

## TRAFFIC ENGINEERING STAFF REPORT

### **Agenda Item 4-c. Lampson Avenue Traffic Issues – Manley Street to Blackmer Street, September 7, 2010**

#### OBJECTIVE

To consider a request to implement the following:

- Install left turn pockets on Blackmer Street at Lampson Avenue.
- Install rumble strips on Lampson Avenue, west of Blackmer Street, in advance of the roadway curve.
- Convert the traffic signals at Lampson Avenue and Manley Street and Lampson Avenue and Blackmer Street to a 4-way flashing red operation.

#### BACKGROUND/DISCUSSION

The City has received a request from Bill McQuade, 12341 Casper Street, to implement the following changes:

#### ***Install left turn pockets on Blackmer Street at Lampson Avenue***

Blackmer is a 40-foot wide residential street on both sides of Lampson and is currently striped with a double yellow centerline down the middle of the roadway. Mr. McQuade has requested the striping be changed to improve traffic flow by striping left turn pockets on Blackmer at the intersection (see attached exhibit). This change in striping could improve traffic flow in two ways. First, left turn traffic would have its own lane and would not block cars wishing to turn right on a red light. Secondly, opposing traffic would more clearly know the directional intentions of motorists, which could lead to reduced accidents.

To implement this striping change parking would need to be restricted in front of five residences, not including the existing red curb in front of 5611 TrINETTE Avenue. Without red curbing, a parked vehicle would block through traffic. Staff talked to the property owners regarding this proposal. The property owner at 12411 Blackmer was opposed to installing red curb in front of his property. Unlike other affected properties that are corner lots, he noted that the red curb would totally eliminate on-street parking in front of his residence.

Staff field reviewed the operations of the intersection during morning and evening peak periods and on weekends. Staff observed no traffic congestion and found traffic flowing relatively freely. The existing 20-foot wide approach lane on northbound and southbound Blackmer was accommodating 2 lanes of traffic segregating right turning traffic from through/left turning traffic.

Staff also reviewed the collision history of the intersection. The report did not indicate a problem at the intersection.

Because there was not an observed traffic problem and because restriping the intersection would have an adverse impact to adjacent property owners, staff cannot support the request to install the left turn pockets.

***Install rumble strips on Lampson Avenue, west of Blackmer Street, in advance of the roadway curve***

In requesting a rumble strip on Lampson, Mr. McQuade identified an accident problem stemming from the sharpness of the curve resulting in collisions into the block wall running along the eastside of Lampson. Staff has reviewed the accident history on Lampson from Manley to Blackmer and consulted the Police Department. The number of collisions identified over the past ten years does not indicate an accident problem on this segment of Lampson.

Rumble strips are typically installed to alert the driver of a changed roadway condition. For example, there is a rumble strip on southbound Euclid as it turns into Main Street because of the speed limit change from 40 mph to 25 mph. The curve on Lampson would not be considered a changed roadway condition. In addition, a rumble strip would likely create a noise issue for adjacent property owners whose backyards abut Lampson.

The posted speed on Lampson is 45 mph and the radius of the horizontal curve on Lampson west of Blackmer is 1000 feet. Based on the Caltrans Highway Design Manual, Figure 203.2 (Comfortable Speed on Horizontal Curves), motorists can comfortably negotiate the curve on Lampson at 40 mph. Staff therefore recommends installing a 40 mph curve warning sign on Lampson in advance of the roadway curve.

***Convert the traffic signals at Lampson Avenue and Manley Street and Lampson Avenue and Blackmer Street to a 4-way flashing red operation***

Mr. McQuade has requested that these two traffic signals be converted to a 4-way flashing red operation to address a perceived speeding issue on Lampson. Changing the traffic signals in this manner would essentially convert the two intersections to a 4-way stop operation requiring motorists in all directions to come to a complete stop.

