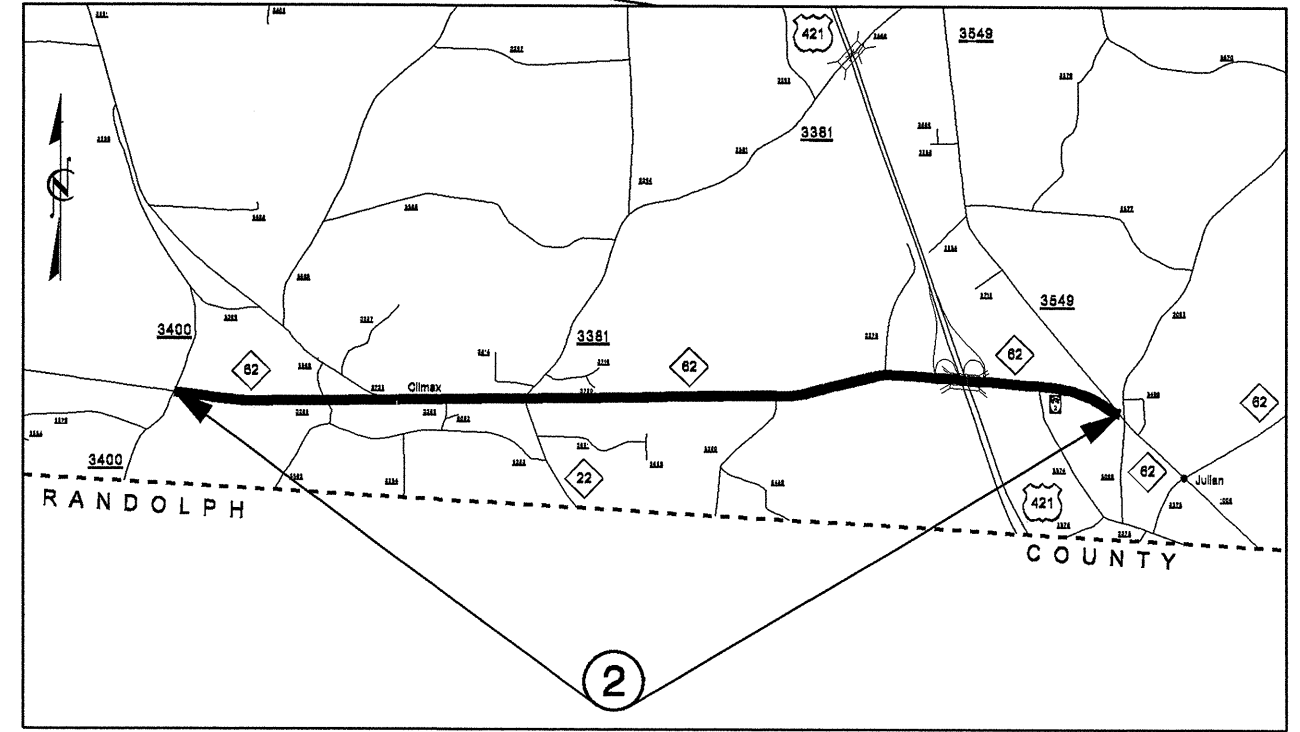
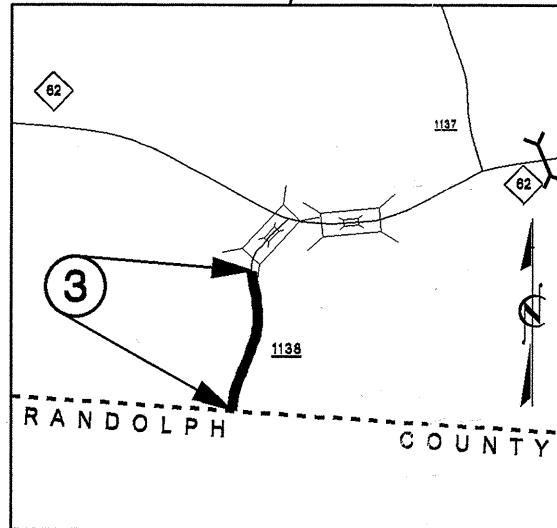
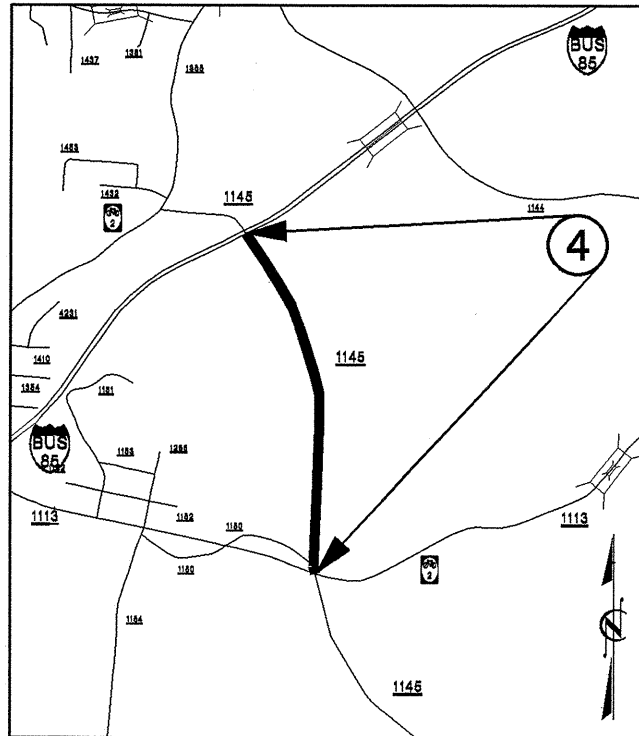
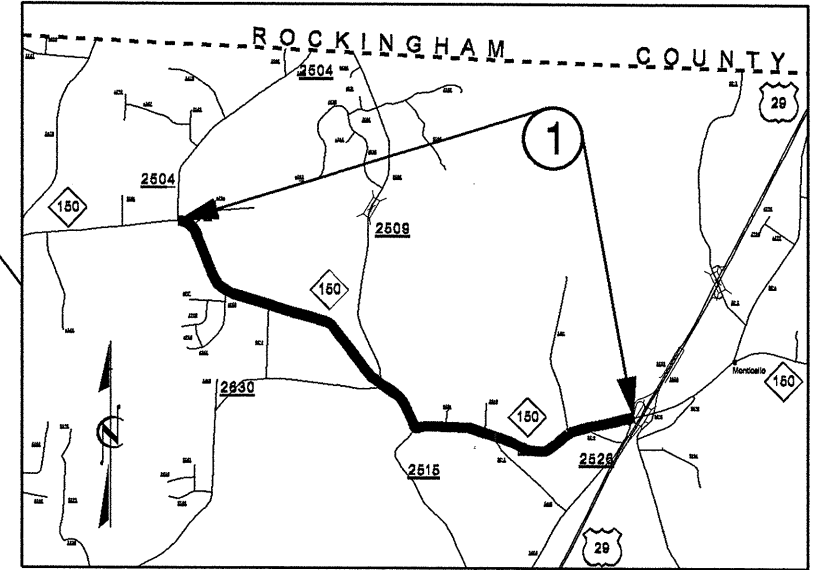
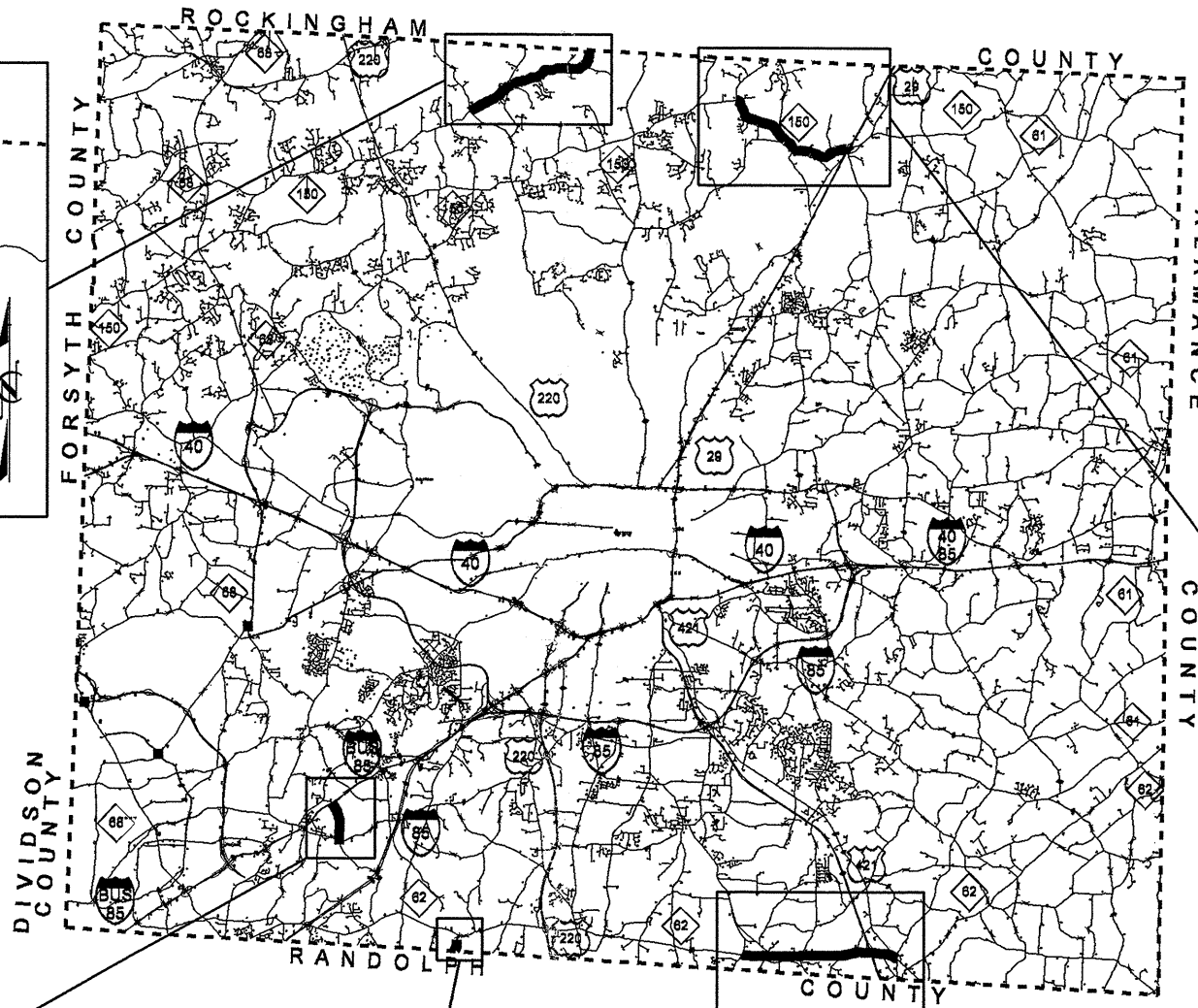
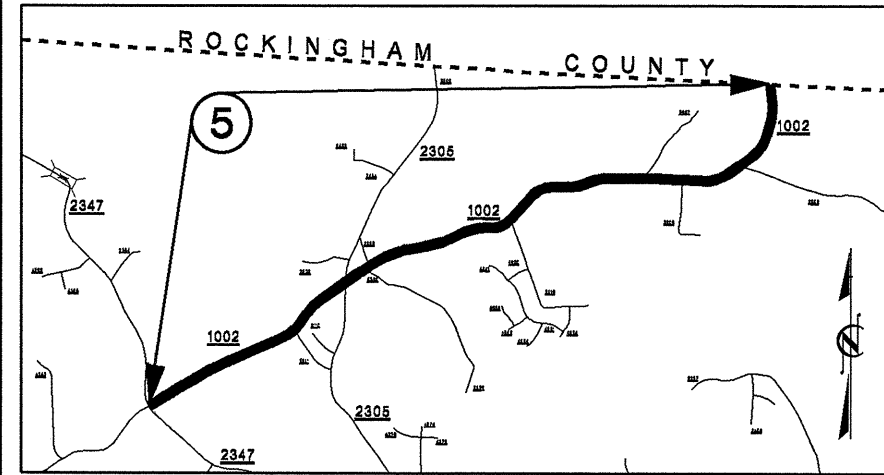
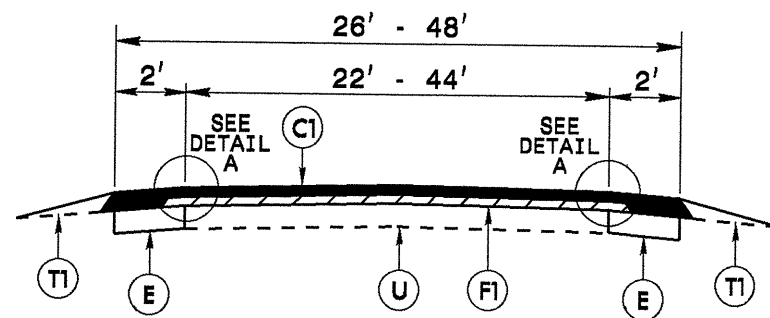


