

Approved by NCUTCD Council January 20, 2006

Technical Committee: Guide and Motorist Information Signs Technical Committee

Date of Action: Approved by NCUTCD Council January 20, 2006

Topic: Guide Signing For Roundabouts

Origin Of Request: AASHTO Traffic Engineering Subcommittee
Guide and Motorist Information Signs Technical Committee

Discussion:

Roundabouts are now being planned, designed, constructed, operated and maintained on an ever increasing basis throughout the nation. With this continuing increase in the use of roundabouts in all 50 states, it is imperative that the MUTCD include appropriate language which would specifically address the placement of traffic control devices associated with roundabouts. Since such language does not exist in the current edition of the MUTCD, there is a substantial lack of uniformity in sign design and placement throughout the United States. From state to state, and even within individual states, a wide variety of sign designs are in use.

The draft proposal noted below contains language addressing guide sign design and placement associated with roundabouts.

Similar draft proposals are also being developed for other traffic control devices associated with roundabouts. It is intended that the subject draft proposal be fully integrated with these other proposals.

The approved proposal is noted below. Any additions to the Sections referenced are noted in red italics and underlined. There are no deletions to the existing language.

Section 2D.08 Arrows

Support:

Arrows are used for lane assignment and to indicate the direction toward designated routes or destinations. Figure 2D-2 shows the up-arrow and the down-arrow designs that have been approved for use on guide signs. Detailed drawings of these arrows are shown in the "Standard Highway Signs" book (see Section 1A.11).

Standard:

On overhead signs where it is desirable to indicate a lane to be followed, a down arrow shall point downward toward the center of that lane. Down arrows shall be used only on overhead guide signs that restrict the use of specific lanes to traffic bound for the destination(s) and/or route(s) indicated by these arrows. Down arrows shall not be used

unless an arrow can be pointed to each lane that can be used to reach the destination shown on the sign.

Where a roadway is leaving the through lanes, an up arrow shall point upward at an angle representative of the alignment of the exit roadway.

Option:

Guide signs approaching a roundabout may apply curved-stem arrows to represent intended driver paths to selected destinations as they negotiate the roundabout. Specifically shaped curved-stem arrows are designated for left-turn movements. If used, curved-stem arrow usage should follow the principles set forth in Sections 2D.25, 2D.26 and 2D.27. Examples of curved-stem arrow shapes are included in Figure 2D-5.

Guidance:

Arrows used on guide signs to indicate the directions toward designated routes or destinations should be pointed at the appropriate angle to clearly convey the direction to be taken. A horizontally oriented up-arrow design should be used at right-angle intersections.

On a ground-mounted guide sign, a directional arrow for a straight-through movement should point upward. For a turn, the arrow on a guide sign should point upward and at an angle related to the sharpness of the turn.

Option:

Arrows may be placed below the principal sign legend or on the appropriate side of the legend.

Guidance:

At an exit, an arrow should be placed at the side of the sign which will reinforce the movement of exiting traffic. The up-arrow design should be used.

The width across the arrowhead should be at least equal to the height of the largest letter on the sign. For short downward pointing arrows on overhead signs, the width across the arrowhead should be 1.75 times the letter height.

Diagrammatic signing used on conventional roads (*except for roundabouts*) should follow the principles set forth in Section 2E.19. Diagrammatic signing applied at roundabouts should follow the principles set forth in Section 2D.34A.

Section 2D.26 Directional Arrow Auxiliary Signs (M6 Series)

Standard:

If used, the Directional Arrow auxiliary sign (see Figure 2D-5) shall be mounted below the route sign in directional assemblies, and displays a single- or double-headed arrow pointing in the general direction that the route follows.

If used at roundabouts, the Directional Arrow auxiliary sign shall not use double-headed arrows.

Section 2D.27 Route Sign Assemblies

Standard:

A Route Sign assembly shall consist of a route sign and auxiliary signs that further identify the route and indicate the direction. Route Sign assemblies shall be installed on all approaches to numbered routes that intersect with other numbered routes.

Where two or more routes follow the same section of highway, the route signs for Interstate, U.S., State, and County routes shall be mounted in that order from the left in horizontal arrangements and from the top in vertical arrangements. Subject to this order of precedence, route signs for lower-numbered routes shall be placed at the left or top.