Per the Manual on Uniform Traffic Control Devices, "STOP signs should not be used for speed control." The reason for this is that motorists will tend to not respect a stop sign if they perceive roadway conditions don't mandate they stop. This can result in an increase in accidents and an increase in liability exposure to the city.

As an arterial highway and established thoroughfare within the city, the posted speed on Lampson is established based on the 85<sup>th</sup> percentile of vehicle speeds in accordance with the California Vehicle Code. The posted speed on Lampson

between Valley View and Manley is 45 mph. Artificially lowering the speed limit would impact the Police Department's ability to enforce it. The Police Department, however, has agreed to provide increased enforcement of the current posted speed.

RECOMMENDATION

It is recommended that the Traffic Commission receive public input and approve staff's recommendation to:

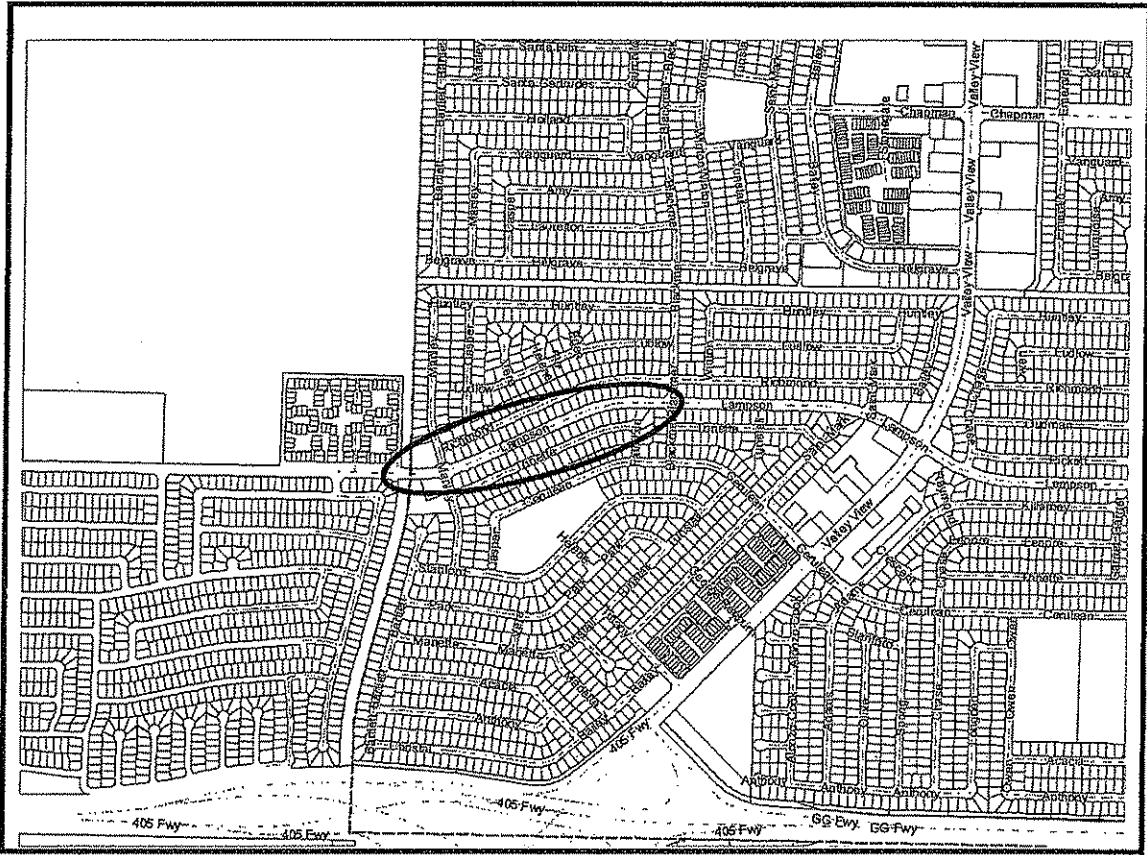
- Deny the request to install left turn pockets on Blackmer Street at Lampson Avenue.
- Deny the request to install rumble strips on Lampson Avenue, west of Blackmer Street, in advance of the roadway curve.
- Deny the request to convert the traffic signals at Lampson Avenue and Manley Street and Lampson Avenue and Blackmer Street to a 4-way flashing red operation.
- Install curve-warning signs on Lampson Avenue, west of Blackmer Street, in advance of the roadway curve.



