

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

VANCE & WARREN COUNTY

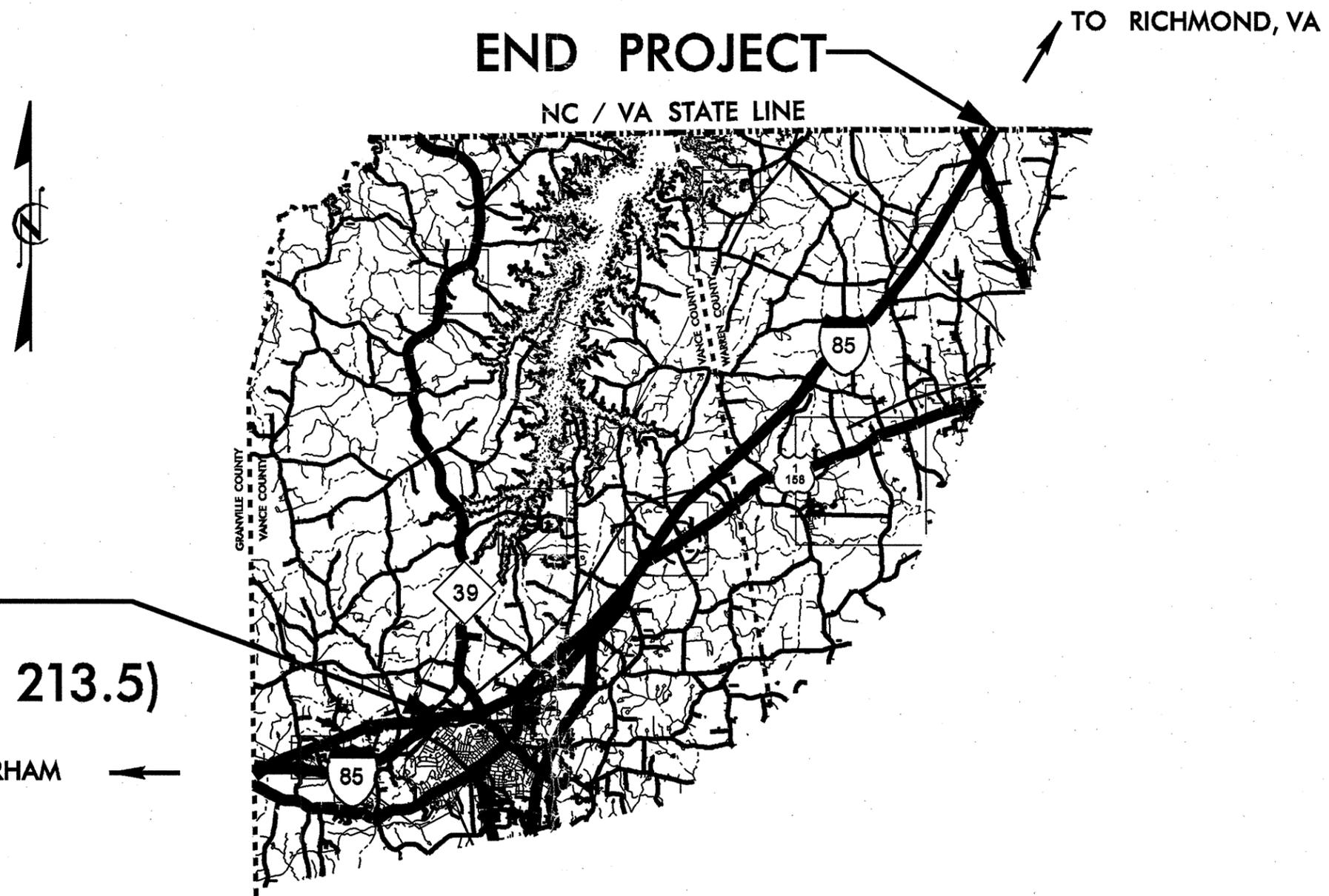
LOCATION : I-85 FROM MP 213.5 TO THE VIRGINIA STATE LINE

