Guide Sign Design Guidelines

Design Guidelines

There are general guidelines to follow in the design of highway signs in order to conform to basic standards. Many of these guidelines are mentioned in various sections of the Texas Manual on Traffic Control Devices (TMUTCD), while others are derived from accepted practice in sign design and layout.

Standard Sign Guidelines

Highway signs with standardized designs conforming to the general guidelines (like most regulatory, warning, emergency management, school, railroad-highway grade crossing, and bicycle signs), are contained in this book and are shown with different standard sizes depending on the type of highway or facility where the sign is intended to be used.

Additional Guidelines for Standard Signs are:

A. As a guide to choice of alphabets, tests have shown that, for any given legend, better legibility can be obtained by using a relatively wide spacing between letters than by using wider and taller letters with a cramped space.

B. Use of Series B alphabet is for street names, parking signs, and other similar signs where limited breadth and stroke widths are required for design purposes.

C. Lettering on street name signs should be at least 6 inches high (TMUTCD, Section 2D.43). Supplementary lettering to indicate type of street or section of city may be in smaller lettering but at least 3 inches high.

D. An accepted “rule-of-thumb” to follow for legibility for signs other than Interstate is to have 1 inch of letter height for every 40 feet of desired legibility.

Guide Sign Dimensioning

Although some guide signs also have been standardized and are included in this book, most guide signs need to be designed separately because of the variability in message or legend. For most guide signs, there can be no rigid standardized sizes.

Message variability controls overall sign dimensions. Whenever practicable, the overall dimensions of the sign plates should be in multiples of 6 inches.

The use of a smaller than “nominal” size for the various four types of roadway signs may sometimes be justified. For instance, a sign mounted over a particular roadway lane to which it applies may have to be limited in width to the lane width. In some cases, vertical clearances may limit the vertical dimension of the sign. On the other hand, a larger than “nominal” sign may be desirable where greater legibility or emphases is needed. When a variation in the “standard” size is necessary, a reduced or enlarged (as the case may be) letter height, interline, and edge spacing may be used but should be as nearly comparable to standards as possible.

Guide Sign Letter Style

Guide Sign lettering shall be “Clearview.” Sign lettering is normally all caps except the destination names may be in upper and lowercase lettering.

Letter Sizes for Guide Signs

For guide signs on expressways and freeways, the prescribed numeral and letter sizes, according to interchange classification and component of sign legend, appear in Tables 2E-1T, 2E-4T and 2E-5 of the TMUTCD. The minimum sizes specified should be exceeded where conditions indicate a need for greater legibility.

For conventional roads in rural districts on major routes, the principal legend on guide signs shall be in letters 6 to 8 inches in height. On low-volume roads and on urban streets with speed of 25 mph, the principal legend shall be in letters at least 4 inches high.

Amount of Legend on Guide Signs

The TMUTCD states that regardless of letter size, the legend on a guide sign must be kept to a minimum to be instantly legible. For example, on expressways, the legend on a guide sign should only have two destinations and the directional copy. Directional copy, not exceeding three lines, may include symbols, route numbers, arrows, cardinal directions, interchange number(s), and other exit instructions. Conventional road guide signs should be limited to three lines of principal legend which includes only place names, route numbers, and street names.
Guide Sign Arrows

The “Type A”, “Type B” and “Down” arrows are to be used for guide signs and recommended applications are stated in Sections 2D.8 and 2E.19 of the TMUTCD.

Guide Sign Borders

Border widths should not exceed the stroke width of the major lettering of the sign. For guide signs, smaller than 60 square feet, a width of 1 to 1¼ inch may be used; for those exceeding 60 square feet the border should be 2 inches wide; and for unusually large signs, a border of 3 inches wide is appropriate.

The corner radii of guide sign borders should be approximately one-eighth of the lesser side dimension except the radii should not exceed 12 inches on any sign. The area outside the corner radius on large signs may need to be trimmed, except for signs made from extruded aluminum panels.

Spacing on Guide Signs

Interline spacing should be approximately three-fourths the average of the capital and/or uppercase letter heights in adjacent lines. Interline spacing shall not be reduced to less than ½ the average height. Spacing between a route marker and the line of text below should be equal to three-fourths the average height of the numeral in the route marker and the tallest letter in that adjacent line. Measurement shall be from the lowest point of the route marker and the top of the tallest letter in the line of text. Interline spacing between an upward sloping arrow and a line of text and/or a route marker should be approximately three-fourths the letter height of the line of text or the numeral inside the marker.

Lateral spacing to the inside edge of the vertical borders shall be the same as the height of the largest letter on the sign. Each line of copy should be centered within the sign borders. Spacing to the inside edge of the top and bottom borders should be approximately equal to the average of the letter and/or numeral height of the adjacent line of text. When a downward pointing arrow is part of the last line of text, spacing should be equal to the average of the arrow and letter height. If an arrow is the only item in the last line, spacing shall be measured from the lowest point of the arrow and be the same as the spacing at the top of the sign. Lateral spacing between each item (words, route markers, numbers and/or arrows) in any given line of text should be approximately 1 to 1½ times the capital and/or uppercase letter height used in that line. If 2 or more route markers are in the same line of text they shall be optically centered on the sign with spacing between the markers at not less than the height of the numeral within the route markers.

Examples of the design of guide signs using the above guidelines are shown on the following pages.

Diagrammatic Guide Signs

Design of diagrammatic signs follow the same principles and guidelines previously covered plus additional guidelines necessary for the details related to graphic components. Diagrammatic signs shall be designed in accordance with the following criteria:

1. The graphic legend shall be a plan view showing a simplified off-ramp arrangement.

2. Only one destination may be shown for each arrowhead, with a maximum of two destinations per sign.

3. The graphic should not depict deceleration lanes. A black on yellow “EXIT ONLY” panel should be used to supplement a lane drop graphic.

4. The shaft for the exit ramp movement should be shorter than, but not separated from, the through movement graphic.

5. Arrow shafts should contain lane lines where appropriate and route shields shall not be used as a substitute for arrowheads.

6. Route shields, cardinal directions, and destinations should be clearly related to the arrowhead, and the arrowhead should point toward the route shield for the off movement.

7. The cardinal direction should generally be placed adjacent to the route shield and the destination should be placed below and justified with the route shield.

8. Exit number panels should be located toward the top left edge of the sign for a left exit and toward the top right edge for right exits.

The above guidelines were based upon the results of a research project conducted by the Federal Highway Administration. This research generated ideals for various diagrammatic design features.
These ideal features have been modified so more economical designs could be obtained.

Specific design standards for graphic components are presented in the table below and other recommended features are shown in the design illustrations in the following pages. The illustrations shown were designed through a trial and error procedure and will provide the designer with the guides and elements needed to design an economical diagrammatic sign while maintaining a clear and simple message.

<table>
<thead>
<tr>
<th>GRAPHIC COMPONENT</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane Width</td>
<td>5&quot; *</td>
</tr>
<tr>
<td>Lane Lines</td>
<td>1&quot; x 6&quot;</td>
</tr>
<tr>
<td>Space between Lane Lines</td>
<td>6&quot;</td>
</tr>
<tr>
<td>Arrowheads</td>
<td>Stand “Up” Arrow</td>
</tr>
<tr>
<td>Stem Height (to upper point of departure-minimum)</td>
<td>30&quot;</td>
</tr>
<tr>
<td>Space between arrowhead and route shield</td>
<td>12&quot;</td>
</tr>
<tr>
<td>Space between route shield and cardinal direction, should be equal to the largest letter/number height in that line.</td>
<td></td>
</tr>
</tbody>
</table>

*Wider lane widths appear to better meet the needs of older drivers.

