# Appendix of Standard Drawings

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Operational Challenges for the Minor Street Approaches to Signalized Jogged Intersections

To select the most appropriate design for minimizing the above challenges see Sheet 2.
81 & 82 = angle between motorist looking straight ahead and back of opposing vehicle
X1 & X2 = Distance along arterial from the crosswalk line or limit line to the signal pole
or BCR at the far side of the first intersecting leg.
D = Internal storage distance between real or hypothetical interior limit lines. For minor
offset D may be a small or negative number.

To select the most appropriate design:

1) Determine if there is a Left Jog or a Right Jog
   See Sheets 3, 5, 7, 9, 10 and 11 for left jagged intersections and Sheets 4, 6, 8 and
   12 for right jagged intersections.

2) Determine D
   If D ≥ 40' then interior limit lines are required. If D < 40' then the jog is operated as
   a single intersection. See Sheets 10, 11 and 12 for intersections with interior limit
   lines and Sheets 3 through 9 for single intersection operation.

3) Determine 81 and 82
   If 81 or 82 is ≥ 20° and D < 40' then some form of opposed phasing is required for
   the minor street. See Sheets 7 through 9 for situations requiring opposed phasing.
   See Sheets 3 through 6 for situations for which concurrent phasing is adequate. Note
   that for Sheets 4 and 6 opposed phasing is required if diagonal crosswalks are not
   feasible, due to the unexpected presence of pedestrians crossing the path of right-
   turning motorists.

4) Determine X1 and X2
   If X1 and X2 ≥ 50' and D < 40' then only internal mastarms are to be used on the
   arterial street. If X1 and X < 50' then only external mastarms are to be used on the
   arterial street. See Sheets 3, 4, 7, and 8 for internal mastarm designs and Sheets
   5, 6 and 9 for external mastarm designs.

Note:
The drawings on Sheets 3 through 12 are not intended to show the required safety
lighting design. Final lighting designs may not include the depicted mastarm lighting and
and likely will include other lighting locations not shown.
1) Install where:
   a) $D < 40'$; and
   b) $\theta_1$ and $\theta_2 \leq 20'$; and
   c) $X_1$ and $X_2 \geq 50'$

2) The beveled visors shown should be installed only where cross-traffic motorists would see 50% or more of the lens area of a far-side signal as they wait at the limit line. PV heads should be used if beveled visors would not be adequate.

Left jogged intersection
Internal Mastarms
1) Install where:
   a) $D < 40\degree$; and
   b) $\theta_1$ and $\theta_2 \leq 20\degree$; and
   c) $X_1$ and $X_2 \geq 50\degree$; and
   d) Diagonal crosswalks are feasible

2) Where diagonal crosswalks are not feasible, use opposed phasing, as shown on Sheet 8.

3) The treatment to allow arterial left turns in one direction and prohibited in the other direction is an operational option. For other typical left turn operations on the arterial street see Sheets 6 and 8.

4) The beveled visors shown should be installed only where cross-traffic motorists would see 50% or more of the lens area of a far-side signal as they wait at the limit line. PV heads should be used if beveled visors would not be adequate.

Right jogged Intersection
Prohibited Left Turn
1) Install where:
   a) $D < 40'$; and
   b) $\theta_1$ and $\theta_2 \leq 20'$; and
   c) $X_1$ and $X_2 < 50'$

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Left jogged Intersection
External Mastarms

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CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Title: Operation and Design of
Signalized jogged Intersections

Drawing No.: S-100.0
1) Install where:
   a) D < 40'; and
   b) \( \theta_1 \) and \( \theta_2 \leq 20' \); and
   c) \( X_1 \) and \( X_2 < 50' \); and
   d) Diagonal crosswalks are feasible

2) Where diagonal crosswalks are not feasible, use opposed phasing, as shown on Sheet 8.

3) If arterial left turns are to be allowed in both directions, at least one direction shall have protected left turns, as shown. For other typical left turn options on the arterial street see Sheets 4 and 8. 

Right jogged Intersection
Protected Left Turn
1) Install where:
   a) $0 < 45^\circ$; and
   b) $\theta_1$ or $\theta_2 > 20^\circ$

2) The alternate signal phasing schemes shown below, with corresponding signal head modifications (not shown), should be used only where the intersection would be operating near capacity with the more conventional opposed phasing. Generally, the alternate phasing would be necessary where pedestrian calls occur on most cycles. Where used, the lighter volume side street approach should have the left arrow indications. If one or both of the crosswalks across the arterial street can be eliminated, then the intersection operation can have more efficient phasing than shown.

3) Where $\theta > 20^\circ$, "KEEP CLEAR" pavement markings should be installed between the cross street legs, as shown.

Left jogged Intersection
Internal Mastarms/Opposed Phasing

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CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Title: Operation and Design of Signalized jogged Intersections
Drawing No: S-100.0
1) Install where:
   a) D<40'; and
   b) $\theta_1$ or $\theta_2$>20'
   c) $X_1$ and $X_2$ $\geq$ 50'

2) The arterial, cat-tracked side-by-side left-turn lanes, as shown, are possible only where the painted median channelization is at least 18' wide. For other typical left turn options on the arterial street see Sheets 4 and 6.

3) The alternate signal phasing schemes shown below with corresponding signal head modifications should be used only where the intersection would be operating near capacity with the more conventional opposed phasing. Generally, the alternate phasing would be necessary where pedestrian calls occur on most cycles. Where used, the lighter volume side street approach should have the right arrow indications. If one or both of the crosswalks across the arterial street can be eliminated, then the intersection operation can have more efficient phasing than shown.

4) Where D>20' "KEEP CLEAR" pavement markings should be installed between the cross street legs, as shown in Sheet 7.

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CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Title: Operation and Design of Signalized Jogged Intersections
Drawing No.: S-100.0
1) Install where:
   a) \( D < 40^\circ \); and
   b) \( \theta_1 \) or \( \theta_2 > 20^\circ \); and
   c) \( X_1 \) and \( X_2 < 50^\circ \)
2) See Sheet 7 for alternate signal phasing schemes.

Left jogged Intersection
External Mastarms/Opposed Phasing
Install where:

a) $40' \leq D \leq 200'$ and

b) There have been 4 or more Right Angle accidents or 4 or more Left Turn accidents in a recent 12 month period at one of the intersections involving vehicles departing from the interior limit line.

Left jogged Intersection
Interior Limit Lines
Slot Clearance

OLA and OLB include slot clearance
1) Install where $40' \leq D \leq 200'$

2) Mask only the Green and Red lenses of the PV heads.

3) The back-to-back left-turn lanes, as shown, are possible only where $D \geq 70'$. Where not possible, a left-turn lane in one direction, possibly with a left-turn restriction in the other direction, should be considered.
Note:
1. All signs shall be posted as close to the near—right B.C. or the extension of the near left as is practical.
2. Post sign in advance of obstructions where encountered.
3. Existing sign posts and/or electroliers shall be used to post street name signs wherever practical.
4. Two parallel roadways with different street names (for example, Huntington Drive North and Huntington Drive) shall be treated as two different streets for sign posting purposes.
When \( X \) is less than 100'

When \( X \) is 100' or Greater
Omit this sign when Y is less than 100'
MAJOR HIGHWAYS (PRIOR TO 11-10-99)
100' R/W – 80' ROADWAY

NOTES:
1. SELECTION OF LENGTH OF LEFT TURN POCKET LANE DEPENDS ON DEMAND, SPACING BETWEEN INTERSECTIONS AND LOCATION OF CRITICAL DRIVEWAYS TO BE SERVED BY TWO-WAY LEFT TURN LANES (2WL). THE DESIRABLE LENGTH AT SIGNALIZED INTERSECTIONS IS AT LEAST 40' OF STORAGE PER VEHICLE PER SIGNAL CYCLE AVERAGED DURING THE PEAK HOUR. HOWEVER, THIS DESIRABLE LENGTH OFTEN MAY NOT BE FEASIBLE. MINIMUM LENGTHS AT SIGNALIZED INTERSECTIONS ON HIGHWAYS WITH CONTINUOUS MEDIAN CHANNELIZATION ARE:
   - 100' AT MAJOR HIGHWAYS
   - 70' AT SECONDARY HIGHWAYS
   - 60' AT COLLECTOR STREETS
   - 40' AT LOCAL STREETS
MINIMUM POCKET LENGTHS FOR MAJOR HIGHWAYS WITHOUT CONTINUOUS MEDIAN CHANNELIZATION MAY BE LESS THAN THE ABOVE, DEPENDING ON TURNING VOLUMES AND PARKING IMPACTS.
2. IN GENERAL, 10' WIDE LEFT TURN CHANNELIZATION SHOULD BE USED. HOWEVER, A 12'-FOOT MEDIAN SHOULD BE USED IF LARGE VEHICLES ARE A SIGNIFICANT PORTION OF TURNING VEHICLES.
3. UTILIZE 60'-WIDE REVERSALS FOR POSTED SPEED LIMITS OF 35 MPH AND LESS, AND 80'-WIDE REVERSALS FOR POSTED SPEED LIMITS OF 40 MPH AND GREATER. A 40'-WIDE MINIMUM REVERSAL MAY BE USED IN EXCEPTIONAL SITUATIONS FOR CRITICAL DRIVEWAYS.
4. SELECTION OF AN OPEN-ENDED (AS SHOWN IN FIRST DRAWING) VERSUS CLOSED ENDED (AS SHOWN IN SECOND DRAWING) 2WL IS DEPENDENT, IN PART, ON THE PROXIMITY OF A CRITICAL DRIVEWAY TO BE SERVED BY A 2WL. MINIMUM DISTANCES TO CRITICAL DRIVEWAYS ARE SHOWN.
5. THE PAINTED REVERSAL FOR A SINGLE LEFT TURN LANE MAY BE ELIMINATED AT A SIGNALIZED INTERSECTION ON A SELECTIVE BASIS IF SPILLOVER IS RECURRENT AND IF IT IS NOT FEASIBLE TO LENGTHEN THE LEFT-TURN POCKET.
6. FOR NEW RAISED MEDIAN INSTALLATIONS, THE WIDTH OF THE ISLAND SHOULD BE LIMITED TO 8' TO ALLOW WIDER ADJACENT THROUGH LANES.
7. THE 4'-WIDE ISLAND ADJACENT TO THE LEFT TURN LANES SHOULD BE REMOVED, WHERE FEASIBLE, SO AS TO AVOID LEFT TURN LANE OFFSETS WHICH REDUCE LEFT TURN DRIVER VISIBILITY OF APPROACHING THROUGH VEHICLES. WHERE AN ISLAND ADJACENT TO THE LEFT-TURN LANE IS PROPOSED, OR IS TO BE RETAINED, PROTECTED LEFT-TURN PHASING SHALL BE CONSIDERED. SEE STANDARD PLAN S-487.0.
8. THIRD THROUGH LANES SHOULD BE INSTALLED WHEN CONDITIONS SO JUSTIFY. RIGHT TURN ONLY LANES MAY BE INSTALLED INSTEAD OF THE THIRD THROUGH LANE, AS APPROPRIATE.
9. BIKE LANE WITH ALL DAY PARKING MAY BE INSTALLED IN PLACE OF A CURB LANE OR RIGHT TURN LANE WHERE THE WIDTH IS 13' OR GREATER (OR 12' IN SELECTED CASES).

APPROVED February 24, 2006

John E. Fisher, Interim General Manager

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
TYPICAL MAJOR HIGHWAY STRIPING TREATMENTS

1

8

S-401.0

M.T. T.E. T.C.
MAJOR HIGHWAYS (PRIOR TO 11-10-99)
100' R/W - 80' ROADWAY

SEE SHEET 1 FOR NOTES
MAJOR HIGHWAY - CLASS II
104' R/W - 80' ROADWAY
(WITH 114' R/W - 90' ROADWAY FLARE AT INTERSECTION)

CRITICAL DRiveway STOPPING PROHIBITION

STANDARD FLARE SECTION

CR=25'

TAPER

CR=25'

150'

CR=25'

150'

STANDARD FLARE SECTION STOPPING PROHIBITION

CR=25'

NOTE 6

4" YELLOW

RAISED MEDIAN

SEE SHEET 1 FOR NOTES

CITY OF LOS ANGELES DEPARTMENT OF TRANSPORTATION TYPICAL MAJOR HIGHWAY STRIPING TREATMENTS

Drawing No. S-401.0
SECONDARY HIGHWAYS (PRIOR TO 11-10-99)
86' R/W - 66' ROADWAY
(WITH 90' R/W - 70' ROADWAY FLARE AT INTERSECTION)

CRITICAL DRIVEWAY

70' MIN.

CRITICAL DRIVEWAY

TAPER 150'

STANDARD FLARE SECTION 300'

STOPPING PROHIBITION

TAPER 150'

STANDARD FLARE SECTION 300'

STOPPING PROHIBITION

NOTES:

1. SELECTION OF LENGTH OF LEFT TURN POCKET LANE DEPENDS ON DEMAND, SPACING BETWEEN INTERSECTIONS AND LOCATION OF CRITICAL DRIVEWAYS TO BE SERVED BY TWO-WAY LEFT TURN LANES (2W/TL). THE DESIRABLE LENGTH AT SIGNALIZED INTERSECTIONS IS AT LEAST 40' OF STORAGE PER VEHICLE PER SIGNAL CYCLE AVERAGED DURING THE PEAK HOUR. HOWEVER, THIS DESIRABLE LENGTH OFTEN MAY NOT BE FEASIBLE. MINIMUM LENGTHS AT SIGNALIZED INTERSECTIONS ON HIGHWAYS WITH CONTINUOUS MEDIAN CHANNELIZATION ARE:
   - 100' AT MAJOR HIGHWAYS
   - 100' AT SECONDARY HIGHWAYS
   - 60' AT COLLECTOR STREETS
   - 40' AT LOCAL STREETS
   MINIMUM POCKET LENGTHS FOR SECONDARY HIGHWAYS WITHOUT CONTINUOUS MEDIAN CHANNELIZATION MAY BE LESS, DEPENDING ON TURNING VOLUMES AND PARKING IMPACTS.

2. UTILIZE 60' REVERSALS FOR POSTED SPEED LIMITS OF 35 MPH AND LESS, AND 80' REVERSALS FOR POSTED SPEED LIMITS OF 40 MPH AND GREATER. A 40' MINIMUM REVERSAL MAY BE USED IN EXCEPTIONAL SITUATIONS FOR CRITICAL DRIVEWAYS.

3. SELECTION OF AN OPEN-ENDED (AS SHOWN IN TOP DRAWING) VERSUS CLOSED ENDED (AS SHOWN IN MIDDLE DRAWING) 2W/TL IS DEPENDENT, IN PART, ON THE PROXIMITY OF A CRITICAL DRIVEWAY TO BE SERVED BY A 2W/TL. MINIMUM Distances TO CRITICAL DRIVEWAYS ARE SHOWN.

