

## **Preface**

### **Purpose**

Highway plans must ultimately satisfy many needs. In addition to the obvious needs of contractors who build the project, plans must serve the needs of designers, project engineers and inspectors, reviewers, and other interested parties. These plans become a part of the construction agreement and serve as an historic record.

Since highway plans incorporate the expertise of many specialty governmental units, organizations and personnel, various reviews are necessary throughout the plan preparation process.

### **Application**

The guidelines contained in this manual are considered a primary source of reference by personnel involved in the preparation of highway plans for the State of Ohio.

Although this manual is an attempt to standardize the form and the process for highway plan preparation in Ohio, it is recognized that many projects will involve unusual circumstances which will require deviation from these guidelines.

### **Preparation**

This Plan Preparation Manual has been developed by the Office of CADD and Mapping Services. Errors and omissions should be reported to the Administrator, Office of CADD and Mapping Services, Ohio Department of Transportation, P.O. Box 0899, Columbus, Ohio, 43216-0899.

### **Format and Revisions**

A separate set of Sample Construction Plans is available, and considered to be, an integral part of the Plan Preparation Manual.

Manuals and revisions may be downloaded from the [Design Reference Resource Center](#) web page. Users are encouraged to sign up on this page for electronic (email) notification of revisions.

ODOT's Internet address is <http://www.dot.state.oh.us>.

### **Unit of Measure**

Plans are to be prepared using the English system of units.

Standard Construction Drawings (SCDs) are listed using only the root number of the drawing (e.g., BP-3.1 rather than BP-3.1M). Highway plans must always use the SCD showing the most up-to-date details available. The most current SCD may be in English and/or dual (English and metric) units.

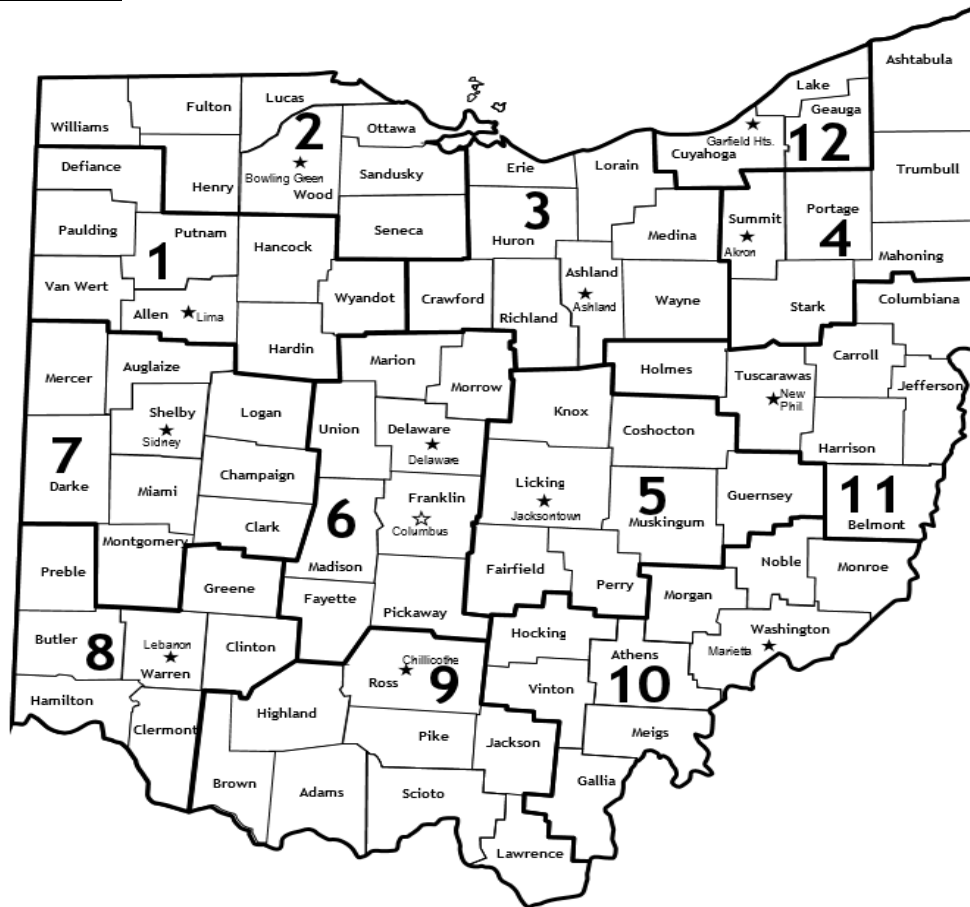
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## Ohio Counties

