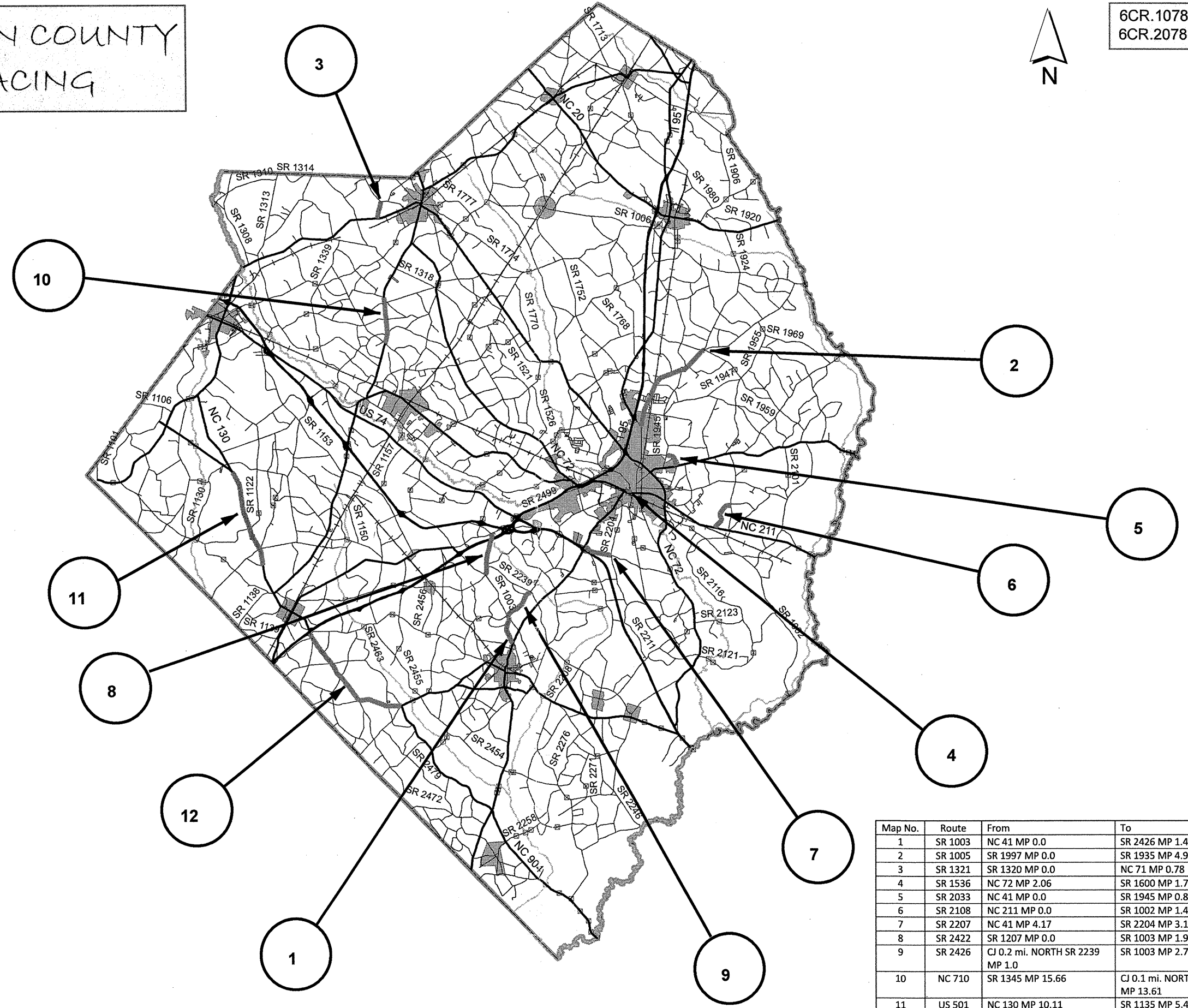
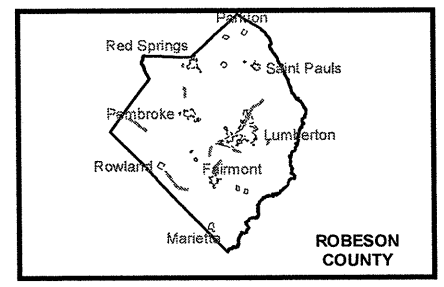
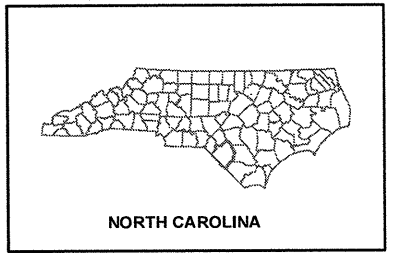


# 2013 ROBESON COUNTY RESURFACING



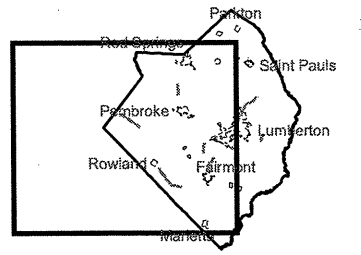
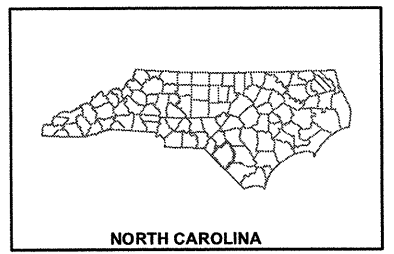
## Legend

- Primary Routes Resurf
- Primary Routes selection
- Secondary Routes Resurf
- Primary Routes
- Secondary Routes
- Railroad
- Major Drainageways
- Bridges
- Robeson County
- Municipal Boundaries