TYPE OF WORK : MILLING, RESURFACING AND SLAB REMOVAL

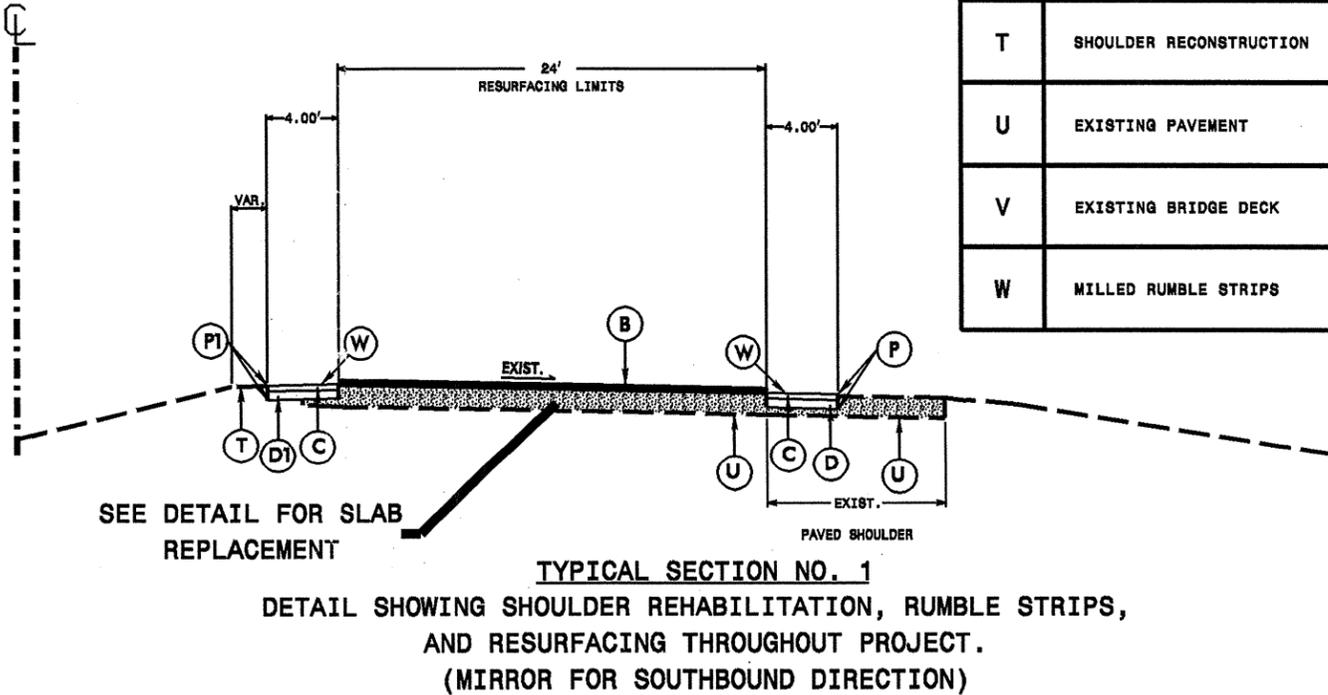
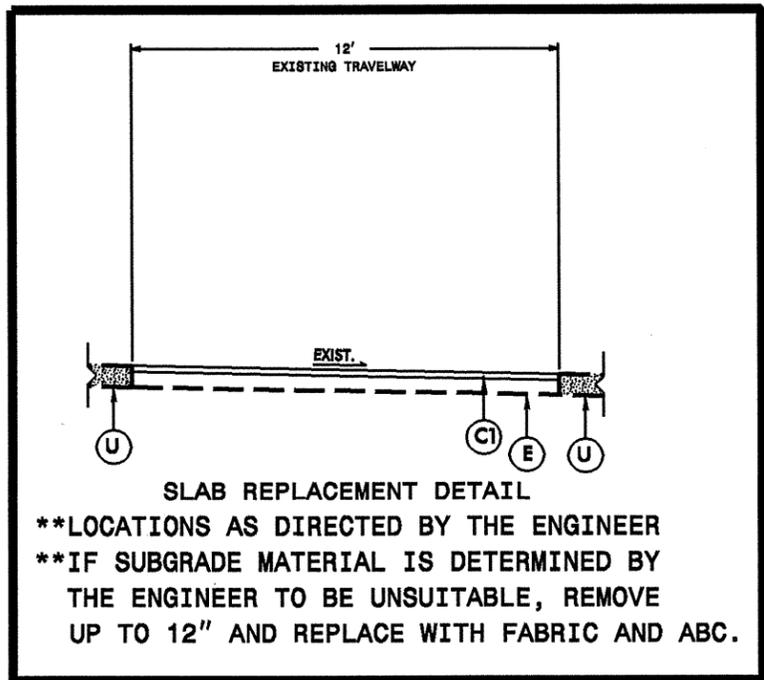
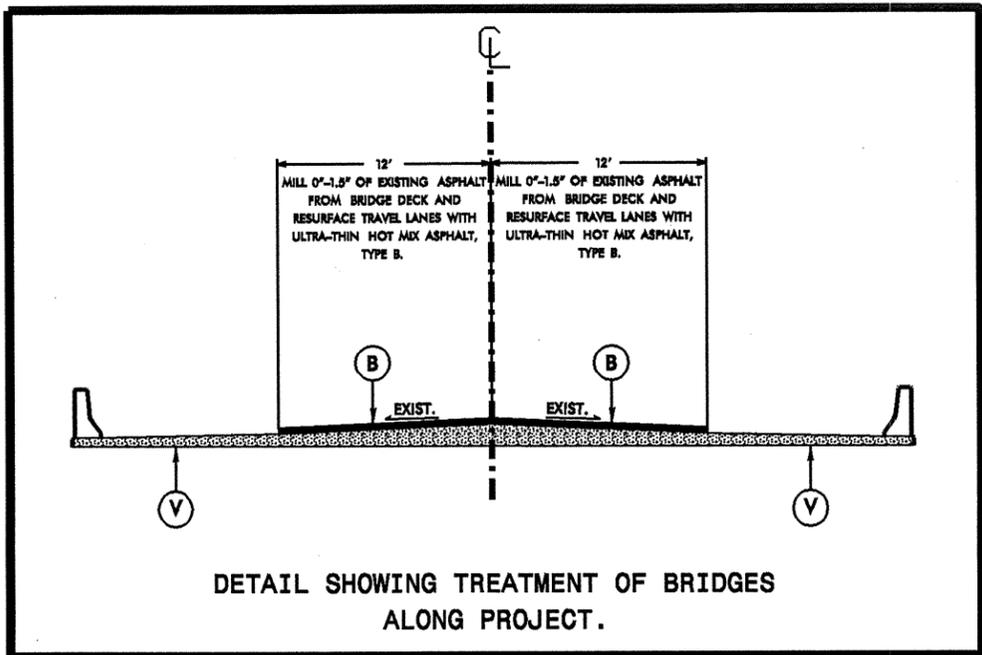
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-4904	1	
STATE FUNDING	F.A. PROGRAM	DESCRIPTION	
39943.3.GV	IMS-85-4(11)214	CONST.	

