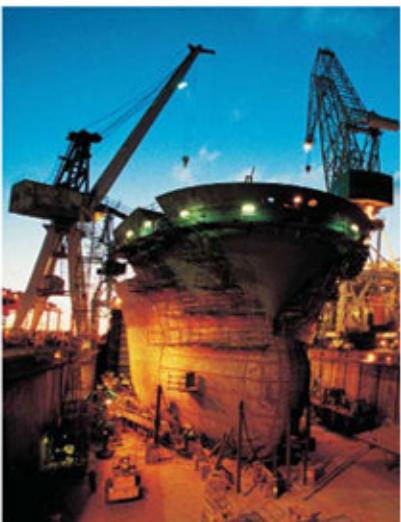
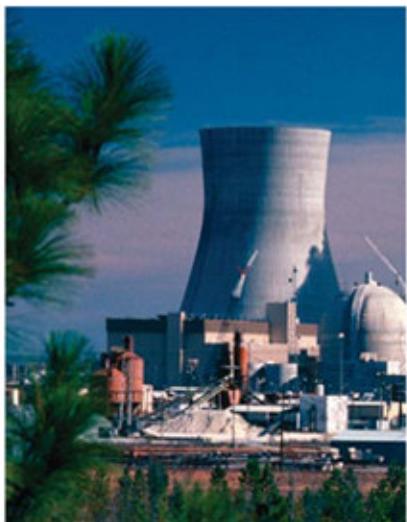


SmartPlant 3D

Electrical Labs

Process, Power & Marine



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Lab 1: Basic Cableway Routing

Objective

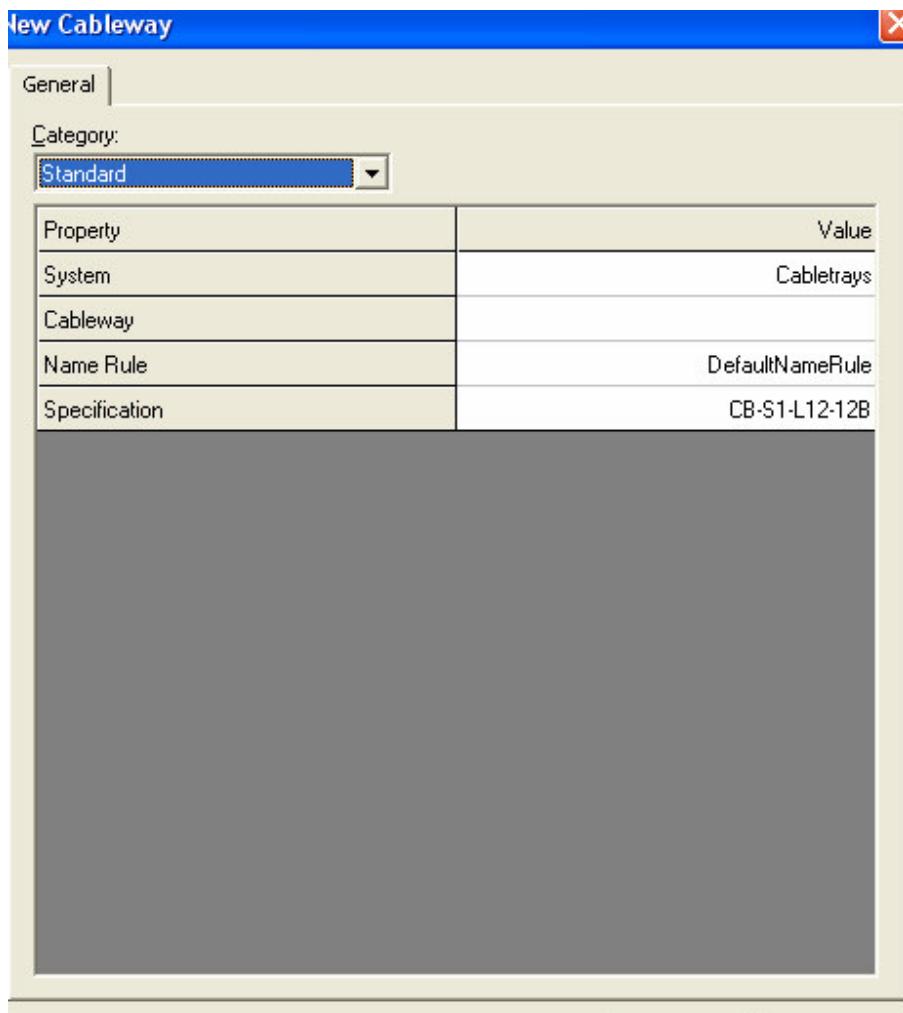
After completing this lab, you will be able to:

Route Cableways with Control Tools

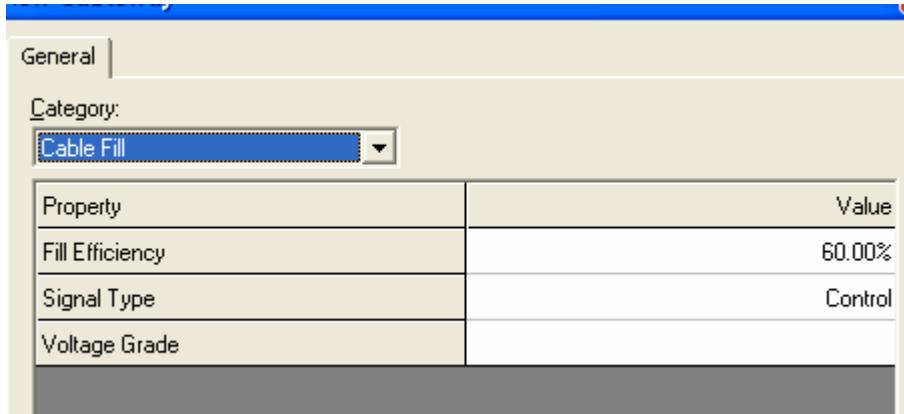
Route Cableways with SmartSketch

Part I: Routing Cableways - Control Tools:

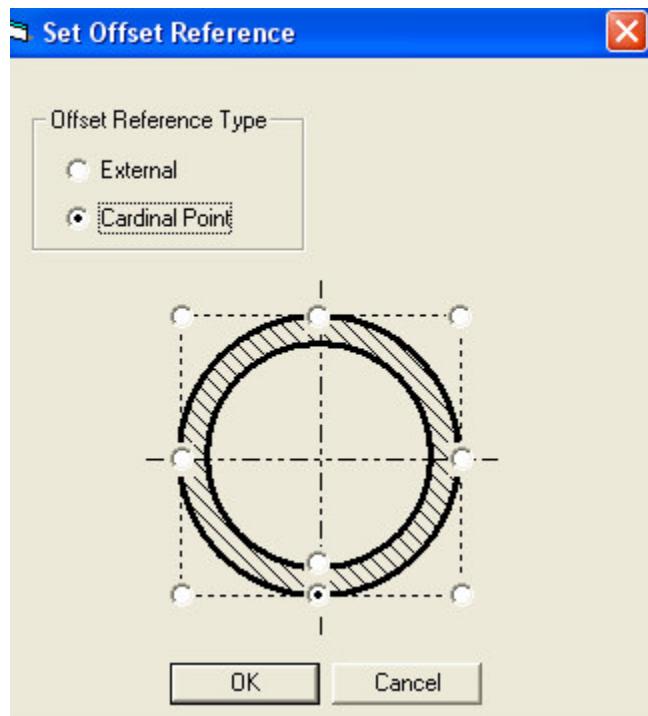
1. Open or create a session file and define an appropriate filter to have Amines Unit System and Coordinates for your workspace. Go to the Electrical Task environment. Make sure the Active Permission Group is set to Electrical. Open Pin Point Tool Bar.
2. Change the Coordinate System to Amines Coordinate System
3. Select Route Cableway command on the vertical toolbar
4. Key in 5' for E, 30' for N and 26' for EL and Left click in the view
5. The system opens the Create Cableway Dialog box. Select “More...” option in the System property field to open the Select System dialog box. Select Amines Unit, Electrical, Control, Cabletrays system and Click OK button to close the Select System dialog box.
6. On the Create Cableway dialog box. Select the cableway specification as follows:



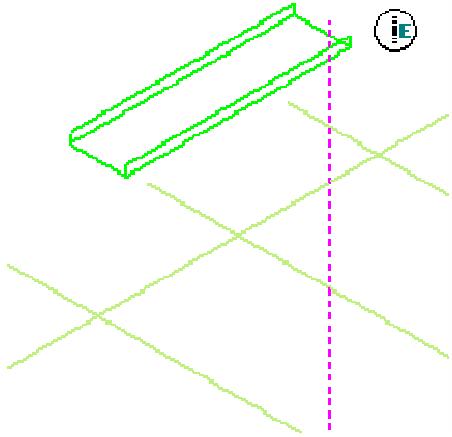
7. Switch the Category to Cable fill and set the following



8. Click OK to close the Create Cableway dialog.
9. Select Rectangle under Shapes and Key in 2' for Width and 4" for the depth
10. Under Offset, select set offset reference
11. Select Cardinal Point Option
12. Select Bottom Center and OK on the form



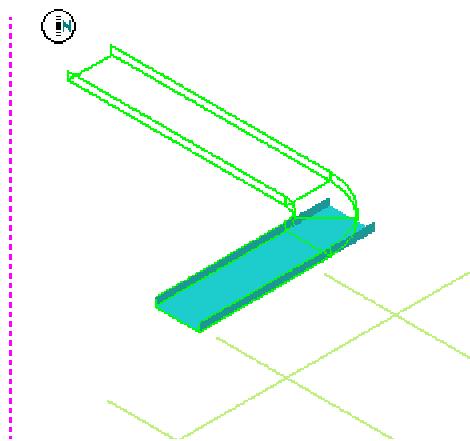
13. Go to the Route ribbon bar and key in 8' in the length box.
14. Go to the Route ribbon bar and set the working plane to PLAN.
15. Position the cursor in the Easting direction.



16. Left mouse click to accept the endpoint.

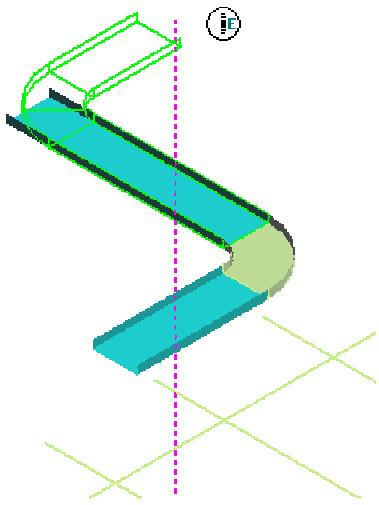
17. Go to the Route ribbon bar and key in 12' in the length box. 12 ft 0.00 i ▾

18. Position the cursor in the Northing direction.

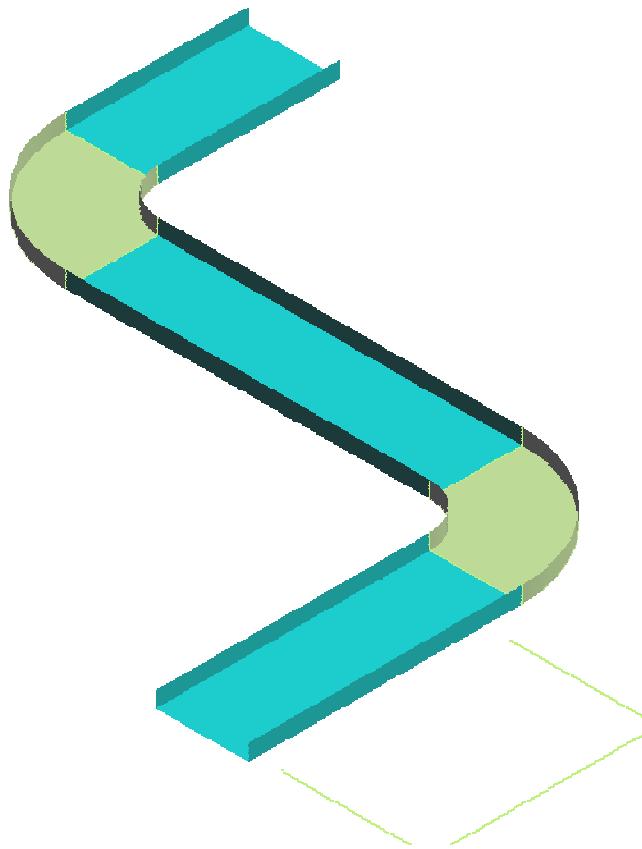


19. Left mouse click to accept the next endpoint.

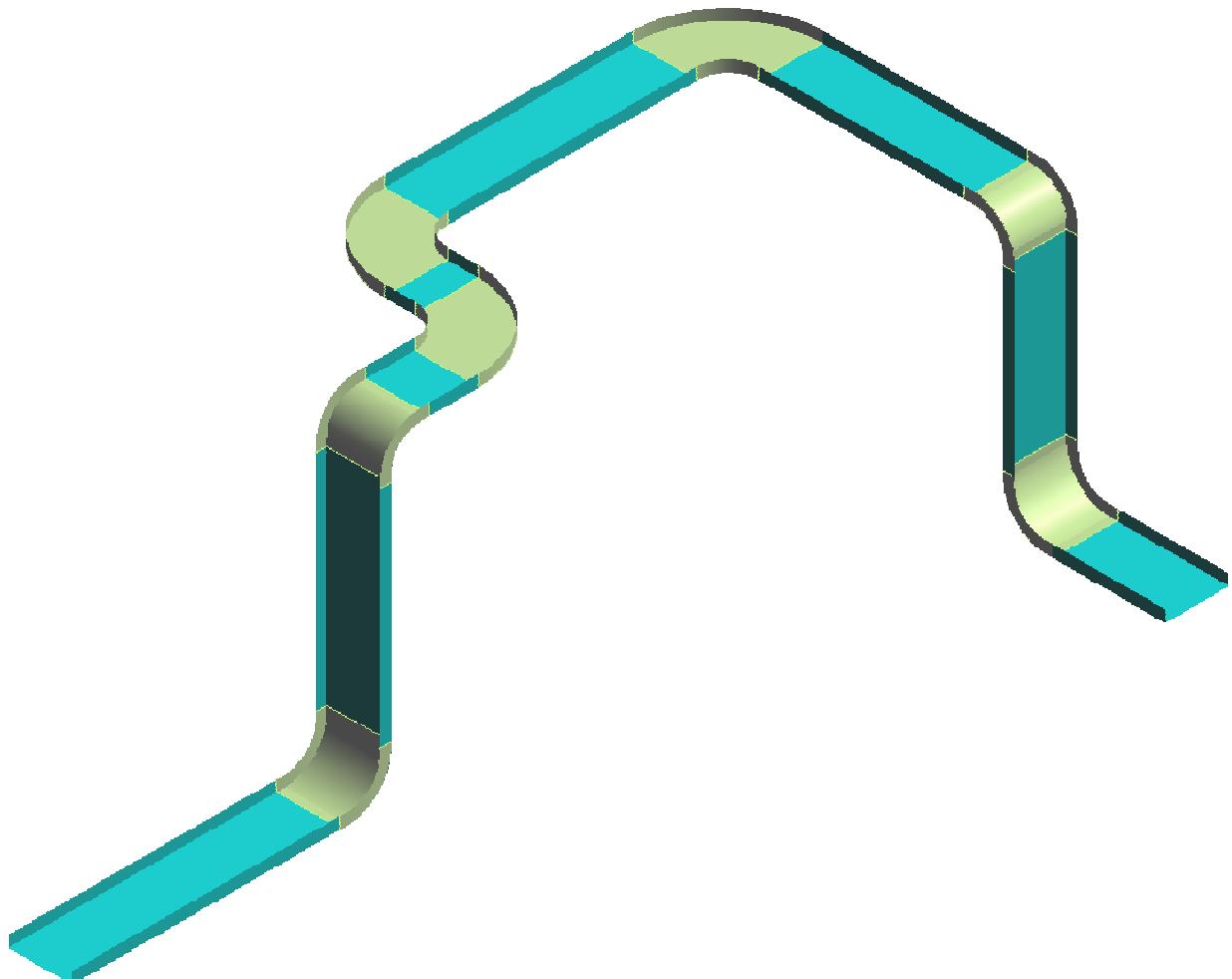
20. Go to the Route ribbon bar and key in 6' in the length box. 6 ft 0.00 in ▾



21. Position the cursor in the Easting direction
22. Left mouse click to accept the next endpoint.
23. Right mouse click to terminate the Route cableway command.
24. Finished Run should resemble this

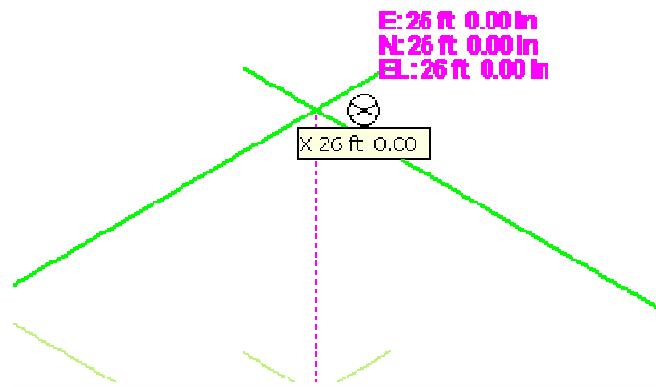


25. Select Route Cableway command on the vertical toolbar
 26. Change the Coordinate System to Amines Coordinate System
 27. Key in 30' for E, 50' for N and 26' for EL and Left click in the view
 28. Keep all the defaults on New Cableway Form (same values as previous lab)
 29. Change the Width to 2' and depth to 4"
 30. Route the shown Cabletray Run
- | | | | |
|--------------|-----------|------------|----------|
| 31. 10' East | 10' Up | 5' East | 5' North |
| 32. 12' East | 10' South | 8' 6" Down | 5' South |

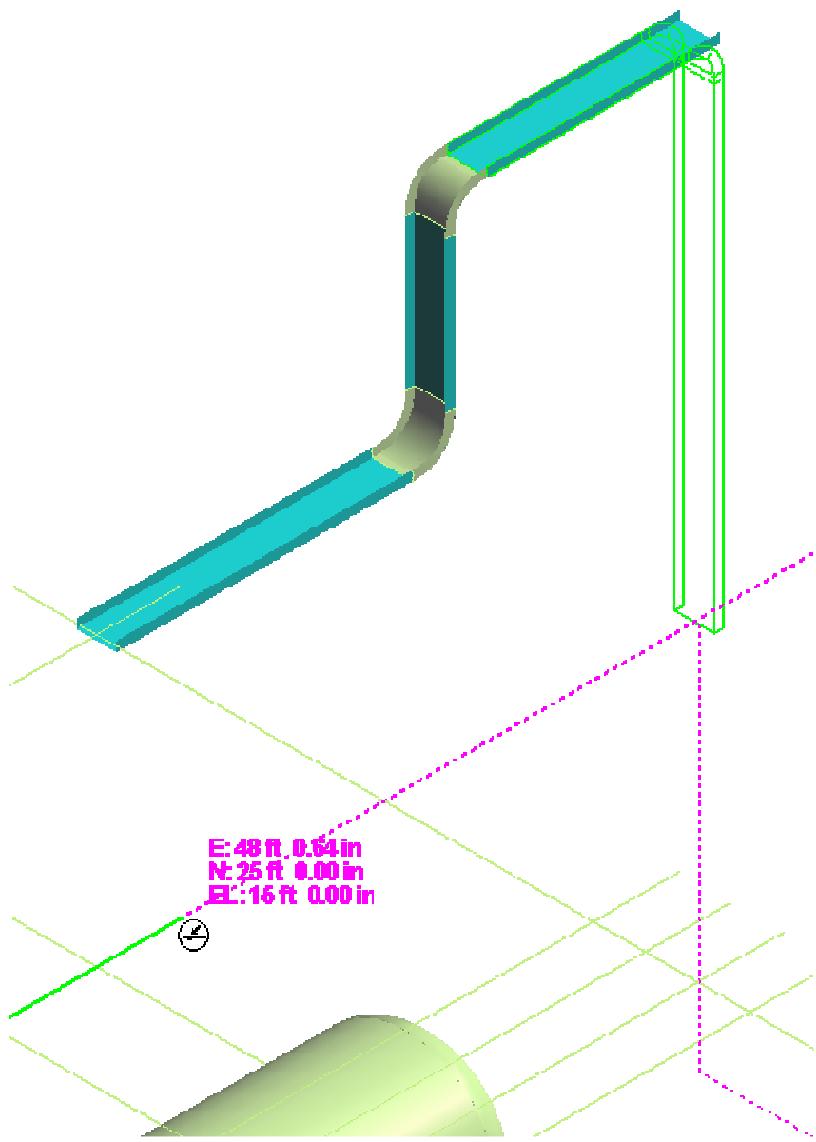


Part II: Routing Cableways - SmartSketch:

1. Open or create a session file and define an appropriate filter to have Amines Unit System and Coordinates for your workspace. Go to the Electrical Task environment. Make sure the Active Permission Group is set to Electrical. Make sure Pin Point Tool Bar is active.
2. Select Route Cableway command on the vertical toolbar
3. Change the Coordinate System to Amines Coordinate System
4. Select the shown Grid intersection as starting point

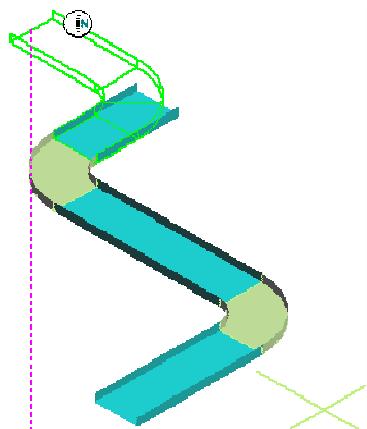
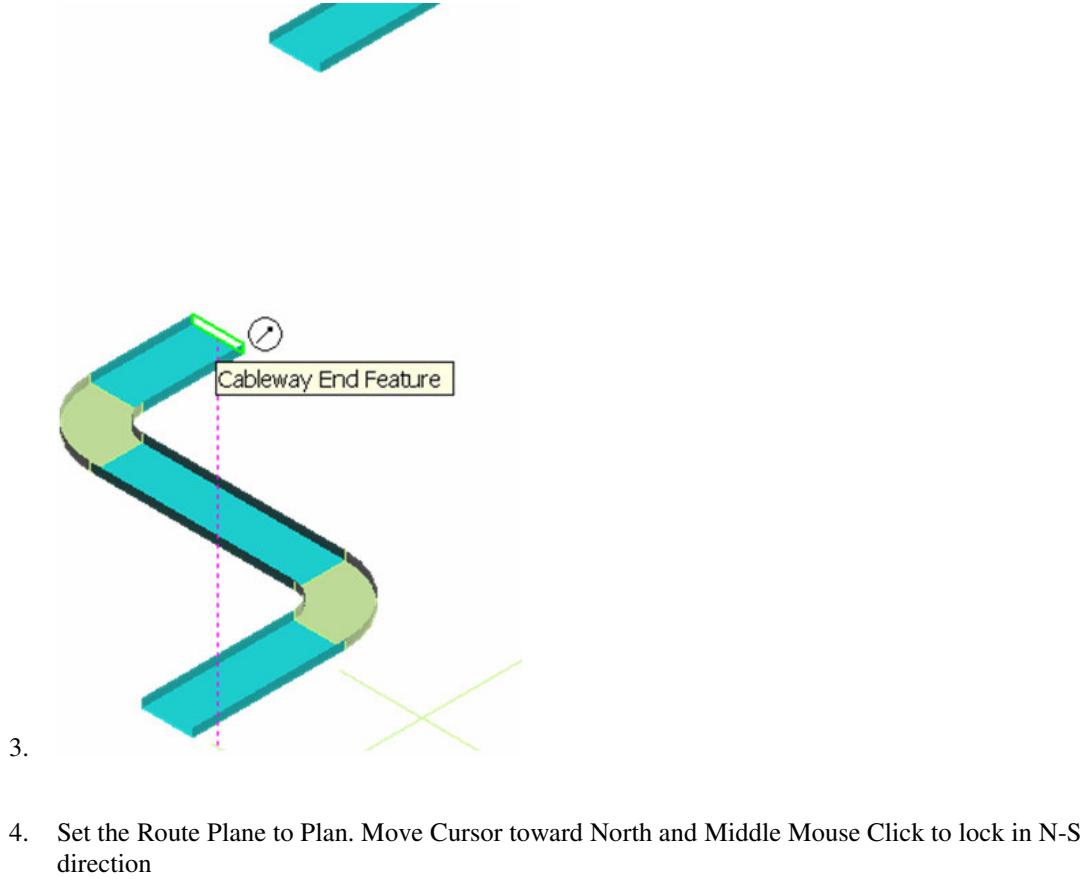


5. The system opens the Create Cableway Dialog box. Select “More...” option in the System property field to open the Select System dialog box. Select Amines Unit, Electrical, Control, Cabletrays system and Click OK button to close the Select System dialog box.
6. Change the Spec to CB-S1-L12-12B and Fill Efficiency to 60 and OK on the form
7. Change the width to 1' 6" and depth to 4"
8. Move the Cursor in East Direction and click to place East – West run. Continue placing Up, and East again. Set the Route Plane to East. Move your Cursor down until “U” glyph appears and select middle mouse button to lock the Up-Down direction. Move cursor over the grid lines and select any grid on Elevation 15' with a left mouse button. System places the Tray up to 15'. Right click to finish the run.

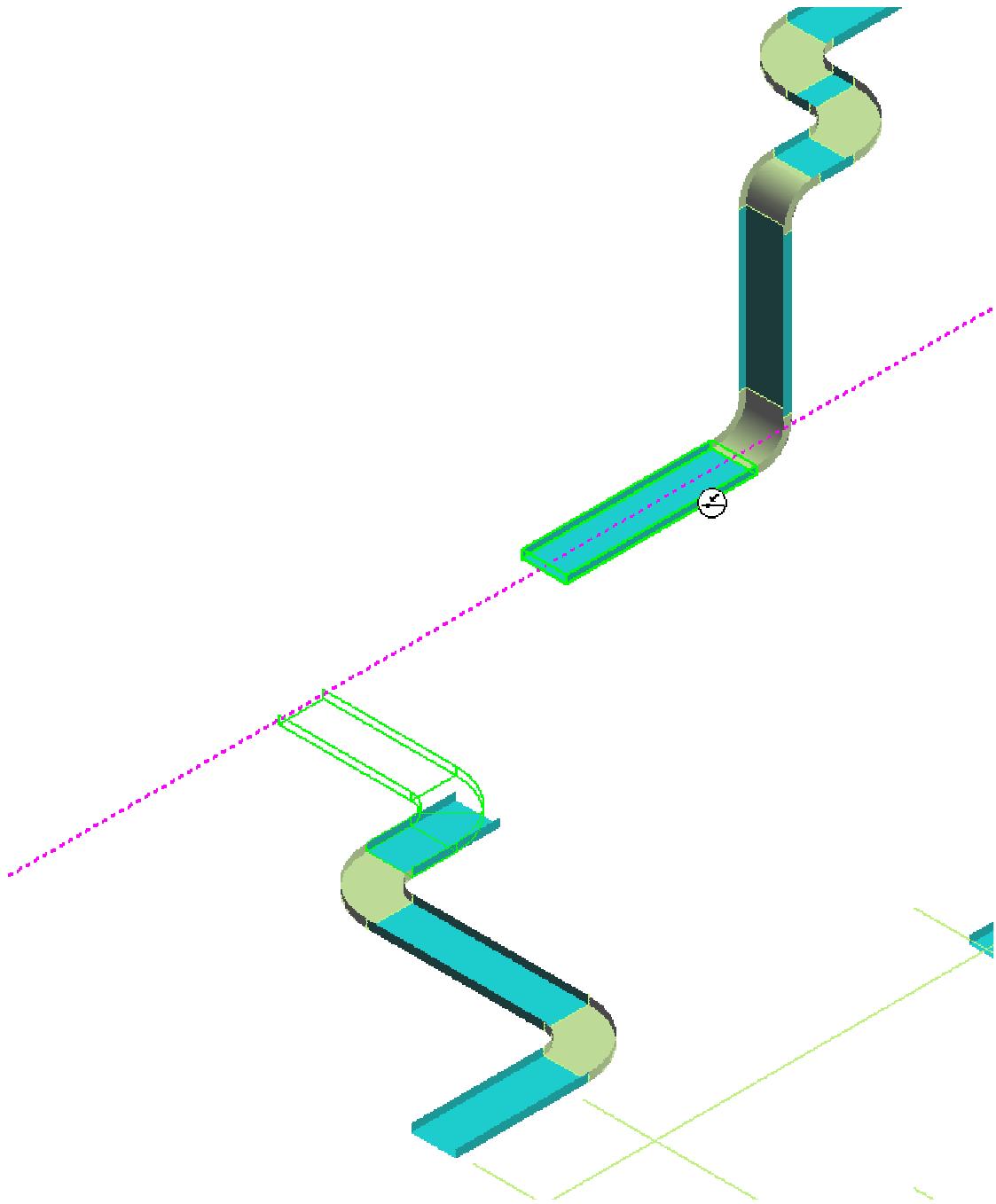


Part III: Routing Cableways From End Features:

1. Click Route Cableway command on the vertical toolbar.
2. Select the N-E end of Tray placed in Part I



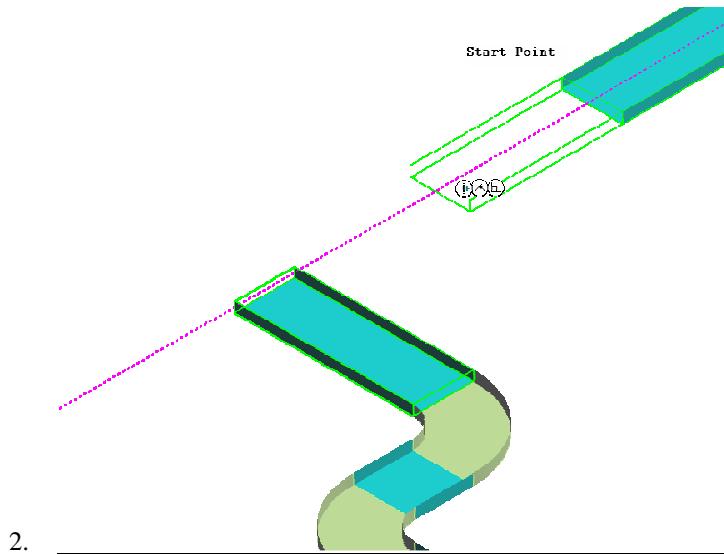
- With N-S direction locked, move the cursor over West-East Run of second tray, until the intersecting lines show up. Left click to place the tray.



