

Autodesk® Revit® Keynotes Made Simple: Adding Custom Keynotes to Your Construction Documents

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Autodesk Revit software has great built-in tools for adding and managing keynotes. Often these tools are underused, possibly because most design firms prefer to use their own custom notes and the process of customizing the text within the notes file may initially seem daunting. In this class, we will look at the keynoting tools starting with the spec/keynote library and the tag as they exist out-of-the-box. Then we will quickly progress to customizing the notes as well as the keynote tag. You will see how keynotes (sometimes called flag notes) can associate a number or code and a corresponding spec or line of text to any object in a Revit model. You will also see how a simple text file of keyed notes can be easily customized to use any notes you need for your projects. We will also present options for streamlining this process.

This class will be useful to beginners, intermediate users, and anyone wanting to use keynotes. You should have some knowledge of Revit navigation and tagging. The steps outlined below apply to any flavor of Revit, to include Architectural, MEP, Structural, and the multi-discipline flavor of Revit. Most of the screenshots in this document have been taken from Revit 2013, or Revit MEP 2013.

Learning Objectives

At the end of this class, you will be able to:

- Setup a Revit file to use the Keynote tools
- Create basic keynotes in Revit
- Customize the keynote source file to suit each project
- Be aware of optional methods and tools to streamline the process
- Customize the keynote symbol

About the Speaker

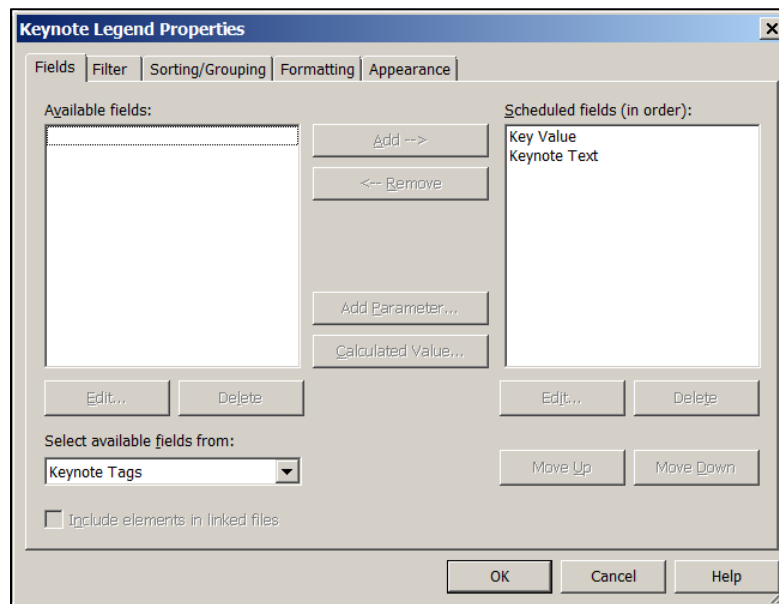
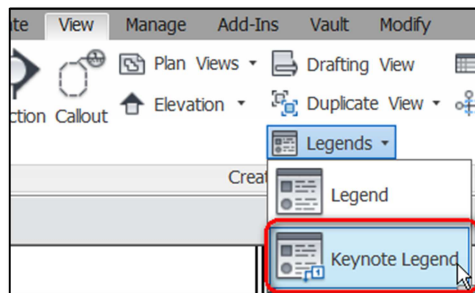
Tony has achieved his vast experience from serving as a Mechanical Engineer, Facilities manager, AutoCAD trainer, BIM Manager and Revit Ninja. Tony has found his calling providing training and technical services with CAD-1, focusing on clients using Revit MEP.

Tony credits his good teaching skills to "being a poor student." He says "I've always loved to learn new things, but I sometimes struggled with the standard classroom lectures. I really needed to do things myself before I could learn them. I try to apply the lessons that I've learned into my own teaching -- and reach my students with whatever methods work for them."