Within groups of assemblies, information for routes intersecting from the left shall be mounted at the left in horizontal arrangements and at the top or center of vertical arrangements. Similarly, information for routes intersecting from the right shall be at the right or bottom, and for straight-through routes at the center in horizontal arrangements or top in vertical arrangements.

Route Sign assemblies shall be mounted in accordance with the general specifications for highway signs (Chapter 2A), with the lowest sign in the assembly at the height prescribed for single signs.

Guidance:

Assemblies for two or more routes, or for different directions on the same route, should be mounted in groups on a common support.

Option:

Route Sign assemblies may be installed on the approaches to numbered routes on unnumbered roads and streets that carry an appreciable amount of traffic destined for the numbered route.

The diagrammatic route sign format may be applied in advance of roundabouts (see Section 2D.34A).

If engineering judgment indicates that groups of assemblies that include overlapping routes or multiple turns might be confusing, route signs or auxiliary signs may be omitted or combined, provided that clear directions are given to road users.

Support:

Figure 2D-6 shows typical placements of route signs.

Section 2D.30 Directional Assembly

Standard:

A Directional assembly shall consist of a route sign, a Directional Arrow auxiliary sign, and a Cardinal Direction auxiliary sign, if needed. The various uses of Directional assemblies shall be as outlined below:

A. Turn movements (indicated in advance by an Advance Route Turn assembly) shall be marked by a Directional assembly with a route sign displaying the number of the turning route and a single-headed arrow pointing in the direction of the turn.

B. The beginning of a route (indicated in advance by a Junction assembly) shall be marked by a Directional assembly with a route sign displaying the number of that route and a single-headed arrow pointing in the direction of the route.

C. The end of a route shall be marked by a Directional assembly with an END auxiliary sign and a route sign displaying the number of that route.

D. An intersected route (indicated in advance by a Junction assembly) shall be designated by:

- 1. Two Directional assemblies, each with a route sign displaying the number of the intersected route, a Cardinal Direction auxiliary sign, and a single-headed arrow pointing in the direction of movement on that route; or**
- 2. A Directional assembly with a route sign displaying the number of the intersected route and a double-headed arrow, pointing at appropriate angles to the left, right, or ahead.**

Guidance:

Straight-through movements should be indicated by a Directional assembly with a route sign displaying the number of the continuing route and a vertical arrow. A Directional assembly should not be used for a straight movement in the absence of other assemblies indicating right or left turns, as the Confirming assembly sign beyond the intersection normally provides adequate guidance.

