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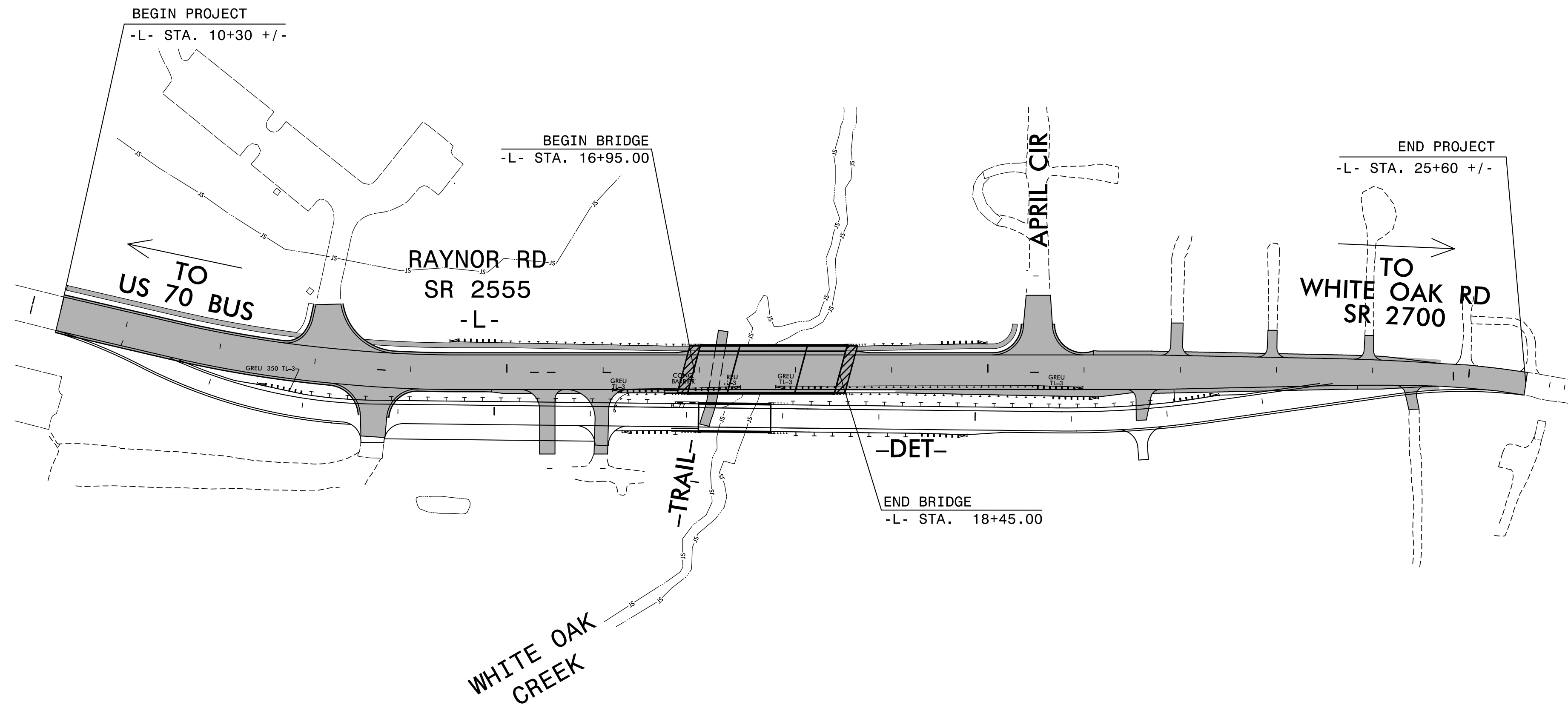
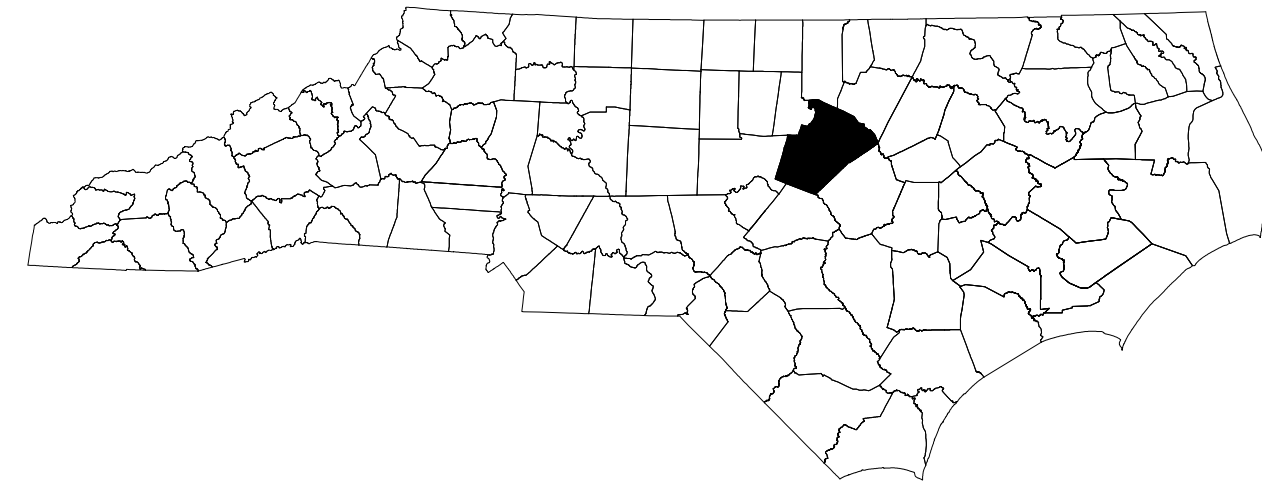
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

