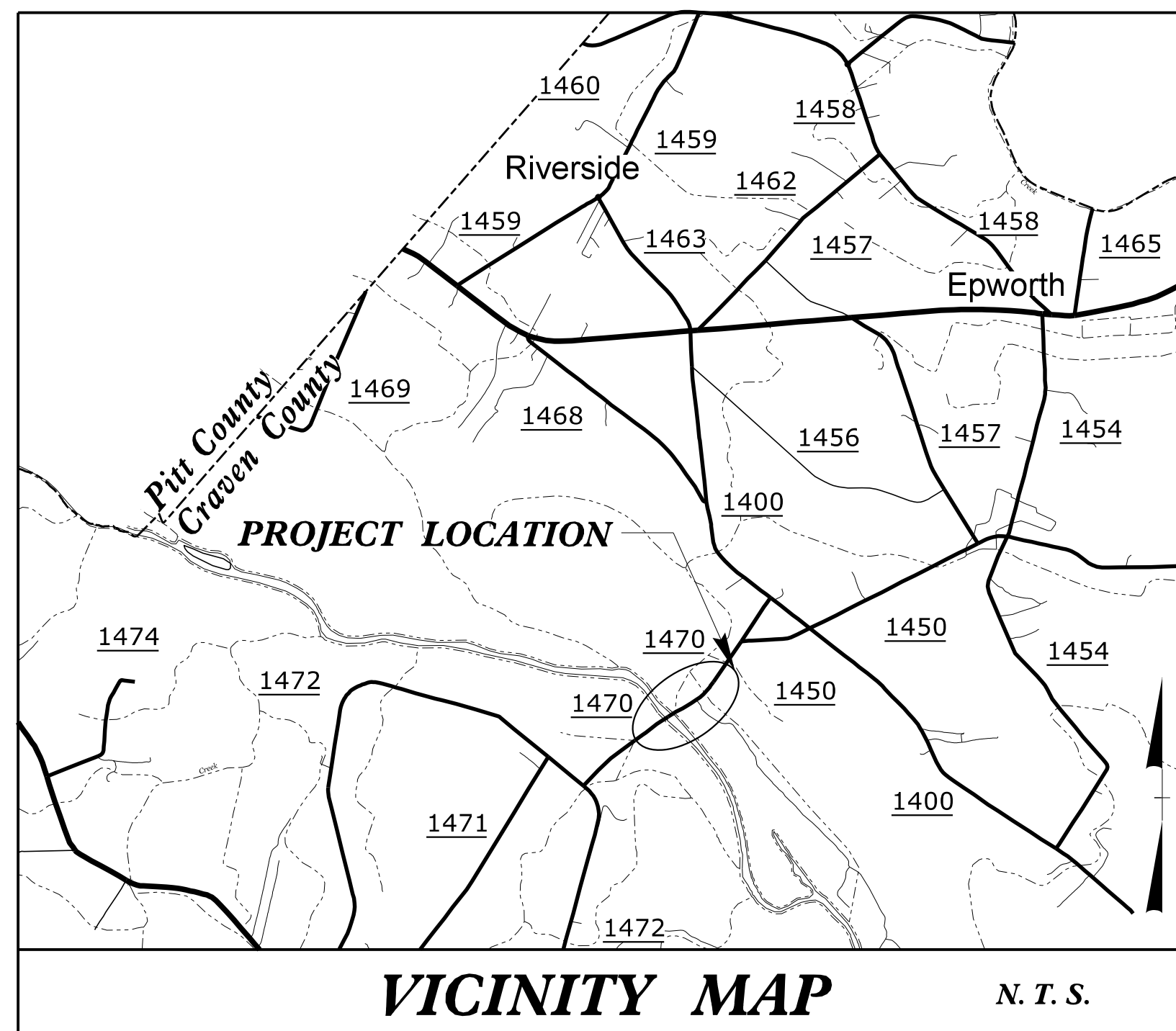
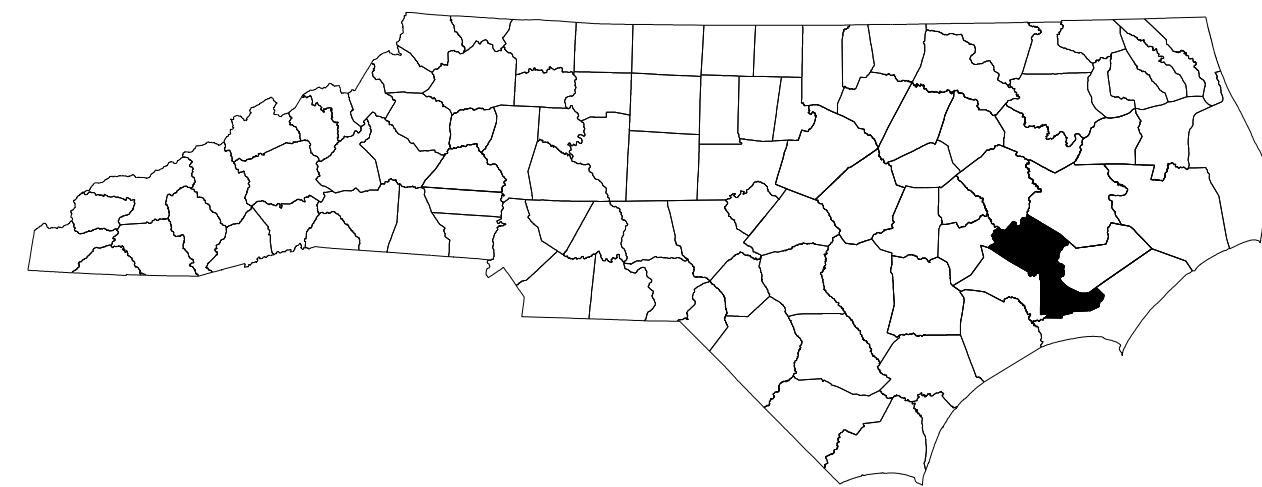


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CRAVEN COUNTY

LOCATION: REPLACE BRIDGES NO. 138 & 139 OVER NEUSE RIVER AND NEUSE RIVER OVERFLOW ON SR 1470 (MAPLE CYPRESS ROAD)



INDEX OF SHEETS

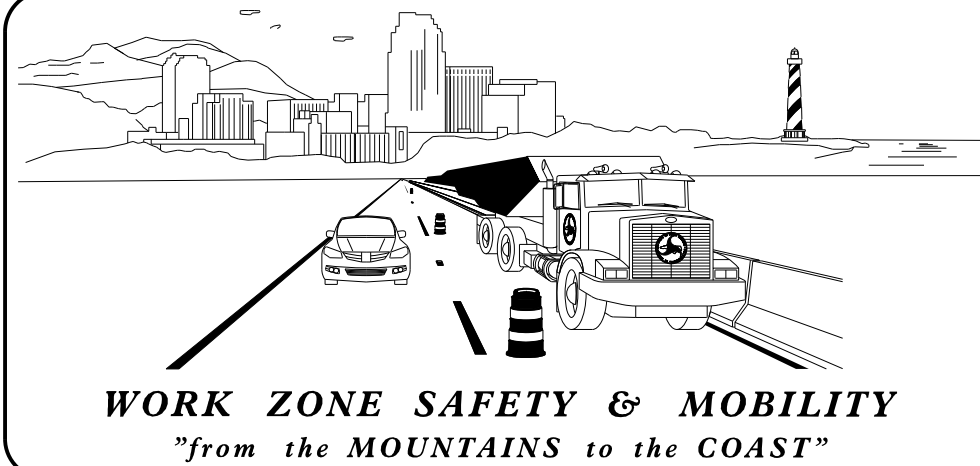
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2 THRU 2A	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGY, GENERAL NOTES, AND LOCAL NOTES)
TMP-2B	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATION
TMP-2C	TEMPORARY SHORING NOTES
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE 1 STEP 2 DETAIL
TMP-5 THRU 7	TEMPORARY TRAFFIC CONTROL PHASE I STEP 3 DETAIL
TMP-8 THRU 10	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-11 THRU 13	TEMPORARY TRAFFIC CONTROL PHASE III DETAIL

SHEET NO.
TMP-1

B-4484

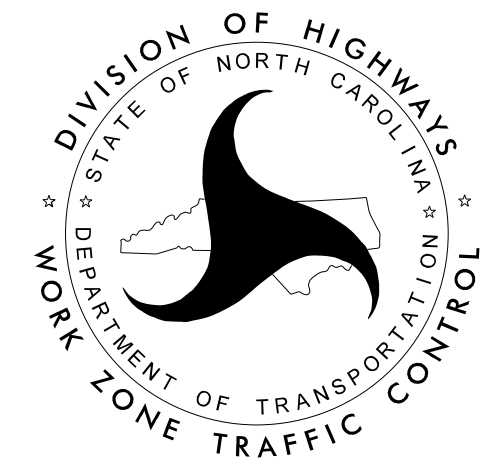
TIP PROJECT:

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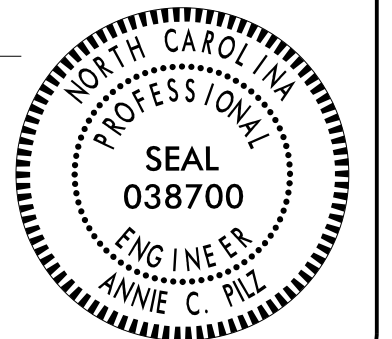


PLANS PREPARED BY:
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 PROJECT ENGINEER
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 PROJECT DESIGN ENGINEER

NCDOT CONTACTS:
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APPROVED: *Annie C. Pilz*
DocuSigned by: Annie C. Pilz 82FB8C0DE83D48E
DATE: 4/2/2020



4/2/2020
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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 WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
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
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)

- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT
- ONGOING CONSTRUCTION

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

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)
- PORTABLE TRAFFIC SIGNAL SYSTEM

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

- P1 WHITE EDGELINE (4" PAINT)
- P61 WHITE STOPBAR (24" PAINT)



APPROVED: <i>Annie C. Pilz</i> DATE: 3/27/2020 		ROADWAY STANDARD DRAWINGS & LEGEND
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GENERAL NOTES

MANAGEMENT STRATEGY

PHASE I

WITH TRAFFIC IN EXISTING PATTERN, BEGIN CONSTRUCTION OF -L1- (SR 1470 MAPLE CYPRESS ROAD).

USING LANE CLOSURES, CONSTRUCT TEMPORARY PAVEMENT.

PHASE II

SHIFT TRAFFIC INTO A ONE-LANE, TWO-WAY TRAFFIC PATTERN, USING POSITIVE PROTECTION, TEMPORARY SHORING, AND A PORTABLE TEMPORARY TRAFFIC SYSTEMS, COMPLETE CONSTRUCTION OF -L1- TIE-INS (LT) AND STRUCTURES.

PHASE III

SHIFT TRAFFIC ONTO THE PROPOSED ROADWAY. USING A LANE CLOSURE, COMPLETE THE -L1- TIE-IN AT THE BEGINNING OF THE PROJECT. USING A ONE-LANE, TWO WAY TRAFFIC PATTERN AND A PORTABLE TRAFFIC SIGNAL SYSTEM, COMPLET THE -L1- TIE-IN AT THE END OF THE PROJECT.

LOCAL NOTES

1. NEUSE RIVER HAS AN IN-WATER CONSTRUCTION MORATORIUM THAT WILL BE IN EFFECT FROM FEBRUARY 15TH TO SEPTEMBER 30TH (SEE PROJECT COMMITMENTS GREEN SHEET).
2. PLACE CHANGEABLE MESSAGE SIGNS THREE (3) WEEKS IN ADVANCE OF CLOSING -L- (MAPLE CYPRESS RD.) TO A ONE-LANE, TWO-WAY PATTERN IN PHASES II AND III
3. ALERT CRAVEN COUNTY SHERIFF, CRAVEN COUNTY EMERGENCY MANAGER/FIRE MARSHAL, AND CRAVEN RESCUE SQUAD IN ADVANCE OF CLOSING -L- (MAPLE CYPRESS RD) TO A ONE-LANE, TWO-LANE PATTERN IN PHASE II AND III
4. CONTACT DOUGLAS WALTERS 919-571-4069 AT USGS 2 WEEKS PRIOR TO SWITCHING TRAFFIC OVER TO THE NEW BRIDGE IN ORDER FOR THEM TO RELOCATE THEIR GAUGE.

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

- 1) FOR UNEXPECTED OCCURENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES,AS DIRECTED BY THE ENGINEER
- 2) FOR NEW YEAR'S DAY, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31ST AND 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY, THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
- 3) FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
- 4) FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- 5) FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY, THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- 6) FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- 7) FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. WEDNESDAY AND 7:00 P.M. MONDAY.
- 8) FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS DAY.

LANE AND SHOULDER CLOSURE REQUIREMENTS

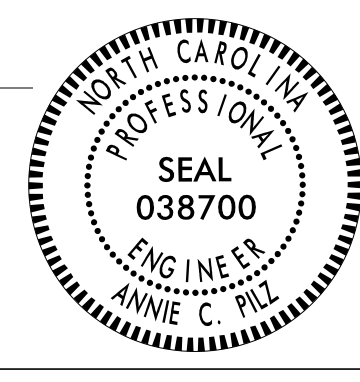
- B) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- D) 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.
- E) 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.
- F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAMELOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.
- G) DO NOT INSTALL MORE THAN 500 FEET OF LANE CLOSURE ON MAPLE CYPRESS RD MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- H) DO NOT INSTALL MORE THAN 2 SIMULTANEOUS LANE CLOSURES IN ANY ONE DIRECTION ON MAPLE CYPRESS RD.
- I) PROVIDE A MINIMUM OF 100 FEET BETWEEN LANE CLOSURES, MEASURED FROM THE END OF ONE CLOSURE TO THE FIRST SIGN OF THE NEXT LANE CLOSURE.
- J) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

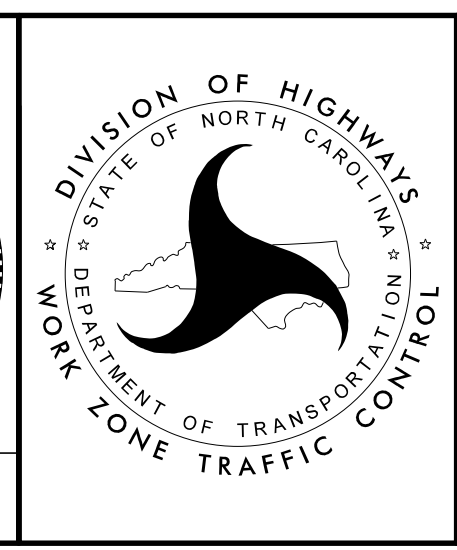
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APPROVED: *Annie C. Pilz*
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DATE: 3/27/2020



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TRANSPORTATION OPERATIONS PLAN



GENERAL NOTES

PAVEMENT EDGE DROP OFF REQUIREMENTS

K) 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.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

N) 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.

