# Electrical Tutorial

## Routing Conduit


**Version 2014**

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SESSION 6

# Routing Conduit

### Objective

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

- Route a conduit

### Before Starting this Procedure

- Smart 3D Overview
- Smart 3D Common Sessions
- Electrical Overview

### Overview

**Route Conduit**  allows you to define the geometry and properties of a conduit run. You can create conduit, modify the conduit that you have created, or extend an existing conduit. Smart 3D allows you to add conduit features and components that are driven by specifications and catalogs such as couplings, unions, and tees. The selection of the catalog part item in the conduit routing is directly attributable to the feature type and the specification on the conduit run.

You can place conduits onto a cabletray for cable drops that may occur along the cabletray route. As a result, you can place conduits onto an existing cabletray in a branching workflow. You can also route conduits within a cabletray or place the conduits at the cabletray ends. Additionally, you can route conduits to and from equipment, if the equipment has a conduit port defined on it.

## Routing a Conduit

In the following workflow, we will route a conduit from an equipment item that has a conduit nozzle. Notice that when a nozzle is selected as the start point for routing, the route conduit command defaults to a matching size for the nozzle.

NOTE Conduits can only be routed from the equipment that has conduit ports.

Route a conduit from **ConduitPort4** on the electrical equipment **Electrical Device** in **Unit U01** under area A2 of your workspace. Route the conduit using the following specifications:

**Standard category:**

- System: Conduit
- Specification: CS0

**Cable Fill category:**

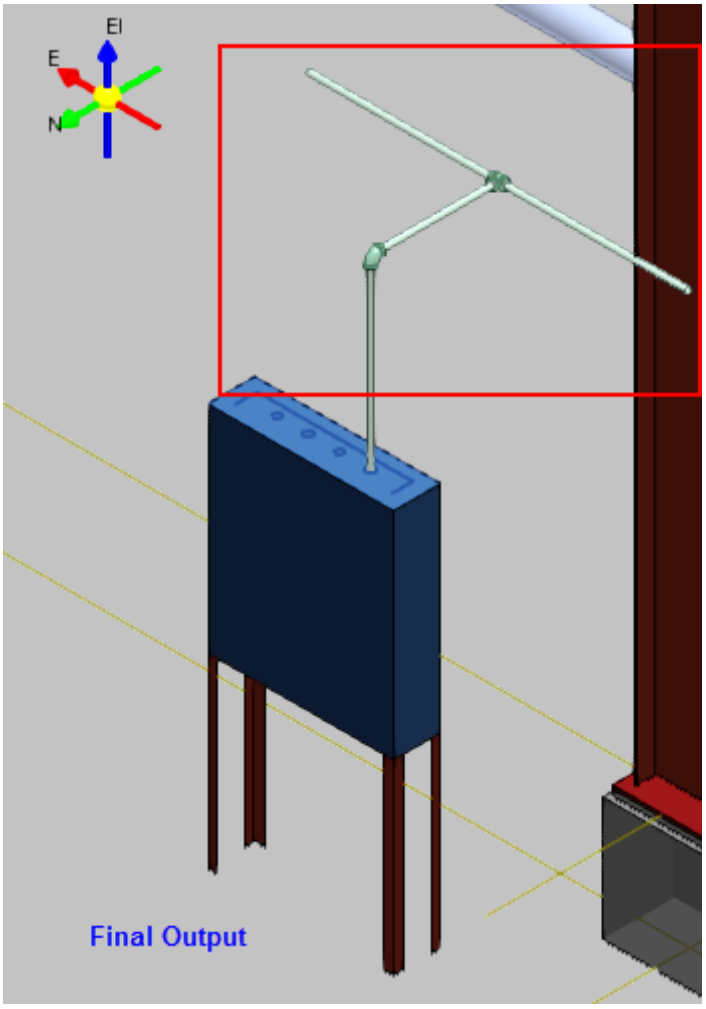
- Fill Efficiency: 65%
- Signal Type 1: Control

- Length: 3 ft in the elevation EL direction
- Length: 2 ft in the south direction

After placing the tee, route the conduit using the following specifications:

- Length: 3 ft in the east direction
- Length: 3 ft in the west direction

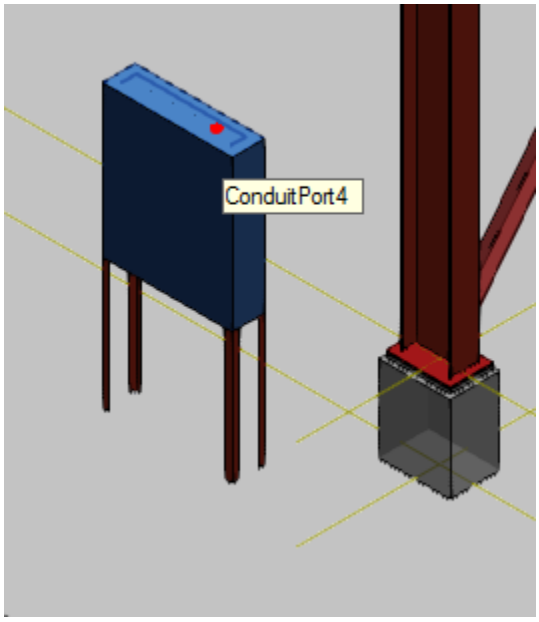
After routing the conduit, the model should display as shown:




Before you begin, define your workspace to show **Unit U01** and coordinate system **U01 CS**.