Minimum Letter and Numerical Sizes for Advance Guide and Exit Direction Signs

<table>
<thead>
<tr>
<th>Type of Sign and Sign Elements</th>
<th>Minimum Size in inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit Panel</td>
<td></td>
</tr>
<tr>
<td>Word</td>
<td>10 CV 4W</td>
</tr>
<tr>
<td>Numeral and Letter</td>
<td>15 CV 4W</td>
</tr>
<tr>
<td>Interstate Route Sign</td>
<td></td>
</tr>
<tr>
<td>Numeral (see note 1 below)</td>
<td>18 D Series</td>
</tr>
<tr>
<td>Shield (1-2 Digit)</td>
<td>36 x 36</td>
</tr>
<tr>
<td>Shield (3 Digit)</td>
<td>45 x 36</td>
</tr>
<tr>
<td>U.S. or State Route Sign, Business, Loop or Spur Interstate Route Sign</td>
<td></td>
</tr>
<tr>
<td>Numeral (see note 1 below)</td>
<td>18 D Series</td>
</tr>
<tr>
<td>Shield (1-2 Digit)</td>
<td>36 x 36</td>
</tr>
<tr>
<td>Shield (3 Digit)</td>
<td>45 x 36</td>
</tr>
<tr>
<td>U.S. or State Route Text Identification (Example: US 56)</td>
<td></td>
</tr>
<tr>
<td>Numerals &amp; Letters</td>
<td>15 CV 5WR (18 CV 5WR*)</td>
</tr>
<tr>
<td>Cardinal Direction</td>
<td></td>
</tr>
<tr>
<td>First Letter</td>
<td>15 CV 5WR (18 CV 5WR*)</td>
</tr>
<tr>
<td>Rest of Word</td>
<td>12 CV 5WR (15 CV 5WR*)</td>
</tr>
<tr>
<td>Auxiliary and Alternative Route Legends (Examples: JCT, TO, ALT, BUSINESS)</td>
<td></td>
</tr>
<tr>
<td>Word</td>
<td>12 CV 5WR (15 CV 5WR*)</td>
</tr>
<tr>
<td>Name of Place, Street or Highway</td>
<td></td>
</tr>
<tr>
<td>Word</td>
<td>16 CV 5WR (20 CV 5WR*)</td>
</tr>
<tr>
<td>Distance Message</td>
<td></td>
</tr>
<tr>
<td>Numerical</td>
<td>15 CV 5WR (18 CV 5WR*)</td>
</tr>
<tr>
<td>Fraction</td>
<td>10 CV 5WR (12 CV 5WR*)</td>
</tr>
<tr>
<td>Word</td>
<td>10 CV 5WR (12 CV 5WR*)</td>
</tr>
<tr>
<td>Exit Gore</td>
<td></td>
</tr>
<tr>
<td>Word</td>
<td>12 CV 6W</td>
</tr>
<tr>
<td>Numerals &amp; Letters</td>
<td>18 CV 4W</td>
</tr>
</tbody>
</table>
See following pages for detail dimensions.
Adjust to have 6” increments
Guideline

Frederick
1 x 6 inch lane lines with 6 inch gaps

* See Symbol section for arrow design
Adjust to have 6" increments

Guideline

12
12.625
36
12.75
12.75
36
16CV-5WR
12
12.625
36
SAMPLE SIGN

Exit 4
North
Lindale
Exit Only

TEXAS

Standard Highway Sign Designs for Texas
* Increase character spacing 25%

COLORS: LEGEND - BLACK
BACKGROUND - YELLOW
COLORS: LEGEND, BORDER - WHITE
BACK GROUND  - GREEN

EXIT 7

EXIT 48 A

E1-5bP

78 for 1-Digit Exit Number
84 for 2-Digit Exit Number
102 for 3-Digit Exit Number

