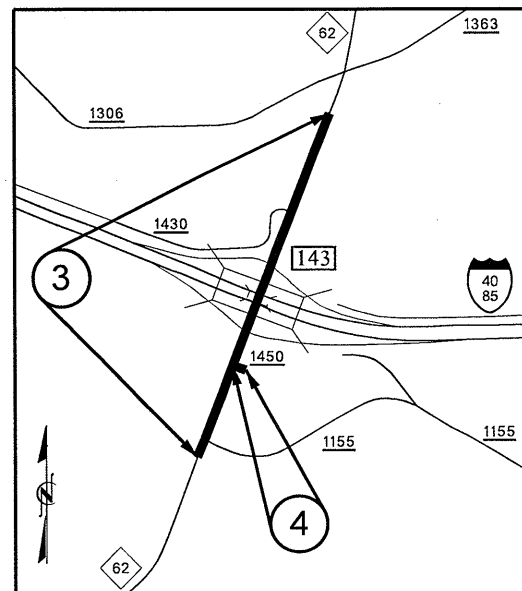
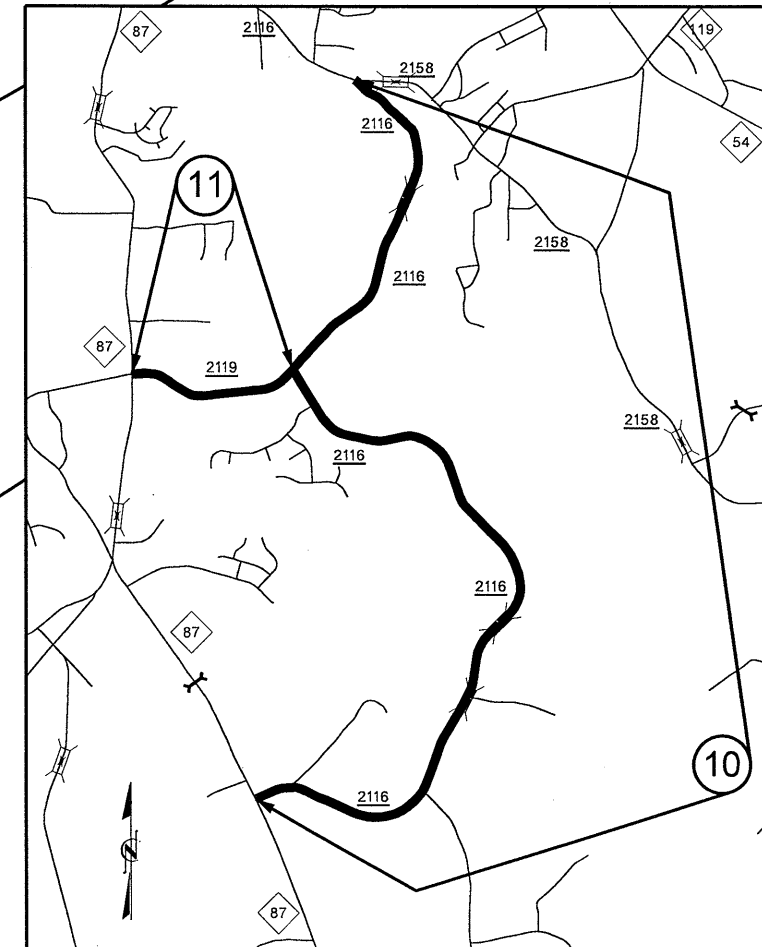
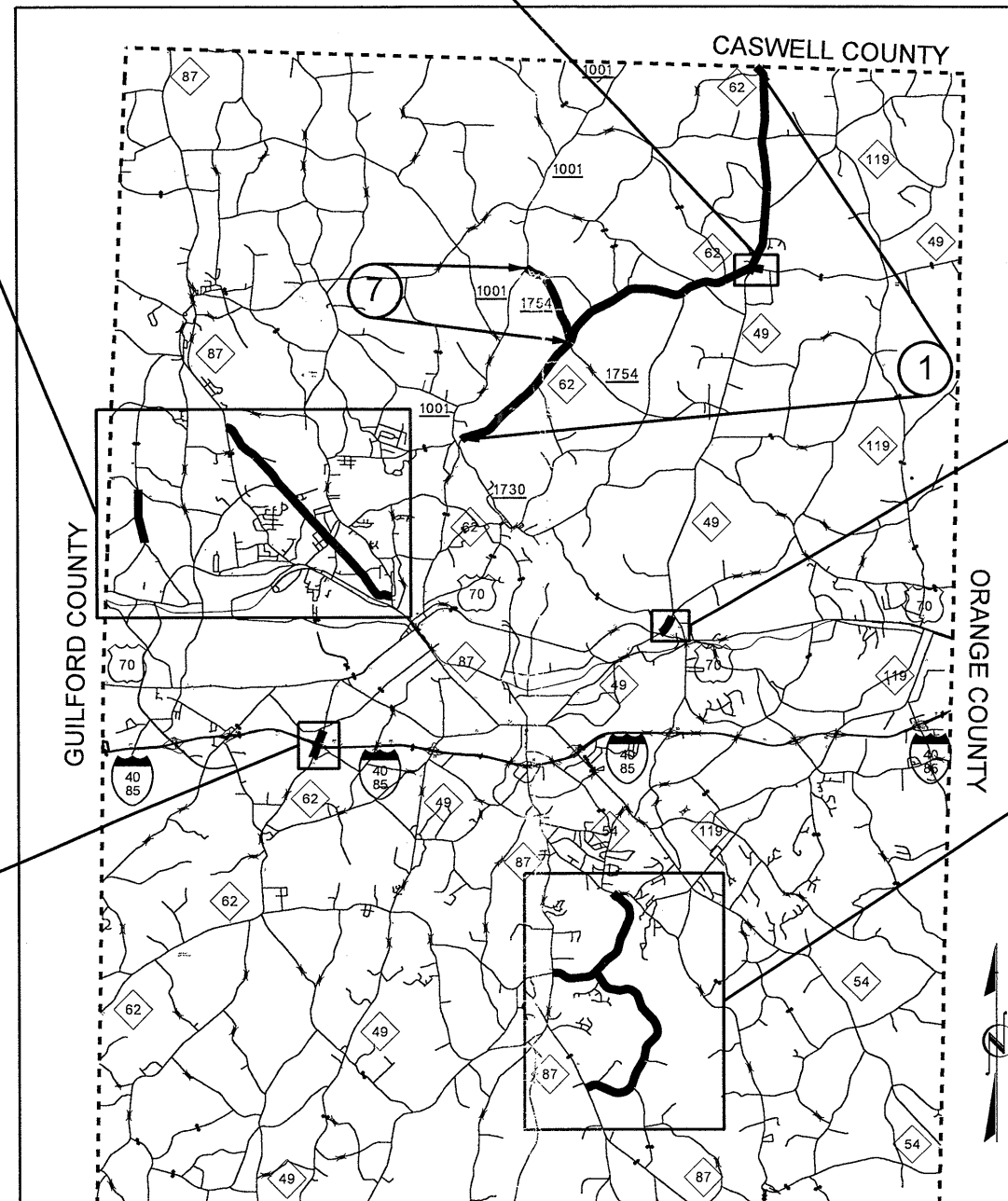
