High Speed Detection
(≥40 mph)
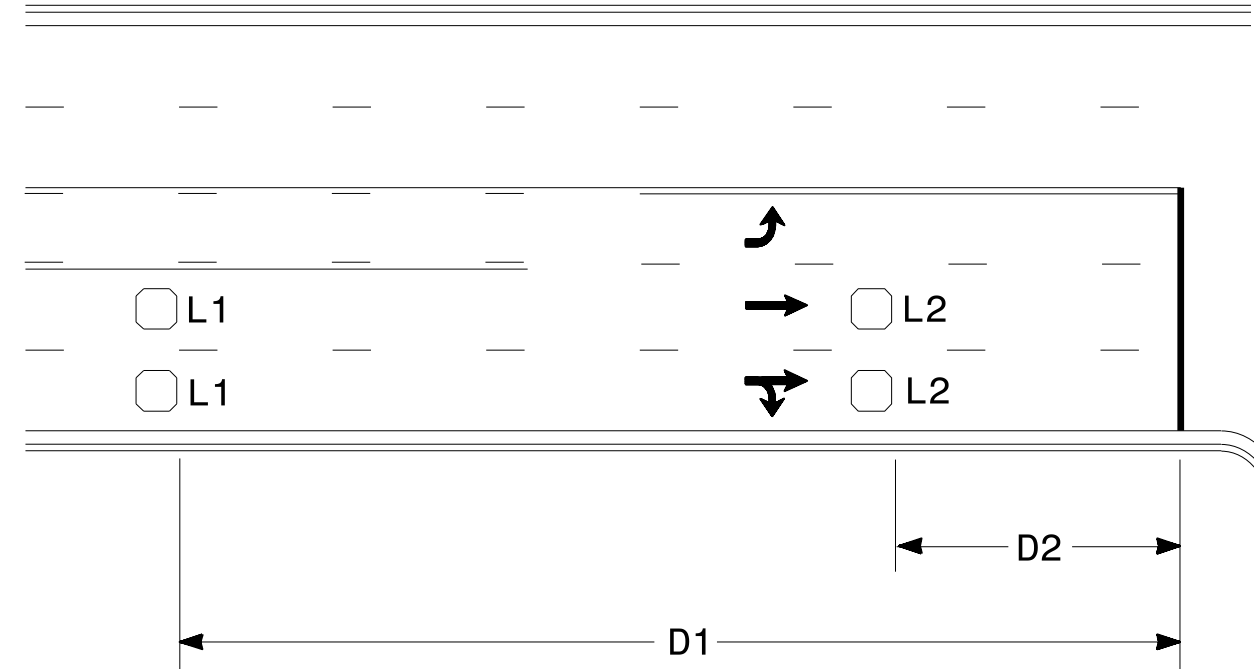
OR
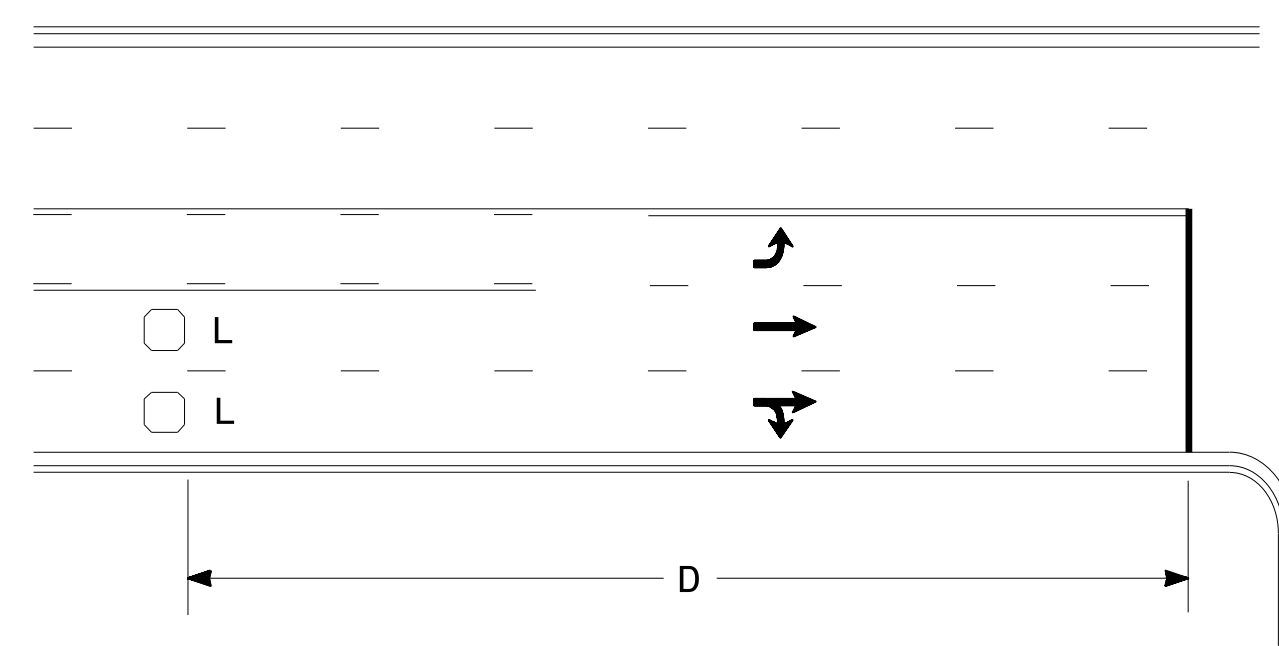
Speed Limit mph	D ft
40	250
45	300
50	355
55	420

