

Chapter 1 - Introduction to CDOT

An Introduction to CDOT XM 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 XM and InRoads XM reference material
- Where to find MicroStation XM and InRoads XM 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 XM and InRoads XM software.

- A Practical Guide for Using MicroStation XM
- A Practical Guide for Using InRoads XM

A Practical Guide for Using MicroStation XM

This guide breaks down the use of MicroStation XM 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 XM

This guide breaks down the use of InRoads XM 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 XM and InRoads XM software.

- Labs for Using MicroStation XM
- Labs for Using InRoads XM

Labs for Using MicroStation XM

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

- Getting Started In MicroStation XM
- 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 XM

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

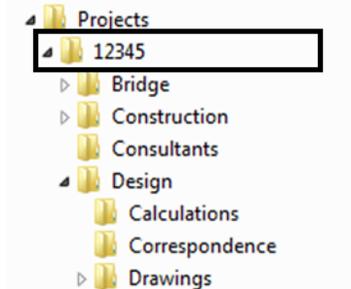
- Building Components
- Building Sections
- Modifying Templates
- Corridors & Template Drops
- Superelevation Wizard
- Point Controls, Secondary Alignments and Parametric Constraints
- Modifying Single Template Drops and Target Aliasing
- Creating Design Surfaces
- Cross Sections, Volumes and Reports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

The CDOT CADD & Engineering Innovation Website is available at: <http://internal/cadd/>. It can also be found on the internet **CDOT website: Organizations > Projects Development > CADD and Engineering Innovation**.

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 > V09.08.XX-XM > 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.dot.state.co.us/DesignSupport/CADD%20and%20Engineering%20Innovation/CADD%20Index.htm>. 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.



Manuals, Training Materials, and Resources

CDOT CADD Manual

Training Materials

MicroStation 2004

[CDOT MicroStation Essentials](#)

MicroStation XM

[Migrating CDOT Projects & MicroStation XM Update Guide](#)

Redline

[CDOT Redline Essentials](#)

InRoads 2004

[Roadway Design Using InRoads](#)

[InRoads Geometry Fundamentals](#)

[Advanced Roadway Modeling](#)

InRoads XM

[A Practical Guide for Using InRoads XM \(Draft Copy\)](#)

InRoads ROW/Survey

[InRoads Geometry for ROW and Row Plan Development Using MicroStation \(Document 1 of 2\)](#)

[InRoads Geometry for ROW and Row Plan Development Using MicroStation \(Document 2 of 2\)](#)

[InRoads Survey Date Reduction](#)

ProjectWise XM

[CDOT ProjectWise User Guide](#)

CADD Training Curriculum

[MicroStation Essentials](#)

[Traffic Workflow Using MicroStation](#)

[Roadway Design Using InRoads](#)

[InRoads Geometry Fundamentals](#)

[InRoads Geometry for ROW and ROW Plan Development Using MicroStation](#)

[InRoads Survey Data Reduction](#)

[Advance Roadway Modeling](#)

[Redline Essentials](#)

CADD Manager

Contact the CDOT CADD Manager at CADDManager@dot.state.co.us for additional help or questions.

