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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

NORTHAMPTON COUNTY

PROJECT VICINITY MAP

INDEX OF SHEETS

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TMP-1B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)
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TMP-2	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2A	TEMPORARY SHORING DATA
TMP-2B	Y6 PHASE II OFF-SITE DETOUR
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SHEET NO.
TMP-1

R-2582A

WBS PROJECT:

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

PLANS PREPARED BY:

J. S. BOURNE, P.E.

N. C. ROHRBAUGH

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PROJECT ENGINEER

S. B. JENNINGS
PROJECT DESIGN ENGINEER

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

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DATE: 5/16/2019

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ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMP. PAVEMENT

SIGNALS

- EXISTING
- PROPOSED
- PORTABLE

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION	QUANTITY	
PAINT (4")			
P8	2'-6' WHITE MINI-SKIP	965	LF
P9	2'-6' YELLOW MINI-SKIP	143	LF
PA	WHITE EDGE LINE	209255	LF
PB	YELLOW EDGE LINE	114705	LF
PC	10 FT. WHITE SKIP	25300	LF
PD	3'-9' WHITE MINI-SKIP	900	LF
PF	10' YELLOW SKIP	20	LF
PH	YELLOW SINGLE CENTER	68	LF
PI	YELLOW DOUBLE CENTER	127854	LF
PAINT (8")			
PN	WHITE GORE	17875	LF
PO	WHITE DIAGONAL	1400	LF
PP	YELLOW DIAGONAL	210	LF
P17	3 FT. - 3 FT./SP WHITE MINISKIP (ROUDABOUTS ONLY)	250	LF

SYMBOL	DESCRIPTION	QUANTITY	
PAINT (24")			
P2	WHITE STOP BAR	56	LF
PAVEMENT MARKING SYMBOLS			
QA	LEFT TURN ARROW	21	EA
QB	RIGHT TURN ARROW	4	EA
QN	24" YIELD LINE TRIANGLE	110	EA
QP	MERGE ARROW	15	EA
QT	U TURN ARROW	27	EA
TEMPORARY RAISED MARKERS			
MH	YELLOW & YELLOW	615	EA
MI	CRYSTAL & RED	1304	EA
MJ	YELLOW & RED	80	EA

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

ROADWAY STANDARD DRAWINGS & LEGEND

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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 - REQUIRES INTERMEDIATE CONTRACT TIME PROJECT SPECIAL PROVISIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 46	MONDAY THRU SUNDAY 4:00 AM TO 7:00 AM AND 4:00 PM TO 7:00 PM
US 158 / US 301	MONDAY THRU FRIDAY 6:00 AM TO 9:00 AM AND 4:00 PM T0 6:00 PM

MEMORIAL DAY THRU LABOR DAY

I-95	MONDAY THRU FRIDAY 9:00 AM TO 7:00 PM AND 9:00 AM FRIDAY TO 9:00 AM MONDAY

LABOR DAY THRU MEMORIAL DAY

I-95	11:00 AM FRIDAY THRU 9:00 AM MONDAY

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

ROAD NAME

I-95 / US 158 / US 301

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 11:00 A.M. DECEMBER 31st TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.

3. FOR EASTER, BETWEEN THE HOURS OF 11:00 A.M. THURSDAY AND 9:00 A.M. MONDAY.

4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF FRIDAY TO TUESDAY.

5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 9:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 9:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 11:00 A.M. FRIDAY AND 9:00 A.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 11:00 A.M. TUESDAY TO 9:00 A.M. MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 11:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
I-95	MONDAY THRU SUNDAY 9:00 AM TO 7:00 PM	HANGING OVERHEAD SIGNS

D) 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

E) 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.

F) 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.

G) 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.

H) 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.

I) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

J) 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.

K) 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) 1500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

M) 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.

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

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

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

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

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

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

GENERAL NOTES

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GENERAL NOTES:

Q) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 350 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

R) 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.

S) 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

T) 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.

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

V) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES (DRUMS, CONES, OR SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL	PAINT	TEMP RAISED

X) 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.

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

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

AA) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION

MISCELLANEOUS

BB) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

GENERAL NOTES

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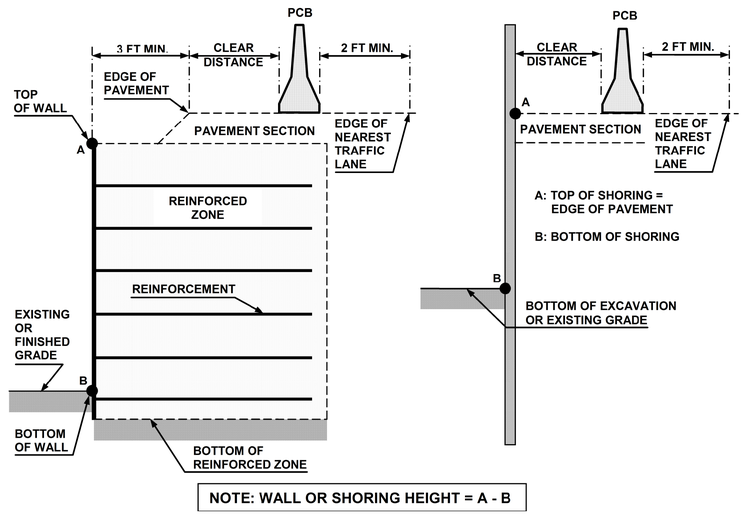

FIGURE A

NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.

2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).

3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.

5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.

6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.

8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.

9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.

10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph <30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
		>56	32	36	42	45	47	51
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

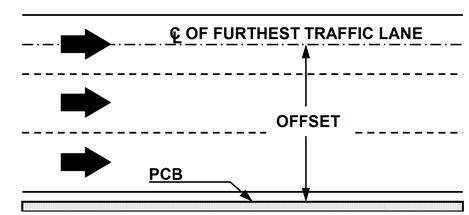

FIGURE B

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PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

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SHORING NOTES

TEMPORARY SHORING NO. 1

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

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

DESIGN TEMPORARY SHORING FROM STATION -L- 85+32±, 5.0 FT. RIGHT, TO STATION -L- 86+11±, 5.0 FT. RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 69.5 FT ±

DO NOT USE CANTILEVER, BRACED AND/OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 85+32±, 5.0 FT. RIGHT, TO STATION -L- 86+11±, 5.0 FT. RIGHT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 85+32±, 5.0 FT. RIGHT, TO STATION -L- 86+11±, 5.0 FT. RIGHT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

TEMPORARY SHORING NO. 2

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

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

DESIGN TEMPORARY SHORING FROM STATION -L- 286+13±, 5.0 FT. RIGHT, TO STATION -L- 286+90±, 12.0 FT. LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 69.5 FT ±

DO NOT USE CANTILEVER, BRACED AND/OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 286+13±, 5.0 FT. RIGHT, TO STATION -L- 286+90±, 12.0 FT. LEFT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 286+13±, 5.0 FT. RIGHT, TO STATION -L- 286+90±, 12.0 FT. LEFT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

TEMPORARY SHORING NO. 3

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

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

DESIGN TEMPORARY SHORING FROM STATION -L- 286+40±, 12.0 FT. LEFT, TO STATION -L- 286+75±, 12.0 FT. LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 69.5 FT ±

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 286+40±, 12.0 FT. LEFT, TO STATION -L- 286+75±, 12.0 FT. LEFT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 286+40±, 12.0 FT. LEFT, TO STATION -L- 286+75±, 12.0 FT. LEFT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING NO. 4

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

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

DESIGN TEMPORARY SHORING FROM STATION -L- 25+60±, 35.0 FT. RIGHT, TO STATION -I95 RPA- 16+00±, 86.9 FT. LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 125.0 FT ±

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 25+60±, 35.0 FT. RIGHT, TO STATION -I95 RPA- 16+00±, 86.9 FT. LEFT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STA STATION -L- 25+60±, 35.0 FT. RIGHT, TO STATION -I95 RPA- 16+00±, 86.9 FT. LEFT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STA STATION -L- 25+60±, 35.0 FT. RIGHT, TO STATION -I95 RPA- 16+00±, 86.9 FT. LEFT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH SEALED DOCUMENTS FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENTS WERE SUBMITTED TO DIVISION 1 ON OCTOBER 16, 2018 AND SEALED BY PROFESSIONAL ENGINEER, JINYOUNG PARK, LICENSE # 032171

APPROVED: DocuSigned by: J. Stuart Bourne DATE: 7/2/2019

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

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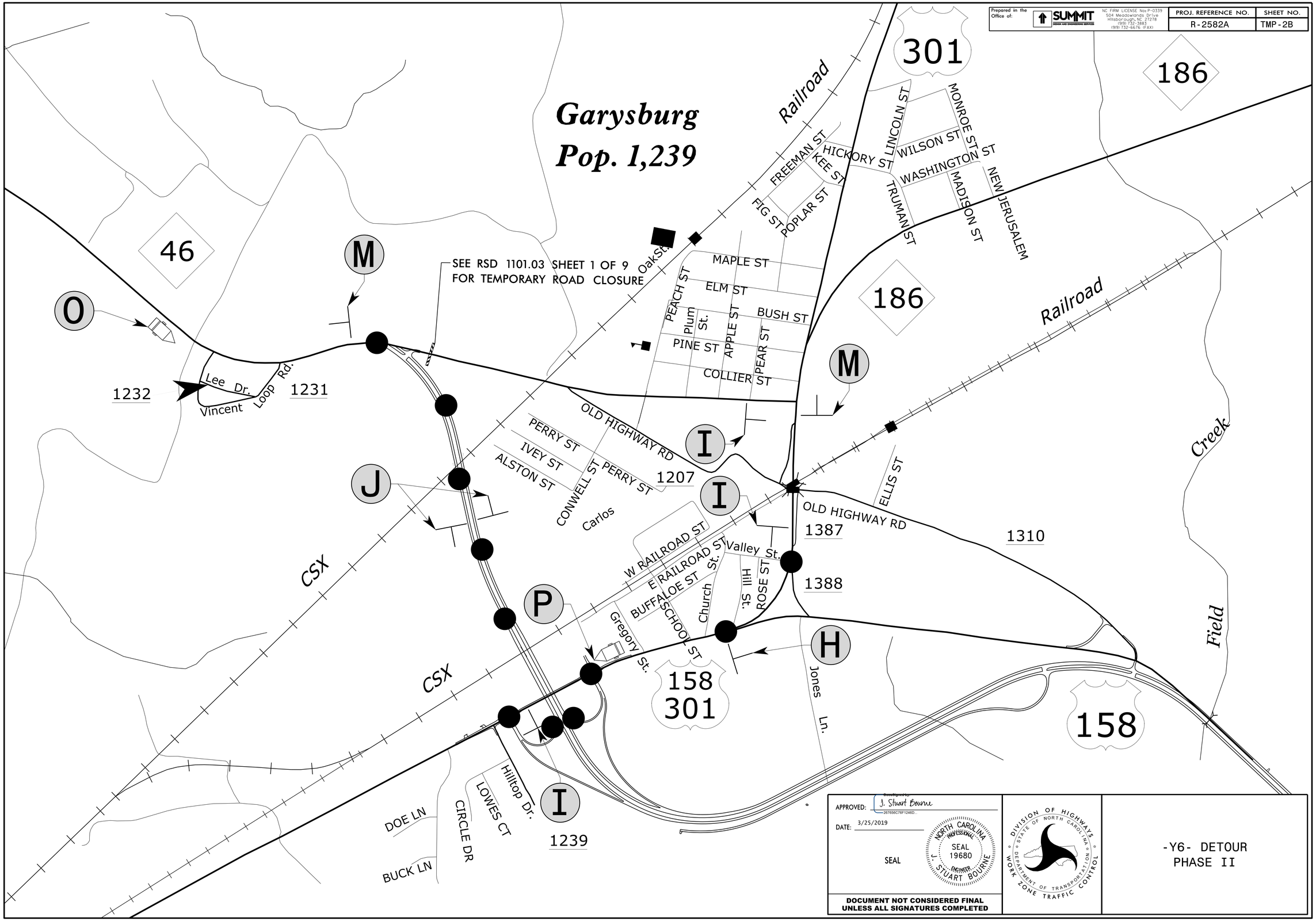

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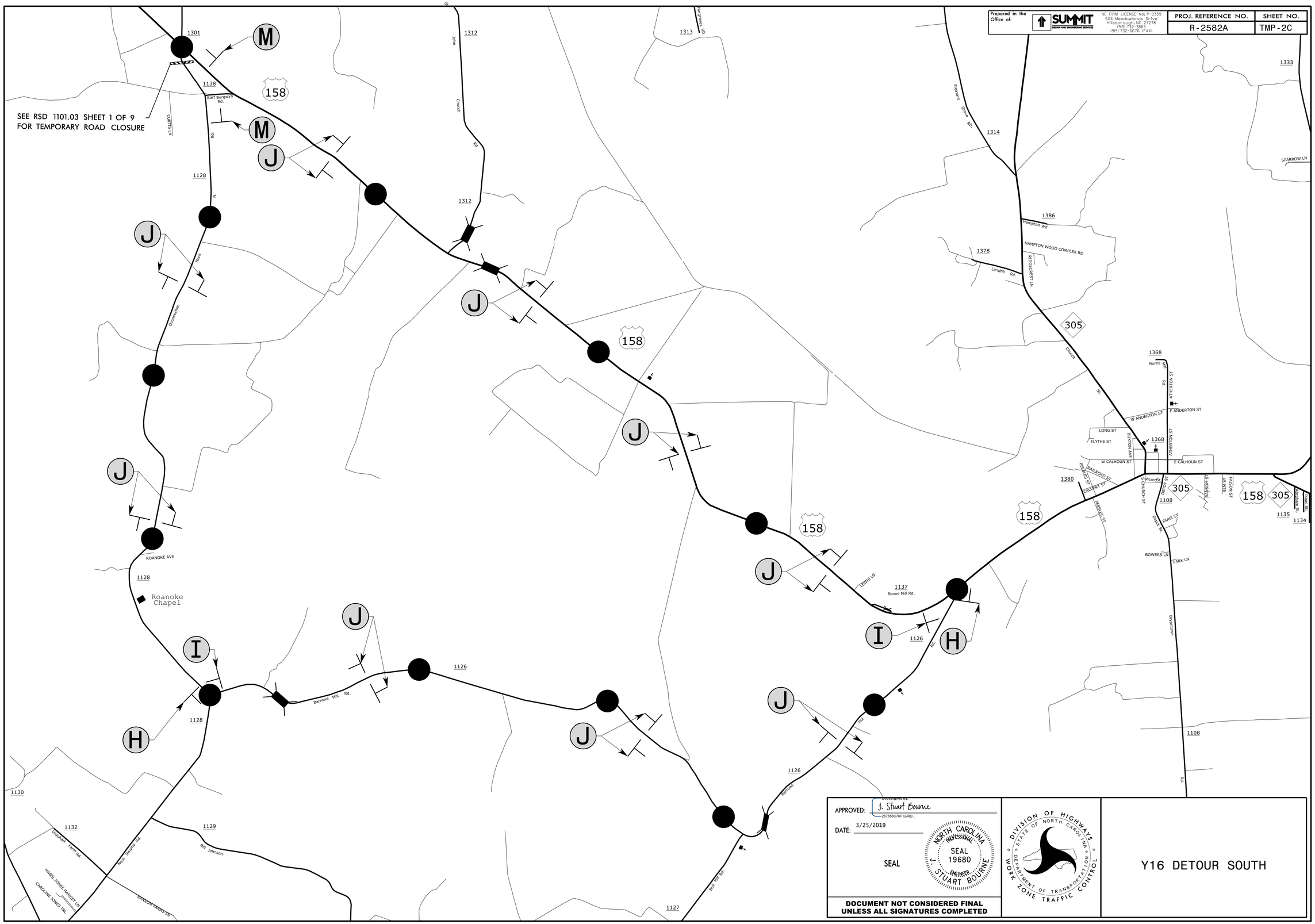
R-2582A	TMP-2C



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DATE: 3/25/2019

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NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

Y16 DETOUR SOUTH

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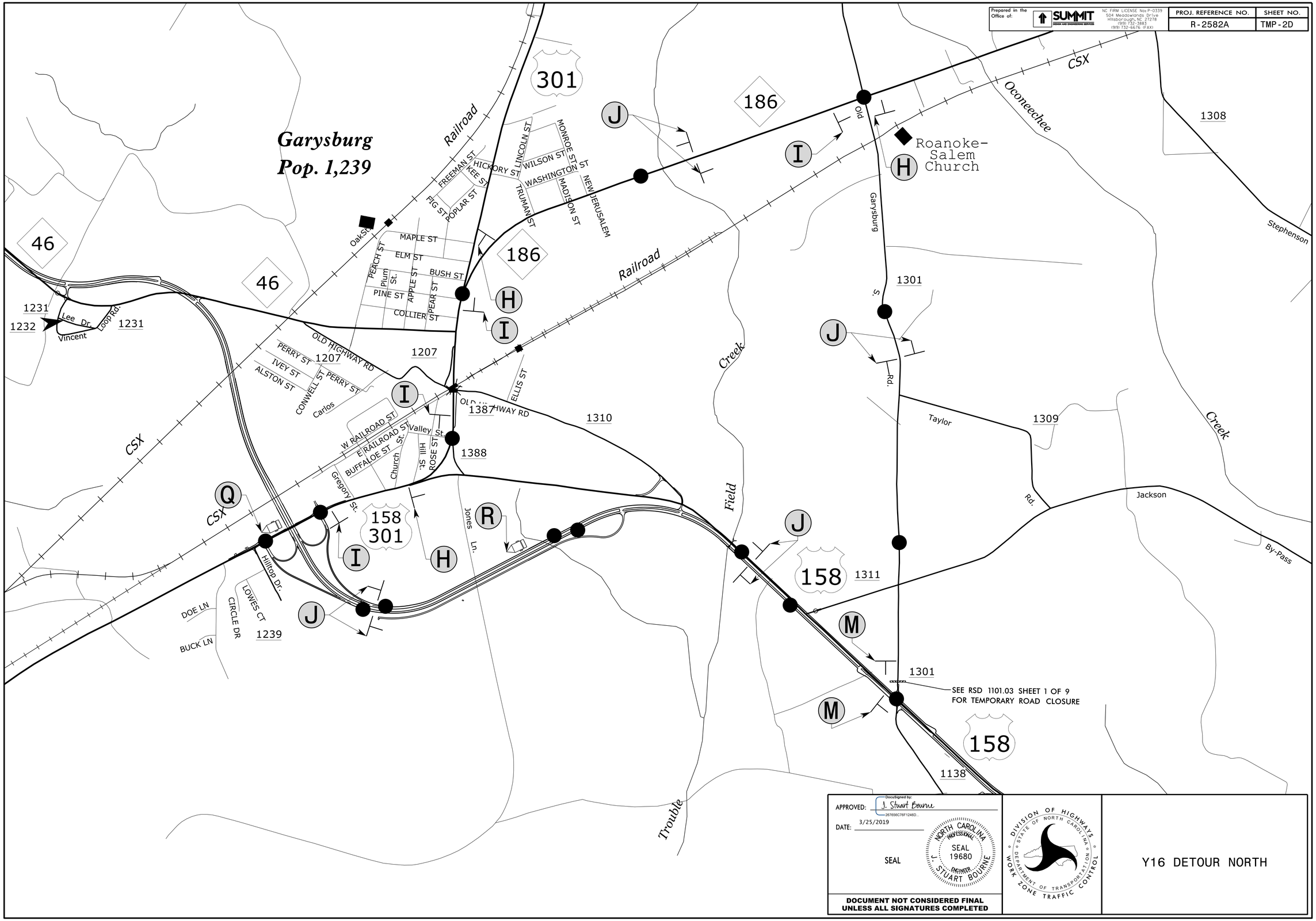

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NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

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Y16 DETOUR NORTH

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PROJ. REFERENCE NO.	SHEET NO.
R-2582A	TMP-2E

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SHOWN IN PLAN SHEET

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SHOWN IN PLAN SHEET

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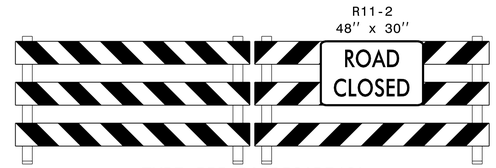
SHOWN IN PLAN SHEET



TYPE III BARRICADE(S)

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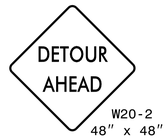

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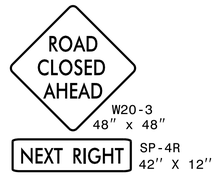

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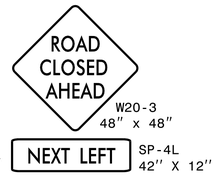

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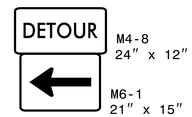

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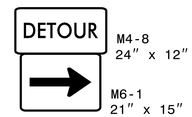

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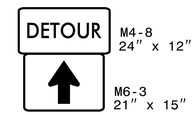

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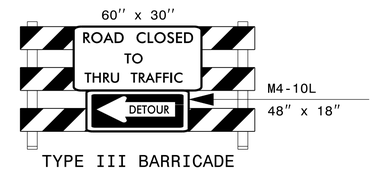

TYPE III BARRICADE

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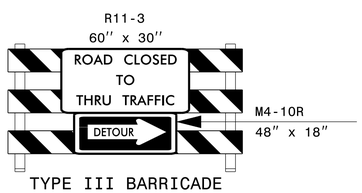

TYPE III BARRICADE

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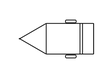
MESSAGE NO. 1	MESSAGE NO. 2
NC 46 DETOUR	USE US 301 NORTH

CHANGEABLE MESSAGE SIGN



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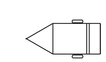
MESSAGE NO. 1	MESSAGE NO. 2
NC 46 DETOUR	USE US 158 WEST

CHANGEABLE MESSAGE SIGN



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MESSAGE NO. 1	MESSAGE NO. 2
CORNWAL-LIS RD. DETOUR	USE US 158 EAST

CHANGEABLE MESSAGE SIGN

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MESSAGE NO. 1	MESSAGE NO. 2
CORNWAL-LIS RD. DETOUR	USE US 301 NORTH

CHANGEABLE MESSAGE SIGN

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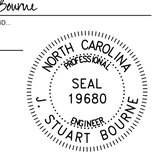

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DETOUR SIGNAGE AND DEVICES

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neil.rohrbaugh

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PROJ. REFERENCE NO.	SHEET NO.
R-2582A	TMP-3

MANAGEMENT STRATEGIES

PHASE I TRAFFIC IS MAINTAINED ON EXISTING NC 46, US 158, AND US 301 WHILE ALL OF THE PROJECT ON NEW LOCATION IS CONSTRUCTED. IN PHASE II TRAFFIC IS PLACED IN A TWO-LANE TWO-WAY TRAFFIC PATTERN AT BOTH ENDS OF THE PROJECT TO ALLOW THE CONSTRUCTION OF THE WEST BOUND LANES AND THE NEW LOCATION IS PARTIALLY OPENED TO ALLOW ACCESS TO US 301 VIA THE NEW INTERCHANGE. IN PHASE III TRAFFIC IS PLACED IN A TWO-LANE TWO-WAY TRAFFIC PATTERN IN THE WESTBOUND LANES ON THE WEST HALF OF THE PROJECT TO COMPLETE THE EASTBOUND LANES AND THE NEW LOCATION IS OPENED TO THE PROPOSED TRAFFIC PATTERN. IN PHASE IV TRAFFIC IS OPENED TO THE PROPOSED PATTERN AND FINAL PAVEMENT MARKING AND RAISED MARKERS ARE INSTALLED UNDER TRAFFIC USING LANE CLOSURES.