<u>COUNTY</u>	<u>CODE</u>	<u>DISTRICT</u>	<u>COUNTY</u>	<u>CODE</u>	<u>DISTRICT</u>	<u>COUNTY</u>	<u>CODE</u>	<u>DISTRICT</u>
Adams	ADA	9	Hamilton	HAM	8	Ottawa	OTT	2
Allen	ALL	1	Hancock	HAN	1			
Ashland	ASD	3	Hardin	HAR	1	Paulding	PAU	1
Ashtabula	ATB	4	Harrison	HAS	11	Perry	PER	5
Athens	ATH	10	Henry	HEN	2	Pickaway	PIC	6
Auglaize	AUG	7				Pike	PIK	9
			Highland	HIG	9	Portage	POR	4
Belmont	BEL	11	Hocking	HOC	10	Preble	PRE	8
Brown	BRO	9	Holmes	HOL	11	Putnam	PUT	1
Butler	BUT	8	Huron	HUR	3			
						Richland	RIC	3
Carroll	CAR	11	Jackson	JAC	9	Ross	ROS	9
Champaign	CHP	7	Jefferson	JEF	11			
Clark	CLA	7				Sandusky	SAN	2
Clermont	CLE	8	Knox	KNO	5	Scioto	SCI	9
Clinton	CLI	8				Seneca	SEN	2
Columbiana	COL	11	Lake	LAK	12	Shelby	SHE	7
Coshocton	COS	5	Lawrence	LAW	9	Stark	STA	4
Crawford	CRA	3	Licking	LIC	5	Summit	SUM	4
Cuyahoga	CUY	12	Logan	LOG	7			
			Lorain	LOR	3	Trumbull	TRU	4
Darke	DAR	7	Lucas	LUC	2	Tuscarawas	TUS	11
Defiance	DEF	1						
Delaware	DEL	6	Madison	MAD	6	Union	UNI	6
			Mahoning	MAH	4			
Erie	ERI	3	Marion	MAR	6	Van Wert	VAN	1
			Medina	MED	3	Vinton	VIN	10
Fairfield	FAI	5	Meigs	MEG	10			
Fayette	FAY	6	Mercer	MER	7	Warren	WAR	8
Franklin	FRA	6	Miami	MIA	7	Washington	WAS	10
Fulton	FUL	2	Monroe	MOE	10	Wayne	WAY	3
			Montgomery	MOT	7	Williams	WIL	2
Gallia	GAL	10	Morgan	MRG	10	Wood	WOO	2
Geauga	GEA	12	Morrow	MRW	6	Wyandot	WAY	1
Greene	GRE	8						
Guernsey	GUE	5	Noble	NOB	10			

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## Glossary of Terms

**As Per Plan Item:** A standard pay item whose requirements need to be modified from that which is defined by the standard drawings, Construction and Materials Specifications, or Supplemental Specifications.

**Backslope:** The slope from the back of a ditch to the existing ground surface.

**Benchmark:** A marker of known elevation and location used in surveying for establishing vertical control.

**Calculation Sheet:** Highway plan sheet used to show the derivation of quantities.

**Centerline of Construction:** The reference line used for construction of a project. Normally located at the median centerline on a divided highway or at the normal crown point location on an undivided highway.

**Centerline of Right-of-Way:** The reference line used for the right-of-way of a project. Normally located at the center of a highway's existing right-of-way.