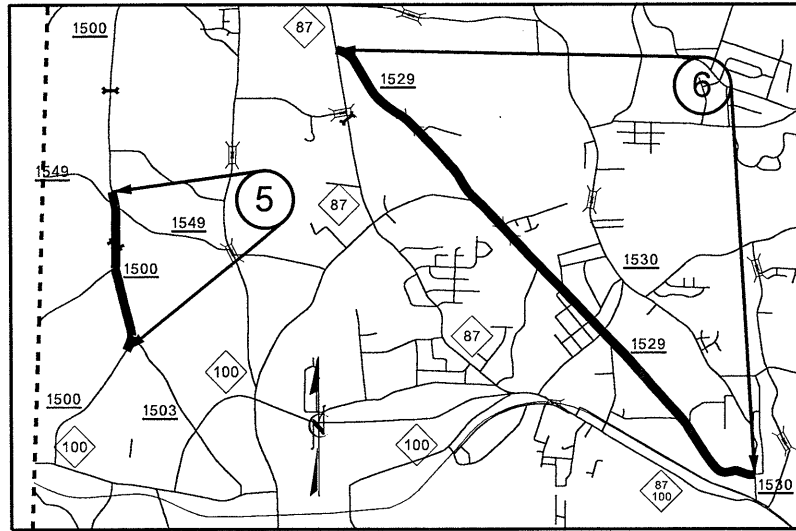
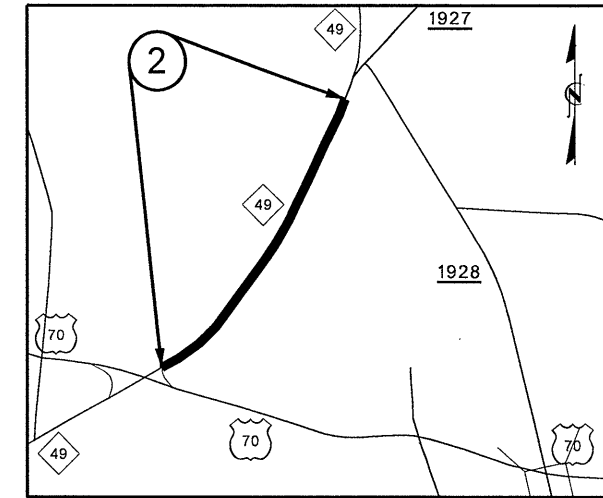
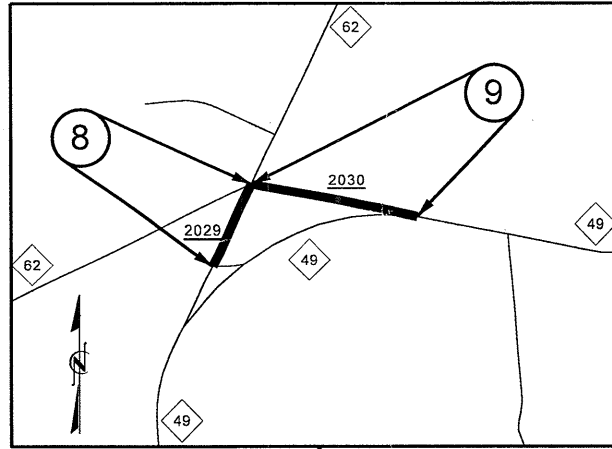


