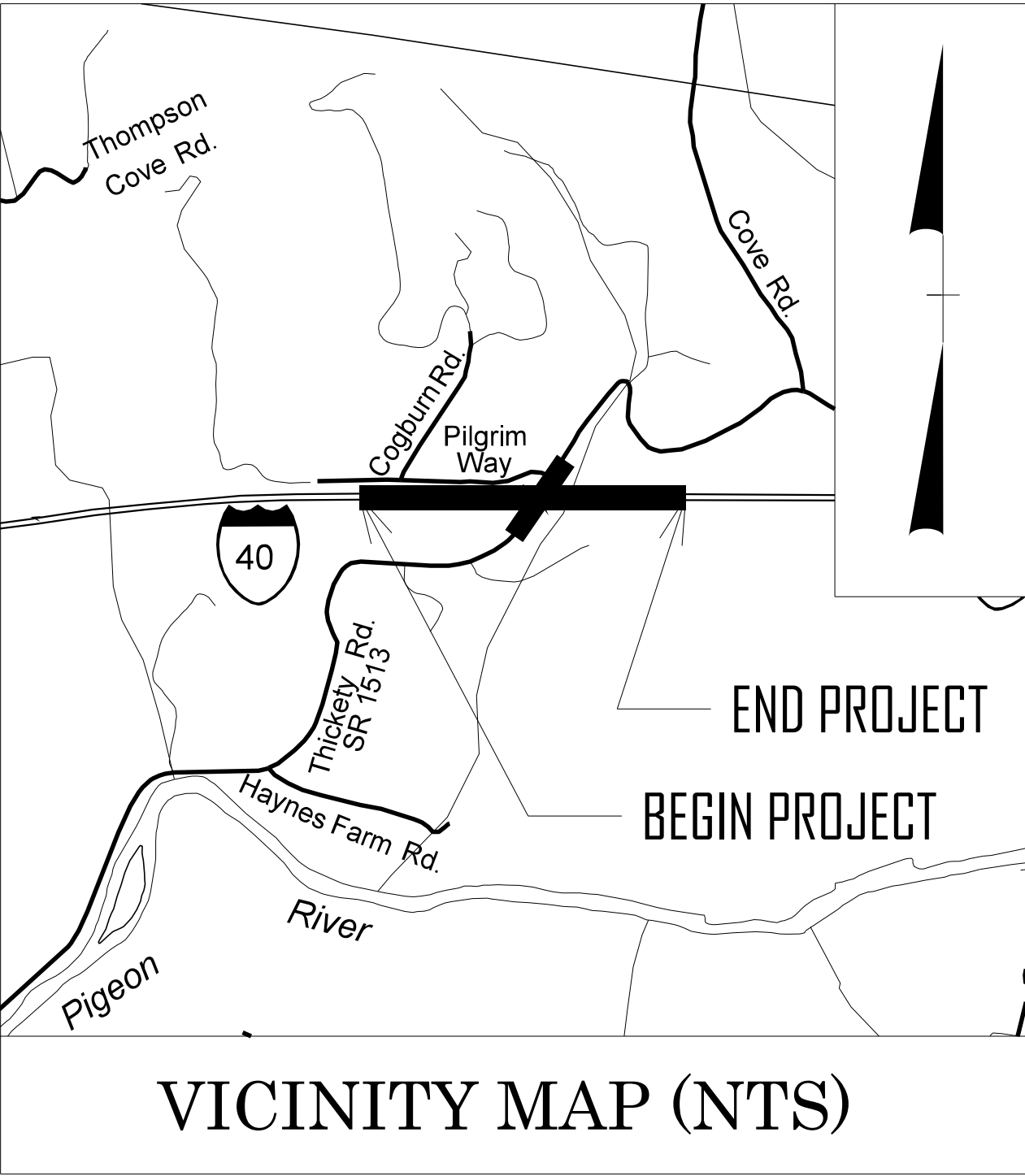
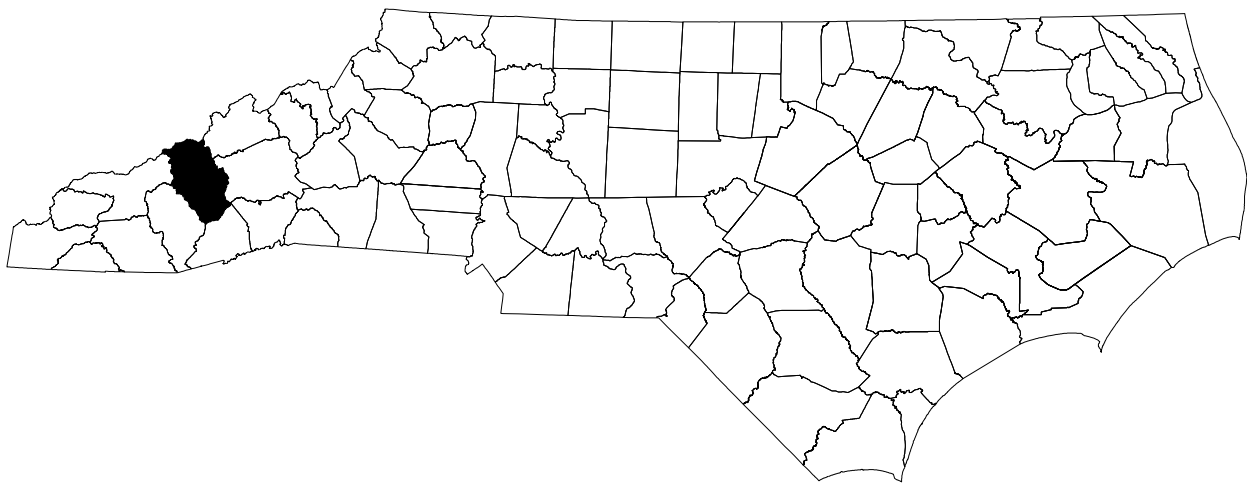


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN
HAYWOOD COUNTY



VICINITY MAP (NTS)

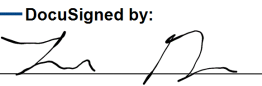
LOCATION: *REPLACE BRIDGE NO. 430236 OVER SR 1513 ON I-40*

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

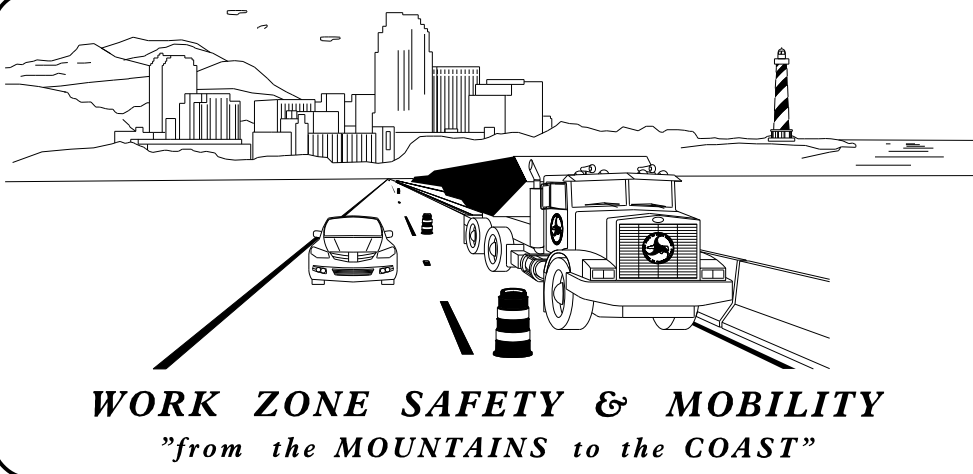
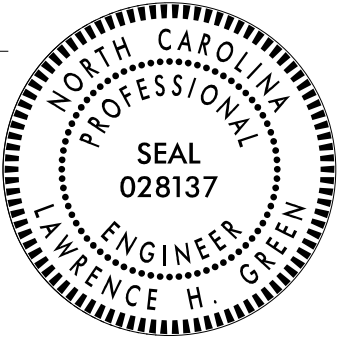
INDEX OF SHEETS

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 THRU 01C	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, AND GENERAL NOTES)
TMP-01D	SIGN AND DEVICE LEGEND
TMP-02	OFFSITE DETOUR
TMP-02A	SPECIAL SIGN DESIGN
TMP-02B	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-02C	TEMPORARY SHORING DATA
TMP-02D	DYNAMIC ZIPPER MERGE SYSTEM LAYOUT
TMP-03	PHASING
TMP-04 THRU 08	PHASE I DETAIL
TMP-09 THRU 11	PHASE II DETAIL
TMP-12 THRU 14	PHASE III DETAIL
TMP-15 THRU 17	PHASE IV DETAIL
TMP-18 THRU 30	TEMPORARY CUT SECTIONS

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UNLESS ALL SIGNATURES COMPLETED

APPROVED: 
DATE: 3/21/2025

SEAL



PLANS PREPARED BY:
LARRY GREEN, P.E.
D. ALLEN HAYES, E.I.

NCDOT CONTACTS:
ZACH SHULER, P.E.
PROJECT ENGINEER
PROJECT DESIGN ENGINEER



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SHEET NO.
TMP-01

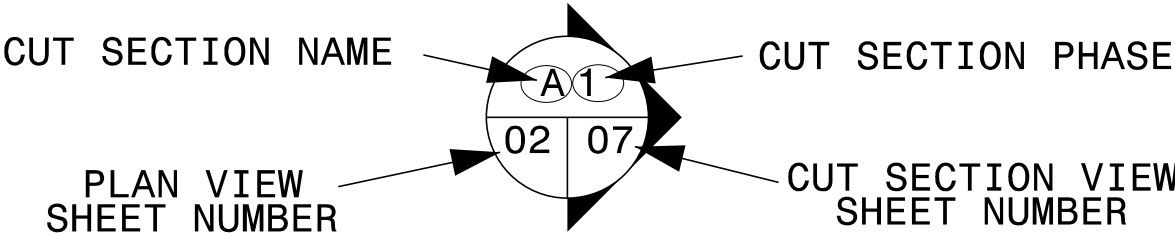
B-5541

TIP PROJECT:

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
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
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

TEMPORARY PAVEMENT

REMOVAL

WEDGING

PEOT PROPOSED EDGE OF PAVEMENT

PTOC PROPOSED TOP OF CROWN

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

DRUM

TEMPORARY CRASH CUSHION

TRUCK MOUNTED ATTENUATOR (TMA)

CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

STATIONARY SIGN

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

EXISTING PAVEMENT MARKING

PAVEMENT MARKINGS

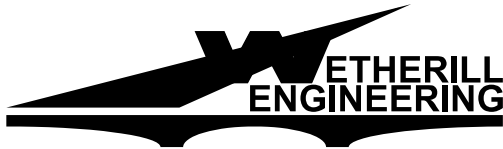
EXISTING LINES

TEMPORARY LINES

TEMPORARY PAVEMENT MARKING

TAG	DESCRIPTION	PAY ITEM
P1	WHITE SOLID EDGE LINE	PAINT (4")
P5	2 FT. - 6 FT./SP WHITE MINISKIP	PAINT (4")
P13	YELLOW DOUBLE CENTER	PAINT (4")
P61	WHITE STOPBAR	PAINT (24")
Z20	WHITE SOLID EDGE LINE	WZ PERFORMANCE PM (6")
Z21	WHITE SOLID LANE LINE	WZ PERFORMANCE PM (6")
Z22	10 FT. - 30 FT./SP WHITE SKIP	WZ PERFORMANCE PM (6")
Z30	YELLOW SOLID EDGE LINE	WZ PERFORMANCE PM (6")
MI	CRYSTAL & RED	TEMPORARY RAISED MARKER

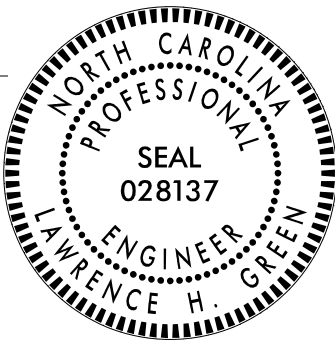
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APPROVED:
DATE: 4/3/2025



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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)	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)

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 CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. -Y1- (SR 1513)	5:00 A.M. - 10:00 P.M. SUNDAY THRU SATURDAY

D) DO NOT CONDUCT SINGLE VEHICLE HAULING AS FOLLOWS:
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
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E) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS:

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

- G) 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.
- H) 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.
- I) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, 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 WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, 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.
- N) USE SEQUENTIAL FLASHING WARNING LIGHTS ON DRUMS USED FOR THE MERGING TAPERS OF NIGHTTIME LANE CLOSURES IN ACCORDANCE WITH SECTION 1140 IN THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- O) NOTIFY THE NCDOT STATEWIDE TRANSPORTATION OPERATIONS CENTER (STOC) AT 877-627-7862 APPROXIMATELY 30 MINUTES PRIOR TO INSTALLING AND WITHIN 15 MINUTES AFTER REMOVING LANE CLOSURES ON INTERSTATES, FREEWAYS, CONTROLLED ACCESS FACILITIES, AND US ROUTES.
- P) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.
- PAVEMENT EDGE DROP OFF REQUIREMENTS
- Q) 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.
- R) 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.

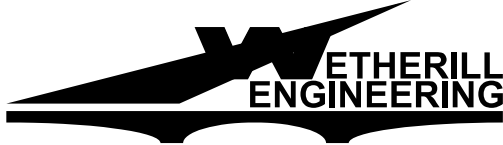
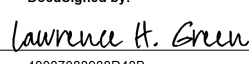
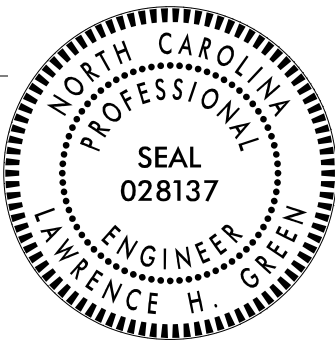
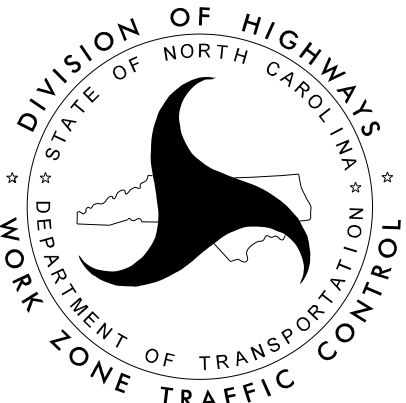
TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- T) 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.
- U) 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.
- V) 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.
- W) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- X) 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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	 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	APPROVED:  DATE: 3/5/2025  DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)
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PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-01C

GENERAL NOTES

MANAGEMENT STRATEGIES

TRAFFIC BARRIER

Y) 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.

Z) 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

AA) 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.

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

CC) 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

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

ROAD NAME	MARKING	MARKER
1. I-40	WZ PERFORMANCE PM	TEMPORARY RAISED
1. -Y1-, -SR1-	PAINT	NONE

EE) 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.

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

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

MISCELLANEOUS

HH) 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) 500 FT AND 500 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

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

JJ) THE CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES DURING CONSTRUCTION.

KK) 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.

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

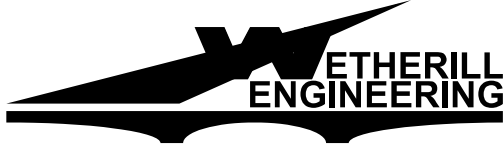
RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:
FULL ROADWAY CLOSURES
ROLLING ROADBLOCK
DYNAMIC ZIPPER MERGE
LANE SHIFTS OR CLOSURES
SHOULDER CLOSURES
ONE-LANE, TWO WAY OPERATION (FLAGGING)
WORK HOUR RESTRICTIONS FOR PEAK TRAVEL
OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES
ON-SITE DETOURS

WORK ZONE SAFETY & MOBILITY STRATEGIES:
SEQUENTIAL LIGHTING
WORK ZONE PERFORMANCE PAVEMENT MARKINGS

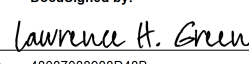
TRAFFIC / INCIDENT MANAGEMENT & SPEED ENFORCEMENT STRATEGIES:
COORDINATION WITH STATE TRAFFIC OPERATIONS CENTER (STOC)

3/5/2025
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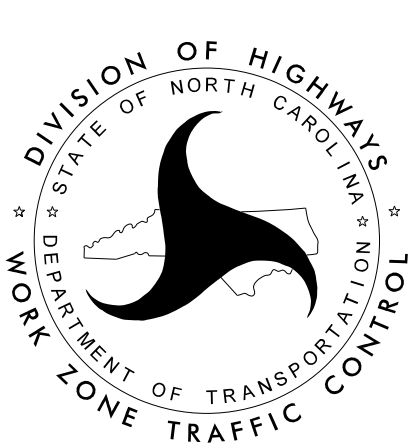
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

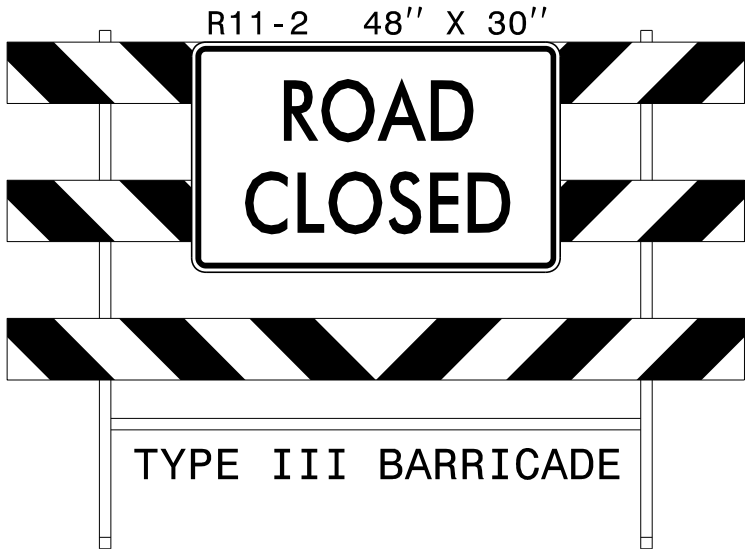
APPROVED: 
DATE: 3/5/2025



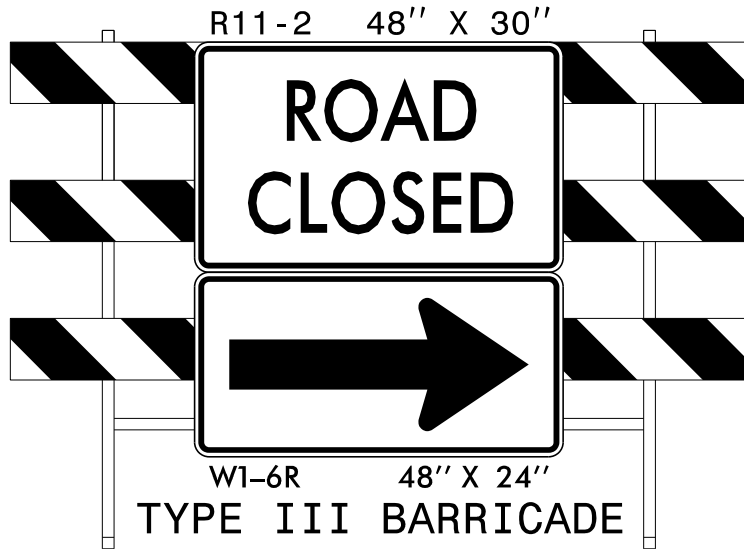
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



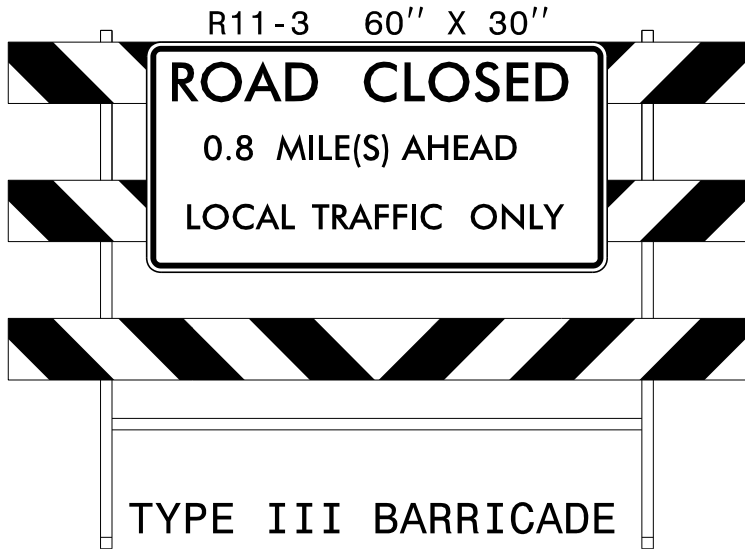
TRANSPORTATION OPERATIONS
PLAN: (MANAGEMENT
STRATEGIES AND GENERAL
NOTES)



