

Carlson 2008 - Road Network Overview

1. Create existing ground surface and save TIN file - For more details, refer to *That CAD Girl* document [Carlson 2008 - Creating Surfaces](#)
 - a. Surface> Triangulate & Contour
 - b. On Triangulate tab, select "Write Triangulation File" button and specify filename for new TIN (.tin) file
 - c. On Selection tab, select types of entities to use for surface
2. Draw polylines to represent centerlines of streets
 - a. Do not draw right of way or cul de sacs
 - b. If also using centerlines for laying out a Lot Network, all centerlines intersecting the outer boundary MUST be perpendicular to the boundary.
 3. Create centerline (.cl) file for each centerline - For more details, refer to *That CAD Girl* document [Carlson 2008 - Create Centerline Files and Create Station Labels](#)
 - a. Centerline> Polyline to Centerline File
 - b. On the New tab, select a folder and specify a file name for new centerline (.cl) file
 - c. Set starting station
 - d. Select polyline
4. Station centerline
 - a. Centerline> Station Polyline/Centerline
 - b. Enter desired settings
 - c. Select .cl file
5. If centerlines are accidentally defined in the wrong direction, you will need to reverse their direction
 - a. Go to Centerline> Input-Edit Centerline File
 - b. Select the "Load" button
 - c. Browse to and select the centerline file (.cl) to be reversed
 - d. Click on the "Reverse" button
 - e. Click on "Save" and then "Exit"
 - f. The polyline in the drawing that represents the centerline file AND the stationing should be automatically updated to reflect the change in direction
6. Repeat for all centerlines
7. Start Road Net
 - a. Roads> Road Network
 - b. On the New tab, select a folder and specify a file name for new Road Network (.rtn) file
8. Establish Road Network settings
 - a. In Road Net palette, click on "Settings" button
 - b. On Process Options tab, set Existing Surface by picking the button and then browsing to the saved TIN file.
 - c. On Output Options tab, set Triangulate and Contour settings
9. Add centerline files to Road Network
 - a. In Road Name section of Road Net palette, pick the "Add" button
 - b. Select "Centerline File" button
 - c. Select the file for the primary road in the network
 - d. Create proposed profile file
 - i. Once selected, you'll be prompted to create a new Profile file for the centerline. On the New tab, select a folder and specify a file name for new Profile (.pro) file
 - ii. Add PVIs and vertical curves to profile
 - iii. Note that vertical yellow lines represent intersecting streets
 - iv. Click on Save and then Exit

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10. Create proposed template file - For more details, refer to *That CAD Girl* document [Carlson 2008 - Creating Roadway Templates](#)
 - a. In the "Edit Road" dialog, click on "Template" to create a new template. On New tab, select a folder and specify a file name for the new Template (.tpl) file
 - b. Add template components such as Grade, Subgrade, Curb and Cut/Fill slopes
 - c. Click on Save and then Exit
11. Repeat for remaining roads
12. Add cul de sacs
 - a. In the Cul de Sac section of the Road Net palette, pick the "Add" button
 - b. Select the road to add the cul de sac to
 - c. Pick the radio button next to Start or End to set the location
 - d. Set the radius of the cul de sac and fillet radius
 - e. Specify an offset if needed
13. Repeat for all cul de sacs
14. On Road Net palette, click Save
15. On Road Net palette, click Process
16. Fine grade intersection
 - a. In the Intersections section of the Road Net palette, select the intersection to be revised
 - b. Click on the "Edit Intersection" button
 - c. Click on one of the other tabs to fine grade each corner of the intersection
 - d. Change radii at intersection if desired
 - e. Click on "Edit Profile" button to fine grade the edge of pavement of the corner
 - f. Click on OK to close
 - g. On Road Net palette, click Save
 - h. On Road Net palette, click Process
17. Fine grade cul de sac
 - a. In the cul de sac section of the Road Net palette, select the cul de sac to be revised
 - b. Click on the "Edit" button
 - c. Change the radii of the cul de sac if desired
 - d. Click on "Edit Profile" button to fine grade the edge of pavement of the cul de sac
 - e. On Road Net palette, click Save
 - f. On Road Net palette, click Process