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

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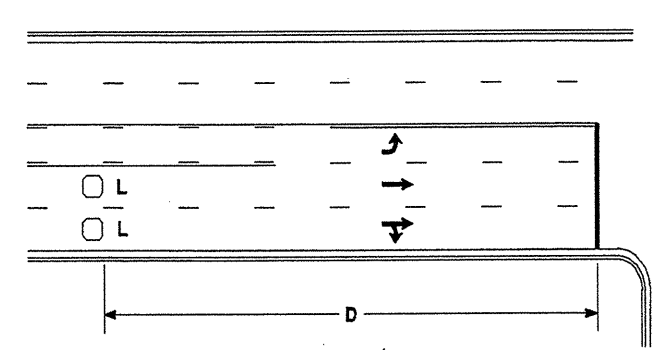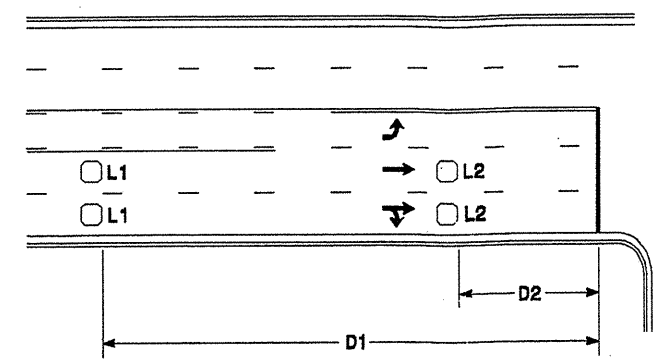
Speed Limit		D	
mph	(km/hr)	ft	(m)
40	(64)	250	(75)
45	(72)	300	(90)
50	(80)	355	(110)
55	(88)	420	(130)

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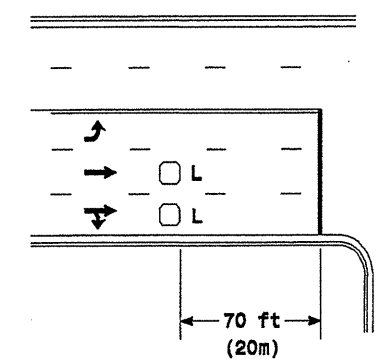Wired separately for TS2,
170, and 2070L Controllers

Volume Density Operation

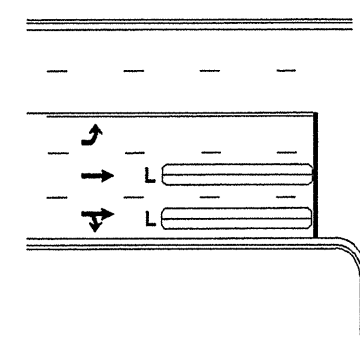| Speed Limit		D1		D2	
mph	(km/hr)	ft	(m)	ft	(m)
40	(64)	250	(75)	80	(25)
45	(72)	300	(90)	90	(27)
50	(80)	355	(110)	100	(30)
55	(88)	420	(130)	110	(35)

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
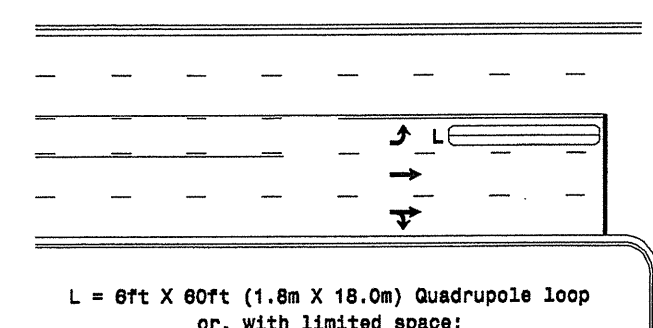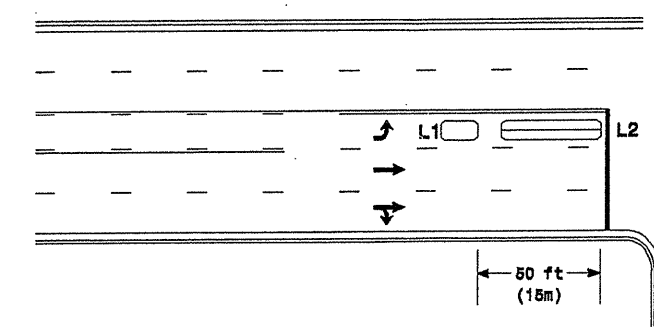### [≤35 mph (56 km/hr)]

