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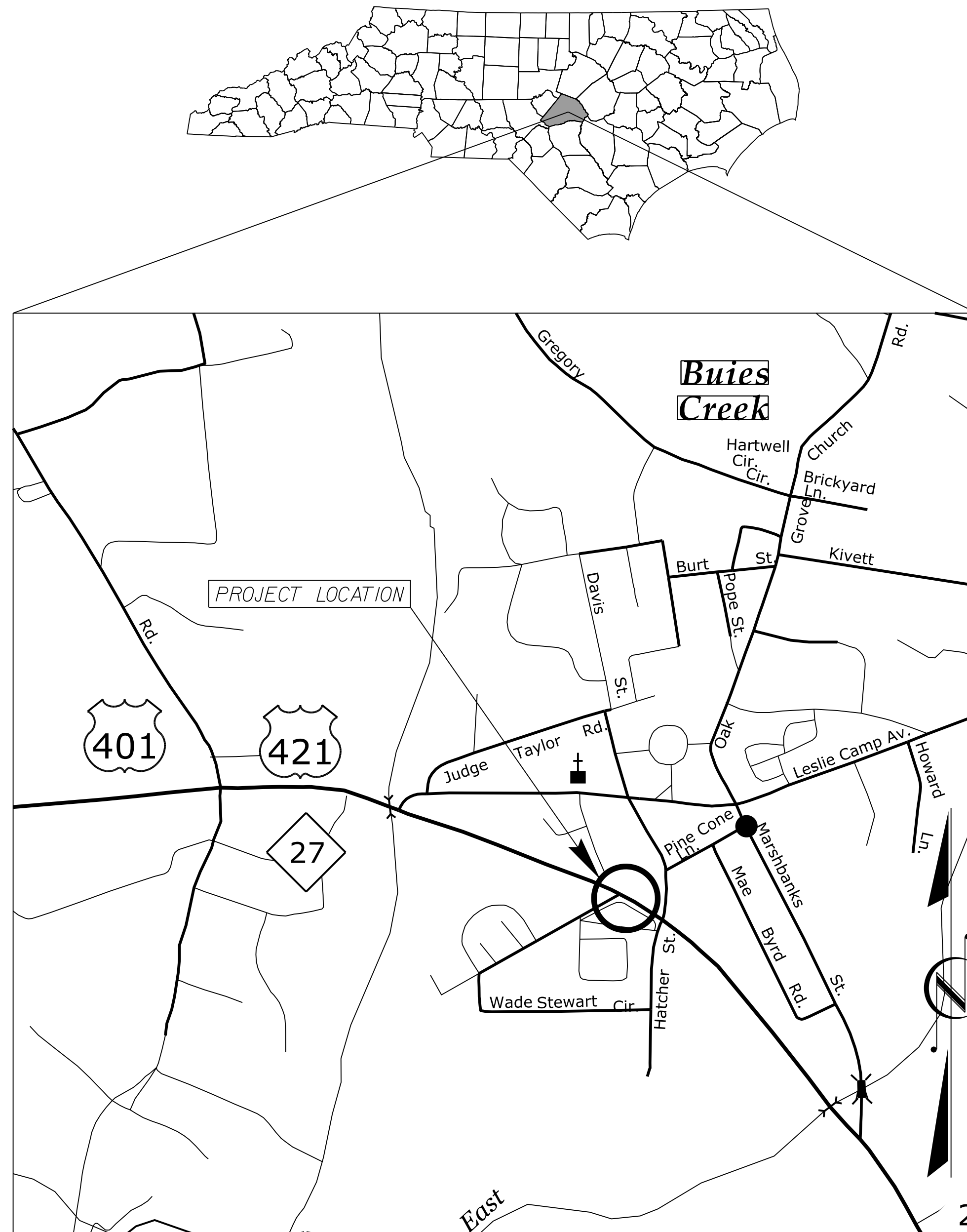
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HARNETT COUNTY



INDEX OF SHEETS

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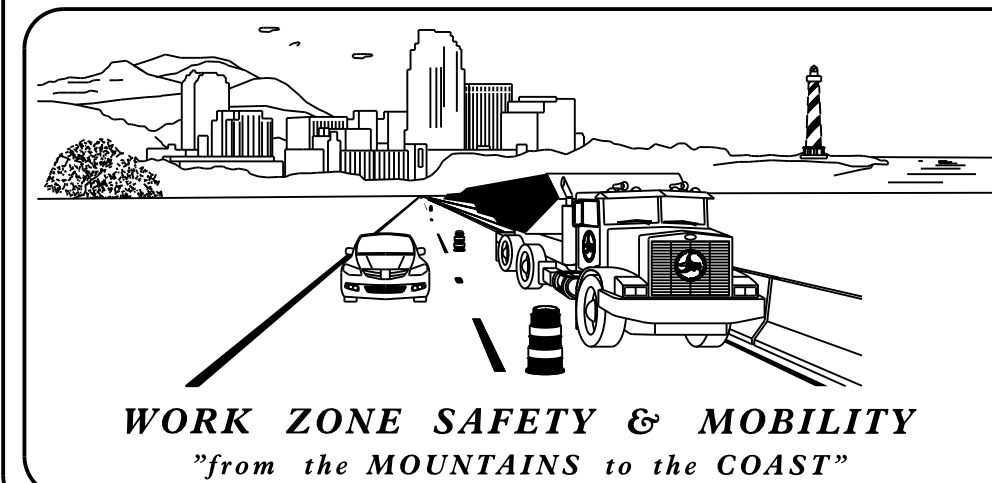
SHEET NO.

TMP-1

W-5206AG

TIP PROJECT:

DAVID L. WILVER, P.E. *TRAFFIC CONTROL PROJECT ENGINEER*
TIM D. GOINS, P.E. *TRAFFIC CONTROL DESIGN ENGINEER*



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



PLANS PREPARED BY:
PARSONS
5540 CENTERVIEW DR., SUITE 217
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO: F-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: *Jim D. Goins, PE*
DATE: 4/17/2015

SEAL

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED 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
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
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
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- SAFETY FENCE
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- MILL AND FILL (USING LANE CLOSURES)
- WEDGE / OVERLAY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

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
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

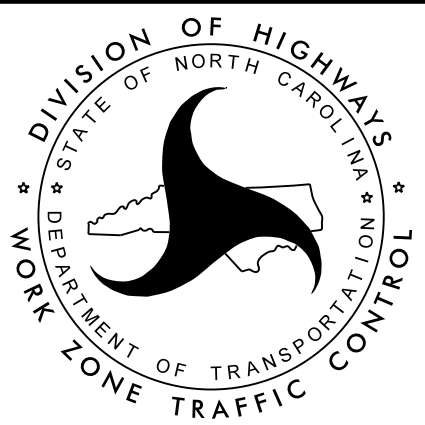
SYMBOL	DESCRIPTION	PAY ITEM
<u>PAVEMENT MARKING LINES</u>		
		PAINT (4")
PA	WHITE EDGELINE	
PB	YELLOW EDGELINE	
PC	10 FT WHITE SKIP	
PD	2 FT WHITE MINISKIP	
PI	DOUBLE YELLOW	
P8	2 FT - 6 FT /SP WHITE MINISKIP	
P9	2 FT - 6 FT / SP YELLOW MINISKIP	
		PAINT (8")
PP	YELLOW DIAGONAL	

NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, REFER TO GENERAL NOTE (W) FOR NUMBER OF APPLICATIONS.

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 \$\$\$USERNAME\$\$\$

PLANS PREPARED BY
PARSONS
 5540 CENTERVIEW DR., SUITE 217
 RALEIGH, NORTH CAROLINA 27606
 NC LICENSE NO. P-5246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: *Jim D. Hoines* PE DATE: 4/1/2015
 SEAL



TRANSPORTATION
 MANAGEMENT PLAN
**ROADWAY STANDARD
 DRAWINGS & LEGENDS**

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR 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

NOTE: THE FOLLOWING DOES NOT APPLY DURING FULL ROAD CLOSURE(PHASE 1, STEPS 3 THRU 5)

A) DO NOT CLOSE LANES AS FOLLOWS:

<u>ROAD NAME</u>	<u>DAY AND TIME RESTRICTIONS</u>
US 421 (-L-)	MONDAY-FRIDAY 6:00AM to 8:00PM

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

<u>ROAD NAME</u>
US 421 (-L-)

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 8:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY, THEN UNTIL 8:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY, THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 8:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 8:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR HOME FOOTBALL GAMES AT BARKER-LANE STADIUM, FROM 8 HOURS PRIOR TO THE START OF THE GAME TO 4 HOURS FOLLOWING THE COMPLETION OF THE GAME.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

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

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

G) 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.

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

PAVEMENT EDGE DROP OFF REQUIREMENTS

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

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

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

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

J) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 350 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

L) 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.

M) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN IN THE TRAFFIC CONTROL PLANS.

N) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

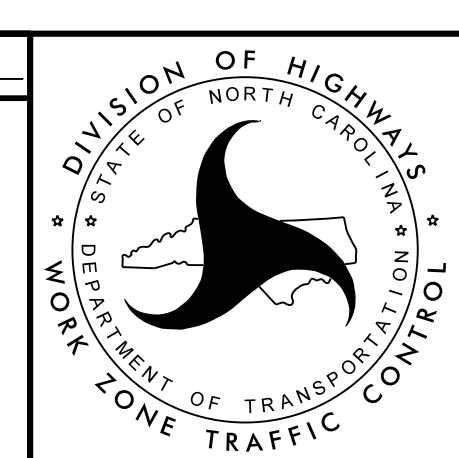
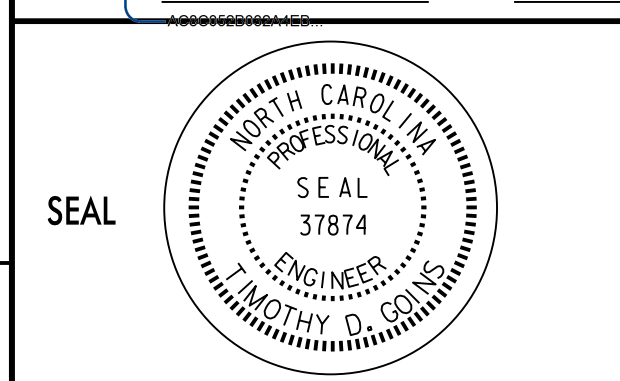
COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

P) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 350 ft IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

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APPROVED: Jim D. Hoines PE DATE: 4/1/2015



TRANSPORTATION
MANAGEMENT PLAN

GENERAL NOTES

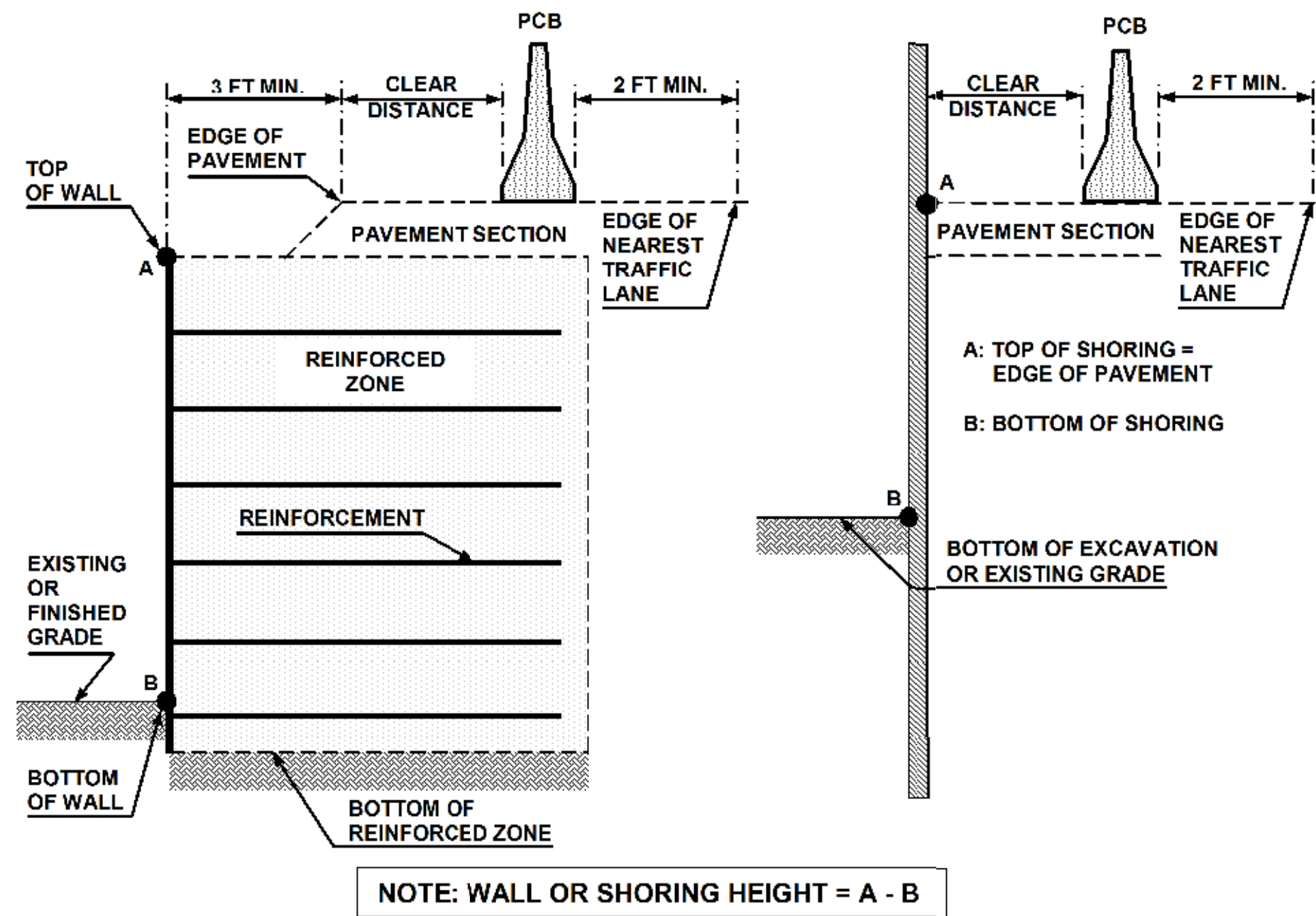


FIGURE A

NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- 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).
- 4- 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.
- 5- 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.
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- 8- 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.
- 9- 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.
- 10- 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.

MINIMUM REQUIRED CLEAR DISTANCE, inches

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

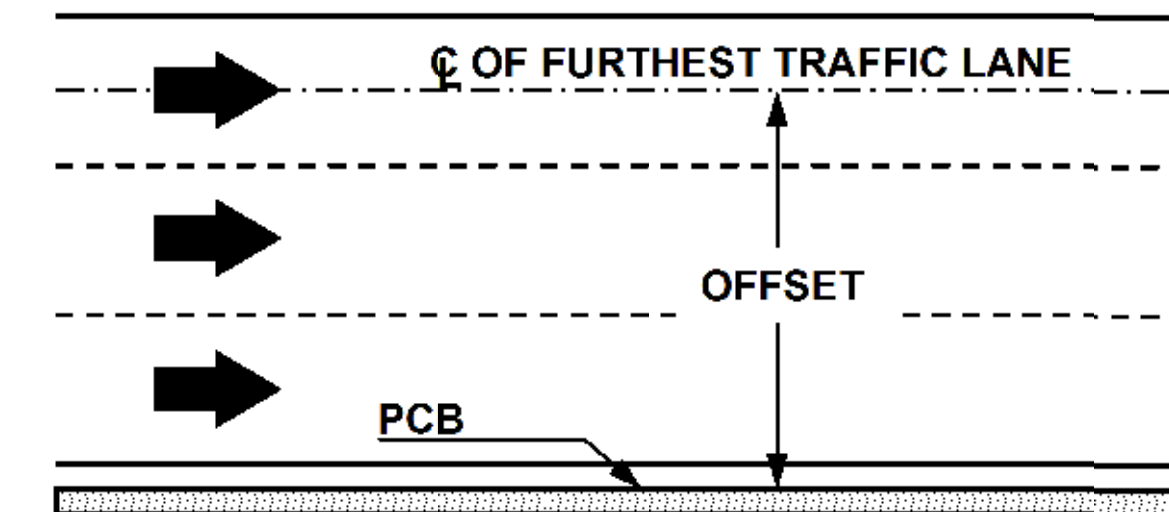


FIGURE B

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APPROVED: <i>Tim D. Boiney</i> PE DATE: 1/1/2015 		PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
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NOTES FOR TEMPORARY SHORING 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 15+55 +/- -WB_TEMP-, 18 FT. (LEFT) TO STATION 17+10 +/- -WB_TEMP-, 17.5 FT. (LEFT) FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT () = 120 LB/CF
 FRITCTION ANGLE () = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 170 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 15+55 +/- -WB_TEMP-, 18 FT. (LEFT), TO STATION 17+10 +/- -WB_TEMP-, 17.5 FT. (LEFT), MAY NOT PENETRATE BELOW ELEVATION 142 FT. DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK.

NOTES FOR TEMPORARY SHORING 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 22+80 +/- -EB_TEMP-, 20 FT. (RIGHT), TO STATION 24+00 +/- -EB_TEMP-, 20 FT. (RIGHT) FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

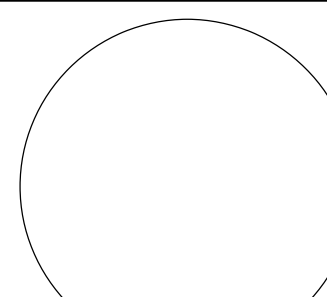
UNIT WEIGHT () = 120 LB/CF
 FRITCTION ANGLE () = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 170 FT

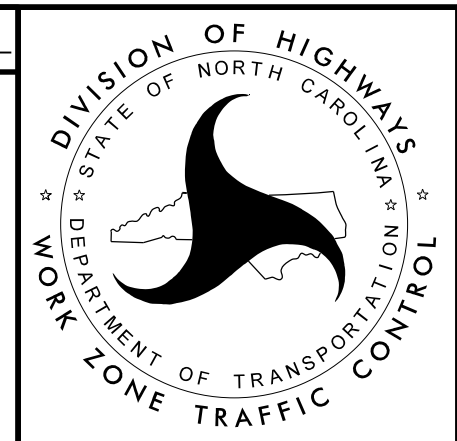
DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 22+80 +/- -EB_TEMP-, 20 FT. (RIGHT), TO STATION 24+00 +/- -EB_TEMP-, 20 FT. (RIGHT), MAY NOT PENETRATE BELOW ELEVATION 140 FT. DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH SEALED DOCUMENTS FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENTS WERE SUBMITTED TO THE WZTC SECTION ON JANUARY 28, 2015 AND SEALED BY PROFESSIONAL ENGINEER, NADIA AL-DHALIMY, P.E., LICENSE #038545.

