ESRI

ELECTRIC DISTRIBUTION: NEW SERVICE DROP

Beta 1 | Utility Networks 1.4

Summary

A customer recently built a new house and requires electricity. She applied for a residential service through the Naperville utility company website where she supplied all pertinent information.

In this lesson, you will assume the position of the editor. Your job is to connect the customer to the nearest transformer by sketching a service drop and populating the necessary attributes based on the customer load. You will then confirm your work by running analytics.

For this workflow, you will use a map from your Naperville project. If using this workflow with client-server, use the **Naperville [Client-Server]** map. If using this workflow with services, use the **Naperville [Services]** map. If these maps are not open, expand the **Maps** item on the **Project** pane and double-click the appropriate map to open it. To access the utility network ribbon, select the Utility Network layer in the Contents pane.

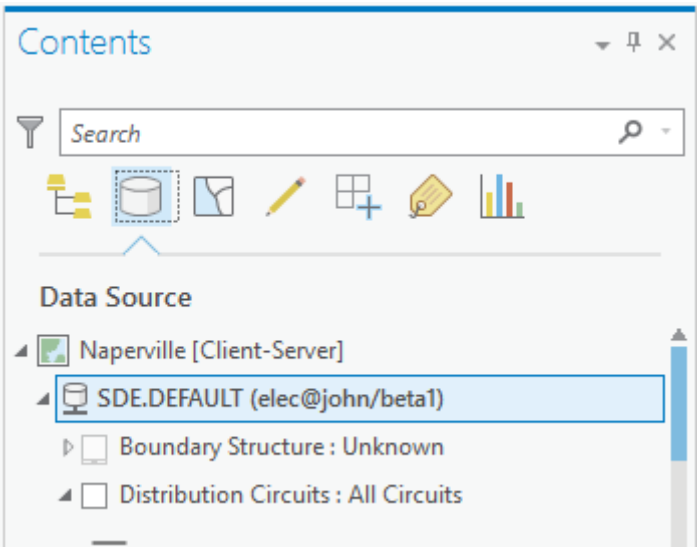
Create a new Version

The utility network works on a versioned geodatabase. Our first step is to create our own.

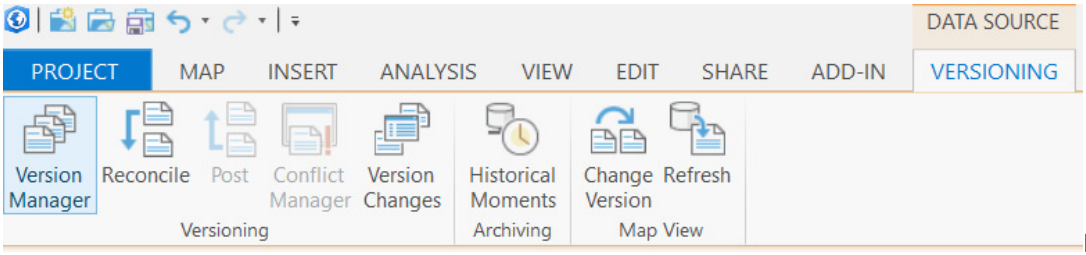
If you are using services in Beta 1, versioning is not yet enabled. You must skip this section and edit against the default version.

Make sure your Naperville project is opened and the data source is correctly set.

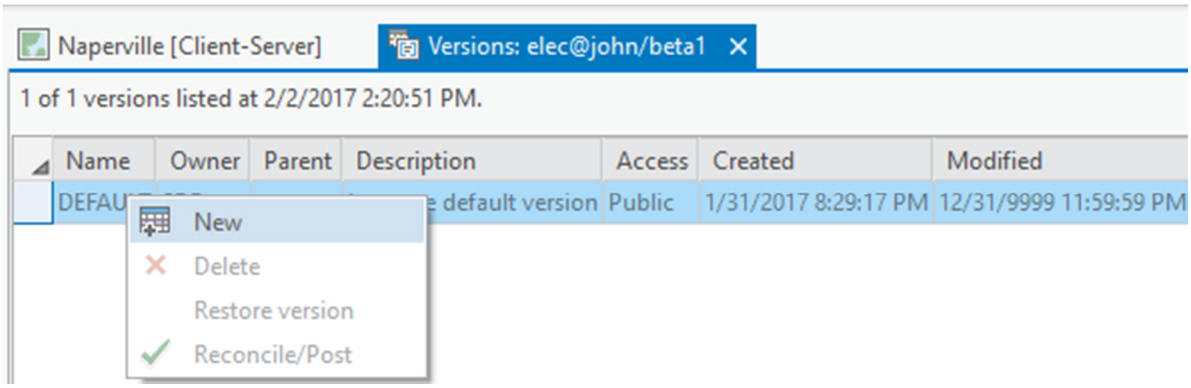
1. Activate the **Naperville (Edit)** map.
2. From the **Contents** pane, click on the **List by Data Source** tab and then click on **sde.DEFAULT**.



3. From the **Versioning** Tab click on the **Version Manager**

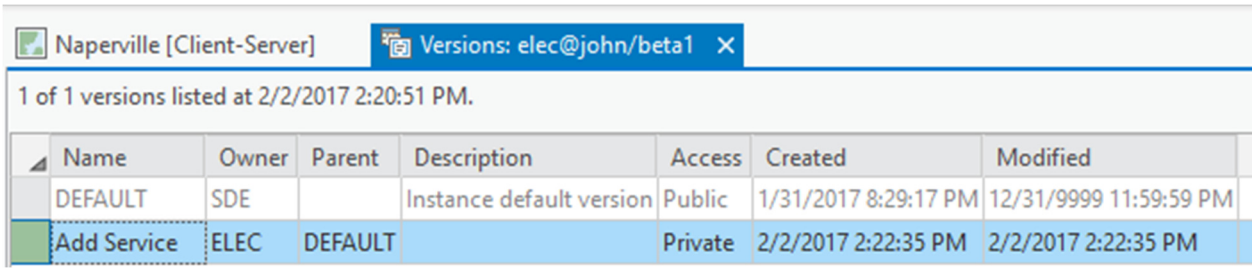
4. 

Right click on the **DEFAULT** version and click on **New**.

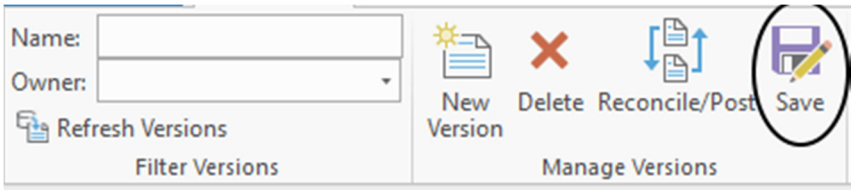


5. Name your version, make sure its unique

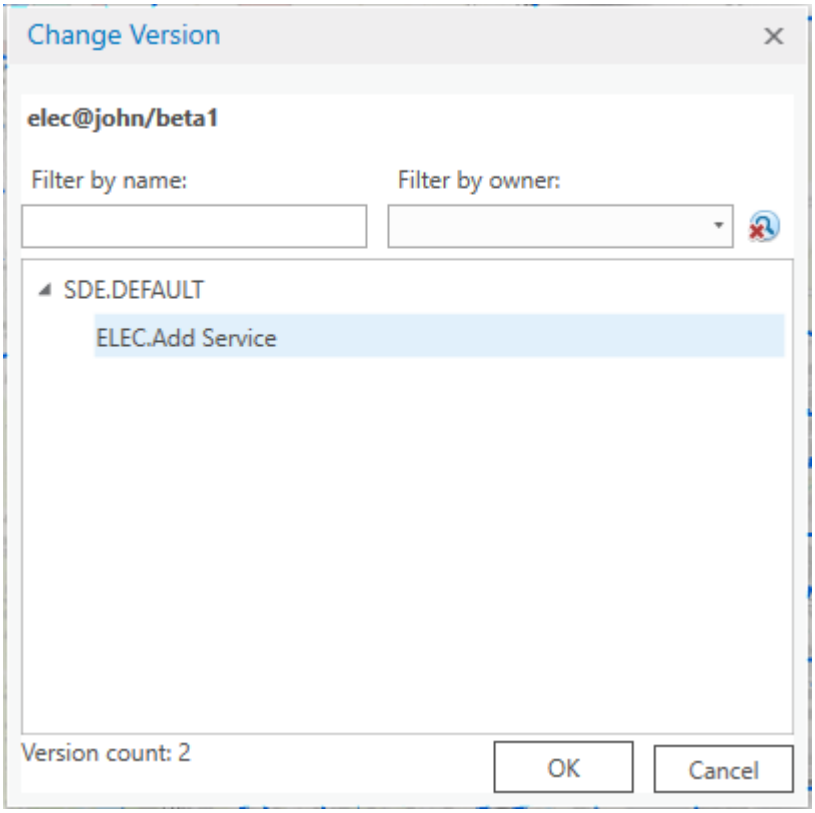
   Tip: You can name your version with the workflow you are trying to execute.



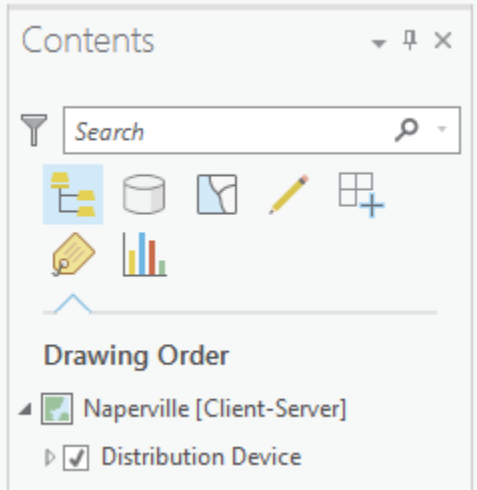
6. From the **Versions** tab, click on **Save**.



7. From the **Versioning** tab, click on **Change version**
8. Click on your version and click **OK**



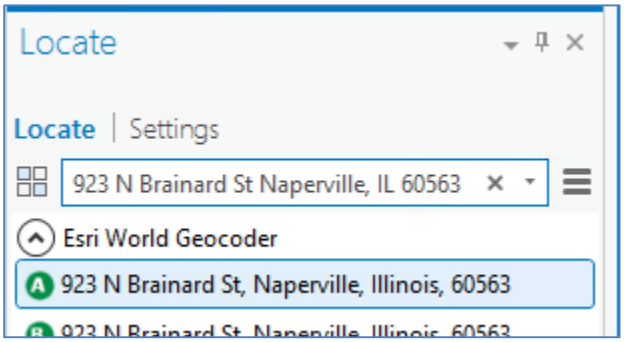
9. From the **Contents** pane, go back to the layers view.



Locate the customer

In this section you will locate the customer that has requested power.

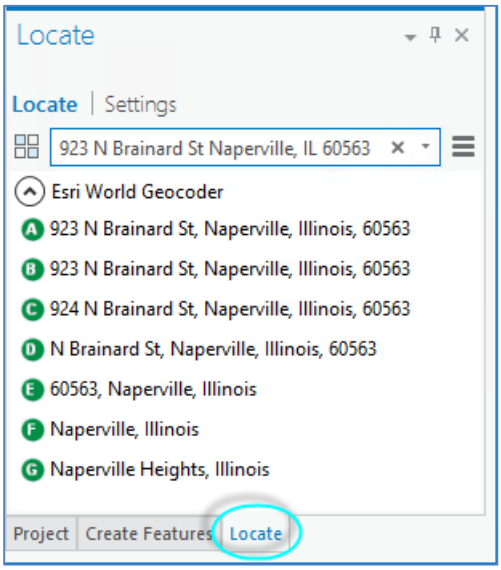
1. Make sure you Activate the **Naperville [Edit]** map.
2. On the **Map** tab, in the **Inquiry** group, click on Locate to open up the **Locate** pane.
3. In the *Search* box, type the customer's address "923 N Brainard St Naperville, IL 60563" then hit **Enter** on your keyboard to return matching addresses.
4. Double click on the first result, A to pan/zoom to the address.



Sketch the proposed service drop

Now that the customer location has been determined, you will digitize the new customer service drop in your map and populate the features with attributes. Then you'll update the network topology for the new features. Finally you'll run a trace to verify your work.