Dan Candelaria, P.E., T.E.  
Executive Secretary

Attachments: Vicinity Map  
Blackmer @ Lampson Striping Exhibits  
Traffic Collision History Report  
California MUTCD Section 2B.05  
Caltrans Highway Design Manual Figure 203.2

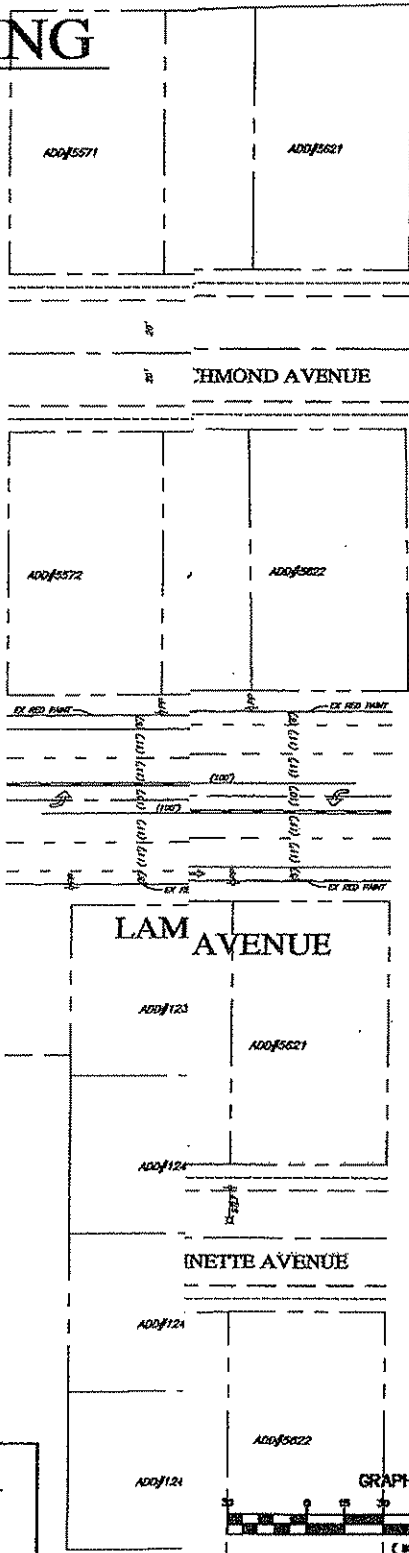
**LOCATION MAP**



**Agenda Item 4.c**



# EXISTING


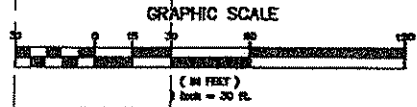


## SIGNING & STRIPING NOTES :

- 1 PAINT TYPE 87 (L) WHITE PAVEMENT ARROW PER STANDARD PLAN No. A24A (CALTRANS).
- 2 PAINT 8-INCH WIDE WHITE LANE LINE AND INSTALL RAISED PAVEMENT MARKERS PER CALTRANS STD PLAN No. D, DETAIL No. 38.
- 3 PAINT 4-INCH WIDE DOUBLE YELLOW CENTERLINES AND INSTALL RAISED PAVEMENT MARKERS PER STANDARD PLAN No. A20A, DETAIL No. 22 (CALTRANS).
- 4 PAINT RED CURB AS SHOWN.

NO WORK SHALL BE DONE ON THIS SITE UNTIL BELOW AGENCY IS NOTIFIED OF INTENTION TO GRADE OR EXCAVATE.

