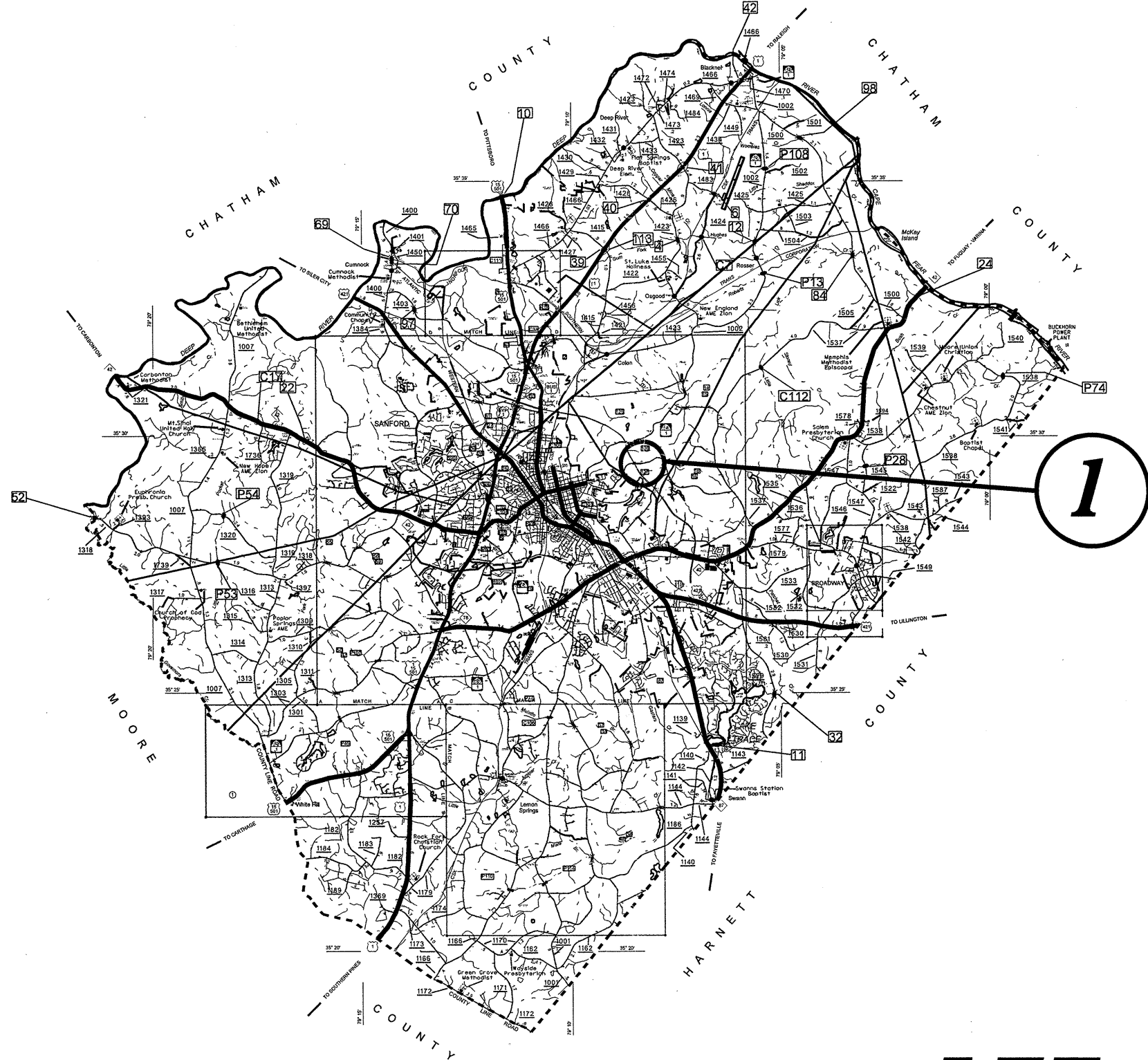


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 5/28/09



# LEE COUNTY

5/28/09

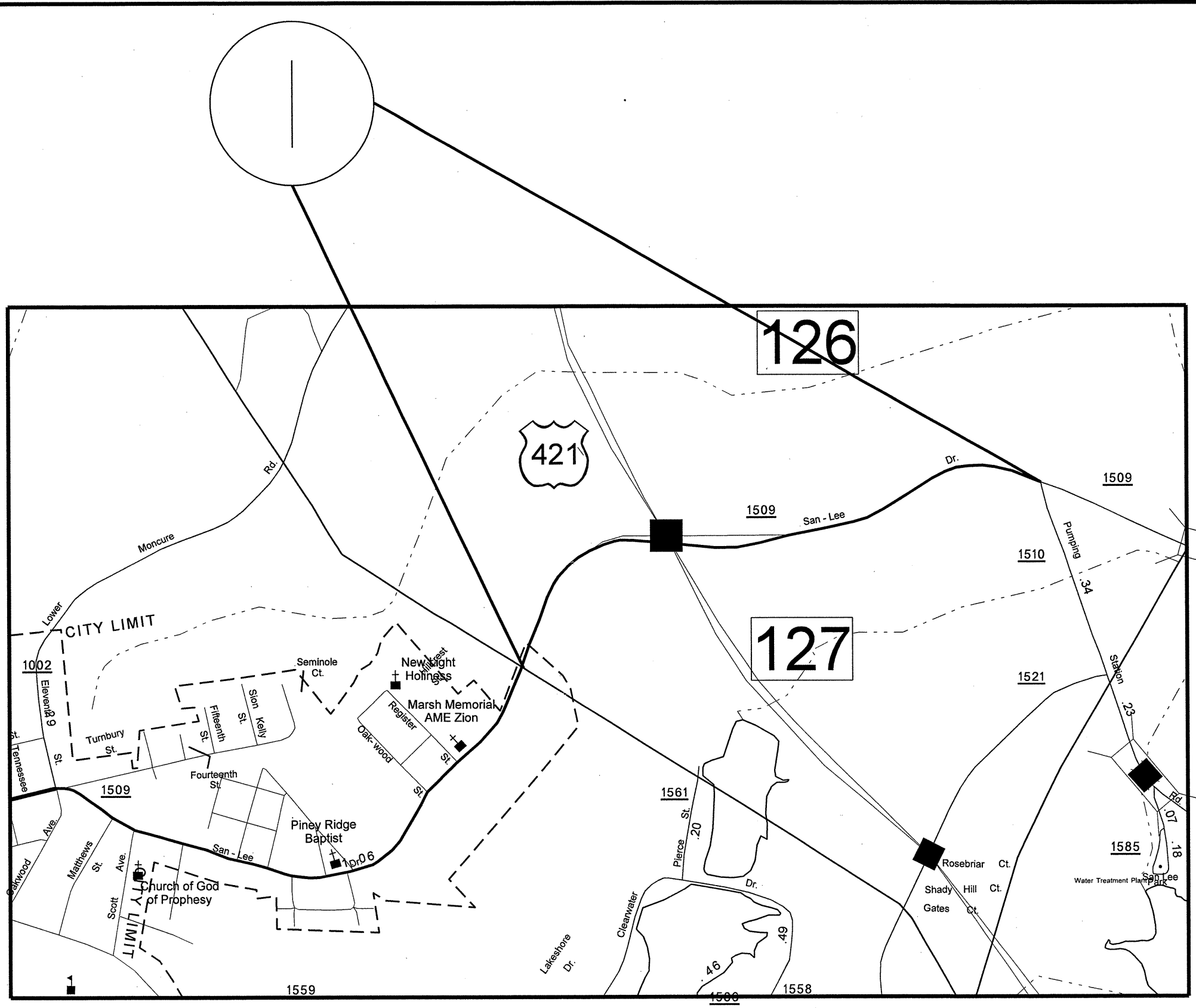
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PROJECT REFERENCE NO.	SHEET NO.
8CR.20531.19	2
8CR.10631.19, 8CR.20631.19	



County Boundary alignments are based on information provided by State and Federal routes, and are shown in their approximate locations.

