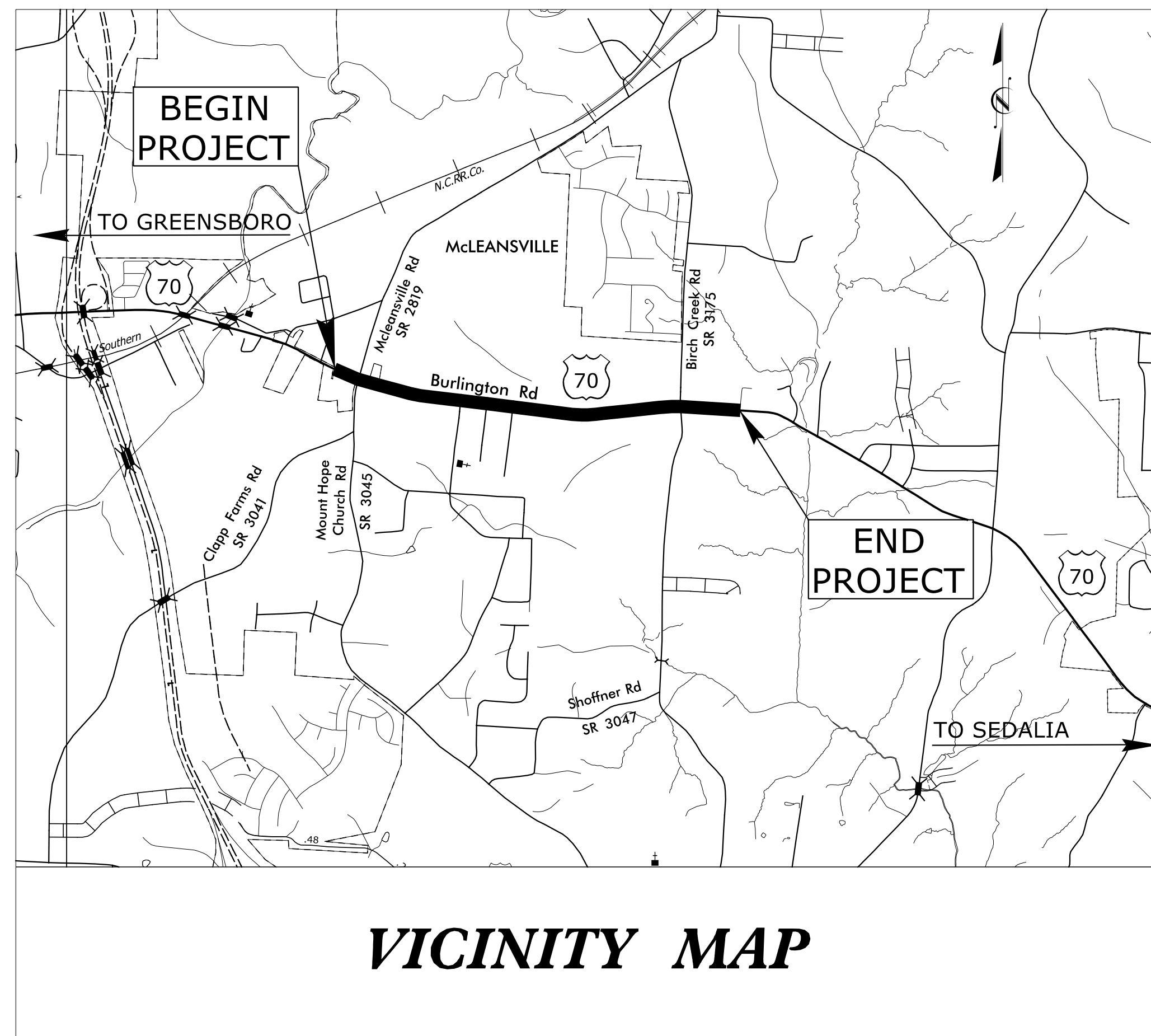
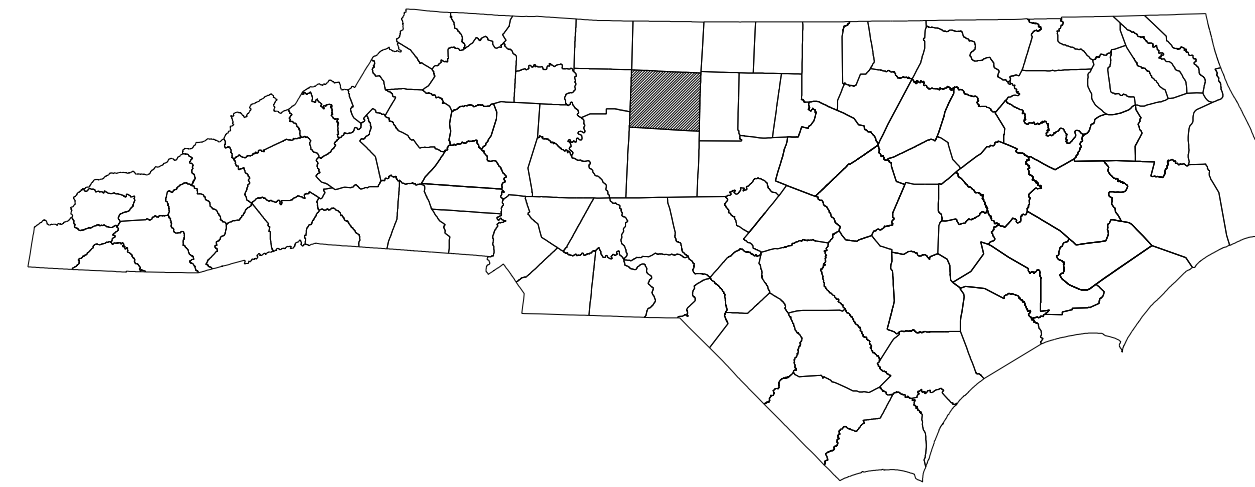


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

GUILFORD COUNTY



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B-1C	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)
TMP-2A-2B	TEMPORARY SHORING DATA
TMP-3-3A	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4-10	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-11-17	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL

SHEET NO.
TMP-1

U-2581BA

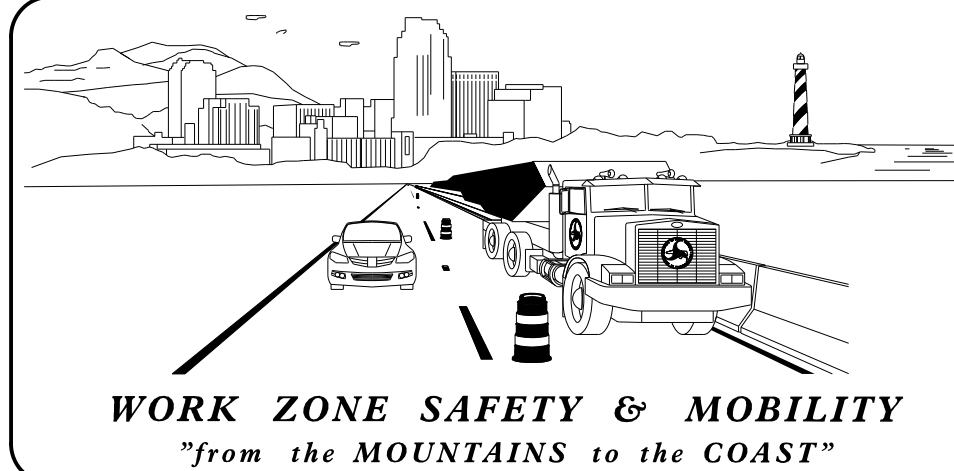
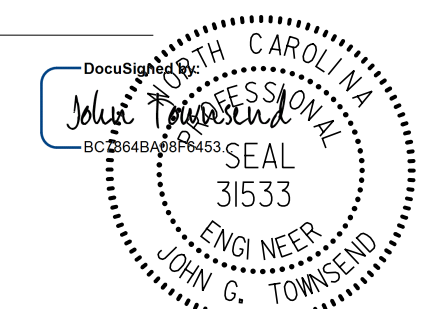
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NC License No. C-3705

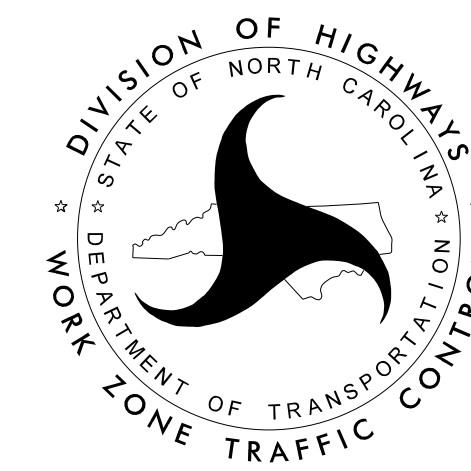
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DATE: 9/6/2019



PLANS PREPARED BY:
Jody Lewis, PE (VHB)
PROJECT DESIGN ENGINEER
John Townsend, PE (VHB)
DESIGN ENGINEER

NCDOT CONTACTS:
Kenneth Thornevell, Jr., PE
PROJECT ENGINEER
Justin Beaver, PE
PROJECT DESIGN ENGINEER



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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
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
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	FLAGGERS
1160.01	TEMPORARY CRASH CUSHION - REFLECTIVE END TREATMENT
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	POSITIVE PROTECTION - PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - THRU LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

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

- WORK AREA
- SHORT DURATION WORK AREA FOR PAVEMENT TRANSITIONING AND BUILD UP

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

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 MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

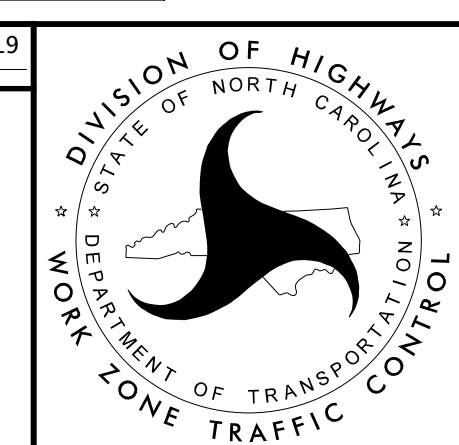
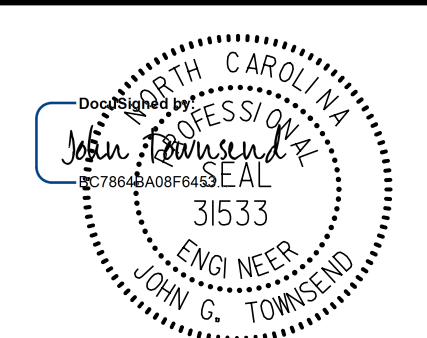
(P2)	WHITE STOP BAR	PAINT (24")
(PA)	WHITE EDGELINE	PAINT (4")
(PB)	YELLOW EDGELINE	PAINT (4")
(PD)	3FT.-9FT./SP WHITE MINISKIP	PAINT (4")
(PE)	WHITE SOLID LANE LINE	PAINT (4")
(PF)	10FT.-30FT./SP YELLOW SKIP	PAINT (4")
(PH)	YELLOW SOLID LANE LINE	PAINT (4")
(PI)	YELLOW DOUBLE CENTER LINE	PAINT (4")
(PP)	YELLOW DIAGONAL LINE	PAINT (8")
(QA)	LEFT TURN ARROW	PAINT
(QB)	RIGHT TURN ARROW	PAINT
(QC)	STRAIGHT ARROW	PAINT

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ROADWAY STANDARD DRAWINGS & LEGEND

GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
U-2581BA	TMP-1B

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 RESTRICT TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
(-Y1-) SR 2819	MONDAY THRU SUNDAY
(-Y2-) SR 3405	6:00 A.M. TO 8:30 A.M.
(-Y3-) SR 3132	AND
(-Y4-) SR 3146	4:00 P.M. TO 7:00 P.M.
(-Y5-) SR 3044	
(-Y6-) BIRCH CREEK RD	
(-Y7-) SUN LAKE DR	
	MONDAY THRU SUNDAY
	6:00 A.M. TO 8:30 A.M.
	AND
(-L-) US 70	4:00 P.M. TO 7:00 P.M.

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

ROAD NAME

ALL ROADS

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 6:00 A.M. DECEMBER 31st TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 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 6:00 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 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY AND 7:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) 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.
- D) 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.
- E) 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.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRANSPORTATION MANAGEMENT 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.

G) 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.

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APPROVED: _____ DATE: 9/12/2019

DocuSigned by:
John Townsend
31533
ENCL NEER
JOHN G. TOWNSEND



TRANSPORTATION OPERATIONS
PLAN: (GENERAL NOTES)

9/12/2019
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GENERAL NOTES CONTINUED

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) 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.

I) 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

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

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

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

TRAFFIC CONTROL DEVICES

N) 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.

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	TEMPORARY RAISED

Q) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS, PLACE A SECOND APPLICATION OF PAINT SIX MONTHS AFTER THE INITIAL APPLICATION AND EVERY 6 MONTHS AS DIRECTED BY THE ENGINEER.

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

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

MISCELLANEOUS

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

U) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

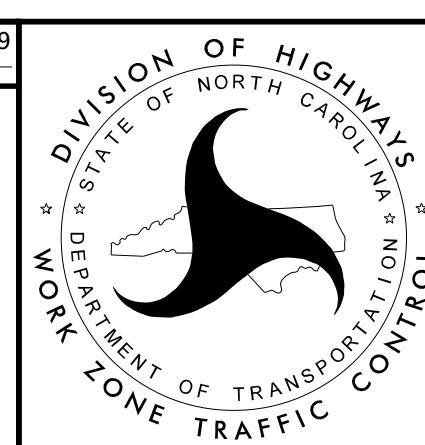
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DocuSigned by:
John Townsend
31533
SEAL
ENJO NEER
JOHN G. TOWNSEND
NORTH CAROLINA
PROFESSIONAL
ENGINEER
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**TRANSPORTATION OPERATIONS
PLAN: (GENERAL NOTES)**

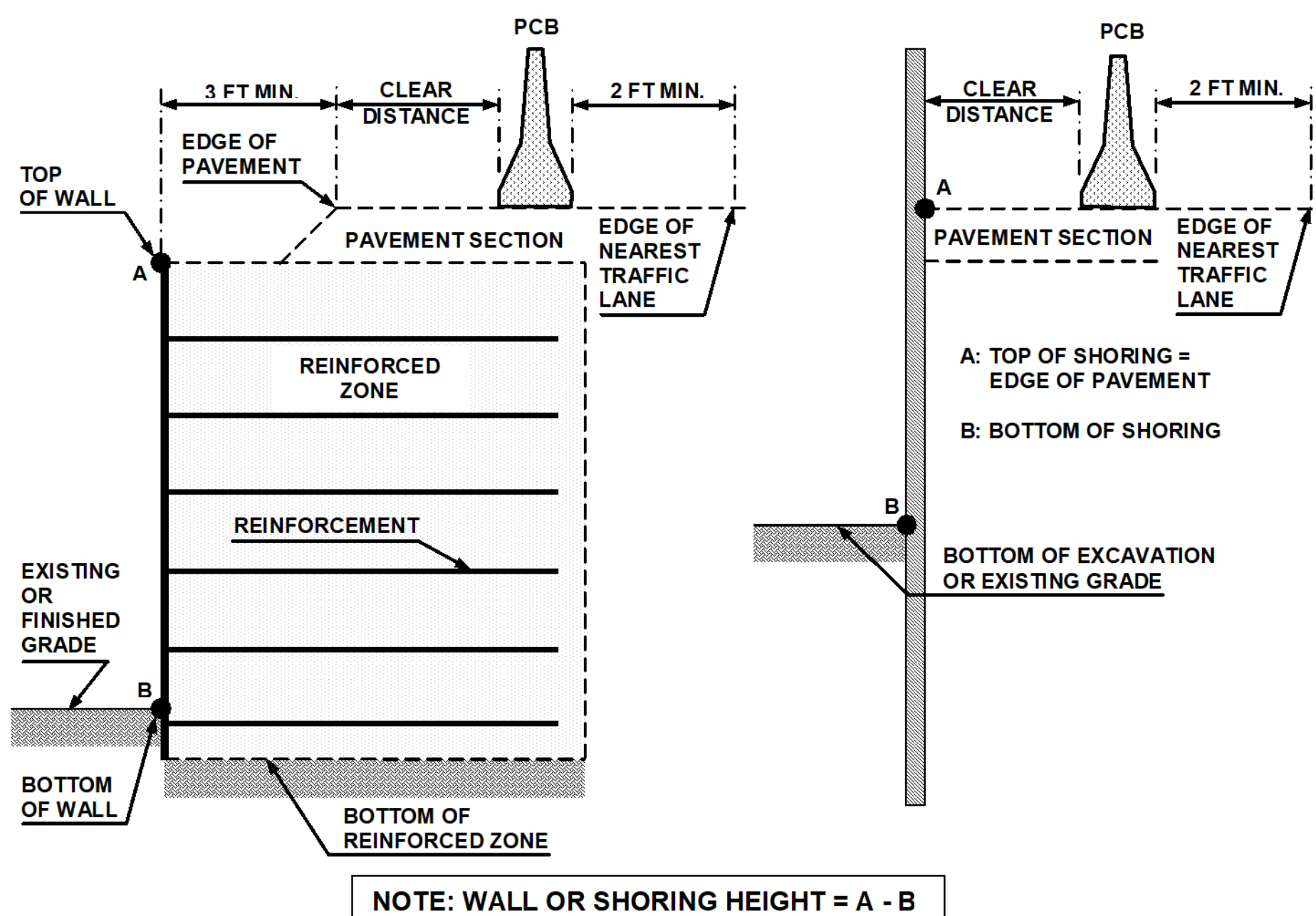


FIGURE A

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

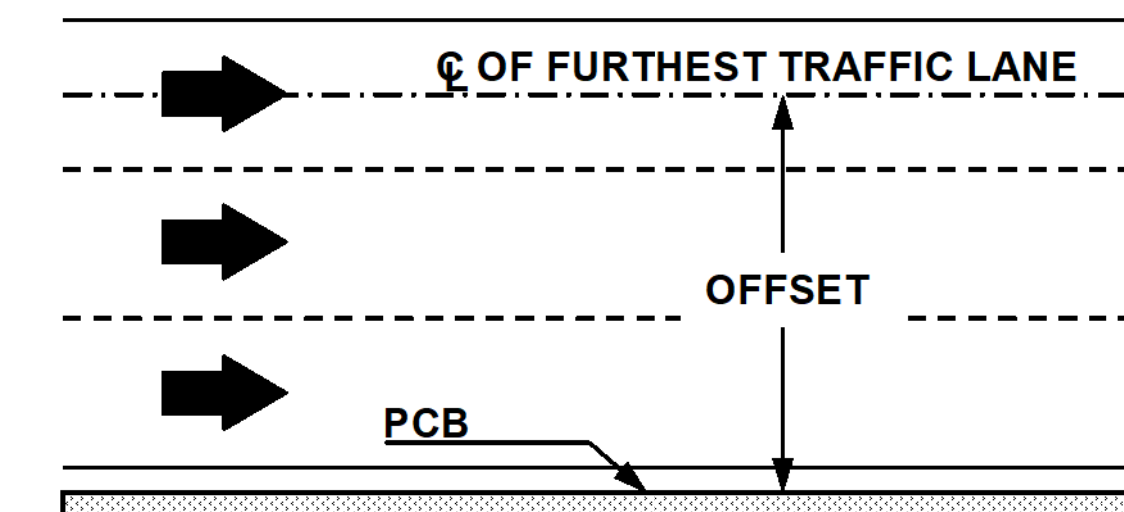
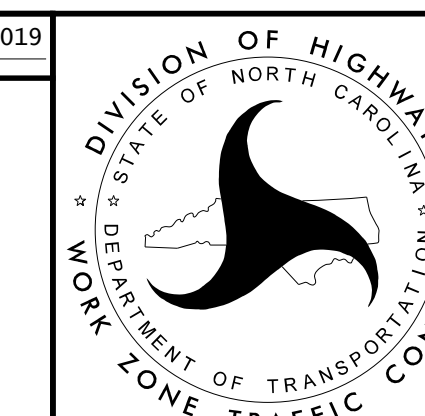
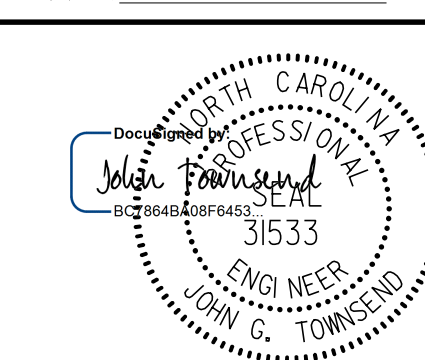


FIGURE B

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**PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS**

NOTES FOR TEMPORARY SHORING NO. 1

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

DESIGN TEMPORARY SHORING FROM STATION 55+38 +/- -L-, 9 FT. LT. TO STATION 56+08 +/- -L-, 9 FT. LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
- UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ' = 60 PCF
- FRICTION ANGLE, ϕ = 28
- COHESION, c = 0 PSF
- GROUNDWATER ELEVATION = 667 FT.

