

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	3CR.10671.65, 3CR.10711.65	1	
	3.106711, 41397		
	41399, 41601		
	41749, 42233		

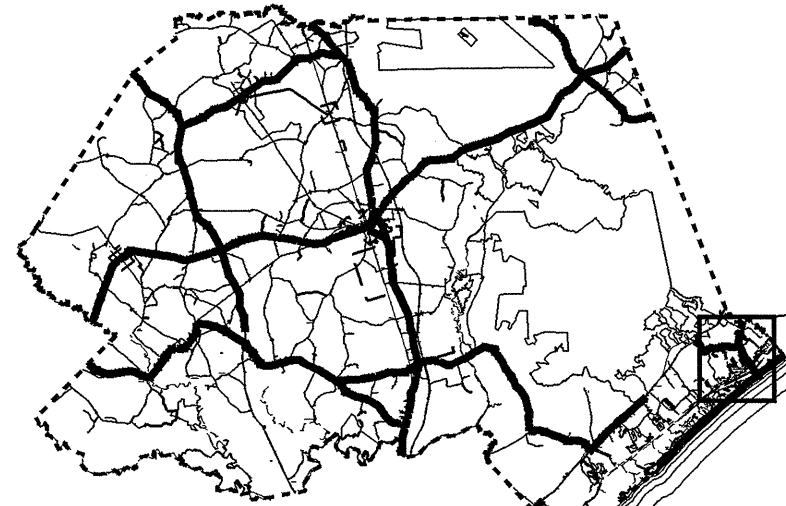
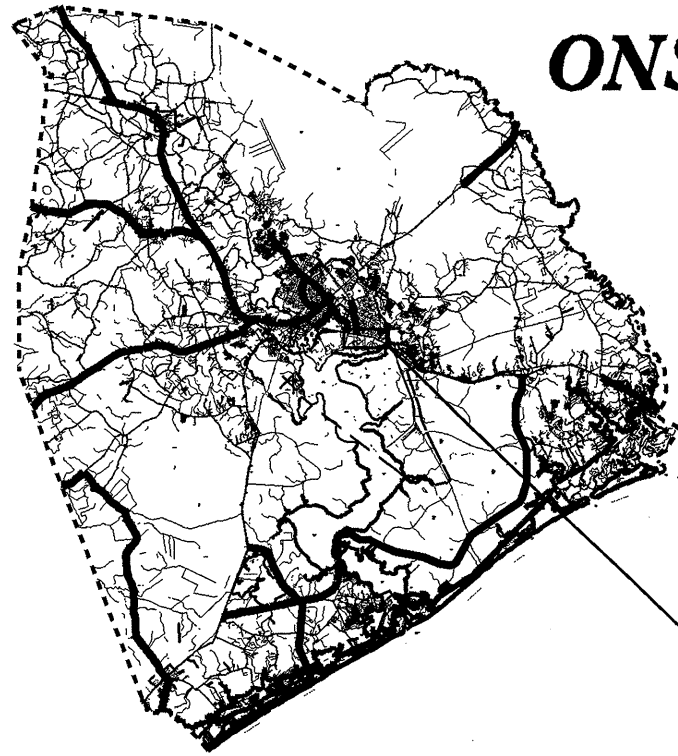
# ONSLOW & PENDER COUNTIES

**LOCATION:** ONSLOW CO. - NC 24 (EBL) (0.08 MI. WEST OF SR 1308 TO 0.63 MI. EAST OF SR 1490)  
 NC 24 (WBL) (0.63 MI. EAST OF SR 1490 TO 0.07 MI. WEST OF SR 1308)  
 NC 50 (SR 1598 - 0.09 MI. N. OF NC 210)

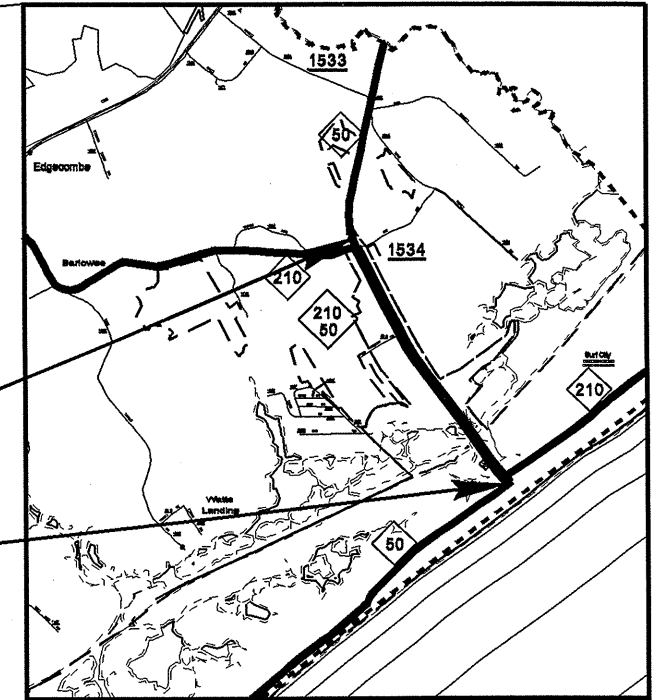
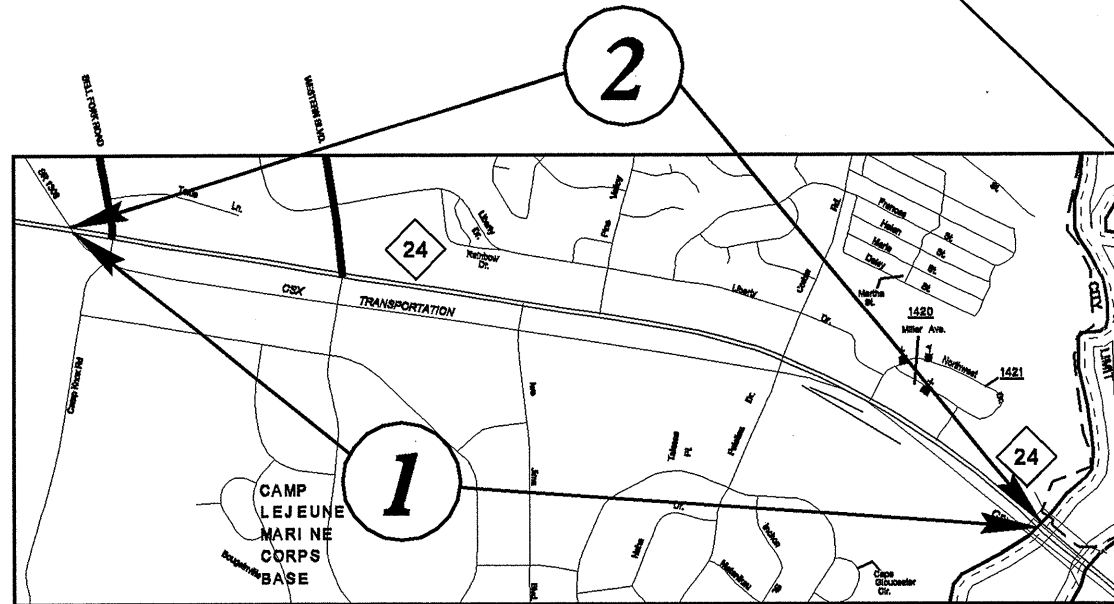
**TYPE OF WORK:** RESURFACING, MILLING, PAVEMENT  
 MARKERS AND MARKINGS, ETC.

NOT TO SCALE

WBS NO.: 3CR.10671.65, ETC.



PENDER CO.



\$\$\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$DGN\$\$\$\$\$  
 \$\$\$SERNAME\$\$\$\$\$

**PROJECT LENGTH**

MAP NO. 1 = 2.09 MI.	MAP NO. 7 = 0.14 MI.
MAP NO. 2 = 2.10 MI.	MAP NO. 8 = 0.06 MI.
MAP NO. 3 = 2.02 MI.	MAP NO. 9 = 0.30 MI.
MAP NO. 4 = 0.09 MI.	MAP NO. 10 = 0.19 MI.
MAP NO. 5 = 0.07 MI.	MAP NO. 11 = 0.03 MI.
MAP NO. 6 = 0.08 MI.	TOTAL = 7.17 MI.

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
 124 Division Dr., Wilmington, NC 28401

2006 STANDARD SPECIFICATIONS

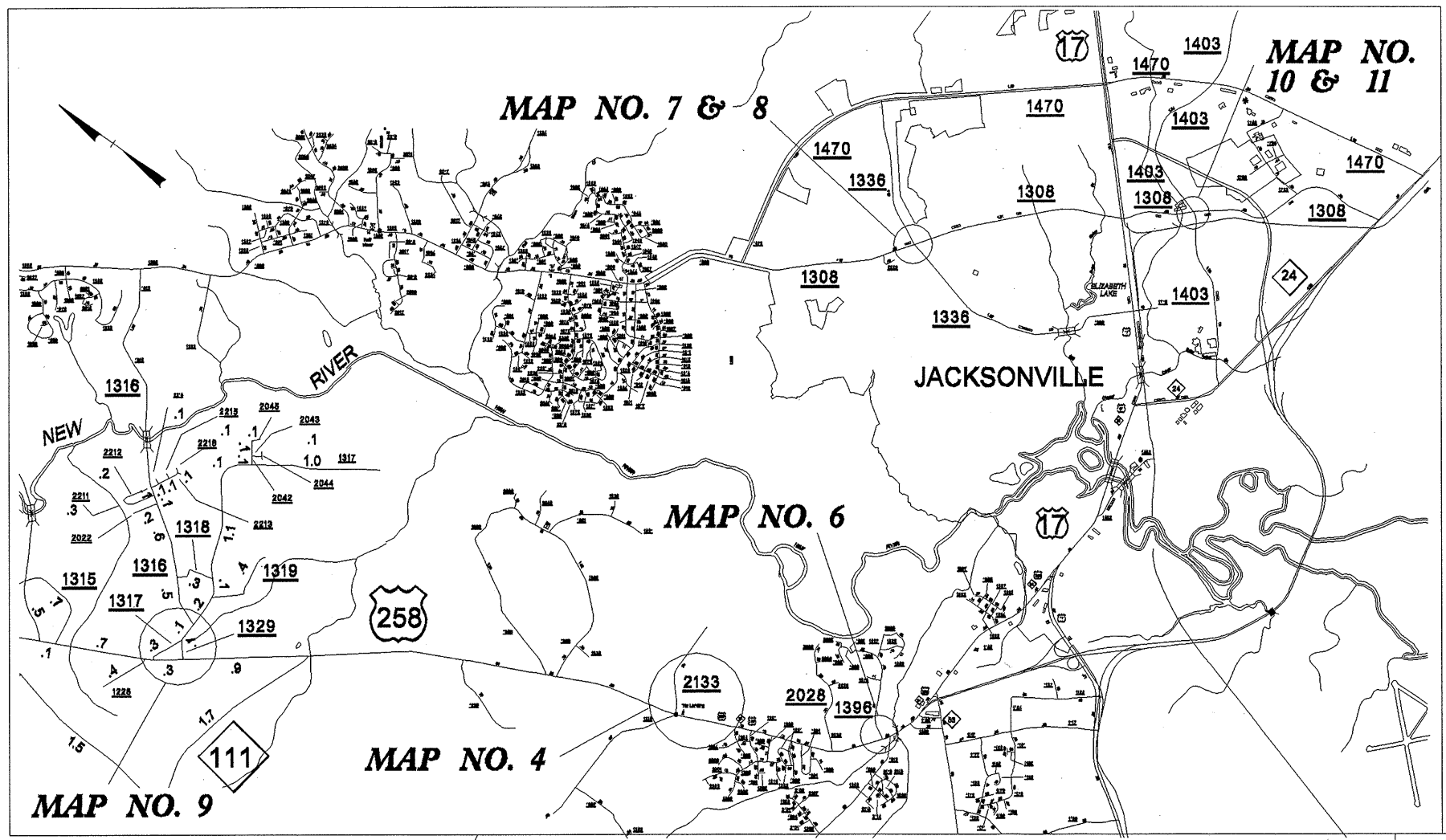
LETTING DATE:  
 November 2008

ROADWAY DESIGN  
 TECHNICIAN  
 DNL

SIGNATURE: \_\_\_\_\_

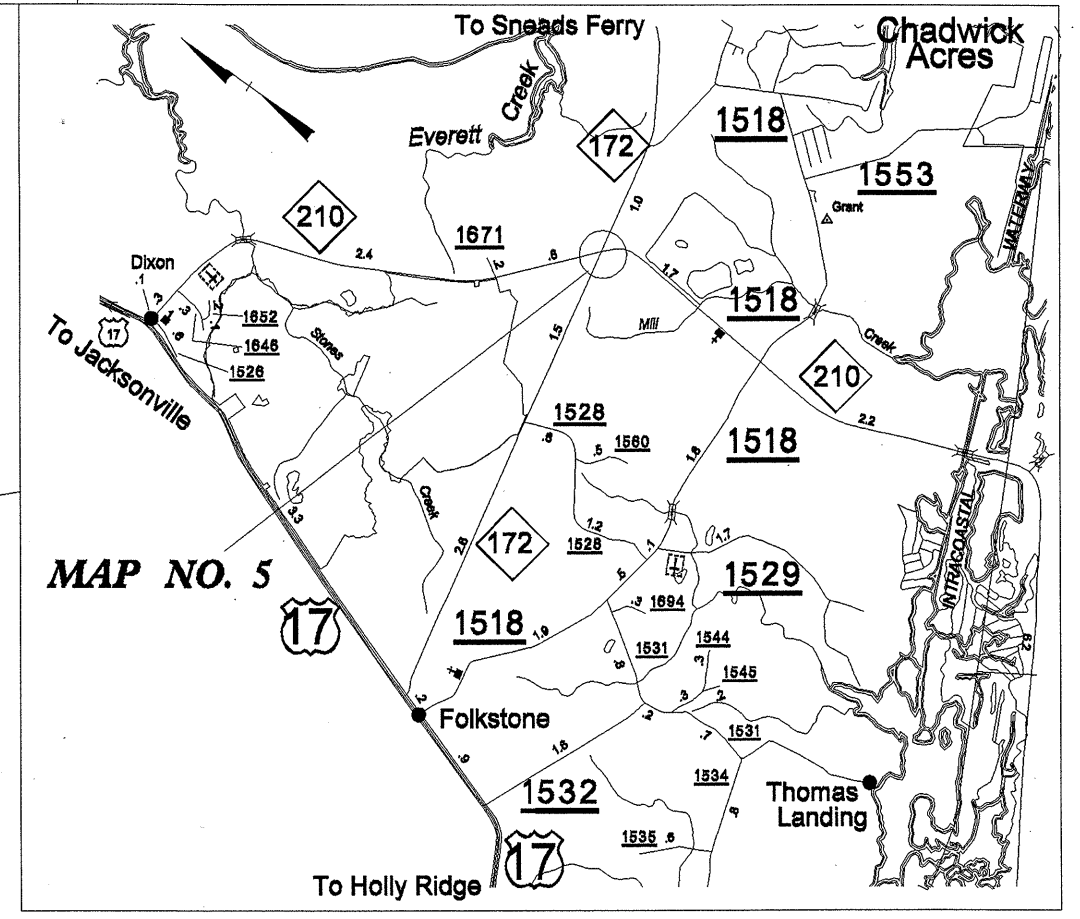
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

