

## PREFACE

Plans included in this book are for standard highway signs prescribed in the 2011 edition of the “Michigan Manual of Uniform Traffic Control Devices” (MMUTCD). These plans were prepared by the Traffic and Safety Support Area, Michigan Department of Transportation, and are for use by all traffic authorities, agencies, jurisdictions, and persons involved with the fabrication of traffic signs intended for use on all Michigan highways and streets.

This English edition uses a simplified format for the standard drawings. These pages were drawn by an electronic process. It should be noted that the shapes of the letters and the spacing between them, as drawn in the electronic process, do not necessarily indicate the actual appearance of the finished sign legend, and the drawings are not to scale.

In this format, specifications for panel and sheeting materials, support hole placement, etc. are not shown on individual drawings. Guidelines for materials are prescribed in the GENERAL SPECIFICATIONS, and bolt holes in the SUPPORT HOLE PLACEMENT sections of this book.

The format utilized herein is to present design information for the appropriate sizes of each sign prescribed by the MMUTCD. The tables or sign dimensions describe the applicable sign sizes as CONVENTIONAL ROAD, EXPRESSWAY, FREEWAY, MINIMUM, and OVERSIZED SHARED-USE PATH. With the addition to the MMUTCD of a part pertaining to bicycle facilities, a shared-use path size has been added to the sign tables for those signs that may be used exclusively for bicyclists. Indiscriminate use of minimum sized signs is to be avoided. The necessary design information for these MINIMUM sizes is presented as a guide to sign fabrication only in the interest of uniformity. Where a need exists, larger than shown size signs may be used in the same proportions as other sizes.

Signs shown with arrows pointing to either left or right may usually be designed with the arrow pointing in the opposite direction (mirror image) as required. In some instances the code number for a sign with an arrow pointing to the left is followed by the letter L, and one pointing to the right by R.

Arrows are shown on most urban parking control signs (R7 series). A single-headed arrow should be used pointing in the direction the regulation is in effect if the sign is at the end of a zone; or a double-headed arrow, pointing both ways, should be used if the sign is an intermediate point in a zone. If it is desired to confine the regulation to a single parking space, a short down-arrow may be used instead of a horizontal arrow. An alternate to the horizontal arrow may be used for signs facing traffic at an angle of 90 degrees to the curb line. On the sign, or on a separate plate below the sign, alternates include the legends BEGIN, END, HERE TO CORNER, HERE TO ALLEY, THIS SIDE OF SIGN, or BETWEEN SIGNS.

All symbols shall be similar to those shown. Where a word message is applicable the wording shall be as herein provided unless alternative wording is indicated as optional. Standardization of these designs does not preclude further improvement by minor changes in the proportion of symbols, width of borders, or layout of word messages, but all shapes and colors shall be as indicated. Most standard symbols are oriented facing left; however, mirror images of these symbols may be used where the reverse orientation might better convey to vehicle operators a direction of movement.

For a symbol message, vertical and horizontal centerlines of the sign are superimposed on the symbol detail. This facilitates proper positioning of the symbol on the sign. The exact detail of the symbol has also been placed on a grid pattern to simplify the enlarging process. The grid pattern is shown on the page following each symbolic assembly. The symbol may be enlarged to the desired size by a conventional enlarging process.

## GENERAL SPECIFICATIONS

### **SIGN PANEL MATERIALS**

All completed signs shall be free from defects in materials and workmanship. Patches will not be allowed except when authorized by the Engineer. Reflectorized sign faces shall be smooth and free from dents, wrinkles, and other defects. They shall exhibit uniform color and brightness over the entire background surface and shall not appear mottled, streaked, or stained when inspected. No sign supports shall be mounted to the side of the sign facing traffic.

For economy and structural strength, the following sign panel materials shall be used unless noted otherwise on a standard highway sign plan or contract plans:

#### **Permanent Signs**

Signs 36 inches x 36 inches or smaller shall be nominal 0.080 inch aluminum sheet (Type III). Signs 48 inches x 24 inches in size may be plywood (Type II).

Signs larger than 36 inches x 36 inches and up to and including 120 inches x 48 inches shall be plywood (Type II).

Signs wider than 120 inches or higher than 48 inches shall be aluminum extrusion (Type I) sign panels.

All 48 inches x 48 inches signs shall be nominal 0.125 inch aluminum sheet (Type V).

For sign overlays, use nominal 0.040 inch aluminum sheet (Type IV).

Rounding of corners is not required for plywood (Type II) or aluminum extrusion (Type I) signs panels.

Flexible roll-up signs may be used in accordance to the Standard Specifications for Construction.

### **LETTERING DESIGN**

Unless otherwise shown on the drawings, the legend shall be optically centered horizontally on the sign panel.

On freeway guide signs, the suggested horizontal distance from the edge of the panel to the longest line of legend is at least equal to the height of the lower case letters plus width of the border. Spacing between words on the same line of legend shall equal the height of the lower case letters on the same line of legend.

Horizontal measurement shall be rounded up to the nearest 6 inch interval for plywood signs and 12 inch interval for extruded aluminum signs.

Vertical measurement shall be rounded up to the nearest 6 inch interval for plywood signs and extruded aluminum signs.

For Overlay, use Stainless Steel Rivets or Stainless Steel-Self Tapping Screws. The spacing on all perimeter mounting hardware shall not exceed 14 inches. For vertical hardware, the spacing in the center of the overlay shall not exceed 14 inches. All perimeter and vertical mounting hardware shall not be less than 3 inches from the edge of the overlay.

For Clearview Highway Fonts, the inter-word spacing is to be determined by SignCAD and will not be directly specified. For Traditional Highway Fonts, the inter-words spacing is specified to be approximately 75% of the text height.