I-4904

PROJECT : C201780



SYSTEME

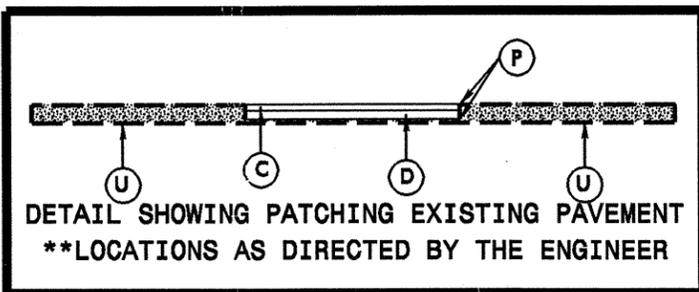


B	PROP. APPROX. 5/8" ULTRA-THIN HOT MIX ASPHALT, TYPE B
C	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
D	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D1	PROP. APPROX. 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
E	PROP. APPROX. 12" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF 3 LAYERS.
P	MILLING, 4" DEPTH
P1	MILLING, 5" DEPTH
T	SHOULDER RECONSTRUCTION
U	EXISTING PAVEMENT
V	EXISTING BRIDGE DECK
W	MILLED RUMBLE STRIPS

2006 ROADWAY STANDARD DRAWINGS EFF. 07-18-06

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
685.01	Milled Rumble Strips - Asphalt Pavements
DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS	
700.05	Tying Proposed Pavement to Existing



