

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

| | |
|-----------------------------|-----------|
| STATE PROJECT REFERENCE NO. | SHEET NO. |
| (ZONE 1) B-3450 | TCP-1 |

**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
DURHAM COUNTY**

LEGEND

REFER TO MAIN TCP-1

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-
ROADWAY DESIGN 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:

STD. NO. TITLE

REFER TO MAIN TCP-1

INDEX OF SHEETS

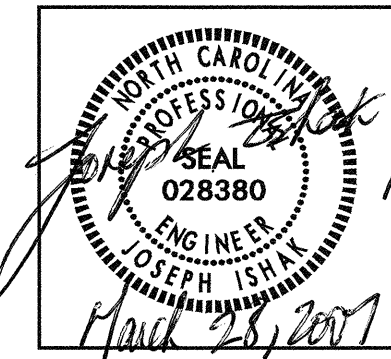
(ZONE 1) PROJECT B-3450

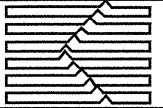
| SHEET NO. | TITLE |
|-----------|---|
| TCP-1 | INDEX OF SHEETS AND FINAL PAVEMENT MARKING SCHEDULE |
| TCP-2 | PROJECT NOTES |
| TCP-3 | PHASING |
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| PM-1 | PAVEMENT MARKING PLAN |

FINAL PAVEMENT MARKING SCHEDULE

| SYMBOL | DESCRIPTION | PAY ITEM | QUANTITY | |
|---|----------------------|----------|-----------|----------------|
| | | | BREAKDOWN | TOTAL QUANTITY |
| PAVEMENT MARKING LINES | | | | |
| THERMOPLASTIC (4", 90 MILS) | | | | |
| TA | WHITE EDGELINE | | 720 LF | |
| | | | TOTAL | 720 LF |
| THERMOPLASTIC (4", 120 MILS) | | | | |
| TI | YELLOW DOUBLE CENTER | | 1210 LF | |
| TF | 10 FT. YELLOW SKIP | | 620 LF | |
| TH | YELLOW SINGLE CENTER | | 2480 LF | |
| | | | TOTAL | 4310 LF |
| THERMOPLASTIC PAVEMENT MARKING SYMBOLS(90 MILS) | | | | |
| UA | LEFT TURN ARROW | | 8 EA | |
| | | | TOTAL | 8 EA |
| MARKERS | | | | |
| PERMANENT RAISED PAVEMENT MARKERS | | | | |
| MA | YELLOW & YELLOW | | 80 EA | |
| | | | TOTAL | 80 EA |

REVISED FEBRUARY 2007 TO MEET THE 2006 ROADWAY
STANDARDS AND REVISE THE INDEX OF SHEETS.



| | | |
|---|--|---|
| PLAN REVIEWED BY: N.C.D.O.T. TRAFFIC CONTROL, MARKING & DELINEATION SECTION S. BOURNE, P.E. TRAFFIC CONTROL ENGINEER J. ISHAK TRAFFIC CONTROL PROJECT ENGINEER M. HENDEE, P.E. TRAFFIC CONTROL PROJ. DESIGN ENGINEER A. ROPP TRAFFIC CONTROL DESIGN TECHNICIAN | APPROVED: _____ DATE: _____ NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT, BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY MICHELLE BRAME, P.E., #22761, ON 11-3-04 | PLAN PREPARED FOR N.C.D.O.T. BY:  MICHELLE R. BRAME P.E. PROJECT ENGINEER MICHELLE R. BRAME P.E. DESIGN ENGINEER JENNIFER M. SPOHN DESIGN TECHNICIAN |
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ZONE 1 PROJECT B-3450

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 |
|-----------------------|---|
| GARRETT RD. (SR 1116) | MONDAY THRU FRIDAY 6:00 A.M. TO 9:00 P.M. SATURDAY AND SUNDAY 9:00 A.M. TO 9:00 P.M. |

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

ROAD NAME
GARRETT 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 6:00 A.M. DECEMBER 31st TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 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 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR UNC-CHAPEL HILL AND DUKE GRADUATIONS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY OF THE WEEK OF THE UNC-CHAPEL HILL AND DUKE GRADUATIONS AND 9:00 P.M. THE FOLLOWING MONDAY AFTER THE WEEK OF THE UNC-CHAPEL HILL AND DUKE GRADUATIONS.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

| ROAD NAME | DAY AND TIME RESTRICTIONS | DURATION AND OPERATION |
|-------------|---|-------------------------------|
| GARRETT RD. | MONDAY THRU FRIDAY 6:00 A.M. TO 9:00 P.M. SATURDAY AND SUNDAY 9:00 A.M. TO 9:00 P.M. | 15 MINUTES FOR TRAFFIC SHIFTS |

LANE AND SHOULDER CLOSURE REQUIREMENTS

D) 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.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN 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.

F) 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.

G) 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.

H) 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.

I) DO NOT INSTALL MORE THAN 0.5 MILE OF LANE CLOSURE ON SR 1116 (GARRETT RD.) MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

J) DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON SR 1116 (GARRETT RD.).

PAVEMENT EDGE DROP OFF REQUIREMENTS

K) 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.

L) 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

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

SIGNING

N) 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.

O) PROVIDE PERMANENT SIGNING.

P) PROVIDE DETOUR SIGNING WITHIN THE PROJECT LIMITS.

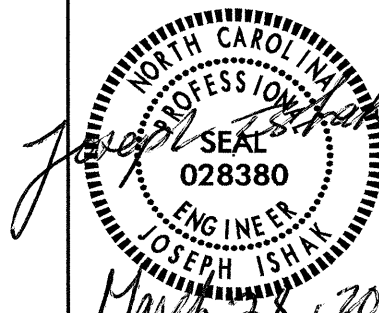
Q) COVER OR REMOVE ALL DETOUR SIGNS WITHIN THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.

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

TRAFFIC BARRIER

S) 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.



REVISED FEBRUARY 2007 TO MODIFY THE PROJECT TIME RESTRICTIONS AND UPDATE THE GENERAL NOTES TO THE NEW NOTES.

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ENGINEERS • PLANNERS • ECOLOGISTS

| | |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| B-3450 | TCP-2 |

CONTINUED

S) 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.

T) 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

U) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER 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.

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

PAVEMENT MARKINGS AND MARKERS

W) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

| ROAD NAME | MARKING | MARKER |
|-------------|---------------|------------------|
| GARRETT RD. | THERMOPLASTIC | PERMANENT RAISED |

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

| ROAD NAME | MARKING | MARKER |
|-------------|---------|------------------|
| GARRETT RD. | PAINT | TEMPORARY RAISED |

Y) 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.

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

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

MISCELLANEOUS

BB) MAINTAIN VEHICULAR ACCESS TO ALL BUSINESSES DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR AS DIRECTED BY THE ENGINEER.

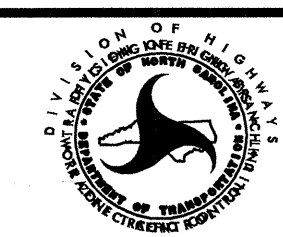
CC) REFER TO MUTCD FOR PEDESTRIAN DETOUR CONSIDERATIONS.

