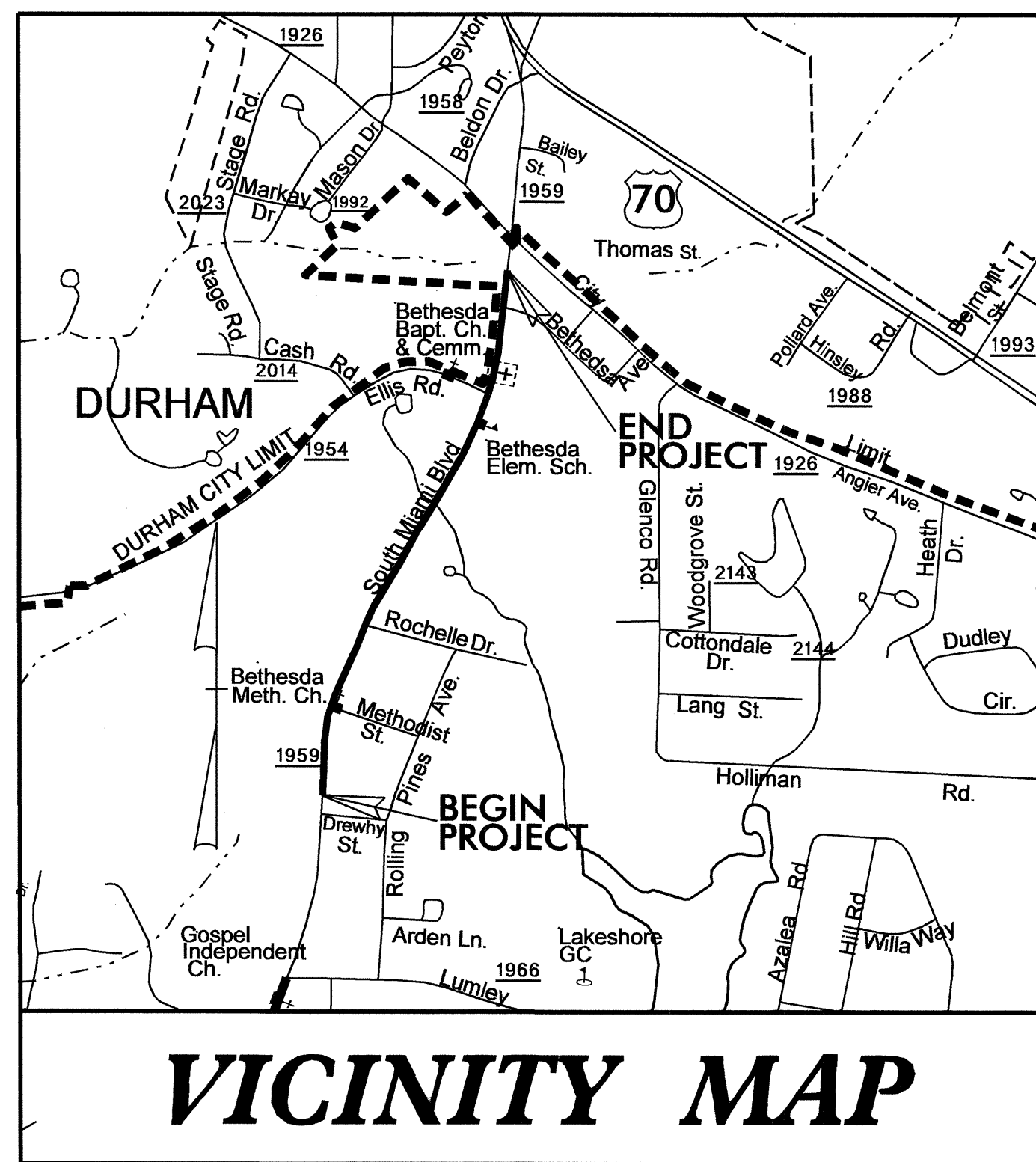
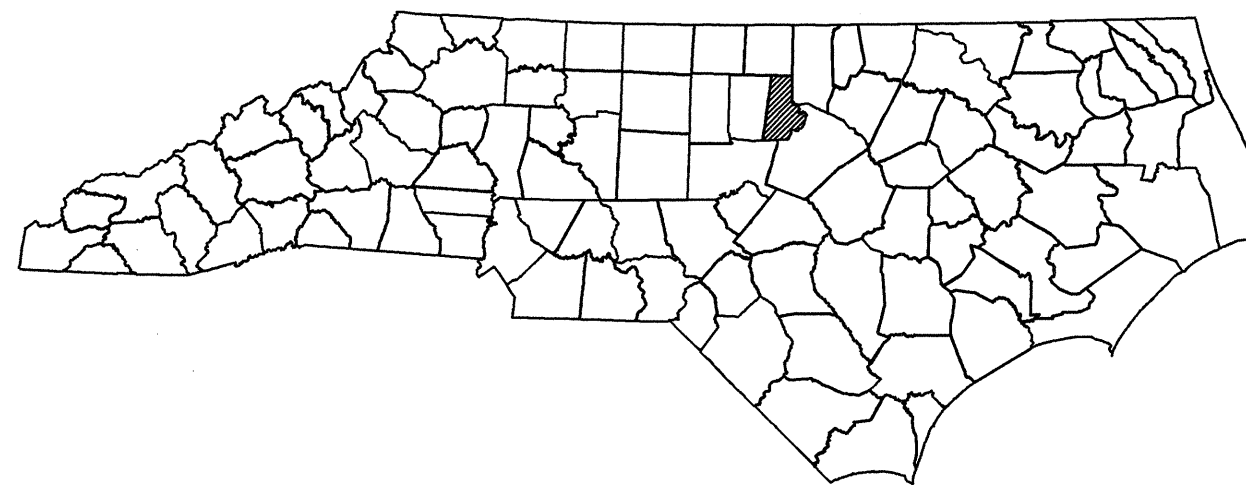


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

DURHAM COUNTY



SR 1959 (SOUTH MIAMI BLVD.) FROM SOUTH OF SR 2112 (METHODIST ST.) TO NORTH OF SR 1960 (BETHESDA AVE.)

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING SCHEDULE
TMP-2-2A	GENERAL NOTES
TMP-2B	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2C	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS
TMP-3-3A	PHASING
TMP-4-7	PHASE I DETAILS
TMP-8	PHASE I: -Y- METHODIST ST DETOUR DETAIL
TMP-9-10	PHASE I: SHORING DETAIL
TMP-11-17	PHASE II DETAILS
TMP-18-19	PHASE II: SHORING DETAIL
SD-1	DETOUR SIGN DESIGN

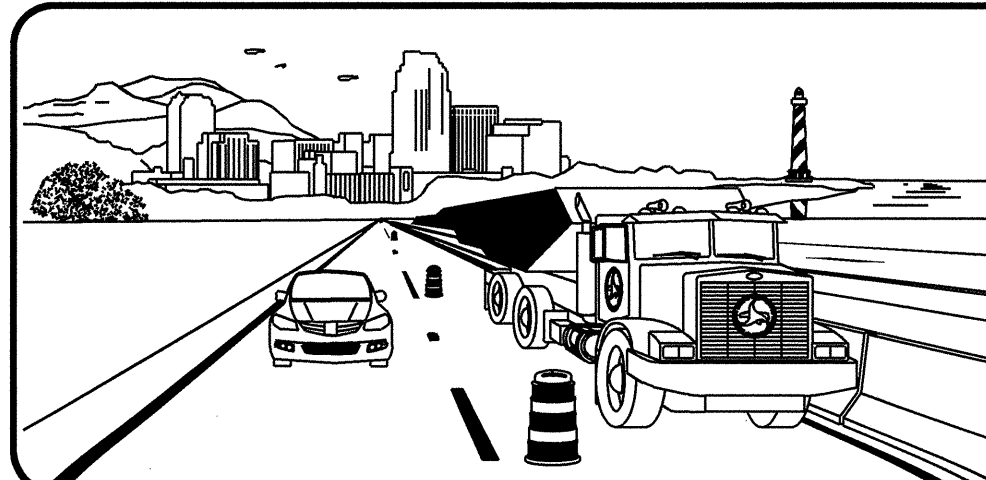
SHEET NO.

TMP-1

U-4011

TIP PROJECT:

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N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1580 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1580
1020 BIRCH RIDGE DRIVE, RALEIGH, NC 27610 (DELIVERY)
PHONE: (919) 250-4094 FAX: (919) 250-4098

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER
J. W. WOOLARD, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
L. K. DONALDSON, P.E. TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: _____
DATE: _____

J. Woolard
5/24/10

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD 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 PANELS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE 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 & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - (TEMPORARY & PERMANENT)
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS
1264.02	PLACEMENT OF OBJECT MARKERS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.

WORK AREA

REMOVAL

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

- PAINT (24")
- P4 WHITE STOPBAR
- P5 WHITE CROSSWALK
- PAINT (8")
- PV YELLOW DIAGONAL
- PAINT (4")
- PA WHITE EDGELINE
- PC 10 FT. WHITE SKIP
- PD 2 FT. WHITE MINISKIP
- PE WHITE SOLID LANE LINE
- PF 10 FT. YELLOW SKIP
- PH YELLOW SINGLE CENTER
- PI YELLOW DOUBLE CENTER

PAINT MARKING SYMBOLS

- QA LEFT TURN ARROW
- QB RIGHT TURN ARROW
- QC STRAIGHT ARROW
- QD COMBO. STRAIGHT/LEFT
- QE COMBO. STRAIGHT/RIGHT
- QF COMBO. LEFT/RIGHT

PAINT MARKING CHARACTERS

- QI ALPHANUMERIC CHAR

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APPROVED: DATE: 5/24/10		
<h3>ROADWAY STANDARD DRAWINGS & LEGEND</h3>		

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 UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
-L- MIAMI BLVD (SR 1959)	MONDAY THRU FRIDAY 7:00 AM TO 10:00 AM MONDAY THRU FRIDAY 4:00 PM TO 7:00 PM

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

ROAD NAME
-L- MIAMI BLVD (SR 1959)
-Y2- ELLIS RD

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 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.
- FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 7:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 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 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 7:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 7:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 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 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.

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.

H) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) 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.

J) 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) 100 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

K) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

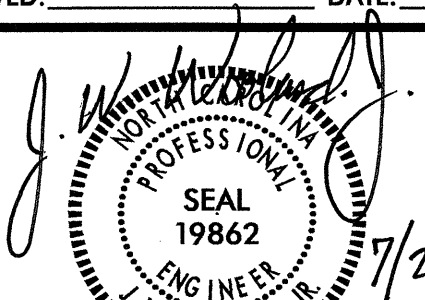
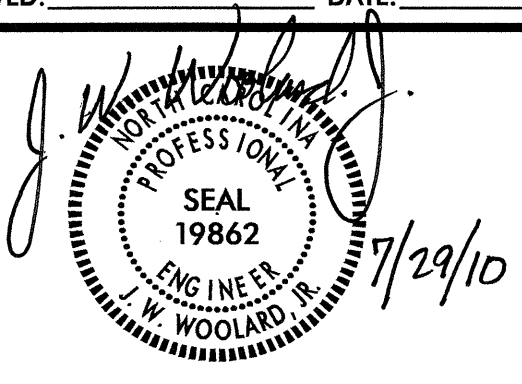
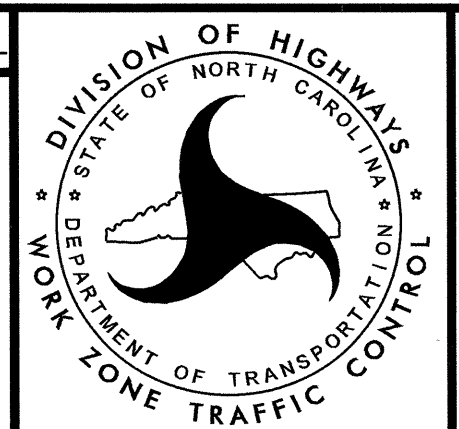
L) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

M) PROVIDE PERMANENT SIGNING.

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

O) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

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APPROVED: 	DATE: 7/29/10			<p>GENERAL NOTES</p>

TRAFFIC BARRIER

- P) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL 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 TRAFFIC CONTROL 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 TRAFFIC CONTROL 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.

- Q) 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 IMPACT 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:

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

- R) 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 WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- S) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

- T) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

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

ROAD NAME	MARKING	MARKER
-L- MIAMI BLVD (SR 1959)	PAINT	TEMPORARY RAISED
-Y2- ELLIS RD	PAINT	TEMPORARY RAISED
-Y-, -Y1-, -DR2-, - DR3-	PAINT	TEMPORARY RAISED

- V) 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.

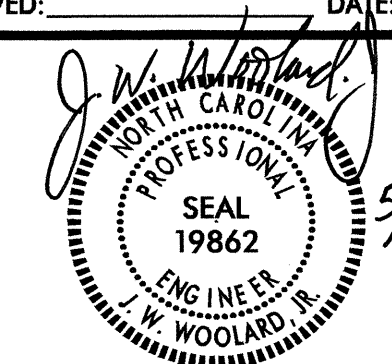

- W) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

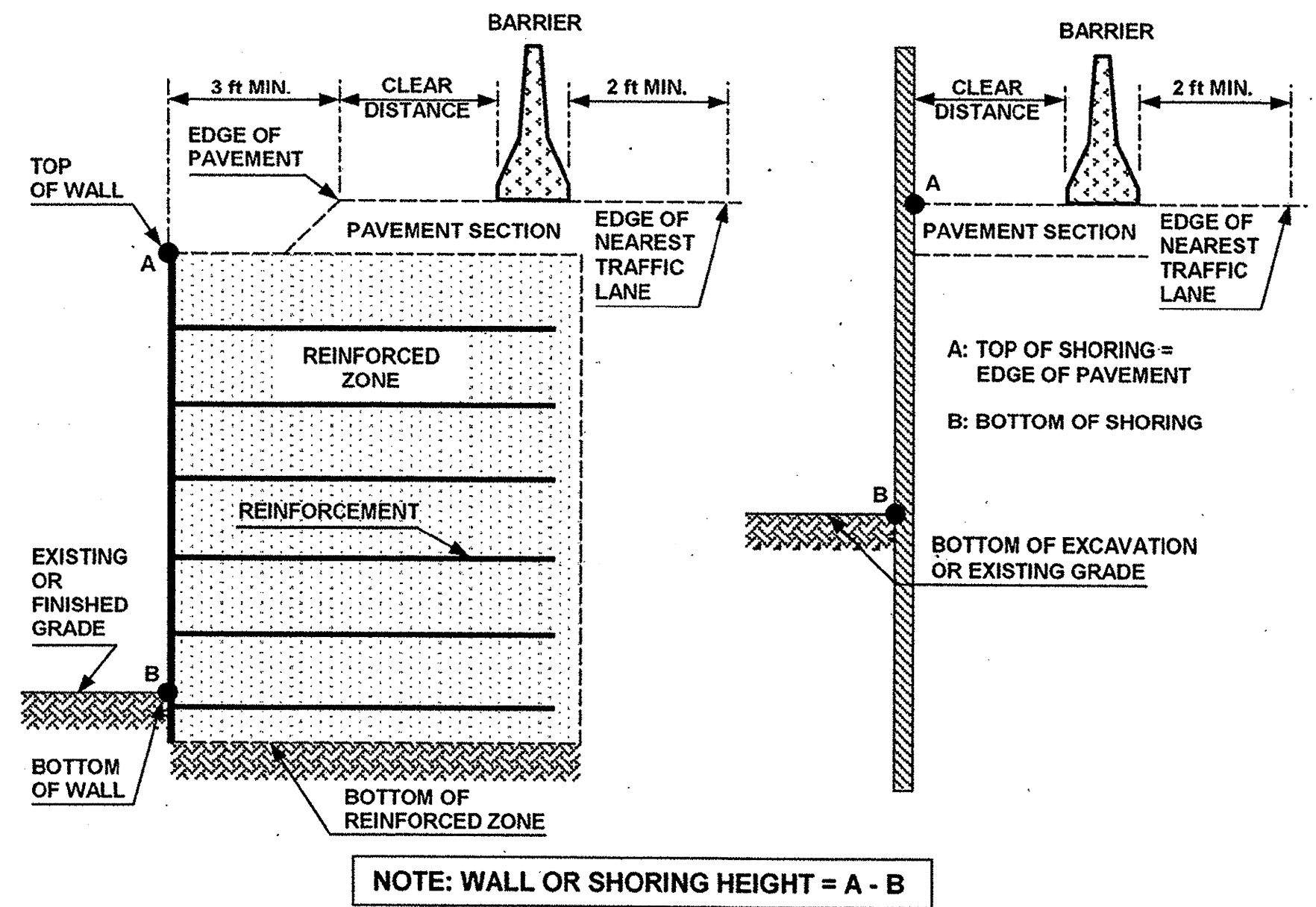
- X) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- Y) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 100 FT AND 150 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.
- Z) ALL WHEELCHAIR 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.
- AA) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

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APPROVED: 	DATE: 5/24/10		GENERAL NOTES
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NOTE: WALL OR SHORING HEIGHT = A - B

FIGURE A

NOTES

- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.
- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.
- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN 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).
- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED PCB, ANCHORED PCB OR AN OREGON BARRIER FROM THE TABLE SHOWN IN FIGURE B. FOR TRAFFIC LANES AND PORTABLE CONCRETE BARRIER LOCATED ABOVE AND BEHIND TEMPORARY SHORING, THE FOLLOWING ARE DEFINED AS:

CLEAR DISTANCE - HORIZONTAL DISTANCE FROM THE BACK FACE OF THE BARRIER TO THE EDGE OF PAVEMENT FOR TEMPORARY MSE WALL OR TO THE FACE OF NON-ANCHORED TEMPORARY SHORING AS SHOWN IN FIGURE A.

OFFSET - HORIZONTAL DISTANCE FROM THE FRONT FACE OF THE BARRIER TO CENTERLINE OF THE FURTHEST TRAFFIC LANE AS SHOWN IN FIGURE B FOR 3 TRAFFIC LANES.
- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET AN UNANCHORED PCB AGAINST THE TRAFFIC SIDE OF THE SHORING AND DESIGN SHORING FOR TRAFFIC IMPACT OR USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT" FOR THE STANDARD TEMPORARY SHORING. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- USE OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH DETAIL DRAWING AND SPECIAL PROVISION OBTAINED FROM: WORK ZONE TRAFFIC CONTROL UNIT WEB PAGE.
- UNLESS NOTED OTHERWISE ON THE PLANS, SET PORTABLE CONCRETE BARRIER WITH A MINIMUM DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A.
- FOR PORTABLE CONCRETE BARRIER ABOVE AND BEHIND TEMPORARY MSE 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.
- 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' 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 or Oregon Barrier	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB or Oregon Barrier	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

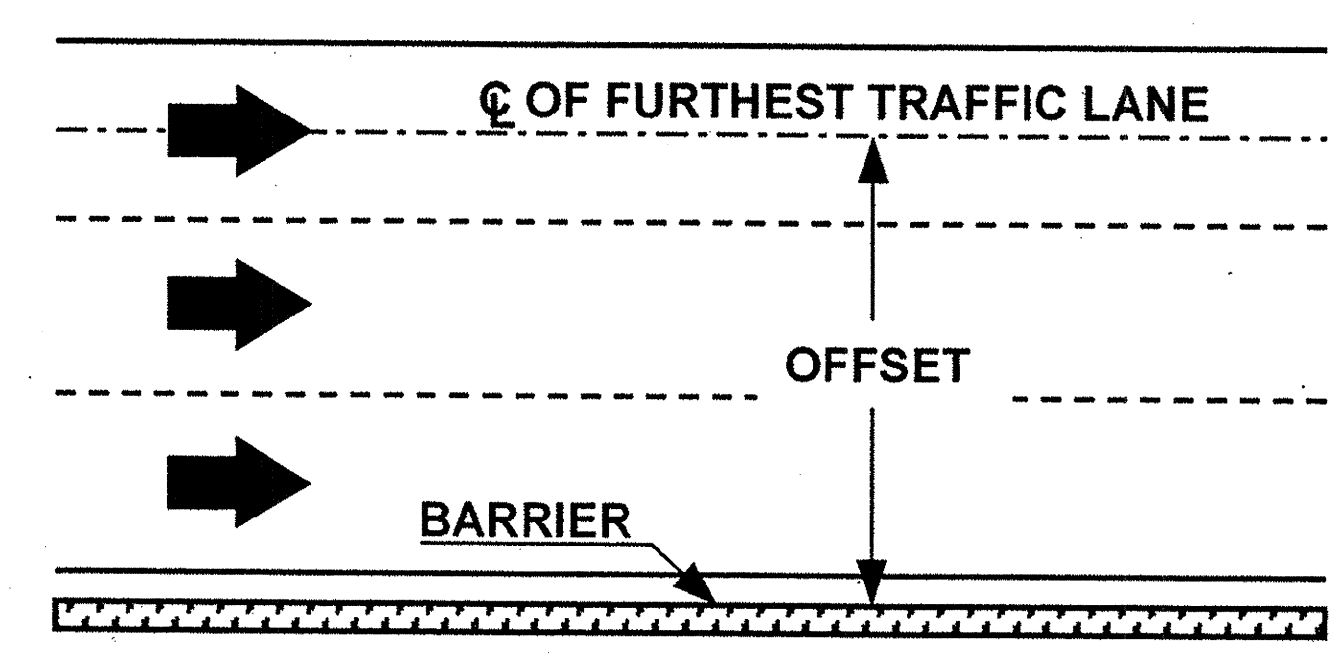


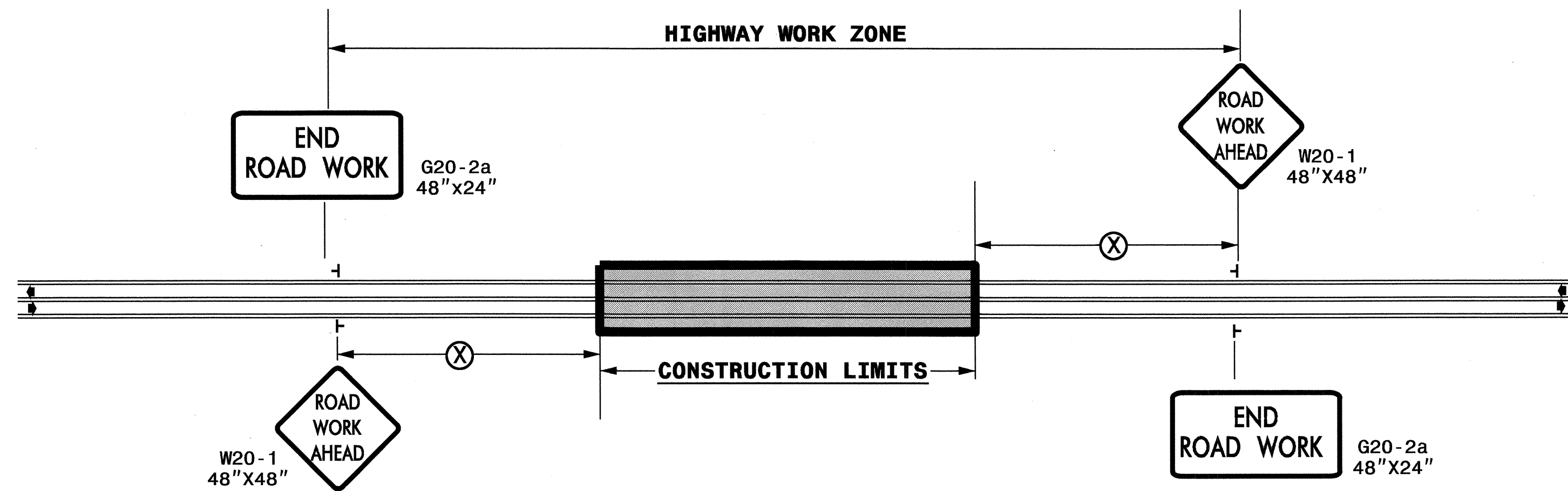
FIGURE B

APPROVED: _____	DATE: _____	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS	
SCALE: NONE	DATE: 3/07		REVISIONS
DWG. BY: JI	DESIGN BY: JI		12/08
REVIEWED BY: JI			CAD FILE

