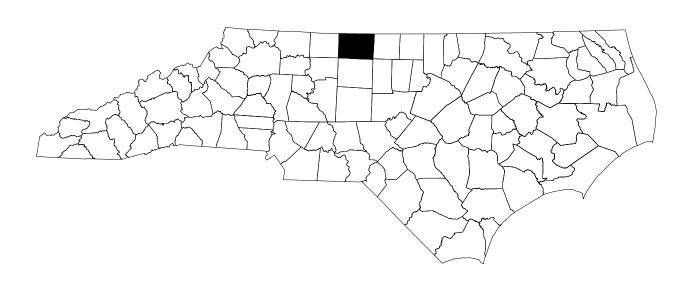
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

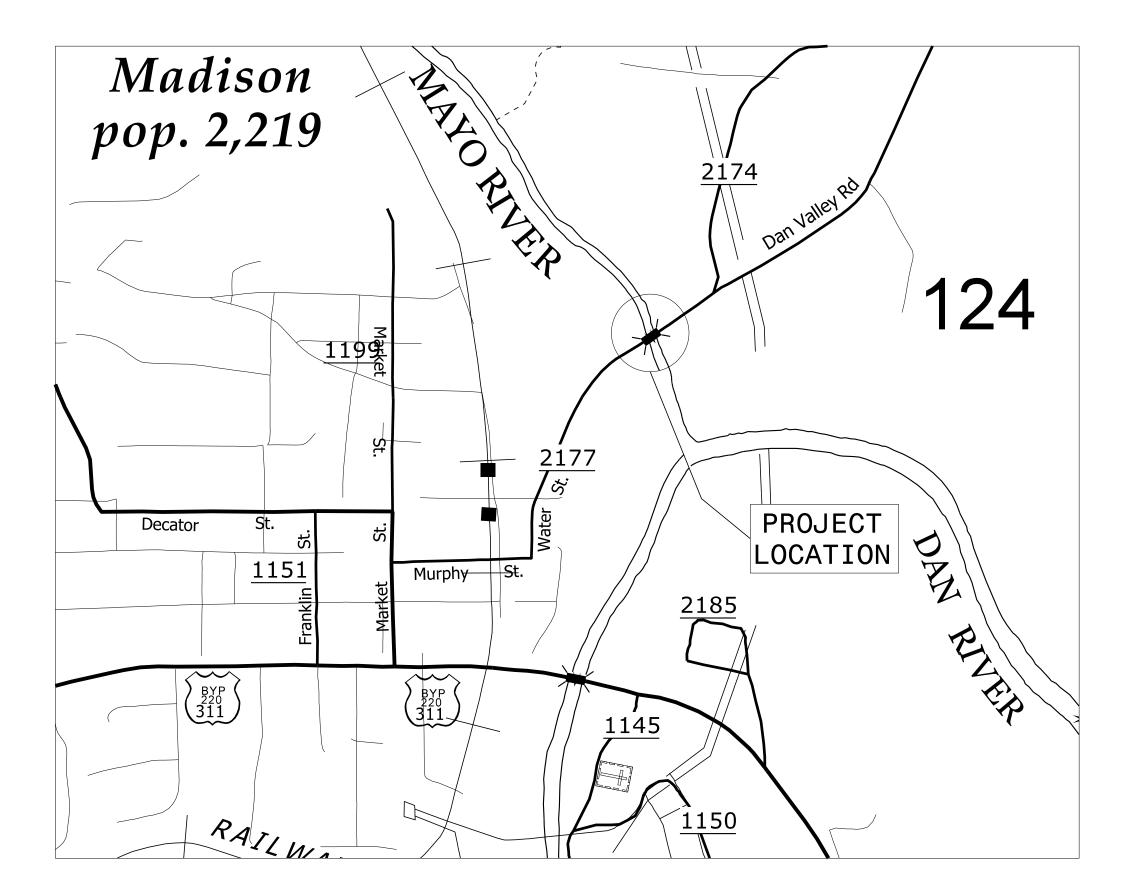
# TRANSPORTATION MANAGEMENT PLAN

# ROCKINGHMAM COUNTY



LOCATION: BRIDGE NO. 780124 OVER MAYO RIVER ON SR 2177 (DAN VALLEY ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



# WORK ZONE SAFETY & MOBILITY "from the MOUNTAINS to the COAST"

PLANS PREPARED BY:
TADEAUS M. KELLY, EIT

JUSTIN D. BEAVER, PE

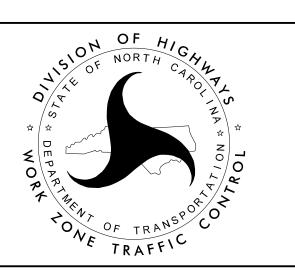
NCDOT CONTACTS:

KENNETH C. THORNEWELL, PE

PROJECT ENGINEER

JUSTIN D. BEAVER, PE

PROJECT DESIGN ENGINEER



# INDEX OF SHEETS

TITLE

TMP-1

TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS

TMP-1A LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND

TMP-2 GENERAL NOTES

TMP-3 TEMPORARY TRAFFIC CONTROL PHASING

TMP-4 TO 7 TEMPORARY TRAFFIC CONTROL PHASE I DETAIL

TMP-8 TO 9 TEMPORARY TRAFFIC CONTROL PHASE II DETAIL

M

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DocuSigned by:

Kenneth C. Thomswell fr., P.C.

1E991EF27373405...

DATE:

01/13/2023

SEAL

SEAL 044089

# 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
1101.03	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
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
	PAVEMENT MARKINGS - SUPERSTREETS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	,
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	
	GUARDRAIL END DELINEATION
	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

PROJ. REFERENCE NO. B-5721 TMP-1A

# **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

WEDGING

### SIGNALS







#### PAVEMENT MARKINGS

——EXISTING LINES ——TEMPORARY LINES

#### TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

DRUM SKINNY DRUM O TUBULAR MARKER

TEMPORARY CRASH CUSHION

LAW ENFORCEMENT

FLASHING ARROW BOARD

FLAGGER

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

P1 PAINT (4") WHITE EDGELINE

P5 PAINT (4") 2 FT- 6 FT/ SP WHITE MINISKIP

P13 PAINT (4") YELLOW DOUBLE CENTER

P61 PAINT (24") WHITE STOPBAR

APPROVED: Kenneth C. Thornewell fr., P.C. DATE: \_\_\_<sup>01/13/2023</sup> DOCUMENT NOT CONSIDERED FINAL

**UNLESS ALL SIGNATURES COMPLETED** 

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
B-5721	TMP-2

#### 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 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.

#### LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) 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.
- B) 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.
- C) 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.

D) 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.

#### PAVEMENT EDGE DROP OFF REQUIREMENTS

E) 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.

F) 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) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

#### TRAFFIC PATTERN ALTERATIONS

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

#### SIGNING

- H) 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.
- I) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- J) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 300 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

#### TRAFFIC CONTROL DEVICES

- K) 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.
- 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 SKINNY DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

#### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
DAN VALLEY RD (SR 2177)	PAINT	NONE
LAUTEN LOOP (SR 2174)	PAINT	NONE

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

#### MISCELLANEOUS

R) 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.

## MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION IN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

#### RECOMMENDED STRATEGIES:

-ONE-LANE, TWO WAY OPERATION (SIGNALIZED)
-ONE-LANE, TWO WAY OPERATION (FLAGGING)
-ROAD CLOSURES



GENERAL NOTES

## **PHASING**

THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING DRIVEWAYS DURING CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS DIRECTED IN THE PHASING NOTES.

ERADICATE EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH MARKINGS SHOWN IN THIS PLAN. REPLACE FADED OR WORN MARKINGS AS NEEDED DURING CONSTRUCTION TO MAINTAIN CLEAR DIRECTION TO THE TRAVELING PUBLIC OR AS DIRECTED BY THE ENGINEER.

PAVEMENT WEDGING/BUILD UP SHALL BE PERFORMED IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE OPEN TRAVEL LANES.

COMPLETE WIDENING AND PAVEMENT BUILD UP SUCH THAT WORK ZONE TRAFFIC PATTERNS, DROP-OFF REQUIREMENTS AND POSITIVE DRAINAGE ARE MAINTAINED.

PHASE I

STEP 1

USING RSD 1101.01, INSTALL WORK ZONE ADVANCE WARNING SIGNS. INSTALL DRUMS AND SHOULDER CLOSURE SIGN AS SHOWN ON TMP-4.