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.51, 7CR.20411.51	1	
F.A. PROJ. NO.			

# 2013 GUILFORD COUNTY

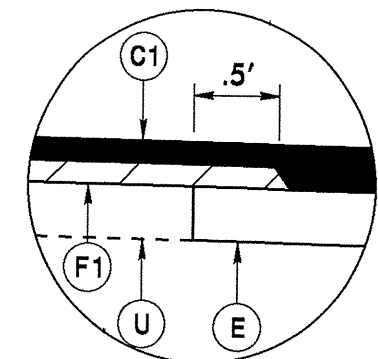


\$\$\$\$\$SYTIME\$\$\$\$\$  
 \$\$\$SY\$\$\$\$\$DGN\$\$\$\$\$  
 \$\$\$SY\$\$\$\$\$SERNAME\$\$\$\$\$

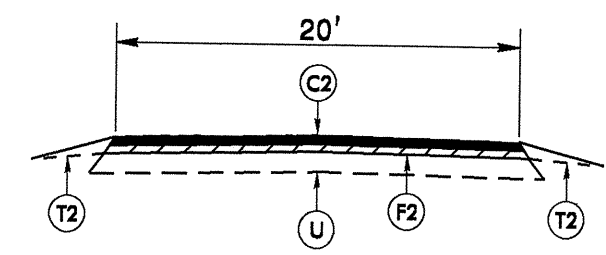


\*NOTE: NO PAVEMENT ON SECTIONS  
MAP 1: STA. 110+40 TO STA. 110+65  
MAP 2: STA. 33+65 TO STA. 34+15  
\*\*NOTE: NO PAVEMENT ON BRIDGE ON MAP 2:  
BRIDGE #90: STA. 176+00 TO STA. 179+00

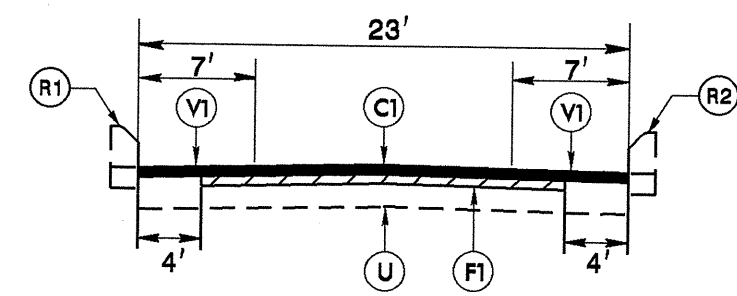
**TYPICAL SECTION NO. 1**  
TO BE USED ON MAPS 1 AND 2  
MAP 1: STA. 0+00 TO STA. 104+95  
STA. 109+95 TO STA. 186+85