See 12/2008

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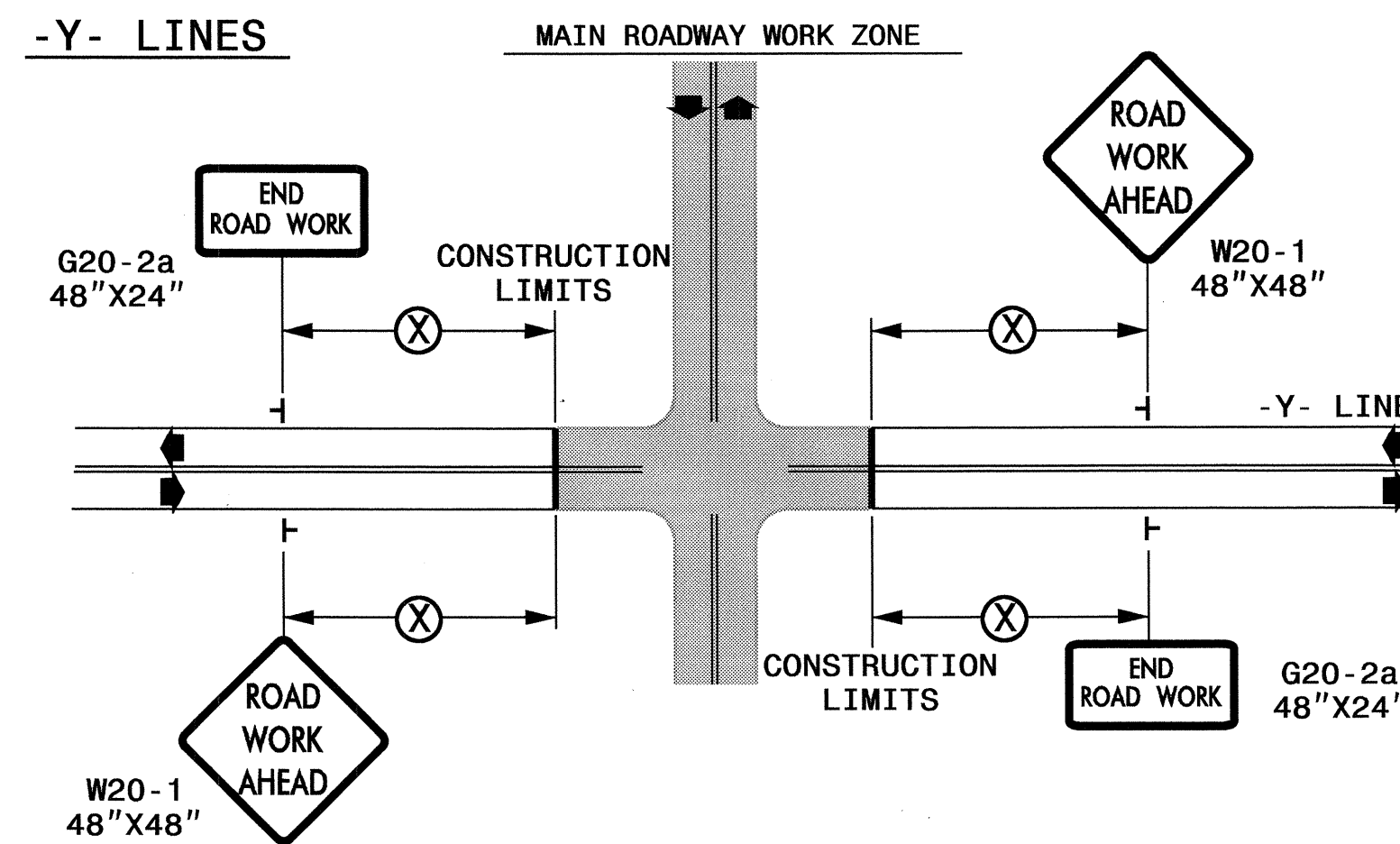
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

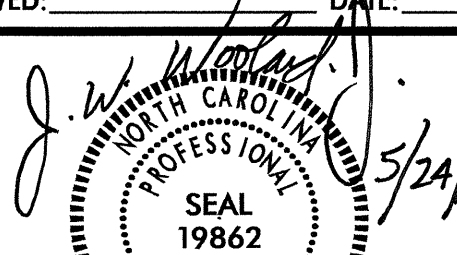
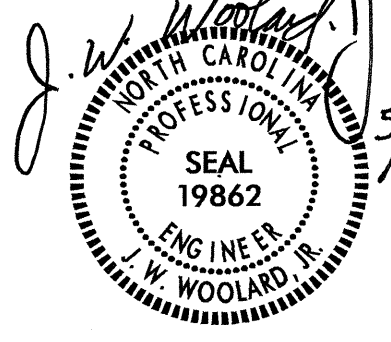
LEGEND

└ STATIONARY SIGN

◀ DIRECTION OF TRAFFIC FLOW

DETAIL DRAWING FOR
TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

SHEET 1 OF 1

APPROVED: 	DATE: 5/24/0	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
	SCALE: NONE	REVISIONS	
	DATE:	7-98	10/01
	DWG. BY:	10-98	03/04
	DESIGN BY:	01/01	11/04
REVIEWED BY:			

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NOTE: MAINTAIN TRAFFIC FOR ALL DRIVEWAYS AND SECONDARY ROADS THROUGHOUT THE PROJECT FOR THE DURATION OF THE PROJECT. MAINTAIN ALL BUS STOPS AND SLOW SCHOOL/FLASHING SIGNS THROUGHOUT THE PROJECT FOR THE DURATION OF THE PROJECT.

PHASE I

STEP 1

USING TMP-2B, PLACE WORK ZONE WARNING SIGNS.

PHASE I, STEP 2 MAY BE PERFORMED CONCURRENTLY WITH PHASE I, STEPS 3 AND 4.

PHASE I, STEP 2 SHALL BE COMPLETED WITHIN ONE WEEKEND (SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES).

STEP 2

USING RSD 1101.02 SHEET 1 OF 9, 4 OF 9 AND FLAGGERS AS NEEDED:

PLACE CONTRACTOR DESIGNED TEMPORARY SHORING NO. 1, PORTABLE CONCRETE BARRIER AND ADDITIONAL TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-9 AND TMP-10. REFER TO RSD 1101.02 SHEET 8 OF 9 FOR ADDITIONAL INFORMATION. PLACE TRAFFIC INTO THE NEW TRAFFIC PATTERN.

CONSTRUCT RIGHT SIDE OF 2 PROPOSED 30" DRAINAGE PIPES AS SHOWN IN THE CONSTRUCTION DRAWINGS BETWEEN -L- STA. 35+50 AND -L- STA. 37+50. REPLACE PAVEMENT, PAVEMENT MARKINGS (PAINT) AND PAVEMENT MARKERS.

REMOVE TEMPORARY SHORING, PORTABLE CONCRETE BARRIER AND TRAFFIC CONTROL DEVICES AND PLACE TRAFFIC BACK INTO EXISTING PATTERN.

STEP 3

USING RSD 1101.02 SHEET 3 OF 9 AS NEEDED, REMOVE EXISTING MARKINGS AND PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS FROM -L- STA. 11+97± TO -L- STA. 27+85± AS SHOWN ON TMP-4 AND TMP-5.

NOTE: THE CONTRACTOR MAY ONLY CLOSE ONE ACCESS AT A TIME FOR BETHESDA ELEMENTARY SCHOOL. COORDINATE ALL ACCESS CLOSINGS WITH BETHESDA ELEMENTARY SCHOOL AT LEAST 7 DAYS PRIOR TO THE CLOSING.

STEP 4

A) USING RSD 1101.02 SHEET 2 OF 9 AND 3 OF 9, CONSTRUCT CURB AND GUTTER, SIDEWALKS, WIDENING, MILLING AND WEDGING UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE ON THE RIGHT SIDE OF -L- FROM STA. 15+00± TO -DR2- AND FROM STA. 47+00± TO STA. 55+50± AS SHOWN ON TMP-4 THROUGH TMP-7. FOR SHALLOW UNDERCUT, REMOVE ONLY AS MUCH MATERIAL AS CAN BE REPLACED IN ONE WORK DAY. PROVIDE WEDGING AS NEEDED ON EXISTING ROADWAY TO PROVIDE A SMOOTH TRANSITION FOR EXISTING TRAFFIC. REPLACE EXISTING MARKINGS AND MARKERS, AND PLACE TEMPORARY EDGELINES AND MARKERS AS NECESSARY WHEN EXISTING CURB AND GUTTER IS REMOVED.

B) USING RSD 1101.02 SHEET 3 OF 9, AND WORKING IN A CONTINUOUS MANNER COMPLETE THE FOLLOWING:

REMOVE EXISTING PAVEMENT MARKINGS FOR CROSSWALK ON NORTH SIDE OF -Y2- ELLIS RD. CONSTRUCT PROPOSED CURB AND GUTTER, SIDEWALKS, WIDENING, MILLING AND WEDGING UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE ON THE RIGHT SIDE OF -L- FROM -DR2- TO STA. 47+00± INCLUDING TIE-INS OF -DR1- AND -DR2- AS SHOWN ON TMP-6. FOR SHALLOW UNDERCUT, REMOVE ONLY AS MUCH MATERIAL AS CAN BE REPLACED IN ONE WORK DAY. PROVIDE WEDGING AS NEEDED ON EXISTING ROADWAY TO PROVIDE A SMOOTH TRANSITION FOR EXISTING TRAFFIC. REPLACE EXISTING MARKINGS (PAINT) AND MARKERS, AND PLACE TEMPORARY EDGELINES AND MARKERS AS NECESSARY WHEN EXISTING CURB AND GUTTER IS REMOVED.

REPLACE CROSSWALK PAVEMENT MARKING AT EXISTING LOCATION AND OPEN CROSSWALK AND SIDEWALK TO PEDESTRIAN TRAFFIC FROM -DR2- AND -L- STA 47+00±.

C) USING RSD 1101.02 SHEET 1 OF 9, 3 OF 9, AND FLAGGERS AS NEEDED CONSTRUCT CURB AND GUTTER, SIDEWALKS, WIDENING, AND WEDGING AS NEEDED TO PROVIDE A SMOOTH TRANSITION FOR EXISTING TRAFFIC UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FOR -Y1- AMBASSADOR RD (SR 2011) AS SHOWN ON TMP-5 AND -Y3- BETHESDA AVE AS SHOWN ON TMP-7. FOR SHALLOW UNDERCUT, REMOVE ONLY AS MUCH MATERIAL AS CAN BE REPLACED IN ONE WORK DAY.

PHASE I, STEP 4D SHALL BE COMPLETED WITHIN ONE WEEKEND (SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES).

NOTE: PHASE I, STEP 4D. COORDINATE ROAD CLOSURE WITH BETHESDA UNITED METHODIST CHURCH TO MINIMIZE IMPACT TO TRAFFIC.

D) USING RSD 1101.02 SHEET 3 OF 9 AND TMP-8, PLACE TEMPORARY TRAFFIC CONTROL DEVICES AND CLOSE -Y- METHODIST ST. CONSTRUCT TIE-IN OF -Y- TO -L-. REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND OPEN -Y- METHODIST ST. TO TRAFFIC.

PHASE II

STEP 1

USING RSD 1101.02 SHEET 2 OF 9 AND 3 OF 9, REMOVING EXISTING MARKINGS AS NECESSARY, PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -L-, -Y-, -Y1-, AND -Y2- AS SHOWN ON TMP-11 THROUGH TMP-14. CONSTRUCT MONOLITHIC ISLAND AT -DR2- AS SHOWN ON TMP-13.

NOTE: PHASE II, STEP 2 MAY BE PERFORMED CONCURRENTLY WITH PHASE II, STEP 3.

PHASE II, STEP 2 SHALL BE COMPLETED WITHIN ONE WEEKEND (SEE SPECIAL PROVISIONS FOR LIQUIDATED DAMAGES).

STEP 2

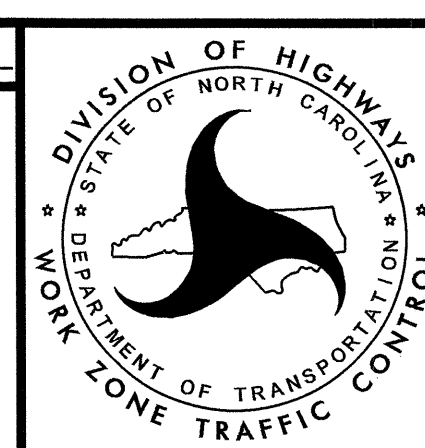
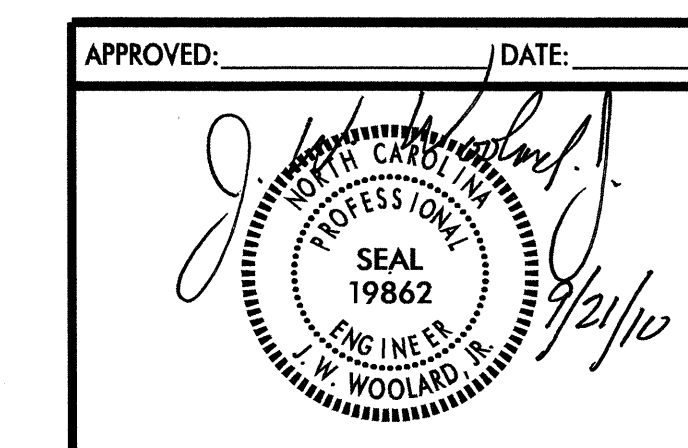
USING RSD 1101.02 SHEET 1 OF 9, 4 OF 9 AND FLAGGERS AS NEEDED:

PLACE CONTRACTOR DESIGNED TEMPORARY SHORING NO. 2, PORTABLE CONCRETE BARRIER AND ADDITIONAL TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-18 AND TMP-19. REFER TO RSD 1101.02 SHEET 8 OF 9 FOR ADDITIONAL INFORMATION. PLACE TRAFFIC INTO THE NEW TRAFFIC PATTERN.

CONSTRUCT LEFT SIDE OF 2 PROPOSED 30" DRAINAGE PIPES AS SHOWN IN THE CONSTRUCTION DRAWINGS BETWEEN -L- STA. 35+50 AND -L- STA. 37+50.

REMOVE TEMPORARY SHORING, PORTABLE CONCRETE BARRIER AND TRAFFIC CONTROL DEVICES AND PLACE TRAFFIC INTO EXISTING PATTERNS.

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PHASING

PHASE II

STEP 3

USING RSD 1101.02 SHEET 2 OF 9 AND 3 OF 9 AS NEEDED, BEGIN CONSTRUCTION OF CURB AND GUTTER, SIDEWALKS, WIDENING, MILLING AND WEDGING UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE ON THE LEFT SIDE OF -L- FROM STA. 15+00± TO STA. 45+40± AS SHOWN ON TMP-11 THROUGH TMP-13. FOR SHALLOW UNDERCUT, REMOVE ONLY AS MUCH MATERIAL AS CAN BE REPLACED IN ONE WORK DAY. PROVIDE WEDGING AS NEEDED ON EXISTING ROADWAY TO PROVIDE A SMOOTH TRANSITION FOR EXISTING TRAFFIC. CLOSE EXISTING SIDEWALK ON LEFT SIDE OF -L- AS SHOWN ON TMP-13.

USING RSD 1101.02 SHEET 3 OF 9 AS NEEDED, WIDEN -Y2- ELLIS RD FROM EDGE OF EXISTING ROADWAY TO 31' LEFT OF -Y2- FROM STA. 10+44± TO STA. 12+71± UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE. CONSTRUCT WEDGING OF EXISTING -Y2- ELLIS RD AS NECESSARY TO PROVIDE A SMOOTH TRANSITION FOR EXISTING TRAFFIC. MAINTAIN EXISTING SIDEWALK ON LEFT SIDE OF -Y2- FOR PEDESTRIAN TRAFFIC. PLACE TEMPORARY PAVEMENT MARKINGS AND PAVEMENT MARKERS ON -Y2- ELLIS RD AS SHOWN ON TMP-13 AND REMOVE CONFLICTING EXISTING MARKINGS.

NOTE: COMPLETE PHASE II STEPS 4 THROUGH 8A WORKING IN A CONTINUOUS MANNER TO MINIMIZE IMPACT TO PEDESTRIAN TRAFFIC ON -Y2- ELLIS RD.

STEP 4

USING RSD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, PLACE WATER FILLED BARRIER AS SHOWN ON TMP-15 TO PROVIDE A DETOUR FOR PEDESTRIAN TRAFFIC. CLOSE EXISTING SIDEWALK AND PLACE PEDESTRIAN TRAFFIC INTO NEW PATTERN.

STEP 5

USING RSD 1101.02 SHEET 1 OF 9, 3 OF 9 AND FLAGGERS AS NEEDED, CONSTRUCT LEFT SIDE OF -Y2- ELLIS RD FROM -L- STA 45+40 TO -Y2- STA. 15+15 INCLUDING NEW SIDEWALK. CONSTRUCT WEDGING AS NEEDED TO PROVIDE A SMOOTH TRANSITION TO MAINTAIN EXISTING TRAFFIC. PLACE PEDESTRIAN TRAFFIC INTO FINAL PATTERN AND REMOVE WATER FILLED BARRIER AND DEVICES USED FOR TEMPORARY PEDESTRIAN DETOUR.

STEP 6

USING RSD 1101.02 SHEET 1 OF 9, 3 OF 9 AND FLAGGERS AS NEEDED, PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -Y2- ELLIS RD AS SHOWN ON TMP-16 AND PLACE TRAFFIC INTO NEW PATTERN. REMOVE EXISTING CROSSWALK CROSSING -L- ON NORTH SIDE OF -Y2- ELLIS RD AND PLACE TEMPORARY CROSSWALK MARKINGS AS SHOWN ON TMP-16.

STEP 7

USING RSD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, PLACE WATER FILLED BARRIER AS SHOWN ON TMP-16 TO PROVIDE A PEDESTRIAN DETOUR. CLOSE EXISTING SIDEWALK ALONG -L- NORTH OF -Y2- ELLIS RD AS SHOWN ON TMP-16 AND TMP-17.

STEP 8

- A) USING RSD 1101.02 SHEET 1 OF 9 AND FLAGGERS AS NEEDED, CONSTRUCT RIGHT SIDE OF -Y2- ELLIS RD AND LEFT SIDE OF -L- FROM -Y2- TO -L- STA. 47+25 TO EXISTING ROADWAY AS SHOWN ON TMP-16. OPEN NEW SIDEWALK TO PEDESTRIAN TRAFFIC ON NORTH SIDE OF -Y2- AND REMOVE WATER FILLED BARRIER USED FOR PEDESTRIAN DETOUR WHEN WORK IS COMPLETED ON -Y2-.
- B) USING RSD 1101.02 SHEET 3 OF 9 AS NEEDED, BEGIN CONSTRUCTION OF CURB AND GUTTER, SIDEWALKS, WIDENING, MILLING AND WEDGING UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE ON THE LEFT SIDE OF -L- FROM -L- STA. 47+25 TO STA. -L- 54+40.

STEP 9

COMPLETE CONSTRUCTION BEGUN IN PHASE II STEP 3 AND STEP 8B UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE AND OPEN SIDEWALK ON LEFT SIDE OF -L- TO PEDESTRIAN TRAFFIC.

