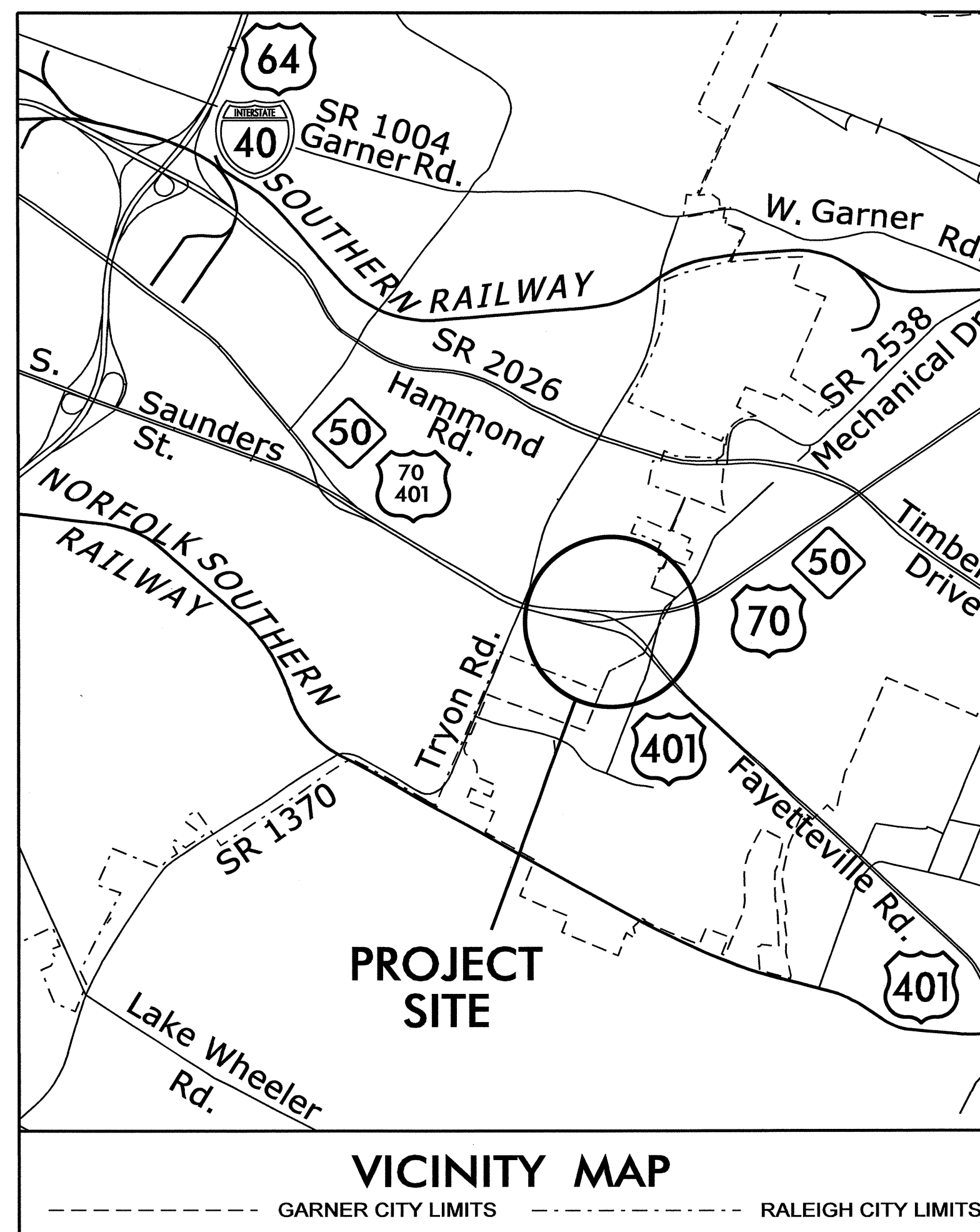
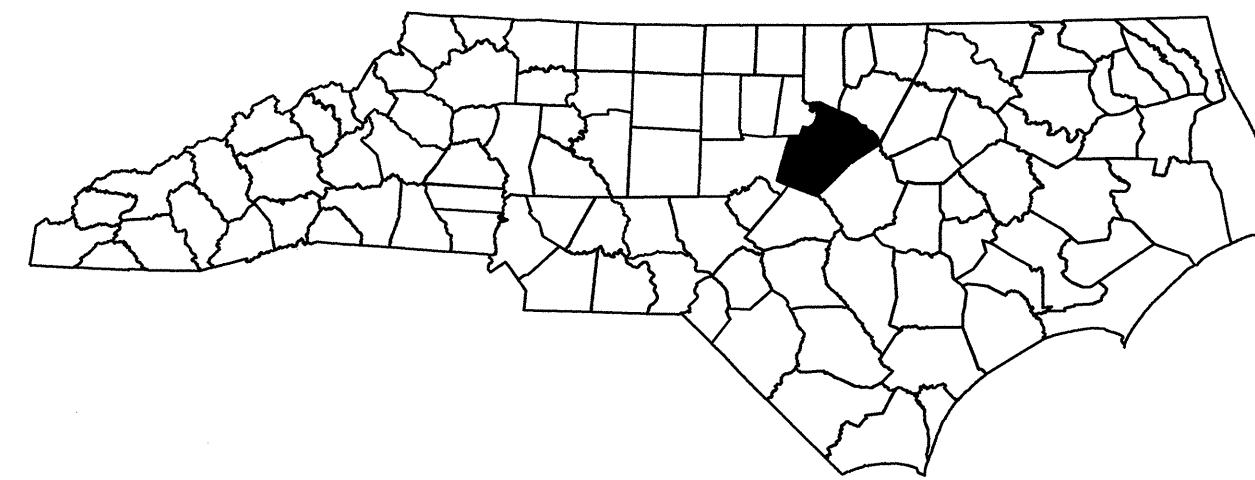


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

WAKE COUNTY



LOCATION: BRIDGE #251 OVER US 401
ON US 70/NC 50

TYPE OF WORK: GRADING, DRAINAGE,
PAVING, GUARDRAIL,
SIGNALS, AND STRUCTURE

INDEX OF SHEETS

| SHEET NO. | TITLE |
|-------------|---|
| TMP-1 | TITLE SHEET AND INDEX OF SHEETS |
| TMP-1A | LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING |
| TMP-1B - 1C | TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES) |
| TMP-2 | PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS |
| TMP-2A - 2B | TEMPORARY SHORING DATA |
| TMP-2C | SPECIAL SIGN DESIGN |
| TMP-3 - 3A | TEMPORARY TRAFFIC CONTROL PHASING |
| TMP-4 - 7 | TEMPORARY TRAFFIC CONTROL PHASE I |
| TMP-8 - 12 | TEMPORARY TRAFFIC CONTROL PHASE II |
| TMP-13 | MECHANICAL BLVD DETOUR |
| TMP-14 - 15 | TEMPORARY CENTER LANES CLOSURE US 70 EAST / US 401 SOUTH |
| TMP-16 - 17 | TEMPORARY US 401 NORTH DETOUR |

SHEET NO.
TMP-1

B-4946

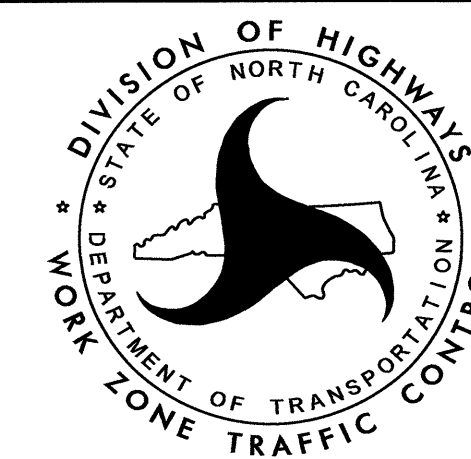
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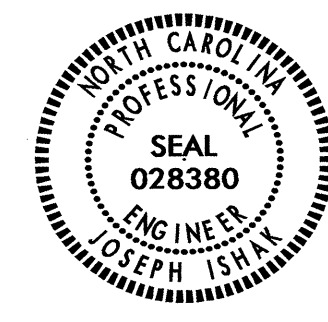


N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
J. ISHAK, P.E. TRAFFIC CONTROL PROJECT ENGINEER
M. H. STEELMAN TRAFFIC CONTROL PROJECT DESIGN ENGINEER
L. K. DONALDSON, P.E. TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: *Joseph Ishak*
DATE: 1-2-2013



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 |
|----------|--|
| 1101.01 | WORK ZONE WARNING 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 |
| 1160.01 | TEMPORARY CRASH CUSHION |
| 1165.01 | WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION |
| 1170.01 | PORTABLE CONCRETE BARRIER |
| 1180.01 | SKINNY - DRUM |
| 1205.01 | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS |
| 1205.02 | PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS |
| 1205.03 | PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMP |
| 1205.04 | PAVEMENT MARKINGS - INTERSECTIONS |
| 1205.05 | PAVEMENT MARKINGS - TURN LANES |
| 1205.06 | PAVEMENT MARKINGS - LANE DROPS |
| 1205.08 | PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES |
| 1205.09 | PAVEMENT MARKINGS - PAINTED ISLANDS |
| 1205.12 | PAVEMENT MARKINGS - BRIDGES |
| 1205.13 | PAVEMENT MARKINGS - LANE REDUCTIONS |
| 1250.01 | RAISED PAVEMENT MARKERS - INSTALLATION SPACING |
| 1251.01 | RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY) |
| 1261.01 | GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING |
| 1261.02 | GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING |
| 1262.01 | GUARDRAIL END DELINEATION |
| 1264.01 | OBJECT MARKERS - TYPES |
| 1264.02 | OBJECT MARKERS - INSTALLATION |

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

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")
- P2 WHITE STOPBAR
- PAINT (4")
- PA WHITE EDGELINE
- PB YELLOW EDGELINE
- PC 10' WHITE SKIP
- PD 2' WHITE MINISKIP
- PE WHITE LANE LINE
- PAINT (12")
- PS WHITE GORELINE

PAINT SYMBOLS

- QB RIGHT TURN ARROW
- QC STRAIGHT ARROW
- QD COMBINATION STRAIGHT/LEFT
- QE COMBINATION STRAIGHT/RIGHT

COLD APPLIED PLASTIC (4") TYPE 4- REMOVABLE TAPE

- CA WHITE EDGELINE
- CB YELLOW EDGELINE
- CC 10 FT. WHITE SKIP

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MANAGEMENT STRATEGIES

US 70 EAST/US 401 SOUTH CONSTRUCTION SUMMARY:
 PROPOSED US 70 EAST/US 401 SOUTH WILL BE CONSTRUCTED USING LAW ENFORCEMENT, A COMBINATION OF NIGHT TIME AND WEEKEND LANE CLOSURES, TEMPORARY PORTABLE CONCRETE BARRIER, TEMPORARY SHORING, AND A TEMPORARY LANE SHIFT WITH TEMPORARY SIGNAL AT THE INTERSECTION OF US 70 EAST AND MECHANICAL BLVD.

US 401 NORTH CONSTRUCTION SUMMARY:
 PROPOSED US 401 NORTH WILL BE CONSTRUCTED USING A COMBINATION OF NIGHT TIME LANE CLOSURES, WEEKEND ROAD CLOSURES USING LAW ENFORCEMENT FOR THE CONSTRUCTION OF DRAINAGE PIPES, TEMPORARY CONCRETE BARRIER, AND CONSTRUCTION OF MSE WALL.

5. 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.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.

8. 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.

I) 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.

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

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 THIRTY (30) 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 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.

P) 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.

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

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 |
|---|---|
| US 401 SOUTH/US 70 EAST, US 401 NORTH, AND US 70 WEST, MECHANICAL BLVD. | MONDAY THRU SATURDAY FROM 6:00 A.M. TO 9:00 P.M. SUNDAY FROM 10:00 AM TO 6:00 P.M. |

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

| ROAD NAME |
|---|
| US 401 SOUTH/US 70 EAST, US 401 NORTH, US 70 WEST, AND MECHANICAL BLVD. |

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.

C) DO NOT CLOSE ROADS AS FOLLOWS:

| ROAD NAME | DAY AND TIME RESTRICTIONS | CONTRACTOR SHALL ONLY BE ALLOWED TO CLOSE THE ROAD FOR THE FOLLOWING OPERATIONS: |
|--------------|--|--|
| US 401 NORTH | MONDAY 6:00 A.M. THRU FRIDAY 9:00 P.M. | HANG PROPOSED GIRDERS, REMOVE EXISTING GIRDERS, INSTALL DRAINAGE |

ONCE THE ROAD IS CLOSED, CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE OPERATION.

D) 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

E) 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.

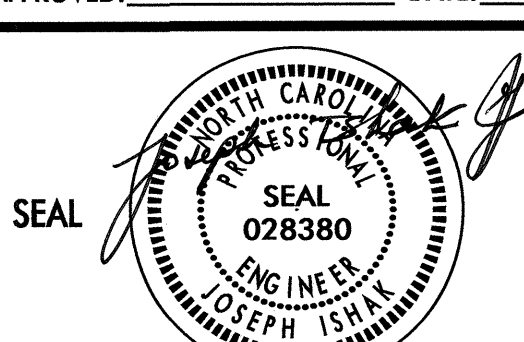
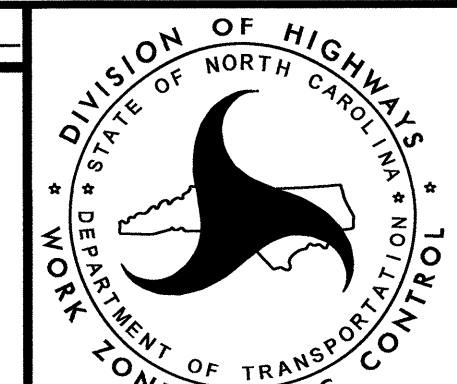
F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

G) 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.

H) 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.

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GENERAL NOTES CONTINUED

TRAFFIC BARRIER

- R) 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.

- S) 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

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

PAVEMENT MARKING

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

| ROAD NAME | MARKING | MARKER |
|-----------|-----------------------------------|------------------|
| ROADWAY | PAINT | TEMPORARY RAISED |
| BRIDGE | COLD APPLIED PLASTIC (TYPE IV) | TEMPORARY RAISED |

- X) 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.
- Y) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Z) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- AA) TRACE THE EXISTING AND PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO REMOVAL AND INSTALLATION. PLACE DRUMS TO DELINEATE ANY EXISTING AND PROPOSED MONOLITHIC ISLANDS AFTER REMOVAL AND BEFORE INSTALLATION.

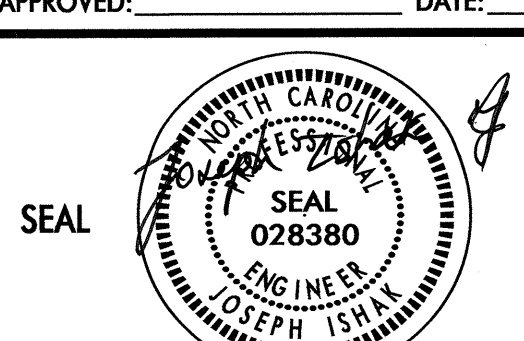

MISCELLANEOUS

- BB) LAW ENFORCEMENT SHALL BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- CC) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

LOCAL NOTES

- CONTRACTOR SHALL INSTALL CMS FOR ADVANCE WARNING OF ROAD CLOSURES AND WEEKEND LANE CLOSURES ASSOCIATED WITH ICT'S FIVE (5) DAYS IN ADVANCE OF THE OPERATION AS DIRECTED BY THE ENGINEER.
- THE BOLTED STEEL PLATES ASSOCIATED WITH TMP-17 ARE INCIDENTAL TO THE OTHER PAY ITEMS IN THIS CONTRACT.

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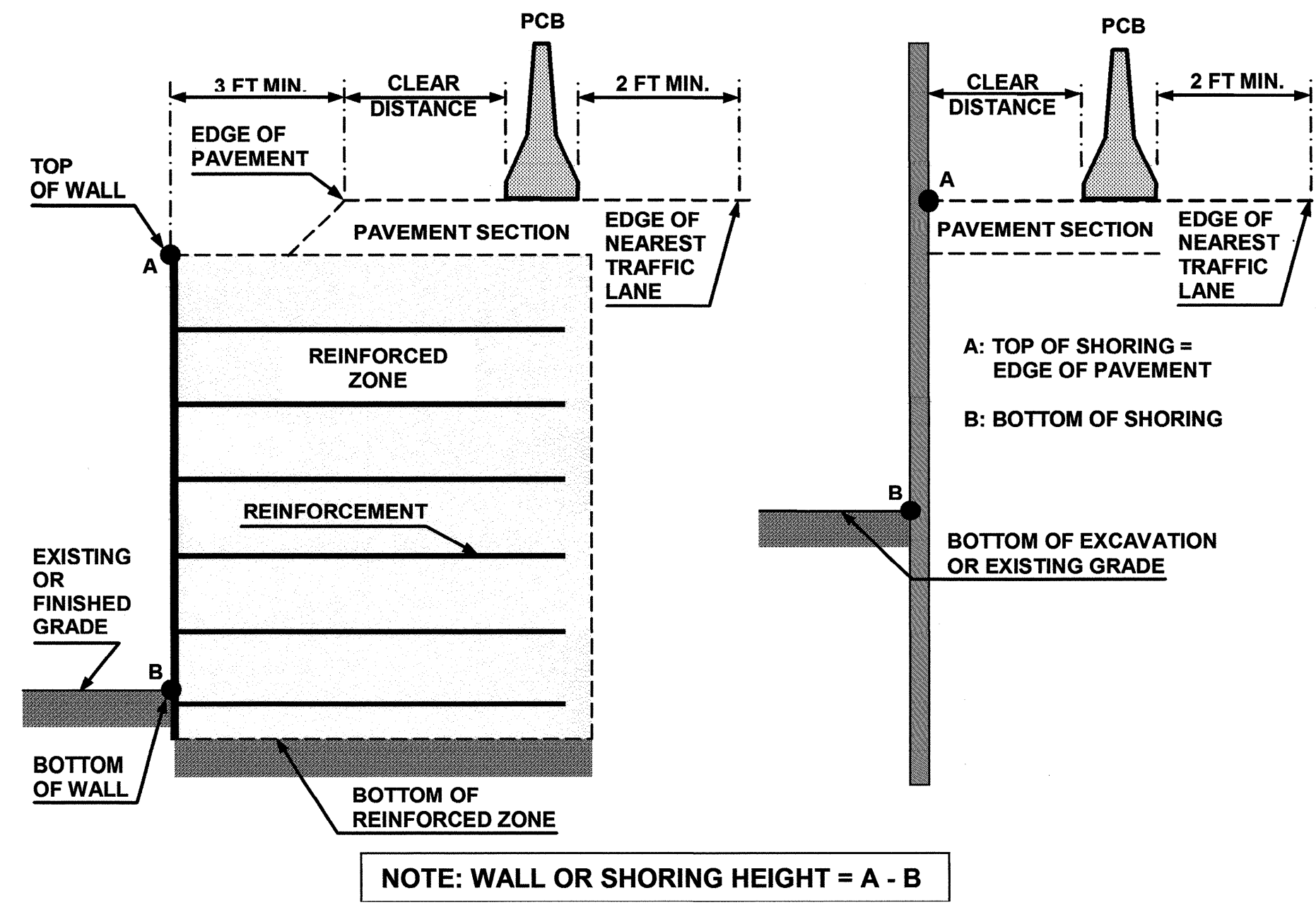