4. THE PAINTED REVERSAL FOR A SINGLE LEFT TURN LANE MAY BE ELIMINATED AT A SIGNALIZED INTERSECTION ON A SELECTIVE BASIS IF SPILLOVER IS RECURRENT AND IF IT IS NOT FEASIBLE TO LENGTHEN THE LEFT- TURN POCKET.

APPROVED // / 10 / 1999
Frances T. Bonerjee, General Manager
CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
TYPICAL SECONDARY HIGHWAY STRIPING TREATMENTS

TYPICAL SECONDARY HIGHWAY STRIPING TREATMENTS

1234567890
SECONDARY HIGHWAYS

90' R/W - 70' ROADWAY

SEE SHEET 1 FOR NOTES
WITHOUT BIKE LANE

* 18' MAY BE USED ON THE FIRST AND LAST STALL IN A BLOCK

DIRECTION OF VEHICULAR TRAVEL

WITH BIKE LANE

* 18' MAY BE USED ON THE FIRST AND LAST STALL IN A BLOCK

DIRECTION OF VEHICULAR TRAVEL

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
ON-STREET PARALLEL PARKING STALLS

APPROVED 8/15/2000
Frances T. Banerjee, General Manager

S-404.1
POLICY AND CRITERIA

GENERAL

1. DOTTED INTERSECTION STRIPING, MORE COMMONLY KNOWN AS "CAT TRACKS" SHALL BE USED FOR ALL MULTIPLE
   TURNS AND UNDER SPECIAL CONDITIONS FOR LONGITUDINAL STRIPING, AS SHOWN IN NOTE 11.

2. CAT TRACKS ARE 4" IN WIDTH AND SHOULD BE APPROXIMATELY ONE FOOT IN LENGTH, 7' CENTER TO CENTER
   (CA MUTCD DETAIL 40 AND 41). THEY SHALL BE THE SAME COLOR AS THE STRIPE THEY EXTEND, EXCEPT
   THAT CAT TRACKS CONNECTING TO DOUBLE YELLOW LINES SHALL BE 4" YELLOW.

3. SOLID INTERSECTION STRIPING SHOULD BE INSTALLED FOR SINGLE OR DOUBLE RIGHT TURNS WHERE ONE OF
   THE LANES IS A TRAP LANE (SEE S-401.0). TRAP LANES SHALL BE SEPARATED FROM ADJACENT THROUGH LANES
   BY A LONGITUDINAL LINE.

MULTIPLE TURNS

4. THE BEGINNING--OF--CURVE OF CAT TRACKS FOR LEFT TURNS SHALL BE TANGENT TO THE BARRIER LINE
   OR ITS PROLONGATION AT OR DOWNSTREAM OF THE INTERIOR CROSSWALK LINE. THE END--OF--CURVE
   SHALL BE PARALLEL TO THE RECEIVING LANE LINE OR ITS PROLONGATION AT OR UPSTREAM OF THE EXTERIOR
   CROSSWALK LINE AND LOCATED AS DESCRIBED IN NOTE 8.

5. THE BEGINNING--OF--CURVE OF CAT TRACKS FOR RIGHT TURNS SHOULD BE AT THE RADIAL EXTENSION OF
   THE BEGINNING OF THE CURB RETURN AND TANGENT TO THE BARRIER LINE. WHERE THE CURB LINE WIDTH IS
   INSUFFICIENT TO ALLOW A LARGER CURVE FOR THE CAT TRACK THAN ONE BEGINNING AS DESCRIBED ABOVE, IN
   ORDER TO PROVIDE AN IMPROVED TRAVEL PATH, THE BEGINNING OF CURVE MAY BE UPSTREAM OF THE CURB. WHEN
   THE CURB LINE AT THE BEGINNING--OF--CURVE IS NOT PARALLEL TO THE CURB, THE CURVE SHALL BE TANGENT TO
   THE BARRIER LINE OR ITS PROLONGATION, THE BEGINNING OF CURVE SHOULD BE POSITIONED TO MAINTAIN A MINIMUM
   WIDTH AT THE CURB RETURN EQUAL TO THE APPROACH WIDTH, OR 12 FEET, WHICHEVER IS SMALLER. THE PORTION
   OF CURVE UPSTREAM OF THE EXTERIOR CROSSWALK LINE SHALL BE A SOLID STRIPE. THE END--OF--CURVE SHALL
   BE PARALLEL TO THE RECEIVING LANE LINE AND LOCATED AS DESCRIBED IN NOTE 8.

6. THE CAT TRACK MAYS BE OFFSET 1 FOOT FROM THE RECEIVING LANE LINE, TO PROVIDE A
   WIDER RECEIVING WIDTH FOR THE NUMBER ONE TURN LANE WHEN: 1) THE NO.1 RECEIVING LANE IS
   LESS THAN 11 FEET; AND 2) THE CURB LANE WIDTH (OR THE COMBINED NO.2 AND NO.3 LANE WIDTHS) EQUALS
   OR EXCEEDS 21 FEET WITH PARKING, OR 13 FEET WITH PARKING PROHIBITED. WHEN THE OFFSET CRITERIA ARE
   MET, THE RECEIVING WIDTH FOR THE NUMBER ONE LANE (LANE WIDTH PLUS OFFSET) SHOULD BE 12 FEET
   WHERE POSSIBLE AND THE DIMENSION BETWEEN THE CAT TRACK AND CURB SHALL EQUAL OR EXCEED 20 FEET WITH
   PARKING, OR 12 FEET WITH PARKING PROHIBITED.

7. INTERSECTION STRIPING FOR MULTIPLE TURNS GENERALLY SHOULD DIRECT MOTORISTS TO NON-CURB LANES
   WHENEVER POSSIBLE, SINCE THEY MAY BE BLOCKED BY PARKED VEHICLES AND THE RADIUS WOULD BE
   SMALLER THAN NECESSARY.

8. FOR MULTIPLE LEFT TURNS, WHERE THERE IS NO RAISED MEDIAN SEPARATING THE OPPOSING TRAFFIC ON THE
   RECEIVING END, THE CROSSWALK ON THE RECEIVING END SHOULD BE AT LEAST 20 FEET AND THE DOUBLE YELLOW
   CENTER LINE THROUGH THAT CROSSWALK MAY BE DELETED. WHERE THERE IS A MEDIAN ISLAND, THE CROSSWALK
   ON THE RECEIVING END SHOULD BE 15 FEET.

9. WHERE THE DISTANCE BETWEEN CAT TRACKS FOR MULTIPLE LEFT--TURNS IN OPPOSITE DIRECTIONS IS LESS THAN
   30 FEET, LEAD--LAG LEFT--TURN OR OPPOSED SIGNAL PHASING SHALL BE USED.

LONGITUDINAL STRIPING

10. WHEREVER FEASIBLE, THE NEED FOR LONGITUDINAL CAT TRACKS SHOULD BE AVOIDED BY DESIGNING TRAVEL
    PATHS THROUGH THE INTERSECTION PARALLEL TO RAISED MEDIAN OR CURB LINES.

11. SPECIAL CONDITIONS WHERE LONGITUDINAL CAT TRACKS WITHIN THE INTERSECTION ARE REQUIRED INCLUDE:
    A. WHERE THE OFFSET IN STRIPING THROUGH THE INTERSECTION IS MORE THAN 2 FEET.
    B. WHERE OPPOSING LEFT TURN LANES ARE OFFSET TO THE RIGHT OF EACH OTHER.
    C. WHERE THE STRIPING HAS A TAPER OR A CURVE THAT BEGINS WITHIN 50 FEET OF THE APPROACH TO AN
       INTERSECTION.
    D. WHERE A TAPER OR CURVE ENDS WITHIN 20 FEET OF THE INTERSECTION.
    E. WHERE THE DESIGN SPEED ASSOCIATED WITH THE RADIUS OF CURVATURE OF THE TRAVEL PATH THROUGH
       THE INTERSECTION EQUALS OR IS LESS THAN THE APPLICABLE SPEED LIMIT.
    F. AT INTERSECTIONS WITH SHARP CREST VERTICAL CURVATURE WHERE THE DEPARTURE STRIPING IS NOT
       CONTINUOUSLY VISIBLE TO APPROACHING MOTORISTS.
SPECIFICATION FOR POST


NOTES

1. Concrete to be CLASS 560 C-3250
2. Post to be level straight.
3. Area to be left clean.
4. Cement grout - 1(cement) : 21/2 (sand)
SPECIFICATION FOR POST


NOTES

1. Post to be level straight.
2. Area to be left clean.
3. Cement grout- 1(cement) : 2 1/2 (sand)

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

APPROVED July 6, 2001

John E. Fisher
General Manager
4-1/2" holes to be drilled 1 7/8" deep to receive 4 Stud Bolt Anchors
1/2" X 3" Nuts to be Steel Hex Galvanized
1/2" washers to be Flat Steel Galvanized
Washers may be used under base as shims for leveling. 3 feet unthreaded post welded onto the Flange.

SPECIFICATION FOR POST

Steel pipe, Standard weight, 2" X 50" Long, ASTM-A120-63T. new and unused, hot dipped galvanized, top reamed.

Cement grout - 1(cement) : 2 1/2(sand)
Notes

1. Refer to S-491.0 for channelization associated with advance left-turn lanes.
2. Refer to S-401.0 Notes 1–5 regarding left turn lane details on the approach to signalized intersections.
3. At a signalized approach the reversal may be deleted and the double yellow line extended as shown only if: 1) the minimum length of the left turn lane is provided per S-401.0; 2) spillover is recurrent; 3) there is a 2WTLT upstream of the left-turn; or 4) an operational decision has been made to provide left-turn storage into a critical driveway.
4. A 2WTLT may be installed adjacent to an advance left turn lane (serving only the through move along the adjacent reach) but shall not be installed adjacent to a unidirectional left turn lane.
5. Signalized driveways should be served with a left-turn pocket lane. Where the driveway within the intersection is not signalized, a 2WTLT may be considered.
6. The reversal of a striped left-turn lane may be deleted at an unsignalized intersection. Where additional storage is desired the lane should be lengthened or replaced by a 2WTLT.
7. The 2WTLT may be extended and the curved median closure (cigar nose) eliminated where it is desired to provide a refuge for vehicles turning left from a driveway or street.
8. A painted median should be striped where the nearest driveway is more than 200 feet away or where it is not desired to provide U-turn capability for motorists to park at the curb.
9. A 2WTLT may be used instead of a left-turn pocket lane where an operational decision has been made to provide left-turn storage into a critical driveway, or where it is desired to provide refuge for vehicles turning left from a driveway or street.
10. The absolute minimum length of a 2WTLT under constrained conditions is 30 feet (6 feet of interior stripe, 18 feet of gap and 6 feet of interior stripe).
11. This is an option to Case 10 where there are no driveways.
12. For interior distances less than 30 feet install at least 7 feet of lane line striping and a diagonal double yellow stripe for guidance.
13. The absolute minimum length for a left-turn lane reversal is 40 feet. Thus, the minimum length for back-to-back left-turn lanes is 70 feet (15 feet of storage, 40 feet of reversal and 15 feet of storage).
14. Use to maximize 2WTLT storage or where the striping of the 30 foot minimum length of a 2WTLT is not possible between the offset cross streets and it is desired to provide 2WTLT storage at the cross streets.
15. Case 16 striping may be used if an operation decision has been made to maximize left turn storage for one of the legs of a joggled intersection, while on the other hand sacrificing left turn storage for the other leg. The minimum length of the left turn pocket is 15 feet. Consideration should be given to prohibiting left turns from the leg without a pocket.
16. The minimum width for each side-by-side left-turn lane is 9 feet and the minimum length is 15 feet.
17. The 8 inch white diagonal line is reserved for jogged intersections with minor offsets where the opposing left turn paths do not overlap. Assume a single radius for each vehicular path.
18. Use Case 19 to provide storage into a critical driveway as discussed in S-401.0, Note 4.
19. The tapered double yellow line may be partially or completely deleted where it is desired to accommodate left-turns to or from a driveway within the reach of the taper.
20. One of the tapered double yellow lines may be broken where it is desired to accommodate left turns to or from a driveway within the reach of the taper.
21. Tapers in different directions shall be separated by a 50 feet minimum tangent parallel to the edge of roadway. Adjacent tapers in the same direction should be avoided and replaced by a longer single taper, curve or curve–tangent–curve.
22. All left turn lanes are to be shielded from opposing traffic with a left-turn lane or (painted or raised) median on the opposite leg. The minimum width of shadow at the receptive center line is 9 feet, unless a protected left turn phase is provided.
23. When the tapered double yellow line is deleted as per Note 20 on 18 feet minimum curb lane width to the unstriped taper shall be provided where curb stopping is allowed.
24. A through pavement marking arrow should be provided where a single through lane lies adjacent to left-turn and right-turn lanes.
25. Striping may be extended across an unsignalized intersection where it is desired to provide continuous storage on the approach to a signalized intersection downstream. Consideration should be given to prohibiting lefts into and out of the cross street.
. General Notes: See Sheet 2
. Arrow Styles: See Sheet 3
. Shield Sizes: See Sheet 3
. Interchange Examples: See Sheet 4
. Sign Formats: See Sheet 5~9
General Notes

1. See S-418.6 regarding the use of overhead versus roadside freeway guide signs. Use roadside freeway guide signing where access to the freeway is provided only by the right lane, where overhead signing may not be feasible or as interim signing until overhead signing can be installed.

2. See S-476.1 regarding mounting of roadside freeway guide signing. 4'x8', 5'x6', 4'x6' and 3'x8' signs require dual posts, while 3'x6' signs may be installed on an electrolyer or single post. Signs up to 10 sq-ft may be installed on steel electrolyers within concrete sidewalks.

3. Lane Assignment freeway guide signs on multilane cross streets that have access to freeways are required per Section 2D.45 of the California MUTCD. Where roadside signs are to be used apply the appropriate formats as shown in signs B, C, F, G, I, L, R, S, W and X.

4. Action freeway guide signs are an essential follow-up to Lane Assignment freeway guide signs for assisting motorists in accessing the desired directions to freeways. Where roadside signs are to be used apply the appropriate formats as shown in Signs D, H, J, K, M, N, O, P, T, U, Y and Z. They should be placed 100' to 200' in advance of the turn. See Note 9.

5. Advance freeway guide signs are necessary in advance of a pair of roadside Lane Assignment freeway guide signs in order to advise motorists early-on that both directions of the freeway are accessible. See the appropriate formats in Signs A, E, C and V.

6. Freeway names are to be used only on the Advance sign or Lane Assignment sign (if an Advance sign is not appropriate) only where the on-ramps are within one mile of a freeway-to-freeway interchange, as shown in Signs A and E.

7. Where a long freeway name does not fit within the 8' wide format, as shown in Sign A, then Series C upper and lower case letters may be used. Where the freeway name and the word "Fwy" can fit on the first line then the freeway shield shall be shown alone on the second line.

8. The first capital letter of the cardinal direction is larger so as to provide improved recognition.

9. The dual direction Action freeway guide sign format as shown in Signs D and H versus the split directional formats as shown in Signs J, K, M, O, T, U, Y and Z is to be used only when physical constraints preclude effective placement of split signs.