**Centerline of Survey:** The reference line used in the field survey of a project. Although it is usually the same as the centerline of construction, it may be a separate survey line established for convenience. With modern surveying instruments, surveys are no longer completed based on a centerline of survey.

**Construction Limits:** Lines shown on a plan view that outline the lateral extent of the work. Typically placed 4 feet outside the point where the backslope touches the existing ground unless additional room is required for construction activities.

**Construction Plan Tracings:** The original copy of a highway plan.

**Cross Section:** A view produced by a vertical plane cutting through the roadway, usually at right angles to the centerline or baseline, showing the transverse profile of the existing ground surface and proposed grade lines. The main use of cross-section sheets is for calculation of earthwork and seeding quantities.

**Cross Slope:** The rate of change of elevation along a straight line from one point in a cross section to another.

**Design Agency:** The firm, partnership, association, limited liability company, government entity, or corporation that employs the Designer of Record in accordance with ORC 4733.

**Designer of Record:** The Designer of Record is the individual that professionally endorses (signs and seals) the design in the Contract Documents in accordance with OAC 4733-23-01(C) and as specified in Section 1302.6.1 of the Location and Design Manual, Volume 3.

**Design Designation:** Information shown on the Title Sheet expressing basic factors which control design (Current ADT, Design Year ADT, Design Hourly Volume, Directional Distribution, Percent B&C Vehicles, Design Speed, Legal Speed, Functional Classification).

**Design Exception:** A document which explains the engineering and/or other reasons for allowing certain design criteria to be relaxed in extreme, unique, or unusual circumstances.

**Drainage Details:** A portion of a highway plan which includes design details for all prefabricated structures as well as other drainage related items.

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**Edge of Pavement:** Edge of traveled way, located at the intersection of the mainline pavement (driving lanes) with the shoulder (treated or turf), or the curb and gutter.

**Federal Project Number:** A number assigned to a project when Federal participation is involved.

**Foreslope:** The slope from the edge of the graded shoulder to the bottom of the ditch.

**General Notes:** A portion of a highway plan containing those plan notes required to clarify construction items not adequately covered by the specifications or plan details.

**General Summary:** A portion of a highway plan used to summarize the total estimated quantities with complete pay item descriptions, item numbers, item extensions and funding splits.

**Item Code:** A nine-digit character used to catalog pay item descriptions.

**Item Master:** A list of acceptable item codes and their corresponding pay item descriptions and units of measure.

**Item Special:** An item that does not exist in the standard drawings, the Construction and Material Specifications or Supplemental Specifications.

**Landscaped Area:** An area containing an arrangement of plant materials specifically selected and located based on principles of design (line, form, color, texture, repetition, variety, balance and emphasis) for one or more of the following functions: visual control, architectural uses, climate control, noise control, erosion control, aesthetics and wildlife habitat.

**Landscaping Plan:** A portion of a highway plan dedicated to highway landscaping, including all plans, details and quantities required for landscaping items.

**Lighting Plan:** A portion of a highway plan dedicated to highway lighting, including all plans, details and quantities required for highway lighting items.

**Location Map:** A map on the Title Sheet showing the area in which the project is located and the project limits.

**Maintenance of Traffic Plan:** A portion of a highway plan which includes the notes and details required for maintaining traffic during construction.

**Miscellaneous Details:** A “catch-all” portion of a highway plan for details that do not specifically fall into another category.

**Plan and Profile Sheet:** A portion of a highway plan showing horizontal and elevation views an area before and after proposed construction: including quantities, dimensions, and other reference items required to lay out and construct a project.

**Plan Insert Sheet:** Special detail drawings furnished by ODOT and used with the original set of tracings as normal numbered plan sheets.

**Profile Grade Point:** The point on a typical highway cross-section which correlates with the profile grade line shown on the plan and profile sheets.

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**Project Designation:** The identification assigned to a particular project. This includes county, route, section number and local name for projects on county or township systems, or county and local name for city street improvements.

