIGNING PLANS FOR PERMANENT SIGNING REQUIREMENTS.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE PAVEMENT MARKING PLAN (PMP) FOR FINAL MARKING AND SYMBOL PLACEMENT.

5/20/2015 8:54:16 AM  
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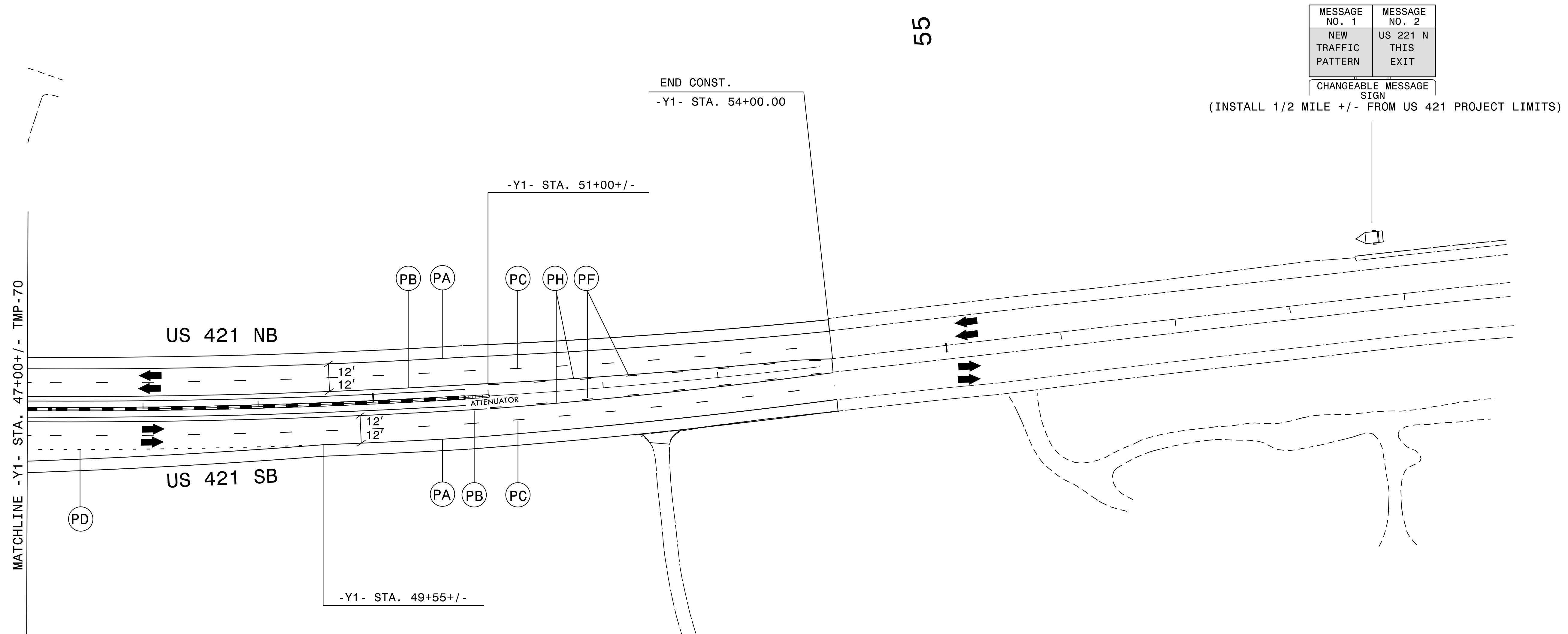
559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-0377  
 Bus: 919 851 8077  
 Fax: 919 851 8107  
 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

SEAL  
 EDWARD G. WETHERILL  
 ENGINEER  
 5/20/2015


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

**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



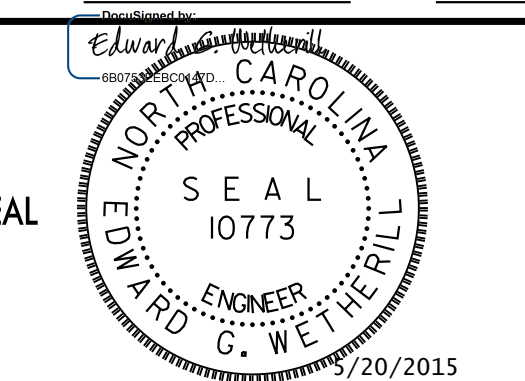
**NOTE:** REFER TO SIGNING PLANS FOR PERMANENT SIGNING REQUIREMENTS.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE PAVEMENT MARKING PLAN (PMP) FOR FINAL MARKING AND SYMBOL PLACEMENT.

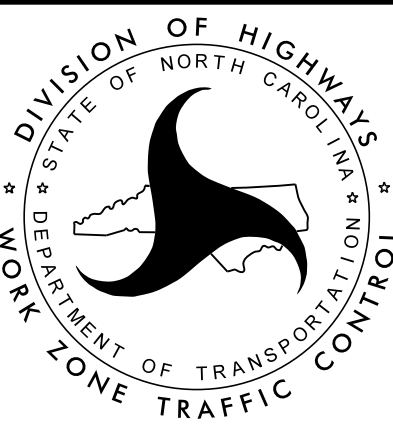
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 559 Jones Franklin Rd, Suite 164  
 Raleigh, NC 27606  
 License No. F-0377  
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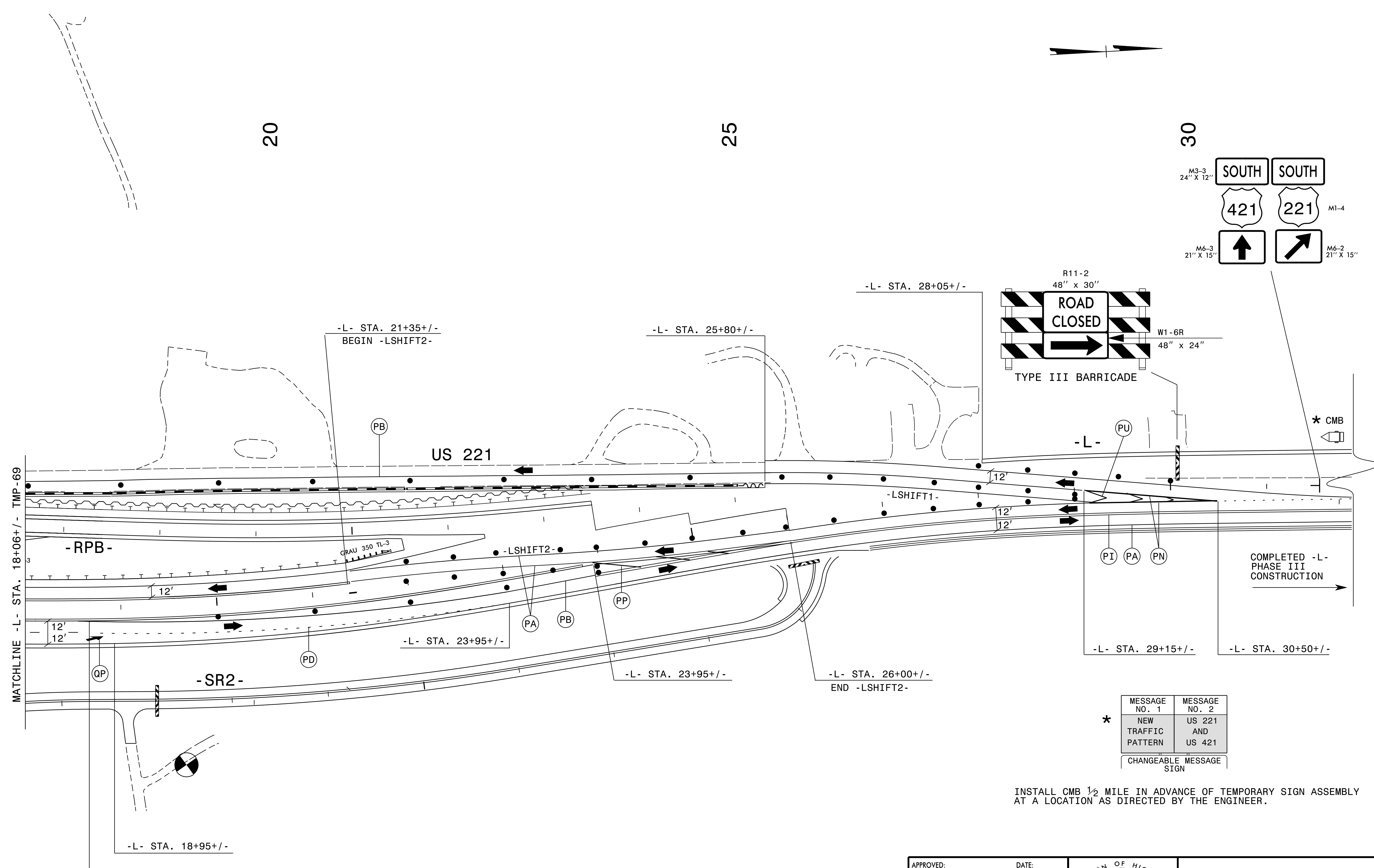
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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


 EDWARD G. WETHERILL  
 PROFESSIONAL ENGINEER  
 NORTH CAROLINA  
 LICENSE NO. 10773


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

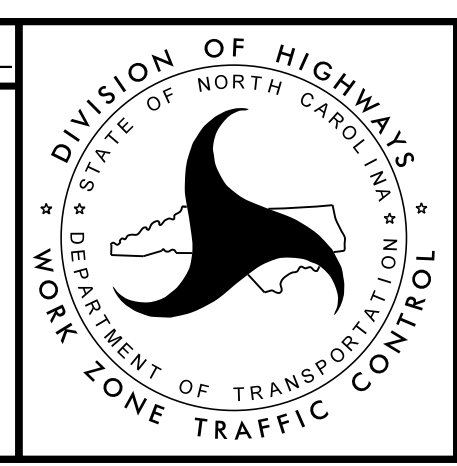
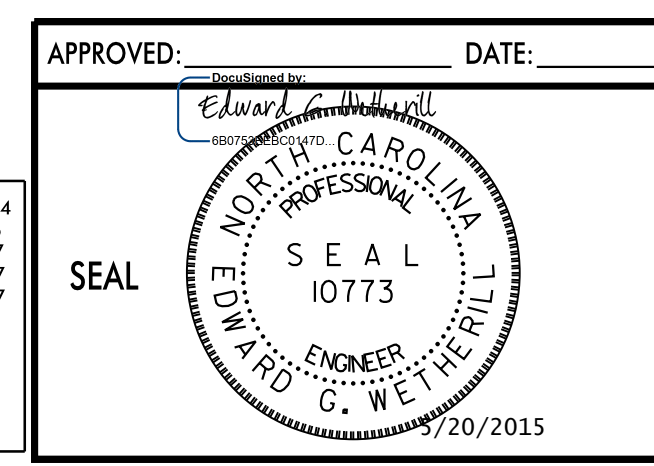
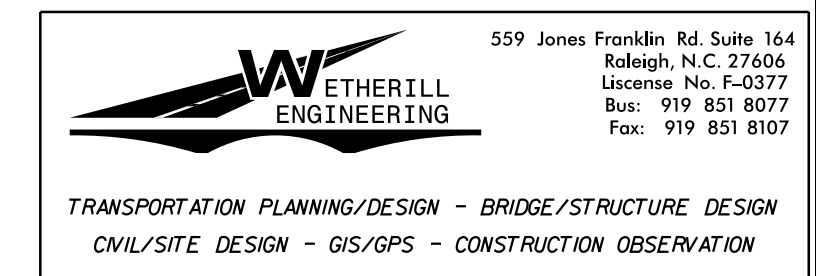
**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAFFIC PATTERN	US 221 AND US 421
CHANGEABLE MESSAGE SIGN	

INSTALL CMB 1/2 MILE IN ADVANCE OF TEMPORARY SIGN ASSEMBLY AT A LOCATION AS DIRECTED BY THE ENGINEER.

NOTE: SEE ROADWAY PLANS FOR TEMPORARY ALIGNMENT ON -LSHIFT2-.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
PAVEMENT MARKINGS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.



**PHASE IV  
TEMPORARY TRAFFIC  
CONTROL DETAIL**

5/20/2015 8:55:42 AM  
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**PHASE IV (PART B)**

STEP 1) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, PLACE TEMPORARY MARKINGS AND MARKERS AS MUCH AS POSSIBLE FOR TEMPORARY -XOVER1- AND -RPB- ALIGNMENTS (SEE TMP-76 AND TMP-79).

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE PHASE IV (PART A) US 421 SB MEDIAN PORTABLE CONCRETE AND TEMPORARY CRASH CUSHION FROM -Y1- STA. 17+35+/- TO STA. 33+50+/-.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE PHASE IV (PART A) US 421 NB MEDIAN PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHIONS FROM -Y1- STA. 23+50+/- TO STA. 34+40+/- AND OUTSIDE FROM -Y1- STA. 32+00+/- TO STA. 34+75+/-.

STEP 2) WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING:

- A. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 SB AND PLACE TEMPORARY MARKINGS AND MARKERS IN THE FINAL TRAFFIC PATTERN (SEE TMP-74 THRU TMP-78) AS SHOWN IN FINAL PAVEMENT MARKING PLANS.
- B. SHIFT US 421 SB TRAFFIC TO THE FINAL TWO-LANE, ONE-WAY PATTERN AND COMPLETE PLACEMENT OF REMAINING TEMPORARY PAVEMENT MARKINGS AND MARKERS AS NECESSARY.
- C. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE CONFLICTING MARKINGS ON US 421 NB AND PLACE TEMPORARY MARKINGS AND MARKERS IN THE FINAL TRAFFIC PATTERN (EXCLUDING -RPB- ACCELERATION LANE) (SEE TMP-74 THRU TMP-78).
- D. SHIFT US 421 NB TRAFFIC TO THE FINAL TWO-LANE, ONE-WAY PATTERN AND COMPLETE PLACEMENT OF REMAINING TEMPORARY PAVEMENT MARKINGS AND MARKERS NECESSARY (EXCLUDING -RPB- ACCELERATION LANE).

STEP 3) WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING:

- A. USING FLAGGERS AS NECESSARY, INSTALL PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS AS FOLLOWS:
  - -L- (US 221) SB -L- STA. 12+73+/- TO -RPB- STA. 7+35+/- (POSITIVE PROTECTION FOR RETAINING WALL) (SEE TMP-76).
  - -L- (US 221) SB STA. 12+73+/- TO -L- STA. 25+75+/- (SEE TMP-76 AND TMP-79).
- B. USING LAW ENFORCEMENT AND CHANGEABLE MESSAGE BOARDS, SHIFT -L- (US 221) SB TO TEMPORARY -XOVER1- AND IN A TEMPORARY ONE-LANE, RIGHT-TURN ONLY PATTERN TO US 421 NB (SEE TMP-76 AND TMP-79).
- C. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, PLACE REMAINING PAVEMENT MARKINGS AND MARKERS AS NECESSARY ON -L- (US 221) AND TEMPORARY -XOVER1- FOR TEMPORARY TRAFFIC PATTERNS.
- D. REMOVE PHASE IV (PART A) PORTABLE CONCRETE BARRIER AND CRASH CUSHION FROM EXISTING US 221 SB AS FOLLOWS:
  - -RPB- STA. 6+15+/- TO -L- STA. 25+80+/- (SEE TMP-69 AND TMP-72).

