

Siteworks for Revit Reference Manual

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GETTING STARTED

In this chapter:

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CHAPTER

1

Overview

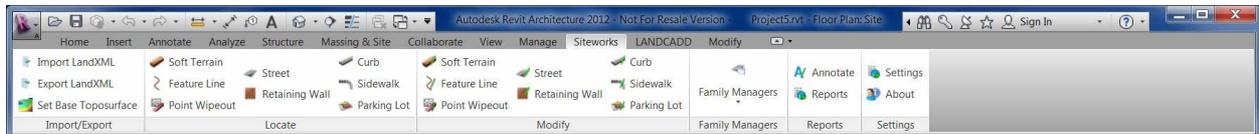


Figure 1-1 Siteworks for Revit Ribbon

Siteworks™ for Revit® enables architects, designers and planners to shape the terrain for their building sites using grading tools to model pads, parking lots, streets, sidewalks and retaining walls. Siteworks uses native Revit families, components and toposurfaces, so designs become part of the overall Building Information Model without the need to transfer between design systems.

Through various component placement tools, design professionals can further enhance their building models with site grading features to visualize their design in 3D and to convey design intent to all stakeholders. Siteworks' dynamic editing tools provide the ability to change grades, elevations and move grading components while automatically reshaping the underlying toposurface. With a site plan contained within the Building Information Model, volume and quantity reports are easily viewed using native Revit commands.

System Requirements

The system requirements are listed below for both the Eagle Point License Manager and the end user (client) workstations.

Eagle Point License Manager Requirements

- One of the following Operating Systems
 - o Windows XP Home
 - o Windows XP Professional
 - o Windows Vista
 - o Windows 7
- Internet Protocol (IP) installed
- A static IP address

- Firewall exception for communication with client machines

Deployment Creation Requirements

- Eagle Point License Manager installed.
- Valid **Siteworks for Revit** license file (egpt.lic).
- Write access to the desired deployment location (100 MB free disk space).
- Internet Protocol (IP) installed.

Workstation Hardware and Operating System Requirements for 32-bit

- Revit 2014 (or later) 32-bit
- Microsoft Windows 7 [any edition], Windows Vista 32-bit (SP2) [any edition] or Windows XP (SP2 or later) [any edition].
- Intel Pentium 4, equivalent processor or higher.
- Minimum of 3 GB of RAM.
- 5 GB of free disk space.
- 1280 x 1024 monitor and display adapter capable of 24-bit color.
- Microsoft Mouse-compliant pointing device.
- Internet connection for download and license registration.
- Ability to “ping” the Eagle Point License Manager machine (if using the license manager).

System recommendations are the same as those recommended by Autodesk for a Revit 2014 installation in a 32-bit OS machine.

Workstation Hardware and Operating System Requirements for 64-bit

- Revit 2014 (or later) 64-bit.
- Microsoft Windows 7 [any edition], Windows Vista 64-bit (SP2) [any edition] or Windows XP Professional (SP2) x64 edition.
- Intel Pentium 4, equivalent processor or higher.
- 3 GB of RAM.
- 5 GB of free disk space.

- 1280 x 1024 monitor and display adapter capable of 24-bit color.
- Microsoft Mouse-compliant pointing device.
- Internet connection for download and license registration.
- Ability to “ping” the Eagle Point License Manager machine (if using the license manager).

System recommendations are the same as those recommended by Autodesk for a Revit 2014 installation in a 64-bit OS machine.

Client Windows Registry and Folder Rights

- Full registry rights to the Eagle Point **Siteworks for Revit** keys.
- Read access to the license folder location.
- Read/write access to the **Siteworks for Revit** support files.

Installation Strategies

The **Siteworks for Revit 2014** application can be installed and licensed in two different ways

- Local license (single seat)
- Network license using the License Manager

Local License (single seat) Installation and Licensing

To install a local license of **Siteworks for Revit**, select the Local License option from the kiosk and follow the wizard through the installation. Once the installation is complete, you need to request codes in order to license **Siteworks for Revit**. To request codes, open any project in Revit. Select the Siteworks tab from the ribbon, and then click on any **Siteworks for Revit** command. Toggle *Request an activation code* and complete the fields on this dialog box. Click OK to send the request email to Eagle Point. Eagle Point will send a response back with the corresponding authorization number.

Network License Using the License Manager

There are two parts to this installation routine. The first part is to install the Eagle Point License Manager on a machine/server. Once the license manager is installed, you will need to request codes for the products you have purchased. You will receive a **Siteworks for Revit** license file (egpt.lic) from Eagle Point in an email. You will then need to configure the license manager to specify the path to the license file using the License Manager Settings command.

The second part of the CD installation routine creates the deployment setup that you will use to install the software to each of the client workstations that need access to the program.

The main steps to implement **Siteworks for Revit** software are:

- Install the Eagle Point License Manager and configure it to use the license file.
- Create client deployments.
- Have users run the deployment to install the client application files on their workstations.

Network Installation Tips

- You must install the License Manager on a server with a static IP address and obtain a license file from Eagle Point.
- The users must have bi-directional IP communication with the license manager server (be able to ping).
- Communication is handled through an open port. The server and client workstations need to specify the same port for communication. The default port is 6861 (TCP).
- Create the client deployments in a location where the end users have at least read access.
- For more information or help on creating network deployments, please review the Installation Guide.

License Borrowing

Borrow License

RIBBON: Siteworks – Licensing – Borrow License

You need to be licensed as a network user of **Siteworks for Revit** to use this command and be connected to your network at the time. You are able to check out a license for your computer for up to 6 months. You can also return the borrowed license early to allow other users access to the application.

Return License

RIBBON: Siteworks – Licensing – Return License

The license can be borrowed until the specified date. To return the license, click on Return License while connected to your network.

IMPORT/EXPORT

In this chapter:

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CHAPTER 2

Import LandXML

RIBBON: Siteworks – Import/Export – Import LandXML

ICON: 

LandXML files provide a way to exchange engineering and survey data between professionals on the BIM team that are using different software applications. LandXML files typically may include surfaces, road and street alignments, parcels and survey data. These files can be easily created by the engineers or consultants on your team using applications such as AutoCAD Civil 3D.

Use the **Siteworks for Revit** Import LandXML command to import the project surface and alignment data created through those engineering applications to streamline toposurface creation and the location of alignments in the project. Siteworks uses the surface information in the LandXML file to create Revit toposurfaces. Alignments are placed in the project using Revit model lines.

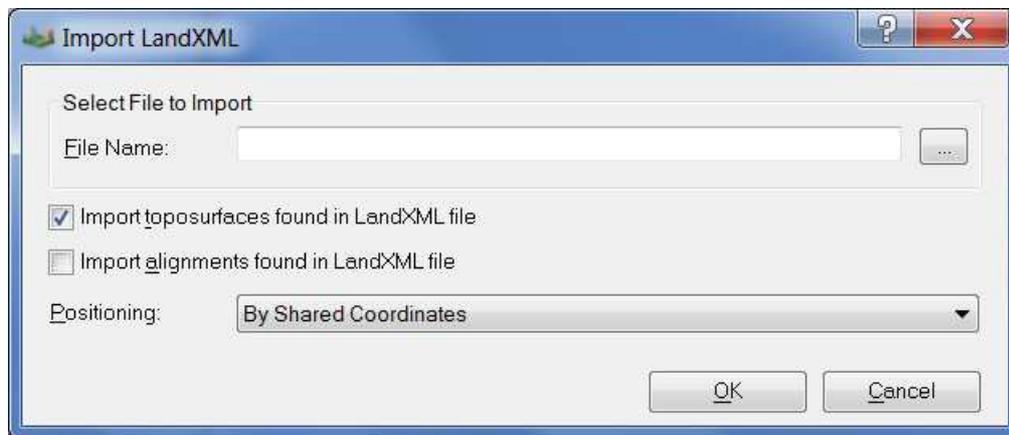


Figure 2-1 Import LandXML Dialog Box

Option	Function
File Name	Input the file name and location of the LandXML file with the data you want to import.
Browse button	Click on the Browse button to browse to the location where the file is stored and select the file with the data you want to import.

Option

Function

Import toposurfaces found in LandXML file

Toggle on this option to import all the surfaces found in the LandXML file.

Import alignments found in LandXML file

Toggle on this option to import all the alignments found in the LandXML file.

Toposurface Selection

If you toggled on the Import toposurfaces found in LANDXML file option on the *Import LandXML Dialog Box*, you are prompted to select the surface(s) to import.

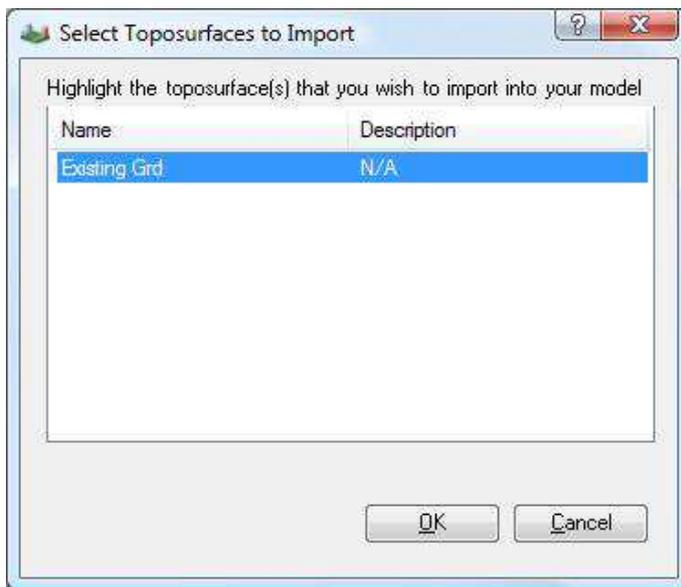


Figure 2-2 Select Toposurfaces to Import Dialog Box

Option

Function

Name

This column displays the name of the surface(s) found in the LandXML file.

Option	Function
Description	This column displays the description for the surface(s) found in the LandXML file.
OK	Click OK to import the surfaces highlighted in the list.
Cancel	Click Cancel to cancel importing the toposurfaces.

Toposurface Information

After selecting the surface(s) to import, you are able to choose between adding the surface as a new toposurface in the Revit model and the phase in which it will be created, or overwriting an existing toposurface in the model.

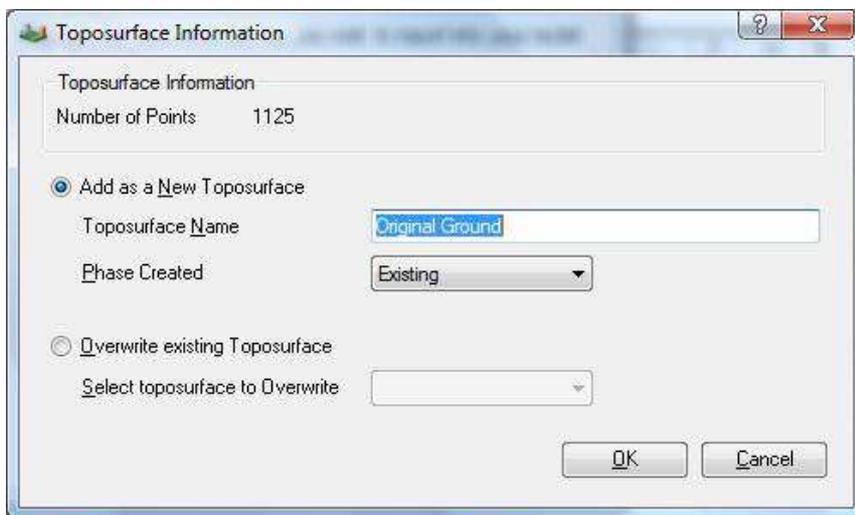


Figure 2-3 Toposurface Information Dialog Box

Option	Function
Toposurface Information	This area displays the number of points that make up the surface.

Option	Function
Add as a New Toposurface	Toggle this option on to add the selected surface as a new toposurface in the project.
Toposurface Name	The name that will be displayed in the toposurface properties. By default, Siteworks for Revit proposes the name found in the LandXML description.
Phase Created	Use this option to assign the toposurface that is being added to a specific phase in the project. By default, Siteworks for Revit proposes that the toposurface be added in the Existing phase.
Overwrite Existing Toposurface	Toggle this option on if you want to overwrite an existing toposurface in the project. This is useful as you may go through various iterations of your site model with other members of the team that use other engineering applications such as AutoCAD Civil 3D.
Select Toposurface to Overwrite	Siteworks for Revit displays a list of the toposurfaces currently in the model. You can select the target toposurface from the list and Siteworks for Revit will delete it from the project and create a new one using the data from the LandXML file.
OK	Click OK to accept the entries and continue the import process.
Cancel	Click Cancel to cancel the entries. If you had more than one toposurface, you are prompted for the import information for the next toposurface.

Alignment Selection

If you toggled on the Import alignments found in LandXML option in the *Import LandXML Dialog Box*, you are prompted to select the alignment(s) you want to import.

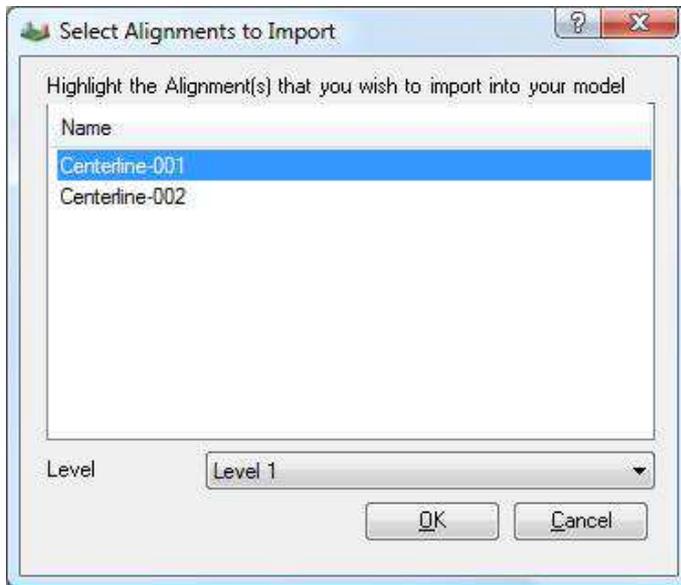


Figure 2-4 Select Alignments to Import Dialog Box

Option	Function
Name	This column displays the name of the alignment(s) found in the LandXML file.
Level	Use the Level drop list to select the level in which you want to draw the model lines representing the alignments found in the LandXML file.
OK	Click OK to accept importing the alignments highlighted in the list.
Cancel	Click Cancel to cancel importing the alignments.

Quick Steps – Import LandXML

1. From the Siteworks tab on the ribbon, select Import LandXML.
2. Click on the Browse button and select the folder where you have the LandXML file stored.
3. Highlight the file and click Open.
4. Toggle on the Import toposurfaces found in LandXML file and Import alignments found in LandXML file options to import the surfaces and alignments found in the LandXML file.
5. Click OK.
6. Highlight the surface or surfaces that you want to import into the project from the Select Toposurfaces to Import Dialog Box and click OK.
7. In the Toposurface Information Dialog Box, click on Add as a New Toposurface.
 - a. You can change the display name of the toposurface in the Revit project. By default, Siteworks for Revit proposes the same name found in the LandXML file.
 - b. Choose the Phase for the toposurface. By default, **Siteworks for Revit** displays a list of the available phases in the project and proposes Existing.
8. Click OK to accept importing the toposurface. Repeat as necessary.
9. Highlight the alignment or alignments that you want to import into the project from the Select Alignments to Import Dialog Box.
10. Select the level in which the alignment lines are to be drawn.
11. Click OK to accept importing the alignments.

The selected surfaces and alignments are imported into the project.
12. To view the import results, you may need to change the active view to a Site or 3D view.

Export LandXML

RIBBON: Siteworks – Import/Export – Export LandXML

ICON: 

LandXML files provide a way to exchange engineering and survey data between professionals in the BIM team that are using different software applications. LandXML files typically may include surfaces, road and street alignments, parcels and survey data. These files can be easily created by the engineers or consultants on your team using applications such as AutoCAD Civil 3D.

Once you have modeled the site using the **Siteworks for Revit** commands, use the Export LandXML command to create a LandXML file with your Revit project toposurface and street centerline data so you can streamline how you share your design intent with team members that use engineering applications.

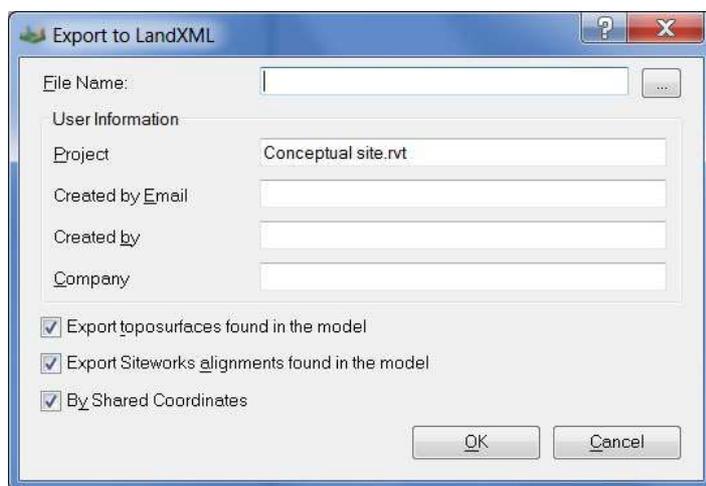


Figure 2-5 Export to LandXML Dialog Box

Option	Function
File Name	Input the file name and location where the file is to be saved.
Browse button	Click on this button to select the folder where you want to save the file.

<i>Option</i>	<i>Function</i>
Project	Enter a Project name to be stored in the LandXML file. By default, <i>Siteworks for Revit</i> proposes the Revit project name.
Created by Email	Enter the email address of the person that created the model if you want this information to be stored in the LandXML file.
Created by	Enter the name of the person that created the model if you want this information to be stored in the LandXML file.
Export toposurfaces found in the model	Toggle on this option to export one or more toposurfaces from the Revit project.
Export Siteworks alignments found in the model	Toggle on this option to export the alignments (centerlines) of the streets created using <i>Siteworks for Revit</i> .
OK	Click OK to export the file.
Cancel	Click Cancel to cancel out the command.

Toposurfaces to Export

Use this command to select the toposurface(s) you want to export from the Revit project.



Figure 2-6 Select Toposurfaces to Export Dialog Box

<i>Option</i>	<i>Function</i>
Name	This column displays the name of all the toposurfaces in the Revit project. You can export more than one toposurface at a time.
OK	Click OK to accept the selection.
Cancel	Click Cancel to cancel the command.

Alignment to Export

Use this command to select the street alignments (centerlines) you want to export from the Revit project.



Figure 2-7 Select Alignment to Export Dialog Box

<i>Option</i>	<i>Function</i>
Name	This column displays the name of the street alignments found in the Revit project.
OK	Click OK to accept the selection.
Cancel	Click Cancel to cancel the command.

Quick Steps – Export LandXML

1. From the Siteworks tab on the ribbon, select Export LandXML.
2. Enter the file name and path to where you want to store the file.
3. Fill in the user information fields.

This information is saved to the LandXML file as reference for other team members.

4. **Toggle on the Export toposurfaces found in the model and Export Siteworks alignments found in the model options and click on OK.**
5. **In the Select Toposurfaces to Export Dialog Box, select the toposurfaces you want to export from your project and click on OK.**
6. **In the Select Alignment to Export Dialog Box, select the street alignments you want to export from your project and click on OK.**

Siteworks informs you when the export is complete.

Set Base Toposurface

RIBBON: Siteworks – Set Base Toposurface

ICON: 

To develop the site model, **Siteworks for Revit** uses the concept of creating a 'proposed' toposurface on which all changes are made. Siteworks creates a copy of the selected toposurface, names it Proposed Toposurface and assigns it to the New Construction phase. If you select more than one toposurface in the model, Siteworks combines them to form a single toposurface. You can also use this command if you need to change the base toposurface. Each time you add a new or modify an existing Siteworks component, the program rebuilds the site model using the new base toposurface.

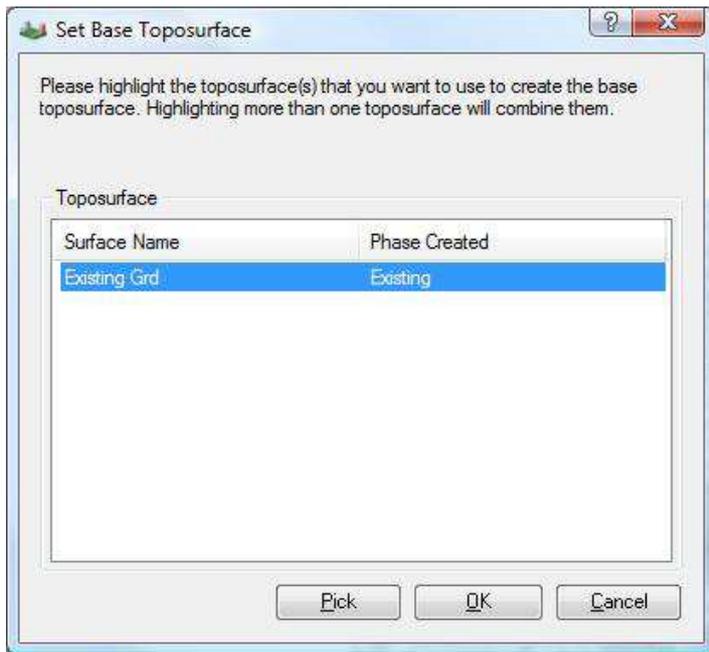


Figure 2-8 Set Base Toposurface Dialog Box

<i>Option</i>	<i>Function</i>
Surface Name	This column displays the name of the toposurfaces found in the project.
Phase Created	This column displays the phase to which the toposurface was assigned.
Pick	If you are not sure of the name of the toposurface, click on Pick and to graphically select the toposurface in a model view.
OK	Click OK to accept the selection and create the proposed toposurface.
Cancel	Click Cancel to cancel the command.

Quick Steps – Setting a Base Toposurface

1. From the Siteworks tab on the ribbon, select Set Base Toposurface.
2. Select the surface you want to copy as the Base Toposurface.
3. Click OK.

Siteworks for Revit makes a copy of the selected toposurface, names it Proposed Toposurface and assigns it to the New Construction phase.

LOCATE

In this chapter:

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CHAPTER

3

Locate Soft Terrain

RIBBON: Siteworks – Locate – Soft Terrain

ICON: 

Use Siteworks for Revit Soft Terrain components to shape the project toposurface by creating a master plan, controlled slope building pads, berms, ditches, swales, detention ponds, and other features. The soft terrain family parameters help you control whether the resulting terrain offsets from the host line, slope projection values for cut and fill conditions, and projection increments.

Through the locate process you determine whether the feature is to follow the terrain or if has a constant elevation. When you locate soft terrain features you are affecting the Base Toposurface set since Siteworks for Revit provides you with the ability to report the cut and fill volumes through the Revit schedule view.

To determine the location of the feature, you can draw model and detail lines using Revit commands, or you can use the Siteworks drawing option. In both cases, Siteworks converts these lines into the feature host line. You can edit and annotate the feature by selecting and applying changes, and annotate the host line by using the Modify and Annotate commands.

