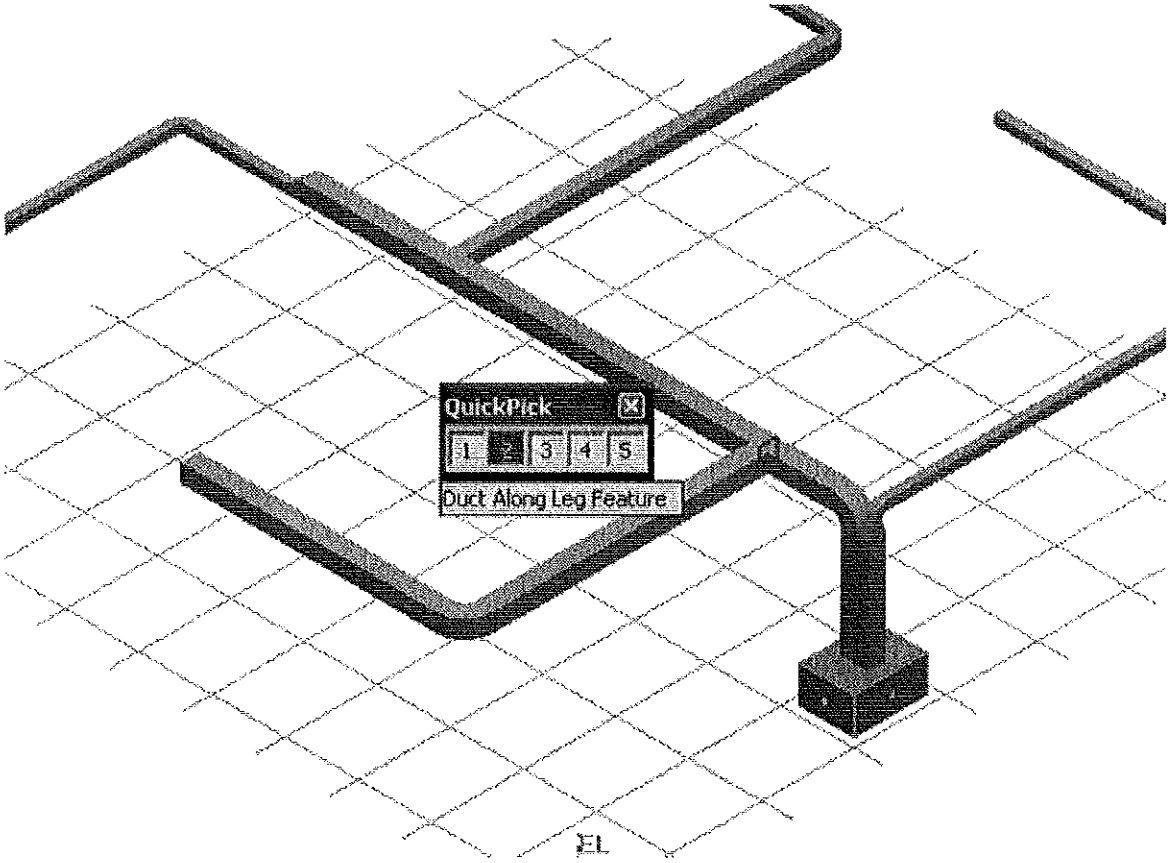
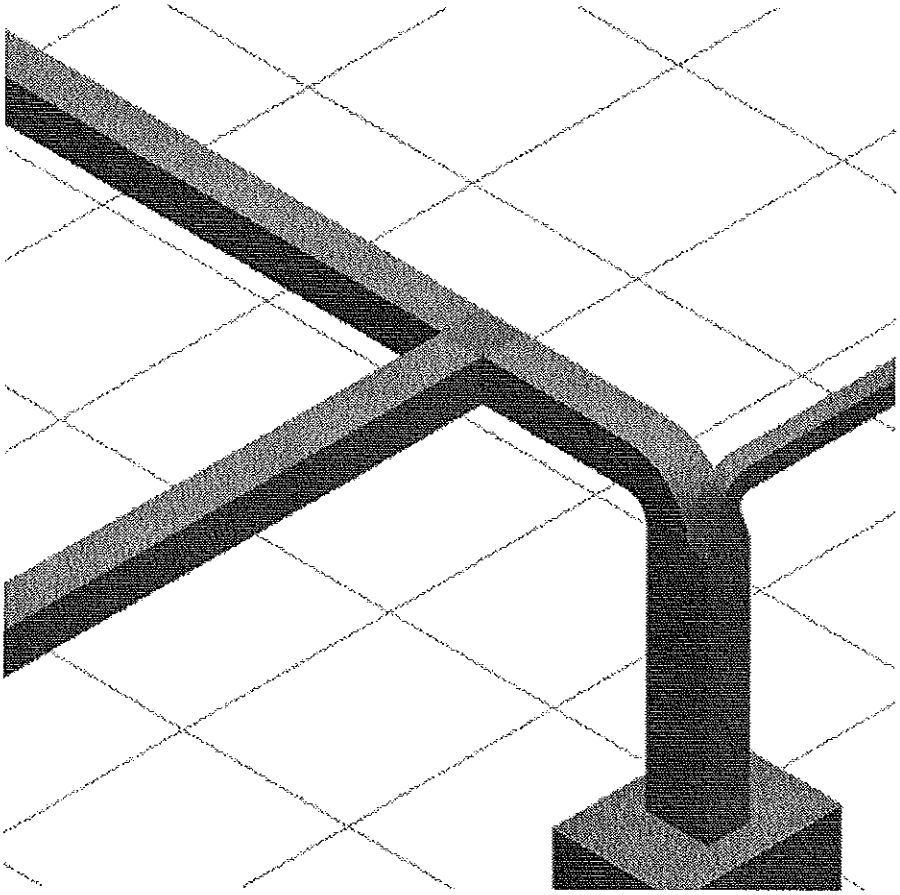
LAB-8: Replacing Fittings