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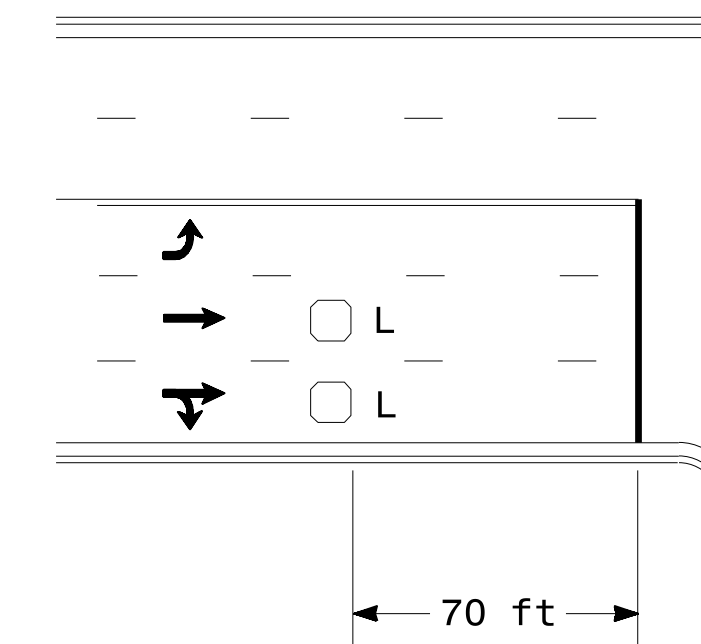170, and 2070L Controllers

