

## AutoCAD Civil 3D Survey Essentials – 4.0 Hours (Half Day)

### Workshop Description

#### Summary

This course provides a thorough introduction to the survey functionality provided within AutoCAD® Civil 3D®. The course examines how Civil 3D manages point data in the drawing and controls point organization, display and labeling. The course also examines how Civil 3D Survey processes data obtained in the field, transferring data into a Civil 3D Survey project and database, and from there into the drawing. Participants receive an in-depth examination of the Civil 3D Survey project and its capabilities, including topics such as network and traverse definitions and analysis.

Topics addressed in this class are appropriate for surveyors engaged in most survey applications, such as topographic, mapping, ALTA, boundary, stakeout and engineering support. Civil 3D has powerful tools applicable across a wide range of survey applications, and this course brings real project application experience to the training and effective use of Civil 3D for surveyors.

### Topics and Schedule

#### Civil 3D Survey Overview

- Civil 3D Survey Concepts
- Civil 3D Cogo Points and Civil 3D Survey Points
- The Civil 3D Survey Database

#### Civil 3D Point Display and Labeling Concepts

- Point Object Concepts – Object and Label Styles
- Point Display Control Hierarchy in Civil 3D
- Civil 3D Description Keys, Styles, Layers and Display
- Symbol Scaling with Description keys
- Point Style Availability and Description Keys

#### Creating the Civil 3D Survey Project and Database

- Organizing the Survey Project within Job Folders
- Setting the Survey Working Folder
- Survey Database Settings and Significance
- Control Points versus Non-control Points in Civil 3D Survey
- Point Availability in the Survey Database versus Display in Drawing
- Survey Network Concepts and Initial Display Style
- Data Organized and Displayed on the Survey Tab

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### Creating Data in Civil 3D Survey

- Importing Survey Data – Import Types, Import Wizard and Import Events
- Survey Data Collection Link and Other Survey Interfaces in Civil 3D
- Setting Import Error Tolerances and Significance of Their Values
- Import Settings and Options in the Import Wizard
- Coordinate Entry, Control Points and Points Held
- Renumbering and Managing Point Numbers on Import
- Point Group Considerations on Import
- Overview of Linework Strategies in Civil 3D
- Managing Fieldbooks and Import Files
- Import Events, Their Management and Use

### Interacting with Civil 3D Survey Data

- Civil 3D Survey “Points” Commands and Interface with the Drawing
- Designation of Survey Points in the Civil 3D Drawing and Prospector
- Viewing and Analyzing the Survey Network through Network Styles
- Setups and Observations as Displayed in Civil 3D Survey
- Using the Civil 3D Survey Preview
- Listing Survey Point Data by Setup and other Lists
- Inversing between Survey Points in the Survey Command Window

### Traverse and Network Analysis in Civil 3D Survey

- Defining Traverses in Civil 3D
- Traverse Loop Reporting and Closure Options
- Network versus Loop-Based Analysis
- Least Squares Settings and Least Squares Analysis

### Learning Objectives

1. Participants will be able to describe the organization of a Civil 3D Survey project as illustrated using the sample survey project used in the course.
2. Participants will be able to describe the process of importing field-generated survey data as illustrated using the sample survey project used in the course.
3. Participants will be able to describe the steps used to control and change the display and labeling of points as illustrated using the sample survey project used in the course.
4. Participants will be able to describe the process for creating traverse closure reports and performing traverse analysis as illustrated using the sample survey project used in the course.

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