Map No.	Route	From	To	Length(mi.)	Type
1	SR 1003	NC 41 MP 0.0	SR 2426 MP 1.46	1.46	SF9.5A
2	SR 1005	SR 1997 MP 0.0	SR 1935 MP 4.99	4.99	S9.5B
3	SR 1321	SR 1320 MP 0.0	NC 71 MP 0.78	0.78	SF9.5A
4	SR 1536	NC 72 MP 2.06	SR 1600 MP 1.72	0.34	S9.5B
5	SR 2033	CJ 0.2 mi. NORTH SR 2239	SR 1945 MP 0.82	0.82	S9.5B
6	SR 2108	NC 211 MP 0.0	SR 1002 MP 1.47	1.47	SF9.5A
7	SR 2207	NC 41 MP 4.17	SR 2204 MP 3.12	1.05	SF9.5A
8	SR 2422	SR 1207 MP 0.0	SR 1003 MP 1.99	2.00	SF9.5A
9	SR 2426	CJ 0.2 mi. NORTH SR 2239 MP 1.0	SR 1003 MP 2.79	1.80	SF9.5A
10	NC 710	SR 1345 MP 15.66	CJ 0.1 mi. NORTH SR 1340 MP 13.61	2.00	S9.5B
11	US 501	NC 130 MP 10.11	SR 1135 MP 5.41	4.75	S9.5B
12	NC 130	NC 904 MP 15.17	CJ EAST I-95 MP 20.95	5.78	S9.5B

# 2013 ROBESON COUNTY RESURFACING

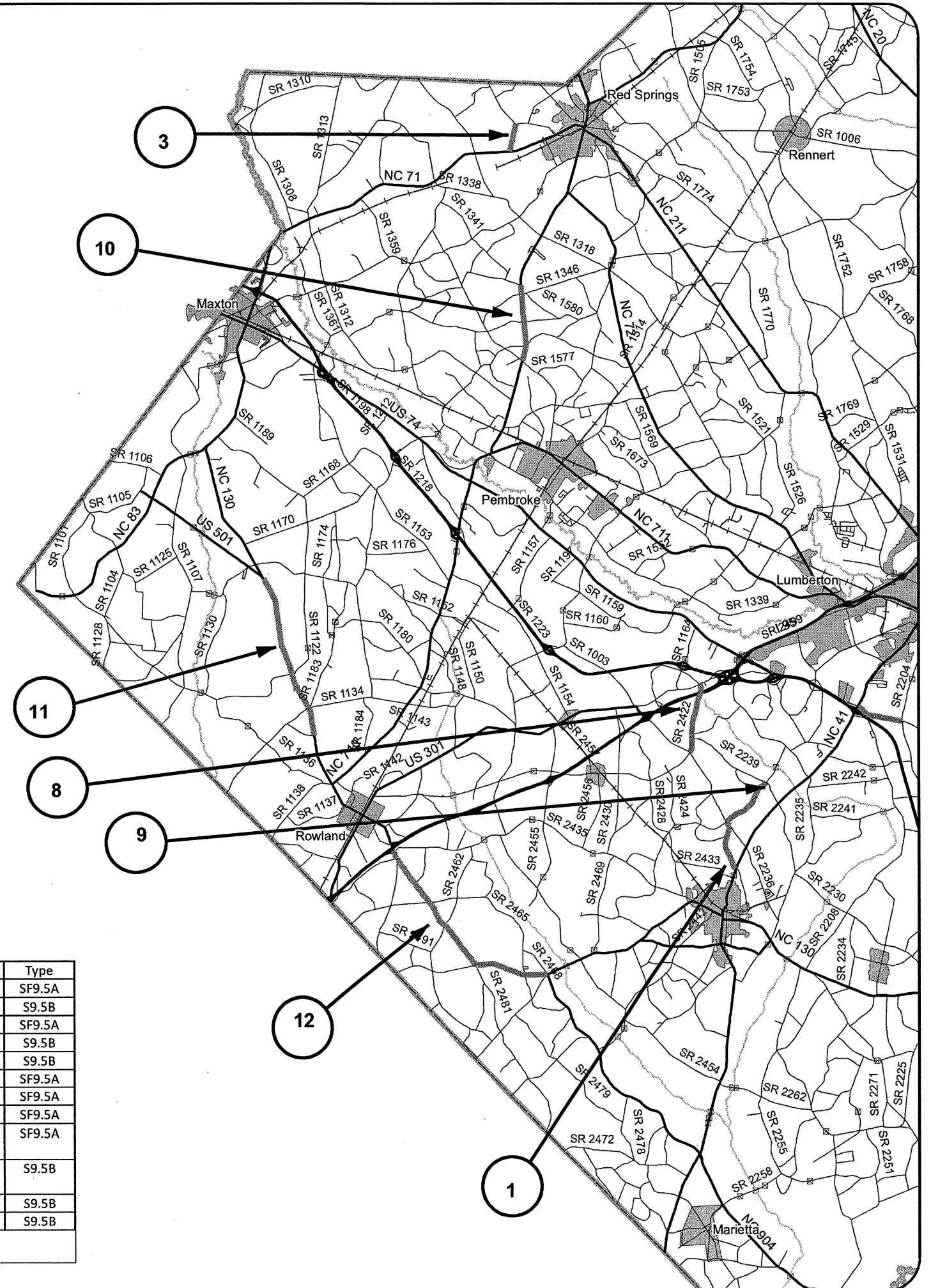
6CR.10781.76 Sheet 2  
6CR.20781.76



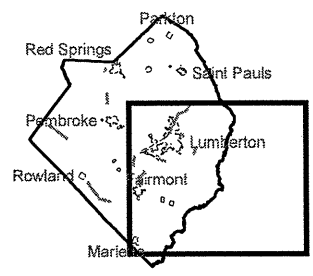
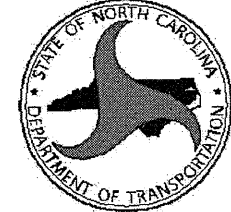
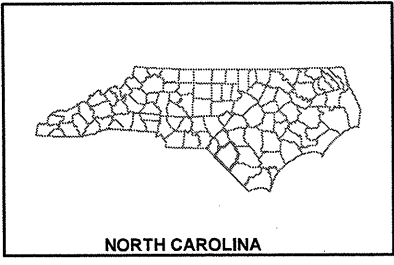
**Legend**

- Primary Routes Resurf
- Secondary Routes Resurf
- Primary Routes
- Secondary Routes
- Railroad
- Major Drainageways
- Bridges
- Robeson County
- Municipal Boundaries