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

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 55+38 +/- -L-, 9 FT. LT. TO STATION 56+08 +/- -L-, 9 FT. LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 55+38 +/- -L-, 9 FT. LT. TO STATION 56+08 +/- -L-, 9 FT. LT MAY NOT PENETRATE BELOW ELEVATION 660 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

NOTES FOR TEMPORARY SHORING NO. 2

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

DESIGN TEMPORARY SHORING FROM STATION 55+25 +/- -L-, 3.5 FT. RT. TO STATION 56+08 +/- -L-, 3.5 FT. RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
- UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ' = 60 PCF
- FRICTION ANGLE, ϕ = 30
- COHESION, c = 0 PSF
- GROUNDWATER ELEVATION = 667 FT.

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

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 55+25 +/- -L-, 3.5 FT. RT. TO STATION 56+08 +/- -L-, 3.5 FT. RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR*S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 55+25 +/- -L-, 3.5 FT. RT. TO STATION 56+08 +/- -L-, 3.5 FT. RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH SEALED DOCUMENTS FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENTS WERE SUBMITTED TO THE WZTC SECTION ON JUNE 27, 2019 AND SEALED BY PROFESSIONAL ENGINEER, DAVID L. TEAGUE, P.E., LICENSE 027869.

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—BCT9848A09F648—
 JOHN G. TOWNSEND
 ENGR NEER
 NORTH CAROLINA PROFESSIONAL ENGINEER



**TEMPORARY
SHORING NOTES**

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PHASING

PROJ. REFERENCE NO.	SHEET NO.
U-2581BA	TMP-3

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

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

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

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

PHASE I

STEP 1

INSTALL WORK ZONE ADVANCE WARNING SIGNS PER RSD NO. 1101.01

INSTALL TEMPORARY PAVEMENT MARKINGS AS SHOWN AND INSTALL TEMPORARY SIGNALS AT THE FOLLOWING INTERSECTIONS:

- US 70 & MT HOPE CHURCH RD/MCLEANSVILLE RD
- US 70 & BIRCH CREEK RD

STEP 2

SHIFT TRAFFIC INTO NEW TRAFFIC PATTERN. CONSTRUCT THE NORTHERN PORTION OF US 70 WIDENING AND PAVEMENT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM STA 12+32 TO STA 48+50 AND THE SOUTHERN PORTION FROM STA 52+00 TO STA 91+80, AS SHOWN ON SHEETS TMP-4 THRU TMP-9.

INSTALL PINNED/ANCHORED TEMPORARY CONCRETE BARRIER AND IMPACT ATTENUATORS ALONG US 70 FROM STA 53+75 TO STA 59+00. INSTALL TEMPORARY SHORING (1) BEHIND BARRIER FROM STA 55+38 TO STA 56+08 (SEE SHORING DETAIL SHEET TMP-2A & TMP-2B). CONSTRUCT SOUTHERN PORTION OF PROPOSED CULVERT AT APPROX. STA 55+67 AND THE ROADWAY IN THIS AREA.

CONSTRUCT PROPOSED DRAINAGE CROSS PIPES ACROSS -L- US 70 AS FOLLOWS:

- USE LANE CLOSURES (RSD NO. 1101.02, SHEETS 1 & 2) AND LAW ENFORCEMENT AS NECESSARY DURING SUCCESSIVE OVERNIGHT PERIODS.
- PATCH PAVEMENT AND RESTORE TRAFFIC TO ITS PRIOR PATTERN BY THE END OF THE WORK PERIOD.

STEP 3

WHILE MAINTAINING TRAFFIC IN EXISTING PATTERN AND USING RSD 1101.02 (SHEETS 1 & 2), COMPLETE CONSTRUCTION OF THE PROPOSED OUTSIDE WIDENING TO THE PAVEMENT LAYER MATCHING EXISTING PAVEMENT LEVEL AND NOT INCLUDING THE FINAL SURFACE COURSE AND INSTALL PROPOSED DRAINAGE FEATURES ALONG THE FOLLOWING ROADWAYS:

- Y1- LEFT & RIGHT - MCLEANSVILLE RD
- Y4- RIGHT - PINE TREE DR

STEP 4

PRIOR TO SWITCHING TO PHASE II CONSTRUCT OUTSIDE WIDENING AND PAVEMENT BUILD/TRANSITION PAVEMENT BETWEEN STA 48+50 TO STA 52+00 USING (RSD NO. 1101.02, SHEETS 1 & 2). TRANSITION PAVEMENT SHALL BE TAPERED TO ALLOW SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT ELEVATION AND PROPOSED PAVEMENT ELEVATION AND BE CONSTRUCTED IN A PROGRESSIVE MANNER FROM NORTH TO SOUTH TO PREVENT PONDING OF WATER AT THE CENTER OF THE ROADWAY.

CONSTRUCT PAVEMENT BUILD UP/TRANSITION PAVEMENT NEAR THE US 70 & MT HOPE CHURCH RD/MCLEANSVILLE RD INTERSECTION FROM STA 12+32 TO STA 25+00.

INSTALL TEMPORARY SHORING (2) FROM STA 55+25 TO STA 56+08 (SEE SHORING DETAIL SHEET TMP-2A & TMP-2B). INSTALL PINNED/ANCHORED TEMPORARY CONCRETE BARRIER IN FRONT OF TEMPORARY SHORING (2) AND IMPACT ATTENUATORS ALONG US 70 FROM STA 53+75 TO STA 59+00.

PHASE II

STEP 1

WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK REQUIRED IN PHASE I AND INSTALL TEMPORARY PAVEMENT MARKINGS, TRAFFIC CONTROL DEVICES AND SIGNING FOR THE PHASE II PATTERN AND SHIFT TRAFFIC TO NEW PATTERN.

STEP 2

PER THE PHASE II TRAFFIC PATTERN, ADJUST TEMPORARY SIGNALS AT THE FOLLOWING INTERSECTIONS:

- US 70 & MT HOPE CHURCH RD/MCLEANSVILLE RD
- US 70 & BIRCH CREEK RD

INTERMEDIATE CONTRACT TIME: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF PHASE II STEP 3 IN 4 CONSECUTIVE CALENDAR DAYS AND COORDINATE WITH THE ENGINEER AND BUSINESS OWNER TO AVOID OR MINIMIZE IMPACTS TO BUSINESS OPERATIONS.

STEP 3

USING WEEKEND AND OVERNIGHT WORK HOURS, CONSTRUCT TEMPORARY ACCESS FOR COMMERCIAL ENTRANCE AT APPROX. STA 56+75. SEE TEMPORARY DRIVEWAY DETAIL ON SHEET TMP-14.

STEP 4

CONSTRUCT THE SOUTHERN PORTION OF US 70 WIDENING AND PAVEMENT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM STA 12+32 TO STA 48+50 AND THE NORTHERN PORTION FROM STA 52+00 TO STA 91+80, AS SHOWN ON SHEETS TMP-11 THRU TMP-16.

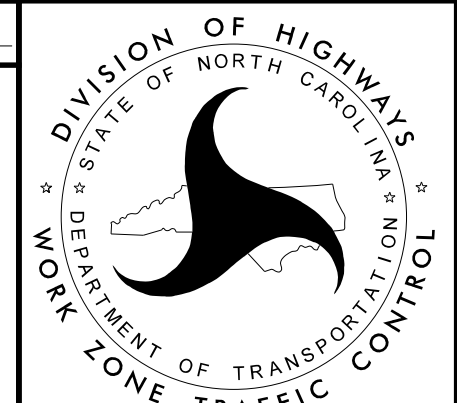
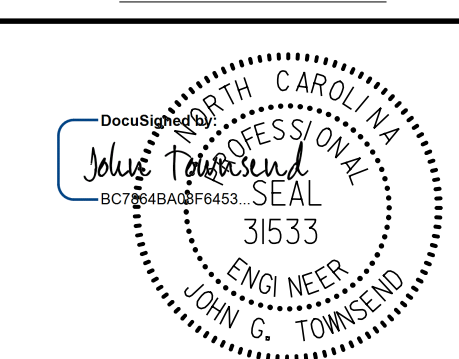
REMOVE TEMPORARY SHORING (1) FROM STA 55+38 TO STA 56+08 AND TEMPORARY CONCRETE BARRIER IN FRONT OF TEMPORARY SHORING (1) FROM STA 53+75 TO STA 59+00 TO ALLOW FOR CONSTRUCTION OF THE NORTHERN PORTION OF PROPOSED CULVERT AT APPROX. STA 55+67.

CONSTRUCT PROPOSED DRAINAGE CROSS PIPES ACROSS -L- US 70 AS FOLLOWS:

- USE LANE CLOSURES (RSD NO. 1101.02, SHEETS 1 & 2) AND LAW ENFORCEMENT AS NECESSARY DURING SUCCESSIVE OVERNIGHT PERIODS.
- PATCH PAVEMENT AND RESTORE TRAFFIC TO ITS PRIOR PATTERN BY THE END OF THE WORK PERIOD.

UPON COMPLETION OF THE PROPOSED BOX CULVERT, ROADWAY, AND GUARDRAIL IN THIS AREA, THE CONTRACTOR SHALL REMOVE THE PCB, TEMPORARY SHORING AND IMPACT ATTENUATORS TO COMPLETE ROADWAY CONSTRUCTION IN THE VICINITY OF THE TEMPORARY SHORING.

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PHASING

PROJ. REFERENCE NO.	SHEET NO.
U-2581BA	TMP-3A

PHASE II

STEP 5

WHILE MAINTAINING TRAFFIC IN EXISTING PATTERN AND USING RSD 1101.02 (SHEETS 1 & 2), COMPLETE CONSTRUCTION OF THE PROPOSED OUTSIDE WIDENING TO THE PAVEMENT LAYER MATCHING EXISTING PAVEMENT LEVEL AND NOT INCLUDING THE FINAL SURFACE COURSE AND INSTALL PROPOSED DRAINAGE FEATURES ALONG THE FOLLOWING ROADWAYS:

- Y2- LEFT & RIGHT - MT HOPE CHURCH RD
- Y3- LEFT & RIGHT - DEBANNE RD
- Y4- LEFT - PINE TREE DR
- Y5- LEFT & RIGHT SPRUCE TREE DR
- Y6- LEFT & RIGHT - BIRCH CREEK RD

PHASE III (NOT SHOWN IN PLAN VIEW)

WORK IN A CONTINOUS MANNER TO COMPLETE THE WORK REQUIRED IN PHASE II.

STEP 1

INSTALL AND ACTIVATE ALL FINAL TRAFFIC SIGNALS AND OPEN ROADWAY TO THE FINAL TRAFFIC PATTERN USING TEMPORARY PAVEMENT MARKINGS.

STEP 2

USING ROADWAY STANDARD DRAWING 1101.02 (SHEET 1& 2), PLACE THE FINAL BUILD UP LAYERS AND SURFACE COURSE ALONG ALL PROJECT ROADWAYS AND INSTALL FINAL PAVEMENT MARKINGS AND MARKERS AS SHOWN IN THE PROJECT PAVEMENT MARKING PLANS.

STEP 3

REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

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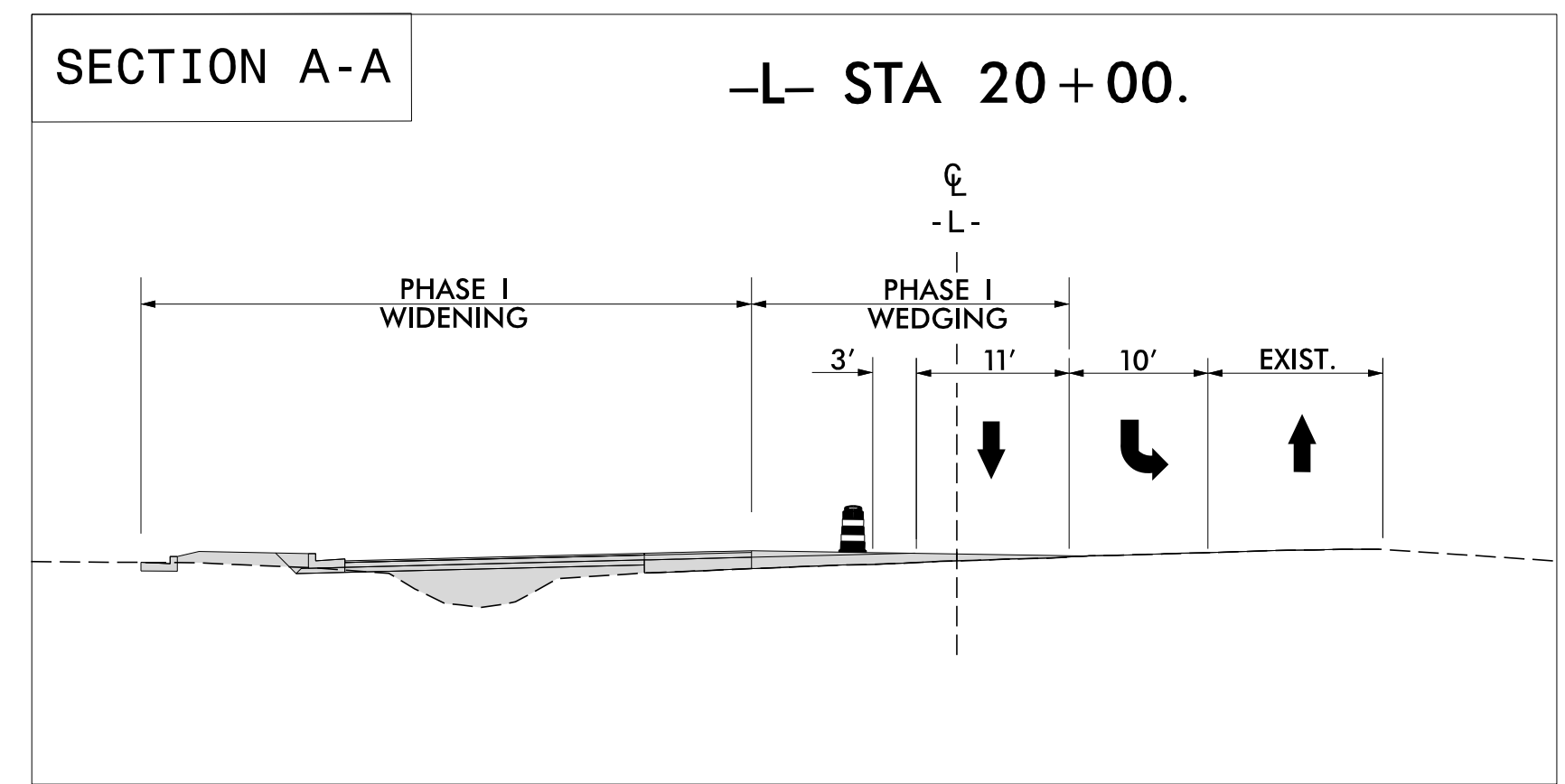
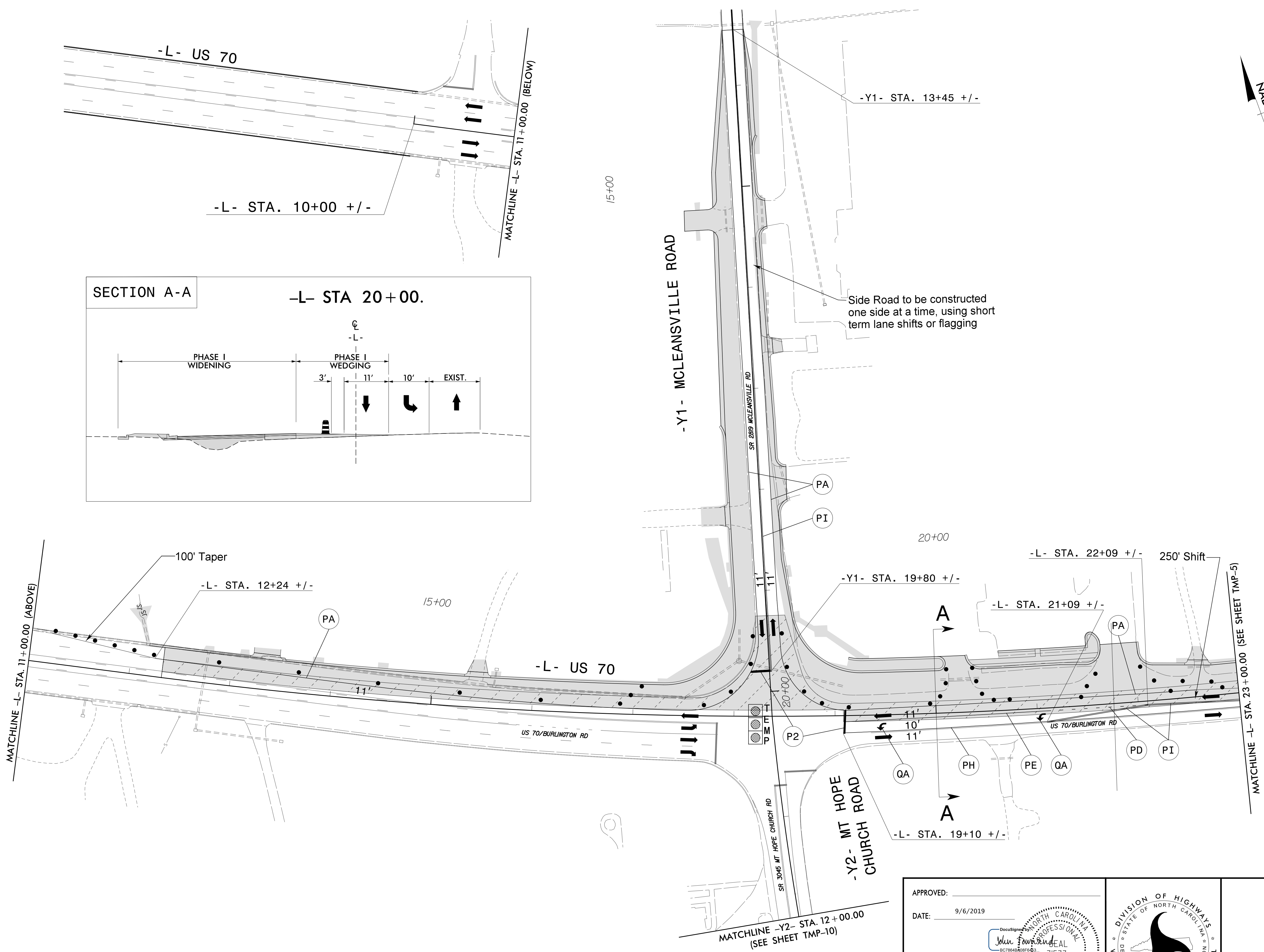
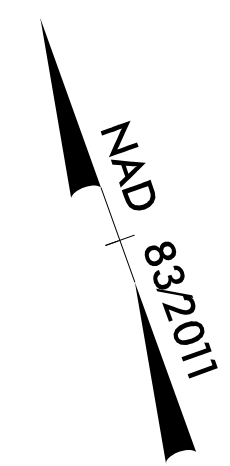
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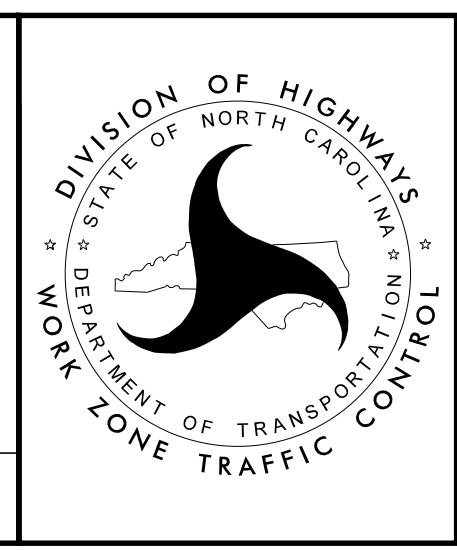
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DATE: 9/6/2019