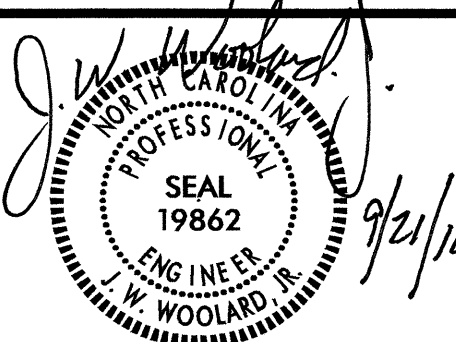
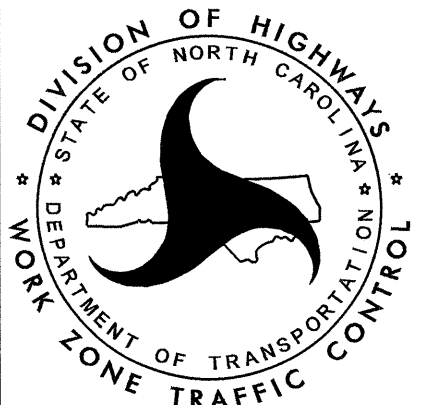
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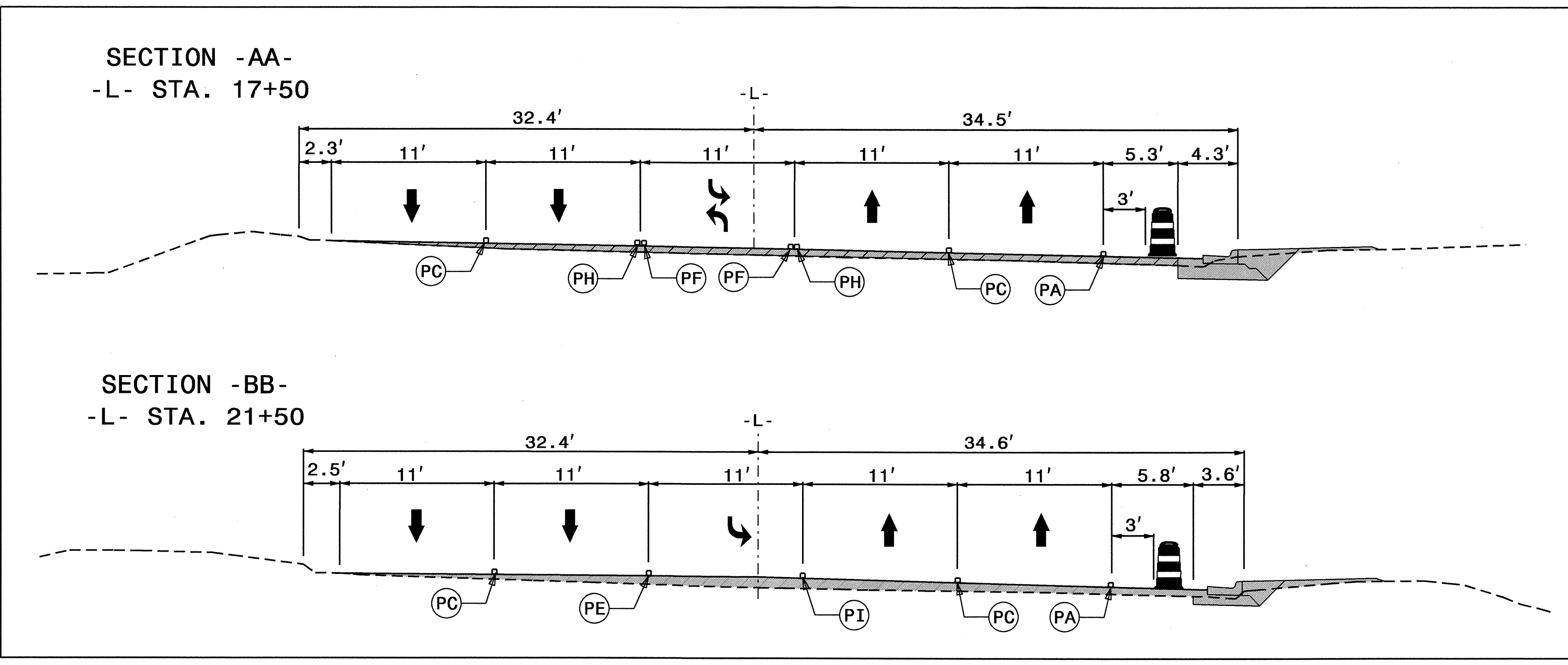
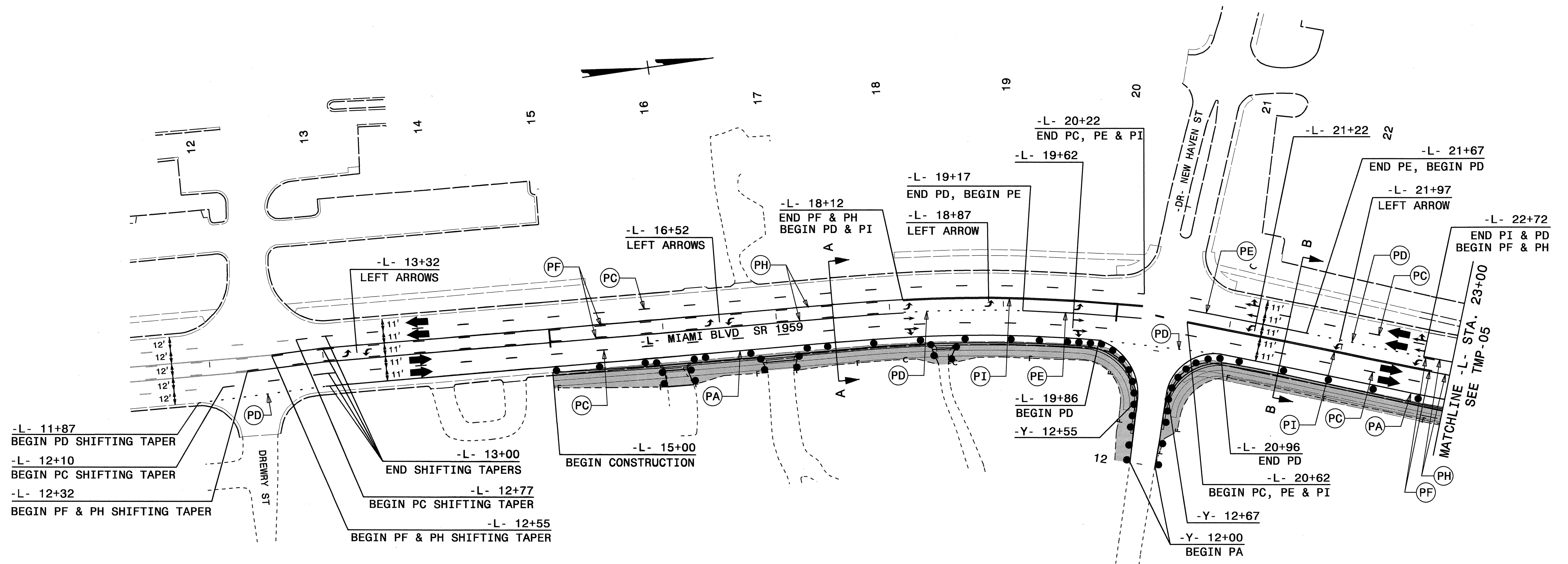
STEP 10

USING RSD 1101.02 SHEET 1 OF 9, 2 OF 9 AND 3 OF 9 AND FLAGGERS AS NEEDED, PLACE FINAL LAYER OF SURFACE COURSE, AND FINAL PAVEMENT MARKINGS AND MARKERS AS SHOWN ON FINAL PAVEMENT MARKING PLANS.

REMOVE ALL ADVANCE WARNING SIGNS AND TEMPORARY TRAFFIC CONTROL DEVICES.

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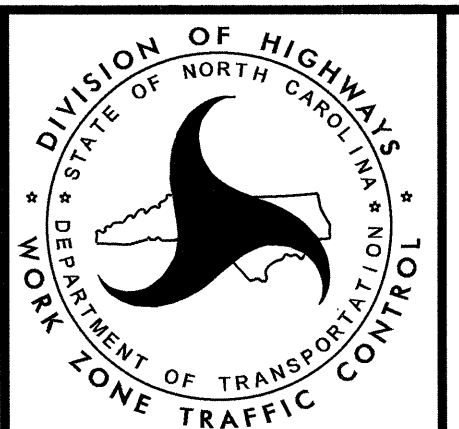


WEDGING

SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

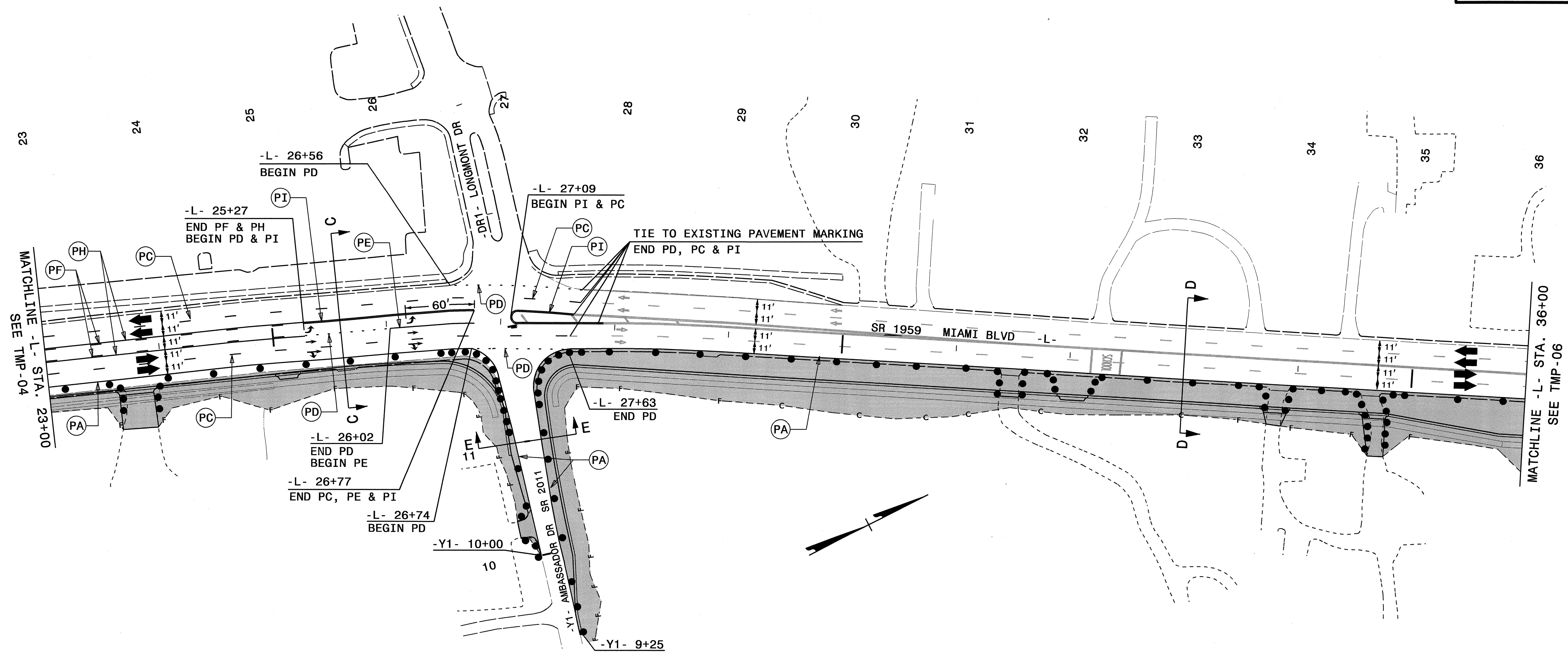
*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *J.W. Woodard* DATE: 5/24/00
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 19862
 J.W. WOODARD

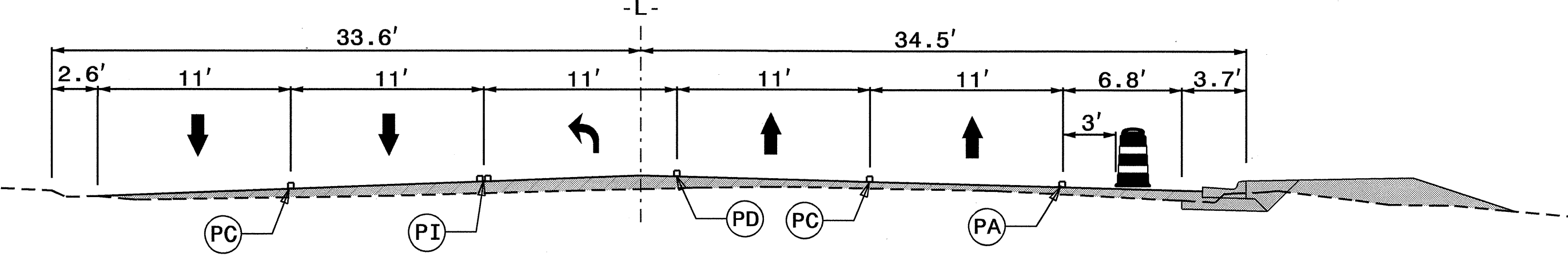


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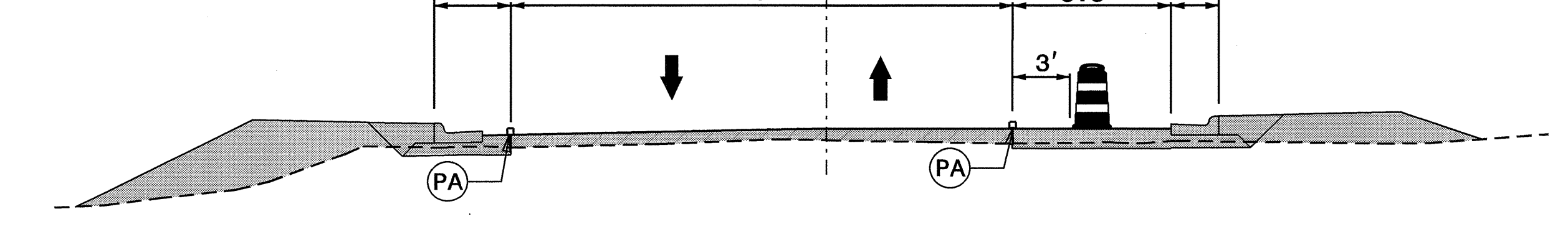
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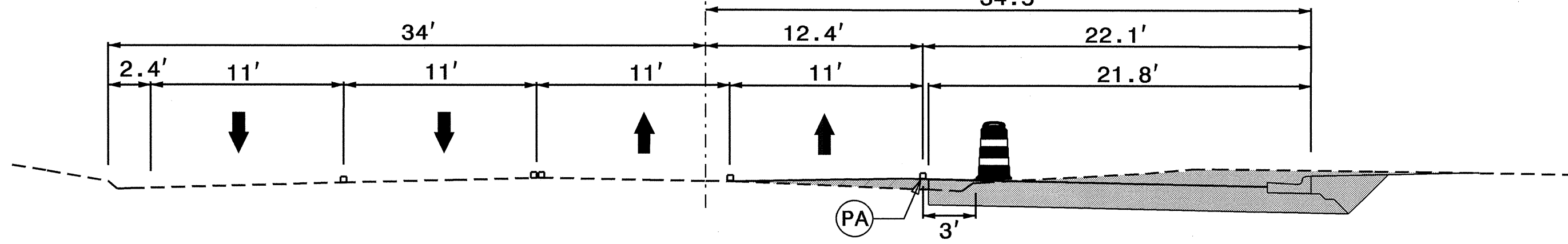
SECTION -CC-
-L- STA. 25+50



SECTION -EE-
-Y1- STA. 11+25



SECTION -DD-
-L- STA. 33+00



WEDGING
SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

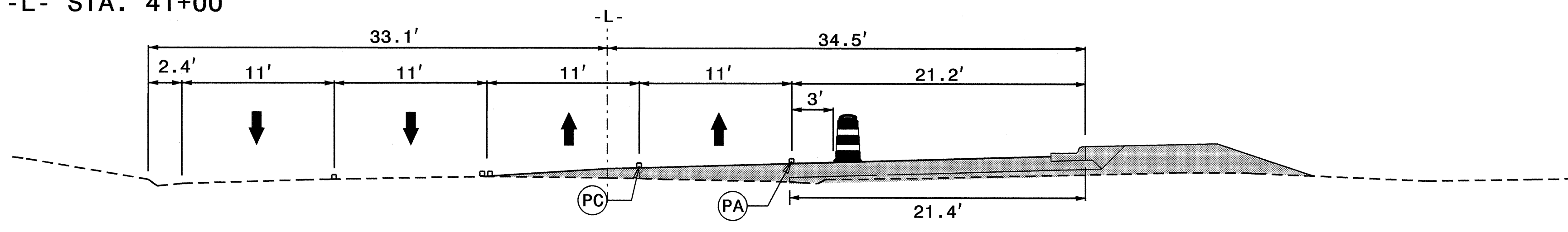
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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

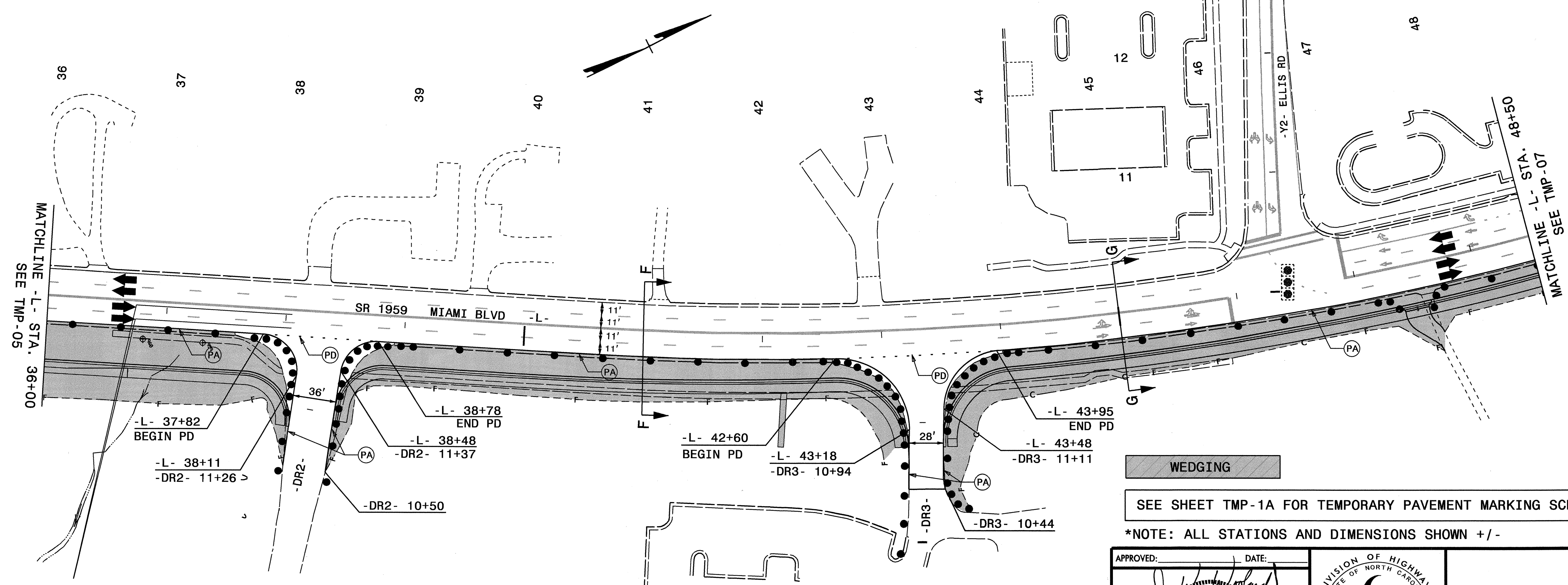
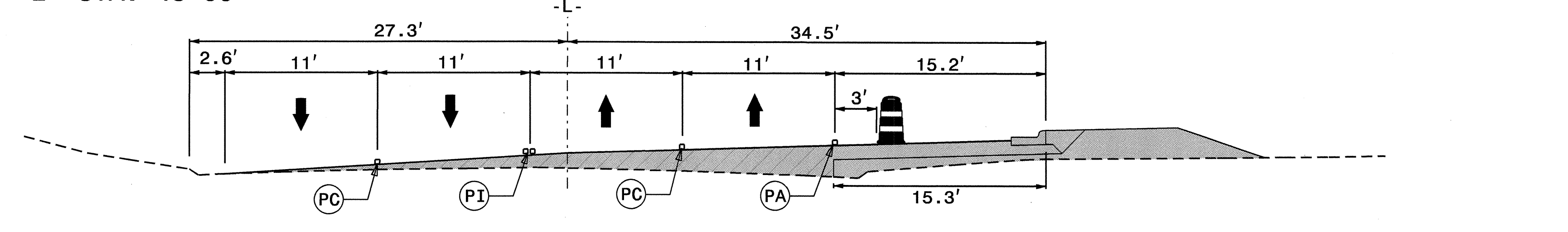
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SECTION -FF-
-L- STA. 41+00



