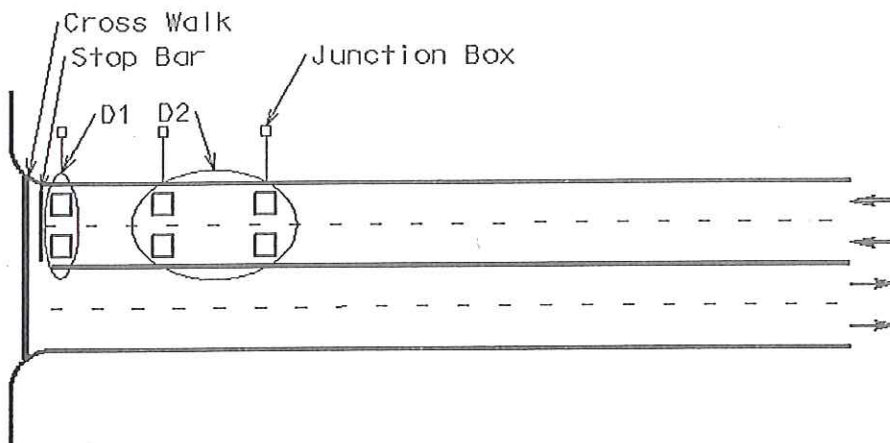


Design stop bar and pedestrian crossing lines to be generally parallel to the associated roadway. When the angle between the intersecting streets is not perpendicular specify stop bar loops that are parallel to the stop bar. This stop bar detector loop may become a parallelogram in order to remain parallel with both the lane and the stop bar. The other detector loops (non-stop-bar) remain square to the through lane pavement markings.

If a detector loop location is in conflict with a manhole, water valve, etc., adjust the loop placement forward or backward in the shortest direction from the optimum position.

Figure 1 – Vehicle Detector Placement for Low Speed Intersection Approach (35 MPH or LESS)



Notes:

1. Each detector group shall have a separate homerun cable and amplifier channel.
2. No more than 4 detector loops shall be hooked up to the same homerun cable or amplifier channel on a minor street & no more than 6 loops on an arterial street.

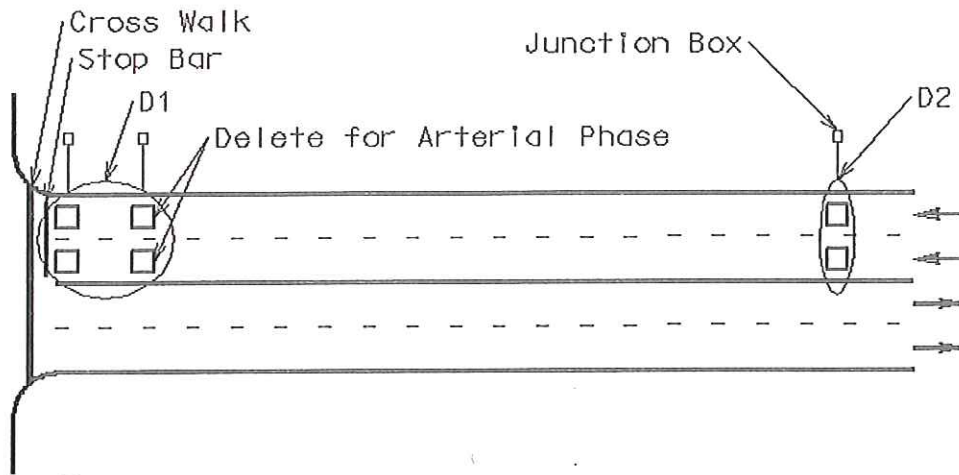
DETECTOR FUNCTIONS:

A = Normal or Standard

SPEED (MPH)	LOCATION			DETECTOR GROUP #	DETECTOR FUNCTION	INDUCTANCE LOOP SIZE
	D1	D2				
25	3'	34'	65'	D1	A	6' x 6'
30	3'	39'	75'	D2	A	6' x 6'
35	3'	44'	85'			

Location = distance from stop bar edge closest to detectors to beginning of detector

Figure 2 – Vehicle Detector Placement for Moderate Speed Intersection Approach (40 MPH)



Notes:

1. Each detector group shall have a separate homerun cable and amplifier channel.
2. The rear detectors for detector group D2 may be omitted if the phase is an arterial on vehicle recall.
3. No more than 4 detector loops shall be hooked up to the same homerun cable or amplifier channel on a minor street & no more than 6 loops on an arterial street.