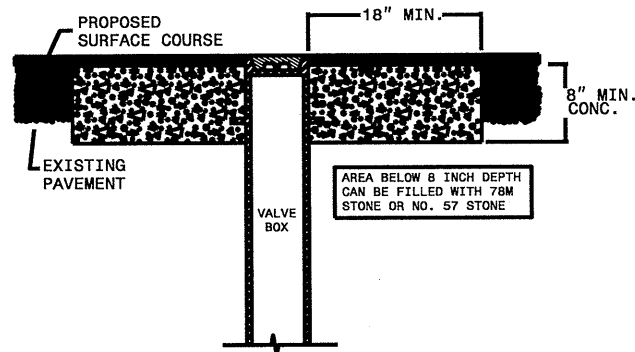
# 2012 ALAMANCE COUNTY

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	7CR.10011.37, 7CR.20011.37	1	
F.A. PROJ. NO.			

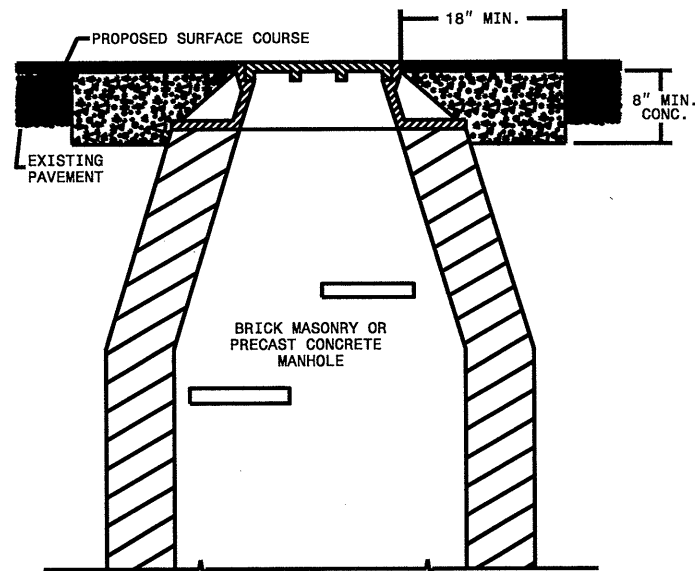




STANDARD CONCRETE ENCASEMENT FOR MANHOLE & VALVE CASTINGS IN PAVEMENT  
 DETAIL DRAWING NO. 858.01



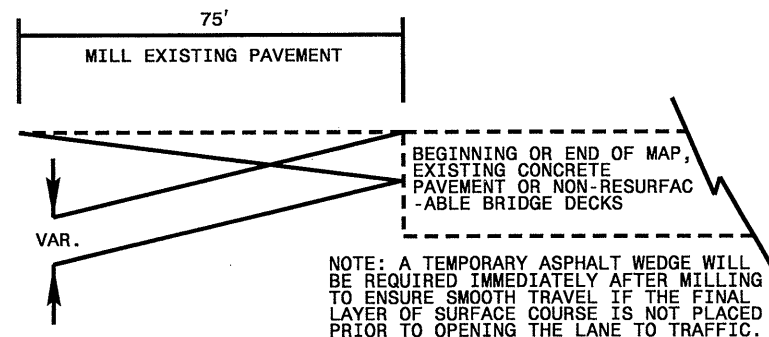
USE RAPID SET GROUT, MORTAR, OR CONCRETE CLASS B CONCRETE MAY BE USED WHEN ADJUSTMENTS ARE NOT IN THE TRAVEL LANE.



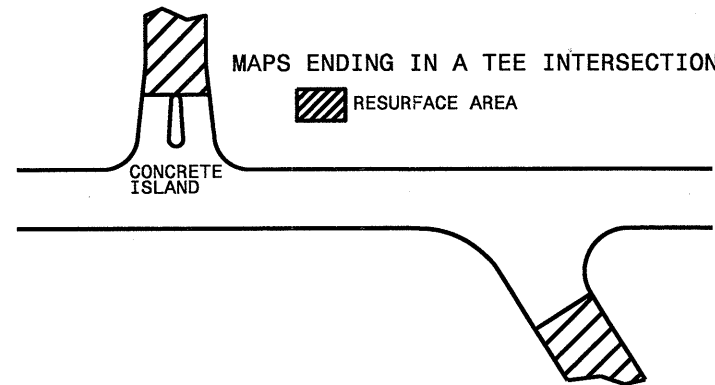
NOTES:

1. MORTAR SHALL BE MIXED TO NCDOT SPECIFICATIONS.
2. ALL FAULTY EXISTING BRICKWORK TO BE REMOVED AND REPLACED WITH NEW BRICK MASONRY.
3. EXCAVATION FOR THE ADJUSTMENT SHALL BE SHEER CUT ON ALL SIDES.
4. RAPID SET GROUT, MORTAR, OR CONCRETE SHALL BE USED

