

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.06	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	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	TRUCK MOUNTED ATTENUATOR
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
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY
- PORTABLE

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING SCHEDULE	
SYMBOL	DESCRIPTION
PAVEMENT MARKINGS	
COLD APPLIED PLASTIC (4")	
C1	WHITE EDGE LINE
C13	YELLOW DOUBLE CENTER
PAINT (4")	
P1	WHITE EDGE LINE
P13	YELLOW DOUBLE CENTER

7/6/2023
 User: smelvin

APPROVED: DATE: 6/25/2024 SEAL			ROADWAY STANDARD DRAWINGS & LEGEND
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

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 AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
SR 2033 OAK GROVE RD	MON - FRI 6:00 AM TO 8:00 AM AND 4:00 PM TO 6:00 PM

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

ROAD NAME
SR 2033 OAK GROVE RD

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEARS, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

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

C. DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
SR 2033 OAK GROVE RD	MONDAY THRU SUNDAY 12:00 AM TO 8:00 AM AND 4:00 PM TO 11:59 PM	20 MINUTES FOR ROCK BLASTING

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- G) 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.
- H) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

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

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

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

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

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.
- M) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE 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) 350 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

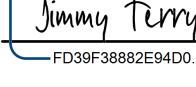
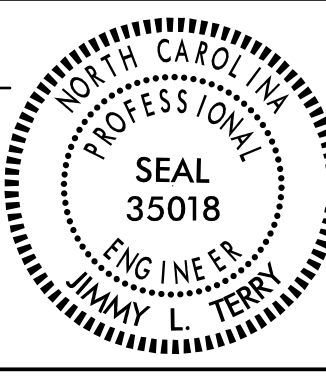
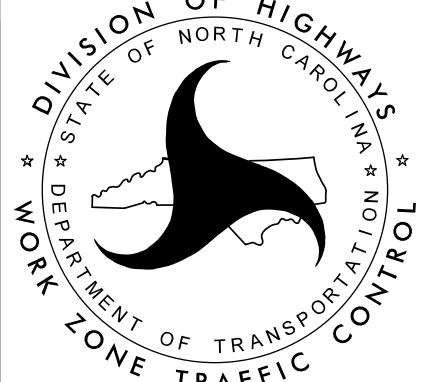
- Q) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
OAK GROVE RD (-L-)	PAINT	NONE
PROPOSED STRUCTURE	COLD APPLIED TEMP. TAPE	NONE
- R) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE.
- S) 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.
- T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- U) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MANAGEMENT STRATEGIES

DURING CONSTRUCTION OF THE PROPOSED STRUCTURE, SR 2033 (OAK GROVE RD) WILL REMAIN OPEN TO THROUGH TRAFFIC, SR 2033 (OAK GROVE RD) TRAFFIC WILL BE MAINTAINED ON EXISTING ALIGNMENT WITH THE USE OF TEMPORARY LANE CLOSURES AND FLAGGERS. ONCE THE PROPOSED STRUCTURE AND ROADWAY IS CONSTRUCTED ON THE PROPOSED SR 2033 (-L-) ALIGNMENT, ALL TRAFFIC WILL BE SHIFTED TO THE PROPOSED ALIGNMENT SO THAT THE EXISTING STRUCTURE AND EXISTING ROADWAY SHALL BE REMOVED AS DIRECTED.

6/26/2024 - Cleveland 25\TrafficControl\CP\B-5845_TC-TMP_01B.dgn User:smelvin

APPROVED:  DATE: 6/26/2024			TRANSPORTATION OPERATIONS PLAN
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

TEMPORARY SHORING DATA

Shoring Location No. 1:

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

TEMPORARY SHORING IS REQUIRED FOR THE STRUCTURE CONSTRUCTION FROM -L- STATION 21+20, 24 FT LT TO -L- STATION 21+55, 24 FT LT.