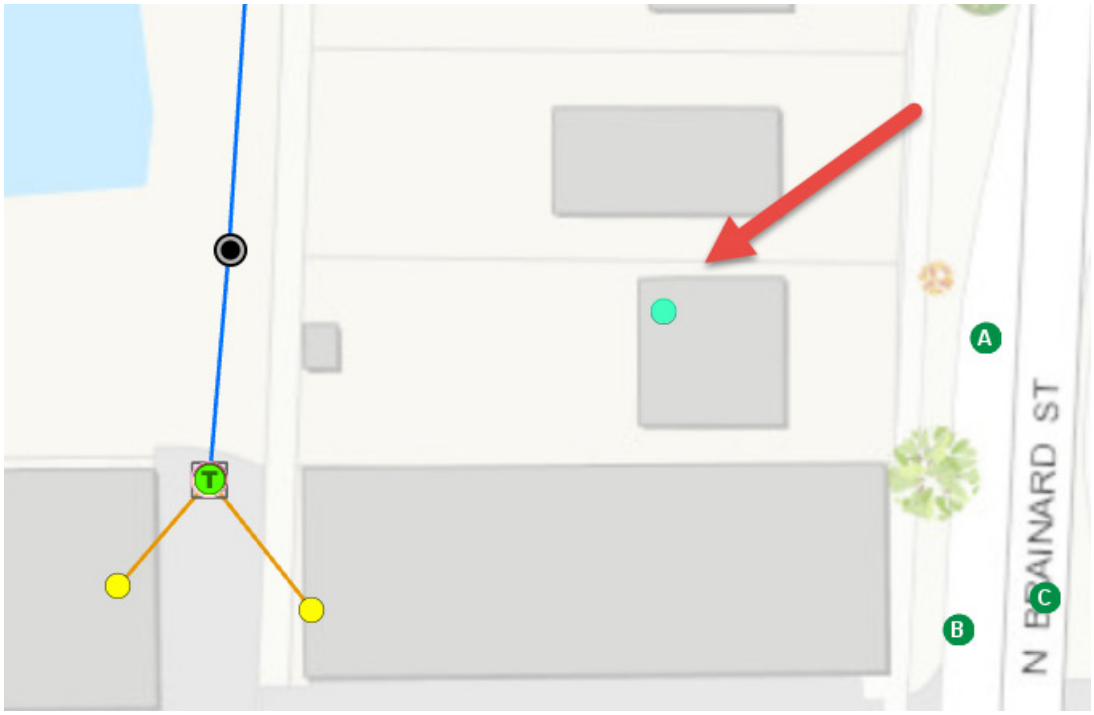
1. On the **Edit** tab, in the **Features** group, click on **Create** to open up the **Create Features** pane.
2. Undock the **Locate** pane so it becomes a floating window. This is required to keep the addresses visible in the map. To undock a pane, click on the pane's tab and drag it out of the app.

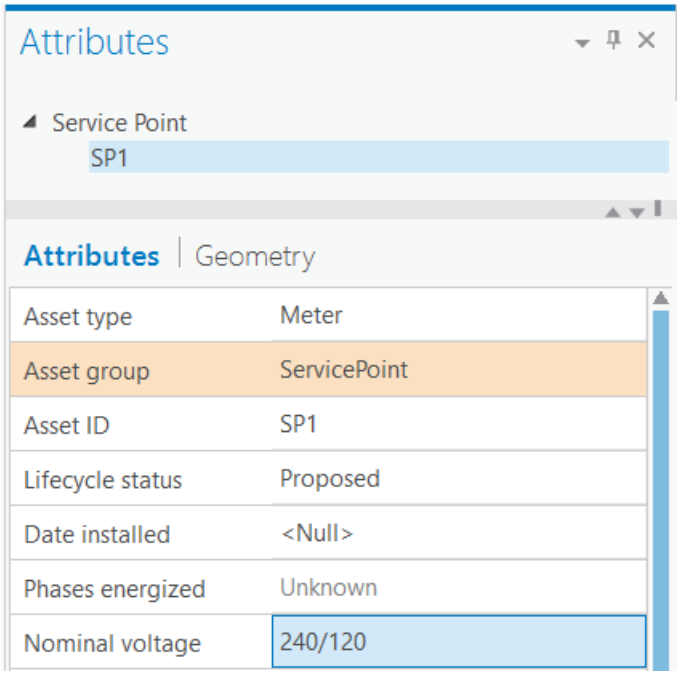


3. In the **Create Features** pane, click on the **Service Point** template.

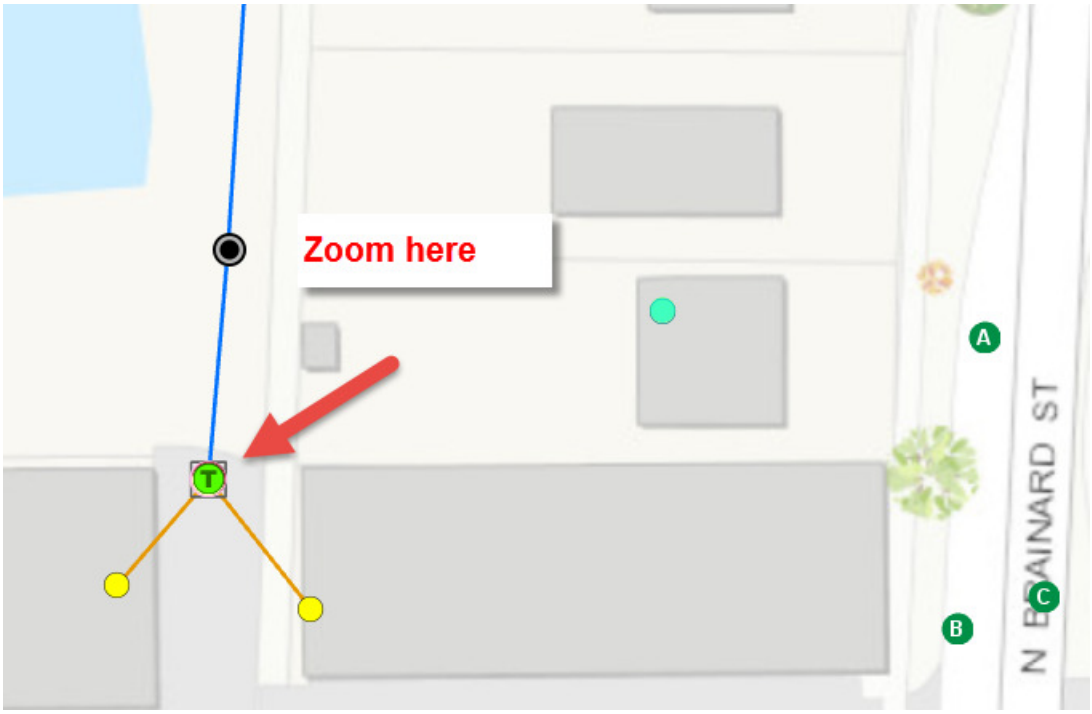
   TIP: Use the search box to quickly locate the template.
4. Create the service point as illustrated in the picture below.
5. Close the **Locate** pane to remove the address points.

6. In the **Edit** tab, in the **Features** group, click on **Attributes** to open up the **Attribute** pane displaying information about the service point. If your service point is not selected, select it.
7. Populate the following attributes for the service point, leave the rest as default.

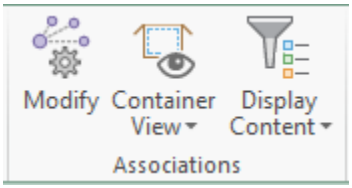


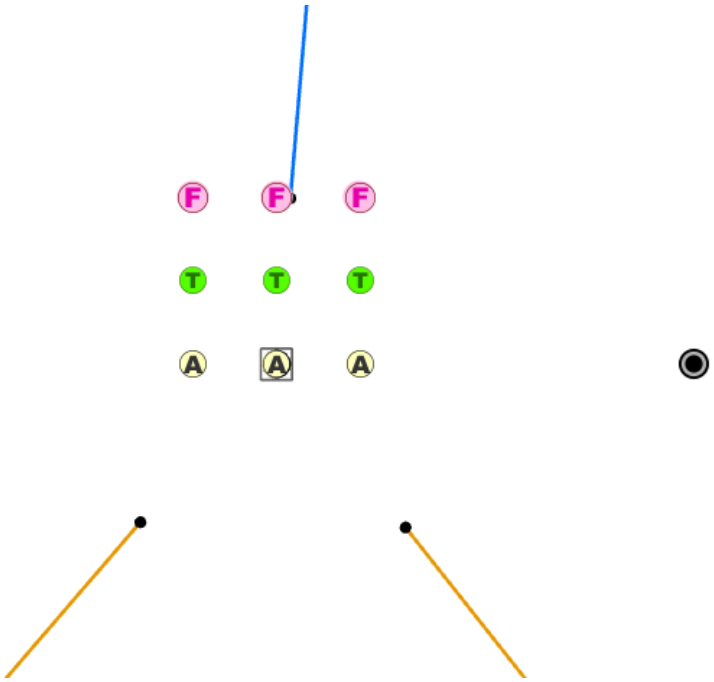


8. Now we will need to zoom to the transformer bank to pull our service drop from.



9. Set your scale to **1:2** to zoom into the transformer bank.
10. On the "Utility Network" menu, click on the "Display Content" button in the "Associations" group.

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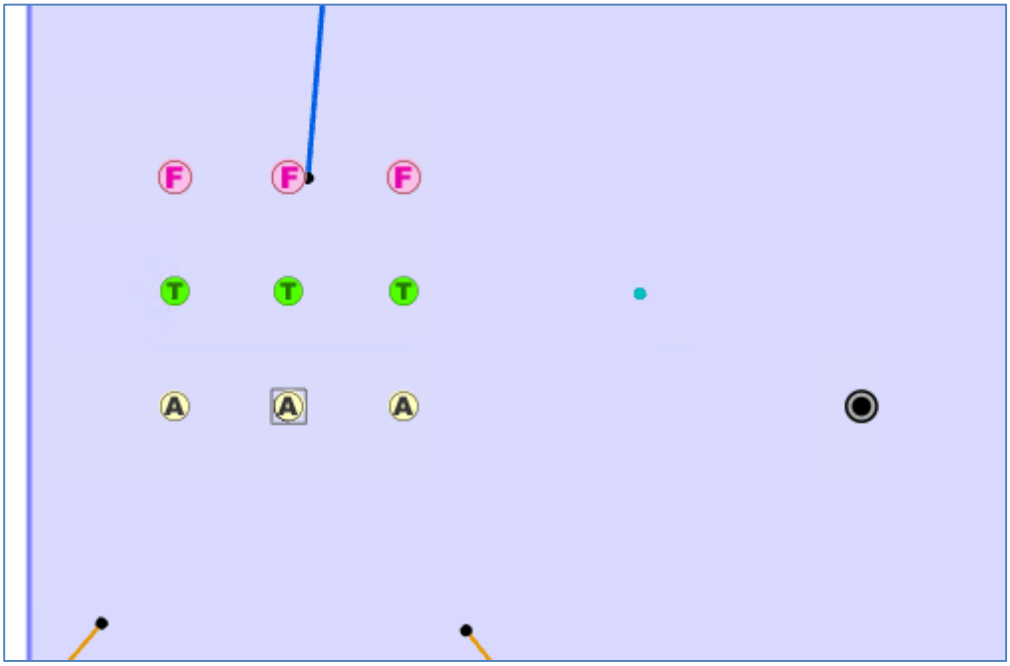
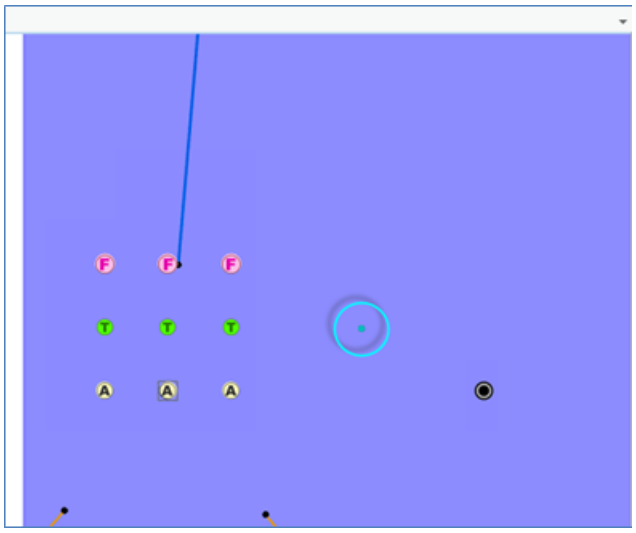
11. In the **Create Features** pane, click on the **Connection Point** template.
12. Create a connection point to the right of the transformer with an asset ID of **91813**.

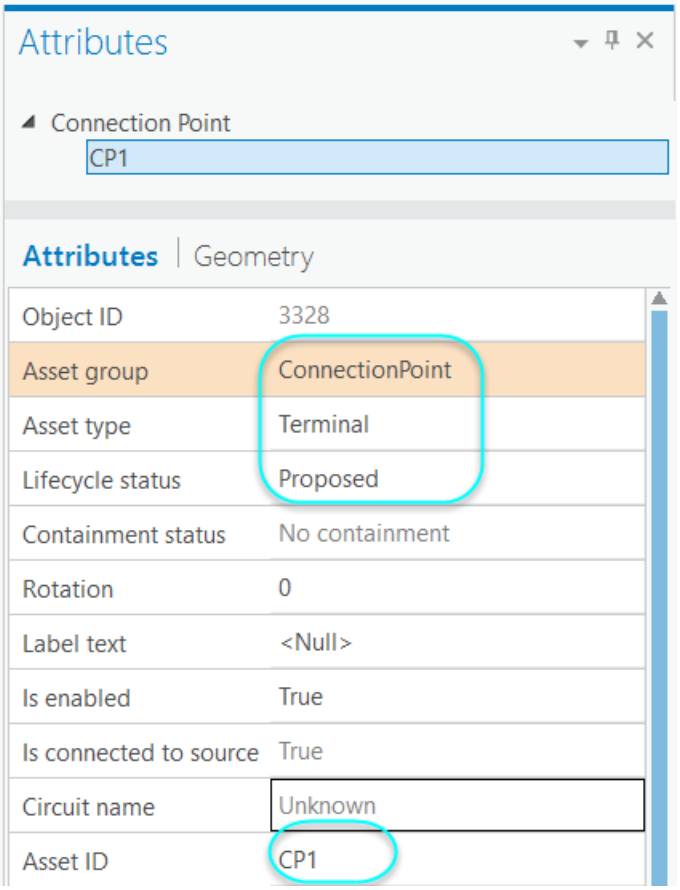
    TIP: Use the screen shot below for reference, it doesn't have to be exact.

    After you place the connection point, a dirty area will appear.



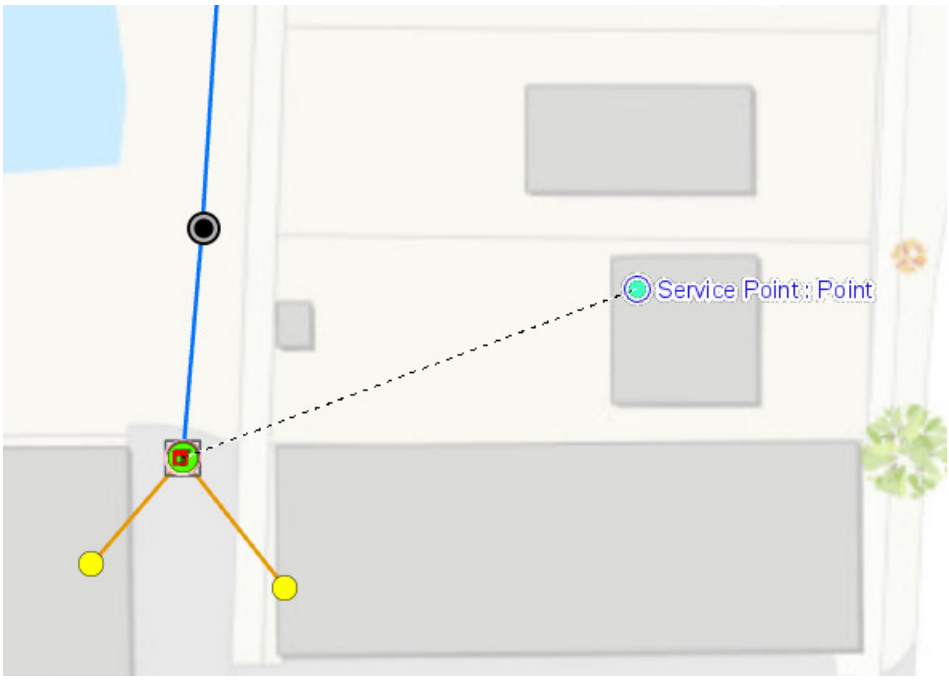
13. From the **Edit** tab, in the **Selection** group, click on **Attribute** to open up the Attributes pane displaying information about the connection point.
14. Populate the following attributes for the **CP1 connection point**.



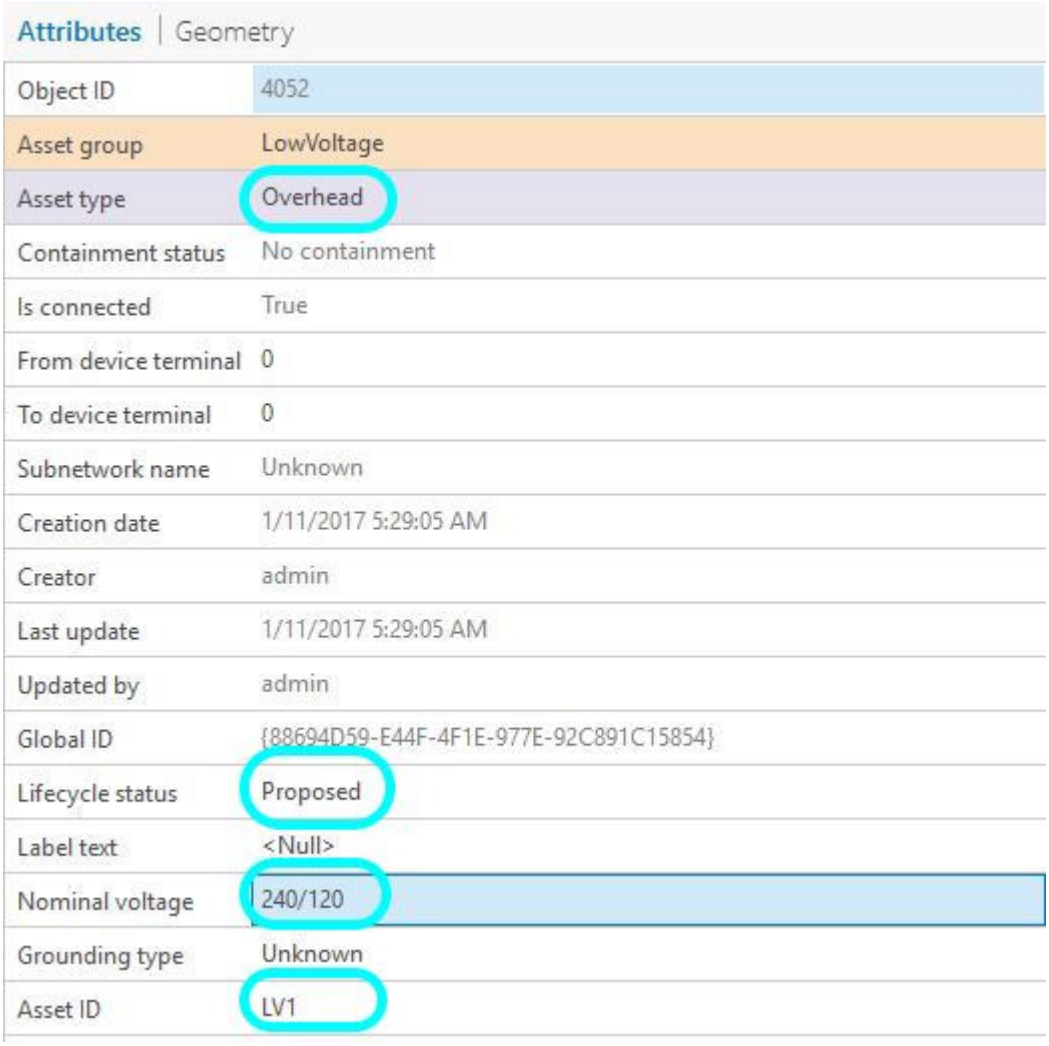


You will notice the dirty area appear to get a shade darker every time you make an update to an attribute. This is because another dirty area is created for each attribute modification. You can turn off the visibility of dirty areas by expanding the Utility Network layer and unchecking the Dirty Areas sublayer.