Volume Density Operation

Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110

L1 = 6ft X 6ft
Wired in series

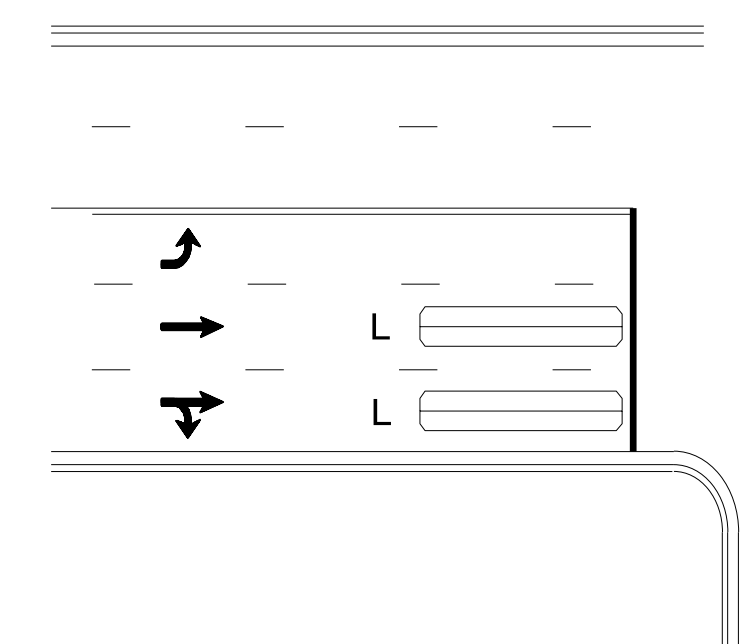L2 = 6ft X 6ft
Wired in series

"Stretch" Operation

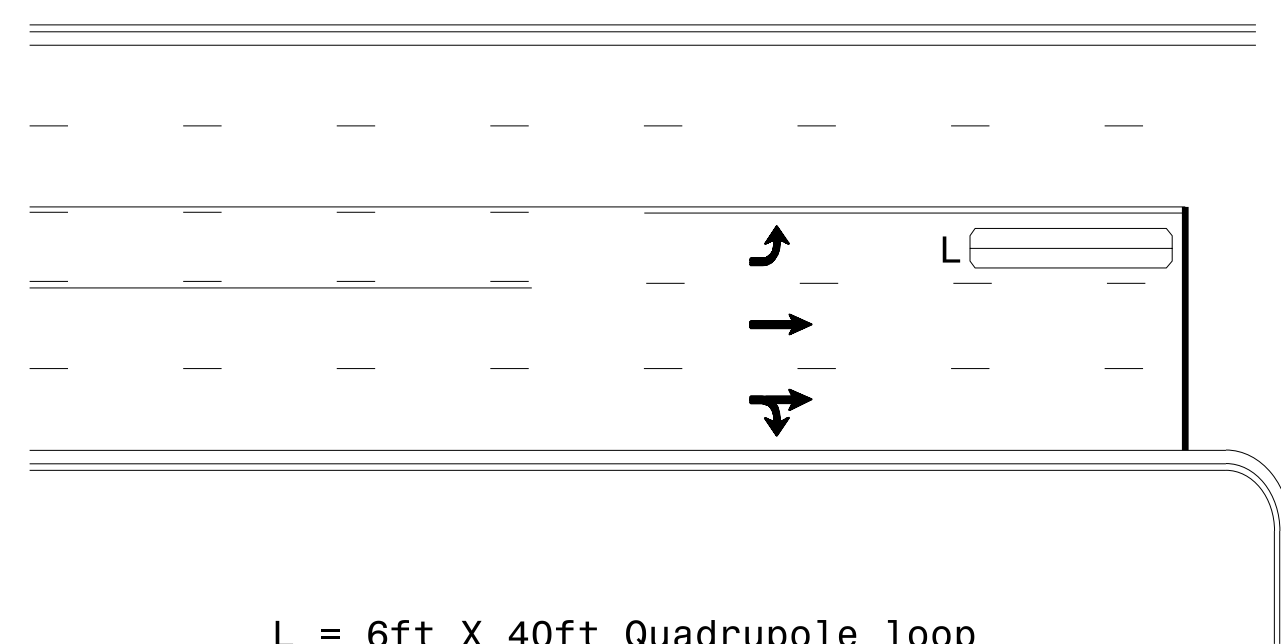# Low Speed Detection
(≤35 mph)

OR

70 ft

L = 6ft X 6ft
Wired in series

L = 6ft X 40ft
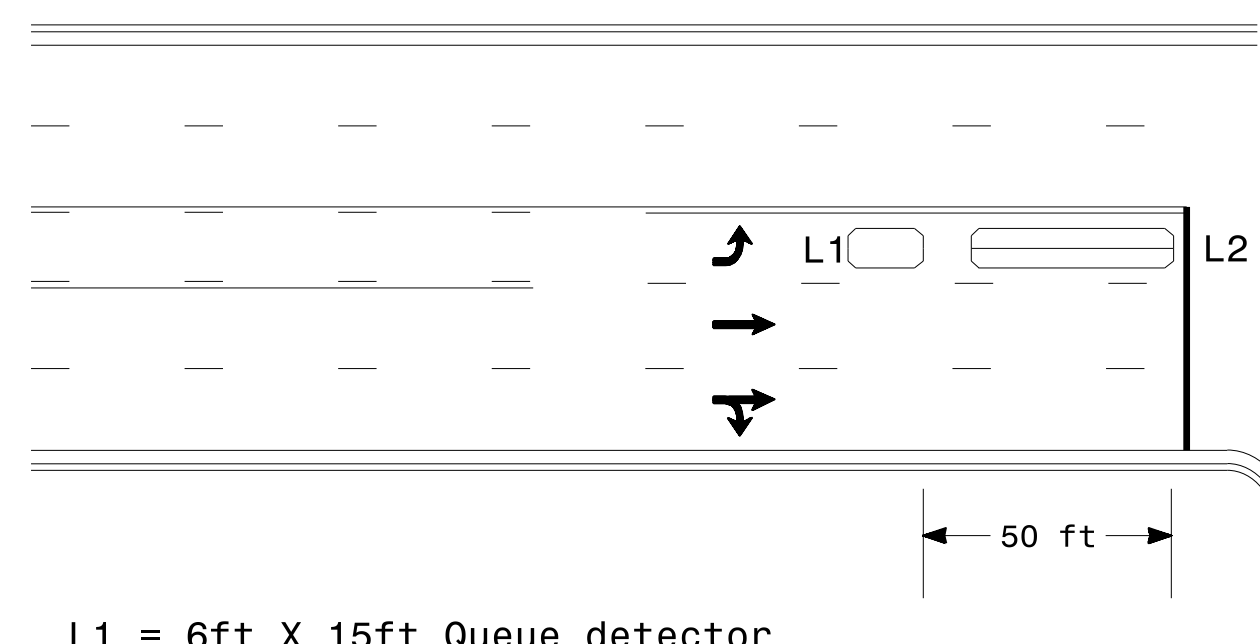Quadrupole loop, wired separately

