M

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS



C-4901B

STATE PROJECT REFERENCE NO.

SHEET NO. TMP-1

PLAN FOR PROPOSED MAINTENANCE OF TRAFFIC

DAVIDSON COUNTY

REV. SEPTEMBER 2011

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 JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	<u>TITLE</u>
904.50	MOUNTING OF TYPE D,E,& F SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL & BARRIER DELINEATOR - INSTALLATION SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

INDEX OF SHEETS

SHEET NO.

TITLE

TMP - 1

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS,

LEGEND AND INDEX OF SHEETS

TMP-2

PROJECT NOTES AND PHASING

TMP-3 THRU TMP-4

PHASE I

TMP-5

OFFSITE DETOUR

TMP-6 THRU TMP-7

PHASE II

TMP-8

SPECIAL SIGN DESIGN

LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

NORTH ARROW

— PROPOSED PVMT. ----- EXIST. PVMT.

WORK AREA

REMOVAL OF EXISTING PAVEMENT

TRAFFIC CONTROL DEVICES

TYPE I BARRICADE

TYPE II BARRICADE

TYPE III BARRICADE

CONE

SKINNY DRUM

FLASHING ARROW PANEL (TYPE C)

- STATIONARY SIGN

✓ PORTABLE SIGN

STATIONARY OR PORTABLE SIGN

---- CRASH CUSHION

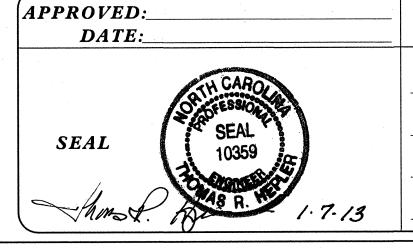
CHANGEABLE MESSAGE SIGN

TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)

POLICE

■ FLAGGER





PLAN PREPARED BY: CH ENGINEERING, PLLC STATE TRAFFIC MANAGEMENT ENGINEER T.R. HEPLER, PE TRAFFIC CONTROL PROJECT ENGINEER TRAFFIC CONTROL PROJECT DESIGN ENGINEER T.L. HEPLER TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

GENERAL NOTES

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

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

TIME RESTRICTIONS

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

ROAD NAME

DAY AND TIME RESTRICTIONS

TO THE EXTENT POSSIBLE LIMIT CLOSURE OF LANES TO PERIODS OF MINIMAL OR NO ACTIVITY AT THE ADJACENT QUARRY OR ASPHALT PLAN AS COORDINATED WITH THE RESPECTIVE OPERATION

LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) 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.
- 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.
- 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.

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.

PAVEMENT EDGE DROP OFF REQUIREMENTS

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.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

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

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

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

- 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) 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 TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- P) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME

MARKING

MARKER

NONE

SR 2024

PAINT

- Q) 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.
- 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.

PHASING

- TMP STRATEGY: THE APPROACH TO THE IMPLEMENTATION OF THIS PROJECT WILL BE TO CONSTRUCT AS MUCH OF THE NEW ROADWAY AS PRACTICAL WHILE MAINTAINING TRAFFIC ON THE EXISTING ROADWAYS. IN ORDER TO CONSTRUCT THE TIE-INS WITH THE EXISTING ROADWAY, TRAFFIC WILL BE DETOURED OFF-SITE ONTO LOWER LAKE ROAD. ACCESS TO THE QUARRY AND ASPHALT PLANT WILL BE MAINTAINED THROUGHOUT CONSTRUCTION. ONCE THE TIE-INS ARE COMPLETE AND THE PAVEMENT, BRIDGE AND ALL APPURTENANCES ARE COMPLETE TRAFFIC WILL BE ROUTED INTO ITS PERMANENT PATTERN ONTO UPPER TAKE ROAD AND THE CLOSING OF LOWER LAKE ROAD GRADE CROSSING COMPLETED.
- NOTES: COORDINATE SCHEDULED WORK WITHIN THE RAILROAD RIGHT OF WAY WITH NORFOLK SOUTHERN AND NCRR, SPECIFICALLY ANY WORK OR ACTIVITY THAT OCCURS IN PROXIMITY TO THE TRACKS.OPERATIONS WITHIN THE RAILROAD RIGHT OF WAY SHALL BE CONTROLLED BY NORFOLK SOUTHERN AND NCRR AND CONSEQUENT DIRECTIONS FROM THESE ENTITIES SHALL SUPERCEDE THIS TRAFFIC CONTROL PLAN. CONTRACTOR MUST HAVE CURRENT ROADWAY WORKER PROTECTION CERTIFICATION ISSUED VIA A RAILROAD AUTHORITY. AT A MINIMUM ANY CONSTRUCTION ACTIVITY WITHIN 25* OF THE TRACKS SHALL BE CONTROLLED BY A CERTIFIED FLAGGER PROVIDED BY THE RAILROAD AT THE CONTRACTOR'S EXPENSE.