FIGURE A

NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- 4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- 8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.
- 9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- 10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches

| Barrier Type | Pavement Type | Offset * ft | Design Speed, mph | | | | | |
|----------------|--|----------------|--------------------------|-------|-------|-------|-------|-------|
| | | | <30 | 31-40 | 41-50 | 51-60 | 61-70 | 71-80 |
| Unanchored PCB | Asphalt | <8 | 24 | 26 | 29 | 32 | 36 | 40 |
| | | 8-14 | 26 | 28 | 31 | 35 | 38 | 42 |
| | | 14-20 | 27 | 29 | 34 | 36 | 39 | 43 |
| | | 20-26 | 28 | 31 | 35 | 38 | 40 | 44 |
| | | 26-32 | 29 | 32 | 36 | 39 | 42 | 45 |
| | | 32-38 | 30 | 34 | 38 | 41 | 43 | 46 |
| | | 38-44 | 31 | 34 | 41 | 43 | 45 | 48 |
| | | 44-50 | 31 | 35 | 41 | 43 | 46 | 49 |
| | | 50-56 | 32 | 36 | 42 | 44 | 47 | 50 |
| | >56 | 32 | 36 | 42 | 45 | 47 | 51 | |
| | Concrete | <8 | 17 | 18 | 21 | 22 | 25 | 26 |
| | | 8-14 | 19 | 20 | 23 | 25 | 26 | 29 |
| | | 14-20 | 22 | 22 | 24 | 26 | 28 | 31 |
| | | 20-26 | 23 | 24 | 26 | 27 | 30 | 34 |
| | | 26-32 | 24 | 25 | 27 | 28 | 32 | 35 |
| | | 32-38 | 24 | 26 | 27 | 30 | 33 | 36 |
| | | 38-44 | 25 | 26 | 28 | 30 | 34 | 37 |
| | | 44-50 | 26 | 26 | 28 | 32 | 35 | 37 |
| 50-56 | | 26 | 26 | 28 | 32 | 35 | 38 | |
| >56 | 26 | 27 | 29 | 32 | 36 | 38 | | |
| Anchored PCB | Asphalt | All Offsets | 24 for All Design Speeds | | | | | |
| Anchored PCB | Concrete (including bridge approach slabs) | All Offsets | 12 for All Design Speeds | | | | | |

* See Figure Below

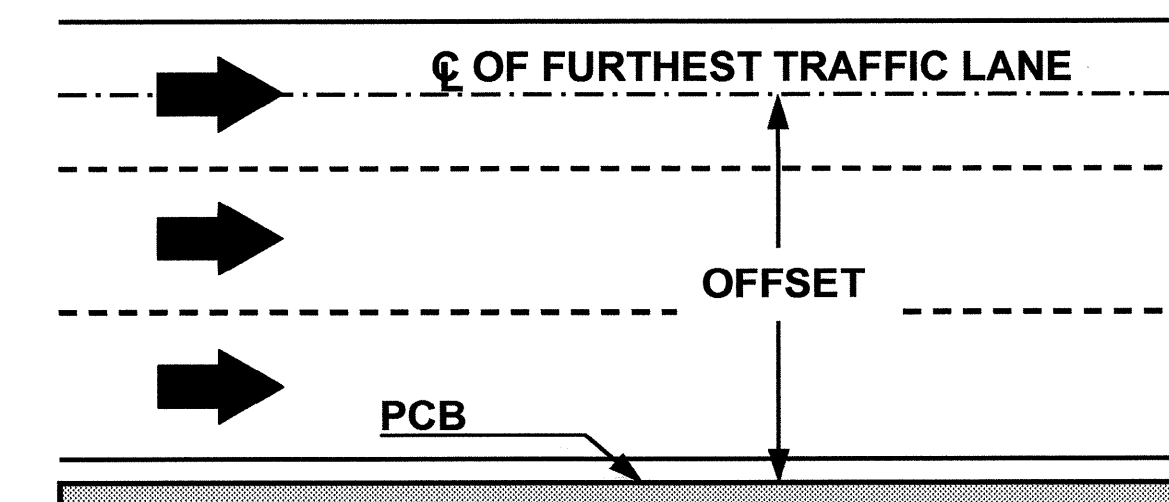


FIGURE B

| | | |
|-----------------------------|--|--|
| APPROVED: _____ DATE: _____ | | PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS |
| | | |

TEMPORARY SHORING LOCATION 1

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

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

DESIGN TEMPORARY SHORING FROM STATION -L EBL- 23+80±, 36.3 FT ± LEFT, TO STATION -L EBL- 24+03.3±, 36.3 FT ± LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 335 FT

DO NOT USE A CANTILEVER, BRACED AND/OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L EBL- 23+80±, 36.3 FT ± LEFT, TO STATION -L EBL- 24+03.3±, 36.3 FT ± LEFT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L EBL- 23+80±, 36.3 FT ± LEFT, TO STATION -L EBL- 24+03.3±, 36.3 FT ± LEFT. SEE STANDARD DRAWING NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

TEMPORARY SHORING LOCATION 2

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

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

DESIGN TEMPORARY SHORING FROM STATION -L EBL- 25+97±, 36 FT ± LEFT, TO STATION -L EBL- 26+31±, 36 FT ± LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 335 FT

DO NOT USE A CANTILEVER, BRACED AND/OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L EBL- 25+97±, 36 FT ± LEFT, TO STATION -L EBL- 26+31±, 36 FT ± LEFT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L EBL- 25+97±, 36 FT ± LEFT, TO STATION -L EBL- 26+31±, 36 FT ± LEFT. SEE STANDARD DRAWING NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR BRIDGE APPROACH FILLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR BRIDGE APPROACH FILLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

TEMPORARY SHORING LOCATION 3

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

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

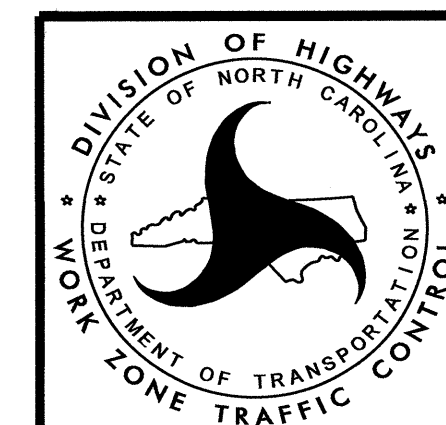
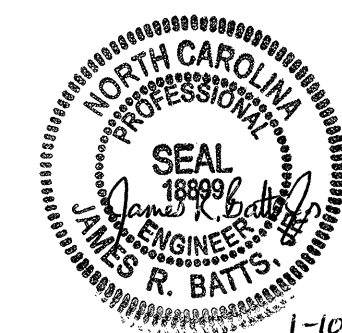
DESIGN TEMPORARY SHORING FROM STATION -L NBL- 11+19.3±, 19.5 FT ± RIGHT, TO STATION -L NBL- 12+31.9±, 19.8 FT ± RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 335 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L NBL- 11+19.3±, 19.5 FT ± RIGHT, TO STATION -L NBL- 12+31.9±, 19.8 FT ± RIGHT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L NBL- 11+19.3±, 19.5 FT ± RIGHT, TO STATION -L NBL- 12+31.9±, 19.8 FT ± RIGHT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

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TEMPORARY SHORING NOTES

TEMPORARY SHORING LOCATION 4

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

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

DESIGN TEMPORARY SHORING FROM STATION -L NBL- 11+63.8±, 21.2 FT ± LEFT, TO STATION -L NBL- 12+71.1±, 19.9 FT ± LEFT AND FROM STATION -L NBL- 12+71.1±, 19.9 FT ± LEFT, TO STATION -L NBL- 13+10.5±, 21.2 FT ± LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 335 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L NBL- 11+53.8±, 21.2 FT ± LEFT, TO STATION -L NBL- 12+71.1±, 19.9 FT ± LEFT AND FROM STATION -L NBL- 12+71.1±, 19.9 FT ± LEFT, TO STATION -L NBL- 13+10.5±, 21.2 FT ± LEFT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L NBL- 11+63.8±, 21.2 FT ± LEFT, TO STATION -L NBL- 12+71.1±, 19.9 FT ± LEFT AND FROM STATION -L NBL- 12+71.1±, 19.9 FT ± LEFT, TO STATION -L NBL- 13+10.5±, 21.2 FT ± LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING LOCATION 5

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

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

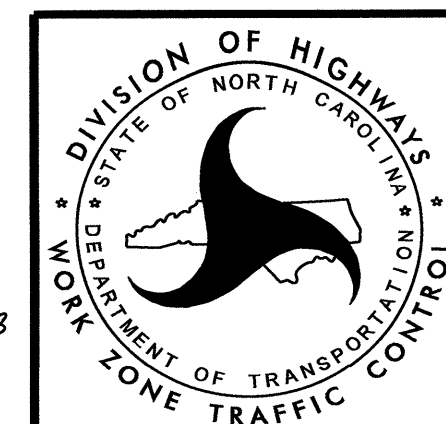
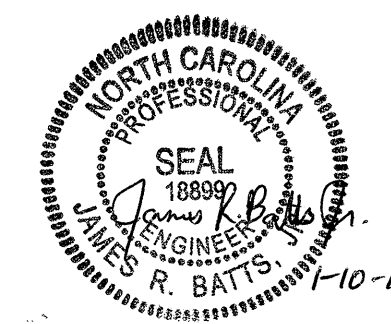
DESIGN TEMPORARY SHORING FROM STATION -L NBL- 11+89 ±, 32 FT ± LEFT, TO STATION -L NBL- 12+06 ±, 32.5 FT ± LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 335 FT

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L NBL- 11+89 ±, 32 FT ± LEFT, TO STATION -L NBL- 12+06 ±, 32.5 FT ± LEFT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L NBL- 11+89 ±, 32 FT ± LEFT, TO STATION -L NBL- 12+06 ±, 32.5 FT ± LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

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TEMPORARY SHORING NOTES

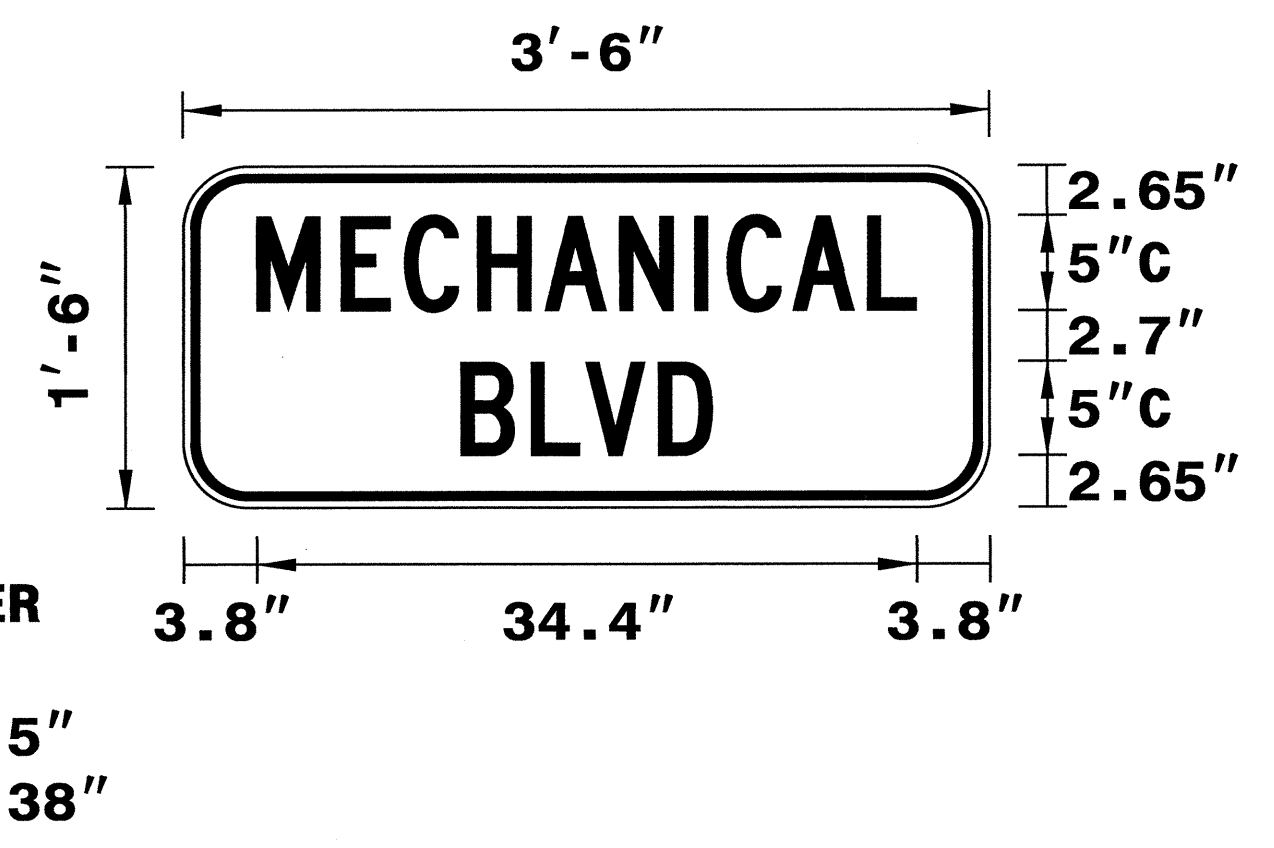
SIGN NUMBER: WorkZone
 TYPE: STATIONARY
 QUANTITY: SEE PLANS
 SIGN WIDTH: 3'-6"
 HEIGHT: 1'-6"
 TOTAL AREA: 5.3 Sq.Ft.
 BORDER TYPE: INSET
 RECESS: 0.38"
 WIDTH: 0.5"
 RADII: 3"
 NO. Z BARS:
 LENGTH:

BACKG COLOR: Fluorescent Orange
 COPY COLOR: Black

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MAT'L: 0.080" (2.0 mm) ALUMINUM

DESIGN BY: SJOHNS
 PROJECT ID: B-4946
 CHECKED BY: SBKUNZ
 DIV: 5
 DATE: Nov 28, 2012



USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE B fluoresent orange retroreflective sheeting.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

| | M | E | C | H | A | N | I | C | A | L | | | | | | | | | | | | Series/Size Text Length | |
|--|------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|--|--|--|----------------------------|--|
| | 3.8 | 4.4 | 3.3 | 3.8 | 3.5 | 3.9 | 3.9 | 1.7 | 3.4 | 3.9 | 2.6 | 3.8 | | | | | | | | | | C 2000 34.4 | |
| | | B | L | V | D | | | | | | | | | | | | | | | | | C 2000 13.1 | |
| | 14.5 | 3.7 | 2.9 | 3.8 | 2.8 | 14.5 | | | | | | | | | | | | | | | | | |
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FILENAME: B-4946_WZsgn Design NORTH CAROLINA D.O.T. SIGN DETAIL

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| APPROVED: <i>[Signature]</i> DATE: 12/13 | | <h2>SPECIAL SIGN DESIGN</h2> |
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NOTES:

- 1) USE TMP-14 AND TMP-15 FOR CLOSURE OF CENTER LANES OF US 70 EAST/US 401 SOUTH AND USE ROADWAY STANDARD DRAWING 1101.02, SHEET 3 OF 15, FOR CLOSURES OF OUTSIDE LANES OF US 70 EAST/US 401 SOUTH AND LANE CLOSURES ON OTHER MULTI-LANE ROADWAYS.
- 2) CONTRACTOR MAY INSTALL LANE CLOSURES ON US 70, US 401, AND MECHANICAL BLVD. BASED ON 35 M.P.H. CRITERIA, AS LONG AS 35 M.P.H. ADVISORY SPEED SIGNS ARE MOUNTED UNDER LANE CLOSURE SIGNING.
- 3) MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES UNLESS OTHERWISE DIRECTED BY ENGINEER.
- 4) MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION.
- 5) RETURN TRAFFIC TO EXISTING PATTERN BY THE END OF EACH DAY UNLESS OTHERWISE NOTED IN PHASING.
- 6) CONSTRUCT ALL ROADS UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE UNLESS OTHERWISE STATED IN PHASING, OR AS DIRECTED BY THE ENGINEER.
- 7) WHEN NECESSARY, RELOCATE ANY WORK ZONE SIGNING DURING TRAFFIC SHIFTS AS DIRECTED BY THE ENGINEER.

PHASE 1

STEP 1) USING LANE CLOSURES AS NEEDED, INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON RSD 1101.01, SHEET 2 OF 3.

STEP 2) USING ROAD CLOSURE SHOWN ON TMP-16, AND TMP-17, AND LAW ENFORCEMENT, CLOSE US 401 NORTH AND CONSTRUCT DRAINAGE PIPES ON SHOULDERS AS SHOWN IN THE ROADWAY PLANS. IF NEEDED, RESET EXISTING BARRIER OR INSTALL NEW BARRIER TO PROTECT BRIDGE PIERS AS DIRECTED BY THE ENGINEER. SEE CONTRACT TIME AND LIQUIDATED DAMAGES. REFER TO LOCAL NOTE 1.

USING LANE CLOSURES AS NEEDED, BEGIN ALL DRAINAGE WORK AS DIRECTED BY ENGINEER.

BEGIN INSTALLATION OF TEMPORARY SIGNAL ON US 70 AT MECHANICAL BLVD.

USING LANE CLOSURES AS NEEDED AND AS SHOWN ON TMP-4, CONSTRUCT A MINIMUM OF 5 FT OF GORE AND SHOULDER WIDENING ON LEFT SIDE OF EXISTING -L SBL- FROM STA 12+00+/- TO STA 14+00+/. INSTALL TEMPORARY PORTABLE CONCRETE BARRIER AND CRASH CUSHIONS ON -L EBL- FROM STA 21+00+/- TO EXISTING BRIDGE RAILING AND ON -L SBL- FROM STA. 12+25+/- TO STA. 15+15+/-.

USING LANE CLOSURES AS NEEDED AND AS SHOWN ON TMP-4, BEGIN CONSTRUCTION OF PROPOSED SHOULDER AND WEDGING OF EXISTING ROADWAY ON -L EBL- FROM STA. 17+00+/- TO STA. 19+00+/- AND -L SBL- FROM STA. 10+00+/- TO STA. 12+00+/- INCLUDING A MINIMUM OF 5 FT OF GORE ON LEFT SIDE OF -L SBL-.