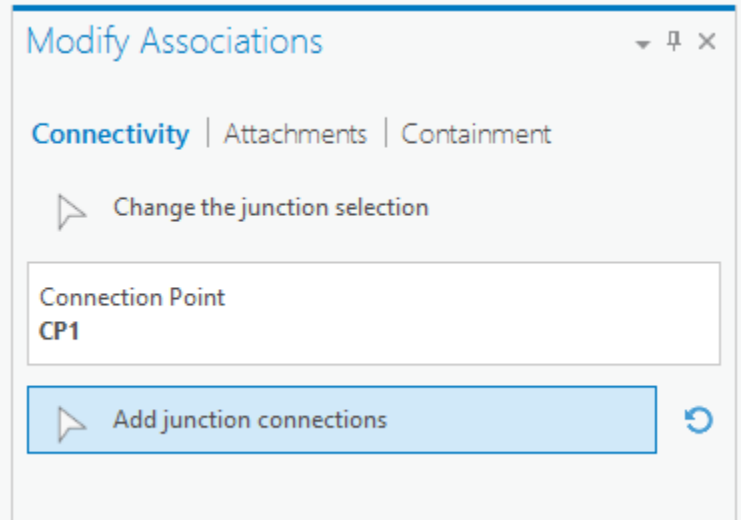
15. In the **Create Features** pane, select the **Low Voltage Overhead** template.
16. Create a low voltage overhead line between the connection point and service point you previously created.
    a. First, click on the **connection point**.
    b. Set your scale to be 1:500.
    c. Hold down the **C** button on your key board to temporarily activate the explore tool. Pan over until the service point is visible. Let go of the **C** button.
    d. Double click on the **service point** to finish creating the overhead line.



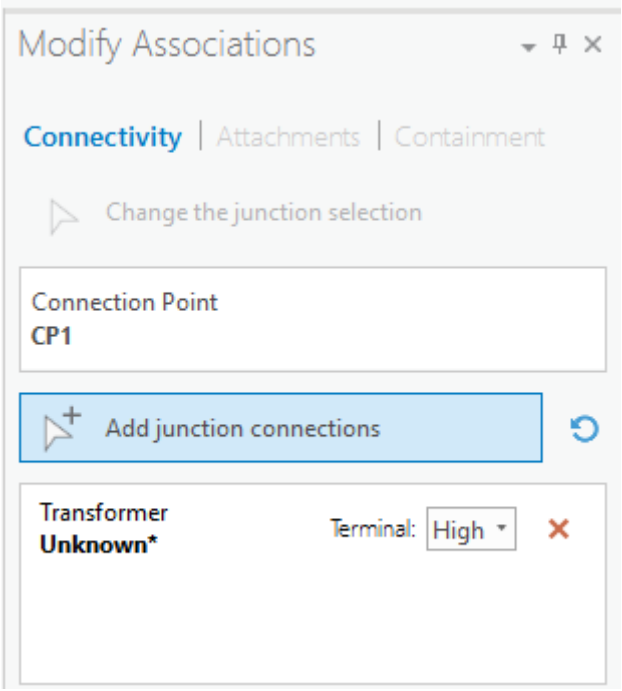
17. In the **Attributes** pane, populate the following attributes for the new line.



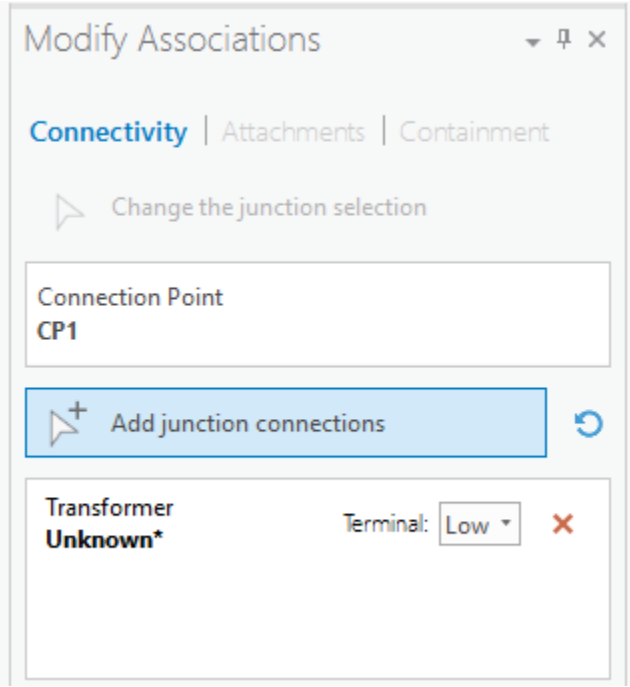
18. Since you are sketching a single-phase service drop, you will need to connect the connection point to the low side of one of three transformers in the transformer bank. Zoom back to the **transformer bank** (scale = 1:2).
19. In the **Contents** pane, click on the **Utility Network** layer to activate the **Utility Network Ribbon** and tabs.
20. Create connectivity associations between the connection point and one of three transformers.
    a. On the **Data** tab, in the **Associations** group, click on **Modify**.
    b. In the **Modify Associations** pane, make sure you activate the **Connectivity** Tab.
    c. Click on the **Select a junction** tool to activate it and then click on the **Connection Point**.



