APPENDIX 1
CHAPTER 10

GEOMETRIC DESIGN GUIDELINES FOR SUBDIVISION STREETS

HARRIS COUNTY
CITY OF HOUSTON

The Guidelines presented in Appendix 1 include the most often requested information regarding geometric design of subdivision streets. Designated Major Thoroughfares and Collector Streets shall be considered for special design features such as presented in Appendix 2 of this Chapter. Design features not shown in Appendix 1 should be considered special design features. Agency Engineer as used throughout this section shall mean City Engineer for the City of Houston and the designated representative for Harris County Public Infrastructure Department. The average daily traffic volumes presented in Standard Drawing No. 10.06-01, 02, and Appendix 2 Figure 1 are provided as general guidelines to define each street classification. Professional engineering experience and judgment should be used in application of the guidelines to a specific project.

It is advisable to consult with the appropriate agencies and review the most recent edition of the following publications to determine adequate thoroughfare requirements and special design features.

- Recommended Guidelines for Subdivision Streets, Institute of Transportation Engineers
- Guidelines for Urban Major Streets Design, Institute of Transportation Engineers
- A Policy on Geometric Design of Highways and Streets, American Associations of State Highway and Transportation Officials (AASHTO)
- Texas Manual on Uniform Traffic Control Devices (TMUTCD), Texas Department of Transportation

THE GUIDELINES IN THIS APPENDIX ARE HEREBY APPROVED AS BASIC REQUIREMENTS FOR FUTURE STREET PLANNING AND DEVELOPMENT

JULY 2009

Director
Department of Public Works & Engineering
City of Houston

Executive Director
Public Infrastructure Department
Harris County

Director
Department of Planning & Development
City of Houston

City Engineer
Department of Public Works & Engineering
City of Houston

10-18
97-01-2009
# Street Paving Design Requirements

## Divided Street Dimensions (Feet)

<table>
<thead>
<tr>
<th>Local Street</th>
<th>Major Street</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential</strong></td>
<td><strong>Principal Thoroughfare</strong></td>
</tr>
<tr>
<td>ADT (k)</td>
<td>2000–1500</td>
</tr>
<tr>
<td>ROW (in.)</td>
<td>70</td>
</tr>
<tr>
<td>W</td>
<td>20</td>
</tr>
<tr>
<td>M</td>
<td>8</td>
</tr>
<tr>
<td>S</td>
<td>11</td>
</tr>
<tr>
<td>T</td>
<td>12</td>
</tr>
<tr>
<td>P</td>
<td>8</td>
</tr>
</tbody>
</table>

**NOTES:**

1. Average daily traffic; refer to guidelines presented in section 10.00A.
2. Any right-of-way dimensions different from those shown shall require special geometric design as determined by agency engineer.
3. Sidewalk located in center median only (min. SW width = 6’).
4. Refer to city mobility plan (infrastructure design manual, chapter 10, appendix 2) for optional designs to serve special mobility needs, pedestrian needs, bicycle lanes, or other requirements, approval by city engineer required.
5. 5’ Minimum width is city of Houston standard for non-transit corridor streets. Minimum width for transit corridor streets is 6’. For minimum width in ETS, contact agency engineer.

---

### Divided Street Typical Cross Section

(Not to scale)

(City Engineer)  
(Director of Public Works and Engineering)

Effective date: July 01, 2009

SWG No: 10.06–02

Previous No: CH 10 FIG 01

---

10-20
07-01-2012
NOTES:
1. ALL RAMPS AND SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ADA STANDARDS AND SEC. 508 OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS DEPARTMENT OF TRANSPORTATION (TDOT) REQUIREMENTS.
2. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH ADA STANDARDS AND THE TxDOT MANUAL ON UNIFORM Trafic Control Devices (MUTCD).
3. CURB RADIO SHALL BE DESIGNED TO ACCOMMODATE THE TYPE OF VEHICLES ANTICIPATED TO USE THE FACILITY, i.e., BUSES, TRUCKS, etc., IN ACCORDANCE WITH ADA STANDARDS AND THE TxDOT MANUAL ON UNIFORM Trafic Control Devices (MUTCD).
4. WHERE ALTERNATIVE MINIMUM CURB RADIO IS REQUIRED TO SERVE HANDICAP, PEDESTRIAN, OR OTHER SPECIFIC NEEDS, SUBMIT DESIGN LAYOUT AND SUPPORTING CALCULATIONS TO AGENCY ENGINEER FOR REVIEW AND APPROVAL.
5. THE CORNER CUT RADIO IS RESERVED FOR TRAFFIC CONTROL DEVICES AND SHALL BE LEFT FREE OF SIGNS, POLES, OR OTHER ITEMS THAT MAY HINDER THE FUTURE INSTALLATION OF SUCH EQUIPMENT WITHIN THE AREA.
6. WHERE A NEW ROADWAY OR DRIVEWAY IS CONNECTING TO AN EXISTING SIGNALIZED INTERSECTION, THE APPLICANT SHALL BE RESPONSIBLE FOR DESIGNING AND CONSTRUCTING THE NECESSARY MODIFICATIONS TO THE EXISTING SIGNAL SYSTEM AS REQUIRED BY AGENCY ENGINEER.
Table 1: Required Intersection Sight Distance