INCIDENTAL MILLING DETAIL

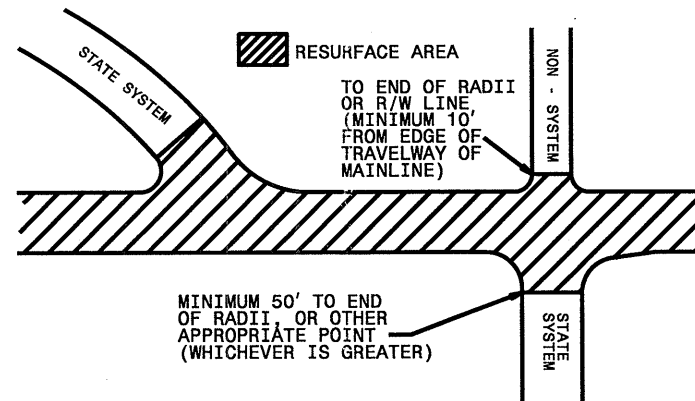


PAVING DETAIL 1  
 MAIN LINE IS NOT BEING RESURFACED

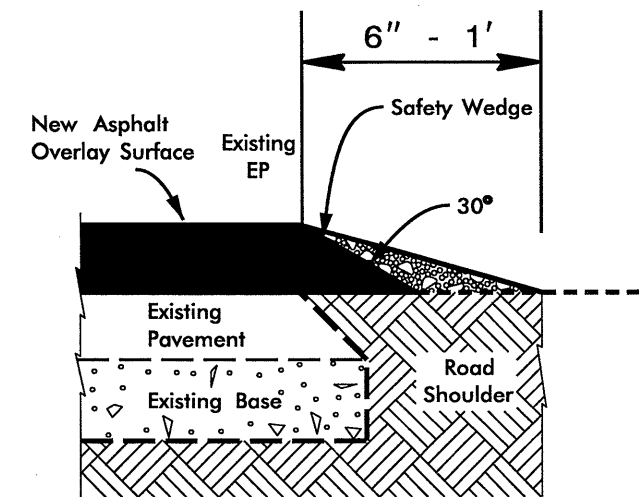


PAVING DETAIL 2  
 MAIN LINE IS BEING RESURFACED

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



INCIDENTAL STONE SHOULDER  
 DETAIL WITH SHOULDER WEDGE

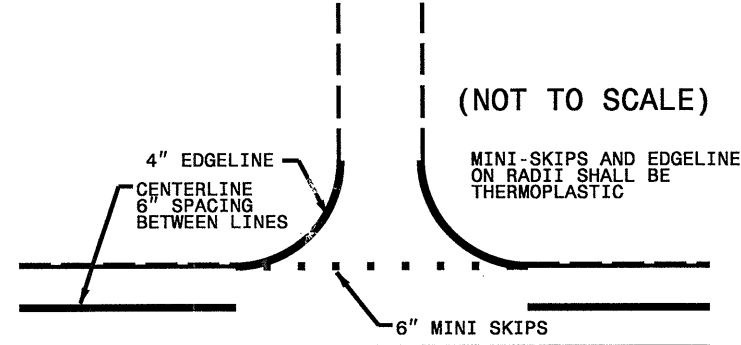


NOTE: ASB OR ABC STONE SHOULD BE PLACE AT THE DISCRETION OF THE ENGINEER  
 NEW ASPHALT OVERLAY SURFACE CAN VARY IN DEPTH

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
F1	AST MAT COAT #67 STONE
F2	AST MAT COAT #78M STONE
U	EXISTING PAVEMENT.
R	EXISTING CURB AND GUTTER
T	INCIDENTAL STONE BASE IN LOW SHOULDER AREAS, AS DIRECTED BY THE ENGINEER
V1	0" - 1½" MILLING
V2	1½" MILLING

TO BE USED AT ALL  
 NON-SIGNALIZED INTERSECTIONS



NOTE: MINI SKIPS SHALL BE PLACED ON A 10' CYCLE, CONTAINING AN 8' AND 2' SKIP, THE WIDTH OF THE SKIP SHALL BE 6".

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PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10011.37, 7CR.20011.37	4	

### SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH	WIDTH	INCIDENTAL STONE BASE	MILLING ASPHALT PAVEMENT, 1 1/2" DEPTH	MILLING ASPHALT PAVEMENT, 0" TO 1 1/2" DEPTH	INCIDENTAL MILLING	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	ASPHALT BINDER FOR PLANT MIX	ASPHALT SURFACE TREATMENT, MAT COAT, #78M STONE	GENERIC PAVING ITEM - ASPHALT SURFACE TREATMENT, MAT COAT, #67 STONE	ADJ. OF MANHOLES	ADJUSTMENT OF METER BOXES OR VALVE BOXES	TRENCHING (UNPAVED) ( 1 ) ( 2" )	JUNCTION BOX (STANDARD SIZE)	2" RISER W/ WEATHERHEAD	INDUCTIVE LOOP SAW CUT	LEAD-IN CABLE (14-2)	PORTABLE LIGHTING					
NO		NO			NO		MI	FT	TONS	SY	SY	SY	TONS	TONS	TONS	SY	SY	EA	EA	LF	EA	EA	LF	LF	LS					
7CR.10011.37	Alamance	1	NC 62	FROM CASWELL COUNTY LINE - 24.18 TO JOINT 650' NORTH OF SR 1001/1730 (UNION RIDGE ROAD/CAROLINA ROAD) - 13.73	1	NO	3.13	22	1,012			183		3,552	238		40,398									1				
					1	NO	0.073	22-34									99	7		1,199										
					1	NO	0.063	34									124	8		1,257										
					1	NO	0.067	22-34										91	6		1,101									
					1	NO	0.529	22										686	46		6,828									
					1	NO	5.806	21										6,276	421		71,530									
					1	NO	0.019	21-24										21	1		256									
					1	NO	0.085	24								200		99	7		1,197									
					1	NO	0.028	34																						
					1	NO	0.647	24								400		755	51		9,110									
					<b>TOTAL FOR MAP NO. 1</b>							<b>10.447</b>		<b>1,012</b>		<b>783</b>		<b>11,703</b>	<b>785</b>		<b>132,876</b>									
		2	NC 49 (ROXBORO STREET)	FROM US 70 - 21.10 TO JOINT 200' SOUTH OF SR1928 (NORTH WILKINS ROAD) - 21.49	2	NO	0.021	42-57		49			86	417		71	5		556	1	2	80	2	1	820	240	*			
					3	NO	0.054	23-42									87	6		776										
					1	NO	0.285	23									399	27		3,846	2	1								
					1	NO	0.01	23-25										12	1		141									
					1	NO	0.019	25-33							242			27	2		323									
					<b>TOTAL FOR MAP NO. 2</b>							<b>0.389</b>		<b>49</b>		<b>530</b>	<b>659</b>	<b>596</b>	<b>41</b>		<b>5,642</b>	<b>3</b>	<b>3</b>	<b>80</b>	<b>2</b>	<b>1</b>	<b>820</b>	<b>240</b>		
		3	NC 62 (ALAMANCE ROAD)	FROM JOINT 250' SOUTH OF SR 1155 (HATCHERY LANE) - 6.75 TO JOINT 300' SOUTH OF SR 1306 (MEBANE STREET) - 7.31	4	NO	0.024	23-45		3	479				40		2			1								*		
					4	NO	0.024	45									53		3											
					5	NO	0.123	55-60									392		24											
					5	NO	0.022	74									140		8			2	4	150	4	2	1,075	250		
					6	NO	0.008	74									29		2				1							
					6	NO	0.011	70-74									39		2											
					6	NO	0.016	63-70									53		3					1						
					4	NO	0.011	84									106		6				1		200	4	1	800	250	
					4	NO	0.102	72									423		22				2		210	4	3	1,050	420	
					6	NO	0.006	63									19		1				1							
					6	NO	0.023	63-88									86		5				1							
		5	NO	0.047	90									329		20				3		200	7	3	1,600	570				
		5	NO	0.147	60									5,650		29				8	2									
		<b>TOTAL FOR MAP NO. 3</b>							<b>0.564</b>		<b>3</b>	<b>25,969</b>		<b>2,185</b>	<b>2,185</b>	<b>127</b>		<b>21</b>	<b>8</b>	<b>760</b>	<b>19</b>	<b>9</b>	<b>4,525</b>	<b>1,490</b>						
		<b>TOTAL FOR PROJ NO. 7CR.10011.37</b>							<b>11.4</b>		<b>1,064</b>	<b>25,969</b>	<b>530</b>	<b>1,442</b>	<b>2,185</b>	<b>12,299</b>	<b>953</b>		<b>138,518</b>	<b>24</b>	<b>11</b>	<b>840</b>	<b>21</b>	<b>10</b>	<b>5,345</b>	<b>1,730</b>	<b>1</b>			

PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10011.37, 7CR.20011.37	5	

### SUMMARY OF QUANTITIES

PROJECT NO.	COUNTY	MAP NO.	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	INCIDENTAL STONE BASE TONS	MILLING ASPHALT PAVEMENT, 1 1/2" DEPTH SY	MILLING ASPHALT PAVEMENT, 0" TO 1 1/2" DEPTH SY	INCIDENTAL MILLING SY	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	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	PORTABLE LIGHTING LS						
7CR.20011.37	Alamance	4	SR 1450 (SERVICE ROAD)	FROM NC 62 (ALAMANCE ROAD) - 0.00 TO END OF MAINTENANCE - 0.02	5	NO	0.019	30		334			28		2																
		<b>TOTAL FOR MAP NO. 4</b>							<b>0.019</b>			<b>334</b>			<b>28</b>	<b>2</b>															
		5	SR 1500 (GIBSONVILLE OSSIPEE ROAD)	FROM JOINT 150' SOUTH OF SR 1503 (MANNING AVENUE) - 3.70 TO JOINT 250' NORTH OF SR 1549 (AMICK ROAD) - 2.64	1	NO	1.058	21		82			350			1,162	78		13,035												
		<b>TOTAL FOR MAP NO. 5</b>							<b>1.058</b>		<b>82</b>		<b>350</b>		<b>1,162</b>	<b>78</b>		<b>13,035</b>													
		6	SR 1529 (DURHAM STREET EXTENSION)		FROM NC 87 - 0.00 TO SR 1530 (ELMIRA STREET/BURCH BRIDGE ROAD) - 4.34	1	NO	0.649	20		455		167			632	42		7,615												
						1	NO	0.033	20-24									35	2		426										
						1	NO	0.062	24					200					72	5		873									
						1	NO	0.028	24																						
						1	NO	0.043	24							200						605									
						1	NO	0.047	20-24													607									
						1	NO	0.889	20													906	61		10,431						
						1	NO	0.039	20-30													47	3		572						
						1	NO	0.005	20							167						5			59						
						1	NO	0.01	20																						
		1	NO	2.535	20								333						3,009	202		29,744	17	22							
		<b>TOTAL FOR MAP NO. 6</b>							<b>4.34</b>		<b>455</b>		<b>1,067</b>		<b>3,009</b>	<b>202</b>		<b>29,744</b>	<b>17</b>	<b>22</b>											
		7	SR 1754 (MCCRAY ROAD)		FROM SR 1001 (UNION RIDGE ROAD) - 0.00 TO NC 62 - 1.61	7	NO	0.325	20		489		167			317	21		3,813												
						7	NO	0.02	24					200				23	2		282										
						7	NO	0.004	24																						
						7	NO	0.054	24							200						103	7		760						
						7	NO	1.203	20							167						1,192	80		14,115						
		<b>TOTAL FOR MAP NO. 7</b>							<b>1.606</b>		<b>489</b>		<b>734</b>		<b>1,635</b>	<b>110</b>		<b>18,970</b>													
		8	SR 2029 (OLD NC 49)		FROM NC 62 / SR 2030 (OLD NC 49) - 0.00 TO NC 49 - 0.09	1	NO	0.088	22		4		183			94	6		1,136												
						<b>TOTAL FOR MAP NO. 8</b>							<b>0.088</b>		<b>4</b>		<b>183</b>		<b>94</b>	<b>6</b>	<b>1,136</b>										
		9	SR 2030 (OLD NC 49)		FROM NC 49 - 0.00 TO NC 62 / SR 2029 (OLD NC 49) - 0.15	1	NO	0.149	21		17		175			152	10		1,836												
						<b>TOTAL FOR MAP NO. 9</b>							<b>0.149</b>		<b>17</b>		<b>175</b>		<b>152</b>	<b>10</b>	<b>1,836</b>										
		10	SR 2116 (BOYWOOD ROAD/PREACHER HOLMES ROAD)		FROM END OF CONCRETE ISLAND AT SR 2158 (SWEPSONVILLE ROAD) - 1.65 TO NC 87 - 7.13	1	NO	0.052	24-53				325							1,190											
						1	NO	0.105	24												123	8		1,478							
						1	NO	0.524	22					183							561	38		6,763							
						BRIDGE #95				1	NO	0.048	22																		
						1	NO	0.062	20-22							175							764								
						1	NO	0.987	20													981	66		11,581						
						(PRECHER HOLMES ROAD)				1	NO	0.119	20										116	8		1,396					
						1	NO	0.039	20-30														47	3		572					
						1	NO	0.036	30														72	5		634					
						1	NO	1.63	20														1,588	106		19,125					
						1	NO	0.013	20-28														15	1		183					
						1	NO	0.022	28-32														32	2		387					
						1	NO	0.019	32							267							30	2		357					
						BRIDGE #96				1	NO	0.033	32																		
						1	NO	0.021	28-32							250							31	2		370					
		1	NO	0.019	22-28														23	2		279									
		1	NO	0.023	20-22														24	2		283									
		1	NO	0.328	20							167							319	21		3,849									
		SKIP				1	NO	0.034	20																						
		1	NO	1.368	20														333			16,051									
		<b>TOTAL FOR MAP NO. 10</b>							<b>5.482</b>				<b>1,700</b>		<b>1,403</b>	<b>94</b>		<b>16,051</b>	<b>371</b>		<b>65,262</b>										
		11	SR 2119 (BOY WOODS ROAD)		FROM NC 87 - 0.00 TO SR 2116 (PREACHER HOLMES ROAD) - 0.80	1	NO	0.804	20		82		167			783	52		9,434												
						<b>TOTAL FOR MAP NO. 11</b>							<b>0.804</b>		<b>82</b>		<b>167</b>		<b>783</b>	<b>52</b>	<b>9,434</b>										
		<b>TOTAL FOR PROJ NO. 7CR.20011.37</b>							<b>13.546</b>		<b>1,129</b>	<b>334</b>		<b>4,376</b>	<b>28</b>	<b>14,158</b>	<b>950</b>		<b>18,970</b>	<b>141,635</b>	<b>17</b>	<b>22</b>									
		<b>GRAND TOTAL</b>							<b>24.946</b>		<b>2,193</b>	<b>26,303</b>	<b>530</b>	<b>5,818</b>	<b>2,213</b>	<b>26,457</b>	<b>1,903</b>		<b>18,970</b>	<b>280,153</b>	<b>41</b>	<b>33</b>	<b>840</b>	<b>21</b>	<b>10</b>	<b>5,345</b>	<b>1,730</b>	<b>1</b>			

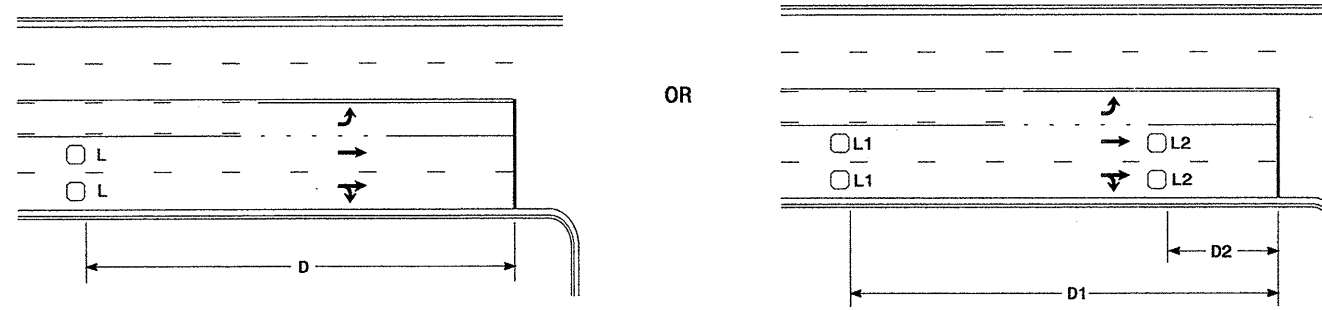
PROJECT NO.	SHEET NO.	TOTAL NO.
7CR.10011.37, 7CR.20011.37	6	