SECTION -GG-
-L- STA. 45+00



WEDGING

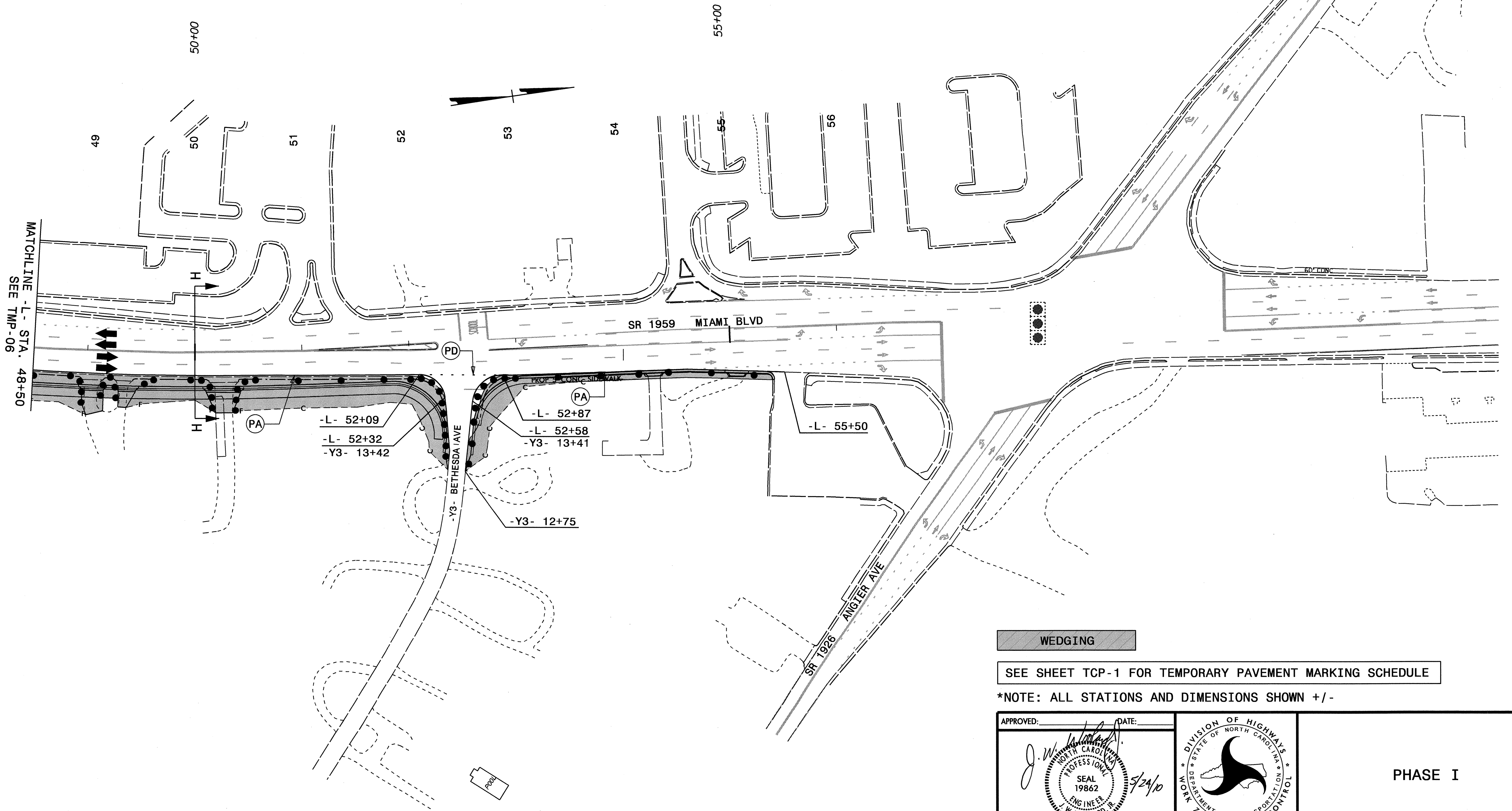
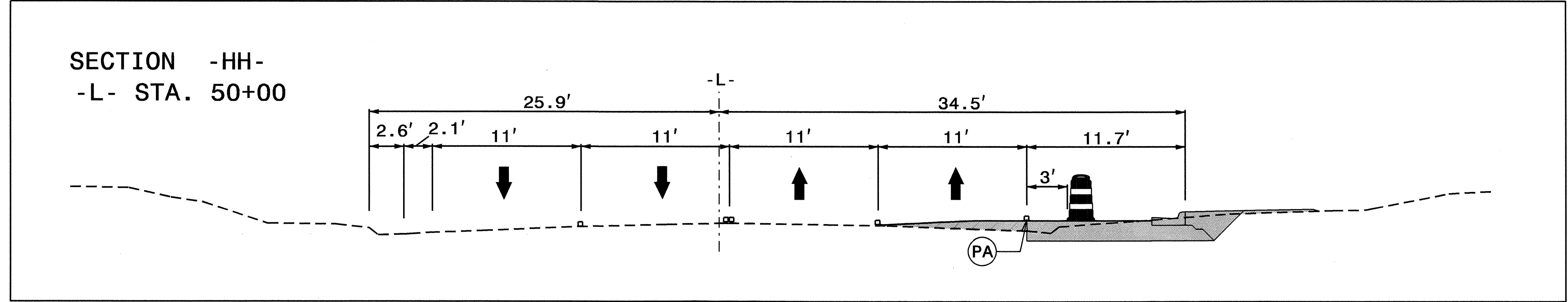
SEE SHEET TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE

*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

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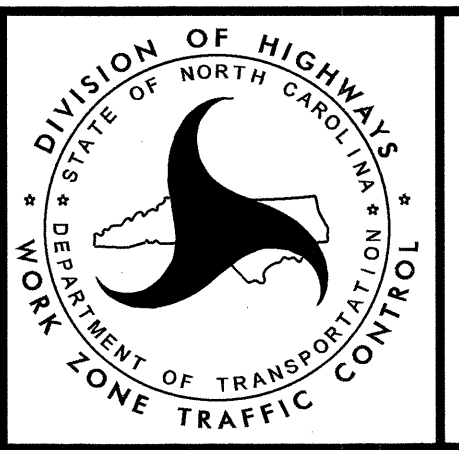
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SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

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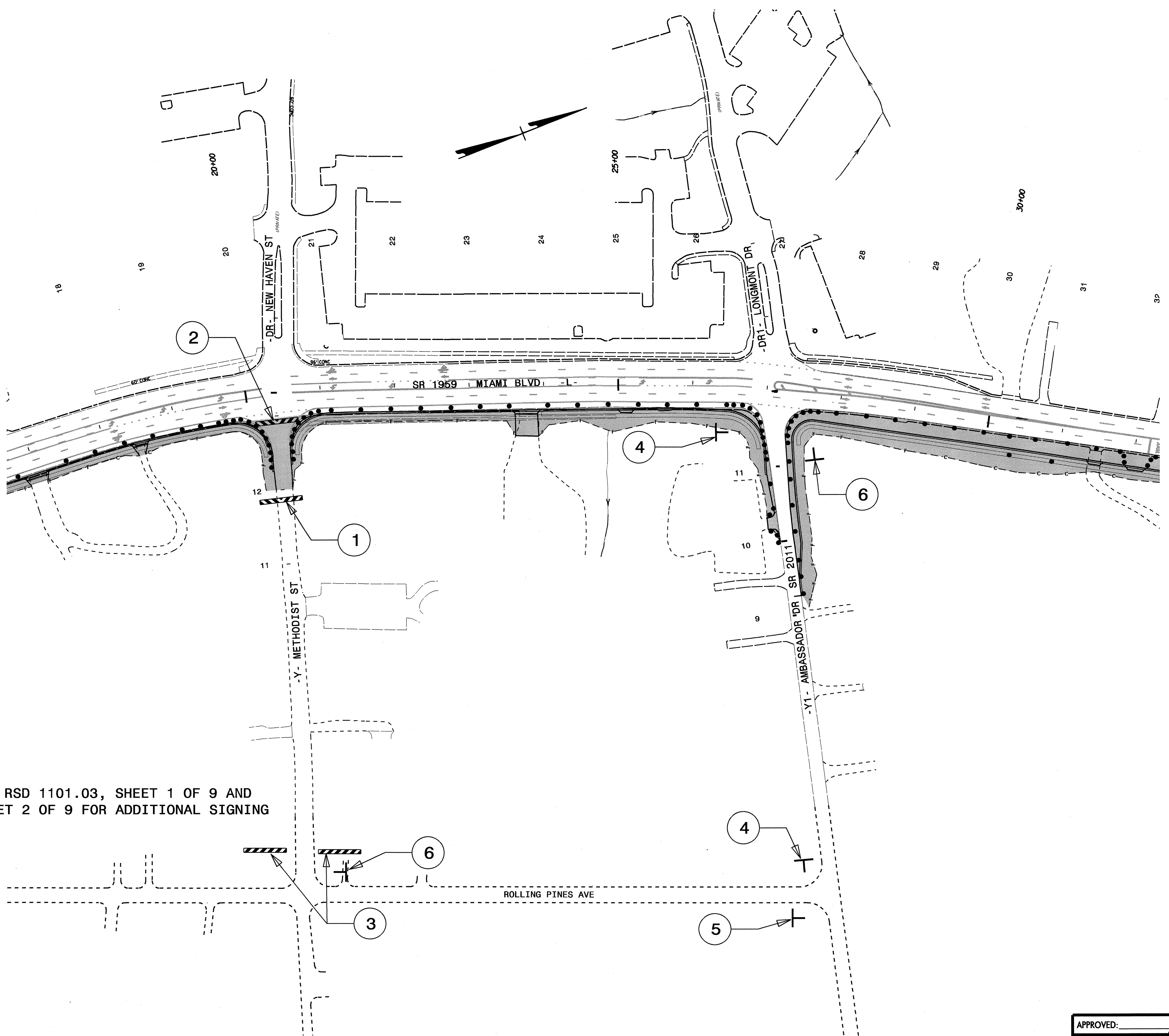
APPROVED: *J. W. Woolard* DATE: 5/24/10

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ENGINEER
W. WOOLARD

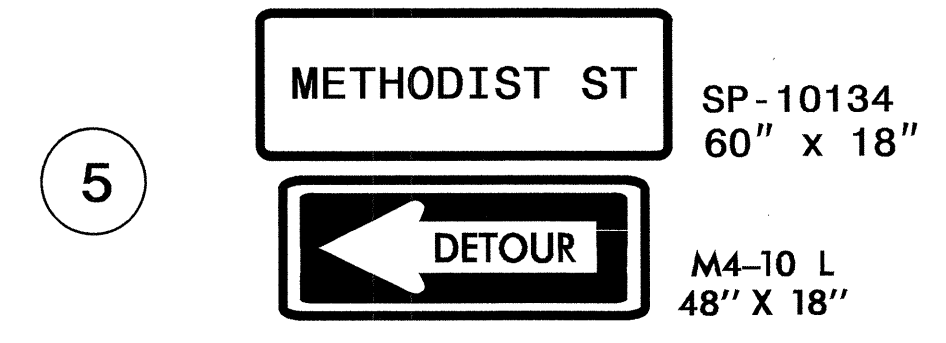
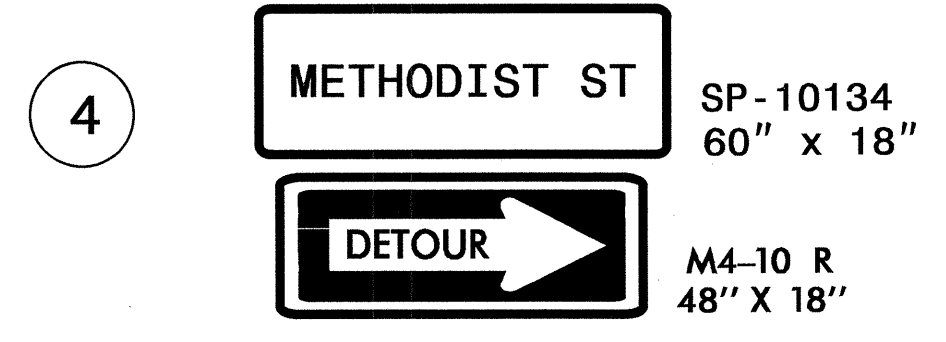
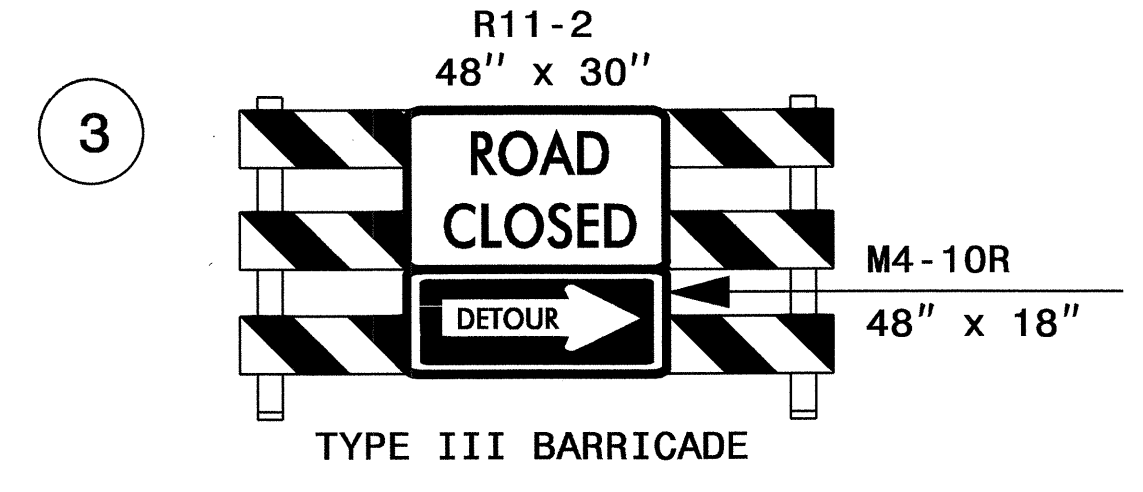
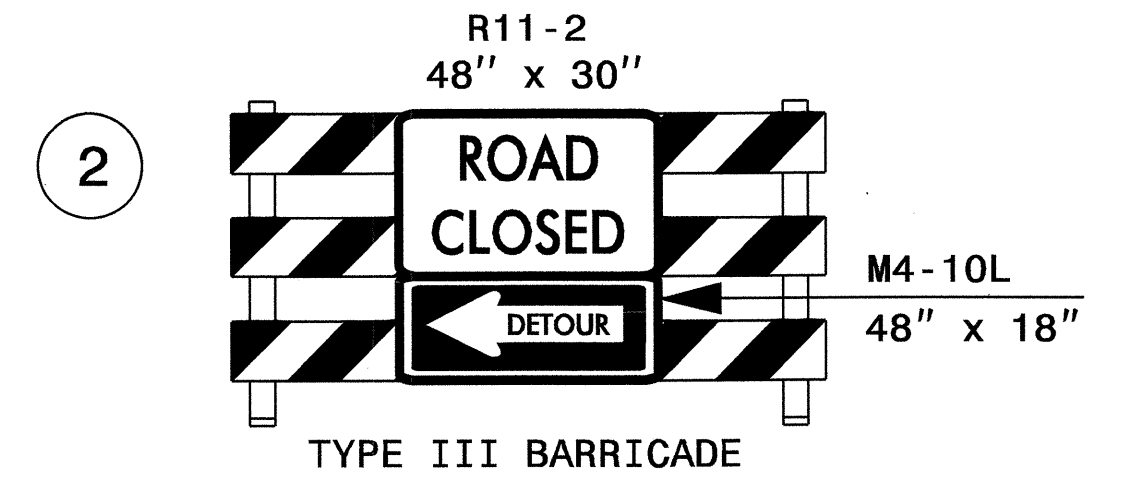
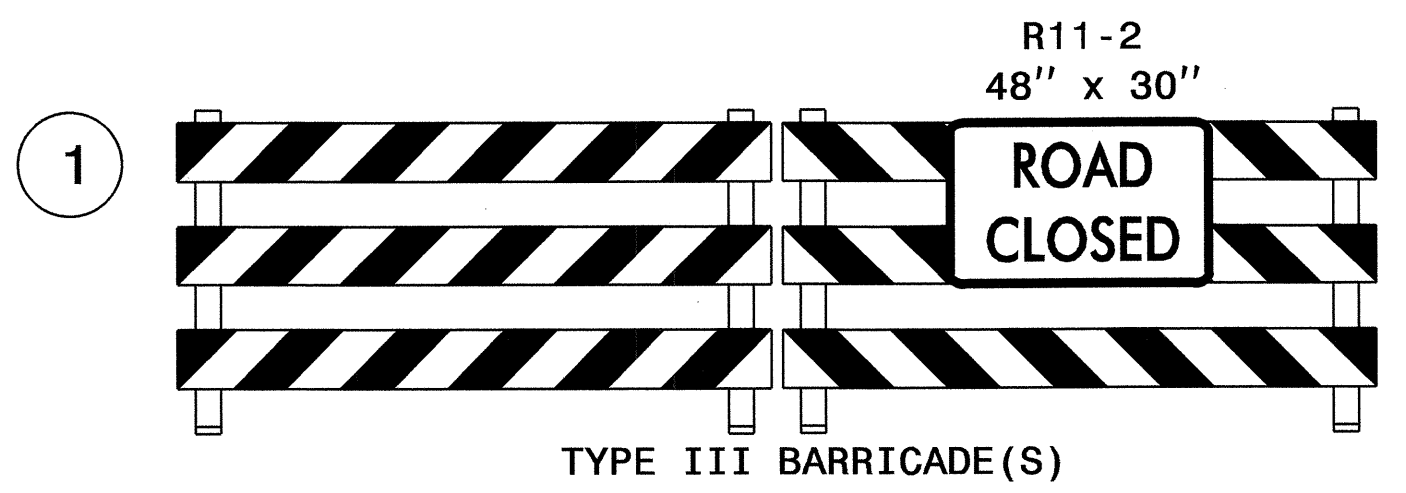


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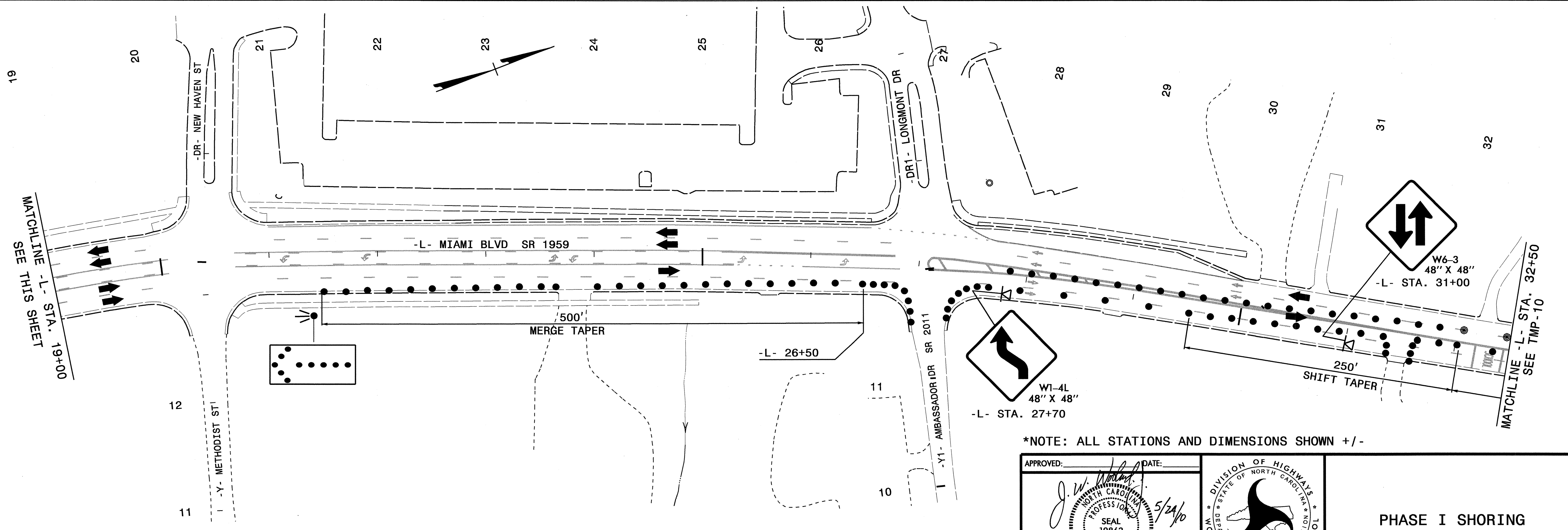
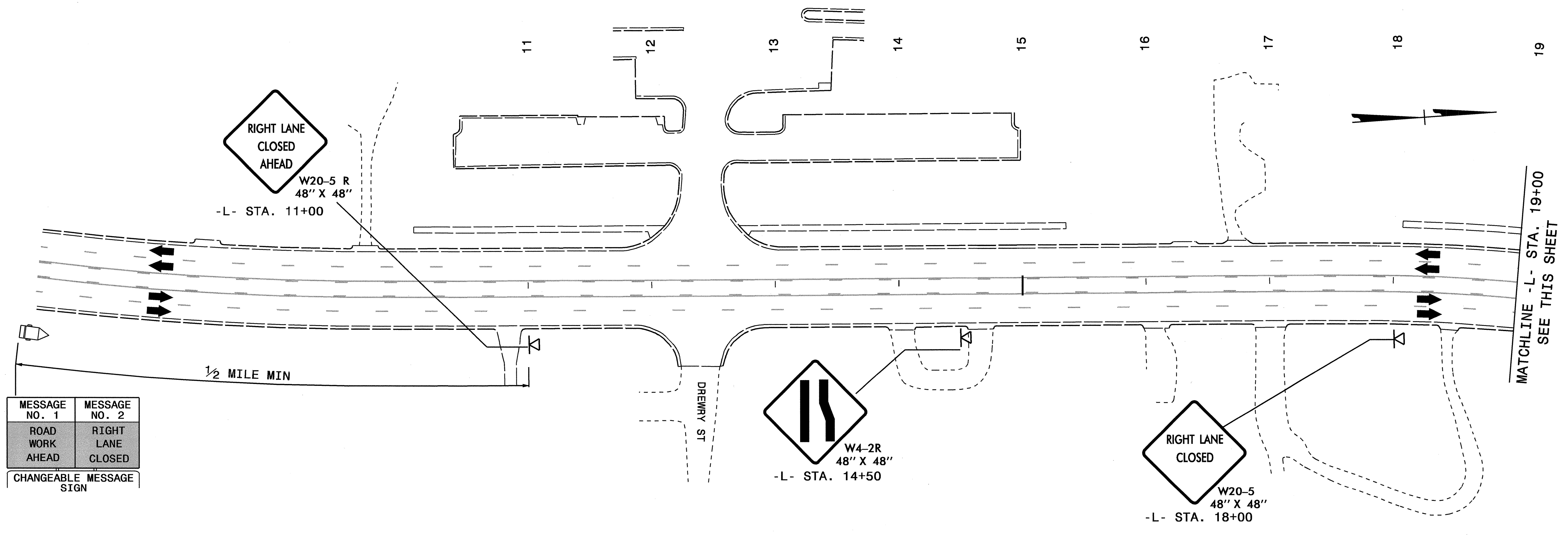


