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## Chapter 5: Digital Terrain Model (DTM)

### Overview

The DTM tools within Geopak offer many different applications and tools dealing with surface models. Geopak's surface models are in a Triangulated Irregular Network or (.tin) format. An existing ground model or (.tin) will be the base with which to create existing profiles, existing cross-sections, generate earthwork, etc. Proper creation is imperative for the success of each of these procedures. This chapter will explain the process for extracting graphics from a DGN file containing 3D elements that represent existing ground.

### Extracting Graphics

There will be occasions when a .tin file will need to be created from a 3D drawing. This can be done using the Extract Graphics command. The following paragraphs and workflows will describe the steps in creating and checking a tin.

This is a two-step process. The first step is to create a **.dat** file; the second step will use the **.dat** file to create the **.tin**. **Workflow 1** will describe these two processes.

### Workflow 1: DTM - Extracting Graphics

To access this workflow, follow this link:

[http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow\\_5.1\\_v8i.pdf](http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow_5.1_v8i.pdf)

### Checking TIN

Once the tin is created, it is important to make sure no elements with zero elevations or no busts in the survey have been included in it. First, check the triangle statistics to verify that the elevation range is realistic. Then draw the contours to make sure they look reasonable. The following workflow will guide the user through these steps.

### Workflow 2: DTM - Checking the .tin

To access this workflow, follow this link:

[http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow\\_5.2\\_v8i.pdf](http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow_5.2_v8i.pdf)