

09/08/99

TIP NO.: R-5503

CONTRACT NO.: C203135

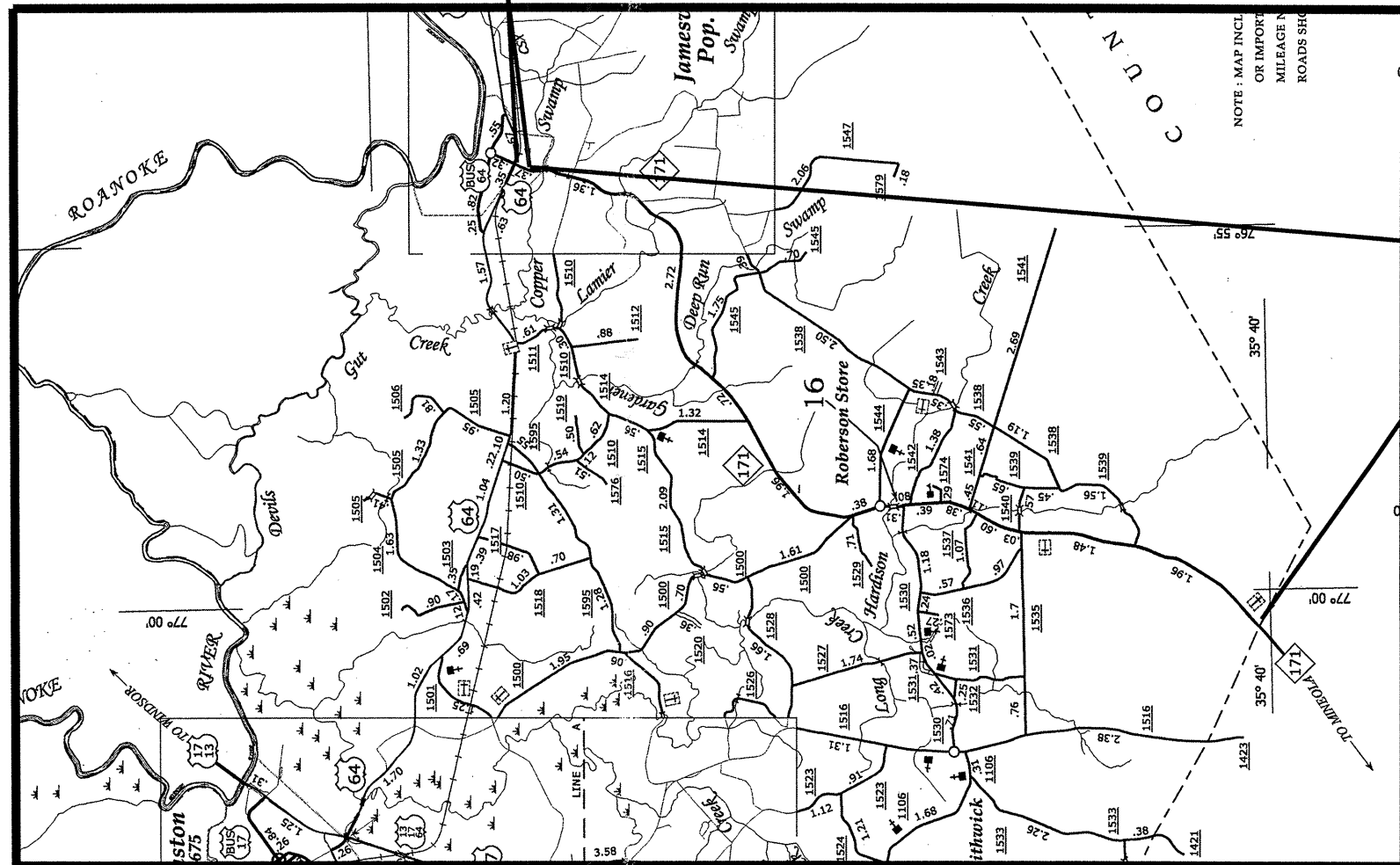
#####SYTIME#####  
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#####USERNAME#####

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**MARTIN COUNTY**

LOCATION: NC 171 FROM US 64 TO BEAUFORT COUNTY LINE  
TYPE OF WORK: MILLING AND RESURFACING

NC 171 MAP # 1



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5503	1	4
STATE FUND NO.	F.A. FUND NO.	DESCRIPTION	
45459.1.1	STP-0171(15)	PE	
45459.3.1	STP-0171(15)	CONSTRUCTION	