DETECTOR FUNCTIONS:

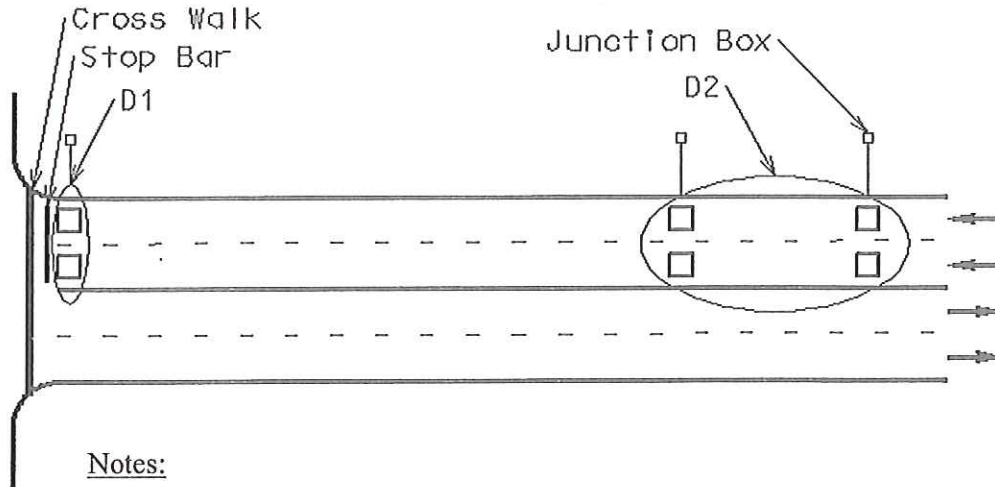
A = Normal or Standard

B = Stop Bar with Extend Timer Reset

SPEED (MPH)	LOCATION			DETECTOR GROUP #	DETECTOR FUNCTION	INDUCTANCE LOOP SIZE
	D1	D2				
40	3'	24'	250'	D1	B	6' x 6'
				D2	A	6' x 6'

Location = distance from stop bar edge closest to detectors to beginning of detector

Figure 3 – Vehicle Detector Placement for Moderate to High-Speed Intersection Approach (45-50 MPH)



Notes:

1. Each detector group shall have a separate homerun cable and amplifier channel.
2. No more than 4 detector loops shall be hooked up to the same homerun cable or amplifier channel on a minor street & no more than 6 loops on an arterial street.

DETECTOR FUNCTIONS:

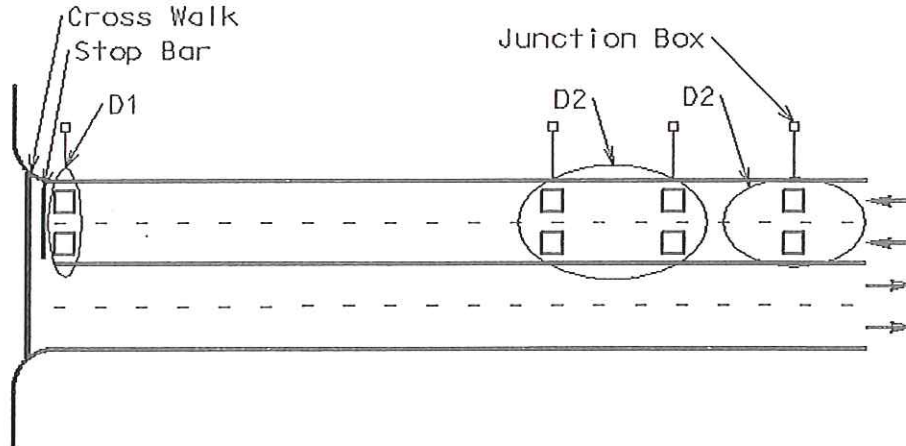
A = Normal or Standard

B = Stop Bar with Extend Timer Reset

SPEED (MPH)	LOCATION		DETECTOR GROUP #	DETECTOR FUNCTION	INDUCTANCE LOOP SIZE
	D1	D2			
45	3'	200' 300'	D1	B	6' x 6'
50	3'	230' 350'	D2	A	6' x 6'

Location = distance from stop bar edge closest to detectors to beginning of detectors

Figure 4 – Vehicle Detector Placement for High-Speed Intersection Approach (55-70 MPH)



Notes:

1. Each detector group shall have a separate homerun cable and amplifier channel.
2. No more than 4 detector loops shall be hooked up to the same homerun cable or amplifier channel on a minor street & no more than 6 loops on an arterial street.

DETECTOR FUNCTIONS:

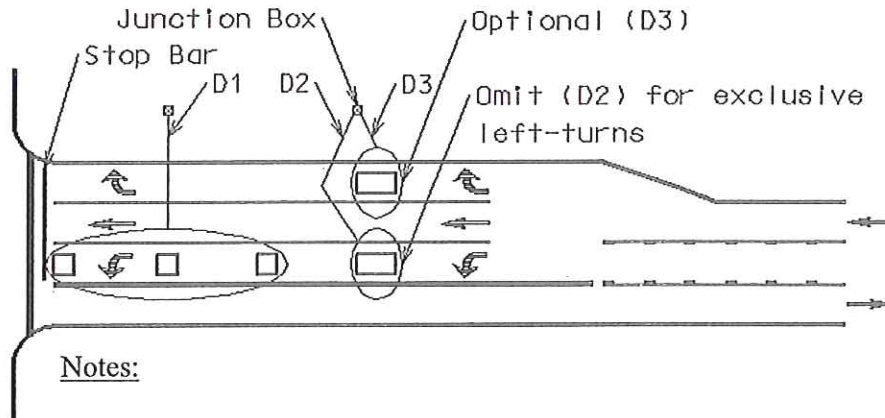
A = Normal or Standard

B = Stop Bar with Extend Timer Reset

SPEED (MPH)	LOCATION				DETECTOR GROUP #	DETECTOR FUNCTION	INDUCTANCE LOOP SIZE
	D1	D2					
55	3'	140'	270'	400'	D1	B	6' x 6'
60	3'	195'	335'	475'	D2	A	6' x 6'
65	3'	240'	395'	550'			
70	3'	295'	460'	625'			

Location = distance from stop bar edge closest to detectors to beginning of detector

Figure 5 – Vehicle Detector Placement for Left & Right Turn Intersection Approach



Notes:

1. Each detector group shall have a separate homerun cable and amplifier channel.
2. No more than 4 detector loops shall be hooked up to the same homerun cable or amplifier channel.
3. Omit the queue detector (D2) for protected-only left turns.
4. For double left turn lanes, group the back 4 detectors separate from the front 2 detectors.
5. Queue Detectors (D2 & D3) should have a 2-3 second delay.
6. Queue Detector (D3) for the right-turn lane should generally be omitted, except in any of the following situations:
 - a. The right-turn is the critical lane group for the phase.
 - b. There are sight distance restrictions making a right-turn-on-red difficult.
 - c. There are significant times of the day with insufficient gaps in merging traffic.

DETECTOR FUNCTIONS:

A = Normal or Standard

LOCATION				
D1			D2	D3
3'	19'	35'	51'	51'

DETECTOR GROUP #	DETECTOR FUNCTION	INDUCTANCE LOOP SIZE
D1	A	6' x 6'
D2	C	6' x 12'
D3	C	6' x 12'

C = Extend/Delay

Location = distance from stop bar edge closest to detectors to beginning of detector