COORDINATE WITH PRIVATE UTILITY OWNERS TO SCHEDULE RELOCATION OF CONFLICTING UTILITIES BY OTHERS PRIOR TO BEGINNING PROPOSED WORK THAT MAY IMPACT RESPECTIVE UTILITIES.

USING INCIDENTAL STONE AS NECESSARY, MAINTAIN VEHICULAR ACCESS TO ALL DRIVEWAYS DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER

COORDINATE WITH THE UTILITY CONTRACTOR AND WITH THE ENGINEER IN CHARGE TO PROVIDE ANY TRAFFIC CONTROL NEEDED TO PERFORM THE PROPOSED UTILITY CONSTRUCTION ON THIS PROJECT.

RETURN TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORK DAY UNLESS OTHERWISE STATED IN THE PHASING OR DIRECTED BY THE ENGINEER.

COMPLETE ANY PROPOSED OR TEMPORARY WIDENING IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE TRAVEL LANE.

PHASE I:

- STEP 1: PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS, PLACE WORK ZONE ADVANCED WARNING SIGNS ON -L- (SR 2024 UPPER LAKE ROAD) IN ACCORDANCE WITH NCDOT DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE SIGNS (RSD 1101.01)
- STEP 2: AWAY FROM TRAFFIC, BEGIN CONSTRUCTION OF PROPOSED STRUCTURE AND PROPOSED -L- FROM *L- STA. 21+50+00 +/- -L- TO STA. 31+50+/- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. CONSTRUCT NEW ENTRANCE (DRV) AND CREATE TEMPORARY TIE TO *L- AT STATION 15+00 (SEE SHEET TCP-3 & 4). USE RSD 1101.04 FOR NECESSARY SHOULDER WORK CLOSURES.

INSTALL RELOCATED WATERLINE ALONG PROPOSED *L- FROM 31+00+/- TO 34+00+/-

PHASE II:

STEP 1: INSTALL DETOUR SIGNING AS SHOWN IN TCP 5 AND BARRICADES TYPE *B*, *C* AND *D*. CLOSE ROAD TO TRAFFIC BETWEEN 15+25+/- AND 32+75+/-.

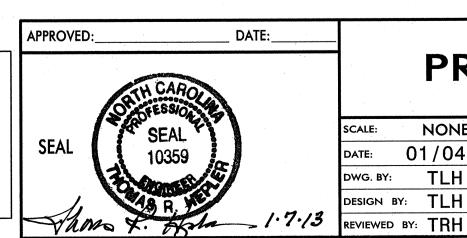
ICT#1 * COMPLETE ROAD CLOSURE FOR OF *L- FOR COMPETION OF TIE-INS SHALL BE LIMITED TO 30 CONSEQUTIVE DAYS.

CONSTRUCT REMAINDER OF THE ROADWAY FROM *L- 13+90 TO STA. 21+50+00 +/- AND -L-STA. 31+50+/- TO 34+80 UP TO THE FINAL SURFACE COURSE. INSTALL TEMPORARY PAVEMENT MARKINGS. USING ROADWAY STANDARD DRAWING NO. 1101.02 (SHEET 1 OF 15) WHILE WEDGING EXISTING ROADWAY. CONSTRUCT THE TIES TO THE EXISTING ROADWAY AT EACH END AND MAINTAINING ACCESS TO THE MARTIN MARIETTA OPERATIONS AS COORDINATED WITH THE RESPECTIVE PLANT FACILITY. PERFORM THE FOLLOWING IN A CONTINUOUS MANNER.