1 Change locate filter to Duct Features

2 Select the Duct along feature as shown

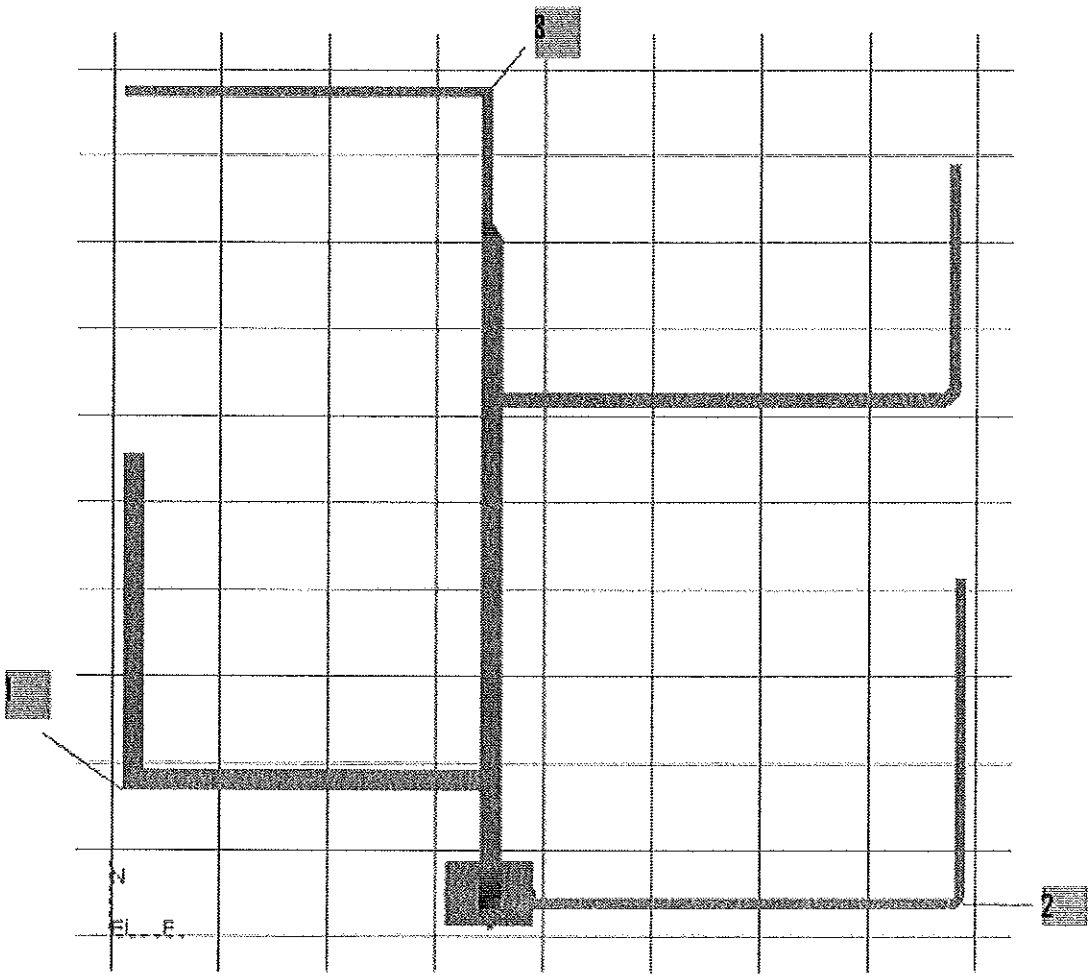


3 Change the type to Rectangular Tee



4 Change the rest of the fittings as shown

1: Miter Turn with number of miters 1
2: HVAC Elbow
3: HVAC SQUARE THROAT ELBOW


3
1
2
N
E

LAB-9: Creating Diffusers/Grills/Registers

Objective

1 Open a Session file with Imperial Units

2 Define your Workspace to Show HVAC Labs filter

3 If you are not in the Equipment task, then select Task -> Equipment and Furnishing

4 Make sure the Active Permission Group is set to ***HVAC***

5 Activate PinPoint by Selecting Tools > PinPoint

6 From Ribbon Bar, select more under Coordinate systems

7 Expand HVAC, Grids and select HVAC_CS

8 Ok on the Select Coordinate System form

9 Select Set target to Origin Command

10 Select Place Designed Equipment Command

11 From Catalog Browser select, \Equipment\Process\Horizontal Vessels\Horizontal Drum with Saddle

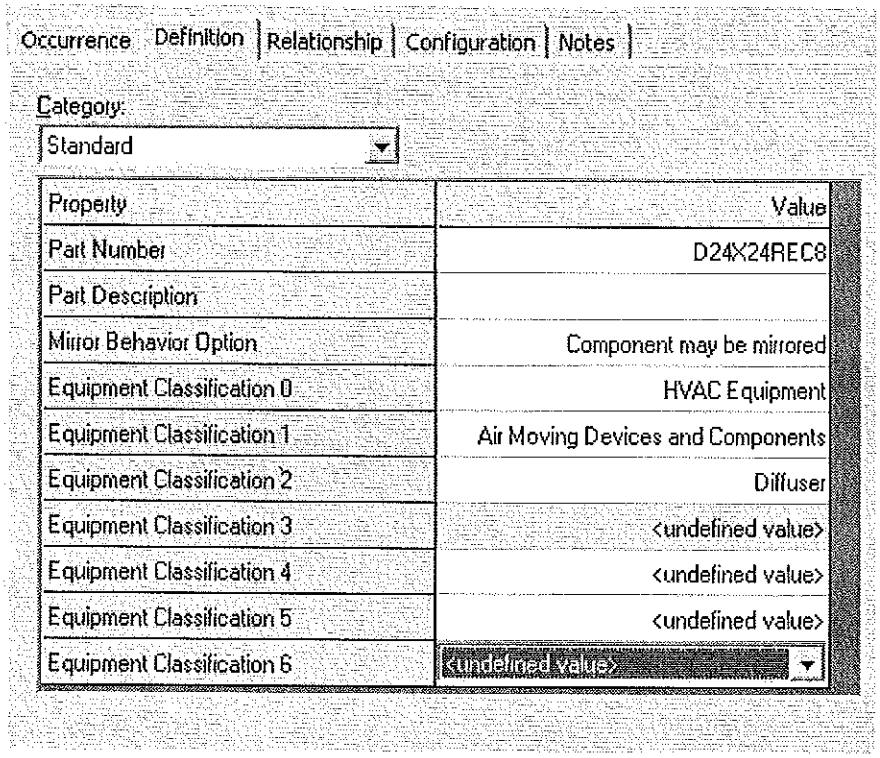
12 Key in 20' for East, -20' for North and 0' for Elevation.

13 Change the System to HVAC, HVAC, Supply, SP-Devices

14 Change the name to D24X24REC8

15 Select AHU-01 in WSE, and open its properties page

16 Switch to Definition tab and make following changes



17 Select Place Shape Command

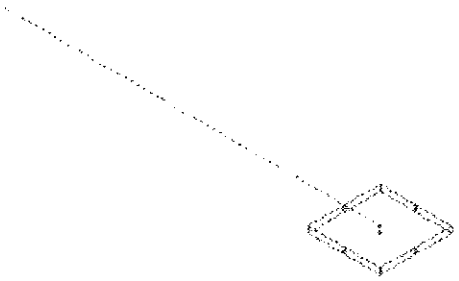
18 If prompted, select D24X24REC8 in WSE