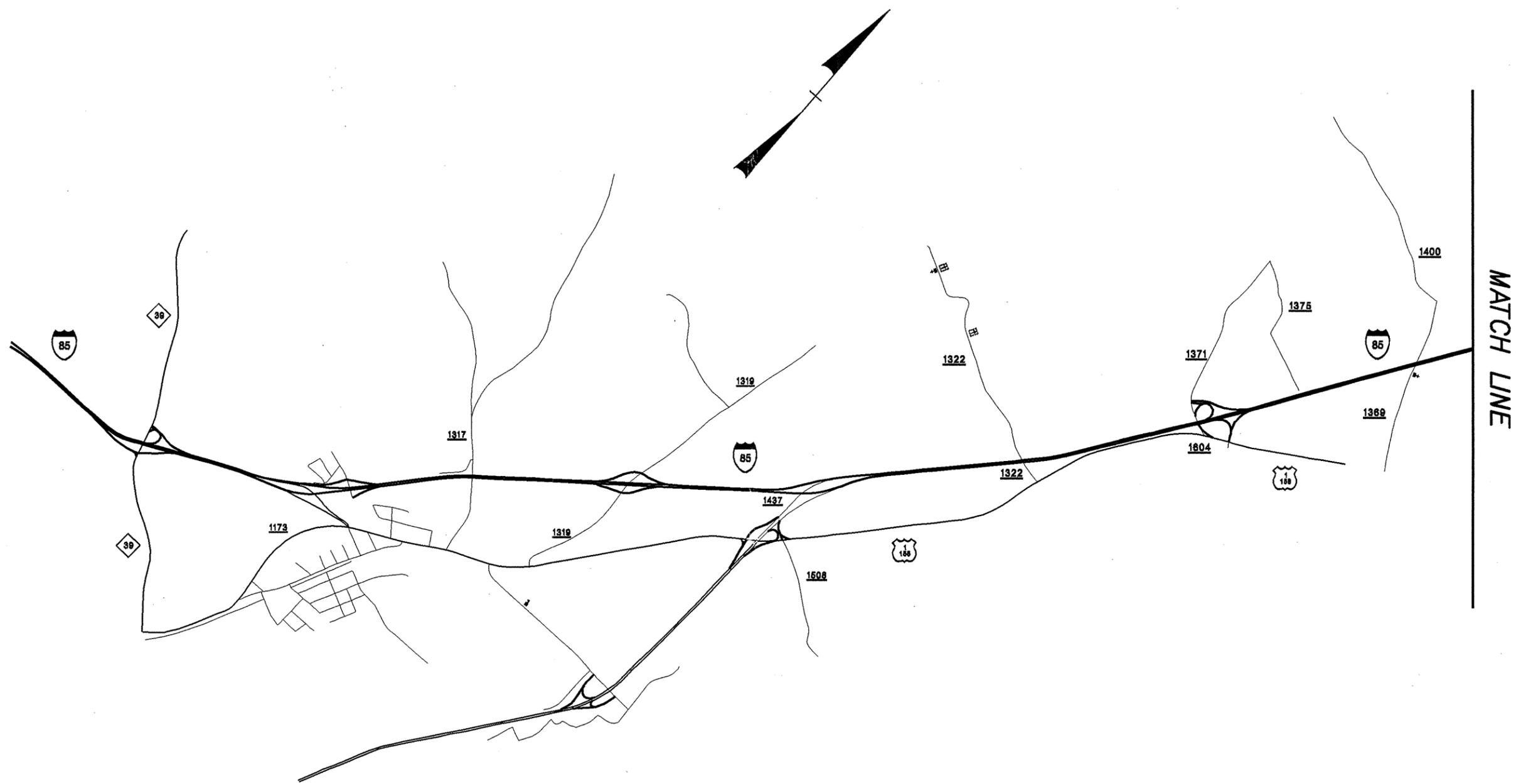
I-85 REHAB NORTH OF MILEPOST 213.5 TO THE VIRGINIA STATE LINE