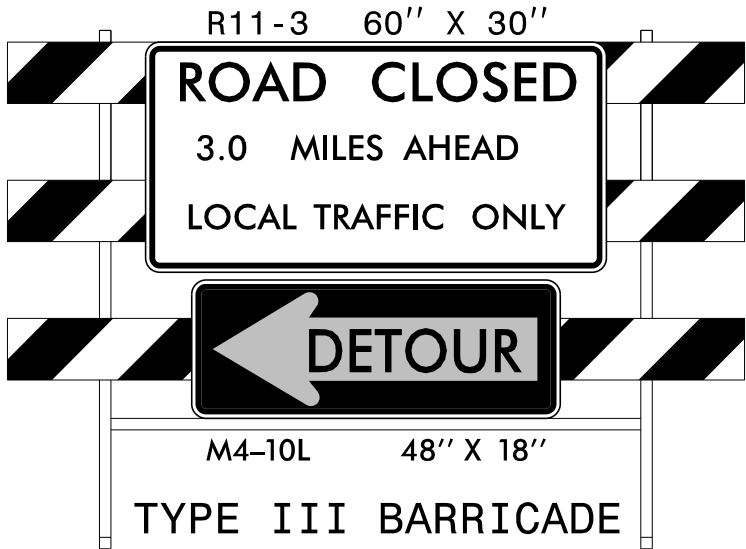
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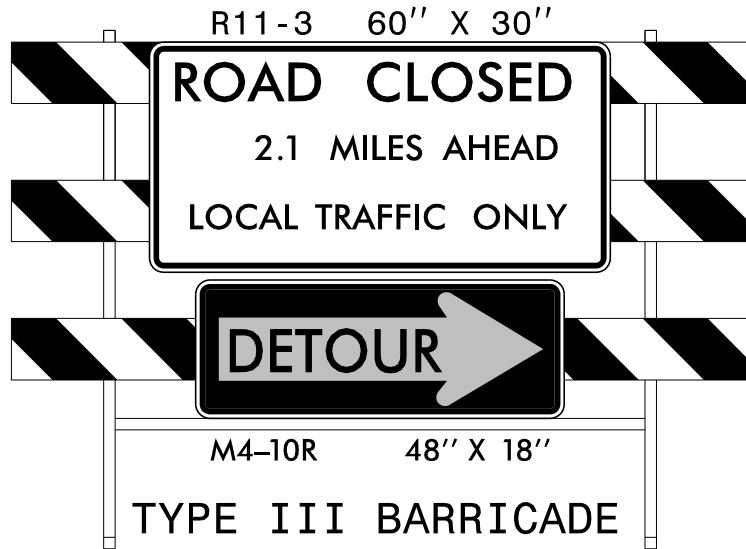
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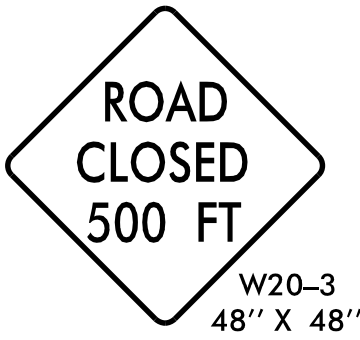
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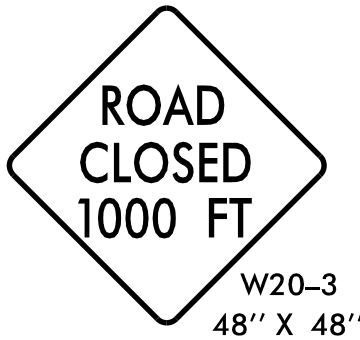
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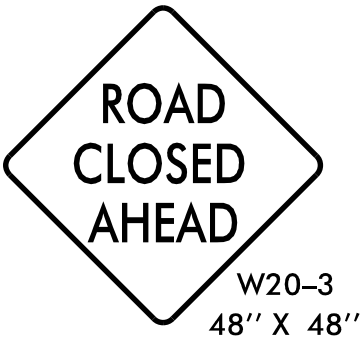
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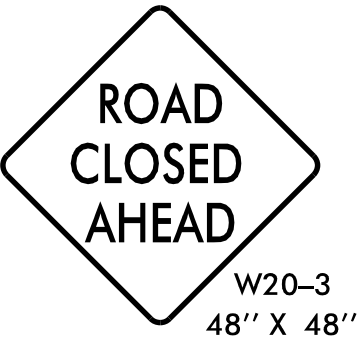
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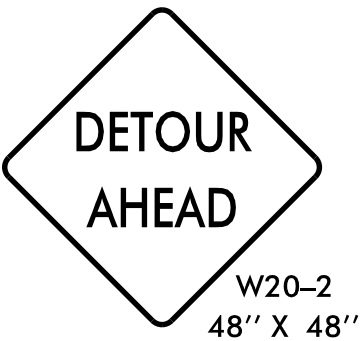
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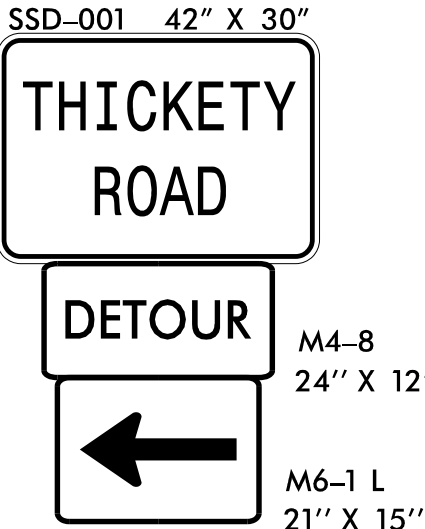
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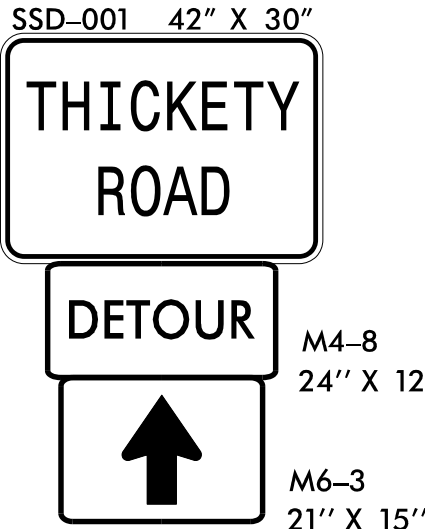
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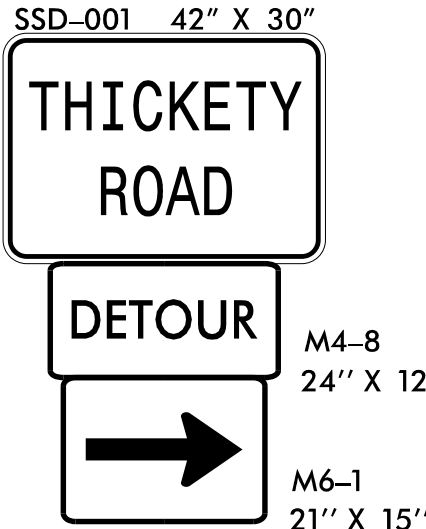
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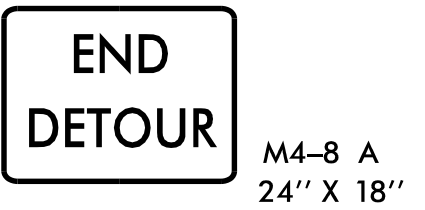
G



H



I



J

MESSAGE NO. 1	MESSAGE NO. 2
(ROAD) WILL BE CLOSED	STARTING (DAY) (TIME)

CHANGEABLE MESSAGE SIGN



BARRICADES
-WITH MOUNTED SIGNING

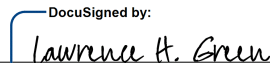


SIGNING
-STATIONARY MOUNTED



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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: 
DATE: 3/5/2025

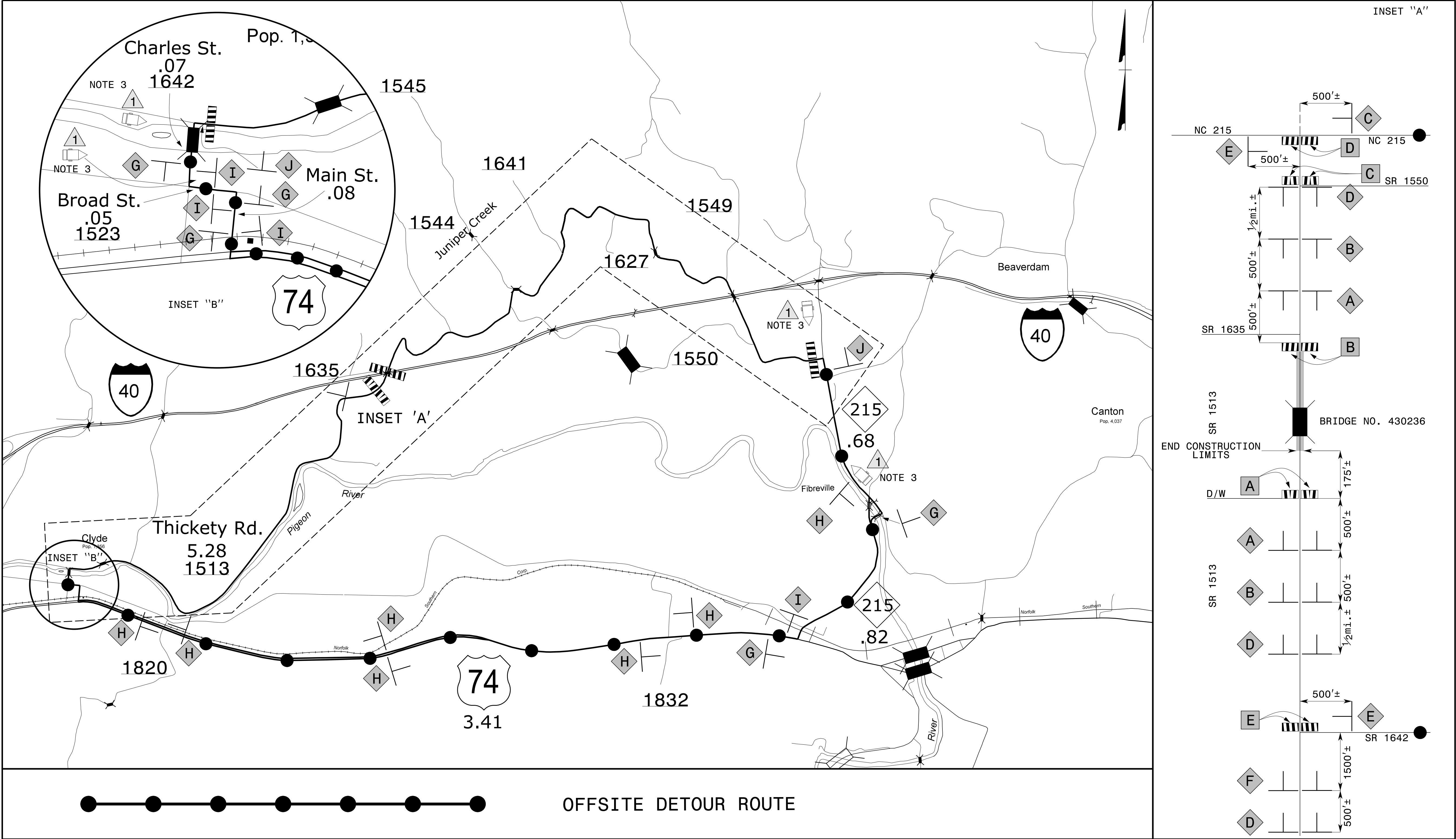


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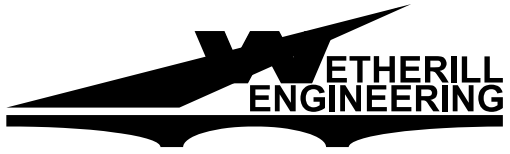


SIGN AND DEVICE LEGEND

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-02



- NOTES:
- 1) REFER TO SHEET TMP-01B FOR SIGN AND DEVICE LEGEND.
 - 2) FOR INSET "A", REFER TO ROADWAY STANDARD DRAWINGS 1101.03, SHEETS 1 & 2 OF 9 FOR APPLICABLE NOTES.
 - 3) CMS SHOULD BE POSITIONED NO MORE THAN 7 DAYS BEFORE CLOSURE OR AS DIRECTED BY THE ENGINEER. DATES SHOULD BE AVOIDED ON THE CMS, USE DAY OF WEEK INSTEAD.



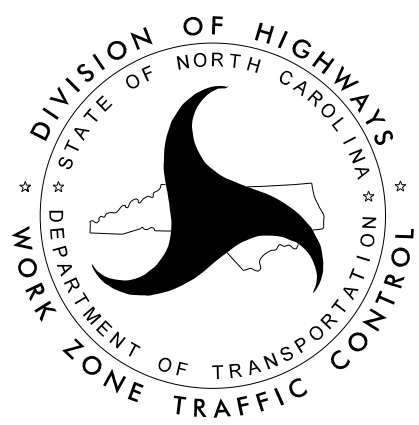
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Lawrence H. Green*
DATE: 4/17/2025



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UNLESS ALL SIGNATURES COMPLETED



OFFSITE DETOUR

SIGN NUMBER: name

TYPE: STATIONARY

QUANTITY: SEE PLANS

SIGN WIDTH: 3'-6"

HEIGHT: 2'-6"

TOTAL AREA: 8.8 Sq.Ft.

BORDER TYPE: INSET

RECESS: 0.38"

WIDTH: 0.63"

RADII: 1.5"

BACKG COLOR: Fluorescent Orange

COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.080" (2.0 mm) ALUMINUM

NO. Z BARS:

LENGTH:

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.

2. Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

DESIGN BY: DAH

PROJECT ID: B-5541

CHECKED BY: WEI

LOCATION: OFFSITE DETOUR

Jan 24, 2025

DIV: 14

THICKETY ROAD

3'-6"

2'-6"

6.75"

6"C

4.5"

6"C

6.75"

5.8"

30.4"

5.8"

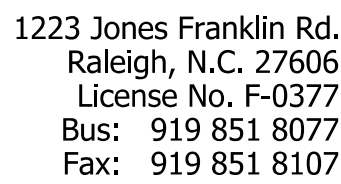
BORDER R=1.5"

TH=0.63"

IN=0.38"

Spacing Factor is 1 unless specified otherwise

3/5/2025
P:\2023\2
User:AHay



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

A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "LAWRENCE H. GREEN" at the bottom. Inside this ring, the word "PROFESSIONAL" is at the top and "ENGINEER" is at the bottom. In the center of the seal, the word "SEAL" is positioned above the license number "028137".



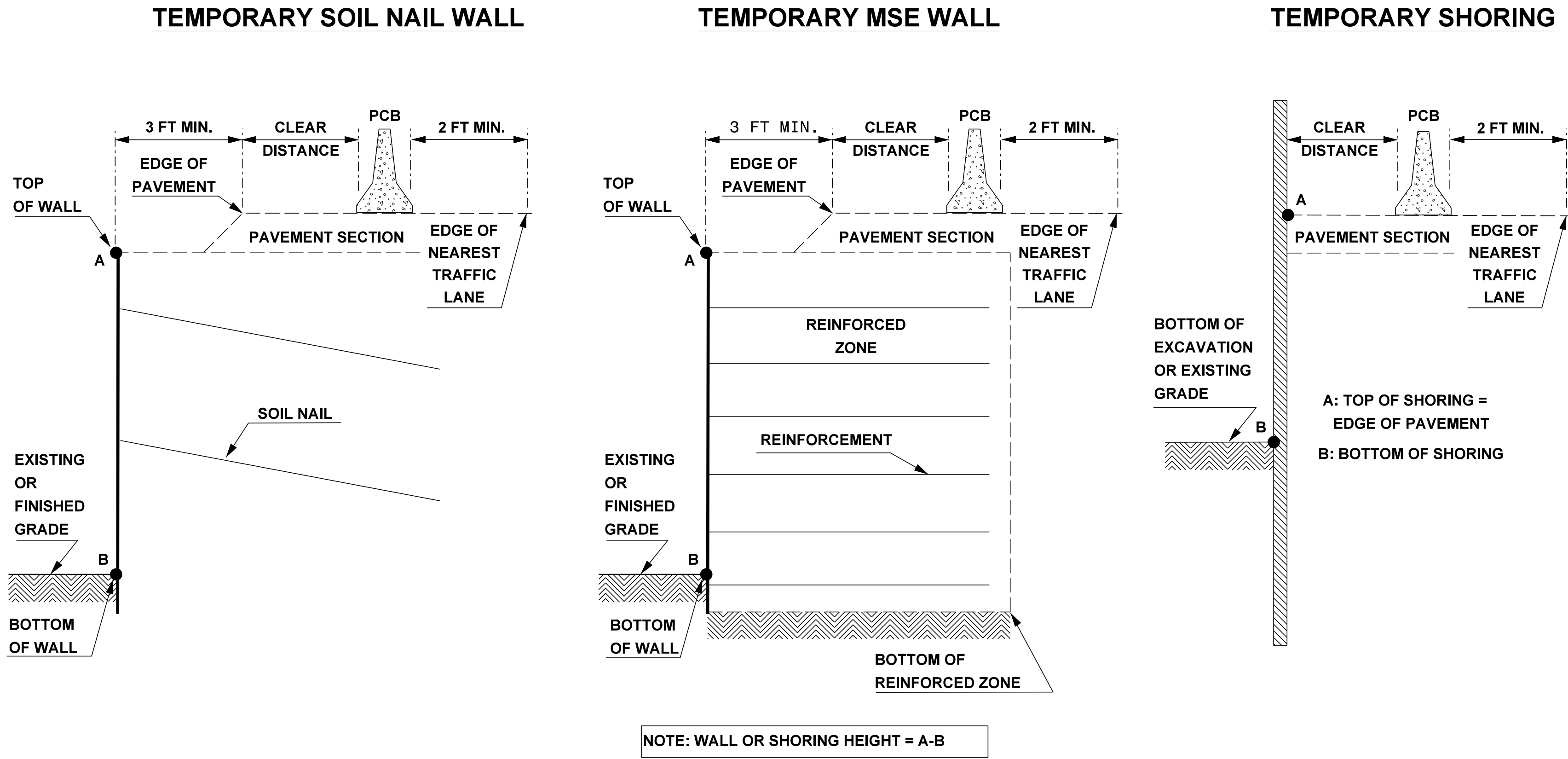


FIGURE A

NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" STANDARD PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- 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).
- 4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING/WALLS EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- 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.
- 8- 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.
- 9- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS.

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-02B

MINIMUM REQUIRED CLEAR DISTANCE, inches								
Barrier Type	Pavement Type	Offset *	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
	Concrete	>56	32	36	42	45	47	51
		<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

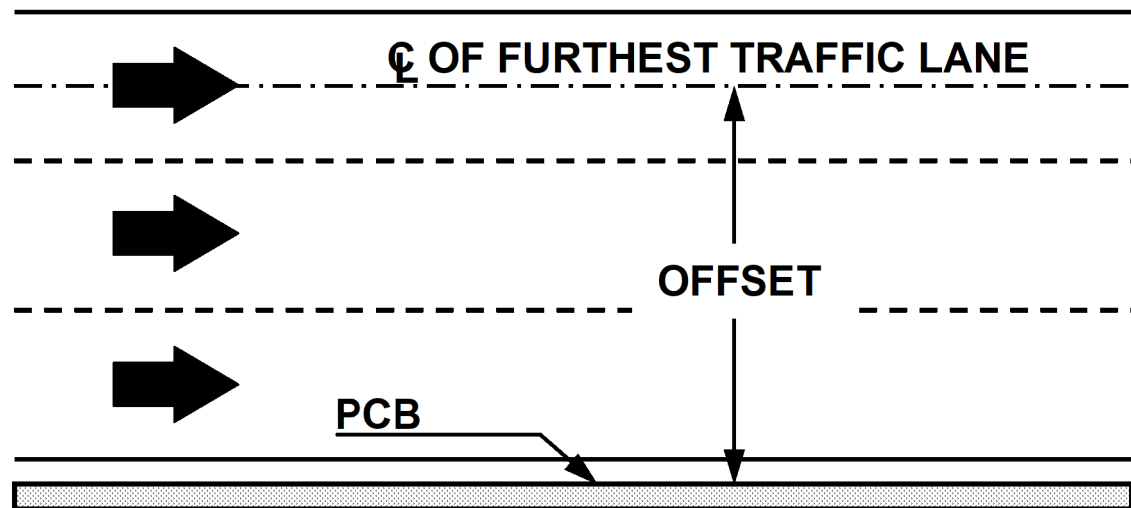
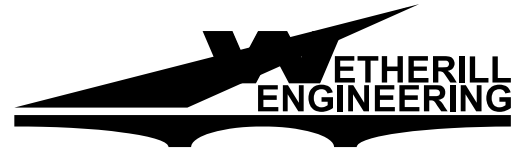


FIGURE B

3/5/2025
P:\2023\23377\LB-5541\Traffic Design\2 Plan Design\4 WZTC\B-5541_TMP_02B_TS_0RO_10_12.dgn
User:AHayes



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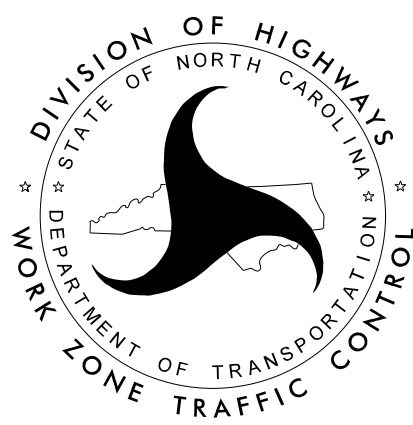
APPROVED:

3/5/2025

DATE:



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UNLESS ALL SIGNATURES COMPLETED



PORTABLE CONCRETE
BARRIER AT TEMPORARY
SHORING LOCATIONS

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-02C

Shoring Location Nos. ①, ②, ⑦, and ⑧

THE FOLLOWING SHORING RECOMMENDATIONS ARE FOR TEMPORARY SHORING LOCATIONS AS INDICATED BELOW:
1) TEMPORARY SHORING LOCATION NO. 1 FROM STATION 28+67 -L-, 19.3’ RT, TO STATION 29+22 -L-, 19.3’ RT.
2) TEMPORARY SHORING LOCATION NO. 2 FROM STATION 29+76 -L- 19.6’ RT, TO STATION 30+39 -L- 19.6’ RT.
3) TEMPORARY SHORING LOCATION NO. 7 FROM STATION 28+95 -L- 19.2’ LT, TO STATION 29+45 -L- 19.2’ LT.
4) TEMPORARY SHORING LOCATION NO. 8 FROM STATION 29+98 -L- 19.1’ LT, TO STATION 30+58 -L- 19.1’ LT.