PHASING

PHASE I

STEP 1:
USE ROADWAY STANDARD DRAWING NUMBER 1101.01 SHEET 1 TO INSTALL WORK ZONE ADVANCE WARNING SIGNS ON -L-, I-95 RAMPS AND ON ALL -Y- LINES.

STEP 2:
WHILE MAINTAINING TRAFFIC IN ITS EXISTING PATTERN CONSTRUCT THE FOLLOWING UP TO BUT NOT INCLUDING FINAL SURFACE COURSE: (SEE SHEETS TMP-4 AND 4A

-L- PROPOSED EB FROM STA 62+50 +/- TO 125+00+/- AND STA 136+50+/- TO 324+00+/- AND STA 329+00+/- TO 451+00+/-
-L- PROPOSED EB FROM STA 156+50+- TO 280+00+/-
-DET 4B- FROM -L- STA 175+70+/- TO 182+80+/-
-DET 5- FROM -L- STA 245+00+/- TO 253+42+/-
-Y9RPA- FROM STA 10+00+/- TO 32+75+/-
-Y9LPA- FROM STA 10+00+/- TO 20+25+/-
-Y9RPD- FROM STA 10+00+/- TO 28+25+/-
-Y9LPD- FROM STA 10+00+/- TO 20+00+/-
-Y1- FROM STA 13+00+/- TO 28+81+/-
-DRIVE- FROM STA 15+91+/- TO 10+00+/-
-Y13A- FROM STA 10+00+- TO 41+08+/-
-Y14- FROM STA 14+50+/- TO 17+50+/-

CONSTRUCT ALL DRAINAGE PIPES AND DRAINAGE STRUCTURES ON NEW LOCATION.

USE RSD 1101.02 SHEET 1 TO ALTERNATE LANE CLOSURES TO CONSTRUCT PROPOSED DRAINAGE CROSS PIPES LESS THAN 42”AND DRAINAGE STRUCTURES.

CONSTRUCT HALF OF THE 42”DRAINAGE PIPE AT -L- STA 422+05+/- ACROSS THE PROPOSED EASTBOUND LANES AND CONSTRUCT DRAINAGE STRUCTURE NUMBER 3205 IN THE MEDIAN. TEMPORARILY TIE EXISTING PIPE TO DRAINAGE STRUCTURE NUMBER 3205. SEE TMP-4A INSET C

CONSTRUCT FIRST HALF OF THE TRIPLE BARREL CULVERT AT -L- STA 85+72 (SEE TMP-4 INSET A) AND THE TRIPLE BARREL CULVERT AT -L- STA 286+51 (SEE TMP-4A INSET B) ACROSS THE PROPOSED EASTBOUND LANES.

CONSTRUCT TEMPORARY SHORING #4 AND PROPOSED RETAINING WALL FOR TRANSMISSION TOWER IN I-95 RAMP A QUADRANT SEE TMP-4A.

WHILE MAINTAINING TRAFFIC IN ITS EXISTING PATTERN THE CONTRACTOR MAY BEGIN CONSTRUCTION OF THE FOLLOWING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE: (THIS CONSTRUCTION IS NOT REQUIRED TO COMPLETE PHASE I)

-L- PROPOSED WB FROM STA 29+50 +/- TO 60+00 +/-
-L- PROPOSED WB AND EB FROM STA 130+00+/- TO 150+00+/-

STEP 3:
USE RSD 1101.02 SHEET 1 TO CONSTRUCT THE PROPOSED OUTSIDE PAVEMENT WIDENING UP TO EXISTING PAVEMENT.

-L- STA 17+00+/- TO 37+00+/-
-I95RPA- STA 10+00+/- TO 17+17+/-
-I95RPB- STA 12+00+/- TO 18+37+/-
-I95RPC- STA 10+50+/- TO 14+19+/-
-I95RPD- STA 12+00+/- TO 18+08+/-
-Y9- FROM STA 13+00+/- TO 36+24+/-

USE RSD 1101.02 SHEET 1 TO CONSTRUCT WIDENING FOR ROUNDABOUTS AT I-95 AND US 301 UP TO EXISTING PAVEMENT ELEVATION AS SHOWN ON SHEETS TMP-5 AND 6 AND TMP-8 AND 9.

PHASE II

STEP 1:
USE RSD 1101.02 SHEET 1 TO WEDGE AND CONSTRUCT ROUNDABOUTS AT I-95 AND US 301 UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE AND PLACE PAVEMENT MARKING (PAINT) AS SHOWN ON SHEETS TMP-14 AND 15 AND TMP-20 AND 21. NOTE: ADDITIONAL FLAGGERS MAY NEED TO BE STATIONED AT I-95 RAMPS A AND C.

I-95 RAMP A: SHIFT TRAFFIC ONTO TEMPORARY PAVEMENT AND CONSTRUCT THE RIGHT SIDE OF RAMP A. SEE TMP-15

I-95 RAMPS B,C,AND D: SHIFT TRAFFIC ONTO TEMPORARY PAVEMENT AND CONSTRUCT THE LEFT SIDE OF RAMP. SEE SHEETS TMP-14 AND 15

PLACE TEMPORARY PAVEMENT MARKING ON -Y1- FROM STA 13+00+/- TO 28+81+/-. USE RSD 1101.02 SHEET 1 TO CONSTRUCT -Y1- FROM STA 10+00+/- TO 13+00+/- UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE. TIE TEMPORARY PAVEMENT MARKING AND OPEN -Y1- TO PROPOSED TRAFFIC PATTERN AS SHOWN ON TMP-14.

STEP 2:
PLACE TEMPORARY PAVEMENT MARKING ON THE NEWLY CONSTRUCTED EASTBOUND LANES FROM STA 62+50+/- TO 125+00+- AND FROM STA 156+50+/- TO 451+00+/- INCLUDING -Y9- RAMPS AND LOOPS. SEE SHEET TMP-19 THROUGH 25 FOR TEMPORARY PAVEMENT MARKING (PAINT) AND MARKERS.

CONSTRUCT THE TEMPORARY TIES AWAY FROM TRAFFIC AS MUCH AS POSSIBLE FROM EXISTING NC 46 TO STA 62+50 AND STA 125+00 TO EXISTING ROADWAY

STEPS 3 AND 4 SHALL BE COMPLETED IN A CONTINUOUS OPERATION.

STEP 3:
USING ROADWAY STANDARD DRAWING NUMBER 1101.02 SHEET 1 CONSTRUCT THE EASTBOUND TEMPORARY TIE (DET-1) FROM EXISTING NC 46 AT APPROXIMATE -L- STA 56+00+/- TO PROPOSED EB ROADWAY AT STA 63+00+/- AS SHOWN ON SHEET TMP-16.

SIMULTANEOUSLY CONSTRUCT 12’ OF TEMPORARY TIE (DET-2) FROM PROPOSED EB ROADWAY AT STA 125+00+/- TO EXISTING EB NC 46 AS SHOWN ON SHEET TMP-17.

STEP 4:
USING ROADWAY STANDARD DRAWING NUMBER 1101.02 SHEET 1 COMPLETE THE WESTBOUND TEMPORARY TIE (DET-1) FROM EXISTING NC 46 AT APPROXIMATE -L- STA 56+00+/- TO PROPOSED WESTBOUND ROADWAY AT STA 63+00+/- AS SHOWN ON SHEET TMP-16 .

SIMULTANEOUSLY COMPLETE TEMPORARY TIE (DET-2) FROM PROPOSED WESTBOUND ROADWAY AT STA 125+00+/- TO EXISTING NC 42 WESTBOUND LANE AS SHOWN ON SHEET TMP-17. PLACE PAVEMENT MARKING ON TIE-INS AND OPEN TRAFFIC TO TEMPORARY TRAFFIC PATTERN.

APPROVED: DocuSigned by: J. Stuart Bourne DATE: 5/16/2019
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NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

MANAGEMENT STRATEGIES & PHASING

IF: MAY 2019 07:31
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nsuchanbaugh

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R-2582A	TMP-3A

STEPS 5 AND 6 SHALL BE COMPLETED IN 120 CALENDAR DAYS. SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES.

STEP 5:
CLOSE -Y16- SOUTH AND IMPLEMENT DETOUR AS SHOWN ON TMP-2C
CONSTRUCT -L- PROPOSED EB FROM STA 324+00+/- TO 329+00+/-
COMPLETE TEMPORARY PAVEMENT MARKING ON EB LANES.
ERECT AND COVER DETOUR SIGNS FOR -Y6- AS SHOWN ON SHEETS TMP-2B
ERECT AND COVER DETOUR SIGNS FOR -16- NORTH AS SHOWN ON SHEET TMP-2D.

STEP 6 SHALL BE COMPLETED IN A CONTINUOUS OPERATION.

STEP 6:
USING ALTERNATING LANE CLOSURES AND ROADWAY STANDARD DRAWING NUMBER 1101.02 SHEET 1 CONSTRUCT THE TEMPORARY TIE (DET 3) FROM EXISTING NC 46 AT APPROXIMATE -L- STA 150+00+/- TO PROPOSED -L- STA 155+50+/- AS SHOWN ON SHEET TMP-18.

SIMULTANEOUSLY USE RSD 1101.02 SHEET 1 TO SHIFT TRAFFIC TO THE PROPOSED EB LANES AS SHOWN ON TMP-18.

COMPLETE TIE-INS BETWEEN EXISTING US 158, -Y14- , -Y13-, PROPOSED EASTBOUND -L- LANES. ERECT STOP SIGN, COMPLETE PAVEMENT MARKING AND OPEN TRAFFIC TO TEMPORARY PATTERN AS SHOWN ON SHEETS TMP-19 THROUGH 25.

OPEN -Y16- (SOUTH LEG) AND CLOSE -Y16- (NORTH LEG) IMPLEMENT -Y16- DETOUR SHOWN ON SHEET TMP-2D.

UNCOVER DETOUR SIGNS AND IMPLEMENT -Y6- DETOUR AS SHOWN ON SHEET 2B

STEPS 7 AND 8 SHALL BE COMPLETED IN 120 CALENDAR DAYS. SEE INTERMEDIATE CONTRACT TIME FOR LIQUIDATED DAMAGES.

STEP 7:
CONSTRUCT PROPOSED WESTBOUND LANES FROM STA 152+00+/- TO 156+50 AND STA 323+00+/- TO 327+00+/- UP TO BUT NOT INCLUDING FINAL SURFACE COURSE AND TEMPORARY TIE -Y6- AND -Y16- TO PROPOSED EASTBOUND LANES AS SHOWN ON TMP-18 AND TMP-24.

STEP 8:
ERECT STOP SIGNS AND OPEN -Y6- AND -Y16- (NORTH LEG) TO TRAFFIC ON THE PROPOSED EAST BOUND LANES. REMOVE DETOUR SIGNS.

STEP 9:
CONSTRUCT THE SECOND HALF OF THE 42”DRAINAGE PIPE AT -L- STA 422+05+/- ACROSS THE PROPOSED WESTBOUND LANES AND REMOVE EXISTING PIPE.

COMPLETE CULVERT CONSTRUCTION OF THE TRIPLE BARREL CULVERT AT -L- STA 85+72 AND CULVERT CONSTRUCTION OF THE TRIPLE BARREL CULVERT AT -L- STA 286+51.

CONSTRUCT PROPOSED WESTBOUND LANES UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM STA 29+50+/- TO 152+00+/- AND 280+00+/- TO 324+00+/- AND FROM STA 329+00+/- TO 451+00+/-

PHASE III

STEP 1:
PLACE TEMPORARY PAVEMENT MARKING (PAINT) ON PROPOSED WESTBOUND LANES FROM STATION 28+00+/- TO 175+00 +/- IN A TWO LANE TWO WAY PATTERN AS SHOWN ON SHEETS TMP 21 AND 22. PLACE TEMPORARY PAVEMENT MARKING (PAINT) ON THE PROPOSED WEST BOUND LANES FROM STA 250+00+/- TO 451+00+/- IN THE PROPOSED PATTERN AS SHOWN ON SHEETS TMP-28 THROUGH 33.

STEP 2:
USE FLAGGERS AND RSD 1101.02 SHEET 1 TO COMPLETE PROPOSED WESTBOUND PAVEMENT MARKING (PAINT) FROM STA 175+00+/- TO 185+69+/- DET 4A. SEE SHEET TMP-29.

USE FLAGGERS AND RSD 1101.02 SHEET 1 TO REMOVE PAVEMENT MARKING FROM DET 5 FROM STA 245+00 TO 250+00 AND PLACE PAVEMENT MARKING IN THE PROPOSED WESTBOUND PATTERN. USE DRUMS TO CANALIZE TRAFFIC UNTIL WESTBOUND TRAFFIC IS SHIFTED IN STEP 3.

USE RSD 1101.02 SHEET 3 TO CLOSE THE LEFT (INSIDE) WESTBOUND LANE FROM STA 175+00 TO 187+60 (SEE SHEET TMP-29 AND 30).

STEP 3:
USE RSD 1101.02 SHEET 1 AND PLACE WESTBOUND TRAFFIC IN THE PROPOSED WESTBOUND LANES. (SEE TMP SHEETS 21 THROUGH 26).

PLACE EASTBOUND TRAFFIC IN A TWO-LANE TWO-WAY TRAFFIC PATTERN ON THE NEWLY CONSTRUCTED WESTBOUND LANES FROM STA 28+00+/- TO 175+00+/- AND IN THE OUTSIDE LANE FROM -L- STA 190+00+/- TO 451+00+/- AS SHOWN ON SHEETS TMP-28 THROUGH 33.

WHILE EASTBOUND TRAFFIC IS IN ONE LANE FROM -L- STA 188+90+/- TO 451+00+/- USE ALTERNATING LANE CLOSURES AND RSD 1101.02 SHEET 3 TO PLACE THE FINAL SURFACE COURSE ON THE PROPOSED EASTBOUND LANES AND PAVEMENT MARKING (PAINT) FROM 249+93+/- TO 451+00+/- SEE SHEETS TMP-29 AND TMP-31 THROUGH 33.

STEP 4:
CONSTRUCT FOOTINGS FOR I-95 GUIDE SIGNS (SEE SIGNING PLANS). IF WORK IS NOT BEHIND GUARDRAIL OR IS WITHIN 15 FT OF AN OPEN TRAVEL LANE USE RSD 1101.02 TO CLOSE THE SHOULDER. IF WORK IS NOT BEHIND GUARDRAIL OR IS WITHIN 5 FT OF AN OPEN LANE OF TRAVEL USE RSD 1101.01 TO CLOSE THE NEAREST LANE. SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES FOR I-95 LANE CLOSURE RESTRICTIONS.

CONSTRUCT PROPOSED EASTBOUND LANES UP THROUGH THE FINAL SURFACE COURSE FROM -L- STA 28+00+/- TO 175+00+/- . PLACE TEMPORARY PAVEMENT MARKING (PAINT) IN THE PROPOSED TRAFFIC PATTERN. SEE PAVEMENT MARKING PLANS.

I-95 RAMP A: USE RSD 1101.02 TO SHIFT TRAFFIC ONTO THE NEWLY CONSTRUCTED RIGHT SIDE AND CONSTRUCT THE LEFT SIDE OF RAMP A. SEE SHEET TMP-28

I-95 RAMPS B,C, AND D: SHIFT TRAFFIC ONTO THE NEWLY CONSTRUCTED LEFT SIDE AND CONSTRUCT THE RIGHT SIDE OF RAMP. SEE SHEETS TMP-27 AND 28.

PHASE IV
STEP 1:
USE FLAGGERS AND ROADWAY STANDARD DRAWING NUMBER 1101.02 SHEET 1 TO PLACE EASTBOUND TRAFFIC IN THE PROPOSED EASTBOUND LANES FROM STA 28+00+/- TO 451+00+/- .

STEP 2:
WHILE WESTBOUND TRAFFIC IS STILL IN ONE LANE FROM -L- STA 28+00+/- TO 208+00 FROM PHASE III LANE CLOSURE USE ALTERNATING LANE CLOSURES AND RSD 1101.02 SHEET 3 TO PLACE THE FINAL SURFACE COURSE AND PAVEMENT MARKING (PAINT) IN THE PROPOSED TRAFFIC PATTERN ON THE WESTBOUND LANES FROM -L- STA 28+00+/- TO 451+00+/-.

USE RSD 1101.02 SHEET 3 TO ALTERNATE LANE CLOSURES AND PLACE THE FINAL SURFACE COURSE AND PAVEMENT MARKING (PAINT) ON THE EASTBOUND LANES FROM -L- STA 175+00+/- TO 249+93+/-

USE RSD 1101.2 SHEET 1 TO PLACE FINAL SURFACE COURSE ON -L- FROM STA 17+00+/- TO 28+00+/- AND ALL -Y- LINES. PLACE PAVEMENT MARKING (PAINT) IN THE PROPOSED TRAFFIC PATTERN. SEE PAVEMENT MARKING PLANS.

COMPLETE CONSTRUCTION OF I-95 RAMPS AND PLACE FINAL SURFACE COURSE AND PAVEMENT MARKING (PAINT) AND OPEN TO THE FINAL TRAFFIC PATTERN. SEE PAVEMENT MARKING PLANS.

ERECT PROPOSED GUIDE SIGNS ON I-95. USE RSD 1101.09 SHEET 9 (ROLLING ROAD BLOCK OPERATION) TO ERECT OVERHEAD SIGNS 1, 2, 3, AND 4. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES FOR TEMPORARY ROAD CLOSURE RESTRICTIONS ON I-95. USE RSD 1101.04 SHEET 1 TO ERECT ALL OTHER GUIDE SIGNS IF WORK IS NOT BEHIND GUARDRAIL OR IS WITHIN 15 FT OF AN OPEN TRAVEL LANE.

STEP 3:
USE RSD 1101.02 SHEETS 1, 3, 11 AND 12 TO PLACE THE FINAL PAVEMENT MARKING (THERMOPLASTIC) AND RAISE PAVEMENT MARKERS ON -L- AND ALL -Y- LINES, RAMPS AND LOOPS.

STEP 4:
REMOVE WORK ZONE SIGNS AND OPEN -L- AND ALL -Y- LINES TO THE PROPOSED TRAFFIC PATTERN.