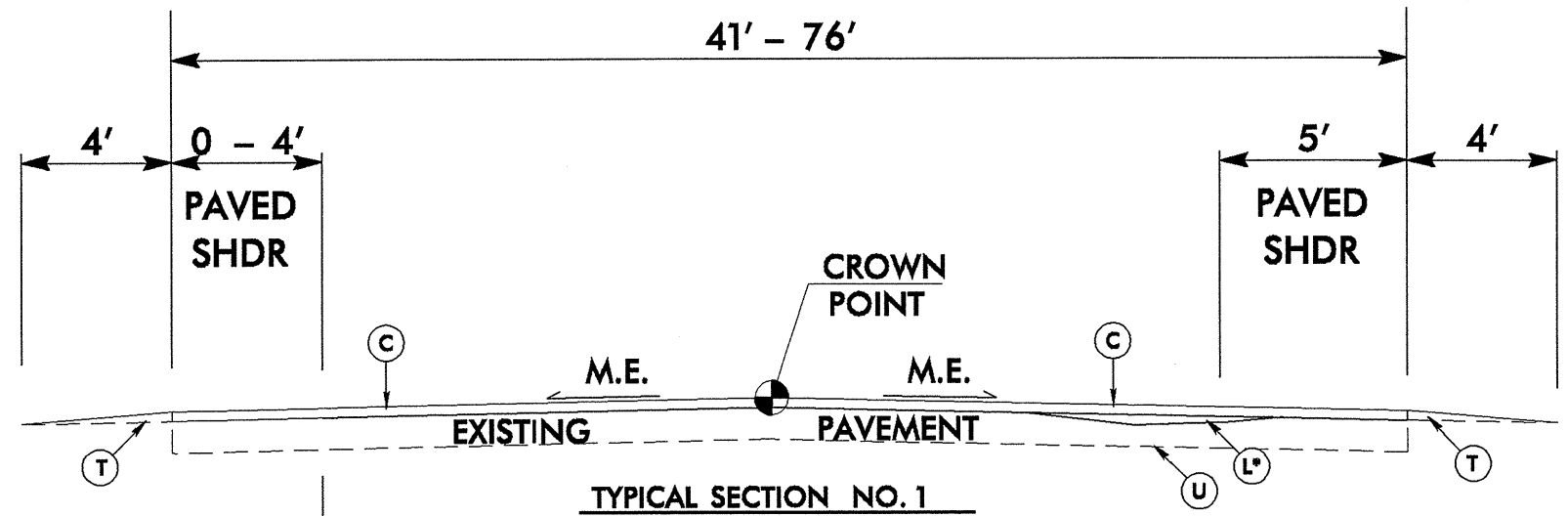


- SECONDARY ROAD NAMES:**
- MAP NO. 4
  - SR 2133 - NORTHWEST CORRIDOR BLVD
  - MAP NO. 6
  - SR 1396 - RIDGE RD
  - MAP NO. 7 & 8
  - SR 1308 - GUM BRANCH RD
  - SR 1336 - HENDERSON DR
  - MAP NO. 9
  - SR 1329 - RHODESTOWN FIRE DEPT RD
  - SR 1317 - BRIARNECK RD
  - MAP NO. 10 & 11
  - SR 1308 - BELL FORK RD
  - SR 1403 - HARGETT ST/COUNTRY CLUB RD

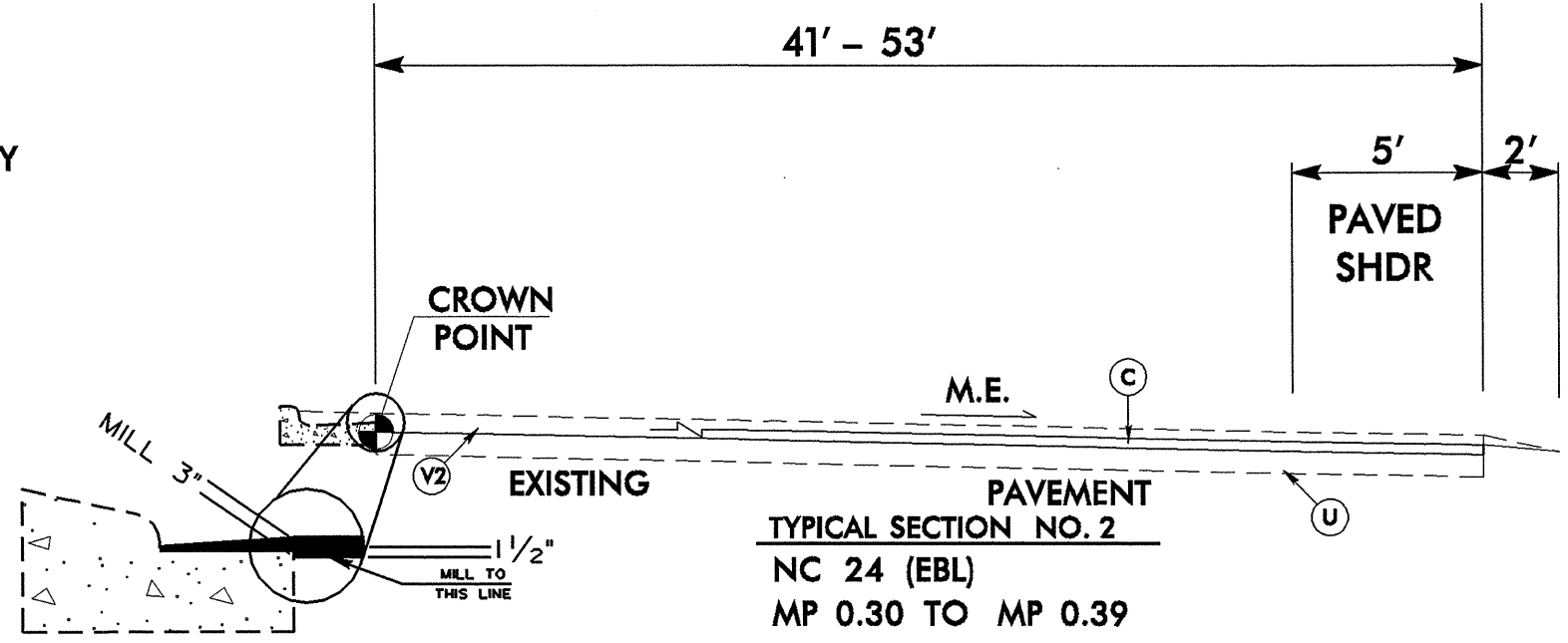
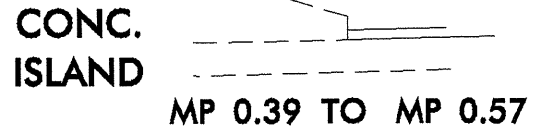
REVISIONS



RWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**TYPICAL SECTION NO. 1**  
 NC 24 (EBL)  
 MP 0.00 TO MP 0.30  
 MP 0.39 TO MP 1.34  
 \* LEVELING MP 0.02 VICINTY



**TYPICAL SECTION NO. 2**  
 NC 24 (EBL)  
 MP 0.30 TO MP 0.39

**PAVEMENT SCHEDULE**

C	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	D2	PROP. APPROX. 2 1/2" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R	PROP. 2'-6" CONCRETE CURB & GUTTER
C1	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E	PROP. APPROX. 5 1/2" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	T	EARTH MATERIAL
C2	PROP. APPROX. 2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.	E1	PROP. APPROX. 5" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
C3	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF 2 LIFTS	E2	PROP. APPROX. 5 1/2" DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	V	MILLING BITUMINOUS PAVEMENT. 4" DEPTH.
D	PROP. APPROX. 2 1/2" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	J	PROP. 6" AGGREGATE BASE COURSE.	V1	MILLING BITUMINOUS PAVEMENT. 1 1/2" DEPTH.
D1	PROP. APPROX. 3" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	L	PROP. VARIOUS DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C. (LEVELING CORSE)	V2	MILLING BITUMINOUS PAVEMENT. 3" DEPTH.

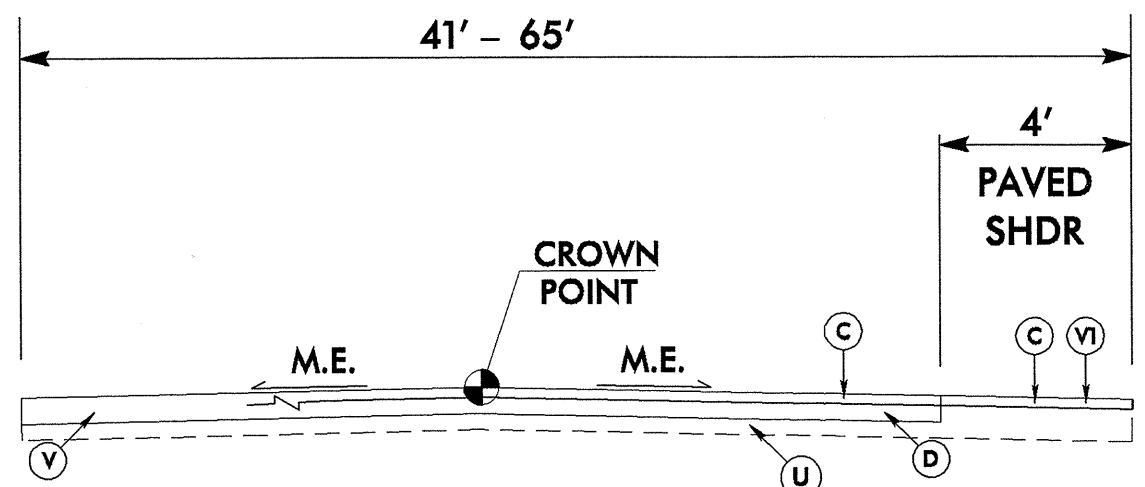
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.  
 SEE STD. DRAWING 1205.01, SHEET 2 OF 2, TABLE 1 FOR EDGE LINE OFFSETS.  
 M.E. = MATCH EXISTING

REVISIONS

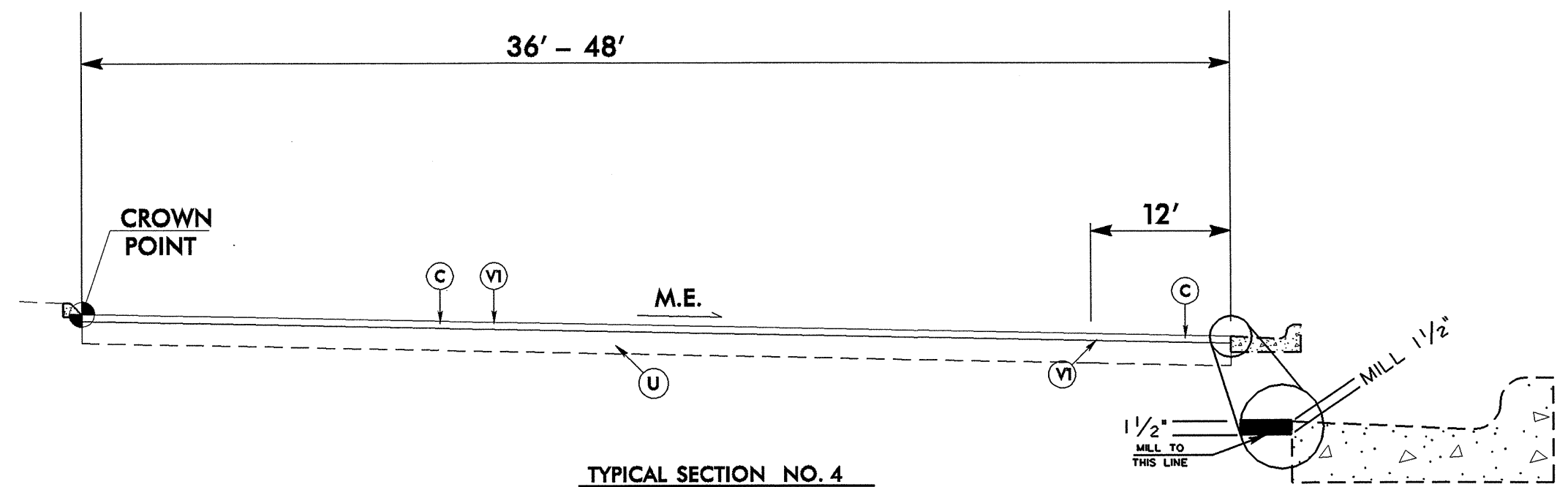
B/17

DATE: 10/1/00  
 TIME: 10:00 AM  
 BY: J. W. BROWN  
 CHECKED: J. W. BROWN  
 APPROVED: J. W. BROWN

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**TYPICAL SECTION NO. 3**  
 NC 24 (EBL)  
 MP 1.34 TO MP 2.09



**TYPICAL SECTION NO. 4**  
 NC 24 (WBL)  
 MP 1.55 TO MP 1.75

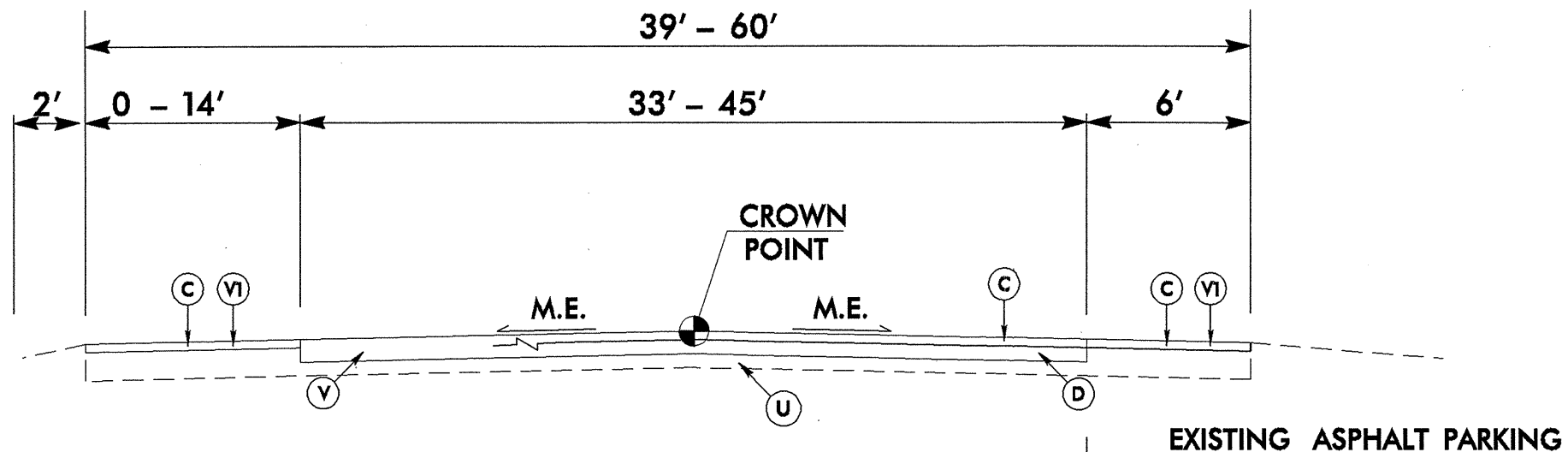
SEE FIRST TYPICAL SECTION SHEET FOR PAVEMENT SCHEDULE.

REVISIONS

8/17

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 SYSTEMS  
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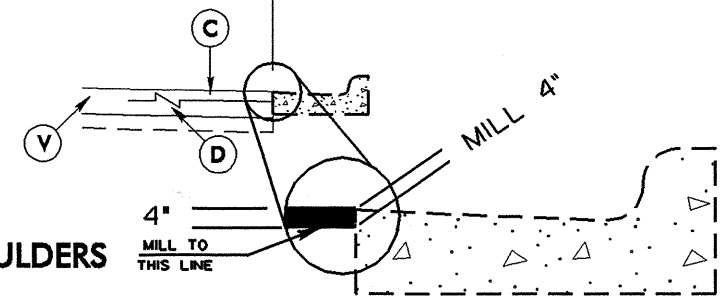
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



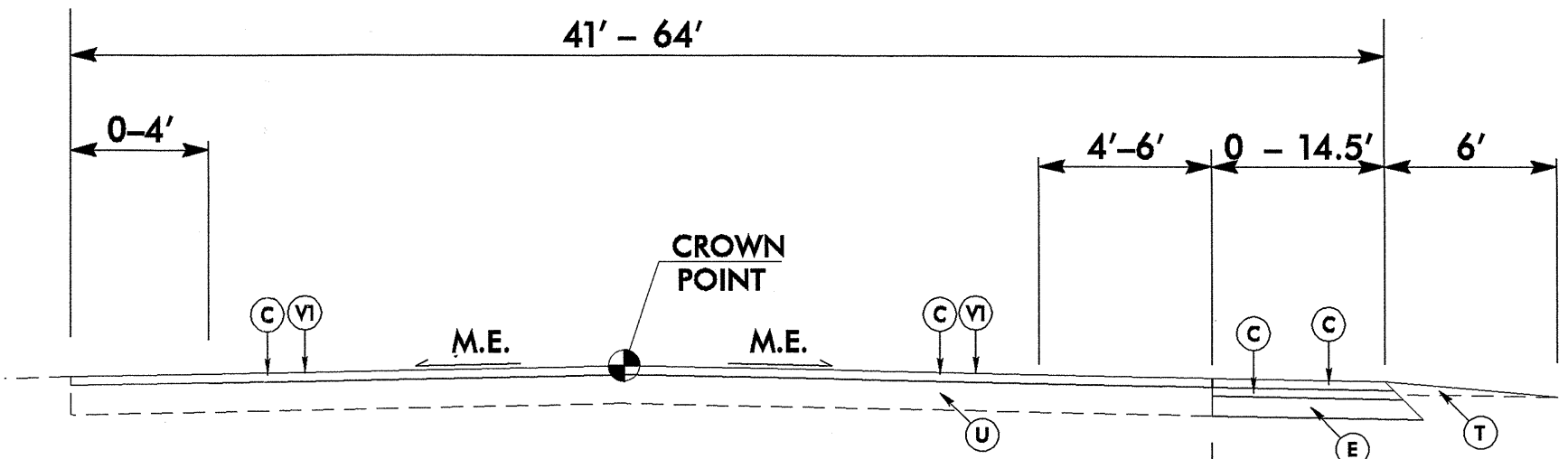
**TYPICAL SECTION NO. 5**

NC 24 (WBL)  
 MP 0.00 TO MP 1.35  
 MP 1.83 TO MP 2.10

\* MILL 4" IN THRU & RIGHT TURN LANES  
 MILL 1.5" IN LEFT TURN LANES, & PAVED SHOULDERS  
 WEDGING WITH 119.0 C IN CROSSOVERS AS NEEDED

