

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
R-5019	TCP-1

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

**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
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS (TEMPORARY & PERMANENT)
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

**INDEX OF SHEETS**

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TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND INDEX OF SHEETS
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TCP-7	DETAIL DRAWING #6 FOR MOVING OPERATION CARAVAN ON TWO-LANE TWO-WAY ROADWAYS
PM-1	PAVEMENT MARKING SCHEDULE
PM-2 THRU PM-10	PAVEMENT MARKING PLANS

**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
  - DRUM SKINNY DRUM
  - FLASHING ARROW PANEL (TYPE C)
  - TYPE 'B' WARNING LIGHT
  - STATIONARY SIGN
  - PORTABLE SIGN
  - STATIONARY OR PORTABLE SIGN
  - WARNING FLAGS
  - CRASH CUSHION
  - CHANGEABLE MESSAGE SIGN
  - TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
  - POLICE
  - FLAGGER
- PAVEMENT MARKINGS**
- CRYSTAL/CRYSTAL PAVEMENT MARKER
  - YELLOW/YELLOW PAVEMENT MARKER
  - CRYSTAL/RED PAVEMENT MARKER
  - PAVEMENT MARKING SYMBOLS

**PROJECT: R-5019**

APPROVED: <i>Lisa M. Podesta</i> DATE: <i>12/28/07</i>	PLAN PREPARED BY: HDR ENGINEERING, INC OF THE CAROLINAS
SEAL 	_____ TRAFFIC CONTROL ENGINEER
	_____ TRAFFIC CONTROL PROJECT ENGINEER
	_____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	_____ TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

# PROJECT NOTES

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DRAWINGS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES.

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.

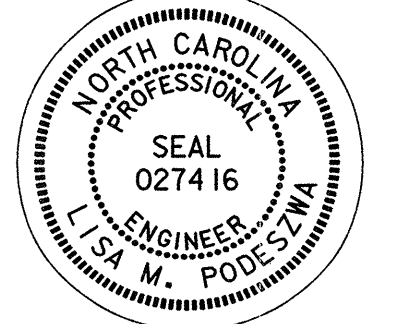
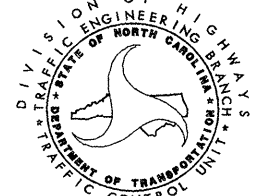
C. DO NOT STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS:

ROAD NAME	OPERATION
1. US 301 AND -Y LINES-	ALL

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 40 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.
  - 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 DRAWINGS 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 DRAWINGS 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 ON BOTH SIDES OF AN OPEN TRAVELWAY WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.
  - I. DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY.
  - J. DO NOT INSTALL MORE THAN ONE-HALF MILE OF LANE CLOSURE ON US 301 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
  - K. DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON US 301.
  - L. PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

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APPROVED: <i>USA Podestma</i> DATE: <i>12/18/07</i>		PROJECT NOTES	
	SCALE: NONE		REVISIONS
	DATE: JULY 2006		
	DWG. BY: DHK		
	DESIGN BY: DHK		
REVIEWED BY: LMP		CADD FILE	



# PROJECT NOTES

**PAVEMENT EDGE DROP-OFF REQUIREMENTS**

- M. BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPEN TRAVEL LANE THAT HAS A 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.
- N. THE MAXIMUM ACCEPTABLE DROP-OFF BETWEEN OPEN LANES OF TRAVEL IS 2 INCHES. WHERE A DROP-OFF BETWEEN OPEN LANES OF TRAFFIC EXCEEDS 2 INCHES, THE AFFECTED LANE(S) CLOSEST TO THE DROP-OFF SHALL BE CLOSED TO TRAFFIC. FOR ALL DROP-OFFS BETWEEN OPEN LANES, ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11 AT 48" X 48") SHALL BE INSTALLED 500 FEET IN ADVANCE AND ONCE EVERY HALF MILE THROUGHOUT THE LENGTH OF THE DROP-OFF AREA.

**TRAFFIC PATTERN ALTERATIONS**

- O. NOTIFY THE ENGINEER 21 DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

**SIGNING**

- P. INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 100 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE DEPARTMENT.
- Q. STATE FORCES WILL BE RESPONSIBLE FOR PERMANENT SIGNING.
- R. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- S. INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) 500 FT IN ADVANCE OF THE UNEVEN AREA.
- T. INSTALL BLACK ON ORANGE "BUMP" SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA.