NOTE: MAP INCL  
OR IMPORT  
MILEAGE N  
ROADS SHC

NC 171 MAP # 2

NOT TO SCALE

PROJECT LENGTH

LENGTH ROADWAY PROJECT MAP 1 = 0.24 MILES  
LENGTH ROADWAY PROJECT MAP 2 = 12.60 MILES  
TOTAL LENGTH STATE PROJECT = 12.84 MILES

Prepared in the Office of:  
DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

LETTING DATE:  
OCTOBER 16, 2012

W.B. HOBBS, P.E.  
DIVISION PROJECT MANAGER

C.E. SLACHTA  
DIVISION PROPOSALS ENGINEER

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

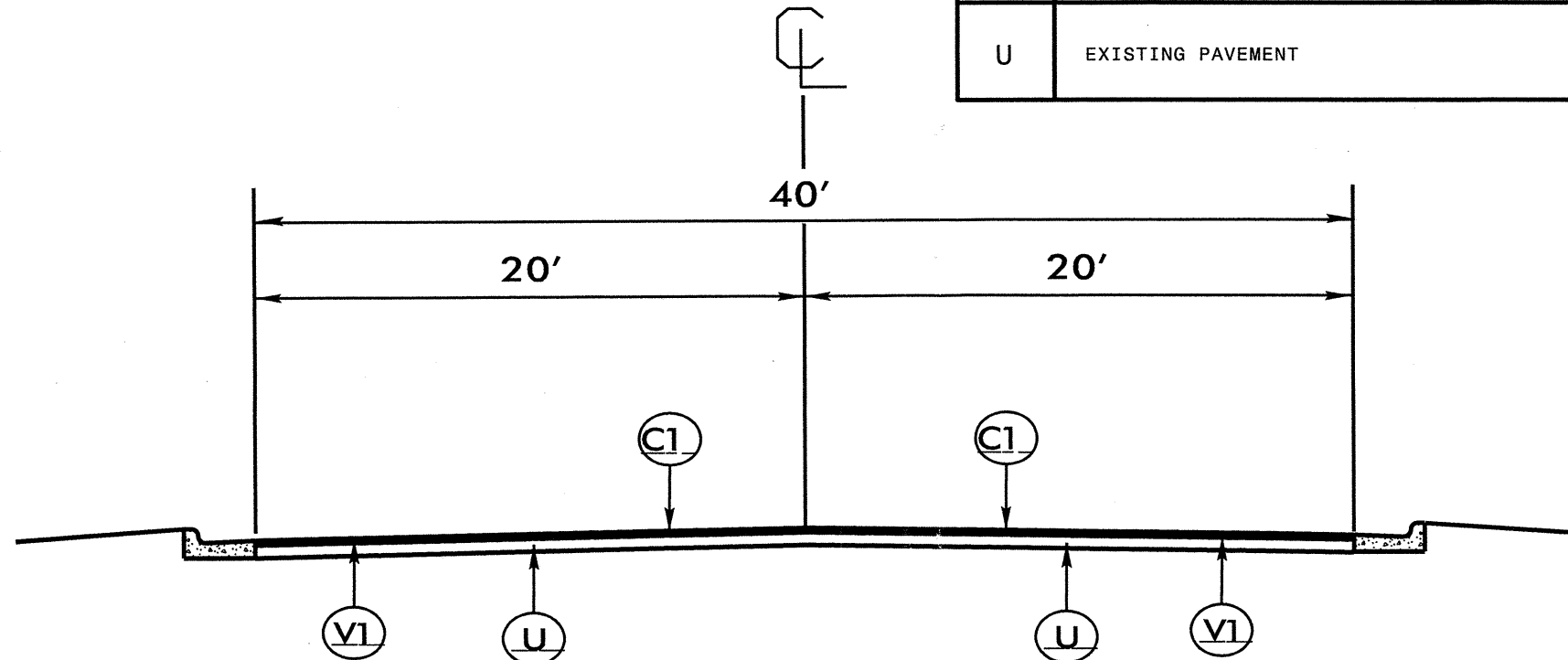


NOTES:

1. ALL PAVED S.R. ROADS TO BE MILLED, RESURFACED TO THE ENDS OF THE RADII OR AS DIRECTED BY THE ENGINEER
2. EDGES, PAVEMENT WIDENING, INTERSECTIONS, TAPERS TURN LANES AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-5503	2 OF 4