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- STATION 21+20, 24 FT LT TO -L- STATION 21+55, 24 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

ASSUMED SOIL PARAMETERS ABOVE ELEVATION 675 FT:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF

ASSUMED SOIL PARAMETERS BELOW ELEVATION 675 FT:

UNIT WEIGHT (γ) = 125 LB/CF
 FRICTION ANGLE (ϕ) = 34 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 671 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM -L- STATION 21+20, 24 FT LT TO -L- STATION 21+55, 24 FT LT WILL NOT PENETRATE BELOW ELEVATION 654 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- STATION 21+20, 24 FT LT TO -L- STATION 21+55, 24 FT LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM -L- STATION 21+20, 24 FT LT TO -L- STATION 21+55, 24 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

Shoring Location No. 2:

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

TEMPORARY SHORING IS REQUIRED FOR THE STRUCTURE CONSTRUCTION FROM -L- STATION 23+70, 24 FT LT TO -L- STATION 24+00, 24 FT LT.

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- STATION 23+70, 24 FT LT TO -L- STATION 24+00, 24 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:


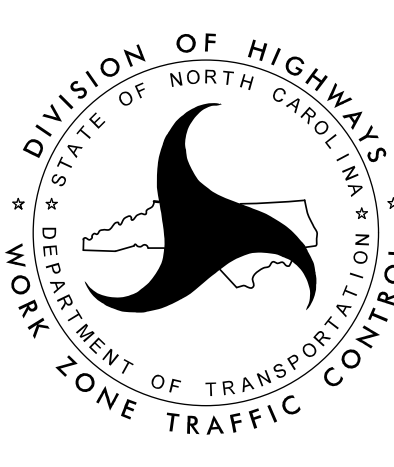
UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 670 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM -L- STATION 23+70, 24 FT LT TO -L- STATION 24+00, 24 FT LT WILL NOT PENETRATE BELOW ELEVATION 675 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- STATION 23+70, 24 FT LT TO -L- STATION 24+00, 24 FT LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM -L- STATION 23+70, 24 FT LT TO -L- STATION 24+00, 24 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

7/6/2023
 \$\$\$DGN\$\$\$\$\$\$\$
 User:smelvin

APPROVED: <i>Robert E. Kral</i> <small>3181C2BA5F4455</small> DATE: 6/25/2024 <div style="text-align: center;">  </div>		<h3>TEMPORARY SHORING DATA</h3>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

PHASING

UNLESS OTHERWISE NOTED TWO WAY THROUGH TRAFFIC SHALL BE MAINTAINED ON TWO 11 FT (MIN.) LANES AT ALL TIMES WHILE FLAGGERS ARE NOT AT WORK.

UNLESS OTHERWISE NOTED MAINTAIN ACCESS TO ALL LOCAL DRIVES AT ALL TIMES.

UNLESS OTHERWISE NOTED USE NCDOT STD DRAWING 1101.02, SHEET 1 OF 19 FOR TEMPORARY LANE CLOSURES.

Phase I (TMP-4)

STEP 1

INSTALL ALL ADVANCE WORK ZONE WARNING SIGNS ON -L- IN ACCORDANCE WITH NCDOT STD DRAWING 1101.01, SHEET 3 OF 3.

STEP 2

USING FLAGGERS AS NECESSARY, INSTALL TEMPORARY SHORING AND CONSTRUCT PROPOSED STRUCTURE AND ROADWAY FROM STA. 20+50+/- TO STA. 25+00+/- (INCLUDING PORTION OF -DR- FROM STA 10+00+/- TO 10+75+, UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE.

NOTE: USE TEMPORARY SLOPES AS NEEDED TO MAINTAIN DRAINAGE BETWEEN PROPOSED AND EXISTING.

NOTE: UTILIZE TMA AS NEEDED TO PROTECT EXPOSED GUARDRAIL END

CLOSE THE EXISTING GRAVEL DRIVEWAY RT OF -L- STA 20+10± AND COMPLETE CONSTRUCTION OF THE PROPOSED DRIVEWAY .

