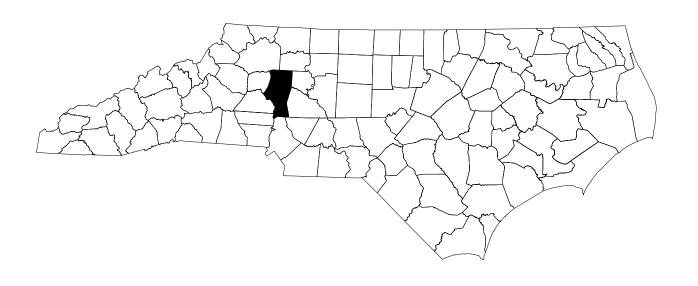
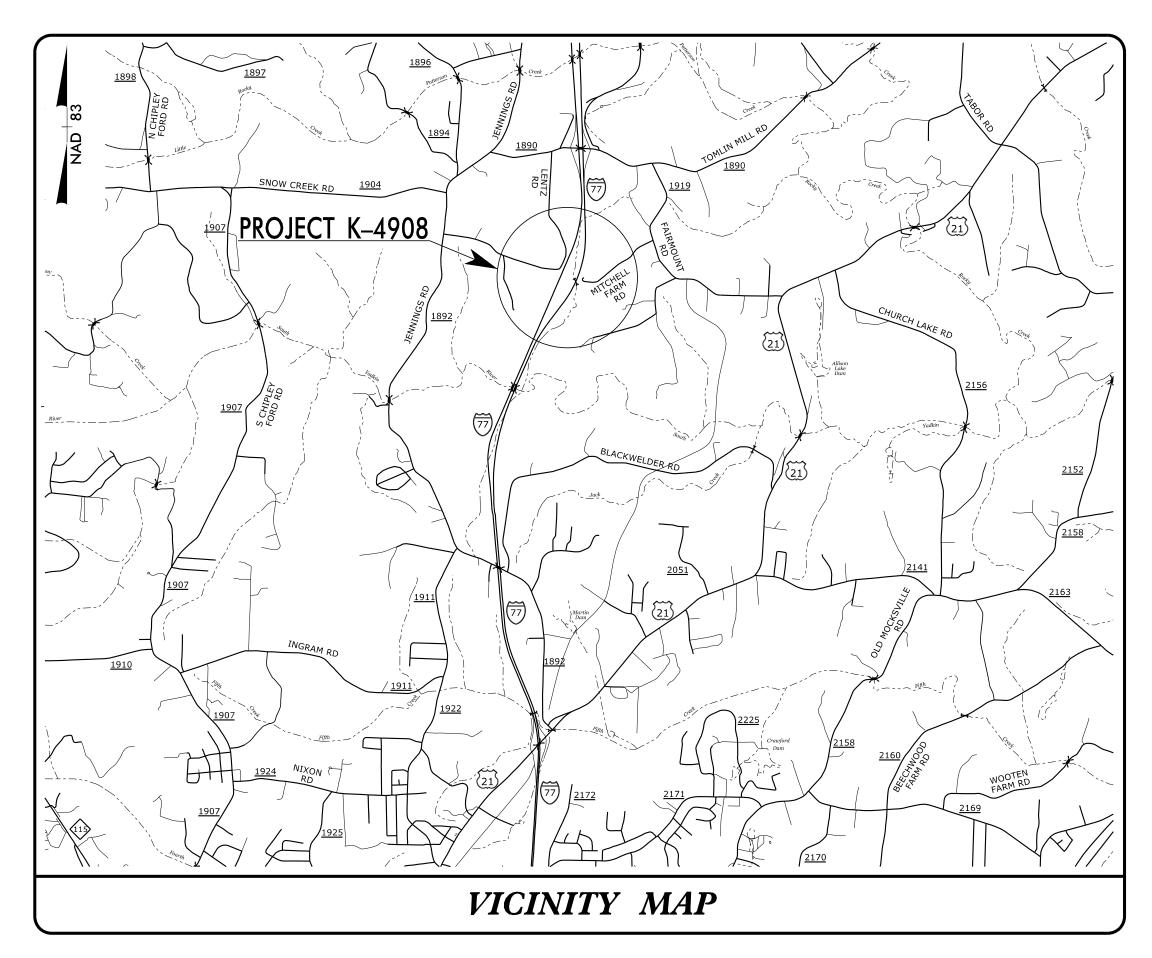
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

IREDELL COUNTY



LOCATION: I-77 REST AREA ON NEW LOCATION



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

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL 1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561 750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E.

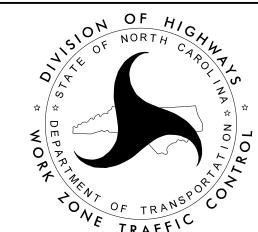
J. W. WOOLARD, P.E.

