| Design Element | | | | **Manual**  **Section** | **Design Criteria** |
| --- | --- | --- | --- | --- | --- |
| Design Controls | Design Forecast Year | | | 9.6.2 | 20 years |
| \*Design Speed | | | 9.5.2 | 30 to 45 mph |
| Access Control | | | 9.8 | Controlled by Regulation |
| Level of Service | | | 9.6.4 | Desirable: C |
| Cross Section  **Elements** | \*Travel Lane Width | | | 13.2.3 | 12′ |
| \*Shoulder Width | Total Width | | 13.2.4 | 8′ or Curb and Gutter |
| Paved Width | | 2′ or Curb and Gutter |
| Auxiliary Lanes | Lane Width | | 13.2.5 | 12′ |
| Shoulder Width | Total Width | Des.: 8′ Min.: 4′ or Curb and Gutter |
| Paved | 2′ or Curb and Gutter |
| Parking Lane Width | | | 21.2.8 | 12′ **(1)** |
| Cross Slope | \*Travel Lane | | 13.2.3.3 | 2.08% |
| Auxiliary Lane | | 13.2.5 | 2.08% **(2)** |
| \*Shoulder | Paved | 13.2.4.3 | 2.08% **(3)** |
| Unpaved | 8.33% |
| Bicycle | Lane Width | | 13.2.3 | 4′ **(4)** |
| Shared Roadway Width | | 14′ Outside Travel Lane |
| Curb and Gutter | Type **(5)** | | 21.2.9 | Vertical or Sloping |
| Width | | 2′ |
| Sidewalk Width | | | 21.2.10 | 5′ |
| Median Width | TWLTL | | 21.2.7 | 15′ |
| Flush | | 13.4.2.1 | Des: 12′ Min: 4′ |
| **Roadway**  **Elements** | Side Slopes | Cut Section | Foreslope | 13.3 | 6H:1V |
| Ditch Width | V-Ditch |
| Back Slope | 4H:1V to 2H:1V |
| Fill Section | 0′ – 5′ | 6H:1V |
| 5′ – 10′ | 4H:1V |
| > 10′ | 2H:1V |
| Median Slopes | Flush/TWLTL | | 21.2.7 | 2.08% |
| Clear Zone | | | 14.3 | **(6)** |
| **Bridges** | New and Reconstructed Bridges | \*Structural Capacity | |  | HL-93 |
| \*Clear Roadway Width | | 13.5.1.1 | **(7)** |
| Existing Bridges to Remain in Place | \*Structural Capacity | |  | HL-15 |
| \*Clear Roadway Width | | 13.5.1.1 | **(7)** |
| \*Vertical Clearance (Collector  Under) **(8a)** | New/Replaced Overpassing Bridges **(8b)** | | 12.6 | 16′ - 0″ |
| Existing Overpassing Bridges | | 16′ - 0″ |
| Pedestrian Bridges | | 18′ – 0″ |
| Overhead Signs | | 17′ – 6″ |
| Clearance (Collector Over) | \*Railroads | | 12.6 | 23′ – 0″ |
| Underpass Width | | 13.5.2 | Traveled Way Plus Clear Zone |

\*Controlling design criteria (see Section 9.2).

Design Criteria for Suburban/Urban Collectors (New Construction/Reconstruction)

Figure 21.3C (SCHDM 2003)