

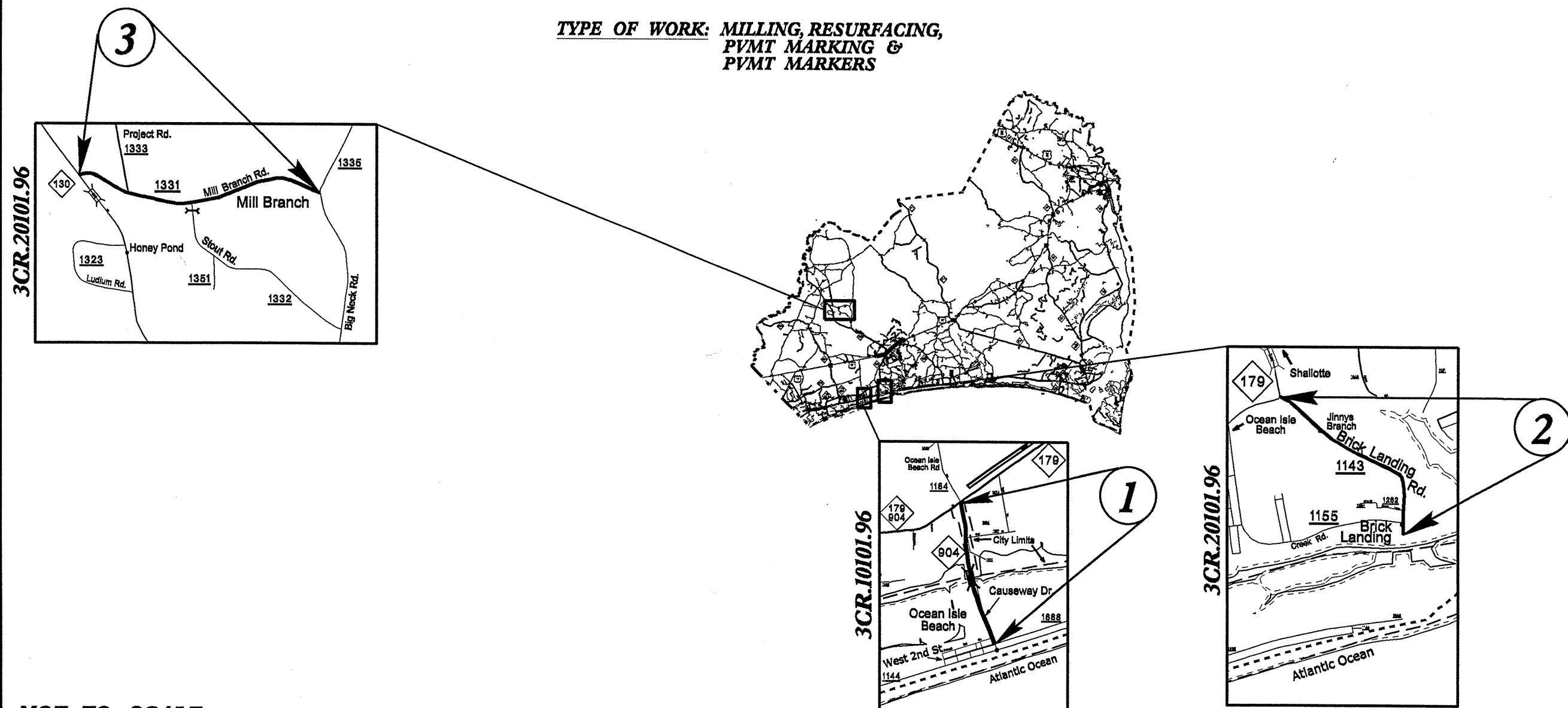
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	3CR.10101.96, ETC	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
3CR.10101.96			
3CR.10651.96			
3CR.10711.96			
3CR.20101.96			
3CR.20651.96			

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BRUNSWICK COUNTY

LOCATION: 1 SECTION OF NC 904
AND 2 SECTIONS OF SECONDARY ROADS.

TYPE OF WORK: MILLING, RESURFACING,
PVMT MARKING &
PVMT MARKERS



NOT TO SCALE

CONTRACT: WBS NO.(S): 3CR.10101.96, 3CR.20101.96

PROJECT LENGTH

PRIMARY
MAP NO. 1 = 1.11 MI.
PRIMARY TOTAL = 1.11 MI.

SECONDARY
MAP NO. 2 = 1.31 MI.
MAP NO. 3 = 2.38 MI.
SECONDARY TOTAL = 3.69 MI.

BRUNSWICK CO. TOTAL = 4.80 MI.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
JANUARY 18, 2011

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

**ROADWAY DESIGN
TECHNICIAN**

SIGNATURE: _____ DNL

SIGNATURE: _____ MPK

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

15-NOV-2010 10:08 R:\RDY\DDC\RETREAT\2011\2011_Resurfacing\BRUNSWICK_NEW HANOVER_PENDER\ROADWAY\Proj\3CR.10101.96_3CR.10651.96_3CR.10711.96_2011_Rdy_tsh_B.dgn \$\$\$USERNAME\$\$\$

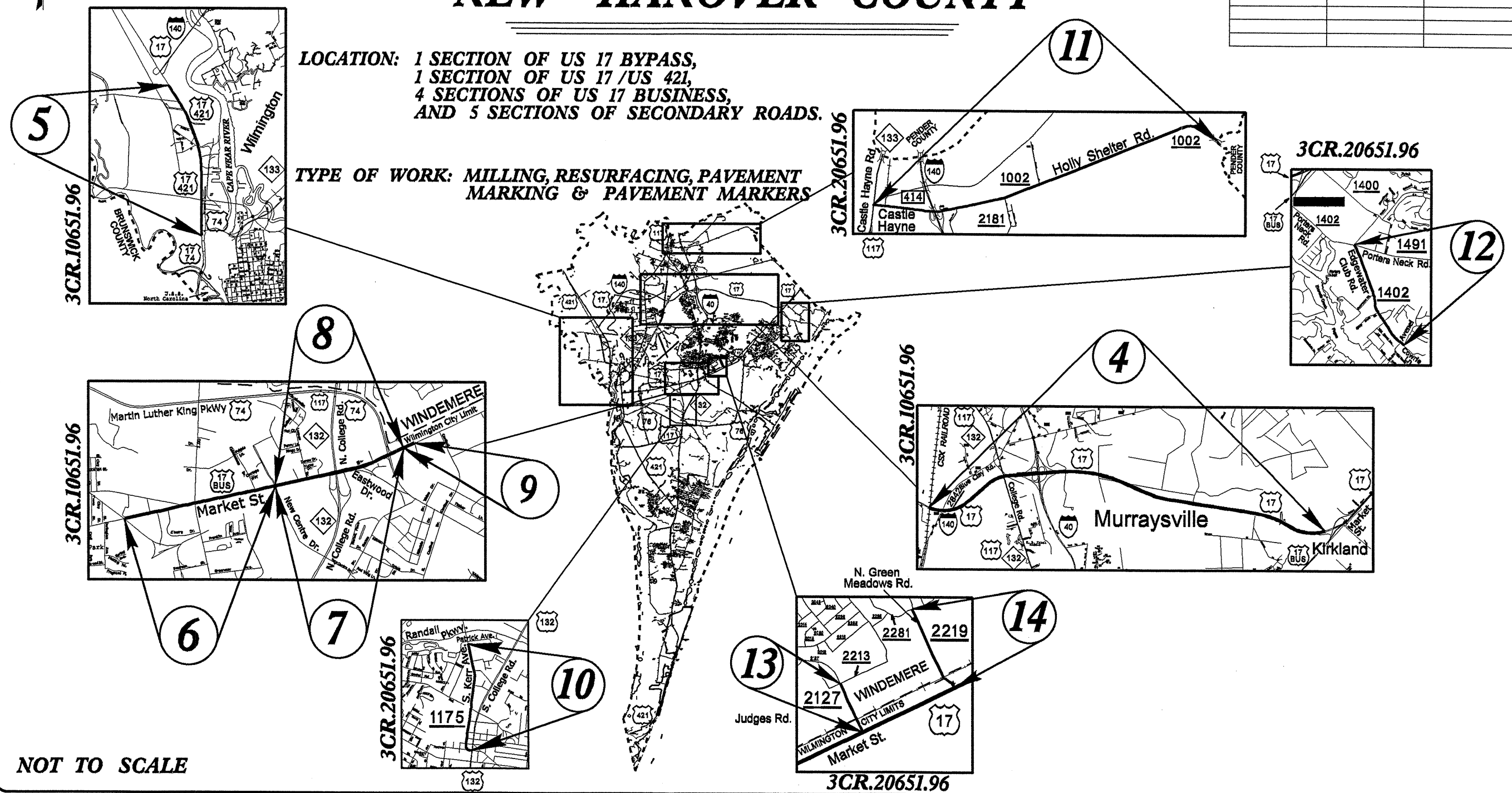
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	3CR.10651.96, ETC	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEW HANOVER COUNTY

LOCATION: 1 SECTION OF US 17 BYPASS,
1 SECTION OF US 17 /US 421,
4 SECTIONS OF US 17 BUSINESS,
AND 5 SECTIONS OF SECONDARY ROADS.

TYPE OF WORK: MILLING, RESURFACING, PAVEMENT
MARKING & PAVEMENT MARKERS



NOT TO SCALE

CONTRACT: WBS NO.(S): 3CR.10651.96, 3CR.20651.96

PROJECT LENGTH

PRIMARY	SECONDARY
MAP NO. 4 = 6.25 MI.	MAP NO. 10 = 1.29 MI.
MAP NO. 5 = 2.62 MI.	MAP NO. 11 = 5.12 MI.
MAP NO. 6 = 1.20 MI.	MAP NO. 12 = 1.24 MI.
MAP NO. 7 = 1.04 MI.	MAP NO. 13 = 0.30 MI.
MAP NO. 8 = 1.03 MI.	MAP NO. 14 = 0.54 MI.
MAP NO. 9 = 0.12 MI.	
TOTAL = 12.26 MI.	TOTAL = 8.49 MI.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
JANUARY 18, 2011

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN
TECHNICIAN

SIGNATURE: _____ DNL

SIGNATURE: _____ MPK

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

15-NOV-2010 10:09 P:\RDY\DDC\RETREAT\2011\2011_Resurfacing\BRUNSWICK_NEW_HANOVER_PENDER\ROADWAY\Proj\3CR.10101.96_3CR.10651.96_3CR.10711.96_2011.Rdy_tsh_NH.dgn \$\$\$\$\$\$USERNAME\$\$\$\$\$

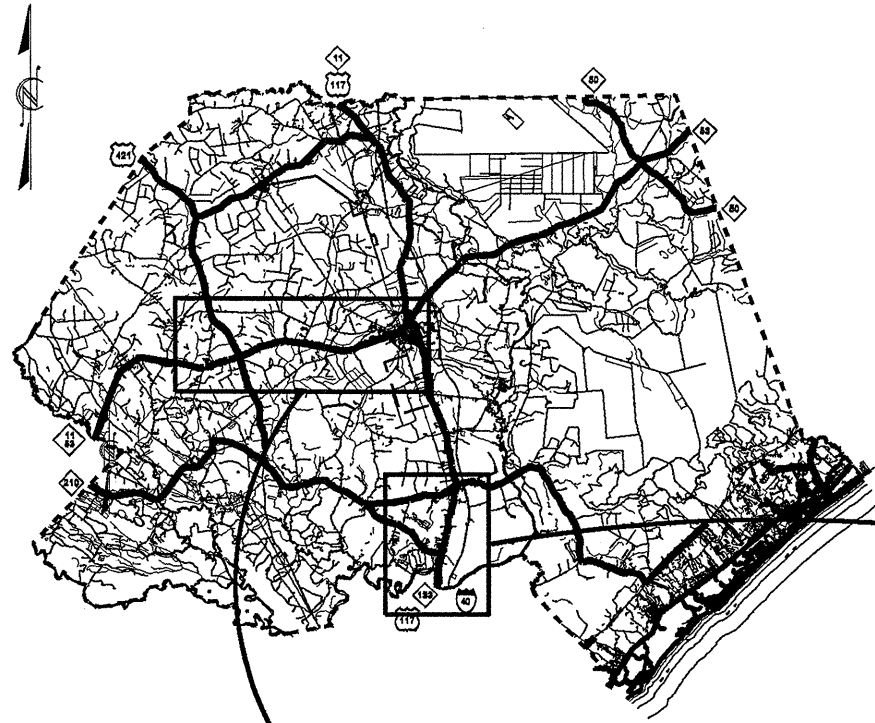
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	3CR.10101.96, ETC	1B	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PENDER COUNTY

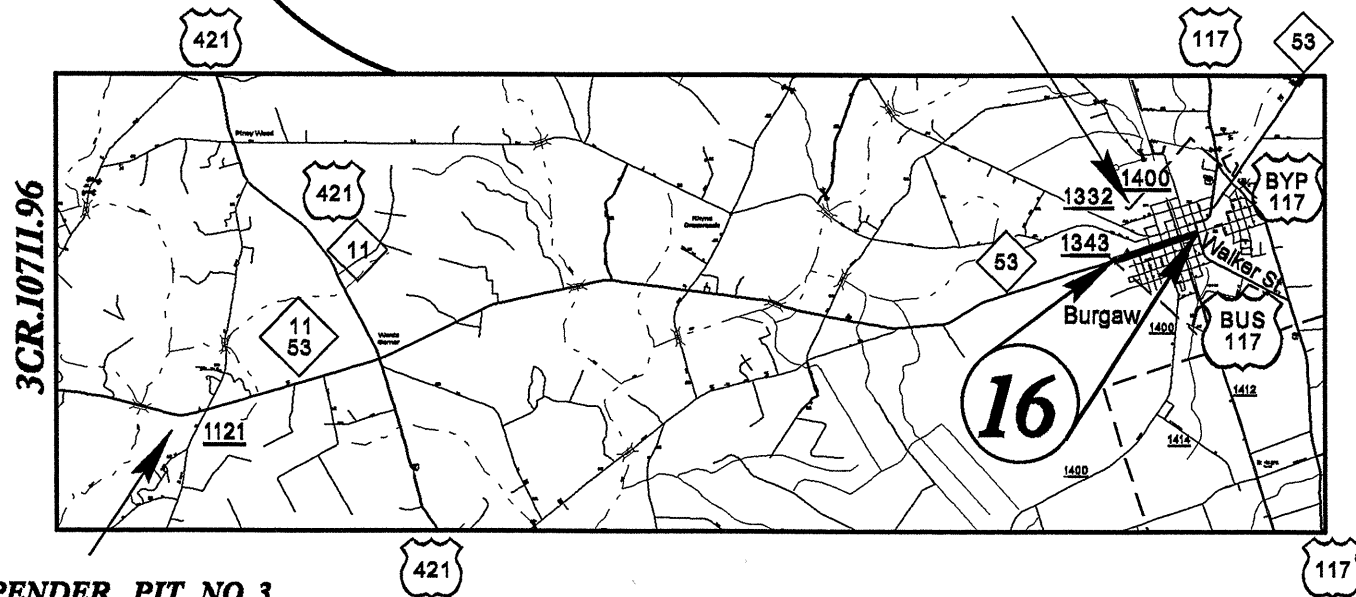
LOCATION: 1 SECTION OF US 117,
1 SECTION OF NC 53.

TYPE OF WORK: MILLING, RESURFACING, PVMT MARKING
& PAVEMENT MARKERS

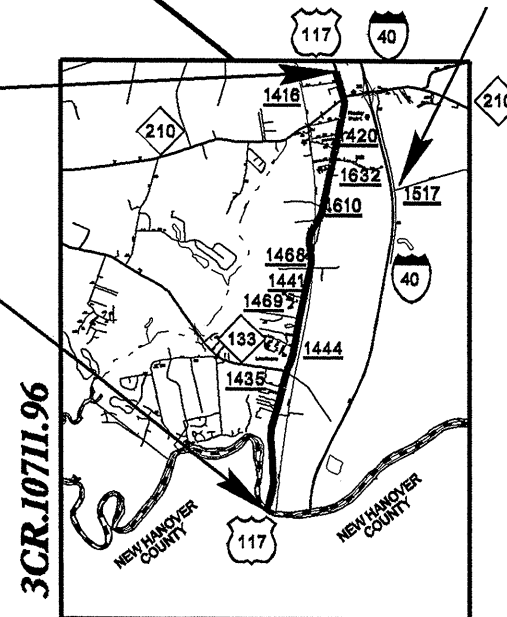


PENDER PIT NO. 2
(STATE FURNISHED
BORROW SOURCE)

PENDER PIT NO. 1
(STATE FURNISHED
BORROW SOURCE)



15



PENDER PIT NO. 3
(STATE FURNISHED
BORROW SOURCE)

NOT TO SCALE

STATE FURNISHED BORROW SOURCES:
PENDER PIT NO. 1 - SR 1571 NEAR I-40
PENDER PIT NO. 2 - SR 1400 AT DRANE ST., BURGAW
PENDER PIT NO. 3 - NC 53 / NC 11 NEAR SR 1121

WBS NO.(S): 3CR.10711.96

CONTRACT:

PROJECT LENGTH

MAP NO. 15 = 5.66 MI.

MAP NO. 16 = 0.93 MI.

TOTAL = 6.59 MI.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
JANUARY 18, 2011

HYDRAULICS ENGINEER

SIGNATURE: _____ P.R.

ROADWAY DESIGN
TECHNICIAN

DNL

SIGNATURE: _____

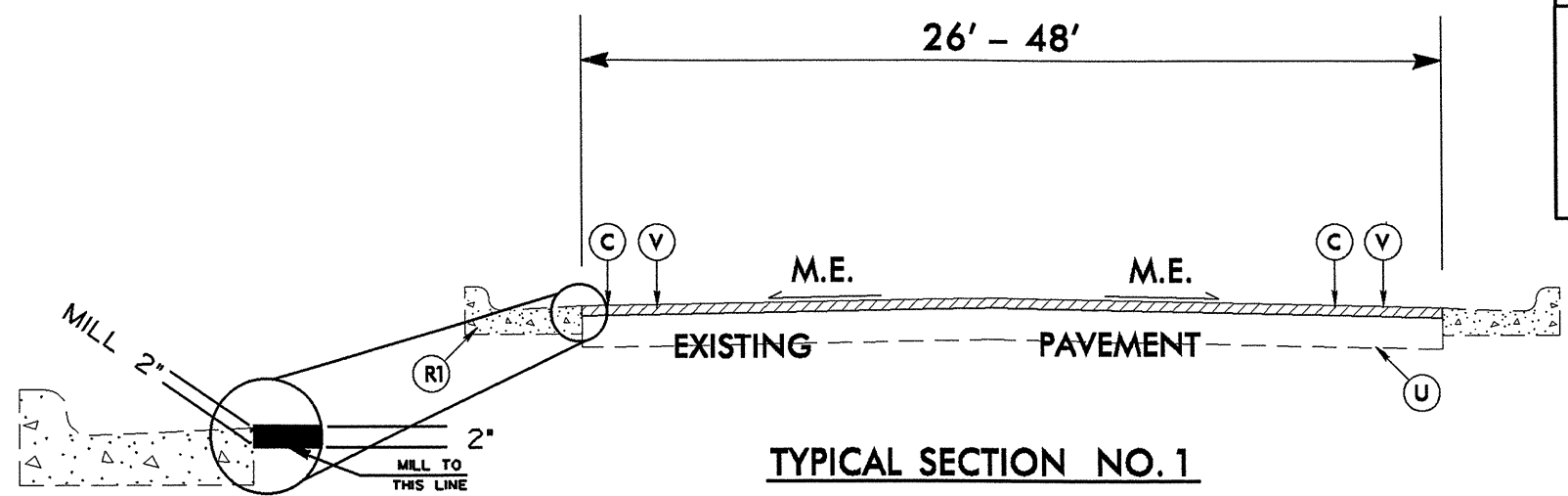
MPK

SIGNATURE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

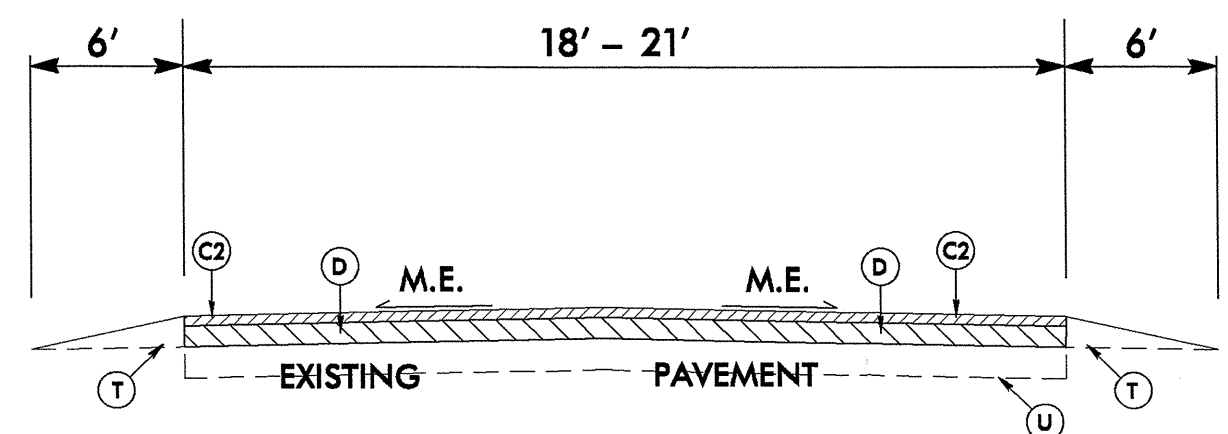
PROJECT REFERENCE NO. 3CR.10101.96, ETC	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PAVEMENT SCHEDULE	
C	PROP. APPROX. 2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
C1	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1 1/2" DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
D	PROP. APPROX. 2 1/2" DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 286 LBS. PER SQ. YD.
R	EXISTING CONC. ISLAND
R1	EXISTING CURB & GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 2" DEPTH.
V1	MILLING BITUMINOUS PAVEMENT. 1 1/2" DEPTH.
V2	MILLING BITUMINOUS PAVEMENT. 3" DEPTH.



MAP NO. 1
NC 904
MP 0.00-0.37
MP 0.37-0.74 (NO WORK)
MP 0.74-1.11

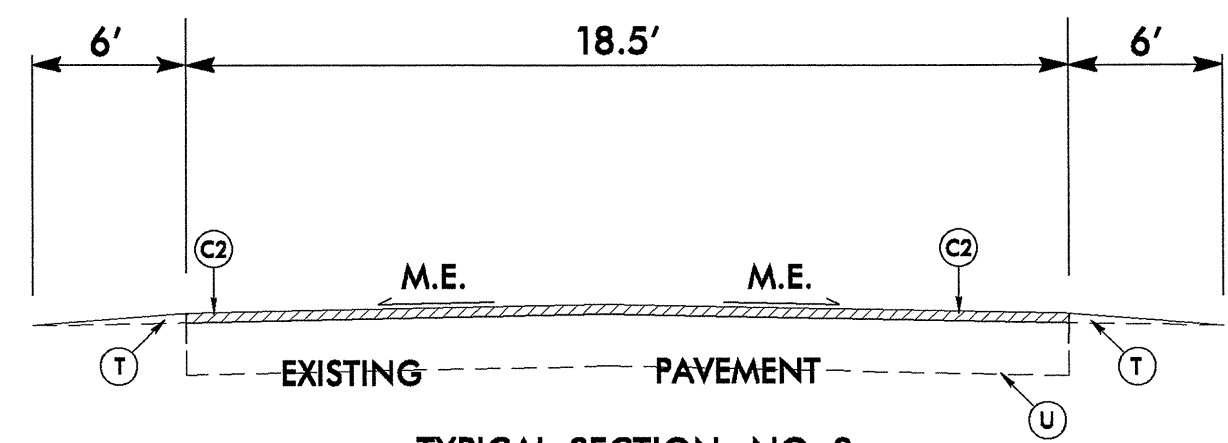
MAP NO. 16
NC 53
MP 0.53-0.80
MP 0.91-0.93



TYPICAL SECTION NO. 2

MAP NO. 2
SR 1143

MAP NO. 3
SR 1331
MP 0.00-1.11



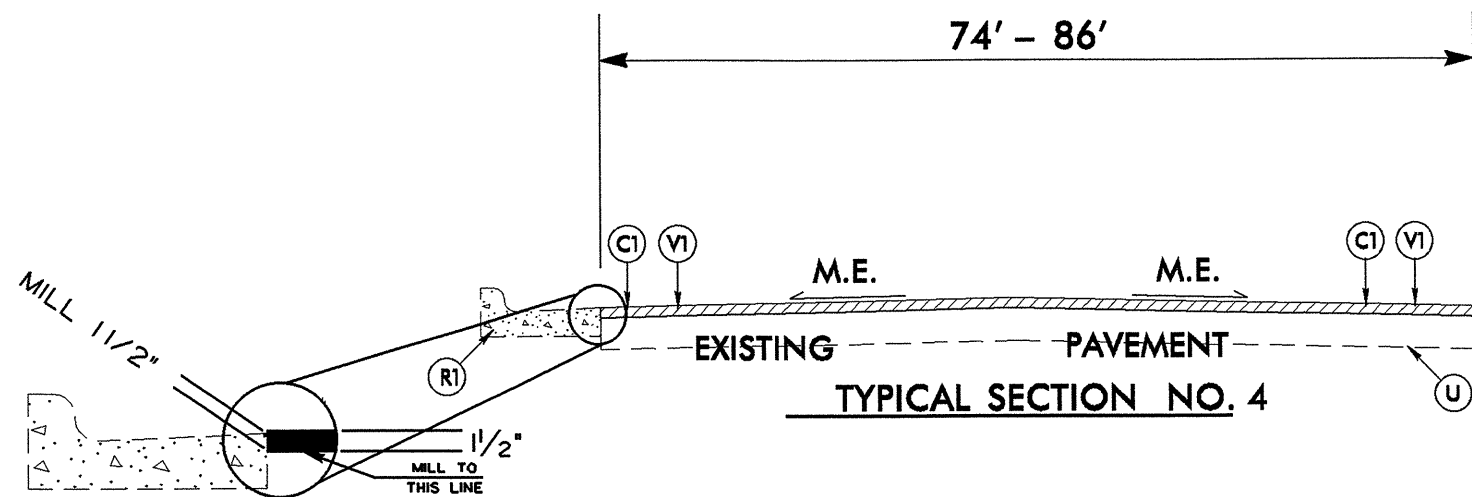
TYPICAL SECTION NO. 3

MAP NO. 3
SR 1331
MP 1.11-2.38

REVISIONS

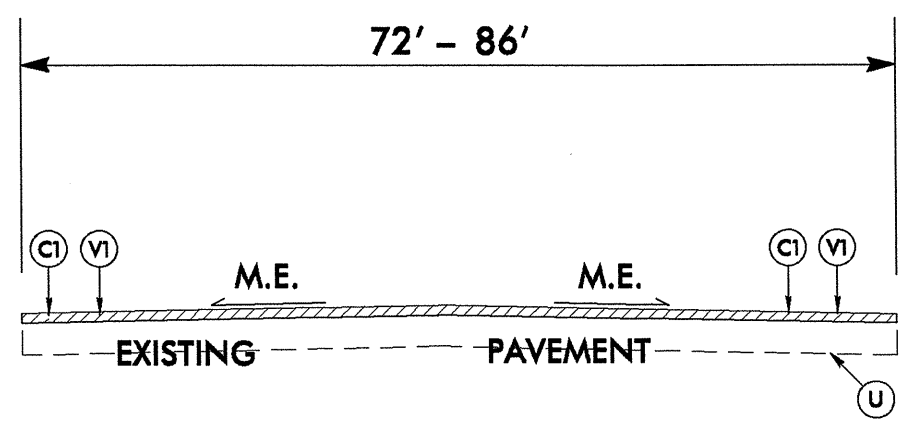
8/17/99
SYSTEMS DESIGN ENGINEERING

PROJECT REFERENCE NO. SCL10101.96, ETC	SHEET NO. 3
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