L. K. DONALDSON, P.E. C. D. REICH, E.I.

STATE TRAFFIC MANAGEMENT ENGINEER

TRAFFIC CONTROL PROJECT ENGINEER TRAFFIC CONTROL PROJECT DESIGN ENGINEER

TRAFFIC CONTROL DESIGN ENGINEER



INDEX OF SHEETS

SHEET NO. TITLE TITLE SHEET, AND INDEX OF SHEETS TMP - 1 LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKINGS TMP-1A TRANSPORTATION OPERATIONS PLAN: (TRANSPORTATION OPERATIONS AND GENERAL NOTES) TMP-1B TEMPORARY TRAFFIC CONTROL PHASING TMP-2 TMP-3 - 8 TEMPORARY TRAFFIC CONTROL PHASE I & II

TYPICAL SECTIONS AND PHASE II PLAN SHEETS

TMP-1

APPROVED Lori Donaldson **DATE:** 12/28/p**2/9**/19444C1...

SEAL



ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO. TITLE

1101	1.01	WORK ZONE ADVANCE WARNING SIGNS
1101	1.02	TEMPORARY LANE CLOSURES
1101	1.04	TEMPORARY SHOULDER CLOSURES
1101	1.05	WORK ZONE VEHICLE ACCESSES
1101	1.11	TRAFFIC CONTROL DESIGN TABLES
1110	0.01	STATIONARY WORK ZONE SIGNS
1110	0.02	PORTABLE WORK ZONE SIGNS
1115	5.01	FLASHING ARROW BOARDS
1130	0.01	DRUM
1145	5.01	BARRICADES
1165	5.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170	0.01	POSITIVE PROTECTION
1180	0.01	SKINNY-DRUM
1205	5.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205	5.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205	5.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1250	0.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251	1.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261	1.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261	1.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262	2.01	GUARDRAIL END DELINEATION

PROJ. REFERENCE NO.	SHEET NO.
K-4908	TMP-1A

LEGEND

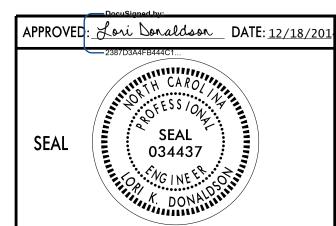
TRAFFIC CONTROL DEVICES **GENERAL** DIRECTION OF TRAFFIC FLOW BARRICADE (TYPE III) DIRECTION OF PEDESTRIAN TRAFFIC FLOW ----- EXIST. PVMT. DRUM SKINNY DRUM O TUBULAR MARKER ─────── NORTH ARROW TEMPORARY CRASH CUSHION FLASHING ARROW BOARD — PROPOSED PVMT. FLAGGER TEMP. SHORING (LOCATION PURPOSES ONLY) LAW ENFORCEMENT WORK AREA TRUCK MOUNTED ATTENUATOR (TMA) CHANGEABLE MESSAGE SIGN REMOVAL TEMPORARY SIGNING PORTABLE SIGN USER DEFINED (IF NEEDED) ── STATIONARY SIGN STATIONARY OR PORTABLE SIGN USER DEFINED (IF NEEDED) PAVEMENT MARKERS SIGNALS CRYSTAL/CRYSTAL CRYSTAL/RED EXISTING YELLOW/YELLOW PAVEMENT MARKINGS PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

——EXISTING LINES

——TEMPORARY LINES

P6 - WHITE EDGELINE (PAINT) - 6"
P7 - YELLOW EDGELINE (PAINT) - 6"
PJ - 10 FT. WHITE SKIP (PAINT) - 6"
MI - CRYSTAL & RED TEMPORARY RAISED MARKER





PAVEMENT MARKING SYMBOLS

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO. SHEET NO. K-4908 TMP-1B

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE

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 DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME I-77 NB/I-77 SB

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

- 6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
- 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
- 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- 9. FOR NASCAR RACING EVENTS OCCURING AT CHARLOTTE MOTOR SPEEDWAY BETWEEN 6:00 A.M. THE THURSDAY BEFORE THE EVENT AND 9:00 P.M. THE MONDAY AFTER THE END OF THE EVENT.
- B) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- 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 INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON I-77.
- 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.

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER TWENTY ONE (21) 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.

TRAFFIC BARRIER

M) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

N) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

- O) 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.
- P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- Q) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME -LNB- & -LSB- (I-77) MARKING PAINT MARKER TEMPORARY RAISED

- S) 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.
- T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- U) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MAMARKERS BY THE END OF EACH DAY'S OPERATION.

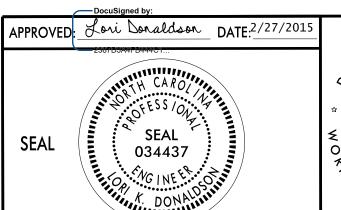
TRANSPORTATION OPERATIONS

CONSTRUCTION

CONSTRUCT REST AREA ON I-77 NB/I-77 SB, INCLUDING NEW REST AREA BUILDING, PARKING AREAS, AND DRAINAGE AS SHOWN IN THE CONSTRUCTION PLANS. CONSTRUCT REST AREA RAMPS AS SHOWN IN THE CONSTRUCTION PLANS.

TMP DESIGN PARAMETERS

UTILIZE CHANGEABLE MESSAGE SIGNS, FLASHING ARROW BOARDS, TMA'S, BARRICADES, TEMPORARY SIGNAGE, AND TRAFFIC CONTROL DEVICES, TO CONSTRUCT REST AREA (SEE SHEET TMP-3 - 8). OUTSIDE SHOULDER IS TO BE REMOVED AND REPLACED TO PROVIDE A SURFICE TO SHIFT TRAFFIC TO OUTSIDE SHOULDER. CONSTRUCTION OF PROPOSED RAMPS IS TO BE CONSTRUCTED BEHIND TEMPORARY PORTABLE CONCRETE BARRIER.





