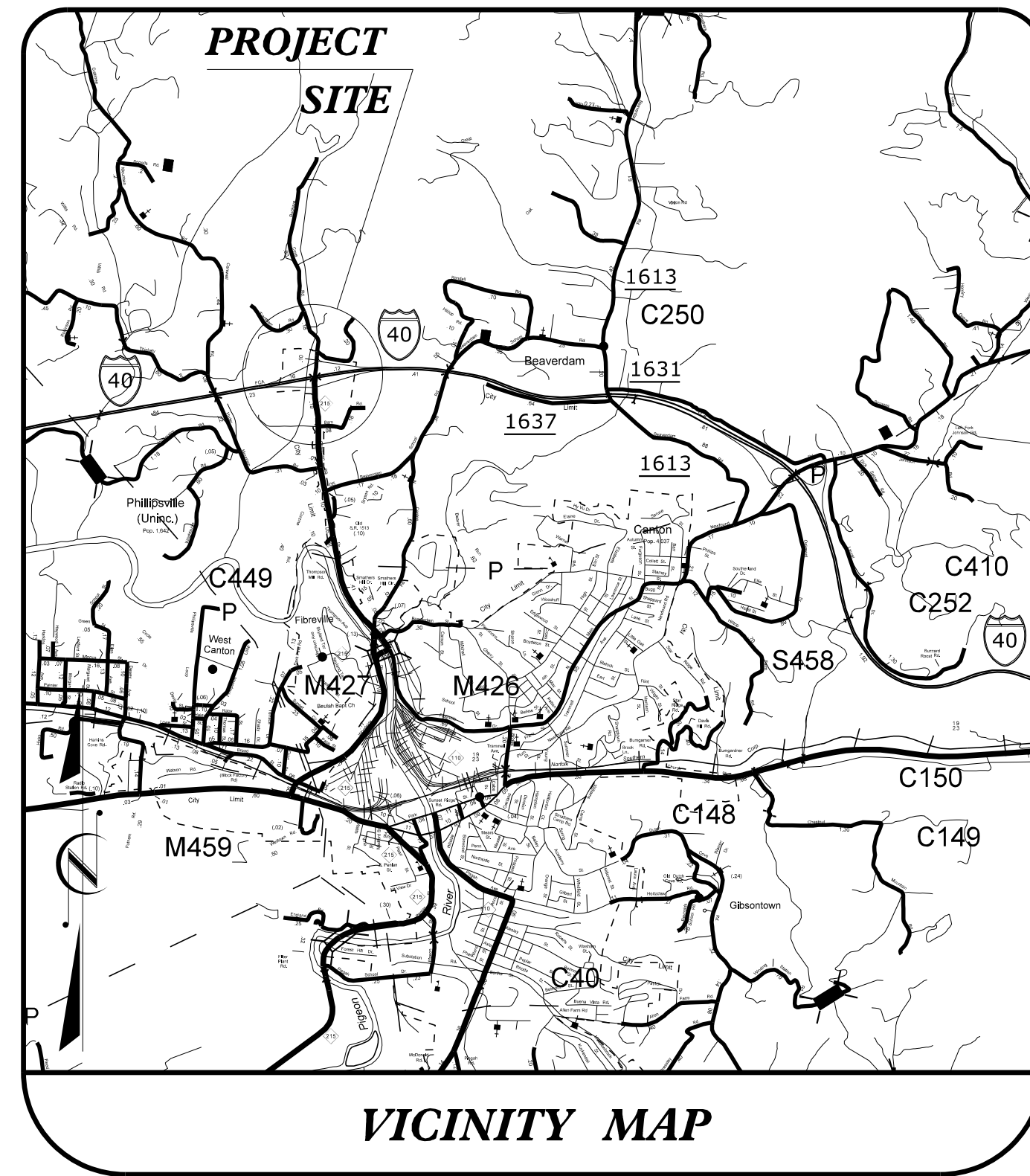
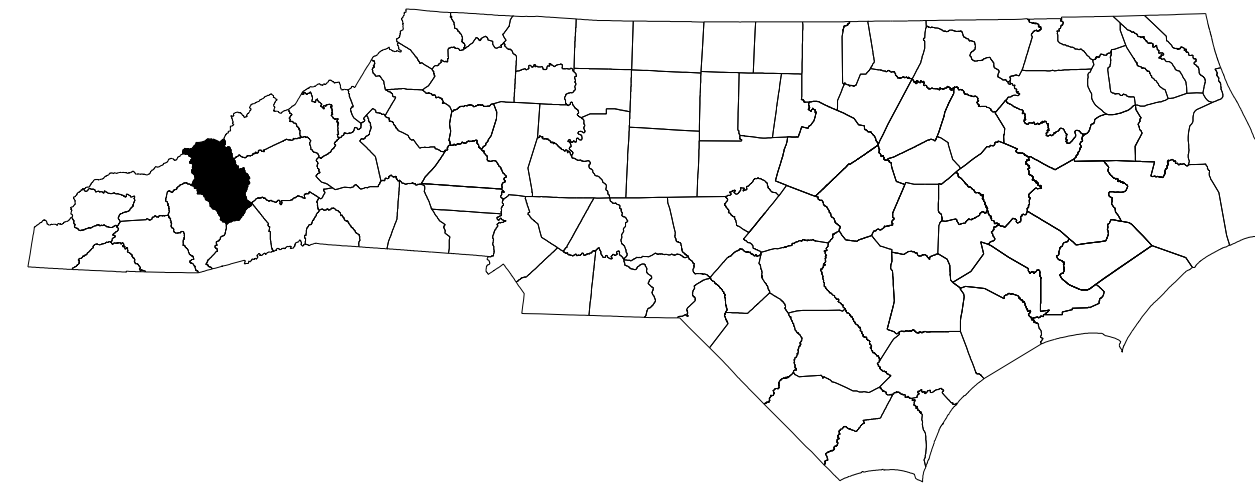


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**HAYWOOD COUNTY**



**LOCATION: REPLACE BRIDGE NO. 243 OVER NC 215  
(CHAMPION DRIVE)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES**

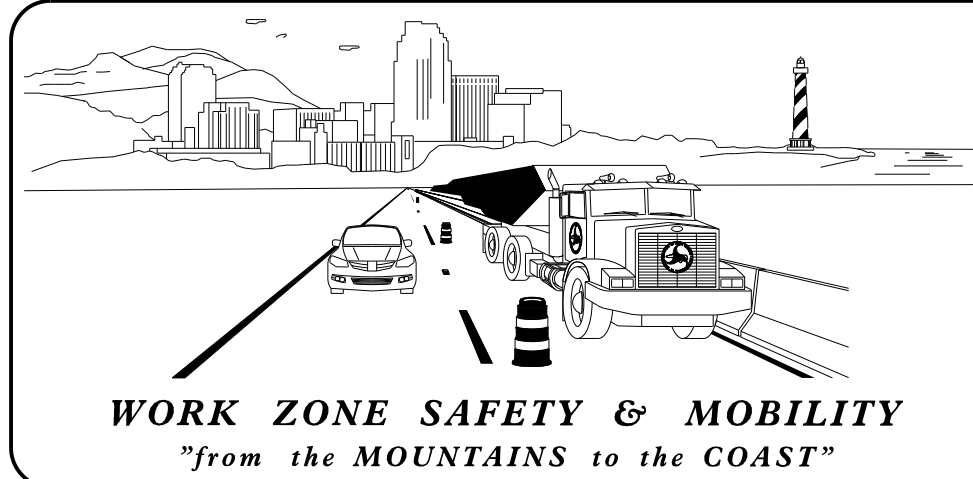
SHEET NO.	TITLE
TMP-01	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-01A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-01B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES & GENERAL NOTES)
TMP-02 THRU 02B	OFFSITE DETOURS
TMP-02C	SIGN AND DEVICE LEGEND
TMP-02D	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-02E	TEMPORARY SHORING DATA
TMP-02F	DYNAMIC ZIPPER MERGE SYSTEM LAYOUT
TMP-03	TEMPORARY TRAFFIC CONTROL PHASING
TMP-04 THRU-07	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-08 THRU 11	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-12 THRU 15	TEMPORARY TRAFFIC CONTROL PHASE III DETAIL
TMP-16 THRU 19	TEMPORARY TRAFFIC CONTROL PHASE IV DETAIL
TMP-20 THRU 29	TEMPORARY CUT SECTIONS

SHEET NO.  
TMP-01

**HB-0004**

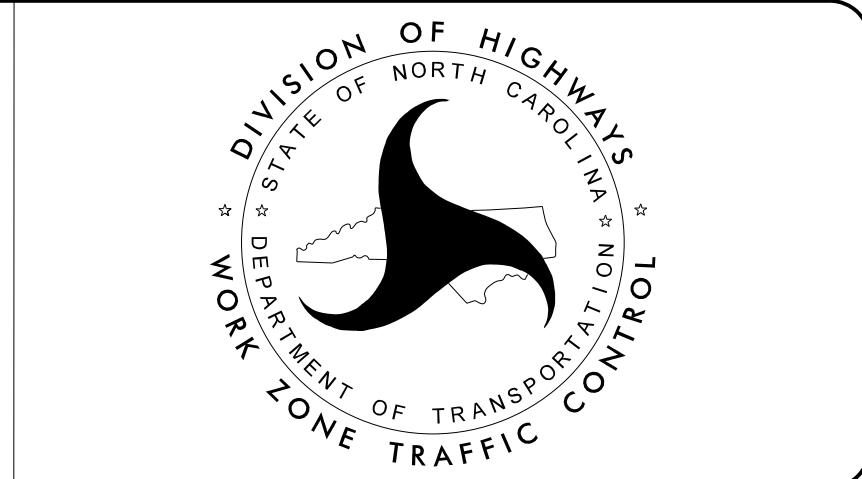
**TIP PROJECT:**

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User: AHayes



**PLANS PREPARED BY:**  
JONATHAN HEFNER, P.E.  
D. ALLEN HAYES, E.I.

**NCDOT CONTACTS:**  
ZACH SHULER  
PROJECT ENGINEER  
PROJECT DESIGN ENGINEER



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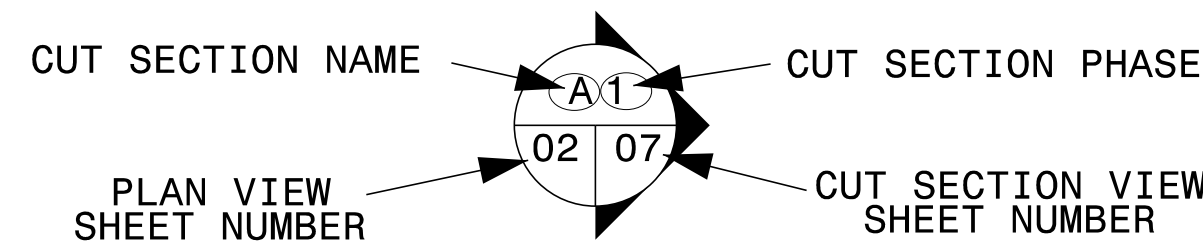
APPROVED: *Laurence H. Green*  
DATE: 4/11/2024  
SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
LAURENCE H. GREEN  
028137

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

# 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
1101.05	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 RAMP
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
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
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (EXCAVATION)(LOCATION PURPOSES ONLY)
- TEMP. SHORING (FILL)(LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- WEDGING

## TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- PEDESTRIAN BARRICADE
- DRUM
- TEMPORARY CRASH CUSHION
- CHANGEABLE MESSAGE SIGN

## TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN

## PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

## PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS
- EXISTING PAVEMENT MARKING

## TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION	PAY ITEM
P1	WHITE SOLID EDGE LINE	PAINT
P2	WHITE SOLID LANE LINE	PAINT
P5	2 FT. - 6 FT./SP WHITE MINISKIP	PAINT
P10	YELLOW EDGELINE	PAINT
P13	YELLOW DOUBLE CENTER	PAINT
P14	2 FT. - 6 FT./SP YELLOW MINISKIP	PAINT
P40	WHITE GORELINE	PAINT
P52	YELLOW DIAGONAL	PAINT
P61	WHITE STOPBAR	PAINT
P79	MERGE ARROW	PAINT PAVEMENT MARKING SYMBOLS
Z21	WHITE SOLID EDGE LINE	WORK ZONE PERFORMANCE PAVEMENT MARKING (6")
Z22	10 FT. - 30 FT./SP WHITE SKIP	WORK ZONE PERFORMANCE PAVEMENT MARKING (6")
Z23	3 FT. - 9 FT./SP WHITE MINISKIP	WORK ZONE PERFORMANCE PAVEMENT MARKING (6")
Z31	YELLOW SOLID LINE	WORK ZONE PERFORMANCE PAVEMENT MARKING (6")
Z50	WHITE GORELINE	WORK ZONE PERFORMANCE PAVEMENT MARKING (12")
MH	YELLOW & YELLOW	TEMPORARY RAISED MARKER
MI	CRYSTAL & RED	TEMPORARY RAISED MARKER

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
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APPROVED:

DATE: 6/4/2024

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LIST OF APPLICABLE  
 ROADWAY STANDARD  
 DRAWINGS, AND LEGEND

# 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.

## TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. -L- (I-40) AND RAMPS	6:00 A.M. - 7:00 P.M. MONDAY THRU THURSDAY 6:00 A.M. - 9:00 P.M. FRIDAY 9:00 A.M. - 9:00 P.M. SATURDAY THRU SUNDAY

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

ROAD NAME
1. -L- (I-40) AND RAMPS

## HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 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 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

9. FOR LEAF SEASON, FROM OCTOBER 6TH TO NOVEMBER 7TH, BETWEEN THE HOURS OF 6:00 A.M AND 7:00 P.M.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
1. ALL -Y- LINES	7:00 A.M. - 9:00 A.M.	TRAFFIC OPERATIONS

D) DO NOT CONDUCT SINGLE VEHICLE HAULING AS FOLLOWS; INGRESS AND EGRESS FROM RAMPS WILL/WILL NOT BE ALLOWED:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. I-40	6:00 A.M. - 7:00 P.M. MONDAY THRU THURSDAY 6:00 A.M. - 9:00 P.M. FRIDAY 9:00 A.M. - 9:00 P.M. SATURDAY THRU SUNDAY

E) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS; INGRESS AND EGRESS FROM RAMPS WILL/WILL NOT BE ALLOWED:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. I-40	6:00 A.M. - 7:00 P.M. MONDAY THRU THURSDAY 6:00 A.M. - 9:00 P.M. FRIDAY 9:00 A.M. - 9:00 P.M. SATURDAY THRU SUNDAY

F) 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

- 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.
- 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.
- 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.

J) 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.

K) 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.

L) DO NOT INSTALL MORE THAN 1 MI OF LANE CLOSURE ON I-40 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE. THE CONTRACTOR SHALL COORDINATE WITH ADJACENT PROJECTS PRIOR TO SETTING UP ANY LANE CLOSURES ON I-40.

M) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON I-40.

## PAVEMENT EDGE DROP OFF REQUIREMENTS

N) 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.

O) 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

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

## SIGNING

Q) 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.

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

AND

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

S) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

AND

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

U) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500 FT/MI IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

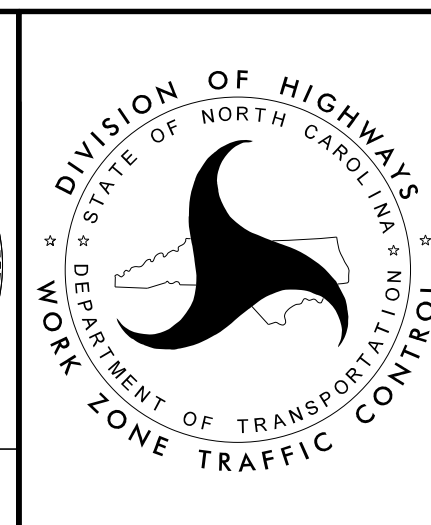
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APPROVED: *Lawrence H. Green*  
DATE: 4/11/2024

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TRANSPORTATION OPERATIONS  
PLAN: (MANAGEMENT  
STRATEGIES AND GENERAL  
NOTES)

## GENERAL NOTES (continued)

### TRAFFIC BARRIER

V) 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.

W) 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

X) 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.

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

Z) 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

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

ROAD NAME	MARKING	MARKER
1. ALL ROADS	PAINT	TEMPORARY RAISED

BB) 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.

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

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

### MISCELLANEOUS

EE) 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) 200 FT AND 200 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

FF) ALL STATIONS ARE CONSIDERED +/- UNLESS OTHERWISE SHOWN ON THE PLANS.

GG) WHEN CONSTRUCTING DRAINAGE STRUCTURES ADJACENT TO TRAFFIC, INSTALL TEMPORARY STEEL PLATES, AS DIRECTED BY THE ENGINEER. THE CONTRACTOR MAY WORK EACH LOCATION INDEPENDENTLY OR CONCURRENTLY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WORK IN A CONTINUOUS MANNER TO PERFORM THE WORK IN THE FOLLOWING SEQUENCE, STEPS '1' THRU '5'.

1: CLOSE THE APPROPRIATE TRAVEL LANE TO TRAFFIC USING ROADWAY STANDARD DRAWING NO. 1101.02.

2: CONSTRUCT PROPOSED STRUCTURE OR INSTALL PRE-CAST DRAINAGE STRUCTURE AS SHOWN IN THE CONSTRUCTION PLANS AND COVER WITH STEEL PLATES TO PROTECT STRUCTURE DURING CURING.

3: OPEN TRAVEL LANE TO EXISTING TRAFFIC PATTERN BY THE END OF EACH WORK PERIOD.

4: WHEN PROPERLY CURED, CLOSE THE APPROPRIATE TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02. BACKFILL & PAVE, IF REQUIRED, UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT (SEE CONSTRUCTION PLANS).

5: OPEN TRAVEL LANE TO EXISTING TRAFFIC PATTERN BY THE END OF THE WORK PERIOD.

### MANAGEMENT STRATEGIES

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

#### RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:  
 FULL ROADWAY CLOSURES  
 LANE SHIFTS OR CLOSURES  
 SHOULDER CLOSURES

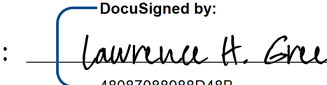
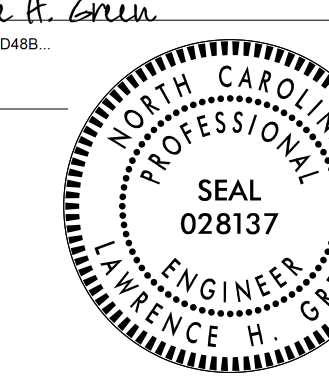
ONE-LANE, TWO WAY OPERATION (FLAGGING)  
 WORK HOUR RESTRICTIONS FOR PEAK TRAVEL  
 OFF-SITE DETOURS

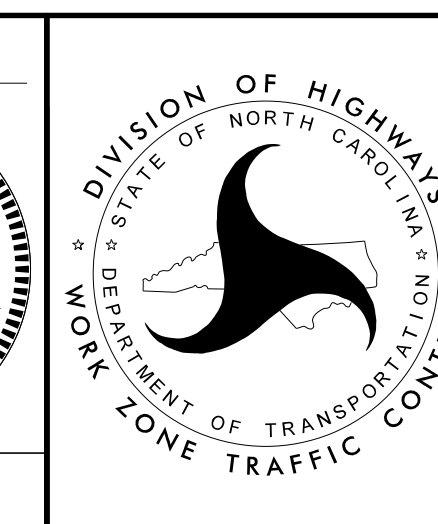
WORK ZONE SAFETY & MOBILITY STRATEGIES:  
 SEQUENTIAL WARNING LIGHTS  
 WORK ZONE PERFORMANCE PAVEMENT MARKINGS

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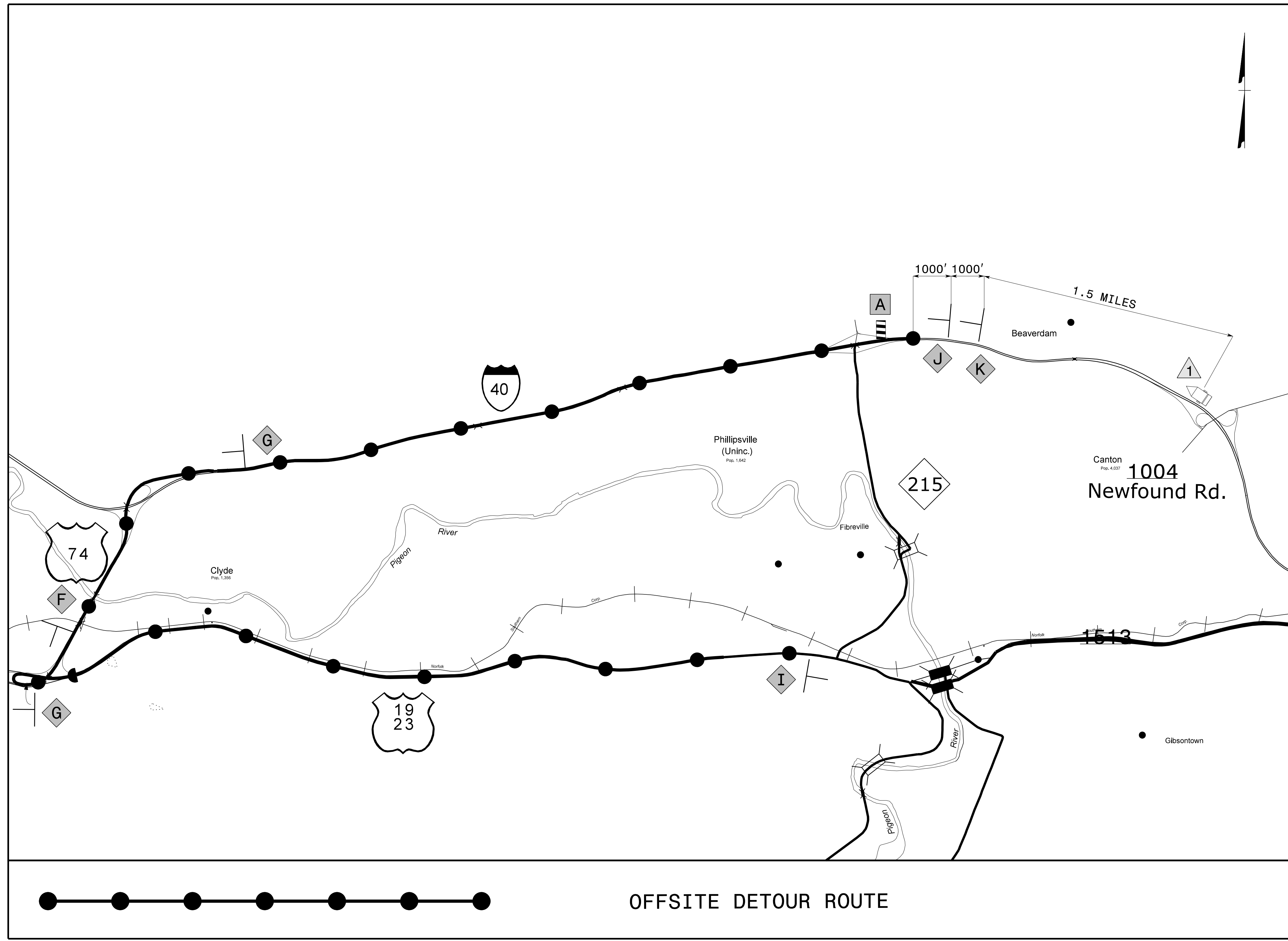
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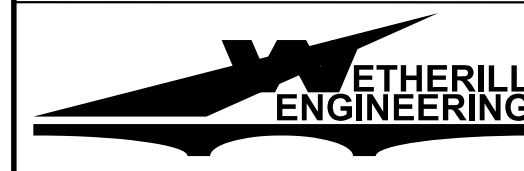


