

Typical Roadway Sections

Design Manual

Chapter 3

Cross Sections

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Initial Typical Roadway Section

Preferred design criteria from Section [1C-1](#) sets up the initial typical roadway section, but project constraints will usually dictate the project typical roadway section.

Project Typical Roadway Section

A PMT agrees upon the typical project roadway section, or a project concept statement defines the typical section. Project constraints dictate selecting values that are not preferred values from Section [1C-1](#). Refer to Section [1C-8](#) for documenting design decisions.

Determining a Typical Roadway Section

The functional classification of a roadway defines widths of various design elements which compose a typical roadway section. Considerations when establishing a typical roadway section are:

- Modes of transportation
 - Motorized users.
 - Non-motorized users.
- Number of lanes
 - Through lanes.
 - Turn lanes.
 - Bike lanes.
 - Parking lanes.
- Pedestrian infrastructure
 - Sidewalks.
 - Buffer zone.
 - Curb ramps.
- Median type
 - Divided roadway.
 - Undivided roadway.

Quick Tips:

- The PMT should agree upon the typical roadway sections, or the sections are defined in the project concept.
- Refer to Section [1C-8](#) for information on documenting design decisions.
- For design decisions exceeding the design criteria, see Section [1B-7](#).
- The project typical sections should minimize the number of changes to the width of a paving machine.

- Shoulder type
 - Rural section.
 - Urban (curbed) section.
- Staging and Construction
 - Pavement width to maintain traffic through traffic zone.
 - Paver widths.
- Other considerations
 - Future through lanes.
 - Pavement type.
 - Crown line location between sections.

Selecting a Typical Section

Project typical sections should minimize the number of changes to the width of a paving machine. The Designer can use the following process when selecting a project typical section.

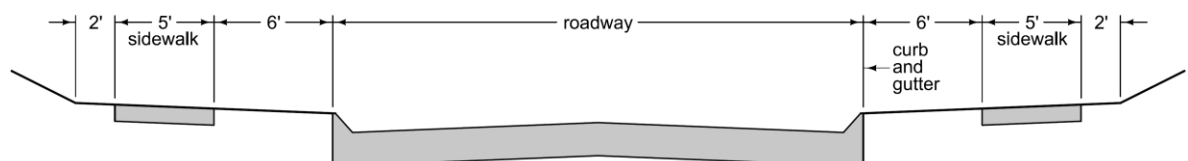
1. Establish the main typical section for a roadway.
2. Determine normal spacing between longitudinal joint lines. Bicycle accommodation may affect longitudinal joint spacing.
3. Determine construction sequence for the roadway and paving machine width.
4. Evaluate whether the construction sequence allows a contractor to build the roadway in sections that match the normal spacing between joint lines.
5. Establish section(s) for areas outside of the typical section (e.g., a roadway section with a left turn lane).
6. Compare the joint spacing between the typical section and the other sections.
7. Evaluate whether the other sections and construction sequence, allow the contractor use the paving machine through the other section.
8. Evaluate whether the contractor can use the paving machine to pave through the area with box-outs and hand pores to keep the paving machine width.
9. Evaluate whether the benefits gained in forcing a contractor to change the width of a paving machine, outweighs the cost to a project (e.g., right of way impacts).
10. Finalize the construction sequence and typical sections for the roadway.

Examples

The following examples illustrate typical sections created from design values from the Design Criteria Worksheets in Section [1C-1](#). The examples are not intended for a designer to copy into their project; instead, the purpose is to aid designers with defining the table values from Section [1C-1](#) to create project typical sections.

Urban Roadways

Urban roadways are usually defined as roadways containing curb and gutter sections, not necessarily a roadway within an urban boundary. Urban roadway sections will often include sidewalks typically situated as shown below.



Two Lane Curbed Roadways

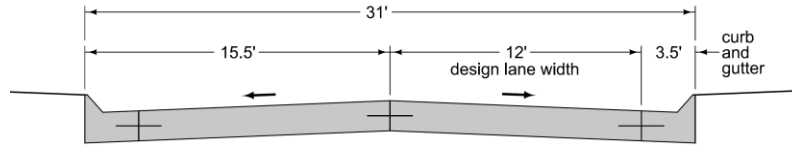


Figure 1: Two lane urban roadway with standard paver width of 31 feet.