Preparation: Setup a Revit file to use the Keynote tools

To prepare a Revit project to use the built in Keynote tool, you will need to create a Keynote Legend within Revit.

With your project file open in Revit, create a Keynote Legend (View tab of the ribbon), as shown. You can change the name of the Keynote Legend or the properties in the dialog boxes that appear. In this example we will continue using the default values.



Revit will create a Keynote Legend view within your project, however the legend will be empty until the keynote tool is used to add individual keynote tags.

You can also add this newly created Keynote Legend to any/all applicable sheets at this time. Keynote Legends can be added or removed from sheets at any time.

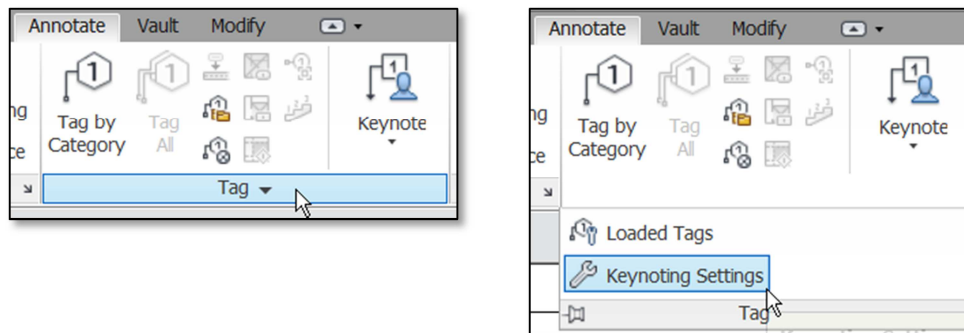
To continue preparing your Revit project to use the built in Keynote tool, you will need to associate a keynote file with your Revit file.

First you must have a text file prepared for use with the necessary data. Details on creating or customizing your own file will be covered in the next section. Autodesk provides two default text files that we can use for this example. The default files are typically located in this or a similar location:

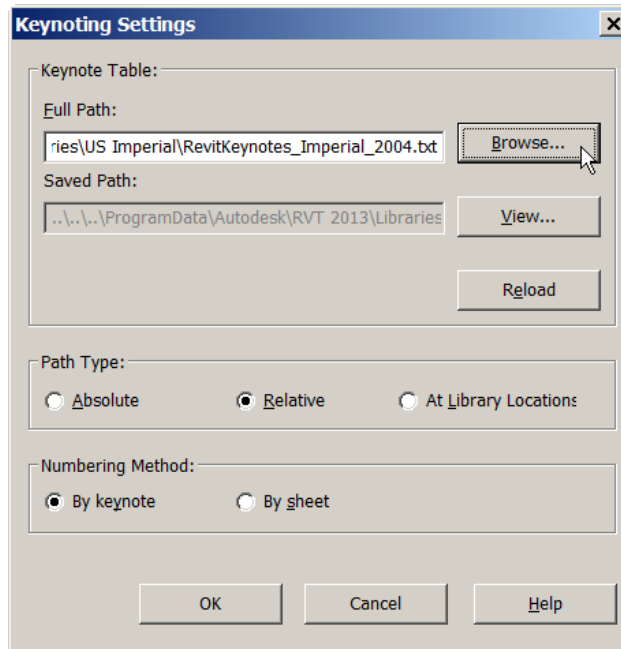
C:\ProgramData\Autodesk\RVT 2013\Libraries\US Imperial

We will use the file named "RevitKeynotes Imperial 2004.txt" for our initial example.

Next, we will tell Revit which text file to use with this particular project. In the Annotate tab of the ribbon, click the Tag flyout to access the Keynote Settings button, as shown.



Click the Browse button and navigate to the text file that has been prepared for use with the keynotes for this file. In this example we will use the default file specified above.



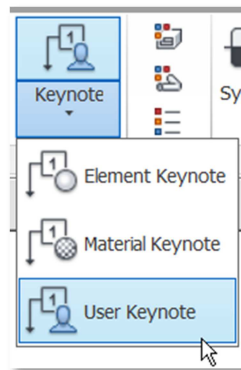
This keynote text file can be reloaded or changed to a different file at any time by returning to this dialog box. You can also locate your text file in the project folder for each project, according to your company standards. Each Revit file can only use one text file for keynotes, but multiple Revit files can each use a different text file, or they can share the same text file. For example: if you divide a project into three Revit files corresponding to three disciplines, the three Revit files can each use a different text file or they can all reference the same text file.

Your file should now be setup and ready to use keynotes.

Adding Keynotes to Views

Add keynotes to specific items in your floor plan or other views using the Keynote tool. These steps will be repeated many times, as often as you need to add a keynote to an item in your project.

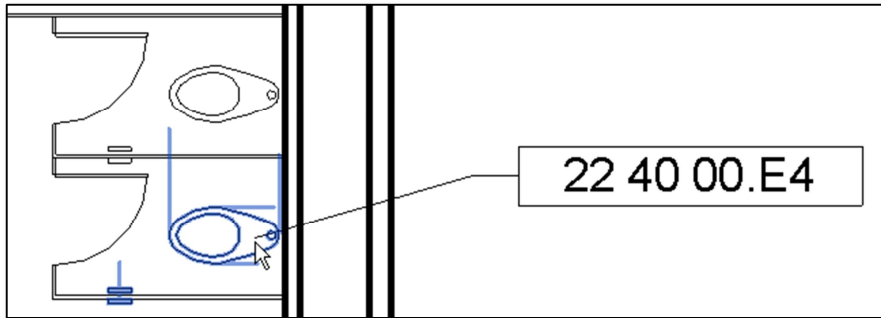
Navigate to the floor plan view or other view in which you want to add keynotes. Start the command by expanding the Keynote icon, and choosing the appropriate Keynote tool as shown. In our example we will choose the User Keynote tool.



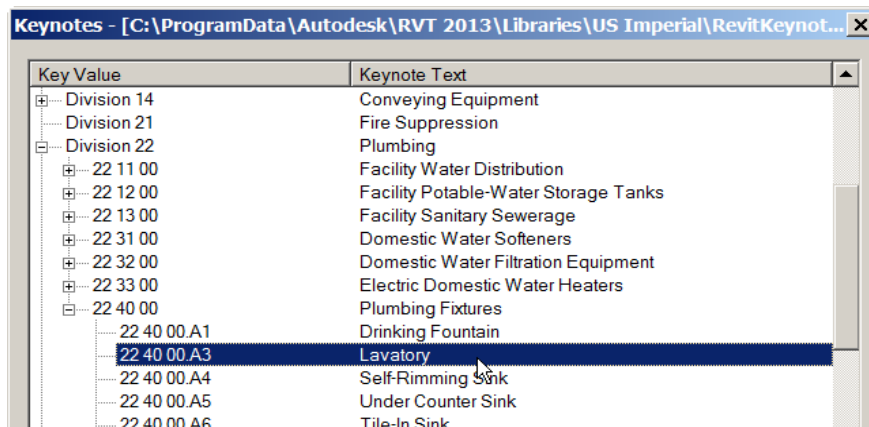
The User Keynote tool will allow you to choose a different note for every instance that you tag. The Element Keynote tool will refer to the associated parameter in the type properties for the element tagged, which you can change within the properties of the item. The Material Keynote will also pull from the keynote table text file, but retains its number every time you tag the same instance of the same family.

Note that if a keynote tag family has not been loaded into your project, you will be prompted to load one. The default tag “Keynote Tag.rfa” is located in the standard library in the Annotations folder. If needed, load the keynote tag family at this time. We will look at customizing this tag in a later section.

Click in the view to add the tag. While recent versions of Revit will allow keynote tags to be added in a blank space, it is strongly recommended that you tag a model object. Some functionality is lost if the tag is not associated with an element. Note that elements will highlight on the screen as you tag them.



When prompted, select the appropriate note and click OK.



The keynote numbers and text listed in this dialog box are taken directly from the text file that we loaded in the previous section. These values can be changed by changing them in the text file, as described in the next section. The file is not linked as a live file, but it is loaded into Revit. If the text file is changed, then it will require reloading into Revit to access the changes. The text file will also be automatically reloaded when the Revit project file is closed and reopened.

As keynote tags are added within a view, the corresponding keynotes & text are automatically added to the keynote legend on the same sheet. If the keynotes are removed or modified, the keynote legend on that same sheet also updates automatically to match the changes.

The default setting for the Keynote Legend in Revit will allow for all keynotes utilized within a project file to be listed on a sheet, even if a particular keynote is only used once. If the option to "Filter by sheet" is activated, then each keynote legend will only display the specific keynotes that appear on that same sheet where each instance of the keynote legend is used, as shown below.

Customize the keynote source file to suit each project

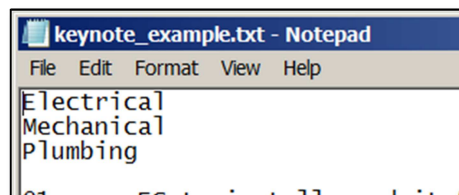
When necessary, the keynote text file can be changed to reflect the requirements of any project or company standards. The text file can be created directly in a text editor such as Windows notepad; or it can be exported from a spreadsheet as a tab-delimited text file format; or it can be created with a third-party program.

The default file that we have used as an example uses the CSI MasterFormat divisions/sections/titles. If this meets the keynoting needs for your project, then you can use the files(s) included with Revit and can skip this section.

Alternatively, the keynote text file can be customized or even created from scratch to meet the needs of various projects or company standards. There are rules for the syntax used in the keynote text file. Some of the rules are rigid, while other rules are flexible and may generate a warning in Revit but will still allow you to continue.

To start a new keynote text file that can be tailored for the specific needs of a particular project or a specific company, open a text editor such as Windows notepad. Save the file to the project folder or other location as appropriate. An example of this file is also included on the AU webpage for this class for downloading.

The keynote text file should start off by declaring the major headings/categories,. These are the parent values in the hierarchy. In the following examples the major categories will be the disciplines used in the project. The first few lines of the text file might look like this:



These major categories can consist of capital letters, lower case, spaces, or combinations thereof. The critical aspect is that when these categories are referenced later within the text file they must exactly match the spelling (including capitals, lower case, spaces, etc.) of these categories as they are listed at the top of the file.

The next portion of the text file, as well as all remaining portions, contains the child values. Each line of a child value must contain three pieces -- the keynote number, the keynote description, and its major category (parent value). Each of the three pieces must be separated by a tab. The parent value at the end of each line must match the exact spelling of a corresponding heading at the top of the text file. The parent value is used to categorize the keynotes when they are loaded into Revit. At this point the text file might look like this:

```
Electrical
Mechanical
Plumbing

01    EC to install conduit from secure panel to electrical room    Electrical
02    Install ceiling mounted duplex receptacle for projector      Electrical
03    Refer to spec section 123456 prior to installation of floor box    Electrical
04    As indicated, install GFCI-rated duplex receptacle on emergency power    Electrical
05    As indicated, install 15A GFCI-rated quad receptacle on emergency power    Electrical
06    # Locate supply grill 68" AFF. Mechanical
```

When loaded into a Revit project, the keynotes shown above would be organized as shown here:

Key Value	Keynote Text
Electrical	
01	EC to install conduit from secure panel to electrical room
02	Install ceiling mounted duplex receptacle for projector
03	Refer to spec section 123456 prior to installation of floor box
04	As indicated, install GFCI-rated duplex receptacle on emergency power
05	As indicated, install 15A GFCI-rated quad receptacle on emergency power

Note that each keynote number must be unique. There cannot be duplicate keynote numbers within a text file or within the Revit file. (The only way to have duplicate keynote numbers within a project is to utilize separate Revit files referencing separate text files, such as separating a project into a separate file for each discipline.) The keynote numbers can be combinations of letters, numbers, dashes, etc. The keynote numbers cannot include a tab character, but must be followed by a tab.