10. The text on each line is to be centered.
Horizontal, Vertical and Diagonal Arrows

One Line

Advance

Shields

1 or 2 digits

3 digits

1 or 2 digits

3 digits
Sign A

Metropolitan
Fwy 28
1/4 MILE

8" u.c., 6" l.c., Series E
(Series C may be used under constrained situations)
8" u.c., 6" l.c., Series E
18" shield, numbers in-line with letters
6" caps, Series D

Sign B

18" shield, numbers in-line with letters
28 Fwy  
EAST
RIGHT LANE

8" u.c., 6" l.c., Series E
8" & 6" caps, Series D
6" caps, Series D

Note: Sign not needed for One-lane approach

Sign C

28 Fwy
WEST
LEFT LANE

See details and note for Sign B
Sign D

13" x 15" Advance Arrow
vertically centered
8" & 6" caps, Series D
1 1/4" dividing line, typical

18" shield,
numbers in-line with letters
8" u.c., 6" l.c., Series E

8" & 6" caps, Series D
12 3/4" x 11 1/4" One Line Arrow,
vertically centered

Sign E
See Sign A

Sign F
Same as Sign B, except that "EAST" becomes "WEST"

Sign G
Same as Sign C, except that "WEST" becomes "EAST"

Sign H
Same as Sign D, except that "EAST" becomes "WEST" and vice versa
Sign I

18" shield, numbers in-line with letters
8" u.c., 6" l.c., Series E
6" caps, Series D

Note: For one-lane approaches
See Sign Q

Sign J

18" shield, numbers in-line with letters
8" u.c., 6" l.c., Series E
8" & 6" caps, Series D
12 3/4" x 11 1/4" One Line Arrow

Sign K

See details for Sign J

Sign L
See Sign I
**Sign M**

18" shield, numbers in-line with letters
8" u.c., 6" l.c., Series E
8" & 6" caps, Series D
12 3/4"x11 1/4" One Line Arrow

**Sign N**

18" shield, numbers in-line with letters
8" u.c., 6" l.c., Series E
8" & 6" caps, Series D
12 3/4"x11 1/4" One Line Arrow

**Sign O**
See Sign J

**Sign P**

8" u.c., 6" l.c., Series E
(Series C may be used under constrained situations)
12 3/4"x11 1/4" One Line Arrow
Sign Q
See Details for Sign I

Sign R
See Sign B

Sign S
See Sign C

Sign T
.18" shield, number in-line with letters
8" u.c., 6" l.c., Series E
8" & 6" caps, Series D
12 3/4"x11 3/4" One Line Arrow

Sign U
See Sign N

Sign V
See Sign Q

Sign W
Same as Sign B, except "EAST" becomes "WEST"

Sign X
Same as Sign C, except "WEST" becomes "EAST"

Sign Y
Same as Sign T, except "EAST" becomes "WEST"

Sign Z
Same as Sign N, except "WEST" becomes "EAST"
Applications of Overhead Guide Signs: See Sheet 2
Overhead Sign Format Details: See Sheet 3
Arrow Styles and Specifications: See Sheet 4
Route Shield Sizes: See Sheet 5
W 61 Signs: See Sheet 5
Roadway Examples: See Sheets 6 & 7
Sign Formats: See Sheets 8~14
Application Notes: See Sheets 15 & 16
APPLICATION OF OVERHEAD GUIDE SIGNS

General
These signs are desirable to provide a high degree of visibility to forewarn and direct motorists on multi-lane approaches of roadway access or lane assignment conditions that generally cannot be anticipated. Situations where overhead signs generally should be provided include:

- Divergent arterial roadways
- Skewed arterial approaches
- Unshaded left-turn lanes
- Arterial grade separations, especially those which involve freeways
- Priority lanes, such as bus and/or carpool lanes
- Street name changes
- End of one-way operation

While overhead signing should be used for the above situations, extenuating circumstances occasionally may suggest an alternative. Accordingly, roadside signing shall be used in the above situations where overhead signing is not used.

Divergent Arterial Roadways
Overhead signs are desirable because motorists cannot otherwise anticipate lane assignment and street name changes at the divergence. Where the intersecting street is not an arterial street and no lanes are entrapmed onto it then overhead signing is not required. Also, where one of the arterial roadways has no change in horizontal alignment nor name and has no lanes that are entrapmed onto the intersecting arterial roadway then no divergence exists and thus overhead signing is not required. See Signs A and B with related notes.

Skewed Arterial Approaches
Overhead signs are desirable because the deviation from right angles formed between the intersection legs can result in lane assignment ambiguity. See Signs C and D with related notes.

Unshaded Left-Turn Lanes
Overhead signs are desirable on two-way streets so that motorists will readily recognize that the lane is entrapmed and that there may be opposing traffic in the lane downstream. If there is a raised median then ground-mounted signing in the median may be adequate. See Signs B, C and D that display R3-5 signs with related notes and Signs S and U.

Arterial Grade Separations
Overhead signs are desirable because motorists cannot otherwise anticipate whether the connecting ramp figures are on the left or right of the arterial approach. "Action" overhead signs show the immediate left-turn or divergent move necessary for access to the grade-separated facility. If there is a raised median then ground-mounted signing in the median may be adequate. "Action" overhead signs are not necessary for right turns or right-divergent moves, since "Lane Assignment" signs will direct motorists to the right lane(s) from where they can readily read roadside signing. See Signs E, F, G, H, H-Altemate, I, I-Altemate with related notes. "Lane Assignment" signs forewarn motorists as to which lanes of a multi-lane approach provide on-ramp access. Section 2D.45 of the California MUTCD requires "Lane Assignment" signs on multi-lane approaches to freeways. See Signs J, K, L, M and N with related notes.

Priority Lanes
Overhead signs are desirable for this rare regulatory condition which cannot otherwise be anticipated. See Signs O, P and Q with related notes.

Street Name Changes
Overhead signs are desirable at selected non-divergent locations and major junctions to advise motorists of the change in route name. Selected locations would be near regionally-significant activity centers. See Sign R.

End of One-Way Operation
Overhead signs are desirable so that motorists in the opposing direction (on the two-way leg of the intersection) may readily recognize that they must turn left and/or right. See Signs S, T and U.
OVERHEAD SIGN FORMAT DETAILS

Legend Size
The minimum size of letters on overhead signs is 8 inches upper case and 6 inches lower case. On streets with three or more approach lanes or with a posted speed limit of 40 miles per hour or greater 10.67 inch upper case and 8 inch lower case letters should be used.

Series E letter widths should be used, but in constrained situations Series C letter widths may be used.

Supplemental or clarifying wording on regulatory and guide signs (such as "ONTO BEVERLY DR", "200 FT" or "3 OR MORE") shall be 6 inch series D capital letters and numbers.

Lane Assignment wording ("RIGHT LANE", etc) shall be 6 inch Series D capital letters.

Cardinal directions shall have the first letter (N, S, E, W) larger so as to improve cardinal recognition. Where the general legend is 10.67 inches upper case and 8 inches lower case the cardinal direction should have 10 inch and 8 inch Series D letters. Where the general legend is 8 inches upper case and 6 inches lower case the cardinal direction should have 8 inch and 6 inch Series D letters.

The size of horizontal and vertical spacing should be equal to the height of the upper case letter. In constrained formats a minimum of one-half of these dimensions may be used. Division and border lines should be 1-1/2 inches wide.

See Sheets 4 and 5 for the sizes of arrows, route shields, and W61B(CA) and W61F(CA) signs.

Sign Size
The size of the sign is governed by the size of its elements. Sign software programs should be used to determine overall sign size.

Sign Structure
Fabrication of the sign from laminated, honeycomb panels using aluminum framing is shown in S-450. Cantilevered sign supports are shown in S92.2, S92.3, S98.0 and Plans S40N, S40P and S40Q of the State of California, Standard Plans.

Sign Retroreflectivity Material
White Legend: Diamond (DG III) or Type VIII
Black Legend: Non-reflective Vinyl
Red legend: EC Film
Green Background: Type III
White Background: Type III
Yellow Background: Type III
All signs are to have match component UV/Anti Graffiti film.
Arrow Styles & Specifications

One Line

Two Line

Advance Arrow

Down Vertical Arrow

Diagrammatic Arrows

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

OVERHEAD GUIDE SIGNING

4 / 16

CDS.

PR. T.E.

PRE. T.E.

DINN.

M.T.

T.E.

S-418.6
Route Shield Sizes

101
24"  28"
1 or 2 digits

27
10"
28"
3 digits

134
32"

INTERSTATE
5
24"
24"
1 or 2 digits

INTERSTATE
405
25"
25"
3 digits

W 61(CA) Signs

ONLY
84" 20"
Yellow or White Background as per Note 4
W61F(CA)

ONLY
44"
Yellow or White Background as per Note 4
W61B(CA)
Sign A (3 approach lanes shown)

Beverly Drive  Clarita Ave
↑  ONLY  ↑

See Notes 1-5
Diagrammatic Arrows shown due to optional lane, as per Note 3.

Beverly Drive  Clarita Ave
↑  ONLY  ↑

See Notes 1-5
Two-Line vertical and diagonal shown since optional lanes are not involved, as per Note 3.

Beverly Dr  Clarita Ave
↑  ONLY  ↑

See Notes 1-5
Diagrammatic Arrows

Beverly Dr  Clarita Ave
↑  ONLY

See Notes 1-5
Two-Line Arrows

Sign B (3 and 4 approach lanes shown)

Arden Blvd  Dolphin St  Beverly Dr
←  ↑  →

See Note 6
One-Line Arrows

Arden Blvd  Dolphin St  Beverly Dr
←  ↑  →

See Note 7
R3-5 and R3-6 shown, as per Note 7.

See Notes 6 and 7
One-Line Arrows

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

OVERHEAD GUIDE SIGNING

8

16

8

16

S-418.6
Sign C (2 and more approach lanes shown)

\[\text{See Notes 6 and 8}
\]
\[\text{One-Line Arrows}\]

Sign D (3 approach lanes shown)

\[\text{See Notes 7 and 9}\]

Sign E

\[\text{See Notes 6}
\]
\[\text{One-Line Arrow}\]

\[\text{See Notes 6 and 7}\]
Sign F

To Lower Ave

See Notes 6 and 10
One-Line Arrow

To Lower Ave

See Notes 6, 7 and 10

Sign G (2 approach lanes shown)

Golden State Fwy

See Notes 2, 3, 4, 5 and 11
Two-line Arrows

NORTH ONLY ONLY SOUTH

Golden State Fwy

See Notes 2, 3, 4, 5 and 11
Diagrammatic Arrows

ONLY NORTH SOUTH

Golden State Fwy

See Notes 2, 3, 4, 5 and 11
Diagrammatic Arrows

NORTH SOUTH ONLY

Sign H

See Notes 6 and 11
One-Line Arrow

ONLY

See Notes 7 and 11
One-Line Arrow

ONLY

OVERHEAD GUIDE SIGNING

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

10/16

S-418.6
Sign H Alternate

5 Fwy

See Notes 11 and 12
Advance Arrow and One-Line Arrow

NORTH

300 FT

SOUTH

See Notes 11 and 12
Advance Arrow and One-Line Arrow

Sign I

5 Fwy

See Notes 6 and 11
One-Line Arrow

SOUTH

See Notes 7 and 11
One-Line Arrow

ONLY

5 Fwy

See Notes 7 and 11
One-Line Arrow

SOUTH

ONLY

SOUTH

See Notes 11 and 12
Advance Arrow and One-Line Arrow

Freeway

NORTH

SOUTH

300 FT

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

OVERHEAD GUIDE SIGNING 11/16

OXD. SR. T.E. PR. T.E.

OWN. M.T. T.E. S-418.6
Sign L (2 approach lanes shown)

Golden State Fwy

ONLY NORTH ONLY SOUTH

See Notes 11, 13, 14 and 15

Golden State Fwy

ONLY NORTH SOUTH

See Notes 11, 13, 14 and 15

Golden State Fwy

NORTH ONLY SOUTH

See Notes 11, 13, 14 and 15

Sign M (2 approach lanes shown)

Freeway

NORTH SOUTH

See Notes 11, 13 and 14

Freeway

NORTH LEFT LANE SOUTH RIGHT LANE

See Notes 11, 13 and 14

Sign N (2 approach lanes shown)

Freeway

SOUTH NORTH

See Notes 11, 13 and 14

Freeway

SOUTH LEFT LANE NORTH RIGHT LANE

See Notes 11, 13 and 14
Application Notes

1. At roadway divergences show all arterial street destinations, including those where the street name does not change. This is necessary because sometimes the street name continues on the left leg, sometimes on the right leg and sometimes diverges into two different names.

2. At roadway divergences with two or more approach lanes, utilize elephant track striping as per S-491.0.

3. At roadway divergences use Two-Line Vertical and Diagonal Arrows (with flared tails) over each applicable lane where optional lanes are not involved. However, where optional lanes are involved use Diagrammatic (non-flared) Arrows over each applicable lane in order to better convey the optional lane use.

4. Use the black on yellow "W 61B(CA)" plates to forewarn of the entrapped lane or divergence ahead. However, where the point of divergence is less than 200 feet downstream from the overhead sign use a black on white "W 61B(CA)" plate to regulate lane assignment.

5. Position arrows as close as practical over the middle of the applicable lanes and position the applicable arterial street destinations preferably above or immediately adjacent to appropriate arrow heads, as space permits. Vertical lines may be shown to distinguish lane groups.

6. Use the single or stacked line-destination format in advance of intersections where entrapped turn lanes are not involved. List street and destination names in the following vertical order from the top, associated with the following directional one-line arrows: diagonal-vertical left, horizontal left, diagonal down left, vertical, diagonal-vertical right, horizontal right, and diagonal down right. Show left arrows to the left of the legends and vertical and right arrows to the right of the legends. Show vertical arrows to the left of the legends when the other destinations have right arrows, and to the right when the other destinations have left arrows.

7. At intersections where unshadowed (entrapped) turn lanes or interior optional lanes are involved use R3-5 and R3-6 signs positioned as close as practical over the middle of the applicable lanes.

8. Use the customized R3-2 sign where protected-only phasing is provided for one but not both of the possible left turns, such as the diagonal left-turn but not the sharper left-turn shown.

9. On the diagonal approach of a five-legged intersection the striping can be designed so that the through move is directed to either the right leg or left leg. The combination of striping and overhead signing should be coordinated to clarify and reinforce the intended operation. The first case shows two lanes directed to westbound Arden Boulevard, while the second shows two lanes directed to southbound Beverly Boulevard. Note that some secondary destinations requiring more than a ninety degree turn from an optional lane are not shown, due to space limitations.
10. Where the destination roadway must be accessed via another named roadway the name should be preceded with the word, "To". Ground mounted trailblazer signs should be provided to direct motorist in advance of every decision point enroute to the destination roadway.

11. Where a freeway on-ramp is within one mile of a freeway-to-freeway interchange, the full freeway name should be shown followed by the appropriate route shield and number. However, in constrained situations the full freeway name may be deleted. In all other situations the appropriate route shield and number followed by the word, "Fwy" or "Freeway" is sufficient.