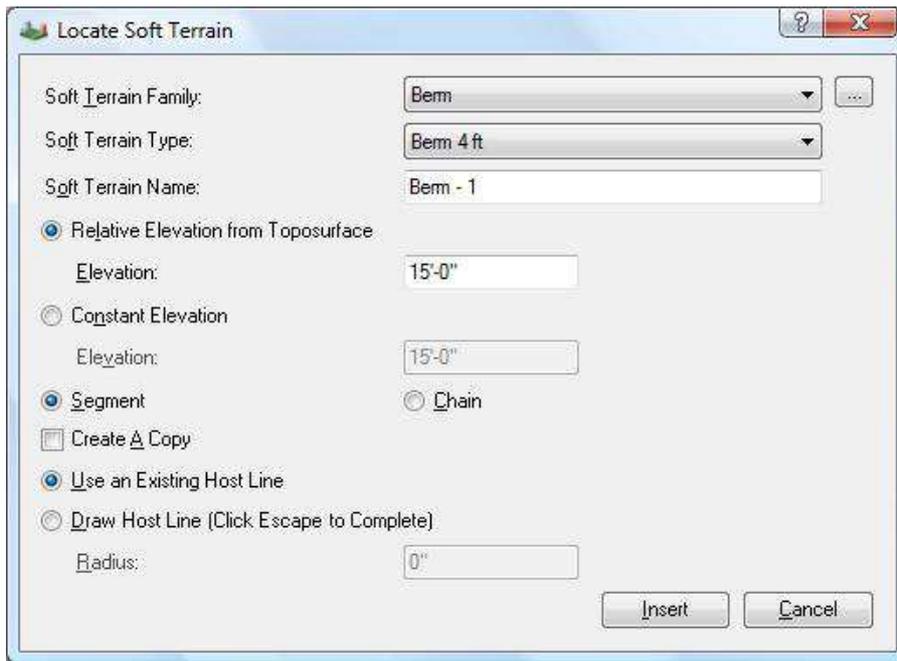


Figure 3-1 Locate Soft Terrain Dialog Box

Option	Function
Soft Terrain Family	Displays a list of the Soft Terrain families currently loaded in the project.
Select Family button	Click on this button to browse, select and load a new family into the project.
Soft Terrain Type	Displays a list of the soft terrain types available in the selected family.
Soft Terrain Name	Enter a name to distinguish the feature that you are placing. This information is kept with the host line.
Relative Elevation from Toposurface	Use Relative Elevation from Toposurface if you want the soft terrain feature to follow the terrain at a relative elevation from the base toposurface. Siteworks for Revit finds the elevation of the base toposurface at the vertices along the host line and uses that information to create the new feature.

Option	Function
Elevation	<p>Input the desired relative elevation from the base toposurface. The number can be positive or negative.</p> <p>To create a berm, enter a positive value. To create a swale, enter a negative value.</p>
Constant Elevation	Use this option to assign a constant elevation to the feature.
Elevation	Input the desired elevation for the feature.
Segment	<p>When using the Existing Host Line option, the feature is created along the selected line segment.</p> <p>When using the Draw option, you are prompted for two points and then the soft terrain feature is created.</p>
Chain	<p>When using the Existing Host Line option, the feature is created along the entire chain.</p> <p>When using the Draw option, you can create as many segments as you want.</p>
Create a Copy	Siteworks automatically hides the host line for the soft terrain feature. You can make a copy of the host line that is to be visible so you can use it as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Insert	Click on insert to create the soft terrain feature.
Cancel	Click Cancel to cancel the command.

When running the command for the first time on a project, if no families have been loaded, you are prompted to load a default family. This loads the default sample soft terrain family into your project. You can also do this for all the other Siteworks for Revit commands. The program comes with a series of additional families with a variety of types that can be found in the Library folder. Typically, on a Windows XP machine this folder is located at C:\Documents and Settings\All Users\Application Data\Siteworks for Revit 2014\Library; on a Windows Vista or Windows 7 machine, this folder is located at C:\Users\Public\Application Data\Siteworks for Revit 2014\Library.

You can also customize your own families using the Family Manager command. Once you have created a family, this family is loaded into your project and can be used right away. The family is also saved to the location of your choice and can be loaded to other projects.

Quick Steps – Master Plan Grades

These quick steps use the Use an Existing Host Line method of creating a feature.

- 1. Use the Revit Model Lines or Detail Lines command to draw the bounding master plan area of the site. Make sure that you close the chain.**

- 2. From the Siteworks tab on the ribbon, select Soft Terrain in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

- 3. Click on the Soft Terrain Family list and select the *Mass Grading* family.**

If you don't have the Mass Grading.rfa family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Mass Grading.rfa*. Click Open to load the family into the project. You can also create your own soft terrain families using the Soft Terrain Family Manager command. For more information on customizing families, review the Soft Terrain Family Manager section in the manual.

- 4. Click on the Soft Terrain Type list and select the *1-to-1 slopes* type.**

This default family type cut and fill slopes are set to ratio of 1/1 and offsets are set to 0.

- 5. Type in a Name for the feature you are about to create.**

This name is associated with the host line only.

- 6. Toggle Constant Elevation and input the desired Elevation.**

- 7. Toggle Chain since you are selecting a closed chain in the model.**

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and lay out other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

8. **Toggle Use an Existing Host Line.**
9. **Click on Insert.**
10. **In the Revit model view, select the closed chain that was previously drawn.**
11. **Answer No to the *Project Slopes on the Inside* message.**

Siteworks calculates the elevation of the points on your host line, projects slopes to tie to the base toposurface and builds a new proposed toposurface for you representing the master grade of the site.

12. **Click Cancel to close the dialog box.**

Quick Steps – Building Pads

These quick steps use the Use an Existing Host Line method of creating a feature.

1. **Use the Revit Model Lines or Detail Lines command to draw the footprint of the building pad you want to grade. Make sure that you close the chain.**

2. **From the Siteworks tab on the ribbon, select Soft Terrain in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

3. **Click on the Soft Terrain Family list and select the *Building Pads* family.**

If you don't have the building pads family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Building Pads.rfa*. Click Open to load the family into the project. You can also create your own soft terrain families using the Soft Terrain Family Manager command. For more information on customizing families, review the Soft Terrain Family Manager section in the manual.

4. **Click on the Soft Terrain Type list and select the *1-to-1 slopes* type.**

This default family type cut and fill slopes are set to ratio of 1/1 and offsets are set to 0.

5. **Type in the Name for the feature you are about to create.**

This name is associated with the host line only.

6. Toggle Constant Elevation and input the desired Elevation.

7. Toggle Chain since you are selecting a closed chain in the model.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

8. Toggle Use an Existing Host Line.

9. Click on Insert.

10. In the Revit model view, select the closed chain that was previously drawn.

11. Answer No to the *Project Slopes on the Inside* message.

Siteworks calculates the elevation of the points on your host line, projects slopes to tie to the base toposurface and builds a new proposed toposurface for you representing the building pad elevation and controlled slope ties to the proposed toposurface.

12. Click Cancel to close the dialog box.

Quick Steps – Berm

These quick steps use the Draw Host Line method to create the feature.

1. From the Siteworks tab on the ribbon, select Soft Terrain in the Locate panel.

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

2. Click on the Soft Terrain Family list and select the *Berms* family.

If you don't have the Berms family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Berms.rfa*. Click Open to load the family into the project. You can also create your own soft terrain families using the Soft Terrain Family Manager command. For more information on customizing families, review the Soft Terrain Family Manager section in the manual.

3. Click on the Soft Terrain Type list and select the *4 feet 4-to-1 slopes* type.

This default family type cut and fill slopes are set to ratio of 4/1, which creates a 4-foot wide berm.

4. Type in the Name for the feature you are about to create.

This name is associated with the host line only.

5. Toggle Relative Elevation from Toposurface and input the desired relative Elevation.

6. Toggle Chain to draw multiple segments.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

7. Toggle Draw Host Line.

8. Enter a 15' Radius value and Siteworks automatically places a 15' radius arcs at the intersections of the lines.

Entering a radius of 0 prevents Siteworks from placing any arcs. Siteworks smooth's the projected slopes along the corner using the slope projection radial increment parameter in the family. For more information on customizing families, please read the corresponding section in the manual.

9. Click on Insert.

10. In the Revit model view, use the mouse to pick the points along the chain for the feature. Press the <Esc> key on your keyboard or right-click and select cancel to complete the process.

Clicking on two points draws a temporary line. When a radius is being uses, clicking on the next points draws both the arcs and lines for the host line.

Siteworks calculates the elevation of the points on your host line, the offset widths for the top of berm and project slopes to tie to the base toposurface. Then it builds the new proposed toposurface that includes the berm.

11. Click Cancel to close the dialog box.

Quick Steps - Swale

These quick steps use the Draw Host Line method to create the feature.

1. From the Siteworks tab on the ribbon, select Soft Terrain in the Locate panel.

If you haven't already done so, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

2. Click on the Soft Terrain Family list and select the Swales family.

If you don't have the Swales family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Swales.rfa*. Click Open to load the family into the project. You can also create your own soft terrain families using the Soft Terrain Family Manager command. For more information on customizing families, review the Soft Terrain Family Manager section in the manual.

3. Click on the Soft Terrain Type list and select the V shape 2-to-1 slopes type.

This default family type cut and fill slopes are set to ratio of 2/1 and create a V-shaped swale.

4. Type in the Name for the feature you want to create.

This name is associated with the host line only.

5. Toggle Relative Elevation from Toposurface and input the desired negative relative Elevation.

6. Toggle Chain to draw multiple segments.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

7. Toggle Draw Host Line.

8. Enter a 15' Radius value and Siteworks automatically places 15' radius arcs at the intersections of the lines.

Entering a radius of 0 prevents Siteworks from placing any arcs. Siteworks smooth's the projected slopes along the corner using the slope projection radial increment parameter in the family. For more information on customizing families, please read the corresponding section in the manual.

9. Click on Insert.

10. In the Revit model view, use the mouse to pick the points along the chain for the feature. Press the <Esc> key on your keyboard or right-click and select Cancel to complete the process.

Clicking on two points draws a temporary line. When a radius is being used, clicking on the next points draws both the arcs and lines for the host line.

Siteworks calculates the elevation of the points on your host line, the offset widths for the top of berm and project slopes to tie to the base toposurface. Then it builds the new proposed toposurface that includes the berm.

11. Click Cancel to close the dialog box.

Locate Feature Line

RIBBON: Siteworks – Locate – Feature Line

ICON: 

Use the Siteworks for Revit Feature Line command to create contours, grade lines, control edges, smooth areas in the toposurface, correct spikes or errors on the toposurface when it is created from a linked CAD file. The Feature Line command will control the toposurface by intensifying the number of points along host line at constant elevations or at controlled slope.

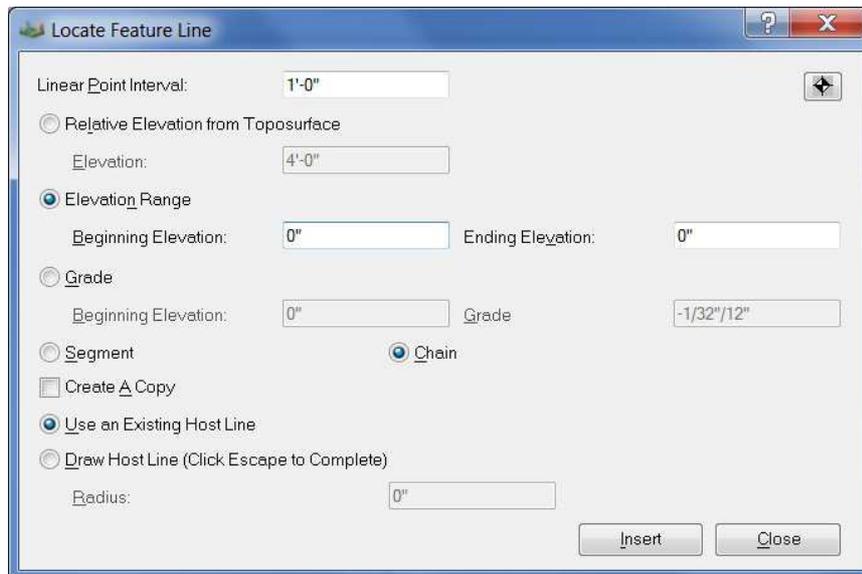


Figure Locate Feature Line

<i>Option</i>	<i>Function</i>
Linear Point Interval	Determines the interval at which the topo points will be placed along the host line.
Relative Elevation from Toposurface	Use Relative Elevation from Toposurface if you want the feature line to follow the terrain at a relative elevation from the base toposurface. Siteworks for Revit finds the elevation of the base toposurface at the vertices along the host line and uses that information to create the new feature.
Elevation	Input the desired relative elevation for the feature line.
Elevation Range	Use Elevation Range to specify the beginning and ending elevations for the feature line. If you input different elevation values, Siteworks will interpolate the elevation of the points along the host line segments.
Beginning Elevation	Input the desired beginning elevation for the feature line. If the beginning and elevations are different, Siteworks will prompt you to select the starting point.
Ending Elevation	Input the desired ending elevation for the feature line.
Grade	Use Grade to specify the grade or slope of the feature line. Siteworks will use this slope value to interpolate the elevation of the points along the host line segments.
Beginning Elevation	Input the desired beginning elevation for the feature line. If the beginning and elevations are different, Siteworks will prompt you to select the starting point.
Grade	Input the desired grade or slope value.
Segment	<p>When selecting an Existing Host Line, the feature is created along the selected line segment.</p> <p>When using the Draw option, you are prompted for two points and then the sidewalk feature is created.</p>
Chain	<p>When selecting an Existing Host Line, the feature is created along the entire chain.</p> <p>When using the Draw option, you can create as many segments as you want.</p>

Option	Function
Create a Copy	Siteworks automatically hides the host line for the street. You can make a copy of the host line that is visible and can be used as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Insert	Click on Insert to create the street.
Cancel	Click Cancel to cancel the command.

Quick Steps – Create a contour line

These quick steps use the existing line method to create a contour line or define a constant elevation row of points.

1. Use the Revit Model Lines or Detail Lines command to draw the desired contour line.

There's no need to assign a level to this line. Siteworks will assign the elevations to the point from your inputs on the dialog box.

2. From the Siteworks tab on the ribbon, select Feature Line in the Locate panel.

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

3. Input the desired Linear Point Interval.

To create a smooth contour, you can decrease this interval to 1' or less.

4. Click on the Elevation Range.

5. Input the desired contour line elevation in both the Beginning and Ending Elevation fields.

If you enter varying elevations, Siteworks will interpolate the topo point elevations along the host line.

6. Toggle Chain.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

7. Toggle Use an Existing Host Line.

8. Click on Insert.

9. In the Revit model view, select the chain that was previously drawn.

10. Click on Cancel to close the dialog box.

Quick Steps – Create a graded line (breakline)

These quick steps use the existing line method of creating a feature line.

1. Use the Revit Model Lines or Detail Lines command to draw the line at the appropriate location.

There's no need to assign a level to this line. Siteworks will assign the elevations to the point from your inputs on the dialog box.

2. From the Siteworks tab on the ribbon, select Feature Line in the Locate panel.

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

3. Input the desired Linear Point Interval.

To create a smooth contour, you can decrease this interval to 1' or less.

4. Click on the Elevation Range.

Use the Elevation Range method when both the elevation at the beginning and ending elevations for the feature line are known.

5. Input the desired Beginning Elevation for the graded line.

6. **Input the desired Ending Elevation for the graded line.**
7. **Toggle Chain.**

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.
8. **Toggle Use an Existing Host Line.**
9. **Click on Insert.**
10. **In the Revit model view, select the chain that was previously drawn.**
11. **Graphically pick the start point for the graded line.**
12. **Click on Cancel to close the dialog box.**

Point Wipeout

RIBBON: Siteworks – Locate – Point Wipeout

ICON: 

Use the Siteworks for Revit to delete points from the proposed toposurface. This will make controlling the toposurface with the Feature Line easier.

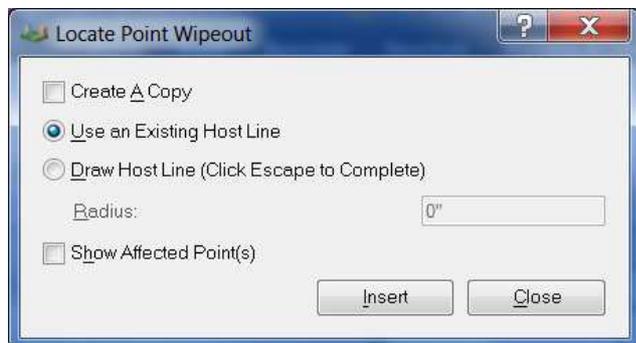


Figure Locate Point Wipeout

Option	Function
Create a Copy	Siteworks automatically hides the host line for the street. You can make a copy of the host line that is visible and can be used as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Show Affected Points	Toggling on Show Affected Points will temporarily display a marker with all the points in the wipeout area that will be deleted from the Proposed Toposurface.
Insert	Click on Insert to create the street.
Cancel	Click Cancel to cancel the command.

Quick Steps – Wiping Points from Proposed Toposurface

These quick steps use the existing line method of creating a point wipeout area.

- 1. Use the Revit Model Lines or Detail Lines command to draw the line that encloses the area with the points you want to delete.**

There's no need to assign a level to this line. Siteworks will assign the elevations to the point from your inputs on the dialog box.

- 2. From the Siteworks tab on the ribbon, select Feature Line in the Point Wipeout.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

- 3. Toggle Chain.**

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

4. **Toggle Use an Existing Host Line.**
5. **Click on Insert.**
6. **In the Revit model view, select the chain that was previously drawn.**
7. **Click on Cancel to close the dialog box.**

Locate Street

RIBBON: Siteworks – Locate – Street

ICON: 

Use Siteworks for Revit to model the project streets. The street family parameters help you control the number of lanes, cross-slopes, curb and gutter placement, boulevard clearing zone, slope projection settings, and materials.

Locate Streets

When you locate streets, Siteworks updates the toposurface with the street section, boulevard and slope ties into the proposed toposurface. It also creates and places a mass form in the model for you to visualize the street and obtain pavement, curb and gutter, base and sub-base quantities, and the total cut and fill. The base and sub-base materials are only reported using the Siteworks for Revit Report command.

To determine the location of the street, you can draw model and detail lines using Revit commands or you can use the Siteworks drawing option. In both cases, Siteworks converts these lines into the feature host line. You can edit and annotate the feature by selecting and applying changes, and annotating the host line using the Modify and Annotate commands.

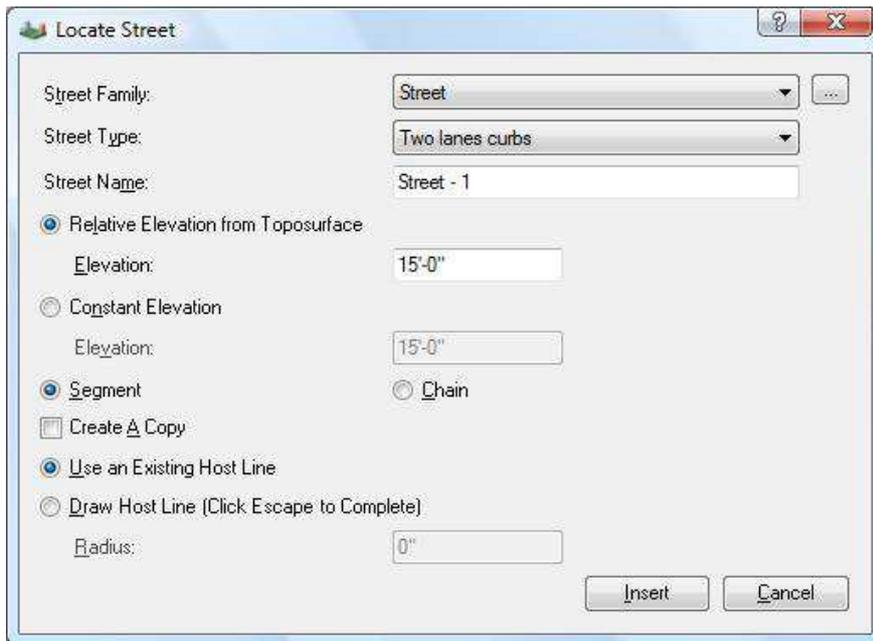


Figure 3-2 Locate Street Dialog Box

Option	Function
Street Family	Displays a list of the Street families currently loaded in the project.
Select Family button	Click on this button to browse, select and load a new family into the project.
Street Type	Displays a list of the street types available in the selected family.
Street Name	Enter a name to distinguish the street you are placing. This information is kept with the host line and also assigned to the street masses in the project.
Relative Elevation from Toposurface	Use Relative Elevation from Toposurface if you want the street to follow the terrain at a relative elevation from the base toposurface. Siteworks for Revit finds the elevation of the base toposurface at the vertices along the host line and uses that information to create the new feature.

Option	Function
Elevation	Input the desired relative elevation from the base toposurface. The number can be positive or negative.
Constant Elevation	Use Constant Elevation if you want to assign a constant elevation to the street.
Elevation	Input the desired elevation for the street.
Segment	<p>When selecting an Existing Host Line, the feature is created along the selected line segment.</p> <p>When using the Draw option, you are prompted for two points and then the sidewalk feature is created.</p>
Chain	<p>When selecting an Existing Host Line, the feature is created along the entire chain.</p> <p>When using the Draw option, you can create as many segments as you want.</p>
Create a Copy	Siteworks automatically hides the host line for the street. You can make a copy of the host line that is visible and can be used as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Insert	Click on Insert to create the street.
Cancel	Click Cancel to cancel the command.

When running the command for the first time on a project, if no families have been loaded yet, you are prompted to load a default family. This load the default sample street family into your project. You can also select to do this for all the other Siteworks for Revit commands. The program comes with a series of additional families with a variety of types that can be found in the Library folder. Typically, on a Windows XP machine this folder is found at C:\Documents and Settings\All Users\Application Data\Siteworks for Revit 2014\Library; on a Windows Vista or Windows 7 machine, this folder is found on C:\Users\Public\Application Data\Siteworks for Revit 2014\Library.

You can also customize your own families using the Family Manager command. Once you have created a family, this family is loaded into your project and can be used right away. The family is also saved to the location of your choice and can be loaded to other projects.

Street Intersections

When locating streets, Siteworks for Revit will detect if the new street intersects with another street that has already been placed in the model. Once an intersection is found, you can allow Siteworks to clean the intersection and determine what the return radiuses will be.

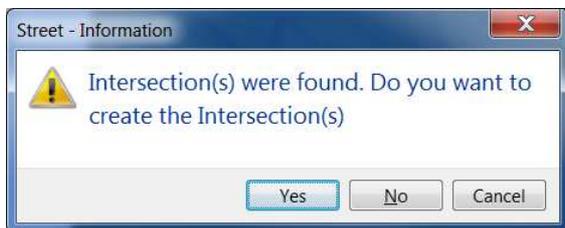


Figure Street Intersection Found Prompt

<i>Option</i>	<i>Function</i>
Yes	Click Yes if you want Siteworks to create the intersection.
No	Click No if you do not want Siteworks to create the intersection but still create the street mass form.
Cancel	Click Cancel if you do not want Siteworks to create the intersection nor place the new street.