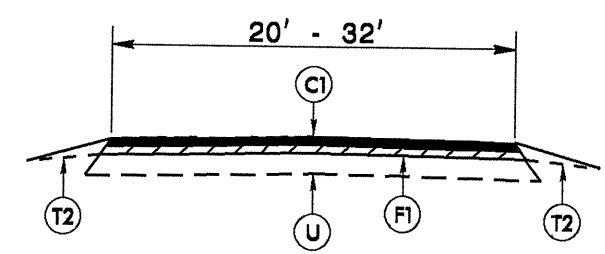
**DETAIL A**



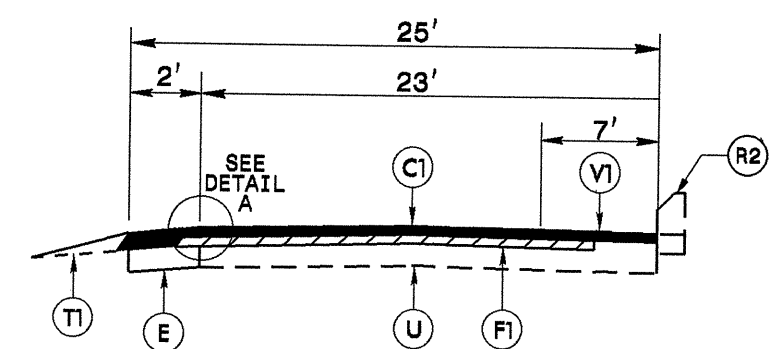
**TYPICAL SECTION NO. 4**  
TO BE USED ON MAP 3



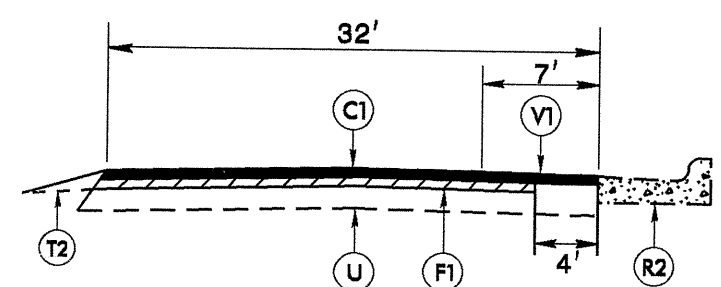
**TYPICAL SECTION NO. 2**  
TO BE USED ON MAP 1  
STA. 104+95 TO STA. 107+50



**TYPICAL SECTION NO. 5**  
TO BE USED ON MAP 4  
STA. 0+00 TO STA. 40+95  
STA. 43+55 TO STA. 51+60



**TYPICAL SECTION NO. 3**  
TO BE USED ON MAP 1  
STA. 107+50 TO STA. 109+95

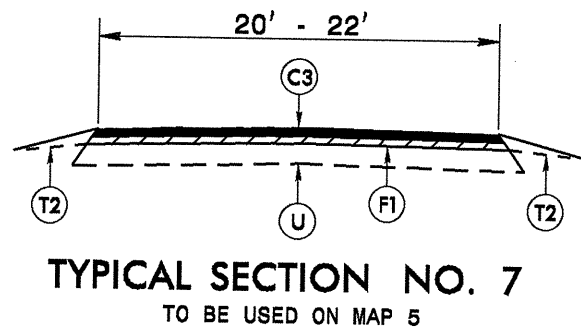


**TYPICAL SECTION NO. 6**  
TO BE USED ON MAP 4  
STA. 40+95 TO STA. 43+55

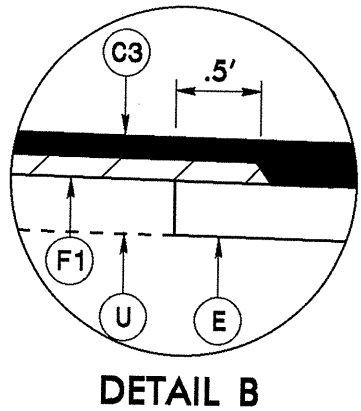
**PAVEMENT SCHEDULE**

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	
C2	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	
D	PROP. APPROX 3" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 342LBS. PER SQ. YD.	
E	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	
F1	AST MAT COAT, #67 STONE	
F2	AST MAT COAT, #78M STONE	
R1	EXISTING CURB	
R2	EXISTING CONCRETE STRUCTURE	
T1	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.	
T2	INCIDENTAL STONE BASE IN LOW SHOULDER AREAS, AS DIRECTED BY THE ENGINEER	
U	EXISTING PAVEMENT.	
V1	0 TO 1 1/2" MILLING	V2 3" MILLING FOR PATCHING
V3	8" MILLING FOR PATCHING	

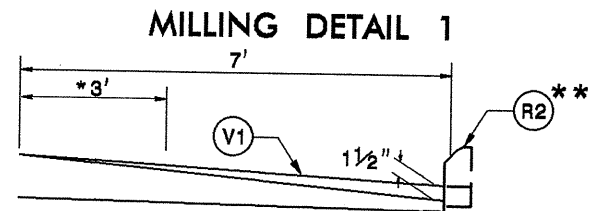
SYSTEMS ENGINEERING  
CONSULTANTS  
INCORPORATED  
1000 EAST 17TH AVENUE  
DENVER, COLORADO 80202  
(303) 733-8800  
FAX (303) 733-8801  
WWW.SECINC.COM



TYPICAL SECTION NO. 7  
TO BE USED ON MAP 5

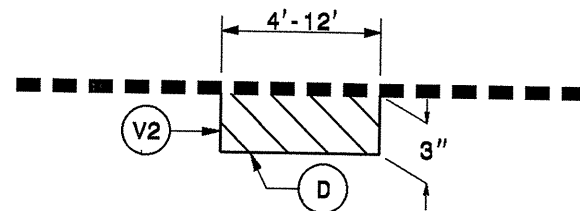


DETAIL B



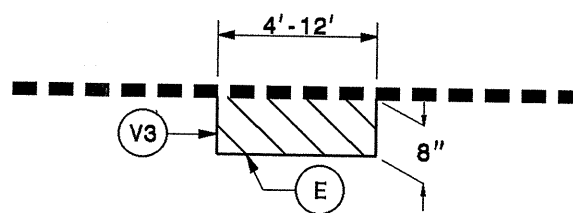
PROFILE MILLING 0 - 1 1/2"  
 \*IF 78M OR #67 SEAL IS INVOLVED, OVERLAP 3'.  
 PROFILE MILL EXISTING ASPHALT PAVEMENT  
 1 1/2" AT LOCATIONS AS DIRECTED BY THE  
 ENGINEER.  
 \*\*NOTE: EXISTING CURB ON TS. NO. 2 MAP 1 LT  
 NOTE: TO BE USED IN CONJUNCTION WITH:  
 TS. NO. 2 ON MAP 1 STA. 104+95 TO STA. 107+50 LT & RT  
 TS. NO. 3 ON MAP 1 STA. 107+50 TO STA. 109+95 RT  
 TS. NO. 6 ON MAP 4 STA. 40+95 TO STA. 43+55 RT

MILLING DETAIL 2



MILL EXISTING ASPHALT PAVEMENT 3" IN DEPTH AND  
 FILL WITH INTERMEDIATE COURSE, TYPE I19.0B AT  
 LOCATIONS AS DIRECTED BY THE ENGINEER.  
 TO BE USED IN CONJUNCTION WITH MAP 4  
 MAP 4: 3" MILLING = 133 SYD  
 INTERMEDIATE COURSE, TYPE I19.0B = 23 TONS