**TRAFFIC BARRIERS**

- U. INSTALL MOVEABLE/PORTABLE CONCRETE BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF 2 WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE MOVEABLE/PORTABLE CONCRETE 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 AS DIRECTED BY THE ENGINEER.
- ONCE MOVEABLE/PORTABLE CONCRETE BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE MOVABLE/PORTABLE CONCRETE BARRIER FOR A PERIOD LONGER THAN 2 MONTHS, REMOVE/RESET MOVABLE/PORTABLE CONCRETE BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.
- V. 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 OR A TEMPORARY CRASH CUSHION.

OFFSET THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER A MINIMUM OF 40 FEET FROM ONCOMING TRAFFIC OR PROTECT AT ALL TIMES BY A TEMPORARY CRASH CUSHION.

INSTALL MOVABLE/PORTABLE CONCRETE BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE MOVABLE/PORTABLE CONCRETE BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS ON 100 FOOT CENTERS TO CLOSE OR KEEP CLOSED THE SECTION OF THE ROADWAY UNTIL THE BARRIER CAN BE PLACED OR AFTER BARRIER IS REMOVED.


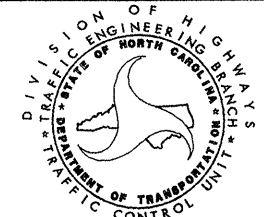
**TRAFFIC CONTROL DEVICES**

- W. SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT, EXCEPT 10 FEET ON-CENTER IN RADII, AND 3 FEET OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.
- X. PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN (R11-2) ATTACHED, OF SUFFICIENT LENGTH TO CLOSE THE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW INGRESS OR EGRESS.
- Y. PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FOOT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

**PAVEMENT MARKINGS AND MARKERS**

- Z. INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:
- | ROAD NAME               | MARKING       | MARKER           |
|-------------------------|---------------|------------------|
| 1. US 301 AND -Y LINES- | THERMOPLASTIC | PERMANENT RAISED |
- AA. INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:
- | ROAD NAME               | MARKING | MARKER           |
|-------------------------|---------|------------------|
| 1. US 301 AND -Y LINES- | PAINT   | TEMPORARY RAISED |
- BB. PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.
- CC. TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- DD. REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- EE. PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

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APPROVED: <i>Lisa M. Poole</i> DATE: 12/28/07		<b>PROJECT NOTES</b>	
	SCALE: NONE		REVISIONS
	DATE: JULY 2006		
	DWG. BY: DHK		
	DESIGN BY: DHK		
	REVIEWED BY: LMP		

# PROJECT PHASING

NOTES: USING INCIDENTAL STONE, MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

## PHASE I

WORK FOR PHASE I, STEPS 2 AND 3 MAY BE COMPLETED CONCURRENTLY, AS DIRECTED BY THE ENGINEER.

STEP 1: - INSTALL ALL WORK ZONE ADVANCE WARNING SIGNS ON US 301 (-L-) AND ALL -Y- LINES PER DETAIL DRAWING FOR TWO-WAY UNDIVIDED ADVANCE WARNING SIGNS. (SEE TCP-6)

STEP 2: - USING ROADWAY STANDARD DRAWING NO. 1101.04 AND CONSTRUCTION DETAIL FOR BOX CULVERT EXTENSION (SEE SHEET TCP-5):

- CONSTRUCT PROPOSED CULVERT EXTENSION ON US 301 (-L-) AT STA. 13+03 +/- - L- AS FOLLOWS:
  - ONLY ONE SIDE OF THE PROPOSED CULVERT EXTENSION CAN BE CONSTRUCTED AT A TIME. CONTRACTOR MAY SELECT WHICH SIDE TO CONSTRUCT FIRST, AS DIRECTED BY THE ENGINEER.
  - CONDUCT PROPOSED WIDENING UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS WITHIN THE STATIONS SHOWN ON SHEET TCP-5.
  - INSTALL PORTABLE CONCRETE BARRIER, TEMPORARY CRASH CUSHIONS, AND DRUMS AS SHOWN ON SHEET TCP-5.
  - CONSTRUCT PROPOSED CULVERT EXTENSION AND INSTALL PROPOSED GUARDRAIL ON ONE SIDE (SEE CULVERT AND CONSTRUCTION PLANS).
  - UPON COMPLETION OF PROPOSED CULVERT EXTENSION ON FIRST SIDE, REMOVE AND RESET PORTABLE CONCRETE BARRIER, TEMPORARY CRASH CUSHIONS, AND DRUMS TO THE OPPOSITE SIDE OF US 301 AS SHOWN ON SHEET TCP-5 AND REPEAT CONSTRUCTION PROCESS AS STATED ABOVE.
  - REMOVE PORTABLE CONCRETE BARRIER, TEMPORARY CRASH CUSHIONS, AND DRUMS.