If you accept the prompt for Siteworks to create the intersection, you will be prompted if you want to change the return radiuses.

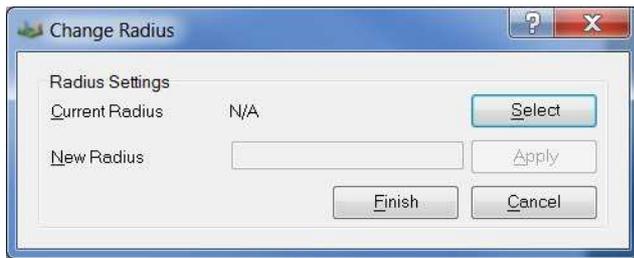


Figure Change Radius

Option	Function
Current Radius	Current Radius will display the return radius of a selected return point.
Select	Click the Select button if you want to change any of the return radiuses in the intersection. After clicking Select, you will be prompted to graphically pick a point close to the return radius you want modify.
New Radius	To change the return radius, input a new value in the New Radius field.
Apply	Click Apply to accept and apply the New Radius value.
Finish	Click Finish once you want Siteworks to process the street and intersection.
Cancel	Click Cancel to cancel out of the command.

Quick Steps – Create a street using an existing line

These quick steps use the Use an Existing Host Line method of creating a feature.

- 1. Use the Revit Model Lines or Detail Lines command to draw the centerline of the street you want to create.**
- 2. From the Siteworks tab on the ribbon, select Street in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

3. Click on the Street Family list and select the Streets family.

If you don't have the Streets family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Streets.rfa*. Click open to load the family into the project. You can also create your own street families using the Street Family Manager command. For more information on customizing families, review the Street Family Manager section in the manual.

4. Click on the Street Type list and select the 2 lanes with curb and gutter type.

This default family type defines a 2 lane road. Each lane is 12' wide with a 2% crown, curb and gutter, 6' boulevard clear zone, cut and fill slopes are set to ratio of 4/1, and sub-base and base materials are set to a depth of 6" each.

5. Type in the Name for the street that you are about to create.

This name is associated with the host line and is used for the mass family when it is placed in the project.

6. Toggle Constant Elevation and input the desired Elevation.

7. Toggle Chain.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

8. Toggle Use an Existing Host Line.

9. Click on Insert.

10. In the Revit model view, select the chain that was previously drawn.

11. Graphically pick the start point for the street.

12. Toggle Show Mass in all existing Views and click on Close.

Because some of the Siteworks components are created as Revit masses, you need to turn on the masses from the Visibility/Graphics properties for the view.

Siteworks calculates the elevation of the points on your host line, determines the street section 'box', project slopes to tie to the base toposurface and builds a new proposed toposurface for

you. It also creates the mass family that follows the host line and adjusts to the terrain elevation changes.

You may receive a Revit warning stating “Line in Massing Sketch is slightly off axis and may cause inaccuracies.” It is normal to receive this warning message and it does not affect the creation of the mass forms. Click on OK to continue.

13. Click on **Cancel** to close the dialog box.

Quick Steps – Create street using draw option

These quick steps use the Draw Host Line method to create the feature.

1. **From the Siteworks tab on the ribbon, select Street in the Locate panel.**

If you haven't done so already, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

2. **Click on the Street Family list and select the Streets family.**

If you don't have the Streets family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Streets.rfa*. Click open to load the family into the project. You can also create your own street families using the Street Family Manager command. For more information on customizing families, review the Street Family Manager section in the manual.

3. **Click on the Street Type list and select the 2 lanes with curb and gutter type.**

This default family type defines a 2 lane road. Each lane is 12' wide with a 2% crown, curb and gutter, 6' boulevard clear zone, cut and fill slopes are set to ratio of 4/1, and sub-base and base materials are set to a depth of 6" each.

4. **Type in the Name for the street you want to create.**

This name is associated with the host line and is used for the mass family when it is placed in the project.

5. **Toggle Constant Elevation and input the desired Elevation.**

6. **Toggle Chain.**

Siteworks creates the chain for the host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

7. **Toggle Draw Host Line.**
8. **Input a Radius of 150' to automatically create the street curves with this radius.**
9. **Click on Insert.**
10. **In the Revit model view, graphically pick the points along the street centerline you want to create.**
11. **Press <Esc> on your keyboard or right-click and select Cancel to complete the command.**
12. **Toggle Show Mass in all existing Views and click on Close.**

Because the some of the Siteworks components are created as Revit masses, you need to turn on the masses from the Visibility/Graphics properties for the view.

Siteworks calculates the elevation of the points on your host line, determines the street section 'box', projects slopes to tie to the base toposurface and builds a new proposed toposurface for you. It also creates the mass family that follows the host line and adjusts to the terrain elevation changes.

You may receive a Revit warning stating "Line in Massing Sketch is slightly off axis and may cause inaccuracies." It is normal to receive this warning message and it does not affect the creation of the mass forms. Click on OK to continue.

13. **Click on Cancel to close the dialog box.**

Quick Steps – Street Intersection

These quick steps use the Use Host Line method to create the feature.

1. **Draw the centerline of the street. Make sure that one end of the line extends over the curb or pavement of the street that you are trying to intersect too.**

You may use Revit model or detail lines.

2. **From the Siteworks tab on the ribbon, select Street in the Locate panel.**
3. **Click on the Street Family list and select the Streets family.**
4. **Click on the Street Type list and select the 2 lanes with curb and gutter type.**

5. Type in the Name for the street you want to create.

This name is associated with the host line and is used for the mass family when it is placed in the project.

6. Toggle Constant Elevation and input the desired Elevation.

7. Toggle Chain.

Siteworks creates the chain for the host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

8. Click on Insert.

9. Select the line drawn in the first step.

10. Answer Yes to the “Intersection(s) were found. Do you want to create the intersection(s)?” prompt.

11. To change the return radius, click the Select button and graphically click close to the return radius marker.

The current return radius will be displayed in the New Radius field.

12. Change the value under the New Radius field and click Apply.

13. Repeat as necessary.

14. Click Finish.

Siteworks will process the new street, transition the pavement, transition the curbs along their returns, and regrade the terrain.

15. Click on Close to close the dialog box.

Locate Curb

RIBBON: Siteworks – Locate – Curb

ICON: 

Use Siteworks for Revit to model the project curbs. The curb family parameters help you control the curb width and height, gutter width and height, material and slope projection settings.

When you locate curbs, you have the option to associate them to any of the toposurfaces created by Siteworks. As changes are made to the toposurface associated to the curb component, Siteworks for Revit automatically updates the curb itself. Curbs always follow the toposurface they have been associated with. Selecting a closed chain or sketching a closed chain creates a parking lot island. When creating parking lot islands, Siteworks adds an 'infill', or capping toposurface, to the island.

When Siteworks creates the curb, it updates the associated toposurface and then places a mass form. You can visualize the curb and obtain pavement, base and sub-base quantities. The base and sub-base materials are only reported through the Siteworks for Revit Report command.

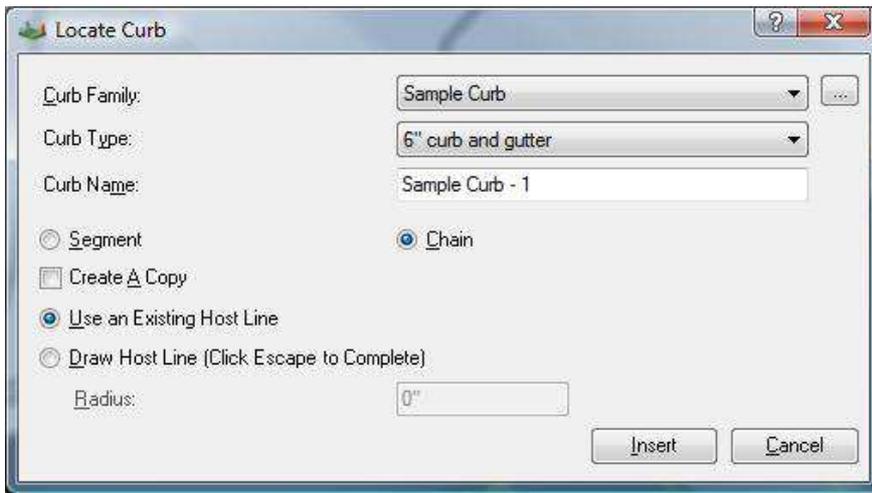


Figure 3-3 Locate Curb Dialog Box

<i>Option</i>	<i>Function</i>
Curb Family	Displays a list of the Curb families currently loaded in the project.
Select Family button	Click on this button to browse, select and load a new family into the project.
Curb Type	Displays a list of the curb types available in the selected family.

Option	Function
Curb Name	Enter a name to distinguish the curb you are placing. This information is kept with the host line and assigned to the curb masses in the project.
Segment	When selecting an Existing Host Line, the feature is created along the selected line segment. When using the Draw option, you are prompted for two points and then the curb feature is created.
Chain	When selecting an Existing Host Line, the feature is created along the entire chain. When using the Draw option, you can create as many segments as you want.
Create a Copy	Siteworks automatically hides the host line for the curb. You can make a copy of the host line that is visible and can be used as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Insert	Click on Insert to create the curb.
Cancel	Click Cancel to cancel the command.

When running the command for the first time on a project, if no families have been loaded yet, you are prompted to load a default family. This loads the default sample curb family into your project. You can also select to do this for all the other Siteworks for Revit commands. The program comes with a series of additional families with a variety of types that can be found in the Library folder. Typically, on a Windows XP machine this folder is found on C:\Documents and Settings\All Users\Application Data\Siteworks for

Revit 2014\Library; on a Windows Vista or Windows 7 machine, this folder is found on C:\Users\Public\Application Data\Siteworks for Revit 2014\Library.

You can customize your own families using the Family Manager command. Once you have created a family, it is loaded into your project and can be used right away. The family is also saved to the location of your choice and can be loaded to other projects.

Toposurface Association

You can associate the curb component to any of the toposurfaces in the project. If the toposurface is edited, Siteworks for Revit updates the curb according to these changes. For example, you created a parking lot island and associated it to a Siteworks Parking Lot component. If you move the parking lot surface or change the elevations, Siteworks moves the curbs with the parking lot surface and updates the curb to the new elevations.

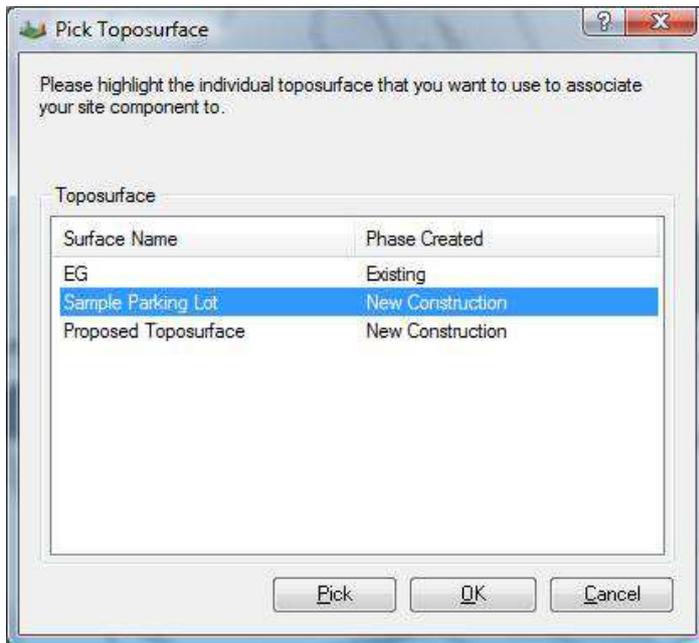


Figure 3-4 Pick Toposurface Dialog Box

Option

Function

Toposurface

Displays a list of the toposurfaces currently found in the project.

Option	Function
Pick	Click on Pick to graphically select the toposurface in the Revit project.
OK	Associates the curb with the highlighted toposurface.
Cancel	Click Cancel to cancel the command.

Quick Steps – Create a curb on a parking lot edge

These quick steps use the Use an Existing Host Line method of creating a feature.

- 1. Use the Revit Model Lines or Detail Lines command to draw the edge of the gutter or face of curb that you want to create.**

- 2. From the Siteworks tab on the ribbon, select Curb in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

- 3. Click on the Curb Family list and select the *Curbs* family.**

If you don't have the Curbs family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Curbs.rfa*. Click open to load the family into the project. You can also create your own curbs families using the Curb Family Manager command. For more information on customizing families, review the Curb Family Manager section in the manual.

- 4. Click on the Curb Type list and select the 6-inch curb and gutter type.**

This default family type defines a 6-inch high curb with a 2-foot wide gutter and base and sub-base materials set to a depth of 4" each.

- 5. Type in the Name for the curb you want to create.**

This name is associated with the host line and is used for the mass family when it is placed on the project.

6. Toggle Chain.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

7. Toggle Use an Existing Host Line.

8. Click on Insert.

9. In the Revit model view, select the chain that was previously drawn.

10. Graphically pick the starting point for the curb and gutter.

11. Graphically pick the offset or curb and gutter placement side.

12. Select the parking lot toposurface that you want the curb to be associated with from the Pick Toposurface dialog box.

13. Toggle Show Mass in all existing Views and click on Close.

Because some of the Siteworks components are created as Revit masses, you need to turn on the masses from the Visibility/Graphics properties for the view.

Siteworks calculates the elevation of the points on your host line, determines the street section 'box', projects slopes to tie to the base toposurface and builds a new proposed toposurface for you. It also creates the mass family that follows the host line and adjusts to the terrain elevation changes.

You may receive a Revit warning stating "Line in Massing Sketch is slightly off axis and may cause inaccuracies." It is normal to receive this warning message and it does not affect the creation of the mass forms. Click on OK to continue.

14. Click on Cancel to close the dialog box.

Quick Steps – Create a parking lot island

These quick steps use the Use an Existing Host Line method of creating a feature.

1. **Use the Revit Model Lines or Detail Lines command to draw the shape of the parking lot island. Make sure you close the chain.**
2. **From the Siteworks tab on the ribbon, select Curb in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

3. Click on the Curb Family list and select the *Curbs* family.

If you don't have the curbs family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Curbs.rfa*. Click open to load the family into the project. You can also create your own curbs families using the Curb Family Manager command. For more information on customizing families, review the Curb Family Manager section in the manual.

4. Click on the Curb Type list and select the 6 inch curb and gutter type.

This default family type defines a 6-inch high curb with a 2-foot wide gutter and base and sub-base materials set to a depth of 4" each.

5. Type in the Name for the curb you want to create.

This name is associated with the host line and is used for the mass family when it is placed on the project.

6. Toggle Chain.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

7. Toggle Use an Existing Host Line.

8. Click on Insert.

9. In the Revit model view, select the chain that was previously drawn.

Siteworks automatically detect that the selected lines form a closed chain and builds the parking lot island.

10. Select the parking lot toposurface that you want the curb to be associated with from the Pick Toposurface dialog box.

11. Toggle Show Mass in all existing Views and click on Close.

Because the some of the Siteworks components are created as Revit masses, you need to turn on the masses from the Visibility/Graphics properties for the view.

Siteworks calculates the elevation of the points on your host line, determines the street section 'box', projects slopes to tie to the base toposurface and builds a new proposed toposurface for you. It also creates the mass family that follows the host line and adjusts to the terrain elevation changes.

You may receive a Revit warning stating "Line in Massing Sketch is slightly off axis and may cause inaccuracies." It is normal to receive this warning message and it does not affect the creation of the mass forms. Click on OK to continue.

12. Click on Cancel to close the dialog box.

Locate Retaining Wall

RIBBON: Siteworks – Locate – Retaining Wall

ICON: 

Use Siteworks for Revit to model the project retaining walls. The retaining wall family parameters help you control the wall width and height, wall material and whether the Siteworks should project a slope to use to tie the wall to the proposed toposurface and the corresponding projection settings.

When you locate retaining wall with Slope Projection set to yes, Siteworks places the wall and then projects cut and fill slopes to tie from the top and back of the wall to the toposurface. Siteworks then updates the proposed toposurface to reflect both the wall and the new slopes. You also have the option to locate a retaining wall with no slope projection. This wall type can be used for purposes such as landscaping walls that follow the terrain.

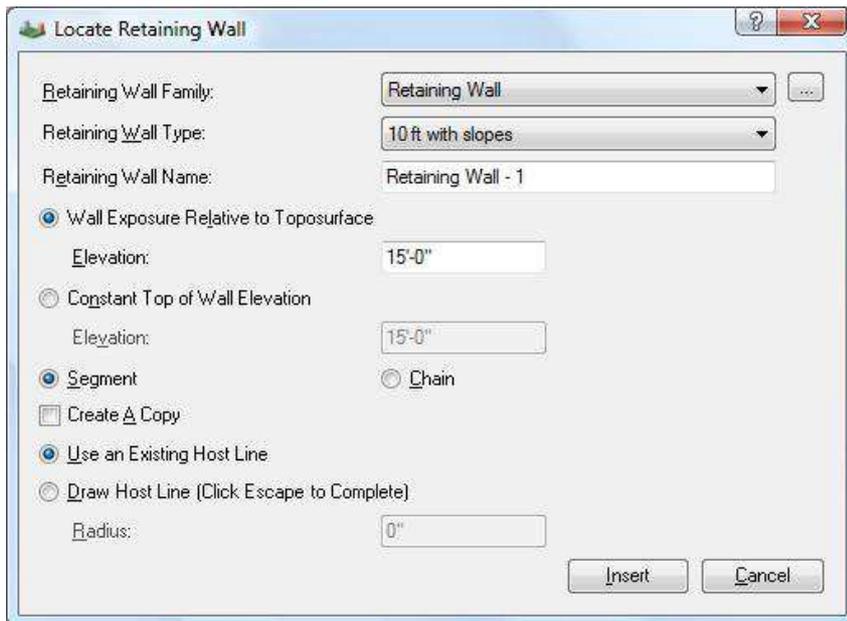


Figure 3-5 Locate Retaining Walls Dialog Box

Option	Function
Retaining Wall Family	Displays a list of the Retaining Wall families currently loaded in the project.
Select Family button	Click on this button to browse, select and load a new family into the project.
Retaining Wall Type	Displays a list of the retaining wall types available in the selected family.
Retaining Wall Name	Enter a name to distinguish the retaining wall you are placing. This information is kept with the host line and assigned to the retaining wall masses in the project.
Wall Exposure Relative to Toposurface	Use Relative Elevation from Toposurface if you want the retaining wall to follow the terrain at a relative elevation from the base toposurface. Siteworks for Revit finds the elevation of the base toposurface at the vertices along the host line and uses that information to create the new feature.

<i>Option</i>	<i>Function</i>
Elevation	Input the desired relative elevation from the base toposurface. The number can be positive or negative.
Constant Top of Wall Elevation	Use this option to assign a constant elevation to the retaining wall.
Elevation	Input the desired elevation for the retaining wall.
Segment	<p>When selecting an Existing Host Line, the feature is created along the selected line segment.</p> <p>When using the Draw option, you are prompted for two points and then the retaining wall feature is created.</p>
Chain	<p>When selecting an Existing Host Line, the feature is created along the entire chain.</p> <p>When using the Draw option, you can create as many segments as you want.</p>
Create a Copy	Siteworks automatically hides the host line for the retaining wall. You can make a copy of the host line that is visible and can be used as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Insert	Click on Insert to create the retaining wall.
Cancel	Click on Cancel to cancel the command.

When running the command for the first time on a project, if no families have been loaded yet, you are prompted to load a default family. This loads the default sample street family into your project. You can also select to do this for all the other Siteworks for Revit commands. The program comes with a series of additional families with a variety of types that can be found in the Library folder. Typically, on a Windows XP machine this folder is found on C:\Documents and Settings\All Users\Application Data\Siteworks for Revit 2014\Library; on a Windows Vista or Windows 7 machine, this folder is found on C:\Users\Public\Application Data\Siteworks for Revit 2014\Library.

You can customize your own families using the Family Manager command. Once you have created a family, it is loaded into your project and can be used right away. The family is also saved to the location of your choice and can be loaded to other projects.

Quick Steps – Create a retaining wall using an existing line

These quick steps use the Use an Existing Host Line method of creating a feature.

- 1. Use the Revit Model Lines or Detail Lines command to draw the centerline of the retaining wall you want to create.**

- 2. From the Siteworks tab on the ribbon, select Retaining Wall in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

- 3. Click on the Retaining Wall Family list and select the *Retaining Walls* family.**

If you don't have the Retaining Walls family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Retaining Walls.rfa*. Click open to load the family into the project. You can also create your own retaining wall families using the Retaining Wall Family Manager command. For more information on customizing families, review the Retaining Wall Family Manager section in the manual.

- 4. Click on the Retaining Wall Type list and select the 10 feet with 100-to-1 slopes type.**

This default family type defines a 10-foot tall wall with slope projections turned on, cut and fill slopes set to 1%, and base and sub-base materials set to a depth of 2" each.

- 5. Type in the Name for the retaining wall you want to create.**

This name is associated with the host line and is used for the mass family when it is placed in the project.

6. Toggle Constant Top of Wall Elevation and input the desired Elevation.

7. Toggle Chain.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

8. Toggle Use an Existing Host Line.

9. Click on Insert.

10. In the Revit model view, select the chain that was previously drawn.

11. Graphically pick the beginning point for the retaining wall.

12. Graphically pick the back side of the wall.

Siteworks projects the slopes on that side of the wall.

13. Toggle Show Mass in all existing Views and click on Close.

Because the some of the Siteworks components are created as Revit masses, you need to turn on the masses from the Visibility/Graphics properties for the view.

Siteworks calculates the elevation of the points on your host line, determines the street section 'box', projects slopes to tie to the base toposurface and builds a new proposed toposurface for you. It also creates the mass family that follows the host line and adjusts to the terrain elevation changes.

You may receive a Revit warning stating "Line in Massing Sketch is slightly off axis and may cause inaccuracies." It is normal to receive this warning message and it does not affect the creation of the mass forms. Click on OK to continue.

14. Click on Cancel to close the dialog box.

Locate Sidewalk

RIBBON: Siteworks – Locate – Sidewalk

ICON: 

Use Siteworks for Revit to model the project sidewalks. The sidewalk family parameters help you control the width, sidewalk depth, material and slope projection settings.

When you locate sidewalks, Siteworks updates the toposurface with the sidewalk slope tied into the proposed toposurface. It also creates and places a mass form in the model for you to visualize the sidewalk and obtain pavement, base and sub-base quantities, and the total cut and fill. The base and sub-base materials are only reported through the Siteworks for Revit Report command.

To determine the location of the sidewalk, you can draw model and detail lines using Revit commands or you can use the Siteworks drawing option. In both cases, Siteworks converts these lines into the feature host line. You can edit and annotate the feature by selecting and applying changes, and annotating the host line using the Modify and Annotate commands.