USING LANE CLOSURES AS NEEDED, CONSTRUCT WEDGING OF EXISTING ROADWAY AND A MINIMUM 5 FT OF WIDENING ON THE RIGHT SIDE OF -L EBL- FROM STA. 31+00+/- TO END OF PROJECT AS SHOWN ON TMP-4. PLACE TEMPORARY PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHION ON THE RIGHT SIDE OF -L EBL- FROM THE EXISTING BRIDGE TO -L EBL- STA. 31+67+/- (PROVIDE TEMPORARY PAVED SHOULDER ON RIGHT SIDE OF -L EBL- AS NECESSARY TO SUPPORT TEMPORARY CONCRETE BARRIER). DO NOT DISTURB EXISTING SIGNAL POLES UNTIL PROPOSED SIGNAL POLES ARE READY TO BE INSTALLED.

STEP 3) USING LANE CLOSURES AS NEEDED, CONSTRUCT A MINIMUM OF 5 FT OF SHOULDER WIDENING ON BOTH SIDES OF -L NBL- AS SHOWN ON SECTION H-H ON TMP-7. PLACE TEMPORARY PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHIONS ON THE NEW SHOULDER AS SHOWN ON TMP-6.

STEP 4) BEHIND BARRIER AND EXISTING GUARDRAIL, BEGIN CONSTRUCTION OF US 70 EAST (-L EBL-) FROM STA. 21+00+/- TO END OF PROJECT INCLUDING PROPOSED END BENTS AS SHOWN ON TMP-4. USE TEMPORARY SHORING AT LOCATIONS 1 AND 2 AS SHOWN ON TMP-6 TO CONSTRUCT AND MAINTAIN PROPOSED ROADWAY WHILE TRAFFIC IS MAINTAINED ON EXISTING STRUCTURE AND UNTIL EXISTING STRUCTURE IS REMOVED AND PROPOSED SLOPES CAN BE CONSTRUCTED. DO NOT DISTURB EXISTING SIGNAL POLES UNTIL PROPOSED SIGNAL POLES ARE READY TO BE INSTALLED.

BEHIND BARRIER, AND USING TEMPORARY SHORING AT LOCATION 3 AS SHOWN ON TMP-6 TO MAINTAIN EXISTING ROADWAY OF US 401 NORTH, CONSTRUCT STAGE 1 OF PROPOSED MSE WALL ON RIGHT SIDE OF US 401 NORTH (-L NBL-) AS SHOWN ON TMP-6.

BEHIND BARRIER AND USING TEMPORARY SHORING AT LOCATIONS 4 TO MAINTAIN EXISTING ROADWAY OF US 401 NORTH AND TEMPORARY SHORING AT LOCATION 5 TO MAINTAIN EXISTING EMBANKMENT BEHIND PROPOSED MSE WALL FILL, CONSTRUCT PROPOSED MSE WALL ON LEFT SIDE OF US 401 NORTH (-L NBL) AS SHOWN ON TMP-6.

STEP 5) USING ROAD CLOSURE AND DETOUR SHOWN ON TMP-16, AND TMP-17, AND LAW ENFORCEMENT, CLOSE US 401 NORTH (-L NBL-) TO TRAFFIC AND PLACE PROPOSED GIRDERS FOR NEW STRUCTURE ON -L EBL-. SEE CONTRACT TIME AND LIQUIDATED DAMAGES. REFER TO LOCAL NOTE 1.

STEP 6) COMPLETE CONSTRUCTION OF -L EBL- AND -L SBL- THAT BEGAN IN STEP 2 AND STEP 4. COMPLETE PROPOSED BRIDGE. COMPLETE TEMPORARY SIGNAL. KEEP NON-ACTIVATED SIGNAL HEADS COVERED. ONCE CONSTRUCTION IS COMPLETE FOR -L EBL- STA. 21+00+/- TO STA. 23+50+/-, AND FROM -L EBL- STA. 30+40+/- TO END OF PROJECT, SHORTEN EXISTING TEMPORARY PORTABLE CONCRETE BARRIER ALONG EXISTING US 70 TO LIMITS SHOWN ON TMP-8. USING LANE CLOSURES AND AWAY FROM TRAFFIC, BEGIN PLACEMENT OF PAVEMENT MARKINGS ON PROPOSED -L EBL- AND MECHANICAL BLVD. AS SHOWN ON TMP-10 AND PLACEMENT OF TEMPORARY PORTABLE CONCRETE BARRIER AND CRASH CUSHION ON LEFT SIDE OF -L EBL- AS SHOWN ON TMP-8. INSTALL AND COVER MECHANICAL BLVD. DETOUR SIGNING (SEE TMP-13).

PHASE II

WORK IN CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE II, STEP 1 THROUGH PHASE II STEP 4, FROM FRIDAY AT 9:00 P.M. TO MONDAY AT 6:00 A.M. (57 HOURS). THE PURPOSE OF THIS ICT IS TO SWITCH TRAFFIC FROM EXISTING ALIGNMENT TO THE PROPOSED ALIGNMENT. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

WORK IN CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE II, STEP 1, FROM FRIDAY AT 9:00 P.M. TO SATURDAY AT 12:00 A.M. (MIDNIGHT) (27 HOURS) SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 1) USING TMP-14 AND TMP-15 TO CLOSE CENTER LANES, CONSTRUCT -L EBL- AND GORE AREA FROM STA. 19+00+/- TO STA. 21+00+/- AS SHOWN ON TMP-8. REFER TO LOCAL NOTE 1.

WORK IN CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE II, STEP 2 AND STEP 3, FROM SATURDAY AT 12:00 A.M. (MIDNIGHT) TO SUNDAY AT 1:00 A.M. (1 HOUR). SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 2) USING ROLLING ROAD BLOCK AND LAW ENFORCEMENT, CLOSE US 70 E/US 401 S, REMOVE TEMPORARY LANE CLOSURE SET UP, AND INSTALL TEMPORARY LANE CLOSURE SET UP AS SHOWN ON SHEETS TMP-9 AND TMP-10. COMPLETE REMAINING TEMPORARY PAVEMENT MARKINGS INCLUDING TIE-INS TO PROPOSED ROADWAY. CLOSE EXISTING US 70 E TO TRAFFIC WITH TYPE-III BARRICADES AS SHOWN ON TMP-10. UNCOVER MECHANICAL BLVD. DETOUR SIGNING (SEE TMP-13).

STEP 3) OPEN US 70 E/US 401 S, PLACING TRAFFIC ONTO PROPOSED BRIDGE IN TEMPORARY TRAFFIC PATTERN SHOWN ON TMP-9 AND TMP-10. ACTIVATE TEMPORARY SIGNAL AT INTERSECTION OF US 70 EAST AND MECHANICAL BLVD.

WORK IN CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE II, STEP 4, FROM SUNDAY AT 1:00 A.M. TO MONDAY AT 6:00 A.M. (29 HOURS). SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 4) CONSTRUCT NEW ROADWAY -L EBL- FROM STA. 19+00+/- TO STA. 22+22+/- AS SHOWN ON TMP-10. PLACE REMAINING TEMPORARY PAVEMENT MARKINGS. REMOVE LANE CLOSURE AND PLACE TRAFFIC INTO TEMPORARY TRAFFIC PATTERN SHOWN ON TMP-11.

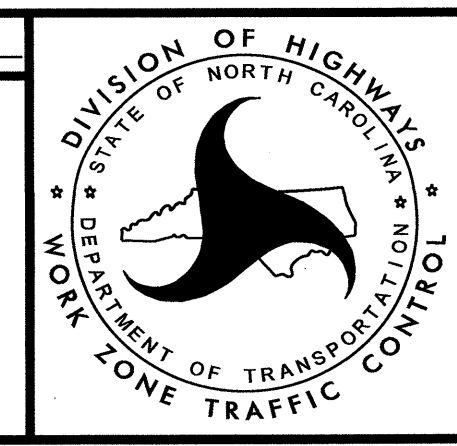
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PHASING

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STEP 5) USING LANE CLOSURES AS NEEDED, EXTEND TEMPORARY PORTABLE CONCRETE BARRIER AND RESET CRASH CUSHION ON LEFT SIDE OF -L EBL- AS SHOWN ON TMP-11.

BEHIND BARRIER, AND USING LANE CLOSURES AS NEEDED, CONSTRUCT REMAINING LEFT SIDE CONSTRUCTION OF -L EBL- AS SHOWN IN ROADWAY PLANS AND ON TMP-11.

USING NIGHT TIME ROAD CLOSURE FOR US 401 N SHOWN ON TMP-16, AND TMP-17, AND LAW ENFORCEMENT, REMOVE EXISTING GIRDERS AS SHOWN IN THE ROADWAY DRAWINGS. SEE CONTRACT TIME AND LIQUIDATED DAMAGES. REFER TO LOCAL NOTE 1.

INSTALL FINAL SIGNAL ON US 70 AT MECHANICAL BLVD. KEEP SIGNAL HEADS COVERED.

CONTRACTOR MAY PERFORM STEP 7 PRIOR TO STEP 6 IF DESIRED. STEPS 6 AND 7 SHALL BE COMPLETED BEFORE PROCEEDING TO STEP 8.

WORK IN CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE II, STEP 6, FROM FRIDAY AT 9:00 P.M. TO THE FOLLOWING MONDAY AT 6:00 A.M. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

ICT

STEP 6) USING A LANE CLOSURE, PERFORM THE FOLLOWING WORK ON THE RIGHT SIDE OF US 401 NORTH: REMOVE TEMPORARY PORTABLE CONCRETE BARRIER, BEGIN CONSTRUCTION OF THE REMAINING PROPOSED SHOULDER, AND INSTALL THE PROPOSED CONCRETE BARRIER AND PROPOSED GUARDRAIL. SAFE UP ANY UNFINISHED PROPOSED SHOULDER SECTIONS BY END OF ICT.

WORK IN CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE II, STEP 7, FROM FRIDAY AT 9:00 P.M. TO THE FOLLOWING MONDAY AT 6:00 A.M. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

ICT

STEP 7) USING A LANE CLOSURE, PERFORM THE FOLLOWING WORK ON THE LEFT SIDE OF US 401 NORTH: REMOVE TEMPORARY PORTABLE CONCRETE BARRIER, BEGIN CONSTRUCTION OF THE REMAINING PROPOSED SHOULDER, AND INSTALL THE PROPOSED CONCRETE BARRIER AND PROPOSED GUARDRAIL. SAFE UP ANY UNFINISHED PROPOSED SHOULDER SECTIONS BY END OF ICT.

STEP 8) COMPLETE ALL CONSTRUCTION PREVIOUSLY BEGUN AS DIRECTED BY THE ENGINEER.


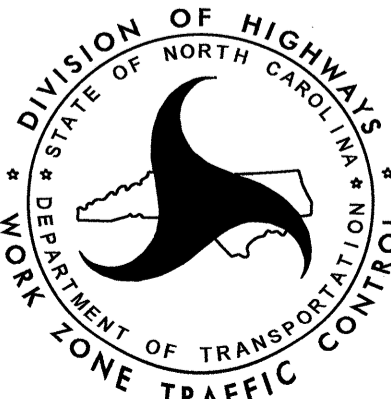
PHASE III

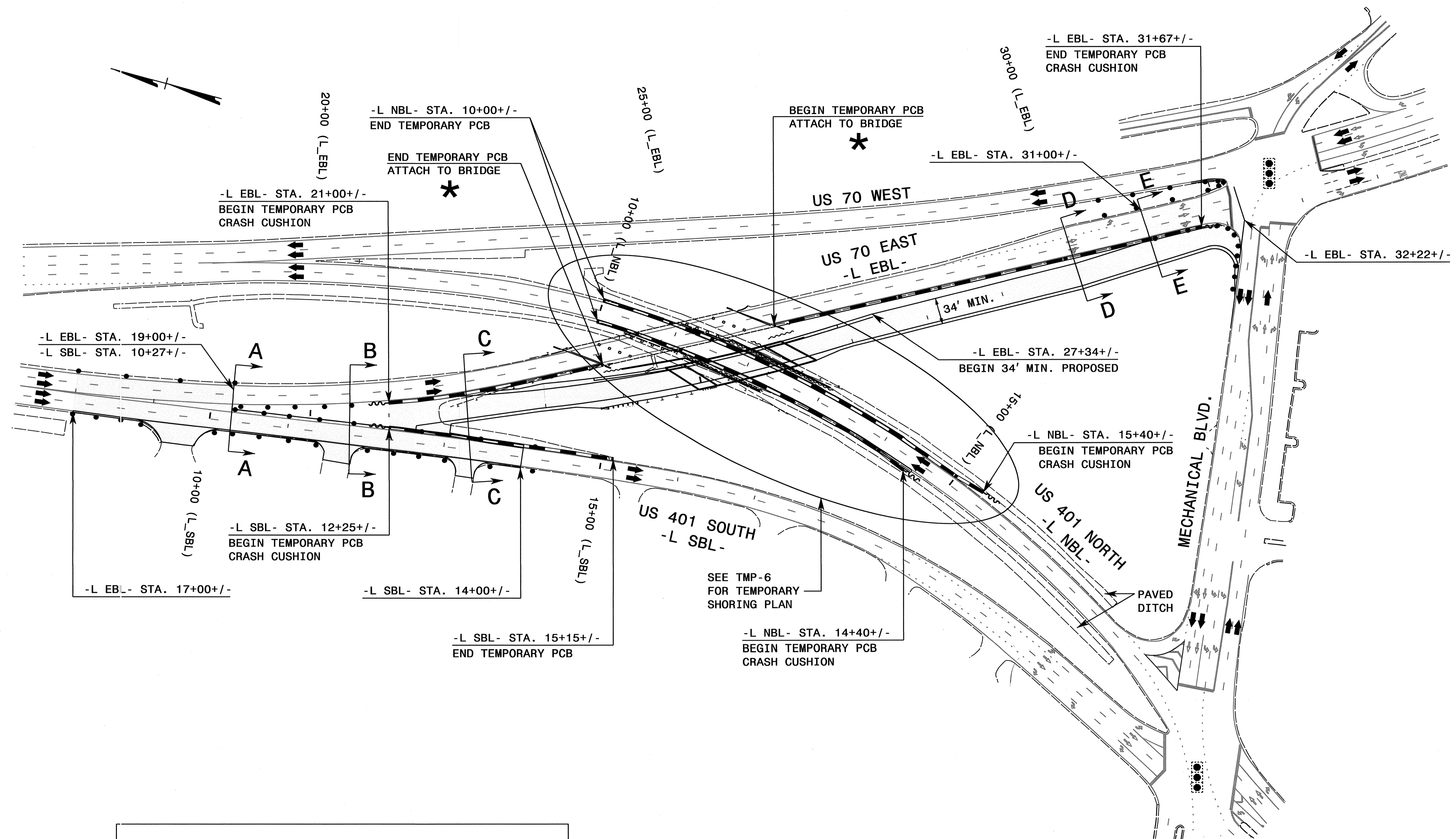
STEP 1) USING LANE CLOSURES AS NEEDED, REMOVE TEMPORARY PORTABLE CONCRETE BARRIER, PLACE TEMPORARY PAVEMENT MARKINGS USING PATTERN SHOWN IN FINAL PAVEMENT MARKING PLAN. ACTIVATE FINAL TRAFFIC SIGNAL AND PLACE TRAFFIC INTO FINAL PATTERN.

STEP 2) USING LANE CLOSURES AS NEEDED, PLACE FINAL LAYER OF SURFACE COURSE, FINAL PAVEMENT MARKINGS AND MARKERS AND PLACE TRAFFIC INTO FINAL PATTERN.

STEP 3) REMOVE ADVANCE WARNING SIGNS AND ALL TEMPORARY TRAFFIC CONTROL DEVICES.

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| APPROVED: <i>Joseph Tshak</i> DATE: 2-21-2013  |  | <h1>PHASING</h1> |
|--|---|------------------|



