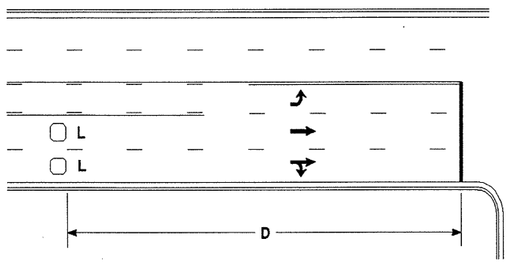
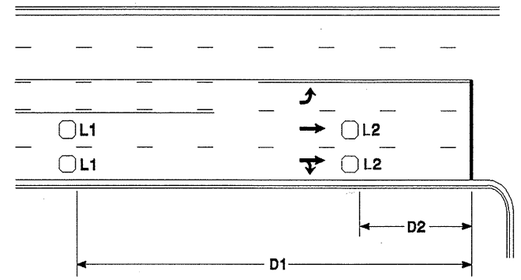
PROJECT REFERENCE NO.	SHEET NO.	TOTAL NO.
37425	SIG-1	22

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

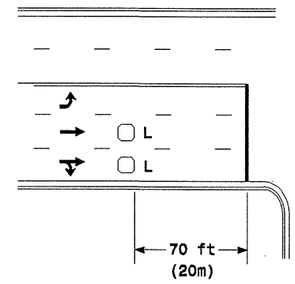
Speed Limit mph	(km/hr)	D1 ft	(m)	D2 ft	(m)
40	(64)	250	(75)	80	(25)
45	(72)	300	(90)	90	(27)
50	(80)	355	(110)	100	(30)
55	(88)	420	(130)	110	(35)

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

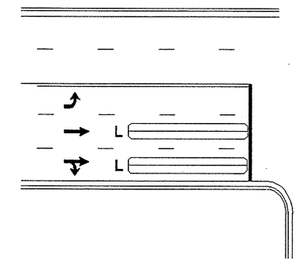
L2 = 6ft X 6ft (1.8m X 1.8m)
Wired in series

"Stretch" Operation

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



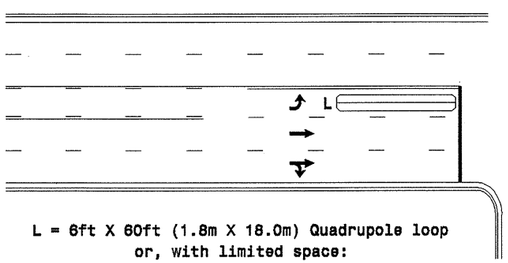
OR



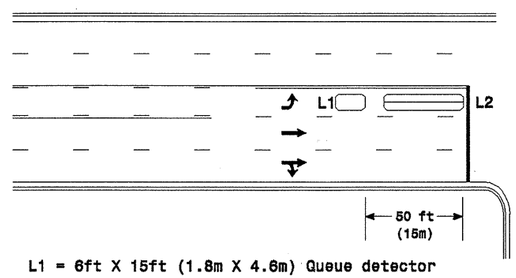
L = 6ft X 6ft (1.8m X 1.8m)
Wired in series

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

Left Turn Lane Detection



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

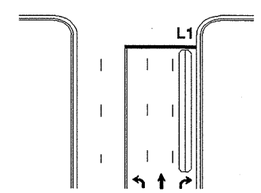
Presence Loop Detection

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

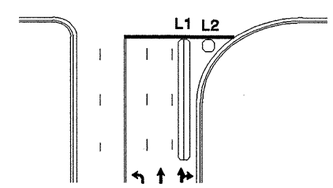
Right Turn Lane Detection

Standard Turn

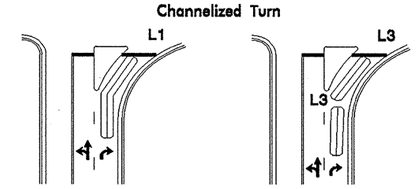


L1 = 6ft X 60ft (1.8m X 18.0m) Quadrupole loop
L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
Wired separately
L3 = 6ft X 30ft (1.8m X 9.0m) Quadrupole loop
Wired in series

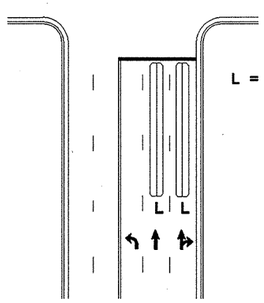
Wide Radius Turn



Channelized Turn

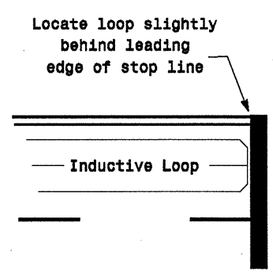


Side Street Detection



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 Office of: Traffic Engineering and Safety Systems Branch, Signals and Geometrics Section, Division of Highways, State of North Carolina, Department of Transportation
122 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	plq	8/02

SCALE: None

30-AUG-2004 14:12
W:\Resurfacing Projects\Division 7\Moving Ahead\37425\loop_typical.dgn
bbentfield AT DS214567