NOTE: WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK OF PHASE I, STEP3 IN A SINGLE WORK PERIOD.

STEP 3

USING FLAGGERS, CONSTRUCT TIE-INS FROM STA. 12+50+/- TO STA 20+50+/- AND FROM STA. 25+00± TO 32+00± UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS:

A.)

PLACE SR 2033 TRAFFIC IN A ONE- WAY ONE-LANE PATTERN ON THE EXISTING WESTBOUND LANE AND TIE IN PROPOSED EASTBOUND LANE. INSTALL EDGE LINE AND DOUBLE YELLOW CENTERLINE.

B.)

SHIFT TRAFFIC ONTO THE NEWLY CONSTRUCTED EASTBOUND LANE IN A ONE-WAY ONE-LANE PATTERN AND TIE IN THE PROPOSED WESTBOUND LANE AND INSTALL EDGE LINE.

Phase II (TMP-5)

STEP 1

USING FLAGGERS AS NECESSARY, PERFORM THE FOLLOWING:

REMOVE THE EXISTING BRIDGE OVER BUFFALO CREEK.
REMOVE EXISTING PAVEMENT AS SHOWN ON PLANS.

COMPLETE PAVED SHOULDER CONSTRUCTION FROM STA. 14+29± TO 21+00± LT, AND FROM STA. 26+00± TO 31+00± LT.

PLACE REMAINING GUARDRAIL.

STEP 2

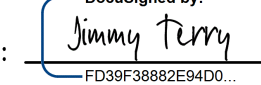
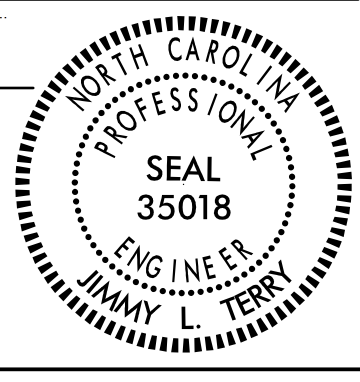

USING FLAGGERS, PLACE THE FINAL LAYER OF SURFACE COURSE FROM STA. 12+50+/- TO STA 32+00± .