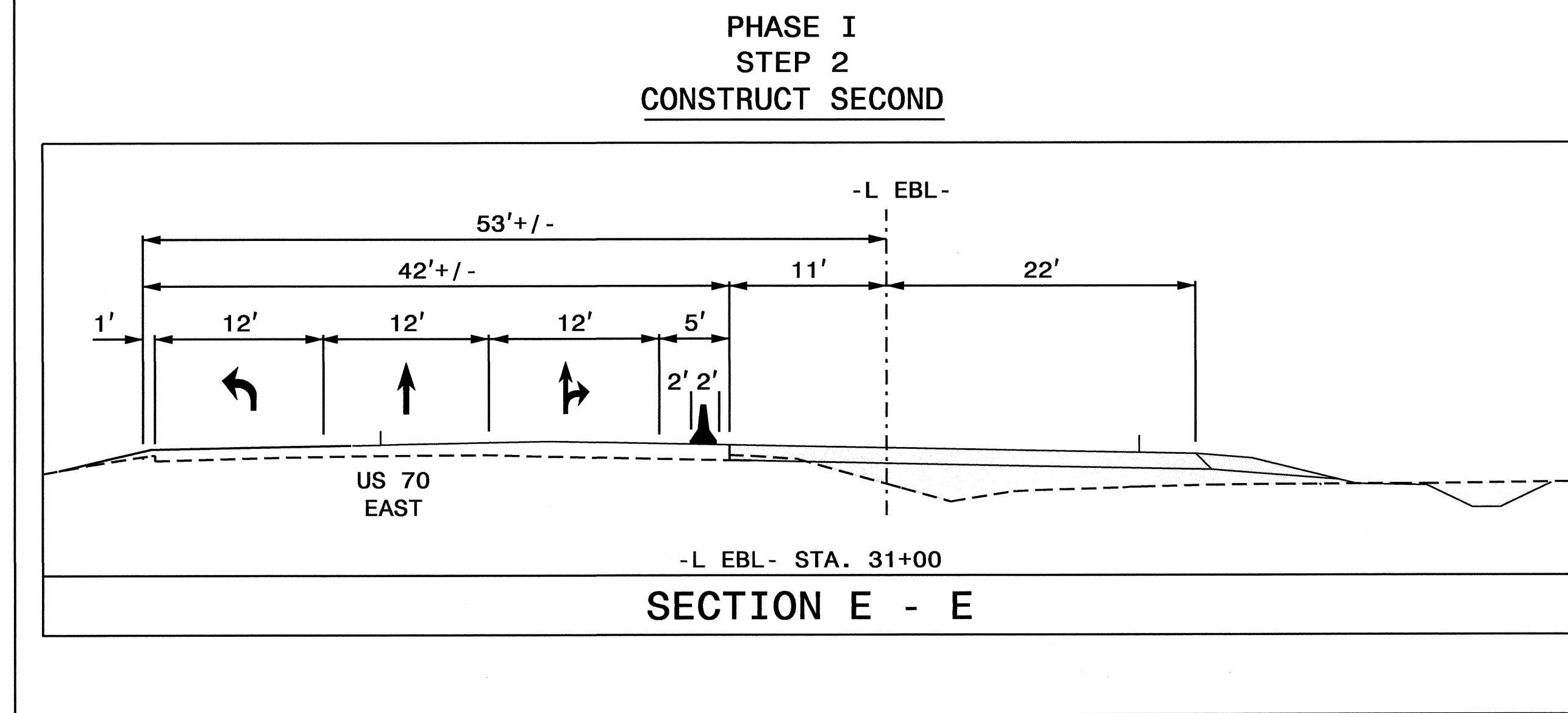
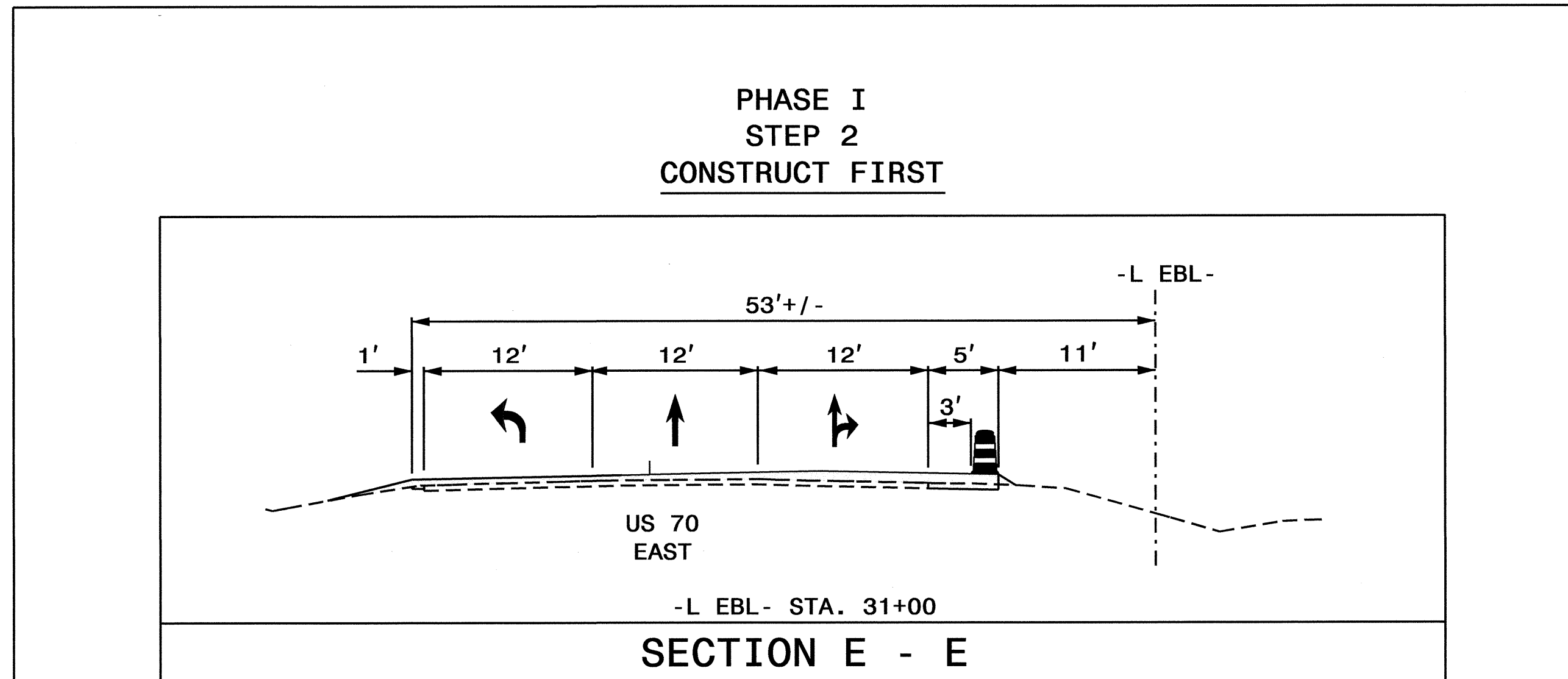
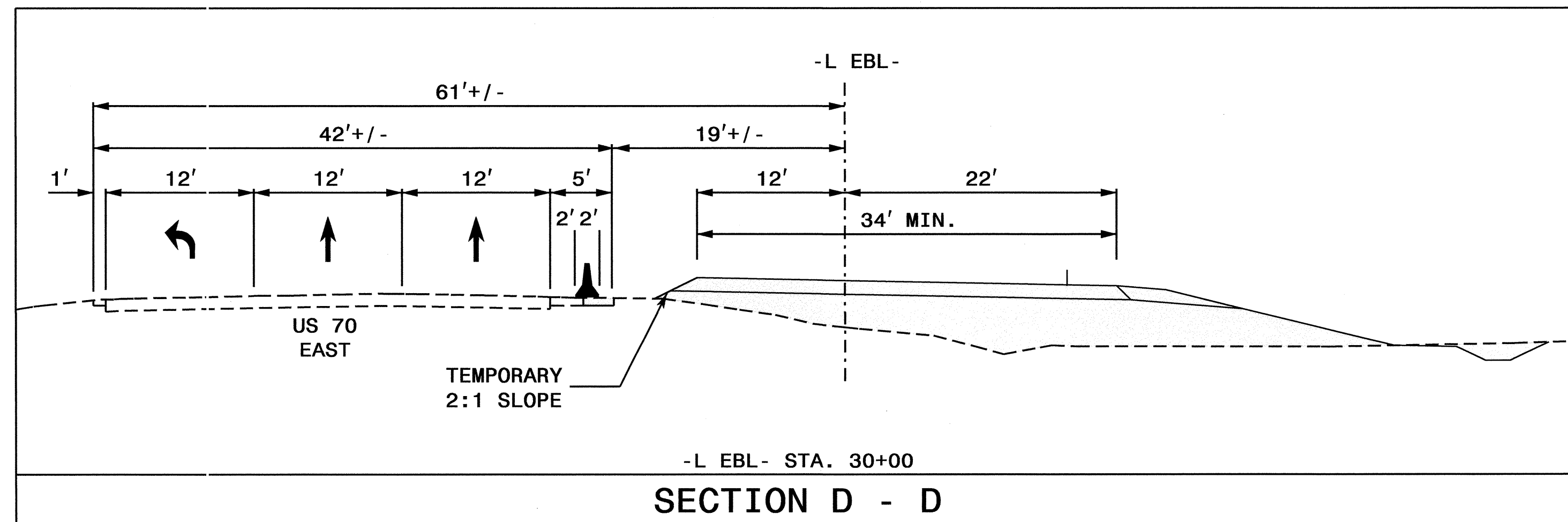
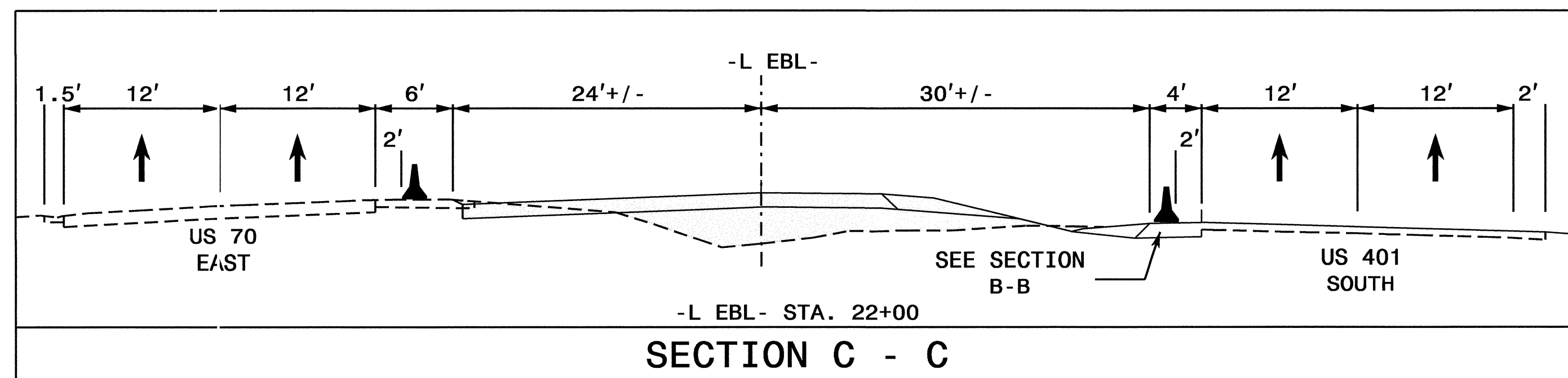
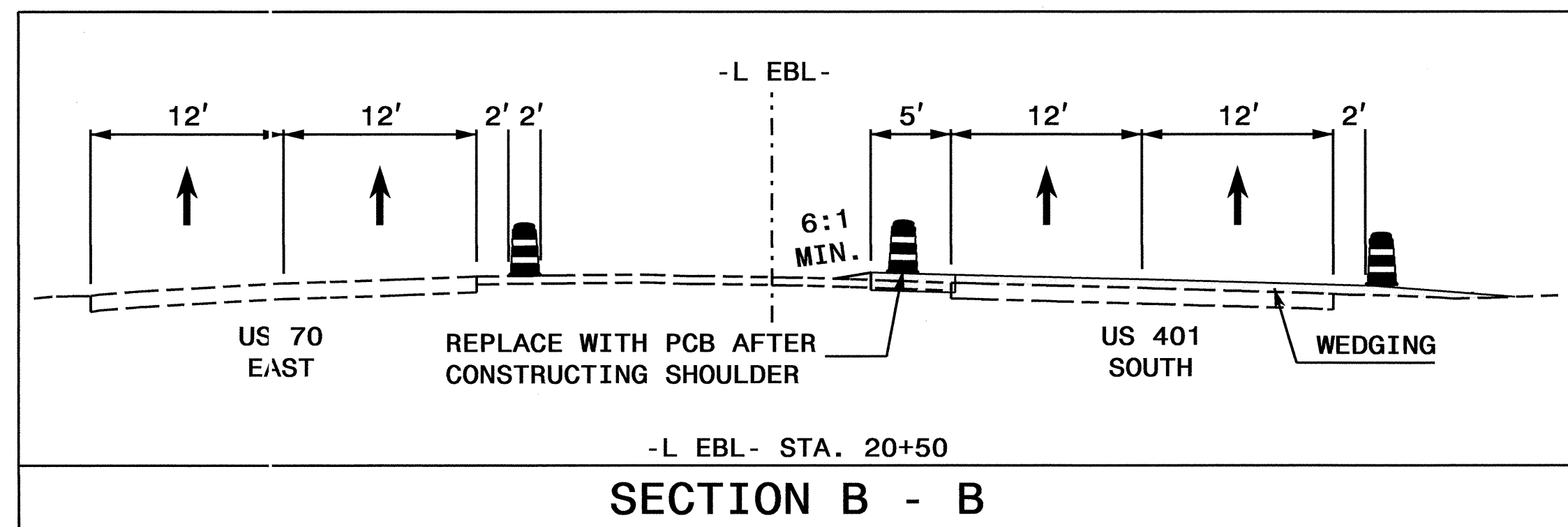
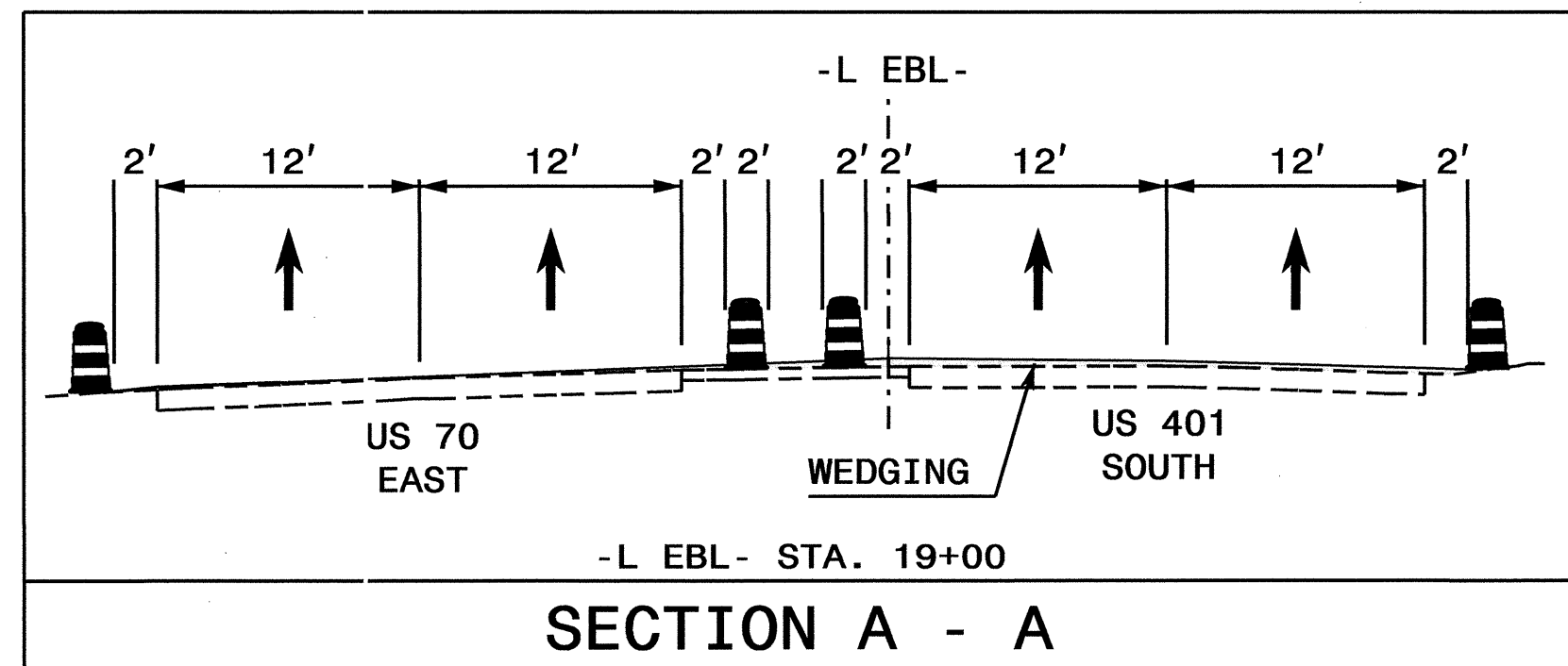
* SEE SHEETS 2-F THRU 2-G IN THE ROADWAY PLANS FOR DETAIL TO ATTACH PCB TO BRIDGE.

SEE TMP-5 FOR CUT SECTIONS

APPROVED: _____ DATE: _____

**PHASE I
DETAIL**

29-JAN-2013 16:04
 \DOT\DFSR00101\PROJECTS\B4946\TrafficControl\TCP\B-4946-TC-TMP-TMP-04.dgn
 idonidson AT 12261932



ALL CUT SECTIONS REFER
BACK TO SHEET TMP-4

APPROVED: _____ DATE: _____

SEAL

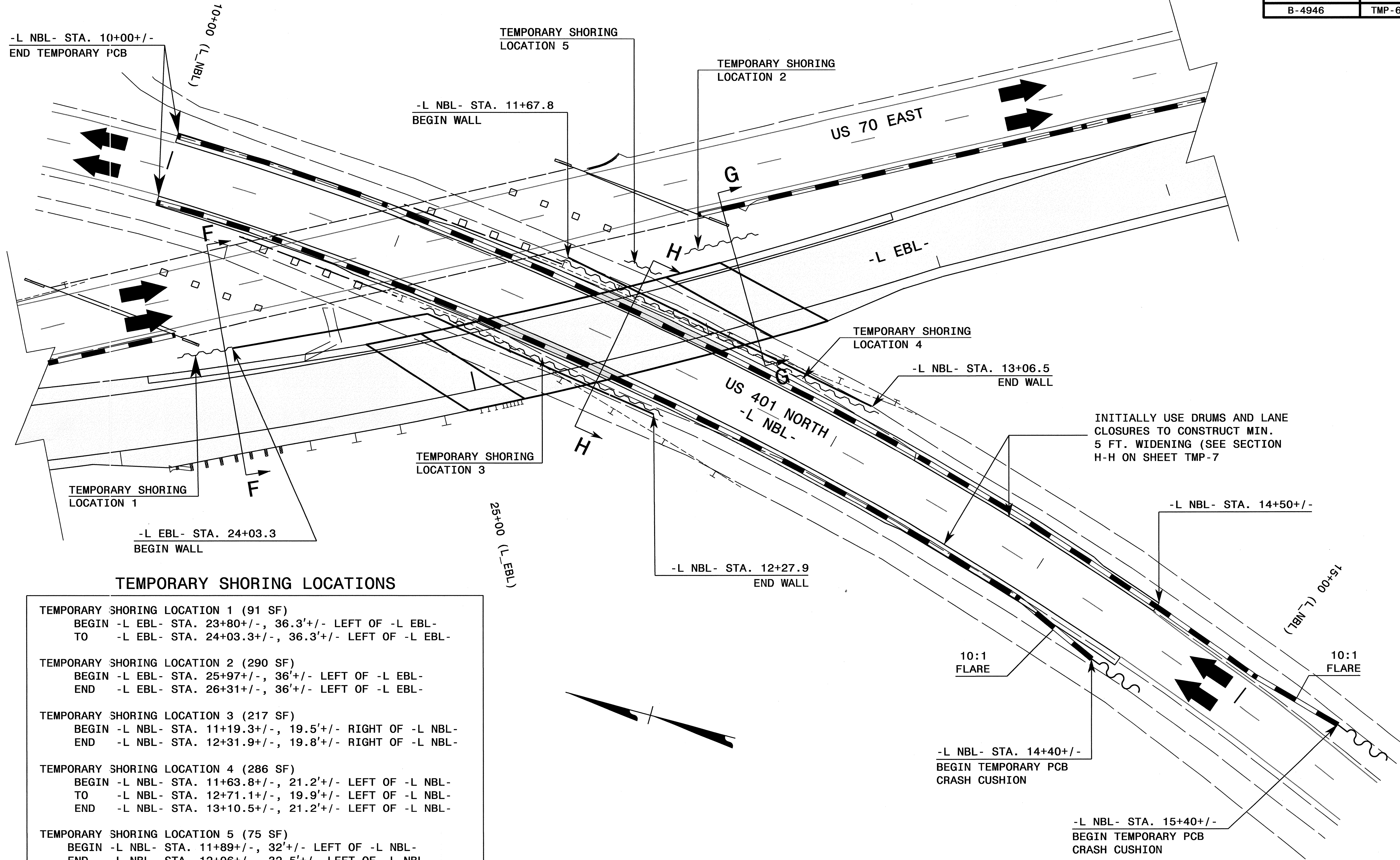
 JOSEPH ISTAITIEH
 ENGINEER
 028380
 NORTH CAROLINA

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

**PHASE I
CUT SECTIONS**

3-DEC-2012 16:46
 \ADOT\DFSR00101\PROJECTS\B\4946\TrafficControl\TCP\B-4946_TC_TMP_TMP-05.dgn
 idonldson AT TE261392



INITIALLY USE DRUMS AND LANE CLOSURES TO CONSTRUCT MIN. 5 FT. WIDENING (SEE SECTION H-H ON SHEET TMP-7)

