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The following information is subject to change.

Overview

There are several procedures required to properly set up a Project Border. It is essential that they be completed correctly. Each project is different. There may be project conditions not covered by this document. Contact the Project BIM Coordinator with questions and clarification.

The IDS Revit Project Model contains one border family, named IDS_Std Border 30x42, used for all Construction Documents. It has been developed to accommodate multiple configurations for multiple projects within one Revit model as well as for each discipline. Do not rename the family or load a different border family into the Project Model. Doing so will circumvent the existing predeveloped sheets and their project sheet phase development.

The Project Model has five phases named Existing, New Construction, New Construction (A), New Construction (B), and New Construction (C). The last three phases are placeholders for possible future phases of design. Having multiple project phases in each Project Model is an essential component of the IDS design process. To accommodate multiple projects for a single Revit building model, the IDS_Std Border 30x42 sheet border family has been developed with four family types. Each type correlates to a project design phase. These names may be different depending on the project, but for documentation purposes we will use these family types and phase names.

Family Type	Sheet Phase
• New Construction	New Construction
• New Construction (A)	New Construction (A)
• New Construction (B)	New Construction (B)
• New Construction (C)	New Construction (C)

By having one Construction Document border family, IDS_Std Border 30x42, with multiple Family Types, only one border family is needed in the Project Model to document each project. If there is another project within the Project Model, the next Family Type is used for these sheets.

Each family type controls the visibility of the text elements that indicates the following:

- Project Design Firms
- Project Name
- Project Number

These text elements overlay each other so that, from within the Project Model, when a sheet is assigned to one Family Type only the information relevant to that Family Type is displayed.

While the project design firms may or may not be the same for all design phases of a project, the project name, and project number are typically different for each project within the model.

This documentation is written for editing the elements associated to the Project Border Family Type: New Construction. However, the same procedures can be used to edit the other Border Family Types.

Border Size

As stated previously, in the Project Model there is one Construction Document Border Family, IDS_Std Border 30x42. However, there are two other Border Families, IDS_Std Border 24x36 and IDS_Std Border 36x48, available when required that are not loaded into the Project Model. These families have been developed in the same manner as the IDS_Std Border 30x42 family.

This procedure illustrates how to change the IDS_Std Border 30x42 family to the IDS_Std Border 36x48 family.

1. From the Project Model *Project Browser*, expand *Families > Annotation Symbols*. Then, right-click on **IDS_Std Border 30x42**. From the popup menu, select **Rename**. The family name, *IDS_Std Border 30x42*, is highlighted for editing in the Project Browser.
2. Rename it to IDS_Std Border 36x48.
3. Right-click on **IDS_Std Border 36x48**. From the popup menu, select **Reload**. The Open dialog appears.
 - a. Navigate to the location of the Border Family by the exact same name.
Note: The default location of the Revit 2023 Border Families is J:\Standards\Corporate\IDS_Covers and Borders\2023
 - b. Select it, then select **Open**. The *Open* dialog closes, The *Family Already Exists* dialog appears.
 - i. Select **Overwrite the existing version and its parameter values**.

Note: All Borders in the Project Model will now be the IDS_Std Border 36x48.

For all sheets that have been predeveloped, the notes and schedules will need to be moved to the appropriate location on the new border.

Edit the Border Family

1. From the Project Model *Project Browser*, expand *Families > Annotation Symbols*. Then, right-click on **IDS_Std Border 30x42**. From the popup menu, select **Edit**. The *Revit Family Editor* opens with the IDS_Std Border 30x42 border family in it.

Project Design Firm, Project Name, and Project Number

Because the Project Design Firms, Project Names, and Project Numbers are overlayed four times, once for each Family Type, you will need to use the following procedure to isolate the text elements designated for the New Construction phase for editing.

1. From the *Create* ribbon, *Properties*, select **Family Types**. The *Family Types* dialog appears.
2. From the *Type name* field, verify that **New Construction** is displayed.
3. Select **OK**. The *Family Types* dialog closes.
4. From the *View Control Bar*, select **Preview Visibility On**. The Project Design Firms, Project Names, and Project Numbers for the New Construction (A), (B), and (C) phases, as well as other elements, are no longer visible.
5. Modify the Project Design Firm, Project Name, and Project Number text as needed for the project.
6. From the *View Control Bar*, select **Preview Visibility Off**. All element that were previously not visible are now visible.

Do not delete the text that represents the Project Design Firms, Project Names, and Project Numbers of the other phases. Doing so will eliminate their use for future projects within the Project Model.

Client Logo

An area for the Client Logo has been designated, by the words Client Logo in a box, within the Project Title area of the border. Import and place an image for the client in this area.

1. From the *Insert* ribbon, select **Import Image**. The *Import Image* dialog appears.
2. Navigate to the location of the image. Select the image, then select **Open**. The *Import Image* dialog closes and an image preview indicator appears on the Revit screen as a dashed X.
3. Place the image to the right of the border near the Client Logo area. The image appears.
4. With the image selected, from the *Modify | Raster Images* ribbon, select **Move**.

5. To change the image size, snap to the upper right corner of the image. Then move the image snapping to the upper right corner of the Client Logo box.
6. With the image selected, select the lower left corner of the image, and drag it to either the bottom or left line of the Client Logo box. It may not snap to the line, so position it the best you can to align with the line.
7. Once the image is in place, select the Client Logo text and the box, from the *Modify* ribbon, select **Delete**.

Client Name and Project Address

The Client Name and Project Address are Project parameters. Their values are set within the project, not the border family.

North Arrow

The North Arrow is a nested generic annotation family in the border family. Typically, the North Arrow points up. However, when it needs to point in a different direction, select the North Arrow and use the Rotate function to rotate it as needed while keeping the center of the North Arrow in place.

1. Select the North Arrow family. From the *Modify* | *Generic Annotation* ribbon, select **Rotate**.
2. From the *Options* bar, deselect **Copy**.
3. Maintain the center of rotation on the North Arrow, then rotation the family as needed.

Key Plan

A Key Plan is not used on all sheets of a project and for some projects a Key Plan is not required. For projects that require one or more Key Plans: Linework, Filled Regions, and Text designating a basic Key Plan with four areas have been established in the border family as a starting point for creating one. The visibility of the Key Plan elements, within the project, are controlled by the following instance parameters within the border family.

Parameter Name:	Controls the visibility of:
• Key Plan	the Key Plan Linework Boundaries and the Text Designations the four areas: A, B, C, and D
• Key Plan Area A	the Filled Region for area A
• Key Plan Area B	the Filled Region for area B
• Key Plan Area C	the Filled Region for area C
• Key Plan Area D	the Filled Region for area D

The creation of a project Key Plan requires several procedures and many steps. These procedures will enable you to create one Key Plan, e.g. First Floor. However, the project may require more Key Plans depending on the number of building levels and other factors. Therefore, you may need to perform these procedures more than once. In these cases, you should plan out the development of the Key Plans before performing the procedures.

For example, naming one parameter Key Plan Area A First Floor and another Key Plan Area A Second Floor. In this example there will need to be two or more Key Plan parameters, one for each building level, e.g., Key Plan First Floor and Key Plan Second Floor. When there are multiple Key Plans that will be stacked on top of each other in the border family, it's recommended that each Key Plan be developed next to each other. Once the Key Plan Testing has been completed, they can be stacked on top of each other in the Key Plan area of the border.

Note: Do not group the elements of the Key Plan. This is not necessary and will increase the file size of the family.

Key Plan Boundary - Trace the Building Outline

The Key Plan is a very small representation of the building. Not an exact duplication. In this procedure you will trace a floor plan. Keep in mind that the end result is a Key Plan with linework scaled down to a size no larger than 4 1/4" x 3 1/8". When the linework is scaled down, any lines shorter than 1/32" will be deleted. Trace the building outline and boundary areas as accurately as possible. However, you may need to drop some detail to reduce or eliminate the deletion of linework during scaling.

1. From the Project Model, work for a sheet Composite Floor Plan or place a Composite Floor Plan view on a sheet.
2. Do not activate the view placed on the sheet. Work from the sheet.
3. From the *Annotation* ribbon, *Detail*, select **Detail Line**.
4. From the *Modify* | *Place Detail Lines* ribbon, *Line Style*, select **..Solid 01 Line Style**.
5. Using Detail Lines to trace the exterior walls then establish the internal boundaries of each area. While drawing the linework, you will not be able to snap to the elements within the viewport.
6. Once the linework has been completed, select all of the linework and use Windows Cut to Clipboard **Ctrl + x**. Make sure to only have the relevant linework selected.
7. From the Revit Family Editor, use Windows **Ctrl + v** to paste the linework into the family placing it to the right side of the border.

Create the Key Plan Linework

In this procedure you will scale the Key Plan Linework so that it fits within an area no larger than 4 1/4" x 3 1/8". Then you will assign the Key Plan Linework to a visibility parameter.

1. From the *Create* ribbon, *Detail* area, select **Line**.
2. From the *Modify | Place Lines* ribbon, *Subcategory*, select the **Title Blocks**.
3. From the lower left most corner of the Key Plan Linework that was pasted into the border family, draw a Line from left to right at a length of 4 1/4".
4. Select all of the Key Plan Linework but remove the 4 1/4" line from the selection. Then, from the *Modify | Lines* ribbon, select **Scale**.
 - a. From the *Options* bar, select **Graphical**, then select the left end point of the 4 1/4" Line.
 - b. For the second point, move the cursor at an angle of 0 from the first point, and select a point on a line that is the far right side of the Key Plan Linework or in alignment to a line that is the far right side of the Key Plan Linework.
 - c. Select the right end point of the 4 1/4" Line.
 - i. If an *Error* dialog appears with one or more Errors, select **Delete Element(s)**.
 1. If the *Error* dialog appears stating *Line is too short*, select **Cancel**. The Scale function did not complete.
 - a. Find the line(s) that will be too short at scale and delete them. Edit the Linework to ensure that they form a closed loop.
 - d. Once the Linework has been scaled properly, delete the 4 1/4" Line.
 - e. Verify that the height of the Linework is no larger than 3 1/8".
 - ii. If it is larger than 3 1/8", repeat steps 1 - 4.e, but in this case use a Line length of 3 1/8" instead of the 4 1/4".
5. Move the Key Plan Linework to the right of the border near the predeveloped Key Plan Linework, Filled Regions, and text in the border family.
6. Select the Key Plan Linework, then from the *Properties* pallet, select the small box to the far right of the *Visibility* control. The *Associate Family Parameter* dialog appears.
 - a. From the parameter list, select **Key Plan**, then select **OK**. The *Associated Family Parameter* dialog will close.
7. With the Key Plan Linework selected, from the *Properties* pallet, the small box to the far right of the *Visibility* control will have an equal symbol = in it. This indicates that all of the Linework has been assigned to the Key Plan visibility parameter.

Create the Key Plan Area Filled Regions

A Key Plan Filled Region Area denotes the building area for the view placed on a sheet. Use this procedure to create the Key Plan Filled Region Areas and assign them to visibility parameters.

1. From the *Create* ribbon, *Detail* area, select **Filled Region**.
2. From the *Properties* pallet, verify that **Area of Work** is the active Filled region Type. If it is not, change the Type to **Area of Work**.
3. From the *Modify | Create Filled Region Boundary* ribbon, *Subcategory*, select **<Invisible lines>** from the dropdown list.
4. Trace the area of the Key Plan Linework representing Area A.
5. When complete, from the *Modify | Create Filled Region Boundary* ribbon, select the **Green Check Mark**, *Finish Edit Mode*. A Filled Region for Area A is created.
6. With the Filled Region selected, from the *Properties* pallet, select the small box to the far right of the *Visibility* control. The *Associate Family Parameter* dialog appears.
 - a. Select **Key Plan Area A**, then select **OK**. The *Associated Family Parameter* dialog will close.
7. With the Key Plan Linework selected, from the *Properties* pallet, the small box to the far right of the *Visibility* control will have an equal symbol = in it. This indicates that all of the Filled Region has been assigned to the Key Plan Area A visibility parameter.
8. Repeat steps 1-7 for the remaining Key Plan Areas. If there are more than four Key Plan Areas, see [Create Additional Key Plan Area Parameters](#) below to create more parameters, then repeat steps 1-7 for the remaining Key Plan Areas.

Create Additional Key Plan Area Parameters

The Key Plan Area Parameters controls the visibility of the Key Plan Filled Regions. If there are more than four Key Plan Areas, additional Key Plan Filled Regions will need to be created as well as Key Plan Area parameters to control their visibility.

1. From the *Create* ribbon, *Properties* area, select **Family Type**. The *Family Types* dialog appears.
2. From the lower left of the dialog, select **New Parameter**, the *Parameter Properties* dialog appears.
 - a. From the *Parameter Data* area, for *Name*, enter the appropriate value, e.g., **Key Plan Area E**.
 - b. For the *Type of Parameter* dropdown, select **Yes/No**.

- c. For the *Group parameter* under dropdown, select **Visibility**.
 - d. Select the **Instance** radial button.
 - e. Select **OK**. The *Parameter Properties* dialog closes and the newly created parameter appears at or near the top of the *Visibility* parameters list, with the suffix (default) added to its parameter name. The suffix indicates that it's an Instance parameter, not a Type parameter.
3. Select the newly created parameter and uncheck the box from the *Value* column.
4. With the newly created parameter selected, from the lower left of the dialog, use the **Move parameter down** control to move the parameter to the proper location within the list of parameters. This sets the order of the *Visibility* parameters displayed in the *Option* pallet for the border in the project.
5. Repeat steps 2 - 4 for each additional Key Plan Area.
6. Once all Key Plan Area parameters have been created, select **OK**. The *Family Types* dialog closes.
7. Return to [Create the Key Plan Filled Regions](#).

Key Plan Text Designations

Four Key Plan Text Designations: A, B, C, and D have been created to kick-start the development of a project Key Plan. Each has been assigned to the Key Plan Visibility parameter. Use this procedure to place and create Key Plan Text Designations.

1. From the original Key Plan Text Designation area, select the **A** and move it to the center of the newly created Key Plan Area A.
2. Repeat step 1 for other Key Plan Area Text Designations as required.
 - a. If more than four Key Plan Text Designations are needed.
 - i. Copy one of the four original Key Plan Text Designations, to the center of the Key Plan Area requiring the designations. When copied, the new Key Plan Text Designation will maintain the Key Plan Visibility parameter.
 - ii. Change the text designation as required.

Repeat steps 2.a for the remaining Key Plan Area Text as required.

Replace the Original Key Plan with the Newly Created Key Plan

1. Select any of the linework, Filled Regions, and Text Designators of the Original Border Key Plan and delete it.
2. Select the newly created Key Plan Linework, Filled Regions, and text and move it to the Key Plan area.

Key Plan Testing

The development of the Key Plan should be tested to make sure that it works properly. The goal is to have the Key Plan Boundary, Text Designations and Filled Regions display correctly when the associated visibility parameters are turned on/off.

1. From the *View Control Bar*, select **Preview Visibility On**. The Project Design Firms, Project Names, and Project Numbers for the New Construction (A), (B), and (C) phases, as well as other elements, including the Key Plan, should no longer be visible.
 - a. If any of the Key Plan elements remain visible, select them. Then, from the *Properties* pallet, select the small box to the far right of the *Visibility* control. The *Associate Family Parameter* dialog appears.
 - i. Select the appropriate Visibility parameter from the list, then select **OK**. The *Associate Family Parameter* dialog will close.
2. From the *Create* ribbon, *Properties*, select **Family Types**. The *Family Types* dialog appears.
3. From the *Visibility* area, for the *Key Plan* parameter, from the *Value* column, check the **Visibility** check box. Then select **Apply**. The Key Plan Linework and Text Designations should appear.
 - a. If there are any issues with the Key Plan boundary linework and/or text designations appearing correctly, from the *Family Types* dialog, select **OK**. The *Family Types* dialog closes.
 - i. From the *View Control Bar*, select **Preview Visibility Off**. All of the Key Plan elements should reappear.
 - ii. Select the element(s) that did not display correctly. Then, from the *Properties* pallet, select the small box to the far right of the *Visibility* control. The *Associate Family Parameter* dialog appears.
 - iii. From the parameter list, select the appropriate Visibility parameter from the list, then select **OK**. The *Associate Family Parameter* dialog will close and correct the visibility issue(s).
 - iv. Restart the Key Plan Testing procedure.
4. Once all of the Key Plan Linework and Text Designations appear correctly, then from the *Visibility* area, for the *Key Plan Area A* parameter, from the *Value* column, select the **Visibility** check box. Then select **Apply**. The Key Plan Area A Filled Region should appear.
 - a. If there are any issues with the Key Plan Area A Filled Region appearing correctly, select **OK**.
 - i. From the *View Control Bar*, select **Preview Visibility Off**. All of the Key Plan elements should appear.
 - ii. Select the element(s) and correct the visibility issue(s).
 - iii. From the *View Control Bar*, select **Preview Visibility On**.

- iv. Repeat step 4 until all visibility issues are resolved.
5. Repeat step 4 for each Key Plan Area until all Filled Regions appear correctly for the associated Key Plan Area Visibility parameter.
6. Once all visibility issues have been resolved, open the *Family Types* dialog. Then, from the *Visibility* area, uncheck the **Visibility** check box for the *Key Plan* parameter from the *Value* column.
7. Repeat step 6 for each of the *Key Plan Area* parameter.
8. Select **OK** to close the *Family Types* dialog. The elements of the Key Plan should no longer be visible.
9. From the *View Control Bar*, select **Preview Visibility Off**. All of the Key Plan elements should appear.

Plan Guide Points

Plan Guide Points are used to place similar plan views on different sheets at the same location. For example, the location of a Second Floor Plan Area A view on a sheet, will more than likely be the same for a First Floor Plan Area A view on another sheet.

The border family has two Plan Guide Points. One for a Composite Plan and another for a Floor Plan. Each consists of a red cross within a 1/4" radius red circle. Below the linework is red text with the words Composite Plan or Floor Plan. These elements are assigned to the Plan Guide Point visibility Type parameter. When the Plan Guide Point Visibility Type parameter is set to On for the New Construction Type for the IDS_Std Border 30x42 sheet border family, all sheets that use the New Construction Type will display the Plan Guide Points. When the Plan Guide Point visibility Type parameter is set to Off for the New Construction Type for the IDS_Std Border 30x42 sheet border family, all sheets that use the New Construction Type will not display the Plan Guide Points.

Use this procedure to position a Plan Guide Point within the Border Family.

1. From the Project Model, place a plan view, either a First Floor Composite Plan or First Floor Plan, on a sheet. For this procedure the First Floor Composite Plan view will be used as the example view.
2. Move the view to its final location on the sheet.
3. Do not activate the view placed on the sheet. Work from the sheet.
4. From the *Annotate* ribbon, select **Detail Line**. Then, from the *Line Style* dropdown list, select **..Solid 01**.
 - a. If there is an intersection of two grid lines, you will be able to snap to them. If there are no grid lines, draw a cross at the intersection of a corner of the building. You may need to zoom in reasonably close for this.
5. Select the two Detail Lines, then use Windows Cut to Clipboard **Ctrl + x**. The two Detail Lines disappear from the sheet.
6. From the IDS_Std Border 30x42 family, from the *Modify* ribbon, *Clipboard* area, select the **Paste** dropdown, then select **Aligned to Current View**. The two Detail Lines will be placed into the IDS_Std Border 30x42 family at the same location from where they were cut from the Project Model.
7. Select the elements Plan Guide Points for the Composite Plan. Then, from the *Modify | Multi-Select* ribbon, select the **Move** function.
 - a. Select the center of the circle of the Plan Guide Point as the start point. Then, place it at the intersection of the two Detail Lines.
8. Select the two Detail Lines. Then, from the *Modify | Multi-Select* ribbon, from the *Modify* area, select the **X Delete** function.
9. Select the text of the Plan Guide Point and edit it to indicate the Grid Line intersection, e.g., Composite Plan A-1. If there are no Grid Lines, use an appropriate indication of what the Plan Guide Point is used for. For example, Floor Plan Area A.

Repeat this procedure as required. If more than two Plan Guide Points are needed, copy one of them and repeat this procedure.

Saving the Border to Autodesk Construction Cloud (ACC)

BIM 360 has been rebranded as Autodesk Construction Cloud (ACC)

All Revit models and AutoCAD drawings relevant to the project are to be maintained on ACC. The project Border family should also be maintained on the project ACC in the Border subfolder. If there is no Border subfolder for the project, contact the BIM Coordinator to create it.

1. From the *File* tab dropdown, select **Save As > Family**. The *Save As* dialog appears.
2. From the *Save in* drop-list, select **This PC > Autodesk Docs > Integrated Design Solutions**.
3. From the *Name* list of Client, double-click the **Client Project**. Then, double-click **Project Files**.
 - a. The Building Name should be listed. Double-click the **Building Name**. Navigate to and open the **Border** folder.
 - b. Verify that the *File name* remains IDS_Std Border 30x42.rfa. Then select **Save**. The *Save As* dialog closes.

Loading the Updated Border Family into the Project Model

1. With the Project Model open in the same session of Revit, from the Family Editor *Create* ribbon, *Family Editor* area, select **Load into Project and Close**. The *Family Already Exists* dialog appears.
2. Select **Overwrite the existing version and its parameter values**. The *Noneditable Family* dialog appears.
3. Select **Yes**. The *Noneditable Family* dialog closes and the Border in the Project Model is updated with the one saved within the ACC Project Border folder.

Finalizing the Project Border in the Project Model

Establish the Project Data for the Project Border

As stated previously, the Client Name and Project Address are Project parameters. This procedure will establish these parameter values as well as the Project Administrator, Project Architect, Q.M. Reviewer, and Approver.

The values entered for these parameters are displayed on all relevant sheets regardless of the Project Phase.

1. From the Project Model, *Manage, Settings* area, select **Project Information**. The *Project Information* dialog appears.
2. From the *Other* area, for the **Client Name**, enter the appropriate value.
3. For the **Project Address**, from the *Value* column, select in the field the states “**Enter address here**”. You can’t actually enter a value directly in this field. To the right of the text, the *Ellipses* appears. Select the **Ellipses**. The *Edit Text* dialog appears.
 - a. Enter the appropriate value for the address. Then select **OK**. The *Edit Text* dialog closes.
4. Enter the appropriate values for the **Project Administrator**, **Project Architect**, **Q.M. Reviewer**, and **Approver**.
5. Select **OK**. The *Project Information* dialog closes and the Border is updated with the Client Name and Project Address. The Project Border is updated with the data entered.

Re-edit the Border Family

Use this procedure to re-edit the Border Family.

1. From the File tab dropdown, select **Open > Family**. The *Open* dialog appears.
2. From the Look in dropdown list, select **This PC**.
3. From the list, double-click on **Autodesk Docs**.
4. From the list of files and folders, there may be more than one design firm listed. Double-click on the appropriate one, e.g., **Integrated Design Solutions**. A list of ACC clients appears in the list of files and folders.
5. Double-click on the appropriate one. The Project Files folder appears in the list of files and folders.
6. Double-click on the **Project Files** folder. One or more building folders appear in the list of files and folders.
7. Navigate to the Borders folder. Then, select **IDS_Std Border 30x42.rfa**. The *IDS_Std Border 30x42.rfa* opens.
8. Make any modifications necessary to the border.
9. From the *File* tab dropdown, select **Save**.
10. From the *Modify* ribbon, select **Load into Project and Close**. The *Family Already Exists* dialog appears.
11. Select **Overwrite the existing version and its parameter values**. The *Noneditable Family* dialog appears.
12. Select **Yes**. The *Noneditable Family* dialog closes and the border in the project is updated with the one on ACC.