90 for 1-Digit Exit Number with single letter suffix
108 for 2-Digit Exit Number with single letter suffix
120 for 3-Digit Exit Number with single letter suffix
COLORS: LEGEND - WHITE
BACKGROUND - GREEN

TEXAS

(* Max number length for 3-Digit Number is 41")
COLORS: LEGEND - WHITE  
BACKGROUND - GREEN

TEXAS

E1-5TP
COLORS: LEGEND - WHITE  
BACKGROUND - GREEN

June 2020  
4-13  
2012 Edition-Revision 3
COLORS: LEGEND - WHITE
BACKGROUND - GREEN OR BLUE
COLORS:  LEGEND - WHITE
BACKGROUND - GREEN

E5-1

* See Symbol section for arrow design

COLORS: LEGEND - WHITE
BACKGROUND - GREEN

TEXAS

June 2020
E5-1aT

COLORS: LEGEND - WHITE
BACKGROUND - GREEN

* See Symbol section for arrow design

TEXAS
**E5-1c**

* See Symbol section for arrow design

COLORS: LEGEND - WHITE  
BACKGROUND - GREEN  

TEXAS

June 2020
COLORS:
LEGEND - WHITE
BACKGROUND - GREEN

Guideline

Adjust to have 6" increments

E6-2

108
16
10

VAR

12
14
11.25
12.75
14

WEST
Waco

E6-2a

90
16

VAR

12
14
12.75
14

INTERSTATE
WEST

Dallas

COLORS:
LEGEND - WHITE
BACKGROUND - GREEN

TEXAS
One line expressway destination sign shall use a 24 inch sign blank.

COLORS: LEGEND - WHITE
BACKGROUND - GREEN

TEXAS
COLORS:  
LEGEND - BLACK  
BACKGROUND - YELLOW

* See symbol section arrow design

COLORS:  
LEGEND - BLACK  
BACKGROUND - YELLOW  
TEXAS
* Increase character spacing 40%.

COLORS: LEGEND - BLACK
BACKGROUND - YELLOW
NO BORDER
COLORS:  
LEGEND - BLACK
BACKGROUND - YELLOW

TEXAS

E11-1aT
** See Symbol section for DOWN arrow design

* See Symbol section for B3 arrow design

COLORS: LEGEND - BLACK
BACKGROUND - YELLOW

TEXAS
** See Symbol section for DOWN arrow design

* See Symbol section for B3 arrow design

COLORS:
- LEGEND: BLACK
- BACKGROUND: YELLOW

TEXAS
E11-2

* Increase character spacing 25%.

E11-2aT

COLORS: LEGEND - BLACK
BACKGROUND - YELLOW

TEXAS
E13-1P

COLORS: LEGEND - BLACK
BACKGROUND - YELLOW

E13-2

- OR -

E13-2

COLORS: LEGEND - BLACK
BACKGROUND - YELLOW
NO BORDER
REST AREA 2 MILES

E21-1T

REST AREA NEXT RIGHT

E21-2T

REST AREA

E21-3T

COLORS: LEGEND - WHITE
BACKGROUND - BLUE

TEXAS

* See Symbol section for arrow design
COLORS: LEGEND - WHITE
BACKGROUND - BLUE

TEXAS
COLORS: LEGEND - WHITE  
BACKGROUND - BLUE  
TEXAS
COLORS: LEGEND - WHITE
BACKGROUND - BLUE

TEXAS

E21-9T

E21-10T

NEXT RIGHT

Alternate text
REST AREA
TOURIST INFO CENTER

COLORS: LEGEND - WHITE
BACKGROUND - BLUE

* See Symbol section for arrow design

TEXAS
Veterans Affairs Hospital
NEXT RIGHT

Veterans Affairs Hospital
EXIT 235

* Alternate text:
   Cemetery
   Medical Clinic

COLORS: LEGEND - WHITE
BACKGROUND - GREEN

TEXAS
COLORS: LEGEND - WHITE
BACKGROUND - BROWN