STEP 2

AWAY FROM TRAFFIC, CONSTRUCT AS MUCH OF THE PROPOSED STRUCTURE AND ROADWAY AS POSSIBLE, INCLUDING PROPOSED DRIVEWAY.

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF PHASE I STEP 3 THRU PHASE II STEP 2, INCLUDING DRAINAGE WORK, IN 21 CONSECUTIVE CALENDAR DAYS AND COORDINATE WITH THE ENGINEER TO AVOID AND/OR MINIMIZE IMPACTS TO LOCAL TRAFFIC. SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES.

STEP 3

USING TMP-6 AND RSD 1101.02 SHEET 14 OF 14, INSTALL LANE CLOSURE ALONG THE WESTBOUND LANE OF DAN VALLEY RD (SR 2177) ADJACENT TO THE CONSTRUCTION AREA TO CHANNELIZE TRAFFIC INTO SINGLE LANE ON EXISTING ALIGNMENT. INSTALL DRIVEWAY SIGNALS ACCORDING TO TMP-7.

INSTALL BARRICADES ACROSS WIDTH OF ROADWAY ON PROPOSED ALIGNMENT AS SHOWN ON TMP-6.

USING TMP-7, INSTALL DETOUR SIGNAGE AND PLACE BARRICADES ACROSS WIDTH OF ROADWAY CLOSING LAUTEN LOOP (SR 2174) TO TRAFFIC.

STEP 4

CONTINUE CONSTRUCTING BRIDGE AND GRADING ROADWAY ON PROPOSED ALIGNMENT.

WHILE MAINTAINING EXISTING SINGLE LANE TRAFFIC PATTERN, BUILD UP PAVEMENT LAYER FOR INSIDE LANE OF PROPOSED ALIGNMENT UP TO BUT NOT INCLUDING FINAL SURFACE LAYER AS SHOWN ON TMP-6. CONTINUE WEDGING PAVEMENT AS SHOWN ON TMP-7 TO MAINTAIN POSITIVE DRAINAGE.

PROJ. REFERENCE NO.	SHEET NO.
B-5721	TMP-3

PHASE II

STEP 1

IN A CONTINUOUS OPERATION, RELOCATE CHANNELIZING DEVICES, SIGNAGE, DRIVEWAY SIGNALS AND BARRICADES AS SHOWN ON TMP-8 AND TMP-9.

INSTALL PERMANENT GUARDRAIL AND END UNITS ON BOTH SIDES OF PROPOSED ALIGNMENT.

SHIFT TRAFFIC INTO ONE LANE TWO WAY TEMPORARY TRAFFIC PATTERN ON PROPOSED ALIGNMENT AS SHOWN ON TMP-8 AND TMP-9.

STEP 2

CONTINUE WEDGING REMAINING AREA OF PROPOSED ALIGNMENT UP TO BUT NOT INCLUDING FINAL SURFACE LAYER ACCORDING TO TMP-8.

INSTALL TEMPORARY MARKINGS AND OPEN TRAFFIC TO TWO LANE PATTERN ON DAN VALLEY RD (SR 2177). REMOVE DETOUR SIGNAGE AND ROAD CLOSURE BARRICADES THEN OPEN LAUTEN LOOP (SR 2174) TO TRAFFIC.

STEP 3

USING TMP-9, COMPLETE BUILD UP OF DRIVEWAYS, USING FLAGGERS AS NECESSARY.

BEGIN REMOVING EXISTING STRUCTURE AND SLOPE PROTECTION. UTILIZE RSD 1101.02 AND FLAGGERS AS NECESSARY WHEN HAULING DEBRIS AWAY FROM SITE.

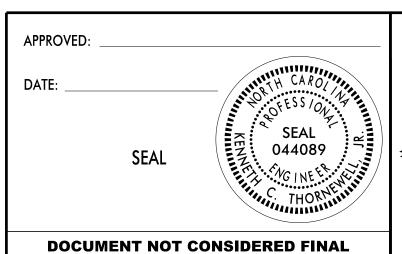
COMPLETE DRIVEWAY TIE-INS USING FLAGGERS AS NECESSARY.