STEP 3: - USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEETS 1 AND 2 OF 7:

- CONDUCT PROPOSED GRADING, DRAINAGE INSTALLATION, GUARDRAIL PLACEMENT UTILITY CONSTRUCTION, AND PROPOSED WIDENING UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE ALONG US 301 (-L-) AND ALL -Y- LINES AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
  - PLACE TYPE III BARRICADES (AT INTERSECTIONS) AND DRUMS TO KEEP PROPOSED WIDENING CLOSED TO TRAFFIC.
  - PLACE TRAFFIC BACK INTO EXISTING PATTERN AT THE END OF EACH WORK PERIOD.
- IN THOSE AREAS WHERE WEDGING IS REQUIRED, CONSTRUCT THE PROPOSED WIDENING & ROADWAY UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE ON US 301 AS SHOWN IN THE CONSTRUCTION PLANS AND CROSS SECTIONS.
- USING DETAIL DRAWING #6 FOR MOVING OPERATION CARAVAN ON TWO-LANE TWO-WAY ROADWAYS (SEE TCP-7).
- PLACE INTERMEDIATE PAVEMENT MARKINGS (PAINT) & INSTALL TEMPORARY RAISED PAVEMENT MARKERS IN THE EXISTING TRAFFIC PATTERN AND OPEN TO TRAFFIC.

## PHASE II

STEP 1: - USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEETS 1 AND 2 OF 7:

- PLACE THE FINAL LAYER OF SURFACE COURSE ON PROPOSED US 301 (-L-) AND ALL -Y- LINES. (SEE CONSTRUCTION PLANS AND CROSS SECTIONS)
- USING DETAIL DRAWING #6 FOR MOVING OPERATION CARAVAN ON TWO-LANE TWO-WAY ROADWAYS (SEE TCP-14).
- PLACE FINAL PAVEMENT MARKINGS (THERMOPLASTIC) AND INSTALL PERMANENT RAISED PAVEMENT MARKERS IN THE FINAL TRAFFIC PATTERN ON US 301 (-L-) AND ALL -Y- LINES. (SEE SHEETS PM-1 THRU PM-10)
- OPEN US 301 (-L-) AND ALL -Y- LINES TO THE FINAL TRAFFIC PATTERN (SEE SHEETS PM-1 THRU PM-10).

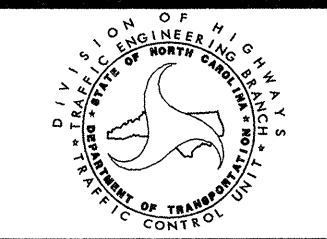
STEP 2 - REMOVE ALL TRAFFIC CONTROL DEVICES.

APPROVED: *Lisa M. Podeszwa* DATE: *7/2/06*



## PROJECT PHASING

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 DATE: JULY 2006  
 DWG. BY: DHK  
 DESIGN BY: DHK  
 REVIEWED BY: LMP

