AutoCAD Civil 2010

Workflows

April 2009

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Published By: Autodesk, Inc.
111 Mclnnis Parkway
San Rafael, CA 94903, USA

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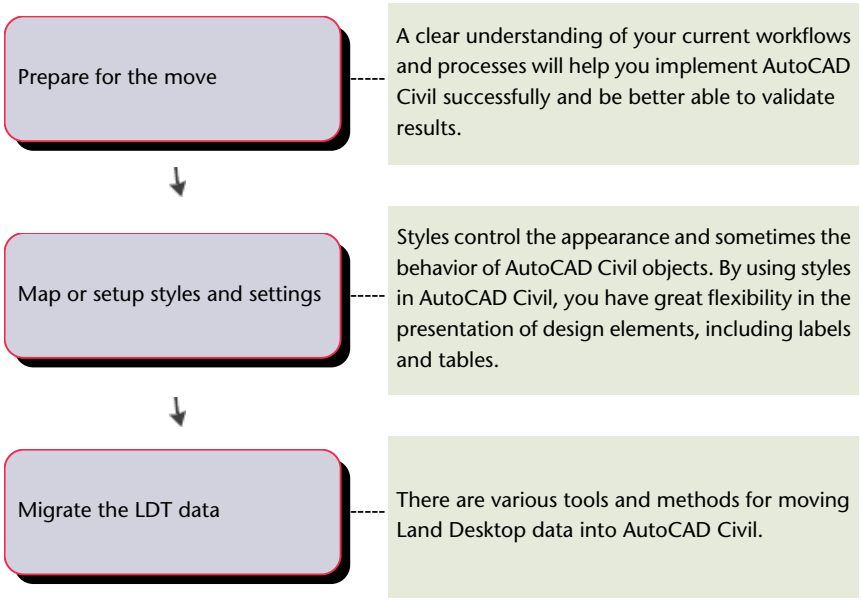
AutoCAD Civil Workflows

Refer to this section for workflows for common tasks you might perform when working with AutoCAD Civil.

Moving Data from Land Desktop

Use this workflow to help you efficiently move existing data from AutoCAD Land Desktop to AutoCAD Civil.



Labels and Tables Workflow

You can use the workflow topics as a reference for the process of working with labels and tables.

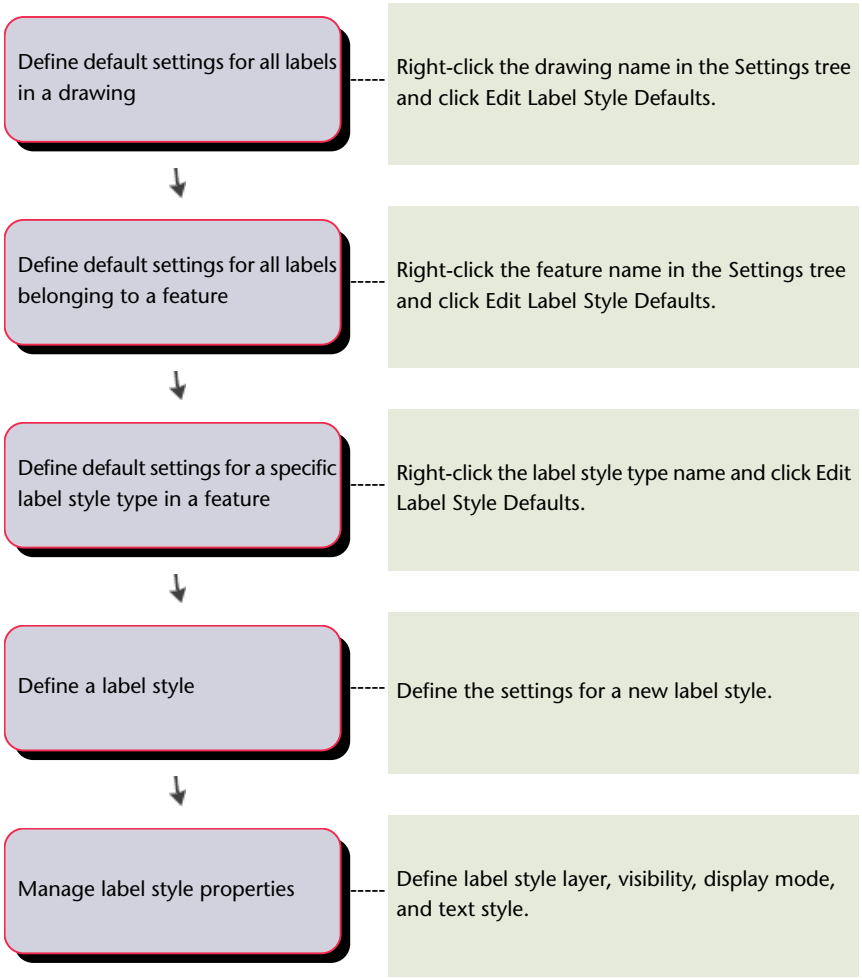
Each topic contains a brief explanation of a stage in the development of labels or tables and provides links to specific tasks in that stage.

Setting Up Label Settings and Styles

Specify settings for labels at various levels in the hierarchal Settings tree. In addition, you define specific settings for individual labels in the *label styles*, which manage label content.

The highest levels of settings can serve as a general prototype model for settings that are lower in the hierarchy. Those settings, if not locked at the drawing level, can be overridden in subordinate settings.

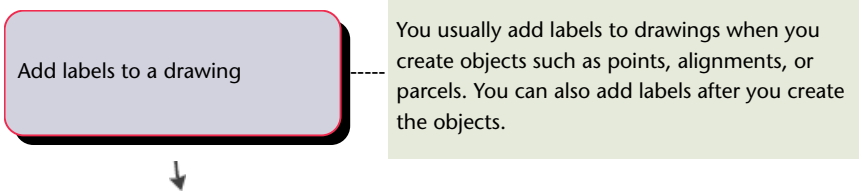
To set up label settings and styles

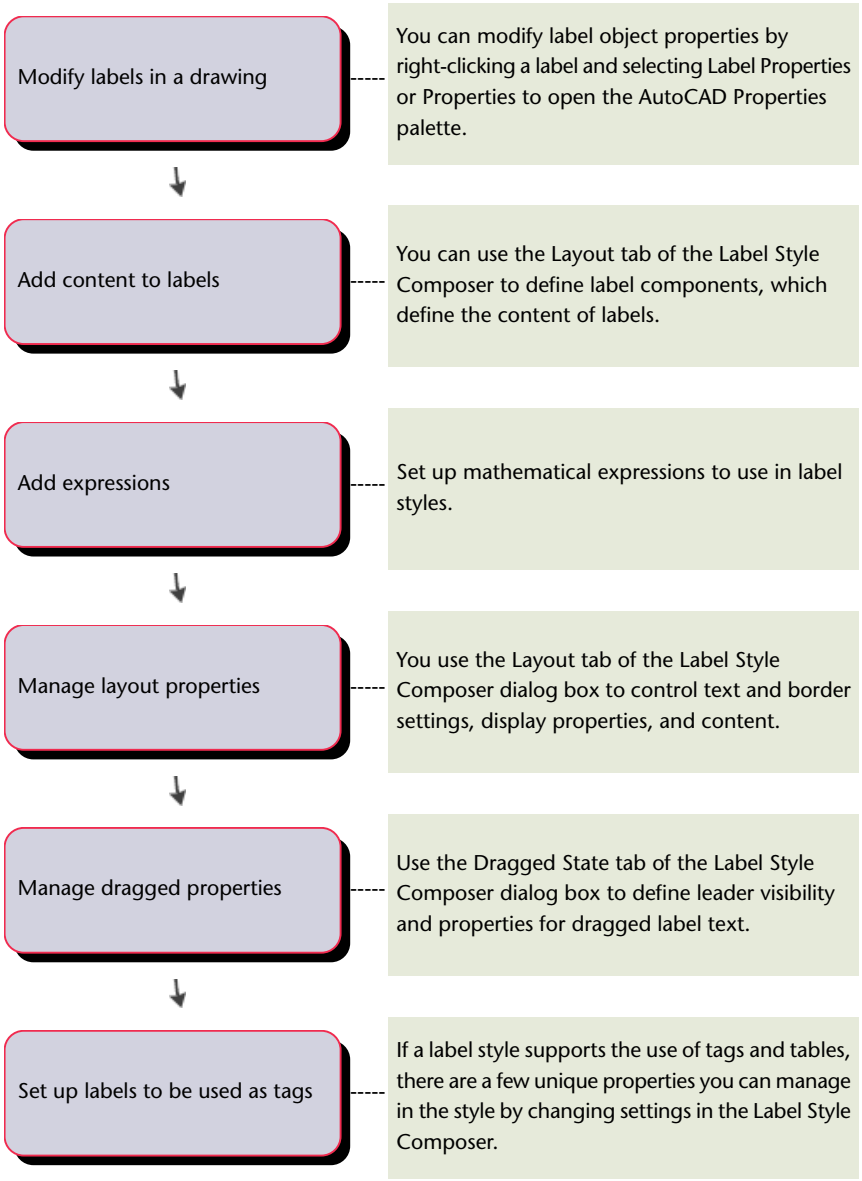


Inserting and Managing Labels

Follow these steps as a guide to efficiently insert and manage labels.

To insert and manage labels

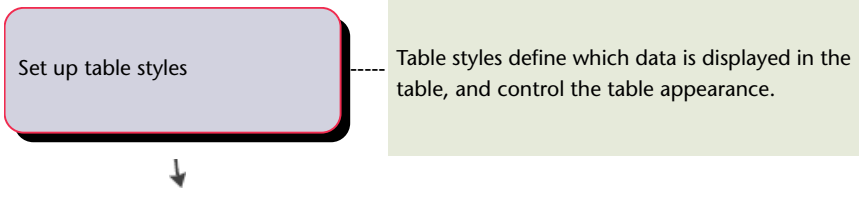


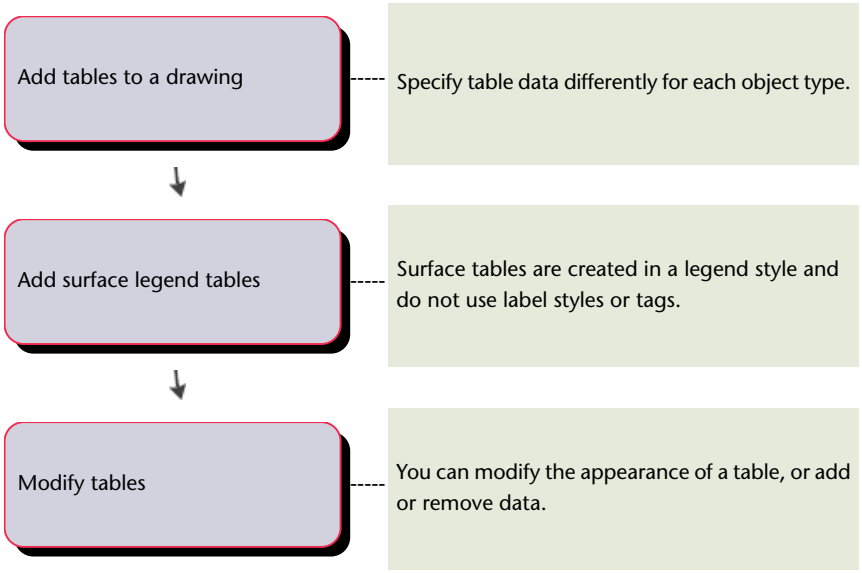


Inserting and Managing Tables

Follow these steps as a guide to efficiently insert and manage tables.

To insert and manage tables



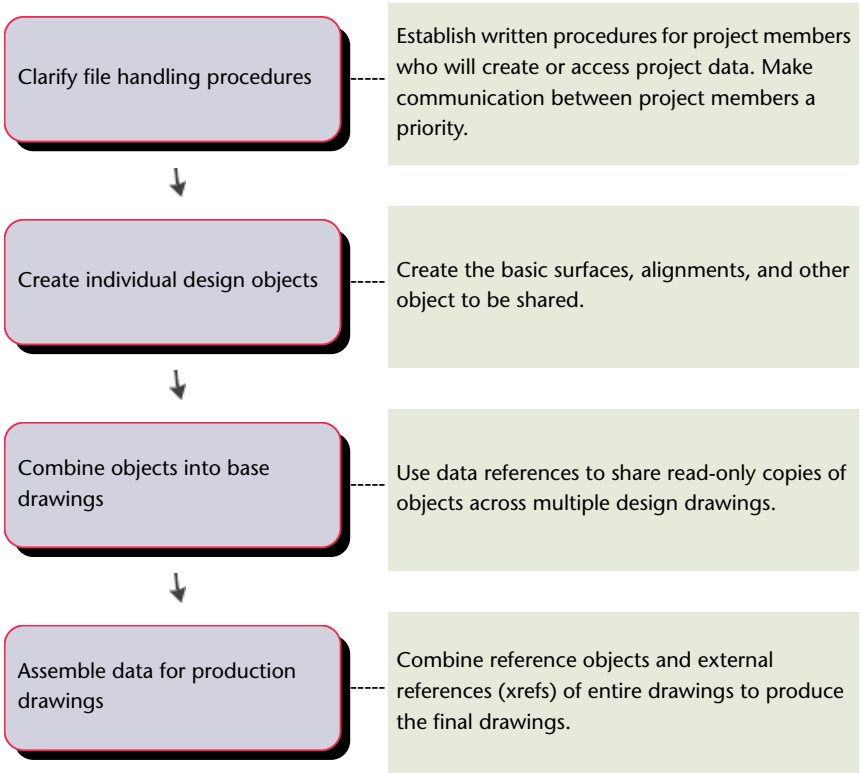


Project Management Workflow

Determine whether the project uses data shortcuts or Autodesk Vault, then choose the appropriate workflow.

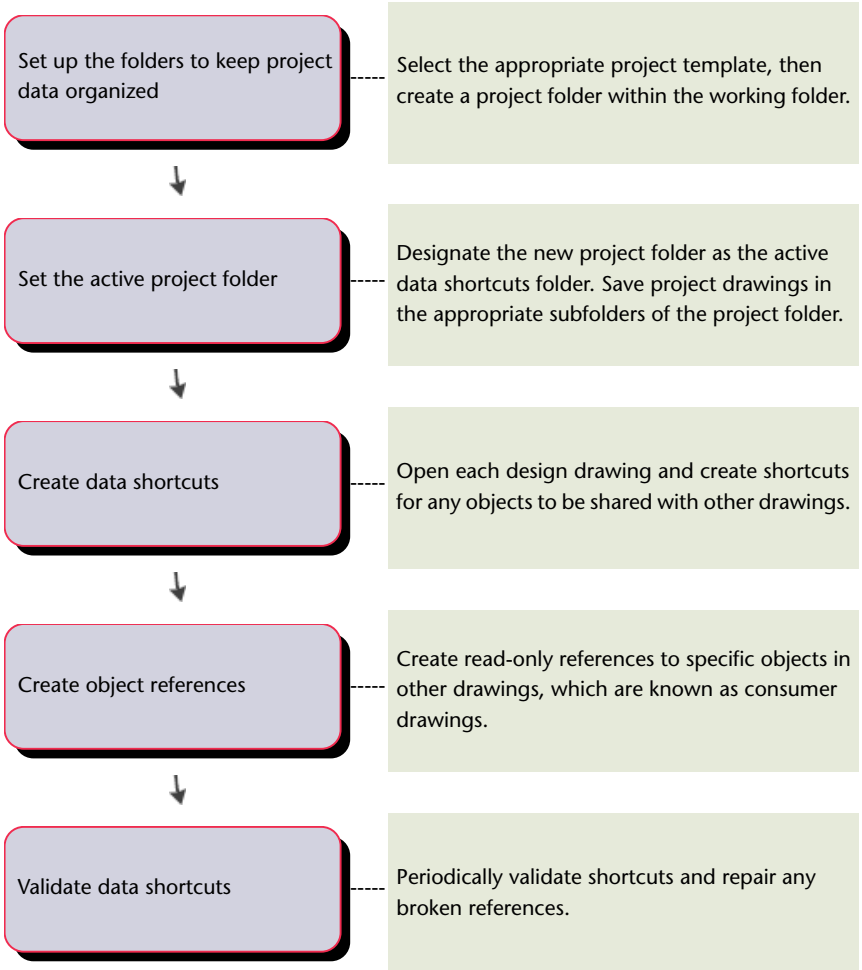
Standard Workflow

Use these steps as a guide to create an efficient network of drawings within a project.