12. Use the Advance Arrow and "XXX FT" legends where there is an intervening roadway 100 feet or less upstream of the overhead sign.

13. Lane Assignment signs should be provided 600 to 1300 feet upstream of turns or divergences associated with grade separations.

14. For Lane Assignment signs use the Down Vertical Arrow format where there is an entrapped turn lane or where it is possible to position arrows over each of the applicable lanes. They should be placed as close as practical over the middle of each lane. Where this is not possible use the "LEFT (RIGHT) LANE" or "NEXT LEFT (RIGHT)" format. The "NEXT LEFT (RIGHT)" message may be used only where there is no intervening intersection. The "SECOND LEFT (RIGHT)" message may be used instead of "NEXT LEFT (RIGHT)" where there is close spacing between intersections.

15. The black-on-yellow "W61F(CA)" sign is used for advance warning of a trap lane, per S-491.0.

16. The sign panel pertaining to the bus and carpool lane shall have a black legend on a white background and the diamond shall be white legend on a black background.

17. See S-487.0 for exclusive bus lane striping.

18. For exclusive lanes where two-person carpools are allowed it is not necessary to identify the required vehicle occupancy. Other required occupancies shall be identified with and below the diamond symbol.
Table A

<table>
<thead>
<tr>
<th>Posted Speed (MPH)</th>
<th>Distance (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>35</td>
<td>125</td>
</tr>
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<td>40</td>
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</tr>
<tr>
<td>45</td>
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</tr>
<tr>
<td>50</td>
<td>325</td>
</tr>
<tr>
<td>55</td>
<td>400</td>
</tr>
</tbody>
</table>

The distances shown in Table A are approximate only. Dimensions of field installations may exceed the figures in the table by up to 100 feet in order to adjust to field conditions. Distances shown are from Table 2C-4 (MUTCD) using condition B and posted speed plus 5 mph.
Type A - One Line

Typical Dimensions

Type VIII retro-reflective white lettering and numbers on a standard blue th match component UV/Anti-Graffiti film. For Type A signs, all colors

City Seal. Signs shall be provided with a 10-year replacement

r fading. An LADOT-approved vendor shall be used for fabrication.

ch thick aluminum stock.

ay Series B, with at least one stroke width between letters (45 spacing).

e letters shall be 6" and the lower case letters shall be 4.5", expect as

, the initial upper case letters shall be 4" and the lower case letters shall

ch as "of", "the" "el", "la", "los", "las", "de" and "del" shall have all lower

case letter representing the cardinal address direction, if any, shall

be same width as an upper case letter "O". The legend shall appear on

street name text shall be left justified starting a minimum of 2" from left

dered.

d by Arabic numerals and not letters. Where the number appears before

nue) the number shall be followed by an ordinal abbreviation, "st", "nd",

ace between them. However, where the number appears after the title

viation shall not be used. The space shall be the same width as an

by an upper case letter representing the cardinal direction, only where

s in another direction (such as for Sepulveda Boulevard, Vermont

t, etc.) within the City of Los Angeles or an adjacent city. The space

per case letter representing the cardinal direction shall be the same

street or driveway, the block number shall be replaced by "PVT" in 3" upper

appropriate. Accent and tilde markings shall be provided for non-English

A lower case " i " or " j " shall be dotted.

source for street names. If a private street or driveway requires a name, due

the Bureau of Engineering must process the naming proposal.

tions shall be used, except where using the unabbreviated word would not

uch as "B Street"). Periods shall not be used after abbreviations.

9 or less

10

11, 12

13, 14

15, 16

17, 18

19, 20

21, 22

23, 24

25, 26

0 abbreviation)

0 abbreviation)

Junior (as part of a name)

Lane

Mount

Jr

(No abbreviation)

Mt

1

2" 6" 3" 3" 11.35" 11.35" 5.35" 5.35" 14.35" 14.35" 8.35" 8.35" 42" 42" 6" 6" 2.35" 2.35" 30" 30" 36" 36" 17.35" 17.35" 18" 18" 15" 15" 11.35" 11.35" 12" 12" 2.35" 2.35" 30" 30" 2.35" 2.35" 5.35" 5.35" 17.35" 17.35" 18" 18" 15" 15" 11.35" 11.35" 12" 12"
Type A - Two Line

Typical Dimensions

Avenida de Santa Ynez
16700

Martin Luther King Jr Bl
3200 W

San Fernando Mission Bl
14800

Astronaut Ellison S Onizuka Street
100

* See the end statement for Note 9. 4" upper case and 3" lower case letters are required so that the message can fit on the largest sign.
**Type B**

**Typical Dimensions**

- R = 0.5"
- R = 5"
- Varies
- 2" minimum

**Street Name Signs**

- **Glendon Av 200S**
- **Avenue 59 500**
- **Gabriel Garcia Marquez St 100N**
- **Sierra Bonita Av 1100S**
- **Paseo de las Lomas Altas 1300**
- **Beverly Estate Dr 1100**
- **Calle Pedro Infante 2900**
Notes:

1. Signs shall have Diamond Grade or Type VIII retro-reflective white lettering and numbers on a standard blue Type IV retro-reflective background with match component UV/Anti-Graffiti film. For Type A signs, all colors shall be provided in the official 4" diameter City Seal. Signs shall be provided with a 10-year replacement warranty against wear, delamination or fading. An LADOT-approved vendor shall be used for fabrication.

2. The sign blade material shall be 1/8 inch thick aluminum stock.

3. Letters and numbers shall be Highway Series B, with at least one stroke width between letters (45% spacing). For Type A signs, the initial upper case letters shall be 6" and the lower case letters shall be 4.5", except as discussed in Note 9. For Type B signs, the initial upper case letters shall be 4" and the lower case letters shall be 3". Intermediate (non-first) words such as "of", "the", "et", "la", "los", "las", "de" and "del" shall have all lower case letters. The block number and upper case letter representing the cardinal address direction, if any, shall be 3". The space between words shall be same width as an upper case letter "O". The legend shall appear on both sides of the aluminum blade. The street name text shall be left justified starting a minimum of 2" from left edge of sign. The legend may be centered.

4. Numbered streets shall be indicated by Arabic numerals and not letters. Where the number appears before the title (such as 3rd Street or 4th Avenue) the number shall be followed by an ordinal abbreviation, "st", "nd", "rd" or "th", at the same level, with a space between them. However, where the number appears after the title (such as Avenue 19), an ordinal abbreviation shall not be used. The space shall be the same width as an uppercase letter "O".

5. The block number shall be followed by an upper case letter representing the cardinal direction, only where the named street has address numbers in another direction (such as for Sepulveda Boulevard, Vermont Avenue, Olympic Boulevard, 3rd Street, etc.) within the City of Los Angeles or an adjacent city. The space between the block number and the upper case letter representing the cardinal direction shall be the same width as upper case "O".

6. Where the named street is a private street or driveway, the block number shall be replaced by "PVT" in 3" upper case letters.

7. Apostrophes shall be used, where appropriate. Accent and tilde markings shall be provided for non-English words and names, where appropriate. A lower case 'i' or 'j' shall be dotted.

8. The Bureau of Engineering is the source for street names. If a private street or driveway requires a name, due to signalization or some other reason, the Bureau of Engineering must process the naming proposal.

9. The following street name abbreviations shall be used, except where using the unabbreviated word would not require an increase in sign length (such as "B Street"). Periods shall not be used after abbreviations.

<table>
<thead>
<tr>
<th>Term</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alley</td>
<td>(No abbreviation)</td>
</tr>
<tr>
<td>Avenida</td>
<td>(No abbreviation)</td>
</tr>
<tr>
<td>Avenue (end word)</td>
<td>Av</td>
</tr>
<tr>
<td>Avenue (first word)</td>
<td>Bl</td>
</tr>
<tr>
<td>Boulevard</td>
<td>(No abbreviation)</td>
</tr>
<tr>
<td>Calle</td>
<td>(No abbreviation)</td>
</tr>
<tr>
<td>Canyon (other than first word)</td>
<td>Cyn</td>
</tr>
<tr>
<td>Canyon (first word)</td>
<td>Cir</td>
</tr>
<tr>
<td>Circle (end word)</td>
<td>(No abbreviation)</td>
</tr>
<tr>
<td>Circle (other than end word)</td>
<td>Ct</td>
</tr>
<tr>
<td>Court (end word)</td>
<td>(No abbreviation)</td>
</tr>
<tr>
<td>Court (other than end word)</td>
<td>Dr</td>
</tr>
<tr>
<td>Drive</td>
<td>Drwy</td>
</tr>
<tr>
<td>Driveway</td>
<td>Eway</td>
</tr>
<tr>
<td>Expressway</td>
<td>Expwy</td>
</tr>
<tr>
<td>General (when used as a title)</td>
<td>Gen</td>
</tr>
<tr>
<td>Heights</td>
<td>Hgts</td>
</tr>
<tr>
<td>Highway</td>
<td>Hwy</td>
</tr>
<tr>
<td>Junior (as part of a name)</td>
<td>Jr</td>
</tr>
<tr>
<td>Lane</td>
<td>(No abbreviation)</td>
</tr>
<tr>
<td>Lane</td>
<td>Mt</td>
</tr>
<tr>
<td>Lane</td>
<td>Park</td>
</tr>
<tr>
<td>Parkway</td>
<td>Paseo</td>
</tr>
<tr>
<td>Place</td>
<td>Plaza</td>
</tr>
<tr>
<td>Road</td>
<td>Rd</td>
</tr>
<tr>
<td>Saint</td>
<td>St</td>
</tr>
<tr>
<td>Senior (as part of a name)</td>
<td>Sr</td>
</tr>
<tr>
<td>Street</td>
<td>Sq</td>
</tr>
<tr>
<td>Square</td>
<td>Terrace</td>
</tr>
<tr>
<td>Terrace</td>
<td>Trail</td>
</tr>
<tr>
<td>Walk</td>
<td>Way</td>
</tr>
<tr>
<td>Way</td>
<td>Westway</td>
</tr>
<tr>
<td>Wway</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

1. Signs shall have Diamond Grade or Type VIII retro-reflective white lettering and numbers on a standard blue Type IV retro-reflective background with match component UV/Anti-Graffiti film. For Type A signs, all colors shall be provided in the official 4" diameter City Seal. Signs shall be provided with a 10-year replacement warranty against wear, delamination or fading. An LADOT-approved vendor shall be used for fabrication.

2. The sign blade material shall be 1/8 inch thick aluminum stock.

3. Letters and numbers shall be Highway Series B, with at least one stroke width between letters (45% spacing). For Type A signs, the initial upper case letters shall be 6" and the lower case letters shall be 4.5", except as discussed in Note 9. For Type B signs, the initial upper case letters shall be 4" and the lower case letters shall be 3". Intermediate (non-first) words such as "of", "the", "et", "la", "los", "las", "de" and "del" shall have all lower case letters. The block number and upper case letter representing the cardinal address direction, if any, shall be 3". The space between words shall be same width as an upper case letter "O". The legend shall appear on both sides of the aluminum blade. The street name text shall be left justified starting a minimum of 2" from left edge of sign. The legend may be centered.

4. Numbered streets shall be indicated by Arabic numerals and not letters. Where the number appears before the title (such as 3rd Street or 4th Avenue) the number shall be followed by an ordinal abbreviation, "st", "nd", "rd" or "th", at the same level, with a space between them. However, where the number appears after the title (such as Avenue 19), an ordinal abbreviation shall not be used. The space shall be the same width as an uppercase letter "O".

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6. Where the named street is a private street or driveway, the block number shall be replaced by "PVT" in 3" upper case letters.

7. Apostrophes shall be used, where appropriate. Accent and tilde markings shall be provided for non-English words and names, where appropriate. A lower case 'i' or 'j' shall be dotted.

8. The Bureau of Engineering is the source for street names. If a private street or driveway requires a name, due to signalization or some other reason, the Bureau of Engineering must process the naming proposal.

9. The following street name abbreviations shall be used, except where using the unabbreviated word would not require an increase in sign length (such as "B Street"). Periods shall not be used after abbreviations.
In addition, cardinal direction names may be abbreviated to "N", "S", "E" or "W", only where the unabbreviated word would require the sign length to exceed 60'. For Example, use "Huntington Dr S" (abbreviated) and "Cahuenga Bl East" (unabbreviated).

10. The blade length should be determined using the table below:

<table>
<thead>
<tr>
<th>Text Including Internal Spaces</th>
<th>Blade Length for Type A-One Line Signs</th>
<th>Blade Length for Type B Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 or less</td>
<td>30'</td>
<td>30'</td>
</tr>
<tr>
<td>10</td>
<td>36'</td>
<td>30'</td>
</tr>
<tr>
<td>11, 12</td>
<td>42'</td>
<td>30'</td>
</tr>
<tr>
<td>13, 14</td>
<td>48'</td>
<td>36'</td>
</tr>
<tr>
<td>15, 16</td>
<td>54'</td>
<td>36'</td>
</tr>
<tr>
<td>17, 18</td>
<td>60'</td>
<td>42'</td>
</tr>
<tr>
<td>19, 20</td>
<td>*</td>
<td>48'</td>
</tr>
<tr>
<td>21, 22</td>
<td>*</td>
<td>54'</td>
</tr>
<tr>
<td>23, 24</td>
<td>*</td>
<td>54'</td>
</tr>
<tr>
<td>25, 26</td>
<td>*</td>
<td>60'</td>
</tr>
</tbody>
</table>

* Longer street names for Type A signs shall use two-line blades. The width of the two-line blade shall be based on the text of the longer line. The maximum length of a two-line blade shall be 48 inches. Where the text of the longer line of a two-line blade exceeds 14 characters, 4” upper case and 3” lower case letters may be used.

11. Type A and Type B signs that are 30’ or 36” long shall be side-mounted only, as shown on sheets 6 and 7. Type A and Type B signs that are 42” and longer shall be side-mounted with vertical support, as shown on sheets 8 and 9. Minor deviations in the sign brackets shown are permissible only with the prior written approval of LADOT.

12. When provided for initial installation, replacement or maintenance, Type A signs shall be used at intersections when at least one approach is a designated Major, Secondary or Collector Street. When provided for initial installation, replacement or maintenance, Type B signs shall be used at intersections where all approaches are designated Local Streets.

