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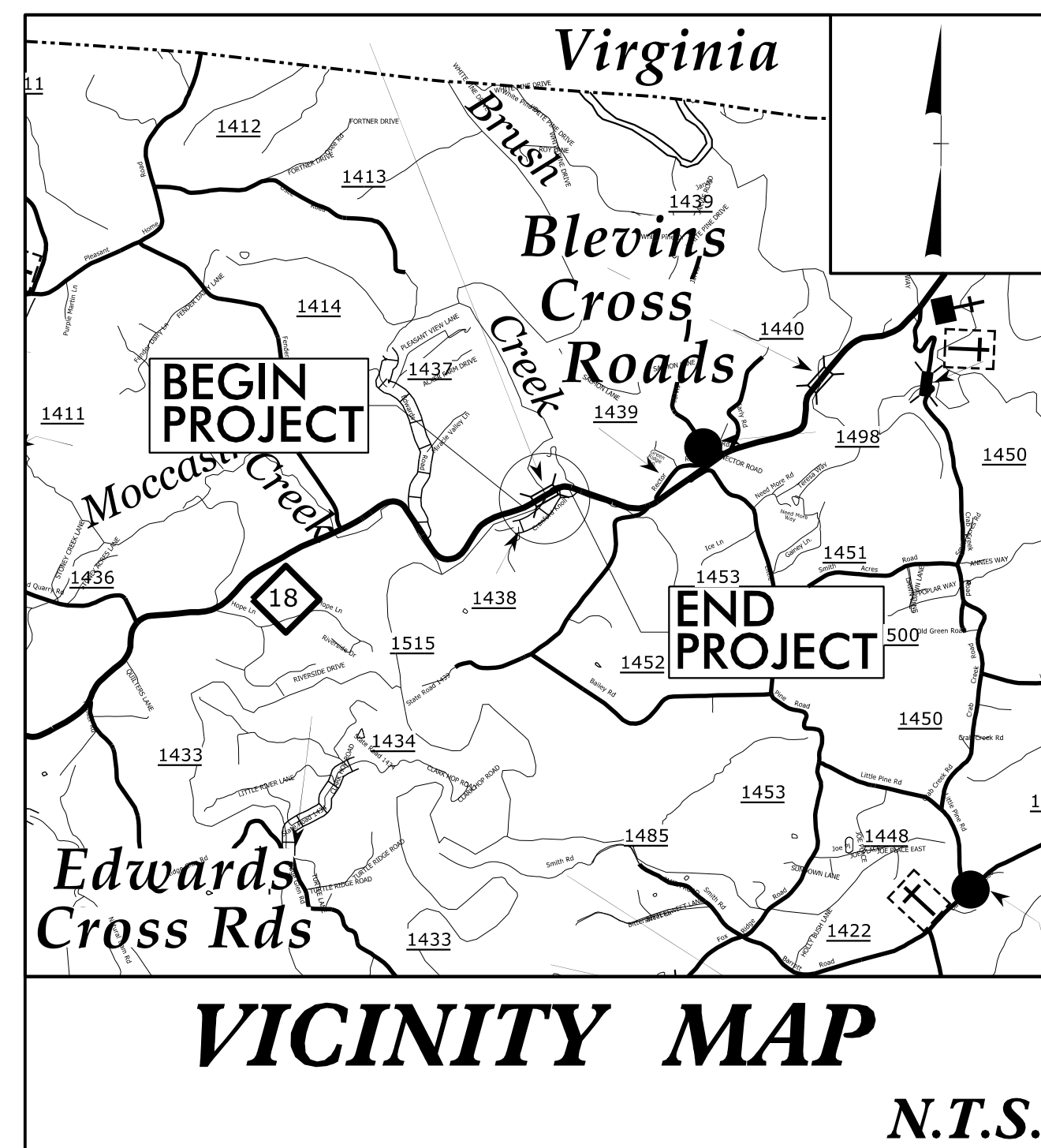
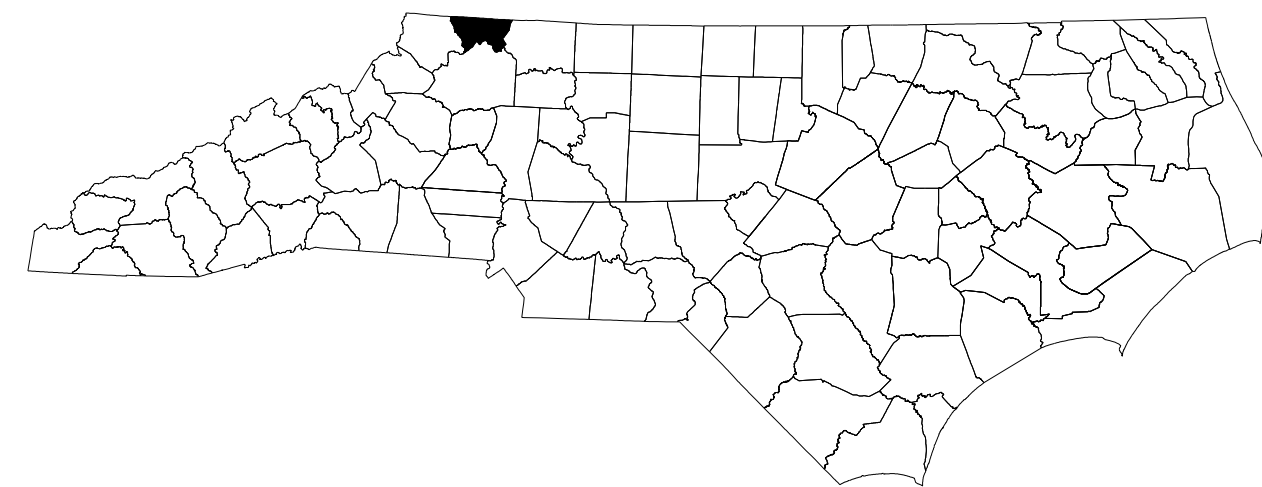
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

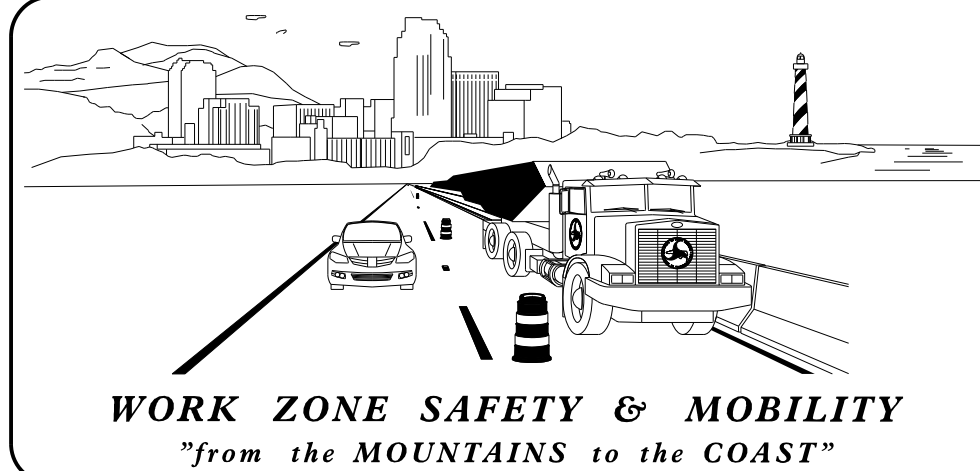
TRANSPORTATION MANAGEMENT PLAN

ALLEGHANY COUNTY



INDEX OF SHEETS	
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TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)
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PLANS PREPARED BY:
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 PROJECT ENGINEER
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 PROJECT DESIGN ENGINEER

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SHEET NO.
TMP-1

B-5388

TIP PROJECT:

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE 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
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
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
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES

TEMPORARY PAVEMENT MARKING & MARKERS

PAVEMENT MARKINGS PAINT (4")

- PA WHITE EDGE LINE
- PI YELLOW DOUBLE CENTER

MARKERS TEMPORARY RAISED PAVEMENT MARKERS

- MH YELLOW AND YELLOW

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

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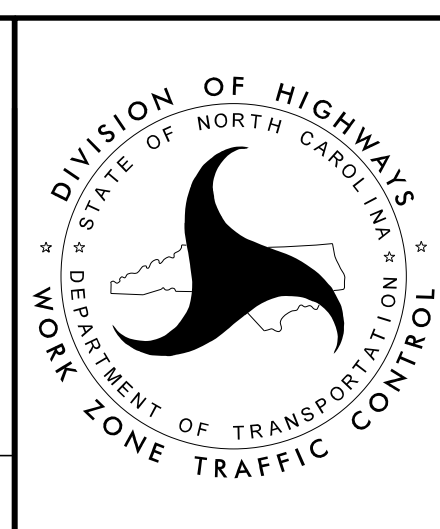


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ROADWAY STANDARD
DRAWINGS & LEGEND

MANAGEMENT STRATEGIES

PROJ. REFERENCE NO.	SHEET NO.
B-5388	TMP-1B

- THIS PROJECT IS TO BE CONSTRUCTED USING A STAGED CONSTRUCTION PROCESS WITH NC 18 TRAFFIC BEING MAINTAINED ON THE EXISTING ROADWAY UNTIL PROPOSED DETOUR BRIDGE IS CONSTRUCTED. TEMPORARY SHORING WILL BE REQUIRED IN ORDER TO FACILITE CONSTRUCTION OF THE PERMANENT PROPOSED BRIDGE AND TEMPORARY LANE CLOSURES WILL BE UTILIZED DURING TIE IN AND WEDGING OPERATIONS.

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

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

ROAD NAME

NC 18 (-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 4:00 P.M. DECEMBER 31st TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

- FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 9:00 A.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

- B) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME

NC 18

DAY AND TIME RESTRICTIONS

SUNDAY, MONDAY, WEDNESDAY, FRIDAY AND SATURDAY ALL DAY TUESDAY AND THURSDAY BETWEEN THE HOURS OF 12:00 AM AND 10:00 AM AND BETWEEN THE HOURS OF 1:00 PM AND 12:00 AM

- C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
NC 18	MONDAY THRU FRIDAY BETWEEN THE HOURS OF 7:00 AM AND 9:00 AM AND 4:00 PM AND 6:00 PM	MAX. 30 MINUTES FOR SETTING GIRDERS

- D) 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

- E) 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.
- F) 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.
- G) 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.

PAVEMENT EDGE DROP OFF REQUIREMENTS

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

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

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

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

- I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 200 FT. IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

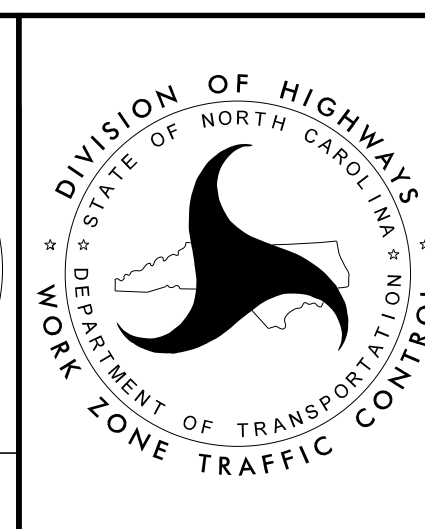
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TEMPORARY TRAFFIC CONTROL MANAGEMENT STRATEGIES, LOCAL NOTES, AND GENERAL NOTES

GENERAL NOTES (CONTINUED)

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

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

M) 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.

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

O) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 200 FT. IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

P) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT 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 TRANSPORTATION MANAGEMENT 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 TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

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

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

Q) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED 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: (SEE ALSO 1101.05)

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

TRAFFIC CONTROL DEVICES

R) 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.

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
NC 18 (-L DET-)	PAINT	RAISED

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

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

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

MISCELLANEOUS

X) A LAND USE PERMIT IS REQUIRED FROM THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) FOR THE OFF-SITE DETOUR SIGNAGE IN VIRGINIA. THE ENGINEER WILL CONTACT MS. PAMELA HEATH, P.E., ASSISTANT RESIDENT ENGINEER/VDOT, 2843 CHAPMAN ROAD, WYTHEVILLE, VA 24382 (TELEPHONE 276-228-2154), TO OBTAIN THE PERMIT FOR THE OFF-SITE DETOUR SIGNAGE INSTALLATION IN VIRGINIA.

NOTE: THE LAND USE PERMIT HAS TO BE APPROVED AND ACQUIRED PRIOR TO INSTALLATION OF THE OFF-SITE DETOUR SIGNAGE IN VIRGINIA.

NOTE: CONTRACTOR SHALL BE RESTRICTED FROM CLOSING NC 18 DURING HOLIDAYS AS STATED IN THE LAND USE PERMIT/NOTICE OF PERMITTEE LIABILITY (PERMITTEE AGREEMENT FOR LAND USE PERMIT ISSUANCE) AND DURING THE WEEK OF THE FIDDLER'S CONVENTION IN CITY OF GALAX, VA.

THE ENGINEER WILL NOTIFY MR. TODD MARTIN AT todd.martin@vdot.virginia.gov AND THE TRANSPORTATION OPERATIONS CENTER (TOC) AT salemtoc@vdot.virginia.gov 10 BUSINESS DAYS PRIOR TO THE OFF-SITE DETOUR BEING UTILIZED FOR THE FIRST BLASTING OPERATION AND TWO BUSINESS DAYS PRIOR TO SUBSEQUENT BLASTING OPERATIONS. THE TOC SHALL ALSO BE CONTACTED AT 888-782-7982 FOR ANY ITEM REQUIRING IMMEDIATE NOTIFICATION DURING CONSTRUCTION, AS IT RELATES TO TRAFFIC MANAGEMENT IN VIRGINIA.

THE ENGINEER WILL NOTIFY MS. PAMELA HEATH, P.E., WHEN THE OFF-SITE DETOUR WILL NO LONGER BE UTILIZED AND THAT THE SIGNAGE WILL BE REMOVED FROM VIRGINIA.

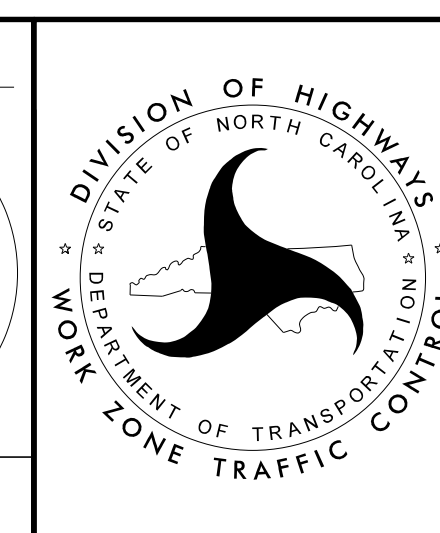
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**TEMPORARY TRAFFIC CONTROL
MANAGEMENT STRATEGIES,
LOCAL NOTES,
AND GENERAL NOTES**

PROJ. REFERENCE NO.	SHEET NO.
B-5388	TMP-2A

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 -L- STA. 18+07.50, 23.0' LT, TO -L- STA. 18+32.50, 23.0' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
 UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE ($\phi?$) = 30
 DEGREES COHESION (c) = 0 PSF
 GROUNDWATER ELEVATION = 2,420 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STA. 18+07.50, 23.0' LT, TO -L- STA. 18+32.50, 23.0' LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM -L- STA. 18+07.50, 23.0' LT, TO -L- STA. 18+32.50, 23.0' LT WILL NOT PENETRATE ABOVE ELEVATION 2,415 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 -L- STA. 18+07.50, 23.0' LT, TO -L- STA. 18+32.50, 23.0' LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

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 -L- STA. 21+39.00, 23.0' LT, TO -L- STA. 21+64.00, 23.0' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
 UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE ($\phi?$) = 30
 DEGREES COHESION (c) = 0 PSF
 GROUNDWATER ELEVATION = 2,420 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STA. 21+39.00, 23.0' LT, TO -L- STA. 21+64.00, 23.0' LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM -L- STA. 21+39.00, 23.0' LT, TO -L- STA. 21+64.00, 23.0' LT MAY NOT PENETRATE ABOVE ELEVATION 2,430 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 -L- STA. 21+39.00, 23.0' LT, TO -L- STA. 21+64.00, 23.0' LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON AUGUST 29, 2018 AND SEALED BY A PROFESSIONAL ENGINEER, MICHAEL H. STEPHENS, LICENSE # 028893.

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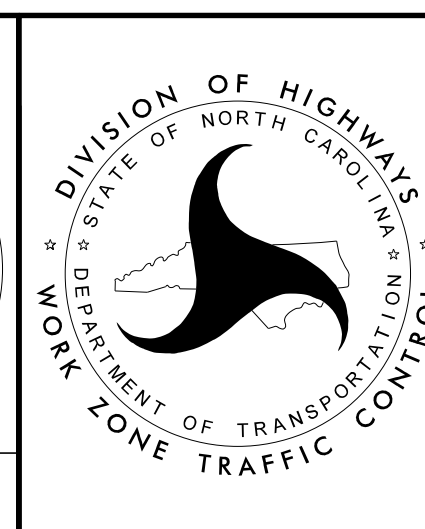


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TEMPORARY TRAFFIC CONTROL
 TEMPORARY SHORING NOTES

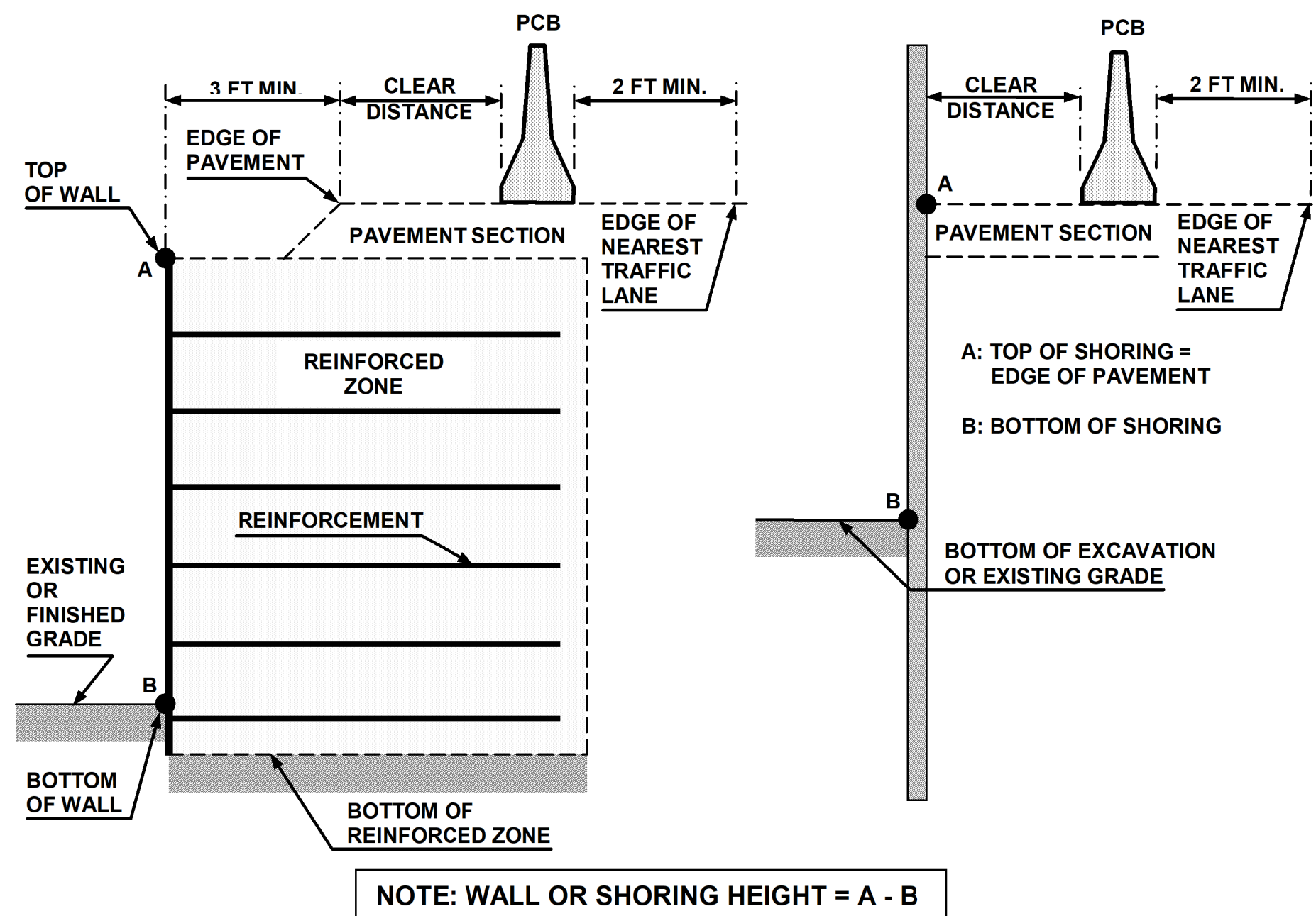


FIGURE A

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.

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

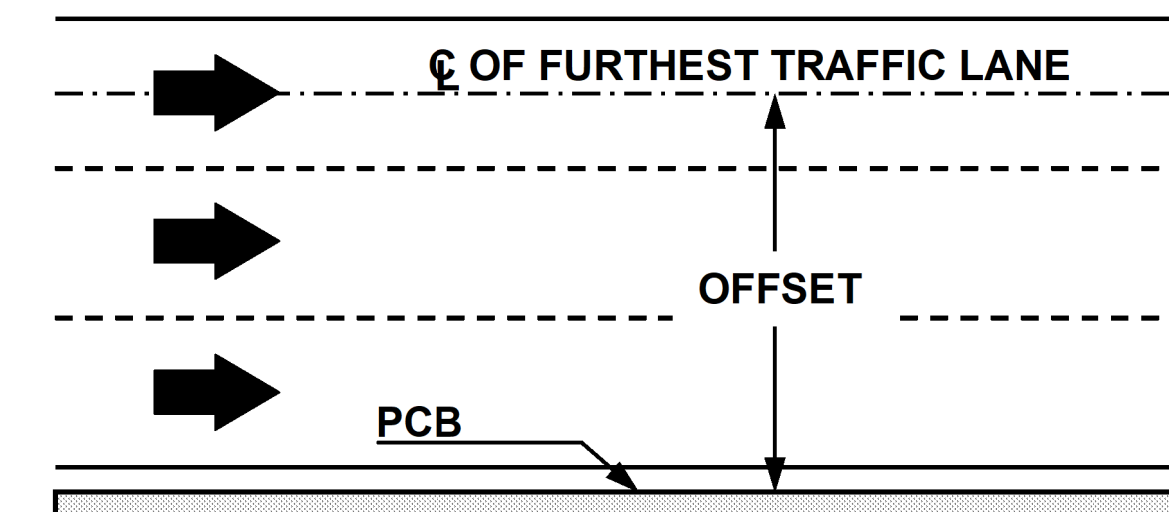
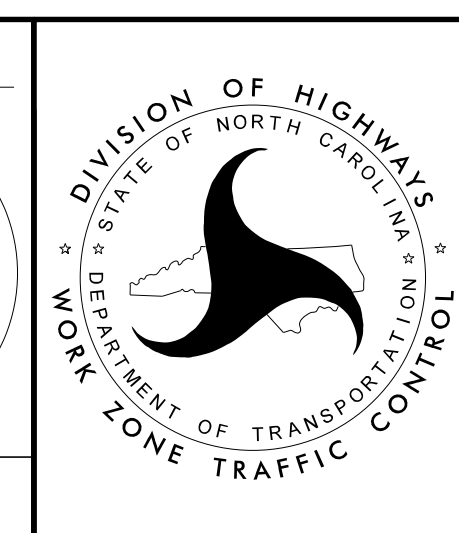


FIGURE B

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 NC COA No. F-1255

APPROVED: *[Signature]*
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PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

PROJECT PHASING NOTES

PROJ. REFERENCE NO.	SHEET NO.
B-5388	TMP-3

MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION.
COORDINATE WITH PROPERTY OWNERS AS NEEDED DURING DRIVEWAY CONSTRUCTION.

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS ON ALL ROADWAYS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01.

STEP 2: BEGIN CONSTRUCTION ON THE FOLLOWING AWAY FROM TRAFFIC UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE:
 - -L DET-: AS SHOWN ON SHEET TMP-4
 - -L-: TEMPORARY SHORING AT LOCATIONS #1 AND #2 AS SHOWN ON SHEET TMP-5.
 - -L DET-: TEMPORARY BRIDGE
 - -DWY1-: AS SHOWN ON SHEET TMP-4

INSTALL DETOUR ROUTE SIGNAGE AS SHOWN ON TMP-6. COORDINATE DETOUR ROUTE WITH ENGINEER AND VDOT AS DIRECTED IN GENERAL NOTES ON SHEET TMP-1B.

USING ROADWAY STANDARD DRAWING NO. 1101.06, STOP TRAFFIC ALONG NC 18 TO PERFORM ANY NECESSARY BLASTING. BLASTING AND REMOVAL OF DEBRIS FROM EXISTING ROADWAY SHALL BE COMPLETED WITHIN THE TIME LIMITS SHOWN IN THE GENERAL NOTES BEFORE OPENING THE ROADWAY TO TRAFFIC.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL THE FOLLOWING;
 - THE PORTION OF THE PROPOSED CROSS PIPE THAT ARE LOCATED UNDER EXISTING -L- AT STA. 15+00+/- -L- BY OPEN CUTTING.
 - PAVEMENT TIE-INS AT STA. 13+00+/- -L DET- AND STA. 24+80+/- -L DET-.

PHASE II

STEP 1: AWAY FROM TRAFFIC AND/OR USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -L DET- AND SHIFT TRAFFIC IN THE PATTERNS SHOWN ON SHEET TMP-5.

STEP 2: BEGIN CONSTRUCTION ON THE FOLLOWING AWAY FROM TRAFFIC UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE:
 - -L-: AS SHOWN ON SHEET TMP-5
 - -L-: PERMANENT BRIDGE
 - -L-: PORTION OF GUARDRAIL FROM STA. 21+42+/- TO STA. 21+85+/- LT.

INSTALL DETOUR ROUTE SIGNAGE AS SHOWN ON TMP-6. COORDINATE DETOUR ROUTE WITH ENGINEER AND VDOT AS DIRECTED IN GENERAL NOTES ON SHEET TMP-1C.

USING ROADWAY STANDARD DRAWING NO. 1101.06, STOP TRAFFIC ALONG NC 18 TO PERFORM ANY NECESSARY BLASTING. BLASTING AND REMOVAL OF DEBRIS FROM EXISTING ROADWAY SHALL BE COMPLETED WITHIN THE TIME LIMITS SHOWN IN THE GENERAL NOTES BEFORE OPENING THE ROADWAY TO TRAFFIC.

USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL THE FOLLOWING;
 - THE PORTION OF THE PROPOSED CROSS PIPE THAT IS LOCATED UNDER EXISTING -L- AT STA. 24+50+/- BY OPEN CUTTING.
 - PAVEMENT TIE-INS AT STA. 13+00+/- -L- AND STA. 24+80+/- -L-.

PHASE III

STEP 1: AWAY FROM TRAFFIC AND/OR USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -L- IN THE FINAL TRAFFIC PATTERN AS SHOWN IN THE PAVEMENT MARKING PLANS AND SHIFT TRAFFIC TO THE FINAL TRAFFIC PATTERN.

STEP 2: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL THE FOLLOWING;
 - REMAINING PORTION OF GUARDRAIL ALONG -L- FROM STA. 21+85+/- TO STA. 23+30+/- LT.

STEP 3: AWAY FROM TRAFFIC, REMOVE THE TEMPORARY DETOUR ROADWAY AND BRIDGE.

STEP 4: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL THE FOLLOWING;
 - PLACE THE FINAL LAYER OF SURFACE COURSE ON PROPOSED -L-.

STEP 5: REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

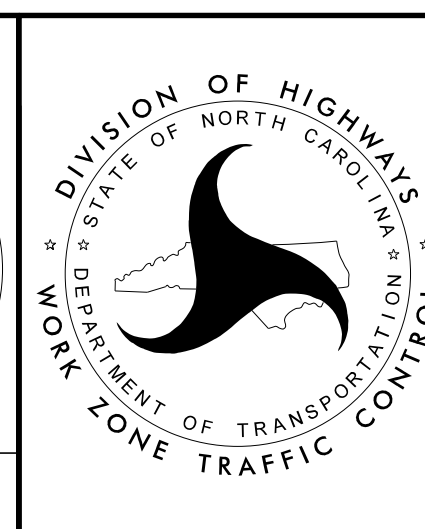
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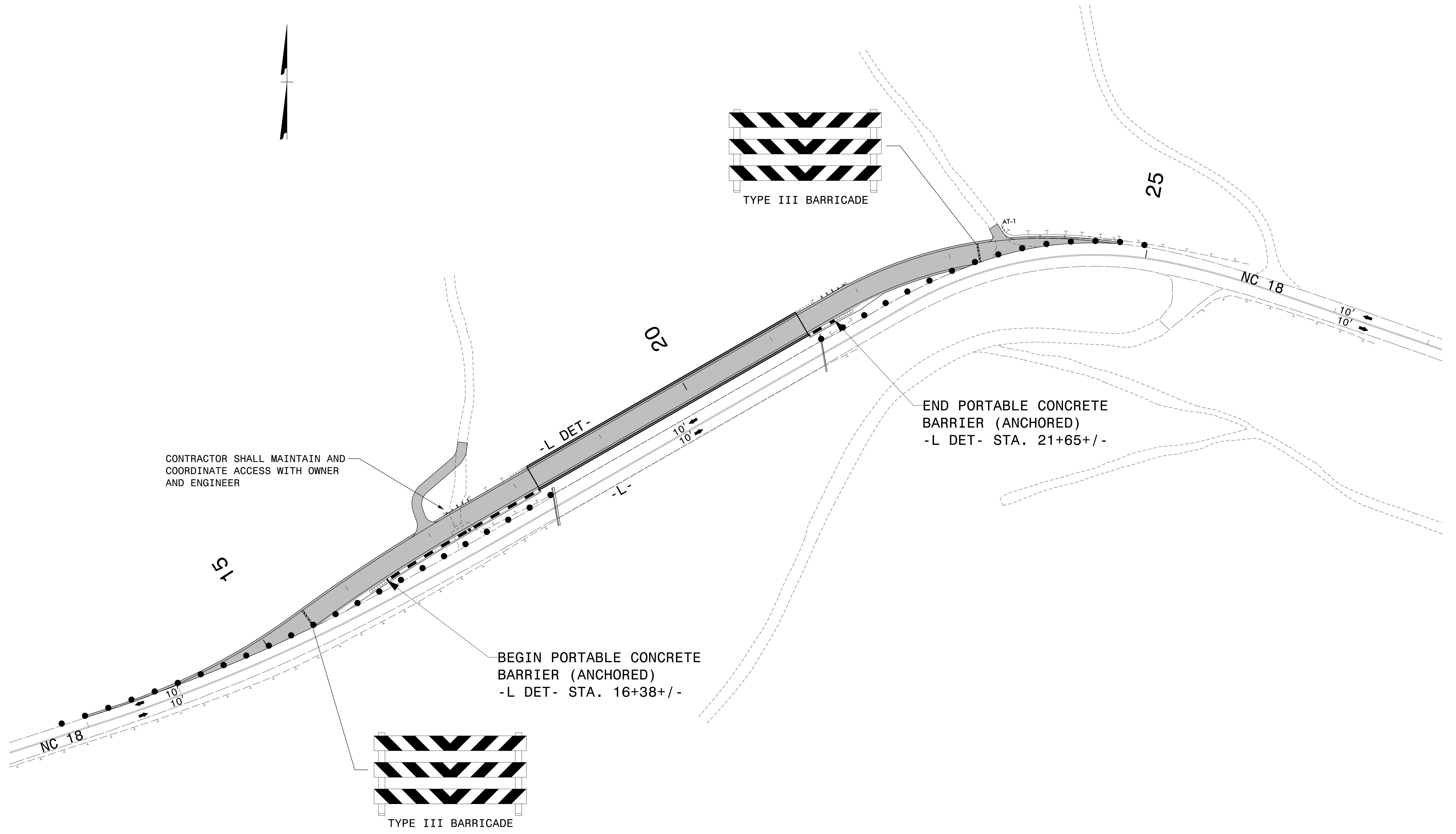
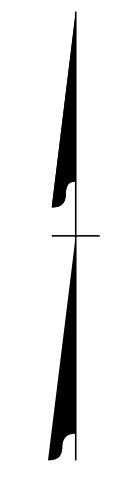
APPROVED: *Art A. Persiani*
09634AC5704C424
 DATE: 11/8/2018

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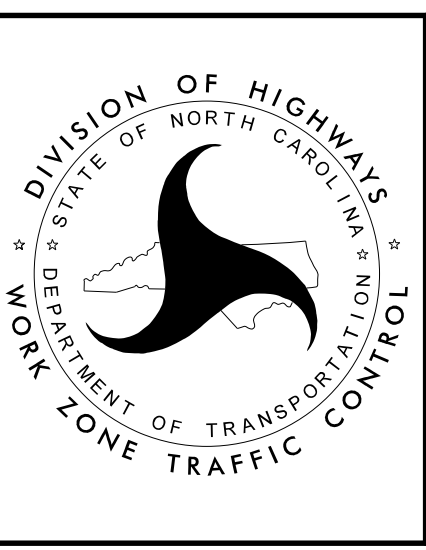
**TEMPORARY TRAFFIC CONTROL
PHASING NOTES**



