

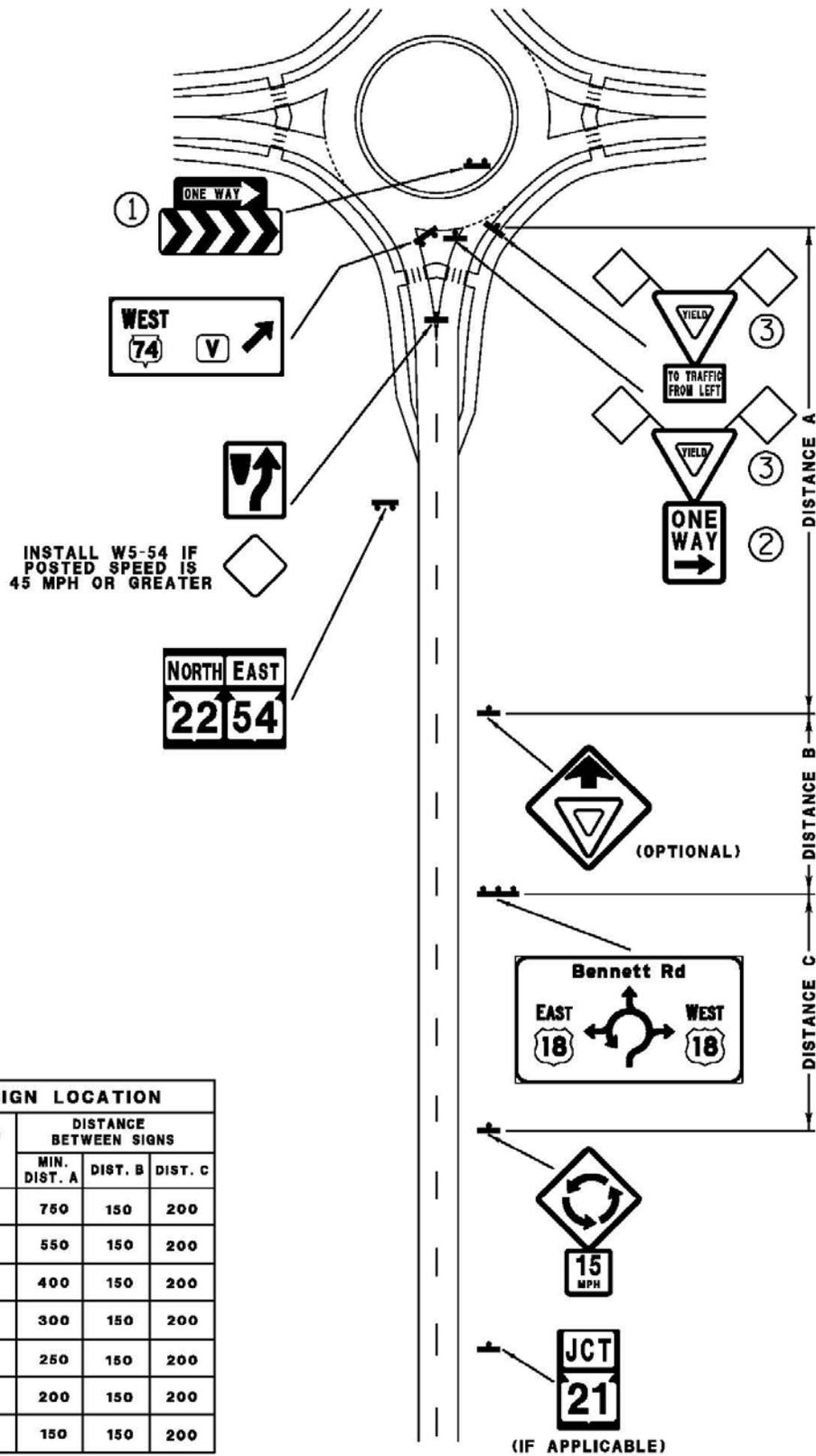
- A. Dotted Edge Line Extension, 18-Inch White, 2-ft segment, 2-ft gap
  - B. Approach Channelizing Line, 4 or 8-Inch White, Contact Regional Traffic Engineer for marking preference
  - C. Circulatory Lane Line, 4 or 8-Inch White, 6-ft segment, 3-ft gap
  - D. Approach Lane Line Special, White:
    - a. 4 or 8-Inch, even segment: gap ratio (12-segment 12-ft gap MAX.) for symmetrical lane assignment. Begin marking where flare widens to 9.5-ft for each lane.
    - b. 8-Inch, 3-ft segment, 9-ft gap for advanced warning of an exclusive turn lane. Begin marking where flare widens to 12-ft for each lane or a minimum of 150-ft before the solid line if no flare is present.
  - E. Dotted Lane Line (guidance), 4 or 8-Inch White\*\*, 1-ft segment, 3-ft gap
  - F. Splitter Island Left Edge Line (optional), 4-Inch Yellow. Refer to TGM 3-10-1 and consult the Regional Traffic Engineer for further placement guidance of the yellow edge line upstream of the roundabout.
  - G. Truncated Domes, aligned to ramp direction, not crosswalk direction
  - H. Crosswalk, refer to TGM 3-2-18 for further guidance, Contact Regional Traffic Engineer for marking preference
    - a. 12 or 24-Inch White, spaced 24-Inches apart, aligned parallel to direction of travel
    - b. 6-Inch White
  - I. Begin solid approach channelizing line where flare widens to 9.5-ft or 50-ft in advance of approach PC, whichever is shorter. This may be extended for certain exclusive lane configurations.
  - J. 4-Inch Double Yellow
  - K. Median Diagonal Marking (optional if island is less than 6-ft wide), 12-Inch Yellow