**THERMOPLASTIC AND PAINT QUANTITIES**

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4685000000-E		4686000000-E		4690000000-E		4695000000-E		4710000000-E		4721000000-E			4725000000-E			4810000000-E		4815000000-E		4820000000-E		4835000000-E		4840000000-N		4845000000-N			4900000000-N		4905000000-N					
							4" X 90 M WHITE THERMO	4" X 90 M YELLOW THERMO	4" X 120 M YELLOW THERMO	4" X 120 M WHITE THERMO	6" X 120 M WHITE THERMO	8" X 90 M YELLOW THERMO	8" X 90 M WHITE THERMO	24" X 120 M WHITE THERMO	THERMO MSG AHEAD 120 M	THERMO MSG SIGNAL 120 M	THERMO MSG ONLY 120 M	THERMO LT ARROW 90 M	THERMO STR ARROW 90 M	THERMO RT ARROW 90 M	THERMO STR & RT ARROW 90 M	THERMO STR & LT ARROW 90 M	4" WHITE PAINT	4" YELLOW PAINT	6" WHITE PAINT	8" WHITE PAINT	8" YELLOW PAINT	24" WHITE PAINT	PAINT MSG ONLY	PAINT LT ARROW	PAINT STR ARROW	PAINT RT ARROW	PAINT STR & RT ARROW	PAINT STR & LT ARROW	YELLOW & YELLOW MARKERS	CRYSTAL & CRYSTAL MARKERS	SNOWPLOWABLE PAVEMENT MARKERS						
NO		NO					LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA						
7CR.10011.37	Alamance	1	NC 62	FROM CASWELL COUNTY LINE - 24.18 TO JOINT 650' NORTH OF SR 1001/1730 (UNION RIDGE ROAD/CAROLINA ROAD) - 13.73	3.13	22	110,330		84,086		544	415		125	5	6		3																				750					
					0.073	22-34																																					
					0.063	34																																					
					0.067	22-34																																					
					0.529	22																																					
					5.806	21																																					
					0.019	21-24																																					
					0.085	24																																					
					0.028	34																																					
					0.647	24																																					
		<b>TOTAL FOR MAP NO. 1</b>					<b>10.447</b>	<b>110,330</b>	<b>84,086</b>	<b>544</b>	<b>415</b>	<b>125</b>	<b>5</b>	<b>6</b>	<b>3</b>																								<b>750</b>				
		2	NC 49 (ROXBORO STREET)	FROM US 70 - 21.10 TO JOINT 200' SOUTH OF SR1928 (NORTH WILKINS ROAD) - 21.49	0.021	42-57	3,260		4,780	394	34				123	48																								50			
					0.054	23-42																																					
					0.285	23																																					
					0.01	23-25																																					
					0.019	25-33																																					
		<b>TOTAL FOR MAP NO. 2</b>					<b>0.389</b>	<b>3,260</b>	<b>4,780</b>	<b>394</b>	<b>34</b>	<b>123</b>	<b>48</b>	<b>2</b>	<b>2</b>	<b>2</b>																						<b>50</b>					
		3	NC 62 (ALAMANCE ROAD)	FROM JOINT 250' SOUTH OF SR 1155 (HATCHERY LANE) - 6.75 TO JOINT 300' SOUTH OF SR 1306 (MEBANE STREET) - 7.51	0.024	23-45	650	785	5,973	3,010	38	72	1,155	674					8	29	37	16	6	2	3,660	6,758	38	1,155	72	674	8	29	37	16	6	2			200				
					0.024	45																																					
					0.123	55-60																																					
					0.022	74																																					
					0.008	74																																					
					0.011	70-74																																					
					0.016	63-70																																					
					0.011	84																																					
					0.102	72																																					
					0.006	63																																					
					0.023	63-88																																					
					0.047	90																																					
					0.147	60																																					
<b>TOTAL FOR MAP NO. 3</b>					<b>0.564</b>	<b>650</b>	<b>785</b>	<b>5,973</b>	<b>3,010</b>	<b>38</b>	<b>72</b>	<b>1,155</b>	<b>674</b>	<b>8</b>	<b>29</b>	<b>37</b>	<b>16</b>	<b>6</b>	<b>2</b>	<b>3,660</b>	<b>6,758</b>	<b>38</b>	<b>1,155</b>	<b>72</b>	<b>674</b>	<b>8</b>	<b>29</b>	<b>37</b>	<b>16</b>	<b>6</b>	<b>2</b>				<b>200</b>								
<b>TOTAL FOR PROJ NO. 7CR.10011.37</b>					<b>11.4</b>	<b>114,240</b>	<b>785</b>	<b>94,839</b>	<b>3,404</b>	<b>616</b>	<b>487</b>	<b>1,278</b>	<b>847</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>34</b>	<b>39</b>	<b>18</b>	<b>6</b>	<b>2</b>	<b>3,660</b>	<b>6,758</b>	<b>38</b>	<b>1,155</b>	<b>72</b>	<b>674</b>	<b>8</b>	<b>29</b>	<b>37</b>	<b>16</b>	<b>6</b>	<b>2</b>		<b>1,000</b>								
							<b>115,025</b>		<b>98,243</b>			<b>1,765</b>			<b>19</b>			<b>99</b>			<b>10,418</b>			<b>1,227</b>											<b>90</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