TRANSPORATION
OPERATIONS
PLAN

PROJ. REFERENCE NO. SHEET NO. K-4908 TMP-2

PHASING

PHASE I

- STEP 1. INSTALL ALL ADVANCE WORK ZONE SIGNS ON I-77, SEE RSD 1101.01 (SHEET 1 OF 3).
- STEP 2. AWAY FROM TRAFFIC BEGIN CONSTRUCTION OF -DR-, -L1-, -L2-, -L3-, AND -L4- UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE. (INCLUDES DRAINAGE, GUARDRAIL, SIDEWALK, AND REST AREA)

RETURNING TRAFFIC TO A 2-LANE PATTERN AT THE END OF EACH WORK DAY, USE RSD 1101.02 (SHEET 4 OF 15) TO REMOVE AND REPLACE THE FOLLOWING (EACH WORK DAY, REMOVE ONLY WHAT CAN BE REPLACED ON THE SAME WORK DAY)(TMP-2):

- 6' OF EXISTING OUTSIDE SHOULDER ON -LNB- FROM STA. 19+00+/TO STA. 27+00+/-
- 10' OF EXISTING OUTSIDE SHOULDER ON -LNB- FROM STA. 27+00+/-TO STA. 92+50+/- -LNB-
- 10' OF EXISTING OUTSIDE SHOULDER ON -LSB- FROM STA. 11+00+/TO STA. 84+00+/-

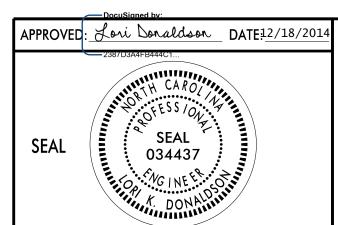
PHASE II

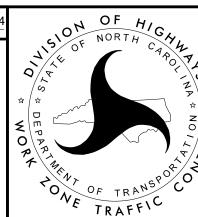
- STEP 1. USING RSD 1101.02 (SHEET 4 OF 15), PLACE TEMPORARY PAVEMENT MARKINGS, MARKERS AND SIGNING; REMOVE CONFLICTING EXISTING PAVEMENT MARKINGS; AND SHIFT TRAFFIC TO NEW TEMPORARY TRAFFIC PATTERN AS SHOWN ON TMP-3 AND TMP-4.
- STEP 2. USING RSD 1101.02 (SHEET 4 OF 15), PLACE TEMPORARY PORTABLE CONCRETE BARRIER AS SHOWN ON TMP-3 AND TMP-4.
- STEP 3. BEHIND PCB, COMPLETE CONSTRUCTION OF -LNB-, -LSB-, -DR-, -L1-, -L2-, -L3-AND -L4- UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE AS SHOWN ON TMP-3 AND TMP-4.
- STEP 4. USING RSD 1101.02 (SHEET 4 OF 15), REMOVE TEMPORARY PORTABLE CONCRETE BARRIER KEEPING REST AREA CLOSED AS NECESSARY WITH DRUMS AND TYPE III BARRICADES.

USING RSD 1101.02 (SHEET 4 OF 15), PLACE FINAL SURFACE COURSE, FINAL PAVEMENT MARKINGS AND MARKERS AS SHOWN ON FINAL PAVEMENT MARKING PLANS ON -LNB- AND -LSB-, AND PLACE TRAFFIC INTO FINAL TRAFFIC PATTERN ON -LNB- AND -LSB-.

AWAY FROM TRAFFIC, PLACE FINAL SURFACE COURSE, FINAL PAVEMENT MARKINGS AND MARKERS AS SHOWN ON FINAL PAVEMENT MARKING PLANS ON -DR-, -L1-, -L2-, -L3-AND -L4-. COMPLETE CONSTRUCTION OF REST AREA INCLUDING DRAINAGE AND SIDEWALK.