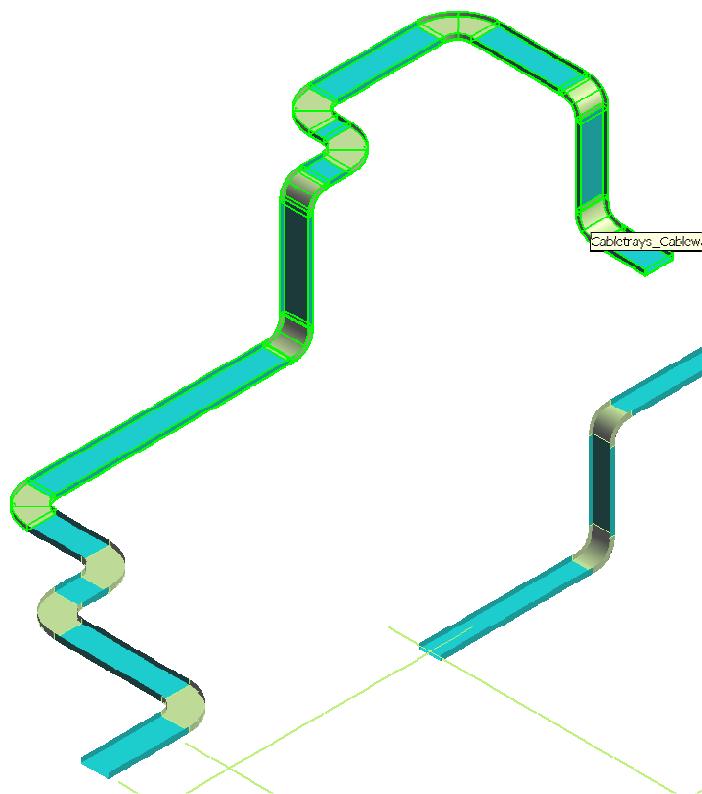
- Right click to finish the run

Part IV: Routing Cableways From End Features to End Features:

1. Join the two trays by Starting From the West end of Second Tray and connecting to the North end of First tray. Go to the Offset field in the ribbon bar and set it to Disable. (Disable the Cardinal Point routing).



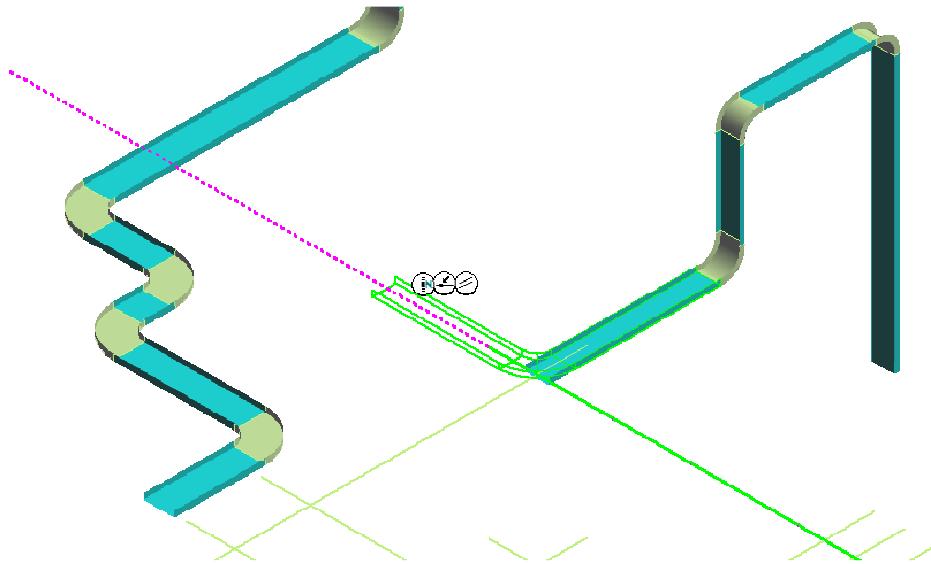
2.



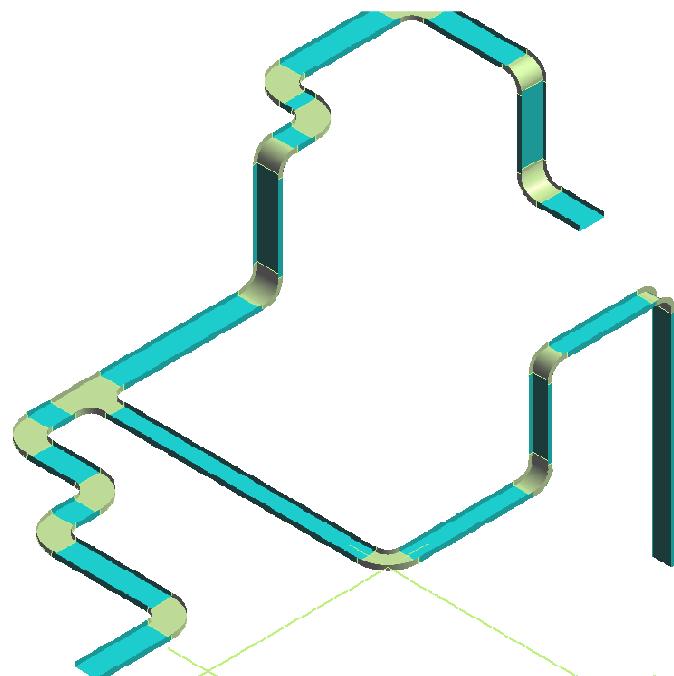
3.

Part V: Routing Cableways From End Features to Straight Features:

1. Click Route Cableway command on the vertical toolbar.
2. Select the West end of 18" X 4" Tray
3. Start Routing in North direction and Middle mouse click to lock the direction

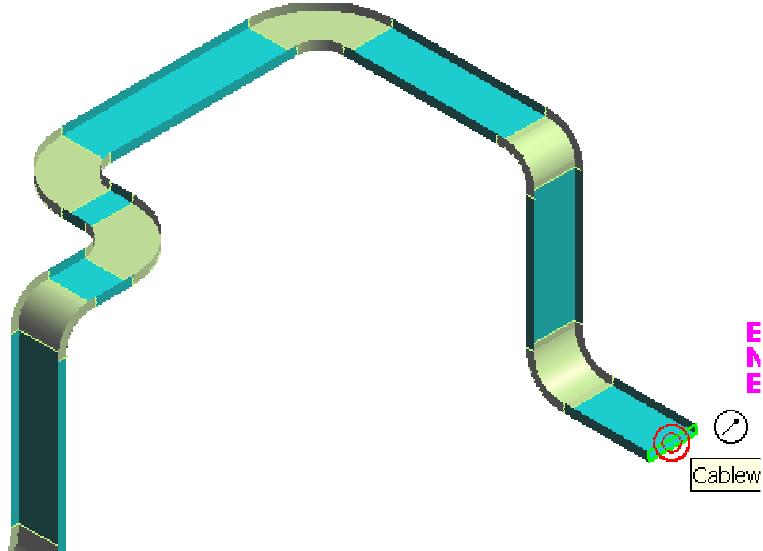


4. Move Cursor above the East-West run until, intersecting line shows up. Left click and system will place a reducing Tee at the branch point.

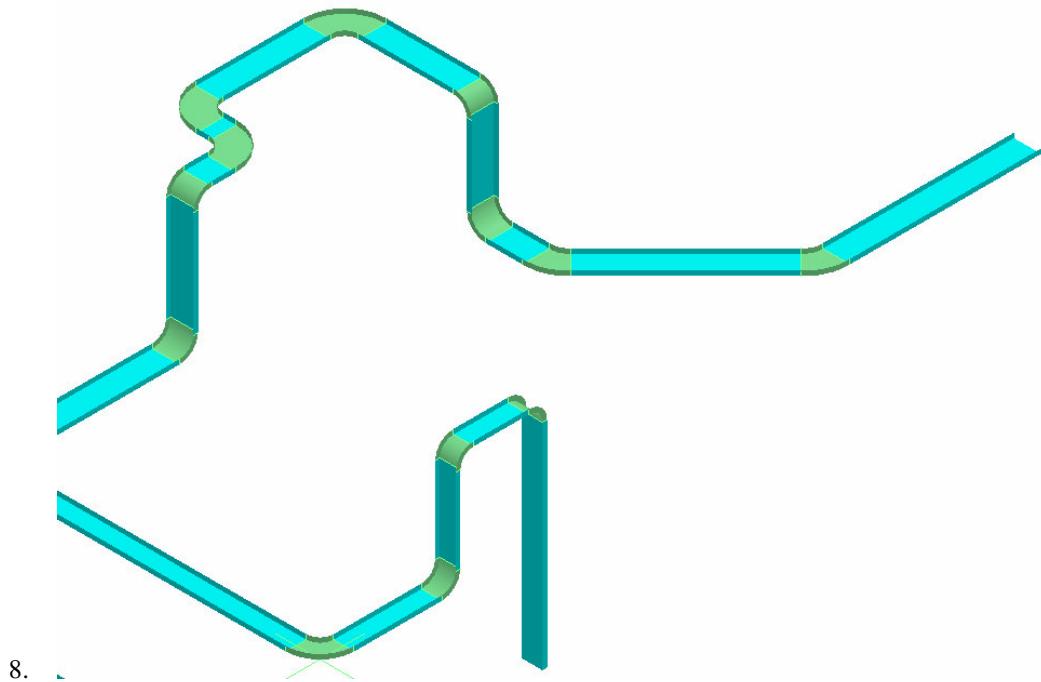


Part VI: Routing Cableways - Using Relative Tracking:

1. Open the PinPoint ribbon bar
2. Enable the relative tracking option. 
3. Make sure the PinPoint readouts are set to rectangular coordinate system. 
4. Click Route Cableway command on the vertical toolbar.
5. Select the end feature at South end of the Tray (see figure)

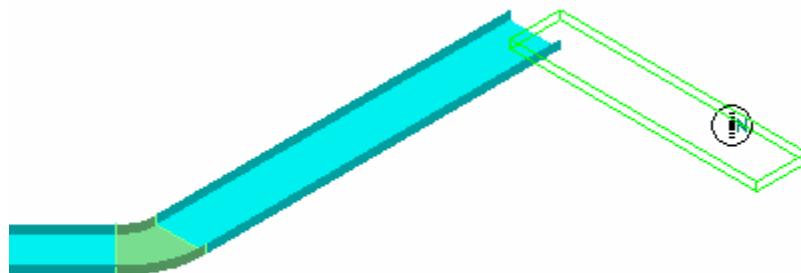


- 6.
7. Go to the PinPoint ribbon bar and lock the East coordinate, North coordinate, and the Elevation coordinate at East 10', North -10' and El 0'. System will show the new dynamics. Left click to place the run. Then place another run due East 15' long.

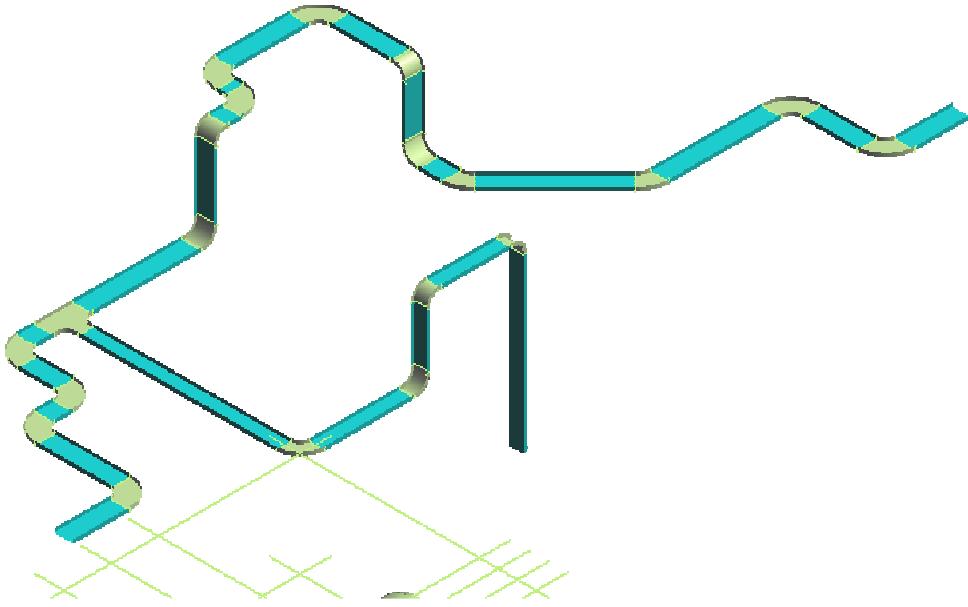


Part VII: Routing Cableways - Using Coordinate System:

1. Turn off relative tracking option.
2. Change the Coordinate System to Amines Coordinate System
3. Make sure the Pin Point readouts are set to rectangular coordinate system.
4. Click Route Cableway command on the vertical toolbar.
5. Select the end feature on West End of tray placed in previous lab

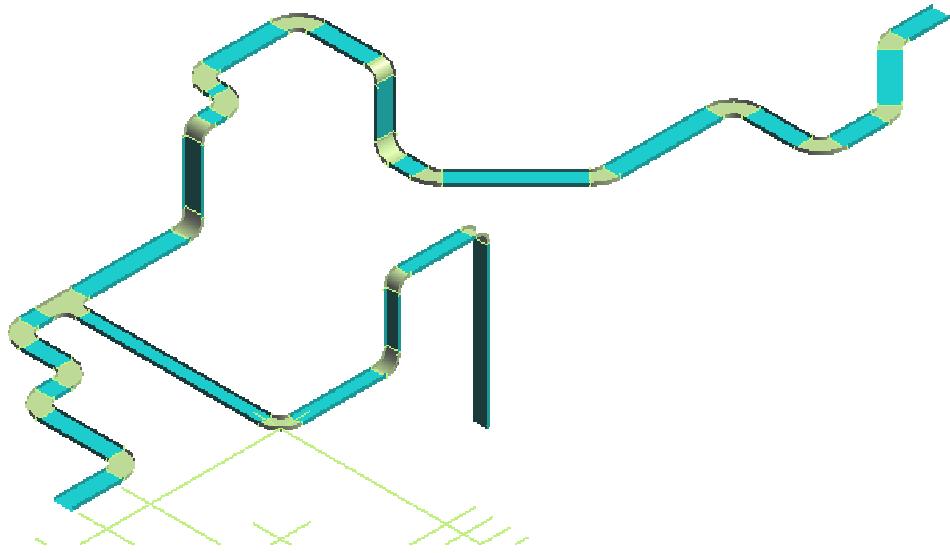


6. Lock the North coordinate to 20 and move the cursor until it lines up to North- South plane. Left click to place the run. Then keep the North and El same and change the East to 90 and place another run by Keyin East coordinate 90. See the figure below.



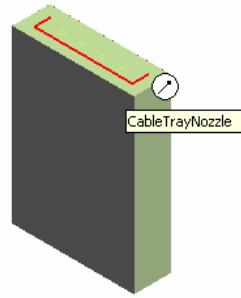
Part VIII: Routing Cableways – Distance and Directions:

1. Open the Pin Point ribbon bar.
2. Enable the relative tracking option.
3. Set the Pin Point readouts to spherical coordinate system. 
4. Click Route Cableway command on the vertical toolbar.
5. Select the East end of Tray placed in previous lab.
6. Go to the Pin Point ribbon bar and lock the Distance, Horizontal and Vertical directions as follows:
7. Absolute Distance: 10' - Horizontal (N>CW): NE 45.00 Deg - Vertical(Plan>CCW): Flat with Plan 0.00
8. System Shows the dynamics of new Tray at 45 degree from North. Left click to place the tray. Place another Tray due East 5'

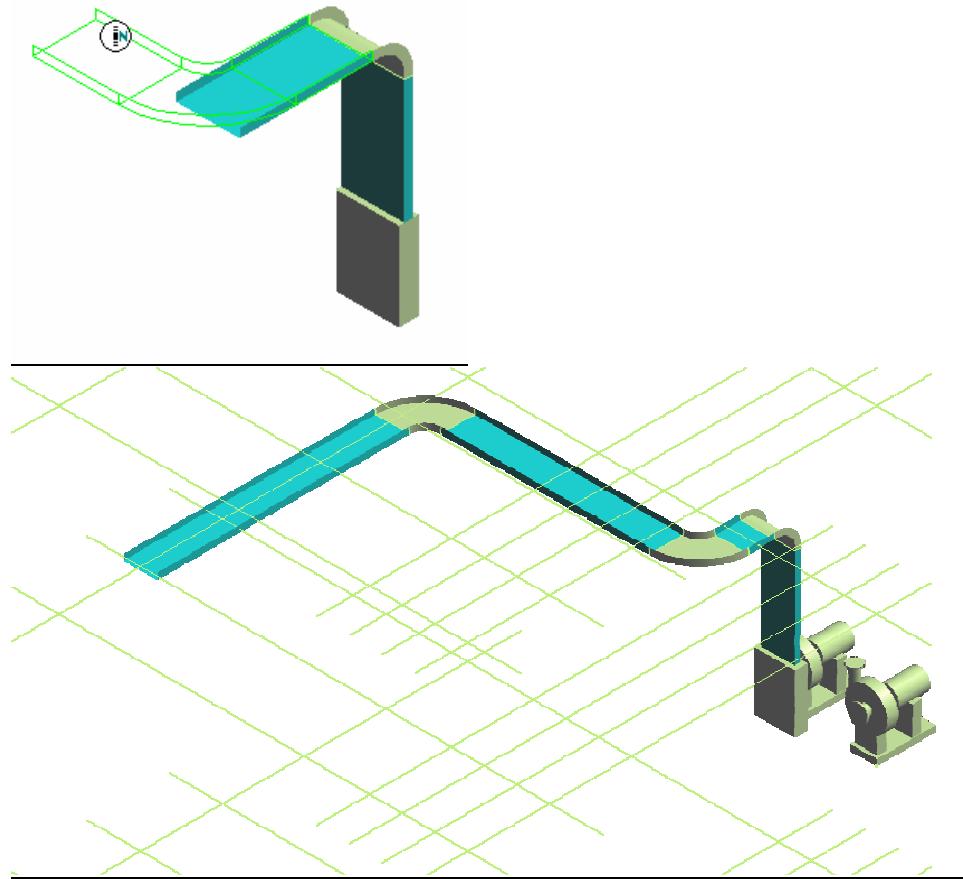


Part X: Routing Cableways – From Tray Nozzle/Port:

1. Select Place Equipment command. Select Electrical Enclosure > Electrical Enclosure > BA106E 42369-1
2. Place it at E 27', N 7, EL 4 wrt Amines Unit Coordinates. Place it in Amines Unit > Electrical > Device system. Name it EBOX-001
3. Click Route Cableway command on the vertical toolbar.
4. Select the Tray nozzle port of EBox-001 as starting point

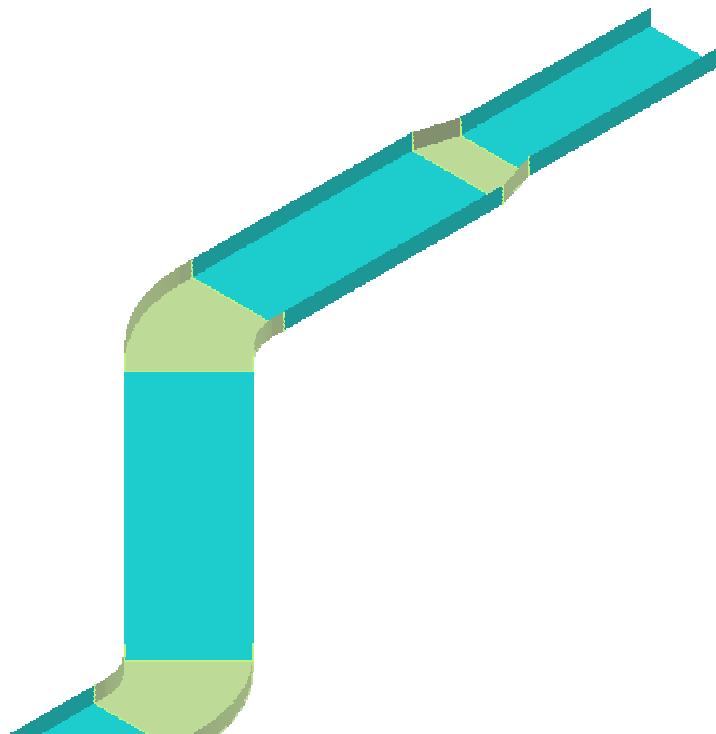
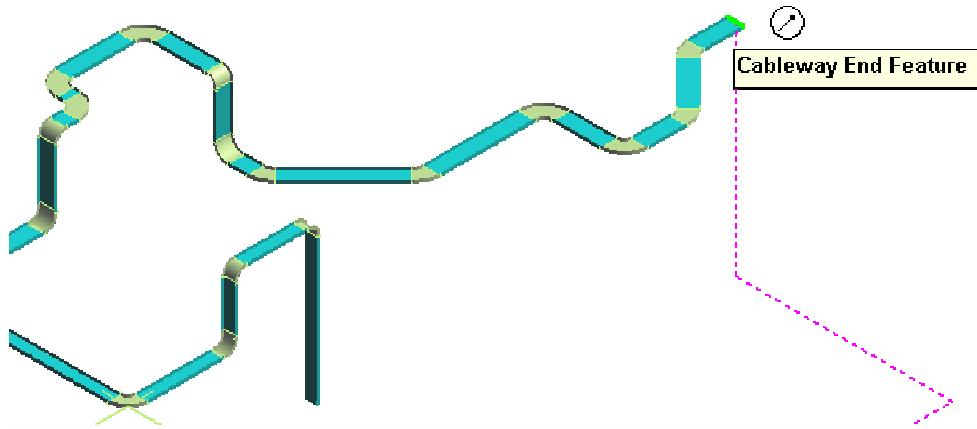


5. Change the Spec to CB-S1-L12-12B. Fill Efficiency to 75. Change the size to 24" X 4"
6. Route to Elevation 15'. Route West 5'. Route to N 25'. Route to E 25'



Part XI: Routing Cableways – Size Change:

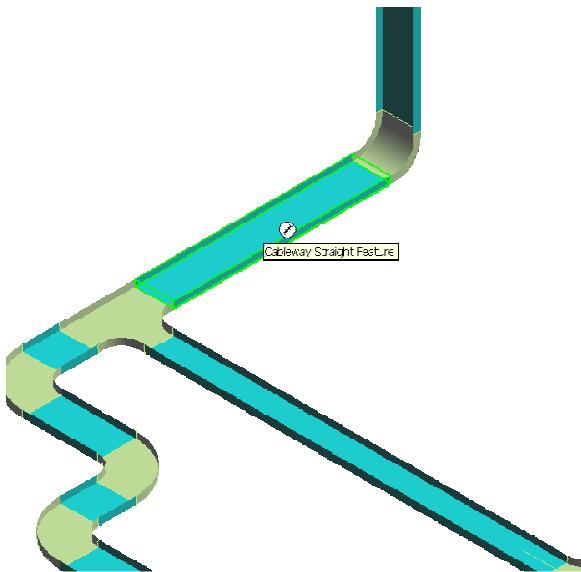
1. Click Route Cableway command on the vertical toolbar.
2. Select the East most end of Tray
3. Change the size to 18" X 4"
4. Route East 5'.



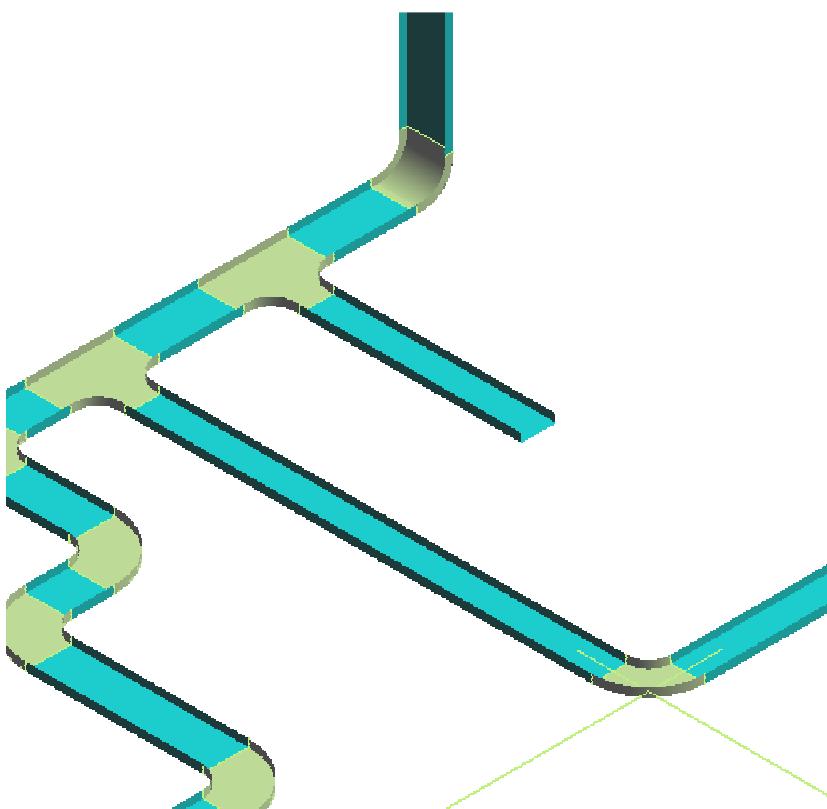
Lab 2: Cableway Routing - Branches

Part I: Routing Cableways – Branch from a Straight Feature:

1. Click Route Cableway command on the vertical toolbar.
2. Select the Mid point of Straight Feature

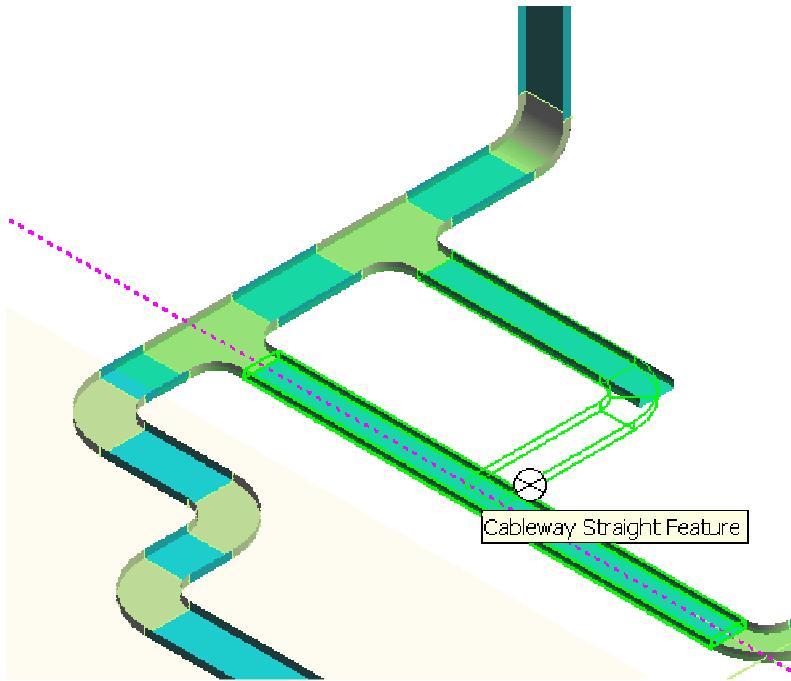


3. Change the Spec to CB-S1-L12-12B. Fill Efficiency to 75. Change the size to 18" X 4"
4. Route South 10'

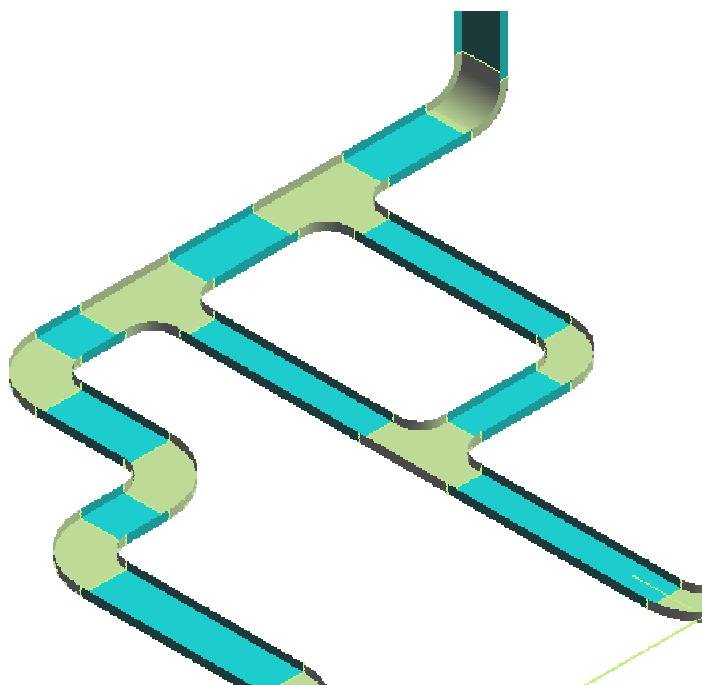


Part II: Routing Cableways – Intersect to Branch:

1. Click Route Cableway command on the vertical toolbar. Select South end of Straight placed in previous section.
2. Lock West direction with middle mouse click and put cursor on top of Straight feature until intersecting lines show up.

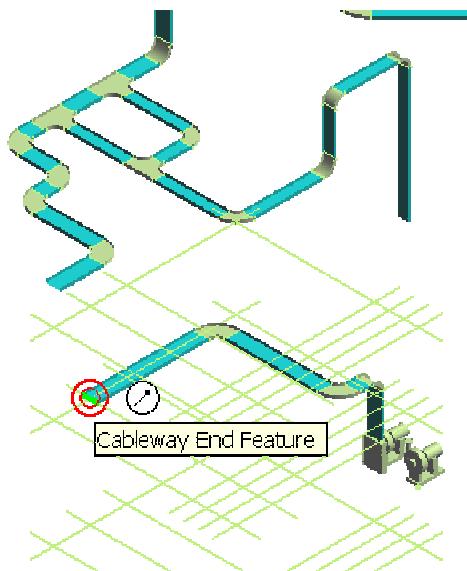


3. Left click to place the tray

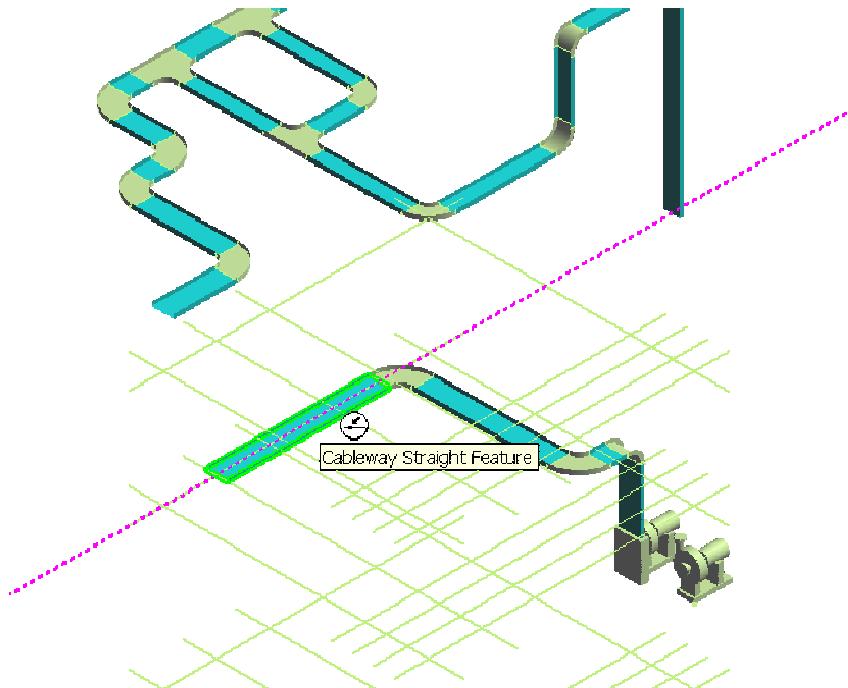


Part III: Routing Cableways – Branch Using Control Tools:

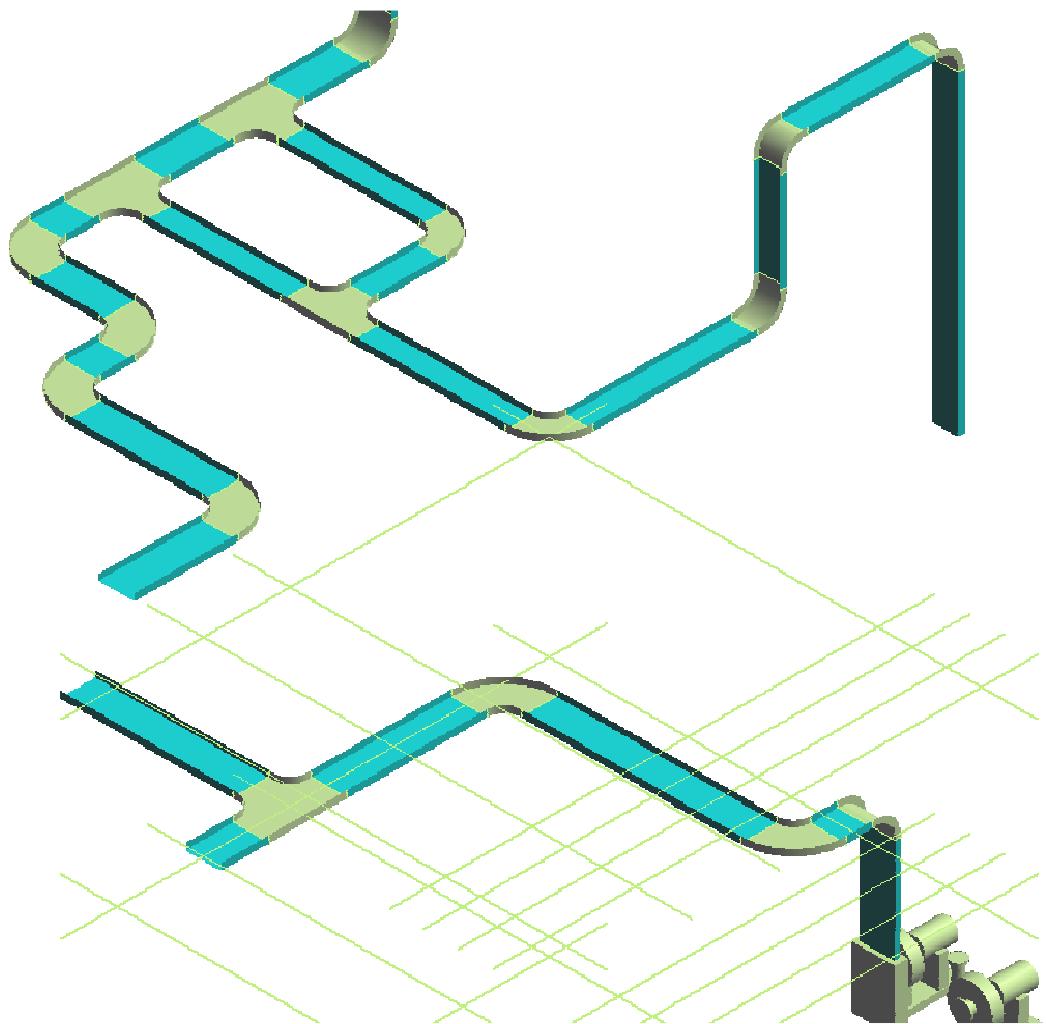
1. Select Reposition Target (F12). Select the West End Feature as s



2. Select Route Cableway command on the vertical toolbar. Key in 5' for East and Select the Straight Feature

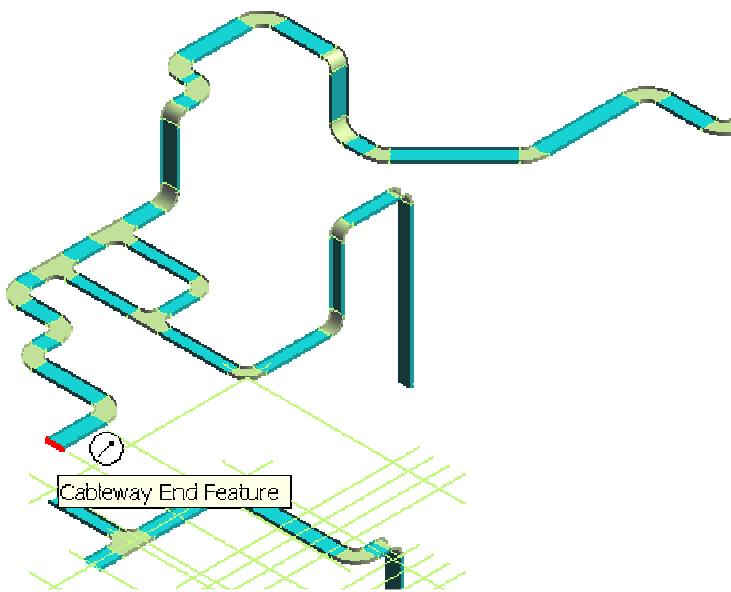


3. Route North 10'

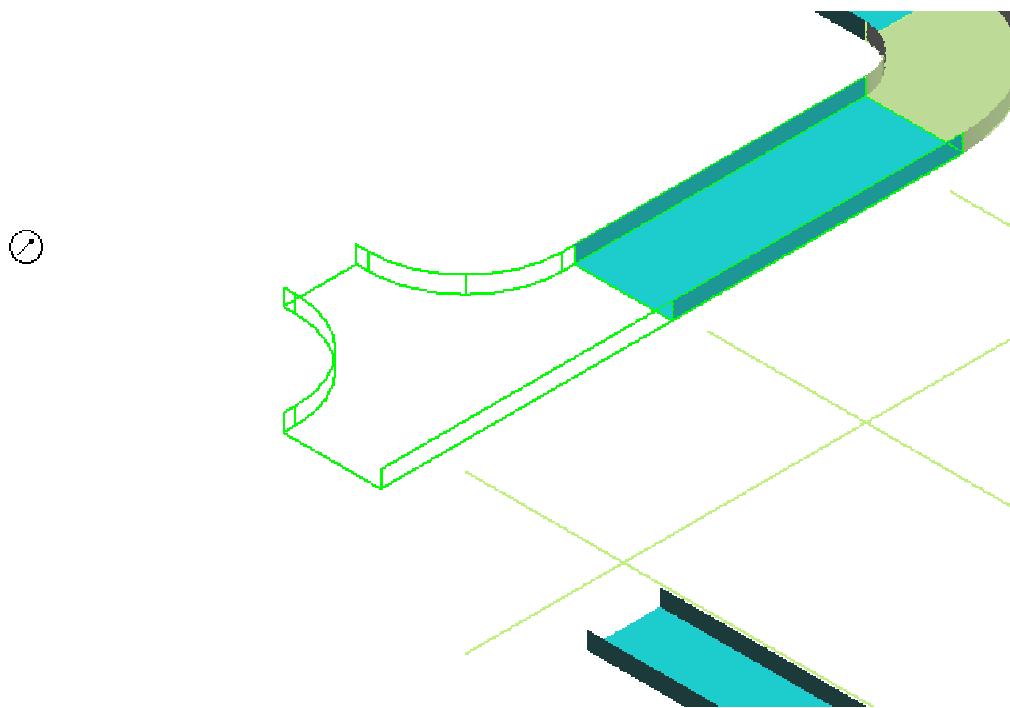


Lab 3: Insert Components

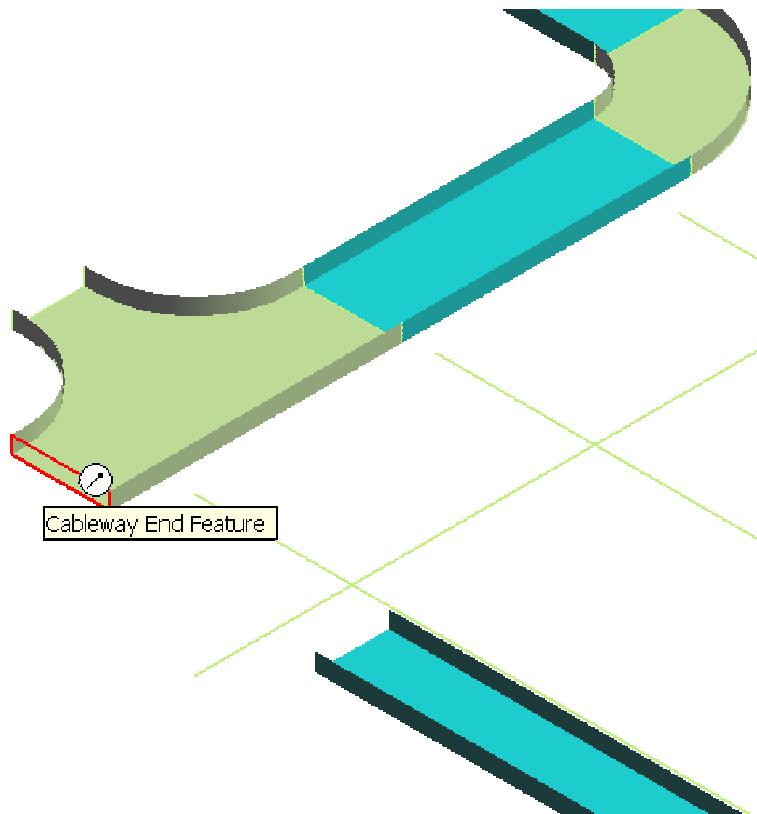
1. Click Insert Component on the vertical tool ribbon.
2. Select the end feature as shown



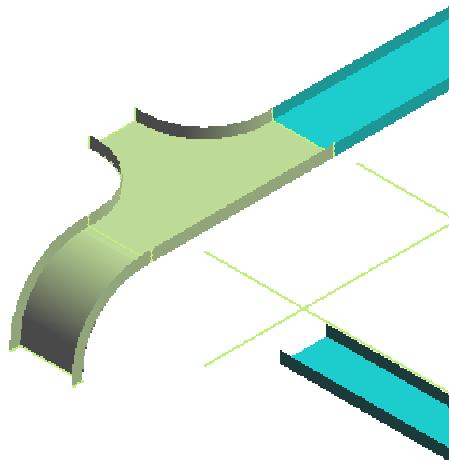
3. Select more under part list
4. Expand the Catalog Browser and Select Branches. Sort the components by Component type and find
5. Cable Tray Parts\Cable Tray Tee\CT Horizontal Tee\Cable Tray Reducing Tee
6. Select Horizontal Reducing Tee, from 2' X 4" to **1' 6" X 4"**, Bend Radius 2'



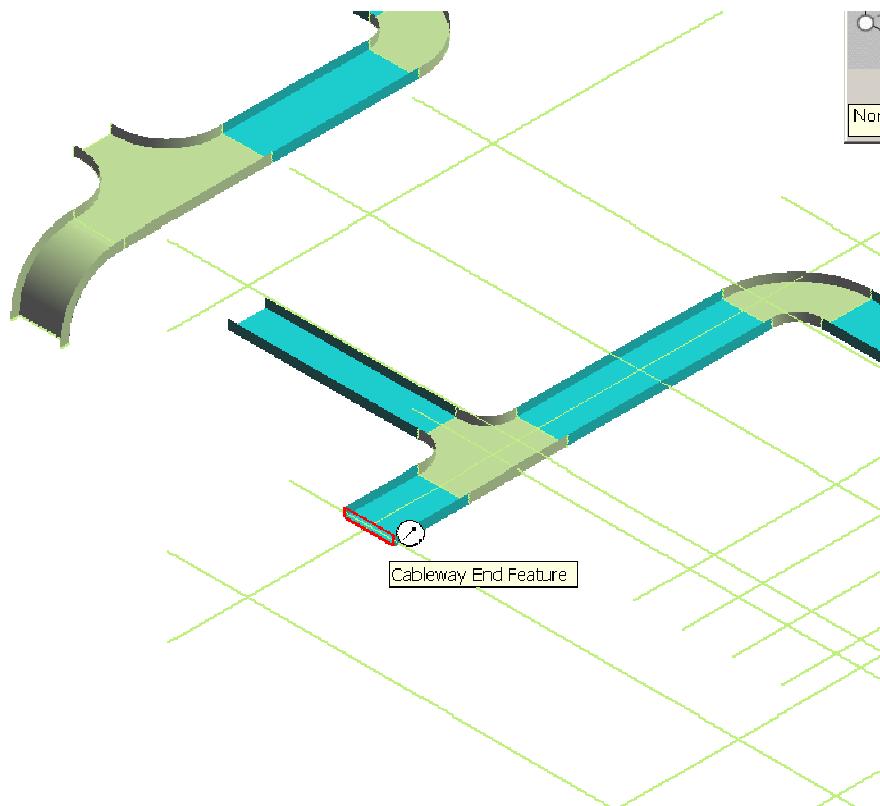
7. Select Finish. Right click to cancel the command
8. Click Insert Component on the vertical tool ribbon.
9. Select the end feature as shown



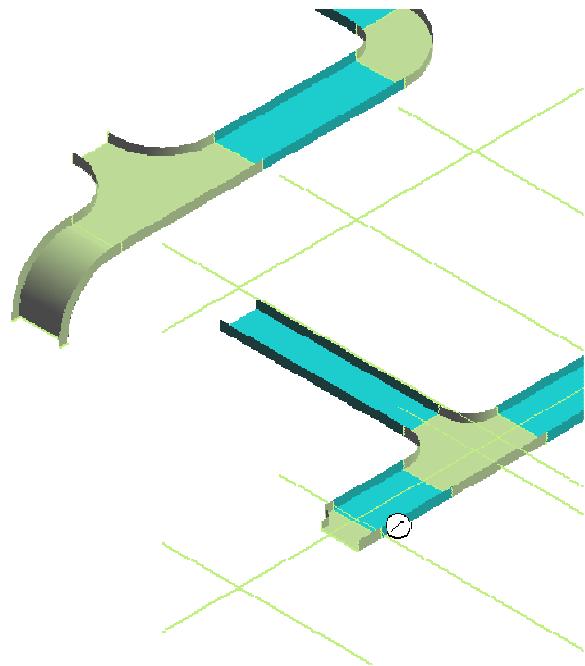
10. From Catalog select Bends, and then select 2' X 4", 90 degree Outside Vertical Bend, Radius 2"



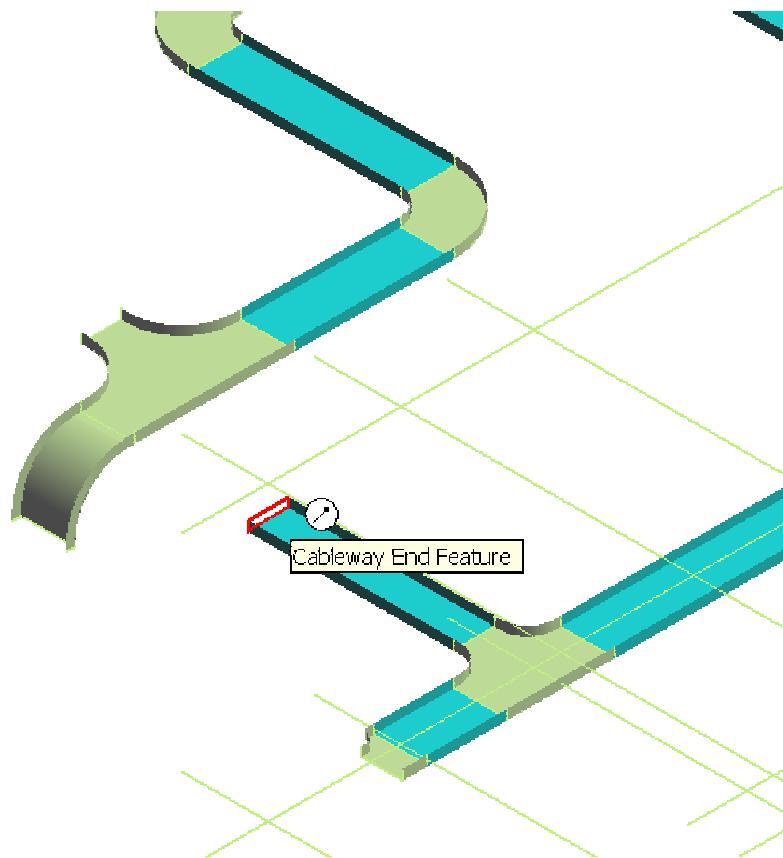
11. Select Finish. Right click to cancel the command
12. Click Insert Component on the vertical tool ribbon.
13. Select the end feature as shown



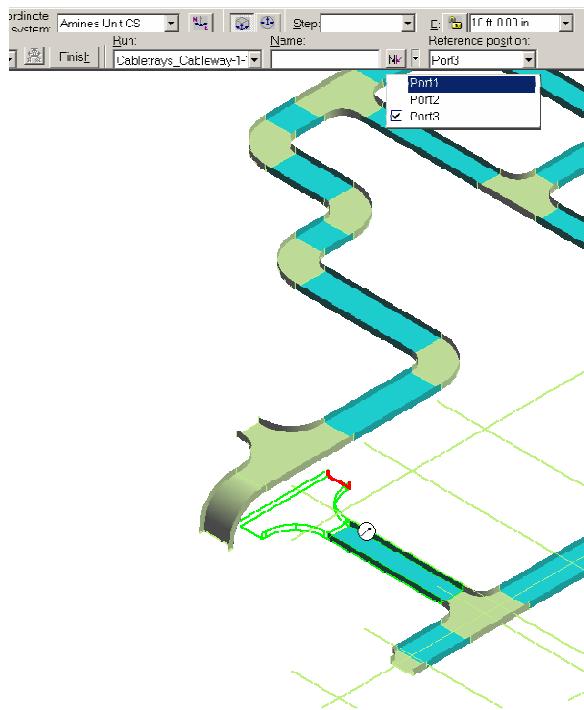
14. From Catalog select Reducers, and then select 2' X 4" to 1' 6" X 4" Left Reducer



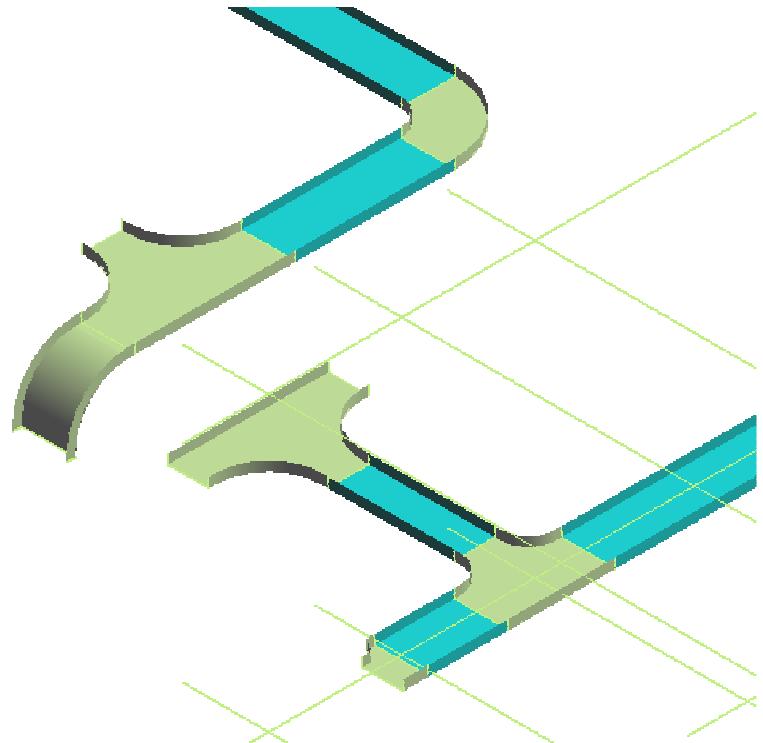
15. Select Finish. Right click to cancel the command
16. Click Insert Component on the vertical tool ribbon.
17. Select the end feature as shown



18. Select Branches, Horizontal Tee, 1' 6" X 4", Bend Radius 2'
19. From Flip Port option, Select Port 3

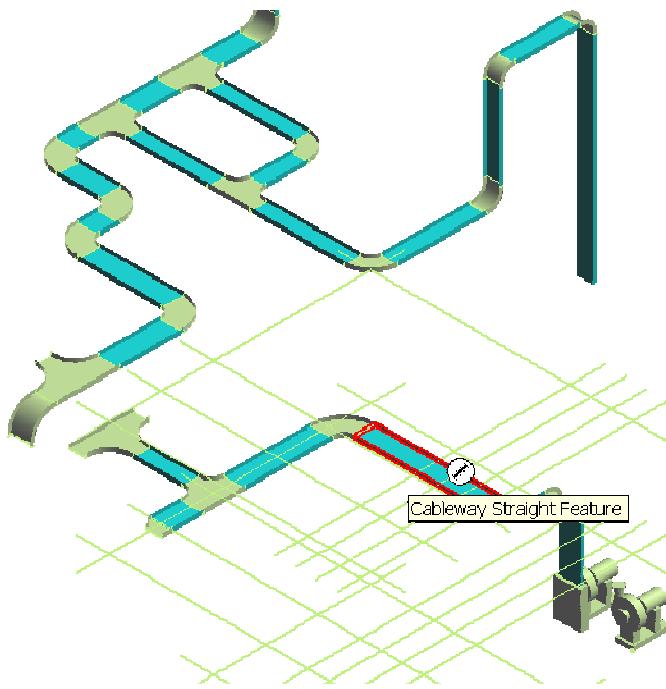


20. Change the Reference Position to Origin

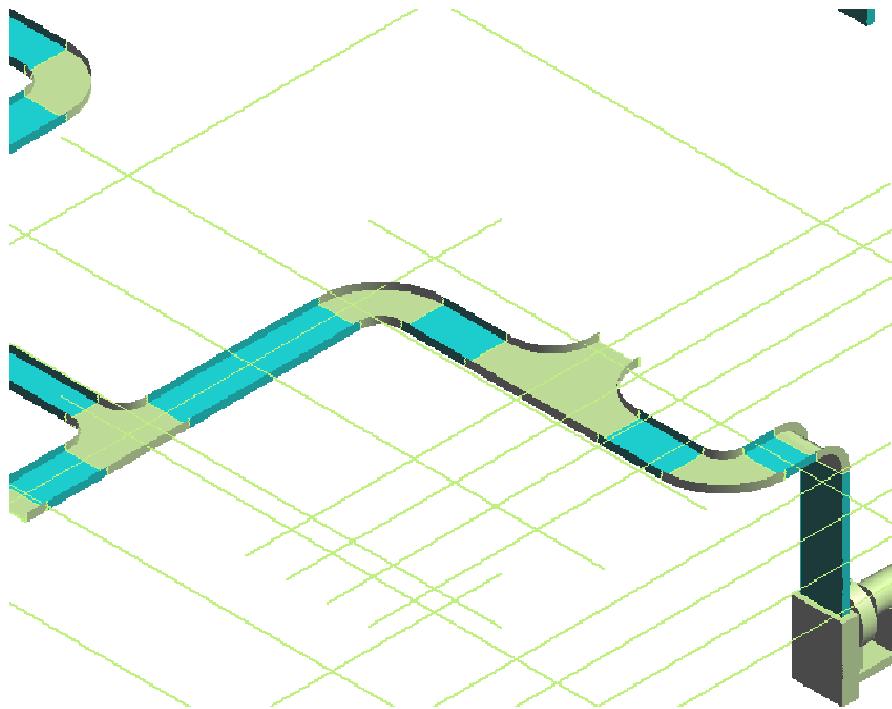


21. Select Finish. Right click to cancel the command

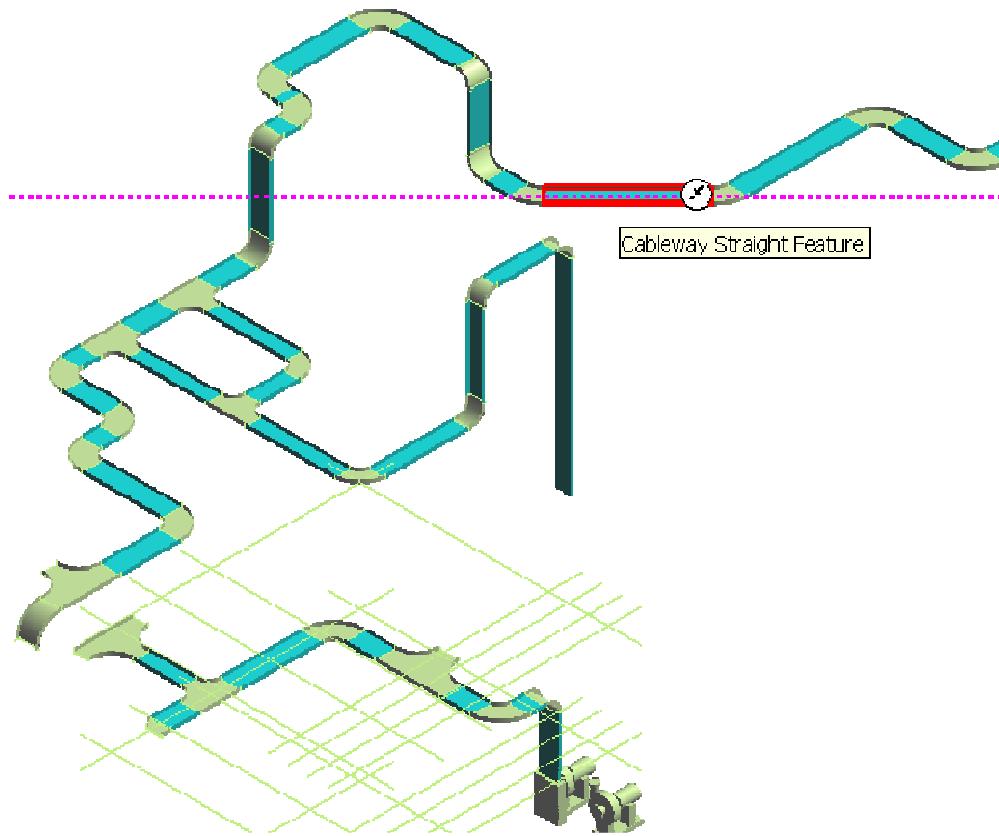
22. Click Insert Component on the vertical tool ribbon.
23. Select the Mid Point of Straight feature as shown



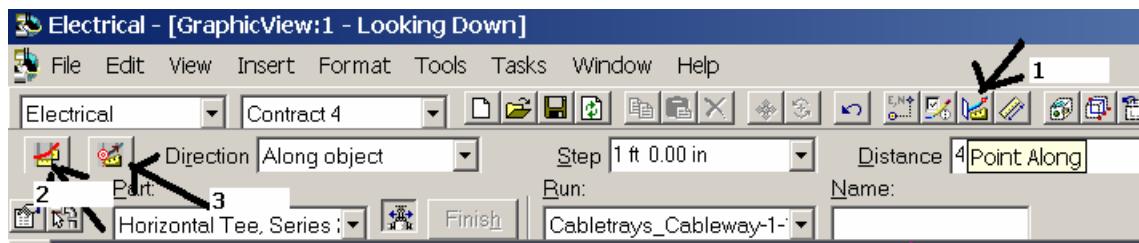
24. Select Branches, Horizontal Tee, 2' X 4", Bend Radius 2'
25. Position Tee at The Mid point . Left Click to Accept the Position. Flip the Tee(go to port) to Point Branch in East Direction. Finish and Right Click to cancel the command



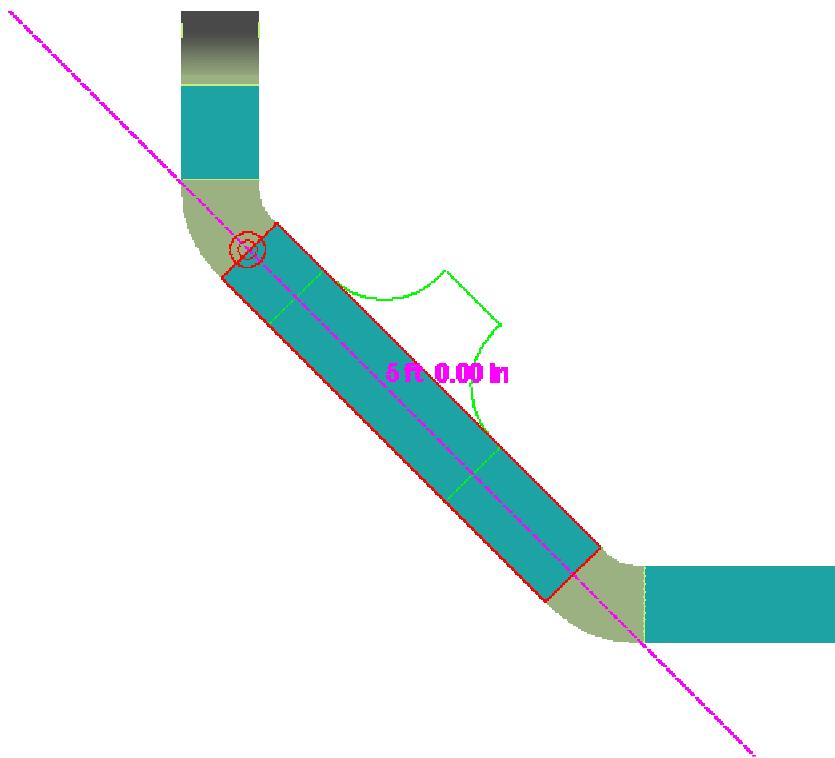
26. Click Insert Component on the vertical tool ribbon.
27. Select the Straight feature as shown



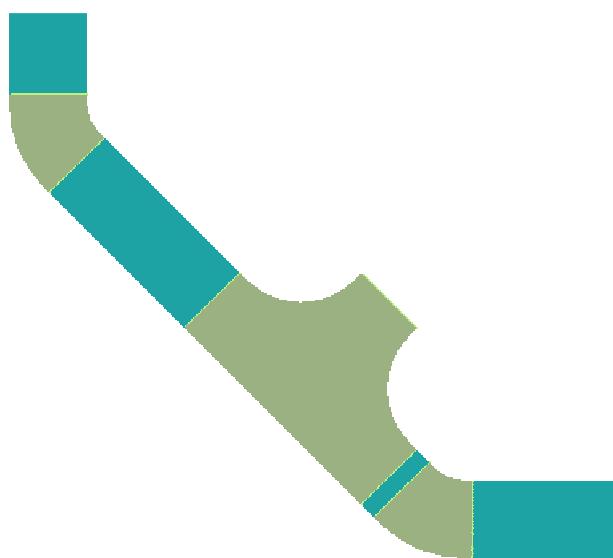
28. Select Branches, Horizontal Tee, 2' X 4", Bend Radius 2'
29. Activate Point Along option (1 in shown figure)



30. Select Reference Option (2 in picture). Select the straight feature as reference.
31. Select Reference Point option (3 in picture). Select the End Feature at the top end.
32. Key in 5' for the Distance

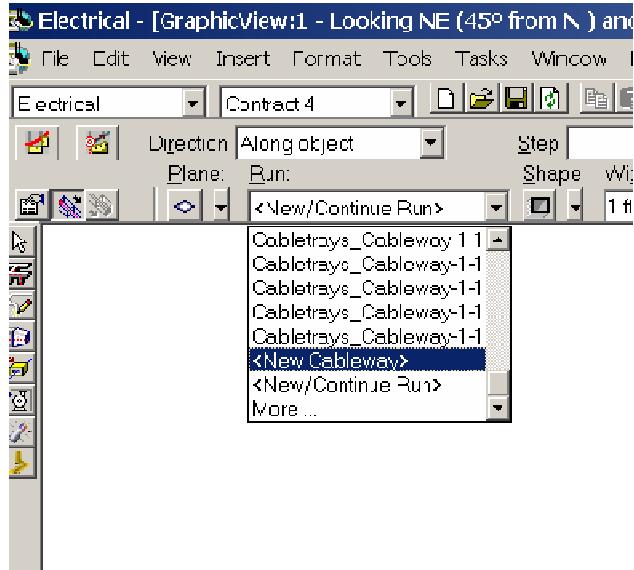


33. Left Click to accept the position. Change the reference position to Port 1.
34. Finish. Right click to cancel the command

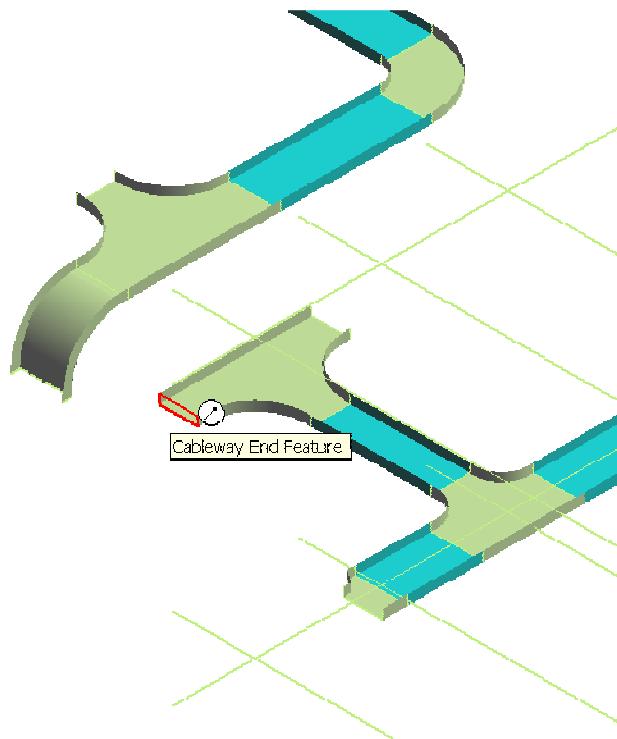


Lab 4: Cableway Routing – (No Part Spec)

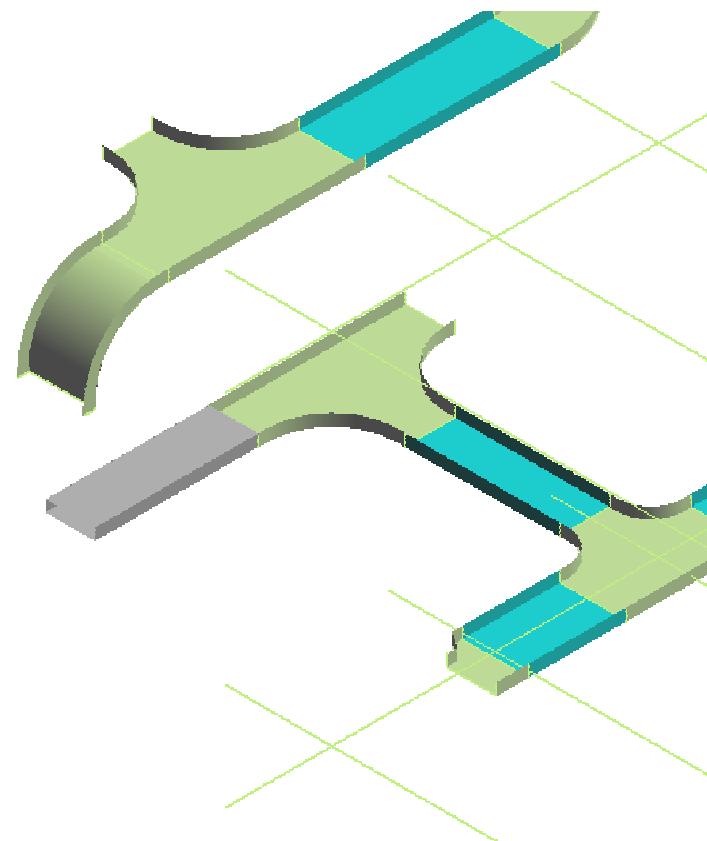
1. Select Route Cableway command on the vertical toolbar
2. Select New Cableway option under Run



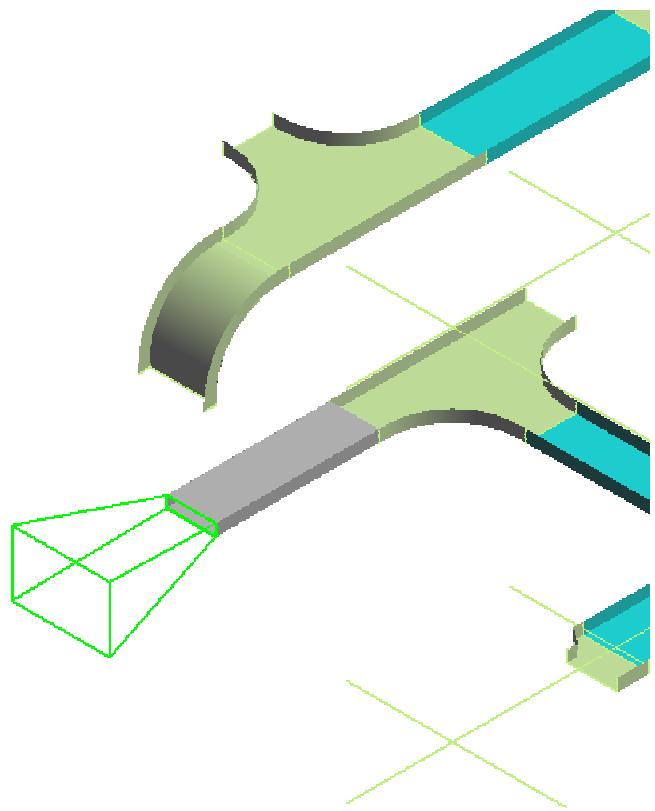
3. Change the Spec to Cws0 . Ok on the form
4. Select the end feature as starting point. Change the Size to 1' 6" X 4"



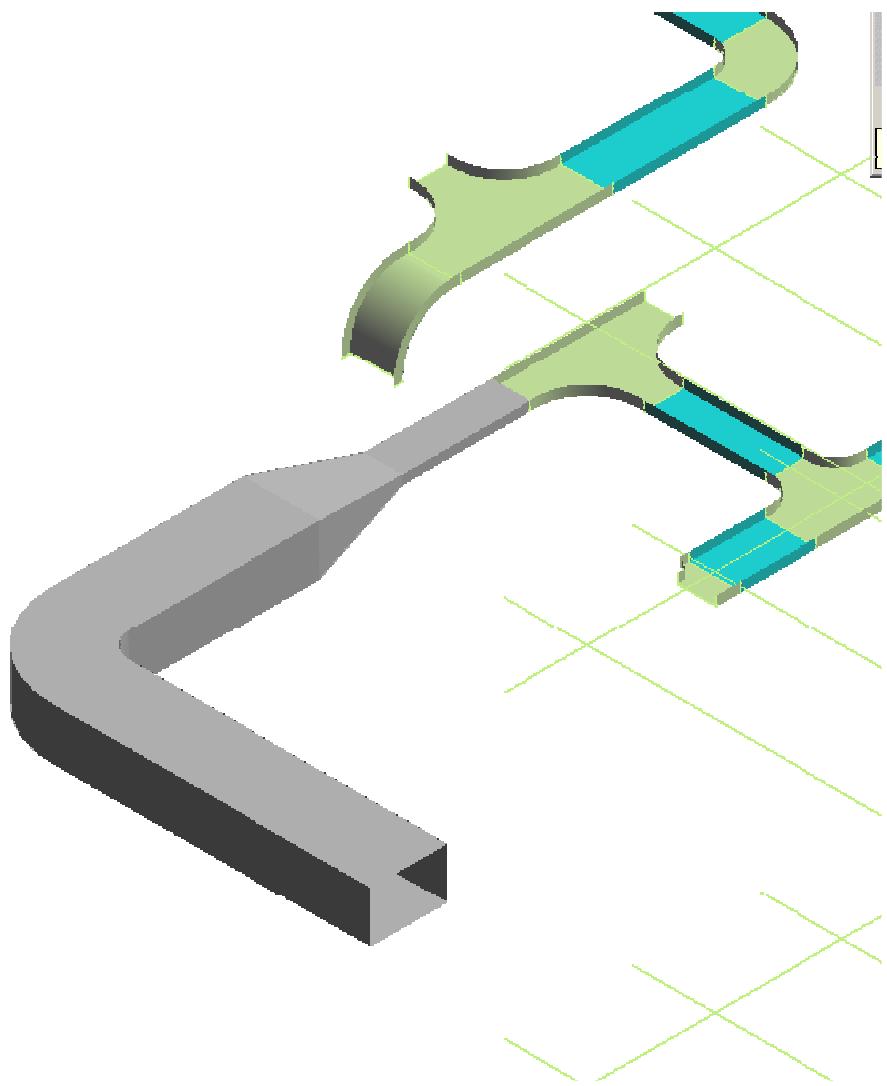
5. Route West 5'



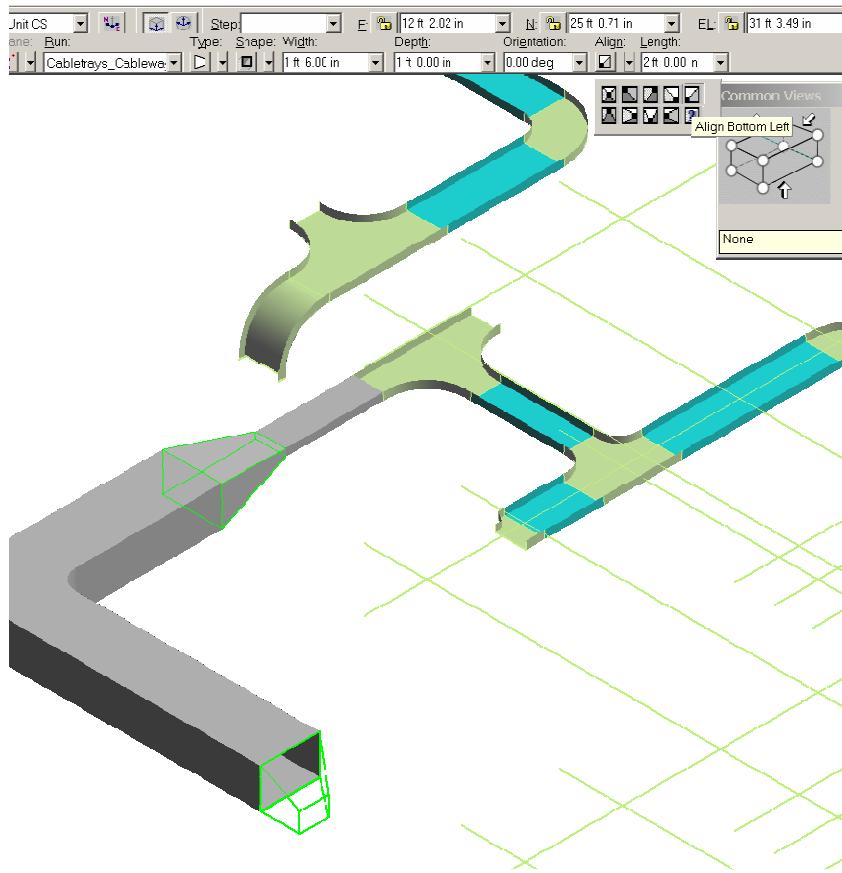
6. Select insert transition command from Vertical tool bar. Select the west end of Cableway.
7. Select 3' for Width, 2' for depth and 4' for length.



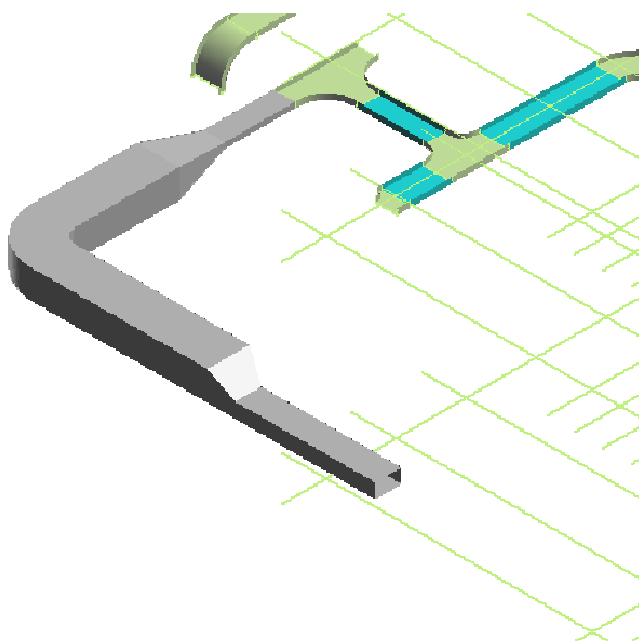
8. Select finish.
9. Select Route cableway and route from transition feature, 10' west, 15' South



10. Select insert transition command. Select the South end of Cableway
11. Change the Width to 18" and Depth to 1'. Change the length to 2'
12. Select Align Bottom left option under Align (first row last button)
13. Select Finish

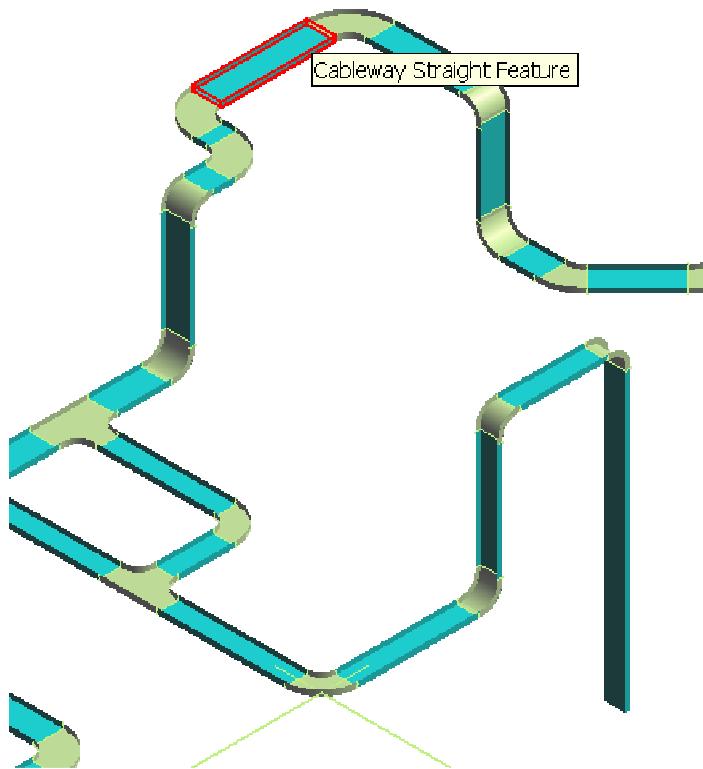


14. Route 10' South from the transition



Lab 5: Cableway Routing – Editing

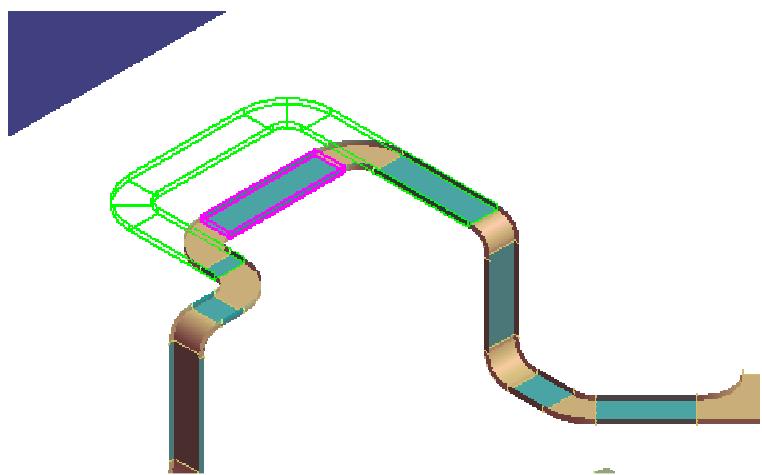
1. Activate Pin Point Ribbon Bar
2. Select Cableway Feature from filter pull down list
3. Activate Relative Tracking
4. Select the Straight Feature Shown below



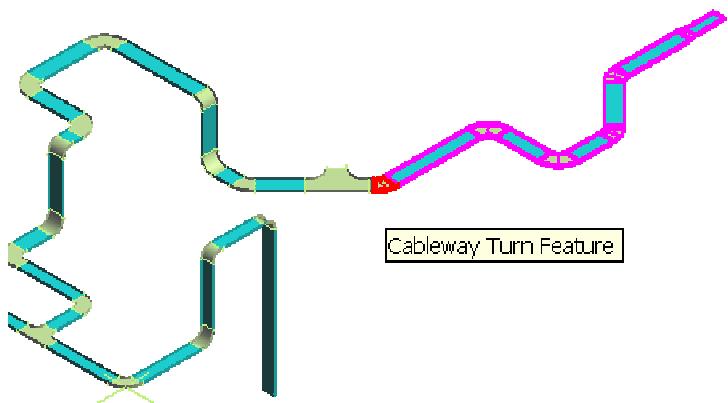
5. Select the Move from Option



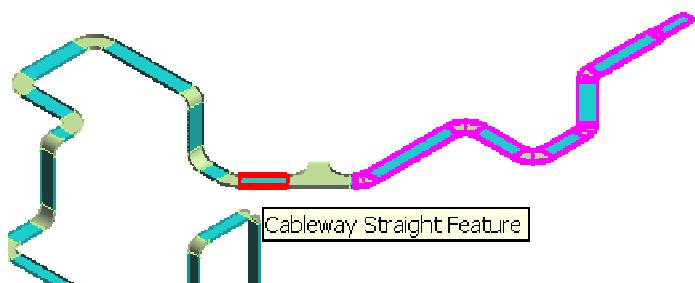
6. Define the Move from point by clicking in the view (in relative move, the move from point is not important)
7. Key in 5' for North.



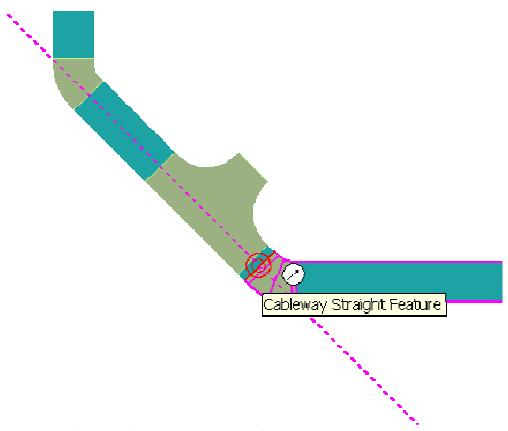
8. Left click to Accept the move. Right click to cancel the command
9. Select the Straight Feature at the end, while holding shift key select the Turn Feature as shown



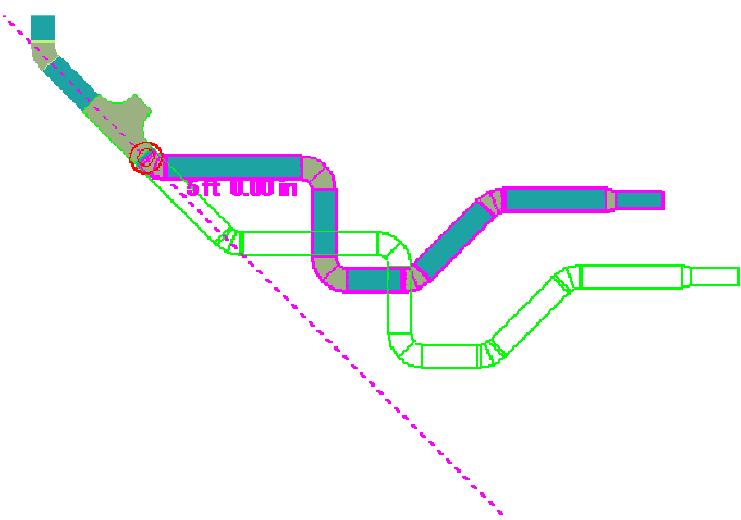
10. Activate the Point Along Ribbon Bar. Select the reference option and pick the Straight Feature as Reference



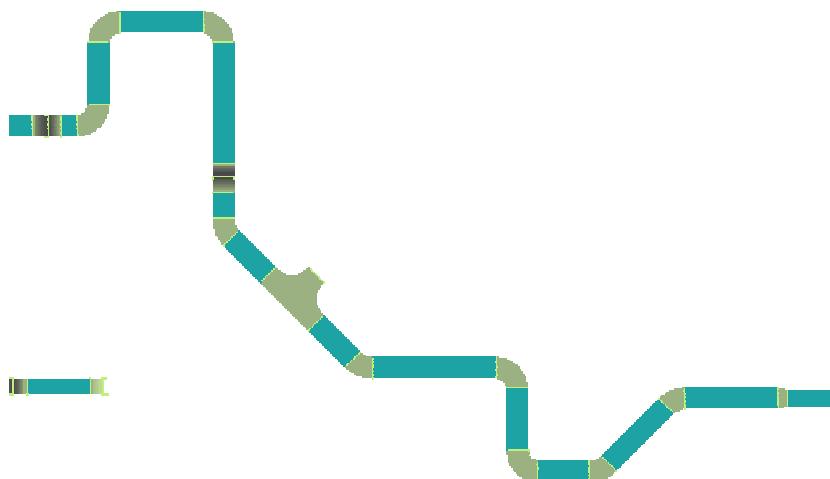
11. Select the End Feature of Elbow as Reference point



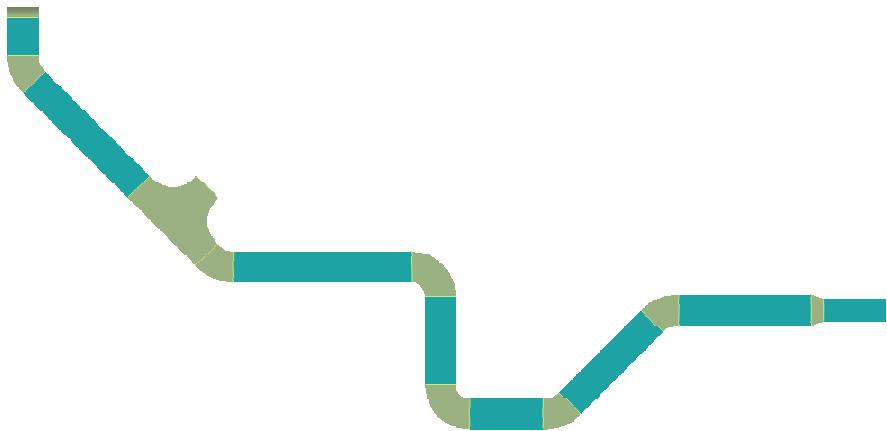
12. Select the Move option
13. Select top End Feature of Elbow as From point
14. Key in 5' for distance



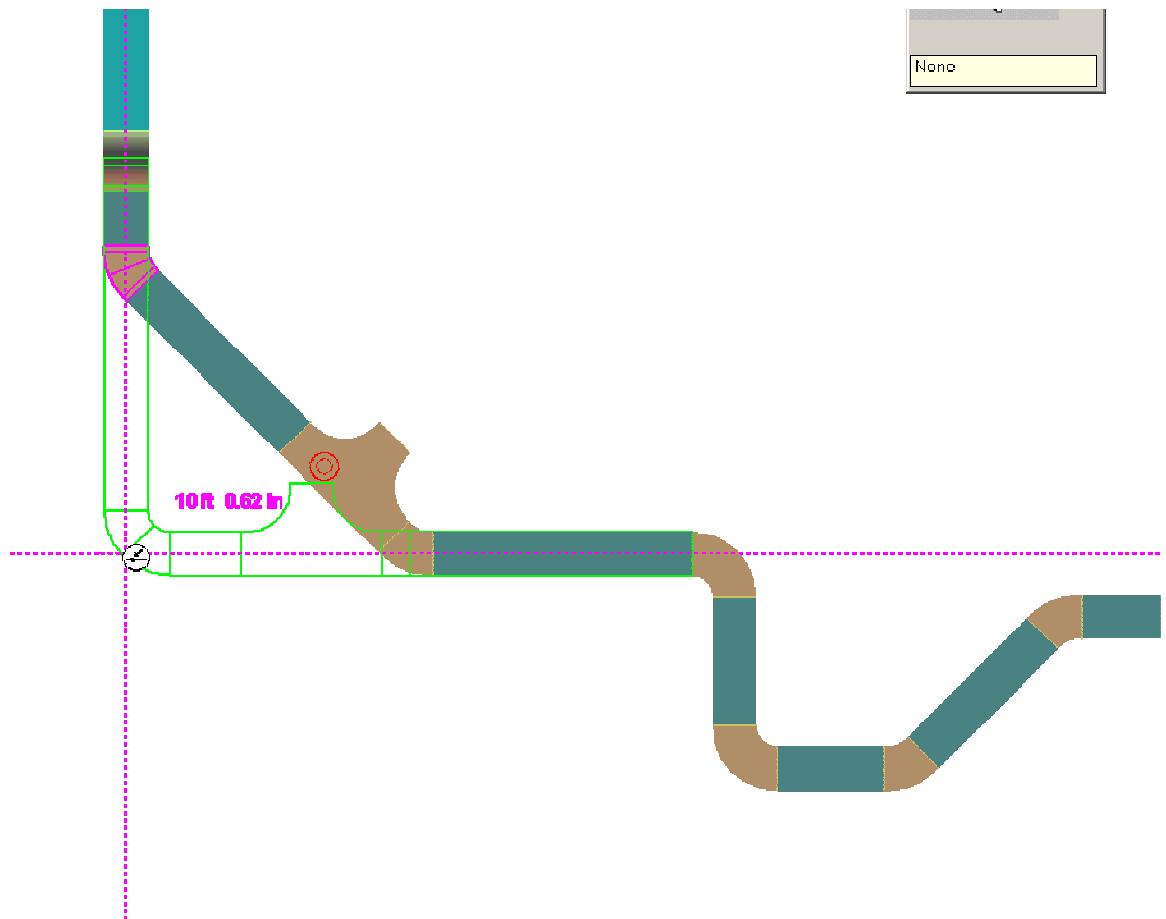
15. Left click to Accept the move.

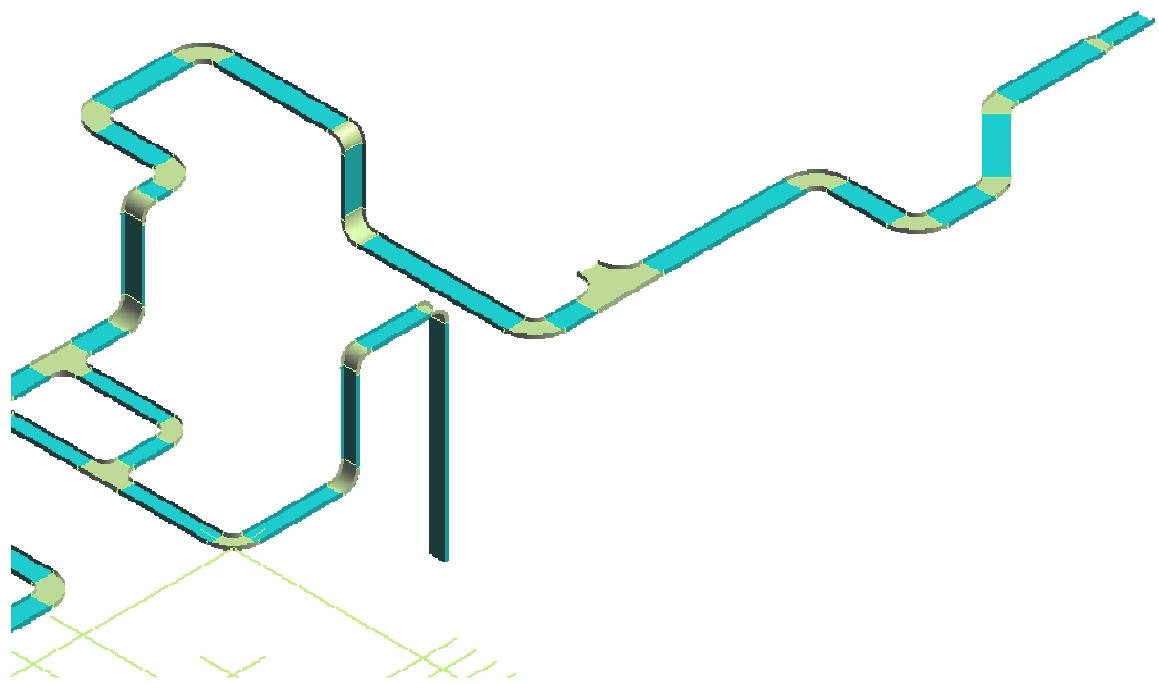


16. Using commands learned in Previous labs, Move the Tee next to Elbow as Shown



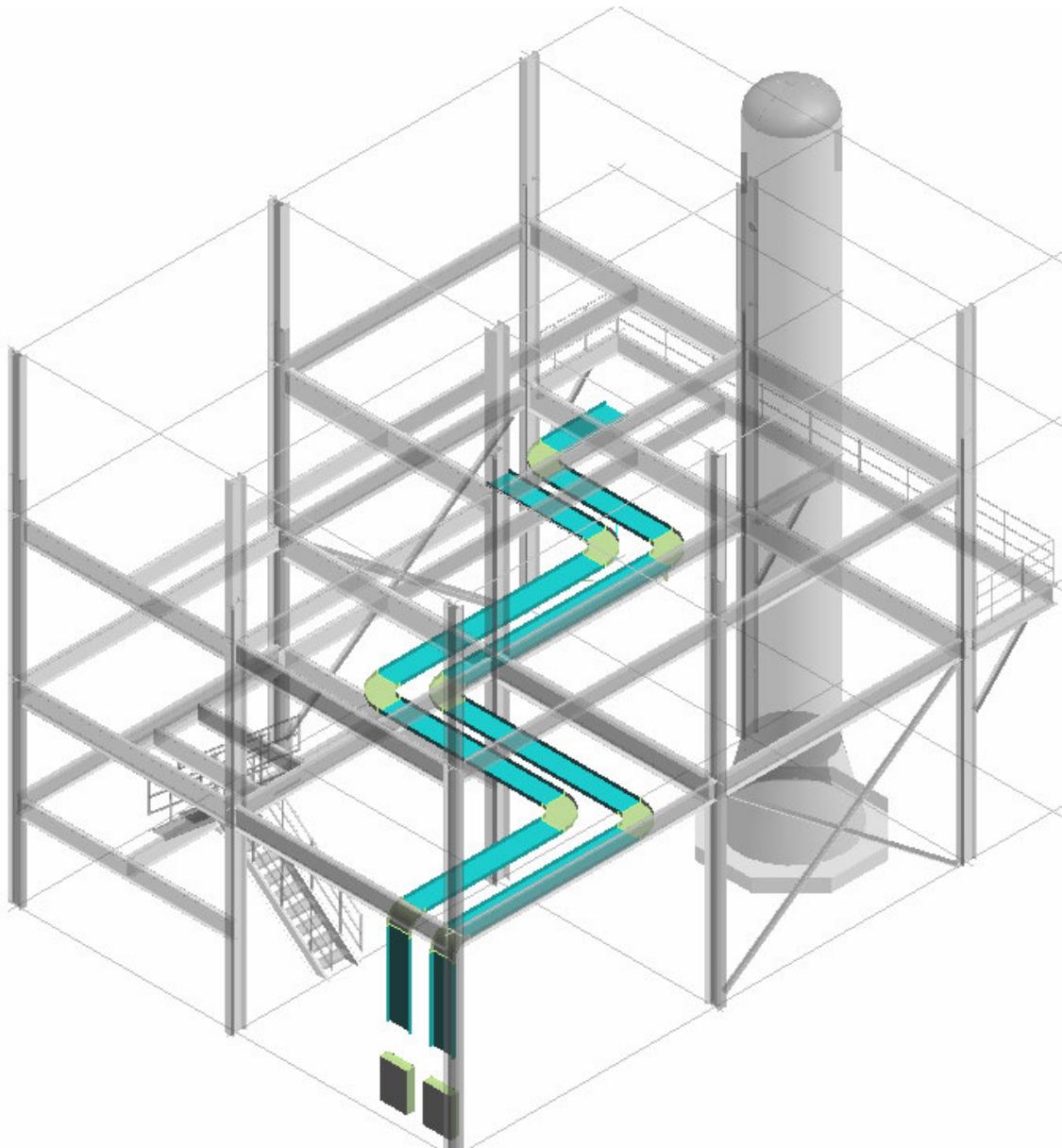
17. Using Point Along and Move Command, Move the elbow so it changes to 90 degree





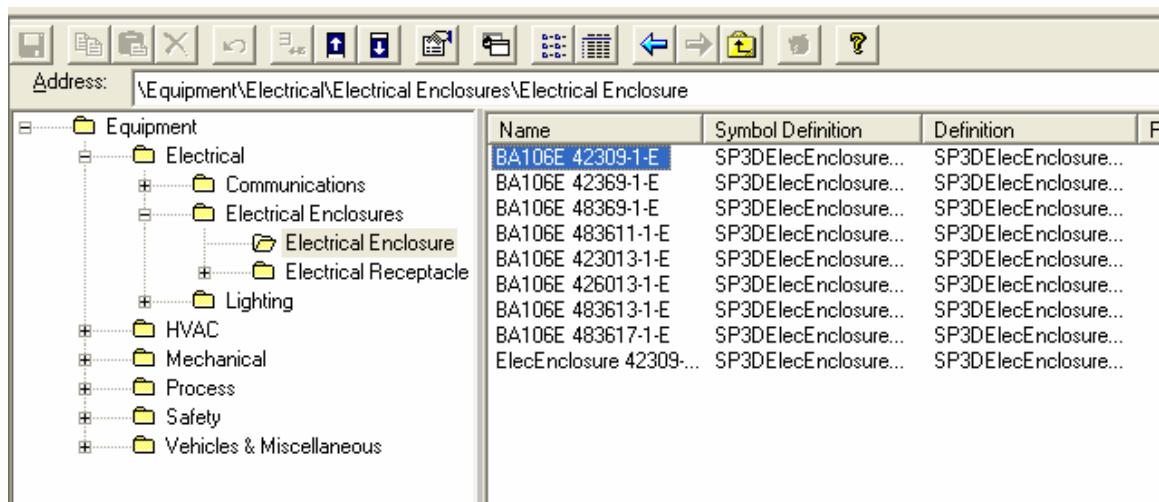
Lab 5 - Basic Cable tray Routing

1. Route the following cable trays using SmartSketch functionality and offset control tool learned in this section. Refer to the sketch below for detailed information.