OR

←70 ft→
(20m)

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

L = 6ft X 60ft (1.8m X 18.0m)
Quadrupole loop, wired separately
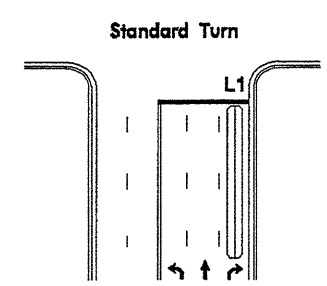
Left Turn Lane Detection

OR

L = 6ft X 60ft (1.8m X 18.0m) Quadrupole loop
or, with limited space:
6ft X 50ft (1.8m X 15.0m) Quadrupole loop
or
6ft X 40ft (1.8m X 12.0m) Quadrupole loop
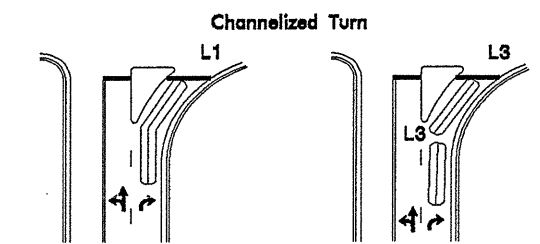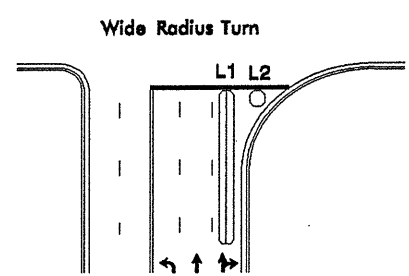
Presence Loop Detection

←50 ft→
(15m)

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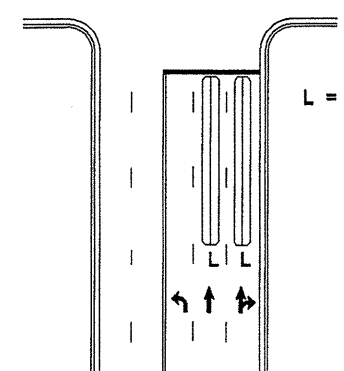
Queue Loop Detection

Right Turn Lane Detection

Standard Turn

L1 = 6ft X 60ft (1.8m X 18.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
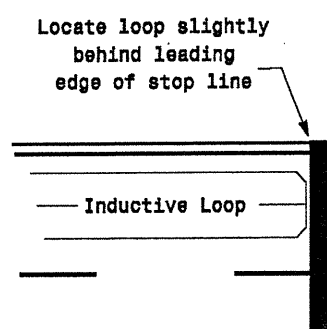L3 = 6ft X 30ft (1.8m X 9.0m) Quadrupole loop
Wired in series

Wide Radius Turn

Channelized Turn

Side Street Detection

L = 6ft X 60ft (1.8m X 18.0m)
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 permitted or
exclusive/permitted 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

Prepared in the Office of
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Signals and Geometrics Section
222 N. McDowell St., Raleigh, NC 27603

Typical Loop Locations

PLAN DATE: August 2001	REVIEWED BY:
PREPARED BY: P. L. Alexander	REVIEWED BY:

REVISIONS		INIT.	DATE
Add queue detector loop reference to 2070L controllers		plg	8/02

SCALE
None