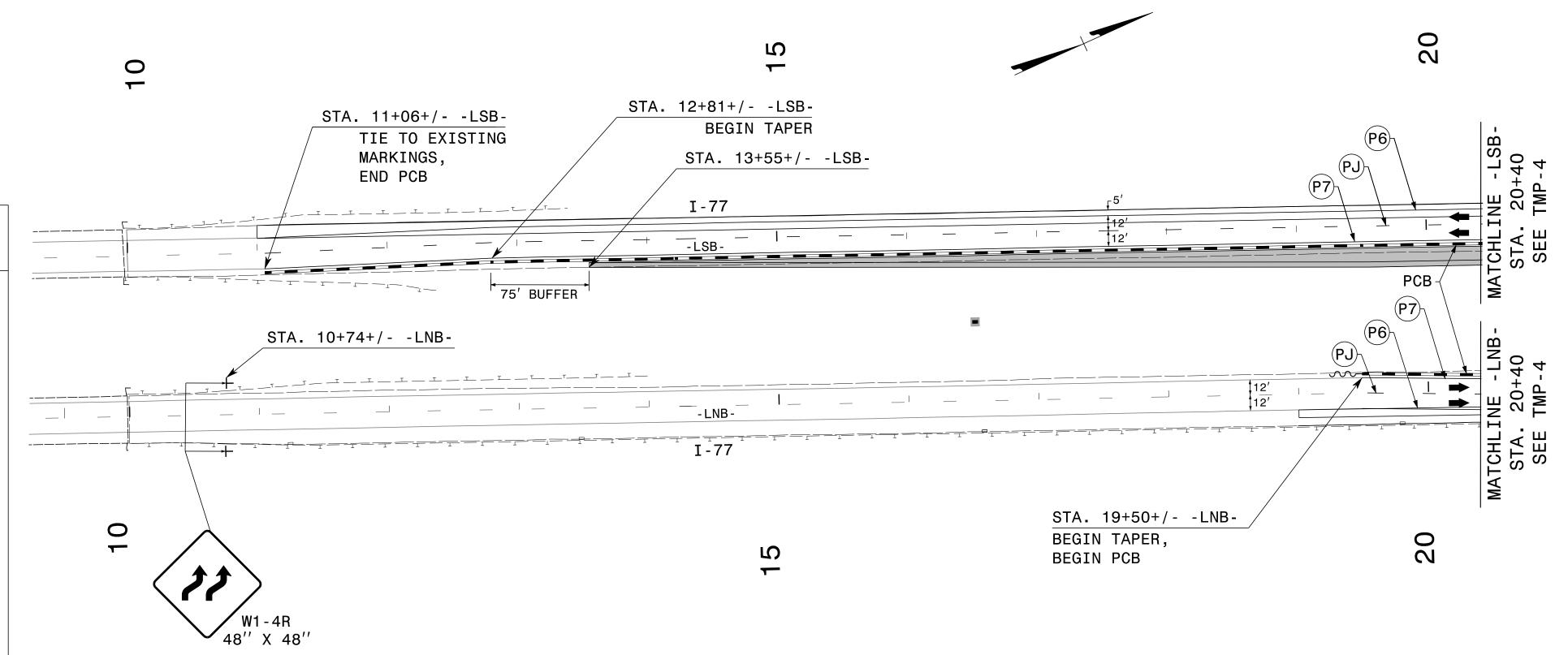
STEP 5. REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND OPEN REST AREA TO TRAFFIC.