SEE RSD 1101.03, SHEET 1 OF 9 AND SHEET 2 OF 9 FOR ADDITIONAL SIGNING



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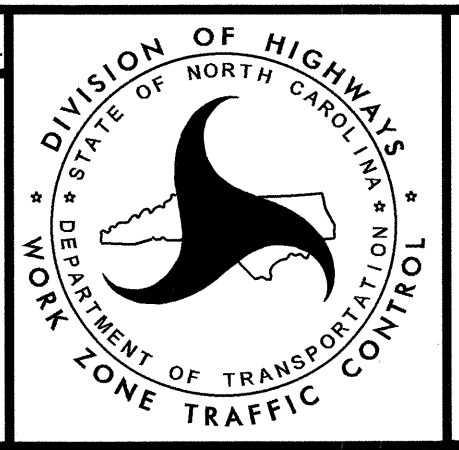
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*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

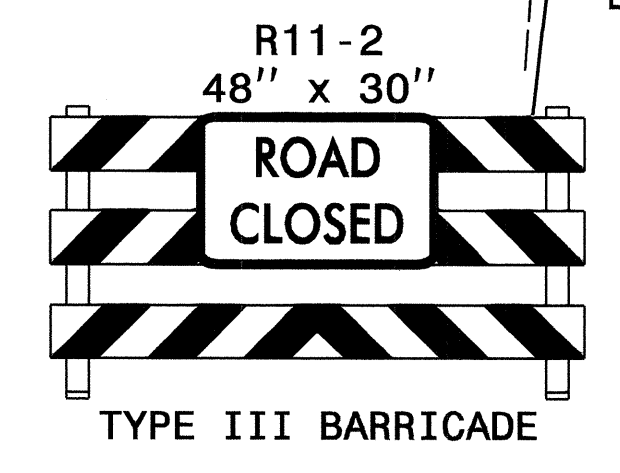
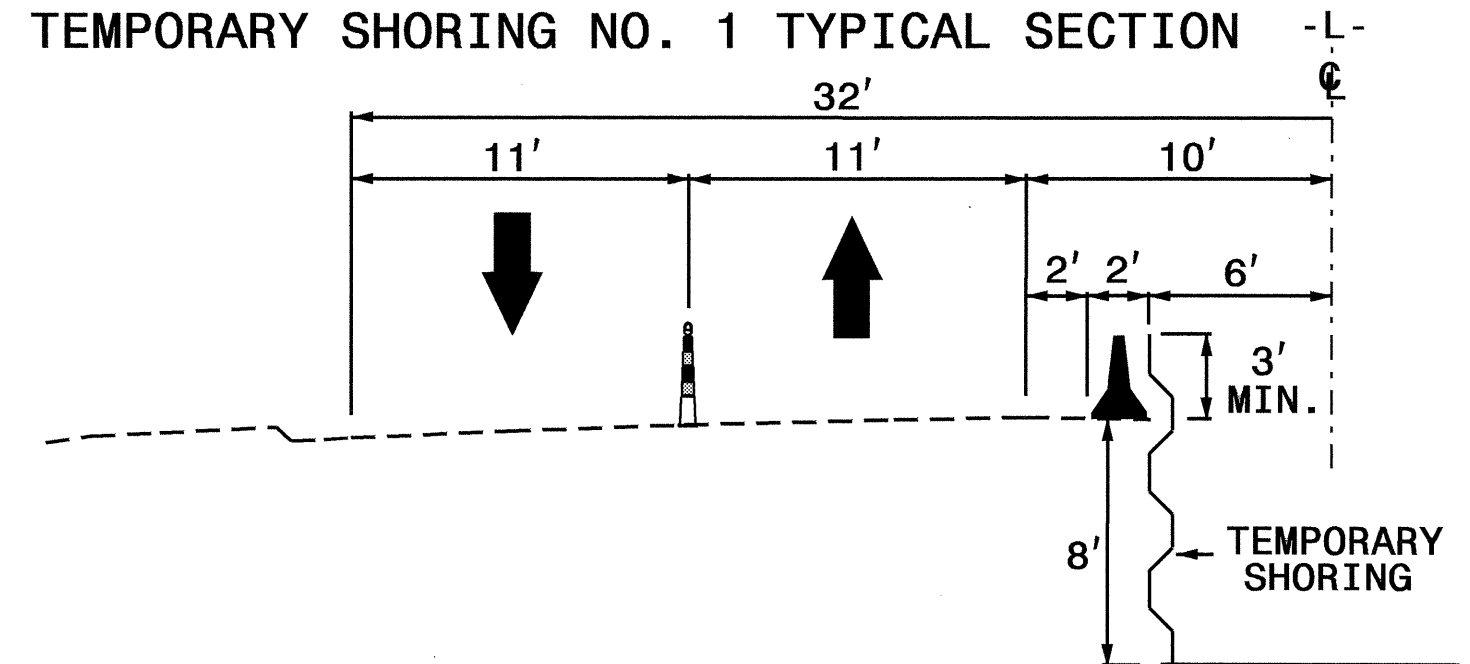
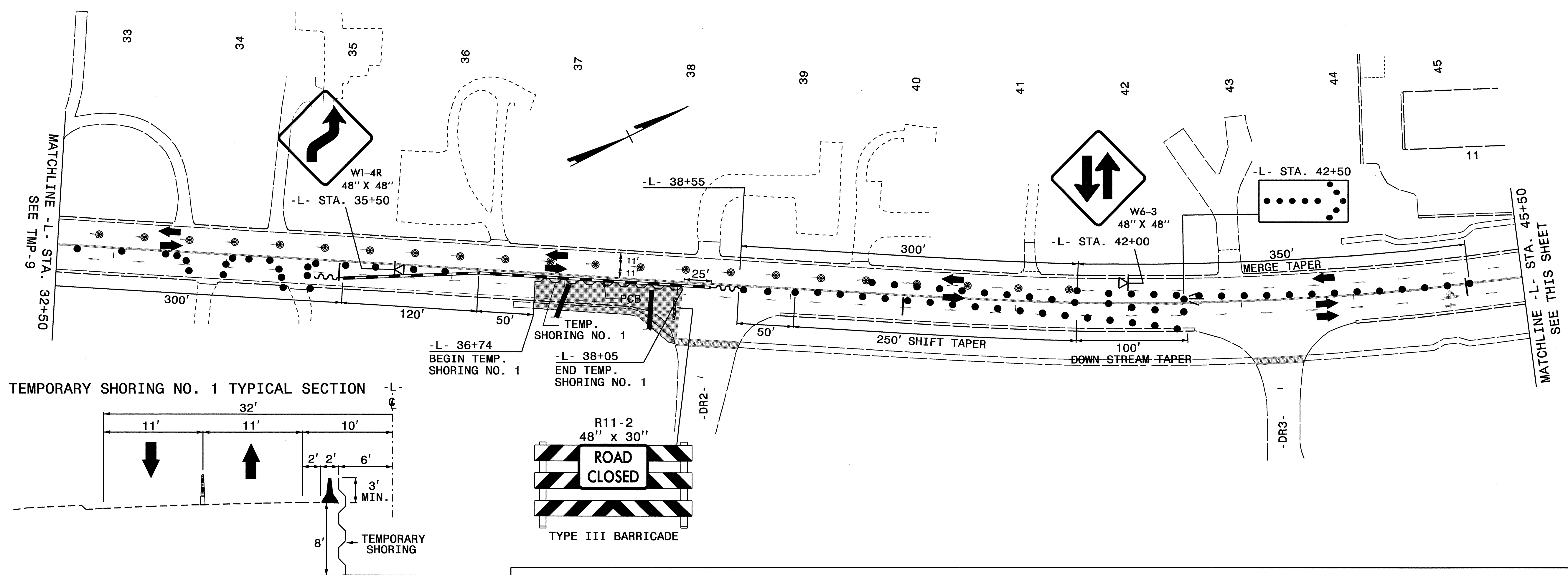
APPROVED: *J. W. Woolard Jr.* DATE: 5/24/0

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19862
ENGINEER
J. W. WOOLARD JR.



PHASE I SHORING

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TEMPORARY SHORING NO. 1 (1485 SF)

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING PROVISION.
 DO NOT USE A TEMPORARY MSE WALL FROM STA. 36+74± -L- TO STA. 38+05± -L- 6.0 FT± LEFT OF -L- CENTER LINE.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STA. 36+74± -L- TO STA. 38+05± -L- 6.0 FT± LEFT OF -L- CENTER LINE, DESIGN SHORING FOR THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:

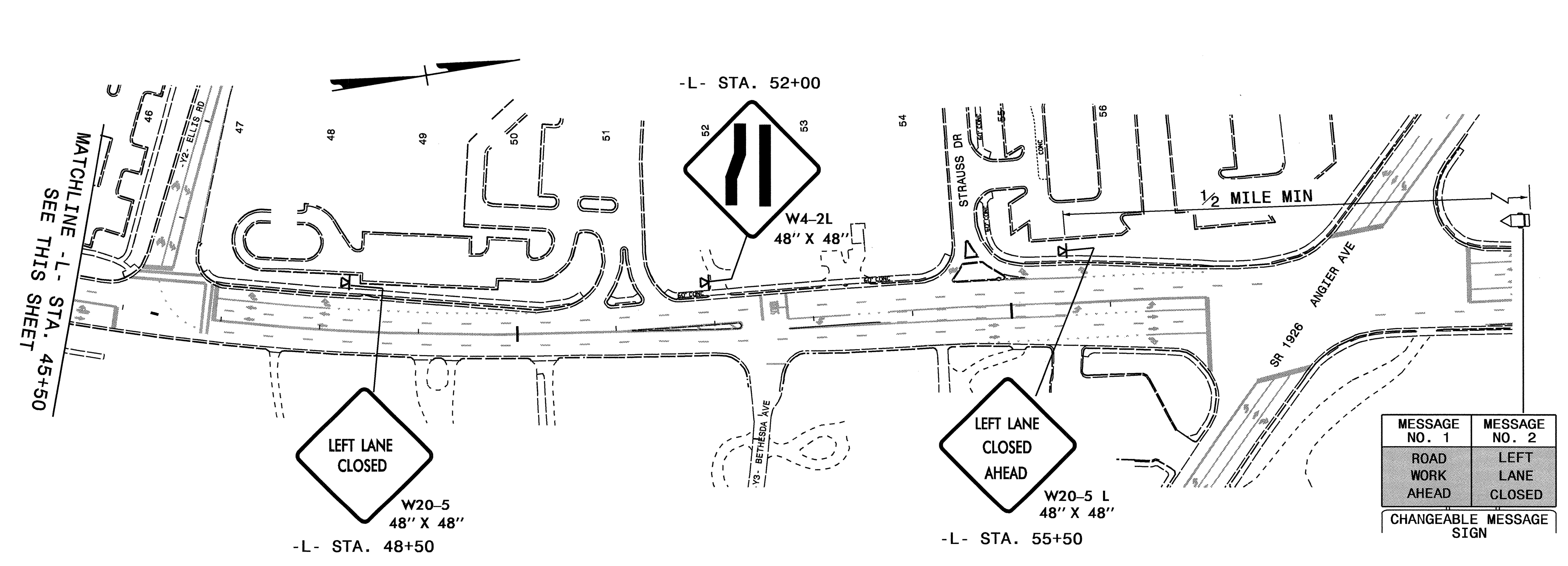
- UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $\gamma = 120$ PCF
- UNIT WEIGHT OF SOIL BELOW WATER TABLE, $\gamma' = 60$ PCF
- FRICTION ANGLE, $\phi = 30$
- COHESION, $c = 0$ PSF

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING. USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STA. 36+74± -L- TO STA. 38+05± -L- 6.0 FT± LEFT OF -L- CENTER LINE. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

NOTE: THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO WZTC ON MAY 19, 2010 AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, P.E. 032171.



MESSAGE NO. 1 ROAD WORK AHEAD	MESSAGE NO. 2 LEFT LANE CLOSED
----------------------------------	-----------------------------------

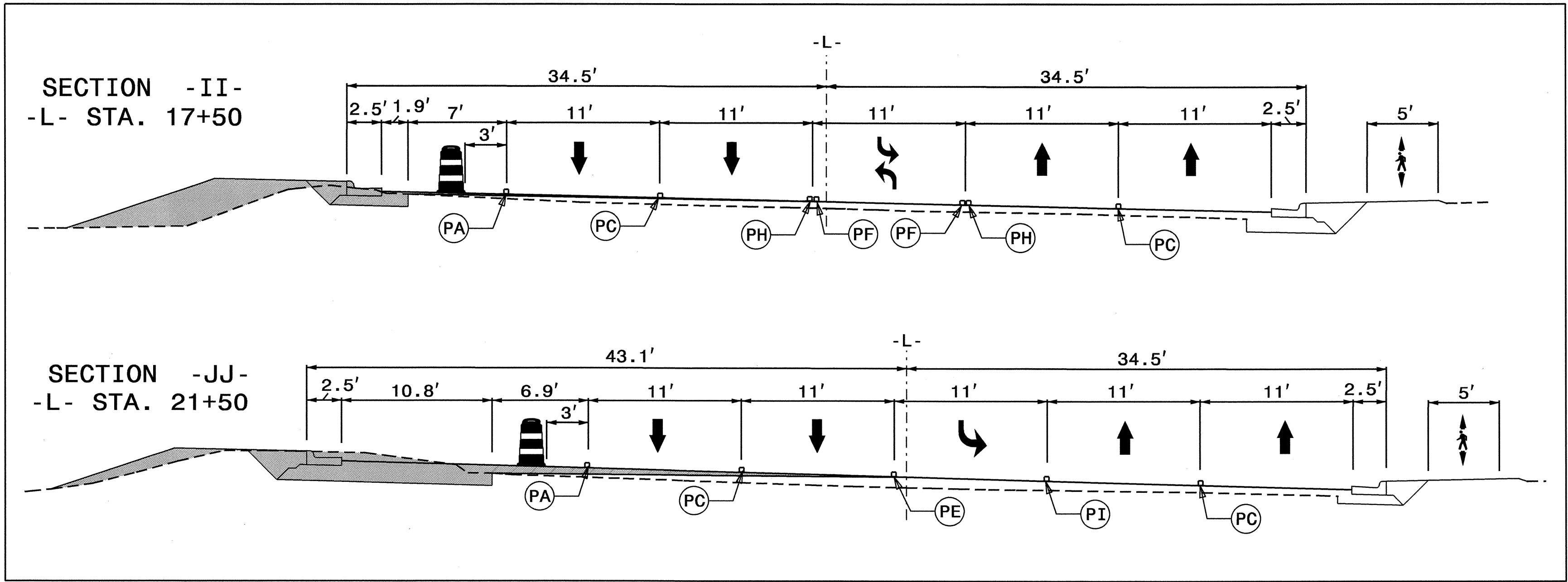
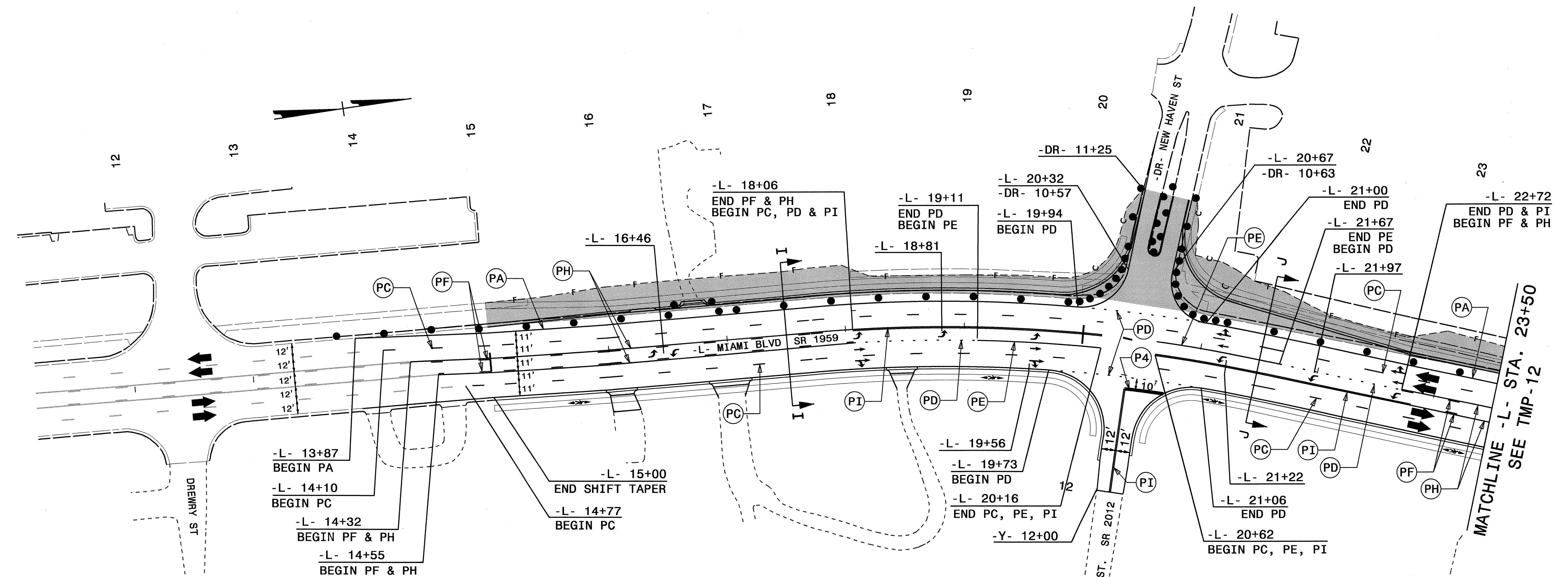
CHANGEABLE MESSAGE SIGN

*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: [Signature] DATE: 6/21/10

PHASE I SHORING

21-JUN-2010 09:40 [Signature] \\projects\U04011\Traffic\TrafficControl\TCP\U04011_IC_TMP-10_phase01shoring.dgn

