

# 8.0 Chapter Eight - Drawing Information

CDOT project plan sets must follow a documented sequence of sheets to constitute a completed bid set. This chapter provides the comprehensive listing and sheet order for Simple Projects, Complicated Projects, and "Write Up" Projects along with general information and instruction for assembling these sheets. Also included are links to sample Project Drawings, which will provide level, text and cell placement detail.

## 8.1 Basic Structure of Drawings

### 8.1.1 Drawing Order

All CDOT projects should be assembled and numbered in a specific order. The normal arrangement of sheets is shown in the following table. Not all sheets may be present in every project. Sheet Numbering for each individual project will be documented on the Title Sheet.

Sheet Order for a Simple Project	Sheet Order for a Complicated Project	Sheet Order for a "Write Up" Project
<u>Title Sheet</u>	<u>Title Sheet</u>	<u>Index of Plans</u>
Standard Project Information	Standard Project Information	Standard Project Information
Agency Information	Agency Information	Agency Information
Federal Aid Project Number	Federal Aid Project Number	Federal Aid Project Number
State Highway Number	State Highway Number	State Highway Number
County Name	County Name	County Name
Const. Project Code Number	Const. Project Code Number	Const. Project Code Number
Index of Sheets	Index of Sheets	Index of Sheets
New and Revised Standards	New and Revised Standards	As Constr. Signature Block
Project Location Map	Contact Information	Oversight Block
Contract Information	Oversight Block	PE Proj & Project Code
Oversight Block	PE Proj & Project Code	Project Name
PE Proj & Project Code	ROW Proj & Project Code	Contract Information
ROW Proj & Project Code	Index of Revisions	Index of Revisions

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Index of Revisions	Length and Design Data Sheet	<u>Project Location Map Sheet</u>
Length and Design Data	<u>Standard Plans List Sheet</u>	<u>Standard Plans List Sheet</u>
<u>Standard Plans List Sheet</u>	<u>Typical Sections Sheet</u>	<u>Description of Project</u>
<u>Typical Section Sheet</u>	<u>General Notes Sheet</u>	<u>Tabulation of Length</u>
<u>General Notes Sheet</u>	<u>Summary of Approximate Quantities</u>	<u>Typical Section Sheet</u>
<u>Summary of Approximate Quantities</u>	<u>Tabulation Sheets</u>	<u>General Notes Sheet</u>
<u>Tabulation Sheets</u>	Summary of Structure Quantities	<u>Summary of Approximate Quantities</u>
Summary of Structure Quantities	Base Course and Surfacing Plan	<u>Tabulation Sheets</u>
Summary of Earthwork	Contract Surveying Tabulation	Surfacing Plan Sheet
<u>Quantities</u>	Tabulation of Planeing of Asphalt	Misc. Tabulations
Base Course and Surfacing Plan	Tabulation of Fencing and Gates	Contract Surveying Tabulation
Contract Surveying Tabulation	Tabulation of Guardrail Sheet	<u>Detail Sheets</u>
<u>Detail Sheets</u>	Tabulation of Curb and Sidewalk	Guardrail Adjustment Sheet
Concrete Pavement Joint Details	<u>Detail Sheets</u>	Wastewater Management Sheets
Impact Attenuator Details	Concrete Pavement Joint Details	Survey Control Diagram
<u>Plan and Profile Sheets</u>	Utility Detail Sheets	Tabulation of Found/Set Points
<u>Major "Specialized Group" Sheets</u>	Impact Attenuator Details Sheets	Miscellaneous Details
Minor Structure Sheets	Median Treatment Detail Sheets	
Bridge Sheets	<u>Intersection Alignment Sheets</u>	
Landscaping Sheets	<u>Construction Staging Sheets</u>	
Wetland Mitigation Sheets	<u>Plan and Profile Sheets</u>	
Stormwater Management Sheets	<u>Major "Specialized Group" Sheets</u>	
Final Signing and	Survey	

Striping Sheets	Control/Tabulation Sheet	
Survey Control/Tabulation Sheet	Known Contamination Sites Plan	
	Hydraulics and Drainage Sheets	
	Minor Structure Sheets	
	Bridge Sheets	
	Sanitary Sewer Sheets	
	Lighting Plans	
	Landscaping Sheets	
	Wetland Mitigation Sheets	
	Stormwater Management Sheets	
	Traffic Control Plan Sheets	
	Traffic Signal Plan Sheets	
	Final Signing Plan Sheets	
	Final Striping Plan Sheets	

### 8.1.2 Drawing Information In Sheet Border

Standard CDOT sheet borders are created to facilitate necessary information being printed each time a plan sheet is plotted for review or final submittal. There are two separate types of information input into the sheet border automatically generated information and user-defined sheet-specific data.