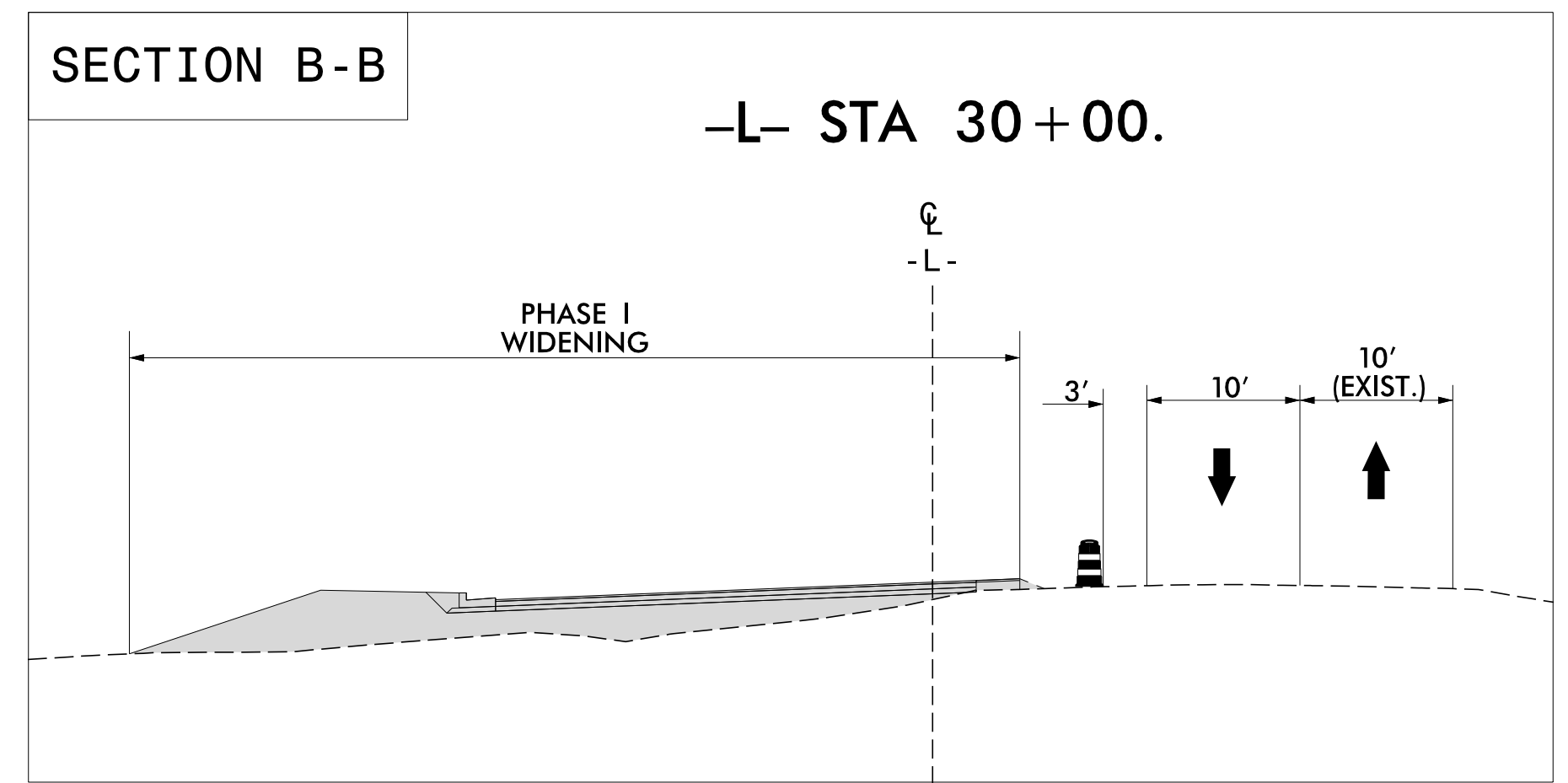
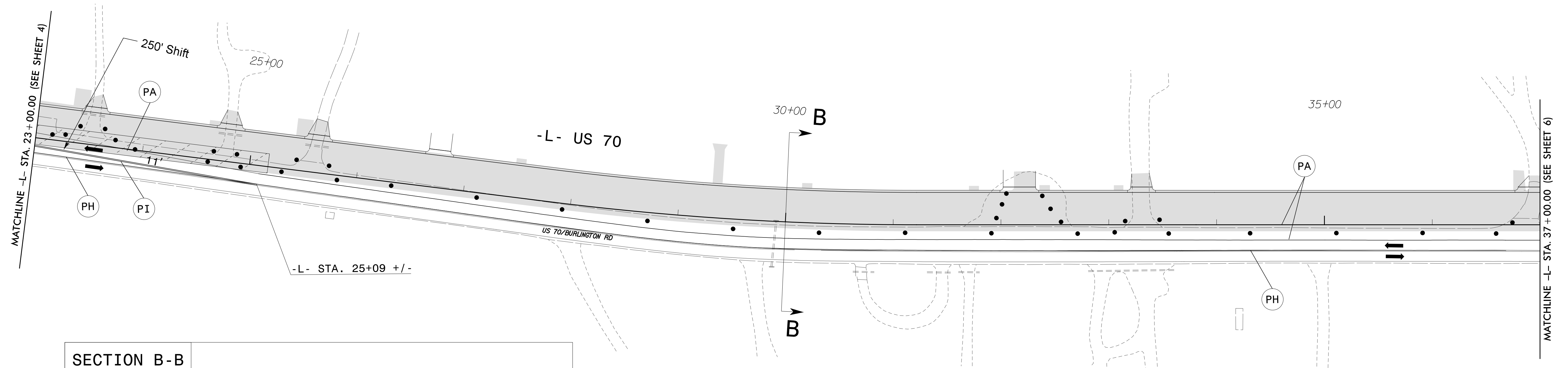
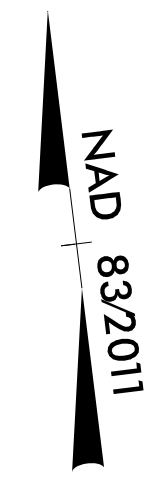
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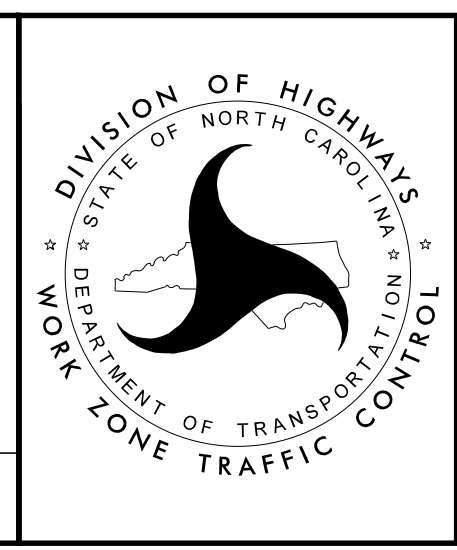


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DATE: 9/6/2019

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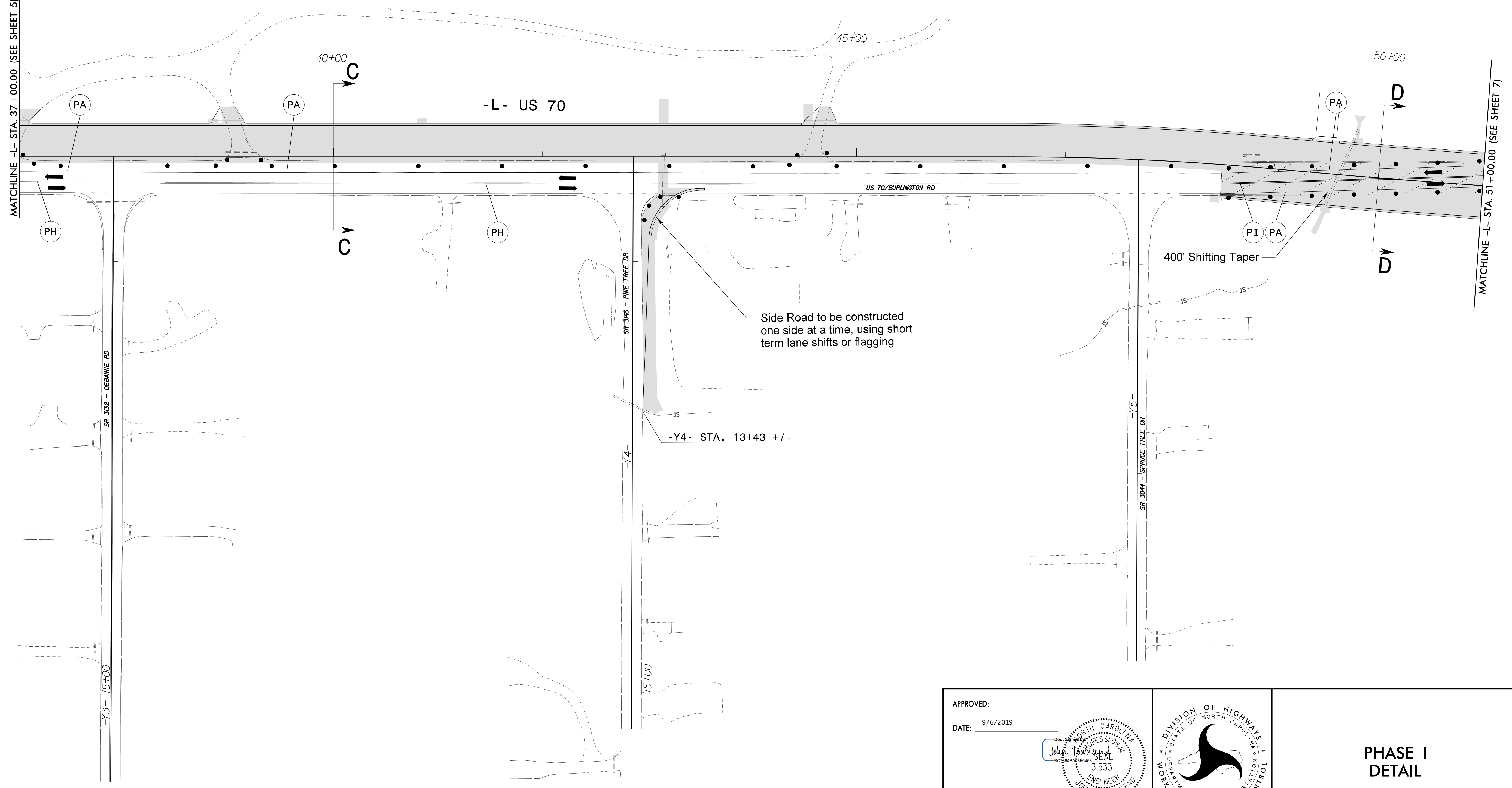
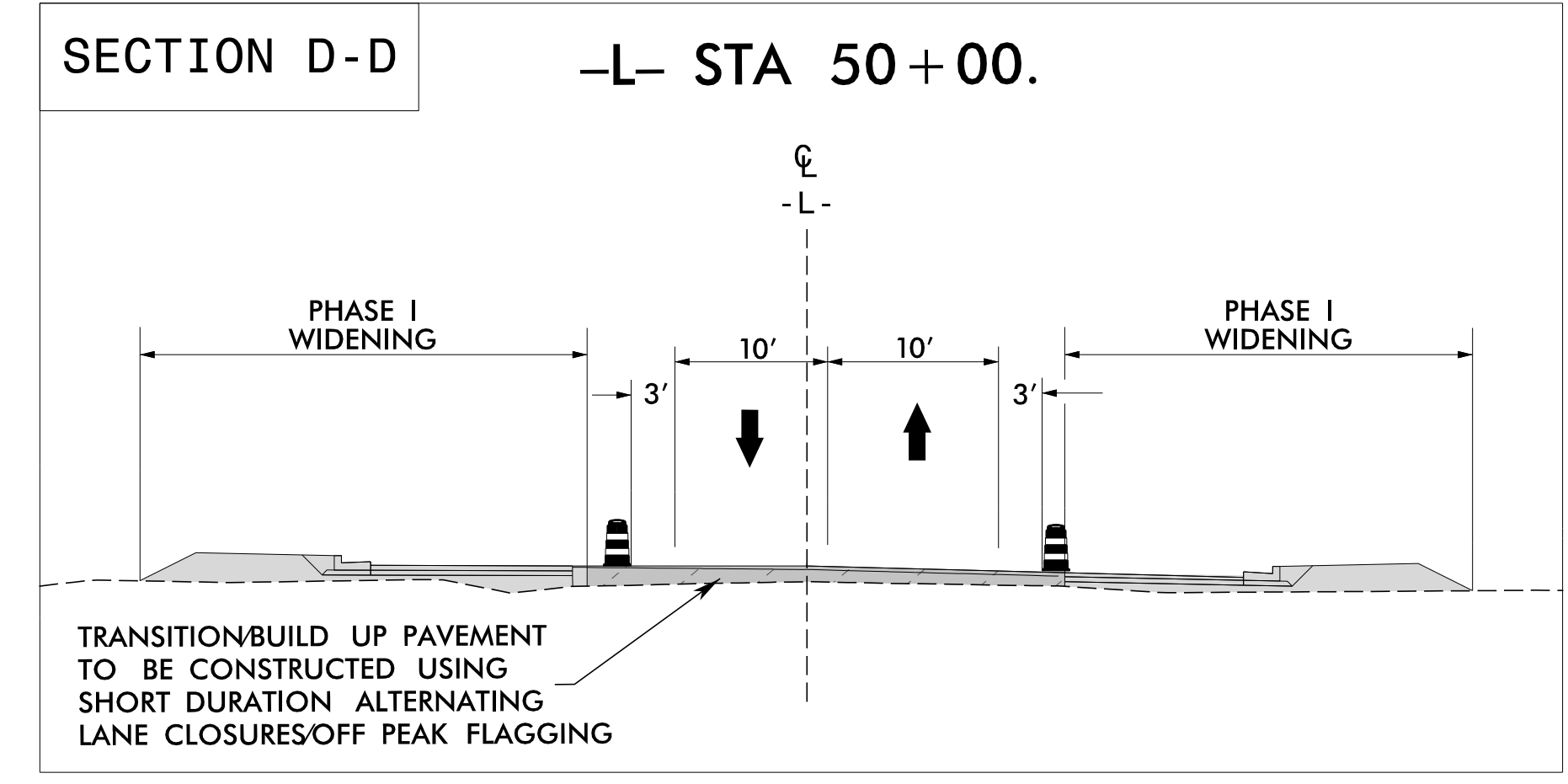
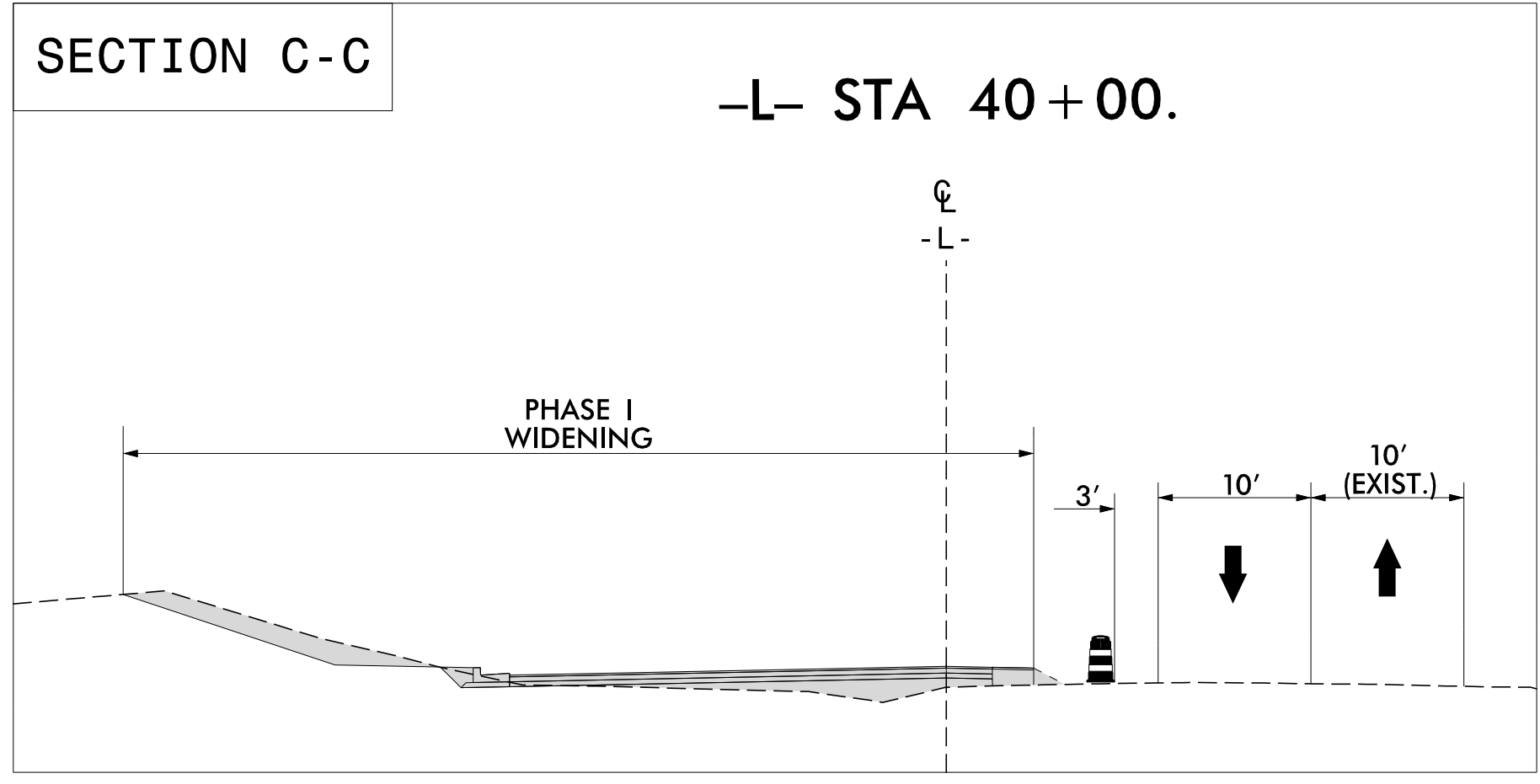
**PHASE I
DETAIL**