MILLING DETAIL 3



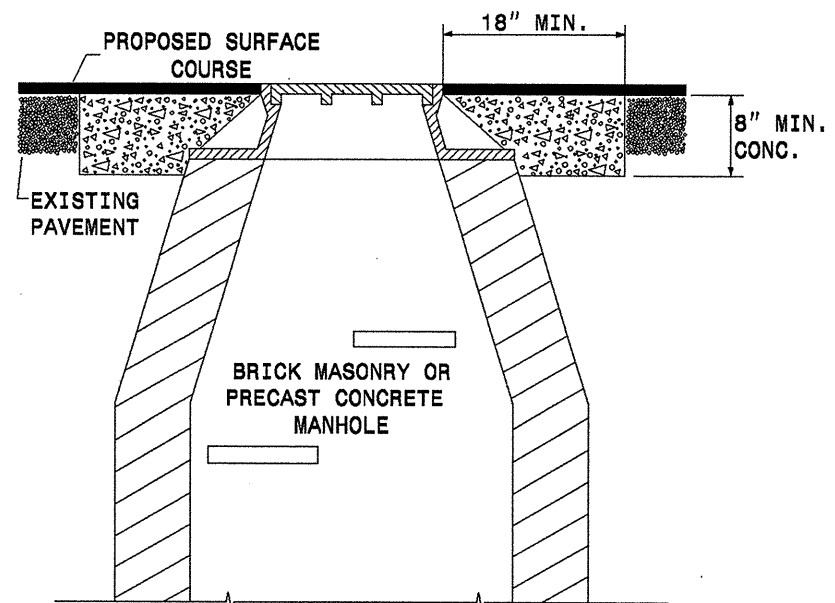
MILL EXISTING ASPHALT PAVEMENT 8" IN DEPTH AND  
 FILL WITH BASE COURSE, TYPE B25.0B AT LOCATIONS AS  
 DIRECTED BY THE ENGINEER.  
 TO BE USED IN CONJUNCTION WITH MAP 4  
 MAP 4: STA. 0+00 TO STA. 32+00 LT  
 8" MILLING = 4400 SYD  
 BASE COURSE, TYPE B25.0B = 2006 TONS

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.		
C2	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.		
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.		
D	PROP. APPROX 3" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 342LBS. PER SQ. YD.		
E	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS		
F1	AST MAT COAT, #67 STONE		
F2	AST MAT COAT, #78M STONE		
R1	EXISTING CURB		
R2	EXISTING CONCRETE STRUCTURE		
T1	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.		
T2	INCIDENTAL STONE BASE IN LOW SHOULDER AREAS, AS DIRECTED BY THE ENGINEER		
U	EXISTING PAVEMENT.		
V1	0 TO 1 1/2" MILLING	V2	3" MILLING FOR PATCHING
V3	8" MILLING FOR PATCHING		

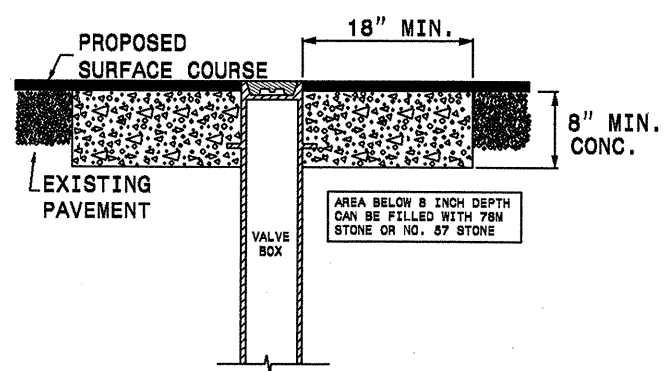
SYSTEMS ENGINEERING CONSULTANTS, INC.

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10411.51, 7CR.20411.51	4	



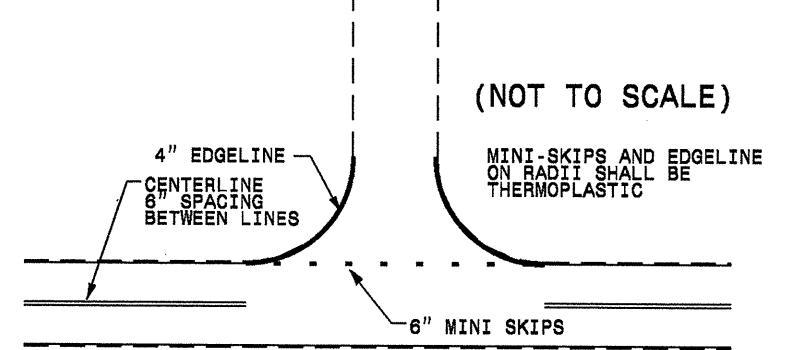
- NOTES:
- MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
  - ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
  - EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
  - USE RAPID SET GROUT, MORTAR OR CONCRETE AS NOTED IN PROJECT SPECIAL PROVISIONS. CLASS B CONCRETE MAY BE USED WHEN THE ADJUSTMENTS ARE NOT IN THE TRAVEL LANE.

### STANDARD CONCRETE ENCASEMENT FOR VALVE CASTINGS IN PAVEMENT

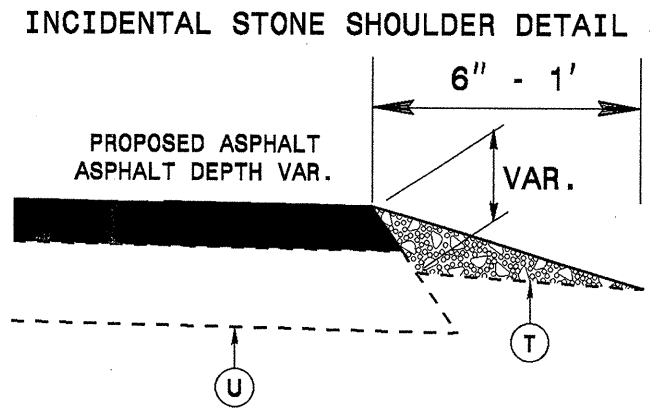


USE RAPID SET GROUT, MORTAR, OR CONCRETE CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS ARE NOT IN THE TRAVEL LANE.

TO BE USED AT ALL NON-SIGNALIZED INTERSECTIONS

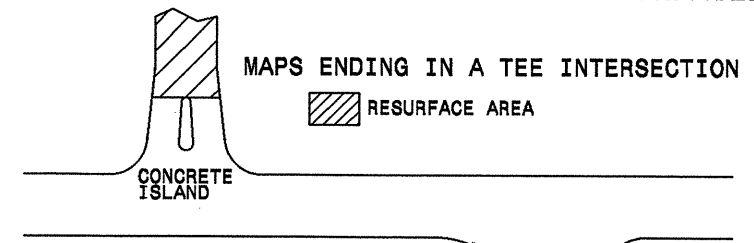


NOTE: MINI SKIPS SHALL BE PLACED ON A 6' CYCLE, CONTAINING AN 6' AND 2' SKIP, THE WIDTH OF THE SKIP SHALL BE 6'.