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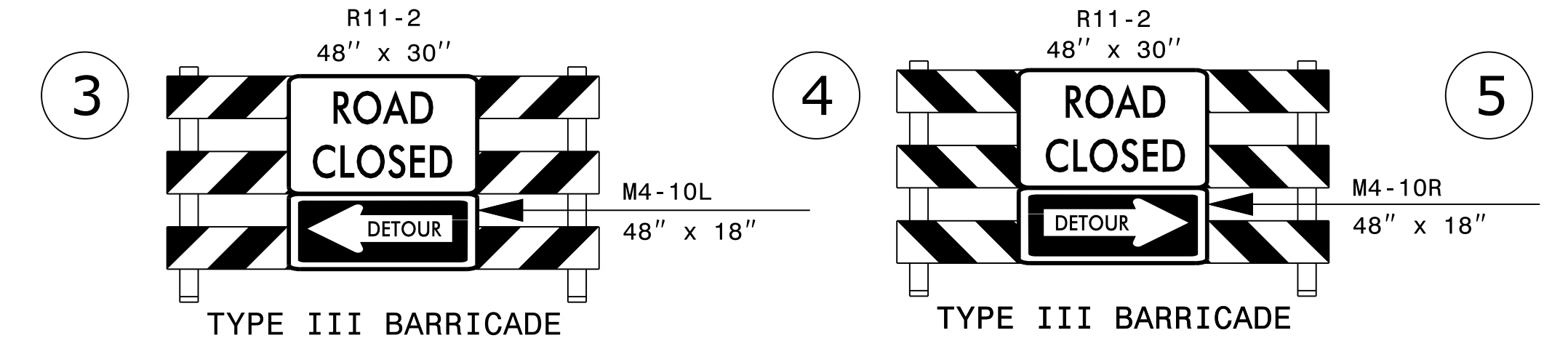
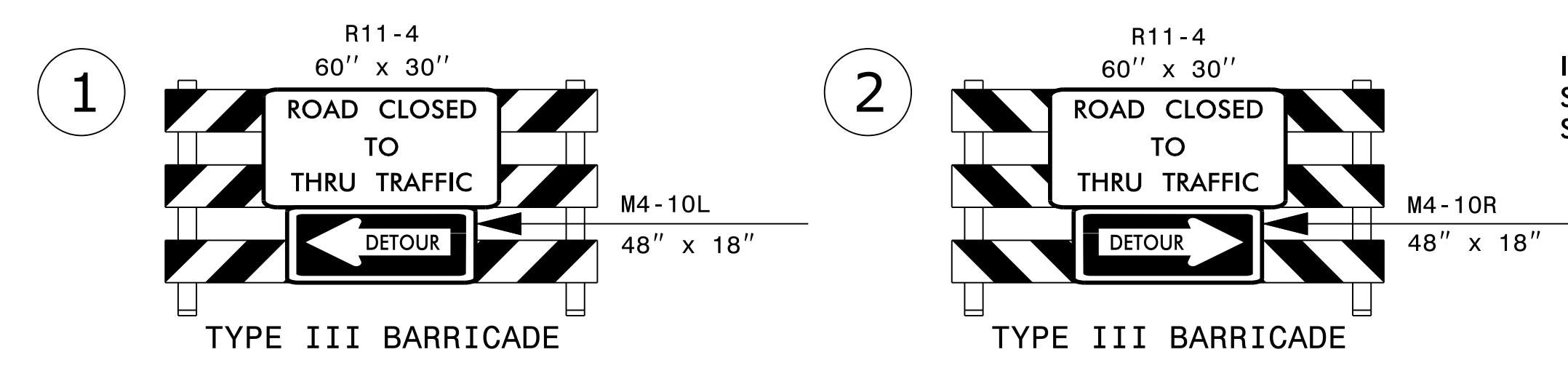
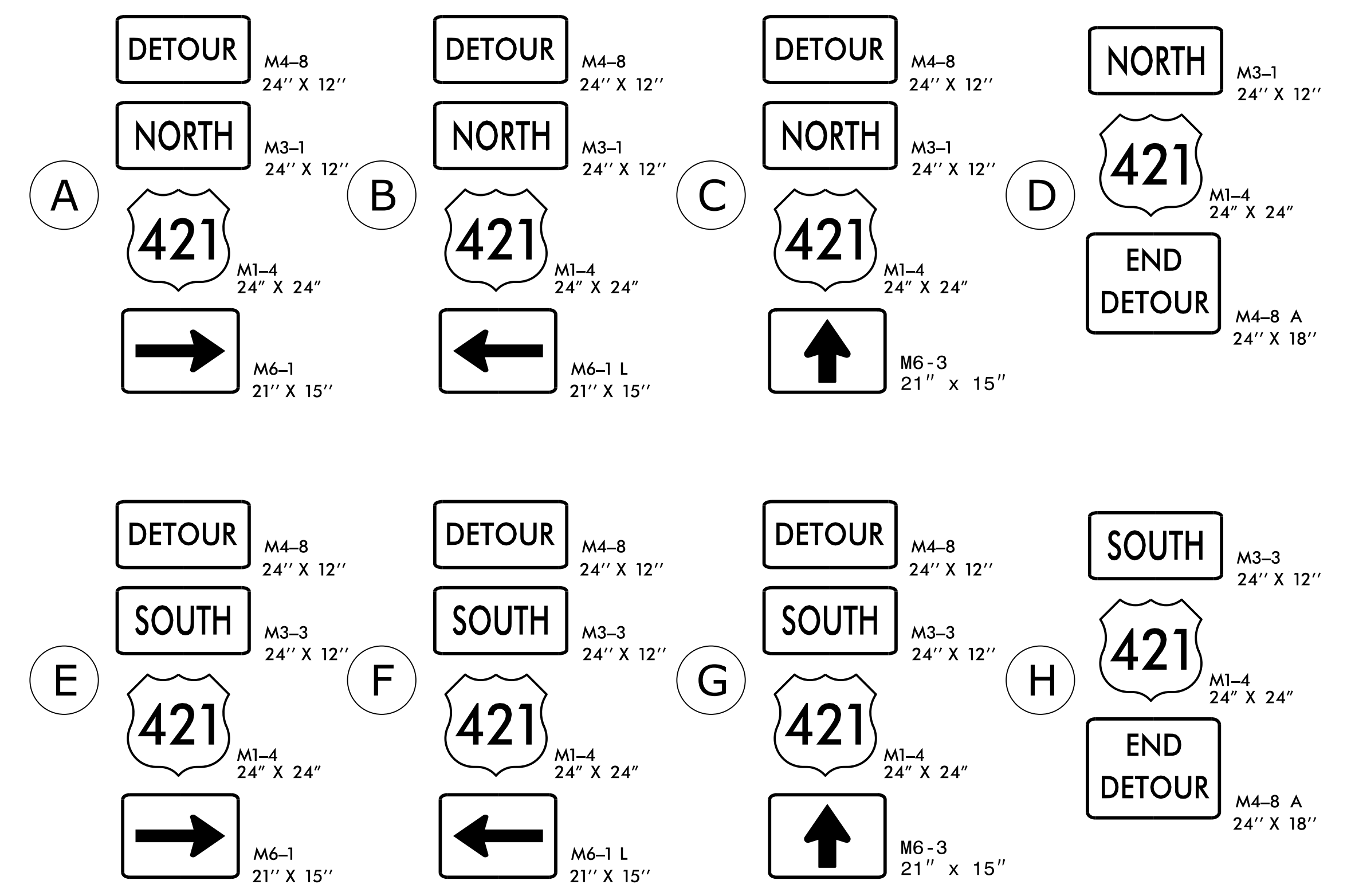
PLANS PREPARED BY
PARSONS
 8540 CENTERVIEW DRIVE, SUITE 217
 RALEIGH, NORTH CAROLINA 27606
 NC LICENSE NO. F12026
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