**Underground Service Alert**  
 Call: TOLL FREE  
**1-800-422-4133**  
 TWO WORKING DAYS BEFORE YOU DIG

**G** City Of Garden Grove  
 Department Of Public Works

BENCH MARK

DESIGNED BY: DC  
 DRAWN BY: MN  
 PLANS PREPARED BY: DAN J. CAMDEN  
 DATE:

TRAFFIC STRIPING PLAN  
**BLACKMER ST AT LAMPSON AV**

REV. 00 00/00/00  
 DRAWING NUMBER  
**S-XXX**  
 SHEET 1 OF 1

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**Traffic Collision History Report  
Midblock Collisions**

Arterial: LAMPSON AVENUE  
Limit 1: MANLEY STREET  
Limit 2: BLACKMER STREET

Total Number of Collisions: 25

Date Range Reported: 1/1/1999 - 12/31/2009

Report No.	Date Time	Dist/Dir	Location	Type of Collision	Motor Veh. Involved With	DOT1	MPC 1	DOT2	MPC 2	PCF	# Inj	# Klid
	7/1/99 15:26	44' East of	Lampson Avenue/Blackmer Street	Rear-End	Other Motor Vehicle	West	Stopped in Road	West	Stopped in Road	Unsafe Speed	3	0
	12/31/99 18:35	0' In Int.	Lampson Avenue/Blackmer Street	Broadside	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	1	0
	3/27/00 08:36	630' East of	Lampson Avenue/Manley Street	Hit Object	Fixed Object	East	Proceeding Straight			Improper Turning	0	0
	5/10/00 16:04	0' In Int.	Lampson Avenue/Manley Street	Head-On	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Auto R/W Violation	1	0
	6/11/00 22:30	481' West of	Lampson Avenue/Blackmer Street	Hit Object	Fixed Object	West	Proceeding Straight			Fell Asleep	1	0
	6/29/00 11:55	0' In Int.	Lampson Avenue/Blackmer Street	Broadside	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
	12/21/01 10:08	25' West of	Lampson Avenue/Blackmer Street	Other	Bicycle	East	Proceeding Straight	West	Making Right Turn	Wrong Side of Road	1	0
0272410	3/21/02 15:00	0' In Int.	Lampson Avenue/Blackmer Street	Broadside	Other Motor Vehicle	North	Making Left Turn	West	Proceeding Straight	Auto RW Violation	0	0
0539179	11/20/02 13:06	0' In Int.	Lampson Avenue/Blackmer Street	Head-On	Other Motor Vehicle	West	Making Left Turn	East	Proceeding Straight	Auto RW Violation	0	0
0867039	5/28/03 18:35	34' East of	Lampson Avenue/Blackmer Street	Rear-End	Other Motor Vehicle	West	Proceeding Straight	West	Stopped in Road	Unsafe Speed	0	0
1162593	11/16/03 15:55	0' In Int.	Blackmer Street/Lampson Avenue	Hit Object	Fixed Object	South	Making Left Turn			Improper Turning	2	0