DIVISION 05 VANCE & WARREN COUNTY

REVISIONS	MT.	DATE

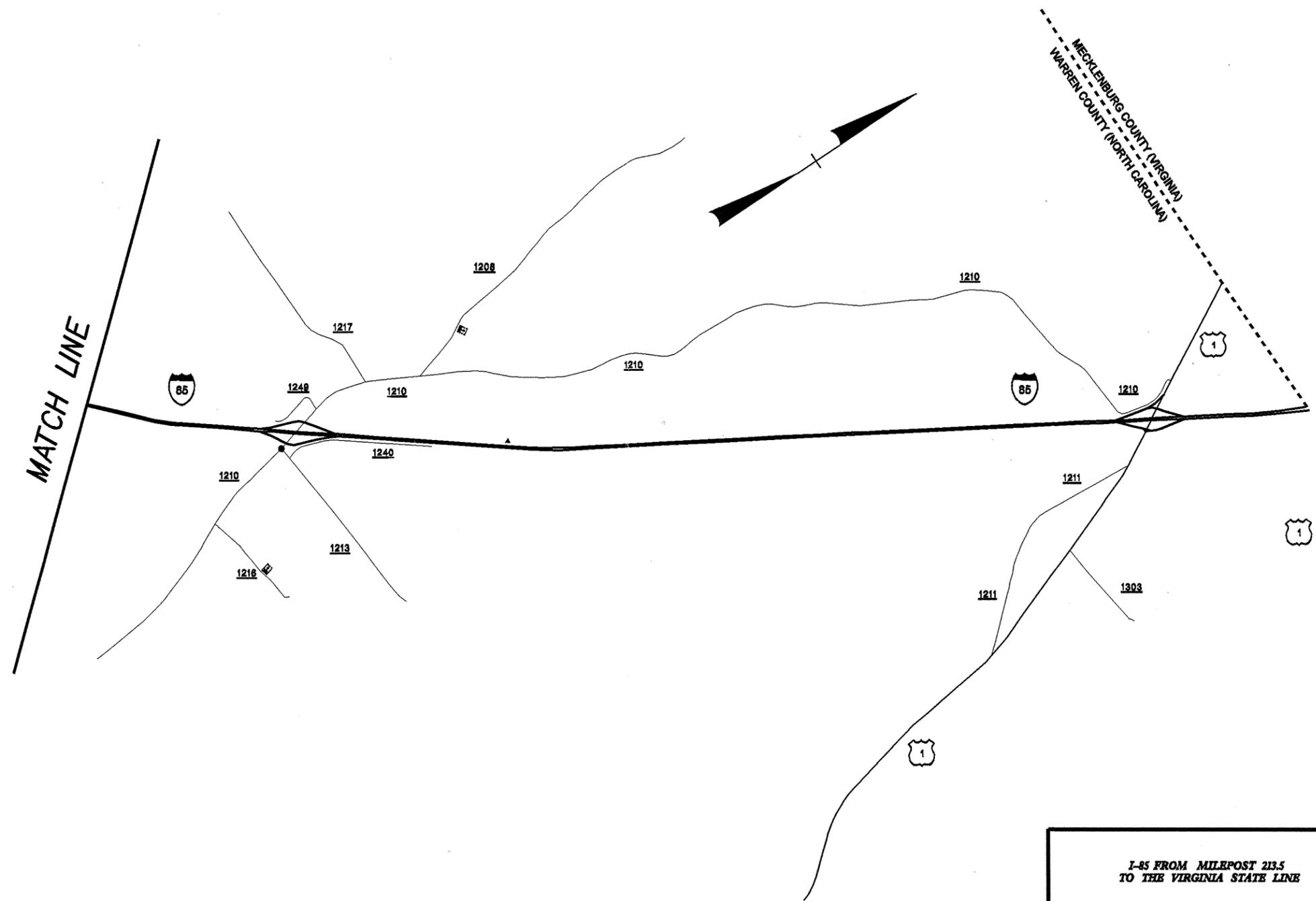
N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT

SCALE: N/A DATE: 3/2007
PREPARED BY: M. BRANDON
REVIEWED BY: B. UPSHAW
REVIEWED BY:





I-85 FROM MILEPOST 213.5 TO THE VIRGINIA STATE LINE			
DIVISION 05 VANCE & WARREN COUNTY			
REVISIONS	INT.	DATE	SCALE: N/A DATE: 3/2007 PREPARED BY: M. BRANDON REVIEWED BY: B. UPSHAW REVIEWED BY:
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT			



**I-85 FROM MILEPOST 213.5
TO THE VIRGINIA STATE LINE**

DIVISION 05 VANCE & WARREN COUNTY

REVISIONS	INT.	DATE

**N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT**

SCALE: N/A	DATE: 3/2007
PREPARED BY: M. BRANDON	REVIEWED BY: B. UPSHAW

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
I-4904	TCP-1

**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
VANCE & WARREN 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
1101.04	Temporary Shoulder Closures
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	Drums
1135.01	Cones
1150.01	Flaggers Devices
1165.01	Truck Mounted Impact Attenuator
1180.01	Skinny - Drum
1205.01	Pavement Markings - Line Types and Offsets
1205.02	Pavement Markings - 2 Lane and Multilane Roadways
1205.03	Pavement Markings - Interchanges
1250.01	Pavement Marker Spacing
1251.01	Raised Pavement Markers - Temporary and Permanent