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 LOCATION NOS. 1, 2, 7, AND 8 FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ)= 120 LB/CF
FRICTION ANGLE (ϕ)= 28 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 2645 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING LOCATION NOS. 1, 2, 7, AND 8. 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 STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING LOCATION NOS. 1, 2, 7, AND 8. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING LOCATION NOS. 1, 2, 7, AND 8. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

Shoring Location Nos. ④, ⑤, ⑨, and ⑩

THE FOLLOWING SHORING RECOMMENDATIONS ARE FOR TEMPORARY SHORING LOCATIONS AS INDICATED BELOW:
1) TEMPORARY SHORING LOCATION NO. 4 FROM STATION 29+50 -L- 22.1’ RT, TO STATION 29+19 -L- 22.1’ RT.
2) TEMPORARY SHORING LOCATION NO. 5 FROM STATION 29+69 -L- 22.1’ RT, TO STATION 30+20 -L- 22.1’ RT.
3) TEMPORARY SHORING LOCATION NO. 9 FROM STATION 28+97 -L- 22.1’ LT, TO STATION 29+45 -L- 22.1’ LT.
4) TEMPORARY SHORING LOCATION NO. 10 FROM STATION 29+94 -L- 22.1’ LT, TO STATION 30+60 -L- 22.1’ LT.

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 LOCATION NOS. 4, 5, 9, AND 10 FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ)= 120 LB/CF
FRICTION ANGLE (ϕ)= 28 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 2645 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING LOCATION NOS. 4, 5, 9, AND 10. 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 NOS. 4, 5, 9, AND 10. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

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

Shoring Location Nos. ③ and ⑥

THE FOLLOWING SHORING RECOMMENDATIONS ARE FOR TEMPORARY SHORING LOCATIONS AS INDICATED BELOW:
1) TEMPORARY SHORING LOCATION NO. 3 FROM STATION 25+80 -L- 16.7’ RT, TO STATION 29+50 -L- 22.1’ RT.
2) TEMPORARY SHORING LOCATION NO. 6 FROM STATION 30+20 -L- 22.1’ RT, TO STATION 32+50-L- 17.1’ RT

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.

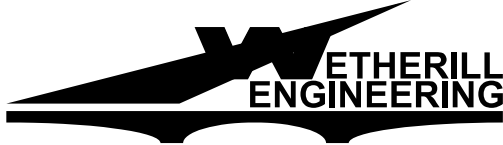
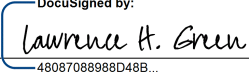
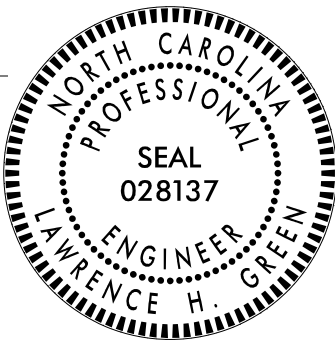
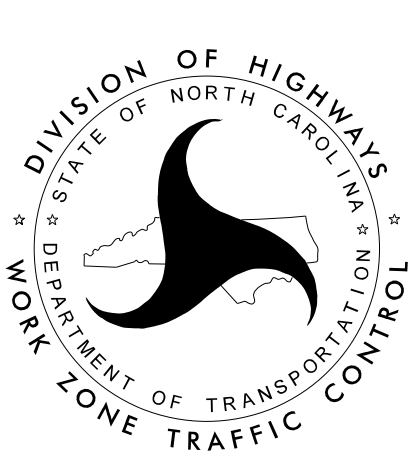
DESIGN TEMPORARY SHORING LOCATION NOS. 3 AND 6 FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (γ)= 120 LB/CF
FRICTION ANGLE (ϕ)= 28 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 2645 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING LOCATION NOS. 3 AND 6. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

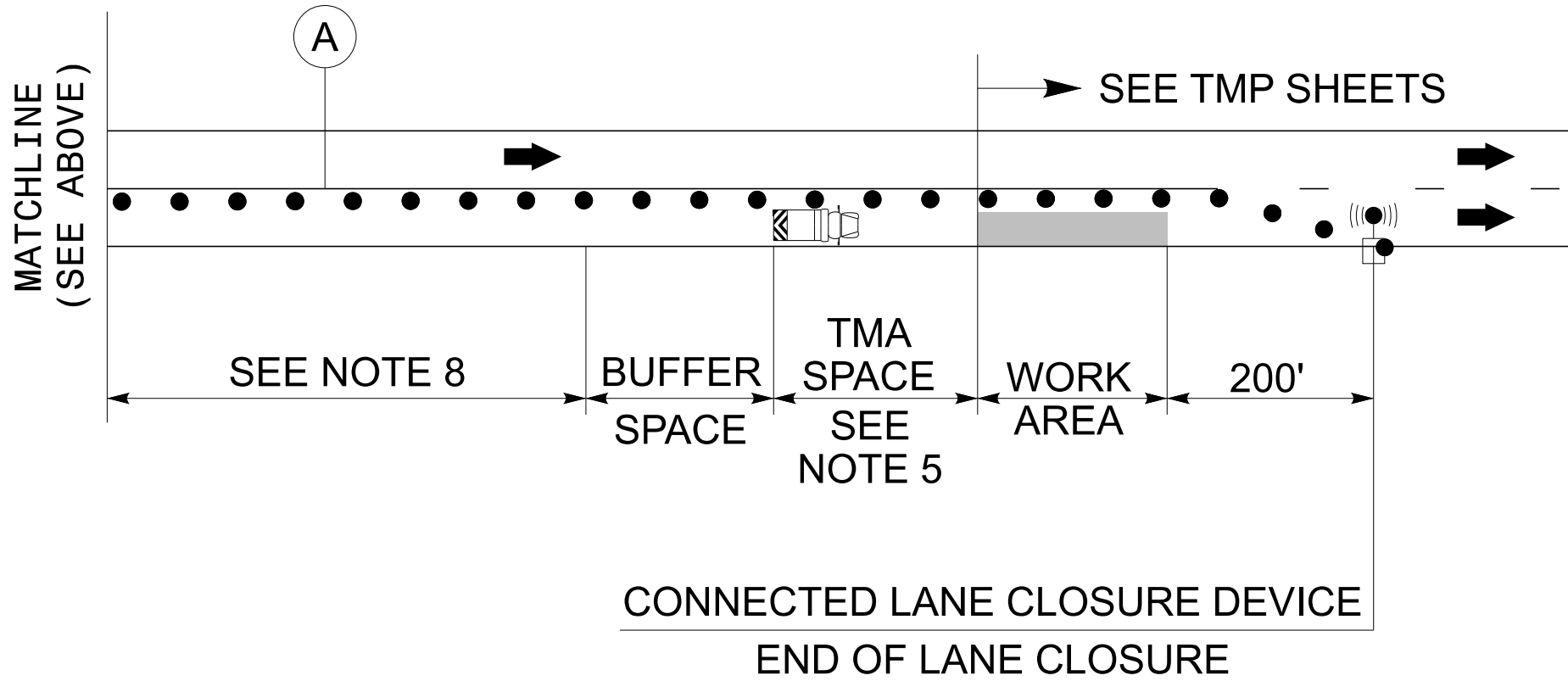
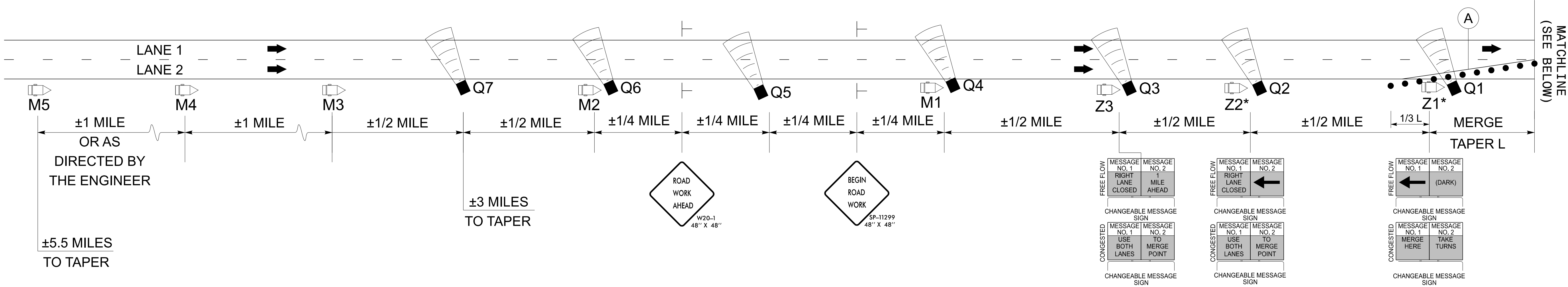
AT THE CONTRACTOR’S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING NOS. 3 AND 6. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON 02/24/25 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.

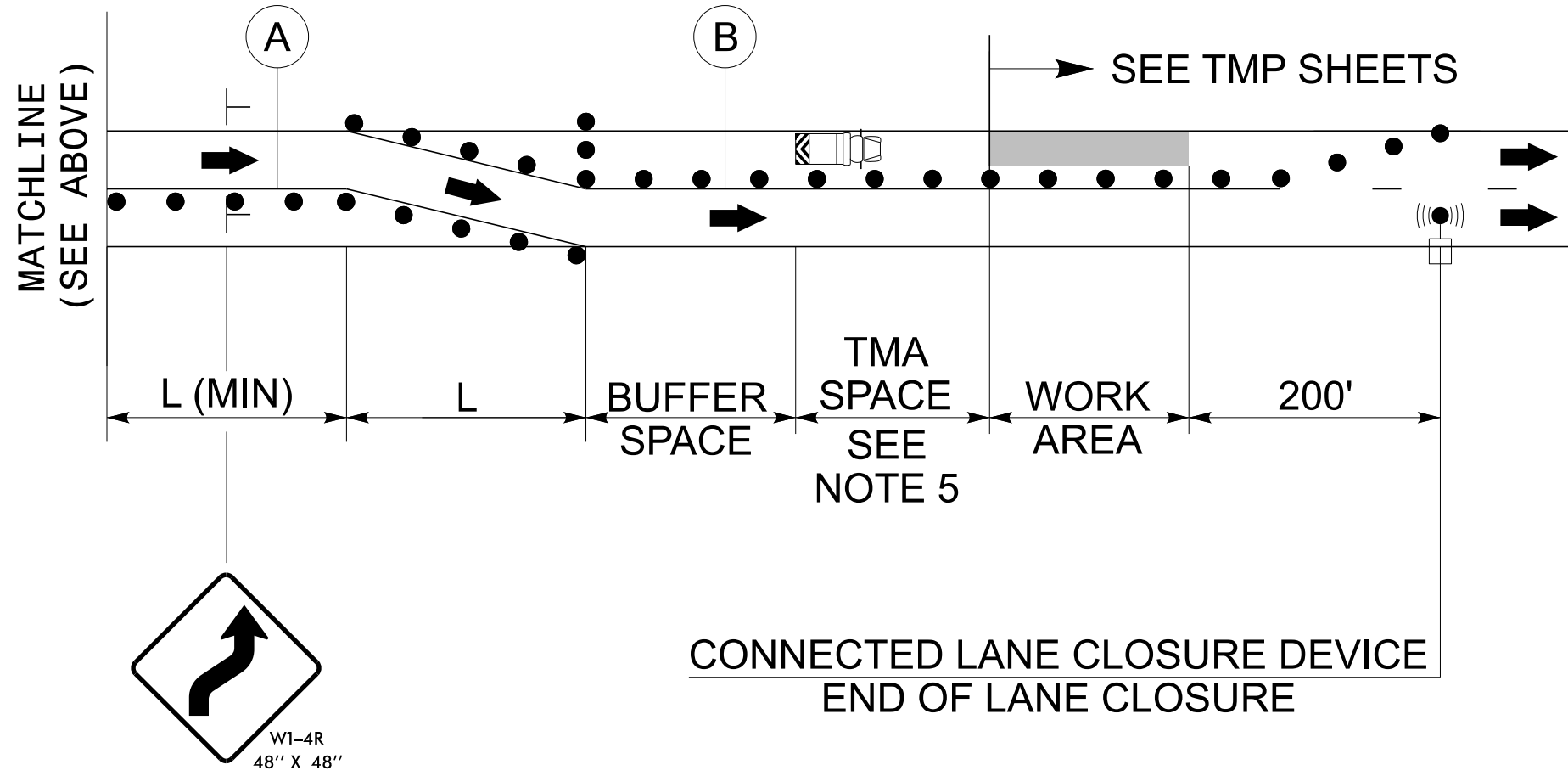
4/17/2025
P:\2023\23377\LB-5541\Traffic Design\2 Plan Design\4 WZTC\B-5541_TMP_02C TSData_0R0_IO_IO.dgn
User:AHayes

	 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	APPROVED:  DATE: 4/17/2025  DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		TEMPORARY SHORING DATA
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PROJ. REFERENCE NO.	SHEET NO.
B - 5541	TMP - 02D



RIGHT LANE WORK AREA



LEFT LANE WORK AREA * (IF APPLICABLE)

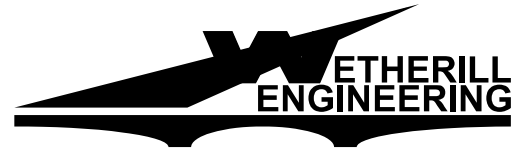
GENERAL NOTES

- 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.

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

3/5/2025
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED:
DATE: 3/5/2025



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DYNAMIC ZIPPER MERGE
SYSTEM LAYOUT

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-03

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 'R' ON SHEET TMP-01B.

NOTE: THE CONTRACTOR MAY NEED TO UTILIZE THE PERMANENT DRAINAGE BOXES (WITH ADJUSTED TOP ELEVATIONS) OR TEMPORARY DRAINAGE BOXES THAT TIE TO THE CURRENTLY PROPOSED PIPE CROSSINGS THROUGHOUT THE CORRIDOR TO INTERCEPT STORMWATER RUNOFF DURING THE TEMPORARY WIDENING / LANE SHIFT CONDITION.

PHASE I

STEP 1) USING ROADWAY STANDARD DRAWING (RSD) 1101.02, INSTALL ALL ADVANCE WORK ZONE SIGNING ON THE PROJECT.

STEP 2) USING RSD 1101.02, REMOVE AND REPLACE EXISTING SHOULDERS ON -L- (I-40) EB. [04-05]

STEP 3) INSTALL ROAD CLOSURE AND OFF-SITE DETOUR SIGNING AND DEVICES AND COVER. [01D, 02, & 02A]

USING RSD 1101.02, INSTALL TEMPORARY PAVEMENT ALONG THE -L- EB MEDIAN SHOULDER. THEN, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS AND SHIFT TRAFFIC ONTO THE TEMPORARY ALIGNMENT. [06-08]

STEP 4) USING RSD 1101.02, INSTALL PORTABLE CONCRETE BARRIER (PCB) ALONG I-40 EB. THEN, BEHIND PCB CONSTRUCT -L- EB UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE AS MUCH AS POSSIBLE, INCLUDING THE STAGE 1 BRIDGE AND TEMPORARY SHORING. [02B, 02C, 06-08]

NOTE: WHEN PERFORMING ANY BRIDGE WORK OVER SR 1513, USE RSD 1101.03 AND SHEETS TMP-01D AND 02 TO CLOSE -Y1- AND DETOUR TRAFFIC OFFSITE. [REFER TO GENERAL NOTE 'C' FOR ROAD CLOSURE TIMES]

STEP 5) INSTALL PCB, TEMPORARY MARKINGS, AND MARKERS ON -L- EB AS MUCH AS POSSIBLE. [09-11]

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 ROADWAY STANDARD DRAWING (RSD) 1101.02 AND THE DYNAMIC ZIPPER MERGE SYSTEM, INSTALL WEDGING ALONG -L- EB, SHIFT I-40 EB TRAFFIC ONTO -L- EB, INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, AND PCB. [02D, 09-11]

STEP 2) USING RSD 1101.02, REMOVE AND REPLACE EXISTING SHOULDERS ON -L- (I-40) WB. [09,11]

STEP 3) USING RSD 1101.02, REMOVE EXISTING MEDIAN WALL AND INSTALL TEMPORARY PAVEMENT IN THE -L- MEDIAN SHOULDERS. [09-11]

NOTE: INSTALL TMA IN THE MEDIAN AT THE BEGIN PROJECT LIMITS TO PROTECT THE EXPOSED END OF THE EXISTING MEDIAN WALL.