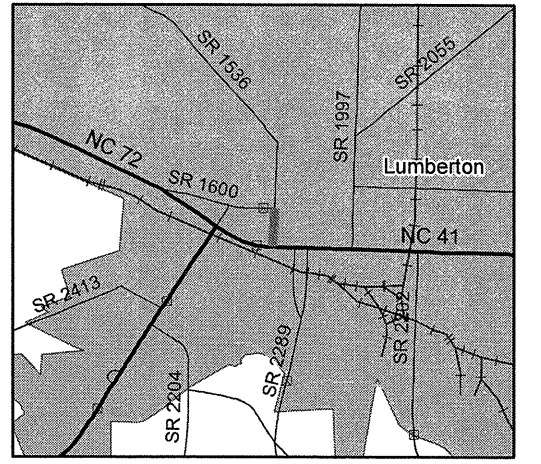
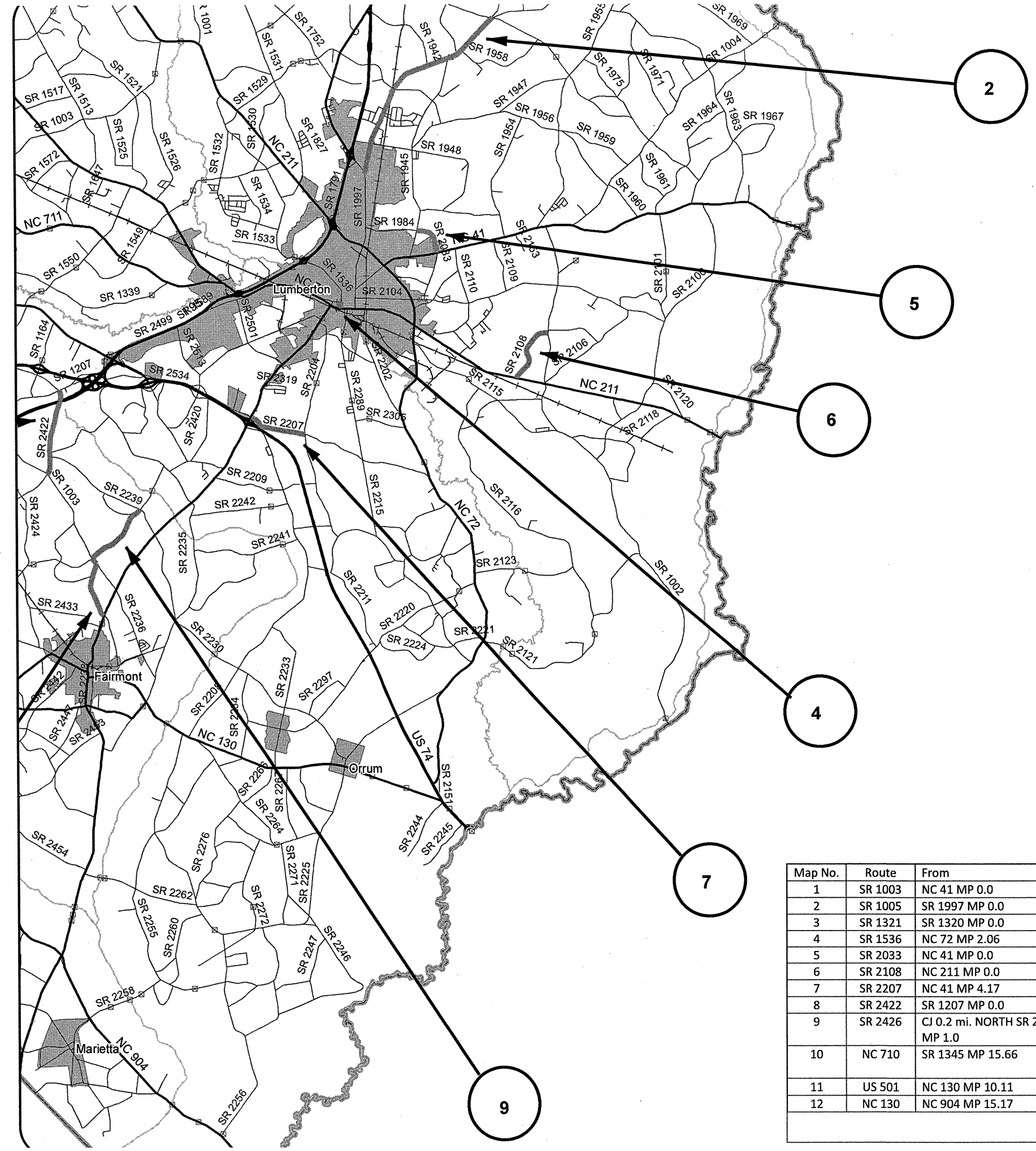
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1	SR 1003	NC 41 MP 0.0	SR 2426 MP 1.46	1.46	SF9.5A
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6	SR 2108	NC 211 MP 0.0	SR 1002 MP 1.47	1.47	SF9.5A
7	SR 2207	NC 41 MP 4.17	SR 2204 MP 3.12	1.05	SF9.5A
8	SR 2422	SR 1207 MP 0.0	SR 1003 MP 1.99	2.00	SF9.5A
9	SR 2426	CJ 0.2 mi. NORTH SR 2239 MP 1.0	SR 1003 MP 2.79	1.80	SF9.5A
10	NC 710	SR 1345 MP 15.66	CJ 0.1 mi. NORTH SR 1340 MP 13.61	2.00	S9.5B
11	US 501	NC 130 MP 10.11	SR 1135 MP 5.41	4.75	S9.5B
12	NC 130	NC 904 MP 15.17	CJ EAST I-95 MP 20.95	5.78	S9.5B



# 2013 ROBESON COUNTY RESURFACING



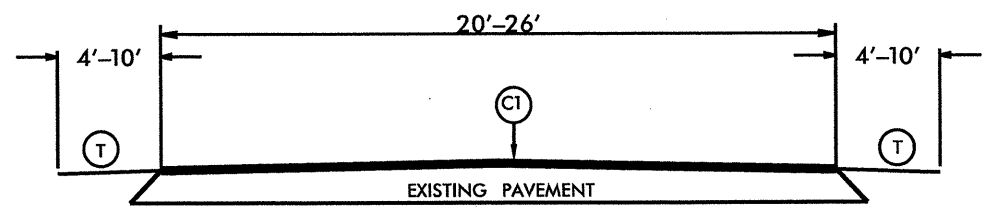
ROBESON COUNTY



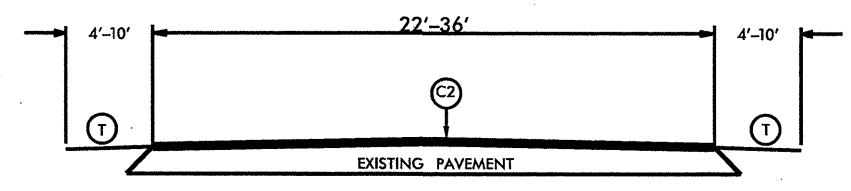
4

- Legend**
- Primary Routes Resurf
  - Secondary Routes Resurf
  - Primary Routes
  - Secondary Routes
  - Railroad
  - Major Drainageways
  - Bridges
  - Robeson County
  - Municipal Boundaries