THE FOLLOWING WORK IN PHASE IV (PART B) STEP 4, STEP 5, AND STEP 6 MAY BE COMPLETED CONCURRENTLY:

STEP 4) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, INSTALL PORTABLE CONCRETE BARRIER AND CRASH CUSHION ON -Y1- (US 421) NB OUTSIDE FOR -RPB- ACCELERATION LANE/SHOULDER CONSTRUCTION AS FOLLOWS:

- A. -Y1- (US 421) NB STA. 18+65+/- TO STA. 31+75+/- (SEE TMP-75 AND TMP-76).
- B. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15 AS NECESSARY, CONSTRUCT PROPOSED -RPB- TIE AND -RPB- ACCELERATION LANE/SHOULDER CONSTRUCTION UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE FROM -Y1- (US 421 NB STA. 12+05+/- TO STA. 18+65+/- (SEE TMP-74 THRU TMP-75).

STEP 5) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, BEGIN REMOVAL OF TEMPORARY -LSHIFT1- PAVEMENT (SEE TMP-79).

GRADE AND CONSTRUCT PROPOSED -L- (US 221) SB TIE-IN UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE FROM -L- STA. 24+00+/- TO STA. 28+00+/- (SEE TMP-79).

CONSTRUCT PROPOSED -L- (US 221) SB CURB AND GUTTER AS FOLLOWS:

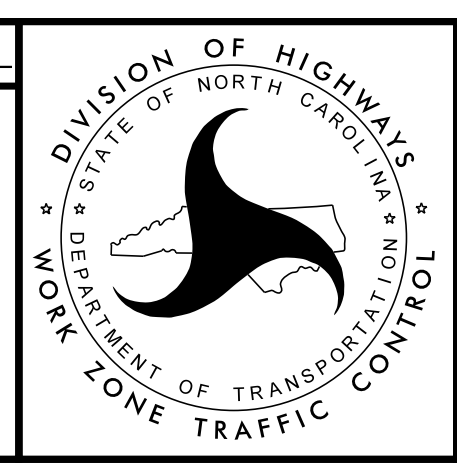
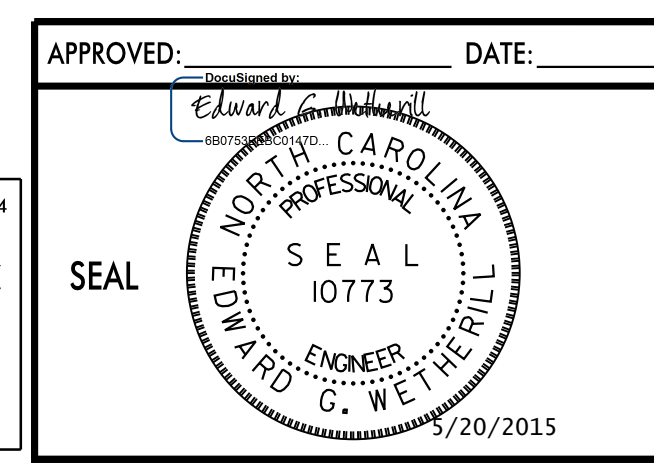
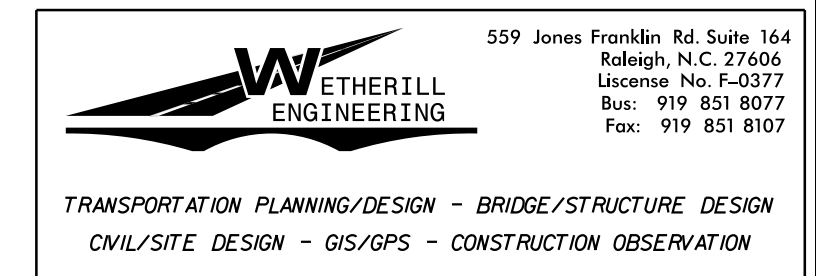
- -L- STA. 28+00+/- TO -L- STA. 34+80+/- (SEE TMP-79).

STEP 6) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, COMPLETE THE FOLLOWING WORK BEGUN IN PHASE III (PART A) -L- (US 221):

- -L- (US 221) SB STA. 60+00+/- TO STA. 113+75+/- (INCLUDING STAGE II BOX CULVERT AT STA 66+00+/-) (SEE TMP-47 THRU TMP-51).
- -L- STA. 130+35+/- TO STA. 158+00+/- (SEE TMP-53 THRU TMP-55).
- -Y5- SR 1100 (CRANBERRY SPRINGS RD.) (SEE TMP-51).
- -Y8- (DEEP GAP ESTATES RD.) (SEE TMP-54).

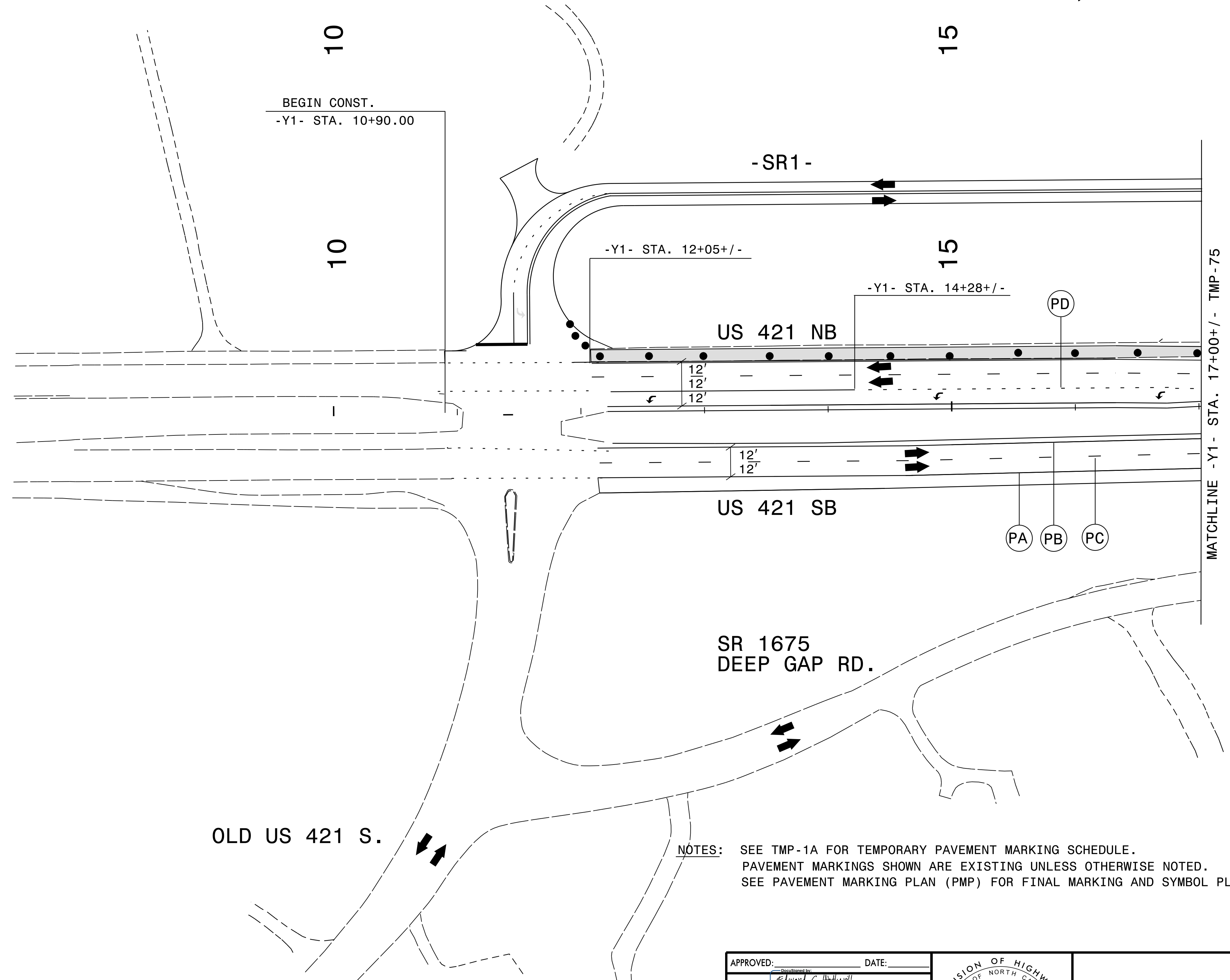
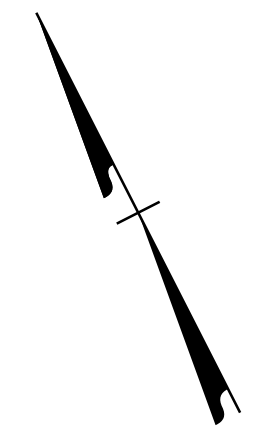
SEE TMP-66 FOR PHASE IV (PART A) CONSTRUCTION

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**PHASE IV  
TEMPORARY TRAFFIC  
CONTROL DETAIL**





OLD US 421 S.

SR 1675  
DEEP GAP RD.

US 421 NB

US 421 SB

BEGIN CONST.  
-Y1- STA. 10+90.00

-Y1- STA. 12+05+/-

-Y1- STA. 14+28+/-

MATCHLINE -Y1- STA. 17+00+/- - TMP-75

NOTES: SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 PAVEMENT MARKINGS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE PAVEMENT MARKING PLAN (PMP) FOR FINAL MARKING AND SYMBOL PLACEMENT.

5/20/2015 8:56:52 AM  
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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

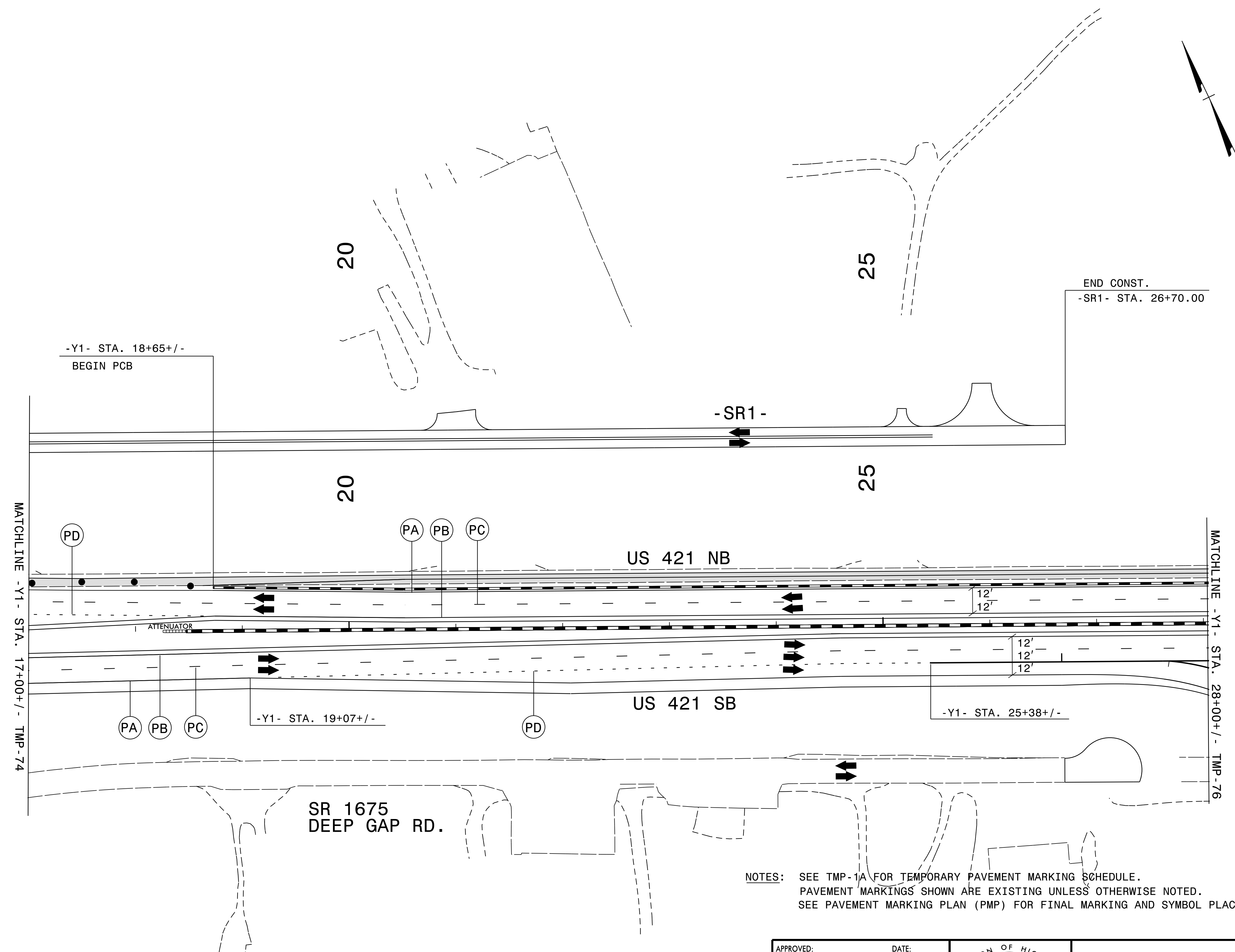
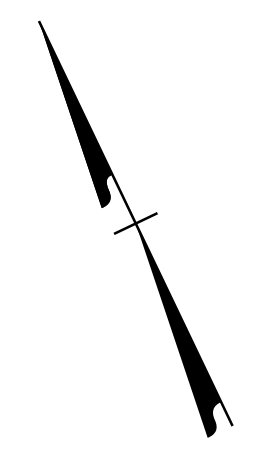
APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

SEAL  
 EDWARD G. WETHERILL  
 ENGINEER  
 NORTH CAROLINA  
 10773  
 5/20/2015

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 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL


**PHASE IV**  
**TEMPORARY TRAFFIC**  
**CONTROL DETAIL**

BEGIN PCB



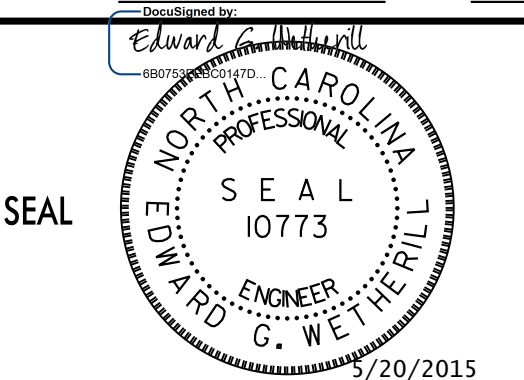
NOTES: SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 PAVEMENT MARKINGS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE PAVEMENT MARKING PLAN (PMP) FOR FINAL MARKING AND SYMBOL PLACEMENT.