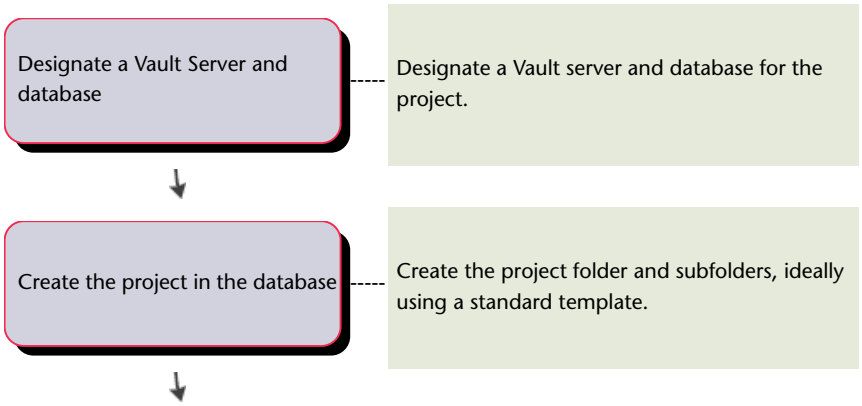
Data Shortcuts Workflow

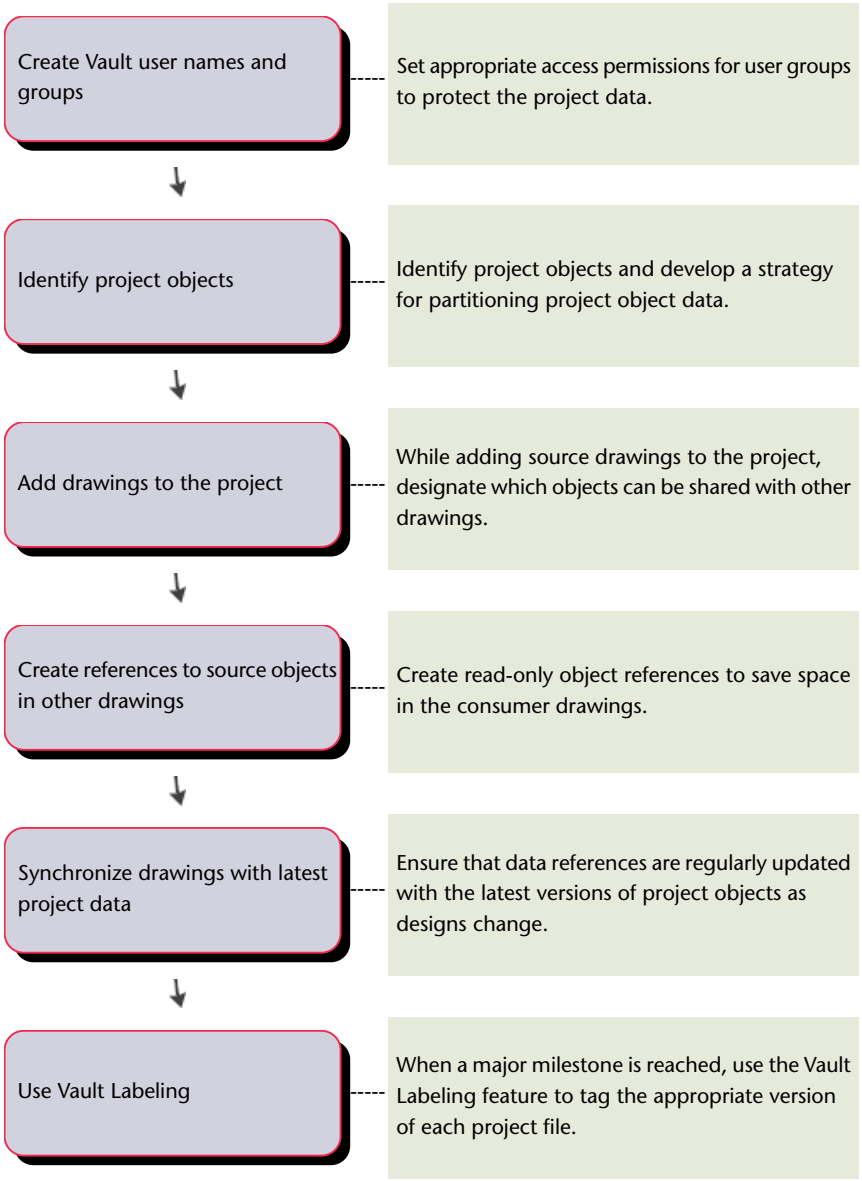
Follow these steps for each new data shortcut project.



Autodesk Vault Workflow

Follow these steps for each new Autodesk Vault project.

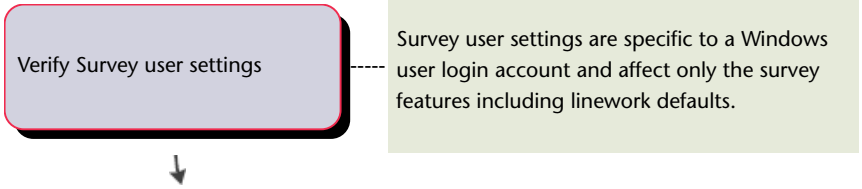


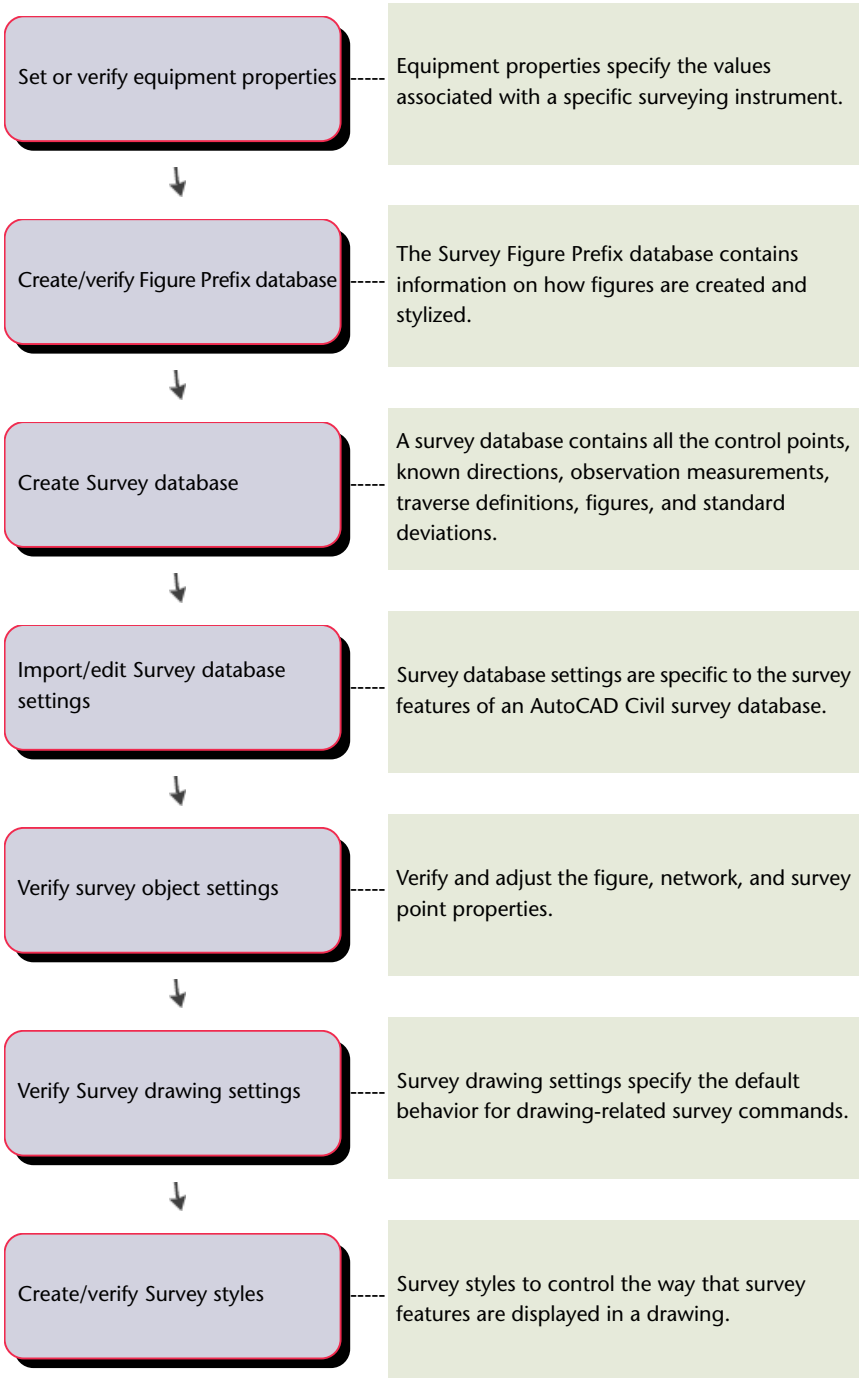


Survey Workflow

Prepare for Survey Data

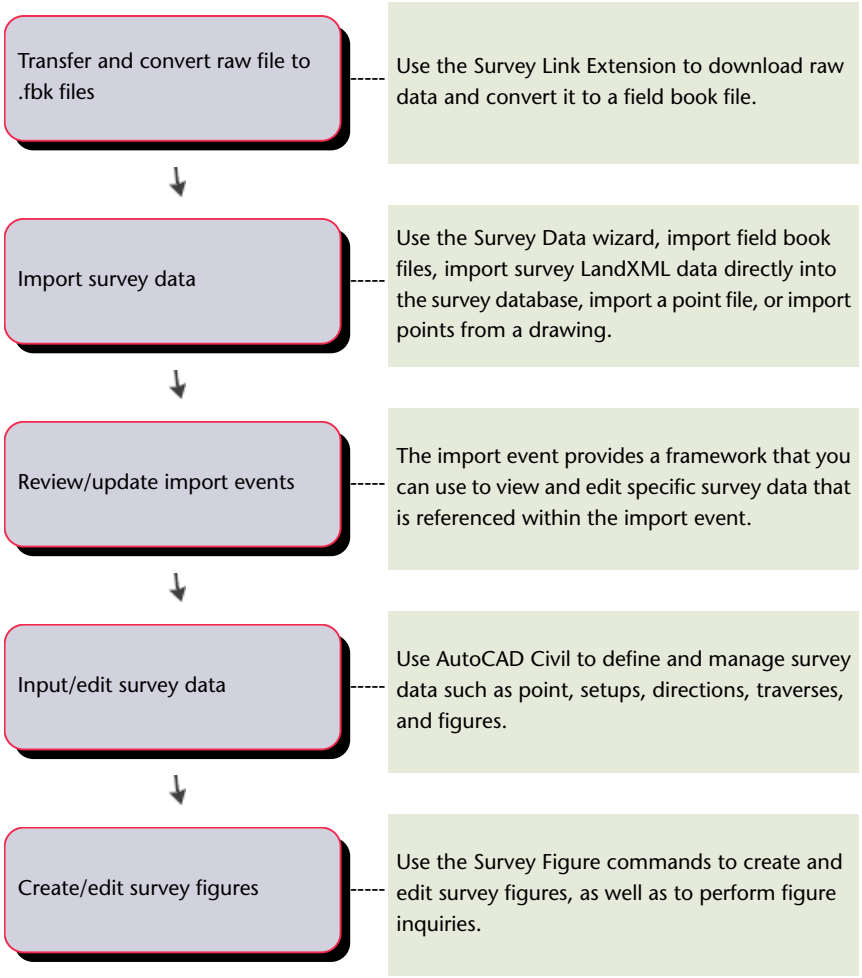
Before adding survey data to a survey database and drawing, ensure that the styles and settings are set up. There are several types of settings that you must specify before importing or creating survey data.




Set or verify equipment properties
Equipment properties specify the values associated with a specific surveying instrument.
Create/verify Figure Prefix database
The Survey Figure Prefix database contains information on how figures are created and stylized.
Create Survey database
A survey database contains all the control points, known directions, observation measurements, traverse definitions, figures, and standard deviations.
Import/edit Survey database settings
Survey database settings are specific to the survey features of an AutoCAD Civil survey database.
Verify survey object settings
Verify and adjust the figure, network, and survey point properties.
Verify Survey drawing settings
Survey drawing settings specify the default behavior for drawing-related survey commands.
Create/verify Survey styles
Survey styles to control the way that survey features are displayed in a drawing.

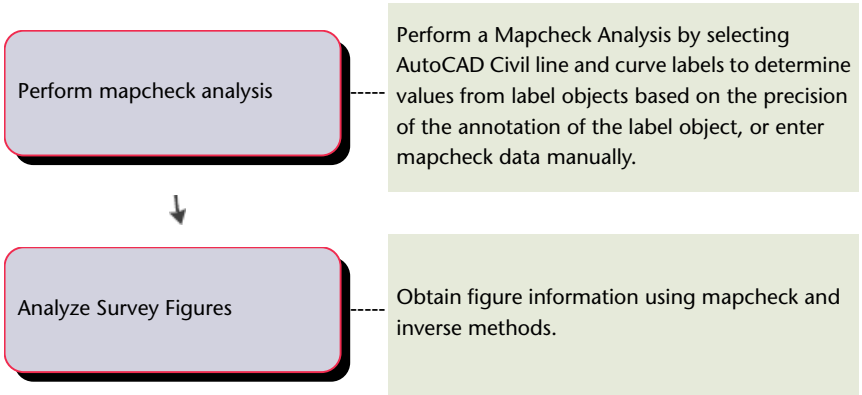
Obtain and Create Survey Data

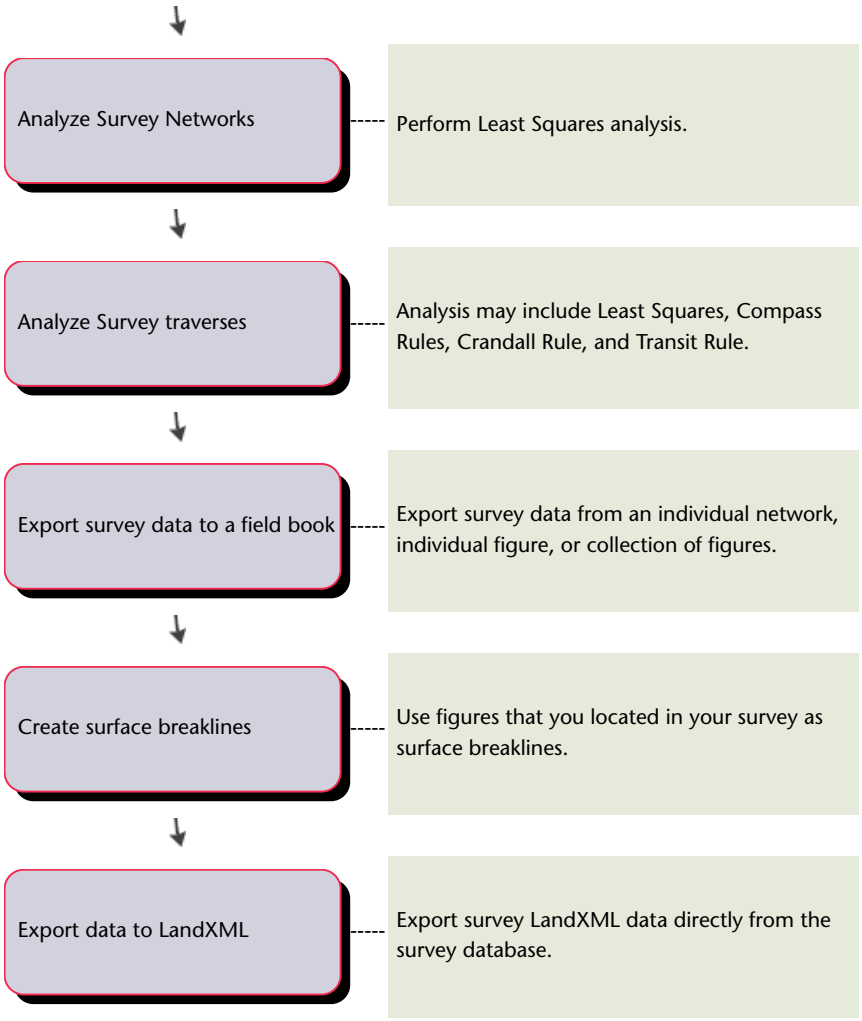
Survey data can be brought into AutoCAD Civil using several methods including importing from field books and LandXML files as well as entering data manually.



Adjust, Analyze, and Output Survey Data

After you have imported or created survey data, you can use several tools to adjust, analyze, and output it.





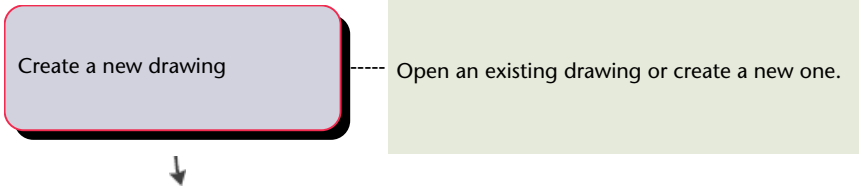
Points Workflow

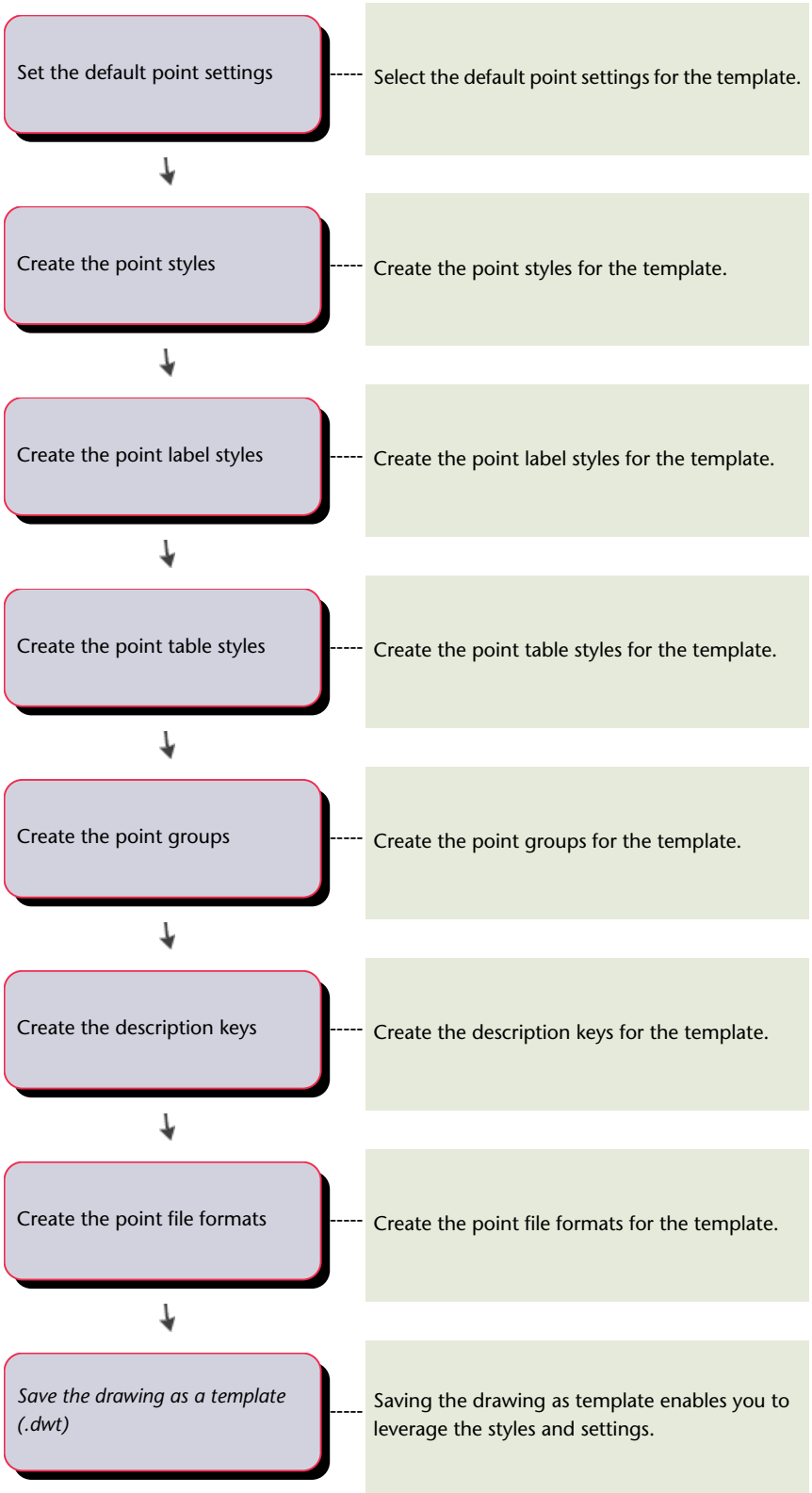
Refer to this section for high-level descriptions of tasks you might perform when working with points in AutoCAD Civil.

Creating a Drawing Template for Points

Creating drawing templates that contain standard styles, settings, and other point-related information helps you work more efficiently and ensures that final drawings conform to office standards.

To create a drawing template for points



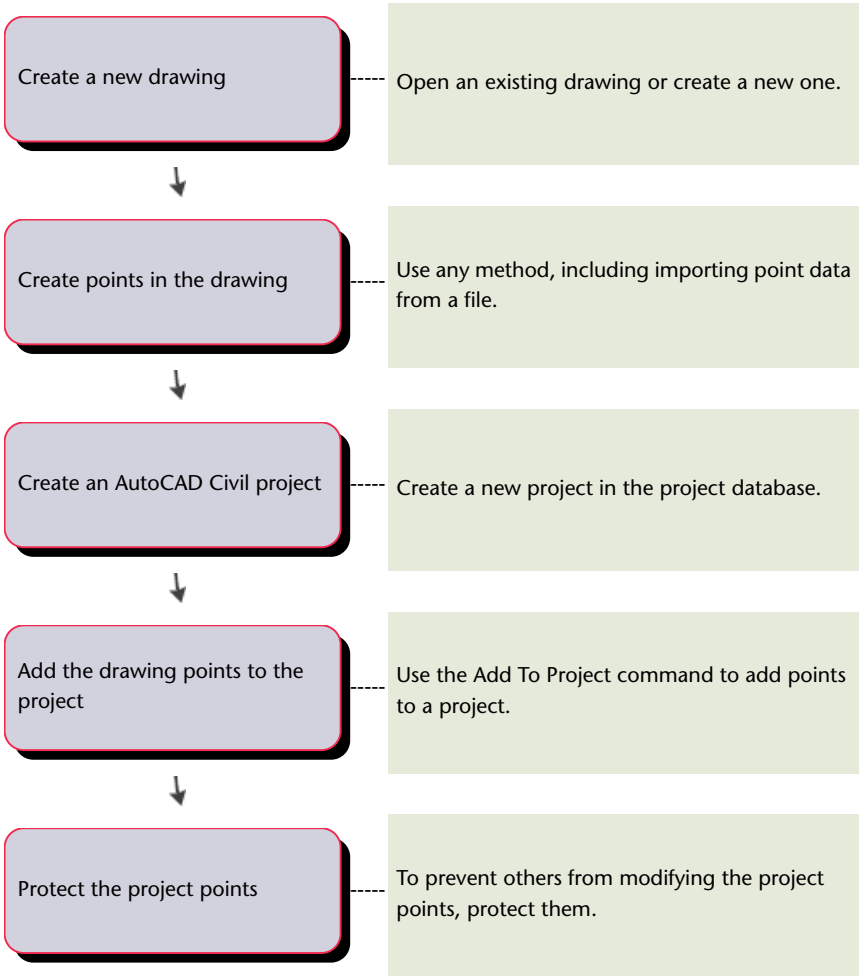

Set the default point settings
Select the default point settings for the template.
Create the point styles
Create the point styles for the template.
Create the point label styles
Create the point label styles for the template.
Create the point table styles
Create the point table styles for the template.
Create the point groups
Create the point groups for the template.
Create the description keys
Create the description keys for the template.
Create the point file formats
Create the point file formats for the template.
Save the drawing as a template (.dwt)
Saving the drawing as template enables you to leverage the styles and settings.

Creating a Project Point Database

Adding points to an AutoCAD Civil project allows others to access the points.

For more information about AutoCAD Civil projects, see Managing Projects.

To create a project point database

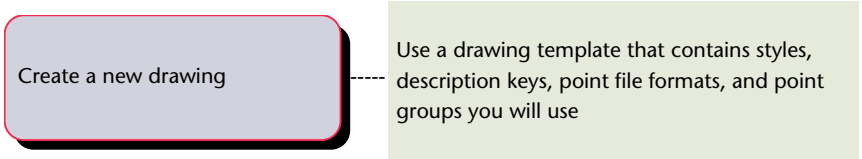


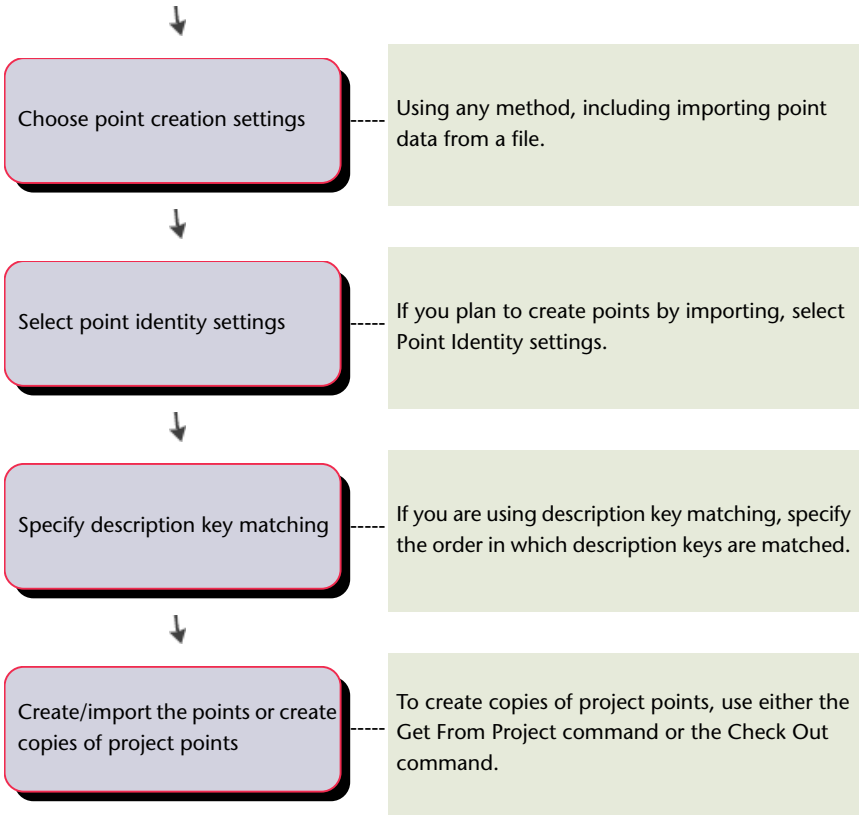
Creating Points in a Drawing

Before creating points in a drawing, specify settings and options that control how points are created and how they appear in a drawing.

Save time by saving commonly used styles, description keys, point groups, and point file formats in a drawing template. For more information, see Creating a Drawing Template for Points on page 9.

To create points in a drawing



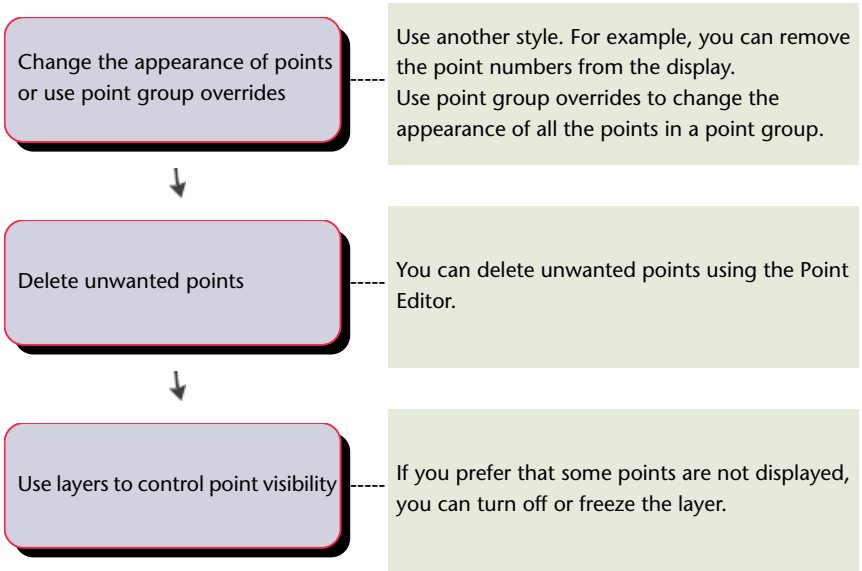


Changing the Appearance of Points in a Drawing

Before producing hard-copy drawings for a project, you can adjust the appearance of the points in the AutoCAD Civil drawing.

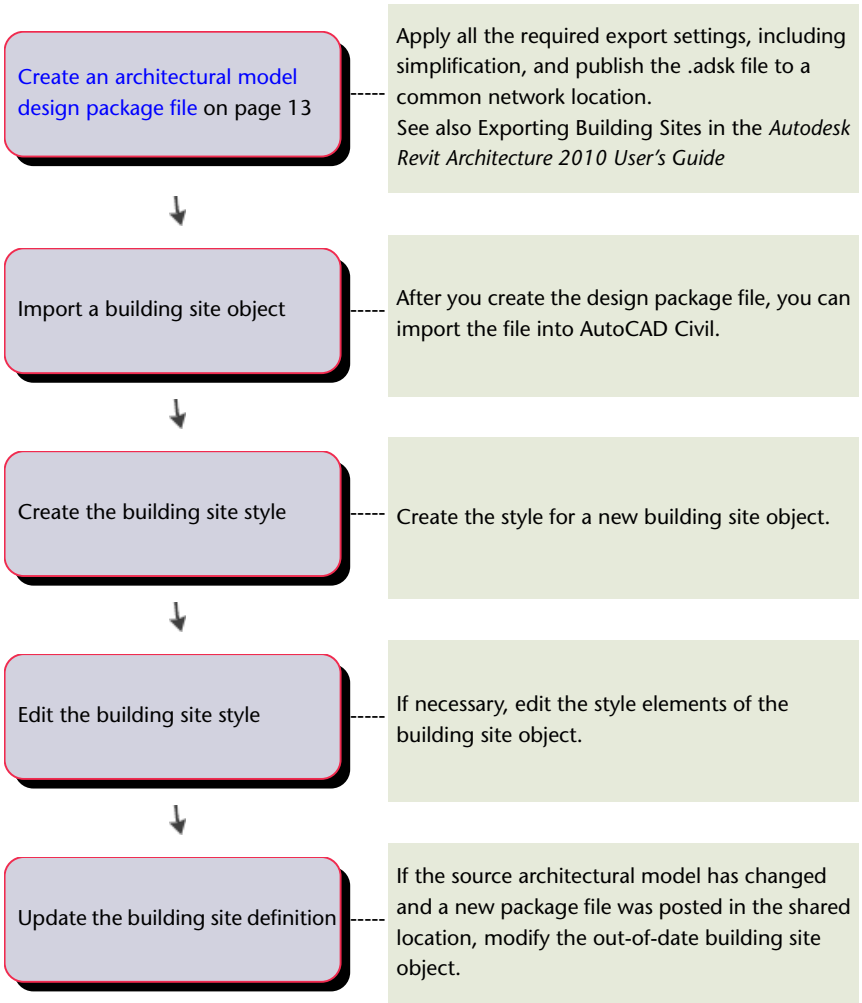
Use styles and point groups to change the appearance of the points in a drawing.

To change the appearance of points in a drawing



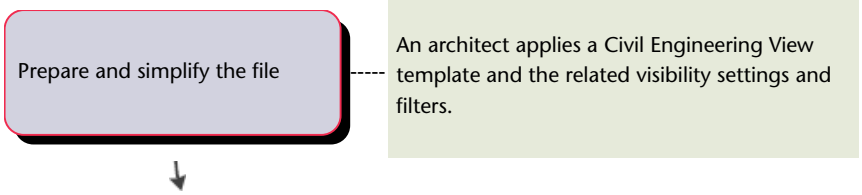
Importing Architectural Data Workflow

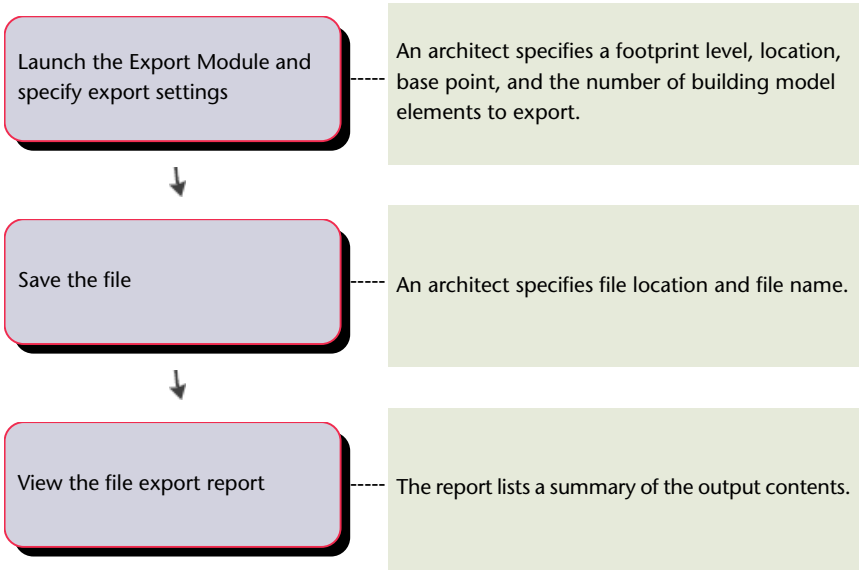
Refer to this section for high-level descriptions of tasks you can perform when importing an architectural data model to AutoCAD Civil.



Preparing a Building Site File for Export

The following is a high-level workflow of the steps that a Revit Architecture user performs to prepare a building site model design package file for export to AutoCAD Civil.





See also:

- Exporting Building Sites in the *Autodesk Revit Architecture 2010 User's Guide*.

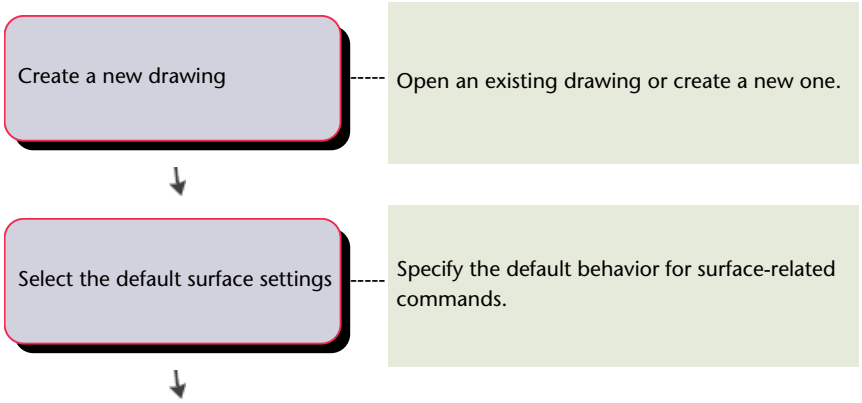
Surfaces Workflow

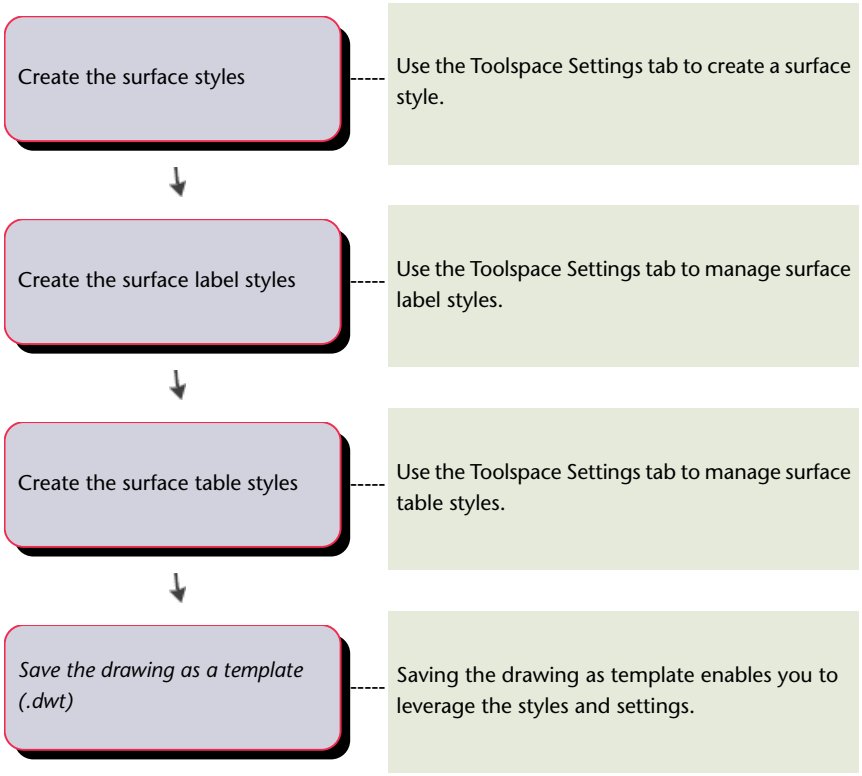
Refer to this section for high-level descriptions of tasks you can perform when working with surfaces in AutoCAD Civil.

Preparing for Surface Data

Before adding surface data to a drawing, ensure that the styles and settings are set up. Consider creating drawing templates that contain standard styles and settings. It helps you work more efficiently and ensure that your final drawings conform to your office standards.

To create a drawing template for surfaces



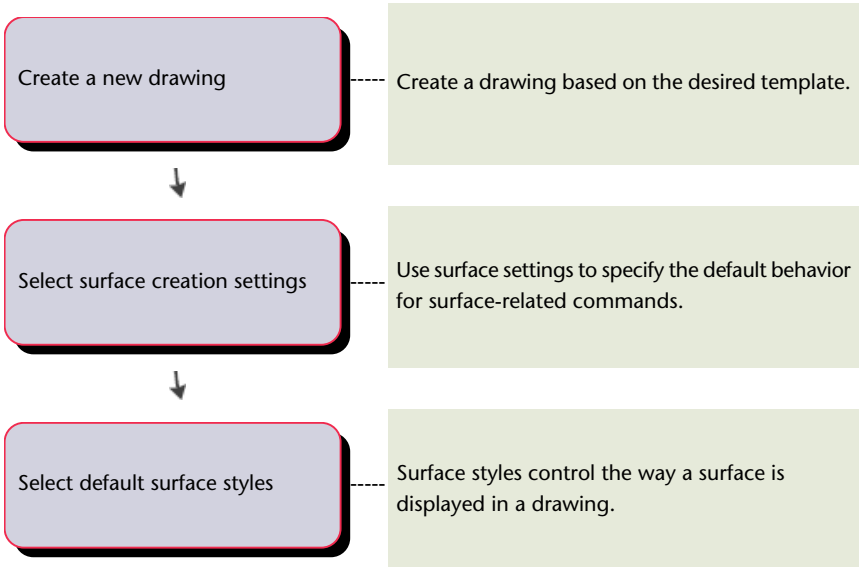


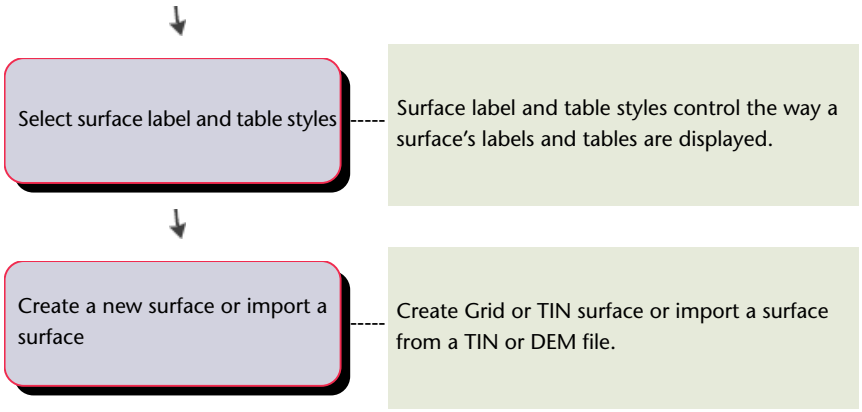
Creating Surfaces in a Drawing

Before you create surfaces in a drawing, set up your environment to take advantage of the settings and options AutoCAD Civil offers for automatically labeling surfaces and surface objects.

To work even more effectively, save the styles in a drawing template. For more information, see Preparing for Surface Data.

To create a surface

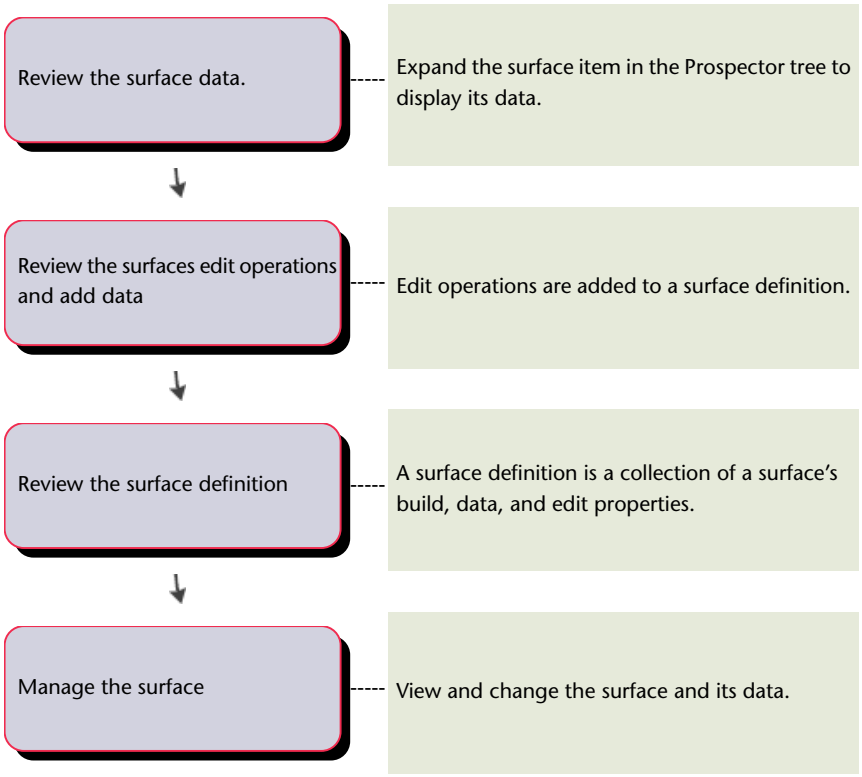




Adding and Managing Surface Data

When you create a surface, the surface may be empty and therefore is not visible in the drawing. However, the surface name is displayed in the Prospector tree so you can perform other operations, such as adding data.

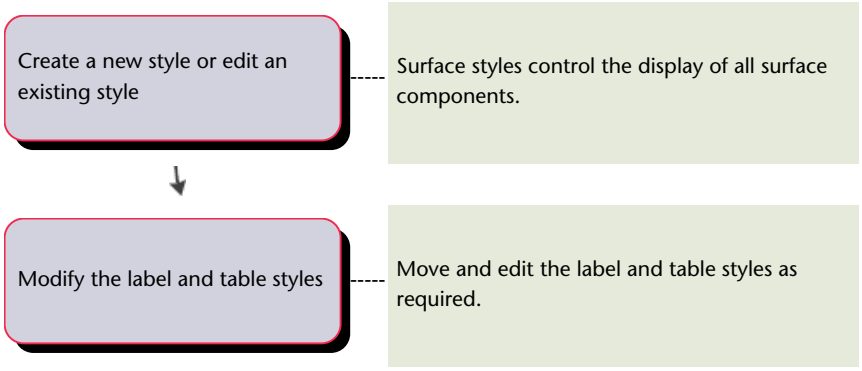
To add and manage surface data



Changing the Appearance of Surfaces

As your design progresses, you can change the look of your drawing by changing the surface style or surface label styles.

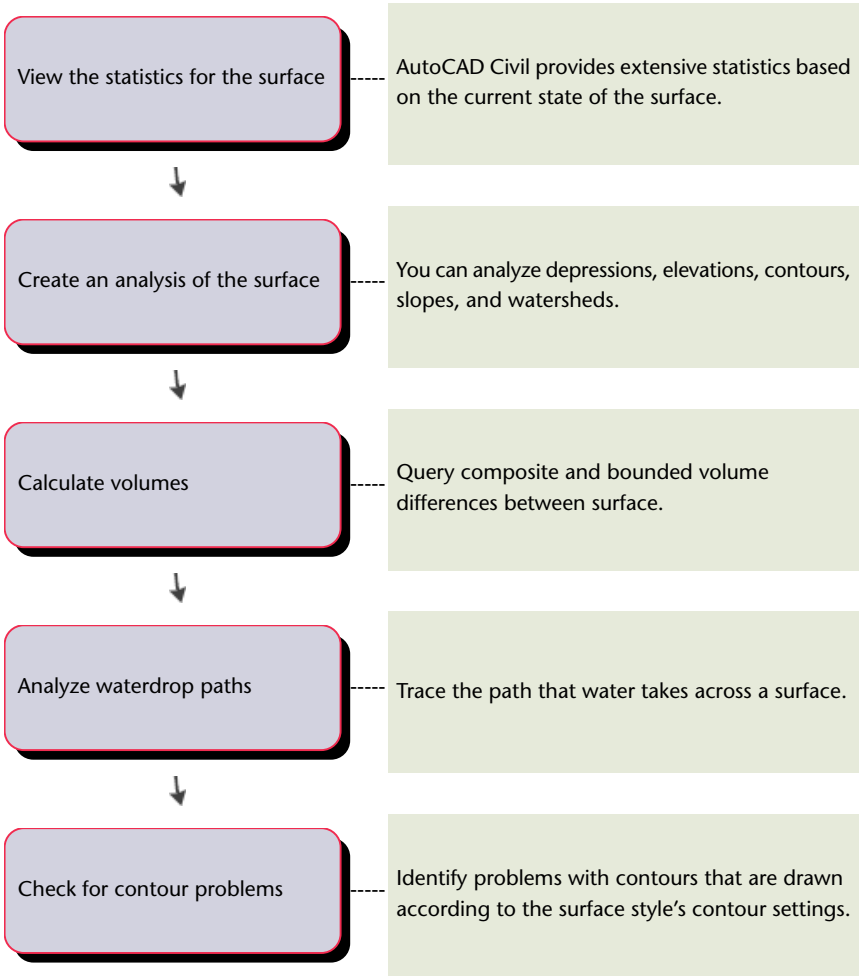
To change the appearance of surfaces in a drawing



Analyzing Surface Information

You can create analysis of surface data and view surface information and statistics.

To analyze surface information



Grading Workflow

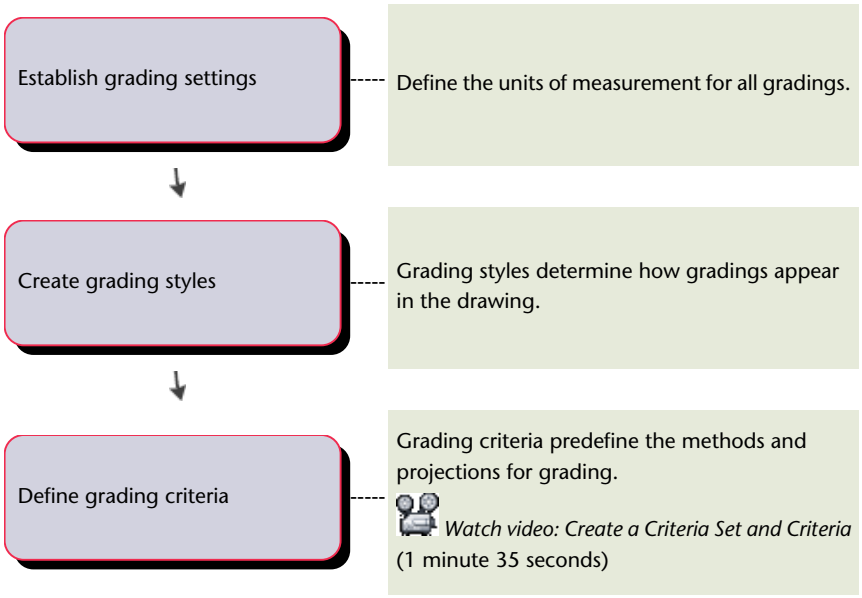
Refer to this section for high-level descriptions of the most common grading tasks you might perform when working with grading in AutoCAD Civil.

Setting up Gradings

This section provides high-level descriptions of grading-related tasks you might perform during the early stages of a project.

Before you begin, save time and effort in the design and drafting phase by doing some setup tasks. Establish and save grading criteria as a collection of values for commonly used slope methods and projections. Then apply saved criteria to any grading you create. The following is a list of setup tasks:

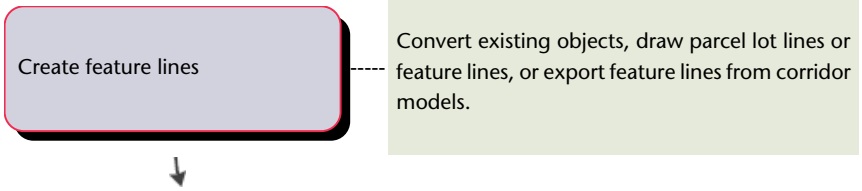
To set up for grading

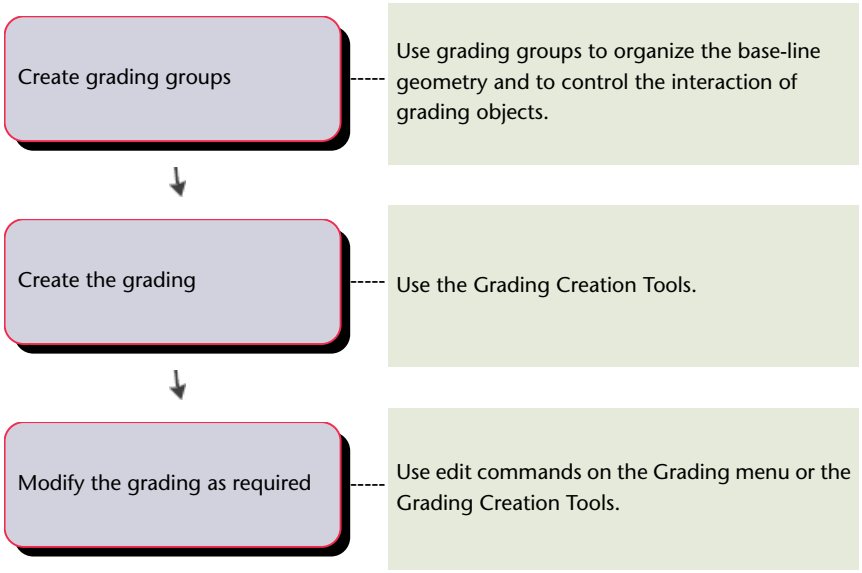


Designing and Creating Gradings

This section provides high-level descriptions of grading-related tasks you might perform during the design phase of a project after completing the setup tasks on page 18.

To perform grading design tasks

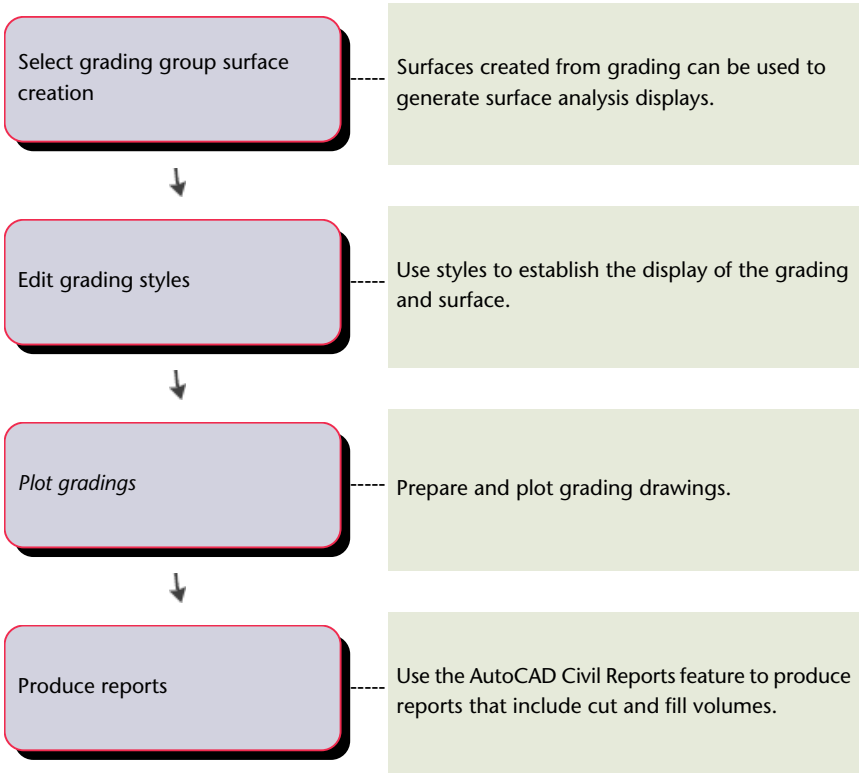




Outputting Grading Information

This section provides high-level descriptions of grading-related tasks that you might perform during the later stages of a project.

To create finished plans and generate reports from surfaces

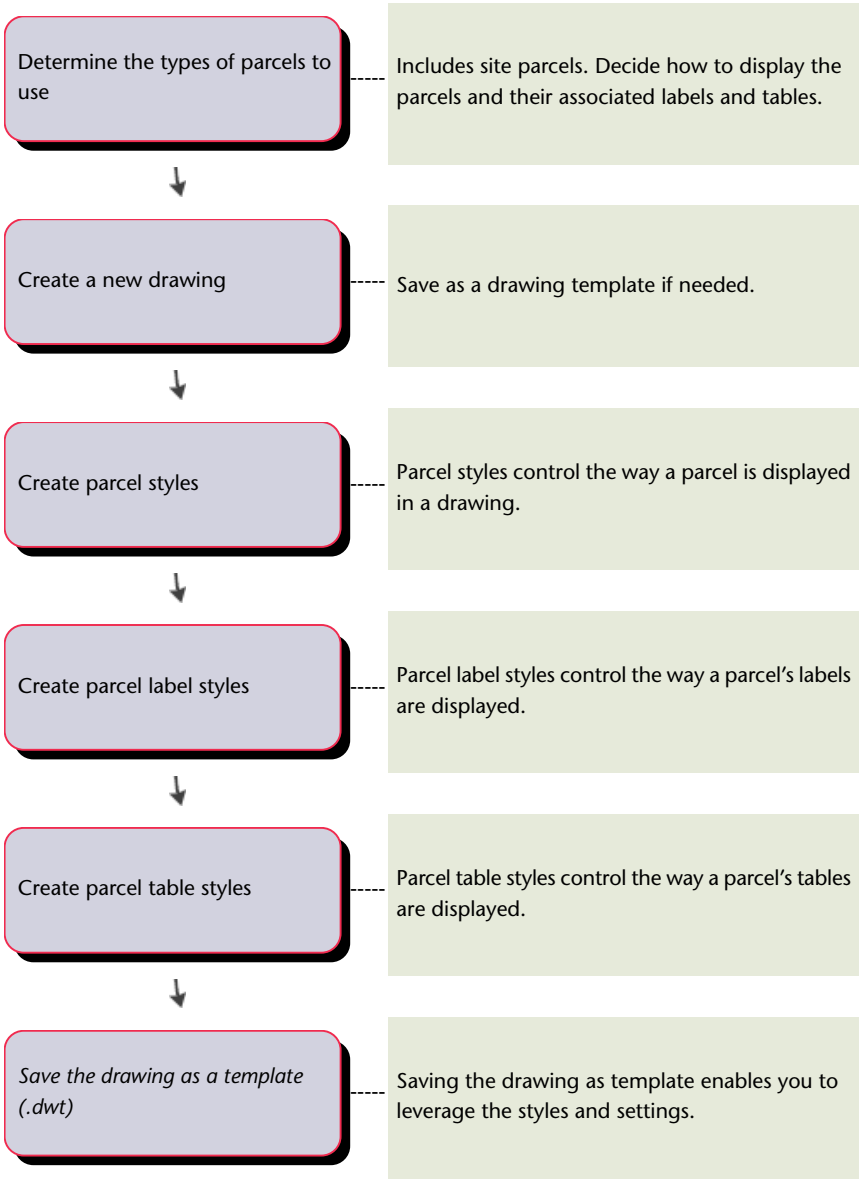


Parcels Workflow

Refer to this section for high-level descriptions of how to work with parcels in AutoCAD Civil.

Setting up Parcels

To set up styles for a project with parcels

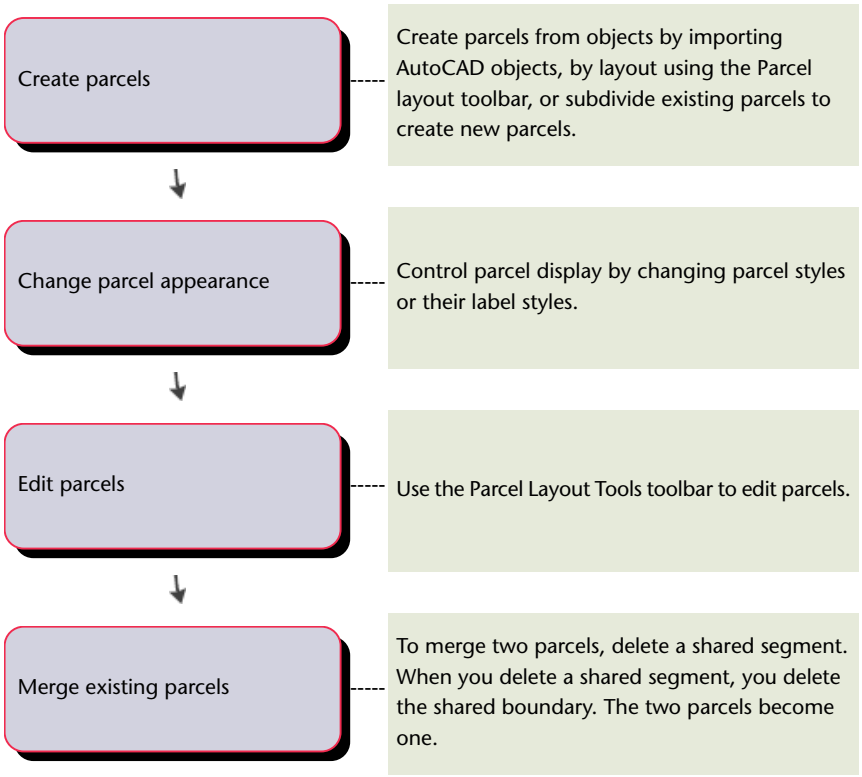


Designing and Creating Parcels

Create parcels by converting existing AutoCAD objects, or create parcels directly using the Parcel Layout Tools toolbar.

AutoCAD objects that you can convert to parcels include closed polylines, and other closed sequences of lines or arcs. If you are converting AutoCAD objects, they must be free of drawing errors. Use the drawing cleanup tools in Autodesk Map to accomplish this before you convert the objects.

To design and create parcels



Alignments Workflow

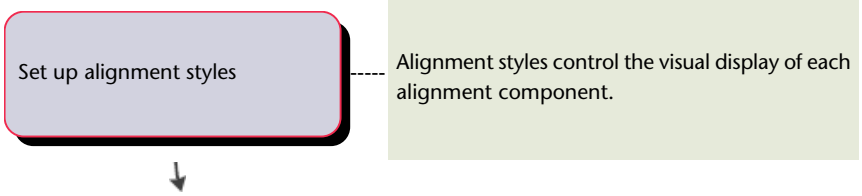
Refer to this section for high-level descriptions of tasks you perform when creating, designing, and finishing alignments in AutoCAD Civil.

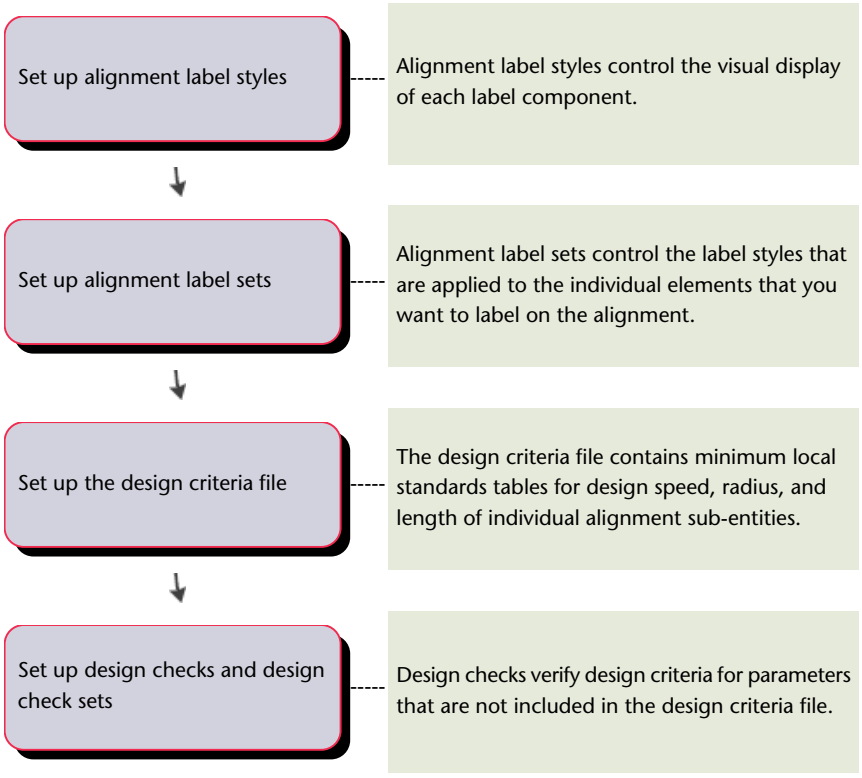
Setting Up Alignments

Establish different alignment and label styles for each design phase.

All objects have a default style that you can copy, edit, and then save with a new name. You may begin by establishing styles for different design phases. For example, design styles might have details that would not be necessary in plotting styles.

To set up alignments

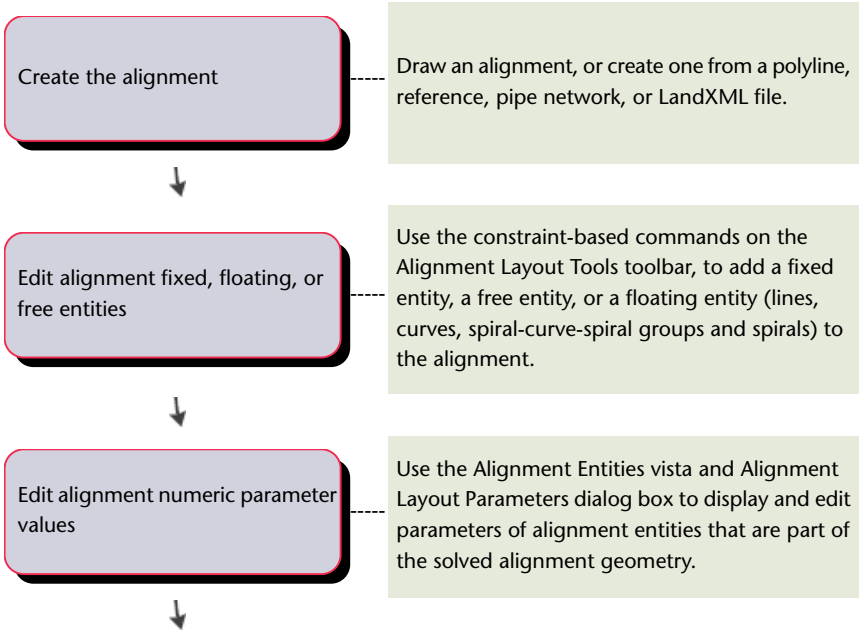


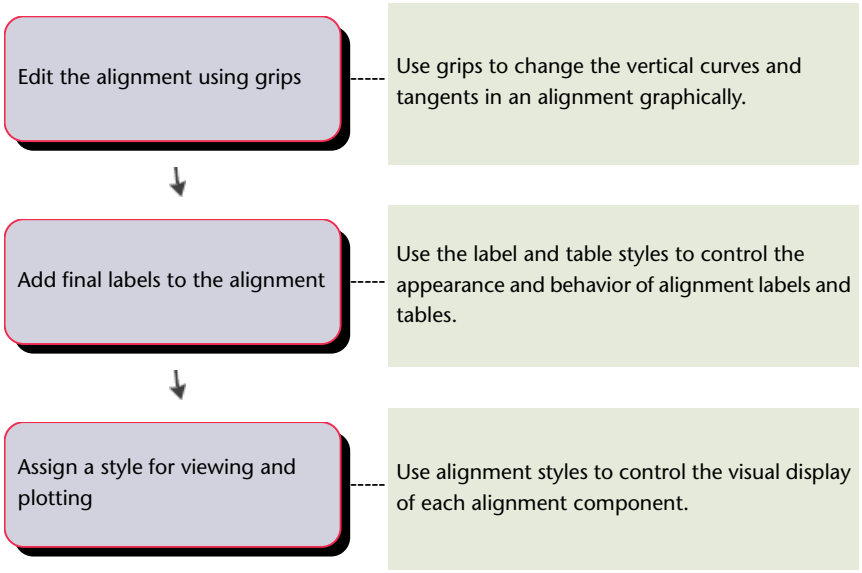


Designing and Editing Alignments

Create alignments by layout, from polylines, from pipe networks, and from LandXML data.

To design and edit alignments





Profiles Workflow

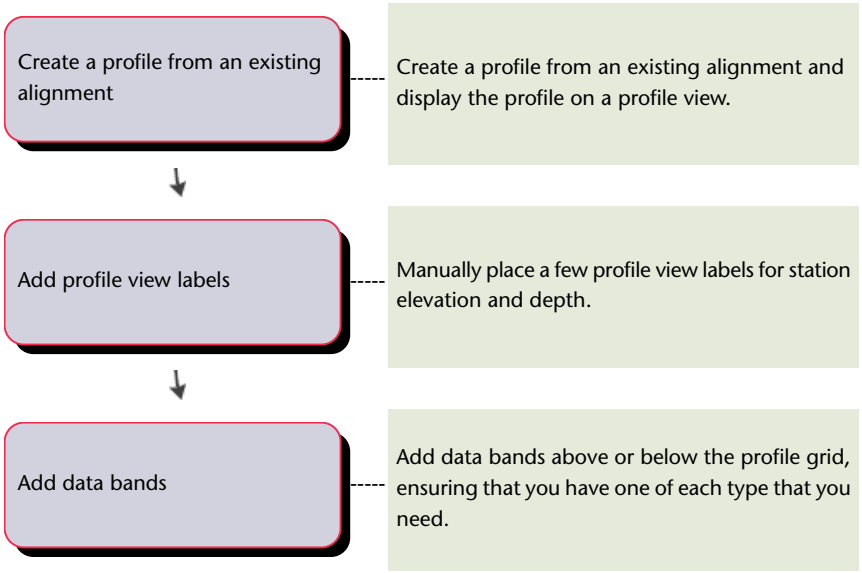
Refer to this section for high-level descriptions of tasks you perform when working with profiles and profile views.

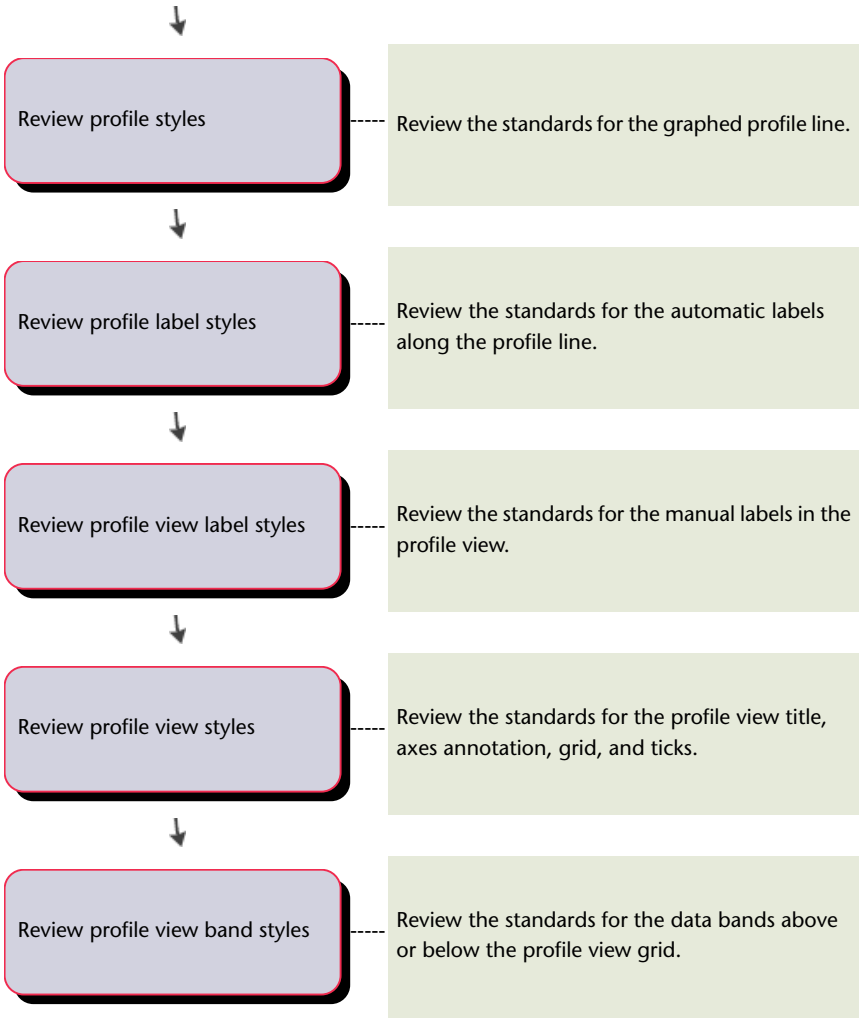
Setting Up Profiles

Use standards to create a consistent format for the profiles in a drawing.

Standard format and content for profiles is often required to comply with your requirements or to make it easier to compare several profiles. You can create these formats and content standards with styles and settings for profiles, profile views, labels, and data bands. The following process helps you evaluate existing styles and settings and to decide whether to change anything.

To set up profiles and profile views

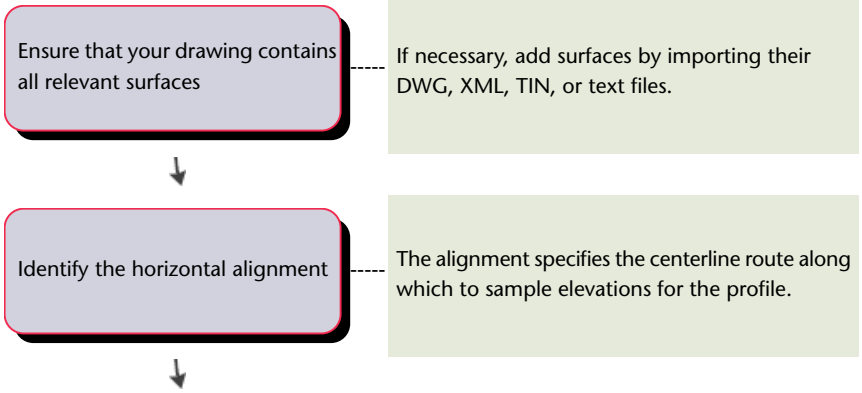


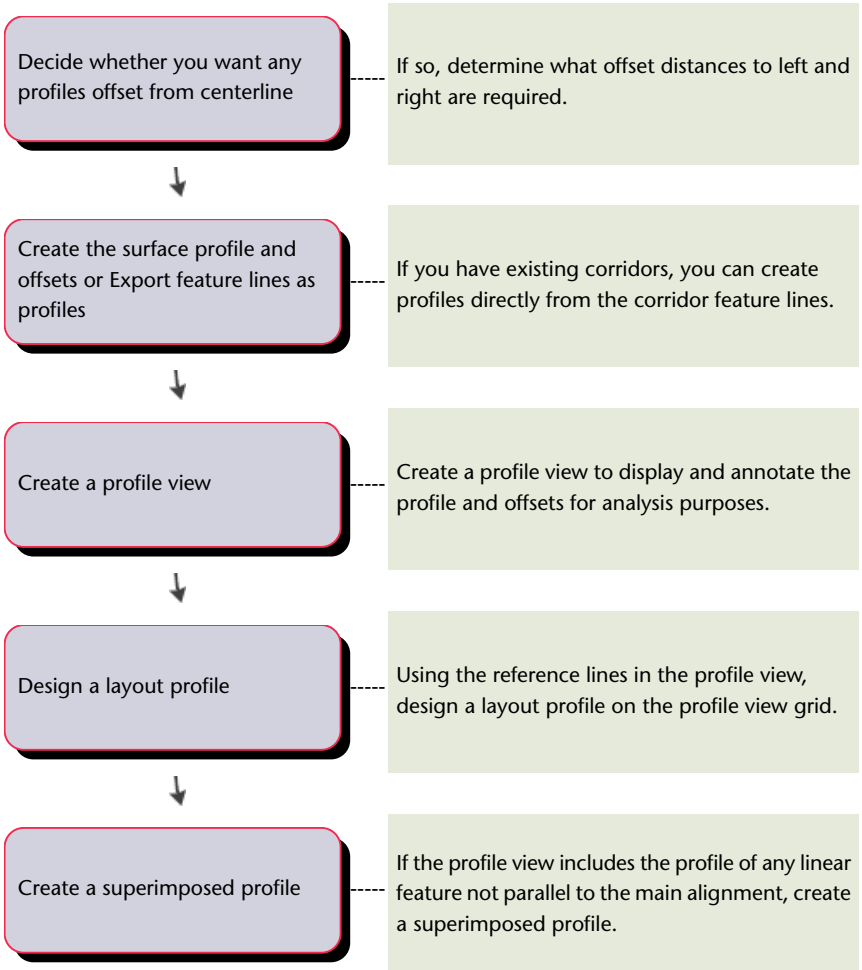


Designing and Displaying Profiles

Follow this sequence to design and display profiles.

To design and display profiles





Sections Workflow

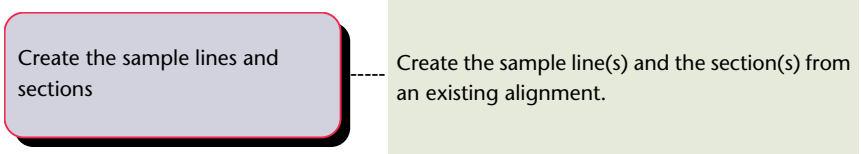
Refer to this section for high-level descriptions of tasks you might perform when working with sections in AutoCAD Civil.

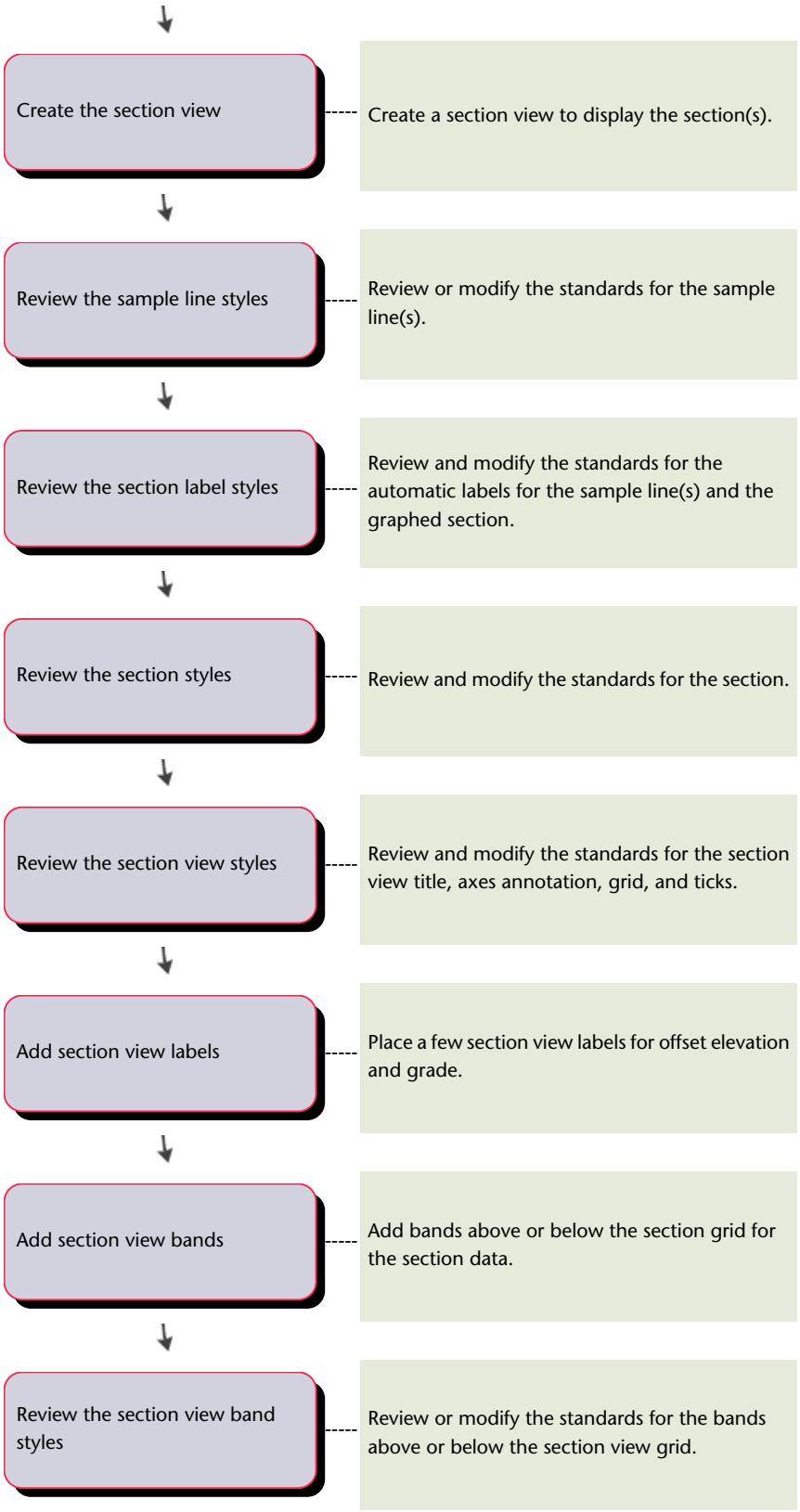
Setting Up Sections

Use this information to determine a standard, consistent format for the sections in a drawing.

Standard format and content for sections is often required to comply with your requirements or to make it easier to compare several sections. These standards are created by means of styles and settings for sample lines, sections, section views, labels, and bands. Use the following workflow to help you evaluate existing styles and settings and decide whether anything should be changed.

To set up standards for sample lines, sections, and section views

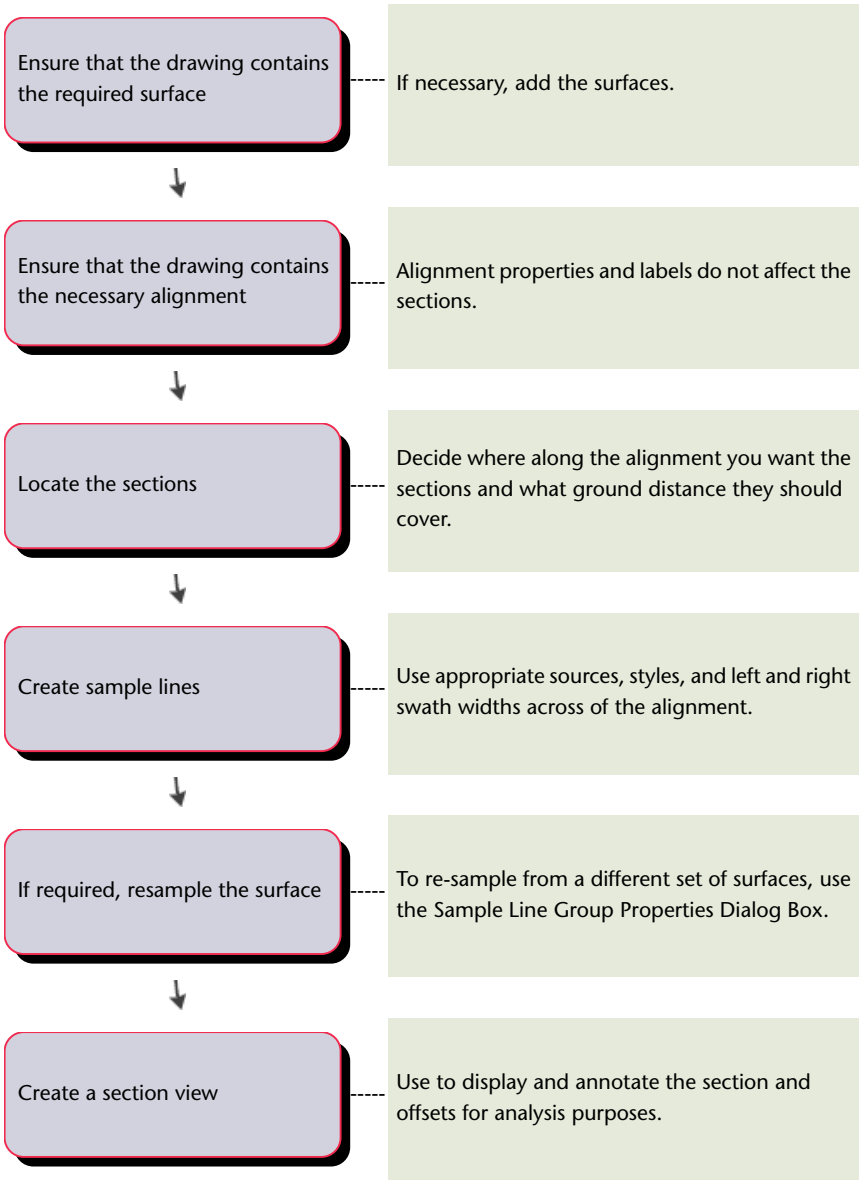



Create the section view
Create a section view to display the section(s).
Review the sample line styles
Review or modify the standards for the sample line(s).
Review the section label styles
Review and modify the standards for the automatic labels for the sample line(s) and the graphed section.
Review the section styles
Review and modify the standards for the section.
Review the section view styles
Review and modify the standards for the section view title, axes annotation, grid, and ticks.
Add section view labels
Place a few section view labels for offset elevation and grade.
Add section view bands
Add bands above or below the section grid for the section data.
Review the section view band styles
Review or modify the standards for the bands above or below the section view grid.

Designing and Creating Sections

Before you create sample lines and sections, you must have existing data, including elevation (surface) data as well as a horizontal alignment.

To design and create sections



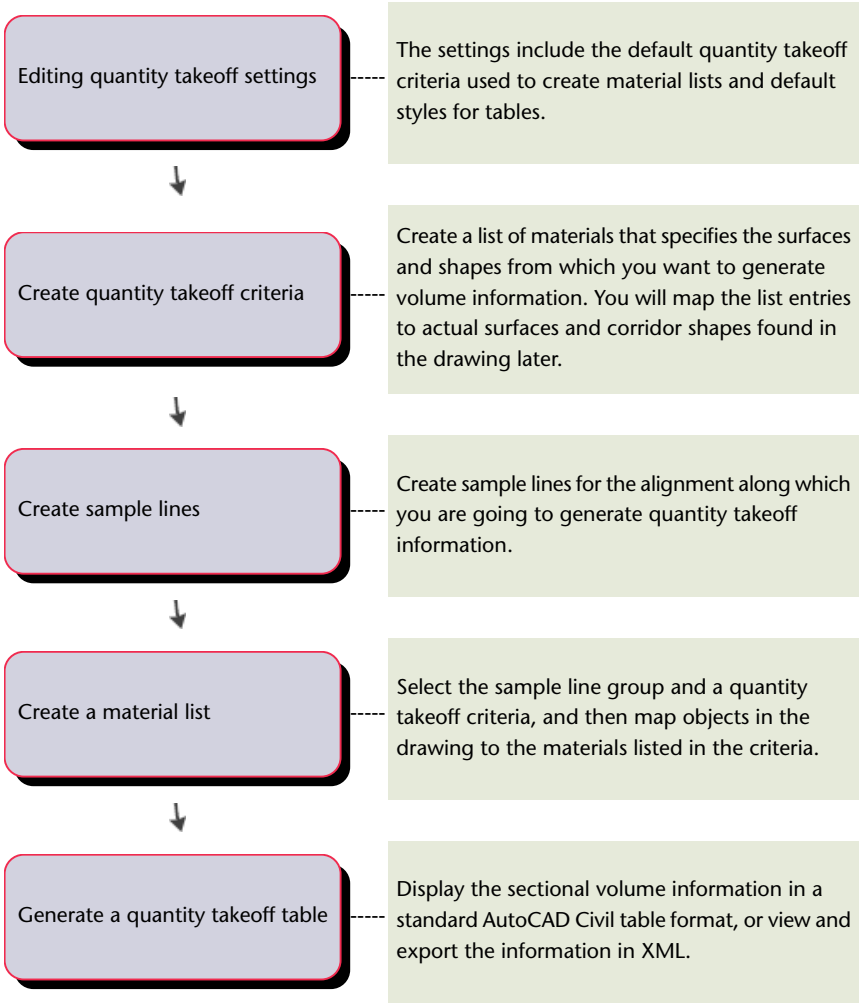
Material and Quantity Analysis Workflow

Refer to this section for high-level descriptions of tasks you might perform when performing material and quantity analysis in AutoCAD Civil

Analyzing Sectional Material Volumes

Refer to this section for high-level descriptions of tasks used to set up quantity takeoff properties for sample line groups and create quantity takeoff tables and reports in AutoCAD Civil.

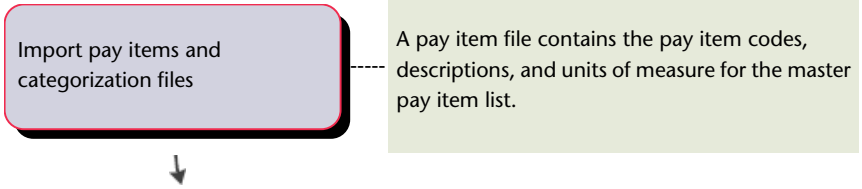
To create a quantity takeoff table or report

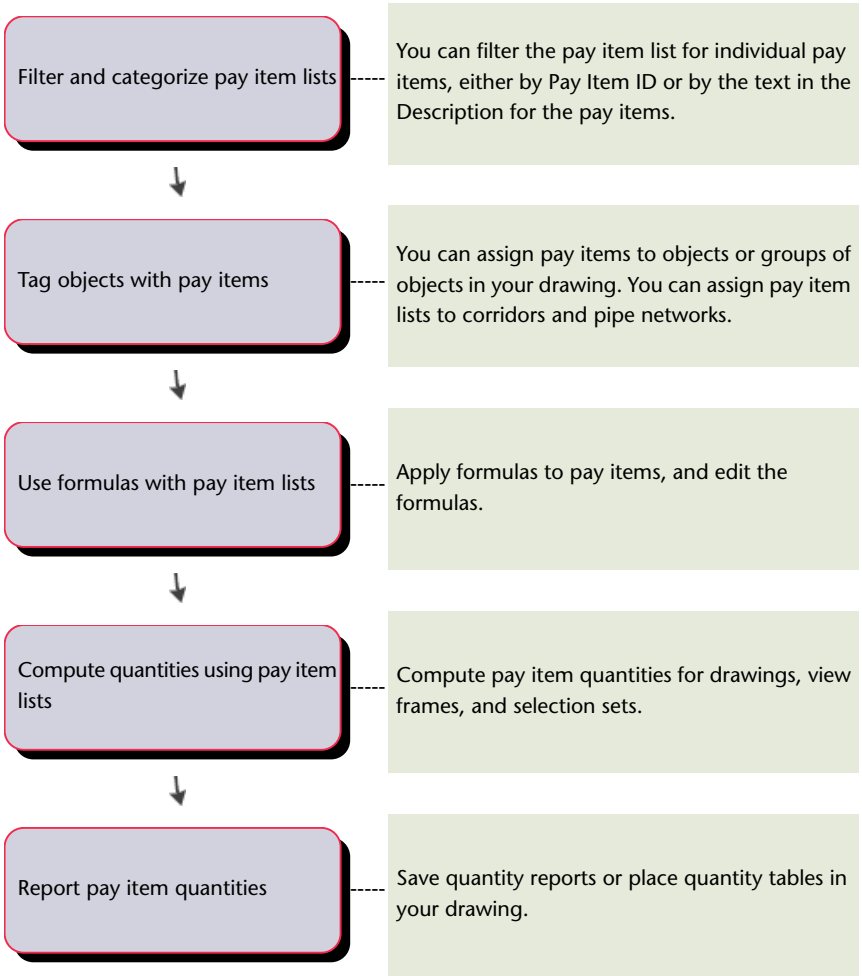


Analyzing Material Quantities

Refer to this section for high-level descriptions of tasks used when analyzing quantites using pay item lists in AutoCAD Civil.

To analyze quantities using pay item lists

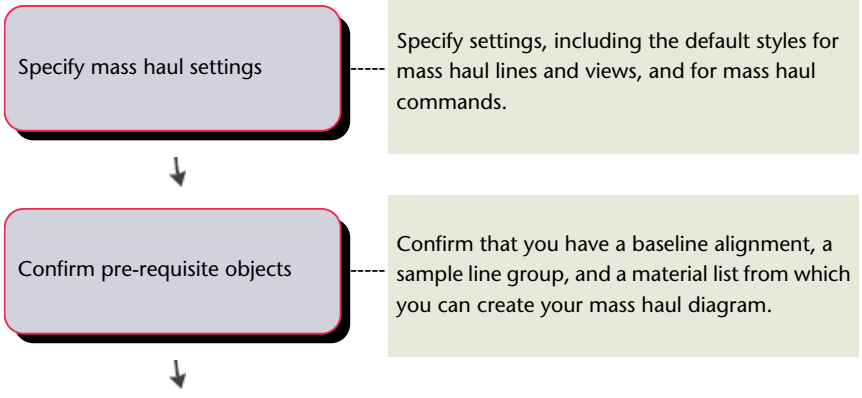


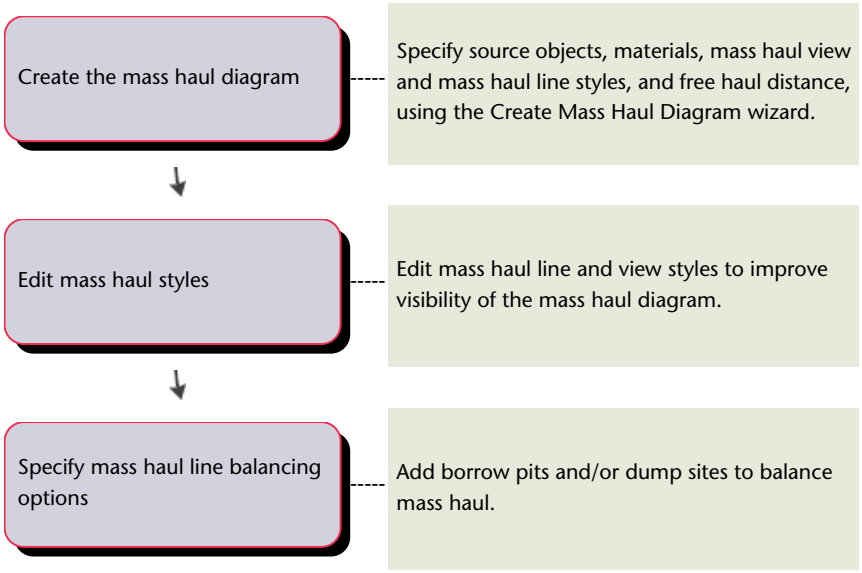


Creating and Editing Mass Haul Diagrams

Refer to this section for high-level descriptions of tasks used to create mass haul diagrams in AutoCAD Civil.

To create a mass haul diagram





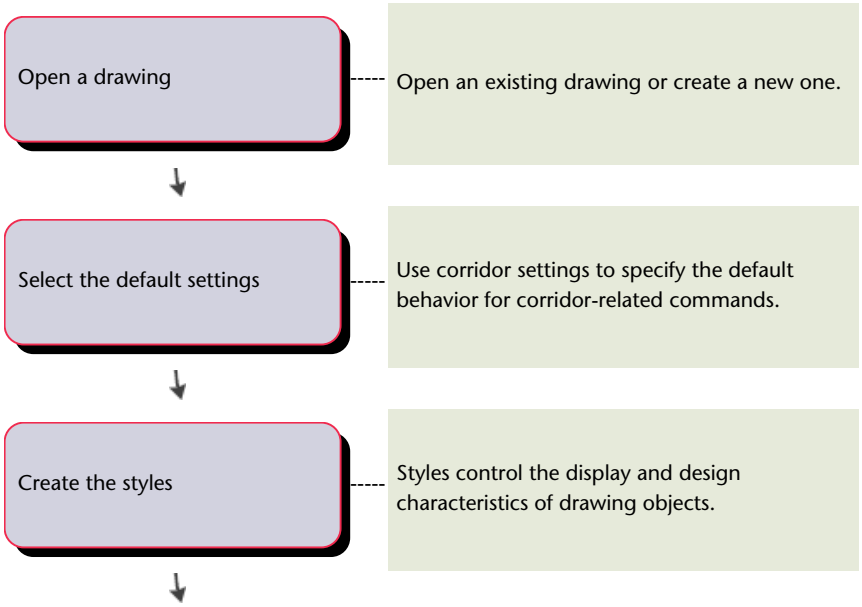
Corridor Modeling Workflow

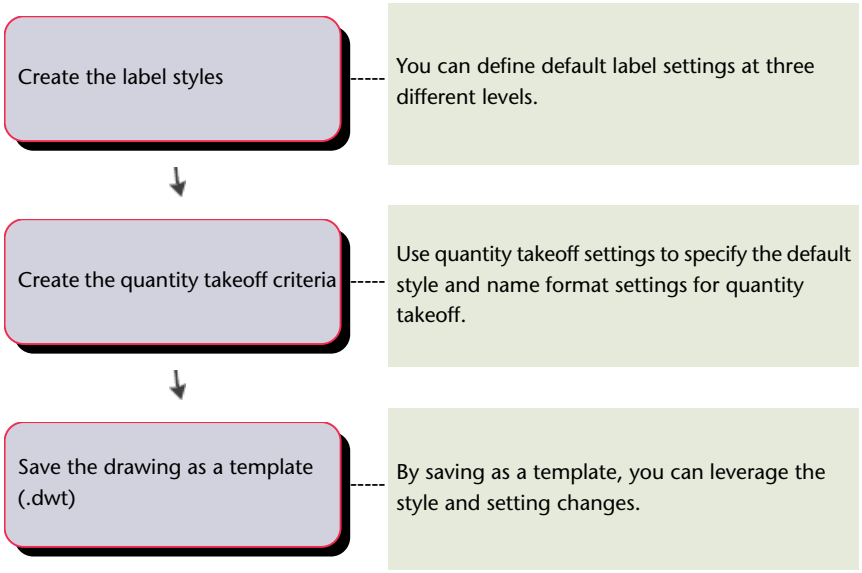
Refer to this section for high-level descriptions of tasks you might perform when working with corridors in AutoCAD Civil.

Preparing the Drawing for Corridor Creation

Creating drawing templates that contain standard styles and settings will help you work more efficiently and ensure that your final drawings conform to your office standards.

Preparing the drawing template for corridor creation

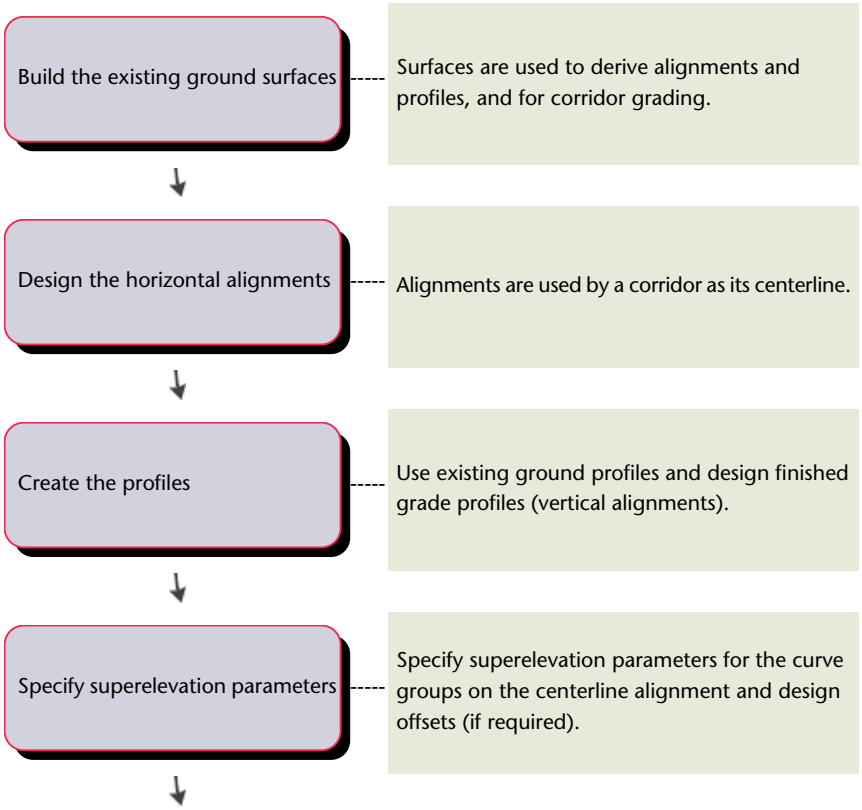


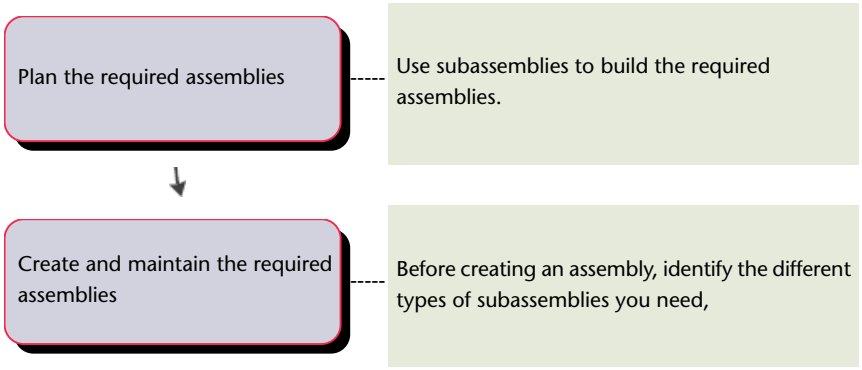


Setting Up Data for Corridor Creation

Before you create corridors, you must have existing data, such as existing ground surfaces, alignments (centerlines), profiles (vertical alignments), and typical sections (assemblies).

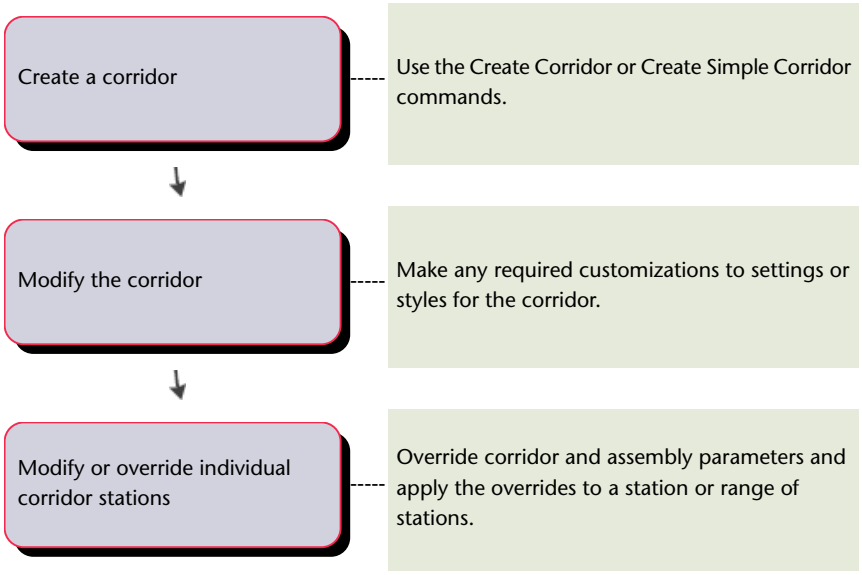
To set up data for corridor creation





Corridor Design and Creation

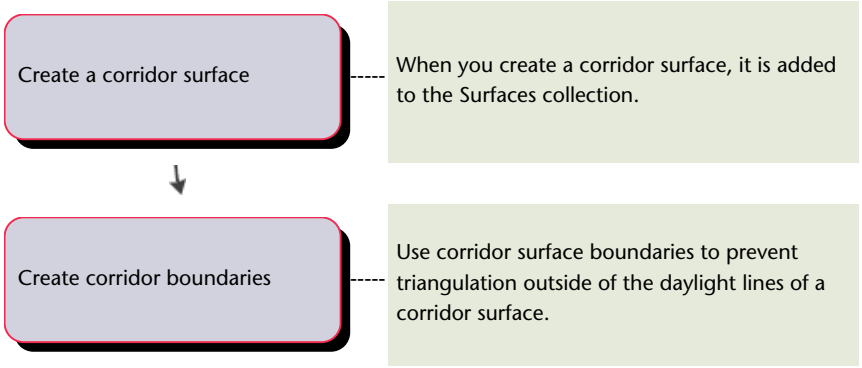
This section provides the processes used to create corridors.

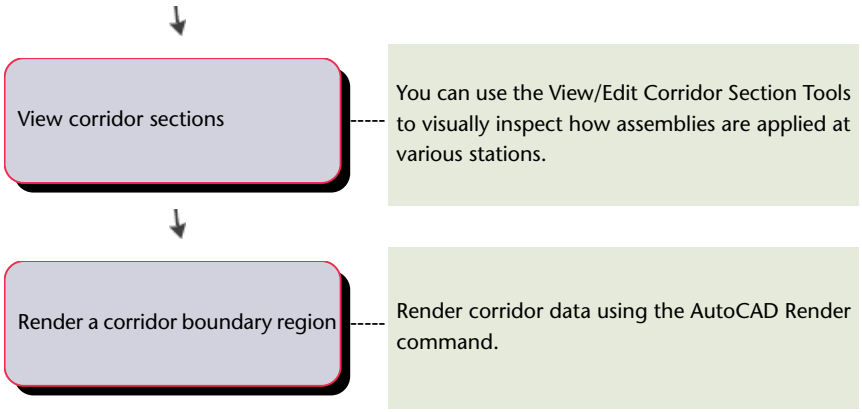


Visualizing Corridors

After you have created a corridor, create corridor surfaces and boundaries to help you visualize the corridor.

To visualize a corridor

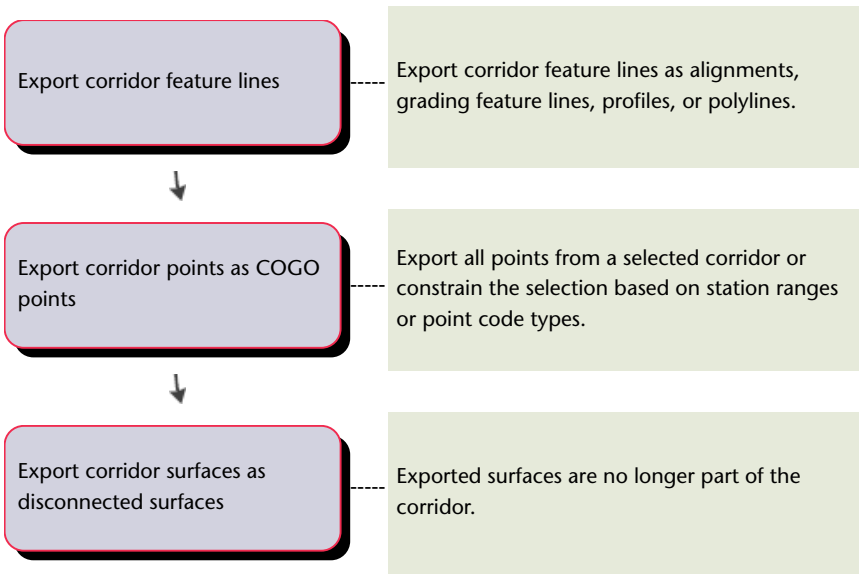




Exporting Corridor Data

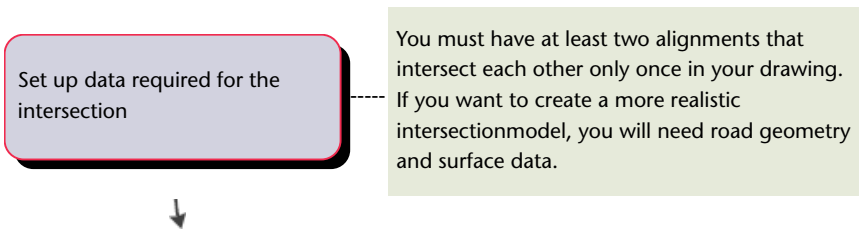
After creating a corridor, you can export several types of data.

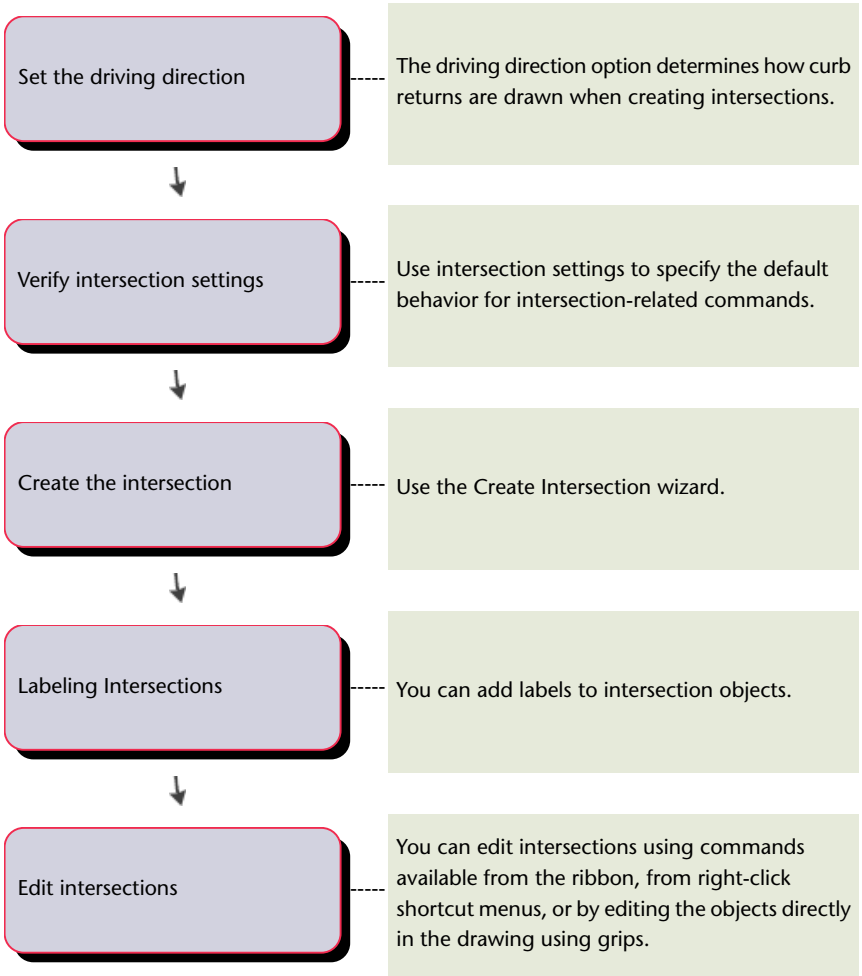
To export corridor data



Intersection Design Workflow

Refer to this section for high-level descriptions of tasks you might perform when working with intersections in AutoCAD Civil.





Pipe Networks Workflow

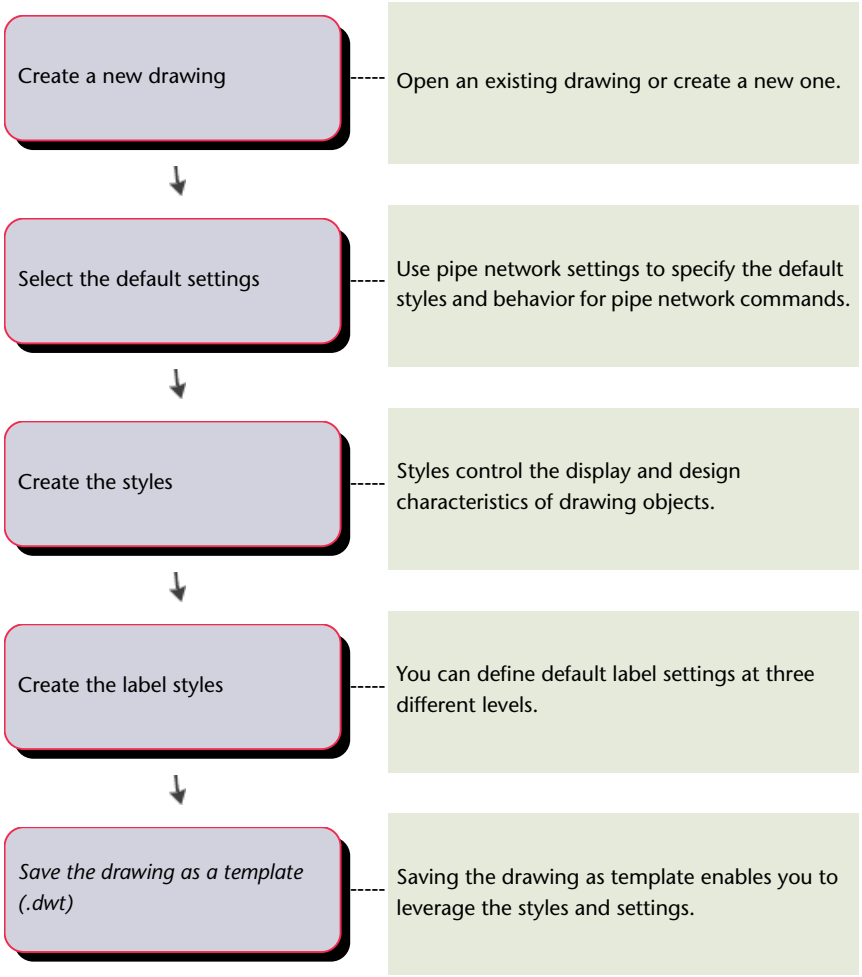
Refer to this section for high-level descriptions of tasks that you might perform when working with pipe networks in AutoCAD Civil.

You can use LandXML features to import existing pipe data into your drawing, or to export pipe data from an AutoCAD Civil drawing. For example, to bring pipe data into AutoCAD Civil from an AutoCAD Land Desktop project, you can export pipe data from AutoCAD Land Desktop using the Export LandXML command, and then import it into AutoCAD Civil using the Import LandXML command. For more information, see LandXML Import and Export.

Preparing for Pipe Network Creation

Creating drawing templates that contain standard styles and settings helps you work more efficiently, and ensures that your final drawings conform to your office standards.

To prepare the drawing template for pipe network creation

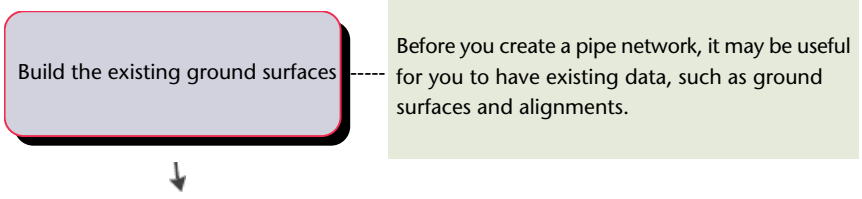


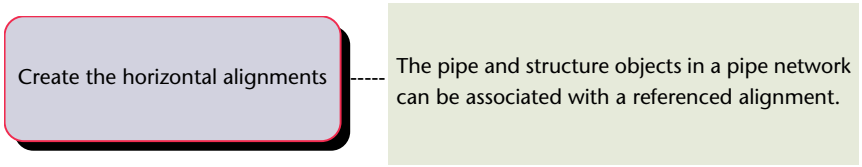
Setting Up Data for Pipe Network Creation

Before you create a pipe network, it may be useful for you to have existing data, such as ground surfaces and alignments, already in your drawing.

While it can be useful to have these items already set up in your drawing, you can create a pipe network even if these components are not yet created.

To set up data for pipe network creation

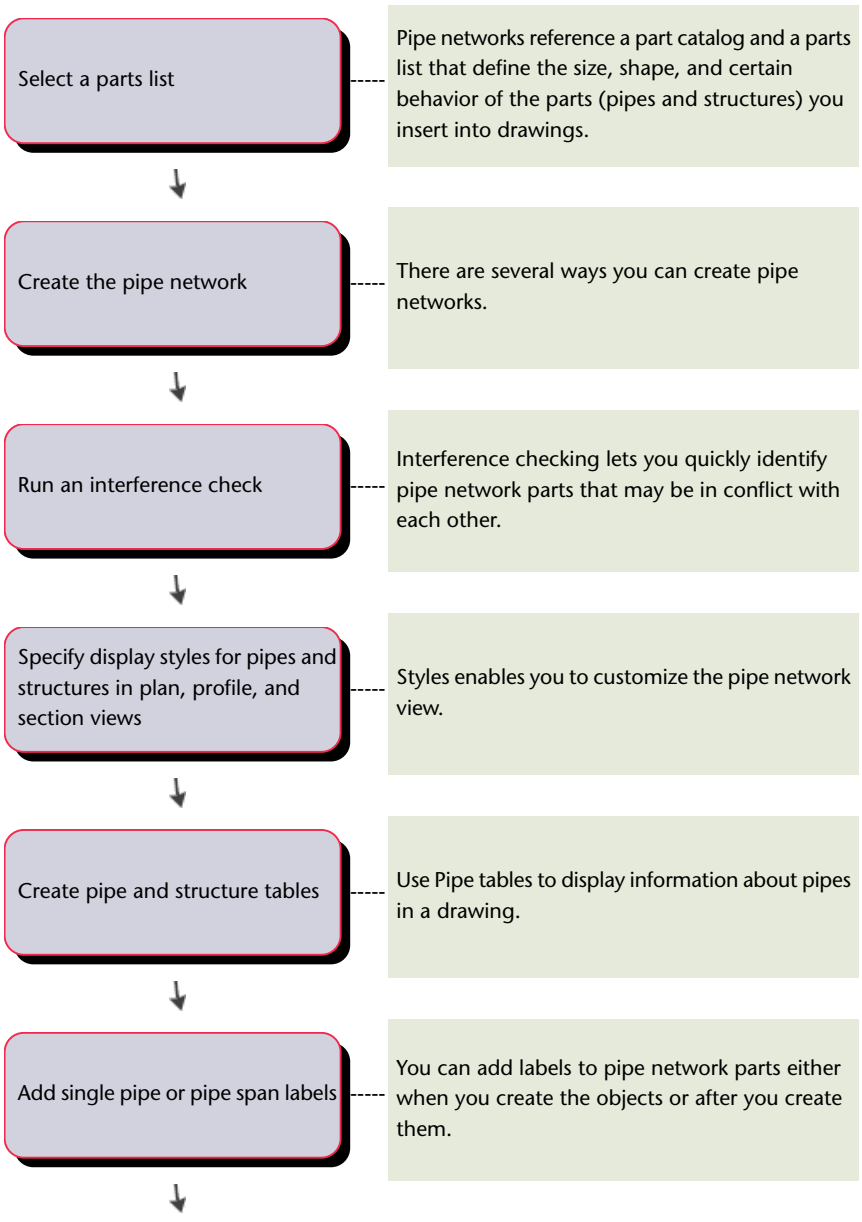


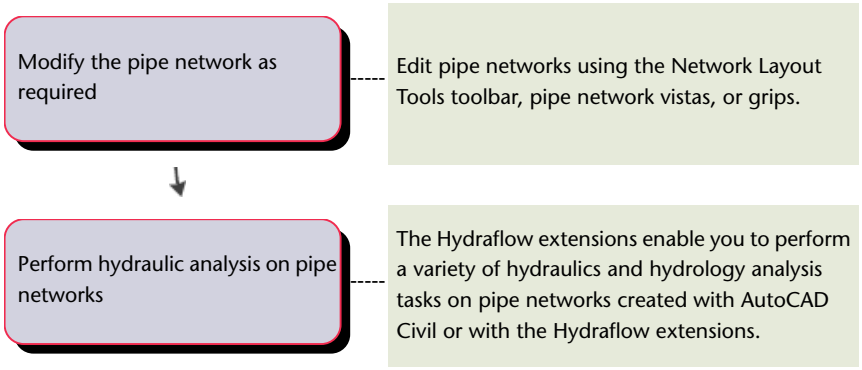


Creating, Modifying, and Analyzing Pipe Networks

This section summarizes the basic process for creating and analizing a pipe network.

To create, modify, and analyze a pipe network

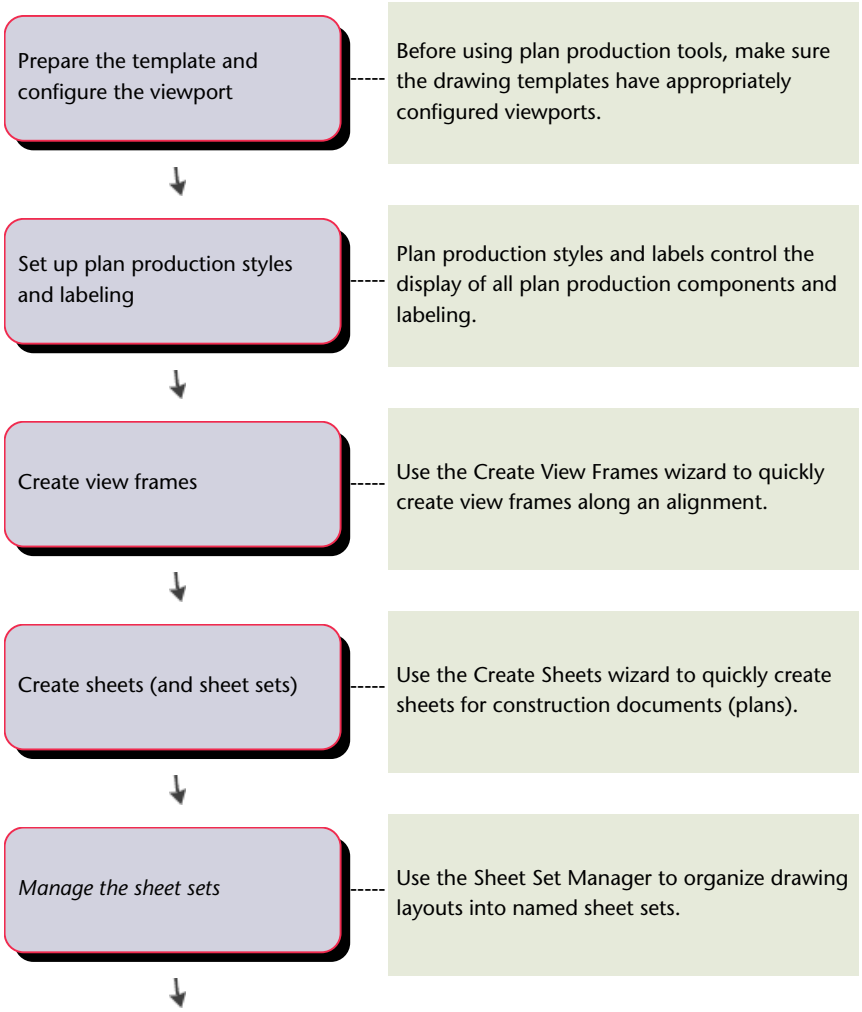




Plan Production Tools Workflow

Refer to this section for high-level descriptions of tasks you might perform when working with plan production tools in AutoCAD Civil.

The key stages involved with using the AutoCAD Civil plan production tools are:



Plot and publish the drawings
You prepare your drawing for plotting or publishing by specifying page setup settings.

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