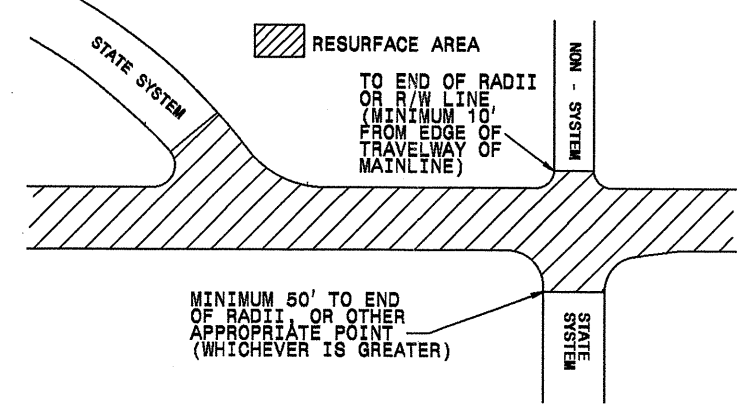
NOTE: ASB OR ABC STONE SHOULD BE PLACE AT THE DESGRESSION OF THE ENGINEER

### PAVING DETAIL 1 MAIN LINE IS NOT BEING RESURFACED

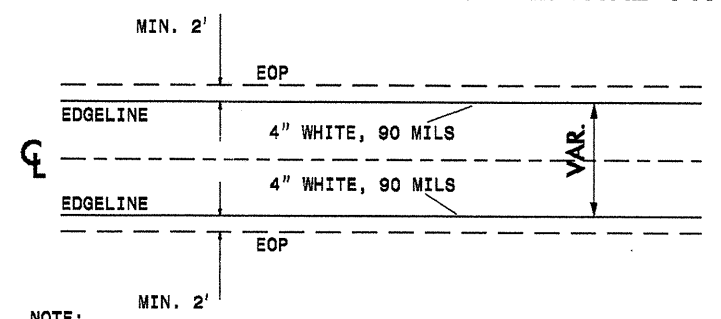


### PAVING DETAIL 2 MAIN LINE IS BEING RESURFACED

NOTE: NON-SYSTEM (CITY STREET, PRIVATE DRIVE, SCHOOL BUS DRIVE)

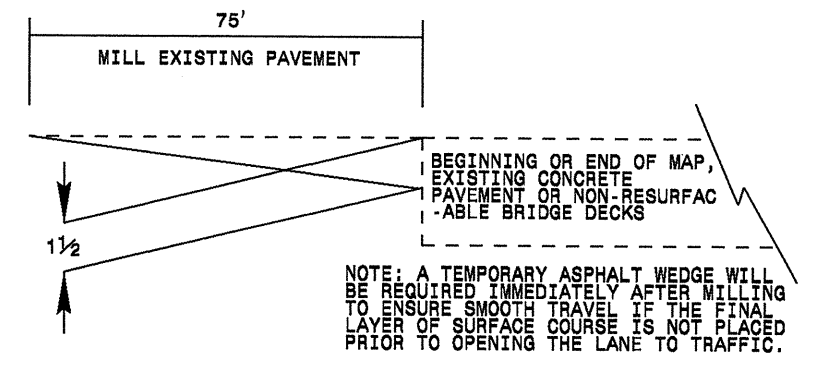


### STRIPING DETAIL 1 GENERAL STRIPING DETAIL FOR ENTIRE PROJECT



- NOTE:
- TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO. 1, 3, AND 6
  - USE IN CONJUNCTION WITH THE EXISTING PAVEMENT MARKINGS TO ESTABLISH THE STRIPING.
  - USE IN CONJUNCTION WITH THE NCDOT STANDARD DRAWINGS.

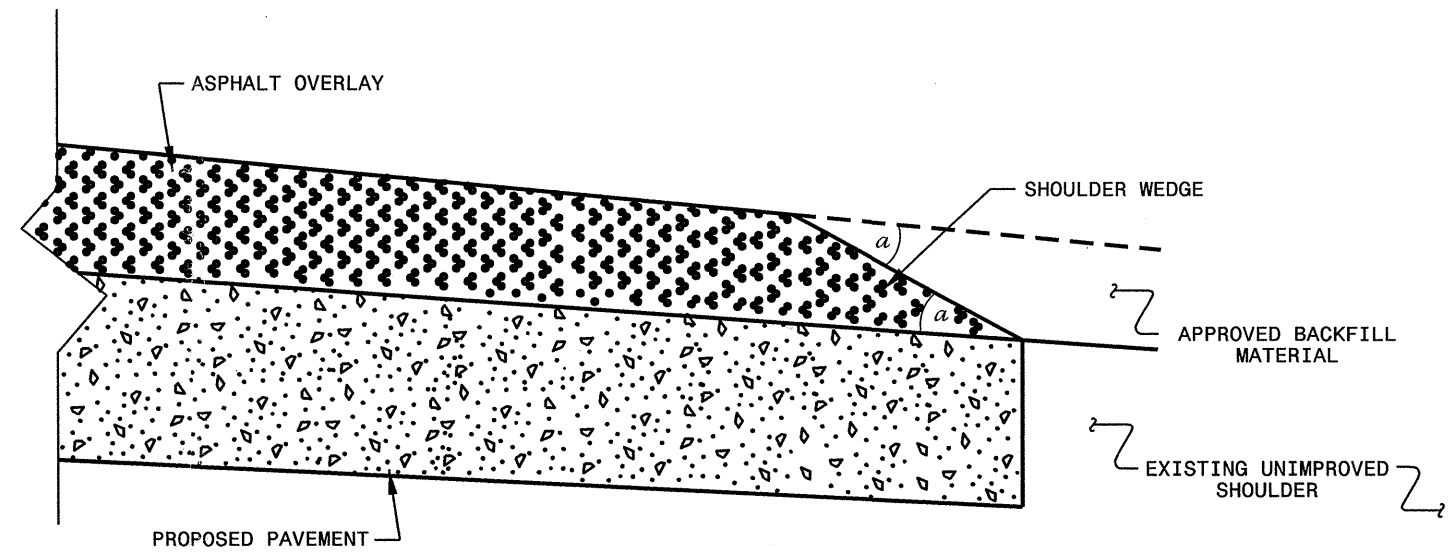
### INCIDENTAL MILLING DETAIL



### PAVEMENT SCHEDULE

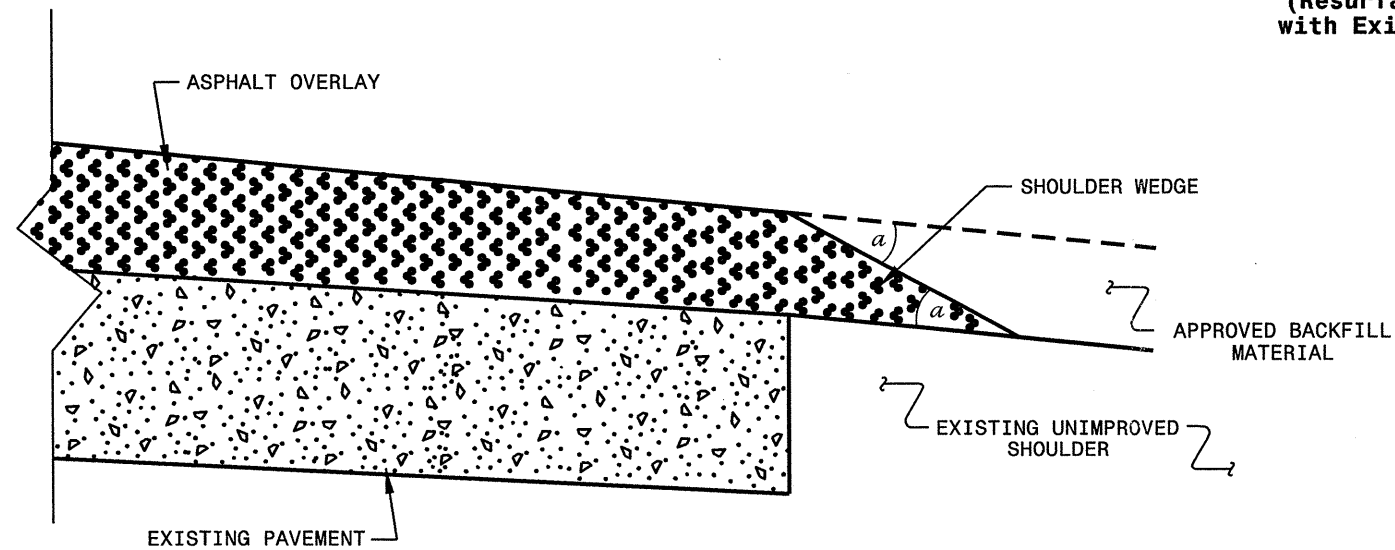
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.		
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C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.		
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R2	EXISTING CONCRETE STRUCTURE		
T1	SHOULDER RECONSTRUCTION, AS DIRECTED BY THE ENGINEER.		
T2	INCIDENTAL STONE BASE IN LOW SHOULDER AREAS, AS DIRECTED BY THE ENGINEER		
U	EXISTING PAVEMENT.		
V1	0 TO 1 1/2" MILLING	V2	3" MILLING FOR PATCHING
V3	8" MILLING FOR PATCHING		

\$\$\$\$\$SYTIME\$\$\$\$\$  
 DGN\$\$\$\$\$  
 \$\$\$USERNAME\$\$\$\$\$



**SHOULDER WEDGE DETAIL**

(Resurfacing Projects w/ Widening or  
with Existing Paved Shoulder > 2 ft.)