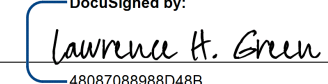
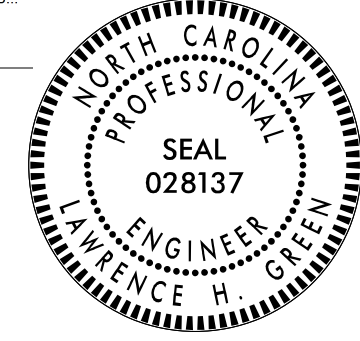
**TRANSPORTATION OPERATIONS  
 PLAN: (MANAGEMENT  
 STRATEGIES AND GENERAL  
 NOTES)**



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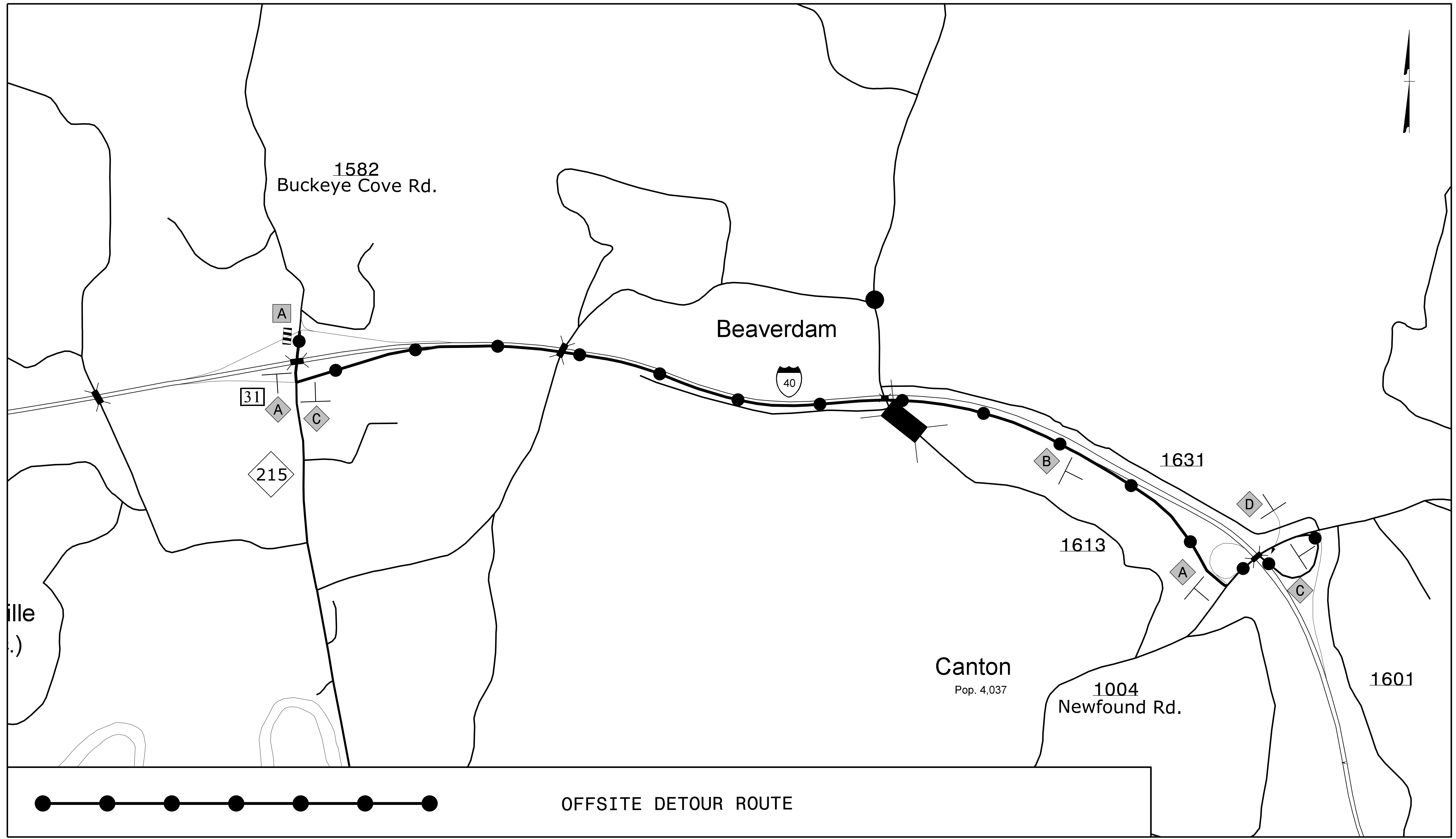
**NOTES:**  
 1) REFER TO SHEET TMP-02C FOR SIGN AND DEVICE LEGEND.

  
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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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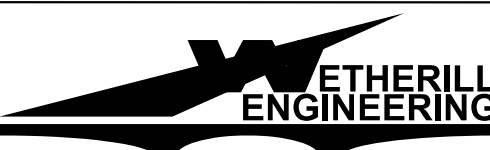
-RPA- OFFSITE DETOUR



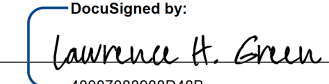
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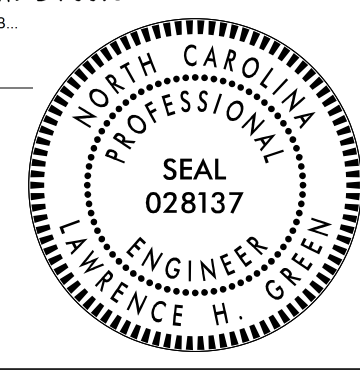
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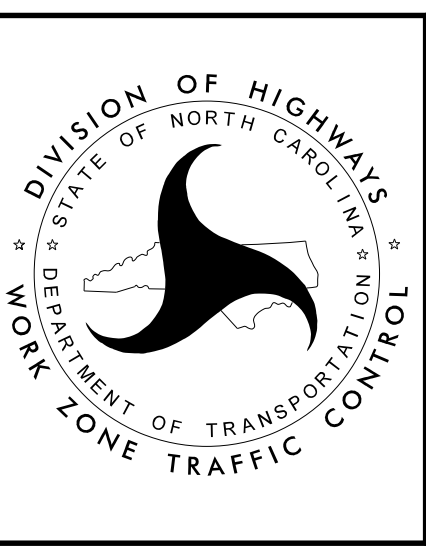

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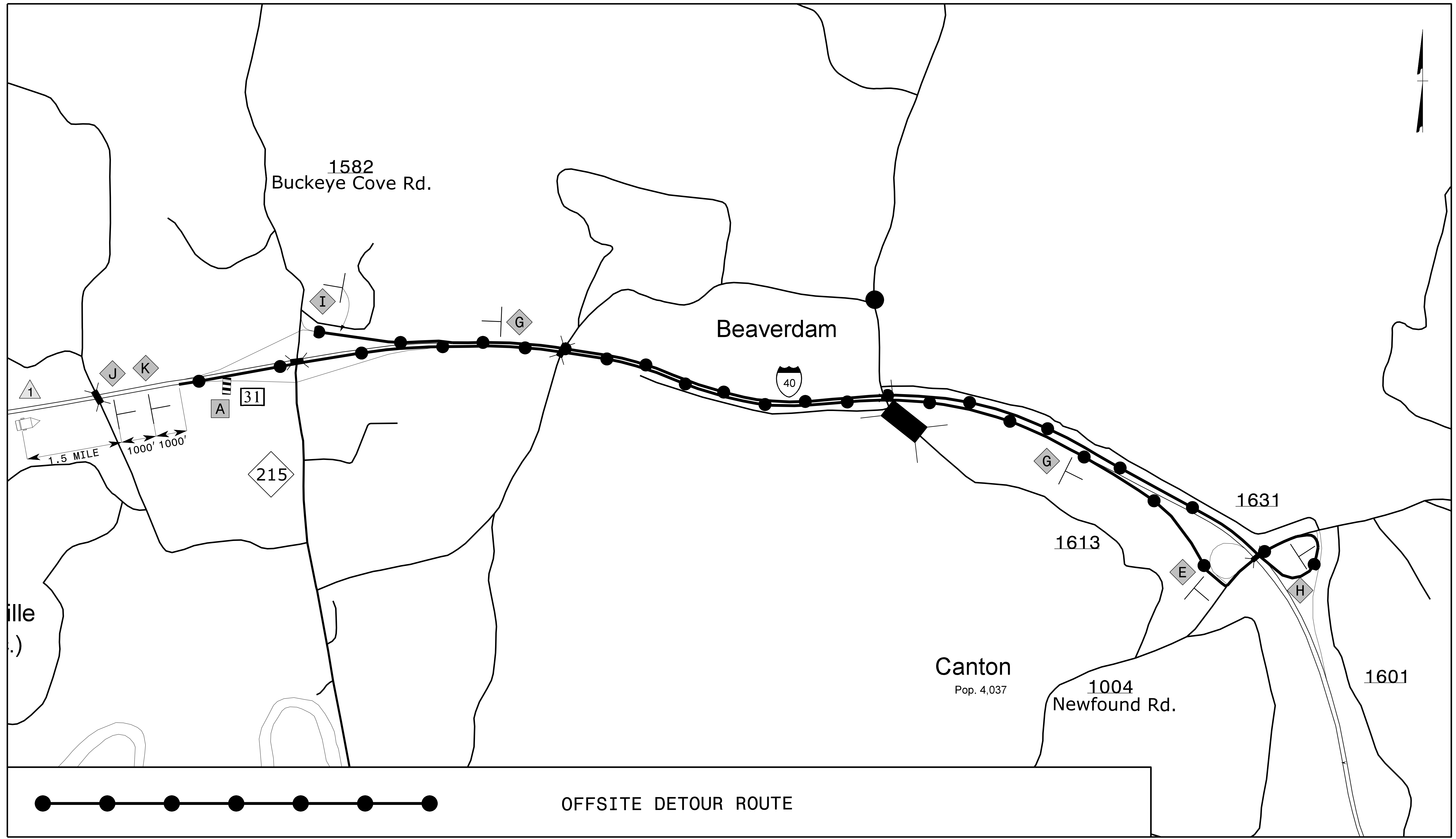
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**-RPB- OFFSITE DETOUR**



NOTES:  
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**-RPC- OFFSITE DETOUR**

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**A** R11-2 48" X 30"  
ROAD CLOSED  
M4-10L 48" X 18"  
DETOUR  
TYPE III BARRICADE

**B** DETOUR WEST  
M4-8 24" X 12"  
M3-4 24" X 12"  
INTERSTATE 40  
M1-1  
M6-1 L 21" X 15"

**C** DETOUR WEST  
M4-8 24" X 12"  
M3-4 24" X 12"  
INTERSTATE 40  
M1-1  
M6-1 21" X 15"

**D** END DETOUR WEST  
M4-8 A 24" X 18"  
M3-4 24" X 12"  
INTERSTATE 40  
M1-1

**E** DETOUR 215  
M4-8 24" X 12"  
M1-5  
M6-1 L 21" X 15"

**F** DETOUR 215  
M4-8 24" X 12"  
M1-5  
M6-3 21" X 15"

**G** DETOUR 215  
M4-8 24" X 12"  
M1-5  
M6-2 21" X 15"

**H** DETOUR 215  
M4-8 24" X 12"  
M1-5  
M6-1 21" X 15"

**I** END DETOUR 215  
M4-8 A 24" X 18"  
M1-5

**J** RAMP CLOSED 1000 FT  
W20-3 48" X 48"

**K** RAMP CLOSED AHEAD  
W20-3 48" X 48"

MESSAGE NO. 1	MESSAGE NO. 2
EXIT 31 CLOSED AHEAD	FOLLOW DETOUR NC 215

CHANGEABLE MESSAGE SIGN  
1

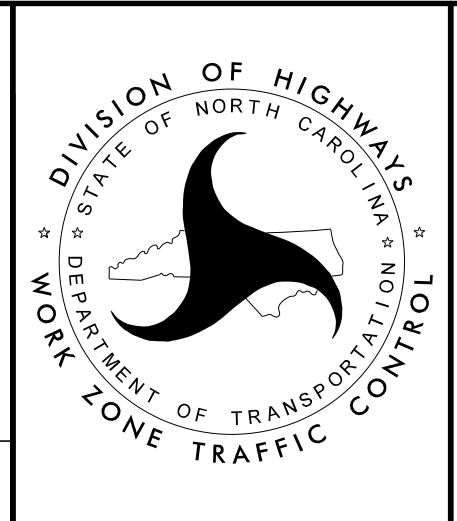
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**X BARRICADES**  
- WITH MOUNTED SIGNING

**X SIGNING**  
- PORTABLE MOUNTED

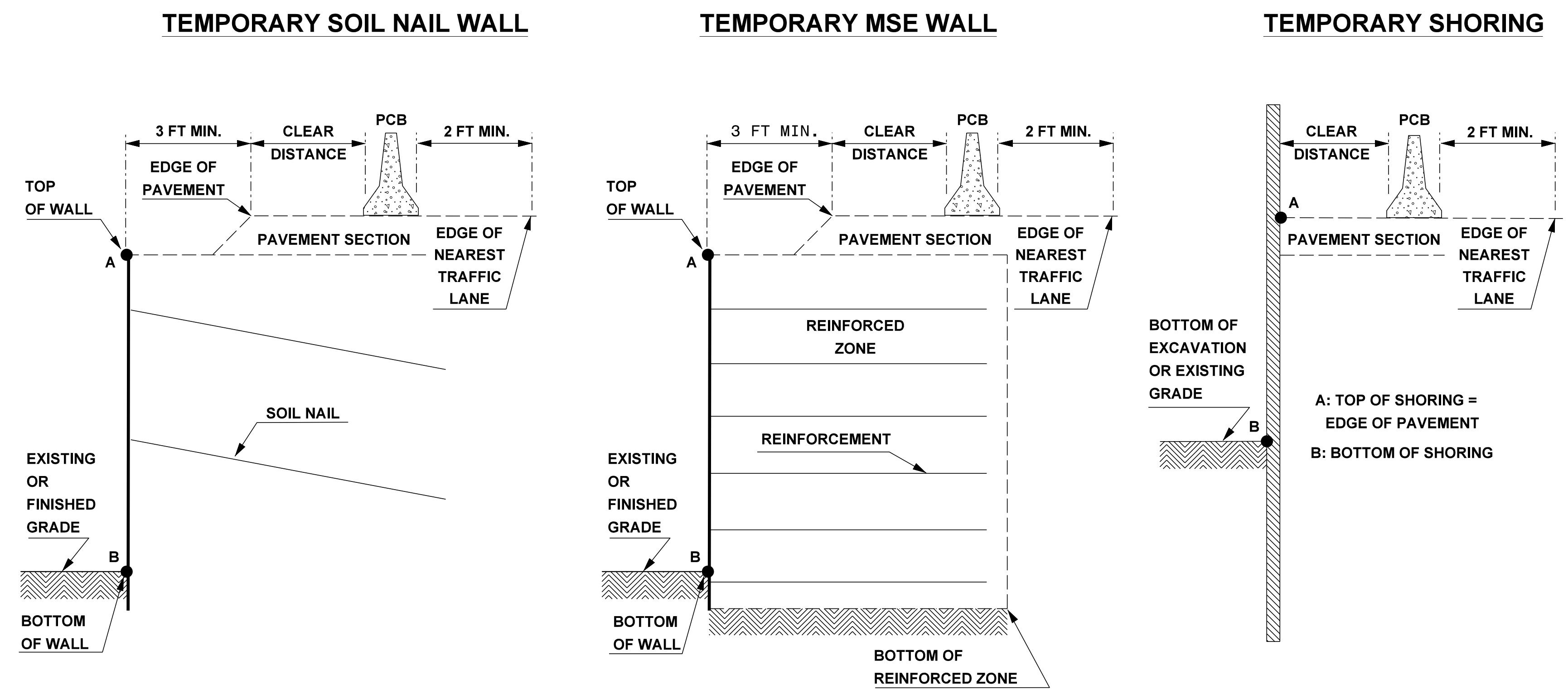
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**SIGN AND DEVICE LEGEND**





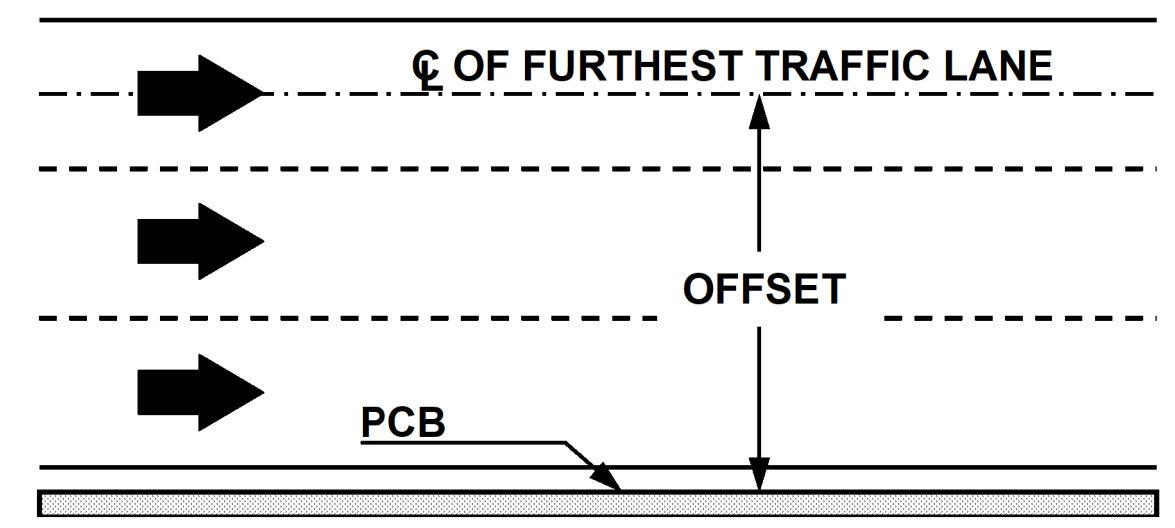
NOTE: WALL OR SHORING HEIGHT = A-B

**FIGURE A**

**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**

**NOTES**

- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- REFER TO THE "TEMPORARY SHORING" STANDARD PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- PCB IS REQUIRED IF TEMPORARY SHORING/WALL 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 FOR APPLICABLE PAVEMENT DESIGN).
- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING/WALLS EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 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 OR APPROVED BY THE ENGINEER.
- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THIS MINIMUM REQUIRED DISTANCE IS NOT AVAILABLE, CONTACT THE ENGINEER.
- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS.