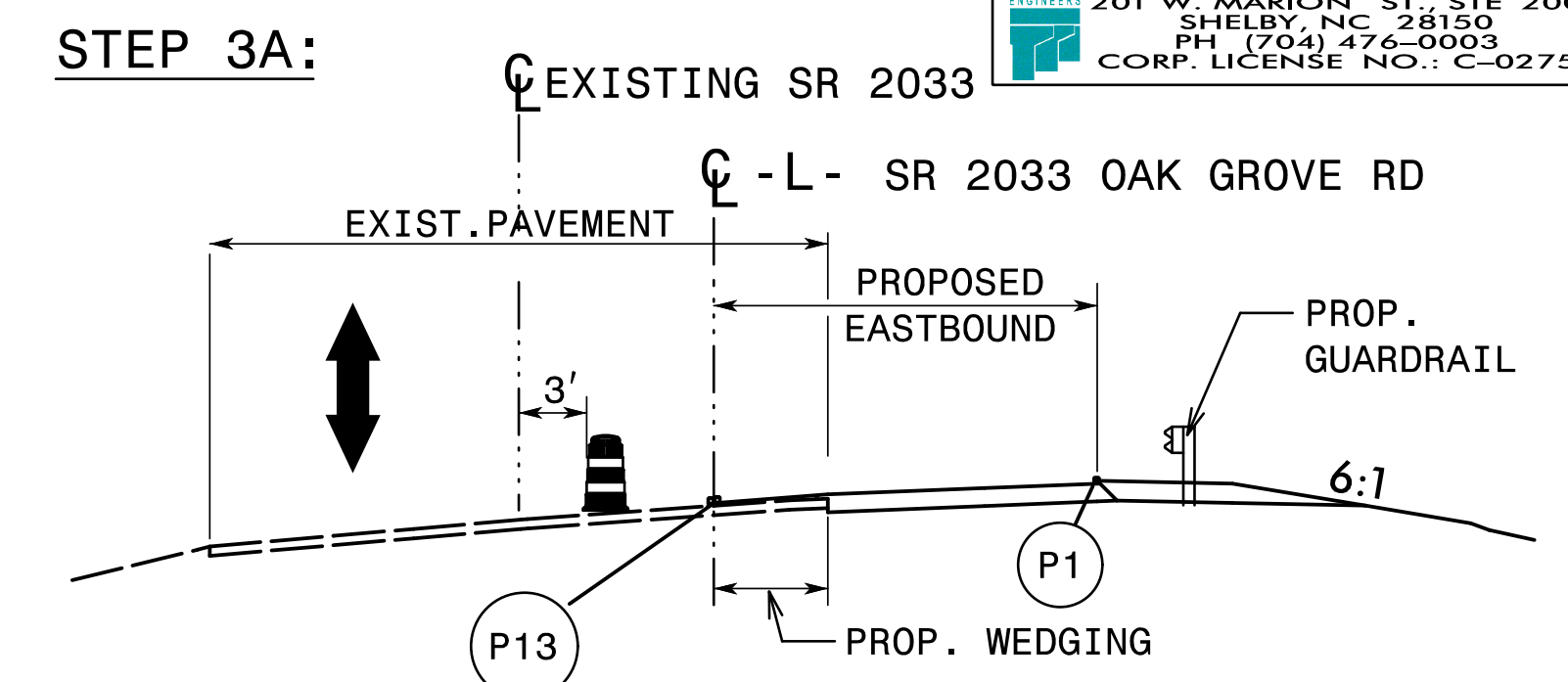
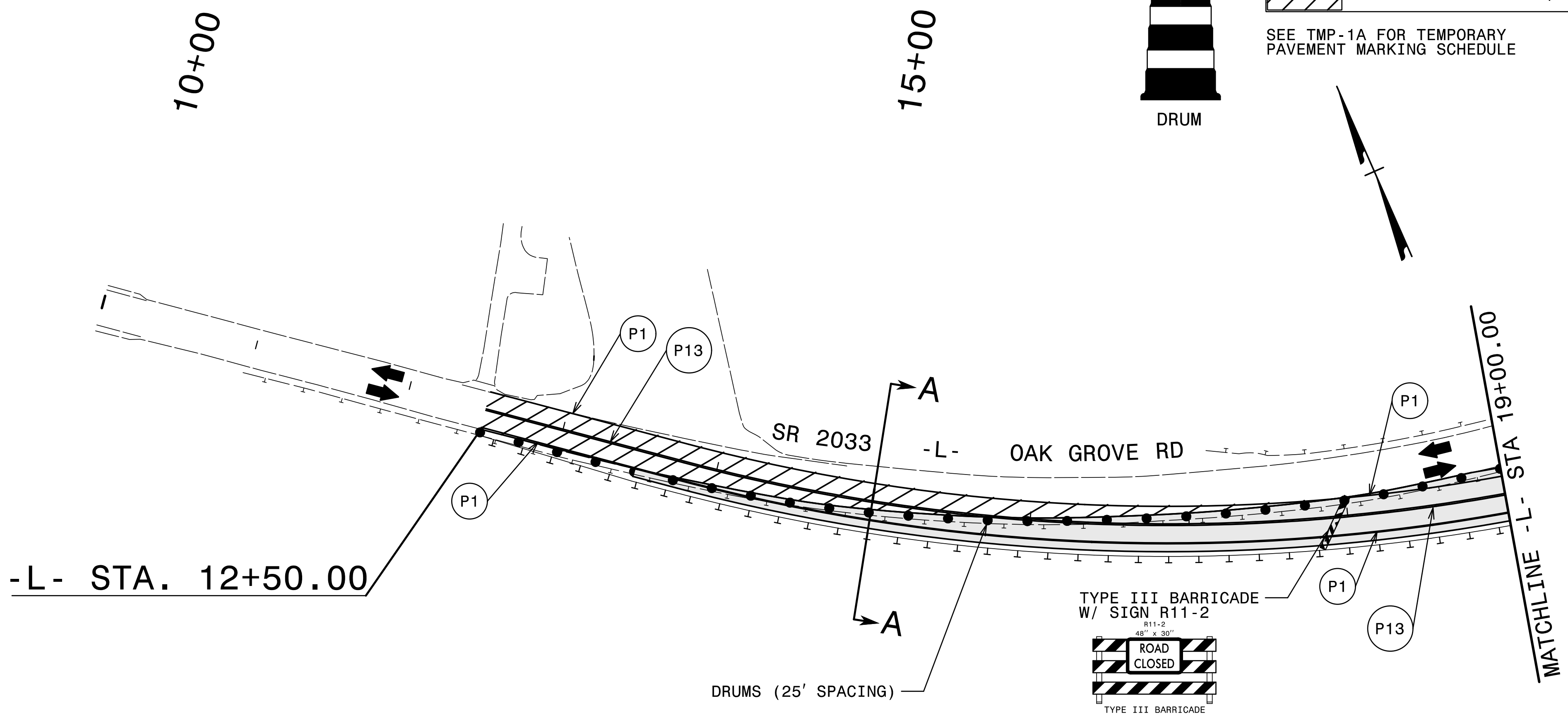
PLACE FINAL PAVEMENT MARKING AS SHOWN IN PAVEMENT MARKING PLANS.