WAKE COUNTY

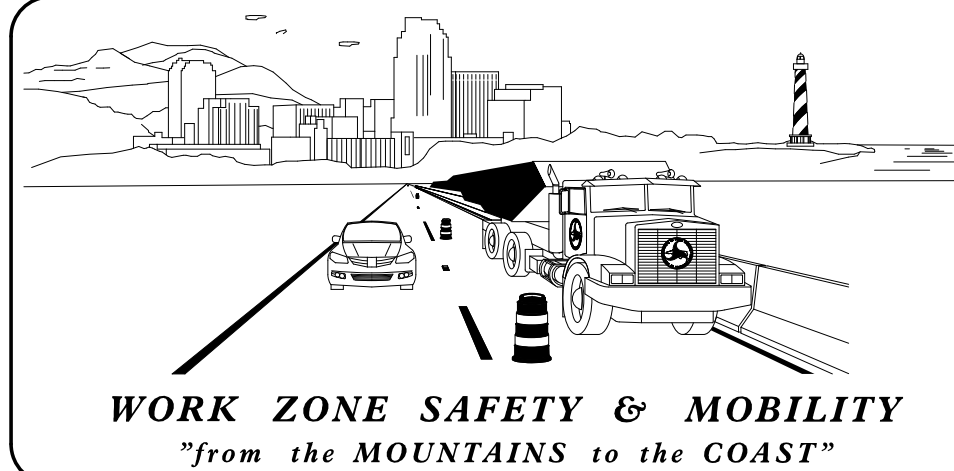


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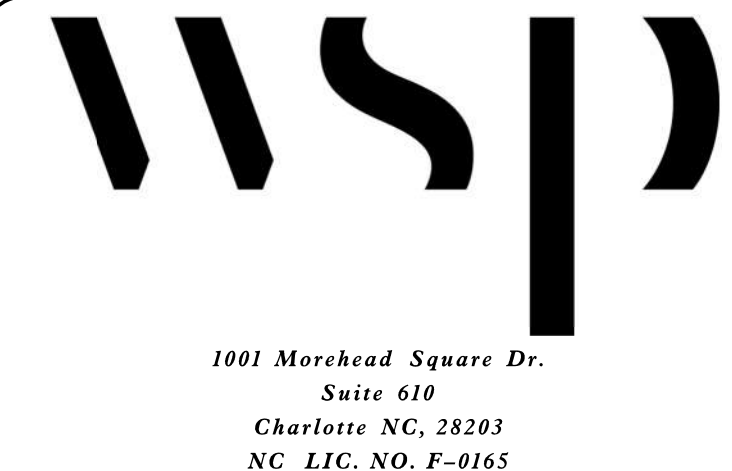
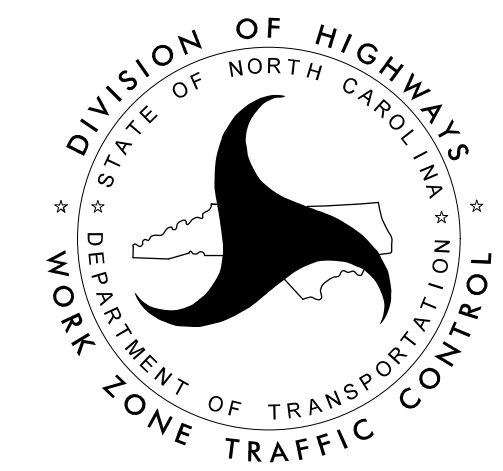
SHEET NO.
TMP-1

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UNLESS ALL SIGNATURES COMPLETED**



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
 1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
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STEVE KITE, PE STATE TRAFFIC MANAGEMENT ENGINEER
KEN THORNEWELL, PE TRAFFIC CONTROL PROJECT ENGINEER
MIKE STEELMAN TRAFFIC CONTROL PROJECT DESIGN ENGINEER
 TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: *Jason R. Horrie*
 DATE: 1/13/2021

PROJECT: B-5326



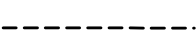
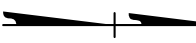
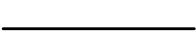
ROADWAY STANDARD DRAWINGS

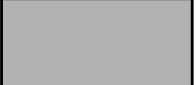
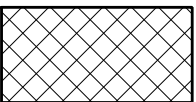
THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESS
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	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1801.01	STANDARD TEMPORARY SHORING
1801.02	STANDARD TEMPORARY WALL

LEGEND

GENERAL







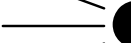




-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.

-  WORK AREA
-  DETOUR REMOVAL




TEMPORARY PAVEMENT MARKING

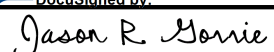
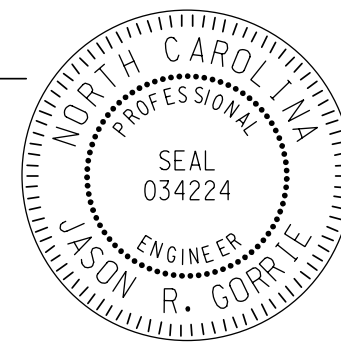

- PAINT (4")
- PA WHITE SOLID EDGE LINE
- PI YELLOW DOUBLE CENTER
- PAINT (8")
- PP YELLOW DIAGONAL

TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  TEMPORARY SHORING
-  CONE
-  DRUM  SKINNY DRUM
-  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

<p>APPROVED: </p> <p>DATE: 1/13/2021</p> <p style="text-align: center;">SEAL</p>		 <p><i>1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203</i></p> <p>NC LIC. NO. F-0165</p>	<p>TRANSPORTATION MANAGEMENT PLAN ROADWAY STANDARD DRAWINGS & LEGEND</p>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

