

autodesk®

# 2005

## Increase Productivity with an Integrated Civil Engineering Tool

Autodesk® Civil Design 2005 expands the power of Autodesk® Land Desktop 2005 with tools that automate and streamline civil engineering tasks. With it you can design and analyze sanitary and storm drain systems. Evaluate and refine grading scenarios. Design roads quickly and intelligently. And improve collaboration by giving multiple team members simultaneous access to data such as roadway alignments and pipe runs. Autodesk Civil Design combines AutoCAD® 2005 software and specialized engineering commands to bring you an integrated civil engineering tool.



Increase productivity on any road, site, or utilities engineering project with Autodesk Civil Design 2005 —part of a complete civil engineering solution.

### Complete Projects Faster

Take advantage of a flexible approach to roadway design that integrates user-definable templates, transition control lines, and engineering rules—so you can quickly complete subdivision roadway designs, model road rehabilitations, and create complex corridor design projects. Use automated grading tools to get instant feedback when changing design parameters such as a footprint elevation or a slope value. Easily lay out and analyze piping systems by integrating proposed pipe runs with surface models, plans and profiles of road designs, and other elements in your design project.

### Automated Drawing for Faster Turnaround

Create production drafts more accurately and efficiently. Generate detailed roadway plans, profiles, and section sheets directly from your design model. Use the Sheet Manager to automatically define standard sheet templates for use with your

sheet sets. Draft piping systems on plan, profile, and section sheets in a simple step. All drafting derives from your Civil Design project, so you can be confident that your annotation and drafting are synchronized with your design.

### The Solid Foundation of the Industry Standard

Seamless integration with Autodesk Land Desktop 2005 software provides COGO functionality, powerful terrain modeling, and alignment and parcel layout functionality. Autodesk Land Desktop is built on components of Autodesk Map™ 3D 2005, so it includes the solid AutoCAD 2005 foundation, which is packed with features that help you create, manage, and share entire sets of related drawings with maximum efficiency.

# Autodesk Civil Design 2005

Autodesk Civil Design 2005 software operates only with Autodesk Land Desktop 2005 software installed.

## Road and Corridor Design

- Use the Vertical Alignment Editor interface to design, analyze, and report vertical components of a road design.
- Superimpose vertical geometry from other alignments onto your current profile.
- Work interactively between plan, profile, and section design modes.
- Combine transitions, templates, and engineering rules in roadway sections.
- Use complex superelevation control.
- Apply varying slopes based on cut/fill depth, surface layers, or benching criteria.
- Stretch templates to match defined transitions in plan and profile.
- Create output that includes template points, 3D grid, contours, and plotted sections.

## Grading

- Automate cut/fill balancing.
- Use intelligent and interactive entities to automate design of ponds, parking lots, and more.
- Calculate daylight lines automatically with user-defined slopes, targets, and footprint criteria.
- Specify grading of various target regions, including relative elevation and horizontal offsets.
- Graphically slide and add controls such as target regions and slope tags.
- Derive terrain models, breaklines, and cut/fill volumes automatically.

## Site Layout

- Create parking layouts automatically.
- Draft culs-de-sac and intersections.
- Use an extensive library of planting, site, and landscape symbols in both 2D and 3D.

## Sanitary and Storm Drainage

- Define pipe runs for sites or relative to roadway station or offset.
- Use database edits or the tabular editor to manipulate designs graphically.
- Retrieve contributing flow values from calculated values.
- Draw both conceptual and finished designs in plan, profile, and section views.
- Calculate critical design data, such as hydraulic and energy gradelines, system capacity, and slopes.

## Runoff Analysis

- Calculate surface-water runoff with a variety of standard methodologies, including TR-20 and TR-55 methods.
- Retrieve critical data, such as slopes and key elevations, directly from the terrain model.
- Customize rainfall frequency and runoff-curve number editors to match local or project standards.
- Import and export hydrographs across systems.
- Extract, import, export, and plot HEC2 cross sections and profiles.

## Ponds and Drainage Structures

- Create ponds based on defined profiles, slopes, and required volume.
- Calculate stage-storage curves and detention-basin storage.
- Use storage-indication method to analyze precurves and postcurves, as well as stage-storage and stage-discharge curves.
- Attach outflow structures to ponds.
- Size and analyze pipes, culverts, weirs, and more in the graphical editor.

## System Requirements

For a complete list of system requirements, visit [www.autodesk.com/civildesign](http://www.autodesk.com/civildesign).

## Companion Products and Services

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For more information about Autodesk Civil Design 2005, visit [www.autodesk.com/civildesign](http://www.autodesk.com/civildesign).

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