STEP 4) REMOVE TMA AND INSTALL PCB ON THE TEMPORARY PAVEMENT AS MUCH AS POSSIBLE. [13]

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 ROADWAY STANDARD DRAWING (RSD) 1101.02 AND THE DYNAMIC ZIPPER MERGE SYSTEM, REMOVE ANY CONFLICTING EXISTING PAVEMENT MARKINGS, INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS, AND SHIFT I-40 WB TRAFFIC ONTO THE TEMPORARY ALIGNMENT. THEN INSTALL PCB ALONG THE OUTER SHOULDER OF -L- WB. [02D, 12-14]

STEP 2) BEHIND PCB, CONSTRUCT -L- WB UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE AS MUCH AS POSSIBLE, INCLUDING THE STAGE 2 BRIDGE AND TEMPORARY SHORING. [12-14]

NOTE: WHEN PERFORMING ANY BRIDGE WORK OVER SR 1513, USE RSD 1101.03 AND SHEETS TMP-01D AND 02 TO CLOSE -Y1- AND DETOUR TRAFFIC OFFSITE. [REFER TO GENERAL NOTE 'C' FOR ROAD CLOSURE TIMES]

STEP 3) INSTALL PCB, TEMPORARY MARKINGS, AND MARKERS ON -L- WB AS MUCH AS POSSIBLE. [16]

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 ROADWAY STANDARD DRAWING (RSD) 1101.02 AND THE DYNAMIC ZIPPER MERGE SYSTEM, INSTALL WEDGING ALONG -L- WB, SHIFT I-40 WB TRAFFIC ONTO -L- WB, INSTALL TEMPORARY PAVEMENT MARKINGS, MARKERS, AND PCB. [02D, 15-17]

STEP 2) BEHIND PCB, CONSTRUCT -L- MEDIAN UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE, INCLUDING THE STAGE 3 BRIDGE AND AND AS MUCH TEMPORARY PAVEMENT MARKINGS AND MARKERS AS POSSIBLE. [15-17]

NOTE: WHEN PERFORMING ANY BRIDGE WORK OVER SR 1513, USE RSD 1101.03 AND SHEETS TMP-01D AND 02 TO CLOSE -Y1- AND DETOUR TRAFFIC OFFSITE. [REFER TO GENERAL NOTE 'C' FOR ROAD CLOSURE TIMES]

USING RSD 101.02, CONSTRUCT -Y1- AND -SR1- UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE, TEMPORARY PAVEMENT MARKINGS, AND MARKERS. [16]

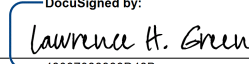
PHASE V

STEP 1) USING RSD 1101.02, INSTALL THE FINAL LIFT OF SURFACE COURSE ON -L- EB AND WB, INCLUDING FINAL PAVEMENT MARKINGS, AND MARKERS AND PLACE TRAFFIC IN THE FINAL PATTERN. [FINAL PAVEMENT MARKING PLAN]

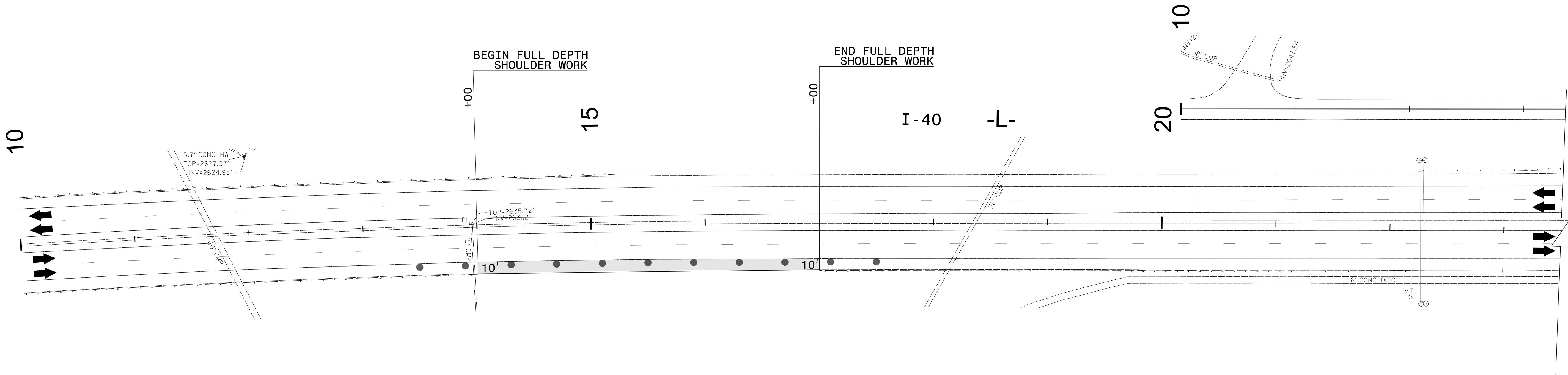
REMOVE ALL ROAD CLOSURE SIGNING, OFF-SITE DETOUR SIGNING, AND BARRICADES ON -Y1-. THEN USING RSD 1101.02, INSTALL THE FINAL LIFT OF SURFACE COURSE, FINAL PAVEMENT MARKINGS, AND MARKERS ON -Y1- AND -SR1- AND PLACE TRAFFIC IN THE FINAL PATTERN. [FINAL PAVEMENT MARKING PLAN]

STEP 2) REMOVE ALL TRANSPORTATION MANAGEMENT DEVICES AND SIGNING FROM THE PROJECT.

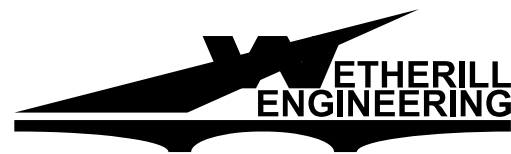
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User:AHayes

	 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	APPROVED:  DATE: 4/17/2025  DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		PHASING
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PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-04



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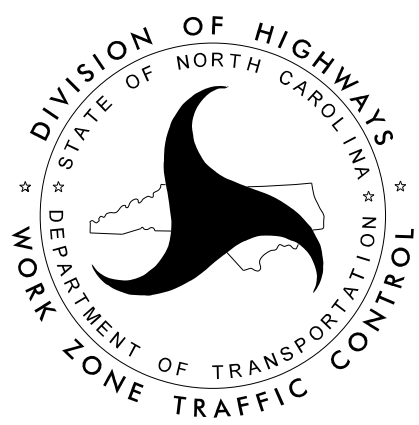
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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DATE: 3/5/2025

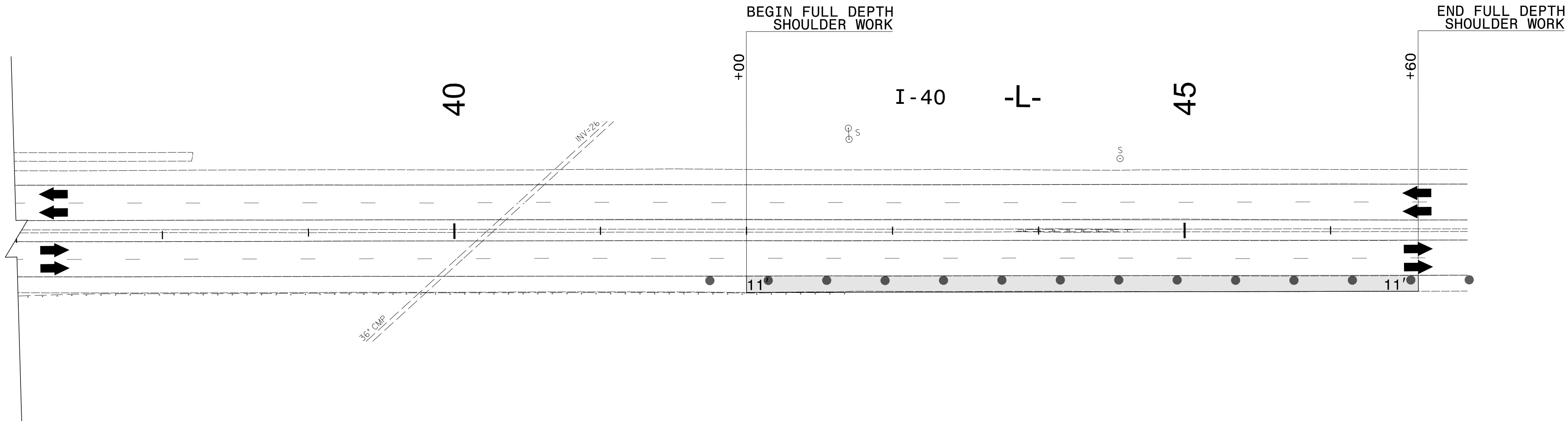


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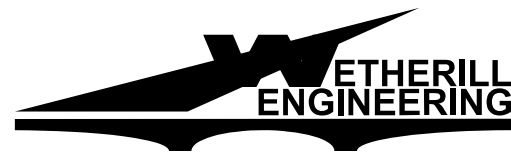


PHASE I DETAIL

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B-5541	TMP-05

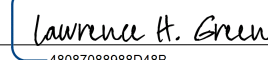


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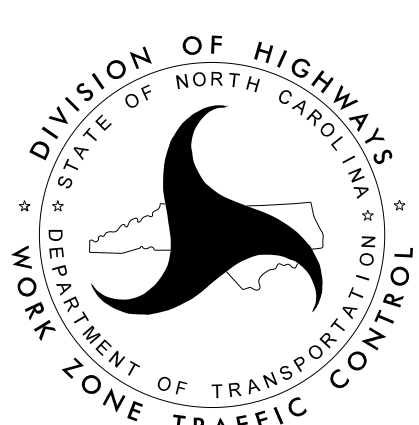
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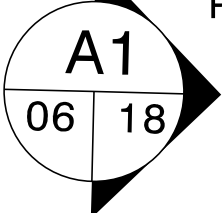
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PHASE I DETAIL



PHASE I DETAIL

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-07

- 1

QUANTITY = 176 SF

TEMPORARY SHORING

FROM STA. 28+67 -L- +/-, 19.3' RT. OF CL

TO STA. 29+22 -L- +/-, 19.3' RT. OF CL

(SEE SHEET TMP-02C FOR

TEMPORARY SHORING NOTES)
- 2

QUANTITY = 202 SF

TEMPORARY SHORING

FROM STA. 29+76 -L- +/-, 19.6' RT. OF CL

TO STA. 30+39 -L- +/-, 19.6' RT. OF CL

(SEE SHEET TMP-02C FOR

TEMPORARY SHORING NOTES)

- 3

QUANTITY = 1036 SF

TEMPORARY SHORING

FROM STA. 25+80 -L- +/-, 16.7' RT. OF CL

TO STA. 29+50 -L- +/-, 22.1' RT. OF CL

(SEE SHEET TMP-02C FOR

TEMPORARY SHORING NOTES)
- 4

QUANTITY = 518 SF

TEMPORARY SHORING

FROM STA. 29+50 -L- +/-, 22.1' RT. OF CL

TO STA. 29+19 -L- +/-, 22.1' RT. OF CL

(SEE SHEET TMP-02C FOR

TEMPORARY SHORING NOTES)

- 5

QUANTITY = 347 SF

TEMPORARY SHORING

FROM STA. 29+69 -L- +/-, 22.1' RT. OF CL

TO STA. 30+20 -L- +/-, 22.1' RT. OF CL

(SEE SHEET TMP-02C FOR

TEMPORARY SHORING NOTES)
- 6

QUANTITY = 483 SF

TEMPORARY SHORING

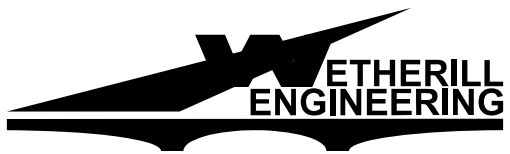
FROM STA. 30+20 -L- +/-, 22.1' RT. OF CL

TO STA. 32+50 -L- +/-, 17.1' RT. OF CL

(SEE SHEET TMP-02C FOR

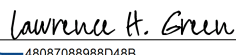
TEMPORARY SHORING NOTES)

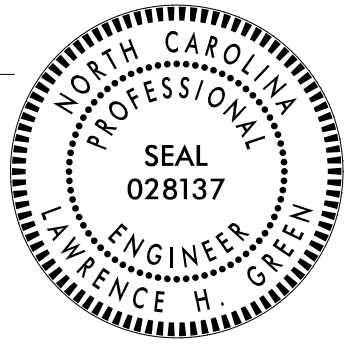
- NOTES:
- REMOVE BRIDGE RAILING BUT RETAIN CURBING.
[REFER TO SHEETS TMP-18 & 21]
 - LATERAL OFFSETS FOR TEMPORARY SHORING ARE MEASURED FROM THE CENTERLINE OF -L- TO THE FRONT FACE OF THE SHORING.



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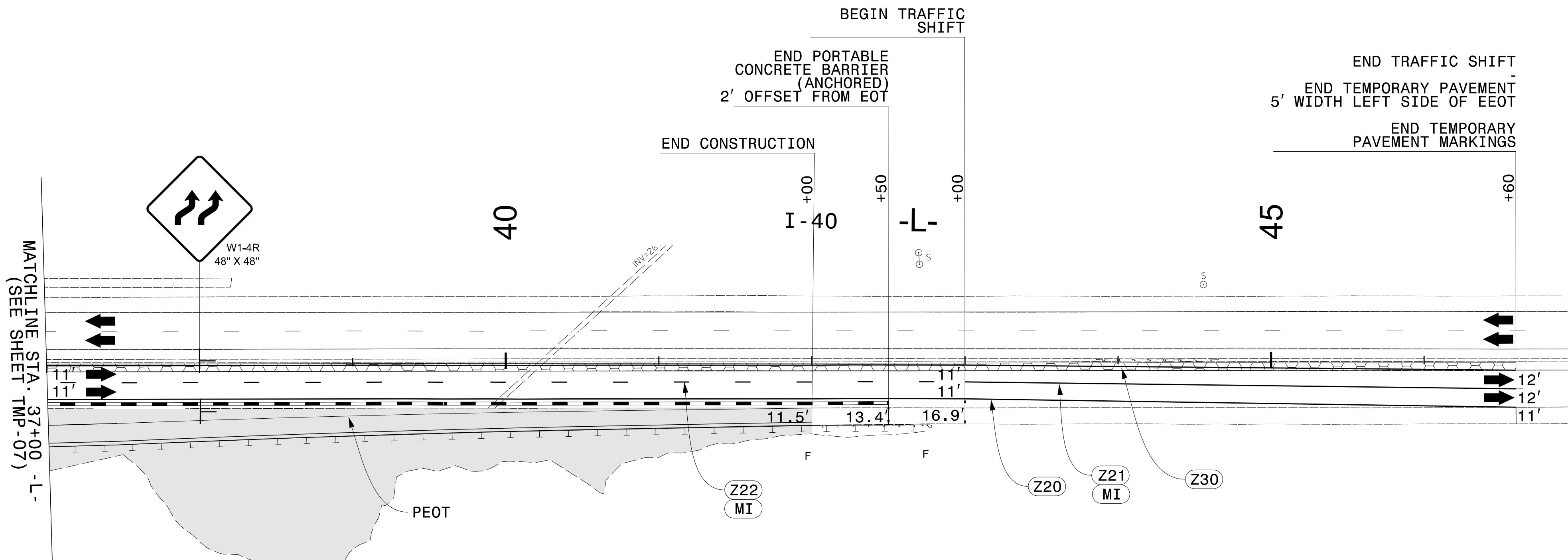


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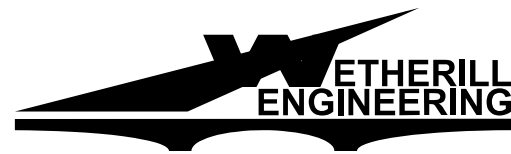


PHASE I DETAIL

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-08



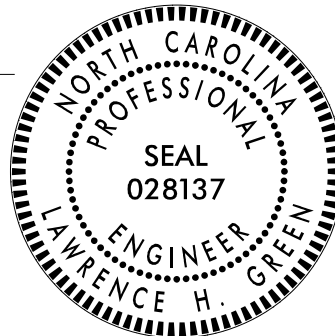
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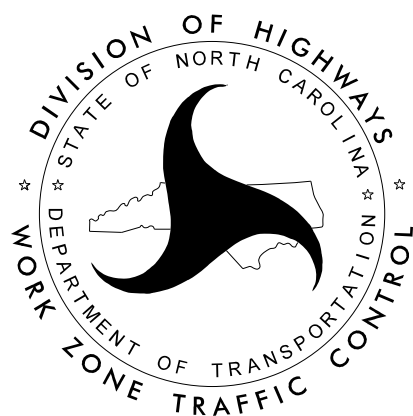
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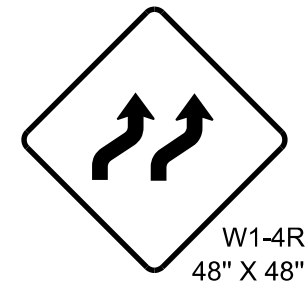
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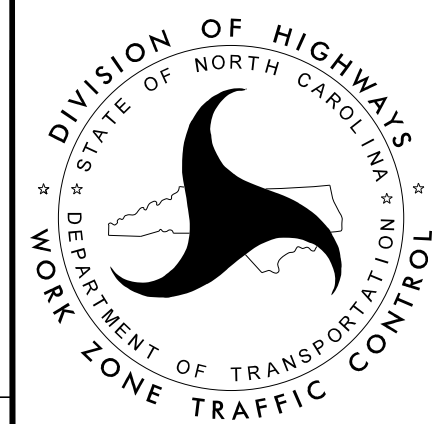
PHASE I DETAIL



**WEATHERILL
ENGINEERING**

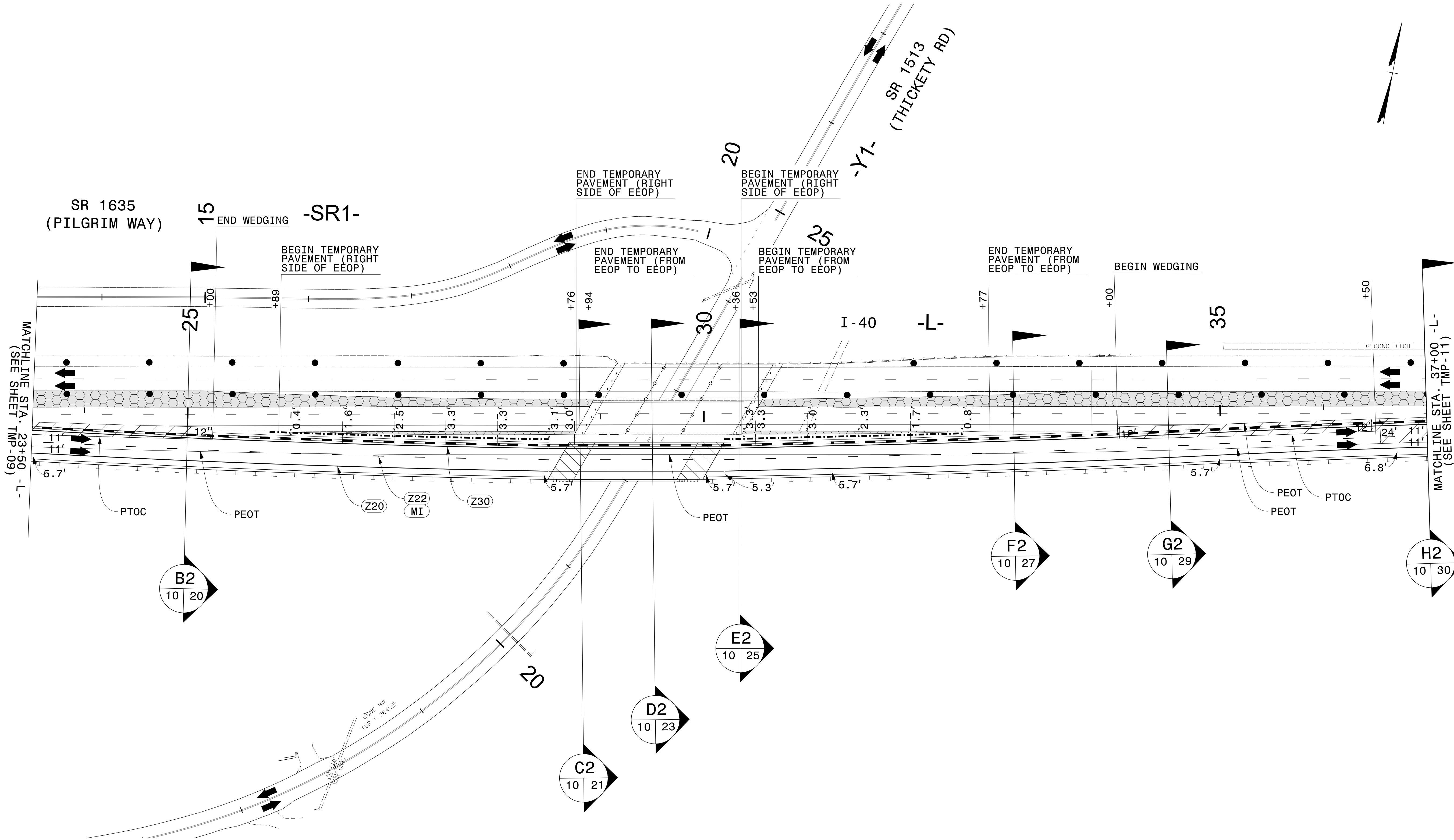
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A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "LAWRENCE H. GREEN" at the bottom. The inner ring contains the text "PROFESSIONAL" at the top and "ENGINEER" at the bottom. In the center, it reads "SEAL" and "028137".

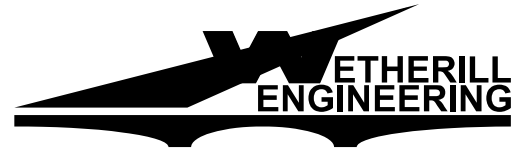


PHASE II DETAIL

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-10

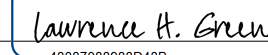


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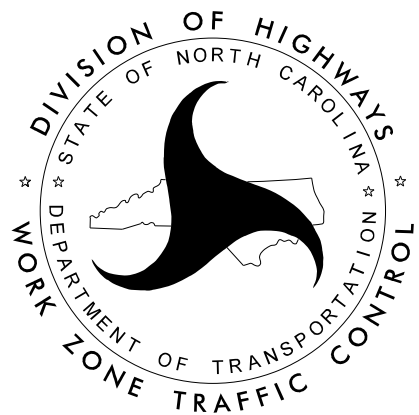
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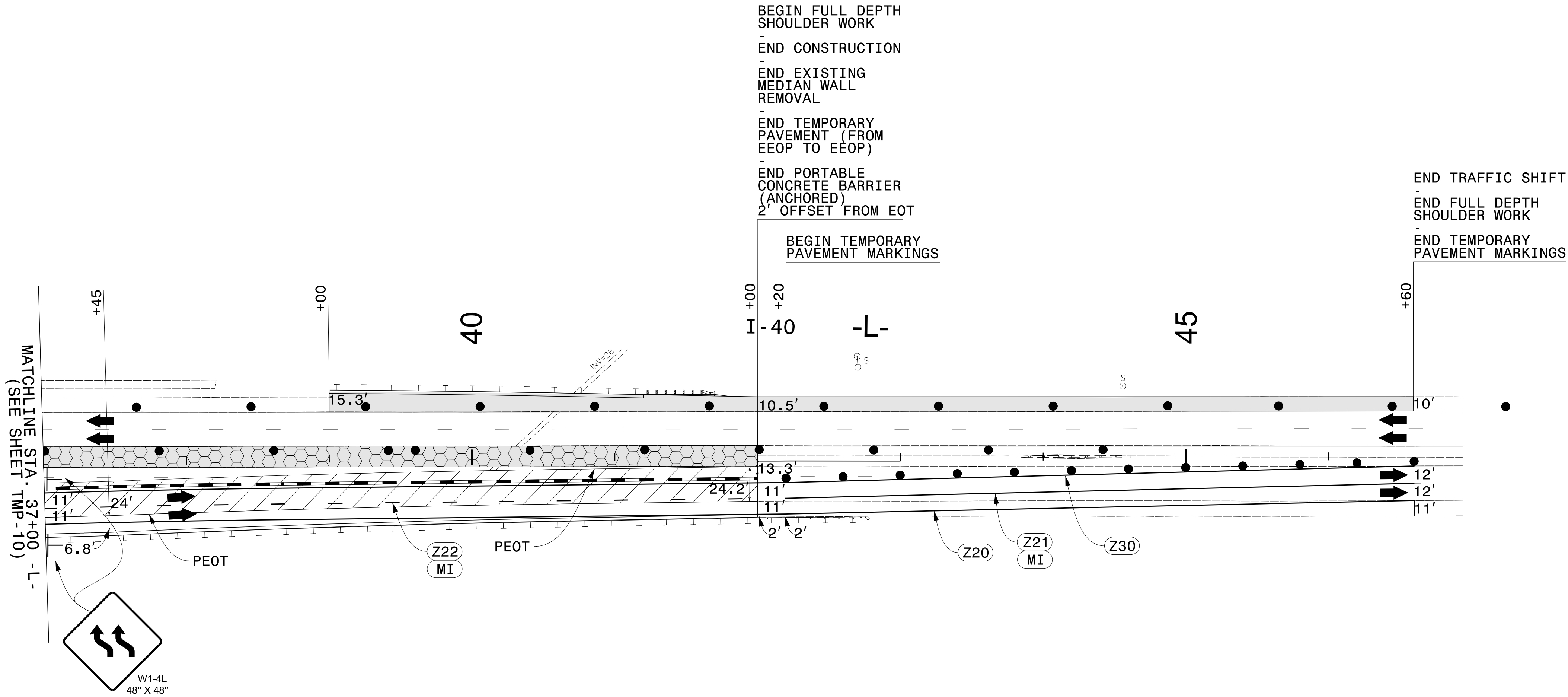


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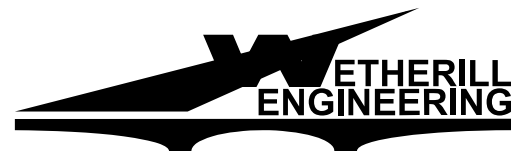


PHASE II DETAIL

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP - 11



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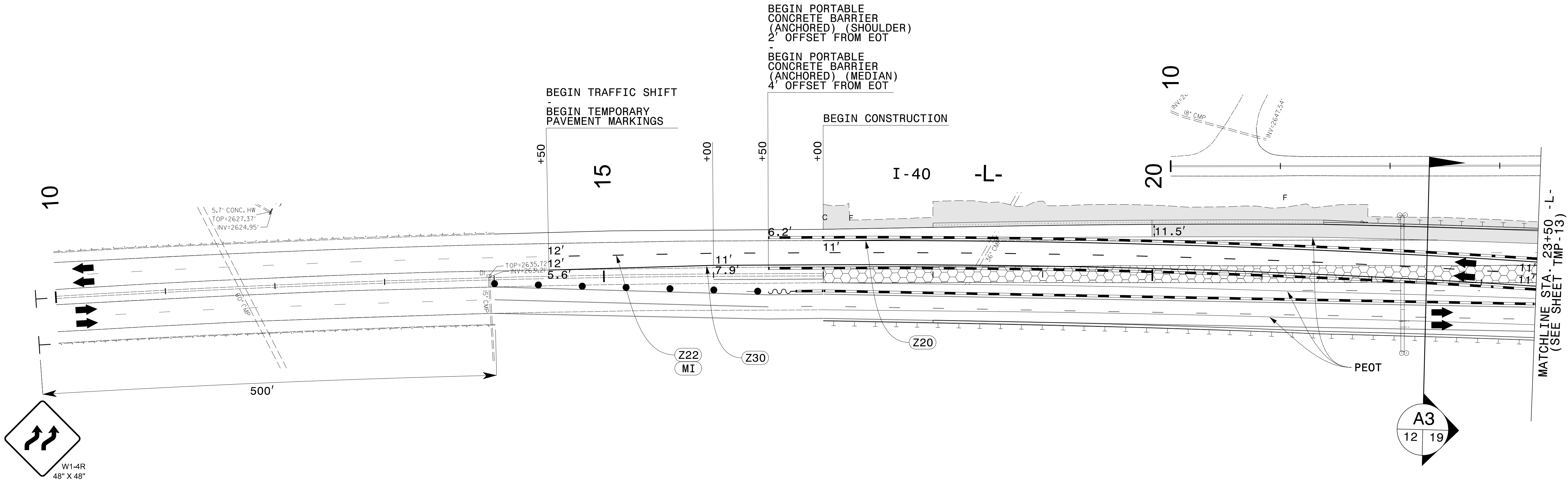


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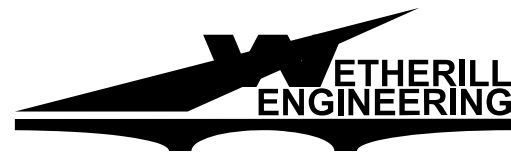


PHASE II DETAIL

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B-5541	TMP-12



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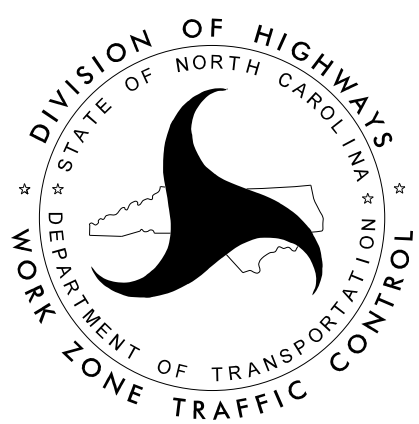
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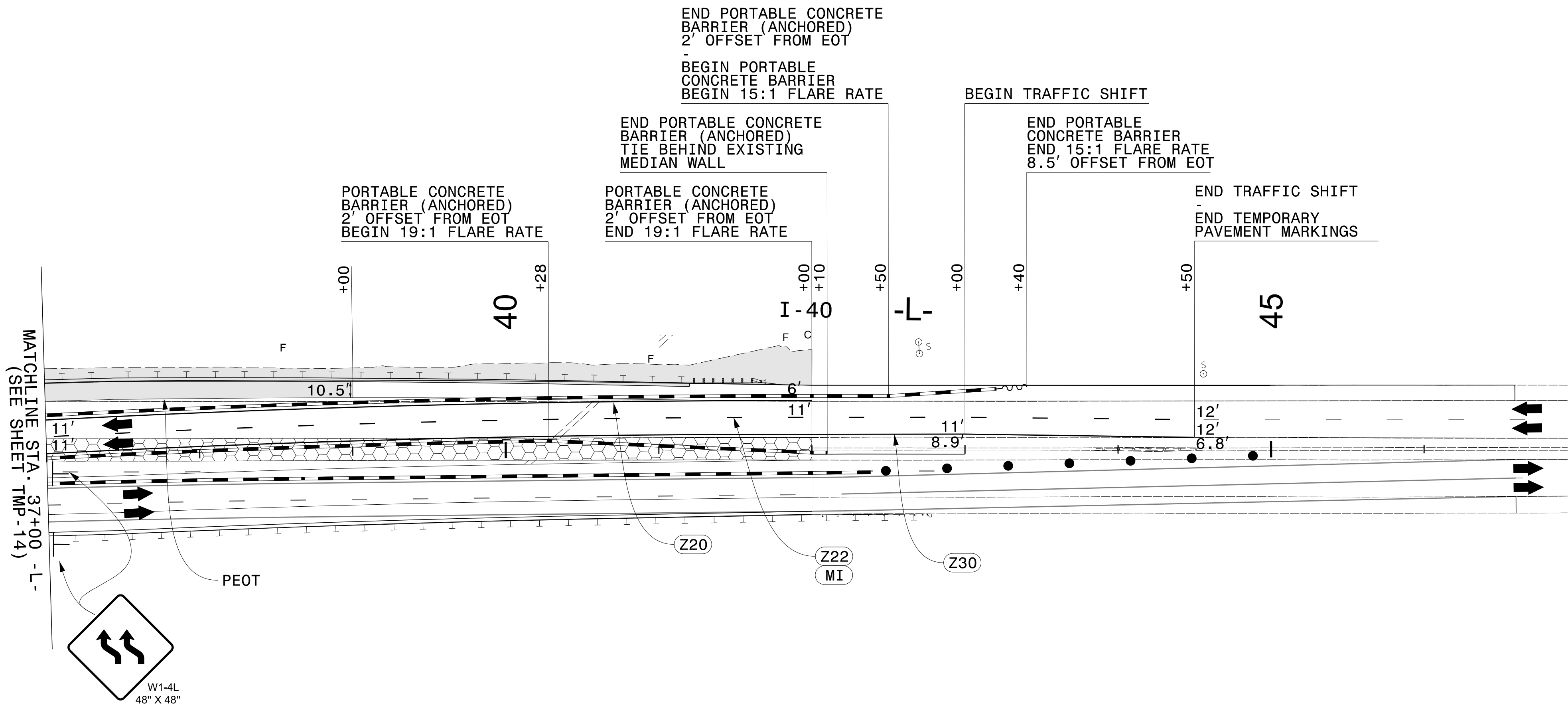


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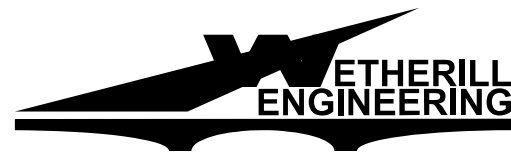


PHASE III DETAIL

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B-5541	TMP-14

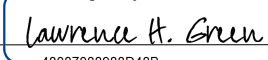


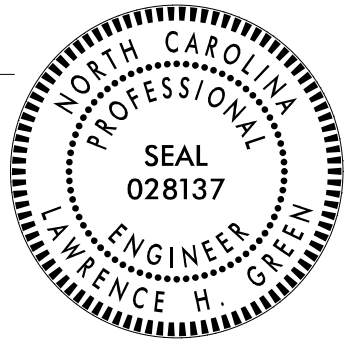
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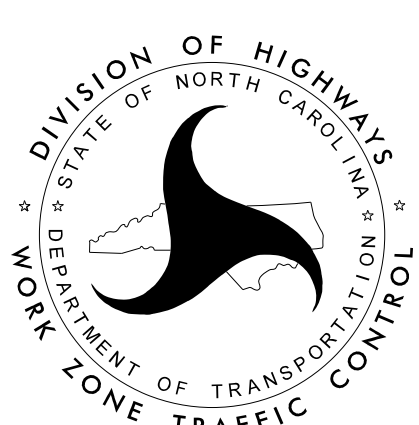
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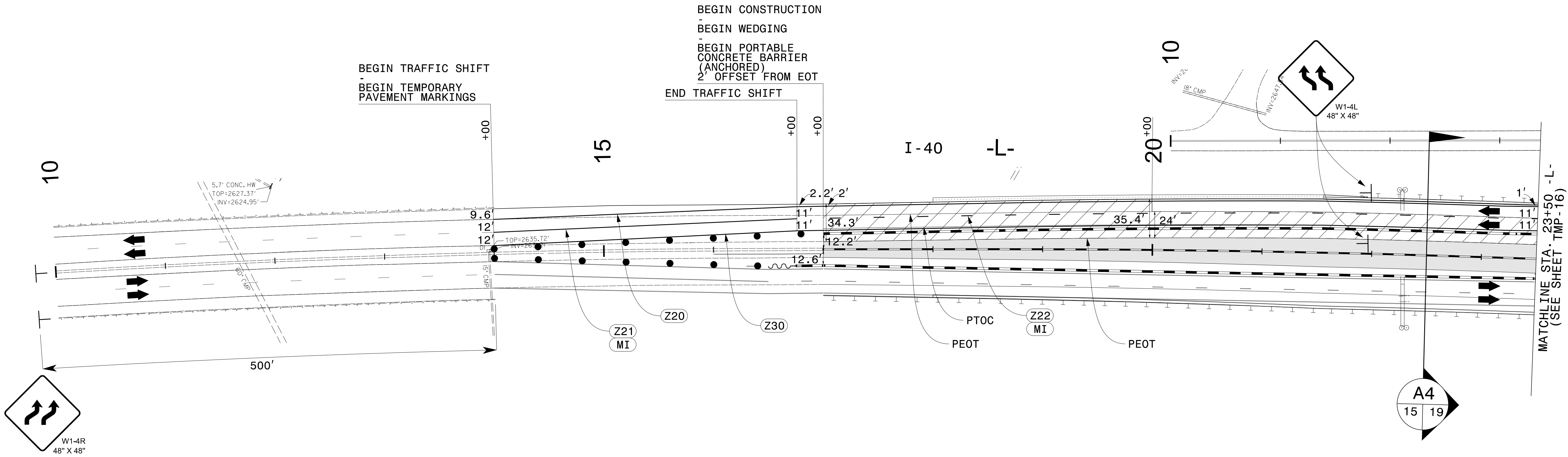


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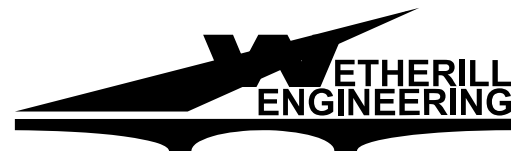


PHASE III DETAIL

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B-5541	TMP-15



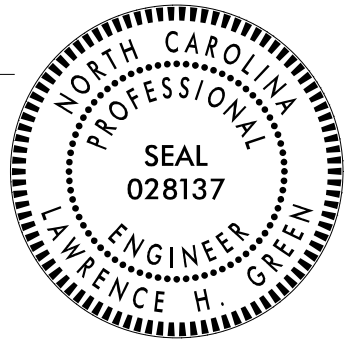
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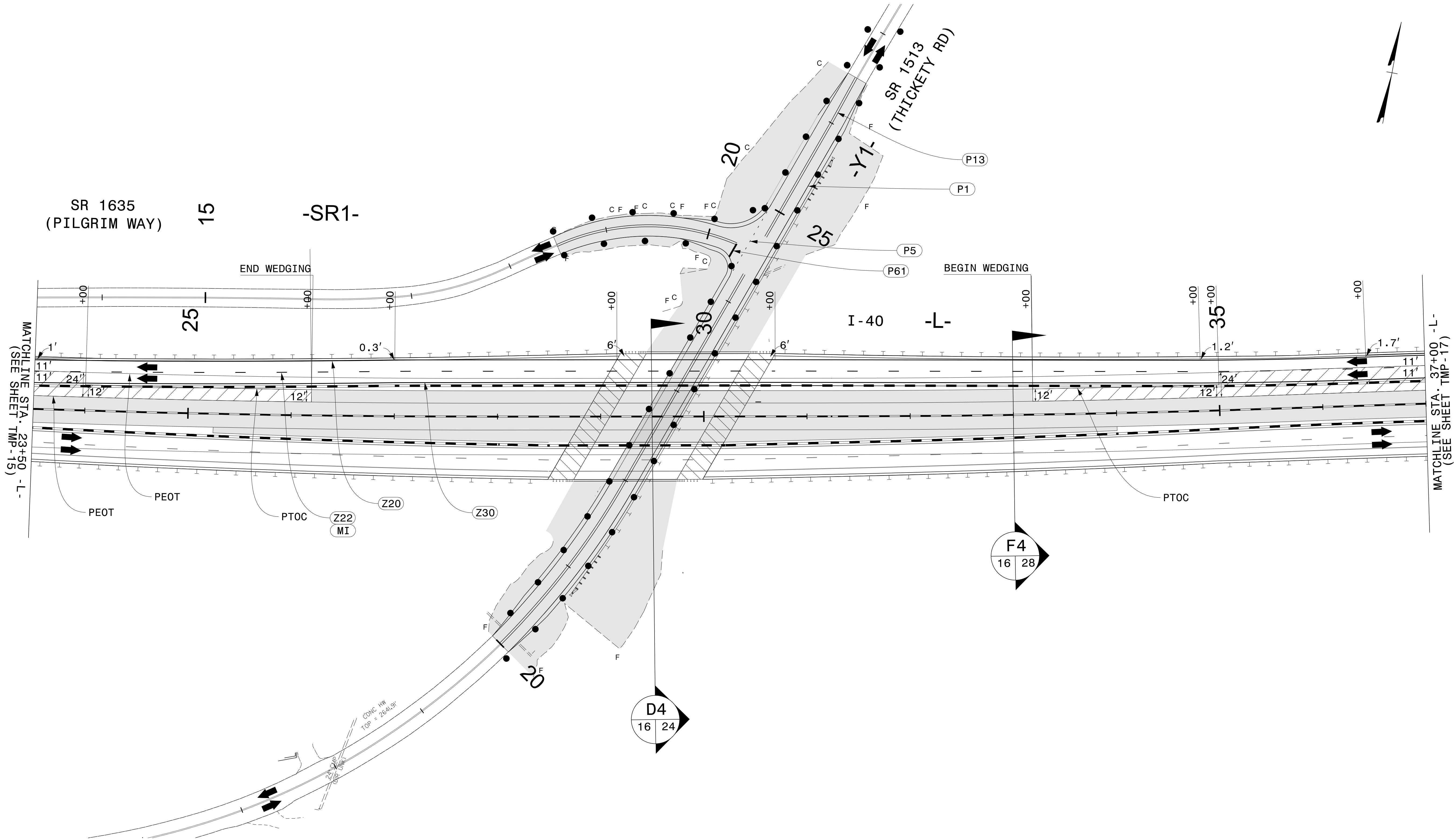


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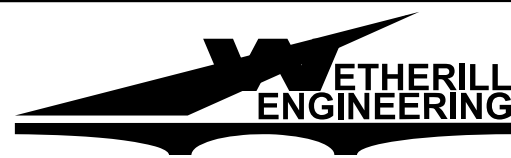


PHASE IV DETAIL

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-16



NOTES:
1) REFER TO THE FINAL PAVEMENT MARKING PLANS FOR STATIONS AND LANE WIDTHS FOR -Y1- AND -SR1-.



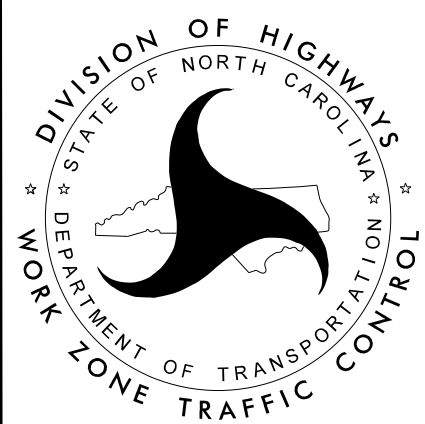
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Bus: 919 851 8077
Fax: 919 851 8107

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

APPROVED: *Lawrence H. Green*
DATE: 3/5/2025

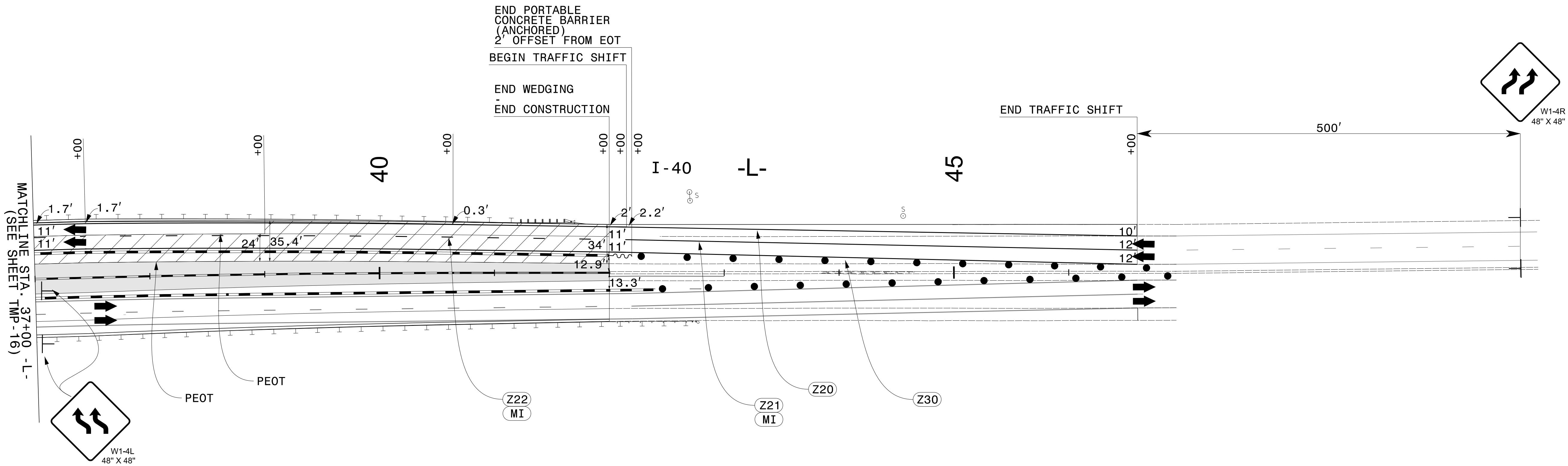


DOCUMENT NOT CONSIDERED FINAL
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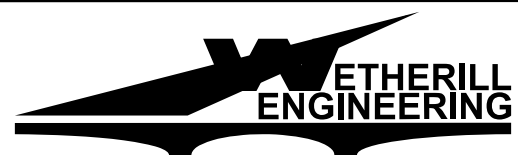


PHASE IV DETAIL

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-17



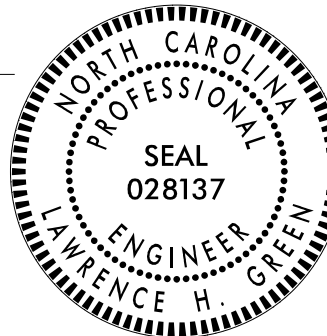
3/5/2025
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User:AHayes



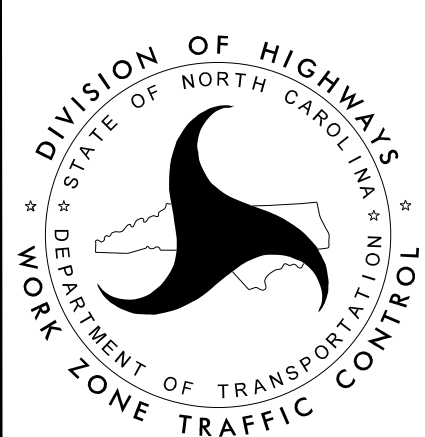
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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

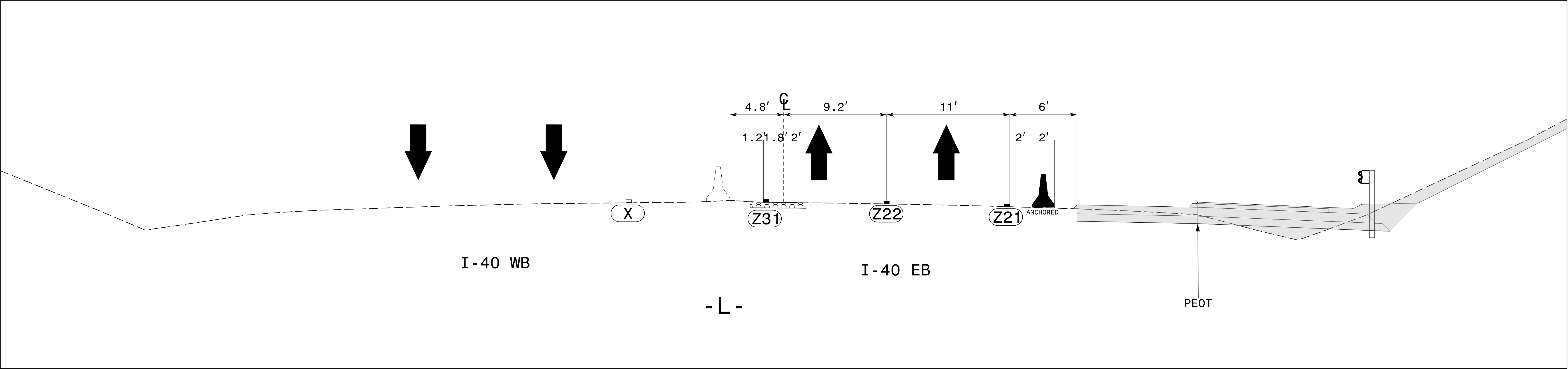
APPROVED: *Lawrence H. Green*
DATE: 3/5/2025



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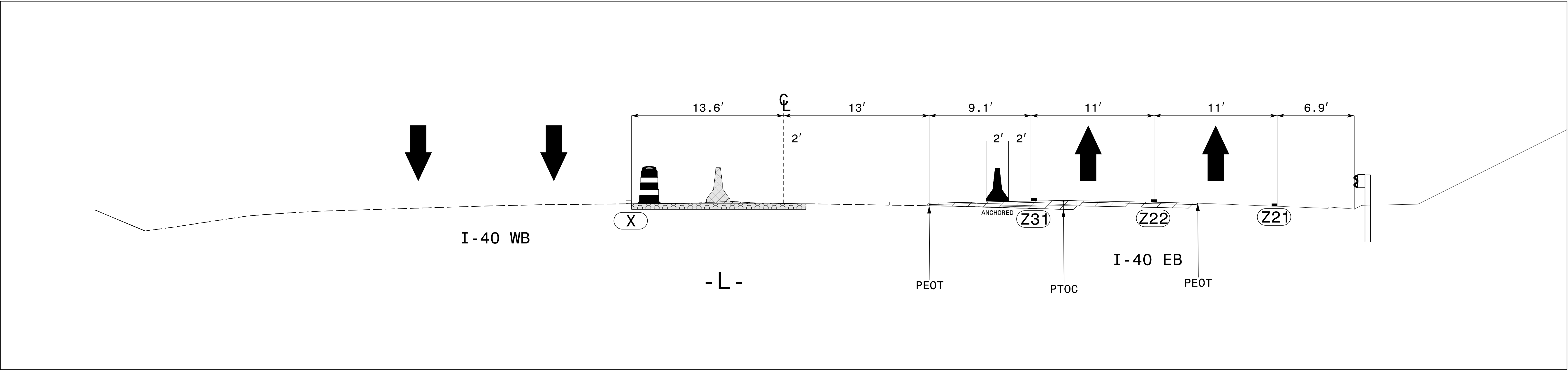


PHASE IV DETAIL



A1
06 | 18

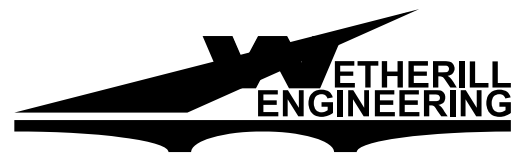
STA. 22+50 -L-
CUT SECTION



A2
09 | 18

STA. 22+50 -L-
CUT SECTION

3/5/2025
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User:AHayes



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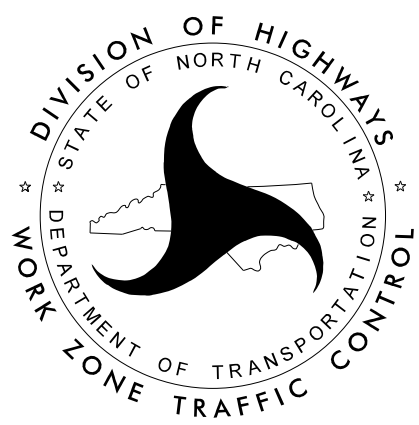
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Lawrence H. Green*
46087089880488...

DATE: 3/5/2025

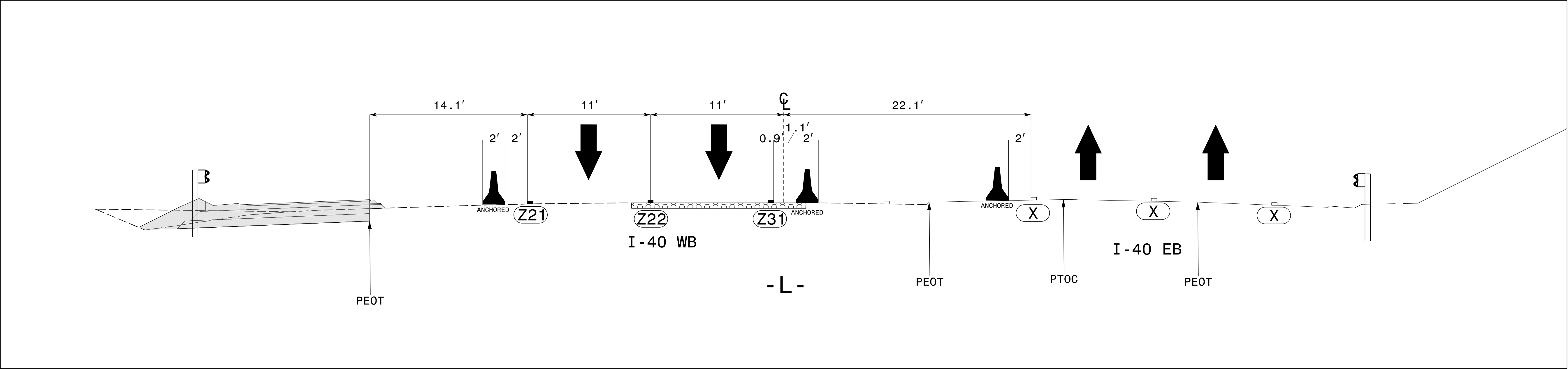


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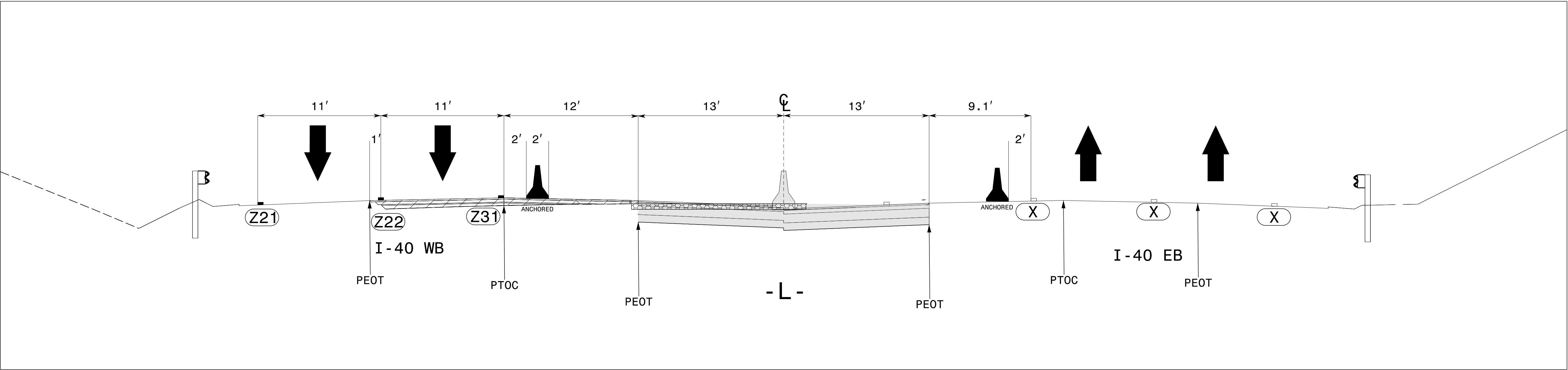
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PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-19



A3
12 | 19

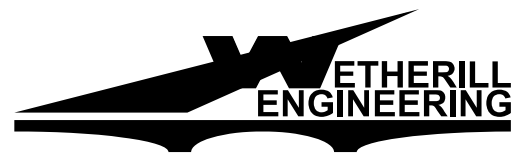
STA. 22+50 -L-
CUT SECTION



A4
15 | 19

STA. 22+50 -L-
CUT SECTION

3/5/2025
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User:AHayes



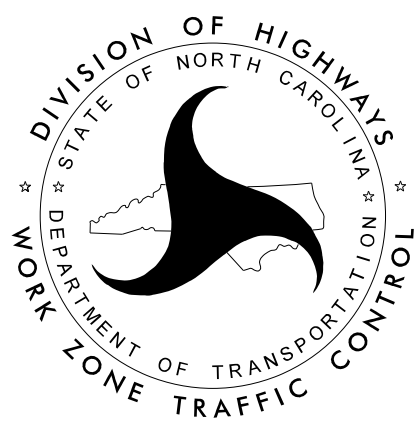
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DATE: 3/5/2025

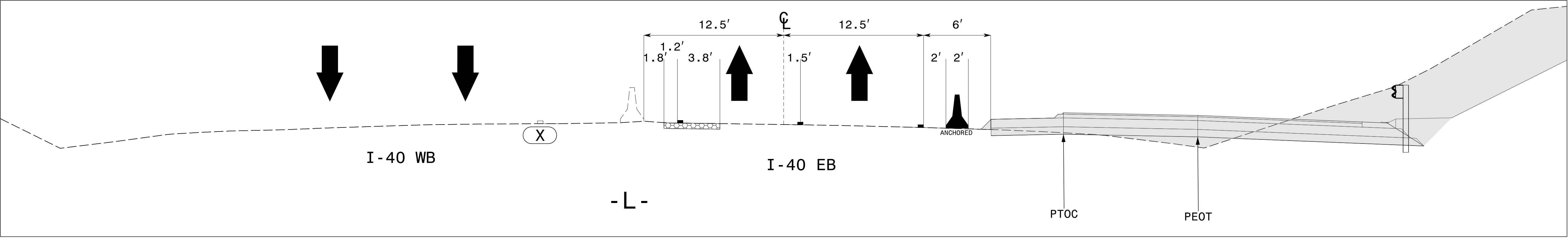


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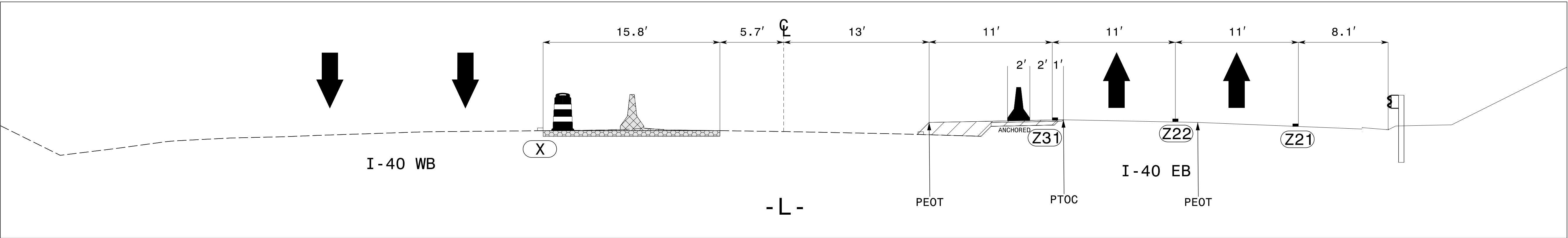


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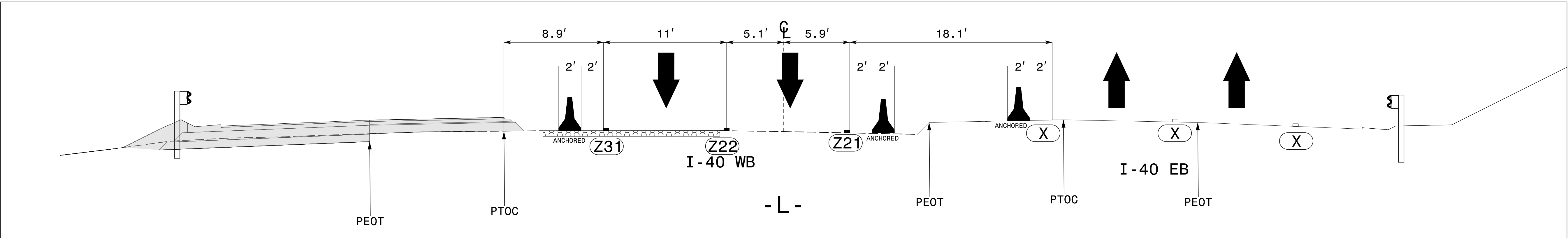
PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-20



B1
07 20
STA. 25+00 -L-
CUT SECTION

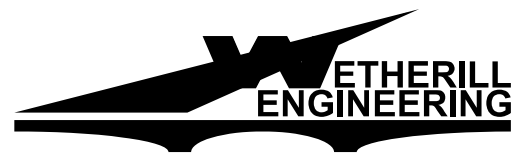


B2
10 20
STA. 25+00 -L-
CUT SECTION



B3
13 20
STA. 25+00 -L-
CUT SECTION

3/5/2025
P:\2023\23377\LB-5541\Traffic Design\2 Plan Design\4 WZTC-B-5541-TMP-20-B.ORD_I0_I2.dgn
User:AHayes



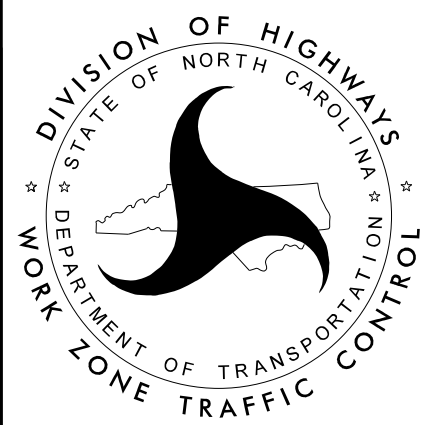
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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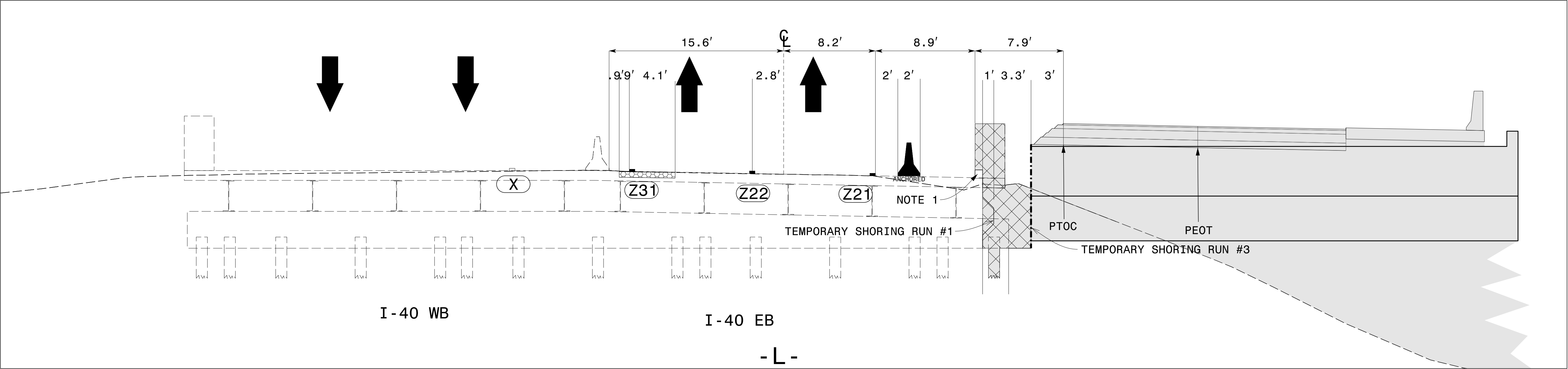


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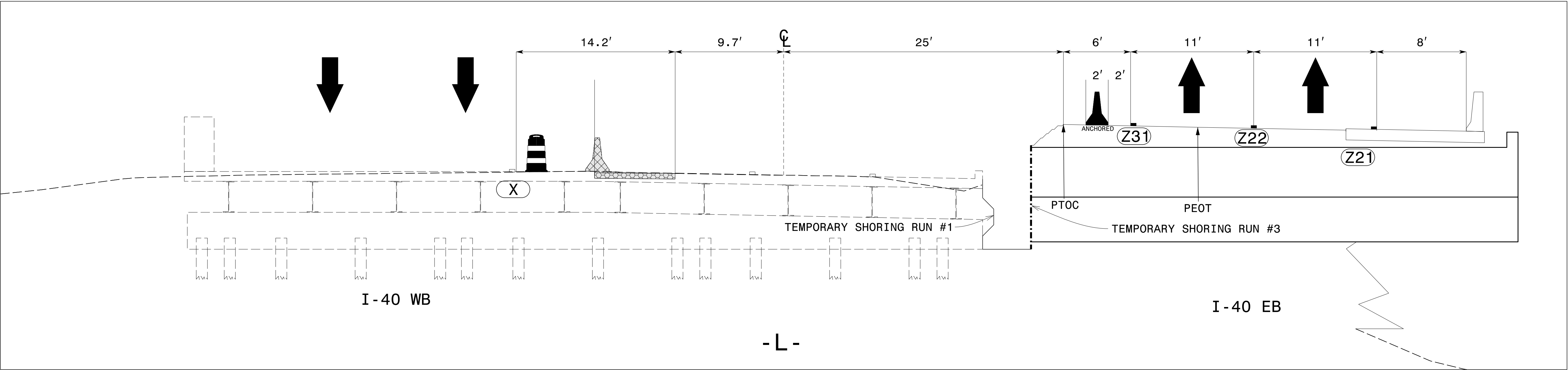
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PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-21



C1
07 21

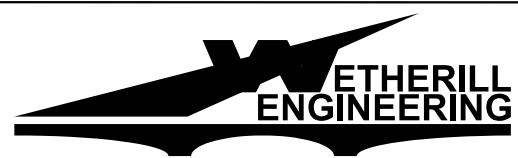
STA. 28+72 -L- -
STA. 29+45 -L- -
CUT SECTION



C2
10 21

STA. 28+72 -L- -
STA. 29+45 -L- -
CUT SECTION

NOTES:
1) REMOVE BRIDGE RAILING BUT RETAIN CURBING.
[REFER TO SHEET TMP-07]



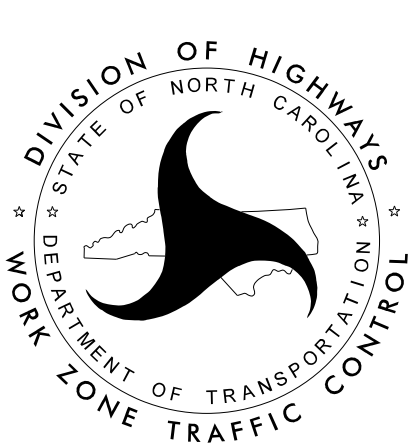
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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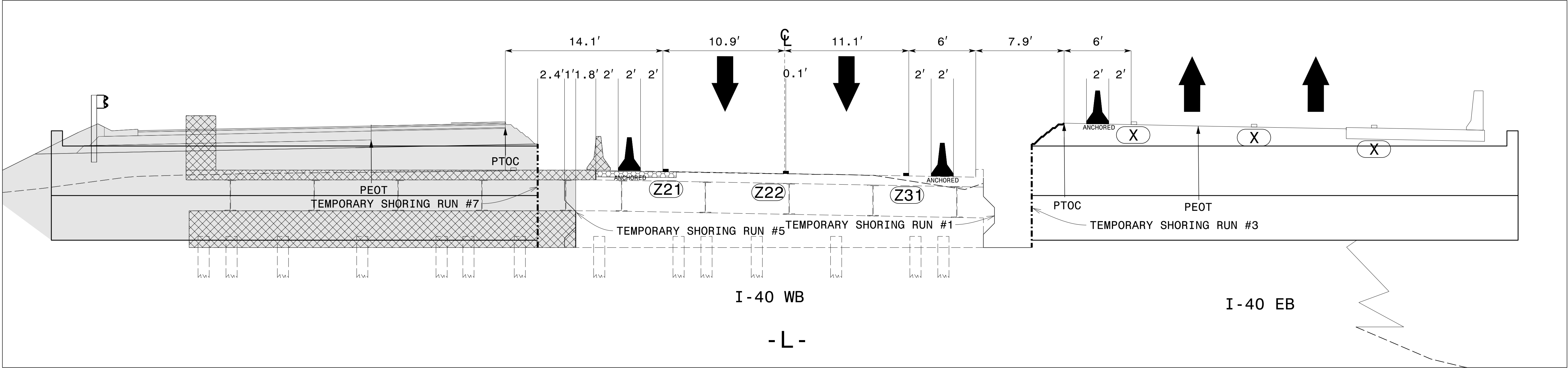


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CUT SECTION C

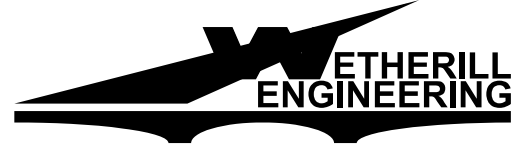
PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-22



C3
13 22

STA. 28+72 -L- -
STA. 29+45 -L- -
CUT SECTION

3/5/2025
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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*
480870856840488...

DATE: 3/5/2025

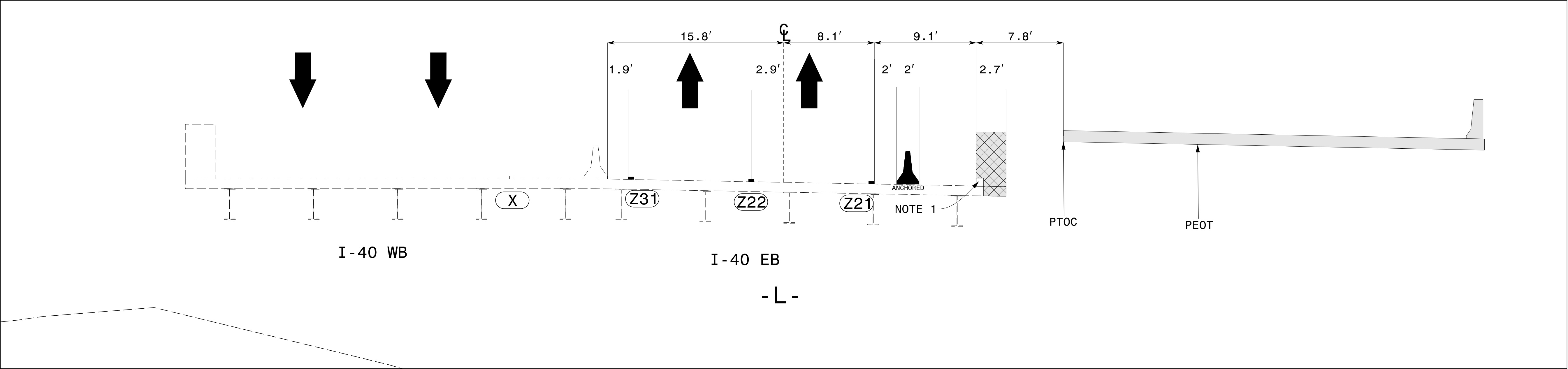


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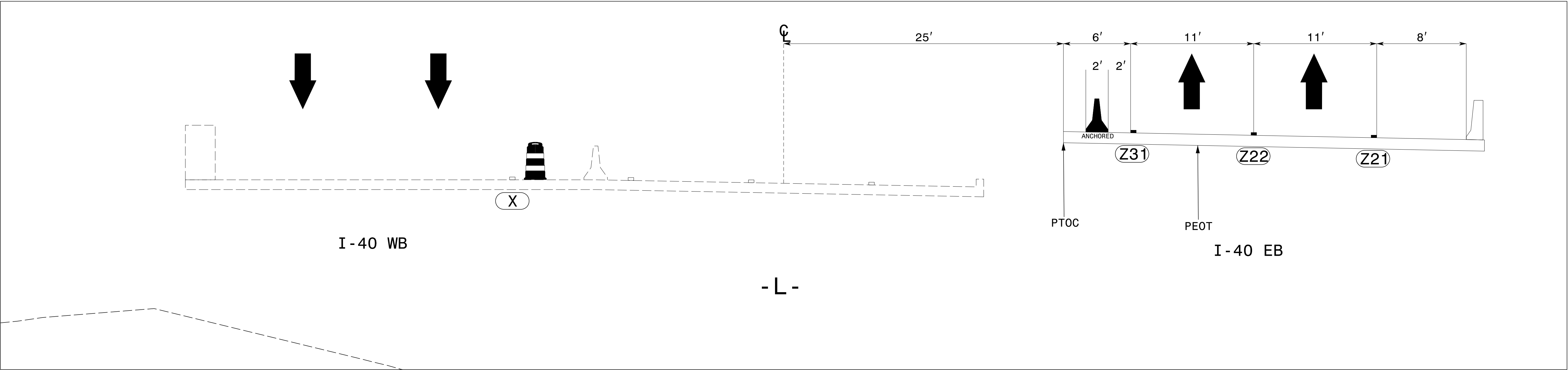
CUT SECTION C

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-23



D1
07 23

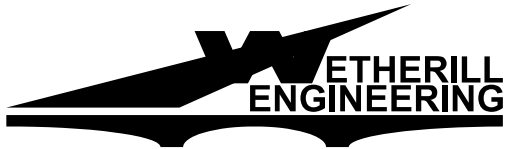
STA. 29+50 -L-
CUT SECTION



D2
10 23

STA. 29+50 -L-
CUT SECTION

NOTES:
1) REMOVE BRIDGE RAILING BUT RETAIN PARAPET CURBING.
[REFER TO SHEET TMP-07]

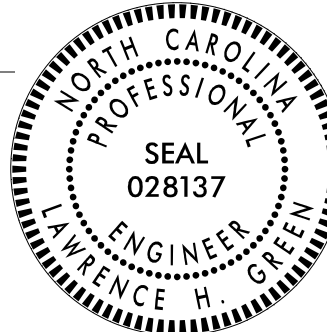


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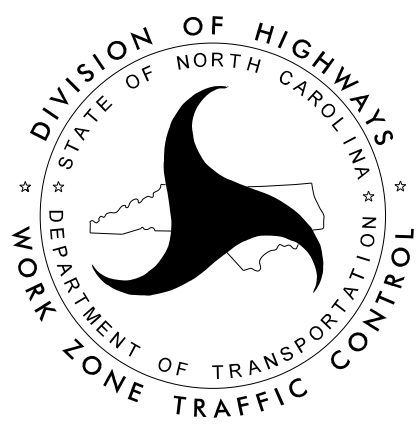
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Lawrence H. Green*
430870880800480...

DATE: 3/5/2025

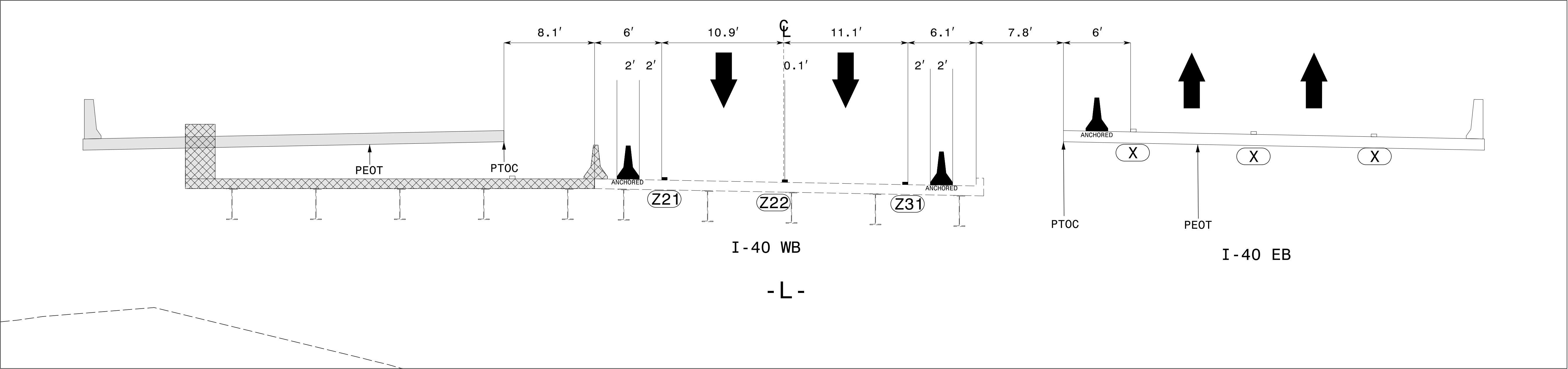


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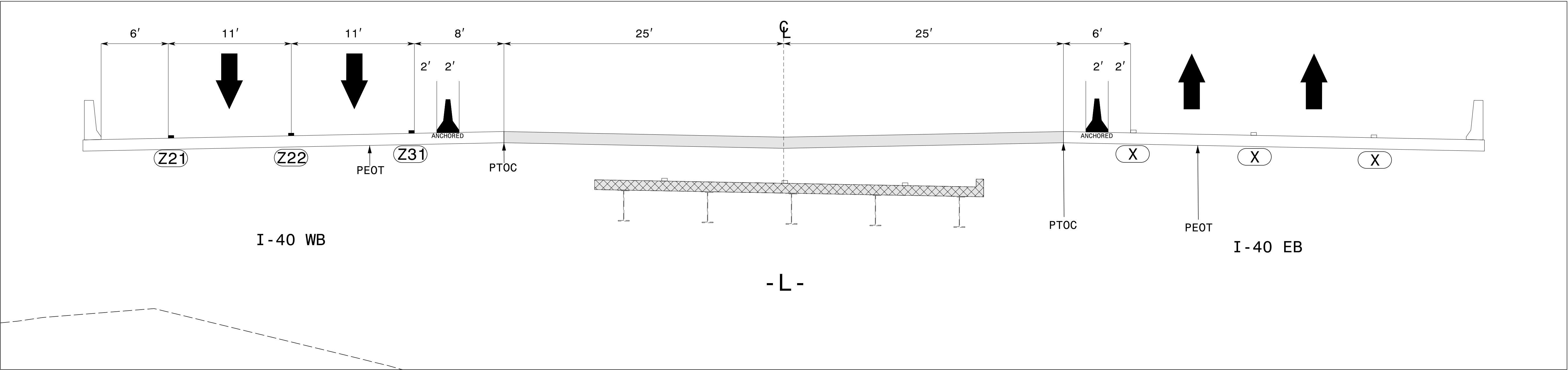


CUT SECTION D

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-24



D3
13 24
STA. 29+50 -L-
CUT SECTION



D4
16 24
STA. 29+50 -L-
CUT SECTION

3/5/2025
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User:AHayes



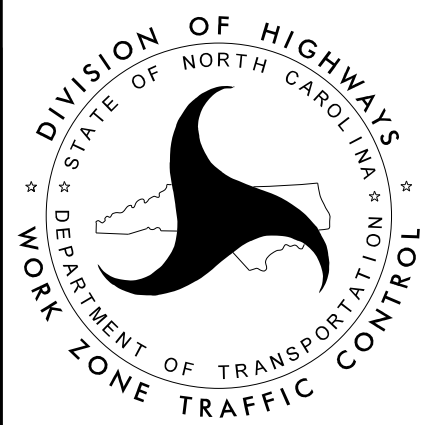
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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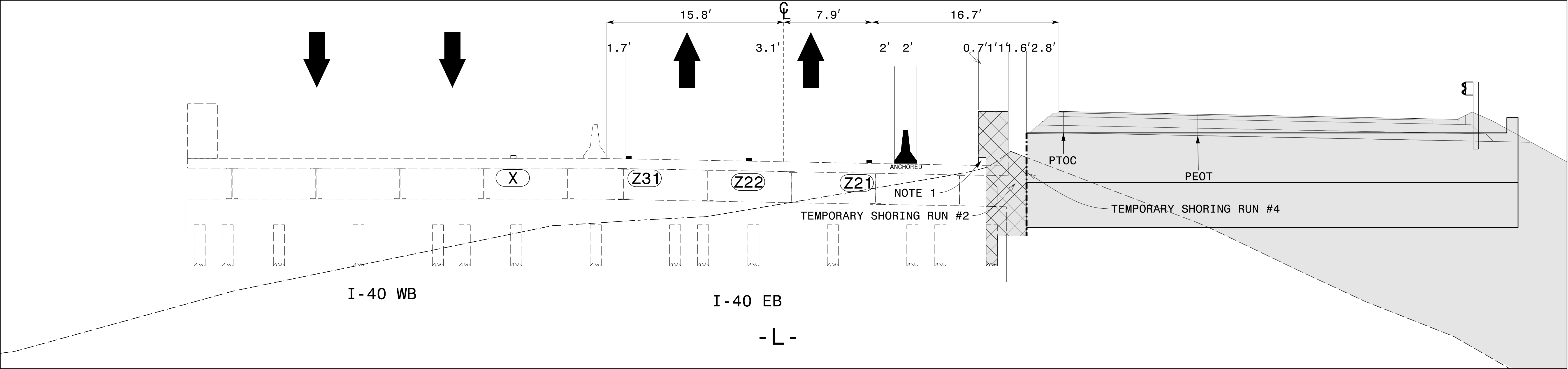


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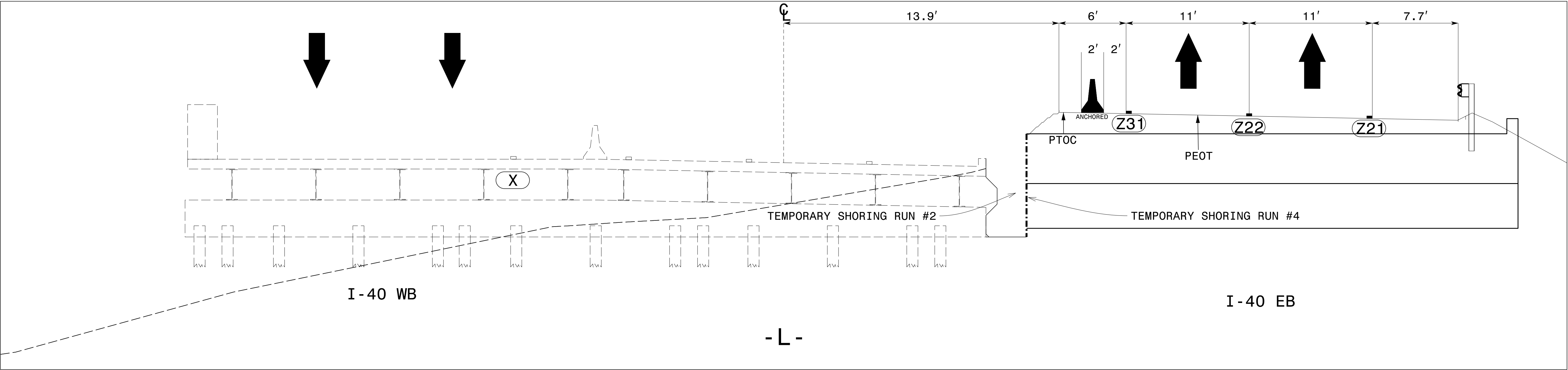
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PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-25



E1
07 25

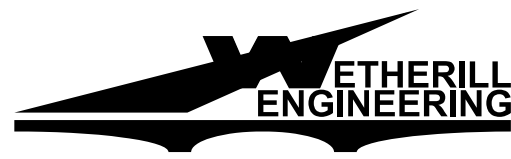
STA. 29+75 -L- -
STA. 30+50 -L- -
CUT SECTION



E2
10 25

STA. 29+75 -L- -
STA. 30+50 -L- -
CUT SECTION

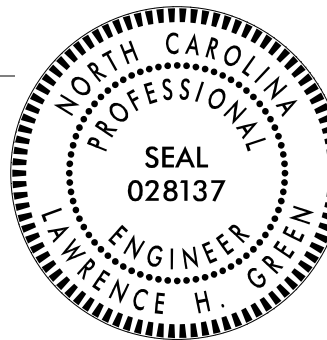
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[REFER TO SHEET TMP-07]



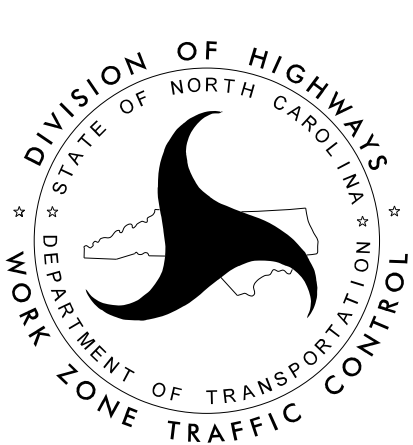
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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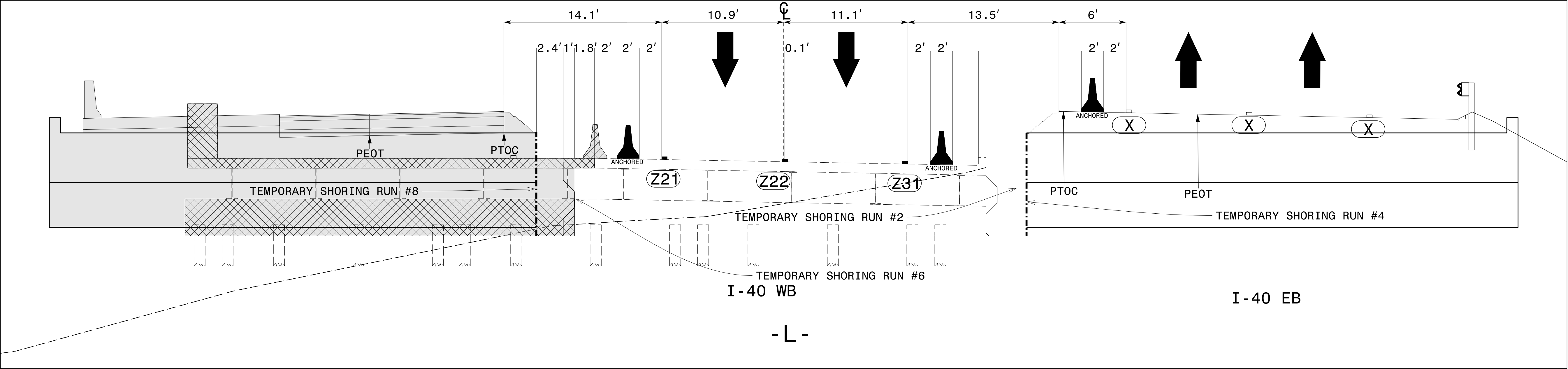