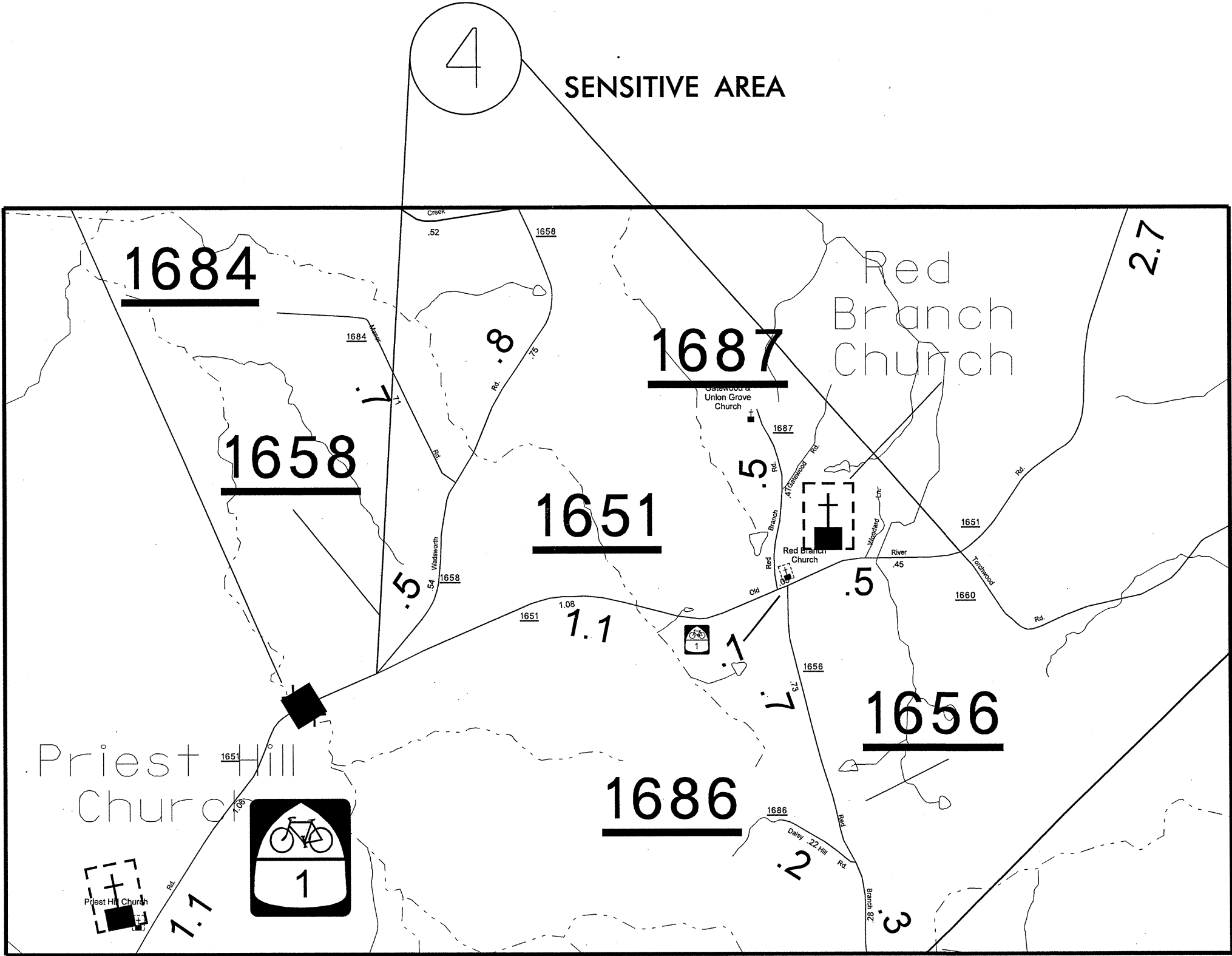
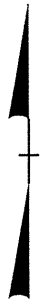
# MOORE COUNTY