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
V1	MILLING ASHALT PAVEMENT DEPTH 1.5"
U	EXISTING PAVEMENT



**TYPICAL SECTION #1**

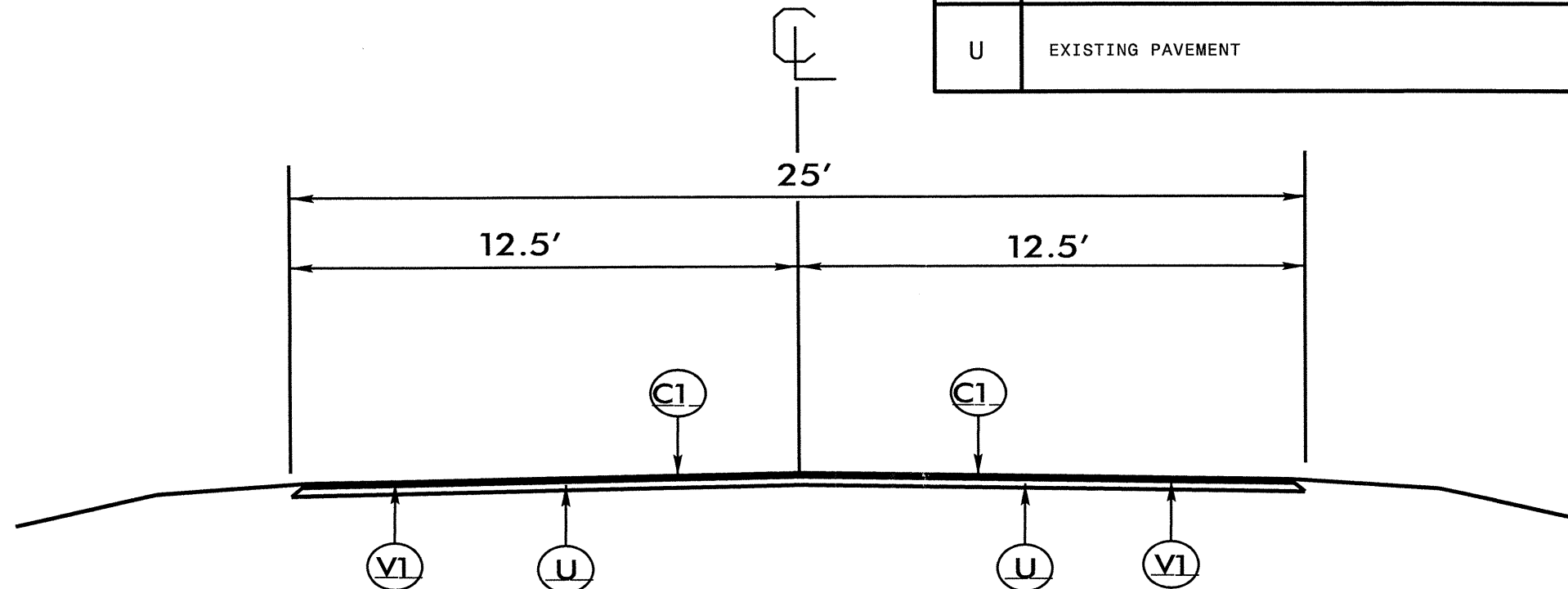
USE WITH MAP 1

NOTES:

1. ALL PAVED S.R. ROADS TO BE MILLED, RESURFACED TO THE ENDS OF THE RADII OR AS DIRECTED BY THE ENGINEER
2. EDGES, PAVEMENT WIDENING, INTERSECTIONS, TAPERS, TURN LANES AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES
3. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