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 19680 ENGINEER J. STUART BOURNE

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

PHASING

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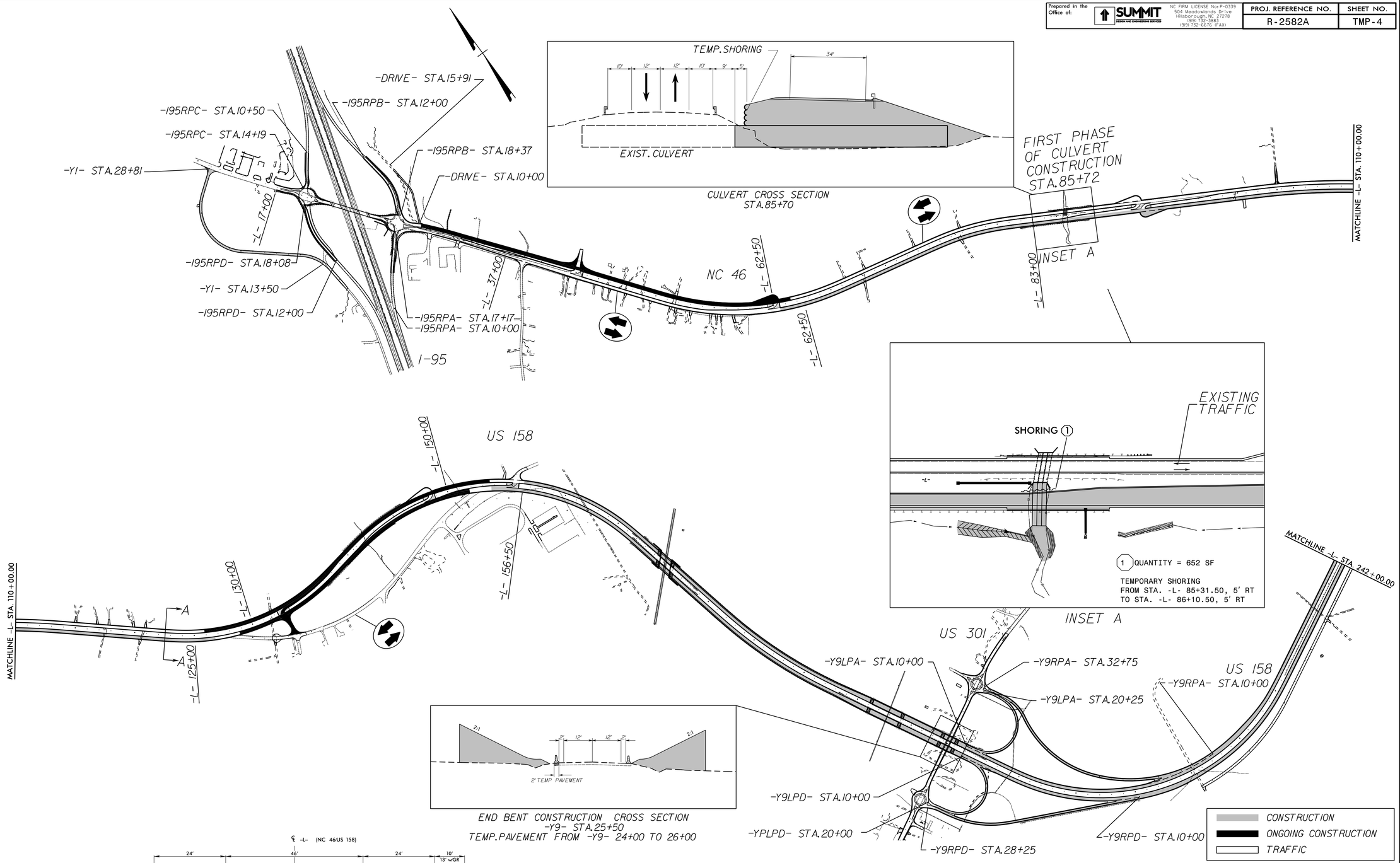
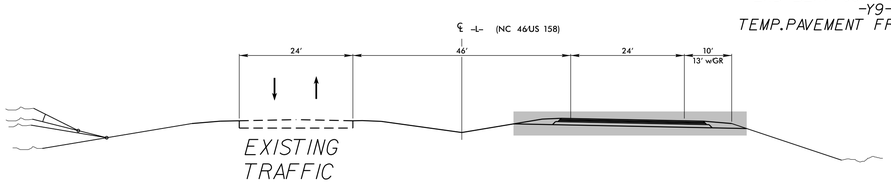
PROJ. REFERENCE NO.	SHEET NO.
R-2582A	TMP-4





SECTION A-A

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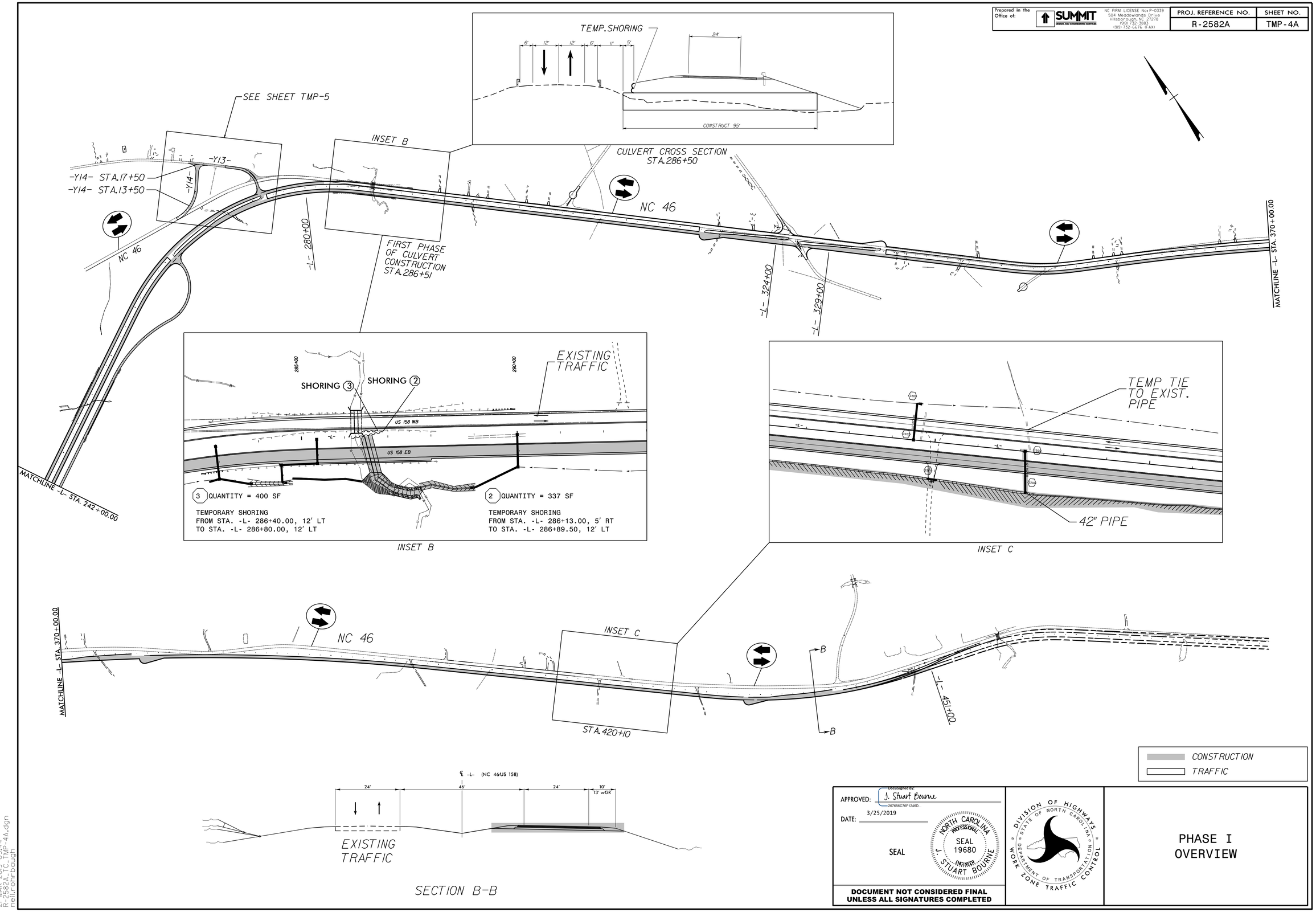

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PROJ. REFERENCE NO.	SHEET NO.
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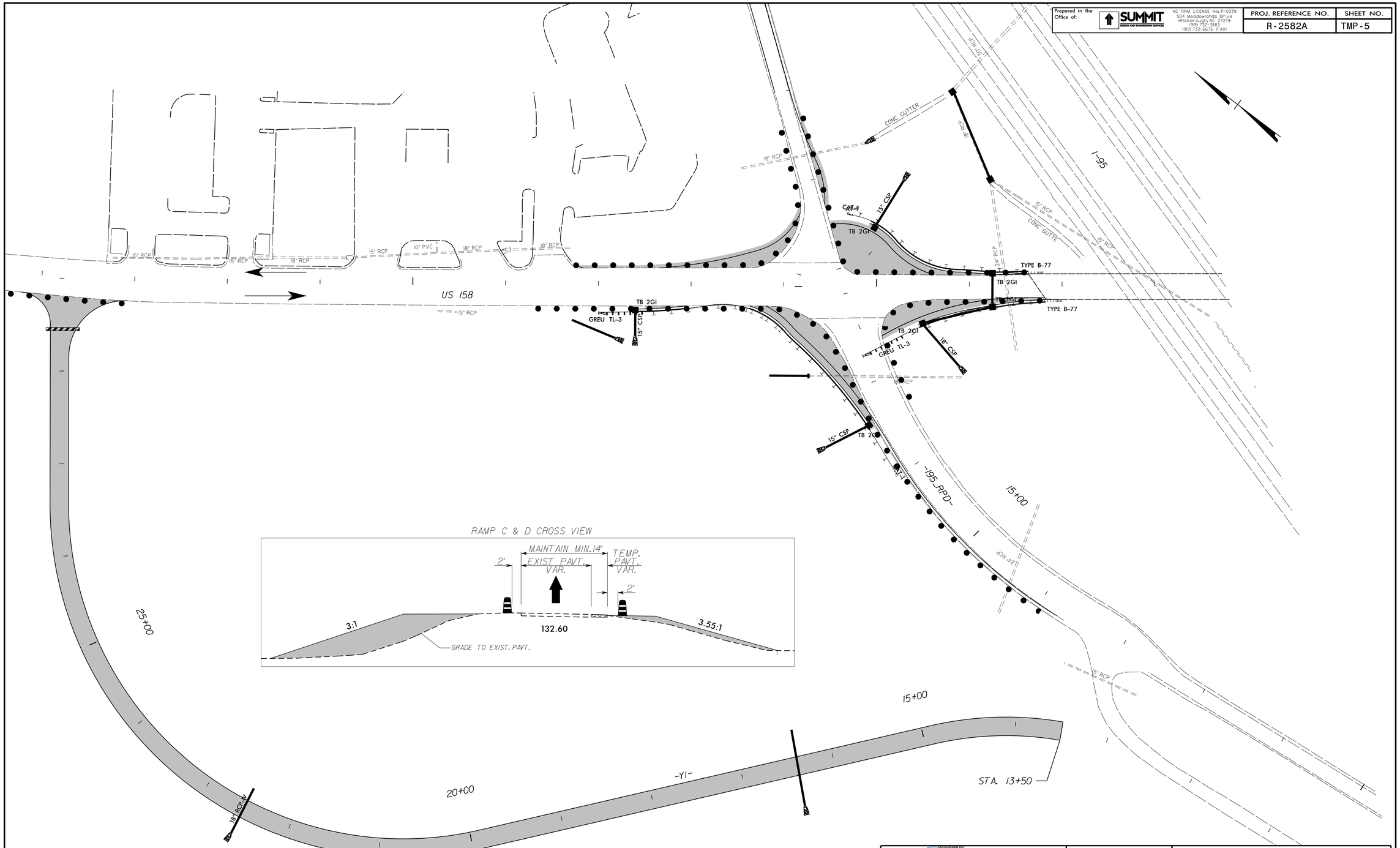

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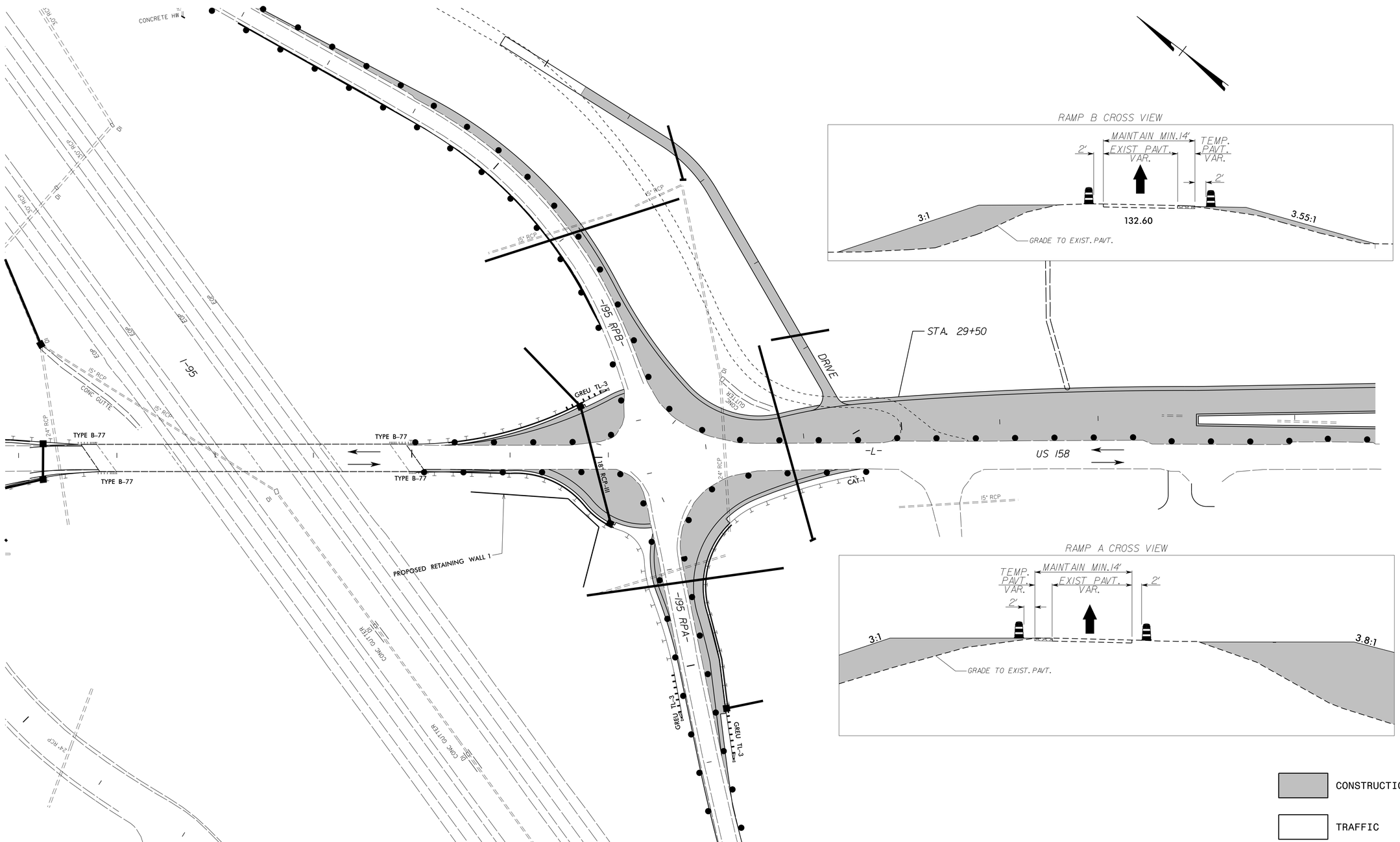

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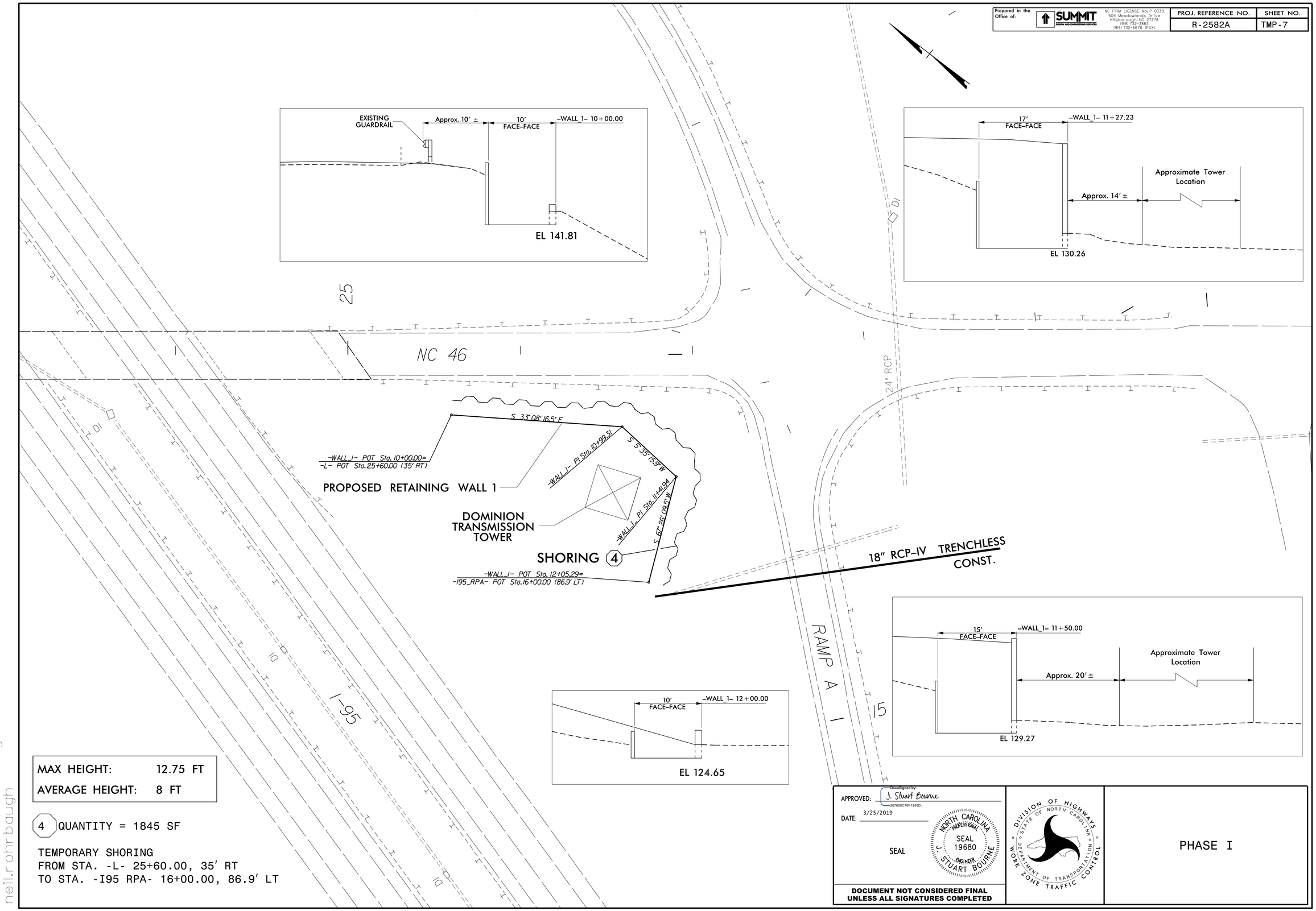