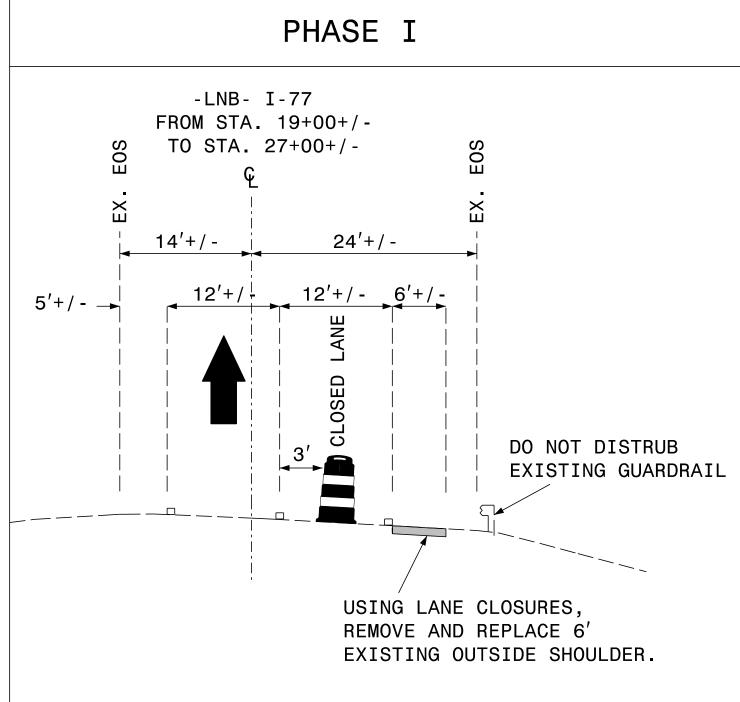


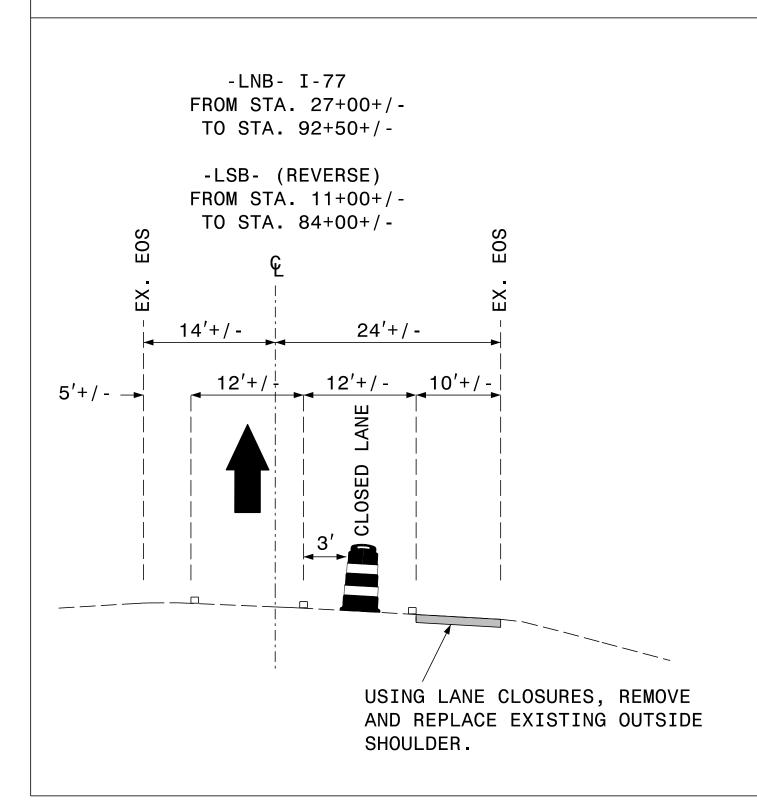


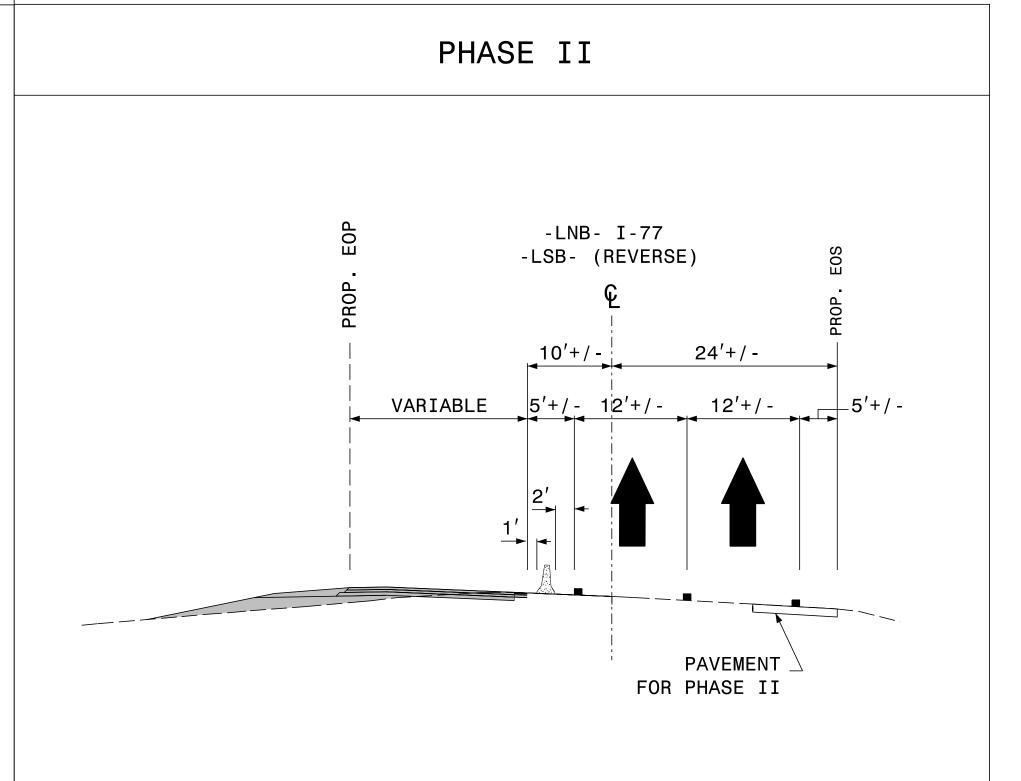
PHASING

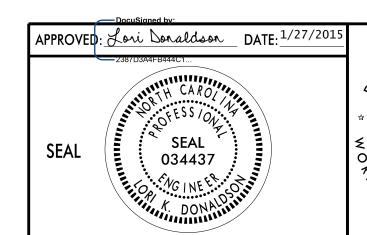
PROJ. REFERENCE NO. SHEET NO. TMP-3