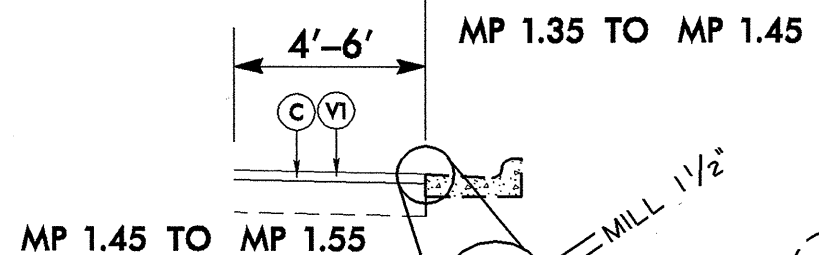


MP 2.01 TO MP 2.11



**TYPICAL SECTION NO. 6**

NC 24 (WBL)  
 MP 1.35 TO MP 1.55



MP 1.45 TO MP 1.55

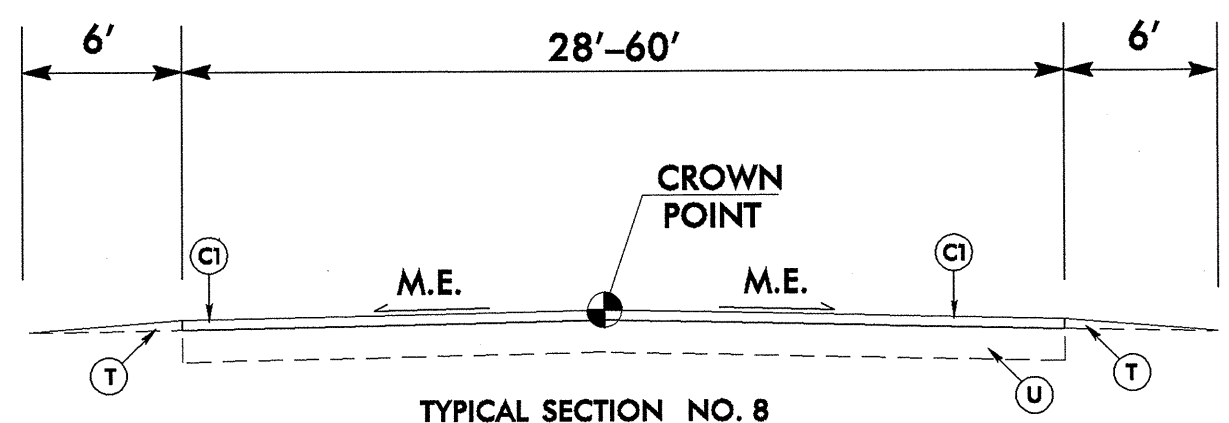
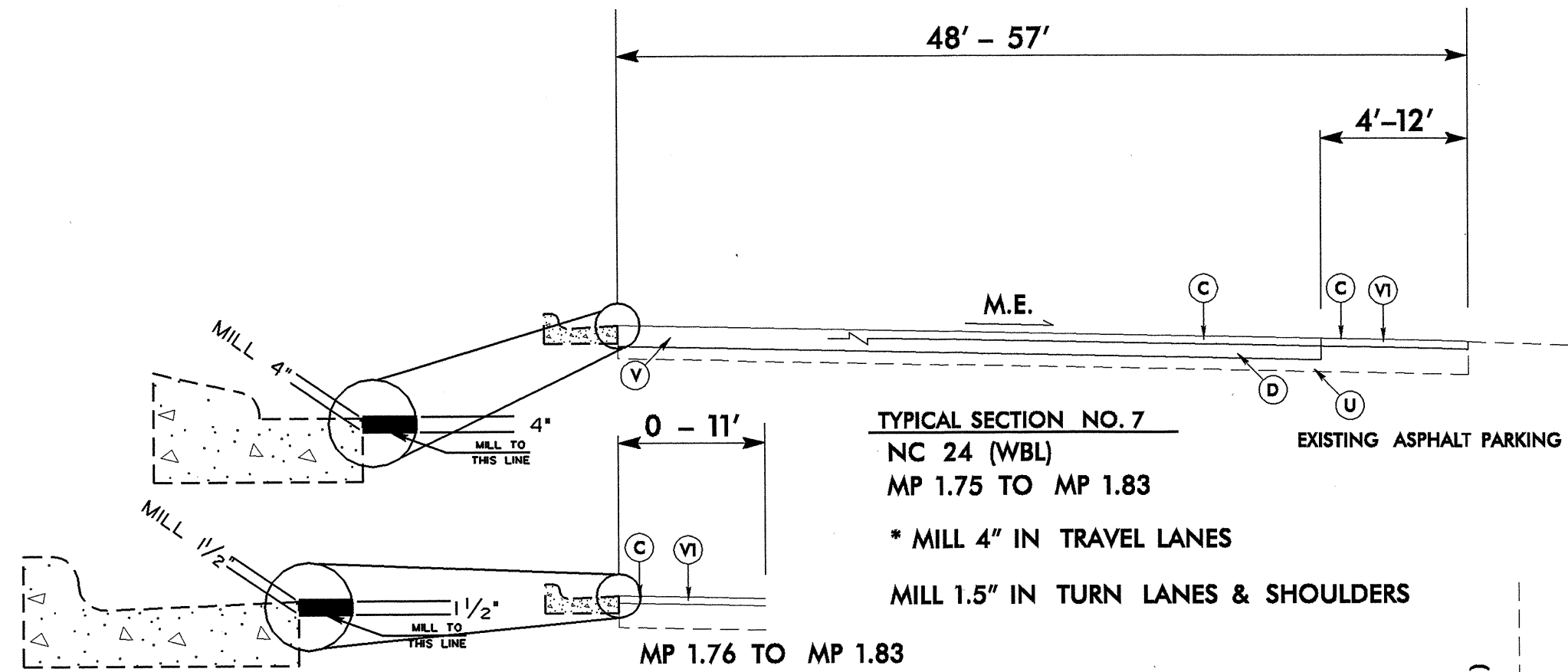
SEE FIRST TYPICAL SECTION SHEET FOR PAVEMENT SCHEDULE.

REVISIONS

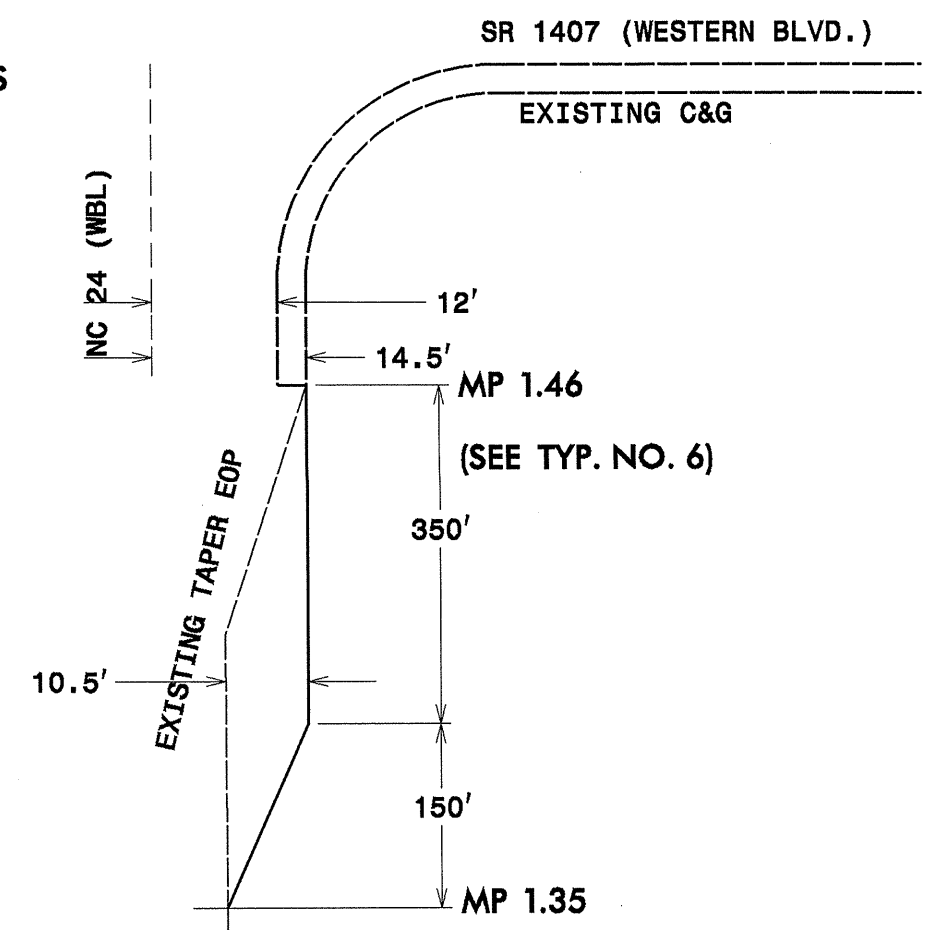
8/17

SYSTEMS DESIGN CONSULTANTS

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE: PAVE ENTIRE INTERSECTION AT MP 0.00 TO PAVEMENT JOINTS. DO NOT MILL IN THIS VICINTY.



**WIDENING DETAIL NO. 1**

MAP NO. 2

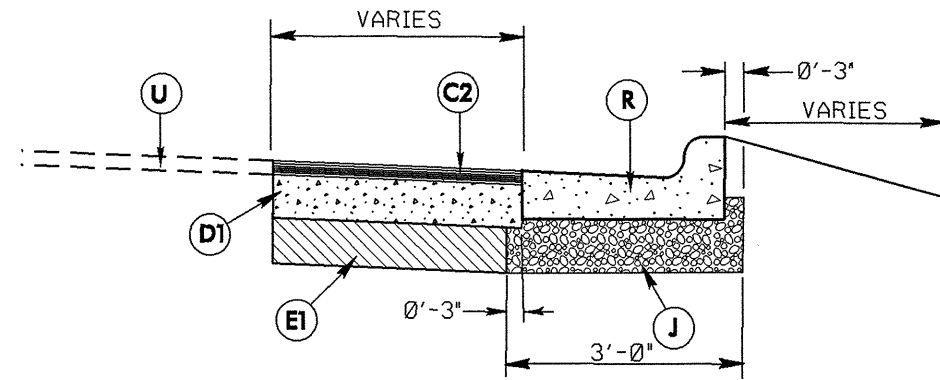
SEE FIRST TYPICAL SECTION SHEET FOR PAVEMENT SCHEDULE.

REVISIONS

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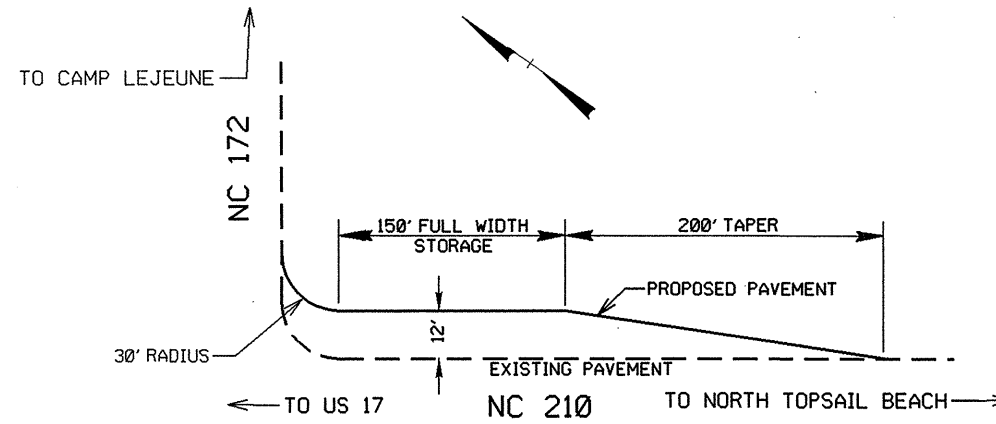
\*\*\*\*\*  
 SYSTEMS  
 DESIGN  
 GROUP  
 \*\*\*\*\*

MAP NO. 4 - WBS 3.106711  
 MAP NO. 6 - WBS 41399



**TYPICAL SECTION NO. 9**

WIDEN FOR TURN LANE  
 USE FOR US 258 AT SR 2133  
 USE FOR US 258 AT SR 1396



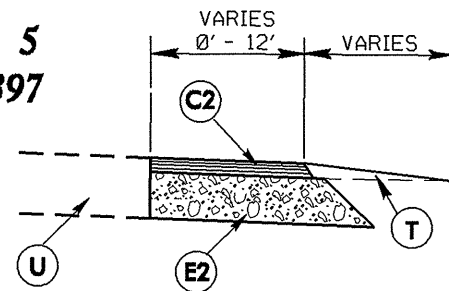
**DETAIL FOR MAP NO. 5**

WIDEN FOR TURN LANE

RWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**NOT TO SCALE**

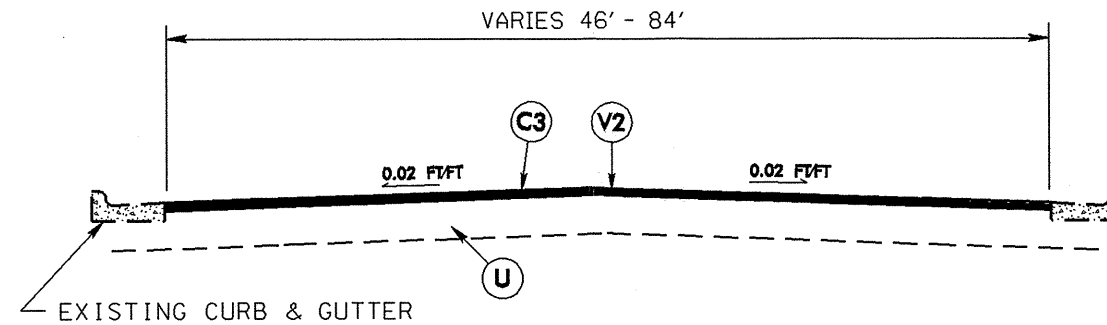
MAP NO. 5  
 WBS 41397



**TYPICAL SECTION NO. 10**

WIDEN FOR RIGHT TURN LANE  
 USE ON NC 210

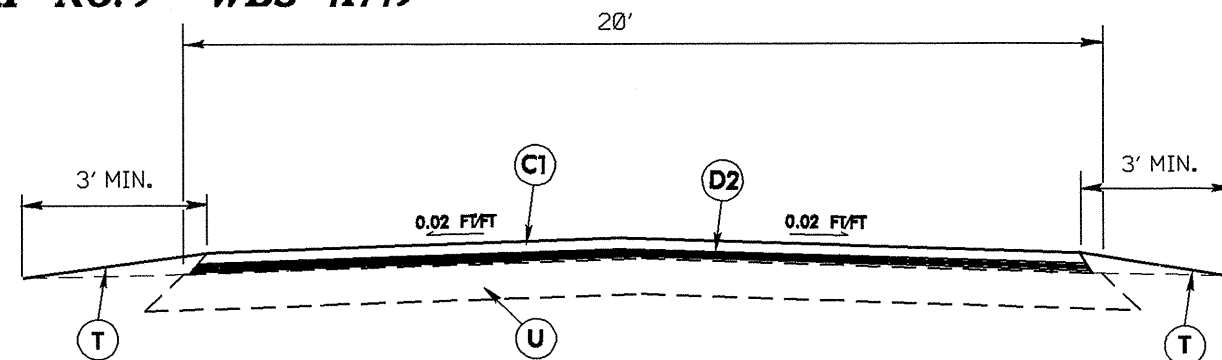
MAP NO. 7 & 8 - WBS 41601  
 MAP NO. 10 & 11 - WBS 42233



**TYPICAL SECTION NO. 11**

RESURFACING AFTER MILLING  
 USE ON SR 1308 AND SR 1336  
 USE ON SR 1308 AND SR1403

MAP NO. 9 - WBS 41749



**TYPICAL SECTION NO. 12**

OVERLAY.  
 USE ON SR 1329 AND SR 1317

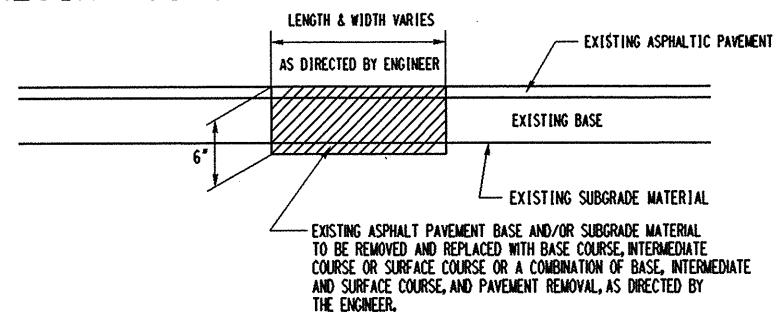
SEE FIRST TYPICAL SECTION SHEET  
 FOR PAVEMENT SCHEDULE.