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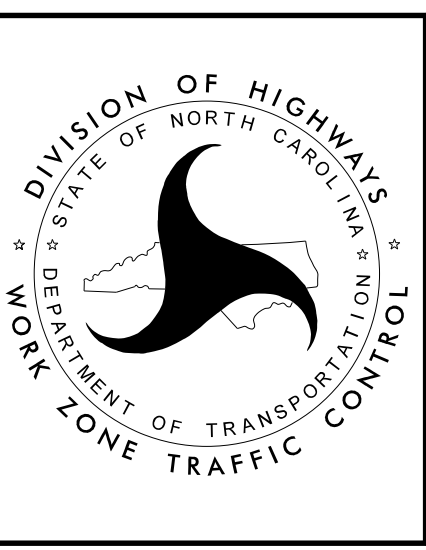
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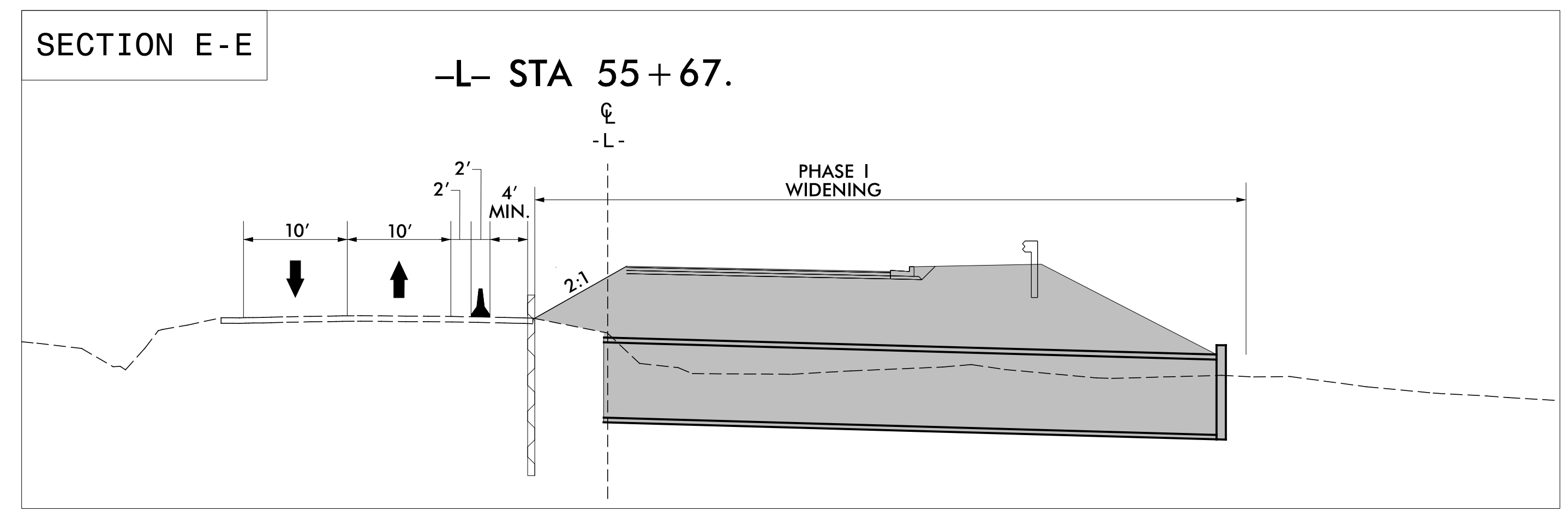
**PHASE I
DETAIL**

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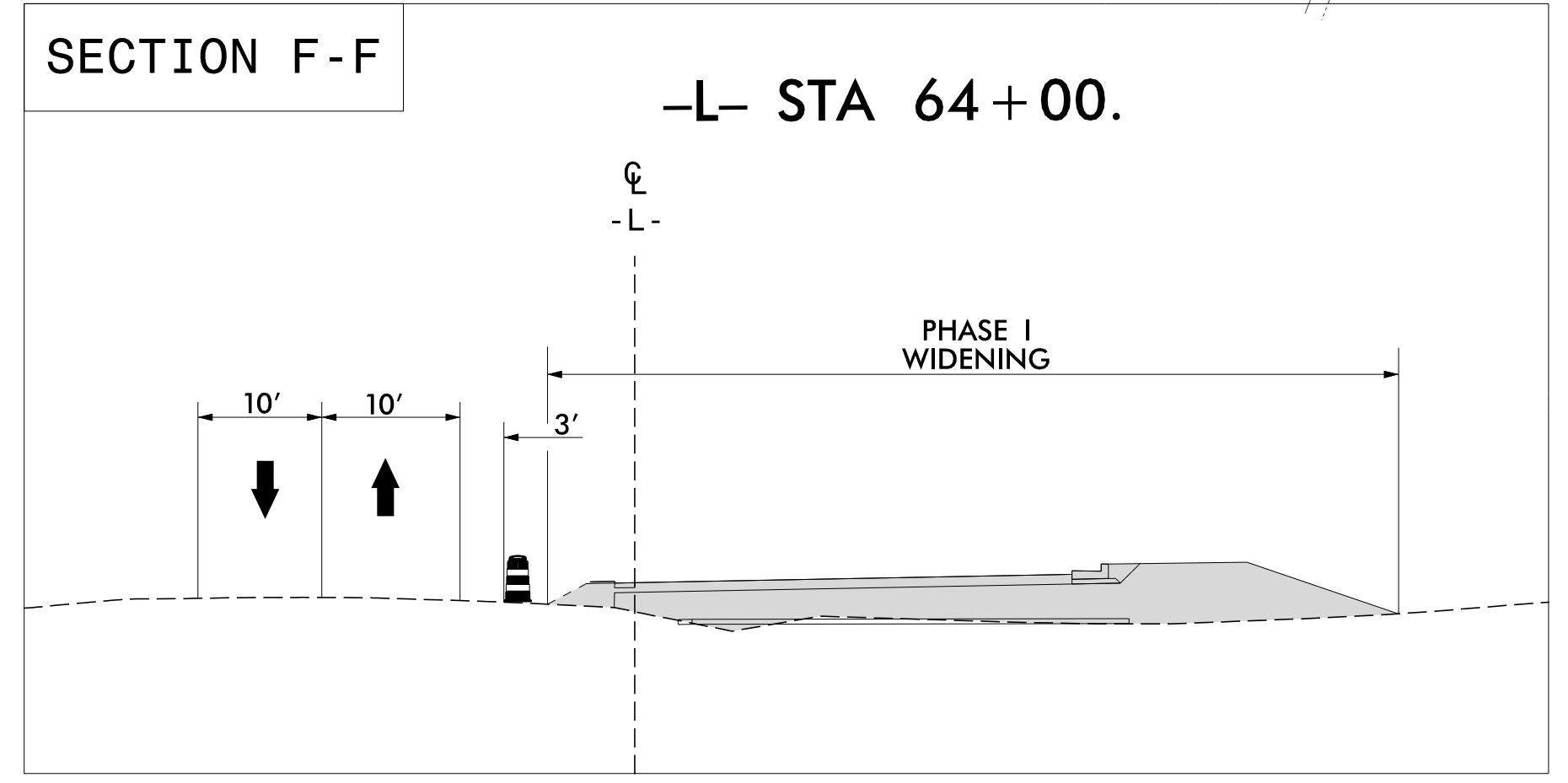
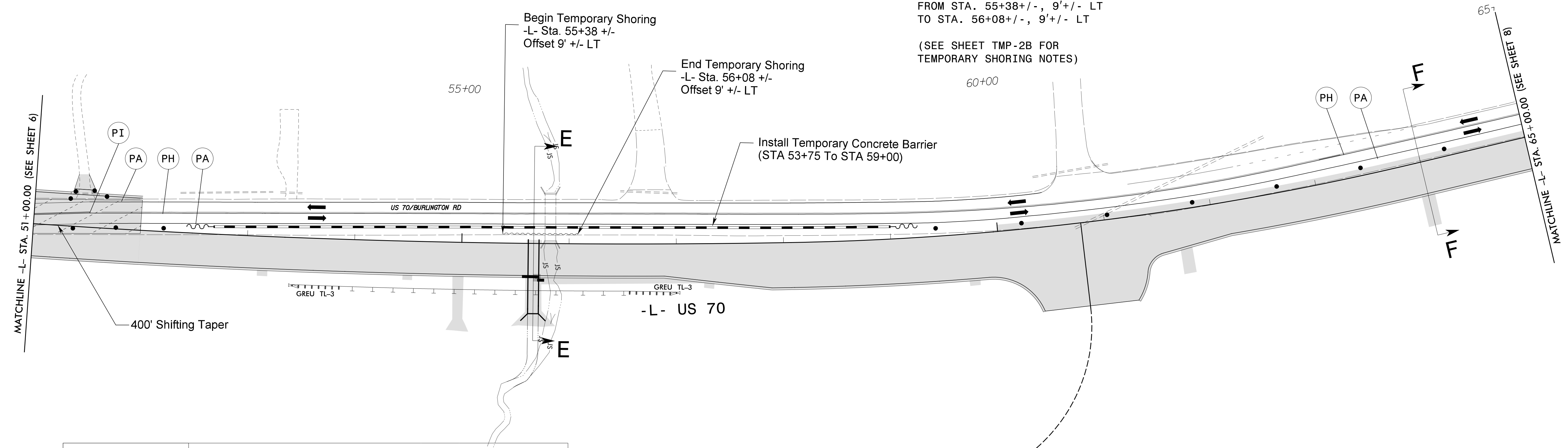
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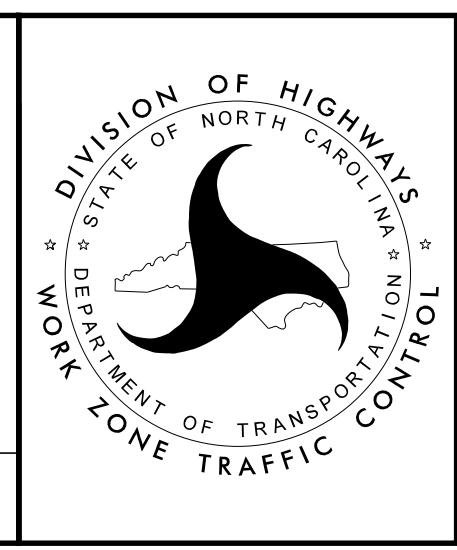
TEMPORARY SHORING
FROM STA. 55+38 +/-, 9' +/- LT
TO STA. 56+08 +/-, 9' +/- LT

(SEE SHEET TMP-2B FOR
TEMPORARY SHORING NOTES)



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JOHN G. TOWNSEND

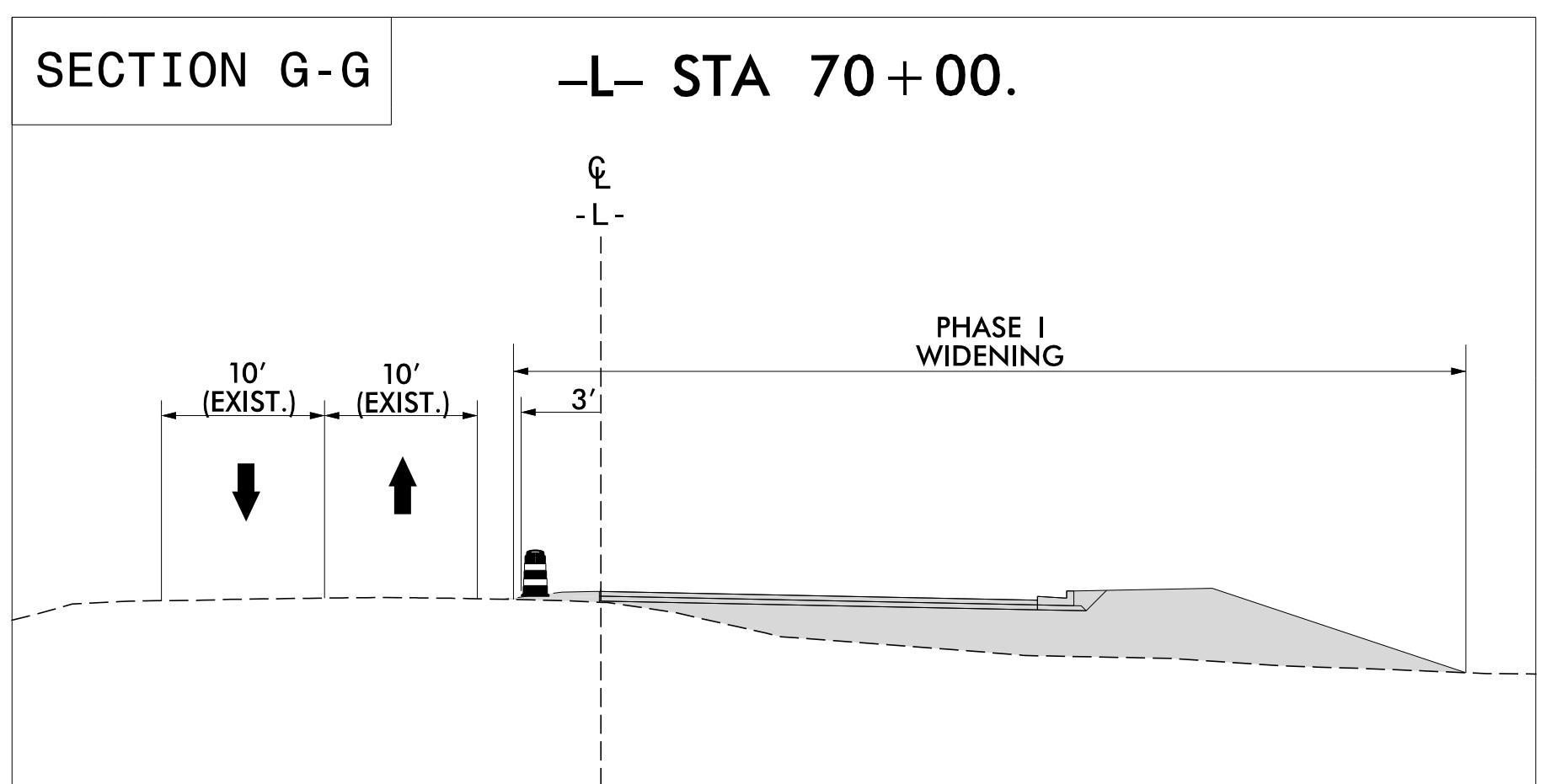
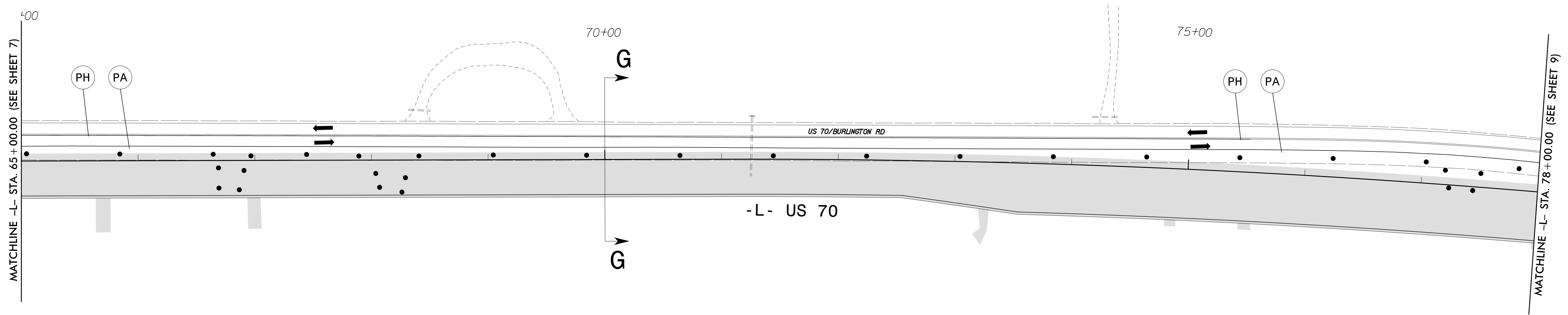


