

Traffic Workflow Using MicroStation

Revised 02/08

Focus: Using the CDOT Menu to accomplish traffic plans
CAD workflow using MicroStation that are necessary to complete a Traffic project
This course uses the 3.01 CDOT Workspace

Duration: 2 days

Instructional Media: Each student will have a computer for hands-on exercises. The instructor will utilize a whiteboard for lecture-type information, and will have an instructor's machine connected to a computer projection system for demonstrating key topics and techniques in the software. Each student will have his or her own course document for use during the course and for reference afterward. They will also have access to the course data files so they may work through the materials at a later date for practice.

Course Format: The course uses a combination of lecture, Power Point visuals, references to the CDOT CADD website (for tips and workflows, etc.), software demonstrations and hands-on exercises to emphasize how Traffic projects are completed at CDOT. The course will not re-teach basic MicroStation principles previously learned. However, new methods for completing previously learned tasks using the CDOT Traffic Menu will be covered. A brief overview of previously learned topics (References, Cells, etc.) will be covered where applicable. A CDOT MicroStation Traffic project will be used for all course exercises and examples.

User levels: CDOT Traffic groups working in the support role to the design teams.

Prerequisites: CDOT MicroStation Essentials

CDOT Standards: The class is designed using CDOT standards. The course covers how to create a CDOT CADD project and emphasis the DOT design and sheet model workflow process for all disciplines. All of CDOT's CADD resources are referenced throughout the course (CADD web site, CADD Manual, CDOT workflows, etc.) and the CDOT Menu is used extensively to teach the tools and applications available to apply CDOT standards to any project.

DAY 1

1. Introduction – 30 minutes

- Purpose of the class
- Course overview

2. The CDOT Traffic CADD Workflow – 1.5 hours

This topic includes a general overview of the entire CDOT workflow to complete a Traffic project using MicroStation. This will give students the “big picture” of the entire process. All other course topics will refer to the overall workflow to emphasize where each piece fits into the overall process.

- Project set-up (who does what, the Create Project Directory Structure utility, etc.)
- Working in a server-based network vs. working locally (making sure files are properly referenced and updated)
- Workflow for mapping a PM's drive (if necessary)
- The Traffic directory structure
- The Traffic file naming convention
- Where to find other specialty group files
- Project workflow for creating traffic design models, plan sheets (signing, signal, striping and construction phasing plans, typical detail sheets, tabulation sheets and the general notes sheet)
- Where to place completed models and sheets in the project directory structure
- Where to place plot sets

- The CDOT support process

Lab:

- Learn how to map a PMs drive if necessary
- Bolster reference file knowledge and how you're affected by the work of others and how your work affects others
- Review CDOT CADD Website and what is available. Review CDOT CADD Manual.
- Review CDOT Project Configuration File Management workflow with emphasis on what to do if you use the project on the PMs machine and why that means you must have your own edited pcf file.
- Open traffic design
- Make minor change to traffic file
- Open sheet file from Traffic and note changes are reflected
- Open additional sheet files and review. (signing/signal/stripping)

3. The CDOT Menu overview – 1.5 hours

The Traffic menu will be used throughout the training course. This topic will introduce students to the menu and provide an overview of its options and functionality.

- Accessing the CDOT Drafting Menu and the Traffic menu from the CDOT icon
- Launching AutoTrack and SignCAD
- Review of other Add-On programs
- Accessing Help for both the Menu and the CDOT workflows and CADD Manual

Lab:

- Start the menu from the CDOT icon
- Place a border, cell and
- Review each of the traffic options
- Place some Signs and stripping to see how the menu works
- Review the Add-ons (esp SignCAD and AutoTrack) which are only available if installed on the machine
- What to do if you need Add-ons that aren't installed
- Access Help / Review each of the options

4. Beginning Your Design – 2.5 hours

The steps to create the initial Traffic model file to begin design work. This includes where and how to reference other discipline's work and how to manage these references.