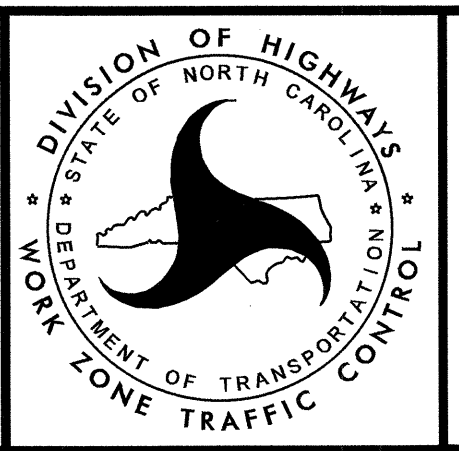


WEDGING

SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

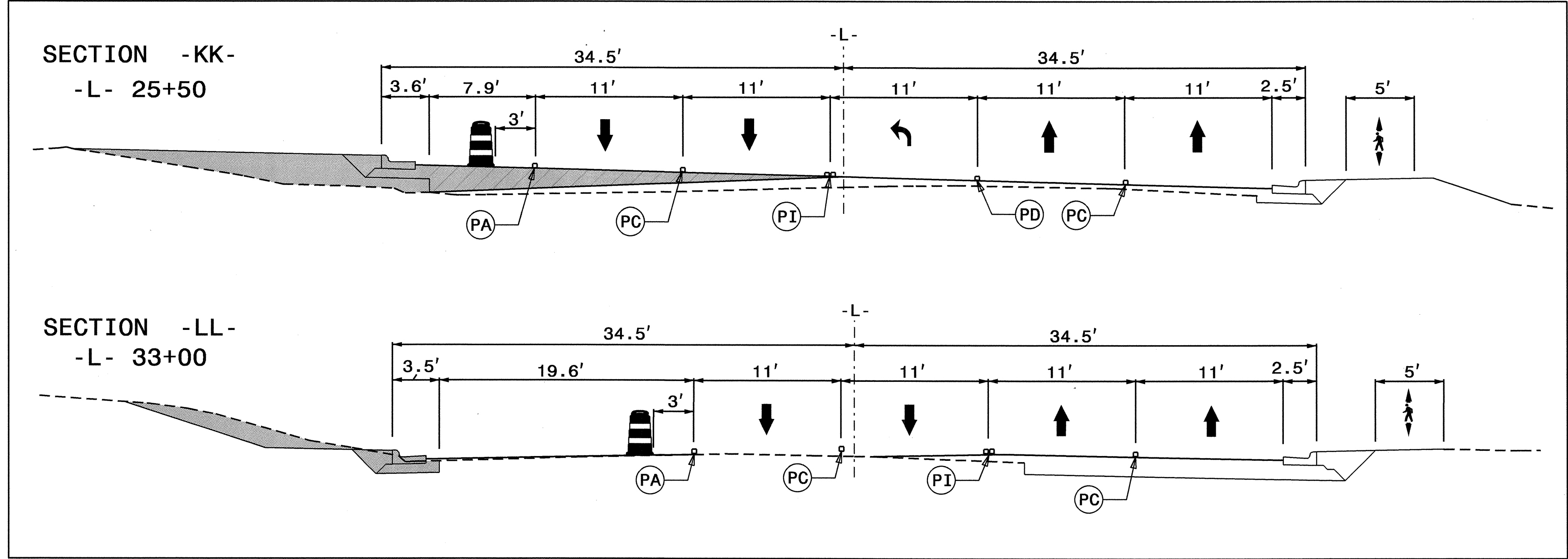
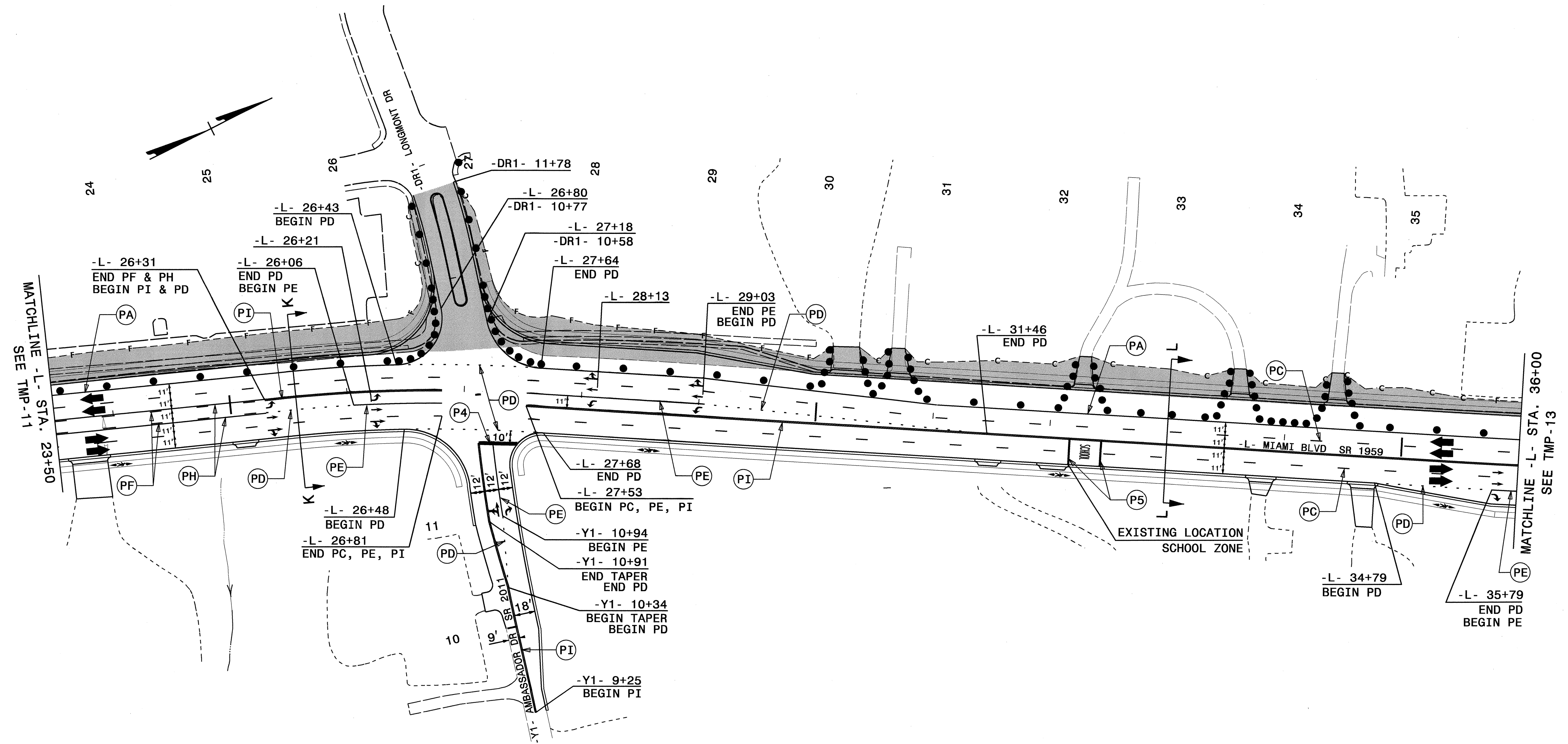
*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *J. W. [Signature]* DATE: 5/24/10
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 19862
 W. WOOLARD JR.



PHASE II

21-MAY-2010 13:37
 \\dot\dfsroot\01\proj\TIP\Projects-U\U4011\TrafficControl\TCP\U4011.TCP_TMP-II_phase02-01.dgn
 igonaldson AT WZTC231459

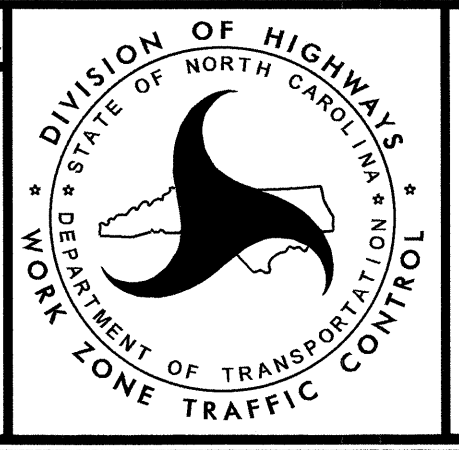


WEDGING

SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

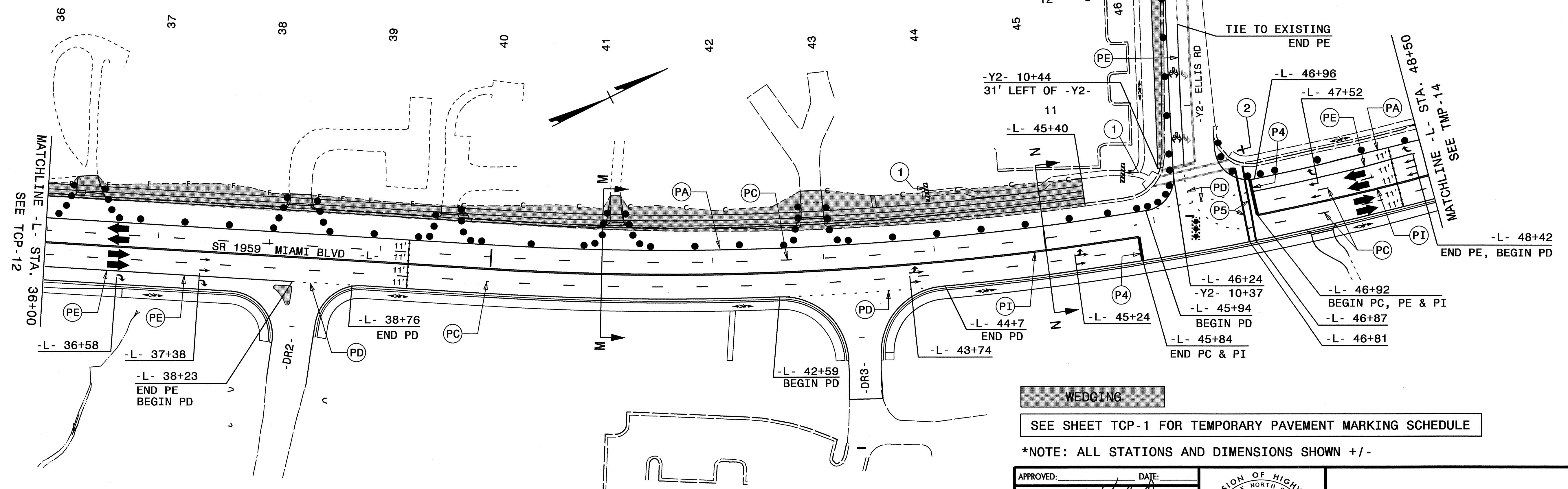
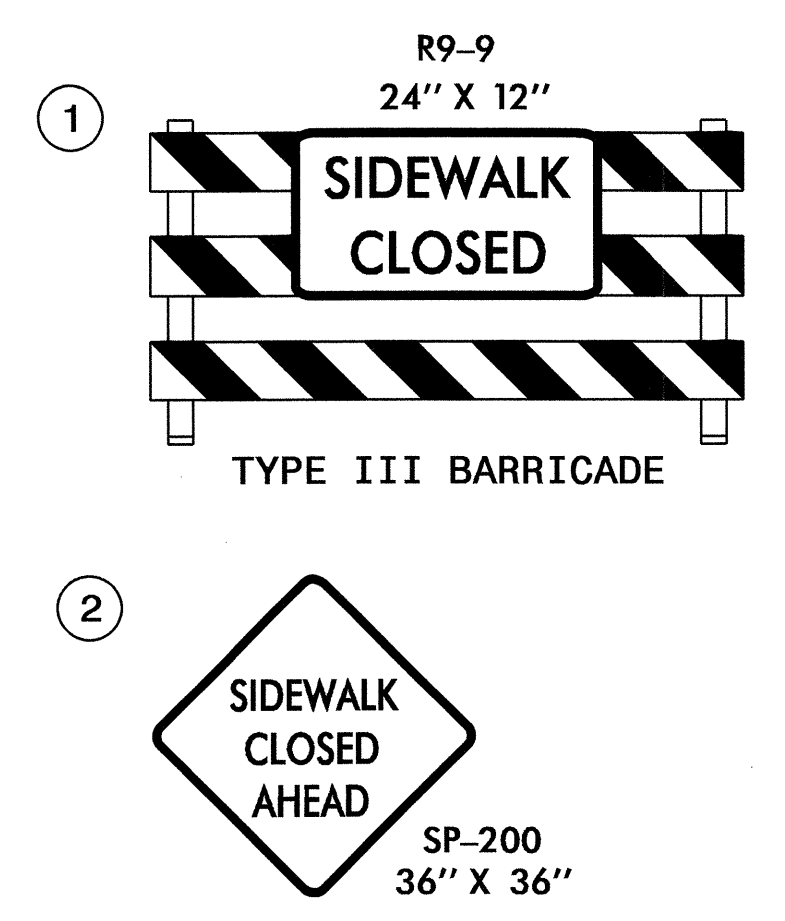
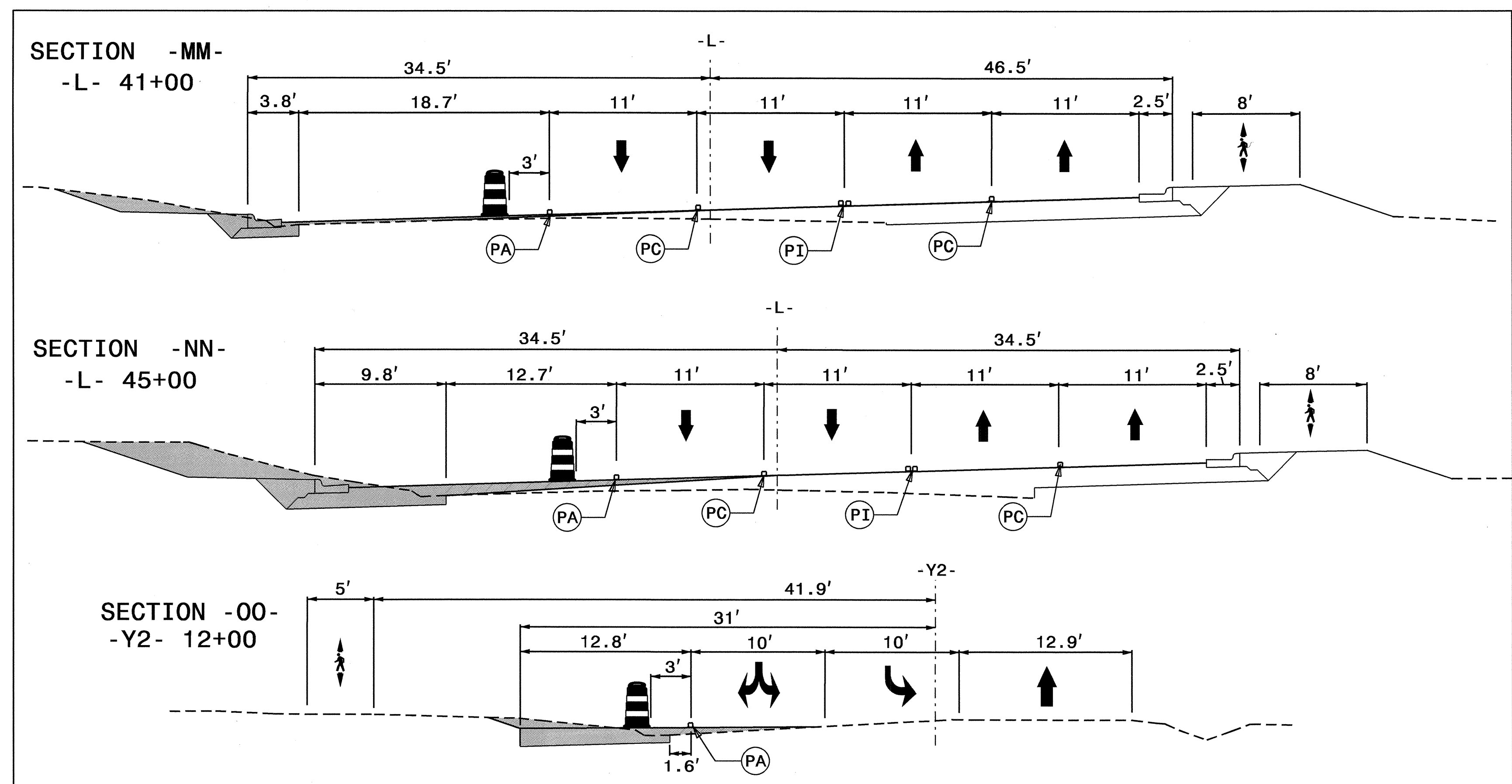
*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *J.W. Woolard Jr.* DATE: 5/24/10
 PROFESSIONAL SEAL 19862
 ENGINEER
 J.W. WOOLARD JR.



PHASE II

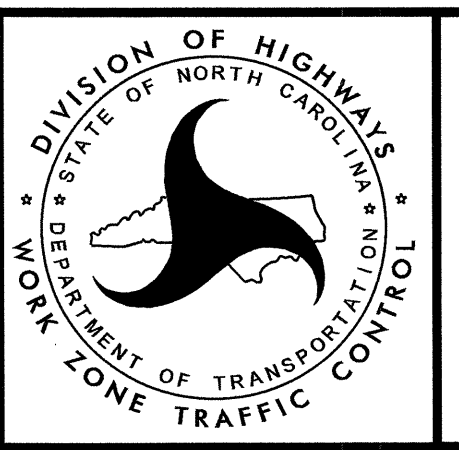
2-MAY-2010 13:37
 \\dot\ndf\sr\0010\p\ol\TIP\Projects-U\4011\TrafficControl\TCP-U4011_TC_TCP_TMP-12_phase02-02.dgn
 idonidson AT WZ TCP237459



WEDGING
 SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

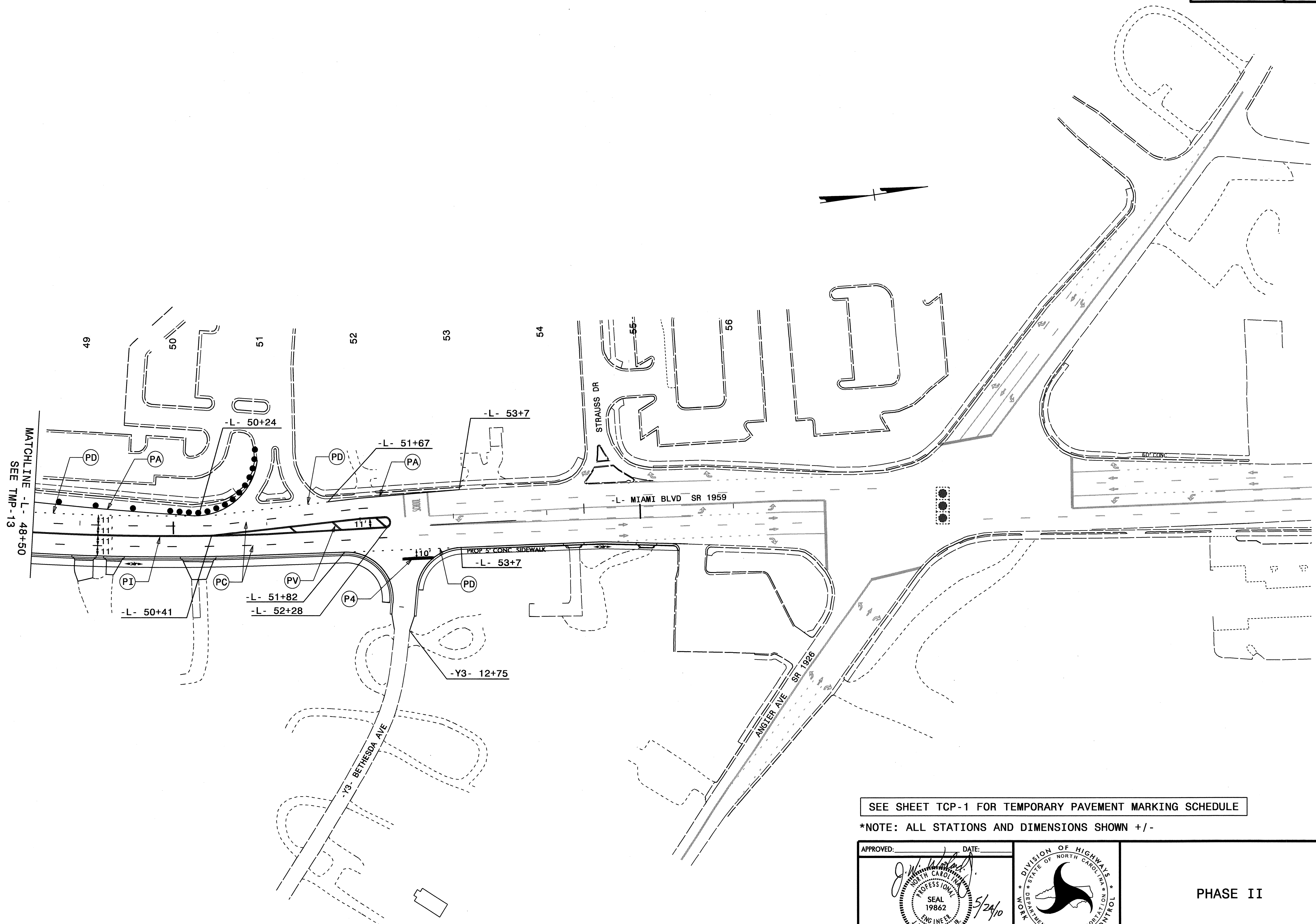
*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *[Signature]* DATE: 5/24/10
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 19862
 W. WOOLARD



PHASE II

21-MAY-2010 13:38
 \\dot\dfsroot\01\pco\N\Tpp\Projects-U\4011\TrafficControl\TCP\U4011.TCP.TMP-13.phase02_03.dgn
 kcondison AT WZ 10231459

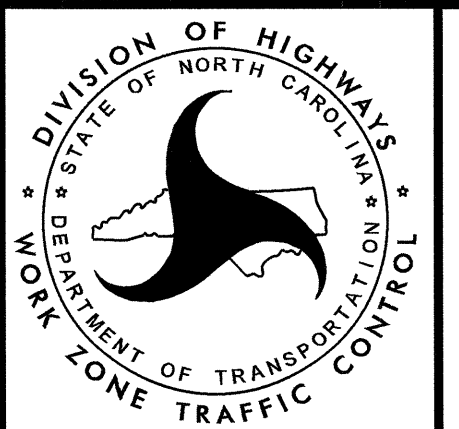


21-MAY-2010 13:39
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 kcondison AT 12/23/499