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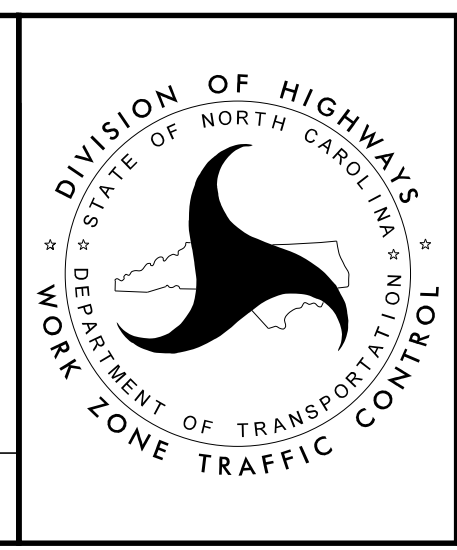
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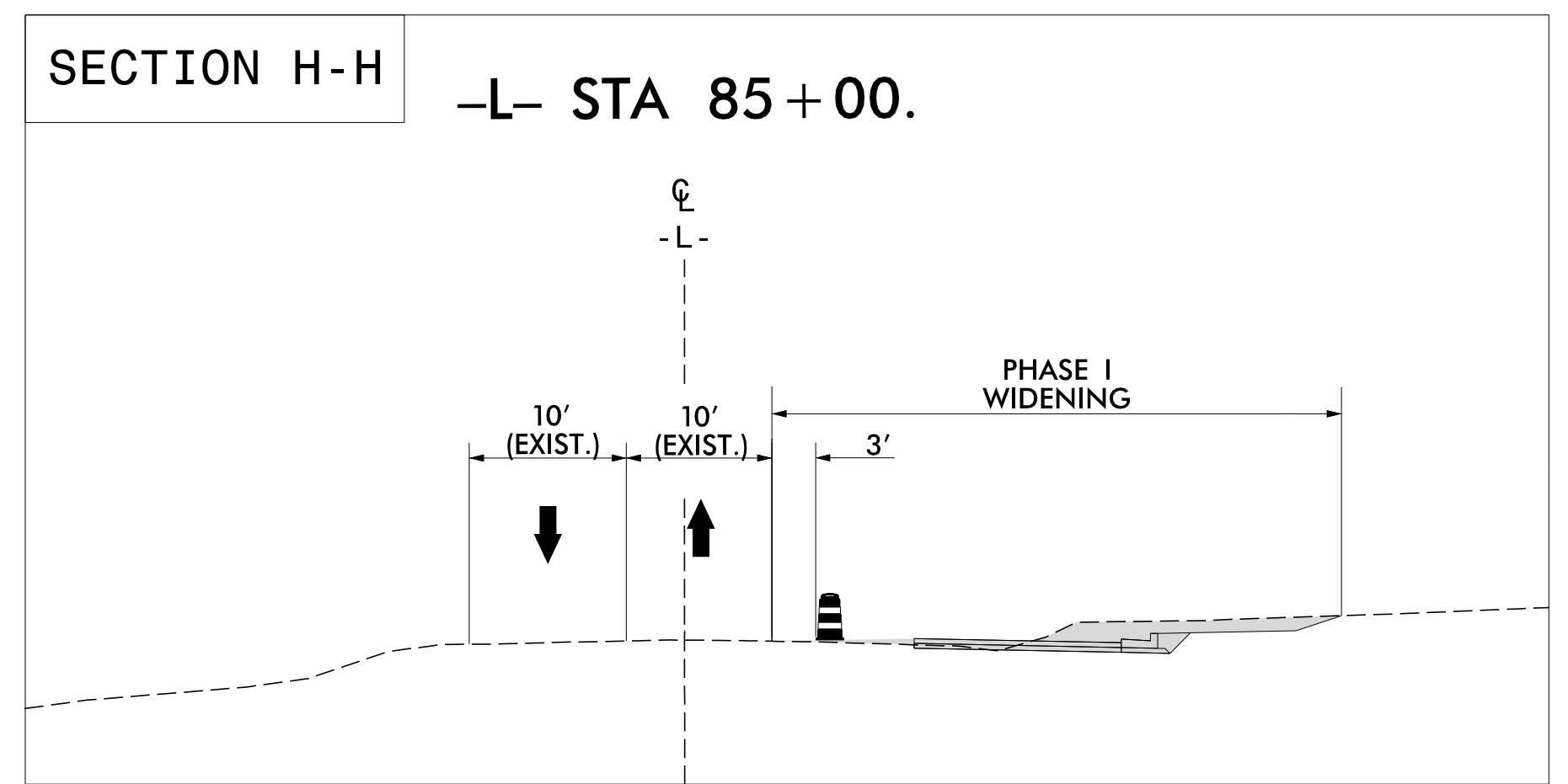
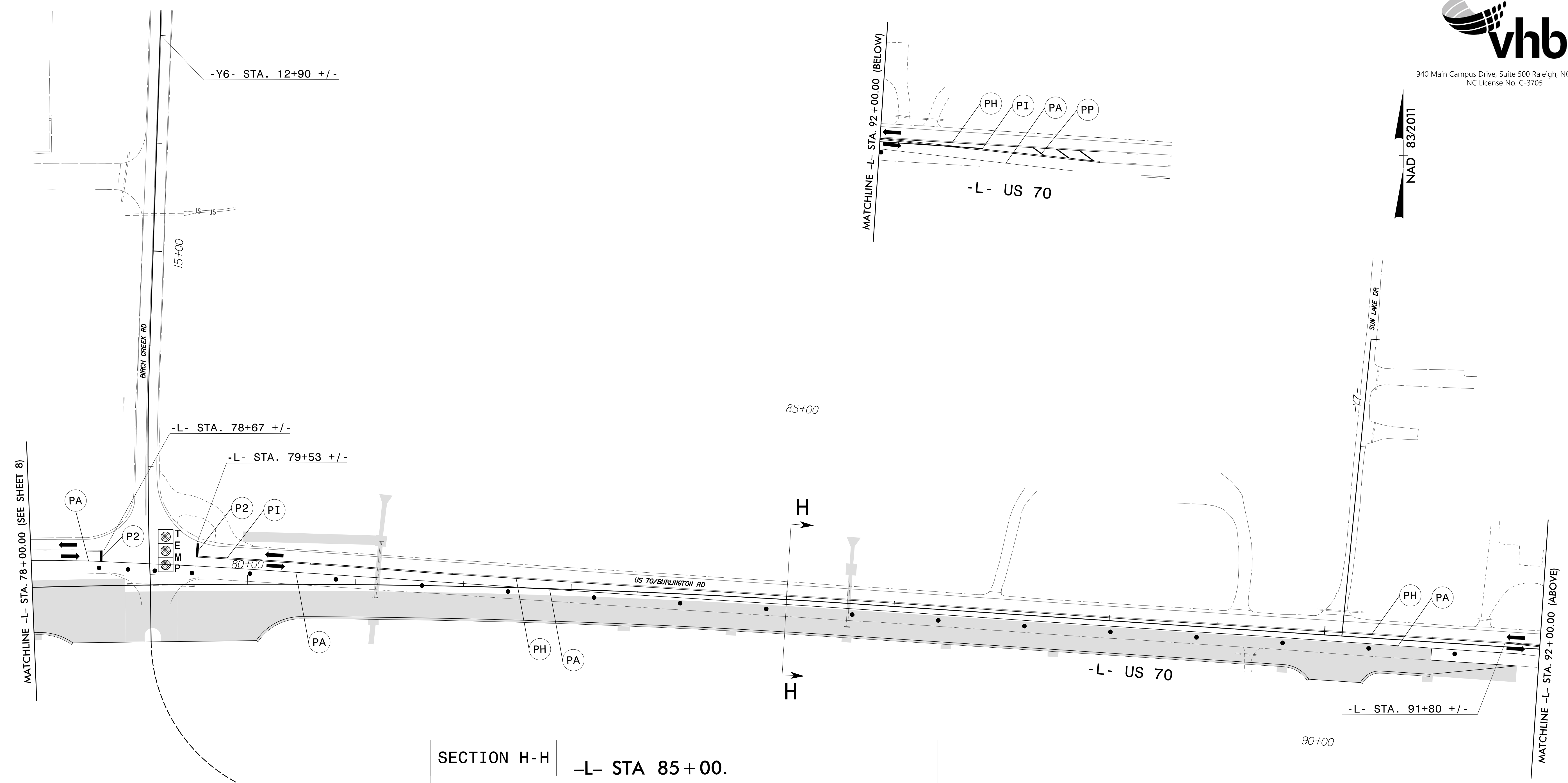
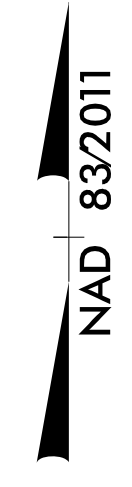


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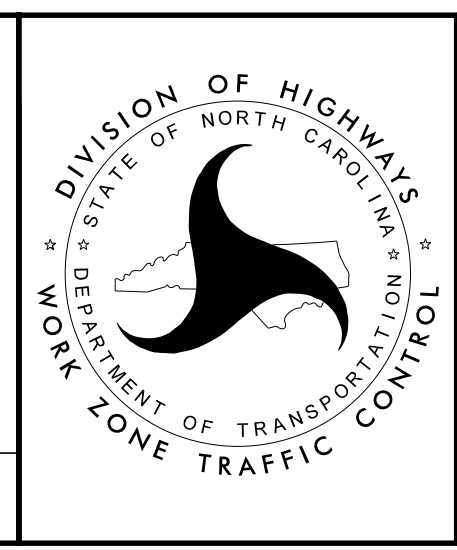
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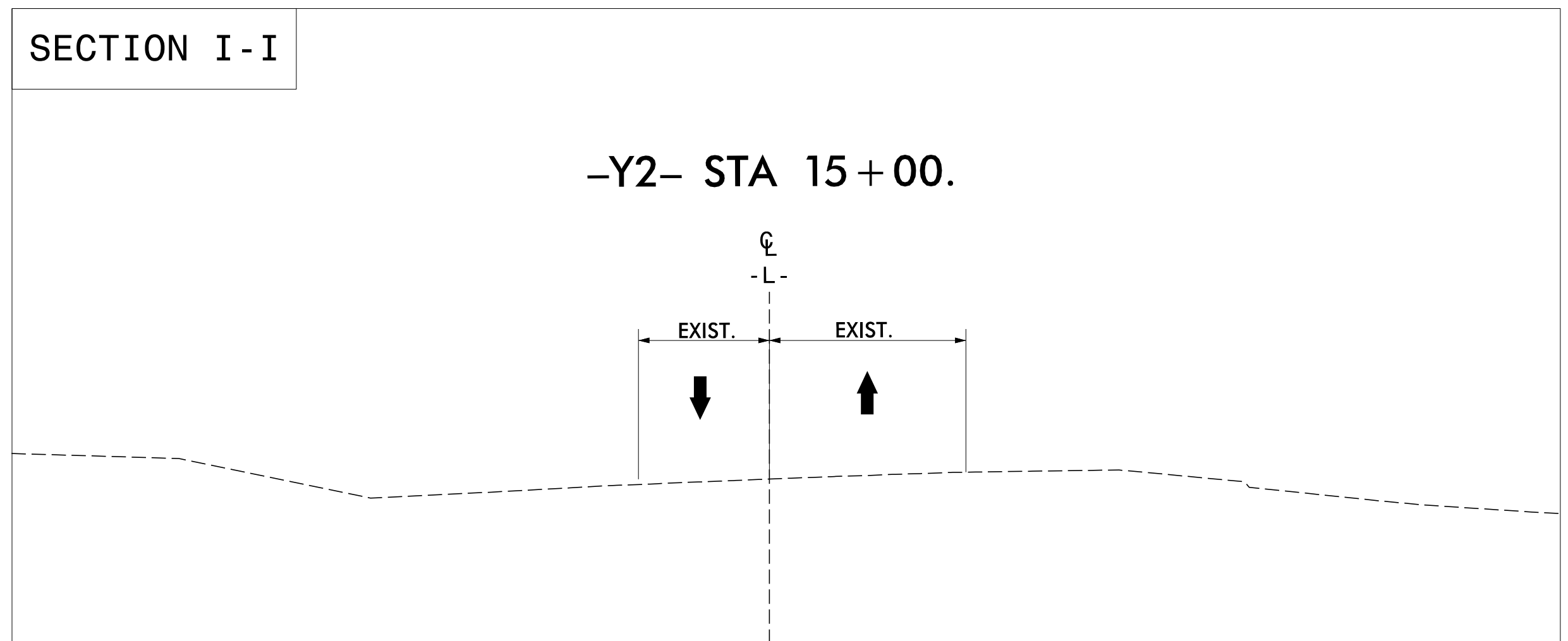
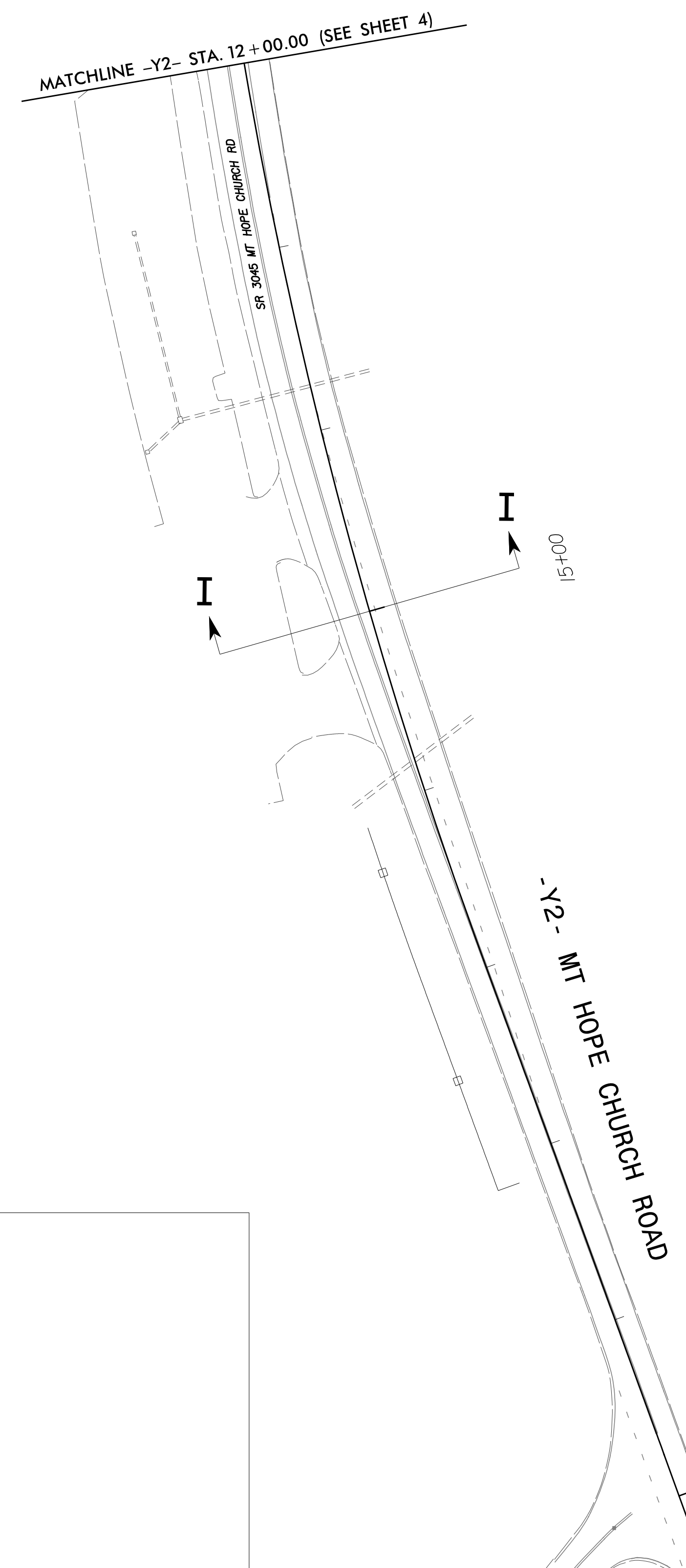
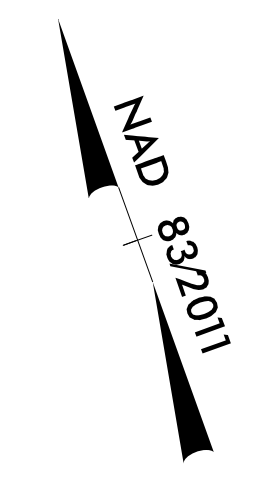
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U-2581BA	TMP-10