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1400917	4/16/04 07:01	0' In Int.	Lampson Avenue/Blackmer Street	Broadside	Other Motor Vehicle	South	Making Left Turn	West	Proceeding Straight	Traffic Signals and Signs	1	0
1758126	11/18/04 13:11	0' In Int.	Lampson Avenue/Blackmer Street	Head-On	Fixed Object	East	Making U Turn			Driving Under Influence	1	0
1808755	12/30/04 17:00	770' East of	Lampson Avenue/Manley Street	Sideswipe	Other Motor Vehicle	West	Proceeding Straight	West	Proceeding Straight	Improper Turning	0	0
2113994	6/6/05 16:01	0' In Int.	Lampson Avenue/Blackmer Street	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Proceeding Straight	Traffic Signals and Signs	2	0
2454334	1/10/06 17:04	0' In Int.	Lampson Avenue/Blackmer Street	Broadside	Other Motor Vehicle	East	Making Left Turn	West	Proceeding Straight	Auto RW Violation	2	0
2616120	5/10/06 14:16	574' West of	Lampson Avenue/Blackmer Street	Hit Object	Fixed Object	West	Changing Lanes	West	Proceeding Straight	Improper Turning	1	0
2815794	9/10/06 19:03	427' West of	Lampson Avenue/Blackmer Street	Hit Object	Fixed Object	West	Proceeding Straight			Driving Under Influence	1	0
3395071	9/21/07 16:00	354' East of	Lampson Avenue/Manley Street	Sideswipe	Other Motor Vehicle	Not Stated	Passing Other Vehicle	East	Proceeding Straight	Unknown	0	0
3694631	4/12/08 15:13	13' East of	Lampson Avenue/Manley Street	Other	Other Motor Vehicle	West	Proceeding Straight	South	Proceeding Straight	Traffic Signals and Signs	1	0
3798537	6/17/08 06:58	0' In Int.	Lampson Avenue/Blackmer Street	Broadside	Other Motor Vehicle	South	Proceeding Straight	East	Proceeding Straight	Driving Under Influence	1	0
3813533	7/20/08 01:21	181' East of	Lampson Avenue/Manley Street	Hit Object	Fixed Object	East	Proceeding Straight			Unknown	0	1

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3853101	7/29/08 10:07	12' East of	Lampson Avenue/Manley Street	Rear-End	Other Motor Vehicle	West	Proceeding Straight	West	Stopped in Road	Unsafe Speed	0	0
3854427	8/7/08 15:35	0' In Int.	Lampson Avenue/Manley Street	Broadside	Other Motor Vehicle	East	Proceeding Straight	North	Making Left Turn	Traffic Signals and Signs	2	0
3879794	8/15/08 18:37	81' West of	Lampson Avenue/Blackmer Street	Rear-End	Other Motor Vehicle	West	Stopped In Road	East	Proceeding Straight	Unsafe Speed	1	0



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Report No.	Date Time	Dist/Dir	Location	Type of Collision	Motor Veh. Involved With	DOT1	MPC 1	DOT2	MPC 2	PCF	# Inj	# Kld
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Total Number of Collisions: 25      Segment Length: 0.33 miles (1,730')

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**Settings Used For Query**

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<u>Parameter</u>	<u>Setting</u>
Limit 1	Include Intersection Related
Limit 2	Include Intersection Related
Intermediate Intersections	Include Intersection Related
Sorted By	'Date and Time'

### **Section 2B.04 STOP Sign (R1-1)**

#### **Standard:**

When a sign is used to indicate that traffic is always required to stop, a STOP (R1-1) sign (see Figure 2B-1) shall be used.

The STOP sign shall be an octagon with a white legend and border on a red background. Secondary legends shall not be used on STOP sign faces. If appropriate, a supplemental plaque (R1-3 or R1-4) shall be used to display a secondary legend. Such plaques (see Figure 2B-1) shall have a white legend and border on a red background. If the number of approach legs controlled by STOP signs at an intersection is three or more, the numeral on the supplemental plaque, if used, shall correspond to the actual number of legs controlled by STOP signs.

At intersections where all approaches are controlled by STOP signs (see Section 2B.07), a supplemental plaque (R1-3 or R1-4) shall be mounted below each STOP sign.

#### **Option:**

The ALL WAY (R1-4) supplemental plaque may be used instead of the 4-WAY (R1-3) supplemental plaque.

#### **Support:**

The design and application of Stop Beacons are described in Section 4K.05.

A STOP (R1-1) sign is not a "cure-all" and is not a substitute for other traffic control devices. Often, the need for a STOP (R1-1) sign can be eliminated if the sight distance is increased by removing obstructions.