**SHOULDER WEDGE DETAIL**

(Resurfacing Projects w/ NO Widening)

NOTES:

- 1) DETAIL DOES NOT APPLY TO OGAFc AND ULTRA-THIN.
- 2) BACKFILL SHOULDER WITH APPROVED MATERIAL.
- 3) THE SHOULDER WEDGE DEVICE MAY BE DISENGAGED AT PAVED DRIVEWAYS AND SIDE STREETS.

$a$  - SHOULDER WEDGE ANGLE = 30°

\*\*\*\*\*  
 DATE PLOTTED: 07/18/12 10:41 AM  
 PLOT BY: T.SPELL  
 PLOT DEVICE: HP DesignJet T530

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b> Office 919-707-6950 FAX 919-250-4119			
<b>SHOULDER WEDGE DETAILS</b>			
ORIGINAL BY:	T.SPELL	DATE:	7-19-11
MODIFIED BY:		DATE:	10/16/12
CHECKED BY:		DATE:	
FILE SPEC.:	s:\usr\details\stand\shoulderwedgedetail.dgn		

PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10411.51, 7CR.20411.51	6	

### SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP NO.	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI.	WIDTH FT.	BORROW EXCAVATION CY.	INCIDENTAL STONE BASE TONS.	SHOULDER RECONSTRUCTION SMI.	MILLING ASPHALT PAVEMENT, 8" DEPTH SY.	MILLING ASPHALT PAVEMENT, 3" DEPTH SY.	MILLING ASPHALT PAVEMENT, 0" TO 1 1/2" DEPTH SY.	INCIDENTAL MILLING SY.	ASPHALT CONC BASE COURSE, TYPE B25.0B TONS.	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B TONS.	ASPHALT CONC SURFACE COURSE, TYPE S9.5B TONS.	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A TONS.	ASPHALT BINDER FOR PLANT MIX TONS.	ASPHALT SURFACE TREATMENT, MAT COAT, #78M STONE SY.	GENERIC PAVING ITEM - [ASPHALT SURFACE TREATMENT, MAT COAT, #67 STONE] SY.	ADJ. OF MANHOLES EA.	ADJUSTMENT OF METER BOXES OR VALVE BOXES EA.	SEEDING & MULCHING AC.	RESIDENTIAL SEEDING ACR.	TRENCHING (UNPAVED) (1) (2") LF.	JUNCTION BOX (STANDARD SIZE) EA.	2" RISER W/ WEATHERHEAD EA.	INDUCTIVE LOOP SAW CUT LF.	LEAD-IN CABLE (14-2) LF.														
7CR.10411.51	Guilford	1	NC 150	FROM SR 2504 (FAIRGROVE CHURCH ROAD) - 19.73 TO US 29 SOUTHBOUND RAMP - 23.27	1	NO	NO	0.458	23	20	118	6.93				192	572	635	63	63	6,453																									
					1	NO	NO	0.031	23-30											39	47	5	5	504																						
					1	NO	NO	0.034	30-44											42	69	6	6	760																						
					1	NO	NO	0.035	44											44	103	8	8	925																						
					1	NO	NO	0.044	36											55	87	8	8	946																						
					1	NO	NO	0.085	23-36											106	143	13	13	1,525																						
					1	NO	NO	1.3	23											1,623	1,825	181	181	18,307																						
					2	NO	NO	0.048	23										394	55	55	3	3	567																						
					3	NO	NO	0.046	23										189	33	57	5	5	544																						
					1	NO	NO	0.009	23											192	11	12	1	1	120																					
					1	NO	NO	0.005	23																																					
					TOTAL FOR MAP NO. 1					1	NO	NO	1.443	23						383	1,801	2,167	209	209	20,320																					
					7CR.10411.51	Guilford	2	NC 62	FROM SR 3400 (RACINE ROAD) - 13.31 TO SR 1006/3549 (LIBERTY ROAD) - 17.33	1	NO	NO	0.048	38	20	118	6.93				583	767	4,326	502	502	50,971							1.25	1.25												
										1	NO	NO	0.096	22-38										317	60	140	11	11	1,105						1.46	1.46	750	6	3	950	500					
										1	NO	NO	0.493	22										183	615	638	65	65	6,657																	
	RXR									1	NO	NO	0.009	22																																
	1	NO	NO	2.525						22										183	3,152	3,486	348	348	34,066									750	4	3	600	600								
	1	NO	NO	0.06						30											75	101	9	9	1,085																					
	1	NO	NO	0.041						42											155	51	133	10	10	1,027																				
	1	NO	NO	0.028						30-42												35	56	5	5	617																				
	1	NO	NO	0.033						30											250	41	56	5	5	603																				
	BRIDGE #90									1	NO	NO	0.057	30																																
	1	NO	NO	0.048						30											250	60	81	7	7	878																				
	1	NO	NO	0.041						42											155	51	133	10	10	1,027																				
	1	NO	NO	0.029						30-42												36	58	5	5	637																				
	1	NO	NO	0.056						22-30												70	83	8	8	885																				
	1	NO	NO	0.413						22												516	554	56	56	5,571																				
	1	NO	NO	0.043						22-40											258	54	75	7	7	800																				
	TOTAL FOR MAP NO. 2									1	NO	NO	4.02		20	300	8.02			1,751	4,936	5,757	561	561	56,697							1.46	1.46	1,500	10	6	1,550	1,100								
	TOTAL FOR PROJ NO. 7CR.10411.51								7.558		40	418	14.95			583	2,518	9,262	10,957	1,063	1,063	107,668							2.71	2.71	1,500	10	6	1,550	1,100											
	7CR.20411.51	Guilford	3	SR 1138 (TOMBALL ROAD)	FROM JOINT 950' SOUTH OF NC 62 - 0.18 TO RANDOLPH COUNTY LINE - 0.39	4	NO	NO	0.212	20		20					333			172	12	2,488																								
						TOTAL FOR MAP NO. 3								0.212		20				333			172	12	2,488																					
5						NO	NO	0.677	20						47		4,400	133		167	2,006	23	691	131	7,944																					
4			SR 1145 (RIVERDALE ROAD)	FROM SR 1113 (KIVETT DRIVE) - 1.25 TO I-85 BUSINESS/US 29/US70 - 0.27	5	NO	NO	0.064	20-26												73	4	864																							
					5	NO	NO	0.034	26-32													49	3	579																						
					6	NO	NO	0.049	32										201			98	6	809	2	2																				
					5	NO	NO	0.152	32													267	16	2,854																						
					TOTAL FOR MAP NO. 4								0.976		47		4,400	133	201	434	2,006	23	1,172	160	13,050	2	2																			
5			SR 1002 (SCALESVILLE ROAD)	FROM SR 2347 (LAKE BRANDT ROAD) 2.65 TO ROCKINGHAM COUNTY LINE - 6.35	7	NO	NO	1.167	22			375						183			1,330	89	15,062																							
					7	NO	NO	0.027	20-22													28	2	333																						
	7	NO			NO	2.503	20										167			2,558	171	29,369																								
TOTAL FOR MAP NO. 5								3.697		375		4,400	133	201	350			3,916	262	44,764																										
TOTAL FOR PROJ NO. 7CR.20411.51								4.885		442		4,400	133	201	1,117	2,006	23	1,172	4,088	434	2,488	57,814	2	2																						
<b>GRAND TOTAL</b>								<b>12.443</b>		<b>40</b>	<b>860</b>	<b>14.95</b>	<b>4,400</b>	<b>133</b>	<b>784</b>	<b>3,635</b>	<b>11,268</b>	<b>23</b>	<b>12,129</b>	<b>4,088</b>	<b>1,497</b>	<b>2,488</b>	<b>165,482</b>	<b>2</b>	<b>2</b>	<b>2.71</b>	<b>2.71</b>	<b>1,500</b>	<b>10</b>	<b>6</b>	<b>1,550</b>	<b>1,100</b>														

PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10411.51, 7CR.20411.51	7	

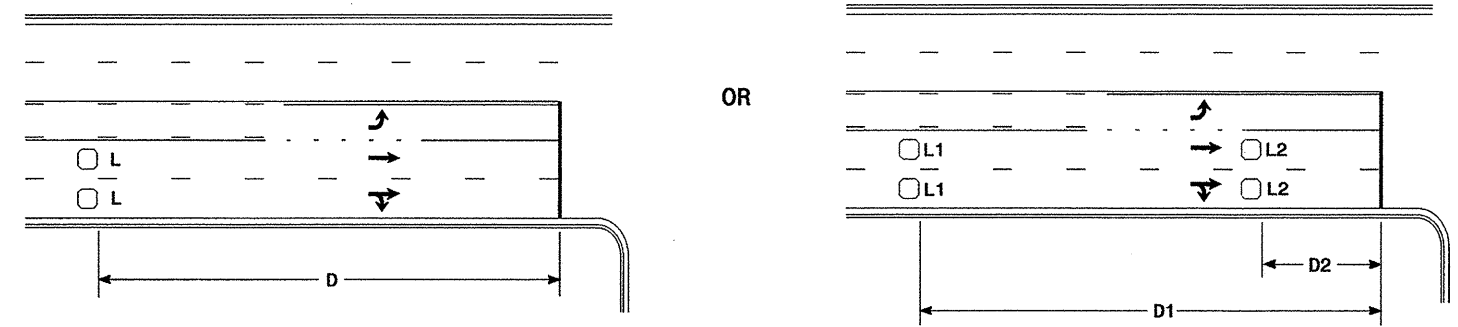
### THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4685000000-E	4686000000-E			4690000000-E	4695000000-E	4705000000-E	4710000000-E	4721000000-E	
							4" X 90 M WHITE THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	6" X 120 M WHITE THERMO LF	8" X 90 M YELLOW THERMO LF	16" X 120 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO MSG RXR 120 M EA	THERMO MSG SCHOOL 120 M EA	
7CR.10411.51	Guilford	1	NC 150	FROM SR 2504 (FAIRGROVE CHURCH ROAD) - 19.73 TO US 29 SOUTHBOUND RAMPS - 23.27	3.538	23-44	37,170	312	35,339	212	454	100	176	4	12	
		<b>TOTAL FOR MAP NO. 1</b>						<b>37,170</b>	<b>312</b>	<b>35,339</b>	<b>212</b>	<b>454</b>	<b>100</b>	<b>176</b>	<b>4</b>	<b>12</b>
		2	NC 62	FROM SR 3400 (RACIN E ROAD) - 13.31 TO SR 1006/3549 (LIBERTY ROAD) - 17.33	4.02	22-42	42,450	306	33,945	126	82	100	301	4		
<b>TOTAL FOR MAP NO. 2</b>						<b>42,450</b>	<b>306</b>	<b>33,945</b>	<b>126</b>	<b>82</b>	<b>100</b>	<b>301</b>	<b>4</b>			
<b>TOTAL FOR PROJ NO. 7CR.10411.51</b>						<b>7.558</b>		<b>79,620</b>	<b>618</b>	<b>69,284</b>	<b>338</b>	<b>536</b>	<b>200</b>	<b>477</b>	<b>8</b>	<b>12</b>
									<b>69,902</b>					<b>20</b>		
7CR.20411.51	Guilford	3	SR 1138 (TOMBALL ROAD)	FROM JOINT 950' SOUTH OF NC 62 - 0.18 TO RANDOLPH COUNTY LINE - 0.39	0.212	20										
		<b>TOTAL FOR MAP NO. 3</b>						<b>0.212</b>								
		4	SR 1145 (RIVERDALE ROAD)	FROM SR 1113 (KIVETT DRIVE) - 1.25 TO I-85 BUSINESS/US 29/US70 - 0.27	0.976	20-32	225			60				45		
		<b>TOTAL FOR MAP NO. 4</b>						<b>0.976</b>	<b>225</b>		<b>60</b>			<b>45</b>		
		5	SR 1002 (SCALESVILLE ROAD)	FROM SR 2347 (LAKE BRANDT ROAD) - 2.65 TO ROCKINGHAM COUNTY LINE - 6.35	3.697	20-22	39,030		36,640	156				68		
<b>TOTAL FOR MAP NO. 5</b>						<b>3.697</b>	<b>39,030</b>		<b>36,640</b>	<b>156</b>			<b>68</b>			
<b>TOTAL FOR PROJ NO. 7CR.20411.51</b>						<b>4.885</b>	<b>39,255</b>		<b>36,640</b>	<b>216</b>			<b>113</b>			
									<b>36,640</b>							
<b>GRAND TOTAL</b>						<b>12.443</b>		<b>118,875</b>	<b>618</b>	<b>105,924</b>	<b>554</b>	<b>536</b>	<b>200</b>	<b>590</b>	<b>8</b>	<b>12</b>
									<b>106,542</b>					<b>20</b>		

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4725000000-E			4810000000-E		4820000000-E	4825000000-E	4900000000-N	4905000000-N			
							THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	4" WHITE PAINT LF	4" YELLOW PAINT LF	8" YELLOW PAINT LF	12" YELLOW PAINT LF	YELLOW & YELLOW MARKERS EA	SNOWPLOWABLE PAVEMENT MARKERS EA	
7CR.10411.51	Guilford	1	NC 150	FROM SR 2504 (FAIRGROVE CHURCH ROAD) - 19.73 TO US 29 SOUTHBOUND RAMPS - 23.27	3.538	23-44	1	2							275			
		<b>TOTAL FOR MAP NO. 1</b>						<b>1</b>	<b>2</b>							<b>275</b>		
		2	NC 62	FROM SR 3400 (RACIN E ROAD) - 13.31 TO SR 1006/3549 (LIBERTY ROAD) - 17.33	4.02	22-42	3	2	3							300		
<b>TOTAL FOR MAP NO. 2</b>						<b>4.02</b>	<b>3</b>	<b>2</b>	<b>3</b>					<b>300</b>				
<b>TOTAL FOR PROJ NO. 7CR.10411.51</b>						<b>7.558</b>	<b>4</b>	<b>4</b>	<b>3</b>					<b>575</b>				
									<b>11</b>									
7CR.20411.51	Guilford	3	SR 1138 (TOMBALL ROAD)	FROM JOINT 950' SOUTH OF NC 62 - 0.18 TO RANDOLPH COUNTY LINE - 0.39	0.212	20					4,480	4,480		50				
		<b>TOTAL FOR MAP NO. 3</b>						<b>0.212</b>				<b>4,480</b>	<b>4,480</b>		<b>50</b>			
		4	SR 1145 (RIVERDALE ROAD)	FROM SR 1113 (KIVETT DRIVE) - 1.25 TO I-85 BUSINESS/US 29/US70 - 0.27	0.976	20-32	4	2		2	2	20,190	19,803	590	24	150		
		<b>TOTAL FOR MAP NO. 4</b>						<b>0.976</b>	<b>4</b>	<b>2</b>		<b>2</b>	<b>2</b>	<b>20,190</b>	<b>19,803</b>	<b>590</b>	<b>24</b>	<b>150</b>
		5	SR 1002 (SCALESVILLE ROAD)	FROM SR 2347 (LAKE BRANDT ROAD) - 2.65 TO ROCKINGHAM COUNTY LINE - 6.35	3.697	20-22										300		
<b>TOTAL FOR MAP NO. 5</b>						<b>3.697</b>								<b>300</b>				
<b>TOTAL FOR PROJ NO. 7CR.20411.51</b>						<b>4.885</b>	<b>4</b>	<b>2</b>		<b>2</b>	<b>2</b>	<b>24,670</b>	<b>24,283</b>	<b>590</b>	<b>24</b>	<b>500</b>		
									<b>10</b>			<b>48,953</b>						
<b>GRAND TOTAL</b>						<b>12.443</b>	<b>8</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>24,670</b>	<b>24,283</b>	<b>590</b>	<b>24</b>	<b>500</b>	<b>575</b>	
									<b>21</b>			<b>48,953</b>						