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) 100 IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

Q) 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.

R) 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

S) 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.

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
-L1- (SR 1470)	PAINT	TEMPORARY RAISED

V) 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.

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

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

MISCELLANEOUS

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

Z) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

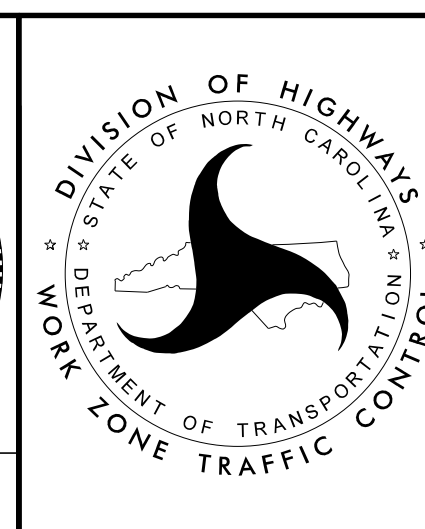
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APPROVED: *Annie C. Pilz*
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DATE: 3/27/2020

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**TRANSPORTATION
OPERATIONS
PLAN**

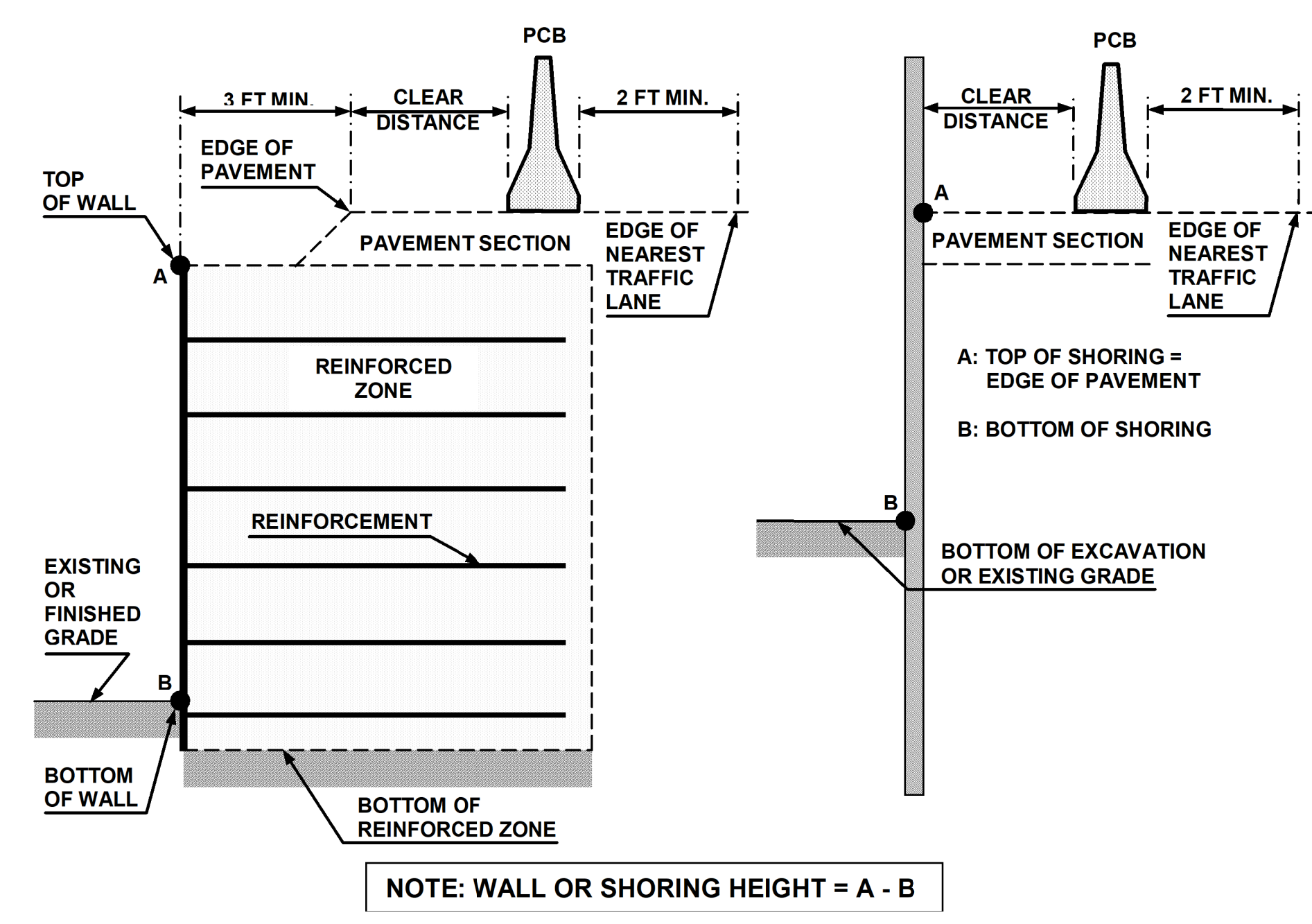


FIGURE A

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.

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

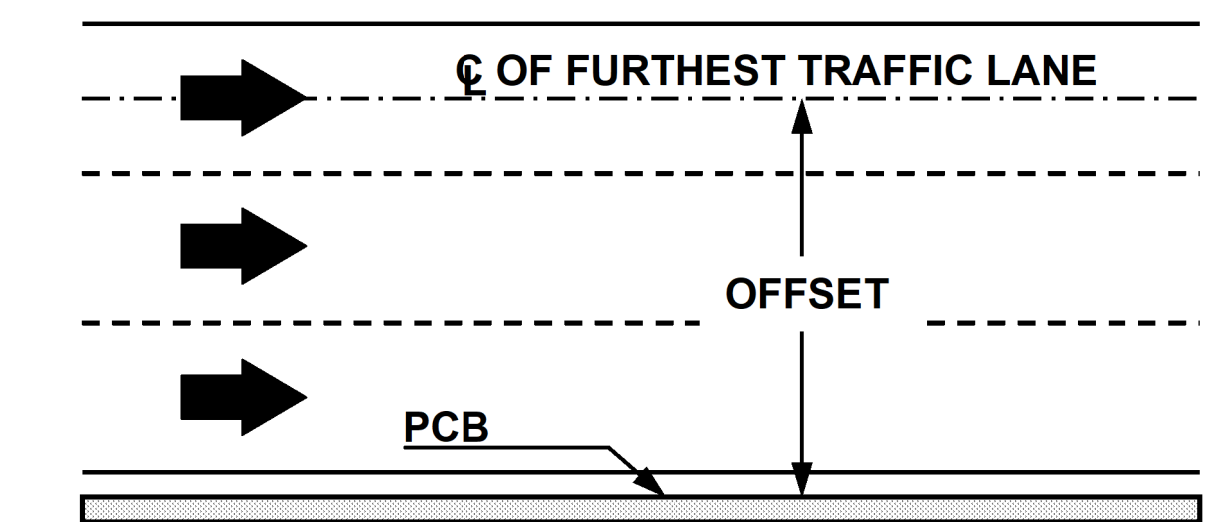


FIGURE B



APPROVED: <i>Annie C. Pilz</i> DATE: 3/27/2020 		PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
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PROJ. REFERENCE NO.	SHEET NO.
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SHORING NOTES

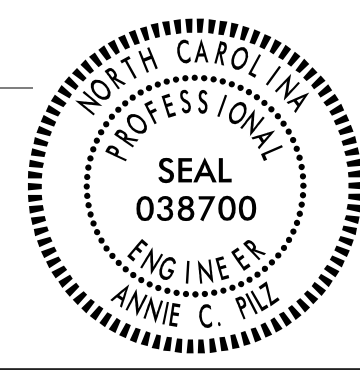

SHORING LOCATION NO. ①
 FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.
 BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.
 DESIGN TEMPORARY SHORING FROM STATION -L1- 19+50±, 24' LT, TO STATION -L1- 20+75±, 24' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
 UNIT WEIGHT = 120 LB/CF
 FRICTION ANGLE = 30 DEGREES
 COHESION = 0 LB/SF
 GROUNDWATER ELEVATION = 7.5 FT ±
 DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L1- 19+50±, 24' LT, TO STATION -L1- 20+75±, 24' LT.
 AT THE CONTRACTOR'S OPTION AND WHEN APPLICABLE, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L1- 19+50±, 24' LT, TO STATION -L1- 20+75±, 24' 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 STATION -L1- 21+95±, 24.2' RT, TO STATION -L- 22+15±, 24.2' RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
 UNIT WEIGHT = 120 LB/CF
 FRICTION ANGLE = 30 DEGREES
 COHESION = 0 LB/SF
 GROUNDWATER ELEVATION = 7.5 FT ±
 DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L1- 21+95±, 24.2' RT, TO STATION -L1- 22+15±, 24.2' RT.
 AT THE CONTRACTOR'S OPTION AND WHEN APPLICABLE, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L1- 21+95±, 24.2' RT, TO STATION -L1- 22+15±, 24.2' RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

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THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON DECEMBER 17, 2019 AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, LICENSE # 032171.



APPROVED: <i>Annie C. Pilz</i> <small>82F8BC0DEB3D48E</small> DATE: 5/5/2020			<h3>SHORING NOTES</h3>
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PHASING

NOTES:

- RSD REFERS TO NCDOT ROADWAY STANDARD DRAWING
- ALL PROPOSED ASPHALT ROADWAY CONSTRUCTION IS UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE UNLESS OTHERWISE NOTED
- PLACE CHANGEABLE MESSAGE SIGNS THREE (3) WEEKS IN ADVANCE OF CLOSING -L1- (MAPLE CYPRESS RD.) TO A ONE-LANE, TWO-WAY PATTERN IN PHASES II AND III
- ALERT CRAVEN COUNTY SHERIFF, CRAVEN COUNTY EMERGENCY MANAGER/FIRE MARSHAL, AND CRAVEN RESCUE SQUAD IN ADVANCE OF CLOSING -L1- (MAPLE CYPRESS RD) TO A ONE-LANE, TWO-LANE PATTERN IN PHASE II AND III
- CONTACT USGS 2 WEEKS PRIOR TO SWITCHING TRAFFIC OVER TO THE NEW BRIDGE (SEE LOCAL NOTES)
- NEUSE RIVER HAS AN IN-WATER CONSTRUCTION MORATORIUM THAT WILL BE IN EFFECT FROM FEBRUARY 15TH TO SEPTEMBER 30TH (SEE PROJECT COMMITMENTS GREEN SHEET).

PHASE I

STEP 1

USING RSD 1101.01 (SHEET 3 OF 3), PLACE ALL ADVANCED WARNING SIGNS ALONG -L1- (MAPLE CYPRESS ROAD).

STEP 2

WITH TRAFFIC IN EXISTING PATTERN AND WHILE MAINTAINING DRIVEWAY ACCESS, USE RSD 1101.02 (SHEET 1 OF 14), TO CONSTRUCT THE FOLLOWING (SEE SHEET TMP-4):

-DW1- STA 10+00 TO -DW1- STA 14+37± PERMANENT TIE FOR -DW1-

STEP 3

WITH TRAFFIC IN EXISTING PATTERN AND USING RSD 1101.02 (SHEET 1 OF 14) AND TEMPORARY SHORING, BEGIN CONSTRUCTION OF THE FOLLOWING UP TO THE EDGE AND ELEVATION OF THE EXISTING ROADWAY, INCLUDING RETAINING WALL, CROSS PIPE AND TEMPORARY DRAINAGE, FILL SLOPE, AND TEMPORARY WORK PLATFORM (SEE SHEETS TMP-5 THRU TMP-7), (SEE ROADWAY SHEET 2D-1), (SEE TEMPORARY SHORING NOTES) (SEE EROSION CONTROL PLANS) (SEE DRAINAGE PLANS):

-L1- STA 18+59± TO -L1- STA 47+41±
-L1- STA 47+41± TO -LI- STA 54+50± (LT)

USING RSD 1101.02 (SHEET 1 OF 14), CONSTRUCT THE FOLLOWING TEMPORARY PAVEMENT (SEE SHEET TMP-7):

-L1- STA 49+14± TO -L1- STA 54+67±

PHASE II

COMPLETE THE WORK REQUIRED WITHIN PHASE II, STEP 1 IN 210 CONSECUTIVE CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES).

WORK REQUIRED IN PHASE I STEP 1 AND PHASE II STEP 2 CAN RUN CONCURRENTLY FOR THE LAST 30 CALENDAR DAYS.

STEP 1:

USING RSD 1101.02 (SHEET 1 OF 14), PLACE CMS BOARDS AND TEMPORARY PAVEMENT MARKINGS. SHIFT TRAFFIC INTO A ONE-LANE, TWO-WAY TRAFFIC PATTERN AND PLACE POSITIVE PROTECTION (SEE SHEET TMP-8) (SEE LOCAL NOTES).

USING RSD 1101.02 (SHEET 14 OF 14), TEMPORARY SHORING FOR RETAINING WALL CONSTRUCTION AND BEHIND POSITIVE PROTECTION, CONSTRUCT THE FOLLOWING (SEE SHEET TMP-8):

-L1- STA 17+00± (LT) TO -L1- STA 18+59± (LT)
-L1- STA 18+59± TO -L1- STA 21+25±

AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION OF THE FOLLOWING (SEE SHEETS TMP-8 THRU TMP-10):

-L1- STA 18+59± TO -L1- STA 48+01±

COMPLETE THE WORK REQUIRED WITHIN PHASE II, STEP 2 IN 30 CONSECUTIVE CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES).

WORK REQUIRED IN PHASE I STEP 1 AND PHASE II STEP 2 CAN RUN CONCURRENTLY FOR THE LAST 30 CALENDAR DAYS.

STEP 2

USING RSD 1101.02 (SHEET 1 OF 14), PLACE CMS BOARDS AND TEMPORARY PAVEMENT MARKINGS. SHIFT TRAFFIC INTO A ONE-LANE, TWO-WAY TRAFFIC PATTERN (SEE SHEETS TMP-9 AND TMP-10) (SEE LOCAL NOTES).

USING A PORTABLE TEMPORARY SIGNAL SYSTEM AND TEMPORARY PAVEMENT, COMPLETE CONSTRUCTION OF THE FOLLOWING, INCLUDING DRAINAGE (SEE SHEETS TMP-9 THRU TMP-10) (SEE EROSION CONTROL PLANS) (SEE DRAINAGE PLANS):

-L1- STA 48+01± (LT) TO -L1- STA 54+50± (LT)

PHASE III

STEP 1

USING RSD 1101.02 (SHEET 1 OF 14), SHIFT TRAFFIC ONTO THE PROPOSED ROADWAY AND COMPLETE CONSTRUCTION OF THE FOLLOWING INCLUDING WEDGE-TIE AND REMOVAL OF TEMPORARY SHORING (SEE SHEET TMP-11):

-L1- STA 17+00± (RT) TO -L1- STA 21+25± (RT)

COMPLETE THE WORK REQUIRED WITHIN PHASE III, STEP 2 IN 30 CONSECUTIVE CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES).

WORK REQUIRED IN PHASE III STEP 1 AND PHASE III STEP 2 CAN RUN CONCURRENTLY.

STEP 2

USING RSD 1101.02 (SHEET 14 OF 14), SHIFT TRAFFIC INTO A ONE-LANE, TWO-WAY TRAFFIC PATTERN ON THE PROPOSED ROADWAY AND COMPLETE CONSTRUCTION OF THE FOLLOWING INCLUDING TIE-IN AND PAVEMENT REMOVAL (SEE SHEETS TMP-12 THRU TMP-13):

-L1- STA 48+38± (RT) TO -L1- STA 54+50± (RT)

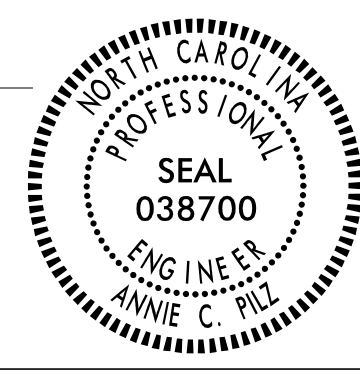

STEP 3

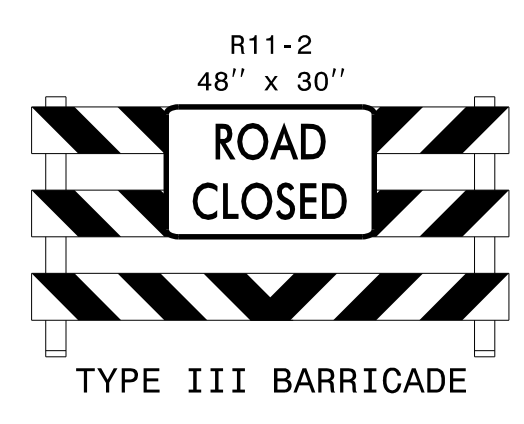
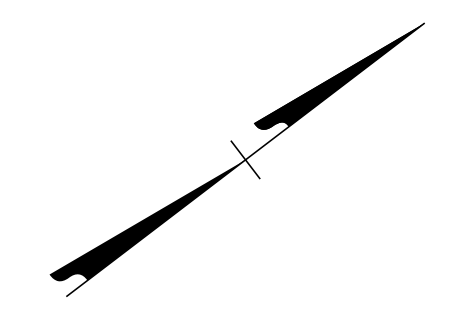
USING RSD 1101.02 (SHEET 1 OF 14), PLACE TEMPORARY PAVEMENT MARKINGS IN FINAL PATTERN AND SHIFT TRAFFIC INTO THE FINAL PATTERN.

USING RSD 1101.02 (SHEET 1 OF 14), REMOVE EXISTING ROADWAY AND STRUCTURES (SEE SHEETS TMP-11 THRU TMP-13).

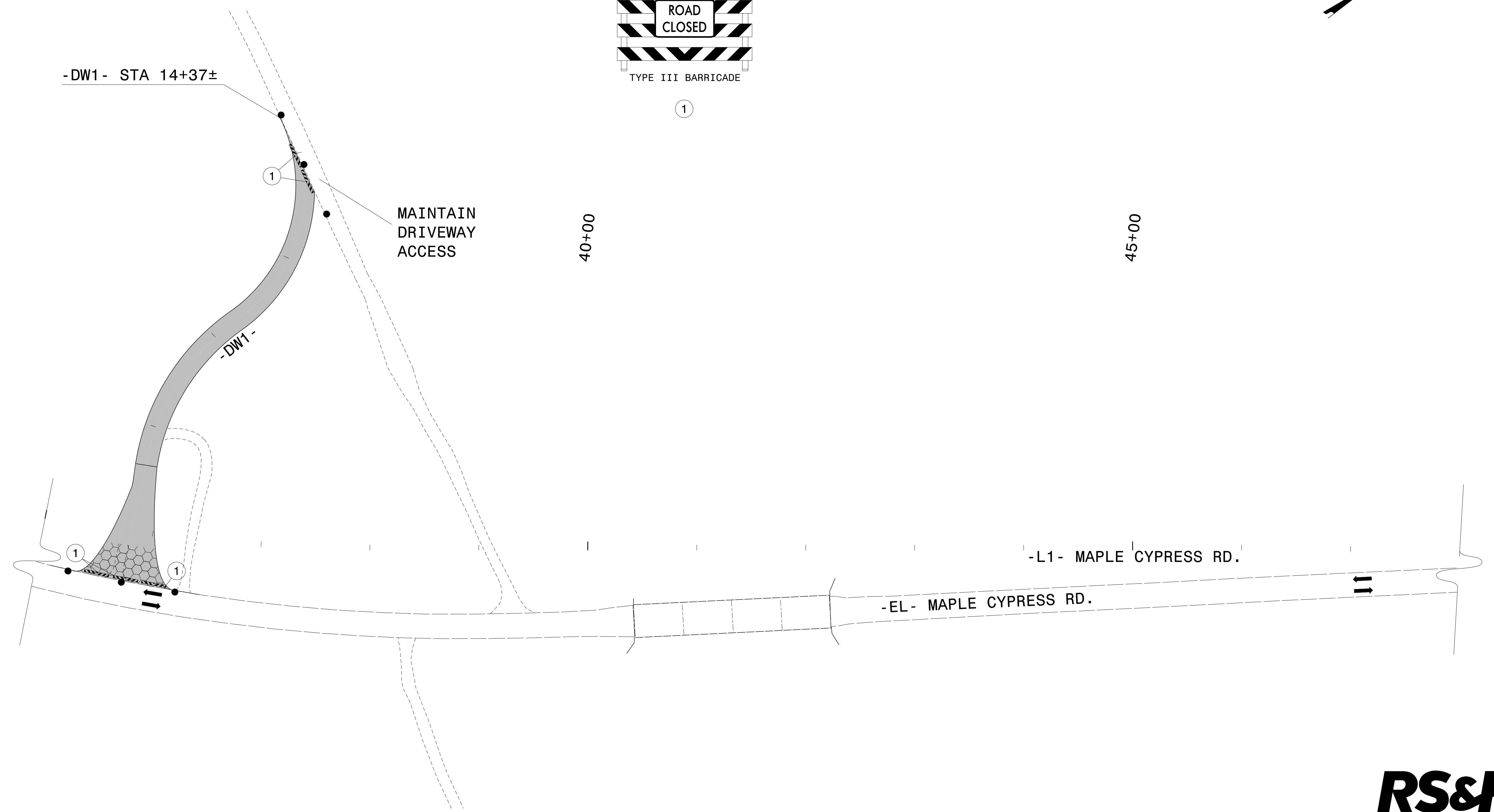
USING RSD 1101.02 (SHEET 1 OF 14), PLACE FINAL LAYER OF SURFACE COURSE, FINAL PAVEMENT MARKINGS AND MARKERS, OPEN TRAFFIC TO FINAL PATTERN AND REMOVE ALL ADVANCED WARNING SIGNS.



APPROVED: _____ DATE: _____			<h1 style="margin: 0;">PHASING</h1>
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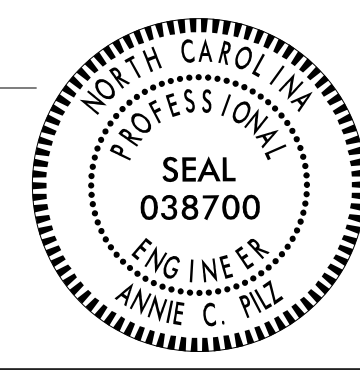
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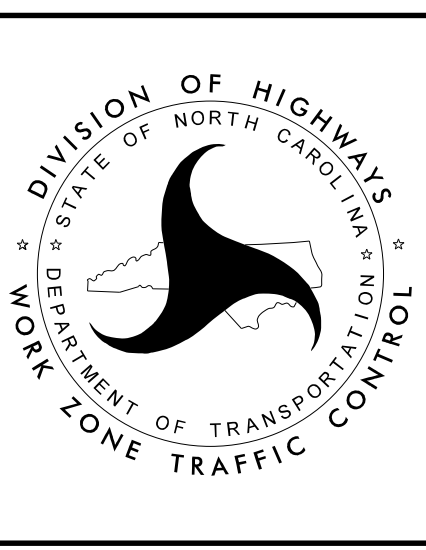
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APPROVED: *Annie C. Pily*
82F89C0DEB3D48E...

