

CLIENT Autodesk

PROJECT Data sheets

OBJECTIVE

Summarize benefits of GIS/CAD applications and upgrades.

BACKGROUND

Although Autodesk is best known for AutoCAD, the leading architectural and engineering design application, the company also offers a broad range of GIS and mapping technology that's tightly integrated with AutoCAD.

PROJECT OVERVIEW

These data sheets provide information on upgrades to several Autodesk tools, including:

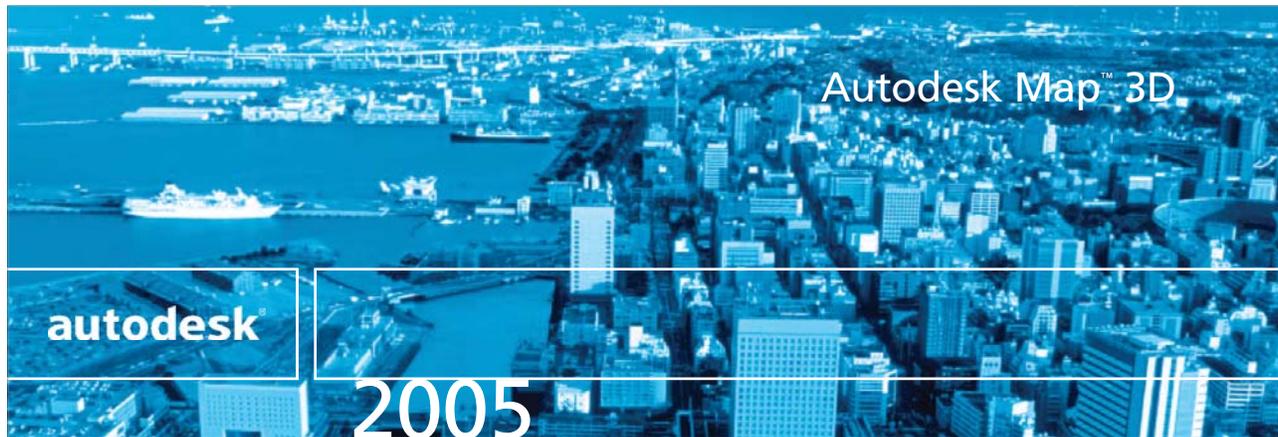
- **Autodesk Map 3D:** Application for 2D and 3D thematic mapping and management of GIS data
- **Autodesk Raster Design:** Technology for converting existing libraries of raster images into vector art for use in design files
- **Autodesk Civil Design:** A civil engineering application for designing roads, pipe runs, drainage systems, etc.
- **Autodesk Survey:** Software that generates drawings directly from survey data collected in the field

Each sheet presents a short summary of the product on the front side with more detailed feature information on the back.

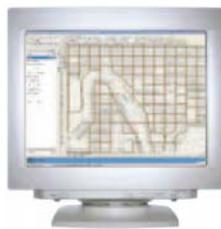


See below for larger views of these data sheets.

Autodesk Map 3D sheet/front



Powerful Precision 2D and 3D Mapping



"Autodesk Map provides us the ability to make one query into seven different windows and produce seven different types of sketches for our boards and commissions. This allows us to increase the number of maps we produce without increasing staff."

– Jim Coats
GIS Manager
City of Redding, CA

Autodesk Map™ 3D 2005 software combines the proven 2D productivity of Autodesk Map 2004 with exciting new 3D functionality to create, maintain, and analyze maps with power and precision. Based on the AutoCAD® 2005 foundation, Autodesk Map 3D integrates CAD and GIS data for more powerful thematic mapping capabilities. Developed for planners, utility managers, mapping technicians, and cartographers, this new version of Autodesk Map provides a solid basis for a complete infrastructure management solution.

The Fastest Autodesk Map Release Yet

Faster than Autodesk Map 2004 or 2000i, this newest release saves time when manipulating information and querying GIS data, providing complete thematic mapping functionality. New accelerated performance enhances productivity by speeding up commonly used functions such as import and export.

Work Smarter with 3D Surfaces

Visualize, analyze, and share your 3D design and spatial data using information that's always up to date. Create precise 2D and 3D representations of surfaces to confirm conditions, with any

revisions to your source data automatically updated to your surface. And with new analytical tools, you can smooth surfaces, subtract one surface from another, and generate thematic views of watershed delineation.

Better 2D Mapping

With improved integration with other Autodesk® and competitive GIS products, Autodesk Map 3D offers full DWG compatibility for import and export of 2D designs and data in a variety of formats. A new display manager help you manage data more intuitively, and with an enhanced API, you can customize Autodesk Map 3D to create applications to meet your specific business needs.