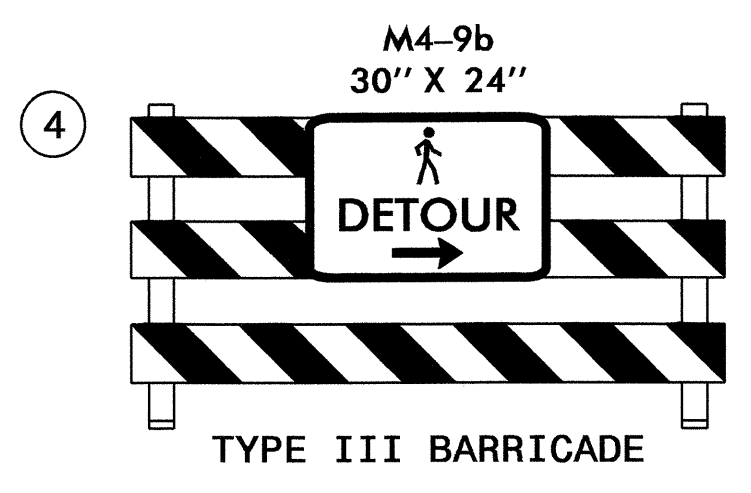
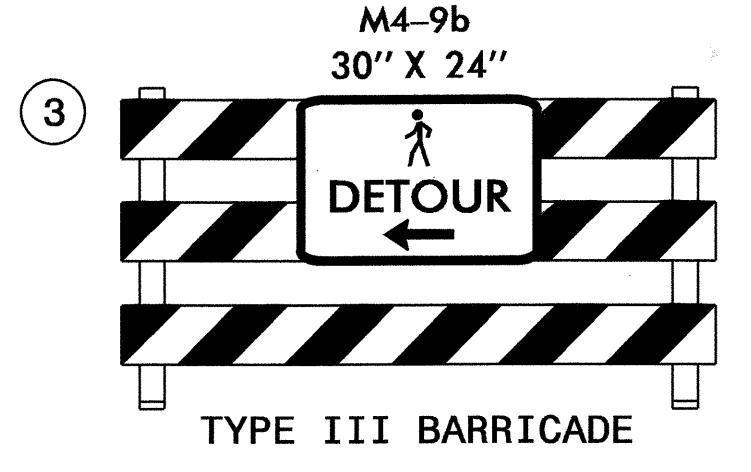
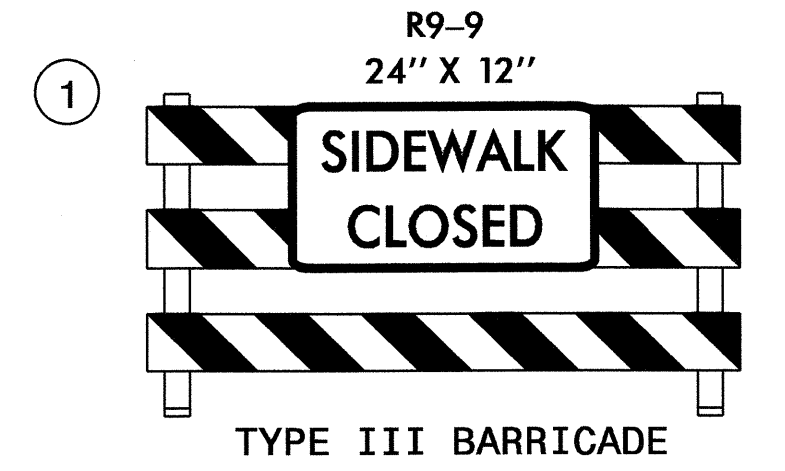
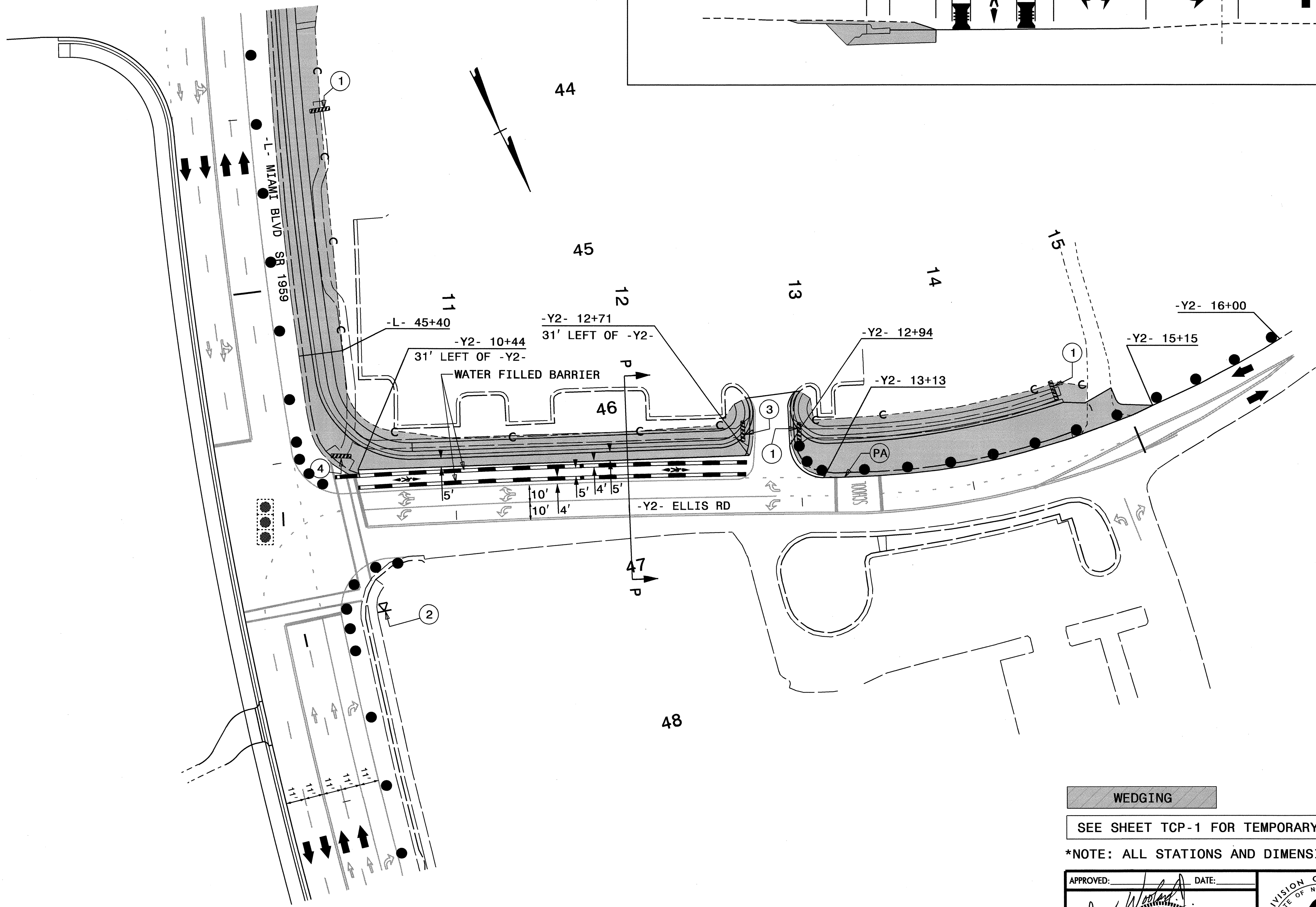
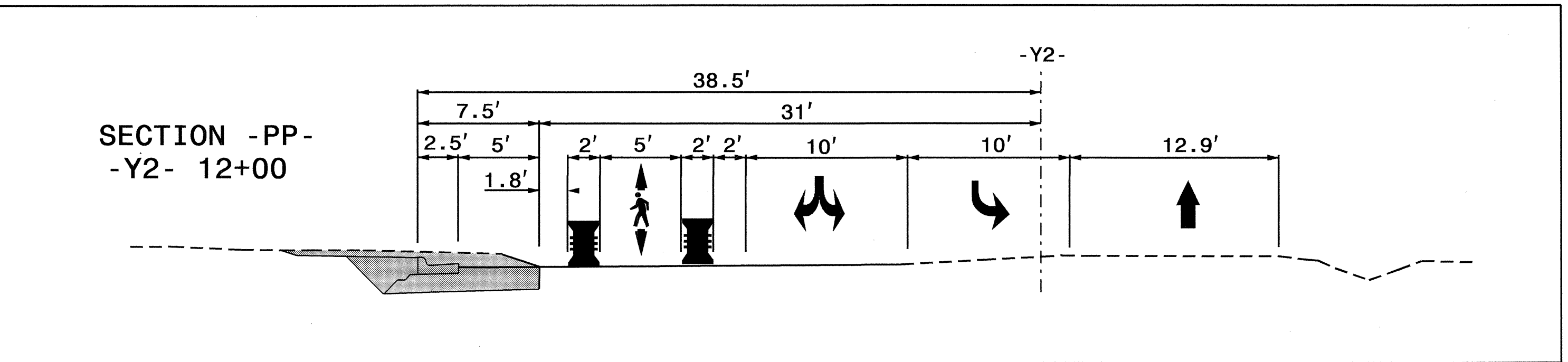
SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *[Signature]* DATE: 5/24/10



PHASE II

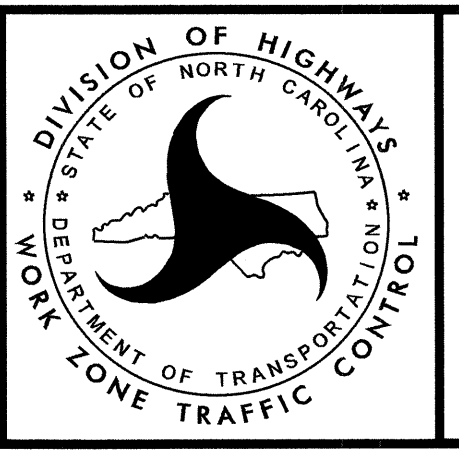


WEDGING

SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

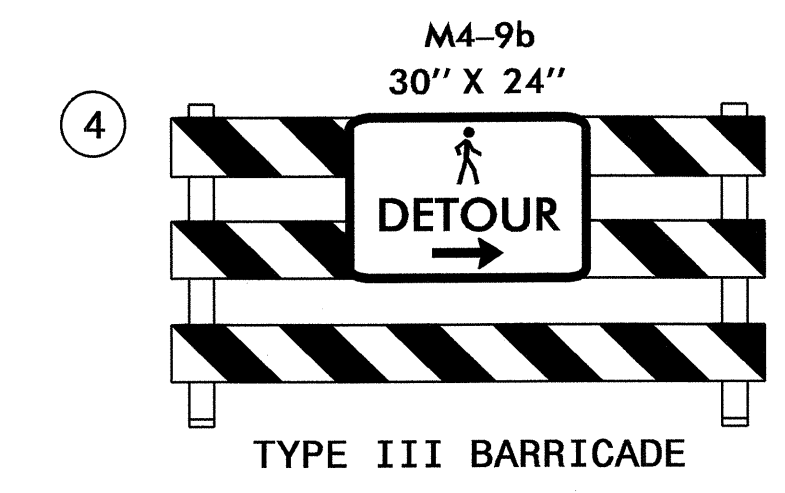
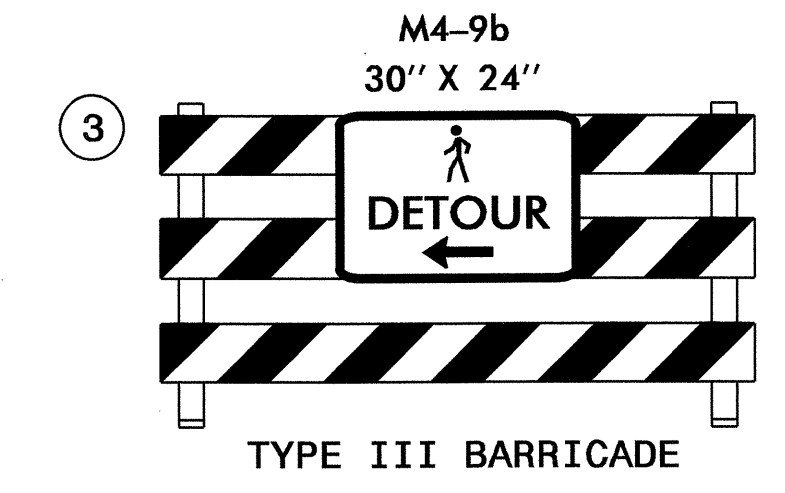
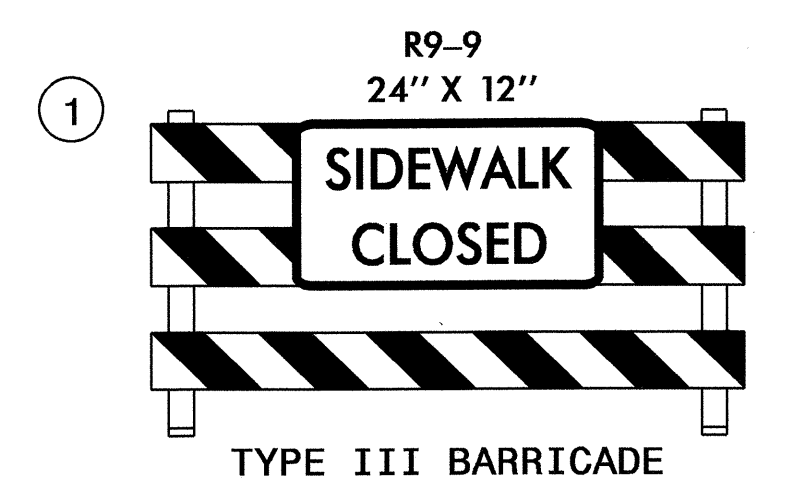
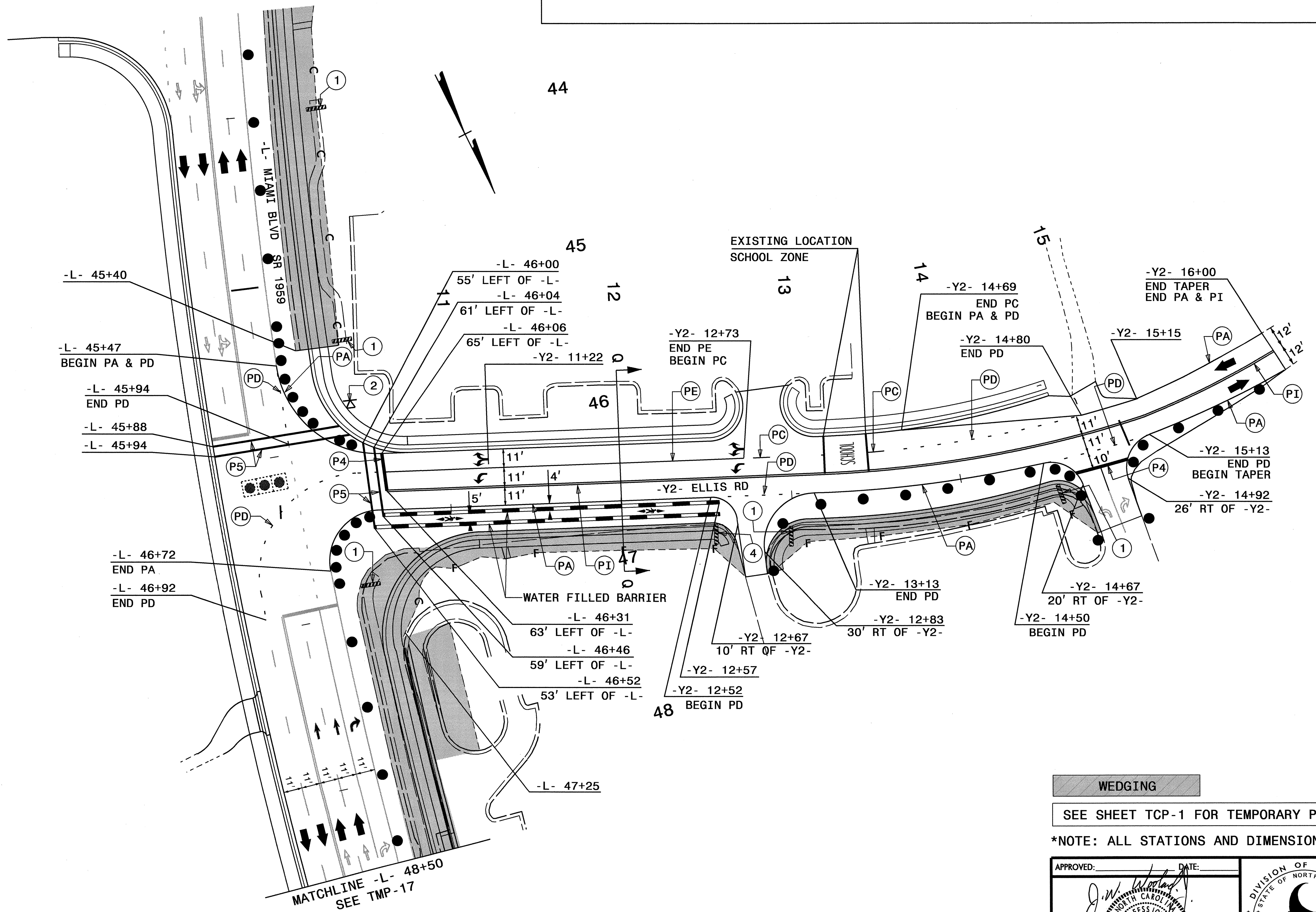
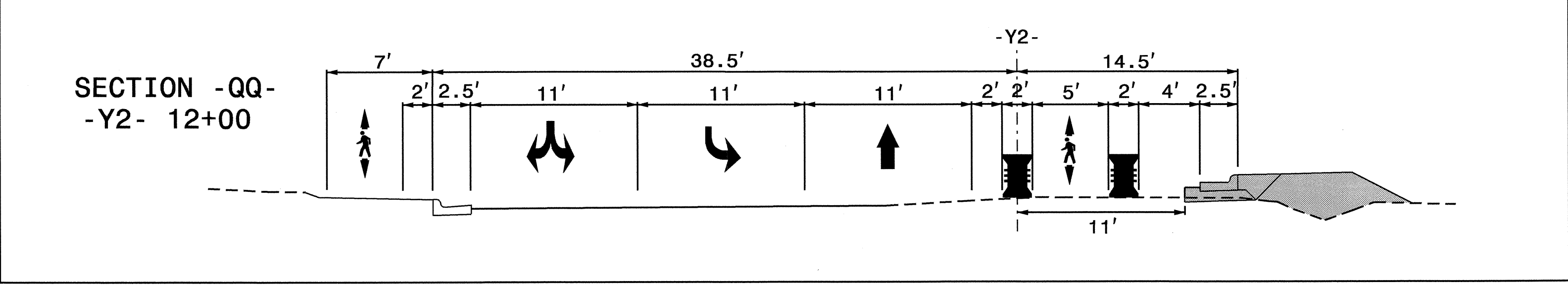
*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *J.W. Woolard* DATE: 5/24/10
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19862
 W. WOOLARD JR.



PHASE II

21-MAY-2010 13:40
 \\dof\dfsroot\01\proj\01\TIP\Projects-U\4011\TrafficControl\TCP\U4011.TCP_TMP-15_phase02.dgn
 gonaldson AT WZ TC231459

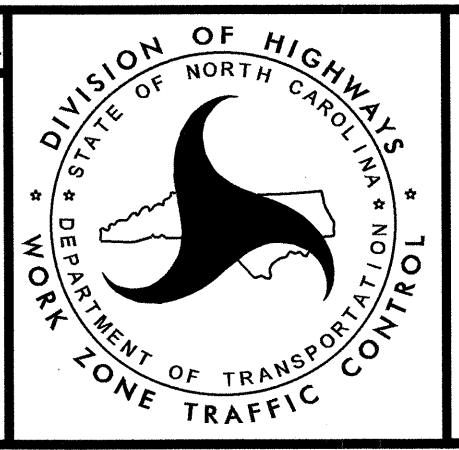


WEDGING

SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

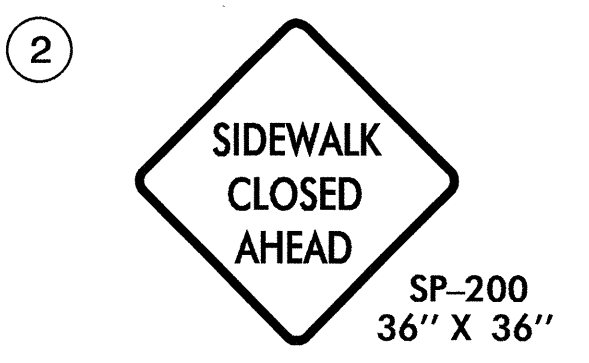
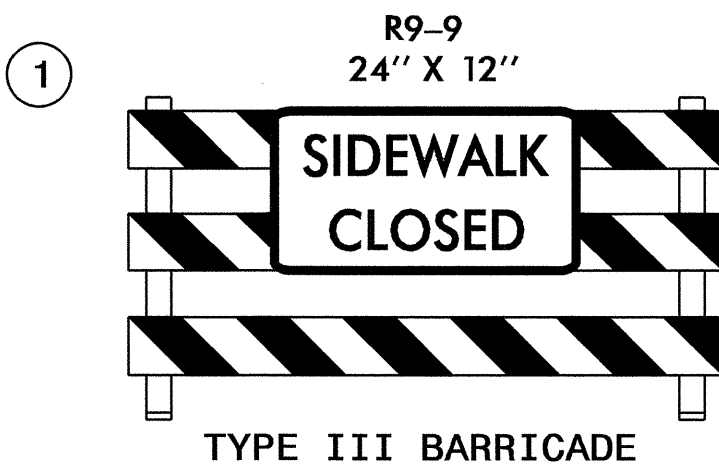
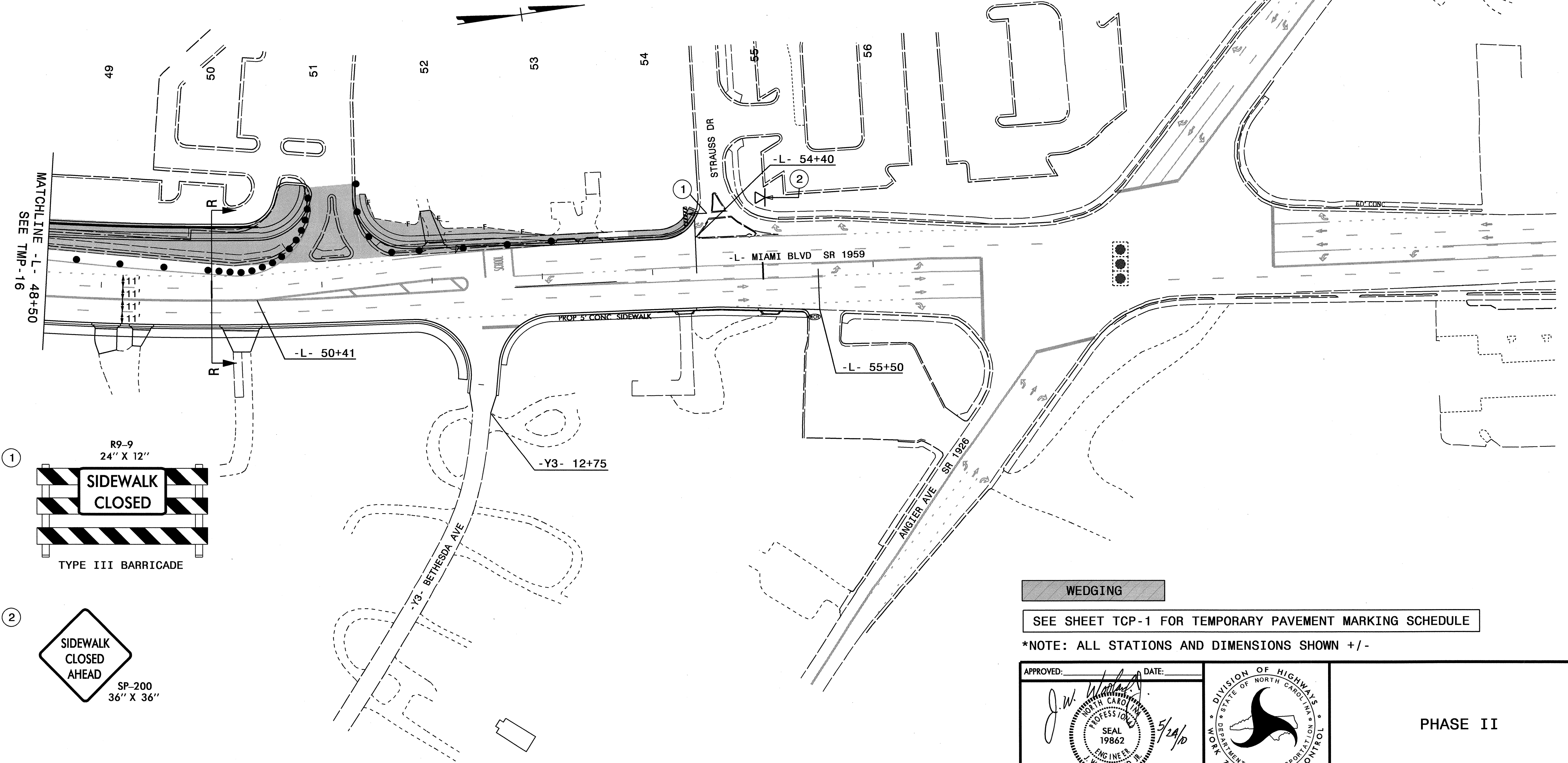
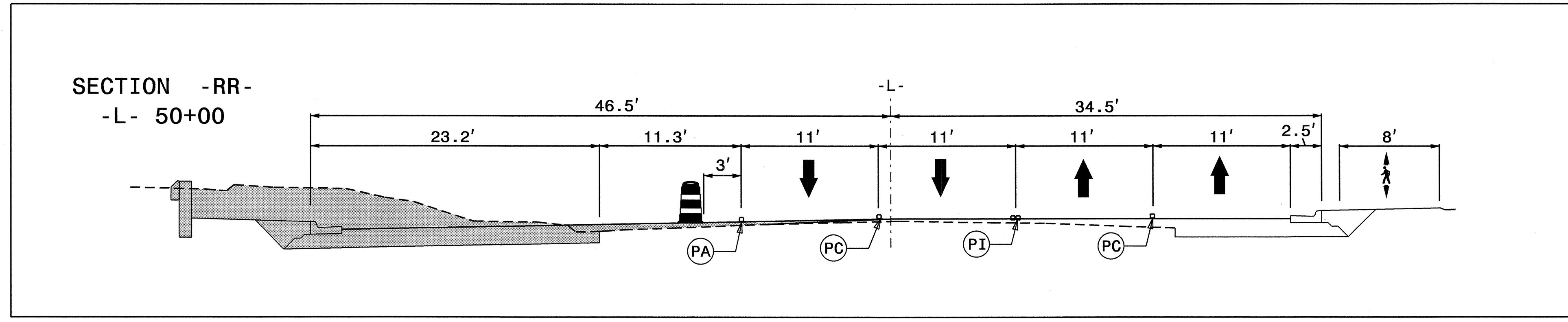
*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *J.W. Woolard* DATE: 5/24/10
 SEAL 19862
 ENGINEER
 W. WOOLARD JR.



