US Army Corps of Engineers®
Engineer Research and
Development Center

Guide Documentation

US Army Corps of Engineers Building Information Modeling Template for Revit

Template based on the 2012 Autodesk Revit Software

Architectural Template v1.1

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Special Thanks to contributions made by: Mobile, Sacramento, Seattle, Fort Worth, Omaha, Norfolk and Baltimore Districts and Autodesk.

Contents

Overview

The intent of the architectural template is to provide a framework to facilitate architectural design using Revit Architectural. This template was developed based on Revit Architecture 2012.

This guide is NOT intended to be a Revit tutorial, but rather assumes that the user has a sufficient level of proficiency to comprehend the template descriptions outlined in this guide.

Browser and View Organization

The default browser setting in the template is organized by Discipline, View Purpose, Family and Type, and sorted by Associated Level.

There are no predefined sub-disciplines in the architectural template.

Pre-defined view purposes are COORD (coordination views), WORK (working views), and DOC (documentation). View purpose is defined as a project parameter and the uppercase abbreviation is also appended to the end of the view names to facilitate user recognition of the views.

Browser View Type	Grouping	Filter
all	Default	<None>
Discipline_USACE	Group by: • Discipline • View Purpose • Family & Type Sort by: • Associated Level	<None>
Not on Sheets_USACE	Group by: • Family and Type • Then by: <None> • Then by: <None> Sort by: • View Name, Ascending	Filter by: Sheet Name = <None>
USACE View Purpose	Group By: • Discipline (all characters) • View Purpose (all characters) • Family and Type Sort By: • Associated Level	<None>

View Types:

To separate the purposes of the Views and make creating the Sheets simpler, separate View Purposes have been created for Working Views (where the main modeling is done),

the Documentation Views (where the Views set up for placing on sheets to for the official model Documents), Presentation Views (for required or accessory presentation Views) and Coordination Views (used to coordinate between the different disciplines).

Note*: the USACE Structural, USACE Documentation- Foundation, USACE Documentation-Framing, USACE Structural Analytical Stick, USACE Structural Foundation Plan & USACE Structural Framing Plan belong to the structural model.*

View Naming

Naming of views is to follow the standard set in the template and is divided into categories by: Floor Level_View Type_Region(use all if building not divided)_Function(depends on view purpose)_View Purpose

- Example A: 02_Floor Plan_East_Dimensions_Doc
- Example B: 00_North and South Elevations_All_Framing_Work
- Example C: 03_Mechanical Plan_West_HW Piping_Coor

Working Views

This set of Views are for the main design and layout of the building. These views are not intended for the final documents and are used to support the modeling process (although a View Purpose may be changed to a Documentation view). There are two site Views (*Site_Plan* and *Site_Plan_True_North*). The True North View is set with the Orientation of True North. The user should change the orientation of the building to the actual orientation of the project in this view. The correct location coordinates should also be set in this view.

Documentation Views

These views are finished and are intended to be placed on sheets. Documentation Views may contain scope box views for larger projects. Appropriate visibility and/or filter settings are applied to display only relevant categories and objects. These may need to be adjusted for specific needs.

There may be additional standards required by the owner or organization that is responsible for review of documentation. These should be followed in lieu of these standards.

Coordination Views

These views are for coordination and collaboration with separate disciplines : civil, interior design, structural, MEP, landscaping. Collision detection between disciplines would be done here.

View Filters

View Filters are used in the Life Safety plans to show color and patterns for walls that have a Fire and /or Smoke rating in the Fire Rating parameter under Identity Data section of the Wall Family (this is a default "Type" parameter and is built into the standard version of Revit Architecture "Wall" families). Refer to Appendix "G" for details.

Tip: Note that the view filters list in Revit cannot be sorted. They are listed in the order they were created.

Note: For all USACE Projects, CAD and BIM requirements that are part of the work contract supersede these standards and settings.

Legends

The "Legends" View section contains legends that will need to be changed based on the specific project type and requirements. The "*ABBREVIATIONS*" legend uses a sample set of abbreviations that are derived from the National CAD Standards/Uniform Design System 5.0 list. The "*Legend, Building Summary and General Notes*" sections will need to be changed for the specific design and project requirements. The "*KEY PLAN*" legend contains the building outline legend view that can be applied to multiple sheets.

Schedules

A set of USACE Schedules has been created based on typical USACE requirements and are labeled with a prefix "USACE ". These are set up for standard USACE documents for producing final sheets. There is a USACE schedule that has been created for Doors, Windows, Wall and Finishes. There are also additional schedules that may be used for reference or for documentation. These schedules are noted with a "Z-". To assist with Quality Assurance and Control there are some additional schedules labeled "Z-QAQC". (Refer to Appendix "E" for more information on program schedule.) The schedule "Z-QAQC Programmed Area vs. Actual" is designed to contain the programmed spaces and area requirements and will track actual room areas in the model once the "Room" objects are assigned to the correct spaces. The schedule "Z-QAQC Egress Route Distances" is set to record egress distances of labeled paths. (Refer to Appendix "F" for more information concerning egress.)

NCS Symbols

Symbols (families) have been added, modified to comply with the current release of the National CAD Standards version 5. Refer to Appendix "A" for examples of the symbols used in the project.

Annotation/Dimensions

USACE fonts have been added that are based upon the National CAD Standards 5.0. For dimensions there are two types of dimensions that are set up: one contains arrows and the other contains slashes, both of which are acceptable in the National CAD Standards. There may be additional standards required by the owner or organization that is responsible for review of documentation. These shall be followed in lieu of these standards.

Sheets

A sheet labeled "0 – USACE Revit Starting View" has been created as the initial opening sheet for the project. The sheet contains general project information and uses that are linked into the Project Information Attributes (accessed under the "Manage" tab,"Project Information" icon). Additional user instructions may be contained on this sheet. (Refer to Appendix "B" on shared parameters for details.)

There is a cover sheet numbered G-001 that may be used that contains labels linked to the Project Information. Items such as Project Name, Owner, Project Status, solicitation and contract number will automatically be filled in on the sheet.

The main body of the sheet set has been set up to assist with the documentation of the model. Use of this sheet set, titles and numbering may necessitate modification because of varying model conditions or as required by contract requirements.

There are sheet attributes that can be used for making a custom sheet order to manually control the order of sheets to be exported. There is also a checkbox for the sheet attribute "Appears in Sheet List" that can control whether the sheet appears in a sheet schedule (this is a default Revit parameter).

There are also project and sheet parameters to allow a printed AEC Sheet Name to appear on the left hand side of the sheet (outside of the Border). See image below.
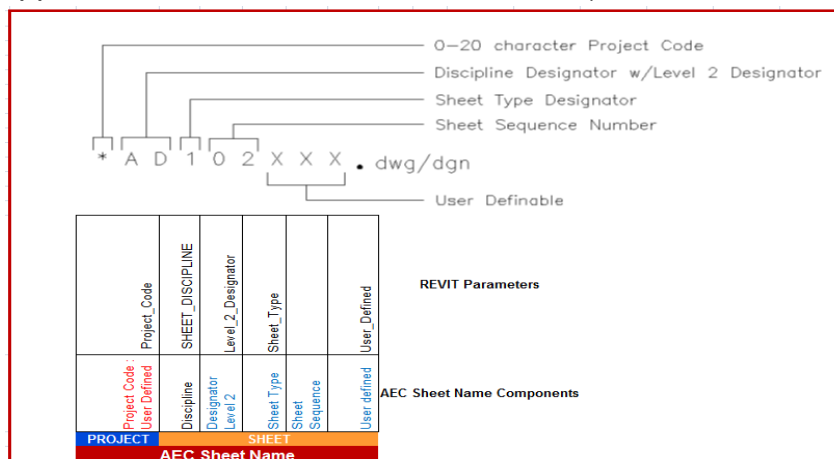
Families

List of Families used in the Architectural Template.

FAMILIES			
Family Type	Family Name	Source	NCS 5 Compliant
Annotation			
	Border_ANSI_D_USACE	USACE	NA
	Callout Head - w-Dash_NCS5	USACE	Y
	Door Tag NCS5	USACE	Y
	Elevation Mark Body_Circle Exterior NCS5	USACE	Y
	Elevation Mark Body_Circle Exterior NCS5_Single	USACE	Y
	Elevation Mark Body_Circle NCS5	USACE	Y
	Elevation Mark Body_Circle NCS5_Single	USACE	Y
	Elevation Mark Pointer_Circle Exterior NCS5	USACE	Y
	Furniture Tag NCS5	USACE	Y
	Graphic Scales_Arch NCS5	USACE	Y
	Grid Head - Circle NCS5	USACE	Y
	Level Head - Circle NCS5	USACE	Y
	NORTH ARROW_USACE	USACE	Y
	Project Starting View_V2.1	USACE	NA
	Revision Tag NCS5	USACE	Y
	Room Tag NCS5	USACE	Y
	Section Head - Filled NCS5	USACE	Y
	Sheet Keynote - Hexagon USACE	USACE	Y
	USACE Egress Route_Tag	USACE	Y
	USACE Exit Sign Symbol	USACE	Y
	USACE Fire Smoke Symbol	USACE	Y
	USACE Wall Tag - Square NCS5	USACE	Y
	USACE Window Tag NCS5	USACE	Y
	USACE_CoverSheet_2012	USACE	Y
	USACE_Room_Hazard_Occupancy_Tag	USACE	Y
	View Title w Sheet_USACE	USACE	Y
	View Title_USACE	USACE	Y
Generic Model			
	USACE Egress_Route	USACE	NA

References:

The location for download of the templates is: https://cadbim.usace.army.mil/BIM. Links to documentation, Q&A and a review form is also available on this site.

Please direct questions or comments about the Templates to : David M. Johnson

Appendix A: Annotation Symbols and the NCS 5.0

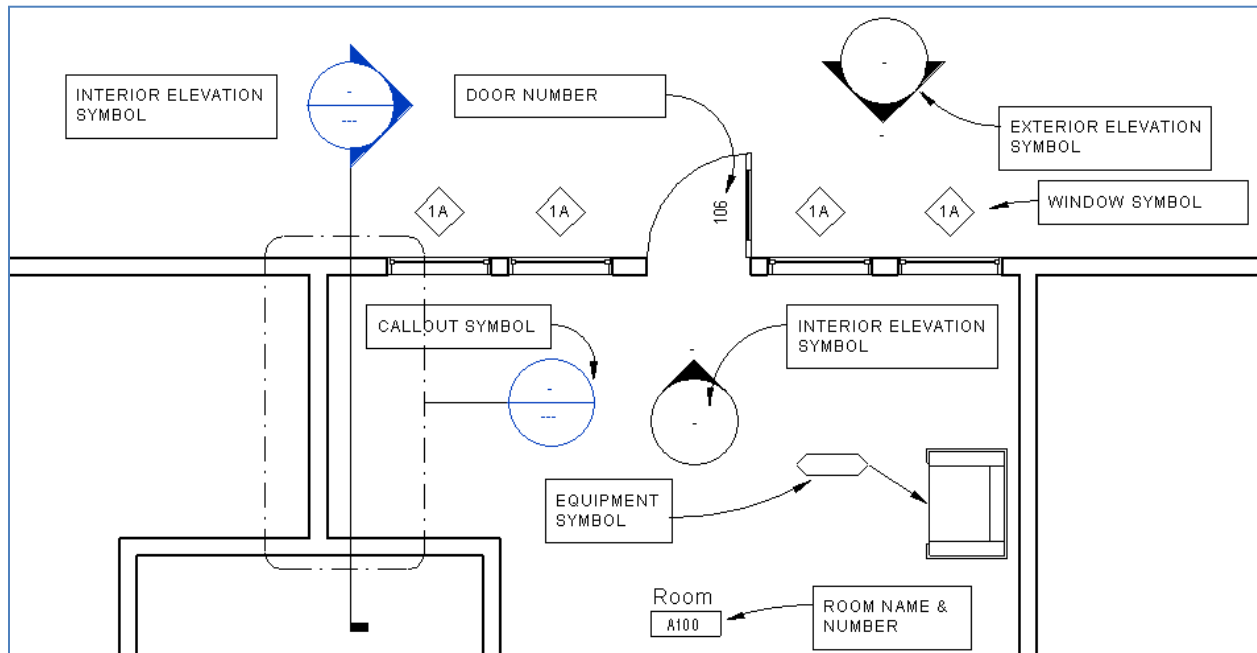The symbols shown below are based upon the requirements of the NCS 5.0. Images are not to scale.
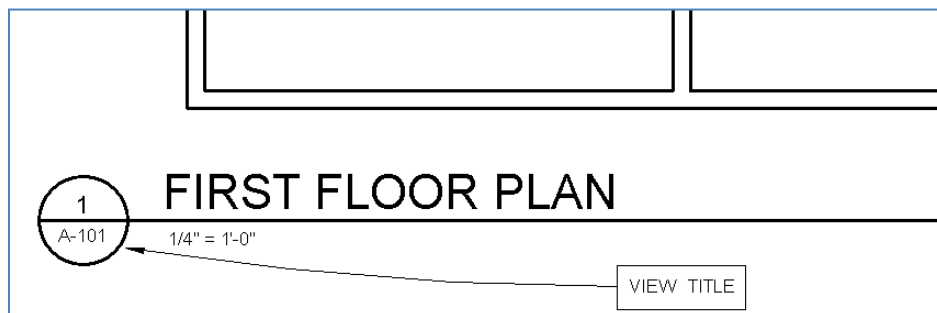

Figure 1 Floor Plan Symbols

Figure 2 View Title Symbol

Appendix B: Shared Parameters

Shared parameter list contains Project, sheet, egress, area, doors, rooms, walls, egress and windows.

Shared parameters are built into the Project Information to link to the sheets and the cover sheet.

Sheet parameters are connected to sheet information. Alternate categories may be used in place of the Solicitation Number and the Contract Number if these are not necessary. There is a setting in the sheet type properties (USACE Standard) to change from the default to the Alternate Information is set. There are separate parameters for the Titles (Alternate Category Title 1, Alternate Category Title 2) that can be changed and the specific Project attributes that apply to these (Alternate Text 1, Alternate Text 2).

There is a View attribute to identify the View Purpose (Working, Documentation, Presentation, Coordination views).

Appendix C: View Template Settings

Typical View Templates have been created to allow a consistent modeling visibility environment for certain types of views. The templates typically do not have the View Scale, Phase Filter, View Purpose, Analytical & Import Overrides, Model Display, shadows, lighting, shadow & intensity, View Range checked to allow flexibility for the design/documentation.

VIEW TEMPLATE TYPES		
View Type Classification:	**View Type Name:**	**Notes:**
Floor, Structural, Area Plans	USACE Area Plan	For showing overall building area.
	USACE Floor Plan	Typical Floor Plan settings for visibility.
	USACE Life Safety Plan	• Uses Filters to identify fire rated and smoke rated walls. Separate symbols may be applied using the "USACE Fire Smoke Symbol" family that is based on the NFPA symbols. • A color scheme may be applied to the plan identifying the "Room_Occupancy_Hazard" classification. • Egress paths may be created using the "Egress_Route" Family. An Egress ID is assigned by the user and the "Z-QAQC Egress Route Distances" schedule tracks the total length of path.
	USACE Site Plan	
	USACE Enlargement	
	USACE Key Plan View	Used only for creating a Keyplan from the model. Suggestions for use shown below in Appendix D.
	USACE Roof Plan	
	USACE Site Plan True North	This site plan is to show the correct True North orientation of the project. The correct geospatial Lat/Long location should also be set.
Ceiling Plans	USACE Reflected Ceiling Plan	
3D Views, Walkthroughs	USACE Presentation 3D	

Renderings, Drafting Views	USACE Drafting View	
Ceiling Plans	USACE Reflected Ceiling Plan	
Elevations, Sections, Area Plans	USACE Coordination - Elevation	
	USACE Elevation	
	USACE Section	

Appendix D: Legends

Name	Description
ABBREVIATIONS & PROJECT INFORMATION	Abbreviations (NCS compliant) and Project information, sample.
CEILING LEGEND	Sample . Optional.
DOOR TYPES	Sample . Optional.
DRAWING SYMBOLS	Sample . Optional.
FIXTURE MOUNTING HEIGHTS	Sample . Optional.
KEY PLAN	Sample to assist users with creation of a Key Plan.
LIFE SAFETY CRITERA	Sample . Optional.
LINE STYLE LEGEND	Sample . Optional.
MANEUVERING CLEARANCE	Sample . Optional.
PARTITION TYPES	Sample showing partitions, materials . Optional.
RCP LEGEND	Sample . Optional.
ROOF LEGEND	Sample . Optional.
SIGNAGE	Sample . Optional.
WALL TYPES	Sample . Optional.
WINDOW TYPES	Sample . Optional.

Appendix E: Schedules

Several schedules are created based on standard USACE Schedule Templates: DOOR, WINDOW, FINISH, FINISH. There may be different schedule styles that are required by different district offices. Schedules that are marked with a "Z-" are used for reference and not necessarily created for use on sheets. If a view is used on a sheet, then the "Z-" prefix should be removed.

The "Z-QAQC Programmed Area vs. Actual" schedule may contain all the programmed spaces and areas from the project in order to allow the user to place the predefined rooms in the design model and compare the actual programmed area with the actual model area. Differences are noted (red denotes actual is greater than the programmed area).

There are also QAQC schedules for sheets and views to assist tracking the View and Sheet object information in the model.

SCHEDULE NAME:	SCHEDULE DESCRIPTION:	FIELDS	HEADING
USACE DOOR SCHEDULE			
Current USACE Schedule based on the USACE Bentley Workspace.		Mark	Door Number
		Type Mark	Type
		Width	Width
		Height	Height
		Thickness	Thickness
		Material	Material
		Finish	Finish
		Under Cut	Under Cut
		Fire Rating	Fire Rating
		Frame Type	Type
		Frame Material	Material
		Frame Finish	Finish
		Head	Head
		Jamb	Jamb
		Sill Height	Sill
		Hardware	Hardware
		Comments	Comments
USACE WINDOW SCHEDULE			
Current USACE Schedule based on the USACE Bentley Workspace.		Count	Count
		Type Mark	Mark
		Width	Width
		Height	Height
		Family	Type
		Finish	Finish
		Material 2	Material
		Glazing Type	Type
		Glazing Thickness	Glazing Thickness
		Head 2	Head
		Jamb 2	Jamb
		Sill	Sill
		Head Height	Head Height
		Comments	Comments (See Notes Below)
USACE_FINISH SCHEDULE			
Current USACE Schedule based on the USACE Bentley Workspace.		Number	ROOM NO
		Name	ROOM NAME

|		Level	FLOOR
		NORTH WALL FINISH	NORTH FINISH
		EAST WALL FINISH	EAST FINISH
		SOUTH WALL FINISH	SOUTH FINISH
		WEST WALL FINISH	WEST FINISH
		NORTH BASE FINISH	NORTH FINISH
		EAST BASE FINISH	EAST FINISH
		SOUTH BASE FINISH	SOUTH FINISH
		WEST BASE FINISH	WEST FINISH
		FLOOR MATERIAL	MAT.
		Floor Finish	FIN.
		CEILING MATL	MAT.
		Ceiling Finish	FIN
		CEILING HEIGHT	HEIGHT
		NOTES & REMARKS	NOTES & REMARKS (SEE NOTES)
		Area	Area
USACE_WALL SCHEDULE			
Current USACE Schedule based on the USACE Bentley Workspace.		Type Mark	TYPE
		Width	WIDTH
		Wall Structure	WALL STRUCTURE
		Wall Finish	WALL FINISH
		Fire Rating	FIRE RATING
		Sound Attenuation	SOUND ATTENUATION
		Full Height	FULL HEIGHT
		Comments	COMMENTS
Z-AEC Sheet Information Name	Schedule for checking sheets for AEC Sheet Name attributers.		
Z-Buildiing Elements Fire Rating Requirements	Code reference information for the project (optional).		
Z-Demolition Drawing Notes	Demolition notes ((optional).		
Z-Door Egress Loads	To assist users with egress calculations (optional).		
Z-Drawing Notes - Elevations	Drawing notes (optional).		
Z-Drawing Notes - Plans	Drawing notes (optional).		
Z-Drawing Notes - RCP	Drawing notes (optional).		
Z-Fire Rating For Building Elements	Optional		
Z-Index of Drawings - Architecture	Index to assist users (optional).		
Z-Index of Drawings - Civil	Index to assist users (optional).		
Z-Index of Drawings - Electrical	Index to assist users (optional).		
Z-Index of Drawings - General Information	Index to assist users (optional).		
Z-Index of Drawings - Interiors	Index to assist users (optional).		
Z-Index of Drawings - Mechanical	Index to assist users (optional).		
Z-Index of Drawings - Plumbing	Index to assist users (optional).		
Z-Index of Drawings - Structural	Index to assist users (optional).		

Z-Interior Finish Schedule	Working finish schedule for users, can be modified for QAQC purposes. Customizable (optional).		
Z-QAQC Egress Route Distances	Assists the user with calculated egress lengths. (optional).		
Z-QAQC Material Checklist	Multiple category schedule to assist users with material references: omniclass information, Material Keynote number.		
Z-QAQC Programmed Area vs. Actual	To assist users with conformance with programmed space allowance.		
Z-QAQC View List	QAQC for View information.		
Z-QAQC Sheet Information List	QAQC for Sheet Information.		
Z-Working Door Schedule	Assists the user with door information. Customizable (optional).		
Z-Working Index of Drawings	Temporary sheet index and publishing order. Customizable (optional).		
Z-Working Plumbing Schedule	Assists the user with door information. Customizable (optional).		
Z-Working Room Program Area	Assists the user with door information. Customizable (optional).		
Z-Working Window Schedule	Assists the user with door information. Customizable (optional).		

Appendix F: Egress Route

- Refer also to **Appendix J** for an alternative method of creating an egress route.
- The symbols used are based upon the requirements of the NCS 5.0.
- The View Template uses Filters to identify fire rated and smoke rated walls. Separate symbols may be applied using the "USACE Fire Smoke Symbol" family that is based on the NFPA symbols.
- A color scheme may be applied to the plan identifying the "Room_Occupancy_Hazard" classification.
- Egress paths may be created using the "Egress_Route" Family. An Egress ID is assigned by the user and the "Z-QAQC Egress Route Distances" schedule tracks the total length of path.
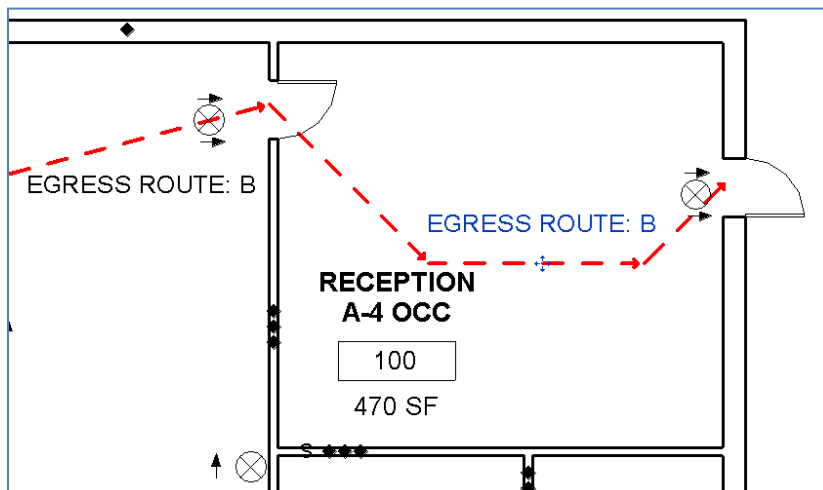
Egress Route Placement Details:
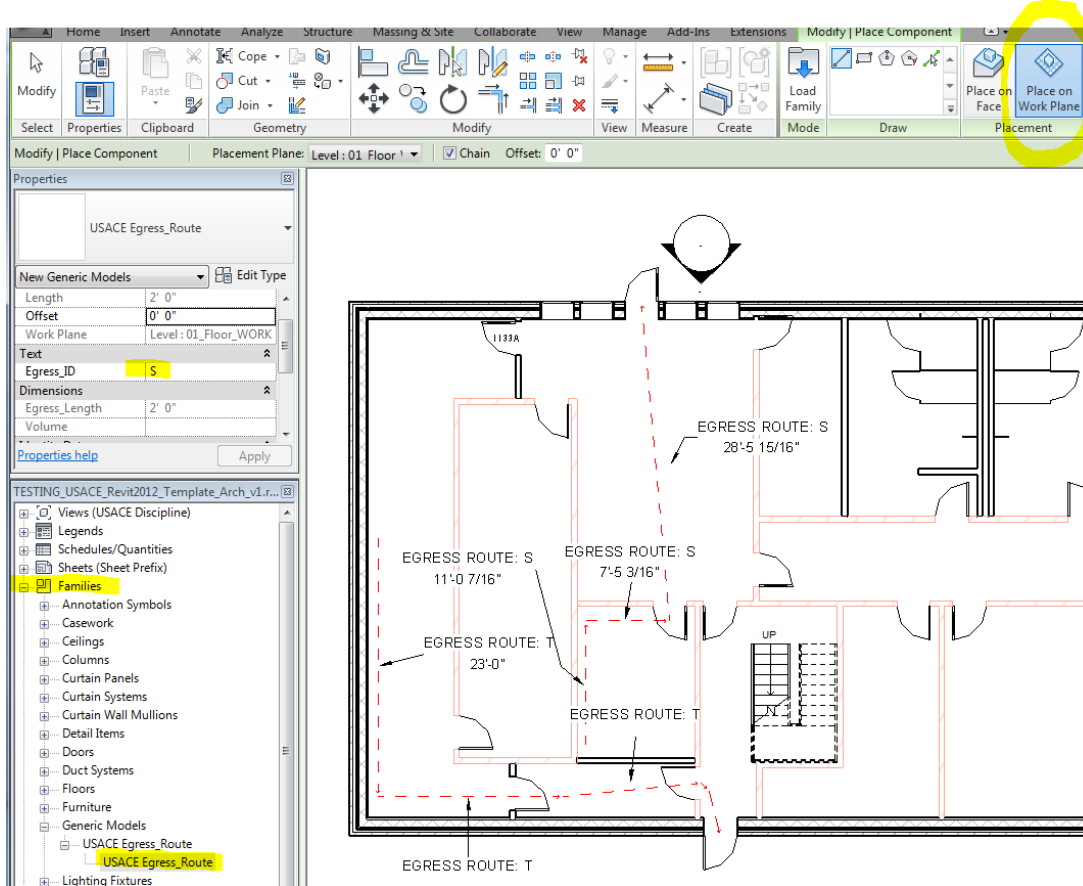
To create a new Egress Path, select the Families list, Generic Models and expand to show the USACE Egress Route Object. Create an instance of this Object to place and select Placement : Place on Work Plane and then set an Egress Path ID (**Egress_ID**) parameter. The **Egress_ID** corresponds to the entire path from start to finish and should be unique from all other path IDs. Using the existing schedule "**Z-QAQC Egress Route Distances**", the component lengths and the entire path length is calculated to determine the actual total length of travel for each path as shown in the screen capture below.

To Label the line segments, select the Annotate Tab, and the "Tag by Category" button and select the egress line segment to be labeled. There are two different tags available- the "Egress Route ID" tag and the "Egress Route ID & Length" tag. The user can show either just the route ID or the ID and segment length. Unfortunately there is not an automated way to show the total length so this would need to be manually placed from the calculated length in the schedule.
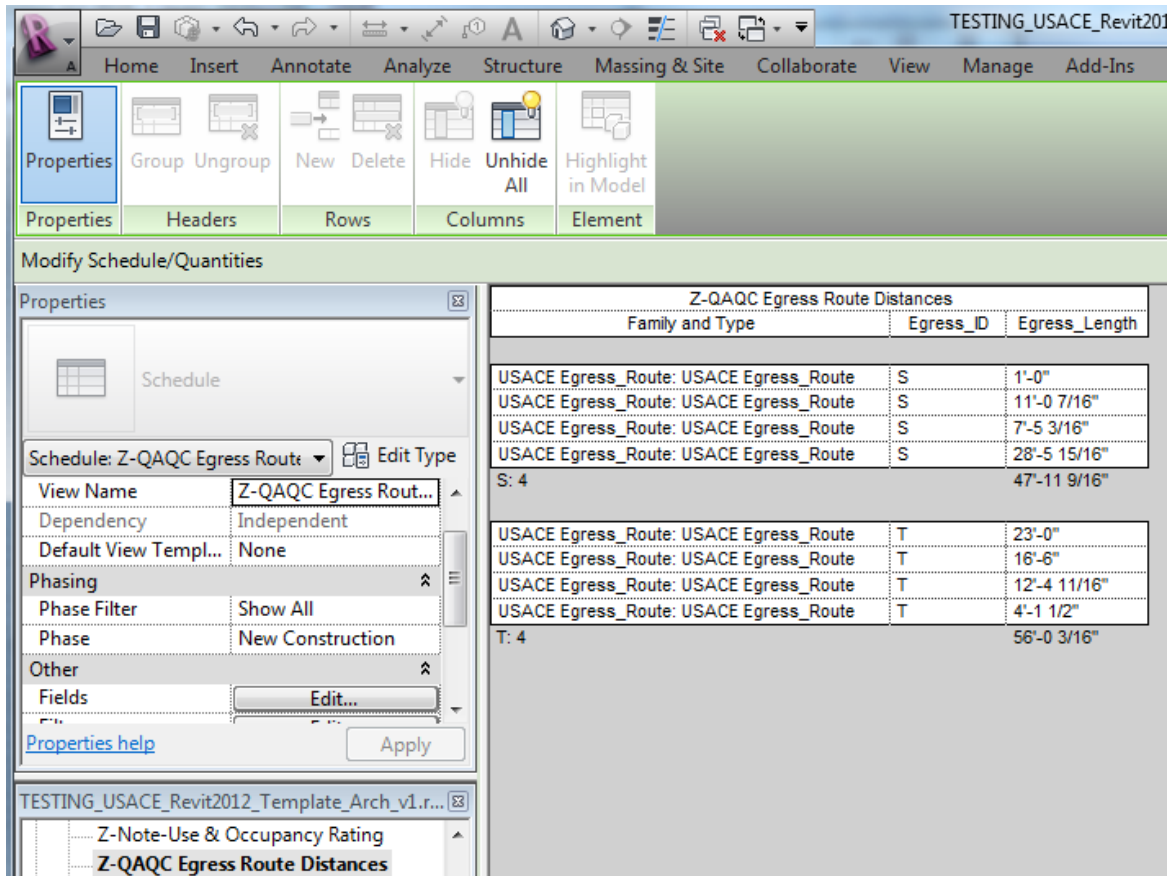
Appendix G: Life Safety Plan

The Life Safety Plans View Template has been created with View Filters based on the Fire Rating parameter of the wall families. Since this is a type parameter from the default wall family, it will apply to all wall types that are given a fire rating (refer to "Type Properties" box below).

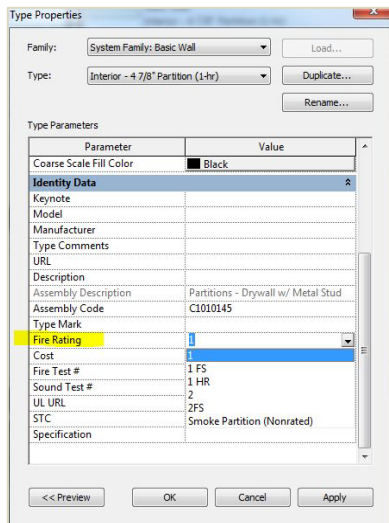The NFPA Fire wall symbols (illustration 5-USACE Fire Smoke Symbol) are actually just generic objects that must be inserted onto walls manually if these are used.
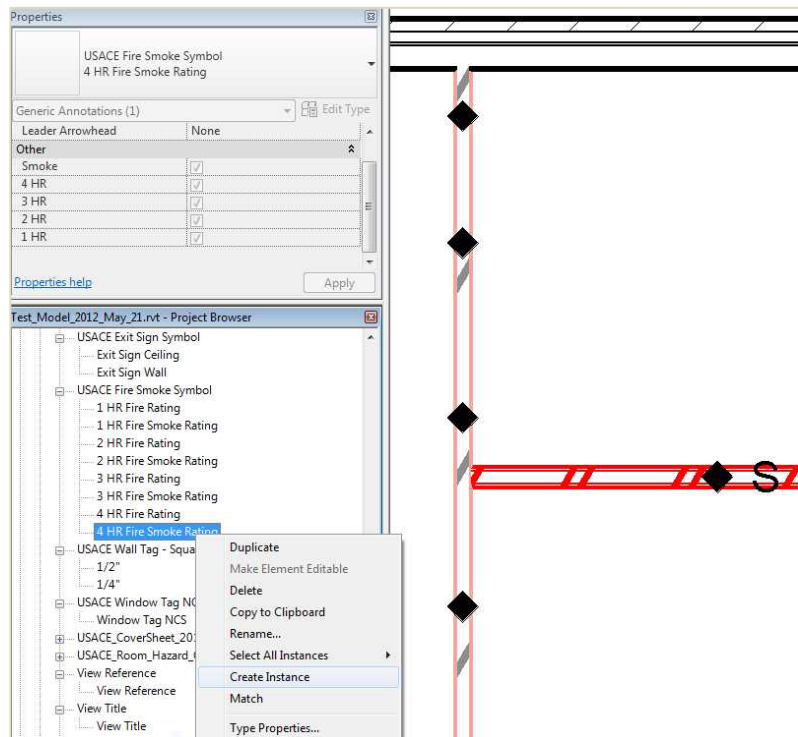

3 View :

Fire Wall Filter

Settings

4. Wall Family: Fire Rating parameter.

5 NFPA Fire Rating Symbol Family

Appendix H: Key Plan Creation

This is not a required process but a method that may be used to create a project key plan.

    1. Use the KEY PLAN located in the Coordination View-Architectural Discipline section of the Project Browser, or create a copy of the Level that you will use to create a building Key Plan.
        1.1. Apply the KEY PLAN View Template to turn off all Object types except the walls (curtain walls will remain on).
        1.2. Use the walls to create an outline of the building plan. Draw Detail Lines (KEY PLAN Linestyle).
        1.3. Draw lines representing building sections to be identified in the KEY PLAN.
   2. Turn off all objects except the detail lines (KEY PLAN Linestyle).
      2.1. Select all lines and copy to clipboard.
   3. Create a new, blank Detail Component family:
      3.1. File a New a Family a **Detail Component**.rft
           3.1.1.^ FILE
               3.1.1.1.^   NEW
                   3.1.1.1.1.^   Detail Component.rft (DETAIL COMPONENT FAMILY)
    4. In the New Detail Family, paste from the Clipboard the lines used to create the KEY PLAN Outline.

CREATE KEY SECTIONS in the New Detail Family:
    5. Create family parameters: Home tab → Family Types button.

      5.1. Create a new family parameter –
      5.2. click the '**Add**…" button under Parameters.
      5.3. Name the parameter **Area A**.
        5.3.1.^ The only other option you will need to change here is the Type of Parameter – change it to Yes/No.
      5.4. Click OK.
      *5.5. **Note**: You will need to repeat step 5 for as many areas into which you will be dividing the floor plan. The Yes/No parameter you set up will drive what portion of the building is shown as shaded in the following step.*
    6. Create a new filled region: Home tab → Filled Region. Draw the path of the filled region along the reference planes you created in step 5. Click the green check box when done. Change the filled region's hatch in the Properties window.
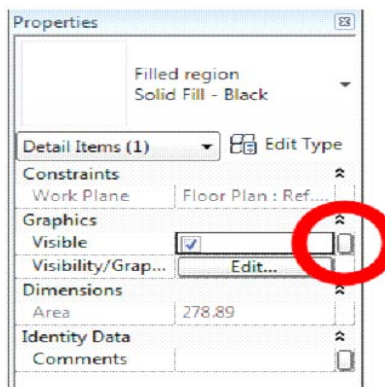
7. Select the region. In the Properties window, you're looking for this tiny grey box [the 'Associate Family Parameter' box].
 Click it. In the list of existing family parameters [which you set up in step 7a], select the appropriate title and click OK.

NOTE! You will need to repeat steps 6 and 7 for as many areas as you divided your plan.

COMPLETED DETAIL Family.
BACK to Model:
10. Save your family. You're done!
- Now you can re-open your Revit file and
- Make a new **legend view**
    - [View tab → Legends pulldown → Legend].
- Select a scale and press OK.
- **Load your key plan family** into the project
    - [Key plan file → Modify → Load into Project].
- Open your legend view and **place your key plan**
    - [Annotate tab → Component pulldown → Detail Component].
- Now when you select the key plan, you will be able to drive what portion is shown as hatched in the Properties window
    - [Properties window → Edit Type] and using the checkboxes in the 'Other' category.
- *You will need to create a new family type for each individual area, but once you are done you can drag the legend onto your sheet.*

NOTE: The only downside to making a key plan family is that, if your footprint changes, you will have to manually update your key plan family [steps 4-6].

## Appendix J: Egress Route Objects Alternate Method

COMMENTS:

1. This method represents one way of creating an Egress Path for modeling. It is not required but is provided to assist the user in showing the Egress Route and tracking the total distance of the Path.
2. When creating new paths it may be easier to right-click on the family type and selecting "create instance" or right-click on an existing instance and selecting "create similar" as opposed to copying an existing path.
3. The tag uses family type mark to append to the distance.
4. Note that what is shown here is for demonstration purposes only. Users are responsible for ensuring code and documentation compliance in actual project design.

Families used:

USACE_Egress Path_GenModel Creates the path Object. User must manually orient path and adjust the route by adjust the "Number of Segments" attribute as needed for the individual path. This object is a Generic Family type of Object.

USACE_Egress Path Total Length Tag Tag to show total Length of Egress Path.

USACE_Room_Hazard_Occupancy_Tag Contains Room Number, Room Name, Area & Classification
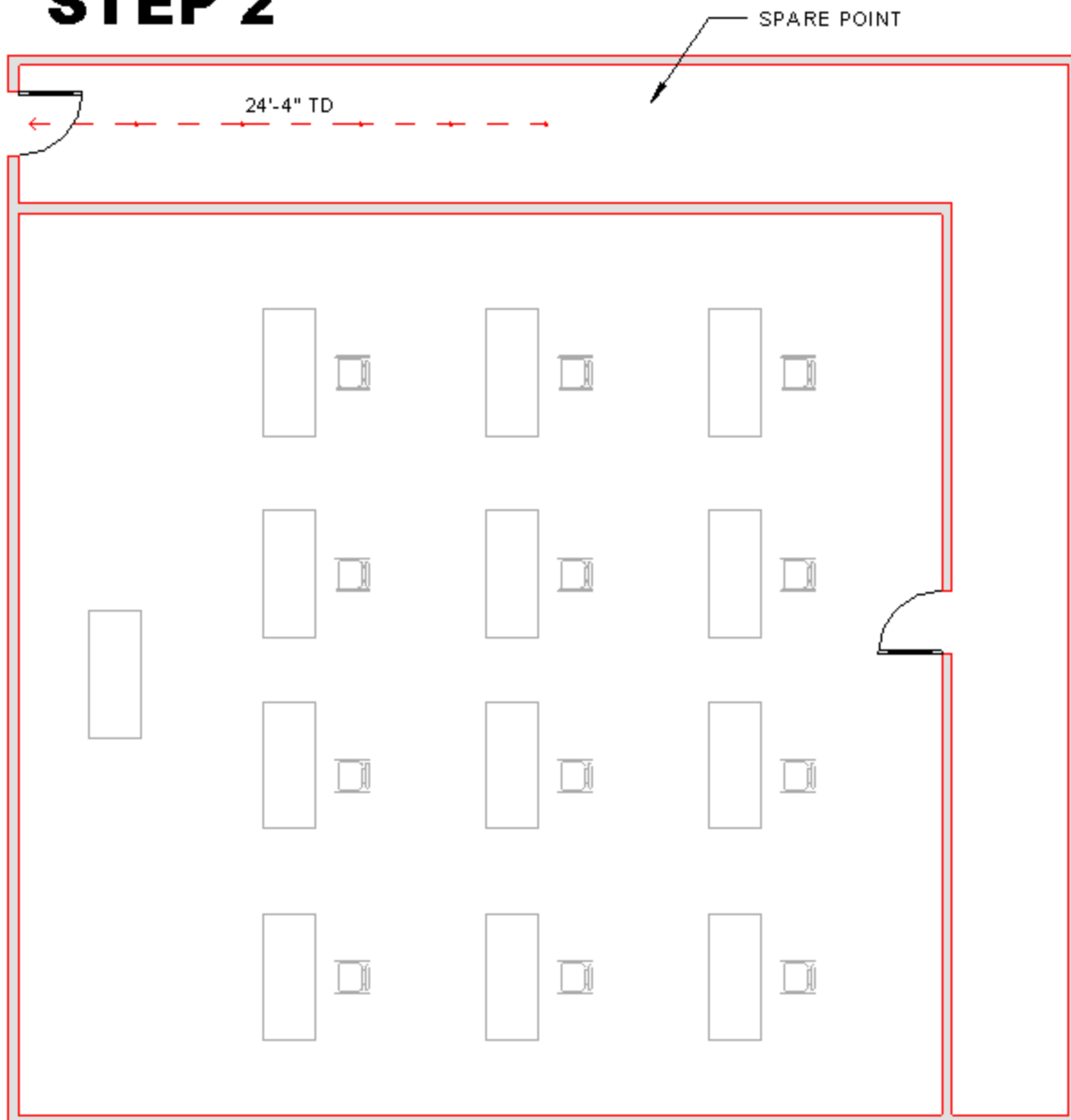
STEP 1

5'-0" TD
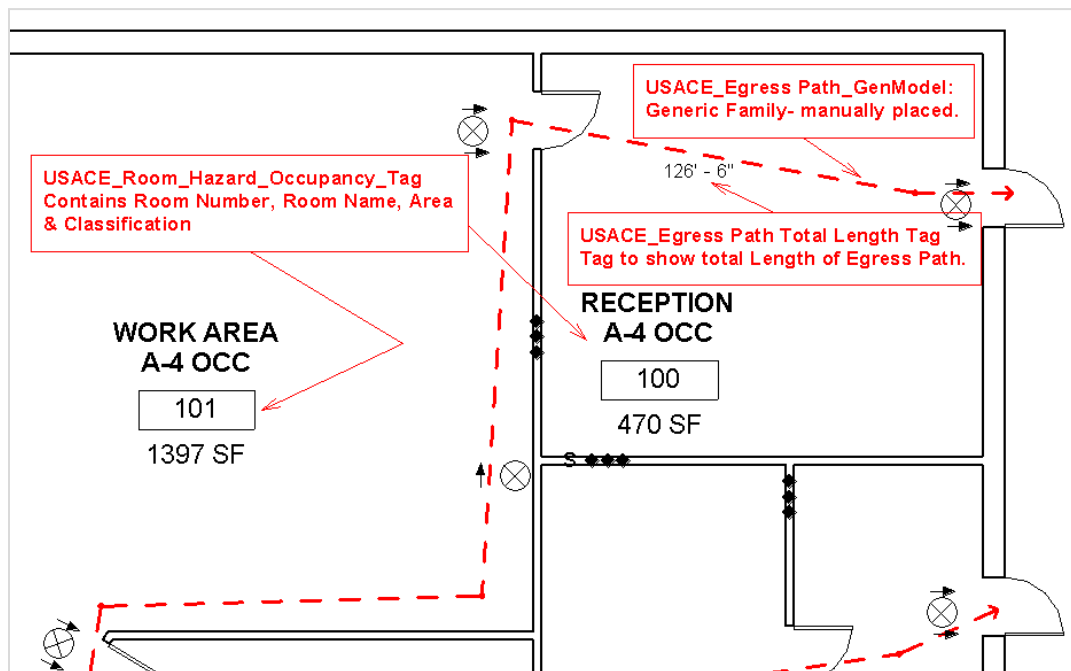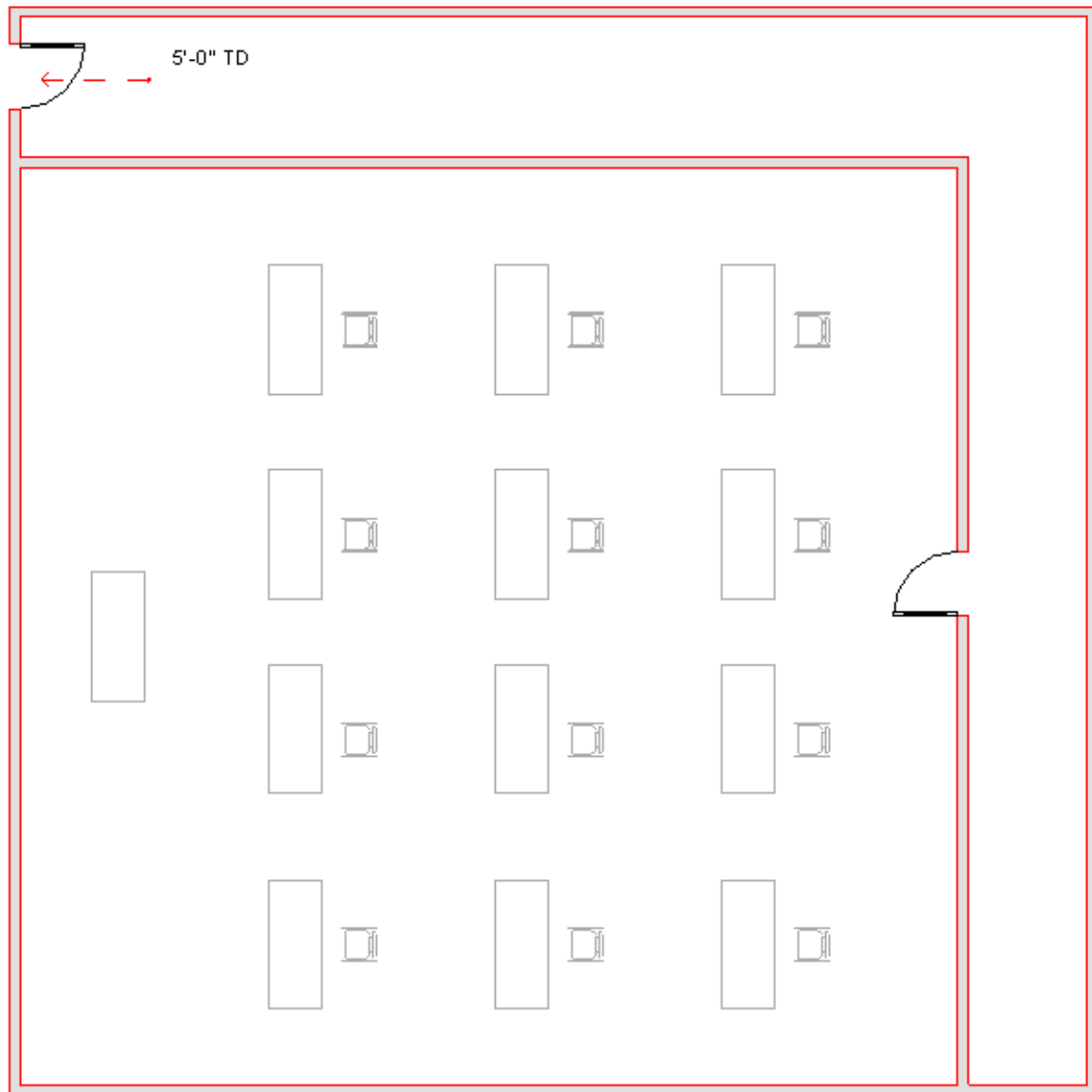
PLACE INSTANCE OF EGRESS PATH. THE INSERTION POINT IS THE HEAD OF THE ARROW.
THE DEFAULT NUMBER OF SEGMENTS IS 3. HOVER OVER THE EGRESS PATH AND YOU SEE
THAT THERE CAN BE UP TO SIX SEGMENTS IN THIS FAMILY. THE NUMBER OF SEGMENTS IS AN
INSTANCE PARAMETER. ADDING A SEGMENT WILL ADD TO THE TAIL OF THE PATH.

STEP 2

SPARE POINT

24'-4" TD

DETERMINE NUMBER OF SEGMENTS REQUIRED AND UPDATE THE INSTANCE. IN THIS CASE, WE'LL TRY FIVE. HOVER OVER THE EGRESS PATH AND YOU NOW SEE THERE'S ONE "SPARE" POINT AT THE END. NOTE THAT UNUSED POINTS MAY END UP SEEMING TO BE "ARBITRARY" UNLESS THE USER PURPOSELY MOVE THEM TO BE CLOSE TO THE USED ONES.
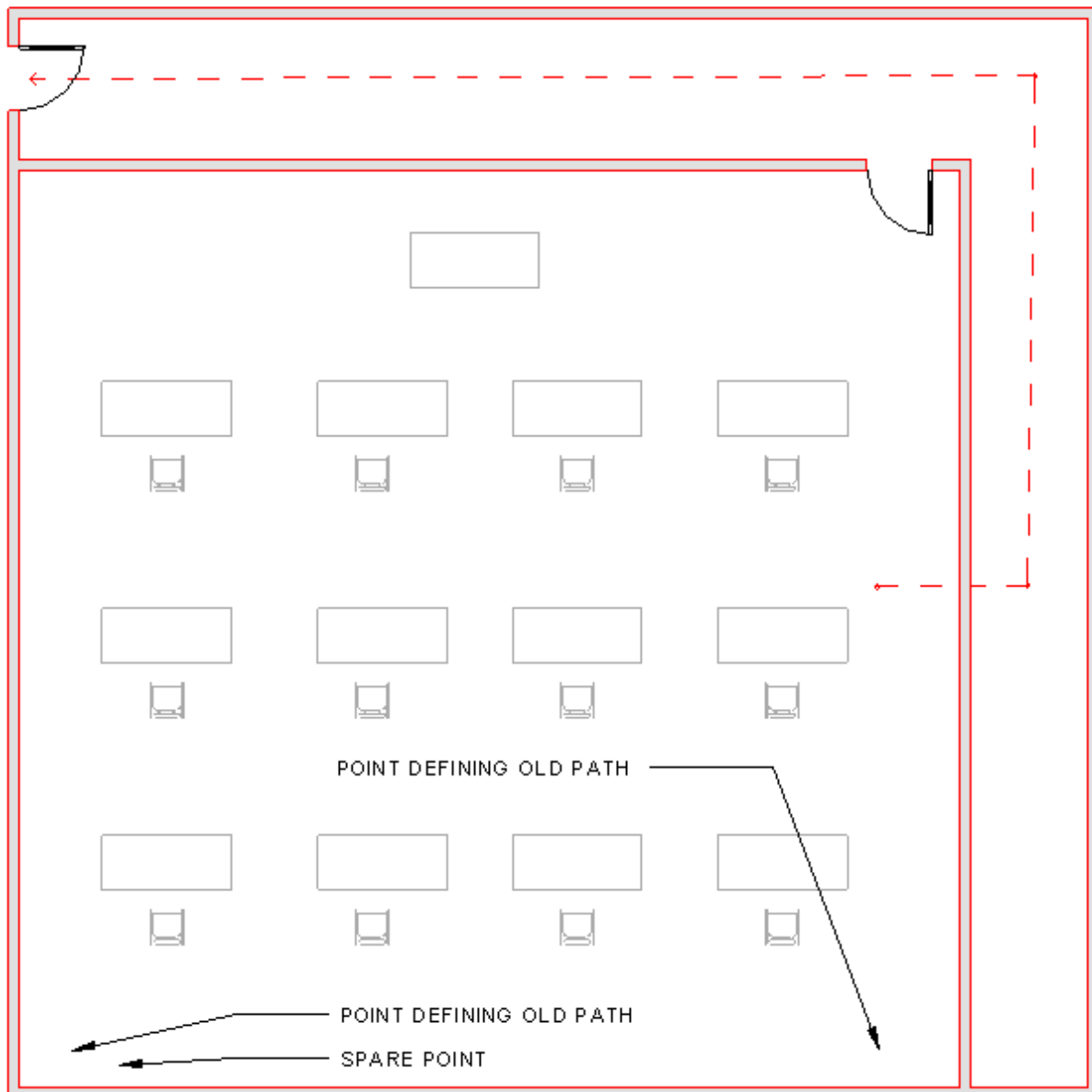
STEP 3

SPARE POINT

136'-7" TD
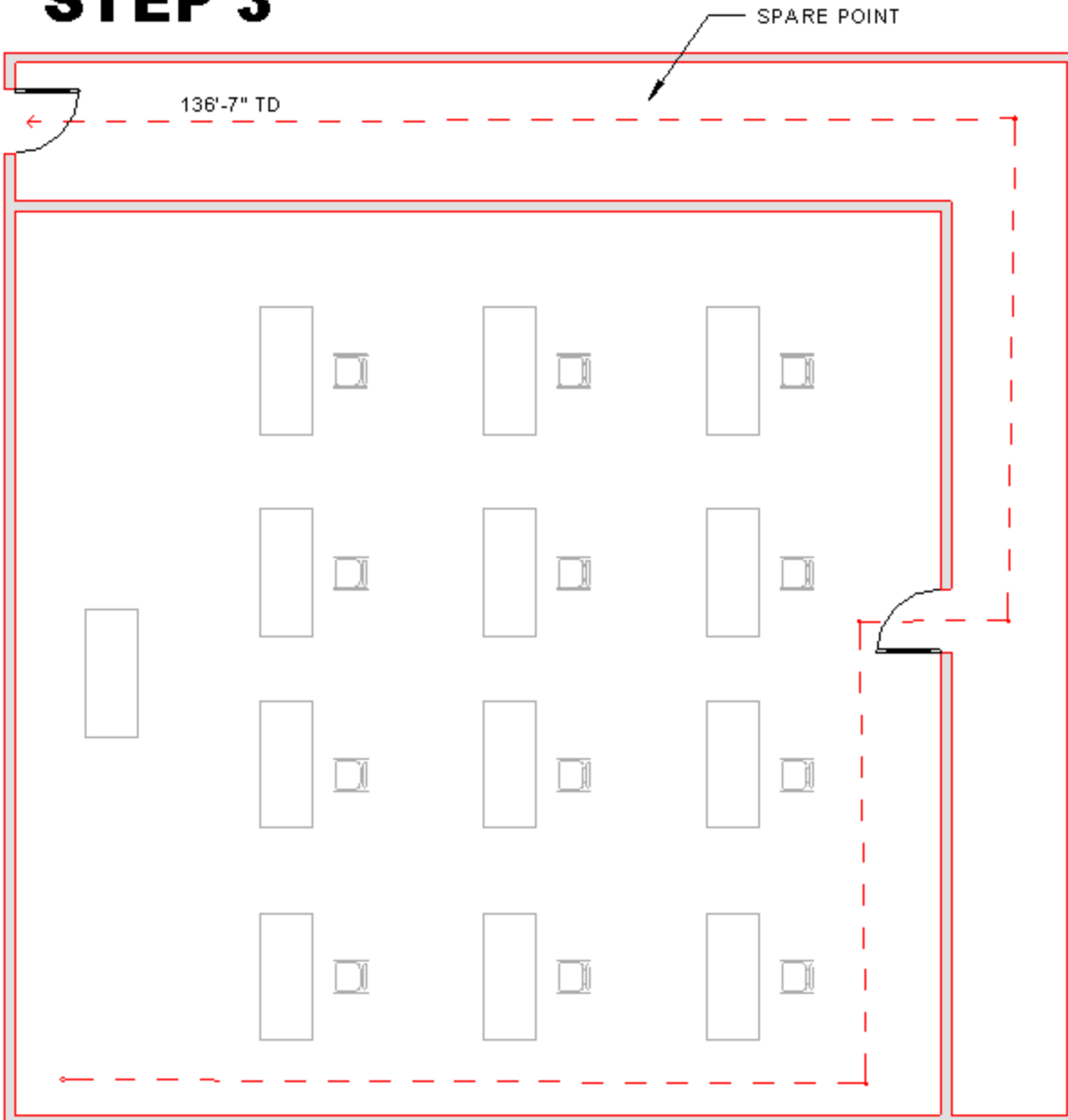
TO MOVE THE POINTS, HOVER OVER ONE OF THE POINTS SO THAT ONLY ONE POINT IS HIGHLIGHTED, CLICK TO SELECT IT. MOVE THE CURSOR AWAY AND THE POINT SHOULD BE NOW SELECTED AND READY TO BE MOVED. MOVE THE POINTS TO THE PROPER LOCATIONS USING THE MOVE TOOL OR USING THE ARROW KEYS TO NUDGE. NOTICED THAT THE "SPARE" POINT HAS NOT BEEN MOVED. HOWEVER, IT IS RECOMMENDED THAT IT SHOULD BE MOVED CLOSER TO THE LAST POINT SO THAT LATER ON IF NEEDED, IT CAN BE FOUND MORE EASILY.