#### **Through Highways**

##### **Option:**

STOP (R1-1) signs may be installed either at or near the entrance to a State highway, except at signalized intersections, or at any location so as to control traffic within an intersection. Refer to CVC 21352 and 21355. See Section 1A.11 for information regarding this publication.

##### **Support:**

When STOP (R1-1) signs or traffic control signals have been erected at all entrances, a highway constitutes a through highway. Refer to CVC 600.

Authority to place STOP (R1-1) signs facing State highway traffic is delegated to the Department of Transportation's District Directors.

##### **Option:**

Local authorities may designate any highway under their jurisdiction as a through highway and install STOP (R1-1) signs in a like manner. Refer to CVC 21354.

##### **Standard:**

No local authority shall erect or maintain any STOP (R1-1) sign or other traffic control device requiring a stop, on any State highway, except by permission of the Department of Transportation. Refer to CVC 21353.

##### **Support:**

The Department of Transportation will grant such permission only when an investigation indicates that the STOP (R1-1) sign will benefit traffic.

### **Section 2B.05 STOP Sign Applications**

#### **Guidance:**

STOP signs should be used if engineering judgment indicates that one or more of the following conditions exist:

- A. Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;
- B. Street entering a through highway or street;
- C. Unsignalized intersection in a signalized area; and/or
- D. High speeds, restricted view, or crash records indicate a need for control by the STOP sign.

**Standard:**

**Because the potential for conflicting commands could create driver confusion, STOP signs shall not be installed at intersections where traffic control signals are installed and operating except as noted in Section 4D.01.**

**Portable or part-time STOP signs shall not be used except for emergency and temporary traffic control zone purposes.**

**Guidance:**

STOP signs should not be used for speed control.

STOP signs should be installed in a manner that minimizes the numbers of vehicles having to stop. At intersections where a full stop is not necessary at all times, consideration should be given to using less restrictive measures such as YIELD signs (see Section 2B.08).

Once the decision has been made to install two-way stop control, the decision regarding the appropriate street to stop should be based on engineering judgment. In most cases, the street carrying the lowest volume of traffic should be stopped.

A STOP sign should not be installed on the major street unless justified by a traffic engineering study.

**Support:**

The following are considerations that might influence the decision regarding the appropriate street upon which to install a STOP sign where two streets with relatively equal volumes and/or characteristics intersect:

- A. Stopping the direction that conflicts the most with established pedestrian crossing activity or school walking routes;
- B. Stopping the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds;
- C. Stopping the direction that has the longest distance of uninterrupted flow approaching the intersection; and
- D. Stopping the direction that has the best sight distance to conflicting traffic.

The use of the STOP sign at highway-railroad grade crossings is described in Section 8B.08. The use of the STOP sign at highway-light rail transit grade crossings is described in Section 10C.04.

**Section 2B.06 STOP Sign Placement**

**Standard:**

**The STOP sign shall be installed on the right side of the approach to which it applies. When the STOP sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.29) shall be installed in advance of the STOP sign.**

**The STOP sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.**

**STOP signs and YIELD signs shall not be mounted on the same post.**

**Guidance:**

Other than a DO NOT ENTER sign, no sign should be mounted back-to-back with a STOP sign in a manner that obscures the shape of the STOP sign.

**Support:**

Section 2A.16 contains additional information about separate and combined mounting of other signs with STOP signs.

**Guidance:**

Stop lines, when used to supplement a STOP sign, should be located at the point where the road user should stop (see Section 3B.16).