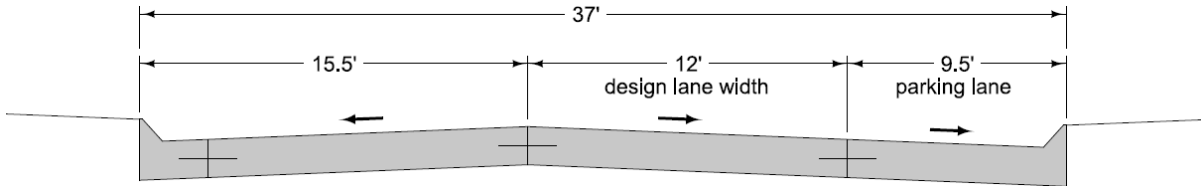


Figure 2: Two lane urban roadway with a parking lane and a standard paver width of 37 feet.

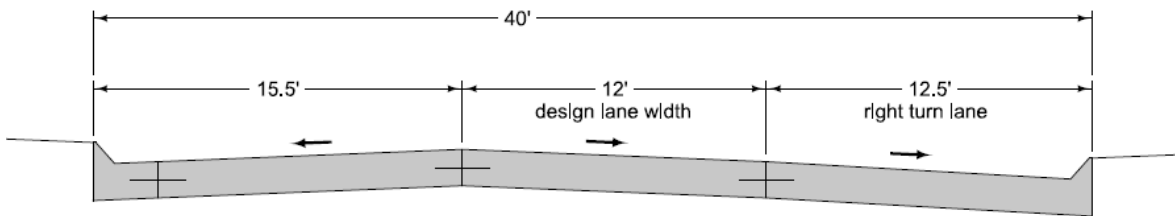


Figure 3: Two lane urban roadway with a right turn lane.

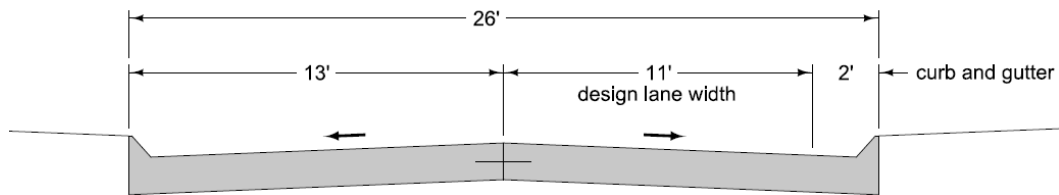


Figure 4: Two lane urban roadway with a standard paver width of 26 feet.

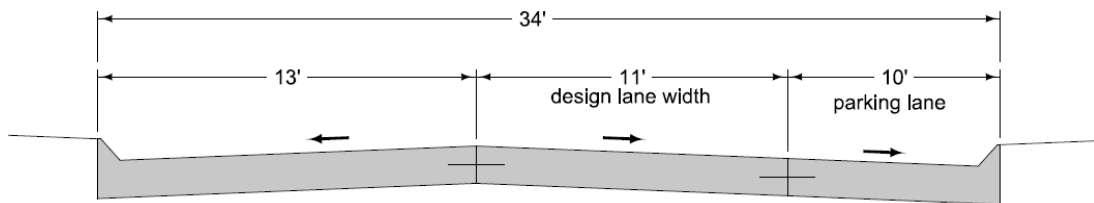


Figure 5: Two lane roadway with a parking lane and a standard paver width of 34 feet.

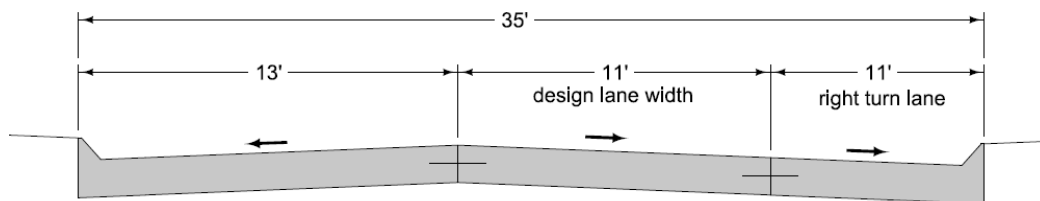


Figure 6: Two lane urban roadway with 11 foot lanes and right turn lane.