DATE: 3/27/2020

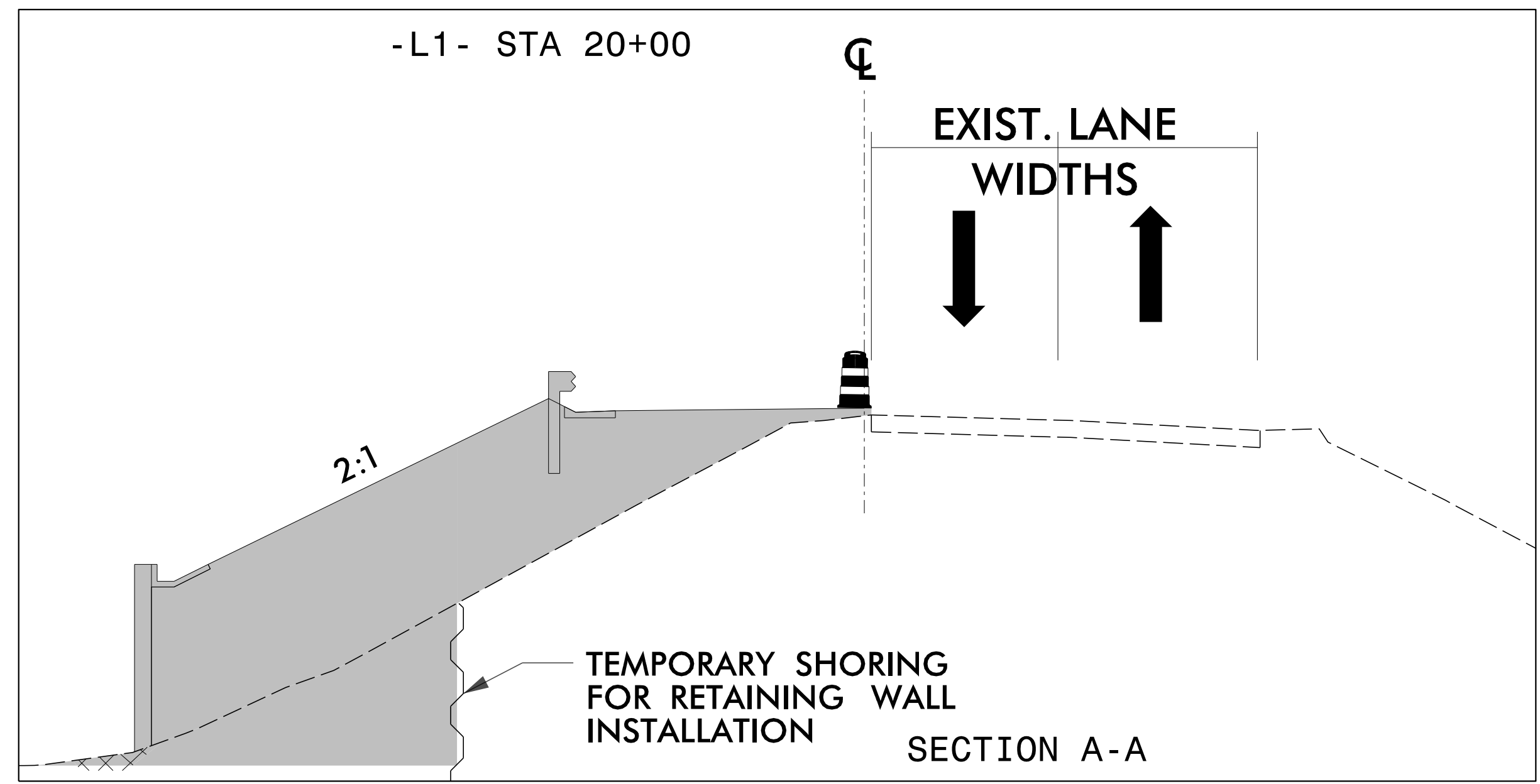
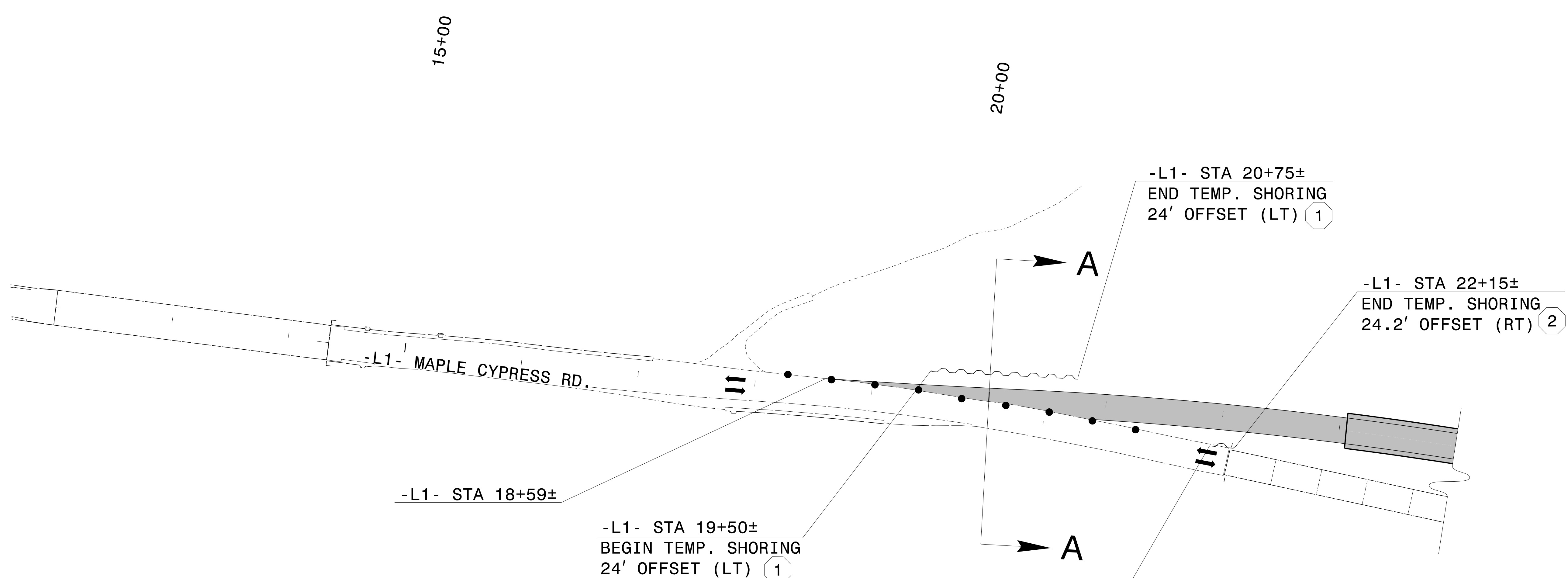
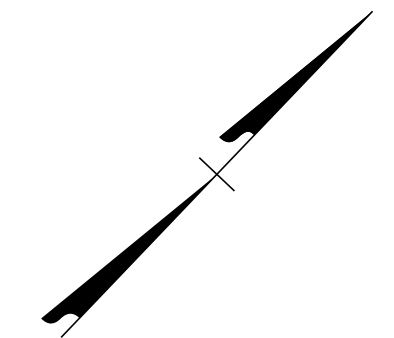


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PHASE I STEP 2
DETAIL

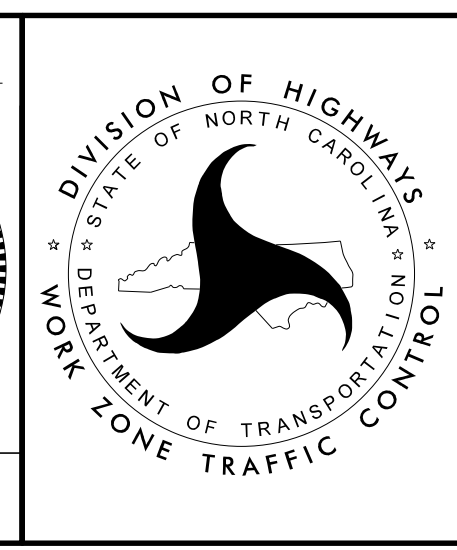
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 User:PIZA



APPROVED: *Annie C. Pily*
82F8C0DEB3D48E

DATE: 5/5/2020

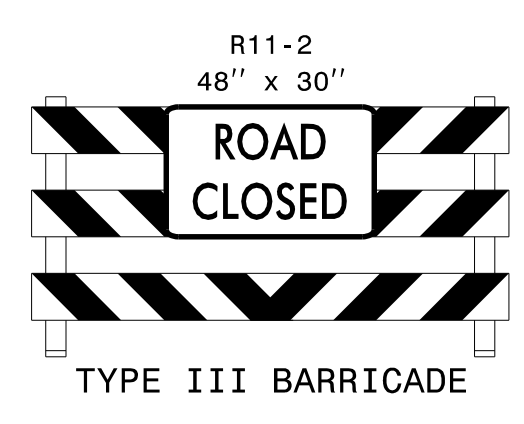
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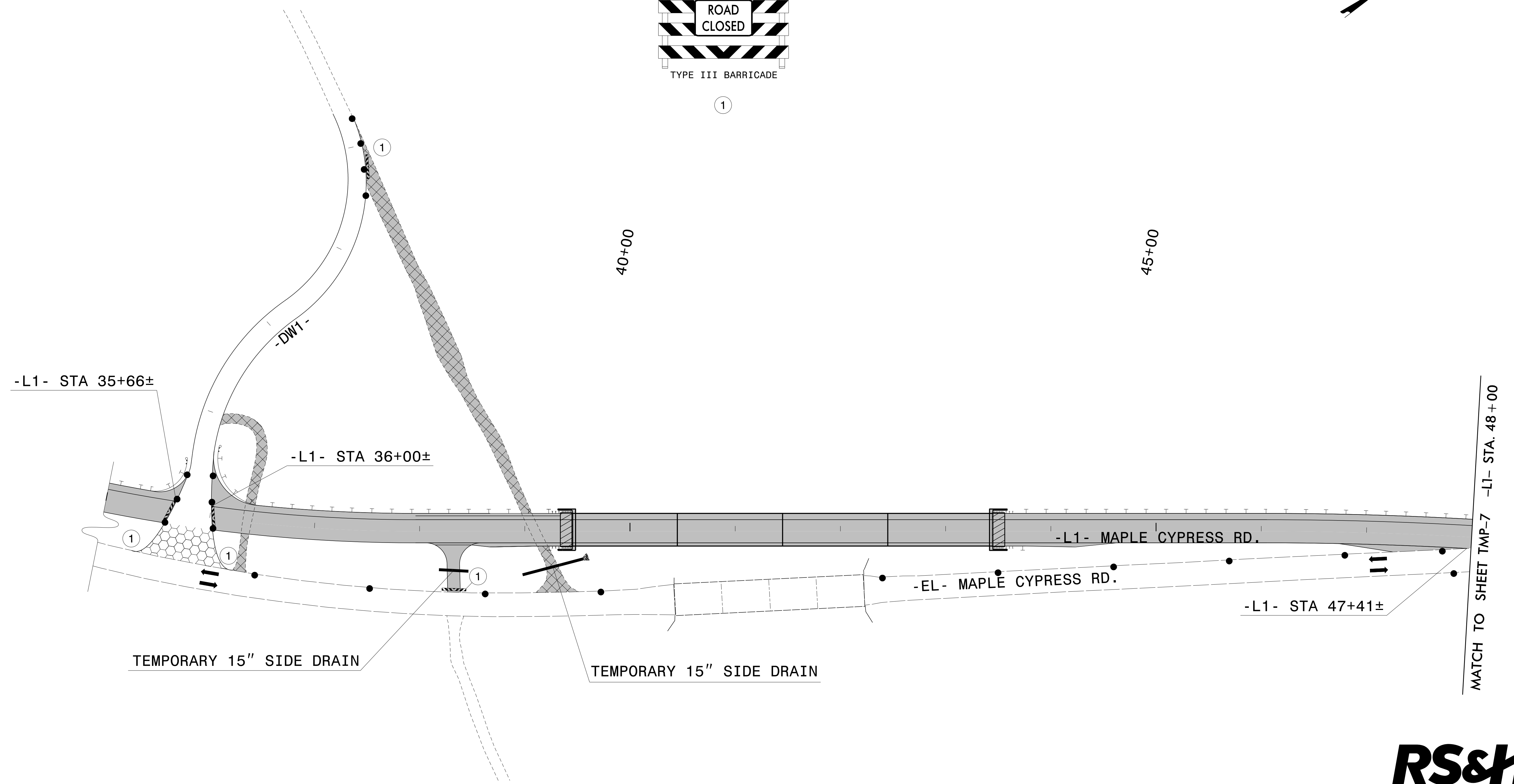
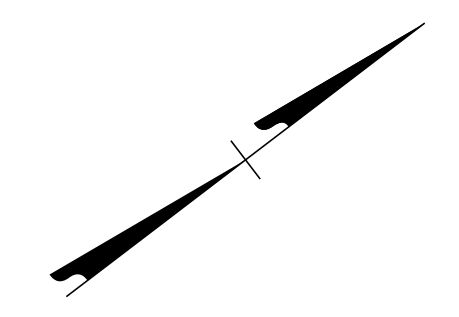
PHASE I STEP 3
DETAIL

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 User:Avgerin

PROJ. REFERENCE NO.	SHEET NO.
B-4484	TMP-6



①



MATCH TO SHEET TMP-7 -L1- STA. 48+00

3/19/2020
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User:PIZA

 TEMPORARY PAVEMENT

APPROVED: *Annie C. Pitz*
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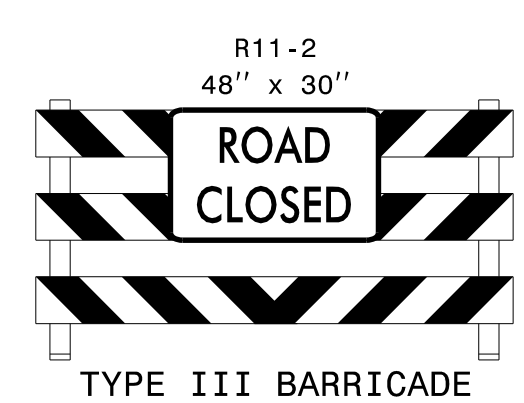
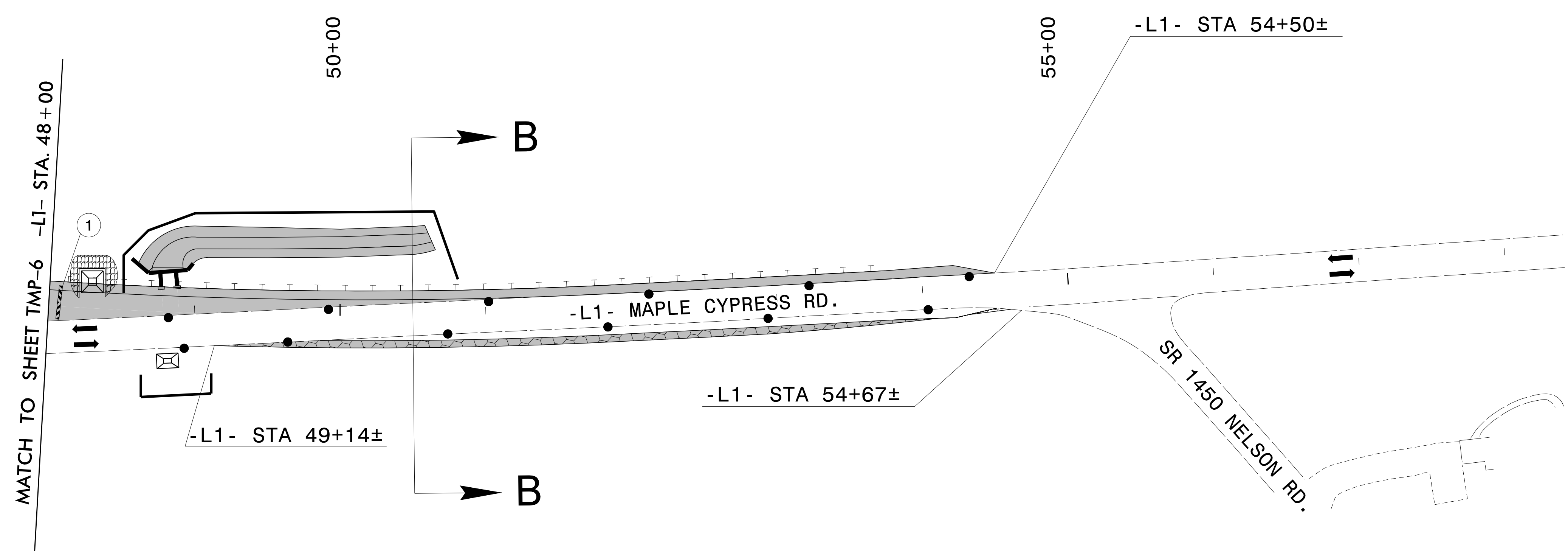
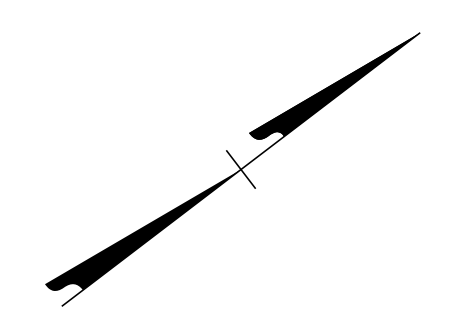
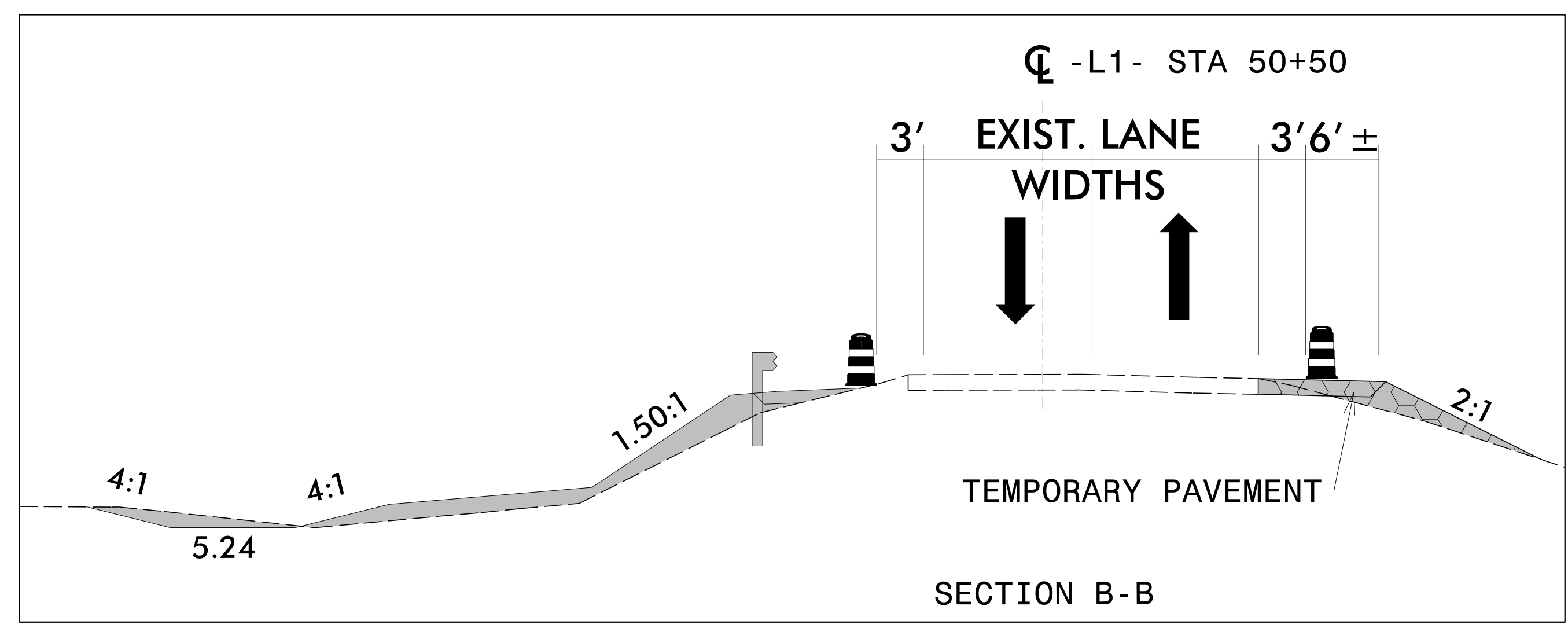
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PROFESSIONAL SEAL
 038700
 ENGINEER
 ANNIE C. PITZ