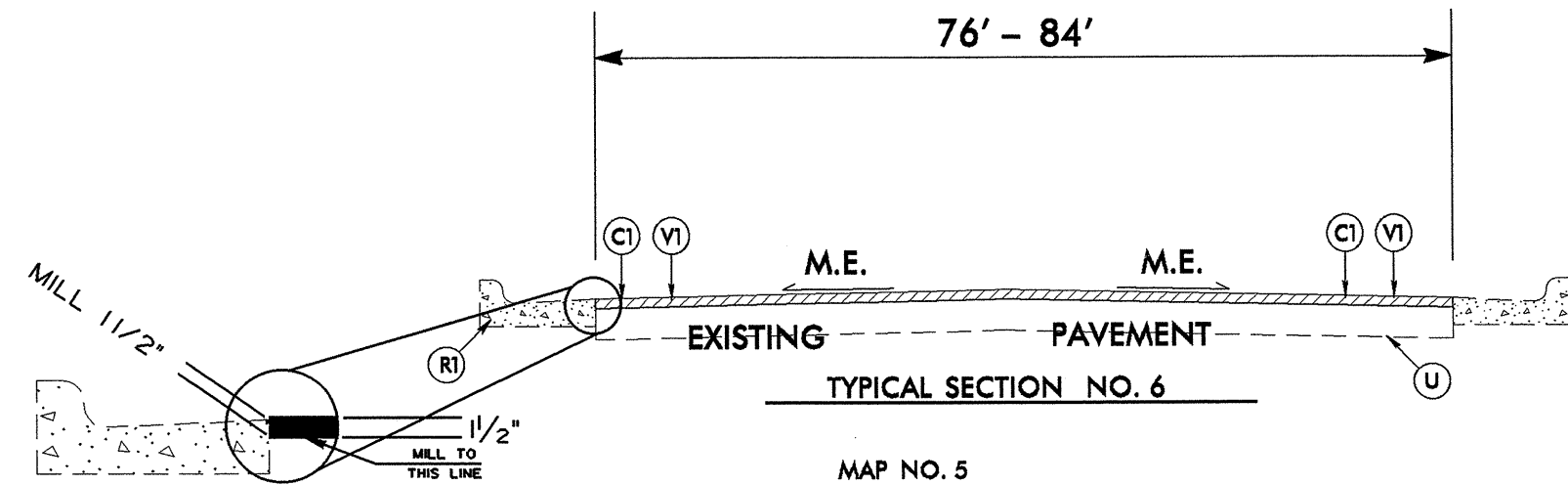


MAP NO. 5
 US 17 /US 421
 MP 0.00-0.09
 MP 0.12-0.16
 MP 0.41-0.43
 MP 1.07-1.96
 MP 2.42-2.52

C1	1 1/2" S9.5C
R1	EXIST. CURB & GUTTER
U	EXIST. PAVEMENT
V1	MILL 1 1/2"



MAP NO. 5
 US 17 /US 421
 MP 0.09-0.12
 MP 0.16-0.41
 MP 0.87-1.07
 MP 1.96-2.42
 MP 2.52-2.62

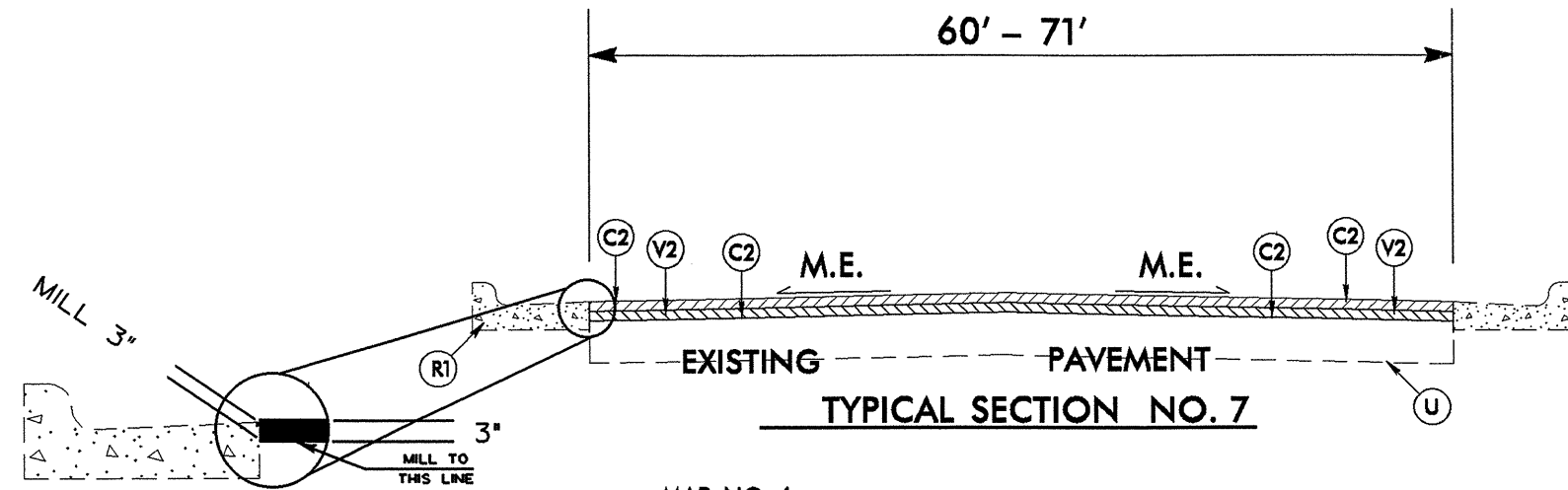


MAP NO. 5
 US 17 /US 421
 MP 0.43-0.58
 (MP 0.58-0.62 NO WORK)
 MP 0.62-0.87

8/17/99

REVISIONS

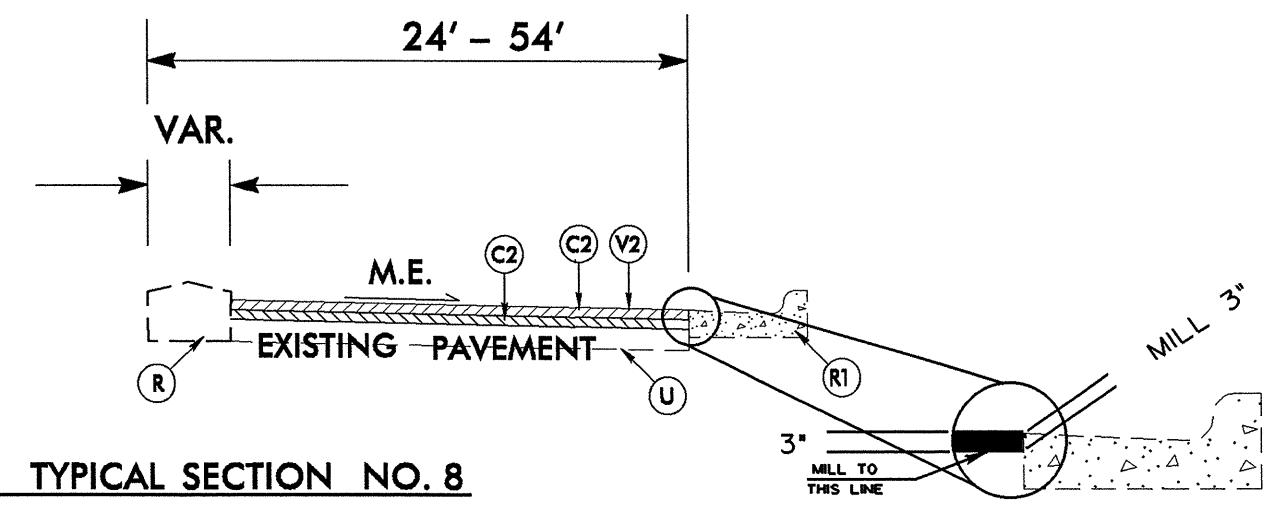
SYSTEMS DESIGN
 USER NAME



MAP NO. 6
US 17 BUSINESS
MP 0.00-0.39
(MP 0.39-0.80 NO WORK)
MP 0.80-1.20

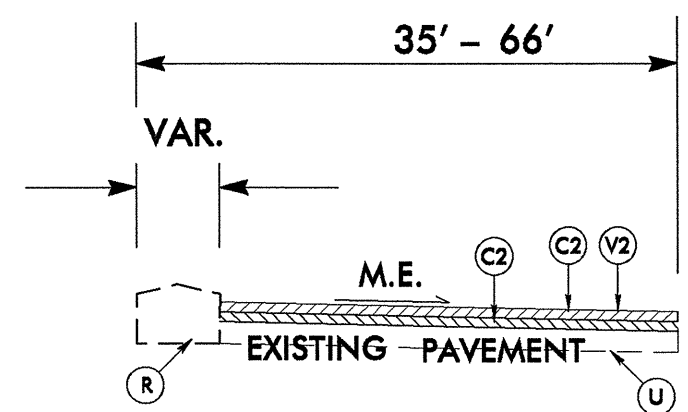
MAP NO. 9
US 17 BUSINESS
MP 2.24-2.37

C2	1 1/2" S9.5B
R	EXIST. CONC. ISLAND
R1	EXIST. CURB & GUTTER
U	EXIST. PAVEMENT
V2	MILL 3"



MAP NO. 7
US 17 BUSINESS NBL
MP 1.20-1.62
MP 1.75-2.24

MAP NO. 8
US 17 BUSINESS SBL
MP 0.12-0.18
MP 0.20-0.56
MP 0.68-1.15



MAP NO. 7
US 17 BUSINESS NBL
MP 1.62-1.75

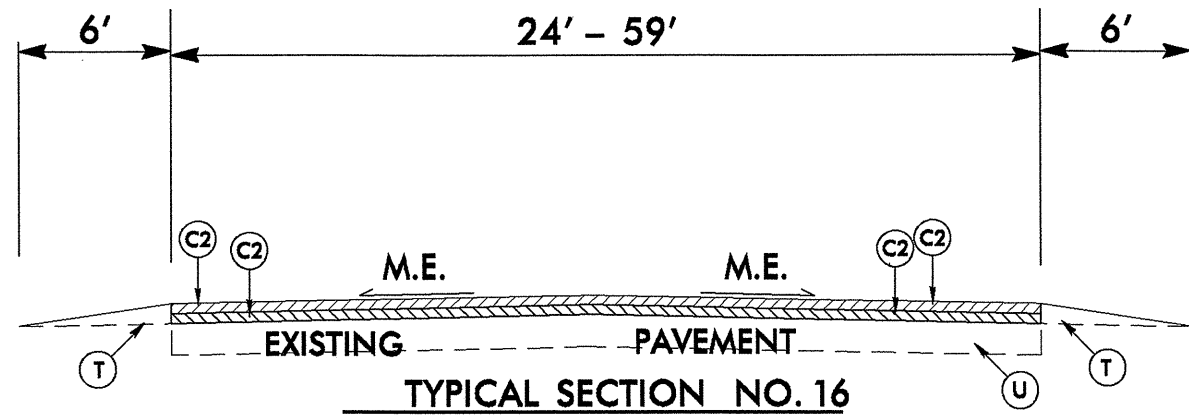
MAP NO. 8
US 17 BUSINESS SBL
MP 0.18-0.20
MP 0.64-0.68

REVISIONS

8/17/99

SYSTEMS
SERIALS

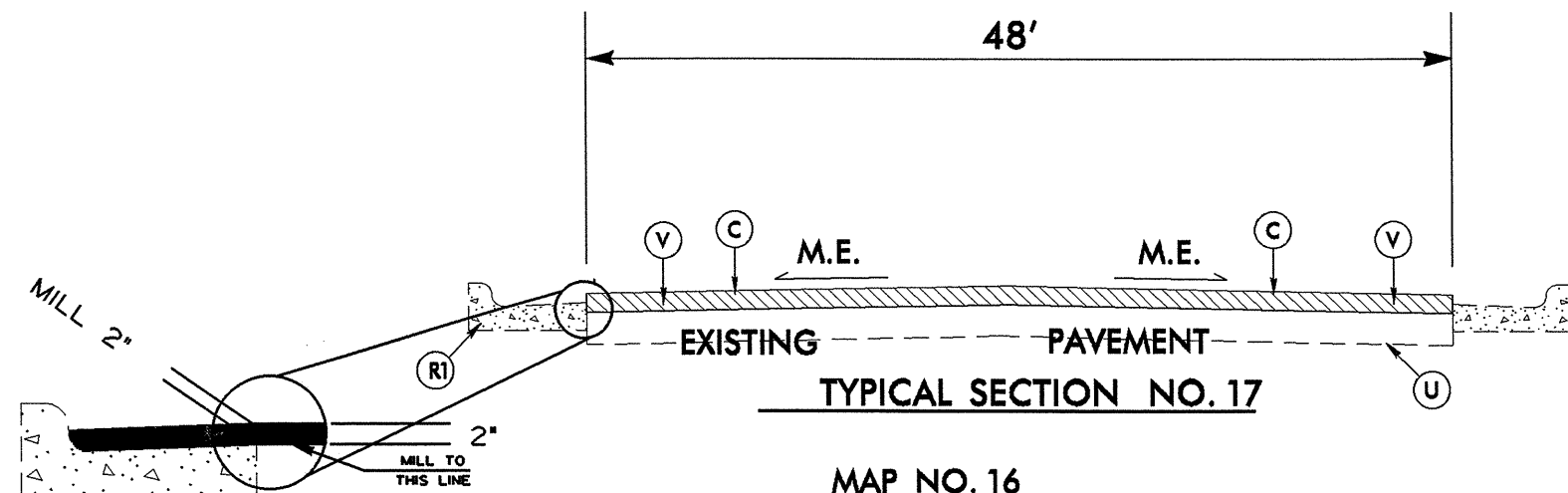
PROJECT REFERENCE NO. 3CL10101.96, ETC	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MAP NO. 14
SR 2219

MAP NO. 15
US 117
MP 0.00-3.10
MP 3.30-5.12

C	2" S9.5B
C2	1½" S9.5B
R1	EXIST. CURB & GUTTER
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	MILL 2"



MAP NO. 16
NC 53
MP 0.80-0.91

2006 ROADWAY ENGLISH STANDARD DRAWINGS

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
 665.01 Milled Rumble Strips - Asphalt Pavements

DIVISION 8 - INCIDENTALS
 840.03 Frame, Grates and Hood - for Use on Standard Catch Basin
 840.54 Manhole Frame and Cover
 846.01 Concrete Curb, Gutter and Curb & Gutter
 848.01 Concrete Sidewalk
 848.04 Street Turnout
 862.01 Guardrail Placement
 862.02 Guardrail Installation
 862.03 Structure Anchor Units

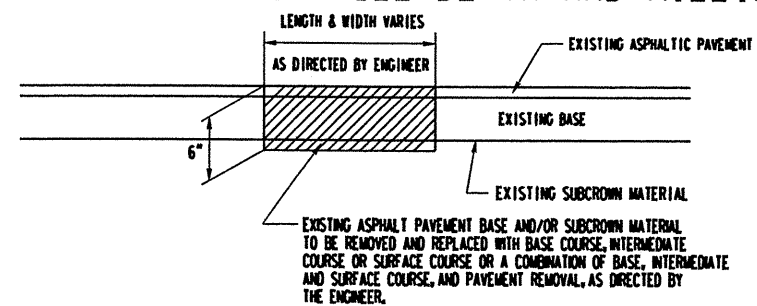
8/17/99

REVISIONS

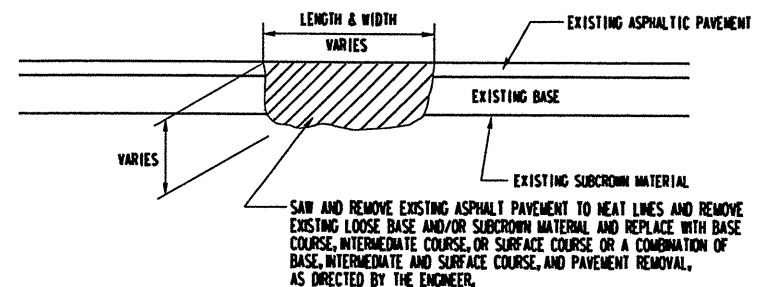
SYSTEMS DESIGN

PROJECT REFERENCE NO. 3CR.10101.96, ETC	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

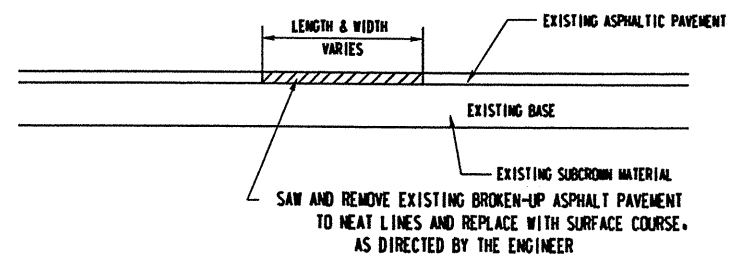
DETAILS OF REPAIRING EXISTING PAVEMENT PRIOR TO RESURFACING FOR FULL DEPTH AND MILLING



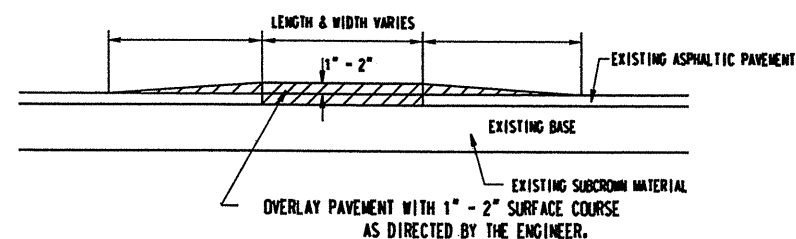
DETAIL NO. 1



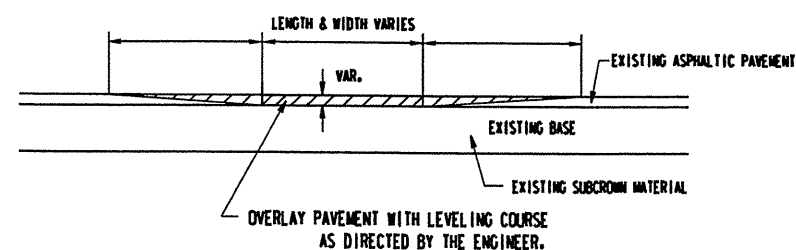
DETAIL NO. 2



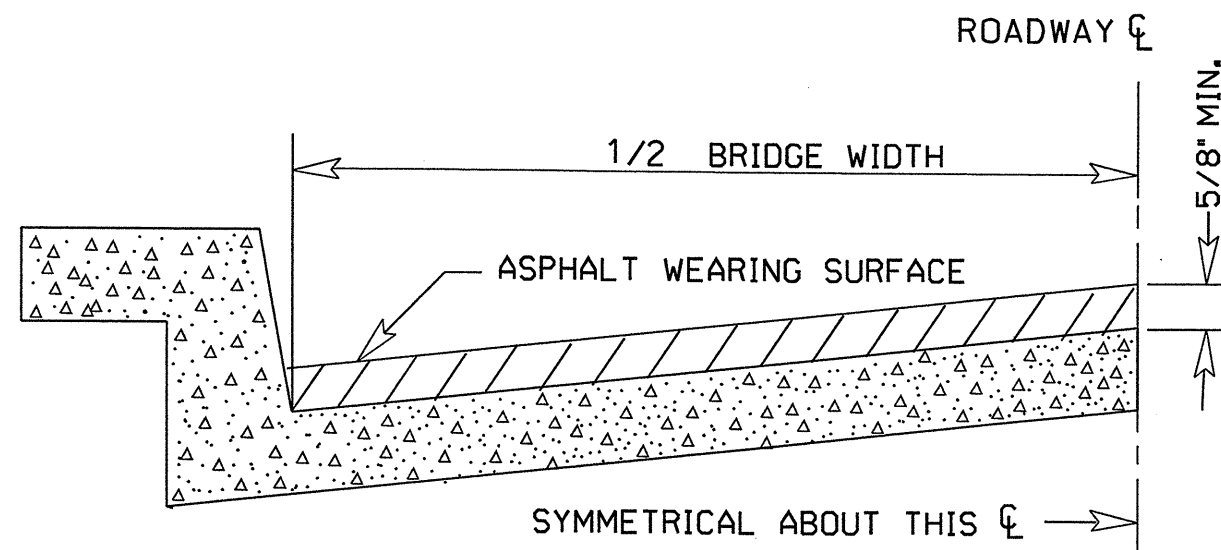
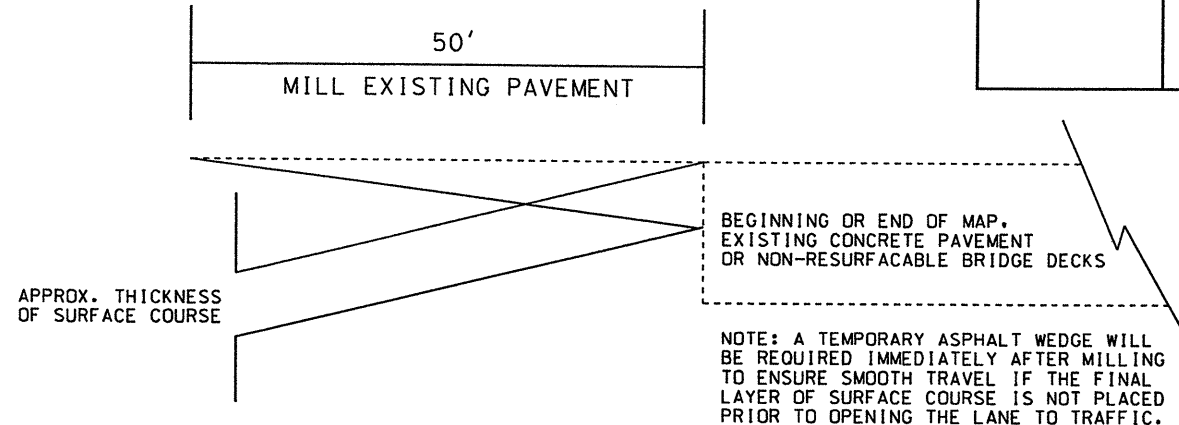
DETAIL NO. 3



DETAIL NO. 4



DETAIL NO. 5



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

SYTIME
3/21/2011 10:58:58 AM
3CR.10101.96_3CR.10651.96_3CR.10711.96_2011.dgn

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.96, etc.	11	

SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	BORROW EXC. CY	BORROW EXC. (State Furnished) CY	GENERIC PAVING ITEM - REMOVE & REPLACE 5' SIDEWALK SY	2'-6" CURB & GUTTER, REMOVE AND REPLACE LF	INC. STONE BASE TONS	SHOULDER RECONST. SMI	2" MILLING SY	1 1/2" MILLING SY	3" MILLING SY	INC. MILLING SY	INT. COURSE, I19.08 TONS	SURFACE COURSE, S9.58 TONS	SURFACE COURSE, S9.5C TONS	LEVELING COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS	PATCHING EXISTING PAVEMENT (MILL), S9.5B TON	MILLED RUMBLE STRIPS LF	PATCHING EXISTING PAVEMENT (FULL DEPTH) TON	FRAME WITH GRATE & HOOD, STD 840.03, TYPE E EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE G EA	FRAME WITH COVER, STD 840.54 EA	RETROFIT EXISTING WC RAMPS EA	WHEEL CHAIR RAMPS EA	GENERIC PAVING ITEM INC. CONC. SY							
3CR.10651.96	NewHanover	9	US 17 BUSINESS UNDIVIDED	END DIVIDED HWY TO 0.34 MI. NORTH OF US 74, TAPER 71'-64' (MP 2.24-2.37)	7	NO	0.12	67.5								4,752				921				55																	
TOTAL FOR MAP NO. 9							0.12									4,752				921				55																	
TOTAL FOR PROJ NO. 3CR.10651.96							12.26		45		17	190		0.13			117,815	77,228	10,075			15,004	11,397	630		470	724	350	2,850	50				10	2	45					
3CR.10711.96	Pender	15	US 117	NEW HANOVER COUNTY LINE TO 0.30 MI. NORTH OF NC 210, FULL WIDTH (MP 0.00-0.17, 1.24-1.57, 2.09-3.10)	16	NO	1.51	24		960			550	3.02				780		4,150				249																	
TOTAL FOR MAP NO. 15							5.66			3,601			550	11.32			80		780			17,926				1,074															
3CR.10711.96	Pender	16	NC 53	0.53 MI. WEST OF SR 1400 TO 0.03 MI. EAST OF US 117 BUSINESS, FULL WIDTH (MP 0.00-0.49)	12	NO	0.49	22				80				6,324		250		669				40		160		225				3	6	1	15						
TOTAL FOR MAP NO. 16							0.93					80			7,486		3,098		250			400				24			160		225			3	6	1	15				
TOTAL FOR PROJ NO. 3CR.10711.96							6.59			3,601		80	550	11.32	10,584	6,981	1,030		20,027				2,101				126			160		225		3	6	1	15				
3CR.20101.96	Brunswick	2	SR 1143	DEAD END TO NC 179, FULL WIDTH	2	NO	1.31	20.5	833				130	2.62					2,000	1,160				164																	
TOTAL FOR MAP NO. 2							1.31		833				130	2.62								2,000	1,160				164														
3CR.20101.96	Brunswick	3	SR 1331	RESURFACE FROM NC 130 TO SR 1332 (MP 0.00-1.11), FULL WIDTH	2	NO	1.11	18.5	50				50	2.22					1,790	1,040				147																	
TOTAL FOR MAP NO. 3							1.27		50				50	2.54								1,790	1,317				79														
TOTAL FOR PROJ NO. 3CR.20101.96							3.69		933				230	7.38									3,790	3,517				390													
3CR.20651.96	NewHanover	10	SR 1175	NC 132 TO 0.14 MI. SOUTH OF RANDALL PKWY., FULL WIDTH (MP 0.00-0.11, 0.16-0.24)	13	NO	0.19	44			30	20	150			4,905		1,279		582				35		500		75				30	2								
TOTAL FOR MAP NO. 10							1.29				30	20	150				26,236		32,361		1,279		3,242				153		500		75			30	2						
3CR.20651.96	NewHanover	11	SR 1002	US 117 TO PENDER COUNTY LINE, MILL PATCHING	MP	NO	5.12	24																																	
TOTAL FOR MAP NO. 11							5.12																																		
3CR.20651.96	NewHanover	12	SR 1402	SR 1491 TO END STATE MAINTENANCE, FULL WIDTH	14	NO	1.24	23	789				50	2.48						1,410				85		750		75													
TOTAL FOR MAP NO. 12							1.24		789				50	2.48										1,410				85		750		75									
3CR.20651.96	NewHanover	13	SR 2127	US 17 TO SR 2213, VARIES 32'-24'	15	NO	0.3	28															470		31		350		50												
TOTAL FOR MAP NO. 13							0.3																			470		31		350		50									
3CR.20651.96	NewHanover	14	SR 2219	US 17 TO MP 0.54, VARIES 24'-36'	16	NO	0.54	30	50					0.95				260		1,110				67		300		30													
TOTAL FOR MAP NO. 14							0.54		50					0.95				260					1,110				67		300		30										
TOTAL FOR PROJ NO. 3CR.20651.96							8.49		839		30	20	200	3.43			32,361	1,539						5,762			470		378		3,055		230			30	2				
GRAND TOTAL							31.11		1,817	3,601	47	430	980	22.26	24,693	157,157	77,228	13,644	3,790	46,217	11,397	630	470	2,981	724	3,565	2,850	905	1	1	3	58	5	80							