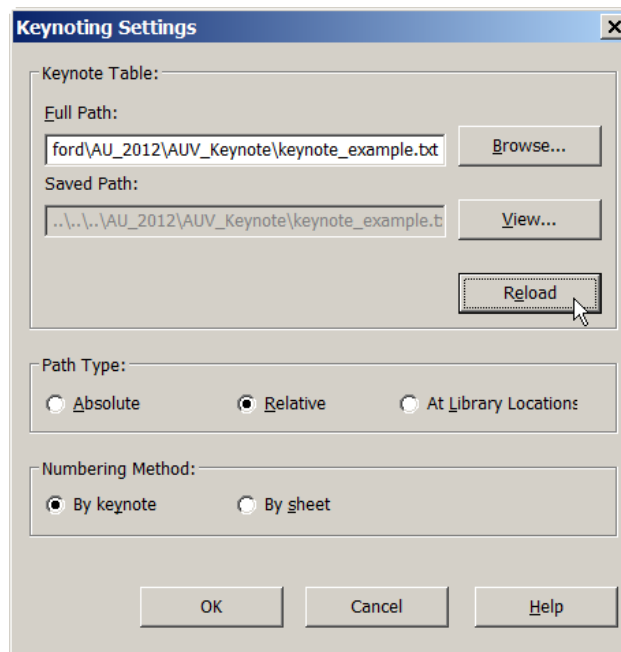
Keynote descriptions must follow the keynote number, separated only by a tab. The description can be as long or as short as necessary. The final item in each line is the keynote category designation for each keynote. If the description is longer than one line, ensure that word wrapping is enabled in the text editor – do not add hard returns within a description. Hard returns are only to be used at the end of a line, after the keynote category designation. Additional blank lines (aka: hard returns) between separate lines of keynote text are allowed, but not required.

The # character denotes a line of remarks. Anything contained in the line that begins with this hash character will be ignored by Revit. Remark lines are allowed, but not required.

Replace or update the keynote values in Revit after replacing or updating the text file.

If the keynote text file has been replaced/updated, you will need to load the new/updated text file into Revit. This will replace the keynote values that were previously loaded into Revit. This process is similar to the initial keynote setup.

Click the Tag flyout on the ribbon and select the Keynote Settings button, as described in the first section of this document. Click the Browse button and select the text file that has been created or changed. If the same text file will be used, and it has not been moved, you may simply click the Reload button rather than browse.



Optional methods and tools to streamline the keynoting process

In addition to using a text editor to create or change the keynote text file a spreadsheet can be used and the data exported to a text file.

A spreadsheet application can be used to create and organize the data for use in the keynoting process. This method will allow for automation of some of the fields and can reduce the time needed to create the keynote text file. It also reduces the likelihood of syntax errors in the text file.

The keynote data should be created in the spreadsheet following the same structure as described in the previous section. The lines at the top of the spreadsheet should be the parent values declaring the major headings/categories. In the examples used here these are typically disciplines. The remainder of the spreadsheet should contain the keynote values organized into three columns. The first column contains the keynote numbers. The second column contains the keynote description. The third column contains the heading or parent value for each line. A spreadsheet might look like this:

	A	B	C
1	ELCTRICAL		
2	MECHANICAL		
3	PLUMBING		
4	E01	CEILING MOUNTED VIDEO PROJECTOR. PROVIDE 120V 20A DUPLEX FLUSH MOUNTED IN CEILING WITHIN 12" OF REAR OF PROJECTOR. PROVIDE (1) LAN CONNECTION IN CEILING TO BE FED DOWN PROJECTOR POLE AND CONNECTED TO PROJECTOR.	ELECTRICAL
5	E02	RECESSED CEILING MOUNTED ELECTRIC PROJECTION SCREEN. PROVIDE 120V POWER AT LEFT END OF SCREEN CASE FACING THE SCREEN. REFER TO THE ENLARGED ROOM RCP FOR SCREEN SIZE.	ELECTRICAL
6	E03	PROVIDE POKE-THRU IN FLOOR. POKE-THRU TO INCLUDE POWER, (2) LAN CONNECTIONS, AND CONNECTION FOR LAPTOP VIDEO AND AUDIO.	ELECTRICAL
7	E04	RECESSED CEILING SPEAKERS. CABLING FOR SPEAKERS RUNS BACK TO LOCAL CB FOR CONNECTIVITY TO AV SYSTEM.	ELECTRICAL
8	E05	SUSPENDED CEILING MICROPHONES. EACH MICROPHONE TO HANG APPROXIMATELY 1-2 FEET BELOW THE CEILING AND EACH MICROPHONE CABLE SHALL BE HOME RUN BACK TO THE LOCAL CB FOR CONNECTIVITY TO THE AV SYSTEM.	ELECTRICAL

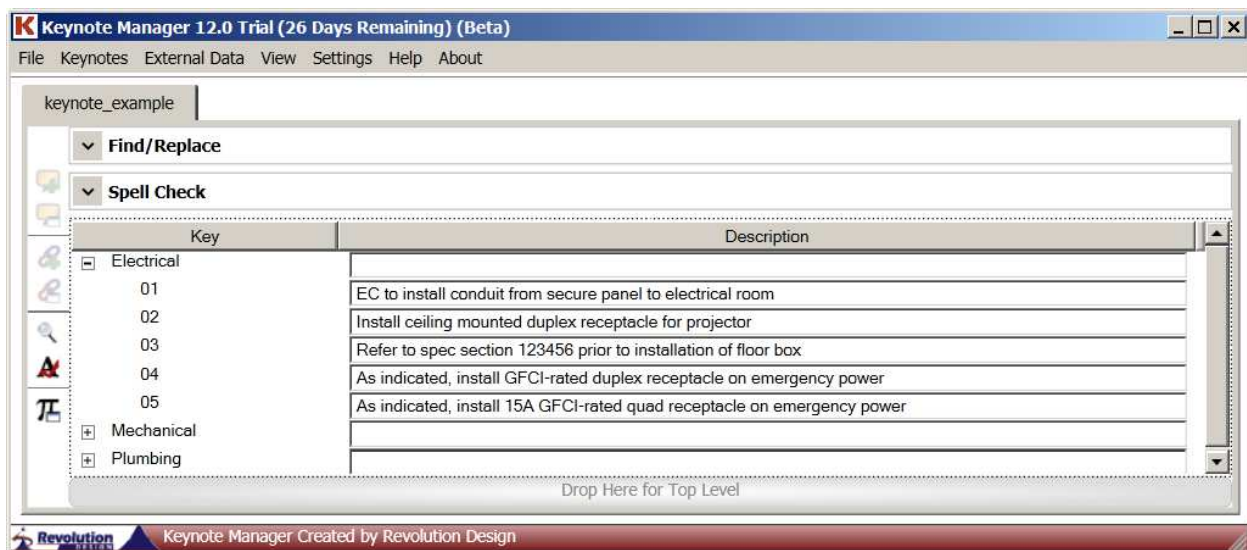
Once the keynote data is prepared in the spreadsheet, it must be exported to a tab-delimited text file. Choose Save-As, then set the type to Text (Tab delimited) as shown:



Another alternative to using a text editor is to utilize a third-party program.

A simple program, such as “Keynote Manager” (keynotemanager.revolutiondesign.biz), can be used to organize and update the keynote text file. An advantage to this method is that the program handles the syntax and other aspects of the file. It organizes your view of the file into a tree similar to how it appears in Revit. It can also allow multiple users to access the keynote file at the same time, if necessary.