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**DIVISION OF HIGHWAYS**  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

**PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS**

PROJ. REFERENCE NO.	SHEET NO.
HB-0004	TMP-02E

Shoring Location Nos. 1 and 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 253+90 +/- -L- 5' RT, TO STATION 255+40 +/- -L- 4.8' RT AND FROM STATION 255+05 +/- -L- 4.1' RT, TO STATION 255+84 +/- -L- 3.3' RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 PCF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0\_PSF  
 GROUNDWATER ELEVATION = 2,655 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 253+90 +/- -L- 5' RT, TO STATION 255+40 +/- -L- 4.8' RT AND FROM STATION 255+05 +/- -L- 4.1' RT, TO STATION 255+84 +/- -L- 3.3' RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

Shoring Location Nos 3 and 4

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

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 253+90 +/- -L-2.1' RT, TO STATION 255+40 +/- -L-1.9' RT AND FROM STATION Sta. 255+06 +/- -L-2' RT, TO STATION 255+84 +/- -L-2' RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 PCF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 PSF  
 GROUNDWATER ELEVATION = 2,655 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 253+90 +/- -L-2.1' RT, TO STATION 255+40 +/- -L-1.9' RT AND FROM STATION Sta. 255+06 +/- -L-2' RT, TO STATION 255+84 +/- -L-2' RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR\*S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 253+90 +/- -L-2.1' RT, TO STATION 255+40 +/- -L-1.9' RT AND FROM STATION Sta. 255+06 +/- -L-2' RT, TO STATION 255+84 +/- -L-2' RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR RETAINING WALLS AND BRIDGE APPROACH FILLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS AND BRIDGE APPROACH FILLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

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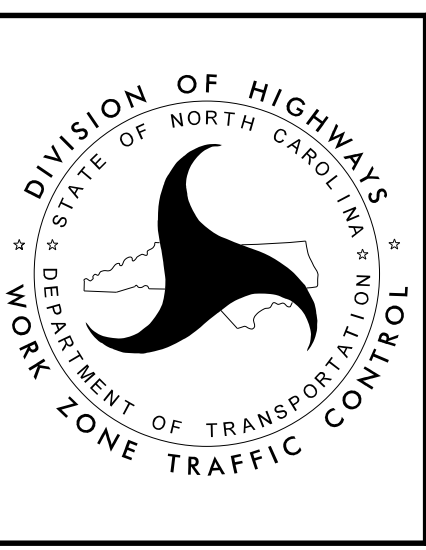
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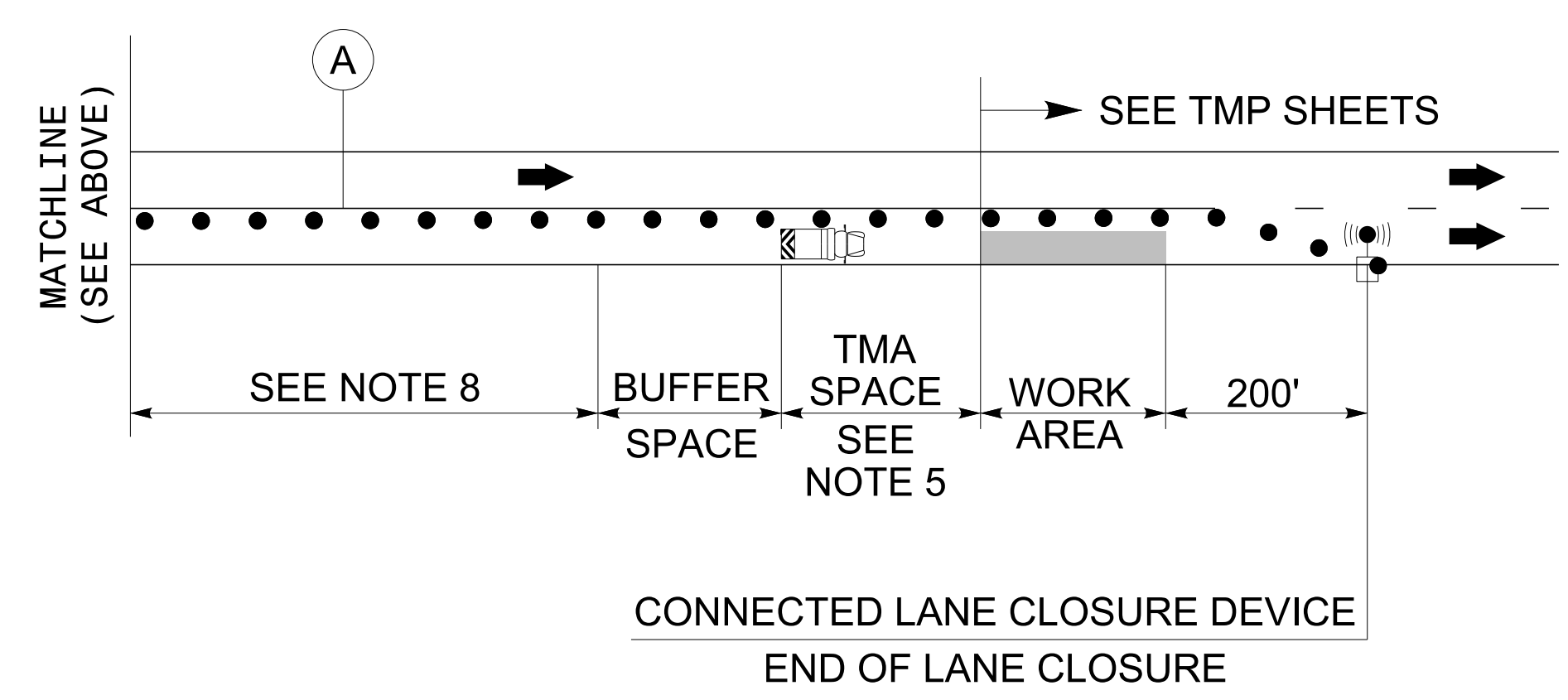
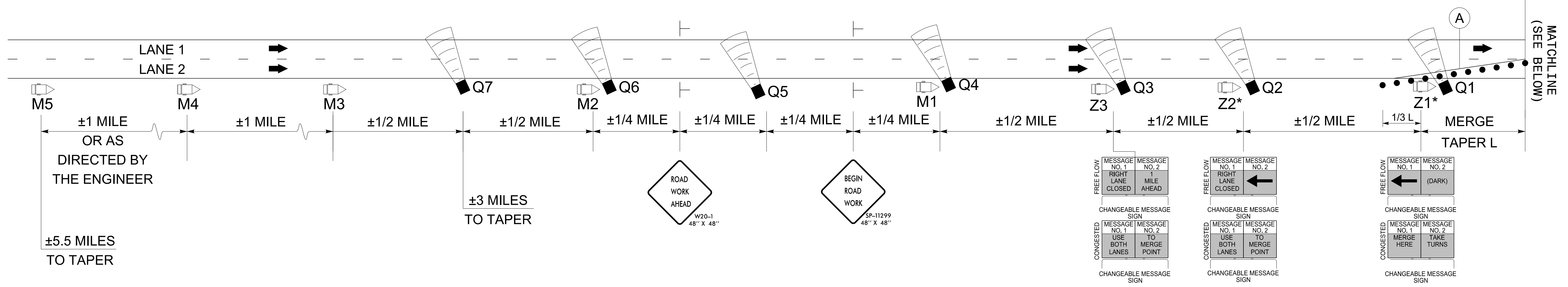
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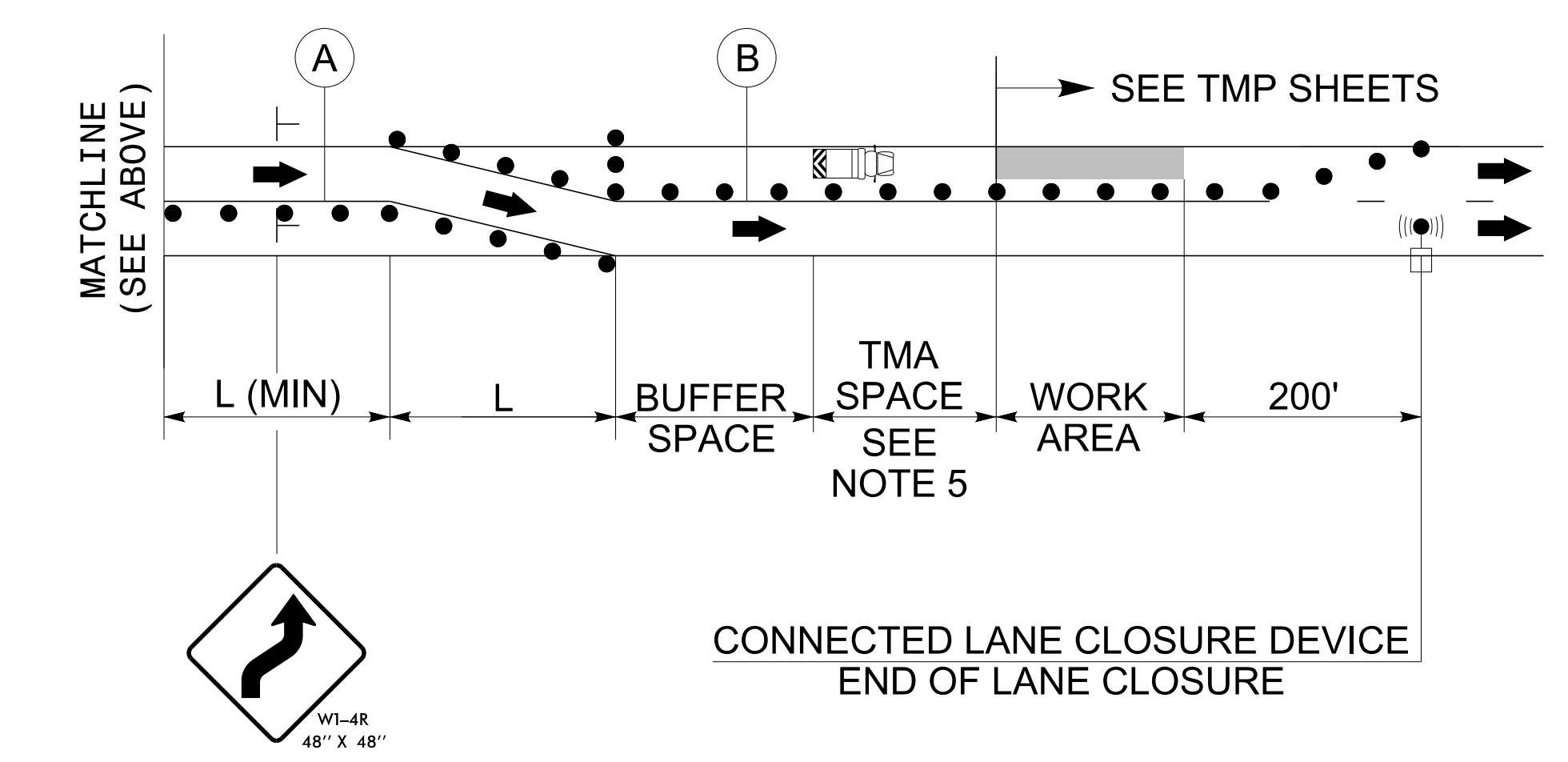
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TEMPORARY SHORING DATA



### RIGHT LANE WORK AREA



### LEFT LANE WORK AREA \*( IF APPLICABLE )

### GENERAL NOTES

- 1- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL TO 2 TIMES THE POSTED SPEED LIMIT.
- 2- REFER TO RSD. 1101.11, SHEETS 1 & 2, FOR "L" DISTANCE AND BUFFER SPACE.
- 3- REFER TO RSD. 1101.02, SHEETS 9 & 10, FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- 4- INSTALL LANE CLOSURES WITH THE FLOW OF TRAFFIC, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE FLOW OF TRAFFIC, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
5. POSITION THE TMAS TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMAS AS WORK PROGRESSES. USE TMAS AS REQUIRED TO SHIELD WORKERS FROM ERRANT VEHICLES AND TRAFFIC FROM POTENTIAL HAZARDS IN THE WORK AREA.
6. REMOVE OR COVER EXISTING ADVANCED WARNING SIGNS PREVIOUSLY INSTALLED USING RSD 1101.01, SHEET 2 OF 3.
7. IN THE EVENT OF A SYSTEM MALFUNCTION, IMMEDIATELY INSTALL WORK ZONE SIGNS ACCORDING TO RSD 1101.02, SHEET 4. SIGNAGE SHOULD REMAIN IN PLACE UNTIL SYSTEM OPERATION IS FULLY RESTORED.
8. IF A LEFT LANE WORK AREA WILL BE NEEDED AT ANY TIME DURING THE PROJECT, USE 2L. IF NO LEFT LANE WORK AREA IS NEEDED, OMIT THIS SPACE.
9. REMOVE ANY CONFLICTING PAVEMENT MARKINGS & MARKERS.

- (A) 6" WHITE EDGELINE
- (B) 6" YELLOW EDGELINE

### LEGEND

- SPEED SENSOR Q#(1-7)
- PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)  
M#(1-5) = MAINLINE  
Z#(1-3) = ZIPPER MERGE  
\*Z1 & Z2 SHALL BE FULL MATRIX
- CONNECTED LANE CLOSURE DEVICE
- DRUM
- TRUCK MOUNTED ATTENUATOR (TMA)
- STATIONARY SIGN

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DYNAMIC ZIPPER MERGE  
SYSTEM LAYOUT

NOTE: ANY WORK THAT REQUIRES A DROP OFF WITHIN OR NEXT TO THE EDGE OF PAVEMENT MORE THAN 2" AND NOT PROTECTED BY PORTABLE CONCRETE BARRIER SHALL BE SAFED UP TO AN ACCEPTABLE ELEVATION BY THE END OF THE WORK PERIOD. REFER TO GENERAL NOTE 'N' ON SHEET TMP-01B.

### PHASE I

- STEP 1) USING ROADWAY STANDARD DRAWING (RSD) 1101.01, INSTALL ALL ADVANCE WORK ZONE SIGNING.
- STEP 2) USING RSD 1101.02, INSTALL FULL DEPTH SHOULDER WORK ON I-40 OUTSIDE SHOULDERS. ANY WORK THAT HAS A DROP OFF NEXT TO THE EDGE OF PAVEMENT MORE THAN 2" SHALL BE SAFED UP TO AN ACCEPTABLE ELEVATION BY THE END OF THE WORK PERIOD. REFER TO GENERAL NOTE 'N' ON SHEET TMP-01B. [TMP-04 THRU 07]
- STEP 3) USING RSD 1101.02, INSTALL PCB ALONG OUTSIDE SHOULDER OF -L- WB. THEN COMPLETE THE FOLLOWING [REFER TO SHEETS TMP-04 THRU 06]:
- CONSTRUCT -L- WB AS SHOWN UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE
  - CONSTRUCT -L- WB UP TO THE EXISTING EDGE AND ELEVATION
  - CONSTRUCT -L- WB BRIDGE AND TEMPORARY SHORING
  - WIDEN RAMPS A AND B UP TO THE EXISTING EDGE AND ELEVATION. CONSTRUCT ONLY WHAT CAN BE COMPLETED AND BROUGHT TO EXISTING ELEVATION AT THE END OF ONE WORK PERIOD. (REFER TO GENERAL NOTES FOR DROP-OFF REQUIREMENTS)
  - NOTE: CLOSE RAMPS AND DETOUR TRAFFIC OFFSITE IF A MINIMUM OF 16' CANNOT BE MAINTAINED ON THE RAMP.
  - CONSTRUCT AS MUCH DRAINAGE AS POSSIBLE. (SEE GENERAL NOTES FOR STEEL PLATING)
- STEP 4) BEHIND BARRIER, INSTALL THE PHASE II TEMPORARY PAVEMENT MARKINGS, MARKERS, AND PORTABLE CONCRETE BARRIER AS MUCH AS POSSIBLE. [REFER TO SHEETS TMP-05 & 06]

### PHASE II

THE CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE II, STEP 1 FROM MONDAY 7:00 P.M TO THURSDAY 6:00 A.M. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

- STEP 1) USING RSD 1101.02 AND THE DYNAMIC ZIPPER MERGE SYSTEM, COMPLETE THE FOLLOWING [REFER TO SHEETS TMP-08 THRU 11]:
- WEDGE -L- WB AT TIE-IN'S, WEDGE -RPA- AND -RPB-, INSTALL REMAINING TEMPORARY PAVEMENT MARKINGS AND MARKERS, AND SHIFT TRAFFIC ONTO THE PHASE II TEMPORARY ALIGNMENT
  - INSTALL PCB ALONG THE MEDIAN SHOULDER OF -L- WB AND THE GORE AREA BETWEEN -L- WB AND -RPB-
- STEP 2) USING RSD 1101.02 ON -L- EB AND WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING [REFER TO SHEETS TMP-08 & 09]:
- REMOVE EXISTING MEDIAN WALL FROM STA. 238+50 -L- TO STA. 239+18 -L-
  - REPAIR ANY DAMAGE TO THE ROADWAY CAUSED BY THE REMOVAL OF THE WALL WITH ASPHALT
  - INSTALL PORTABLE CONCRETE BARRIER FROM STA. 238+22 -L- TO STA. 239+18 -L- AND CONTINUE TO INSTALL AS MUCH OF THE REMAINING BARRIER RUN AS POSSIBLE BY THE END OF THE WORK PERIOD. CONTINUE TO USE NIGHTLY LANE CLOSURES TO INSTALL THE REMAINING RUN OF BARRIER UNTIL ALL BARRIER HAS BEEN INSTALLED TO STA. 248+00 -L-.

- STEP 3) USING RSD 1101.02 ON -L- EB AND WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING [REFER TO SHEET TMP-10]:
- REMOVE EXISTING MEDIAN WALL FROM STA. 261+01 -L- TO STA. 262+38 -L-
  - REPAIR ANY DAMAGE TO THE ROADWAY CAUSED BY THE REMOVAL OF THE WALL WITH ASPHALT
  - INSTALL PORTABLE CONCRETE BARRIER FROM STA. 260+69 -L- TO STA. 262+38 -L- AND CONTINUE TO INSTALL AS MUCH OF THE REMAINING BARRIER RUN AS POSSIBLE BY THE END OF THE WORK PERIOD. CONTINUE TO USE NIGHTLY LANE CLOSURES TO INSTALL THE REMAINING RUN OF BARRIER UNTIL ALL BARRIER HAS BEEN INSTALLED TO STA. 273+00 -L-.

- STEP 4) BEHIND BARRIER AND AWAY FROM TRAFFIC COMPLETE THE FOLLOWING [REFER TO SHEETS TMP-08 THRU 10]:
- REMOVE ANY REMAIN EXISTING MEDIAN WALL WITHIN PROJECT LIMITS AS NEEDED
  - CONSTRUCT THE PHASE III TEMPORARY ALIGNMENT AS MUCH AS POSSIBLE
  - INSTALL TEMPORARY PAVEMENT MARKINGS AS MUCH AS POSSIBLE
  - INSTALL PCB ALONG THE OUTER SHOULDER OF THE -L- EB TEMPORARY ALIGNMENT AS MUCH AS POSSIBLE
  - CONSTRUCT AS MUCH DRAINAGE AS POSSIBLE. (SEE GENERAL NOTES FOR STEEL PLATING)

USING RSD 1101.02 AS NEEDED, WIDEN RAMPS C AND D AND INSTALL FULL DEPTH SHOULDER WORK ON THE I-40 EB OUTSIDE SHOULDERS. ANY WORK THAT HAS A DROP OFF NEXT TO THE EDGE OF PAVEMENT MORE THAN 2" SHALL BE SAFED UP TO AN ACCEPTABLE ELEVATION BY THE END OF THE WORK PERIOD. REFER TO GENERAL NOTE 'N' ON SHEET TMP-01B. CONSTRUCT ONLY WHAT CAN BE COMPLETED AND BROUGHT TO EXISTING ELEVATION AT THE END OF ONE WORK PERIOD. (REFER TO GENERAL NOTES FOR DROP-OFF REQUIREMENTS) [REFER TO SHEETS TMP-08 THRU 10]

NOTE: CLOSE RAMPS AND DETOUR TRAFFIC OFFSITE IF A MINIMUM OF 16' CANNOT BE MAINTAINED ON THE RAMP.

### PHASE III

THE CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE III, STEP 1 FROM MONDAY 7:00 P.M TO THURSDAY 6:00 A.M. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

- STEP 1) USING RSD 1101.02 AND THE DYNAMIC ZIPPER MERGE SYSTEM, COMPLETE IN THE FOLLOWING ORDER [REFER TO SHEETS TMP-12 THRU 15]:
- REMOVE AS MUCH OF THE -L- EB MEDIAN PCB AS NEEDED
  - WEDGE -L- EB TEMPORARY ALIGNMENT AT TIE-INS AND -RPC-, INSTALL REMAINING TEMPORARY PAVEMENT MARKINGS, MARKERS, AND SHIFT TRAFFIC ONTO PHASE III TEMPORARY ALIGNMENT
  - NOTE: CLOSE RAMPS AND DETOUR TRAFFIC OFFSITE IF A MINIMUM OF 16' CANNOT BE MAINTAINED ON THE RAMP.
  - INSTALL REMAINING PCB ALONG THE OUTER SHOULDER OF THE -L- EB TEMPORARY ALIGNMENT

- STEP 2) BEHIND BARRIER COMPLETE THE FOLLOWING REFER TO SHEETS TMP-13 & 14]:
- CONSTRUCT I-40 EB AS MUCH AS POSSIBLE UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE AS SHOWN, INCLUDING TEMPORARY PAVEMENT MARKINGS, AND MARKERS
  - CONSTRUCT I-40 WB AS MUCH AS POSSIBLE UP TO THE EXISTING EDGE AND ELEVATION AS SHOWN
  - CONSTRUCT -L- EB BRIDGE
  - INSTALL PCB ALONG THE -L- EB MEDIAN IN THE PHASE IV TEMPORARY ALIGNMENT AS MUCH AS POSSIBLE
  - CONSTRUCT AS MUCH DRAINAGE AS POSSIBLE. (SEE GENERAL NOTES FOR STEEL PLATING)

USING RSD 1101.02, CONSTRUCT -Y1- 'LEFT' UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE. CONSTRUCT ONLY WHAT CAN BE COMPLETED AND BROUGHT TO EXISTING ELEVATION AT THE END OF ONE WORK PERIOD. (REFER TO GENERAL NOTES FOR DROP-OFF REQUIREMENTS) [REFER TO SHEET TMP-13]

### PHASE IV

THE CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE IV, STEP 1 FROM MONDAY 7:00 P.M TO THURSDAY 6:00 A.M. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

- STEP 1) USING RSD 1101.02 AND THE DYNAMIC ZIPPER MERGE SYSTEM, COMPLETE THE FOLLOWING [REFER TO SHEETS TMP-16 THRU 19]:
- REMOVE PCB ALONG THE -L- EB OUTER SHOULDER AS MUCH AS POSSIBLE
  - WEDGE -L- EB TIE-IN FROM STA. 260+00 -L- TO STA. 273+00 -L- AND -RPD- AS SHOWN, INSTALL REMAINING TEMPORARY PAVEMENT MARKINGS, MARKERS, INSTALL TEMPORARY PAVEMENT OVER RUMBLE STRIPS, AND SHIFT I-40 EB TRAFFIC ONTO -L- EB PHASE IV TEMPORARY ALIGNMENT
  - NOTE: CLOSE RAMPS AND DETOUR TRAFFIC OFFSITE IF A MINIMUM OF 16' CANNOT BE MAINTAINED ON THE RAMP.
  - INSTALL THE REMAINING PCB ALONG THE MEDIAN OF THE -L- EB PHASE IV TEMPORARY ALIGNMENT

- STEP 2) BEHIND BARRIER, CONSTRUCT THE MEDIAN SHOULDERS OF -L-, INCLUDING THE MEDIAN BARRIER WALL. [REFER TO SHEETS TMP-16 THRU 18]

USING RSD 1101.02, COMPLETE THE FOLLOWING [REFER TO SHEET TMP-17]:

- INSTALL THE TEMPORARY PAVEMENT MARKINGS, MARKERS, AND SHIFT TRAFFIC ONTO -Y1- 'LEFT'
- INSTALL PORTABLE CONCRETE BARRIER (ANCHORED) AND BEHIND BARRIER CONSTRUCT -Y1- 'RIGHT' UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE
- CONSTRUCT REMAINING DRAINAGE (SEE GENERAL NOTES FOR STEEL PLATING)

### PHASE V

- STEP 1) USING RSD 1101.02 ON -L- AND ONE DIRECTION AT A TIME, COMPLETE THE FOLLOWING [REFER TO THE FINAL PAVEMENT MARKING PLAN]:
- REMOVE ALL PCB
  - INSTALL THE FINAL LIFT OF SURFACE COURSE, FINAL PAVEMENT MARKINGS, AND MARKERS
  - SHIFT TRAFFIC ONTO THE FINAL ALIGNMENT PATTERN
- USING RSD 1101.02 ON -Y1-, REMOVE PCB, INSTALL THE FINAL LIFT OF SURFACE COURSE, FINAL PAVEMENT MARKINGS, AND MARKERS, AND RETURN TRAFFIC TO THE FINAL PATTERN. [REFER TO THE FINAL PAVEMENT MARKING PLAN]

- STEP 2) REMOVE ANY REMAINING TRANSPORTATION MANAGEMENT DEVICES AND SIGNING INSTALLED DURING CONSTRUCTION.

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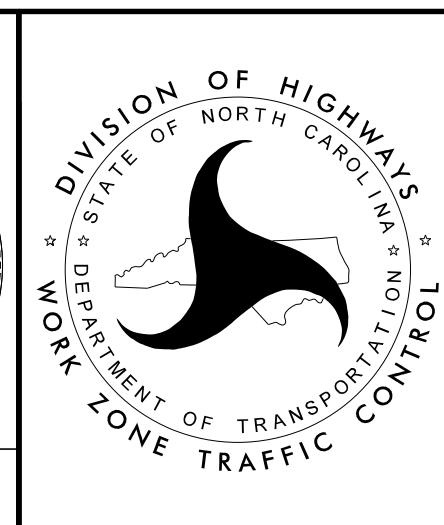


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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

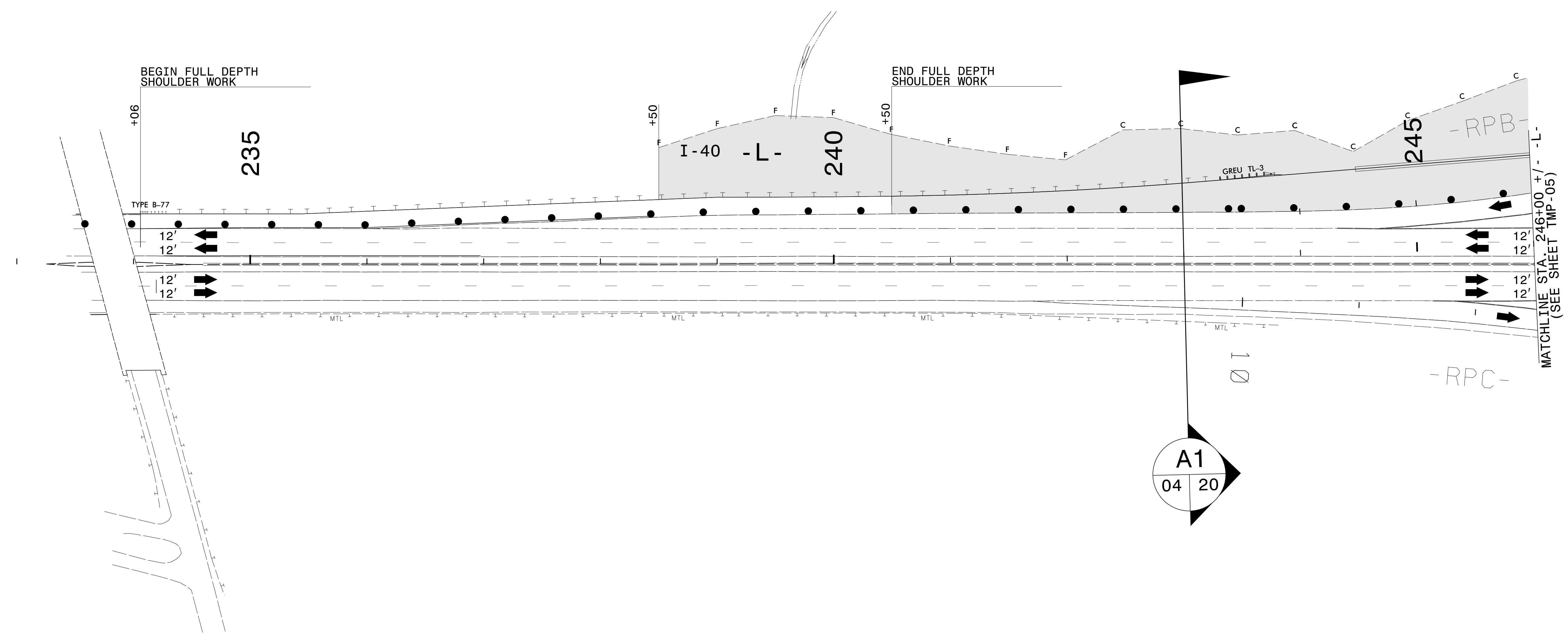
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- NOTES:
- 1) PEOT = PROPOSED EDGE OF TRAVEL  
PTOC = PROPOSED TOP OF CROWN

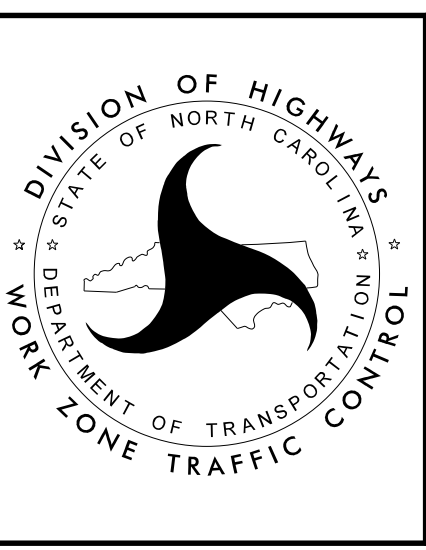
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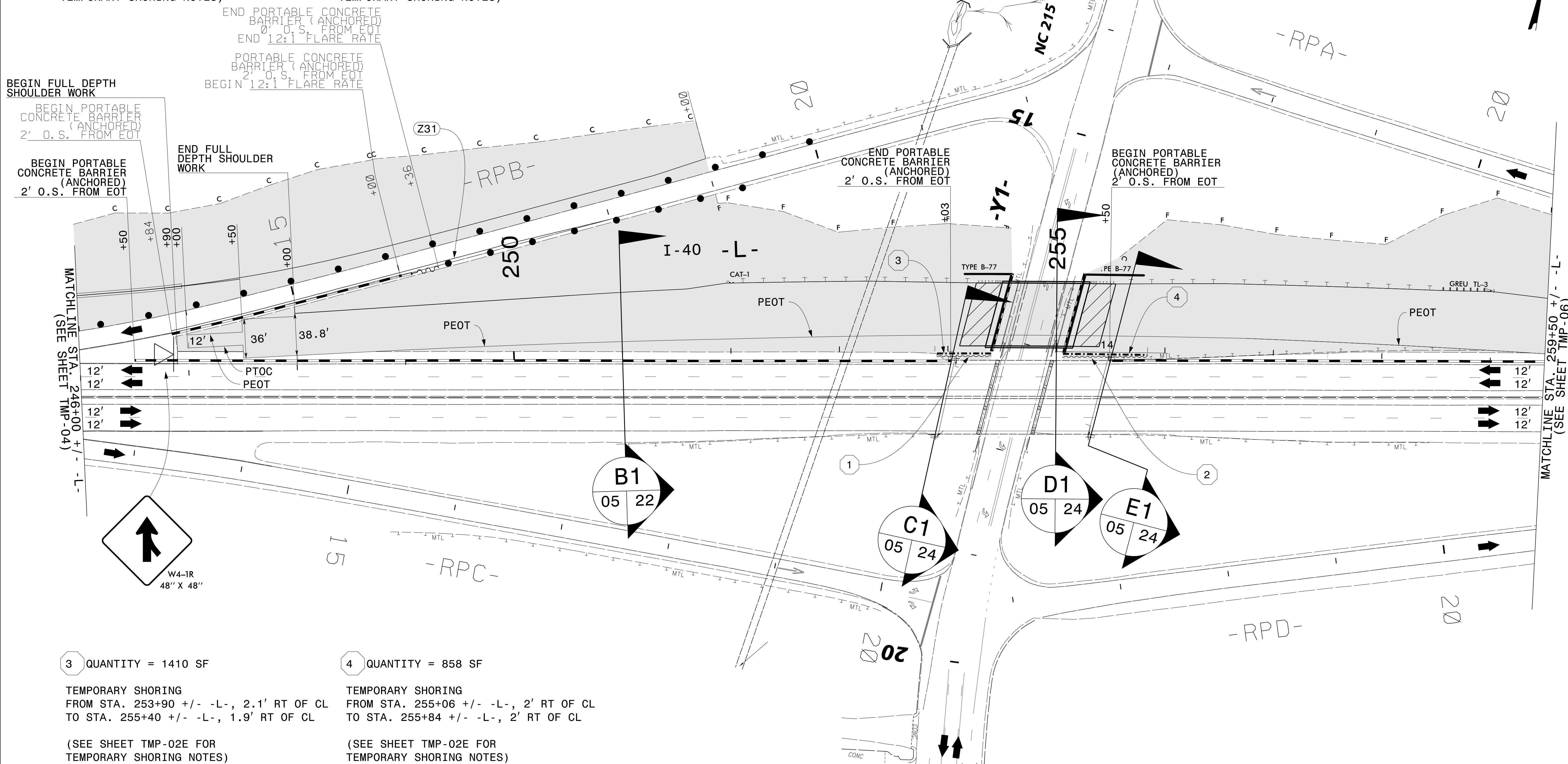
PHASE I, STEP 3  
& 4 DETAIL

1 QUANTITY = 1095 SF  
 TEMPORARY SHORING  
 FROM STA. 253+90 +/- -L-, 5' RT OF CL  
 TO STA. 255+40 +/- -L-, 4.8' RT OF CL

2 QUANTITY = 418.7 SF  
 TEMPORARY SHORING  
 FROM STA. 255+05 +/- -L-, 4.1' RT OF CL  
 TO STA. 255+84 +/- -L-, 3.3' RT OF CL

(SEE SHEET TMP-02E FOR  
 TEMPORARY SHORING NOTES)

(SEE SHEET TMP-02E FOR  
 TEMPORARY SHORING NOTES)



3 QUANTITY = 1410 SF  
 TEMPORARY SHORING  
 FROM STA. 253+90 +/- -L-, 2.1' RT OF CL  
 TO STA. 255+40 +/- -L-, 1.9' RT OF CL

4 QUANTITY = 858 SF  
 TEMPORARY SHORING  
 FROM STA. 255+06 +/- -L-, 2' RT OF CL  
 TO STA. 255+84 +/- -L-, 2' RT OF CL

(SEE SHEET TMP-02E FOR  
 TEMPORARY SHORING NOTES)

(SEE SHEET TMP-02E FOR  
 TEMPORARY SHORING NOTES)

NOTES:  
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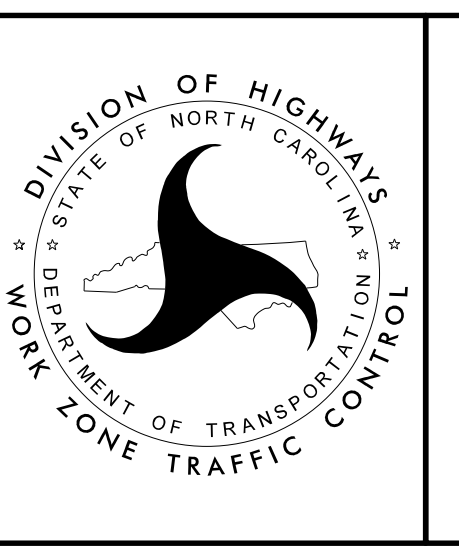
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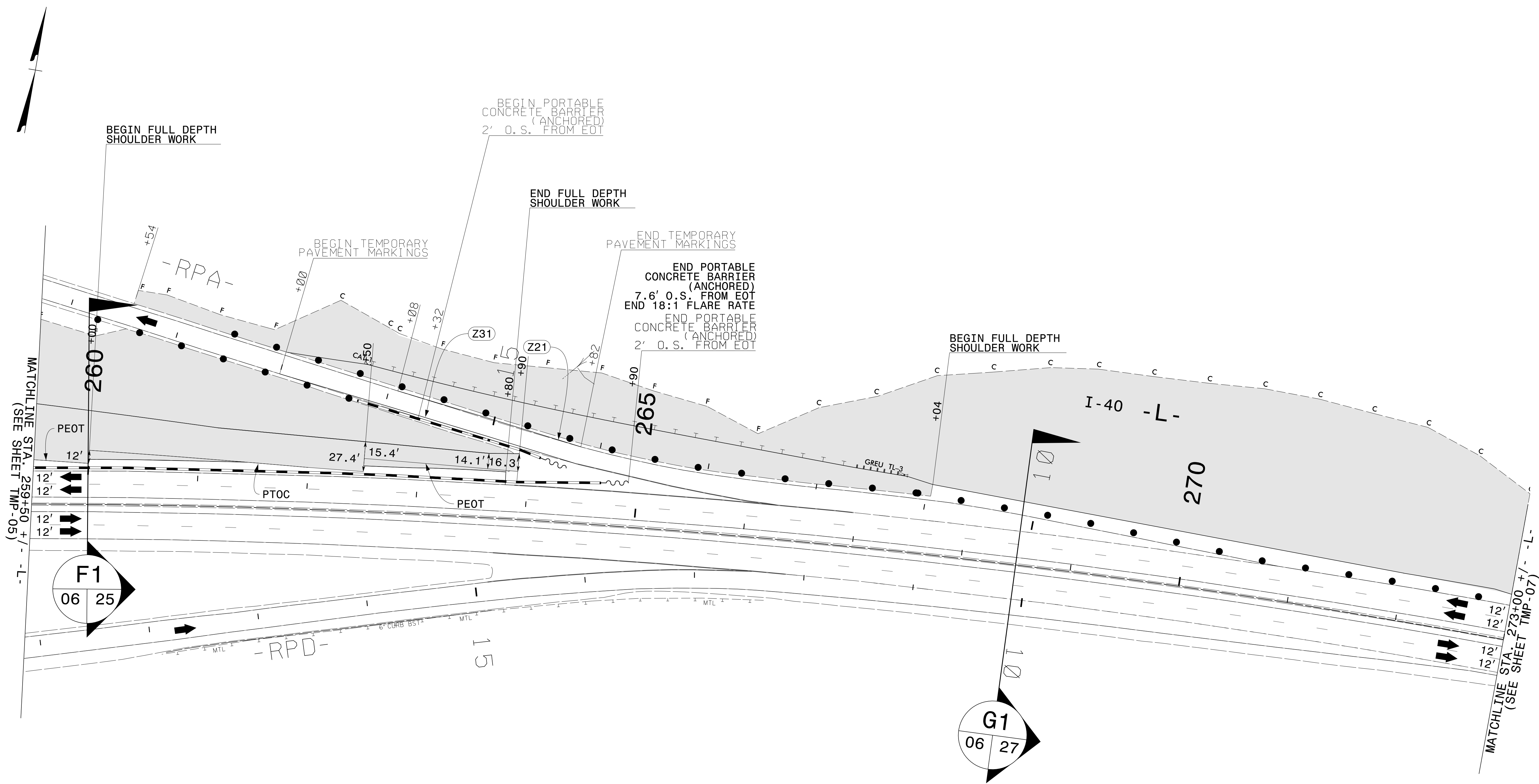
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 & 4 DETAIL



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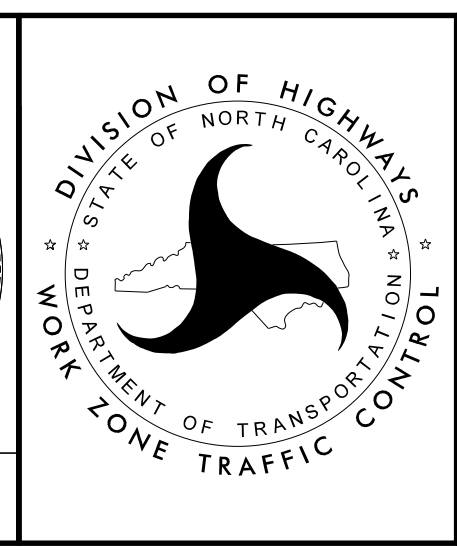
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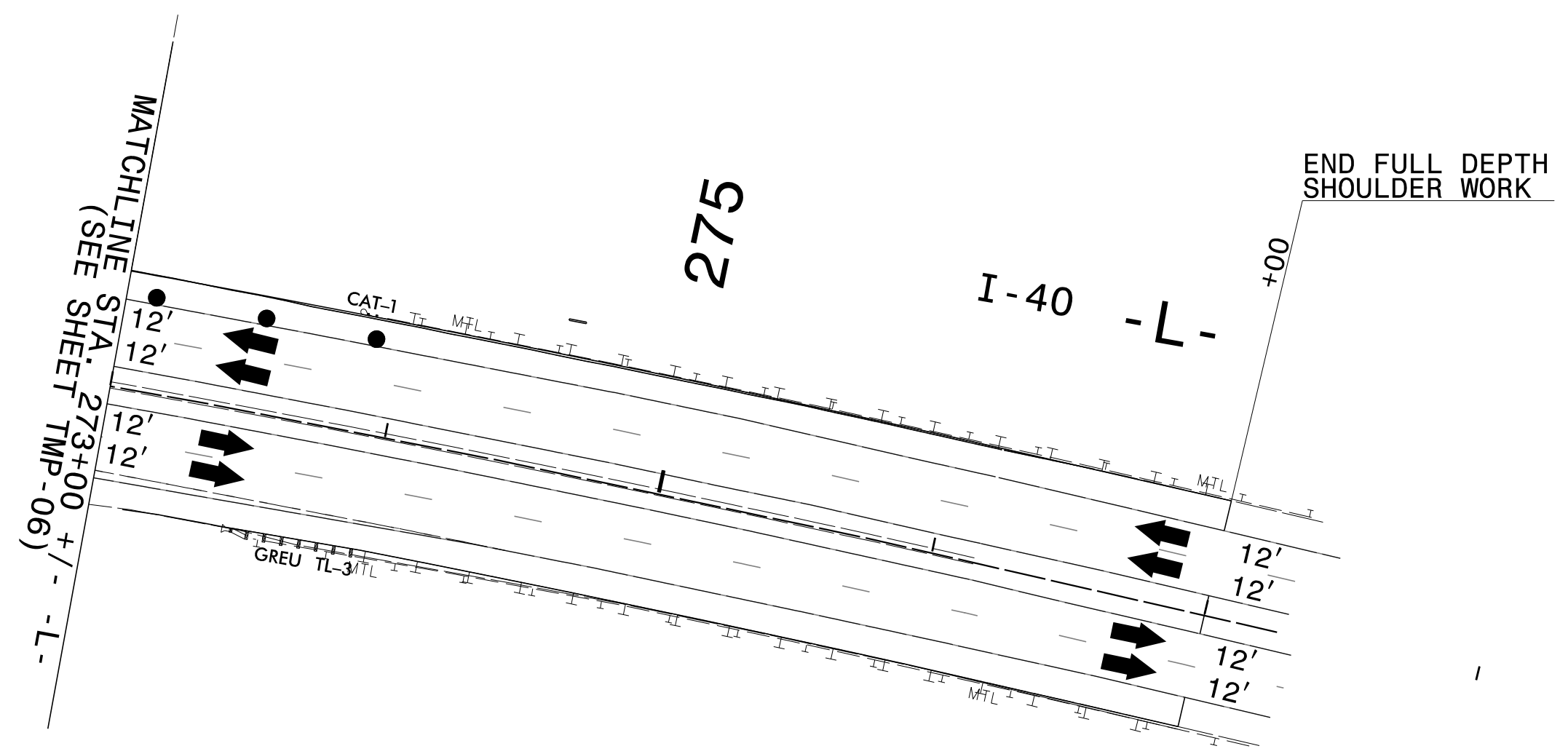
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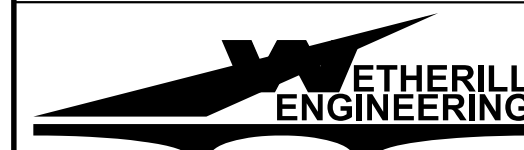
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PROJ. REFERENCE NO.	SHEET NO.
HB-0004	TMP-07



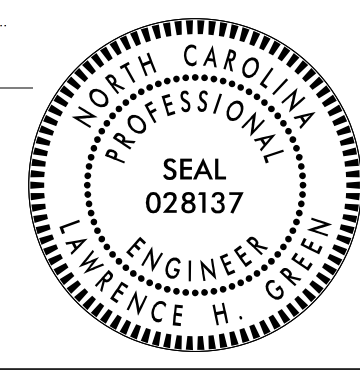
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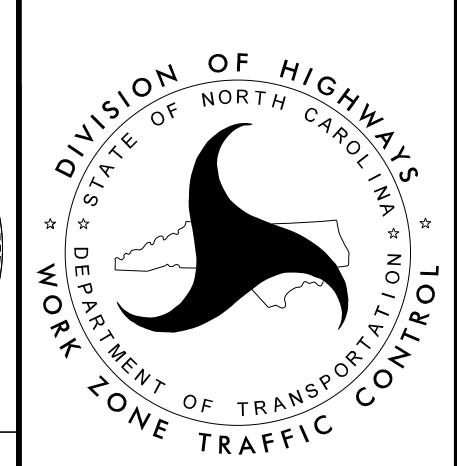

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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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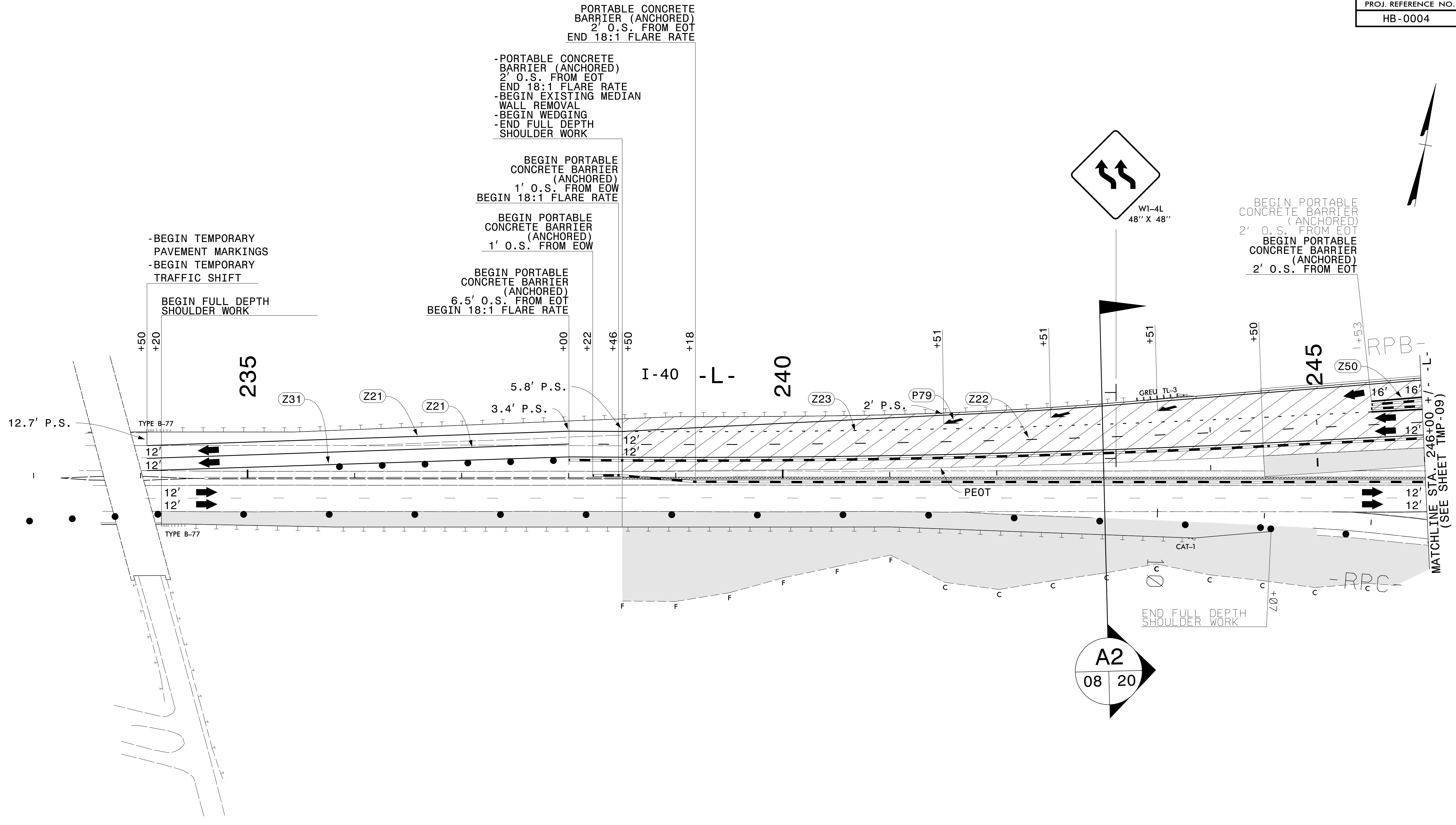