TEMPORARY SHORING LOCATIONS

| |
|--|
| TEMPORARY SHORING LOCATION 1 (91 SF) |
| BEGIN -L EBL- STA. 23+80+/-, 36.3'+/- LEFT OF -L EBL- |
| TO -L EBL- STA. 24+03.3+/-, 36.3'+/- LEFT OF -L EBL- |
| TEMPORARY SHORING LOCATION 2 (290 SF) |
| BEGIN -L EBL- STA. 25+97+/-, 36'+/- LEFT OF -L EBL- |
| END -L EBL- STA. 26+31+/-, 36'+/- LEFT OF -L EBL- |
| TEMPORARY SHORING LOCATION 3 (217 SF) |
| BEGIN -L NBL- STA. 11+19.3+/-, 19.5'+/- RIGHT OF -L NBL- |
| END -L NBL- STA. 12+31.9+/-, 19.8'+/- RIGHT OF -L NBL- |
| TEMPORARY SHORING LOCATION 4 (286 SF) |
| BEGIN -L NBL- STA. 11+63.8+/-, 21.2'+/- LEFT OF -L NBL- |
| TO -L NBL- STA. 12+71.1+/-, 19.9'+/- LEFT OF -L NBL- |
| END -L NBL- STA. 13+10.5+/-, 21.2'+/- LEFT OF -L NBL- |
| TEMPORARY SHORING LOCATION 5 (75 SF) |
| BEGIN -L NBL- STA. 11+89+/-, 32'+/- LEFT OF -L NBL- |
| END -L NBL- STA. 12+06+/-, 32.5'+/- LEFT OF -L NBL- |

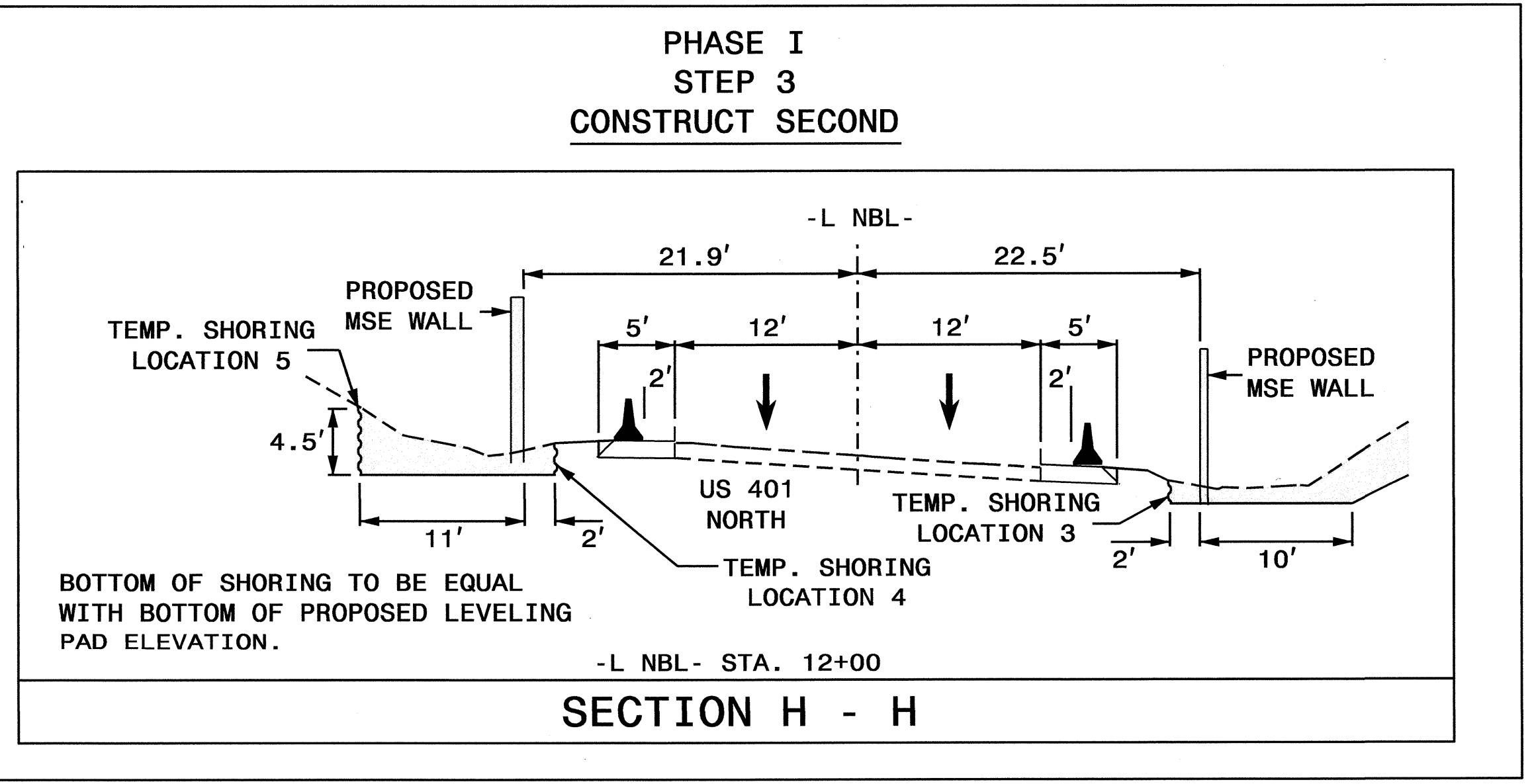
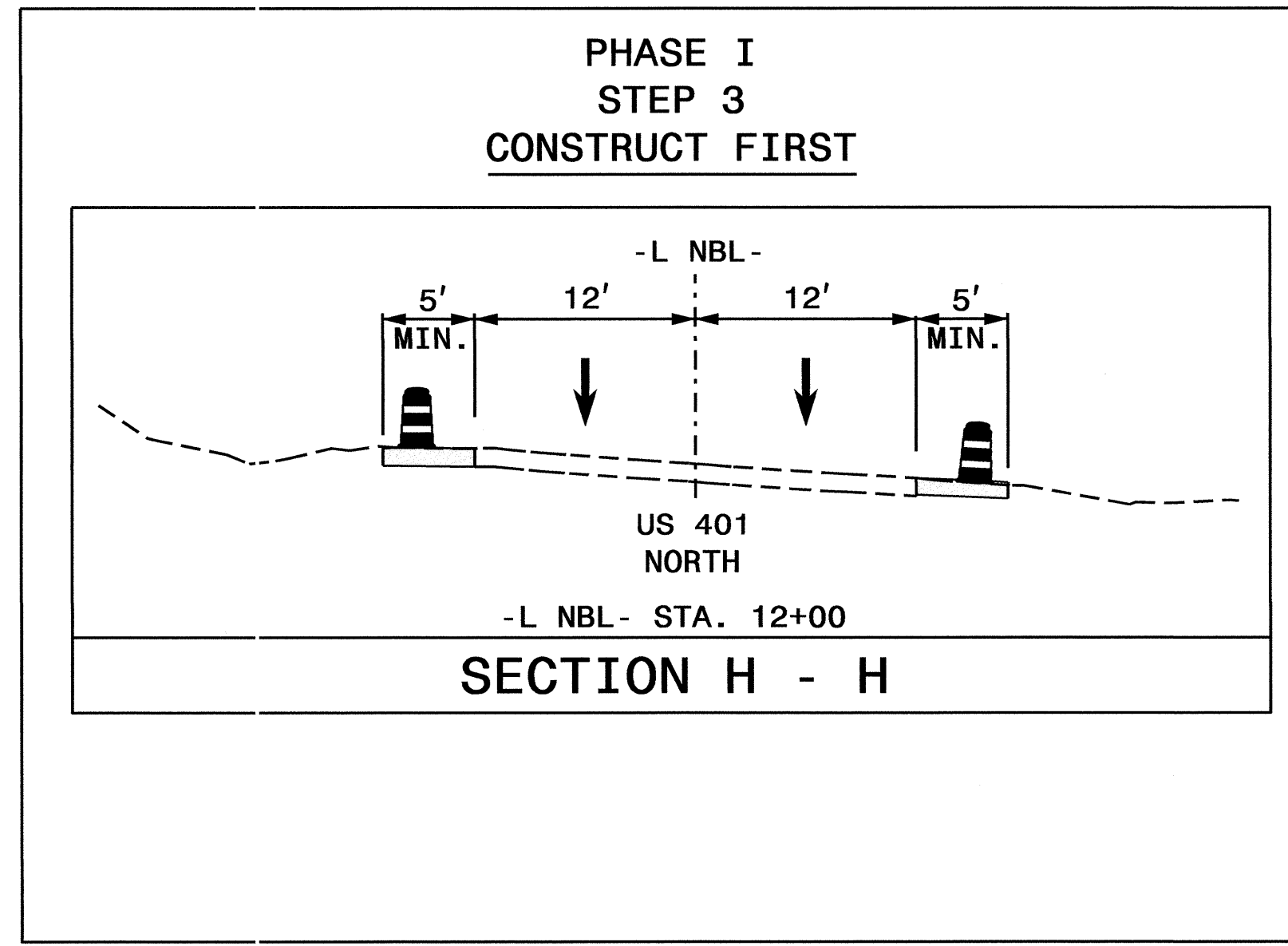
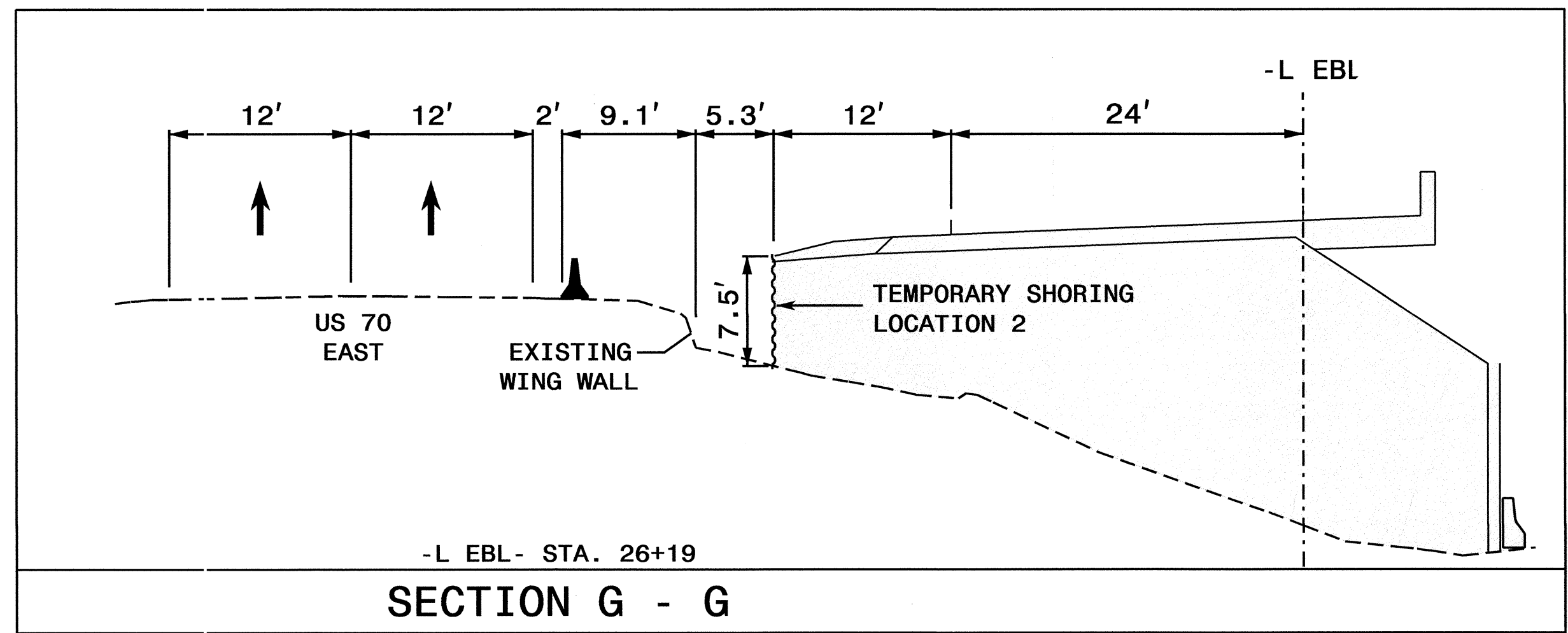
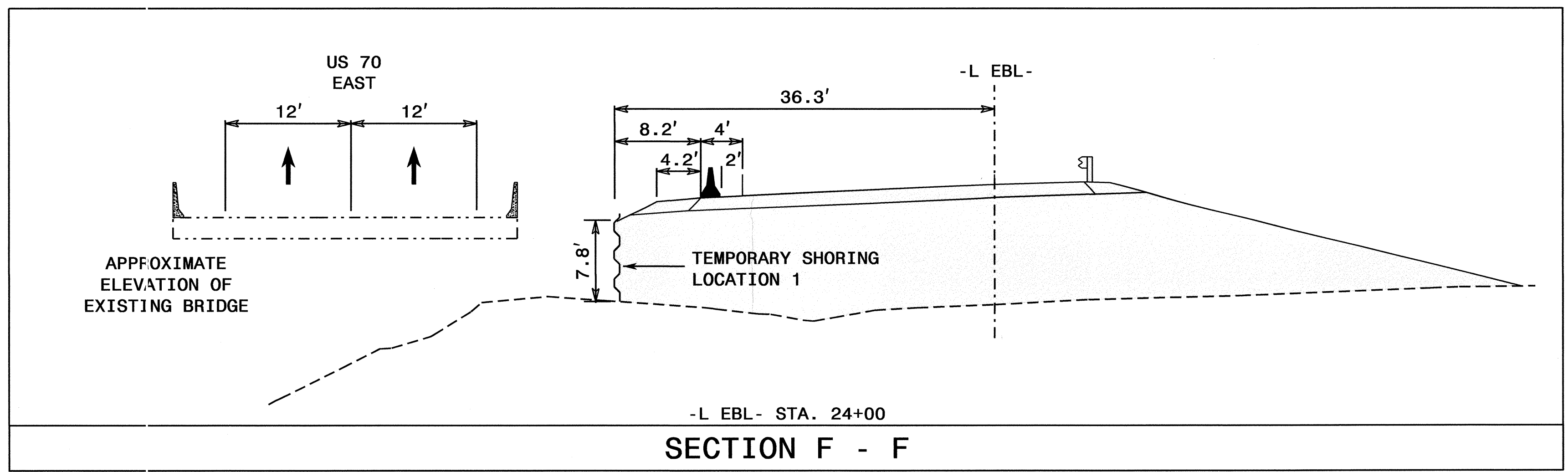
SEE TMP-7 FOR CUT SECTIONS

APPROVED: _____ DATE: _____

SEAL

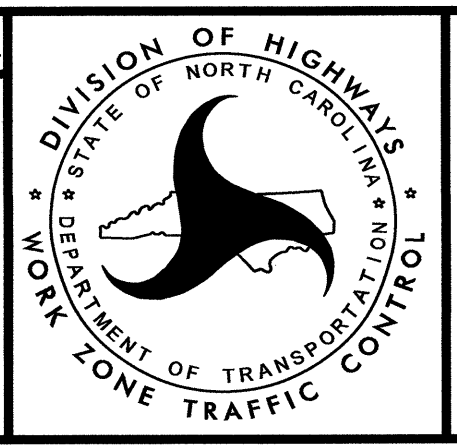
**PHASE I
DETAIL**

3-DEC-2012 16:49 \\dot\dfs00101\proj\TipProjects-B\B4946\TrafficControl\TCP-B-4946-TC-TMP-TMP-06.dgn



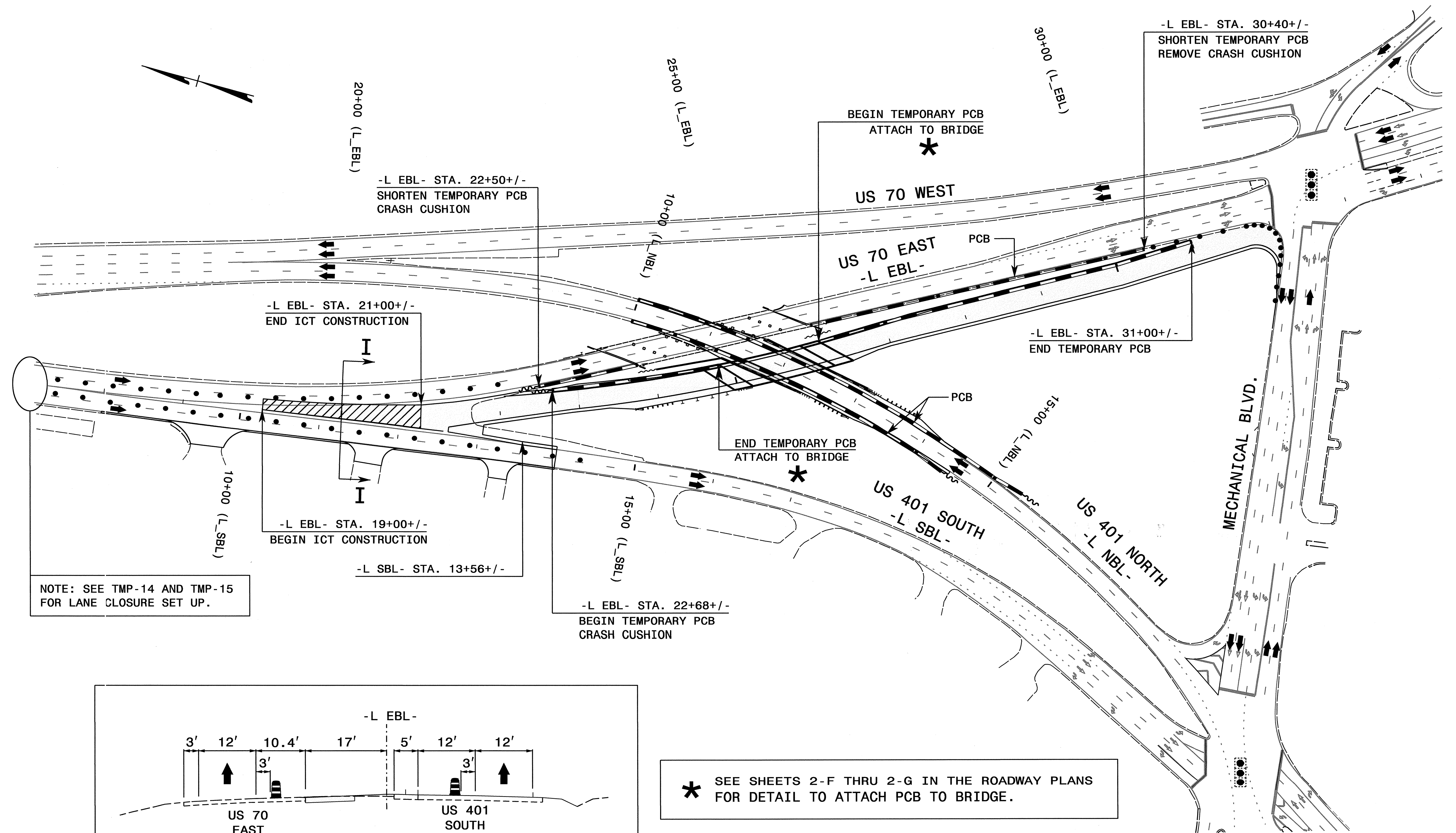
ALL CUT SECTIONS REFER
BACK TO SHEET TMP-6