Additional information is available from the program website(s).



Customize the keynote symbol

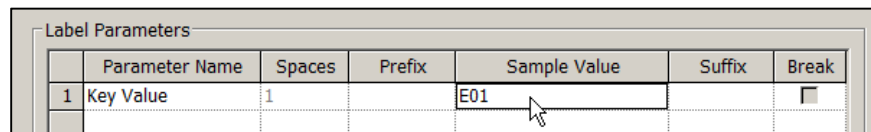
The default keynote symbol can be changed to accommodate the needs of a project or to match existing company standard symbols.

The keynote symbol in the keynote tag provided with Revit is a rectangle box designed to fit around the CSI MasterFormat numbering system. If used with a shorter numbering system – such as 1, 2, 3, etc. – the rectangle will be unnecessarily large. This box can be easily altered or replaced entirely. As this is an optional procedure, the steps included below are optional.

Open the family file “Keynote Tag.rfa” in the Revit family editor. This file can be renamed to comply with company naming standards. The tag should look something like this:

05 20 00.A239

Select the label and click Edit (or Edit Label) to open the label dialog box. Change the sample value to something that more closely represents your company standard for keynote numbering – such as “1” or “E01” as shown. (This is only a sample value and this step is not critical.) Click Ok to close this dialog box.



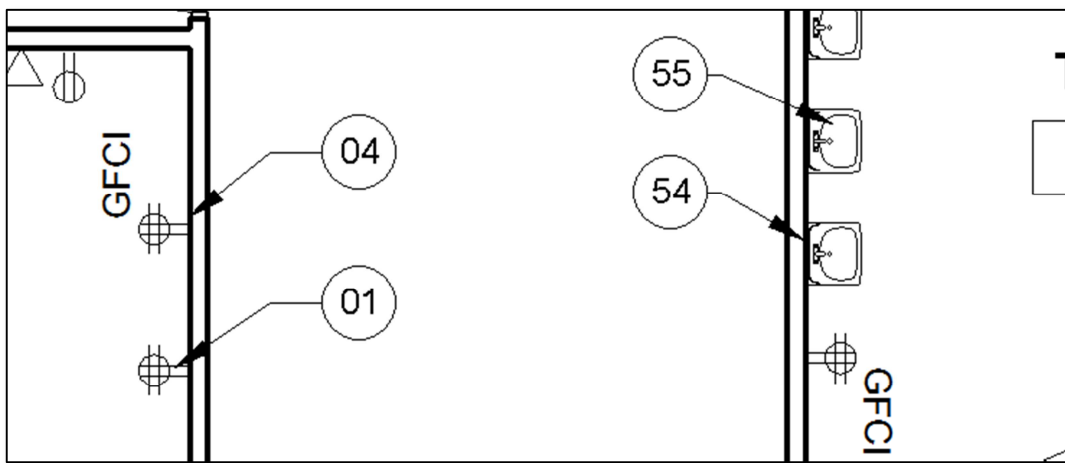
Select the lines that enclose the sample number and delete them. Be sure to select the lines, and not the label.

Using the Line tool, create a shape around the sample letters/numbers. Draw a circle, hexagon, triangle flag, or whatever shape corresponds to your company standards for the keynote symbol. Your keynote tag should now look something like this:



Save the updated keynote tag to your company Revit family library or other location as appropriate. Load the updated keynote tag family into your project. If the family file name is the same as a keynote tag already in use in the project then it will automatically update existing instances of the tag to reflect the changes to the symbol.

You should now have keynotes in your Revit project that conform to the requirements of your project, rather than the default out-of-the-box Revit keynotes.



Resources:

Keynote Manager tool - www.keynotemanager.revolutiondesign.biz

Keynoting in Revit webinar - www.youtube.com/watch?v=rTD91VxqPG8

Additional CAD-1 recorded webinars - www.cad-1.com/archives

Autodesk Help - www.wikihelp.autodesk.com/Revit/enu/2013