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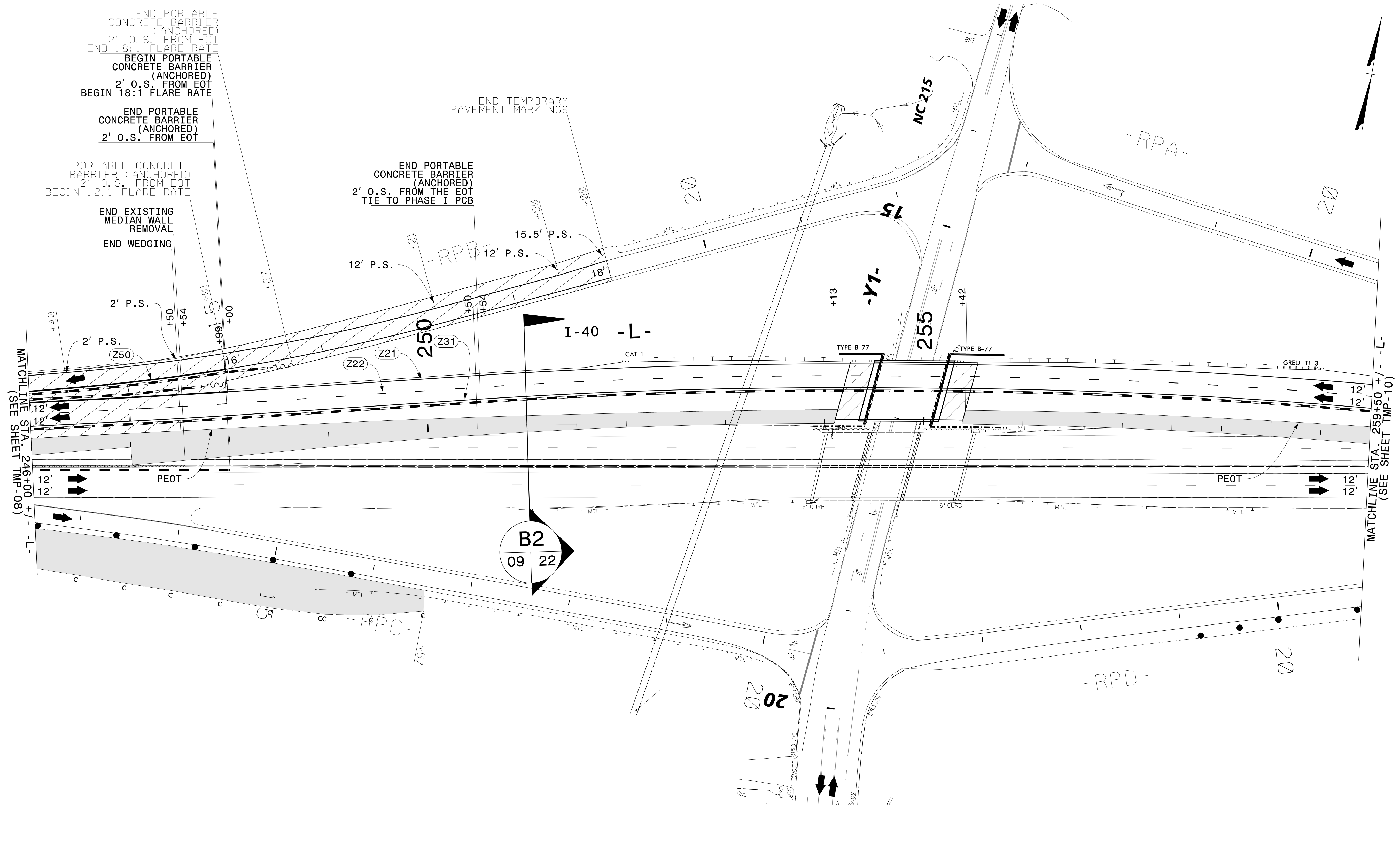
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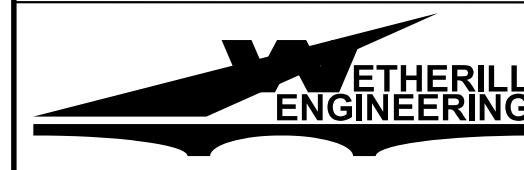
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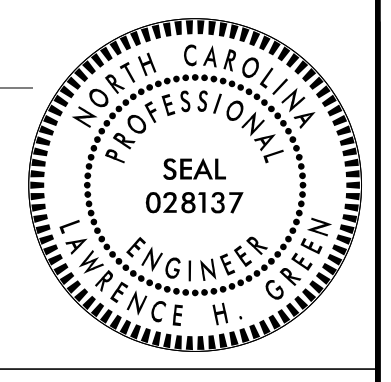
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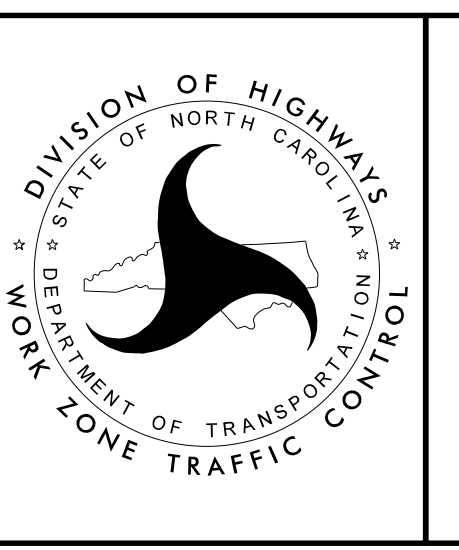
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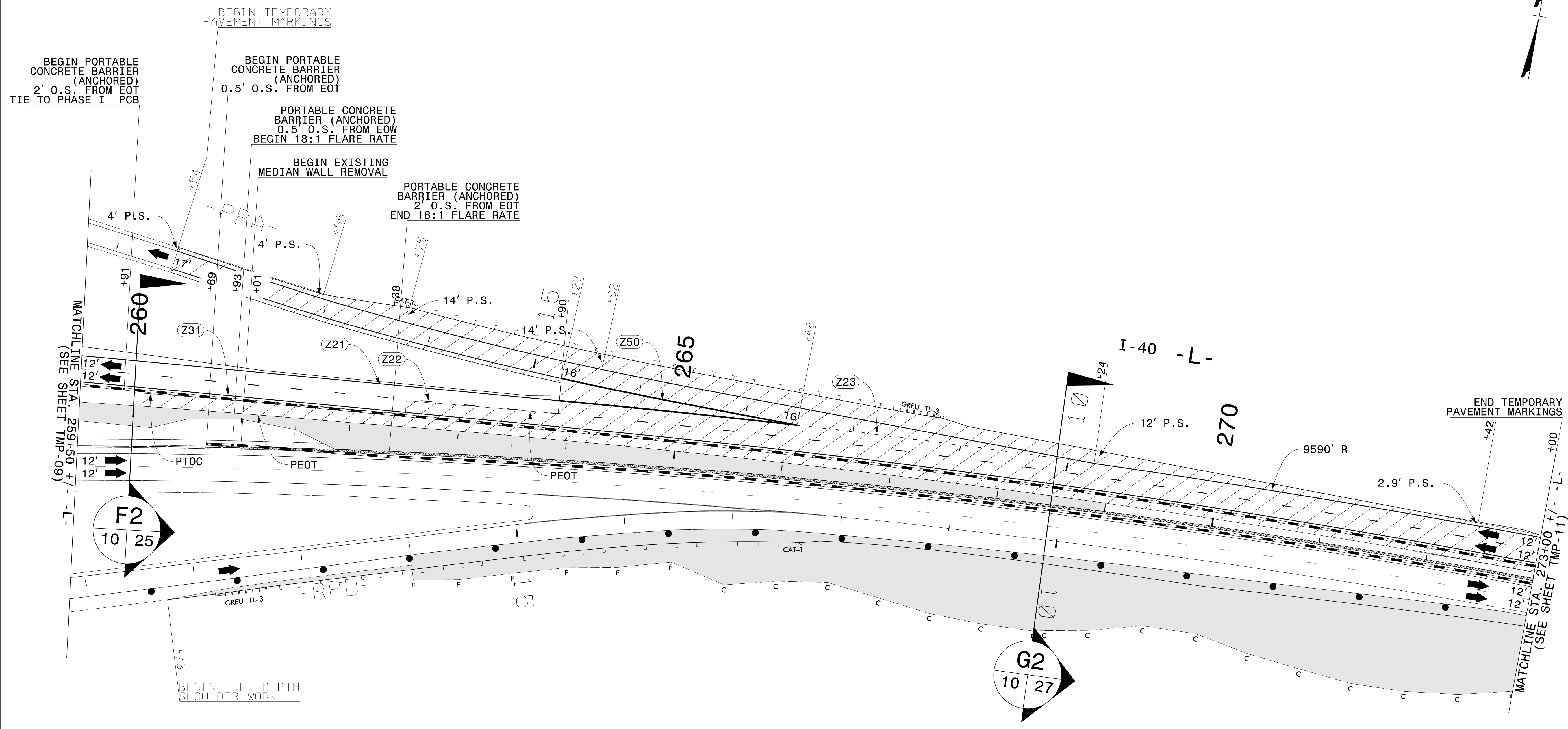
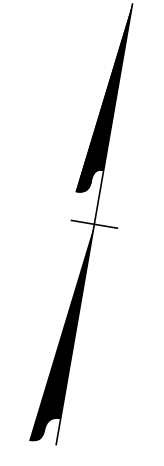
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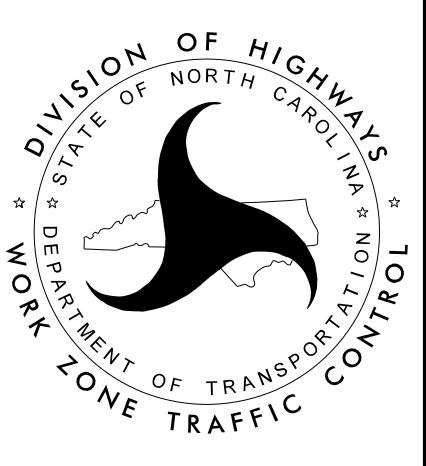
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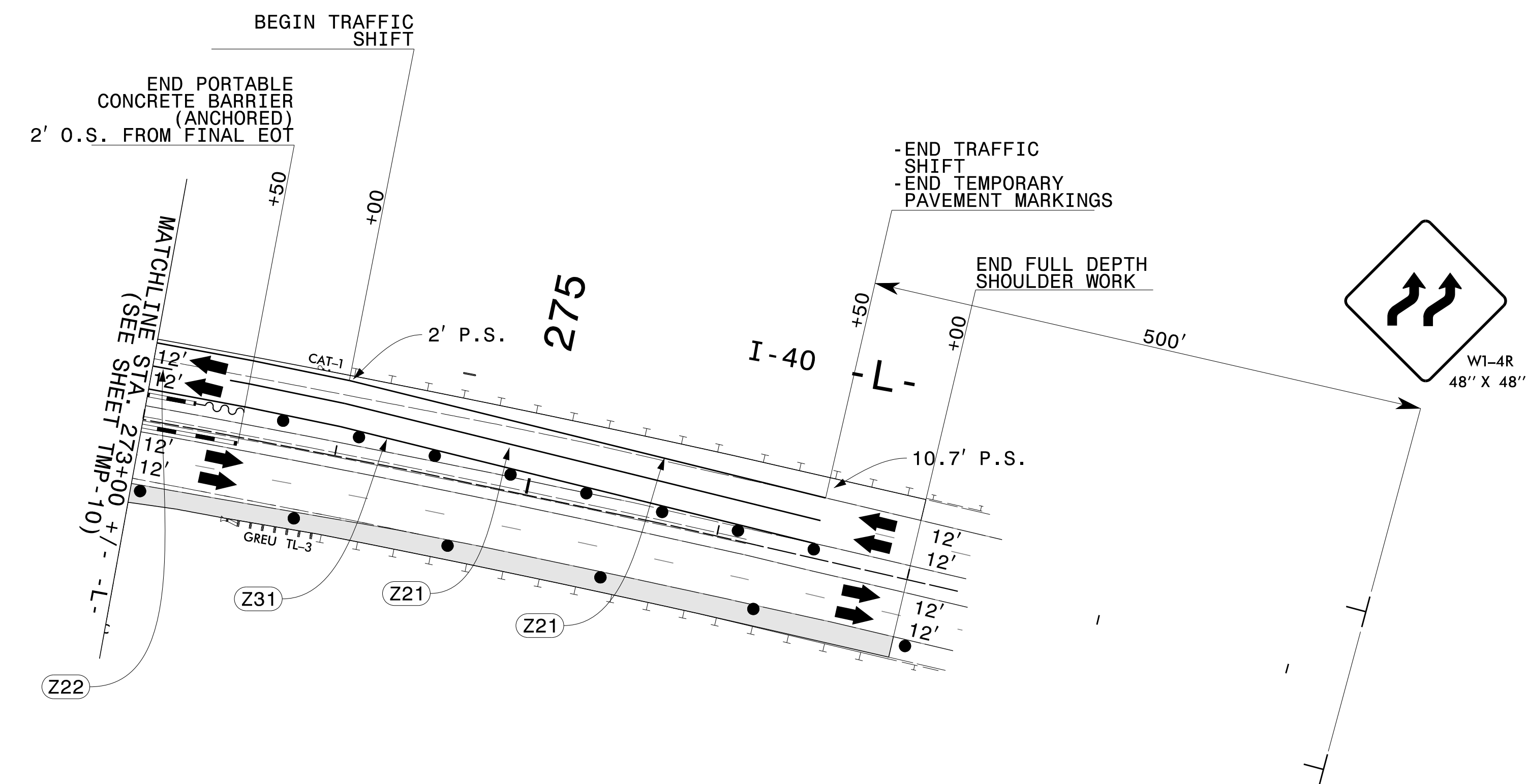
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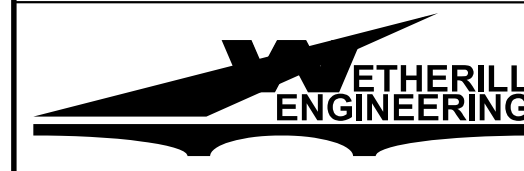
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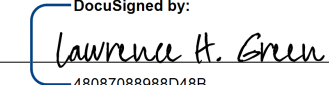
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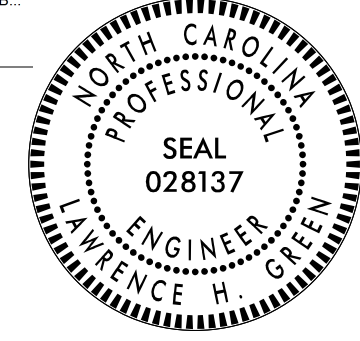
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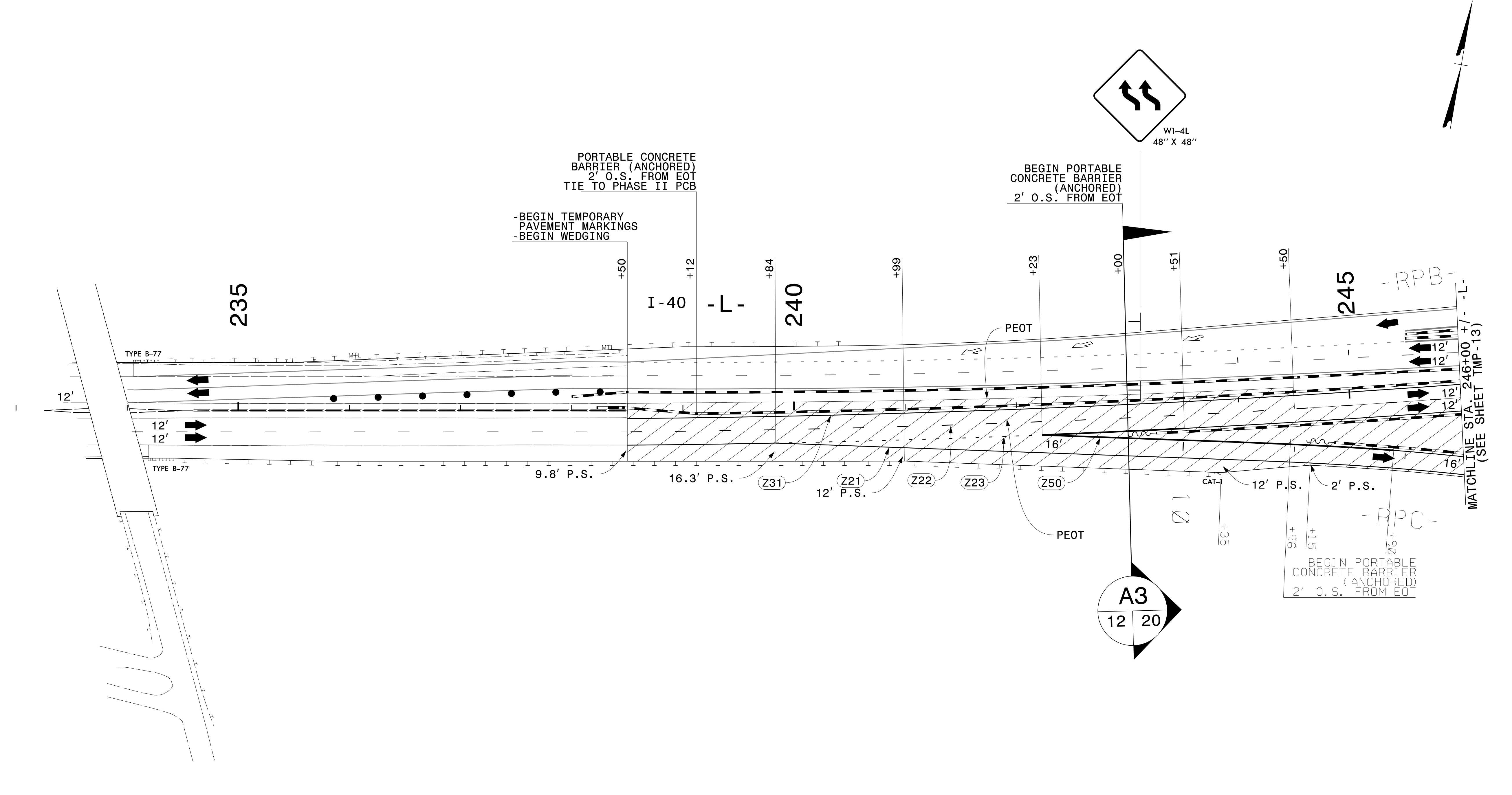
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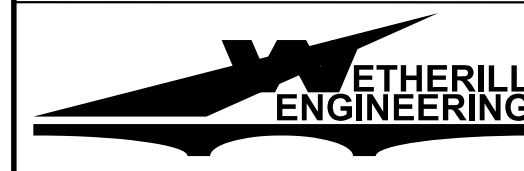


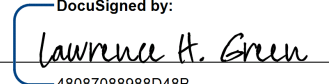
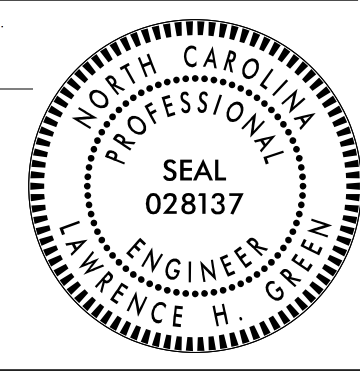
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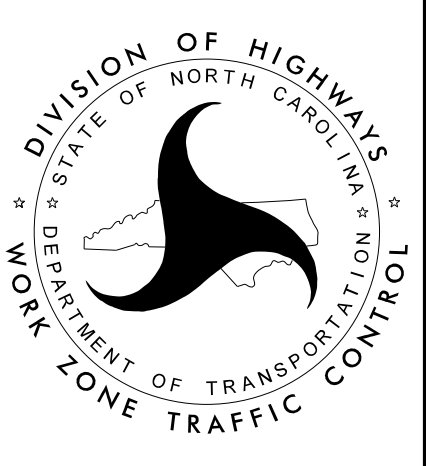