APPROVED: _____ DATE: _____

NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT, BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY MICHELLE BRAME, P.E., #22761, ON 11-3-04

PROJECT NOTES

SCALE: NONE
DATE: 8-6-04
DWG. BY: JMS
DESIGN BY: MRB
REVIEWED BY: MRB



| REVISIONS |
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PRE-PHASING NOTES

RETURN TRAFFIC TO TWO-LANE, TWO-WAY PATTERN AT THE END OF EACH WORK DAY UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

CONSTRUCTION MAY PROCEED SIMULTANEOUSLY IN ALL AREAS WITHIN EACH PHASE AND STEP, UNLESS OTHERWISE DIRECTED IN THE NOTES, PHASING, OR ICTS FOR EACH STEP. PROCEED WITH CONSTRUCTION WITHIN EACH AREA IN THE SEQUENCE LISTED.

AREA 1 (-L- STA. 9+60 TO -L- STA. 18+67 +/-)

- STEP 1: INSTALL WORK ZONE SIGNS ON SR 1116 (GARRETT ROAD) AS SHOWN ON SHEET TCP-4.
STEP 2: BEGIN ALL DRAINAGE WORK WITHIN THE AREA 1 LIMITS.
STEP 3: USING RSD 1101.02 (SHEETS 1 & 2 OF 9) AND SHEET TCP-4, PERFORM THE FOLLOWING:
- BEGIN CONSTRUCTION OF -DET1- FROM -DET1- STA. 1+12 +/- TO -DET1- STA. 6+84 +/-...
STEP 4: USING RSD 1101.02 (SHEETS 1 & 2 OF 9) AND SHEET TCP-4, PERFORM THE FOLLOWING:
- COMPLETE CONSTRUCTION OF -DET1- (INCLUDING ALL TEMPORARY GUARDRAIL & TEMPORARY STRUCTURE WORK FOR -DET1-) FROM -DET1- STA. 1+12 +/- TO -DET1- STA. 6+84 +/- UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE...
STEP 5: USING RSD 1101.03 (SHEET 3 OF 9) AND SHEET TCP-5, PERFORM THE FOLLOWING:
- UNCOVER SIGNS FOR RSD 1101.03 ON -DET1-.
- SHIFT TRAFFIC ONTO -DET1- IN A TWO LANE TWO WAY PATTERN AND CLOSE OFF THE PROPOSED ROADWAY (SR 1116) FROM -L- STA. 12+33 +/- TO -L- STA. 15+71 +/-...
STEP 6: AWAY FROM TRAFFIC AND USING SHEET TCP-6 , PERFORM THE FOLLOWING:
- USING A TYPE III BARRICADE, CLOSE THE DRIVEWAY AT -L- STA. 16+00 LT. +/-...
- CONSTRUCT THE PROPOSED ROADWAY (SR 1116), INCLUDING PROPOSED STRUCTURE WORK, FROM -L- STA. 12+33 +/- TO -L- STA. 15+71 +/-, UP TO BUT NOT INCLUDING THE FINAL 1-1/4" LAYER OF SURFACE COURSE...
- RELOCATE ALL UTILITIES ON THE -L- LINE WITHIN THE AREA 1 LIMITS.

NOTE: THE WORK REQUIRED IN STEP 6 IN BOTH AREAS 1 AND 2 SHALL BE COMPLETED BEFORE WORK REQUIRED IN STEP 7 BEGINS. STEPS 7 THRU 8 OF EACH AREA SHOULD BE COMPLETED SIMULTANEOUSLY.

- STEP 7: USING RSD 1101.02 (SHEET 1 OF 9) AND SHEETS TCP-8 & TCP-9, CONSTRUCT THE REMAINING PROPOSED SR 1116, TYING IN PROPOSED SR 1116 WITH EXISTING SR 1116 AS FOLLOWS:
- COVER OR REMOVE SIGNS FOR RSD 1101.03 FOR -DET1-.
- PLACE SR 1116 TRAFFIC IN ONE-LANE TWO-WAY PATTERN ONTO SB LANE OF SR 1116 FROM -L- STA. 10+00 +/- TO -L- STA. 18+67 +/-...
- CONSTRUCT THE NB LANE OF PROPOSED SR 1116 FROM -L- STA. 10+00 +/- TO -L- STA. 12+33 +/- AND FROM -L- STA. 15+71 +/- TO -L- STA. 18+67 +/- UP TO BUT NOT INCLUDING THE FINAL 1-1/4" LAYER OF SURFACE COURSE...
- PLACE SR 1116 TRAFFIC IN ONE-LANE TWO-WAY PATTERN ONTO NB LANE OF SR 1116 FROM -L- STA. 10+00 +/- TO -L- STA. 18+67 +/-...
- CONSTRUCT THE SB LANE OF PROPOSED SR 1116 FROM -L- STA. 10+00 +/- TO -L- STA. 12+33 +/- AND FROM -L- STA. 15+71 +/- TO -L- STA. 18+67 +/- UP TO BUT NOT INCLUDING THE FINAL 1-1/4" LAYER OF SURFACE COURSE...
- INSTALL TEMPORARY PAVEMENT MARKINGS (PAINT) AND PAVEMENT MARKERS (TEMPORARY RAISED) FROM -L- STA. 10+00 +/- TO -L- STA. 18+67 +/- AND OPEN PROPOSED SR 1116 TO TWO-LANE, TWO-WAY PATTERN AS SHOWN ON TCP-9...
- REMOVE -DET1-, INCLUDING THE TEMPORARY STRUCTURE...
- COMPLETE EARTHWORK IN THE AREA 1 LIMITS. SEE ROADWAY PLAN CROSS-SECTIONS...
- COMPLETE PROPOSED GUARDRAIL INSTALLATION LT. & RT. AS SHOWN ON THE ROADWAY PLANS, INCLUDING THE PROPOSED GRAU-350 FROM -L- STA. 10+75 RT. +/- TO -L- STA. 13+00 RT. +/- .

- STEP 8: USING RSD 1101.02 (SHEETS 1 & 2 OF 9) AND SHEET PM-1, PERFORM THE FOLLOWING:
- PLACE THE FINAL 1-1/4" LAYER OF SURFACE COURSE AND INSTALL FINAL PAVEMENT MARKINGS (THERMOPLASTIC) AND PAVEMENT MARKERS (PERMANENT RAISED) FROM -L- STA. 10+00 +/- TO -L- STA. 18+67 +/- . SEE PM-1.
- REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1116 TO TRAFFIC.

PHASING

AREA 2 (-L- STA. 18+67 +/- TO -L- STA. 26+99)

- STEP 1: INSTALL WORK ZONE SIGNS ON SR 1116 (GARRETT ROAD) AS SHOWN ON SHEET TCP-4.
STEP 2: BEGIN ALL DRAINAGE WORK WITHIN THE AREA 2 LIMITS.
STEP 3: USING RSD 1101.02 (SHEETS 1 & 2 OF 9) AND SHEET TCP-4, PERFORM THE FOLLOWING:
- BEGIN CONSTRUCTION OF -DET2- FROM -DET2- STA. 1+48 +/- TO -DET2- STA. 5+86 +/-...
STEP 4: USING RSD 1101.02 (SHEETS 1 & 2 OF 9) AND SHEET TCP-4, PERFORM THE FOLLOWING:
- COMPLETE CONSTRUCTION OF -DET2- (INCLUDING TEMPORARY GUARDRAIL, PCB, & TEMPORARY STRUCTURE WORK FOR -DET2-) FROM -DET2- STA. 1+48 +/- TO -DET2- STA. 5+86 +/- UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE...
STEP 5: USING RSD 1101.03 (SHEET 3 OF 9) AND SHEET TCP-5, PERFORM THE FOLLOWING:
- UNCOVER SIGNS FOR RSD 1101.03 ON -DET2-.
- SHIFT TRAFFIC ONTO -DET2- IN A TWO LANE TWO WAY PATTERN AND CLOSE OFF THE PROPOSED ROADWAY (SR 1116) FROM -L- STA. 21+25 +/- TO -L- STA. 23+31 +/- .
STEP 6: AWAY FROM TRAFFIC AND USING SHEET TCP-7, PERFORM THE FOLLOWING:
- AWAY FROM TRAFFIC, CONSTRUCT THE PROPOSED ROADWAY (SR 1116), INCLUDING PROPOSED STRUCTURE WORK, CURB AND GUTTER, AND SIDEWALK, FROM -L- STA. 21+25 +/- TO -L- STA. 23+31 +/-, UP TO BUT NOT INCLUDING THE FINAL 1-1/4" LAYER OF SURFACE COURSE...
- RELOCATE ALL UTILITIES ON THE -L- LINE WITHIN THE AREA 2 LIMITS.