Note: Unless approved otherwise by the Jurisdiction, all 2-lane urban roadways should comply with standard paving machine widths of 26 and 31, or 34 and 37 feet for roadways with on street parking.

Three Lane Urban Roadways

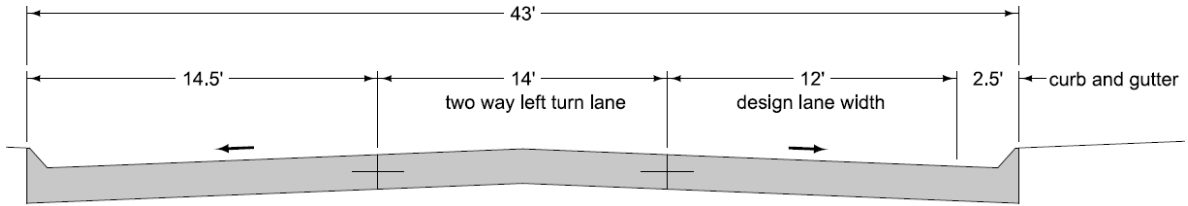


Figure 7: Three Lane urban roadway with a two way left turn lane.

Four Lane Urban Roadways

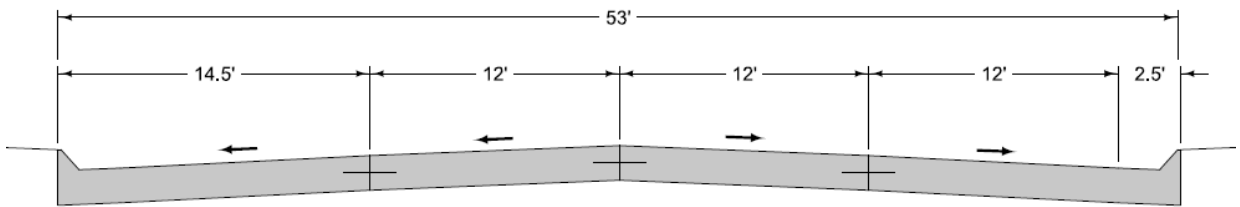


Figure 8: Four lane urban roadway.

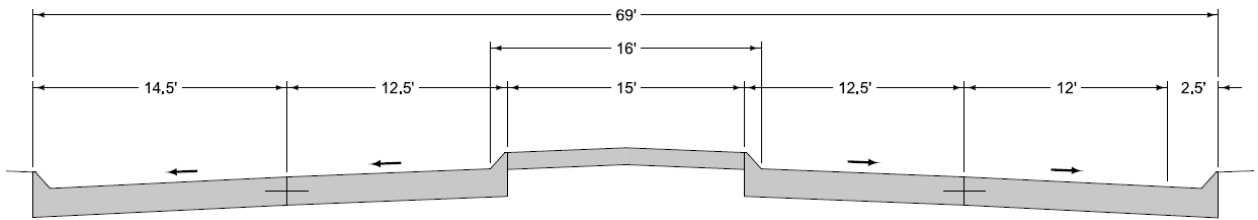


Figure 9: Four lane urban roadway with channelization.

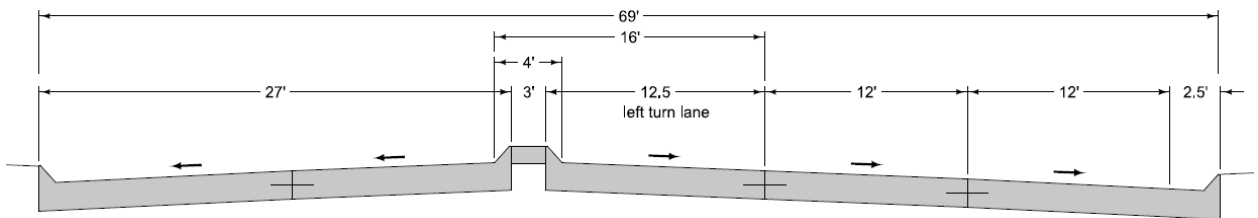


Figure 10: Four lane urban roadway with a left turn lane and channelization.