APPROVED: _____ DATE: _____

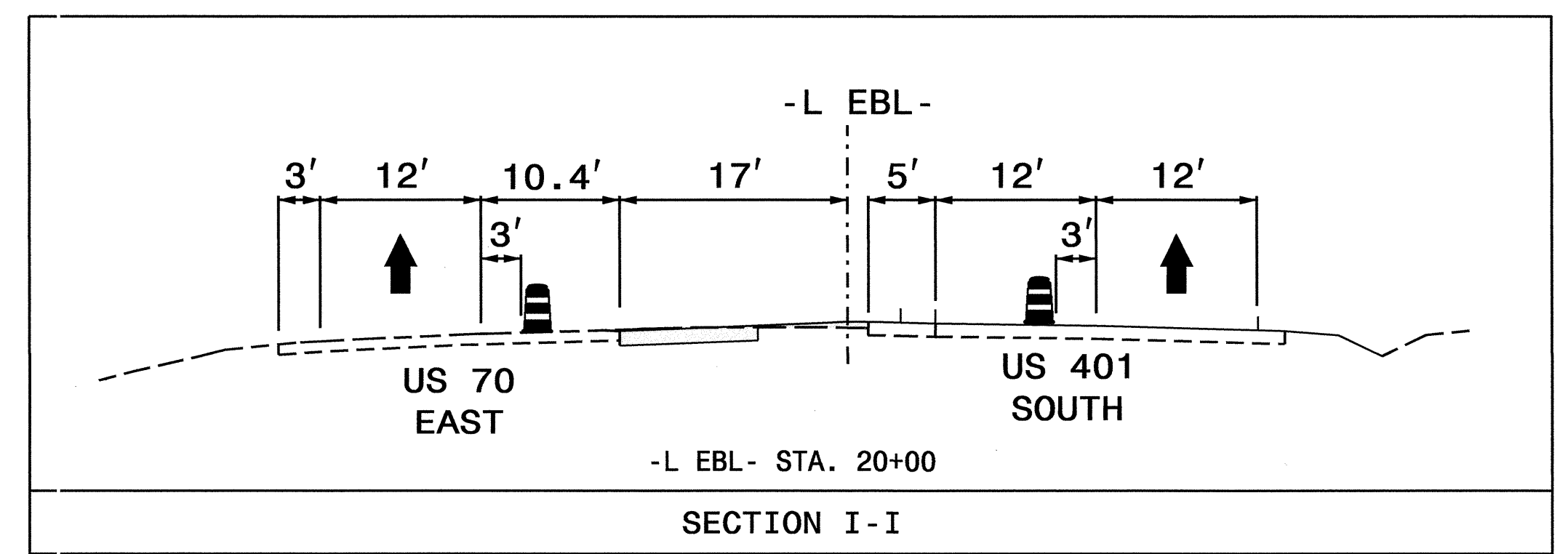


PHASE I
CUT SECTIONS

3-DEC-2012 16:49 \\D:\DOT\DFSR0010\PROJECTS\B\4946\TrafficControl\TCP\B-4946.TC.TMP-TMP-07.dgn idonidson AT 1226192



NOTE: SEE TMP-14 AND TMP-15 FOR LANE CLOSURE SET UP.



* SEE SHEETS 2-F THRU 2-G IN THE ROADWAY PLANS FOR DETAIL TO ATTACH PCB TO BRIDGE.

PHASE II, STEP 1 ICT

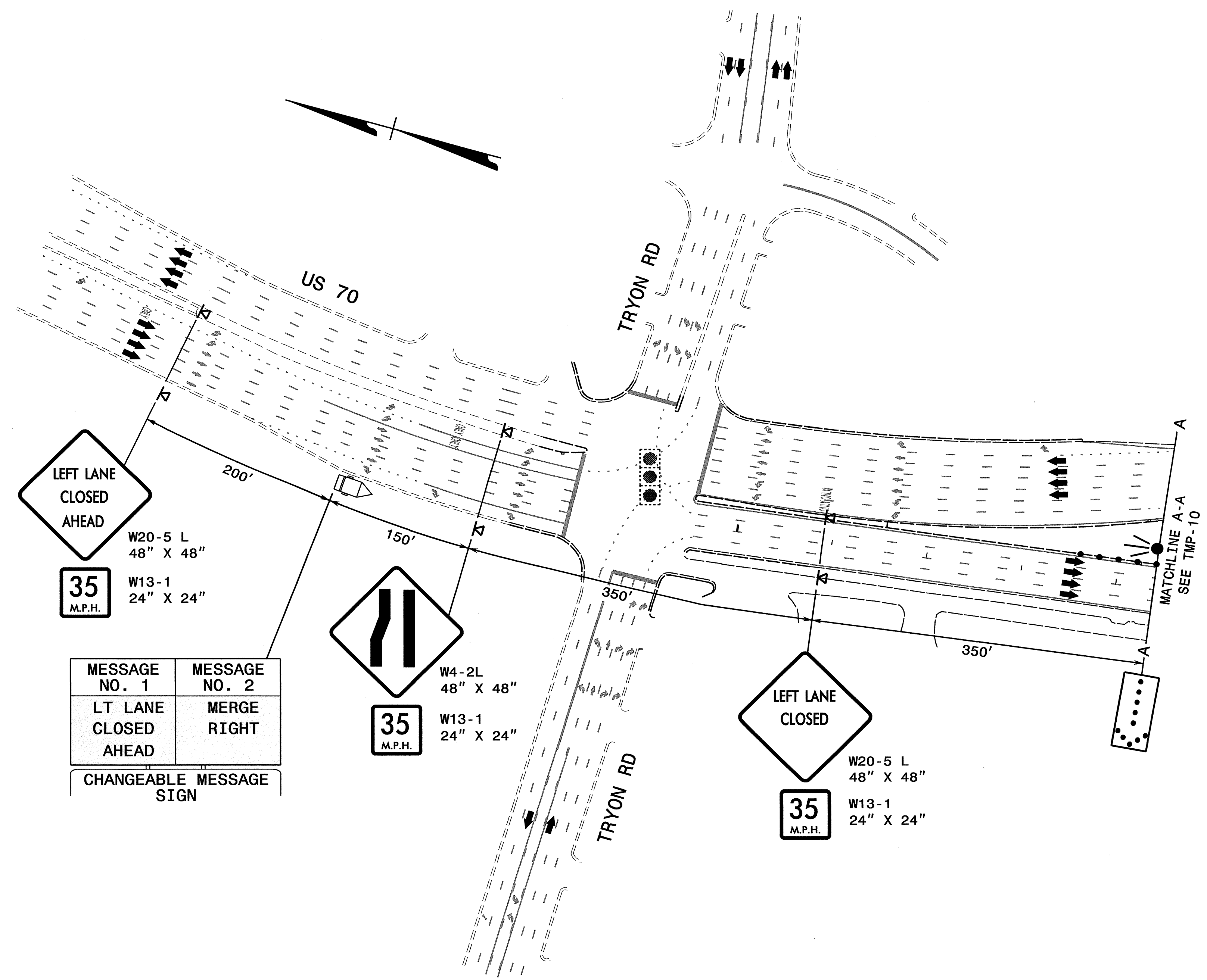
APPROVED: _____ DATE: _____

SEAL

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

**PHASE II
 DETAIL**

29-JAN-2013 16:03
 \DOT\Projects\TrafficControl\B-4946\TrafficControl\TCP\B-4946-TC-TMP-TMP-08.dgn
 idonidson AT 1226192



LEFT LANE
CLOSED
AHEAD

35
M.P.H.

W20-5 L
48" X 48"
W13-1
24" X 24"

| | |
|----------------------------|------------------|
| MESSAGE NO. 1 | MESSAGE NO. 2 |
| LT LANE CLOSED AHEAD | MERGE RIGHT |
| CHANGEABLE MESSAGE SIGN | |

35
M.P.H.

W4-2L
48" X 48"
W13-1
24" X 24"

LEFT LANE
CLOSED

35
M.P.H.

W20-5 L
48" X 48"
W13-1
24" X 24"

SEE GENERAL NOTES ON RSD
1101.02 SHEET 3 OF 15

3-DEC-2012 17:04
 \DOT\SPROD\PROJECTS\B\B4946\TrafficControl\TCP\B-4946_TC_TMP-TMP-09.dgn
 idonaldson AT 1226392

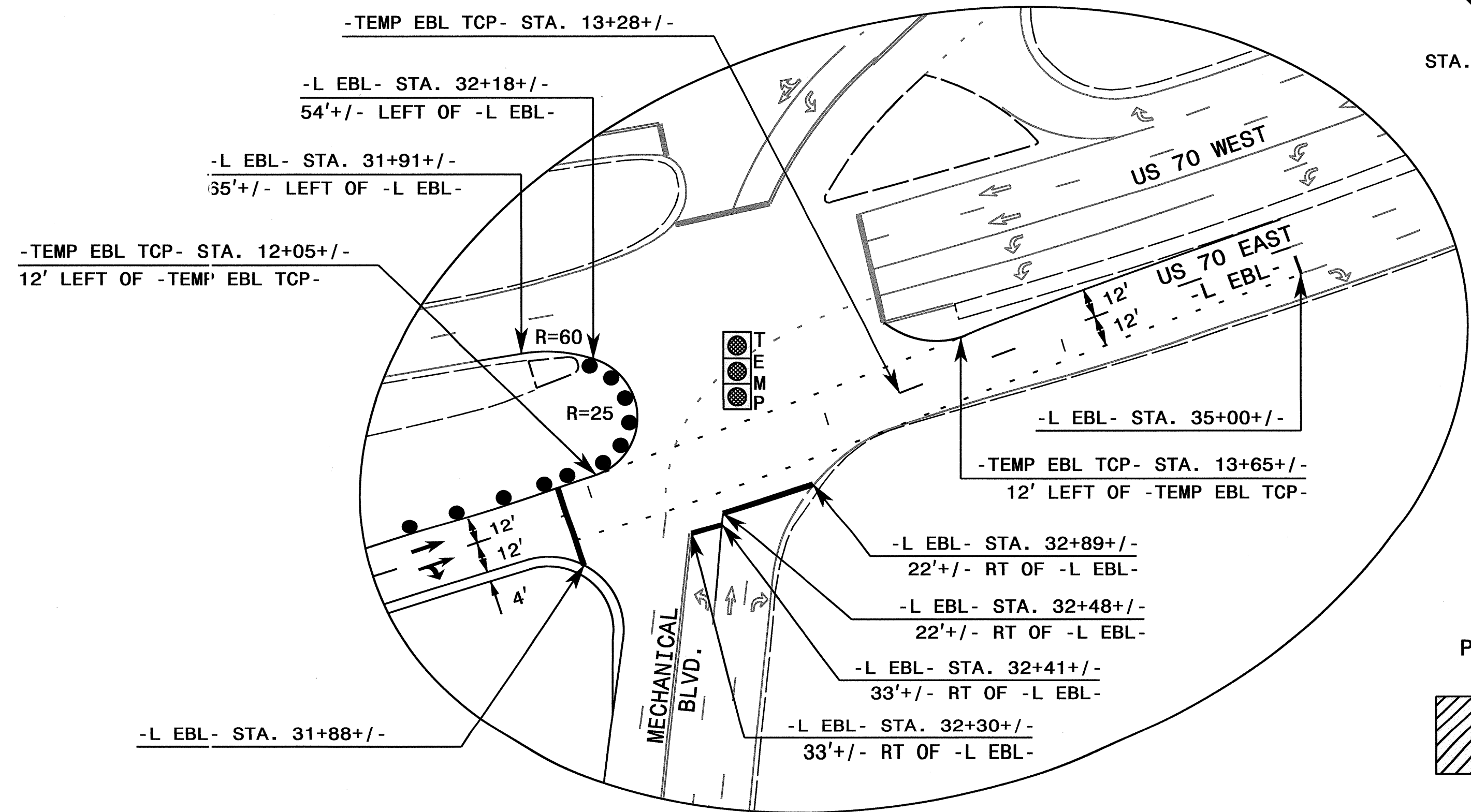
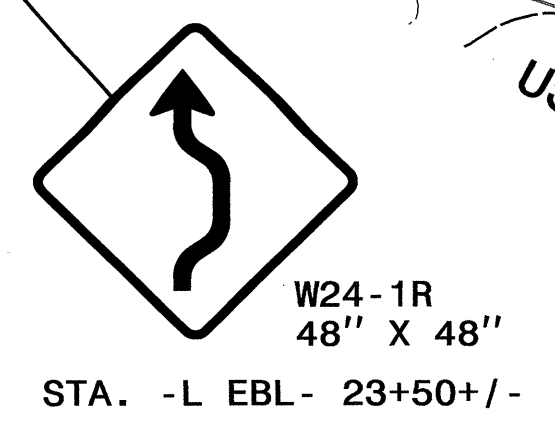
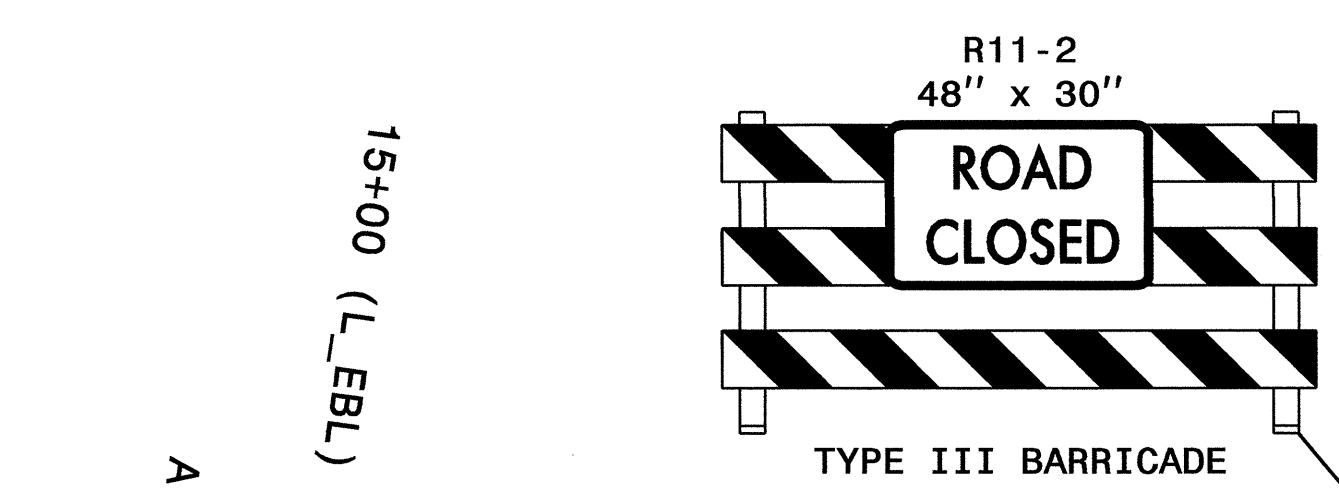
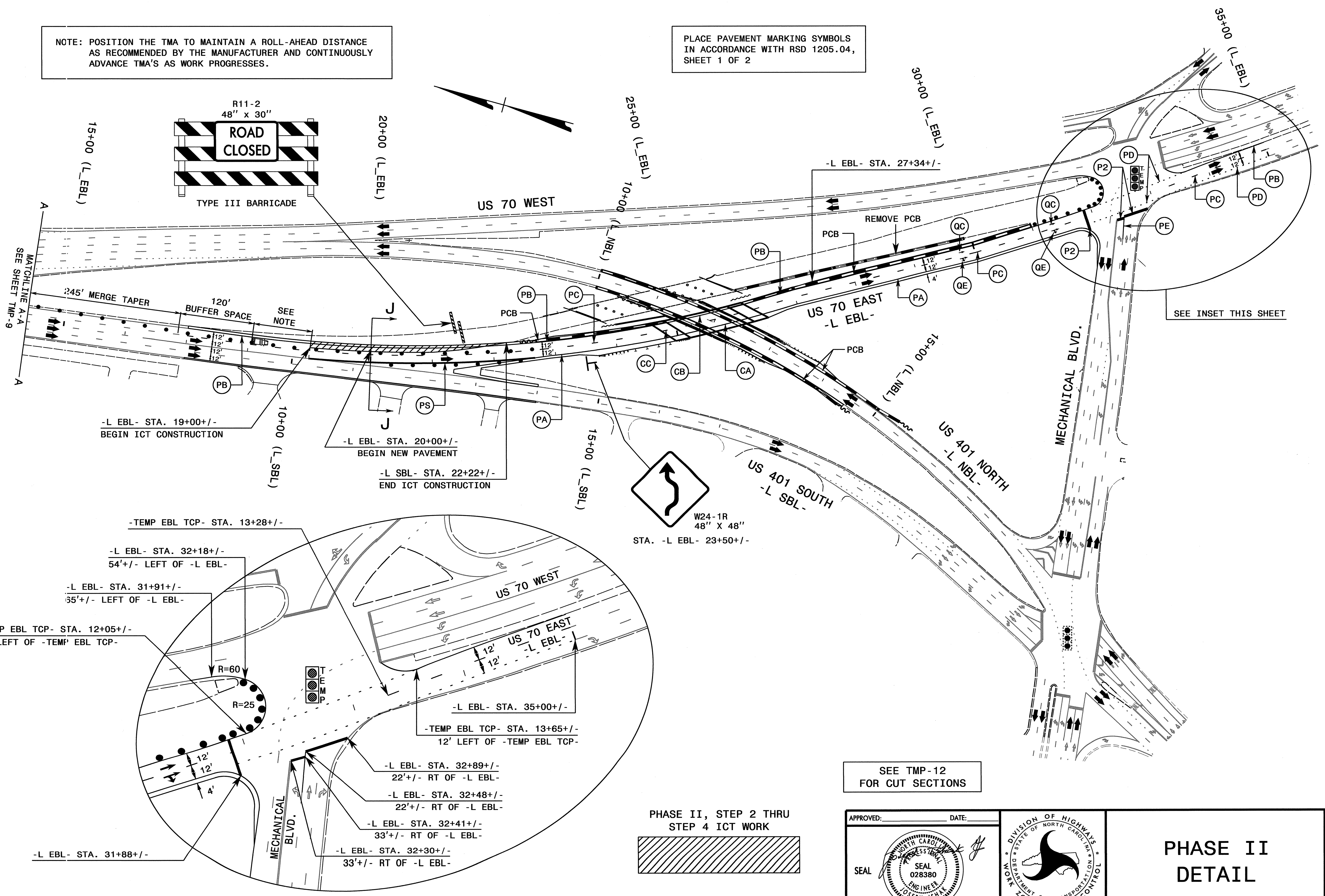
APPROVED: _____ DATE: _____

1-6-2013

PHASE II
DETAIL

NOTE: POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMA'S AS WORK PROGRESSES.