APPROVED: _____	DATE: _____
	
SEAL	

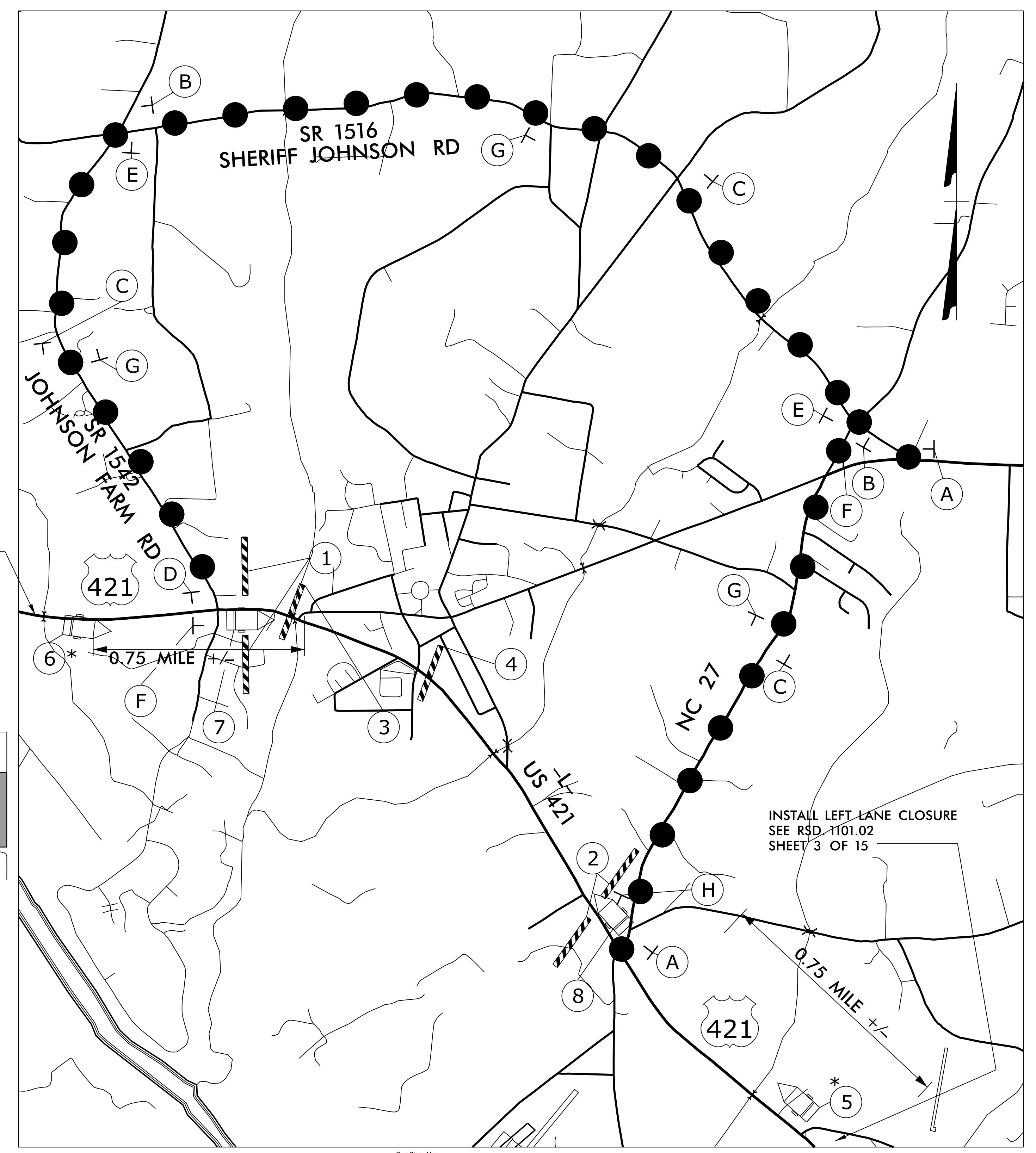
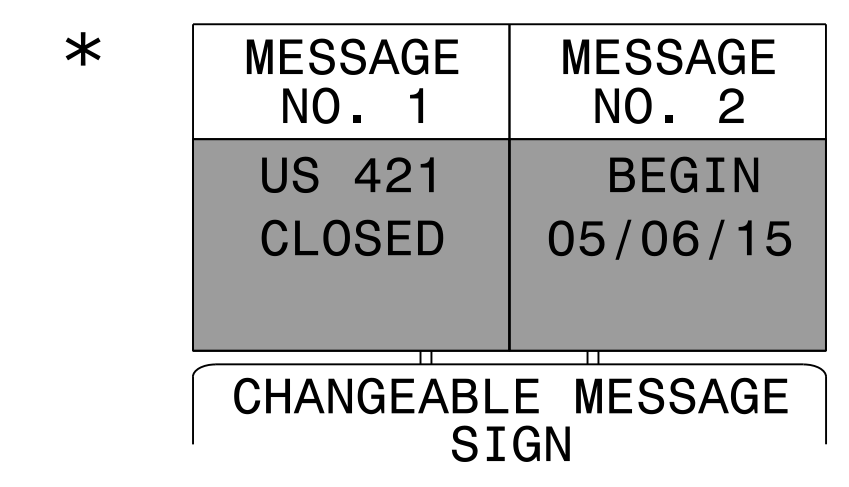
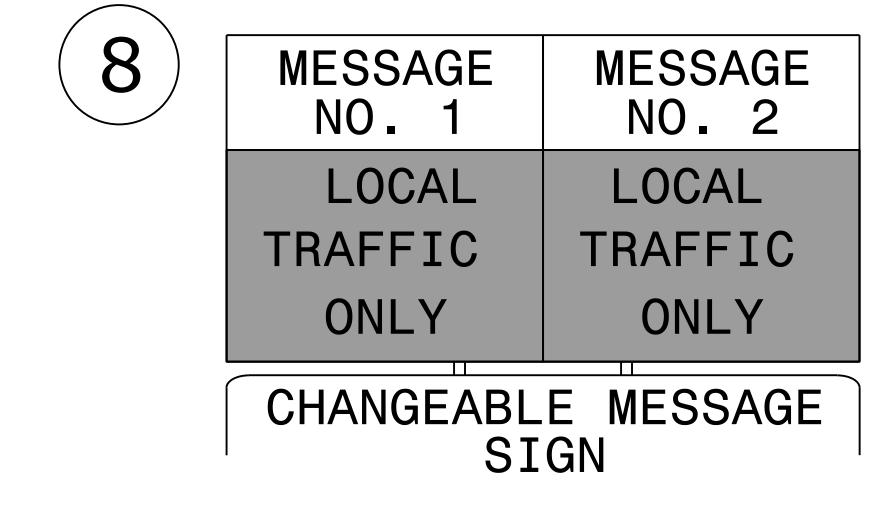
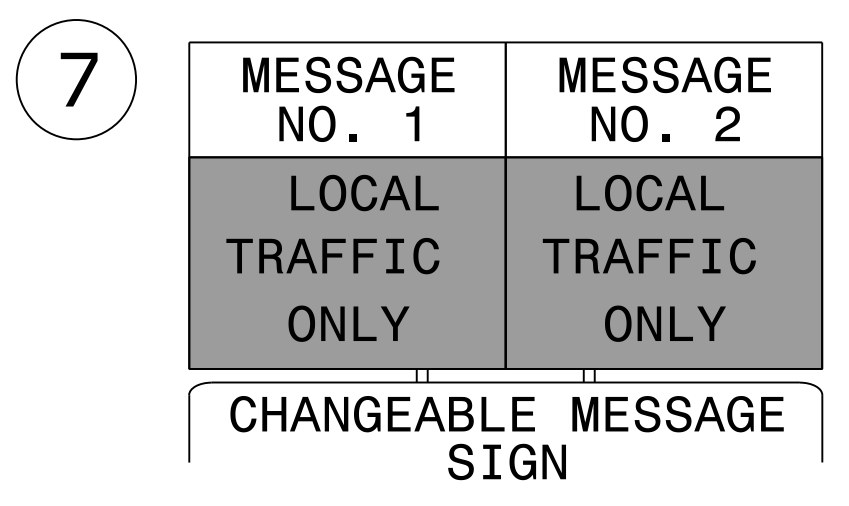
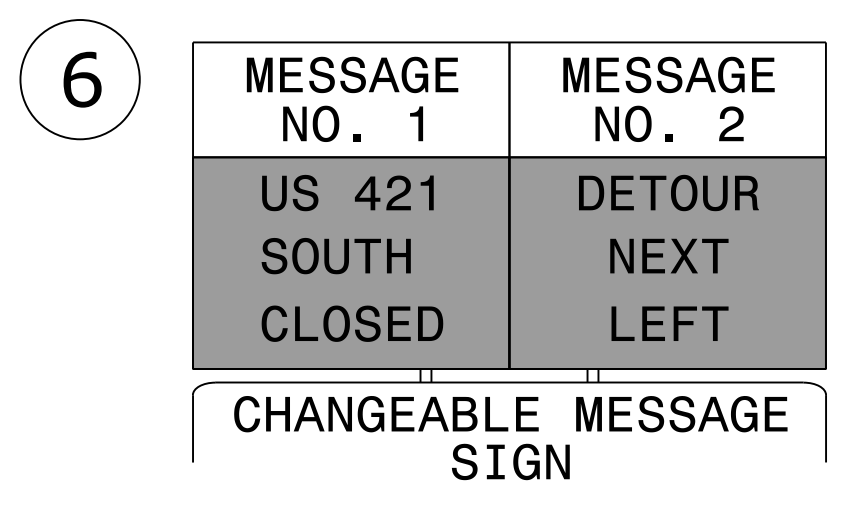
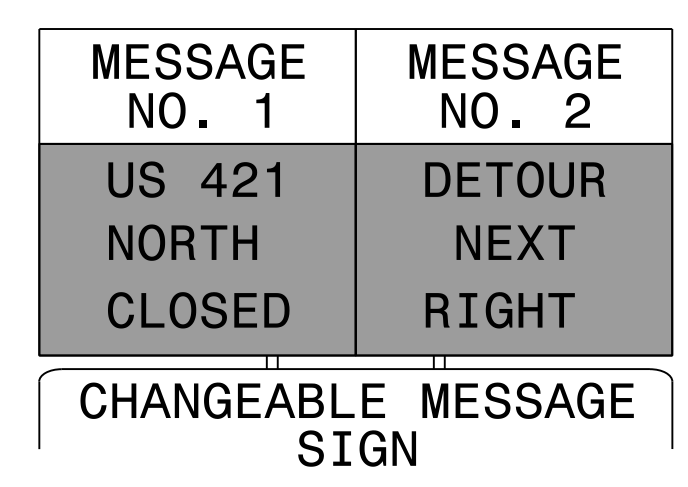