REVISIONS

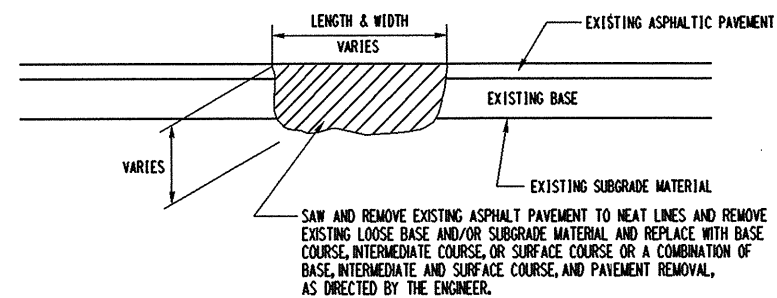
8/17

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

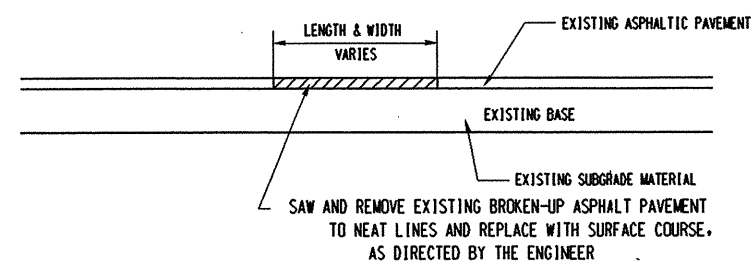
### DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



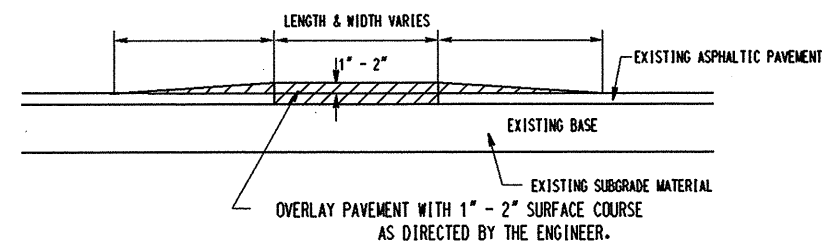
DETAIL NO. 1



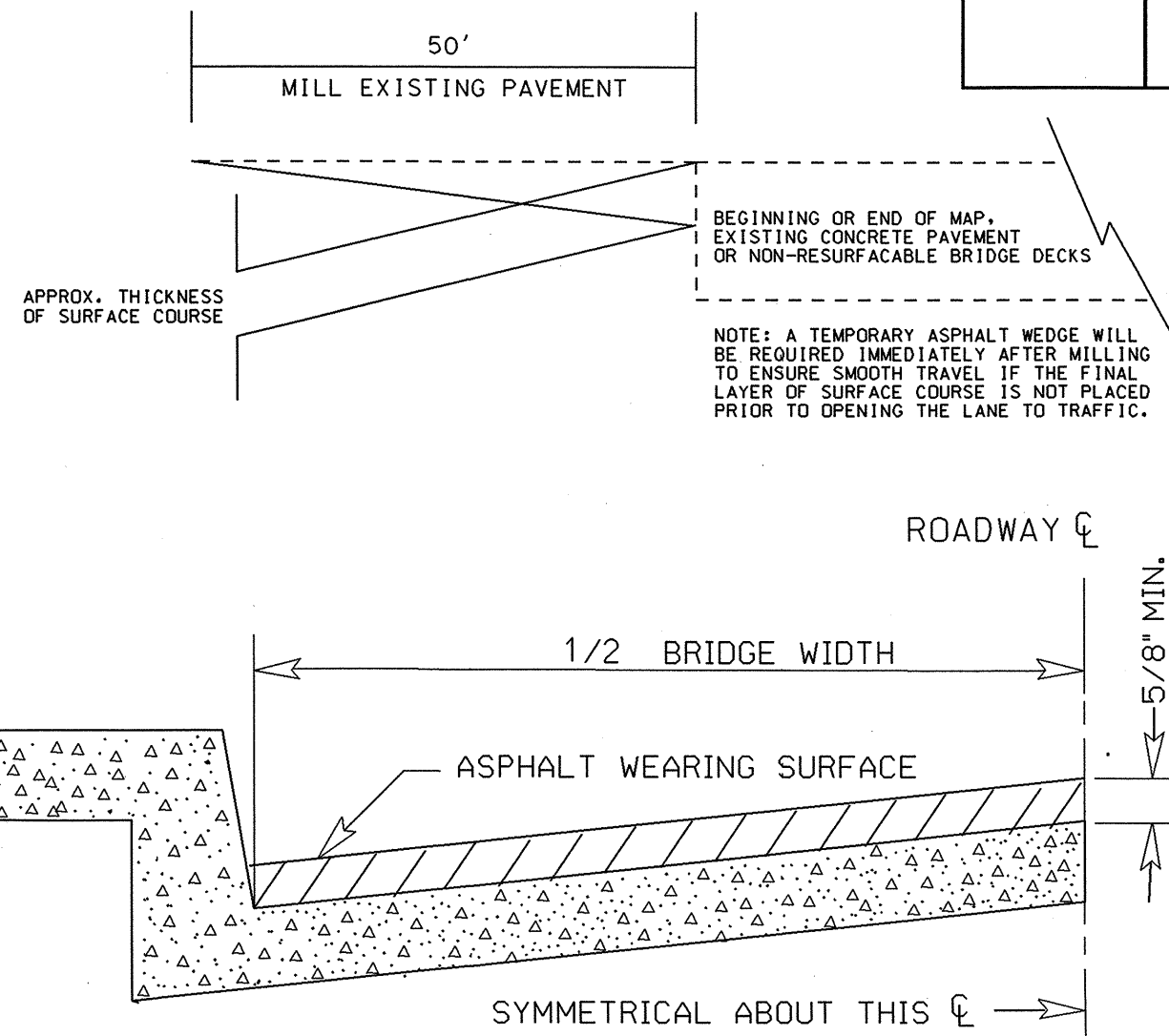
DETAIL NO. 2



DETAIL NO. 3



DETAIL NO. 4



### BRIDGE HALF TYPICAL SECTION

FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS NECESSARY TO PROVIDE A SMOOTH RIDING SURFACE. A THICKNESS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1-1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.

REVISIONS

8.6.7Z  
REVISIONS



PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10671.65, 3CR.10711.65	9	
3.106711, ETC.		

## SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	LENGTH MI	WIDTH FT	BORROW EXC. CY	GRADING PER SHOULDER MILE SMI	FOUND. COND. MATERIAL, MINOR STRS TON	18" RCP CULVERTS, CL. III LF	PIPE REMOVAL LF	ABC TONS	INC. STONE BASE TONS	SHOULDER RECON. SMI	3" MILLING SY	4" MILLING SY	1 1/2" MILLING SY	INC. MILLING SY	BASE COURSE, B25.0B TONS	BASE COURSE, B25.0C TONS	INT. COURSE, I19.0B TONS	INT. COURSE, I19.0C TONS	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	LEVELING COURSE, S9.5C TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING (MILL) TONS	PATCHING (FULL DEPTH) TONS	MASONRY DRAINAGE STRUCT (STD. DWG 840.311 EA)	FRAME WITH GRATE & HOOD, STD 840.03, TYPE E EA						
3CR.10671.65	Onslow	1	NC 24 (EBL)	FROM 0.08 MI. WEST OF SR 1308 (BELL FORK RD.) TO 0.63 MI. EAST OF SR 1490 (CORBIN ST.) TAPER 62'-65' (MP 0.00-0.02)	1	0.02	41-76	8						250	0.04																								
				FULL WIDTH (MP 0.02-0.08, 0.87-0.92), TAPER 53'-76' (MP 0.39-0.50)	1	0.97	65	411							1.76											2889													
				FULL WIDTH (MP 0.30-0.33) TAPER 41'-53' (MP 0.33-0.34) FULL WIDTH (MP 0.34-0.39)	2	0.09	41-53								0.09	2553																							
				FULL WIDTH (MP 0.57-0.71, 0.78-0.83) TAPER 44'-56' (MP 0.71-0.74) FULL WIDTH (MP 0.74-0.78)	1	0.26	44-56	111								0.52																							
				FULL WIDTH (MP 1.37-1.52, 1.54-1.66, 1.69-1.84, 1.86-1.96) TAPER 41-65 MP 1.34-1.37	3	0.75	41-65											19748	1760																				
<b>TOTAL FOR MAP NO. 1</b>						<b>2.09</b>		<b>530</b>						<b>250</b>	<b>2.41</b>	<b>2553</b>	<b>19748</b>	<b>1760</b>	<b>1803</b>							<b>2082</b>	<b>100</b>	<b>146</b>	<b>125</b>	<b>175</b>	<b>50</b>								
		2	NC 24 (WBL)	0.63 MI. EAST OF SR 1490 (CORBIN ST.) TO 0.07 MI. WEST OF SR 1308 (BELL FORK RD.)																																			
				FULL WIDTH (MP 0.00-0.11, 0.18-0.29, 0.36-0.44, 0.84-0.95, 1.02-1.09, 1.18-1.25, 1.31-1.35)	5	0.59	39																																
				TAPER 39'-53' (MP 0.11-0.13) TAPER 39'-50' (MP 0.29-0.31, 0.95-0.97, 1.09-1.12, 1.25-1.28)	5	0.02	46											469	70																				
				FULL WIDTH (MP 0.13-0.18)	5	0.05	53										1379	176																					
				TAPER 39'-50' (MP 0.29-0.31, 0.95-0.97, 1.09-1.12, 1.25-1.28) TAPER 39'-50' (MP 0.44-0.46)	5	0.12	44.5											2712	422																				
				FULL WIDTH (MP 0.31-0.36, 0.46-0.84, 0.97-1.02, 1.12-1.18, 1.28-1.31)	5	0.57	50											15382	2007	635																			
				TAPER 39'-53' (MP 1.35-1.45)	6	0.1	46		0.1																														
				TAPER 57'-64' (MP 1.45-1.55)	6	0.1	60.5																																
				FULL WIDTH (MP 1.55-1.75)	4	0.2	36-48																																
				TAPER 48'-57' (MP 1.75-1.78), FULL WIDTH (MP 1.78-1.83)	7	0.08	52.5											2065	375																				
				TAPER 41'-60' (MP 1.83-2.00)	5	0.17	50.5											4438	598																				
				FULL WIDTH (MP 2.03-2.10)	5	0.1	36-60											2059	352	1033																			
<b>TOTAL FOR MAP NO. 2</b>						<b>2.1</b>			<b>0.1</b>					<b>250</b>			<b>39926</b>	<b>17394</b>	<b>4396</b>	<b>164</b>						<b>5643</b>	<b>100</b>	<b>302</b>	<b>339</b>	<b>57</b>	<b>125</b>								
<b>TOTAL FOR PROJ NO. 3CR.10671.65</b>						<b>4.19</b>		<b>530</b>	<b>0.1</b>					<b>500</b>	<b>2.41</b>	<b>2553</b>	<b>59674</b>	<b>19154</b>	<b>6199</b>	<b>164</b>						<b>11621</b>	<b>100</b>	<b>448</b>	<b>705</b>	<b>232</b>	<b>175</b>								
3CR.10711.65	Pender	3	NC 50	SR 1598 TO 0.09 MI. N. OF NC 210 (NO WORK ON BRIDGE MP 0.36-0.45, 1 NON-SYSTEM INTERSECTION)	BRIDGE	0.09								200																									
				FULL WIDTH (MP 0.00-0.13, 0.18-0.24)	8	0.19	44	121							0.38																								
				TAPER 44'-52' (MP 0.13-0.16), FULL WIDTH (MP 0.24-0.25, 0.71-0.77, 1.26-1.30, 1.44-1.48, 1.82-1.85)	8	0.21	48	134							0.42																								
				FULL WIDTH (MP 0.16-0.18)	8	0.02	52	13							0.04																								
				TAPER 48'-28' (MP 0.25-0.29)	8	0.04	38	25							0.08																								
				FULL WIDTH (MP 0.29-0.36, 0.45-0.59)	8	0.21	28	134							0.42																								
				TAPER 28'-37' (MP 0.59-0.63, 1.97-2.02)	8	0.09	32.5	57							0.18																								
				FULL WIDTH (MP 0.63-0.69, 0.82-1.26, 1.32-1.44, 1.50-1.75, 1.85-1.97)	8	0.99	37	630							1.98																								
				TAPER 37'-48' (MP 0.69-0.71, 0.77-0.82, 1.30-1.32, 1.48-1.50)	8	0.11	42.5	70							0.22																								
				TAPER 48'-60' (MP 1.75-1.78, 1.78-1.82)	8	0.07	54	45							0.14																								
<b>TOTAL FOR MAP NO. 3</b>						<b>2.02</b>		<b>1229</b>						<b>200</b>	<b>3.86</b>					<b>500</b>						<b>4258</b>	<b>50</b>	<b>259</b>	<b>260</b>	<b>30</b>									
<b>TOTAL FOR PROJ NO. 3CR.10711.65</b>						<b>2.02</b>		<b>1229</b>						<b>200</b>	<b>3.86</b>					<b>500</b>						<b>4258</b>	<b>50</b>	<b>259</b>	<b>260</b>	<b>30</b>									

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10671.65, 3CR.10711.65	10	
3.106711, ETC.		

### SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LENGTH MI	WIDTH FT	BORROW EXC. CY	GRADING PER SHOULDER MILE SMI	FOUND. COND. MATERIAL, MINOR STRS TON	18" RCP CULVERTS, CL. III LF	PIPE REMOVAL LF	ABC TONS	INC. STONE BASE TONS	SHOULDER RECON. SMI	3" MILLING SY	4" MILLING SY	1 1/2" MILLING SY	INC. MILLING SY	BASE COURSE, B25.0B TONS	BASE COURSE, B25.0C TONS	INT. COURSE, I19.0B TONS	INT. COURSE, I19.0C TONS	SURFACE COURSE, S9.5B TONS	LEVELING COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	LEVELING COURSE, S9.5C TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING (MILL) TON	PATCHING (FULL DEPTH) TONS	MASONRY DRAINAGE STRUCT (STD. DWG R40 311) EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE E EA			
3.106711	Onslow	4	US 258	0.09 MI. EAST OF SR 2133 TO SR 2133, TAPER 0'-12' (MP 0.00-0.04)	9	0.04	6		0.04				24	23																						
				FULL WIDTH (MP 0.04-0.09)	9	0.05	12		0.05				30	37																						
				TOTAL FOR MAP NO. 4		0.09			0.09				54	60																						
				TOTAL FOR PROJ NO. 3.106711		0.09			0.09				54	60																						
41397	Onslow	5	NC 210	0.07 MI. EAST OF NC 172 TO NC 172, TAPER 0'-12' (MP 0.00-0.04)	10	0.04	6		0.04																											
				FULL WIDTH (MP 0.04-0.07)	10	0.03	12		0.03																											
				TOTAL FOR MAP NO. 5		0.07			0.07																											
				TOTAL FOR PROJ NO. 41397		0.07			0.07																											
41399	Onslow	6	US 258	0.08 MI. EAST OF SR 1369 TO SR 1369, TAPER (MP 0.00-0.04)	9	0.04	6		0.04				100	10																						
				FULL WIDTH (MP 0.04-0.08)	9	0.04	12		0.04	30	280	150	200	10																			2	2		
				TOTAL FOR MAP NO. 6		0.08			0.08	30	280	150	300	20																			2	2		
				TOTAL FOR PROJ NO. 41399		0.08			0.08	30	280	150	300	20																			2	2		
41601	Onslow	7	SR 1308	0.09 MI. NW OF SR 1336 TO 0.04 MI. SE SR 1336 (MP 0.00-0.04) FULL WIDTH (MP 0.04-0.10)	11	0.04	78																													
				FULL WIDTH (MP 0.04-0.10) FULL WIDTH (MP 0.10-0.14)	11	0.1	60-72																													
				TOTAL FOR MAP NO. 7		0.14																														
		8	SR 1336	0.04 MI. SW OF SR 1308 TO 0.01 MI. NE OF SR 1308, FULL WIDTH (MP 0.00-0.04)	11	0.04	60																													
				FULL WIDTH (MP 0.06-0.08, NO WORK MP 0.04-0.06)	11	0.02	48																													
				TOTAL FOR MAP NO. 8		0.06																														
				TOTAL FOR PROJ NO. 41601		0.2																														
41749	Onslow	9	SR 1329/1317	0.02 MI. NE OF US 258 TO 0.02 MI. N OF SR 1316, FULL WIDTH	12	0.3	20	120						50	0.6																					
				TOTAL FOR PROJ NO. 41749		0.3		120						50	0.6																					
42233	Onslow	10	SR 1308	0.09 MI. SE OF SR 1403 TO 0.09 MI. NW OF SR 1403, TAPER (MP 0.00-0.05, 0.14-0.19)	11	0.1	49.5																													
				FULL WIDTH (MP 0.05-0.14)	11	0.09	53																													
				TOTAL FOR MAP NO. 10		0.19																														
		11	SR 1403	0.03 MI. SW OF SR 1308 TO SR 1308, FULL WIDTH	11	0.03	48																													
				TOTAL FOR PROJ NO. 42233		0.22																														
<b>GRAND TOTAL</b>						<b>7.17</b>		<b>1879</b>	<b>0.34</b>	<b>30</b>	<b>280</b>	<b>150</b>	<b>354</b>	<b>830</b>	<b>6.87</b>	<b>16843</b>	<b>59674</b>	<b>19154</b>	<b>7699</b>	<b>427</b>	<b>164</b>	<b>654</b>	<b>9525</b>	<b>7540</b>	<b>50</b>	<b>11621</b>	<b>100</b>	<b>952</b>	<b>705</b>	<b>492</b>	<b>205</b>	<b>2</b>	<b>2</b>			

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10671.65, 3CR.10711.65	11	
3.106711, ETC.		

## SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	LENGTH MI	WIDTH FT	2'-6" CURB & GUTTER, REMOVE AND REPLACE LF	W/C RAMPS EA	ADJ. DROP INLET EA	ADJ. MANHOLES EA	ADJ. METER OR VALVE BOX EA	CONVERT EXISTING CB TO JB EA	PORTABLE LIGHTING LS	TEMP. SILT FENCE LF	STONE FOR EC CLASS B TON	SEDIMENT CONTROL STONE TON	TEMP. MULCHING ACR	SEED FOR TEMP. SEEDING LBS	FERTILIZER FOR TEMP. SEEDING TON	MATTING (EROSION CONTROL) SY	1/4" HARDWARE CLOTH LF	SEED & MULCHING AC	INDUCTIVE LOOP LF	LEAD-IN CABLE LF	
3CR.10671.65	Onslow	1	NC 24 (EBL)	FROM 0.08 MI. WEST OF SR 1308 (BELL FORK RD.) TO 0.63 MI. EAST OF SR 1490 (CORBIN ST.)	1	0.99	41-76				10			0.8	209	53	53.00	2	105	1		105	1.30			
		"	"	FULL WIDTH (MP 0.30-0.33) TAPER 41'-53' (MP 0.33-0.34) FULL WIDTH (MP 0.34-0.39)	2	0.09	41-53																			
		"	"	FULL WIDTH (MP 0.57-0.71, 0.78-0.83) TAPER 44'-56' (MP 0.71-0.74) FULL WIDTH (MP 0.74-0.78)	1	0.26	44-56																			
		"	"	FULL WIDTH (MP 1.37-1.52, 1.54-1.66, 1.68-1.84, 1.86-1.96) TAPER 41-65' MP 1.34-1.37	3	0.75	41-65																	1,225	175	
<b>TOTAL FOR MAP NO. 1</b>						<b>2.09</b>					<b>10</b>			<b>0.8</b>	<b>209</b>	<b>53</b>	<b>53.00</b>	<b>2</b>	<b>105</b>	<b>1</b>		<b>105</b>	<b>1.30</b>	<b>1,225</b>	<b>175</b>	
		2	NC 24 (WBL)	0.63 MI. EAST OF SR 1490 (CORBIN ST.) TO 0.07 MI. WEST OF SR 1308 (BELL FORK RD.)				30	2	1	1	3			210	53	53.00	2	105	1		105	0.20			
		"	"	FULL WIDTH (MP 0.00-0.11, 0.18-0.29, 0.36-0.44, 0.84-0.95, 1.02-1.09, 1.18-1.25, 1.31-1.35)	5	0.59	39																			
		"	"	TAPER 39'-53' (MP 0.11-0.13) TAPER 39'-50' (MP 0.29-0.31, 0.95-0.97, 1.09-1.12, 1.25-1.28)	5	0.02	46																			
		"	"	FULL WIDTH (MP 0.13-0.18)	5	0.05	53																			
		"	"	TAPER 39'-50' (MP 0.29-0.31, 0.95-0.97, 1.09-1.12, 1.25-1.28) TAPER 39'-50' (MP 0.44-0.46)	5	0.12	44.5																			
		"	"	FULL WIDTH (MP 0.31-0.36, 0.46-0.84, 0.97-1.02, 1.12-1.18, 1.28-1.31)	5	0.57	50																	1,050	150	
		"	"	TAPER 39'-53' (MP 1.35-1.45)	6	0.1	46																			
		"	"	TAPER 57'-64' (MP 1.45-1.55)	6	0.1	60.5																			
		"	"	FULL WIDTH (MP 1.55-1.75)	4	0.2	36-48																			
		"	"	TAPER 48'-57' (MP 1.75-1.78), FULL WIDTH (MP 1.78-1.83)	7	0.08	52.5																		1,575	225
		"	"	TAPER 41'-60' (MP 1.83-2.00)	5	0.17	50.5																			
		"	"	FULL WIDTH (MP 2.03-2.10)	5	0.1	36-60																		1,450	200
<b>TOTAL FOR MAP NO. 2</b>						<b>2.1</b>		<b>30</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>3</b>			<b>210</b>	<b>53</b>	<b>53.00</b>	<b>2</b>	<b>105</b>	<b>1</b>		<b>105</b>	<b>0.20</b>	<b>5,125</b>	<b>725</b>	
<b>TOTAL FOR PROJ NO. 3CR.10671.65</b>						<b>4.19</b>		<b>30</b>	<b>2</b>	<b>1</b>	<b>11</b>	<b>3</b>		<b>0.8</b>	<b>419</b>	<b>106</b>	<b>106.00</b>	<b>4</b>	<b>210</b>	<b>2</b>		<b>210</b>	<b>1.50</b>	<b>6,350</b>	<b>900</b>	
3CR.10711.65	Pender	3	NC 50	SR 1598 TO 0.09 MI. N. OF NC 210 (NO WORK ON BRIDGE MP 0.36-0.45, 1 NON-SYSTEM INTERSECTION)	BRIDGE	0.09				2	6	13			200	51	51.00	2	100	1	25	100	3.50			
		"	"	FULL WIDTH (MP 0.00-0.13, 0.18-0.24)	8	0.19	44																			
		"	"	TAPER 44'-52' (MP 0.13-0.16), FULL WIDTH (MP 0.24-0.25, 0.71-0.77, 1.26-1.30, 1.44-1.48, 1.82-1.85)	8	0.21	48																			
		"	"	FULL WIDTH (MP 0.16-0.18)	8	0.02	52																			
		"	"	TAPER 48'-28' (MP 0.25-0.29)	8	0.04	38																			
		"	"	FULL WIDTH (MP 0.29-0.36, 0.45-0.59)	8	0.21	28																			
		"	"	TAPER 28'-37' (MP 0.59-0.63, 1.97-2.02)	8	0.09	32.5																			
		"	"	FULL WIDTH (MP 0.63-0.69, 0.82-1.26, 1.32-1.44, 1.50-1.75, 1.85-1.97)	8	0.99	37																			
		"	"	TAPER 37'-48' (MP 0.69-0.71, 0.77-0.82, 1.30-1.32, 1.48-1.50)	8	0.11	42.5																			
		"	"	TAPER 48'-60' (MP 1.75-1.78, 1.78-1.82)	8	0.07	54																			
<b>TOTAL FOR MAP NO. 3</b>						<b>2.02</b>				<b>2</b>	<b>6</b>	<b>13</b>			<b>200</b>	<b>51</b>	<b>51.00</b>	<b>2</b>	<b>100</b>	<b>1</b>	<b>25</b>	<b>100</b>	<b>3.50</b>			
<b>TOTAL FOR PROJ NO. 3CR.10711.65</b>						<b>2.02</b>				<b>2</b>	<b>6</b>	<b>13</b>			<b>200</b>	<b>51</b>	<b>51.00</b>	<b>2</b>	<b>100</b>	<b>1</b>	<b>25</b>	<b>100</b>	<b>3.50</b>			

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10671.65, 3CR.10711.65	12	
3.106711, ETC.		

## SUMMARY OF QUANTITIES

PROJECT	COUNTY	MAP	ROUTE	DESCRIPTION	TYP	LENGTH	WIDTH	2'-6" CURB & GUTTER, REMOVE AND REPLACE	W/C RAMPS	ADJ. DROP INLET	ADJ. MANHOLES	ADJ. METER OR VALVE BOX	CONVERT EXISTING CB TO JB	PORTABLE LIGHTING	TEMP. SILT FENCE	STONE FOR EC CLASS B	SEDIMENT CONTROL STONE	TEMP. MULCHING	SEED FOR TEMP. SEEDING	FERTILIZER FOR TEMP. SEEDING	MATTING (EROSION CONTROL)	1/4" HARDWARE CLOTH	SEED & MULCHING	INDUCTIVE LOOP	LEAD-IN CABLE		
3.106711	Onslow	4	US 258	0.09 MI. EAST OF SR 2133 TO SR 2133, TAPER 0'-12' (MP 0.00-0.04)	9	0.04	6	200							200								0.05				
				FULL WIDTH (MP 0.04-0.09)	9	0.05	12	326				1					326								0.07		
				<b>TOTAL FOR MAP NO. 4</b>		<b>0.09</b>		<b>526</b>				<b>1</b>					<b>526</b>									<b>0.12</b>	
<b>TOTAL FOR PROJ NO. 3.106711</b>						<b>0.09</b>		<b>526</b>						<b>526</b>									<b>0.12</b>				
41397	Onslow	5	NC 210	0.07 MI. EAST OF NC 172 TO NC 172, TAPER 0'-12' (MP 0.00-0.04)	10	0.04	6								200								0.03	100	400		
				FULL WIDTH (MP 0.04-0.07)	10	0.03	12										150								0.05	500	100
				<b>TOTAL FOR MAP NO. 5</b>		<b>0.07</b>											<b>350</b>								<b>0.08</b>	<b>600</b>	<b>500</b>
<b>TOTAL FOR PROJ NO. 41397</b>						<b>0.07</b>								<b>350</b>									<b>0.08</b>	<b>600</b>	<b>500</b>		
41399	Onslow	6	US 258	0.08 MI. EAST OF SR 1369 TO SR 1369, TAPER (MP 0.00-0.04)	9	0.04	6	200							200								0.05				
				FULL WIDTH (MP 0.04-0.08)	9	0.04	12	225				2					225	2	4.00						0.05		
				<b>TOTAL FOR MAP NO. 6</b>		<b>0.08</b>		<b>425</b>				<b>2</b>					<b>425</b>	<b>2</b>	<b>4.00</b>							<b>0.10</b>	
<b>TOTAL FOR PROJ NO. 41399</b>						<b>0.08</b>		<b>425</b>						<b>425</b>	<b>2</b>	<b>4.00</b>							<b>0.10</b>				
41601	Onslow	7	SR 1308	0.09 MI. NW OF SR 1336 TO 0.04 MI. SE SR 1336 (MP 0.00-0.04)	11	0.04	78							0.1													
				FULL WIDTH (MP 0.04-0.10)	11	0.06	72				1															1,500	600
				FULL WIDTH (MP 0.10-0.14)	11	0.04	60																			1,500	600
<b>TOTAL FOR MAP NO. 7</b>						<b>0.14</b>			<b>1</b>					<b>0.1</b>										<b>3,000</b>	<b>1,200</b>		
		8	SR 1336	0.04 MI. SW OF SR 1308 TO 0.01 MI. NE OF SR 1308, FULL WIDTH (MP 0.00-0.04)	11	0.04	60																	250	150		
				FULL WIDTH (MP 0.06-0.08, NO WORK MP 0.04-0.06)	11	0.02	48																			250	150
				<b>TOTAL FOR MAP NO. 8</b>		<b>0.06</b>																				<b>500</b>	<b>300</b>
<b>TOTAL FOR PROJ NO. 41601</b>						<b>0.2</b>			<b>1</b>					<b>0.1</b>										<b>3,500</b>	<b>1,500</b>		
41749	Onslow	9	SR 1329/1317	0.02 MI. NE OF US 258 TO 0.02 MI. N OF SR 1316, FULL WIDTH	12	0.3	20																0.50				
				<b>TOTAL FOR PROJ NO. 41749</b>		<b>0.3</b>																			<b>0.50</b>		
42233	Onslow	10	SR 1308	0.09 MI. SE OF SR 1403 TO 0.09 MI. NW OF SR 1403, TAPER (MP 0.00-0.05, 0.14-0.19)	11	0.1	49.5							0.1													
				FULL WIDTH (MP 0.05-0.14)	11	0.09	53				4															300	300
				<b>TOTAL FOR MAP NO. 10</b>		<b>0.19</b>					<b>4</b>						<b>0.1</b>										<b>300</b>
		11	SR 1403	0.03 MI. SW OF SR 1308 TO SR 1308, FULL WIDTH	11	0.03	48																	500	400		
				<b>TOTAL FOR PROJ NO. 42233</b>		<b>0.22</b>					<b>4</b>						<b>0.1</b>									<b>800</b>	<b>700</b>
<b>GRAND TOTAL</b>						<b>7.17</b>		<b>981</b>	<b>7</b>	<b>3</b>	<b>17</b>	<b>17</b>	<b>2</b>	<b>1</b>	<b>1,920</b>	<b>159</b>	<b>161.00</b>	<b>6</b>	<b>310</b>	<b>3</b>	<b>25</b>	<b>310</b>	<b>5.80</b>	<b>11,250</b>	<b>3,600</b>		





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

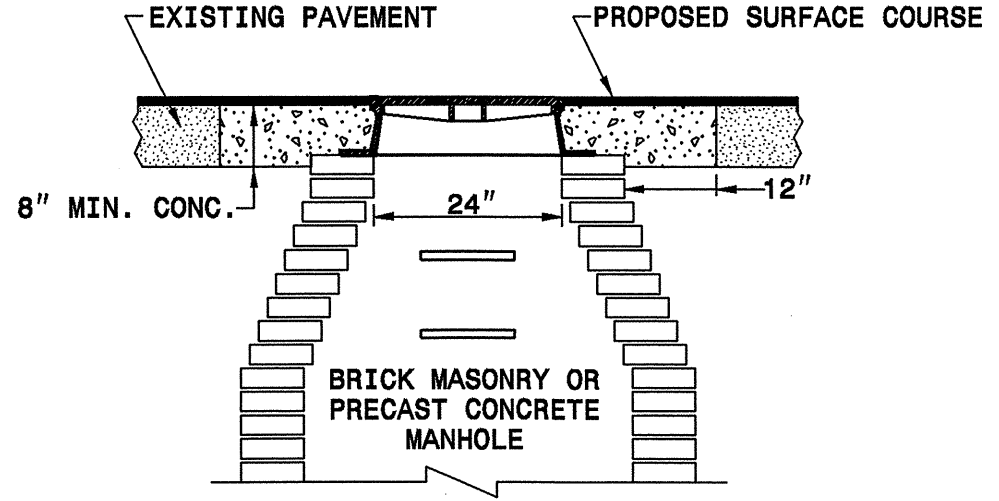
MANHOLE AND VALVE BOX ADJUSTMENTS

ENGLISH DETAIL DRAWING FOR

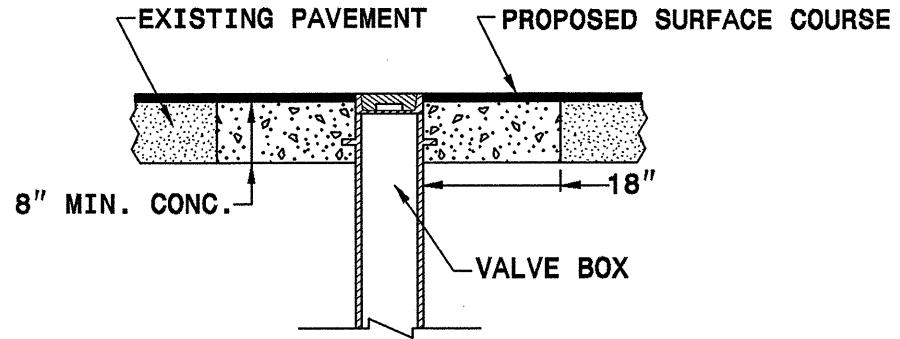
SHEET 1 OF 1  
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GENERAL NOTES:

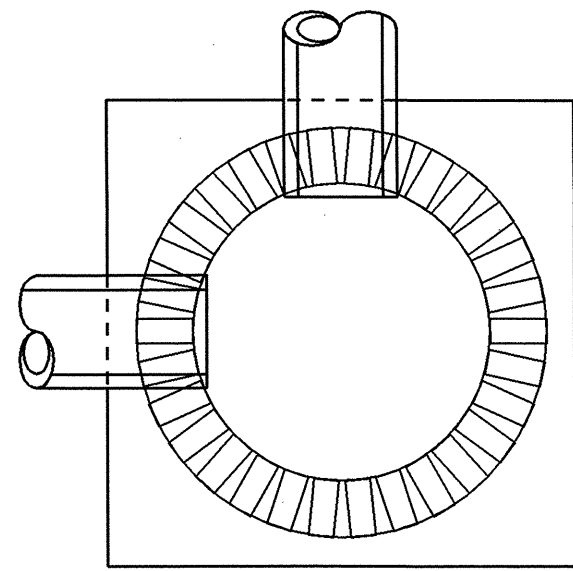
1. RAPID SET GROUT, MORTAR, OR CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
4. AREA BELOW 8" DEPTH CAN BE FILLED WITH 78M OR NO. 57 CLEAN STONE.
5. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
6. MORTAR JOINTS 1/2" +/- 1/8"



MANHOLE CONCRETE ENCASEMENT



VALVE BOX CONCRETE ENCASEMENT



ELEVATION VIEW

PLACE BRICK ACCORDING TO ELEVATION VIEW

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

MANHOLE AND VALVE BOX ADJUSTMENTS

ENGLISH DETAIL DRAWING FOR

SHEET 1 OF 1  
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REVISIONS

8/12/15








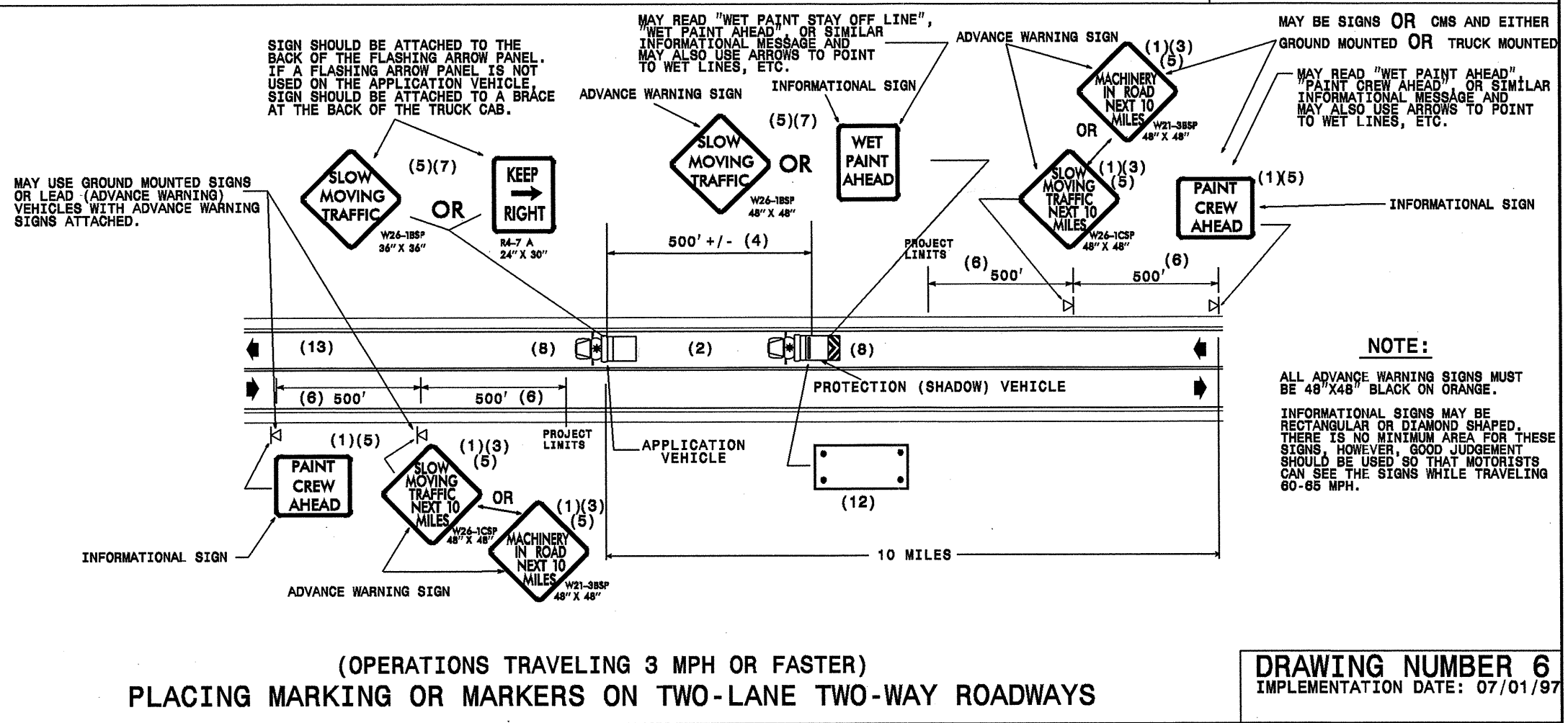
**GENERAL NOTES**

- (1) THE FOLLOWING OPTIONS MAY BE USED AS ADVANCE WARNING SIGNS:
  - A. TRUCK MOUNTED ADVANCE WARNING SIGNS
  - B. MOVING CHANGEABLE MESSAGE SIGN (CMS)
  - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST USE 'NEXT 10 MILES' AND MAKE CIRCLE TO PICK UP SIGNS)
  - D. STATIONARY CHANGEABLE MESSAGE SIGN (CMS) (MUST USE 'NEXT 10 MILES' AND MAKE CIRCLE TO PICK UP CMS)
- (2) 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 SHOULD HAVE A TMIA.
- (3) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED TEN (10) MILES IN LENGTH.
- (4) DISTANCE BETWEEN APPLICATION VEHICLE AND PROTECTION VEHICLE WILL VARY AS DRYING TIMES VARY, HOWEVER, THE CRITICAL FACTOR IS PASSING MOTORISTS. IF THE GAP BETWEEN VEHICLES IS TOO GREAT, MOTORISTS WILL ATTEMPT TO PASS AND ULTIMATELY APPEAR IN THE MIDDLE OF THE OPERATION.
- (5) MOUNTING HEIGHT DIMENSIONS FROM ROADWAY TO SIGN SHOULD BE A MINIMUM OF FIVE (5) FEET FOR INTERSTATES, OTHER HIGH VOLUME ROADWAYS, OR ROADWAYS THAT MAY REQUIRE A MOUNTING HEIGHT OF FIVE (5) FEET FOR INCREASED VISIBILITY AND A MINIMUM OF ONE (1) FOOT FOR ALL OTHER ROADWAYS.
- (6) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (7) SIGN W26-1BSP OR R4-7A SHOULD BE PLACED ON FRONT OF APPLICATION VEHICLE AND SIGN W26-1BSP OR INFORMATIONAL SIGN ON BACK OF PROTECTION VEHICLE IN TWO-LANE, TWO-WAY TRAFFIC SO VEHICLES APPROACHING FROM FRONT AND REAR ARE NOTIFIED OF OPERATION.
- (8) RADIO COMMUNICATION BETWEEN VEHICLES IS RECOMMENDED.
- (9) USE OF A LIGHT BAR ON THE ADVANCE WARNING VEHICLE IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (10) USE OF A CMS WITH ADVANCED WARNING VEHICLES IS OPTIONAL.
- (11) IF WORK IS PERFORMED AT NIGHT, THE FOLLOWING PROVISIONS MUST BE MADE:
  - A. GROUND MOUNTED SIGNS MUST HAVE TYPE B FLASHING LIGHTS ATTACHED (TRUCK MOUNTED SIGNS DO NOT REQUIRE TYPE B FLASHING LIGHTS)
  - B. OPERATION MUST INCLUDE A CHANGEABLE MESSAGE SIGN (CMS)
  - C. WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) USE A TYPE "B" FLASHING ARROW PANEL.
 

PANEL TYPE	MIN. SIZE
B	60"X30"
- (13) 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
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH ROTATING BEACON
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND ROTATING BEACON (SEE ROADWAY STANDARD NO. 1185.01)
-  FLASHING ARROW PANEL, TYPE "B" "CAUTION MODE"

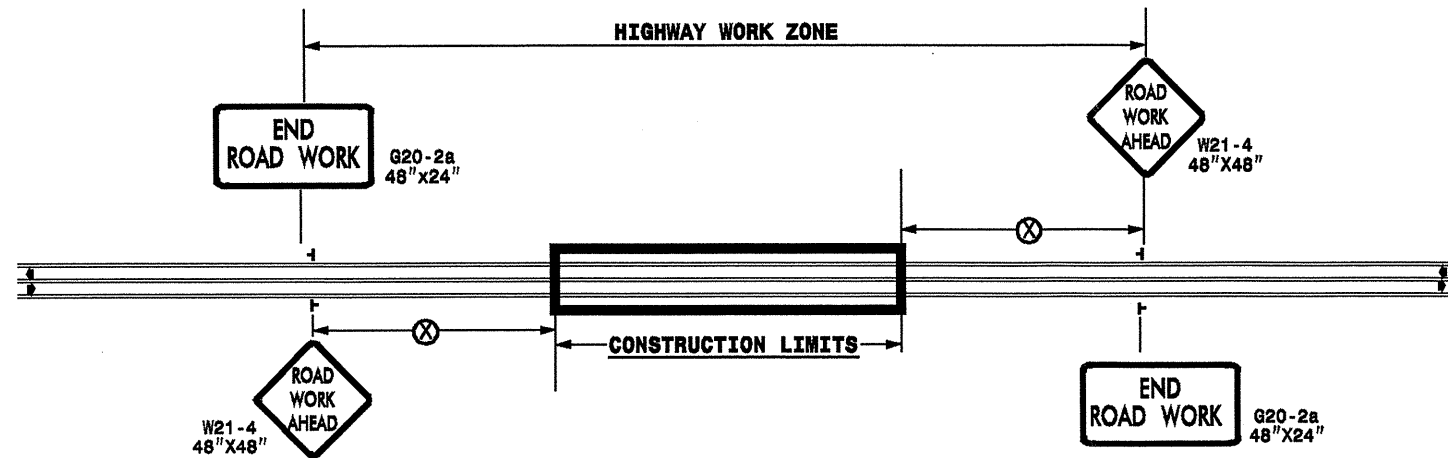


REVISIONS

86/17



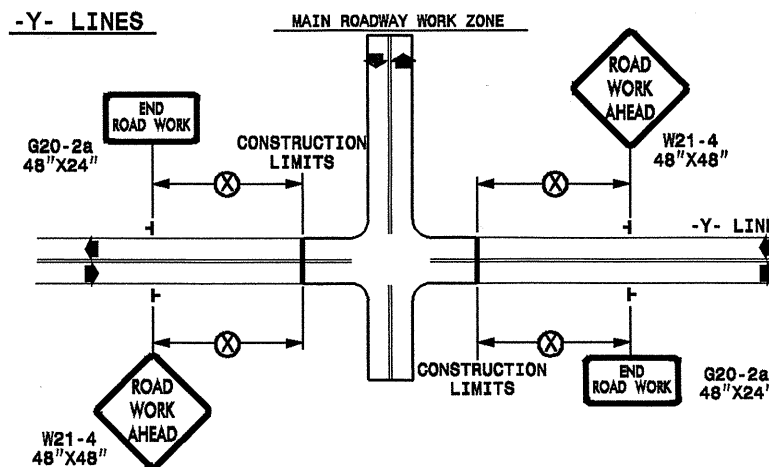
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- \*\* 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**

┆ STATIONARY SIGN

◀ DIRECTION OF TRAFFIC FLOW

DETAIL DRAWING FOR  
TWO-WAY UNDIVIDED  
WORK ZONE WARNING SIGNS

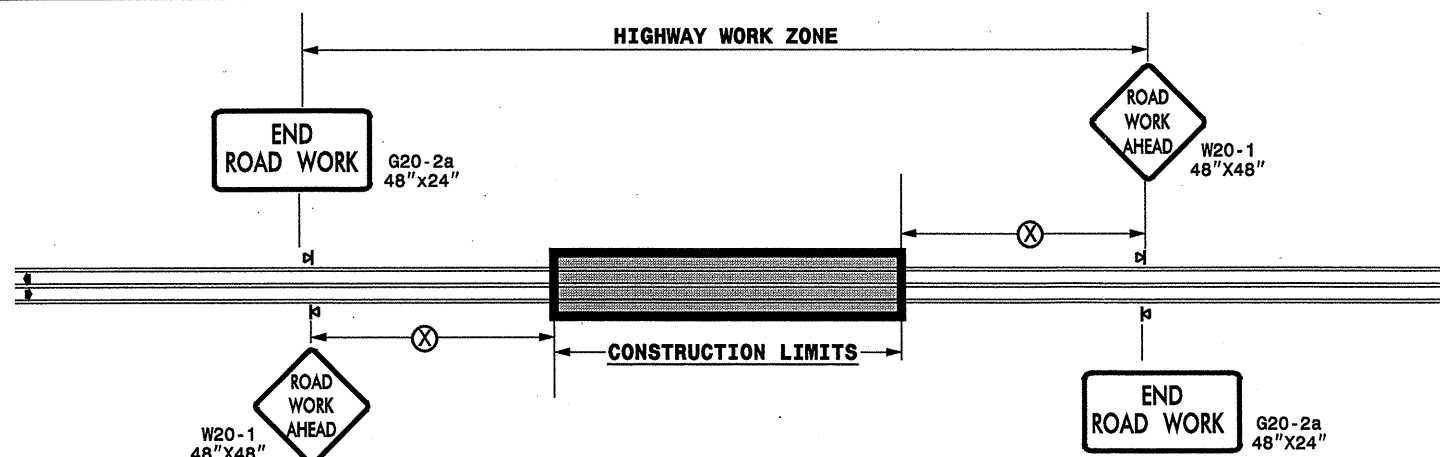
SHEET 1 OF 1

APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
SEAL	SCALE: NONE	REVISIONS
	DATE: _____	7-98 10/01
	DWG. BY: _____	10-98 09/04
	DESIGN BY: _____	01/01 11/04
	REVIEWED BY: _____	CHD FILE



\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*DONS\*\*\*\*\*  
\*\*\*\*\*SUBSERNAME\*\*\*\*\*

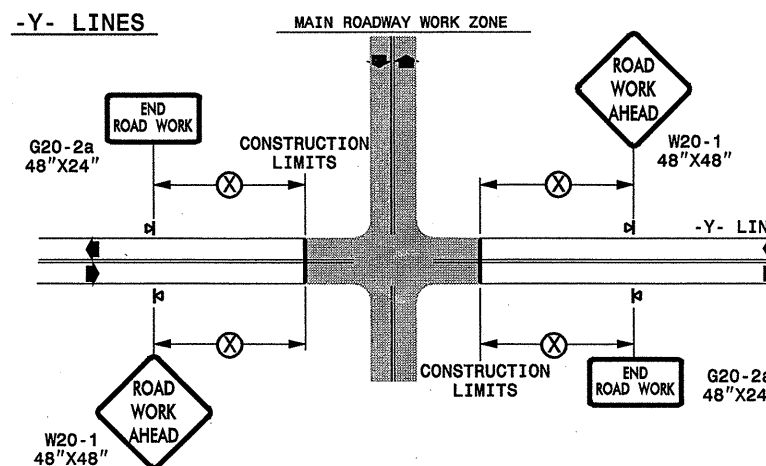
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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≤ 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)**