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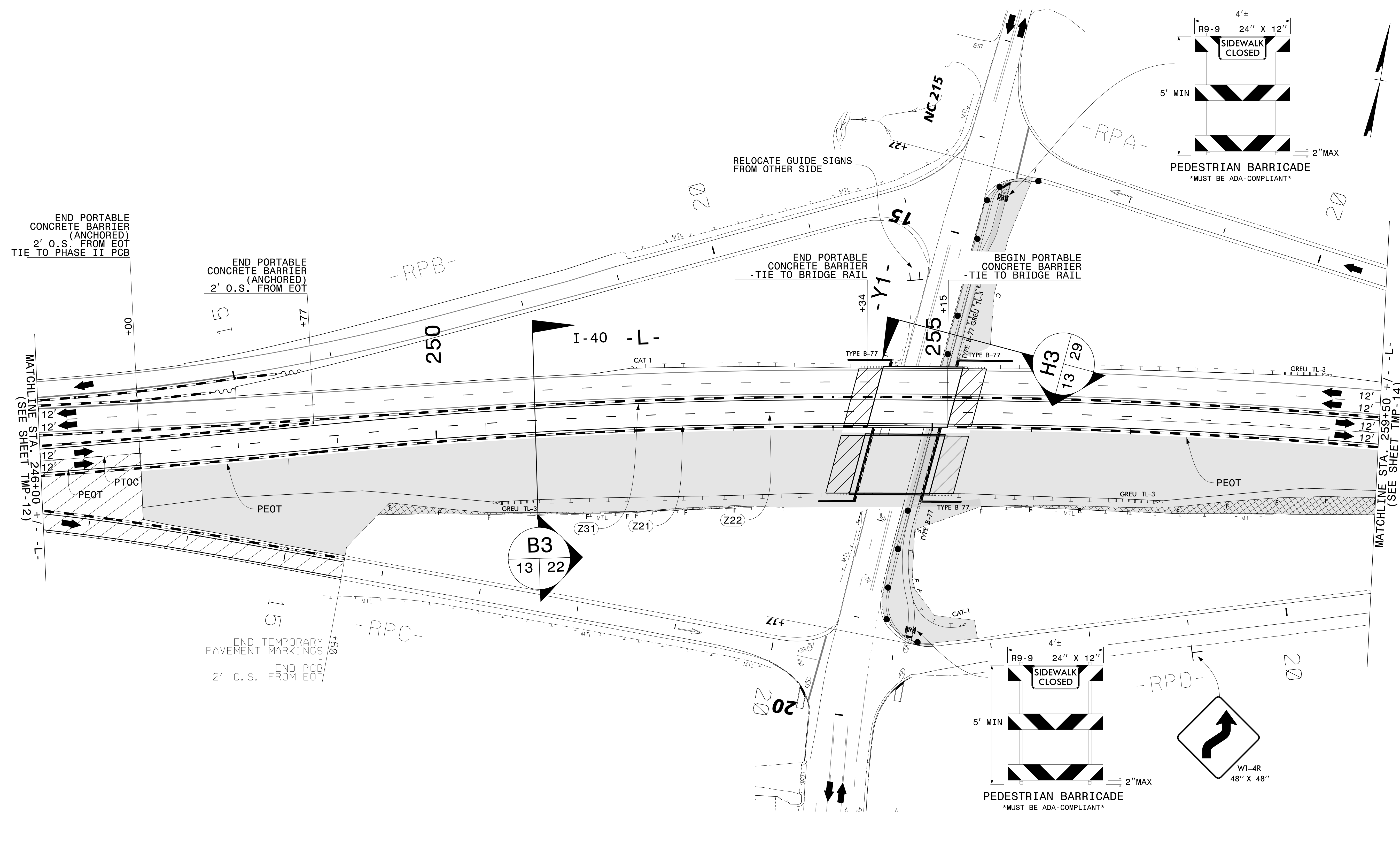
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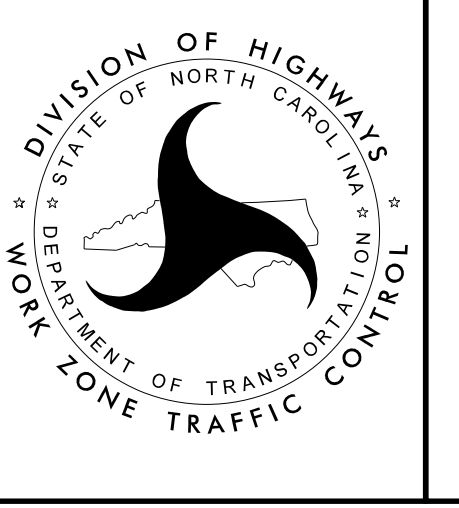
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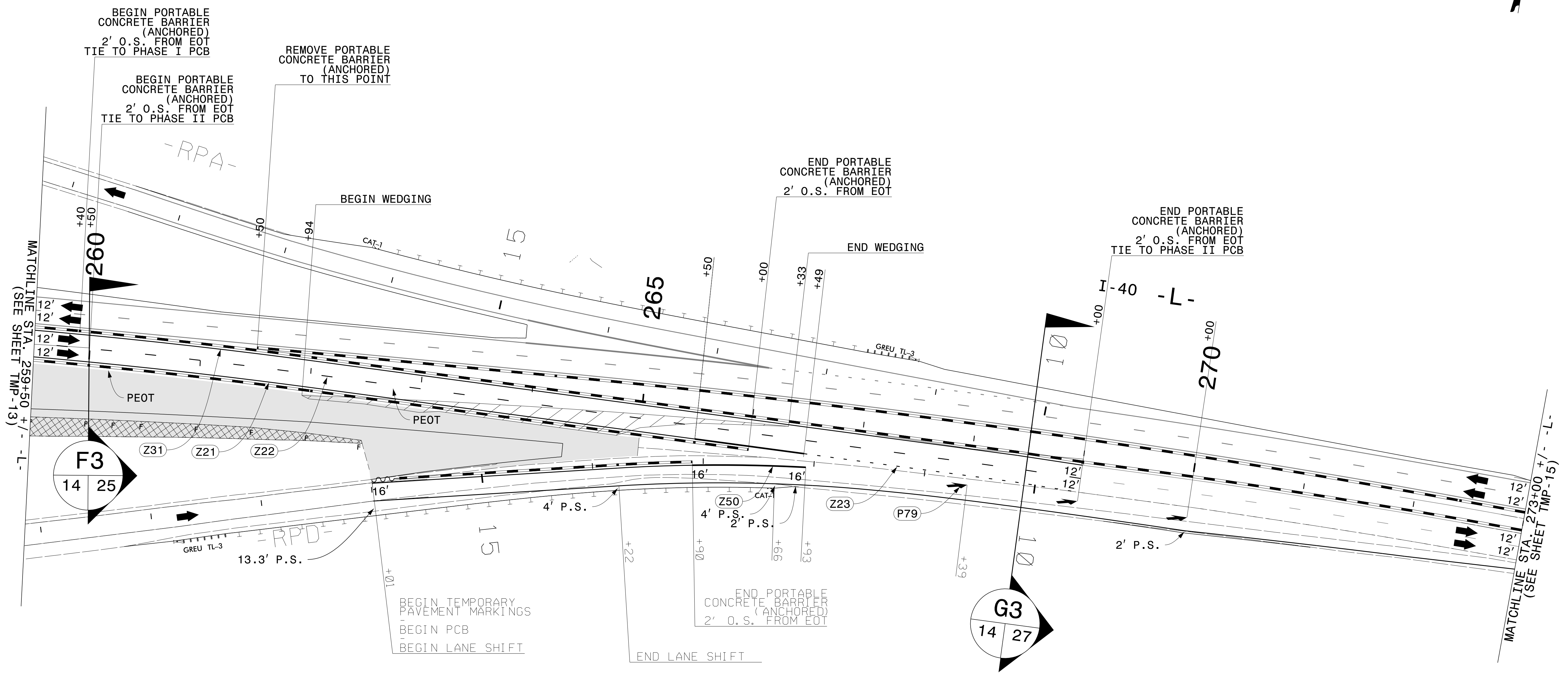
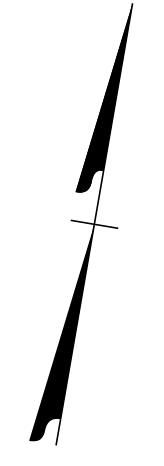
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**PHASE III DETAIL**

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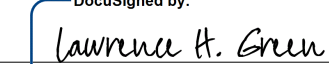



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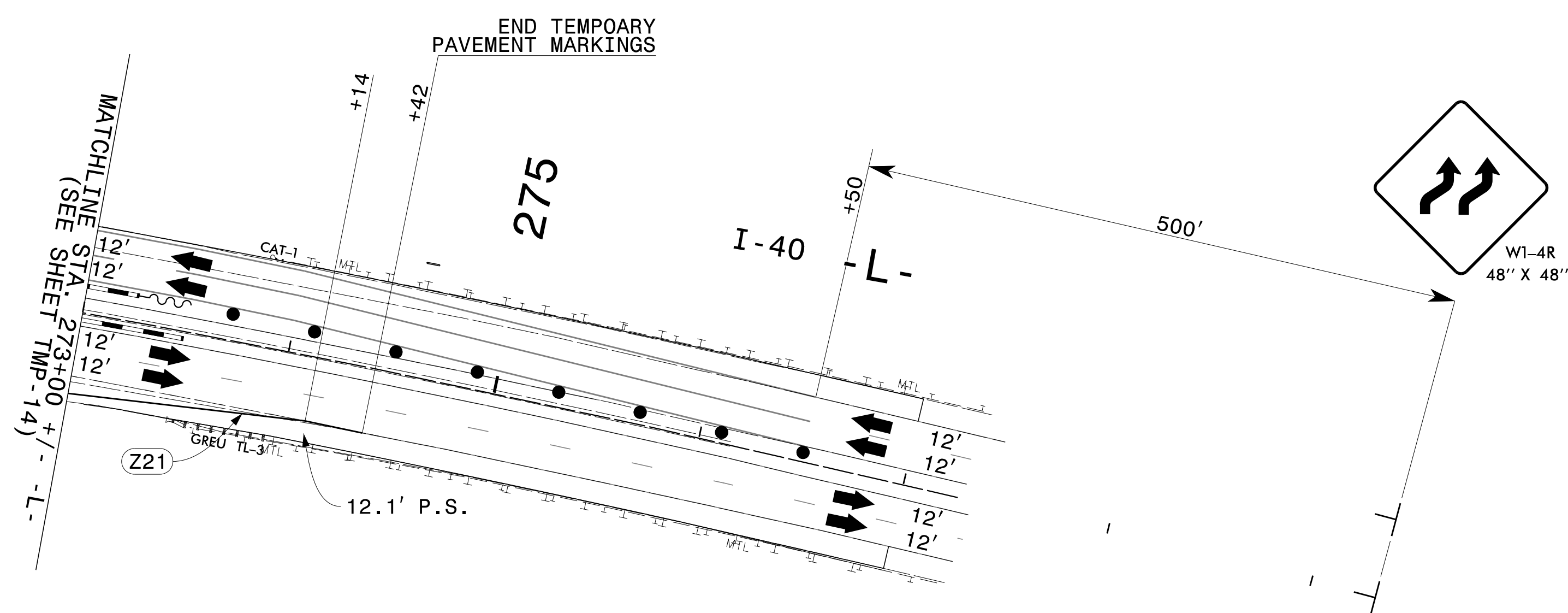

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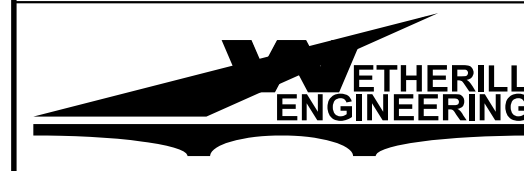


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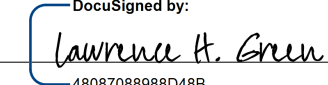
NOTES:  
 1) PEOT = PROPOSED EDGE OF TRAVEL  
 PTOC = PROPOSED TOP OF CROWN

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 User: AHayes

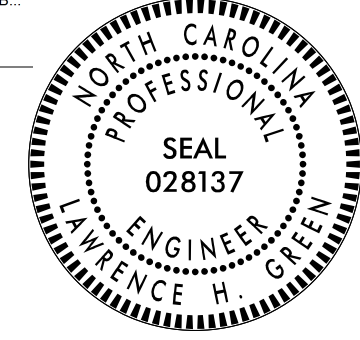


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 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED:   
DocuSigned by: Lawrence H. Green  
4808708888C468

DATE: 4/11/2024

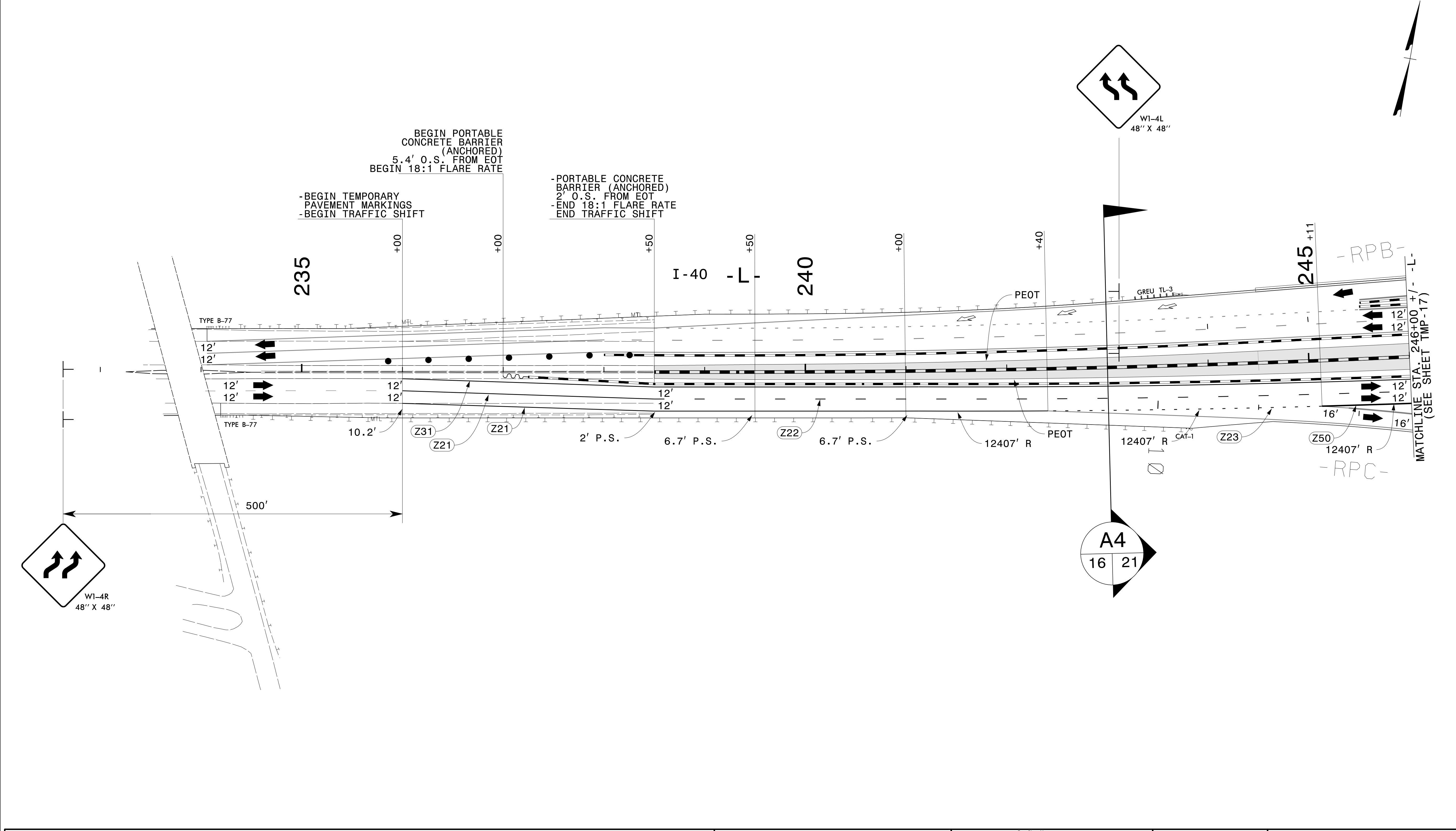


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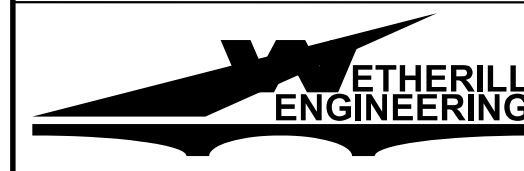
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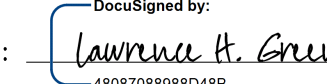
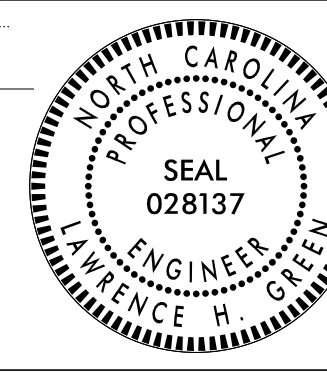


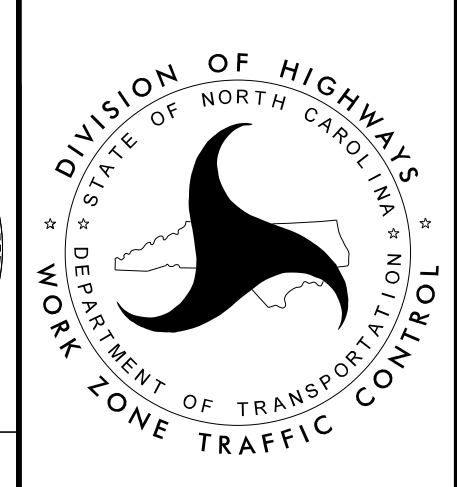


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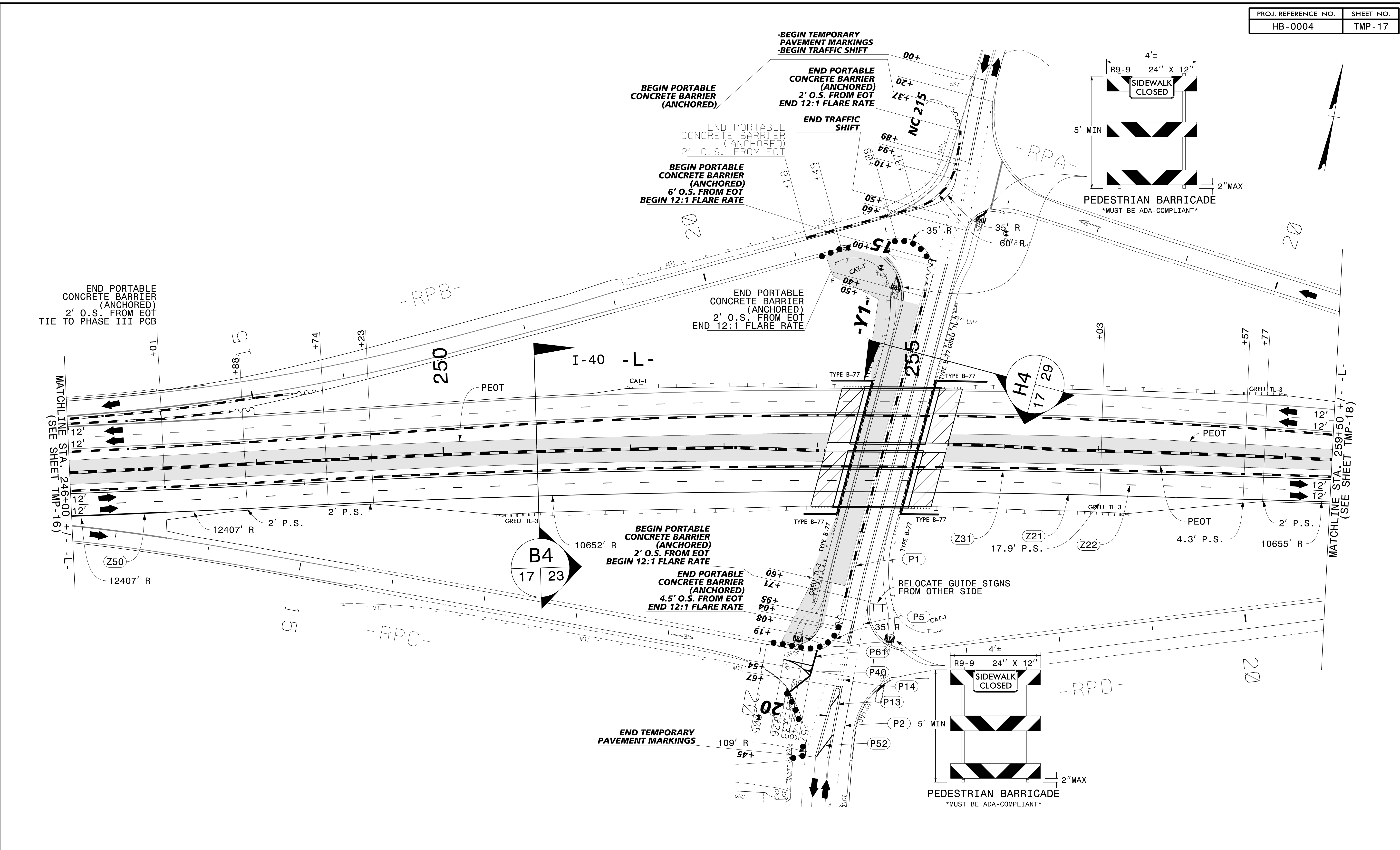
NOTES:  
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 PTOC = PROPOSED TOP OF CROWN

  
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED:   
 DATE: 4/11/2024  
  
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PHASE IV DETAIL



NOTES:  
 1) PEOT = PROPOSED EDGE OF TRAVEL  
 PTOC = PROPOSED TOP OF CROWN

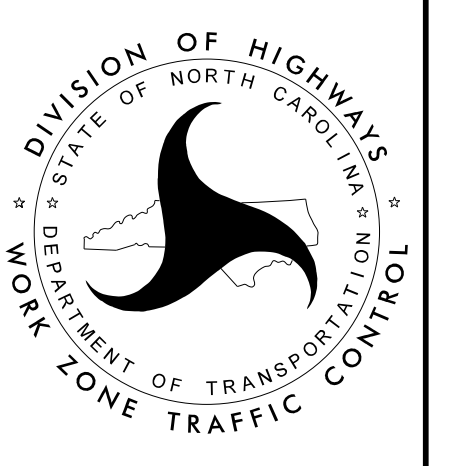
**ETHERILL ENGINEERING**  
 1223 Jones Franklin Rd.  
 Raleigh, N.C. 27606  
 License No. F-0377  
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 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Lawrence H. Green*  
 DATE: 4/11/2024