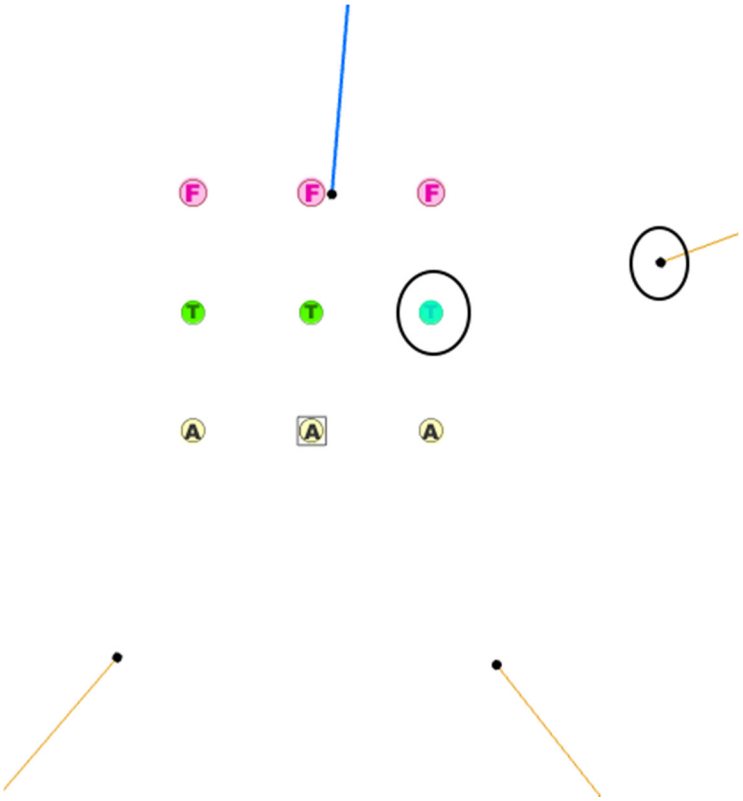
d. Click on the Add junction connections tool to activate it and then click one of the three transformers. You should it populated on your list.



e. Change the Terminal drop down to **Low** for the transformer.



f. Click Apply to save your changes.



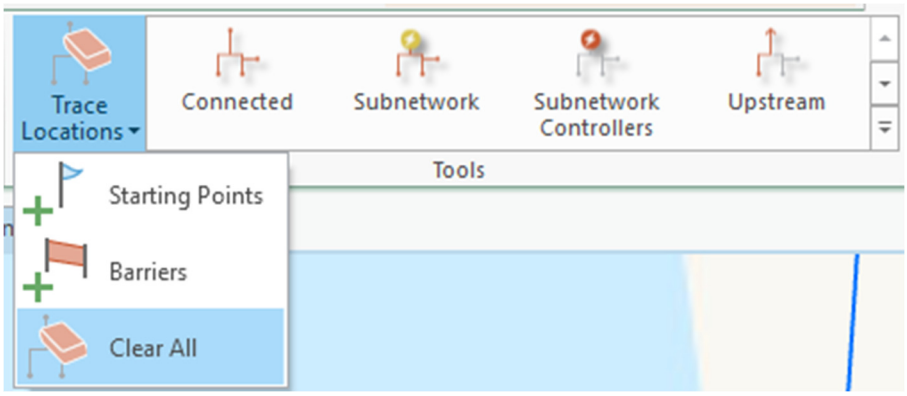
Hook the new service drop up to a circuit

Your new service drop has been sketched out. Now you will validate the network topology. With the new features reflected in the topology, appropriate traces will return those features in the results.

1. In the **Contents** pane, click on the **Utility Network** layer to activate the **Utility Network** ribbon.
2. On the **Data** tab, in the **Network Topology** group, click on **Validate** to validate the network topology and remove all dirty areas.

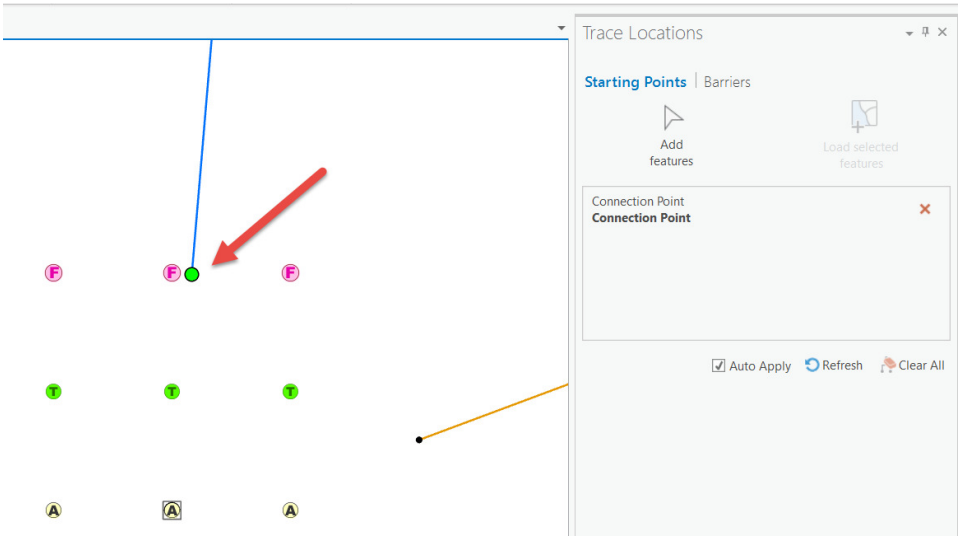
Verify your work with traces

First, you'll run a trace configured to return active and proposed features to ensure the new features are part of the topology and participate in a circuit.

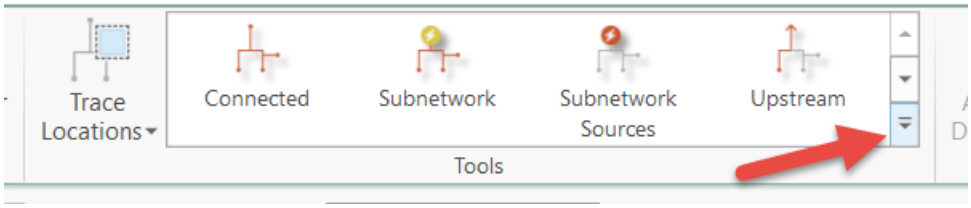
1. Click on Utility Network layer to display the Utility network tabs.
2. On the **Data** tab, in the **Tools** group, click on **Trace Locations** to activate the **Trace Locations** pane. If there are any existing trace locations in the list, click **Clear All** to remove them.
3. 

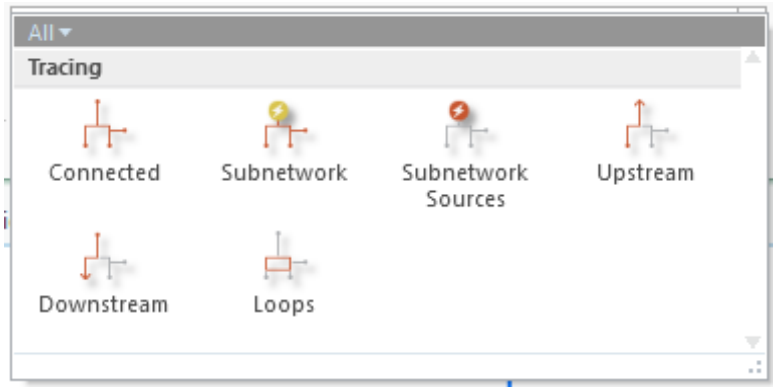
4. From the **Trace Locations** pane, click on **Starting Points** menu item.
5. Click on the **Connection point** (Asset ID = 13965) This will add it to the Starting Points list.

   NOTE: A green circular graphic is created to represent the starting point of the line.

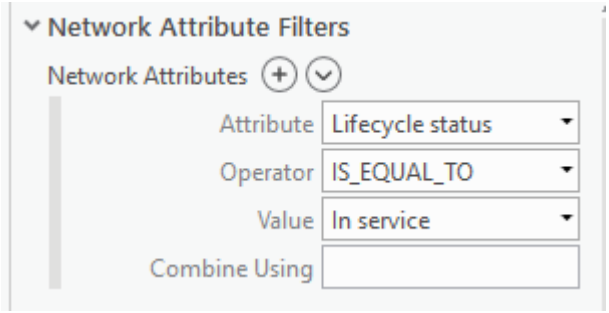


6. Running the trace with **In Service** lifecycle status only.
    a. On the **Data** tab, in the **Tools** gallery, click on **Downstream**.

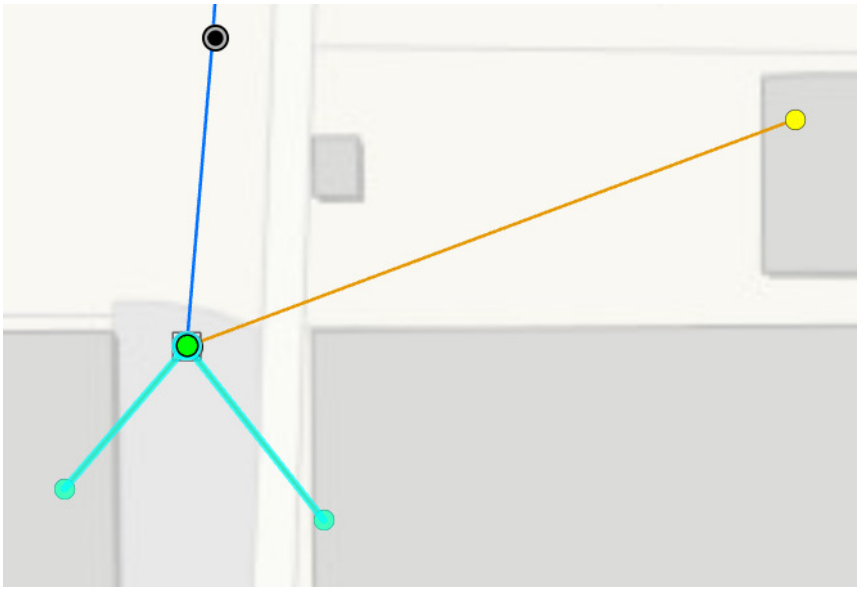




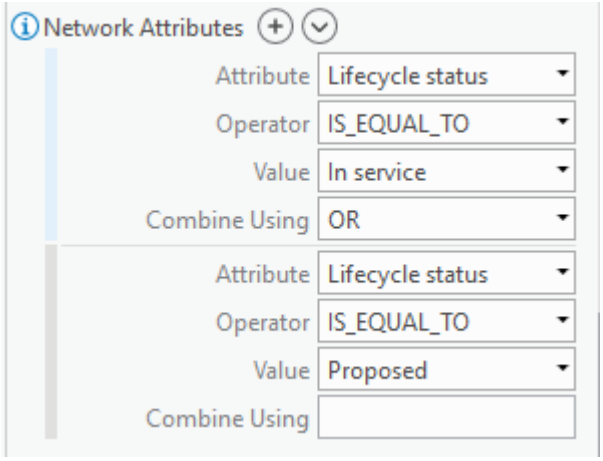
    b. Under **Domain Network** select **"Electric Distribution."**
    c. Under **Tier** select **"Medium Voltage."**
    d. Under Network Attribute Filters, in the Attribute drop down list, select **Lifecycle Status**, Operator **"IS EQUAL TO",** set the Value to **"In Service".**



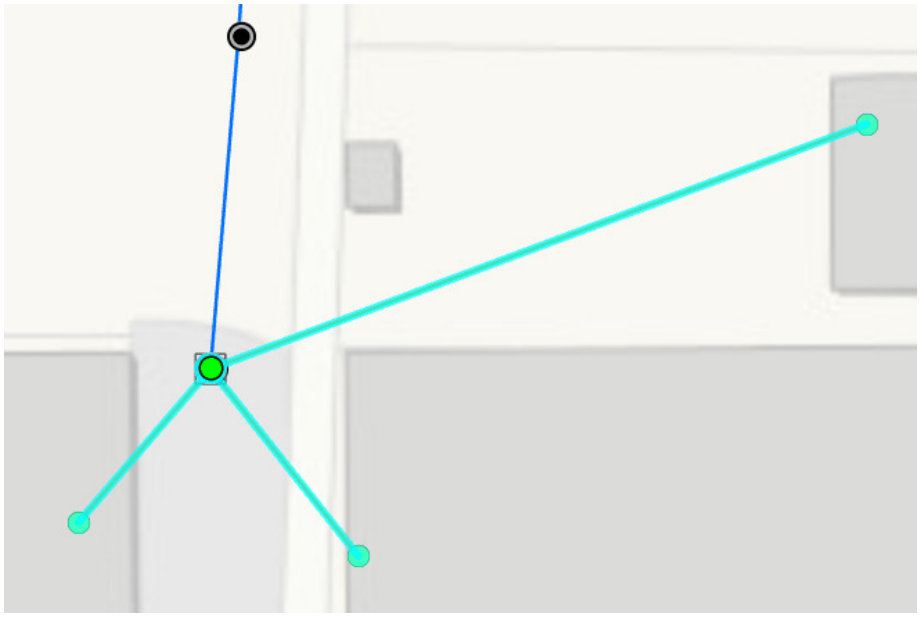
    e. Click on **Run**. You should see the following result. Notice that the service drop you sketched is not selected, this is because it does not satisfy the trace attributes.



7. Now run the trace with both **In Service** and **Proposed**.
    a. Add the following Network attribute filters, use the (+) Button to add a network filter.
    b. Lifecycle Status Is Equal to In Service
    c. OR Lifecycle Status Is Equal to Proposed. Note that the "Combine Using" operator only populates after the second network attribute has been added and values specified.



    d. Accept all the other parameters.
    e. Click on **Run**.



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