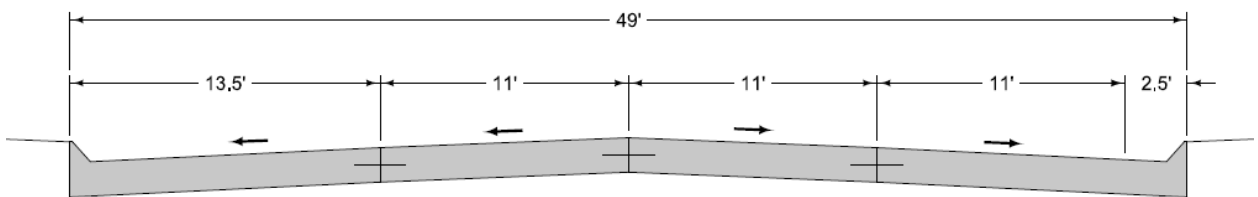


Figure 11: Four lane urban roadway with 11 foot lanes.

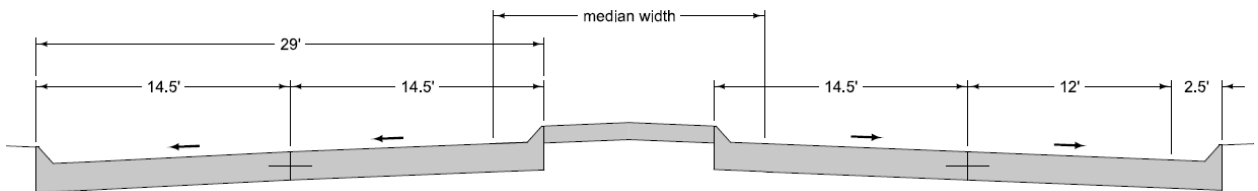


Figure 12: 4 lane urban roadway with a raised median.

Five Lane Urban Roadways

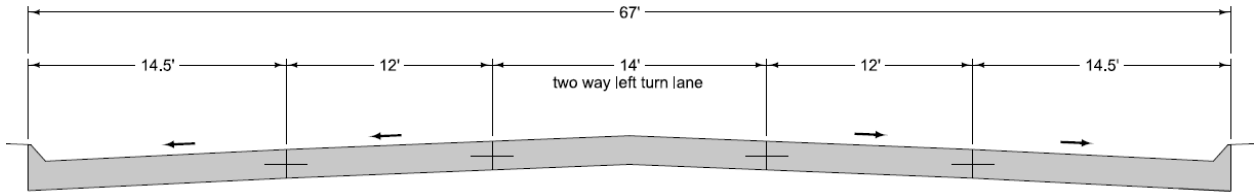


Figure 13: Curbed four lane urban roadway with a two way left turn lane.

Rural Roadways

Rural roadways are usually defined as roadways containing shoulders.

Two Lane Rural Roadways

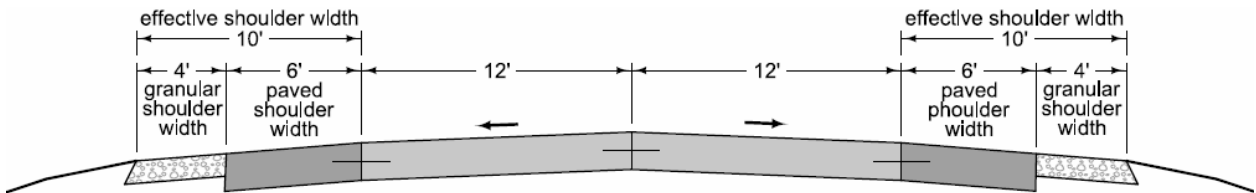


Figure 14: Two lane rural roadway.

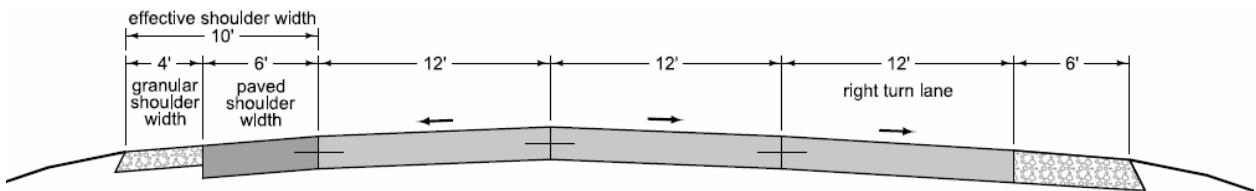


Figure 15: Two lane rural roadway with a right turn lane.

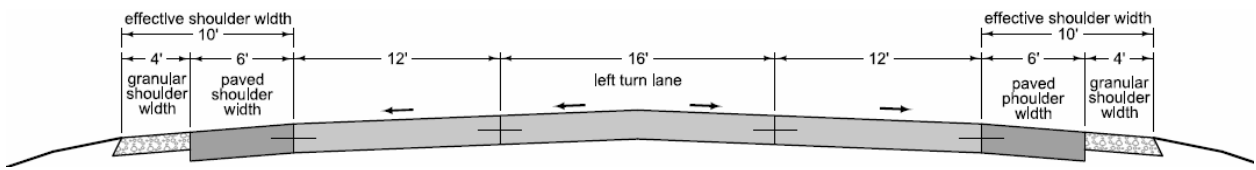


Figure 16: Two lane rural roadway with a left turn lane.

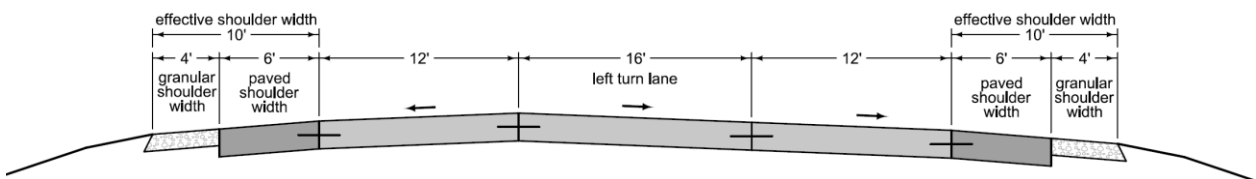


Figure 17: Two lane rural roadway with a left turn lane and widening one side.

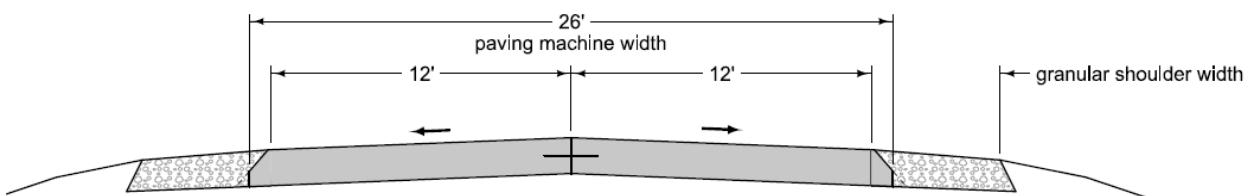


Figure 18: Two lane rural roadway with safety edge (see Section [3C-6](#) for more on safety edge).

Four Lane Rural Roadways

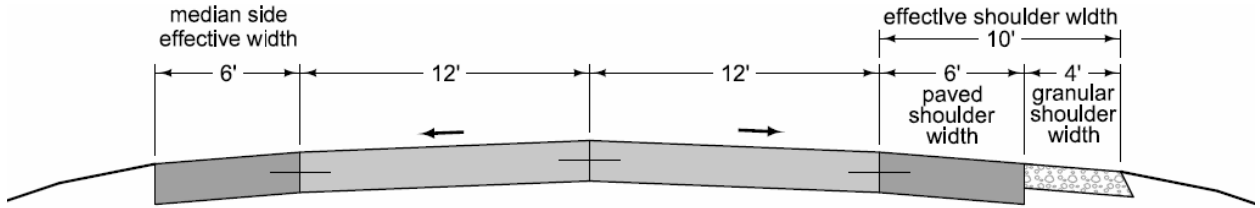


Figure 19: Four lane rural roadway.

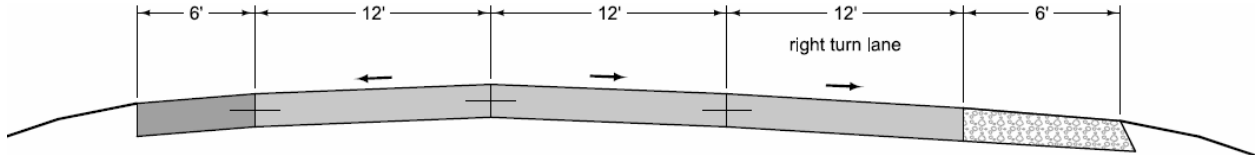


Figure 20: Four lane rural road way with right turn lane.

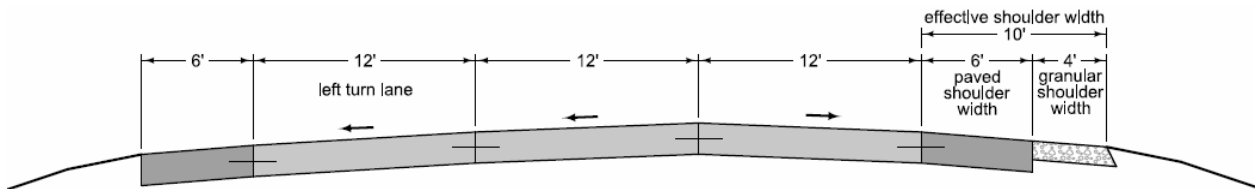


Figure 21: Four lane rural roadway with a left turn lane.

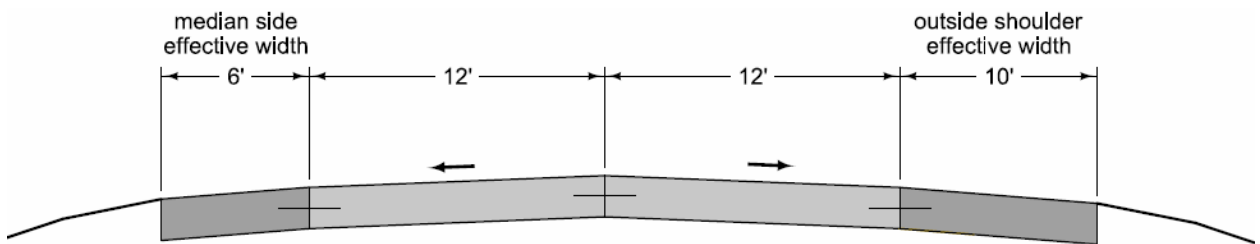


Figure 22: Four lane rural roadway with full width paved shoulder on the outside.

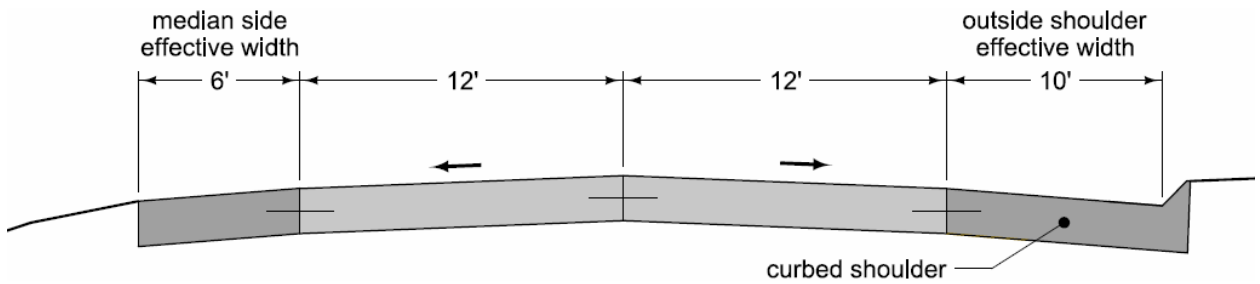


Figure 23: Four lane rural roadway with a curbed shoulder on the outside.

Chronology of Changes to Design Manual Section:

003A-001 Typical Roadway Sections

5/27/2022	Revised	Added pedestrian infrastructure as a consideration for determining typical roadway section. Added new figure for placement of sidewalks in urban areas. Revised Figure 17.
6/25/2019	Revised	Revised Rural Roadways cross sections to reflect change to 12 foot outside lanes.
5/15/2014	NEW	Revised guidance for selecting a typical section. Revised figures to better reflect Design Criteria Worksheets in Section 1C-1.
9/13/2012	NEW	New. Describes typical sections used for roadway design.