### High Speed Detection (≥40 mph)

**Volume Density Operation**

- **L** = 6ft X 6ft
  - Wired in series for TBI Controllers
  - Wired separately for TBQ, 170, and 2070 Controllers

**"Stretch" Operation**

- **L1** = 6ft X 6ft
  - Wired in series

**Speed Limit mph**

<table>
<thead>
<tr>
<th>Speed Limit</th>
<th>D ft</th>
<th>L1 ft</th>
<th>D2 ft</th>
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</thead>
<tbody>
<tr>
<td>40</td>
<td>350</td>
<td>80</td>
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<td>300</td>
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<td>250</td>
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<td>55</td>
<td>200</td>
<td>110</td>
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</tbody>
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### Low Speed Detection (≤35 mph)

**Presence Loop Detection**

- **L1** = 6ft X 6ft
  - Wired in series
- **L2** = 6ft X 40ft
  - Quadrupole loop, wired separately

**Speed Limit mph**

<table>
<thead>
<tr>
<th>Speed Limit</th>
<th>D1 ft</th>
<th>L1 ft</th>
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</tbody>
</table>

### Left Turn Lane Detection

- **L** = 6ft X 40ft Quadrupole loop

### Right Turn Lane Detection

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

### Wide Radius Turn

- **L1** = 6ft X 40ft Quadrupole loop

### Presence Loop Placement at Stop Lines

- Locate loop slightly behind leading edge of stop line

**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 Loop-15 ft
      - ≤ 250: 3 turns
      - 250-500: 4 turns
      - > 500: 5 turns

- **Quadrupole loops:** Use 2-4-2 turns
  - 6' X 15' loops:
    - Lead-in < 150': use 2 turns
    - Lead-in > 150': use 3 turns

### Typical Signal Loop Locations

- **Lane:**
  - 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