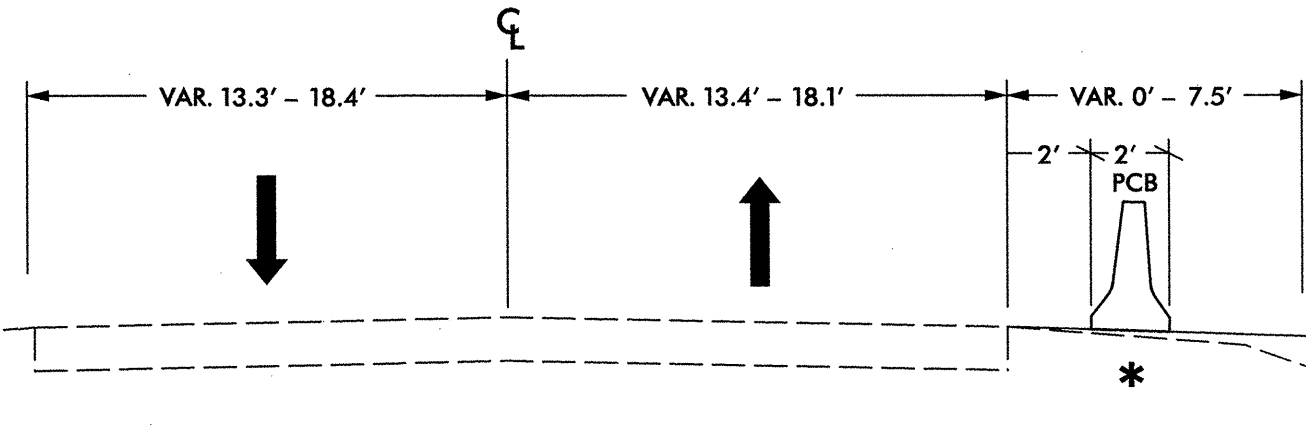
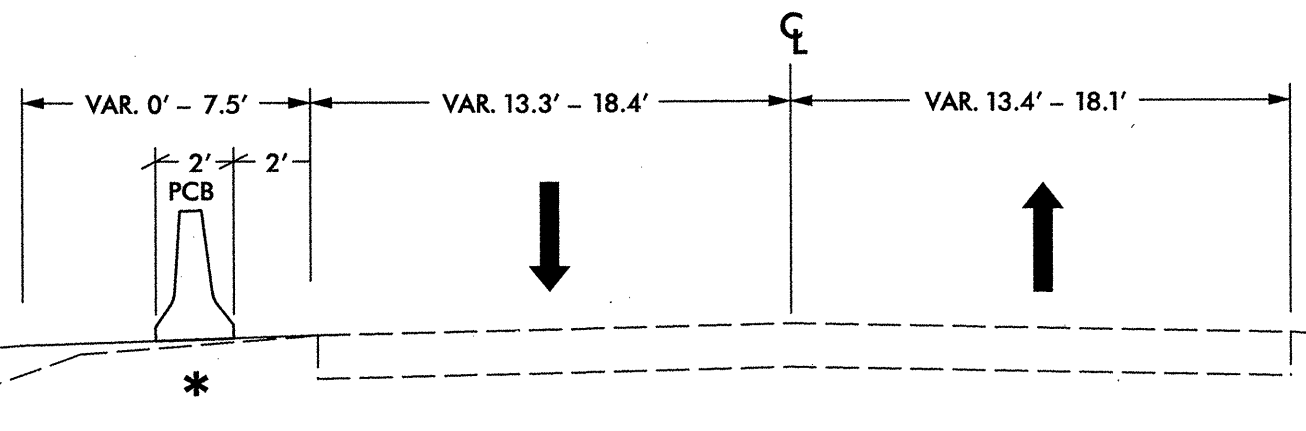
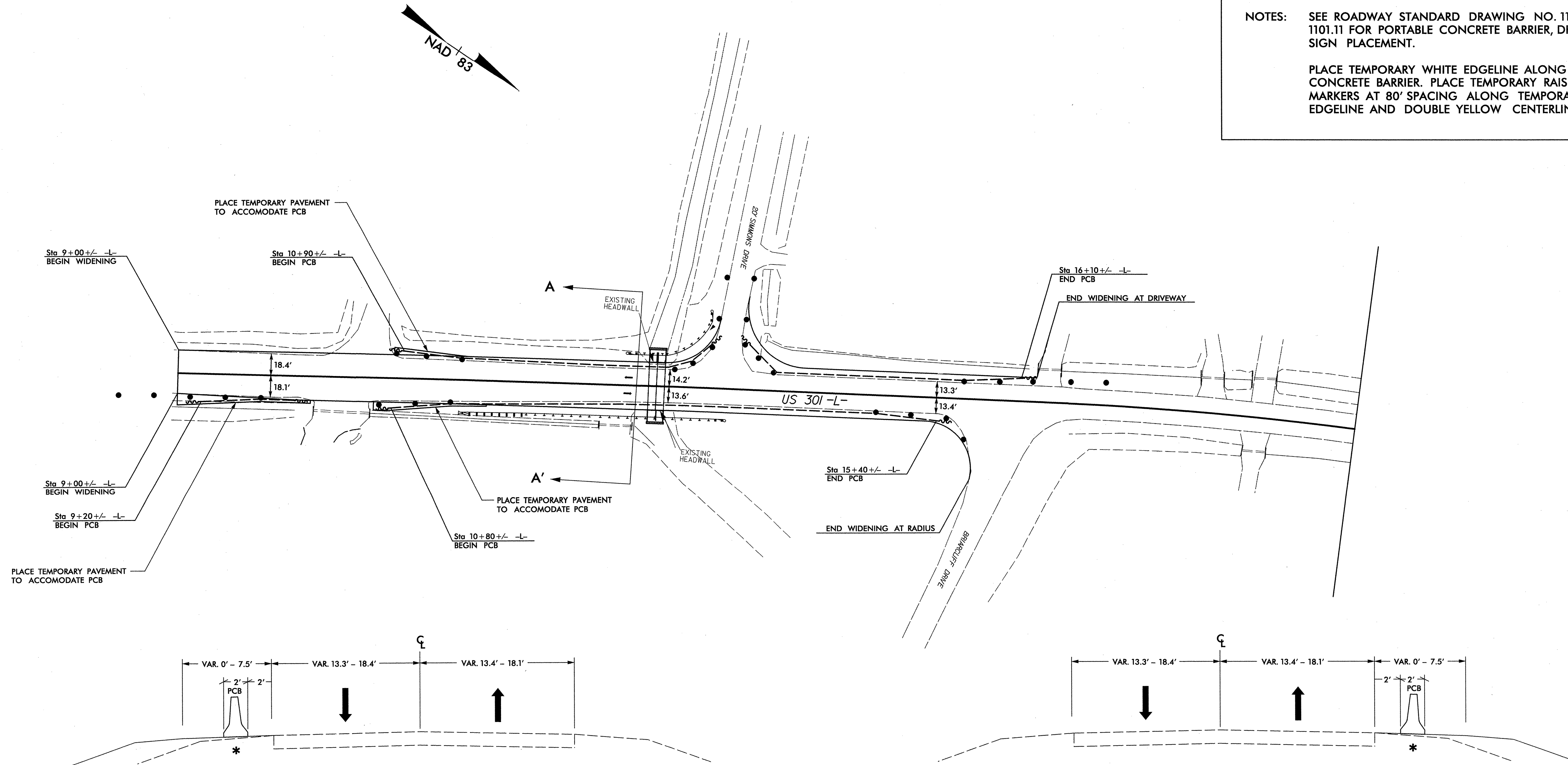


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NOTES: SEE ROADWAY STANDARD DRAWING NO. 1101.04 AND 1101.11 FOR PORTABLE CONCRETE BARRIER, DRUM, AND SIGN PLACEMENT.

PLACE TEMPORARY WHITE EDGELINE ALONG PORTABLE CONCRETE BARRIER. PLACE TEMPORARY RAISED PAVEMENT MARKERS AT 80' SPACING ALONG TEMPORARY WHITE EDGELINE AND DOUBLE YELLOW CENTERLINE.



TYPICAL SECTION A - A'

TYPICAL SECTION A - A'

NOTES: PROPOSED WIDENING AND PLACEMENT OF TEMPORARY PAVEMENT SHALL TAKE PLACE PRIOR TO INSTALLATION OF PORTABLE CONCRETE BARRIER.

ONLY ONE SIDE OF THE PROPOSED CULVERT EXTENSION CAN BE CONSTRUCTED AT A TIME. ONLY PLACE PORTABLE CONCRETE BARRIER ON ONE SIDE OF THE ROAD AT A TIME.

SEE PROJECT PHASING PHASE I, STEP 2 FOR DETAILS.

NOTES: SEE TYPICAL SECTIONS FOR PAVEMENT STRUCTURE OF PROPOSED WIDENING.

TEMPORARY PAVEMENT SHALL CONSIST OF:

6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 684 LBS. PER SQ. YD.