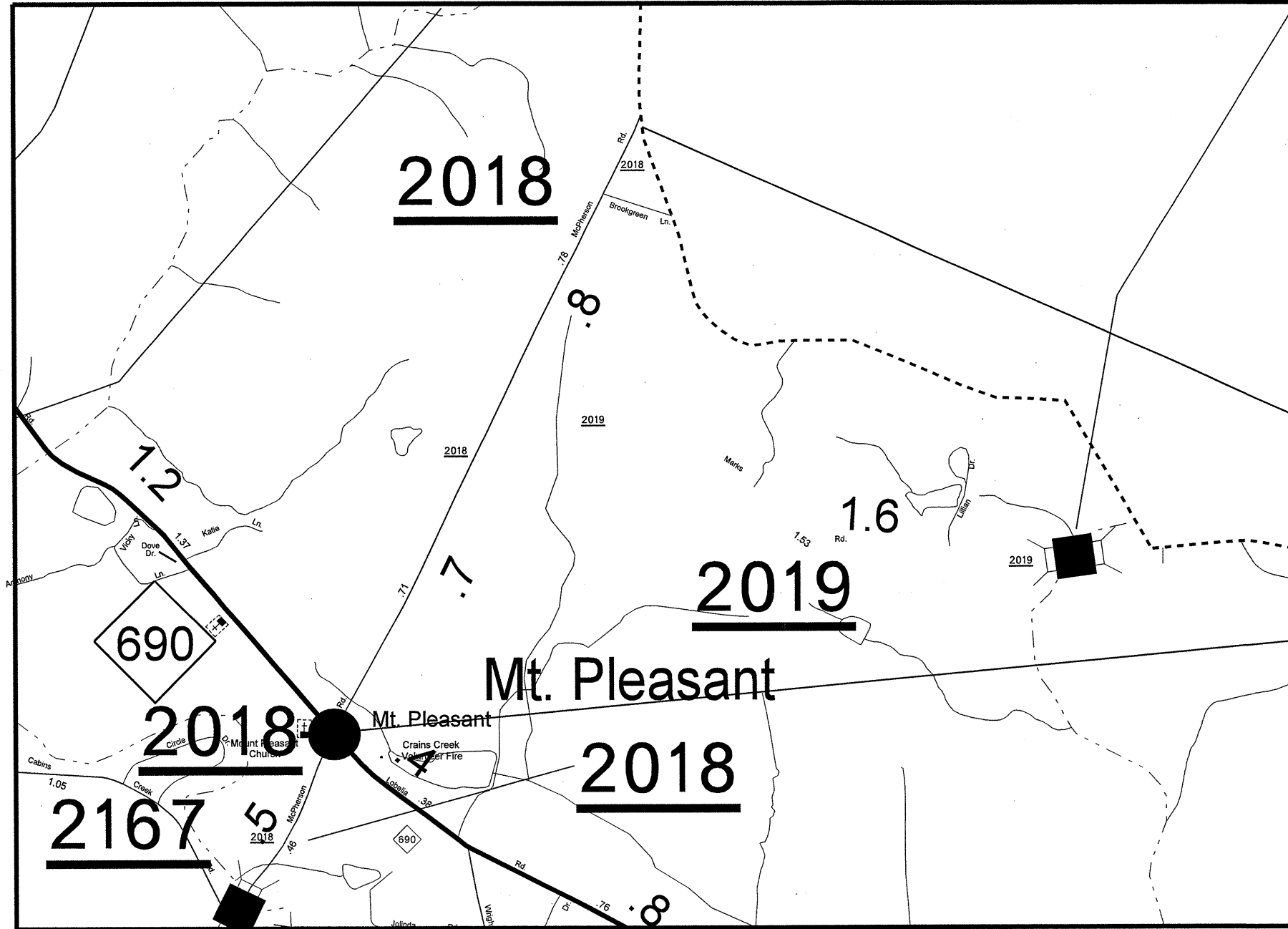
# VICINITY MAP



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# VICINITY MAP

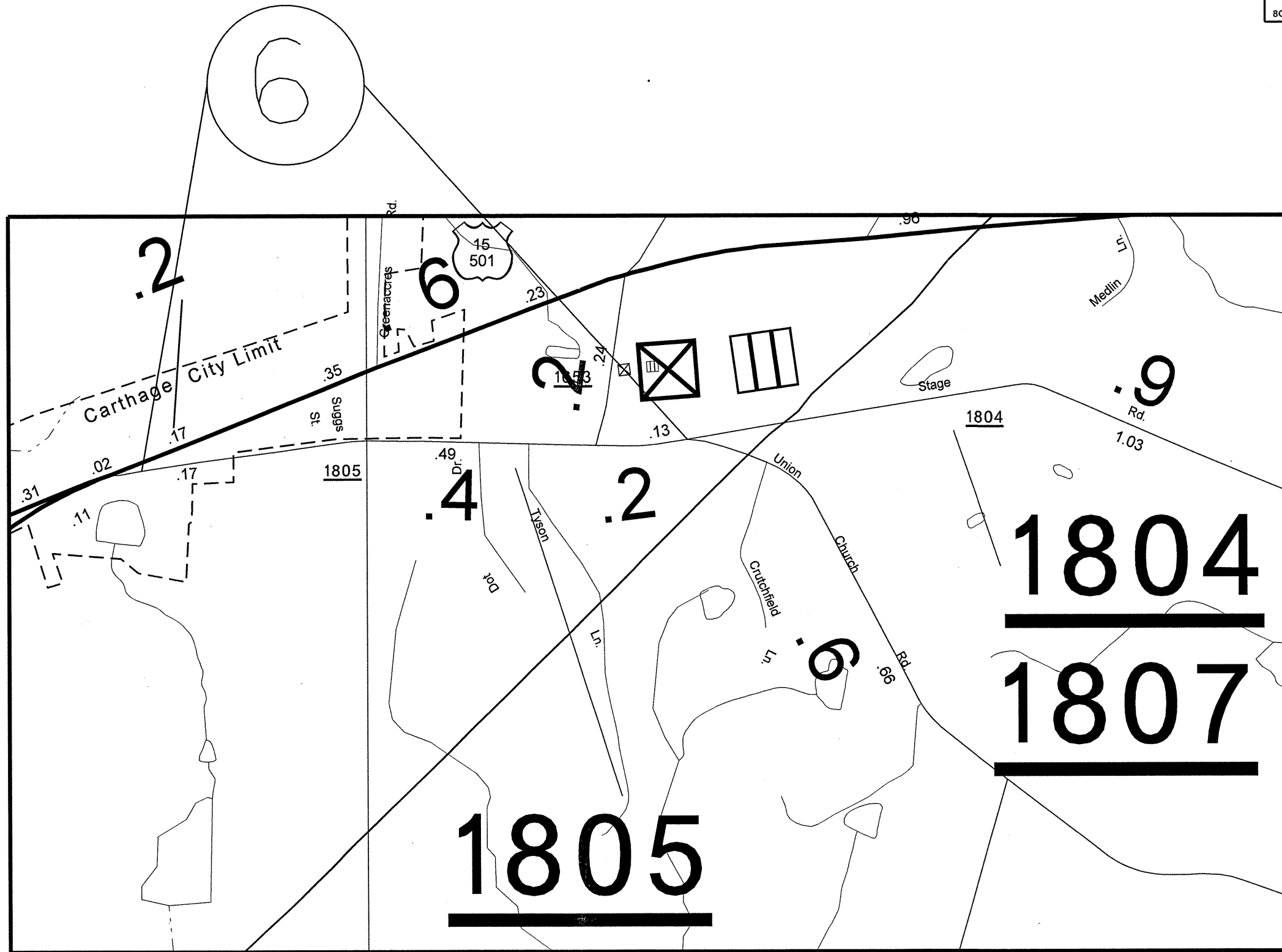


# VICINITY MAP

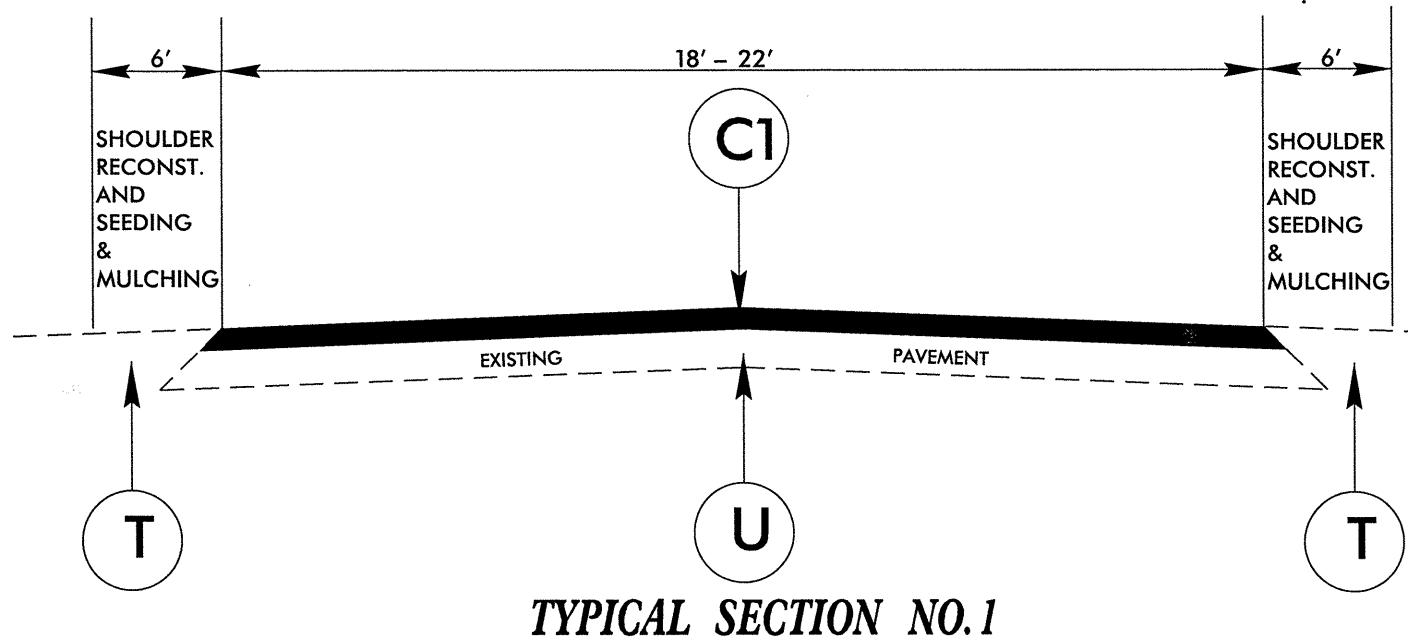
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PROJECT REFERENCE NO.	SHEET NO.
8CR.20531.19	7
8CR.10631.19, 8CR.20631.19	

