

AutoCAD Civil 3D Survey Field Work Applications – 8.0 Hours (1 Day)

Course Description

Summary

This course focuses on practical field applications for AutoCAD® Civil 3D® Survey and the ability to easily produce accurate, intelligent drawings representing field conditions in 2D and 3D.

The term, “Field to Finish,” is frequently used to describe the process of transferring data from the field crew to the finished drawing. There are many elements that go into developing an intelligent field to finish strategy, all with the potential to impact survey field personnel and field productivity. Carefully developed and introduced, Civil 3D and its companion products can provide a high level of efficiency in transferring field data into finished drawings and engineering models.

This class examines management of both point data with attribute information and intelligent linework creation. The point data management is controlled by Civil 3D directly, through the development of Description Keys and Styles. Linework is somewhat more complicated in Civil 3D and can be handled by any combination of three toolsets: the legacy Figure language coding as used in Land Desktop, Civil 3D linework coding introduced in recent versions of Civil 3D, or coding through SmartDraft® PConnect, an add-in program for Civil 3D. This class will examine the capabilities of each, and the class and its field practice will focus on the methods preferred by the participants.

This class provides time for field practice in the collection of data with the participants’ survey equipment. Accordingly, potential participants should contact the instructor in advance to discuss their current practices and coding methods employed, and participants should plan to bring their field equipment to the class.

Topics and Schedule

Overview of Civil 3D Survey Field Work Capabilities

- Civil 3D Survey Tools for Point, Attribute and Linework Generation
- Civil 3D and “Field to Finish”
- Linework Capabilities in Civil 3D and Add-In Products

Review of Pertinent Civil 3D and Survey Concepts

- Point Object Concepts – Object and Label Styles
- Point Display Control Hierarchy in Civil 3D
- Civil 3D Survey Project Management
- Civil 3D Survey Settings Organization in Template Drawings

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Managing Points with Description Keys

- Detailed Examination of Description Key Capabilities in Civil 3D
- Description Keys and Wild Cards
- Point Label Management and Integration with Description Fields
- Symbology Options, Scaling and Application
- Description Key Development for Both Attribute and Linework Coding
- Organizing Description Keys Logically for Use in the Field

Creating Field Linework in Civil 3D

- Linework Requirements in Field Survey and Drawing Applications
- Civil 3D Linework through Figures, Civil 3D Linework Coding and SmartDraft® PConnect
- Creating and Deploying Linework Code Libraries
- Curve and Control Codes
- Collecting Multiple Features through Single Points
- Linework and Point Editing

Surface Creation Concepts and Field Linework

- Breakline Concepts in Surface Creation
- Surface Creation with Points and Breaklines
- Managing Survey Topo versus Traverse Data in the Project
- Managing Surface versus Non-Surface Points
- Surface and Contour Creation

Field Practice in Civil 3D Linework Applications

- Coding and Collecting Linework Data
- Downloading and Transferring Data to Civil 3D
- Processing and Editing of Point and Linework Data

Figure Data in Civil 3D

- Survey Figure Applications and Management
- Creating Figures from Civil 3D and SmartDraft
- Figure Interaction with Parcels, Feature Lines and Corridors

Prerequisites

Thorough familiarity with AutoCAD® is essential. Completion of Civil 3D Essentials and Civil 3D Survey Essentials is generally required. Participants who have not completed Civil 3D Essentials and Civil 3D Survey Essentials may attend, but complete familiarity with Civil 3D Point management and Civil 3D Survey concepts is absolutely required.

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Learning Objectives

1. Participants will be able to describe the capabilities and methodologies for attribute and symbol coding provided in Civil 3D Description Keys, as examined using the sample survey project in the course.
2. Participants will be able to describe the capabilities and methodologies for linework and breakline coding provided in Civil 3D, as examined using the sample survey project in the course.
3. Participants will be able to collect and import survey data in the practice survey project used in the course.
4. Participants will be able to create a Civil 3D surface and contours in the practice survey project used in the course.

AUTOCAD CIVIL 3D SURVEY FIELD WORK APPLICATIONS – ONE DAY	
Overall Course Length	8.0 Hours
Instructional Time	7.0 HOURS
PROFESSIONAL DEVELOPMENT HOURS (PDHS)	
New York State Land Surveyors	7.0 PDHS
New York State Professional Engineers	7.0 PDHS



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