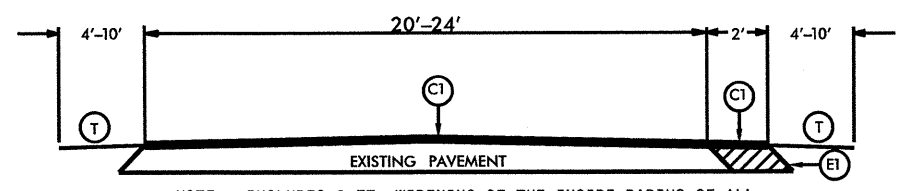
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12	NC 130	NC 904 MP 15.17	CJ EAST I-95 MP 20.95	5.78	S9.5B



TYPICAL SECTION NO. 1

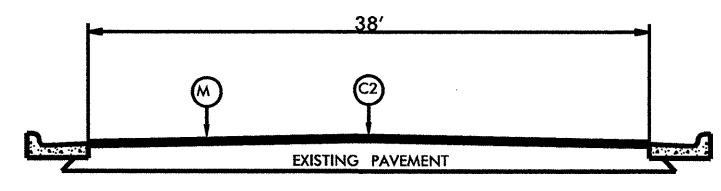


TYPICAL SECTION NO. 3

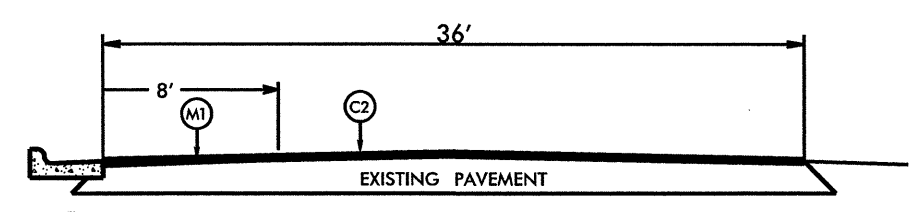


NOTE: INCLUDES 2 FT. WIDENING OF THE INSIDE RADIUS OF ALL CURVES, OR AS DIRECTED BY THE ENGINEER. SEE INSIDE CURVE WIDENING DETAIL.

TYPICAL SECTION NO. 2

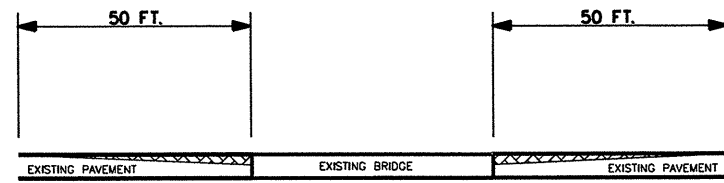


TYPICAL SECTION NO. 4



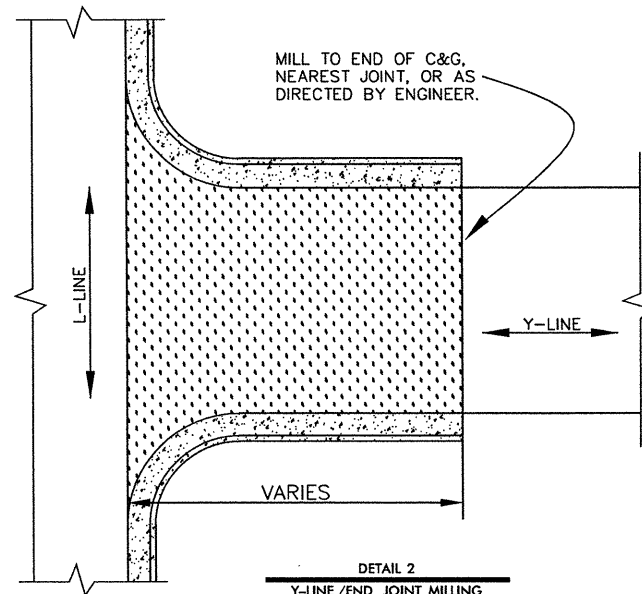
TYPICAL SECTION NO. 5

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.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
M	MILLING BITUMINOUS PAVEMENT. 1½" DEPTH. FULL WIDTH.
M1	MILLING BITUMINOUS PAVEMENT. 0-1½" DEPTH. 8' WIDTH.
T	SHOULDER RECONSTRUCTION.



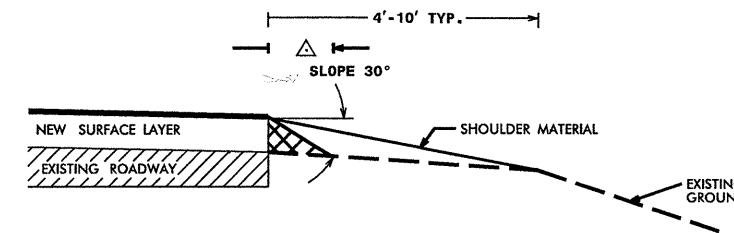
DETAIL 1  
MILLING APPROACHES  
AND CONSTRUCTION JOINTS

NOTE: INCIDENTAL MILLING SHALL BE PERFORMED AT BRIDGES, RAILROAD APPROACHES, AND CONSTRUCTION JOINTS AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH DETAIL 1.



DETAIL 2  
Y-LINE / END JOINT MILLING

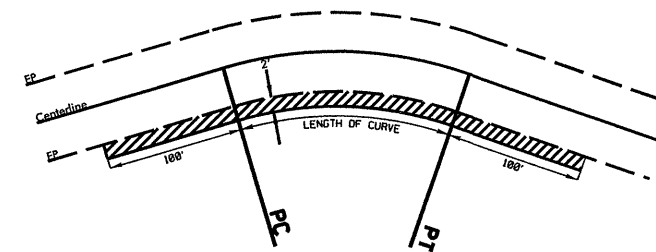
NOTE: INCLUDES INCIDENTAL MILLING AT THE ENDS OF SECTIONS FOR SMOOTH TIE-INS, CURB RADII, AND STREET INTERSECTIONS, AS NEEDED, OR AS DIRECTED BY THE ENGINEER. SEE DETAIL 2.