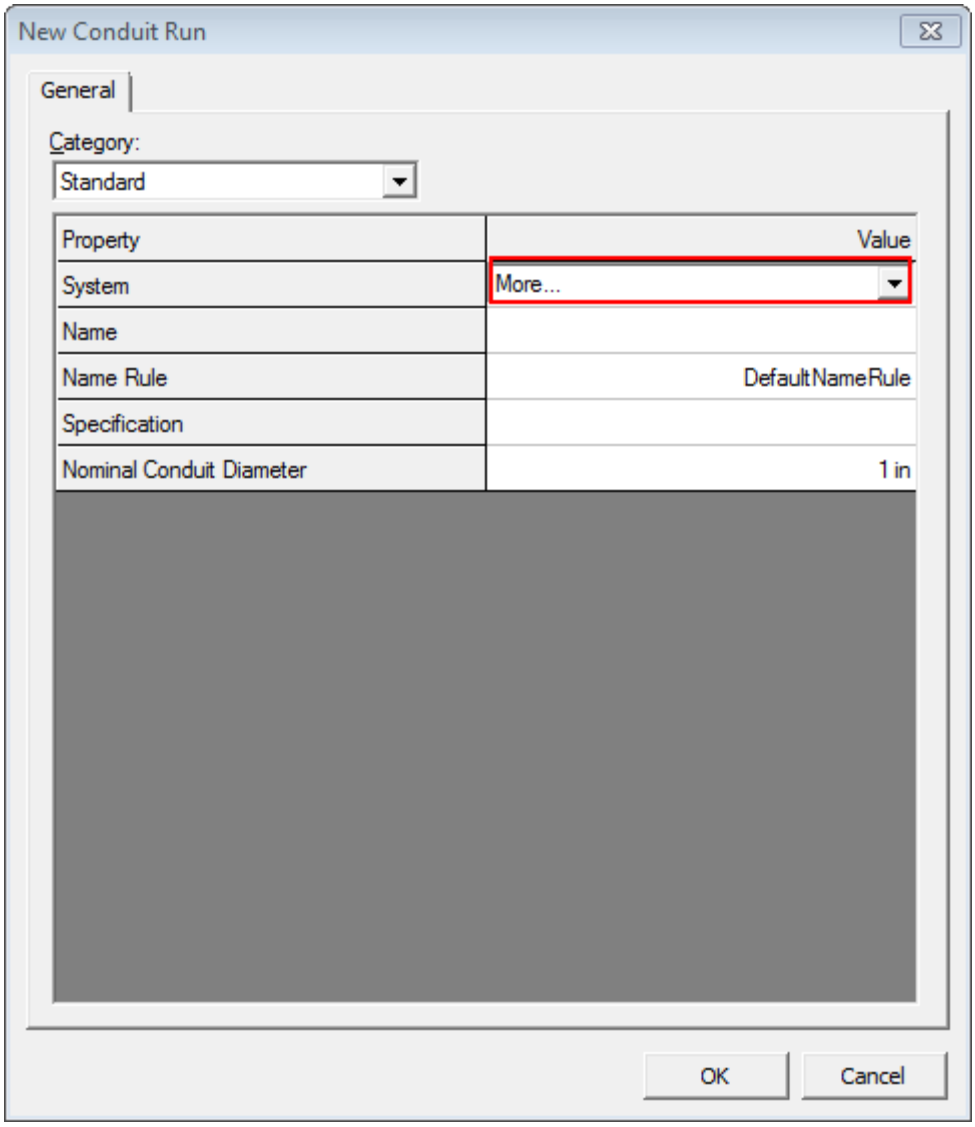
1. On the **PinPoint** ribbon, set the active coordinate system to **U01 CS** and click **Set Target to Origin** .
2. If you are not in the Electrical task, then select **Tasks > Electrical** and set the **Active Permission Group** to **Electrical**.
3. Click **Route Conduit** from the vertical toolbar.