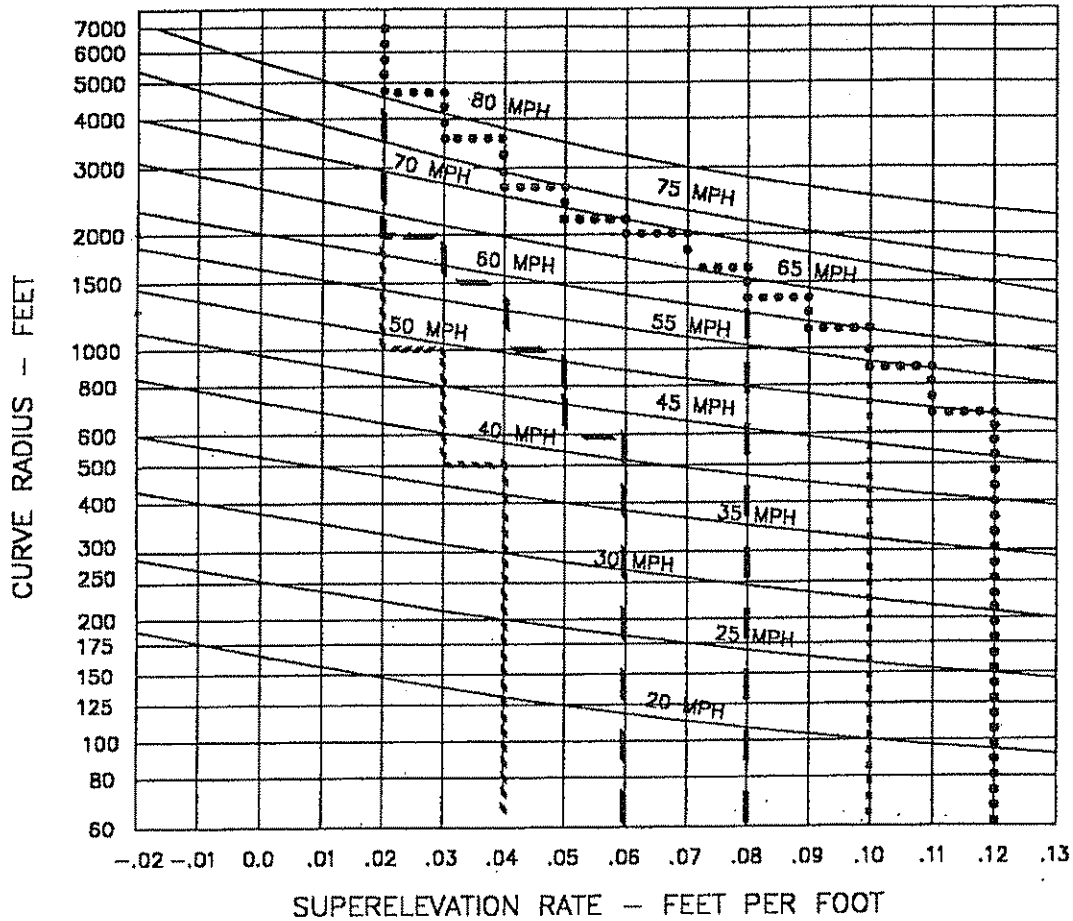
If only one STOP sign is installed on an approach, the STOP sign should not be placed on the far side of the intersection.

Where two roads intersect at an acute angle, the STOP sign should be positioned at an angle, or shielded, so that the legend is out of view of traffic to which it does not apply.

Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the crosswalk line nearest to the approaching traffic.

Figure 203.2

Comfortable Speed on Horizontal Curves



NOTES:

- 1) SYMBOL LINES indicate standard superelevation rates for various  $e_{max}$  values as listed in Index 202.2.
- 2) Higher value at steps is the proper superelevation for indicated curve radius.

$e$  - SUPERELEVATION  
 $f$  - SIDE FRICTION FACTOR  
 $V$  - SPEED IN MILES PER HOUR  
 $R$  - RADIUS IN FEET

$$e+f = \frac{0.067V^2}{R}$$

Legend:

- /// = .04  $e_{max}$
- = .06  $e_{max}$
- = .08  $e_{max}$
- ... = .10  $e_{max}$
- ooo = .12  $e_{max}$

SPEED	DESIGN SIDE FRICTION FACTOR
20	0.17
30	0.16
40	0.15
50	0.14
60	0.12
70	0.10
80	0.08