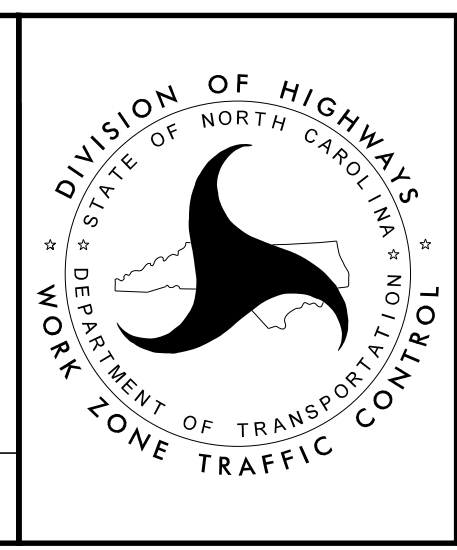
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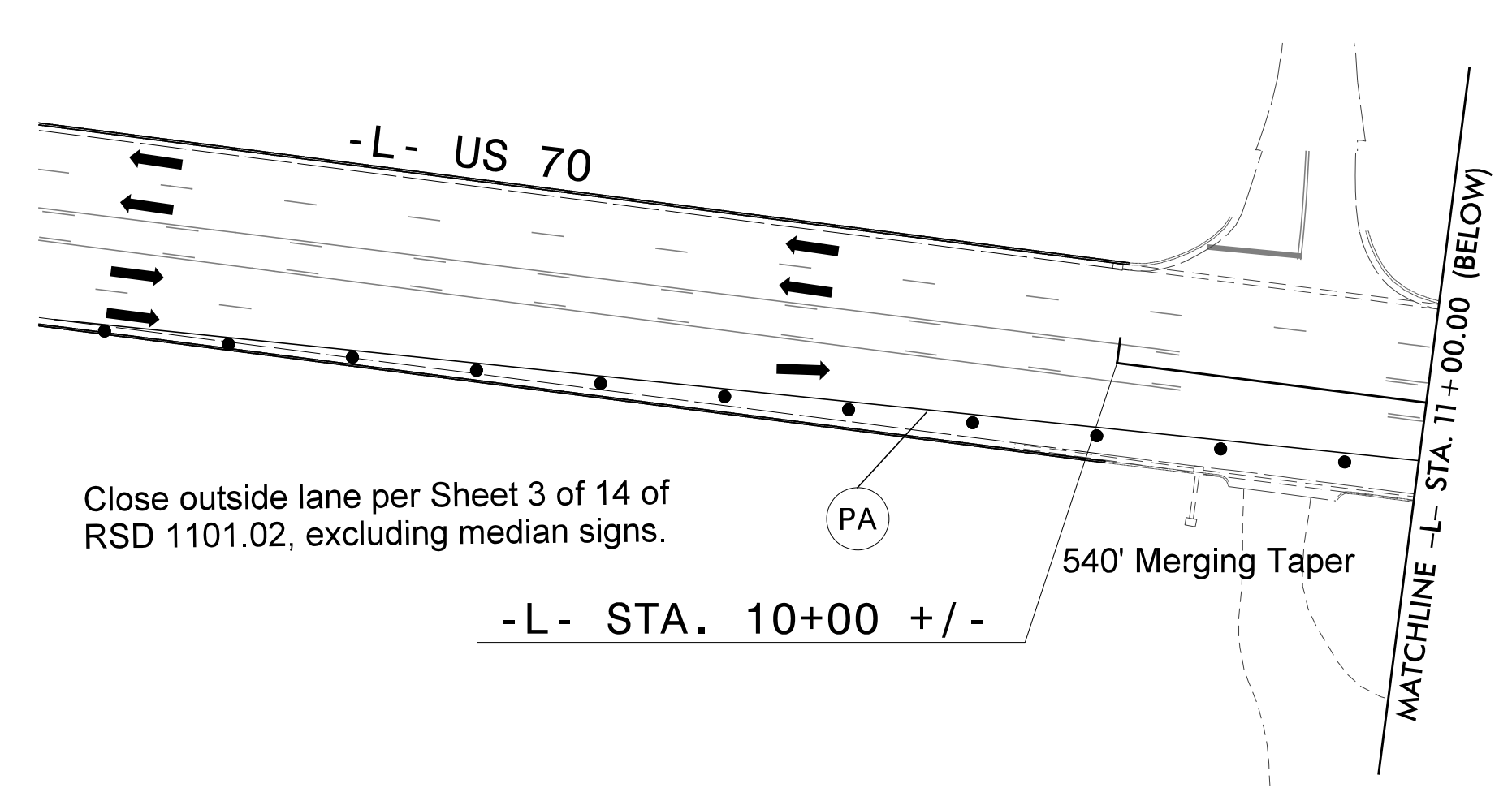
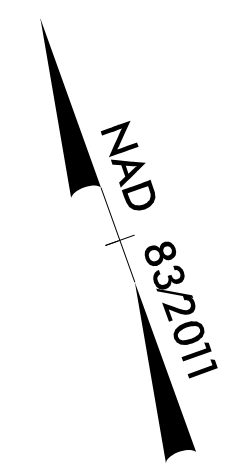


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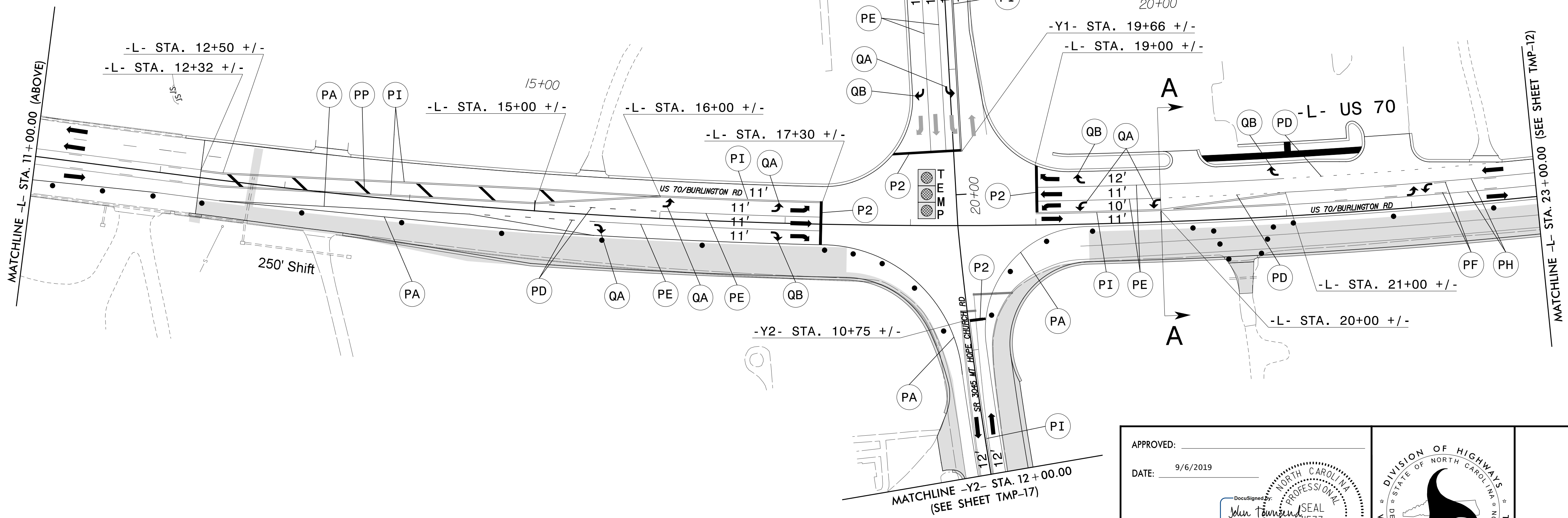
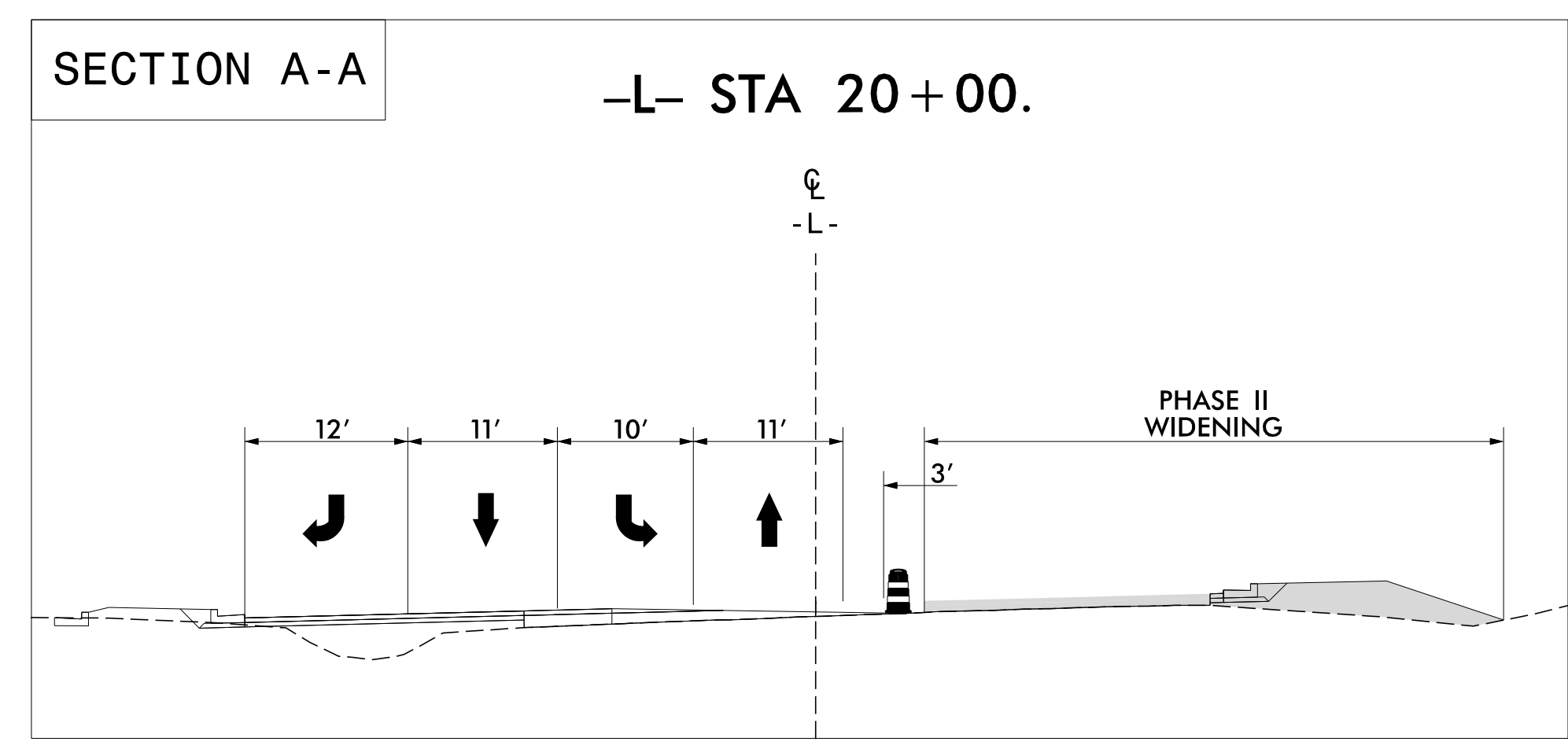
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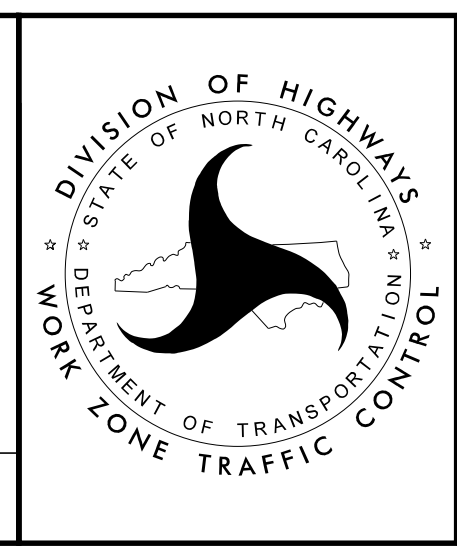
Close outside lane per Sheet 3 of 14 of RSD 1101.02, excluding median signs.



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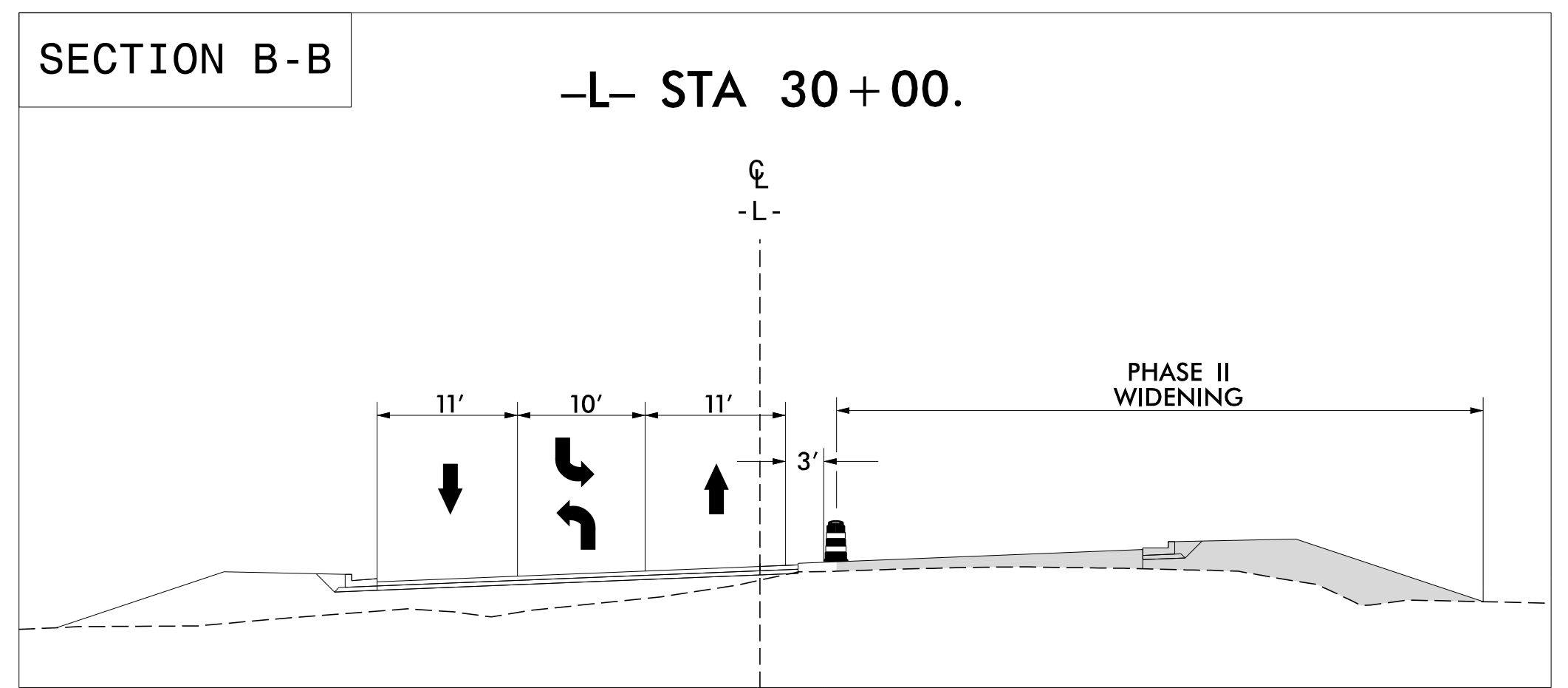
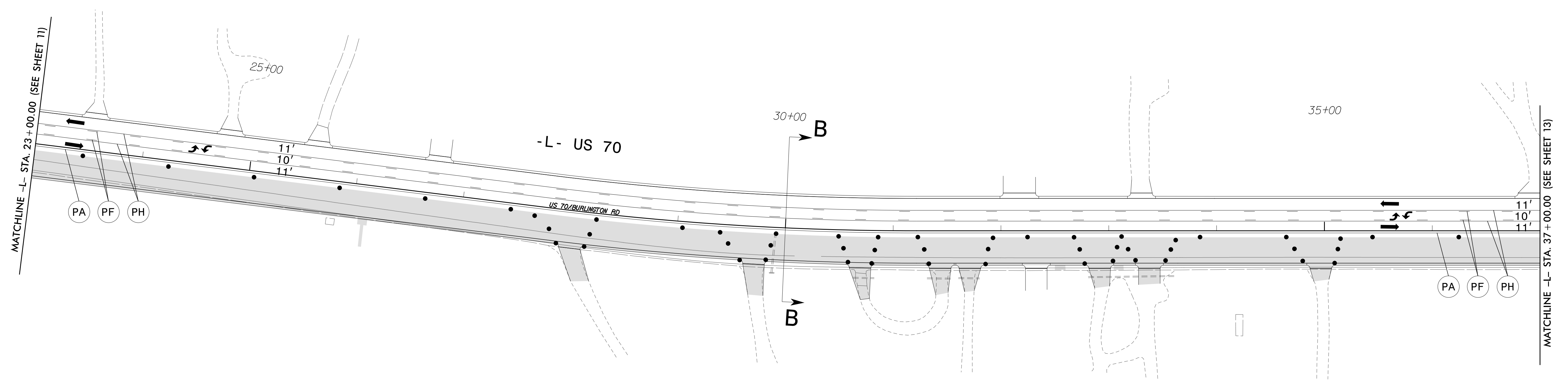
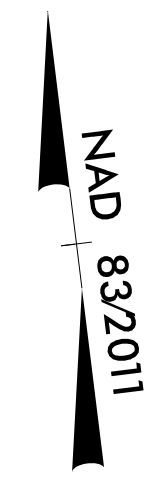
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U-2581BA	TMP-12



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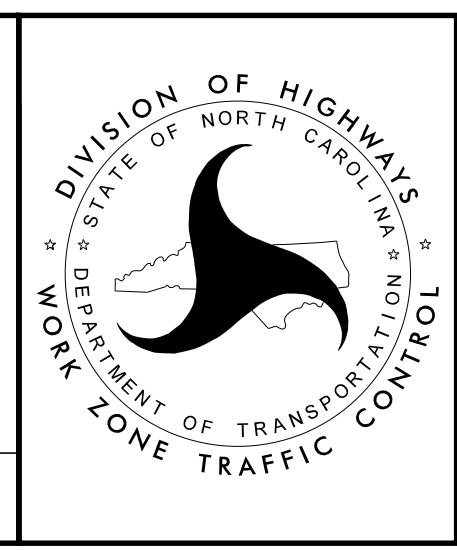