TRANSPORTATION
 MANAGEMENT PLAN

**TEMPORARY
 SHORING NOTES**

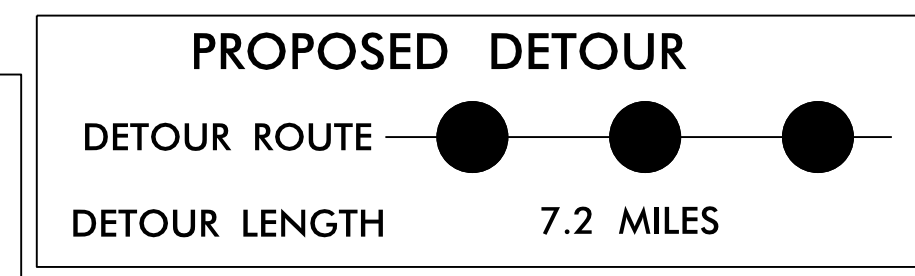


INSTALL RIGHT LANE CLOSURE
SEE RSD. 1101.02
SHEET 3 OF 15

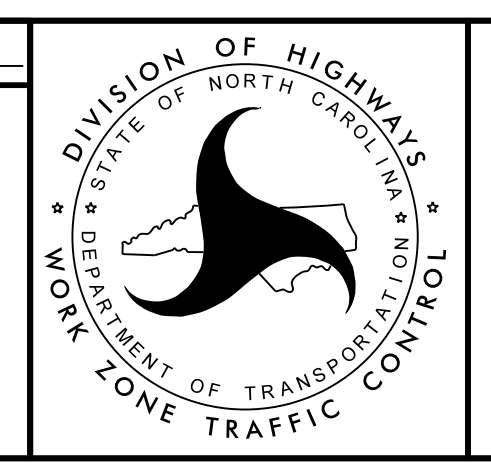
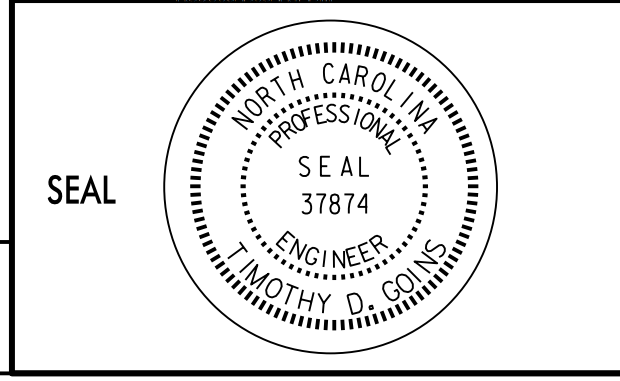


INSTALL LEFT LANE CLOSURE
SEE RSD. 1101.02
SHEET 3 OF 15

NOTES:
1. REFER TO RSD 1101.02, SHEET 3 OF 15 AND RSD 1101.03, SHEET 1 & 2 OF 9, FOR ADDITIONAL SIGNS AND GENERAL NOTES.
2. ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.



APPROVED: *Jim S. Bouras* DATE: 4/1/2015



TRANSPORTATION MANAGEMENT PLAN
US 421 -L- DETOUR PHASE I

31-MAR-2015 10:13 31-W-5206AG-TrafficControl\TCP\W-5206AG-TC-TMP-02.dgn

PHASING

PHASE I

STEP 1:
INSTALL ADVANCE WARNING SIGNS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS

STEP 2:
CONSTRUCTION MAY BEGIN WITHIN THE PROJECT LIMITS

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF PHASE 1 STEPS 3 THROUGH 5 IN 30 CONSECUTIVE CALENDAR DAYS. (SEE ICT AND LDS)

STEP 3:
USING ROADWAY STANDARD DRAWING 1101.03
SHEETS 1 AND 2 OF 9, AND TMP-4, CLOSE US 421/NC 27

STEP 4:
AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING AS SHOWN ON TMP-4:

- A) REMOVE EXISTING MONOLITHIC ISLAND ON US 421/NC 27
- B) INSTALL 20" WATERLINE
- C) INSTALL TEMPORARY 16" BYPASS WATERLINE AND OPEN TO SERVICE
- D) CONSTRUCT THE PEDESTRIAN CULVERT UNDER US 421/NC 27 AND TEMPORARY HEADWALLS
- E) OPEN 20" WATERLINE TO SERVICE AND REMOVE BYPASS 16" WATERLINE
- F) INSTALL STORMWATER DRAINAGE ITEMS AS SHOWN ON TMP-4 INCLUDING TEMPORARY STEEL PLATE COVERS FOR DRAINAGE BOXES

STEP 5:
UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, COMPLETE RECONSTRUCTION OF ROADWAY THAT WAS REMOVED TO INSTALL THE PEDESTRIAN CULVERT

INSTALL PORTABLE CONCRETE BARRIER LT. OF -WB_TEMP-

INSTALL PORTABLE CONCRETE BARRIER RT. OF -EB_TEMP-

PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS AND REOPEN US 421/NC 27 TO 2 LANE 2 WAY TRAFFIC AS SHOWN ON TMP-5

PHASE II

MAINTAIN TRAFFIC IN A TWO LANE - TWO WAY PATTERN ON -EB_TEMP- AND -WB_TEMP-.

STEP 1:
WORKING BEHIND PORTABLE CONCRETE BARRIER, PERFORM THE FOLLOWING:

INSTALL TEMPORARY SHORING LOCATIONS 1 AND 2

STEP 2:
CONSTRUCT THE ROADWAY UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE AT THE FOLLOWING LOCATIONS:

-WB_TEMP- LT FROM STA. 14+27 +/- TO STA. 16+40 +/- AND FROM STA. 17+40 +/- TO STA. 18+25 +/-

-EB_TEMP- RT FROM STA. 18+51 +/- TO STA. 22+50 +/- AND FROM STA. 23+50 +/- TO STA. 26+40 +/-

CONSTRUCT PEDESTRIAN CULVERT APPROACHES

CONSTRUCT RETAINING WALLS 1,3,4, AND 5 AND CORRESPONDING STEPS.

STEP 3:
USING ROADWAY STANDARD DRAWING 1101.02 SHEET 1 OF 15 AND WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING AS SHOWN ON TMP-6:

REMOVE PORTABLE CONCRETE BARRIER LT. OF -WB_TEMP- AND RT. OF -EB_TEMP-.

PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS FOR PHASE III PATTERN (SEE TMP-6)

REMOVE ANY CONFLICTING MARKINGS ON -L-

SHIFT EXISTING TRAFFIC TO A SEPARATED ONE LANE IN EACH DIRECTION PATTERN

INSTALL TRAFFIC CONTROL DEVICES AND CLOSE -L- MEDIAN TO TRAFFIC AS SHOWN ON TMP-6

PHASE III

MAINTAIN TRAFFIC IN THE TEMP PATTERN AS SHOWN ON TMP-6

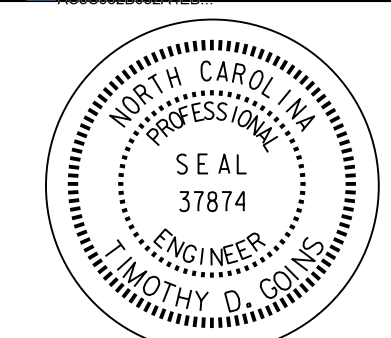
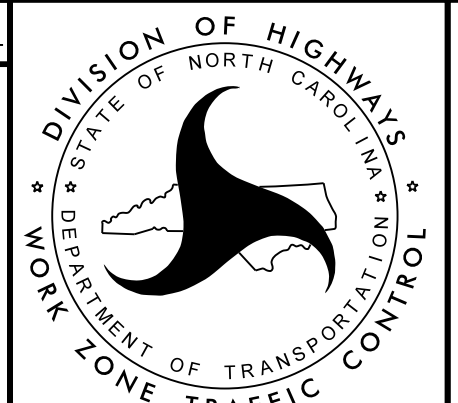
STEP 1:
PLACE THE FIRST LIFT OF FINAL SURFACE COURSE IN THE CENTER LANES AND INSTALL THE MONOLITHIC CONCRETE ISLAND.

STEP 2:
USING ALTERNATING LANE CLOSURES, PLACE THE FINAL LIFT OF SURFACE COURSE THROUGHOUT THE LIMITS OF THE PROJECT AS SHOWN IN THE ROADWAY PLANS. (SEE ROADWAY STANDARD DRAWING 1101.02, SHEET 3)

STEP 3:
USING FLAGGERS, PLACE TEMPORARY PAINT PAVEMENT MARKINGS IN THE FINAL PATTERN THROUGHOUT THE LIMITS OF THE PROJECT AS SHOWN IN THE PAVMENT MARKING PLANS AS DIRECTED BY THE ENGINEER.

PLACE THE FINAL PAVEMENT MARKINGS THROUGHOUT THE LIMITS OF THE PROJECT AS SHOWN IN THE PAVEMENT MARKING PLANS.

STEP 4:
UPON PROJECT ACCEPTANCE BY THE ENGINEER, OPEN ROADWAY TO FINAL TRAFFIC PATTERN.

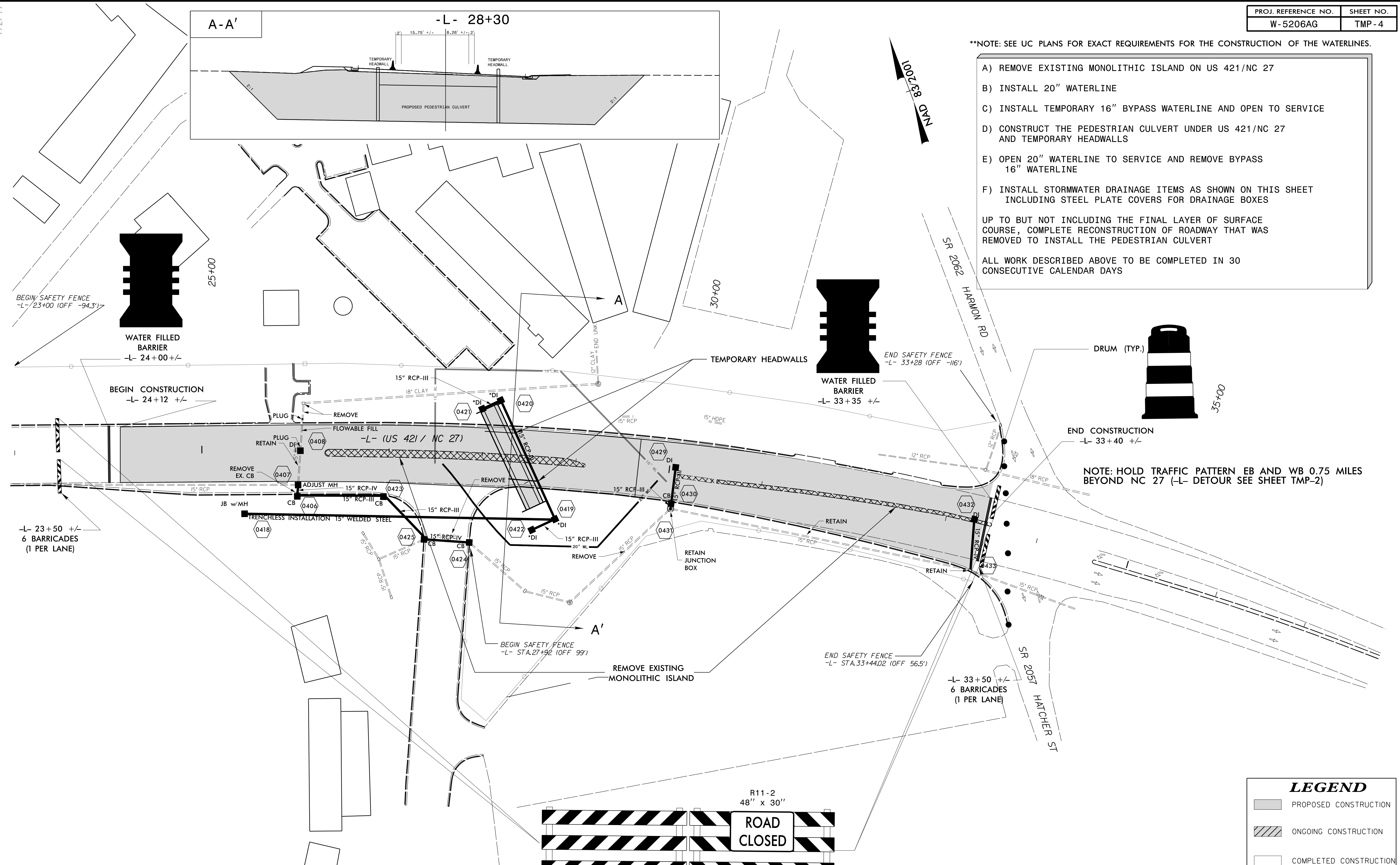
<p>APPROVED: <i>Jim D. Heiney</i> PE DATE: 4/1/2015</p> 		<h2>PHASING</h2>
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**NOTE: SEE UC PLANS FOR EXACT REQUIREMENTS FOR THE CONSTRUCTION OF THE WATERLINES.

- A) REMOVE EXISTING MONOLITHIC ISLAND ON US 421/NC 27
- B) INSTALL 20" WATERLINE
- C) INSTALL TEMPORARY 16" BYPASS WATERLINE AND OPEN TO SERVICE
- D) CONSTRUCT THE PEDESTRIAN CULVERT UNDER US 421/NC 27 AND TEMPORARY HEADWALLS
- E) OPEN 20" WATERLINE TO SERVICE AND REMOVE BYPASS 16" WATERLINE
- F) INSTALL STORMWATER DRAINAGE ITEMS AS SHOWN ON THIS SHEET INCLUDING STEEL PLATE COVERS FOR DRAINAGE BOXES

UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, COMPLETE RECONSTRUCTION OF ROADWAY THAT WAS REMOVED TO INSTALL THE PEDESTRIAN CULVERT

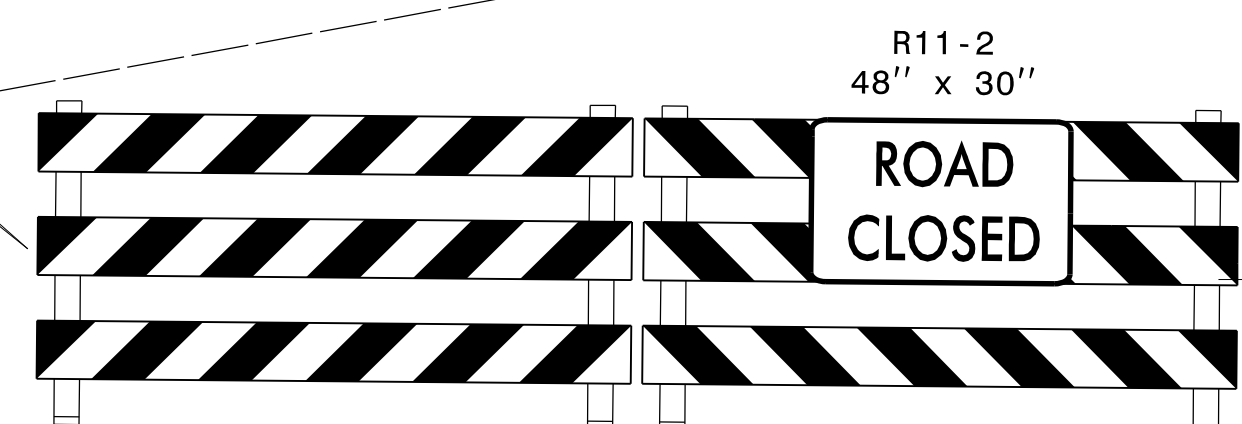
ALL WORK DESCRIBED ABOVE TO BE COMPLETED IN 30 CONSECUTIVE CALENDAR DAYS



NOTE: HOLD TRAFFIC PATTERN EB AND WB 0.75 MILES BEYOND NC 27 (-L- DETOUR SEE SHEET TMP-2)

