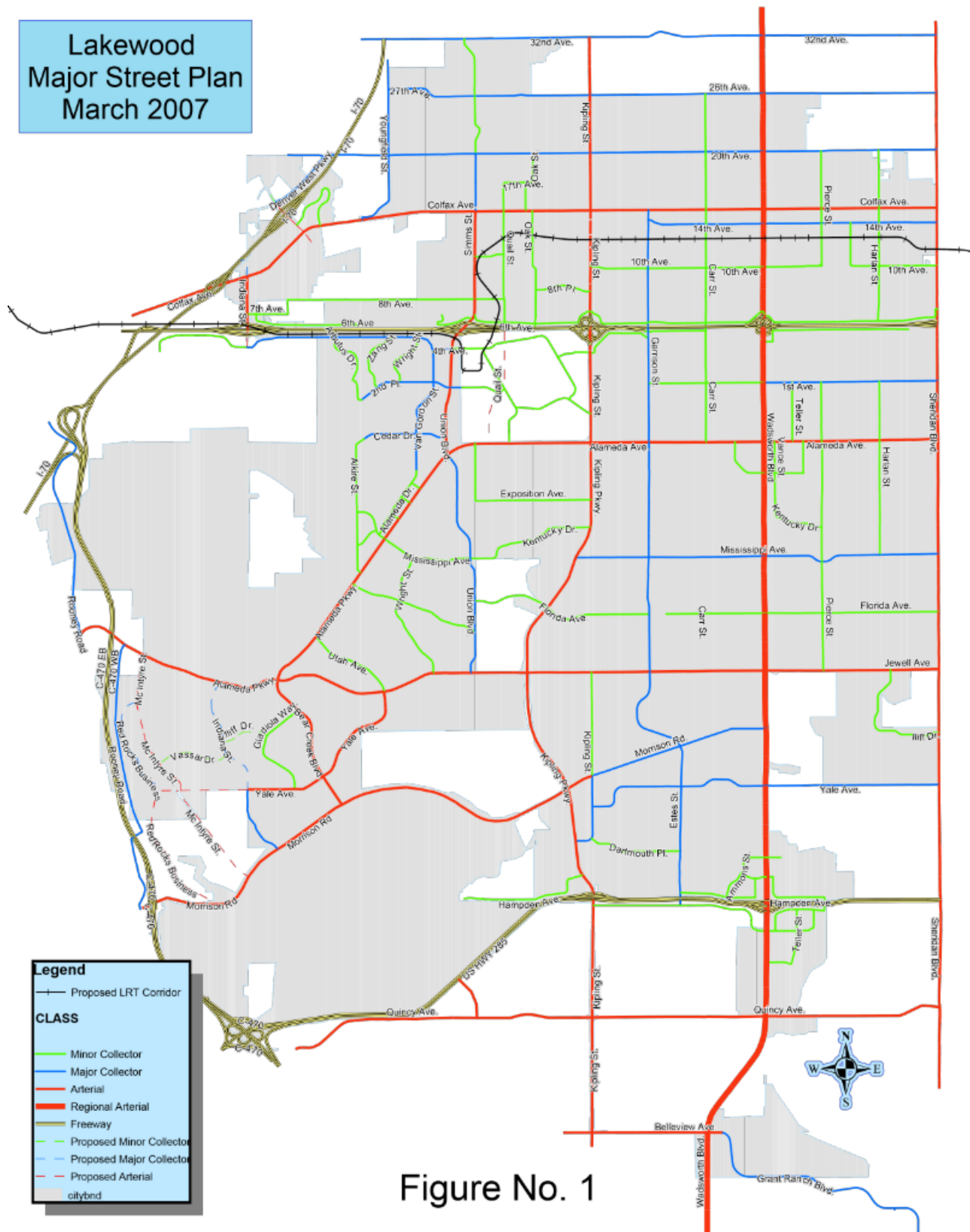
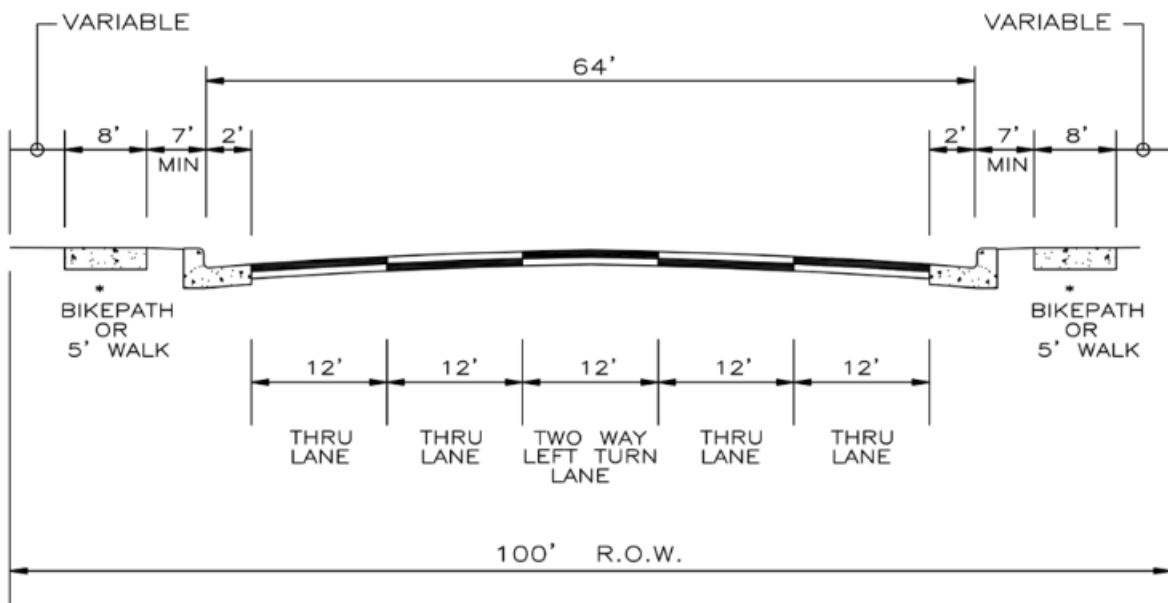


APPENDIX

Lakewood
Major Street Plan
March 2007





Notes:

1. Bikepath, bike lanes and walk is determined by the Bicycle Master Plan.
2. Four feet (4') of additional pavement width will be added to each side if bike lanes are required.
3. Raised or depressed median island are required where necessary to control left turn movements or to provide landscaped areas.
4. See text section 2.2 and 6.

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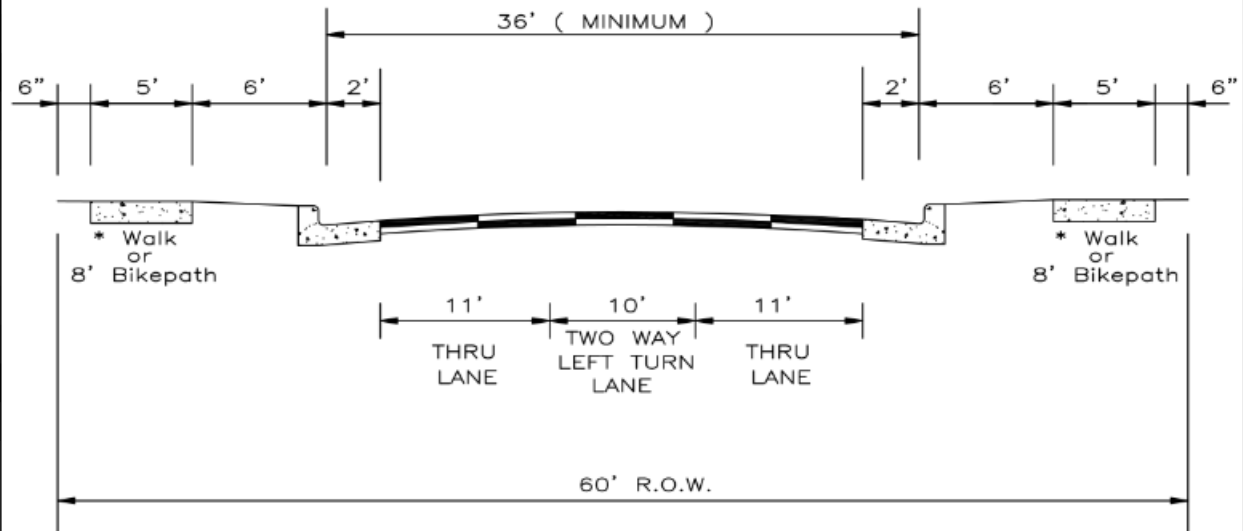
REVISIONS DATE:

October 2006

MINIMUM ARTERIAL ROADWAY

FIGURE NO.

2



Notes:

1. Bikepath, bike lanes and walk is determined by the Master Bicycle Plan.
2. Four feet (4') of additional pavement width will be added to each side if bike lanes are required.
3. Existing collector street with backout drives must be constructed to a minimum 40' flow line to flow line width.
4. See text section 2.2 and 6.

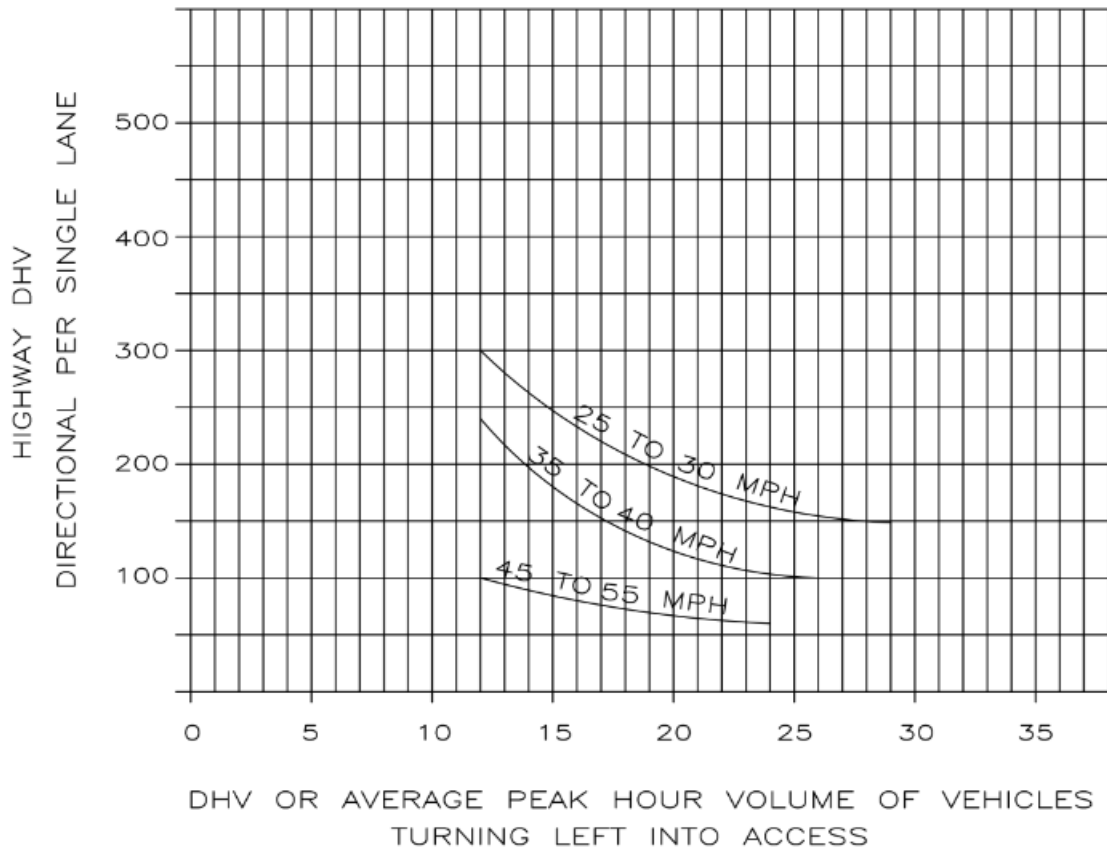
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COLLECTOR STREET & LOCAL STREET FOR
FOR
MULTI FAMILY, COMMERCIAL & INDUSTRIAL

FIGURE NO.
3

<u>SECTION A</u> 27'-4" HARD SURFACE 24' FLOW LINE TO FLOW LINE 20' 6' 5' 6' 5' Mountable Curbs 12' 34' R.O.W. 12' PERMANENT EASEMENT PERMANENT EASEMENT		
<u>SECTION B</u> 28' Flow Line To Flow Line 6' 5' 6' 5' Mountable or Barrier Curbs 12' 34' R.O.W. 12' PERMANENT EASEMENT PERMANENT EASEMENT		
<u>Notes:</u> 1. Section A — Parking allowed only on one side of the street. Parking will be on the opposite side of the street from where the water line is located. Water line to be located under paved portion of street. 2. Section A not available for use in Alameda Water & Sanitation District. 3. Permanent easements shall be for traffic control devices, utilities, pedestrians, construction, maintenance and landscaping. 4. See text section 2.2 and 6.		
CITY OF LAKEWOOD, COLORADO DEPARTMENT OF PUBLIC WORKS DIVISION OF TRAFFIC ENGINEERING		
REVISION DATE: October 2006	LOCAL RESIDENTIAL STREET SERVING R1A, RR, 1R, 2R AND 3R LAND USES	FIGURE NO. 4



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DEPARTMENT OF PUBLIC WORKS
DIVISION OF TRAFFIC ENGINEERING

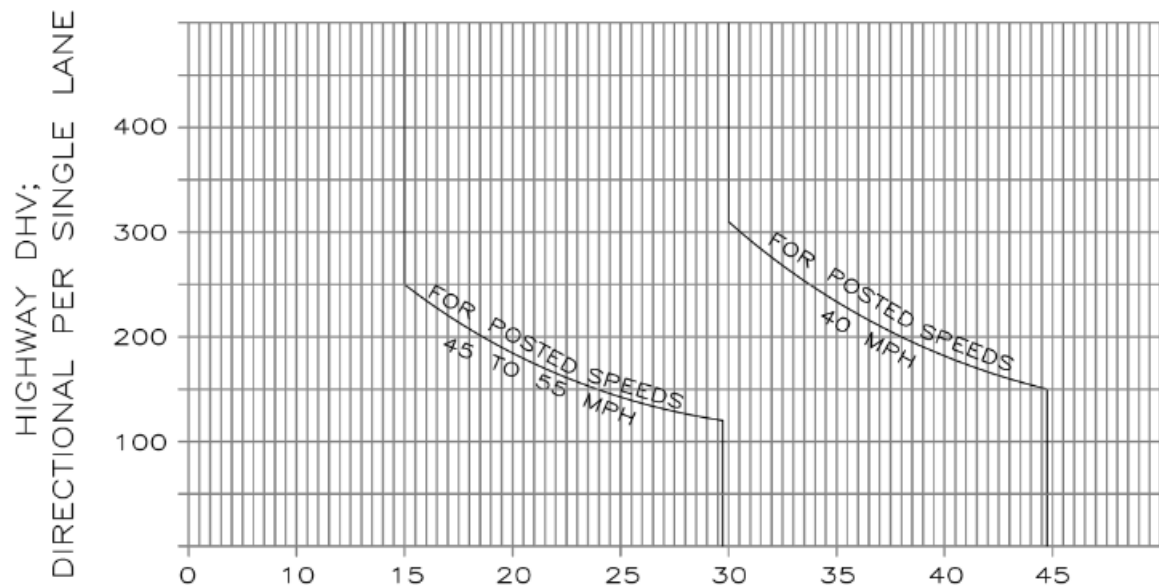
REVISION DATE :

October 2006

VOLUME WARRANTS FOR
LEFT-TURN DECELERATION LANES

FIGURE NO.

5



DHV OR AVERAGE PEAK HOUR
VOLUME OF VEHICLES TURNING RIGHT OUT OF ACCESS

Right turn acceleration lanes not required for
posted speed less than 40 mph.

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DEPARTMENT OF PUBLIC WORKS
DIVISION OF TRAFFIC ENGINEERING

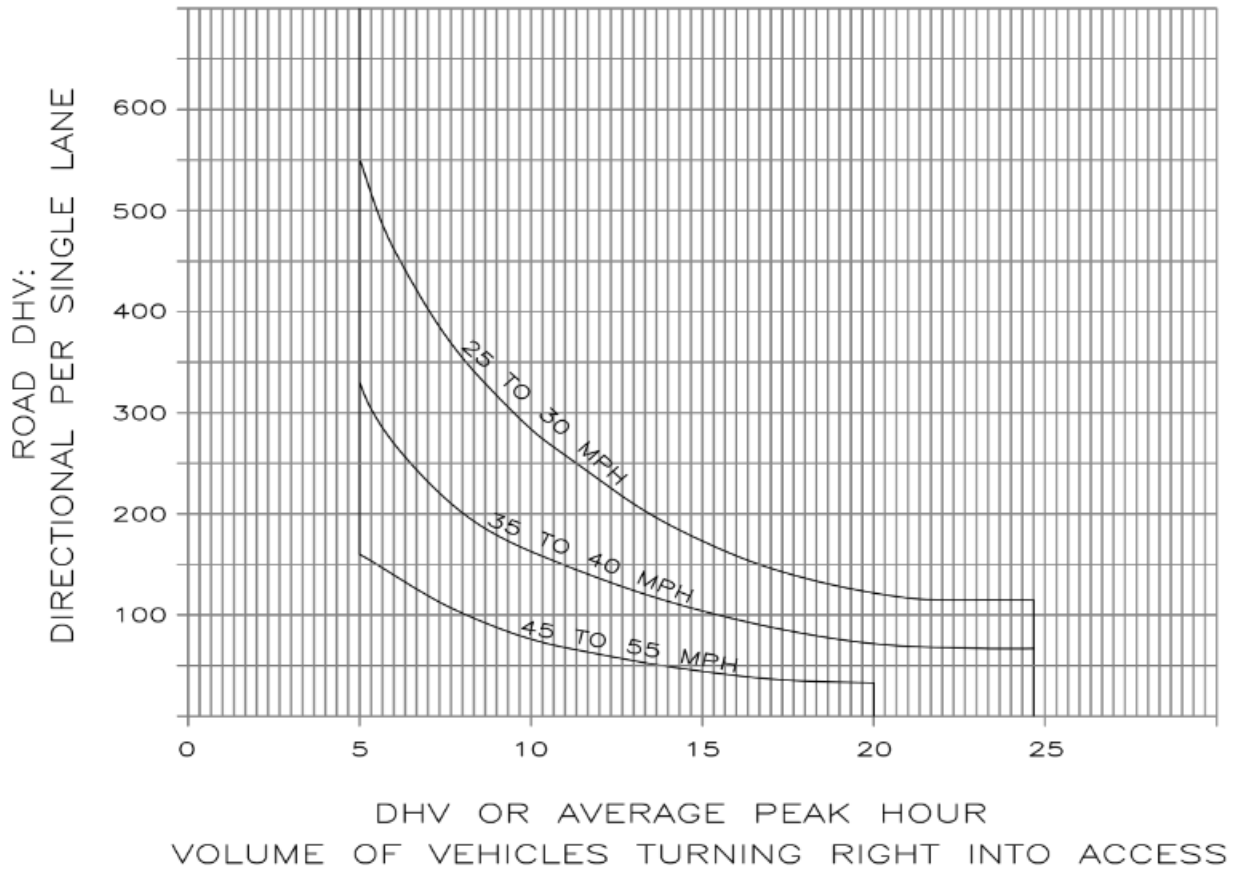
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VOLUME WARRANTS FOR RIGHT TURN
ACCELERATION LANES

FIGURE NO.

6



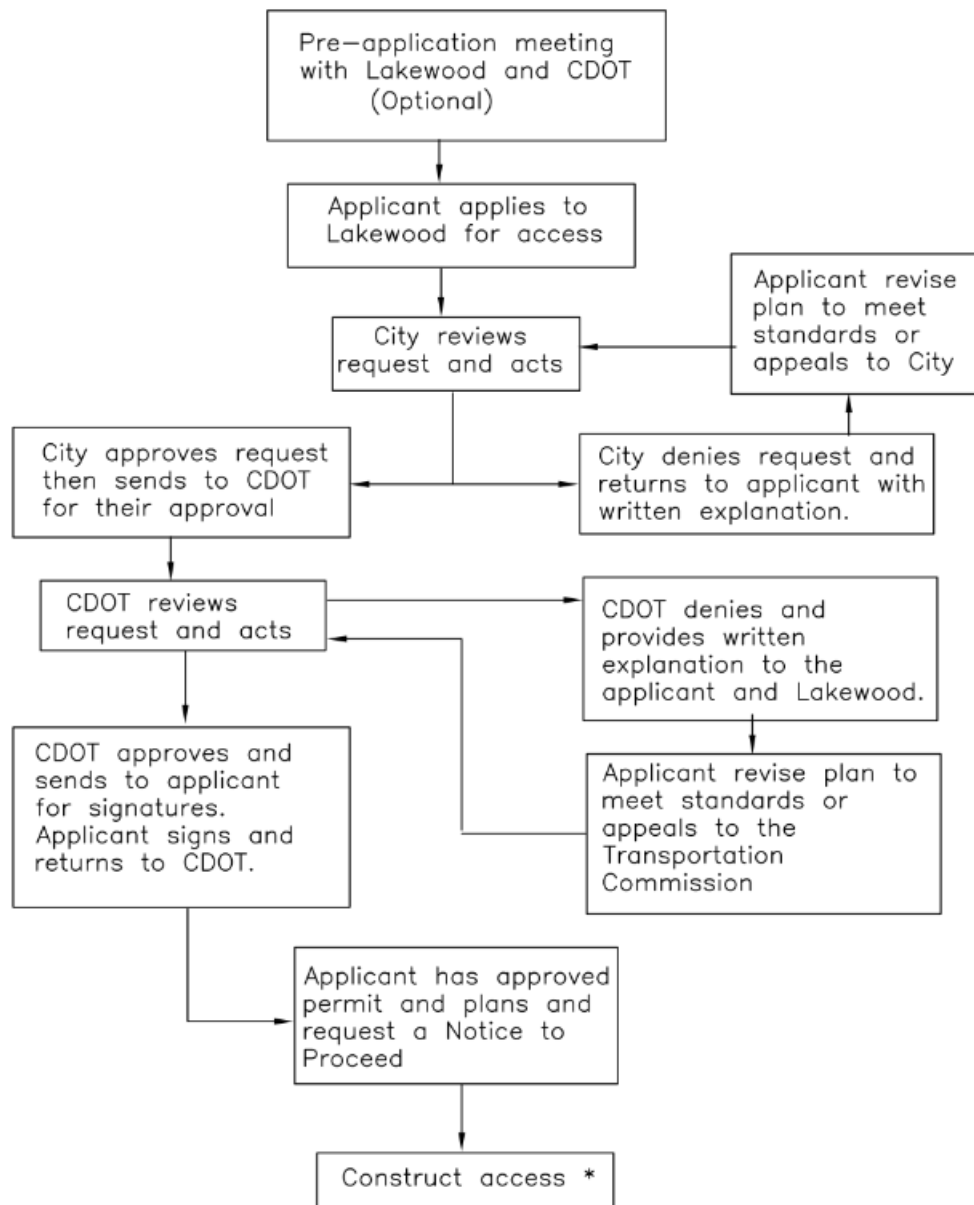
Right turn deceleration lane is required when on or above the relevant curve. Also see section 4.3.

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VOLUME WARRANTS FOR
RIGHT-TURN DECELERATION LANES

FIGURE NO.
7



* If access is not under construction within one year of permitting then the access permit will expire.

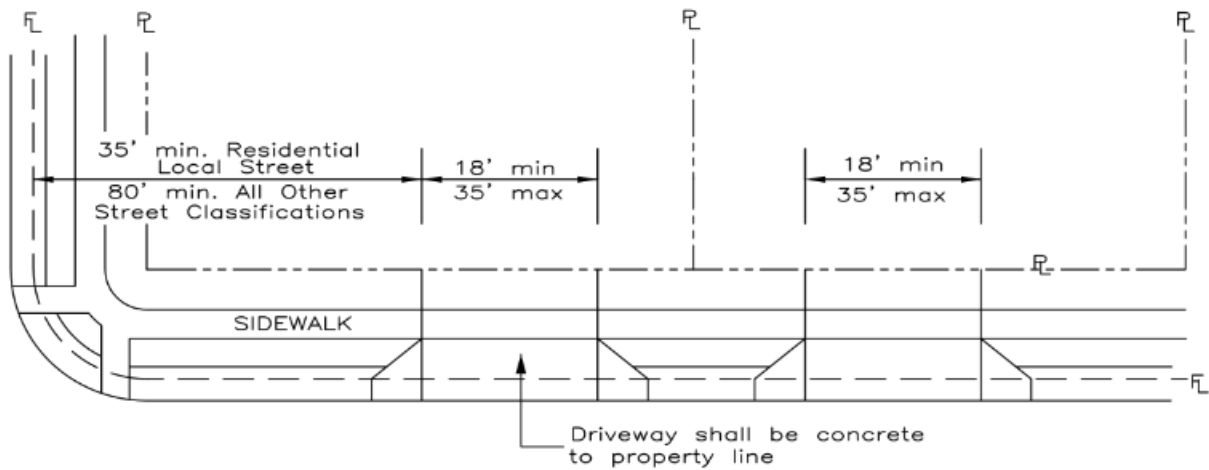
See State Access Code for exact procedures.

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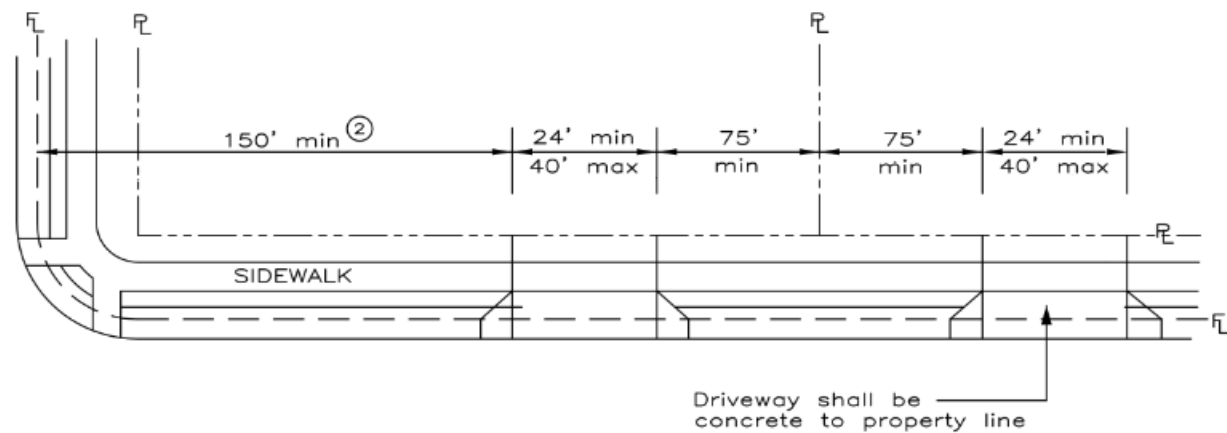
REVISION DATE:
October 2006

STATE HIGHWAY ACCESS PERMIT
PROCEDURE

FIGURE NO.
8



SINGLE FAMILY/DUPLEX ACCESS ①



COMMERCIAL/OFFICE/MULTI-FAMILY/INDUSTRIAL ACCESS ①

1. This standard applies to all street classifications.
2. The 150' dimension from the corner may be increased to provide additional left-turn storage.
3. New and relocated accesses shall align with an access on the opposite side of the street or staggered by 150'.

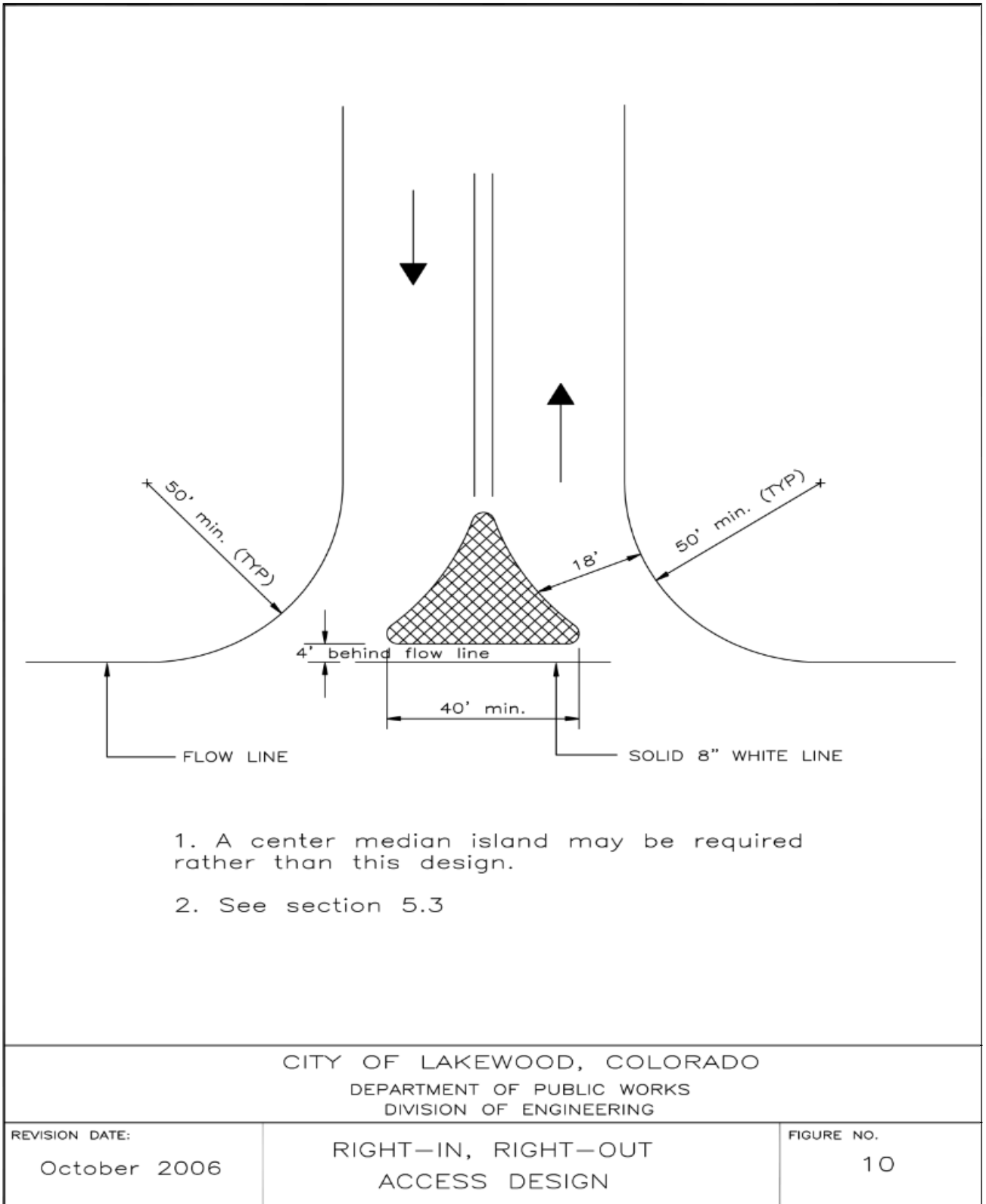
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DEPARTMENT OF PUBLIC WORKS
DIVISION OF TRAFFIC ENGINEERING

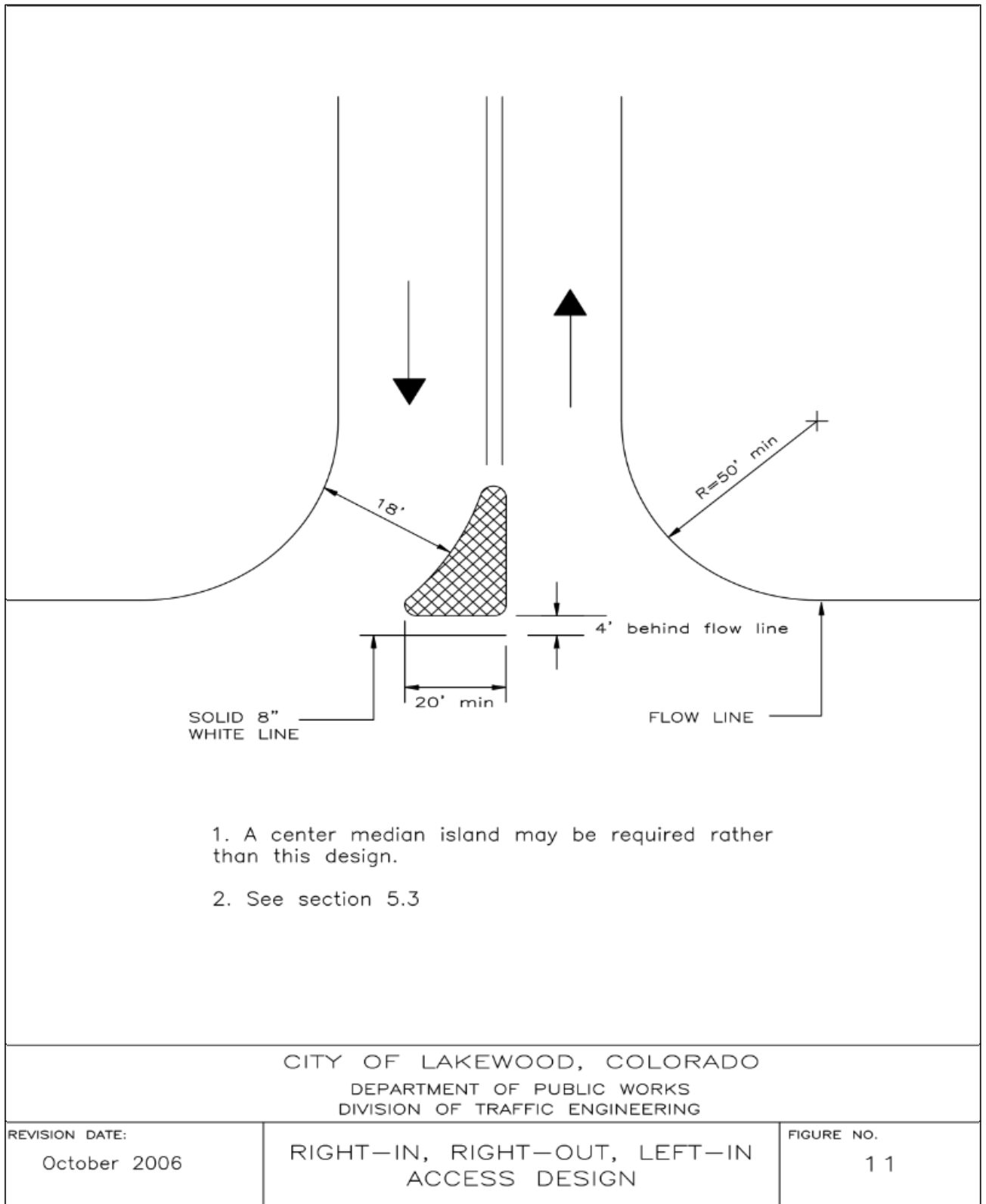
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ACCESS SPACING AND WIDTHS

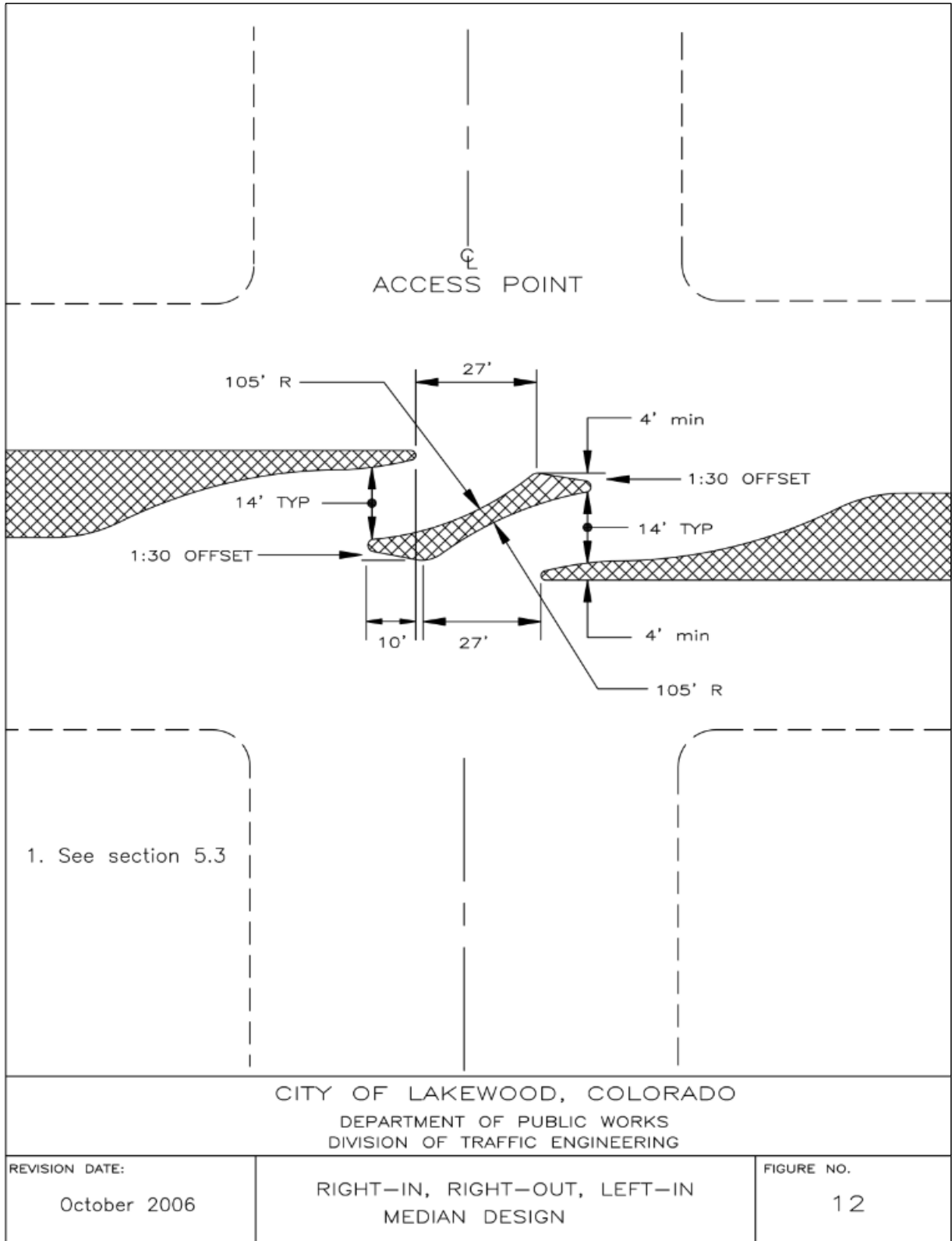
FIGURE NO.

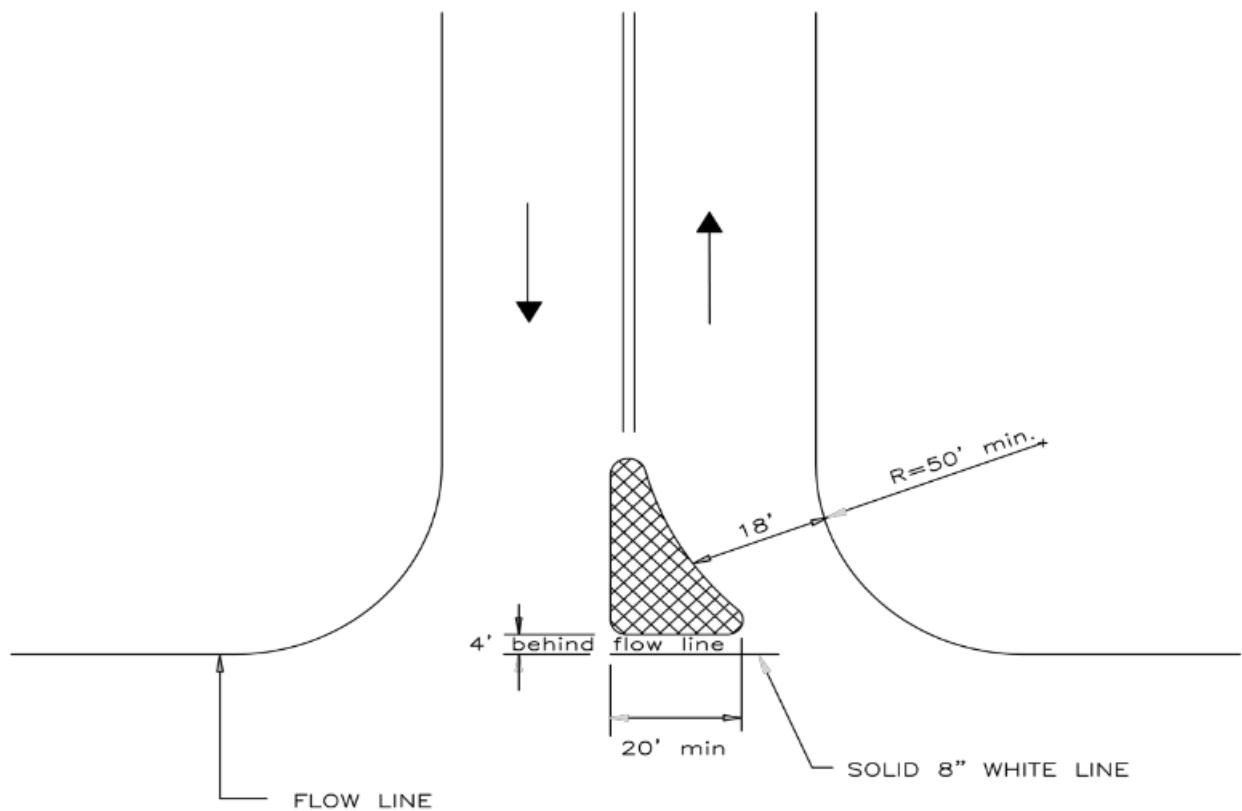
9





D:\Cityard\Traffic\Median Design Right IN-OUT, Left IN





1. A center median island may be required rather than this design.

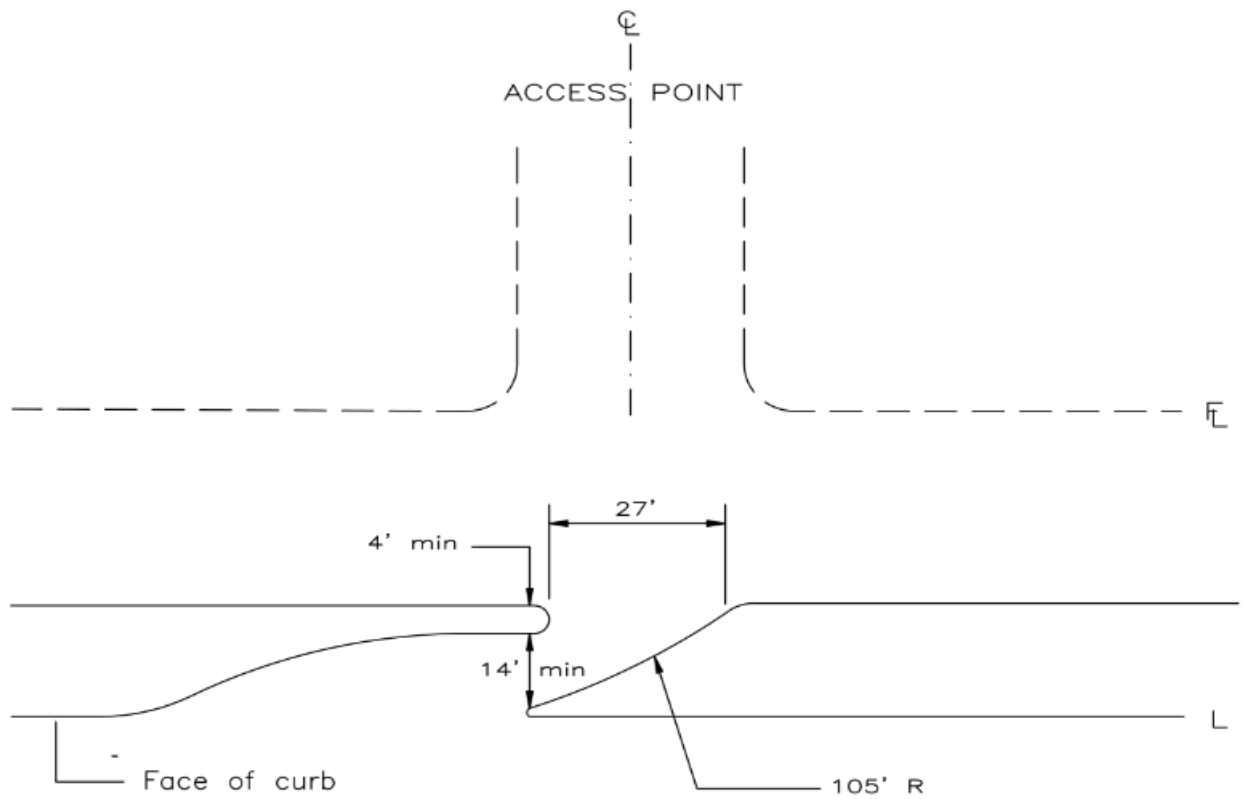
2. See section 5.3

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REVISION DATE:
october 2006

RIGHT-IN, RIGHT-OUT, LEFT-OUT
ACCESS DESIGN

FIGURE NO.
13



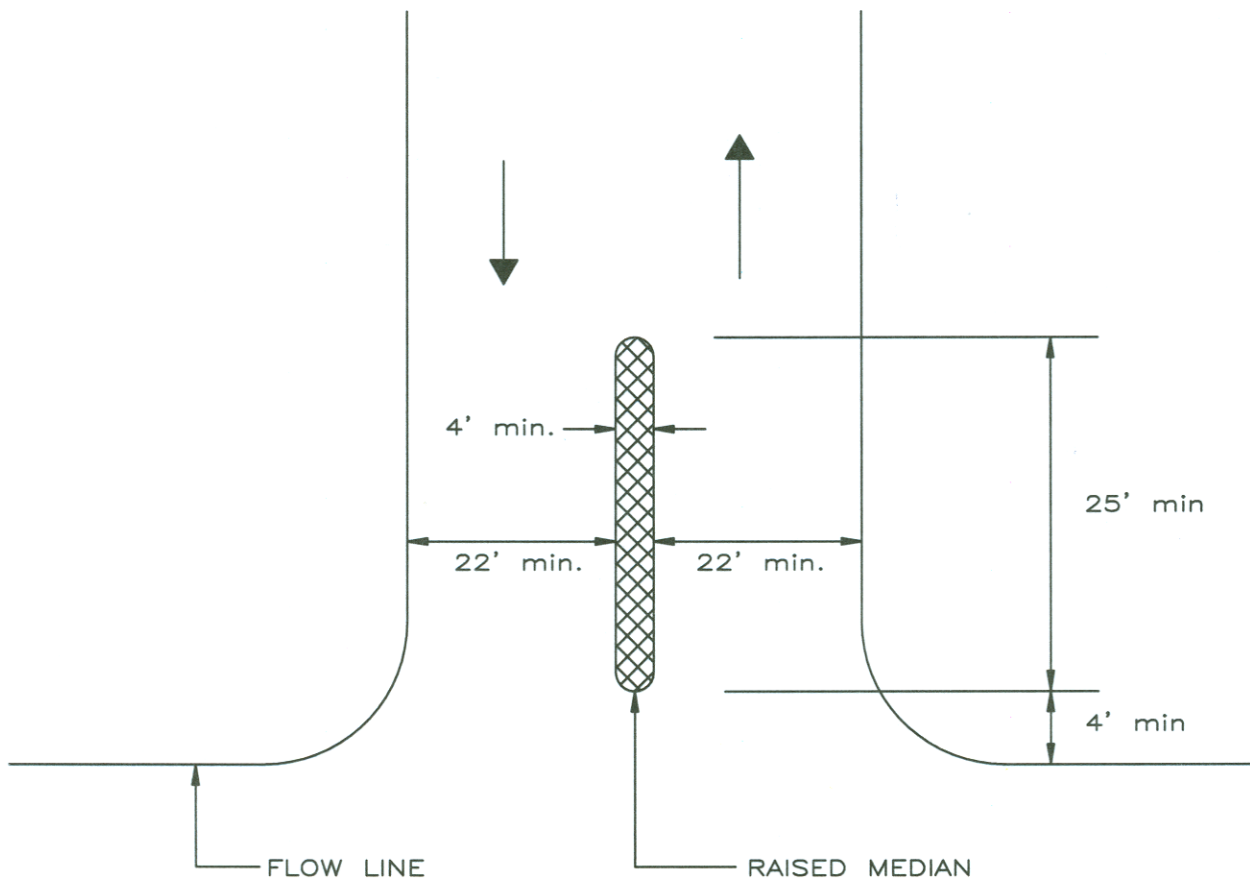
1. See section 5.3

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DIVISION OF TRAFFIC ENGINEERING

REVISION DATE:
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MEDIAN DESIGN TO RESTRICT
EXITING LEFT TURNS

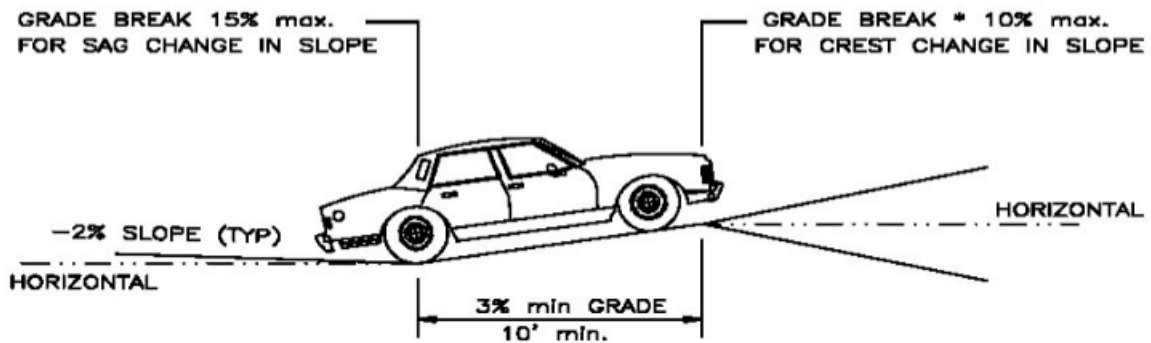
FIGURE NO.
14



1. This access design cannot be used for signalized intersection approaches where left-turn have to be aligned.
2. See section 5.3

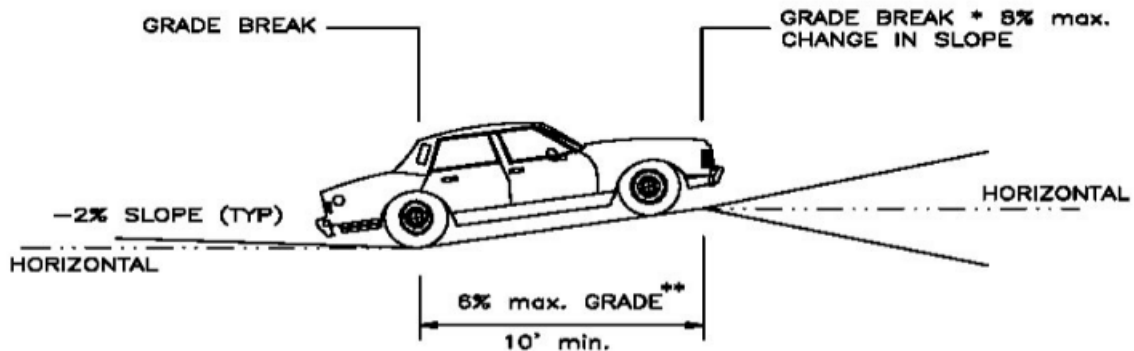
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DIVISION OF TRAFFIC ENGINEERING

REVISION DATE: October 2006	ACCESS DESIGN WITH MEDIAN DIVIDER	FIGURE NO. 15
--------------------------------	-----------------------------------	------------------



LOW DENSITY RESIDENTIAL DRIVEWAYS

* DRIVEWAY GRADES NOT TO EXCEED 14%
ANY VARIANCE TO BE APPROVED BY CITY ENGINEER



HIGH DENSITY RESIDENTIAL & COMMERCIAL DRIVEWAYS

* DRIVEWAY GRADES NOT TO EXCEED 8%

** THE 10' DISTANCE WITH ATTACHED WALKS,
SHALL BEGIN AT THE BACK OF WALK

ANY VARIANCE TO BE APPROVED BY CITY ENGINEER

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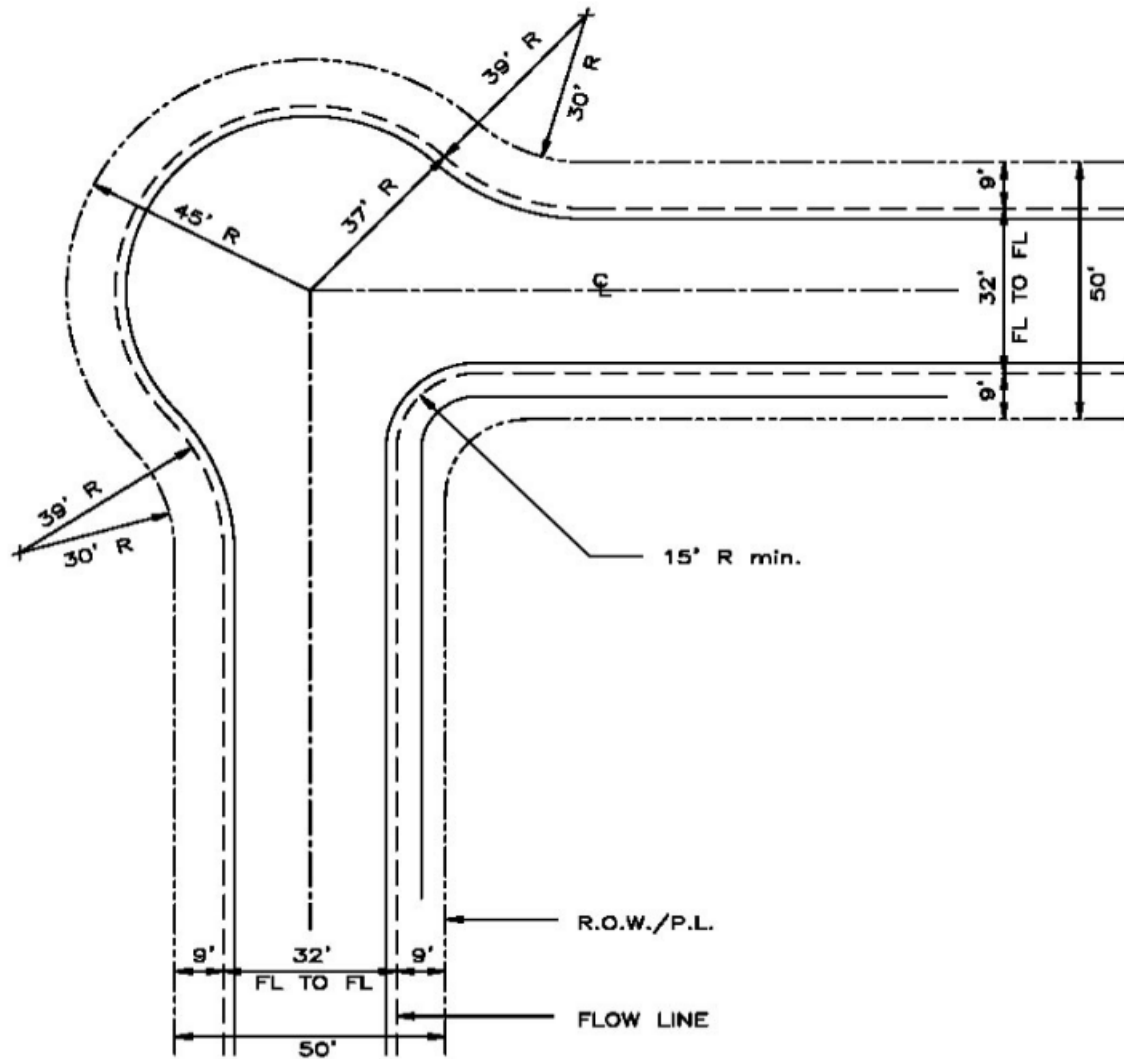
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ACCESS GRADES

FIGURE NO.

16

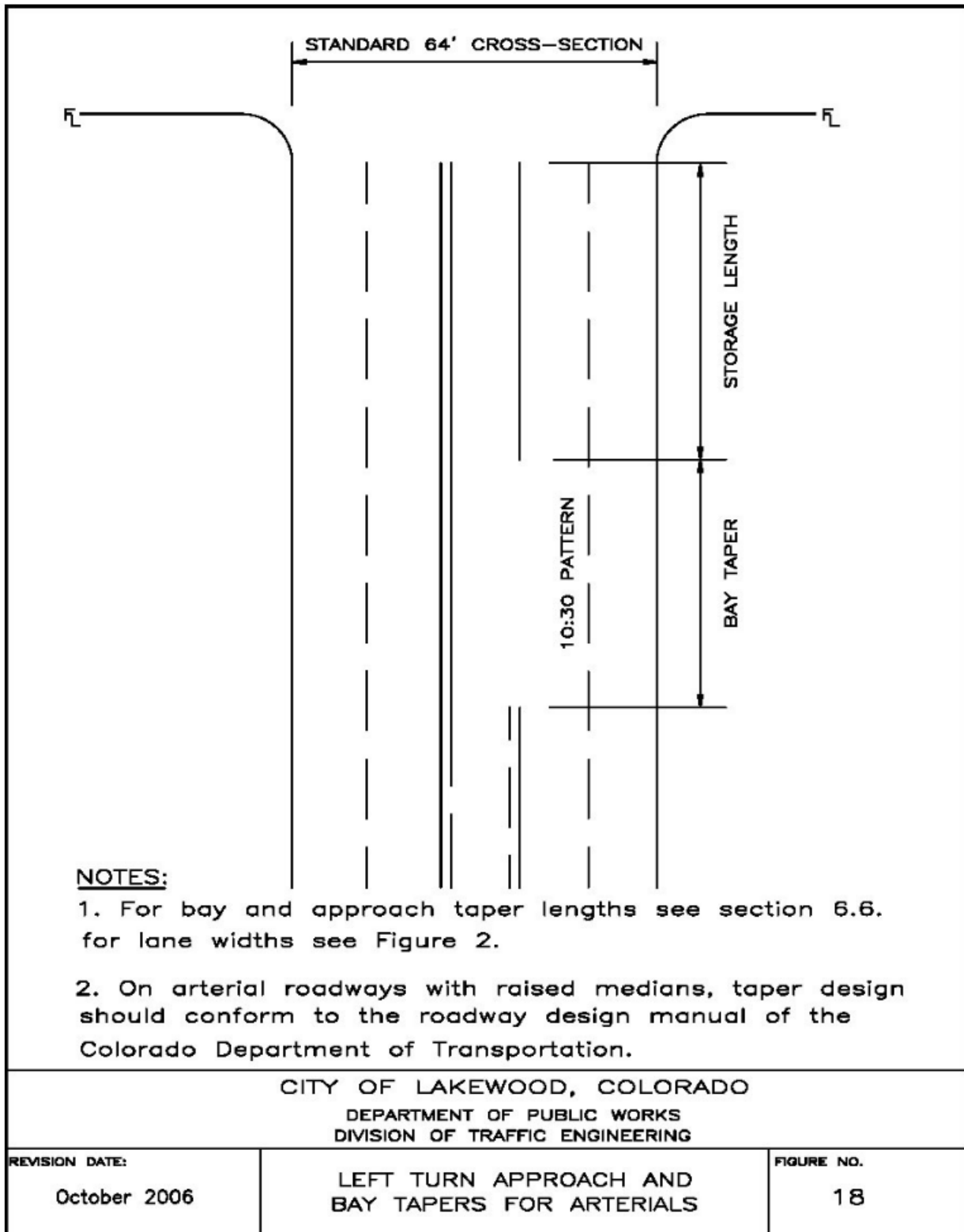


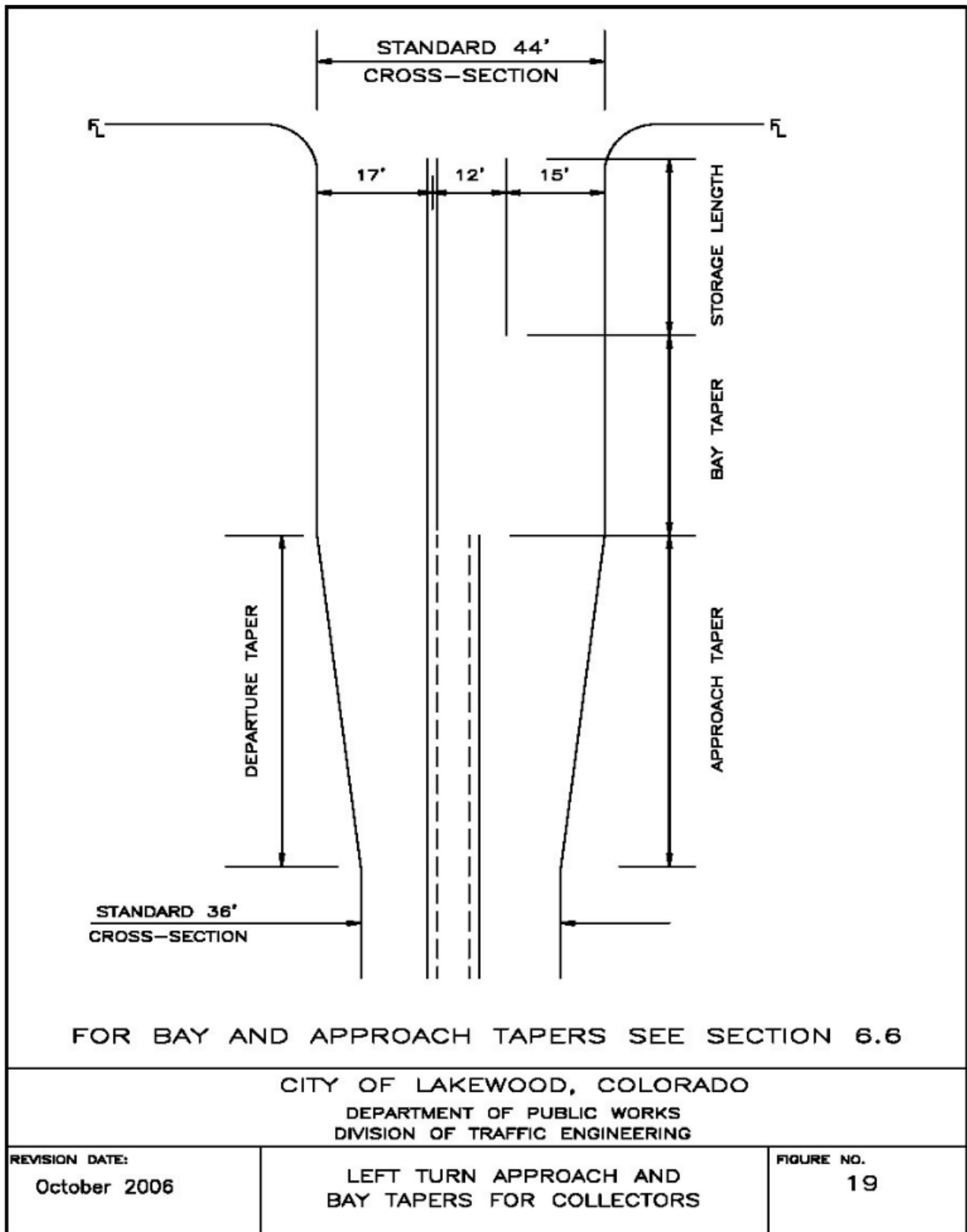
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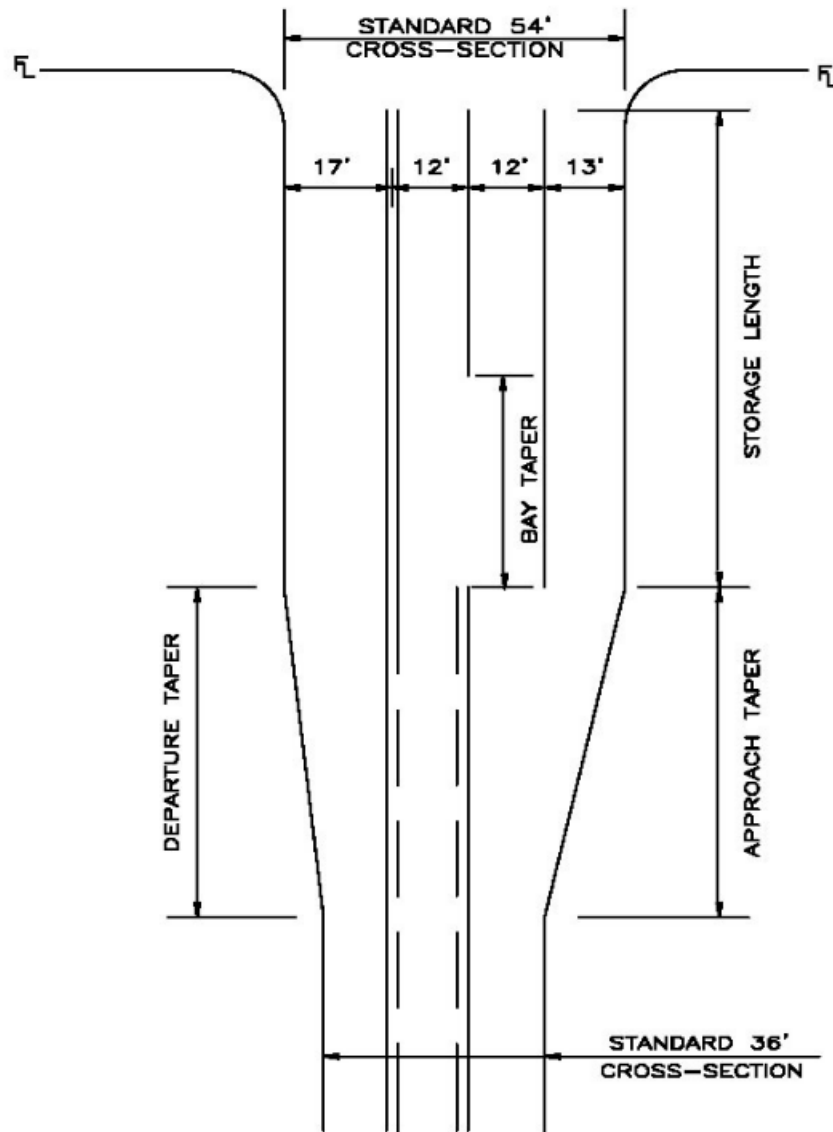
EYE BROW TYPE
CUL-DE-SAC BULB

FIGURE NO.
17





D:\Projects\Traffic\Collector Left Turn Approach



NOTES:

1. This full intersection design is assymetrical. Left turn and thru lane must align with opposite intersection approach.
2. For bay and approach tapers see Section 6.6.

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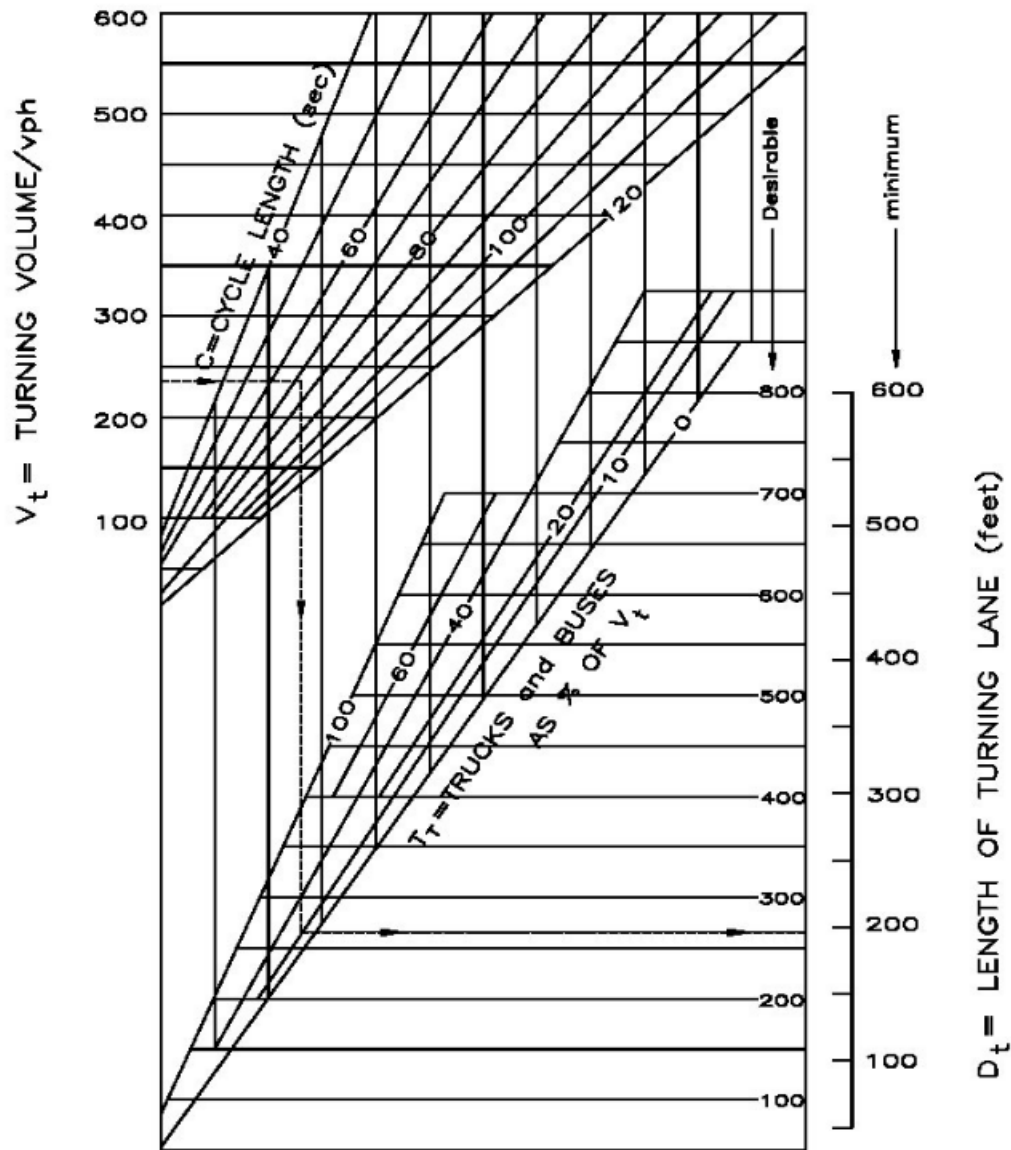
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**54' COLLECTOR STREET APPROACH
WITH RIGHT TURN LANE**

FIGURE NO.

20



1. Use 120 second cycle length for arterial streets.
2. $T_t = 2\%$ minimum.

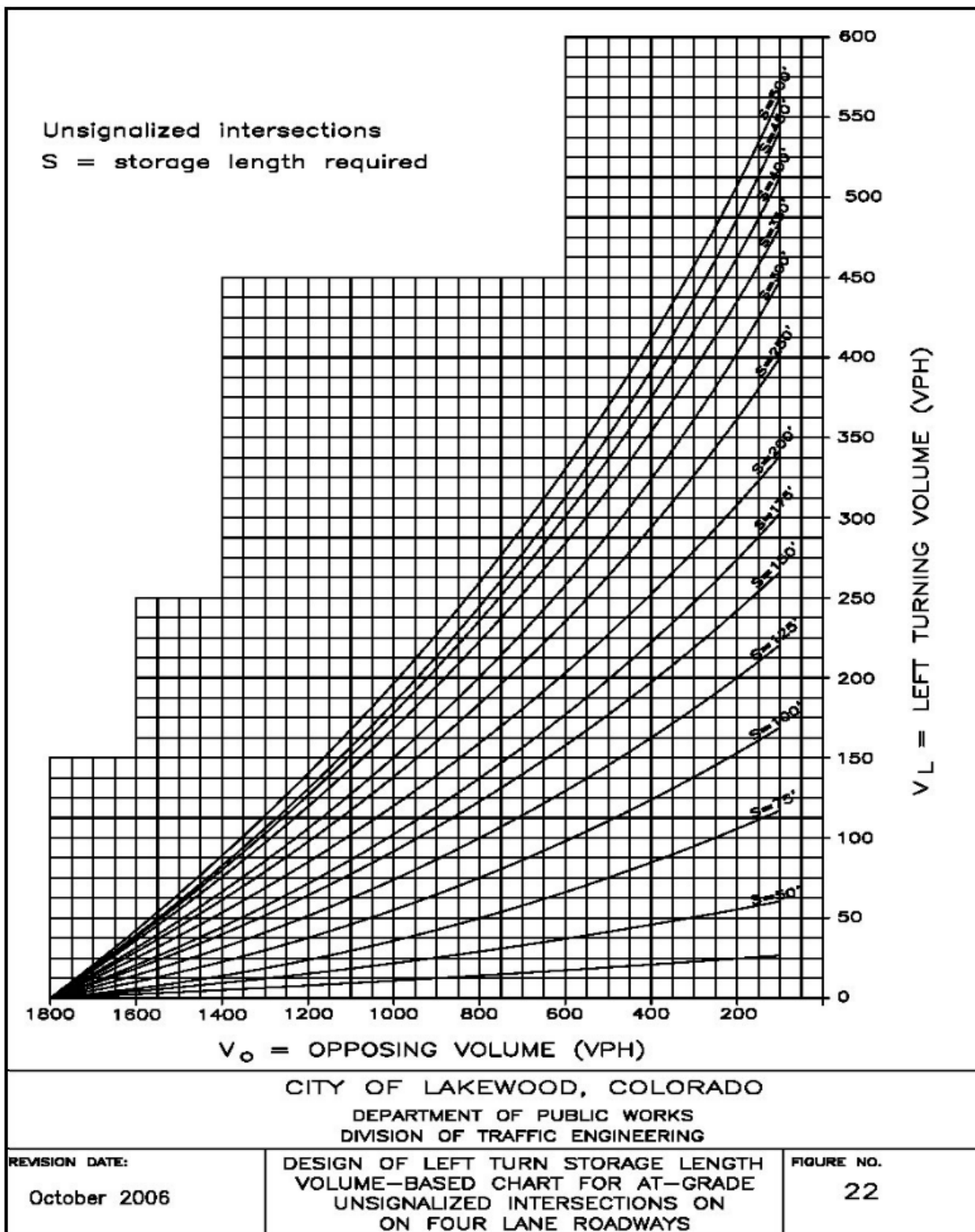
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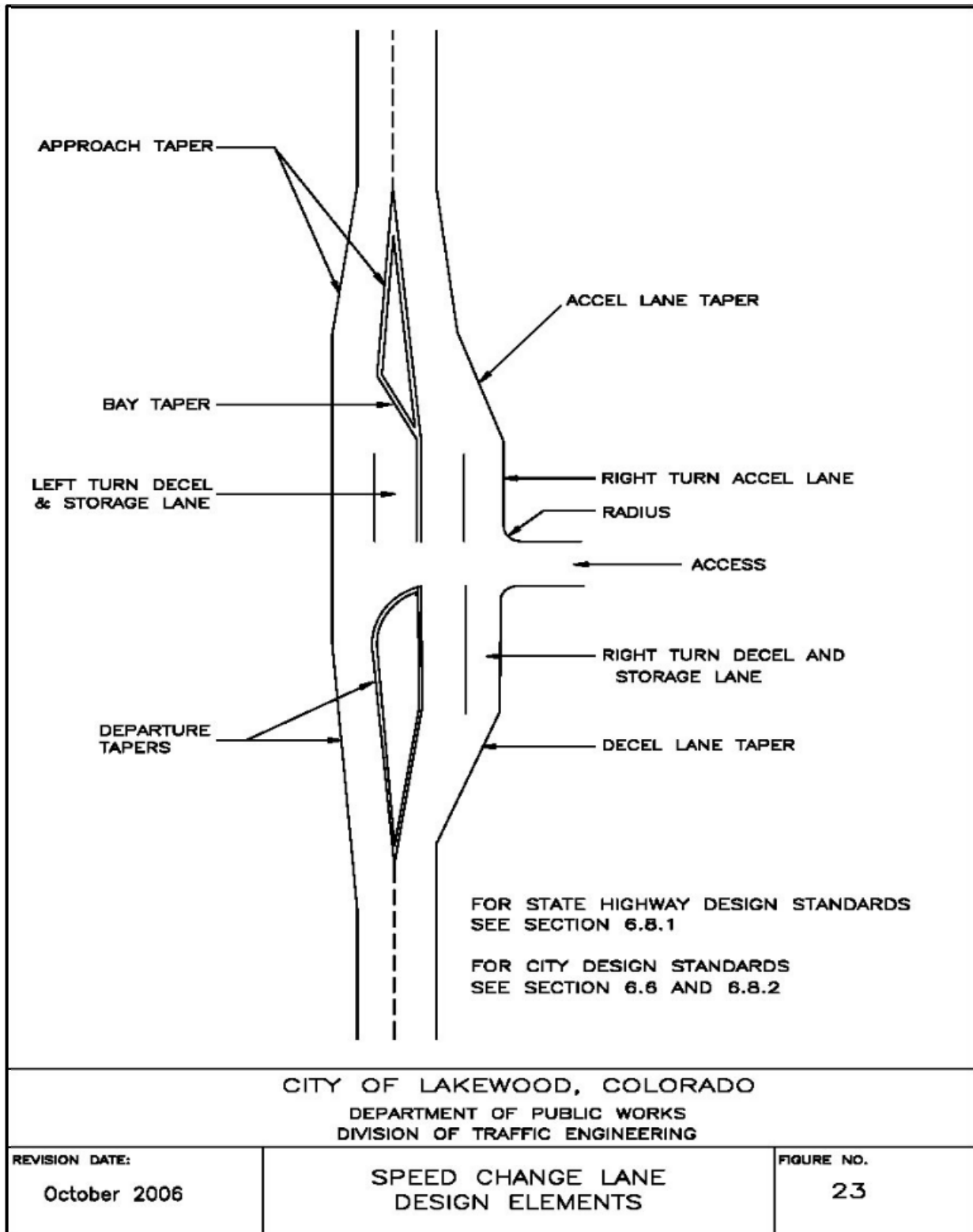
REVISION DATE:
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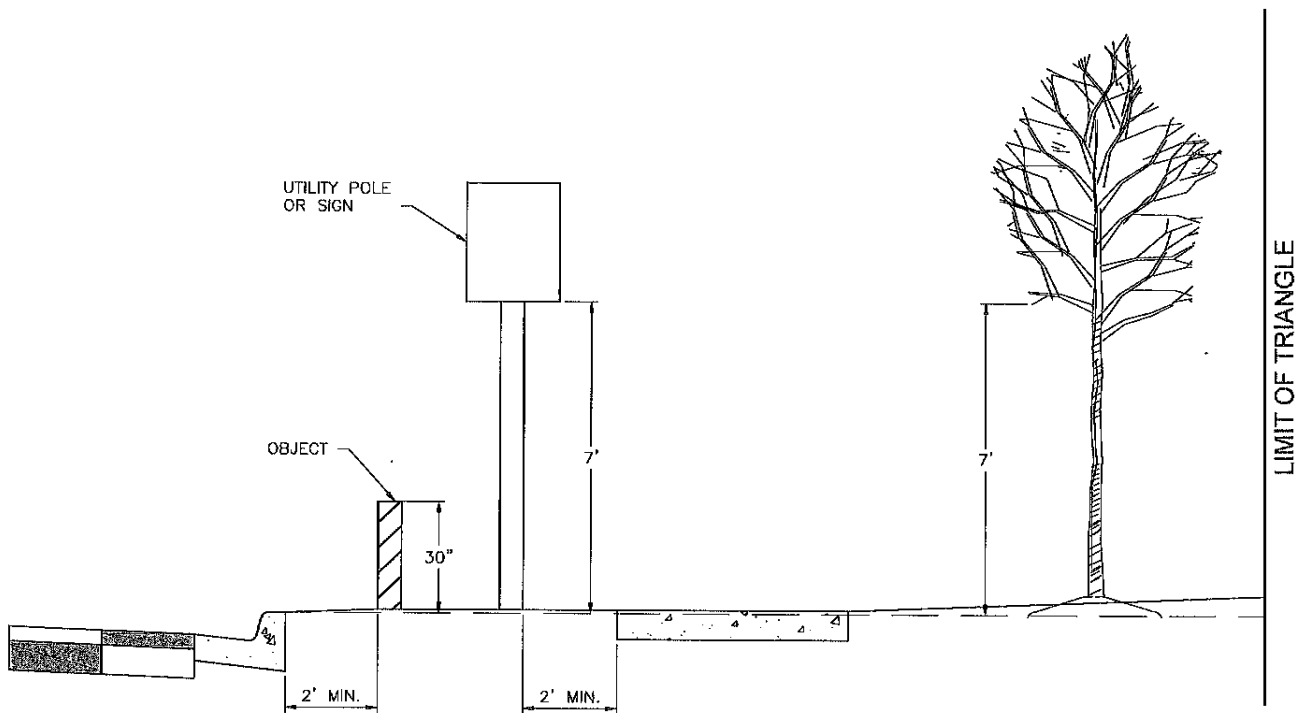
DESIGN OF LEFT TURN STORAGE LENGTH
VOLUME-BASED NOMOGRAPH FOR
AT-GRADE SIGNALIZED INTERSECTIONS

FIGURE NO.
21

C:\Users\Trent\Documents\Volume Base Design Left Turn Storage Chart







OBJECTS WITHIN SIGHT AND VISION CLEARANCE TRIANGLES

NOTES:

1. THE TRANSPORTATION ENGINEERING DESIGN STANDARDS DEFINE ADDITIONAL AREAS IN WHICH SIGHT DISTANCE AND VISION CLEARANCE TRIANGLE CRITERIA APPLY.
2. ITEMS WITHIN THE TRIANGLES MUST BE LOWER THAN 30" OR ABOVE 7'. THE HEIGHT IS MEASURED FROM THE TOP OF CURB.
3. SAFETY DEVICES SUCH AS FIRE HYDRANTS AND TRAFFIC SIGNALS MAY BE LOCATED WITHIN THE TRIANGLES WITH APPROVAL OF THE CITY TRAFFIC ENGINEER.
4. DISTANCES DEPENDENT ON STREET CLASSIFICATION OR SPEED. SEE SECTION 6.9.
5. THE CITY MAY ALLOW FENCING IN THE SIGHT DISTANCE AND VISION CLEARANCE TRIANGLES, SEE ZONING ORDINANCE 17.6.6.3 AND 17.7.8.3.
6. ONE COLUMN (18" WIDE MAX) OR EXISTING UTILITY POLE MAY BE LOCATED IN THE SIGHT OR DISTANCE VISION CLEARANCE TRIANGLE WITH APPROVAL OF THE CITY TRAFFIC ENGINEER.

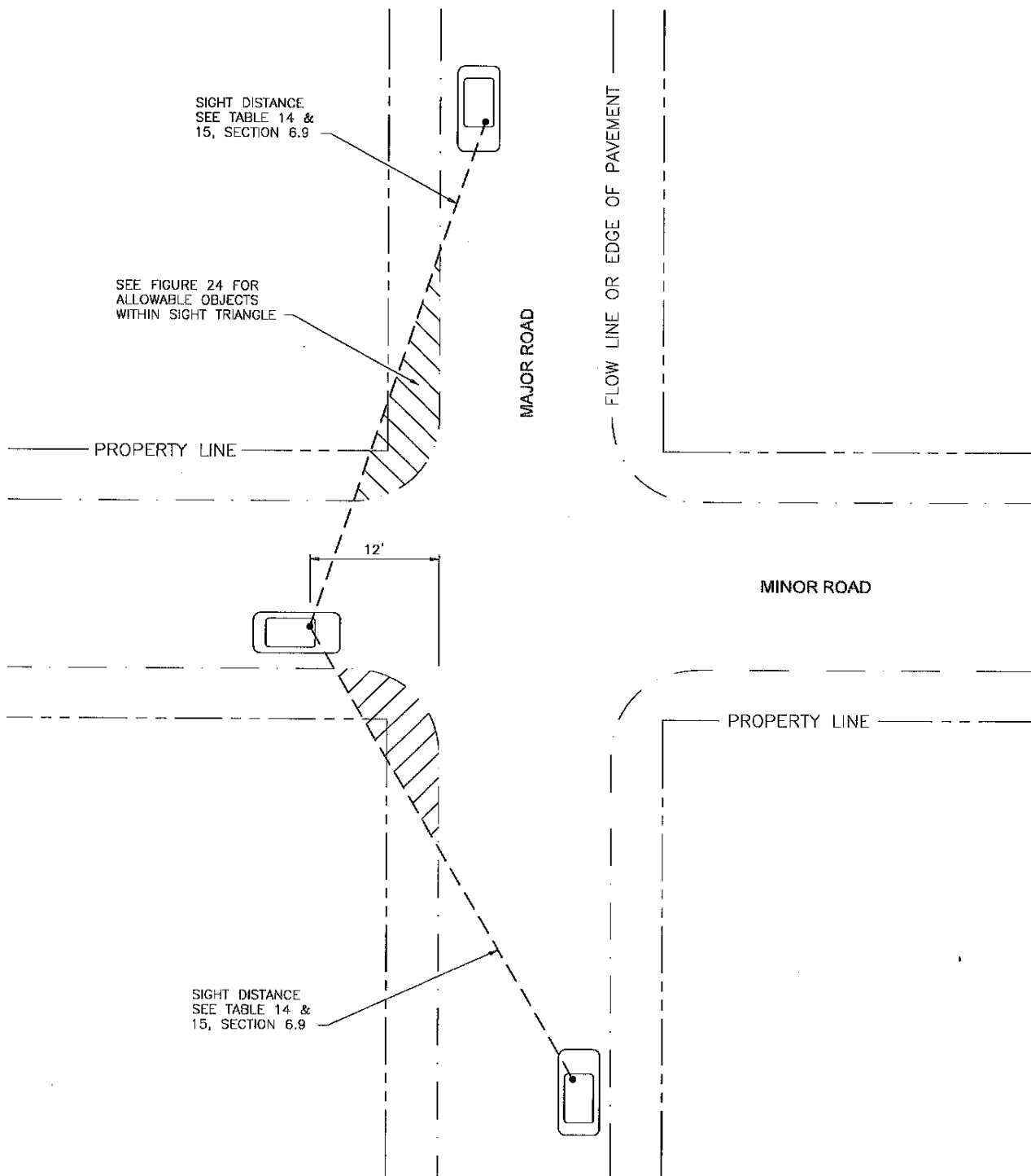


Public Works Department
Transportation
Engineering Division
480 South Allison Parkway
Lakewood, Colorado 80226

City of Lakewood Transportation Engineering Design Standards

SIGHT DISTANCE AND VISION CLEARANCE TRIANGLES

Date:
March 2021
Figure No:



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Transportation
Engineering Division
480 South Allison Parkway
Lakewood, Colorado 80226

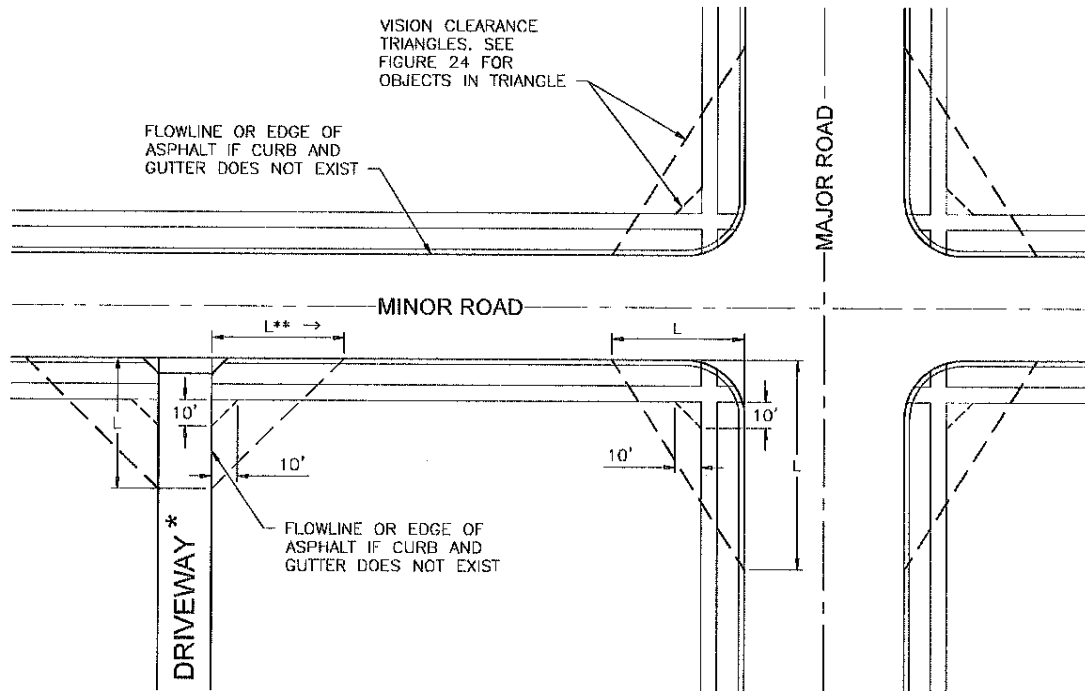
City of Lakewood Transportation Engineering Design Standards

DEPARTURE SIGHT DISTANCE

Date:
March 2021

Figure No:

25



* SEE ZONING ORDINANCE -- ARTICLE 8.

** FOR ONE-WAY STREETS OR STREETS WITH MEDIANS THIS TRIANGLE IS BEST PRACTICE BUT NOT REQUIRED. (DRAWING ILLUSTRATES TRAFFIC TO THE RIGHT)

L (FEET)	STREET CLASSIFICATION (SEE FIGURE 1)
10'	DETACHED SIDEWALK OR PATH
25'	DRIVEWAY
25'	LOCAL / PRIVATE STREET
40'	MINOR COLLECTOR
55'	MAJOR COLLECTOR
55'	ARTERIAL



Public Works Department
Transportation
Engineering Division
480 South Allison Parkway
Lakewood, Colorado 80226

City of Lakewood Transportation Engineering Design Standards

VISION CLEARANCE TRIANGLES

Date:
March 2021

Figure No:

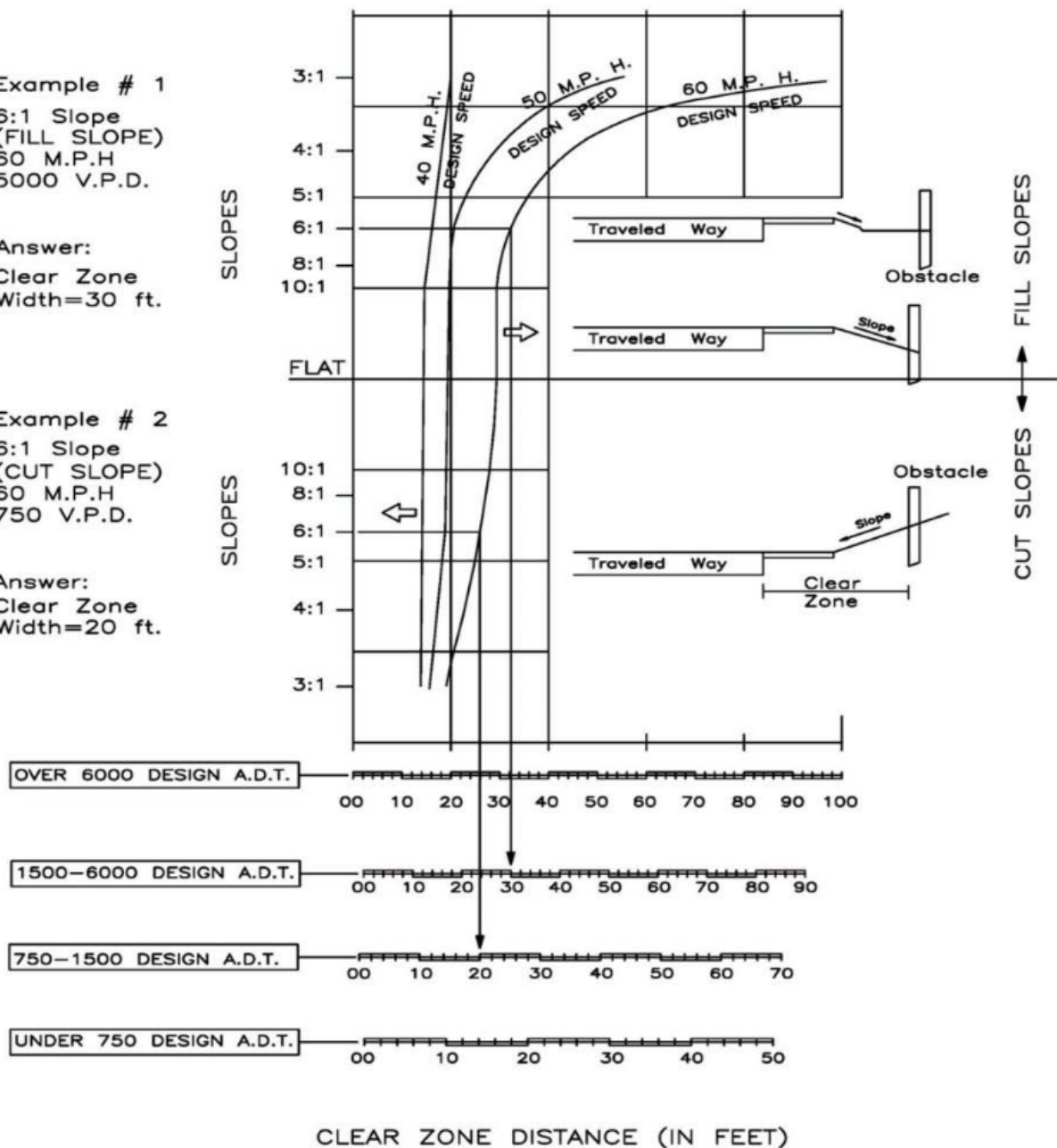
25B

Example # 1
6:1 Slope
(FILL SLOPE)
60 M.P.H
5000 V.P.D.

Answer:
Clear Zone
Width=30 ft.

Example # 2
6:1 Slope
(CUT SLOPE)
60 M.P.H
750 V.P.D.

Answer:
Clear Zone
Width=20 ft.

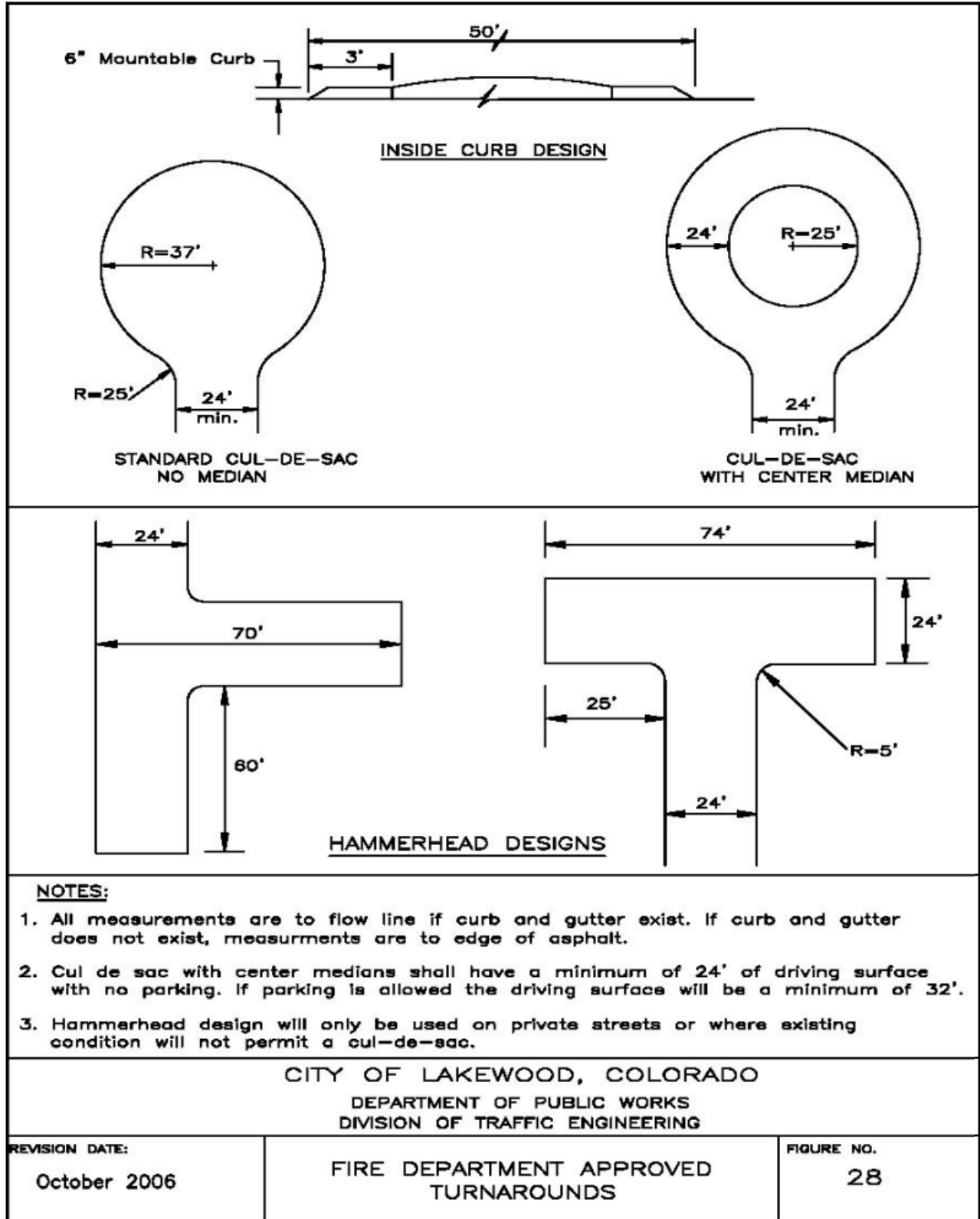


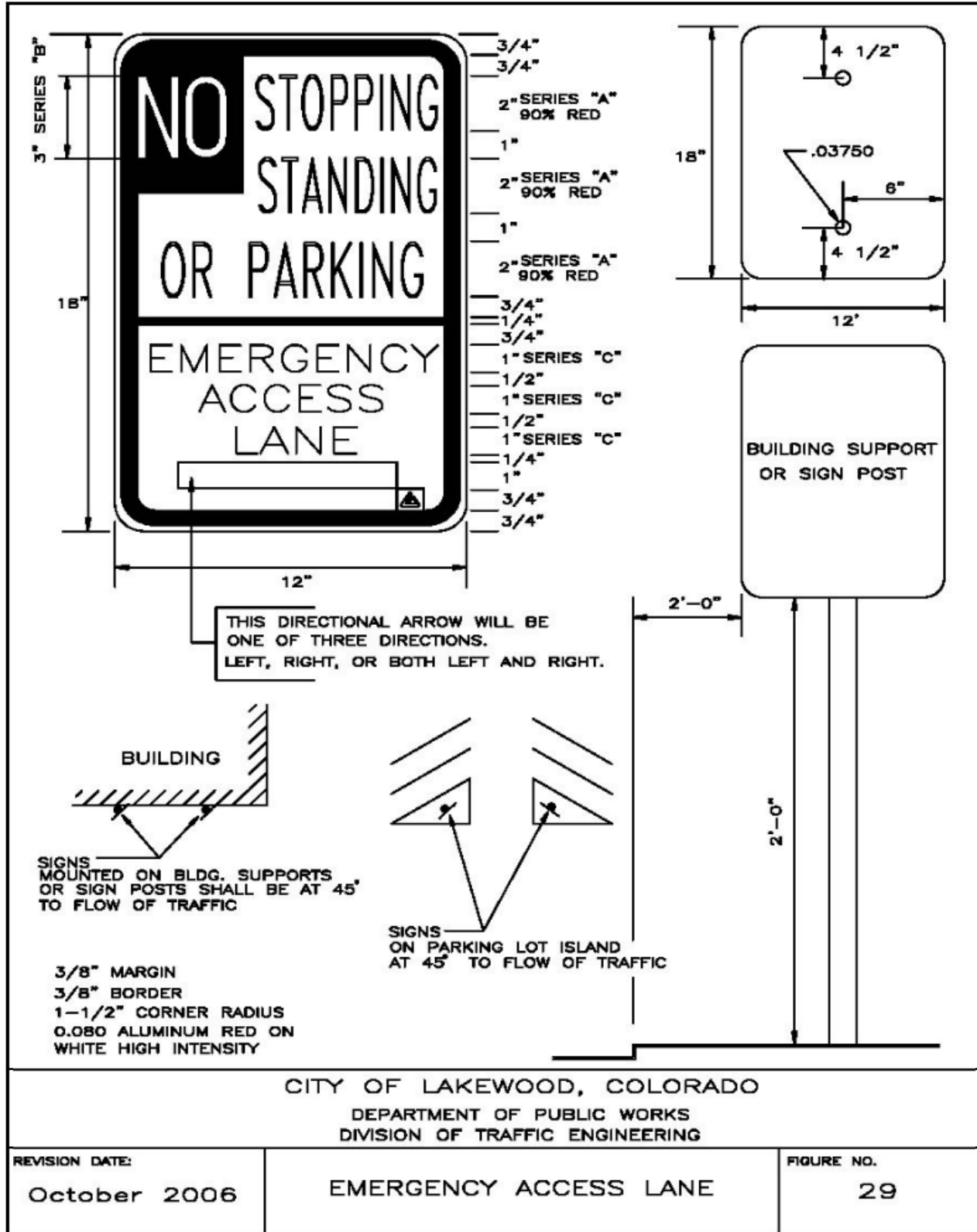
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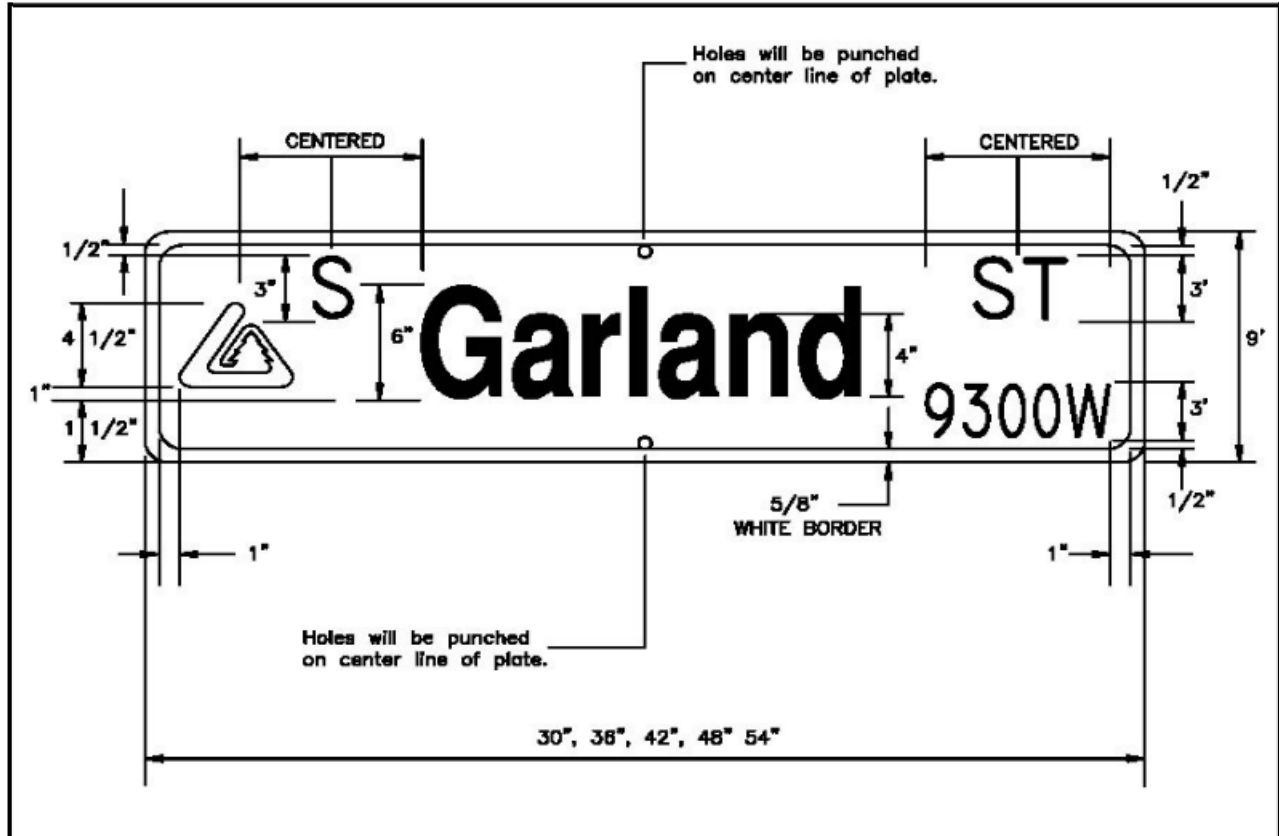
REVISION DATE:
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GUARD RAIL WARRANT CHART FOR
CLEAR ZONE WIDTH, SPEED AND SLOPE
CRITERIA

FIGURE NO.
27



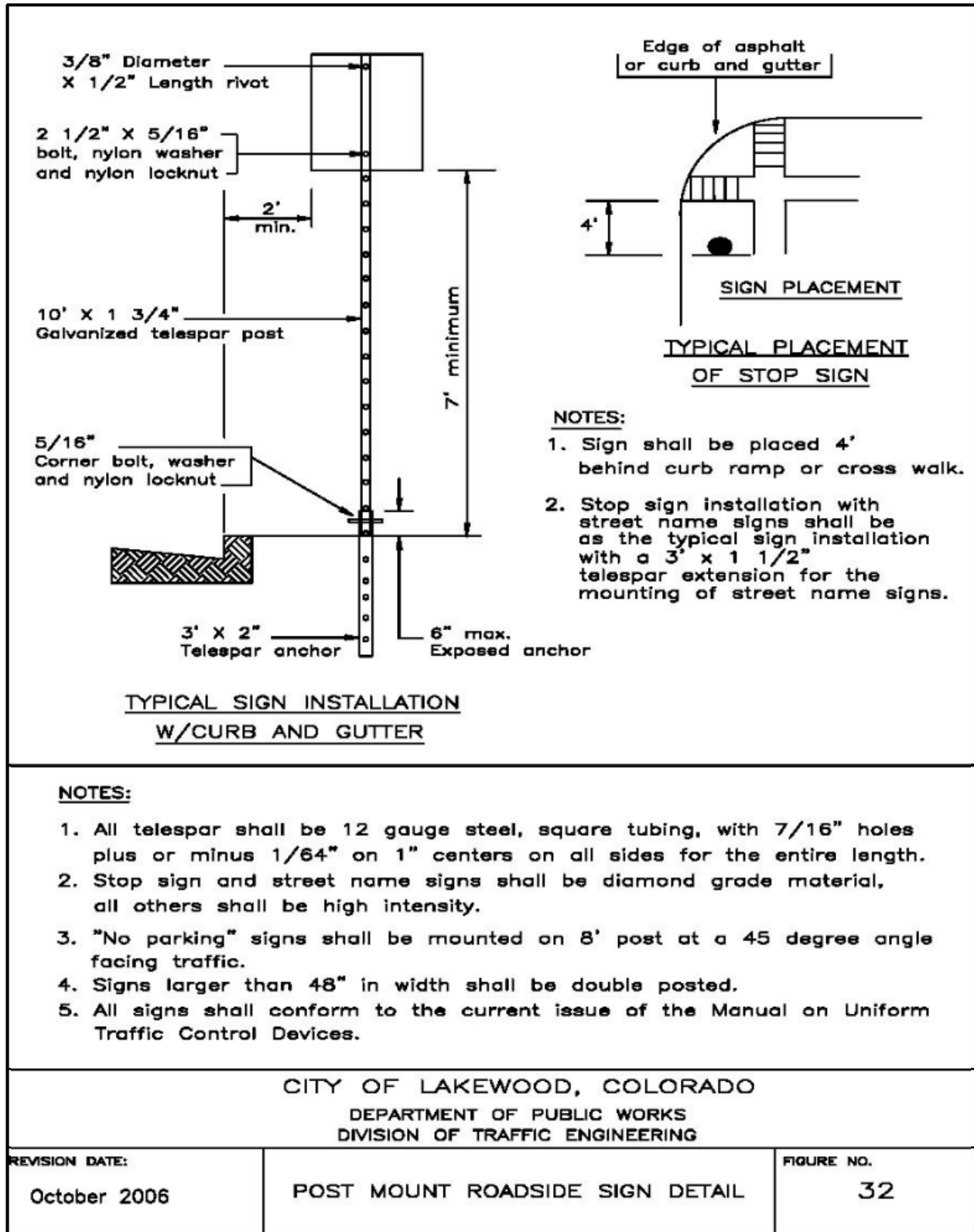




NOTES :

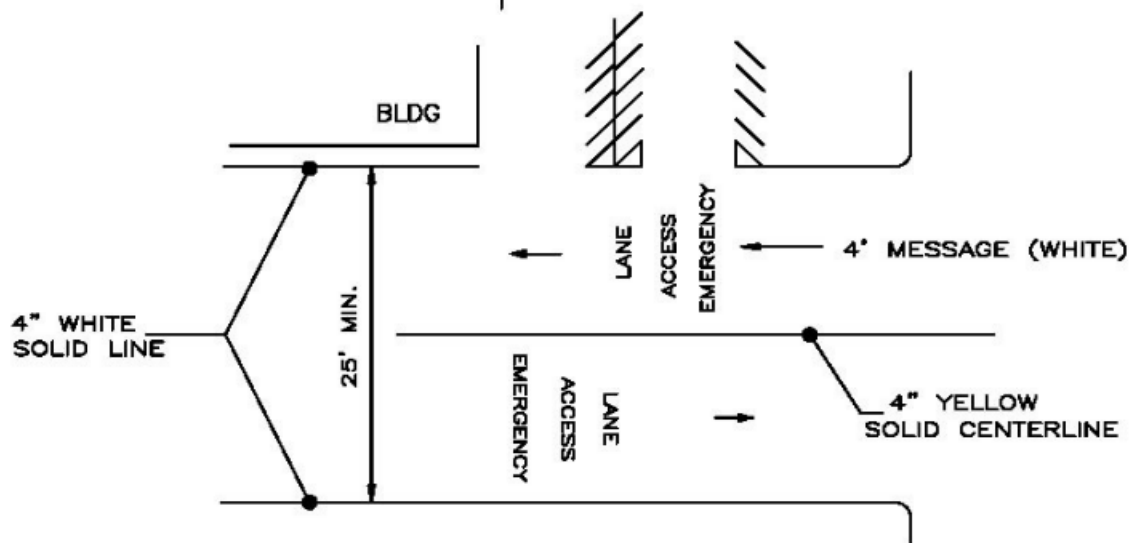
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STREET NAME SIGN DESIGN
NON SIGNALIZED INTERSECTIONS



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LANE ACCESS EMERGENCY

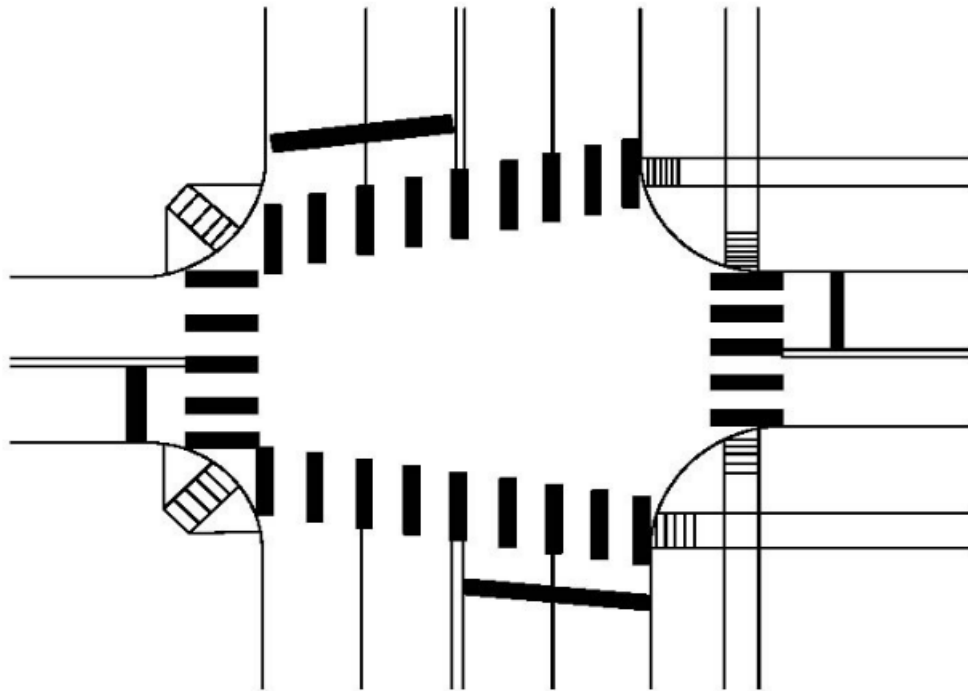


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EMERGENCY ACCESS LANE
PAVEMENT MESSAGE LAYOUT

FIGURE NO.
33



NOTES:

1. All bars shall be 1'x8', except on State Highway then 2'x8' bars required with a posted speed limit of 40 m.p.h. or greater.
2. Bars shall be centered in the travel lane and on lane lines.
3. Lanes wider than 12' shall have bars spaced at 6' center to center.
4. Bars shall be centered on the pedestrian ramps.
5. Stop bars shall be 24" in width and installed in compliance with the M.U.T.C.D.
6. All materials shall be thermoplastic or 3M Intersection grade tape or equivalent.

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CROSSWALK INSTALLATION

FIGURE NO.

34

