# Drawing Creation Tutorial

## Placing Section and Detail Views


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SESSION 7

# Placing Section and Detail Views

## Objective

By the end of this session, you will be able to:

- Place cutting planes on a 2D graphic view to create section views
- Place a detail envelope on a 2D graphic view to create a detail view
- Move the section and detail views to another drawing

## Overview

Smart 3D lets you place section and details views as child views to other graphical views. Section views show information similar to its parent graphic view in a different orientation.

Detail views are enlargements of the parent graphic view, and often provide additional information that clarifies details about the portion of the drawing being enlarged.

Section and detail views display objects that are in the query associated with the parent graphical view, but they can use different view styles than the parent view.

To place a section view, first place a cutting plane on the parent graphic view. The cutting plane is an annotation marker that indicates where to slice a desired group of objects, and from which direction to look at that slice. Cutting planes are made of one or more line segments. A cutting plane comprised of multiple line segments is referred to as a "jogged" cutting plane. Once a cutting plane has been defined, a section view appears on your cursor and may be placed by clicking anywhere in the drawing sheet. The **Section View** ribbon allows you to update the view immediately upon placement and to set other values, such as view style or scale.

To place a detail view, first place a detail envelope on the parent graphic view. Specify the detail envelope by drawing a circle or polygon around a portion of the main drawing view. Once the envelope is placed, the detail view can be placed by selecting the envelope and then clicking the **Place Detail View** command. The **Detail View** ribbon allows you to set other values, such as view style or scale.

You can change the size of a section view by modifying the cutting plane or using the resize handles on the section view. You cannot directly modify the volume associated with a section view in the 3D model.

Section and detail views are frequently placed on a different drawing than the main view. Smart 3D allows you to move views from one drawing to another using the ‘Move View’ command. If child views are moved, they retain their association with any parent views even if they are in a different drawing.

In this session we will learn how to place a cutting plane and a section view. We will learn how to place a detail envelope and a detail view. We will learn to modify section views using both the cutting plane modification and handle modification methods. We will then move the section and detail views onto a separate drawing.

# Place Cutting Plane and Section View

1. Click **File > Define Workspace**.

   *The **Define Workspace** dialog box displays.*

2. Select **More** from the **Filter** list, then select **Drawings Creation Filters\06\U01 Workspace**.

3. Open the **Drawing Console**. Expand the **Creation Labs** and **06** folders. Expand the **Equipment** node.

4. Right-click **Equipment Plan01**, and select **Edit**.

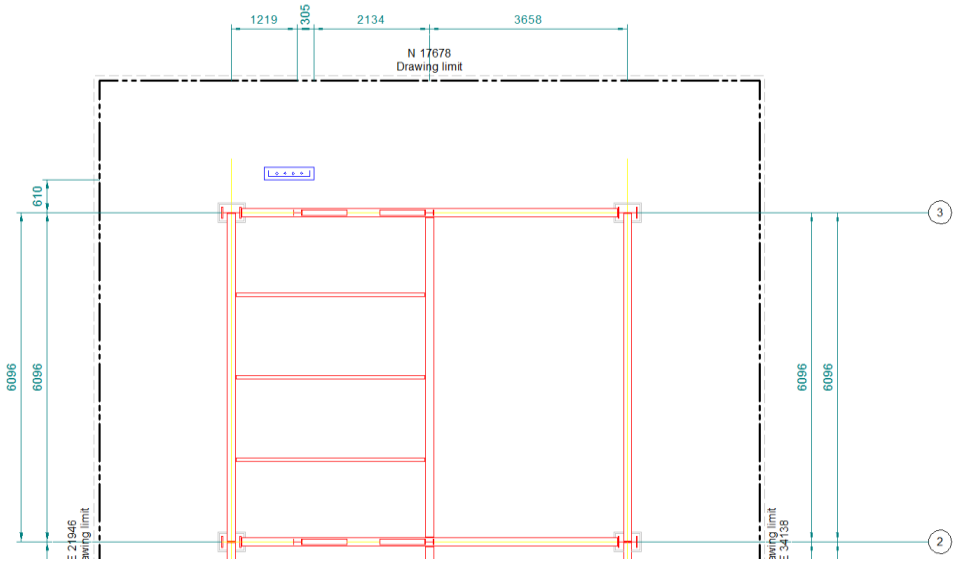
   *The **SmartSketch Drawing Editor**window displays.*

5. Maximize the drawing window in **SmartSketch Drawing Editor**.

6. Click **Fit** .

7. Click **Zoom Area** .

8. Drag a rectangle around the top two thirds of the graphic view to get a closer look at the contents.




9. Click **Cutting Plane** .

   *The **Cutting Plane** ribbon displays.*


   *The status bar displays **Select the drawing view that will contain the cutting plane**.*

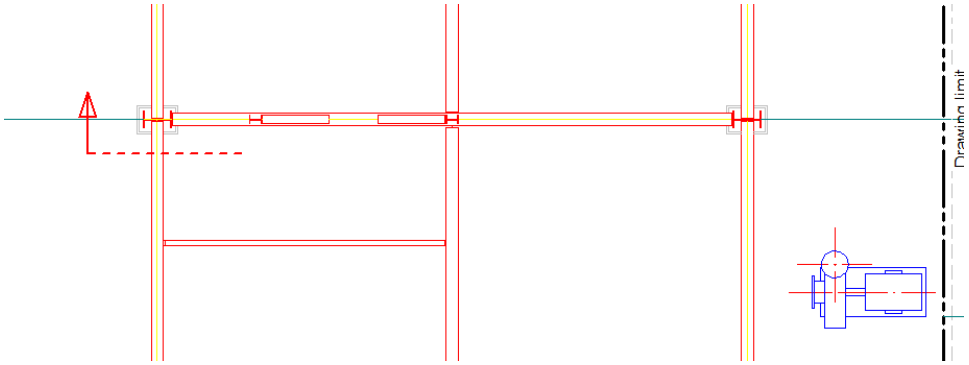
10. Select the graphic view.

11. Type **A1** in the **Reference 1** field on the **Cutting Plane** ribbon, and press TAB to advance to the **Reference 2** field.

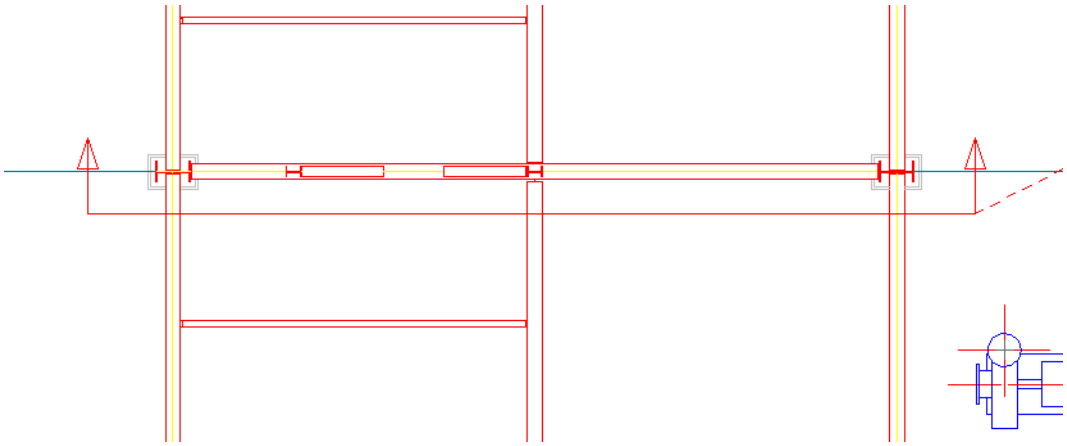
12. Type **A2** in the **Reference 2** field.

TIP To be an 'acceptable' cutting plane, the area defined during the **Cutting Plane** command must overlap some portion of the area bounded by the selected view.

13. For the first point of the cutting plane, click just below grid line 2 to the left of the rack, as shown in the picture below.




14. For the second point of the cutting plane, click along grid line 2 to the right of the rack, as shown in the picture below:



TIP This lab places a cutting plane comprised of one segment. However, a cutting plane is not limited to just one segment. To create a cutting plane with more than one segment, keep clicking points in the graphic window. When the placement of points is complete, right-click to signal the end of point placement.

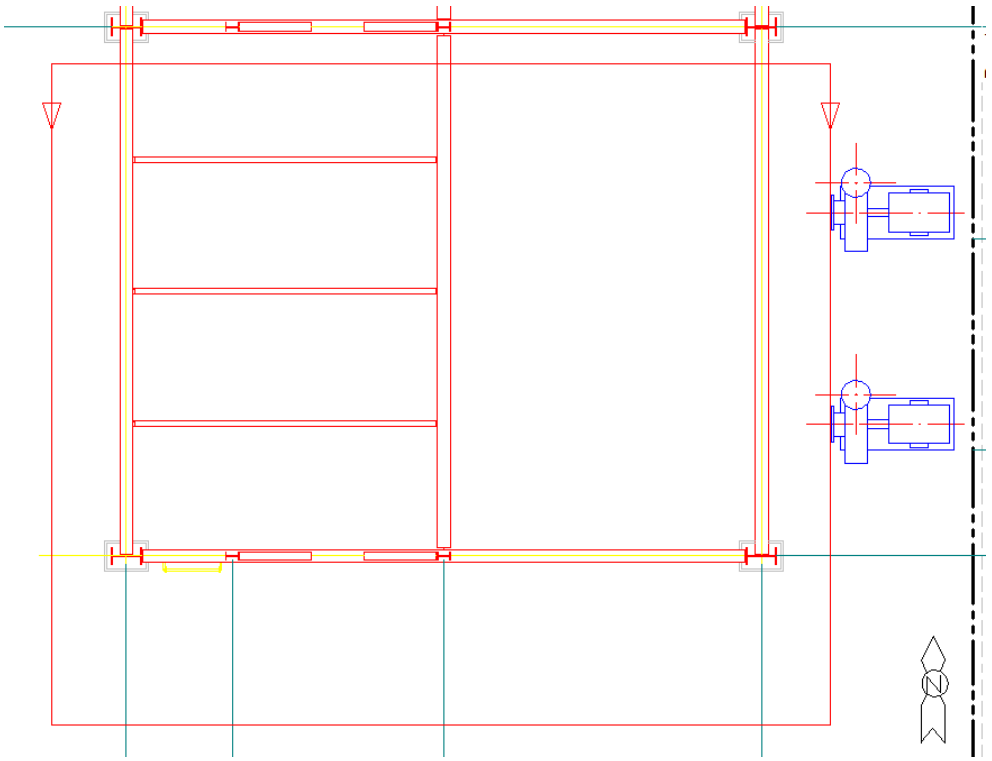
15. While the cursor is within the drawing window, right-click to complete the placement of cutting plane points, and enter the step to define the depth of the cutting plane.

    *The **Cutting Plane** ribbon displays a new field called **Depth** on its right side.*

16. Type **25** in the **Depth** field.

    *The value **25' 00"** displays in the field and is locked.*

17. Move the cursor below the cutting plane to define the depth direction.



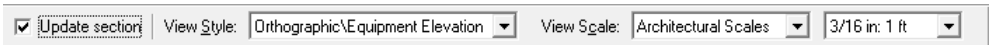
18. Click in the drawing window to complete the cutting plane placement.

    *The style of the cutting plane changes, a view is attached to the end of the cursor, and the **Place Section View** ribbon displays.*


19. Select the **Update section** box on the **Place Section View** ribbon so that the section view automatically updates after placement.
20. Select **More** from the **View Style** list.

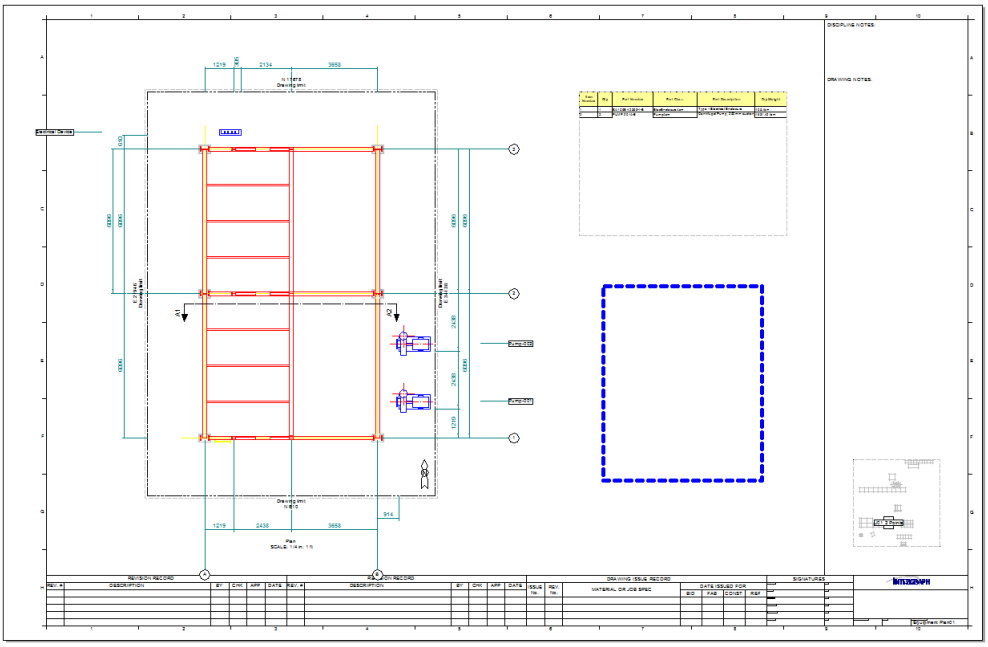
    *The **Select View Style** dialog box displays.*

21. Select **Orthographic\Equipment Elevation** on the **Select View Style** dialog box:
22. Click **OK** on the **Select View Style** dialog box.
23. Select **Architectural Scales and 3/16 in: 1 ft** from the **View Scale** list.

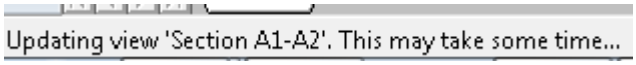



24. Click **Fit** .

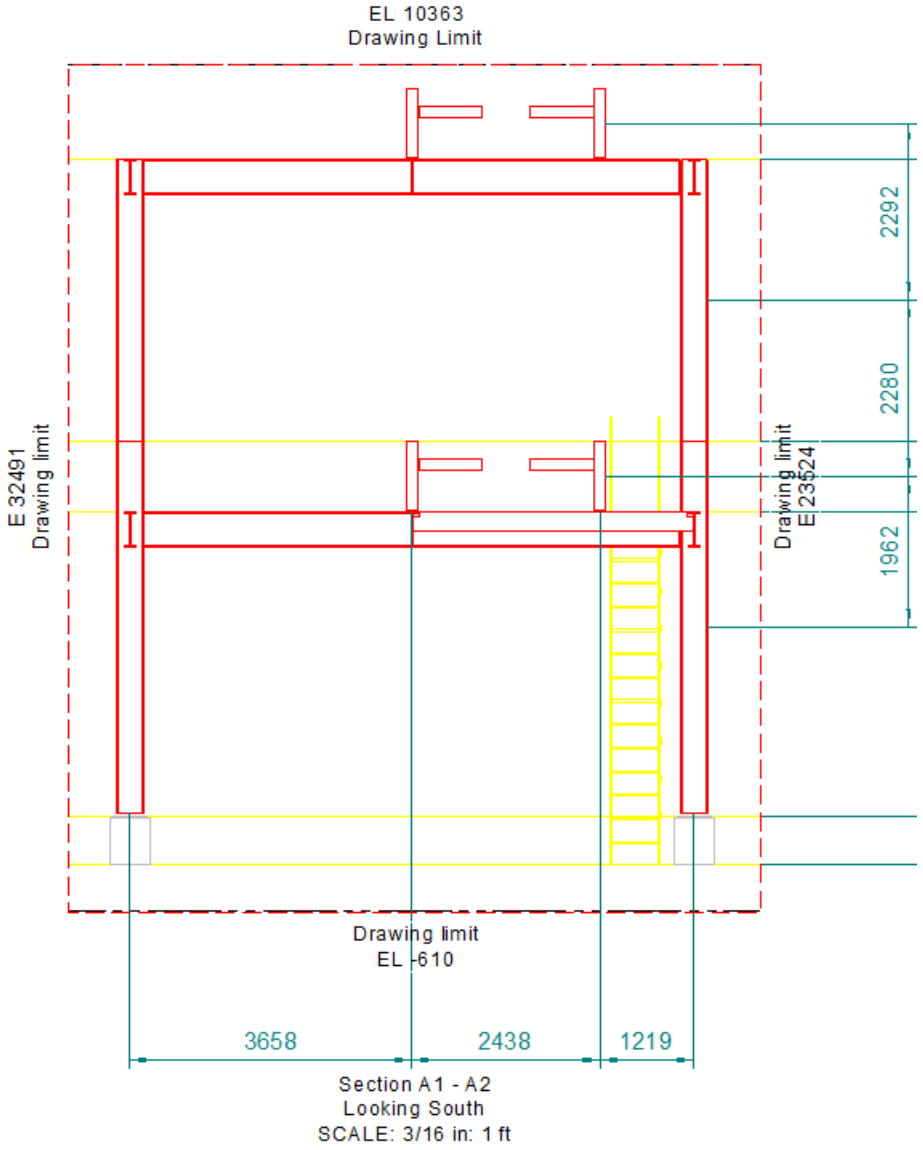
25. Click to place the section view in the clear space under the report view.



*The view automatically updates. A message displays in the status bar.*



*When the update completes, the section view contents should look like the picture below:*




26. Switch to the **Smart 3D** window.

    *A new volume with the same name as the section view has been created in the same space folder as the parent volume on the **Space** tab of the **Workspace Explorer**.*

    *The section volume now covers the southern half of the rack.*

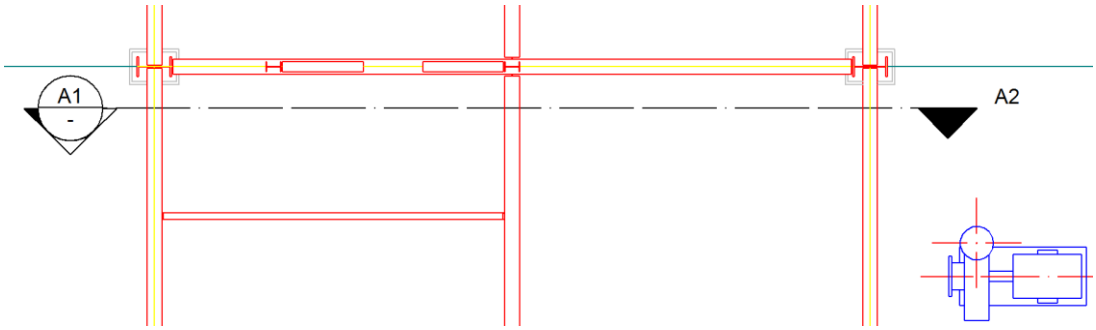
    TIP The section volume that is placed in the model is automatically associated with the section view. The section volume is a 'volume by path' type volume. The width and depth of the section volume is controlled by the cutting plane. The height of the section volume matches the height of the parent view's associated volume.

# Modify Section View

TIP Modifying the size of a section can be achieved by modifying the cutting plane or using the resize handles on the section view. Either one of these modifications resizes the section volume. Both of these methods are covered in this section of the lab.

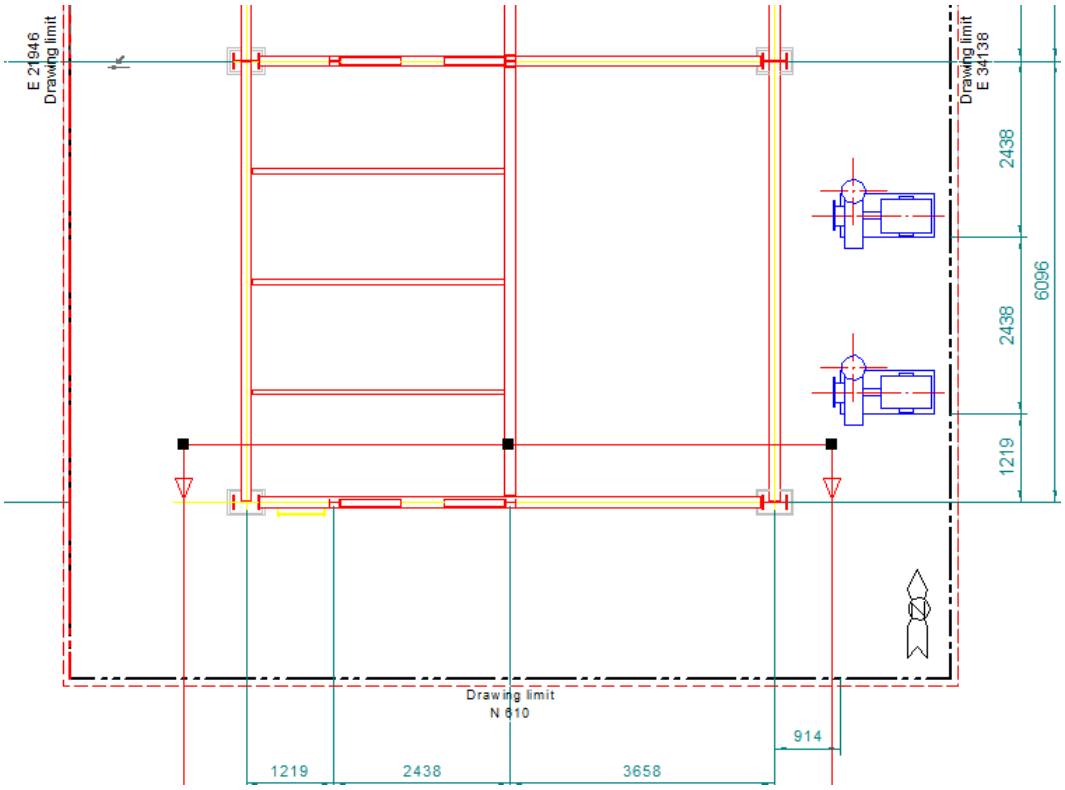
NOTE Modifying the section volume directly is not supported.

1. Click **Zoom Area** .
2. Drag a rectangle around the bottom half of the main graphic view to get a closer look. Make sure to include the cutting plane in the window.
3. Hover the cursor over the center of the cutting plane segment until it turns red.



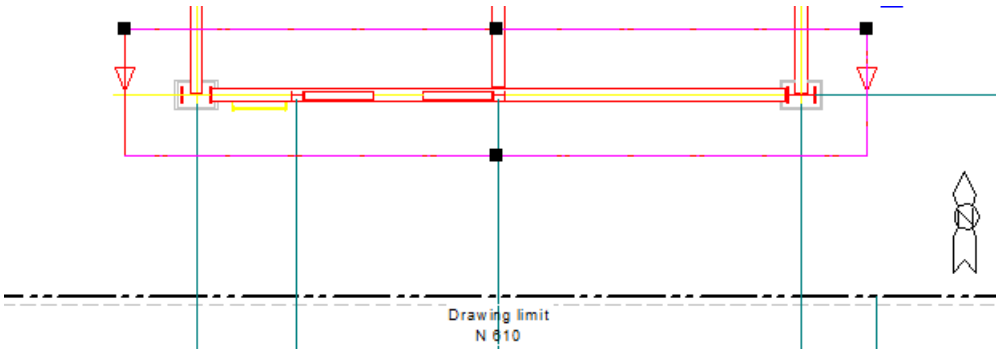

4. Click to select the cutting plane

5. Mouse down on the cutting plane segment and drag it due South in the drawing so that the cutting plane segment is just above the bottom-most column line in the view.

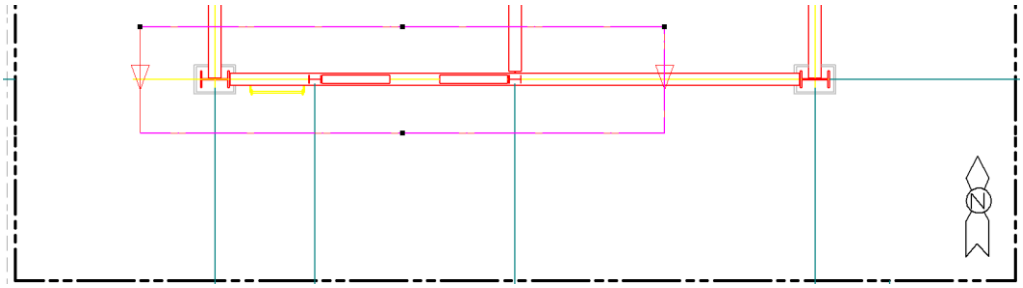



6. If necessary, click on the **Vertical View Scroll Bar** to move the view down to see the depth line of the cutting plane.

7. Drag the handle on the depth line so that the depth line is just below the bottom-most column line in the view.

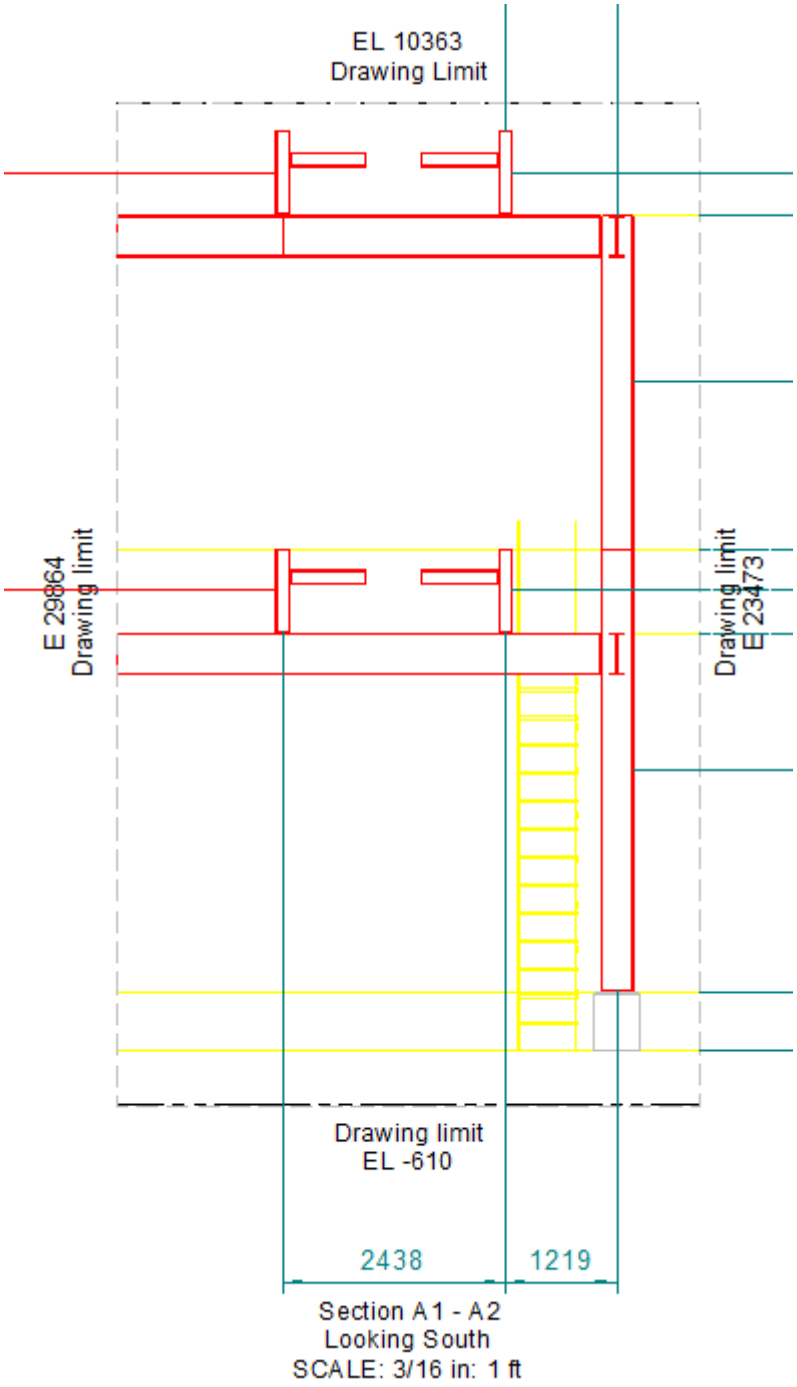


8. Mouse down on the right handle on the cutting plane segment, and drag it to the left so that the segment is about 3/4 of its original length.



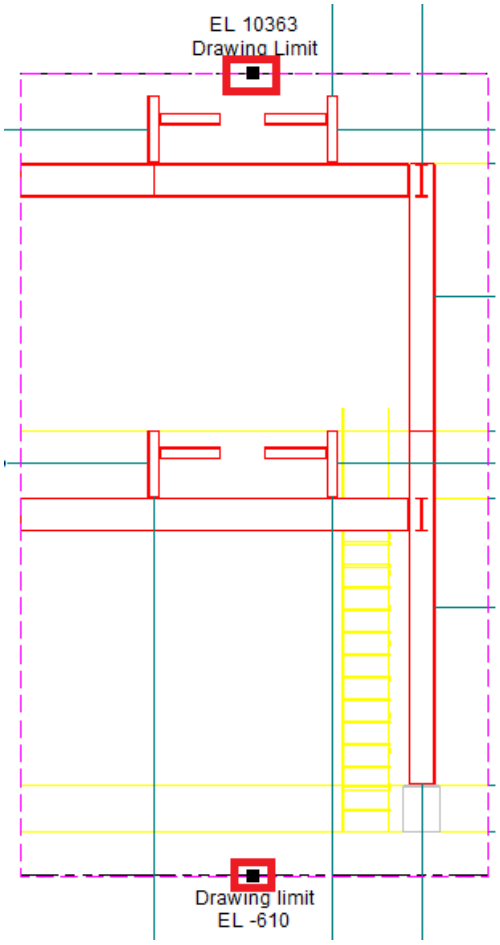
9. Click **Finish** on the **Cutting Plane Modify** ribbon to complete the modification of the cutting plane and update the section view (because **Update Section** is still selected on the ribbon).
10. Click **Fit** .

*The section view is narrower to match the size of the cutting plane.*

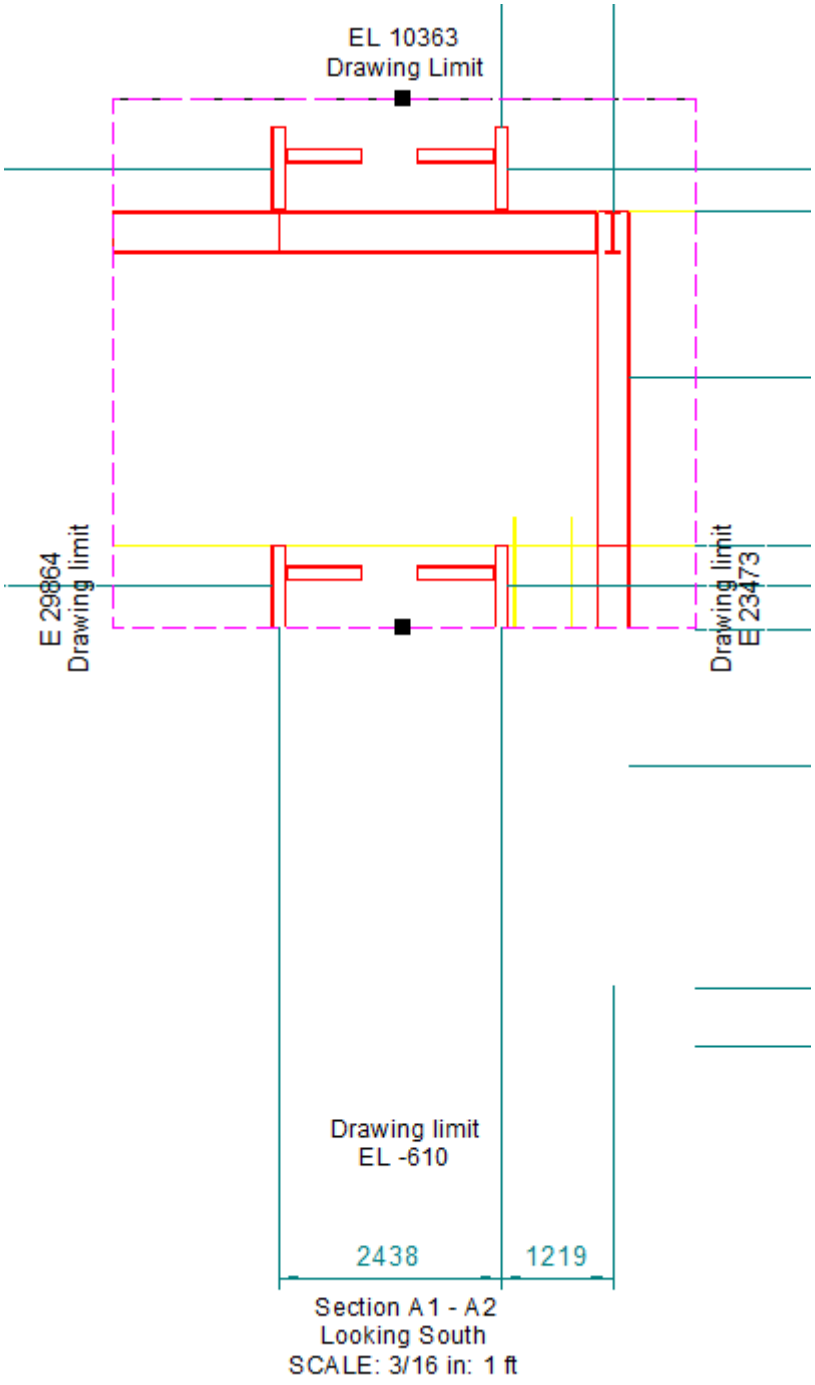



11. Click on the section view.

*Handles display on the top and the bottom of the section view.*



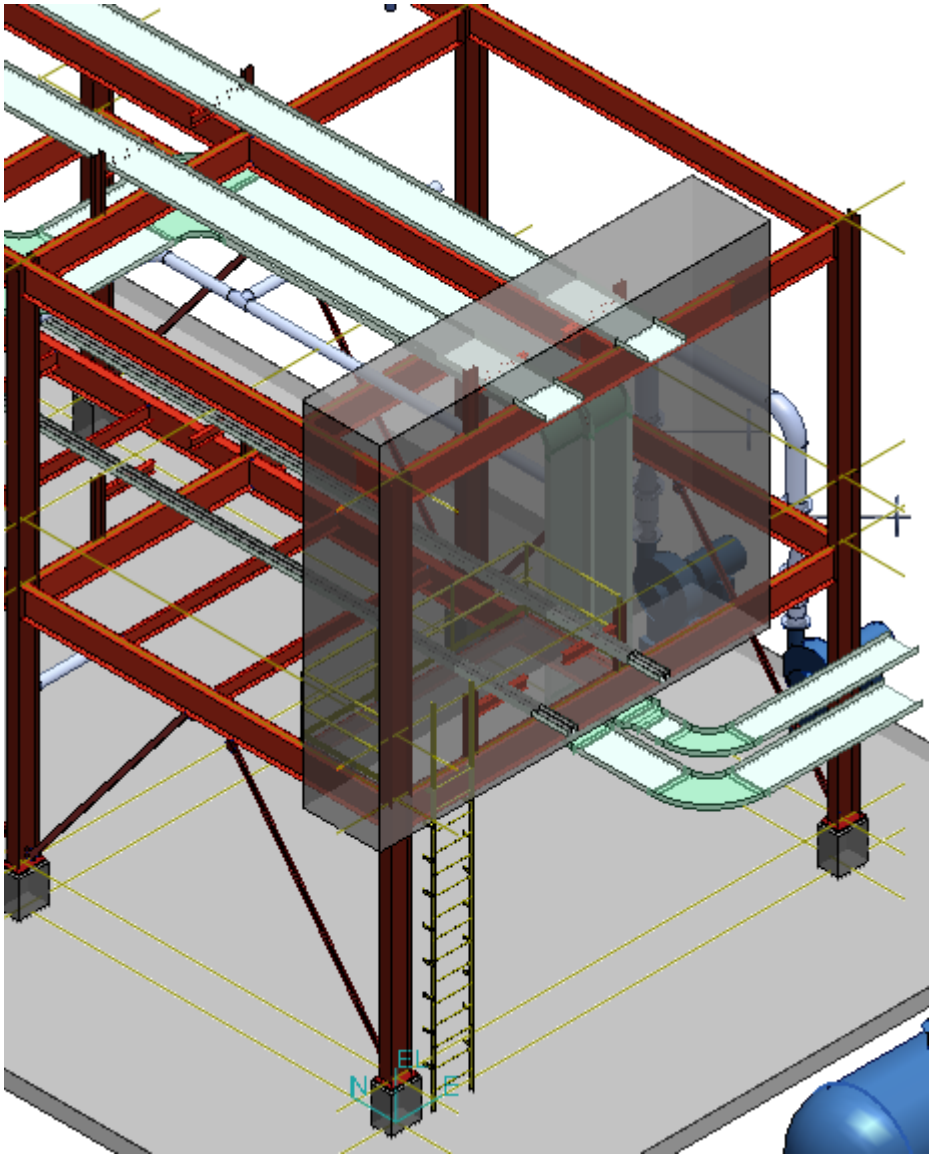
12. Mouse down on the bottom-most handle, and drag it up so that the view is about half as tall.




13. Click **Finish** on the **Cutting Plane Modify** ribbon to complete the modification of the section view and update it.
14. Switch to the **Smart 3D** window.

15. In the graphic window, right-click on **U01 2 Points**, and select **Hide**.

    *The section volume is smaller to match the modifications made in the drawing.*

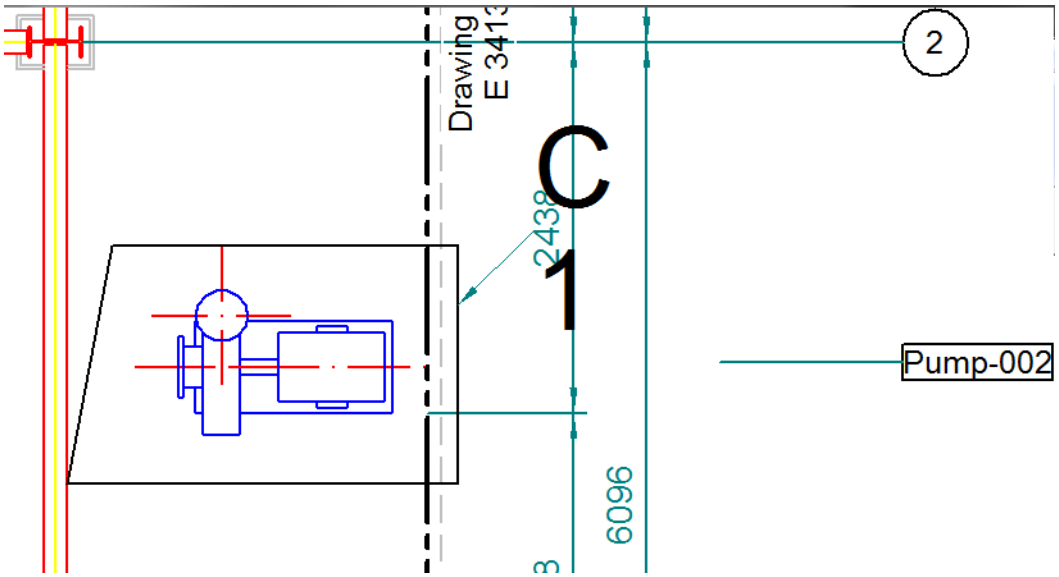


# Place Detail Envelope and Detail View

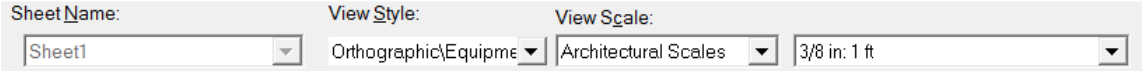
1. Switch to the **SmartSketch Drawing Editor** window.
2. Click **Detail Envelope** .

   *The **Detail Envelope** ribbon displays.*

   *The status bar displays **Select the drawing view for which to place a detail envelope**.*
3. Select the normal graphic view.
4. Ensure that **Polygon Shape** is selected on the **Detail Envelope** ribbon.
5. Type **C** In the **Reference mark** field.
6. Type **1** in the **Additional callout text** field.
7. To place a four-sided detail envelope around **Pump-002**, click four points around the object. Make sure that the fourth and first points are at the same position.




*The style of the detail envelope changes, a view with a preview is attached to the end of the cursor, and the **Detail View** ribbon displays.*

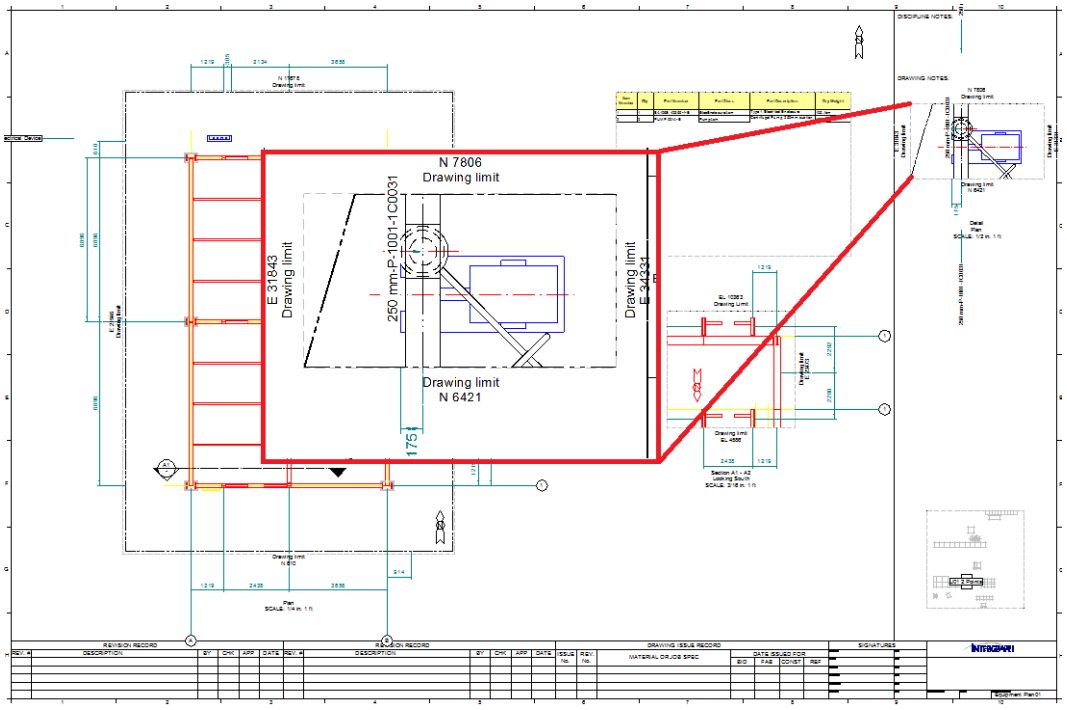



TIP The ribbon for placing detail views does not have the feature to automatically update the view after placement as in the ribbon for placing section views.

8. Select **More** from the **View Style** list on the **Detail View** ribbon.
9. Select **Orthographic\Piping Plan on** the **Select View Style** dialog box:
10. Click **OK** on the **Select View Style** dialog box.
11. Select **Architectural Scales and 1/2 in: 1 ft** from the **View Scale** list.
12. Click **Zoom Out** , and drag the cursor in the graphic window until you can see the entire drawing.

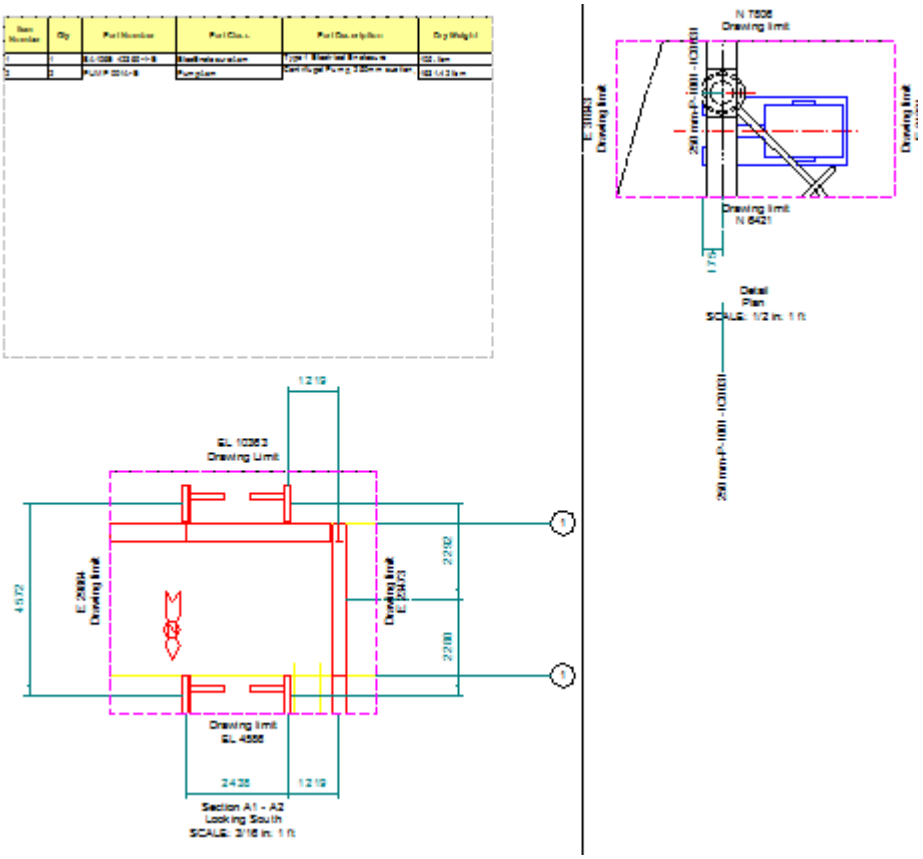
13. Right-click to exit **Zoom Out**.
14. Click in the clear space above the key plan view to place the detail view.
15. Right-click the detail view boundary, and select **Update View**.

    *When the update completes, the detail view contents should look like the picture below:*



# Move Section and Detail Views to Another Drawing

1. Press CTRL, and select the section and detail views.



2. Click **Move View** .

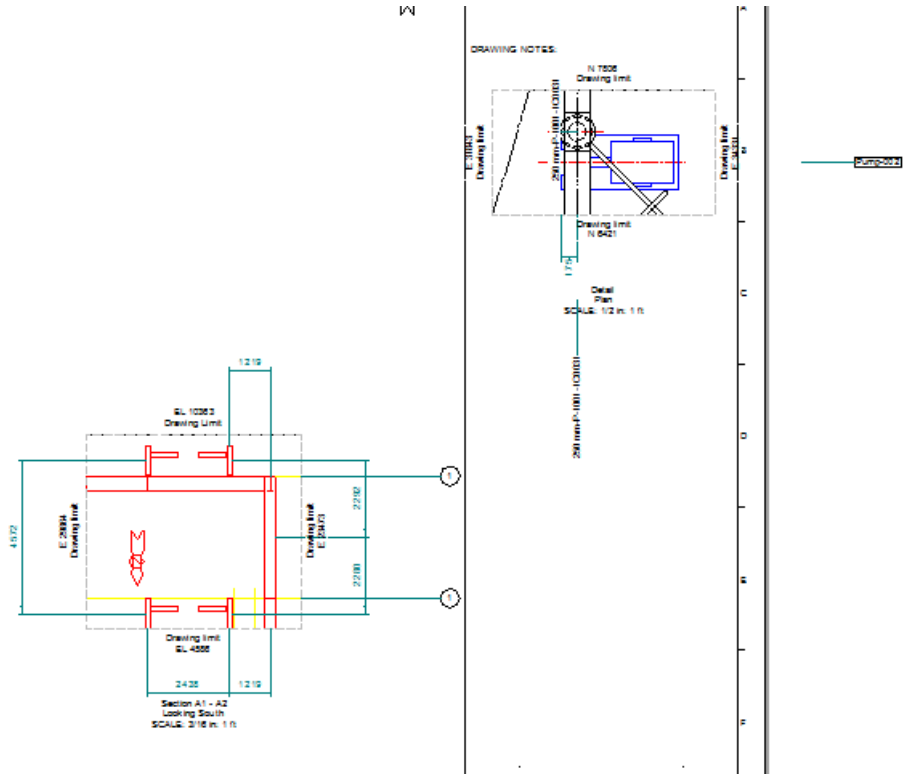
   *The **Move view** dialog box displays.*

3. Select **Section and Detail Views** in the **Move view** dialog box.
4. Click **OK** on the **Move view** dialog box.
5. When the move completes, click **File > Exit** to exit **SmartSketch Drawing Editor**. It is not necessary to save the drawing because it was auto-saved during the move of the views.
6. Switch to the **Drawing Console** window.
7. Right-click on the drawing **Section and Detail Views**, and select **Edit**.

   *The **SmartSketch Drawing Editor** window displays.*

8. Maximize the drawing window in **SmartSketch Drawing Editor**.
9. Click **Fit** .

*The drawing contents should appear similar to the picture below:*




10. Click **File > Exit** to exit **SmartSketch Drawing Editor**. You do not need to save the drawing because you did not change it.