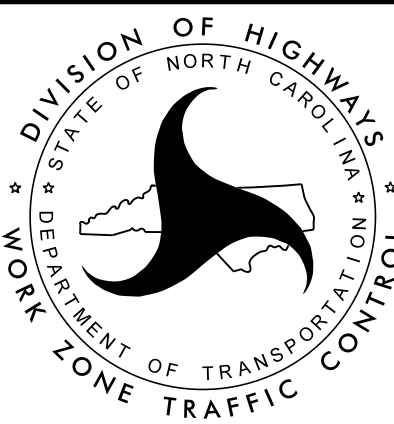
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 Fax: 919 851 8107

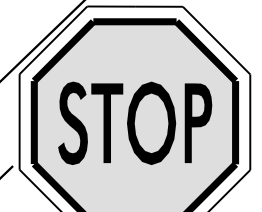
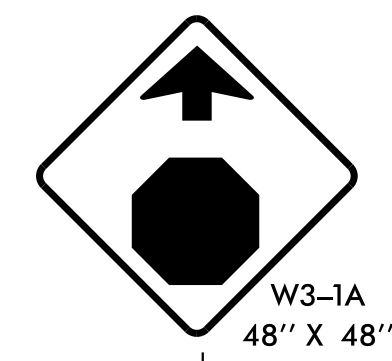
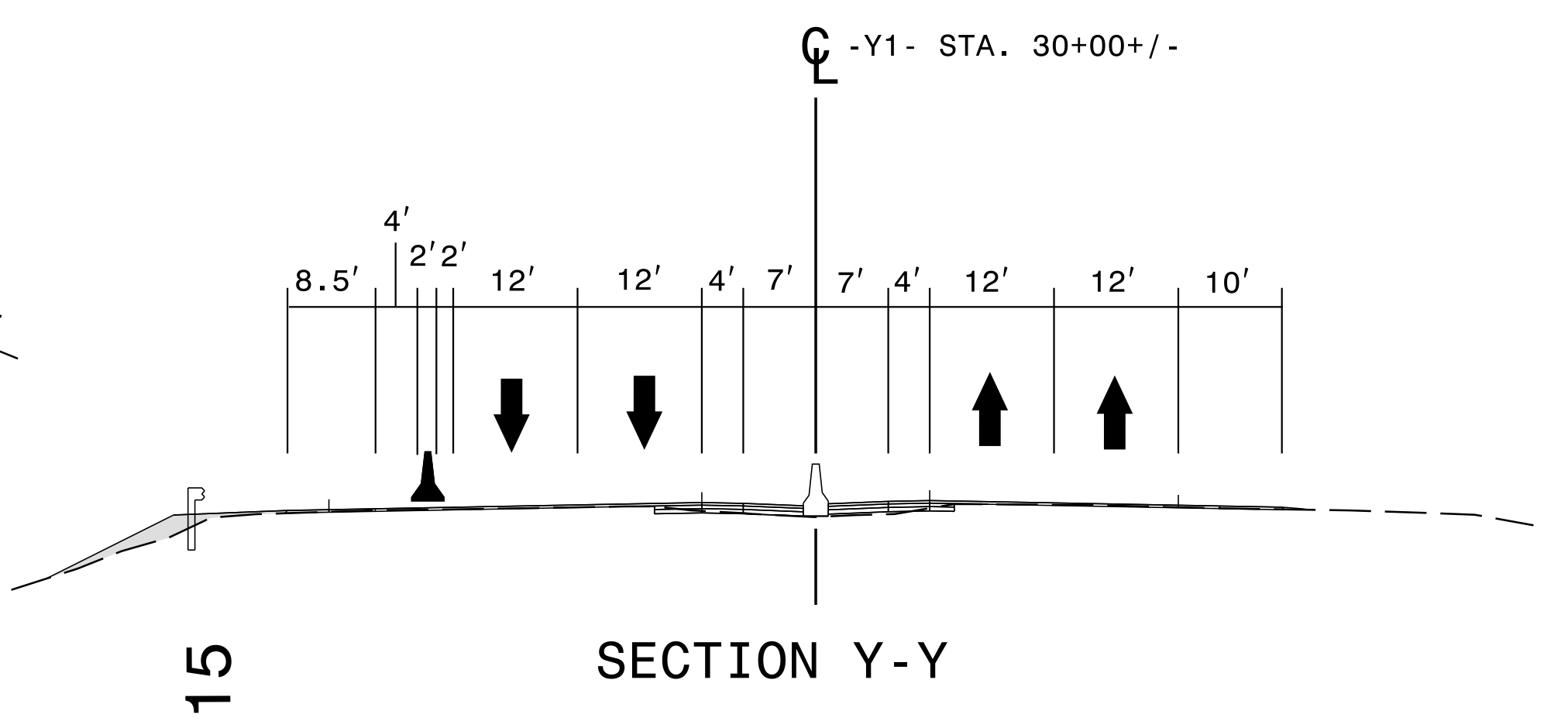
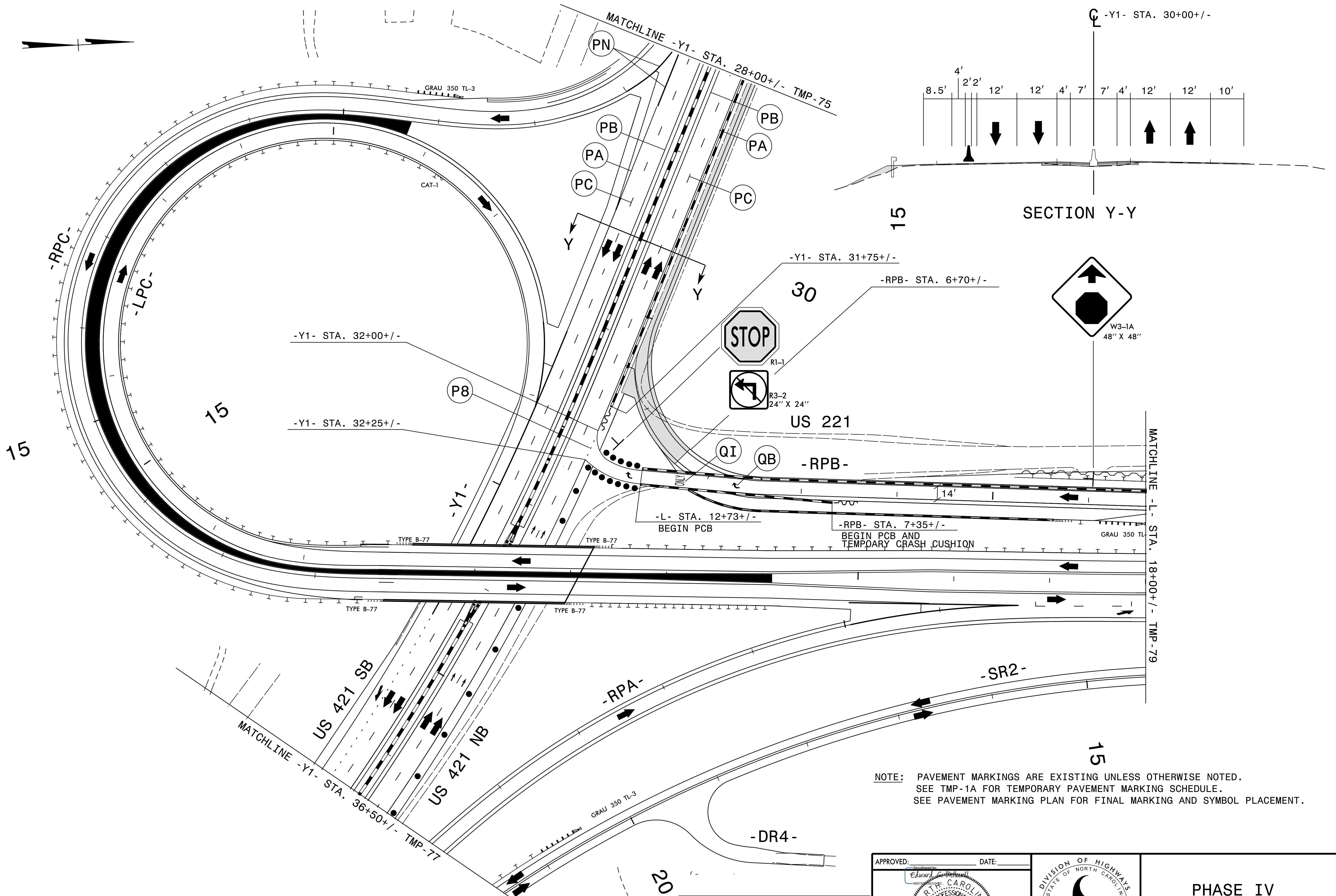
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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


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 EDWARD G. WETHERILL  
 ENGINEER  
 NORTH CAROLINA  
 PROFESSIONAL  
 5/20/2015


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 STATE OF NORTH CAROLINA  
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 WORK ZONE TRAFFIC CONTROL

**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



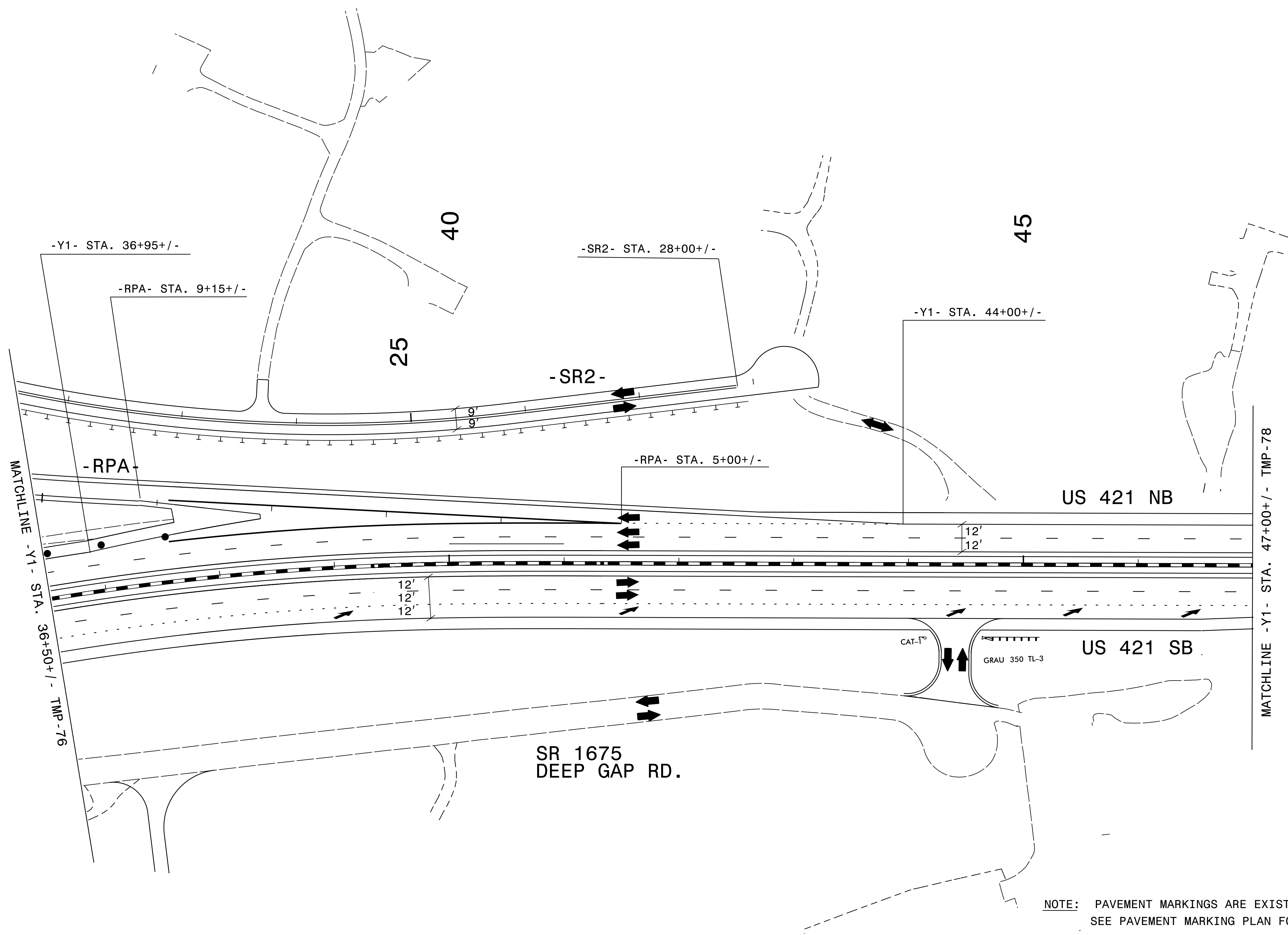
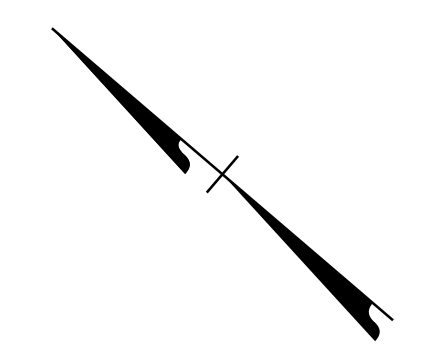
NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE PAVEMENT MARKING PLAN FOR FINAL MARKING AND SYMBOL PLACEMENT.

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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION


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**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE PAVEMENT MARKING PLAN FOR FINAL MARKING AND SYMBOL PLACEMENT.

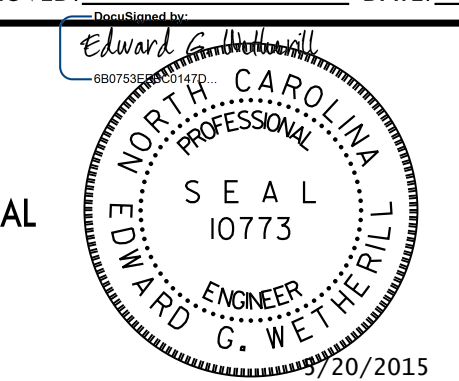
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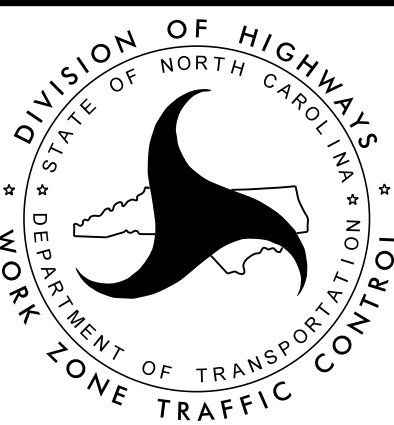
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APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