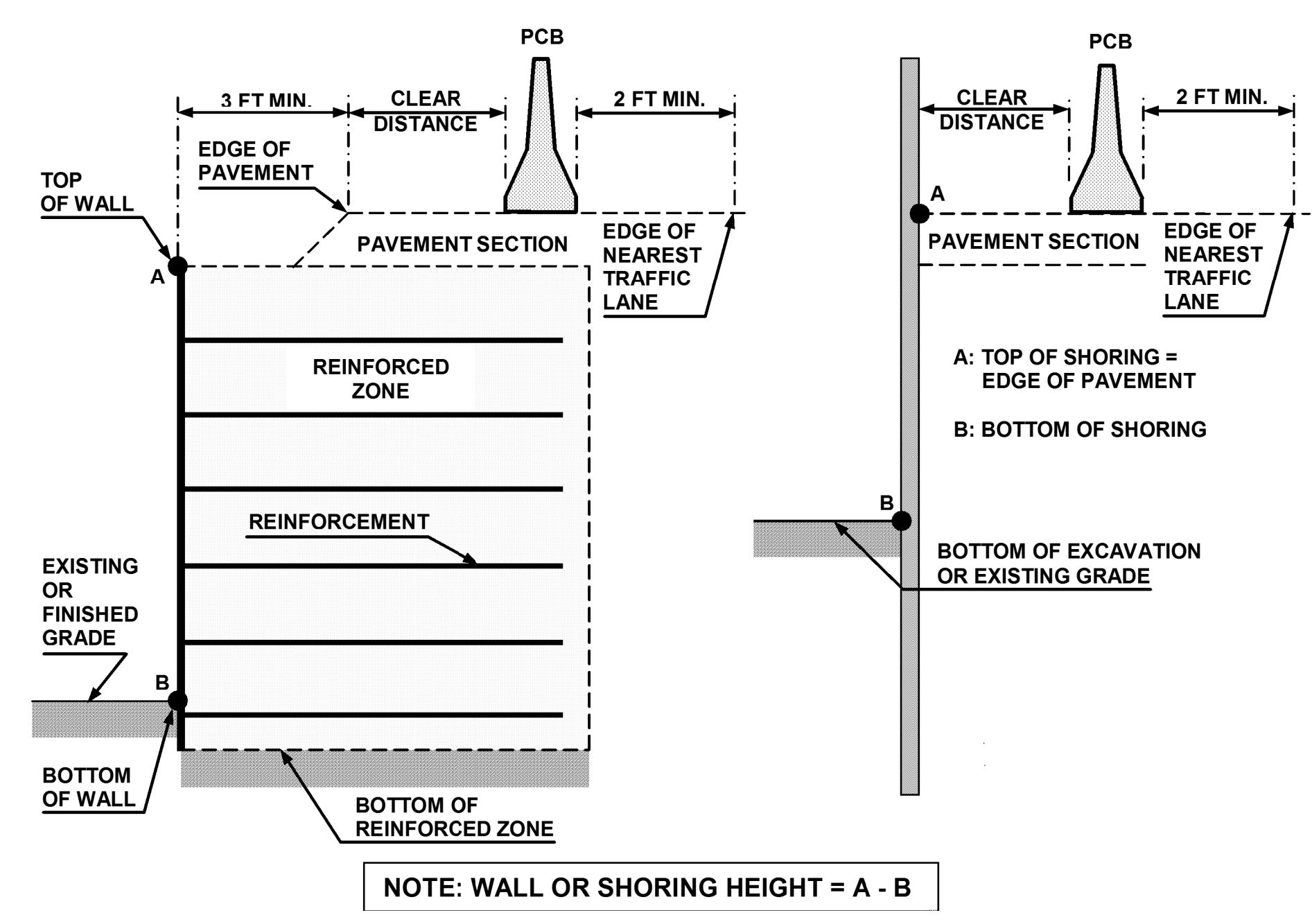


FIGURE A

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

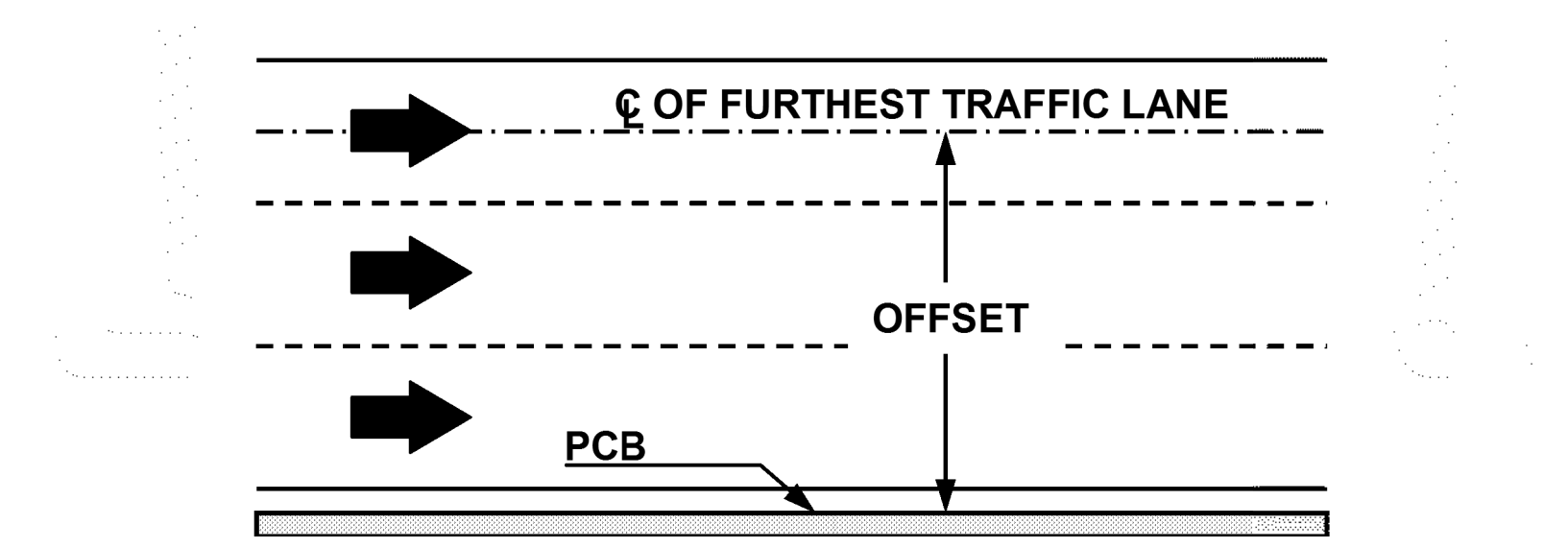


FIGURE B

<p>APPROVED: <i>Jason R. Gorrie</i></p> <p>DATE: 1/13/2021</p> <p>SEAL</p>		<p>1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203 NC LIC. NO. F-0165</p>	<p>TRANSPORTATION MANAGEMENT PLAN</p> <p>PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS</p>
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

PROJ. REFERENCE NO.	SHEET NO.
B-5326	TMP-3

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.

- A) 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

- 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) 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

- F) 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.
- G) 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

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

SIGNING

- I) 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.
- J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

GENERAL NOTES (CONT.)

TRAFFIC CONTROL DEVICES

- K) 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 WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- L) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- M) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

- N) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.
- O) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	NONE

- P) 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.
- Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- S) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- T) CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES AT ALL TIMES. CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNERS DURING CONSTRUCTION OF DRIVEWAYS.

PHASING NOTES

PHASE I

- STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS ON ALL ROADS ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01, SHEET 3 OF 3, WHERE WORK WILL BE OCCURRING NO MORE THAN THREE DAYS PRIOR TO BEGINNING CONSTRUCTION.
- STEP 2: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, CONSTRUCT 12" WATERLINE.
- STEP 3: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL TEMPORARY GUARDRAIL (TMP-4):
-L- STA. 16+60 ± TO -L- STA. 16+93 ±
-L- STA. 18+29 ± TO -L- STA. 20+49 ±
- STEP 4: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL TEMPORARY PAVEMENT MARKINGS AND DRUMS, AND CONSTRUCT:

INSTALL TEMPORARY SHORING (TMP-4)
-L- STA. 16+75 ±, 29' RT TO STA. 16+99 ±, 29' RT; SHEET PILE (TMP-4)
-L- STA. 17+79 ±, 29' RT TO STA. 20+00 ±, 32' RT; SHEET PILE (TMP-4)

-DET- STA. 10+31 ± TO STA. 25+75 ± (TMP-4)
TEMPORARY BRIDGE: -DET- STA. 17+13 ± TO -DET- STA. 17+88 ± (TMP-4)

INSTALL ANCHORED PORTABLE CONCRETE BARRIER (TMP-4)
-DET- STA. 16+88 ± TO -DET- STA. 17+13 ±

PHASING NOTES (CONT.)

PHASE II

- STEP 1: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED TO PLACE TEMPORARY PAVEMENT MARKINGS ON -DET-. USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 3 OF 9, SHIFT TRAFFIC TO -DET-.

- STEP 2: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED TO CONSTRUCT THE FOLLOWING, UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE:

RELOCATE EXISTING 30" FORCE MAIN.

INSTALL TEMPORARY SHORING (TMP-5):

-L- STA. 13+00 ±, 23' RT TO STA. 14+00 ±, 22' RT; FABRIC WALL (TMP-5)
-L- STA. 14+00 ±, 22' RT TO STA. 15+00 ±, 23' RT; FABRIC WALL (TMP-5)
-L- STA. 15+00 ±, 23' RT TO STA. 16+75 ±, 23' RT; FABRIC WALL (TMP-5)
-L- STA. 16+75 ±, 23' RT TO STA. 16+75 ±, 29' RT; FABRIC WALL (TMP-5)
-L- STA. 20+00 ±, 27.5' RT TO STA. 20+00 ±, 32' RT; FABRIC WALL (TMP-5)
-L- STA. 20+00 ±, 27.5' RT TO STA. 22+00 ±, 22' RT; FABRIC WALL (TMP-5)
CONSTRUCT -L- IMPROVEMENTS (TMP-5):
-L- STA. 10+30 ± TO -L- STA. 25+60 ±

CONTRACTOR TO MAINTAIN LOCAL ACCESS BY INSTALLING INCIDENTAL STONE AND/OR PAVEMENT WEDGING ON -L- TO MAINTAIN ACCESS TO DRIVEWAYS AND APRIL CIRCLE AS NEEDED.

PHASE III

- STEP 1: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, CONSTRUCT TIE-INS AND PLACE TEMPORARY MARKINGS, SHIFT TRAFFIC TO -L- AS SHOWN AND CONSTRUCT THE FOLLOWING, UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE:

-L- RIGHT SIDE SHOULDER FILL/SLOPES (TMP-6)
-L- STA. 13+18 ± TO STA. 14+09 ± (TMP-6)
-L- STA. 15+26 ± TO STA. 15+52 ± (TMP-6)
-L- STA. 15+77 ± TO STA. 16+15 ± (TMP-6)
-TRAIL- STA. 10+60 ± TO STA. 10+94 ± (TMP-6)
-L- STA. 21+51 ± TO STA. 21+71 ± (TMP-6)
-L- STA. 24+31 ± TO STA. 24+52 ± (TMP-6)
-L- RIGHT SIDE PROPOSED GUARDRAIL (TMP-6)

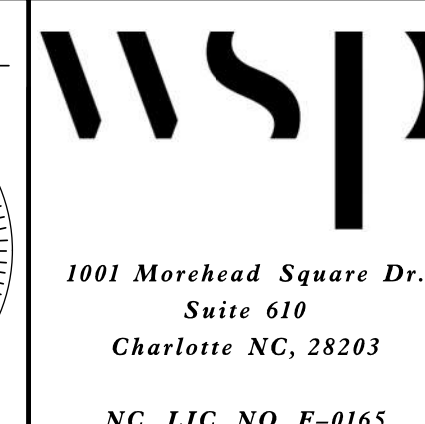
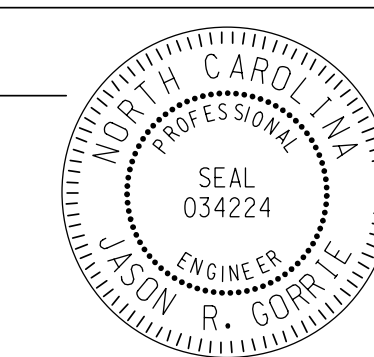
USING ROADWAY STANDARD DRAWING NO. 1101.02, REMOVE TEMPORARY DETOUR AS SHOWN ON TMP-6.

- STEP 2: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 14, AS NEEDED, INSTALL FINAL SURFACE COURSE AND FINAL PAVEMENT MARKINGS AS SHOWN IN FINAL PAVEMENT MARKING PLANS.

- STEP 3: REMOVE TRAFFIC CONTROL DEVICES/SIGNS AND PLACE TRAFFIC IN THE FINAL PATTERN.

APPROVED: *Jason Horne*
DATE: 6/8/2022
SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TRANSPORTATION
MANAGEMENT PLAN
GENERAL NOTES AND
WRITTEN PHASING

SHORING NOTES

SHORING LOCATON 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 16+75± -L-, 29 FT, RIGHT, TO STATION 16+99± -L-, 29 FT, RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ)= 120 PCF
 FRICTIONAL ANGLE (ϕ)= 30 DEGREES
 COHESION (c)= 0 PSF
 GROUNDWATER ELEVATION= 242 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 16+75± -L-, 29 FT, RIGHT, TO STATION 16+99± -L-, 29 FT, RIGHT MAY NOT PENETRATE BELOW ELEVATION 225 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 16+75± -L-, 29 FT, RIGHT TO STATION 16+99± -L- 29 FT, RIGHT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPOARY 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 17+79± -L-, 29 FT, RIGHT, TO STATION 20+00± -L-, 32 FT, RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATIONS:

UNIT WEIGHT (γ)= 120 PCF
 FRICTIONAL ANGLE (ϕ)= 30 DEGREES
 COHESION (c)= 0 PSF
 GROUNDWATER ELEVATION= 245 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 17+79± -L-, 29 FT, RIGHT, TO STATION 20+00± -L-, 32 FT, RIGHT, MAY NOT PENETRATE BELOW ELEVATIONS 225 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 17+79± -L-, 29 FT, RIGHT, TO STATION 20+00± -L-, 32 FT, RIGHT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

SHORING LOCATION NO. 3:

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

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

DESIGN TEMPORARY SHORING FROM STATION 13+00± -L-, 23 FT, RIGHT, TO STATION 16+75± -L-, 23 FT, RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ)= 120 PCF
 FRICTIONAL ANGLE (ϕ)= 30 DEGREES
 COHESION (c)= 0 PSF
 GROUNDWATER ELEVATION= 242 FT

DO NOT USE CANTILEVER, BRACED OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION 13+00± -L-, 23 FT, RIGHT, TO STATION 16+75± -L-, 23 FT, RIGHT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 13+00± -L-, 23 FT, RIGHT, TO STATION 16+75± -L-, 23 FT, RIGHT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 4:

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.

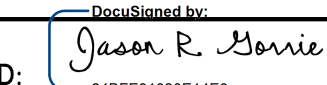
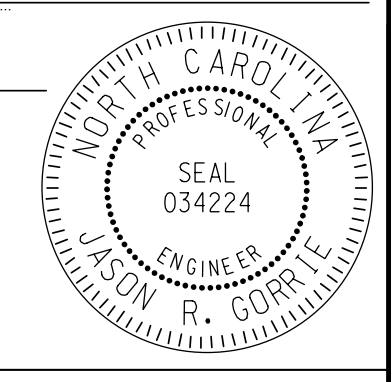

DESIGN TEMPORARY SHORING FROM STATION 20+00± -L-, 27.5 FT, RIGHT, TO STATION 22+00± -L-, 22.0 FT, RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

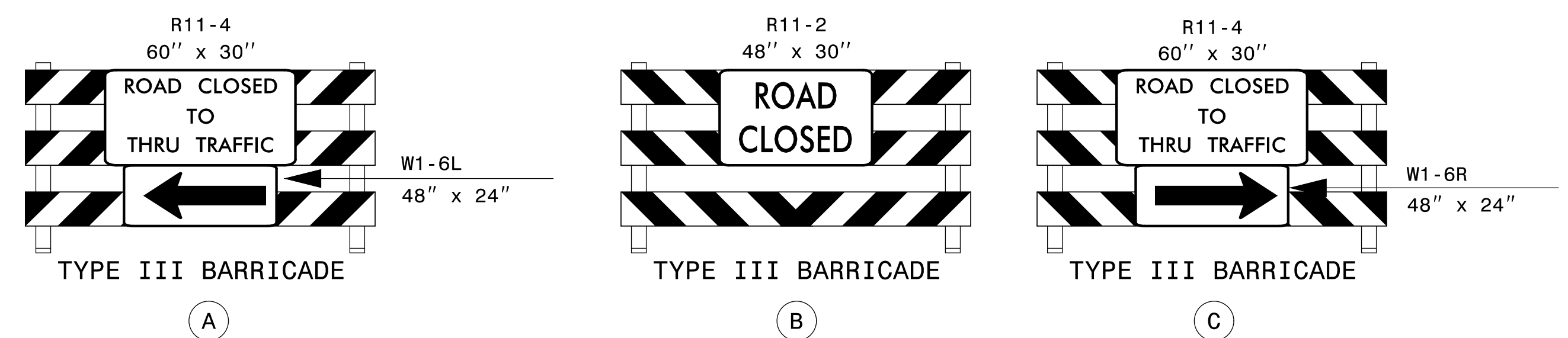
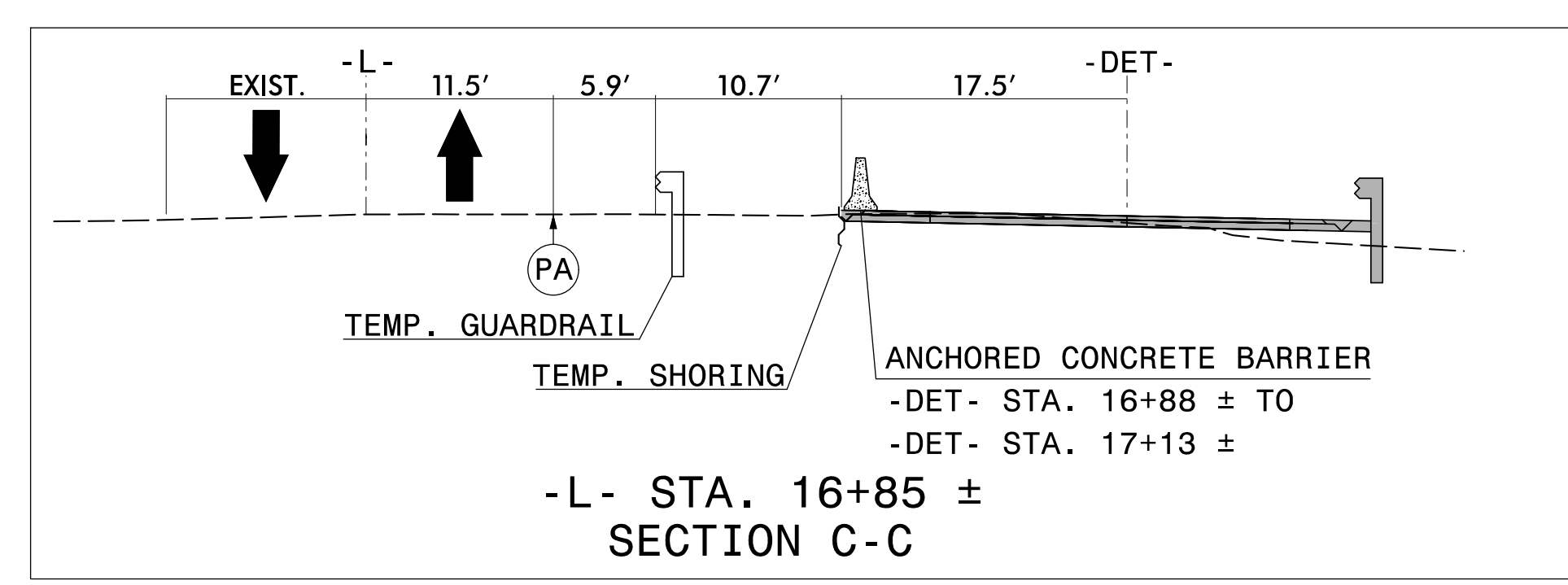
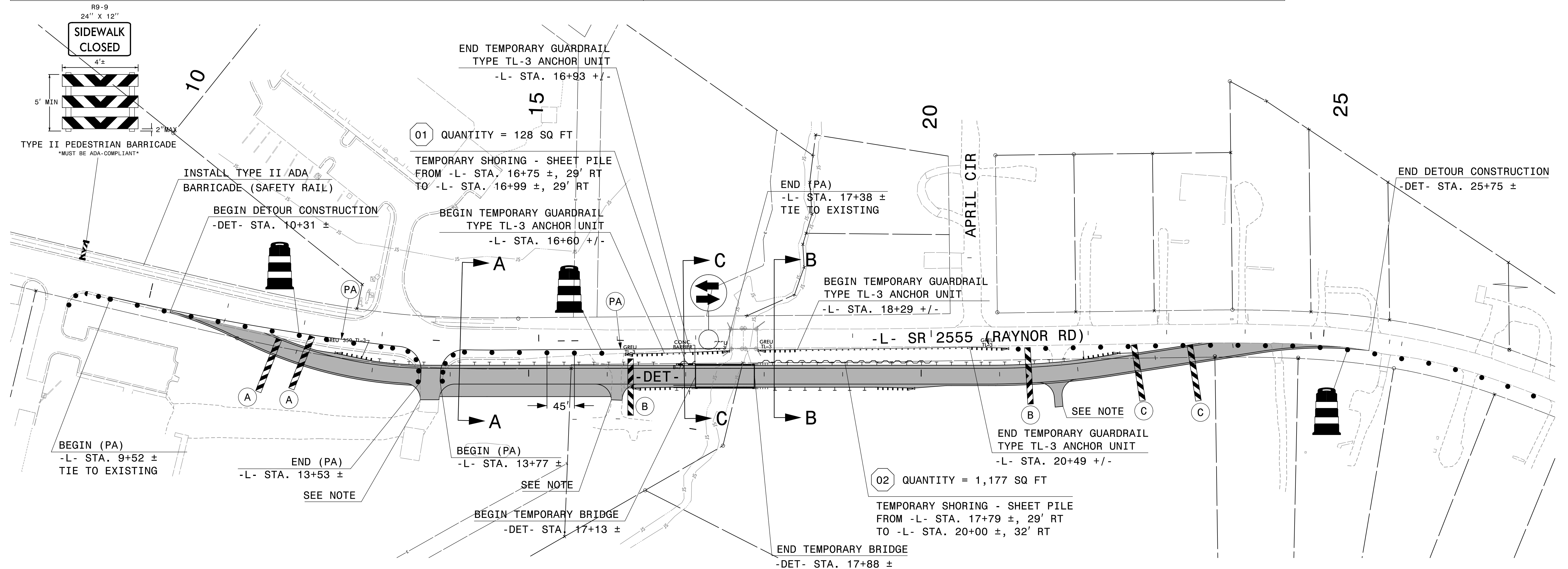
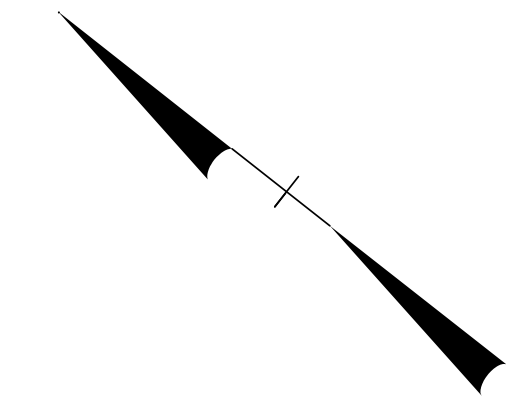
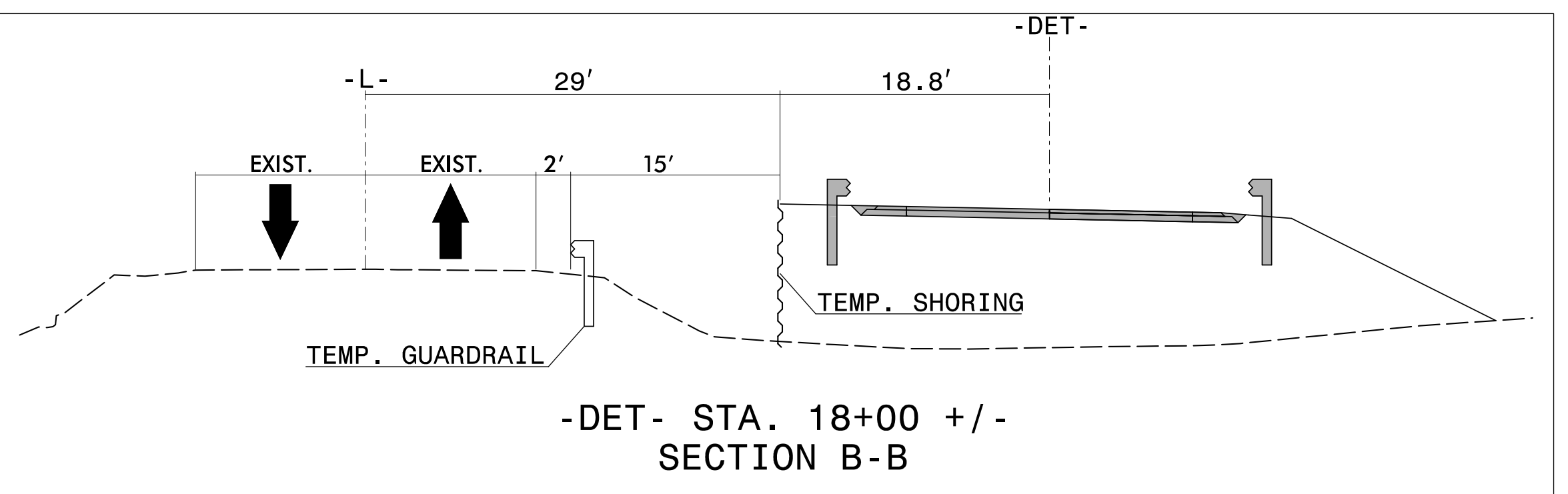
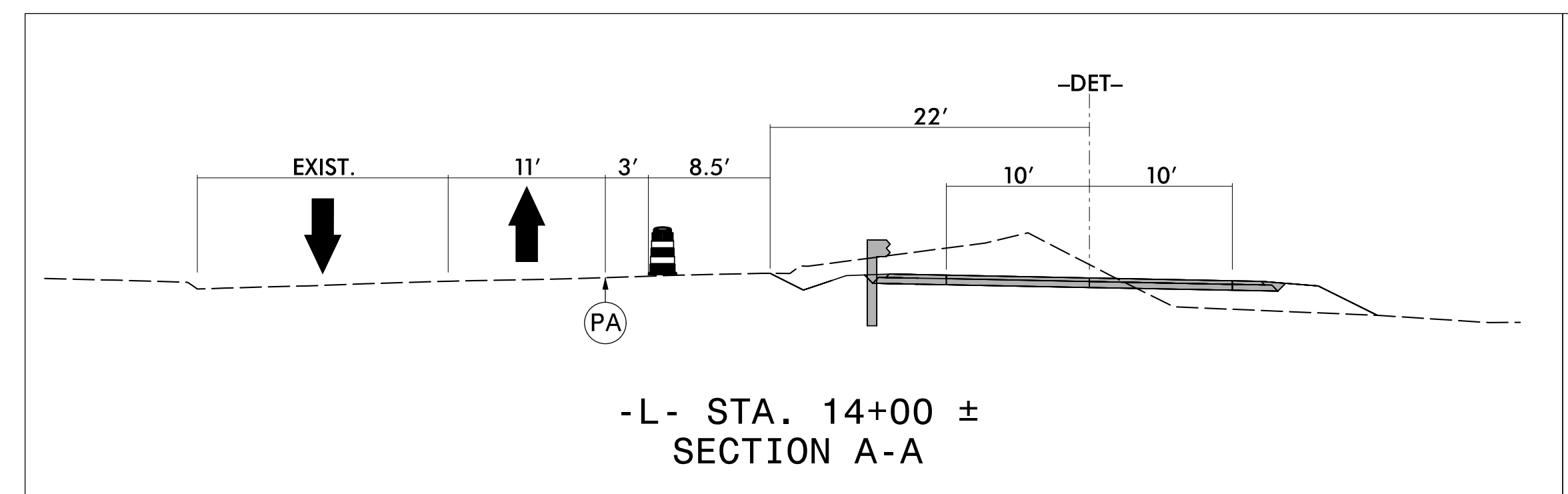
UNIT WEIGHT (γ)= 120 PCF
 FRICTIONAL ANGLE (ϕ)= 30 DEGREES
 COHESION (c)= 0 PSF
 GROUNDWATER ELEVATION= 242 FT