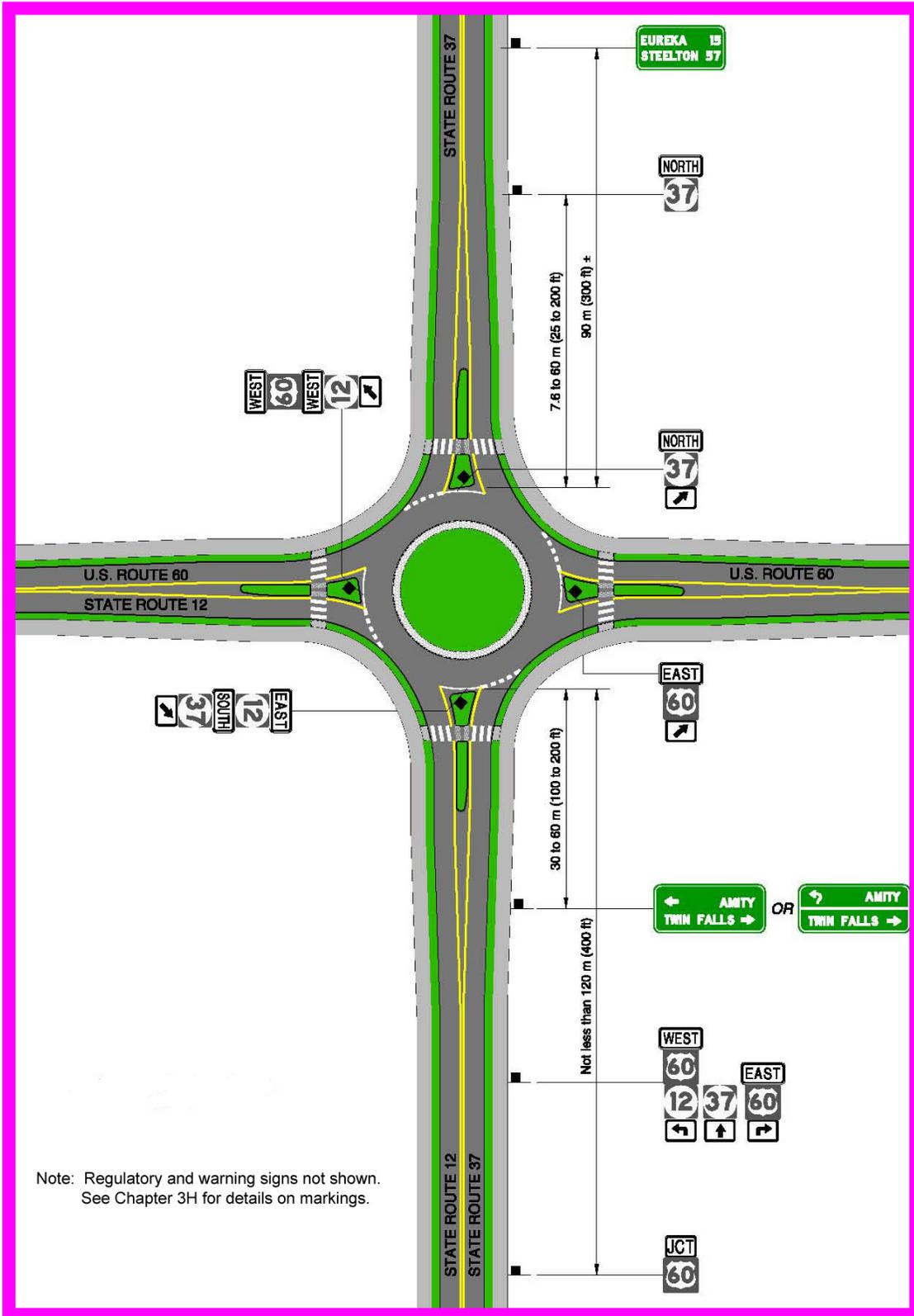
Directional assemblies should be located on the near right corner of the intersection. At major intersections and at Y or offset intersections, additional Directional assemblies should be installed on the far right or left corner to confirm the near-side assemblies. When the near-corner position is not practical for Directional assemblies, the far right corner should be the preferred alternative, with oversized signs, if necessary, for legibility. Where unusual conditions exist, the location of a Directional assembly should be determined by engineering judgment with the goal being to provide the best possible combination of view and safety.

Support:

It is more important that guide signs be readable at the right time and place than to be located with absolute uniformity.

Figure 2D-6 shows typical placements of Directional assemblies.

Figure 2D-6:
 Add sheets 4 and 5 to Figure 2D-6. Sheet 4 is noted below.





Section 2D.34 Destination Signs (D1 Series)

Standard:

Except where special interchange signing is prescribed, the Destination (D1-1 through D1-3) sign (see Figure 2D-7), if used, shall be a horizontal rectangle carrying the name of a City, town, village, or other traffic generator, and a directional arrow.

Option:

The distance (see Section 2D.36) to the place named may also be shown on the Destination (D1-1a through D1-3a) sign (see Figure 2D-7). If several destinations are to be shown at a single point, the several names may be placed on a single panel with an arrow (and the distance, if desired) for each name. If more than one destination lies in the same direction, a single arrow may be used for such a group of destinations.

Guidance:

Adequate separation should be made between any destinations or group of destinations in one direction and those in other directions by suitable design of the arrow, spacing of lines of legend, heavy lines entirely across the panel, or separate panels.

Standard:

An arrow pointing to the right shall be at the extreme right of the sign, and an arrow pointing left or up shall be at the extreme left. The distance figures, if used, shall be placed to the right of the destination names.

Guidance:

Unless a sloping arrow will convey a clearer indication of the direction to be followed, the directional arrows should be horizontal or vertical.

Guidance:

If several individual name panels are assembled into a group, all panels in the assembly should be of the same length.

Destination signs should be used:

- A. At the intersections of U.S. or State numbered routes with Interstate, U.S., or State numbered routes; and
- B. At points where they serve to direct traffic from U.S. or State numbered routes to the business section of towns, or to other destinations reached by unnumbered routes.