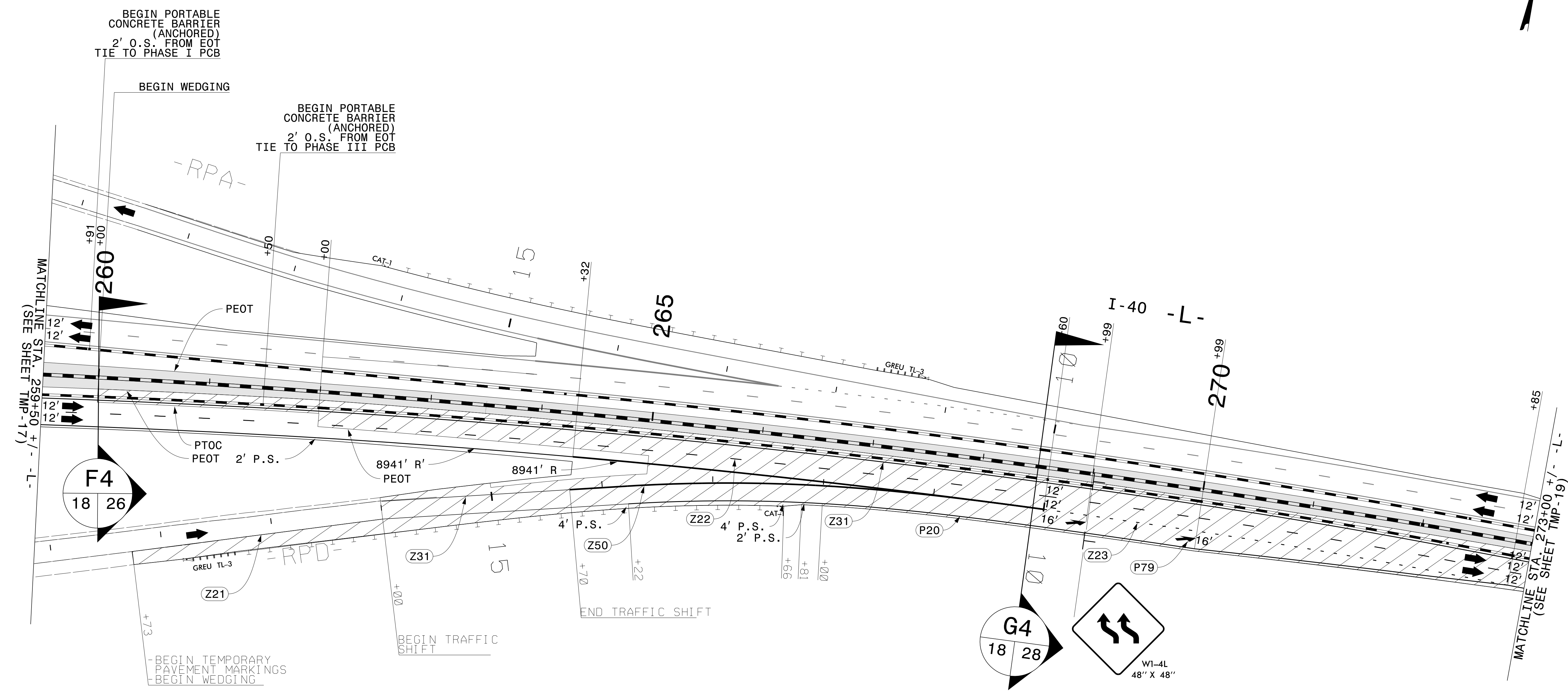
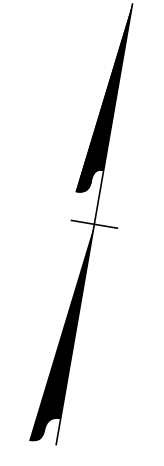
**SEAL**  
 028137  
 LAWRENCE H. GREEN  
 ENGINEER

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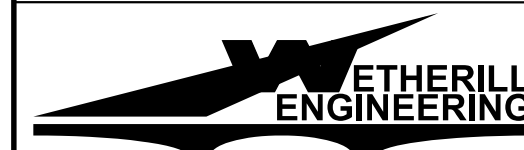
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 User: AHayes

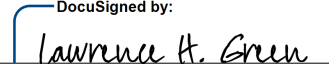
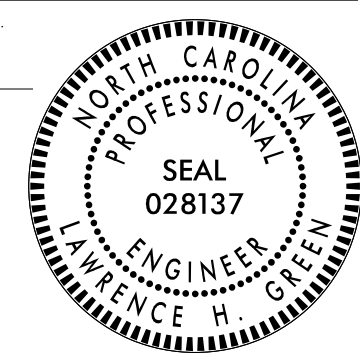


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 User: AHayes

- NOTES:
- 1) PEOT = PROPOSED EDGE OF TRAVEL  
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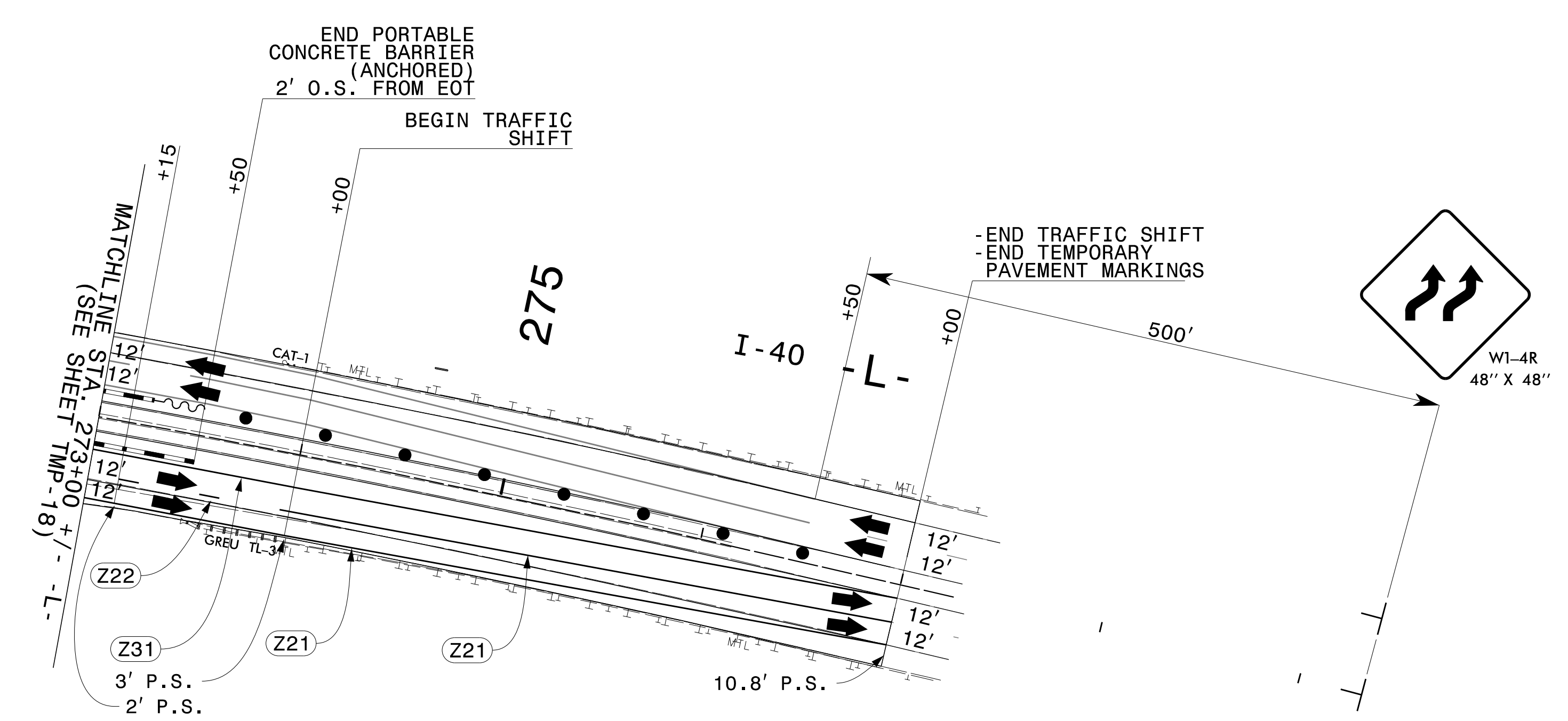
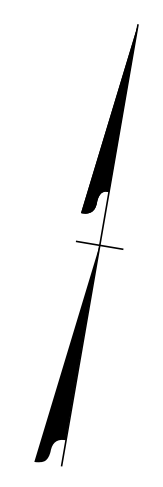

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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PHASE IV DETAIL



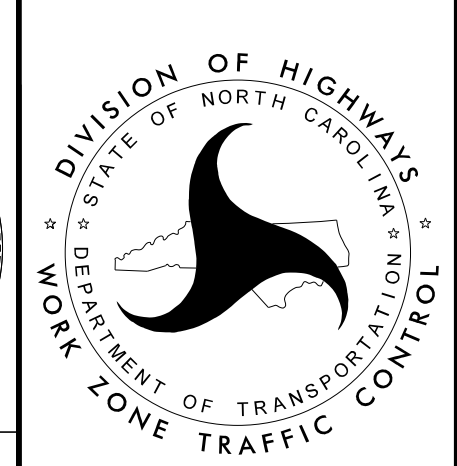
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**NOTES:**  
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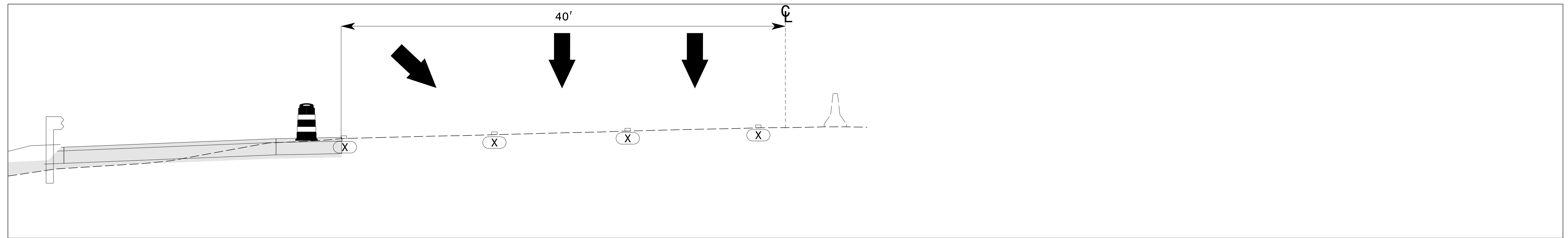
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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 DATE: 4/11/2024

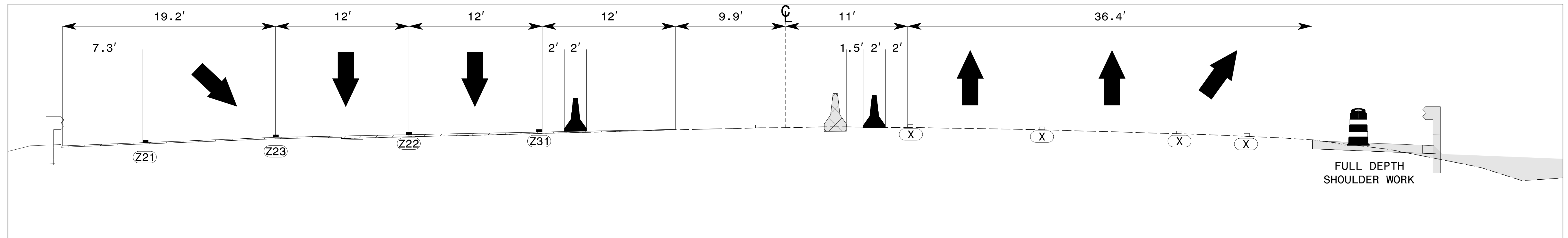


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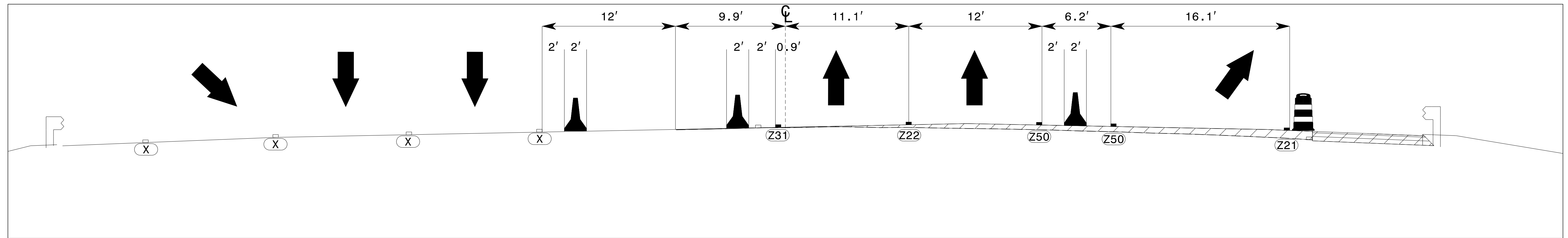
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04 | 20  
STA. 243+00 -L-  
CUT SECTION



**A2**  
08 | 20  
STA. 243+00 -L-  
CUT SECTION



**A3**  
12 | 20  
STA. 243+00 -L-  
CUT SECTION

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

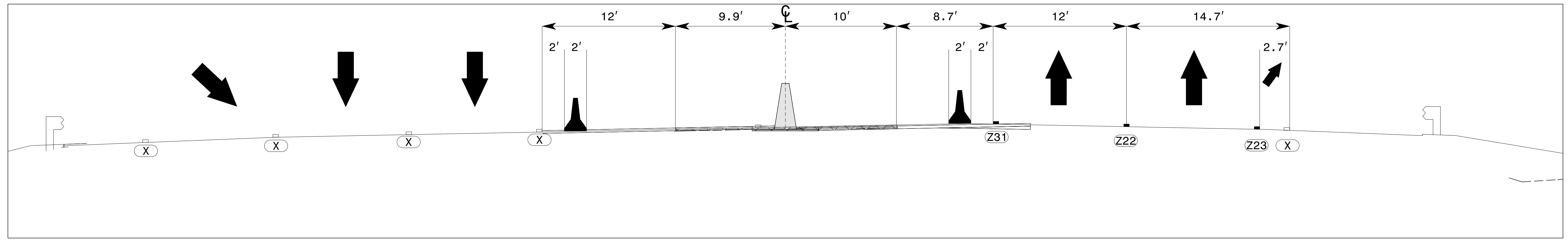
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DATE: 6/4/2024

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DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
WORK ZONE TRAFFIC CONTROL

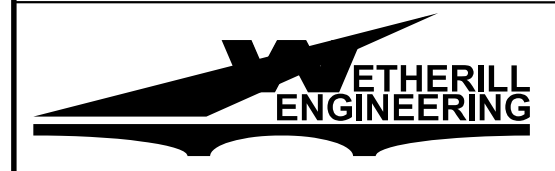

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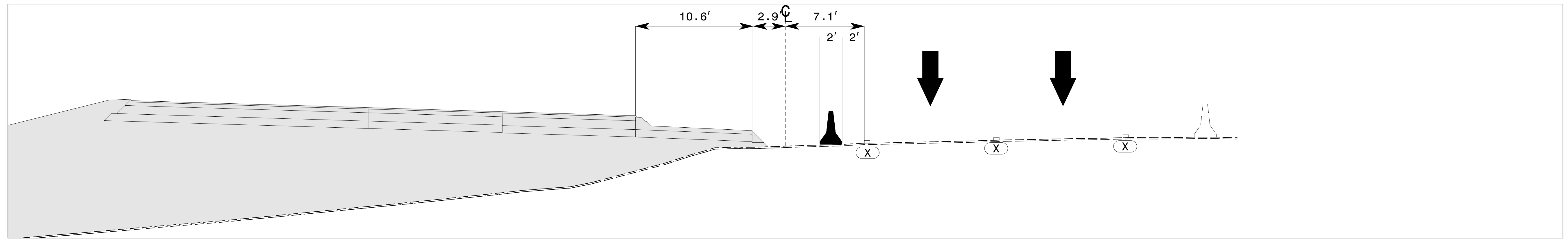
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HB-0004	TMP-21



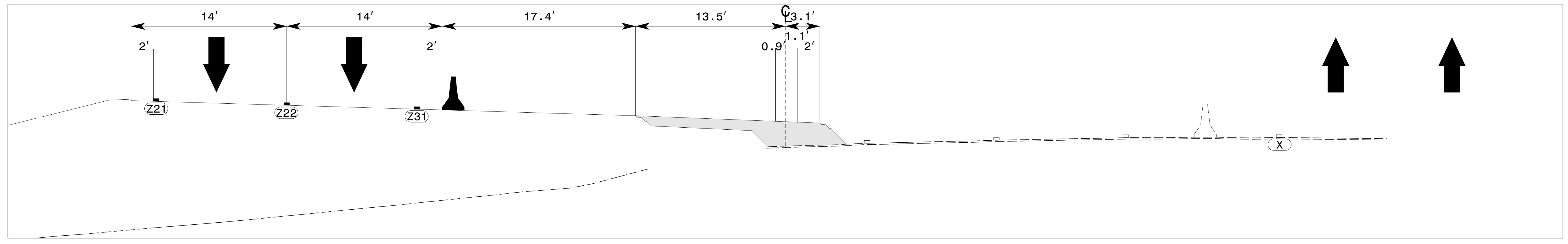
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16 | 21 CUT SECTION

4/11/2024  
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 User: AHayes

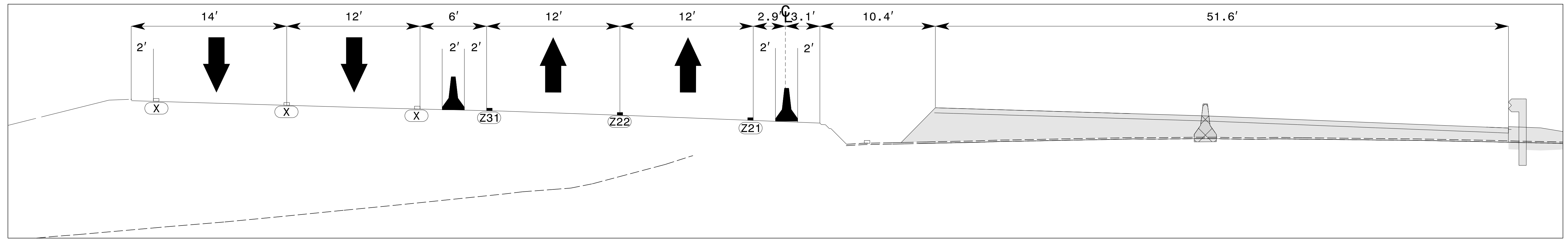
 <p>1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107</p> <p style="font-size: small;">TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION</p>	<p>APPROVED: <i>Lawrence H. Green</i>  <small>480870869820488</small></p> <p>DATE: 4/11/2024</p> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> <small>NORTH CAROLINA</small>  <small>PROFESSIONAL</small>  <small>SEAL</small>  <small>028137</small>  <small>ENGINEER</small>  <small>LAWRENCE H. GREEN</small> </div>		<p>CUT SECTION A</p>
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CUT SECTION

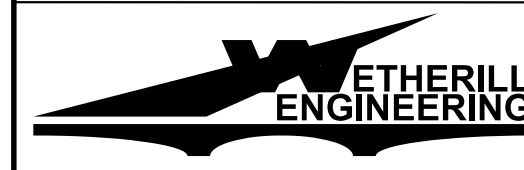


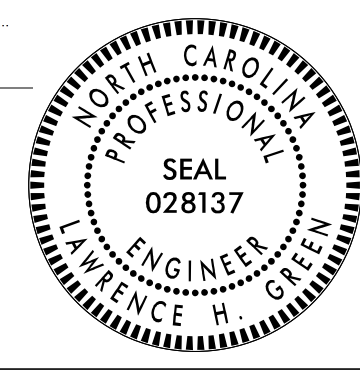
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STA. 251+00 -L-  
CUT SECTION



**B3**  
13 | 22  
STA. 251+00 -L-  
CUT SECTION

4/11/2024  
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 User: AHayes

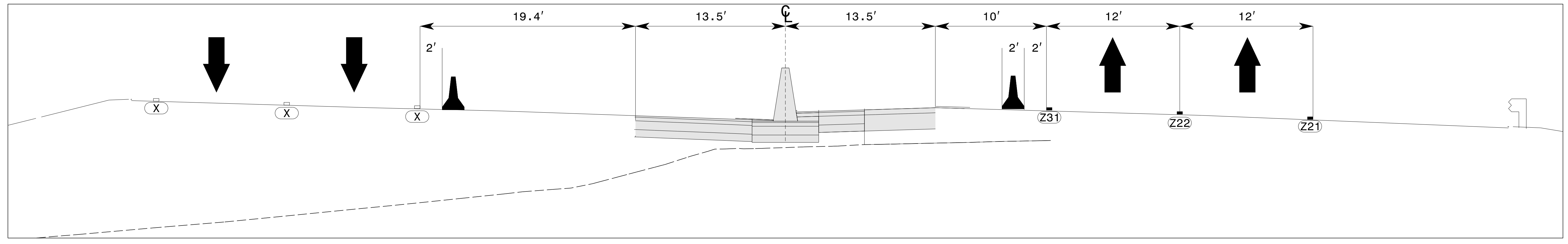
  
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 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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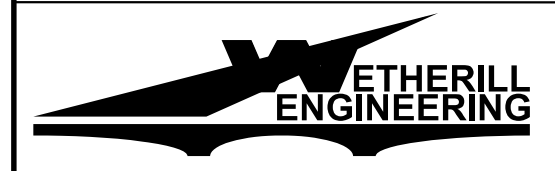
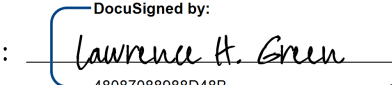
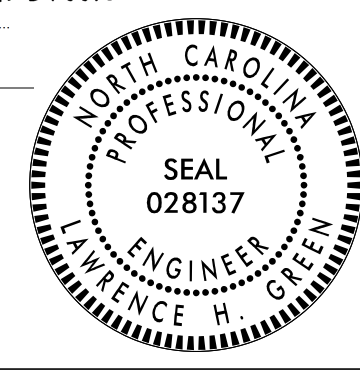

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PROJ. REFERENCE NO.	SHEET NO.
HB-0004	TMP-23