<table>
<thead>
<tr>
<th>Street Classification</th>
<th>Sight Distance (ft)</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Street</td>
<td>200</td>
<td>15</td>
</tr>
<tr>
<td>All Other Streets</td>
<td>500</td>
<td>25</td>
</tr>
</tbody>
</table>

Notes:
1. Intersection sight distances are based on American Association of State Highway and Transportation Officials (AASHTO) criteria for intersection sight distance.
2. If roadway being crossed or turned onto has a median that is 25 feet or greater, sight distance to the right may be measured from the point at which a vehicle can safely stop within the median opening.

Typical Crosswalk and Stop Bar Placement Detail
TYPICAL MEDIAN OPENING C

<table>
<thead>
<tr>
<th>MEDIAN INTERSECTION FOR</th>
<th>NO LTB</th>
<th>1 LTB</th>
<th>2 LTB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Drive</td>
<td>45°</td>
<td>50°</td>
<td>60°</td>
</tr>
<tr>
<td>Undivided Street &lt;40</td>
<td>45°</td>
<td>50°</td>
<td>55°</td>
</tr>
<tr>
<td></td>
<td>44°</td>
<td>50°</td>
<td>60°</td>
</tr>
<tr>
<td>Divided Street All</td>
<td>0°±22°</td>
<td>3°±22°</td>
<td>6°±22°</td>
</tr>
</tbody>
</table>

NOTE:

(1) LTB=LEFT TURN BAY
(2) DISTANCE FROM CENTERLINE OF OPENING TO MEDIAN HOSE WITH LEFT TURN LANE IS 35' FOR RIGHT ANGLE INTERSECTIONS. FOR INTERSECTIONS OTHER THAN 90°, APPLY DESIGN VEHICLE TURNING TEMPLATE TO DETERMINE DIMENSION TO MEDIAN HOSE CUT OFF.

MINIMUM MEDIAN LENGTH A, B

<table>
<thead>
<tr>
<th>INTERSECTING STREET CLASSIFICATION</th>
<th>MAJOR STREET/THOROUGHFARE (A)</th>
<th>COLLECTOR STREET (A)</th>
<th>LOCAL STREET (A)</th>
<th>PRIVATE STREET OR DRIVEWAY (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Thoroughfare/Thoroughfare</td>
<td>500'</td>
<td>500'</td>
<td>350'</td>
<td>300'</td>
</tr>
<tr>
<td>Collector Street</td>
<td>350'</td>
<td>300'</td>
<td>250'</td>
<td>250'</td>
</tr>
<tr>
<td>Local Street</td>
<td>250'</td>
<td>230'</td>
<td>250'</td>
<td>250'</td>
</tr>
</tbody>
</table>
CITY OF HOUSTON
DESIGN MANUAL
Department of Public Works & Engineering
Street Paving Design Requirements

NOTES:
1) APPROACH AND DEPARTURE TAPER REQUIREMENT:
   \[ L = \frac{45}{S^2} \]
   \[ W = \text{SPEED IN M.P.H.} \]
   \[ S = \text{MINIMUM DESIGN SPEED FOR SUBDIVISION STREETS} \]
   \[ W = A-B \]
2) 350' MINIMUM CENTERLINE RADIUS FOR HORIZONTAL CURVE WITH
   APPROACH OR DEPARTURE TAPERS.
3) REFER TO STANDARD DRAWING NO. 10.06-06 FOR MEDIAN LENGTHS
   AND MEDIAN OPENING.

<table>
<thead>
<tr>
<th>ROADWAY CROSS SECTION (FEET)</th>
<th>TAPER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A + A</td>
<td>(TEES)</td>
</tr>
<tr>
<td>80 40</td>
<td>400</td>
</tr>
<tr>
<td>70 40</td>
<td>360</td>
</tr>
<tr>
<td>60 40</td>
<td>300</td>
</tr>
<tr>
<td>50 27</td>
<td>240</td>
</tr>
</tbody>
</table>

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
MEDIAN DESIGN ROADWAY TAPERS FOR MEDIAN DESIGN (LOCAL STREETS)
(NOT TO SCALE)

PREVIOUS NO.: CH 10 FIG 7