AND

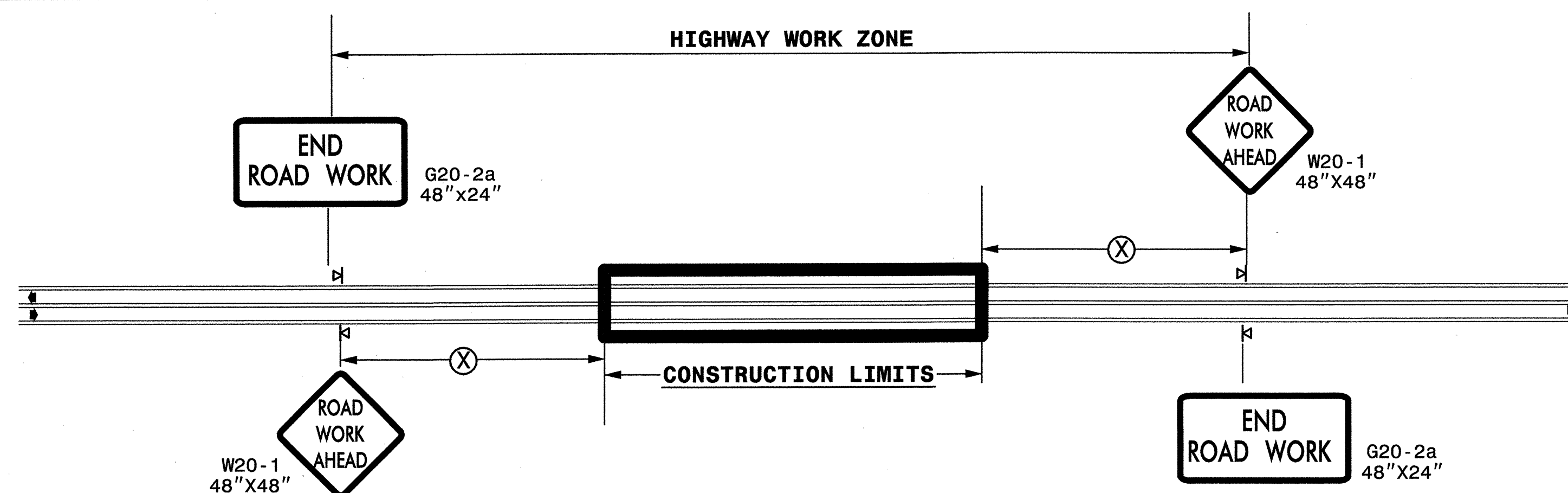
2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.

APPROVED: <i>[Signature]</i> DATE: 7/2/06	<b>CONSTRUCTION DETAIL</b> BOX CULVERT EXTENSION										
	SCALE: NONE										
	DATE: JULY 2006		<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							
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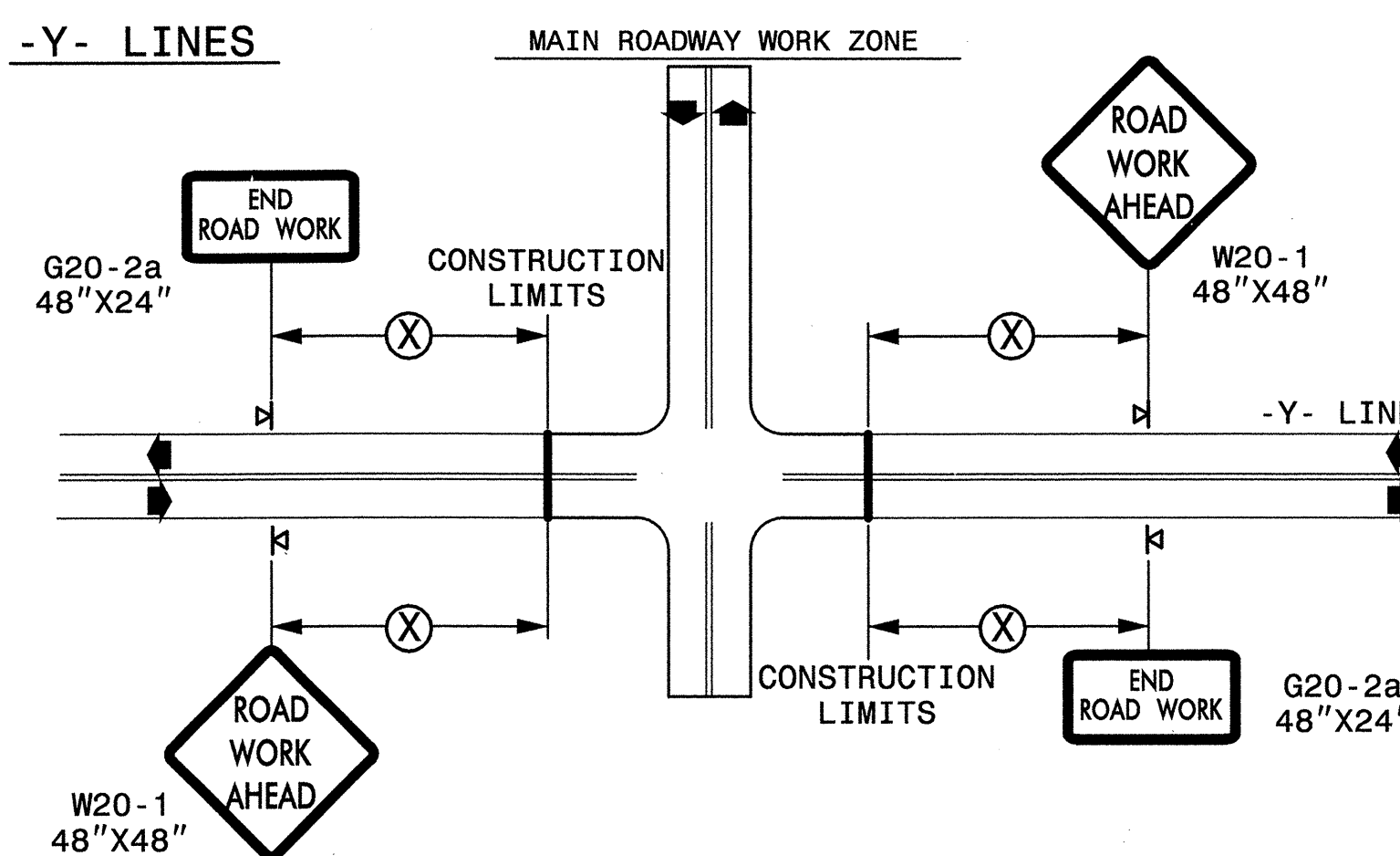
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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