DETAIL 3  
PAVEMENT SAFETY EDGE / SHOULDER WEDGE

GENERAL NOTES

- 1 THE SAFETY EDGE WILL BE CONSTRUCTED AS PART OF THE ROADWAY PAVEMENT. A SHOULDER WEDGE DEVICE WILL BE ADDED TO THE SCREED OF THE PAVING MACHINE.
- 2 SAFETY EDGE TO BE INCLUDED ON ALL TYPICALS EXCEPT CURB AND GUTTER SECTIONS, OR AS OTHERWISE DIRECTED BY THE ENGINEER.
- 3 SAFETY EDGE IS TO BE USED ON THE SURFACE LAYER ONLY.
- 4 SHORT SECTIONS OF HANDWORK WILL BE ALLOWED WHEN NECESSARY FOR TRANSITIONS AND TURNOUTS.
- 5 SITE PREPARATION AND ADDITIONAL EARTHWORK REQUIRED TO CONSTRUCT THE SAFETY EDGE WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.



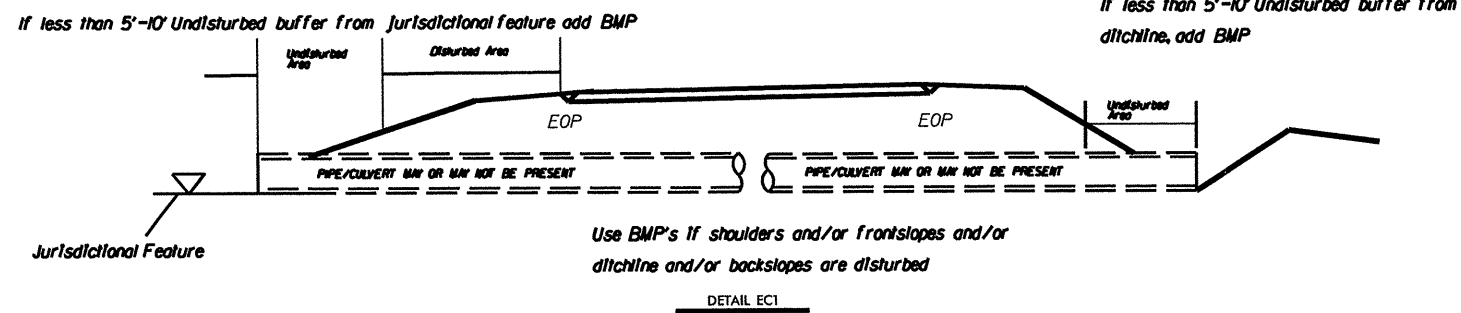
DETAIL 4  
INSIDE CURVE WIDENING

NOTE: 2 Ft. widening of inside radius of curves, as directed by the Engineer

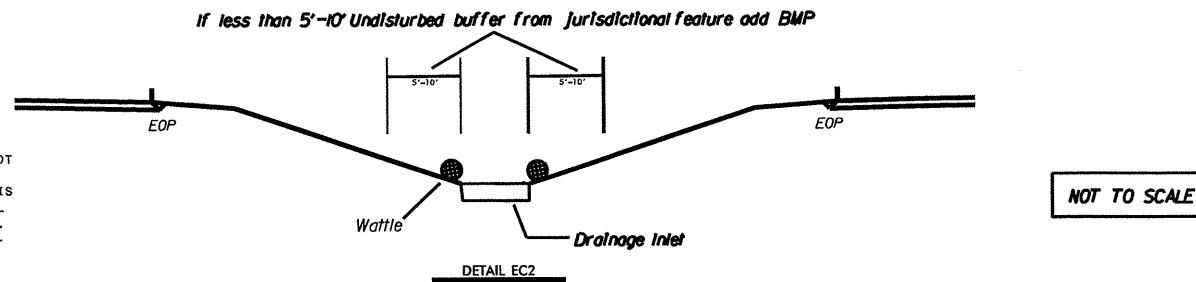
# EROSION CONTROL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
6CR.10781.76 & 6CR.20781.76	6

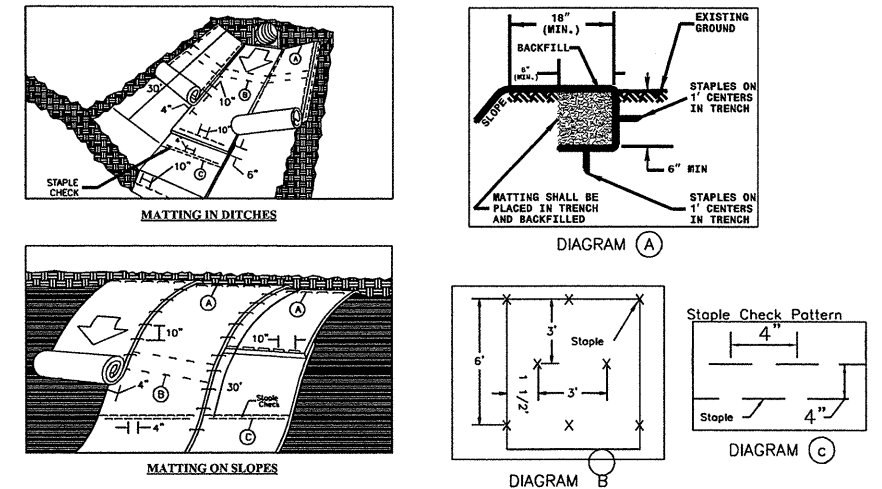
ROBESON COUNTY  
RESURFACING



- NOTES:
- IF A 5'-10' VEGETATED, UNDISTURBED BUFFER FROM R/W, DITCHLINE, WATER FEATURE, OR DRAINAGE INLET CAN BE MAINTAINED, THEN NO BMPs NEEDED.
  - IF LESS THAN A 5'-10' VEGETATED, UNDISTURBED BUFFER FROM R/W, DITCHLINE, WATER FEATURE, OR DRAINAGE INLET, THEN ADD BMPs.
  - BMP OPTIONS:
    - MATTING MAY BE APPLIED AS SHOWN IN NCDOT STD. DWG. 1631.01 TO ESTABLISH BUFFER.
    - IF MATTING IS NOT PRACTICAL, OR THERE IS NOT ENOUGH SHOULDER WIDTH, THEN INSTALL TEMP. SILT FENCE AS SHOWN IN NCDOT STD. DWG. 1605.01 AND WATTLES WITH POLYACRYLAMIDE (PAM) WHERE APPLICABLE.