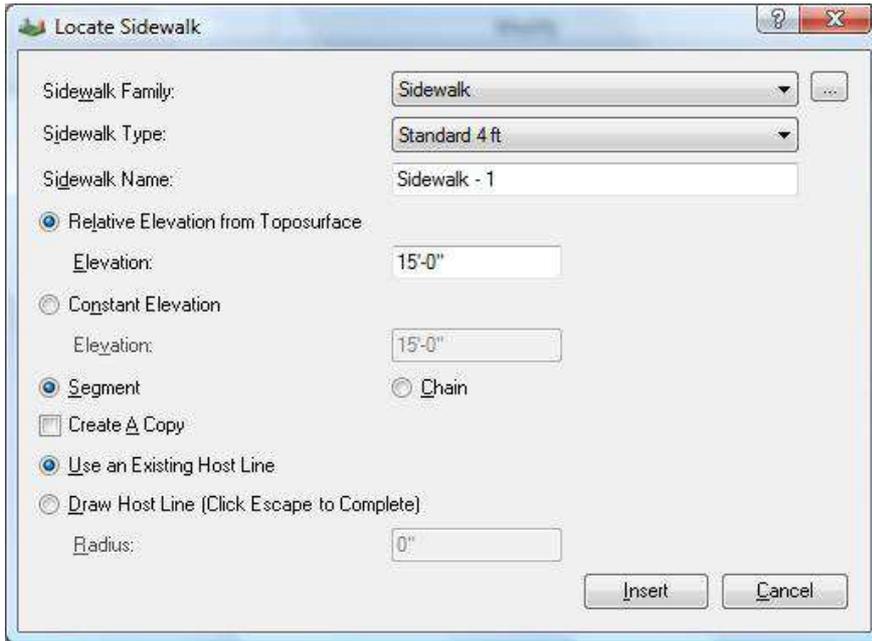


Figure 3-6 Locate Sidewalk Dialog Box

Option	Function
Sidewalk Family	Displays a list of the Sidewalk families currently loaded in the project.
Select Family button	Click on this button to browse, select and load a new family into the project.

<i>Option</i>	<i>Function</i>
Sidewalk Type	Displays a list of the sidewalk types available in the selected family.
Sidewalk Name	Enter a name to distinguish the sidewalk that you are placing. This information is kept with the host line and assigned to the sidewalk masses in the project.
Relative Elevation from Toposurface	Use Relative Elevation from Toposurface if you want the sidewalk to follow the terrain at a relative elevation from the base toposurface. Siteworks for Revit finds the elevation of the base toposurface at the vertices along the host line and uses that information to create the new feature.
Elevation	Input the desired relative elevation from the base toposurface. The number can be positive or negative.
Constant Elevation	Use Constant Elevation to assign a constant elevation to the sidewalk.
Elevation	Input the desired elevation for the sidewalk.
Segment	<p>When selecting an Existing Host Line, the feature is created along the selected line segment.</p> <p>When using the Draw option, you are prompted for two points and then the sidewalk feature is created.</p>
Chain	<p>When selecting an Existing Host Line, the feature is created along the entire chain.</p> <p>When using the Draw option, you can create as many segments as you want.</p>
Create a Copy	Siteworks automatically hides the host line for the sidewalk. You can make a copy of the host line that is visible and can be used as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.

Option	Function
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Insert	Click on Insert to create the sidewalk.
Cancel	Click on Cancel to cancel the command.

When running the command for the first time on a project, if no families have been loaded yet, you are prompted to load a default family. This loads the default sample sidewalk family into your project. You can also select to do this for all the other Siteworks for Revit commands. The program comes with a series of additional families with a variety of types that can be found in the Library folder. Typically, on a Windows XP machine this folder is found on C:\Documents and Settings\All Users\Application Data\Siteworks for Revit 2014\Library; on a Windows Vista or Windows 7 machine, this folder is found on C:\Users\Public\Application Data\Siteworks for Revit 2014\Library.

You can customize your own families using the Family Manager command. Once you have created a family, it is loaded into your project and can be used right away. The family is also saved to the location of your choice and can be loaded to other projects.

Quick Steps – Create a sidewalk using an existing line

These quick steps use the Use an Existing Host Line method of creating a feature.

- 1. Use the Revit Model Lines or Detail Lines command to draw the centerline of the sidewalk you want to create.**
- 2. From the Siteworks tab on the ribbon, select Sidewalk in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

- 3. Click on the Sidewalk Family list and select the *Sidewalks* family.**

If you don't have the Sidewalks family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Sidewalks.rfa*. Click open to load the family into the

project. You can also create your own sidewalk families using the Sidewalk Family Manager command. For more information on customizing families, review the Sidewalk Family Manager section in the manual.

4. Click on the Sidewalk Type list and select the 4 feet 1 pct slope type.

This default family type defines a 4 feet wide sidewalk that is 6" deep, with cut and fill slopes set to ratio of 100/1, and sub-base and base materials set to a depth of 2" each.

5. Type in the Name for the sidewalk you want to create.

This name is associated with the host line and is used for the mass family when it is placed on the project.

6. Toggle Constant Elevation and input the desired Elevation.

7. Toggle Chain.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and lay out other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

8. Toggle Use an Existing Host Line.

9. Click on Insert.

10. In the Revit model view, select the chain that was previously drawn.

11. Graphically pick the start point for the sidewalk.

12. Toggle Show Mass in all existing Views and click on Close.

Because the some of the Siteworks components are created as Revit masses, you need to turn on the masses from the Visibility/Graphics properties for the view.

Siteworks calculates the elevation of the points on your host line, determines the street section 'box', projects slopes to tie to the base toposurface and builds a new proposed toposurface for you. It also creates the mass family that follows the host line and adjusts to the terrain elevation changes.

You may receive a Revit warning stating "Line in Massing Sketch is slightly off axis and may cause inaccuracies." It is normal to receive this warning message and it does not affect the creation of the mass forms. Click on OK to continue.

13. Click on Cancel to close the dialog box.

Quick Steps – Create sidewalk using draw option

These quick steps use the Draw Host Line method to create the feature.

- 1. From the Siteworks tab on the ribbon, select Sidewalk in the Locate panel.**

If you haven't already done so, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

- 2. Click on the Sidewalk Family list and select the *Sidewalks* family.**

If you don't have the Sidewalks family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Sidewalks.rfa*. Click open to load the family into the project. You can also create your own sidewalk families using the Sidewalk Family Manager command. For more information on customizing families, review the Sidewalk Family Manager section in the manual.

- 3. Click on the Sidewalks Type list and select the 4 feet 1 pct slope type.**

This default family type defines a 4 foot wide sidewalk that is 6" deep, with cut and fill slopes set to ratio of 100/1, and sub-base and base materials set to a depth of 2" each.

- 4. Type in the Name for the sidewalk you want to create.**

This name is associated with the host line and is used for the mass family when it is placed on the project.

- 5. Toggle Constant Elevation and input the desired Elevation.**

- 6. Toggle Chain.**

Siteworks creates the chain for the host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

- 7. Toggle Draw Host Line.**

- 8. Input a Radius of 5' to automatically create curved sidewalks with this radius.**

- 9. Click on Insert.**

- 10. In the Revit model view, graphically pick the points along the sidewalk centerline that you want to create.**

11. Press <Esc> on your keyboard or right-click and select Cancel to complete the command.

12. Toggle Show Mass in all existing Views and click Close.

Because some of the Siteworks components are created as Revit masses, you need to turn on the masses from the Visibility/Graphics properties for the view.

Siteworks calculates the elevation of the points on your host line, determines the street section 'box', projects slopes to tie to the base toposurface and builds a new proposed toposurface for you. It also creates the mass family that follows the host line and adjusts to the terrain elevation changes.

You may receive a Revit warning stating "Line in Massing Sketch is slightly off axis and may cause inaccuracies." It is normal to receive this warning message and it does not affect the creation of the mass forms. Click on OK to continue.

13. Click on Cancel to close the dialog box.

Locate Parking Lot

RIBBON: Siteworks – Locate – Parking Lot

ICON: 

Use Siteworks for Revit to model the project parking lots. The parking lot family parameters help you control the pavement depth and base and sub-base material depths and material.

When you create parking lots, Siteworks updates the proposed toposurface by cutting out the pavement surface depth into it. Then, Siteworks places a new parking lot toposurface with the material assignment from the family. The grade, catch basins and grade planes in the parking lot can be added or modified using the Modify Parking Lots command.

 *Whether using Revit model and detail lines or the Siteworks draw option, the resulting line chain has to be closed. Revit splines are not supported at this time.*

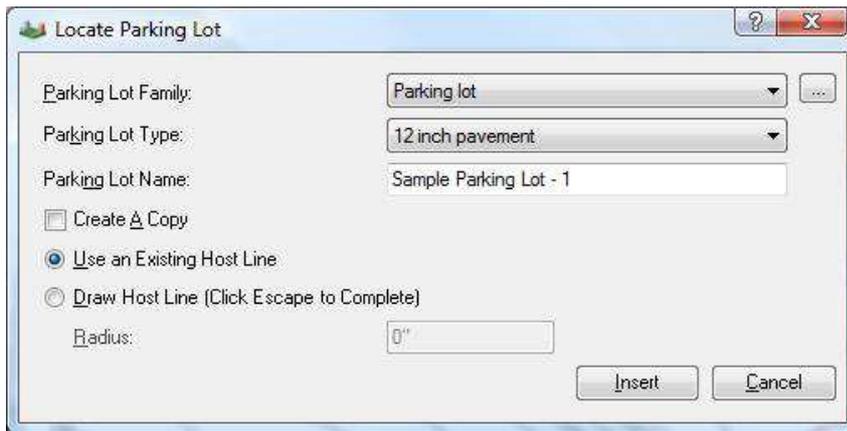


Figure 3-7 Locate Parking Lot Dialog Box

<i>Option</i>	<i>Function</i>
Parking lot Family	Displays a list of the parking lot families currently loaded in the project.
Select Family button	Click on this button to browse, select and load a new family into the project.
Parking Lot Type	Displays a list of the parking lot types available in the selected family.
Parking Lot Name	Enter a name to distinguish the parking lot that you are placing. This information is kept with the host line and assigned as the description for the toposurface that represents the pavement surface.
Create a Copy	Siteworks automatically hides the host line for the parking lot. You can make a copy of the host line that is visible and can be used as a reference to lay out other components.
Use an Existing Host Line	Toggle this option to convert any model and detail lines in the project into Siteworks component host lines.
Draw Host Line	Toggle this option to start the Siteworks sketch mode. You are able to pick points and Siteworks uses the Radius to place arcs at the intersection of the tangent lines.

Option	Function
Radius	When using the Draw option, the Radius you enter determines if any arcs are to be placed at the intersection between the tangent lines and the radius of these arcs. Any value higher than 0 creates an arc.
Insert	Click on Insert to create the parking lot.
Cancel	Click on Cancel to cancel the command.

When running the command for the first time on a project, if no families have been loaded yet, you are prompted to load a default family. This loads the default sample parking lot family into your project. You can also select to do this for all the other Siteworks for Revit commands. The program comes with a series of additional families with a variety of types that can be found in the Library folder. Typically, on a Windows XP machine this folder is found on C:\Documents and Settings\All Users\Application Data\Siteworks for Revit 2014\Library; on a Windows Vista or Windows 7 machine, this folder is found on C:\Users\Public\Application Data\Siteworks for Revit 2014\Library.

You can customize your own families using the Family Manager command. Once you have created a family, it is loaded into your project and can be used right away. The family is also saved to the location of your choice and can be loaded to other projects.

Quick Steps – Create a sidewalk using an existing line

These quick steps use the Use an Existing Host Line method of creating a feature.

- 1. Use the Revit Model Lines or Detail Lines command to draw the a closed line chain for the border of the parking lot.**
- 2. From the Siteworks tab on the ribbon, select Parking Lot in the Locate panel.**

If you hadn't done so previously, you may need to set the base toposurface for the project. Review the Set Base Toposurface section in the manual for more information.

If you receive a prompt to load default families, toggle Always load default families.

- 3. Click on the Parking Lot Family list and select the *Parking Lot* family.**

If you don't have the Parking Lot family loaded, click on the Select Family button, browse to the Siteworks for Revit Library folder and select *Parking Lot.rfa*. Click open to load the family into the

project. You can also create your own parking lot families using the Parking Lot Family Manager command. For more information on customizing families, review the Parking Lot Family Manager section in the manual.

4. Click on the Parking Lot Type list and select the 6 inch pavement type.

This default family type defines a 6-inch pavement parking lot surface with base and sub-base materials set to a depth of 2" each.

5. Type in the Name for the parking lot you want to create.

This name is associated with the host line and used for the toposurface description.

6. Toggle Constant Elevation and input the desired Elevation.

7. Toggle Use an Existing Host Line.

Siteworks converts your chain into the feature host line and then hides it. If you want to reference this chain as you further design and layout other components on the site, you can toggle *Create a Copy* to leave a visible copy of the host line.

8. Click on Insert.

9. In the Revit model view, select the chain that was previously drawn.

10. Click on Cancel to close the dialog box.

MODIFY

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CHAPTER 4

Modify Soft Terrain

RIBBON: Siteworks - Modify – Soft Terrain

ICON: 

Siteworks for Revit gives you the ability to control the soft terrain feature by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks rebuilds the soft terrain feature and updates any other features and components placed using Siteworks. Manual edits of the base toposurface created by Siteworks will be lost when new features are created or when features are edited.

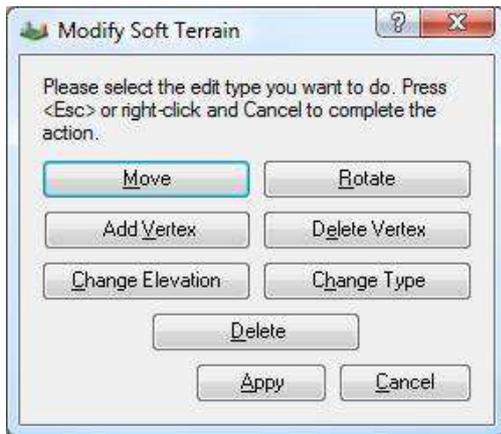


Figure Modify Soft Terrain

Option	Function
Move	Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the feature accordingly and rebuild the base toposurface.
Rotate	Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the feature accordingly and rebuild the base toposurface.

Option	Function
Add Vertex	Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the feature according to the new geometry and then rebuild the base toposurface.
Delete Vertex	Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the feature according to the new geometry and then rebuild the base toposurface.
Change Elevation	Use Change Elevation to adjust the elevation of the ends of the host line. You can change the elevation value of any vertex and change the grade between vertices. Siteworks will update the feature according to the elevation changes and then rebuild the base toposurface.
Change Type	Use Change Type to change the Soft Terrain family type applied to the feature. Siteworks will update the feature with the new type settings and then rebuild the base toposurface
Delete	Use Delete to delete the soft terrain feature and the corresponding host line.
Apply	Use Apply to apply all the changes made and rebuild the base toposurface.
Cancel	Click on Cancel to cancel all the changes.

Quick Steps – Change the elevation of a soft terrain feature

The following steps assume that you have already created master plan, building pad, berm or swale that with the locate soft terrain command.

- 1. From the Siteworks tab on the ribbon, select Soft Terrain in the Modify panel.**

Siteworks will display the host lines for all the soft terrain features that have been placed in the model. You can then graphically select the host line for the feature that you want to modify.

- 2. Graphically select the soft terrain feature host line.**
- 3. Click on the Change Elevation button.**

Siteworks displays a circle marker on all the vertices and midpoints of the host line. The labels on the vertices display the elevation of the feature at that point while the labels on the midpoints display the grade of the feature between the vertices.

4. Click close to the circle marker of one of the vertices.

Siteworks will open a dialog box that displays the current elevation of that point and an edit field to input the new elevation value for that point.

5. Input the desired new elevation for that point and click OK.

Siteworks will annotate the new elevation of this vertex and also annotate the new grade for the segment lines adjoined to it.

6. Press the <Esc>key on your keyboard or right-click and select Cancel to complete all edits.

You can make more than one elevation change or other edits to the feature. Siteworks for Revit will apply the changes when you click Apply.

7. Click the Apply button to commit the changes.

Siteworks will apply the changes to the feature and rebuild the base toposurface.

Modify Feature Line

RIBBON: Siteworks – Modify – Feature Line

ICON: 

Siteworks for Revit gives you the ability to control the feature lines by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks will rebuild the toposurface as necessary. Manual edits to the toposurfaces created by Siteworks will be lost when a new component is created or any of the Siteworks components are edited.

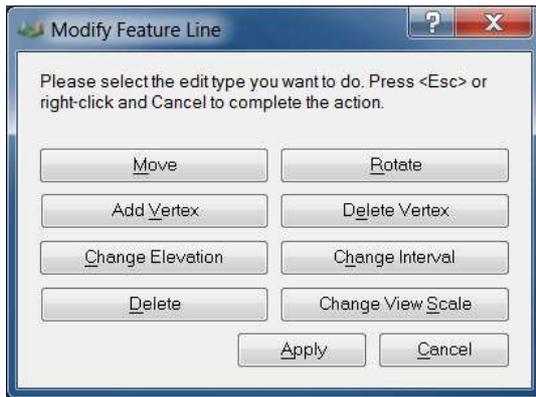


Figure Modify Feature Line

Option	Function
Move	Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the feature accordingly and rebuild the base toposurface.
Rotate	Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the feature accordingly and rebuild the base toposurface.
Add Vertex	Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the feature according to the new geometry and then rebuild the base toposurface.
Delete Vertex	Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the feature according to the new geometry and then rebuild the base toposurface.
Change Elevation	Use Change Elevation to adjust the elevation of the ends of the host line. You can change the elevation value of any vertex and change the grade between vertices. Siteworks will update the feature according to the elevation changes and then rebuild the base toposurface.
Change Interval	Use Change Interval to change the linear increment interval. Decreasing the value will place more topo points in the Revit model resulting in a better surface definition. Increasing the value will place less topo points in the Revit model resulting in less surface definition.

Option	Function
Delete	Use Delete to delete the feature line and the corresponding host line.
Apply	Use Apply to apply all the changes made and rebuild the base toposurface.
Cancel	Click on Cancel to cancel all the changes.

Modify Point Wipeout

RIBBON: Siteworks – Modify – Point Wipeout

ICON: 

Siteworks for Revit gives you the ability to control the point wipeout areas by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks will rebuild the toposurface as necessary. Manual edits to the toposurfaces created by Siteworks will be lost when a new component is created or any of the Siteworks components are edited.

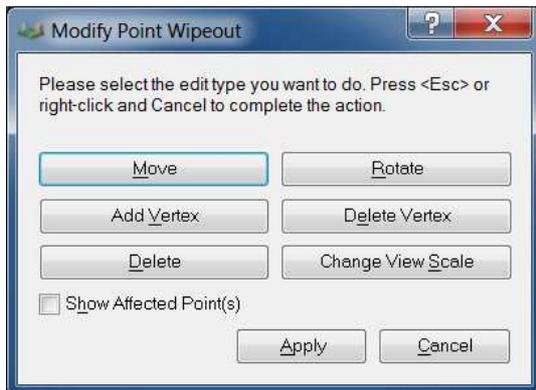


Figure Modify Point Wipeout

Option	Function
Move	Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the feature accordingly and rebuild the base toposurface.
Rotate	Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the feature accordingly and rebuild the base toposurface.
Add Vertex	Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the feature according to the new geometry and then rebuild the base toposurface.
Delete Vertex	Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the feature according to the new geometry and then rebuild the base toposurface.
Delete	Use Delete to delete the point wipeout boundary area and the corresponding host line.
Apply	Use Apply to apply all the changes made and rebuild the base toposurface.
Cancel	Click on Cancel to cancel all the changes.

Modify Street

RIBBON: Siteworks – Modify – Street

ICON: 

Siteworks for Revit gives you the ability to control the street components by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks rebuilds the street masses and base toposurface as necessary. Manual edits to street mass forms and the toposurfaces created by Siteworks will be lost when a new component is created or if any existing Siteworks components are edited.



Option

Function

Move

Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the street accordingly and rebuild the base toposurface.

Rotate

Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the street accordingly and rebuild the base toposurface.

Add Vertex

Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the street according to the new geometry and then rebuild the base toposurface.

Delete Vertex

Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the street according to the new geometry and then rebuild the base toposurface.

Change Elevation

Use Change Elevation to adjust the elevation of the ends of the host line. You can change the elevation value of any vertex and change the grade between vertices. Siteworks will update the street according to the elevation changes and then rebuild the base toposurface.

Change Type

Use Change Type to change the Soft Terrain family type applied to the feature. Siteworks will update the street with the new type settings and then rebuild the base toposurface

Delete

Use Delete to delete the street and the corresponding host line.

Option	Function
Apply	Use Apply to apply all the changes made and rebuild the street mass forms and the base toposurface.
Cancel	Click on Cancel to cancel all the changes.

Quick Steps – Change the grade of a street segment

The following steps assume that you have already created a street.

- 1. From the Siteworks tab on the ribbon, select Street in the Modify panel.**

Siteworks will display the host lines for all the streets that have been placed in the model. You can then graphically select the host line for the street that you want to modify.

- 2. Graphically select the street host line.**

- 3. Click on the Change Elevation button.**

Siteworks displays a circle marker on all the vertices and midpoints of the host line. The labels on the vertices display the elevation of the street at that point while the labels on the midpoints display the grade of the street between the vertices.

- 4. Click close to the circle marker at one of the midpoints of the host line.**

Siteworks will display two directional arrows so you can pick the direction in which you want to apply the grade change.

- 5. Click close to the directional arrow that indicates the direction in which you want to assign the new grade.**

Siteworks will open a dialog box that displays the grade of that segment of the street and an edit field to input the new grade for that segment.

- 6. Input the desired new grade for that segment and click OK.**

Siteworks will annotate the new grade for this segment and also annotate the new elevation of the vertex in the direction you selected.

- 7. Press the <Esc>key on your keyboard or right-click and select Cancel to complete all edits.**

You can make more than one elevation change or other edits to the feature. Siteworks for Revit will apply the changes when you click Apply.

8. Click the Apply button to commit the changes.

Siteworks will apply the changes to the feature and rebuild the base toposurface.

Modify Curb

RIBBON: Siteworks – Modify – Curb

ICON: 

Siteworks for Revit gives you the ability to control the curb components by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks rebuilds the curb masses and base toposurface or parking lot surface as necessary. Manual edits to curb mass forms and the toposurfaces created by Siteworks will be lost when a new component is created or if any existing Siteworks components are edited.



Option

Function

Move

Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the curb accordingly and rebuild the base toposurface.

Option	Function
Rotate	Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the curb accordingly and rebuild the toposurface.
Add Vertex	Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the curb according to the new geometry and then rebuild the base toposurface.
Delete Vertex	Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the curb according to the new geometry and then rebuild the toposurface.
Change Elevation	Use Change Elevation to adjust the elevation of the ends of the host line. You can change the elevation value of any vertex and change the grade between vertices. Siteworks will update the curb according to the elevation changes and then rebuild the toposurface.
Change Type	Use Change Type to change the Soft Terrain family type applied to the feature. Siteworks will update the curb with the new type settings and then rebuild the toposurface
Delete	Use Delete to delete the curb and the corresponding host line.
Apply	Use Apply to apply all the changes made and rebuild the curb mass forms and the toposurface.
Cancel	Click on Cancel to cancel all the changes.

Quick Steps – Change the curb type

The following steps assume that you have already created a curb.

- 1. From the Siteworks tab on the ribbon, select Curb in the Modify panel.**

Siteworks will display the host lines for all the curbs that have been placed in the model. You can then graphically select the host line for the curb that you want to modify.

- 2. Graphically select the curb host line.**

3. Click on the **Change Type** button.
4. Select the new type that you want to apply for the curb.

If you have more than one family loaded, you can also select a type from a different family.