Left Turn Lane Detection
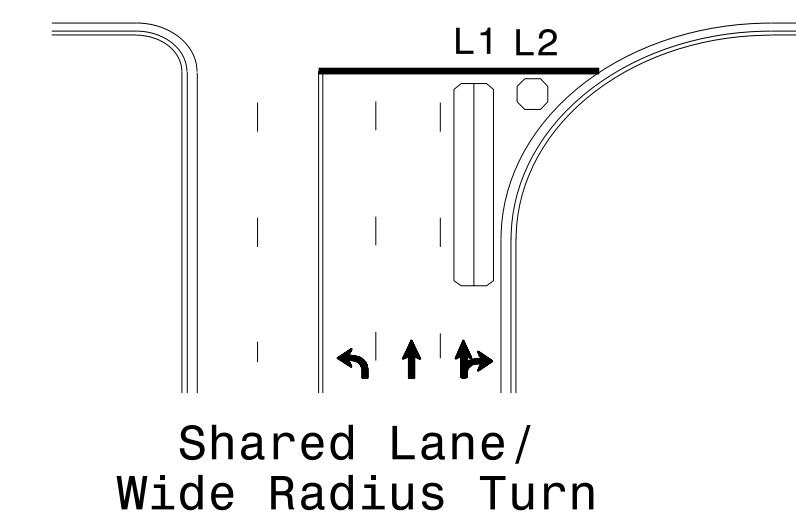
OR

L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

50 ft

L1 = 6ft X 15ft Queue detector
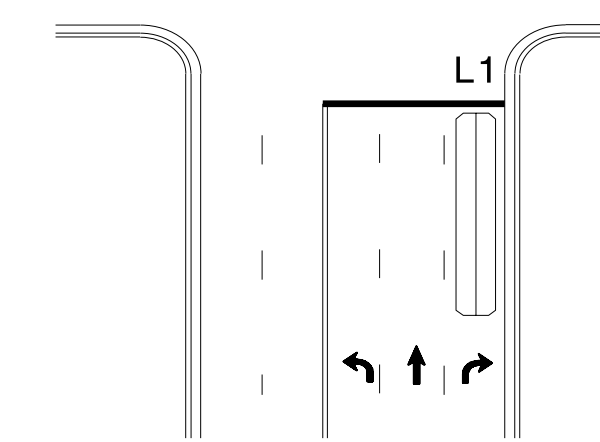L2 = 6ft X 40ft Quadrupole loop
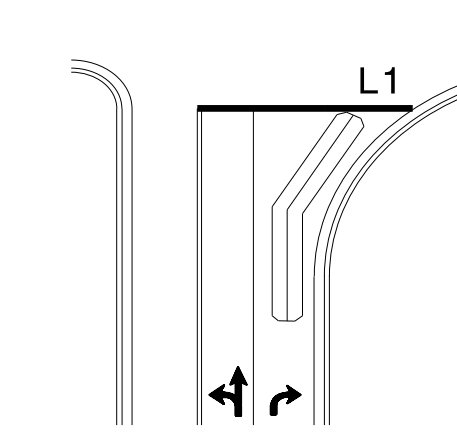
Queue Loop Detection

Right Turn Lane Detection

L1 L2

L1 = 6ft X 40ft Quadrupole loop
L2 = 6ft X 6ft [Minimum] Presence loop
Wired separately

