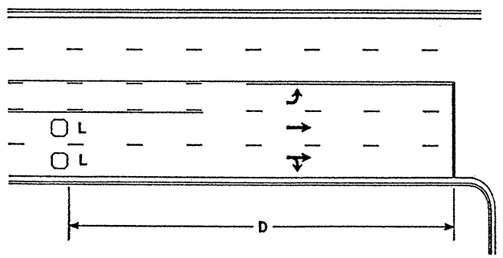
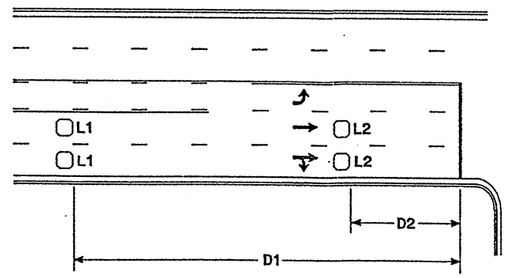
PROJECT REFERENCE NO.	SHEET NO.
	SIG 1

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



OR



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

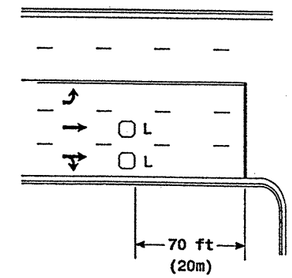
Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

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

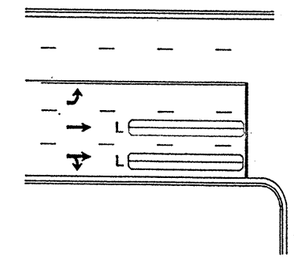
L2 = 6ft X 6ft (1.8m X 1.8m)
Wired in series

"Stretch" Operation

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



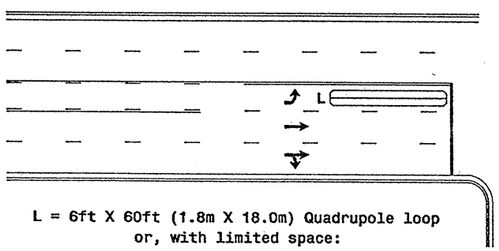
OR



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

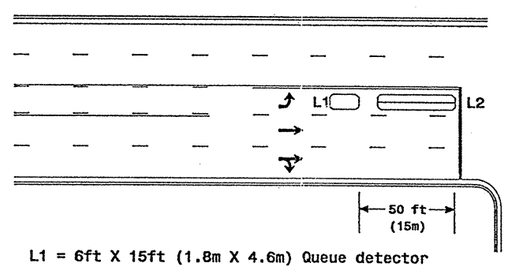
Left Turn Lane Detection



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

OR

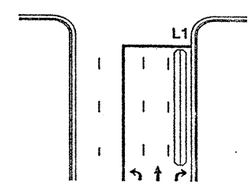


L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector
L2 = 6ft X 40ft (1.8m X 12.0m) Quadrupole loop

Queue Loop Detection

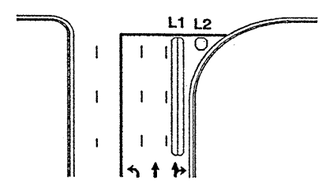
Right Turn Lane Detection

Standard Turn

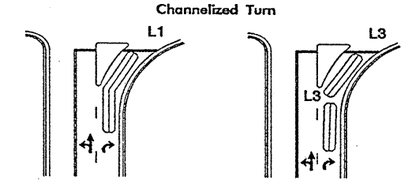


L1 = 6ft X 60ft (1.8m X 18.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 30ft (1.8m X 9.0m) Quadrupole loop
Wired in series

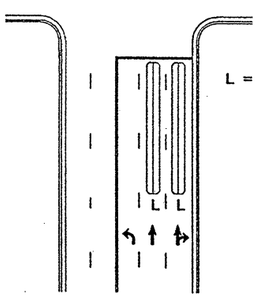
Wide Radius Turn



Channelized Turn

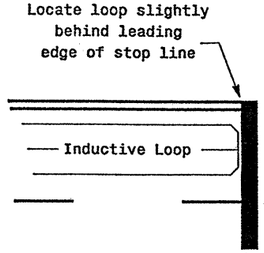


Side Street Detection



L = 6ft X 60ft (1.8m X 18.0m)
Quadrupole loop
Wired to separate detectors/channels

Presence Loop Placement at Stop Lines



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 Offices of:
Traffic Engineering and Safety Systems Branch
Signals and Geometrics Section
122 N. McDowell St., Raleigh, NC 27603

Typical Loop Locations

PLAN DATE: July 2003	REVIEWED BY:
PREPARED BY: P L Alexander	REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE
N/A

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 23489 ENGINEER PAMELA L. ALEXANDER
SIGNATURE
7/15/03
DATE
SIG. INVENTORY NO.

15-JUL-2003 15:56
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palexander