Autodesk Map 3D sheet/back

► Features
+ = new features

► www.autodesk.com/map

Autodesk Map 3D 2005

Faster Map Creation

- + Improve performance when querying, importing/exporting, manipulating data, and creating thematic maps.

Smarter 3D Surfaces

- + Work with points to create improved representations of surfaces.
- + Generate 3D surfaces and record precise spatial information.
- + Read text or database files to generate points.
- + Group points based on values you define, such as description, elevation range, and graphical selection.
- + Add, edit, or remove points to quickly update surfaces.
- + Analyze surfaces using functions such as thematic displays and surface smoothing.
- + Create 3D representations of surfaces, including contours, surface triangles, and surface face direction.

Better 2D Mapping

- Use classification functionality to manage data more intuitively.
- Prepare data for topology with enhanced cleanup tools.

Data Integration

- + Import and Export LandXML data to streamline workflow.
- + Create DWF™ (Design Web Format™) files to share data more easily.

- + Exchange data with other industry-standard GIS formats, such as GML, ARC/INFO® coverages, ArcView® Shape, and MicroStation® DGN.
- + Store and access geospatial data in one central data source, Oracle® Spatial.

Coordinate Conversion

- + Choose from more than 3,000 global systems or create your own.

Multiple Drawing Access

- Use multiple maps in one work session through query capabilities.
- Access multiple maps for concurrent users.

Presentation and Plotting

- + Manage the style and the order in which entities are displayed.
- Annotate objects by displaying textual values and expressions intuitively.

Develop Your Own Autodesk Map Applications

Autodesk Map software is a flexible development platform for mapping, land planning, and infrastructure management applications. To learn more, visit www.autodesk.com/developmap.

System Requirements

For a complete list of system requirements, visit www.autodesk.com/map.

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For more information about Autodesk Map 3D 2005, visit www.autodesk.com/map.



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Autodesk Raster Design sheet/front



"What makes AutoCAD and Raster Design not only important, but singularly important, is the ability to map over aerial photographs to display wells, roads, faults, and land activities so they are easily understood visually."

– Thomas Bilhorn
Environmental Hydrologist
Earth Sciences Consultants
San Diego, California

Extend the Value of Your Existing Raster Images

Now convert your raster images into vector objects quickly and easily with Autodesk® Raster Design 2005 — the image-processing software that works within AutoCAD® software-based applications. Manage and manipulate images to access information and create compelling presentations. Integrate existing maps, aerial photographs, and satellite imagery without redrafting. With support for a wide range of formats, Autodesk Raster Design helps you make the most of your existing data with no need for additional applications.

Breathe New Life into Your Image Archive

Get full value from your existing legacy data using simple and intuitive tools to display and analyze raster data in formats such as DEM, JPEG 2000, and GeoTIFF. Whether your library includes scanned paper drawings, maps, aerial photos, or satellite images, Autodesk Raster Design works within the familiar AutoCAD interface to adapt your existing data quickly and accurately.

More Than Just Imagery

View and analyze your raster data through sophisticated color mapping and computation. You can include a wide range of information in various contexts, using data such as DEM, aerial, or satellite images to make more informed decisions.

Create Compelling Presentations

Even with the latest CAD technology, vectors tell only part of the story. Now you can quickly create vivid presentations using unlimited-point rubber-sheeting to transform and stretch images with no expensive ortho correction required. Powerful cleanup tools help you correct problems while maintaining complete control over shadows, highlights, color, and transparency.

Make the Most of Smart Tools

Quickly select specific raster lines, circles, and arcs, with SmartCorrect functionality that recognizes text, verifies geometry, and captures the most appropriate data to convert raster entities into vector objects with precise results.

Autodesk Raster Design sheet/back

- Features
- + = new features

- www.autodesk.com/rasterdesign

Autodesk Raster Design 2005

Image Manipulation and Editing

- + Use restructured image management interface with new data types and operations.
- + Take advantage of support for multi-spectral imagery and DEM format data for more informed decision making.
- Use Tonal Adjustment to improve clarity and usefulness of images.
- Standardize use of color images and select transparency color with the Palette Manager.
- Eliminate the high cost of ortho correction with unlimited-point rubbersheeting.
- Use Display Order buttons to manage images and insertions.
- Clean up images with Despeckle, Bias, and Mirror commands.
- Control image density and color depth to create smaller files.
- Match images to AutoCAD scale and rotation based on known points.
- Use Histogram, Convolve, and Invert commands to enhance images.
- Adjust RGB or individual color channels to highlight image details.

Image Display

- + Use a wider range of raster data in design projects.
- + Take advantage of additional support for more raster data formats, including GeoTIFF, JPEG 2000, and DOQ.
- Read and write georeferenced images to and from the Internet with URL support.
- Insert georeferenced wavelet format imagery, including ECW and MrSID.®
- Adjust correlation parameters with the Correlation wizard.