PLACE PAVEMENT MARKING SYMBOLS IN ACCORDANCE WITH RSD 1205.04, SHEET 1 OF 2



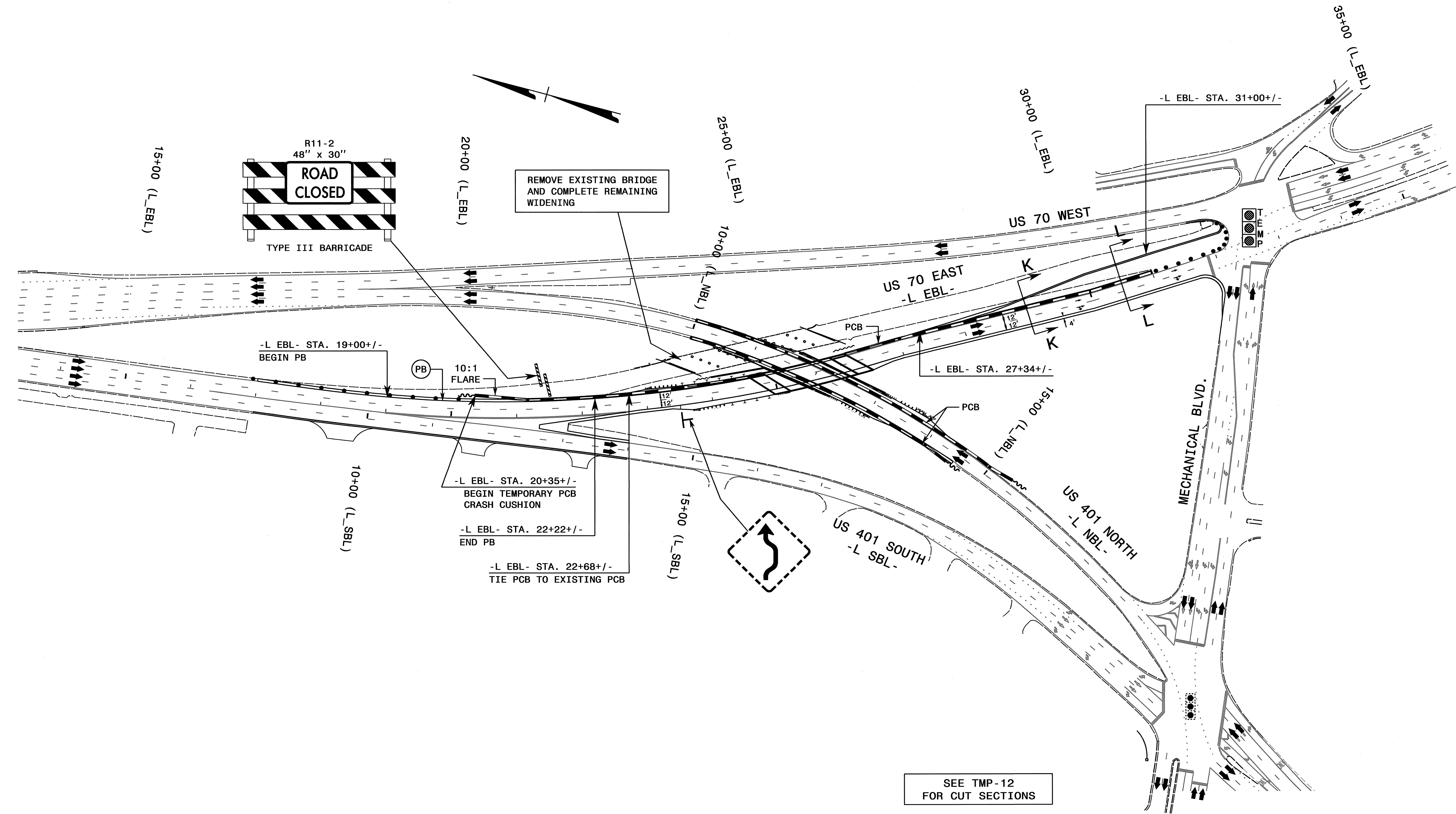
SEE TMP-12 FOR CUT SECTIONS

PHASE II, STEP 2 THRU STEP 4 ICT WORK

APPROVED: _____ DATE: _____

PHASE II
DETAIL

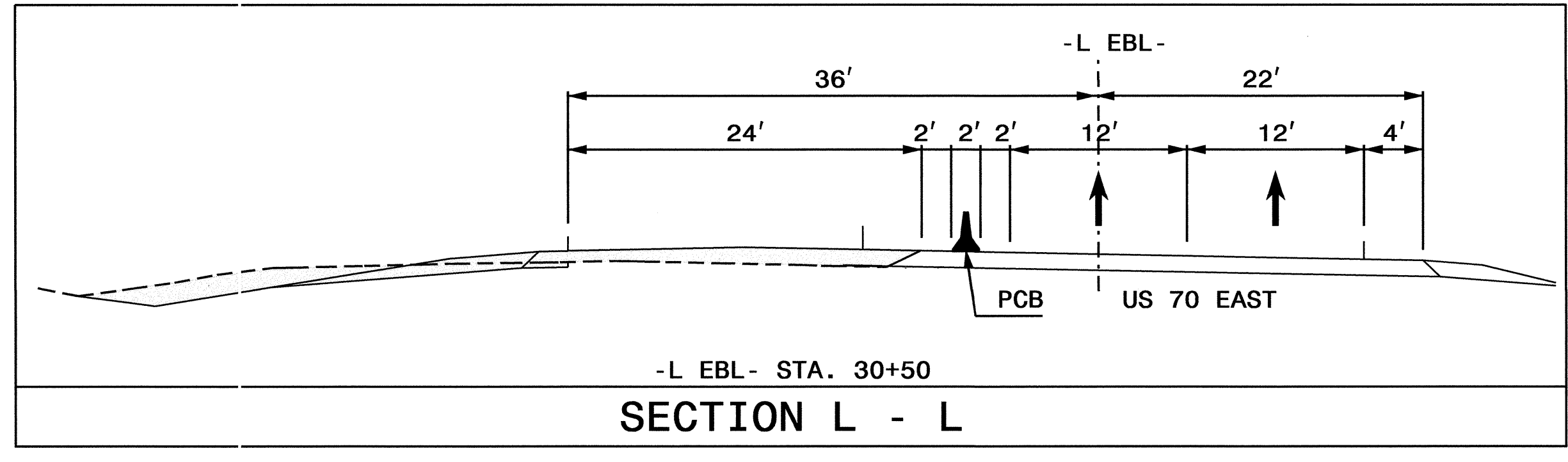
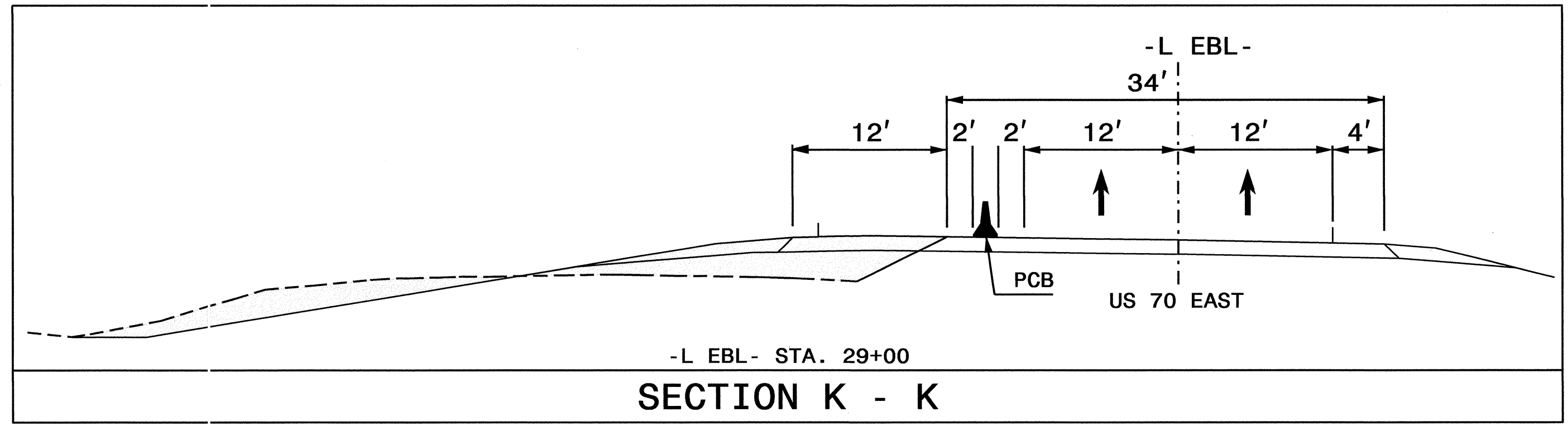
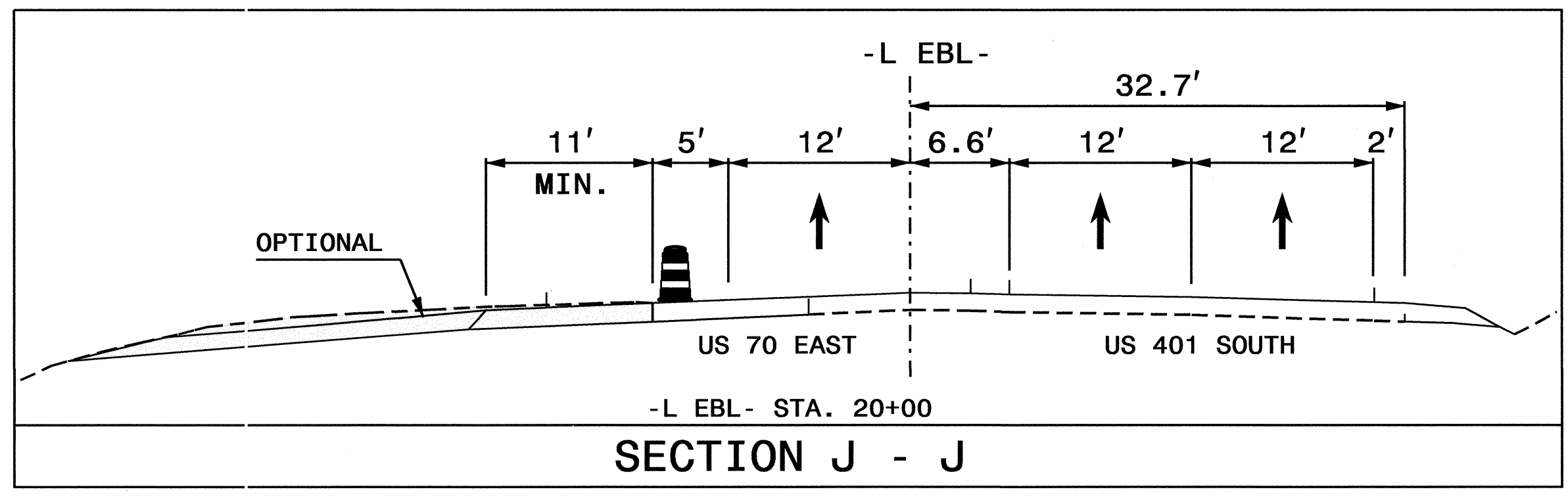
3:49:54 2012 16:54
 \\D:\S\PROJ\01\PROJ\TIPPR\Projects\B\B4946\TrafficControl\TCP\B-4946.TC.TMP-TMP-10.dgn
 idonaldson AT 12/26/12



SEE TMP-12
FOR CUT SECTIONS

31-DEC-2012 16:55
 \\D01\05\PROJ\01\PROJ\TIP\Projects-B\B4946\TrafficControl\TCP\B-4946.TC.TMP_TMP-il.dgn
 idonaldson AT 12261392

| | | |
|-----------------------------|--|------------------------------|
| APPROVED: _____ DATE: _____ | | <h2>PHASE II DETAIL</h2> |
| | | |



SECTION J-J REFER
BACK TO SHEET TMP-10

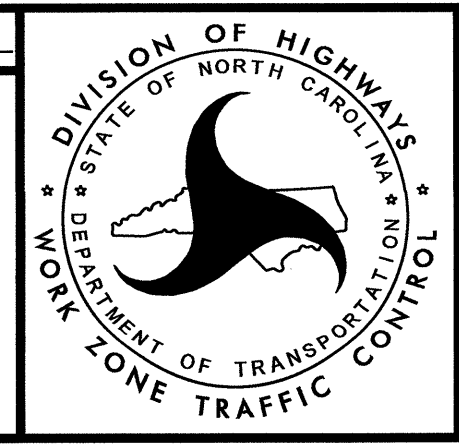
SECTION K-K AND
SECTION L-L REFER
BACK TO SHEET TMP-11

3-DEC-2012 16:56
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 idonaldson AT TE261392

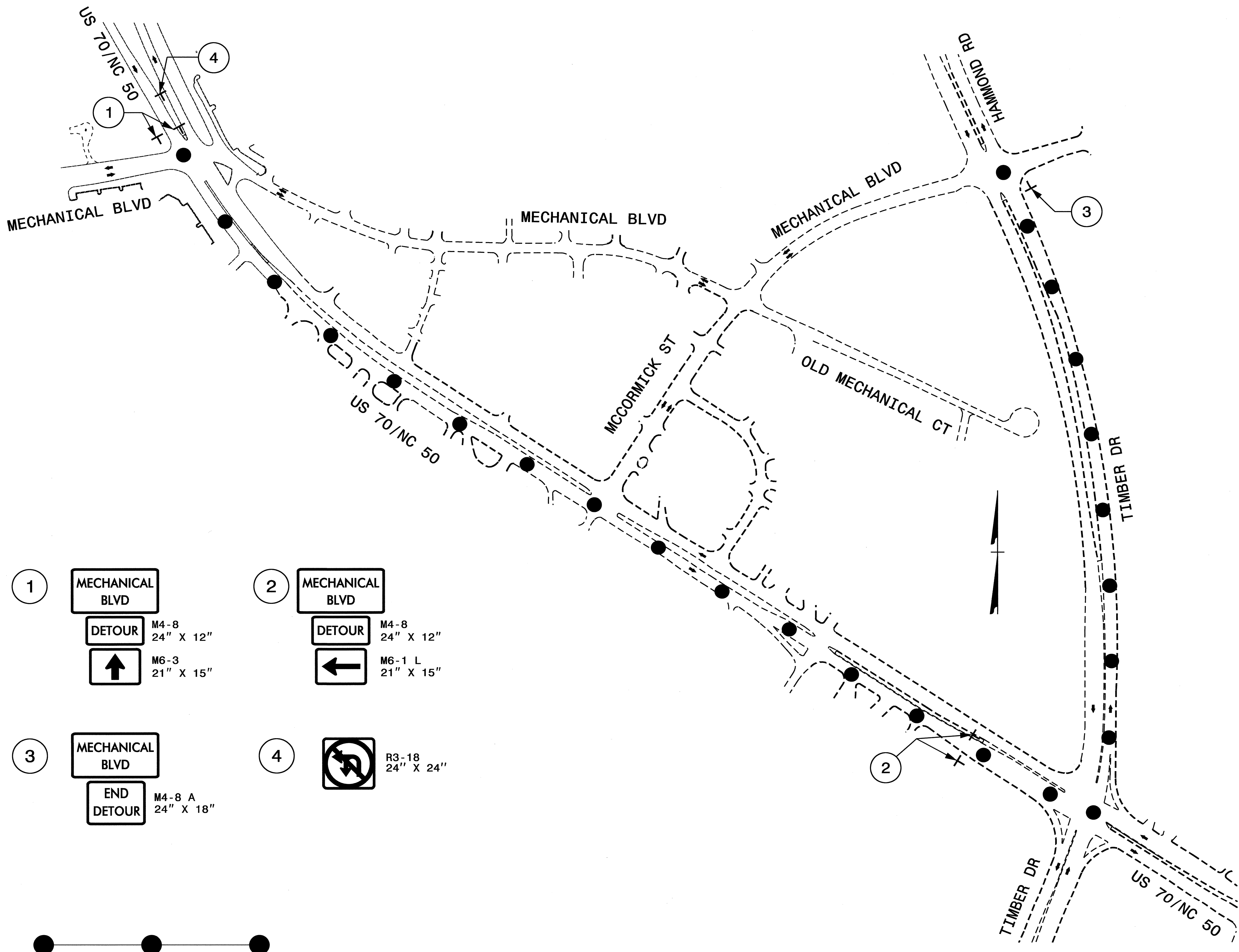
APPROVED: _____ DATE: _____

SEAL

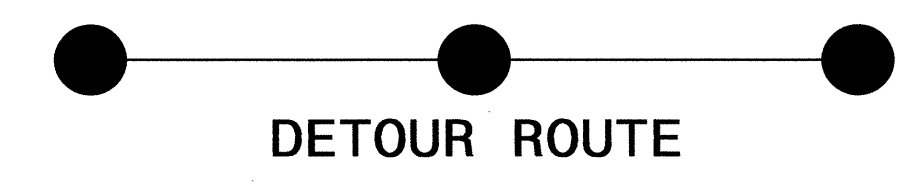
1-2-2013



PHASE II
CUT SECTIONS

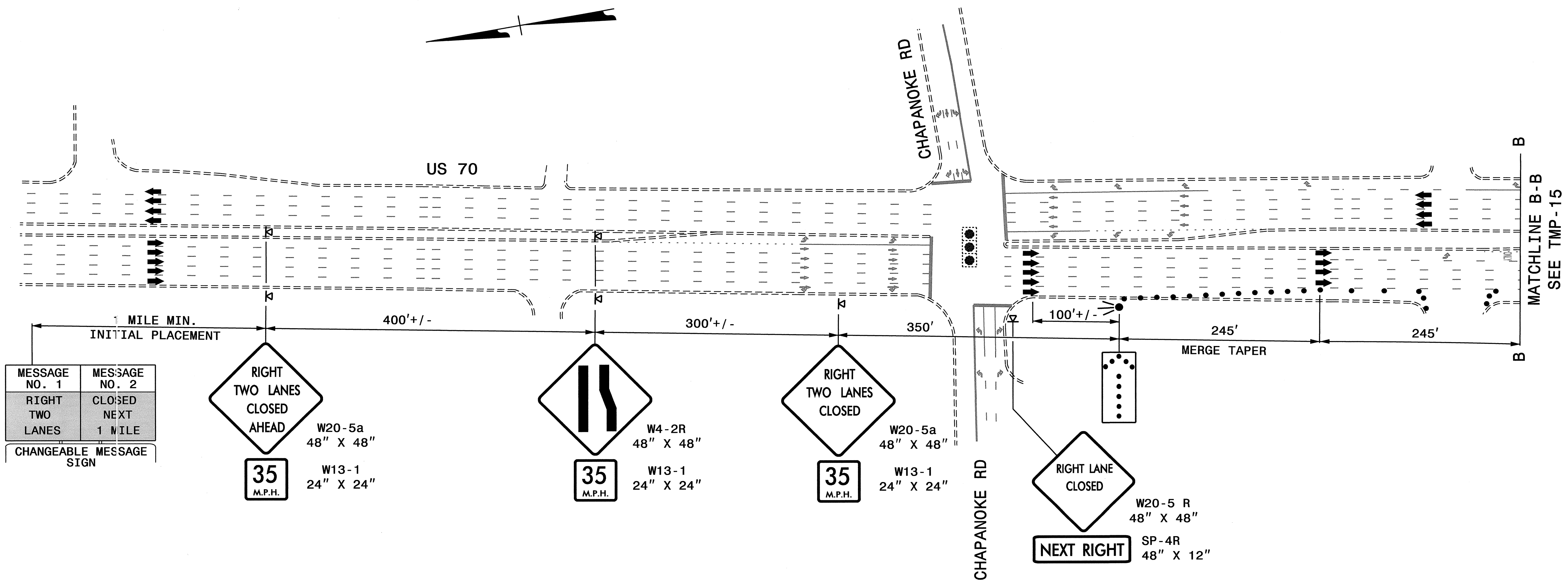


- | | | | |
|---|---|---|---|
| ① | MECHANICAL BLVD DETOUR M4-8 24" X 12" M6-3 21" X 15" ↑ | ② | MECHANICAL BLVD DETOUR M4-8 24" X 12" M6-1 L 21" X 15" ← |
| ③ | MECHANICAL BLVD END DETOUR M4-8 A 24" X 18" ↑ | ④ | R3-18 24" X 24" ⊘ |