13. Street name signs shall be provided on the near-right side of each leg of a primary street at the named crossing street, flagged in the direction of the sidewalk or parkway, unless it is physically infeasible. If so, an alternate location shall be provided. If the named cross street does not intersect the primary street, due to a separation island, an additional near right sign shall be provided on the island. For unusual situations, see S-221.3.
Bracket Specifications

For Type A-One-Line and Type B Signs
30" and 36" long

Material for bracket to be extruded Aluminum Alloy 6063-T6

Not to Scale
Bracket Specifications

For Type A-Two-Line Signs
30" and 36" long

Material for bracket to be extruded
Aluminum Alloy
6063-T6

Section A-A

Not to Scale
Bracket Specifications

For Type A-One-Line and Type B Signs
42\" and longer

Material for bracket to be Aluminum Alloy 6063-T6

Section A-A

Dia=\(\frac{3}{8}\)\
2 holes

AA

\(R=\frac{\sqrt{3}}{16}\)

Dia=\(\frac{3}{16}\) thru,
R=\(\frac{\sqrt{3}}{8}\) 4 slots req'd

1\" for Type B
3\" for Type A

1\" for Type A
6\" for Type B

\(9^*\) minimum
16" maximum

Not to Scale
Bracket Specifications

For Type A - Two-Line Signs
42" and longer

Material for bracket to Aluminum Alloy 6063-T6

Section A-A

Dia=3/8"
2 holes

Dia=7/16" 2 holes

Material for bracket to Aluminum Alloy 6063-16

Not to Scale
1. ALL PARKING STALL LINES AND EDGE LINES SHALL BE IN ALKYD-BASED THERMOPLASTIC.
2. CALCULATIONS BASED ON, BUT NOT LIMITED TO L.A.M.C., SECTION 12.21, UTILIZING, 9'x16' STALL SIZE. LARGE VEHICLES REQUIRING THE 18-FOOT DIMENSION ARE EXPECTED TO OVERHANG THE CURB, AS SHOWN. STALL DESIGN ABOVE REQUIRES 2-FOOT OVERHANG FOR 18-FOOT VEHICLE.
3. ON LOCAL STREETS, COLLECTOR STREETS, AND THOSE ARTERIAL STREETS WHICH FUNCTION AS COLLECTOR STREETS (SEE 4, BELOW), THE "E" DIMENSION SHALL BE 4' MINIMUM WHERE THE PARKING ANGLE IS GREATER THAN 45 DEGREES. ON THOSE LOCAL AND COLLECTOR STREETS WITH ANGLE PARKING 45 DEGREES OR LESS, THE "E" DIMENSION MAY BE REDUCED TO A MINIMUM OF 2 FEET. THE 4' DIMENSION IS PREFERRED, HOWEVER, AND SHOULD BE PROVIDED IF THE ROADWAY WIDTH PERMITS.
4. ON ARTERIAL HIGHWAYS, THE "E" DIMENSIONS SHOWN IN THE ABOVE TABLE SHALL BE CONSIDERED REQUIRED MINIMUMS. THIS IS INTENDED TO PROVIDE FOR MANEUVERS TO AND FROM THE PARKING STALL WITHOUT OBSTRUCTING TRAFFIC MOVEMENT IN THE ADJACENT TRAVELED LANE. ARTERIAL STREETS ARE DESIGNATED IN COMMUNITY PLANS. A DESIGNATED ARTERIAL STREET MAY, FOR THE PURPOSES OF THIS STANDARD PLAN BE CONSIDERED AS A COLLECTOR STREET IF THE DAILY VOLUME IS LESS THAN 10,000 VEHICLES, OR THE STRIPING PROVIDES FOR ONLY ONE THROUGH LANE IN EACH DIRECTION.

John S. Fischer
Wayne K. Tanda, General Manager
CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
ON-STREET ANGLE PARKING STALLS

<table>
<thead>
<tr>
<th>θ</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.5°</td>
<td>16.9'</td>
<td>14.8'</td>
<td>22'</td>
<td>11'</td>
</tr>
<tr>
<td>45°</td>
<td>17.7'</td>
<td>12.7'</td>
<td>17.7'</td>
<td>11.1'</td>
</tr>
<tr>
<td>50°</td>
<td>18.0'</td>
<td>11.75'</td>
<td>15.1'</td>
<td>12'</td>
</tr>
<tr>
<td>52.5°</td>
<td>18.2'</td>
<td>11.3'</td>
<td>13.9'</td>
<td>13.1'</td>
</tr>
<tr>
<td>60°</td>
<td>18.4'</td>
<td>10.4'</td>
<td>10.6'</td>
<td>15.1'</td>
</tr>
<tr>
<td>67.5°</td>
<td>18.2'</td>
<td>9.7'</td>
<td>7.5'</td>
<td>17.3'</td>
</tr>
<tr>
<td>75°</td>
<td>17.8'</td>
<td>9.3'</td>
<td>4.8'</td>
<td>19.7'</td>
</tr>
</tbody>
</table>
NOTES

1. ALL PARKING STALL LINES AND EDGE LINES SHALL BE IN ALKYD–BASED THERMOPLASTIC.
2. MAXIMUM SLOPE 1:12
3. OTHER REQUIRED DIMENSIONS SHOWN ON PAGE 1.
ON-STREET ANGLE PARKING STALLS - SUPPLEMENT TO S-440.0

The following table should be used as a guide to determine the feasibility and numbers of spaces that may be installed with the installation on-street angle parking stalls. DOT Standard Plan S-440.0 should be reviewed to determine other restrictions and requirements.

<table>
<thead>
<tr>
<th>Number of spaces</th>
<th>Continuous linear footage between driveways, fire hydrants, etc.</th>
<th>37.5°</th>
<th>45°</th>
<th>50°</th>
<th>52.5°</th>
<th>60°</th>
<th>67.5°</th>
<th>75°</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>36.8</td>
<td>30.4</td>
<td>26.9</td>
<td>25.2</td>
<td>21.0</td>
<td>17.2</td>
<td>14.1</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>51.6</td>
<td>43.1</td>
<td>38.6</td>
<td>36.5</td>
<td>31.4</td>
<td>26.9</td>
<td>23.4</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>66.4</td>
<td>55.8</td>
<td>50.4</td>
<td>47.8</td>
<td>41.8</td>
<td>36.6</td>
<td>32.7</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>81.2</td>
<td>68.5</td>
<td>62.1</td>
<td>59.1</td>
<td>52.2</td>
<td>46.3</td>
<td>42.0</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>96.0</td>
<td>81.2</td>
<td>73.9</td>
<td>70.4</td>
<td>62.6</td>
<td>56.0</td>
<td>51.3</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>110.8</td>
<td>93.9</td>
<td>85.6</td>
<td>81.7</td>
<td>73.0</td>
<td>65.7</td>
<td>60.6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>125.6</td>
<td>106.6</td>
<td>97.4</td>
<td>93.0</td>
<td>83.4</td>
<td>75.4</td>
<td>69.9</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>140.4</td>
<td>119.3</td>
<td>109.1</td>
<td>104.3</td>
<td>93.8</td>
<td>85.1</td>
<td>79.2</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>155.2</td>
<td>132.0</td>
<td>120.9</td>
<td>115.6</td>
<td>104.2</td>
<td>94.8</td>
<td>88.5</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>170.0</td>
<td>144.7</td>
<td>132.6</td>
<td>126.9</td>
<td>114.6</td>
<td>104.5</td>
<td>97.8</td>
</tr>
<tr>
<td>Each additional space (+B)</td>
<td></td>
<td>+14.8</td>
<td>+12.7</td>
<td>+11.75</td>
<td>+11.3</td>
<td>+10.4</td>
<td>+9.7</td>
<td>+9.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Min. (E) for local/collector streets</th>
<th>2</th>
<th>2</th>
<th>4</th>
<th>4</th>
<th>4.1</th>
<th>6.3</th>
<th>8.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. cross-section</td>
<td>16.9</td>
<td>17.7</td>
<td>18</td>
<td>18.2</td>
<td>18.4</td>
<td>18.2</td>
<td>17.8</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4.1</td>
<td>6.3</td>
<td>8.7</td>
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<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Min. roadway width</td>
<td>46.9</td>
<td>47.7</td>
<td>50.0</td>
<td>50.2</td>
<td>51.5</td>
<td>53.5</td>
<td>55.5</td>
</tr>
</tbody>
</table>

The minimum cross-section assumes angle parking on one side, parallel parking on other, with one lane in each direction. Minimum E and adjacent lane width have been determined based upon design requirement that a vehicle backing out of angle parking space does not back over the double yellow centerline.
CASE 1

2' OFF RECOMMENDED
(1' MINIMUM
7' MINIMUM W/PARKING)

SW44(CA) (DOWN LEFT ARROW)

LANE LINE

WHITE LINE (SEE NOTES 1 & 2)

8''

12'' WHITE DIAGONALS, SPACING PER PLAN (MINIMUM TWO DIAGONALS)

2' OR EDGE OF GUTTER
IF PARKING IS PROHIBITED,
8' IF PARKING IS PERMITTED

CASE 2

2' OFF RECOMMENDED
(1' MINIMUM
7' MINIMUM W/PARKING)

SW44(CA) (DOWN LEFT ARROW)

LANE LINE

WHITE LINE (SEE NOTE 3)

10' TO 12'

12'' WHITE DIAGONALS, SPACING PER PLAN (MINIMUM TWO DIAGONALS)

2' OR EDGE OF GUTTER
IF PARKING IS PROHIBITED,
8' IF PARKING IS PERMITTED

NOTES:

1. FOR CASE 1 THE 8'' CHANNELIZING LINE SHOULD BE INSTALLED WHERE;
   A) DOWNSTREAM LANE WIDTH IS LESS THAN 13' (LANE LINE TO EDGE LINE) WITH PARKING PROHIBITED; OR
   B) DOWNSTREAM LANE WIDTH IS LESS THAN 20' (LANE LINE TO EDGE OF ROADWAY) WITH PARKING PERMITTED;
   OR C) THE CHANGE IN ROADWAY WIDTH IS 6' OR GREATER.

2. FOR CASE 1 THE 8'' WHITE EDGELINE SHOULD BE A MINIMUM OF 100 FEET IN LENGTH
   WHERE CONDITIONS PERMIT, TO PROVIDE ADEQUATE VISIBILITY FOR APPROACHING MOTORISTS.
   TAPER RATES IN CASE 1 SHOULD BE 5:1 OR GREATER.

3. FOR CASE 2 THE LANE LINE AND 8'' CHANNELIZING LINE MAY BE TRANSITIONED USING THE APPROPRIATE
   MINIMUM TAPER RATE FROM TABLE 1 OR BY APPROPRIATE CURVE-TANGENT-CURVE DESIGN.

4. FOR NARROWED ROADWAY DELINEATION WITH A LANE DROP SEE S-485.0.

5. FOR CASE 1 AND CASE 2, THE ADDITION OF 12'' WHITE DIAGONALS SHOULD BE INSTALLED TO EMPHASIZE THAT
   LARGE PAVEMENT AREAS ARE NOT INTENDED AS PART OF THE TRAVELLED ROADWAY.

6. TAPER RATES SHOWN IN TABLE 1 ARE BASED ON POSTED SPEED PLUS 5 MPH, WHERE THE 85% SPEED
   (CRITICAL SPEED) ON THE APPROACH IS DETERMINED TO BE EQUAL TO THE POSTED SPEED. THE TABLE
   NUMBERS FOR THE NEXT LOWER SPEED INCREMENT MAY BE USED.

TABLE 1

<table>
<thead>
<tr>
<th>SPEED LIMIT (MPH)</th>
<th>TAPER RATE (PREFERRED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>15 : 1</td>
</tr>
<tr>
<td>30</td>
<td>20.5 : 1</td>
</tr>
<tr>
<td>35</td>
<td>26.7 : 1</td>
</tr>
<tr>
<td>40</td>
<td>45 : 1</td>
</tr>
<tr>
<td>45</td>
<td>50 : 1</td>
</tr>
<tr>
<td>50</td>
<td>55 : 1</td>
</tr>
<tr>
<td>55</td>
<td>60 : 1</td>
</tr>
</tbody>
</table>

APPROVED September 29, 2005

John E. Fischer
Wayne K. Tanda, General Manager

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

NARROWED ROADWAY DELINEATION (WITHOUT LANE DROP) 1

OKO. SR. T.E. PR. T.E.

OWN. MT T.E. S-444.0
W31(CA) and Type OM4-3 Signs

W31(CA) 30"x30"

OM4-3
18"x18"(red)

3.5'

4.0'

MUTCD California Supplement
Section 3C-04

Notes:
1. W31(CA) and OM4-3 signs shall be posted at street termini as in a, and b. below:
   a. Without cul-de-sac designs.
   b. With cul-de-sac designs where the frontage of the cul-de-sac is not fully developed.
2. Where installed, the number of signs should be posted as shown below. However, they may deviate as much as 10' from the standard location in order to utilize existing street light standards or existing sign posts or to avoid driveways or utility installations.

<table>
<thead>
<tr>
<th>Number of Postings</th>
<th>Street Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>44' or less</td>
</tr>
<tr>
<td>2</td>
<td>45'-59'</td>
</tr>
<tr>
<td>3</td>
<td>60' or greater</td>
</tr>
</tbody>
</table>

DEAD END

W14-1

APPROVED January 21, 2005
John E. Fischer
Wayne K. Tanda, General Manager
CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
Sign Posting
For Street Termini

1 1

S-446.0
Note:
1. 30" typical for parking signs. 36" typical for warning and regulatory signs.

2. Posts for parking signs to be installed at 45° angle to curb. Posts for warning and regulatory signs to be installed at 90° angle to curb.

3. 9'6" minimum for street name signs; 7'6" typical for parking signs; 4' typical for W31(CA), W1-6, and W1-7; 4' typical to top of sign for W1-8, W12-1, OM1-3, and OM4-3.

Insert 2" X 2" post 6" to 8" deep into the anchor assembly.

2 Blind rivets

See Note 2

2 holes above surface

2 1/2"X2 1/2"X18"

2 1/4"X2 1/4"X30"

Detail

Note: 30" typical for parking signs. 36" typical for warning and regulatory signs. 24" min. (see Note 1) 6"~8" See Detail 7’m in. over pedestrian area (see Note 3) Center blind rivet used on 36" or large signs Blind rivet Max. 10 sq ft sign area. For larger signs see Standard Plan S-476.1
Notes:
1. Pipe post to be set 1'-6" back from face of curb unless otherwise specified.
2. For minimum pipe diameters and wall thickness refer to ASTM A6M.
Install only if \( L_1 \) or \( L_2 \geq 250' \)

Install at beginning of lane
NOTES:
1. SIGN FACE SHALL BE DIAMOND GRADE REFLECTIVE MATERIAL. LETTERS SHALL BE 8" SERIES "D" CAPS. SIGN FACE MAY BE APPLIED TO THE FRONT OR FRONT AND BACK OF SIGN AS SPECIFIED.
NOTES:
1. See Detail for square tube sign post installation.
2. Sign stiffener system and hardware per standard plan S-476.0.
3. Signs greater than 32 sq.ft. should be placed on a cantilever standard.
4. Sign may not extend beyond property line.
5. Large roadside mountings on electricals are permitted only when the poles are steel and embedded in concrete sidewalks.
A = Safe stopping distance = 1.47V^2 + 1.075V^2/2 
B = 4A/W = Curb stopping prohibition necessary for motorist to 
see a pedestrian at a point 4' into the roadway. LADOT practice is 
to install 50 feet of red curb on arterial approaches to side streets, 
measured from the side street curb line. Install this 
minimum dimension whenever the calculated B distance results 
in a lesser dimension. (See Note 7) 
V = Posted speed + 5 mph (Chart listings calculated on posted speed + 5 mph) 
W = Perception = Reaction time of 1.5 seconds (Driver previously 
alerted with advance sign and pavement markings) 
a = Deceleration rate = 11.2 ft/s^2 (Source: ASSHTO Policy on 
Geometric Design of Highways & Streets, Stopping Sight Distance) 
C = Advance warning sign placement (Source: CA MUTCD, Table 2C-4 
and Part 7) 

**NOTES:** 

1. **IMPLEMENTATION** 
   This standard plan applies to new installations and reinstallations of marked 
crosswalks and to marked crosswalks determined to be retained as a result of a 
study. 