PROJECT REFERENCE NO.	SHEET NO.
R-5503	3 OF 4

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
V1	MILLING ASHALT PAVEMENT DEPTH 1.5"
U	EXISTING PAVEMENT



**TYPICAL SECTION #2**

USE WITH MAP 2

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5503 45459.3.1	4	4

### SUMMARY OF QUANTITIES

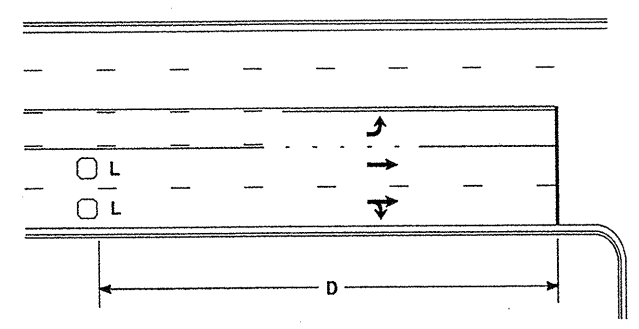
PROJECT	COUNTY	MAP	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH	WIDTH	MOBILIZATION	1½" MILLING	INCIDENTAL MILLING	SURFACE COURSE, S9.5B	ASPHALT BINDER FOR PLANT MIX	INDUCTIVE LOOP SAWCUT	LEAD-IN CABLE (18-4)
NO		NO			NO		MI	FT	LS	SY	SY	TONS	TON	LF	LF
R-5503	Martin	1	NC 171	FROM US 64 TO END CURB AND GUTTER AND TAPER	1	NO	0.24	40	1	6,641		616	37	1,000	200
		2	NC 171	FROM END TAPER OF CURB AND GUTTER TO BEAUFORT COUNTY LINE	2	NO	12.6	25	*	203,500	7,194	18,129	1,088		
<b>GRAND TOTAL</b>							<b>12.84</b>		<b>1</b>	<b>210,141</b>	<b>7,194</b>	<b>18,745</b>	<b>1,125</b>	<b>1,000</b>	<b>200</b>

### THERMOPLASTIC AND PAINT QUANTITIES

PROJECT	COUNTY	MAP	ROUTE	DESCRIPTION	LENGTH	WIDTH	TEMPORARY TRAFFIC CONTROL	4" X 90 M WHITE THERMO	4" X 120 M YELLOW THERMO	4" X 120 M WHITE THERMO	8" X 90 M YELLOW THERMO	16" X 120 M WHITE	24" X 120 M WHITE	THERMO RXR 120 M	THERMO LT ARROW 90	THERMO RT ARROW 90 M	THERMO STR ARROW 90 M
NO		NO					LS	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA
R-5503	Martin	1	NC 171	FROM US 64 TO END TAPER AND CURB AND GUTTER	0.24	40	1	550	4,104	40	100	100	130	4	3	3	3
		2	NC 171	FROM END TAPER OF CURB AND GUTTER TO BEAUFORT COUNTY LINE	12.6	25	*	134,150	72,871	400	280				11	6	
<b>GRAND TOTAL</b>					<b>12.84</b>		<b>1</b>	<b>134,700</b>	<b>76,975</b>	<b>440</b>	<b>380</b>	<b>100</b>	<b>130</b>	<b>4</b>	<b>14</b>	<b>9</b>	<b>3</b>
									<b>77,415</b>						<b>26</b>		

PROJECT	COUNTY	MAP	ROUTE	DESCRIPTION	LENGTH	WIDTH	4" YELLOW PAINT	4" WHITE PAINT	8" YELLOW PAINT	16" WHITE PAINT	24" WHITE PAINT	PAINT MSG RXR	PAINT RT ARROW	PAINT LT ARROW	PAINT STR ARROW	YELLOW / YELLOW MARKERS	CRYSTAL & RED MARKERS
NO		NO					LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA
R-5503	Martin	1	NC 171	FROM US 64 TO END TAPER AND CURB AND GUTTER	0.24	40	4,104	590	100	100	130	4	3	3	3	40	3
		2	NC 171	FROM END TAPER OF CURB AND GUTTER TO BEAUFORT COUNTY LINE	12.6	25	72,871	134,550	280				6	11		954	20
<b>GRAND TOTAL</b>					<b>12.84</b>		<b>76,975</b>	<b>135,140</b>	<b>380</b>	<b>100</b>	<b>130</b>	<b>4</b>	<b>9</b>	<b>14</b>	<b>3</b>	<b>994</b>	<b>23</b>
									<b>212,115</b>				<b>26</b>		<b>1017</b>		