5. Click **OK**.
6. Click the **Apply** button to commit the changes.

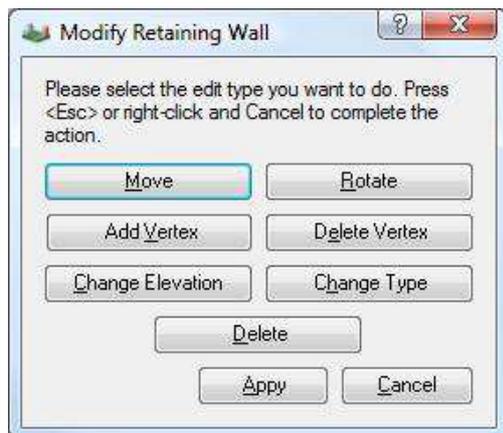
Siteworks will apply the changes to the curb and rebuild the toposurface.

Modify Retaining Wall

RIBBON: Siteworks – Modify – Retaining Wall

ICON: 

Siteworks for Revit gives you the ability to control the retaining wall components by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks rebuilds the retaining wall masses and base toposurface as necessary. Manual edits to retaining wall mass forms and the toposurfaces created by Siteworks will be lost when a new component is created or if any existing Siteworks components are edited.



Option	Function
Move	Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the retaining wall accordingly and rebuild the base toposurface.
Rotate	Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the retaining wall accordingly and rebuild the base toposurface.
Add Vertex	Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the retaining wall according to the new geometry and then rebuild the base toposurface.
Delete Vertex	Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the retaining wall according to the new geometry and then rebuild the base toposurface.
Change Elevation	Use Change Elevation to adjust the elevation of the ends of the host line. You can change the elevation value of any vertex and change the grade between vertices. Siteworks will update the retaining wall according to the elevation changes and then rebuild the base toposurface.
Change Type	Use Change Type to change the Soft Terrain family type applied to the feature. Siteworks will update the retaining wall with the new type settings and then rebuild the base toposurface
Delete	Use Delete to delete the retaining wall and the corresponding host line.
Apply	Use Apply to apply all the changes made and rebuild the retaining wall mass forms and the base toposurface.
Cancel	Click on Cancel to cancel all the changes.

Quick Steps – Delete a retaining wall

The following steps assume that you have already created a retaining wall.

- 1. From the Siteworks tab on the ribbon, select Retaining Wall in the Modify panel.**

Siteworks will display the host lines for all the retaining walls that have been placed in the model. You can then graphically select the host line for the retaining wall that you want to modify.

2. **Graphically select the retaining wall host line.**
3. **Click on the Delete button.**
4. **Click Yes to the deletion warning message.**

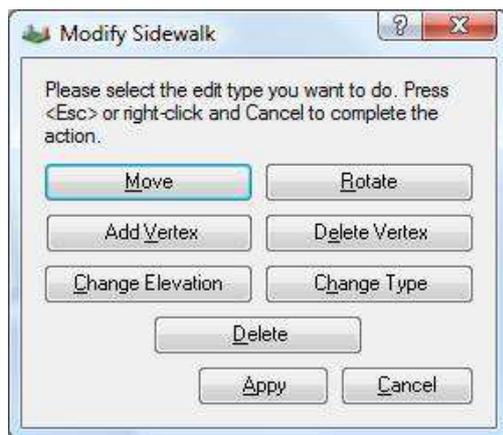
Siteworks will delete the retaining wall mass form and rebuild the base toposurface.

Modify Sidewalk

RIBBON: Siteworks – Modify – Sidewalk

ICON: 

Siteworks for Revit gives you the ability to control the sidewalk components by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks rebuilds the sidewalk masses and base toposurface as necessary. Manual edits to sidewalk mass forms and the toposurfaces created by Siteworks will be lost when a new component is created or if any existing Siteworks components are edited.



Option	Function
Move	Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the sidewalk accordingly and rebuild the base toposurface.
Rotate	Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the sidewalk accordingly and rebuild the base toposurface.
Add Vertex	Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the sidewalk according to the new geometry and then rebuild the base toposurface.
Delete Vertex	Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the sidewalk according to the new geometry and then rebuild the base toposurface.
Change Elevation	Use Change Elevation to adjust the elevation of the ends of the host line. You can change the elevation value of any vertex and change the grade between vertices. Siteworks will update the sidewalk according to the elevation changes and then rebuild the base toposurface.
Change Type	Use Change Type to change the Soft Terrain family type applied to the feature. Siteworks will update the sidewalk with the new type settings and then rebuild the base toposurface.
Delete	Use Delete to delete the sidewalk and the corresponding host line.
Apply	Use Apply to apply all the changes made and rebuild the sidewalk mass forms and the base toposurface.
Cancel	Click on Cancel to cancel all the changes.

Quick Steps – Move the sidewalk

The following steps assume that you have already created a sidewalk.

1. From the Siteworks tab on the ribbon, select Sidewalk in the Modify panel.

Siteworks will display the host lines for all the sidewalks that have been placed in the model. You can then graphically select the host line for the sidewalk that you want to modify.

2. **Graphically select the sidewalk host line.**
3. **Click on the Move button.**
4. **Graphically pick the start (base) point.**
5. **Graphically pick the end point.**
6. **Press the <Esc>key on your keyboard or right-click and select Cancel to complete the move.**

You can make more than one move. Siteworks for Revit will apply the changes when you click Apply.

7. **Click the Apply button to commit the changes.**

Siteworks will apply the changes to the sidewalk and rebuild the base toposurface.

Modify Parking Lot

RIBBON: Siteworks – Modify – Parking Lot

ICON: 

Siteworks for Revit gives you the ability to control the parking lot toposurface by controlling the host line. To access these controls, you will need to enter the edit mode in Siteworks. Once you make the desired changes, Siteworks rebuilds the parking lot surface and will update any curbs that may be associated to it. Manual edits of the parking lot toposurface created by Siteworks will be lost when new features are created or when features are edited.



Option

Function

Move

Use Move to move the entire host line to a new position. Siteworks will prompt for the base point and then a second point to determine how to move the host line and then update the parking lot toposurface and rebuild the base toposurface.

Rotate

Use Rotate to rotate the entire host line. Siteworks will prompt for the rotation base point, the first direction point, and then the second direction point to determine the base point and rotation angle to update the host line and then update the parking lot toposurface accordingly and rebuild the base toposurface.

Add Vertex

Use Add Vertex to add more vertices to the host line. Siteworks will add the extra vertices to the host line and then update the parking lot toposurface according to the new geometry and then rebuild the base toposurface.

Delete Vertex

Use Delete Vertex to delete vertices from the host line. Siteworks will delete the vertices from the host line and then update the parking lot toposurface according to the new geometry and then rebuild the base toposurface.

Change Elevation

Use Change Elevation to adjust the elevation of the ends of the host line. You can change the elevation value of any vertex and change the grade between vertices. Siteworks will update the parking lot toposurface according to the elevation changes and then rebuild the base toposurface.

Option	Function
Change Type	Use Change Type to change the Soft Terrain family type applied to the feature. Siteworks will update the parking lot toposurface with the new type settings and then rebuild the base toposurface.
Add Breakline	Use Add Breakline to create hard breaks on the parking lot surface that help you define high and low points, grading planes, catch basin areas. When adding breaklines you will be in Siteworks draw mode. Breaklines can be added at a relative elevation from the current parking lot toposurface, at a constant elevation, or by grade.
Delete Breakline	Use Delete Breakline to delete defined breaklines in the parking lot surface.
Delete	Use Delete to delete the parking lot toposurface and the corresponding host line.
Apply	Use Apply to apply all the changes made and rebuild the base toposurface.
Cancel	Click on Cancel to cancel all the changes.

Quick Steps – Adding a break line to the parking lot toposurface

The following steps assume that you have a parking lot toposurface.

- 1. From the Siteworks tab on the ribbon, select Parking Lot in the Modify panel.**

Siteworks will display the host lines for all the parking lot toposurfaces that have been placed in the model. You can then graphically select the host line for the feature that you want to modify.

- 2. Graphically select the parking lot host line.**
- 3. Click on the Add Breakline button.**
- 4. Toggle Relative Elevation.**
- 5. Input the desired elevation in the Beginning Elevation field and click OK.**
- 6. Graphically pick the beginning point for the breakline.**

7. Graphically pick the second point off the breakline.

8. Click the Apply button to commit the changes.

Siteworks will apply the changes to the parking lot toposurface and rebuild the base toposurface.

FAMILY MANAGERS

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<i>Sidewalk Family Manager</i>	129
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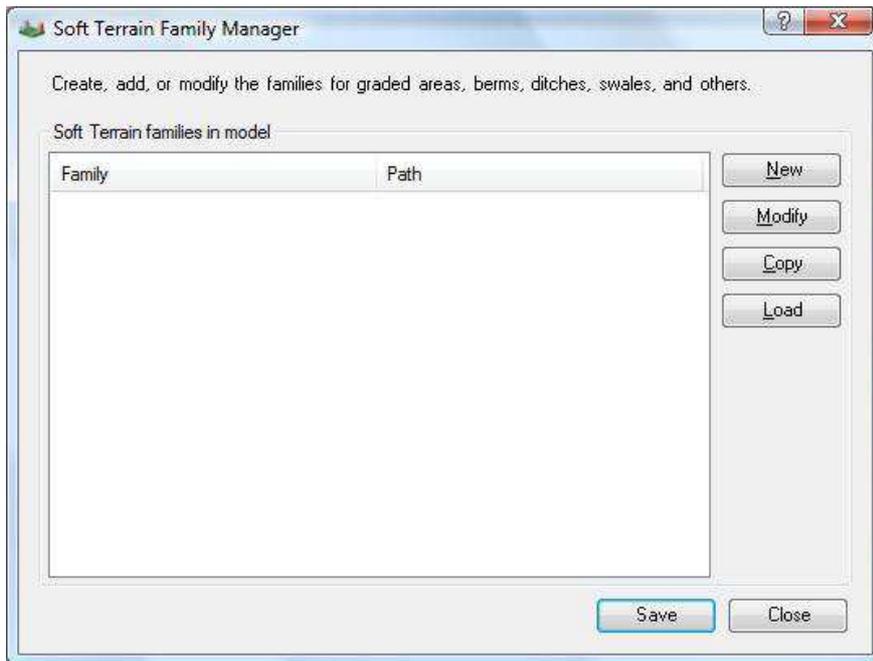
CHAPTER 5

Soft Terrain Family Manager

RIBBON: Siteworks – Family Managers – Soft Terrain

ICON: 

Use the Soft Terrain Family Manager to customize the soft terrain family types for your projects. At the type level, you can define the offset distance from the host line for the feature, the cut and fill slopes, and the projection increments.



Option

Family

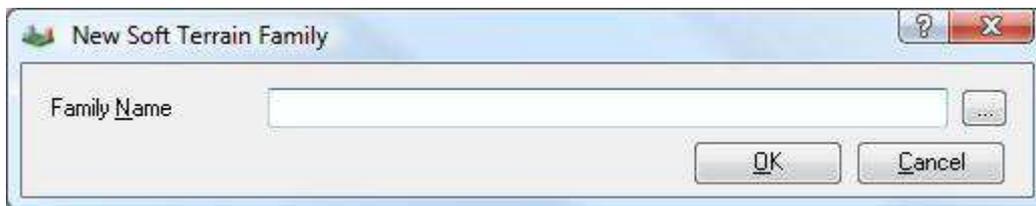
Function

The Family column displays the name of families currently loaded in the project.

Option	Function
Path	The Path column displays the location on your local or network drive from which the family was loaded.
New	Use New if you want to create a new family.
Modify	Use Modify to make changes to the family types.
Copy	Use Copy to make a copy of a family.
Load	Use Load to load a new family into the project.
Save	Use Save to save new families, changes to families, and loaded families into the project.
Close	Use close to close the family manager dialog box.

New Soft Terrain Family

Use new to create a new family. Once you have created and saved the new family, Siteworks for Revit will save the family file to the location you indicate and load it to the current project.



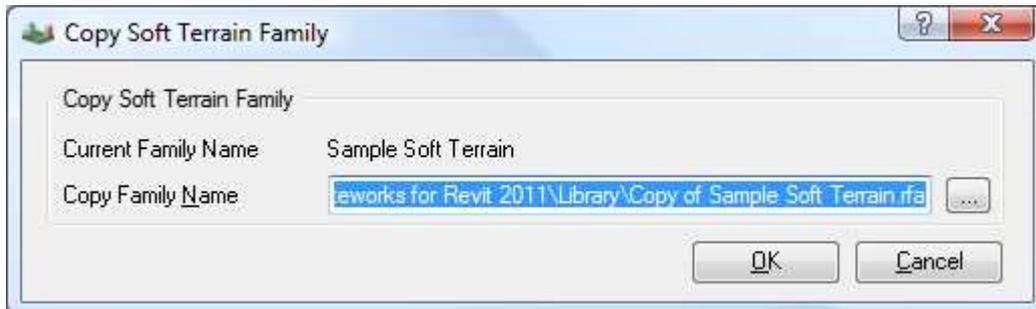
Option	Function
Family Name	Input the path and file name for the new family.
Browse button	Use the Browse button to select or create a folder on your local or network drive to store the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Modify Soft Terrain Family

Use modify family to modify the types found in the selected family. Clicking on the Modify button will open the Type Manager dialog box.

Copy Soft Terrain Family

Use copy family to make a copy of the selected family and then make changes to types for use in the project.



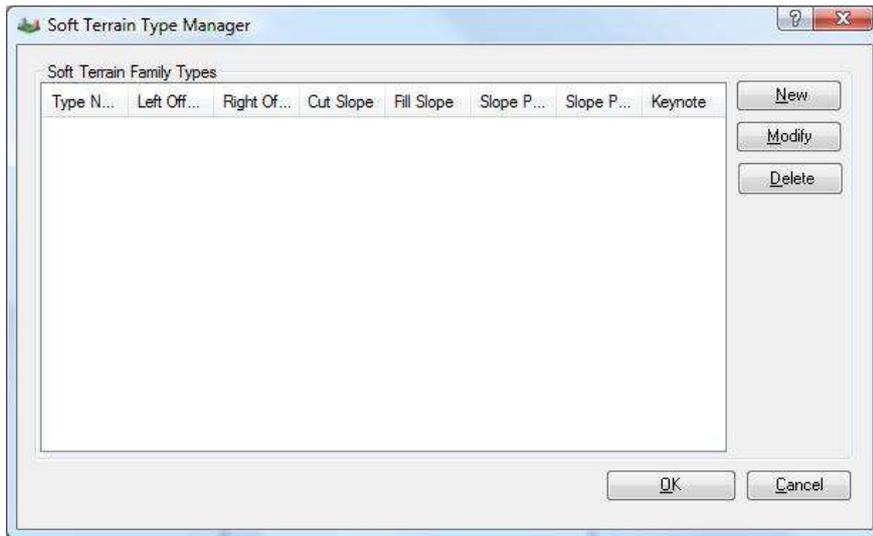
<i>Option</i>	<i>Function</i>
Current Family Name	Displays the name of the family that was highlighted on the Family Manager dialog box.
Copy Family Name	Input the new name and location to store the new family. This family will also be loaded into the project.
Browse button	Click the Browse button to open a browse window to search for the location for the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Load Soft Terrain Family

Use Load Family to load a family into your project from your local or network drive. Using this command will allow you make review and make any changes to the types if necessary. You can also load the family using the Revit load families command.

Soft Terrain Type Manager

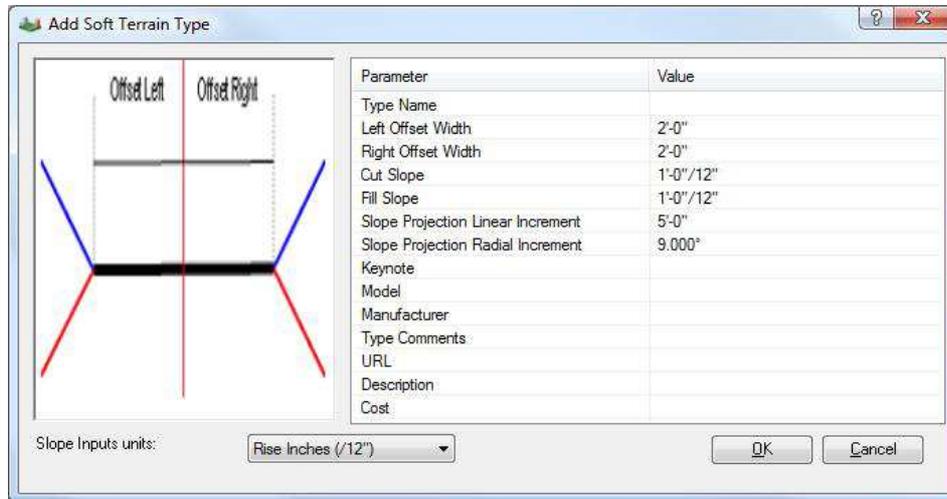
The type manager displays a list of all the types and parameters found in the selected family.



Option	Function
Family Type	Family Type displays a list of the types and parameters in the selected family.
New	Use New to add a new type to the current family.
Modify	Use Modify to make changes to the family type parameters.
Delete	Use Delete to delete a family type.
OK	Use OK to accept the changes made to the family types.
Cancel	Use Cancel to cancel out of the Family Type Manager dialog box.

New Soft Terrain Type

Use new type to add a new type to the family.



Option

Function

Type Name

Input the type name in this field.

Left Offset Width

Input the left offset from the host line for the soft terrain feature. Entering a value greater than 0 will create top of berms, ditch bottoms, swales. A value of 0 can be used to create V ditches. It can also be used to create grading plans and building pads that exactly follow the host line.

Right Offset Width

Input the right offset from the host line for the soft terrain feature. Entering a value greater than 0 will create top of berms, ditch bottoms, swales. A value of 0 can be used to create V ditches. It can also be used to create grading plans and building pads that exactly follow the host line.

Cut Slope

Input the desired cut slope value for Siteworks to use when tying to the proposed toposurface.

Fill Slope

Input the desired fill slope value for Siteworks to use the tying to the proposed toposurface.

Option

Function

Slope Projection Linear Increment

Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.

Slope Project Radial Increment

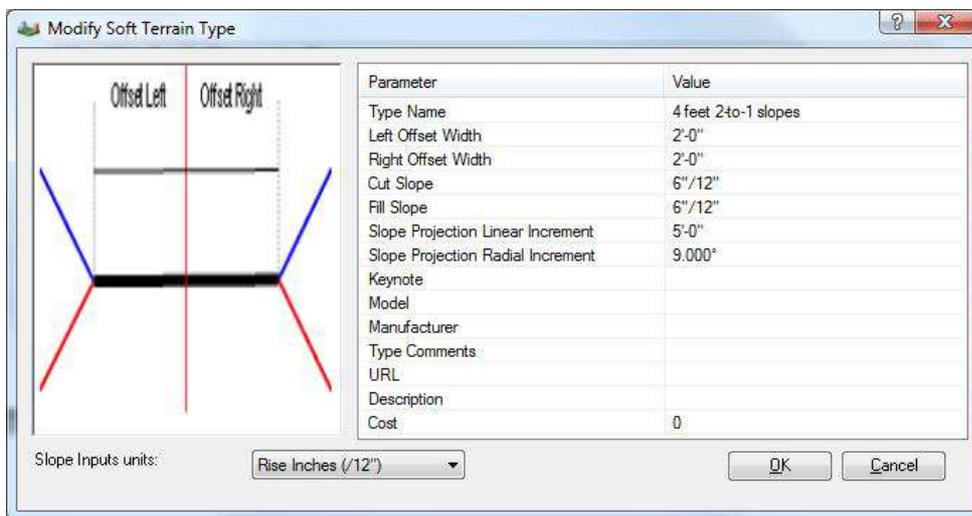
Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.

General Parameters

Siteworks will also let you define other standard Revit general parameters.

Modify Soft Terrain Type

Use modify type to make changes to the parameters on an existing family type.



Option

Function

Type Name

Input the type name in this field.

Option	Function
Left Offset Width	Input the left offset from the host line for the soft terrain feature. Entering a value greater than 0 will create top of berms, ditch bottoms, swales. A value of 0 can be used to create V ditches. It can also be used to create grading plans and building pads that exactly follow the host line.
Right Offset Width	Input the right offset from the host line for the soft terrain feature. Entering a value greater than 0 will create top of berms, ditch bottoms, swales. A value of 0 can be used to create V ditches. It can also be used to create grading plans and building pads that exactly follow the host line.
Cut Slope	Input the desired cut slope value for Siteworks to use when tying to the proposed toposurface.
Fill Slope	Input the desired fill slope value for Siteworks to use the tying to the proposed toposurface.
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

Delete Soft Terrain Type

Use the delete option to delete a type from the selected family.

Street Family Manager

RIBBON: Siteworks – Family Managers – Street

ICON: 

Use the Street Family Manager to customize the street family types for your projects. At the type level, you can define the number of lanes, lane width, cross-slope, whether the street has curb and gutters and the corresponding parameters, material assignment, slope projection settings and general parameters.



Figure 5-1 Street Family Manager

<i>Option</i>	<i>Function</i>
Family	The Family column displays the name of families currently loaded in the project.
Path	The Path column displays the location on your local or network drive from which the family was loaded.
New	Use New if you want to create a new family.

Option	Function
Modify	Use Modify to make changes to the family types.
Copy	Use Copy to make a copy of a family.
Load	Use Load to load a new family into the project.
Save	Use Save to save new families, changes to families, and loaded families into the project.
Close	Use close to close the family manager dialog box.

New Street Family

Use new to create a new family. Once you have created and saved the new family, Siteworks for Revit will save the family file to the location you indicate and load it to the current project.

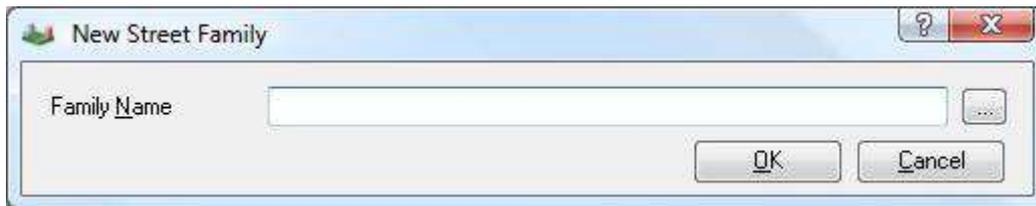


Figure 5-2 New Street Family Dialog Box

Option	Function
Family Name	Input the path and file name for the new family.

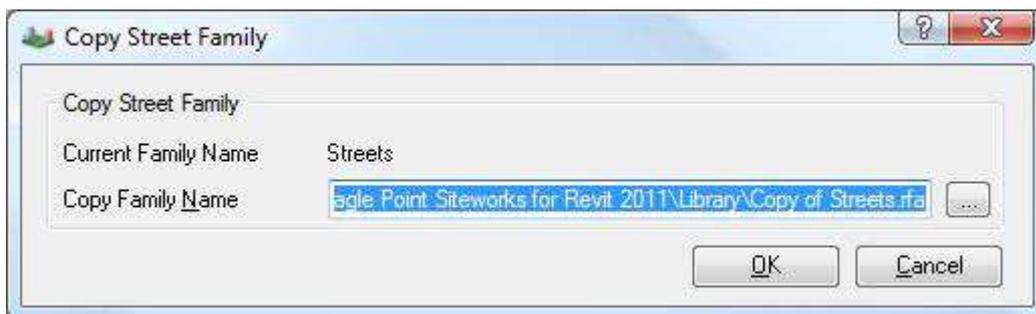
Option	Function
Browse button	Use the Browse button to select or create a folder on your local or network drive to store the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Modify Street Family

Use modify family to modify the types found in the selected family. Clicking on the Modify button will open the Type Manager dialog box.