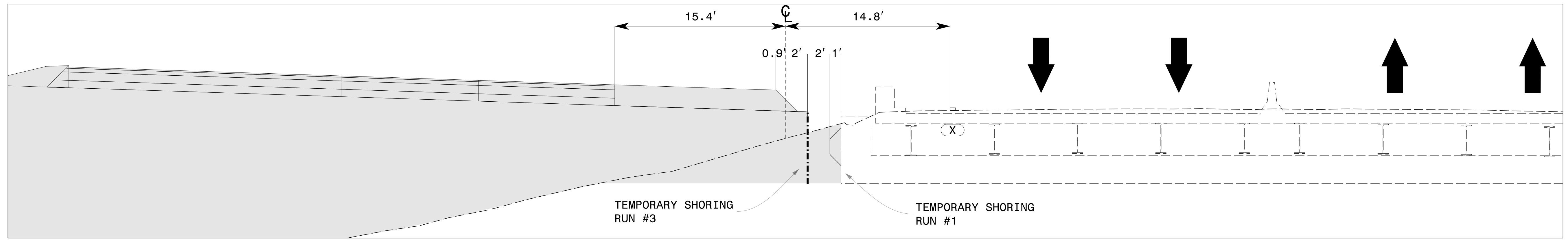


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 17 | 23
 
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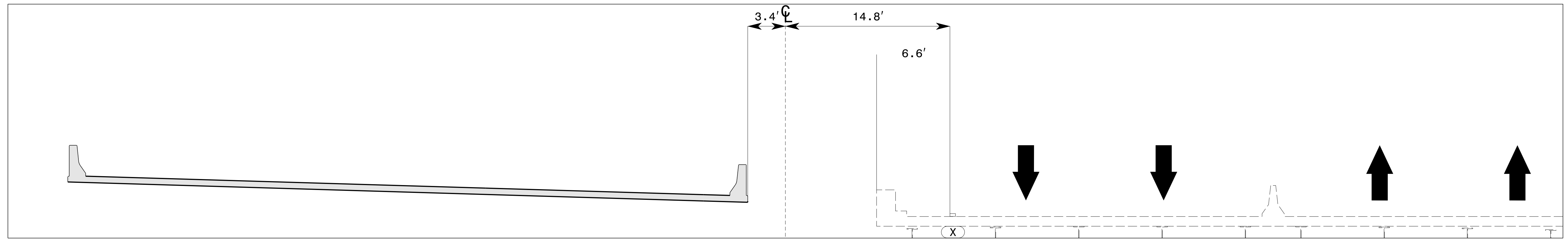
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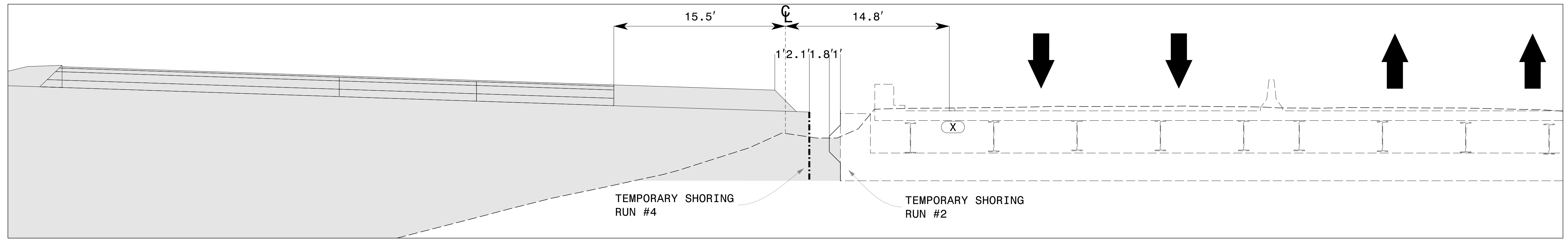




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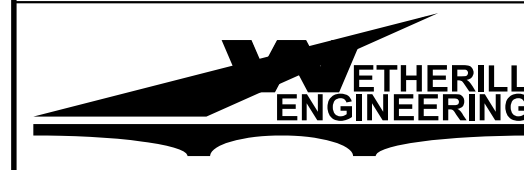


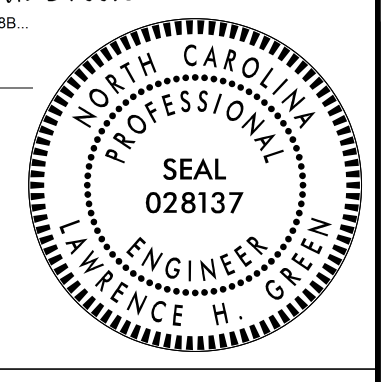
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CUT SECTION



**E1**  
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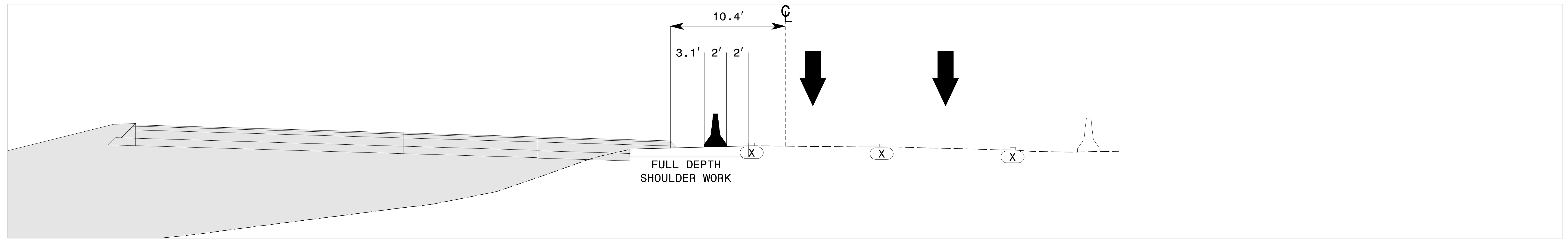
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 User: AHayes


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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

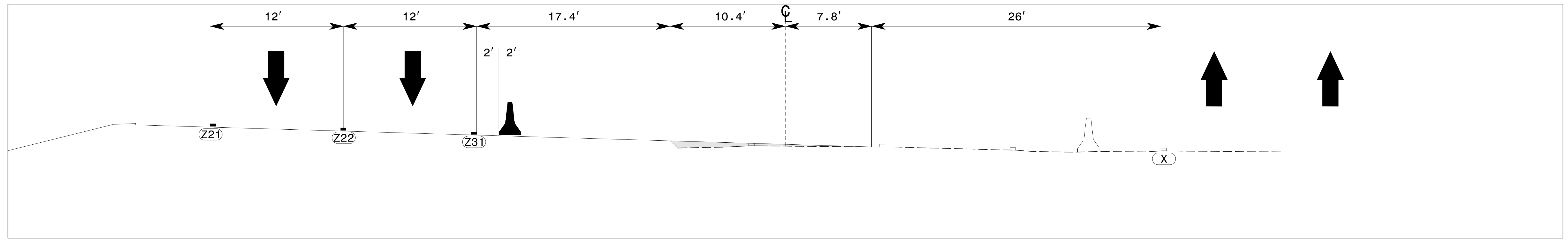
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 DATE: 4/11/2024  
  
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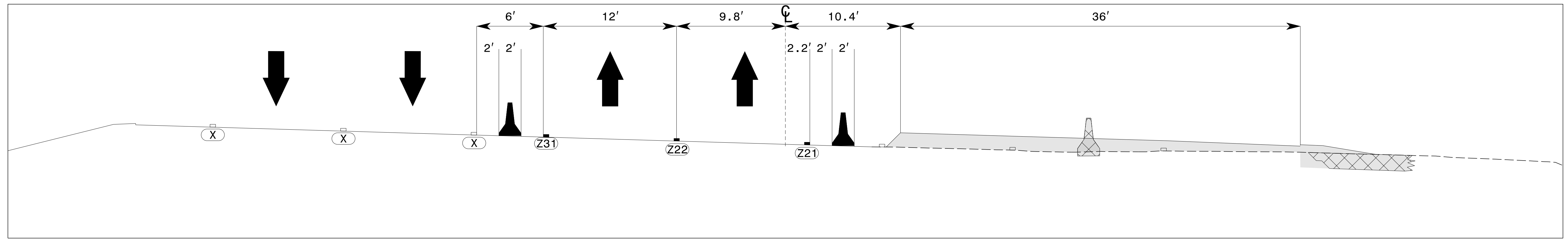
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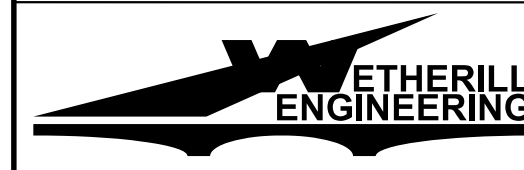


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CUT SECTION



**F3**  
14 | 25  
STA. 260+00 -L-  
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6/4/2024  
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 User: AHayes

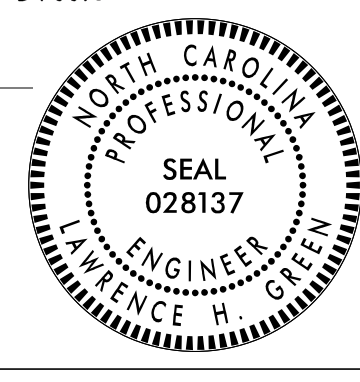


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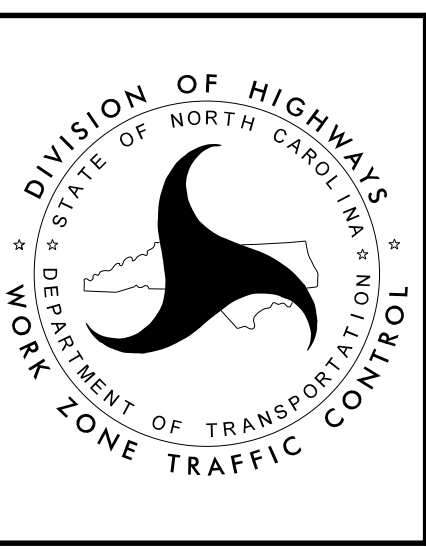
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN  
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Lawrence H. Green*  
480870889880488

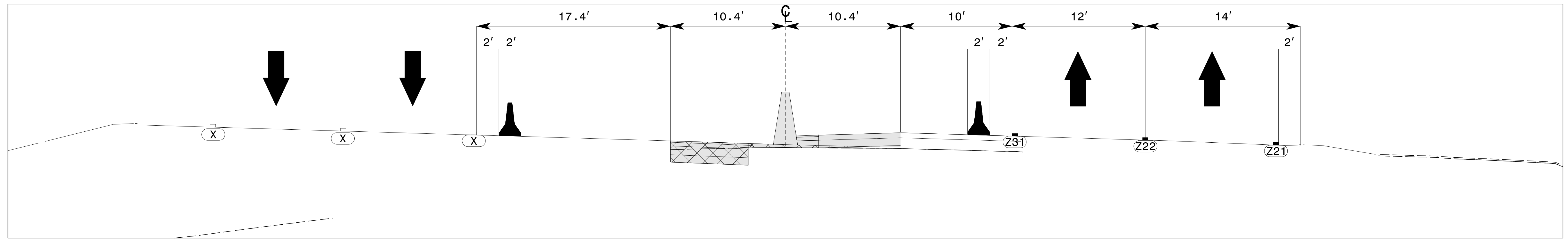
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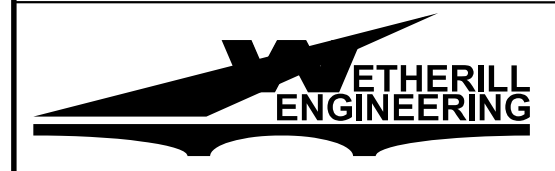



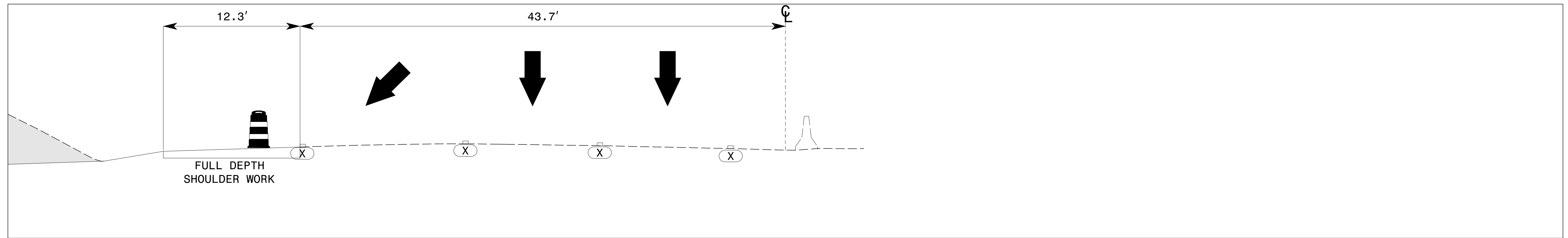
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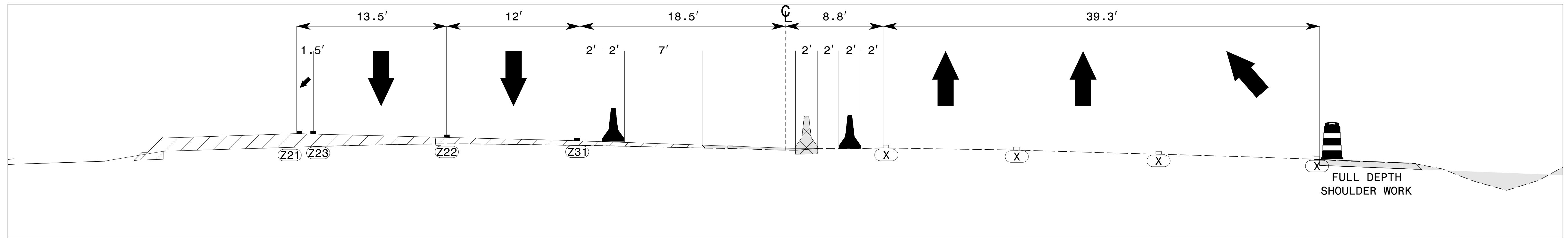
**F4**  
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 STA. 260+00 -L-  
 CUT SECTION

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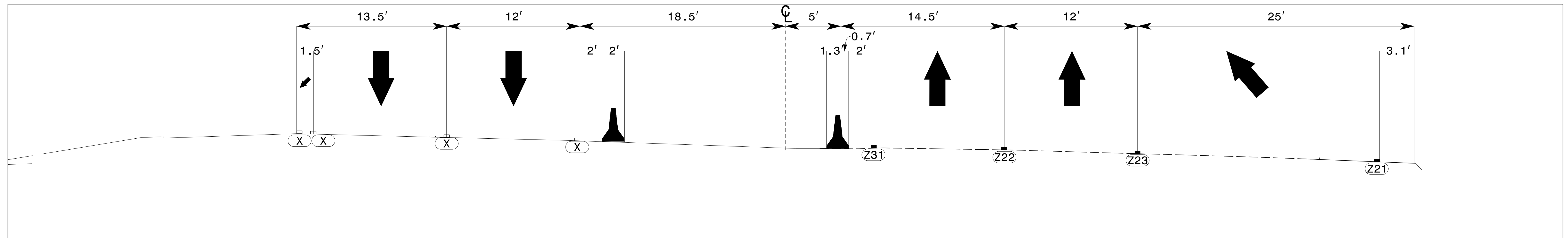
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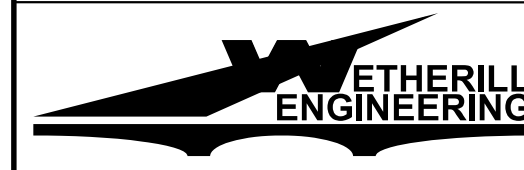


**G2**  
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STA. 268+50 -L-  
CUT SECTION



**G3**  
14 | 27  
STA. 268+50 -L-  
CUT SECTION

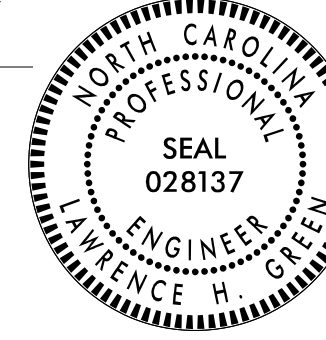
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 User: AHayes



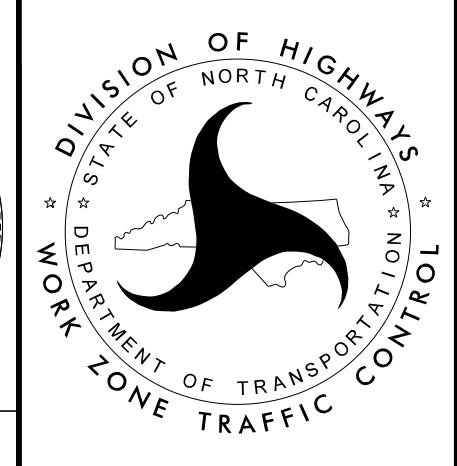
1223 Jones Franklin Rd.  
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 License No. F-0377  
 Bus: 919 851 8077  
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 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

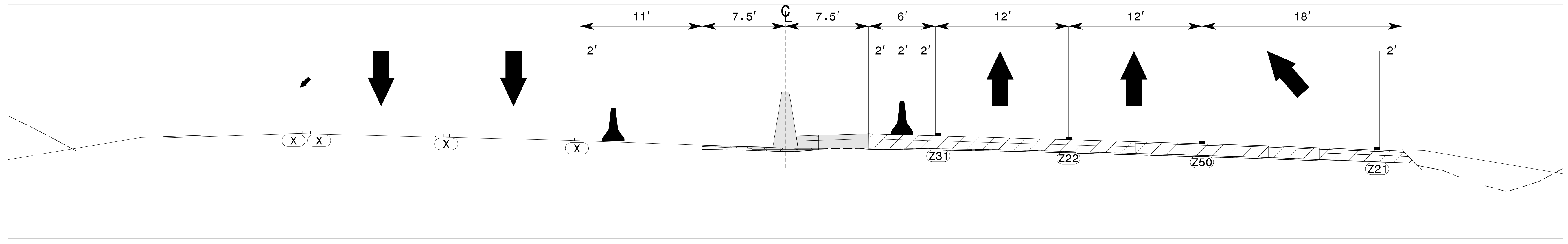
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 DATE: 6/4/2024



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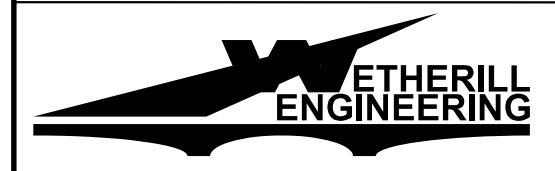
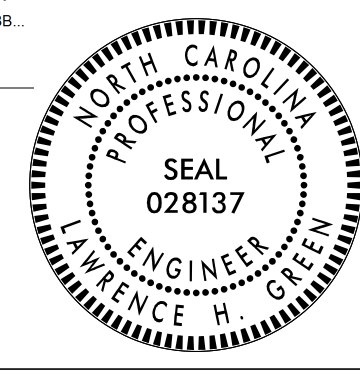

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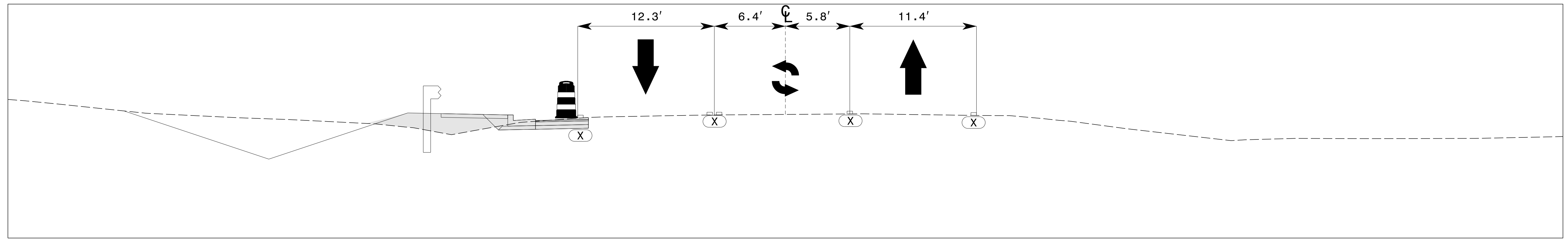
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 18 | 28
 

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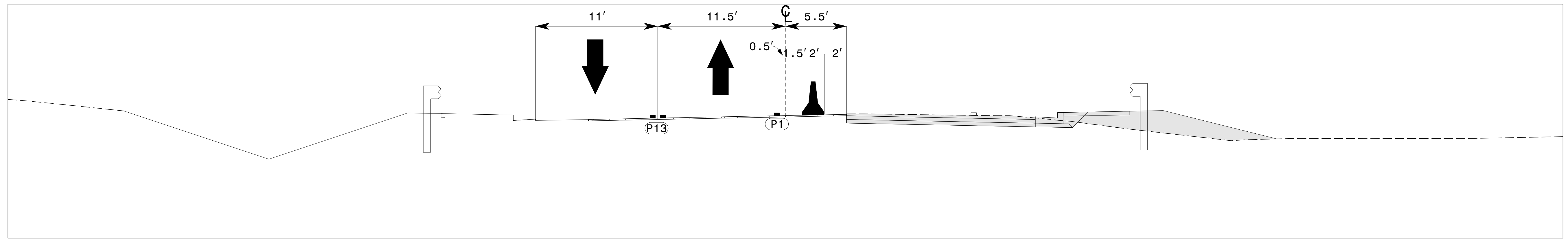
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 <p>1223 Jones Franklin Rd.        Raleigh, N.C. 27606        License No. F-0377        Bus: 919 851 8077        Fax: 919 851 8107</p> <p style="font-size: small;">TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN        CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION</p>	<p>APPROVED: <i>Lawrence H. Green</i>  <small>DocuSigned by: 48087088868048B...</small></p> <p>DATE: 4/11/2024</p>			<p><b>CUT SECTION G</b></p>
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HB-0004	TMP-29

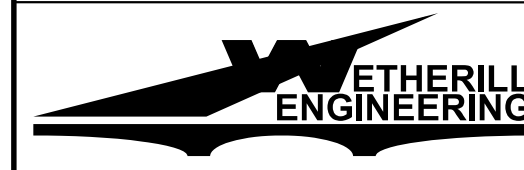


**H3**  
13 | 29  
STA. 16+00 -Y1-  
CUT SECTION



**H4**  
17 | 29  
STA. 16+00 -Y1-  
CUT SECTION

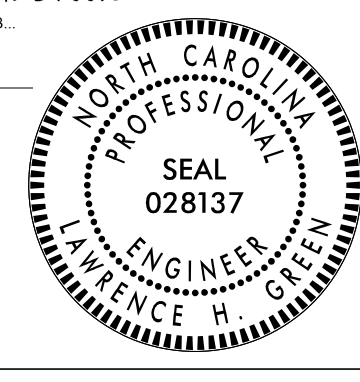
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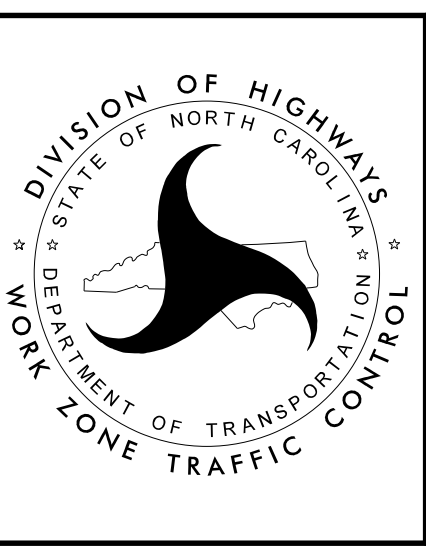
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CUT SECTIONS H