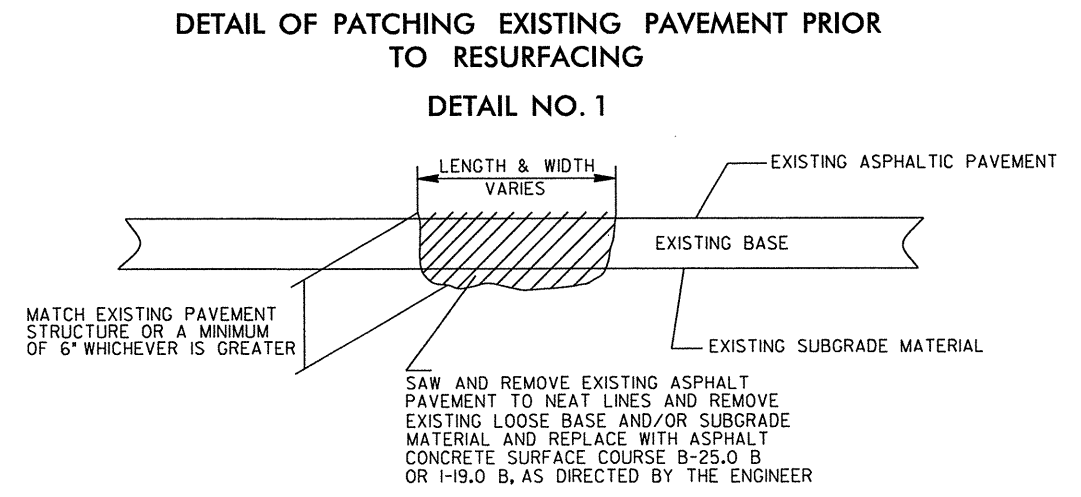
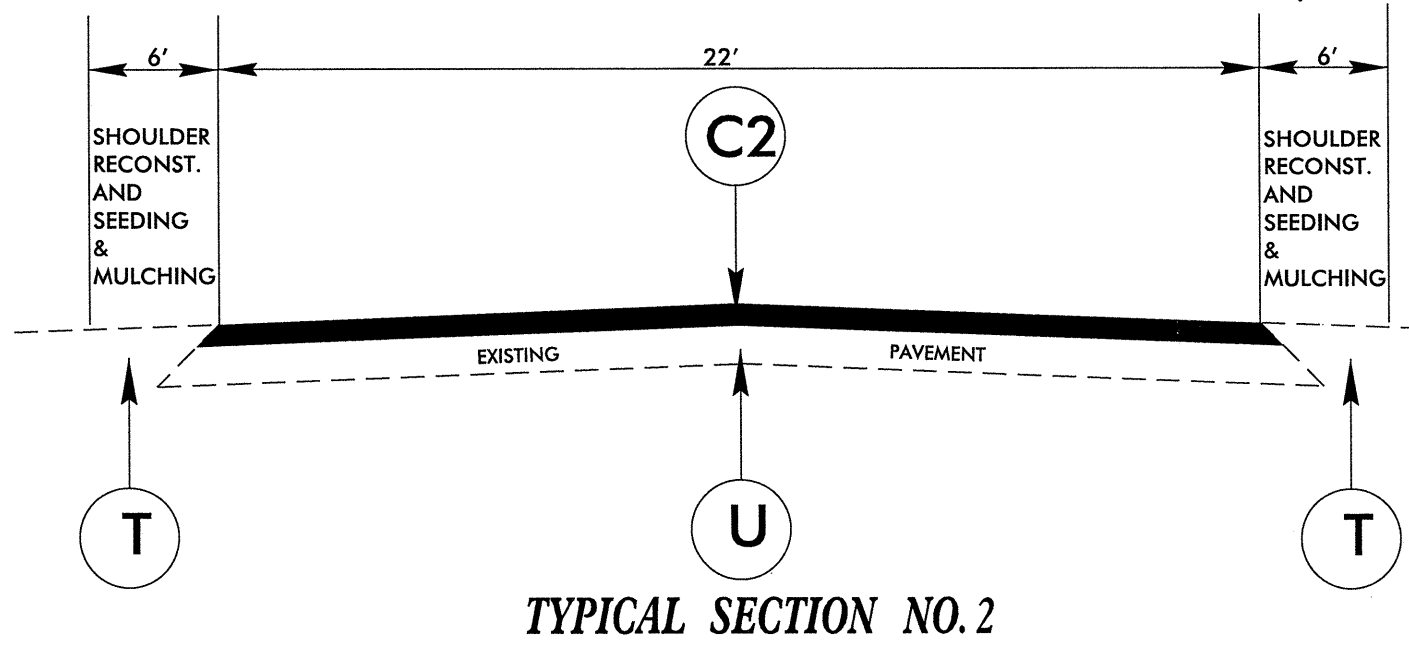
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# VICINITY MAP

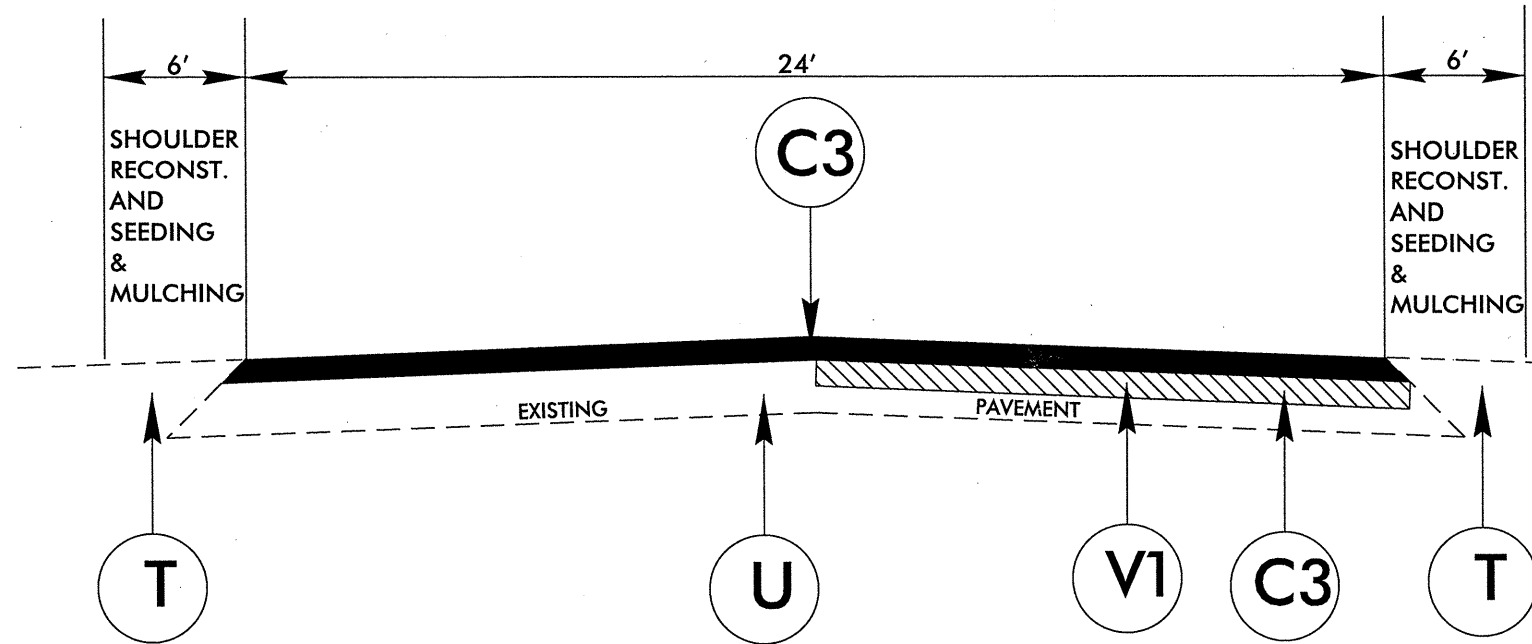


PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT



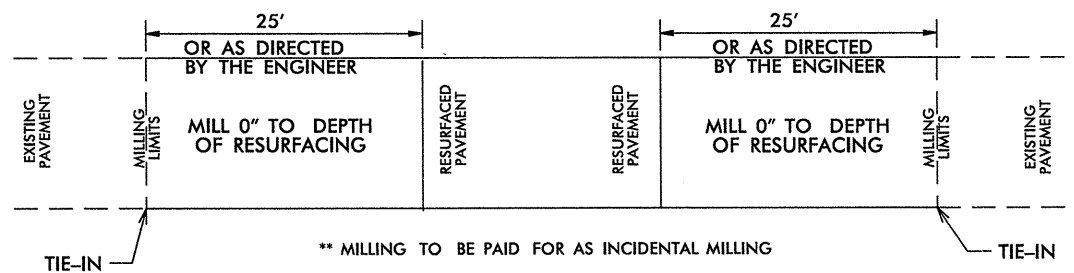
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**TYPICAL SECTION NO. 6**

NOTE: Mill from centerline to white line 1.5" and replace with 1.5" of S9.5C. Overlay entire surface 1.5" of S9.5C.