MAX HEIGHT:	12.75 FT
AVERAGE HEIGHT:	8 FT

4 QUANTITY = 1845 SF

TEMPORARY SHORING
FROM STA. -L- 25+60.00, 35' RT
TO STA. -I95 RPA- 16+00.00, 86.9' LT

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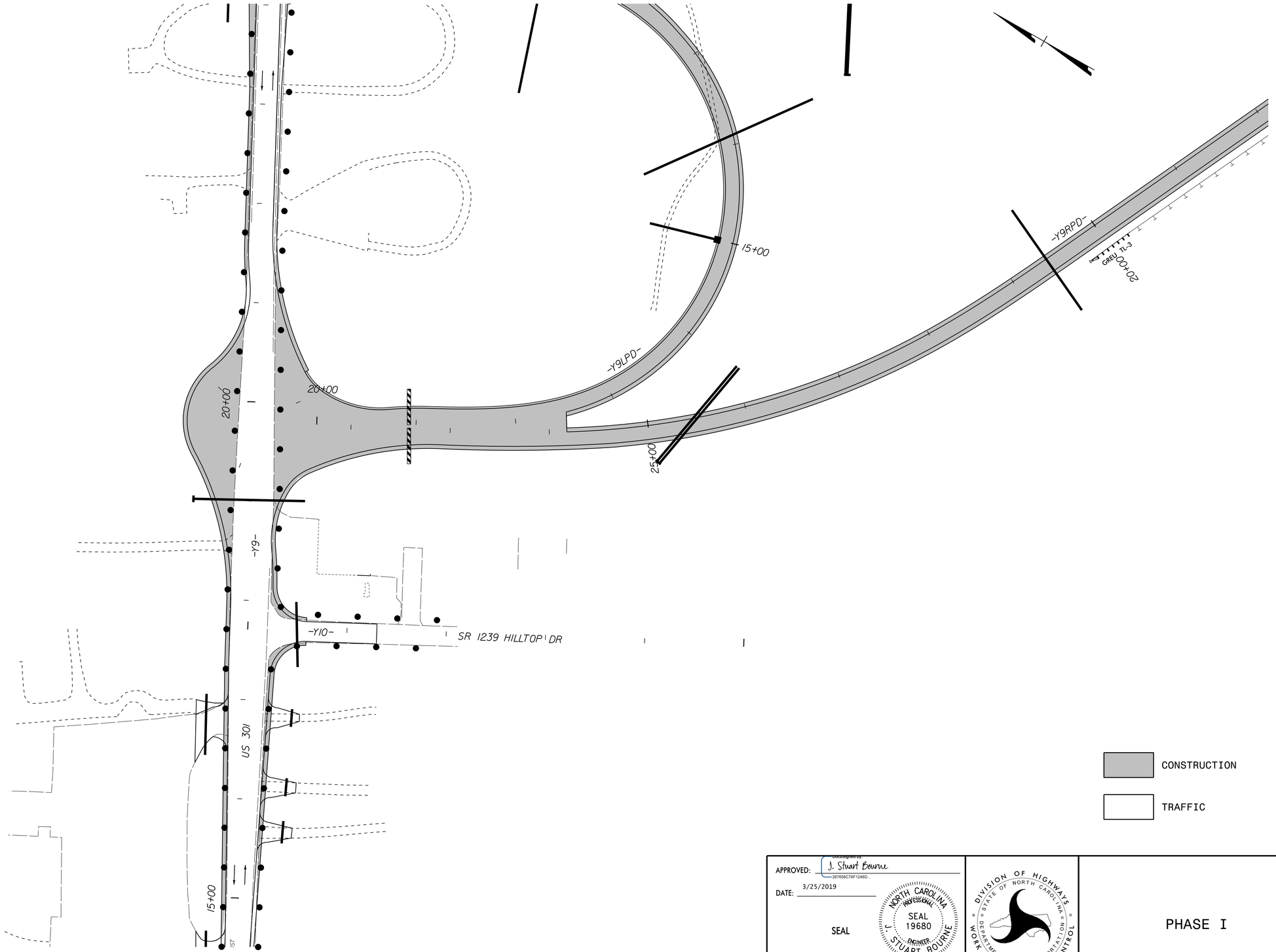

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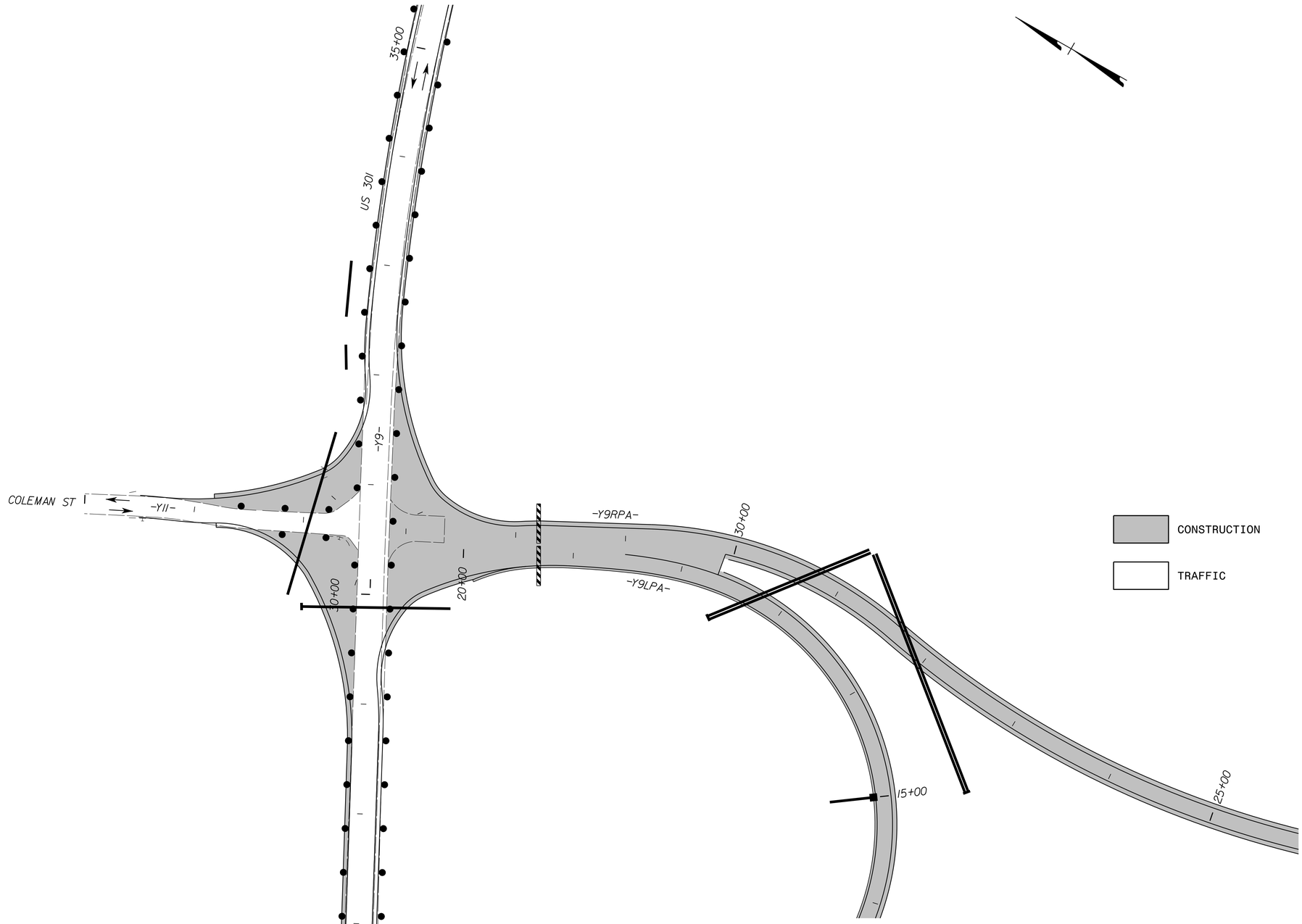

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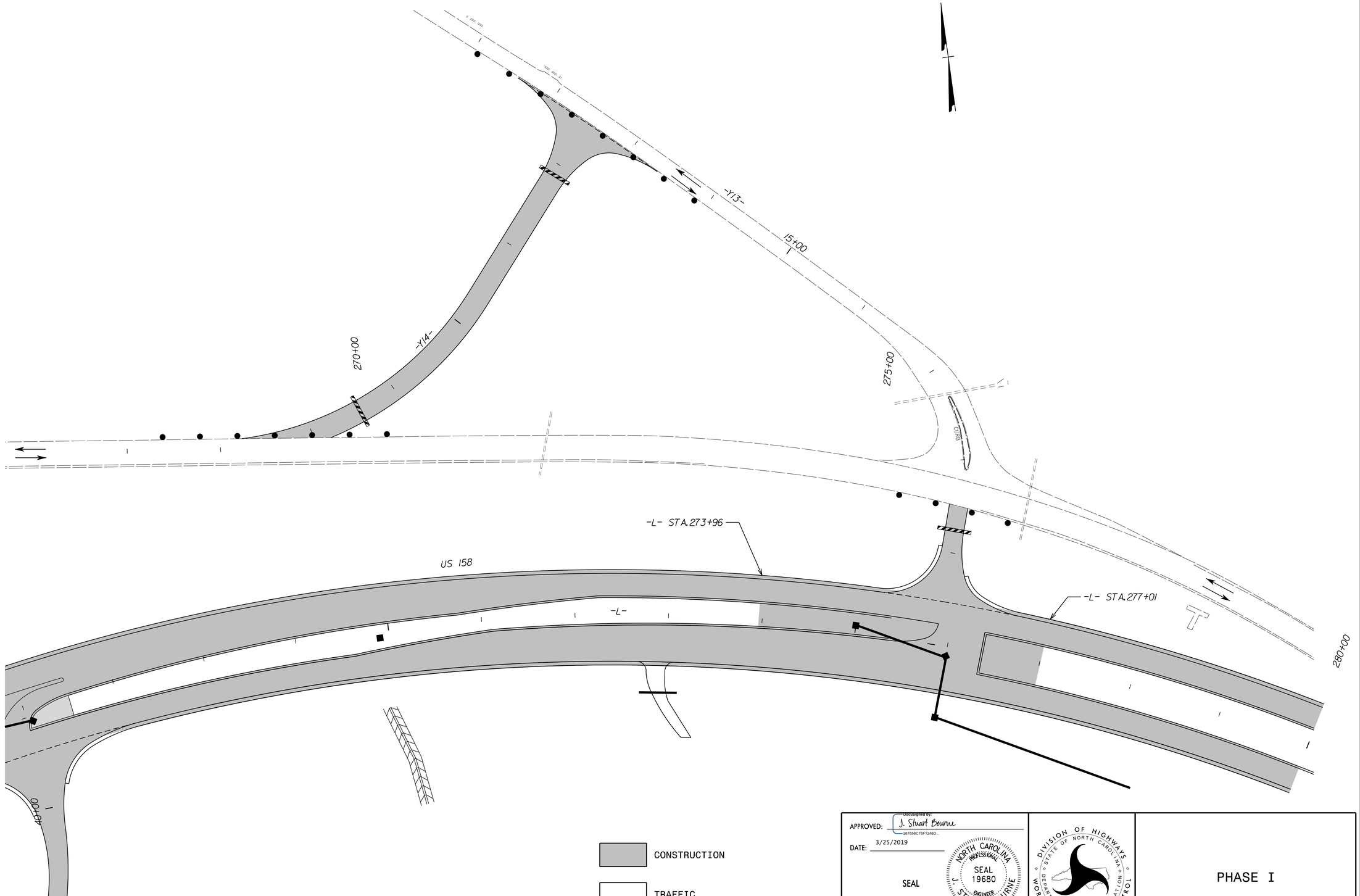
R-2582A	TMP-10



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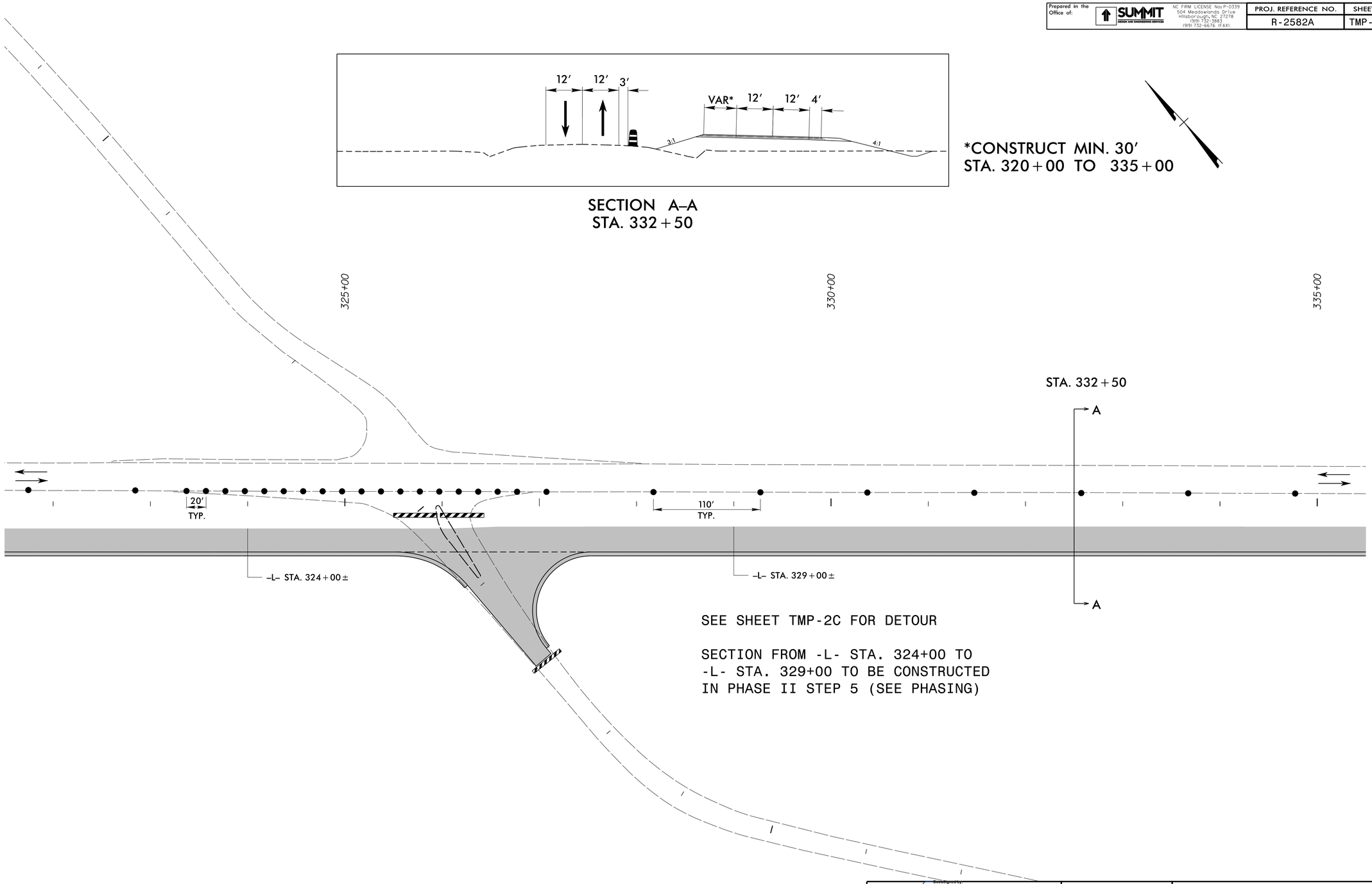
R-2582A	TMP-11

SECTION A–A
STA. 332 + 50

*CONSTRUCT MIN. 30′
STA. 320 + 00 TO 335 + 00



SEE SHEET TMP-2C FOR DETOUR

SECTION FROM -L- STA. 324+00 TO
-L- STA. 329+00 TO BE CONSTRUCTED
IN PHASE II STEP 5 (SEE PHASING)

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PHASE I
Y16 DETOUR DETAIL

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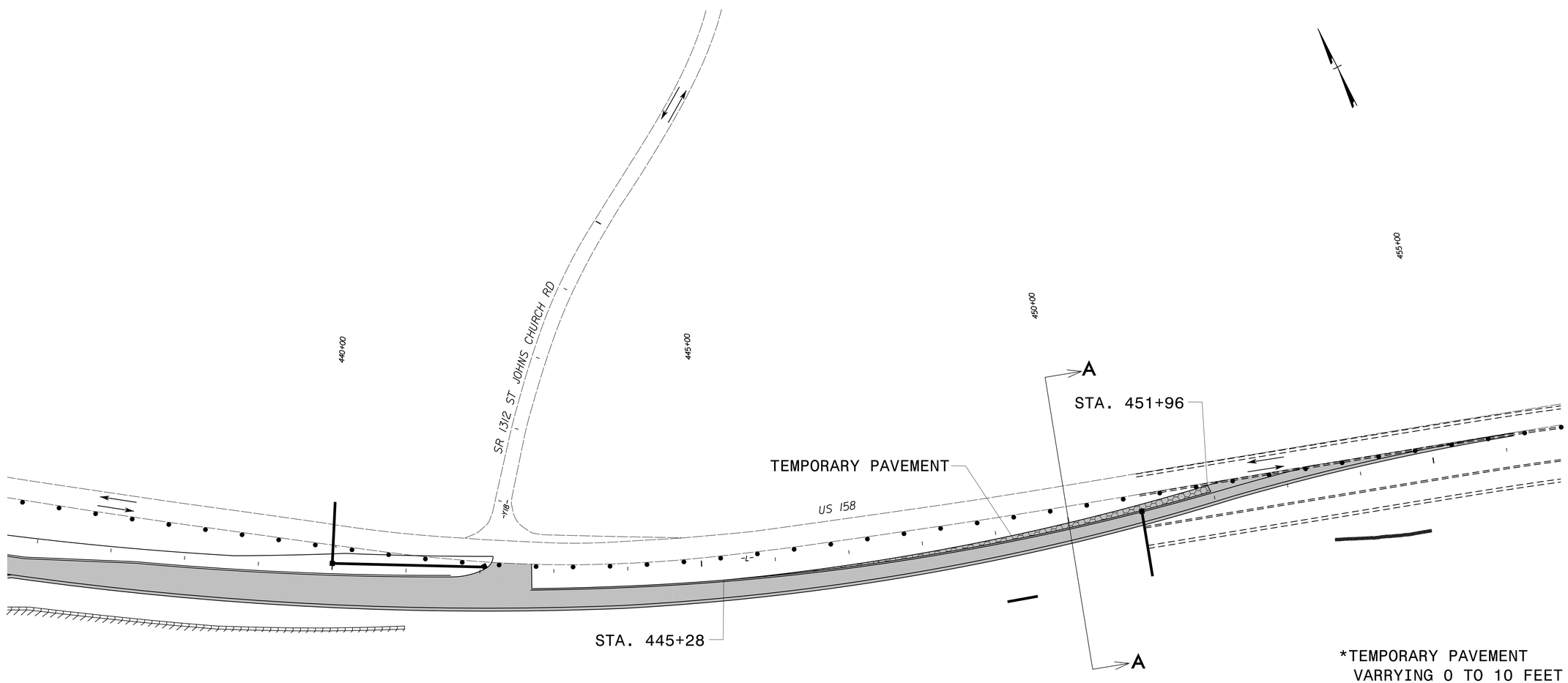
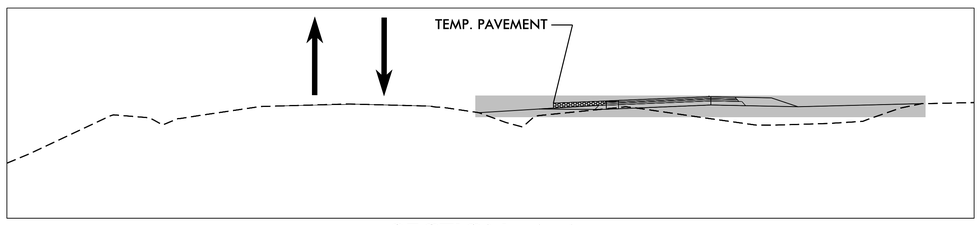
PROJ. REFERENCE NO.	SHEET NO.
R-2582A	TMP-12