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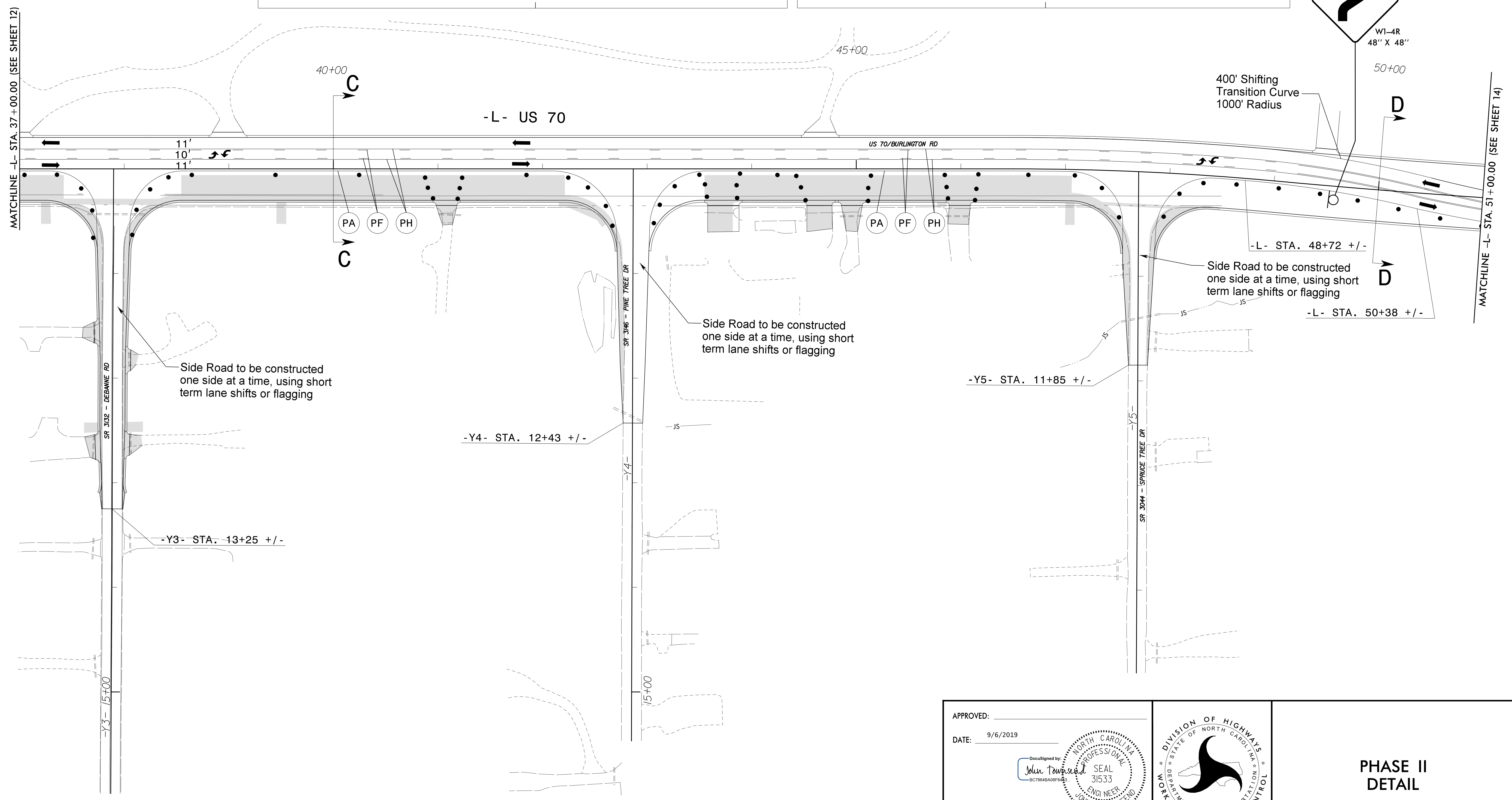
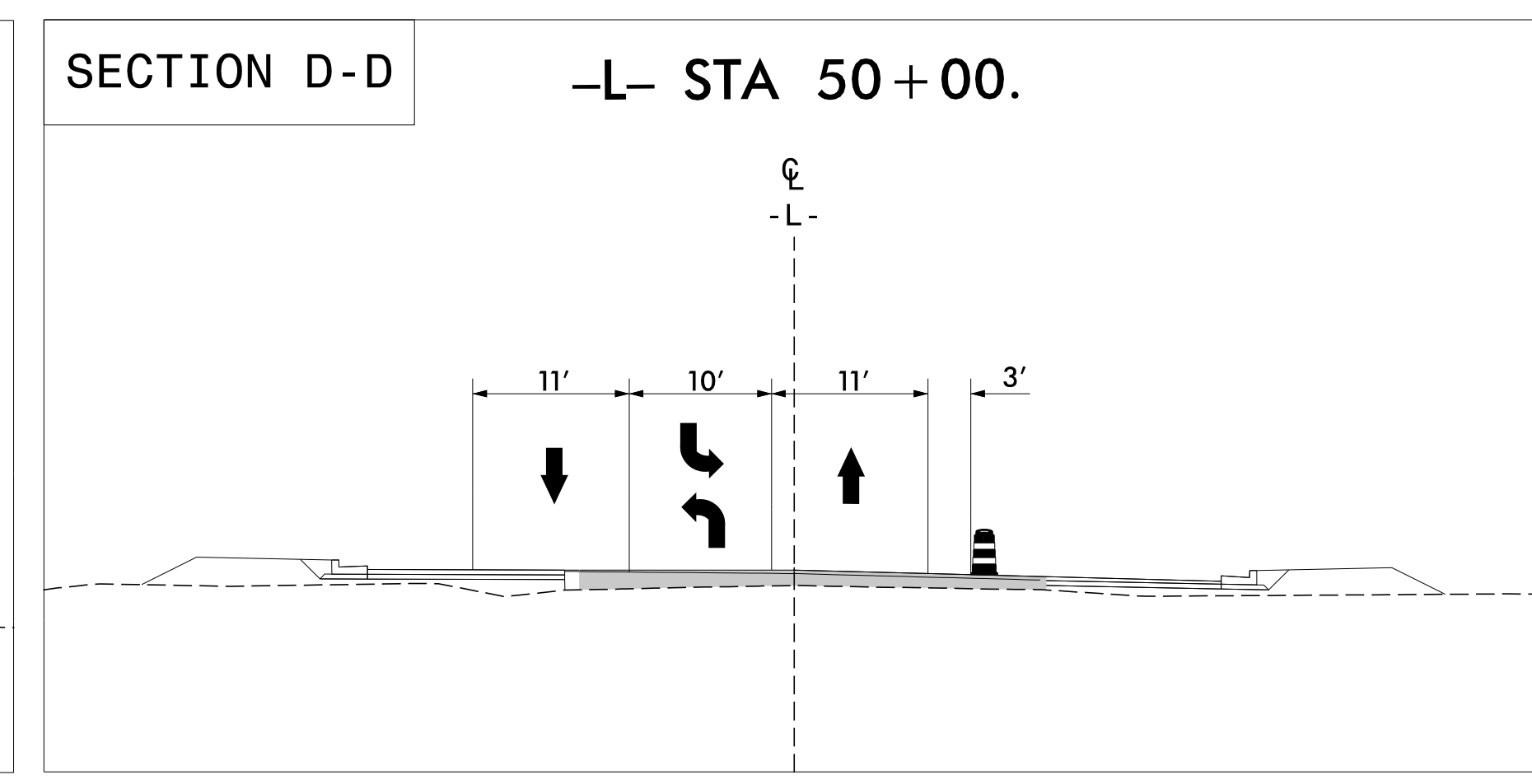
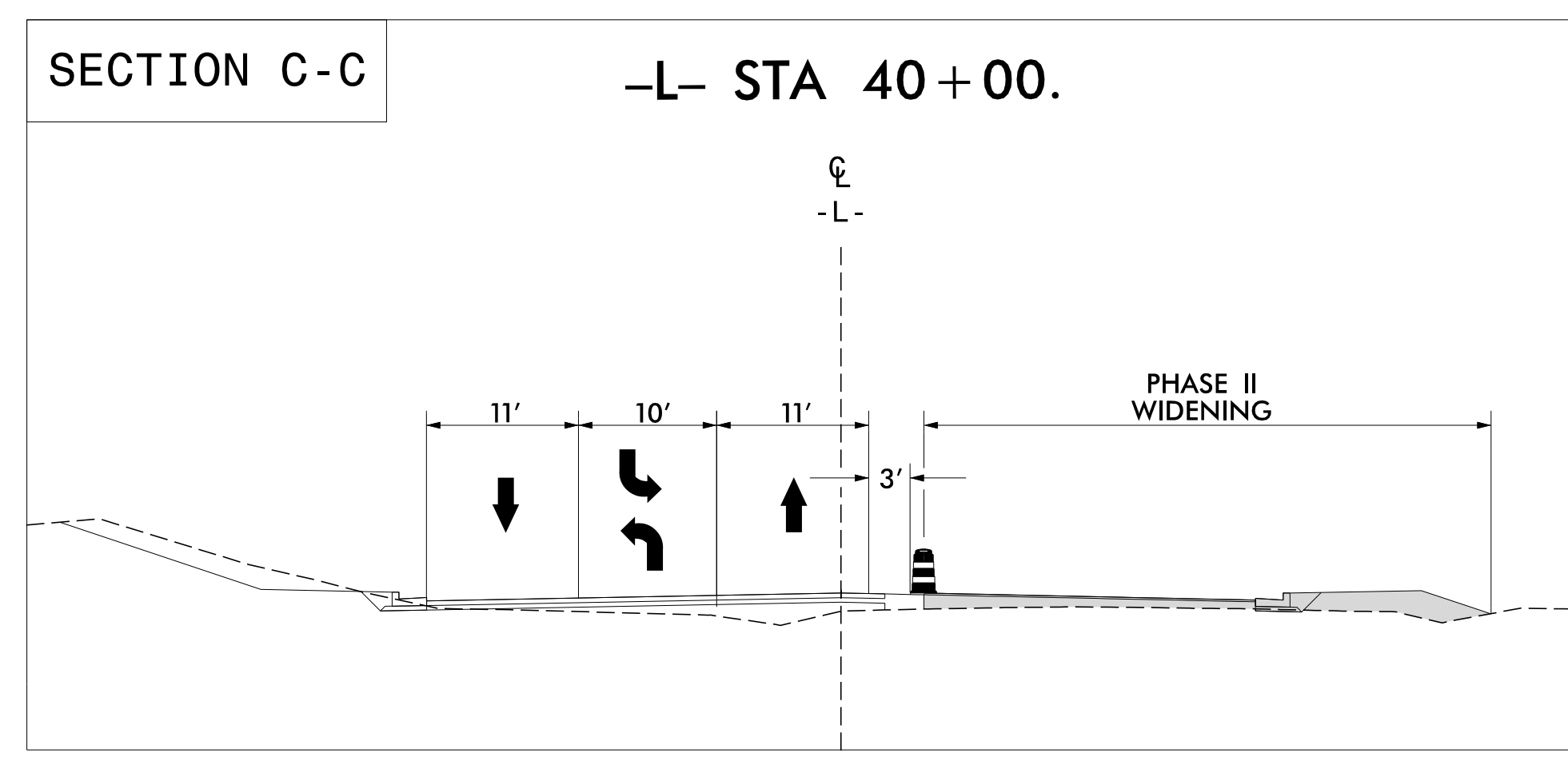
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**PHASE II
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NAD 83/2011

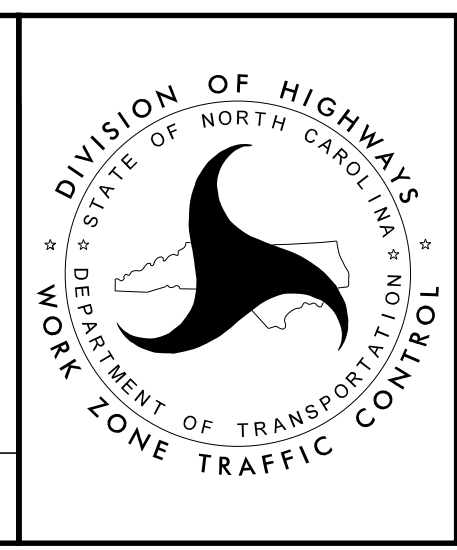


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 SEAL 31533
 JOHN G. TOWNSEND

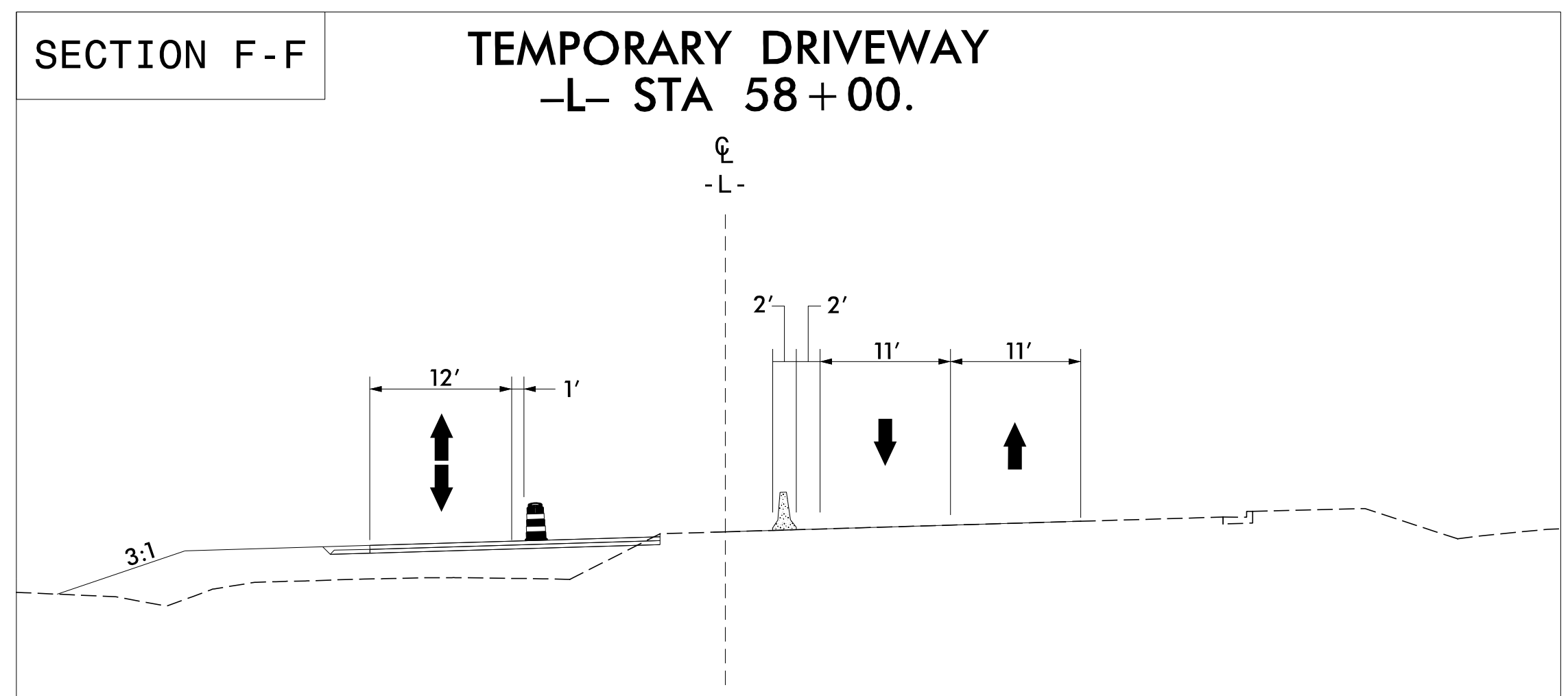
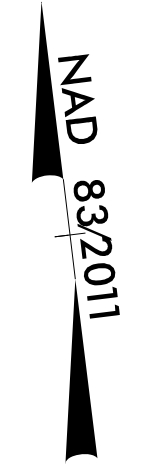
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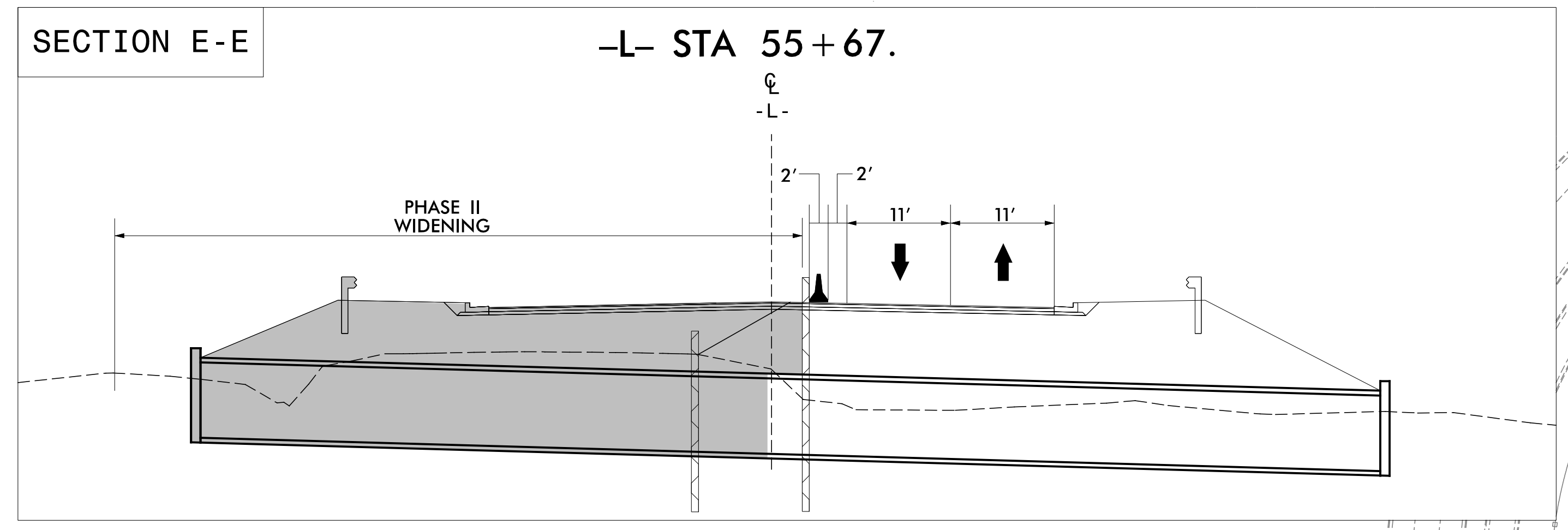
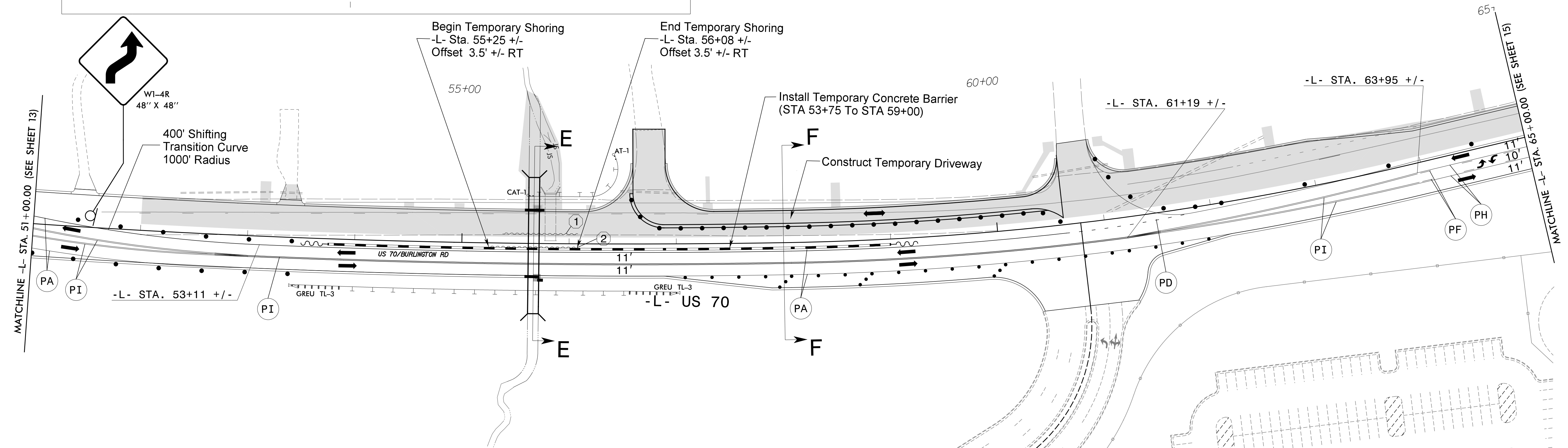


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2 QUANTITY = 728 SF
TEMPORARY SHORING
FROM STA. 55+25+/-, 3.5'+/- RT
TO STA. 56+08+/-, 3.5'+/- RT