2. **SIGN POSTING AT CROSSWALK** 
   Pedestrian Crossing W11-2 and W16-7p or Assembly B(CA) signs should be posted 
within ten feet of the crosswalk. These signs should be posted back-to-back so that 
one sign is on the right and the other on the left (gate post effect signing). If a raised 
median with a width of 8' or greater exists, the left sign should be in the median. On 
local or collector streets these signs should be 30' X 30'; on major or secondary 
highways these signs should be 36' X 36'. All school signs shall be 36' X 36'. The 
distance to the bottom of the signs should be eight feet. 

3. **ADVANCE SIGN POSTING** 
   Advance Pedestrian Crossing (W11-2) signs shall be posted as shown. See CA 
MUTCD Part 7 for required installations of Assembly A(CA) and Assembly C(CA). 
When Assembly A or C are required (not shown), Assembly D(CA) is to be posted as 
shown in that section. When neither are required, post Assembly O as shown herein. 
On local or collector streets these signs should be 36' X 36'. All school signs shall be 
36' X 36'. 

4. **All signs shall be fluorescent yellow-green.** 

5. **PAVEMENT MARKINGS** 
   "PED XING" or "SCHOOL XING" pavement markings shall be installed as shown on 
arterial streets and generally should be installed on local and collector streets. If the 
crosswalk spacing is less than 500 feet, only one set of pavement marking is 
recommened in advance of the first crosswalk. Yellow "SCHOOL XING" pavement 
marking shall always be installed in advance of uncontrolled yellow school crosswalks. 

6. **MIDBLOCK CROSSWALKS** 
   This standard plan also applies at non-controlled approaches to midblock crosswalks. 

7. **Because one-way streets place driver closer to the curb on the left side of the roadway, use B = 4A/W (W = 1) for left side pedestrian approach. This distance is not 
shown above."
Reflective white thermoplastic pavement markings

12' or 22'

250' to 600' ±

100' to 250' ±

* See Note 5

W17-1
W13-1(15)

* See Note 5

100' to 250' ±

Type I or Type II Asphalt Hump

Type I Marking Shown
See Sheet 4 for Type II

Layout on Two-Lane Street

Reflective white thermoplastic pavement markings

12' or 22'

250' to 600' ±

100' to 250' ±

* See Note 5

W17-1
W13-1(15)

* See Note 5

100' to 250' ±

Type I or Type II Asphalt Hump

Type I Marking Shown
See Sheet 4 for Type II

Layout on Street with Striped Median

A.C. Standard
3/8" Aggregate Mix

* If there is no actual gutter use 2' from flow line

Width * Varies

12" Taper

Curb Face

Section A-A

APPROVED JUNE 27, 2007

John S. Fisher

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Speed Humps

1/4

S-483.0
### Speed Humps Installation Notes

1. Speed humps shall be installed only when authorized by LADOT. Installations shall conform to the latest revision of LADOT Specification No. 51–008–003.

2. All asphalt concrete pavement shall conform to the most recent edition of the Standard Specification for Public Works Construction Section 302–5.

3. Speed humps shall not be placed over maintenance covers, watergates, junction chambers, etc.

4. Edge of speed humps should be 5 ft. or more from edge of driveway or catch basin.

5. Spacing between humps may vary. Exact locations and type of speed humps and sign locations shall be determined by LADOT.

6. Asphalt joins shall be accomplished by feather-edging.

7. The height of the speed hump shall not be less than 2 5/8 inch, and shall not exceed a tolerance of +1/4 inch.
Type I Speed Hump Marking (Chevron I)

Type I Speed Hump
2 5/8" High by 12' long
Section B-B
Type II Speed Hump Marking (Chevron II)

Type II Speed Hump
2 5\(\frac{7}{8}\)" High by 22' long
Section C-C
Typical Signs and Lane Reduction Markings - Reference MUTCD
Section 3B.09 and Figure 3B-12(CA)

Peak period lane to all day parking lane

Full time lane to peak period lane

<table>
<thead>
<tr>
<th>Posted Speed Limit (mph)</th>
<th>Posted Speed Limit plus 5mph</th>
<th>&quot;d&quot; Distance (feet)</th>
<th>d/4 (feet)</th>
<th>Taper Rate (minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>30</td>
<td>450</td>
<td>113</td>
<td>15 : 1</td>
</tr>
<tr>
<td>30</td>
<td>35</td>
<td>550</td>
<td>138</td>
<td>20.5 : 1</td>
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<td>35</td>
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<td>163</td>
<td>26.7 : 1</td>
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<td>45</td>
<td>750</td>
<td>188</td>
<td>45 : 1</td>
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<td>45</td>
<td>50</td>
<td>850</td>
<td>213</td>
<td>50 : 1</td>
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<td>950</td>
<td>238</td>
<td>55 : 1</td>
</tr>
<tr>
<td>55</td>
<td>60</td>
<td>1100</td>
<td>275</td>
<td>60 : 1</td>
</tr>
</tbody>
</table>

"d"= Advance Placement Distance per MUTCD, section 2C.05, Condition A. Taper rates and "d" distances shown are based on posted speed plus 5 mph. Where the 85% speed (critical speed) on the approach is determined to be equal or less than the posted speed, the table numbers for the next lower speed increment may be used.

Notes:
1. Where the lane dropped is a peak period lane, the W9-1 and W4-2 signs shall be modified by the addition of a black-on-yellow sign plate below to indicate the hours during which the curb lane is used by moving traffic.
2. Where the lane drop is installed in advance of a parking lane which is used as a thru lane for peak period traffic, the W9-1 and W4-2 signs shall be modified by the addition of a black-on-yellow sign plate below to indicate the excepted hours during which the lane is continuous.
A. STREET NAME SIGNS

NOTES
1. LEGEND SIZE: 8" UPPER CASE, 6" LOWER CASE, SERIES "E" LETTERS; 11-1/4"X12-3/4" ONE-LINE ARROW
2. COLOR: WHITE LEGEND, BLUE BACKGROUND
3. REFLECTIVITY: HIGH INTENSITY LETTERS ON SUPER ENGINEER GRADE BACKGROUND OR REVERSE SCREENING ON HIGH INTENSITY SHEETING
4. WHERE THE LENGTH OF THE SIGN BLADE WOULD EXCEED 96" (GENERALLY 16 LETTERS AND SPACES) THE STREET NAME TITLES, "ST"","AVE","BL","PL","DR","RD", ETC. MAY BE DELETED

B. FREEWAY RAMP SIGNS

NOTES
1. LEGEND SIZE: 8" AND 6" SERIES D CAPITAL LETTERS; 11-1/4"X 12-3/4" ONE-LINE ARROW; 18" HIGH US, CALIFORNIA OR INTERSTATE SHIELD, AS APPROPRIATE WITH PROPORTIONAL NUMBERS
2. COLOR: WHITE LEGEND, WAREBOYS GREEN (LA. NO.1) BACKGROUND; BLACK ON WHITE US SHIELD; WHITE ON GREEN CALIFORNIA SHIELD; WHITE ON BLUE AND RED INTERSTATE SHIELD
3. REFLECTIVITY: HIGH INTENSITY LETTERS ON SUPER ENGINEER GRADE OR REVERSE SCREENING ON HIGH INTENSITY SHEETING

APPROVED March 4, 2005
Wayne K. Tando, General Manager
CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

MAST ARM MOUNTED STREET NAME SIGNS

OBL. SR. T.E. PR. T.E. T.I. S-486.0
NOTES:
1. FOR INSTALLATION DETAILS SEE STD. PLAN S-457.0
2. FOR SIGNFIX ALUMINUM CHANNEL FRAMING SYSTEM
   DETAILS SEE STANDARD PLAN S-476.0
Notes

1. These pavement markings are supplementary to signing which regulates use of the exclusive bus lanes.

2. Install the "BUS ONLY" pavement markings at the beginning of bus turn lanes and at the beginning and ending of each block where there is a bus only curb lane.

3. Bus only turn lanes shall be supplemented with turn pavement arrows.

4. Contra-flow bus only lanes shall be supplemented with straight ahead direction pavement arrows.

5. Concurrent-flow bus only lanes shall be delineated by 8" solid white lines. For a part-time bus lane installation, which is used as a mixed flow lane during non-restricted hours, a 4" solid white line shall be used.

6. Bus only left turn pocket lanes shall have a closed entrance delineated by the extension of the 8" white barrier line.

7. Mid-block pavement markings for bus only curb lanes shall be installed where the block length exceeds 700 feet.

8. The "BUS ONLY" pavement markings shall conform to the 8' high Caltrans Standard.

9. All markings shall be Alkyd-Based thermoplastic.
CASE 1: BI-DIRECTIONAL RAMPS

CASE 2: UNI-DIRECTIONAL RAMPS

APPROVED October 3, 2005

Wayne K. Tanda, General Manager
CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

CROSSWALK ALIGNMENT

<table>
<thead>
<tr>
<th>CRD.</th>
<th>SD. T.E.</th>
<th>PR. T.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.T.</td>
<td>T.E.</td>
<td></td>
</tr>
</tbody>
</table>

S-490.0
NOTES

1. Crosswalk installations with an access ramp intended to serve Case 1 situations generally should be aligned so that \( A \geq 2' \), \( B \geq 2' \) and \( C \leq 7' \). However, if there is an all-day parking lane, a parallel approach right-turn lane or if the curb lane width for parallel through traffic is \( \geq 14' \), the related \( A \) or \( B \) distance may be \( \geq 0' \).

2. Countless combinations of existing intersectional angles, curb radii and ramp locations prevent selection of specific dimensions for \( A \), \( B \), and \( C \) in Case 1 situations. \( C \) should be set at a preferred 4' dimension wherever the criteria for \( A \) and \( B \) are met. However, at a right angle intersection with an existing ramp located at the M.C. and curb return radius of \( < 17' \), \( C \) must be \( < 4' \) in order for \( A \) and \( B \) to be the desired 2' minimum needed when through curb lanes are \( \leq 14' \). For a curb radius of 14', set \( C = 3' \) so that \( A \) & \( B \) are equal to 2. \( C \) dimensions for curb radii between 14' and 17' may be increased proportionately to 4'. For curb radii \( < 13' \), set the \( C \) distance at the edge of gutter (generally 1' to 2') when curb lanes are \( \leq 14' \). With these smaller radii where curb lanes are \( > 14' \), the \( A \) and \( B \) distances should be decreased to 0 to achieve a larger \( C \) dimension.

3. At intersections where street resurfacing, street widening, or channelization projects require reinstallation or modification of an existing crosswalk, all crosswalks at the intersection should be realigned to meet the criteria of Notes 1 and 2 above.

4. At curb returns without a ramp where a single ramp location would not meet the criteria of Note 1 above, unidirectional ramps should be proposed, as shown in Case 2.

5. For Case 2 situations, \( C \leq 2' \).

6. A crosswalk width of 15' is standard. Use 20' in high pedestrian areas, or on the receptive leg of dual left turns.
Notes:

1. The second (downstream) pavement marking is not mandatory if advance turn lane is 100' long or less. At locations where a right turn is prohibited at an intermediate intersection during limited hours, the pavement arrow at that intersection should be deleted.

2. Continuous through lanes that terminate as mandatory turn lanes and that are not otherwise regulated by the Vehicle Code, (commonly known as "Trap Lanes") shall be delineated by Elephant Tracks. The length of Elephant Tracking should be two blocks in advance of the mandatory turn, but not less than 500 feet and not more than 1,300 feet. This striping shall be supplemented with W4–7 and W73A(CA) signing. The W4–7 sign should be placed near the start of the Elephant Tracks.

3. Added turn lanes (i.e. having no continuity upstream) traversing through all intervening intersections shall be delineated by Elephant Tracking (lane drop markings) and pavement arrows as shown.

4. Trap Lanes should be considered where it is not feasible to drop a lane with the standard signing and pavement markings. They should terminate at arterial streets or freeway ramps.

5. Trapped lanes for left turns should have overhead signing.

6. Trapped lanes for right turns shall be terminated by a curved barrier line and separated from the adjacent through lane by a longitudinal line. Barrier lines for right-turn lanes should be 100' minimum.

7. Placement of arrows should also conform with Standard Plan S–456.0.
CASE 1
(WITH AND WITHOUT ACCESS RAMPS)

PROPERTY LINE

CASE 2

SEE NOTE 2

5' MIN.