When a file is sent to the printer, automated labeling inserts the Print Date, Drawing File Name and Horizontal Scale of the active file into the border sheet. Other information in the sheet border is user-defined. Project and sheet-specific text must be added and edited within MicroStation. User defined data includes but is not limited to:

Place holders for editing are available for the following information:

- Edit Project Title
- Edit Sheet Numbers
- Edit Project Number and Code
- Edit Designer and Detailer Initials

- Edit Unit Information and Unit Leader Initials (Specialty Group)

Data required in every sheet includes the appropriate RE cell that indicates the Resident Engineer responsible for the entire project. The Specialty Group information that contains the initials for the unit leader on the project, is only required if applicable. The Consultant Logo, if applicable, should be placed in the field directly below the Unit Information/Unit Leader initials located in the lower left hand corner of the title block.

## 8.2 CDOT Check List

The CDOT Final Checklist provides a list of all information to be included in the sheets in a CDOT Plans, Specifications and Estimates bid package. This checklist will serve as a guide to the Engineer or Designer to verify CDOT required information has been addressed in the submittal.

Final Checklist Link

## 8.3 Identification Blocks

Two identification blocks are used to display Resident Engineer information and designer information. These identification blocks have been created as cells and are located in the General cell library. See Chapter 5 - CDOT Workspace Drafting Standards, 5.1 Cell Libraries.



Sample Resident Engineer cell placement demonstration

## 8.4 Project Sheets

Many sheets for each project are created after the Project Manager runs the Project Creation Utility program, as described in Chapter 3. The sheets are created, named and placed in the appropriate directories for the project team's use. The following sections will address the standard sheets, outlining what should be included on them in order to achieve consistency between projects.

### 8.4.1 Title Sheet

Title Sheet development begins with the completion of the project. Title Sheet is located in the project folder under \Design\Drawings\. The file will be named Job Project Code )TitleSheet.dgn.

Standard Title Sheet information includes:

- Title information

- DEPARTMENT OF TRANSPORTATION
- STATE OF COLORADO
- HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED

Project Specific Title Sheet information that must be edited per project includes:

- Federal-Aid or Colorado Project Number
- State Highway Number
- Project Code Number
- FHWA oversight and National Highway System check blocks
- Other project numbers and codes (e.g., R.O.W., Util. or P.E.)
- Index of Revisions
- Tabulation of Length and Design Data
- Project Location Map
- Index of Sheets
- New and revised Standard Plans
- Designer block/ID; e.g., Resident Engineer initials and Region information
- Contract Information block
- Description of Project

Title Sheet Sample

### **8.4.2 Typical Section Sheet**

Typical Section sheets show a detailed, cross-sectional view of the roadway surface design. Development of the typical section sheets includes the use of custom program called CDOT Typical Section Program. This program writes graphical data to the typical section file at a scale of 1:10. All of the graphical properties such as the levels, patterns, text, and cells are set by default to CDOT standards. This drawing is located in the \Design\Drawings\ folder and is called (Job Project Code)TypicalSection##.dgn. See the Typical Section Workflow to learn more.

Typical Sections Sheet Sample

### **8.4.3 Standard Plans List**

The Standard Plans List sheet is an auto-populated sheet from the Project Creation program which was run as presented in Section 3.1. The drawing is located in the \Design\Drawings\ folder and is called (Job Project Code)StandardPlanList.dgn. A copy of the M&S Standard Plans List drawing has been attached to this sheet file as a referenced model file through the creation utility. The M&S sheet is being continually updated. Prior to advertising, check for the latest M&S Standard Plans List drawing

at the following link. Both New 2006 and 2000 versions are available for download. The designer should fill in the appropriate blocks with the MicroStation Create Region Flood command within the sheet file, not in the Standard Plans List referenced model. By filling in the boxes in the Sheet file, the designer can simply download the appropriate file from the website and verify what sheets have changed. Just the changed revised standard plans will have to be addressed.

[Link to current M&S Standard Plans List](#)  
[Standard Plans List Sheet Sample](#)

#### **8.4.4 Plan and Profile Sheets**

Plan and Profile sheets may be created using the Plan and Profile Generator command within InRoads or can be setup manually by the user. Regardless of whether the sheets are created manually or automatically, the plan portion of all Plan and Profile sheets will remain coordinately correct and with true dimensioning. This is accomplished by placing the Sheet Border cell in the sheet file, and scaling the cell to the desired plot scale. See the CDOT Creating Multiple Plan Sheets workflow for additional detail.

[Plan and Profile Sheet Samples](#)  
[Plan and Profile Generator workflow document](#)

#### **8.4.5 Additional Sample Project Drawings**

[General Notes Sample](#)  
[Summary of Approximate Quantities Sample](#)  
[Structure Cross Section Sample](#)  
[Survey Tab Sheet Sample](#)  
[Cross Section Sample](#)  
[Land Survey Control Diagram Title Sheet Sample](#)  
[Land Survey Control Diagram Plan Sheet](#)