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

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



**GENERAL NOTES**

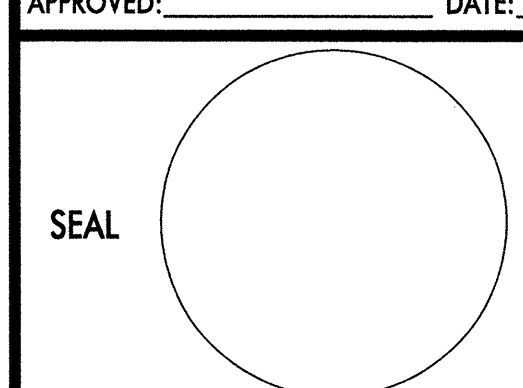
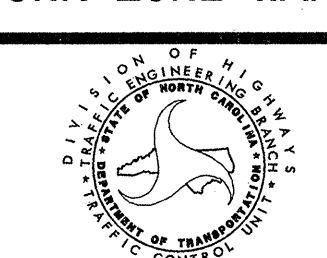
- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE PORTABLE WORK ZONE SIGNS ONLY WITH PORTABLE WORK ZONE SIGN STANDS SPECIFICALLY DESIGNED FOR ONE ANOTHER. PORTABLE WORK ZONE SIGNS MAY BE ROLL UP OR APPROVED COMPOSITE.
- PROVIDE PORTABLE WORK ZONE SIGN STANDS, PORTABLE SIGNS AND SIGN SHEETING WHICH ARE LISTED ON THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCT LIST OR ACCEPTED AS TRAFFIC QUALIFIED BY THE TRAFFIC CONTROL UNIT.
- \*\* TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