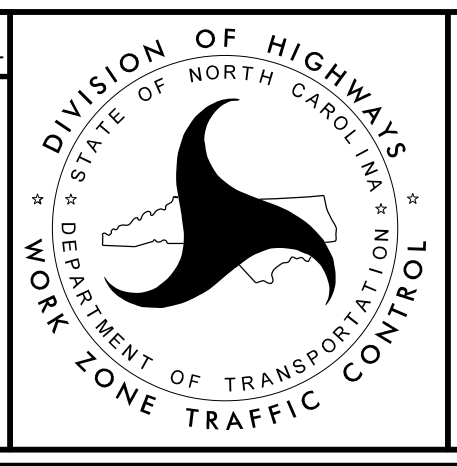
LEGEND

	PROPOSED CONSTRUCTION
	ONGOING CONSTRUCTION
	COMPLETED CONSTRUCTION



APPROVED: _____ DATE: _____

SEAL

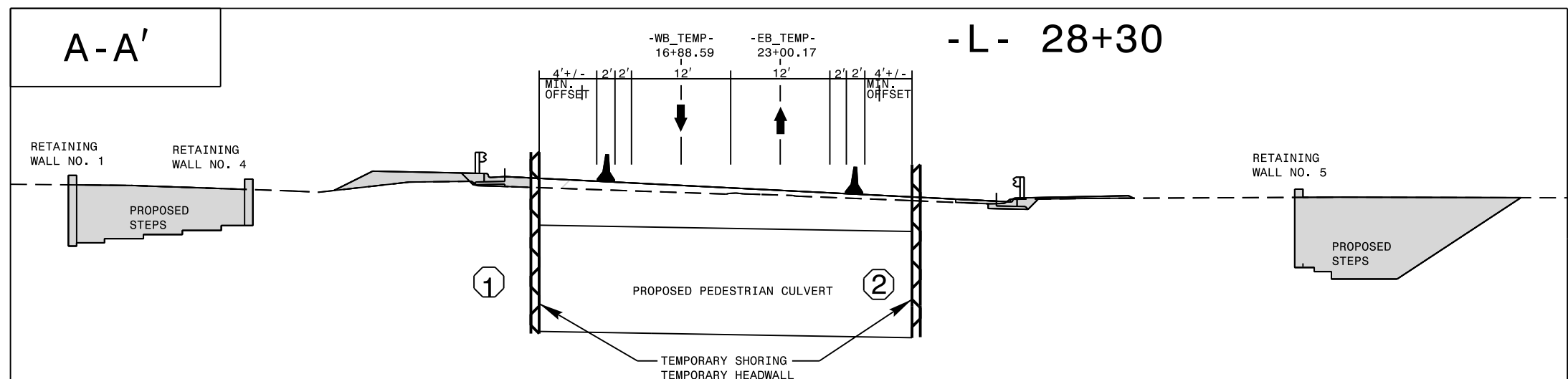


TRANSPORTATION
MANAGEMENT PLAN

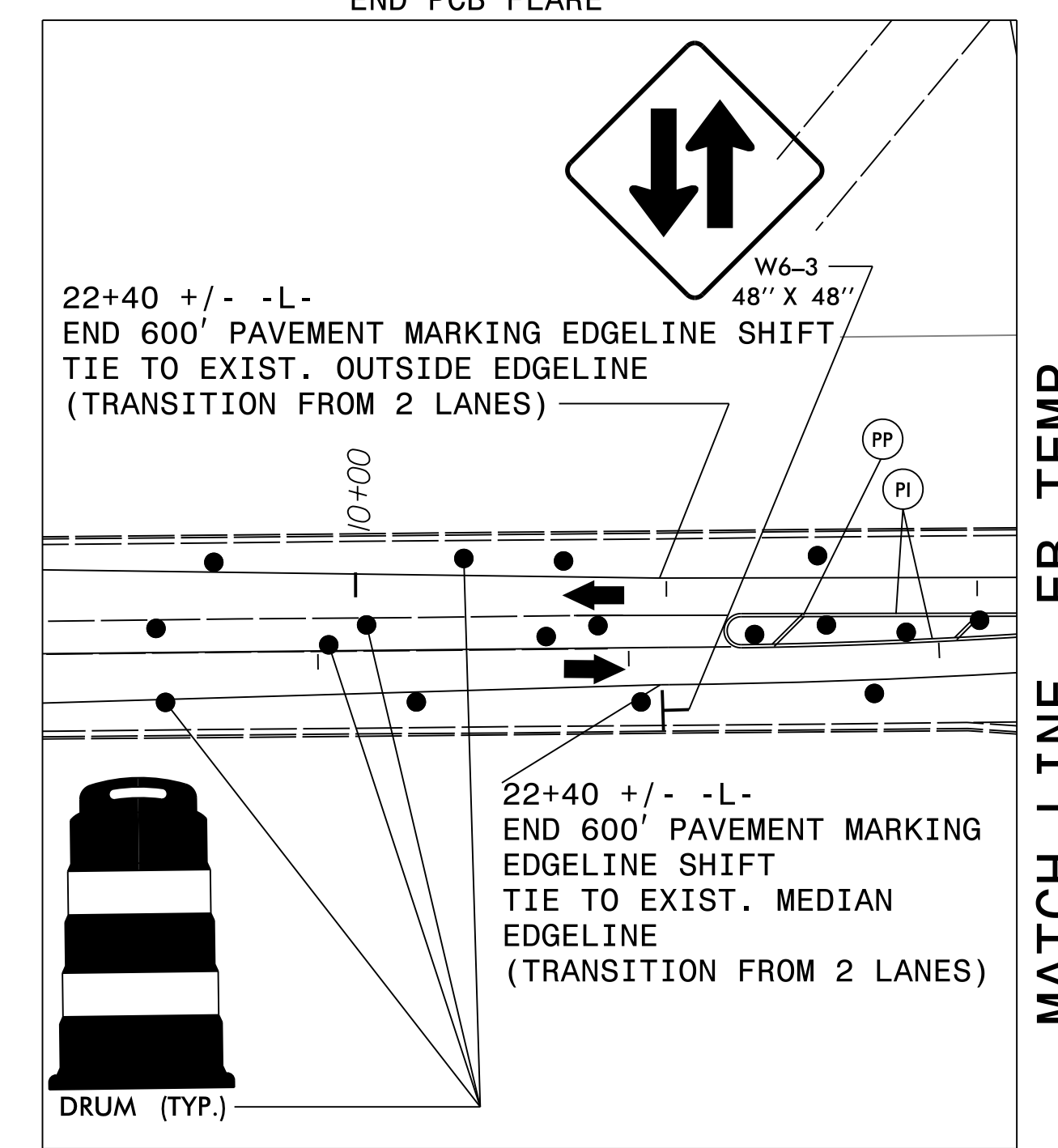
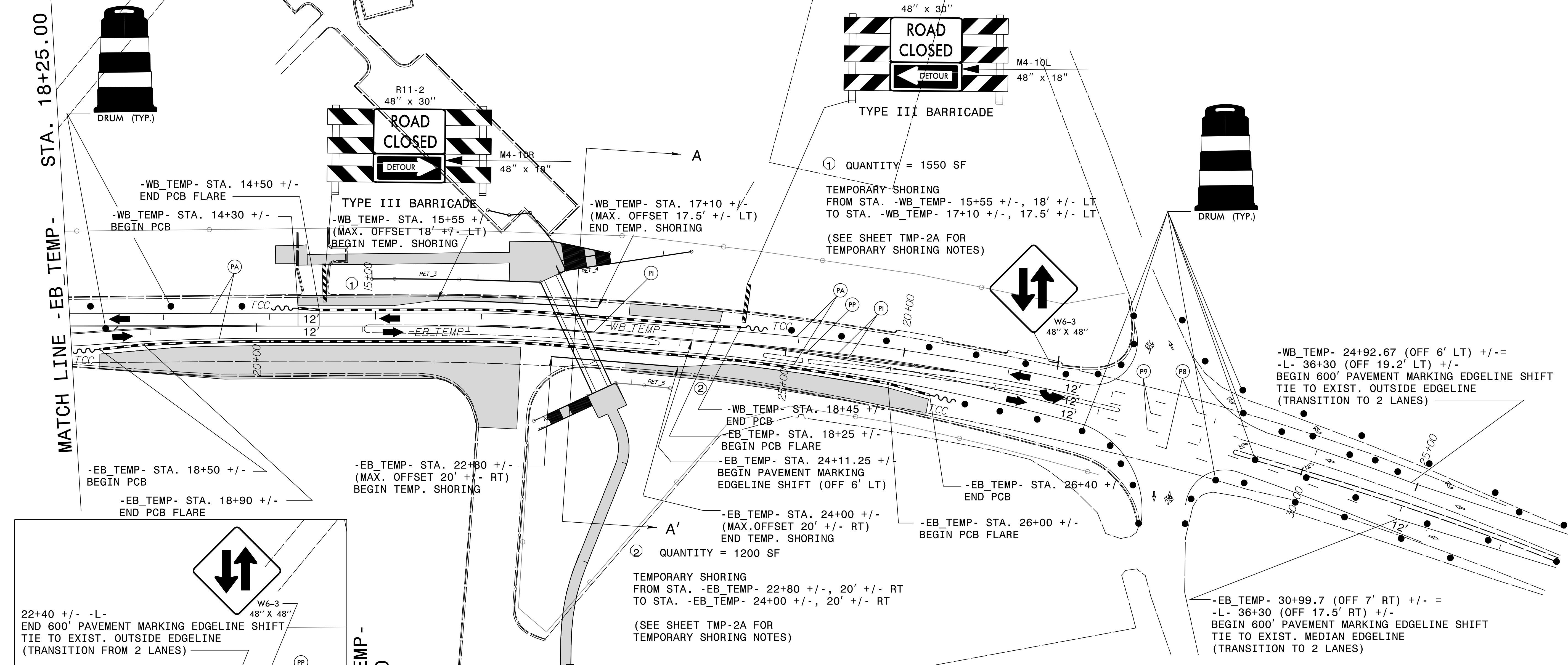
**PHASE I
DETAIL 1**

PLANS PREPARED BY:
PARSONS
2540 CENTERVIEW DR., SUITE 207
RALEIGH, NORTH CAROLINA 27606
NC LICENSE NO. F-0246
FOR NORTH CAROLINA STATE OF TRANSPORTATION

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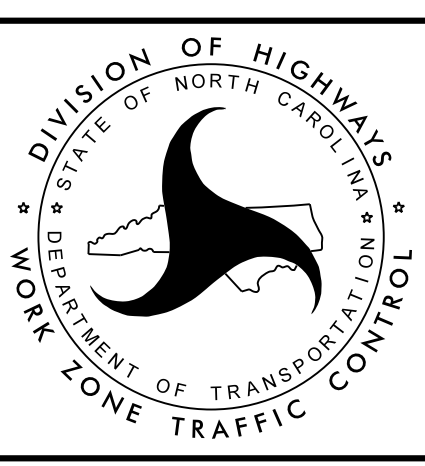
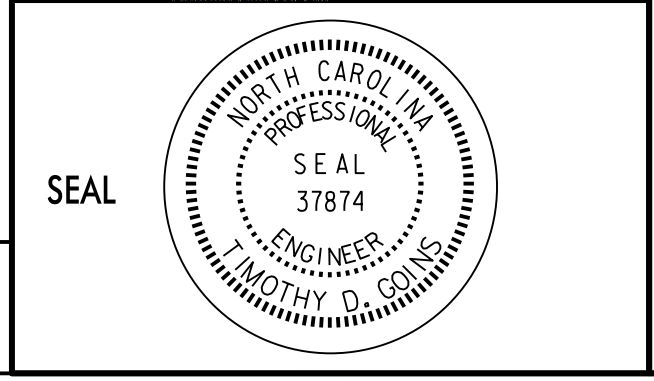
NOTE: REFER TO RSD. 1101.02, SHEET 3 OF 15 FOR ADDITIONAL SIGNS AND GENERAL NOTES.



