

**Delaware County Supplement to the  
ODOT Location and Design Manual,  
Bridge Design Manual  
and CADD Standards Manual**

Delaware County Engineer's Office  
50 Channing Street  
Delaware, Ohio 43015

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## General

Highway construction plans for capital improvement projects designed for the Delaware County Engineer's Office are to meet the requirements of the ODOT Location and Design Manual, Bridge Design Manual and CADD Standards Manual.

Deviations from the Manual are listed herein.

### Location and Design Manual, Volume 1

#### **301.1.5 Pavement Cross Slope**

For county and township maintained roads, cross slope is to be 0.02 ft/ft.

#### **301.2.3 Shoulder Width**

Treated width for shoulders on collectors or local roads is to be 2' stabilized aggregate. Treated width on arterials should be as shown in Figure 301-3 and 301.4. Shoulder is to be the full thickness of the pavement section. For typical pavement sections using Item 301 Asphalt Concrete over Item 304 Aggregate Base, the aggregate base course should extend to the edge of the treated shoulder.

Graded shoulder width should conform to Figure 301-3 and 301-4 for all roads.

### Location and Design Manual, Volume 2

#### **1002 Pipe Policy**

##### **1002.1 Introduction**

All conduit materials listed in CMS 603.02 are allowed as specified for the various conduit types, except for the following:

706.01, 706.06, 706.07, 706.08, 706.09, 707.01 and 707.02 Zinc Coated (Aluminized Type 2 allowed), 707.05 and 707.07 Zinc Coated (Aluminized Type 2 allowed)

The designer should give consideration to specifying smooth lined pipe (i.e. non-corrugated) for any culvert or storm sewer that may be subject to debris accumulation, such as locations downstream of wooded areas or cultivated fields.

##### **1008.11 Precast Culvert End Treatments**

The preferred method of wingwall design for long-span culverts is as follows:

#### 706.05 Four Sided Precast Reinforced Concrete Box Culverts

Cast in place reinforced concrete wingwalls should be designed according to ODOT Box Culvert Headwall Design Data Sheets. 45 degree wingwalls are typically preferred except in cases where the culvert skew exceeds 10 degrees relative to the centerline of construction. Plan preparation for cast in place footings is preferred to follow the ODOT Sample Highway Plans and the CADD Manual

#### 706.051 Three Sided Precast Reinforced Concrete Flat Topped Culverts

Cast in place reinforced concrete wingwalls should be designed according to ODOT Box Culvert Headwall Design Data Sheets. 45 degree wingwalls are typically preferred except in cases where the culvert skew exceeds 10 degrees relative to the centerline of construction. Plan preparation for cast in place footings is preferred to follow the ODOT Sample Highway Plans and the CADD Manual

#### 706.052 Three Sided Precast Reinforced Concrete Arch Culverts

Proprietary wingwall designs according to the manufacturer's recommended system may be used. Plan preparation for cast in place footings is preferred to follow the ODOT Sample Highway Plans and the CADD Manual guidelines rather than incorporating proprietary manufacturer drawings into the plans. Manufacturers should be consulted in developing plans to ensure that the design does not conflict with the manufacturer's requirements. Manufacturer design may be used to assist with plan development.

### Location and Design Manual, Volume 3

#### **Appendix B**

In addition to the applicable ODOT notes, include applicable Delaware County roadway, erosion control, drainage, pavement, maintenance of traffic, structure and other notes listed on the Design Resource Page at [www.co.delaware.oh.us/engineer/drp.htm](http://www.co.delaware.oh.us/engineer/drp.htm).