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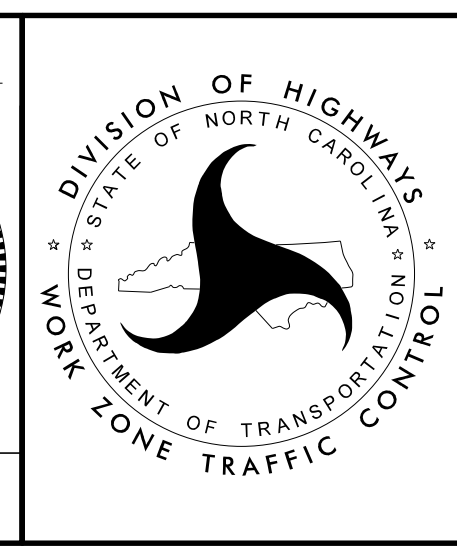
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APPROVED: *Annie C. Peltz*
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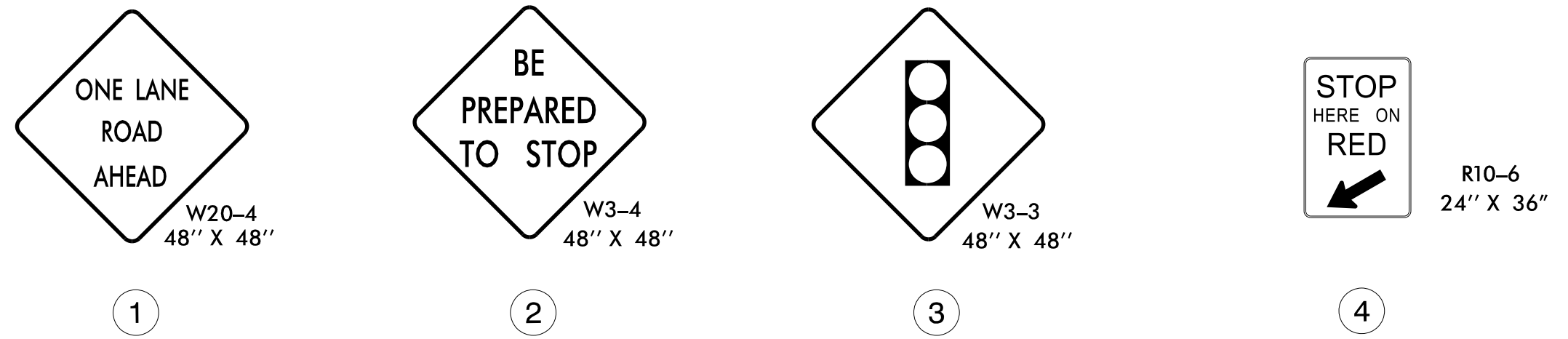
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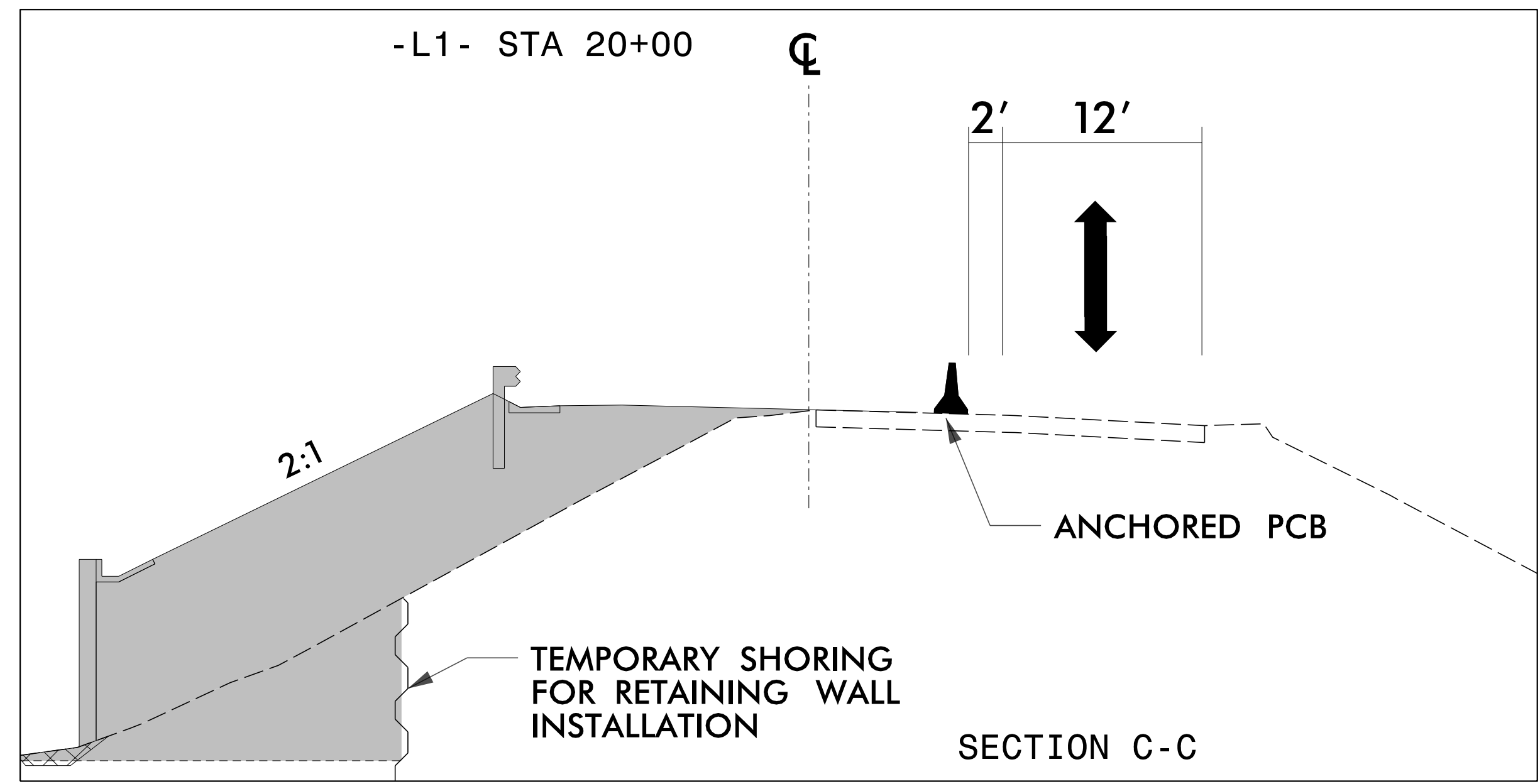
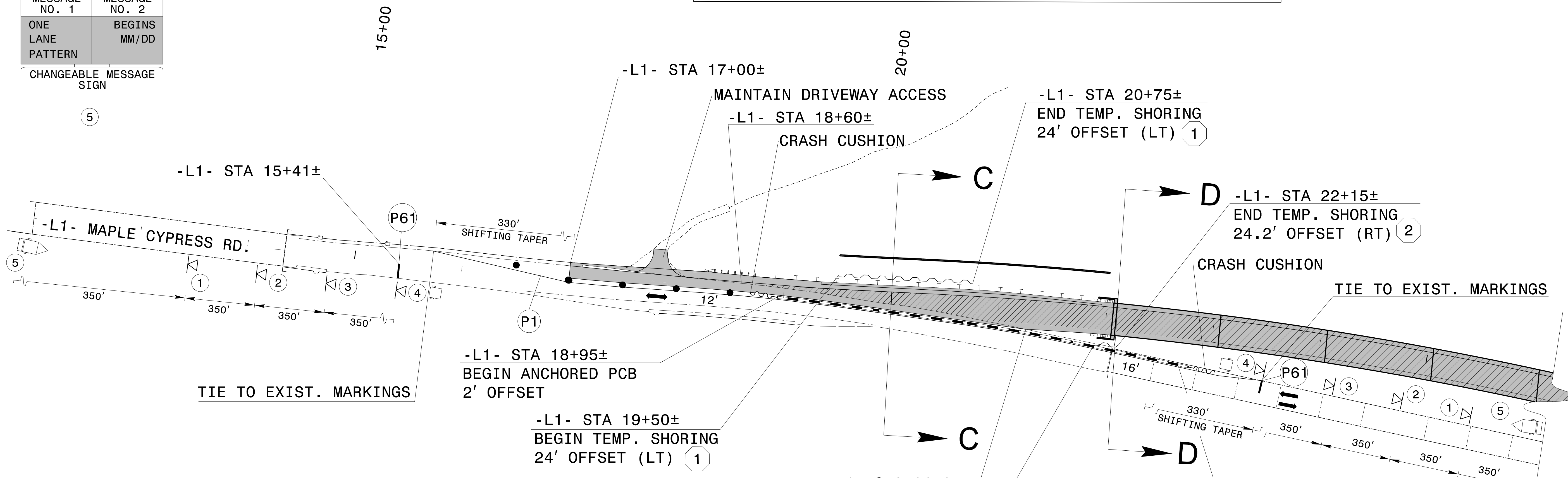
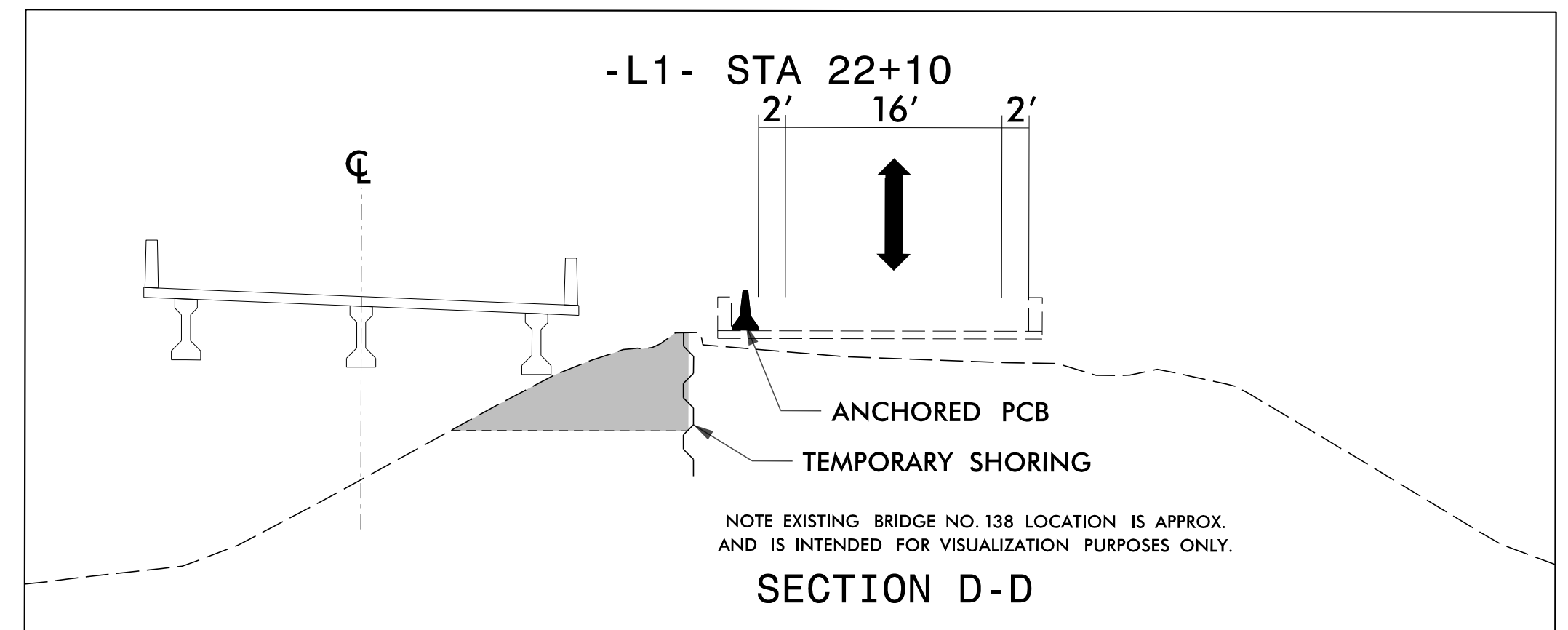