Copy Street Family

Use copy family to make a copy of the selected family and then make changes to types for use in the project.



Option	Function
Current Family Name	Displays the name of the family that was highlighted on the Family Manager dialog box.

<i>Option</i>	<i>Function</i>
Copy Family Name	Input the new name and location to store the new family. This family will also be loaded into the project.
Browse button	Click the Browse button to open a browse window to search for the location for the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Load Street Family

Use Load Family to load a family into your project from your local or network drive. Using this command will allow you make review and make any changes to the types if necessary. You can also load the family using the Revit load families command.

Street Family Type Manager

The type manager displays a list of all the types and parameters found in the selected family.

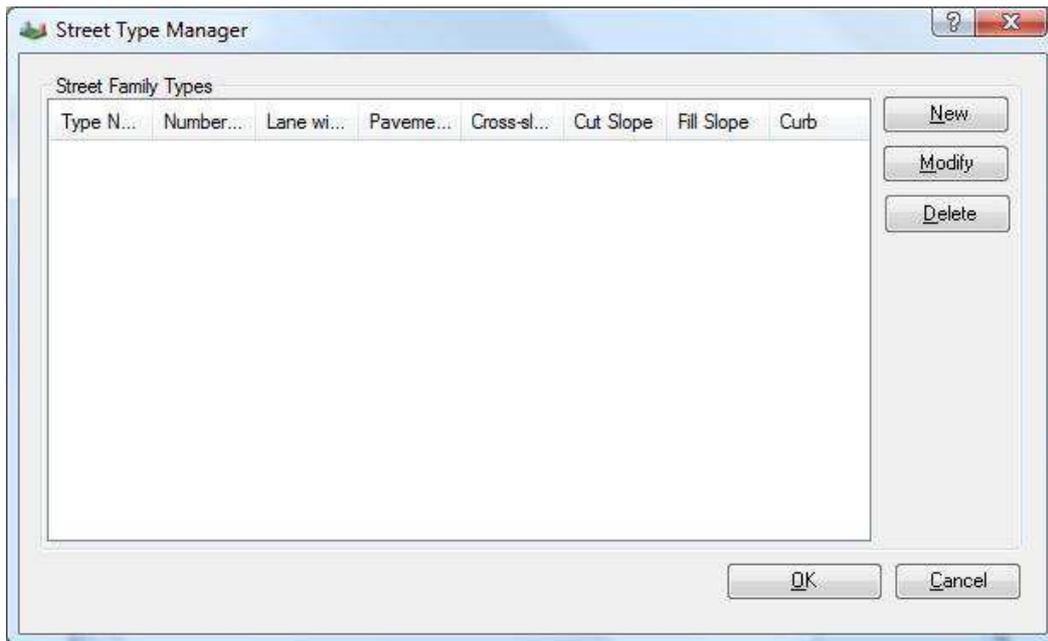
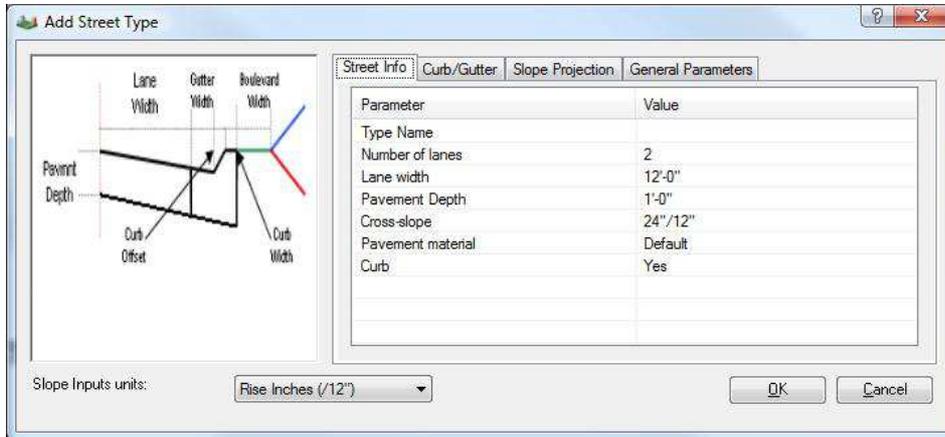


Figure 5-3 Street Type Manager

Option	Function
Family Type	Family Type displays a list of the types and parameters in the selected family.
New	Use New to add a new type to the current family.
Modify	Use Modify to make changes to the family type parameters.
Delete	Use Delete to delete a family type.
OK	Use OK to accept the changes made to the family types.
Cancel	Use Cancel to cancel out of the Family Type Manager dialog box.

New Street Type

Use new type to add a new type to the family.



General Street Settings

General street settings define the basic street profile settings such as number of lanes, lane width, pavement depth and whether or not the street has curb and gutter attached to it.

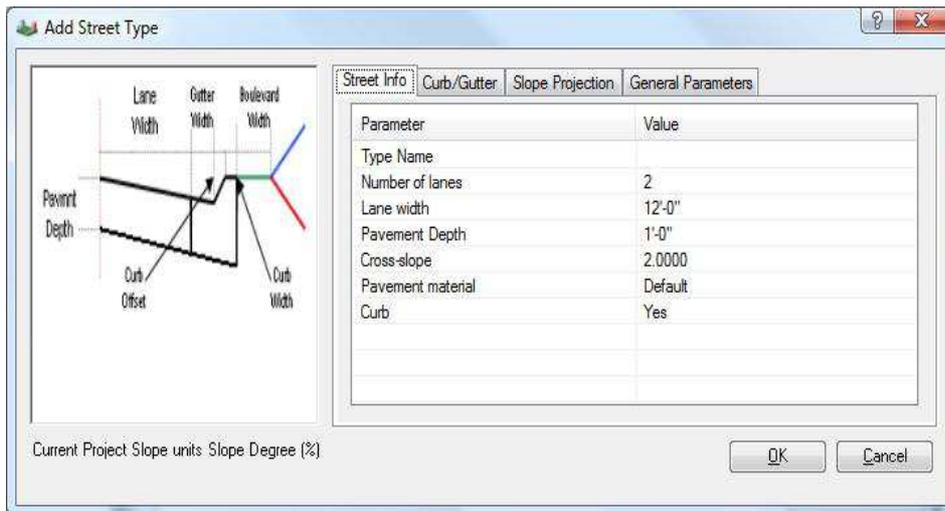


Figure 5-4 Add Street Type Dialog Box – Street Info Settings

Option	Function
Type Name	Input the type name in this field.
Number of Lanes	Input the number of lanes for the street type.
Lane Width	Input the lane width.
Pavement Depth	Input the street pavement depth.
Cross-slope	Input the street cross-slope.
Pavement Material	Assign the street pavement material.
Curb	Determine if the street will have curb and gutter.

Curb and Gutter Settings

If you determined that the street will have curb and gutter and toggled yes on general Street Info, use the Curb/Gutter to input the parameters for the curb and gutter.

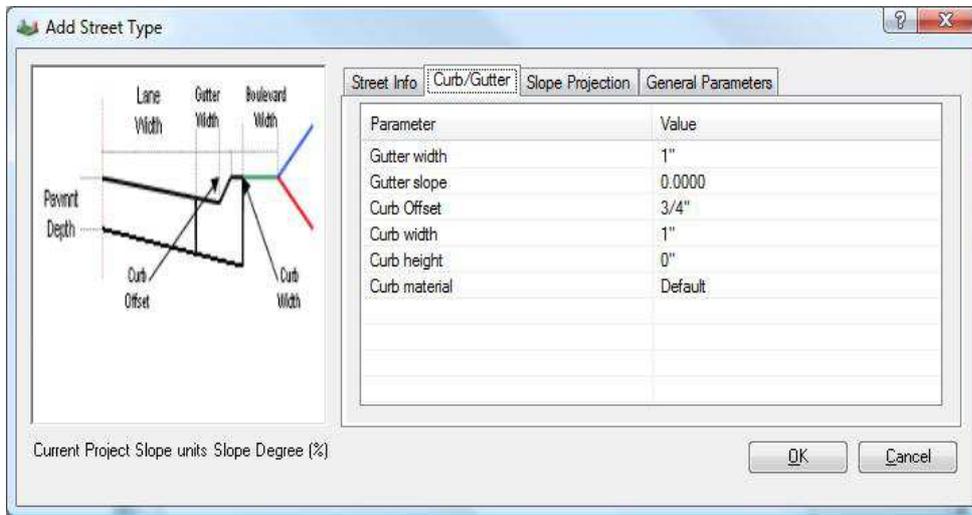


Figure 5-5 Add Street Type Dialog Box – Curb/Gutter Settings

Option	Function
Gutter Width	Input the gutter width.
Gutter Slope	Input the gutter slope.
Curb Offset	Input the curb offset or batter distance.
Curb Width	Input the curb width.
Curb Height	Input the Curb Height

Option	Function
Curb Material	Assign the curb and gutter material.

Slope Projection Settings

Enter the general slope projection settings for the street type in this tab. You can also determine if a boulevard (clear) zone is to be established.

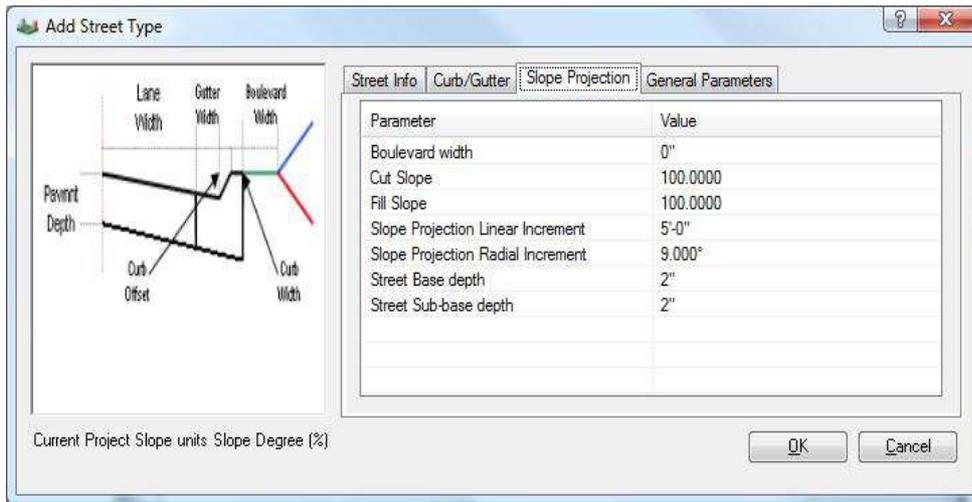


Figure 5-6 Add Street Type Dialog Box – Slope Projection Settings

Option	Function
Boulevard Width	Input the boulevard or clear zone distance.
Cut Slope	Input the desired cut slope value for Siteworks to use when tying to the proposed toposurface.
Fill Slope	Input the desired fill slope value for Siteworks to use the tying to the proposed toposurface.

<i>Option</i>	<i>Function</i>
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
Street Base Depth	Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.
Street Sub-base Depth	Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.

General Parameters

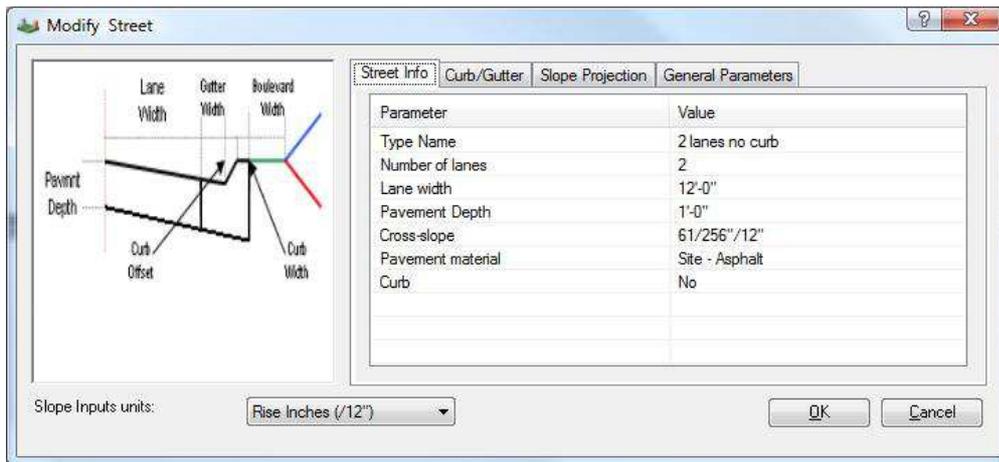
Input other Revit General Parameters in this tab.

Modify Street Type

Use modify type to make changes to the parameters on an existing family type.

General Street Settings

General street settings define the basic street profile settings such as number of lanes, lane width, pavement depth and whether or not the street has curb and gutter attached to it.



Option

Function

Type Name

Input the type name in this field.

Number of Lanes

Input the number of lanes for the street type.

Lane Width

Input the lane width.

Pavement Depth

Input the street pavement depth.

Cross-slope

Input the street cross-slope.

Pavement Material

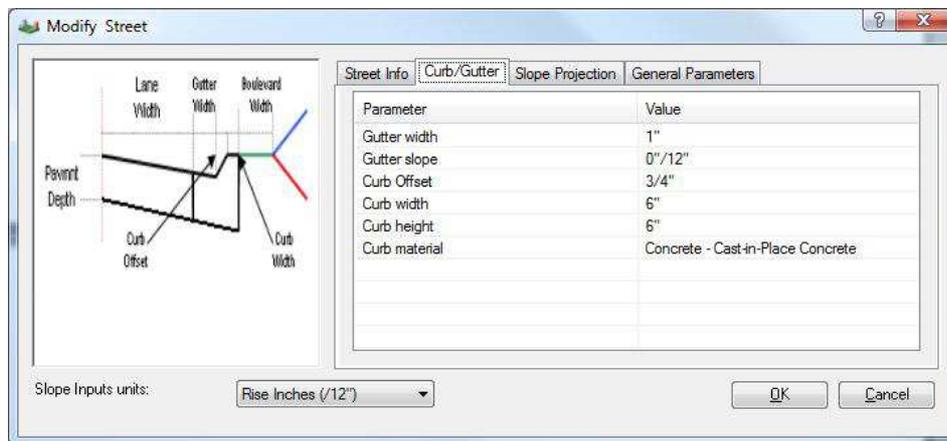
Assign the street pavement material.

Curb

Determine if the street will have curb and gutter.

Curb and Gutter Settings

If you determined that the street will have curb and gutter and toggled yes on general Street Info, use the Curb/Gutter to input the parameters for the curb and gutter.



Option

Function

Gutter Width

Input the gutter width.

Gutter Slope

Input the gutter slope.

Curb Offset

Input the curb offset or batter distance.

Curb Width

Input the curb width.

Curb Height

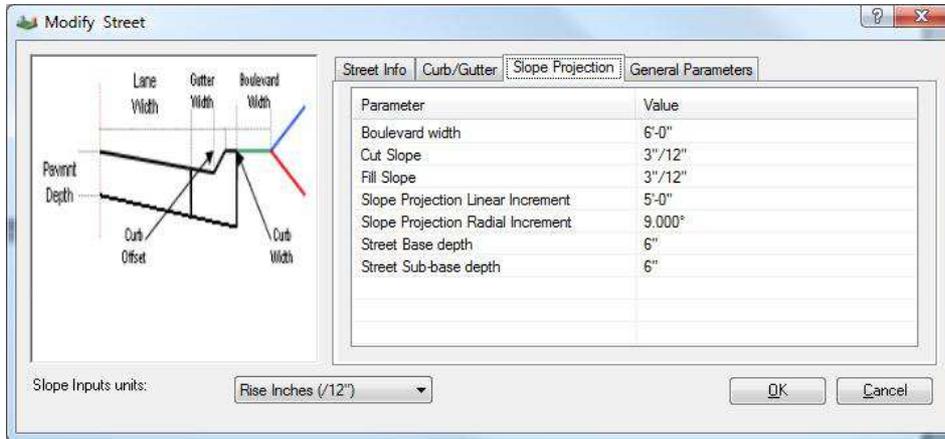
Input the Curb Height

Curb Material

Assign the curb and gutter material.

Slope Projection Settings

Enter the general slope projection settings for the street type in this tab. You can also determine if a boulevard (clear) zone is to be established.



Option

Function

Boulevard Width

Input the boulevard or clear zone distance.

Cut Slope

Input the desired cut slope value for Siteworks to use when tying to the proposed toposurface.

Fill Slope

Input the desired fill slope value for Siteworks to use the tying to the proposed toposurface.

Slope Projection Linear Increment

Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.

Slope Project Radial Increment

Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.

Street Base Depth

Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.

Option**Function****Street Sub-base
Depth**

Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.

General Parameters

Input other Revit General Parameters in this tab.

Delete Street Type

Use the delete option to delete a type from the selected family.

Curb Family Manager

RIBBON: Siteworks – Family Managers – Curb

ICON: 

Use the Curb Family Manager to customize the curb family types for your projects. At the type level, you can define the curb and gutter widths, height, slopes, material assignment and general parameters.



Option

Function

Family

The Family column displays the name of families currently loaded in the project.

Path

The Path column displays the location on your local or network drive from which the family was loaded.

New

Use New if you want to create a new family.

Modify

Use Modify to make changes to the family types.

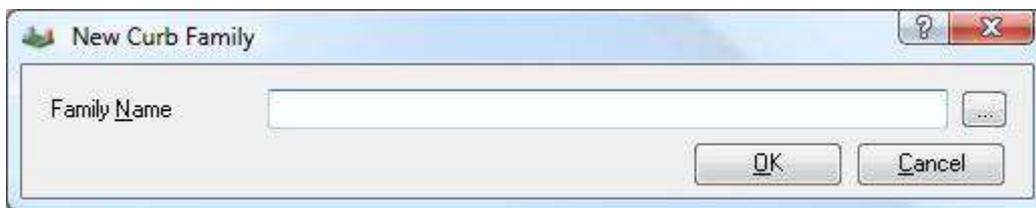
Copy

Use Copy to make a copy of a family.

Option	Function
Load	Use Load to load a new family into the project.
Save	Use Save to save new families, changes to families, and loaded families into the project.
Close	Use close to close the family manager dialog box.

New Curb Family

Use new to create a new family. Once you have created and saved the new family, Siteworks for Revit will save the family file to the location you indicate and load it to the current project.



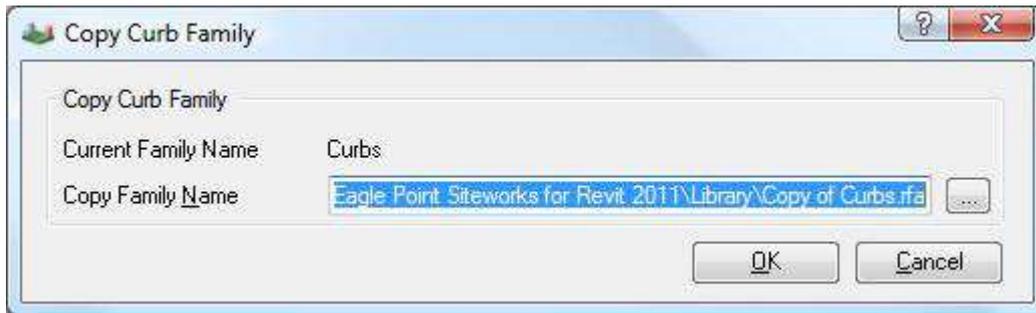
Option	Function
Family Name	Input the path and file name for the new family.
Browse button	Use the Browse button to select or create a folder on your local or network drive to store the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Modify Curb Family

Use modify family to modify the types found in the selected family. Clicking on the Modify button will open the Type Manager dialog box.

Copy Curb Family

Use copy family to make a copy of the selected family and then make changes to types for use in the project.



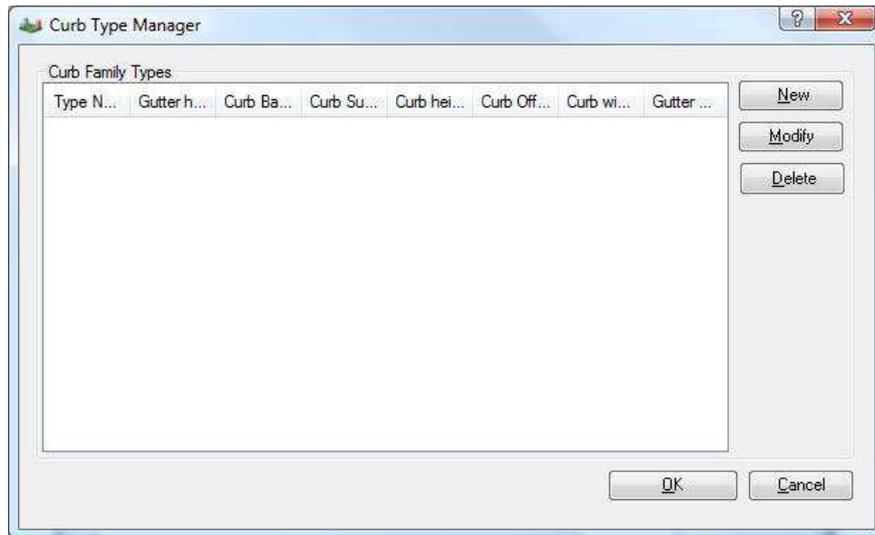
Option	Function
Current Family Name	Displays the name of the family that was highlighted on the Family Manager dialog box.
Copy Family Name	Input the new name and location to store the new family. This family will also be loaded into the project.
Browse button	Click the Browse button to open a browse window to search for the location for the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Load Curb Family

Use Load Family to load a family into your project from your local or network drive. Using this command will allow you make review and make any changes to the types if necessary. You can also load the family using the Revit load families command.

Curb Type Manager

The type manager displays a list of all the types and parameters found in the selected family.



Option

Function

Family Type

Family Type displays a list of the types and parameters in the selected family.

New

Use New to add a new type to the current family.

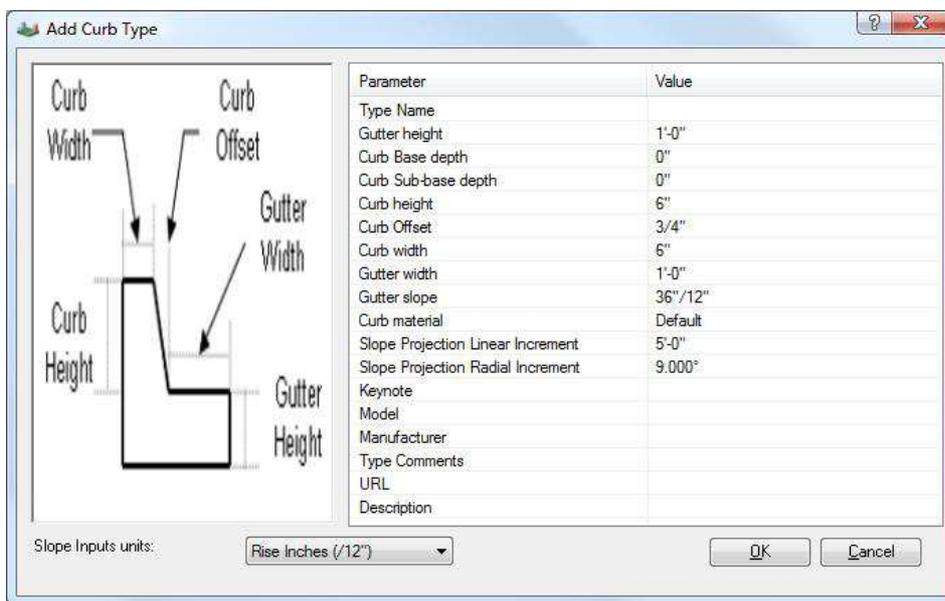
Modify

Use Modify to make changes to the family type parameters.

Option	Function
Delete	Use Delete to delete a family type.
OK	Use OK to accept the changes made to the family types.
Cancel	Use Cancel to cancel out of the Family Type Manager dialog box.

New Curb Type

Use new type to add a new type to the family.

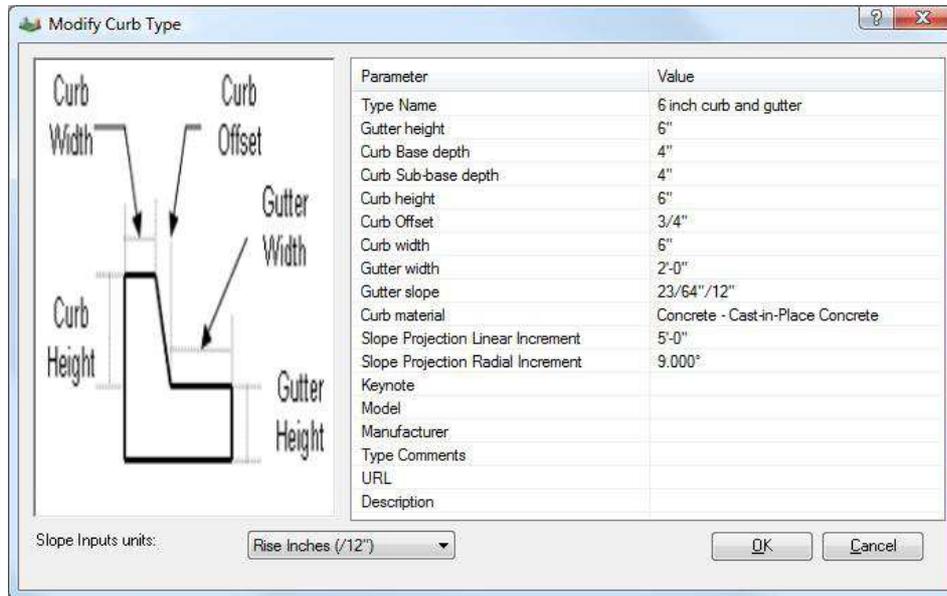


Option	Function
Type Name	Input the type name in this field.

<i>Option</i>	<i>Function</i>
Gutter Height	Input the desired gutter height. The sum of the curb and gutter heights defines the total curb and gutter height.
Curb Base Depth	Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.
Curb Sub-base Depth	Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.
Curb Height	Input the desired curb height.
Curb Offset	Input the offset or batter distance for the curb.
Curb Width	Input the curb width.
Gutter Width	Input the gutter width.
Gutter Slope	Input the gutter slope.
Curb Material	Input the curb and gutter material assignment.
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

Modify Curb Type

Use modify type to make changes to the parameters on an existing family type.



Option

Function

Type Name

Input the type name in this field.

Gutter Height

Input the desired gutter height. The sum of the curb and gutter heights defines the total curb and gutter height.

Curb Base Depth

Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.

Curb Sub-base Depth

Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.

<i>Option</i>	<i>Function</i>
Curb Height	Input the desired curb height.
Curb Offset	Input the offset or batter distance for the curb.
Curb Width	Input the curb width.
Gutter Width	Input the gutter width.
Gutter Slope	Input the gutter slope.
Curb Material	Input the curb and gutter material assignment.
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

Delete Curb Type

Use the delete option to delete a type from the selected family.

Retaining Wall Family Manager

RIBBON: Siteworks – Family Managers – Retaining Wall

ICON: 

Use the Retaining Wall Family Manager to customize the retaining wall family types for your projects. At the type level, you can define the wall height and width, whether the slopes should be projected from the top backside of the wall, slope projection settings, material assignment and general parameters.



Figure 5-7 Retaining Wall Family Manager

Option

Function

Family

The Family column displays the name of families currently loaded in the project.

Option	Function
Path	The Path column displays the location on your local or network drive from which the family was loaded.
New	Use New if you want to create a new family.
Modify	Use Modify to make changes to the family types.
Copy	Use Copy to make a copy of a family.
Load	Use Load to load a new family into the project.
Save	Use Save to save new families, changes to families, and loaded families into the project.
Close	Use close to close the family manager dialog box.

New Retaining Wall Family

Use new to create a new family. Once you have created and saved the new family, Siteworks for Revit will save the family file to the location you indicate and load it to the current project.



Figure 5-8 New Retaining Wall Family Dialog Box

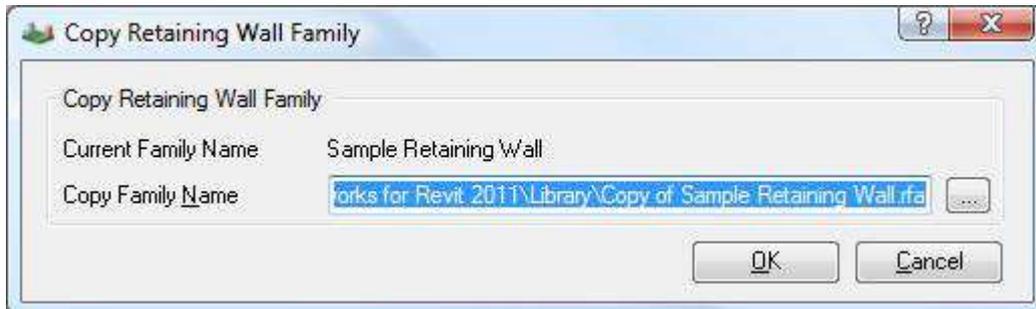
Option	Function
Family Name	Input the path and file name for the new family.
Browse button	Use the Browse button to select or create a folder on your local or network drive to store the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Modify Retaining Wall Family

Use modify family to modify the types found in the selected family. Clicking on the Modify button will open the Type Manager dialog box.

Copy Retaining Wall Family

Use copy family to make a copy of the selected family and then make changes to types for use in the project.



<i>Option</i>	<i>Function</i>
Current Family Name	Displays the name of the family that was highlighted on the Family Manager dialog box.
Copy Family Name	Input the new name and location to store the new family. This family will also be loaded into the project.
Browse button	Click the Browse button to open a browse window to search for the location for the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Load Retaining Wall Family

Use Load Family to load a family into your project from your local or network drive. Using this command will allow you make review and make any changes to the types if necessary. You can also load the family using the Revit load families command.

Retaining Wall Types

The type manager displays a list of all the types and parameters found in the selected family.

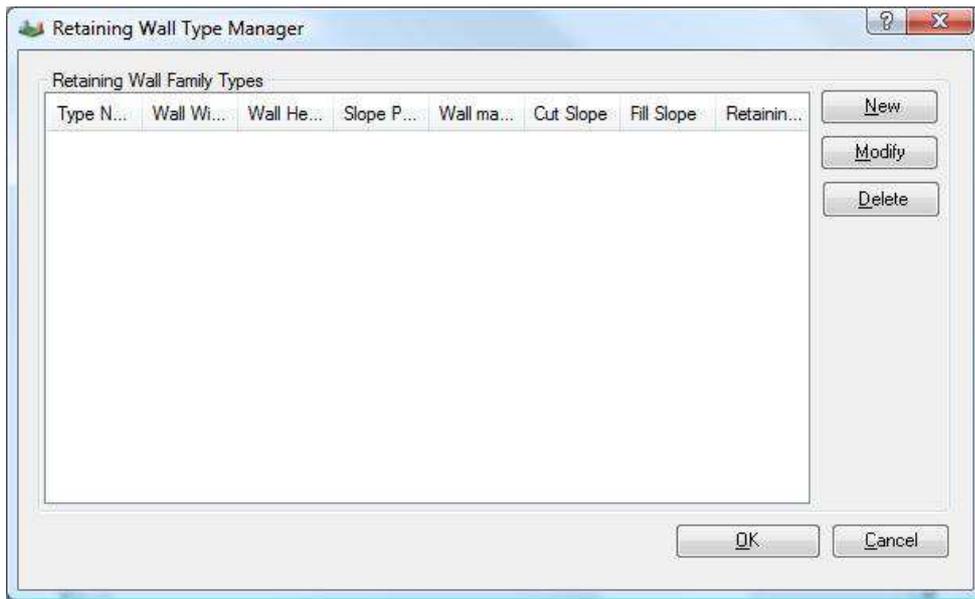


Figure 5-9 Retaining Wall Type Manager

<i>Option</i>	<i>Function</i>
Family Type	Family Type displays a list of the types and parameters in the selected family.
New	Use New to add a new type to the current family.
Modify	Use Modify to make changes to the family type parameters.
Delete	Use Delete to delete a family type.
OK	Use OK to accept the changes made to the family types.
Cancel	Use Cancel to cancel out of the Family Type Manager dialog box.

New Retaining Wall Type

Use new type to add a new type to the family.

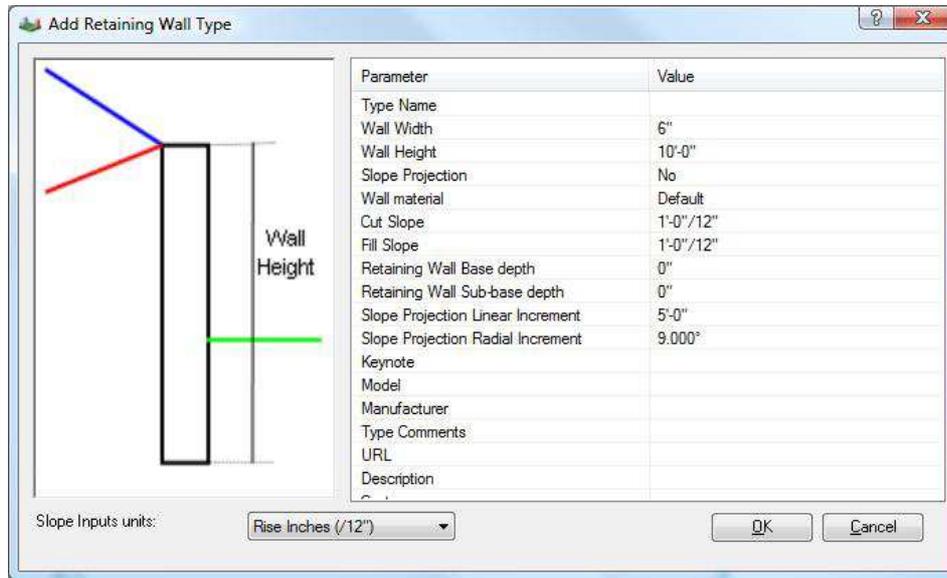


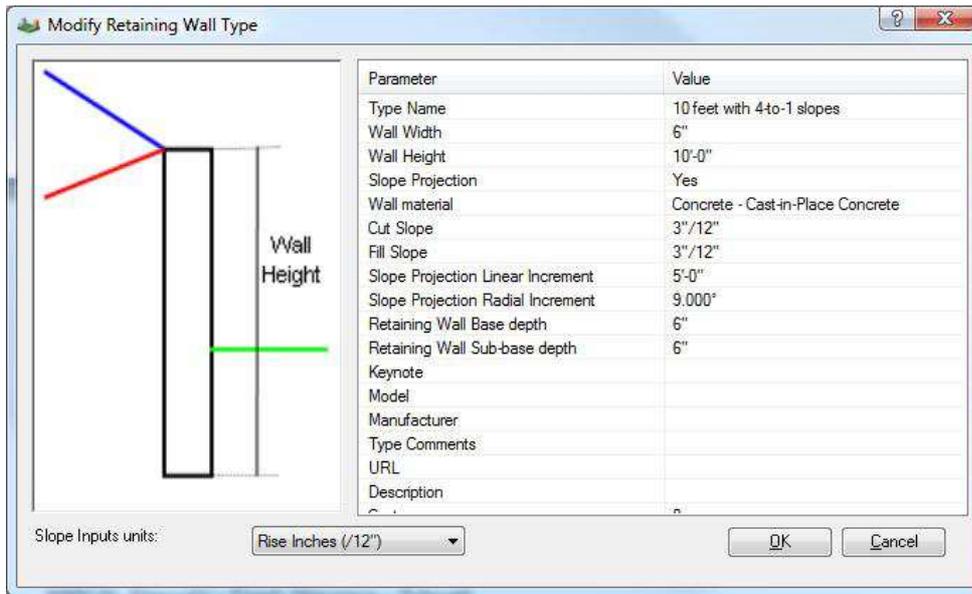
Figure 5-10 Add Retaining Wall Type Dialog Box

Option	Function
Type Name	Input the type name in this field.
Wall Width	Input the wall width.
Wall Height	Input the wall height.
Slope Projection	Select whether this type will project cut and fill tie slopes from the top-back side of the wall into the proposed base toposurface.
Wall Material	Assign the desired material for the wall.

<i>Option</i>	<i>Function</i>
Cut Slope	Input the desired cut slope.
Fill Slope	Input the desired fill slope.
Retaining Wall Base Depth	Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.
Retaining Wall Sub-base Depth	Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

Modify Retaining Wall Type

Use modify type to make changes to the parameters on an existing family type.



Option	Function
Type Name	Input the type name in this field.
Wall Width	Input the wall width.
Wall Height	Input the wall height.
Slope Projection	Select whether this type will project cut and fill tie slopes from the top-back side of the wall into the proposed base toposurface.
Wall Material	Assign the desired material for the wall.
Cut Slope	Input the desired cut slope.

Option	Function
Fill Slope	Input the desired fill slope.
Retaining Wall Base Depth	Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.
Retaining Wall Sub-base Depth	Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

Delete Retaining Wall Type

Use the delete option to delete a type from the selected family.

Sidewalk Family Manager

RIBBON: Siteworks – Family Managers – Sidewalk

ICON: 

Use the Sidewalk Family Manager to customize the sidewalk family types for your projects. At the type level, you can define the sidewalk width and pavement depth, slope projection settings, material assignment and general parameters.



Figure 5-11 Sidewalk Family Manager

<i>Option</i>	<i>Function</i>
Family	The Family column displays the name of families currently loaded in the project.
Path	The Path column displays the location on your local or network drive from which the family was loaded.
New	Use New if you want to create a new family.
Modify	Use Modify to make changes to the family types.

Option	Function
Copy	Use Copy to make a copy of a family.
Load	Use Load to load a new family into the project.
Save	Use Save to save new families, changes to families, and loaded families into the project.
Close	Use close to close the family manager dialog box.

New Sidewalk Family

Use new to create a new family. Once you have created and saved the new family, Siteworks for Revit will save the family file to the location you indicate and load it to the current project.

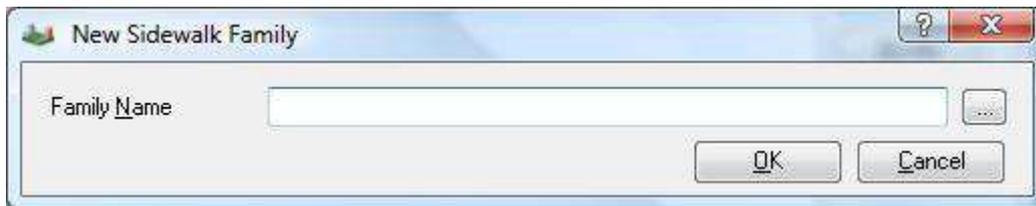


Figure 5-12 New Sidewalk Family Dialog Box

Option	Function
Family Name	Input the path and file name for the new family.
Browse button	Use the Browse button to select or create a folder on your local or network drive to store the new family.
OK	Click OK to accept the family name and path.

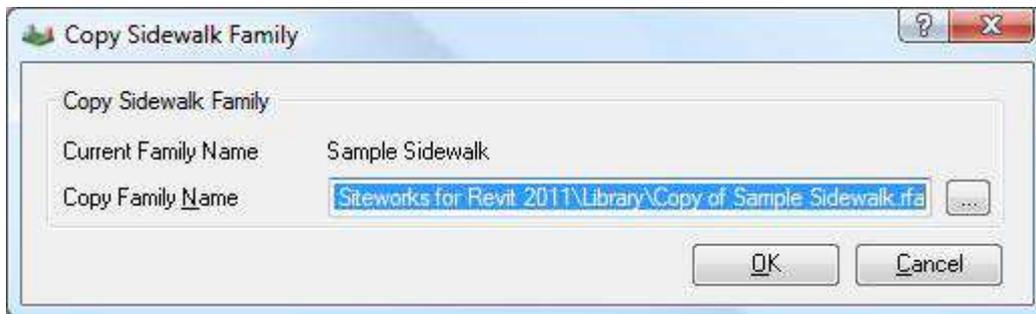
Option	Function
Cancel	Use Cancel to cancel out of the New family dialog box.

Modify Sidewalk Family

Use modify family to modify the types found in the selected family. Clicking on the Modify button will open the Type Manager dialog box.

Copy Sidewalk Family

Use copy family to make a copy of the selected family and then make changes to types for use in the project.



Option	Function
Current Family Name	Displays the name of the family that was highlighted on the Family Manager dialog box.
Copy Family Name	Input the new name and location to store the new family. This family will also be loaded into the project.
Browse button	Click the Browse button to open a browse window to search for the location for the new family.

Option	Function
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Load Sidewalk Family

Use Load Family to load a family into your project from your local or network drive. Using this command will allow you make review and make any changes to the types if necessary. You can also load the family using the Revit load families command.

Sidewalk Type Manager

The type manager displays a list of all the types and parameters found in the selected family.

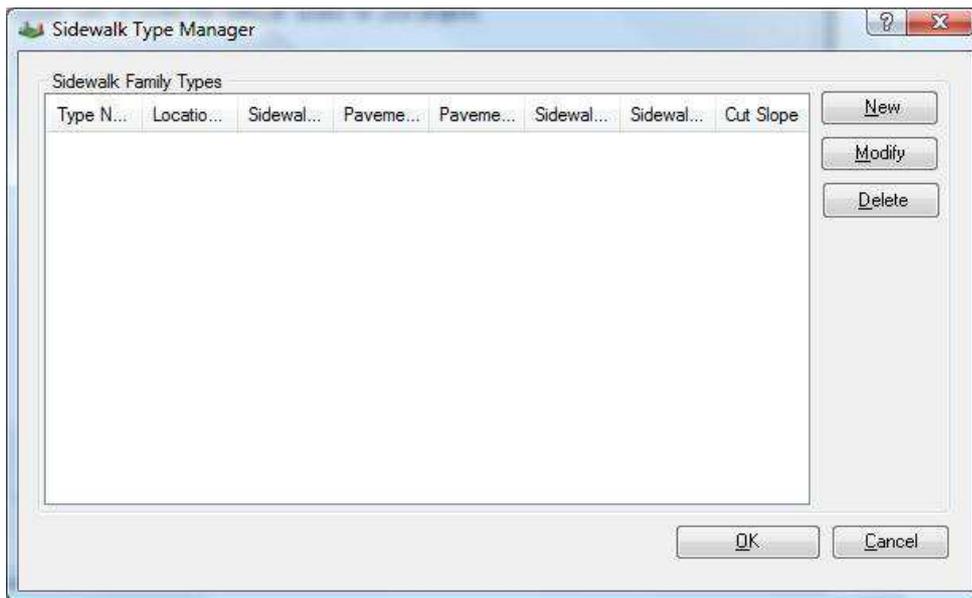


Figure 5-13 Sidewalk Type Manager

<i>Option</i>	<i>Function</i>
Family Type	Family Type displays a list of the types and parameters in the selected family.
New	Use New to add a new type to the current family.
Modify	Use Modify to make changes to the family type parameters.
Delete	Use Delete to delete a family type.
OK	Use OK to accept the changes made to the family types.
Cancel	Use Cancel to cancel out of the Family Type Manager dialog box.

New Sidewalk Type

Use new type to add a new type to the family.

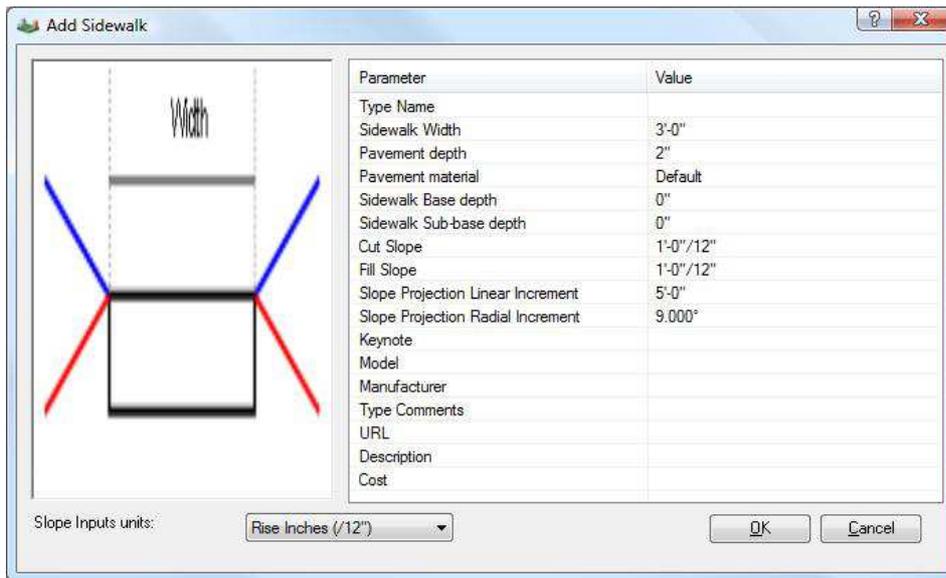


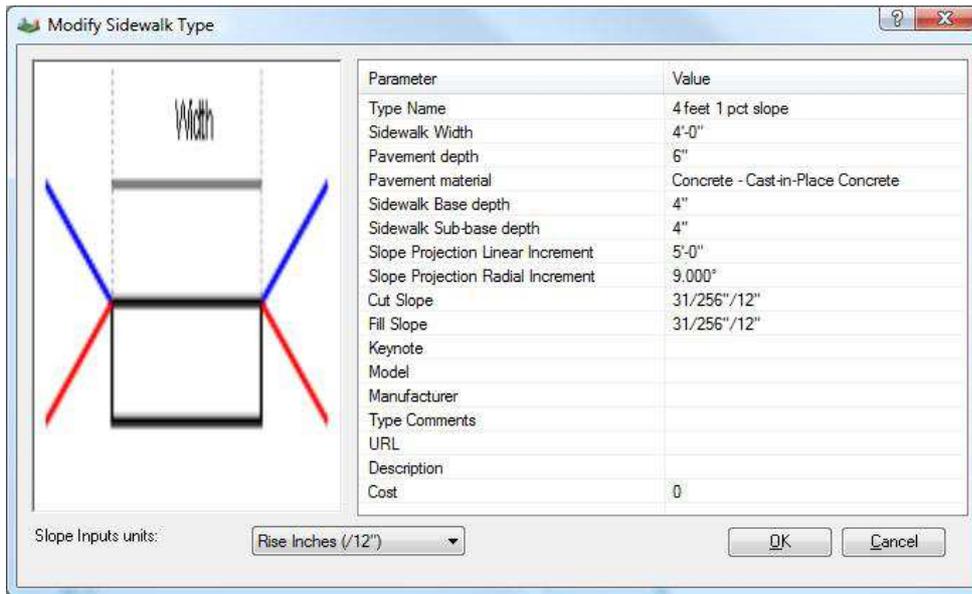
Figure 5-14 Add Sidewalk Dialog Box

Option	Function
Type Name	Input the type name in this field.
Sidewalk Width	Input the sidewalk width.
Pavement Depth	Input the sidewalk pavement depth.
Pavement Material	Assign the desired material for the sidewalk.
Sidewalk Base Depth	Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.
Sidewalk Sub-base Depth	Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.