DO NOT USE CANTILEVER, BRACED OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION 20+00± -L-, 27.5 FT, RIGHT, TO STATION 22+00± -L-, 22 FT, RIGHT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 20+00± -L-, 27.5 FT, RIGHT, TO STATION 22+00± -L-, 22 FT, RIGHT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

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 NOVEMBER 16, 2018 AND SEALED BY A PROFESSIONAL ENGINEER, THEIN TUN ZAN, LICENSE # 030943.

APPROVED:  DATE: 1/13/2021 <div style="text-align: center;">  </div>	 1001 Morehead Square Dr. Suite 610 Charlotte NC, 28203 NC LIC. NO. F-0165	<h3>TRANSPORTATION MANAGEMENT PLAN SHORING NOTES</h3>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



NOTE: DO NOT INSTALL GUARDRAIL UNTIL DRIVEWAY ACCESS CAN BE MAINTAINED VIA -DET-

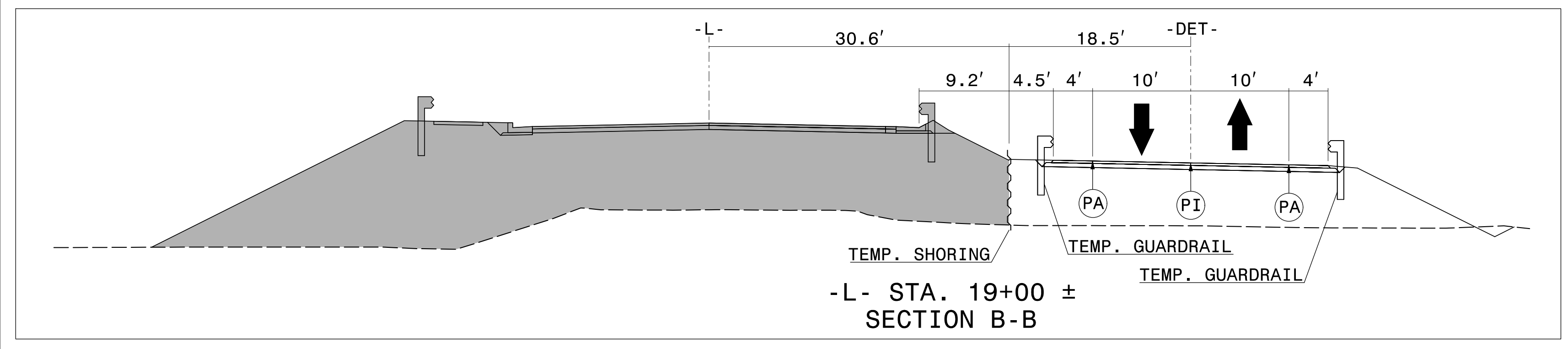
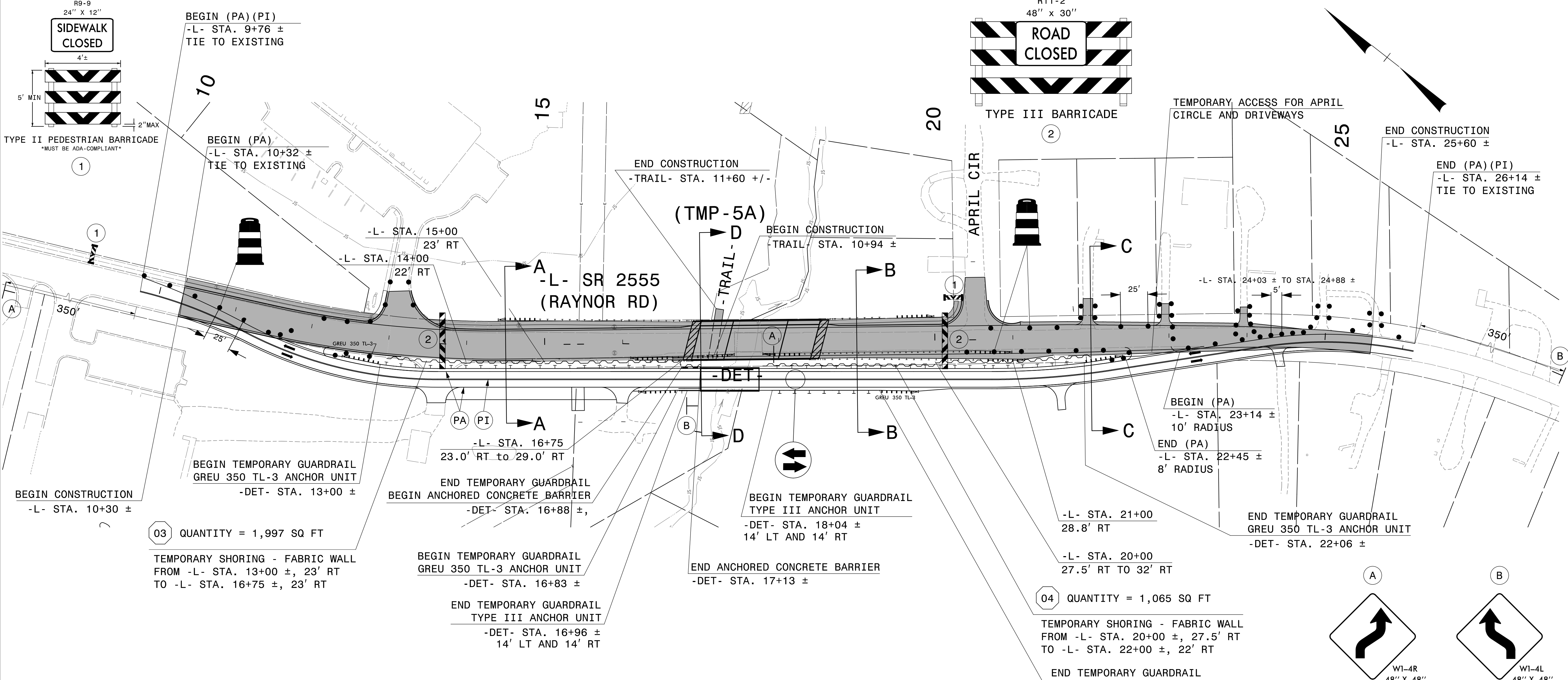
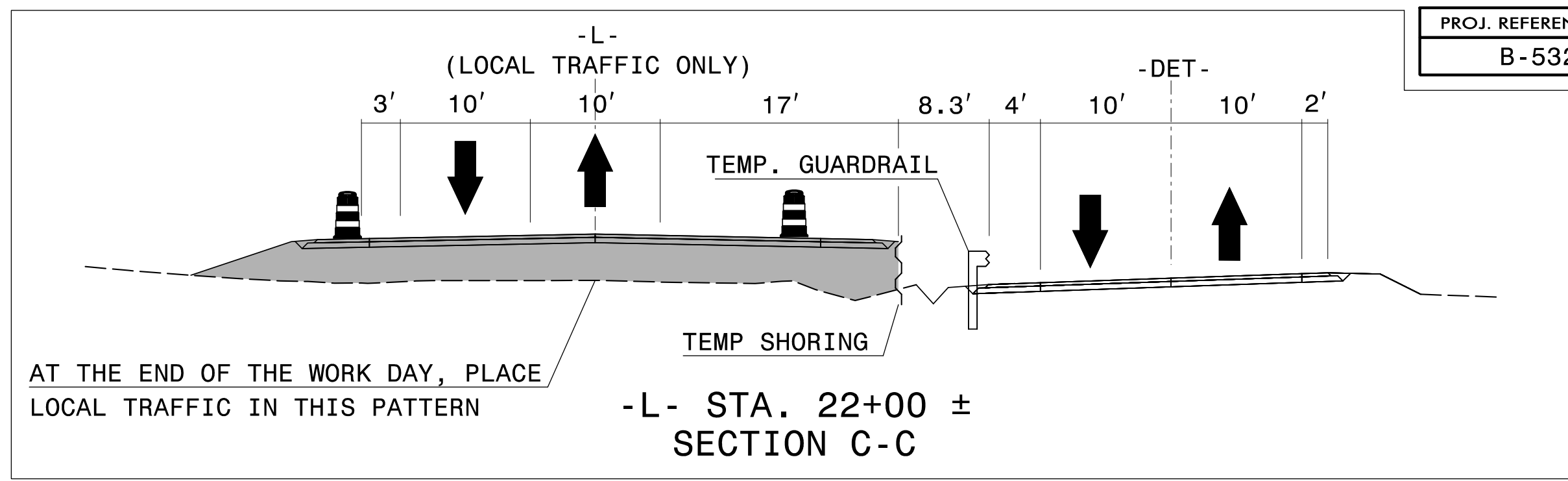
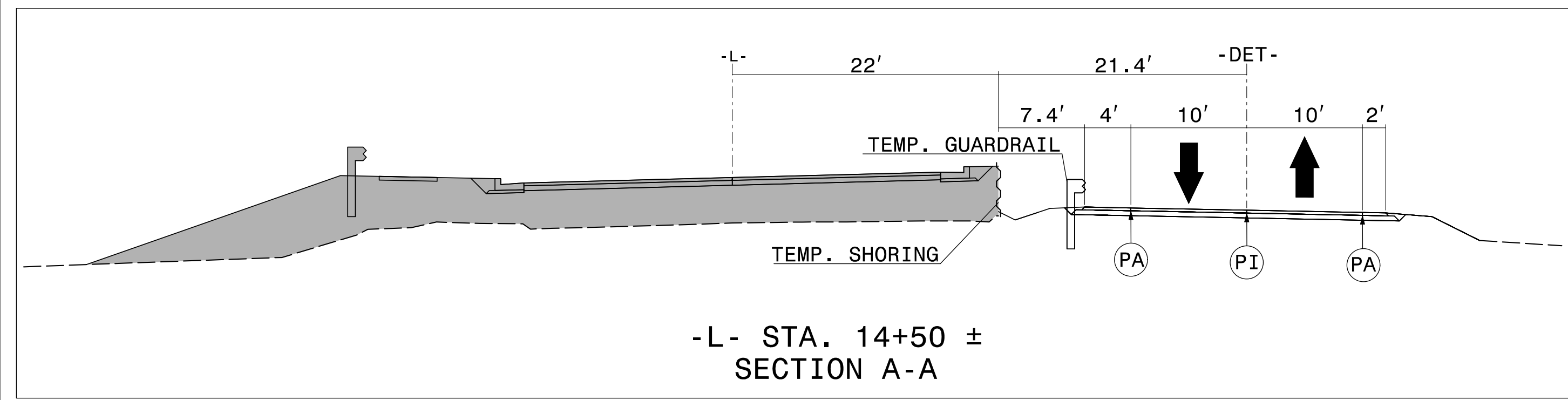
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DATE: 1/13/2021

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TRANSPORTATION
MANAGEMENT PLAN
PHASE I