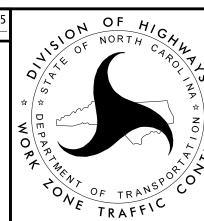








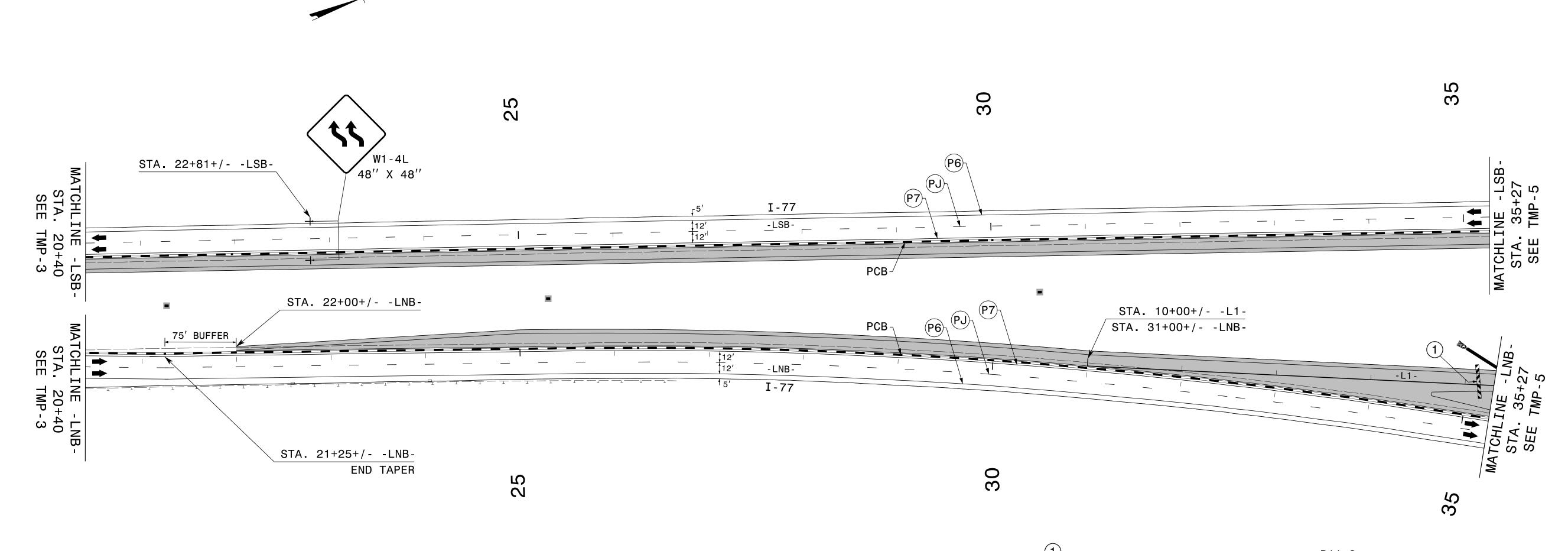


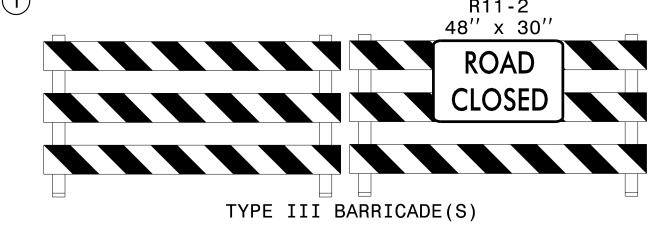


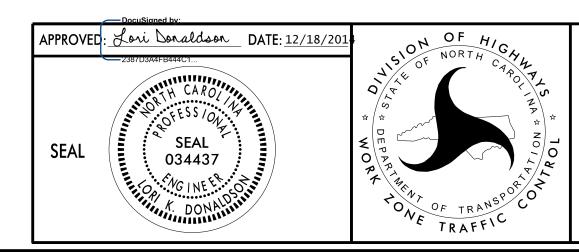
PHASE I & II
TYPICAL SECTIONS
PHASE II PLAN