STEP 3

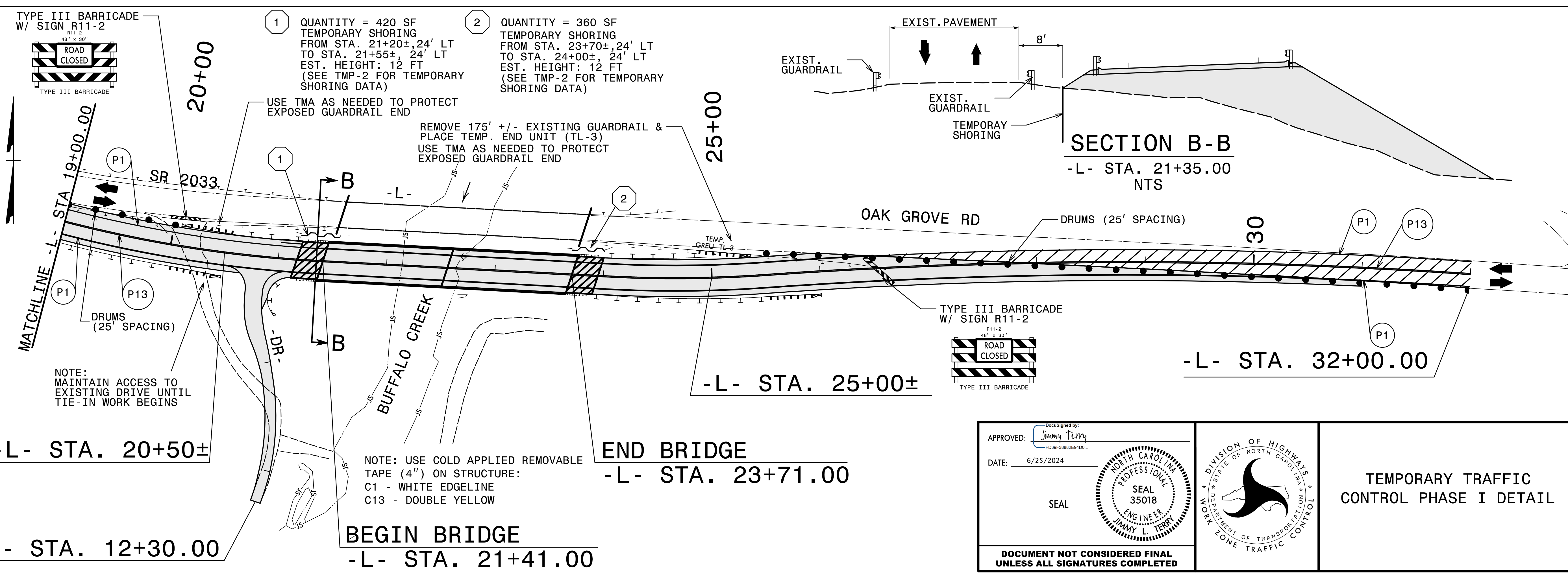
REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