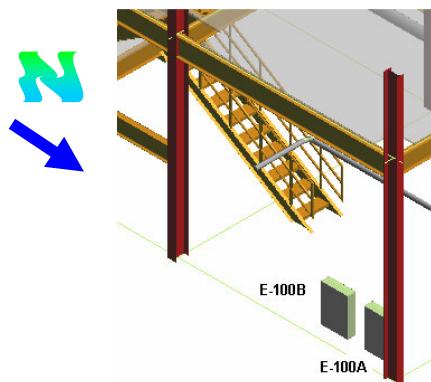
Iso View

2. Make sure the Active Permission Group is set to *Equipment*.
3. Select Place Equipment command from the vertical toolbar to open the select Equipment Dialog box.
4. Locate the electrical enclosures part number BA-106E42309-1 using the tree view. Expand the Equipment Folder and the Electrical Enclosure Folder until you see the part. Select the part and click the OK button.



	Name	Symbol Definition	Definition	F
	BA106E 42309-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	BA106E 42369-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	BA106E 48369-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	BA106E 483611-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	BA106E 423013-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	BA106E 426013-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	BA106E 483613-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	BA106E 483617-1-E	SP3DElecEnclosure...	SP3DElecEnclosure...	
	ElecEnclosure 42309-...	SP3DElecEnclosure...	SP3DElecEnclosure...	

5. Using Pinpoint Tool, place the electrical enclosure origin (E-100A) at the following coordinates:
6. Easting: 53 ft reference to the building 1 coordinate system
7. Northing: 36 ft reference to the building 1 coordinate System
8. Elevation: 0 ft
9. Place the electrical enclosures in the Building1 -> Equipment System.
10. Place the second electrical enclosure origin (E-100B) at the following coordinates:
11. Easting: 53 ft reference to the building 1 coordinate system
12. Northing: 32 ft reference to the building 1 coordinate System
13. Elevation: 0 ft

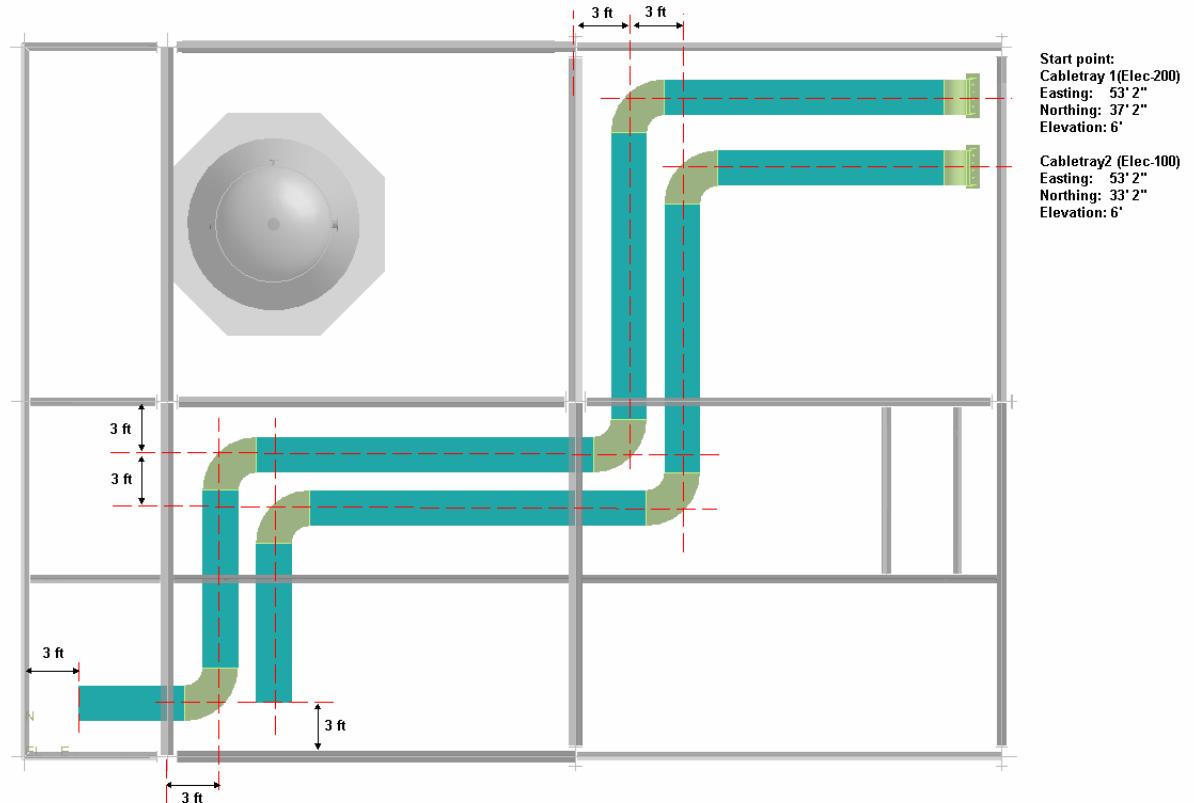


Iso View

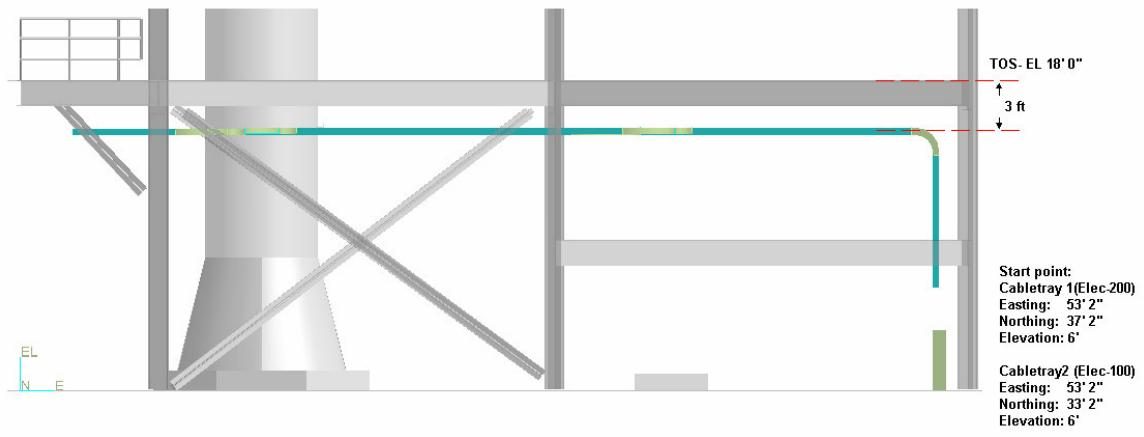
14. Make sure the Active Permission Group is set to *Electrical*
15. Use the Route Cableway command to route the cableways.
16. Use the following data for the cable tray:

System	Building 1>Electrical>T100
Name	Elec-200
Spec	CB-S1-L6-12B
Fill Efficiency	85 %
Width	2 ft
Depth	4 inches

System	Building 1>Electrical>T101
Name	Elec-100
Spec	CB-S1-L6-12B
Fill Efficiency	85 %
Width	2 ft
Depth	4 inches



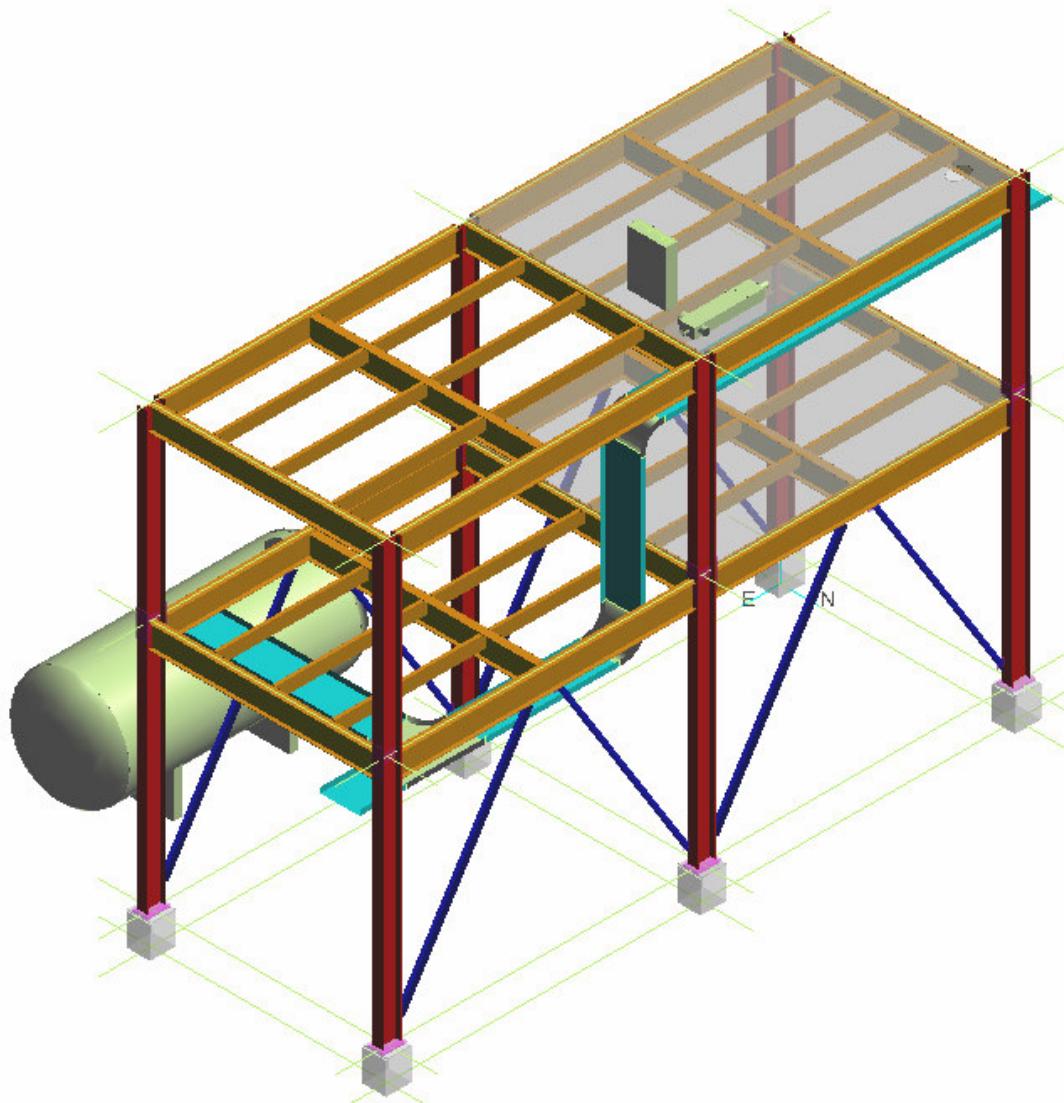
Plan View



Elevation View

Lab 6 – Cabletray and Cables Path (Optional)

1. Route the following cable trays using SmartSketch functionality and offset control tool learned in this section. Refer to the sketch below for detailed information. Make sure the Active Permission Group is set to *Electrical*.



2. Use the Route Cableway command to route the cableways.
3. Use the following data for the cable tray:

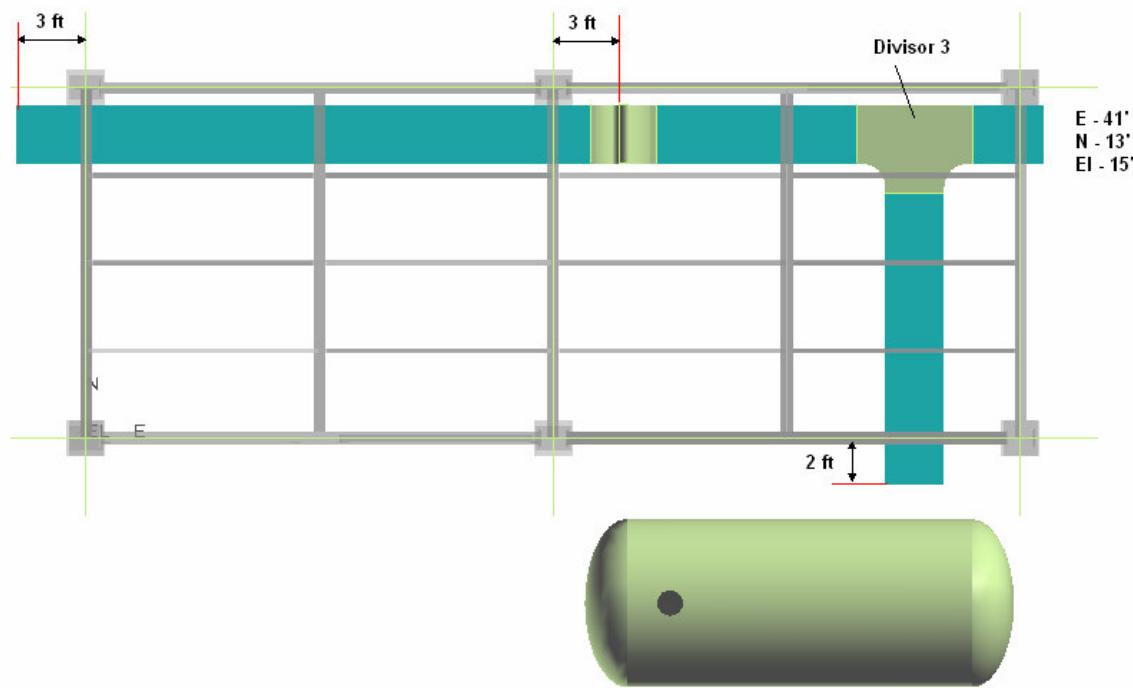
System	Unit 2 -> Electrical -> Control > Cabletrays
Name	Elec-300
Spec	CB-S1-L6-12B
Fill Efficiency	85 %
Width	2 ft
Depth	4 inches

4. Using Pinpoint Tool, place the starting point of electrical cabletray at the following coordinates

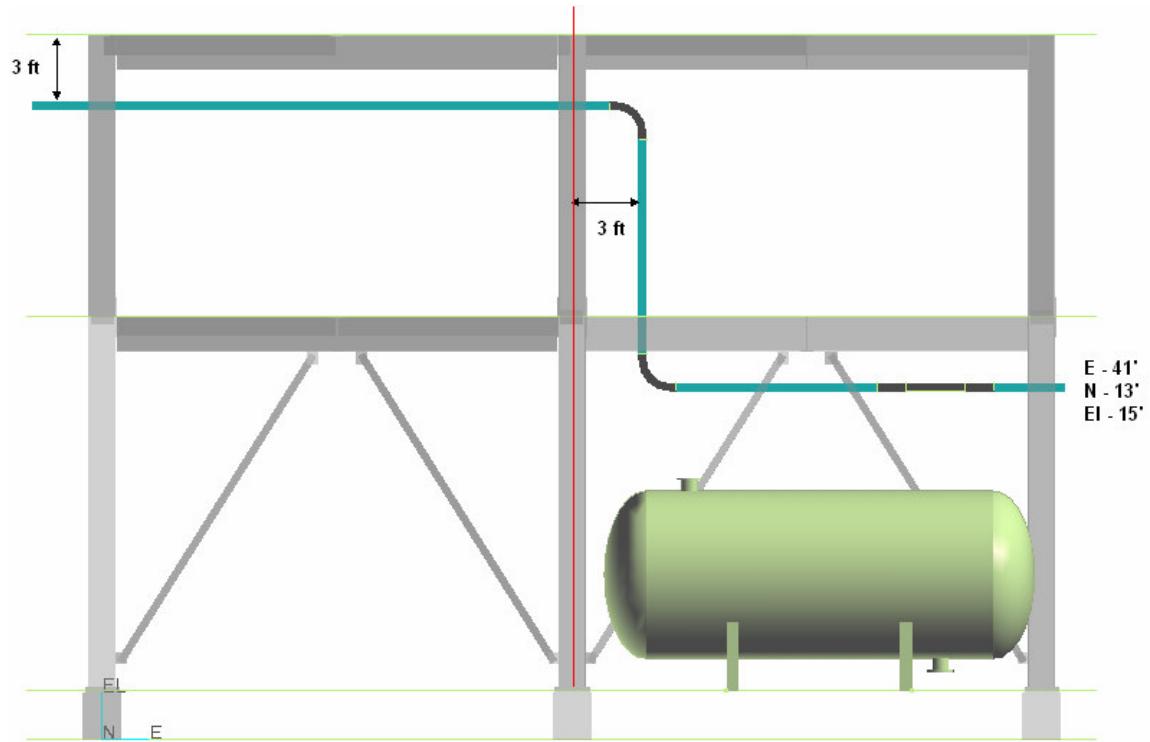
Easting: 41 ft reference to the Unit 2 coordinate system

Northing: 13 ft reference to the Unit 2 coordinate System

Elevation: 15 ft reference to the Unit 2 coordinate system



Plan View of the Structure Unit 2



Elevation View at Column E-0' 0" of the Structure Unit 2

Lab 7 – Cabletray and Cables Path (Optional)

Use the Route Cableway command to route the cabletray
Use the following data for the cable tray:

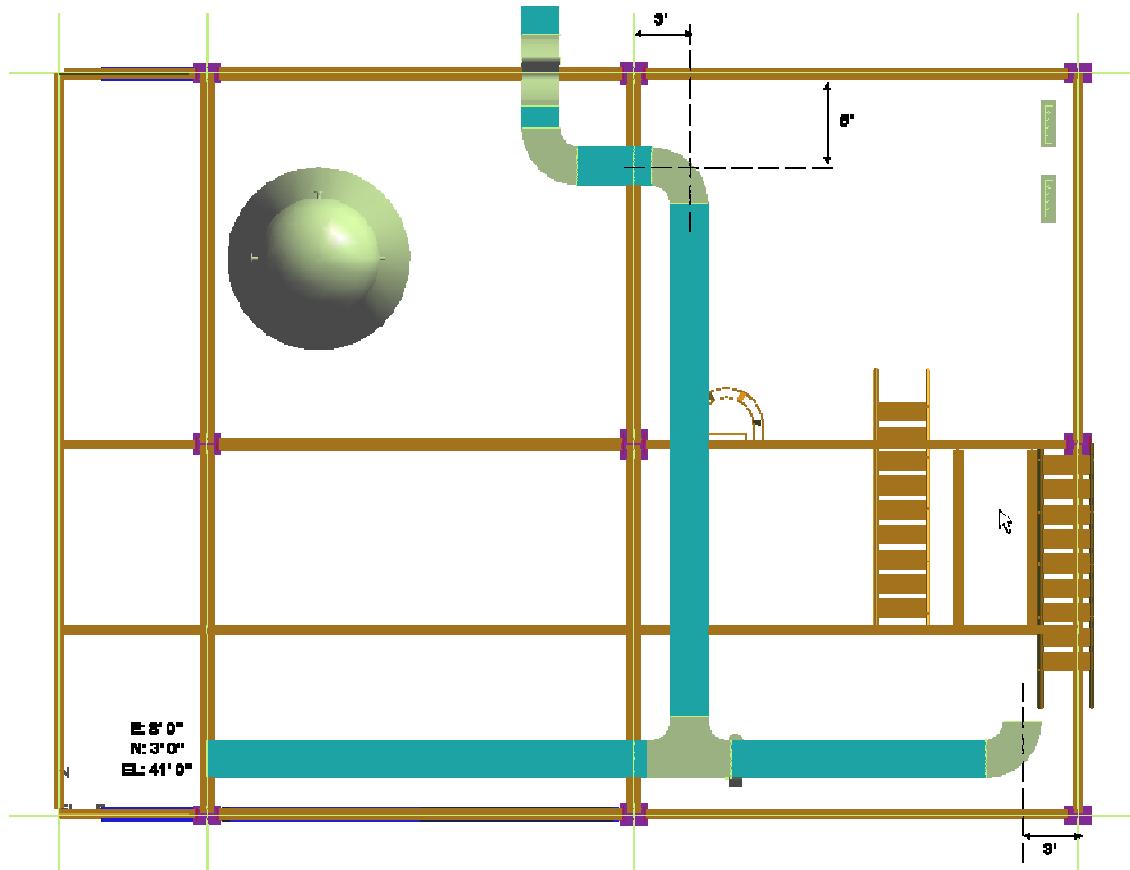
System	Building 1> Electricals -> T102
Name	Elec-250 & 260 (New Run at Branch)
Spec	CB-S1-L6-12B
Fill Efficiency	85 %
Width	2 ft
Depth	4 inches

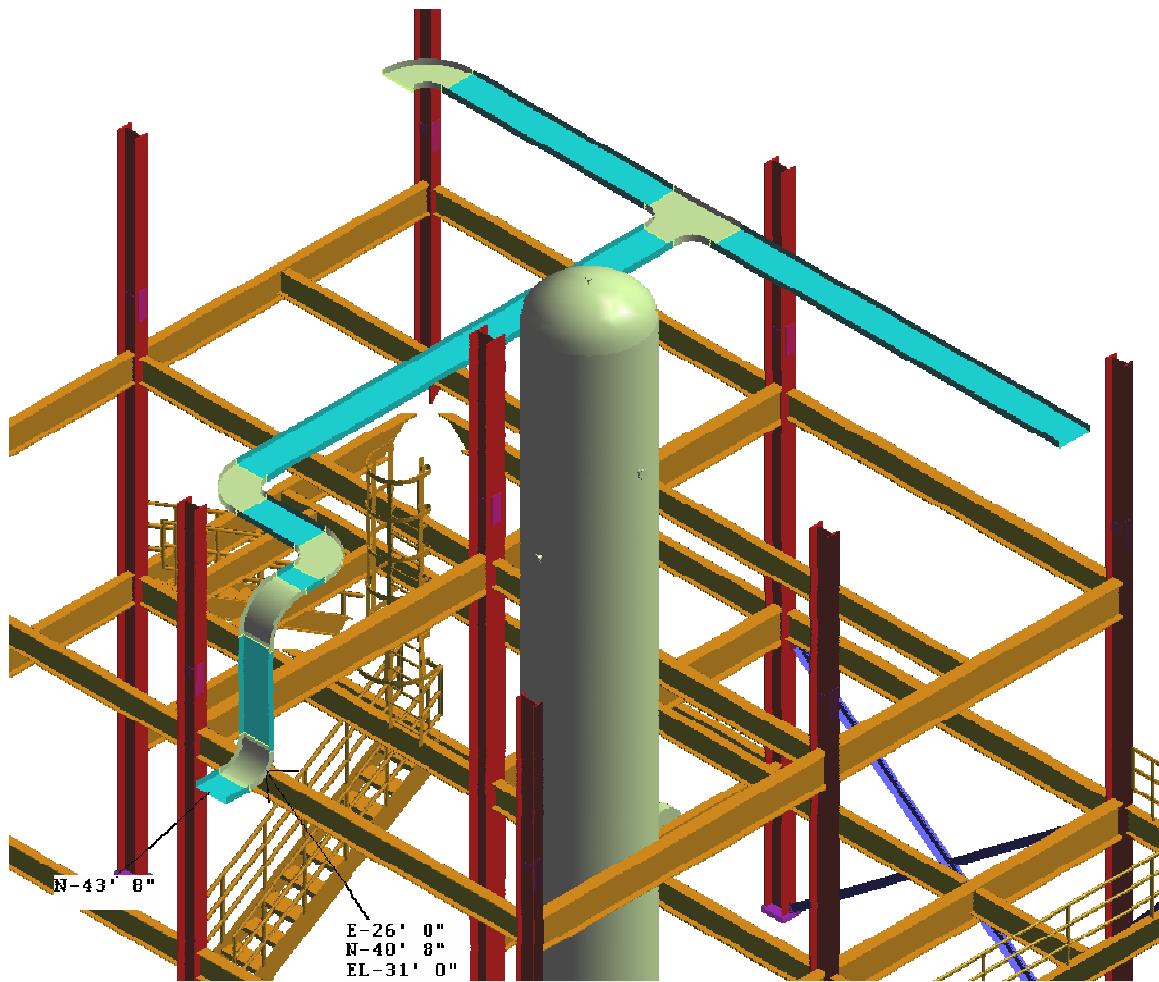
Using Pinpoint Tool, place the starting point of electrical cabletray at the following coordinates

Easting: 8 ft reference to the Building 1 coordinate system

Northing: 3 ft reference to the Building 1 coordinate system

Elevation: 41 ft reference to the Building 1 coordinate system





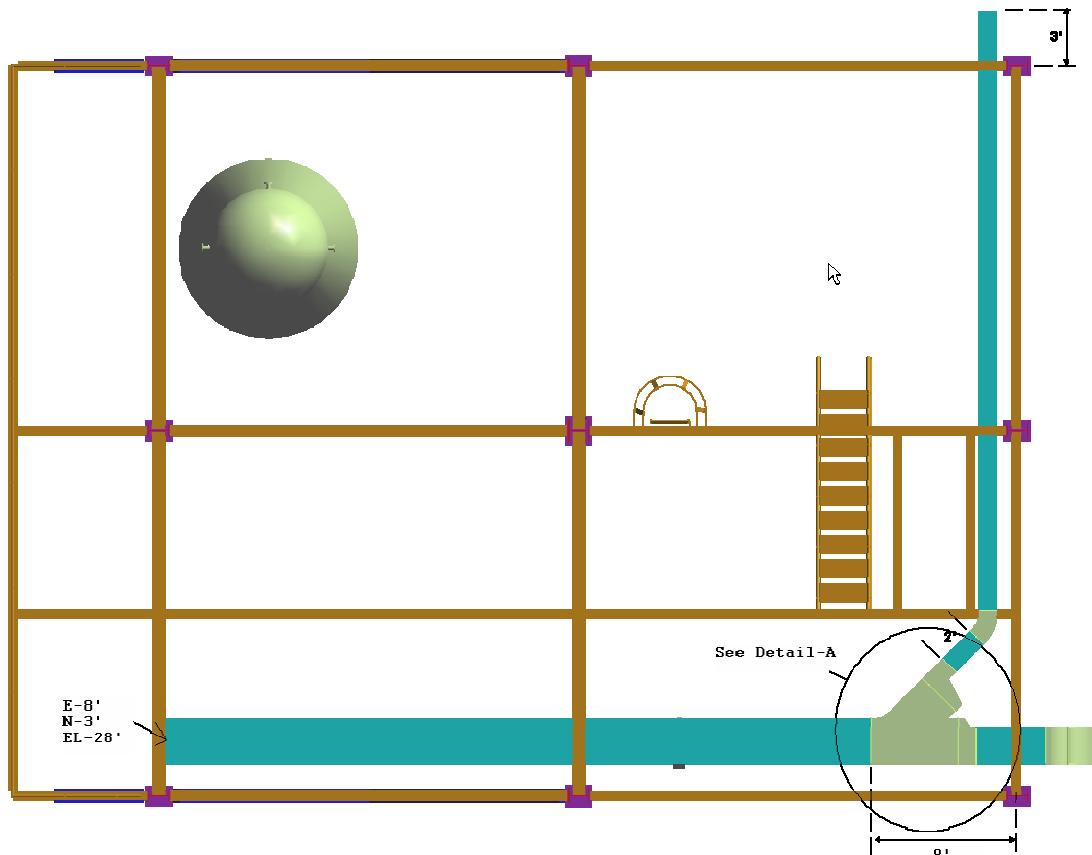
Lab 8 – Cabletray and Cables Path (Optional)

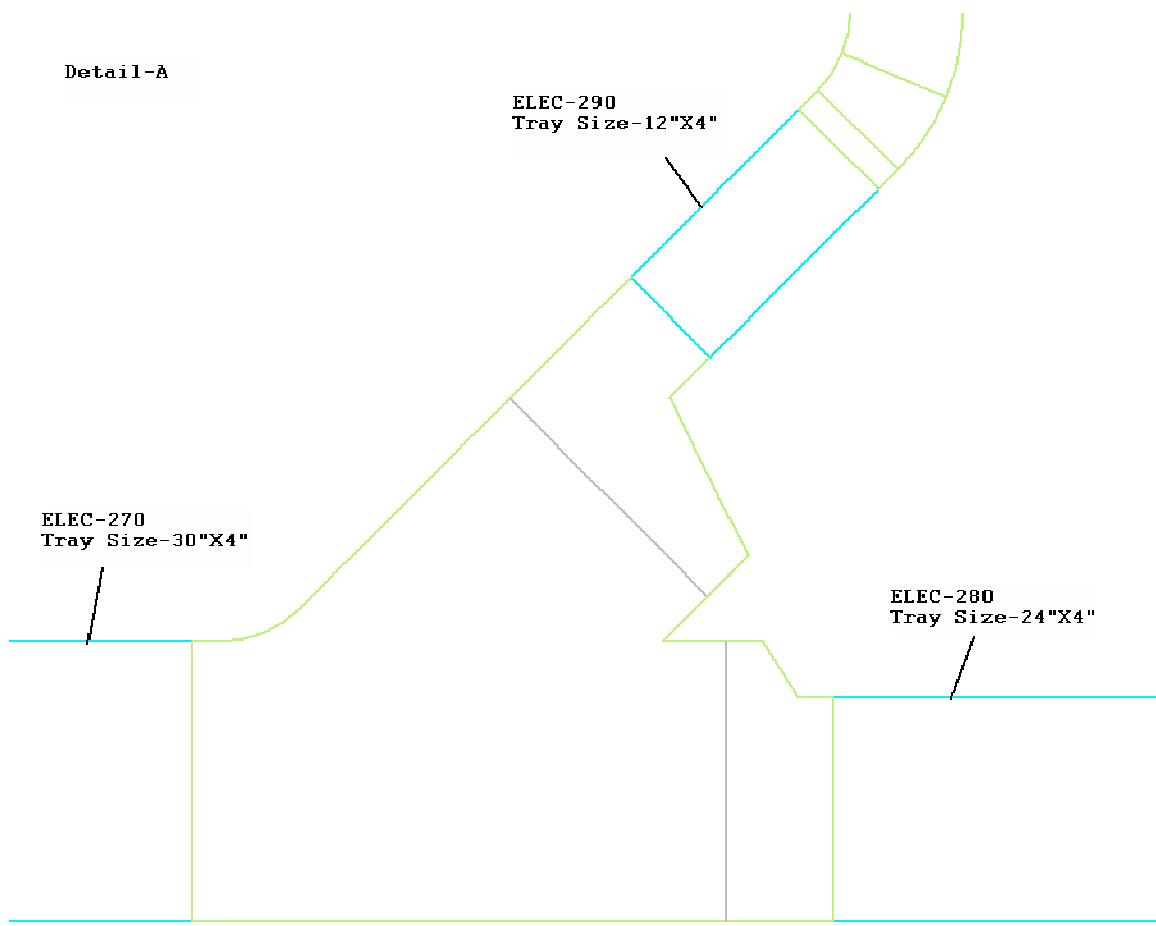
Use the Route Cableway command to route the cabletray
Use the following data for the cable tray:

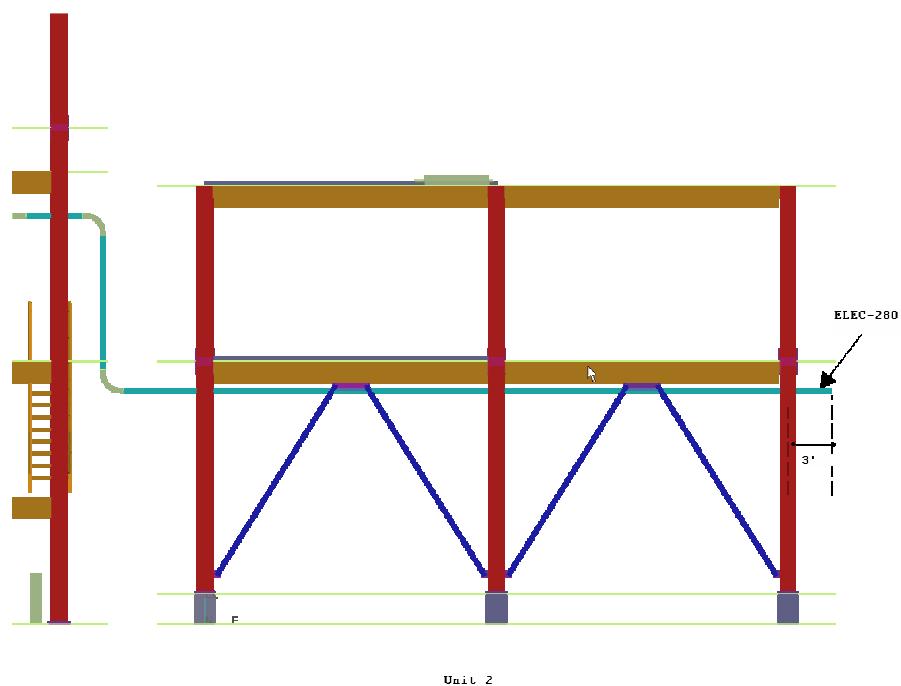
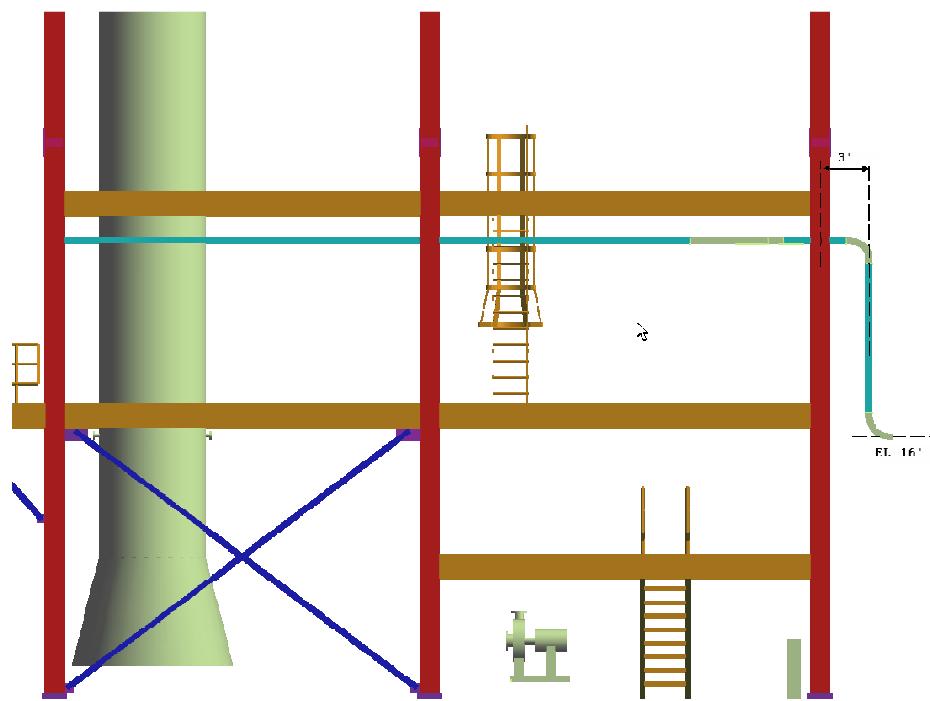
System	Building 1> Electricals -> T103
Name	Elec-270, 280, 290 (New Run at Reducers)
Spec	CB-S1-L6-12B
Fill Efficiency	85 %
Width	2' 6" (270) – 2'(280) – 1' (290)
Depth	4 inches

Using Pinpoint Tool, place the starting point of electrical cabletray at the following coordinates

Easting: 8 ft reference to the Building 1 coordinate system
Northing: 3 reference to the Building 1 coordinate system
Elevation: 28 ft reference to the Building 1 coordinate system

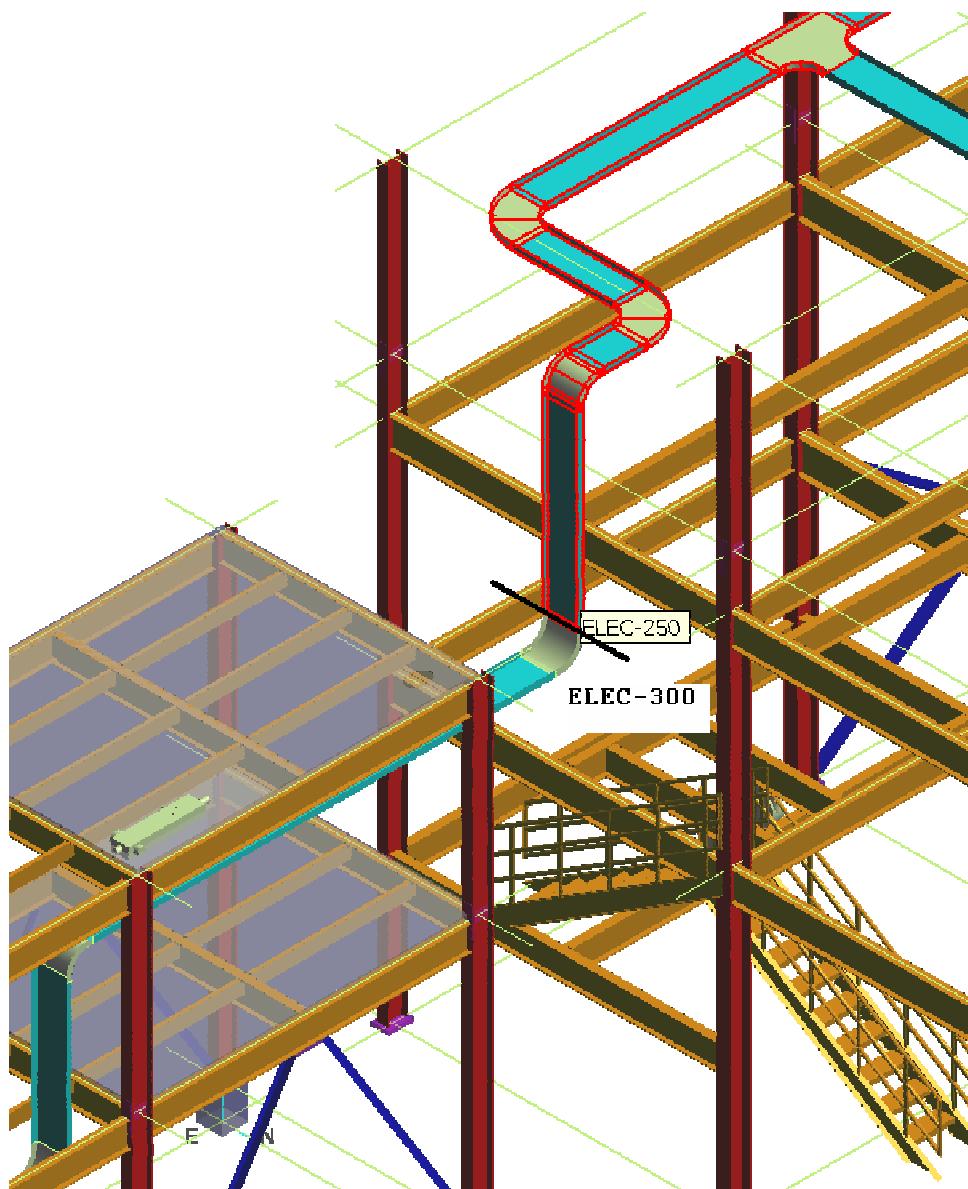






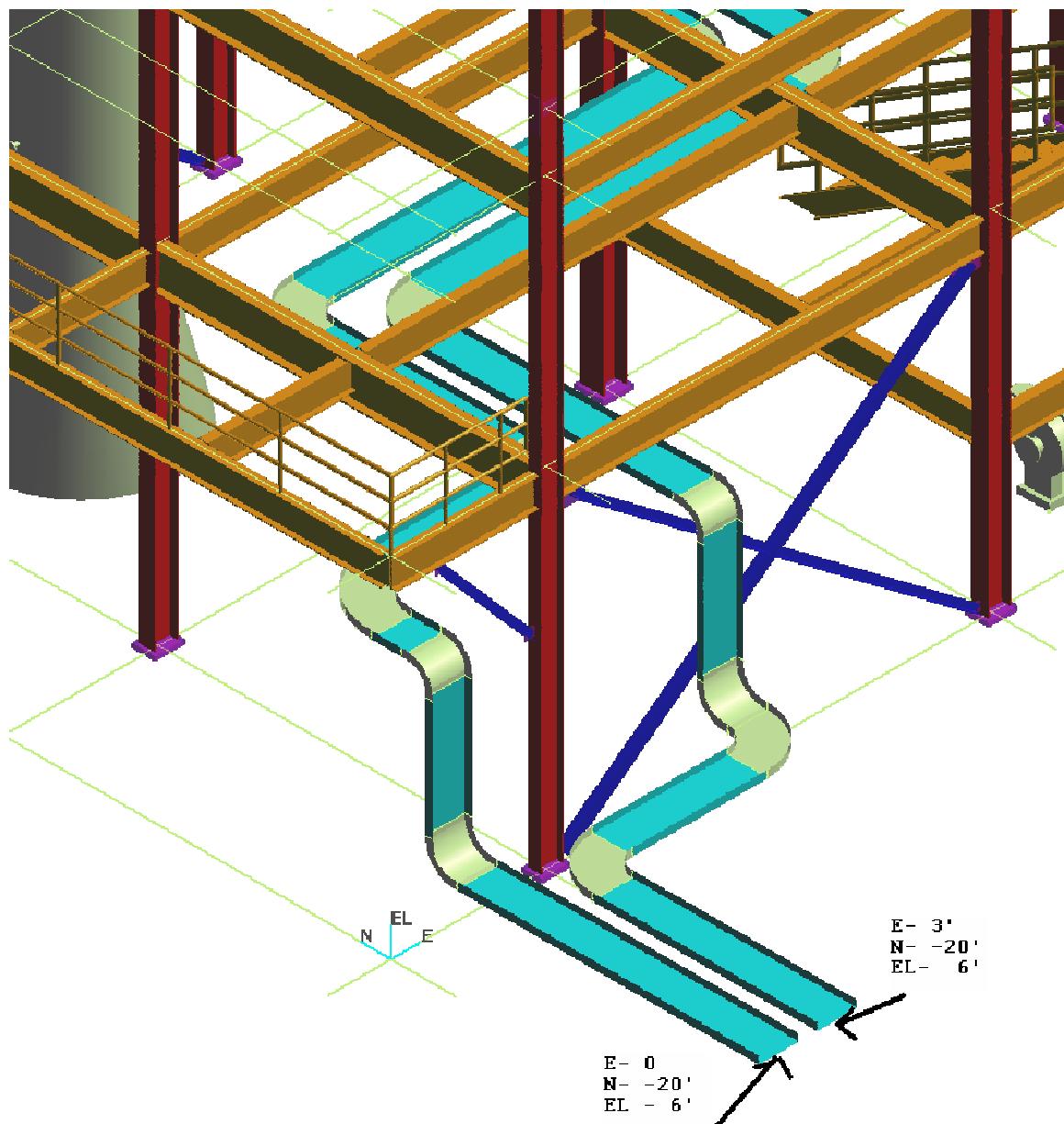
Lab 9 – Cabletray and Cables Path (Optional)

Continue Run Elec-250 and Connect to Elec-300
Distance between Vertical Run and Outside Grid line is 3'



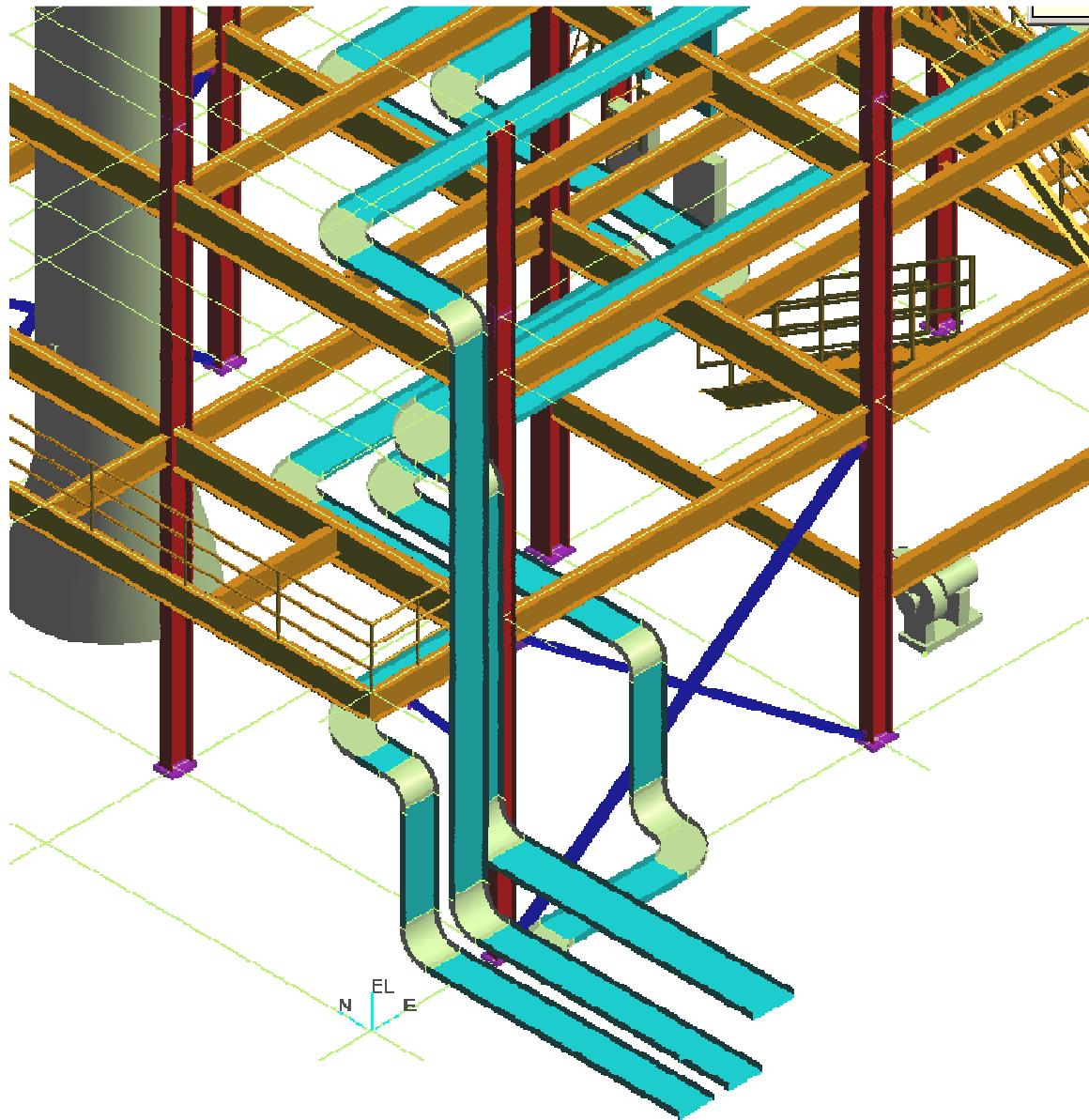
Lab 10 – Cabletray and Cables Path (Optional)

Continue Run Elec-100 and, Elec-200 and Finished at shown coordinates
Distance between Vertical Run and Outside Grid line is 3'



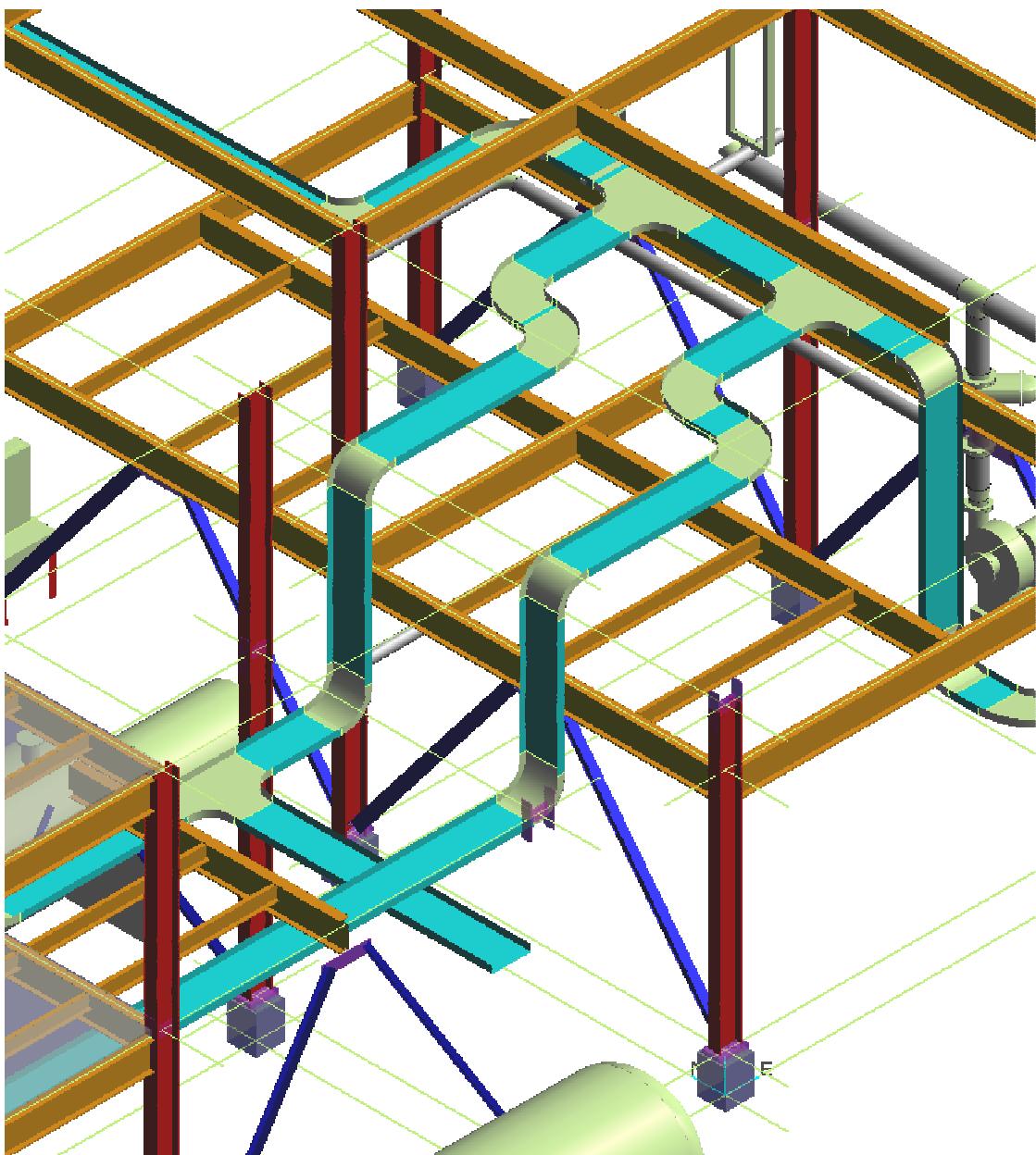
Lab 11 – Cabletray and Cables Path (Optional)

Continue Run Elec-250 and, Elec-270 and Finish at same Northing and Easting as Elec-100 and Elec-200.
The elevation is 9'.



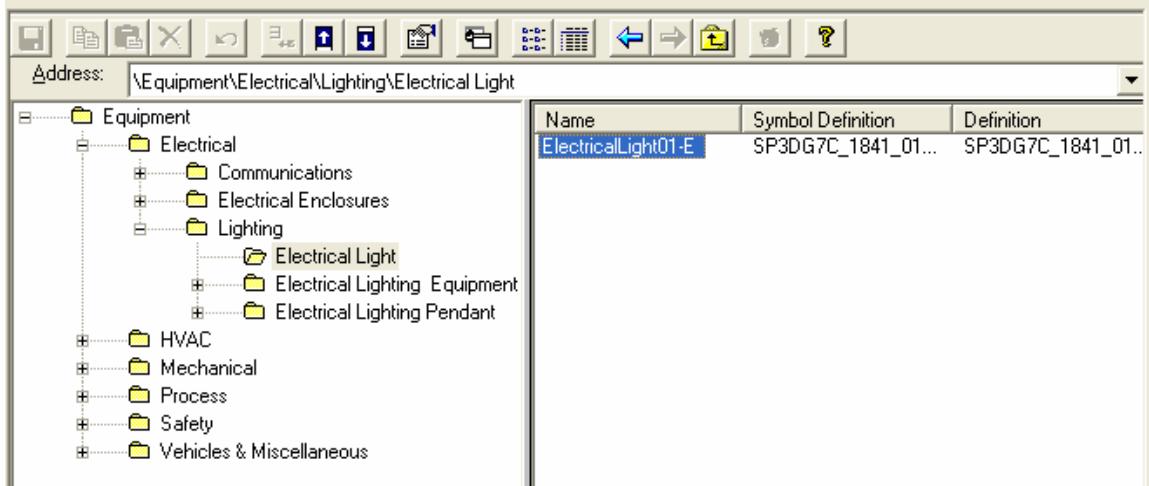
Lab 12 – Cabletray and Cables Path (Optional)

Continue Run Elec-280 and, Elec-300 and connect to Tray in Unit 1

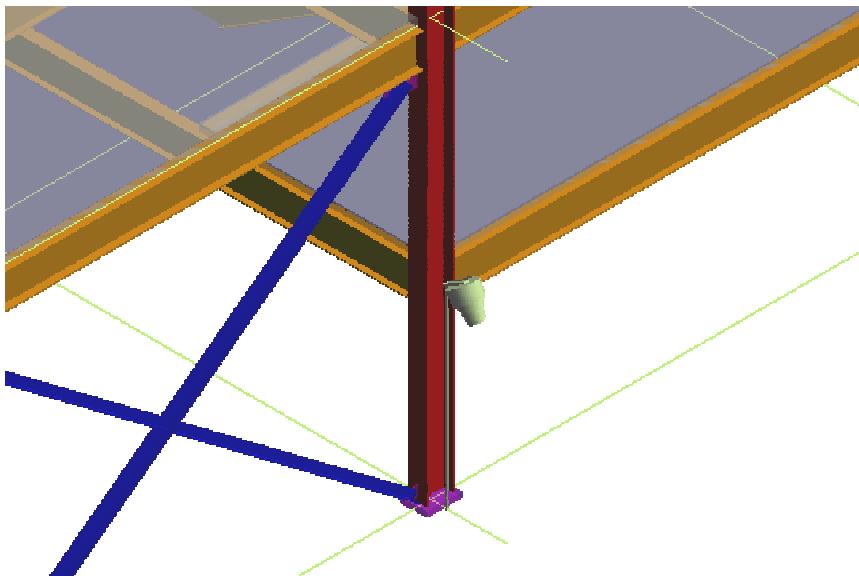


Lab 12 – Electrical Equipment Placement

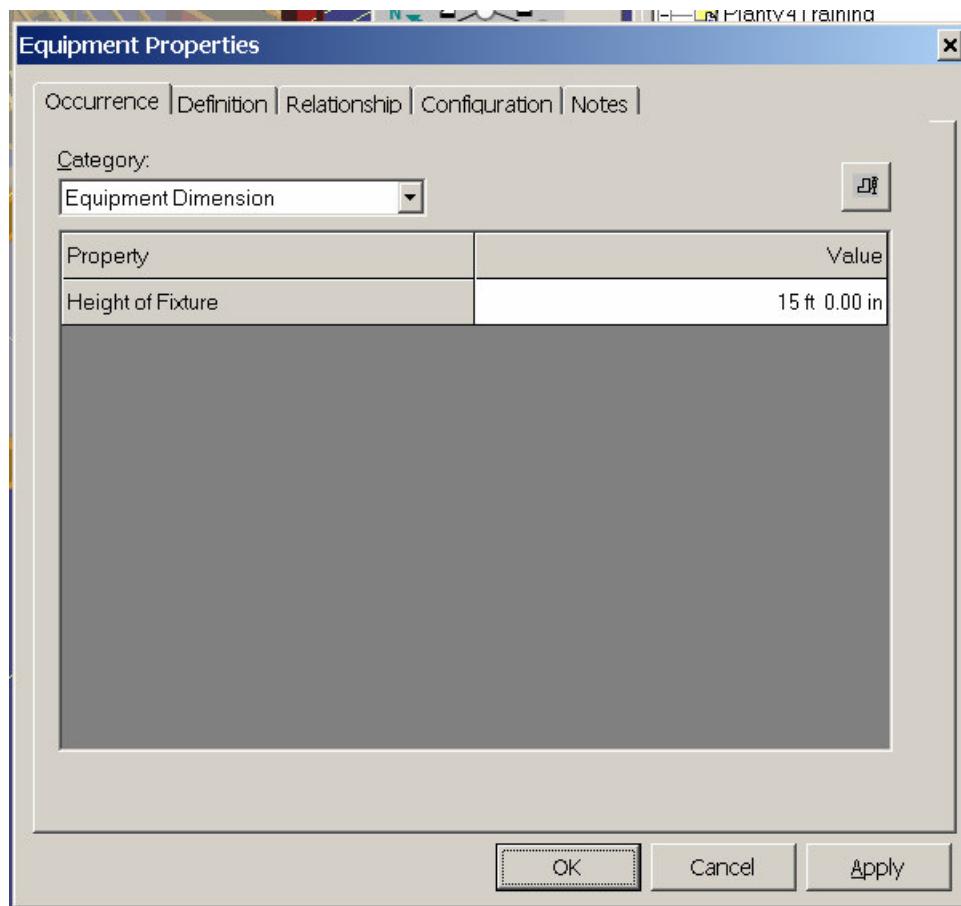
1. Select Place Equipment command from the vertical toolbar to open the select Equipment Dialog box.
2. Browse to Electrical Equipment, I7C-1841-01Electrical Light and select ElectricalLight01



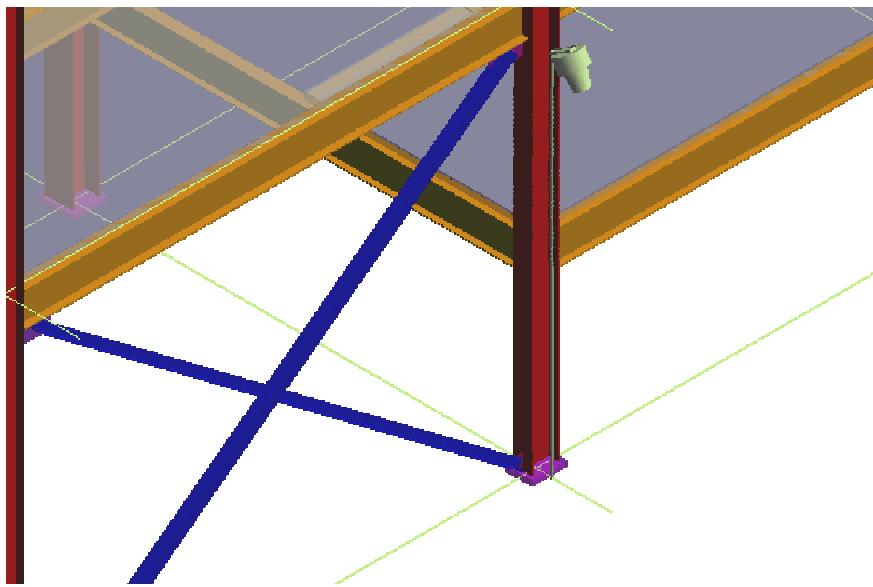
3. Change The System to Area 2, Building 1, Equipment. Set Target to Grid intersection at E 31, N 0 and EL 0.
4. Place the light 1' South of the Intersection. Rotate the light so it is pointing South.



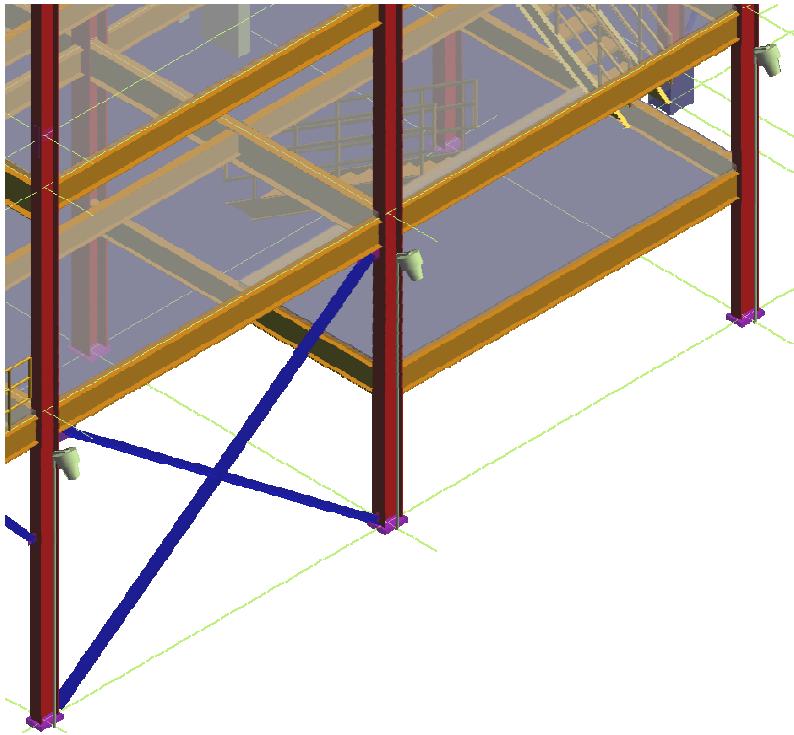
5. Change the filter to Equipment and select the light. Select Properties and go to Equipment Dimension category. Change the Height to 15'



6. Ok on the form



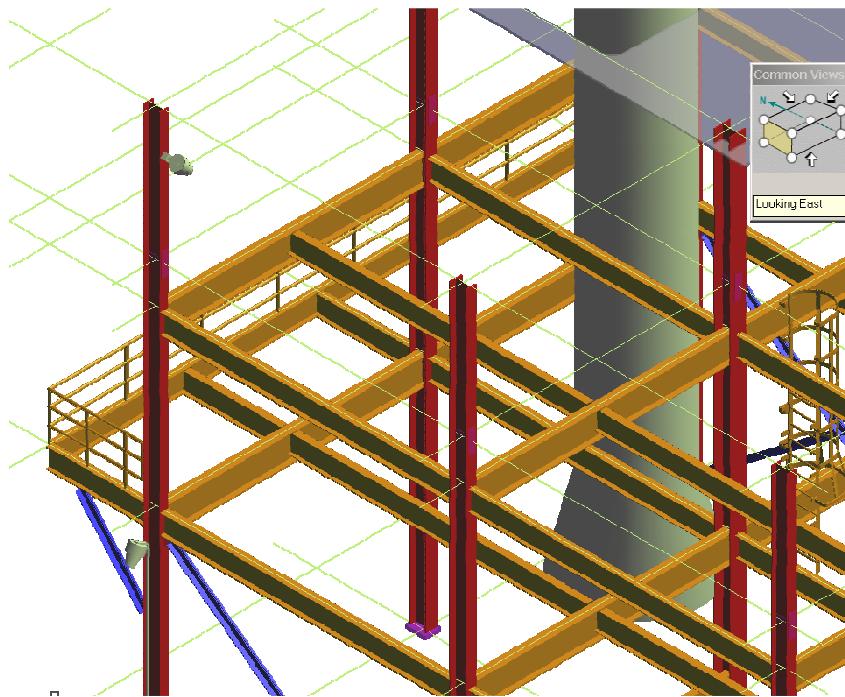
7. Place same light fixture around all outside columns on South and North side of Building 1. Rotate lights to point them outside the Building



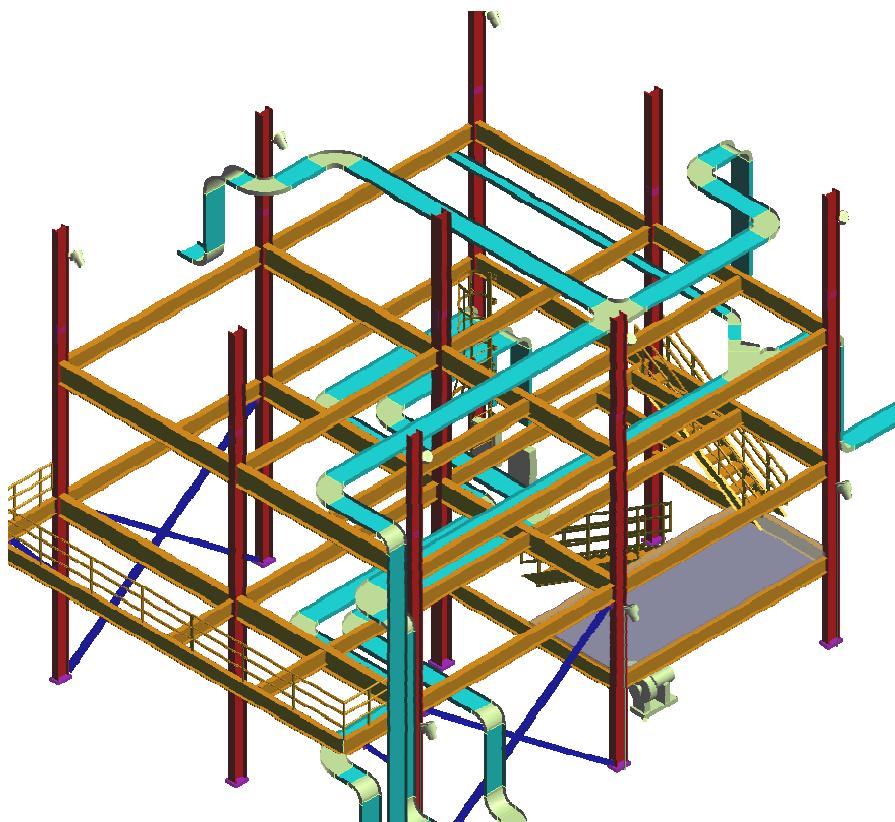
8. Select Place Equipment command from the vertical toolbar to open the select Equipment Dialog box.
9. Browse to \Equipment\Electrical\Lighting\ElectricalLighting Equipment\ElectricalEqp01-E
10. Change System to Building 1, Equipment. Set Target at Grid intersection E 8, N 0, EL 44 in Building 1.
11. Key in 0 for North and -3 for EL. Select Connect under Relationship options. Select the Outside Surface of column on East side (as shown)



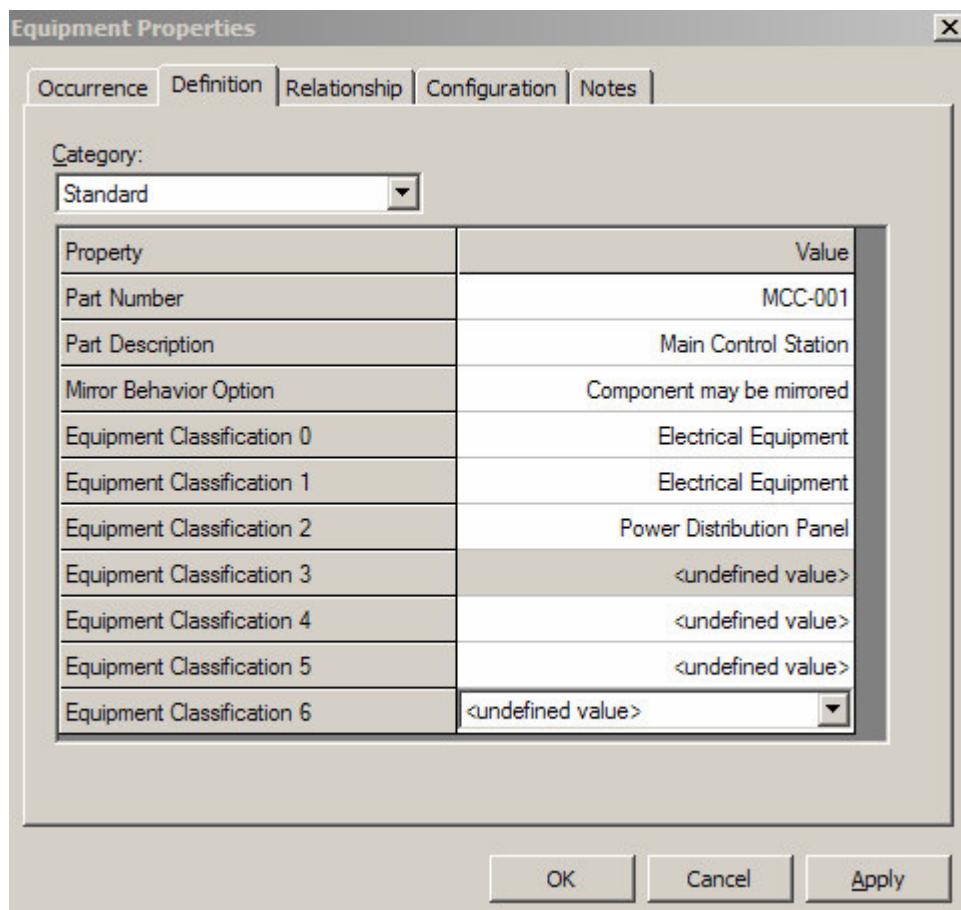
12. Select Rotate Equipment Command. Select X axis as Rotation axis. Type 45 for Rotation angle



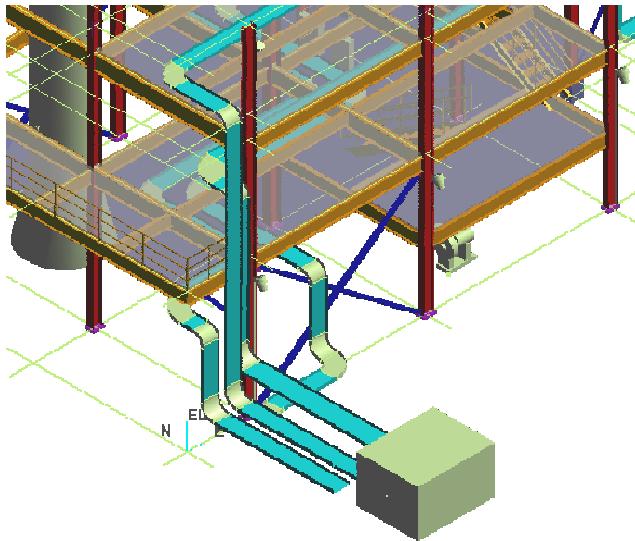
13. Place same light fixture around all outside columns on South and North side of Building 1. Rotate lights to point them inside the Building



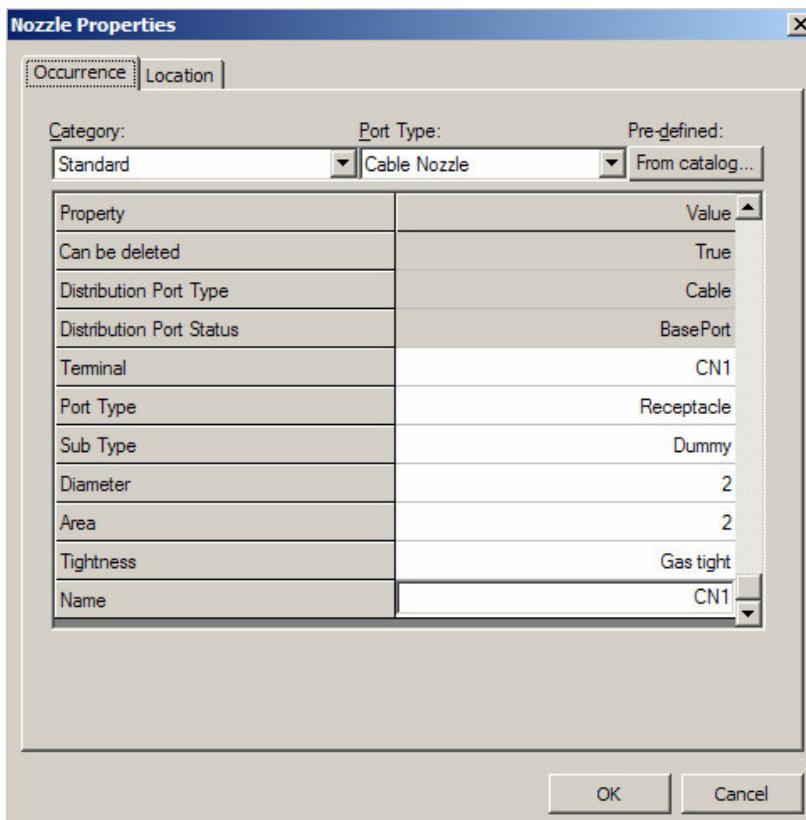
14. Switch To equipment Task
15. Activate Pinpoint Tool Bar
16. Select Place Design Equipment
17. Browse to Electrical Enclosure, Electrical Enclosure
18. Place the triad at the following coordinates
19. Place it at E 0, N -26, EL 8 WRT Building 1 CS
20. Change system to Area 2, Unit 1, Electrical, Devices
21. Change the Name to Elec MCC
22. Select Elec MCC in WSE and select Properties
23. Make the following changes



24. Ok on the form
25. Select place shape
26. Select Rectangular Box shape
27. Key in A = 10, B = 8, C = 6
28. Place it at E 0, N -26, EL 8 WRT Building 1 CS



29. Select place Nozzle command and pick the shape. Under port select Cable Nozzle. Key in the following data for nozzle



30. Go to the location Tab and set the Placement type to Position by Point.
 31. Place the port at the origin of the designed equipment.
 32. Select Place Equipment Command

33. Locate the electrical enclosures part number BA-106E42309-1 using the tree view. Expand the Equipment Folder and the Electrical Enclosure Folder until you see the part. Select the part and click the OK button.
34. Using Pinpoint Tool, place the electrical enclosure origin (BA106E 42309-1) at the following coordinates:

Easting: 34 ft reference to the building 1 coordinate system

Northing: 1 ft reference to the building 1 coordinate System

Elevation: 34'

Hit Left arrow key to rotate the equipment

Place it in Building 1, Equipment System

Name it E-300A

Place 3 More Electrical Enclosures at:

Name : E-200A

Easting: 34 ft reference to the building 1 coordinate system

Northing: 39 ft reference to the building 1 coordinate System

Elevation: 21'

Rotate the box using Left arrow key

Name : E-100C

Easting: 34 ft reference to the building 1 coordinate system

Northing: 1 ft reference to the building 1 coordinate System

Elevation: 3'

Rotate the box using Left arrow key

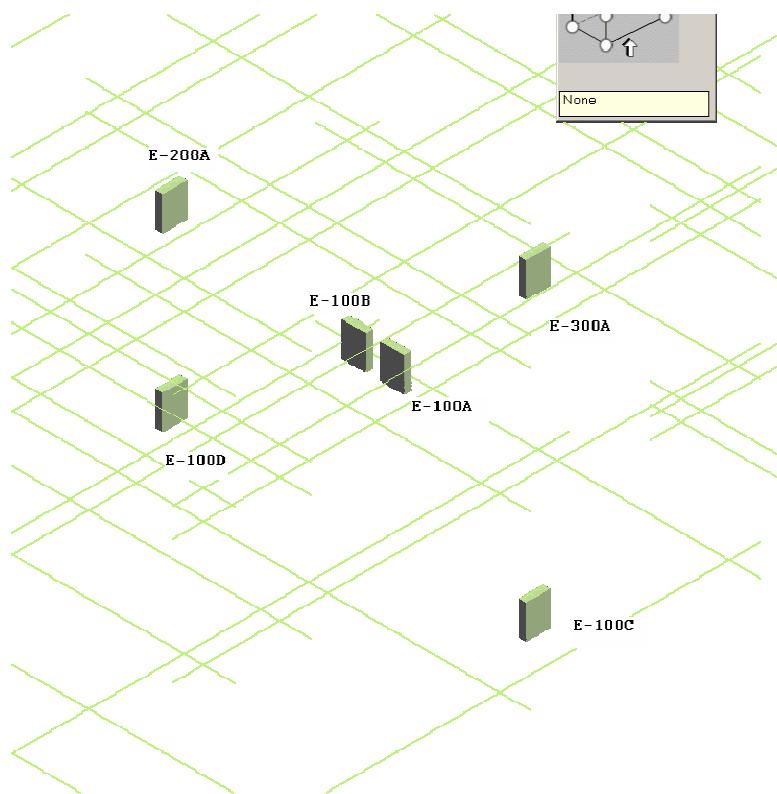
Name : E-100D

Easting: 34 ft reference to the building 1 coordinate system

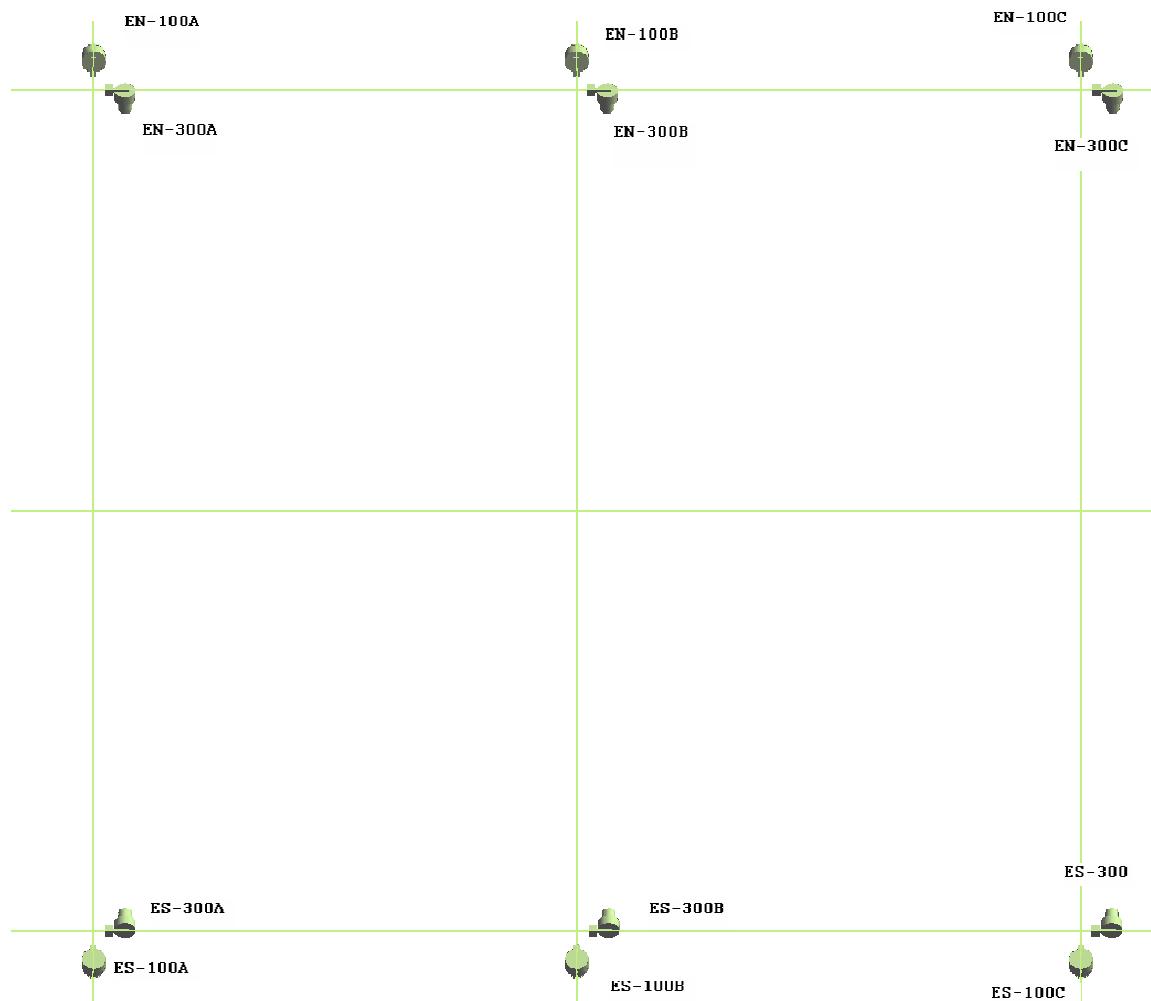
Northing: 39 ft reference to the building 1 coordinate System

Elevation: 3'

Rotate the box using Left arrow key

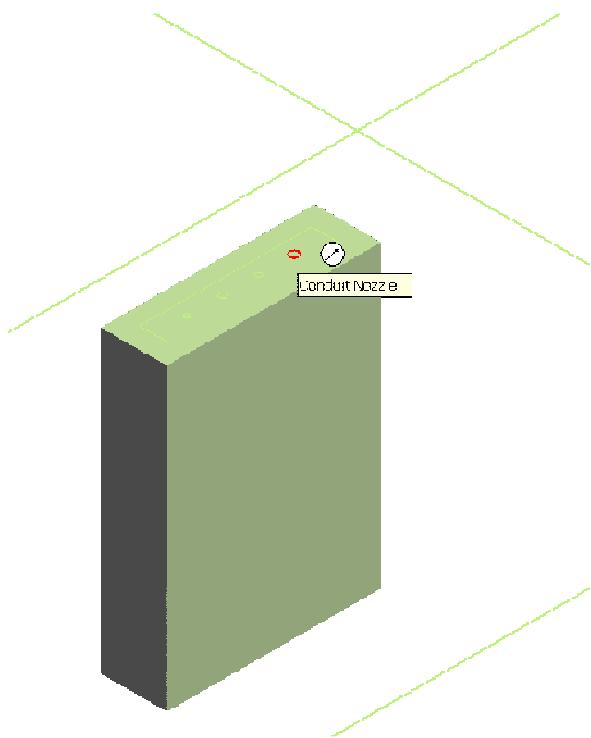


35. Change names of All lights to match the picture

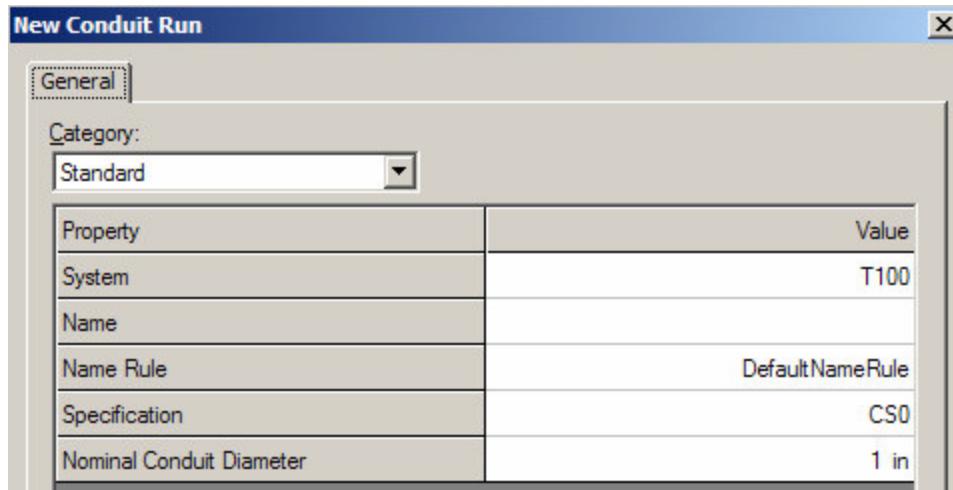


Lab 13 – Conduits – (Adding Conduit System)

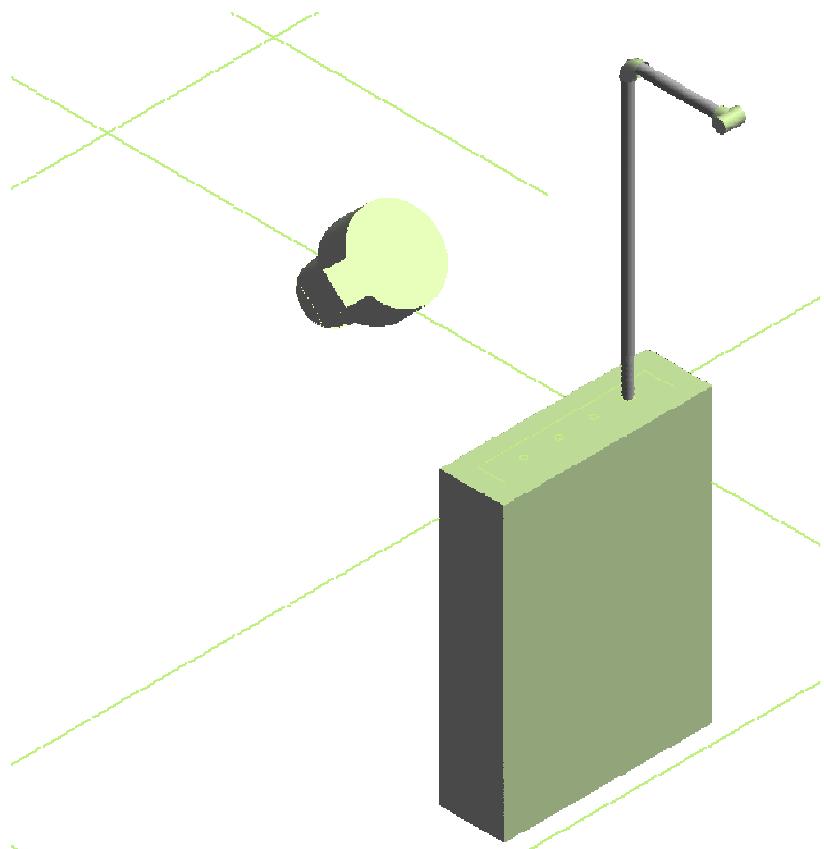
1. Expand WSE to show Area 2, Building 1, Electrical. Right click on Electrical and select New System,
2. Select New Conduit System from System pull down list
3. Change the name to EC-001
4. Add an electrical system and name it cables
5. Select Route Conduit Command
6. Select Conduit Port 4 on Electrical Enclosure E-300A



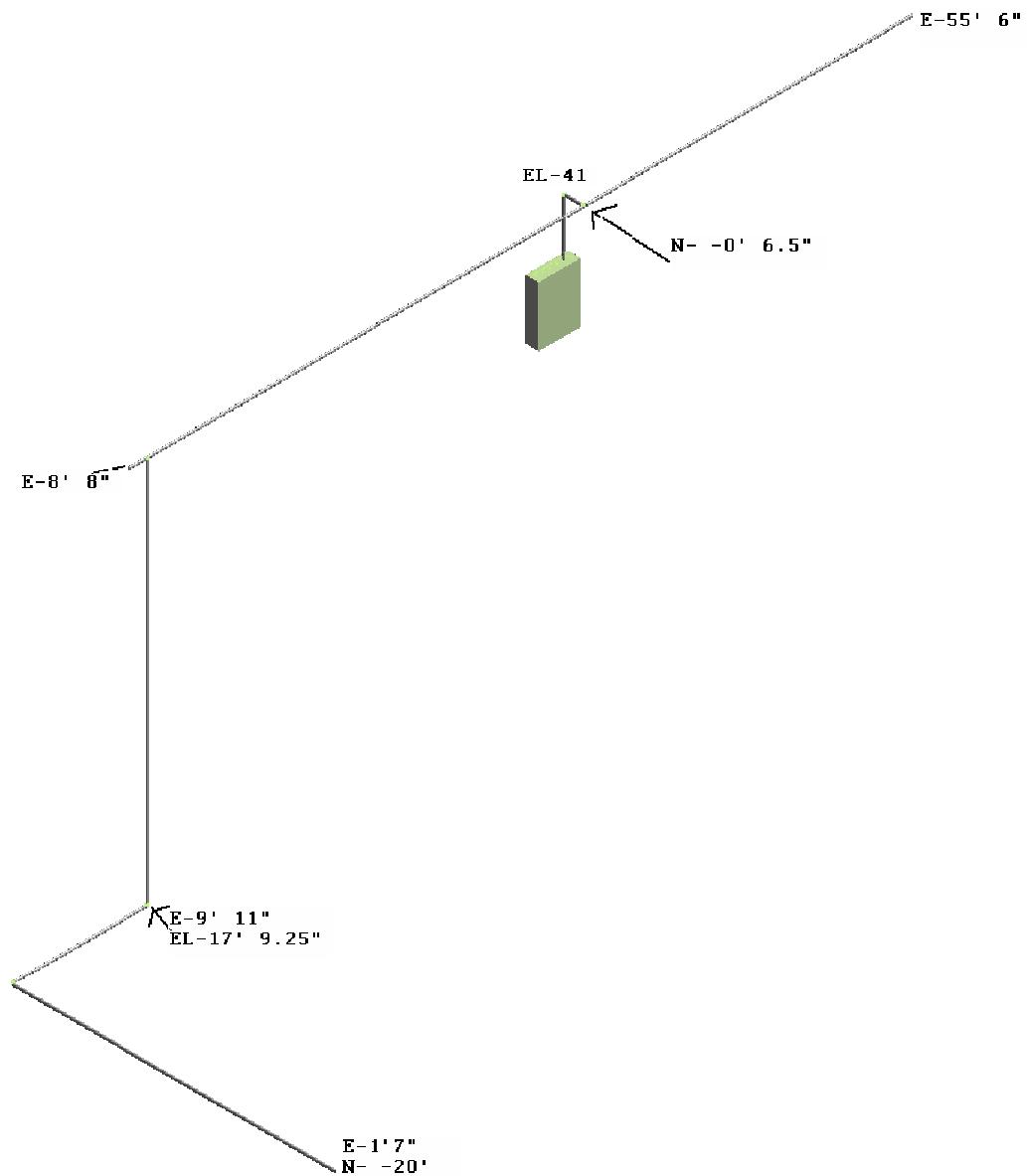
7. Set the spec and system as shown



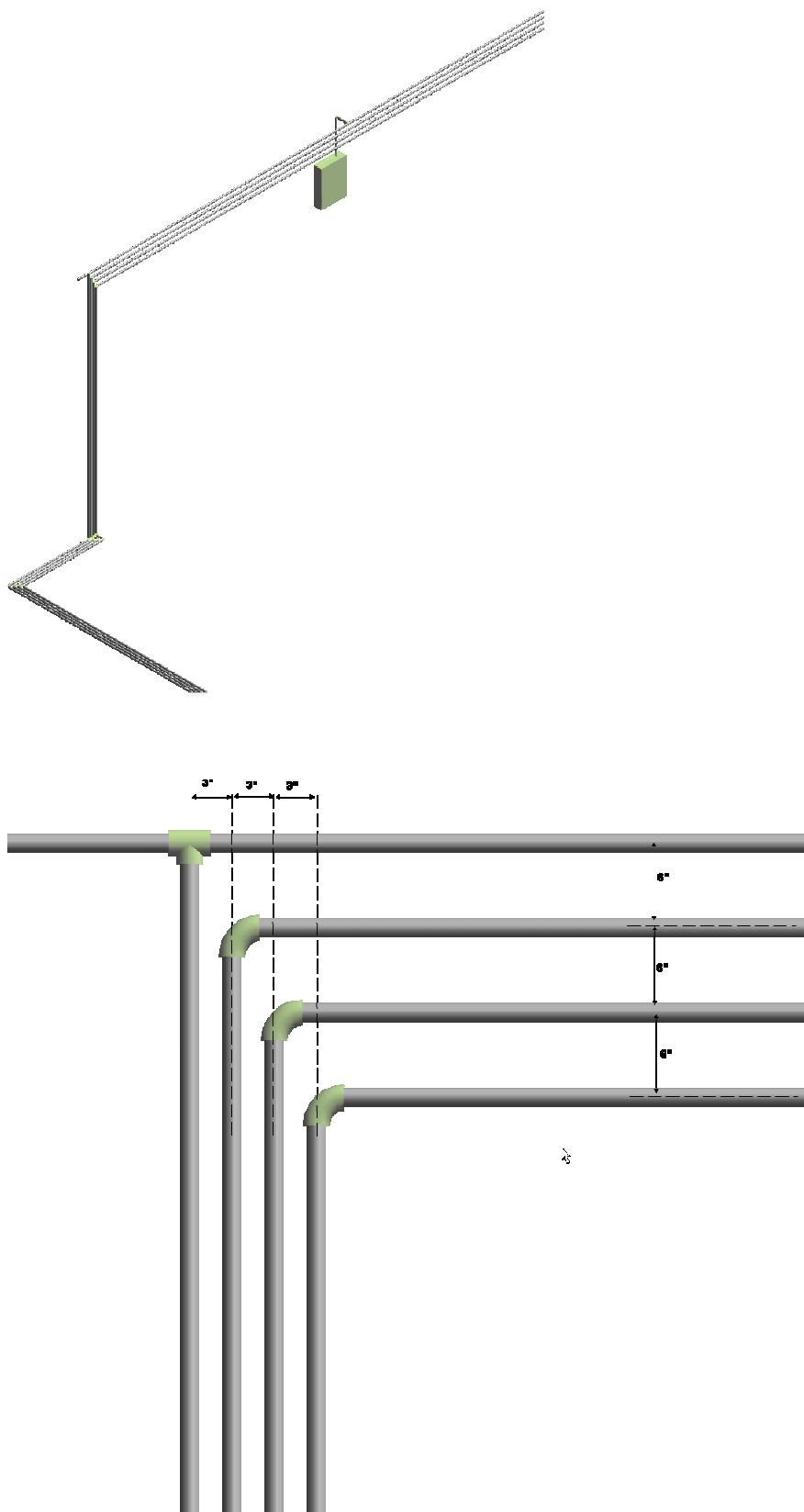
8. Route to EL 41 and North – 0' 6.5". Place a Tee so Port 3 is connected to Conduit and Main run is facing East West.



9. Connect to East end of Tee and Route to E 55' 6". Connect to West End of Tee and Route to E 8' 8". Take a Branch going down from 1' 3" west end of conduit.
10. Continue Routing as shown in the figure below



11. Using same Spec and size Route 3 more conduits as shown in figure below

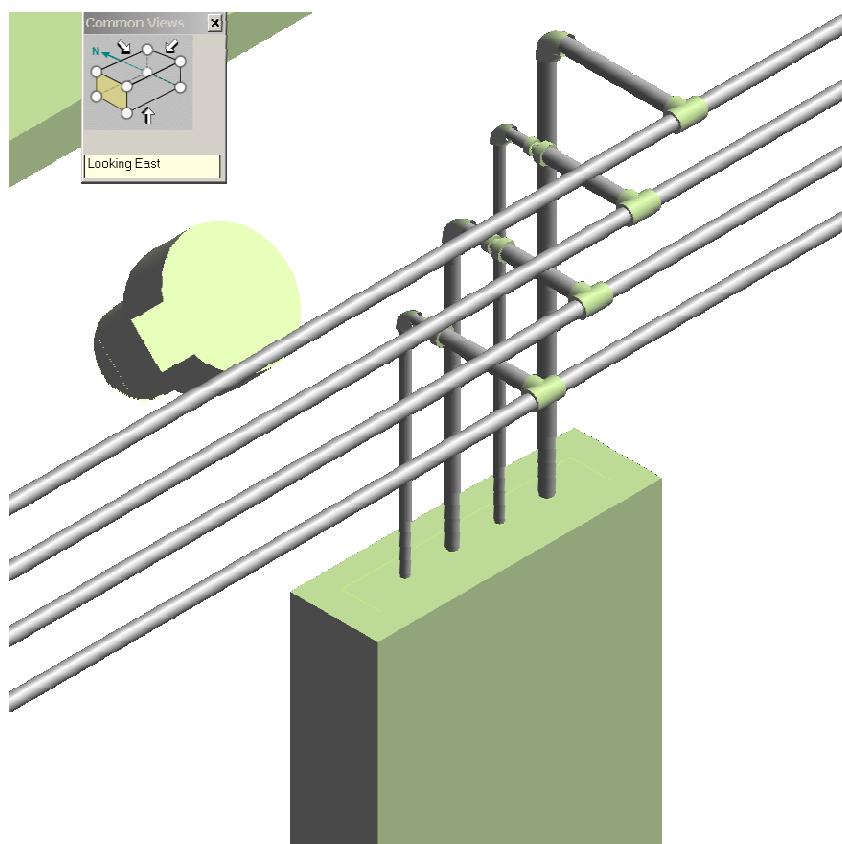


12. Looking North



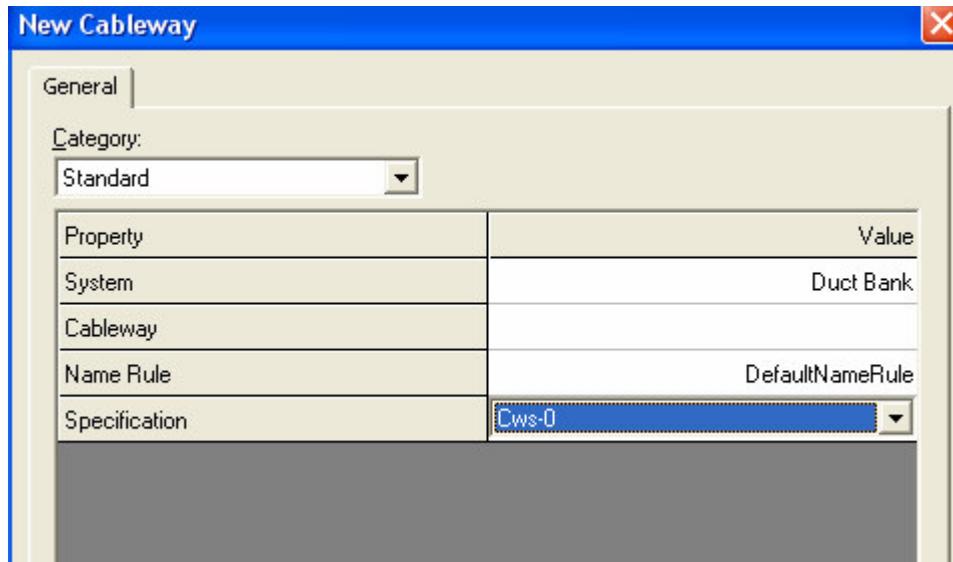
13. Plan View – All offset are 3" (CL – CL)

14. Connect all four Conduit ports of E-300A to conduits. Inset reducers in North-South runs

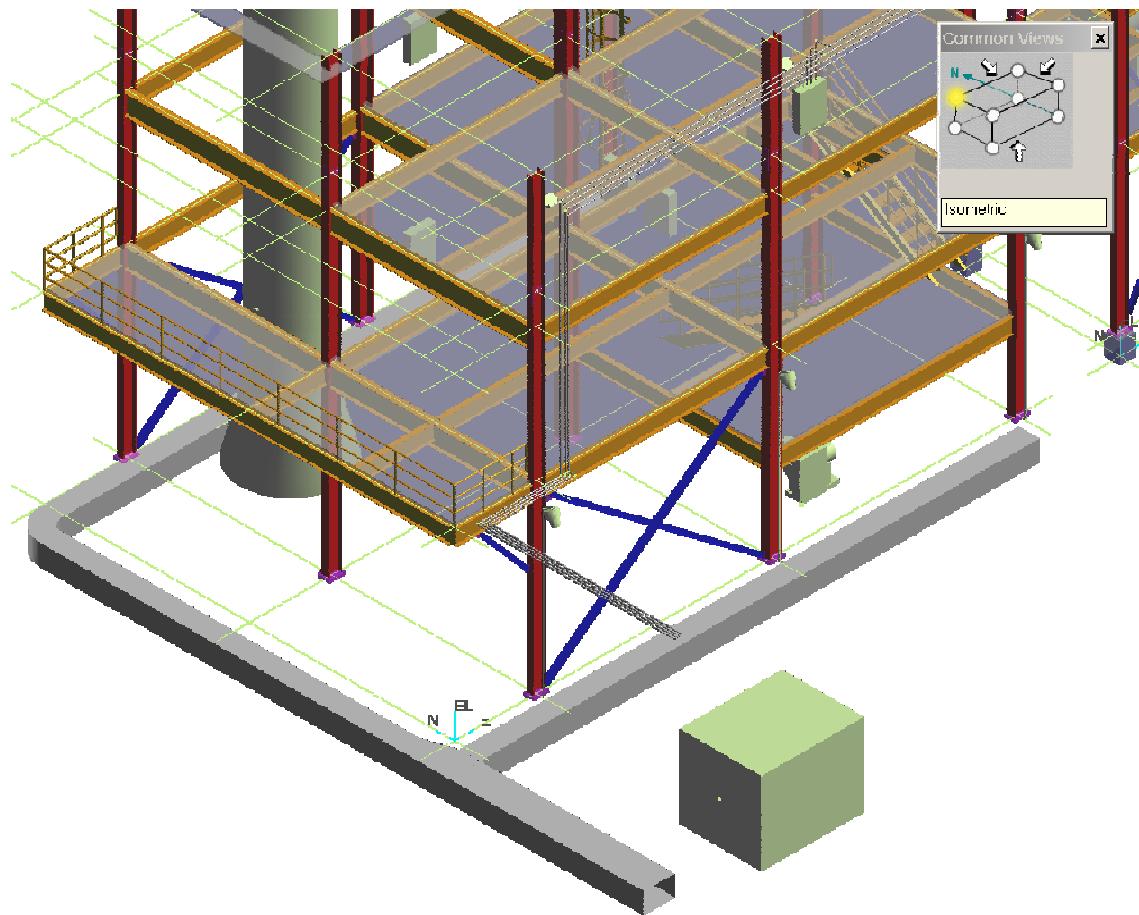


Lab 14 – Duct Bank

1. Expand the tree on left side and Browse to Area 2, Building 1, Electrical
2. Add a new Electrical System and name it Duct Bank
3. Start Route Cableway Command
4. Specify E 0', N -20', EL -3' as starting point
5. Change the info as shown in the figure

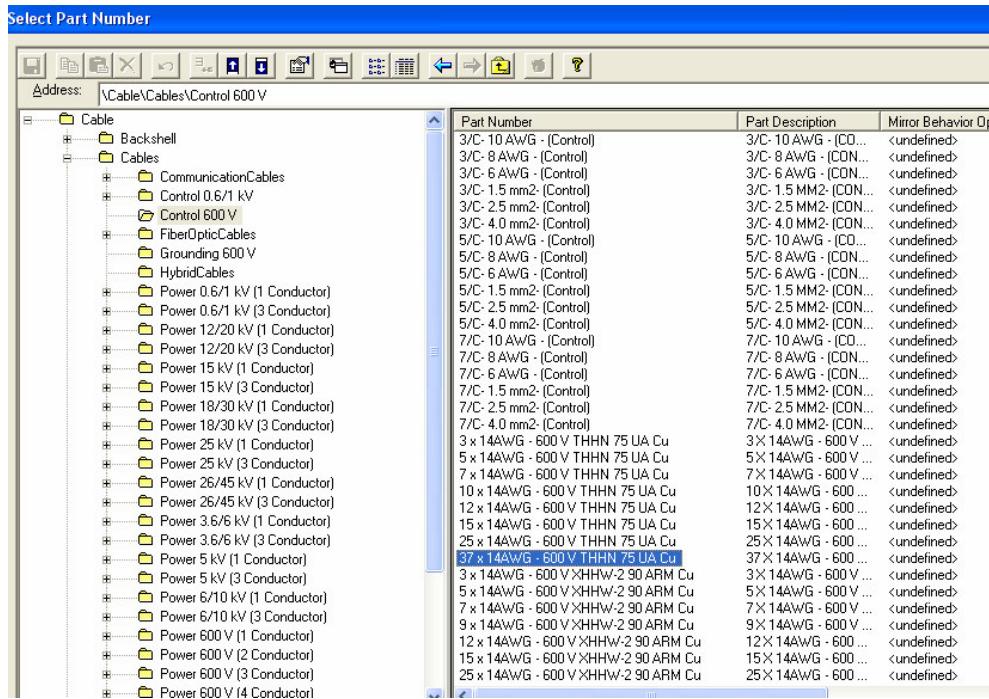


6. Select Rectangular shape and key in 3' for width and 2' for depth
7. Rout to N 5'.
8. Take a 2' X 2' Branch to East 56 (Start the branch at N -4)
9. Change the size to 2 X 2 and Continue North 43'
10. Continue East 56'



Lab 15– Cables

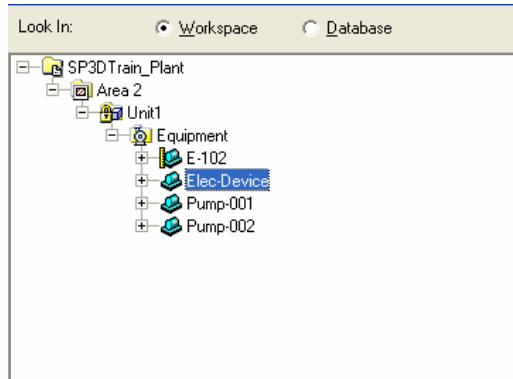
1. Set your workspace to Show Unit 1
2. Expand the tree in WSE and Browse to Unit 1, Electrical
3. Add a new Electrical System and name it U1-Cables
4. Select Insert Cable Command
5. Change the Name Rule to Default Name Rule
6. Change the System to Area 2, Unit1, Electrical, U1-Cables
7. Select the Part Number as:



8. For originating Device select Pump-001

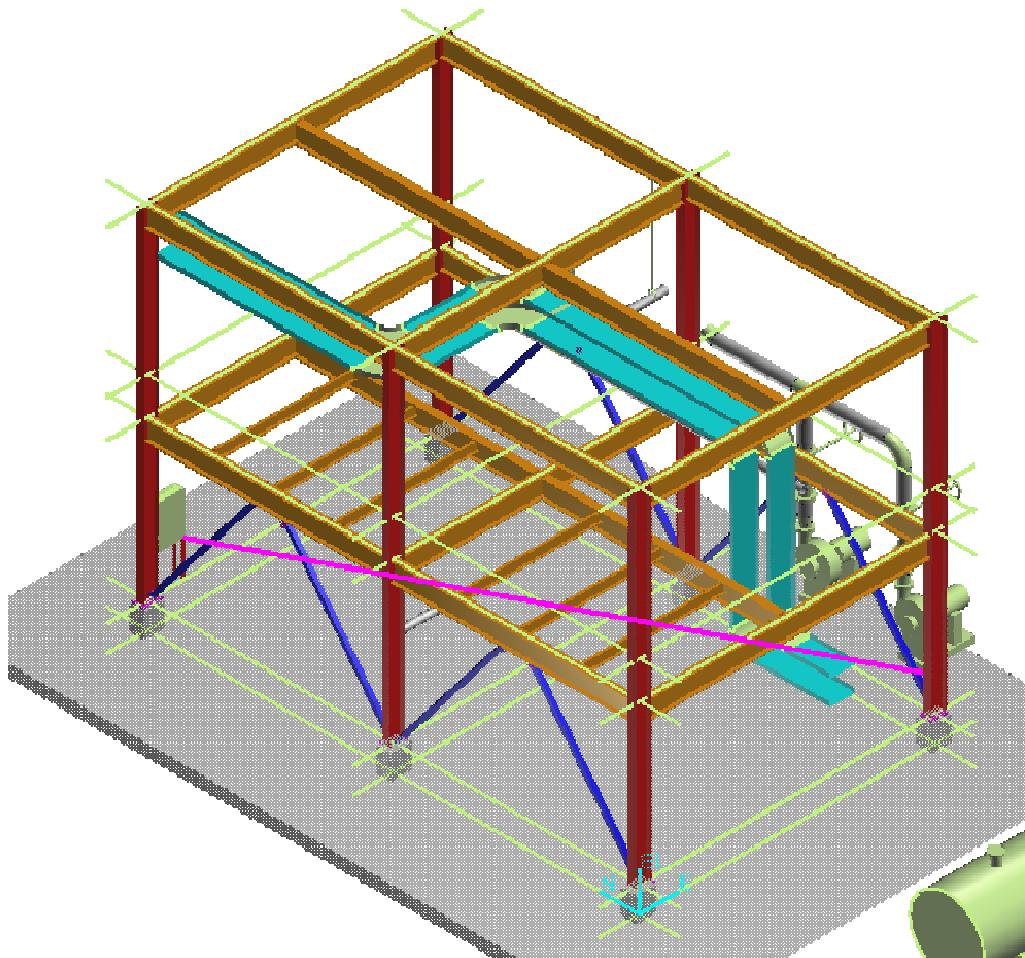


9. For terminating device select Elec-Device



10. Ok to create the Cable

11. System Shows a cable running between 2 equipment pieces

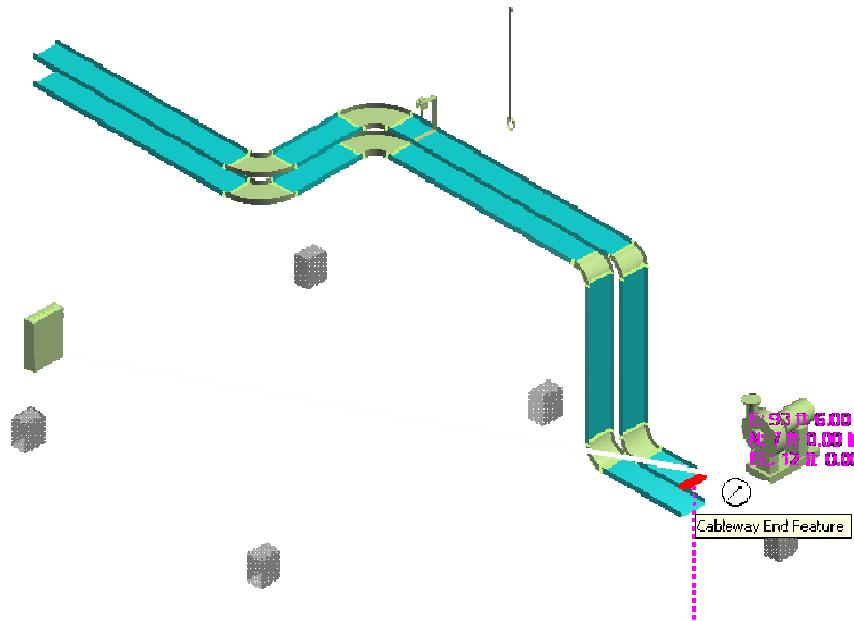


12. Select the cable if not already selected (select in WSE)

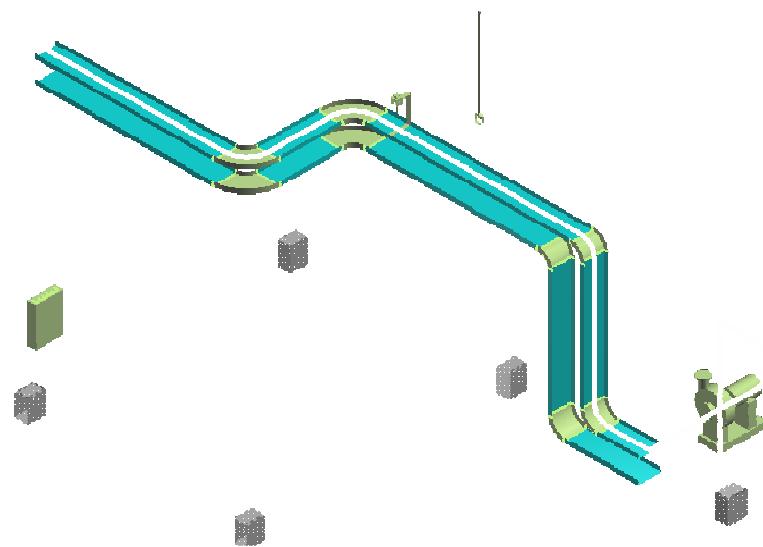
13. Go to View, Set view by Cable

14. Select Edit Cable Path command

15. Select Cables and Green check from the ribbon bar
16. System prompts for, Select a position on Cableway for Entry point, Select End feature of Top tray as shown



17. System shows the cableway path. Make sure cable is going thru the top tray. Green check to accept the path

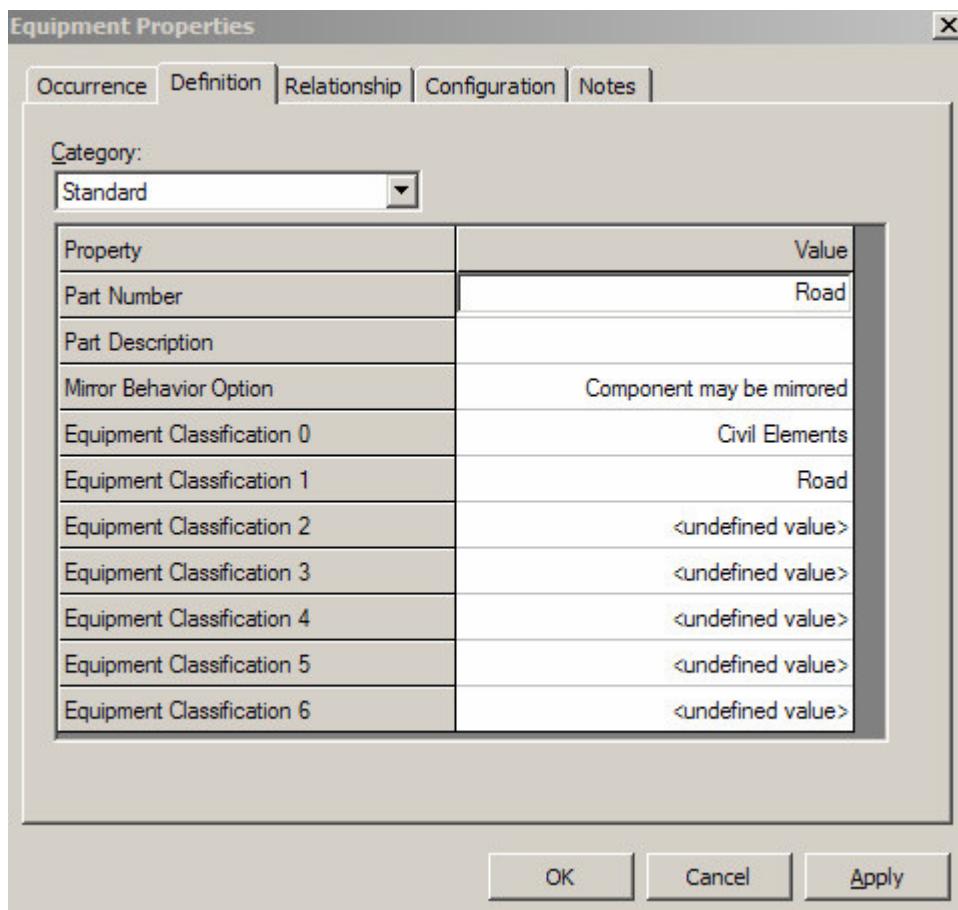


18. Select the end feature at the other end of tray as exit point
19. Select Finish to complete the cable path

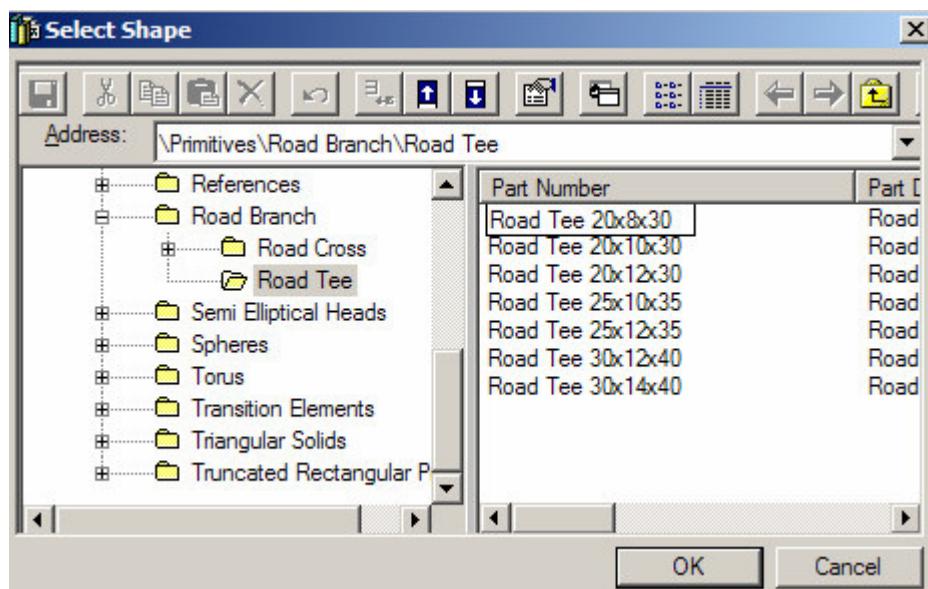
Lab 16 – Equipment Placement (Civil elements)

1. Switch To equipment Task
2. Activate Pinpoint Tool Bar
3. Select Place Design Equipment
4. Browse to \Equipment\Vehicles & Miscellaneous\Generic Aides
5. Place the triad at the following coordinates
6. Place it at E -40 ft, N – 60 ft, EL 0 WRT Building 1 CS

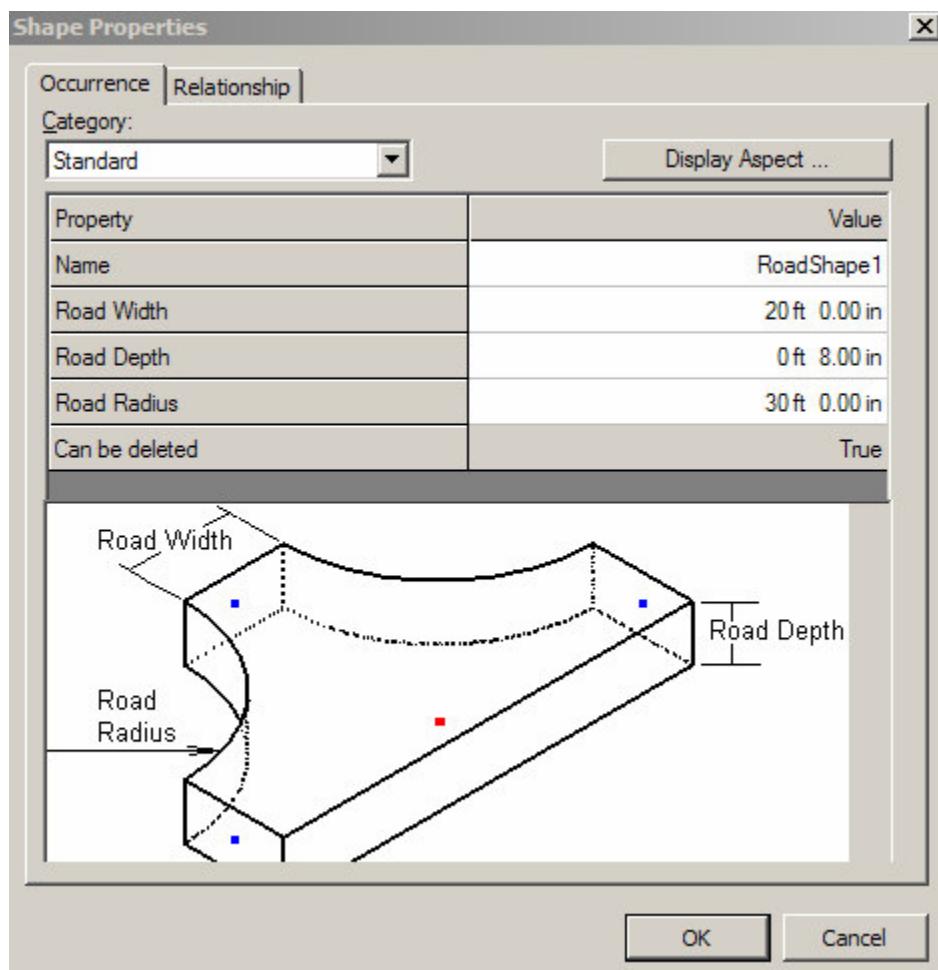
7. Change system to Area 2
8. Change the Name to Road
9. Select Road object in WSE and select Properties
10. Make the following changes



11. Ok on the form
12. Select place shape
13. Select More icon in the shape palette to open Shape Catalog Browser dialog. Select Road Tee

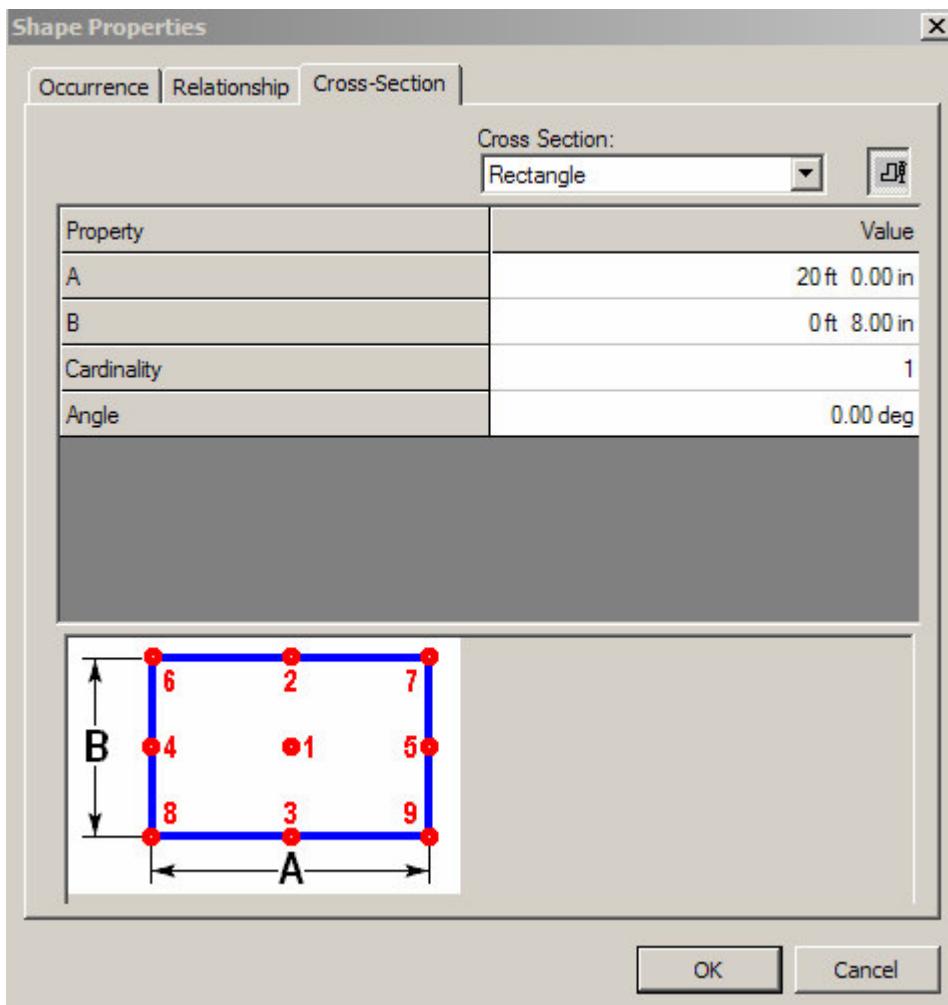


14. Key in the dimension as shown below:



15. Hit Ok.

16. Place it at E -40 ft, N – 60 ft, EL 0 WRT Building 1 CS
17. Select prismatic shape icon in the shape palette. Key-in the following dimension for the cross section.



18. Define the path of the straight road as shown below. Continue placing the shapes to model the roads.