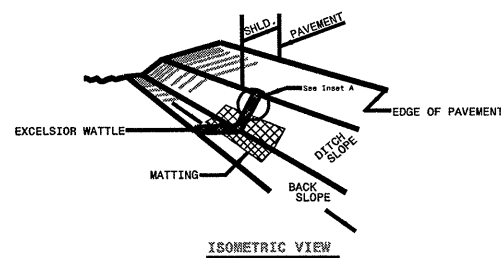
## MATTING INSTALLATION DETAIL



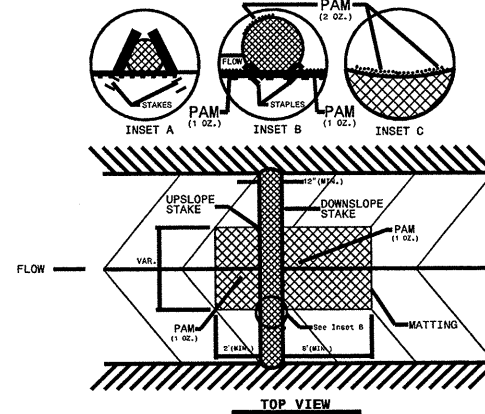
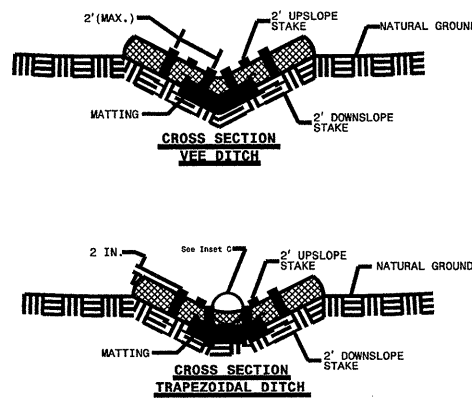
- NOTES:
- THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.
- STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

## WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



- 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.



DETAIL EC3

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

6' MAX. WITH WIRE  
(6' MAX. WITHOUT WIRE)

MIDDLE AND VERTICAL WIRES SHALL BE 12 1/2 GAUGE MIN.

TOP AND BOTTOM STRAND SHALL BE 10 GAUGE MIN.

WIRE

FILTER FABRIC

COMPACTED FILL

STEEL POST - 2'-0" DEPTH

EXTENSION OF FABRIC AND WIRE INTO TRENCH

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

ENGLISH STANDARD DRAWING FOR  
TEMPORARY SILT FENCE

NOTES:

USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

USE FILTER FABRIC A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.

PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

SHEET 1 OF 1  
1605.01

ENGLISH STANDARD DRAWING FOR  
TEMPORARY SILT FENCE

SHEET 1 OF 1  
1605.01

DETAIL EC5



PROJECT NO.	SHEET NO.	TOTAL NO.
6cr.10781.76, 6cr.20781.76	7	

## SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	INCIDENTAL STONE BASE TONS	BORROW CY	SHOULDER RECONSTRUCTION SMI	1 1/2" MILLING SY	0" TO 1.5" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0B TONS	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, SF9.5A TONS	ASPHALT BINDER FOR PLANT MIX TONS	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA
6cr.10781.76	Robeson	10	NC 710	FROM SR 1345 (MP15.66) TO CONST JT 0.1 MILE NORTH OF SR 1340 (MP13.61)	3	NO	NO	2	24	48	292	4.00			300		2,428		146		
		11	US 501	FROM NC 130 (MP10.11) TO SR 1135 (MP5.41)	3	NO	NO	4.75	26	114	694	9.50			600		6,149		369		
		12	NC 130	FROM NC 904 (MP15.17) TO CONST JT OF I-95 (MP20.95)	3	NO	NO	5.78	22	139	844	11.56			300		6,367		382		
<b>TOTAL FOR PROJ NO. 6cr.10781.76</b>								<b>12.53</b>		<b>301</b>	<b>1,830</b>	<b>25.06</b>			<b>1,200</b>		<b>14,944</b>		<b>897</b>		
6cr.20781.76	Robeson	1	SR 1003	FROM NC 41 (MP0.00) TO SR 2426 (MP1.46)	1	NO	NO	1.46	25.5	35	213	2.92						1,862	125		
		2	SR 1005	FROM SR 1997 (MP0.00) TO SR 1935 (MP 4.99)	5 & 3	NO	NO	4.99	26-36	120	729	9.28		94	575		6,852		411		
		3	SR 1321	FROM SR 1320 (MP 0.00) TO NC 71 (MP0.78)	1	NO	NO	0.78	20	19	114	1.56						767	51		
		4	SR 1536	FROM NC 72 (MP2.06) TO SR 1600 (MP1.72)	4	NO	NO	0.34	38				7,580				649		39	6	5
		5	SR 2033	FROM NC 41 (MP0.00) TO SR 1945 (MP0.82)	3	NO	NO	0.82	25	20	120	1.64			300		1,119		67		
		6	SR 2108	FROM NC 211 (MP0.00) TO SR 1002 (MP1.47)	2	NO	NO	1.47	21	35	215	2.94				334		1,494	115		
		7	SR 2207	FROM NC 41 (MP4.17) TO SR 2204 (MP3.12)	2	NO	NO	1.05	22	25	153	2.10				84		1,130	79		
		8	SR 2422	FROM SR 1207 (MP 0.00) TO SR 1003 (MP1.99)	2	NO	NO	2	24	48	292	4.00			600	167		2,360	165		
		9	SR 2426	FROM CONST JT 0.2 MI NORTH OF SR 2239 (MP1.0) TO SR 1003 (MP2.79)	2	NO	NO	1.8	20	43	263	3.60				251		1,780	130		
<b>TOTAL FOR PROJ NO. 6cr.20781.76</b>								<b>14.71</b>		<b>345</b>	<b>2,099</b>	<b>28.04</b>	<b>7,580</b>	<b>94</b>	<b>1,475</b>	<b>836</b>	<b>8,620</b>	<b>9,393</b>	<b>1,182</b>	<b>6</b>	<b>5</b>
<b>GRAND TOTAL</b>								<b>27.24</b>		<b>646</b>	<b>3,929</b>	<b>53.10</b>	<b>7,580</b>	<b>94</b>	<b>2,675</b>	<b>836</b>	<b>23,564</b>	<b>9,393</b>	<b>2,079</b>	<b>6</b>	<b>5</b>