Standard:

Where a total of three or less destinations are provided on the Advance Guide (see Section 2E.30) and Supplemental Guide (see Section 2E.32) signs, not more than three destination names shall be used on a Destination sign. Where four destinations are provided by the Advance Guide and Supplemental Guide signs, not more than four destination names shall be used on a Destination sign.

Guidance:

If space permits, four destinations should be displayed as two separate sign panels.

Option:

Where space does not permit, or where all four destinations are in one direction, a single sign assembly may be used.

Standard:

Where a single four-name sign assembly is used, a heavy line entirely across the panel or separated sign panels shall be used to separate destinations by direction.

Guidance:

The next closest destination lying straight ahead should be at the top of the sign or assembly, and below it the closest destinations to the left and to the right, in that order. The destination shown for each direction should ordinarily be the next County seat or the next principal City, rather than a more distant destination. In the case of overlapping routes, there should be shown only one destination in each direction for each route.

Standard:

If there is more than one destination shown in the same direction, the name of the nearest destination shall appear above the names of any destinations that are further away.

Section 2D.34A Roundabout Destination Signs (NEW SECTION)

Standard:

If used, destination signs at roundabouts shall comply with the provisions of Section 2D.34, except as indicated in this section.

Option:

Exit destination signs (D1-1b, D1-1c) may be used to designate a particular exit of a roundabout.

Curved-stem arrows (D1-2b, D1-3b) may be applied to represent the left turning movement at roundabouts (see Figure 2D-7A).

Sloping arrowheads may be applied to curved-stem arrows at roundabout intersections (see Figure 2D-7A).

The diagrammatic sign format (D1-4) may be applied in advance of roundabouts (see Figure 2D-7A).

Support:

Diagrammatic signs may be preferable for instances of atypical intersection geometry (e.g., other than 4-legged, 90-degree intersections) and where space is available.

ADD NEW FIGURE - Figure 2D-7A. Destination Signs for Roundabouts



D1-1b



DI-1c



DI-2b



DI-3b



DI-4

Section 2D.39 Advance Street Name Signs (D3-2)

Support:

Advance Street Name (D3-2) signs (see Figure 2D-8) identify an upcoming intersection. Although this is often the next intersection, it could also be several intersections away in cases where the next roundabout or signalized intersection is referenced.

Standard:

Advance Street Name (D3-2) signs, if used, shall supplement rather than be used instead of the Street Name (D3-1) signs at the intersection.

Option:

Advance Street Name (D3-2) signs may be installed in advance of signalized or unsignalized intersections to provide road users with advance information to identify the name(s) of the next intersecting street to prepare for crossing traffic and to facilitate timely deceleration and/or lane changing in preparation for a turn.

Guidance:

On arterial highways in rural areas, Advance Street Name signs should be used in advance of all roundabouts and signalized intersections and in advance of all intersections with exclusive turn lanes.

In urban areas, Advance Street Name signs should be used in advance of all roundabouts and signalized intersections on major arterial streets, except where roundabouts or signalized intersections are so closely spaced that advance placement of the signs is impractical.

The heights of the letters on Advance Street Name signs should be the same as those used for Street Name signs (see Section 2D.38)

Standard:

If used, Advance Street Name signs shall have a white legend and border on a green background. If used, Advance Street Name signs shall provide the name(s) of the intersecting street(s) on the top line(s) of the legend and the distance to the intersecting streets or messages such as NEXT SIGNAL, *NEXT ROUNDABOUT*, NEXT INTERSECTION, or directional arrow(s) on the bottom line of the legend.

Option:

Directional arrow(s) may be placed to the right or left of the street name or message such as NEXT SIGNAL, as appropriate, rather than on the bottom line of the legend. *Curved-stem arrows may be applied at roundabouts.*

For intersecting crossroads where the same road has a different street name for each direction of travel, the different street names may be shown on the same Advance Street Name sign along with directional arrows.

In advance of two closely spaced intersections where it is not practical to install separate Advance Street Name signs, the Advance Street Name sign may include the street names for both intersections along with appropriate supplemental legends for both street names, such as NEXT INTERSECTION, 2nd INTERSECTION, or NEXT LEFT and NEXT RIGHT, or advance directional arrows.

Addition to Figure 2D-8:

Put the following sign second from the bottom of the stack above D3-2:

