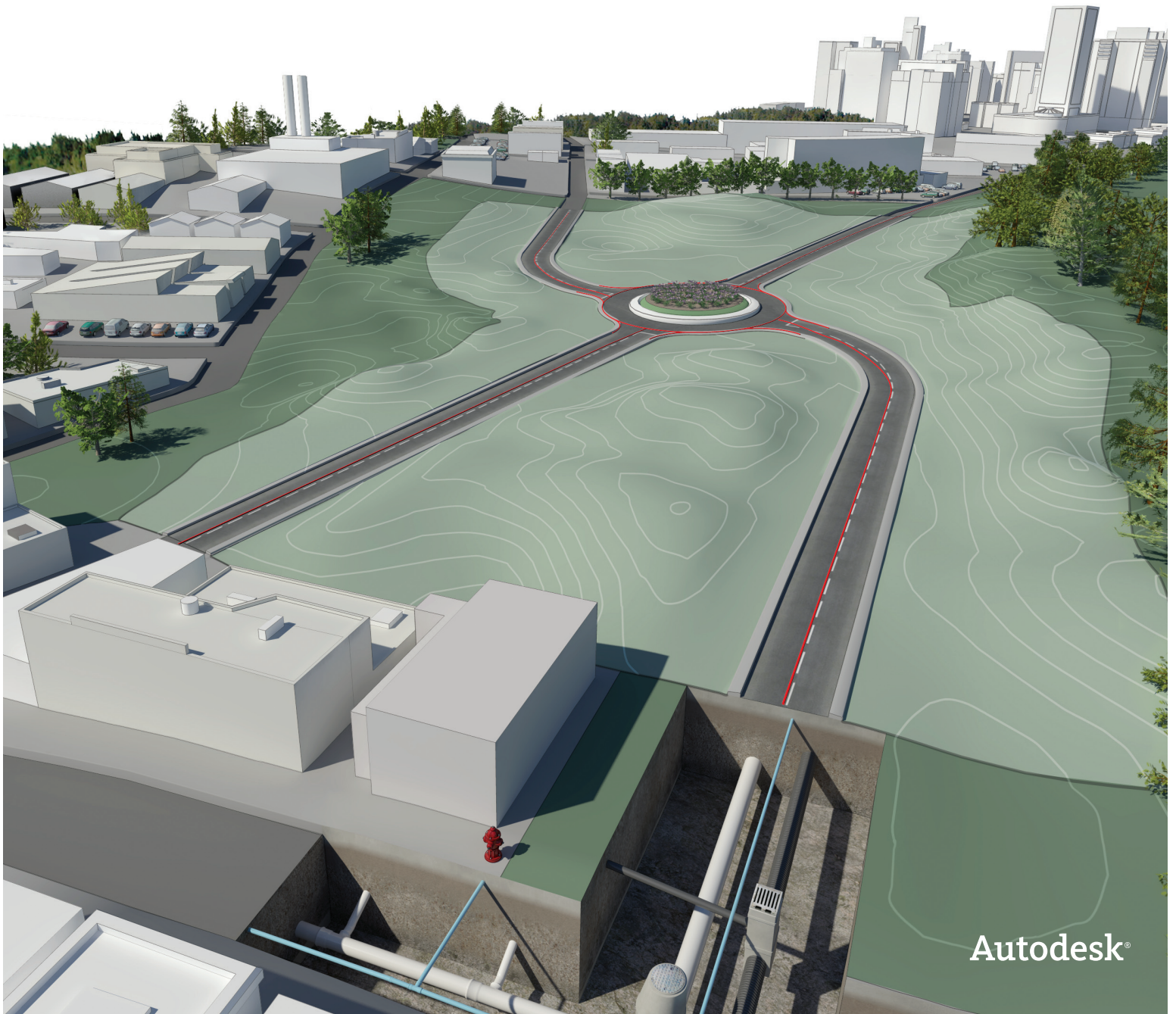


One powerful solution.
Two options for how you work.

AutoCAD[®]

Civil 2009 & Civil 3D[®] 2009



Autodesk[®]

The Right Software for the Job

Autodesk® civil engineering model-centric design software comes in two versions to meet the needs of your teams. Find out which version is right for you.

Whether you work on land development, transportation, or environmental projects, Autodesk civil engineering software is the right choice for your organization.

You can choose from two products to match the way you work: AutoCAD® Civil software—for the design and documentation needs of civil engineering technicians, drafters and surveyors—and AutoCAD® Civil 3D® software, the leading design and analysis tool for civil engineers and designers.

Not Just Faster: Higher Quality

Reduce the time it takes to design, analyze, document, and implement changes so you can evaluate more what-if scenarios—realizing improved results faster.

On Schedule and on Budget

Now, the entire team can work from the same up-to-date model, so everyone stays coordinated throughout all project phases.

A Flexible Solution

Whichever version of Autodesk civil engineering software you choose, you have the flexibility to handle a broad range of project types—and the software has the depth of functionality to help support the technical needs of your project team.

	AutoCAD® Civil 2009	AutoCAD® Civil 3D® 2009
Target User and Application	Civil engineering technicians, drafters and surveyors for developing civil engineering design information and delivering documentation	Same as AutoCAD Civil + Civil engineers and designers responsible for design, analysis, and simulation
Industries	<ul style="list-style-type: none">• Land development• Transportation• Environmental	Same as AutoCAD Civil
Drafting and Documentation	<ul style="list-style-type: none">• Plan production and drafting• Drafting styles and standards• Reporting	Same as AutoCAD Civil + Map Books
Design	<ul style="list-style-type: none">• Surface creation and design using grading and feature lines• Parcels• Corridor modeling and road design• Pipe layout	Same as AutoCAD Civil
Surveying and Coordinate Systems	<ul style="list-style-type: none">• Extensive support of surveying workflow for civil engineering projects from field to finish• Import and process raw survey data from most data collector formats• Survey database• Traverse and least-squares adjustment• Automatic creation of survey figures• COGO• Coordinate system setting and transformations• Export for machine control	Same as AutoCAD Civil
Data Management and Team Coordination	<ul style="list-style-type: none">• Xrefs (including annotation of civil model)• Data shortcuts• Advanced data management with Autodesk® Vault software (included)	Same as AutoCAD Civil
Data Exchange and Interoperability	DGN, LandXML, Google Earth™, and SDF	Same as AutoCAD Map 3D
Stormwater Analysis and Simulation	No	Stormwater analysis and simulation with Hydraflow Storm Sewers Extension, Hydraflow Hydrographs Extension, and Hydraflow Express Extension [†]
Geospatial Analysis and Mapping	No	Includes geospatial analysis and mapping functionality from AutoCAD Map 3D

AutoCAD Civil is only available in the United States and Canada.

[†] Metric capability is currently available for Hydraflow Storm Sewers Extension for AutoCAD Civil 3D with some limitations. Metric support is currently not available for Hydraflow Hydrographs Extension or Hydraflow Express Extension.

Purpose-Built Surveying and Design Tools

Streamline project workflows by automating time-consuming tasks.

Preliminary Design

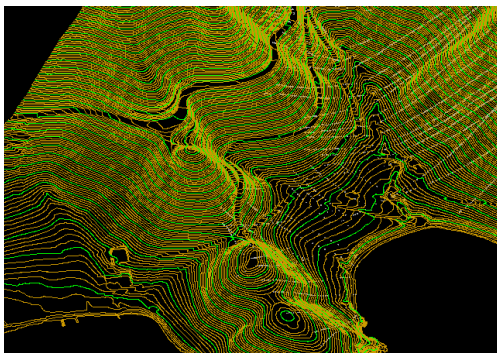
Pull in aerial imagery and terrain models from the Google Earth application; import geographic information system data such as road centerlines and wetlands boundaries; and then use the purpose-built design tools to lay out preliminary road and lot designs—all without hiring a survey crew.

Surveying

Survey functionality is fully integrated, so you have a consistent environment for all tasks, including direct import of raw survey data, least-squares adjustment, editing of survey observations, and automated creation of survey figures and surfaces. Most important, the result—points, survey figures, and surfaces—can be used throughout the design process.

Surfaces

The software supports large surface models while maintaining dynamic relationships to source data, including contours, breaklines, corridor models, and grading objects. Once generated, the surface can be used to display contours, catchment areas, flow paths, elevation and slope analysis, and 3D render-ready views.



Grading

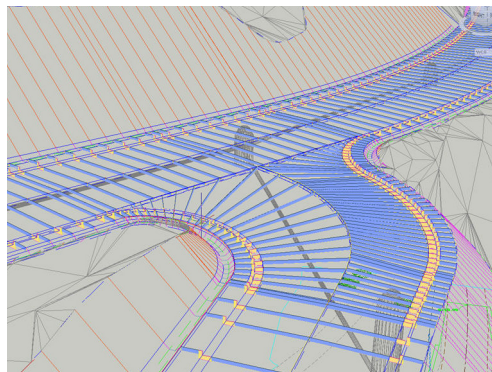
Team members can use the powerful daylighting and grade projection tools to generate surface models for any type of grading projection. You also get easy-to-use graphical and tabular grading manipulation tools for use in the development of any surface.

Parcel Layout

Generate parcels by converting existing AutoCAD® entities or by using flexible layout tools to automate the process. The software uses a topology to manage parcels so that a change to one parcel is automatically reflected in neighboring parcels.

Corridor Modeling

Corridor modeling combines horizontal and vertical geometric constraints with customizable cross sectional components called subassemblies to create a dynamic model of roads and other transportation systems. Use the included subassemblies—ranging from travel lanes, sidewalks, and ditches to complex lane components—or create your own to match any conceivable design standard.

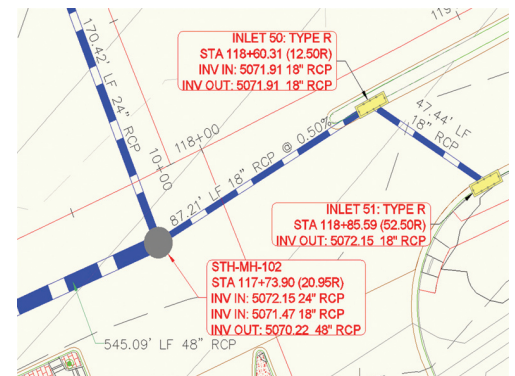


Criteria-Based Road Design

Quickly lay out plan and profile alignment geometry with local design criteria that you specify. These constraints remain in place when using interactive “best fit,” PI-based (point of intersection), or highly flexible element-based layout approaches.

Pipes

Use rules-based tools to lay out sanitary and storm drainage systems. Make changes to pipes and structures using graphical or numerical input, and conduct interference checks. Plot and complete final drafting of the pipe network in plan, profile, and section views, and share pipe network information, such as material and size, with external analysis applications.



Data provided by JR Engineering

Earthwork Calculations

Quickly process earth volumes between your existing and proposed surfaces using composite volume or average end area methods. Use the Autodesk civil engineering solution to generate mass haul diagrams for analyzing the distance over which cut and fill can balance, the amount of material to be moved, the direction of movement, and the identification of borrow pits and dump sites.

High-Quality Documentation

Enhance your productivity and deliver consistent and coordinated construction documents.

Drafting Styles and Standards

The solution provides country-specific CAD styles to control many aspects of drawing display. Colors, linetypes, contour increments, labeling, and much more are fully controlled by styles.

Production Drafting

Automatically generate production plans such as fully annotated section sheets, profiles, grading plans, and more. Most important, drafting can be generated across multiple drawings by using xrefs and data shortcuts. The result is a workflow that enables production sheets to use a single instance of the model. And if the model changes, you can quickly synchronize all production sheets to reflect the update.

Plan Production

A comprehensive tool assists with the layout of plan and profile sheets. Fully integrated with the AutoCAD Sheet Set Manager, the Plans Production wizard automates the layout of sheets and matchlines along alignments, and generates plan and profile sheets based on the layout. The finished product is a series of drawing sheets ready for final annotation and plotting.

With Autocad Civil 3D, you gain the additional functionality of map books which lays out sheets across your project while generating key maps and legends for your entire sheet set. This capability is ideal for laying out utility maps, grading plans, or even cross-section sheets.

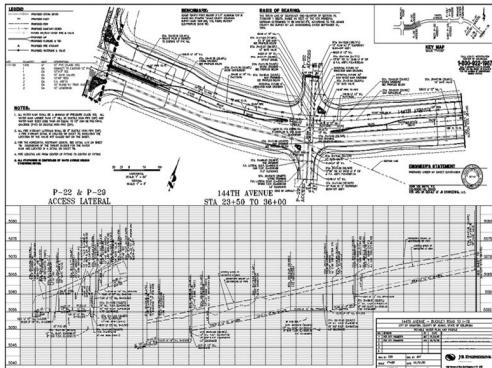
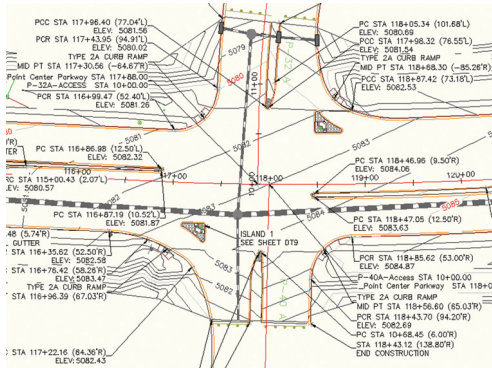


Image courtesy of JR Engineering

Annotation

The software's annotation is derived directly from design objects, through external references, and updates automatically when the design changes. It also automatically responds to changes in drawing scale and view orientation so if you rotate or change the plot scale within different viewports, the labels update instantly.



Data provided by JR Engineering

Reporting

The Autodesk civil engineering solution provides flexible, real-time, and extensible report generation directly in the software. And, because the data is derived directly from the model, reports can easily be updated, providing quick feedback as design changes are made.

Stakeout Alignment Report				
Client: John Smith ABC Property Co. 123 East St. Date: 8-7-2008		Prepared by: Jane Doe The Engineering Company 123 Main Street		
Alignment Name: ENT RD CL				
Description: Station Range: Start: 0+00.00, End: 5+63.86 Stakeout Axis: Type: TransPis Occupied Pt: Northing: 1359442.4026, Easting: 761795.3519 Backsight Pt: Northing: 1359601.4149, Easting: 761916.6576 Station Increase: 50.00 Offset: 0.00				
Station	Turned Right	Distance	Coordinate N	Coordinate E
0+00.00	240.9985 (d)	425.505'	1359504.1022	761374.3442
0+50.00	242.1445 (d)	376.149'	1359504.3787	761424.3434
1+00.00	243.6359 (d)	326.990'	1359504.6542	761474.3427
1+50.00	245.6530 (d)	278.130'	1359504.9299	761524.3419
2+00.00	248.5243 (d)	229.761'	1359505.2057	761574.3412
2+50.00	252.9080 (d)	182.274'	1359505.4816	761624.3404
3+00.00	260.2950 (d)	136.594'	1359505.7574	761674.3396
3+50.00	274.2228 (d)	95.551'	1359506.0332	761724.3389
4+00.00	304.4582 (d)	67.273'	1359506.3092	761774.3381
4+50.00	348.9176 (d)	64.210'	1359499.9880	761823.7580
5+00.00	425.9174 (d)	82.726'	1359479.6291	761869.2282
5+50.00	48.9549 (d)	114.216'	1359449.7854	761909.2287
5+63.86	53.1301 (d)	125.000'	1359441.3797	761920.3477
Alignment Name: R: CR Description: Station Range: Start: 21+47.55, End: 22+25.14				

Better Coordination

With the Autodesk civil engineering solution, your team works from the same consistent, up-to-date model—so they stay coordinated throughout the project, from survey to construction documentation.

Data Shortcuts and References

With data shortcuts and xrefs, project members can share model data such as surfaces, alignments and pipes, working off the same instance of a design object for multiple design tasks. Annotation can also be generated from the data shortcuts or directly through an xref to help ensure that production drafting remains in sync.

Advanced Data Management

For companies looking for advanced data management, the addition of Autodesk® Vault technology enhances data shortcut functionality with advanced change management, version control, user permissions and archive control.

Design Review

Today, the engineering process is more complex than ever. Design review often involves team members who are not CAD software users yet are vital to the project. Publishing to DWF™ format allows you to digitally extend design review to your team.

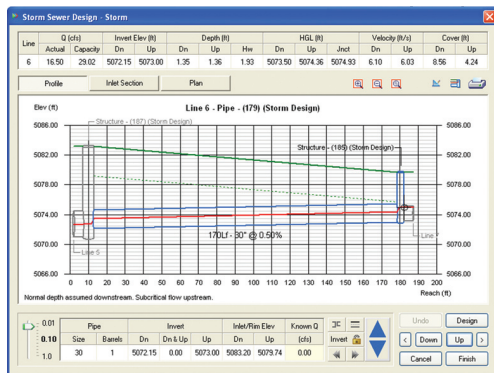
Advanced Analysis and Visualization Tools

Predict your project performance with AutoCAD Civil 3D and make better-informed decisions before breaking ground.

Stormwater Analysis and Simulation

AutoCAD Civil 3D includes three extensions for stormwater hydraulics and hydrology:

- **Hydraflow Storm Sewers Extension***—a full-featured, easy-to-use storm sewer design and analysis package.
- **Hydraflow Hydrographs Extension***—a comprehensive solution for watershed analysis and detention pond designs.
- **Hydraflow Express Extension***—a collection of powerful calculators for solving everyday hydraulics and hydrology challenges.



Visualization

Most civil engineering projects require you to deliver presentations to review boards and funding agencies. But preparing those presentations can be time consuming and disconnected from the design process. Civil 3D provides integrated tools for developing 3D visualizations directly from the model. You can even publish to Google Earth to quickly demonstrate how designs fit into the surrounding landscape.



Image courtesy of Tibi Architects and RDV Systems

The biggest advantage of AutoCAD Civil 3D is the return on investment we will see for years to come. The software has not only heightened our firm's internal design efficiencies and enhanced capabilities for client presentations, but it also distinguishes RGS among the next generation of civil engineers.

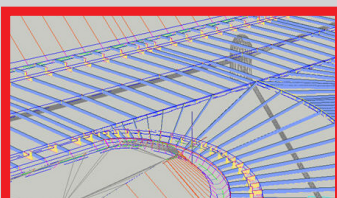
—Amy Eidemiller
Managing Principal
RGS

Geospatial Analysis and Mapping

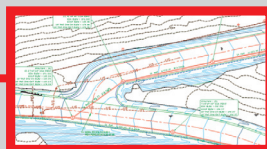
AutoCAD Civil 3D includes geospatial analysis and mapping capabilities from AutoCAD Map 3D software to support engineering-based workflows. These tools help bridge the gap between GIS and CAD, extending how engineers are able to access, edit, publish, and distribute geospatial data, maps, and designs to meet the specific needs of your organization.

* Metric capability is currently available for Hydraflow Storm Sewers Extension for AutoCAD Civil 3D with some limitations. Metric support is currently not available for Hydraflow Hydrographs Extension or Hydraflow Express Extension.

One change. Multiple updates. All automatic.



Model. Use the intelligent and dynamic tools to quickly make a design change at any stage of the project.



Documentation. The model automatically reflects any changes to drafting and annotation throughout the project. Sheets update with the most current and accurate design information, helping to reduce errors and omissions.



Visualization. Quickly and efficiently produce visualizations that remain in sync with design changes as they are made.

Volume Report									
Project: C:\Project\New Branch\Plan Set\logtable.dwg									
Align: Road 1									
Channel: 1									
Date: 11/11/2010									
User: [Name]									
Station	Vol	Vol	Reservoir	Vol	Vol	Vol	Vol	Vol	Vol
(Sta)	(cu)	(cu)	(cu)	(cu)	(cu)	(cu)	(cu)	(cu)	(cu)
0+00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1+00	10.00	10.00	0.00	10.00	10.00	0.00	10.00	10.00	0.00
2+00	20.00	20.00	0.00	20.00	20.00	0.00	20.00	20.00	0.00
3+00	30.00	30.00	0.00	30.00	30.00	0.00	30.00	30.00	0.00
4+00	40.00	40.00	0.00	40.00	40.00	0.00	40.00	40.00	0.00
5+00	50.00	50.00	0.00	50.00	50.00	0.00	50.00	50.00	0.00
6+00	60.00	60.00	0.00	60.00	60.00	0.00	60.00	60.00	0.00
7+00	70.00	70.00	0.00	70.00	70.00	0.00	70.00	70.00	0.00
8+00	80.00	80.00	0.00	80.00	80.00	0.00	80.00	80.00	0.00
9+00	90.00	90.00	0.00	90.00	90.00	0.00	90.00	90.00	0.00
10+00	100.00	100.00	0.00	100.00	100.00	0.00	100.00	100.00	0.00

Reports. Whether it's a volume, structure, or pipe report, when a change to the design is made, the crucial information in tables updates automatically.

In such a fast developing industry as this, the time savings created by using the software is all important. We work on around 20 different projects across the globe concurrently—all at different stages of design and construction. Using Civil 3D we can get through our work on projects far more quickly and therefore stay highly competitive.

—Michael Whitbread
CAD Manager
Renewable Energy Systems

Learn More or Purchase

Access specialists worldwide who can provide product expertise, a deep understanding of your industry, and value that extends beyond your software purchase. To purchase AutoCAD Civil and AutoCAD Civil 3D software, contact an Autodesk Premier Solutions Provider or Autodesk Authorized Reseller. To locate the reseller nearest you, visit www.autodesk.com/reseller.

To learn more about the Autodesk civil engineering software, visit www.autodesk.com/civil, visit www.autodesk.com/civil3d.

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