PHASE I STEP 3
DETAIL

3/19/2020
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 User:PIZA



MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE PATTERN	BEGINS MM/DD
CHANGEABLE MESSAGE SIGN	

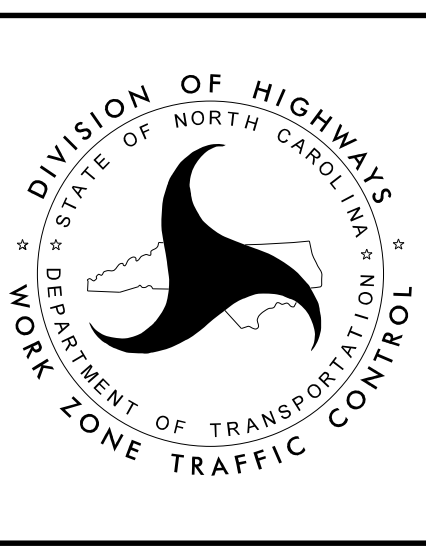


APPROVED: *Annie C. Pety*
 DATE: 5/5/2020

DocuSigned by:
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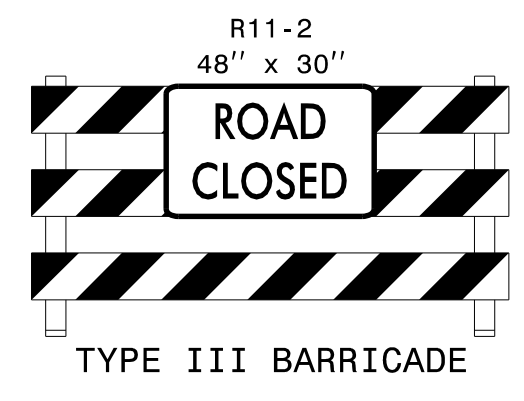
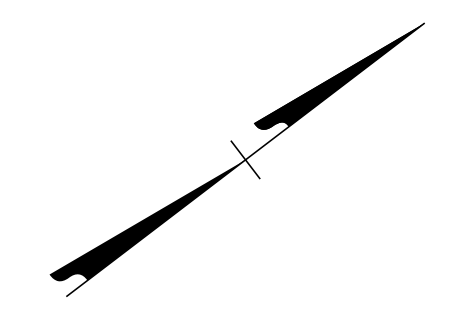
SEAL 038700
 ANNIE C. PETY

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PHASE II DETAIL

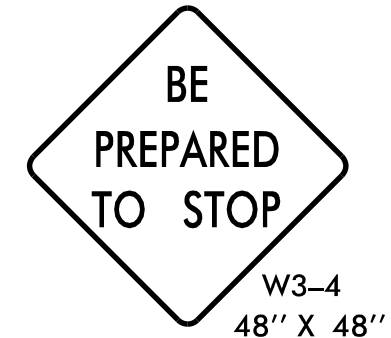
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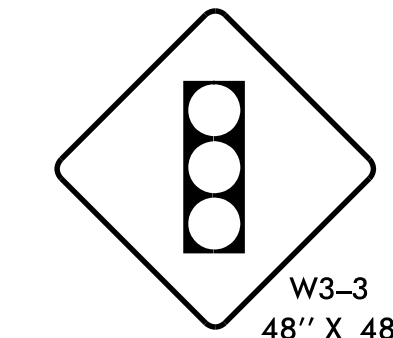
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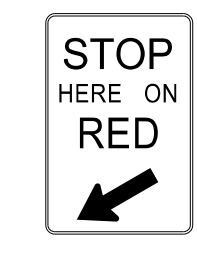
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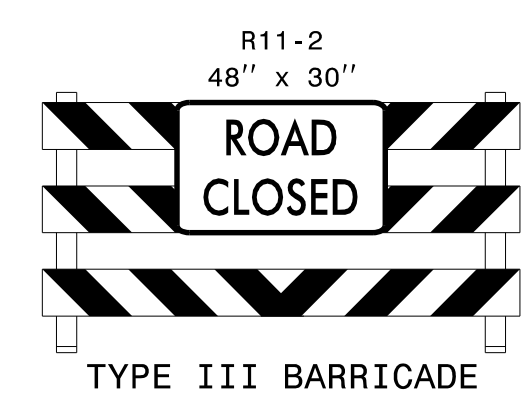
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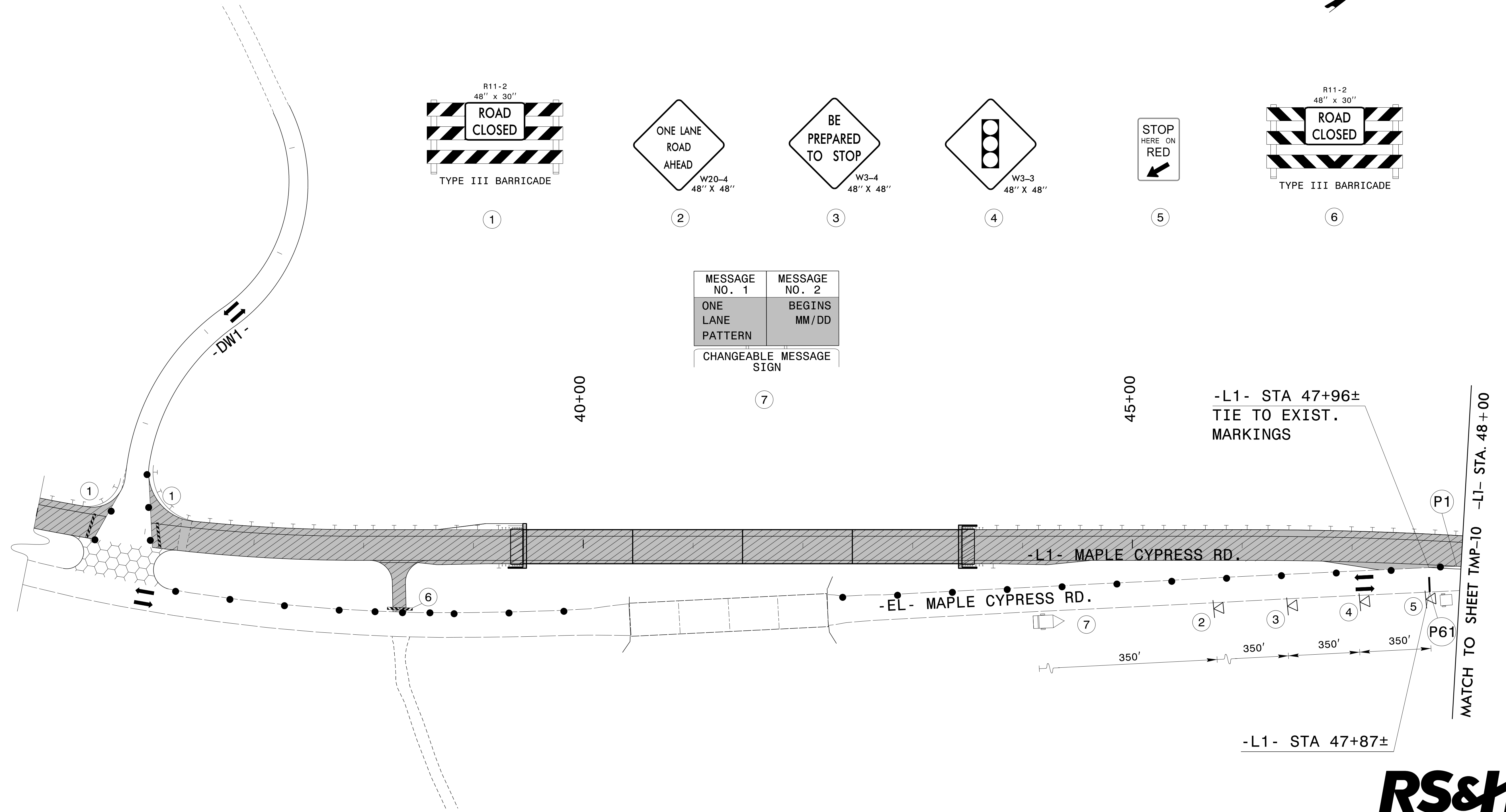


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MESSAGE NO. 1	MESSAGE NO. 2
ONE LANE PATTERN	BEGINS MM/DD

CHANGEABLE MESSAGE SIGN

7



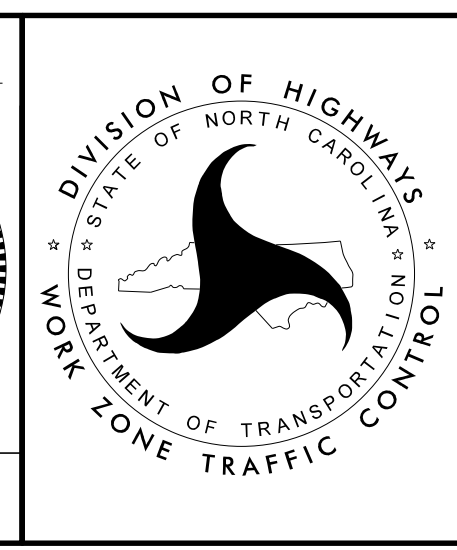
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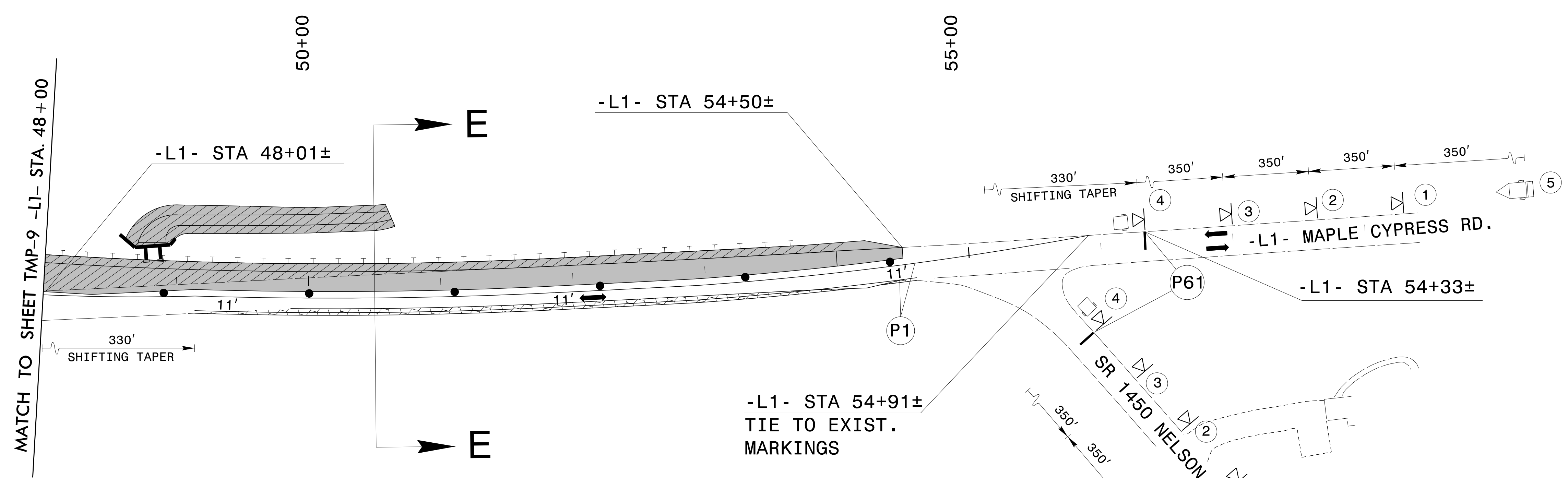
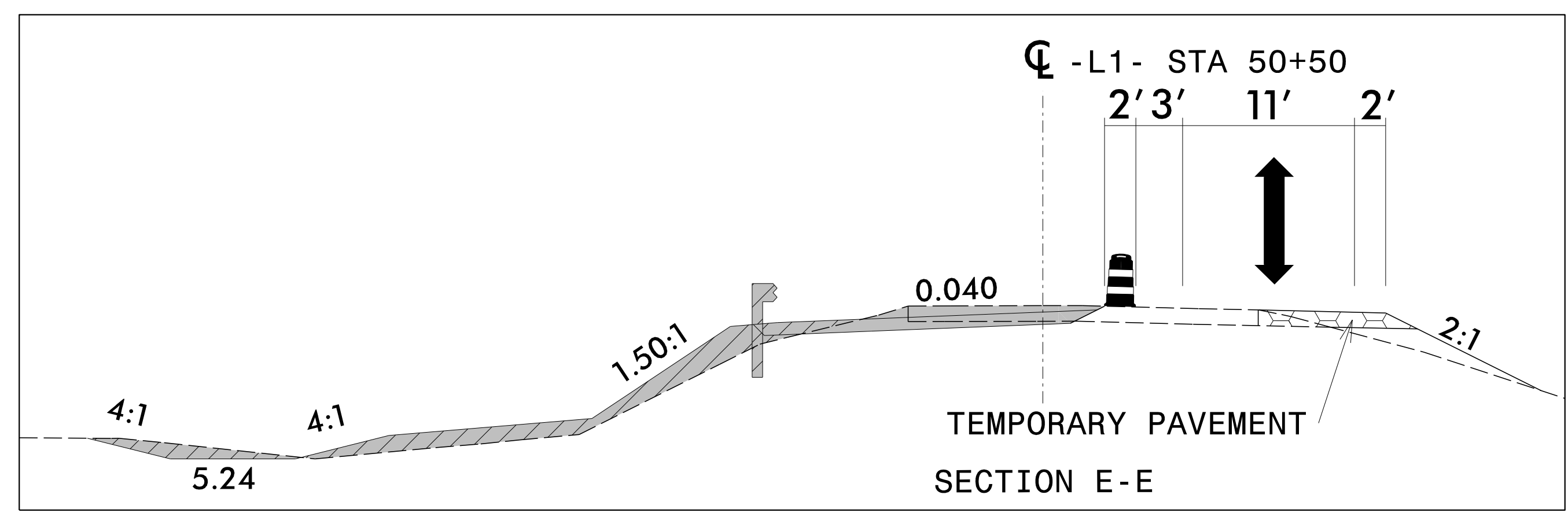
APPROVED: *Annie C. Dily*
82F8C0DEB3D48E

DATE: 3/27/2020

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PHASE II DETAIL

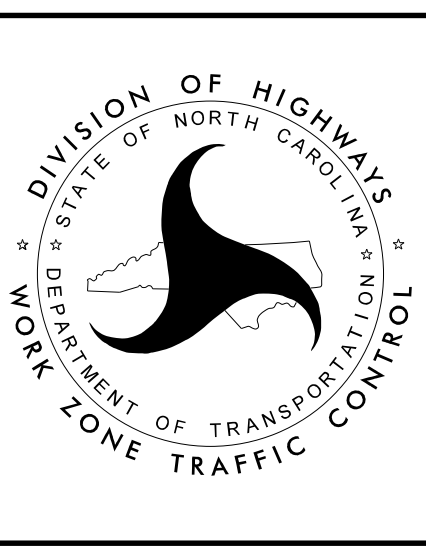


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MESSAGE NO. 1	MESSAGE NO. 2							
ONE LANE PATTERN	BEGINS MM/DD							



APPROVED: *Annie C. Pily*
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 DATE: 3/27/2020

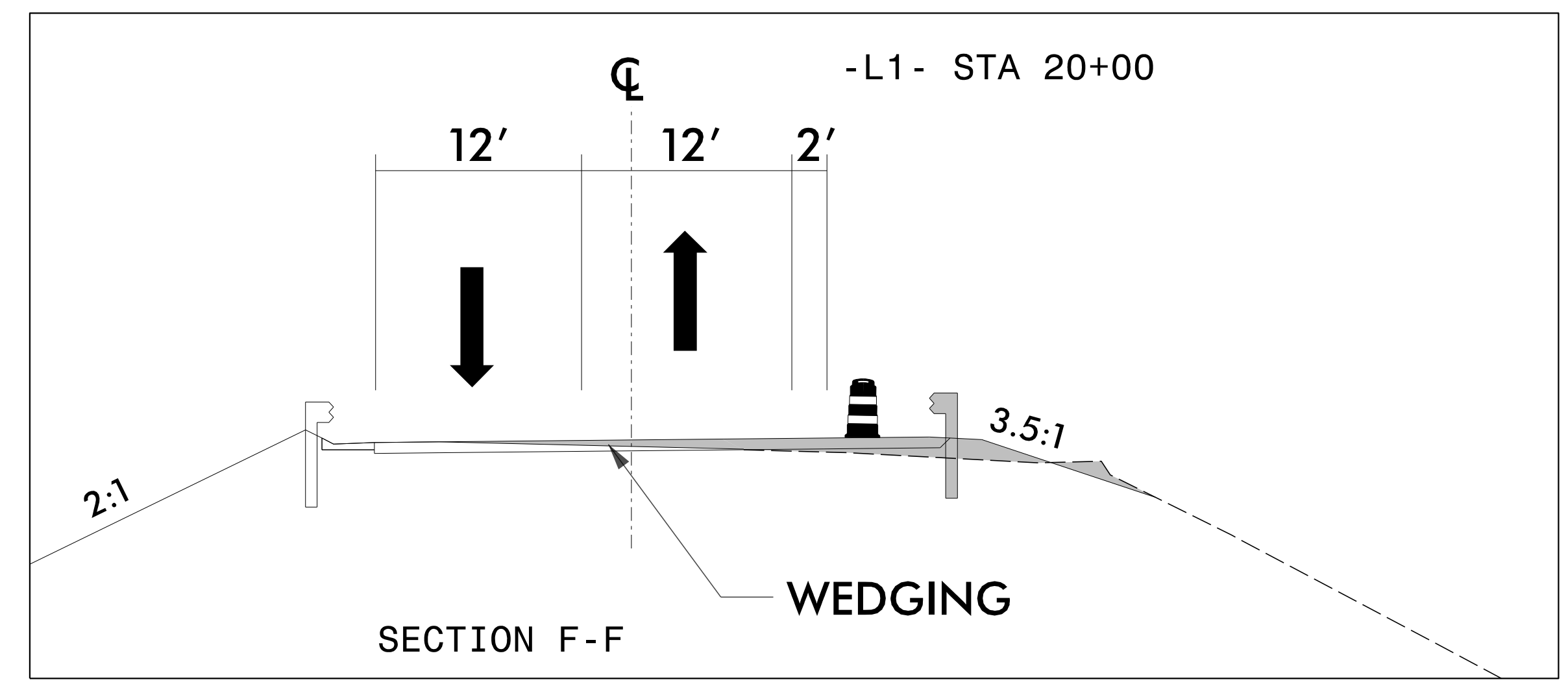
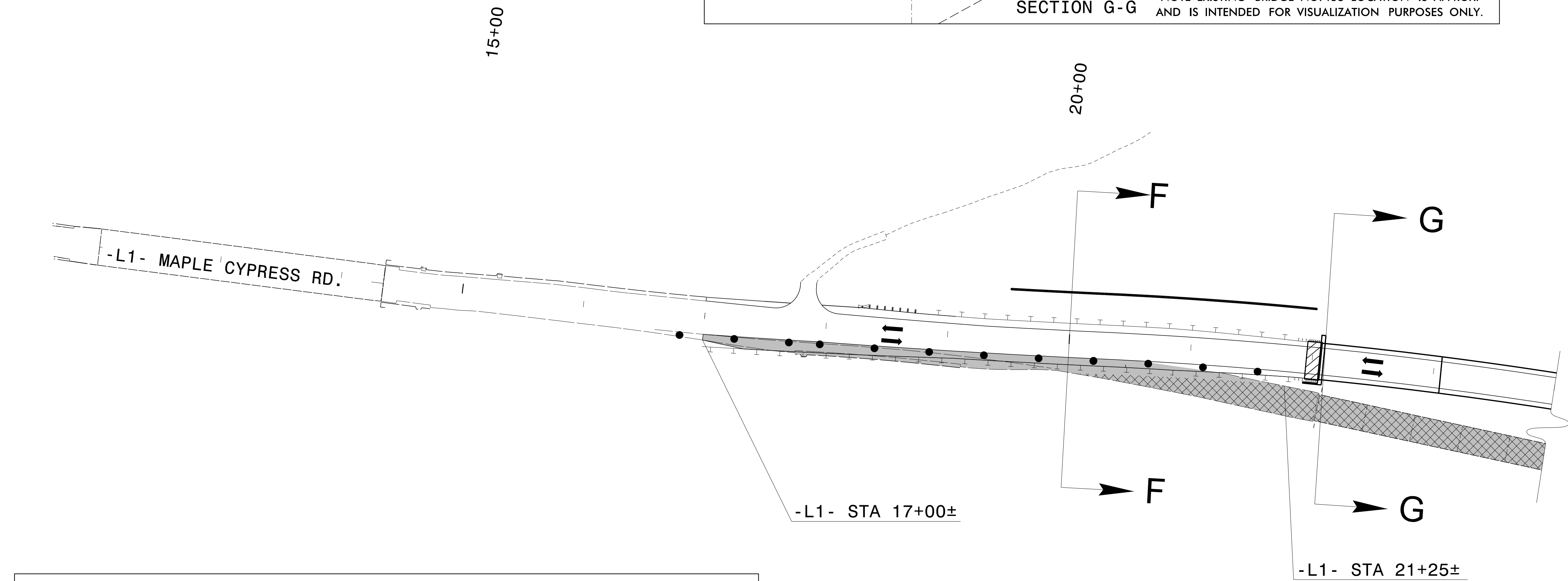
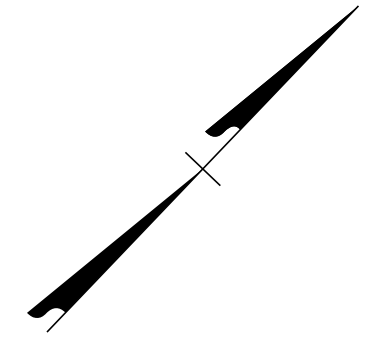
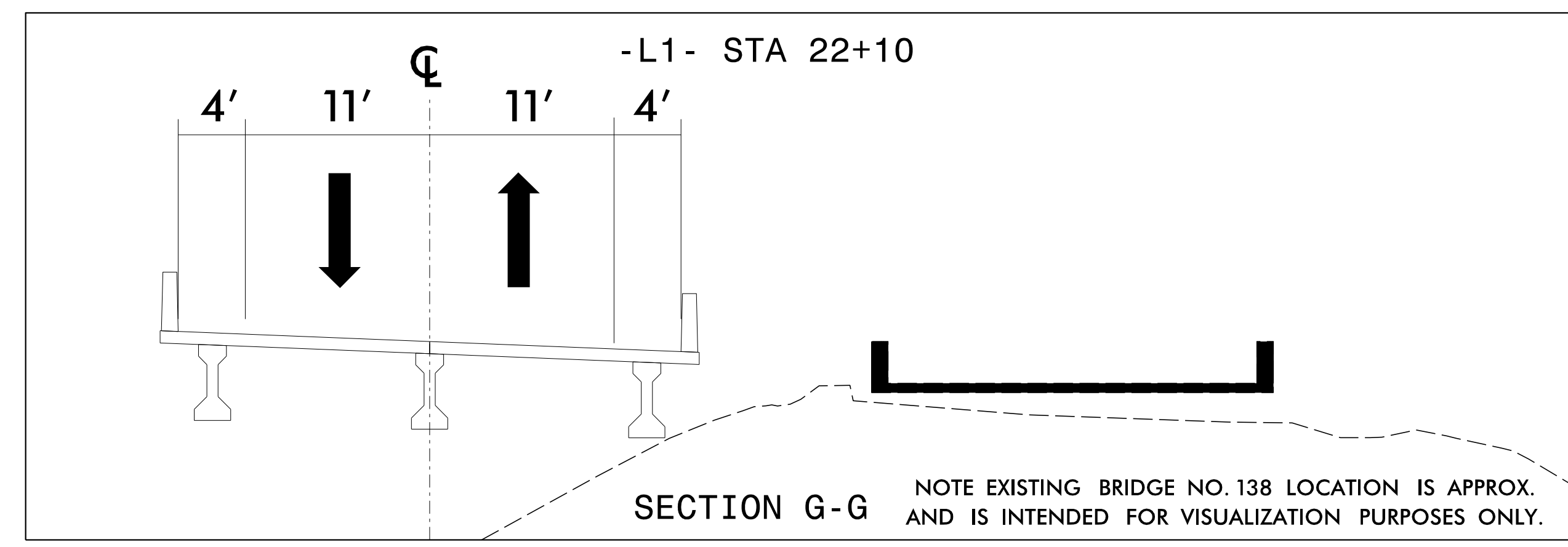
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PHASE II DETAIL

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PROJ. REFERENCE NO.	SHEET NO.
B-4484	TMP-11

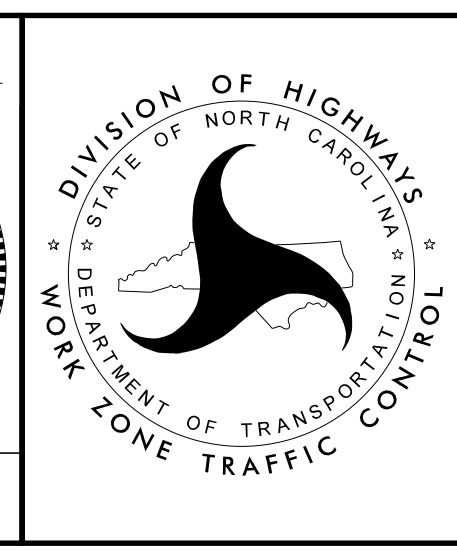


APPROVED: *Annie C. Pety*
82F89C0DEB3D48E...

DATE: 3/27/2020

SEAL
 038700
 ENGINEER
 ANNIE C. PETY

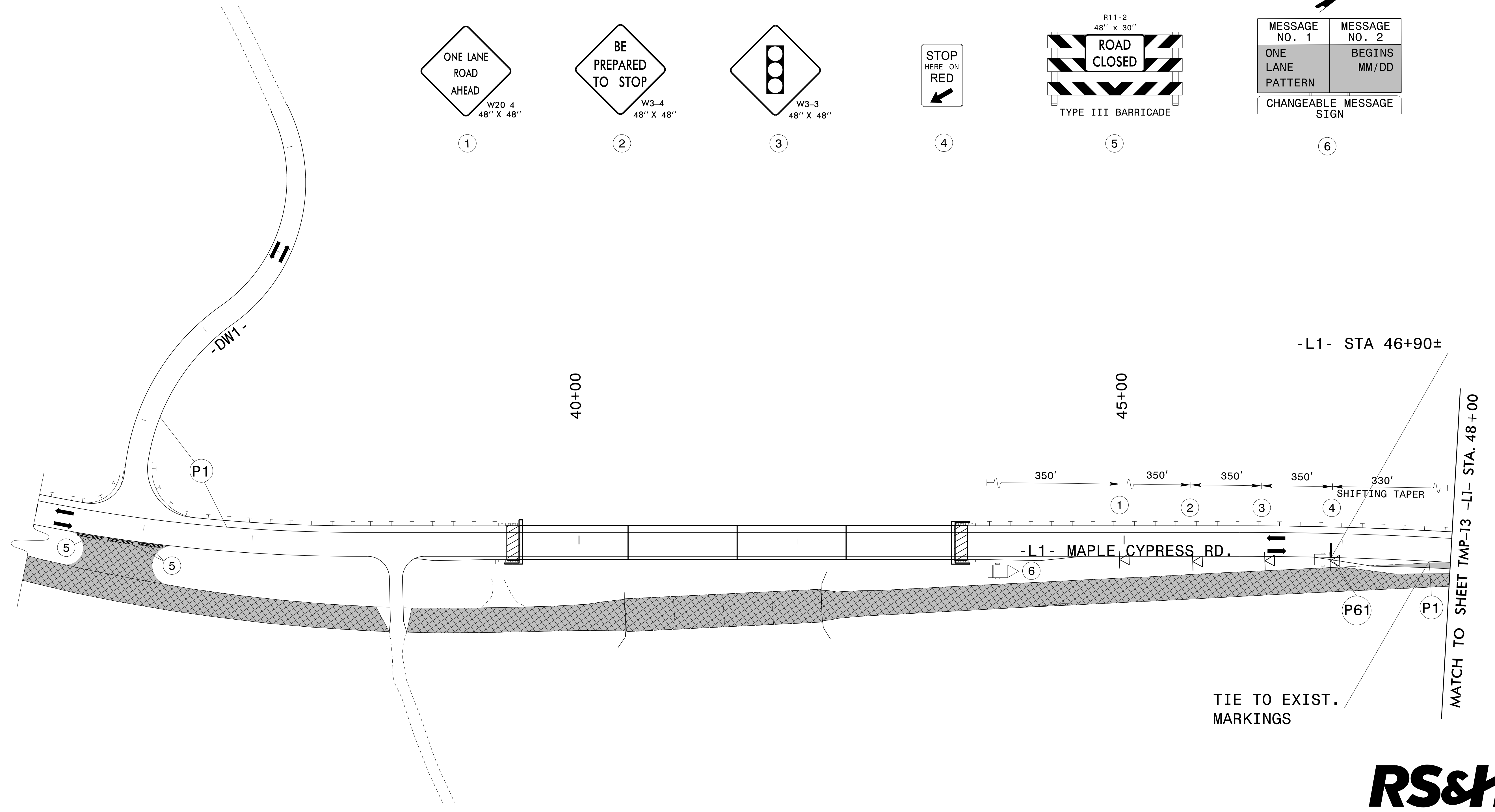
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DIVISION OF HIGHWAYS
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

PHASE III DETAIL

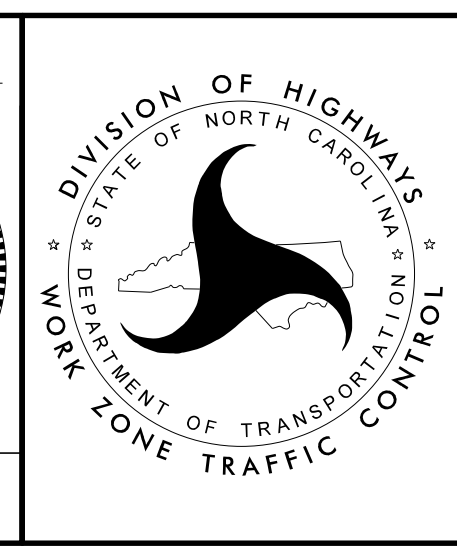
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3/19/2020
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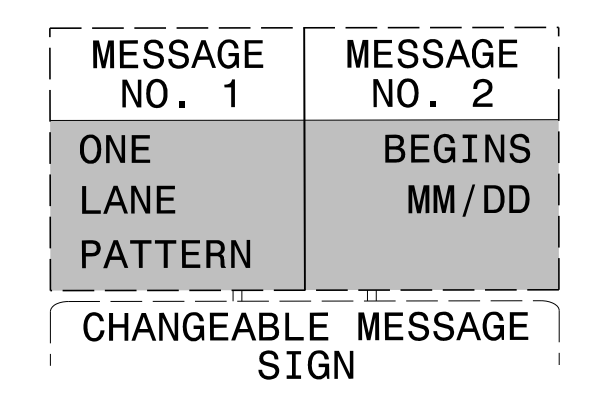
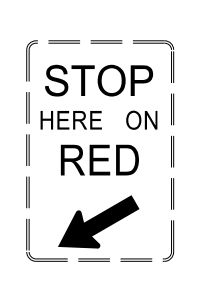
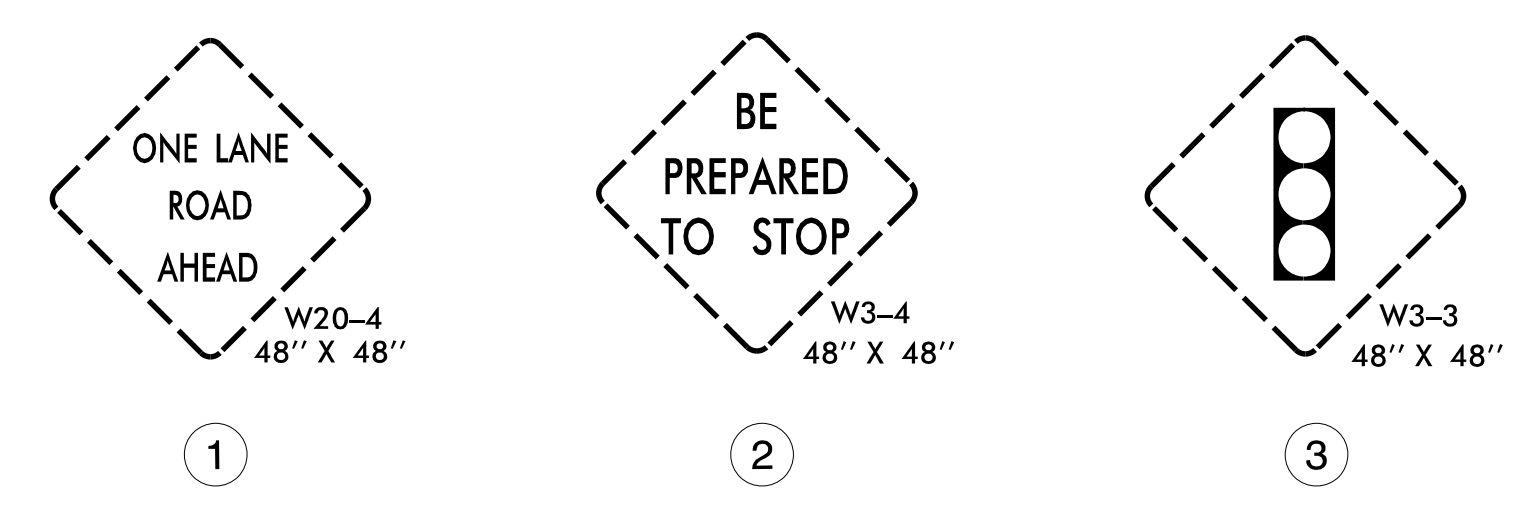
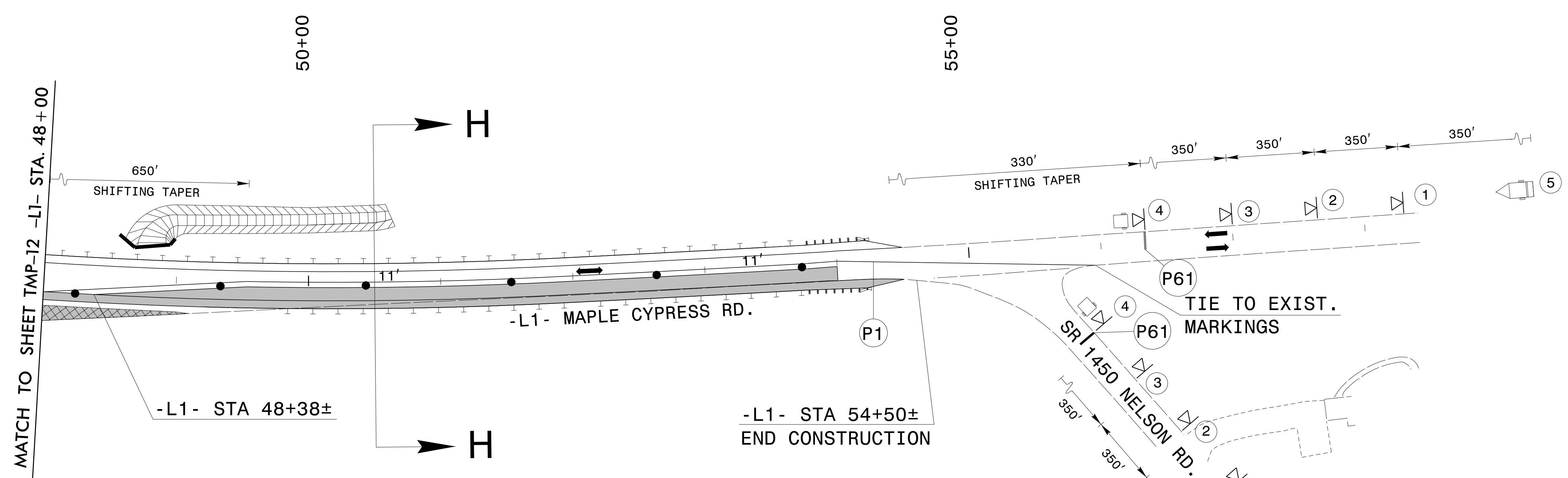
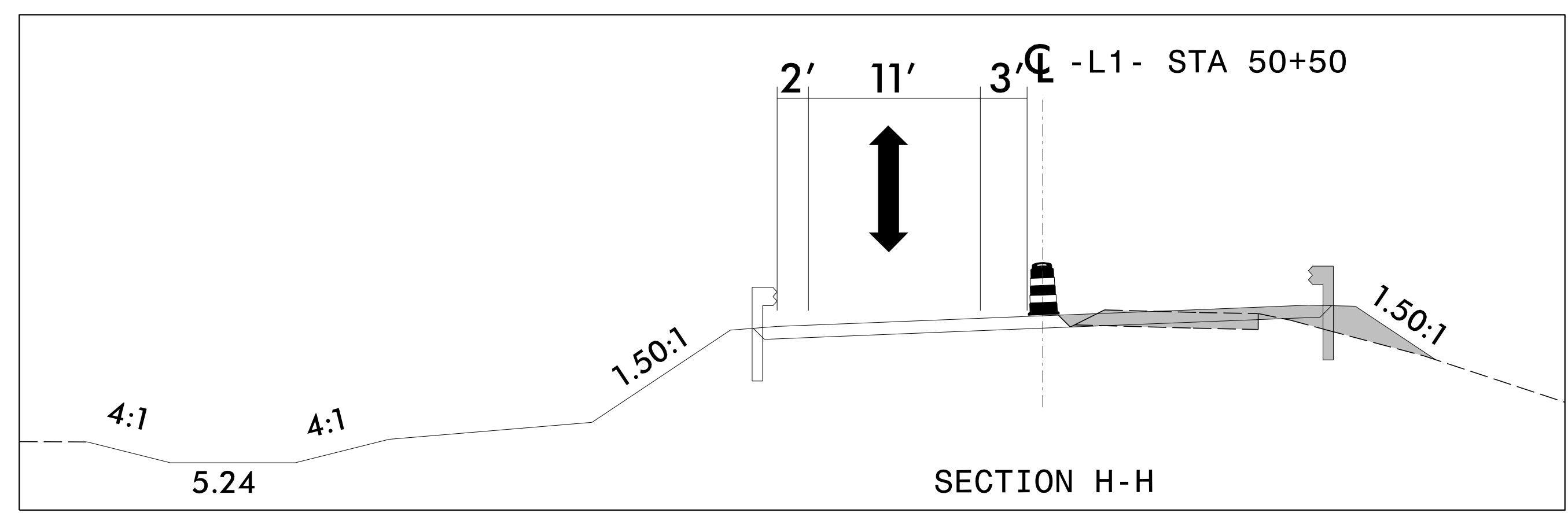


Approved by: *Annie C. Pily*
 DATE: 3/27/2020



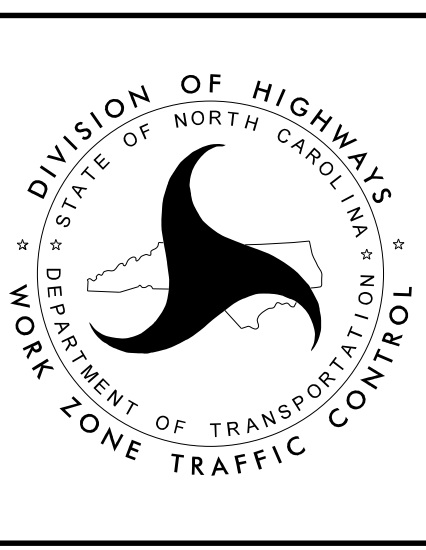
PHASE III DETAIL

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APPROVED: *Annie C. Pely*
8278R00DEB3D48E
 DATE: 3/27/2020

PROFESSIONAL SEAL
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 ENGINEER
 ANNIE C. PELY



PHASE III DETAIL

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