4. Select **ConduitPort4** on the **Electrical Device** equipment as the starting location.



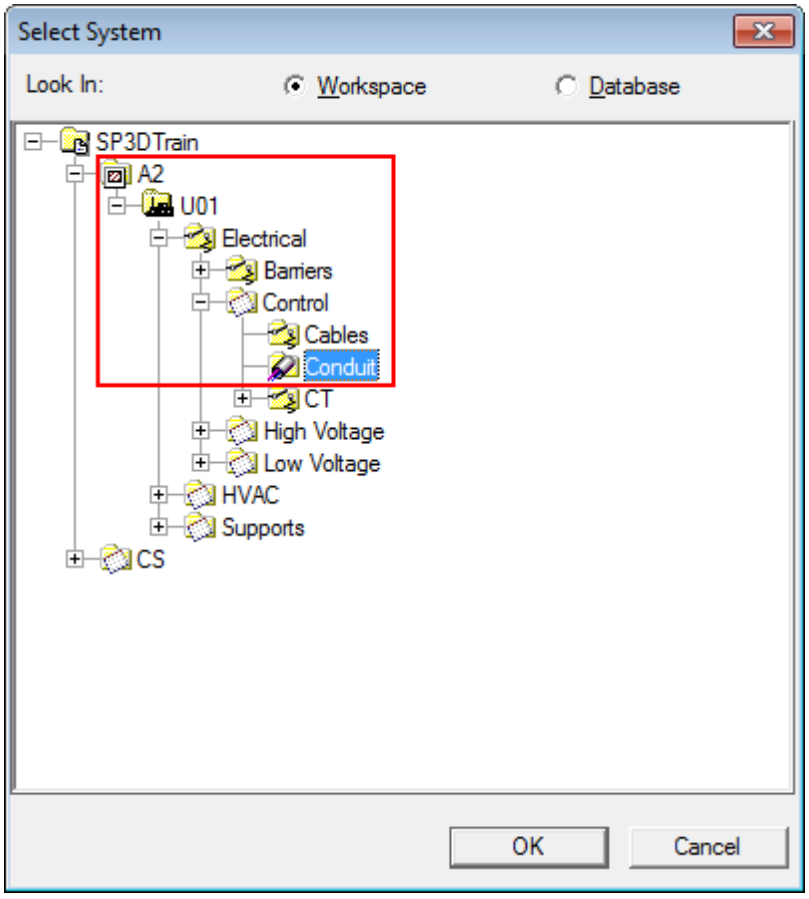

*The **New Conduit Run** dialog box displays.*

5. Under **System**, select **More…**.

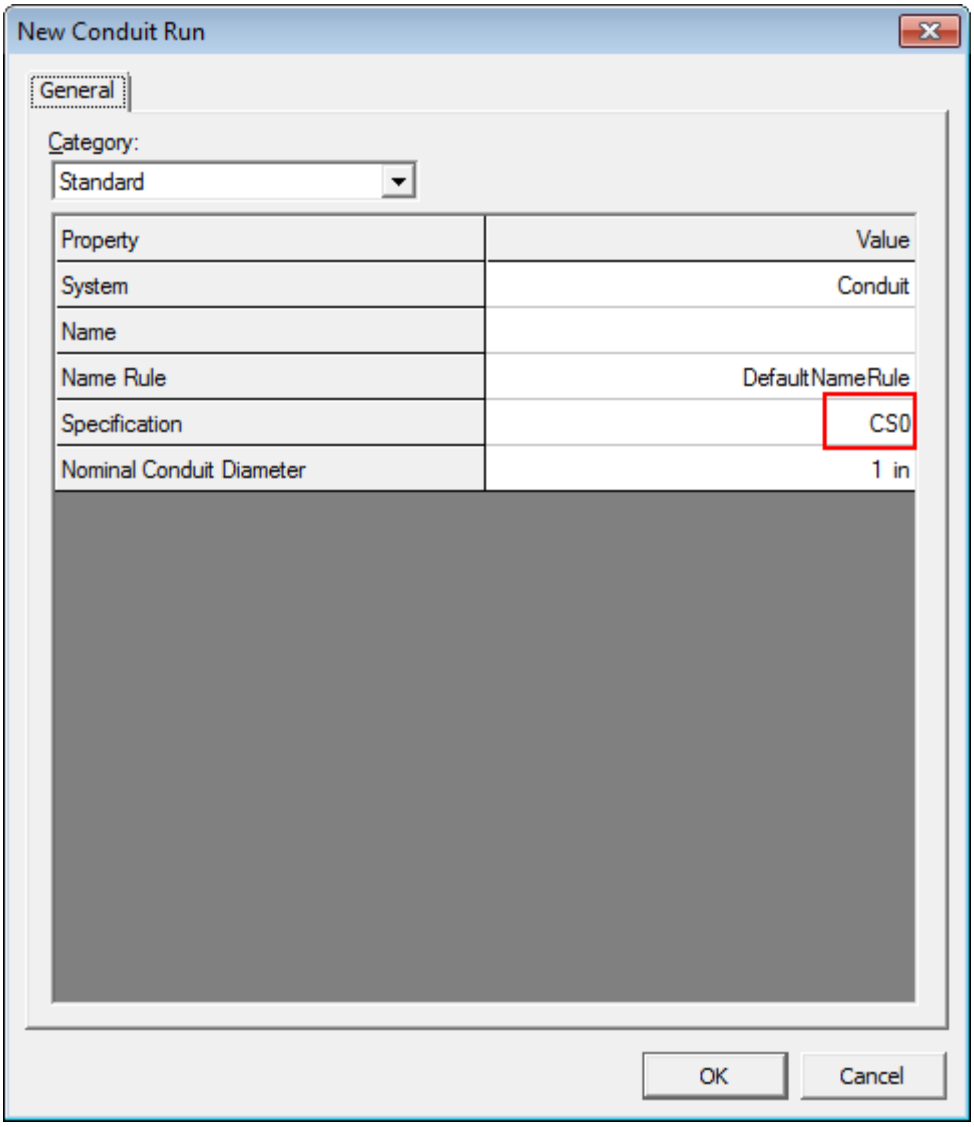



*The **Select System** dialog box displays.*

6. Select **A2 > U01 > Electrical > Control > Conduit** and click **OK**.

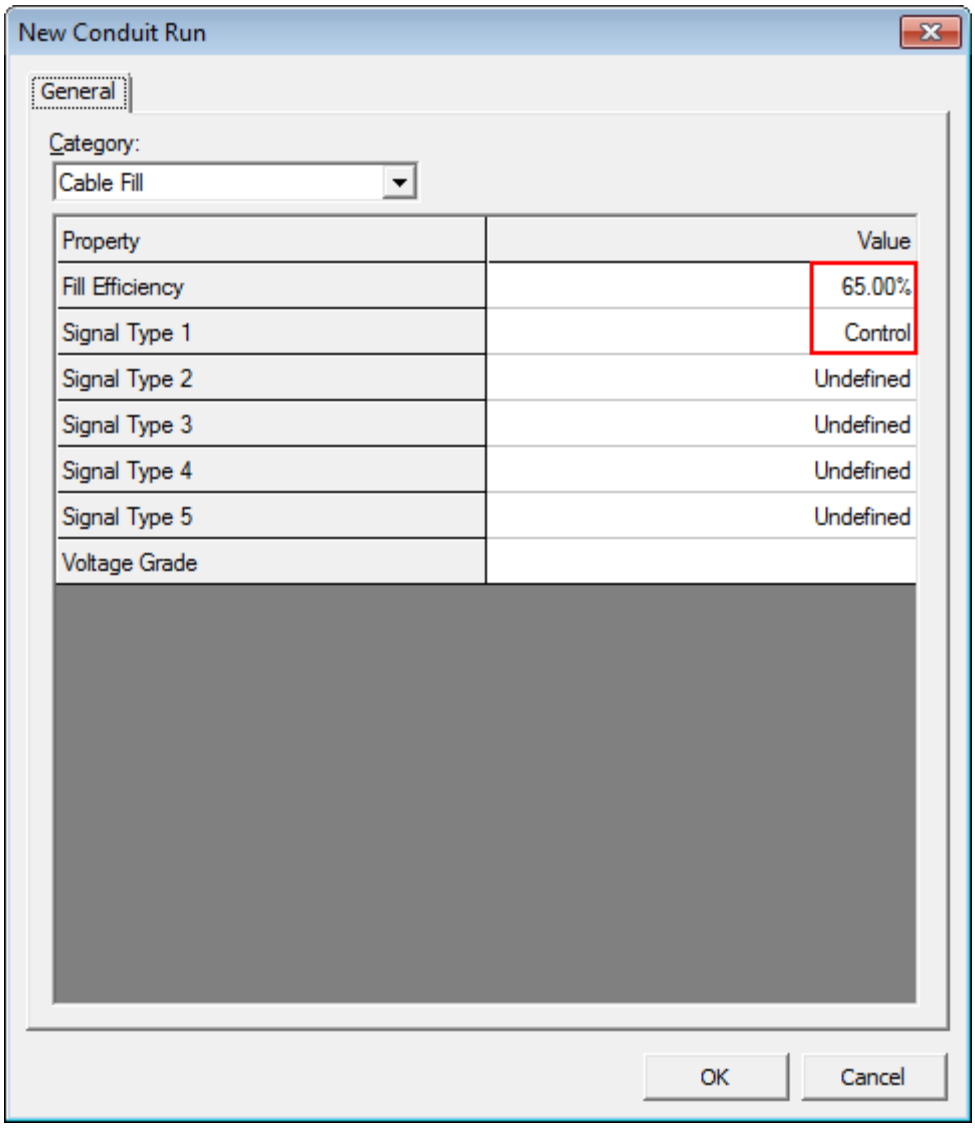


7. In the **New Conduit Run** dialog box, set the **Specification** to **CS0.**

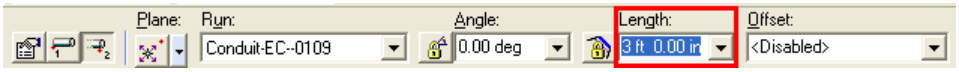



8. Set the **Category** to **Cable Fill** and define the following specifications:

**Fill Efficiency**: 65%
**Signal Type 1**: Control

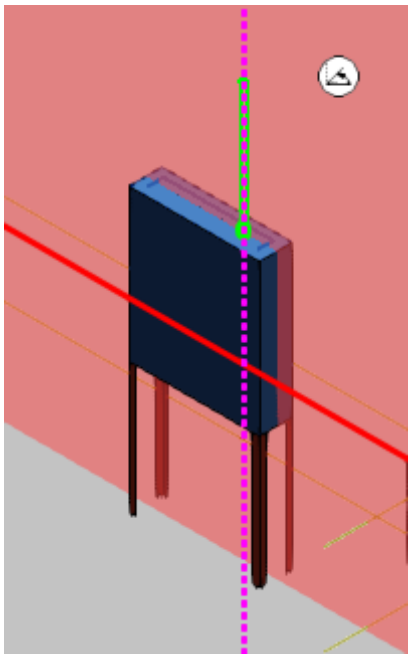



9. Click **OK** to close the **New Conduit Run** dialog box.
10. On the **Route Conduit** ribbon, set the **Length** to **3 ft**.



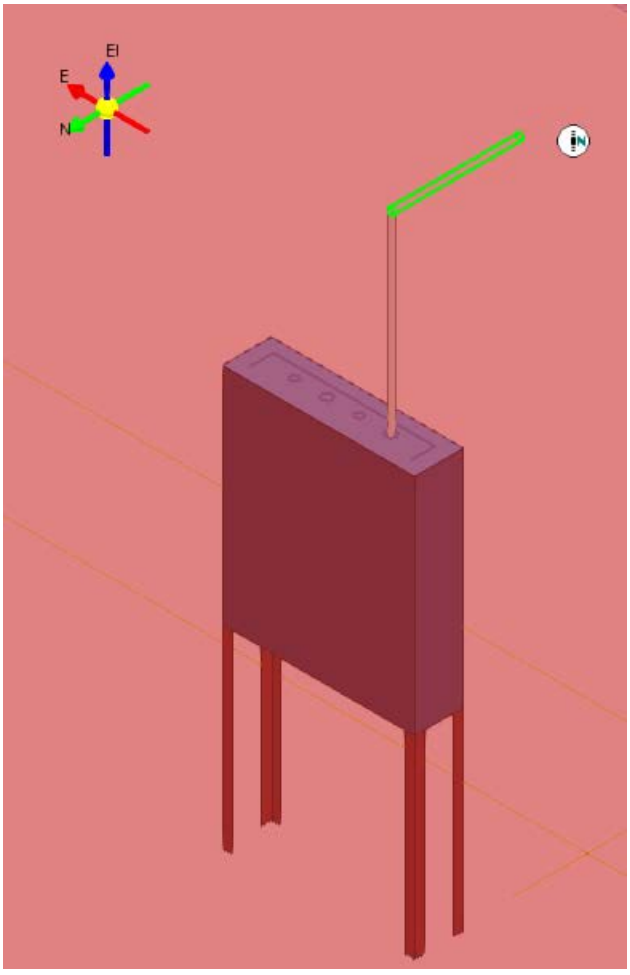

11. Set the route plane to **East-West** .

12. Hover over the elevation direction in the graphic view and click to place the conduit as shown:



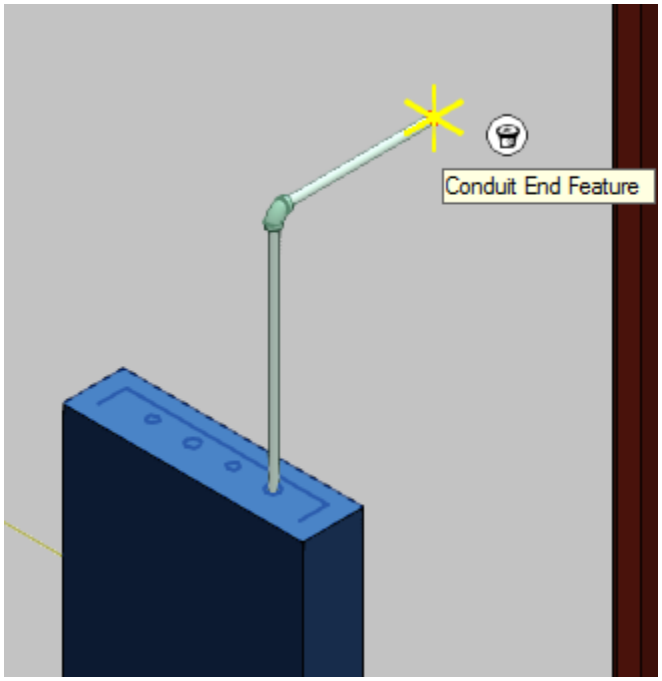
13. Set the **Length** to **2 ft**, and set the route plane to **Plan** .

14. Hover over the south direction in the graphic view and click to place the conduit as shown:

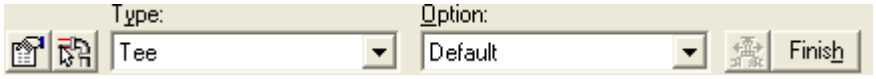



15. Right-click to close the command.
16. Click **Insert Component** from the vertical toolbar.

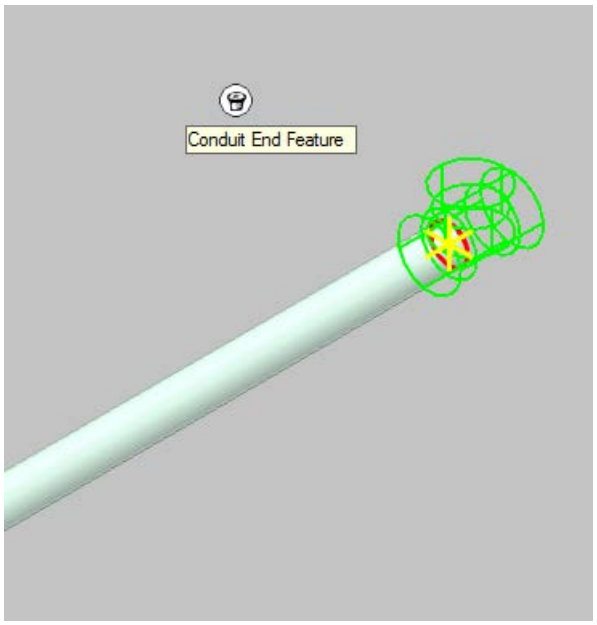
17. Select the end feature of the conduit as shown:



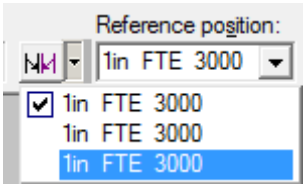

18. Set the **Type** to **Tee**.



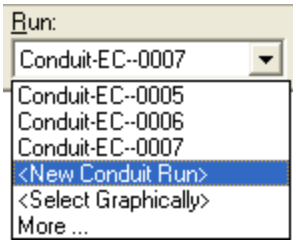

*A tee appears at the end of the end feature:*



19. On the **Insert Component** ribbon, just before **Reference position**, there is a small drop-down arrow called **Flip** that allows you to select the port to use to place a component. Under Flip, select **1 in FTE 3000**.

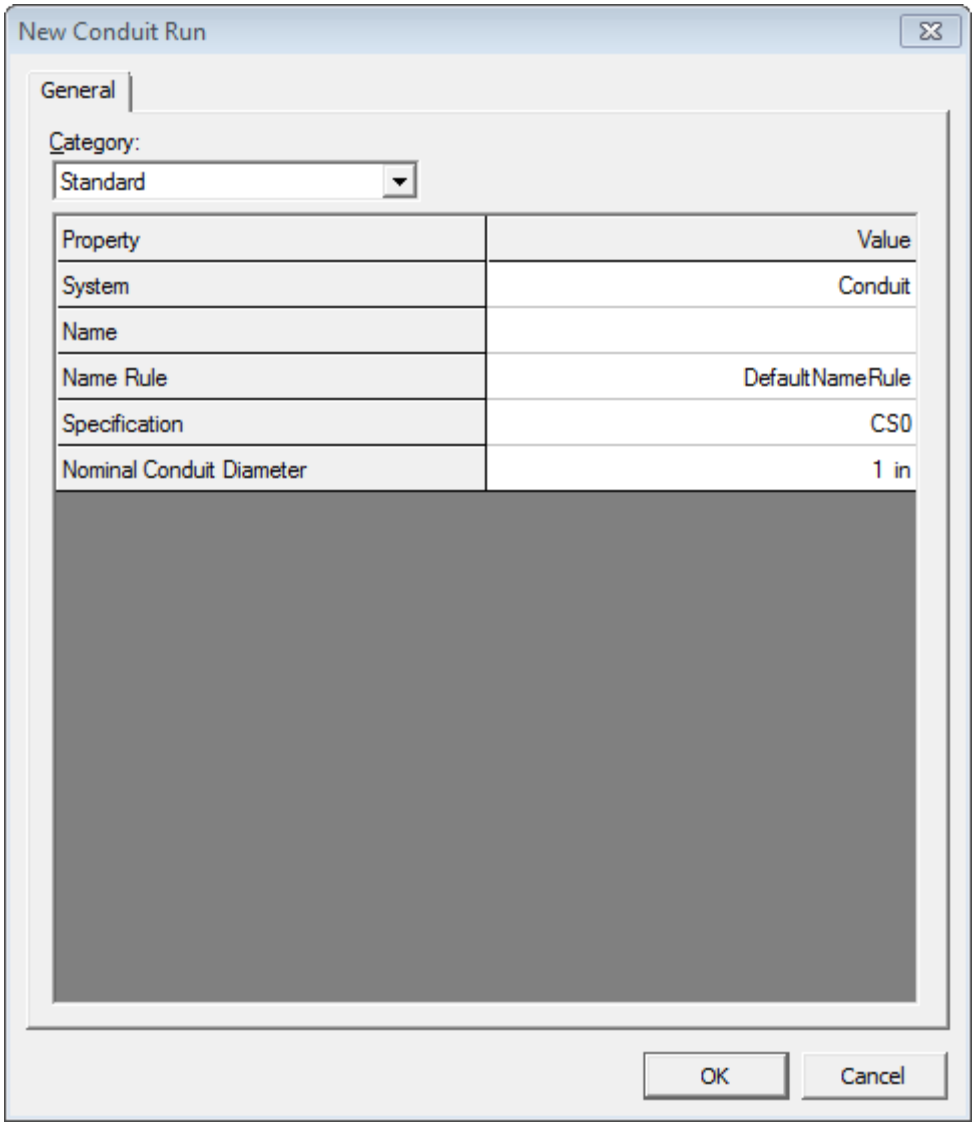



20. Under **Run**, select **<New Conduit Run>**.



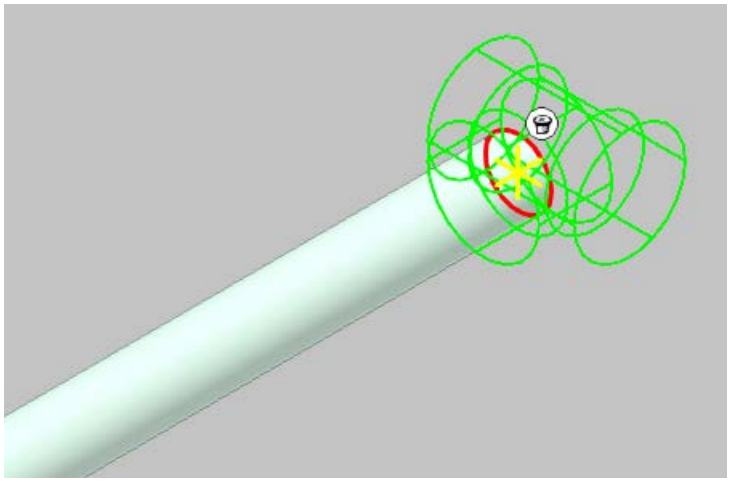

*The **New Conduit Run** dialog box displays.*

21. Click **OK** to accept the default values of the new conduit run.

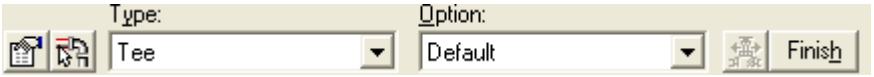



22. Set the Angle to 90.00 deg to rotate the tee.

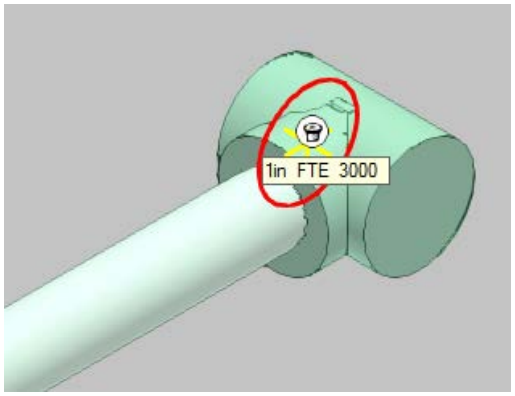
*You will now see the outline of a tee at the active placement point.*



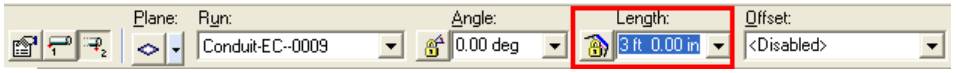
23. Click **Finish** to place the component.