PROJECT NOTES

PROJECT 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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) 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.
- B) 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.
- C) 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.
- D) 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.
- E) 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.
- F) OPERATE EQUIPMENT AND CONDUCT OPERATIONS IN THE SAME DIRECTION AS THE FLOW OF TRAFFIC. DO NOT CROSS MEDIANS WITH EQUIPMENT, EXCEPT AT PROPERLY DESIGNATED INTERCHANGES.
- G) THE STATIONARY WORK ZONE SHALL BE A MAXIMUM OF 3 MILES IN LENGTH AT ANY GIVEN TIME UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PROJECT NOTES continued:

PAVEMENT EDGE DROP OFF REQUIREMENTS

- H) 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.
- I) 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) 1000 Ft. IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- K) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 1000 Ft. IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.
- M) SIGNING AND TRAFFIC CONTROL ITEMS INCLUDING BUT NOT LIMITED TO TRUCK MOUNTED IMPACT ATTENUATORS (TMIA), CHANGEABLE MESSAGE SIGNS (CMS), FLASHING ARROW PANEL (FAP) AND DRUMS WILL BE PAID FOR AS LUMP SUM.
- N) FURNISH, INSTALL, MAINTAIN, AND REMOVE ADVANCE WARNING WORK ZONE SIGNS, GENERAL WARNING WORK ZONE SIGNS AND ANY REQUIRED LANE CLOSURE SIGNING.

TRAFFIC CONTROL DEVICES

- O) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADIUS, 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.

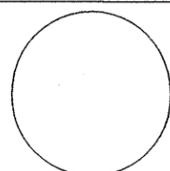
PROJECT NOTES continued:

PAVEMENT MARKINGS AND MARKERS

- P) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- Q) REVIEW AND RECORD THE EXISTING PAVEMENT MARKINGS AND MARKERS PRIOR TO RESURFACING. USE THE RECORD OF EXISTING PAVEMENT MARKINGS AND MARKERS IN CONJUNCTION WITH THE ROADWAY STANDARD DRAWINGS TO RE-ESTABLISH THE PROPOSED PAVEMENT MARKINGS AND MARKERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- R) REMOVE EXISTING PAVEMENT MARKERS IN PREPARATION FOR PAVING. REPAIR ANY PAVEMENT DAMAGE DUE TO EXISTING PAVEMENT MARKER REMOVAL PRIOR TO THE END OF THE WORKDAY. DISPOSE OF EXISTING PAVEMENT MARKERS AS DIRECTED BY THE ENGINEER. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, AS IT WILL BE INCIDENTAL TO THE PAVING OPERATION.
- S) PAVEMENT MARKINGS FOR EACH PROJECT LOCATION ARE SUBJECT TO A 180-DAY OBSERVATION PERIOD THAT BEGINS WITH THE SATISFACTORY COMPLETION OF ALL PAVEMENT MARKINGS REQUIRED ON THAT SPECIFIC LOCATION AND SHALL MEET ALL REQUIREMENTS AS SPECIFIED IN SUBARTICLE 1205-3(H) OBSERVATION PERIOD OF THE STANDARD SPECIFICATIONS.