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CUT SECTION E

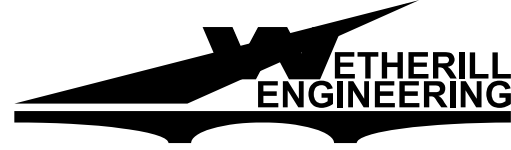
PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-26



E3
13 | 26

STA. 29+75 -L- -
STA. 30+50 -L- -
CUT SECTION

3/5/2025
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Lawrence H. Green*
DATE: 3/5/2025

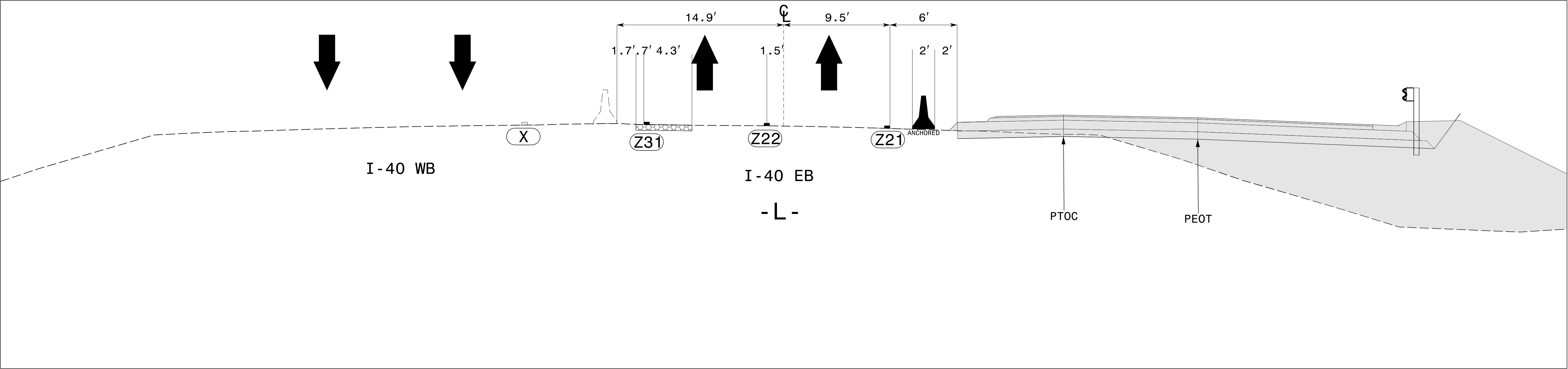


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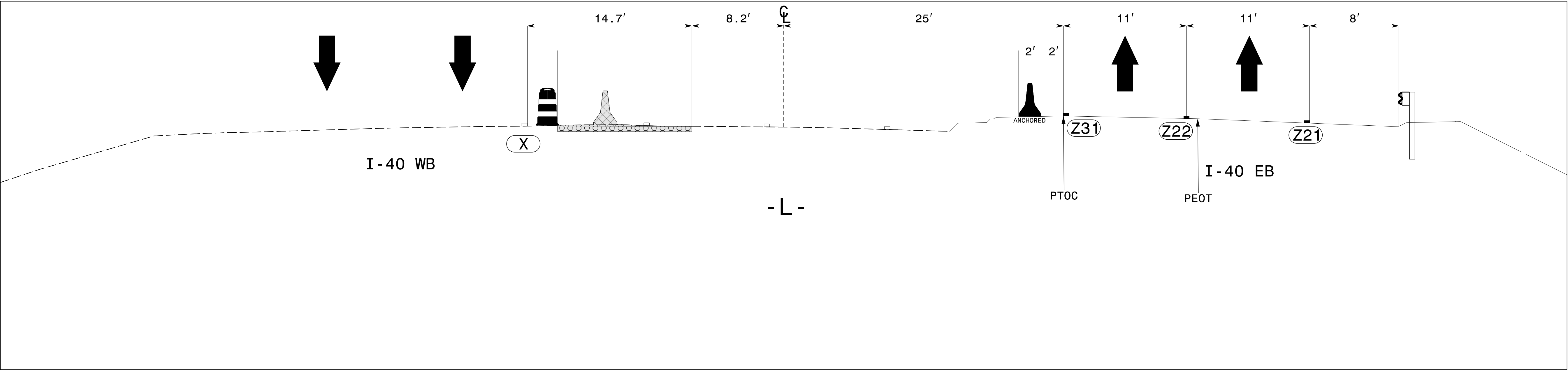
CUT SECTION E

PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-27



F1
07 27

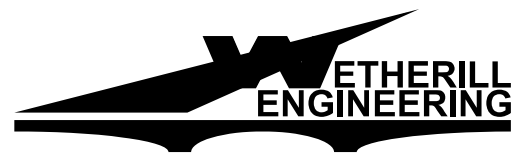
STA. 33+00 -L-
CUT SECTION



F2
10 27

STA. 33+00 -L-
CUT SECTION

3/5/2025
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User:AHayes



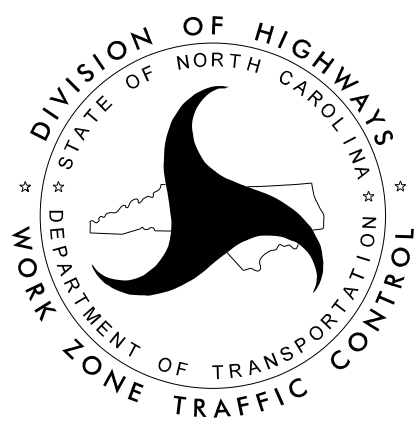
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Fax: 919 851 8107

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

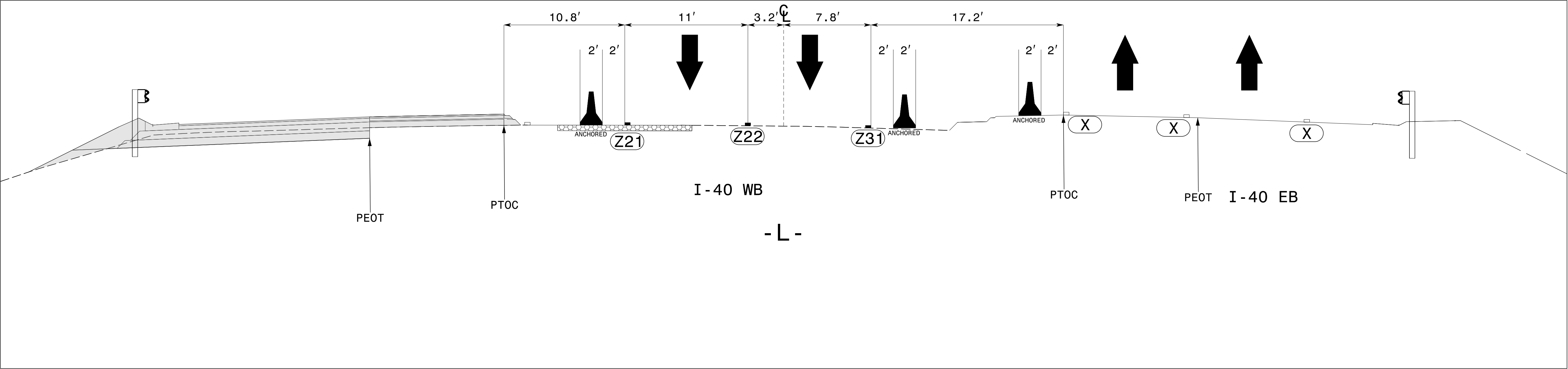
APPROVED: *Lawrence H. Green*
DATE: 3/5/2025



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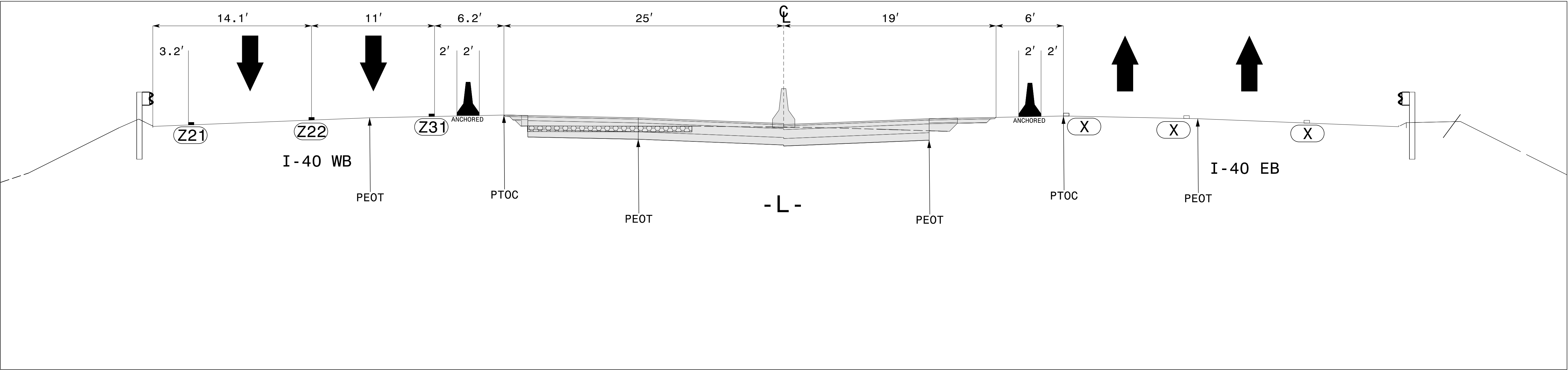


CUT SECTION F



F3
13 28

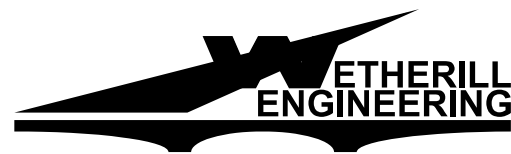
STA. 33+00 -L-
CUT SECTION



F4
16 28

STA. 33+00 -L-
CUT SECTION

3/5/2025
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User:AHayes



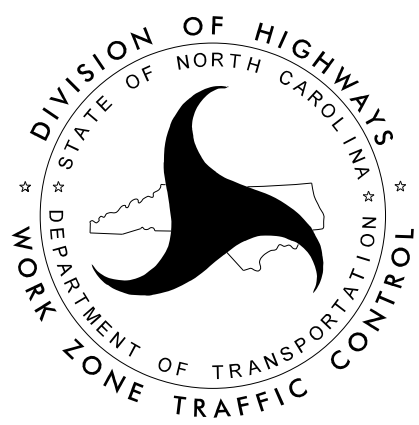
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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

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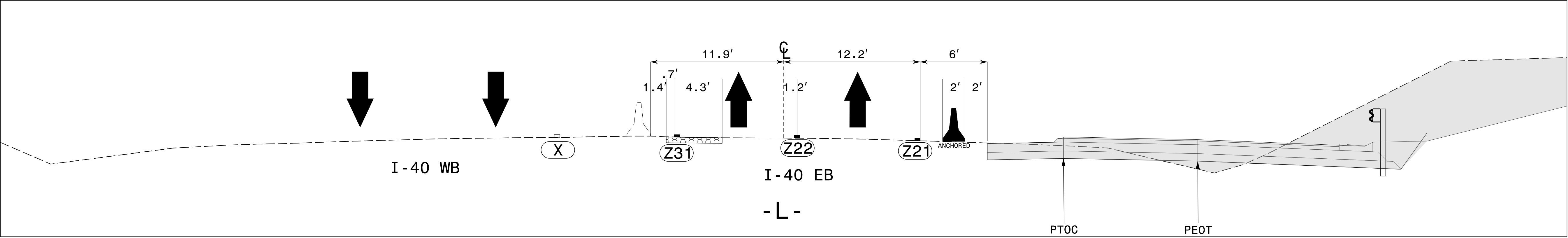


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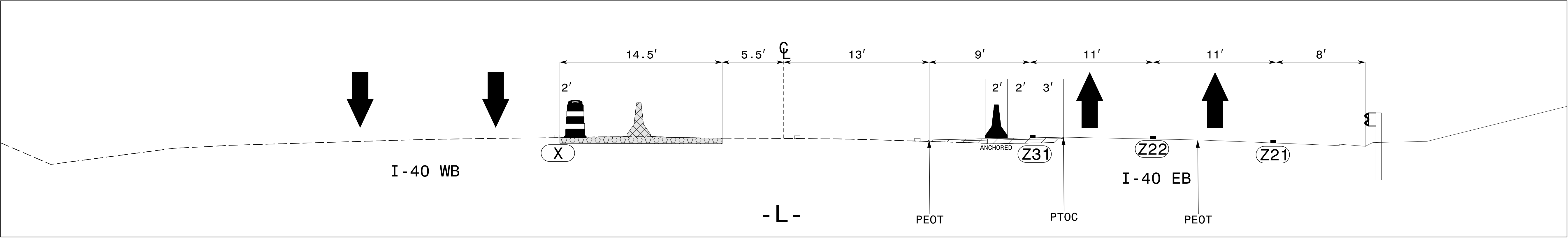
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PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-29



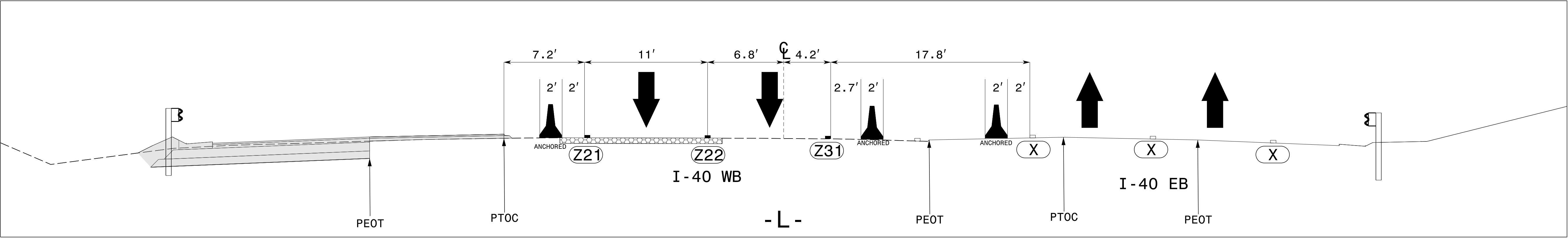
G1
07 29

STA. 34+50 -L-
CUT SECTION



G2
10 29

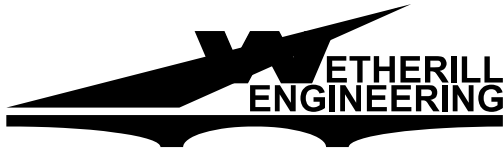
STA. 34+50 -L-
CUT SECTION



G3
13 29

STA. 34+50 -L-
CUT SECTION

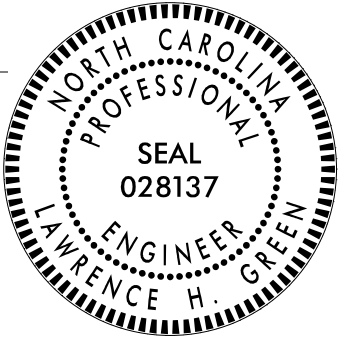
3/5/2025
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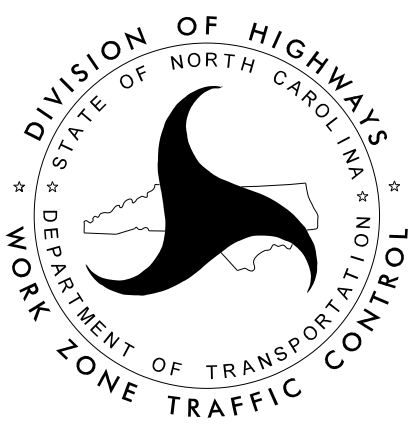
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

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

APPROVED: *Lawrence H. Green*
DATE: 3/5/2025

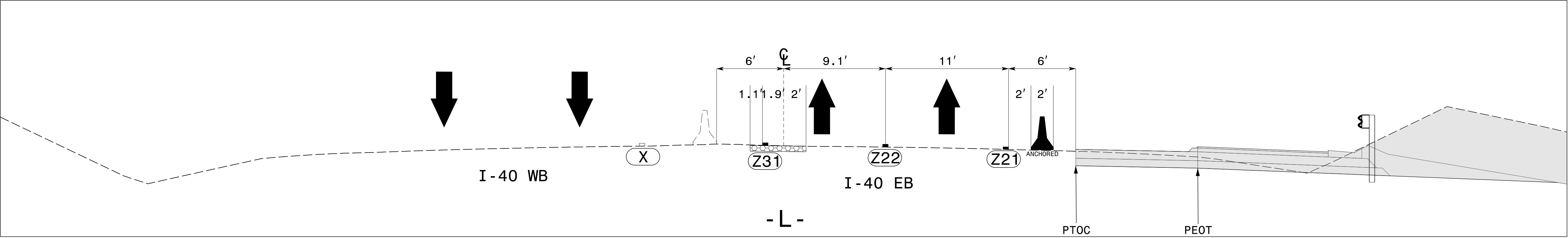


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UNLESS ALL SIGNATURES COMPLETED



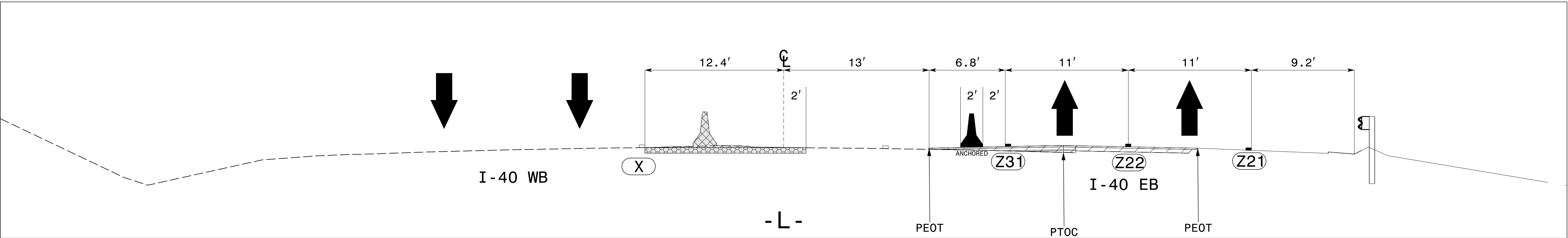
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PROJ. REFERENCE NO.	SHEET NO.
B-5541	TMP-30



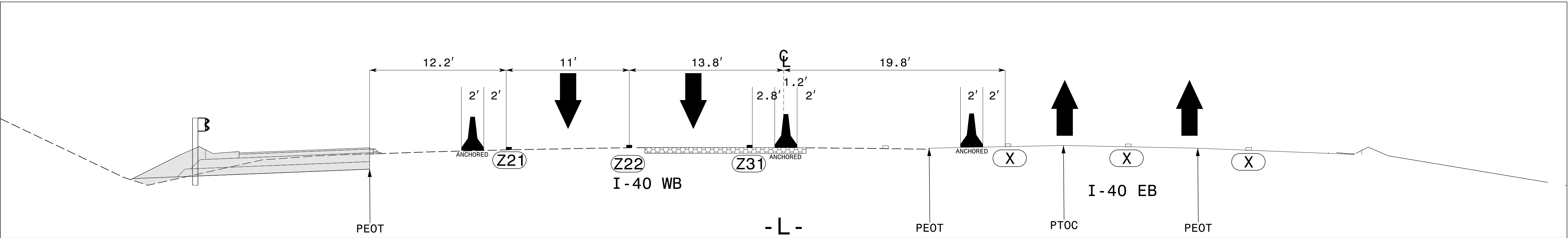
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STA. 37+00 -L-
CUT SECTION



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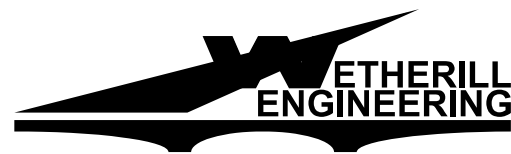
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CUT SECTION



H3
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STA. 37+00 -L-
CUT SECTION

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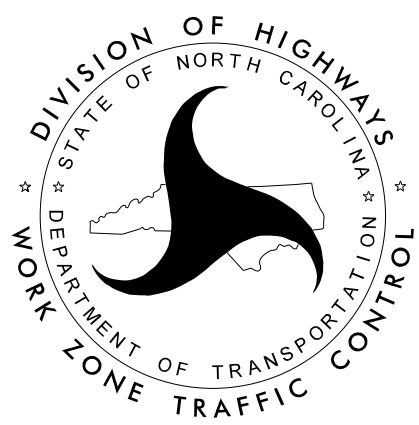
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: *Lawrence H. Green*
430670888004488

DATE: 3/5/2025



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CUT SECTION H