**LEGEND**

- ◁ PORTABLE SIGN
- ◀ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1






DETAIL DRAWING  
FOR TWO-WAY UNDIVIDED  
WORK ZONE WARNING SIGNS

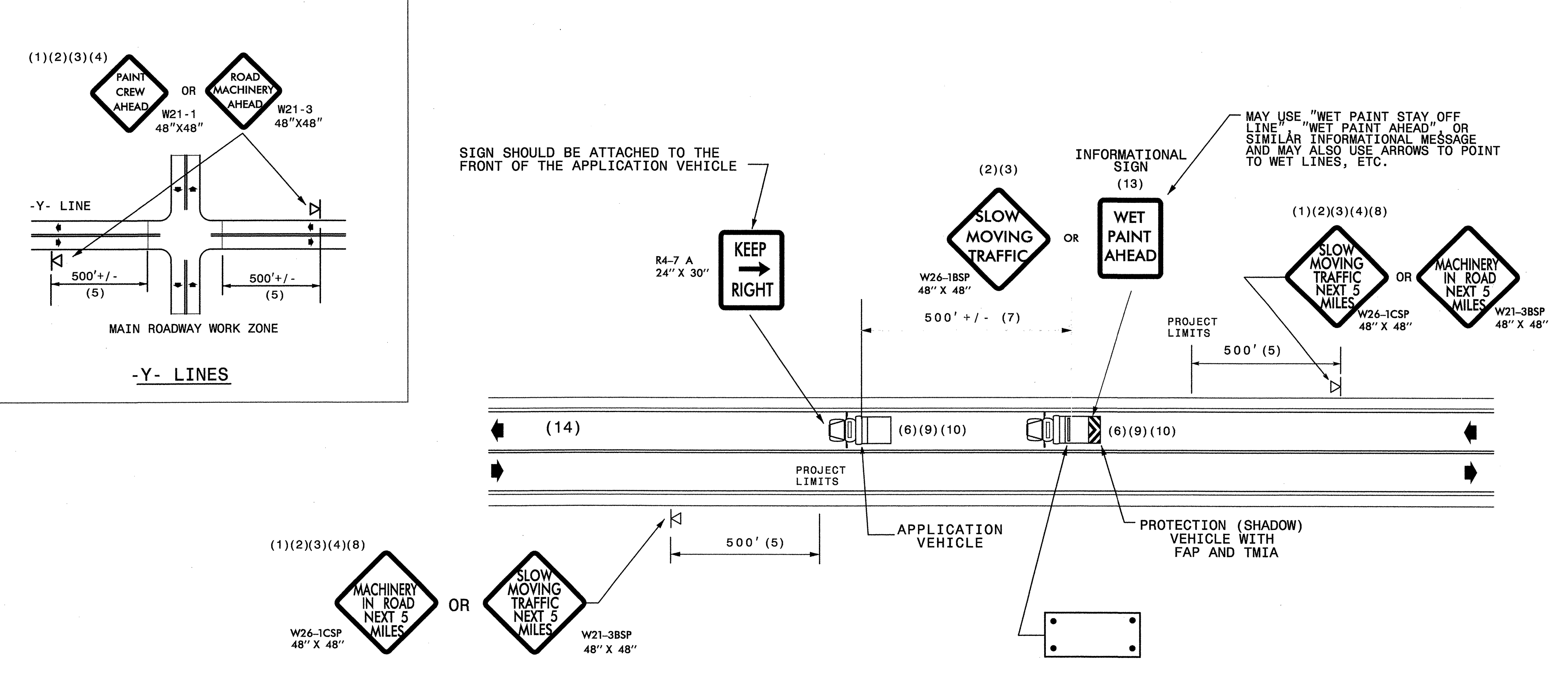
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DWG. BY: _____		10-98	03/04
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**GENERAL NOTES**

- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
  - A. TRUCK MOUNTED SIGNS
  - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
  - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
  - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, I.E. "PAINT CREW IN ROAD" SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN SIZE SHOULD BE BASED ON THE MOTORIST ABILITY TO RECOGNIZE SIGN WHEN TRAVELING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.
- (14) IF A LEAD VEHICLE IS ADDED TO OPERATION, IT SHOULD HAVE THE SAME ADVANCE WARNING SIGNS AS THE APPLICATION VEHICLE SHOWN BELOW.

**LEGEND**

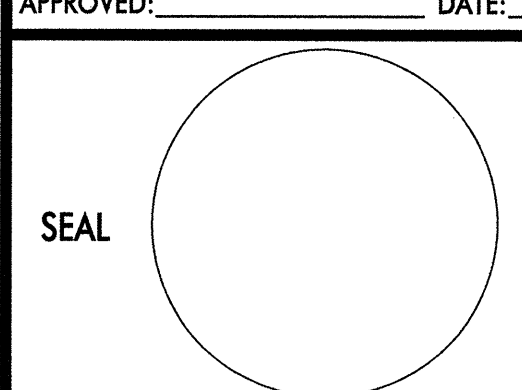
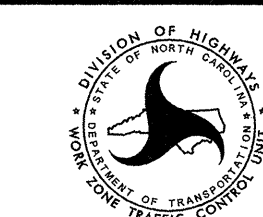
-  PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH LIGHT BAR
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1165.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (60+MPH) APPROVED.
-  FLASHING ARROW PANEL, TYPE "B" (60"X30" MIN.), "CAUTION MODE"



**MOVING OPERATION CARAVAN**  
 (OPERATIONS TRAVELING 3 MPH OR FASTER)  
 PLACING PAVEMENT MARKING OR MARKERS  
 ON TWO-LANE TWO-WAY ROADWAYS

**DRAWING NUMBER 6**  
 IMPLEMENTATION DATE: 07/01/97  
 REVISED: 11/03/04

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APPROVED: _____	DATE: _____	<b>DETAIL DRAWING #6 FOR MOVING OPERATION CARAVAN ON TWO-LANE TWO-WAY ROADWAYS</b>									
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