LEGEND

	PROPOSED CONSTRUCTION
	ONGOING CONSTRUCTION
	COMPLETED CONSTRUCTION

APPROVED: *Jim S. Bowers* DATE: 4/1/2015

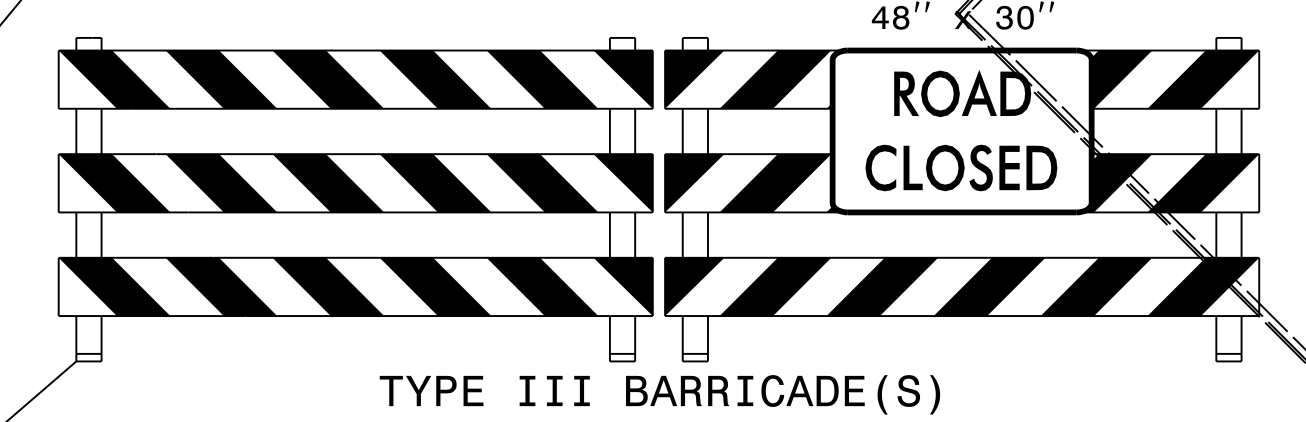


TRANSPORTATION MANAGEMENT PLAN
**PHASE II
 DETAIL 1**

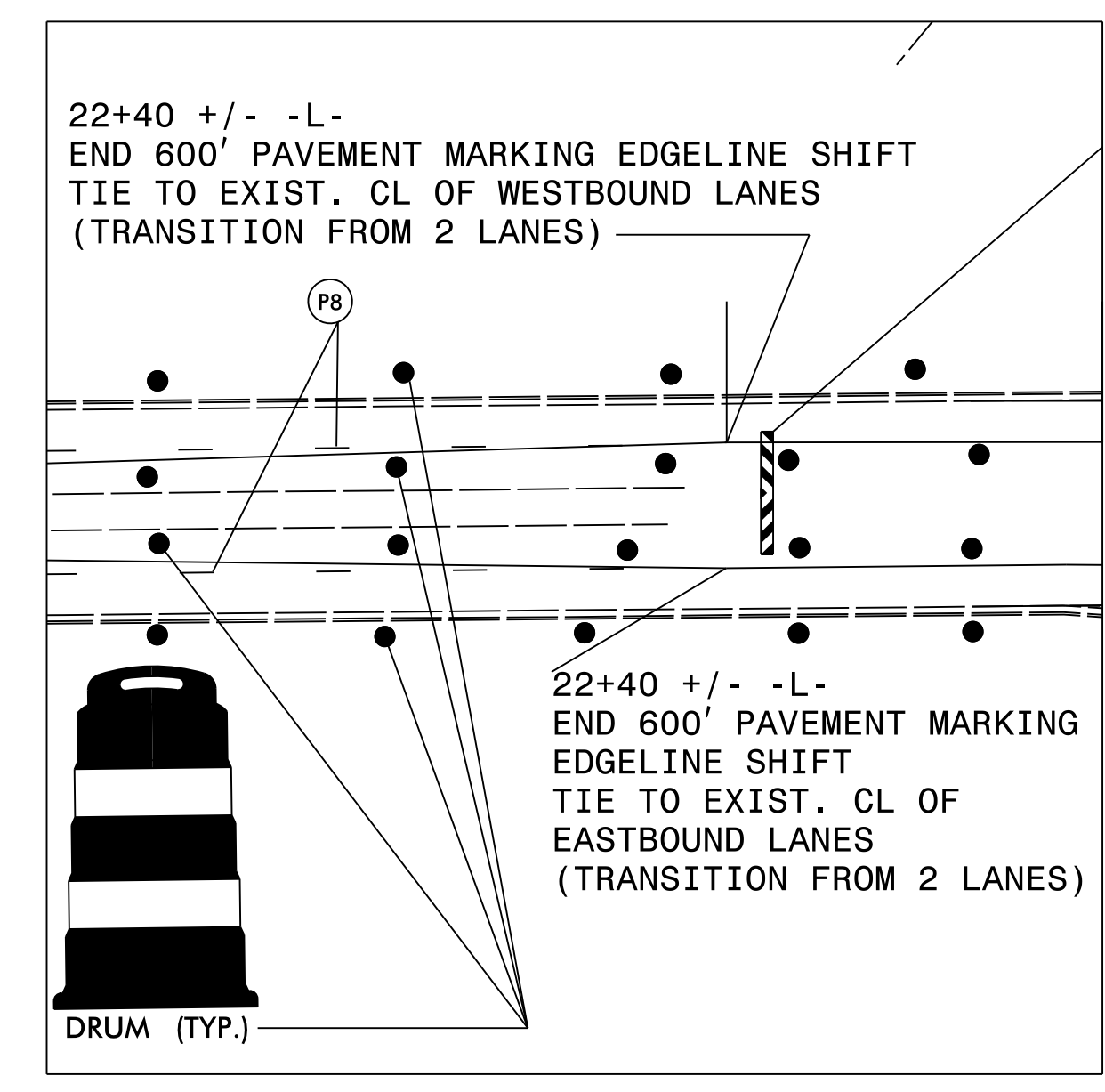
PLANS PREPARED BY
PARSONS
 5540 CENTERVIEW DR., SUITE 201
 RALEIGH, NORTH CAROLINA 27606
 INC. LICENSE NO. F-15246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

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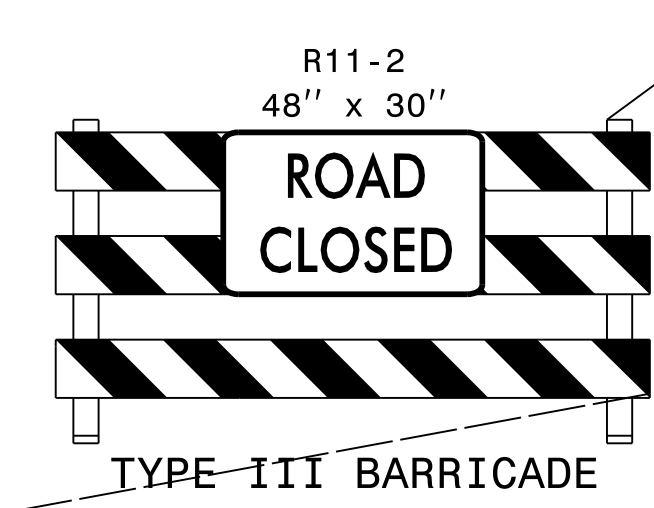
MATCH LINE -L- STA. 23+50.00



TYPE III BARRICADE(S)



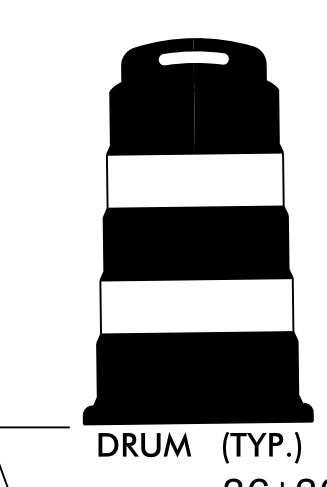
MATCH LINE -L- STA. 23+50.00



TYPE III BARRICADE

33+00 +/- -L- BEGIN 330' PAVEMENT MARKING EDGELINE SHIFT TIE TO EXIST. CL OF WESTBOUND LANES

33+00 +/- -L- BEGIN 330' PAVEMENT MARKING EDGELINE SHIFT TIE TO EXIST. CL OF EASTBOUND LANES



DRUM (TYP.)

36+30 +/- -L- TIE TO EXIST. MARKINGS BEGIN 600' SHIFTING TAPER TIE TO EXISTING MEDIAN EDGELINE TRANSITION TO EXISTING TWO EB / WB LANES

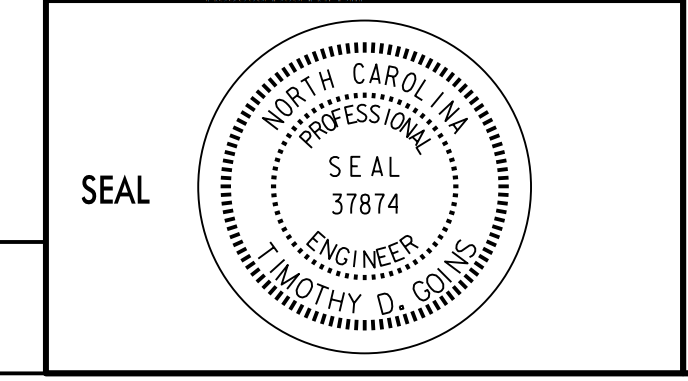
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LEGEND

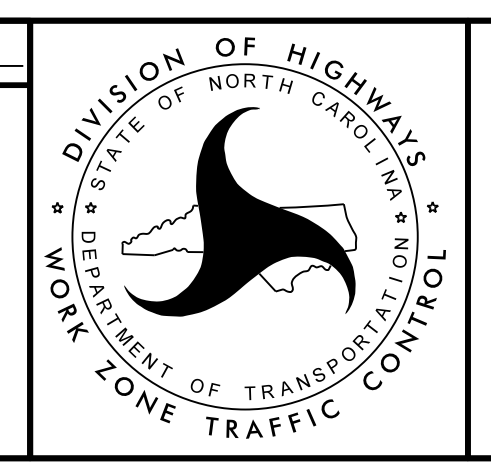
	PROPOSED CONSTRUCTION
	ONGOING CONSTRUCTION
	COMPLETED CONSTRUCTION

31-MAR-2015 10:13 31-W-5206AG-TC-TMP-06.dgn

APPROVED: *Jim S. Boon* DATE: 4/1/2015



PLANS PREPARED BY
PARSONS
 5540 CENTERVIEW DR., SUITE 217
 RALEIGH, NORTH CAROLINA 27606
 INC. LICENSE NO. F-5246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION



TRANSPORTATION MANAGEMENT PLAN

PHASE III
DETAIL 1