PROPERTY LINE

CASE 2 ALTERNATE
LARGE VEHICLE SET BACK

NOTE 3

BASE ON TURNING TEMPLATE

CASE 2 ALTERNATE
WITH ISLAND

NOTE 3

ISLAND

ISLAND

Approved: July 24, 2009
John E. Fisher
Rita L. Robinson, General Manager
CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
LOCATION OF LIMIT LINES AND CROSSWALKS

T.E. Sr. T.E. Pr. T.E. D.S. D.R.H.
TC JW 88

MT 7-20-09 CNM

S-493.0
NOTES:

1. For Cases 2 -10 refer to S-490.0 for precise alignment of crosswalks.
2. Generally, limit lines are located along the extension of the property line. They shall be placed at the near side or upstream of the flat portion (w) of any access ramp. It is preferable to have the limit line upstream of the (w) to allow a buffer between the crossing pedestrian and stopped vehicles. Limit lines may be located downstream of the extension of the property line to improve cross-traffic visibility, where necessary. The distance between the curb line extended and the limit line shall be at least 5 feet.
3. The reception leg for a left-turn from a one-way street requires a minimum 25 foot setback so as to provide a buffer between the left turning vehicle and the vehicle waiting at the crosswalk. This can be measured at 35 feet from the lane line marking for the turning vehicle. Where medians separate the turning vehicle from waiting vehicles on the cross street, the median is to be designed to accommodate the turns. In this latter instance the stop line for waiting vehicles may be closer to the cross street while maintaining the intended buffer. Where large trucks prevail, a stepped limit line in the number one lane should be considered, based on truck turning templates. Commonly single unit or WB40 trucks are to be used for design. Unique situations may require use of the largest design vehicle (WR65). There should be a 5-foot buffer distance from the nearest point of the turning design vehicle and the limit line.
4. Limit lines shall be at or upstream of where a crosswalk line parallel to the direction of travel intersects the curb. At skewed intersections a single skewed limit line often is preferred to stepped limit lines, for ease of recognition and maintenance.
5. Where gates are present at railroad crossings the limit line in advance of the gate shall be placed 8 feet from the gate, except as indicated for Cases 4 and 5. In Case 4, a greater distance may be required to provide space for the “Keep Clear” pavement markings. In Case 5, a lesser distance may be required when gates are close to the cross street. In these instances the limit line should be located as shown. Install W10-2 on show when distance to parallel track is 100’ or less. W10-11a signs should be installed when the distance between the nearest rail and the limit line is 100’ or less. See MUTCD California Supplement and S-436.0 for other applicable sign and pavement markings associated with railroad crossings.
6. Ensure that the signal design (detector locations, signal head location and size) and signal timing (clearance intervals) reflect the setback limit line and wide intersection. Except for any cal-tracks that may be necessary, there shall be no lane line striping between the double limit line and the curb line for the approach that crosses the rail line in Case 5.
7. “Wait Here” pavement markings shall be used only to show the stopping point for vehicles at a stop sign or signal.
8. Where installed, the minimum storage of 60 feet between the traffic signal limit line and the “Keep Clear” pavement message, as shown, should be provided in order to command respect for the interruption in queuing. The limit lines are optional in Case 6.
9. See Section 21355 CVC (“…stop signs shall not be erected at any entrance to an intersection controlled by official traffic control signals…”).
10. Case 8 is an alternative to Case 7 where it is desired to have Stop sign control on the approach to the frontage road immediately in advance of the signalized intersection.
11. Where the storage is less than 20 feet, the frontage road should be signalized as shown in Case 9 and S-101.0.
12. The 20-foot minimum distance allows one passenger car to store between the respective limit lines of the stop sign and traffic signal, in order to ensure compliance with Section 21355 CVC (“…stop signs shall not be erected at any entrance to an intersection controlled by official traffic control signals…”).
13. The mastarm signal shall be at least 50 feet downstream from the limit line.
14. Case 14 and Case 15 are interim alternatives to Case 13, and are designed to provide at least 50 feet between the limit line and the mastarm signal where the signal is installed at the crosswalk. Signal projects should convert Case 14 and Case 15 locations to Case 13 operation where possible. In the presence of a driveway immediately downstream of the crosswalk, where it is desirable to exclude the driveway from traffic signal control, Case 14 and Case 15 operation may be permanent.
15. Install crosswalk markings along striping and space at 4.5’, 5’, 5.5’ and 6’ c-c for 9’, 10’, 11’ and 12’ lanes, respectively.
CASE 1: STOP SIGN CONTROL
Note: Use Stop sign operation where the curb return radius is less than 20 feet (10 miles per hour design speed), pedestrian traffic across the channelized right turn is high, cross-traffic visibility is restricted, or where the use of a Yield sign has been shown to be inadequate.

CASE 2: YIELD SIGN CONTROL
Note: Use Yield sign operation where the curb return radius is 20 feet (10 miles per hour design speed) or greater and pedestrian traffic across the channelized right turn is low.

[Diagram of a stop sign and a yield sign with notes on their application]
Notes:
1. Use Yield sign operation where the available distance "x" for acceleration and merging is less than "D", as determined by the tables in Case 4.
2. Installation of the Yield limit line is optional.
3. An optional added location for a crosswalk is where the Yield sign is shown near the end of the island. If added, stop sign control should be considered. If Yield sign control is retained then the crosswalk should have ladder markings as shown on sheet 1.
CASE 4: MERGE OPERATION

D = Minimum distance necessary for accelerating and merging
D1 = Minimum distance necessary for accelerating from point x at the initial speed, S1, to point y at the speed limit, S2. See Tables 1&2. Consideration should be given to using a design speed greater than the speed limit where higher speeds are known to occur.
D2 = Minimum distance necessary for merging maneuver at speed, S. See Table 3.

Notes
1) Use Merge operation where the available distance for acceleration and merging equals or exceeds "D".
2) The length of lane line within D is discretionary.
3) Where it is desired to provide traffic signal control for pedestrians to cross the channelized right turn, the following shall apply:
   a. Omit the W11-2 sign; and
   b. Omit ladder markings in crosswalk.
   c. Provide pedestrian heads across the channelized right turn; and
   d. Control the channelized right turn with three-arrow signal heads; and
   e. Omit reference to Table1; and
   f. Measure D, from diagonal crosswalk; and
   g. Si = 0 at crosswalk
4) Install a second W4-1 sign on the right side if the median mounted W4-1 sign is not visible to merging traffic.
Table 1: Determination of $S_1$ (Case 4)

<table>
<thead>
<tr>
<th>Radius ft</th>
<th>$S_1$ mi/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>55</td>
<td>15</td>
</tr>
<tr>
<td>110</td>
<td>20</td>
</tr>
<tr>
<td>210</td>
<td>25</td>
</tr>
<tr>
<td>340</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 2: Determination of $D_1$ (Case 4)

\[
D_1 = \frac{(S_2 - S_1)^2}{2a}, \text{ Where } a = \text{acceleration rate of } 3 \text{ ft/sec}^2
\]

<table>
<thead>
<tr>
<th>$S_2 - S_1$ mi/hr</th>
<th>$D_1$ (rounded) ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>22.0</td>
</tr>
<tr>
<td>20</td>
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<td>35</td>
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</table>

Table 3: Determination of $D_2$ (Case 4)

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<thead>
<tr>
<th>$S_2$ mi/hr</th>
<th>Formula</th>
<th>$D_2$, ft for W=10ft</th>
<th>W=11ft</th>
<th>W=12ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>$W S_2^2 / 60$</td>
<td>105</td>
<td>116</td>
<td>126</td>
</tr>
<tr>
<td>30</td>
<td>$W S_2^2 / 60$</td>
<td>150</td>
<td>165</td>
<td>180</td>
</tr>
<tr>
<td>35</td>
<td>$W S_2^2 / 60$</td>
<td>205</td>
<td>226</td>
<td>246</td>
</tr>
<tr>
<td>40</td>
<td>$W S_2$</td>
<td>267</td>
<td>294</td>
<td>320</td>
</tr>
<tr>
<td>45</td>
<td>$W S_2$</td>
<td>450</td>
<td>495</td>
<td>540</td>
</tr>
<tr>
<td>50</td>
<td>$W S_2$</td>
<td>500</td>
<td>550</td>
<td>600</td>
</tr>
<tr>
<td>55</td>
<td>$W S_2$</td>
<td>550</td>
<td>605</td>
<td>660</td>
</tr>
</tbody>
</table>

For determining $D_2$, use the posted speed limit plus 5 mph (35 mph speed limit + 5 mph = 40 mph for $S_2$). Where the 85% speed (critical speed) in the vicinity of the taper is determined to be equal or less than the posted speed, use the speed limit for $S_2$. 
CASE 5: ADDED LANE OPERATION

Notes
1) Use Added Lane operation where the receiving lane is available all day and equals or exceeds 1/2 mile in length.
2) Where it is desired to provide traffic signal control for pedestrians to cross the channelized right turn, the following shall apply:
   a. Omit the W11–2 sign; and
   b. Omit ladder markings in crosswalk.
   c. Provide pedestrian heads across the channelized right turn; and
   d. Control the channelized right turn with three-arrow signal heads.
3) Install a second W4–3 sign on the right side if the median mounted W4–3 sign is not visible to merging traffic.

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
Title CHANNELIZED RIGHT TURNS
Drawing No. S–494.0
Notes:

1. This standard plan supplements Table 1 of Section 521, pertaining to restricted sight distance which justifies protected left-turn phasing at signalized intersections.

2. Motorists require both an acceptable gap in opposing traffic and sufficient sight distance in order to execute permissive left turns. Studies have shown that the value of an acceptable gap is equal to (5.0 + 0.5 n) seconds of travel time, where "n" is the number of opposing through lanes. Sufficient sight distance is the distance associated with an acceptable gap, or the gap time multiplied by the design speed. The design speed for opposing through traffic is five miles per hour above the posted or prima facie speed limit. However, where there is restrictive horizontal or vertical alignment the design speed is five miles per hour above the posted advisory speed. See Table 1.

Table A: Minimum Sight Distance Requirements for Permissive Left Turns, * ft (rounded)

<table>
<thead>
<tr>
<th>Speed Limit or Advisory Speed, mi/hr</th>
<th>Minimum Sight Distance Requirements, * ft (rounded)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.5 sec 1 lane</td>
<td>6.0 sec 2 lane</td>
</tr>
<tr>
<td>15</td>
<td>165</td>
</tr>
<tr>
<td>20</td>
<td>205</td>
</tr>
<tr>
<td>25</td>
<td>240</td>
</tr>
<tr>
<td>30</td>
<td>280</td>
</tr>
<tr>
<td>35</td>
<td>320</td>
</tr>
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<tr>
<td>50</td>
<td>440</td>
</tr>
<tr>
<td>55</td>
<td>480</td>
</tr>
</tbody>
</table>

*Based on the speed limit or advisory speed plus 5 mi/hr

3. Several types of sight distance restrictions can occur. Permanent type restrictions, due to horizontal curvature, vertical alignment or physical obstructions cannot be readily overcome. Where the sight distances for permanent type restrictions are less than that shown in Table A, and left turns are allowed then protected left-turn phasing is required. See Figures 1, 2 and 3 which illustrate these types of restrictions.

4. Sight distance also can be restricted due to opposing left turn vehicles at locations where left turn lanes are negatively offset. Where the opposing left turn demand is light it tends to be accommodated during the same signal cycle of arrival. In this case, left turn motorists would be afforded adequate sight distance to execute left turns at some point during the green or yellow after opposing left turn motorists clear. Thus, protected left turn phasing would not be necessary. See Figure 4. However, where an opposing left turn queue is frequent and persistent and the sight distances are less than those shown in Table A then left turn motorists are not afforded an opportunity to turn with adequate sight distance. In this case, island removal with restriping or protected left-turn phasing is necessary and required. See Figure 5.

5. A unique situation occurs with negatively offset left turn lanes in combination with a right horizontal curve. As illustrated in Figure 6, left turn motorists can see opposing through traffic both upstream from the front and downstream from the back of a left turn queue. However, motorists cannot continuously see downstream from the front of the queue. If the required sight distance is at a point which is not obstructed by the opposing queue then protected left turn phasing is phasing would not be necessary. However, where the required sight distance is at a point which is obstructed by the opposing queue then visibility is inadequate for left turning decisions and protected left turn phasing is required.

APPROVED 12/26/2000

Frances T. Banerjee, General Manager
CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION
Restricted Sight Distance Criteria for Protected Left-Turn Phasing

CIV. T.E. T.L J PR. T.E. G 0
EWN. M.T. T.E.
S-497.0
Protected left turn phasing is required if any minimum sight distance is not met and left turns are allowed.

Example of Restricted Sight Distance Due To Left Horizontal Curvature

Figure 1
See Table A for \((5.0 + 0.5n)\) sec, where \(n = \) number of opposing thru lanes

Protected left turn phasing is required if any minimum sight distance is not met and left turns are allowed.

Example of Restricted Sight Distance Due To Vertical Alignment

Figure 2
Protected left turn phasing is required if any minimum sight distance along Line A is not met and left turns are allowed. See Figure 6 and examine Line B distances if the obstruction distance is relatively short.

Example of Restricted Sight Distance Due To Physical Obstruction

Figure 3
This figure is for general use on arterial highways with negatively offset left turn lanes at intersections with lower volume cross streets and/or low volume left turns from the arterial streets. In these situations the queuing from the opposing left turns will be short or infrequent and will usually clear during the cycle, thus resulting in a period of unrestricted sight distance for permissive left turns.

Infrequently restricted sight distance generally would be assumed to occur if the cross street has less than 10,000 ADT and opposing left turns are less than two cars per cycle during the peak hour. However, a left turn study may be conducted in place of these guidelines to document the frequency of restricted sight distance. When such a study is conducted, refer to Figure 5.

Example of Infrequently Restricted Sight Distance Due to Negatively Offset Left Turn Lanes with Light Opposing Left Turn Demand

Figure 4
This figure is for general use on arterial highways or high volume collector streets with negatively offset left turn lanes at higher volume cross streets. In these situations, the negative offset, in combination with moderate opposing left turn demand, may result in frequently restricted sight distance for permissive left turns.

The determination of frequently restricted sight distance can be determined by: 1) Assessing the frequency of restricted sight distance; and 2) measuring the sight distance. Restricted sight distance will be assumed to occur frequently with moderate opposing left-turn demand if the cross street has more than 10,000 ADT. However, a left turn study may be conducted in place of this guideline to document the actual frequency of restricted sight distance. If the study shows that more than 15% of queues do not clear during their cycles of arrival during the peak hour then restricted visibility is judged to be frequent.

The sight distance can be plotted on a striping plan as shown in this figure or as measured in the field. If the sight distance is frequently restricted and is less than the values shown in Table A then remedial action should be taken.

Remedial action should first consider removal of the raised median island and restriping to eliminate the negative offset. If this is not feasible then protected left turn phasing is required.

Generally, an
Arterial or
High Volume
Collector Street
(10,000 ADT)

<table>
<thead>
<tr>
<th>W, ft</th>
<th>X, ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>1.5</td>
</tr>
<tr>
<td>10</td>
<td>2.0</td>
</tr>
<tr>
<td>11</td>
<td>2.5</td>
</tr>
<tr>
<td>12</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Example of Frequently Restricted Sight Distance Due To Negatively Offset Left Turn Lanes with Moderate Opposing Left Turn Demand

Figure 5
Left turning motorists can see upstream of Line A (which is defined by the first vehicle in a queue) and downstream of Line B which is defined by the last vehicle in an 85th percentile queue. They cannot, however, see between Lines A and B. If opposing vehicles can be seen at the required sight distances, shown in Table A, either upstream of Line A or downstream of Line B, then protected left turn phasing is not required. If however, the required sight distances lie between Lines A and B then visibility is inadequate for left turning decisions and protected left turn phasing is required. In the absence of documented observations, the 85th percentile queue length, in feet, is assumed to be 40 V/N, where V equals the peak hour left turn volume and N equals the number of signal cycles per hour.

<table>
<thead>
<tr>
<th>W, ft</th>
<th>X, ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>1.5</td>
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<tr>
<td>10</td>
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<tr>
<td>11</td>
<td>2.5</td>
</tr>
<tr>
<td>12</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Example of Frequently Restricted Sight Distance Due To Moderate Opposing Left Turn Demand in Combination with Right Horizontal Curvature

Figure 6
A = 5.5 SQ. FT.
SIGN SAMPLES:

Notes:

1. Guide signs should be considered for installation as per Section 336 of the Department of Transportation’s Manual of Policy and Procedures.

2. The minimum lettering size is 8” upper case and 6” lower case for overhead signs and 6” upper case and 4½” lower case for roadside signs. Series E reflective white engineering grade sheeting should be used for the lettering. Total area of sign shall not exceed 18 square feet for roadside installations per Standard Plan S-476.0.

3. Signs may be fabricated by qualified private parties, with installation by LADOT field forces. Contact LADOT Coordination Section, for a list of approved sign manufacturers. However, after initial installation LADOT is responsible for maintenance and replacement of sign. If the private entity does not furnish a suitable replacement logo to LADOT when the sign need to be replaced, LADOT may elect to install a guide sign without a logo.