11/7/2018
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 User: PERSIANIK

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APPROVED: *A. A. Persiani*
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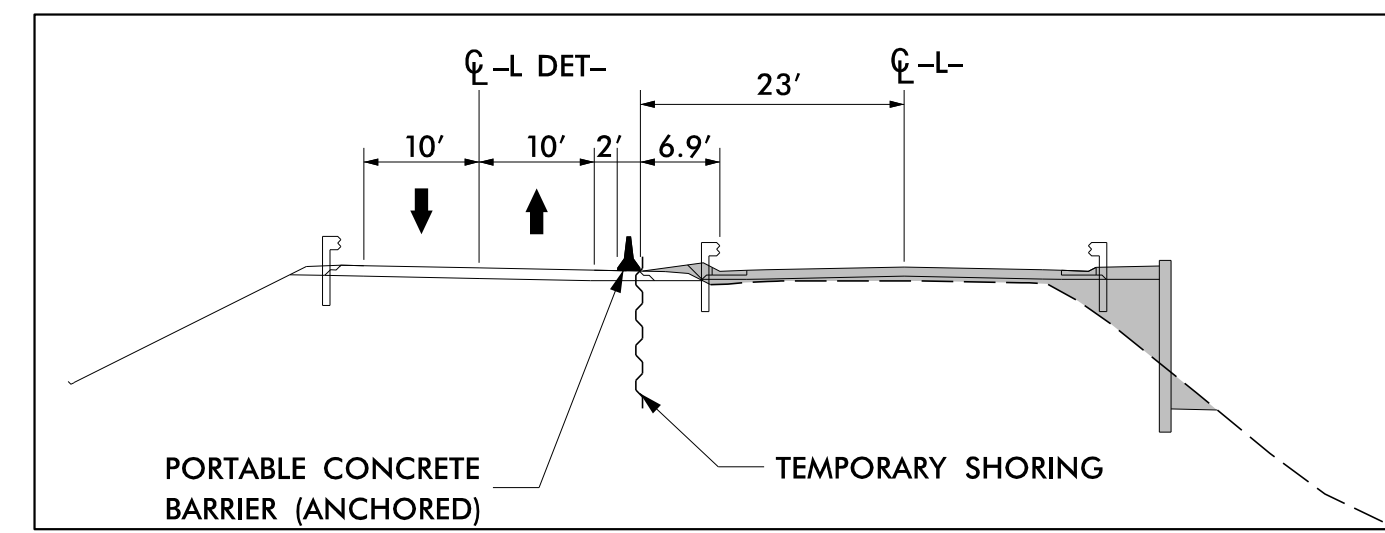
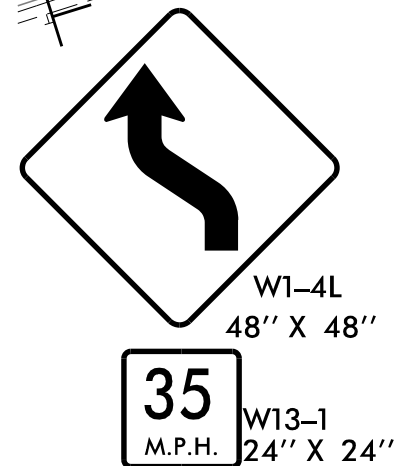
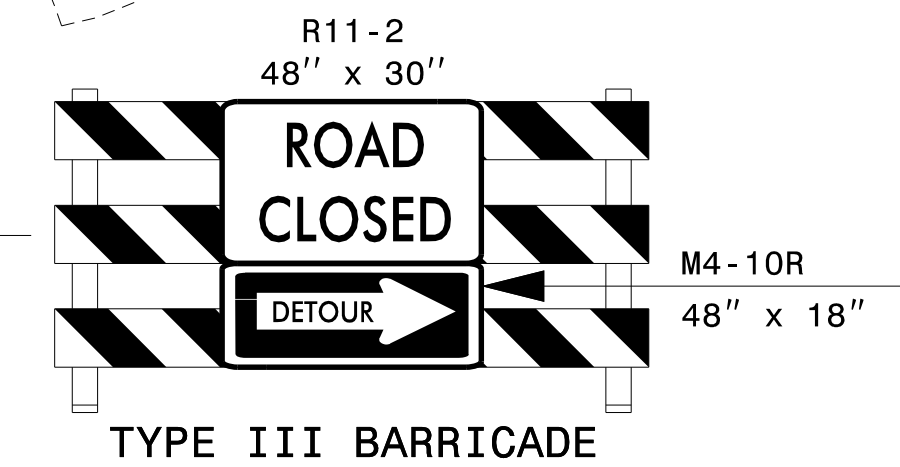
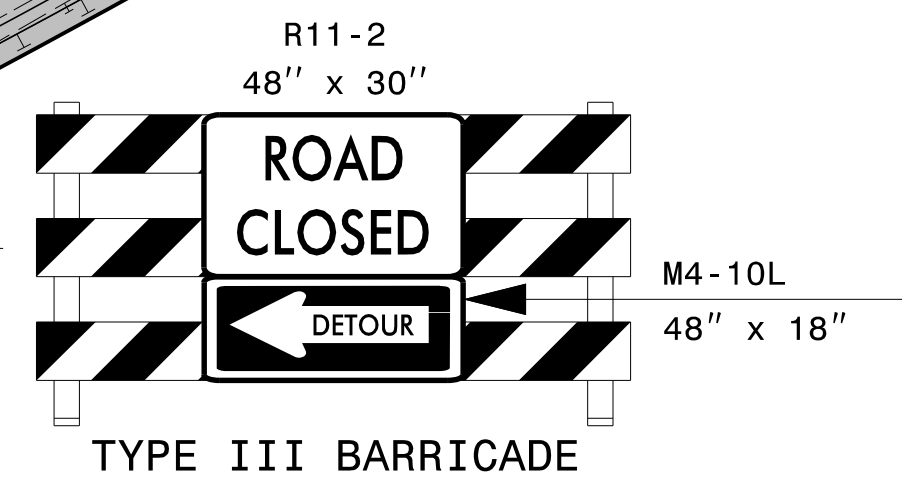
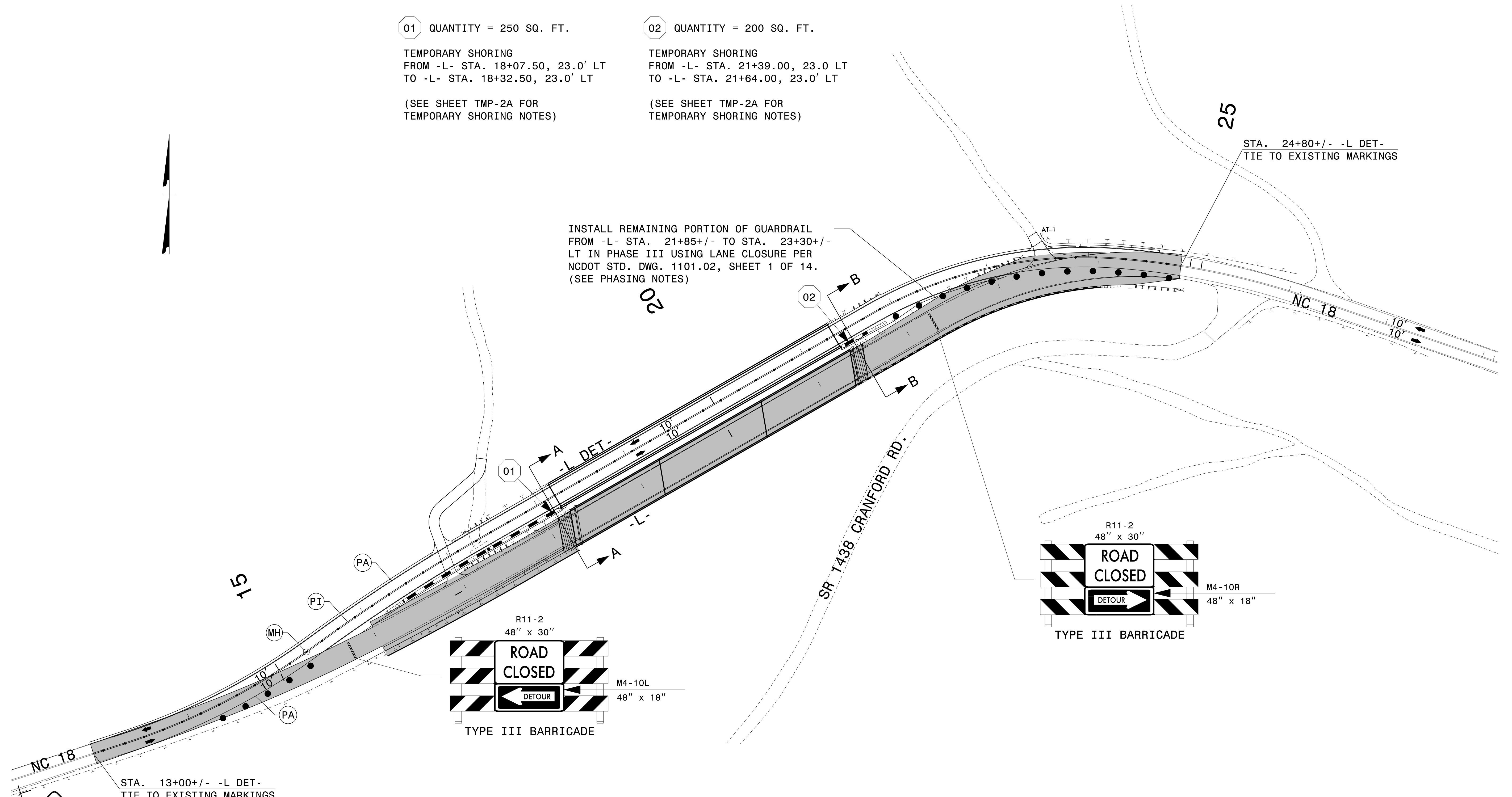


DIVISION OF HIGHWAYS
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL
**TEMPORARY TRAFFIC CONTROL
 PHASE I DETAIL**

