

**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, Pavement Design Manual, Traffic Engineering Manual and CADD Standards Manual.

References to the Ohio Department of Transportation shall be assumed to mean the Delaware County Engineer's Office.

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**

Minimum treated width for shoulders on rural local roads and rural minor collectors is to be 2' stabilized aggregate. 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.

Bituminous surface treated or paved shoulders may be specified on rural local roads or minor collectors where there are a significant number of bicycle or pedestrian users, or a history of crashes that may be corrected by additional treated width.

Paved shoulders are preferred on all urban local roads, urban collectors, rural major collectors and arterials. Treated width should be as shown in Figure 301-3 and 301.4.

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 is allowed), 707.05 and 707.07 Zinc Coated (Aluminized Type 2 is 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**

### **1401 Design Review Process**

#### **1403.6.3 Minor Project Preliminary Engineering Study Review Submission**

The Minor Project Preliminary Engineering Study Review Submission should include all items listed in this section, except as follows:

12. Form LD-35 Drainage Criteria Form is not required.
15. Documentation of contact with County Engineer for flowline information is not required.
19. Waterway permit determination may be made by the County Engineer. Comments on the Waterway Permit determination from the Office of Environmental Services are not required on projects without ODOT oversight.
23. Retaining wall justification not required.
24. Pedestrian overpass justification not required.
36. Noise Wall justification not required.

#### **1403.7.2 Stage 1 Detailed Design Activities**

Complete the activities listed in this section for Stage 1 Detailed Design, except as follows:

8. For design exceptions, submit a brief summary of the design exception and support for the request. The full Design Exception Request form not required. The County Engineer will approve design exceptions.
12. Submit deviations from the Pipe Policy to the **Office of Structural Engineering, Hydraulics Section**. Approval of deviations is required for Stage 1 Detailed Design approval.
26. LD-33 County Engineer approval form not required.
28. Provide waterway permit determination. Prepare and submit final waterway permit applications to the Army Corps of Engineers, Huntington District as agent of Delaware County, with County signature.
29. Prepare "No Rise Certification" for Local Flood Plain Coordinator, if applicable, for all flood zone encroachments. County will coordinate approval from Local Flood Plain Coordinator.

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47. Determine affected utilities through contact with the Delaware County Utility Coordinator. Do not send plans to utilities. Send one (1) copy of Stage 1 plans for each affected utility to the Delaware County Utility Coordinator along with cover letter including a listing of affected utilities. The Utility Coordinator will send plans to affected utilities and provide feedback to the designer.
54. Value Engineering Study not required unless required by the scope of services.

### 1403.7.3 Stage 1 Detailed Design Review Submission

The Stage 1 Detailed Design Review Submission should include all items listed in this section, except the following:

37. Correspondence with utility owners is not required; however, coordination with the Delaware County Utility Coordinator is required.

## 1500 Plan Related Actions

### 1503.1 Introduction

Use of Microstation/V8 in conformance with the ODOT **CADD Engineering Standards Manual** is preferred; however, consultants may use AutoCAD 2000 or later, provided that the plan appearance follows the **Manual** as closely as practicable.

### 1504.1.2 Projects Administered through the Local Public Agency

Consultants shall submit final design contract deliverables in accordance with section 1504.1.1, except for the following deviations:

- A. Tracings of the final construction plan
  1. One set full size (22"x34") bound on 4-mil (min.) Mylar film, single or double sided matte finish
  2. One set quarter size (11"x17") good quality bond paper with blank cover and back pages (clear plastic or Mylar film). Bind with bolts or a binder clip – do not staple.
  3. Soil profile/foundation sheets are not required, unless specifically requested
- B. Tracings of the final Right of Way plan (see item #1)
- C. Completed Standard Forms
  - a. Final estimate in Estimator format or in an Excel spreadsheet. The LD-4, Estimating Form is not required.
  - b. LD-33, County Engineer Approval Form not required for County Engineer projects.
- D. Marked review plans (if retained by the design agency) and the disposition of all review comments.
- E. Quantity calculations that are not included in the plans. For example: structure calculations and pavement calculations.
- F. Cost estimates for waterwork items and/or services or other special items as furnished by the local government.
- G. Documents (photography, survey data, reports, studies, drawings, maps, computations, plans, specifications, estimates, electronic files per **Section 502** of the **CADD Engineering Standards Manual**, and all other items specified in the scope of services). Tiff images not required.

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H. CADD files in native drawing format.

I. Final drawings in Adobe Acrobat PDF format in with one file set up for 11"x17" printing. Do not set up for 22"x34" sheets. These files will be printed on 11"x17" and in order to preserve scale, page scaling must be able to be set to "none" on the print settings.

### **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).