



Florida Department of Transportation

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ROADWAY DESIGN BULLETIN 22-04
TRAFFIC ENGINEERING AND OPERATIONS BULLETIN 22-02
(FHWA Approved: 09/22/22)

DATE: October 11, 2022

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Construction Engineers, District Structures Design Engineers, District Maintenance Engineers, District Consultant Project Management Engineers, District Roadway Design Engineers, District Traffic Operations Engineers, Program Management Engineers, District Materials Engineers, District Specifications Engineers, District Estimates Engineers, District Safety Engineers, District Safety Administrators

FROM: Michael Shepard, P.E., State Roadway Design Engineer
Omar Meitin, P.E., Interim Director, Traffic Engineering and Operations Office

COPIES: Dan Hurtado, Tim Lattner, Rudy Powell, Raj Ponnaluri, Stefanie Maxwell, Scott Arnold, Paul Hiers, Vern Danforth, Daniel Strickland, Will Potter, Lora Hollingsworth, Gevin McDaniel, Kevin Burgess (FHWA), Gregory Hall (FHWA), Bren George (FHWA)

SUBJECT: **Wrong-Way Driving Signs for Arterials and Collectors**

This Bulletin introduces revisions to the *FDOT Design Manual (FDM)* to implement clarifications and improvements to the signing requirements associated with wrong-way driving (WWD) on arterials and collectors.

REQUIREMENTS

1. Delete *FDM 230.4.3* and *FDM 230.4.4* and replace with Attachment 'A'.
2. Delete *FDM Exhibits 230-3* through *230-7* and replace with Attachment 'B'.
3. Delete *FDM Exhibit 230-12* and replace with Attachment 'C'.

BACKGROUND

Requirements 1 and 2: Requirements for DO NOT ENTER (R5-1) and WRONG WAY (R5-1a) signs in narrow medians have been modified. The revisions provide options with more guidance and commentary.

Requirement 3: Excess signing has been removed for some of the unnecessary ONE WAY signing on 3-leg intersections.

IMPLEMENTATION

The requirements of this bulletin are effective immediately on all design-bid-build projects for which design development is less than 90% complete (Phase III Submittal). These requirements should be employed on projects beyond 90% complete where implementation will not adversely impact the production schedule.

The requirements of this bulletin are effective immediately on all design-build projects for which the final Request for Proposal (RFP) has not been released. Implementation of this bulletin for design-build projects for which the final RFP has been released is at the discretion of the District.

At the discretion of the District, the requirements of this Bulletin may be incorporated into ongoing construction contracts. The addition of this work will require supplemental design details and revisions to be developed for successful implementation. This work should be coordinated between District Transportation Development and Operations.

CONTACT

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MS/JE/gjm

Attachment 'A'

230.4.3 Divided Arterials and Collectors

Use Wrong-Way Arrow pavement markings at unsignalized intersections with median widths of 20 feet or greater.

Use DO NOT ENTER (R5-1) signs and WRONG WAY (R5-1a) signs at unsignalized intersections with median nose widths of 30 feet or greater. Place these signs with the face oriented at 45 degrees toward the connection it is intended to regulate. For median nose widths less than 30 feet, the median DO NOT ENTER (R5-1) and WRONG WAY (R5-1a) signs are optional. Place signs as close to the wrong-way roadway as possible while meeting the placement criteria of **Standard Plans, Index 700-101**.

See **Exhibits 230-3** and **230-4** for recommended configurations of Wrong-Way Arrow pavement markings, DO NOT ENTER (R5-1) signs, and WRONG WAY (R5-1a) signs.

Commentary: For median nose widths less than 30ft, median DO NOT ENTER (R5-1) and WRONG WAY (R5-1a) signs should only be considered in high-risk locations (as described below). If placed in these narrower medians, ensure details in the plans clearly specify 45-degree rotation of signs toward the wrong way movements to reduce visibility to those making proper turning movements.

At intersections with positive offset left-turns, use DO NOT ENTER (R5-1) signs with dimensions of 48 inches by 48 inches. See **FDM 212.14.4** for further information on offset left turn lanes.

For Context Classifications C1, C2, C3C, and C4 place Wrong-Way Arrow pavement markings in all lanes prior to unsignalized, stop-controlled connection (i.e., side streets, commercial driveways, or driveways). Place Wrong-Way Arrow pavement markings no closer than 300 ft spacing. For all other Context Classifications, consider placing Wrong-Way Arrow pavement markings as described above where high-risk locations are present. Coordinate with the District Traffic Operations Engineer (DTOE) to evaluate high-risk locations using factors such as land-use, presence of lighting, history of impaired driving, crash history, and an over-represented population of licensed drivers 25 or younger and 65 or older. Determination of high-risk locations is at the discretion of the DTOE.

At intermediate ends of medians, consider the use of KEEP RIGHT (R4-7) sign for median nose widths less than 30 feet.

230.4.4 One-Way Pairs and Divided Arterials/Collectors with One-Way Egress

One-Way Egress is a condition where a two-way or one-way side street, commercial driveway, or driveway connects to a one-way arterial/collector or divided arterial/collector without a median opening.

See **Exhibit 230-5** for recommended configurations.

Place a ONE WAY (R6-1) sign at signalized and unsignalized, stop-controlled connection (i.e., side streets, commercial driveways, or driveways) with one-way egress. ONE WAY (R6-1) sign shall be placed on far side median or shoulder depending on facility type.

At driveways controlled by a non-signalized traffic control device with one-way egress, place a RIGHT TURN ARROW (FTP-55R-06) sign or a LEFT TURN ARROW (FTP-55L-06) sign below the STOP (R1-1) sign. Verify this sign has not already been installed by District driveway permit. At side street connections, place a Mandatory Lane Control (R3-5) sign below the STOP (R1-1) sign.

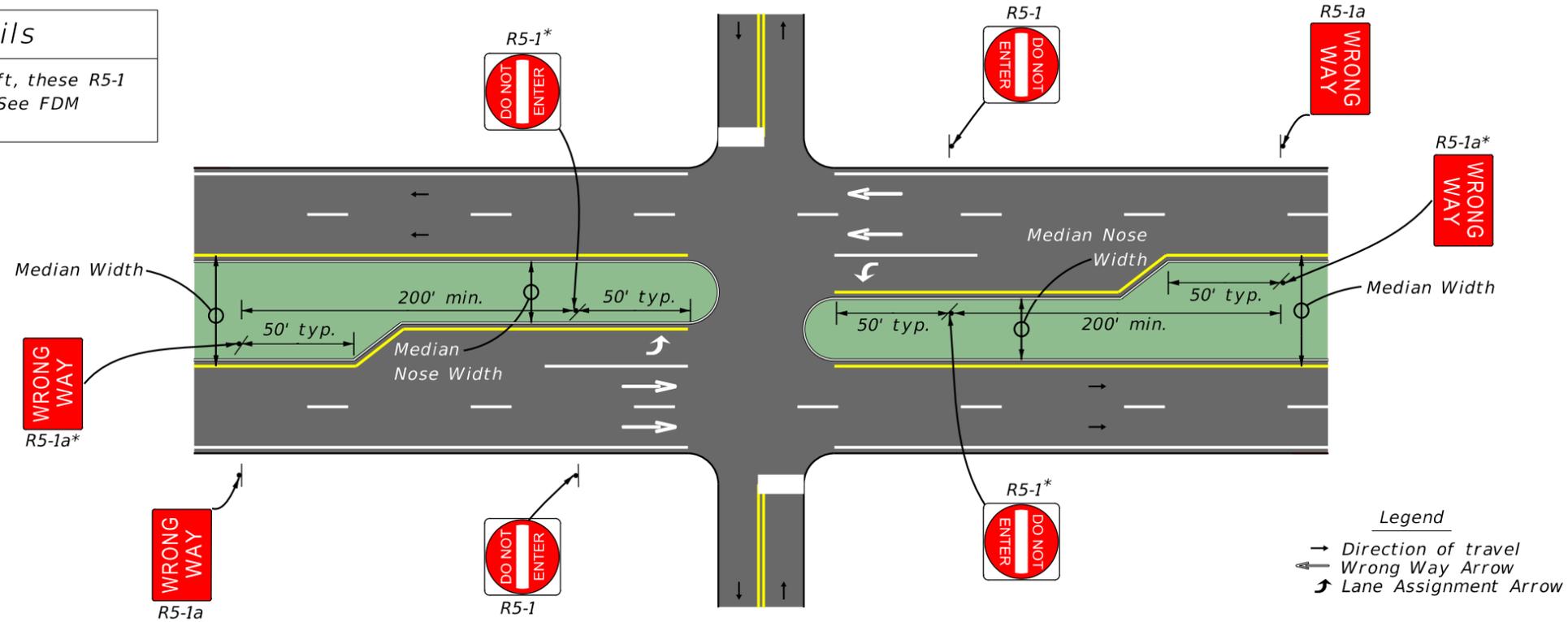
For Context Classifications C1, C2, C3C, and C4 place Wrong-Way Arrow pavement markings in all lanes prior to signalized and unsignalized, stop-controlled connection (i.e., side streets, commercial driveways, or driveways) with one-way egress. Place Wrong-Way Arrow pavement markings no closer than 300 ft spacing. For all other Context Classifications, consider placing Wrong-Way Arrow pavement markings as described above where high-risk locations are present. Coordinate with the District Traffic Operations Engineer (DTOE) to evaluate high-risk locations using factors such as land-use, presence of lighting, history of impaired driving, crash history, and an over-represented population of licensed drivers 65 and older. Determination of high-risk locations is at the discretion of the DTOE.

Attachment 'B'

WRONG-WAY SIGNING AND PAVEMENT MARKING AT 4-LEG UNSIGNALIZED INTERSECTIONS ALONG DIVIDED ARTERIALS/COLLECTORS

Installation Details

* If median nose width is <30 ft, these R5-1 and R5-1a signs are optional. See FDM 230.4.3



NOT TO SCALE

EXHIBIT 230-3
06/24/2022

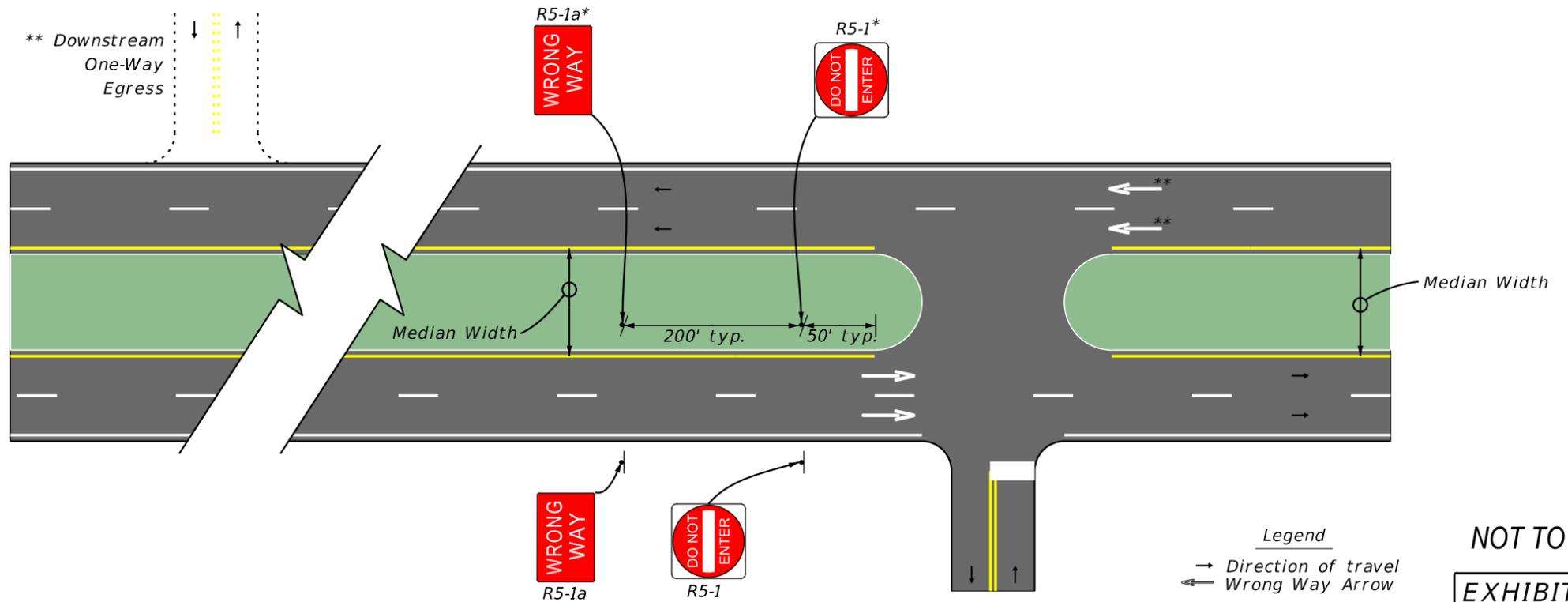
WRONG-WAY SIGNING AND PAVEMENT MARKING AT 3-LEG UNSIGNALIZED INTERSECTIONS ALONG DIVIDED ARTERIALS/COLLECTORS

Installation Details

(1) Median Nose Width is equal to Median Width when auxiliary lanes are not present.

* If median nose width is <30 ft, these R5-1 and R5-1a signs are optional. See FDM 230.4.3.

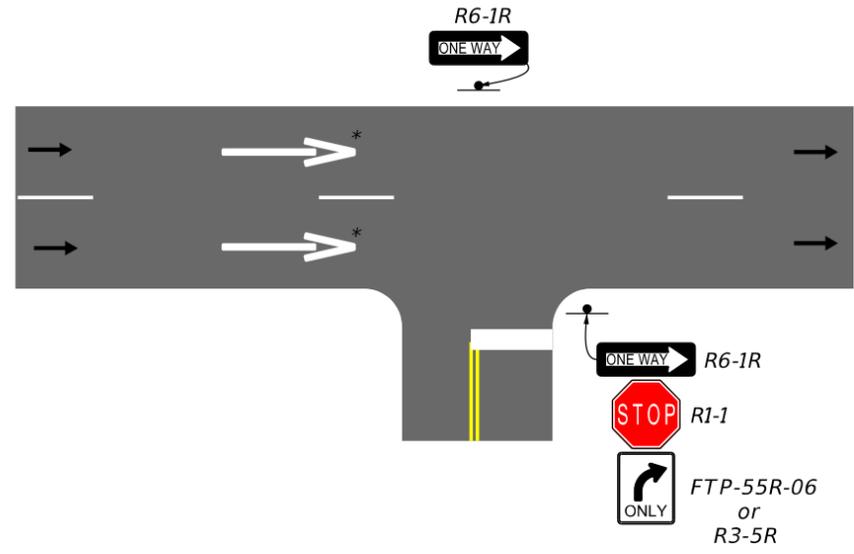
** Wrong Way Arrows optional when Downstream One-Way Egress is present. See Exhibit 230-5 for signing at these One-Way Egress locations.



NOT TO SCALE

EXHIBIT 230-4
06/24/2022

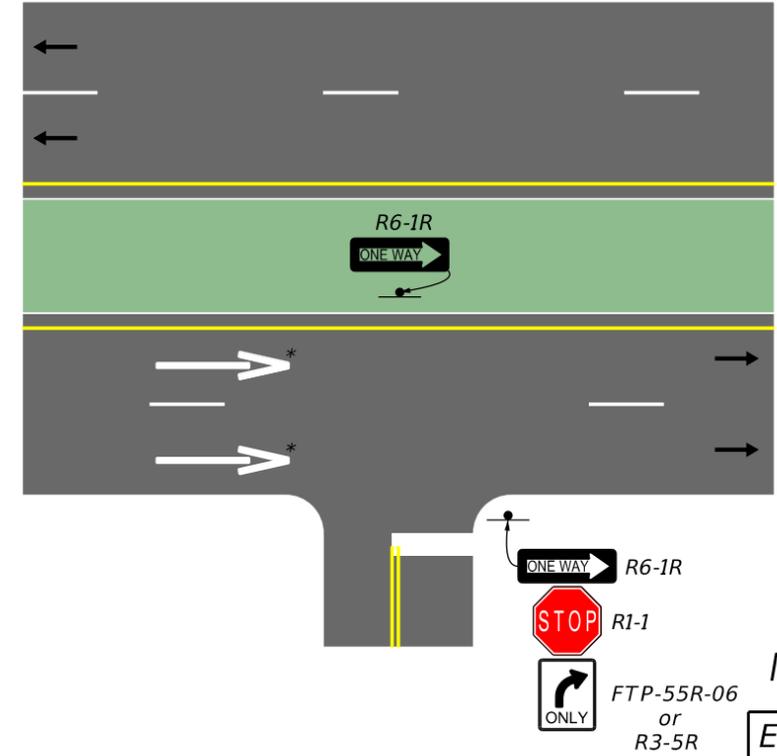
ONE-WAY PAIRS AND DIVIDED ARTERIALS/COLLECTORS WITH UNSIGNALIZED ONE-WAY EGRESS



- Installation Details*
- 1) R6-1 shall be placed on far side median or shoulder depending on facility type.
 - 2) RIGHT TURN ARROW (FTP-55R-06) or LEFT TURN ARROW (FTP-55L-06) typically added by district driveway permit.
 - 3) Mandatory Movement Lane Control (R3-5) sign must be added to side street.
- * See FDM 230.4.4 for how often to place Wrong-Way arrows based on context classification.

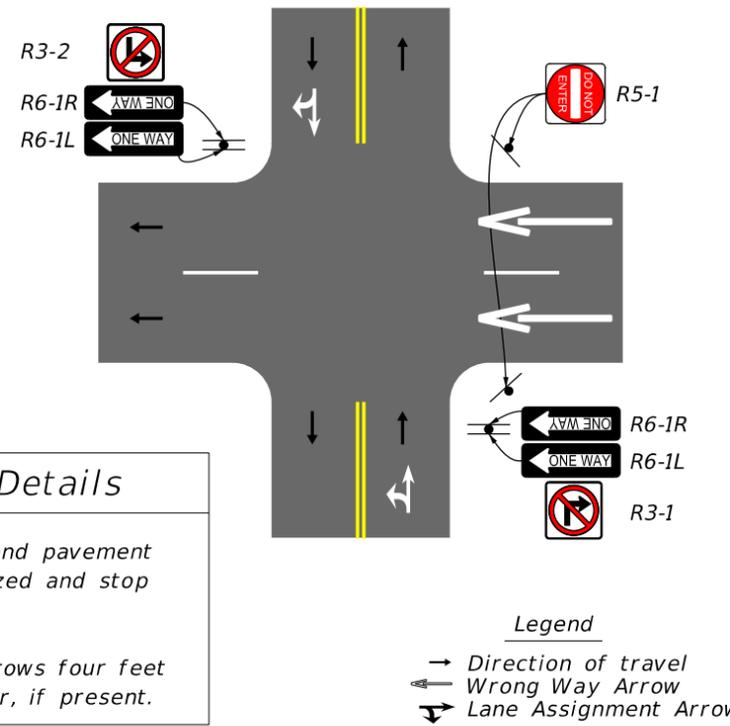
Legend

→ Direction of travel
↔ Wrong Way Arrow



NOT TO SCALE
EXHIBIT 230-5
01/01/2023

TYPICAL TWO-WAY APPROACH TO UNDIVIDED SIGNALIZED AND UNSIGNALIZED ONE-WAY STREET



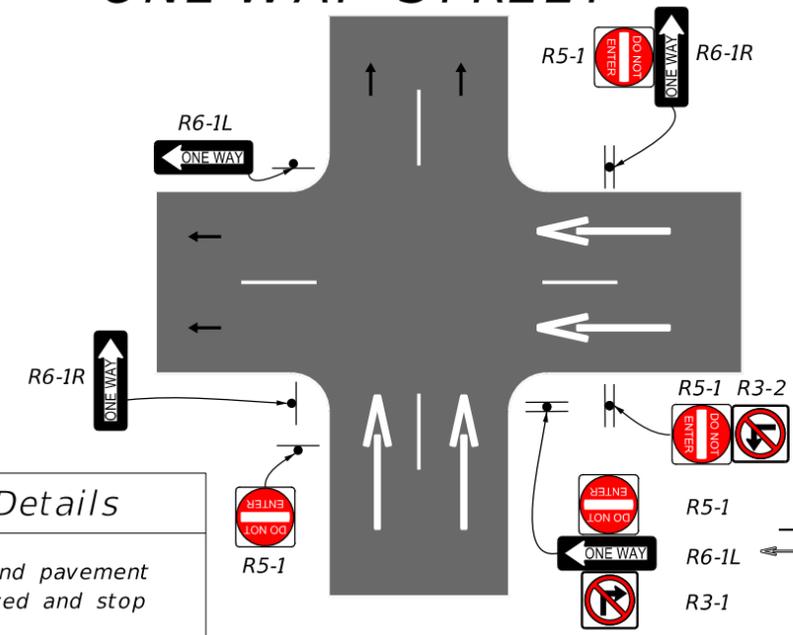
- Installation Details*
- 1) Wrong-Way signing and pavement markings for signalized and stop control.
 - 2) Place Wrong-Way arrows four feet upstream of stop bar, if present.

Legend

→ Direction of travel
↔ Wrong Way Arrow
↗ Lane Assignment Arrow

NOT TO SCALE
EXHIBIT 230-6
01/01/2023

TYPICAL ONE-WAY APPROACH TO UNDIVIDED SIGNALIZED AND UNSIGNALIZED ONE-WAY STREET



- Installation Details*
- 1) Wrong-Way signing and pavement markings for signalized and stop control.
 - 2) Place Wrong-Way arrows four feet upstream of stop bar, if present.

Legend

→ Direction of travel
↔ Wrong Way Arrow

NOT TO SCALE
EXHIBIT 230-7
01/01/2023

Attachment 'C'

TYPICAL SIGNING AND PAVEMENT MARKING AT 3-LEG STOP CONTROLLED INTERSECTIONS ALONG DIVIDED HIGHWAYS

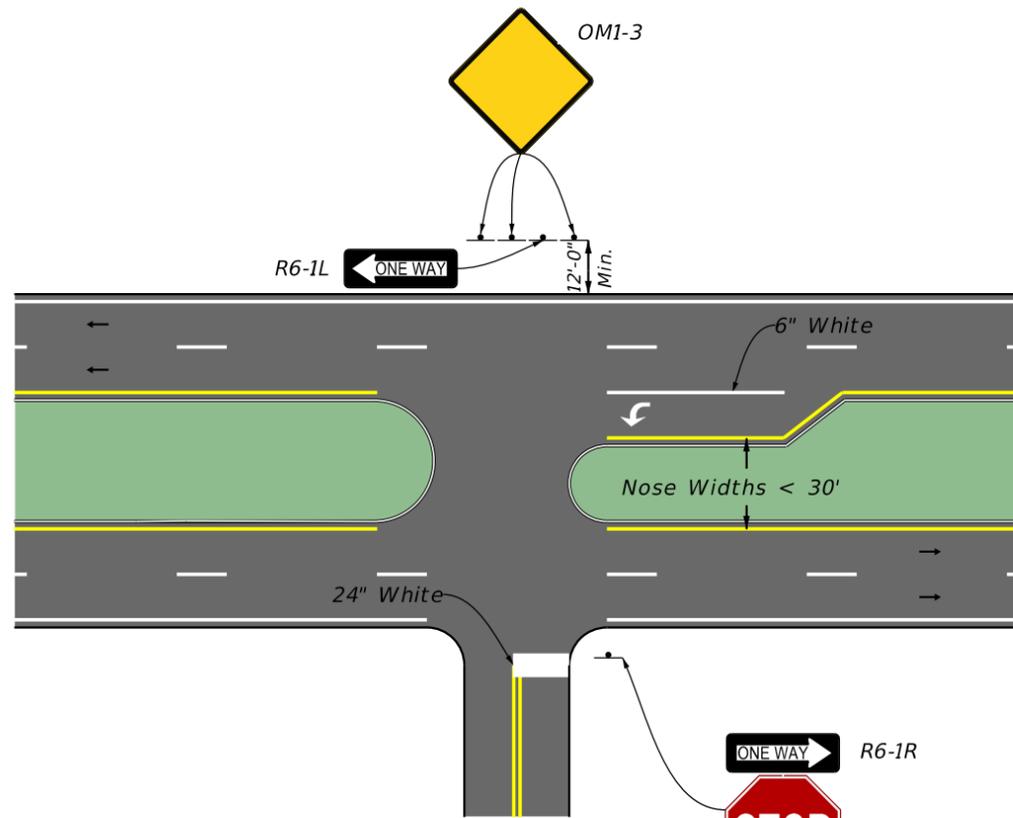


Figure 1
NOSE WIDTHS
LESS THAN 30'

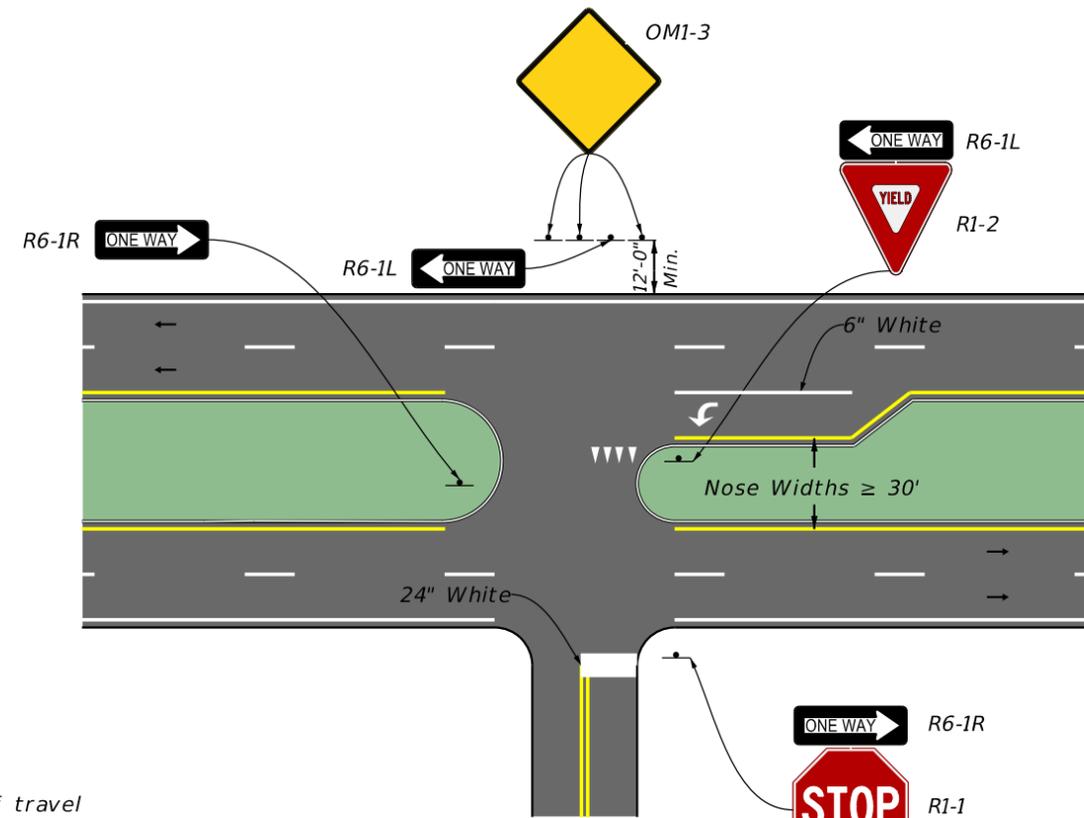


Figure 2
NOSE WIDTHS 30'
AND GREATER

Legend
→ Direction of travel

Installation Details

- 1) Major streets to be evaluated on a case-by-case basis.
- 2) Install Object Markers in accordance with Index 700-010.
- 3) See Index 711-001 for pavement markings.
- 4) Provide sheeting on signs and object markers in accordance with Specification 993.
- 5) For additional signing and pavement marking details to discourage Wrong-Way Driving, see FDM 230.4.3.

NOT TO SCALE

EXHIBIT 230-12
06/24/2022