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	ADJ. OF CATCH BASIN	ADJ. OF MANHOLES	ADJ. OF METER OR VALVE BOX	ADJ. OF MON	STEEL BM GR	ADD GR POSTS	GR ANCHOR UNITS, TYPE III	REMOVE EXISTING GR	PORTABLE LIGHTING	TEMP. SILT FENCE	STONE FOR EC CLASS B	SEDIMENT CONTROL STONE	TEMP. MULCHING	MATTING (EROSION CONTROL)	1/4" HARDWARE CLOTH	WATTLE	SEED & MULCHING	SEED FOR REPAIR SEEDING	FERTILIZER FOR REPAIR SEEDING	SIGNAL CABLE	VEHICLE SIGNAL HEAD (12", 3 SECTION)	VEHICLE SIGNAL HEAD (12", 4 SECTION)	UNPAVED TRENCHING (1)(2")	JUNCTION BOX (STANDARD SIZE) EA	2" RISER WITH WEATHERHEAD EA	INDUCTIVE LOOP	LEAD-IN CABLE (14-2)				
NO		NO			NO	EA	EA	EA	EA	LF	EA	EA	LF	LS	LF	TON	TON	ACR	SY	LF	LF	AC	LB	TON	LF	EA	EA	EA	EA	EA	EA	EA				
3CR.10651.96	NewHanover	9	US 17 BUSINESS UNDIVIDED	END DIVIDED HYW TO 0.34 MI. NORTH OF US 74, TAPER 71'-64' (MP 2.24-2.37)	7									0.167																						
TOTAL FOR MAP NO. 9														0.167											0	0	0	0	0	0	0	0				
TOTAL FOR PROJ NO. 3CR.10651.96						1	42	43	2					0.831	589	148	279	5.89	50	164	100	0.09	295	1.48	1250	6	6	1100	28	12	11,353	15,120				
3CR.10711.96	Pender	15	US 117	NEW HANOVER COUNTY LINE TO 0.30 MI. NORTH OF NC 210, FULL WIDTH (MP 0.00-0.17, 1.24-1.57, 2.09-3.10)	16										566	142	142	5.66	40	283	90	2.27	283	1.42												
				FULL WIDTH (MP 0.17-0.38, 0.70-0.78)	16					2,772.50	5	2	2810									0.44														
				FULL WIDTH (MP 0.38-0.41, 0.43-0.59, 3.66-4.40), TAPER 27'-25' (MP 1.21-1.24)	16					1,762.50		2	1800									1.44														
				FULL WIDTH (MP 0.41-0.43, 4.96-5.12)	16																	0.27														
				FULL WIDTH (MP 0.59-0.69, 0.80-1.21, 1.88-2.09, 3.30-3.66), TAPER 28'-30' (MP 0.69-0.70, 0.78-0.80)	16					2,152.50		2	2190										1.67													
				TAPER 25'-59' (MP 1.57-1.66), FULL WIDTH (MP 1.71-1.72), TAPER 59'-28' (MP 1.72-1.88)	16																		0.39									700	100			
				FULL WIDTH (MP 1.66-1.71)	16																	0.08														
				TAPER 25'-43' (MP 3.10-3.15) TAPER 43'-28' (MP 3.22-3.30)	14																	0.20														
				FULL WIDTH (MP 3.15-3.22)	14																	0.11														
				TAPER 26'-38' (MP 4.40-4.47, 4.89-4.96)	16																	0.21														
				FULL WIDTH (MP 4.47-4.89)	16																	0.63														
				TAPER 25'-40' (MP 5.12-5.19)	14																	0.11														
				FULL WIDTH (MP 5.19-5.25)	14																	0.09														
				TAPER 50'-67' (MP 5.25-5.30)	14																	0.08														
				FULL WIDTH (MP 5.30-5.37)	14																	0.11														
				FULL WIDTH (MP 5.37-5.53, 5.61-5.66)	14																	0.32										1,050	150			
				TAPER 50'-40' (MP 5.53-5.57, 5.57-5.61)	14																	0.12														
TOTAL FOR MAP NO. 15										6,687.50	5	6	6800		566	142	142	5.66	40	283	90	8.50	283	1.42	0	0	0	0	0	0	0	0	1,750	250		
3CR.10711.96	Pender	16	NC 53	0.53 MI. WEST OF SR 1400 TO 0.03 MI. EAST OF US 117 BUSINESS, FULL WIDTH (MP 0.00-0.49)	12	5									93	23	23	0.93	10	47	20		47	0.23												
				TAPER 22'-34' (MP 0.49-0.53)	11																															
				FULL WIDTH (MP 0.53-0.80, 0.91-0.93)	1		7	4																							4		2,466	350		
				FULL WIDTH (MP 0.80-0.91)	17		6	4																												
TOTAL FOR MAP NO. 16						5	13	8			0	0	0		93	23	23	0.93	10	47	20		47	0.23	0	0	0	0	0	4	0	2,466	350			
TOTAL FOR PROJ NO. 3CR.10711.96						5	13	8		6,687.50	5	6	6800		659	165	165	6.59	50	330	110		8.50	330	1.65	0	0	0	0	4	0	4,216	600			
3CR.20101.96	Brunswick	2	SR 1143	DEAD END TO NC 179, FULL WIDTH	2										151	33	99	1.31	10			1.97	66	0.33												
TOTAL FOR MAP NO. 2											0	0	0		151	33	99	1.31	10				1.97	66	0.33	0	0	0	0	0	0	0	0	0	0	
3CR.20101.96	Brunswick	3	SR 1331	RESURFACE FROM NC 130 TO SR 1332 (MP 0.00-1.11), FULL WIDTH	2										121	30	30	1.21	10	61	20	1.70	61	0.30												
				RESURFACE FROM SR 1332 TO SR 1335 (MP 1.11-2.38), FULL WIDTH	3										121	30	30	1.21	10	61	20	1.70	61	0.30												
TOTAL FOR MAP NO. 3											0	0	0		242	60	60	2.42	20	122	40	3.40	122	0.60	0	0	0	0	0	0	0	0	0	0	0	
TOTAL FOR PROJ NO. 3CR.20101.96											0	0	0		393	93	159	3.73	30	122	40	5.37	188	0.93	0	0	0	0	0	0	0	0	0	0	0	
3CR.20651.96	NewHanover	10	SR 1175	NC 132 TO 0.14 MI. SOUTH OF RANDALL PKWY., FULL WIDTH (MP 0.00-0.11, 0.16-0.24)	13		26	25	2						0.167	129	32	32	1.29	10	65	20		65	0.32					6		608	15			
				FULL WIDTH (MP 0.11-0.16)	13																															
				FULL WIDTH (MP 0.24-0.25)	11																															
				FULL WIDTH (MP 0.25-1.29)	12																															
TOTAL FOR MAP NO. 10							26	25	2			0	0	0	0.167	129	32	32	1.29	10	65	20		65	0.32	0	0	0	0	6	0	608	15			
3CR.20651.96	NewHanover	11	SR 1002	US 117 TO PENDER COUNTY LINE, MILL PATCHING	MP																		256	1.28												
TOTAL FOR MAP NO. 11												0	0	0										256	1.28	0	0	0	0	0	0	0	0	0	0	0
3CR.20651.96	NewHanover	12	SR 1402	SR 1491 TO END STATE MAINTENANCE, FULL WIDTH	14										124	31	31	1.24	10	62	20	1.86	62	0.31												
TOTAL FOR MAP NO. 12												0	0	0	124	31	31	1.24	10	62	20	1.86	62	0.31	0	0	0	0	0	0	0	0	0	0	0	0
3CR.20651.96	NewHanover	13	SR 2127	US 17 TO SR 2213, VARIES 32'-24'	15		1								30	8	8	0.30	10	15	10		15	0.08												
TOTAL FOR MAP NO. 13							1					0	0	0	30	8	8	0.30	10	15	10		15	0.08	0	0	0	0	0	0	0	0	0	0	0	
3CR.20651.96	NewHanover	14	SR 2219	US 17 TO MP 0.54, VARIES 24'-36'	16		5		5						54	14	14	0.54	10	27	10	0.70	27	0.14												
TOTAL FOR MAP NO. 14							5		5			0	0	0	54	14	14	0.54	10	27	10	0.70	27	0.14	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL FOR PROJ NO. 3CR.20651.96							32	25	7			0	0	0	0.167	337	85	85	8.49	40	169	60	2.56	425	2.13	0	0	0	0	0	6	0	608	15		
GRAND TOTAL						6	88	82	9	6,687.50	5	6	6800	1	2,200	519	716	25.81	180	841	310	16.52	1,294	6.47	1250	6	6									

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.96, etc.	16	

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	481000000-E		482000000-E		483000000-E	483500000-E	484000000-N				484500000-N				485000000-E	486000000-E	486500000-E	487000000-E	487500000-N	490000000-N		490500000-N	
							4" WHITE PAINT	4" YELLOW PAINT	8" WHITE PAINT	8" YELLOW PAINT	16" WHITE PAINT	24" WHITE PAINT	PAINT MSG RXR	PAINT MSG ONLY	PAINT STR ARROW	PAINT STR & RT ARROW	PAINT LT ARROW	PAINT RT ARROW	4" LINE REMOVAL	8" LINE REMOVAL	12" LINE REMOVAL	24" LINE REMOVAL	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	CYAN & RED MARKERS	YELLOW & YELLOW MARKERS	SNOW PLOWABLE MARKERS (Y/Y)	SNOW PLOWABLE MARKERS (C/R)		
NO		NO					LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
3CR.10101.96	Brunswick	1	NC 904	0.02 MI. SOUTH OF NC 179 TO SR 1888, FULL WIDTH (MP 0.00-0.04)	0.04	48	211	422																					
				TAPER 48'-32' (MP 0.04-0.07)	0.03	40		396																					
				FULL WIDTH (MP 0.07-0.28, 0.82-1.11)	0.5	32	400				192																		
				TAPER 32'-26' (MP 0.28-0.37, 0.74-0.82)	0.17	29	150	2,244																					
				BRIDGE DECK - NO WORK (MP 0.37-0.74)	0.37	26																							
TOTAL FOR MAP NO. 1					1.11		761	3,062	512		192			2	4	12		500	200		100	5				188	24		
TOTAL FOR PROJ NO. 3CR.10101.96					1.11		761	3,062	512		192			2	4	12		500	200		100	5				188	24		
							3,823		512				18										212						
3CR.10651.96	NewHanover	4	US 17 BYPASS	0.13 MI. WEST OF US 17 BUSINESS OVERPASS TO RR BRIDGE 2.72 MI. WEST OF I-40, INC. MILLING & LEVELING	6.25	38																							
TOTAL FOR MAP NO. 4					6.25																								
3CR.10651.96	NewHanover	5	US 17 / NC 421	0.09 MI. SOUTH OF US 74/NC 133 TO 0.21 MI. SOUTH OF I-140 OVERPASS, TAPER 81'-86' (MP 0.00-0.03, 1.56-1.60)	0.07	82	1,109	1,478																					
				FULL WIDTH (MP 0.03-0.09, 1.60-1.76)	0.22	86	6,969	1,162			50																		
				TAPER 86'-80' (MP 0.09-0.12), FULL WIDTH (MP 2.13-2.17, 2.26-2.30)	0.11	84	1,743	1,452																					
				FULL WIDTH (MP 0.12-0.16, 1.47-1.56), TAPER 82'-74' (MP 1.80-1.86)	0.19	80	3,009	2,508																					
				FULLL WIDTH (MP 0.16-0.41)	0.25	80	3,960	3,300																					
				FULL WIDTH (MP 0.41-0.43)	0.02	76	317	264																					
				TAPER 76'-84' (MP 0.43-0.46)	0.03	80	475	396																					
				FULL WIDTH (MP 0.46-0.58, 0.62-0.74)	0.24	84	3,801	3,168																					
				BRIDGE DECK, NO WORK (MP 0.58-0.62)	0.04	84																							
				FULL WIDTH (MP 0.74-0.87)	0.13	76	2,059	1,716																					
				FULL WIDTH (MP 0.87-1.07, 1.96-2.09, 2.17-2.26, 2.34-2.42, 2.52-2.62)	0.6	72	9,504	7,920			100	50	4																
				FULL WIDTH (MP 1.07-1.47, 1.86-1.96, 2.42-2.52)	0.6	74	9,504	7,920																					
				FULL WIDTH (MP 1.76-1.80)	0.04	98	633	528																					
				TAPER 72'-84' (MP 2.09-2.13, 2.30-2.34)	0.08	78	1,267	1,056																					
TOTAL FOR MAP NO. 5					2.62		44,350	32,868			100	100	4	86	91	21	500	200		100	5				718	661			
3CR.10651.96	NewHanover	6	US 17 BUSINESS UNDIVIDED	RR TRACTS TO BEG. DIVIDED HWY, FULL WIDTH (MP 0.00-0.32, 0.83-1.05)	0.54	60	1,426	7,128			100	97	4																
				TAPER 60'-70' (MP 0.32-0.34, 0.36-0.39, 0.80-0.83)	0.08	65	211	1,056																					
				FULL WIDTH (MP 0.34-0.36, 1.05-1.20)	0.17	71	449	2,244																					
				NO WORK (MP 0.39-0.80)	0.41	70																							
TOTAL FOR MAP NO. 6					1.2		2,086	10,428			100	197	4	10	9	33	5	500	200		100	5				209	104		
3CR.10651.96	NewHanover	7	US 17 BUSINESS NBL	BEG. DIVIDED HWY TO END DIVIDED HWY, FULL WIDTH (MP 1.20-1.35, 1.44-1.45, 1.91-1.93, 1.95-1.98, 2.12-2.15)	0.24	36	1,901																						
				TAPER 36'-46' (MP 1.35-1.38, 1.45-1.48), TAPER 42'-36' (MP 2.10-2.12)	0.08	41	634																						
				FULL WIDTH (MP 1.38-1.44, 1.48-1.62)	0.2	46	1,584				40																		
				FULL WIDTH (MP 1.62-1.75)	0.13	38	1,030																						
				TAPER 38'-24' (MP 1.75-1.77) TAPER 24'36' (MP 1.88-1.91, 1.94-1.95)	0.06	31	475					40																	
				FULL WIDTH (MP 1.77-1.88, 1.93-1.94, 1.98-2.03, 2.15-2.24)	0.26	24	2,059																						
				TAPER 25'-54' (2.03-2.09)	0.06	39.5	634				40																		
				FULL WIDTH (MP 2.09-2.10)	0.01	54	106				60																		
TOTAL FOR MAP NO. 7					1.04		8,423				180		4	16	3	9	10	500	200		100	5				178			
3CR.10651.96	NewHanover	8	US 17 BUSINESS SBL	0.22 MI. NORTH OF US 74 TO END DIVIDED HWY, TAPER 27'-48' (MP 0.12-0.16), FULL WIDTH (MP 0.40-0.45)	0.09	38	238					60																	
				FULL WIDTH (MP 0.16-0.18)	0.02	48	158																						
				TAPER 53'-66' (MP 0.18-0.20)	0.02	59.5	317					40																	
				TAPER 42'-36' (MP 0.20-0.22), TAPER 36'-47' (MP 1.05-1.06)	0.03	41																							
				FULL WIDTH (MP 0.22-0.24, 0.74-0.97, 1.00-1.05)	0.3	36	2,376																						
				FULL WIDTH (MP 0.24-0.38, 0.45-0.54, 0.97-0.98)	0.24	24	317																						
				TAPER 24'-38' (MP 0.38-0.40, 0.54-0.56), TAPER 24'-35' (MP 0.98-1.00)	0.06	31	79																						
				FULL WIDTH (MP 0.56-0.63)	0.07	38	554				40																		
				TAPER 29'-33' (MP 0.63-0.64)	0.01	31	13																						
				FULL WIDTH (MP 0.64-0.68)	0.04	35	106																						
				TAPER 42'-51' (MP 0.68-0.70), FULL WIDTH (MP 1.06-1.15)	0.11	47	871																						
				FULL WIDTH (MP 0.70-0.74)	0.04	51	371					40																	
TOTAL FOR MAP NO. 8					1.03		5,400				470		418	13	13	4	750	400	100	100	11					121			

PROJECT NO.	SHEET NO.	TOTAL NO.
3CR.10101.96, etc.	17	

THERMOPLASTIC AND PAINT QUANTITIES

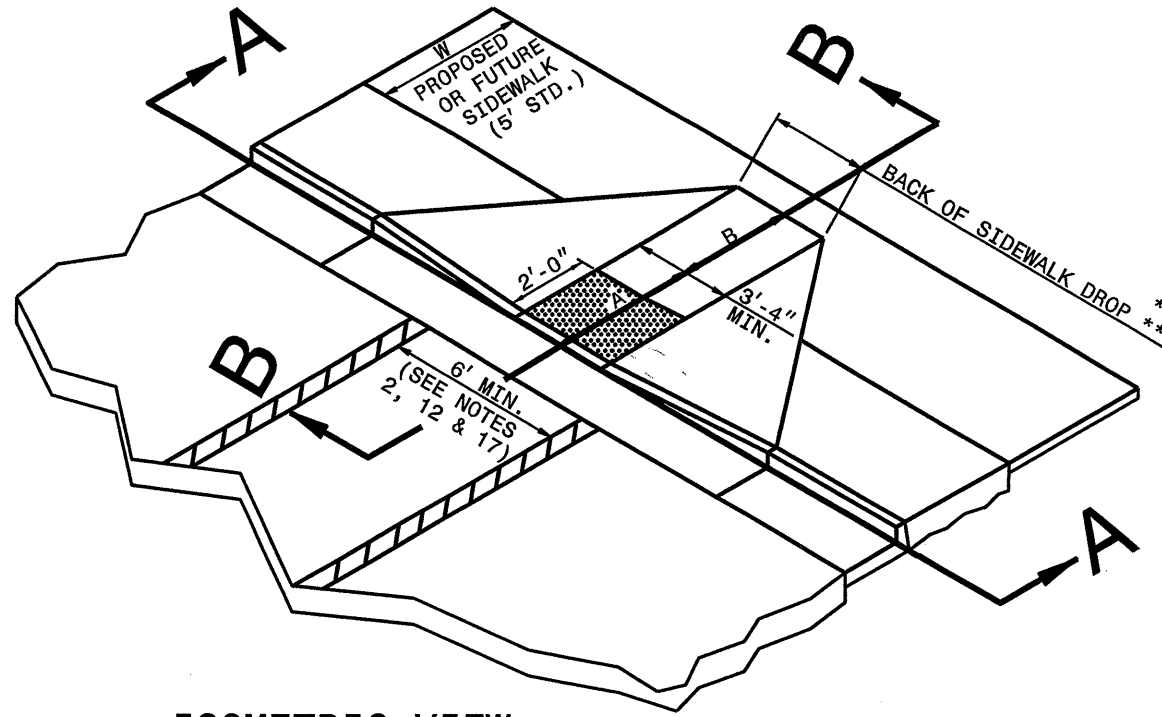
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4810000000-E		4820000000-E		4830000000-E		4835000000-E		4840000000-N				4845000000-N				4900000000-N		4905000000-N			
							4" WHITE PAINT	4" YELLOW PAINT	8" WHITE PAINT	8" YELLOW PAINT	16" WHITE PAINT	24" WHITE PAINT	PAINT MSG RXR	PAINT MSG ONLY	PAINT STR ARROW	PAINT STR & RT ARROW	PAINT LT ARROW	PAINT RT ARROW	4" LINE REMOVAL	8" LINE REMOVAL	12" LINE REMOVAL	24" LINE REMOVAL	REMOVAL OF PAVEMENT MARKING SYMBOLS & CHARACTERS	CYAN & RED MARKERS	YELLOW & YELLOW MARKERS	SNOW PLOWABLE MARKERS (Y/Y)	SNOW PLOWABLE MARKERS (C/R)	
NO		NO					LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA			
3CR.10651.96	NewHanover	9	US 17 BUSINESS UNDIVIDED	END DIVIDED HYW TO 0.34 MI. NORTH OF US 74, TAPER 71'-64' (MP 2.24-2.37)	0.12	67.5	343	1,716																	32	16		
TOTAL FOR MAP NO. 9							0.12	1,716																	32	16		
TOTAL FOR PROJ NO. 3CR.10651.96							12.26	60,602	45,012	470		200	895	8	4	125	12	152	40	2,250	1,000	100	400	26		959	1,104	
								105,614		470			12		329											2,063		
3CR.10711.96	Pender	15	US 117	NEW HANOVER COUNTY LINE TO 0.30 MI. NORTH OF NC 210, FULL WIDTH (MP 0.00-0.17, 1.24-1.57, 2.09-3.10)	1.51	24	15,946	11,959											500	200					100			
		"	"	FULL WIDTH (MP 0.17-0.38, 0.70-0.78)	0.29	30	3,062	2,297																	19			
		"	"	FULL WIDTH (MP 0.38-0.41, 0.43-0.59, 3.66-4.40), TAPER 27'-25' (MP 1.21-1.24)	0.96	26	10,138	7,603																	63			
		"	"	FULL WIDTH (MP 0.41-0.43, 4.96-5.12)	0.18	24	1,901	1,426																	12			
		"	"	FULL WIDTH (MP 0.59-0.69, 0.80-1.21, 1.88-2.09, 3.30-3.66), TAPER 28'-30' (MP 0.69-0.70, 0.78-0.80)	1.11	28	11,722	8,791																	73			
		"	"	TAPER 25'-59' (MP 1.57-1.66), FULL WIDTH (MP 1.71-1.72), TAPER 59'-28' (MP 1.72-1.88)	0.26	43	3,046	5,791			60				3		3								17	4		
		"	"	FULL WIDTH (MP 1.66-1.71)	0.05	59	528	396																				
		"	"	TAPER 25'-43' (MP 3.10-3.15) TAPER 43'-28' (MP 3.22-3.30)	0.13	32.5																			17			
		"	"	FULL WIDTH (MP 3.15-3.22)	0.07	43																			8			
		"	"	TAPER 26'-38' (MP 4.40-4.47, 4.89-4.96)	0.14	32	1,478	2,957																	18			
		"	"	FULL WIDTH (MP 4.47-4.89)	0.42	38	4,785	5,544							6	6	15								111	32		
		"	"	TAPER 25'-40' (MP 5.12-5.19)	0.07	32.5																			9			
		"	"	FULL WIDTH (MP 5.19-5.25)	0.06	40																			8	8		
		"	"	TAPER 50'-67' (MP 5.25-5.30)	0.05	58.5																			5			
		"	"	FULL WIDTH (MP 5.30-5.37)	0.07	67																			55	8		
		"	"	FULL WIDTH (MP 5.37-5.53, 5.61-5.66)	0.21	52																			11			
		"	"	TAPER 50'-40' (MP 5.53-5.57, 5.57-5.61)	0.08	45																			518	60		
TOTAL FOR MAP NO. 15							5.66	52,606	46,764	28	60				9	6	18		500	200		100	5		518	60		
3CR.10711.96	Pender	16	NC 53	0.53 MI. WEST OF SR 1400 TO 0.03 MI. EAST OF US 117 BUSINESS, FULL WIDTH (MP 0.00-0.49)	0.49	22	5,174	3,881											500	200					32			
		"	"	TAPER 22'-34' (MP 0.49-0.53)	0.04	28	211	317																	3			
		"	"	FULL WIDTH (MP 0.53-0.80, 0.91-0.93)	0.29	44	100	2,297			120				2		2								19	8		
		"	"	FULL WIDTH (MP 0.80-0.91)	0.11	48		871																	7			
TOTAL FOR MAP NO. 16							0.93	5,485	7,366		120				2		2		500	200		100	5		61	8		
TOTAL FOR PROJ NO. 3CR.10711.96							6.59	58,091	54,130	28	180				11	6	20		1,000	400		200	10		579	68		
								112,221		28					37											647		
3CR.20101.96	Brunswick	2	SR 1143	DEAD END TO NC 179, FULL WIDTH	1.31	20.5	27,800	15,800																	8	185		
TOTAL FOR MAP NO. 2							1.31	27,800	15,800																	8	185	
3CR.20101.96	Brunswick	3	SR 1331	RESURFACE FROM NC 130 TO SR 1332 (MP 0.00-1.11), FULL WIDTH	1.11	18.5	20,600	2,900																		150		
		"	"	RESURFACE FROM SR 1332 TO SR 1335 (MP 1.11-2.38), FULL WIDTH	1.27	18.5	20,600	2,900																		150		
TOTAL FOR MAP NO. 3							2.38	41,200	5,800																	300		
TOTAL FOR PROJ NO. 3CR.20101.96							3.69	69,000	21,600																		8	485
								90,600							2										493			
3CR.20651.96	NewHanover	10	SR 1175	NC 132 TO 0.14 MI. SOUTH OF RANDALL PKWY., FULL WIDTH (MP 0.00-0.11, 0.16-0.24)	0.19	44	500	2,508	100		86				3	2	12	3	500	200					50	23		
		"	"	FULL WIDTH (MP 0.11-0.16)	0.05	33	785				30				3	3									13	8		
		"	"	FULL WIDTH (MP 0.24-0.25)	0.01	43		132																	3			
		"	"	FULL WIDTH (MP 0.25-1.29)	1.04	43	11,432	13,728						28	8	6	46								283	18		
TOTAL FOR MAP NO. 10							1.29	12,717	16,368	100	116			28	14	11	58	3	500	200		100	5		349	49		
3CR.20651.96	NewHanover	11	SR 1002	US 117 TO PENDER COUNTY LINE, MILL PATCHING	5.12	24																						
TOTAL FOR MAP NO. 11							5.12																					
3CR.20651.96	NewHanover	12	SR 1402	SR 1491 TO END STATE MAINTENANCE, FULL WIDTH	1.24	23	14,365	8,985																	165			
TOTAL FOR MAP NO. 12							1.24	14,365	8,985																	165		
3CR.20651.96	NewHanover	13	SR 2127	US 17 TO SR 2213, VARIES 32'-24'	0.3	28	3,150	3,950																	90			
TOTAL FOR MAP NO. 13							0.3	3,150	3,950																	90		
3CR.20651.96	NewHanover	14	SR 2219	US 17 TO MP 0.54, VARIES 24'-36'	0.54	30	3,475	2,525																	8	42		
TOTAL FOR MAP NO. 14							0.54	3,475	2,525																	8	42	
TOTAL FOR PROJ NO. 3CR.20651.96							8.49	33,707	31,828	100	116			28	14	11	58	3	500	200		100	5		8	297	349	49
								65,535		100				28		86									305	398		
GRAND TOTAL					31.11		222,161	155,632	1,082	28	200	1,383	8	32	152	33	244	43	4,250	1,800	100	800	46	16	782	2,075	1,245	
								377,793		1,110				40		472								798		3,320		

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

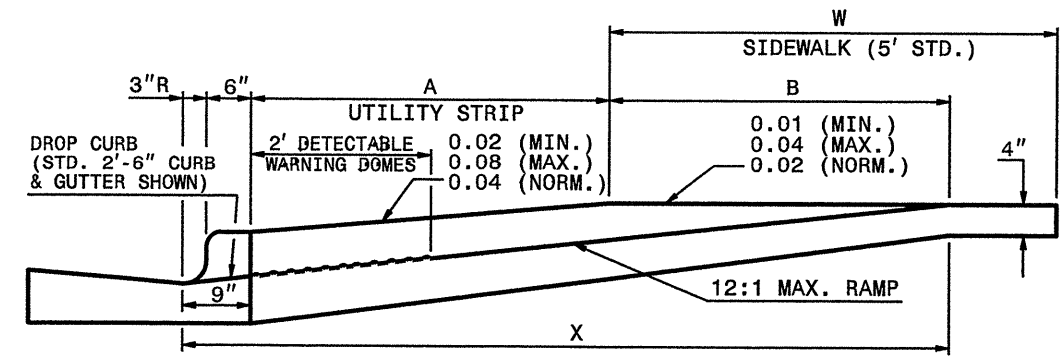
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
PROPOSED CURB AND GUTTER

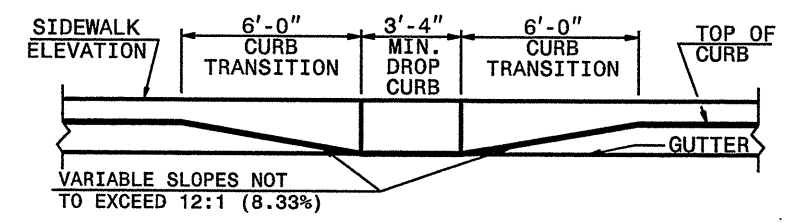
ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
PROPOSED CURB AND GUTTER



ISOMETRIC VIEW

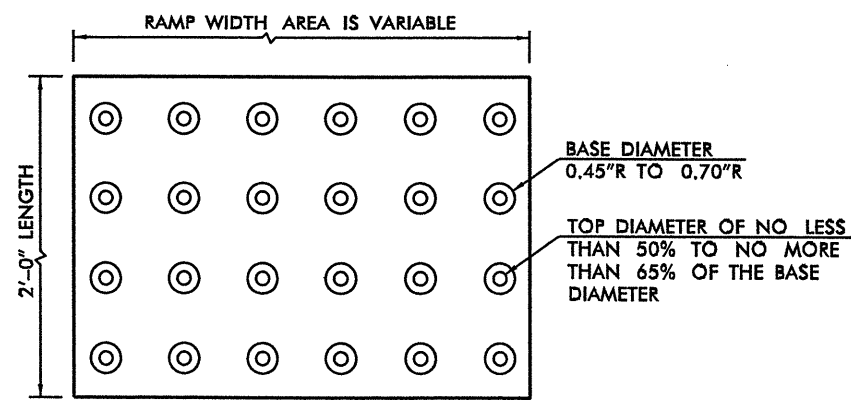


SECTION B-B



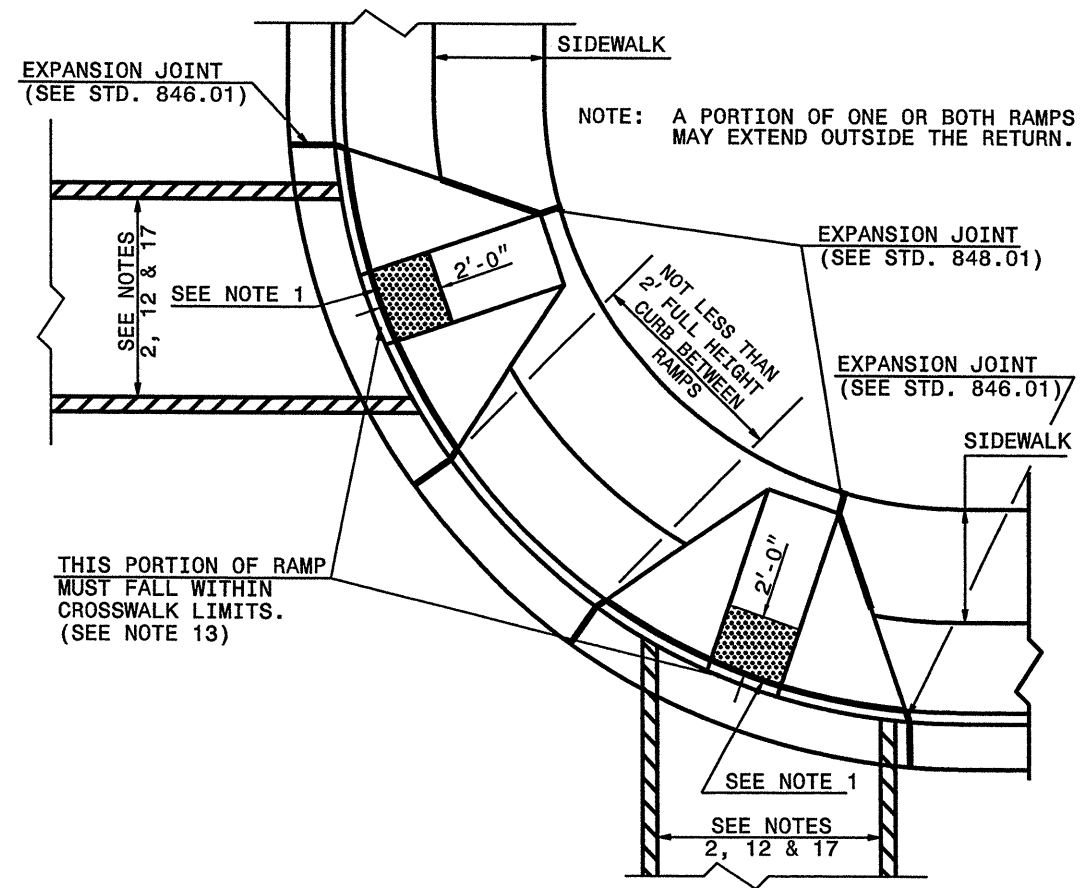
SECTION A-A

- NOTES:
1. DETECTABLE WARNING DOMES SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN 70% CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'**
7'	0.0'	7.8'	7.3'	6.5'**
8'	0.0'	8.8'	7.3'	6.5'**
5'	2.5'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

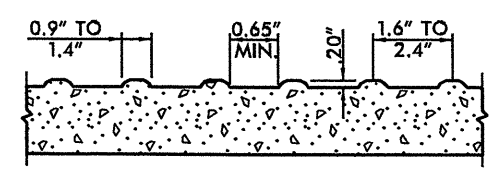
$B = X - (A + 9")$
 B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.
 * BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
 ** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 0.04.



PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

DETECTABLE WARNING DOMES

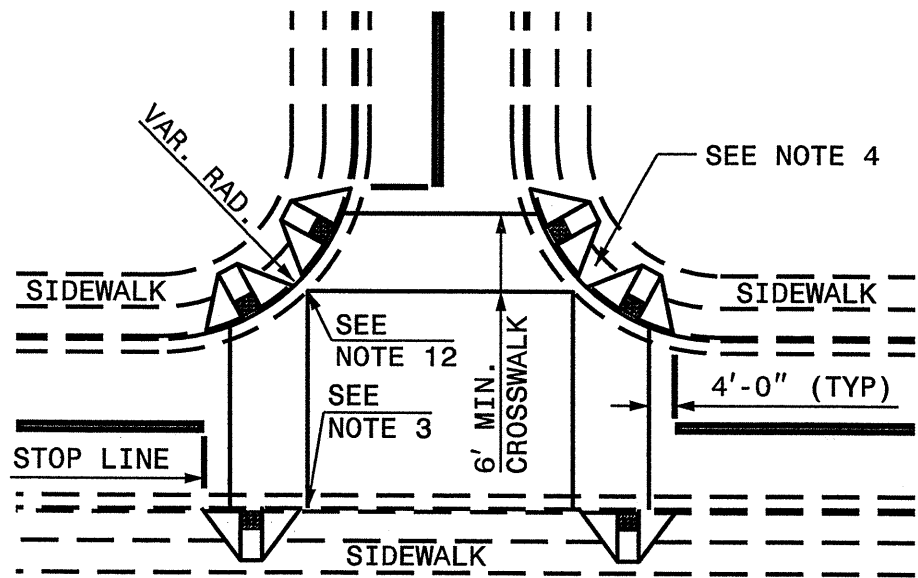


STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

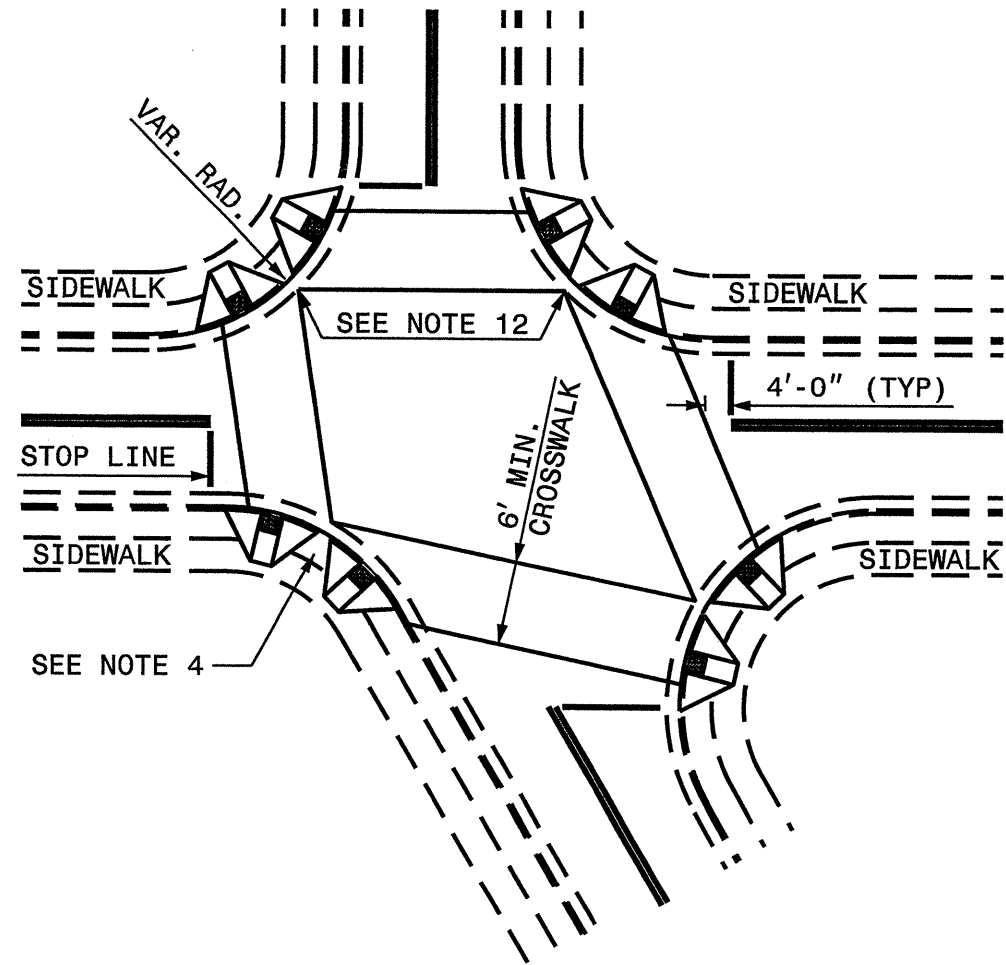
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
PROPOSED CURB AND GUTTER

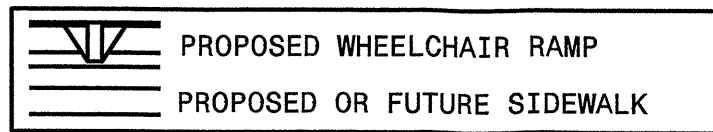
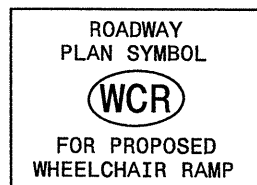
ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
PROPOSED CURB AND GUTTER



DETAIL SHOWING TYPICAL LOCATION OF WHEELCHAIR RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF WHEELCHAIR RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES



ALLOWABLE LOCATIONS
DUAL RAMP RADII.....ANY

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

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
PROPOSED CURB AND GUTTER

NOTES:

1. CONSTRUCT THE WALKING SURFACE WITH SLIP RESISTANTANCE AND A 70% CONTRASTING COLOR TO THE SIDEWALK.
2. CROSSWALK WIDTHS AND CONFIGURATION VARY BUT MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
3. NORTH CAROLINA GENERAL STATUTE 136-44.14 REQUIRES THAT ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY DISABLED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTER AND SIDEWALKS ARE PROVIDED AND AT OTHER POINTS OF PEDESTRIAN FLOW.

IN ADDITION, SECTION 228 OF THE 1973 FEDERAL AID HIGHWAY SAFETY ACT REQUIRES PROVISION OF CURB RAMPS ON ANY CURB CONSTRUCTION AFTER JULY 1, 1976 WHETHER A SIDEWALK IS PROPOSED INITIALLY OR IS PLANNED FOR A FUTURE DATE.

THE AMERICANS WITH DISABILITIES ACT (ADA) OF 1990 EXTENDS TO INDIVIDUALS WITH DISABILITIES. COMPREHENSIVE CIVIL RIGHTS PROTECTIONS SIMILIAR TO THOSE PROVIDED TO PERSONS ON THE BASIS OF RACE, SEX, NATIONAL ORIGIN AND RELIGION UNDER THE CIVIL RIGHTS ACT OF 1964. THESE CURB RAMPS HAVE BEEN DESIGNED TO COMPLY WITH THE CURRENT ADA STANDARDS.

4. PROVIDE WHEELCHAIR RAMPS AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATE WHEELCHAIR RAMPS AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT. WHERE TWO RAMPS ARE INSTALLED PLACE NOT LESS THAN 2 FEET OF FULL HEIGHT CURB BETWEEN THE RAMPS. PLACE DUAL RAMPS AS NEAR PERPENDICULAR TO THE TRAVEL LANE BEING CROSSED AS POSSIBLE.
5. DO NOT EXCEED 0.08 (12:1) SLOPE ON THE WHEELCHAIR RAMP IN RELATIONSHIP TO THE GRADE OF THE STREET.
6. CONSTRUCT WHEELCHAIR RAMPS 40" (3'-4") OR GREATER FOR DUAL RAMPS.
7. USE CLASS "B" CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
8. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE WHEELCHAIR RAMP JOINS THE CURB AND AS SHOWN ON STD. DWG. 848.01.
9. PLACE THE INSIDE PEDESTRIAN CROSSWALK LINES NO CLOSER IN THE INTERSECTION BY BISECTING THE INTERSECTION RADII, WITH ALLOWANCE OF A 4' CLEAR ZONE IN THE VEHICULAR TRAVELWAY WHEN ONE RAMP IS INSTALLED. (SEE NOTE 17)
10. COORDINATE THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SO THE FLOOR OF THE WHEELCHAIR RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES. PLACE DIAGONAL RAMPS WITH FLARED SIDES SO 24" OF FULL HEIGHT CURB FALLS WITHIN THE CROSSWALK MARKINGS ON EACH SIDE OF THE FLARES.
11. CONSTRUCT THE PEDESTRIAN CROSSWALK A MINIMUM OF 6 FEET. A CROSSWALK WIDTH OF 10 FEET OR GREATER IS DESIRABLE.
12. USE STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTING ROADWAY.
13. TERMINATE PARKING A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
14. PLACE ALL PAVEMENT MARKINGS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

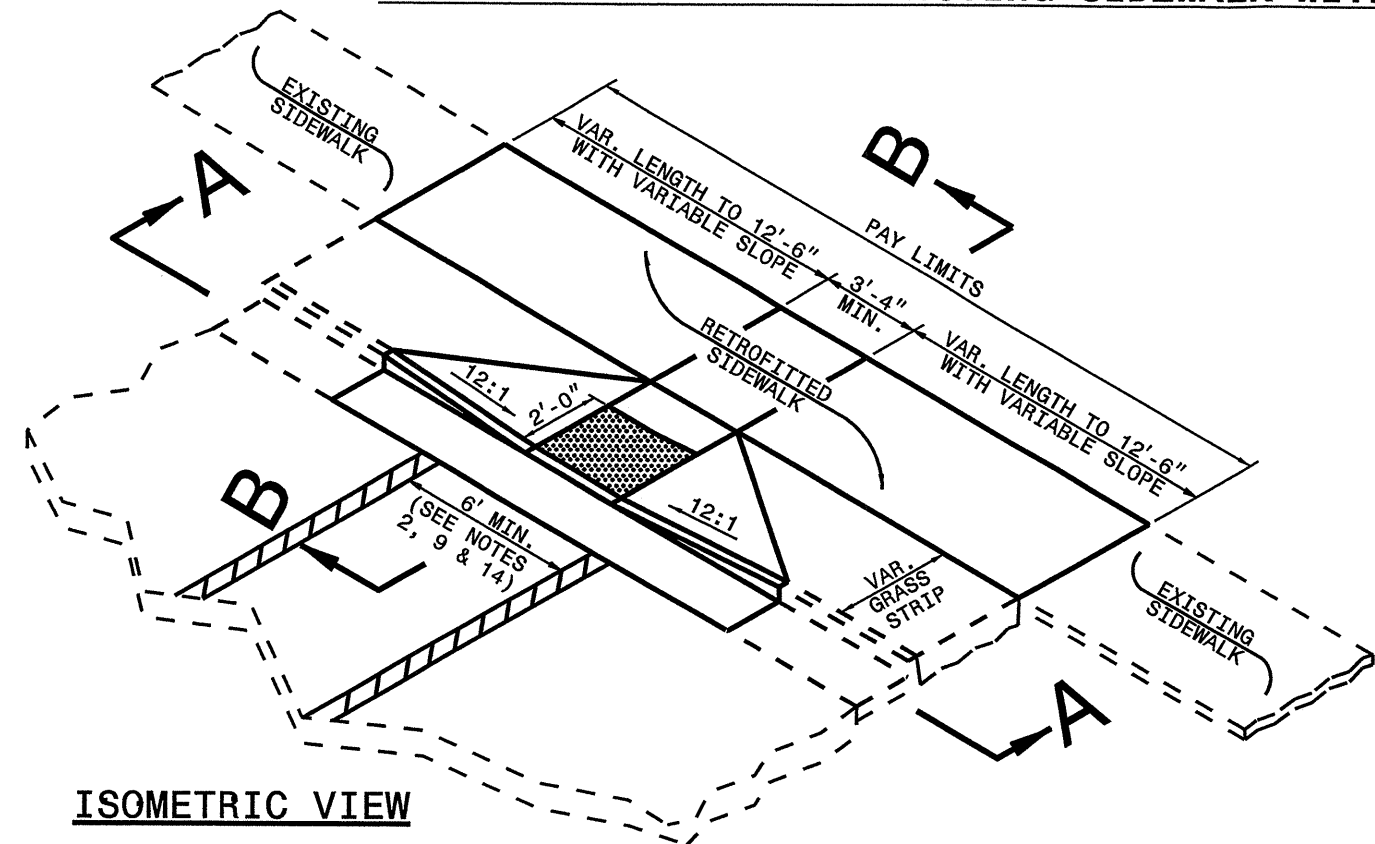
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
PROPOSED CURB AND GUTTER

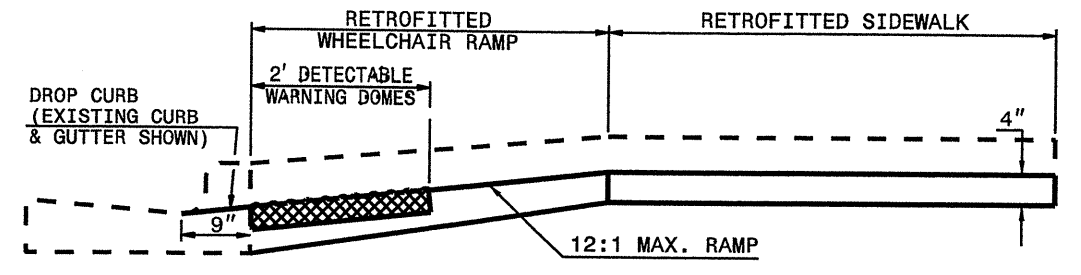
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

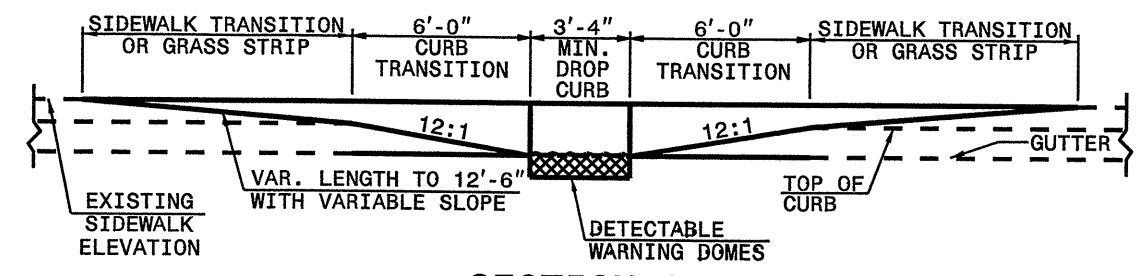
WHEELCHAIR RAMP AND EXISTING SIDEWALK WITH GRASS STRIP



ISOMETRIC VIEW

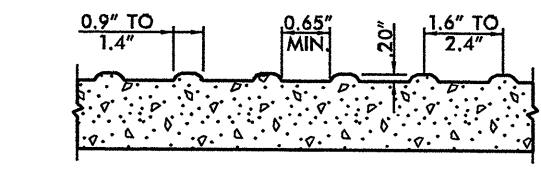
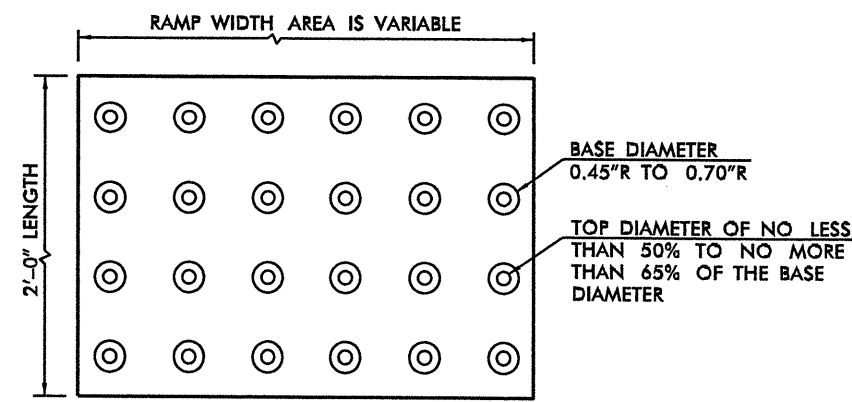


SECTION B-B

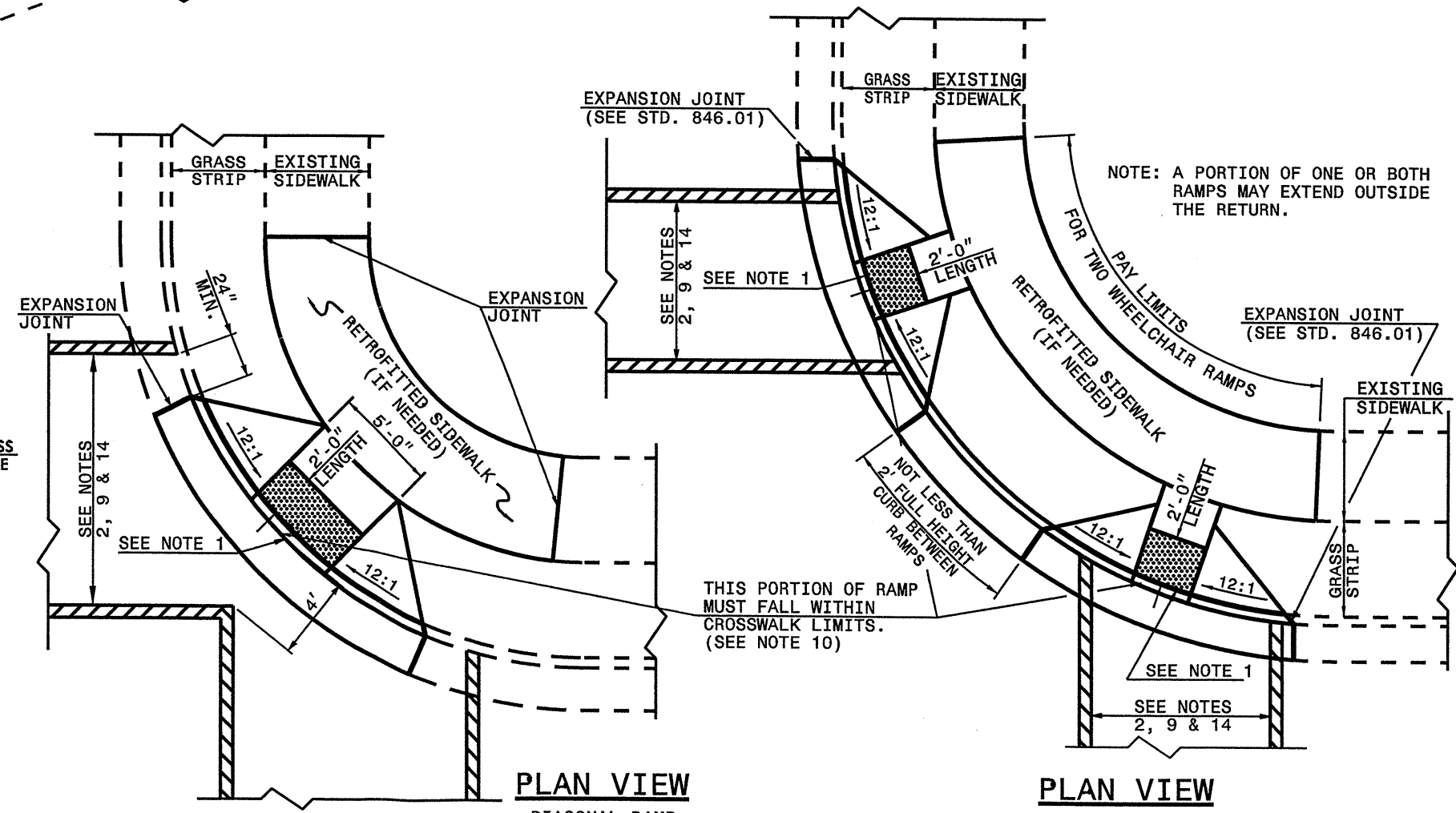


SECTION A-A

- NOTES:
1. DETECTABLE WARNING DOMES SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN 70% CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING DOMES



PLAN VIEW

DIAGONAL RAMP
MAX. 25' RADII
(60" MIN. FLOOR WIDTH)

PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

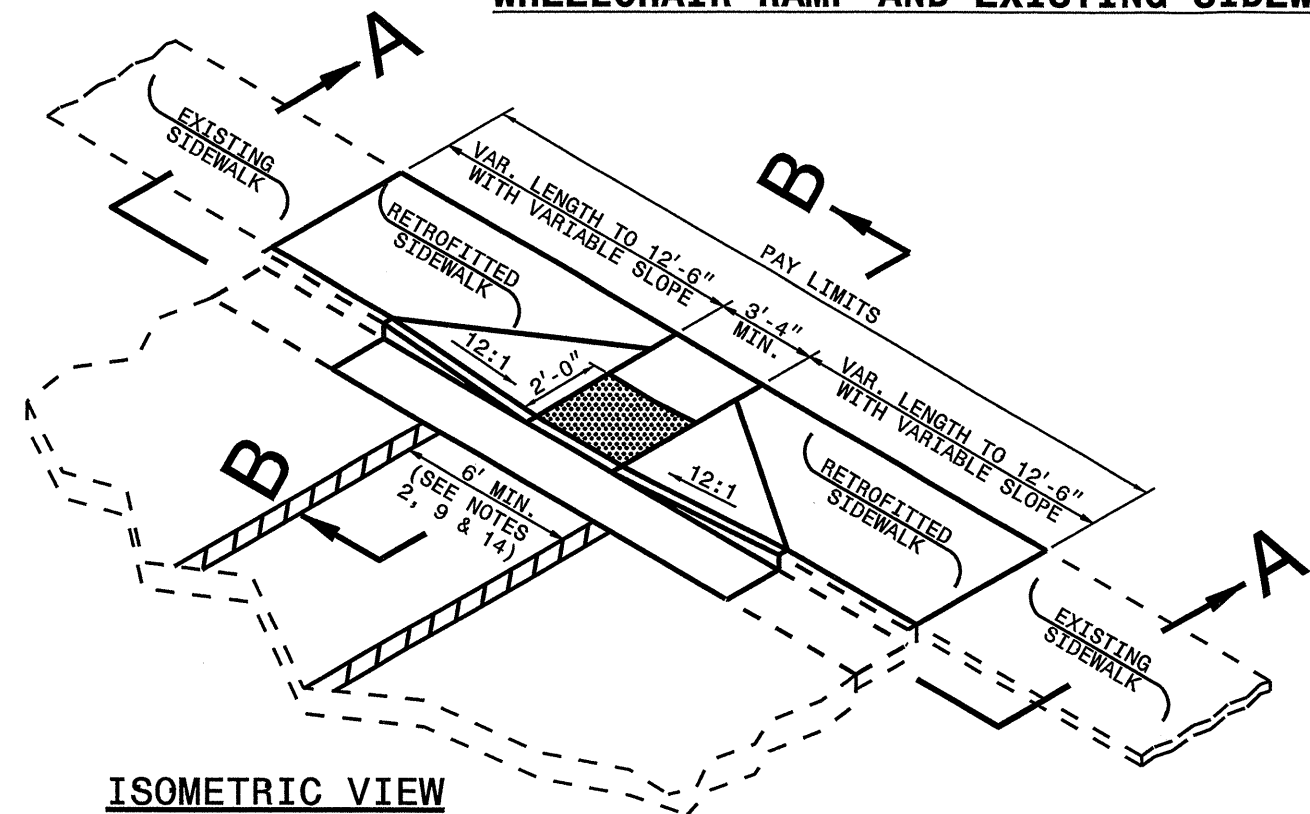
ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER

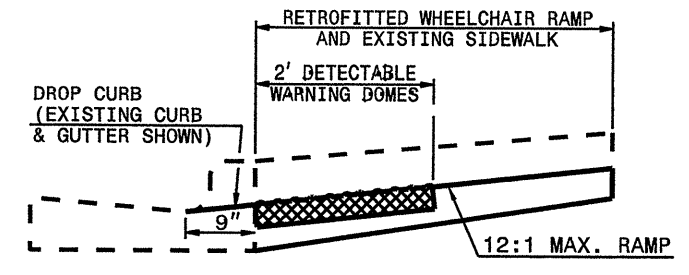
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

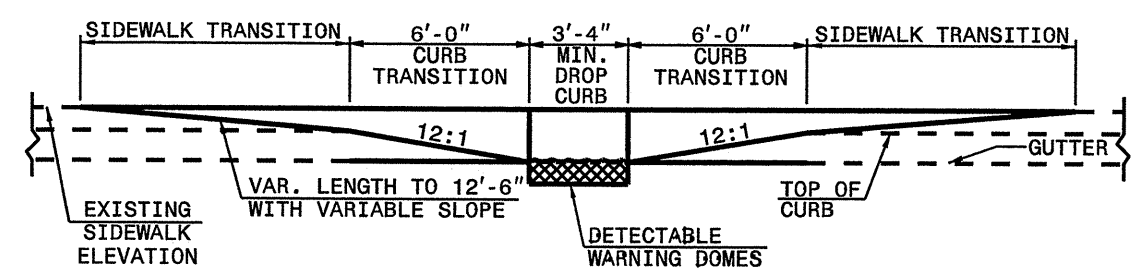
WHEELCHAIR RAMP AND EXISTING SIDEWALK ADJACENT TO CURB



ISOMETRIC VIEW

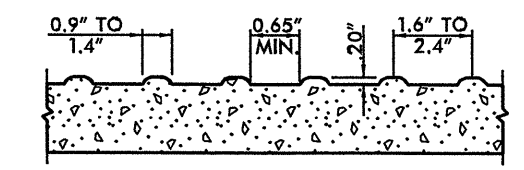
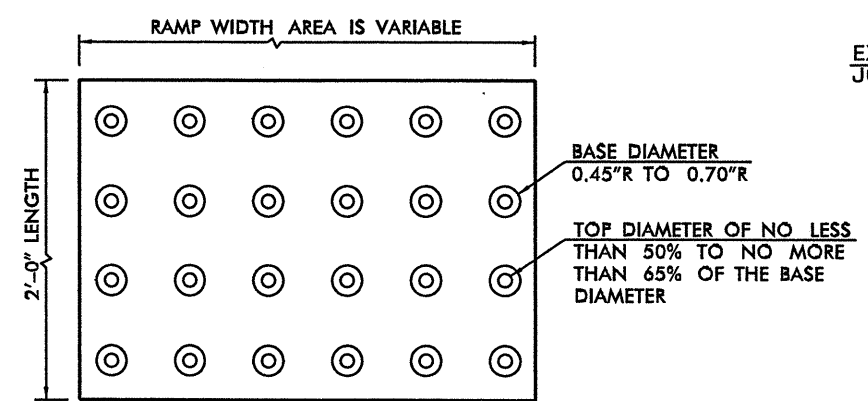


SECTION B-B

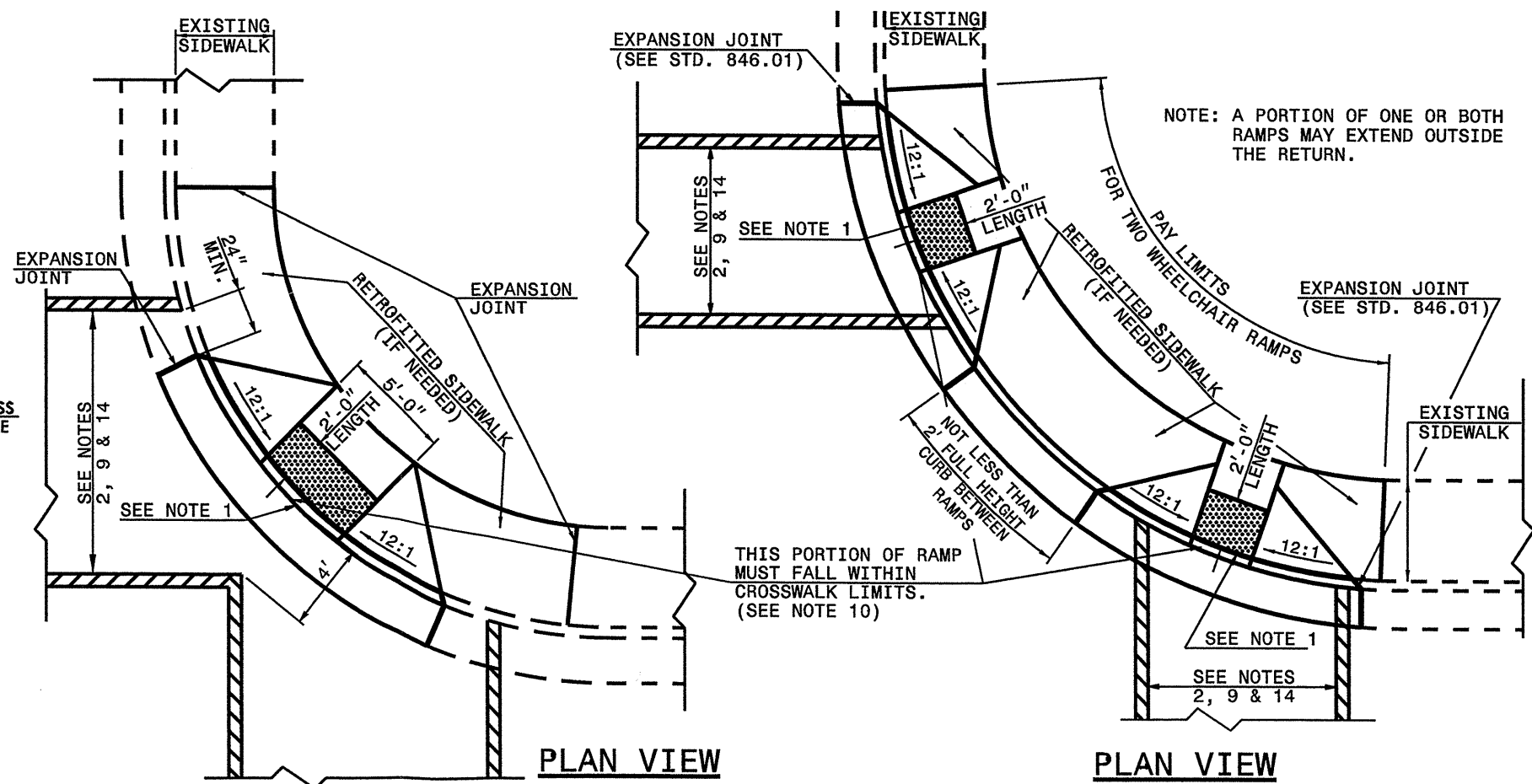


SECTION A-A

- NOTES:
1. DETECTABLE WARNING DOMES SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN 70% CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING DOMES



PLAN VIEW

DIAGONAL RAMP
MAX. 25' RADII
(60" MIN. FLOOR WIDTH)

PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER

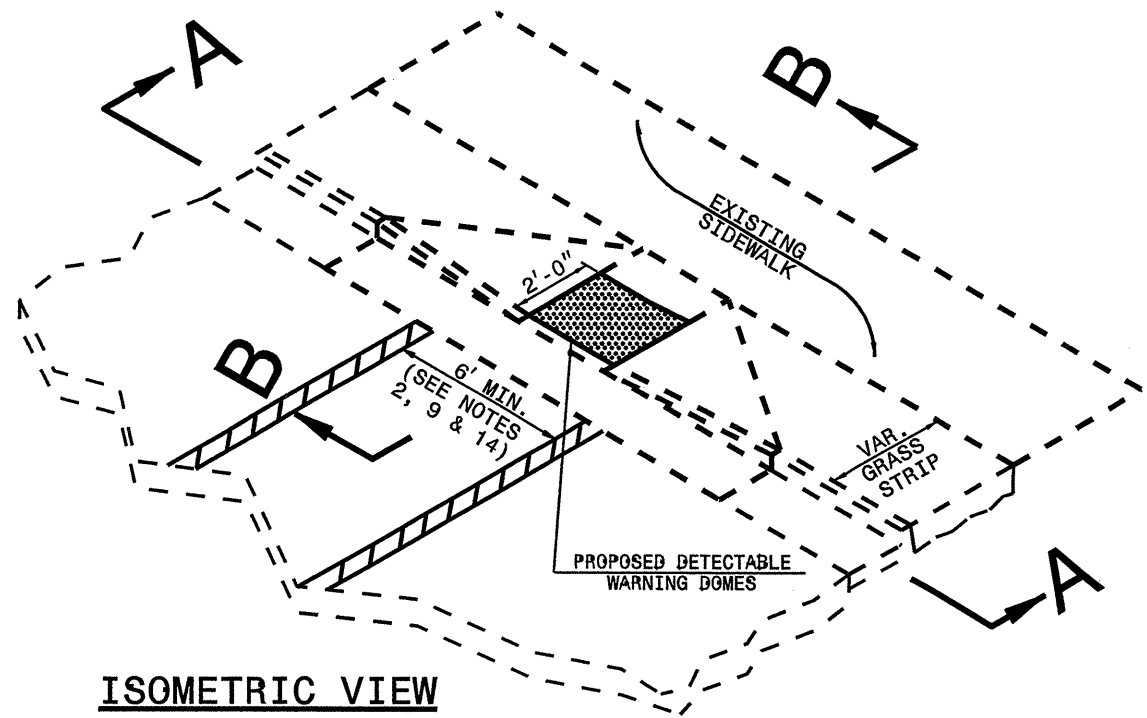
RETROFITTING DETECTABLE WARNING DOMES ONTO EXISTING WHEELCHAIR RAMP

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

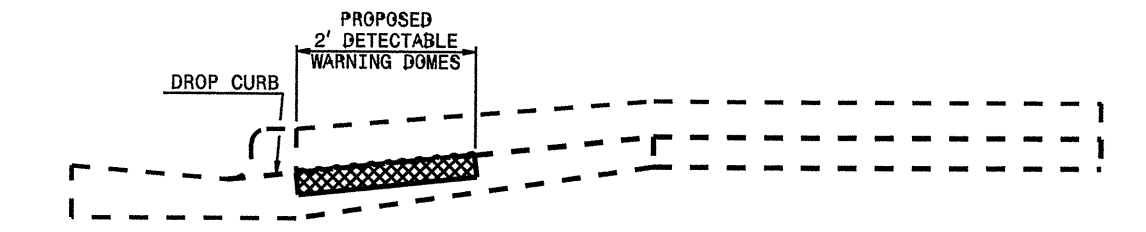
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER

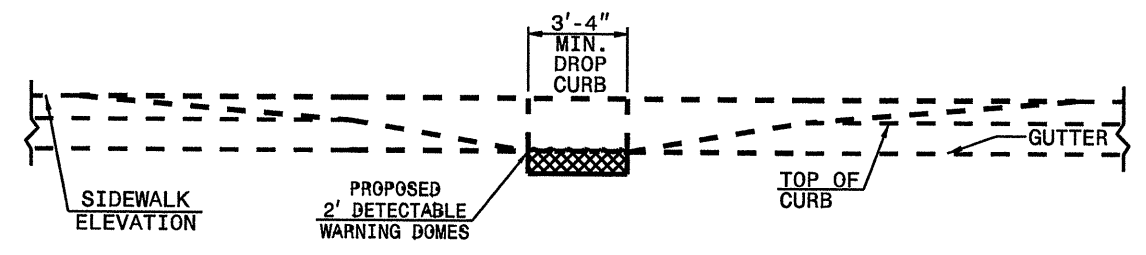
ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER



ISOMETRIC VIEW

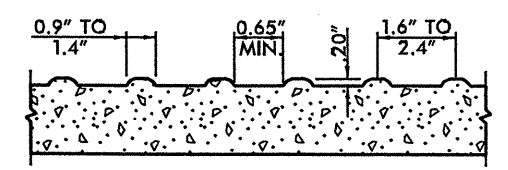
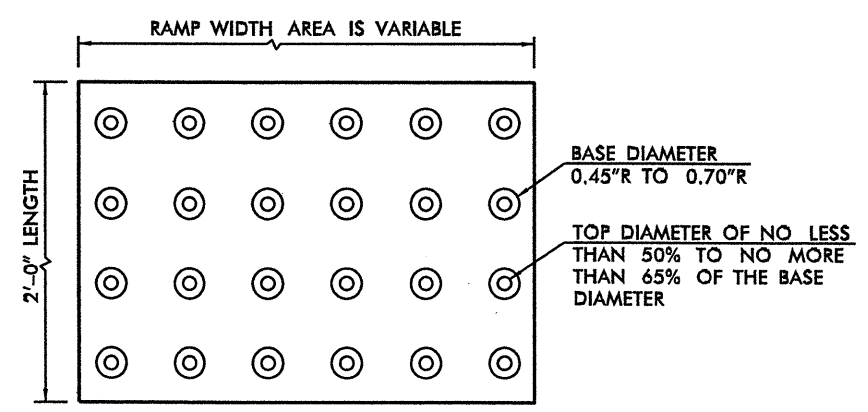


SECTION B-B

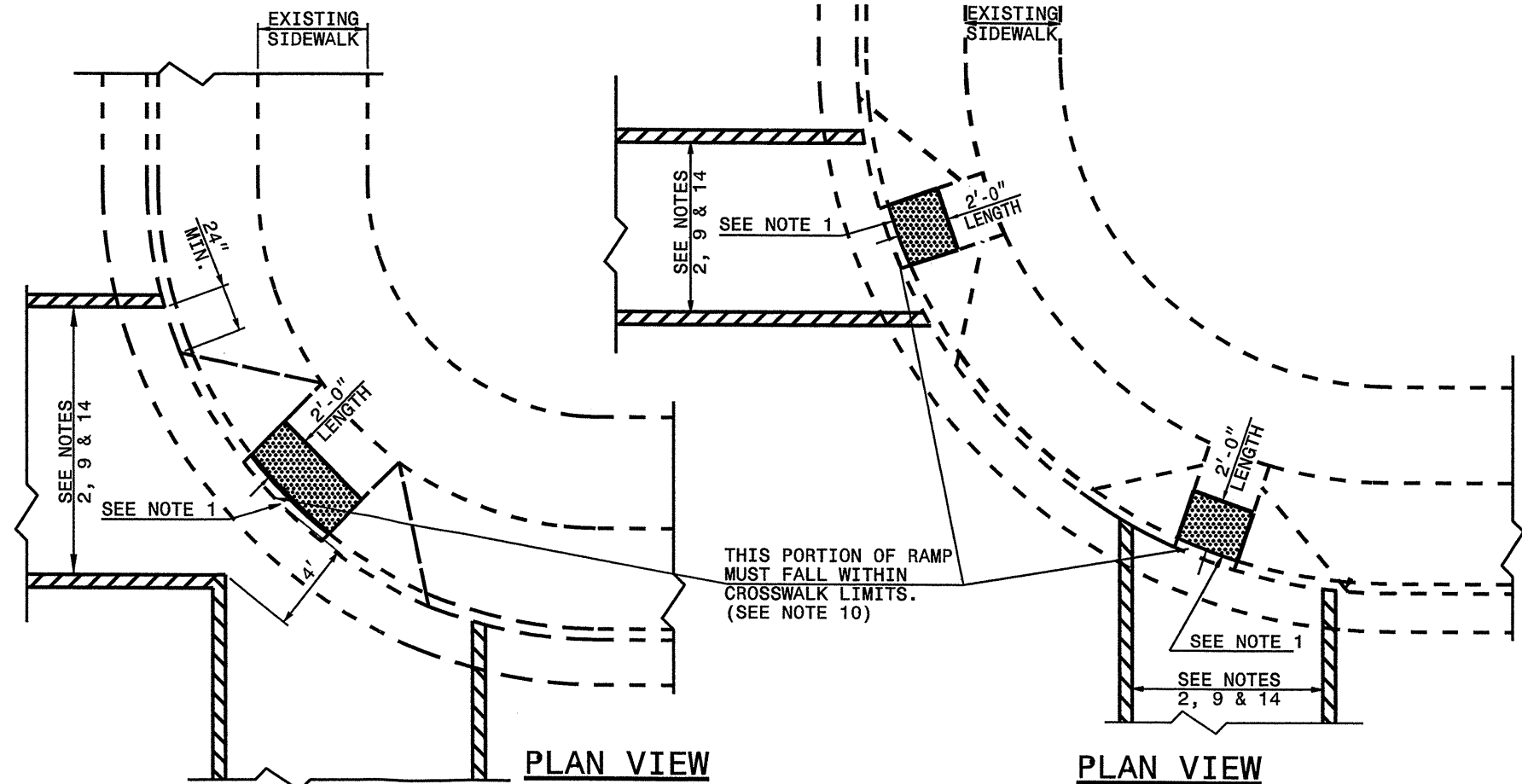


SECTION A-A

- NOTES:
1. DETECTABLE WARNING DOMES SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON THE DETAILS.
 2. OBTAIN 70% CONTRAST VISIBILITY WITH ADJOINING SURFACE, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT SEQUENCE COVERING THE ENTIRE RAMP.



DETECTABLE WARNING DOMES



PLAN VIEW

DIAGONAL RAMP
MAX. 25' RADII
(60" MIN. FLOOR WIDTH)

PLAN VIEW

DUAL RAMPS
ANY RADII
(40" MIN. FLOOR WIDTH)

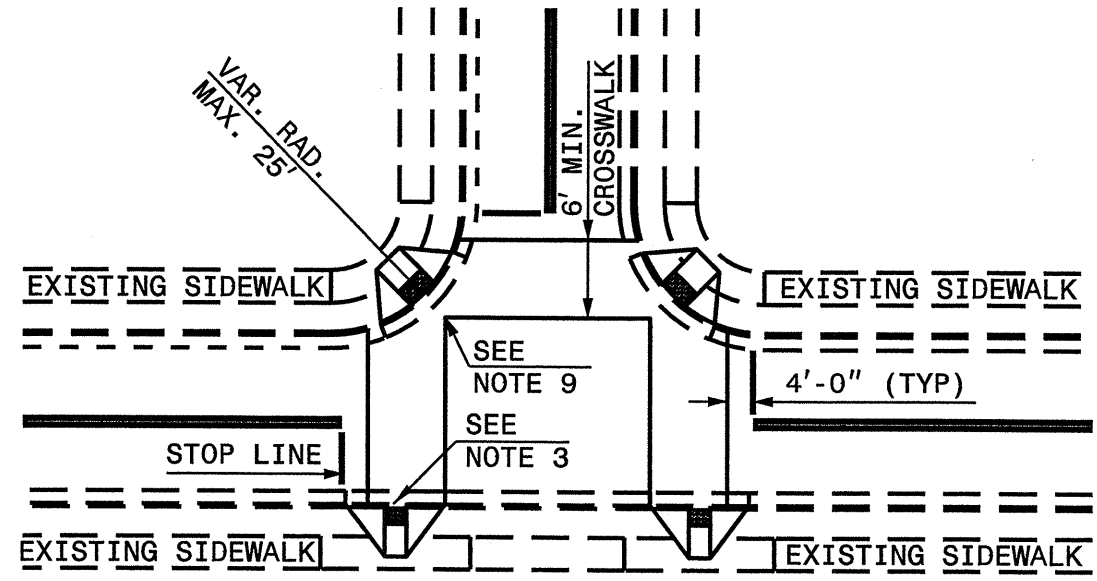
WHEELCHAIR RAMP AND EXISTING SIDEWALK

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

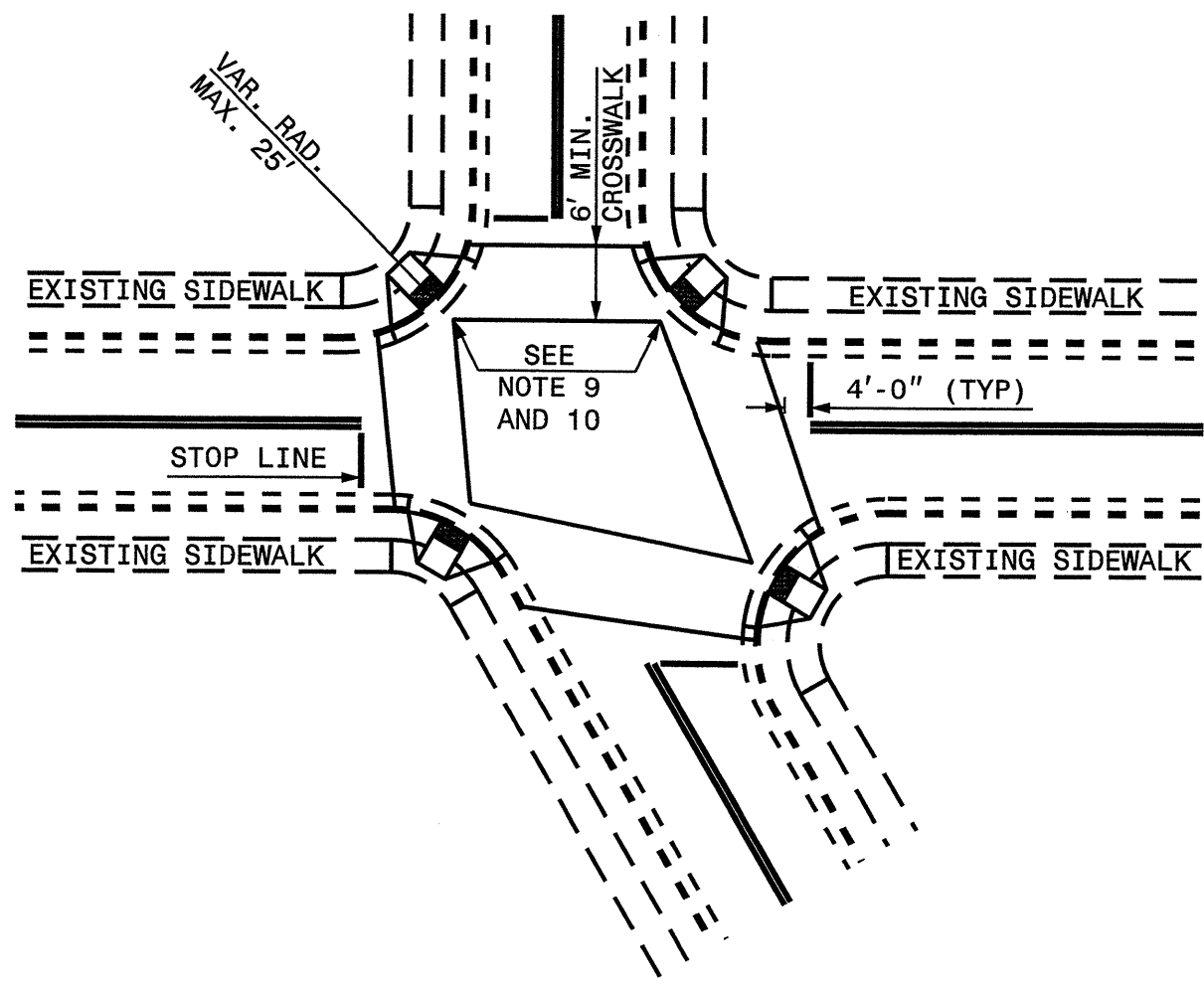
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
 EXISTING CURB AND GUTTER

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
 EXISTING CURB AND GUTTER

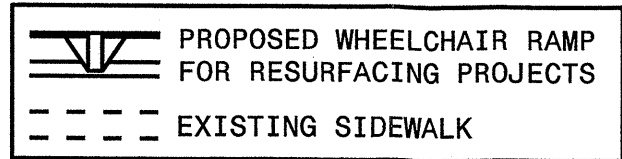


DETAIL SHOWING TYPICAL LOCATION OF WHEELCHAIR RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES FOR TEE INTERSECTIONS



DETAIL SHOWING TYPICAL LOCATION OF WHEELCHAIR RAMPS, PEDESTRIAN CROSSWALKS AND STOP LINES

RESURFACING PROJECTS



ALLOWABLE LOCATIONS

 DIAGONAL RAMP RADII...MAX. 25'

WHEELCHAIR RAMP AND EXISTING SIDEWALK

NOTES:

- 1. CONSTRUCT THE WALKING SURFACE WITH SLIP RESISTANCE AND A 70% CONTRASTING COLOR TO THE SIDEWALK.
- 2. CROSSWALK WIDTHS AND CONFIGURATION VARY, BUT MUST CONFORM TO TRAFFIC DESIGN STANDARDS.
- 3. NORTH CAROLINA GENERAL STATUTE 136-44.14 REQUIRES THAT ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED FOR MAINTENANCE PROCEDURES, TRAFFIC OPERATIONS, REPAIRS, CORRECTION OF UTILITIES OR ALTERED FOR ANY REASON AFTER SEPTEMBER 1, 1973 SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY DISABLED AT ALL INTERSECTIONS WHERE BOTH CURB AND GUTTER AND SIDEWALKS ARE PROVIDED AND AT OTHER POINTS OF PEDESTRIAN FLOW.

IN ADDITION, SECTION 228 OF THE 1973 FEDERAL AID HIGHWAY SAFETY ACT REQUIRES PROVISION OF CURB RAMPS ON ANY CURB CONSTRUCTION AFTER JULY 1, 1976 WHETHER A SIDEWALK IS PROPOSED INITIALLY OR IS PLANNED FOR A FUTURE DATE.

THE AMERICANS WITH DISABILITIES ACT (ADA) OF 1990 EXTENDS TO INDIVIDUALS WITH DISABILITIES, COMPREHENSIVE CIVIL RIGHTS PROTECTIONS SIMILIAR TO THOSE PROVIDED TO PERSONS ON THE BASIS OF RACE, SEX, NATIONAL ORIGIN AND RELIGION UNDER THE CIVIL RIGHTS ACT OF 1964. THESE CURB RAMPS HAVE BEEN DESIGNED TO COMPLY WITH THE CURRENT ADA STANDARDS.

- 4. PROVIDE WHEELCHAIR RAMPS AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATE WHEELCHAIR RAMPS AS DIRECTED BY THE ENGINEER WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT. WHERE TWO RAMPS ARE INSTALLED PLACE NOT LESS THAN 2 FEET OF FULL HEIGHT CURB BETWEEN THE RAMPS. PLACE DUAL RAMPS AS NEAR PERPENDICULAR TO THE TRAVEL LANE BEING CROSSED AS POSSIBLE.
- 5. DO NOT EXCEED 0.08 (12:1) SLOPE ON THE WHEELCHAIR RAMP IN RELATIONSHIP TO THE GRADE OF THE STREET.
- 6. CONSTRUCT WHEELCHAIR RAMPS 40" (3'-4") OR GREATER FOR DUAL RAMPS AND 60" (5'-0") OR GREATER FOR DIAGONAL RAMPS.
- 7. USE CLASS "B" CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NON-SKID TYPE SURFACE.
- 8. PLACE A 1/2" EXPANSION JOINT WHERE THE CONCRETE WHEELCHAIR RAMP JOINS THE CURB AND AS SHOWN ON STD. DWG. 848.01.
- 9. PLACE THE INSIDE PEDESTRIAN CROSSWALK LINES NO CLOSER IN THE INTERSECTION BY BISECTING THE INTERSECTION RADII, WITH ALLOWANCE OF A 4' CLEAR ZONE IN THE VEHICULAR TRAVELWAY WHEN ONE RAMP IS INSTALLED. (SEE NOTE 14)
- 10. COORDINATE THE CURB CUT AND THE PEDESTRIAN CROSSWALK LINES SO THE FLOOR OF THE WHEELCHAIR RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES. PLACE DIAGONAL RAMPS WITH FLARED SIDES SO 24" OF FULL HEIGHT CURB FALLS WITHIN THE CROSSWALK MARKINGS ON EACH SIDE OF THE FLARES.
- 11. CONSTRUCT THE PEDESTRIAN CROSSWALK A MINIMUM OF 6 FEET. A CROSSWALK WIDTH OF 10 FEET OR GREATER IS DESIRABLE.
- 12. USE STOP LINES, NORMALLY PERPENDICULAR TO THE LANE LINES, WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT. AN UNUSUAL APPROACH SKEW MAY REQUIRE THE PLACEMENT OF THE STOP LINE TO BE PARALLEL TO THE INTERSECTING ROADWAY.
- 13. TERMINATE PARKING A MINIMUM OF 20 FEET BACK OF PEDESTRIAN CROSSWALK.
- 14. PLACE ALL PAVEMENT MARKINGS IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION AND THE NORTH CAROLINA SUPPLEMENT TO THE MUTCD.

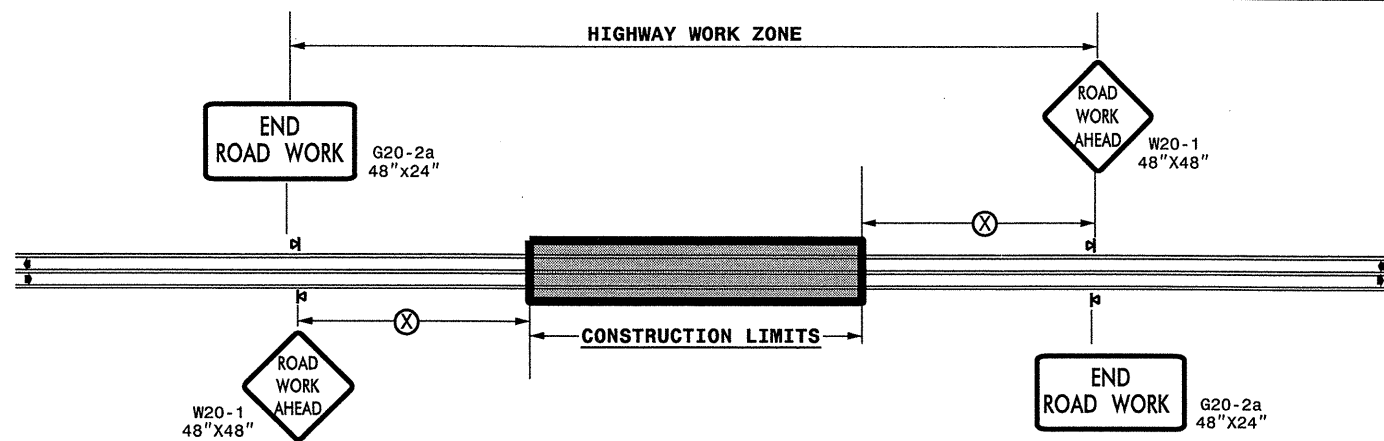
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER

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

ENGLISH DETAIL DRAWING FOR
WHEELCHAIR RAMP
EXISTING CURB AND GUTTER

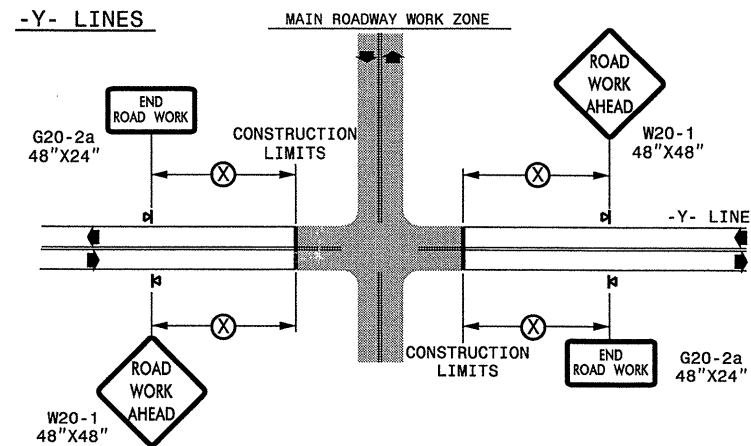
TWO-WAY UNDIVIDED ** (L-LINES)



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 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.
- ** 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

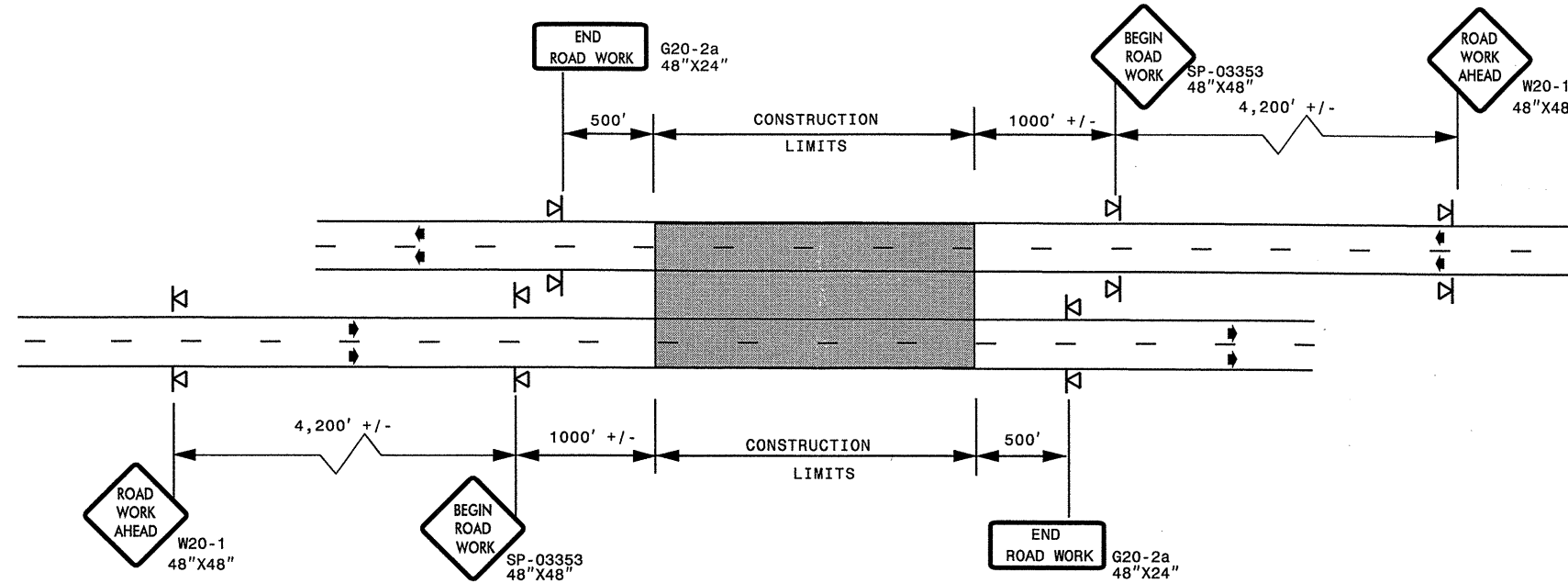
DETAIL DRAWING
FOR TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

SHEET 1 OF 1

APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED ADVANCED WORK ZONE WARNING SIGNS	
SEAL	SCALE: NONE	
	DATE: 11/10	
	DESIGN BY: _____	
	REVIEWED BY: _____	
		REVISIONS

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

DETAIL A

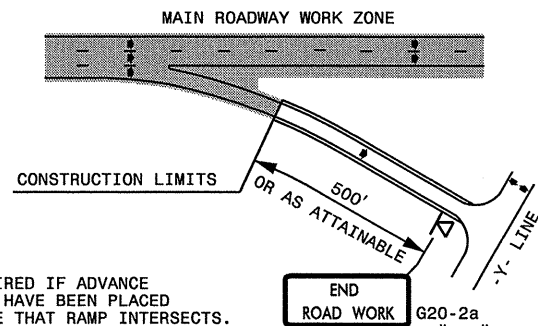


STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG FREEWAY WORK ZONE (Y-LINES)

DETAIL B

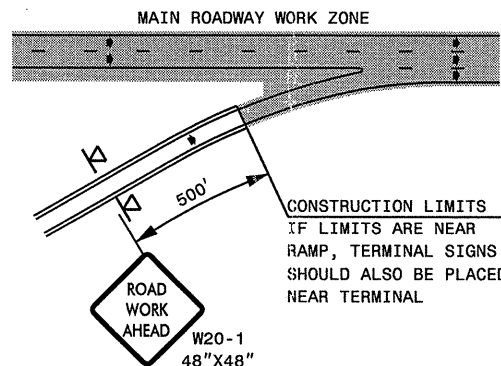
EXIT RAMP



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.

DETAIL C

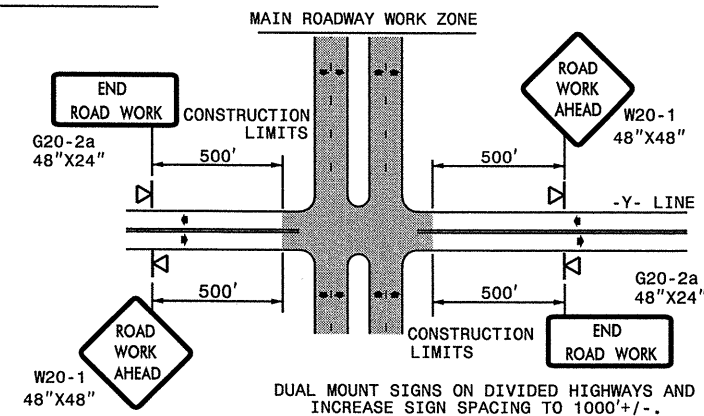
ENTRANCE RAMP



CONSTRUCTION LIMITS
IF LIMITS ARE NEAR
RAMP, TERMINAL SIGNS
SHOULD ALSO BE PLACED
NEAR TERMINAL

DETAIL D

-Y- LINES



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND
INCREASE SIGN SPACING TO 1000'+/-.

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

GENERAL NOTES

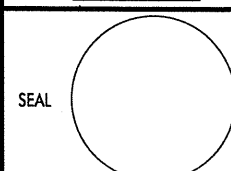

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCE WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE PORTABLE WORK ZONE SIGNS ONLY WITH 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.
- ** 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

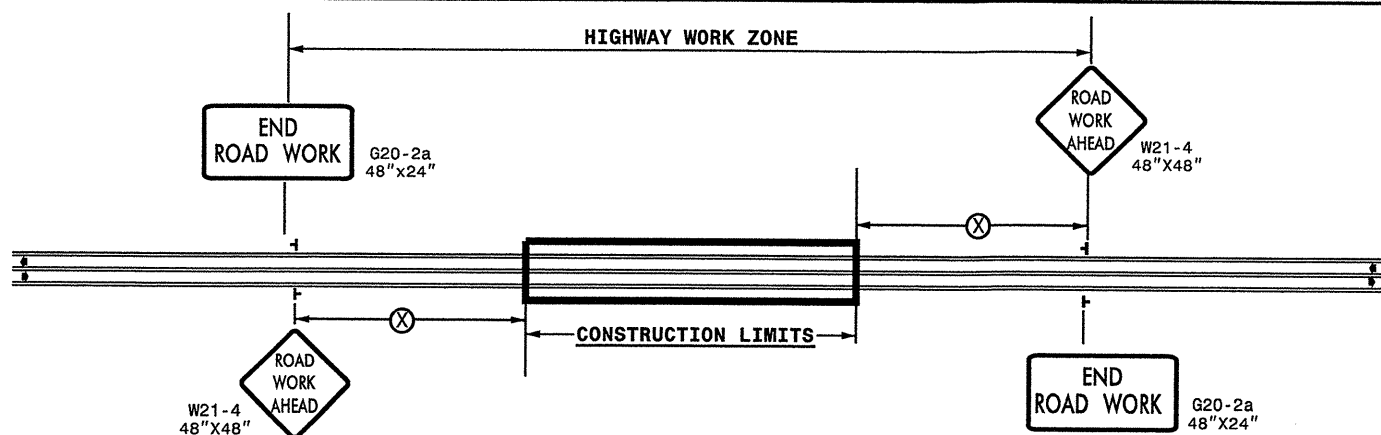
- ▣ PORTABLE SIGN
- ◀ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

10-DEC-2010 10:35
C:\Documents\19...
skpartel AT WZ10244748

APPROVED: _____	DATE: _____	DETAIL DRAWING FOR FREEWAYS WORK ZONE WARNING SIGNS	
			
SCALE: NONE	DATE: 11/10	REVISIONS 7-98 10/01 10-98 03/04 01/01 11/04	
DWG. BY: _____	DESIGN BY: _____		
REVIEWED BY: _____	DATE: _____	CAD: _____ PLOT: _____	

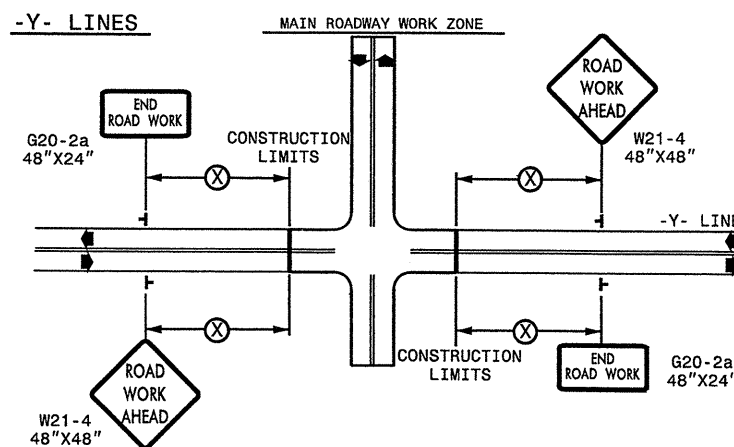
TWO-WAY UNDIVIDED ** (L-LINES)



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

SHEET 1 OF 1

APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS									
SEAL	SCALE: NONE									
	DATE: _____									
	DESIGN BY: _____									
	REVIEWED BY: _____									
		<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> </thead> <tbody> <tr> <td>7-98</td> <td>10/01</td> </tr> <tr> <td>10-98</td> <td>03/04</td> </tr> <tr> <td>01/01</td> <td>11/04</td> </tr> </tbody> </table>	REVISIONS		7-98	10/01	10-98	03/04	01/01	11/04
REVISIONS										
7-98	10/01									
10-98	03/04									
01/01	11/04									

*****SYSTEM*****
*****USER*****






PROJECT REFERENCE NO. 3CR.10101.96, ETC		SHEET NO.	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

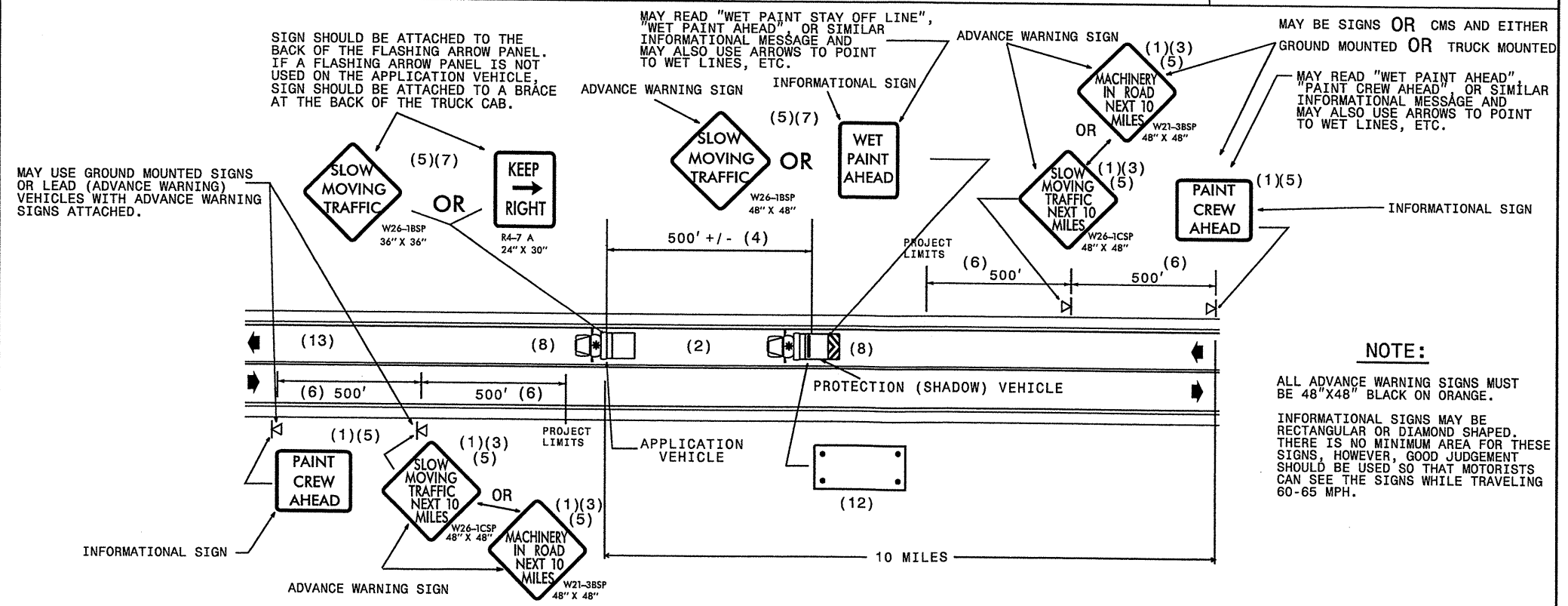
GENERAL NOTES

- (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 SIGNS)
- (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. 1165.01)
-  FLASHING ARROW PANEL, TYPE "B" "CAUTION MODE"



NOTE:

ALL ADVANCE WARNING SIGNS MUST BE 48"x48" BLACK ON ORANGE.

INFORMATIONAL SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPED. THERE IS NO MINIMUM AREA FOR THESE SIGNS. HOWEVER, GOOD JUDGEMENT SHOULD BE USED SO THAT MOTORISTS CAN SEE THE SIGNS WHILE TRAVELING 60-65 MPH.

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

DRAWING NUMBER 6
IMPLEMENTATION DATE: 07/01/97

PHASING DIAGRAM

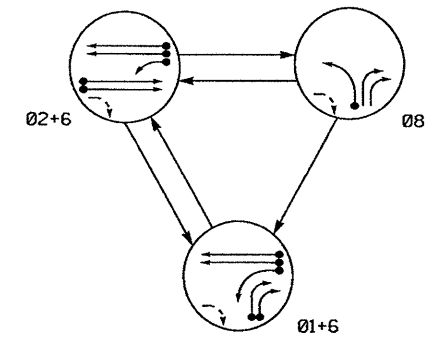
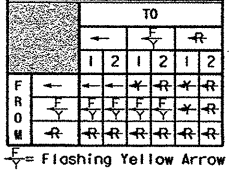


TABLE OF OPERATION

SIGNAL FACE	PHASE			
	Ø 1 + 6	Ø 2 + 6	Ø 8	F L D S H
11	←	←	←	←
12, 13	←	←	←	←
21, 22	R	G	R	Y
61, 62	G	G	R	Y
81	←	←	←	←

STANDARD SIGNAL FACE CLEARANCES FOR FLASHING LEFT TURN SIGNAL



F = Flashing Yellow Arrow

OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING				SYSTEM LOOP	NEW CARD
					PHASE	CALLING	EXTENSION	STRETCH TIME		
1A	6X40	0	2-4-2	Y	1	Y	Y	-	15	-
1B	6X40	0	2-4-2	Y	1	Y	Y	-	15	-
1C	6X40	0	2-4-2	Y	1	Y	Y	-	15	-
2A	6X6	300	5	Y	2	Y	Y	-	-	-
2B	6X6	300	5	Y	2	Y	Y	-	-	-
6A	6X6	300	5	Y	6	Y	Y	-	-	-
6B	6X6	300	5	Y	6	Y	Y	-	-	-
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	-

3 Phase Fully Actuated Wilmington Signal System

NOTES

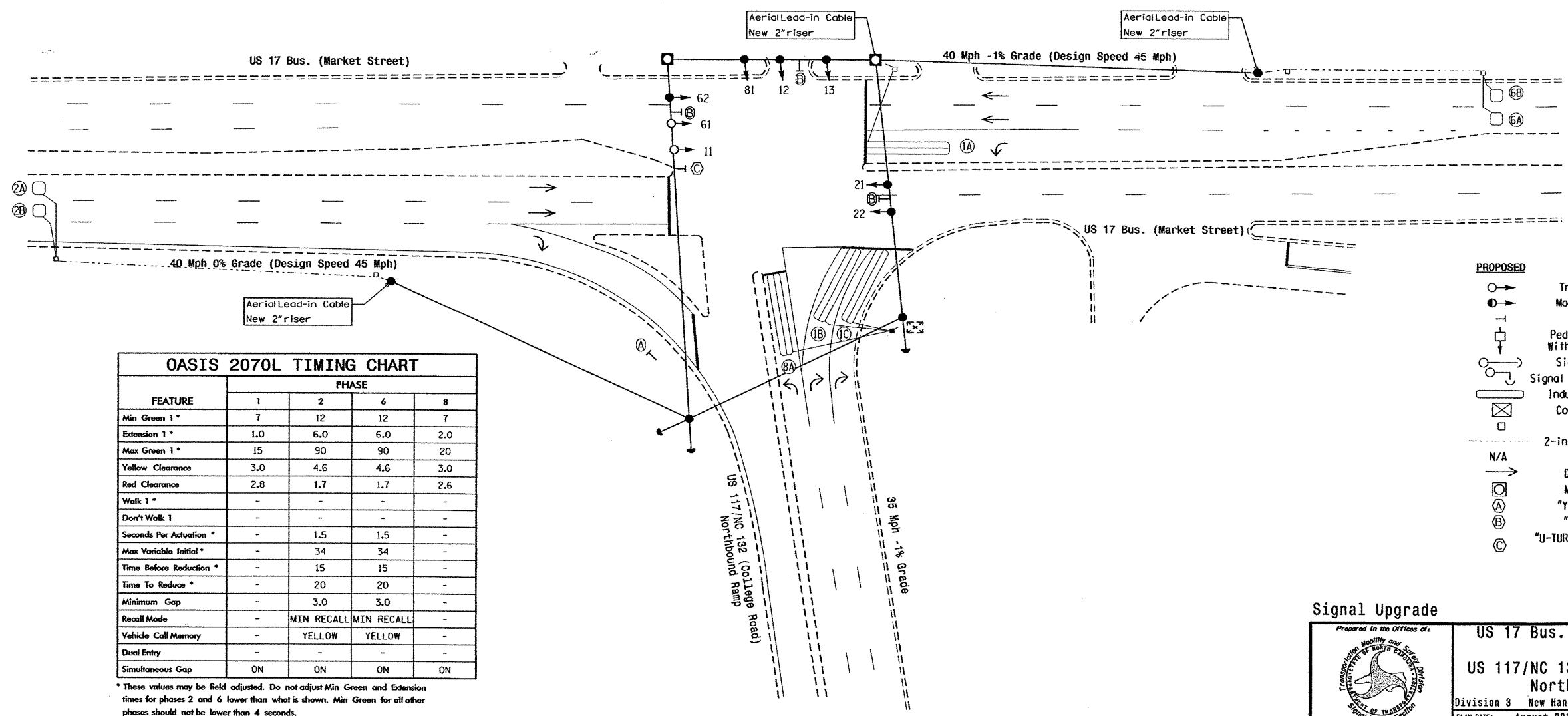
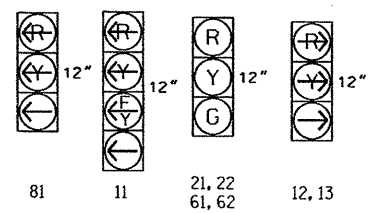
- Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 may be lagged.
- Reposition existing signal heads numbered 62.
- Set all detector units to presence mode.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Signal system data: Controller Asset #0242.

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

SIGNAL FACE I.D.

All Heads L.E.D.



OASIS 2070L TIMING CHART

FEATURE	PHASE			
	1	2	6	8
Min Green 1 *	7	12	12	7
Extension 1 *	1.0	6.0	6.0	2.0
Max Green 1 *	15	90	90	20
Yellow Clearance	3.0	4.6	4.6	3.0
Red Clearance	2.8	1.7	1.7	2.6
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	1.5	1.5	-
Max Variable Initial *	-	34	34	-
Time Before Reduction *	-	15	15	-
Time To Reduce *	-	20	20	-
Minimum Gap	-	3.0	3.0	-
Recall Mode	-	MIN RECALL	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	YELLOW	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

LEGEND

- PROPOSED: Traffic Signal Head, Modified Signal Head, Pedestrian Signal Head, Signal Pole with Guy, Signal Pole with Sidewalk Guy, Inductive Loop Detector, Controller & Cabinet, Junction Box, 2-in Underground Conduit, Right of Way, Directional Arrow, Metal Strain Pole, "YIELD" Sign (R1-2), "Street name" Sign, "U-TURN YIELD TO RIGHT TURN" Sign (R10-16)
- EXISTING: N/A, T, Signal Pole with Guy, Signal Pole with Sidewalk Guy, Junction Box, Right of Way, Directional Arrow, Metal Strain Pole, "YIELD" Sign (R1-2), "Street name" Sign, "U-TURN YIELD TO RIGHT TURN" Sign (R10-16)

Signal Upgrade

Prepared in the Office of: **Transportation Mobility and Safety Division**
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Signal Design Section

US 17 Bus. (Market Street) at US 117/NC 132 (College Road) Northbound Ramp
 Division 3 New Hanover County Wilmington

PLAN DATE: August 2010 REVIEWED BY: [Signature]
 PREPARED BY: I. O. UMOZURIKE REVIEWED BY: [Signature]

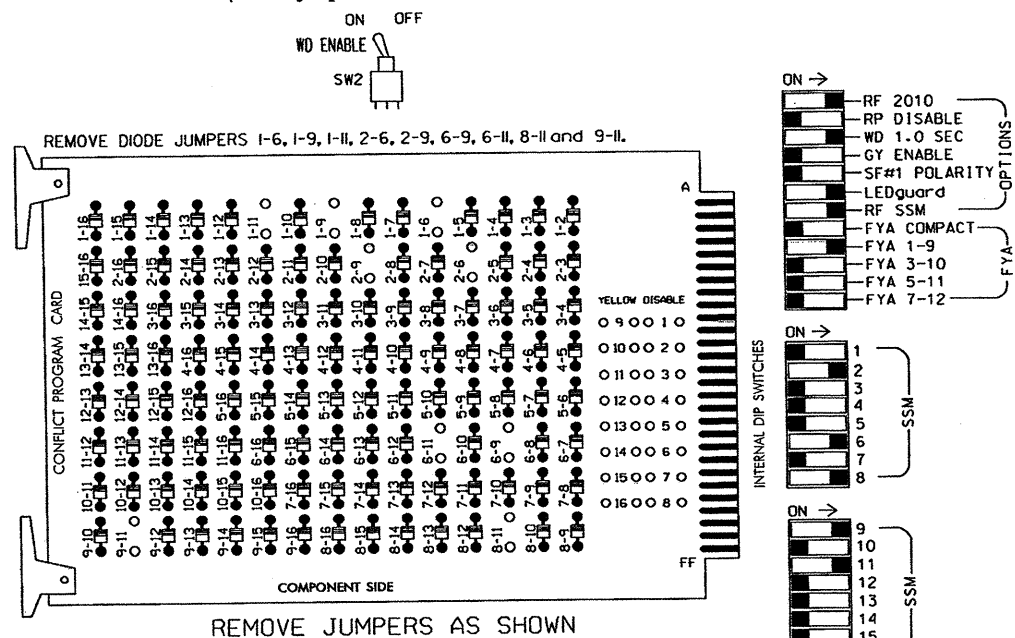
750 N. Greenfield Pkwy, Garner, NC 27529
 SCALE: 1"=30'
 REVISIONS: [Table]
 INLT. DATE: [Table]

10/6/10
 03-0242

05-001-010, 08, 26
 S:\ITS\SSM\TS - Signal\Signal - Design\Market St - resurf-fac\sig\03-0242\030242.dwg, 2010madd.dgn
 I:\maddur\lke

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Make sure jumpers SEL2-SEL5 are present on the monitor board.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 1,3,4,5, 7,10,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Variable Initial and Gap Reduction.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 2 and 6 for Yellow Flash, and overlaps 1 and 3 as Wag Overlaps.
- The cabinet and controller are part of the Wilmington Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
 CABINET.....CONTRACTOR SUPPLIED 332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S6,S8,S9,S12.
 PHASES USED.....1,2,6,8.
 OVERLAP "A".....1+2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....1+8
 OVERLAP "D".....NOT USED

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1*	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA*	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	21,22	NU	NU	NU	NU	NU	61,62	NU	NU	81	NU	11	NU	NU	12,13	NU	NU
RED		128						134										
YELLOW	*	129						135										
GREEN		130						136										
RED ARROW											107		A121					A114
YELLOW ARROW											108		A122					A115
FLASHING YELLOW ARROW													A123					
GREEN ARROW	127										109							A116

NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

* See pictorial of head wiring in detail below.

FLASHER CIRCUIT MODIFICATION DETAIL

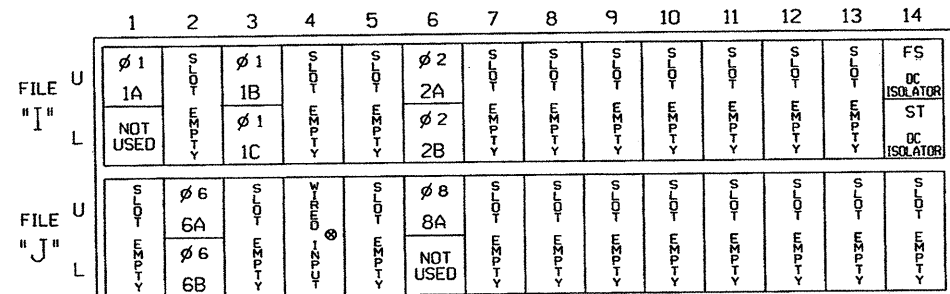
IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

INPUT FILE POSITION LAYOUT

(front view)

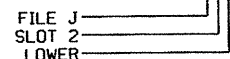


EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

⊗ Wired Input - Do not populate slot with detector card

INPUT FILE POSITION LEGEND: J2L



INPUT FILE CONNECTION & PROGRAMMING CHART

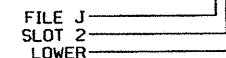
LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
		J4U	48	10	26	6	Y	Y	Y		3
1B	TB2-9,10	I3U	63	25	32	1	Y	Y			15
1C	TB2-11,12	I3L	76	38	42	1	Y	Y			15
2A	TB4-9,10	I6U	41	3	4	2	Y	Y			
2B	TB4-11,12	I6L	45	7	14	2	Y	Y			
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			

¹Add jumper from I1-W to J4-W, on rear of input file.

NOTE!

Remove jumpers from TB2-5 to TB2-7, and from TB2-6 to TB2-8.

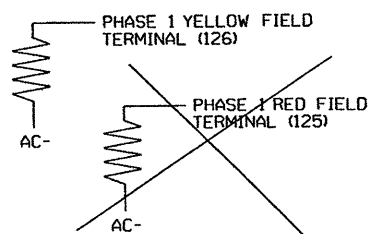
INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

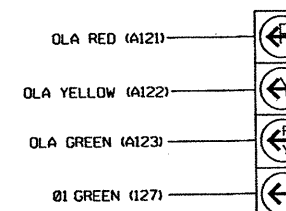
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



IMPORTANT: If present, remove load resistor PHASE 1 RED FIELD TERMINAL (I25)

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

- The sequence display for this signal requires special logic programming. See sheet 2 of 2 for programming instructions.

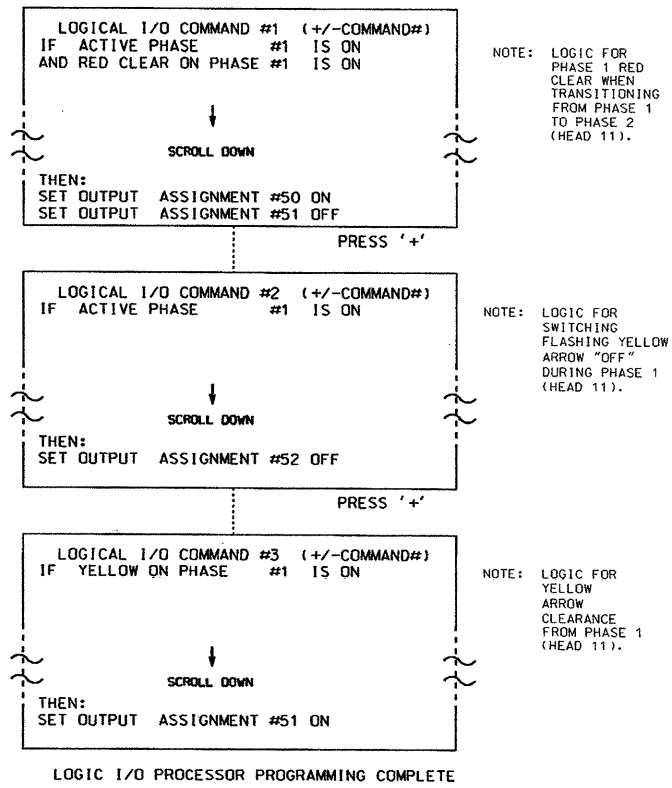
ELECTRICAL DETAIL SHEET 1 OF 2

	US 17 Bus. (Market Street) at US 117/NC 132 (College Road) Northbound Ramp		
	Division 03 PLAN DATE: 9-14-10 PREPARED BY: D.H. Spaulding	New Hanover County REVIEWED BY: D.T. Joyce REVIEWED BY:	
THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0242 DESIGNED: August 2010 SEALED: 10-06-10 REVISED: N/A		REVISIONS: _____ INIT. DATE _____ SIGNATURE: _____ DATE: _____ SIG. INVENTORY NO. 03-0242	

**LOGICAL I/O PROCESSOR PROGRAMMING DETAIL
TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE**

(program controller as shown below)

- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS), SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2 and 3.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



OUTPUT REFERENCE SCHEDULE

OUTPUT 50	= Over lap A Red
OUTPUT 51	= Over lap A Yellow
OUTPUT 52	= Over lap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE: 12345678910111213141516
 VEH OVL PARENTS: XX
 VEH OVL NOT VEH:
 VEH OVL NOT PED:
 VEH OVL GRN EXT:
 STARTUP COLOR: - RED - YELLOW - GREEN
 FLASH COLORS: - RED - YELLOW X GREEN
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...Y
 GREEN EXTENSION (0-255 SEC)...0.0
 YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

← NOTICE GREEN FLASH

PRESS '+' TWICE

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE: 12345678910111213141516
 VEH OVL PARENTS: X X
 VEH OVL NOT VEH:
 VEH OVL NOT PED:
 VEH OVL GRN EXT:
 STARTUP COLOR: - RED - YELLOW - GREEN
 FLASH COLORS: - RED - YELLOW - GREEN
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...N
 GREEN EXTENSION (0-255 SEC)...0.0
 YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 03-0242
 DESIGNED: August 2010
 SEALED: 10-06-10
 REVISED: N/A

ELECTRICAL DETAIL SHEET 2 OF 2

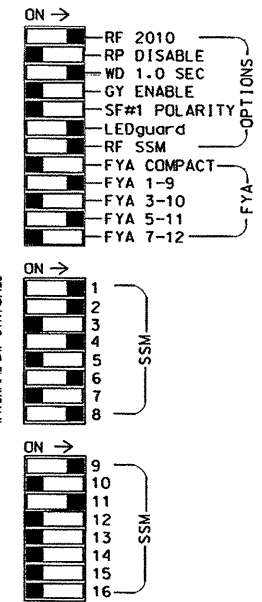
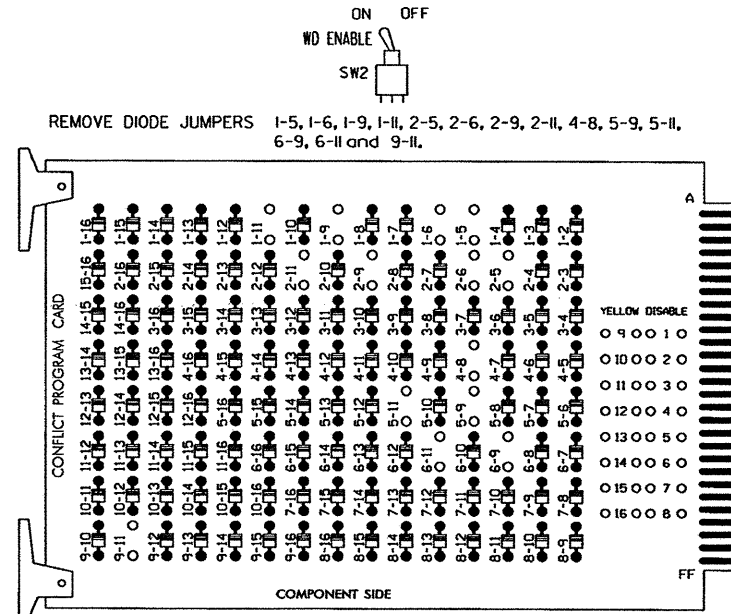
<p>750 N. Greenfield Pkwy, Garner, NC 27529</p>	<p>US 17 Bus. (Market Street) at US 117/NC 132 (College Road) Northbound Ramp</p>	<p>SEAL NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BROWN</p>							
	<p>Division 03 New Hanover county Wilmington</p> <p>PLAN DATE: 9-14-10 REVIEWED BY: D.T. Joyce</p> <p>PREPARED BY: D.H. Spaulding REVIEWED BY:</p>		<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>INIT.</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	NO.	DATE	INIT.	DATE		
NO.	DATE	INIT.	DATE						

SIG. INVENTORY NO. 03-0242

15-001-2010_08159
 S:\11725\SUM\15_01\01\15\work\progress\030242_sml.ele_201008.dgn
 d:\spaulding

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



- NOTES:
- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
 - Make sure jumpers SEL2-SEL5 are present on the monitor board.

NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 3,5,7,10,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Program phases 4 and 8 for Dual Entry.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Variable Initial and Gap Reduction.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
- The cabinet and controller are part of the Wilmington Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 *CABINET.....332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S4,S5,S6,S8,S9,S12.
 PHASES USED.....1,2,4,5,6,8.
 OVERLAP "A".....1+2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....5+6
 OVERLAP "D".....NOT USED

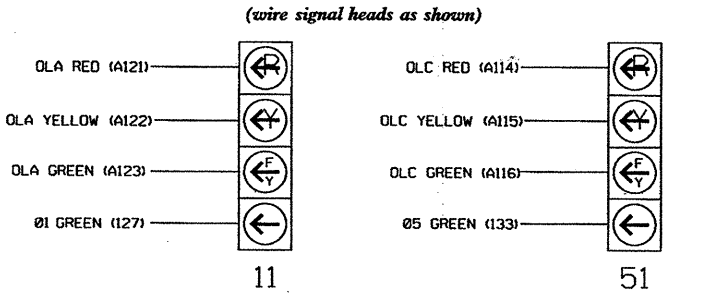
* Auxiliary Output File required.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	82	21,22	NU	41,42	NU	51	61,62	NU	81,82	NU	11	NU	NU	51	NU	NU	NU
RED	*	128			101			134			107							
YELLOW		129			102		*	135			108							
GREEN		130			103			136			109							
RED ARROW														A121				A114
YELLOW ARROW		126												A122				A115
FLASHING YELLOW ARROW														A123				A116
GREEN ARROW	127	127						133										

NU = Not Used
 * Denotes install load resistor. See load resistor installation detail this sheet.
 * See pictorial of head wiring in detail below.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL



NOTE
 1. The sequence display for this signal requires special logic programming. See sheet 2 of 2 for programming instructions.

BACKUP PROTECTION NOTE

(program controller as shown below)
 From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Program phases 2 and 6 for 'Backup Protect'. Make sure the Red Revert times shown on the Signal Design Plans are programmed in the 'Phase Timing' menu.

! IMPORTANT: Disable Backup Protection for phases 2 and 6.

(front view)

FILE "I"	1	2	3	4	5	6	7	8	9	10	11	12	13	14	FS
U	Ø 1	Ø 1	Ø 2	Ø 2	Ø 2	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	DC ISOLATOR
L	NOT USED	NOT USED	2B	Ø 2	Ø 2	4B	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	Ø 4	DC ISOLATOR
U	Ø 5	Ø 6	Ø 6	Ø 6	Ø 6	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	DC ISOLATOR
L	NOT USED	Ø 6	Ø 6	Ø 6	Ø 6	NOT USED	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	Ø 8	DC ISOLATOR

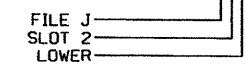
EX.: 1A, 2A, ETC. = LOOP NO.'S
 FS = FLASH SENSE
 ST = STOP TIME
 ® Wired Input - Do not populate slot with detector card

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
1B	TB2-5,6	J4U	48	10	26	6	Y	Y	Y		3
2A	TB2-9,10	I2U	39	1	2	1	Y	Y			15
2B	TB2-11,12	I3L	76	38	42	2	Y	Y			
4A	TB4-9,10	I6U	41	3	4	4	Y	Y			3
4B	TB4-11,12	I6L	45	7	14	4	Y	Y			10
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y	Y		15
6A	TB3-5,6	J2U	40	2	6	6	Y	Y			
6B	TB3-7,8	J2L	44	6	16	6	Y	Y			
8A	TB5-9,10	J6U	42	4	8	8	Y	Y			3

¹Add jumper from I1-W to J4-W, on rear of input file.
²Add jumper from J1-W to I4-W, on rear of input file.

INPUT FILE POSITION LEGEND: J2L



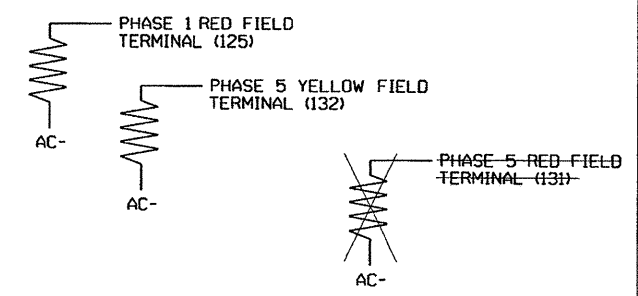
NOTE:
 Remove jumpers from TB2-5 to TB2-7, and from TB2-6 to TB2-8.
 Remove jumpers from TB3-5 to TB3-7, and from TB3-6 to TB3-8.

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



! IMPORTANT: If present, remove load resistor PHASE 5 RED FIELD TERMINAL (I31)

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0409
 DESIGNED: August 2010
 SEALED: 10-06-10
 REVISED: N/A

ELECTRICAL DETAIL SHEET 1 OF 2

US 17 Bus. (Market Street) at Lullwater Drive/ Motel Driveway

Division 3 New Hanover County Wilmington

PLAN DATE: 9-15-10 REVIEWED BY: D.T. Joyce

PREPARED BY: D.H. Spaulding REVIEWED BY:

REVISIONS: INIT. DATE

759 N. Greenfield Pkwy, Garner, NC 27529

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022013 GEORGE C. BROWN

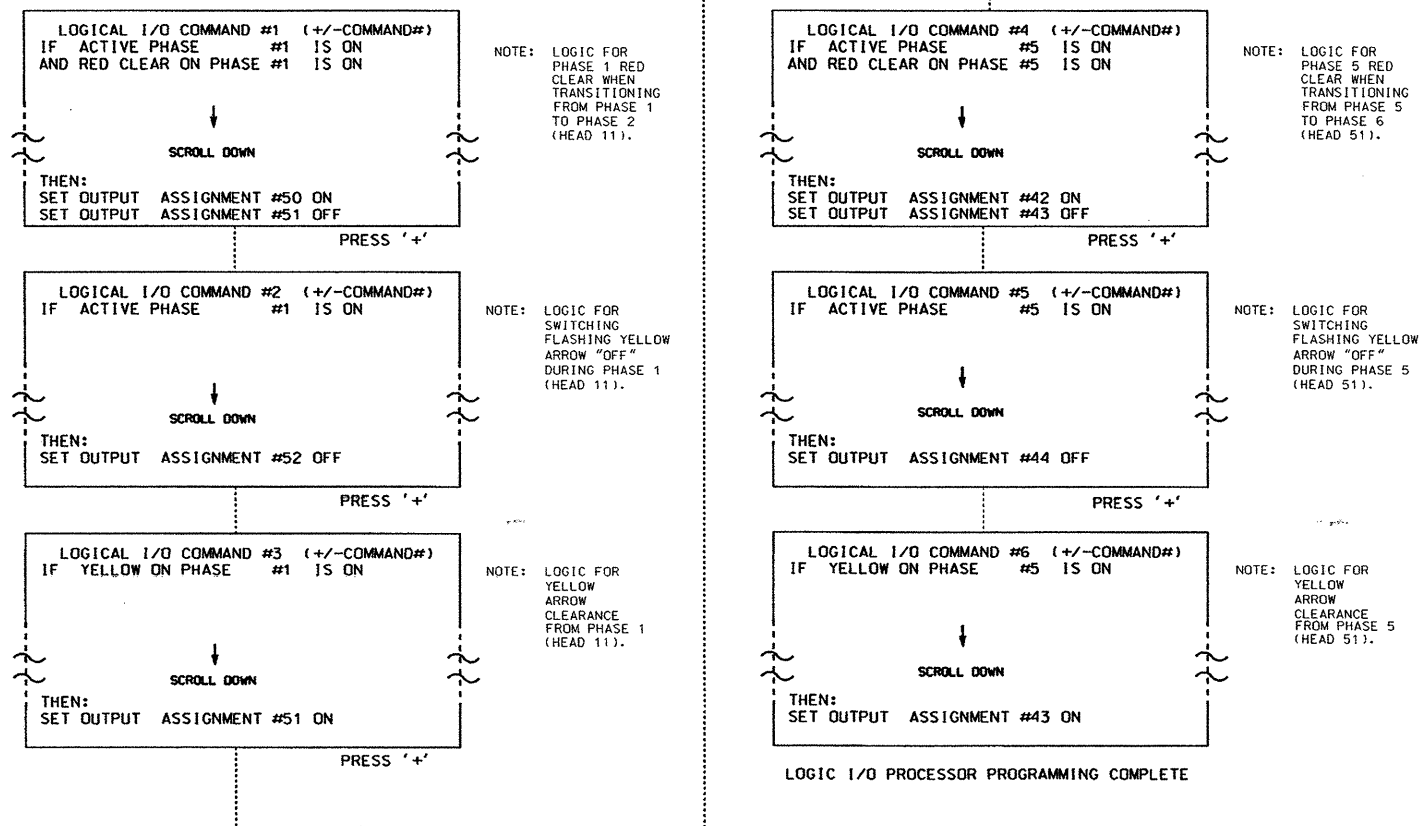
SIG. INVENTORY NO. 03-0409

15-007-2010 11/18
 S:\17AS\SUNITS 51\plan\elec\prog\spaulding\in-progress\030409_elec.dwg
 201008.dwg

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5 AND 6.
2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).



OUTPUT REFERENCE SCHEDULE	
OUTPUT 42 =	Overlap C Red
OUTPUT 43 =	Overlap C Yellow
OUTPUT 44 =	Overlap C Green
OUTPUT 50 =	Overlap A Red
OUTPUT 51 =	Overlap A Yellow
OUTPUT 52 =	Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE: 12345678910111213141516
 VEH OVL PARENTS: XX
 VEH OVL NOT VEH: :
 VEH OVL NOT PED: :
 VEH OVL GRN EXT: :
 STARTUP COLOR: - RED - YELLOW - GREEN
 FLASH COLORS: - RED - YELLOW X GREEN
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...Y
 GREEN EXTENSION (0-255 SEC)...0
 YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

← NOTICE GREEN FLASH

PRESS '+' TWICE

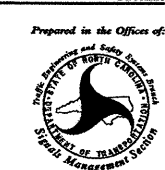
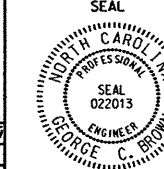
PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE: 12345678910111213141516
 VEH OVL PARENTS: XX
 VEH OVL NOT VEH: :
 VEH OVL NOT PED: :
 VEH OVL GRN EXT: :
 STARTUP COLOR: - RED - YELLOW - GREEN
 FLASH COLORS: - RED - YELLOW X GREEN
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...Y
 GREEN EXTENSION (0-255 SEC)...0
 YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

← NOTICE GREEN FLASH

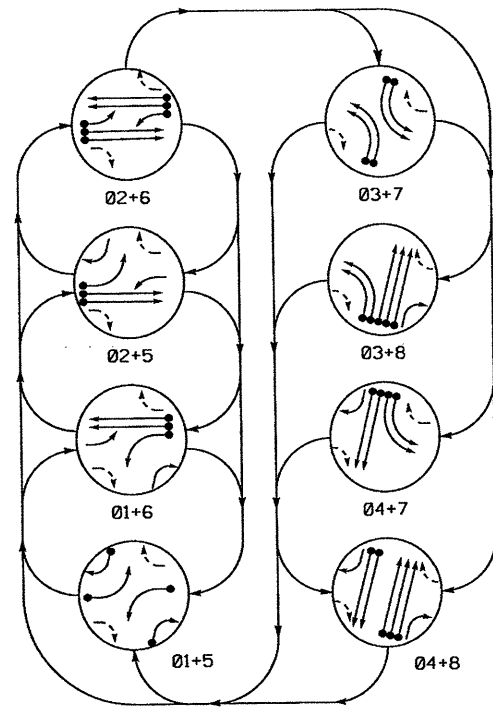
OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 03-0409
 DESIGNED: August 2010
 SEALED: 10-06-10
 REVISED: N/A

ELECTRICAL DETAIL SHEET 2 OF 2

Prepared in the Offices of:  GEORGE C. BROWN ENGINEER 750 N. Greenfield Parkway, Garner, NC 27529	US 17 Bus. (Market Street) at Lullwater Drive/ Motel Driveway Division 3 New Hanover County Wilmington PLAN DATE: 9-15-10 REVIEWED BY: D.T. Joyce PREPARED BY: D.H. Spaulding REVIEWED BY:	SEAL  SEAL 022013 ENGINEER GEORGE C. BROWN SIGNATURE: <i>George C. Brown</i> DATE:									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISIONS</th> <th>INIT.</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		REVISIONS	INIT.	DATE							SIG. INVENTORY NO. 03-0409
REVISIONS	INIT.	DATE									

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

- ← ● → DETECTED MOVEMENT
- ← ○ → UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

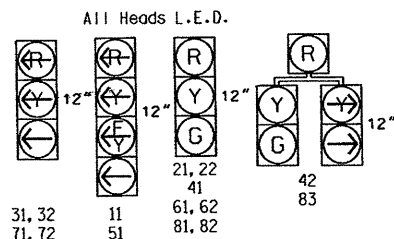
SIGNAL FACE	PHASE							
	01+5	02+5	03+7	04+8	01+6	02+6	03+8	04+7
11								
21, 22	R	R	G	G	R	R	R	Y
31, 32	R	R	R	R				
41	R	R	R	R	R	G	G	R
42	R	R	R	R	R	G	G	R
51								
61, 62	R	G	R	G	R	R	R	Y
71, 72	R	R	R	R	R	R	R	Y
81, 82	R	R	R	R	G	R	G	R
83	R	R	R	R	G	R	G	R

STANDARD SIGNAL FACE CLEARANCES FOR FLASHING LEFT TURN SIGNAL

FROM	TO			
	1	2	1	2
1	Y	Y	Y	Y
2	Y	Y	Y	Y
1	Y	Y	Y	Y
2	Y	Y	Y	Y

Y = Flashing Yellow Arrow

SIGNAL FACE I.D.



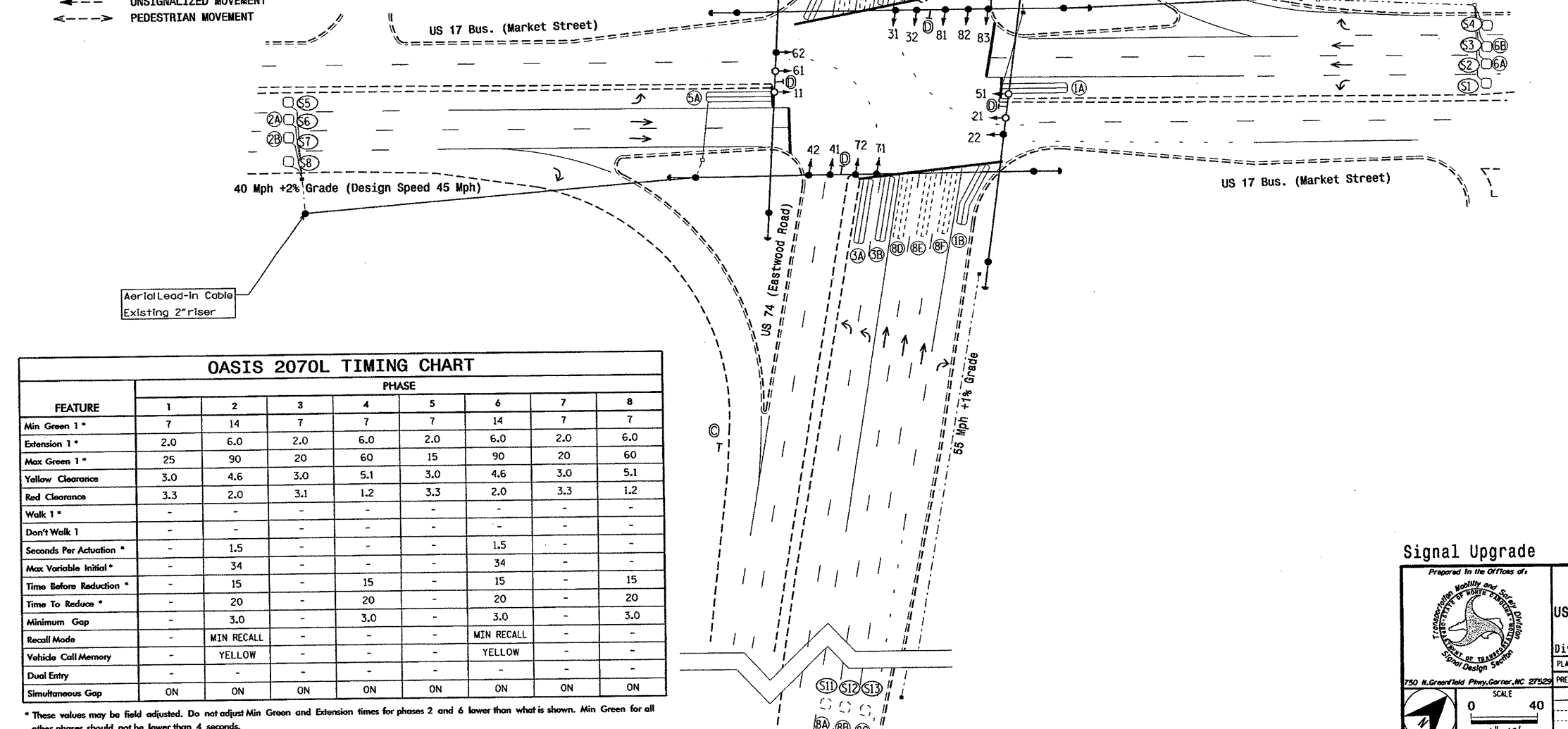
OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING					SYSTEM LOOP	NEW CARD
					PHASE	CALLING	EXTENSION	STRETCH TIME	DELAY TIME		
IA	6X40	0	2-4-2	Y	1	Y	Y	-	15	-	-
IB	6X40	0	2-4-2	Y	1	Y	Y	-	15	-	-
2A/S6	6X6	300	4	Y	2	Y	Y	-	-	-	Y
2B/S7	6X6	300	4	Y	2	Y	Y	-	-	-	Y
3A	6X40	0	2-4-2	Y	3	Y	Y	-	-	-	-
3B	6X40	0	2-4-2	Y	3	Y	Y	-	-	-	-
4A/S9	6X6	420	4	Y	4	Y	Y	-	-	-	Y
4B/S10	6X6	420	4	Y	4	Y	Y	-	-	-	Y
4C	6X40	0	2-4-2	Y	4	Y	Y	2.0	5	-	-
4D	6X40	0	2-4-2	Y	4	Y	Y	2.0	5	-	-
5A	6X40	0	2-4-2	Y	5	Y	Y	-	15	-	-
5B	6X40	0	2-4-2	Y	5	Y	Y	-	15	-	-
6A/S2	6X6	300	4	Y	6	Y	Y	-	-	-	Y
6B/S3	6X6	300	4	Y	6	Y	Y	-	-	-	Y
7A	6X40	0	2-4-2	Y	7	Y	Y	-	-	-	-
7B	6X40	0	2-4-2	Y	7	Y	Y	-	-	-	-
8A/S11	6X6	420	4	Y	8	Y	Y	-	-	-	Y
8B/S12	6X6	420	4	Y	8	Y	Y	-	-	-	Y
8C/S13	6X6	420	4	Y	8	Y	Y	-	-	-	Y
8D	6X40	0	2-4-2	Y	8	Y	Y	2.0	5	-	-
8E	6X40	0	2-4-2	Y	8	Y	Y	2.0	5	-	-
8F	6X40	0	2-4-2	Y	8	Y	Y	2.0	5	-	-
S1	6X6	300	4	Y	-	-	-	-	-	-	Y
S4	6X6	300	4	Y	-	-	-	-	-	-	Y
S5	6X6	300	4	Y	-	-	-	-	-	-	Y
S8	6X6	300	4	Y	-	-	-	-	-	-	Y

8 Phase Fully Actuated Wilmington Signal System

NOTES

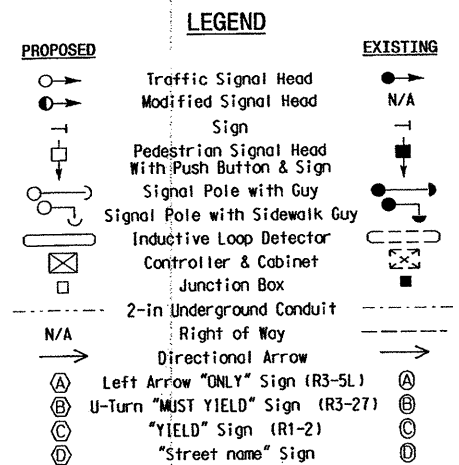
- Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- Phase 3 and/or phase 7 may be lagged.
- Reposition existing signal heads numbered 22 & 62.
- Set all detector units to presence mode.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Signal system data: Controller Asset #0721.



OASIS 2070L TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1*	7	14	7	7	7	14	7	7
Extension 1*	2.0	6.0	2.0	6.0	2.0	6.0	2.0	6.0
Max Green 1*	25	90	20	60	15	90	20	60
Yellow Clearance	3.0	4.6	3.0	5.1	3.0	4.6	3.0	5.1
Red Clearance	3.3	2.0	3.1	1.2	3.3	2.0	3.3	1.2
Walk 1*	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation*	-	1.5	-	-	-	1.5	-	-
Max Variable Initial*	-	34	-	-	-	34	-	-
Time Before Reduction*	-	15	-	15	-	15	-	15
Time To Reduce*	-	20	-	20	-	20	-	20
Minimum Gap	-	3.0	-	3.0	-	3.0	-	3.0
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



Signal Upgrade

Prepared in the Offices of:

 I. O. Umzurike, Professional Engineer
 License No. 23489, State of North Carolina

US 17 Bus. (Market Street) at US 74 (Martin Luther King, Jr. Parkway) Eastwood Road

Division 03 New Hanover County Wilmington

PLAN DATE: August 2010 REVIEWED BY: I. O. Umzurike

PREPARED BY: I. O. Umzurike

REVISIONS: _____

SCALE: 1"=40'

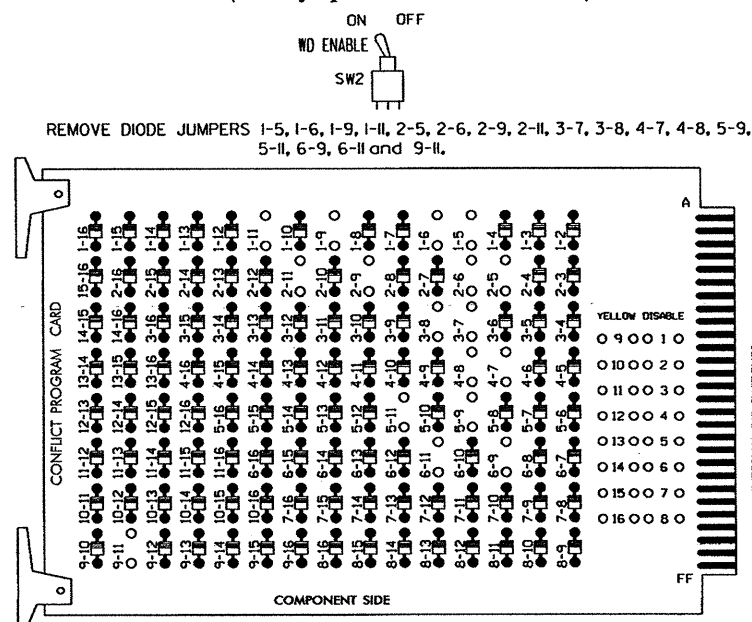
SIGNATURE: _____ DATE: _____

SIG. INVENTORY NO. 03-0721

13-001-2010 11:20 5:41:53 AM I:\S:\Signal\03-0721\03-0721-10.dwg I:\S:\Signal\03-0721\03-0721-10.dwg 2010/08/10 11:20:53 AM I:\S:\Signal\03-0721\03-0721-10.dwg

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Make sure jumpers SEL2-SEL5 are present on the monitor board.

INPUT FILE POSITION LAYOUT

(front view)

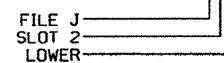
FILE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	1A	2A/S6	3A	4A/S9	5A	6A/S2	7A	8A/S11	9A	10A	11A	12A	13A	14A
L	NOT USED	2B/S7	3B	4B/S10	5B	6B/S3	7B	8B/S12	9B	10B	11B	12B	13B	14B

EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
ST = STOP TIME

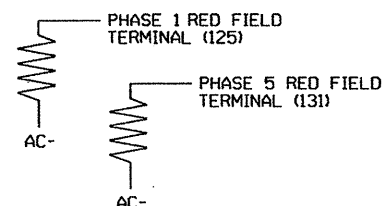
⊗ Wired Input - Do not populate slot with detector card

INPUT FILE POSITION LEGEND: J2L



LOAD RESISTOR INSTALLATION DETAIL

VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



NOTES

- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
- Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 10, 12, 13, 14, 15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
- Enable Simultaneous Gap-Out for all phases.
- Program phases 2 and 6 for Variable Initial and phases 2, 4, 6 & 8 for Gap Reduction.
- Program phases 2 and 6 for Start Up In Green.
- Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
- The cabinet and controller are part of the Wilmington Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
 * CABINET.....332 /W/ AUX
 SOFTWARE.....ECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
 LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S7,S8,S9,S12.
 PHASES USED.....1,2,3,4,5,6,7,8.
 OVERLAP "A".....1+2
 OVERLAP "B".....NOT USED
 OVERLAP "C".....5+6
 OVERLAP "D".....NOT USED

* Auxiliary Output File required.

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A ¹	TB2-1,2	I1U	56	18	1	1	Y	Y			15
2A/S6	TB2-5,6	J4U	48	10	26	6	Y	Y	Y		3
2B/S7	TB2-7,8	I2L	43	5	12	2/SYS	Y	Y			
3A	TB4-5,6	I5U	58	20	3	3	Y	Y			
3B	TB4-7,8	I5L	58	20	3	3	Y	Y			
4A/S9	TB4-9,10	I6U	41	3	4	4/SYS		Y			
4B/S10	TB4-11,12	I6L	45	7	14	4/SYS		Y			
4C	TB6-1,2	I7U	65	27	34	4	Y	Y	Y	2.0	5
4D	TB6-3,4	I7L	78	40	44	4	Y	Y	Y	2.0	5
* S1	TB6-9,10	I9U	60	22	11	SYS					
* S4	TB6-11,12	I9L	62	24	13	SYS					
5A ²	TB3-1,2	J1U	55	17	5	5	Y	Y			15
1B	TB3-5,6	J2U	40	2	6	1	Y	Y	Y		3
5B	TB3-7,8	J2L	44	6	16	5	Y	Y			15
6A/S2	TB3-9,10	J3U	64	26	36	6/SYS	Y	Y			
6B/S3	TB3-11,12	J3L	77	39	46	6/SYS	Y	Y			
7A	TB5-5,6	J5U	57	19	7	7	Y	Y			
7B	TB5-7,8	J5L	57	19	7	7	Y	Y			
8A/S11	TB5-9,10	J6U	42	4	8	8/SYS		Y			
8B/S12	TB5-11,12	J6L	46	8	18	8/SYS		Y			
8C/S13	TB7-1,2	J7U	66	28	38	8/SYS		Y			
8D	TB7-3,4	J7L	79	41	48	8	Y	Y	Y	2.0	5
8E	TB7-5,6	I8U	50	12	28	8	Y	Y	Y	2.0	5
8F	TB7-7,8	J8U	50	12	28	8	Y	Y	Y	2.0	5
* S5	TB7-9,10	J9U	59	21	15	SYS					
* S8	TB7-11,12	J9L	61	23	17	SYS					

* SYSTEM DETECTOR ONLY. REMOVE THE VEHICLE PHASE ASSIGNED TO THIS DETECTOR IN THE DEFAULT PROGRAMMING.

- Add jumpers from I1-W to J4-W, on rear of input file.
- Add jumpers from J1-W to I4-W, on rear of input file.

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3	S4	S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3	4	4 PED	5	6	6 PED	7	8	8 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11	83	21,22	NU	31,32	41,42	51	42	61,62	NU	71,72	81,82 83	NU	11	NU	51	NU	NU
RED		*	128		101		*	134			107							
YELLOW			129		102			135			108							
GREEN			130		103			136			109							
RED ARROW					116						122			A121			A114	
YELLOW ARROW					117						123			A122			A115	
FLASHING YELLOW ARROW		126						132						A123			A116	
GREEN ARROW	127	127			118		133	133			124							

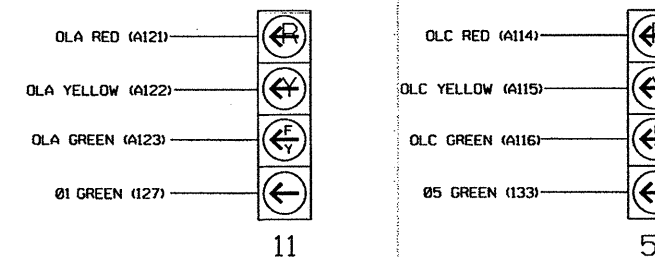
NU = Not Used

* Denotes install load resistor. See load resistor installation detail this sheet.

* See pictorial of head wiring in detail below.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



NOTE

- The sequence display for this signal requires special logic programming. See sheet 2 of 2 for programming instructions.

BACKUP PROTECTION NOTE

(program controller as shown below)

From Main Menu press '2' (Phase Control), then '1' (Phase Control Functions). Program phases 2 and 6 for 'Backup Protect'. Make sure the Red Revert Times shown on the Signal Design Plans are programmed in the 'Phase Timing' menu.

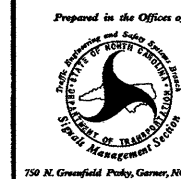
! IMPORTANT: Disable Backup Protection for phases 2 and 6.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0721
 DESIGNED: August 2010
 SEALED: 10-06-10
 REVISED: N/A

ELECTRICAL DETAIL SHEET 1 OF 2

PREPARED BY: D.H. Spaulding

US 17 Bus. (Market Street) at US 74 (Martin Luther King, Jr. Parkway Eastwood Road)



Division 3 New Hanover County Wilmington

PLAN DATE: 9-15-10 REVIEWED BY: D.T. Joyce

PREPARED BY: D.H. Spaulding REVIEWED BY:

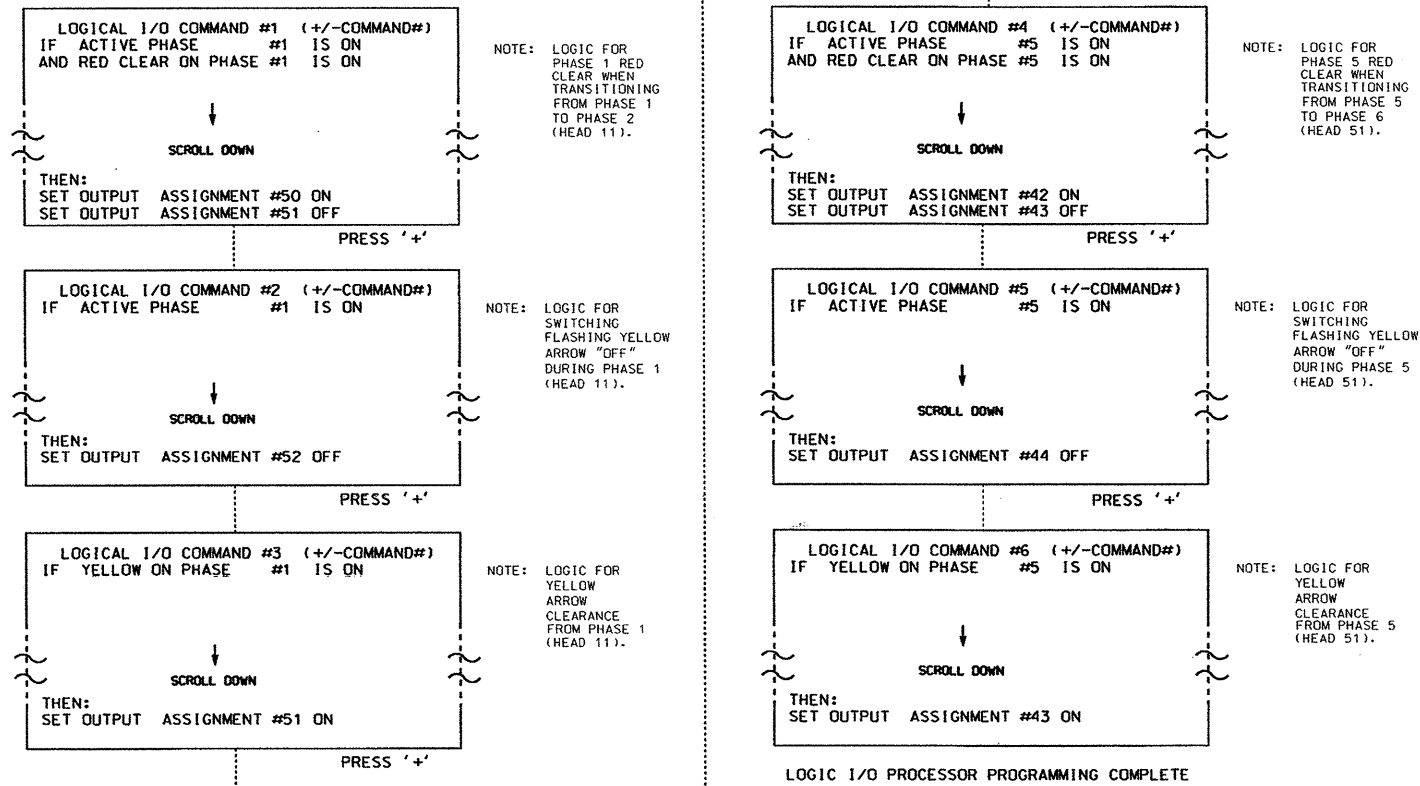
REVISIONS	INIT.	DATE

Signature: George C. Brown
 Date: 10/10/10
 Sig. Inventory No. 03-0721

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

- FROM MAIN MENU PRESS '2' (PHASE CONTROL). THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5 AND 6.
- FROM MAIN MENU PRESS '6' (OUTPUTS). THEN '3' (LOGICAL I/O PROCESSOR).



OUTPUT REFERENCE SCHEDULE	
OUTPUT 42 =	Overlap C Red
OUTPUT 43 =	Overlap C Yellow
OUTPUT 44 =	Overlap C Green
OUTPUT 50 =	Overlap A Red
OUTPUT 51 =	Overlap A Yellow
OUTPUT 52 =	Overlap A Green

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

- FROM MAIN MENU PRESS '8' (OVERLAPS). THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE: |12345678910111213141516
 VEH OVL PARENTS: |XX
 VEH OVL NOT VEH: |
 VEH OVL NOT PED: |
 VEH OVL GRN EXT: |
 STARTUP COLOR: - RED - YELLOW - GREEN
 FLASH COLORS: - RED - YELLOW X GREEN ← NOTICE GREEN FLASH
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...Y
 GREEN EXTENSION (0-255 SEC)...0
 YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

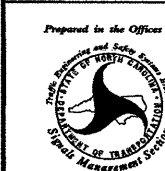
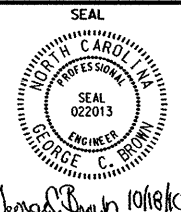
PRESS '+' TWICE

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE: |12345678910111213141516
 VEH OVL PARENTS: |XX
 VEH OVL NOT VEH: |
 VEH OVL NOT PED: |
 VEH OVL GRN EXT: |
 STARTUP COLOR: - RED - YELLOW - GREEN
 FLASH COLORS: - RED - YELLOW X GREEN ← NOTICE GREEN FLASH
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...Y
 GREEN EXTENSION (0-255 SEC)...0
 YELLOW CLEAR (0=PARENT.3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT.0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)...0

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
 THE SIGNAL DESIGN: 03-0721
 DESIGNED: August 2010
 SEALED: 10-06-10
 REVISED: N/A

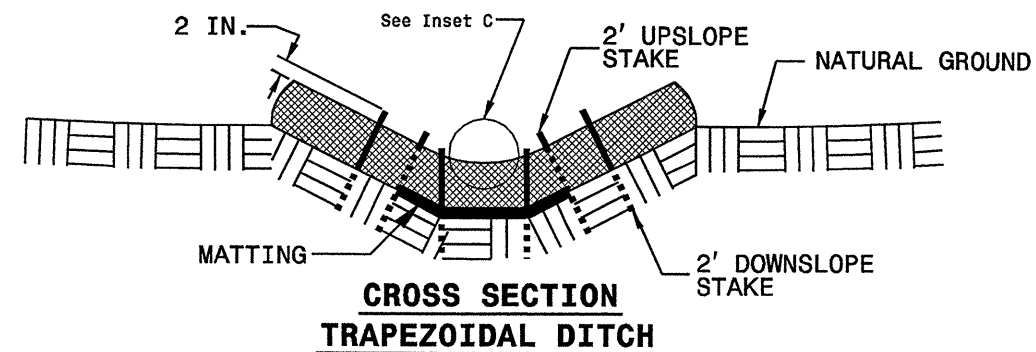
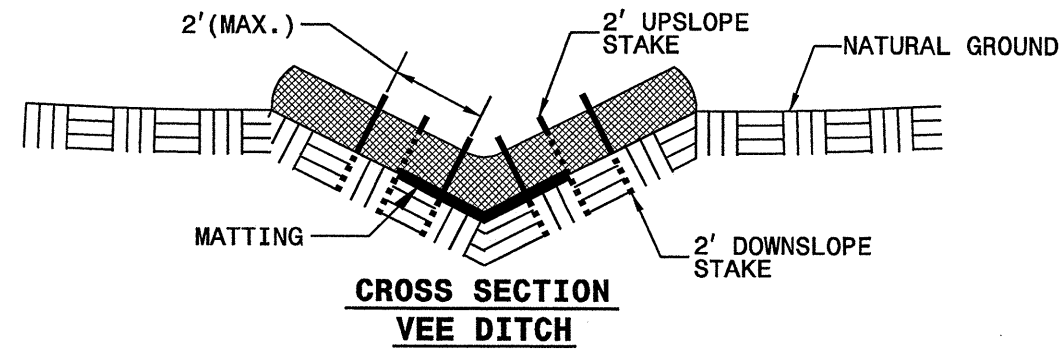
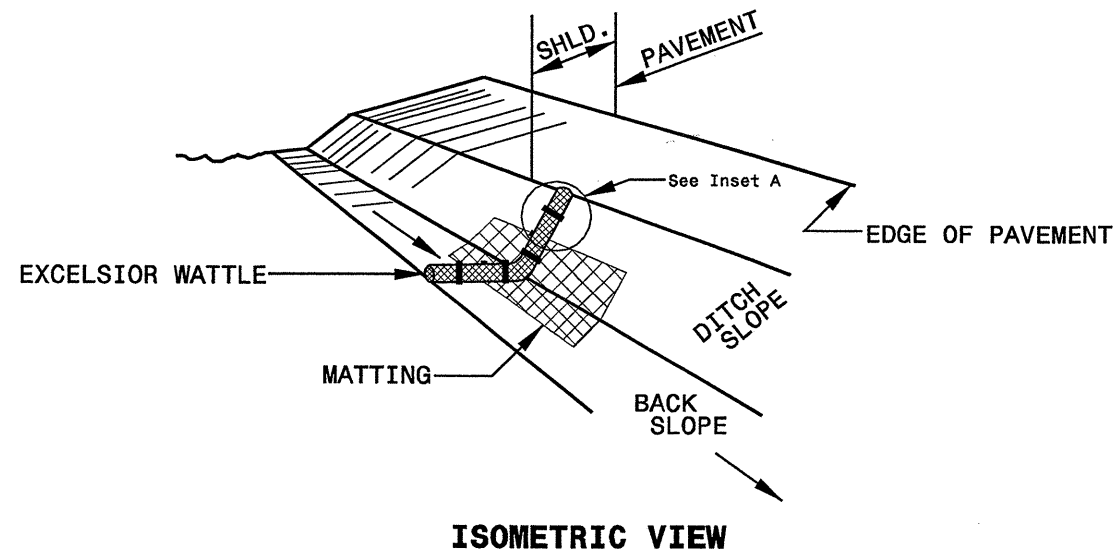
ELECTRICAL DETAIL SHEET 2 OF 2

Prepared in the Offices of:  750 N. Greenfield Parkway, Greensboro, NC 27429	US 17 Bus. (Market Street) at US 74 (Martin Luther King, Jr. Parkway Eastwood Road)	SEAL  SEAL 022013 ENGINEER GEORGE C. BROWN
Division 3 New Hanover County Wilmington		
PLAN DATE: 9-15-10	REVIEWED BY: D.T. Joyce	
PREPARED BY: D.H. Spaulding	REVIEWED BY:	
REVISIONS	INIT.	DATE
SIGNATURE: <i>D.H. Spaulding</i>	DATE:	SIG. INVENTORY NO. 03-0721

07-001-010-10-10-10
 S:\ITS\SUMITS\Sig\01\swc\kpc\pds\10_Koms\paul.d\Inq\In-progress\030721_1.sm_01_2010xx.dgn
 d:\paul.d\Inq

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT REFERENCE NO. X-XXXX	SHEET NO. EC-26
BY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