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



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

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

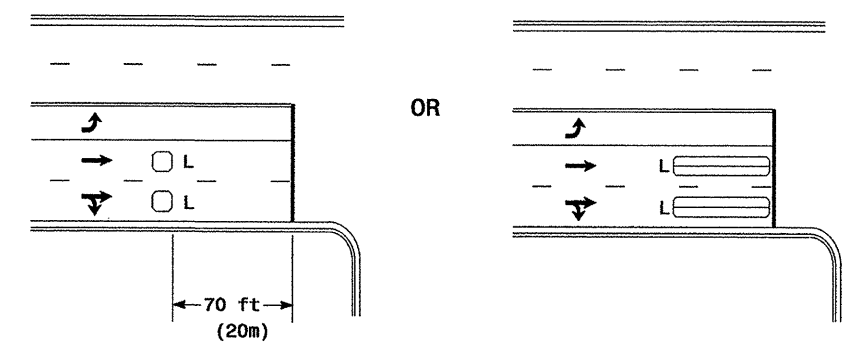
Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

Volume Density Operation

"Stretch" Operation

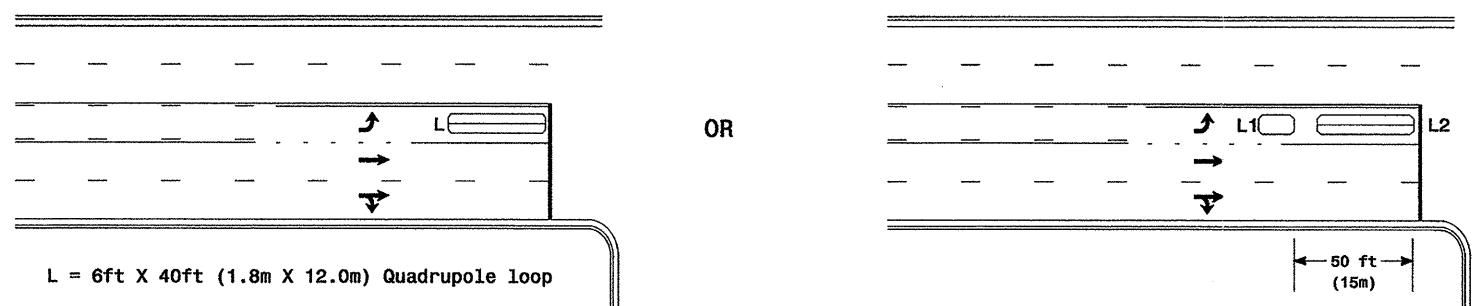
### Low Speed Detection [<35 mph (56 km/hr)]



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

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

### Left Turn Lane Detection



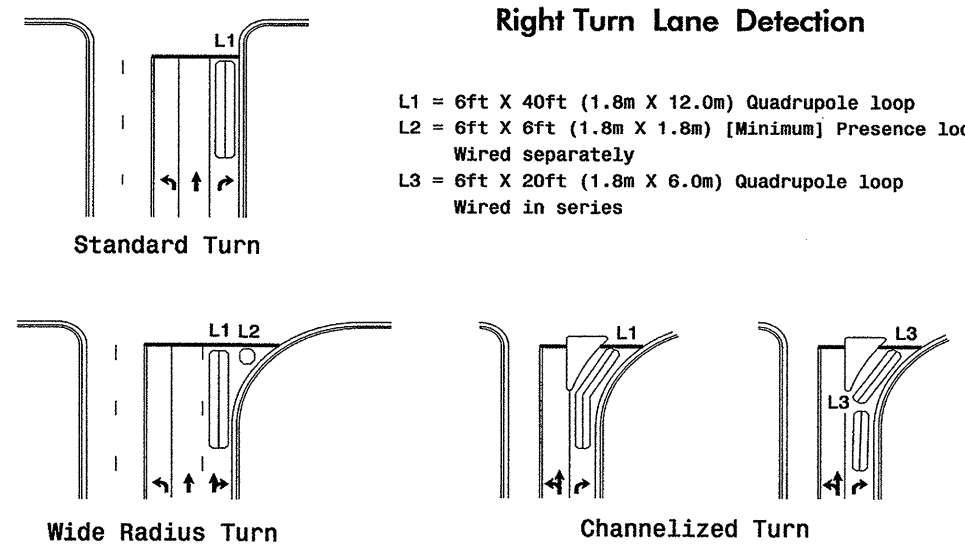
L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

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

Presence Loop Detection

Queue Loop Detection

### Right Turn Lane Detection

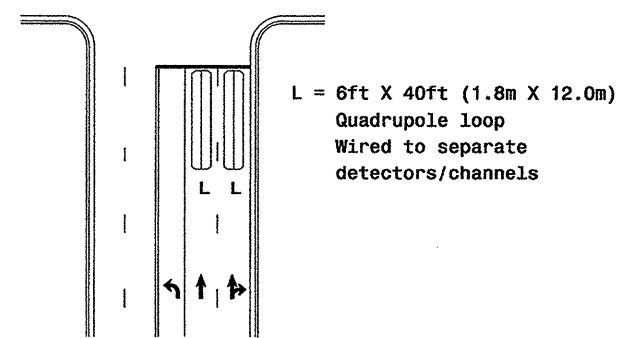


L1 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop  
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop  
Wired separately  
L3 = 6ft X 20ft (1.8m X 6.0m) Quadrupole loop  
Wired in series

Wide Radius Turn

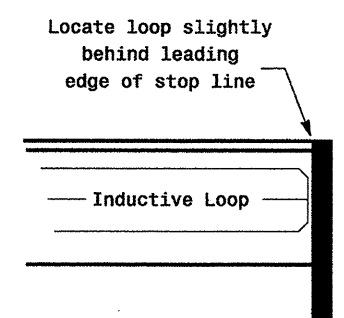
Channelized Turn

### Side Street Detection



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

### Presence Loop Placement at Stop Lines



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

### Recommended Number of Turns

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

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

Quadrupole loops: Use 2-4-2 turns  
6' X 15' (1.8m X 4.6m) Loops:  
Lead-in < 150' (45 m), use 2 turns  
Lead-in > 150' (45 m), use 3 turns

	<b>Typical Loop Locations</b>		
	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander	REVIEWED BY: REVIEWED BY:	

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