- View image properties and thumbnails before insertion.
- Customize the Places list in the Insert and Save dialog boxes to locate key data.

Vectorization Tools with SmartCorrect

- Use enhanced optical character recognition (OCR) to eliminate manual data entry costs.
- Get more accurate results using One Pick with SmartCorrect technology.
- Control output with Vector Separation options to save time.
- Create profiles from raster drawings with 3D Polyline Follower command.

Raster Entity Manipulation (REM) with SmartPick

- Use standard AutoCAD commands to operate on raster regions and primitives.
- Create REM primitives using SmartPick, One Pick, or multipoint selection.
- Create enhanced bitonal REM regions using smart or connected options and standard data selection techniques.
- Erase raster lines, arcs, and circles using quick delete functionality.

Configuration and Automation

- Use MSI/Wise installer to administer software more effectively.
- Automate key commands with ActiveX® for improved productivity and accuracy.

System Requirements

For a complete list of system requirements, visit www.autodesk.com/rasterdesign.

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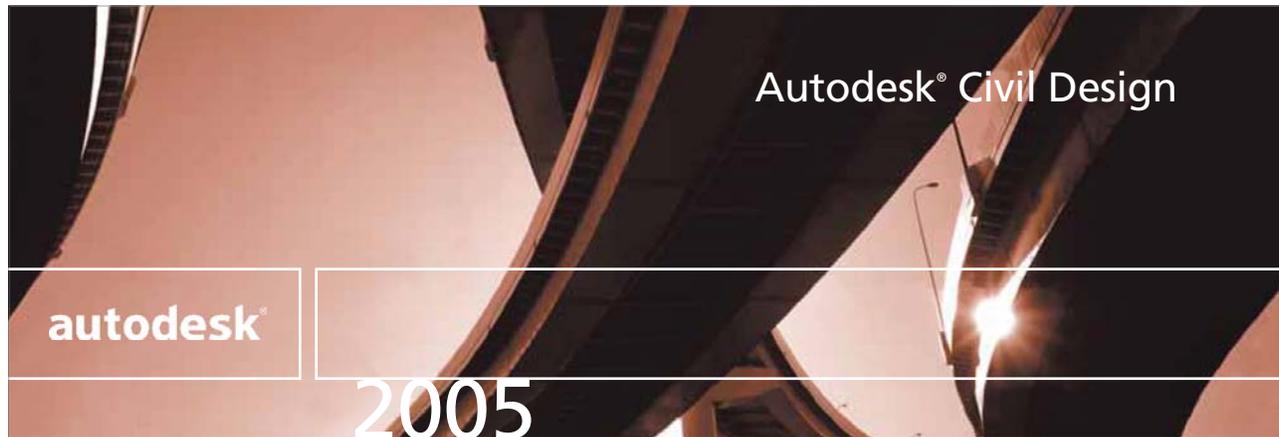
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Autodesk Civil Design sheet/front



autodesk®

2005

Enhance Productivity With One Integrated Civil Engineering Tool



Automated tools help design and engineering teams complete any road, site, or utilities project more quickly and efficiently. Use Autodesk Civil Design 2005 as part of your complete civil engineering solution.

Autodesk® Civil Design 2005 expands the power of Autodesk® Land Desktop 2005 with specialized tools to automate and streamline civil engineering tasks. Evaluate and refine grading scenarios. Analyze sanitary and storm drain system performance. Design roads quickly and intelligently. Plus, multiple team members can access data simultaneously to improve collaboration. Combine your AutoCAD® 2005 software with Autodesk Civil Design to take advantage of precise engineering commands in one integrated civil engineering tool.

Complete Projects More Quickly

A flexible approach to design integrates user-definable templates, transition control lines, and engineering rules — so you can quickly complete subdivision roadway designs, road rehabilitations, and complex corridor design projects. With automatic grading tools, you get instant feedback when design parameters such as footprint elevations or slope values change. And you can easily lay out and analyze piping systems using profiles of road designs and other project elements.

Automated Drawing for Faster Turnaround

Create production drawings more quickly and accurately by generating detailed roadway plans, profiles, piping runs and section sheets directly

from your design model in one simple step. Use the Sheet Manager to automatically define standard templates and assure that annotation and drafting remain synchronized to your design.

A Solid Foundation Based on the Industry Standard

Seamless integration with Autodesk Land Desktop 2005 software provides sophisticated COGO functionality, powerful terrain modeling, and new alignment and parcel layout capabilities. Built on the solid AutoCAD 2005 foundation, Autodesk Land Desktop and AutoCAD Civil Design help you create, manage, and share entire sets of related drawings to make sure design and engineering teams can work quickly and efficiently.