7/6/2023
User: smelvin

APPROVED:  <small>FD30F5882E94D0...</small> DATE: 6/25/2024			<h2>TEMPORARY TRAFFIC CONTROL PHASING</h2>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



SECTION A-A
-L- STA. 15+00.00
NTS



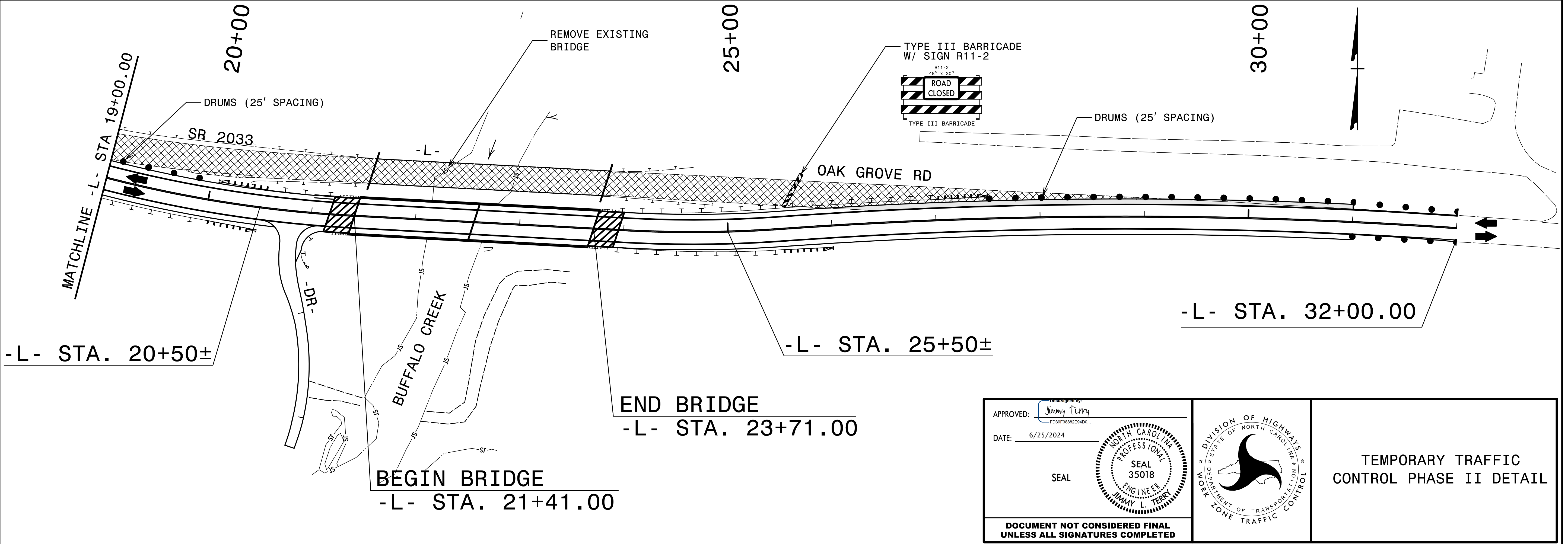
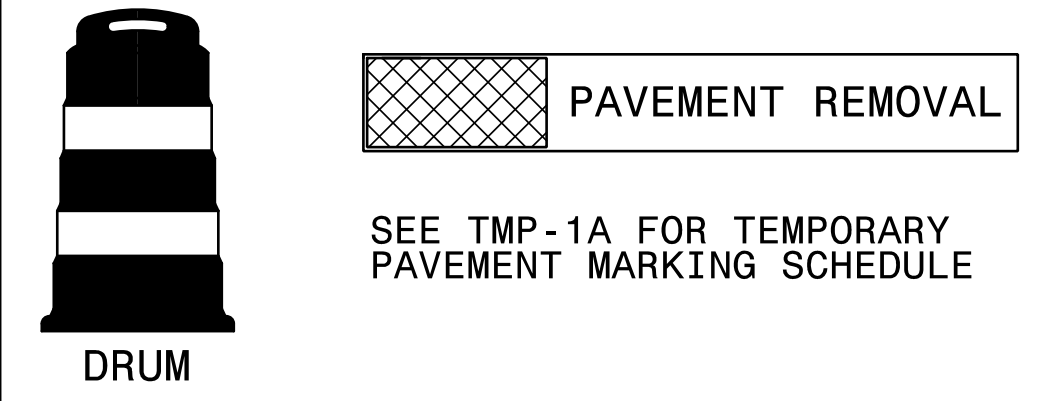
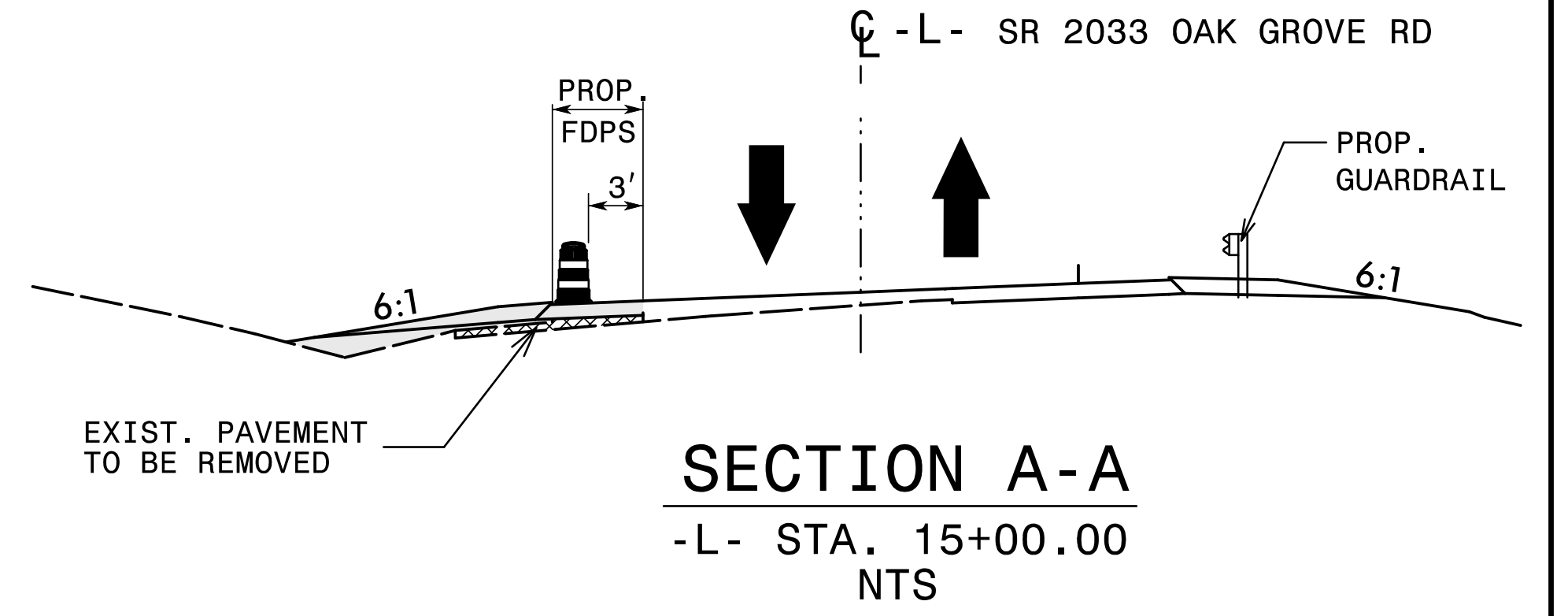
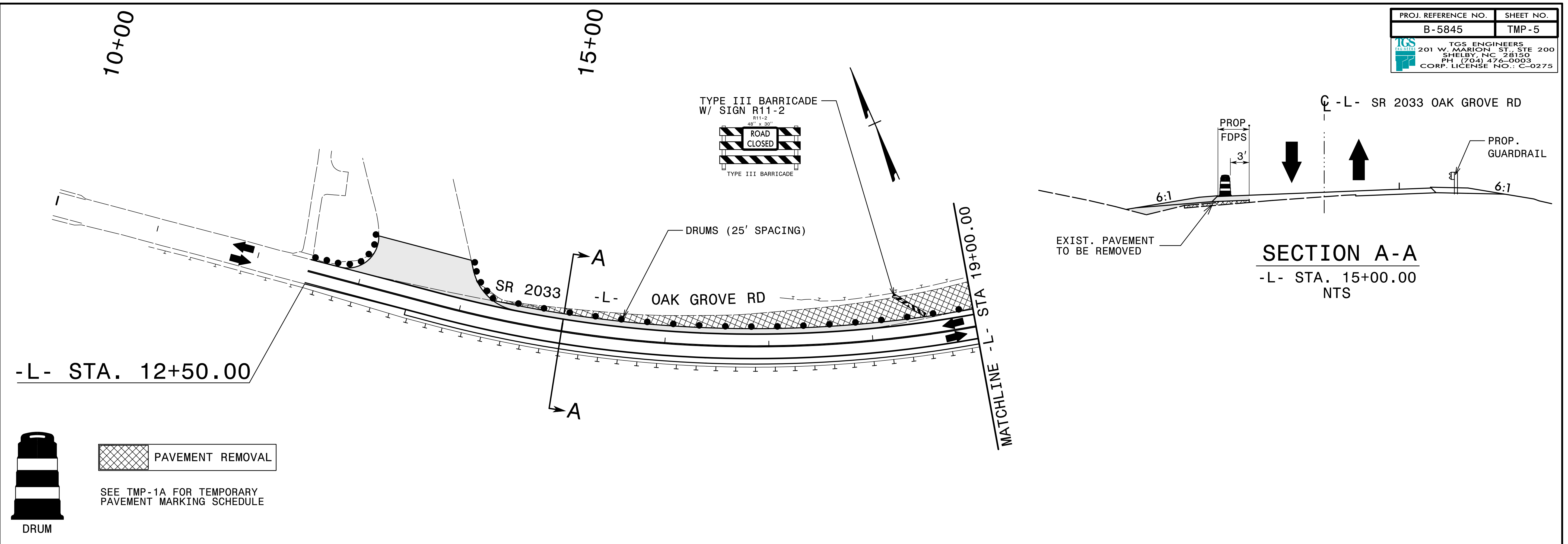
SECTION B-B
-L- STA. 21+35.00
NTS

APPROVED: *Jimmy Terry*
DATE: 6/25/2024

SEAL

TEMPORARY TRAFFIC CONTROL PHASE I DETAIL

7/6/2023
User:smelvin



APPROVED: <i>Jimmy Perry</i> DATE: 6/25/2024			<p style="text-align: center;">TEMPORARY TRAFFIC CONTROL PHASE II DETAIL</p>
<p style="text-align: center;">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

7/6/2023
 User:smelvin