Shared Lane/ Wide Radius Turn
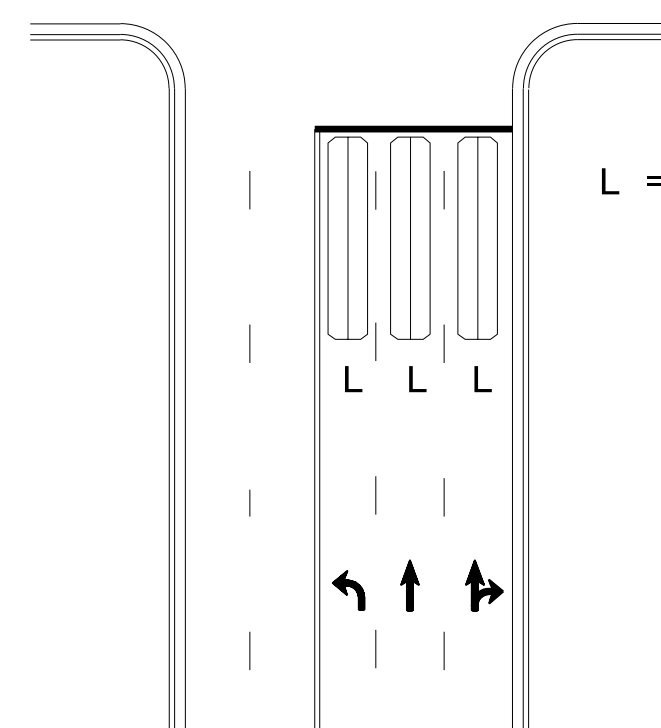
L1

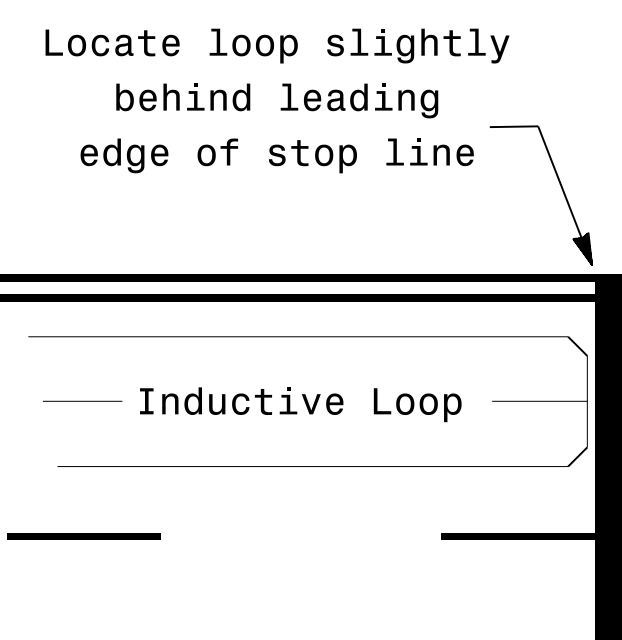## Standard Turn

L1

Wide Radius Turn

L1
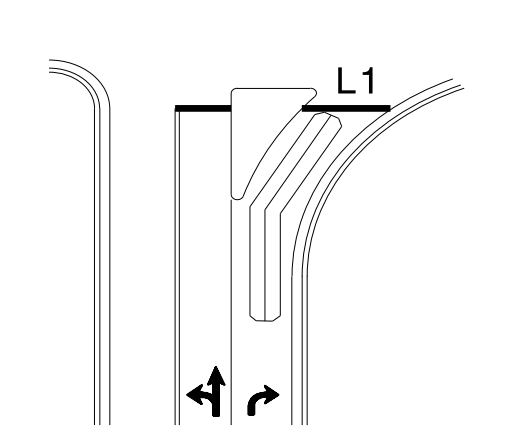
Channelized Turn

Side Street Detection

L L L

L = 6ft X 40ft
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 under any of the
following conditions:
1) stop line is greater than 15'
from edge of intersecting
roadway
2) loop detects a permissive or
protected/permissive left turn
3) for an exclusive right turn
lane

Recommended Number of Turns

Single 6' X 6' loop
(when wired separately):

Length of Lead-in ft	Number of Turns
< 250	3
250-375	4
375-525	5
> 525	6

Quadrupole loops: Use 2-4-2 turns

6' X 15' Loops:
Lead-in < 150', use 2 turns
Lead-in > 150', use 3 turns

Prepared in the Offices of:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

Typical Signal Loop Locations

SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
23489
ENGINEER
PAMELA L. ALEXANDER

PLAN DATE:	January 2015	REVIEWED BY:	JPG
PREPARED BY:	PLA	REVIEWED BY:	

REVISIONS	INIT.	DATE

SCALE
N/A

DocuSigned by:
P.L. Alexander
1/30/2015
DATE

SIG. INVENTORY NO.