

# TransCAD Notes for: Dualizing Roadways & Making Interchanges



**What is this instruction for????** - You have begun to create your network by cleaning up the nodes and road links. As a part of this process of "cleaning the network", you have an Interstate or major roadway facility that has interchanges on it. How do you draw in the interchanges and make the roadway look like a control of access facility and assure that you have the proper connectivity and directionality on your network????

***This tip explains how to edit your network to make access controlled facilities!***



## Here's How:

**Step 1: Open up your network that has your linework you are cleaning** (or you can use this file: S:\TransCad\training files\pilot mtn\uncleaned network)

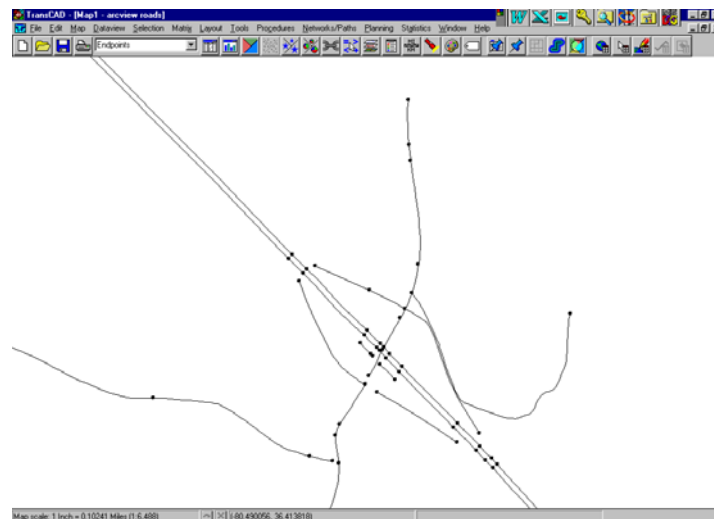
1) Turn on the endpoints layer

**How?** -With the Map Active go to Map Menu → Layers

\*Unhide the endpoints layer by highlighting it and clicking Show Layer.

\*Close the Dialog Box.

**Your uncleaned linework may look like this now:**



**Step 2: Merging Segments**

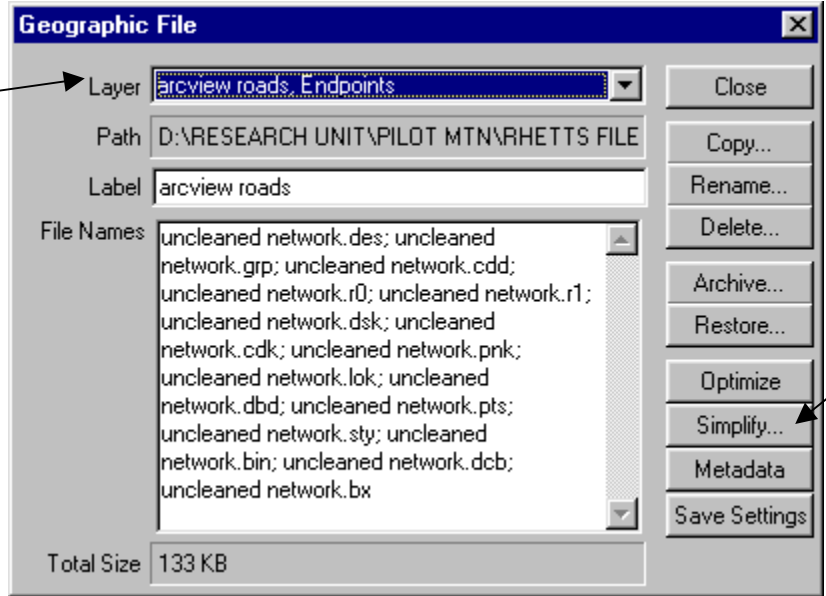
1) **Simplify your roadway network** (This step should ultimately be performed as soon as you bring in your network and begin to "clean it") not just when you are making a control of access facility

**HOW???** - Go to the

**Tools→Geographic Utilities→Geographic File menu**

*This window should appear! And then click the Simplify Button*

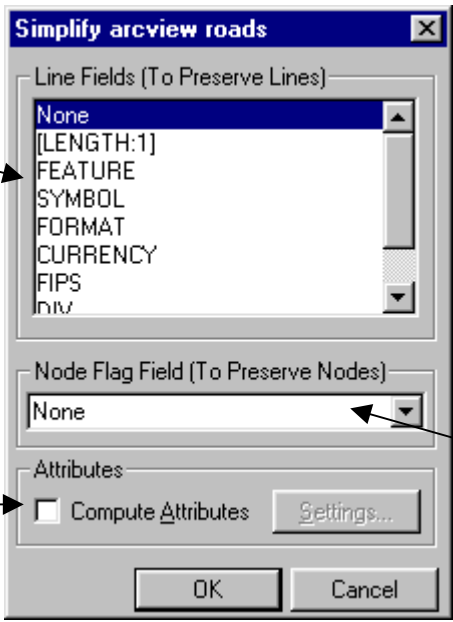
**Oh yeah.....  
Make sure you have  
the line layer listed  
first -then endpoints  
For some reason, it  
won't cooperate  
unless it looks like  
this???**



**Click Here**

2) Now you should have the Simplify screen

You should be selecting NONE - but if you highlight any of these fields then links will not be merged if values are different on the two links attempting to be merged!



Tells TransCad how to "interpret" the merging of the values-shouldn't be necessary at this time in the process

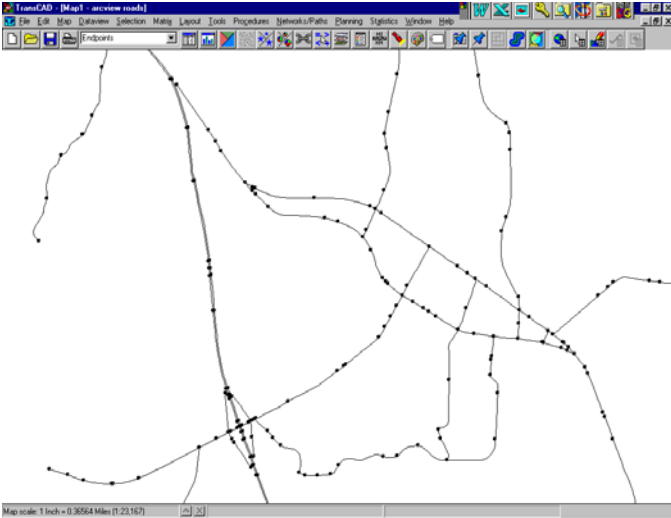
**Click OK & watch the network magically get cleaned for you!!!!**  
A lot of saved time and work just happened by the way!!

If there are certain nodes in the network you know you don't want merged then select the column you used to designate them

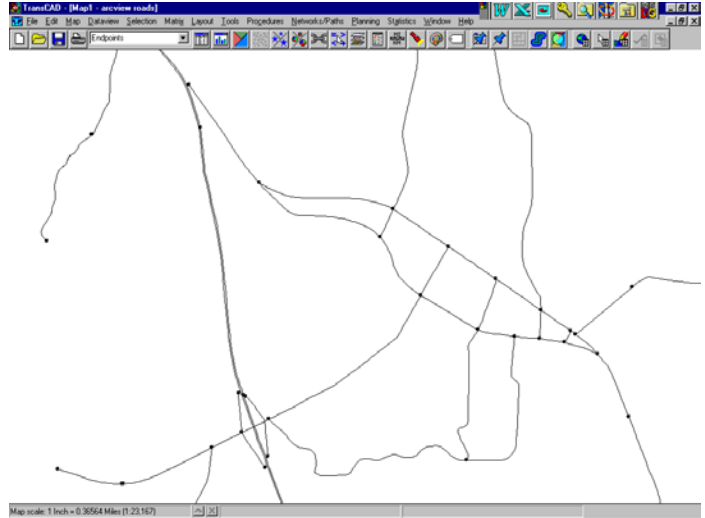


## Here's the magical Results

Network/Nodes BEFORE using Simplify



Network/Nodes After Simplifying

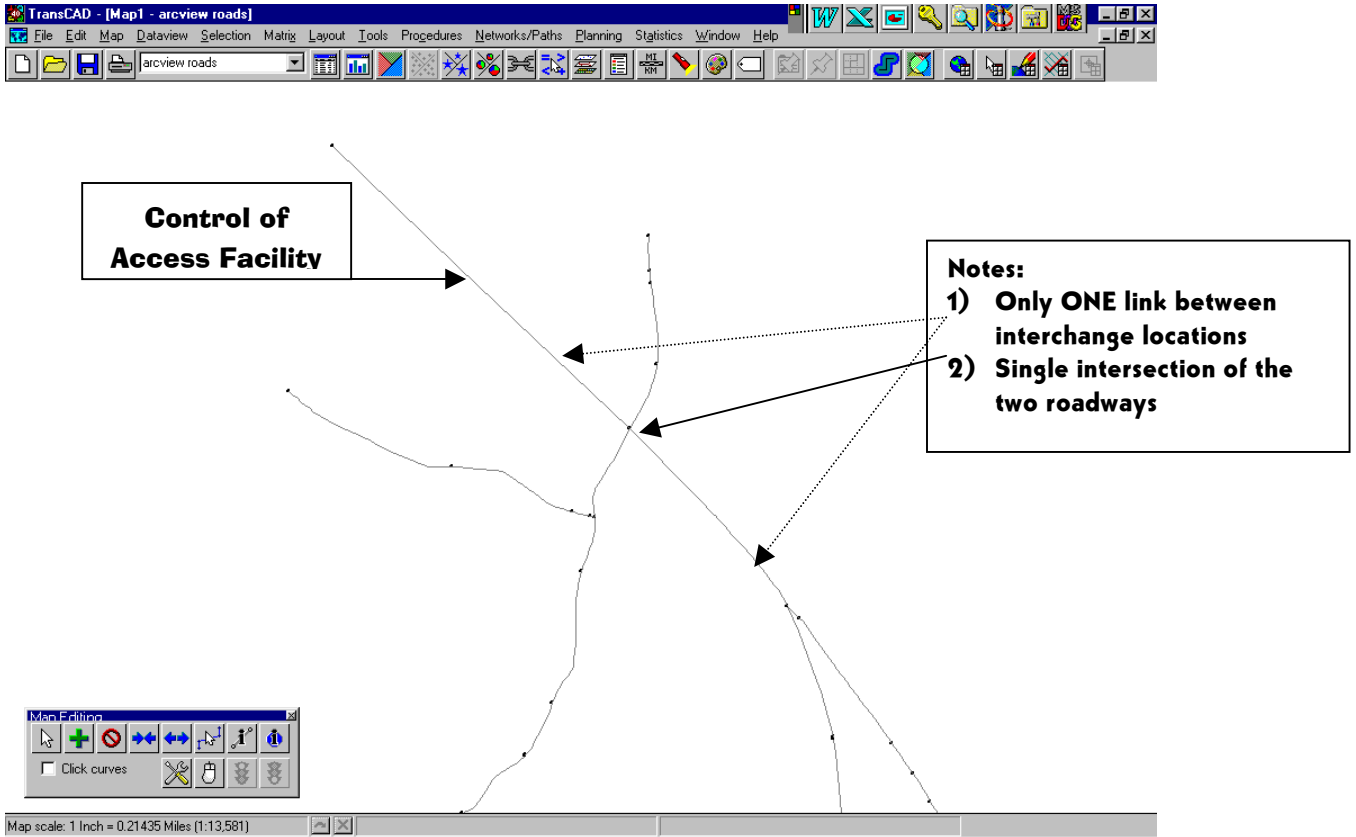


**Note to Self:** After using the simplify button check the connectivity of the network and continue with other editing (Step 3 below) to completely clean the line work

### Step 3: Edit the line layer

- 1) Make sure the line layer is the active layer.
- 2) Open the toolbox editor. Go to Tools → Map Editing → Toolbox
- 3) Make edits to the control of access facility in order to make it "useable"
  - Delete unnecessary links
  - Merge segments into one link for the controlled facility. **The control of access facility should only have one link between each interchange location.**
  - **Make ONE node for the intersection of the controlled facility with the crossing roadway**
    - The best way to ensure you have one intersection is to delete the lines where the roads cross and then connect them back at a central node (see picture on next page)
  - ONE INTERSECTION node is necessary for the interchange tool in Transcad to work properly
  - A brief "merge tutorial" is described on the next page

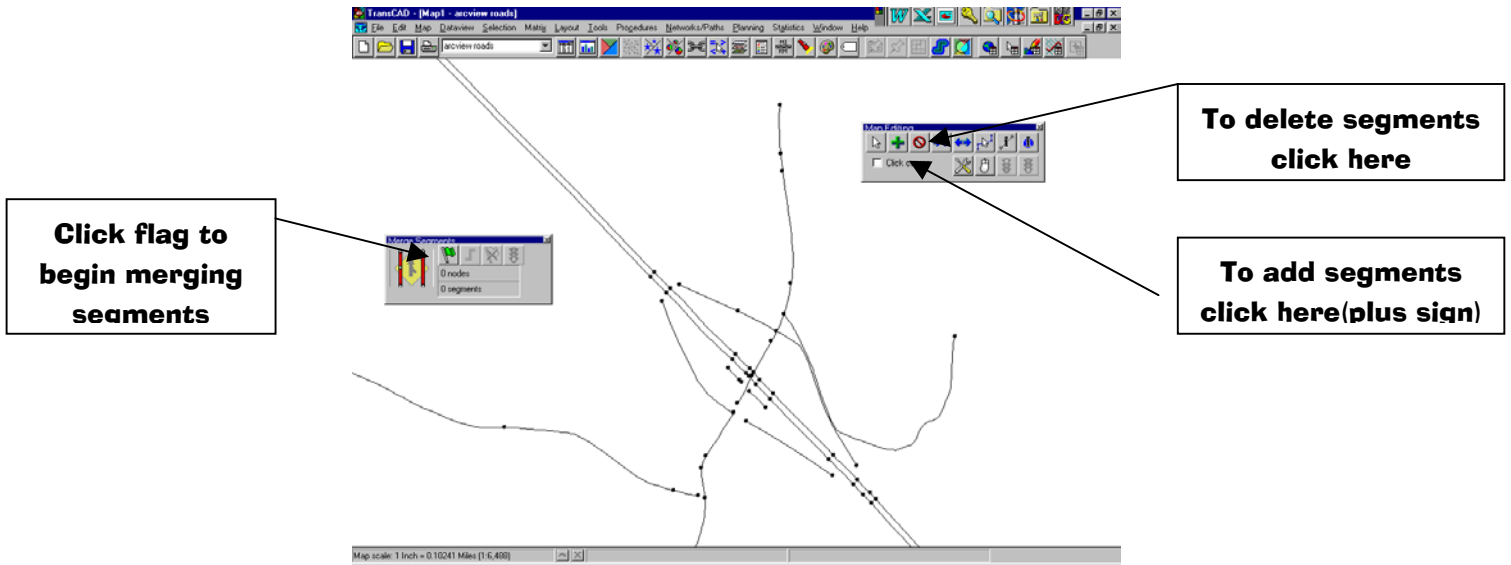
**Your network (well the part with the access controlled facility)  
should look similar to this after Step 2:**



## MERGE STEP

A quick how to on merging/editing segments on the roadway layer!

- 1. Make sure the line layer is the active layer.**
- 2. Turn on the editing toolbar and the merge segments toolbar**  
Go to Tools → Map Editing → Toolbox &  
Tools → Map Editing → Merge Segments
- 3. Making Edits to the Linework**  
→ To delete segments click the button that looks like a no symbol and click on all the links you want to delete. Once you have selected the links you must click on the green light to accept the changes. ( If you mess up then click the red light and your edits will be discarded)  
  
→ To add segments click the plus sign.



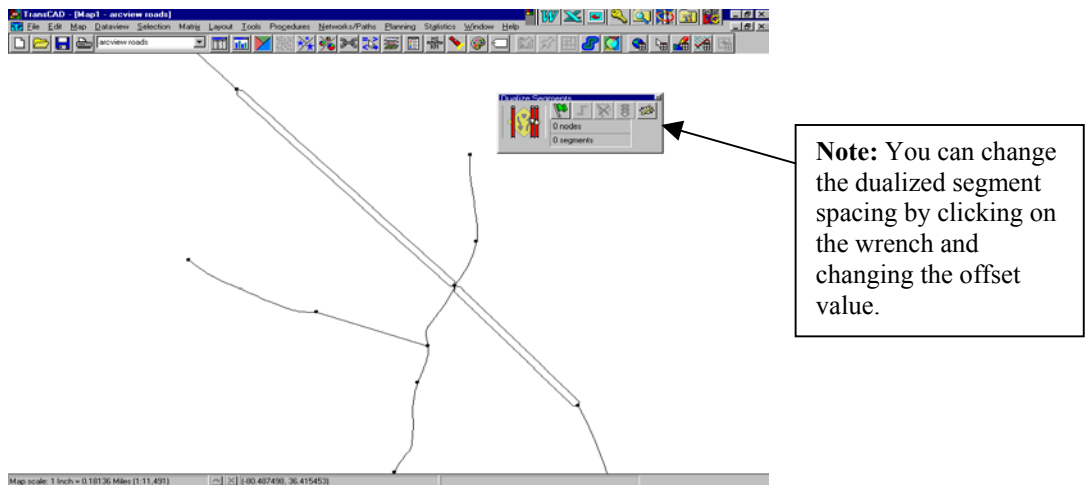
**4. To Merge Segments Click on the Flag**

- Click on the two endpoints of the entire length of segment you want to merge. There should now be two circles with X's in side at those two endpoints.
- Click on the find segments button (red line following the path) and then click the green light to complete the merge.
- Repeat this step until all of the segments are merged properly.

**5. Dualize the Segment**

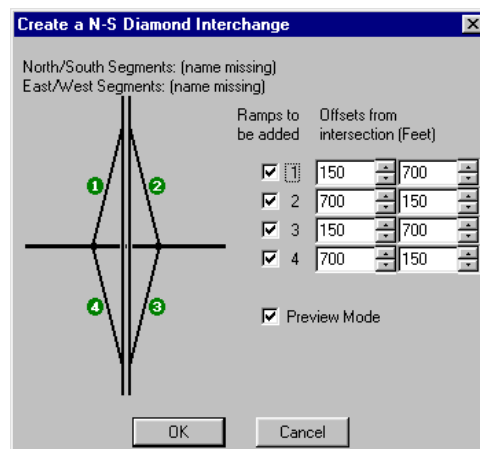
- Turn on the dualize segments toolbar
- Go to Tools → Map Editing → Dualize Segments
- Click on the flag button and click the two endpoints of the line you want to dualize. There should now be two circles with X's in side at those two endpoints.
- Click on the find segments button (red line following the path) and then click the green light to complete the dualizing.
- Repeat this step until all of the segments are dualized properly.

**It should look similar to this now!!**



## 6. Create the Interchanges

- Turn on the create interchange toolbar
- Go to Tools → Map Editing → Create Interchange
- Select the type of interchange you would like created by clicking on that button
- Click on the intersection node of the two roadways
- If you need to change the offset of the interchange ramps do so on the popup window or if you need to leave off a ramp make sure you click the appropriate location.
- When your options are chosen click on OK and the interchange will be created on your roadway linework.
- Continue to create the necessary interchanges to complete your roadway linework.



**Change offsets here or leave off ramps on your interchange**

**TIP: You might want to have your GIS linework underneath (in another color) to match the interchange types/looks. Once you click yes there isn't a way to "edit" the ramp locations and designs.....keep that in mind!**

**Congratulations you have just made it through this section!! Great job!!**

Happy TransCadding!!!!