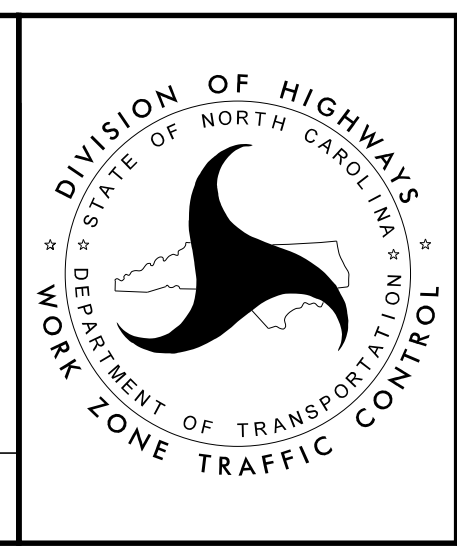
(SEE SHEET TMP-2B FOR
TEMPORARY SHORING NOTES)



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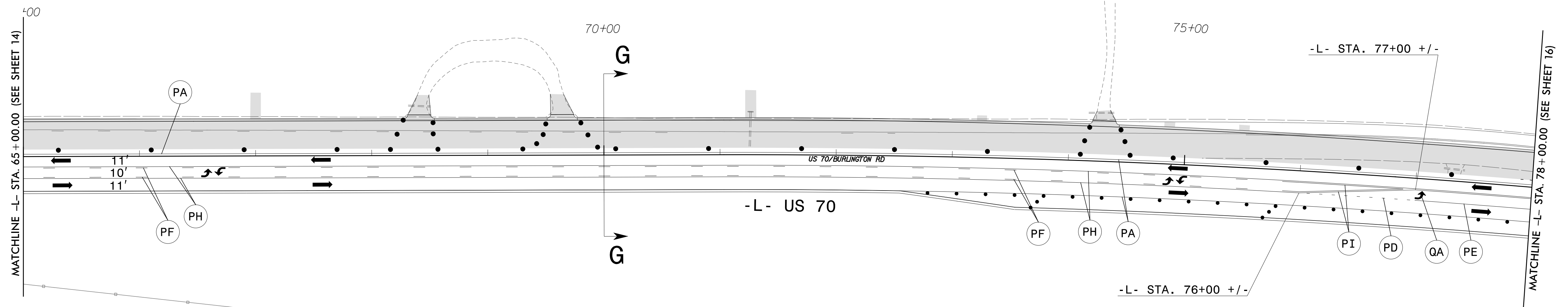
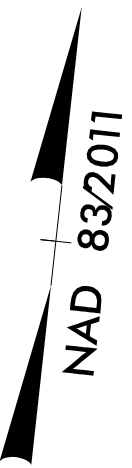


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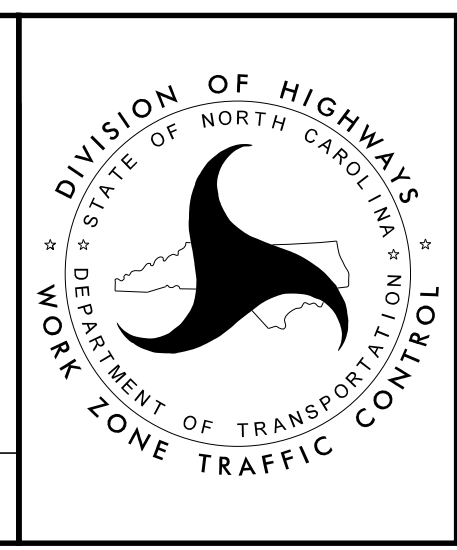


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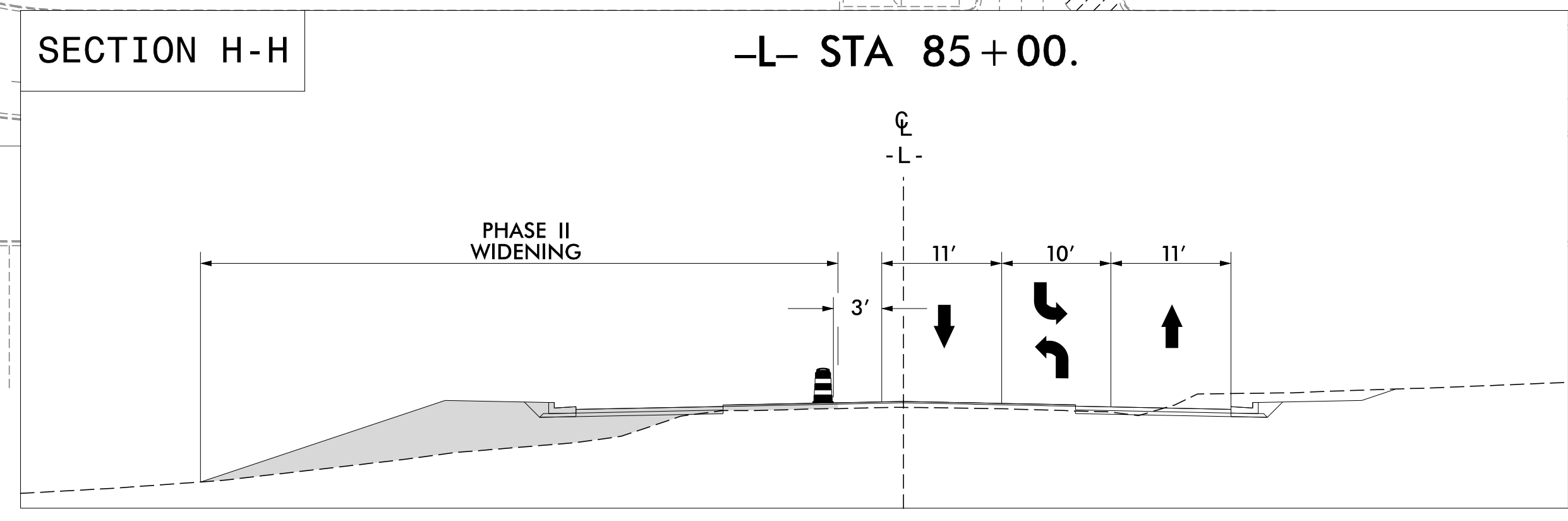
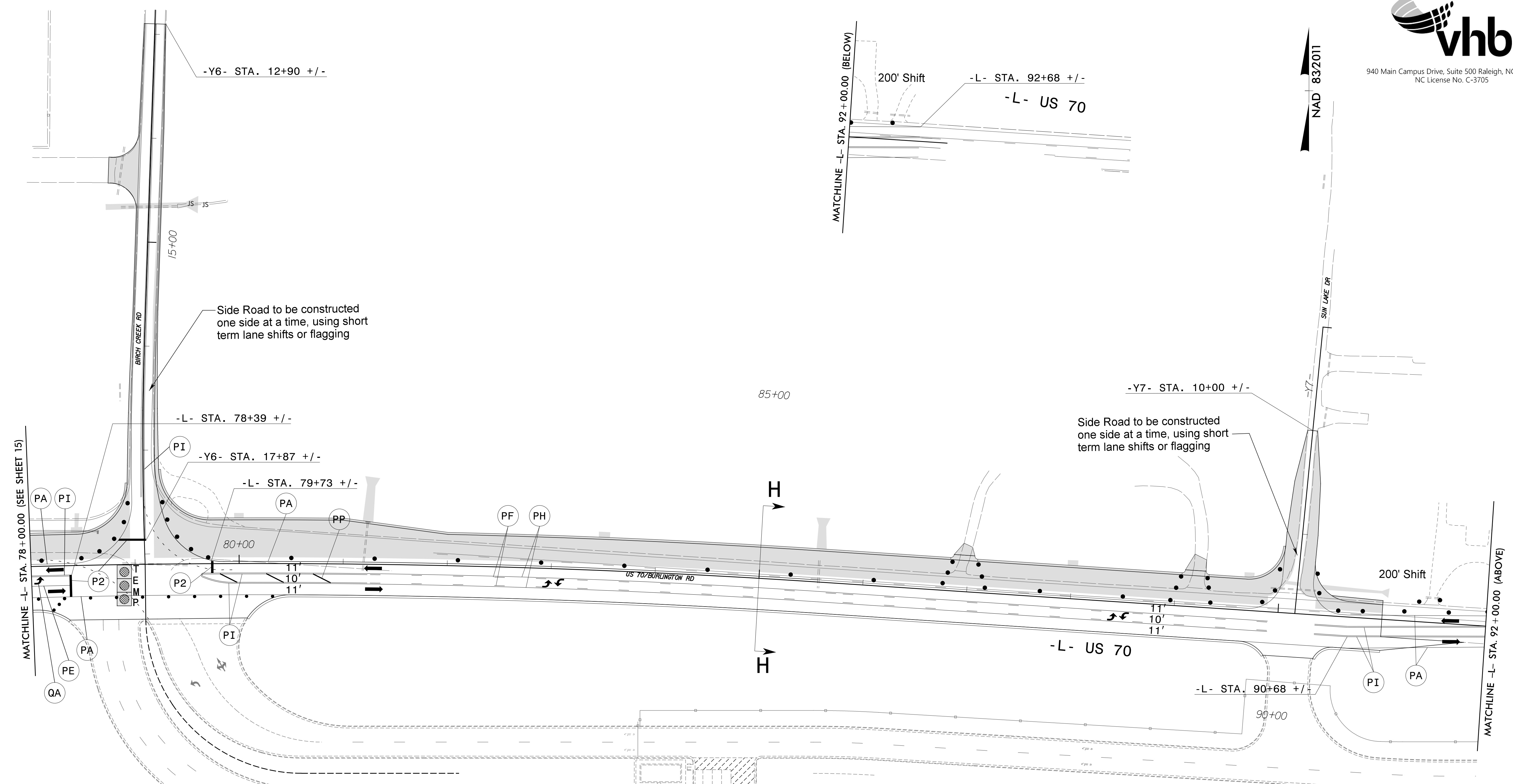
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User: jtownsend



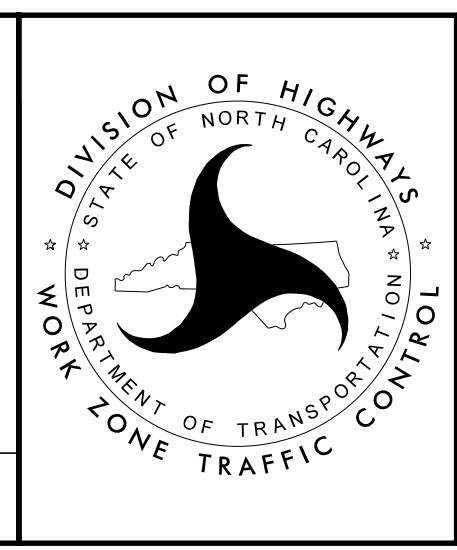
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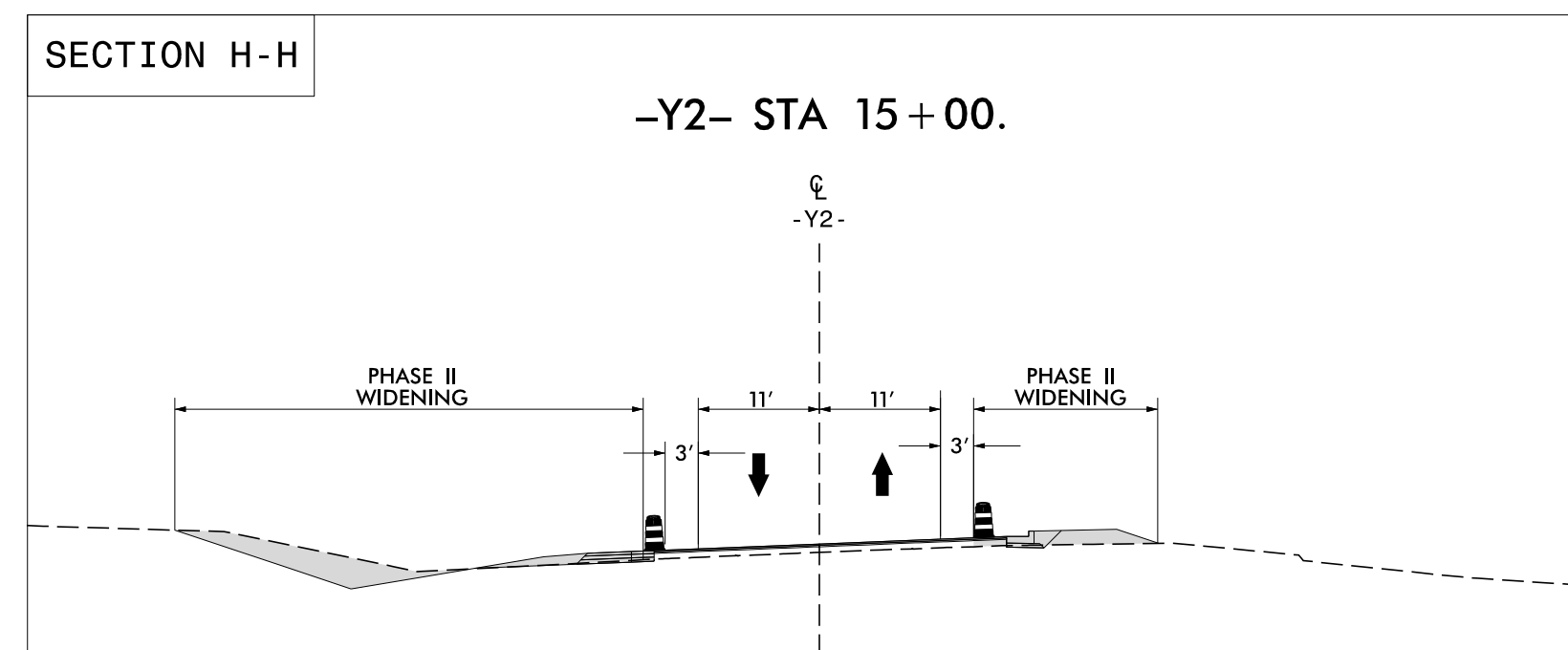
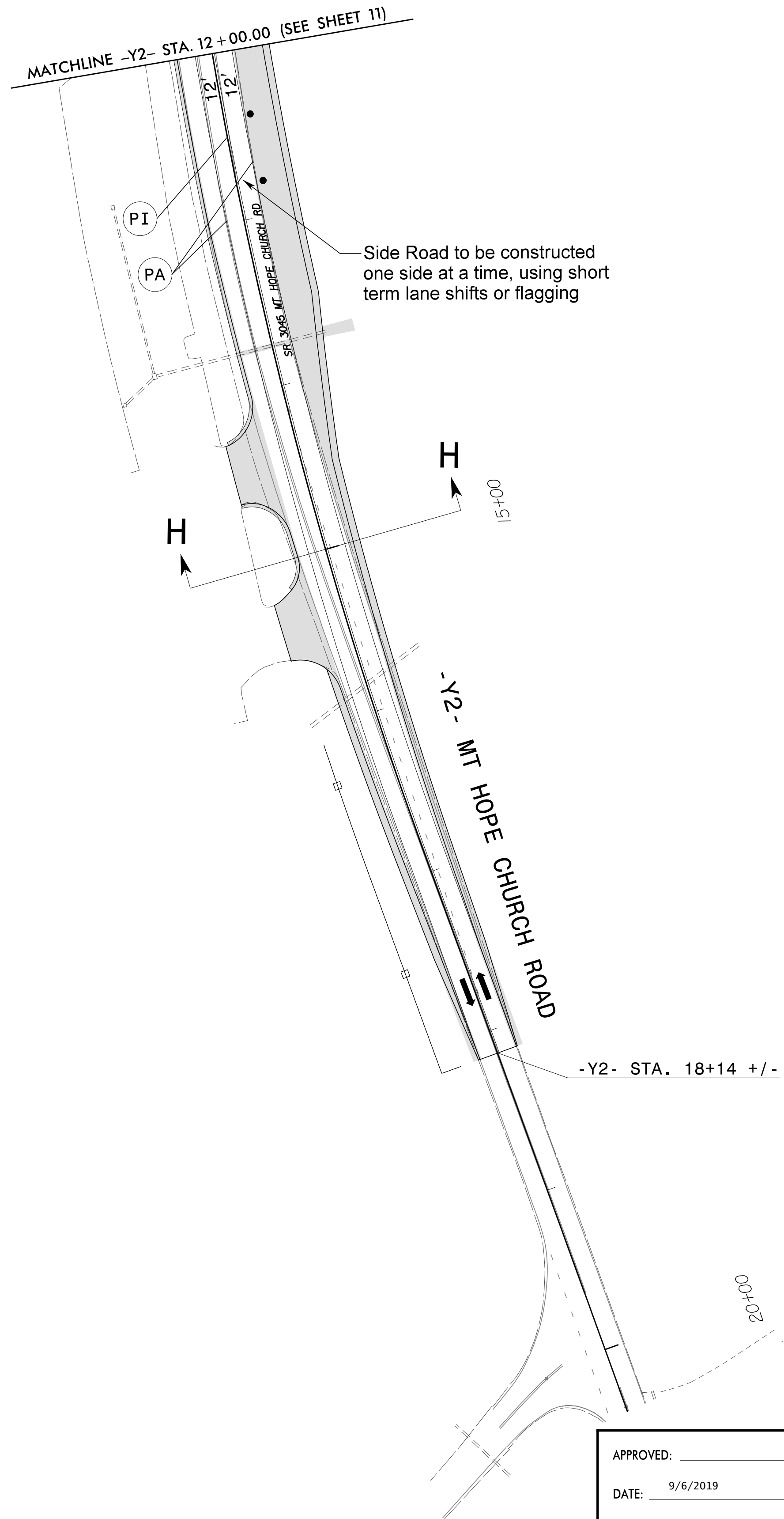
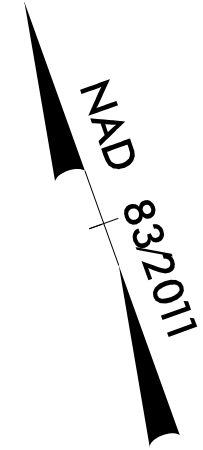
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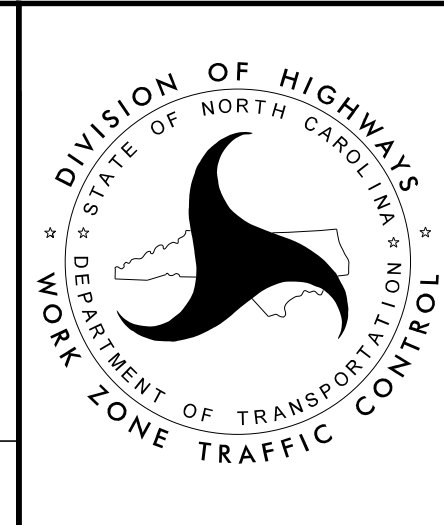
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