MISCELLANEOUS

- T) IN THE EVENT THAT A SLAB CANNOT BE REPLACED BY THE END OF THE DAY'S OPERATIONS, THE PAVEMENT DROP-OFF WILL BE PROTECTED WITH A LANE CLOSURE AND SHALL MEET THE ABOVE PAVEMENT EDGE DROP OFF REQUIREMENTS.
- U) ANYTIME A LANE CLOSURE IS IN PLACE, THE CONTRACTOR MUST HAVE PERSONNEL ON-SITE TO MAINTAIN THE TRAFFIC CONTROL DEVICES.
- V) SUBMIT A SEQUENCE OF OPERATION FOR ALL LOCATIONS TO THE ENGINEER AT THE FIRST PRE-CONSTRUCTION MEETING FOR APPROVAL BY THE ENGINEER. APPROVED SEQUENCE CAN NOT BE ALTERED WITHOUT WRITTEN PERMISSION OF THE ENGINEER.
- W) NOTIFY THE ENGINEER 15 CONSECUTIVE CALENDAR DAYS BEFORE RESURFACING A BRIDGE OR ITS APPROACHES. PATCH AND MAKE REPAIRS TO BRIDGE SURFACE AND ITS APPROACHES BEFORE RESURFACING OCCURS. COORDINATE ALL OPERATIONS ON THE BRIDGE AND ITS APPROACHES WITH THE ENGINEER.
- X) NOTIFY THE ENGINEER 48 HOURS BEFORE RESURFACING THE AREAS OF EXISTING PAVEMENT THAT REQUIRE PATCHING. PATCH THESE AREAS BEFORE RESURFACING OCCURS. ALLOW FULL DEPTH ASPHALT PATCHING TO COOL TO THE POINT OF SUPPORTING TRAFFIC WITHOUT DISPLACEMENT OR RUTTING BEFORE REOPENING CLOSED LANE. COORDINATE THE RESURFACING OPERATIONS OF THE PATCHED AREAS WITH THE ENGINEER.
- Y) DURING A RESURFACING ONLY OPERATION, BRING ALL NEWLY RESURFACED LANES TO THE SAME ELEVATION WITHIN 96 HOURS.
- Z) SLOPE THE PAVEMENT AT THE BEGINNING AND ENDING OF THE DAILY MILLING OPERATION AS DIRECTED BY THE ENGINEER. SWEEP AND REMOVE ALL MILLED MATERIAL FROM THE ROADWAY AS SOON AS THE DAILY MILLING OPERATION IS COMPLETED. CONTINUE MILLING OPERATIONS UNTIL THE PARTICULAR SECTION OF ROADWAY BEING MILLED IS COMPLETE. REMOVE ANY EXISTING PAVEMENT ADJACENT TO THE MILLED AREA THAT HAS BEEN DAMAGED, AND REPLACE WITH PATCH MATERIAL AS DIRECTED BY THE ENGINEER.

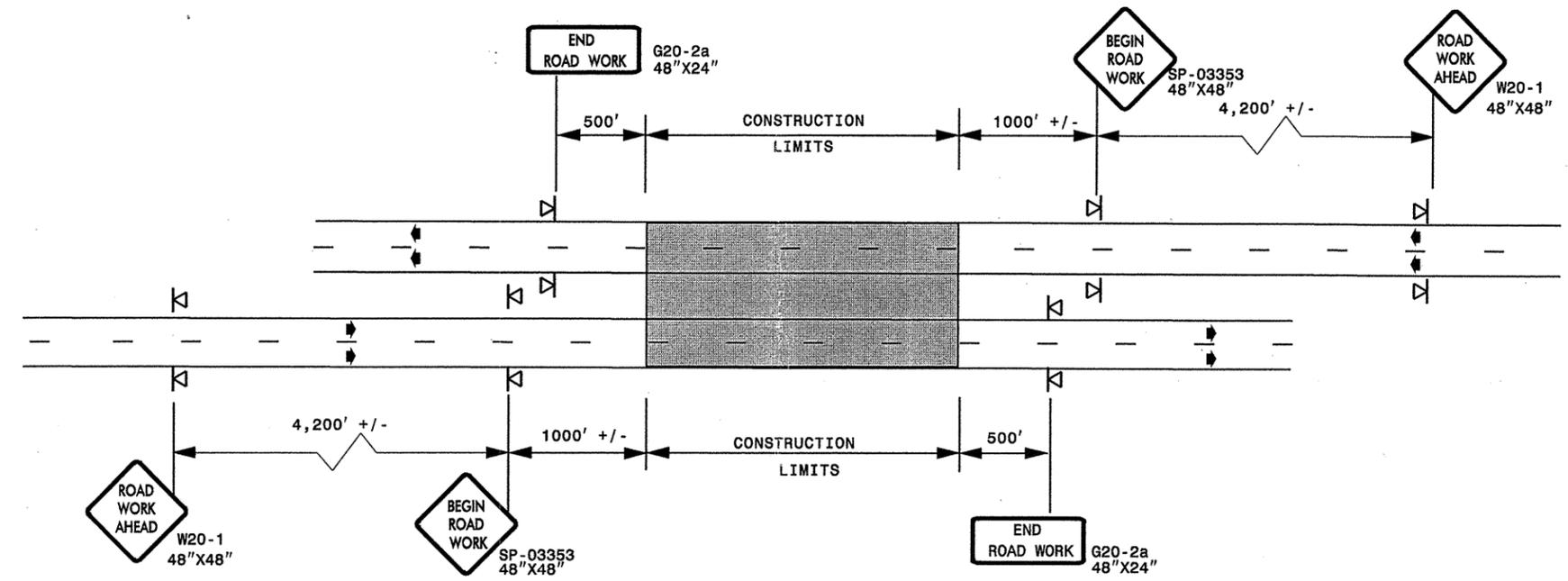
APPROVED: _____ DATE: _____	PLAN PREPARED BY: N.C.D.O.T. - D.O.H. FIFTH DIVISION
SEAL 	_____ TRAFFIC CONTROL ENGINEER
	_____ B. UPSHAW TRAFFIC CONTROL PROJECT ENGINEER
	_____ M. BRANDON TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	_____ TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