STEP 4

USING RSD 1101.02 SHEET 1 OF 14, BEGIN PAVING FINAL SURFACE LAYER. UPON COMPLETION OF PAVING OPERATIONS, INSTALL PERMANENT PAVEMENT MARKINGS FOR PROPOSED ALIGNMENT ACCORDING TO FINAL PAVEMENT MARKING PLAN.

STEP 5

REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.



**UNLESS ALL SIGNATURES COMPLETED** 



PHASING

PROJ. REFERENCE NO. TMP-4 TRAFFIC DRUMS
@ 45' SPACING SECTION A-A 19+00 RIGHT SHOULDER CLOSED W21–5A 48" X 48" NOTE: MAINTAIN DRIVEWAY ACCESS AT ALL TIMES. APPROVED: Kenneth C. Thornewell fr., P.C. DATE: \_01/13/2023 PHASE I DETAIL

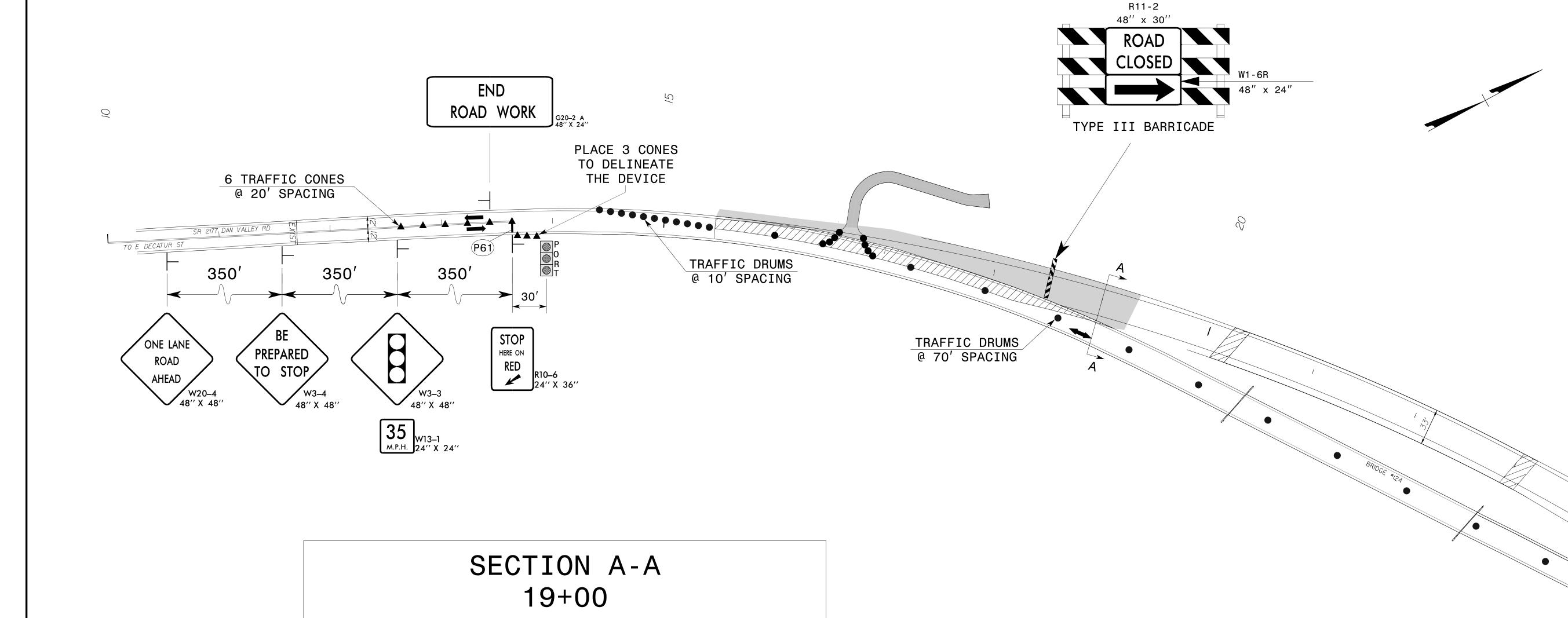
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJ. REFERENCE NO. TMP-5 B-5721 TRAFFIC DRUMS
@ 45' SPACING SECTION B-B 28+00 APPROVED: Kenneth C. Thornewell Jr., P.E. DATE: 01/13/2023

PHASE I DETAIL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJ. REFERENCE NO. SHEET NO. B-5721 TMP-6

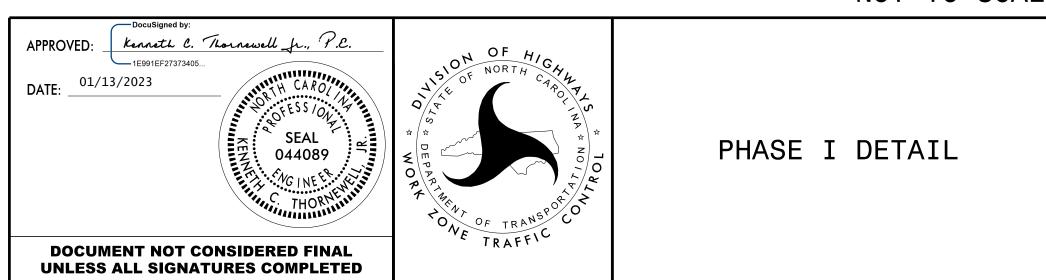


WORK AREA

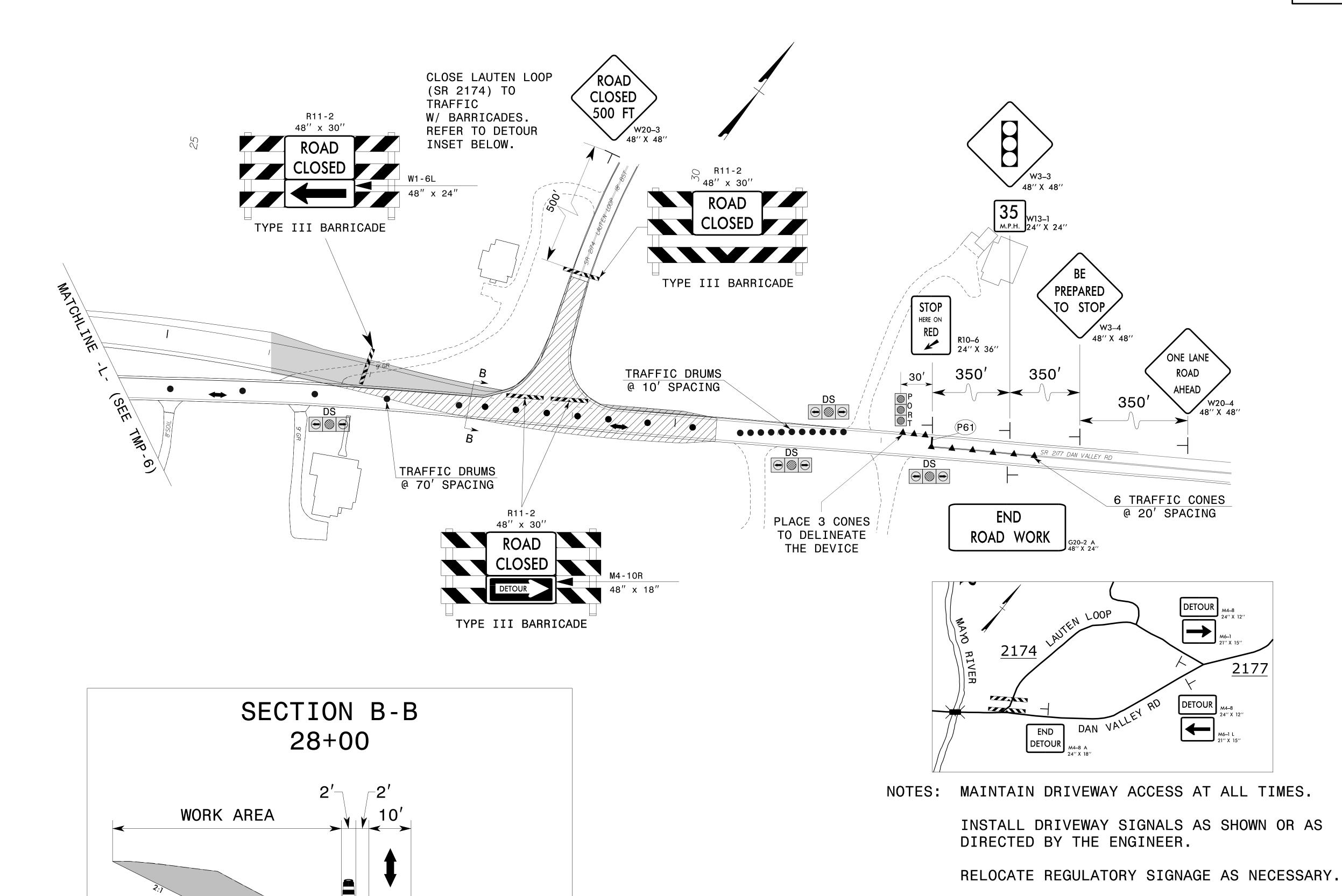
NOTES: MAINTAIN DRIVEWAY ACCESS AT ALL TIMES.

NOT TO SCALE

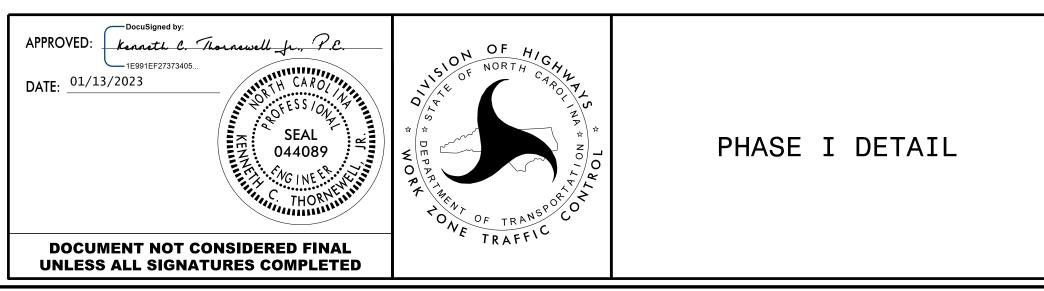
MATCHLINE



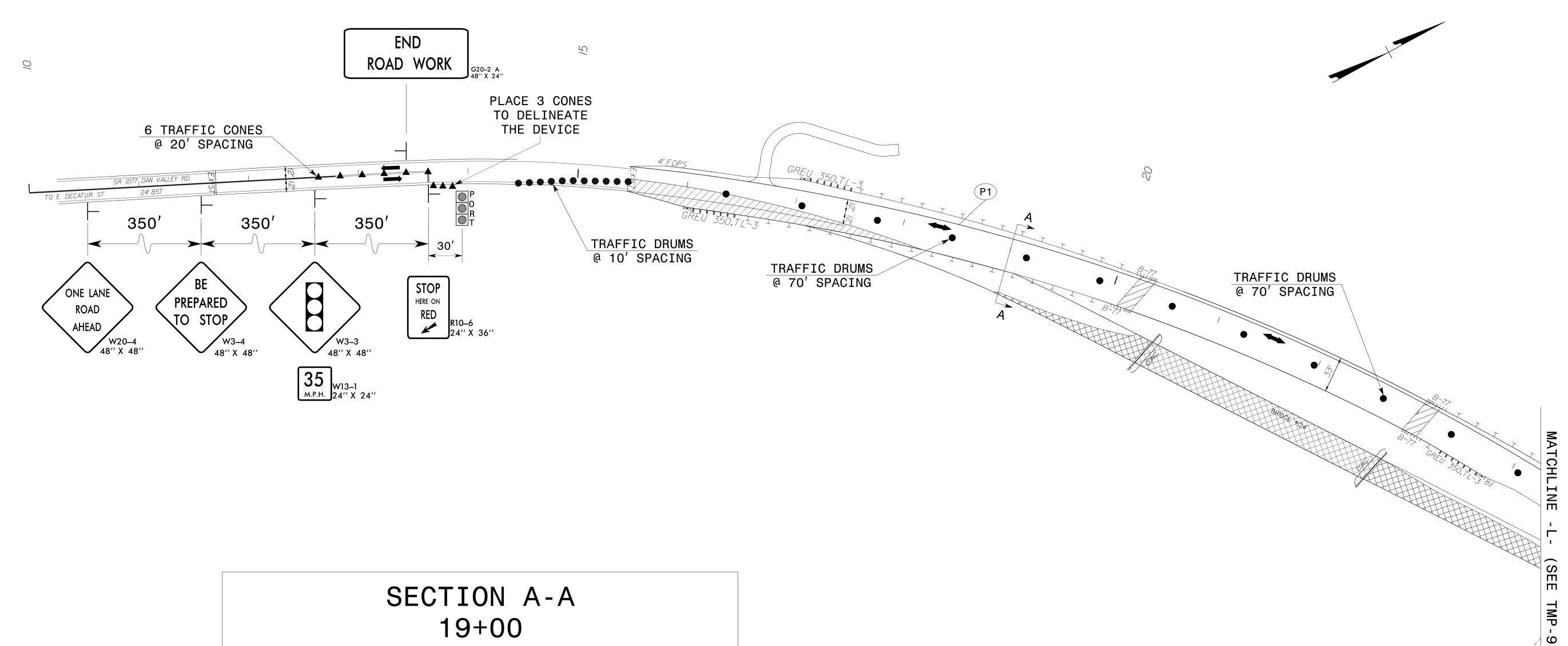
P:\TIPProjects-B\B572I\Traffic\TrafficControl\TCP\B-572L\_TMP\_6\_P User:tmkellyl

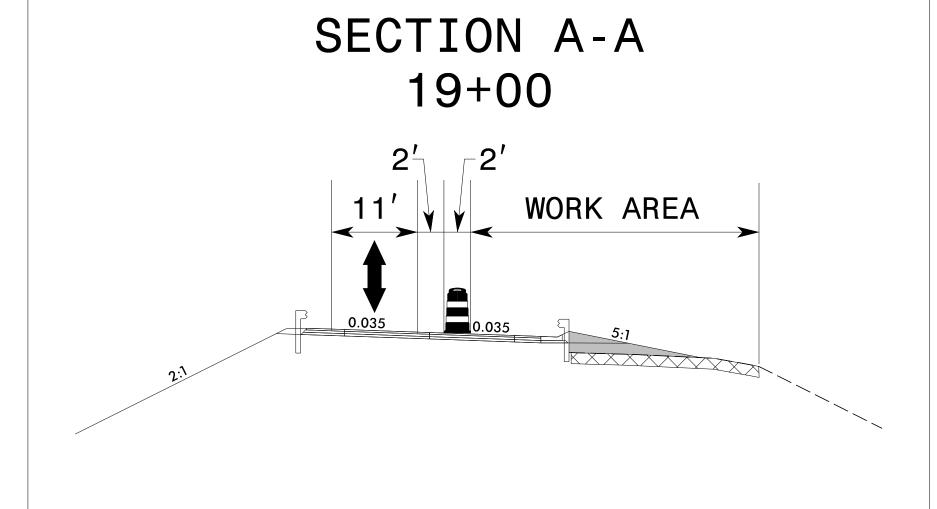


NOT TO SCALE



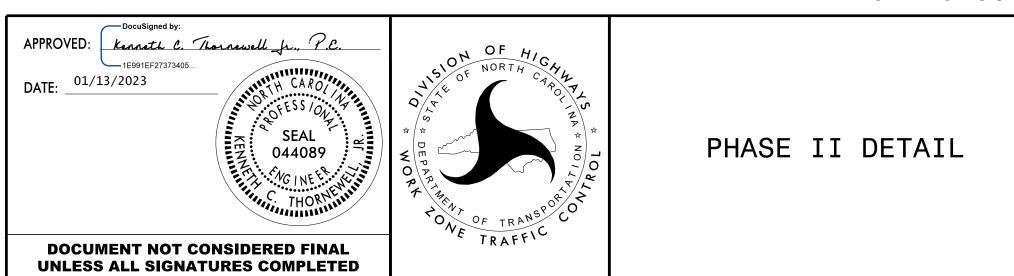
PROJ. REFERENCE NO.	SHEET NO.
B-5721	TMP-8



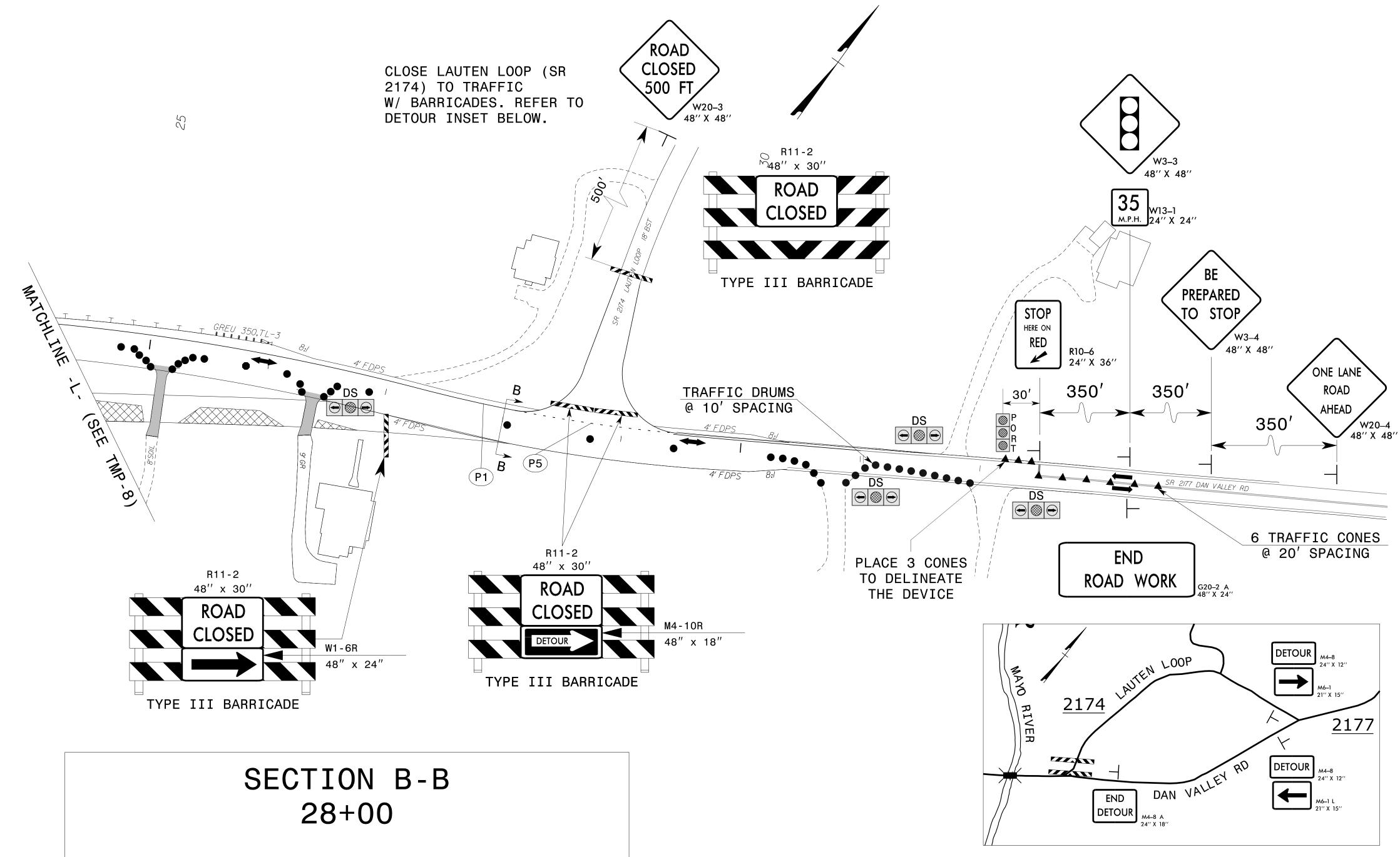


NOTES: MAINTAIN DRIVEWAY ACCESS AT ALL TIMES.

NOT TO SCALE



PROJ. REFERENCE NO. B-5721 TMP-9



WORK AREA

NOTES: MAINTAIN DRIVEWAY ACCESS AT ALL TIMES.

INSTALL DRIVEWAY SIGNALS AS SHOWN OR AS DIRECTED BY THE ENGINEER.

RELOCATE REGULATORY SIGNAGE AS NECESSARY.

NOT TO SCALE