19 Select the Rectangular shape

20 Key in A=2", B=' and C=2'

21 Key in 20' for East, -20' for North and 0' for Elevation

22 Rotate the Shape so that the place point is at the top center as shown



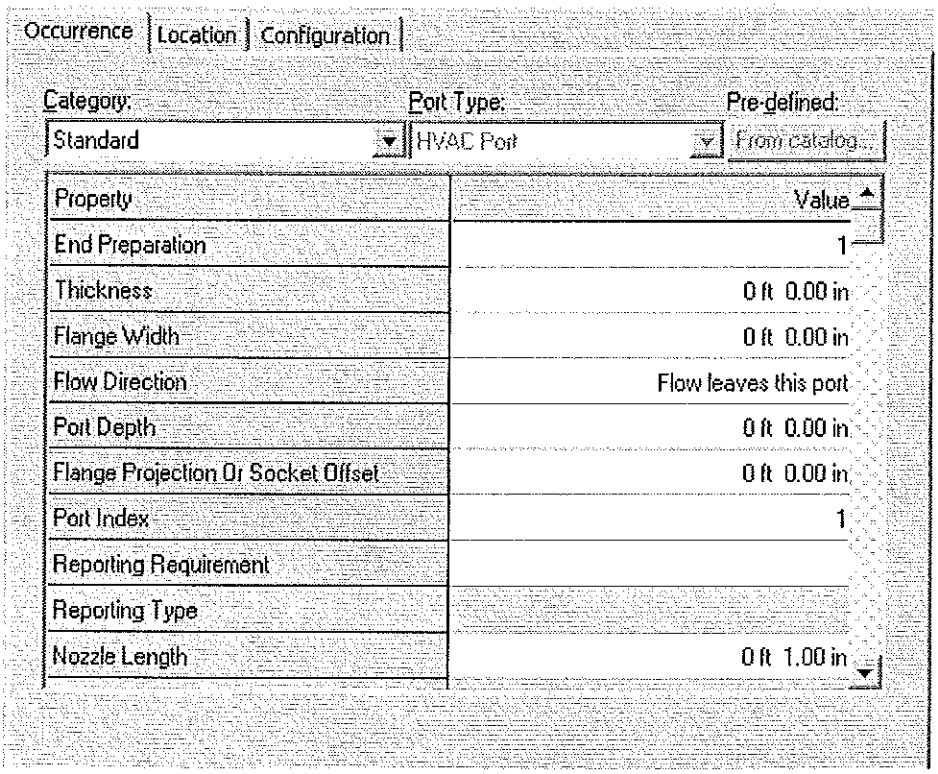
23 Change the name of shape to D-Box

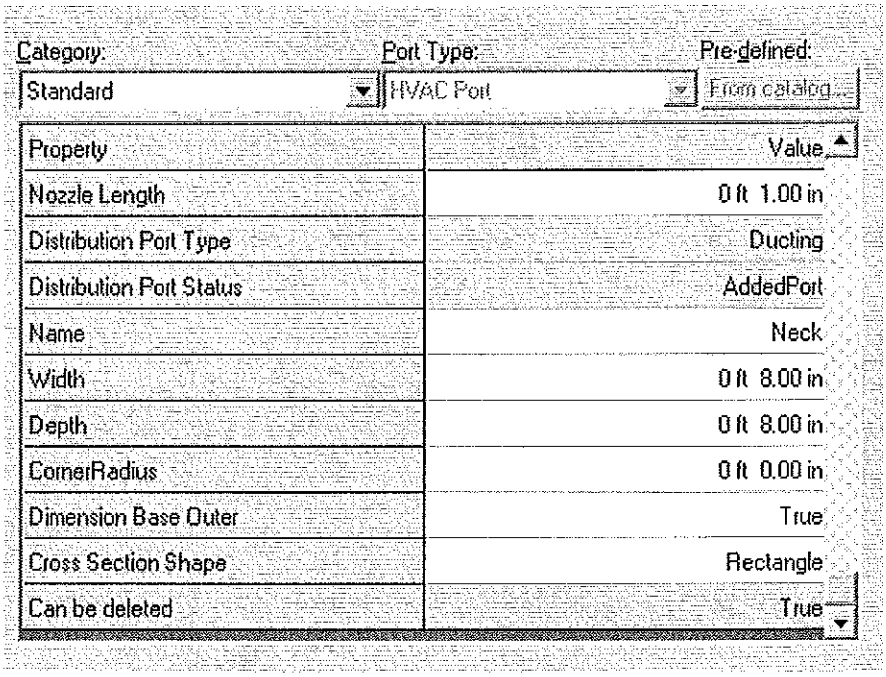
24 Select Place nozzle command

25 Select the D-Box shape as the nozzle parent

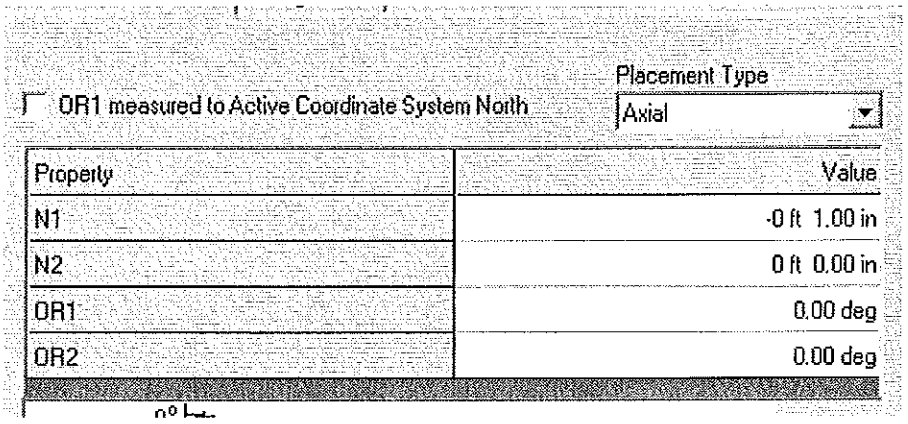
26 Select HVAC Port as the nozzle type

27 Change the properties as shown

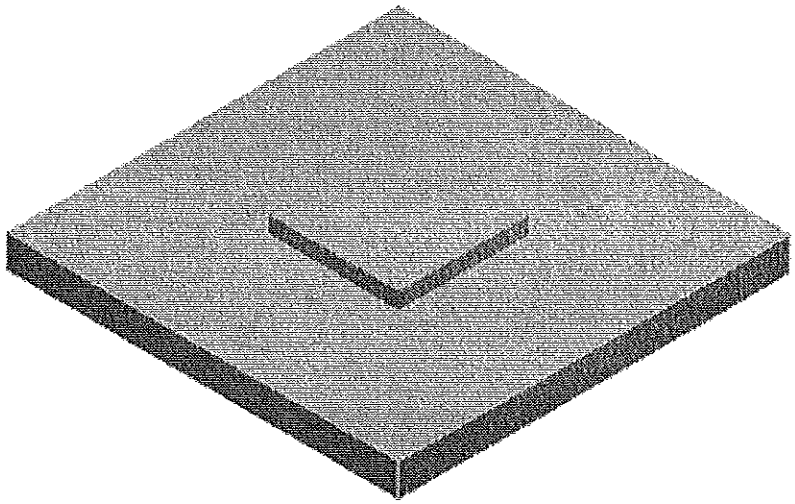




28 Switch to location tab



29 The diffuser should resemble this



30 Select the diffuser D24X24REC8

31 Select Copy command

32 Select Paste command

33 Accept the SP-Devices as parent folder

34 Change the name of new diffuser to D24X24RND8

35 Open the property page for D24X24REC8

36 Switch to position and orientation category

37 Change the east to 25

38 Select Neck under D24X24REC8 and open its property page

39 Change the cross section shape to Round

40 Select the diffuser D24X24REC8

41 Select Copy command

42 Select Paste command

43 Change the parent system to RT-Devices, under Return system

44 Change the name of new diffuser to G18X12REC12X8

45 Open the property page for G18X12REC12X8

46 Switch to position and orientation category

47 Change the east to 28

48 On Definition tab, change diffuser to grill

49 Change the name of D-Box under grill to G-Box

50 Open property page for G-box and change B to 1' 6" and C to 1'

51 Select Neck under G18X12REC12X8 and open its property page

52 Change width to 1' and depth to 8"

LAB-10: Copying To Catalog

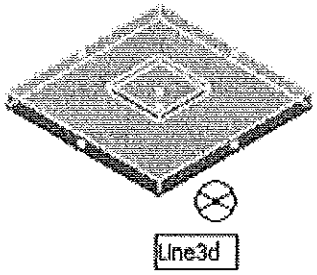
1 Select Diffuser D24X24REC8 in WSE

2 Select Edit, Copy to Catalog

3 Under type, select more and then select HVAC, HV Misc folder

4 Type D24X24REC8 for name and hit "Enter" key

5 System prompts for placement point, Select Bottom SW corner as placement point
Note: A center point will be most logical point for placement. Since, we are going to use Grid plane for placement the corner point will be used.



6 Ok to keep SP-Devices as the parent system

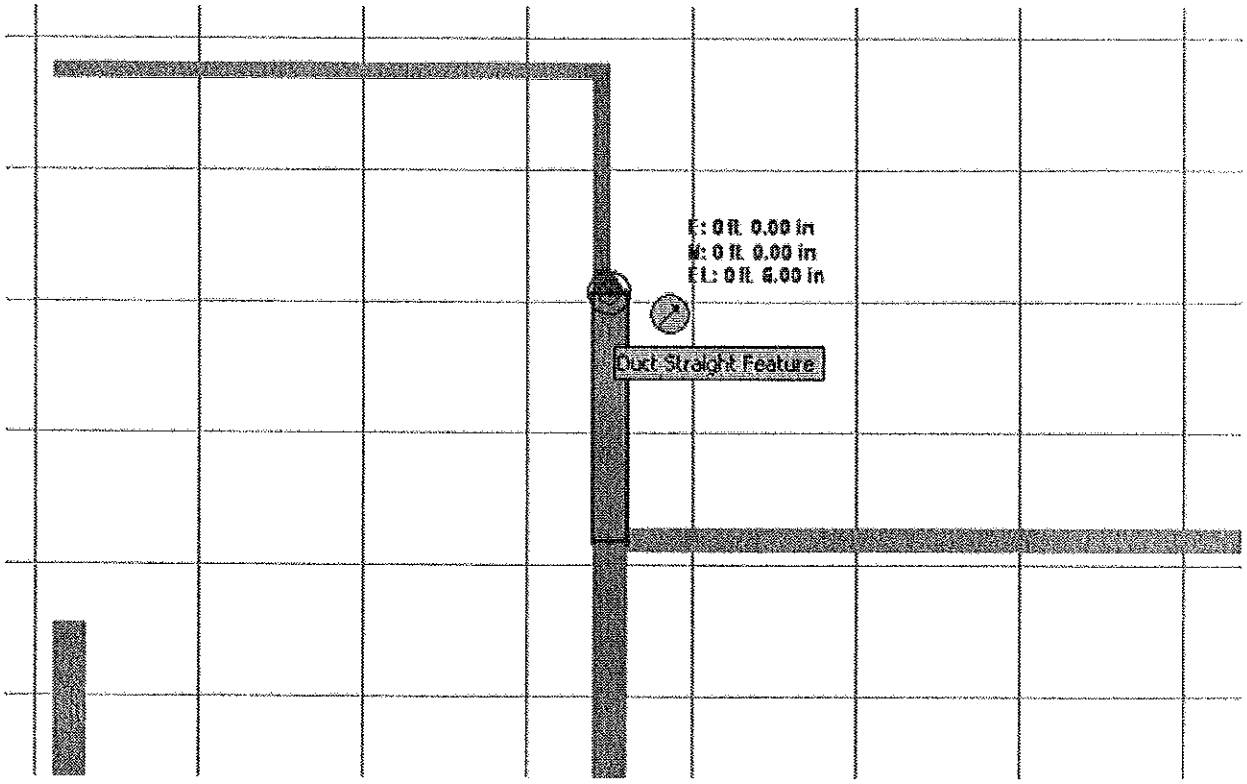
7 Select Finish

8 Copy D24X24RND8 to catalog using same steps and using D24X24RND8 for name.

9 Copy G18X12REC12X8 to catalog also.

LAB-11: Branches with Offset

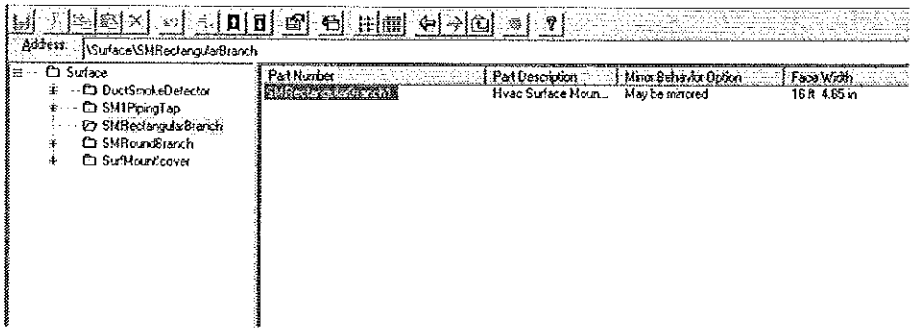
1 Reposition target at the transition as shown



2 Select Insert surface mount component command

3 Key in -5 for North and select the duct straight feature shown in above picture

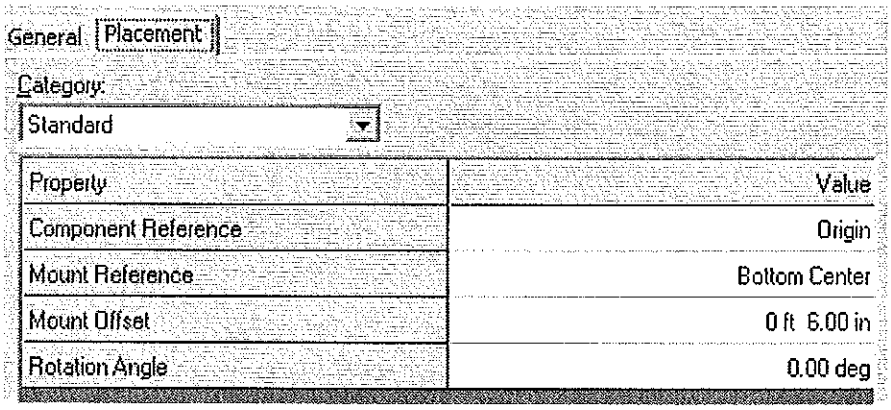
4 Expand Surface, SMRectangularBranch and select SMRectabularBranch1



5 Click in the view to place the Branch 5' from Transition piece

6 While Branch is selected, open its properties page from Ribbon Bar

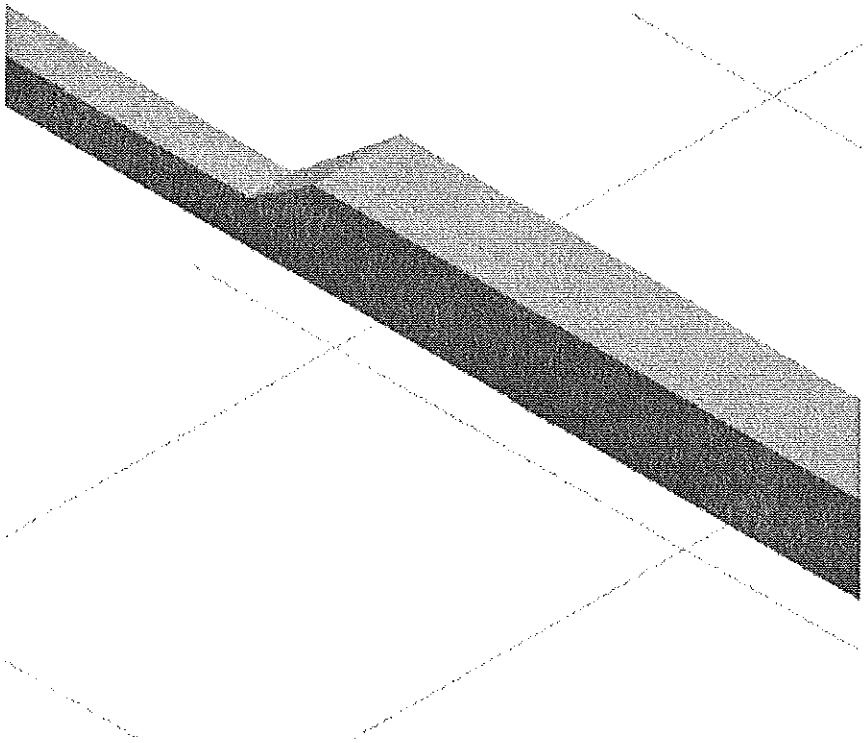
7 From Placement tab, make following changes to place the branch on West side



8 Finish to place the Branch

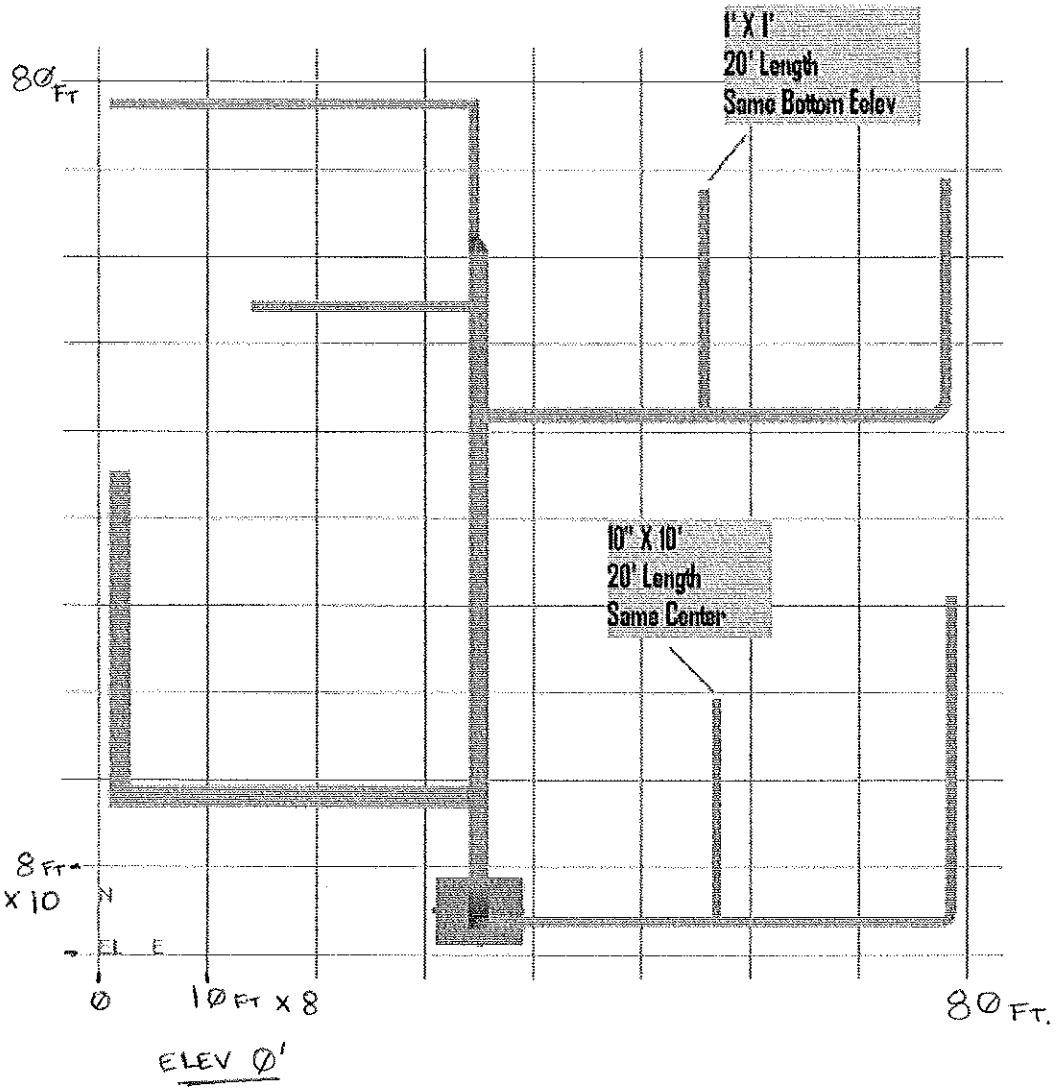
9 Change the locate filter to part and select the branch and open its property page

10 Change the width and depth to 1'



11 Route a duct from new branch 20' west

12 Place other 2 Brach components as shown and route Ducts



LAB-12: Placing Diffusers

1 Hide elevation plane at 0'

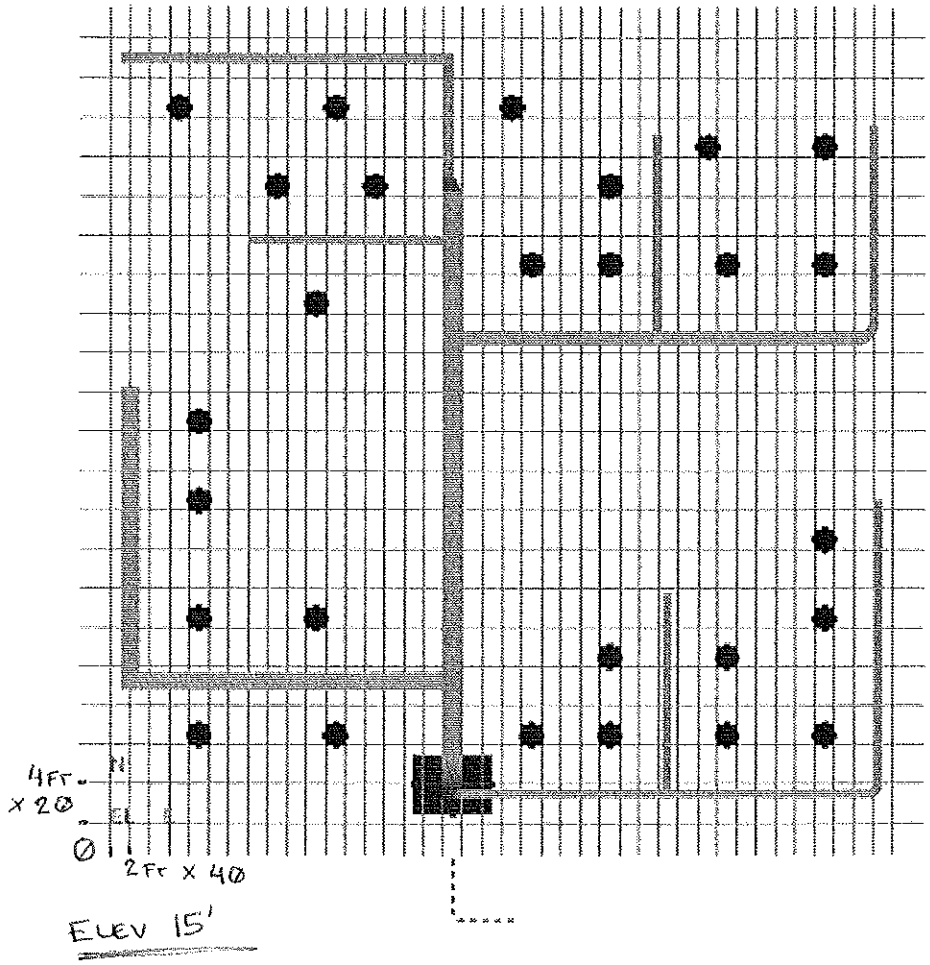
2 Show Grid plane at 15' (if hidden)

3 Select Edit, Place from Catalog

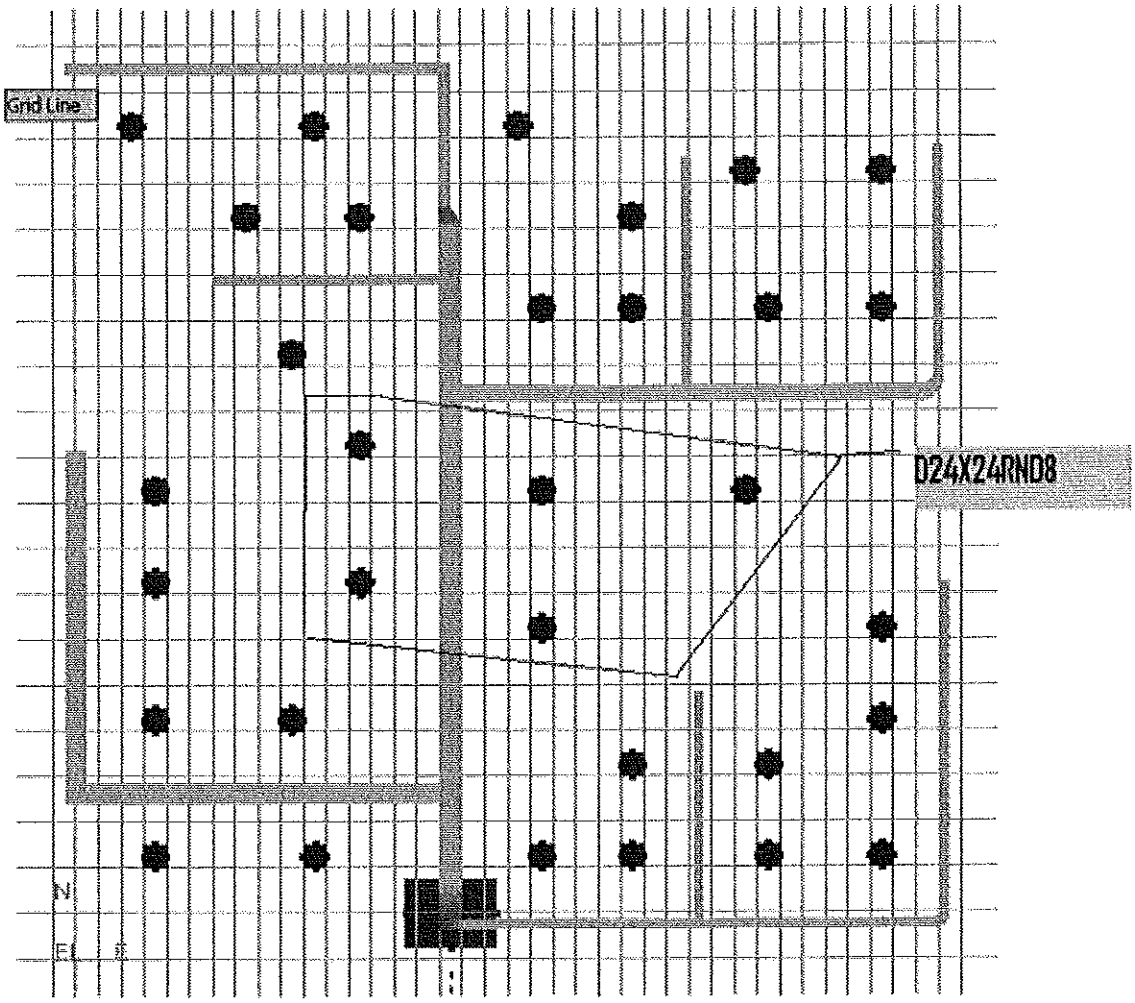
4 Select D24X24REC8

5 Keep the same Parent system and OK

6 Place the Diffuser at the grid intersection shown (You do not need to place the diffusers at the exact same intersection as shown. Approximate location will work)

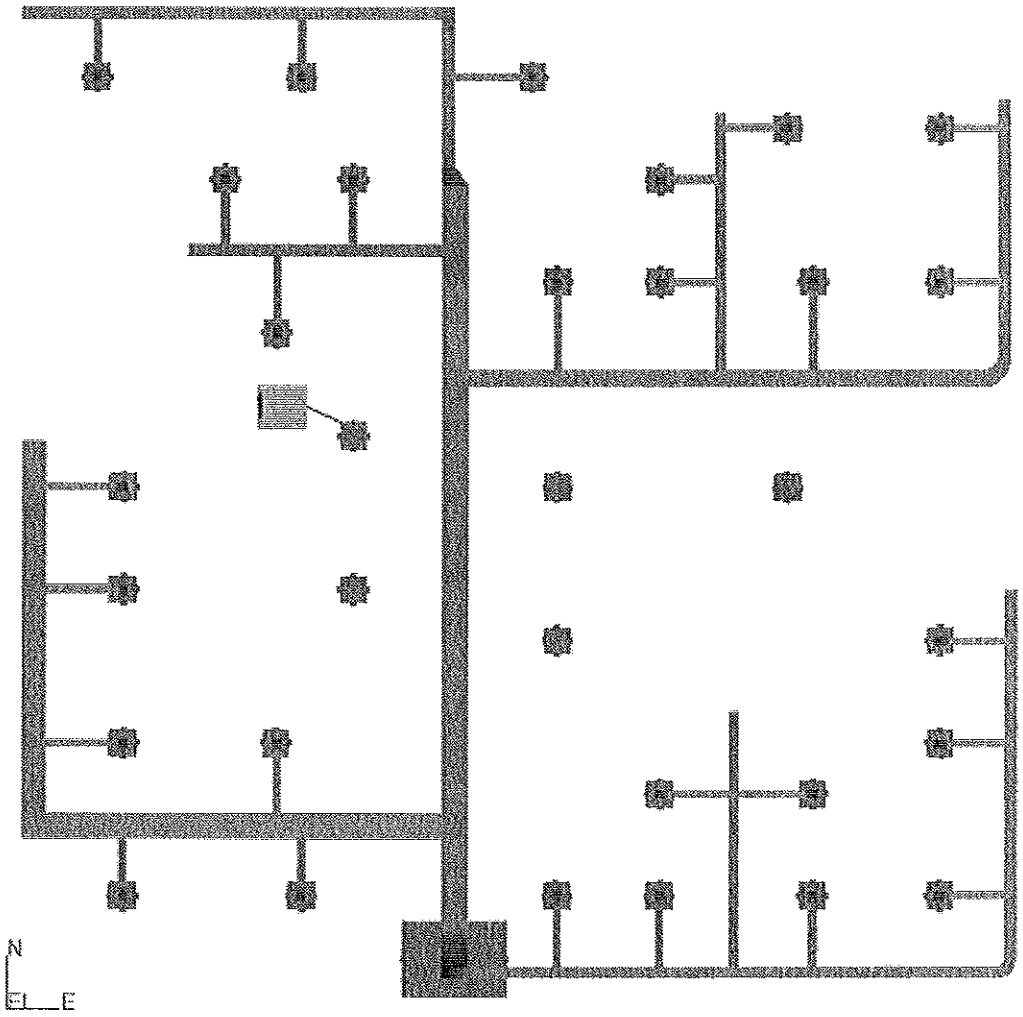


7 Place D24X24RND8 diffusers at the shown locations



LAB-13: Diffuser Hook Up

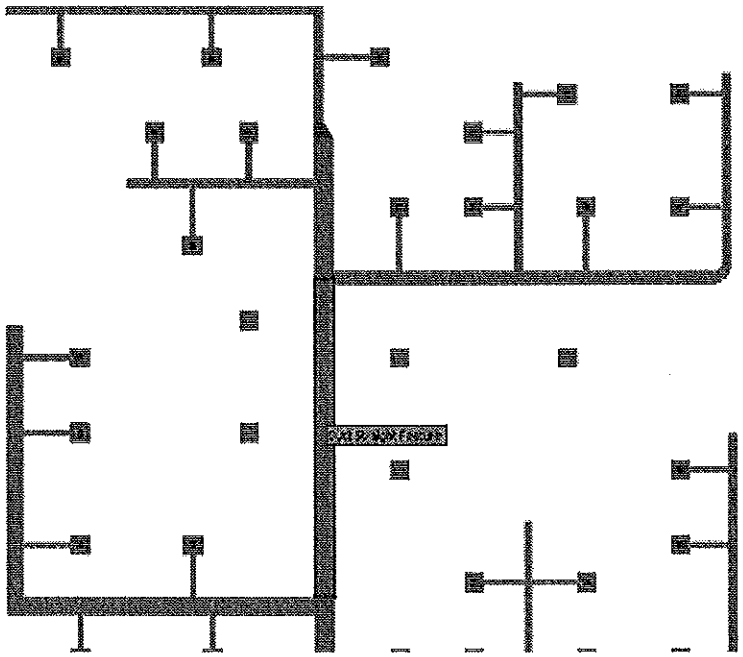
1 Connect All Select D24X24REC8 diffusers to closest ducts using Spec-1 as shown in the picture.
Note: Do not connect D24X24RND8 at this time



2 Reposition Target to the center of Neck of diffuser D24X24RND8 shown as 1 in above picture

3 Select Insert Surface Mount component command

4 Select the duct shown in picture



5 Select SMRoundBranch1 from catalog

6 Key in 0 for North and click in the view

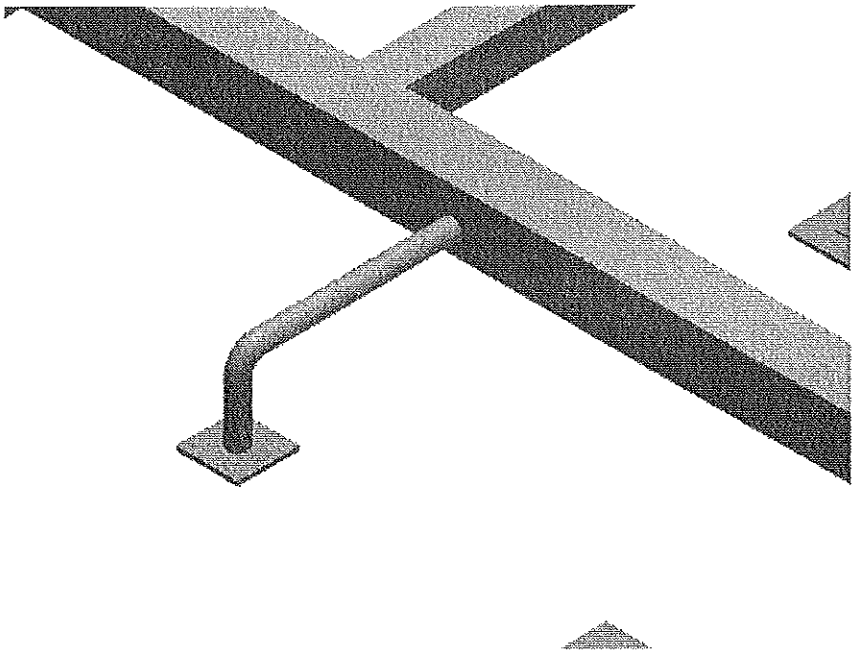
7 Open property page for branch and locate the Branch on the same side as Diffuser and change the offset to 3"

8 Finish to place the branch

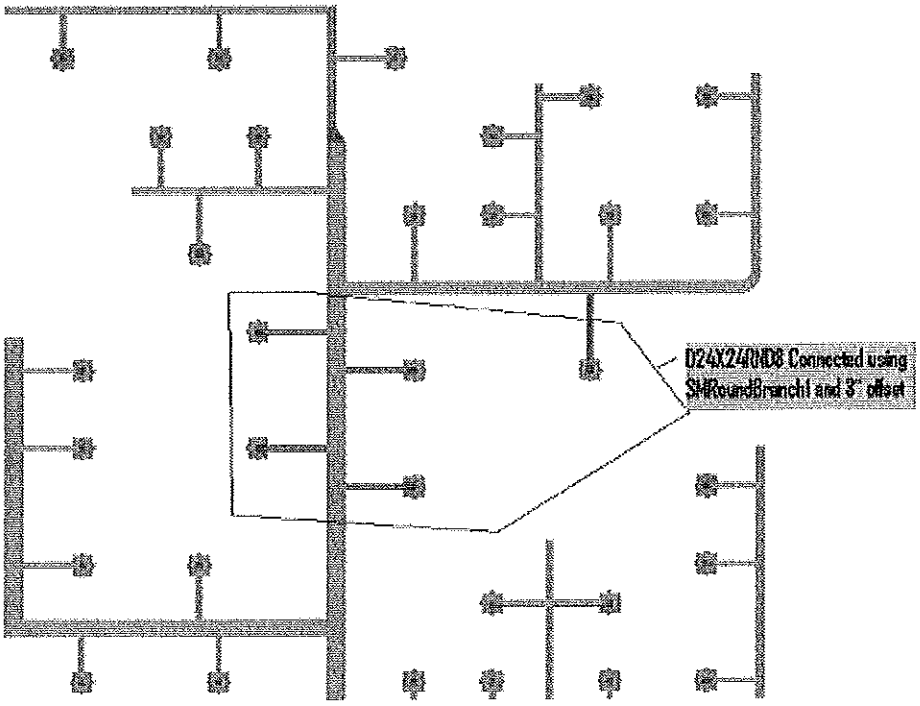
9 Change the locate filter to duct parts and select the branch component placed in above steps

10 Change the width to 8"

11 Connect the diffuser to the branch component using Spec-0



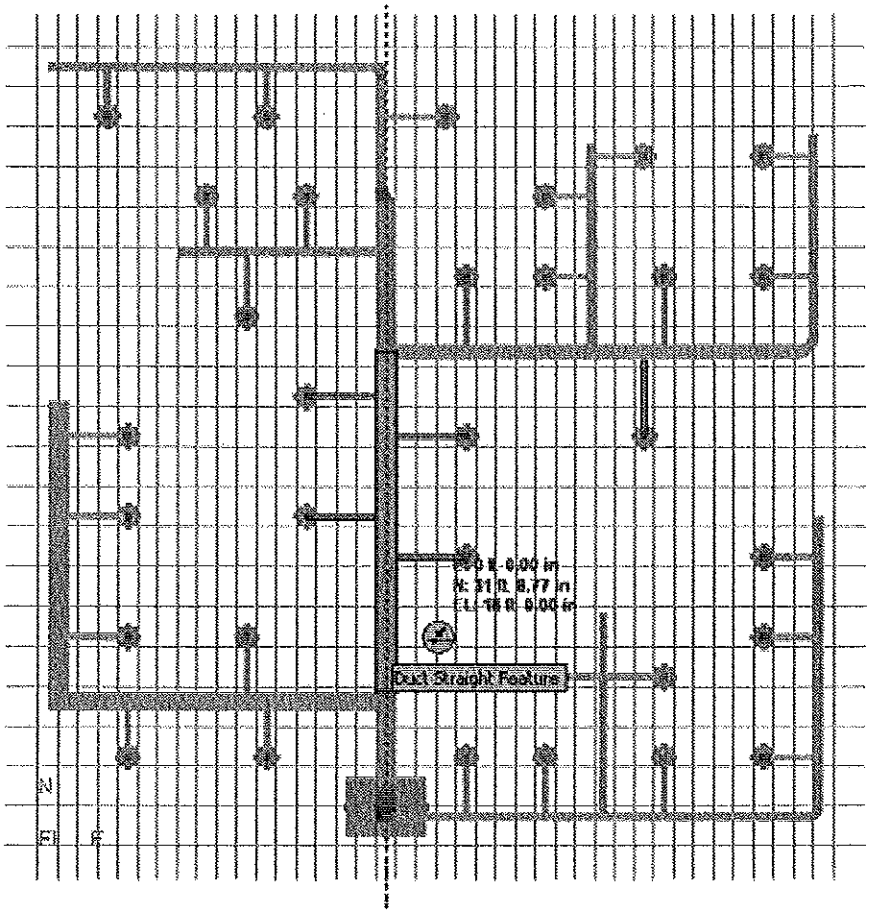
12 Connect all D24X24RND8 diffusers to ducts using SMRoundBranch1 component with 3" offset and Spec-0



LAB-14: Placing Dampers/Access Doors

1 Select insert In-line component command

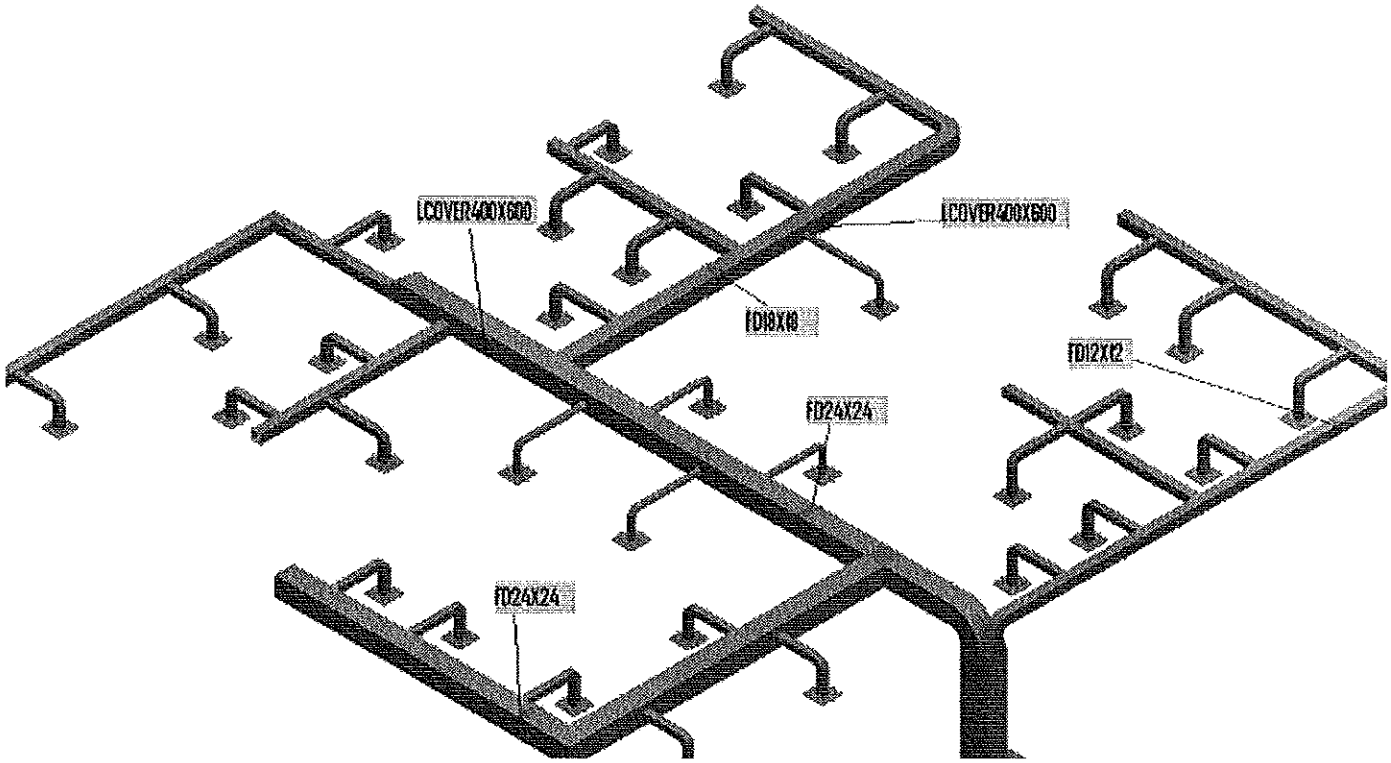
2 Select the duct as shown



3 From Catalog expand Fire Dampers and select, FD24X24

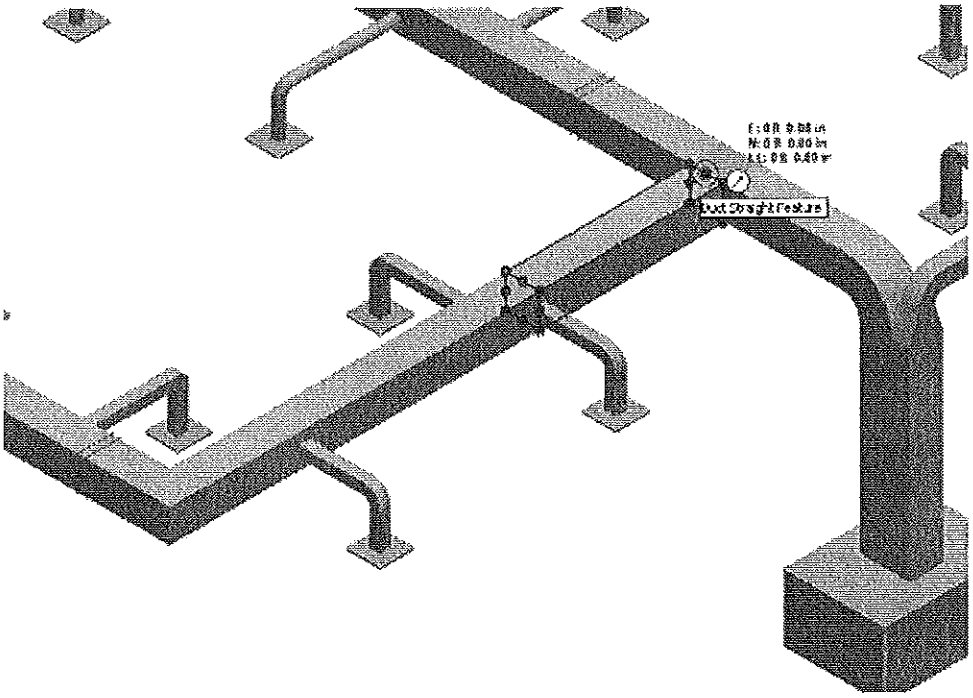
4 Locate and place the damper as shown

5 Place other inline and Surface mount components as shown.


LCOVER(400X600)
LCOVER(400X600)
FD18X18
FD12X12
FD24X24
FD24X24

LAB-15: Placing Splits

1 Reposition target to the EF of Branch duct as shown

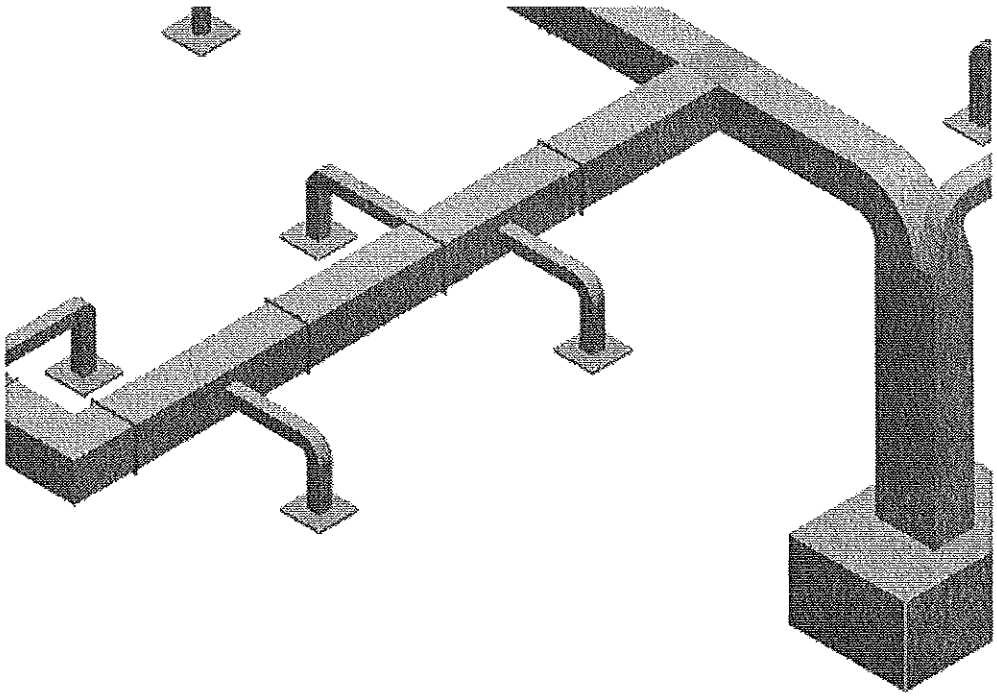


2 Select insert split command

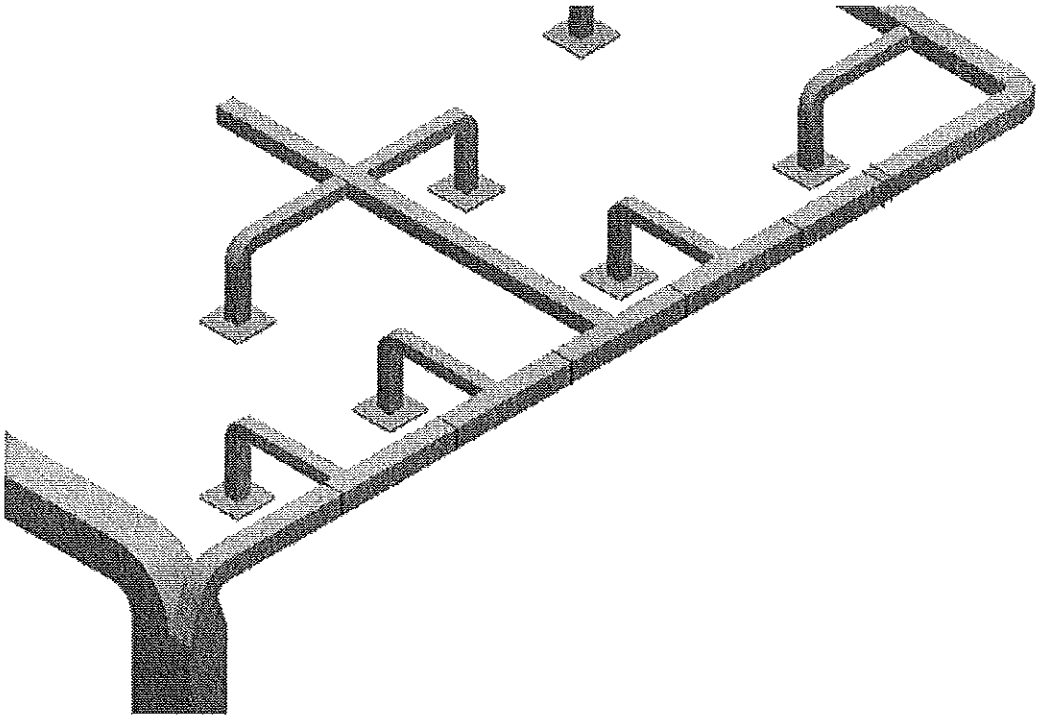
3 Select the duct shown in the above picture