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PROJECT: I-4904
TIP PROJECT: I-4904
PROJECT: C201780B

ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS (4 LANES OR GREATER)

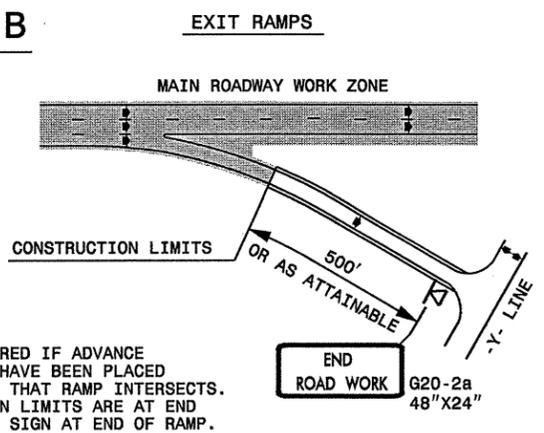
DETAIL A



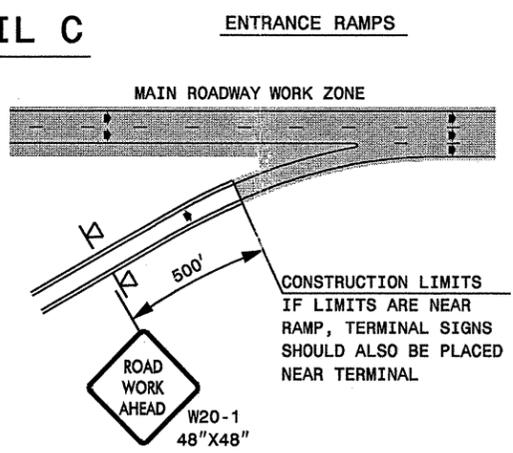
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG FREEWAY WORK ZONE (Y-LINES)

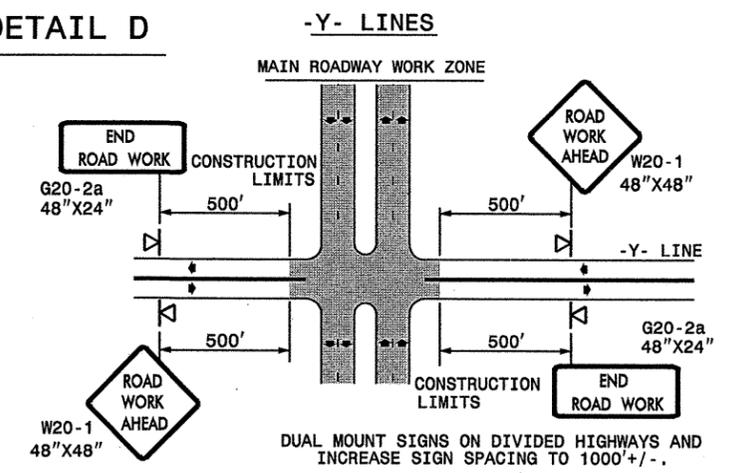
DETAIL B



DETAIL C



DETAIL D



NOTE:
 SIGN NOT REQUIRED IF ADVANCE
 WARNING SIGNS HAVE BEEN PLACED
 ALONG -Y- LINE THAT RAMP INTERSECTS.
 IF CONSTRUCTION LIMITS ARE AT END
 OF RAMP, PLACE SIGN AT END OF RAMP.

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 MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

◀ PORTABLE SIGN

➡ DIRECTION OF TRAFFIC FLOW

DETAIL DRAWING
 FOR FREEWAYS
 WORK ZONE WARNING SIGNS
 (SHORT-DURATION LANE CLOSURES)

APPROVED: _____ DATE: _____

SEAL

DETAIL DRAWING
 FOR FREEWAYS
 WORK ZONE WARNING SIGNS

SCALE: NONE	REVISIONS
DATE: _____	7-98 10/01
DWG. BY: _____	10-98 03/04
DESIGN BY: _____	01/01 11/04
REVIEWED BY: _____	

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