Autodesk Civil Design sheet/back

► Features

► www.autodesk.com/civildesign

Autodesk Civil Design 2005

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

Road and Corridor Design

- Use Vertical Alignment Editor interface to design and analyze vertical components of a road design.
- Superimpose vertical geometry from other alignments onto current profile.
- Combine transitions, templates, and engineering rules in roadway sections.
- 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 entities to automate design of ponds, parking lots, and more.
- Calculate daylight lines with user-defined slopes, targets, and footprint criteria.
- Specify grading of target regions with relative elevation and horizontal offsets.
- Derive terrain models, breaklines, and cut/fill volumes automatically.

Site Layout

- Automate design of parking layouts.
- Draft culs-de-sac and intersections.
- Use an extensive library of planting, site, and landscape symbols in 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.
- Calculate critical design data, such as hydraulic and energy gradelines, system capacity, and slopes.

Runoff Analysis

- Analyze surface water runoff with a variety of standard methodologies, including TR-20 and TR-55 methods.
- Retrieve data such as slopes and key elevations, directly from terrain models.
- Customize rainfall frequency and runoff curve number editors to match local or project standards.

Ponds and Drainage Structures

- Create ponds based on defined profiles, slopes, and required volume.
- Calculate stage-storage curves and detention-basin storage.
- 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.

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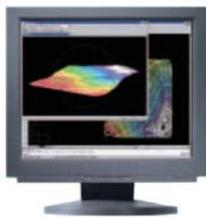
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Autodesk Survey sheet/front



Streamline Field Work to Improve Data Collection



Work smarter and faster with Autodesk Survey 2005. Eliminate steps and keystrokes, simplify data collection, and streamline workflow using industry-standard data collectors, survey instruments, and GPS receivers.

Access critical information directly from the field with new intelligent tools that speed data collection and reduce errors. With Autodesk® Survey 2005, you can download or upload information using the latest industry-standard data collectors, survey instruments, and GPS receivers. Generate drawings from field data automatically within the AutoCAD® environment to share information and communicate more effectively with civil engineering, GIS, and land-planning professionals.

Generate Drawings and Improve Data Analysis

Reduce manual data entry through automatic generation of linework, points, symbols, and terrain model breaklines directly from field survey data. Connect field codes to create lines and curves on predefined layers for more accurate analysis. And when you complete your design, field crews can transmit proposed grade points back to the data collection point for stakeout.

Enhance Data Collection and Communication

End costly translation errors by automatically creating DWG files with accurate links between

data and drawings. Autodesk Survey now supports more survey instruments, including data collectors, total stations, GPS receivers, and digital lasers — and converts ASCII and coordinate data to and from a wide range of formats.

A Seamless Add-On Application

Built on the industry-standard AutoCAD foundation, Autodesk Survey is a seamless add-on application to Autodesk Land Desktop that improves communication with land planning and civil engineering teams wherever they are. And you can use additional Autodesk Land Desktop tools for point management, terrain modeling and contouring, and creating parcels and alignments.

Autodesk Survey sheet/back

- Features
- + = new features

- www.autodesk.com/survey

Autodesk Survey 2005

Data Capture and Input

- + Use new Survey Toolspace to view, manage, and edit survey networks, control point setups, and figures.
- + Use additional data collectors, survey instruments, and GPS receivers through new Carlson Connect functionality.
- + Communicate with Trimble™ RTK GPS using the latest release of Trimble Link software.
- Connect directly with a wide range of common survey instruments and data collectors via the latest release of Survey Link DC.
- Input and edit survey information in an ASCII fieldbook.
- Enter raw survey data quickly and easily with tabular sideshot and traverse editors.
- Replace the AutoCAD command prompt with command-line COGO input.
- Specify command-line COGO options, including input based on control points, traverse, sideshots, baseline, centerline, and intersections.
- Edit and import COGO history files.
- View an imported fieldbook and batch process data as it's imported into Autodesk Land Desktop.

Data Analysis

- Perform traverse analyses, including Compass, Crandall, Transit, and 2D/3D Least Squares adjustment.
- Adjust traverse loops and generate a full report.
- Create, edit, process, display, and report on Least Squares network functionality.
- Draft error ellipses and traverse linework automatically.
- Update sideshot locations based on changes to the parent traverse.

Figures

- + Select specific survey figures to be used as Terrain Modeling breaklines.
- + Zoom directly to a selected figure from within the Survey Toolspace.
- Control breakline layer, prefix, and usage with the user-defined figure library.
- Base figures on a variety of geometric input methods.
- Analyze and view reports on figures using options that include Mapcheck, Inverse, and Area/Perimeter.
- Place points on figures automatically.

System Requirements

For a complete list of system requirements, visit www.autodesk.com/survey.

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