    - a. 25-ft C-C spacing, typical
    - b. 10-ft C-C spacing if less than 50-ft long
  - L. Splitter Island
  - M. \* Gore Line, 8-Inch White to 5-ft beyond PC of nose
  - N. \* Left Edge Line, 4-Inch Yellow
  - O. \* Gore Chevrons, 12-Inch White, 10-ft C-C spacing
  - P. \* Diagonals, 12-Inch White, 10-ft spacing. Place only if distance between curb flange and edge line is 3-ft or greater.
  - Q. \* Diagonals, 12-Inch Yellow, 10-ft spacing. Place only if distance between curb flange and edge line is 3-ft or greater.
  - R. Curb marking, Yellow
  - S. Yield word (optional), White
  - T. Lane line, 4-Inch White, 12.5-ft segment, 37.5-ft gap
  - U. Truck Gore Chevrons (optional if gore is less than 6-ft wide), 12-Inch White
    - a. 25-ft C-C spacing, typical
    - b. 10-ft C-C spacing if less than 50-ft long
  - V. Lane Separation, Truck Gore, 8-Inch White
  - W. Lane Use Arrows, White: Arrows with the oval shall only be used on the left-most turn lane
  - X. Lane Use Arrows, White: No ovals shall be used on any arrows within the circulatory roadway
  - Y. Bike Lane Markings, 4 or 8-Inch 3-ft segment, 9-ft gap
  - Z. Center line Yellow Marking 4-Inch Double or 4-inch 500-ft segment and 12.5 segment, 37.5-ft gap
- \* SPECIAL CASE:
- These markings should be used when additional space is needed to accommodate truck movements while still restricting the pavement width for smaller vehicles. It is expected that larger vehicles will have to drive over the markings to complete their maneuver.
  - The point of the chevron should always 'point' upstream.
- \*\* Match width of marking extended

**Roundabout Pavement Marking Bid Item and Product Type \*\*\***

Marking and Code	Bid Item Name	Roadway Surface	Bid Item Number
Dotted Edge Line (Yield Line), A	Pavement Marking Epoxy 18-Inch	All	646.0156
Approach Channelizing Line, B Lane Line, Da & Db, Bike Lane Markings, Y	Pavement Marking Epoxy, 4-Inch or 8-Inch	All	646.0106 or 646.0126
Circulatory Lane Line, C Dotted Lane Line, E	Pavement Marking Epoxy, 4-Inch or 8-Inch	All	646.0106 or 646.0126
Truck Gore, V	Pavement Marking Epoxy 8-Inch	All	646.0126
Edge Line, F, J, N, Center Line, Z	Pavement Marking Epoxy 4-Inch	All	646.0106
Crosswalk, Ha & Hb	Pavement Marking Crosswalk Epoxy 6, 12 or 24-Inch	All	647.0766, 647.0776 or 647.0796
Median Diagonals, K	Pavement Marking Diagonal Epoxy 12-Inch	All	647.0726
Gore Line, M	Pavement Marking Epoxy 8-Inch	All	647.0126
Chevron, O, P, QQ, & U	Pavement Marking Diagonal Epoxy 12-Inch	All	647.0726
Arrows & Words, S, W, & X	Pavement Marking Epoxy Arrows Pavement Marking Epoxy Arrows, Type 6R & 7R <b>Excluded**</b> Pavement Marking Epoxy Words	All	Multiple bid items 647.0140 and 647.0130  Multiple bid items
Approach & Exit Lane Line, T	Pavement Marking Epoxy 4-Inch	All	646.0106

\*\*\* Contact the Regional Traffic Engineer for product and bid item practices.

\*\* Avoid use of Type 6R and 7R Contrast Arrows due to width issues.



SIGNS WITH ROUTE SHIELDS ARE EXAMPLE APPLICATIONS.

SUBSTITUTE APPROPRIATE ROUTE SHIELDS AND NUMBERS OR LETTERS AS NECESSARY.

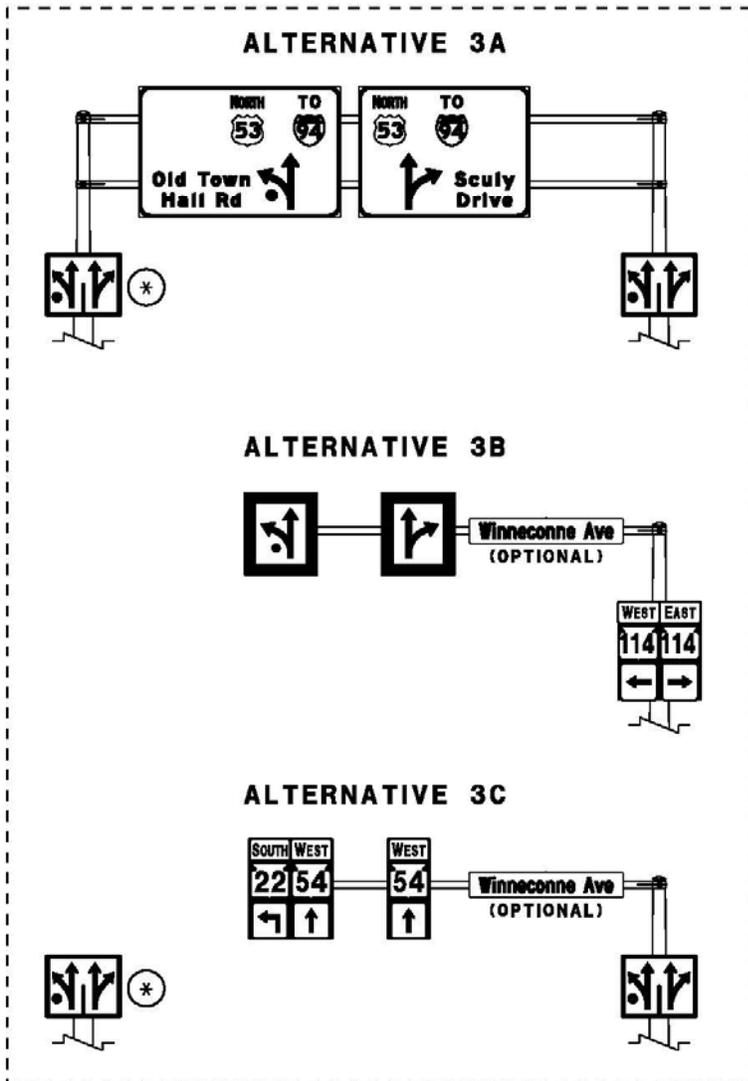
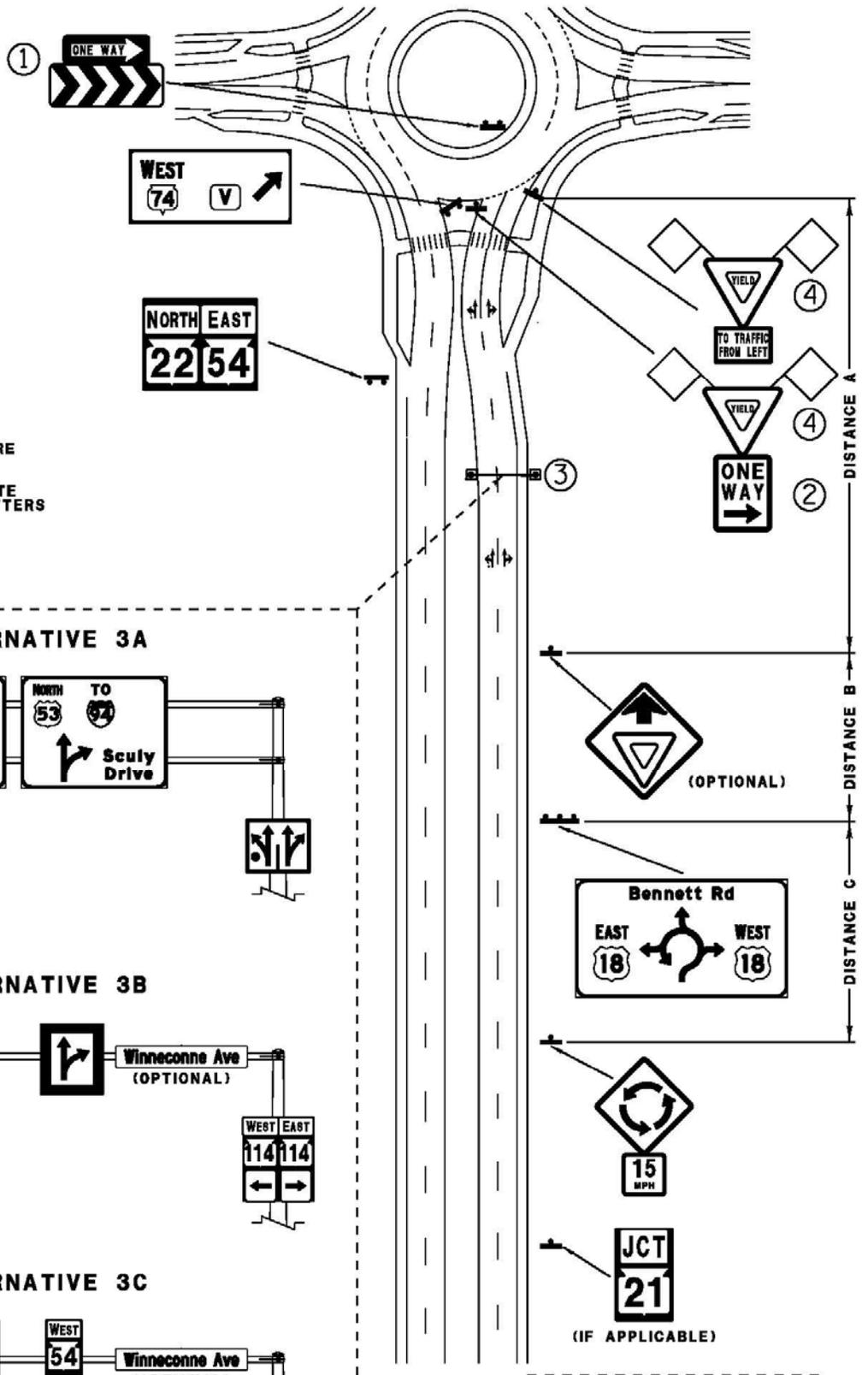
**NOTES:**

1. Place a ONE WAY (R6-1R) sign above the roundabout chevron bank (R6-4b) in the central island.
2. Place a ONE WAY (R6-2R) sign below the left side YIELD (R1-2) sign. All YIELD signs shall be mounted at the same height (7'-3"± to the bottom of the YIELD sign).
3. Install 18" x 18" orange flags on top of the YIELD signs for the first six months of operation of the roundabout to emphasize the yield movement.
4. In general, the typical spacing between signs may be reduced to 100 feet in urban areas. Typical rural sign spacing is 200 feet.

POSTED SPEED MPH	DISTANCE BETWEEN SIGNS		
	MIN. DIST. A	DIST. B	DIST. C
55	750	150	200
50	550	150	200
45	400	150	200
40	300	150	200
35	250	150	200
30	200	150	200
25	150	150	200

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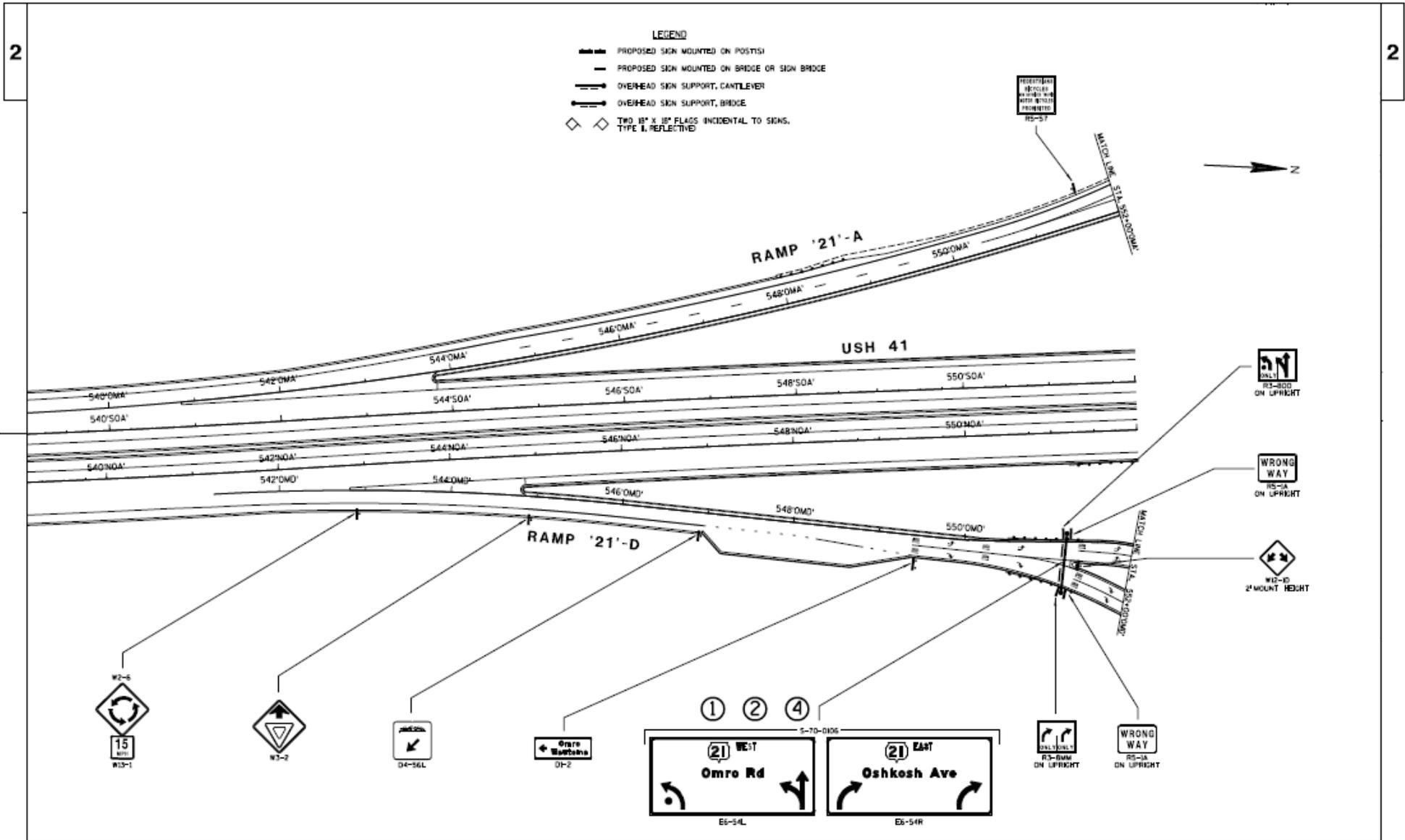
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2. Place a ONE WAY (R6-2R) sign below the left side YIELD (R1-2) sign. All YIELD signs shall be mounted at the same height (7'-3"± to the bottom of the YIELD sign).
3. Lane use and destination guidance is required on multilane approaches. Approach speed and available lateral space will dictate which style of signing should be installed. Placement of the will depend on the approach speed, sight lines, and lane configuration. Consult the Regional Traffic Engineer for additional guidance.
  - a. When green and white (Type I) overhead guide signs are used, a ground mounted lane use sign (R3-8 series) shall be placed as well.
  - b. When Type I overhead guide signs are not feasible, overhead lane control signs (R3-5 or R3-6 series) should be used. Route directional sign assemblies (J-series) should be mounted to the structure upright or ground-mounted adjacent to the overhead structure. An advanced street name sign shall also be installed on the cross-arm for additional directional guidance. The route directional assemblies may be directionally split (left turns on the left side, right turns on the right) when multiple routes are concurrent. Use care when splitting these assemblies that the placement matches the adjacent lane designations. Consult the Regional Traffic Engineer for further guidance.
  - c. When Type I overhead guide signs are not feasible and lateral space will not allow ground-mounted route directional assemblies (J-series) to be placed, J-series assemblies may be mounted overhead. Ground-mounted lane use signs shall be placed as well. Consult the Regional Traffic Engineer before implementing this type of installation.
- \* An additional lane use sign may be placed on the left side as well for additional emphasis. The additional sign should be placed when volumes are high, for approaches of three or more lanes, or any time when the sign may have a greater chance of being blocked by passing vehicles. Consult the Regional Traffic Engineer for additional guidance.
4. Install 18" x 18" orange flags on top of the YIELD signs for the first six months of operation of the roundabout to emphasize the yield movement.
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PROJECT NO: EXIT RAMP ROUNDABOUT SIGNING TYPICAL SIGNS SHEET 2 of 2 E

FILE NAME: P:\2011\11925 FDM Update to PMA\MLC\Drawings\Figures\Section 35 Figures & Attachments\Attachment 35.33.dgn PLOT DATE: 10/3/2012 PLOT BY: G.R.E., Inc. PLOT NAME: PLOT SCALE: 50.0000 in / 1in. MUSDOT/CADD/SHEET 42

**NOTES:**

1. The D15 series of overhead guide signs (Bureau of Traffic Operations A11-17 sign plate) may be used in lieu of the E6 series (BTO A11-13 sign plate) overhead guide signs. D15 series guide signs shall not be used on any approach that has an option lane. A mix of E6 and D15 series signs shall not be used on the same approach. Mixing of the signs may confuse unfamiliar drivers.

When roundabouts follow in close succession, as in the case of ramp terminals, all overhead signs in the same direction within the corridor shall match. Consult with the Regional Traffic Engineer regarding the final design of corridor overhead signing. Since D15 signs combine regulatory lane assignment and directional guidance, drivers may become distracted and confused if the location of information changes (on the sign or location of the sign).

2. When practical, combine overhead signs to reduce the amount of repetitious information the driver must process. Consult the Regional Traffic Engineer regarding the final design of overhead signing.
3. The ONLY plaque shall be used when a through lane becomes a dedicated turn lane. The ONLY plaque shall be placed on the inside of the curved arrow stem.
4. All lane arrows, pavement marking, regulatory sign, and overhead guide signs shall match for each lane of the approach. The return to the freeway through movement should be indicated by an arrow on the guide sign. Route shields and associated cardinals for the return movement are optional, however, may require significant space and contribute to message clutter when concurrent highways are involved. Consult with the Regional Traffic Engineer regarding the final design of off-ramp overhead signing.
5. Arrow stems should be centered over the center of the lane as space allows.