**PAVEMENT TIE-IN DETAIL**

**PAVEMENT SCHEDULE**

C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C3	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING

PROJECT NO.	SHEET NO.	TOTAL NO.
8CR.20531.19, 8CR.10631.19 8CR.20631.19,	10	

### 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	1.5 MILLING SY	INCIDENTAL MILLING SY	SURFACE COURSE, S9.5B TONS	SURFACE COURSE, S9.5C TONS	SURFACE COURSE, SF9.5A TON	ASPHALT BINDER FOR PLANT MIX TONS	PATCHING EXISTING PAVEMENT TONS	ADJUST METER OR VALVE BOX EA	TEMPORARY SILT FENCE LF	WATTLE LF	SEED & MULCHING AC	INDUCTIVE LOOP SAWCUT LF	
8CR.20531.19	Lee	1	SR 1509	FROM PVMT JT @ US 421 TO SR 1510	1	NO	NO	2.083	20	85	220	4.20		70			2,265	152	335	1	305	760	3.10	500	
<b>TOTAL FOR MAP NO. 1</b>								<b>2.083</b>		<b>85</b>	<b>220</b>	<b>4.20</b>		<b>70</b>			<b>2,265</b>	<b>152</b>	<b>335</b>	<b>1</b>	<b>305</b>	<b>760</b>	<b>3.10</b>	<b>500</b>	
<b>TOTAL FOR PROJ NO. 8CR.20531.19</b>								<b>2.083</b>		<b>85</b>	<b>220</b>	<b>4.20</b>		<b>70</b>			<b>2,265</b>	<b>152</b>	<b>335</b>	<b>1</b>	<b>305</b>	<b>760</b>	<b>3.10</b>	<b>500</b>	
8CR.10631.19	Moore	2	US1 SBL	FROM END OF CONSTRUCTION ON B-3680 TO PVMT JT NORTH CITY LIMITS OF PINEBLUFF	3	NO	NO	1.771	24	75	70	3.54	12,500	135		3,570		211	75		260	650	2.58		
<b>TOTAL FOR MAP NO. 2</b>								<b>1.771</b>		<b>75</b>	<b>70</b>	<b>3.54</b>	<b>12,500</b>	<b>135</b>		<b>3,570</b>		<b>211</b>	<b>75</b>		<b>260</b>	<b>650</b>	<b>2.58</b>		
8CR.10631.19	Moore	3	US 1 NBL	FROM END OF CONSTRUCTION ON B-3680 TO PVMT JT NORTH CITY LIMITS OF PINEBLUFF	3	NO	NO	1.771	24	75	110	3.54	13,500	1,175		3,850		227	75		260	650	2.58		
<b>TOTAL FOR MAP NO. 3</b>								<b>1.771</b>		<b>75</b>	<b>110</b>	<b>3.54</b>	<b>13,500</b>	<b>1,175</b>		<b>3,850</b>		<b>227</b>	<b>75</b>		<b>260</b>	<b>650</b>	<b>2.58</b>		
<b>TOTAL FOR PROJ NO. 8CR.10631.19</b>								<b>3.542</b>		<b>150</b>	<b>180</b>	<b>7.08</b>	<b>26,000</b>	<b>1,310</b>		<b>7,420</b>		<b>438</b>	<b>150</b>		<b>520</b>	<b>1,300</b>	<b>5.16</b>		
8CR.20631.19	Moore	4	SR 1651	FROM SR 1658 TO SR 1660	1	NO	NO	1.6	22	65	30	3.20		150			2,490	167	40		235	590	2.33		
<b>TOTAL FOR MAP NO. 4</b>								<b>1.6</b>		<b>65</b>	<b>30</b>	<b>3.20</b>		<b>150</b>			<b>2,490</b>	<b>167</b>	<b>40</b>		<b>235</b>	<b>590</b>	<b>2.33</b>		
8CR.20631.19	Moore	5	SR 2018	FROM NC 690 TO HARNETT COUNTY	1	NO	NO	1.477	18-22	60	100	2.95		100			1,635	110	25		215	540	2.15		
<b>TOTAL FOR MAP NO. 5</b>								<b>1.477</b>		<b>60</b>	<b>100</b>	<b>2.95</b>		<b>100</b>			<b>1,635</b>	<b>110</b>	<b>25</b>		<b>215</b>	<b>540</b>	<b>2.15</b>		
8CR.20631.19	Moore	6	SR 1805	FROM US 15/501 TO SR 1804	2	NO	NO	0.72	22	30	60	1.44		100	1,020			61			105	270	1.05	600	
<b>TOTAL FOR MAP NO. 6</b>								<b>0.72</b>		<b>30</b>	<b>60</b>	<b>1.44</b>		<b>100</b>	<b>1,020</b>			<b>61</b>			<b>105</b>	<b>270</b>	<b>1.05</b>	<b>600</b>	
<b>TOTAL FOR PROJ NO. 8CR.20631.19</b>								<b>3.797</b>		<b>155</b>	<b>190</b>	<b>7.59</b>		<b>350</b>	<b>1,020</b>			<b>4,125</b>	<b>338</b>	<b>65</b>		<b>555</b>	<b>1,400</b>	<b>5.53</b>	<b>600</b>
<b>GRAND TOTAL</b>								<b>9.422</b>		<b>390</b>	<b>590</b>	<b>18.87</b>	<b>26,000</b>	<b>1,730</b>	<b>1,020</b>	<b>7,420</b>	<b>6,390</b>	<b>928</b>	<b>550</b>	<b>1</b>	<b>1,380</b>	<b>3,460</b>	<b>13.79</b>	<b>1,100</b>	