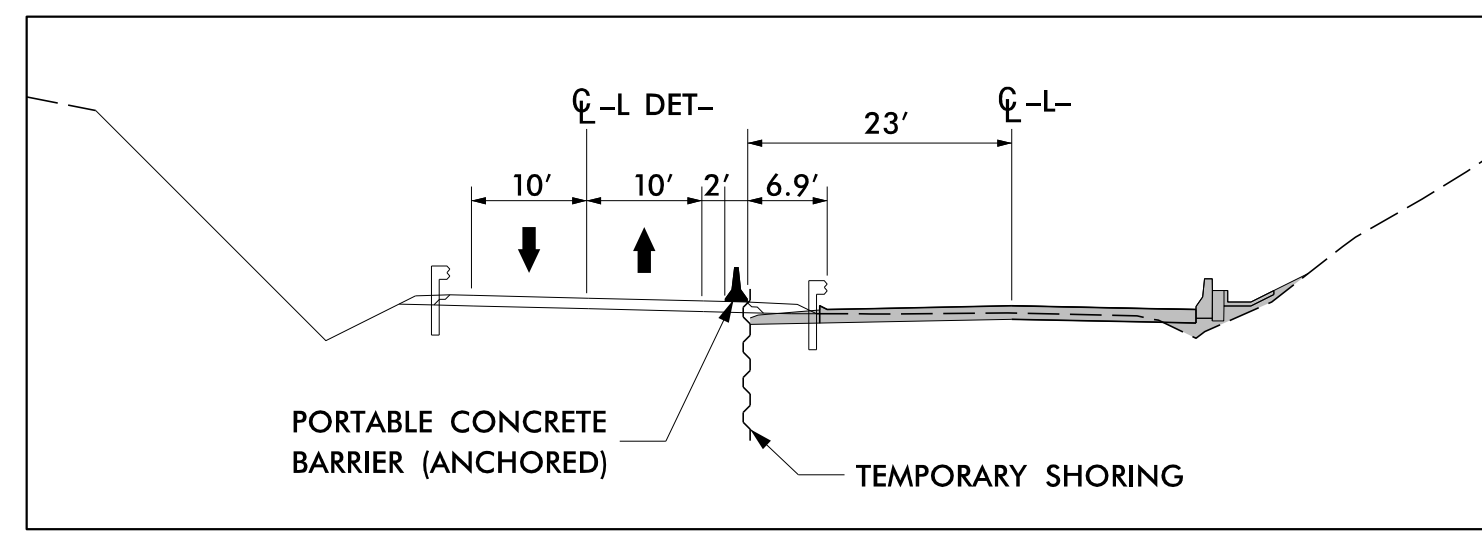
01 QUANTITY = 250 SQ. FT.
 TEMPORARY SHORING
 FROM -L- STA. 18+07.50, 23.0' LT
 TO -L- STA. 18+32.50, 23.0' LT
 (SEE SHEET TMP-2A FOR
 TEMPORARY SHORING NOTES)

02 QUANTITY = 200 SQ. FT.
 TEMPORARY SHORING
 FROM -L- STA. 21+39.00, 23.0 LT
 TO -L- STA. 21+64.00, 23.0' LT
 (SEE SHEET TMP-2A FOR
 TEMPORARY SHORING NOTES)

INSTALL REMAINING PORTION OF GUARDRAIL
 FROM -L- STA. 21+85+/- TO STA. 23+30+/-
 LT IN PHASE III USING LANE CLOSURE PER
 NCDOT STD. DWG. 1101.02, SHEET 1 OF 14.
 (SEE PHASING NOTES)

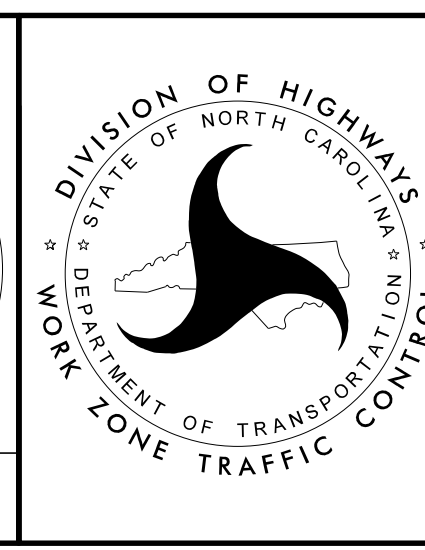


SECTION A-A



SECTION B-B

APPROVED: *A. Persiani*
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 NORTH CAROLINA PROFESSIONAL ENGINEER
 A. PERSIANI
 021655