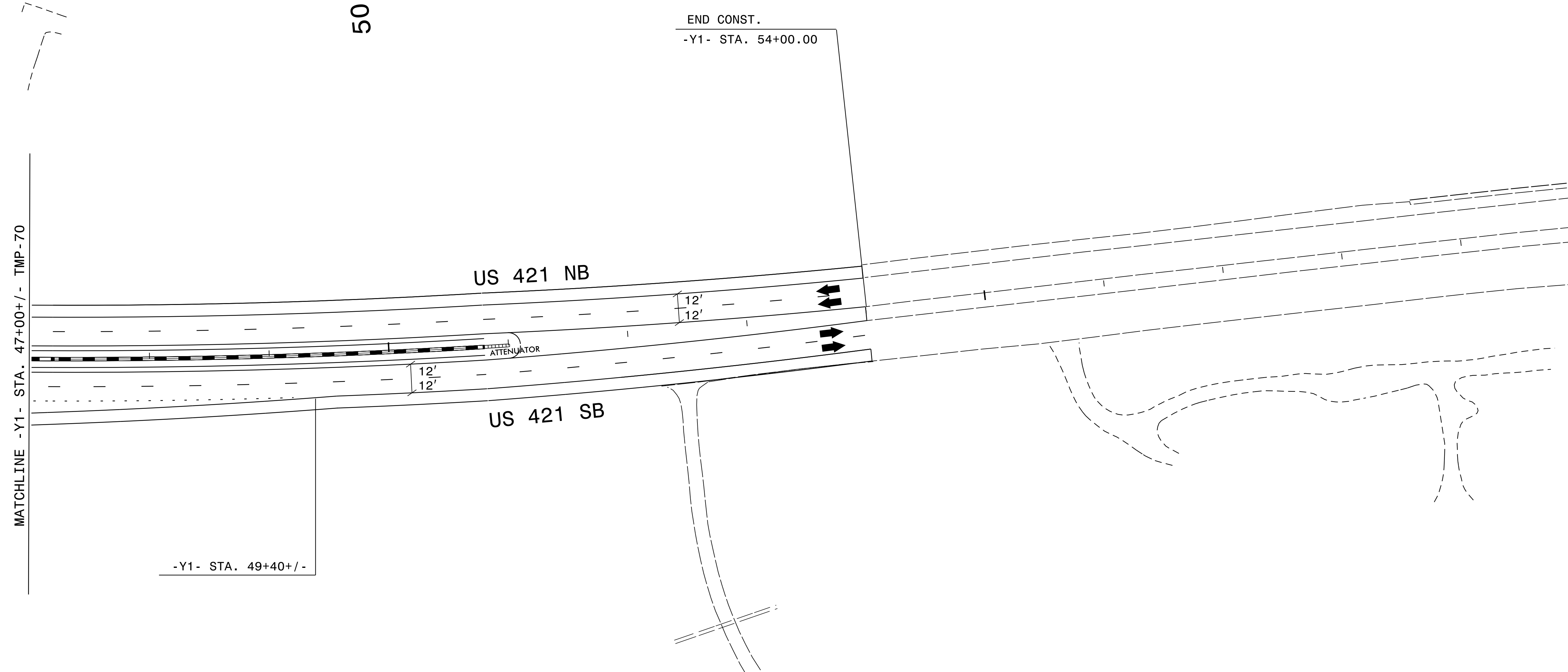
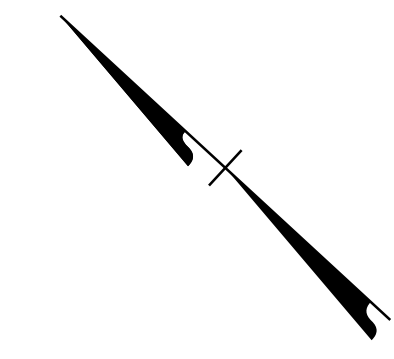
SEAL



7/20/2015




**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

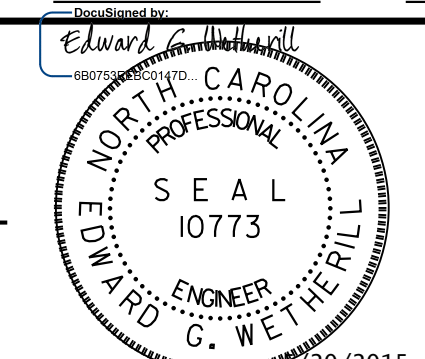


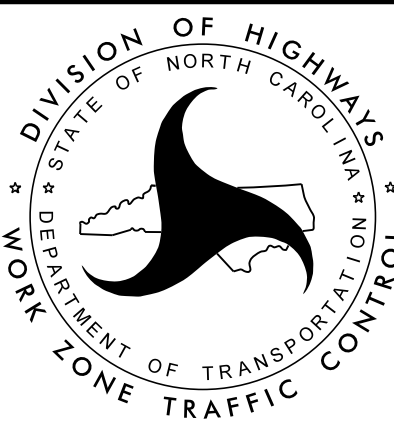
**NOTE:** PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE PAVEMENT MARKING PLAN FOR FINAL MARKING AND SYMBOL PLACEMENT.  
 SEE SIGNING PLAN FOR APPLICABLE PERMANENT SIGNING.

5/20/2015 8:59:23 AM  
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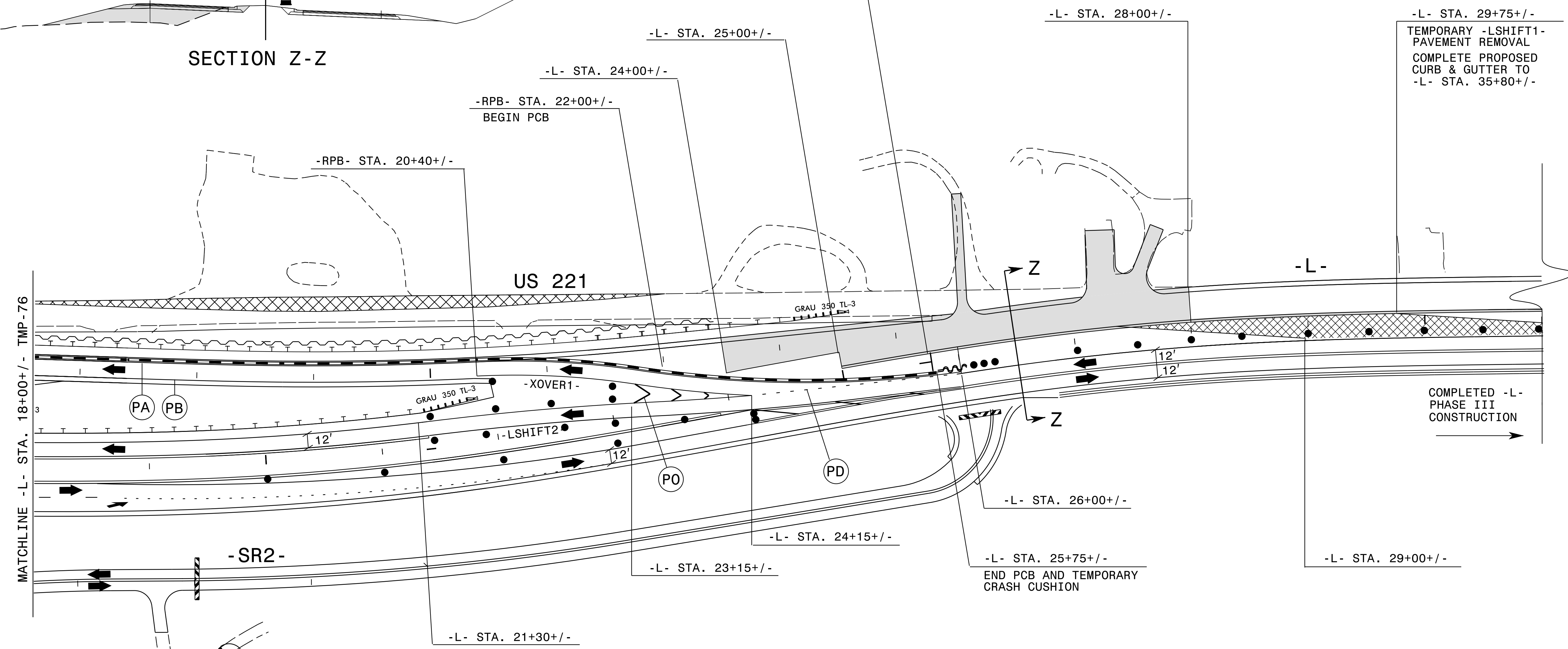
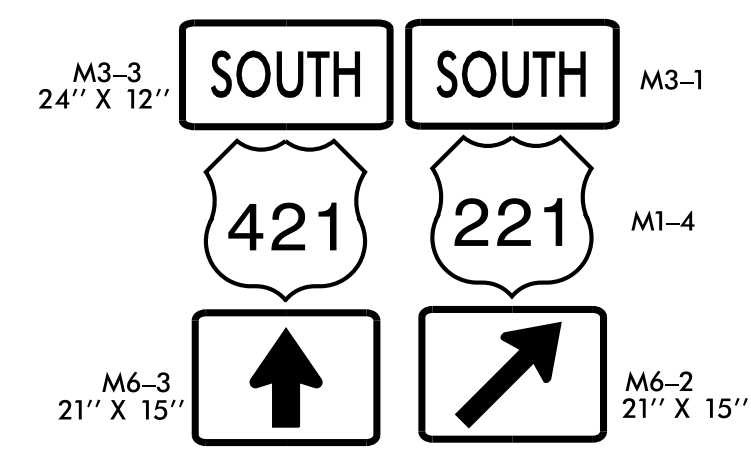
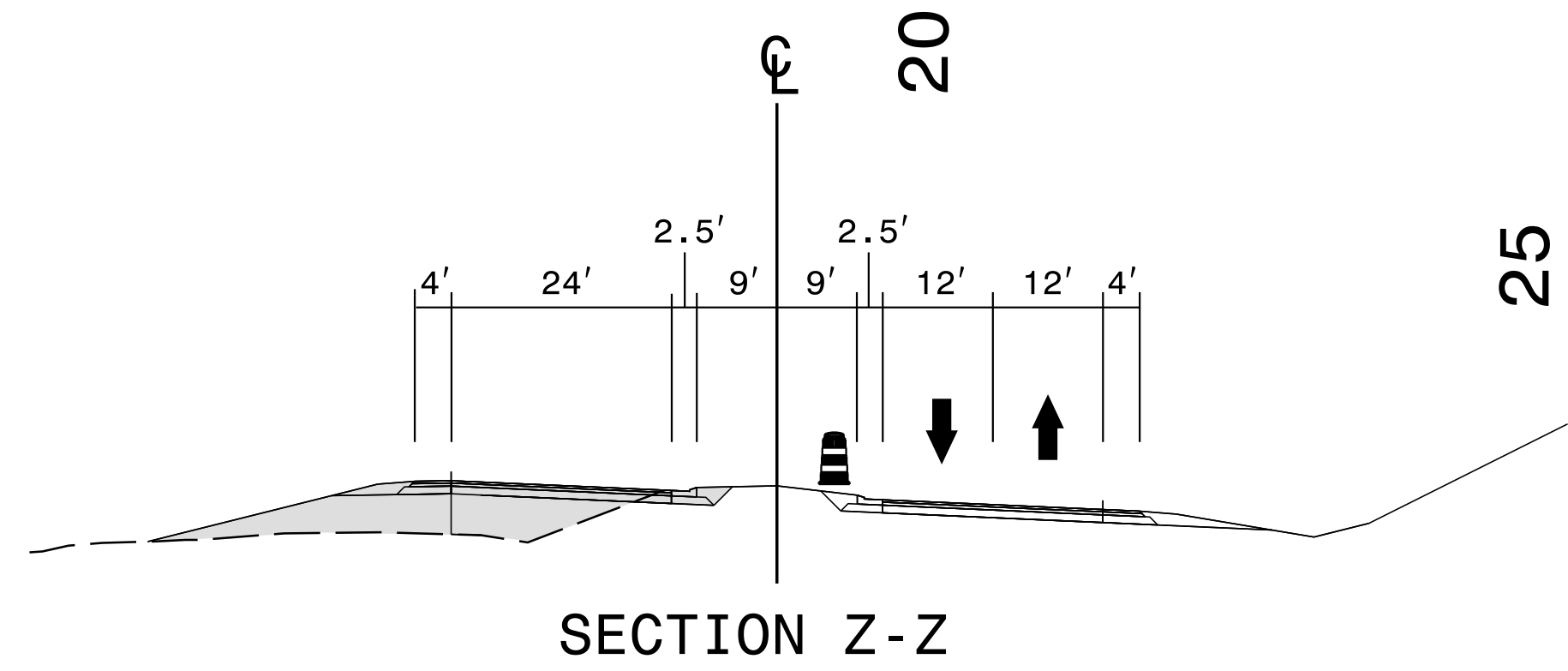
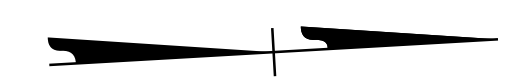

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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
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 SEAL  
 EDWARD G. WETHERILL  
 ENGINEER  
 NORTH CAROLINA  
 PROFESSIONAL  
 10773  
 5/20/2015


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 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



NOTE: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE ROADWAY PLANS FOR TEMPORARY ALIGNMENT ON -XOVER1-

(DENOTES PAVEMENT REMOVAL)

**WETHERILL ENGINEERING**  
 559 Jones Franklin Rd. Suite 164  
 Raleigh, N.C. 27606  
 License No. F-2377  
 Bus: 919 851 8077  
 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
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**PHASE IV  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 8:59:57 AM P:\2012\R-2915A\TrafficControl\TCPAR2915A.TC.TCP\_PSH\_79.dgn

**PHASE V**

THE FOLLOWING WORK OF STEP 1 AND STEP 2 MAY BE PERFORMED CONCURRENTLY:

- STEP 1) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, REMOVE PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHION INSTALLED IN PHASE IV (PART B) FROM -Y1- (US 421) NB STA. 18+65+/- TO STA. 31+75+/- AND REPLACE WITH DRUMS.
- REMOVE CONFLICTING MARKINGS ALONG -Y1- (US 421) NB AND PLACE TEMPORARY MARKINGS, SYMBOLS AND MARKERS TO MATCH THE FINAL TRAFFIC ALIGNMENT ON -RPB- ACCELERATION LANE. MAINTAIN CLOSURE OF -RPB- AND -RPB- ACCELERATION LANE WITH DRUMS.
  - USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, REMOVE PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHION FROM -L- STA. 12+73+/- TO -L- (US 221) STA. 25+75+/- AND REPLACE WITH DRUMS.
- STEP 2) AWAY FROM TRAFFIC, PLACE A YELLOW PAINT EDGELINE ALONG -L- (US 221) SB LANES FROM -L- STA. 24+00+/- TO STA. 160+01+/- AS SHOWN (SEE TMP-82 THRU TMP-91).

