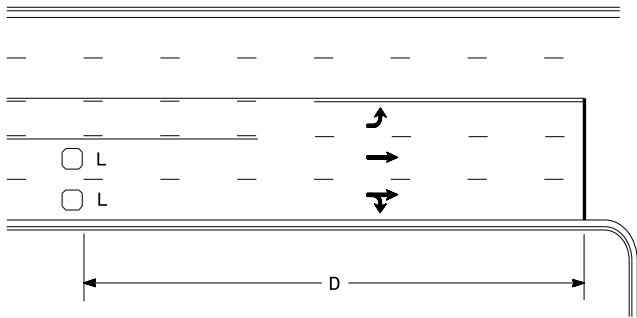


High Speed Detection  
(≥35 mph)

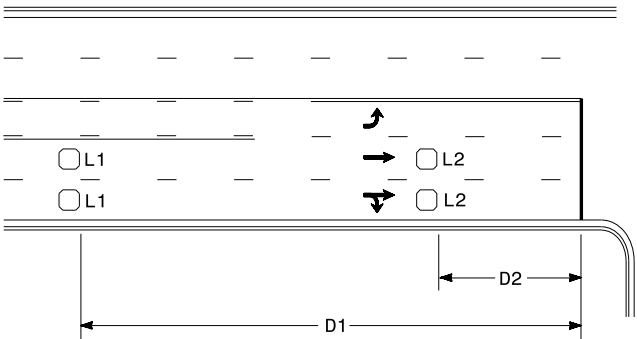


Speed Limit mph	D ft
35	200
40	250
45	300
50	355
55	420
60	475
65	550

L = 6ft X 6ft  
Wired separately

Volume Density Operation

OR



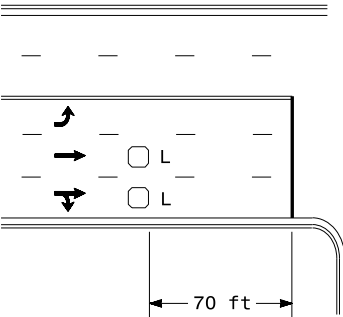
Speed Limit mph	D1 ft	D2 ft
40	250	80
45	300	90
50	355	100
55	420	110
60	475	120
65	550	130

L1 = 6ft X 6ft  
Wired in series

L2 = 6ft X 6ft  
Wired in series

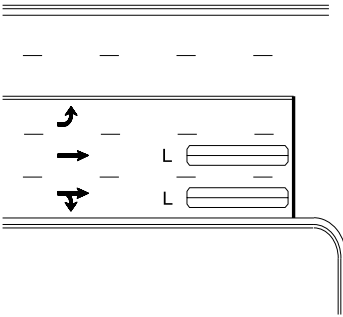
"Stretch" Operation

Low Speed Detection  
(≤35 mph)



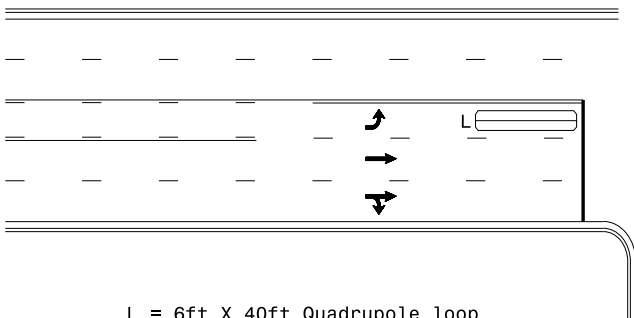
L = 6ft X 6ft  
Wired in series

OR



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

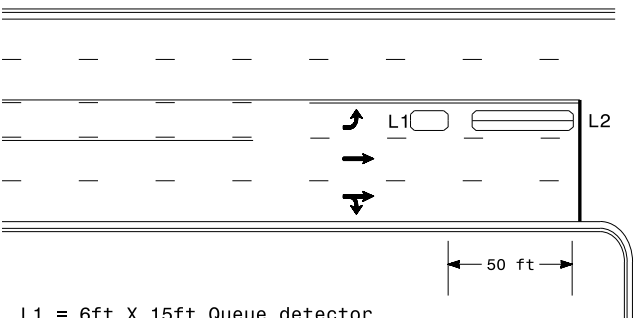
Left Turn Lane Detection



L = 6ft X 40ft Quadrupole loop

Presence Loop Detection

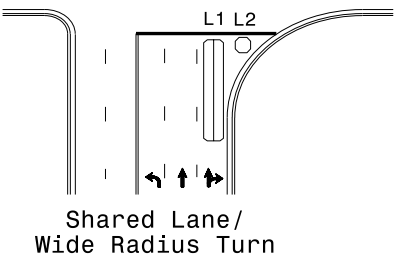
OR



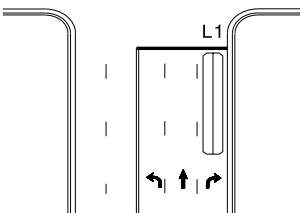
L1 = 6ft X 15ft Queue detector  
L2 = 6ft X 40ft Quadrupole loop

Queue Loop Detection

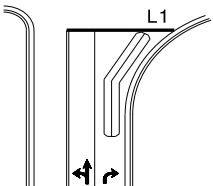
Right Turn Lane Detection



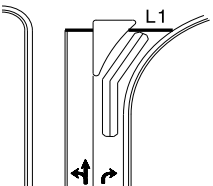
L1 = 6ft X 40ft Quadrupole loop  
L2 = 6ft X 6ft [Minimum] Presence loop  
Wired separately



Standard Turn

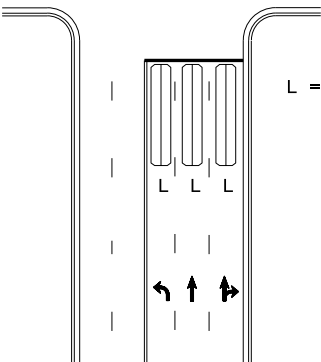


Wide Radius Turn



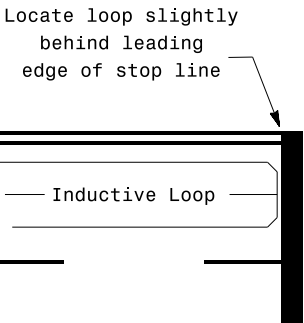
Channelized Turn

Side Street Detection



L = 6ft X 40ft  
Quadrupole loop  
Wired to separate  
detectors/channels

Presence Loop Placement at Stop Lines



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:  
  
750 N. Greenfield Pkwy, Garner, NC 27529

PLAN DATE: September 2025  
PREPARED BY: J.A. Lohr  
REVIEWED BY: [Signature]  
SCALE: N/A

REVISIONS  
INIT. DATE

Typical Signal Loop Locations  
REVIEWED BY: [Signature]  
DATE: 11/25/2025  
SIG. INVENTORY NO.

SEAL  
NORTH CAROLINA  
PROFESSIONAL ENGINEER  
ROBERT J. ZIEGLER  
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11/25/2025