- The Select Group Utility
- Creating your traffic model file(s)
- A brief review of References
- Referencing files needed to begin your design (from Design and others)
- Working with nested references and using the Copy Attachment option
- Working with raster attachments (from Design)

Lab:

- Create a new design file
- Reference the design model with nested attachments
- Manipulate the references
- Copy attachment to see how the nested references can be manipulated
- Attach a raster
- Instruction on what to do when you need to register the raster

5. Creating Your Design – 1.0 hour

While MicroStation basics will not be taught, a detailed review of the Traffic level structure is included in this topic, as it relates to the Traffic Menu and the Level Display. Use of the CDOT Traffic menu will emphasize a shortcut to many of the standard drafting tasks used by the Traffic group.

- Review of Traffic levels (what goes where – refer to the CDOT website)
- Drafting Levels for drawing details
- Levels for model work (e.g. signals, striping, and signing plans)
- Placing graphics with the Traffic menu
- Placing cells with the Traffic menu
- Dropping cells and editing graphics
- Importing a SignCAD sign and creating a MicroStation cell from these graphics (personal or project cell library use only)
- Using InRoads ALG file for tracking, obtaining station/offsets
- Lock files; access to .alg from design
- Creating .alg for traffic if necessary
- Using MicroStation to obtain coordinates, station/offsets, etc. when InRoads is not available

Lab:

- What goes on which level
- How to use the traffic menu for placing signals, striping and signs
- How to use precision input (including stations and offsets) to place graphics (such as signs)
- How to load InRoads .alg files and use them to track alignments and to place signs at stations and offsets
- How to drop a sign cell and edit it
- How to create a personal cell library to save the cell
- What to do if it's a change that should go in the standard library
- How to copy and paste signs when you don't need a special cell

DAY 2

6. Creating Sheet Files – 2.0 hours

File management techniques and steps necessary to create new Traffic sheet files are covered in this topic. Assembling the references and clipping model file graphics from both Traffic other disciplines (if necessary). Placing borders, regions cells, text and other graphics necessary for plotting the sheet is also included. While there are several different types of plan, tabulation and detail sheets produced by the Traffic group, the lab exercise includes one example of each type of sheet. Due to time constraints, some of these labs may be optional.

Note: Detailed steps to complete basic MicroStation tasks like referencing, placing cells, etc. will not be provided. It is assumed that students have experience with these tasks. The emphasis of this topic is to teach the sheet creation process, not the MicroStation mechanics.

Lab:

- Creating a plan sheet border design file
- Placing the border from the drafting menu
- Modify the border data for this project
- Modify the tabs XCEL Spreadsheet in project directory for signs
- Open tab sheet
- Modify border title block
- Creating a typical detail sheet
- Creating the General Notes sheet

7. Plotting Sheets – 1.0 hour

This topic covers file management techniques and steps necessary to create plot files. Both single sheet and batch plots will be covered.

- Proper folder locations for plot files in the project directory
- Plotting single sheets to a plotter or to PDF
- Batch Printing to PDF for FIR/FOR/AD
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Lab:

- Plotting to a printer/plotter
- Creating pdf files
- Open batch plot
- Plotting multiple plan sheets to one pdf file in the plot sets folder

8. Example Traffic project – 3.5 hours

To reinforce the students' understanding of the overall MicroStation CAD process to complete a CDOT traffic project, an example project will be completed on the last ½ day of class. This challenge lab exercise will be presented in a given/required format without detailed steps. Students must use what they have learned and follow the proper CDOT process and procedures to complete the project.

Lab:

- Creating a new Traffic Model file from pre-defined roadway model and referencing others' work
- Using basic MicroStation knowledge and the CDOT Traffic menu to create some proposed traffic graphics
- Using existing plan sheets to copy and rename
- Creating/assembling a plan sheet file
- Creating/assembling other sheet files (time permitting)
- Plotting the plan sheet file

9. Wrap up/Questions and Answers – 30 minutes