Session 4: Creating Section and Detail Views

Objective:

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

- Add section and detail views to composed drawings

Prerequisite Sessions:

- SP3D Overview
- SP3D Common Sessions
- Drawings and Reports: An Overview
- Creating a Composed Drawing

Overview:

SP3D Drawings allows a user to create section and detail views based on a main drawing view.

Detail views are more than enlargements of the main drawing view. They often contain additional graphical information that is not visible in the main drawing view, such as weld or chalk information. You specify the detail view by drawing a circle or polygon around a portion of the main drawing view. The shape created is called the *detail envelope*.

Section views are extracted from main drawing views or other section views. Section views are similar to detail views, except that they can display information in an orientation that is different from that of the originating 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. The cutting plane is comprised of one or more line segments. When comprised of multiple line segments, cutting planes are referred to as "jogged" cutting planes.

In this session, you will learn to create and update section and detail views. But first we will create a composed drawing and place a view on it that allows us to create section and detail views.

Create a composed drawing in Unit U01 of your workspace by performing the following tasks:

Create New Drawing

1. Open Drawing Console using **Tools > Drawing Console**
2. Right mouse click on **Composed Drawings** and select **New Drawing.**
3. Enter values as shown in Figure 1 and click **OK** to create a new drawing. This opens the drawing editor.

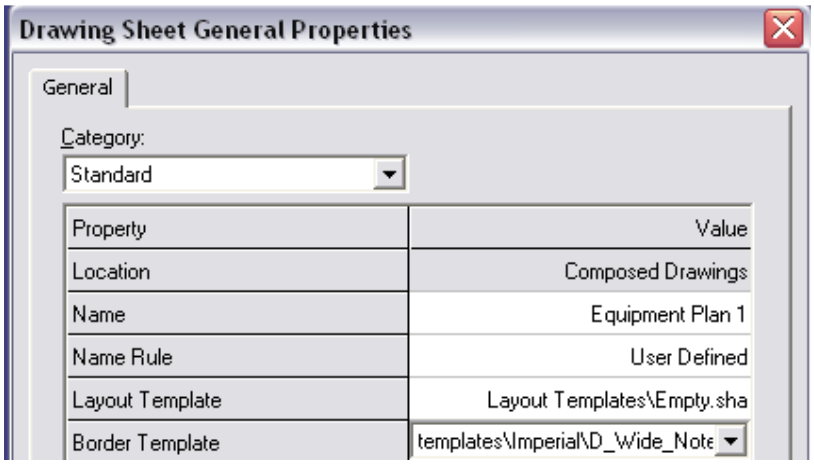

Figure 1: New Drawing Properties

Place a drawing view in the drawing

4. In Drawing Editor, click **PinPoint** to start the 2D pinpoint as shown in Figure 2

Figure 2: PinPoint Command

5. Click the **Select Tool** command in the vertical toolbar to dismiss the target as shown in Figure 3.

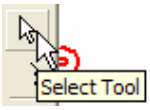

Figure 3: Select Tool Command

6. Start the **Line** command and click in the drawing sheet to activate pinpoint as shown in Figure 4

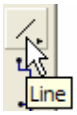

Figure 4: Place Line Command

7. Set **Step** to 1" by entering value in the ribbon bar as shown in Figure 5.

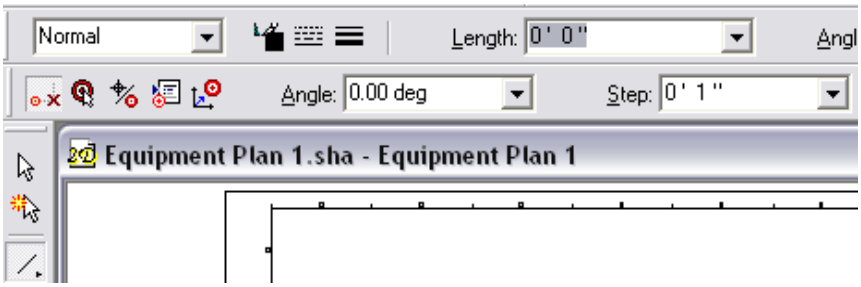

Figure 5: Setting PinPoint Step Value

8. Right mouse click to terminate the place line command.
9. Click the **Place View** button in the toolbar to start the placement of a view as shown in Figure 6.

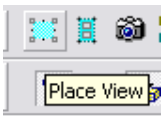

Figure 6: Place View Command

10. Click at **X=0 '5", Y = 1'7"** to start view placement, click at **X = 1'7", Y = 0'5"** to finish view placement as shown in Figure 7. The drawing view properties dialog is shown

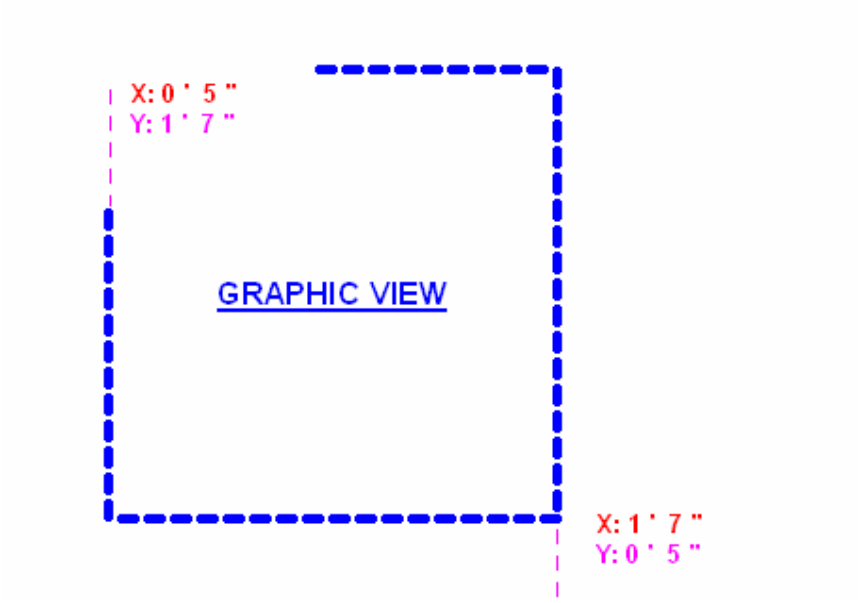

Figure 7: Placing a graphic view

11. Select More… in the Style field and select 'Orthographic\Equipment Plan' as shown in Figure 8.

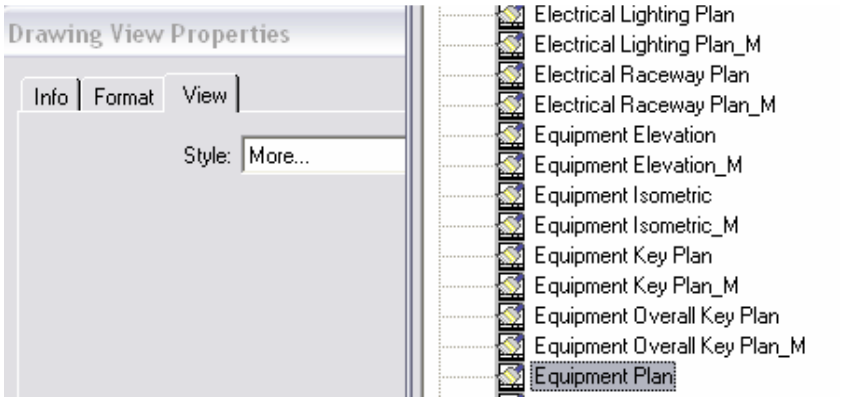

Figure 8: Select the Equipment Plan Style

12. Name the view **Equipment Plan** and select the Scale Family **Architectural Scales** and Scale **1/4in: 1 ft** as shown in Figure 9 and click **OK**.

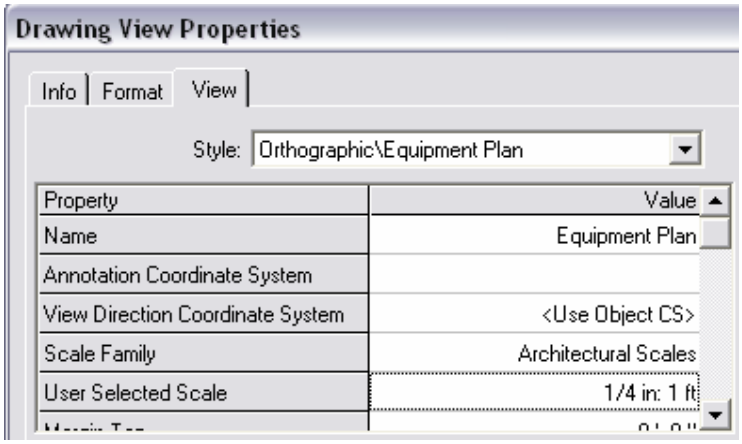

Figure 9: Drawing View Properties

Place Volume by Two Points

13. Switch to the 3D application and enter Space Management task using **Tasks > Space Management.**

14. Start **Pin Point.**

15. Start the **Place Volume by Two Points** command in the vertical toolbar as shown in Figure 10.

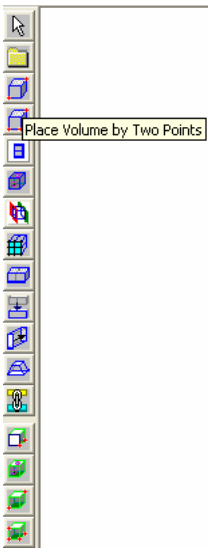

Figure 10: Place Volume by Two Points command

16. In the ribbon bar, enter 'U01 2 Points' in the Name field as shown in Figure 11.
17. Browse the Type field and select Definitions – Drawing Volumes – DrawingVolumes – DWGVOLUME1 and click OK
18. Browse the Space Folder field and select the 'U01 and U02' folder
19. Select the 'Disable Assoc Point Creation' button

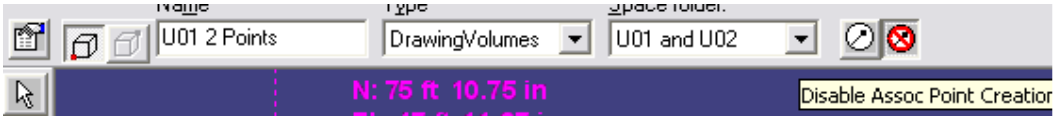

Figure 11: Volume by Two Points Ribbon

20. In the pin point toolbar, enter E = 72', N = 2', EL = -2' and click in the graphic view
21. In the pin point toolbar, enter E = 112', N = 58', EL = 34' and click in the graphic view. This completes view placement.

Associate Drawing View to Volume

22. Switch to 'Drawing Editor'
23. Select the drawing view 'Equipment Plan' and click the 'Associate View to Objects' command as shown in Figure 12.

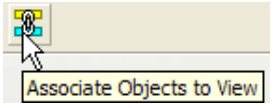

Figure 12: Associate Objects to View Command

24. Switch to the 3D application and select the 'U01 2 Points' volume.
25. In the Filter field in the ribbon bar, select More…

26. Browse to Plant Filters – Composed Drawing Filters – Drawings – U01 and U02 and click New Filter (Simple or Asking) as shown in Figure 13.

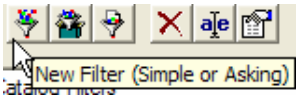

Figure 13: Create New Filter command

27. Name the filter 'U01' and select the systems 'U01' and 'U01 CS' as shown in Figure 14.

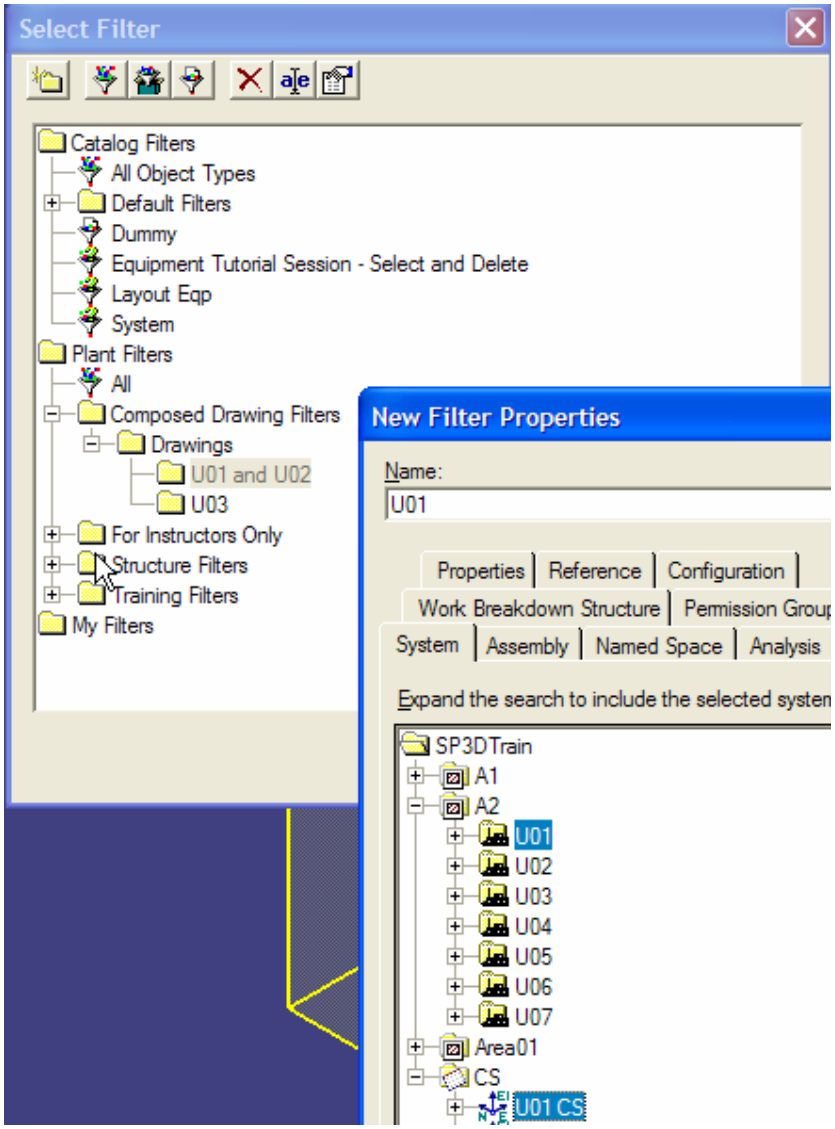

Figure 14: New Filter associated with Composed View

28. Click OK to define the filter.

29. Select the 'U01' filter just defined and click OK to associate it with the view.

Update the Drawing View

30. Switch to 'Drawing Editor' application.
31. Right mouse click on 'Equipment Plan' and select 'Update View'

Place cutting plane and place section view

32. Start the 'Cutting Plane' command as shown in Figure 15.

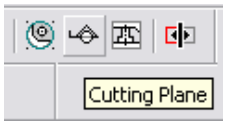

Figure 15: Cutting Plane Command

33. Enter value A for Reference 1 and 2 as shown in Figure 16.

Figure 16: Cutting Plane Ribbon

34. Select the graphic view 'Equipment Plan' which will contain the cutting plane.
35. Click to place the first point of the cutting plane slightly to the left of the middle left column at X= 0′ 8″, Y = 1′ 0″ as shown in Figure 17.

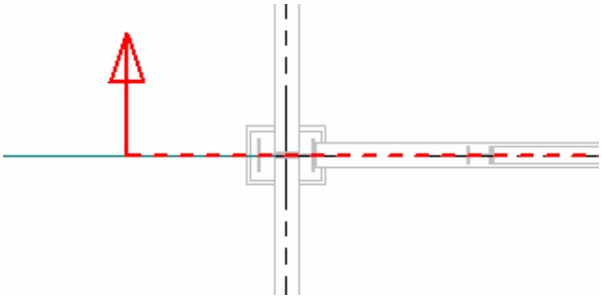

Figure 17: Place first point for cutting plane

36. Click to place the second point of the cutting plane slightly to the right of the middle right column at X = 1′ 4″, Y = 1′ 0″ as shown in Figure 18.

Figure 18: Place second point for cutting plane

37. Right click once to finish the cutting plane placement.
38. In the ribbon, enter a depth of 25′ 0″ as shown in Figure 19.

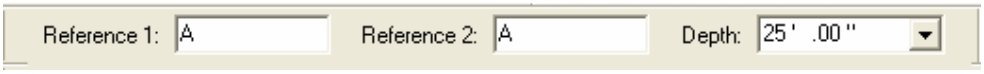

Figure 19: Cutting plane ribbon showing depth of section view

39. Move the mouse towards the bottom of the screen to set the cutting plane look direction, then click to finish cutting plane placement as shown in Figure 20.

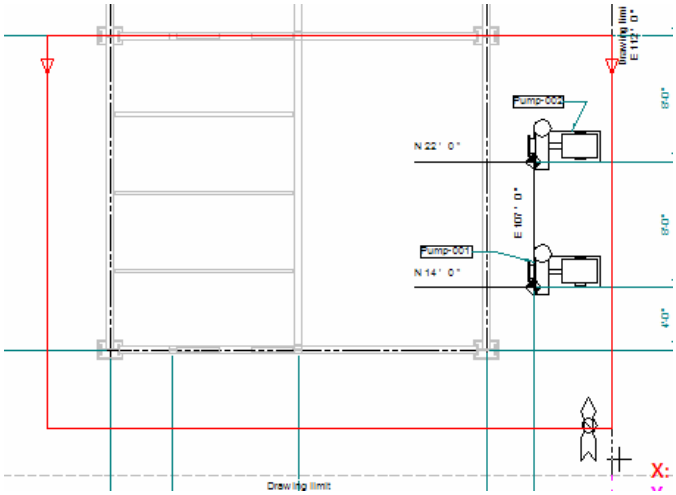

Figure 20: Cutting plane placement complete

40. A view appears on your cursor. In the ribbon bar, check the 'Update' box, select the 'Orthographic\Equipment Elevation' view style and select a scale of 3/16 in:1 ft as shown in Figure 21.

Figure 21: Section View Ribbon

41. Click in the view at X = 2' 1", Y = 0' 8" to place the view as shown in Figure 22. Since we have checked the 'Update section' box in the ribbon bar, the view is immediately updated.

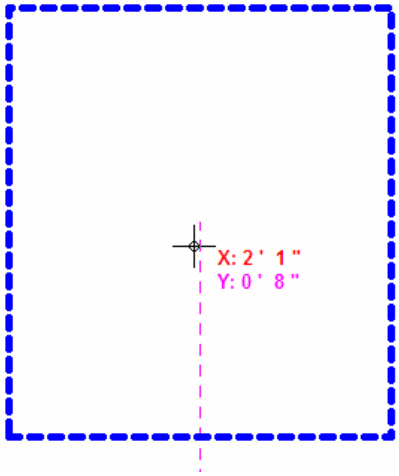

Figure 22: Place Section View

42. The status bar shows as in Figure 23 that the section view is being updated.

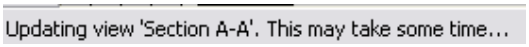

Figure 23: Status Bar updating section view

43. The updated view should resemble the picture shown in Figure 24.

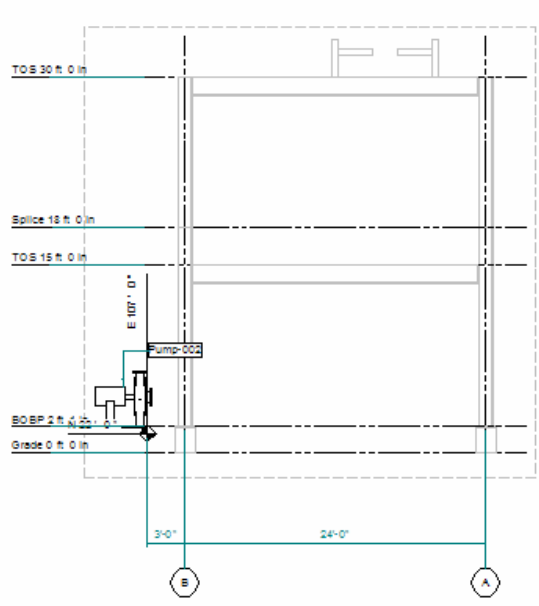

Figure 24: Updated Section View

44. Notice that in 3D, a new volume named 'Section A-A' has been created under the same parent folder as the parent volume as shown in Figure 25.

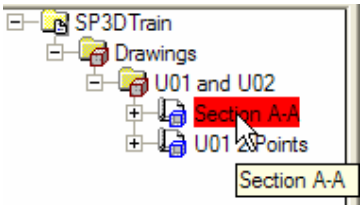

Figure 25: 3D Volume automatically created

Place detail envelope and place detail view

45. Start the 'Detail Envelope' command as shown in Figure 26.

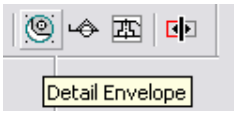

Figure 26: Detail envelope command

46. Select the graphic view 'Equipment Plan' which will be the parent of the detail view.

47. Select the circular detail in the ribbon bar and enter a Reference Mark 'A' as shown in Figure 27.

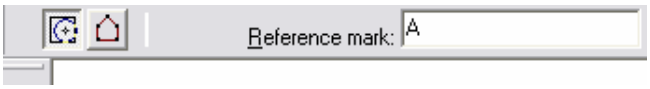

Figure 27: Detail Envelope Ribbon

48. Click at X = 1′ 4″ , Y = 0′ 8″ near the center of the pump to start the detail envelope placement as shown in Figure 28.

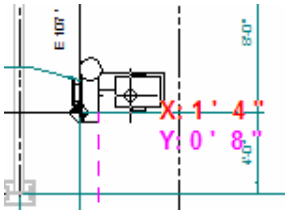

Figure 28: Start detail envelope placement

49. Move mouse and click at X = 1′ 5″, Y = 0′ 7″ as shown in Figure 29 to finish detail envelope placement.

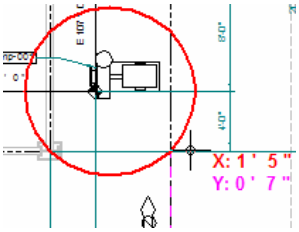

Figure 29: Finish detail envelope placement

50. In the ribbon bar, change the view style to 'Orthographic\Piping Plan' and the scale to ½ in: 1 ft as shown in Figure 30.

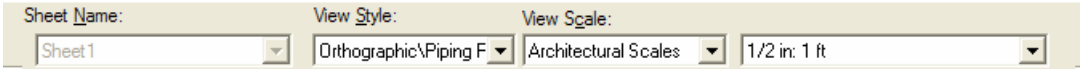

Figure 30: Detail View Ribbon

51. A view appears on your cursor. Click in the sheet at X = 2′ 1″, Y = 1′ 5″ to place the view as shown in Figure 31.

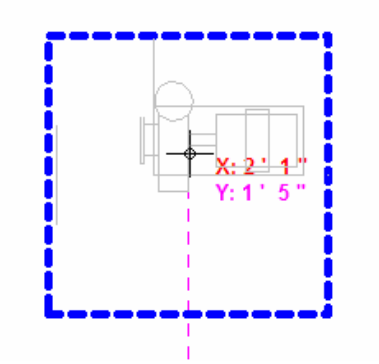

Figure 31: Detail View Placement

52. Right mouse click the detail view and 'Update View'. Figure 32 shows the updated detail view.

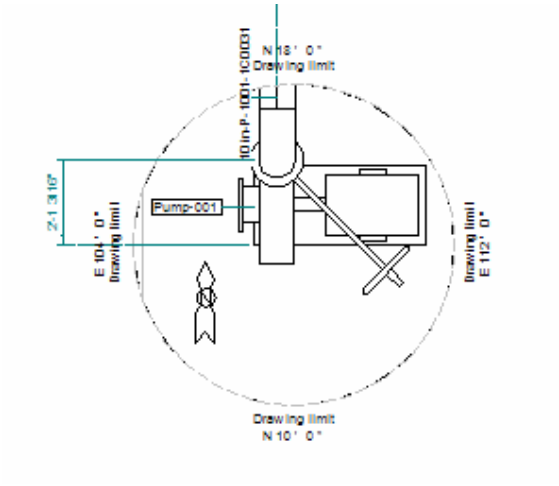

Figure 32: Updated Detail View

For more information related to creating and updating section and detail views, refer to the following topics of the user guide OrthographicDrawingUsersGuide.pdf

- Place a Detail View
- Place a Section View