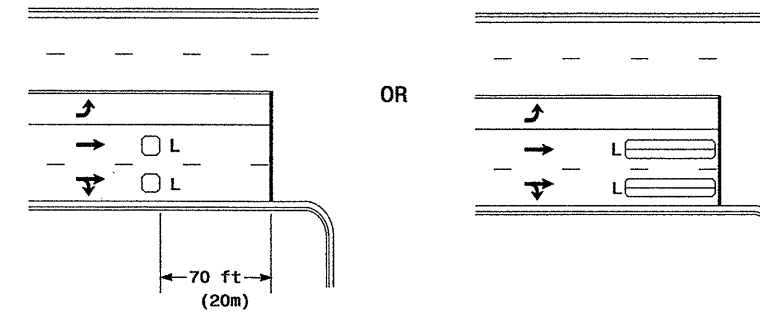
Volume Density Operation

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

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

"Stretch" Operation

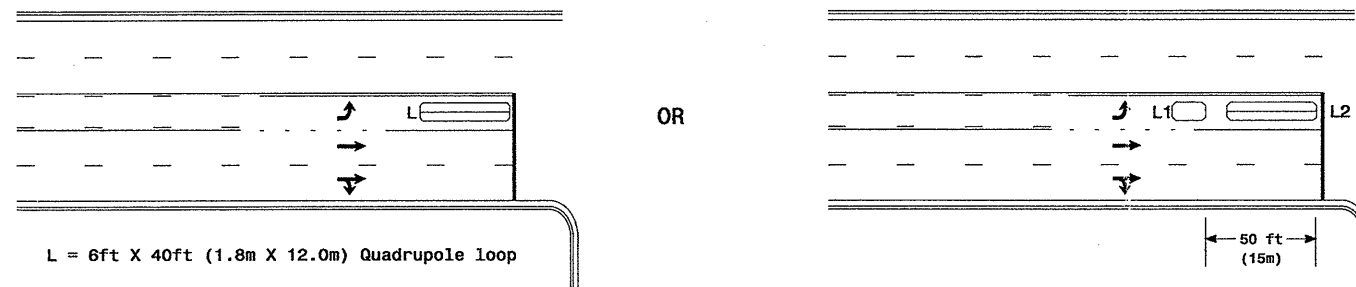
### Low Speed Detection [≤35 mph (56 km/hr)]



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



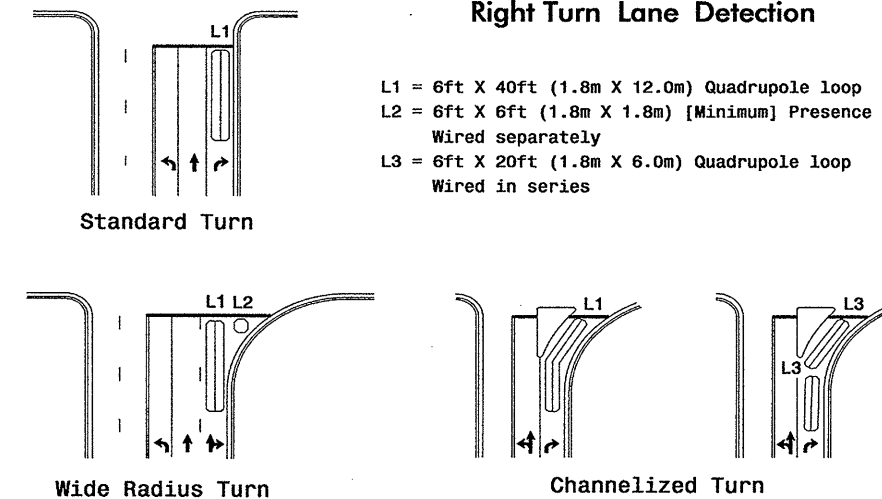
L = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Presence Loop Detection

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

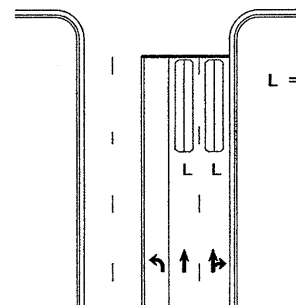
Queue Loop Detection

### Right Turn Lane Detection



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

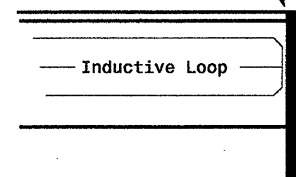
### Side Street Detection



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

### Presence Loop Placement at Stop Lines

Locate loop slightly  
behind leading  
edge of stop line



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

### Recommended Number of Turns

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

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

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

	<b>Typical Loop Locations</b>		
	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander	REVIEWED BY: REVIEWED BY:	
722 N. McDowell St., Raleigh, NC 27603		INIT.: [Signature] DATE: 12/1/13	SIGNATURE: [Signature] DATE: