

# Chapter 1 - Introduction to CDOT

## An Introduction to CDOT V8i SS2 Configuration

This document outlines the Colorado Department of Transportation's (CDOT) standardized CADD procedures. Topics are covered in detail and curriculum has been developed providing a foundation for CDOT users to effectively learn. The material covered is structured as a project motivated learning experience modeled after CDOT engineering workflows.

The remaining sections of this document present the reference material for each subject with supporting lab work for the student.

### **Chapter Objectives:**

- Identify the Training Directory Structure
- Where to find MicroStation V8i SS2 and InRoads V8i SS2 reference material
- Where to find MicroStation V8i SS2 and InRoads V8i SS2 lab material
- Where to look for help

## Reference Material

CDOT has developed a reference material library for the CDOT user working with the Bentley MicroStation V8i SS2 and InRoads V8i SS2 software.

- A Practical Guide for Using MicroStation V8i SS2
- A Practical Guide for Using InRoads V8i SS2

### **A Practical Guide for Using MicroStation V8i SS2**

This guide breaks down the use of MicroStation V8i SS2 into manageable modules placing emphasis on the CDOT workflow.

- ◆ Getting Started in MicroStation
- ◆ Levels
- ◆ Working in a CDOT 3D Design Model
- ◆ Creating a CDOT Project
- ◆ Creating Your Design Graphics
- ◆ Manipulating and Modifying Design Graphics
- ◆ Cells and Patterns
- ◆ Grouping Design Graphics
- ◆ Creating Sheets
- ◆ Annotating and Plotting Sheets

### **A Practical Guide for Using InRoads V8i SS2**

This guide breaks down the use of InRoads V8i SS2 into manageable modules placing emphasis on the CDOT design workflows.

- ◆ Getting Started in InRoads
- ◆ Reports
- ◆ Typical Sections
- ◆ Roadway Modeling
- ◆ Surface Editing]
- ◆ Initial Geometry Procedures
- ◆ Cross Sections
- ◆ Volumes
- ◆ Initial Surface Procedures
- ◆ Defining Vertical Geometry
- ◆ Profiles
- ◆ InRoads Options
- ◆ Hydraulics
- ◆ Creating Plan Sheets
- ◆ Surface Fundamentals
- ◆ Other Helpful Tools
- ◆ Defining Geometry

## Lab Material

CDOT has developed a lab material library for CDOT user's working with the Bentley MicroStation V8i SS2 and InRoads V8i SS2 software.

- Labs for Using MicroStation V8i SS2
- Labs for Using InRoads V8i SS2

### Labs for Using MicroStation V8i SS2

Labs have been created for MicroStation V8i SS2 placing emphasis on the CDOT workflows.

- Getting Started In MicroStation V8i SS2
- Levels
- 3D View Controls
- Creating the Project and Design Model
- Drawing Basics using the CDOT Menu
- Draw the Median Island Nose Section
- Place Guardrail Lines
- Create 3D Utility Graphics
- Create Landscape Graphics
- Create Hydraulics Graphics
- Draw a Bridge Typical Section

- Create Plan/Profile Sheet for the Intersection
- Create a Project Specific Border
- Create a 40-Scale Plan Sheet
- Create a Bridge General Layout Sheet at Different Scales
- Create a General Notes Sheets
- Create the Standard Plans List Sheets
- Create a Title Sheet
- Annotate the Intersection Plan/Profile Sheet
- Annotate the Bridge General Layout Sheet
- Printing to a Printer
- Batch Printing to PDF

## **Labs for Using InRoads V8i SS2**

Labs have been created for MicroStation V8i SS2 placing emphasis on the CDOT workflows.

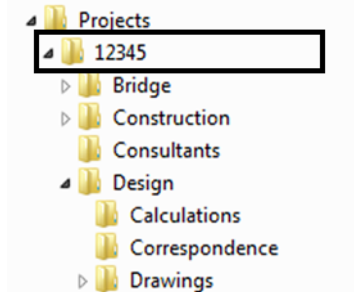
- Building Components
- Building Sections
- Modifying Templates
- Corridors & Template Drops
- Superelevation Wizard
- Point Controls, Secondary Alignments and Parametric Constraints
- Modifying Single Template Drops and Target Aliasing
- Creating Design Surfaces
- Cross Sections, Volumes and Reports
- Creating Plan Sheets

## **Training Directory Structure**

CDOT has developed a training directory structure replicating a CDOT project directory structure for use in all training. The directory has been designed so the top level (project) directory is used to designate the job project code. During training, the project code will be 12345. Sub-directories for each CDOT specialty group are included under the project directory.

## Training Directory Structure

All of the files for class are located in the **C:\Projects\12345** directory. This directory structure, as well as the file names used, conforms to the CDOT standards. More information on the CDOT directory structure and file naming convention is found in the **Creating a CDOT Project** chapter.



## How To Get Help

There are many resources available to assist you when working on your CDOT CADD project. These resources can be found on the **CDOT CADD & Engineering Innovation** website. See the **CADD Resources** chapter for detailed information on each of these options.

### **CDOT CADD & Engineering Processes & ProjectWise Website**

The CDOT CADD & Engineering Processes & ProjectWise Website is available at: <http://www.coloradodot.info/business/designsupport/cadd>. The website provides CDOT users with up to date information, tools, and resources related to CADD.

This website is a valuable resource for CADD users and includes:

#### **CADD Library**

The **CADD Library** page provides links to manuals, newsletters, standard details, etc. One extremely useful link is to the **Tips and Tricks** section for MicroStation and InRoads.

#### **CADD Manual**

The **CDOT Computer Aided Design and Drafting (CADD) Manual** outlines CDOT's use of Bentley's MicroStation and InRoads software. It can be accessed several different ways including:

- ◆ From the Windows Start menu:  
Start > All Programs > \_CDOT\_CADD\_Information > V08.11.XX-V8i SS2 > Workflows
- ◆ From the CDOT Menu: CDOT Help > Workflows

#### **Request & Support**

This page provides CADD help solutions where you can help, submit questions and requests, and obtain InRoads Survey and MicroStation support.

There is also a link to **IT Services** for hardware support, "how to" instructions, installation, training files, and dual monitor and work space setup.

## CADD & Engineering Processes

The CDOT CADD & Engineering Processes Website is available at: <http://www.coloradodot.info/business/designsupport/cadd>. The website provides CDOT consultants with the latest MicroStation/InRoads configurations, CADD Workflows, manuals, training materials, resources, CADD detail library, CDOT Standards and Design Guides, and more.

The screenshot shows the CDOT website's 'CADD & Engineering Processes & ProjectWise' page. The header includes the CDOT logo and the slogan 'Taking care to get you there'. A navigation bar contains links for HOME, TRAVEL CENTER, NEWS, BUSINESS CENTER, PROGRAMS, PROJECTS, ABOUT CDOT, and LIBRARY. Below the navigation bar, the page title is 'CADD & Engineering Processes & ProjectWise'. The main content area lists several resources with expandable icons:

- ProjectWise Training Materials**: ProjectWise training videos. (These videos do not have to be viewed in sequential order.)
- MicroStation/InRoads Configuration**: For CDOT-V03.02.03 and CDOT-04.01.00
- MicroStation 2004 Help File**: Due to XM over-writing MicroStation 2004's Help File.
- Manuals, Training Materials, and Resources**: Includes training materials for MicroStation & InRoads 2004 & XM, CADD Training Curriculum, ProjectWise XM, CADD Manual & other Resources
- CADD Workflows**: V8 2004, V8 XM, ProjectWise, Survey/Row
- CDOT CADD Detail Library**: Design, Environmental & Hydraulics
- CADD Tip and Tricks**: MicroStation 2004, MicroStation 3D 2004, InRoads 2004, Miscellaneous, External Tips
- Disclaimer**

A sidebar on the left titled 'Quick Links' contains links to: CADD & Engineering Processes & ProjectWise, ProjectWise Training Materials, MicroStation/InRoads Configuration, MicroStation 2004 Help File, Manuals, Training Materials, and Resources, CADD Workflows, CDOT CADD Detail Library, CADD Tip and Tricks, and Disclaimer. On the right, a 'Contact Information' box provides the following details:

**Contact Information**  
For CADD related questions contact [CADDManager@dot.state.co.us](mailto:CADDManager@dot.state.co.us)  
**Notice of Disclaimer:**  
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**Contact Information**  
Questions about the use of Design & Construction Support should be directed to CDOT's Standards and Specifications Unit:  
Larry Brinck  
(303) 257-9474  
[larry.brinck@dot.state.co.us](mailto:larry.brinck@dot.state.co.us)

## CADD Manager

Contact the CDOT CADD Manager at [CADDManager@dot.state.co.us](mailto:CADDManager@dot.state.co.us) for additional help or questions.