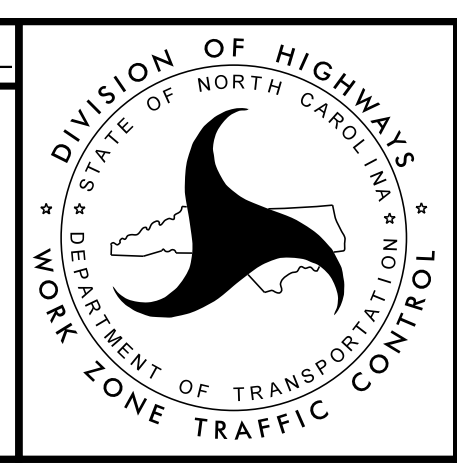
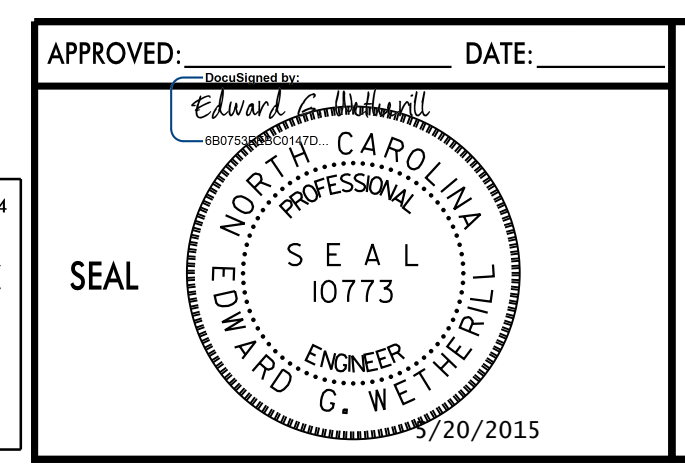
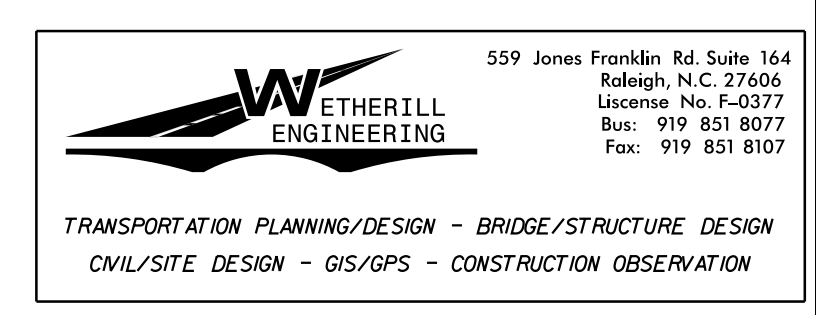
WORK IN A CONTINUOUS MANNER TO COMPLETE STEP 3 AS FOLLOWS:

- STEP 3) USING LAW ENFORCEMENT AND CHANGEABLE MESSAGE BOARDS, SHIFT -L- (US 221) SB TRAFFIC TO THE NEW OUTSIDE TRAVEL LANE IN A ONE-LANE, ONE-WAY TRAFFIC PATTERN AND INSTALL DRUMS TO CLOSE THE MEDIAN LANES (SEE TMP-81 THRU TMP-91). CLOSE TEMPORARY -XOVER1- WITH TYPE III BARRICADES AND SLOW-DIRECT ALL -Y- LINE TRAFFIC.
- INSTALL DRUMS ALONG -L- (US 221) NB YELLOW DOUBLE CENTERLINE AND MAINTAIN -L- (221) NB IN A ONE-LANE, ONE-WAY TRAFFIC PATTERN (SEE TMP-81 THRU TMP-91).
- INSTALL PERMANENT SIGNING AT ALL -Y- LINE INTERSECTIONS ALONG -L- (US 221) NB (SEE SIGNING PLANS).
- STEP 4) WITH -L- (US 221) NB/SB TRAFFIC OPERATING IN A ONE-LANE PATTERN IN EACH DIRECTION, COMPLETE -LSHIFT1- PAVEMENT REMOVAL AND AND CONSTRUCT REMAINING RAISED MEDIAN ISLAND AREAS AND CONCRETE ISLANDS (SEE TMP-82 THRU TMP-91). REMOVE TEMPORARY -XOVER1- AND -LSHIFT2- PAVEMENT (SEE TMP-82). 2).
- COMPLETE CONSTRUCTION ON REMAINING MEDIAN CURB AND GUTTER LOCATIONS ALONG -L- (US 221) NB AND SB.
- USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 8 OF 9, INSTALL PROPOSED OVERHEAD SIGN ASSEMBLY OVER -L- (US 221) SB AT -L- STA. 24+64+/- (SEE SIGNING PLANS AND TMP-82).
- STEP 5) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, PLACE TEMPORARY MARKING SYMBOLS AND DRUMS AT COMPLETED MEDIAN LEFTOVER LOCATIONS TO PROVIDE MEDIAN TURN AROUND POINTS FOR US 221 TRAFFIC (SEE TMP-92). THE ENGINEER WILL DETERMINE THE ORDER OF WHICH -L- (US 221) MEDIAN LEFTOVER LOCATION IS TO BE CONSTRUCTED AND OPENED.

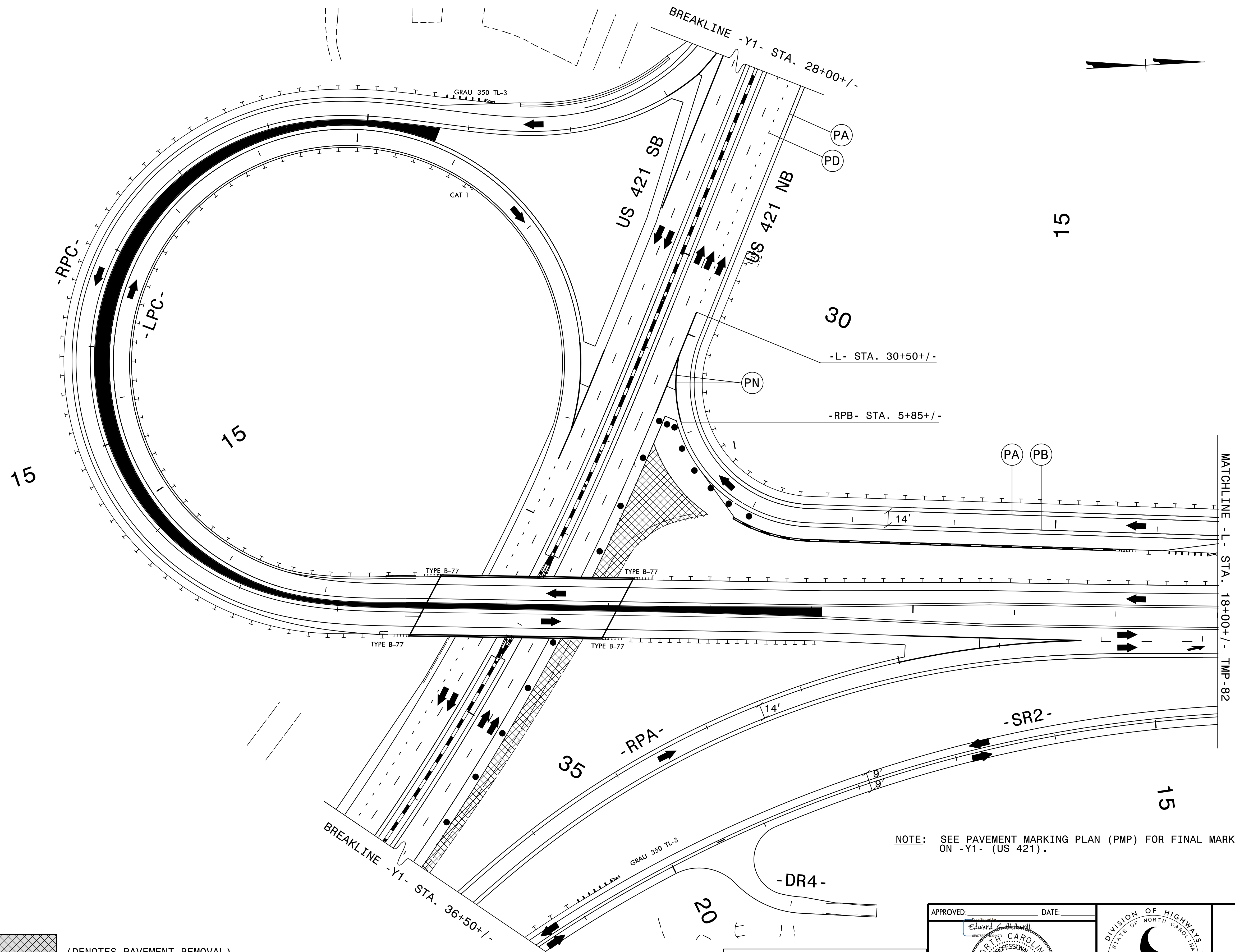
THE FOLLOWING WORK OF STEP 6 AND STEP 7 MAY BE PERFORMED CONCURRENTLY:

- STEP 6) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, PLACE THE FINAL LAYER OF SURFACE COURSE ON -L- (US 221) NB AND -L- (US 221) SB LANES AND ASSOCIATED -Y- LINES.
- PLACE FINAL PAVEMENT MARKINGS, SYMBOLS, AND PAVEMENT MARKERS ON -L- (US 221) AND -Y- LINES ACCORDING TO THE FINAL PAVEMENT MARKING PLAN (PMP).
- STEP 7) USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 15, PLACE THE FINAL LAYER OF SURFACE COURSE ON -Y1- (US 421) NB AND SB LANES, -RPA-, -RPB-, RPC-, -LPC-, -SR1-, AND -SR2-.
- PLACE FINAL PAVEMENT MARKINGS, SYMBOLS, AND PAVEMENT MARKERS ON -Y1- (US 421) NB AND SB LANES, -RPA-, -RPB-, -RPC-, -LPC-, -SR1-, AND -SR2- ACCORDING TO THE FINAL PAVEMENT MARKING PLAN (PMP).

5/20/2015 9:00:33 AM P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_80.dgn




**PHASE V  
TEMPORARY TRAFFIC  
CONTROL DETAIL**



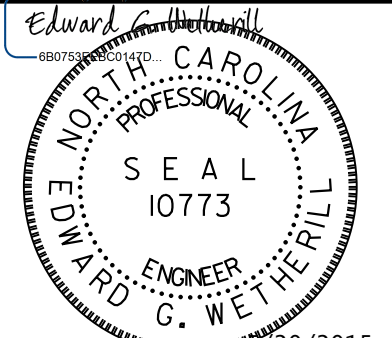
 (DENOTES PAVEMENT REMOVAL)

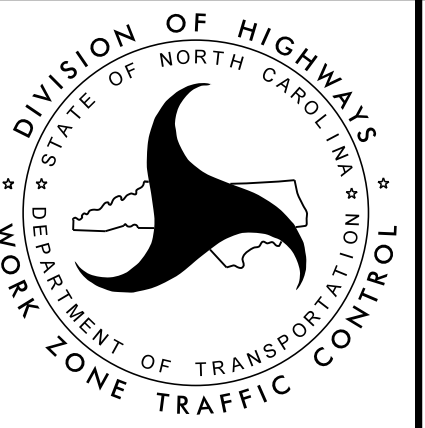
NOTE: SEE PAVEMENT MARKING PLAN (PMP) FOR FINAL MARKING AND SYMBOL PLACEMENT ON -Y1- (US 421).

5/20/2015 9:01:01 AM P:\2012\NR-2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_81.dgn

  
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

  
 SEAL  
 EDWARD G. WETHERILL  
 ENGINEER  
 NORTH CAROLINA  
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 5/20/2015

  
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**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

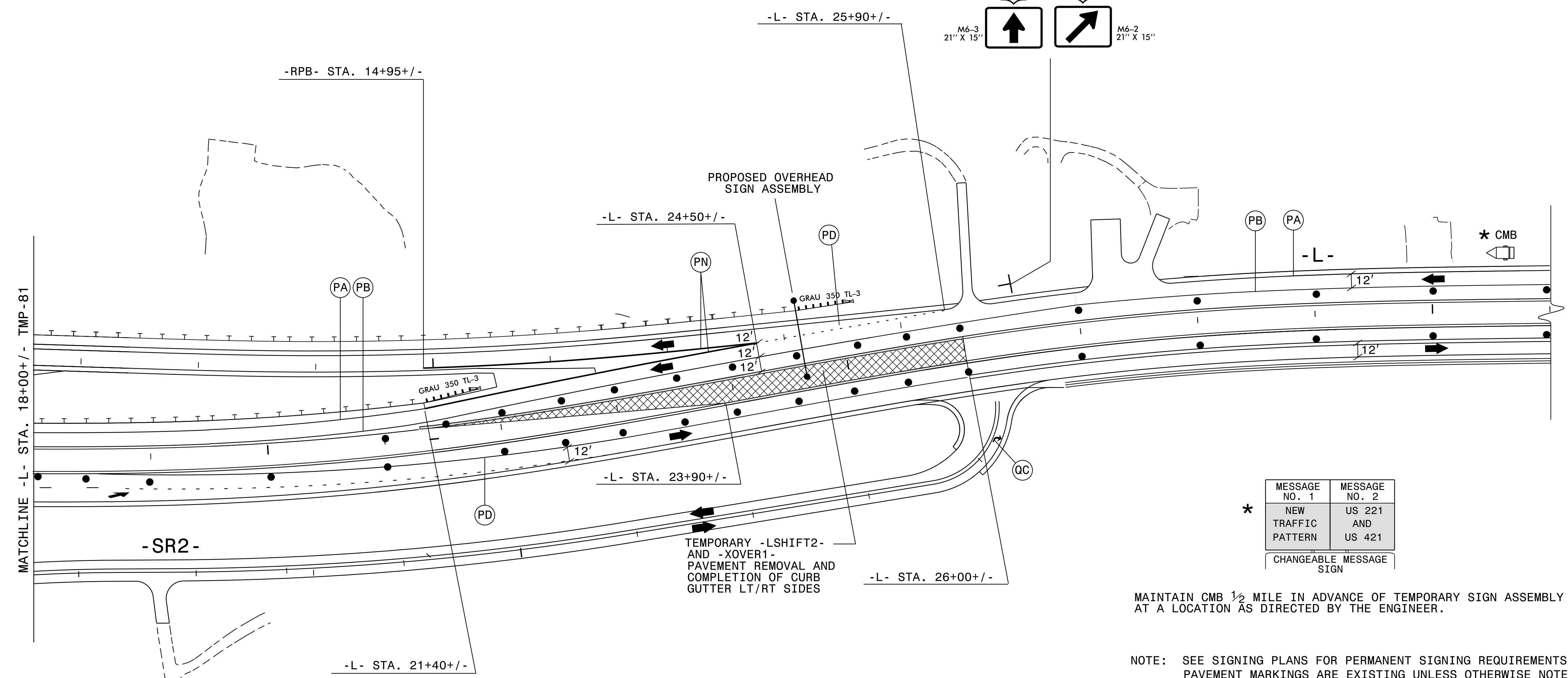
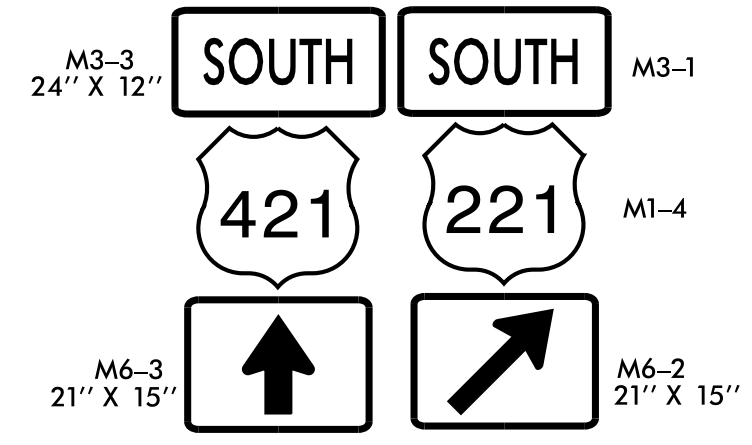




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MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAFFIC PATTERN	US 221 AND US 421
CHANGEABLE MESSAGE SIGN	

\* MAINTAIN CMB 1/2 MILE IN ADVANCE OF TEMPORARY SIGN ASSEMBLY AT A LOCATION AS DIRECTED BY THE ENGINEER.

NOTE: SEE SIGNING PLANS FOR PERMANENT SIGNING REQUIREMENTS. PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED. SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

(DENOTES PAVEMENT REMOVAL)

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 License No. F-6377  
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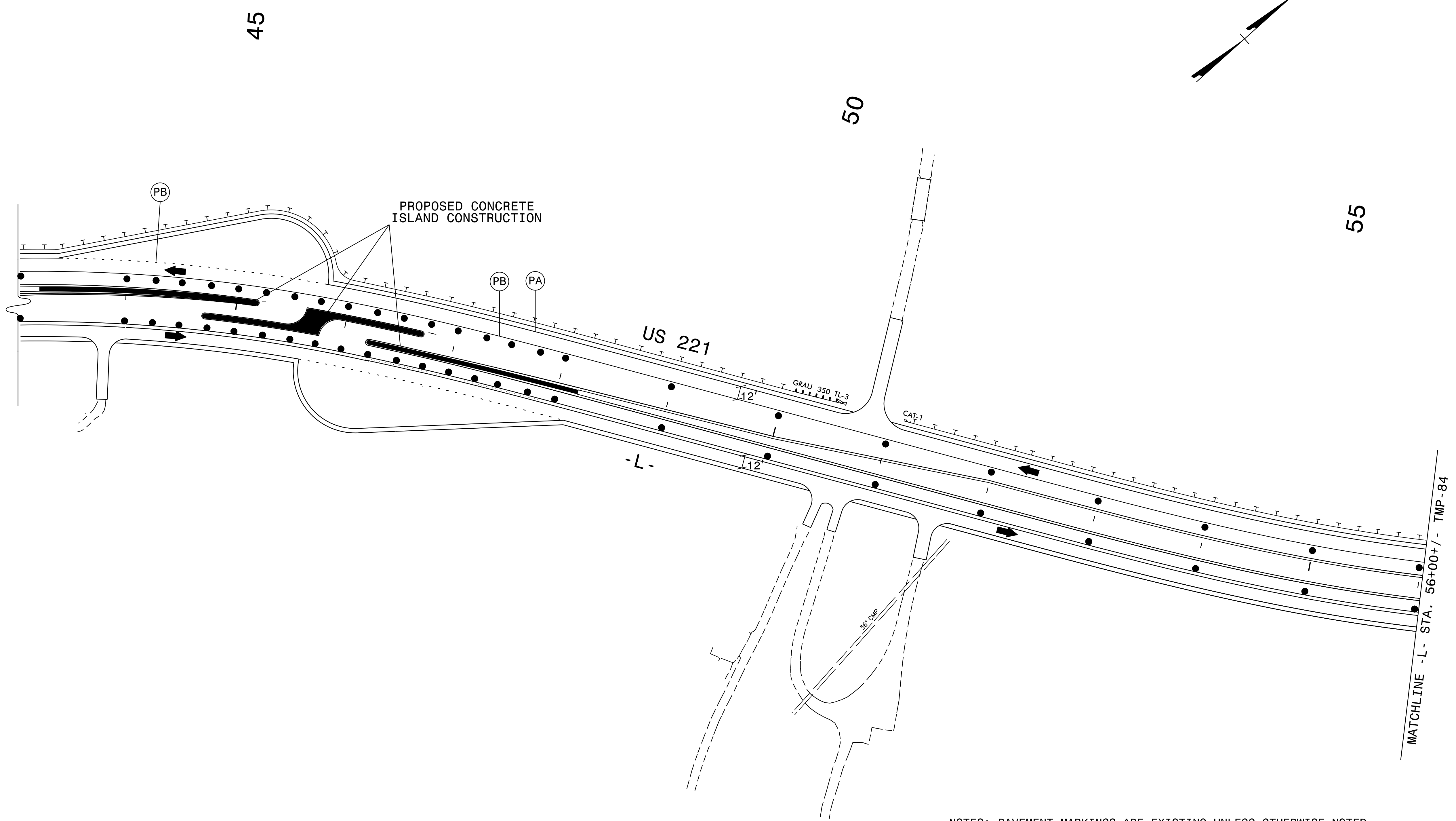
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**PHASE V  
 TEMPORARY TRAFFIC CONTROL DETAIL**

5/20/2015 9:01:42 AM P:\2012\NR-2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH\_82.dgn

PROJ. REFERENCE NO.	SHEET NO.
R-2915A	TMP-83



NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

5/20/2015 9:19:17 AM  
 P:\2012\NR-2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_83.dgn

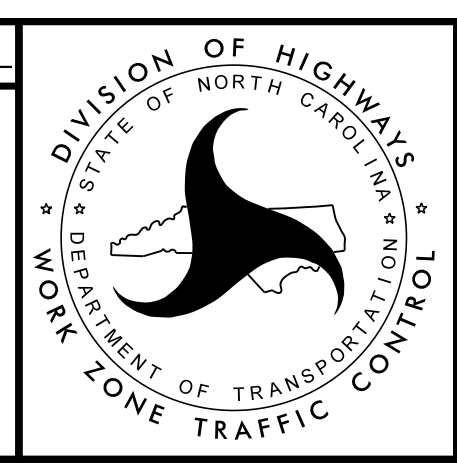
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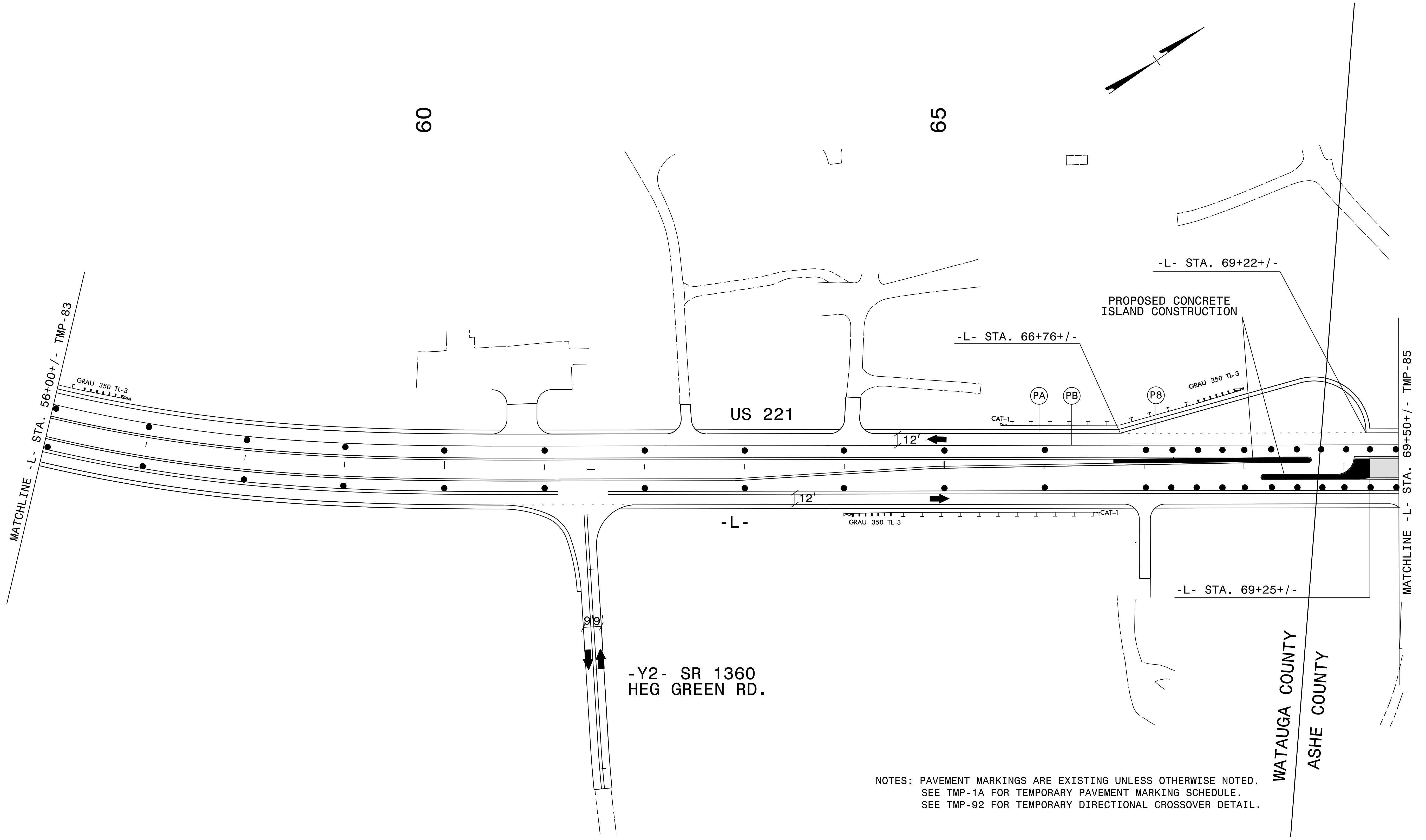
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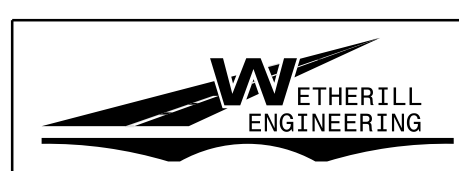


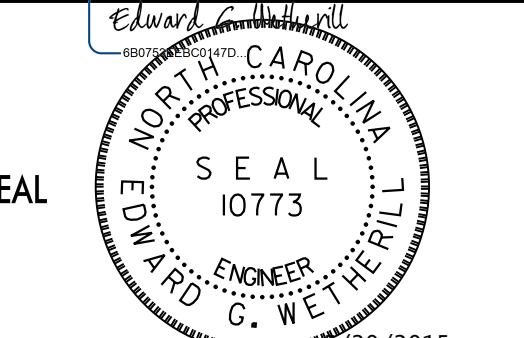
**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

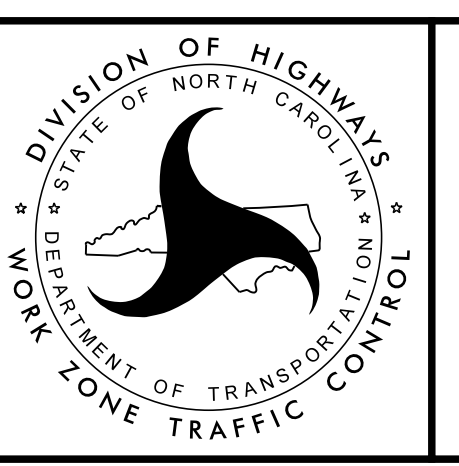


NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

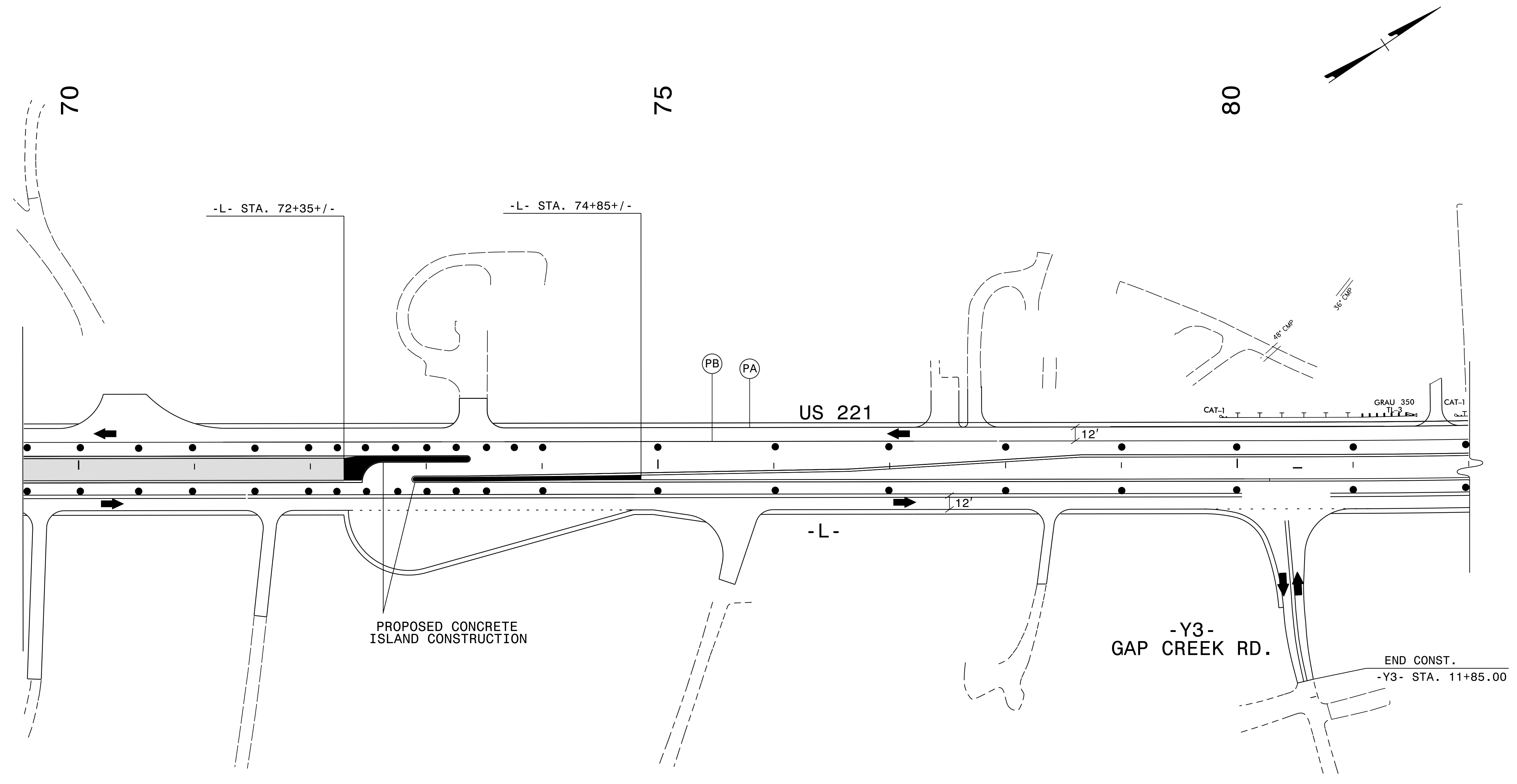
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



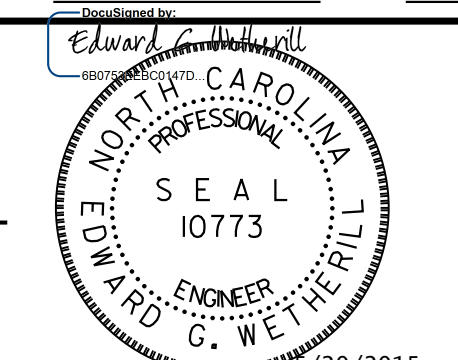
NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

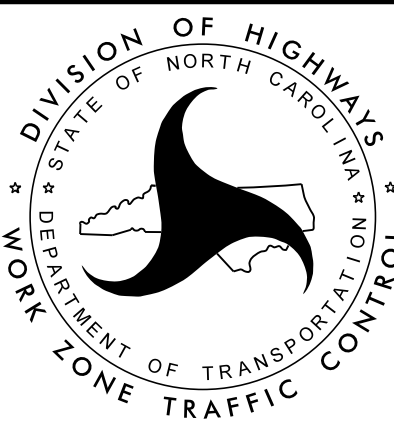
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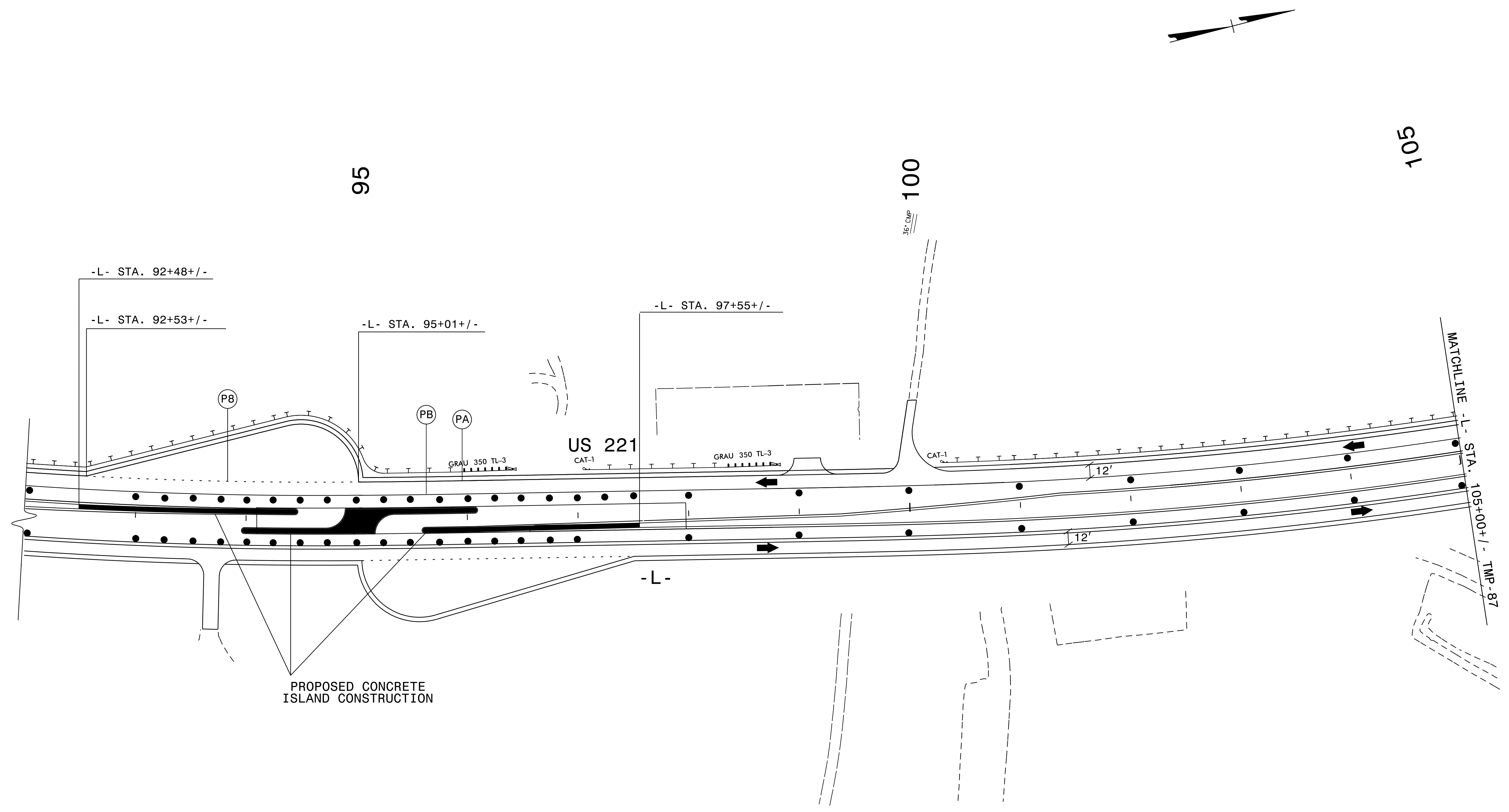
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



PROPOSED CONCRETE ISLAND CONSTRUCTION

NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

5/20/2015 9:03:41 AM P:\2012\15A\TrafficControl\TCP\R2915A\_IC\_TCP\_PSH\_86.dgn

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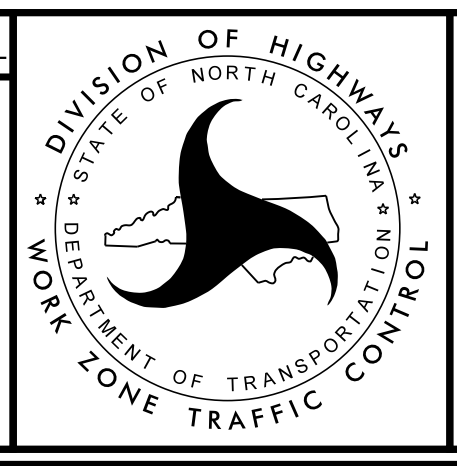
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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

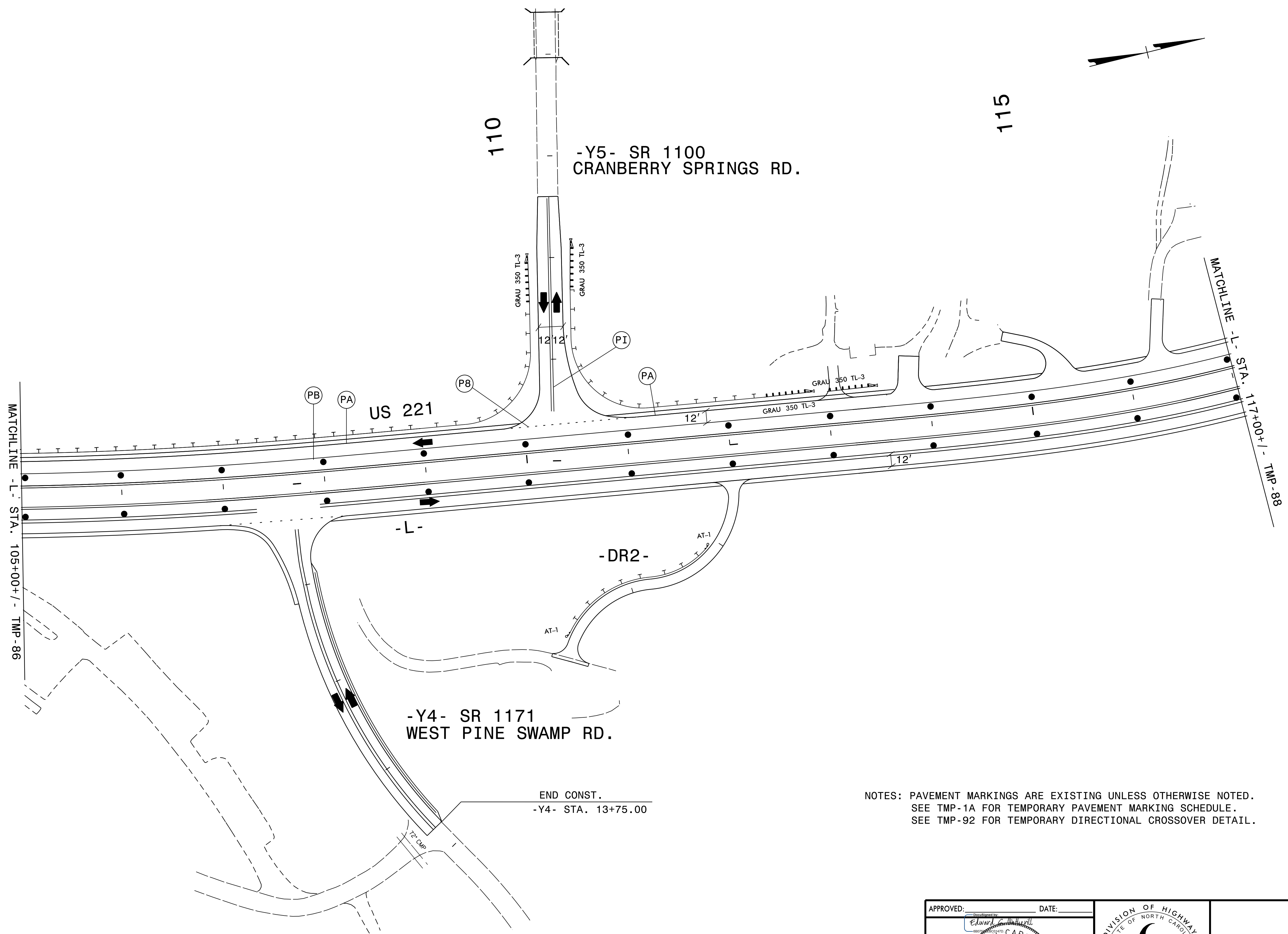
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**PHASE V  
TEMPORARY TRAFFIC CONTROL DETAIL**



NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

END CONST.  
 -Y4- STA. 13+75.00

5/20/2015 9:04:14 AM  
 P:\2012\NR-2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH\_87.dgn

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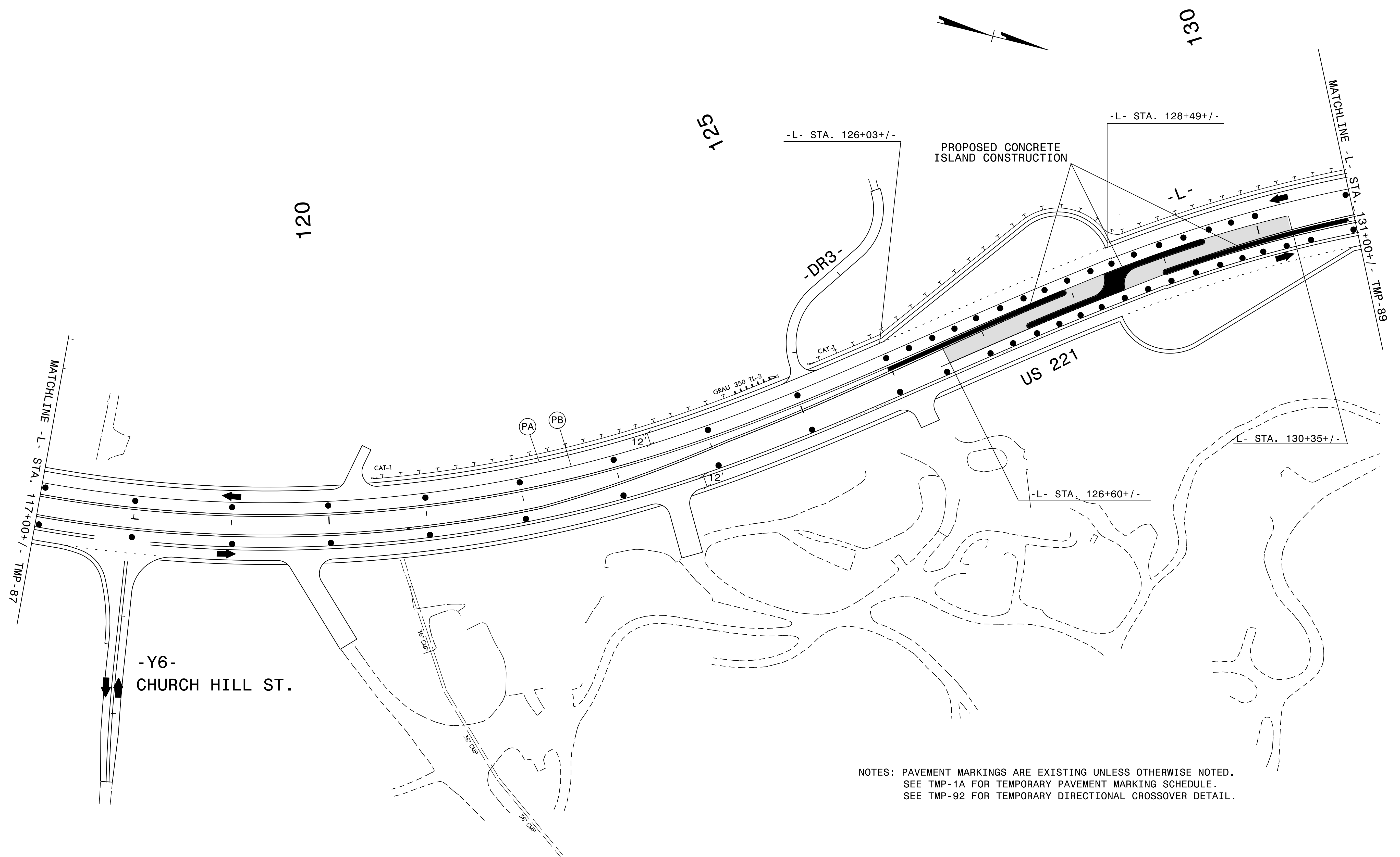
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Edward G. Wetherill* DATE: 5/20/2015

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**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



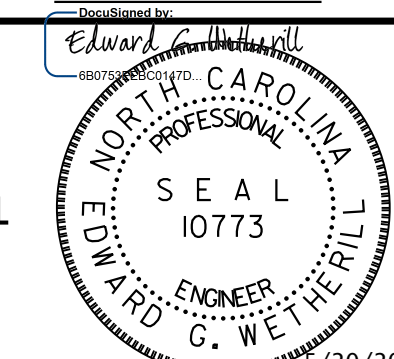
NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

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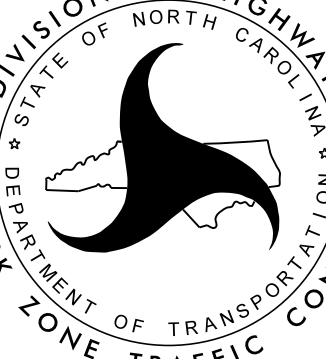

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

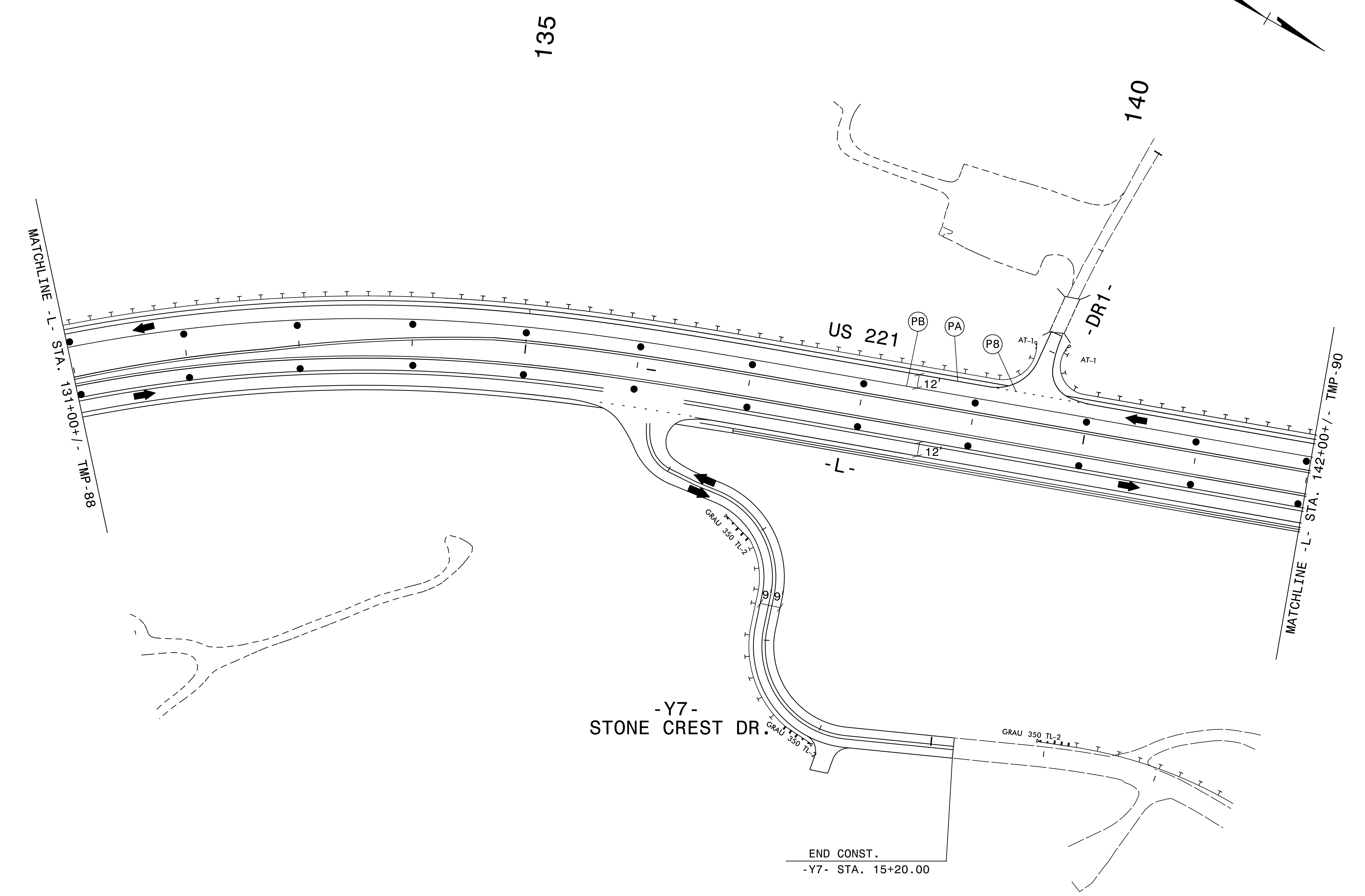
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**PHASE V**  
**TEMPORARY TRAFFIC**  
**CONTROL DETAIL**



NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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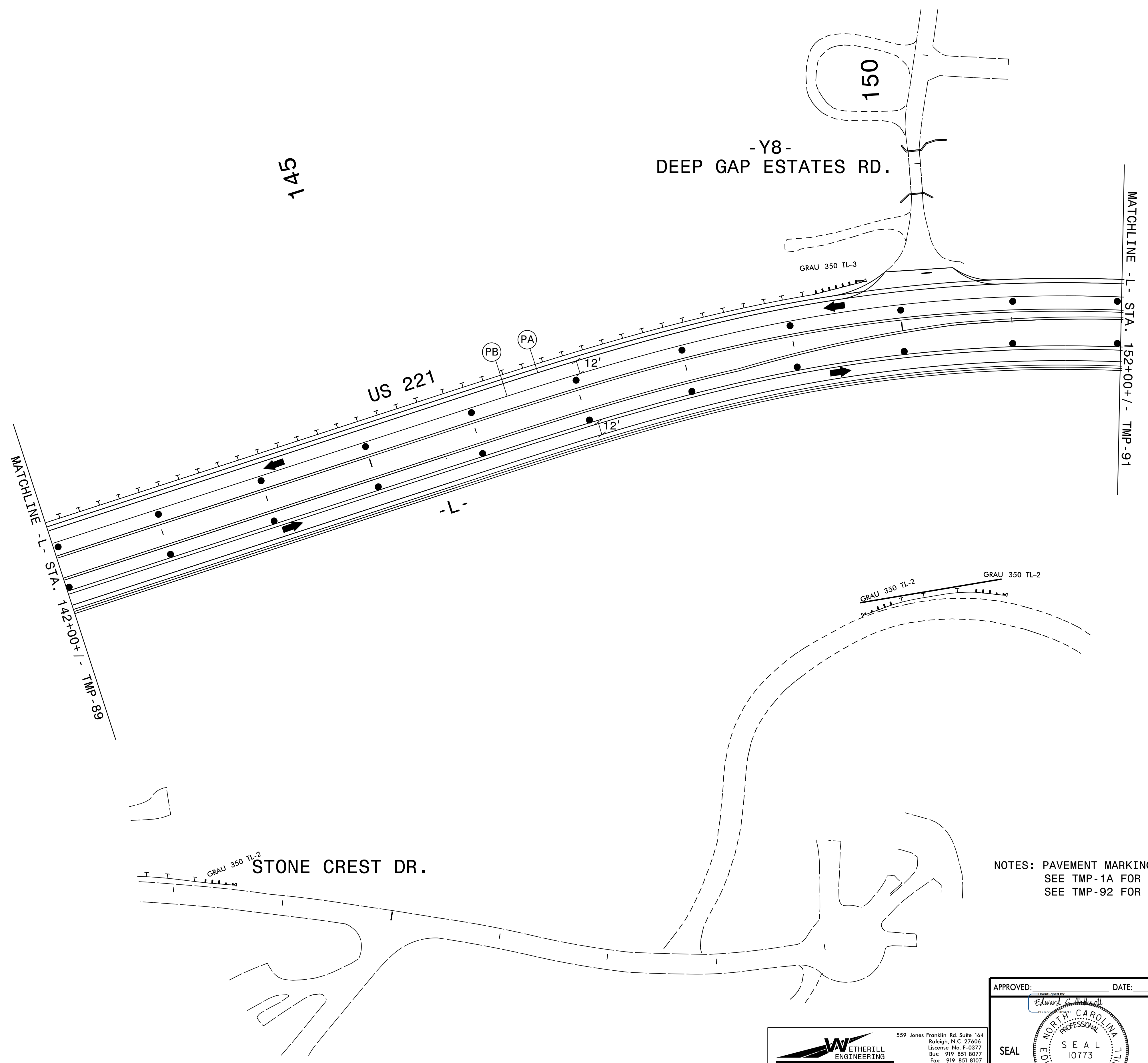
**EDWARD G. WETHERILL**  
 NORTH CAROLINA  
 PROFESSIONAL ENGINEER  
 10773  
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 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 9:05:17 AM P:\2012\NR-2915A\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_89.dgn





NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

5/20/2015  
 9:05:44 AM  
 P:\2012\NR-2915A\Traffic\TrafficControl\TCP\NR2915A\_TC\_TCP\_PSH\_90.dgn

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

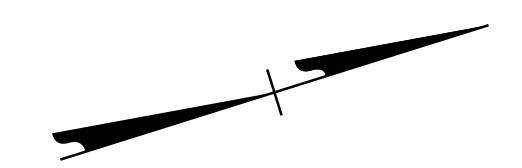
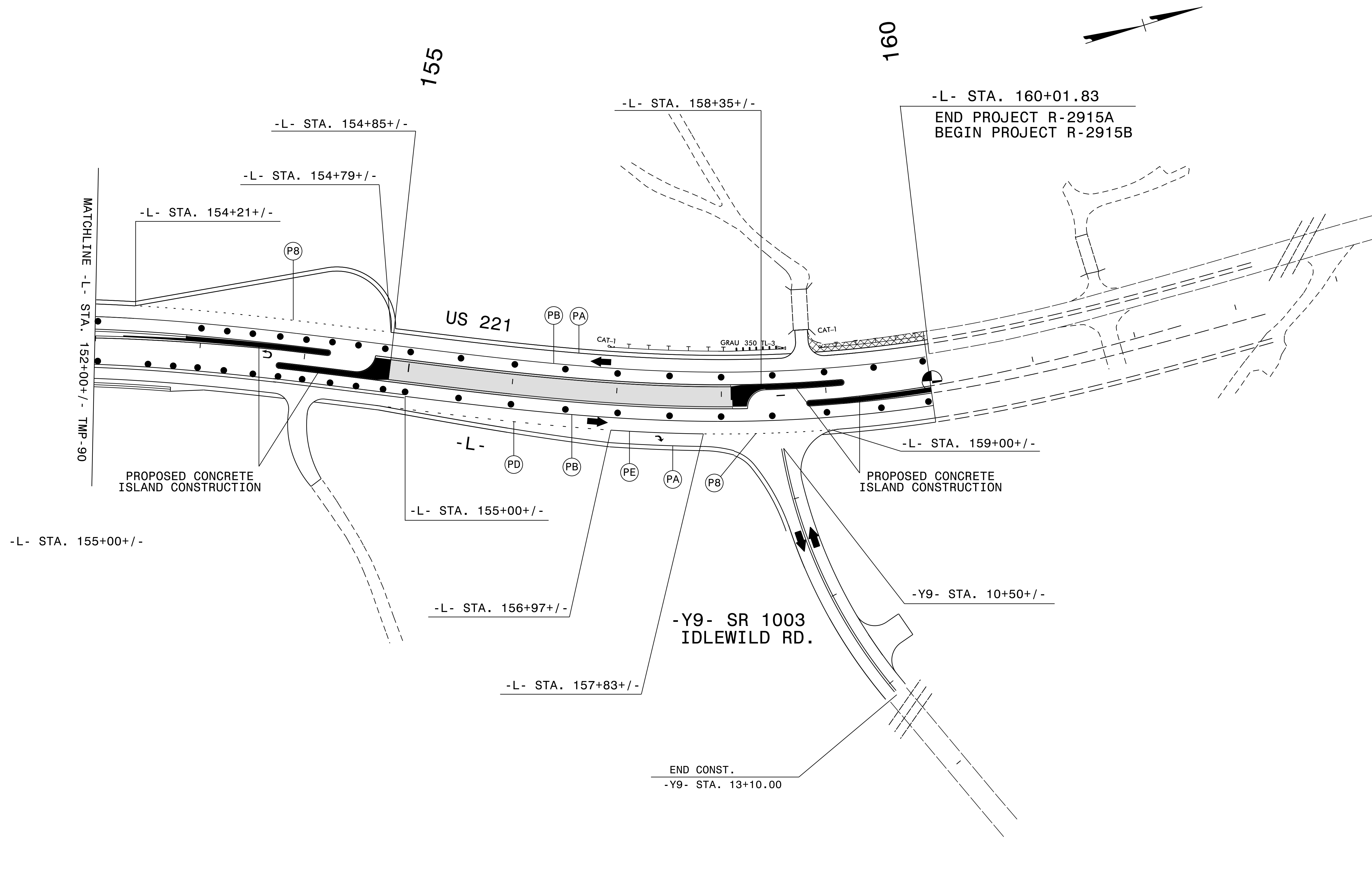
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**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**



MATCHLINE -L- STA. 152+00+/- - TMP-90

NOTES: PAVEMENT MARKINGS ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE TMP-92 FOR TEMPORARY DIRECTIONAL CROSSOVER DETAIL.

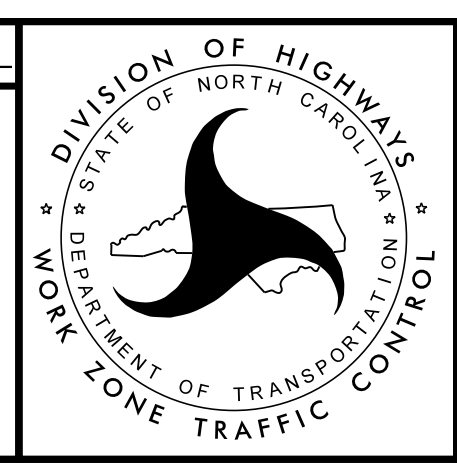
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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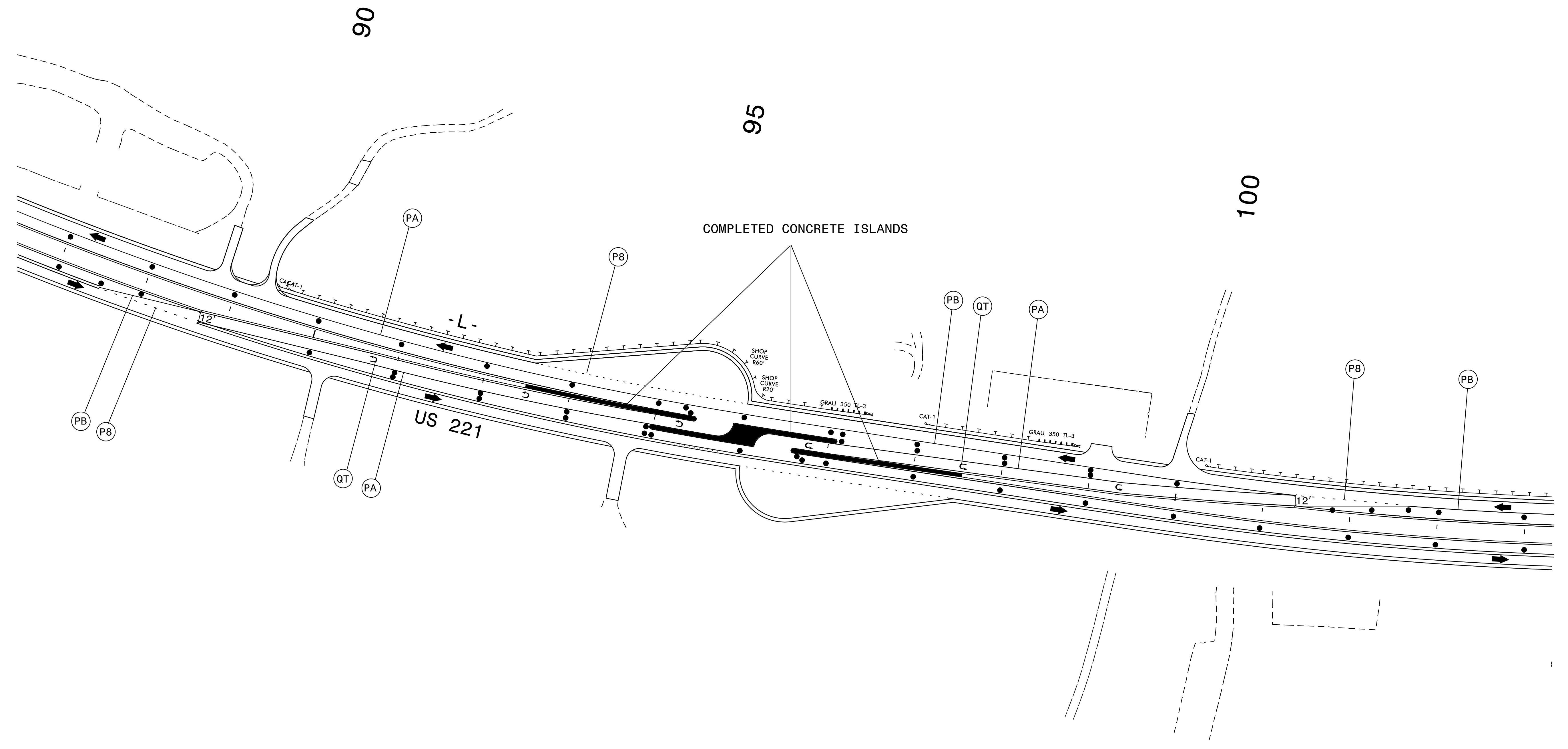
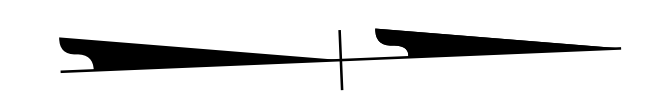
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**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**

5/20/2015 9:06:14 AM P:\2012\R-2915A\TrafficControl\TCP\R2915A\_TC\_TCP\_PSH-91.dgn

# TEMPORARY DIRECTIONAL CROSSOVER LAYOUT



NOTES: PAVEMENT MARKINGS SHOWN ARE EXISTING UNLESS OTHERWISE NOTED.  
 SEE TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE.  
 SEE PAVEMENT MARKING PLAN (PMP) FOR FINAL MARKINGS AND SYMBOLS.

5/20/2015  
 9:06:50 AM  
 P:\2015\2915A\TrafficControl\TCP\2915A\_TC\_TCP\_PSH-92.dgn

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 NORTH CAROLINA  
 LICENSE NO. 10773  
 5/20/2015

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**PHASE V  
 TEMPORARY TRAFFIC  
 CONTROL DETAIL**