**Project Length:** The total distance between the project limits, adjusted for station equations and suspensions, measured along the centerline of construction.

**Project Limits:** Points on the mainline centerline of construction where the proposed improvement, as described in the project description, begins and ends. This is generally defined as the beginning/ending of full-depth, full-width pavement. Project limits do not include incidental construction, such as: pavement feathering and tapering, traffic control devices, drainage, guardrail, drives, side roads, service roads, etc., unless this type of work is the primary reason for the improvement.

**Proposal Note:** A note that is a part of a project's proposal that alters a pay item, standard drawing, Construction and Materials Specification or Supplemental Specification.

**Reference Balloon:** A circle with a leader line used to tie construction items to pay quantities on Plan and Profile sheets and to the legend on Typical Sections.

**Reference Monument:** An object that marks a point of known location. Used in surveying to establish horizontal control.

**Reference Points:** Fixed marked points, located on permanent objects in the field, from which various points on the reference line can be established using distances and directions.

**Right-of-Way Plan:** A portion of a highway plan showing a graphical representation of a highway improvement and its relation to adjacent property, the parcels or portions thereof needed for highway purposes, and other pertinent information.

**Sanitary Sewer Plan:** A portion of a highway plan dedicated to construction of sanitary sewers, including all plans, profiles, details and quantities required for sanitary sewer items.

**Schematic Plan:** A portion of a highway plan which shows the geometric location of a roadway in relation to existing features, such as; political boundaries, waterways, railroads, utilities, etc.

**Service Road:** Sometimes referred to as a Frontage Road or Access Road, it is a roadway, generally running parallel to the mainline, which provides access to commercial, residential or farm areas.

**Simplified Plans:** An abbreviated highway construction plan format consisting only of that information necessary to describe the type of work and its limits. Particularly adaptable to special types of projects (minor emergency relief, resurfacing, pavement markings, etc.)

**SPEDuP Plans:** Simplified Plans - Expedited Delivery Project Plans are a straightforward letter-size format which reduces the time to process, advertise and bid a project. Projects which qualify for this type of format are routine maintenance-type projects which have minimal design, and no complexities such as funding splits, right-of-way, utilities, or environmental impacts.

**Staged Review Process:** A series of review submissions at various stages in the design process.

**Standard Construction Drawings:** Detail drawings, identified by a specific number, published by ODOT, of items which are frequently used in plans and would otherwise require redrawing for each plan and have been pre-approved for general use.

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**Standard Pay Item:** An item whose requirements are defined by the standard construction drawings and the Construction and Materials Specifications or Supplemental Specifications.

**Station:** A point or position on a measured line using 100-foot increments as a base of reference.

**Straight Line Distance (SLD):** Distance based on the centerline of the roadway as measured from the western or southern county line or other true beginning.

**Subsummary Sheet:** Plan sheets used to gather quantities prior to carrying them to the General Summary.

**Supplemental Specifications:** Detailed specifications for items which are in the development stage or are used only occasionally. These specifications supplement or supersede the Construction and Material Specifications.

**Tie Points:** Any three points used to verify the location of the control point for the centerline of construction.

**Title Sheet:** The cover sheet in a set of highway plans showing project identification and location, sheet index, design parameters, specifications, standard construction drawings, approvals, and other pertinent information.

**Traffic Control Plan:** A portion of a highway plan dedicated to signing, signalization, pavement marking and other traffic control details.

**Typical Section:** A portion of a highway plan showing typical cross-sectional views of the existing pavement and the roadway after construction is complete.

**Waterwork Plans:** A portion of a highway plan dedicated to construction of waterwork items including all plans, profiles, details and quantities required for waterwork items.

**Work Limits:** The extreme longitudinal limits of the contractor's responsibility, including all temporary and incidental construction (except temporary traffic control devices). Identified by the "Work Limit" station on the centerline of construction on the mainline and on the centerline of all side roads, cross roads, and other construction generally running perpendicular to the project or separated from the project.