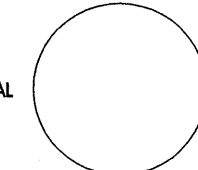
**GENERAL NOTES**

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCE 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.
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LEGEND	
◁	PORTABLE SIGN
←	DIRECTION OF TRAFFIC FLOW

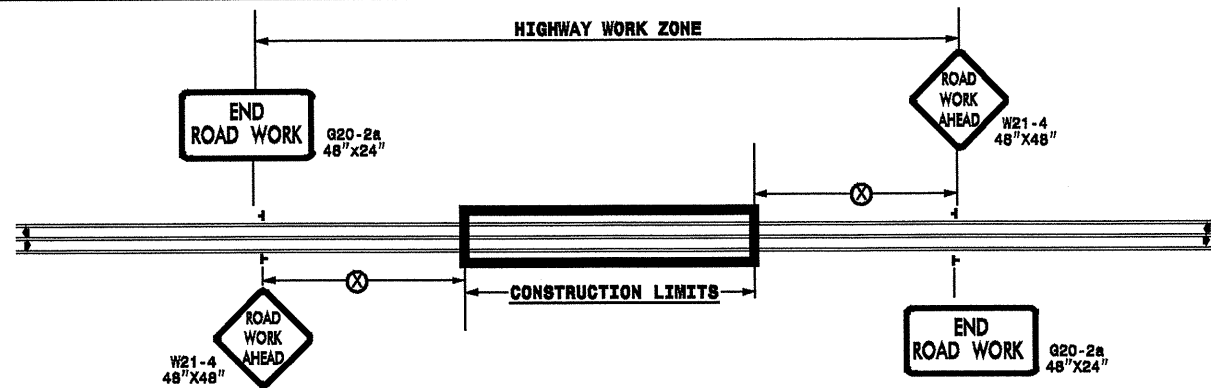
**DETAIL DRAWING  
FOR TWO-WAY UNDIVIDED  
WORK ZONE WARNING SIGNS**

SHEET 1 OF 1

APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED ADVANCED WORK ZONE WARNING SIGNS	SCALE: NONE		REVISIONS 7-98 10/01 10-98 03/04 01/01 11/04
SEAL 		DESIGNED BY:		REVIEWED BY:

05-OCT-2008 20:42 \\D01\DRS001\DRS\Groups\WZ\TCCC\design\group4\resurfacing\resurfacing008\Div03\C20284\_3CR067165set7.2wayundivurbfrywysjuly2006.dgn pseyimre AT WZ1231502

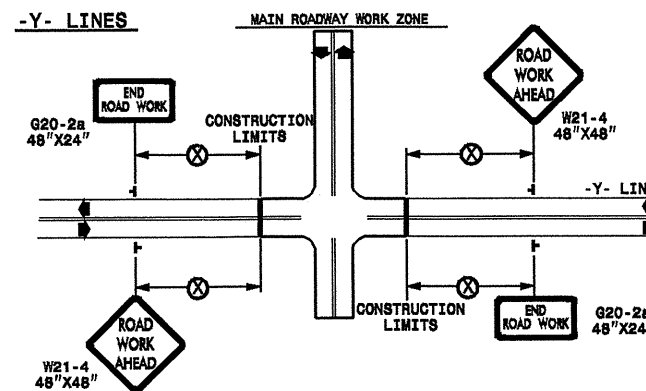
**TWO-WAY UNDIVIDED \*\* (L-LINES)**



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≥ 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**

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- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
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- \*\* 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**

┆ STATIONARY SIGN

◀ DIRECTION OF TRAFFIC FLOW

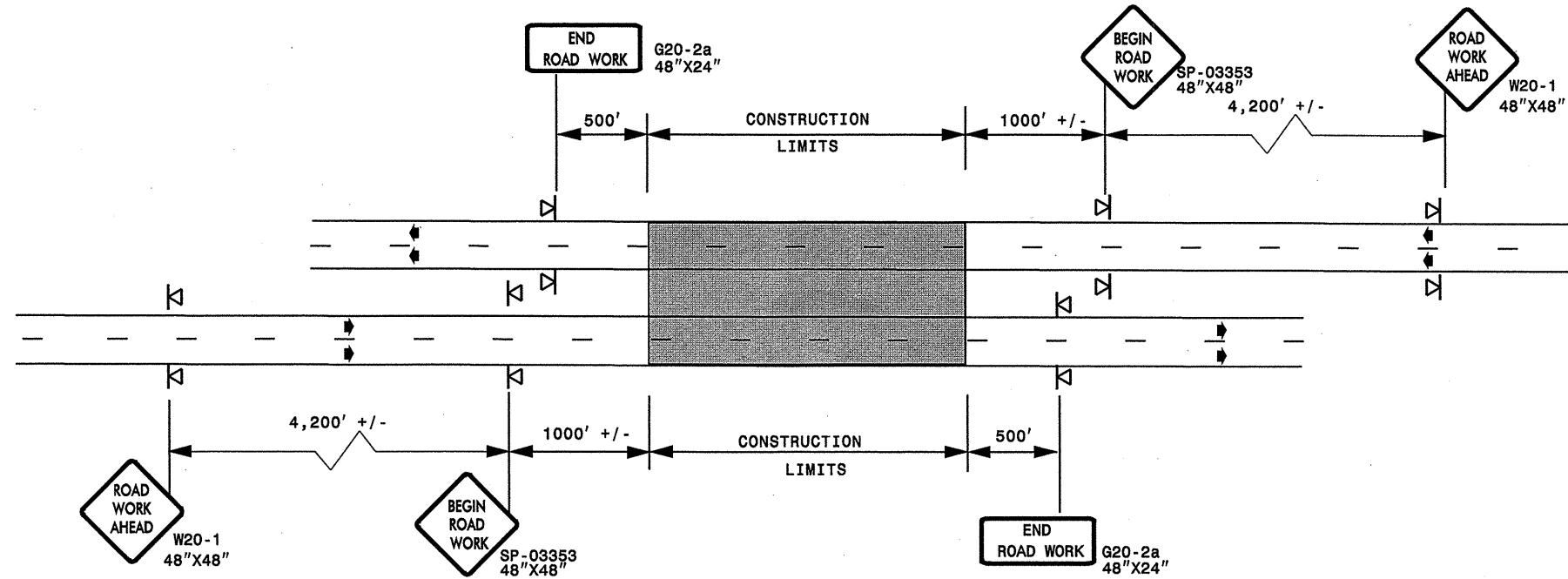
SHEET 1 OF 1

APPROVED:	DATE:	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS									
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	REVISIONS										
	7-98	10/01									
	10-98	03/04									
01/01	11/04										
DATE:											
DWG. BY:											
DESIGN BY:											
REVIEWED BY:											

\*\*\*\*\*CYTIME\*\*\*\*\*  
\*\*\*\*\*LISTNAME\*\*\*\*\*

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

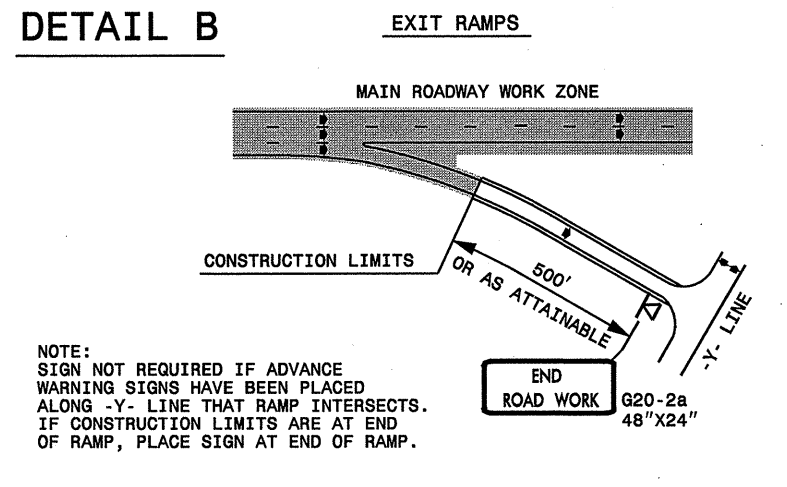
**DETAIL A**



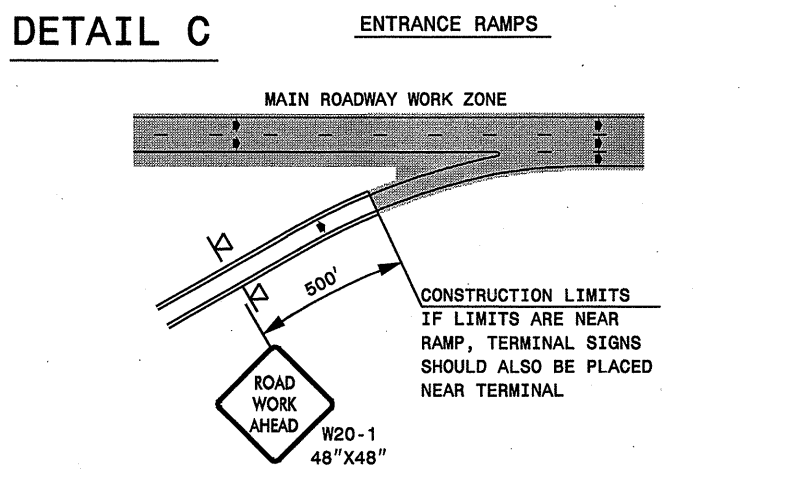
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

**ROADWAYS INTERSECTING ALONG FREEWAY WORK ZONE (Y-LINES)**

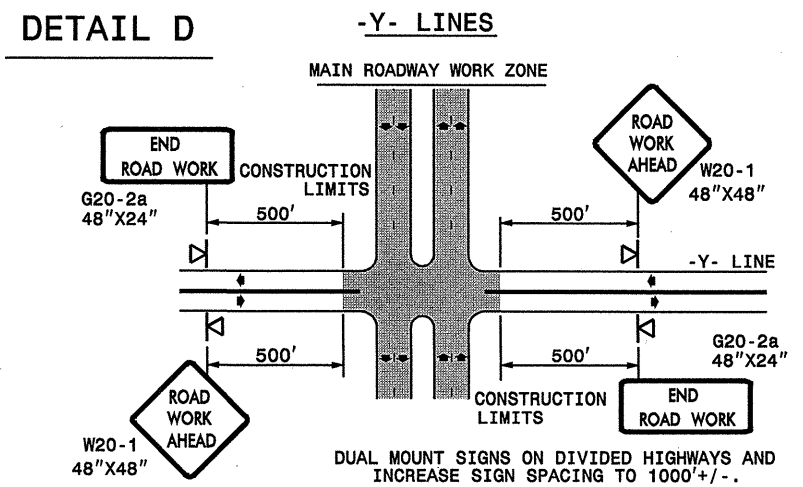
**DETAIL B**



**DETAIL C**



**DETAIL D**



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

**GENERAL NOTES**

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- \*\* 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

SHEET 1 OF 1

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

SCALE: NONE

DATE: \_\_\_\_\_

DWG. BY: \_\_\_\_\_

DESIGN BY: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_

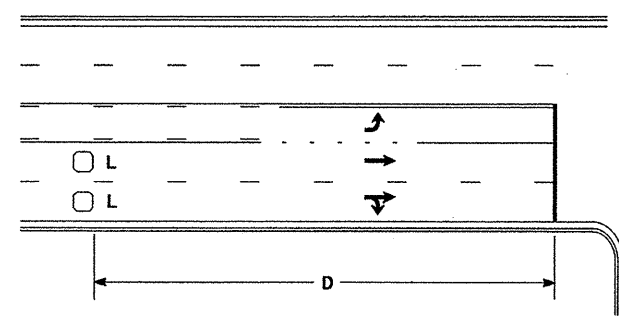
DETAIL DRAWING FOR FREEWAYS WORK ZONE WARNING SIGNS

SEAL

REVISIONS	
7-98	10/01
10-98	03/04
01/01	11/04

05-OCT-2008 20:43 \\DOT\DF-SR001010\WORK\DESIGN\GROUP4\resurfacing\resurfacing2008\Div03\C202184\_3CR1067165setc7\_0nslowPender\_NC24etoc202184\_3CR1067165setc7\_ree4lanesgreat July2006.dgn

### High Speed Detection [≥40 mph (64 km/hr)]

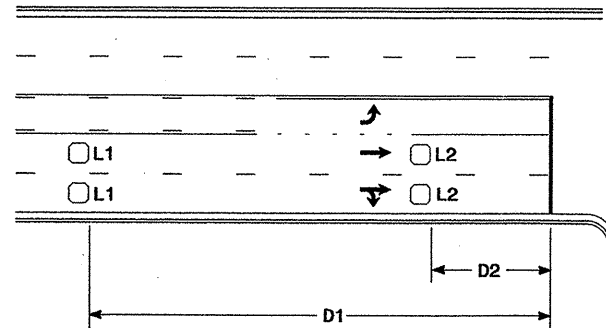


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

L = 6ft X 6ft (1.8m X 1.8m)  
Wired in series for TS1  
Controllers  
Wired separately for TS2,  
170, and 2070L Controllers

Volume Density Operation

OR



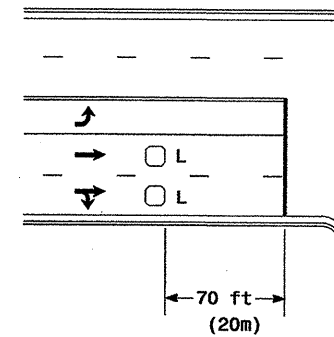
Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

L1 = 6ft X 6ft  
(1.8m X 1.8m)  
Wired in series  
L2 = 6ft X 6ft  
(1.8m X 1.8m)  
Wired in series

"Stretch" Operation

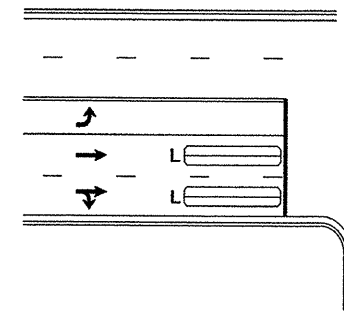
### Low Speed Detection [≤35 mph (56 km/hr)]

3CR.10671.65, 3CR.10711.65, 3CR.10711, 41397,  
41399, 41601, 41749 & 42233



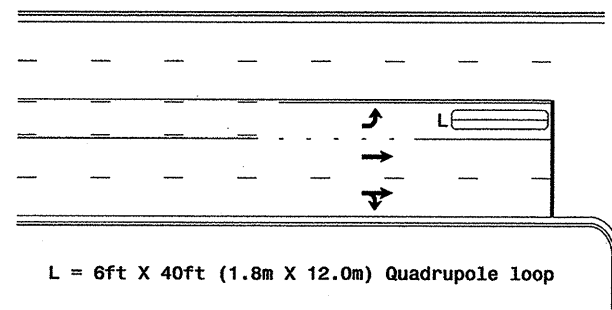
L = 6ft X 6ft (1.8m X 1.8m)  
Wired in series

OR



L = 6ft X 40ft (1.8m X 12.0m)  
Quadrupole loop, wired separately

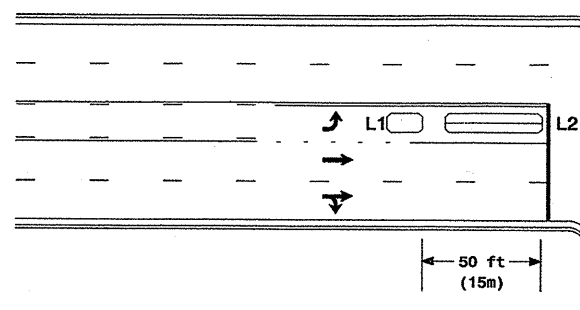
### Left Turn Lane Detection



L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Presence Loop Detection

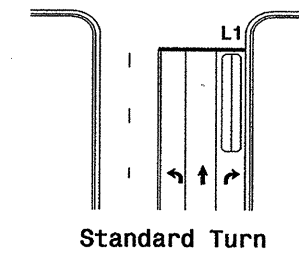
OR



L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector  
L2 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

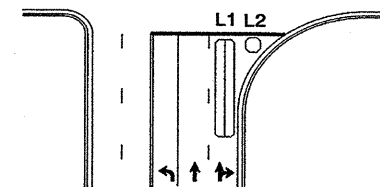
Queue Loop Detection

### Right Turn Lane Detection

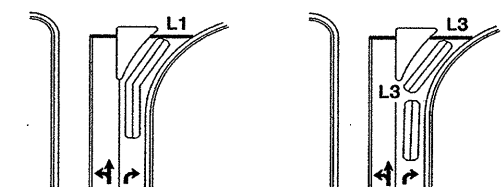


Standard Turn

L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop  
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop  
Wired separately  
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop  
Wired in series

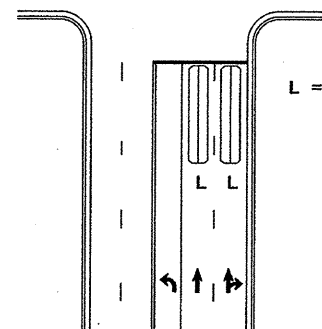


Wide Radius Turn



Channelized Turn

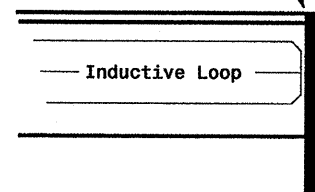
### Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)  
Quadrupole loop  
Wired to separate  
detectors/channels

### Presence Loop Placement at Stop Lines

Locate loop slightly  
behind leading  
edge of stop line



Note:  
Loop may be located in advance  
of stop line when stop line is  
greater than 15' (4.5m) from edge  
of intersecting roadway; or, when  
loop detects a permissive or  
protected/permissive left turn.