- STEP 2: OPEN ROADWAY TO TRAFFIC AND REMOVE DETOUR SIGNAGE AND BARRICADES.
- STEP 3: USING ROADWAY STANDARD DRAWING NO. 1101.02 (SHEET 1 OF 15), PLACE FINAL SURFACE COURSE AND FINAL PAVEMENT MARKINGS.
- STEP 4: REMOVE EXISTING ROADWAY BRIDGE AND RAILROAD CROSSING AS INDICATED ON THE PLANS.
- STEP 5: REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES
- STEP 6: COORDINATE WITH PROJ. C-4901C PROCEED WITH CLOSURE OF EXISTING LOWER LAKE ROAD, UPON COMPLETION OF TURNER ROAD(SR 2005) GRADE SEPARATION.







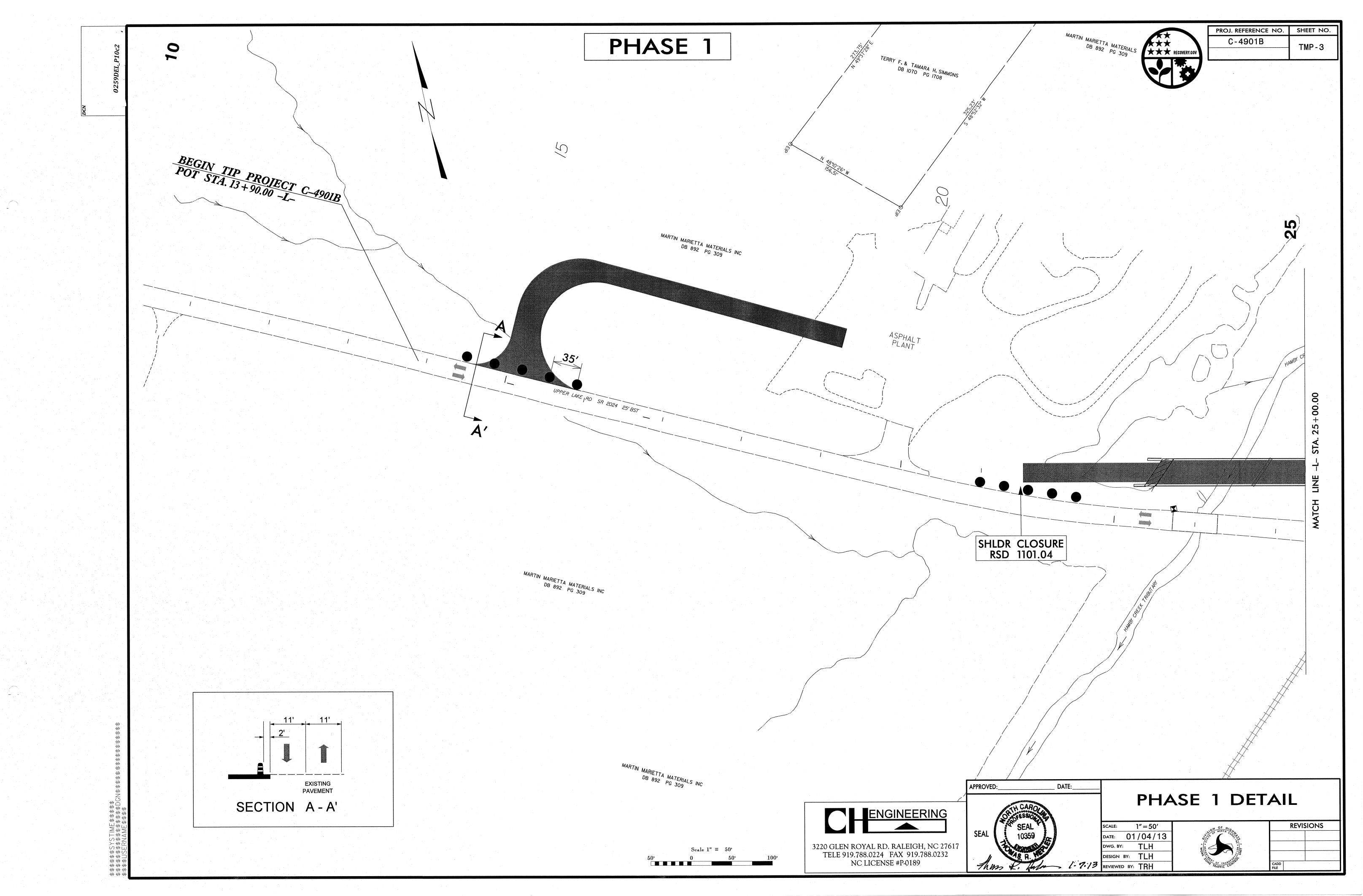
PROJECT NOTES

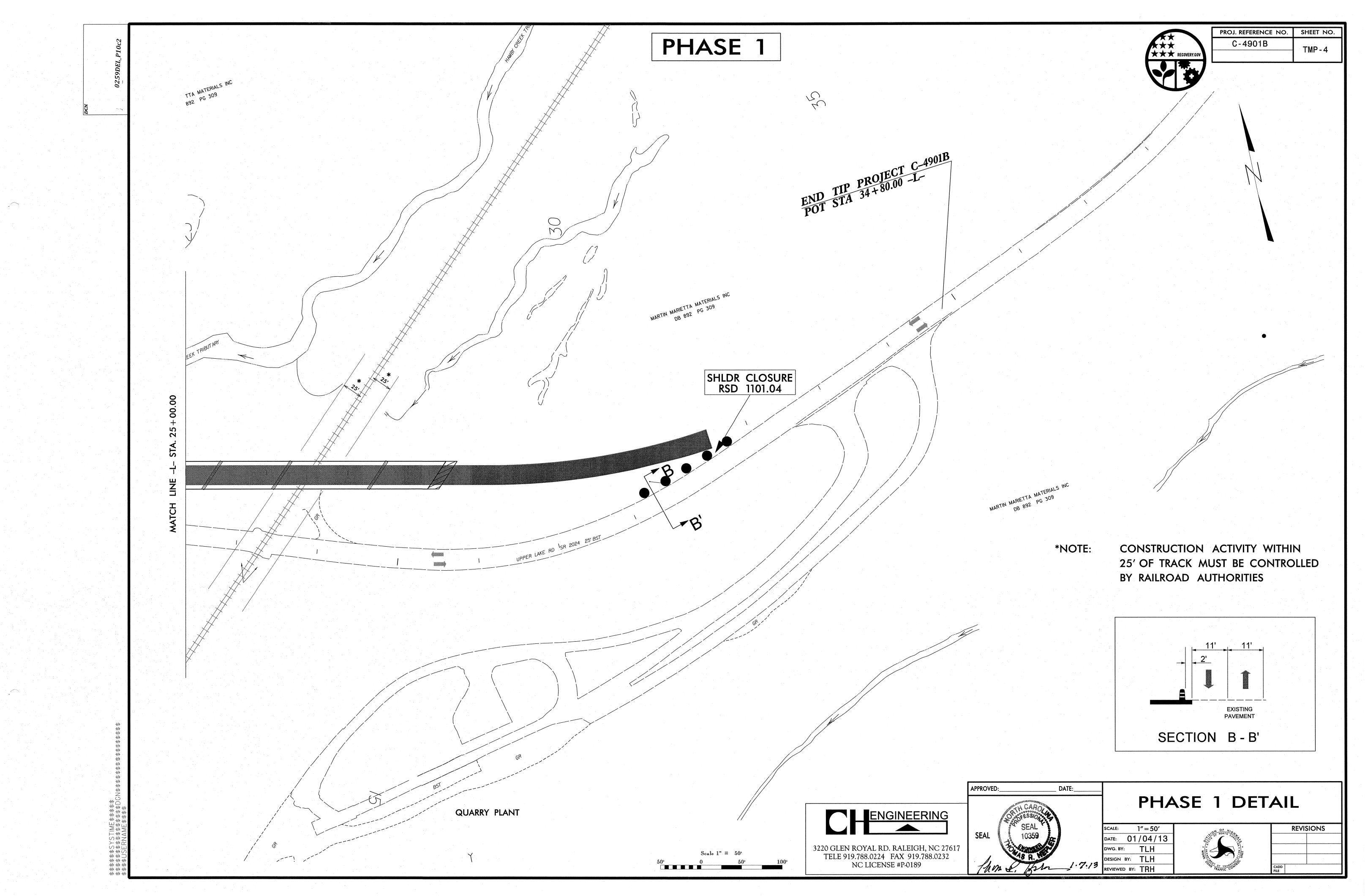
NONE 01/04/13 DWG. BY: TLH DESIGN BY: TLH

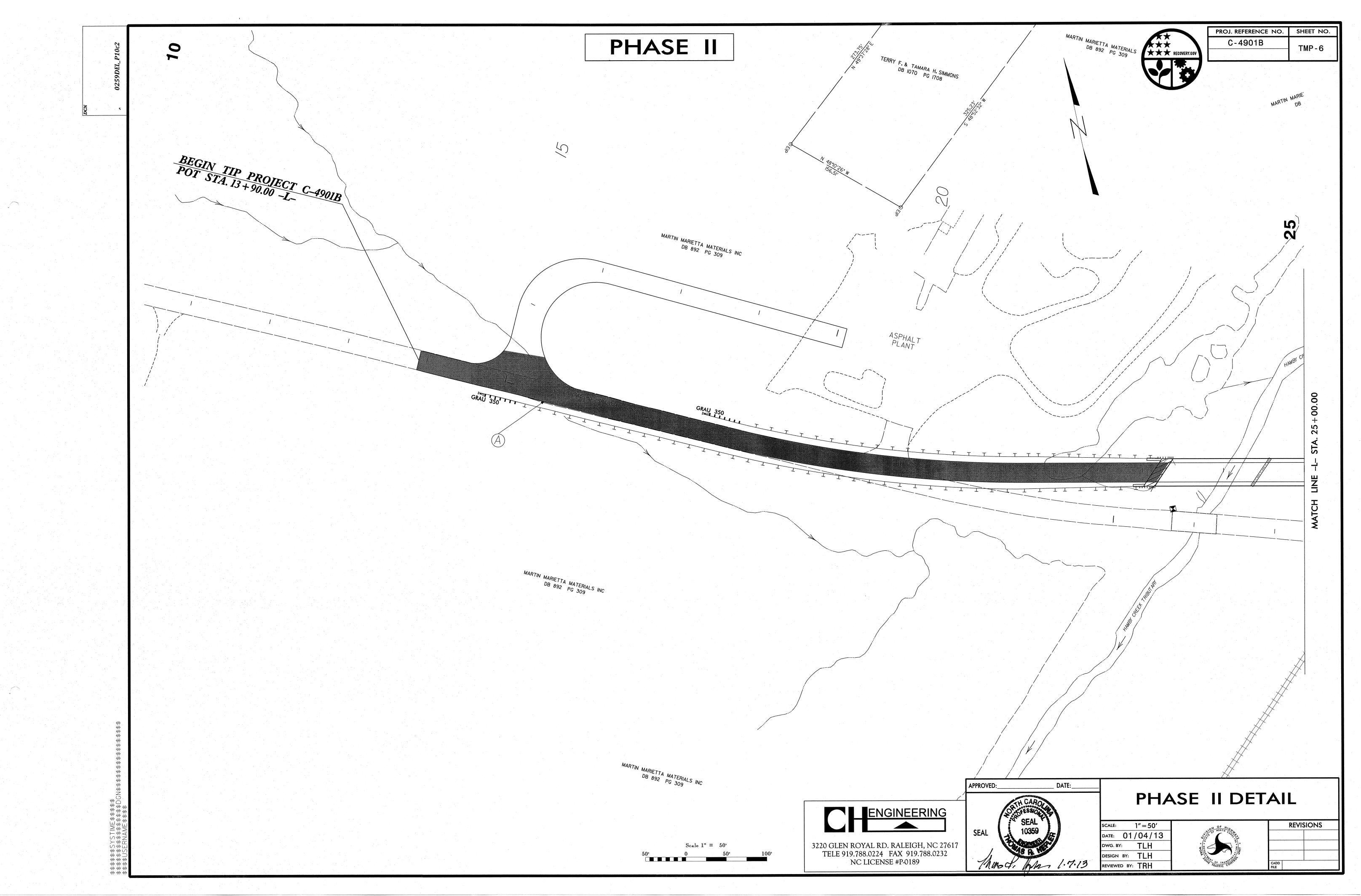


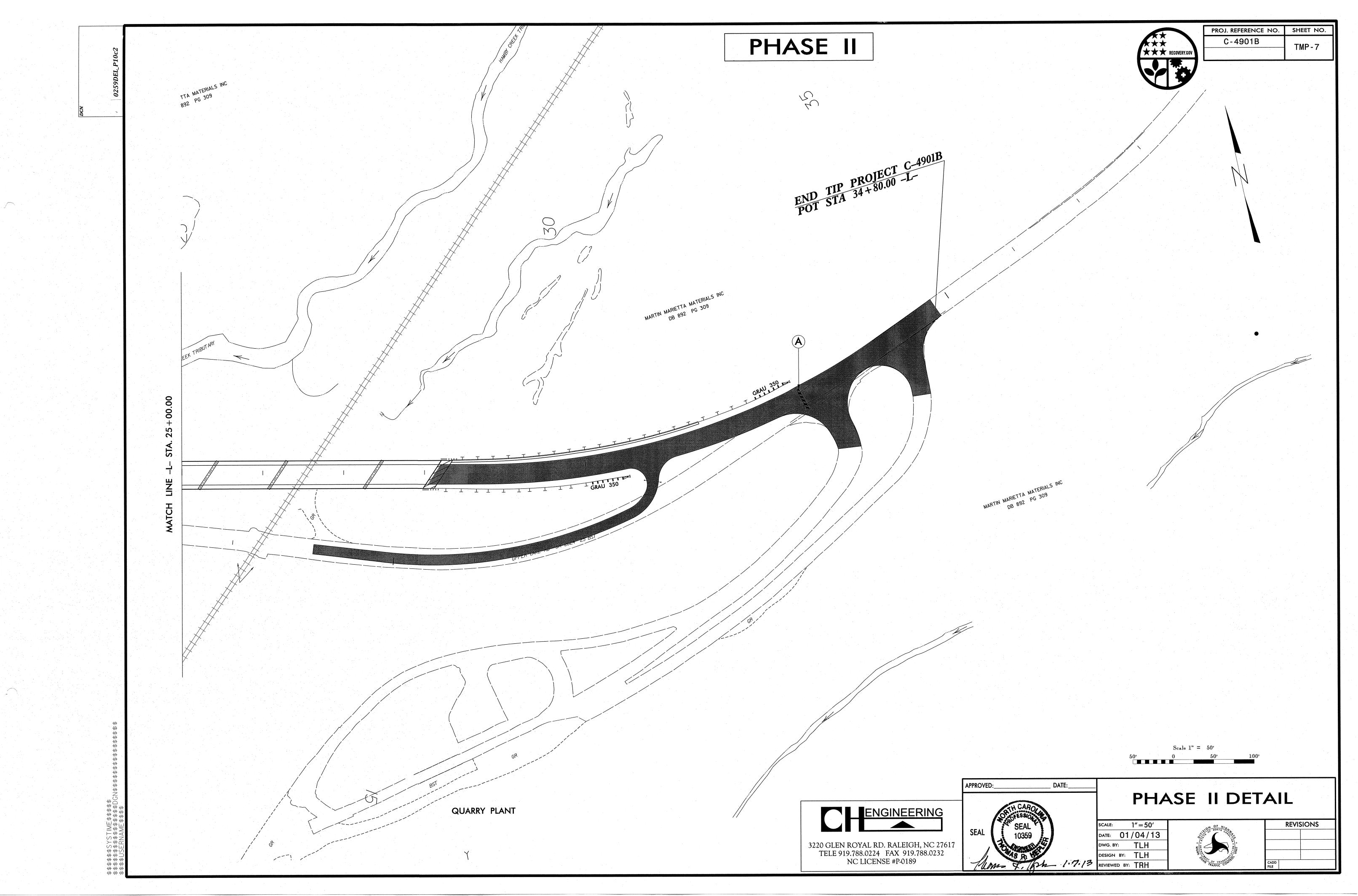
REVISIONS











PROJ. REFERENCE NO. C4901B TMP-8

BACKG COLOR: Orange SIGN NUMBER: SP-2 COPY COLOR: Black TYPE: D QUANTITY: 18 WID HT SYMBOL SIGN WIDTH: 3'-0" **HEIGHT:** 1'-9" TOTAL AREA: 5.25 Sq.Ft. BORDER TYPE: RECESSED RECESS: 0.47" WIDTH: 0.63"

NO. Z BARS:

LENGTH:

MAT'L: 0.080" (2.0 mm) ALUMINUM

USE NOTES:

RADII: 1.5"

- 1. Legend and border shall be direct applied, black, non-reflective sheeting.
- 2. Background shall be type VII, VIII, IX (Prismatic), Fluorescent orange, Retro-reflective sheeting.

LAKE RD

23.6"

CHECKED BY:

DIV: DIV

BORDER R=1.5" TH=0.63" IN=0.47"

Spacing Factor is 1 unless specified otherwise

DATE: Dec 5, 2012

LETTER POSITIONS

FILENAME: TCP SIGN DESIGNS

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DESIGN BY:

PROJECT ID: C4901B

TRH

NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN DESIGN

REVISIONS