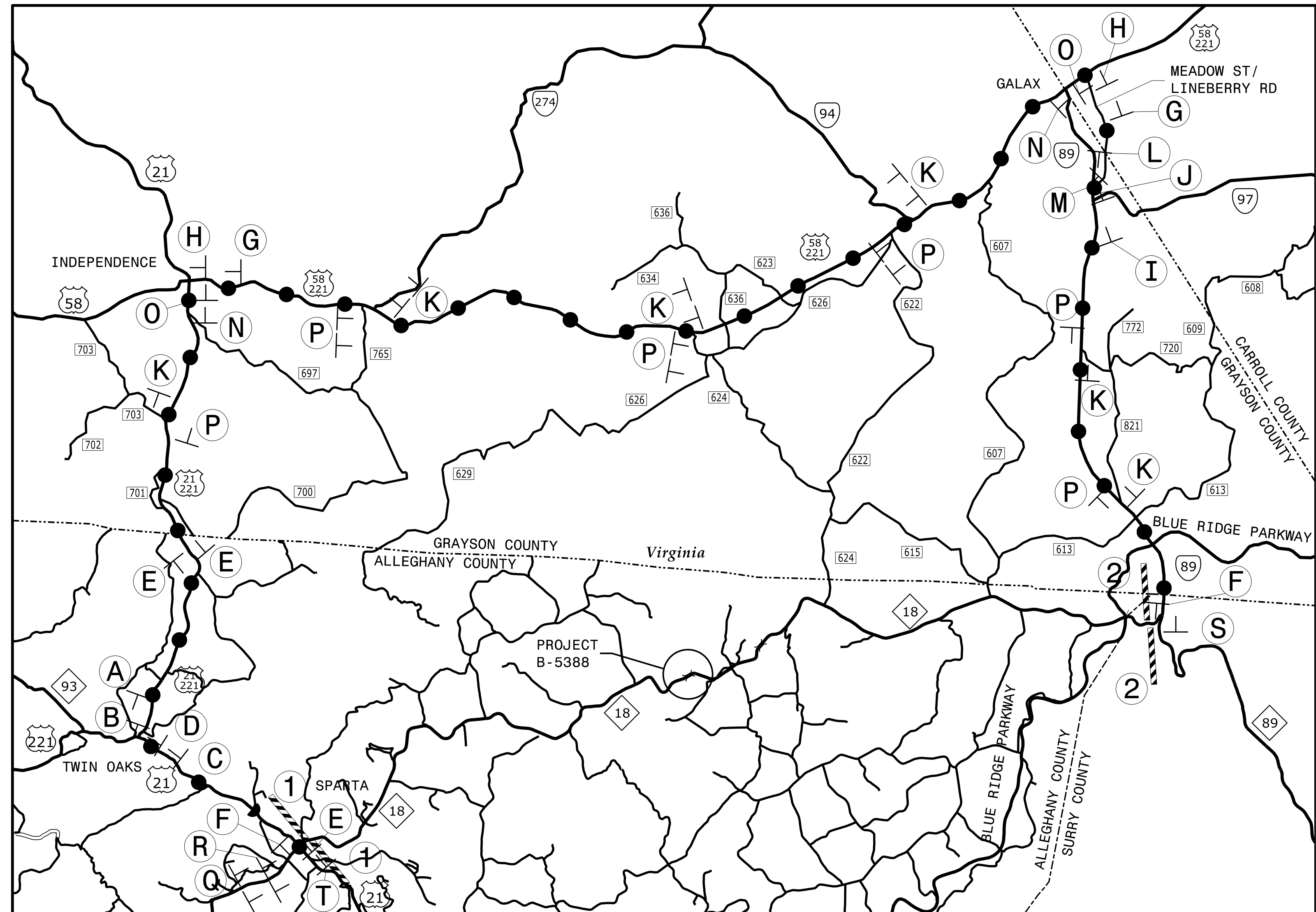


TEMPORARY TRAFFIC CONTROL
 PHASE II DETAIL

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 NC COA No. F-1255

11/8/2018
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 User: PERSIANI

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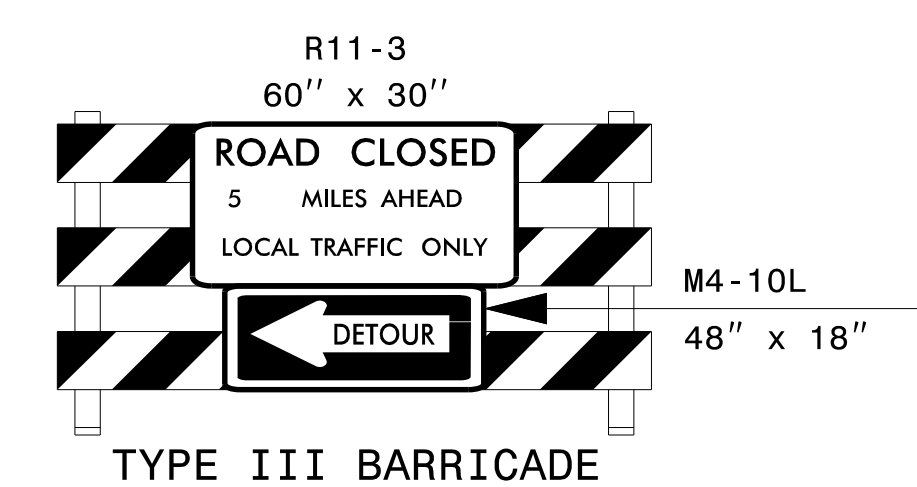
TEMPORARY DETOUR FOR BLASTING/CLEANUP OPERATION

DETOUR ROUTE

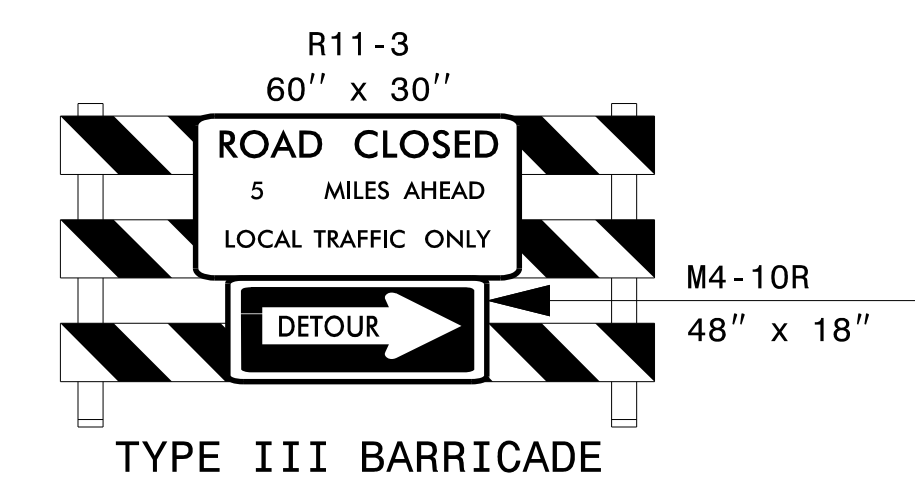
INSTALL SIGNS (A) THRU (P) IN LOCATIONS APPROVED BY THE ENGINEER.

INSTALL SIGNS (Q) THRU (T) AND BARRICADES (1) THRU (2) PER NCDOT RSD. 1101.03 SHEET 1 OF 9.

REFER TO THE LATEST VERSIONS OF THE VDOT WORK AREA PROTECTION MANUAL (WAPM) AND THE STANDARD HIGHWAY SIGNS MANUAL (SHS) FOR DETOUR ROUTE SIGNAGE IN VIRGINIA.



1

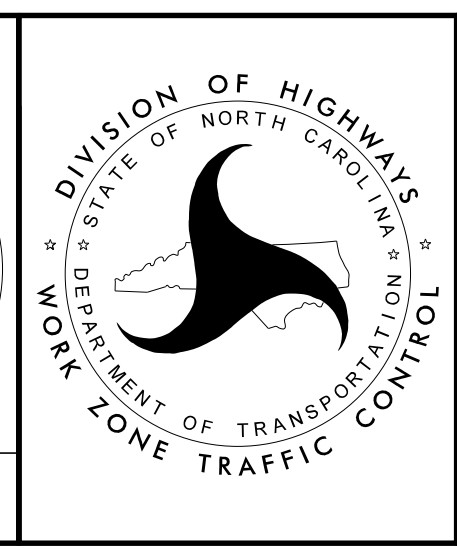


2

(A) DETOUR M4-8 24" X 12" (M1-5) 18 (M5-1) 21" X 15" (M5-1) 21" X 15"	(B) DETOUR M4-8 24" X 12" (M1-5) 18 (M6-1 L) 21" X 15" (M6-1 L) 21" X 15"	(C) DETOUR M4-8 24" X 12" (M1-5) 18 (M5-1 R) 21" X 15" (M5-1 R) 21" X 15"	(D) DETOUR M4-8 24" X 12" (M1-5) 18 (M6-1 R) 21" X 15" (M6-1 R) 21" X 15"	(E) DETOUR M4-8 24" X 12" (M1-5) 18 (M6-3) 21" X 15" (M6-3) 21" X 15"
(F) END DETOUR M4-8 A 24" X 18" (M1-5) 18	(G) WEST M3-4 24" X 12" (M1-5) 18 (M5-1) 21" X 15" (M5-1) 21" X 15"	(H) WEST M3-4 24" X 12" (M1-5) 18 (M6-1 L) 21" X 15" (M6-1 L) 21" X 15"	(I) WEST M3-4 24" X 12" (M1-5) 18 (M5-1 R) 21" X 15" (M5-1 R) 21" X 15"	(J) WEST M3-4 24" X 12" (M1-5) 18 (M6-1 R) 21" X 15" (M6-1 R) 21" X 15"
(K) DETOUR M4-8 24" X 12" (M3-4) 24" X 12" (M1-5) 18 (M6-3) 21" X 15" (M6-3) 21" X 15"	(L) DETOUR M4-8 24" X 12" (M3-2) 24" X 12" (M1-5) 18 (M5-1) 21" X 15" (M5-1) 21" X 15"	(M) DETOUR M4-8 24" X 12" (M3-2) 24" X 12" (M1-5) 18 (M6-1 L) 21" X 15" (M6-1 L) 21" X 15"	(N) DETOUR M4-8 24" X 12" (M3-2) 24" X 12" (M1-5) 18 (M5-1 R) 21" X 15" (M5-1 R) 21" X 15"	(O) DETOUR M4-8 24" X 12" (M3-2) 24" X 12" (M1-5) 18 (M6-1 R) 21" X 15" (M6-1 R) 21" X 15"
(P) DETOUR M4-8 24" X 12" (M3-2) 24" X 12" (M1-5) 18 (M6-3) 21" X 15" (M6-3) 21" X 15"	(Q) ROAD CLOSED AHEAD W20-3 48" X 48" (W20-3) 48" X 48"	(R) DETOUR AHEAD W20-2 48" X 48" (W20-2) 48" X 48"	(S) ROAD CLOSED AHEAD W20-3 48" X 48" (W20-3) 48" X 48" (SP-4L) 42" X 12"	(T) ROAD CLOSED AHEAD W20-3 48" X 48" (W20-3) 48" X 48" (SP-4R) 42" X 12"

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APPROVED: *kt A. Persiani*
 DATE: 11/30/2018
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 KYLE A. PERSIANI



TEMPORARY OFF-SITE DETOUR

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