PROJECT NO.	SHEET NO.	TOTAL NO.
8CR.20531.19, 8CR.10631.19	11	
8CR.20631.19,		

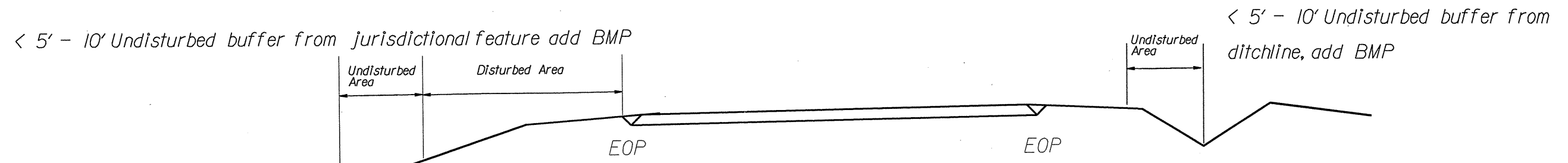
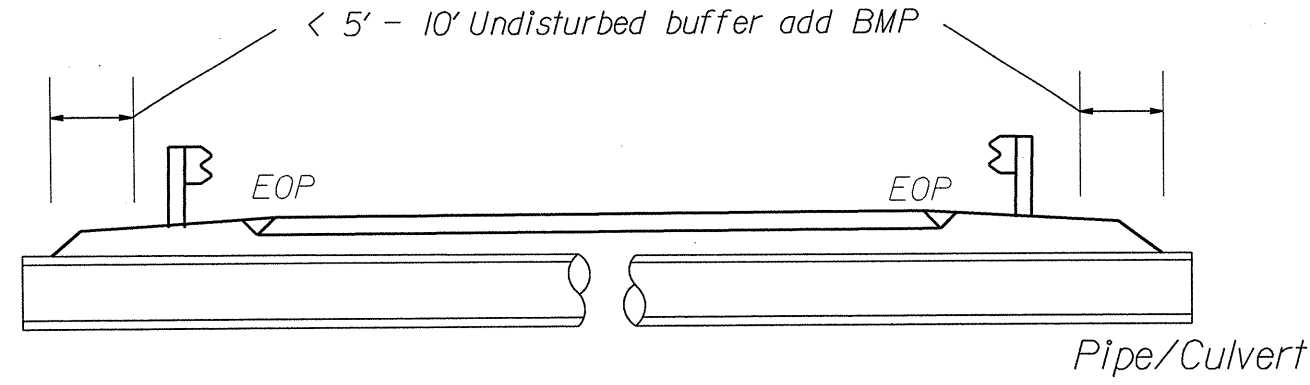
## THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	LENGTH	WIDTH	4589000000-N	4685000000-E		4686000000-E		4721000000-E		4725000000-E	4810000000-E		4900000000-N	
							GENERIC TRAFFIC CONTROL ITEM - TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 90 M YELLOW THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	THERMO MSG STOP 120 M EA	THERMO MSG AHEAD 120 M EA	THERMO RT ARROW 90 M EA	4" WHITE PAINT LF	4" YELLOW PAINT LF	CRYSTAL & RED MARKERS EA	
8CR.20531.19	Lee	1	SR 1509	FROM PVMT JT @ US 421 TO SR 1510	2.083	20										44,000	39,500	
<b>TOTAL FOR MAP NO. 1</b>					<b>2.083</b>											<b>44,000</b>	<b>39,500</b>	
<b>TOTAL FOR PROJ NO. 8CR.20531.19</b>					<b>2.083</b>		*									<b>44,000</b>	<b>39,500</b>	
<b>83,500</b>																		
8CR.10631.19	Moore	2	US1 SBL	FROM END OF CONSTRUCTION ON B-3680 TO PVMT JT NORTH CITY LIMITS OF PINEBLUFF	1.771	24		9,350	9,350	2,340				1	2,340			118
<b>TOTAL FOR MAP NO. 2</b>					<b>1.771</b>			<b>9,350</b>	<b>9,350</b>	<b>2,340</b>				<b>1</b>	<b>2,340</b>			<b>118</b>
8CR.10631.19	Moore	3	US 1 NBL	FROM END OF CONSTRUCTION ON B 3680 TO PVMT JT NORTH CITY LIMITS OF PINEBLUFF	1.771	24		9,350	9,350	3,340					2,340			138
<b>TOTAL FOR MAP NO. 3</b>					<b>1.771</b>			<b>9,350</b>	<b>9,350</b>	<b>3,340</b>					<b>2,340</b>			<b>138</b>
<b>TOTAL FOR PROJ NO. 8CR.10631.19</b>					<b>3.542</b>		*	<b>18,700</b>	<b>18,700</b>	<b>5,680</b>				<b>1</b>	<b>4,680</b>			<b>256</b>
<b>37,400</b>																		
<b>5,680</b>																		
<b>4,680</b>																		
8CR.20631.19	Moore	4	SR 1651	FROM SR 1658 TO SR 1660	1.6	22										33,800	30,150	
<b>TOTAL FOR MAP NO. 4</b>					<b>1.6</b>											<b>33,800</b>	<b>30,150</b>	
8CR.20631.19	Moore	5	SR 2018	FROM NC 690 TO HARNETT COUNTY	1.477	18						4	5		31,200	10,220		
<b>TOTAL FOR MAP NO. 5</b>					<b>1.477</b>							<b>4</b>	<b>5</b>		<b>31,200</b>	<b>10,220</b>		
8CR.20631.19	Moore	6	SR 1805	FROM US 15/501 TO SR 1804	0.72	22		7,600			7,600							
<b>TOTAL FOR MAP NO. 6</b>					<b>0.72</b>			<b>7,600</b>			<b>7,600</b>							
<b>TOTAL FOR PROJ NO. 8CR.20631.19</b>					<b>3.797</b>		*	<b>7,600</b>			<b>7,600</b>	<b>4</b>	<b>5</b>		<b>65,000</b>	<b>40,370</b>		
<b>7,600</b>																		
<b>7,600</b>																		
<b>9</b>																		
<b>105,370</b>																		
<b>GRAND TOTAL</b>					<b>9.422</b>		<b>1</b>	<b>26,300</b>	<b>18,700</b>	<b>5,680</b>	<b>7,600</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>113,680</b>	<b>79,870</b>	<b>256</b>	
<b>45,000</b>																		
<b>13,280</b>																		
<b>9</b>																		
<b>193,550</b>																		

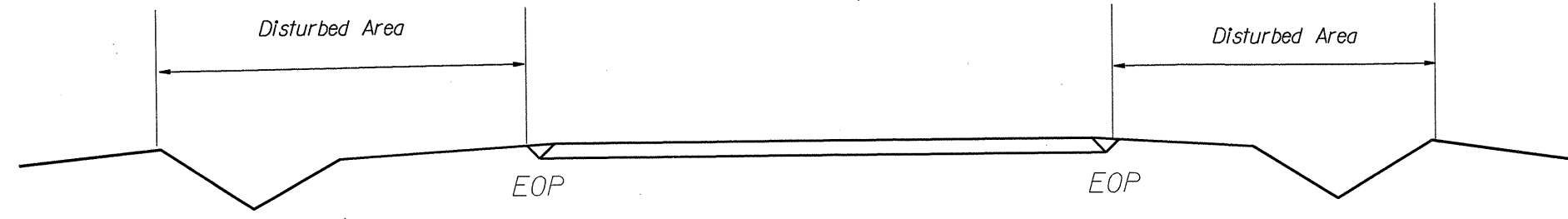
NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle or Silt Fence

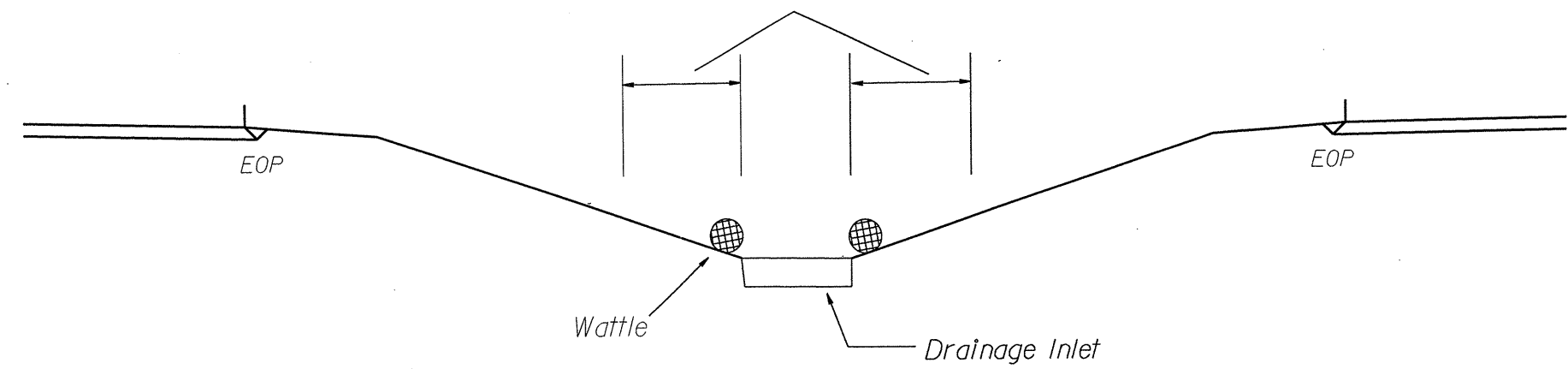
# EROSION CONTROL DETAIL



Use BMP's if shoulders and/or frontslopes and/or ditchline and/or backslopes are disturbed

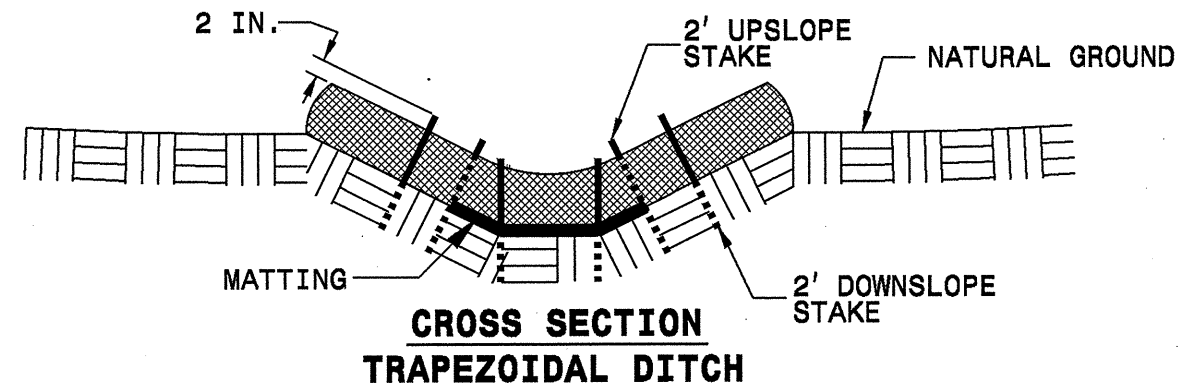
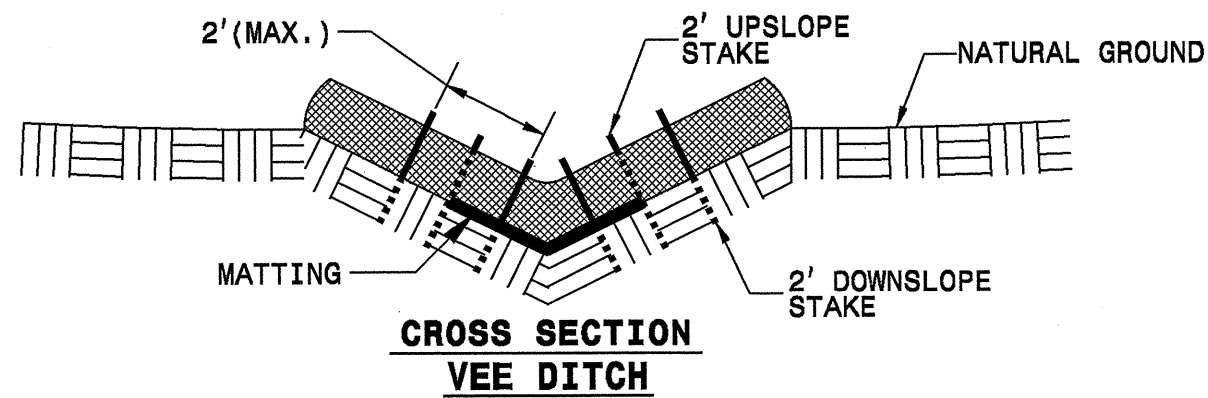
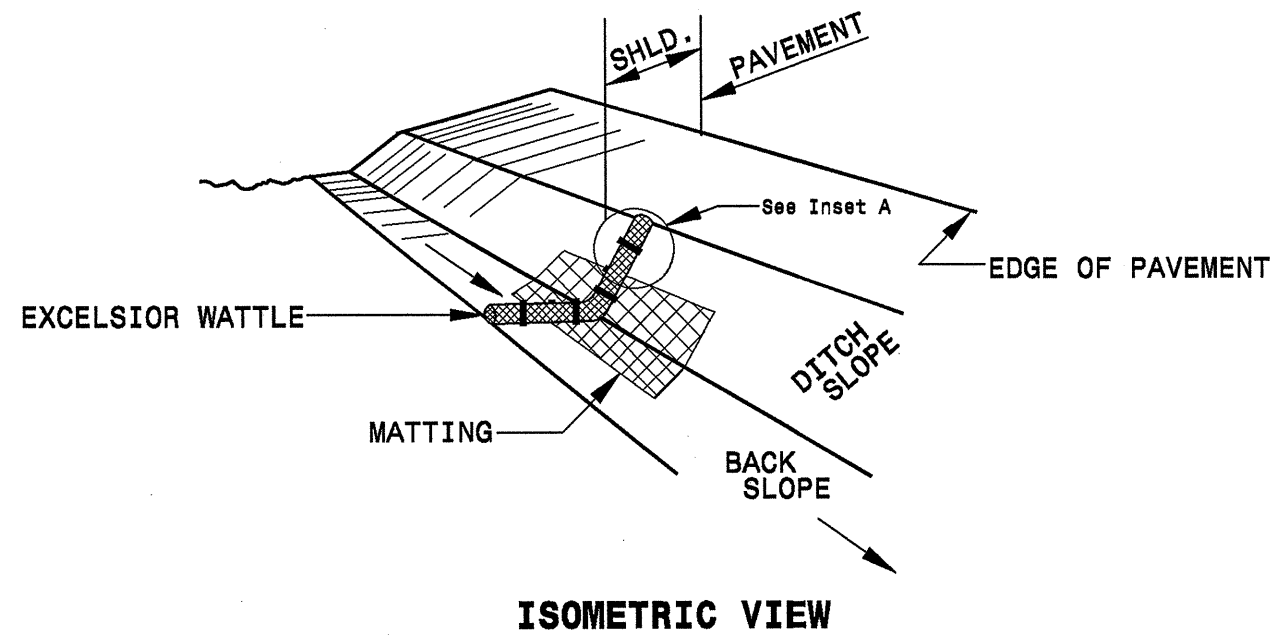


< 5' - 10' Undisturbed buffer from inlet, add wattle



NOT TO SCALE

# WATTLE DETAIL



**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

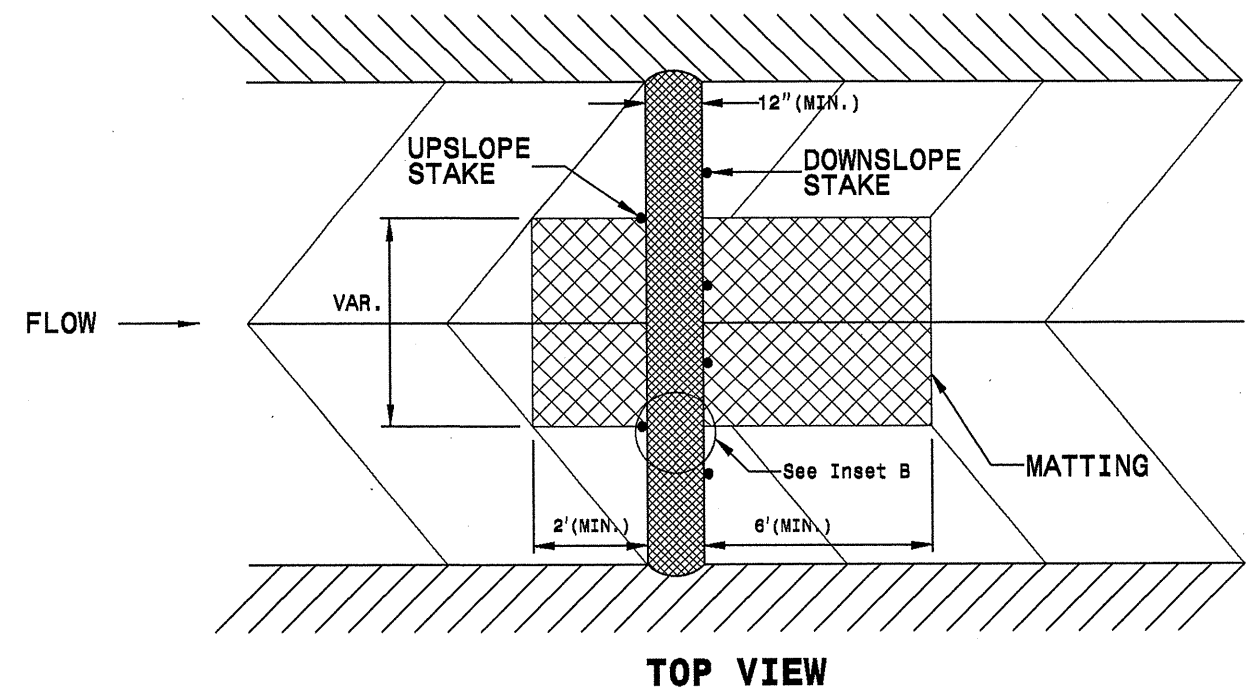
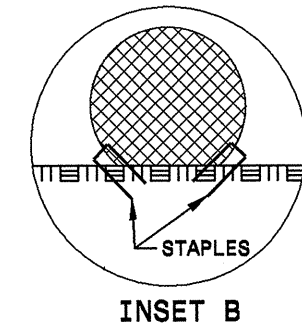
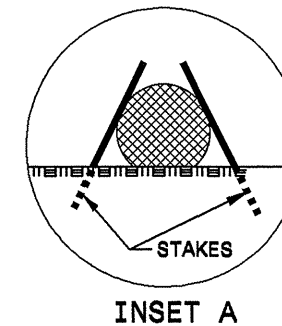
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

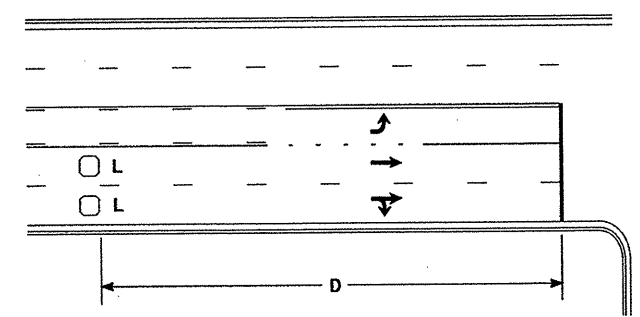
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.



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

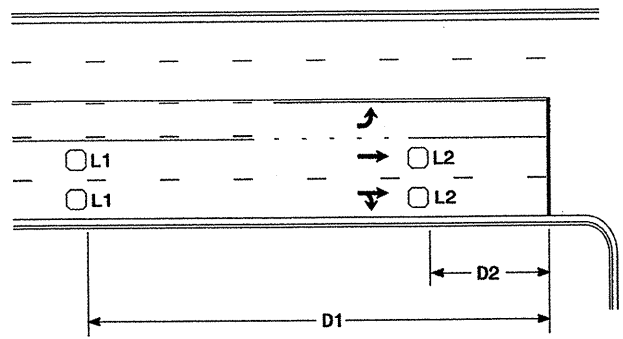


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

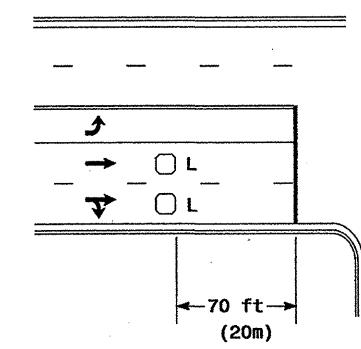


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

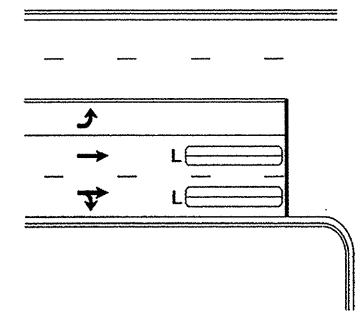
"Stretch" Operation

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



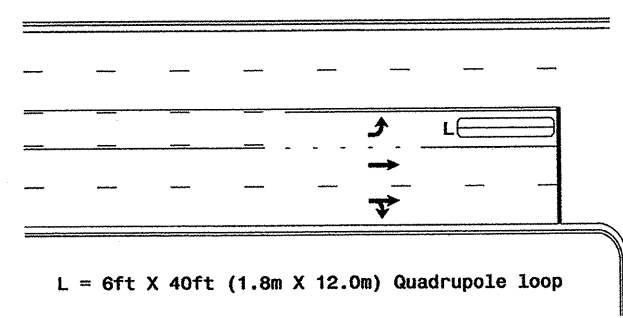
L = 6ft X 6ft (1.8m X 1.8m)  
Wired in series

OR



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

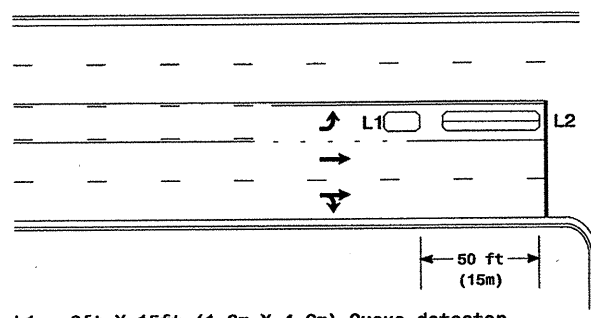
### Left Turn Lane Detection



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

Presence Loop Detection

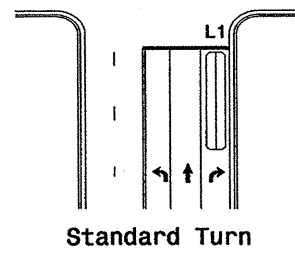
OR



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

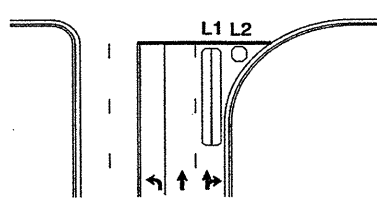
Queue Loop Detection

### Right Turn Lane Detection

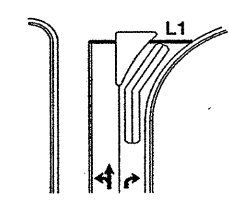


Standard Turn

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

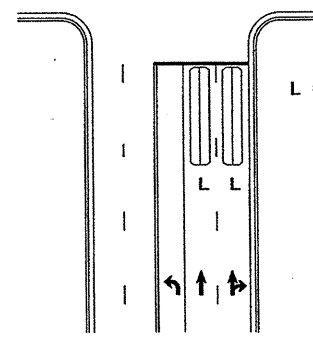


Wide Radius Turn



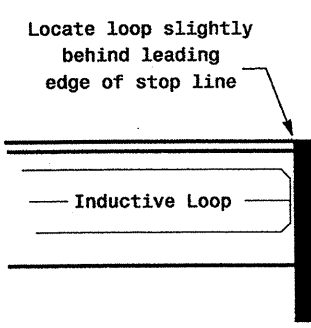
Channelized Turn

### 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



Locate loop slightly  
behind leading  
edge of stop line

Inductive Loop

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

### Recommended Number of Turns

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

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

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

### Typical Loop Locations

	PLAN DATE: June 2006 PREPARED BY: P. L. Alexander SCALE: N/A	REVIEWED BY: REVIEWED BY: REVISIONS: DATE: 12/1/06	SEAL NORTH CAROLINA PROFESSIONAL ENGINEER P. L. ALEXANDER 23496 SIGNATURE: [Signature] DATE: 6/6/06 SIG. INVENTORY NO.
	122 N. McDowell St., Raleigh, NC 27603		

18-DEC-2006 14:29  
 p:\projects\2006\18-115\signal\18-115 turn inductive loop\typical\2006.dgn  
 P. Alexander