STEP 3b

136'-7" TD

SPARE POINT MOVED HERE
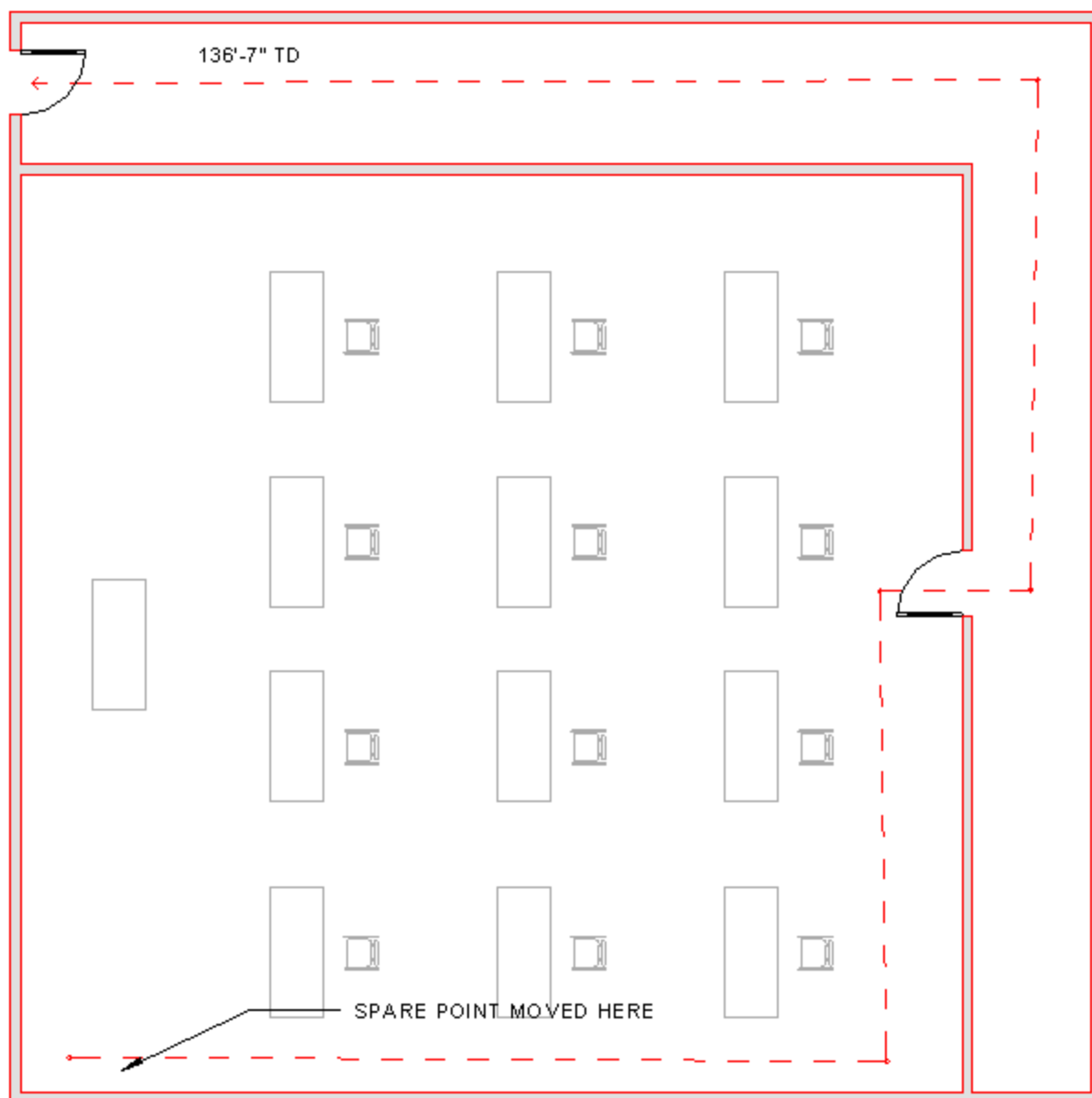
OPTIONALLY, THE SPARE POINT HAS BEEN MOVED.

STEP 4

POINT DEFINING OLD PATH

POINT DEFINING OLD PATH

SPARE POINT

NOW ASSUME THE FURNITURE HAS BEEN RE-ARRANGED AND THE DOOR HAS MOVED. THE EGRESS PATH NEEDS UPDATING. WE PROBABLY ONLY NEED 3 SEGMENTS HERE. SO THE EGRESS PATH INSTANCE PARAMETER NUMBER OF SEGMENTS IS CHANGED TO 3. NOTICE THAT TWO OF THE SEGMENTS ARE REMOVED, BUT THE DEFINING POINTS REMAIN. HOVER OVER THE EGRESS PATH TO SEE THE POINTS.

STEP 5

124'-8" TD

SPARE POINTS PLACED HERE
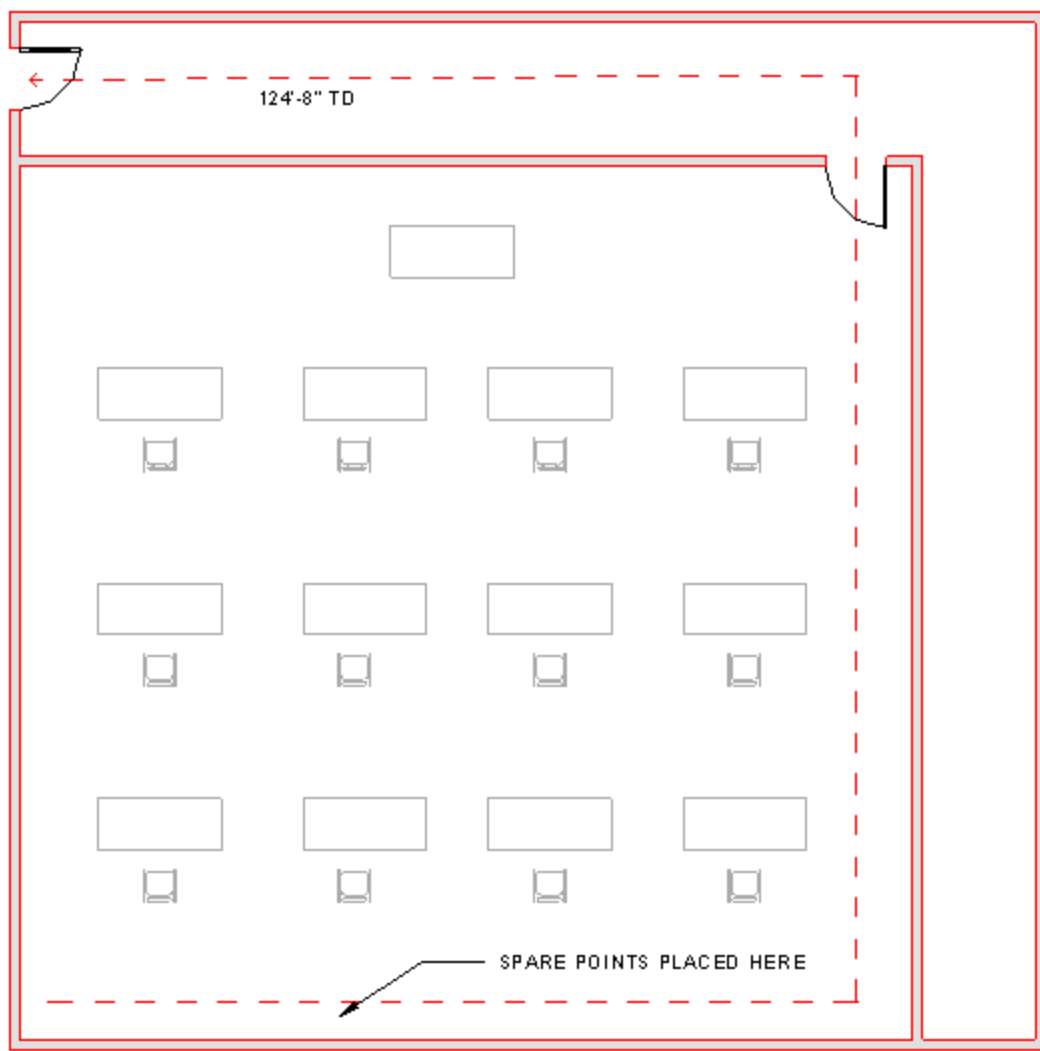
THE POINTS ARE THEN ADJUSTED FOR THE NEW PATH AND THE DISTANCE IS UPDATED.

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