NOTE: THE WORK REQUIRED IN STEP 6 IN BOTH AREAS 1 AND 2 SHALL BE COMPLETED BEFORE WORK REQUIRED IN STEP 7 BEGINS. STEPS 7 THRU 8 OF EACH AREA SHOULD BE COMPLETED SIMULTANEOUSLY.

- STEP 7: USING RSD 1101.02 (SHEET 1 OF 9) AND SHEETS TCP-8 & TCP-10, CONSTRUCT THE REMAINING PROPOSED SR 1116, TYING IN PROPOSED SR 1116 WITH EXISTING SR 1116 AS FOLLOWS:
- COVER OR REMOVE SIGNS FOR RSD 1101.03 FOR -DET2-.
- PLACE SR 1116 TRAFFIC IN ONE-LANE TWO-WAY PATTERN ONTO SB LANE OF SR 1116 FROM -L- STA. 18+67 +/- TO -L- STA. 26+99 +/-...
- CONSTRUCT THE NB LANE OF PROPOSED SR 1116, INCLUDING THE PROPOSED CURB AND GUTTER AND SIDEWALK, FROM -L- STA. 18+67 +/- TO -L- STA. 21+25 +/- AND FROM -L- STA. 23+31 +/- TO -L- STA. 26+99 +/- UP TO BUT NOT INCLUDING THE FINAL 1-1/4" LAYER OF SURFACE COURSE WHERE REQ'D...
- PLACE SR 1116 TRAFFIC IN ONE-LANE TWO-WAY PATTERN ONTO NB LANE OF SR 1116 FROM -L- STA. 18+67 +/- TO -L- STA. 26+99 +/-...
- CONSTRUCT THE SB LANE OF PROPOSED SR 1116, INCLUDING THE PROPOSED CURB AND GUTTER AND SIDEWALK, FROM -L- STA. 18+67 +/- TO -L- STA. 21+25 +/- AND FROM -L- STA. 23+31 +/- TO -L- STA. 26+99 +/- UP TO BUT NOT INCLUDING THE FINAL 1-1/4" LAYER OF SURFACE COURSE WHERE REQ'D...
- INSTALL TEMPORARY PAVEMENT MARKINGS (PAINT) AND PAVEMENT MARKERS (TEMPORARY RAISED) FROM -L- STA. 18+67 +/- TO -L- STA. 26+00 +/- AND OPEN PROPOSED SR 1116 TO TWO-LANE, TWO-WAY PATTERN AS SHOWN ON TCP-10...
- REMOVE -DET2-, INCLUDING THE TEMPORARY STRUCTURE...
- COMPLETE EARTHWORK IN THE AREA 2 LIMITS. SEE ROADWAY PLAN CROSS-SECTIONS...
- COMPLETE PROPOSED GUARDRAIL INSTALLATION LT. & RT. AS SHOWN ON THE ROADWAY PLANS, INCLUDING THE PROPOSED GRAU-350 FROM -L- STA. 20+89 LT +/- TO -L- STA. 21+39 LT +/- AND THE REMAINING PROPOSED GUARDRAIL AND GRAU-350'S FROM -L- STA. 23+31 LT. +/- TO -L- STA. 24+86 LT. +/-, FROM -L- STA. 19+87 RT +/- TO -L- STA. 21+25 RT +/-, AND FROM -L- STA. 23+31 RT +/- TO -L- STA. 23+84 RT +/- .
STEP 8: USING RSD 1101.02 (SHEETS 1 & 2 OF 9) AND SHEET PM-1, PERFORM THE FOLLOWING:
- PLACE THE FINAL 1-1/4" LAYER OF SURFACE COURSE AND INSTALL FINAL PAVEMENT MARKINGS (THERMOPLASTIC) AND PAVEMENT MARKERS (PERMANENT RAISED) FROM -L- STA. 18+67 +/- TO -L- STA. 26+00 +/- . SEE PM-1.
- REMOVE ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1116 TO TRAFFIC.

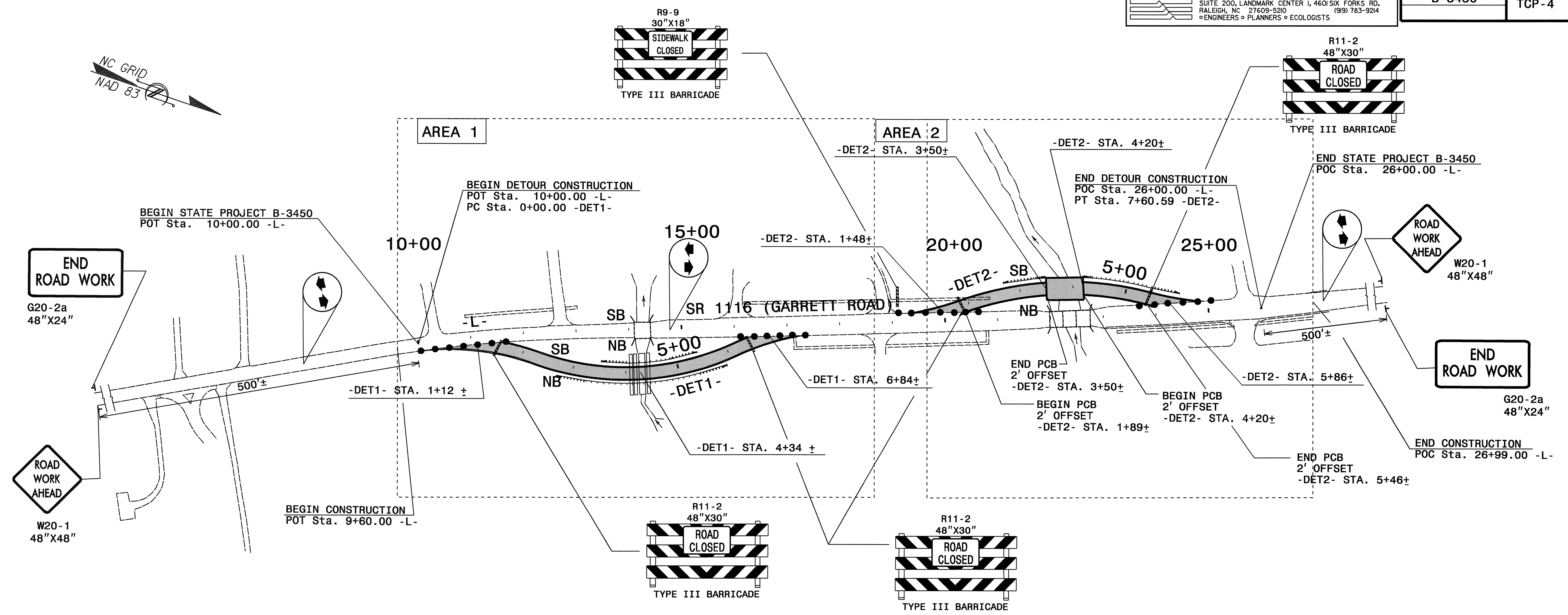
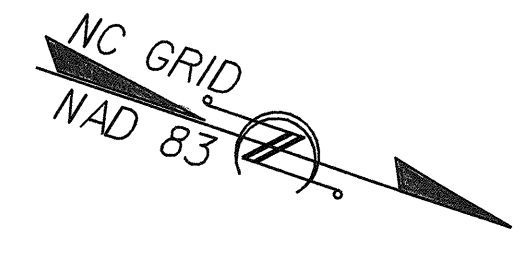
KCI Associates of North Carolina, P.A. SUITE 200, LANDMARK CENTER I, 4601 SIX FORKS RD. RALEIGH, NC 27609-5210 (919) 783-9214 ENGINEERS • PLANNERS • ECOLOGISTS

Table with 2 columns: PROJ. REFERENCE NO. (B-3450) and SHEET NO. (TCP-3)

28-FEB-2007 11:39 \\dot\dfs\o\101\proj\101\traffic\trafficcontrol\tcp\3450_3_3.tcp updated to 2006 standard\3450_3_3.tcp

Professional Engineer Seal for Joseph Brame, No. 028380, State of North Carolina. Includes a handwritten signature and date: March 28, 2007. Text: REVISED FEBRUARY 2007 TO UPDATE THE ROADWAY STANDARDS REFERENCED IN THE PHASING TO THE 2006 ROADWAY STANDARDS

APPROVED: _____ DATE: _____
NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY MICHELLE BRAME, P.E., #22761, ON 11-3-04
SCALE: NONE
DATE: 8-6-04
DWG. BY: JMS
DESIGN BY: MRB
REVIEWED BY: MRB
PHASING
REVISIONS



TEMPORARY PAVEMENT MARKING SCHEDULE

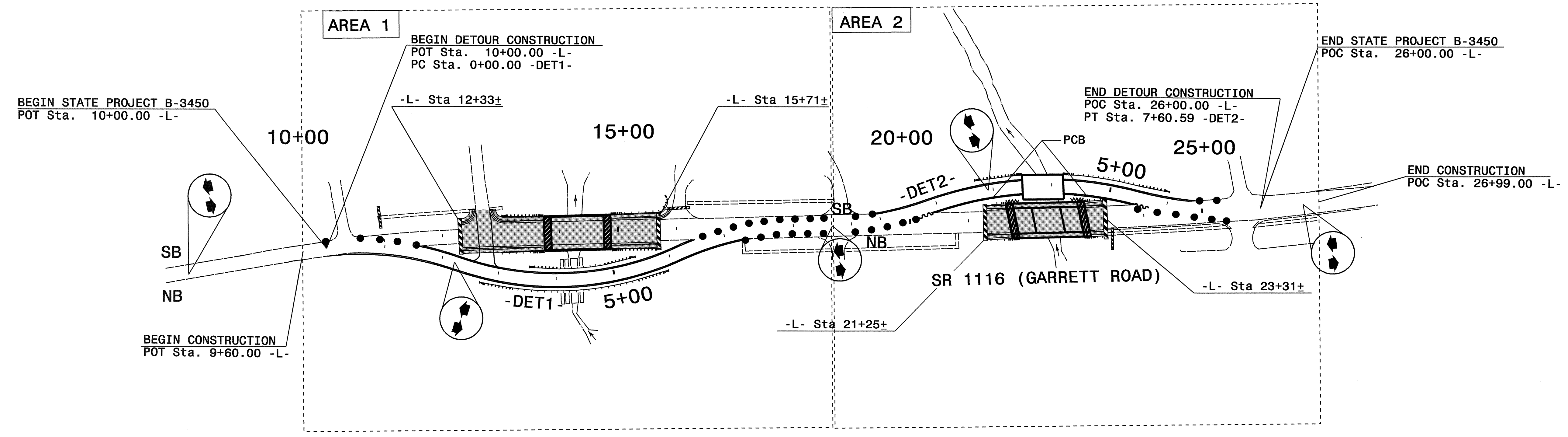
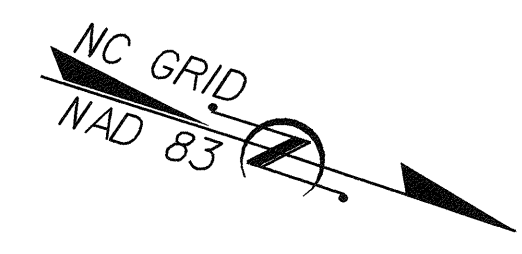
| SYMBOL | DESCRIPTION | PAY ITEM | QUANTITY | |
|-----------------------------------|---------------------------|----------|-----------|----------------|
| | | | BREAKDOWN | TOTAL QUANTITY |
| PAVEMENT MARKING LINES | | | | |
| PAINT (4") | | | | |
| PA | WHITE EDGELINE(2X) | | 14,370 LF | |
| PI | YELLOW DOUBLE CENTER(2X) | | 16,250 LF | |
| PH | YELLOW SINGLE CENTER (2X) | | 4,960 LF | |
| PF | 10 FT. YELLOW SKIP (2X) | | 1,240 LF | |
| | | | TOTAL | 36,820 LF |
| MARKERS | | | | |
| TEMPORARY RAISED PAVEMENT MARKERS | | | | |
| MH | YELLOW & YELLOW | | 163 EA | |
| | | | TOTAL | 163 EA |

NOTES: 1) FOR EACH PAINT PAVEMENT MARKING ITEM, 2X MEANS TWO APPLICATIONS.
 2) AS DIRECTED BY THE ENGINEER, TEMPORARY PAVEMENT MARKING (PAINT) MAY BE USED TO STRIPE THE FINAL TRAFFIC PATTERN ON THE -L- LINE. THE TEMPORARY PAVEMENT MARKING SCHEDULE INCLUDES QUANTITIES FOR PLACING TWO APPLICATIONS OF PAINT ON THE FINAL SURFACE OF NEW ASPHALT WITH PERMANENT TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE UNTIL THE PROPOSED FINAL PAVEMENT MARKING (THERMOPLASTIC) IS APPLIED.

REVISED FEBRUARY 2007 TO UPDATE THE BARRICADES AND WORK ZONE ADVANCE WARNING SIGNS TO THE 2006 ROADWAY STANDARDS.
 [Professional Engineer Seal: MICHELLE BRAME, P.E., #22761, ON 11-3-04]

| | | | | |
|--|-------------|---|--|-----------|
| APPROVED: _____ | DATE: _____ | OVERVIEW 1 & TEMPORARY PAVEMENT MARKING SCHEDULE | | |
| NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT, BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY MICHELLE BRAME, P.E., #22761, ON 11-3-04 | | SCALE: NONE | | |
| | | DATE: 8-6-04 | | REVISIONS |
| | | DWG. BY: JMS | | |
| | | DESIGN BY: MRB | | |
| REVIEWED BY: MRB | | | | |

28-FEB-2007 14:51 \\dot\dfsroot\projects-b\3450\traffic\control\top\top's updated to 2006 standard\sb3450_4.tpc
 AT WZTC224162 msteelman

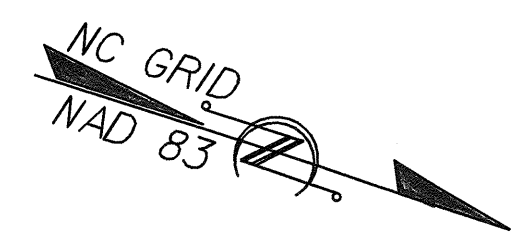


05-MAR-2007 13:47 \\dot\dfs\root\proj\traffic\trafficcontrol\top\top's updated to 2006 standards\b3450_5.top
 AT WZTC22462
 msteelman

SEE SHEET TCP-6 & TCP-7 FOR DETAILS 1 & 2

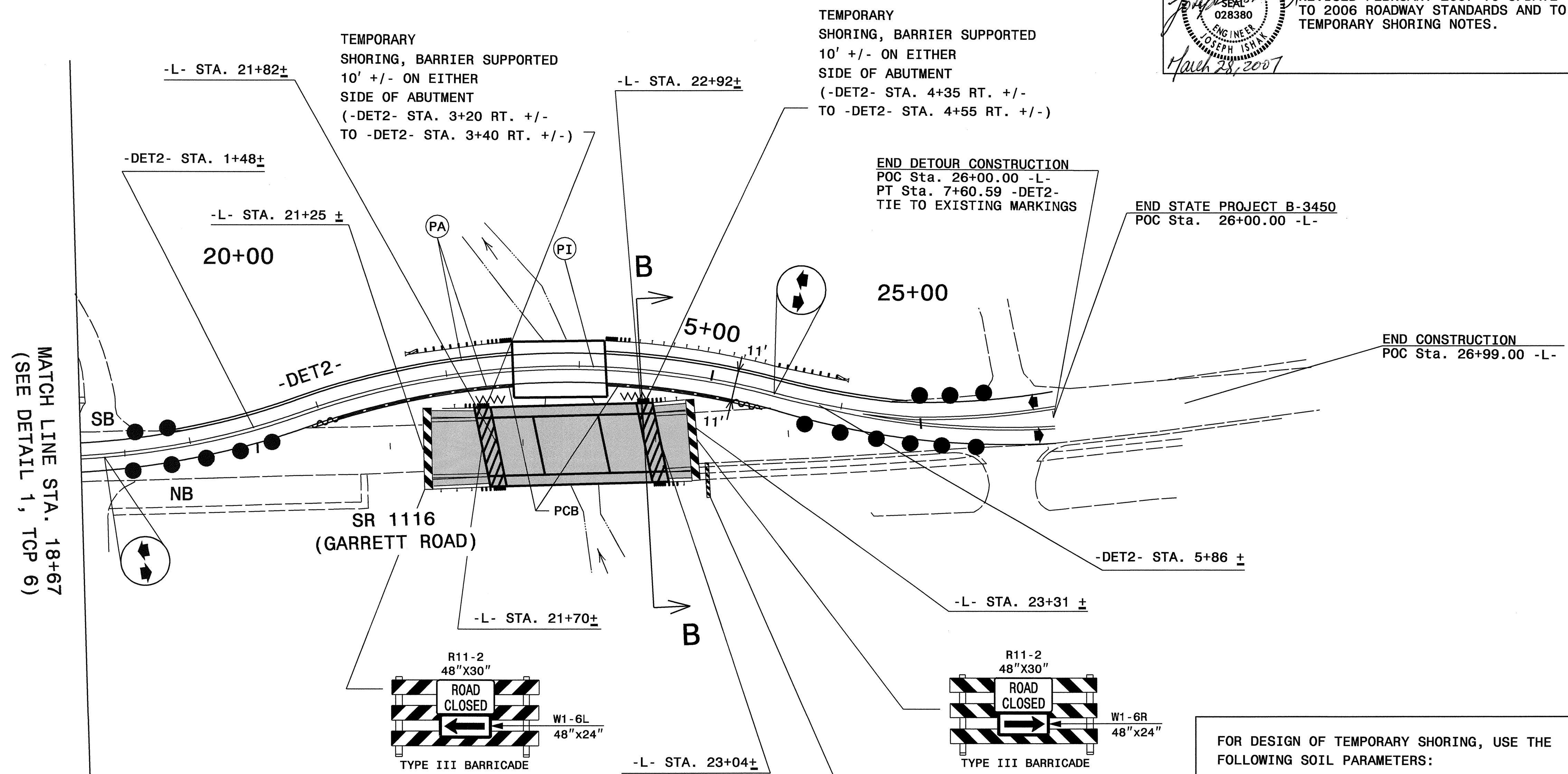
REVISED FEBRUARY 2007 TO RELOCATE THE TYPE III BARRICADE ON THE EXISTING DRIVEWAY AT -L- STA. 16+00+/- TO A LOCATION IN FRONT OF THE EXISTING SIDEWALK TO ALLOW PEDESTRIAN ACCESS TO THE SIDEWALK

| | | | |
|--|----------------|-------------------|-----------|
| APPROVED: _____ | DATE: _____ | OVERVIEW 2 | |
| NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT, BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY MICHELLE BRAME, P.E., #22761, ON 11-3-04 | | | |
| SCALE: NONE | DATE: 8-6-04 | | REVISIONS |
| DWG. BY: JMS | DESIGN BY: MRB | | |
| REVIEWED BY: MRB | | | |
| | | | |



SEE SHEET TCP-4 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

AREA 2



REVISED FEBRUARY 2007 TO UPDATE THE BARRICADES TO 2006 ROADWAY STANDARDS AND TO CORRECT THE TEMPORARY SHORING NOTES.

Professional Engineer Seal: JOSEPH ISHAK, No. 028380, State of North Carolina, dated March 28, 2007.

END STATE PROJECT B-3450
POC Sta. 26+00.00 -L-

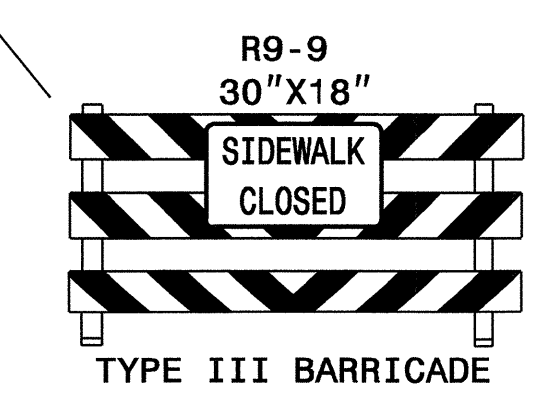
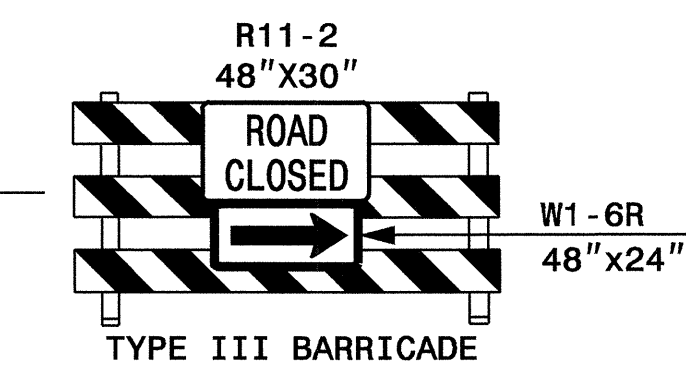
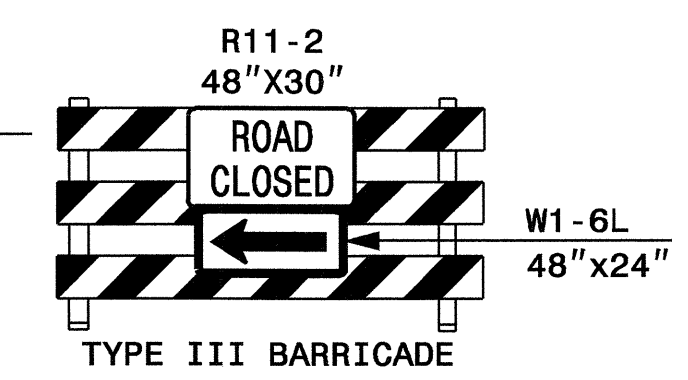
END CONSTRUCTION
POC Sta. 26+99.00 -L-

TEMPORARY SHORING, BARRIER SUPPORTED
10' +/- ON EITHER SIDE OF ABUTMENT
(-DET2- STA. 4+35 RT. +/- TO -DET2- STA. 4+55 RT. +/-)

TEMPORARY SHORING, BARRIER SUPPORTED
10' +/- ON EITHER SIDE OF ABUTMENT
(-DET2- STA. 3+20 RT. +/- TO -DET2- STA. 3+40 RT. +/-)

END DETOUR CONSTRUCTION
POC Sta. 26+00.00 -L-
PT Sta. 7+60.59 -DET2-
TIE TO EXISTING MARKINGS

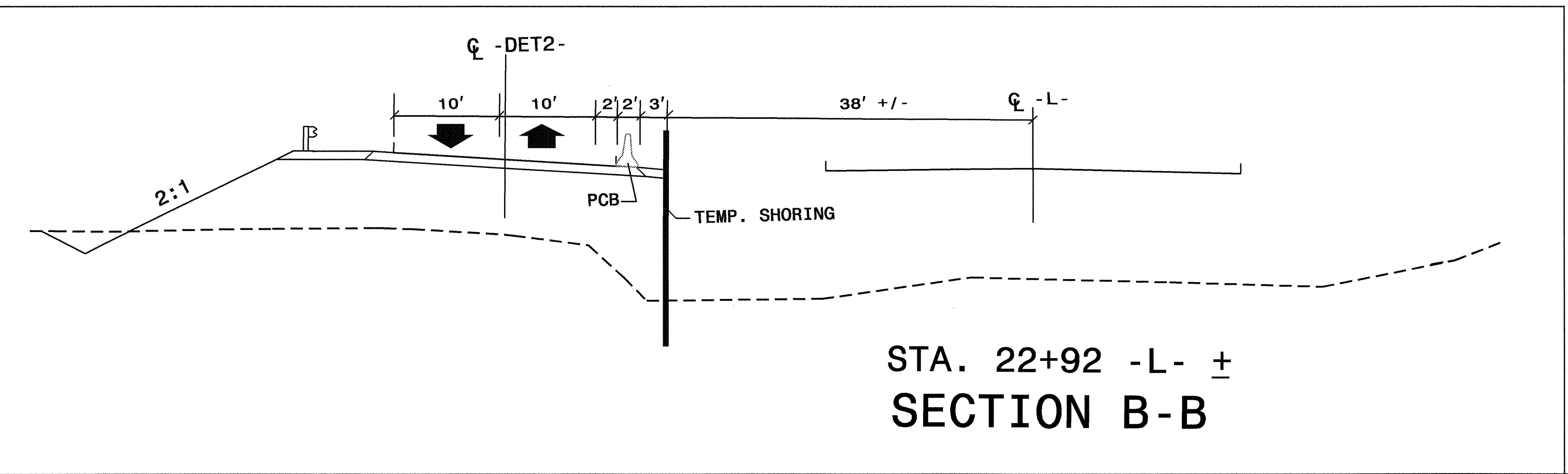
MATCH LINE STA. 18+67
(SEE DETAIL 1, TCP 6)



FOR DESIGN OF TEMPORARY SHORING, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $\gamma = 120$ pcf
 UNIT WEIGHT OF SOIL BELOW WATER TABLE, $\gamma' = 60$ pcf
 FRICTION ANGLE, $\phi = 30^\circ$
 COHESION, $c = 0$ psf

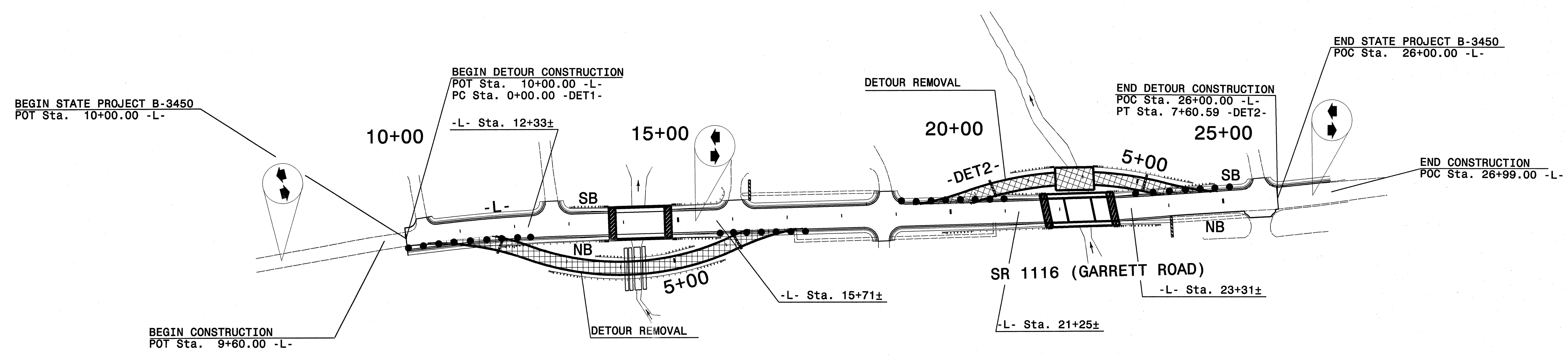
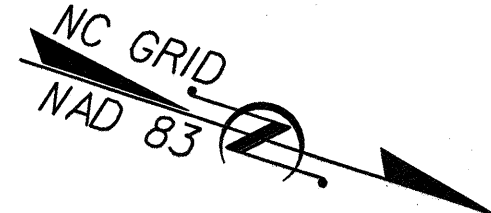
DO NOT USE STANDARD SHORING DESIGN FROM STA. 3+20 +/- TO STA. 3+40 +/- -DET2-, 16.0 FT. +/- RT. AND STA. 4+35 +/- TO STA. 4+55 +/- -DET2-, 16.0 FT. +/- RT. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING SHORING DESIGN.



STA. 22+92 -L- ±
SECTION B-B

| | | | |
|---|--------|-----------------|-----------|
| APPROVED: | DATE: | DETAIL 2 | |
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| SCALE: | NONE | | REVISIONS |
| DATE: | 8-6-04 | | |
| DWG. BY: | JMS | | |
| DESIGN BY: | MRB | | |
| REVIEWED BY: | MRB | | |

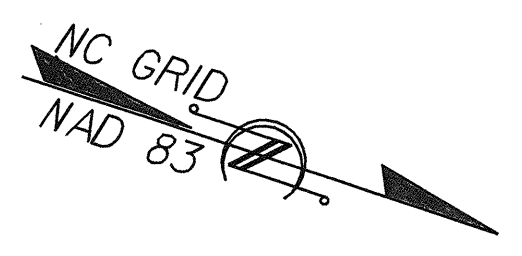
21-MAR-2007 08:21
 \\dot\dfs\proj\proj\projects-b\3450\traffic\traffic\control\top\top's updated to 2006 standards\b3450_7_top
 msteelman AT WZTC224162



\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DCN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

| | | | |
|--|------------------|-------------------|-----------|
| APPROVED: <i>Michelle R. Brune</i> DATE: 11/1/04 | | OVERVIEW 3 | |
| | SCALE: NONE | | REVISIONS |
| | DATE: 8-6-04 | | |
| | DWG. BY: JMS | | |
| | DESIGN BY: MRB | | |
| | REVIEWED BY: MRB | | |

SEE SHEET TCP-4 FOR TEMPORARY PAVEMENT MARKING SCHEDULE



BEGIN STATE PROJECT B-3450
 POT Sta. 10+00.00 -L-

BEGIN CONSTRUCTION
 POT Sta. 9+60.00 -L-

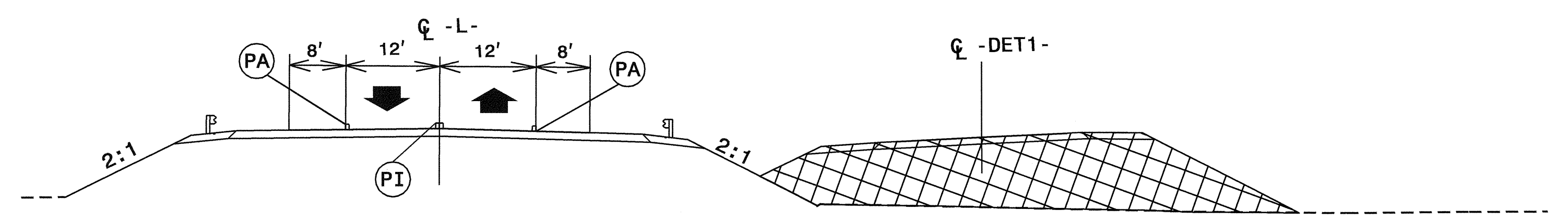
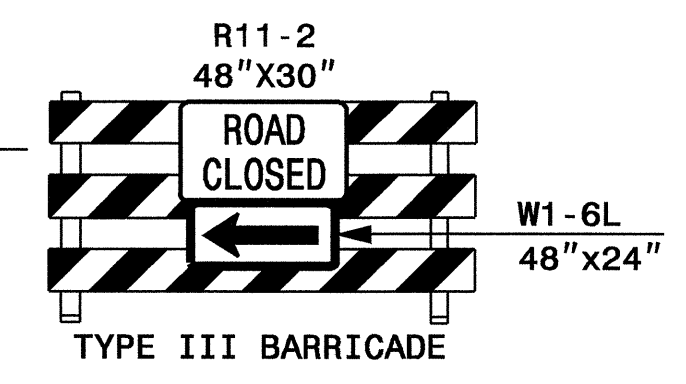
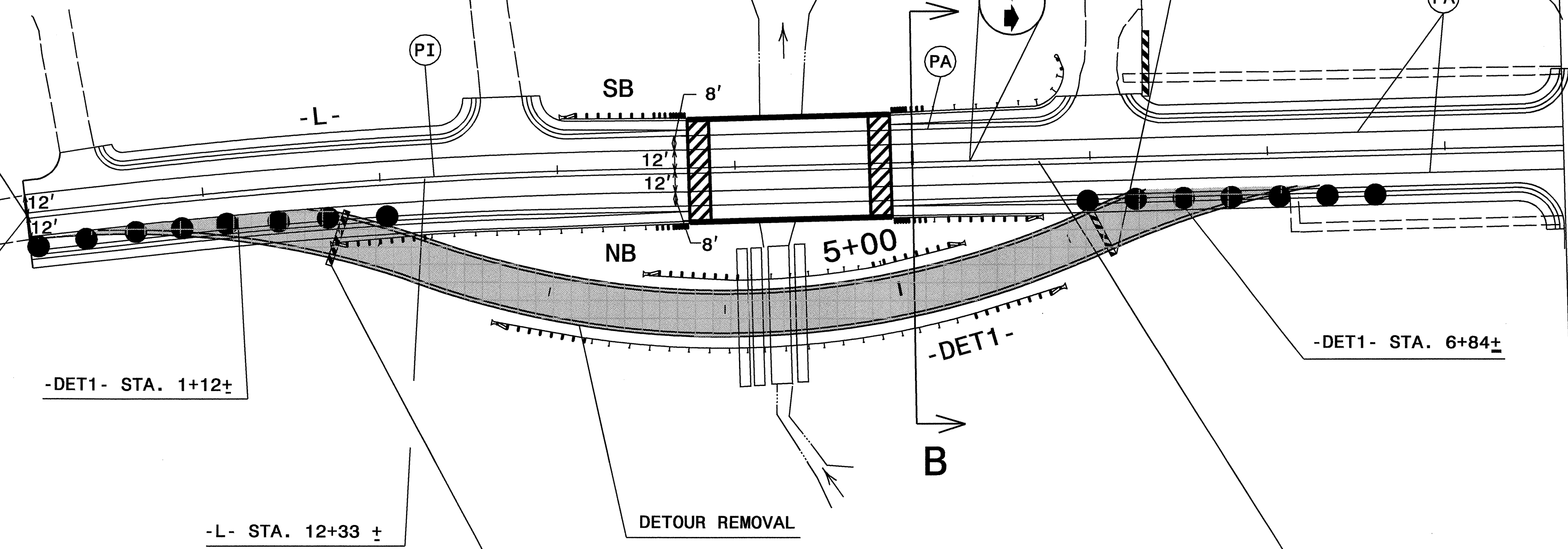
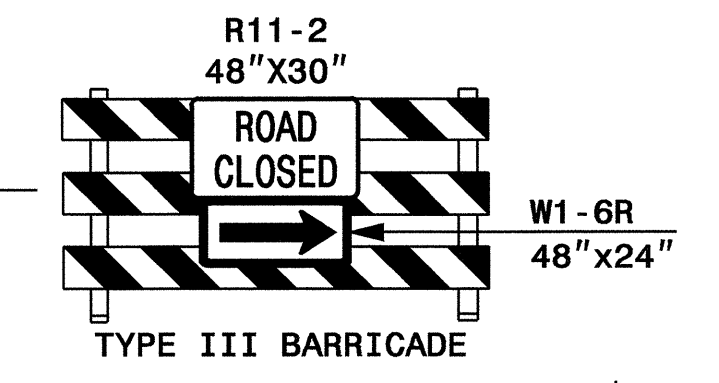
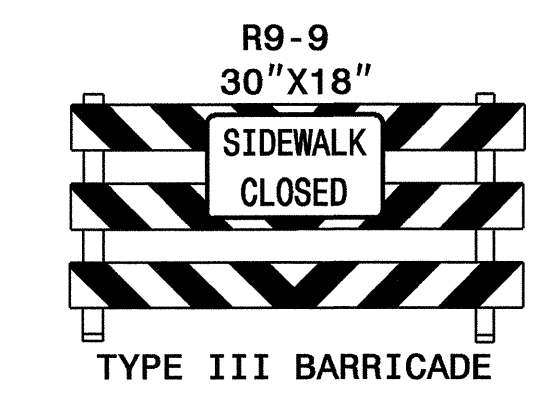
BEGIN DETOUR CONSTRUCTION
 POT Sta. 10+00.00 -L-
 PC Sta. 0+00.00 -DET1-
 TIE TO EXISTING PAVEMENT MARKINGS

10+00

15+00

SR 1116 (GARRETT ROAD)

MATCH LINE STA. 18+67
 (SEE DETAIL 4, TCP 10)



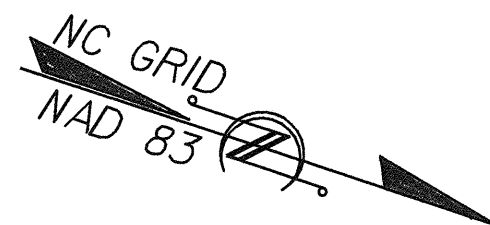
STA. 15+00 -L-
 SECTION B-B

STA. 5+08.48 -DET1-
 (SAME TYPICAL FOR -DET2-)

REVISED FEBRUARY 2007 TO UPDATE THE BARRICADES TO 2006 ROADWAY STANDARDS.
 [Professional Engineer Seal for Joseph Ishak, No. 028380, State of North Carolina, dated March 28, 2007]

| APPROVED: _____ DATE: _____ | DETAIL 3 | | | | | | | | | |
|---|-----------------|---|-----------|--|--|--|--|--|--|--|
| NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY MICHELLE BRAME, P.E., #22761, ON 11-3-04 | SCALE: NONE | <table border="1"> <tr><th colspan="2">REVISIONS</th></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table> | REVISIONS | | | | | | | |
| | REVISIONS | | | | | | | | | |
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| | | | | | | | | | | |
| DATE: 8-6-04 | | | | | | | | | | |
| DESIGN BY: JMS | | | | | | | | | | |
| REVIEWED BY: MRB | | | | | | | | | | |

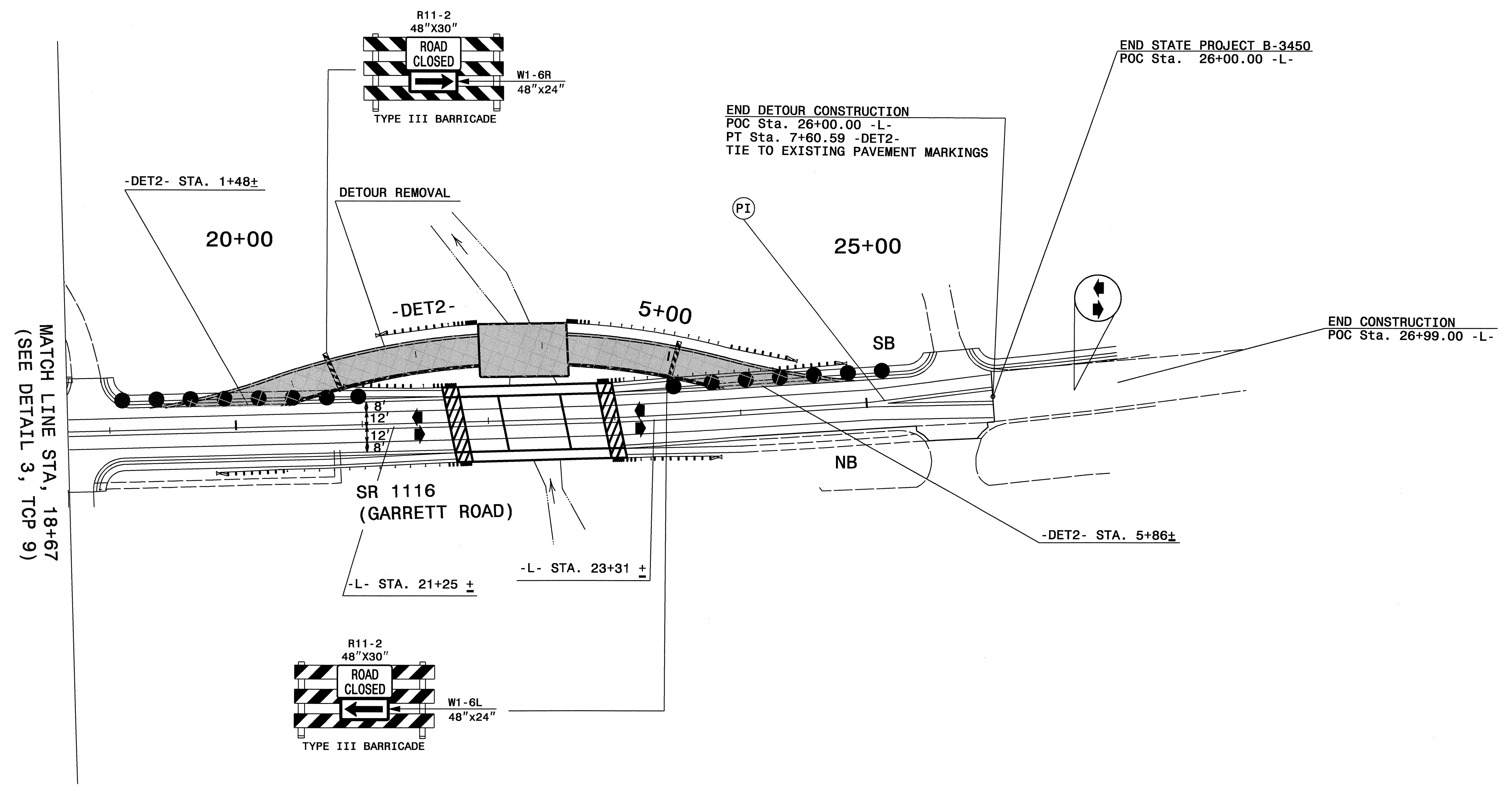
28-FEB-2007 13:16
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 AT WZTC22462
 mstealman



SEE SHEET TCP-4 FOR TEMPORARY PAVEMENT MARKING SCHEDULE

**KCI Associates
of North Carolina, P.A.**
SUITE 200, LANDMARK CENTER I, 4601 SIX FORKS RD.
RALEIGH, NC 27609-5210 (919) 783-9214
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| | |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| B-3450 | TCP-10 |



28-FEB-2007 13:17
\\dot\dfs\001\0\proj\nc\1\proj\projects-b\3450\traffic\control\tcp\tcp's updated to 2006 standard\sb3450_10.tcp
msteelman

REVISED FEBRUARY 2007 TO UPDATE THE BARRICADES TO 2006 ROADWAY STANDARDS. DELETED A BARRICADE CLOSING AN EXISTING SIDEWALK NEAR NORTHEAST CORNER OF PROPOSED BRIDGE.

Joseph Ishia
March 28, 2007

| | | | |
|---|--------|-----------------|-----------|
| APPROVED: | DATE: | DETAIL 4 | |
| <p>NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT, BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY MICHELLE BRAME, P.E., #22761, ON 11-3-04</p> | | | |
| SCALE: | NONE | | REVISIONS |
| DATE: | 8-6-04 | | |
| DESIGN BY: | JMS | | |
| REVIEWED BY: | MRB | | |