APPROVED: *Jason R. Bonie*

DATE: 1/13/2021

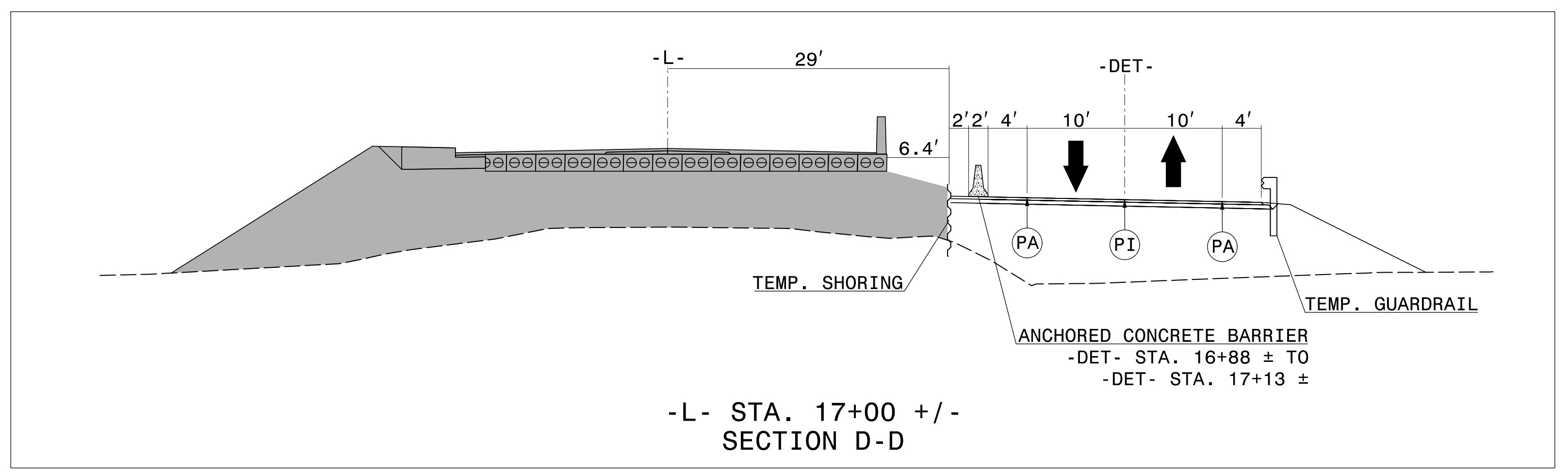
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

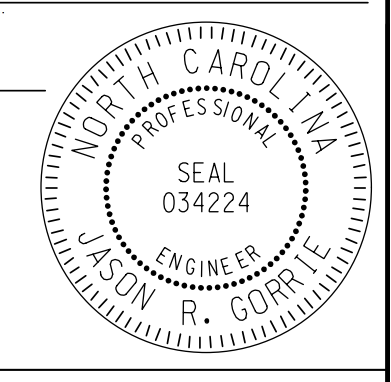
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TRANSPORTATION MANAGEMENT PLAN PHASE II



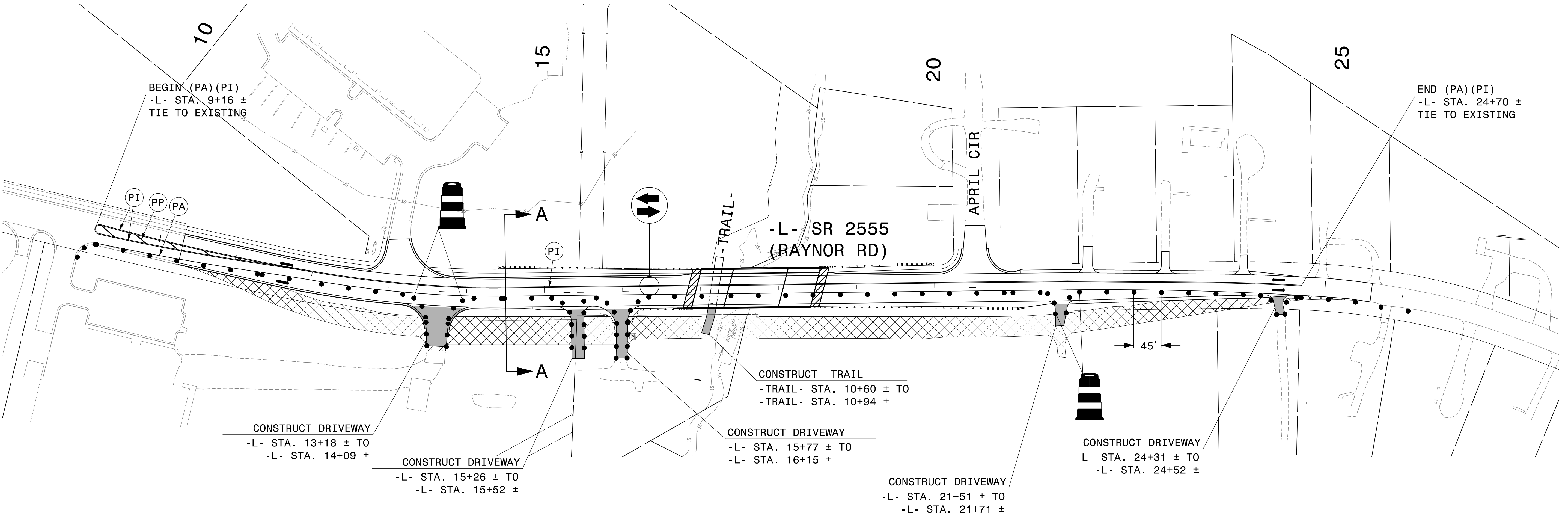
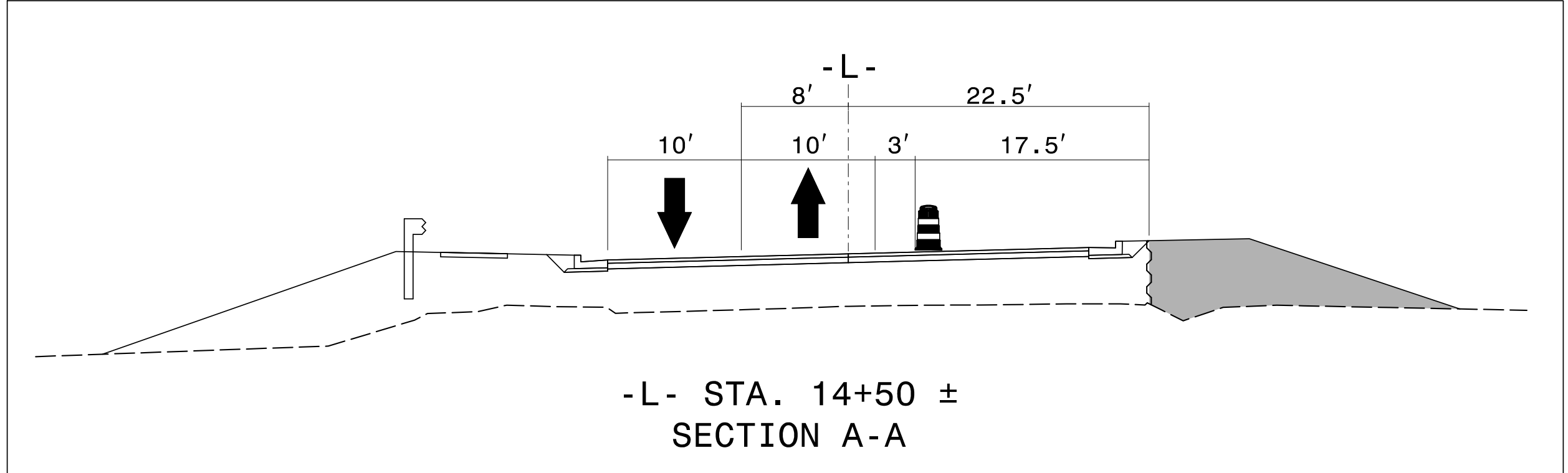
APPROVED: *Jason R. Berrie*
DATE: 1/13/2021
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TRANSPORTATION
 MANAGEMENT PLAN
 PHASE II

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APPROVED: *Jason R. Morris*
DATE: 1/13/2021

SEAL

SEAL
034224
ENGINEER
JASON R. MORRIS

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TRANSPORTATION
MANAGEMENT PLAN
PHASE III