### Recommended Number of Turns

Single 6' X 6' (1.8m X 1.8m)  
loop (wired separately):

Length of Lead-in ft (m)	Number of Turns
< 250 (75)	3
250-375 (75-115)	4
375-525 (115-160)	5
> 525 (160)	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' (1.8m X 4.6m) Loops:  
Lead-in < 150' (45 m), use 2 turns  
Lead-in > 150' (45 m), use 3 turns

### Typical Loop Locations

	Prepared in the Office of: State of North Carolina Department of Transportation Traffic and Geometrics Section 122 N. McDowell St., Raleigh, NC 27603	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander	REVIEWED BY:
	SCALE: N/A	REVISIONS: 1. Revise Revisions	INIT. DATE: P.L.A. 12/1/06

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

5-07

ENGLISH DETAIL DRAWING FOR  
INDUCTIVE DETECTION LOOPS

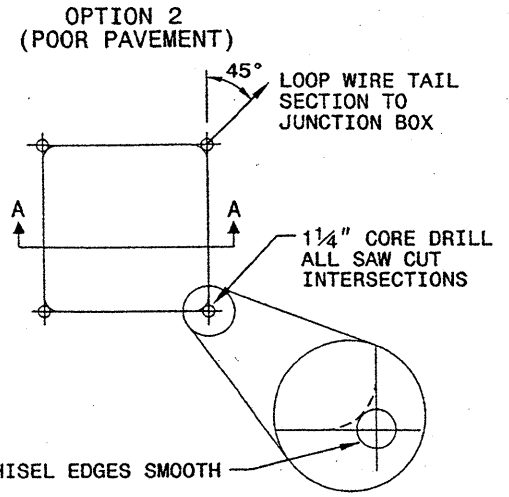
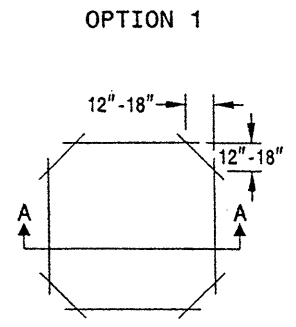
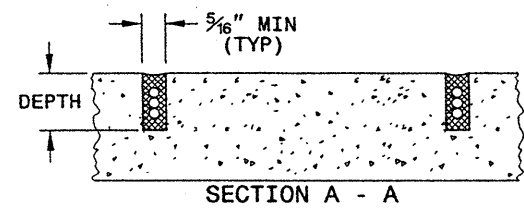
SHEET 1 OF 3  
1725D01

**CONVENTIONAL 4-SIDED LOOP**

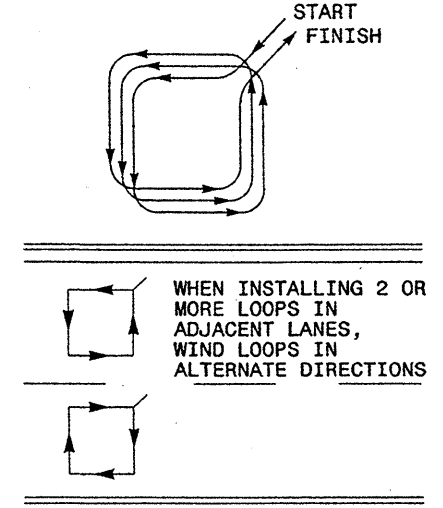
SAW CUT OPTIONS

SAW SLOT DEPTH CHART

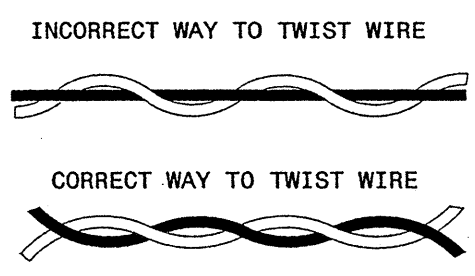
DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

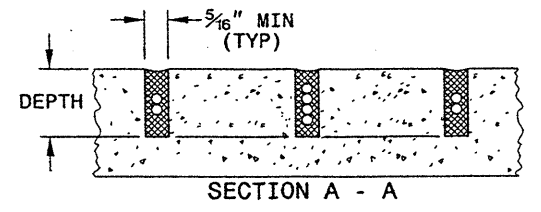
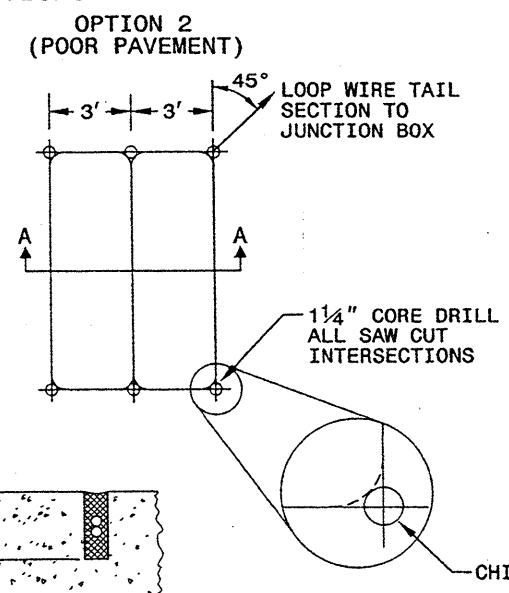
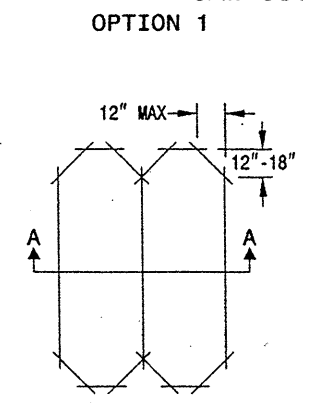


NOTES

1. OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
2. MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
3. WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
4. LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

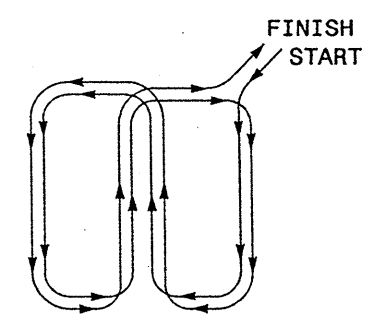
**QUADRUPOLE LOOP**

SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD



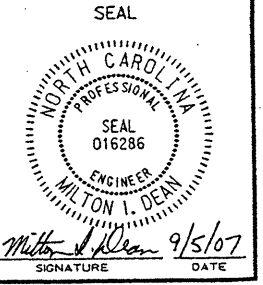
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

5-07

ENGLISH DETAIL DRAWING FOR  
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3  
1725D01

See Plate for Title



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

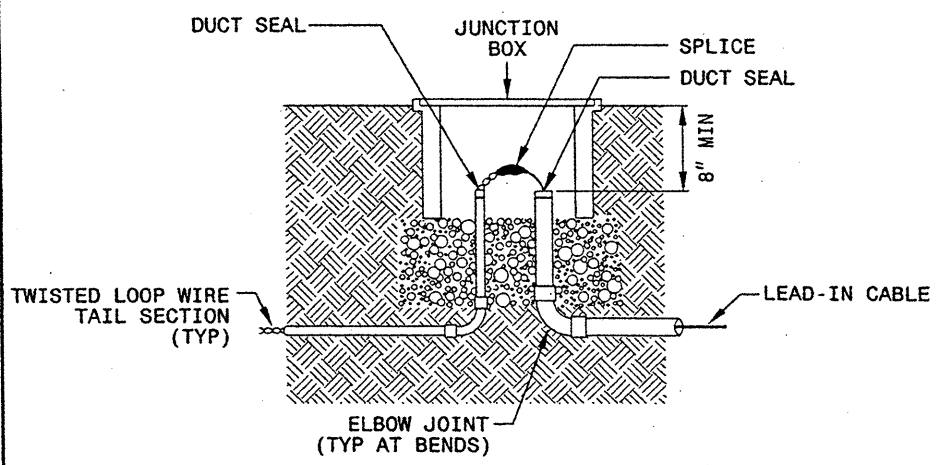
5-07

ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
 LOOP WIRE DETAILS

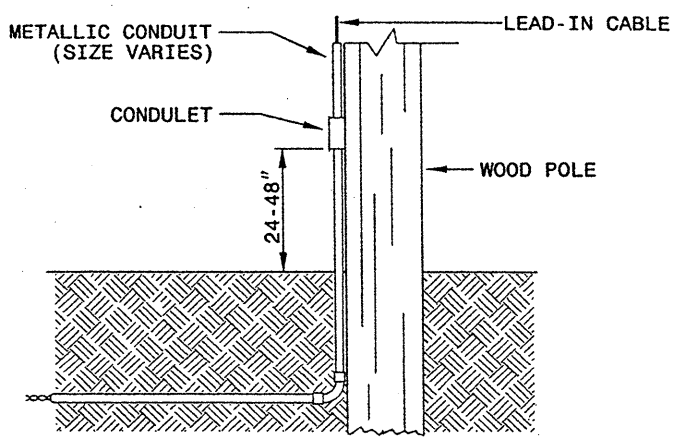
SHEET 2 OF 3  
**1725D01**

**LOOP WIRE SPLICE POINT DETAILS**

**LOOP WIRE AT JUNCTION BOX**



**LOOP WIRE AT POLE**

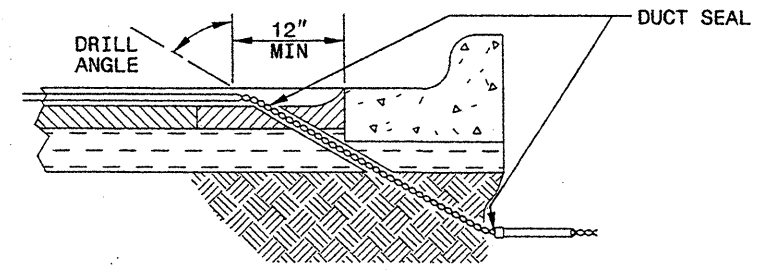


**NOTE**

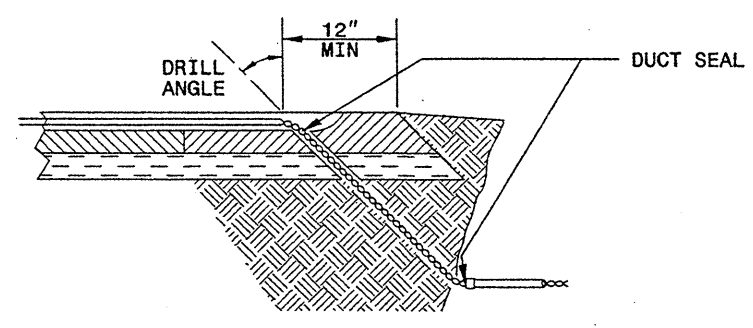
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

**LOOP WIRE PAVEMENT EDGE DETAILS**

**LOOP WIRE AT CURB & GUTTER SECTION**



**LOOP WIRE AT PAVEMENT SECTION**



**NOTES**

1. DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
2. TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
3. BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

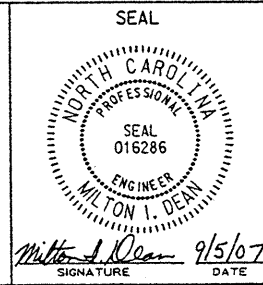
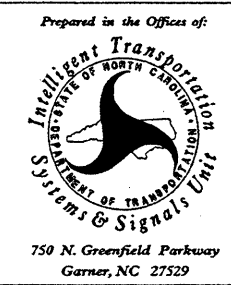
STATE OF NORTH CAROLINA  
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ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
 LOOP WIRE DETAILS

SHEET 2 OF 3  
**1725D01**

See Plate for Title



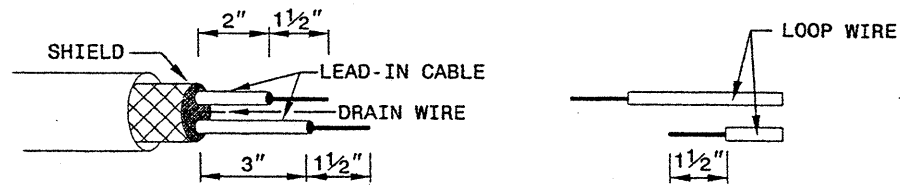
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

5-07

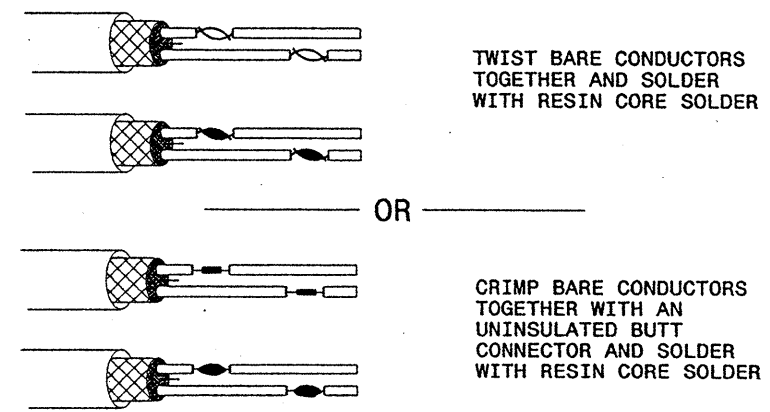
ENGLISH DETAIL DRAWING FOR  
**INDUCTION DETECTION LOOPS**  
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3  
**1725D01**

**STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE**

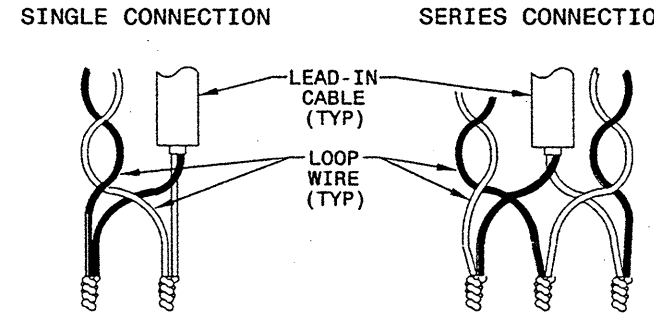


**STEP 2. CONNECT AND SOLDER**

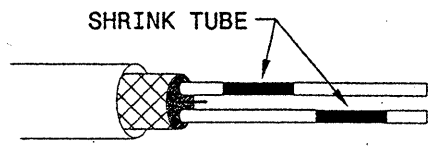


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

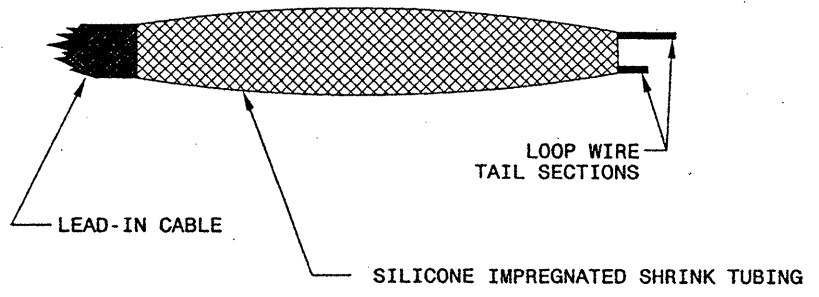
**LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS**



**STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY**



**STEP 4. ENVIRONMENTALLY PROTECT SPLICE**



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ENGLISH DETAIL DRAWING FOR  
**INDUCTIVE DETECTION LOOPS**  
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3  
**1725D01**

See Plate for Title

Prepared in the Office of:

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Garner, NC 27529

SEAL

ENGINEER  
MILTON I. DEANN  
9/5/07  
SIGNATURE      DATE

05-SEP-2007 14:01 c:\documents and settings\zml1116\desktop\standard metal pole sheets\1725D01\_03.dwg 2/11/16