4. Standard Highway Series lettering and arrow style shall be used.

5. The logo size shall not exceed 25% of the sign area and shall be located in the upper left or right corner for roadside signs.

6. Sign colors should be reflectorized. Background color of sign, except for logo shall be Type 2 (Super-engineering grade) green. Legend except for logo shall be Type 3 (High intensity) white. Logo colors shall be Type 2.

7. All lines of legend are to be centered.

8. The outside edge of the sign shall have a ¾” reflective white border for roadside signs. There shall be a ½” margin between the sign edge and the border.

9. The entire sign shall be produced on 0.080 inch aluminum sheeting.

10. Sign stiffener system and hardware shall be secured to the back of the sign as required, per Standard Plan S-476.0.

11. Use one-line directional arrows as shown in S-418.5.
Painted Area = 5.5 sq/ft

Pavement marking shall be in paint in accordance with current LADOT specifications.
S = Approximate equal spacing between W1-8 Signs
R = Radius of outside curve
θ = Central Angle of Curve
L = Arc Length

L = 2πRθ/360
S = 2πR(13.3)/360 ≤ 100'
Σs = L

<table>
<thead>
<tr>
<th>R, ft</th>
<th>Maximum Average S, ft</th>
</tr>
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<tbody>
<tr>
<td>100</td>
<td>25</td>
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<tr>
<td>150</td>
<td>35</td>
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<td>45</td>
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<td>55</td>
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<td>300</td>
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<tr>
<td>400</td>
<td>90</td>
</tr>
<tr>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

* See Note 6

R = Radius of outside curve
θ = Central Angle of Curve

Arc Length ≥ 100'

Arc Length < 100'

W1-8
W1-6
OM1-3

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Supplemental Curve Warning Signage

S-501.0
Notes

1. Supplemental curve warning signing may be used along any curve and should be used where the design speed of the curve is at least 10 miles per hour below the speed limit. Either W1–6 or W1–8 signs are used for this purpose.

2. W1–6 signs (in combination with OM1–3 signs) are used for "short" curves. One installation is posted on the outside of the curve facing each direction near the tangent of the curve. For purposes of this standard, "short" curves have arc lengths less than 100 feet.

3. W1–8 signs are used for "long" curves. Three signs must be seen in each direction at all times throughout the curve. They are installed on the outside of the curve. For purposes of this standard, "long" curves have arc lengths of 100 feet or more.

4. Determine R and Θ of the curve for the outside curb line of the street. Calculate the arc length by the formula \( L = 2 \pi R \theta / 360 \), and determine if W1–6 or W1–8 signs are to be used.

5. If W1–8 signs are to be used, the spacing is determined by the 20 degree half cone-of-vision, where three should be seen within this angle. Thus, each sign is 6.7 degrees apart, which corresponds to a 13.3 degree central angle. The maximum spacing is calculated from the formula \( S = 2 \pi R (13.3) / 360 \) and rounded values are shown in the table.

6. Adjust S downward from the value derived from the formula calculation or table, where the arc length is not an integer multiple of the value. Along a given arc length S may vary somewhat due to trees, driveways or other spacing obstructions.
City of Los Angeles

City Limit Sign

Atwater Village

Community/District Name Sign

- Community or District names that would exceed the 96" maximum length shall require two lines of text, with a 24" height.

Castle Heights Neighborhood

Custom Neighborhood Sign
City Limit Signs (Sign No. 4130, MMS No. 5731 624)

Installed and maintained by LADOT near official City Limit locations on arterial streets. Blue background with 6” upper case and 4 1/2” lower case letters.

Community/District Name Signs (Sign No. 4160, MMS No. 5731 627)

Installed and maintained by LADOT near Community Plan Boundaries on arterial streets identified in the adopted Community Plan, or as adopted by resolution of the City Council between Community Plan updates. Each sign is individually fabricated by LADOT for the specific community. Blue background with 6” upper case and 4 1/2” lower case letters.

Custom Neighborhood Signs

These signs are generally not installed nor maintained by LADOT, due to the numerous variations and styles. They are designed by the local community, retail district or neighborhood under an officially sanctioned program of the City, and as approved by the affected Council office. Each installed sign shall be purchased by the local group and installed by a sign installation firm acceptable to LADOT. A map of the proposed locations of all signs shall be provided to the General Manager, LADOT, by the City agency sponsoring the project. Requirements for these unique signs are as follows:

Sign - Size shall be no greater than three feet horizontally or vertically, with a maximum total area of nine square feet.

Colors should be reflectorized and may be any background color except red, yellow, orange, white, or black, in order to avoid confusion with stop signs, warning signs, construction signs and regulatory signs. Signs preferably should have one background color and one contrasting legend color. The text shall be restricted to community identification. Slogans and words, such as “Welcome” and “Leaving” may not be included in the text. A logo or community symbol may be shown.

Anti graffiti film should be used.

Material shall be 0.08 inch minimum thickness aluminum stock, pre-drilled with two 3/8 inch diameter holes, centered with one near the top of the sign and one near the bottom. Corners of sign shall have a minimum 0.50 inch radius.

Shape shall not be a regular octagon (Stop sign), an equilateral triangle with one point down (Yield sign), or a diamond (Warning sign).

Installation - Signs shall be installed only by a qualified sign installer approved by LADOT. A list of qualified sign installers can be obtained by calling the LADOT Field Coordination Section, telephone (213) 580-5367. A listing of LADOT approved sign manufacturers can also be obtained at this number.

Signs should be installed on steel street lighting poles, upon receiving approval from the Bureau of Street Lighting. They may be installed on street lighting poles with parking restriction signs. However, they may not be installed on traffic signal poles, nor on street lighting poles with other warning, regulatory or, unrelated guidance traffic signs. They may be installed in combination with G60 signs in retail districts. Where feasible they should be installed at a clearance height greater than 7 feet. so that they will be less prone to vandalism. LADOT reserves the right to remove Custom Neighborhood Signs not in conformance with these guidelines.
“Duke” Ellington Square
EDWARD KENNEDY ELLINGTON,
BIG BAND JAZZ LEADER

1. The sign shall have brown letters on a tan background with the mission shape outline and the City Seal on top.
2. The name of the intersection or facility shall use 4 inch upper case and 3 inch lower case serif letters.
3. Below the name identification shall be a short description of the person's significance, using all upper case serif letters. Refer to the Council File for guidance as to the commemorated person's significance.
4. The sign shall not include the name of any current elected official.
5. The designation shall have been approved by the City Council or an official state or federal historical committee prior to installation.
Authority

Installation of these signs is subject to completion of an "Application for Installation of Official Neighborhood Watch Sign" and receipt of Los Angeles Department of Transportation (LADOT) approval.

The name of elected officials, donating parties, sponsoring parties, neighborhood groups or neighborhood councils, etc. shall not be shown on the sign.

Sign

Size shall be no greater than 24 inches vertically and 18 inches horizontally. Appearance shall be as shown by the sample on the right.

Colors should be reflectorized. All lettering is black. Top and bottom portion are orange background, middle portion is white background. The Burglar figure is black in color and the circle and slash is red in color.

Anti-graffiti film should be used.

Material shall be 0.08 inch minimum thickness aluminum stock, pre-drilled with two 3/8 inch diameter holes, centered with one near the top of the sign and one near the bottom. Corners of sign shall have a minimum 0.50 inch radius.

Installation

Signs shall be manufactured and installed only by qualified sign companies approved by LADOT.

Signs should be installed on non-wooden street lighting poles. They may be installed on street lighting poles with parking restriction signs. However, they may not be installed on traffic signal poles, nor on street lighting poles with other warning, regulatory, or guidance traffic signs facing the same direction. They should be installed at a clearance height greater than 7 feet so they will be less prone to vandalism. LADOT reserves the right to remove Neighborhood Watch Signs not in conformance with these guidelines.

Maintenance

LADOT is not responsible for the maintenance of these signs. If the signs are damaged or stolen, the local group is responsible for sign replacement and reinstallation using only LADOT approved sign companies.
Painted Area = 30 sq/ft

Material for pavement markings shall be Alkyd Thermoplastic in accordance with current LADOT specifications.
Notes:

1. Signs shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 12"x15", and legend lettering size shall be as noted above. The arrow is 1½" in height and can be Double, Left or Right. The border shall be ¼" wide and spaced ⅛" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacturer "code" and date of fabrication e.g. "SM 09/05", b) "Property of City of Los Angeles", c) LADOT Stock Number 2530.

4. The background color is white. The large "P" is black. The circle and slash, arrow and border are red.

5. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:

1. Signs shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 12"x18", and legend lettering size shall be as noted above. The font is Highway Gothic Series C type. All lines of legend are to be centered. The border shall be \( \frac{3}{4} \)" wide and spaced \( \frac{3}{4} \)" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacturer "code" and date of fabrication e.g. "SM 09/05", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. The background color is white. The large "P" is black. The circle and slash, all text and border are red.

5. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:
1. Sign shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 12" X 18", and legend lettering size shall be as noted above. The arrow is $\frac{3}{8}$" in height and can be Double, Left or Right. All lines of legend are to be centered. The border shall be $\frac{3}{8}$" wide and spaced $\frac{3}{8}$" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacture "code" and date of fabrication e.g. "SM 09 / 05", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. The background color is white. The large "P" is black. The circle and slash, all text, arrow and border are red.

5. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:

1. Signs shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 12"x18", and legend lettering size shall be as noted above. The font is Highway Gothic Series C type. All lines of legend are to be centered. The border shall be ¼" wide and spaced ¼" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacturer "code" and date of fabrication e.g. "SM 09/05", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. The background color is white. The large "P" is black. The circle and slash, all text and border are red.

5. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:
1. Signs shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.
2. Sign size is 18"x24", and legend lettering size shall be as noted above. The font is as noted. All lines of legend are to be centered. The border shall be 1/4" wide and spaced 1/4" from edge of sign.
3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacturer "code" and date of fabrication e.g. "MS 12/08", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).
4. The background color is white. The large "P" is black. The circle and slash, all text, arrow and border are red.
5. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:
1. Sign shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 18" X 24", and legend lettering size shall be as noted above. The font is as noted. All lines of legend are to be centered. The border shall be \( \frac{1}{4} \)" wide and spaced \( \frac{3}{4} \)" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacture "code" and date of fabrication e.g. "SM 09 / 05", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:
1. Sign shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 18" x 24", and legend lettering size shall be as noted above. The font is as noted. All lines of legend are to be centered. The border shall be \( \frac{3}{4} \)" wide and spaced \( \frac{3}{8} \)" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacture "code" and date of fabrication e.g. "SM 09 / 05", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:
1. Sign shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 18" x 36", and legend lettering size shall be as noted above. The font is as noted. All lines of legend are to be centered. The border shall be 1\(\frac{3}{4}\)" wide and spaced 1\(\frac{3}{4}\)" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacture "code" and date of fabrication e.g. "SM 09 / 05", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:

1. Sign shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 18" X 36", and legend lettering size shall be as noted above. The font is as noted. All lines of legend are to be centered. The border shall be $\frac{1}{4}$" wide and spaced $\frac{1}{4}$" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacture "code" and date of fabrication e.g. "SM 09 / 09", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Generally, limit and yield lines are located along the extension of the property line. They shall be placed at the near side or upstream of the flat portion (w) of any access ramp. The distance between the curb line extended and the limit line shall be at least 5 feet. The limit line should extend to the middle of the street or the striped centerline.

<table>
<thead>
<tr>
<th>POSTED SPEED (mph)</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>C * (ft)</td>
<td>100</td>
<td>100</td>
<td>125</td>
<td>175</td>
<td>250</td>
<td>325</td>
</tr>
</tbody>
</table>

* Distance may exceed the dimensions in the table by up to 100' in order to adjust to the field conditions.

Approved: December 11, 2008

Rita L. Robinson, General Manager

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Typical Pavement Marking Installations

NOT TO SCALE
Notes
1. Maintain 20' fire lane through closure area.
2. Type III barricades shall cover entire street with no more than a 4' gap between barricades or barricade and curb.
3. Minimum 28" tall traffic cone spaced a maximum 25' apart on all turn lanes into closure area.
4. Permanent signs to be installed by LADOT. Permittee shall reimburse LADOT for the sign fabrication and installation cost.
5. Permittee shall provide install and maintain barricades, R11-2 signs mounted on barricades and traffic cones as shown. Permittee must wear safety vest, conforming to ANSI/ISEA 107-2004 when installing and removing signs, cones, and barricades.
6. Additional traffic controls may be required as determined by LADOT.
Notes:
1. Maintain 20' fire lane through closure area.
2. Type II barricades shall cover entire street with no more than a 4' gap between barricades or barricade and curb.
3. Permittee shall obtain R11-2 signs and barricades from the Bureau of Street Services and install and maintain barricades as shown. Permittee must wear safety vest, conforming to ANSI/ISEA 107-2004 when installing and removing signs and barricades.
4. The installation of Temporary No Parking signs are optional. If requested by permittee, LADOT shall be reimbursed for the installation cost.
5. Additional traffic controls may be required as determined by LADOT.
John Ferraro
Councilmember, 4th District
FIELD OFFICE

Sign
Size shall be 36" vertically and 60" horizontally. Background color shall be blue and reflectorized. Letters and border are white. Anti-graffiti film shall be used. Material shall be 0.08 inch minimum thickness aluminum stock. Corners of sign shall be 2 inch radius.

Installation
Signs shall be installed on two heavy duty sign posts. Signs may not be installed on traffic signal poles, or on street lighting poles. Signs should be installed at a clearance height of 10 feet so they will be less prone to vandalism.

Authority
District Office is responsible for determining the exact name and spelling on the sign. Fabrication and installation work orders should be initiated by District Office. Field Operations should install the signs on or before the effective date the new Councilmember assumes office.

Approved February 9, 2010

John E. Fischer
Rita L. Robinson, General Manager

CITY OF LOS ANGELES
DEPARTMENT OF TRANSPORTATION

Council District
Field Office Sign

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<td>29</td>
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<td>50</td>
<td>T.C.</td>
<td>S-520.0</td>
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Notes:
1. Sign shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 18" X 24", and legend lettering size shall be as noted above. The font is as noted. All lines of legend are to be centered. The border shall be ¼" wide and spaced ¼" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacture "code" and date of fabrication e.g. "SM 09 / 05", b) "Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.
Notes:
1. Sign shall be fabricated by a qualified, professional sign manufacturer approved by LADOT.

2. Sign size is 18" X 18", and legend lettering size shall be as noted above. The arrow is 1½" in height and can be Double, Left or Right. All lines of legend are to be centered. The border shall be ¼" wide and spaced ½" from edge of sign.

3. All signs shall include (reading left to right) at the bottom of the sign the following information: a) if fabricated by a private contractor, a manufacture "code" and date of fabrication e.g. "SM 09 / 05", b) *Property of City of Los Angeles", c) LADOT Stock Number (four numbers).

4. The background color is white. All text, arrow and border are red.

5. Sign shall be made of .080 Aluminum and have reflective SEG Type II material with graffiti film.