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

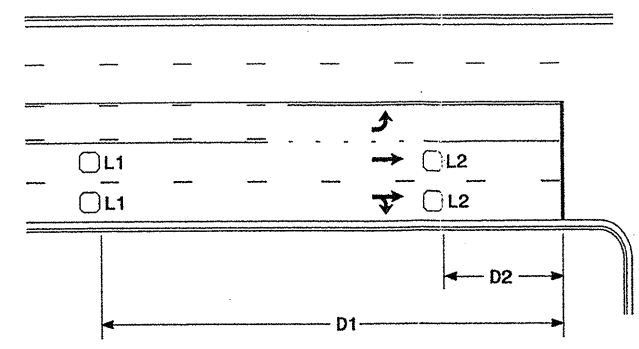


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

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

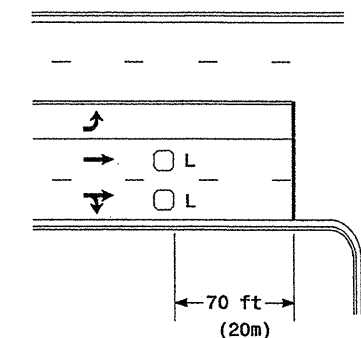


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

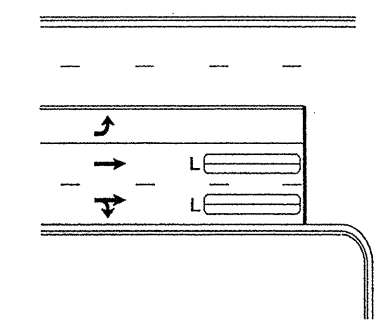
"Stretch" Operation

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



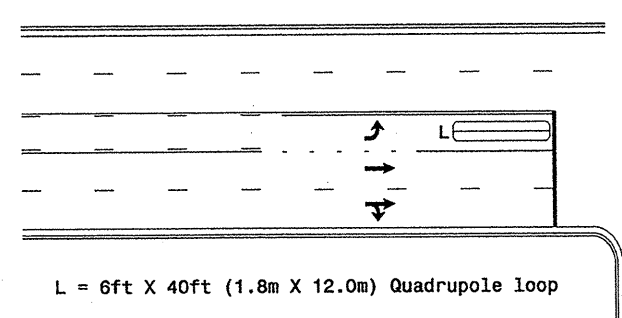
L = 6ft X 6ft (1.8m X 1.8m)  
Wired in series

OR



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

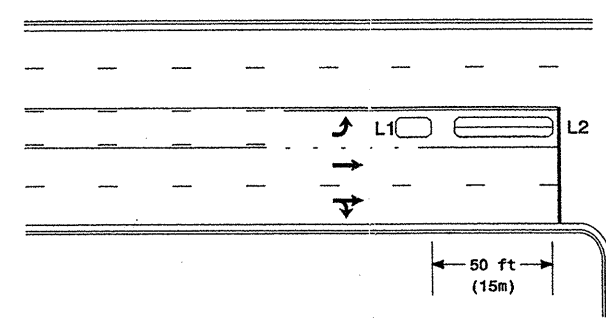
### Left Turn Lane Detection



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

Presence Loop Detection

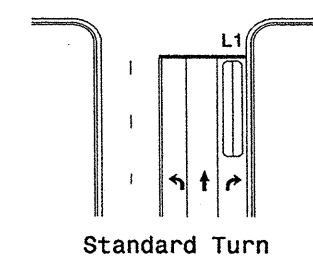
OR



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

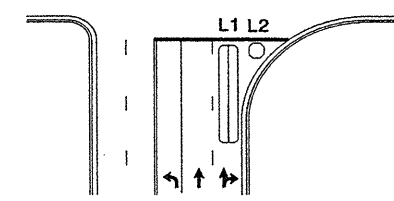
Queue Loop Detection

### Right Turn Lane Detection

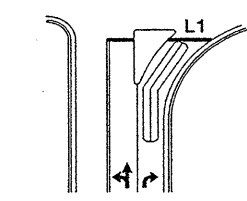


Standard Turn

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

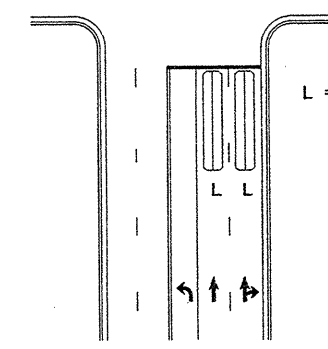


Wide Radius Turn



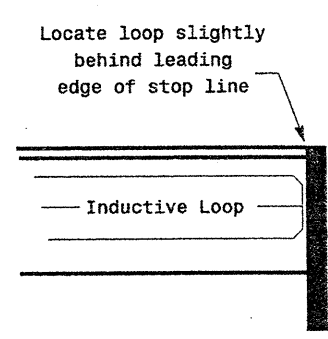
Channelized Turn

### 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



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

19-FEC-2006 14129  
s:\its\signal\1b\turn\_in\m\lca\loop\typ\lca12006.dgn  
palexander

#### Typical Loop Locations

PLAN DATE: June 2006	REVIEWED BY:
PREPARED BY: P. L. Alexander	REVIEWED BY:
SCALE: N/A	REVISIONS:
	NO. REVISIONS: 1
	DATE: 12/1/06
	INITIALS: P.L.
	DATE: 12/1/06
	SIGNATURE: P.L. Alexander
	DATE: 12/1/06

SIG. INVENTORY NO.