<i>Option</i>	<i>Function</i>
Cut Slope	Input the desired cut slope.
Fill Slope	Input the desired fill slope.
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

Modify Sidewalk Type

Use modify type to make changes to the parameters on an existing family type.



Option

Function

Type Name

Input the type name in this field.

Sidewalk Width

Input the sidewalk width.

Pavement Depth

Input the sidewalk pavement depth.

Pavement Material

Assign the desired material for the sidewalk.

Sidewalk Base Depth

Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.

Sidewalk Sub-base Depth

Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.

Option	Function
Cut Slope	Input the desired cut slope.
Fill Slope	Input the desired fill slope.
Slope Projection Linear Increment	Slope Projection Linear Increment controls the distance along the lines at which Siteworks will project the cut and fill slopes and create ties to the proposed toposurface.
Slope Project Radial Increment	Slope Projection Linear Increment controls the angle at which Siteworks will project cut and fill slopes when an intersection between two lines is found.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

Delete Sidewalk Type

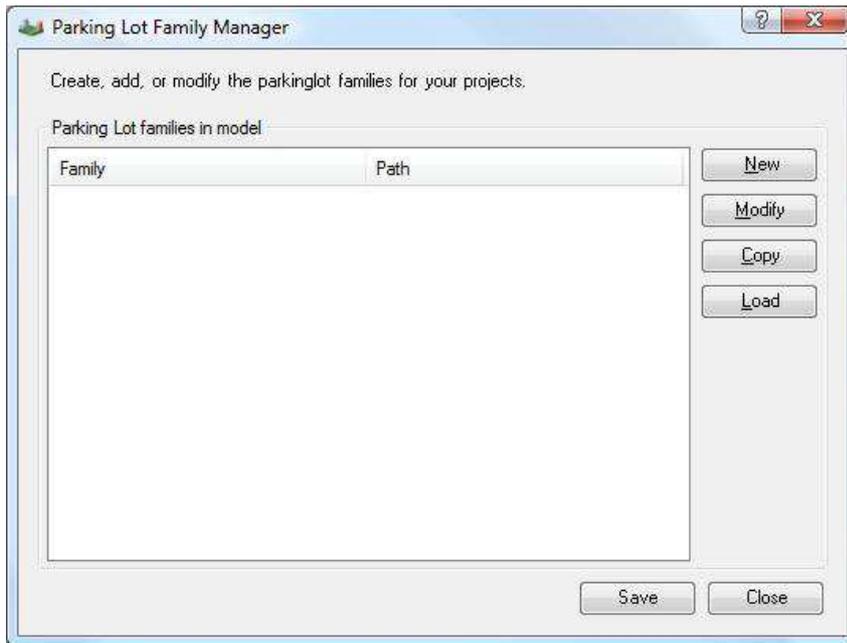
Use the delete option to delete a type from the selected family.

Parking Lot Family Manager

RIBBON: Siteworks – Family Managers – Parking Lot

ICON: 

Use the Parking Lot Family Manager to customize the parking lot family types for your projects. At the type level, you can define the pavement depth, material assignment and general parameters.



Option

Function

Family

The Family column displays the name of families currently loaded in the project.

Path

The Path column displays the location on your local or network drive from which the family was loaded.

New

Use New if you want to create a new family.

Modify

Use Modify to make changes to the family types.

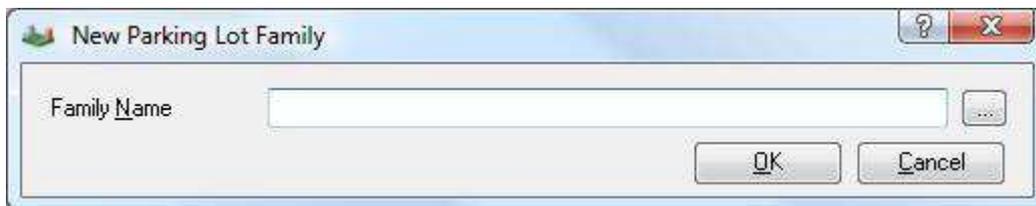
Copy

Use Copy to make a copy of a family.

Option	Function
Load	Use Load to load a new family into the project.
Save	Use Save to save new families, changes to families, and loaded families into the project.
Close	Use close to close the family manager dialog box.

New Parking Lot Family

Use new to create a new family. Once you have created and saved the new family, Siteworks for Revit will save the family file to the location you indicate and load it to the current project.



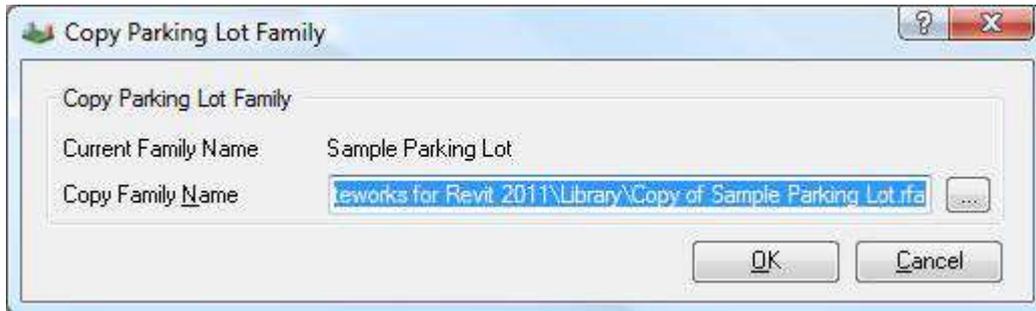
Option	Function
Family Name	Input the path and file name for the new family.
Browse button	Use the Browse button to select or create a folder on your local or network drive to store the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Modify Parking Lot Family

Use modify family to modify the types found in the selected family. Clicking on the Modify button will open the Type Manager dialog box.

Copy Parking Lot Family

Use copy family to make a copy of the selected family and then make changes to types for use in the project.



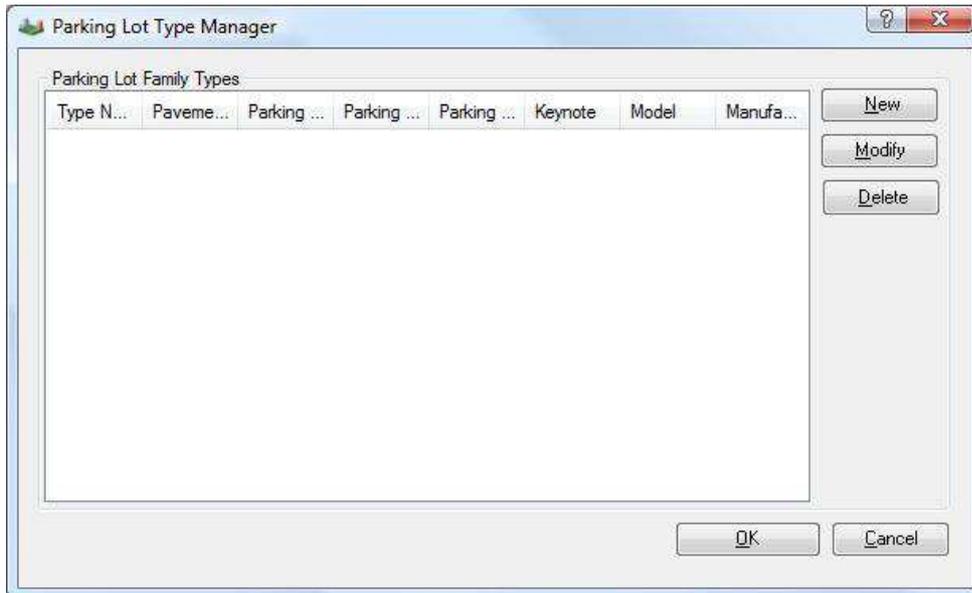
Option	Function
Current Family Name	Displays the name of the family that was highlighted on the Family Manager dialog box.
Copy Family Name	Input the new name and location to store the new family. This family will also be loaded into the project.
Browse button	Click the Browse button to open a browse window to search for the location for the new family.
OK	Click OK to accept the family name and path.
Cancel	Use Cancel to cancel out of the New family dialog box.

Load Parking Lot Family

Use Load Family to load a family into your project from your local or network drive. Using this command will allow you make review and make any changes to the types if necessary. You can also load the family using the Revit load families command.

Parking Lot Type Manager

The type manager displays a list of all the types and parameters found in the selected family.



Option

Function

Family Type

Family Type displays a list of the types and parameters in the selected family.

New

Use New to add a new type to the current family.

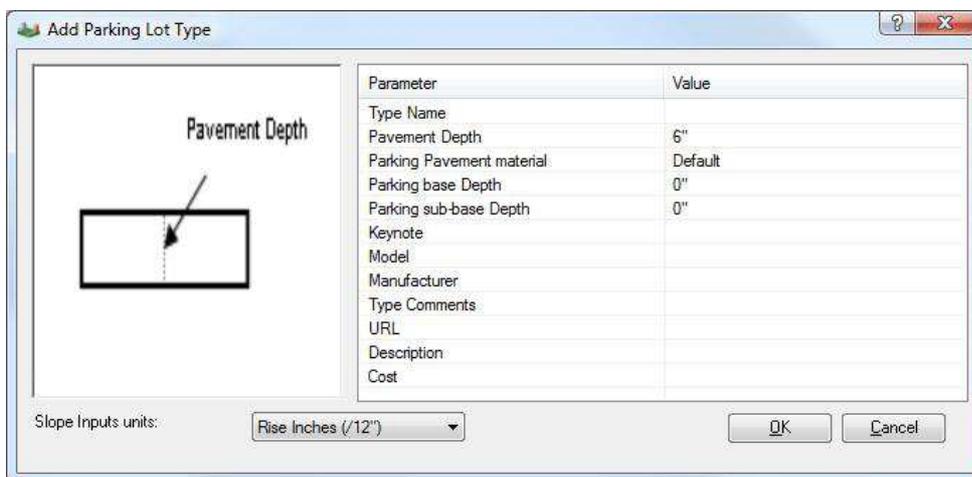
Modify

Use Modify to make changes to the family type parameters.

Option	Function
Delete	Use Delete to delete a family type.
OK	Use OK to accept the changes made to the family types.
Cancel	Use Cancel to cancel out of the Family Type Manager dialog box.

New Parking Lot Family Type

Use new type to add a new type to the family.



Option	Function
Type Name	Input the type name in this field.
Pavement Depth	Input the pavement depth for the parking lot surface.

Option**Function****Parking Pavement Material**

Assign the desired material for the parking lot toposurface.

Parking Base Depth

Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.

Parking Sub-base Depth

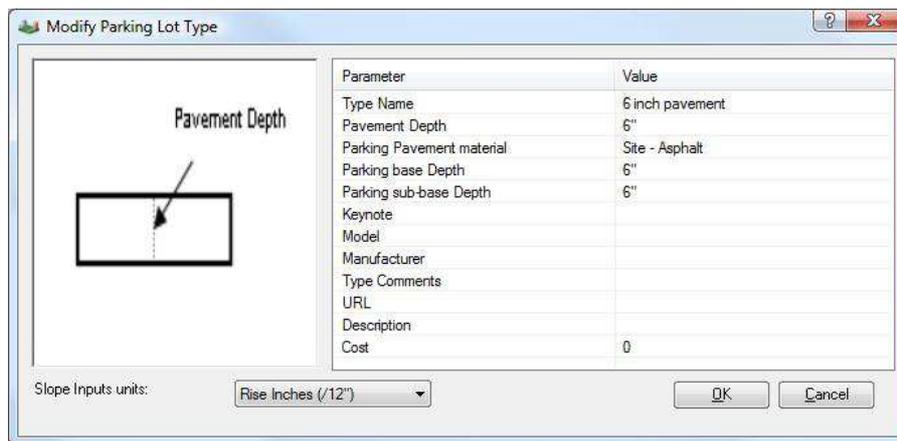
Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.

General Parameters

Siteworks will also let you define other standard Revit general parameters.

Modify Parking Lot Type

Use modify type to make changes to the parameters on an existing family type.

**Option****Function****Type Name**

Input the type name in this field.

<i>Option</i>	<i>Function</i>
Pavement Depth	Input the pavement depth for the parking lot surface.
Parking Pavement Material	Assign the desired material for the parking lot toposurface.
Parking Base Depth	Input a value in this field if you want Siteworks to calculate a general base material quantity. This quantity can be reported through Siteworks Reports command.
Parking Sub-base Depth	Input a value in this field if you want Siteworks to calculate a general sub-base material quantity. This quantity can be reported through Siteworks Reports command.
General Parameters	Siteworks will also let you define other standard Revit general parameters.

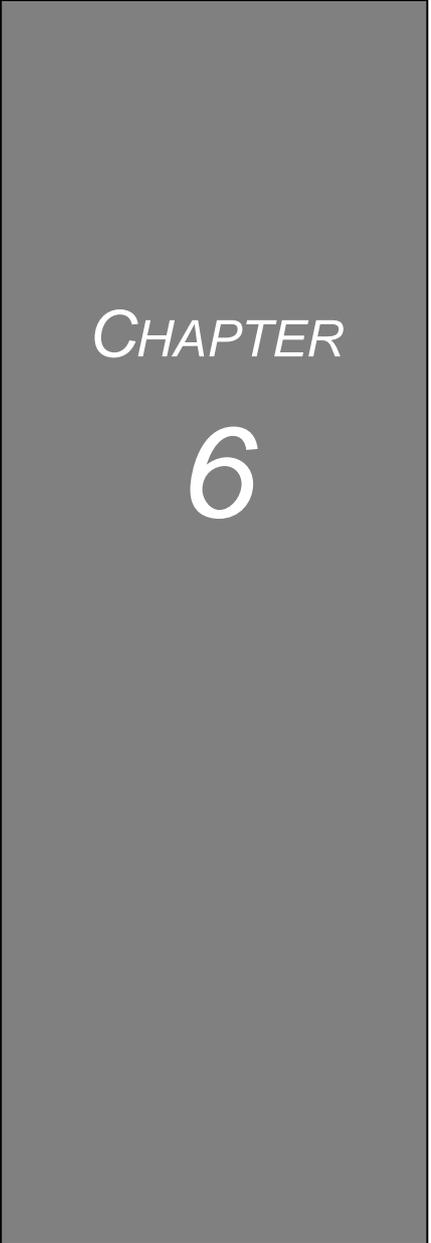
Delete Parking Lot Type

Use the delete option to delete a type from the selected family.

REPORTS

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CHAPTER 6

Annotate

RIBBON: Siteworks – Reports – Annotate

ICON: 

Use this command to annotate the grade and elevation of the components created through **Siteworks for Revit**. The annotation is created on the active view using Revit text notes. Elevation labels are placed at the location of the vertices of the host line. Grade labels are placed along the segments of the host line. If you modify the component, the annotation is updated.

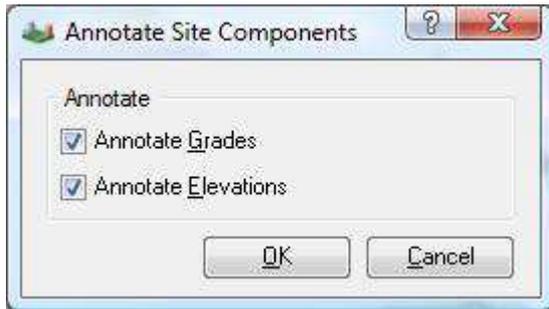


Figure 6-1 Annotate Site Components Dialog Box

Option	Function
Annotate Grades	Toggle this option to annotate the grade of the component.
Annotate Elevations	Toggle this option to annotate the elevation of the component.
OK	Click OK to run the command.
Cancel	Click Cancel to cancel the command.

Quick Steps - Annotate

1. Open the Revit view in which you want to annotate the component.
2. From the Siteworks tab on the ribbon, select Annotate.

The Annotate Site Components Dialog Box displays.

3. Toggle on Annotate Grades and Annotate Elevations. Click OK.
4. Select the host line of the component that you want to annotate.

Siteworks for Revit annotates the component's grades and elevations.

5. Repeat these steps to annotate other components.

Reports

RIBBON: Siteworks – Reports – Reports

ICON: 

Siteworks for Revit creates and places standard Revit elements when creating the components. This allows you to use Revit schedule views to report cut and fills and the mass forms. You can also use the Reports command to generate a complementary report of the areas and volumes of the streets, curbs, retaining walls, sidewalks and parking lots. This report gives you quick access to the quantities of these components in addition to an estimate of the base and sub-base material quantities. **Siteworks for Revit** uses the base and sub-base material depth parameters found on the streets, curbs, retaining walls, sidewalks and parking lot families to estimate these quantities.

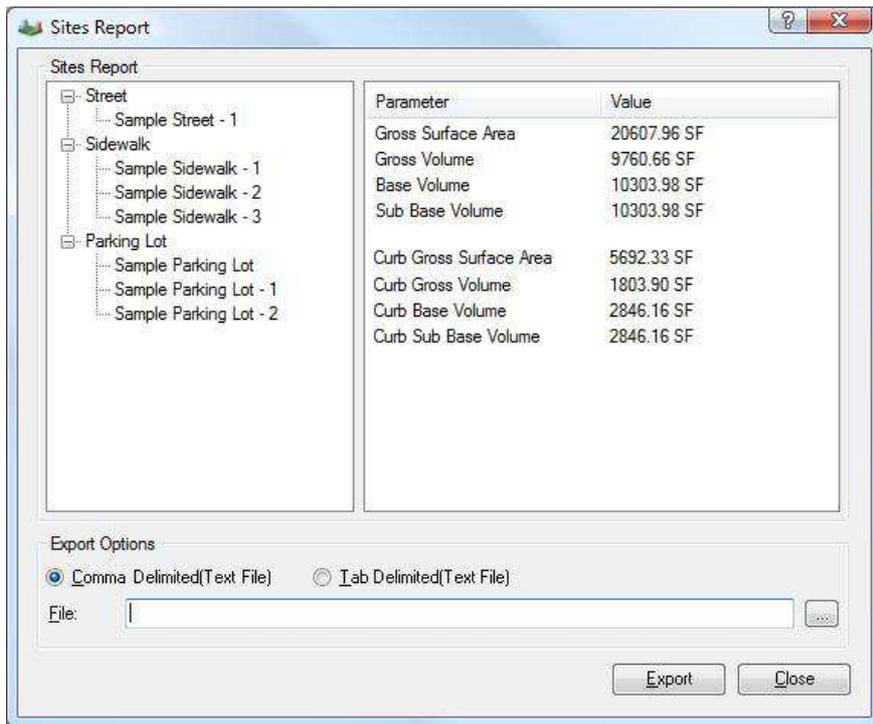


Figure 6-2 Site Reports Dialog Box

Option	Function
Types	The root level of the report displays the available Siteworks for Revit component types found in the project only. Select the desired type to review the results.
Instances	Expand the type branch of the report to review the result by instances of the components.
Comma Delimited	Choose Comma Delimited to export the report to a comma-delimited (CSV) file format.
Tab Delimited	Choose Tab Delimited to export the report to a tab delimited (TXT) file format.
File	Enter the path and file name for the report.

<i>Option</i>	<i>Function</i>
New File	Click on the New File button to select a location for the file.
Export	Click on Export to create the report.
Close	Click Close to close the dialog box.

Quick Steps – Reports

- 1. From the Siteworks tab on the ribbon, select Reports.**

The Site Reports Dialog Box displays. At the root level, the report displays the ***Siteworks for Revit*** component types found in the project.

- 2. Highlight the component type to display the area and volume results for it.**

Opening the tree for a type allows you to report the individual instance areas and volumes.

- 3. Select an export file format.**

- 4. Type a file name and path, or use the New File button to select a location, and then click on Export to export the report to a text file.**

PROGRAM FILES

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CHAPTER

7

Siteworks for Revit Program, Support and Libraries

Program Files

By default, **Siteworks for Revit 2014** is installed to the Program Files directory on your computer. This folder is typically:

C:\Program Files\Eagle Point Siteworks for Revit 2014\Program

Support, Libraries and Documentation

Siteworks for Revit 2014 needs full read and write access to the Siteworks for Revit Windows registry keys and to some initialization files. By default, the support, libraries and help files are installed to the following directories:

- Windows XP
 - Help and docs: C:\Program Files\Eagle Point Siteworks for Revit 2014\Help
 - Support: C:\Documents and Settings\All Users\Application Data\Eagle Point Siteworks for Revit 2014\Support
 - Libraries: C:\Documents and Settings\All Users\Application Data\Eagle Point Siteworks for Revit 2014\Libraries
 - Samples: C:\Documents and Settings\All Users\Application Data\Eagle Point Siteworks for Revit 2014\Samples

 - Windows Vista / Windows 7
 - Help and docs: C:\Program Files\Eagle Point Siteworks for Revit 2014\Help
 - Support: C:\Users\Public\Application Data\Eagle Point Siteworks for Revit 2014\Support
 - Libraries: C:\Users\Public\Application Data\Eagle Point Siteworks for Revit 2014\Libraries
 - Samples: C:\Users\Public\Application Data\Eagle Point Siteworks for Revit 2014\Samples
-

Revit Add-ins Folder

In order for **Siteworks for Revit 2014** to be loaded into your Revit 2014 session, an add-in file is added to your Revit add-ins directory. Typically, the location of the Revit 2014 add-ins folder is:

- Windows XP
 - C:\documents and settings\all users\application data\autodesk\revit\Addins\2014

- Windows Vista and Windows 7
 - C:\Program Data\Autodesk\Revit\Addins\2014

These paths can be modified during the installation process. If you installed from a Client Deployment setup, make sure to check with your system administrator for the location of these folders.

Contacting Technical Support

You can contact Eagle Point Technical Support via phone or email.

Phone:

If calling from North America → 800-477-0909

If calling from anywhere else → 563-556-8392

Email/Web Addresses:

support@eaglepoint.com

<http://www.eaglepoint.com>

About

RIBBON: Siteworks – Licensing – About

When contacting Eagle Point technical support, please have the version of **Siteworks for Revit** available. You can find this by clicking on the About button on the Licensing Panel.

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