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	FINAL SURFACE TESTING REQUIRED	WARM MIX ASPHALT REQUIRED	LENGTH MI	WIDTH FT	TEMPORARY SILT FENCE LF	MATTING FOR EROSION CONTROL SY	WATTLE LF	POLYACRYL AMIDE (PAMI) LB	SEED & MULCHING AC	PAVED TRENCHING (1CONDUIT, 2") LF	UNPAVED TRENCHING (1CONDUIT, 2") LF	JUNCTION BOX (STANDARD SIZE) EA	JUNCTION BOX (OVER-SIZED, HEAVY DUTY) EA	2" RISER WITH WEATHERHEAD EA	INDUCTIVE LOOP SAWCUT LF	LEAD-IN CABLE (14-2)(FT) LF
6cr.10781.76	Robeson	10	NC 710	FROM SR 1345 (MP15.66) TO CONST JT 0.1 MILE NORTH OF SR 1340 (MP13.61)	3	NO	NO	2	24	300	80	144	6	4.85							
		11	US 501	FROM NC 130 (MP10.11) TO SR 1135 (MP5.41)	3	NO	NO	4.75	26	713	80	144	14	11.52							
		12	NC 130	FROM NC 904 (MP15.17) TO CONST JT OF I-95 (MP20.95)	3	NO	NO	5.78	22	867	231	416	17	14.01							
<b>TOTAL FOR PROJ NO. 6cr.10781.76</b>								<b>12.53</b>		<b>1,880</b>	<b>391</b>	<b>704</b>	<b>37</b>	<b>30.38</b>							
6cr.20781.76	Robeson	1	SR 1003	FROM NC 41 (MP0.00) TO SR 2426 (MP1.46)	1	NO	NO	1.46	25.5	219	58	105	4	3.54							
		2	SR 1005	FROM SR 1997 (MP0.00) TO SR 1935 (MP 4.99)	5 & 3	NO	NO	4.99	26	749	200	56	15	12.10	10	100	1	1	1	500	100
		3	SR 1321	FROM SR 1320 (MP 0.00) TO NC 71 (MP0.78)	1	NO	NO	0.78	20	117	31	56	2	1.89							
		4	SR 1536	FROM NC 72 (MP2.06) TO SR 1600 (MP1.72)	4	NO	NO	0.34	38						20	200	2	2	2	500	200
		5	SR 2033	FROM NC 41 (MP0.00) TO SR 1945 (MP0.82)	3	NO	NO	0.82	25	123	33	59	3	1.98							
		6	SR 2108	FROM NC 211 (MP0.00) TO SR 1002 (MP1.47)	2	NO	NO	1.47	21	221	59	106	4	3.56							
		7	SR 2207	FROM NC 41 (MP4.17) TO SR 2204 (MP3.12)	2	NO	NO	1.05	22	158	42	76	3	2.55							
		8	SR 2422	FROM SR 1207 (MP 0.00) TO SR 1003 (MP1.99)	2	NO	NO	2	24	300	80	144	6	4.85							
		9	SR 2426	FROM CONST JT 0.2 MI NORTH OF SR 2239 (MP1.0) TO SR 1003 (MP2.79)	2	NO	NO	1.8	20	270	72	130	5	4.36							
<b>TOTAL FOR PROJ NO. 6cr.20781.76</b>								<b>14.71</b>		<b>2,157</b>	<b>575</b>	<b>732</b>	<b>42</b>	<b>34.83</b>	<b>30</b>	<b>300</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>1,000</b>	<b>300</b>
<b>GRAND TOTAL</b>								<b>27.24</b>		<b>4,037</b>	<b>966</b>	<b>1,436</b>	<b>79</b>	<b>65.21</b>	<b>30</b>	<b>300</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>1,000</b>	<b>300</b>

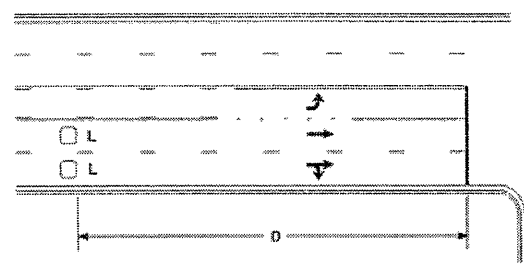
PROJECT NO.	SHEET NO.	TOTAL NO.
6cr.10781.76, 6cr.20781.76	8	

## THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNT	MAP	ROUTE	DESCRIPTION	LENGT H	WIDT H	4685000000-E		4686000000-E		4695000000-E		4705000000-E	4710000000-E	4721000000-E	4725000000-E						4810000000-E		4820000000-E	4900000000-N					
							4" X 90 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	8" X 90 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 RXR 120 M EA	THERMO LT ARROW 90 M EA	THERMO RT ARROW 90 M EA	THERMO STR & LT ARROW 90 M EA	THERMO STR ARROW 90 M EA	THERMO STR & RT ARROW 90 M EA	THERMO LT STR RT ARROW 90 M EA	4" WHITE PAINT LF	4" YELLOW PAINT LF	8" YELLOW PAINT LF	YELLOW & YELLOW MARKERS EA	CRYSTAL & RED MARKERS EA					
6cr.10781.76	Robeson	10	NC 710	FROM SR 1345 (MP15.66) TO CONST JT 0.1 MILE NORTH OF SR 1340 (MP13.61)	2	24	20,200	17,170																		140				
		11	US 501	FROM NC 130 (MP10.11) TO SR 1135 (MP5.41)	4.75	26	51,000	43,350																		350				
		12	NC 130	FROM NC 904 (MP15.17) TO CONST JT OF I-95 (MP20.95)	5.78	22	66,000	56,100																		400				
<b>TOTAL FOR PROJ NO. 6cr.10781.76</b>							<b>12.53</b>		<b>137,200</b>	<b>116,620</b>																<b>890</b>				
									<b>116,620</b>																	<b>890</b>				
6cr.20781.76	Robeson	1	SR 1003	FROM NC 41 (MP0.00) TO SR 2426 (MP1.46)	1.46	25.5	15,400	13,090																		110				
		2	SR 1005	FROM SR 1997 (MP0.00) TO SR 1935 (MP 4.99)	4.99	26	53,800	48,800	360	350	200	100	180	4	15	2	2									420	40			
		3	SR 1321	FROM SR 1320 (MP 0.00) TO NC 71 (MP0.78)	0.78	20																								
		4	SR 1536	FROM NC 72 (MP2.06) TO SR 1600 (MP1.72)	0.34	38							95			6	8	6	2	1						16,400	14,000			
		5	SR 2033	FROM NC 41 (MP0.00) TO SR 1945 (MP0.82)	0.82	25							75		10	3			2							1,300	7,200			
		6	SR 2108	FROM NC 211 (MP0.00) TO SR 1002 (MP1.47)	1.47	21																				19,450	19,400			
		7	SR 2207	FROM NC 41 (MP4.17) TO SR 2204 (MP3.12)	1.05	22																				32,000	28,800			
		8	SR 2422	FROM SR 1207 (MP 0.00) TO SR 1003 (MP1.99)	2	24																				29,200	24,820			
		9	SR 2426	FROM CONST JT 0.2 MI NORTH OF SR 2239 (MP1.0) TO SR 1003 (MP2.79)	1.8	20																				44,000	37,400			
<b>TOTAL FOR PROJ NO. 6cr.20781.76</b>							<b>14.71</b>		<b>69,200</b>	<b>61,890</b>	<b>360</b>	<b>350</b>	<b>200</b>	<b>100</b>	<b>350</b>	<b>4</b>	<b>25</b>	<b>11</b>	<b>10</b>	<b>6</b>	<b>4</b>	<b>1</b>				<b>182,350</b>	<b>161,620</b>	<b>300</b>	<b>560</b>	<b>70</b>
									<b>62,250</b>		<b>550</b>							<b>57</b>							<b>343,970</b>		<b>630</b>			
<b>GRAND TOTAL</b>					<b>27.24</b>		<b>206,400</b>	<b>178,510</b>	<b>360</b>	<b>350</b>	<b>200</b>	<b>100</b>	<b>350</b>	<b>4</b>	<b>25</b>	<b>11</b>	<b>10</b>	<b>6</b>	<b>4</b>	<b>1</b>				<b>182,350</b>	<b>161,620</b>	<b>300</b>	<b>1,450</b>	<b>70</b>		
									<b>178,870</b>		<b>550</b>						<b>57</b>							<b>343,970</b>		<b>1,520</b>				



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

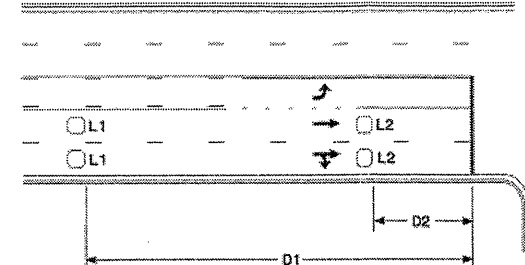


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

OR

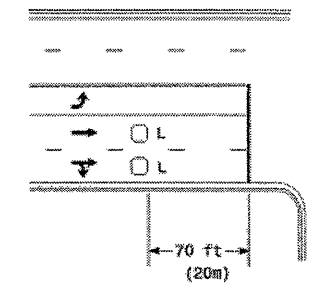


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

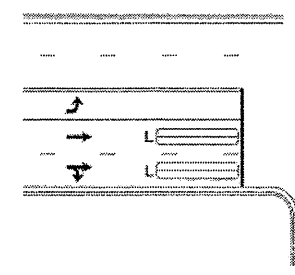
"Stretch" Operation

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



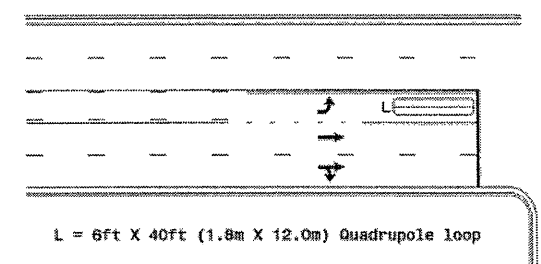
L = 6ft X 6ft (1.8m X 1.8m)  
Wired in series

OR



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

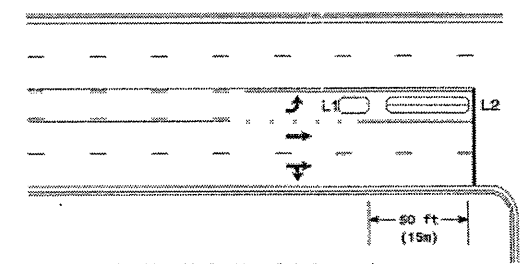
### Left Turn Lane Detection



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

Presence Loop Detection

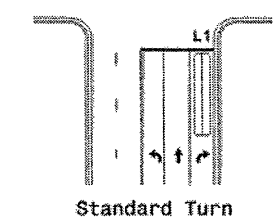
OR



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

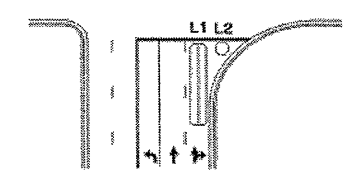
Queue Loop Detection

### Right Turn Lane Detection

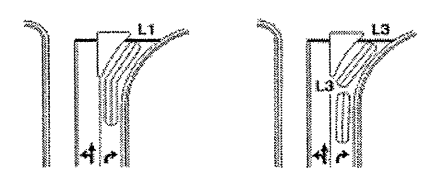


Standard Turn

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

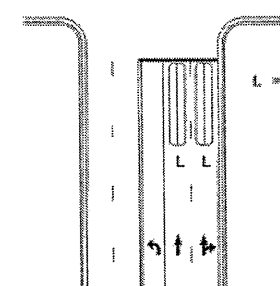


Wide Radius Turn



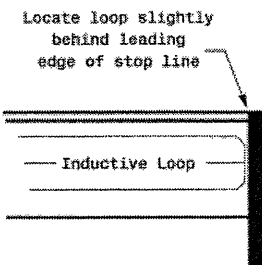
Channelized Turn

### Side Street Detection



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

### Presence Loop Placement at Stop Lines



Note:  
Loop may be located in advance  
of stop line when stop line is  
greater than 15' (4.6m) 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>		
	SCALE N/A	PREPARED BY: P. I. Alexander REVIEWED BY: [Signature] DATE: [Date]	

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