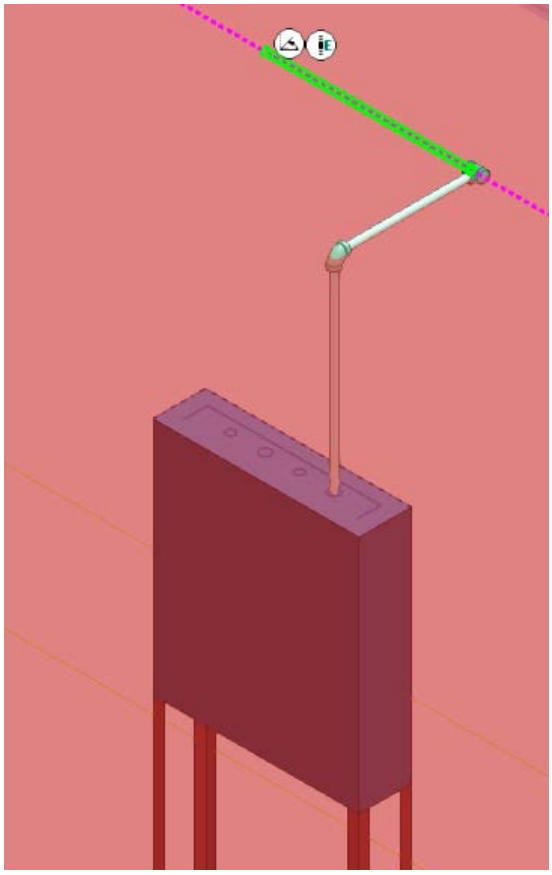

24. Click **Route Conduit** from the vertical toolbar.
25. Select the tee port to start routing the conduit.




26. On the **Route Conduit** ribbon, set the Length to **3 ft**.

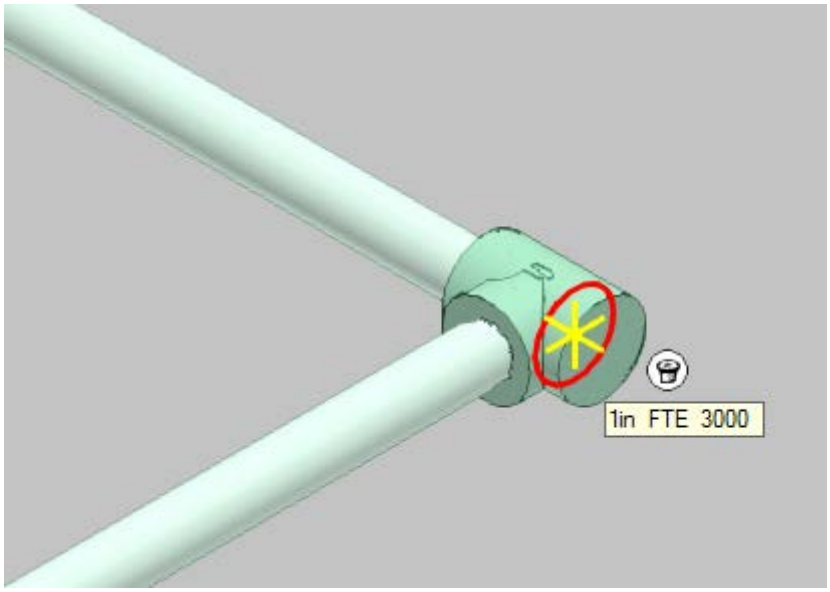


27. Route the conduit in the east direction as shown:



28. On the **Route Conduit** ribbon, select **Start Route Step** to re-define the starting point of the next conduit run.

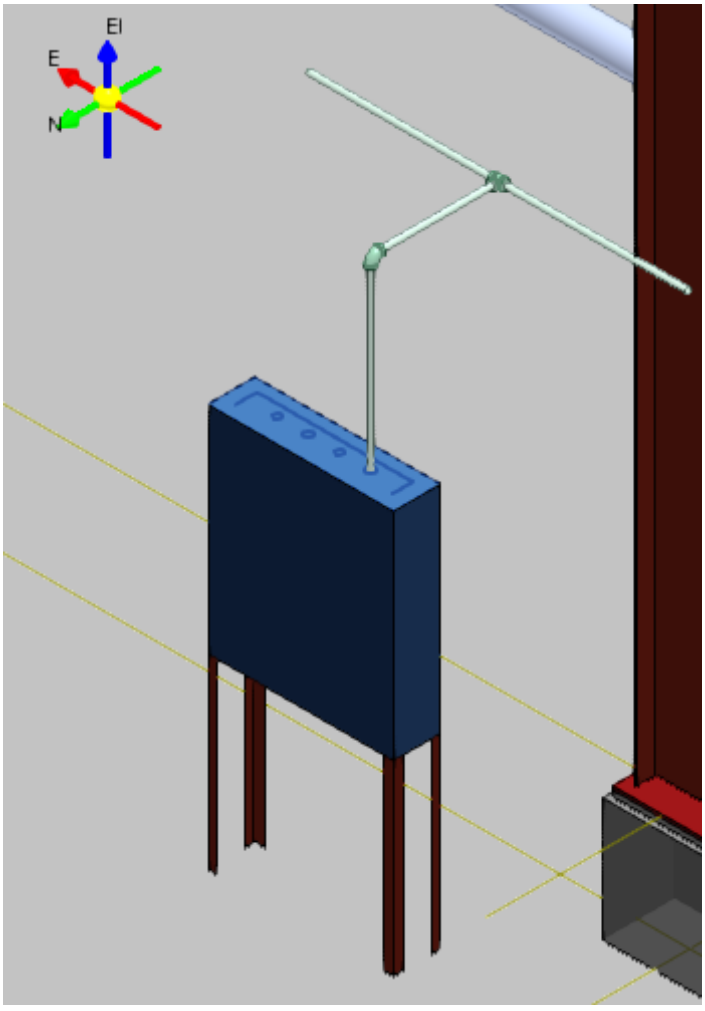
29. Select the other tee port to start the conduit.




30. Set the **Length** to **3 ft** and route the conduit in the West direction.


31. Right-click in the graphic view to close the command.

*The conduits are routed as shown.*




For more information related to the routing a conduit in a model, see *Routing a Conduit* in the *Electrical User's Guide*.