.s-K\K4908\|raffic\|rafficControl\|CP\K4908_|C_|MP-3,dgr on

PROJ. REFERENCE NO. SHEET NO. TMP-4

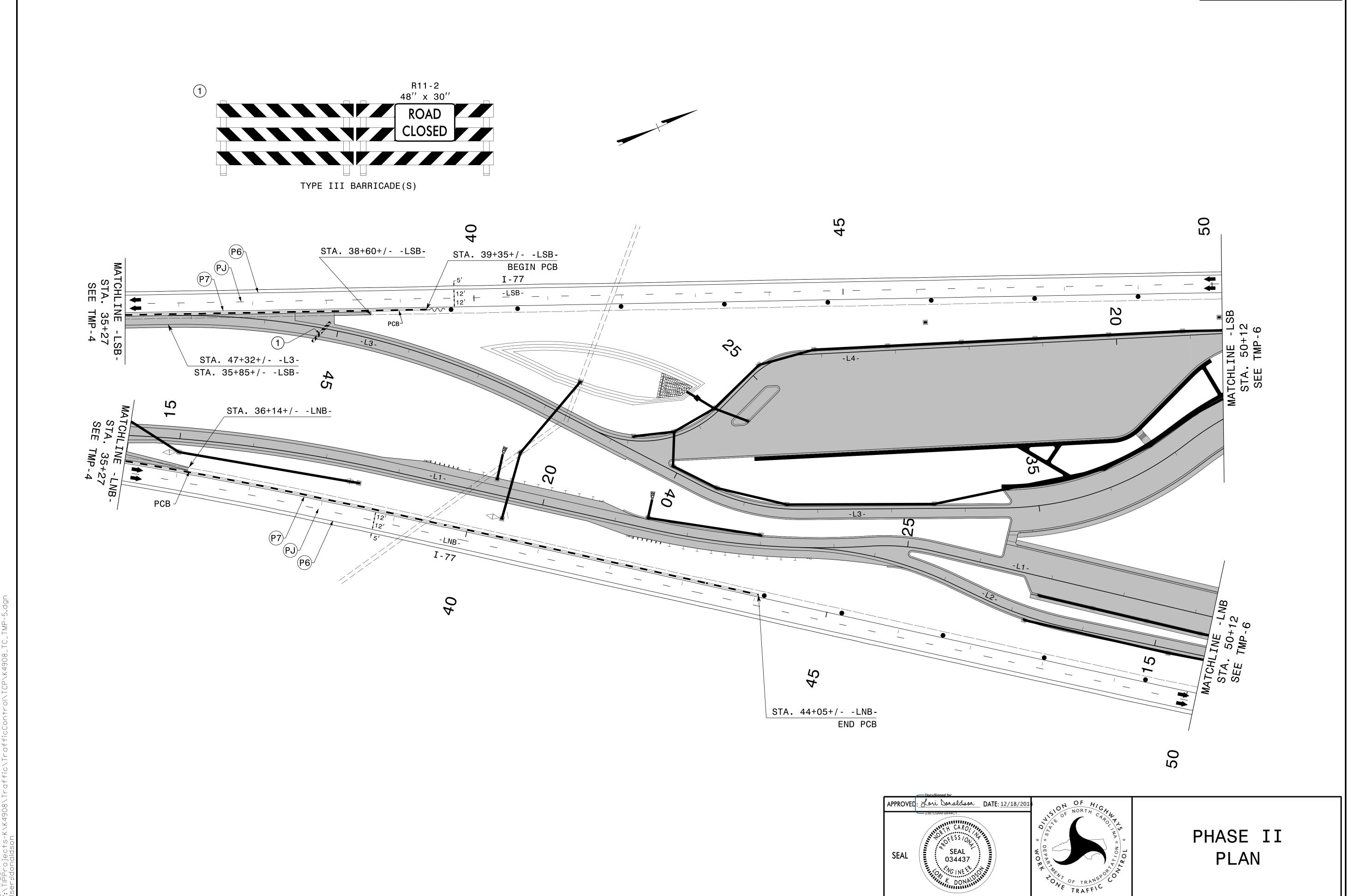


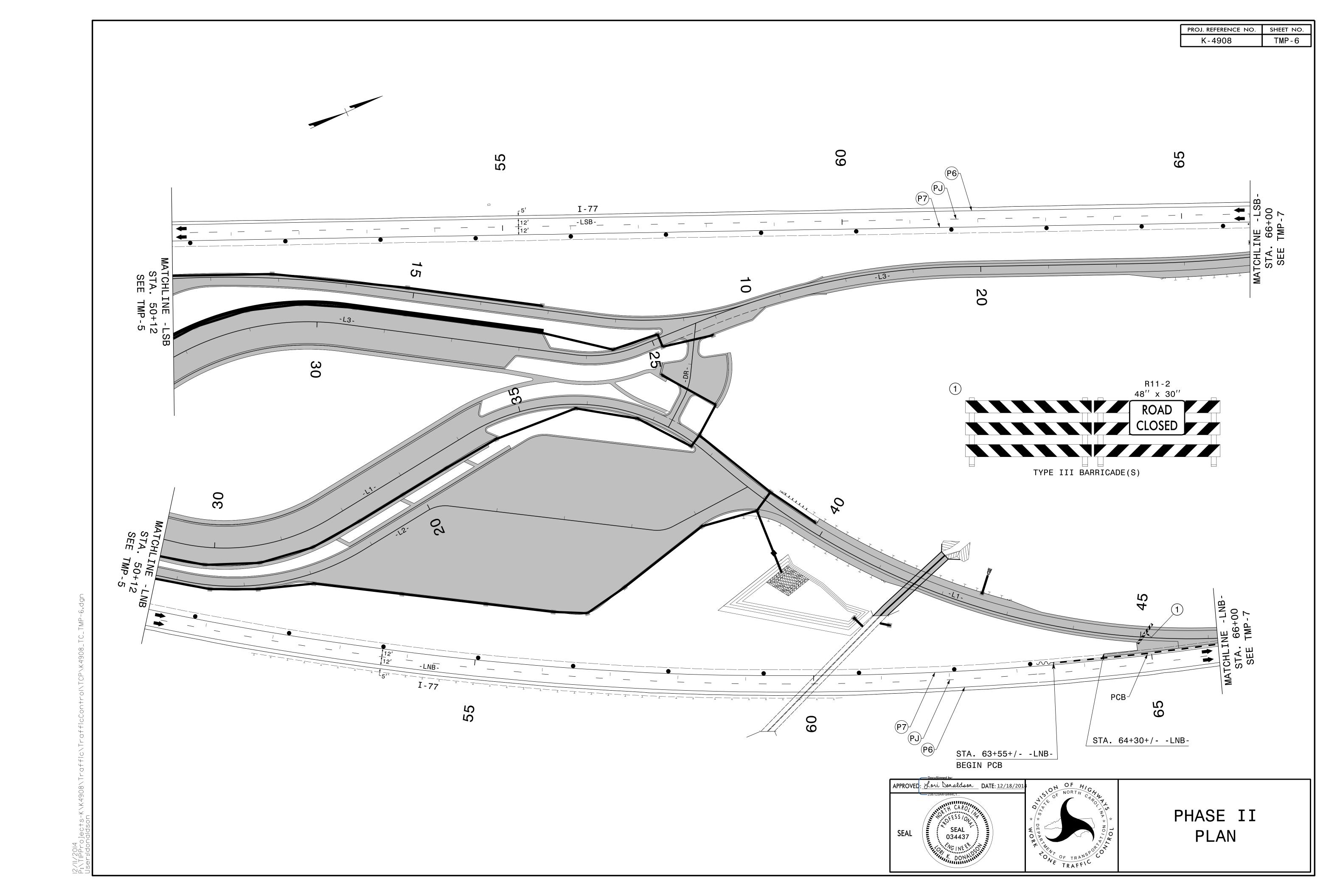




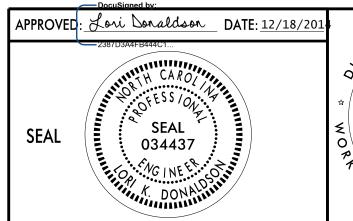
PHASE II PLAN

PROJ. REFERENCE NO. SHEET NO. TMP - 5





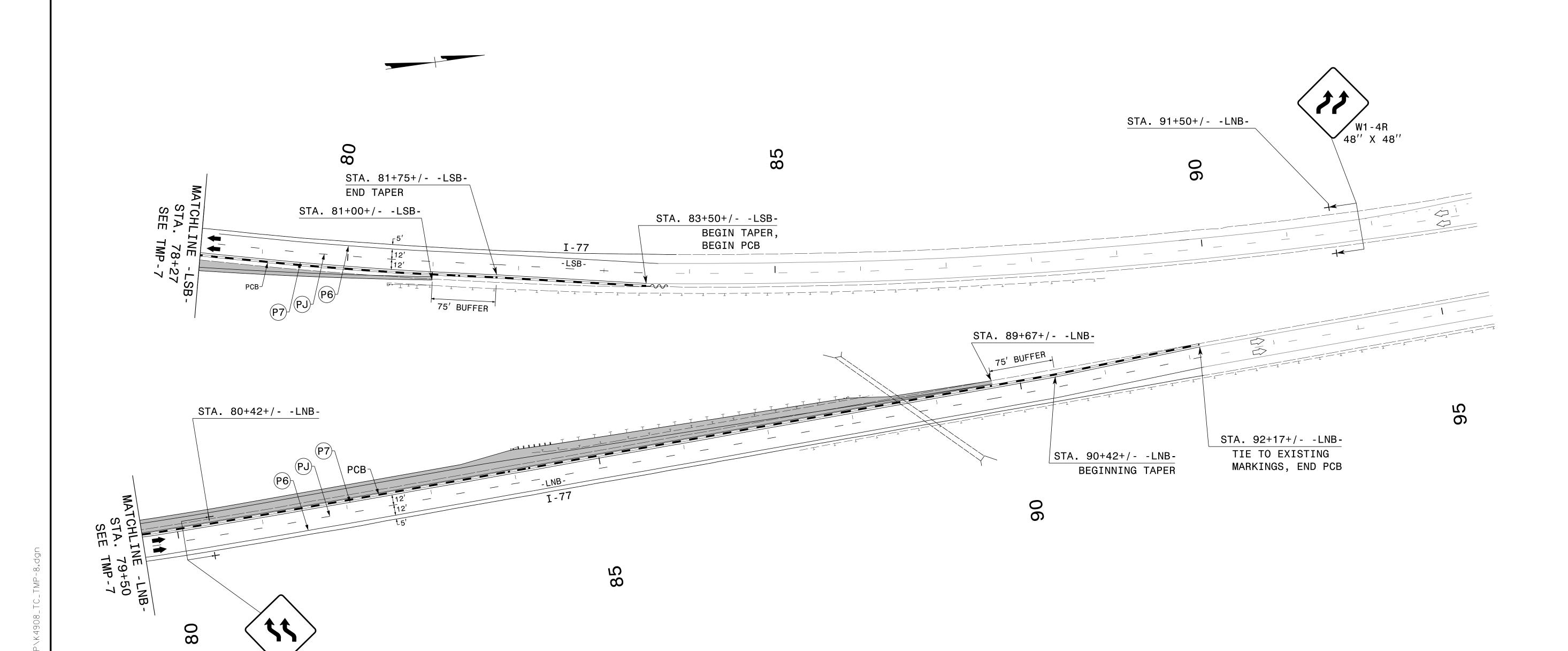
PROJ. REFERENCE NO. K-4908 STA. 66+00+/- -LSB-END PCB STA. 66+83+/- -LSB-70 57 R11-2 48" x 30" STA. 10+00+/- -L3-STA. 72+00+/- -LSB-TYPE III BARRICADE(S) STA. 47+64+/- -L1-STA. 67+38+/- -LNB-I-77 75

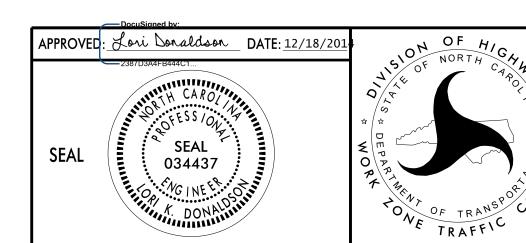




PHASE II PLAN SHEET NO.

PROJ. REFERENCE NO. SHEET NO. TMP - 8





PHASE II PLAN