4 Select Rect_FlatFlange under type

5 Key in -7 for east and place the flanges 7 feet apart as shown
Note: If flange is placed where a branch is connected, relocate the branch



6 Placed weld on the 1X1 ducts as shown



LAB-16: Placing Insulation

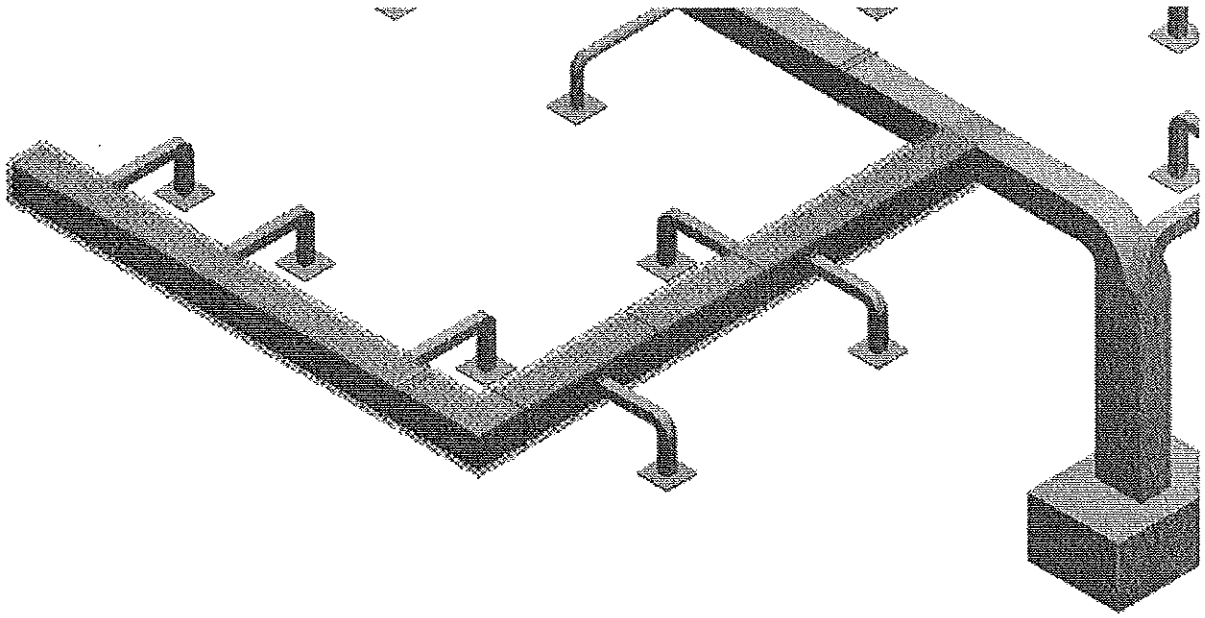
1 Turn Insulation aspect on from Format, View

2 Change locate filter to Duct Runs

3 Select the Duct Run branching from TEE as shown in the picture

4 Open Properties page and change Insulation material to FBG and thickness to 4"

5 Create a Surface style rule to show insulation as Translucent Orange

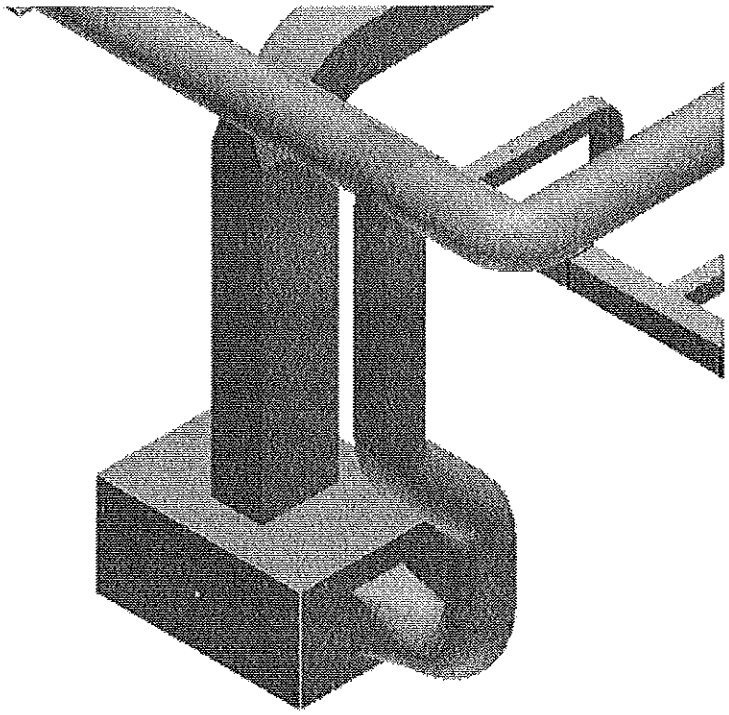


LAB-17: Return System (Optional)

1 Connect to Return Connection on the East side of AHU

2 Place a Rectangular to Round transition with 2' dia

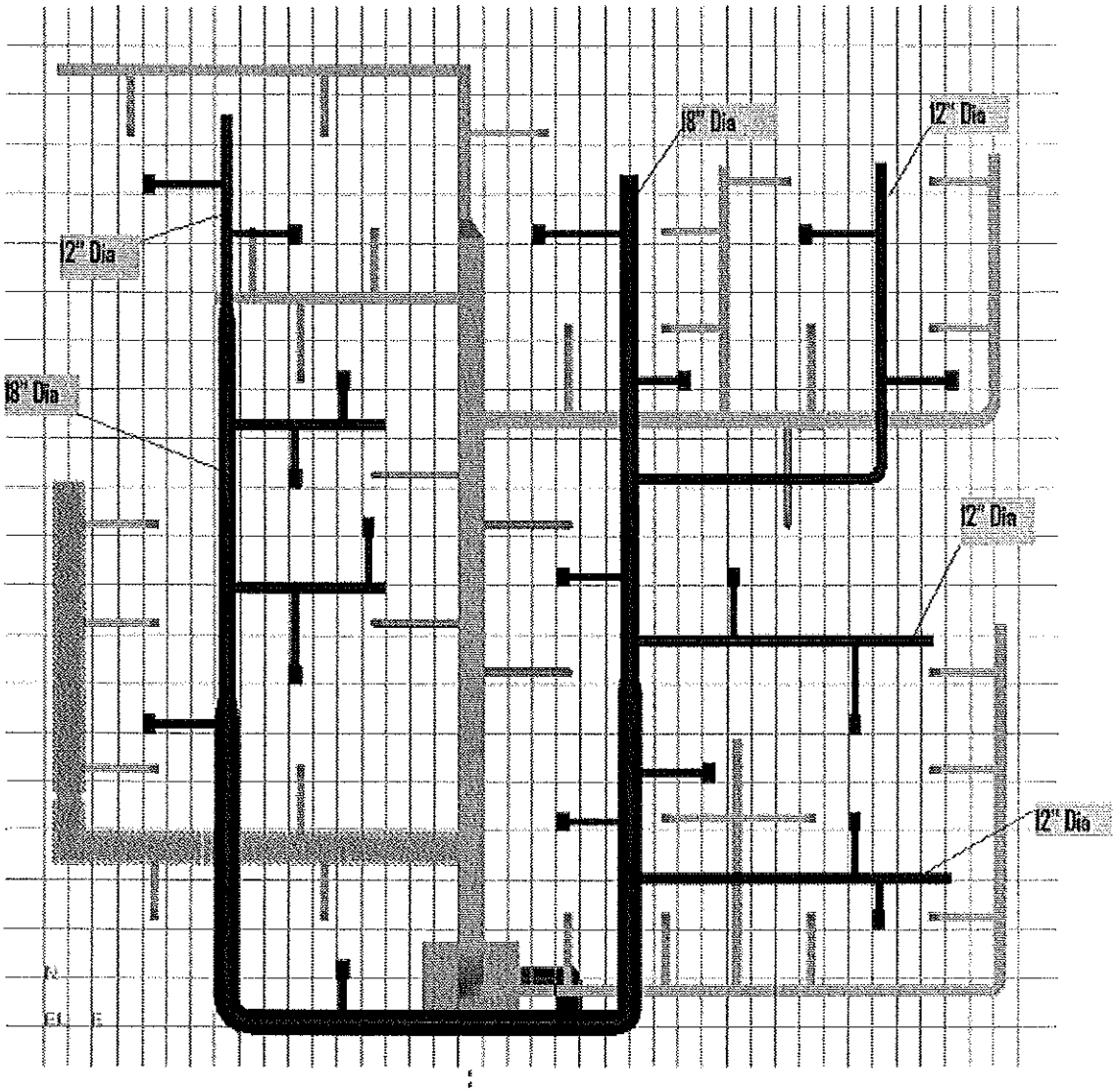
3 Rout to 20' 6" elevation using 90 degree bend as shown



4 Place Grills G18X12REC12X8 at shown location

5 Route ducts as shown for return system and connect the grills

6 Use Round, 8" duct to connect grills to main ducts as shown



Return System is shown in Dark Color