*TEMPORARY PAVEMENT
VARRYING 0 TO 10 FEET



SECTION A–A

TEMPORARY PAVEMENT

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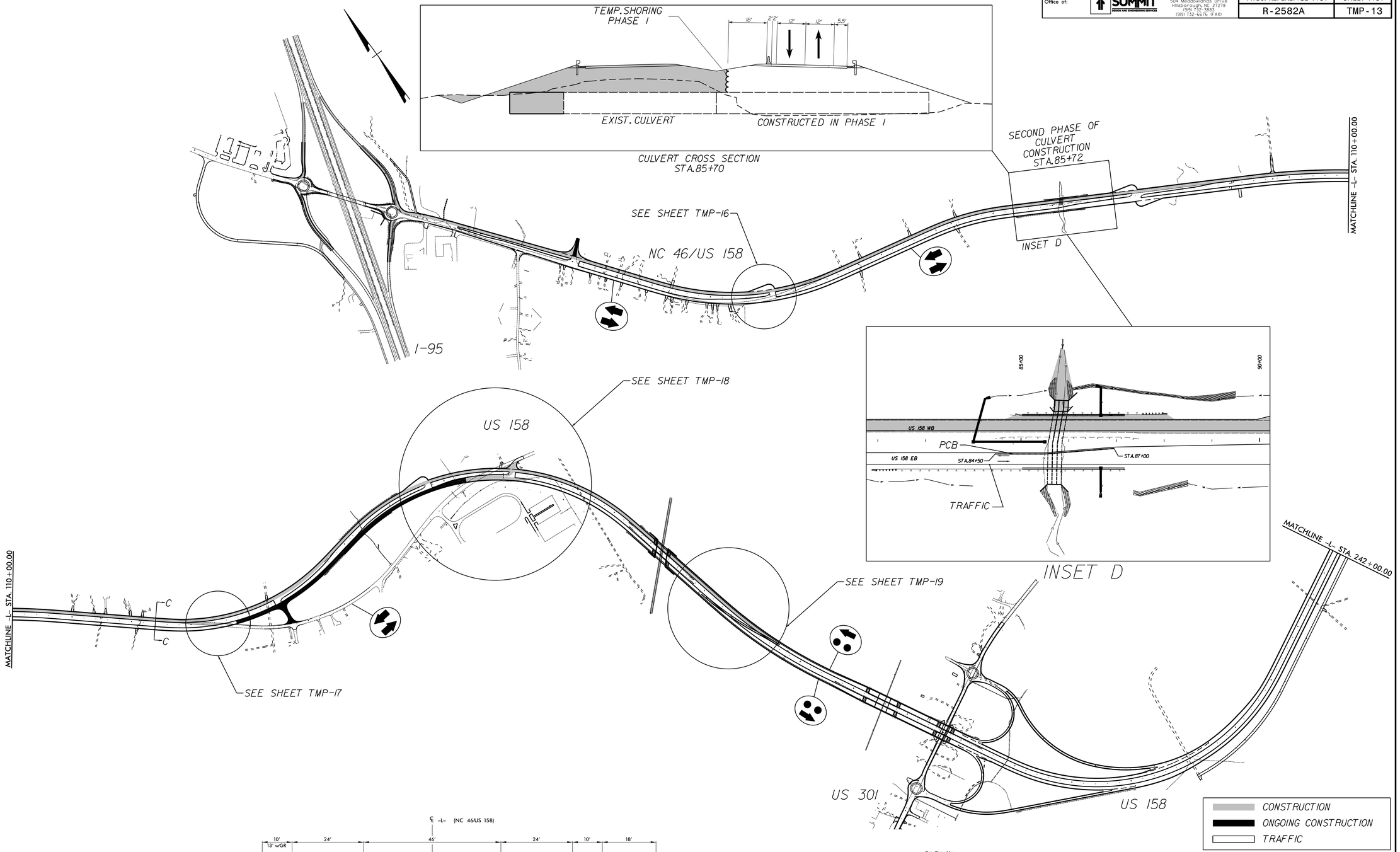
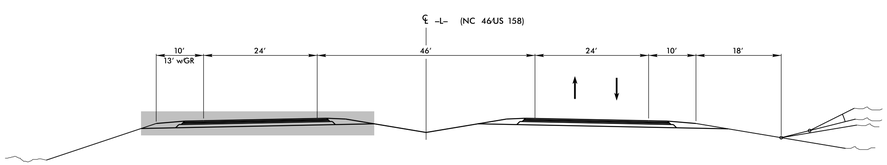
R-2582A	TMP-13





SECTION C-C

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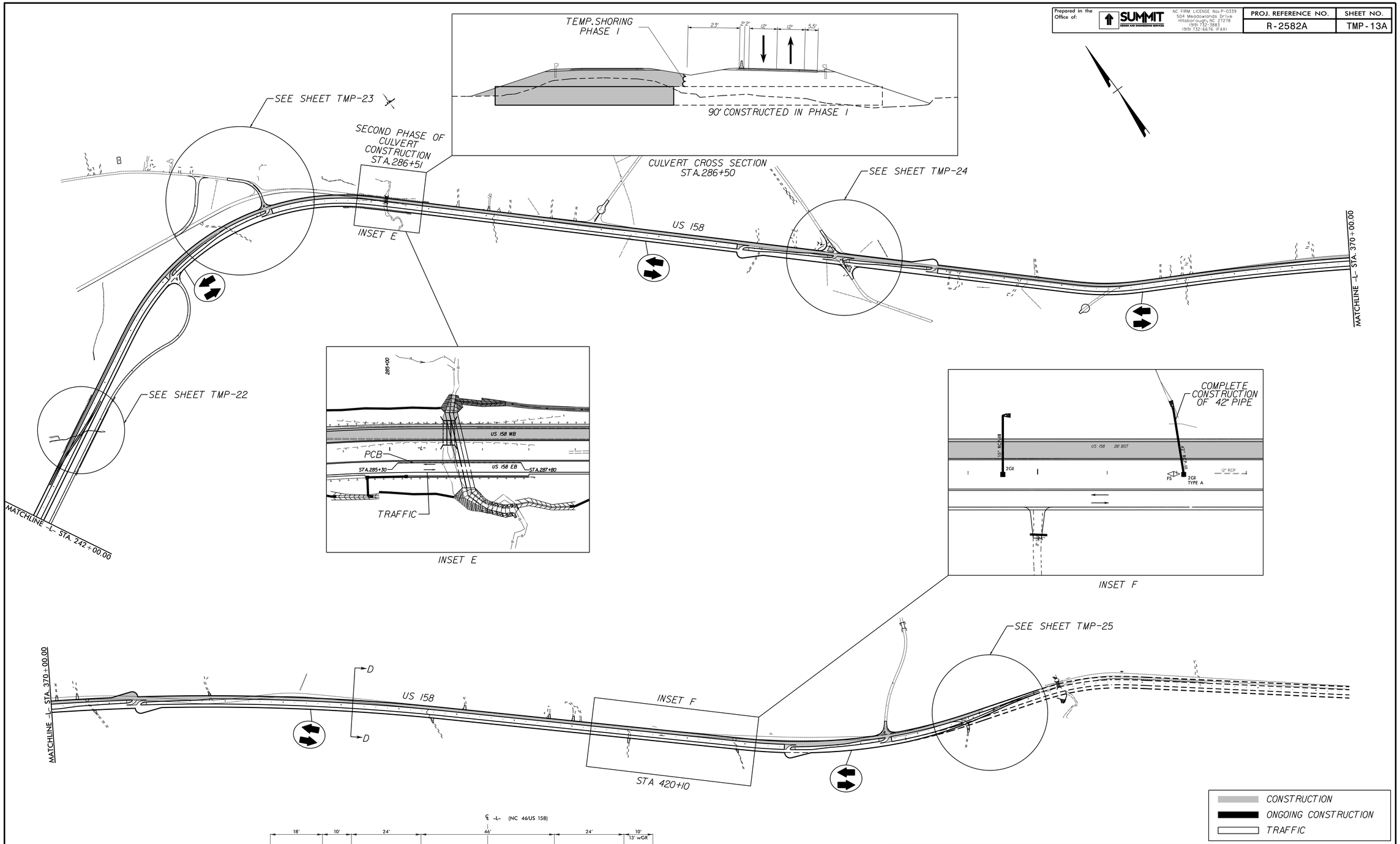
R-2582A	TMP-13A



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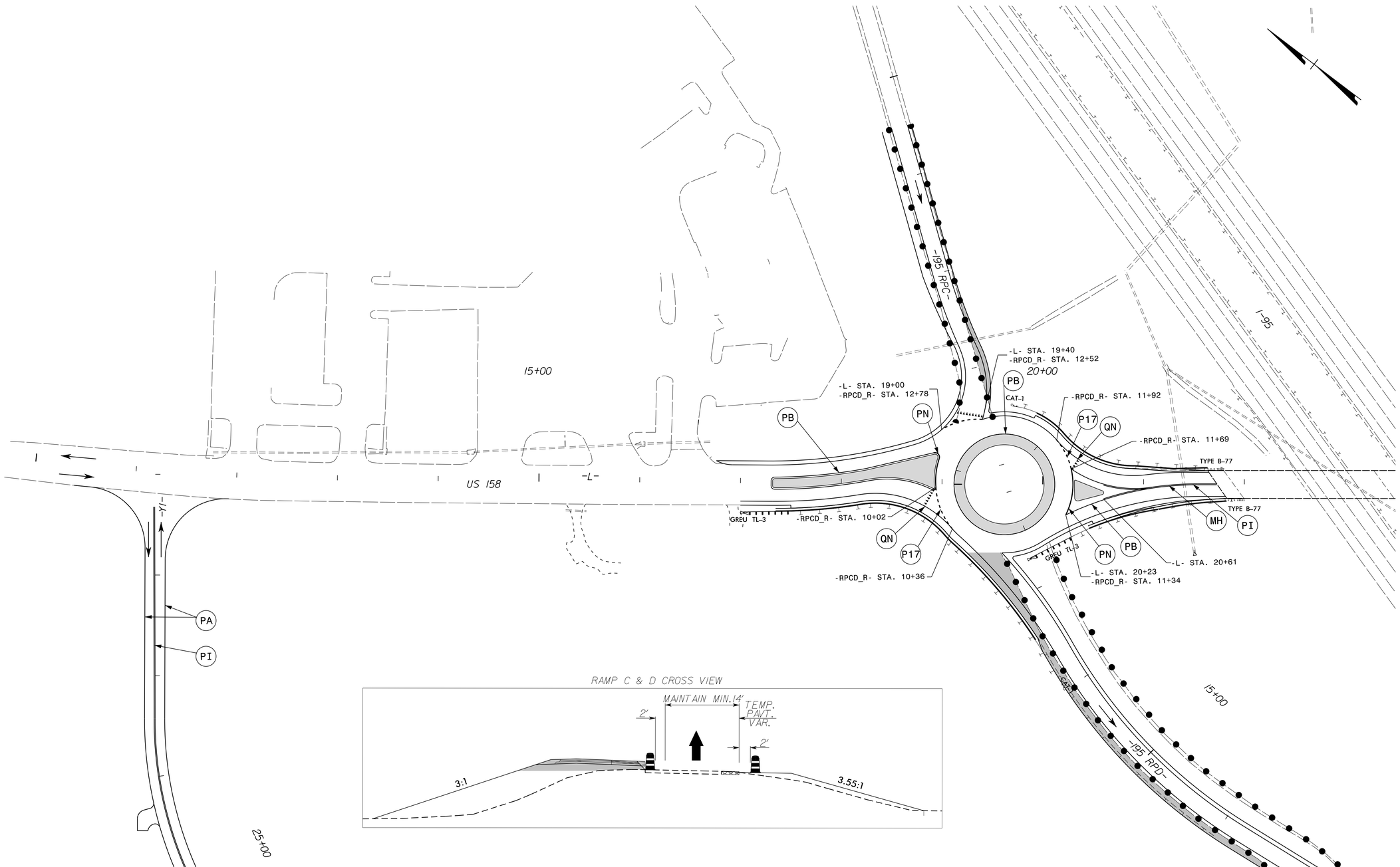
PROJ. REFERENCE NO.	SHEET NO.
R-2582A	TMP-14



CONSTRUCTION

TRAFFIC

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PROJ. REFERENCE NO.	SHEET NO.
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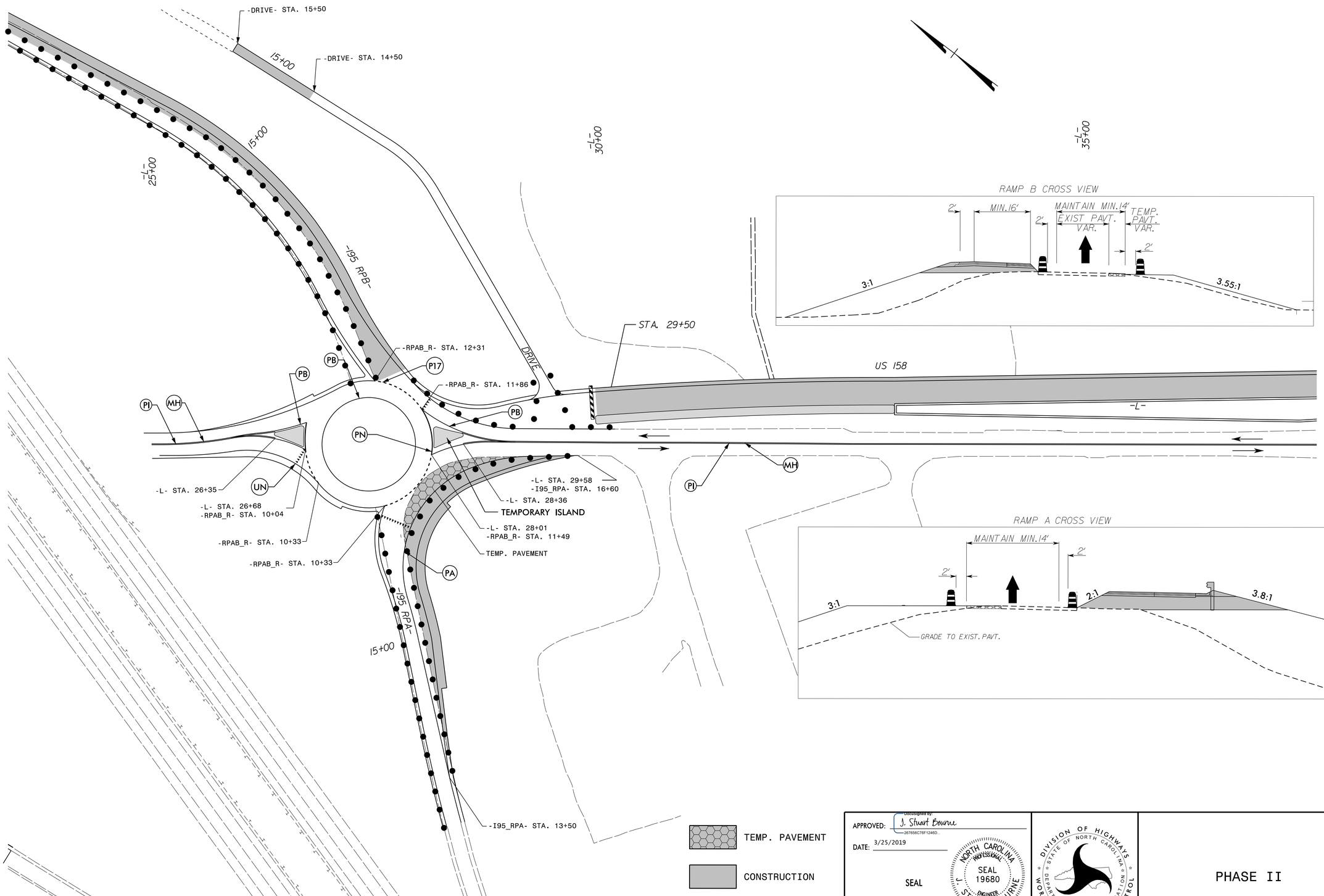

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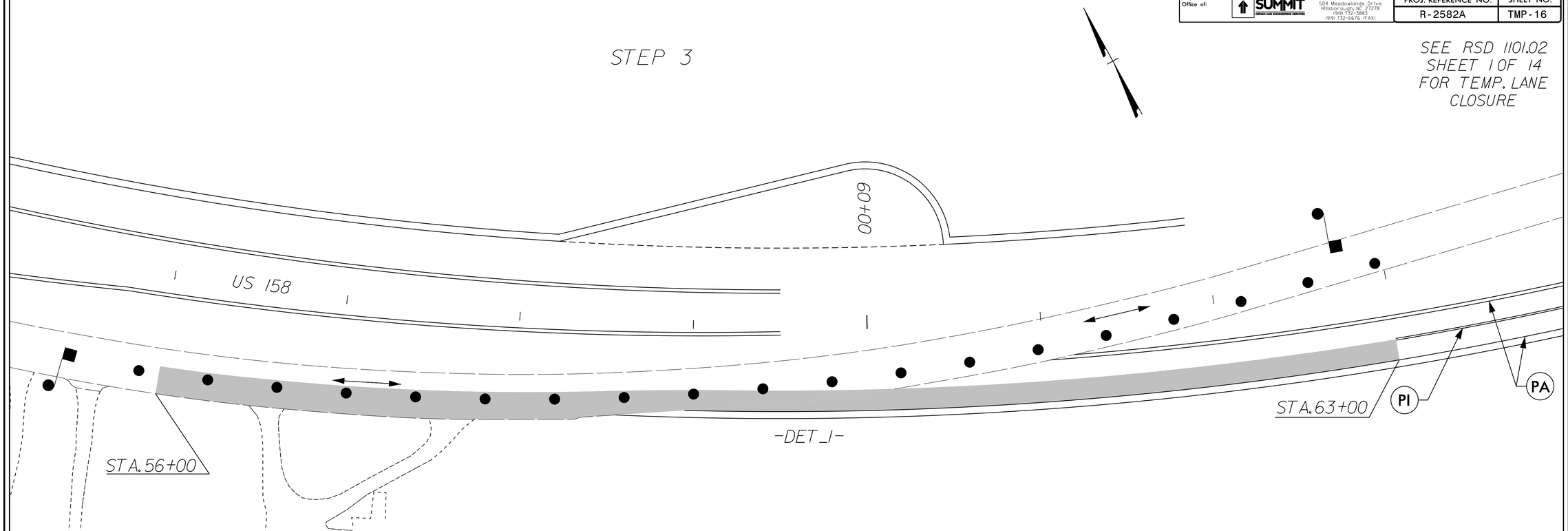

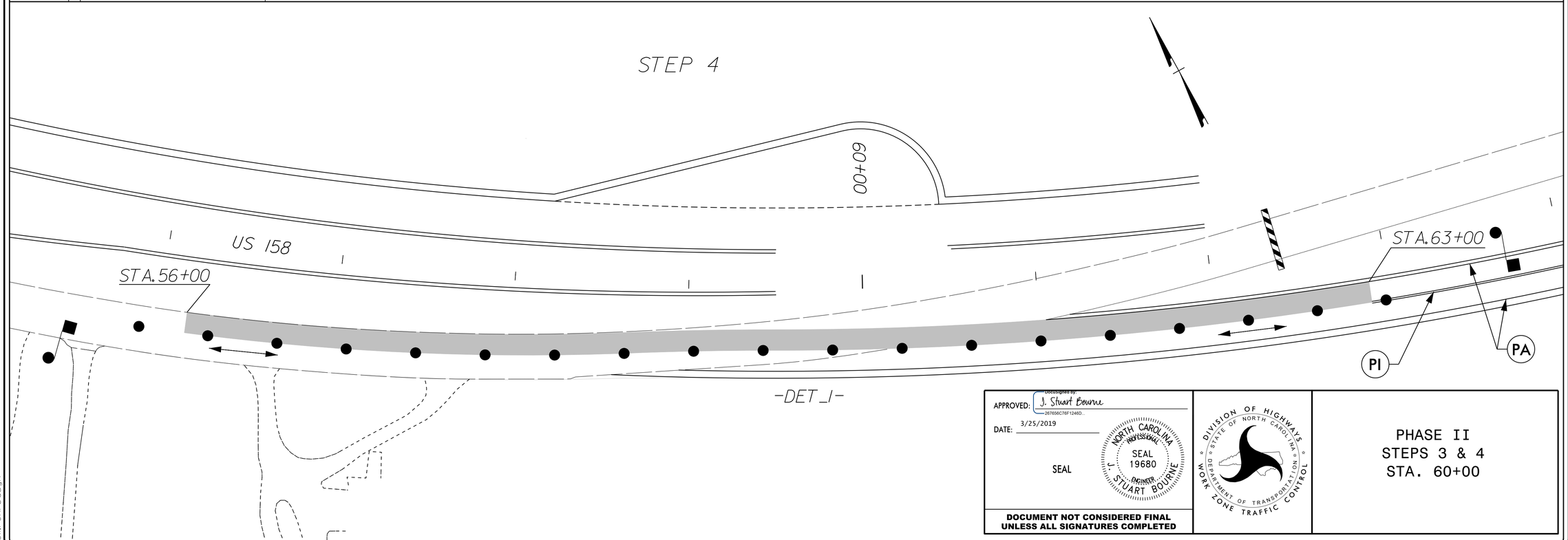

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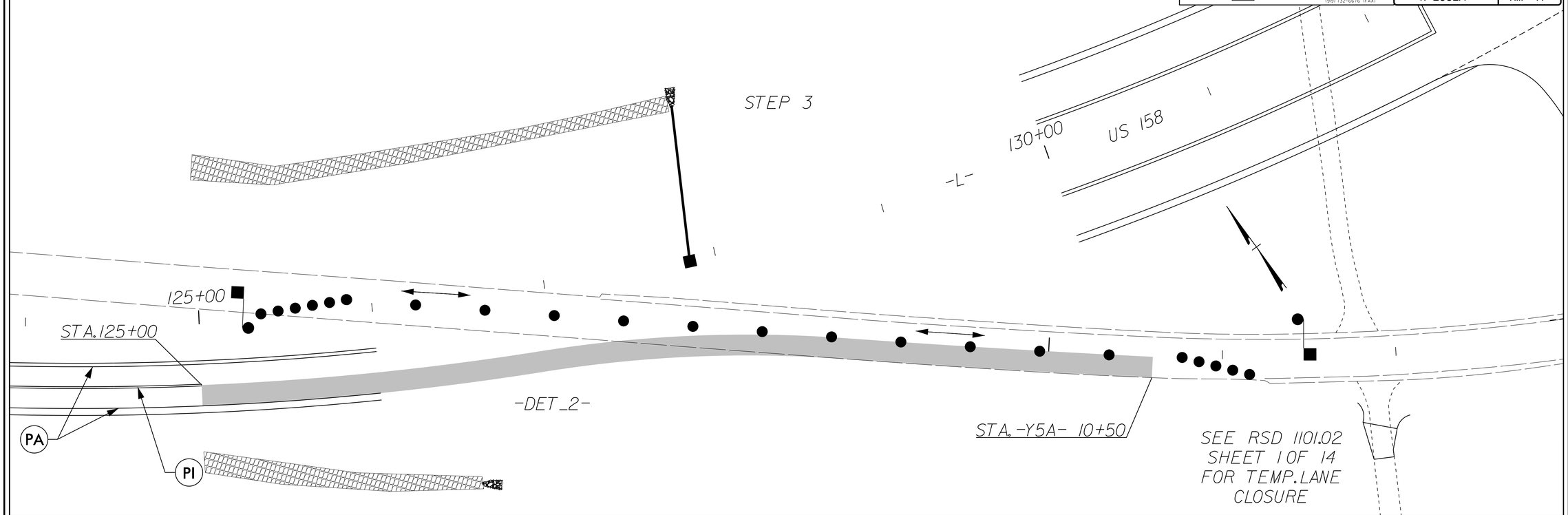

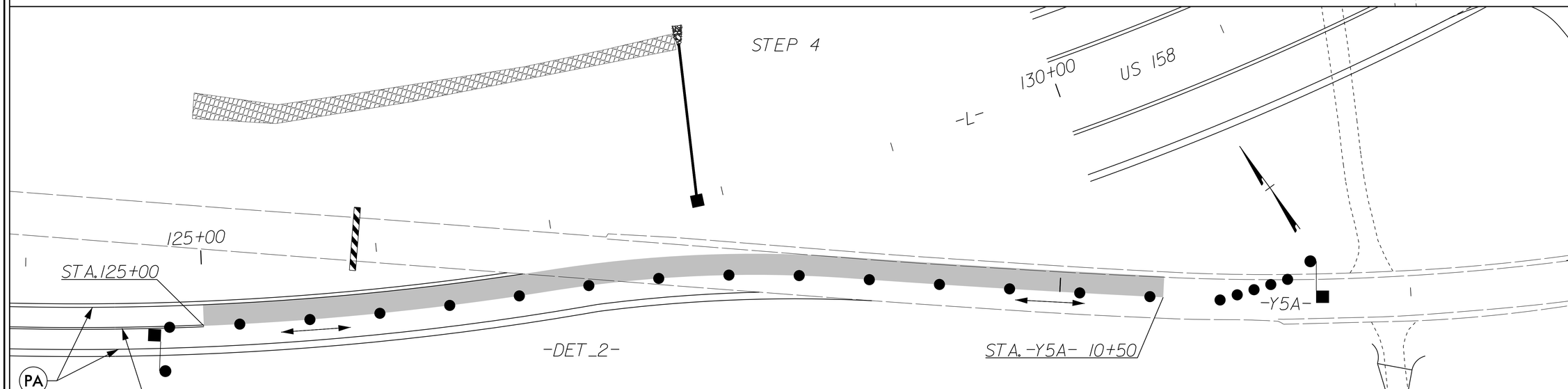

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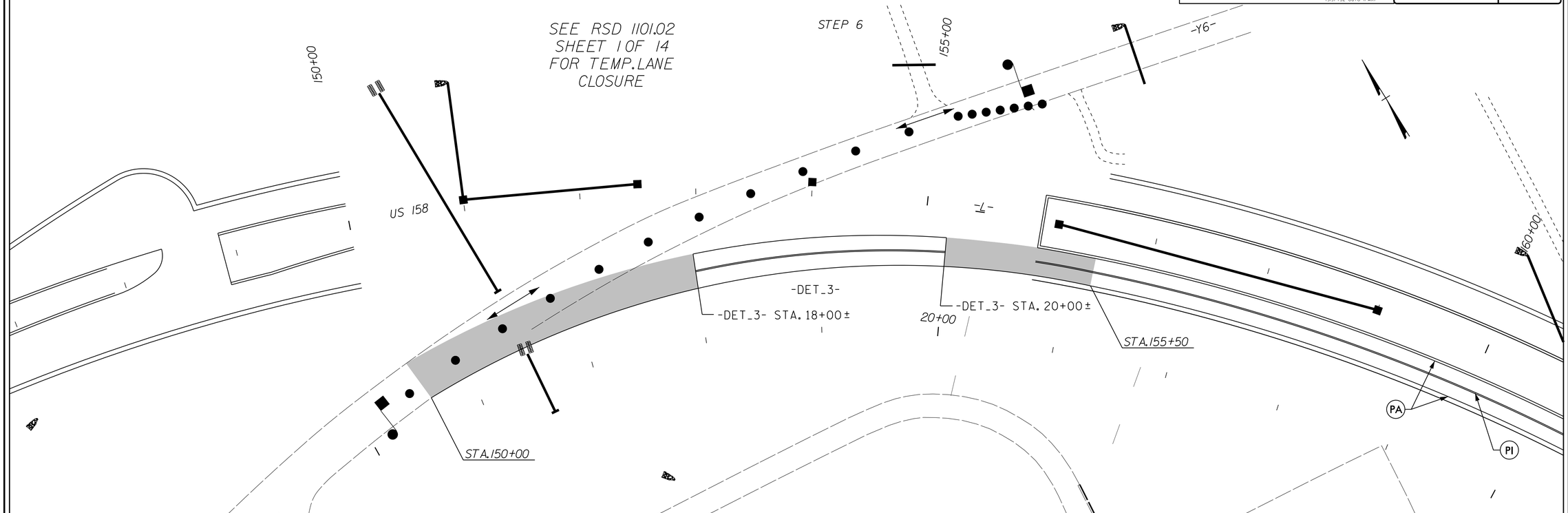

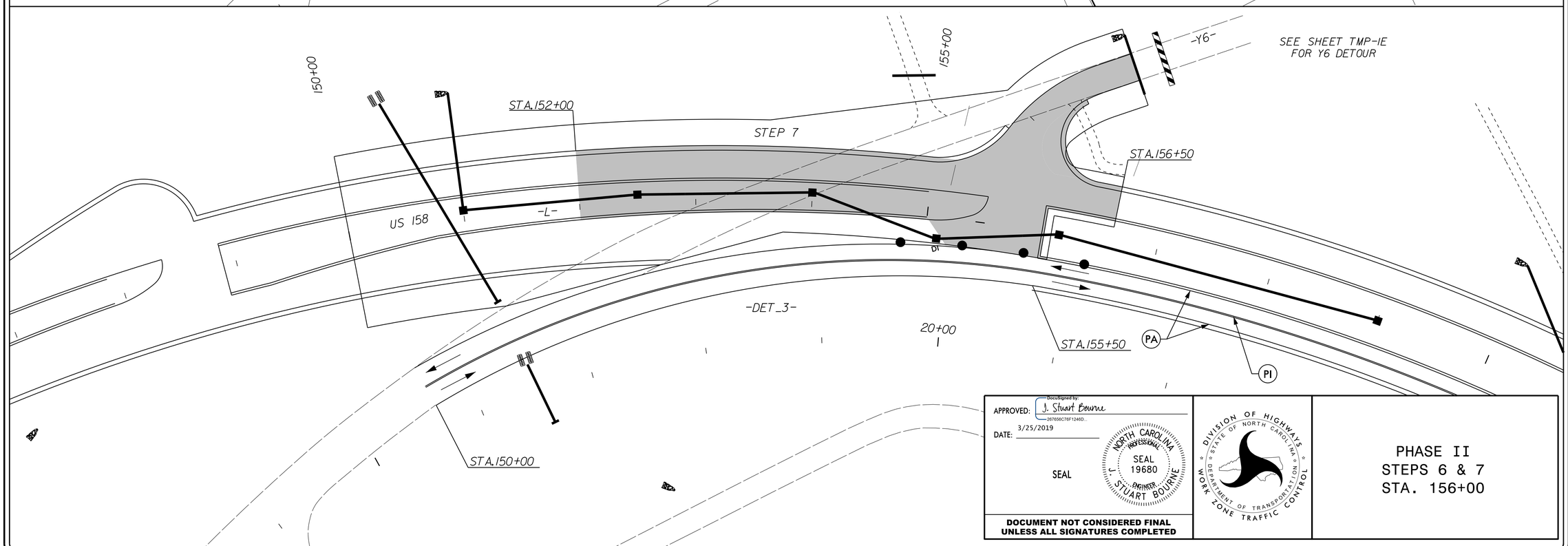

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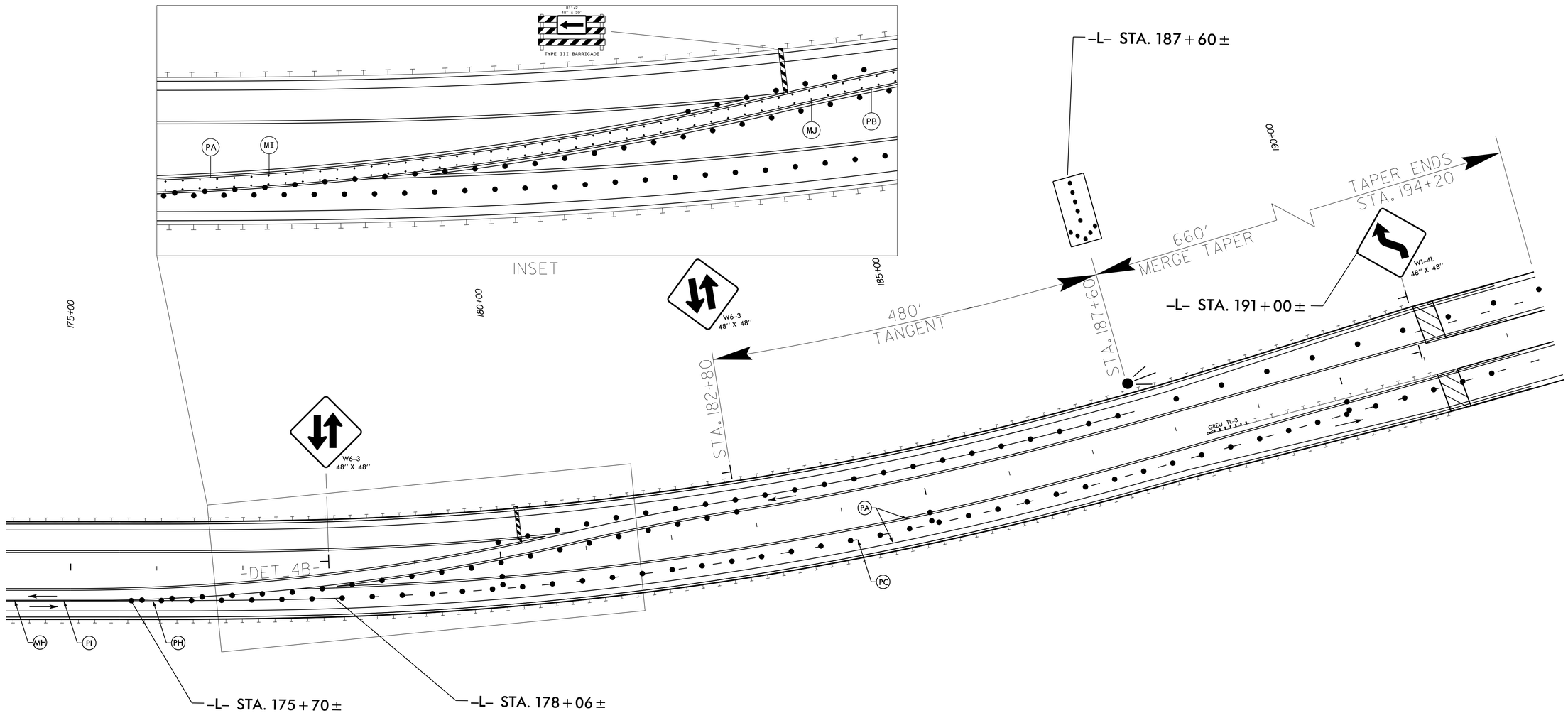

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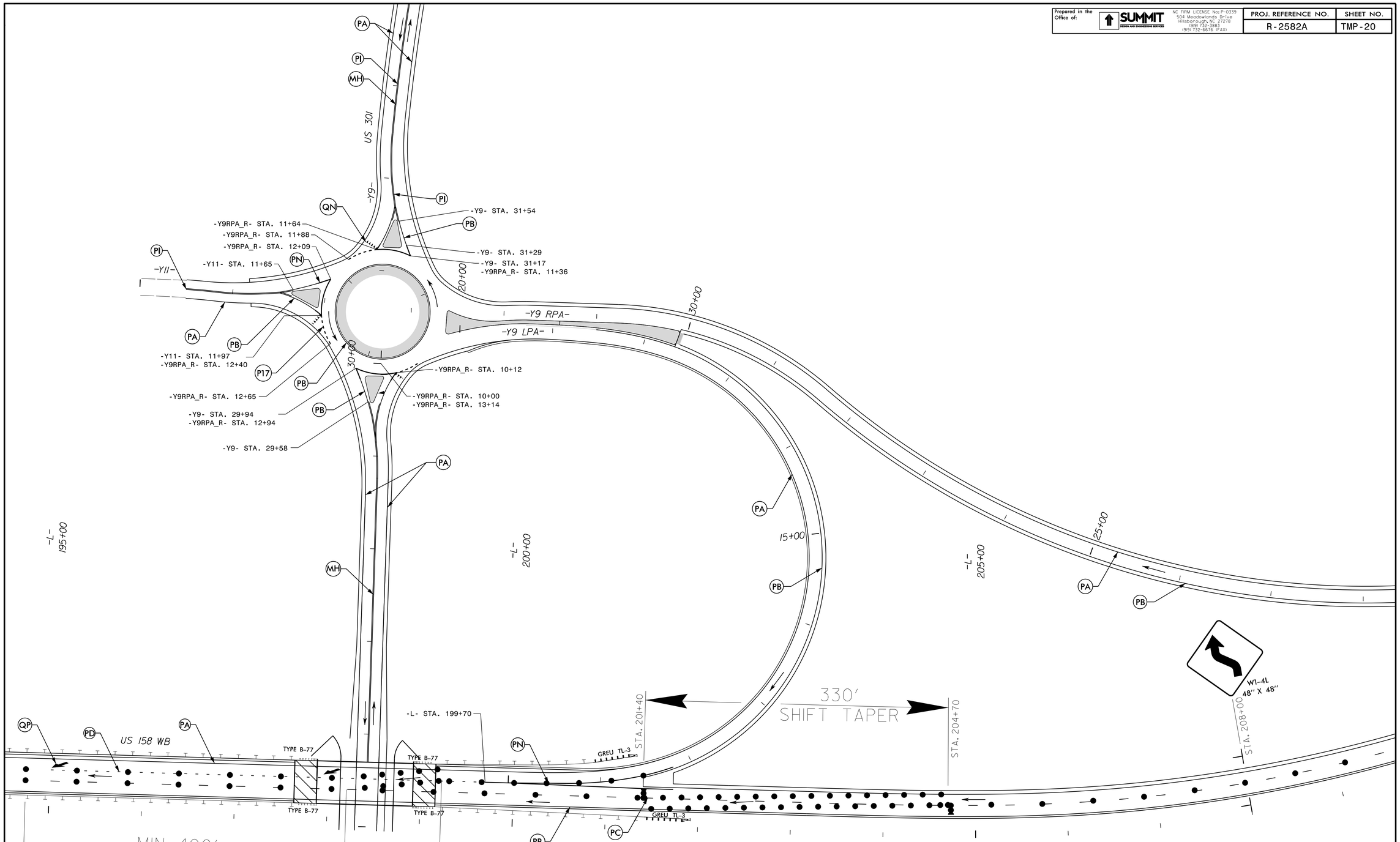

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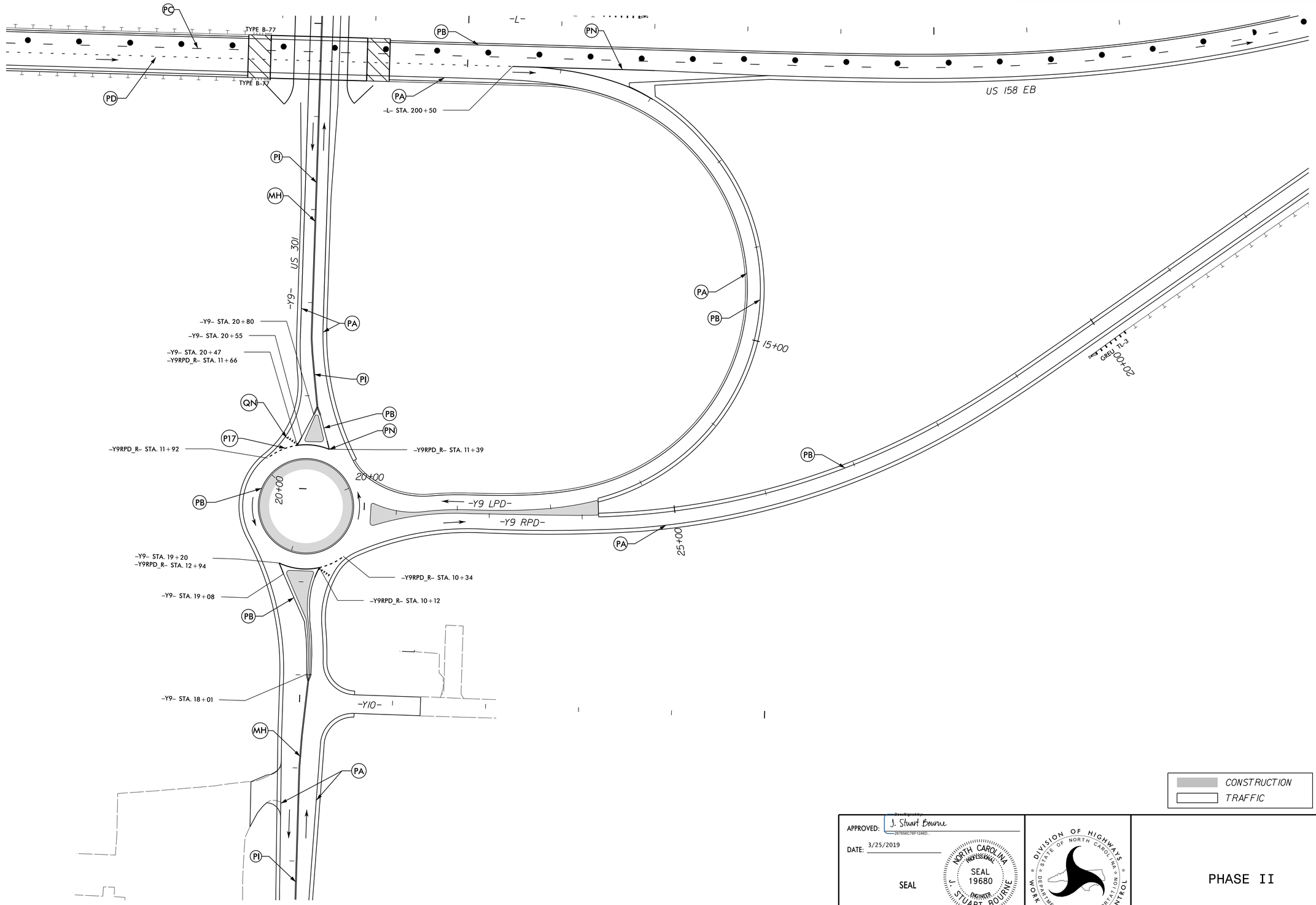

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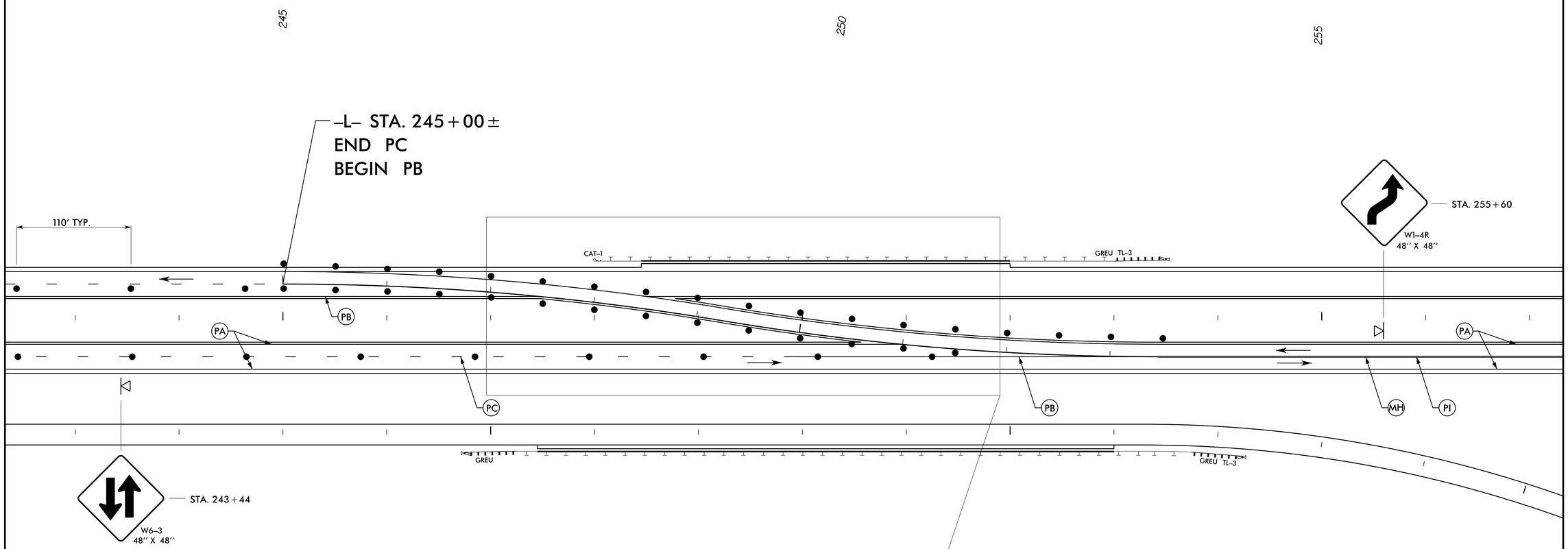

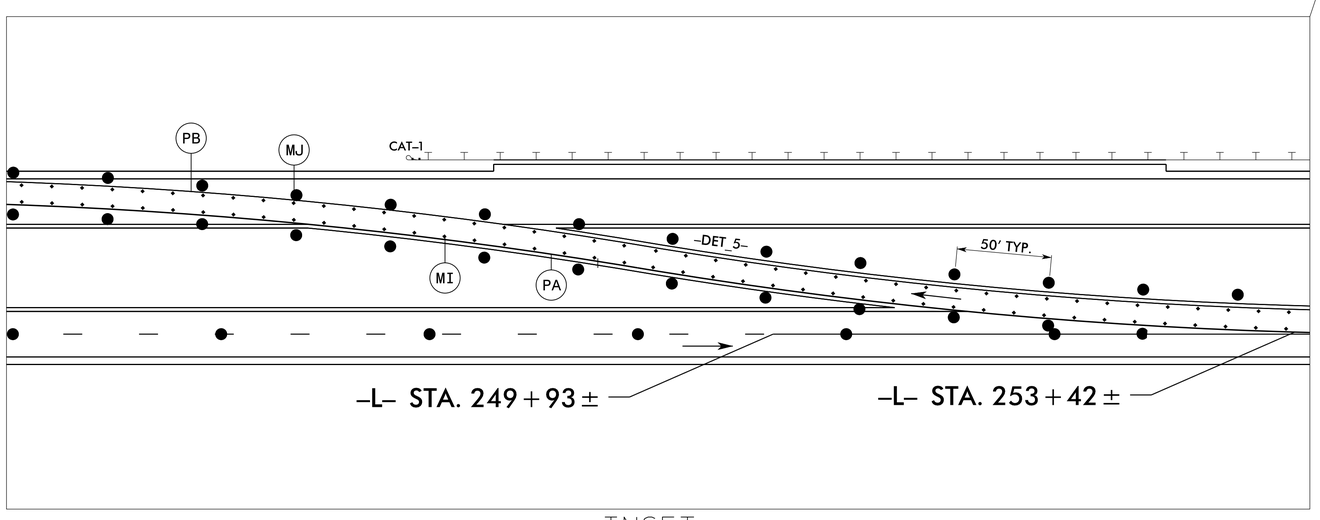

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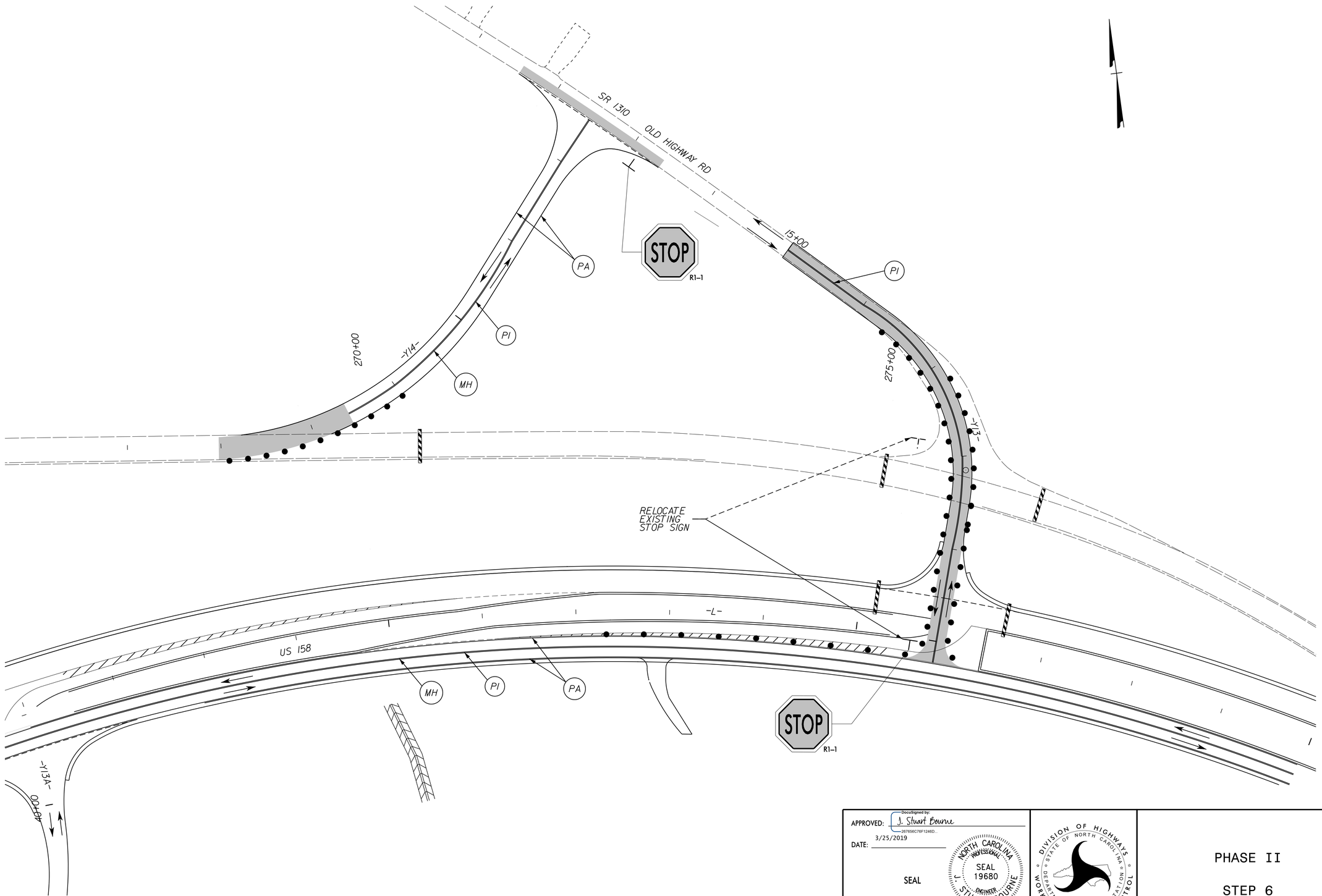

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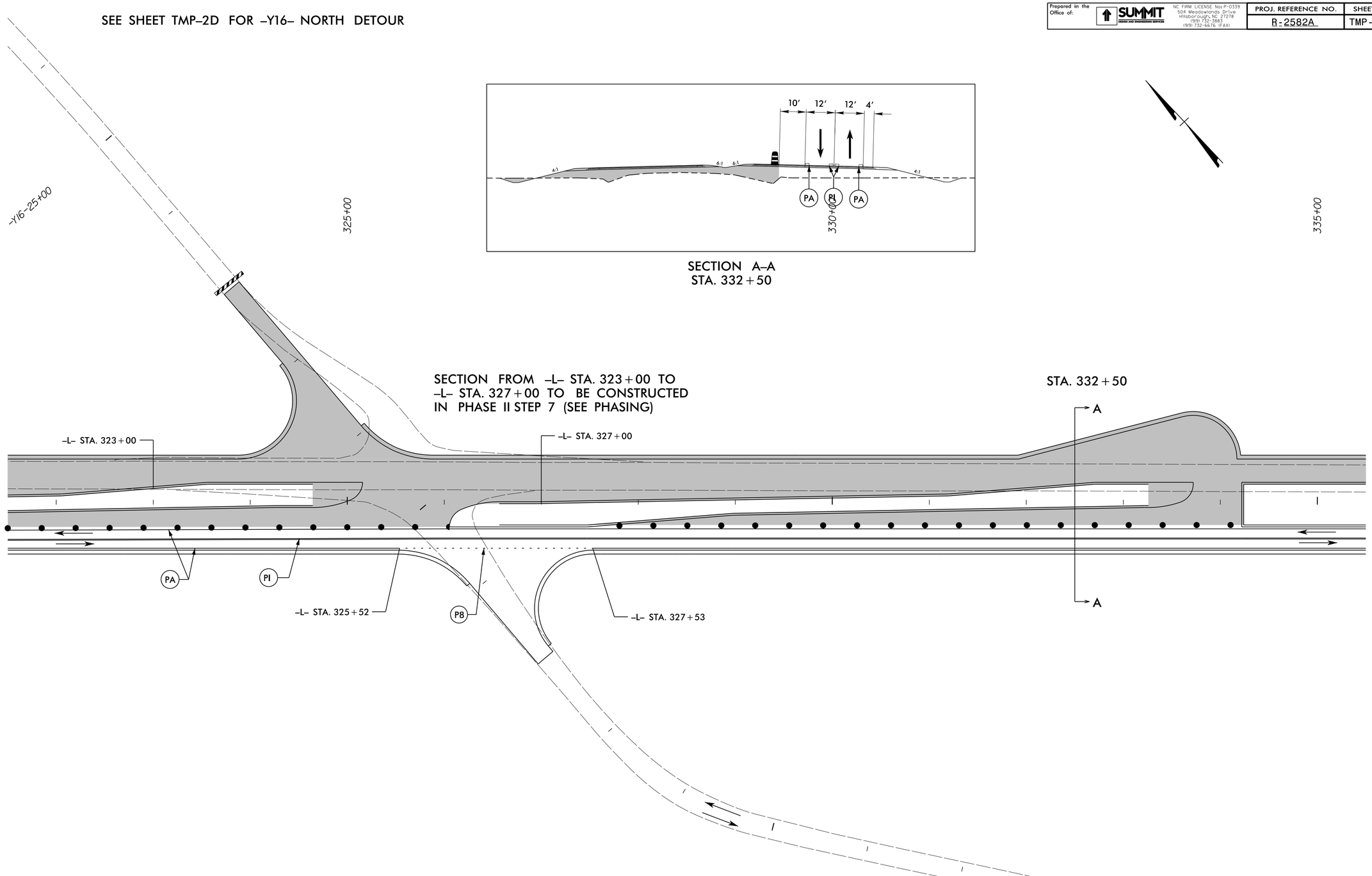

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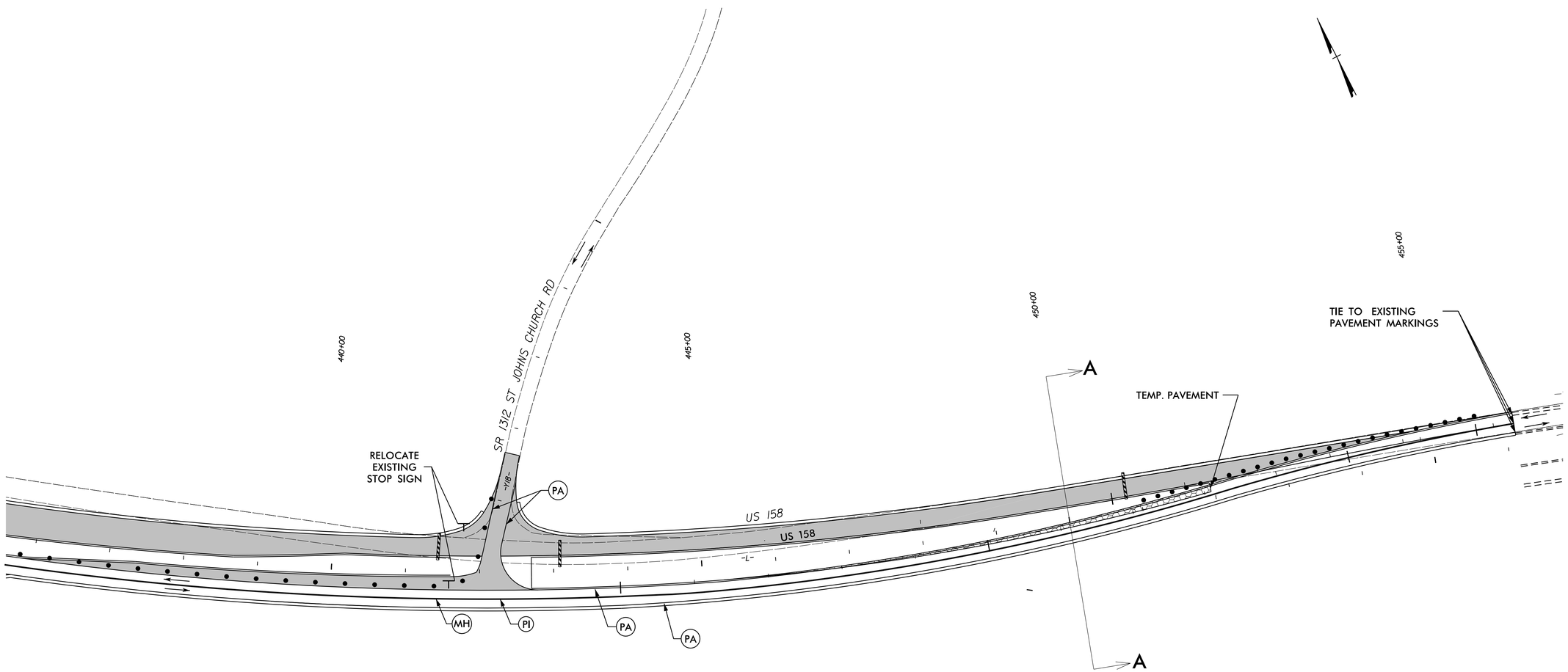

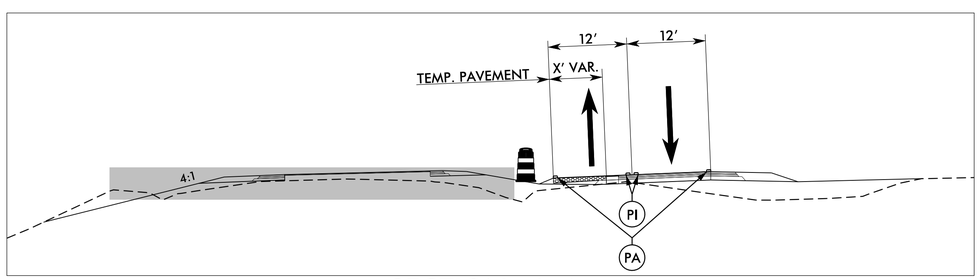

SECTION A–A

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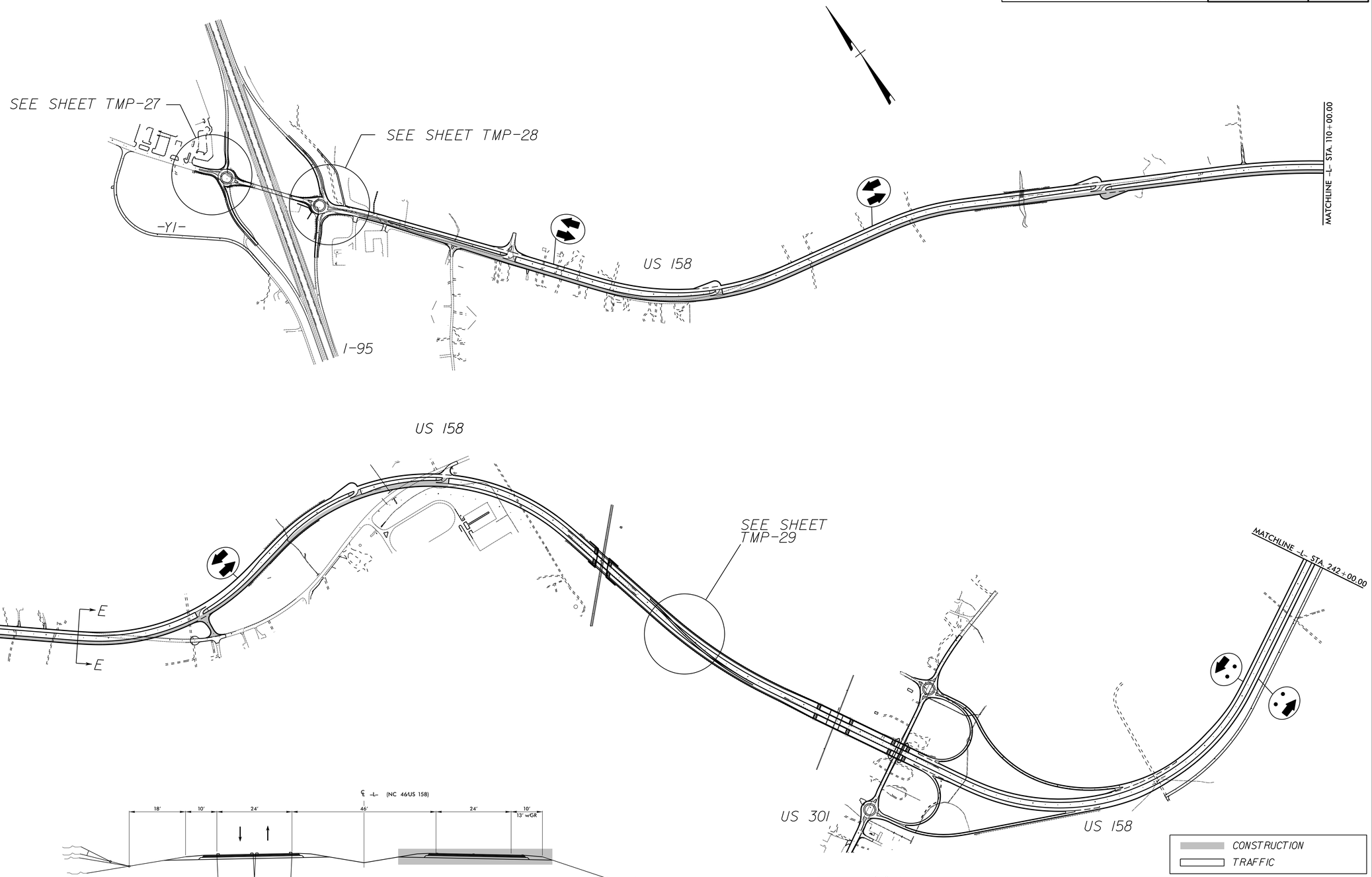

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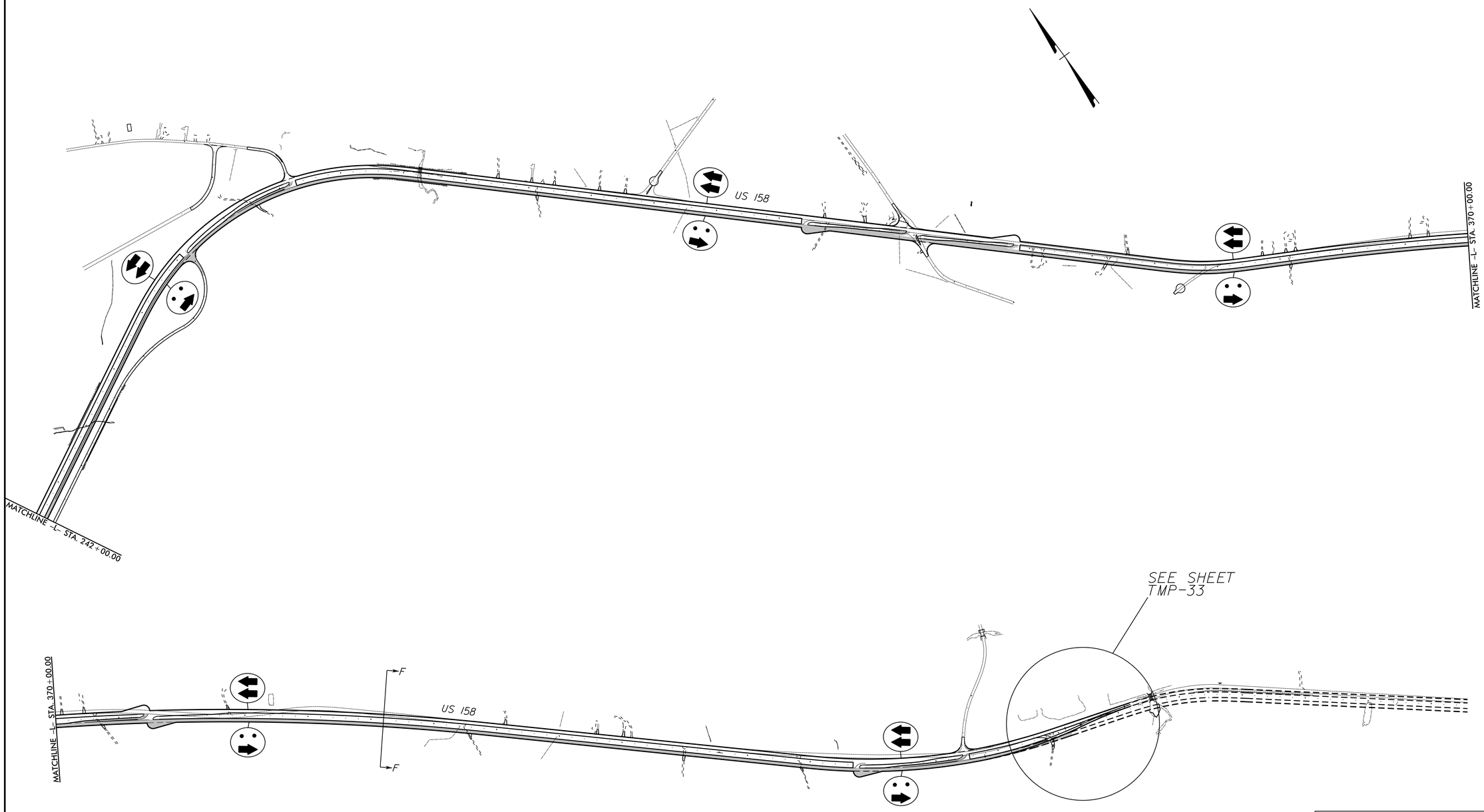

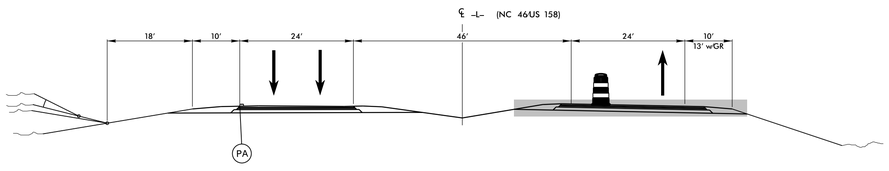

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PHASE III OVERVIEW

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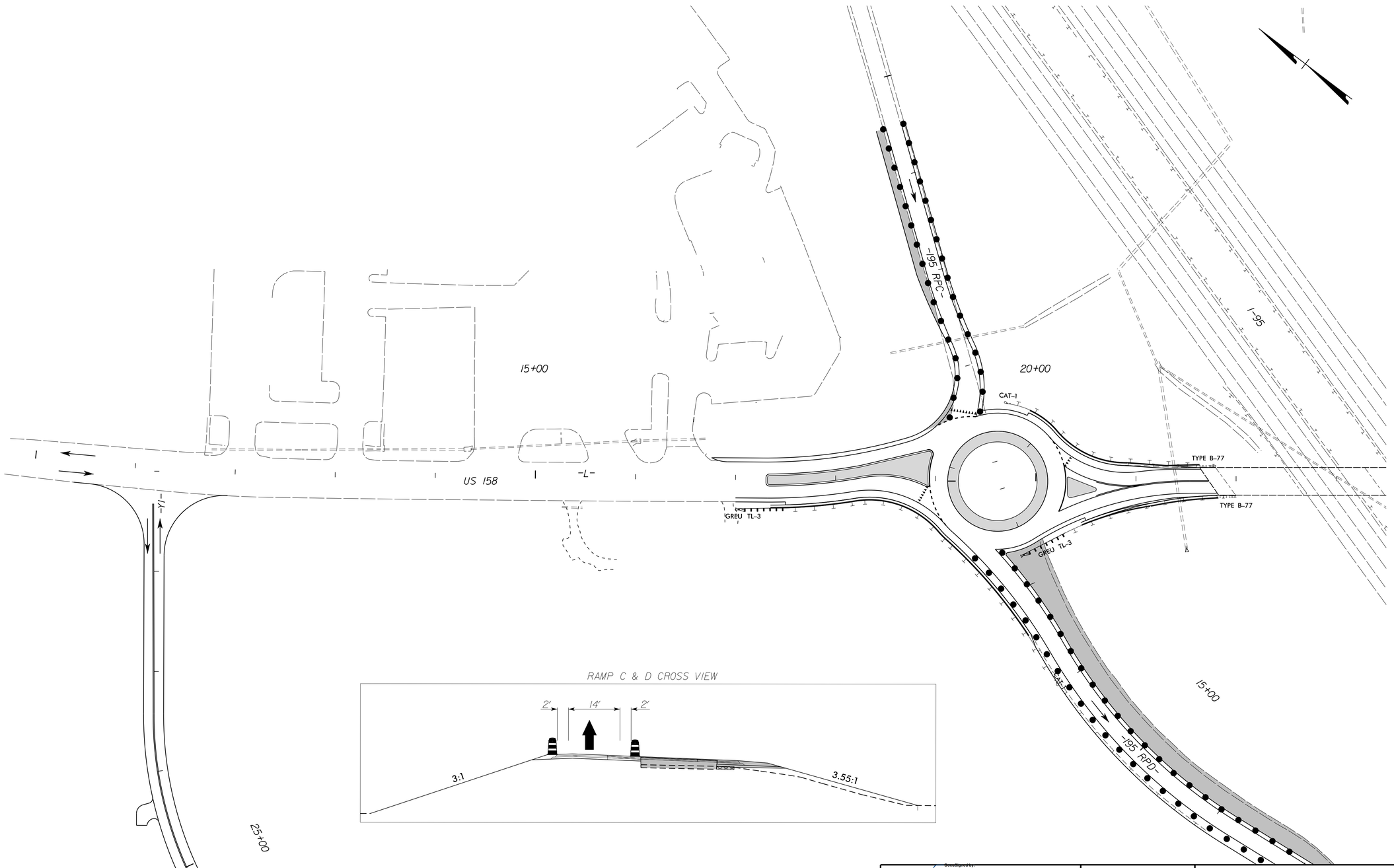

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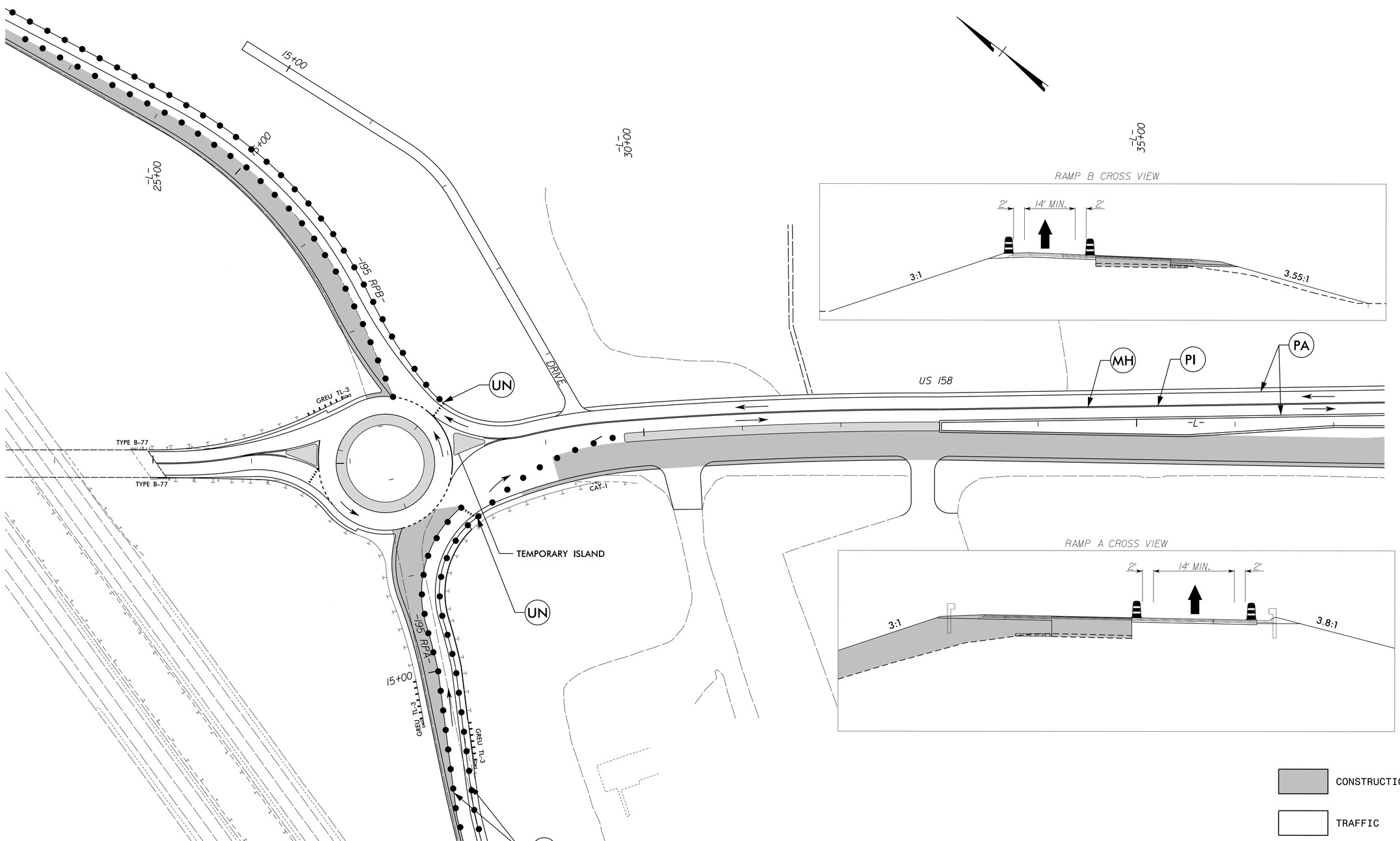

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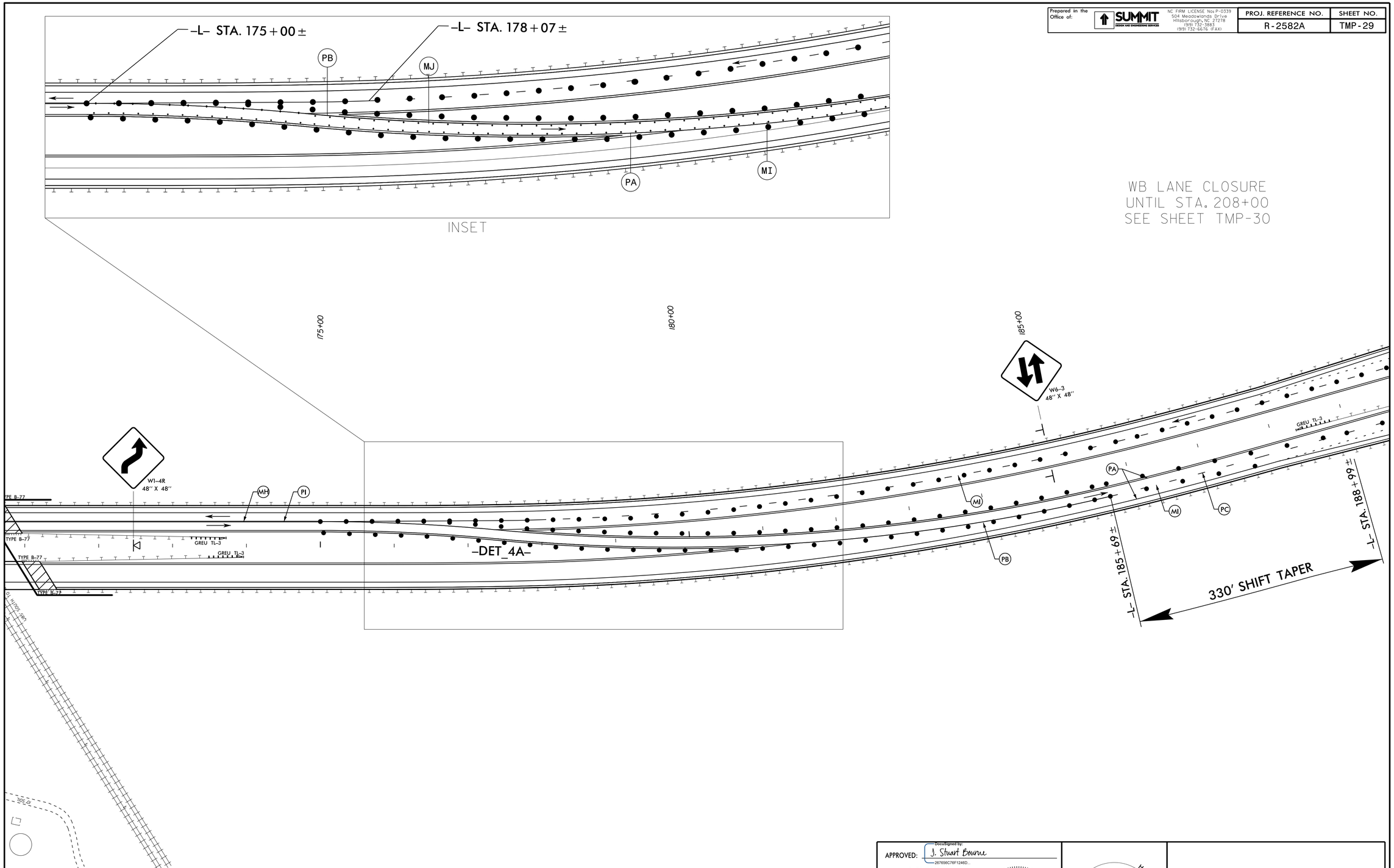

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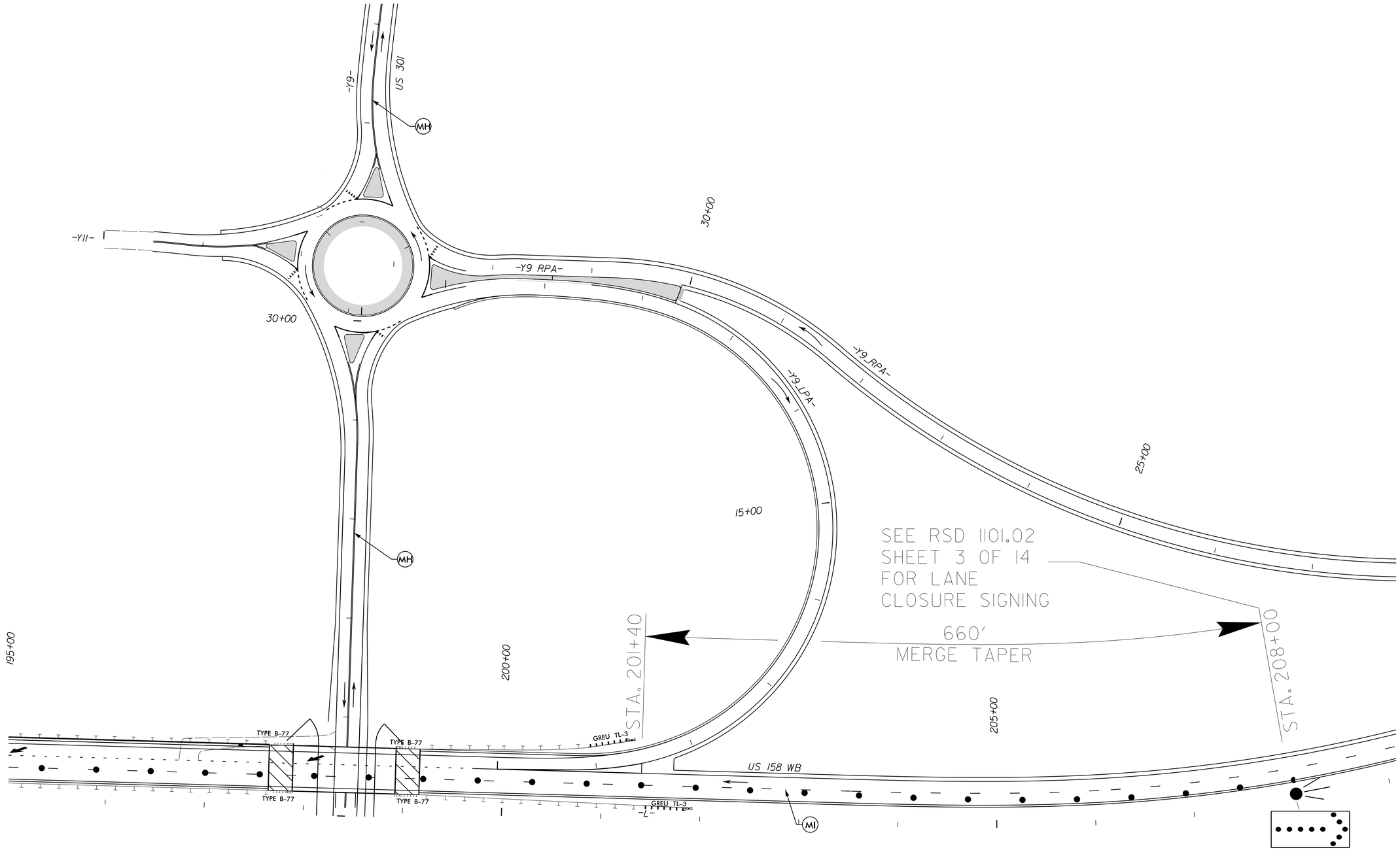

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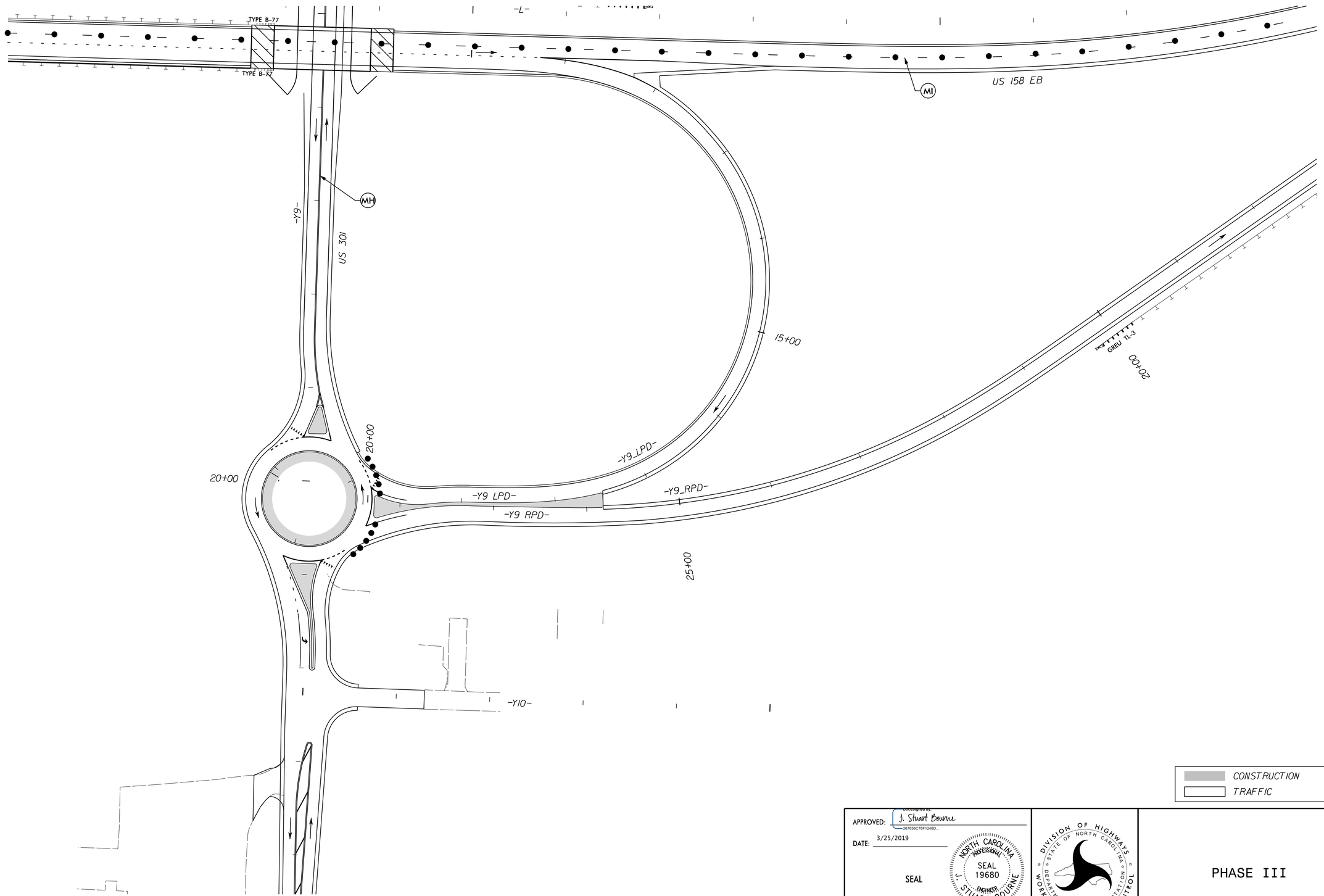

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