02-JAN-2013 10:54
 \\PORT053800\PROJ\TIPPrProjects-B\B4946\TrafficControl\TCP\B-4946-TC-TMP-TMP-13-left turn detour.dgn
 idonidson AT 12:26:32

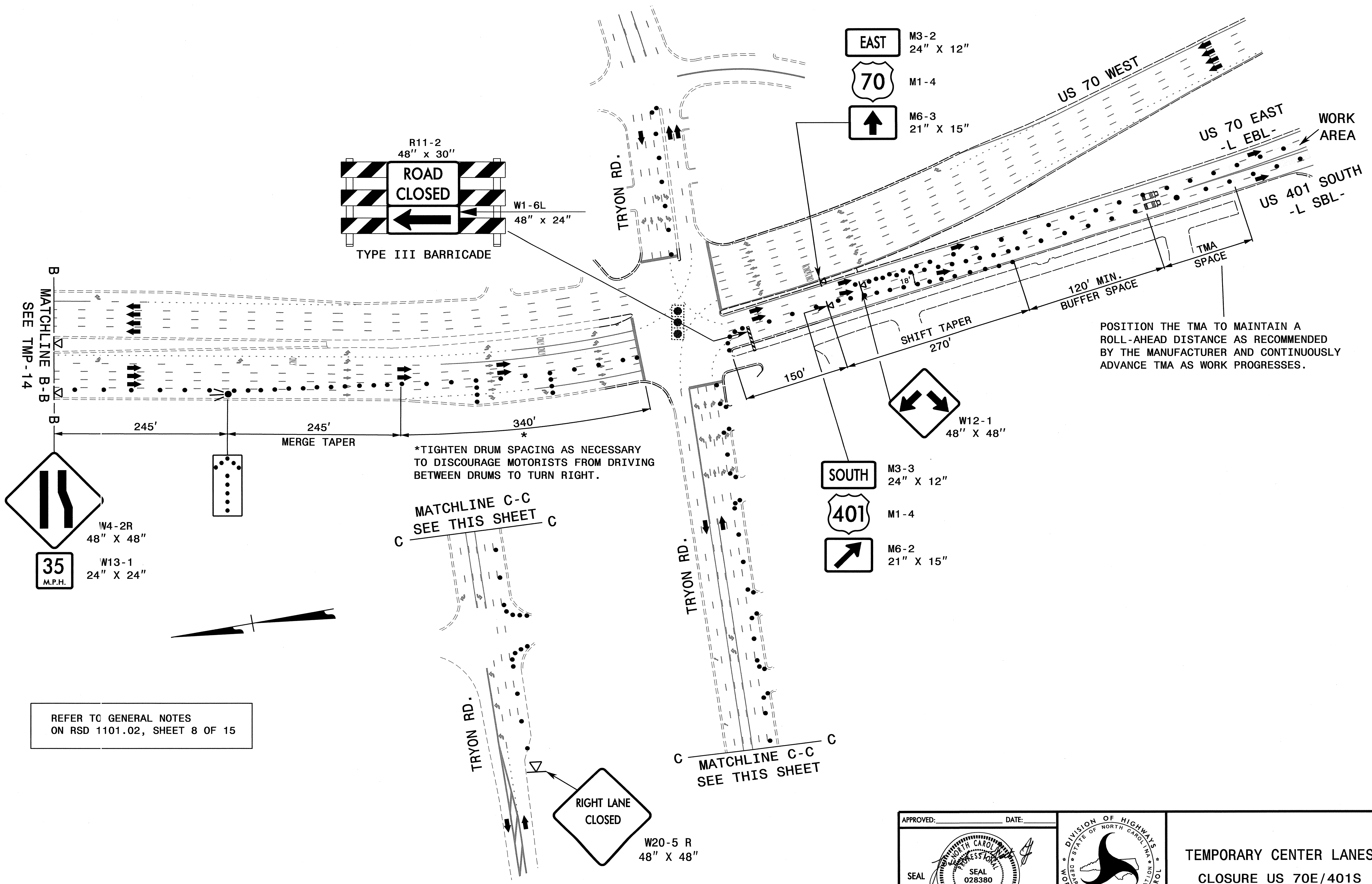
| | | |
|-----------------------------|--|----------------------------|
| APPROVED: _____ DATE: _____ | | PHASE II DETOUR |
| | | |



REFER TO GENERAL NOTES
ON RSD 1101.02, SHEET 8 OF 15

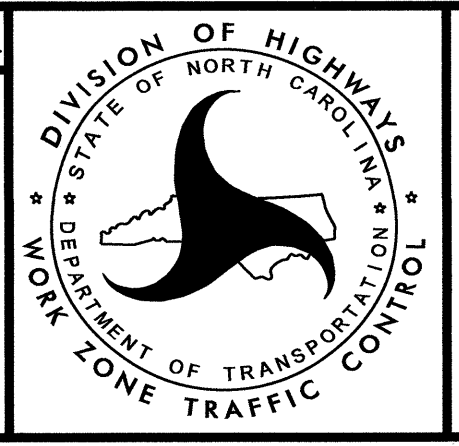
3-DEC-2012 16:58 \\D01\dfs00101\proj\TipProjects\B\B4946\TrafficControl\TCP\B-4946_Tc.TMP_TMP-14 & 15 lane closure Rcdgn idonidson AT 1226192

| | | | |
|---------------|-------|--|---|
| APPROVED: | DATE: | | TEMPORARY CENTER LANES CLOSURE US 70E/401S |
| SEAL | | | |

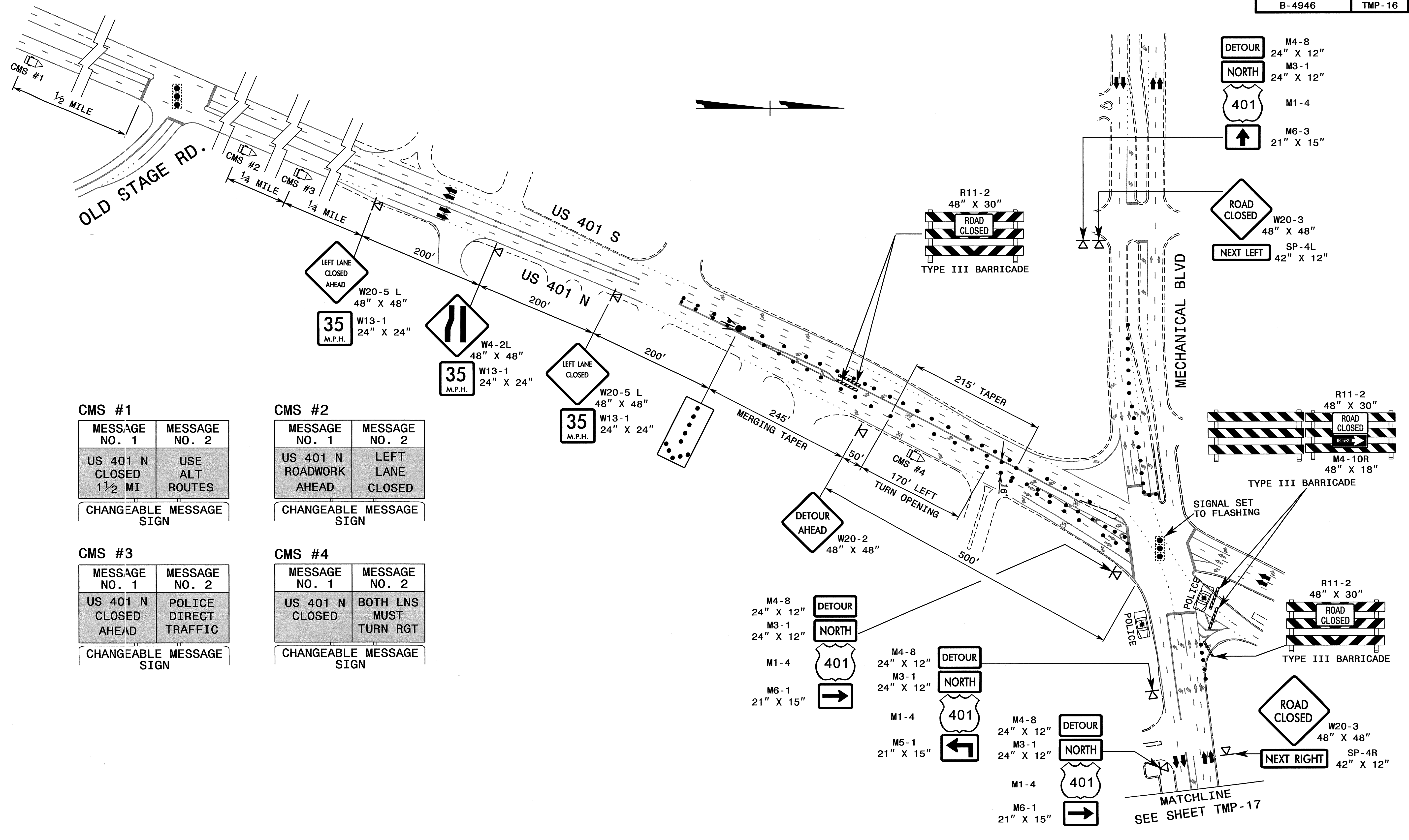


3-DEC-2012 16:58 \\D:\DOT\DFSR001\PROJECTS\B-4946\TrafficControl\TCP\B-4946_TC_TMP-TMP-14 & 15 lane closure R.dgn idonaldson AT TE26392

APPROVED: _____ DATE: _____



**TEMPORARY CENTER LANES
CLOSURE US 70E/401S**



CMS #1

| MESSAGE NO. 1 | MESSAGE NO. 2 |
|--------------------------------|----------------------|
| US 401 N CLOSED 1 1/2 MI | USE ALT ROUTES |

CHANGEABLE MESSAGE SIGN

CMS #2

| MESSAGE NO. 1 | MESSAGE NO. 2 |
|-------------------------------|------------------------|
| US 401 N ROADWORK AHEAD | LEFT LANE CLOSED |

CHANGEABLE MESSAGE SIGN

CMS #3

| MESSAGE NO. 1 | MESSAGE NO. 2 |
|-----------------------------|-----------------------------|
| US 401 N CLOSED AHEAD | POLICE DIRECT TRAFFIC |

CHANGEABLE MESSAGE SIGN

CMS #4

| MESSAGE NO. 1 | MESSAGE NO. 2 |
|--------------------|------------------------------|
| US 401 N CLOSED | BOTH LNS MUST TURN RGT |

CHANGEABLE MESSAGE SIGN

- DETOUR M4-8 24" X 12"
- NORTH M3-1 24" X 12"
- 401 M1-4
- ↑ M6-3 21" X 15"

- ROAD CLOSED W20-3 48" X 48"
- NEXT LEFT SP-4L 42" X 12"

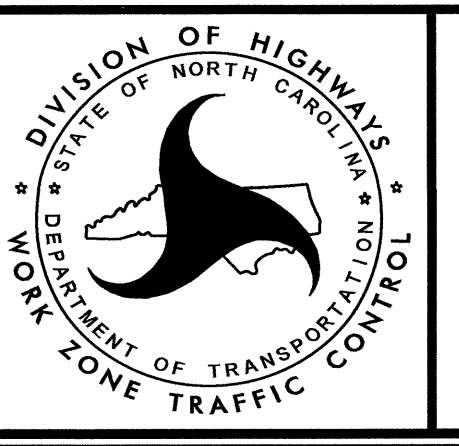
- R11-2 48" X 30"
- ROAD CLOSED
- M4-10R 48" X 18"

- R11-2 48" X 30"
- ROAD CLOSED

- ROAD CLOSED W20-3 48" X 48"
- NEXT RIGHT SP-4R 42" X 12"

31-DEC-2012 17:00
 \\D:\S\00\01\PROJ\TIP\Projects\B\B4946\TrafficControl\TCP\B-4946-TC-TMP-TMP-16 & 17 DetourR.dgn
 idonaldson AT 12261392

APPROVED: _____ DATE: _____



US 401 DETOUR

CMS #5

| | |
|-----------------------------------|-----------------------------------|
| MESSAGE NO. 1 US 401 N TRAFFIC | MESSAGE NO. 2 USE LEFT 2 LANES |
|-----------------------------------|-----------------------------------|

CHANGEABLE MESSAGE SIGN

- M4-8 24" X 12"
- M3-1 24" X 12"
- M1-4
- M6-1 L 21" X 15"

MATCHLINE
SEE SHEET TMP-16

* THE BOLTED STEEL PLATES DESCRIBED ON THIS SHEET ARE INCIDENTAL TO THE OTHER PAY ITEMS IN THIS CONTRACT.

* BOLTED STEEL PLATE WITH THRU-LEFT TURN ARROW SYMBOL. (TO COVER THRU ARROW SYMBOL)

COORDINATE WITH THE CITY OF RALEIGH TO ADJUST PHASING OF SIGNAL AS DIRECTED BY ENGINEER.

CMS #7

| | |
|----------------------------------|----------------------------------|
| MESSAGE NO. 1 ALT RTE TO I-40 | MESSAGE NO. 2 RIGHT ON TIMBER |
|----------------------------------|----------------------------------|

CHANGEABLE MESSAGE SIGN

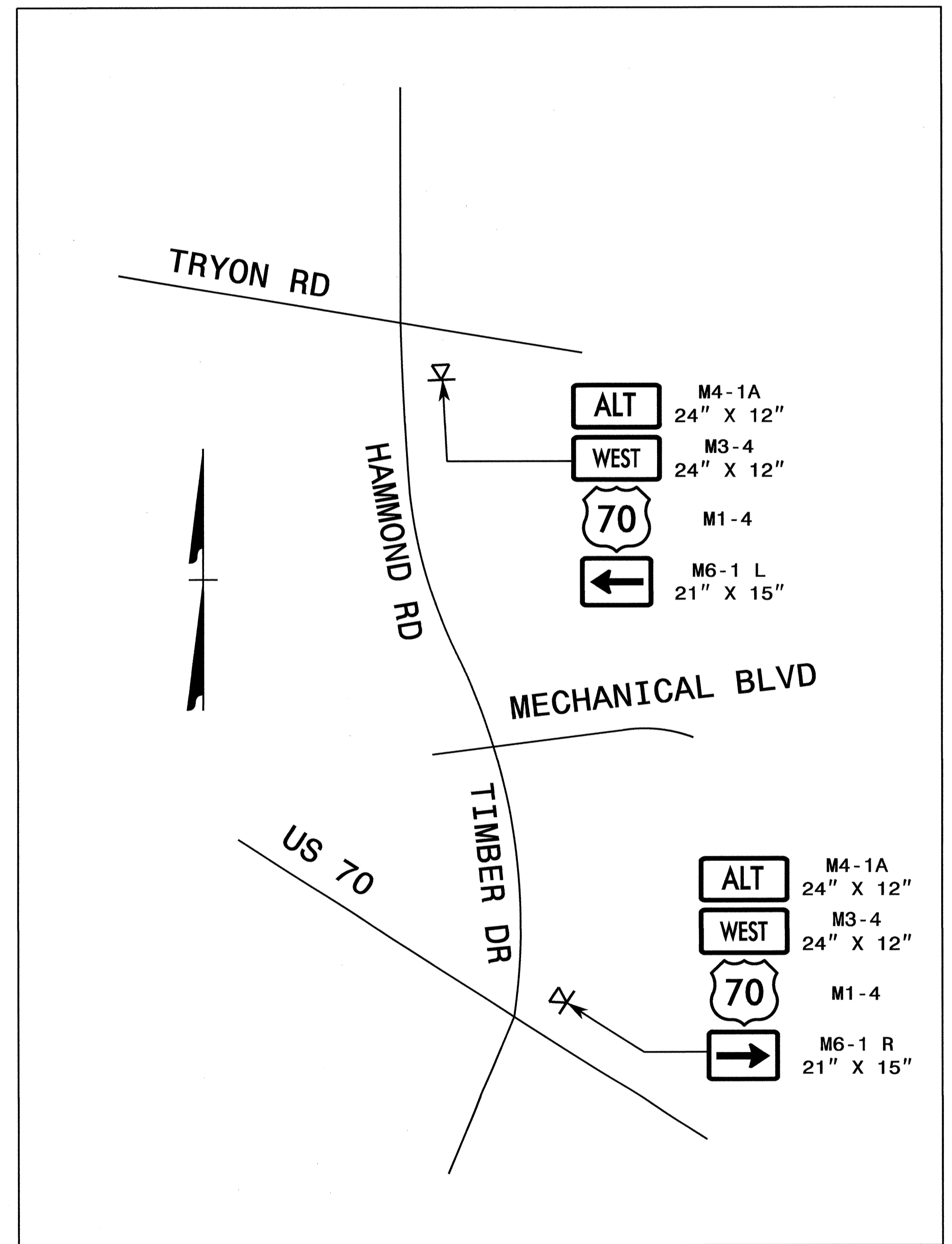
INSTALL CMS 1/2 MILE IN ADVANCE OF HAMMOND RD.

CMS #6

| | |
|----------------------------------|--------------------------------|
| MESSAGE NO. 1 ALT RTE TO I-40 | MESSAGE NO. 2 EXPECT DELAYS |
|----------------------------------|--------------------------------|

CHANGEABLE MESSAGE SIGN

INSTALL CMS 1 MILE IN ADVANCE OF HAMMOND RD.



APPROVED: _____ DATE: _____

SEAL

US 401 DETOUR

14-FEB-2013 09:48
 \ADO\N\SPROD\01\PROJ\TIP\Projects-B\B4946\TrafficControl\TCP\B-4946.TC.TMP-TMP-16 & 17 DetourR.dgn
 idonaldson AT 1226192