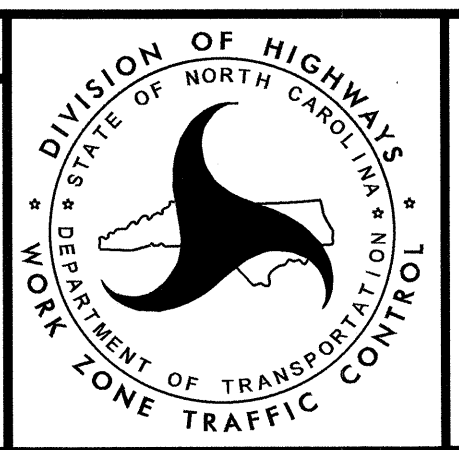
PHASE II

21-MAY-2010 13:41 \\dot\dfsroot\0\p\proj\TPP\projects-U\U4011\TrafficControl\TCP\U4011_TC_TCP_TMP-16_phase02.dgn idonaldson AT WZTC237459



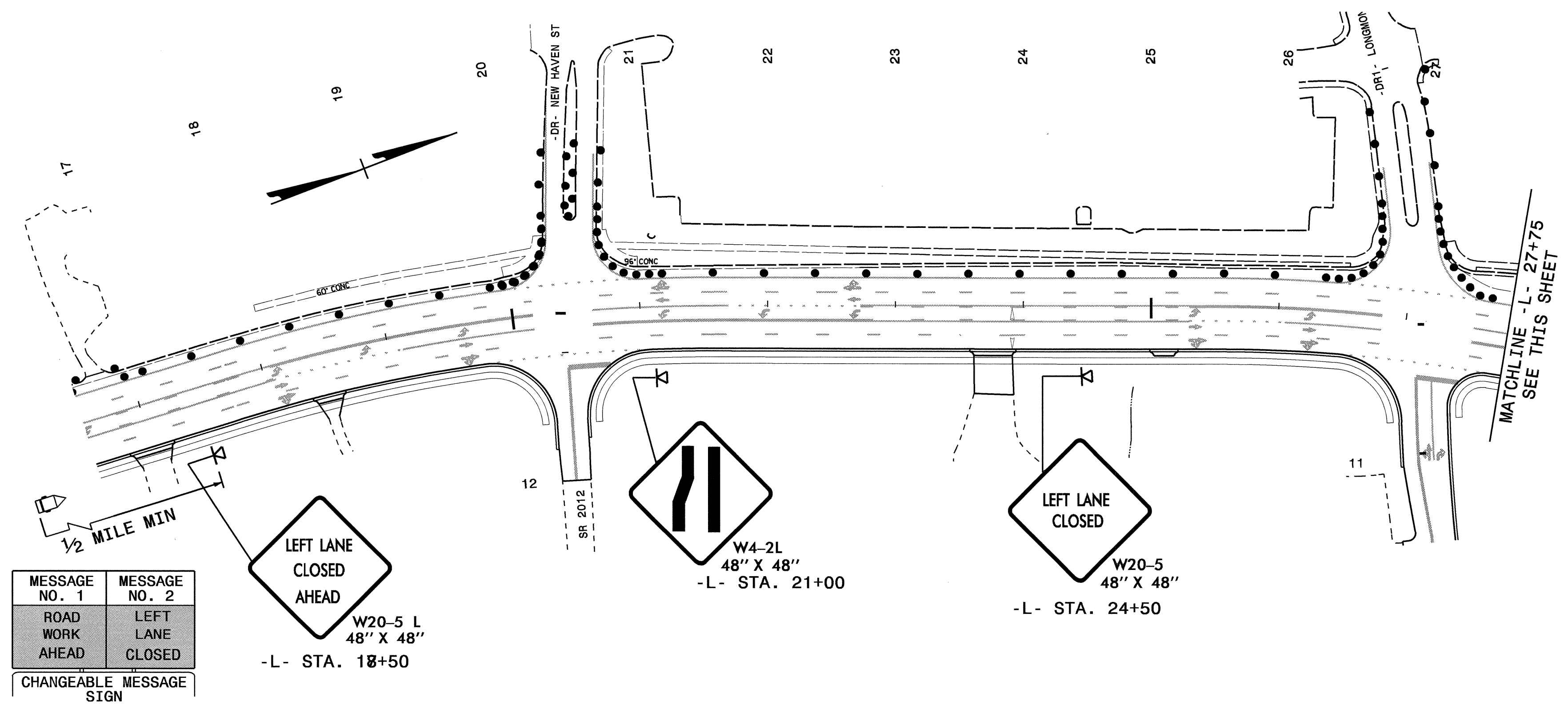
WEDGING
 SEE SHEET TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE
 *NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *J.W. Woolard* DATE: 5/24/00
 NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER
 J.W. WOOLARD JR.



PHASE II

21-MAY-2010 14:28
 \\dot\dfsroot\proj\TIP\Projects-UN\4011\TrafficControl\TCP\U4011.TCP.TMP-17_phase02_04.dgn
 idonadson AT MZTC237459



MESSAGE NO. 1	MESSAGE NO. 2
ROAD WORK AHEAD	LEFT LANE CLOSED
CHANGEABLE MESSAGE SIGN	

TEMPORARY SHORING NO. 2 (1485 SF)
 FOR TEMPORARY SHORING, SEE TEMPORARY SHORING PROVISION.
 DO NOT USE A TEMPORARY MSE WALL FROM STA. 36+74± -L- TO STA. 38+05± -L- 6.0 FT± RIGHT OF -L- CENTER LINE.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STA. 36+74± -L- TO STA. 38+05± -L- 6.0 FT± RIGHT OF -L-, DESIGN SHORING FOR THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:

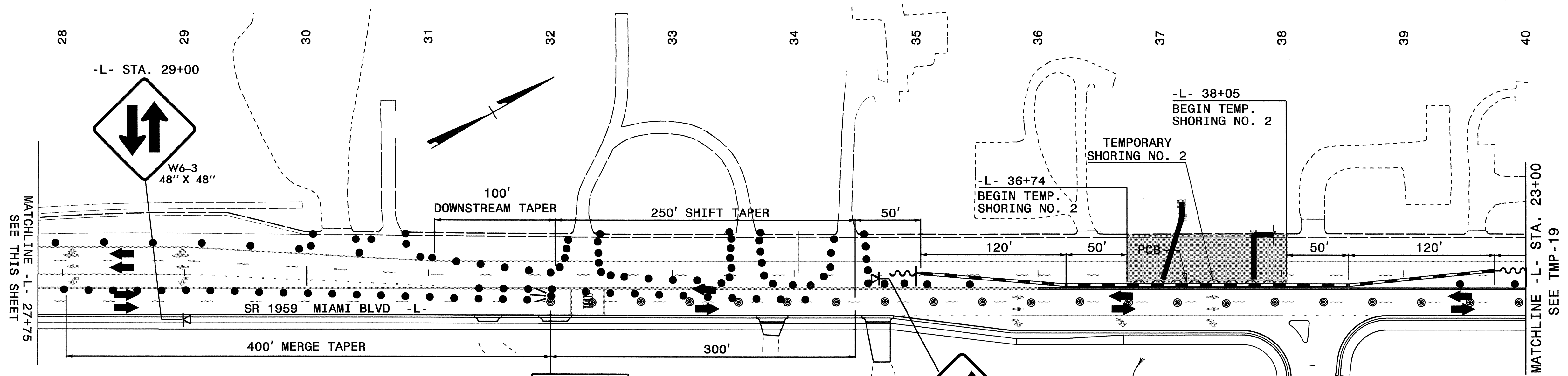
- UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $\gamma = 120$ PCF
- UNIT WEIGHT OF SOIL BELOW WATER TABLE, $\gamma' = 60$ PCF
- FRICTION ANGLE, $\phi = 30$
- COHESION, $c = 0$ PSF

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

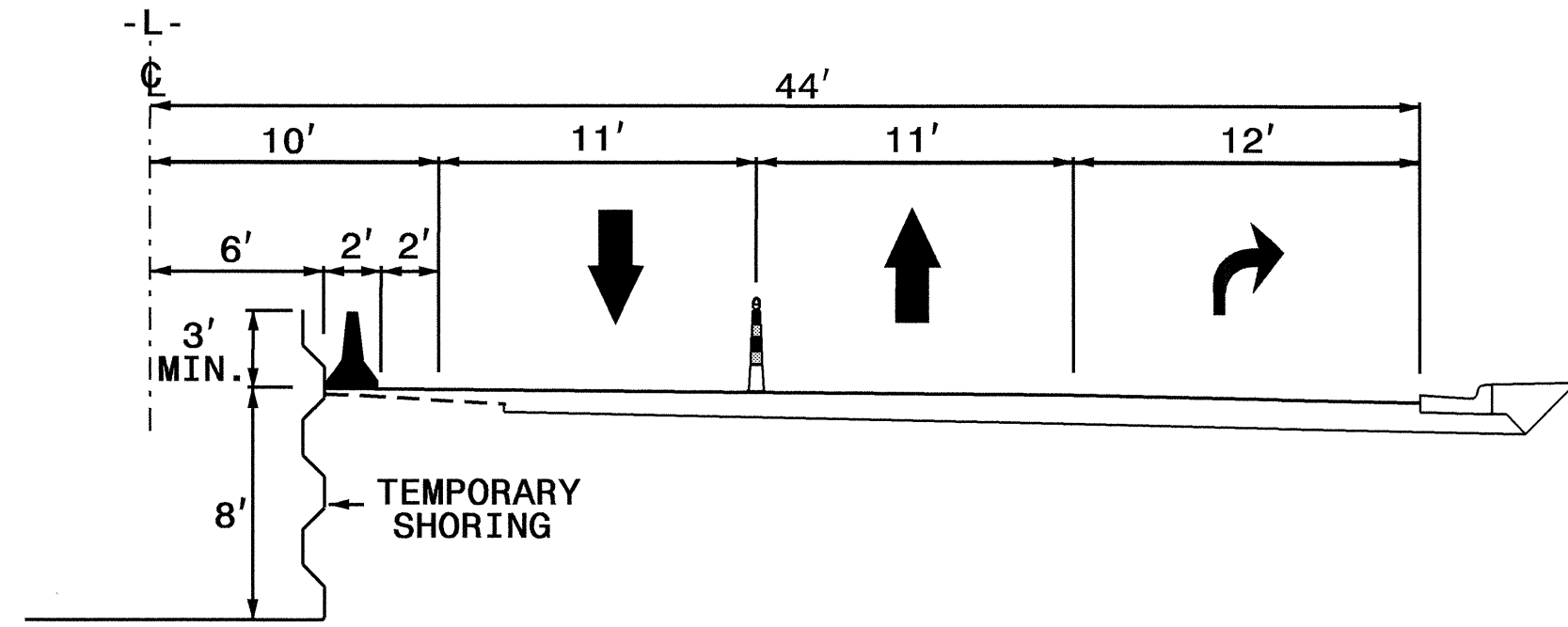
FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING. USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STA. 36+74± -L- TO STA. 38+05± -L- 6.0 FT± RIGHT OF -L-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

NOTE: THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO WZTC ON MAY 19, 2010 AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, P.E. 032171.



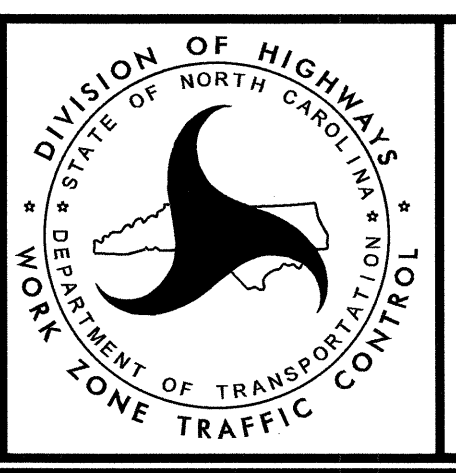
TEMPORARY SHORING NO. 2 TYPICAL SECTION



*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

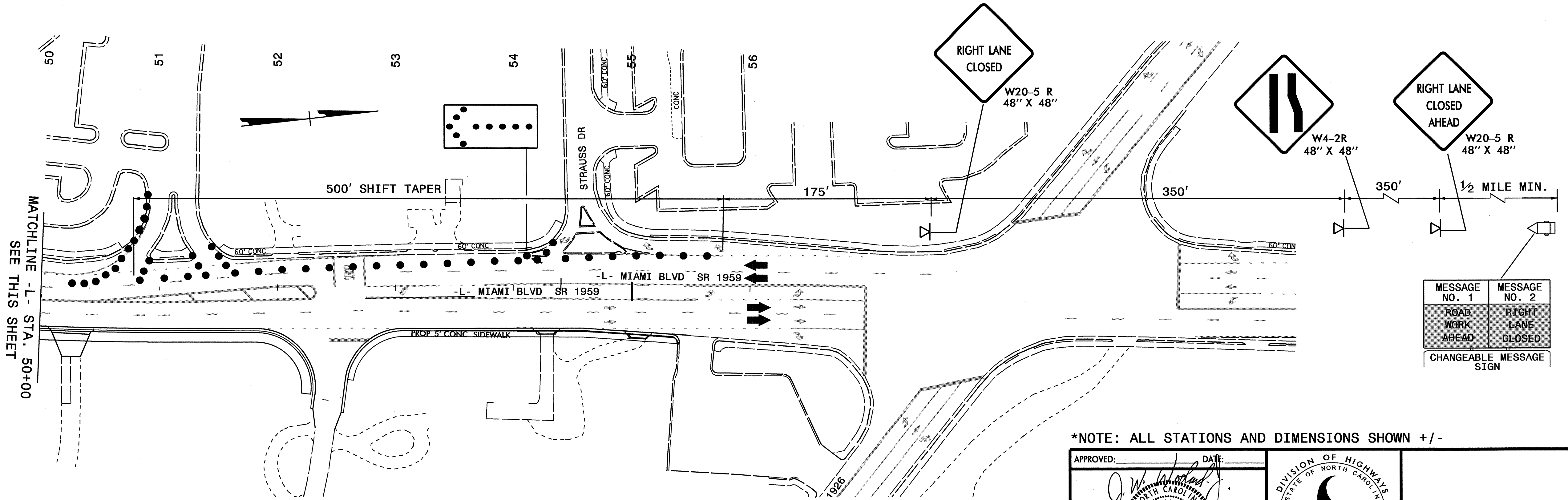
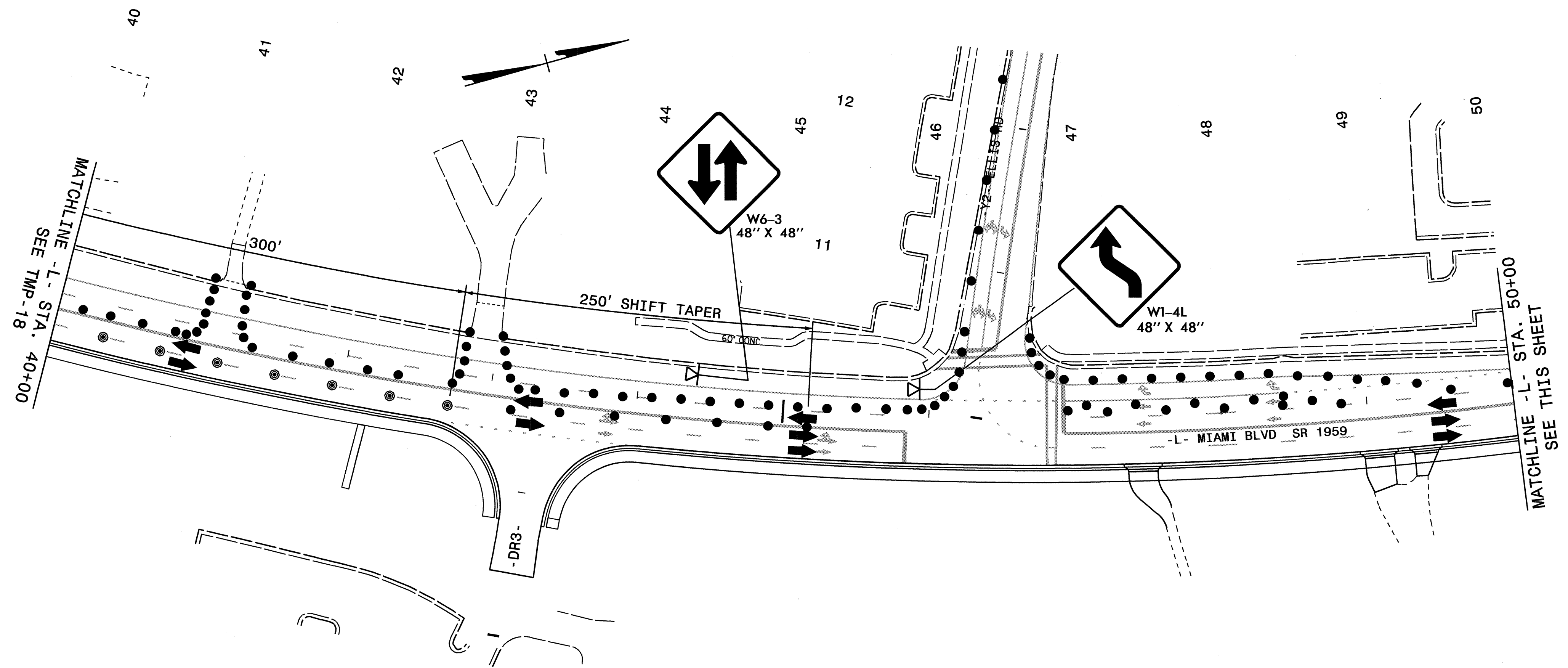
APPROVED: *[Signature]* DATE: 6/2/10

PROFESSIONAL ENGINEER
 SEAL 19862
 W. WOOLARD



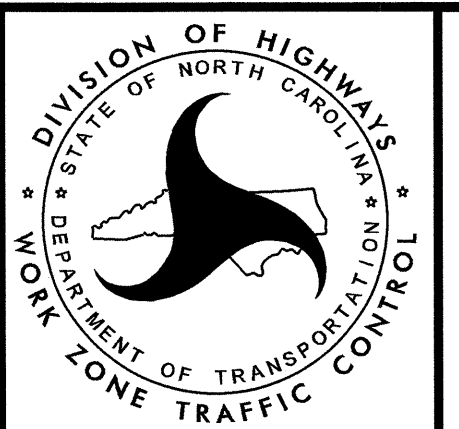
PHASE II SHORING

21-JUN-2010 09:32
 \\dot\dfsroot\0\pco\trpp\projects-U\U4011\TrafficControl\TCP\U4011_TC_TMP-18_phase02shoring.dgn
 donaldson - AT 17210237459



*NOTE: ALL STATIONS AND DIMENSIONS SHOWN +/-

APPROVED: *J. W. Woolard* DATE: 5/24/10
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 19862
 W. WOOLARD JR.



PHASE II SHORING

21-MAY-2010 13:44
 \\dof\dfsroot\pro\N\TIP\projects-U\U4011\TrafficControl\CP\U4011.TC.TCP.TMP-19_phase02shoring.dgn
 Conderson AT 12/23/459