

# 2012 Civil 3D Google Earth Surface Analysis

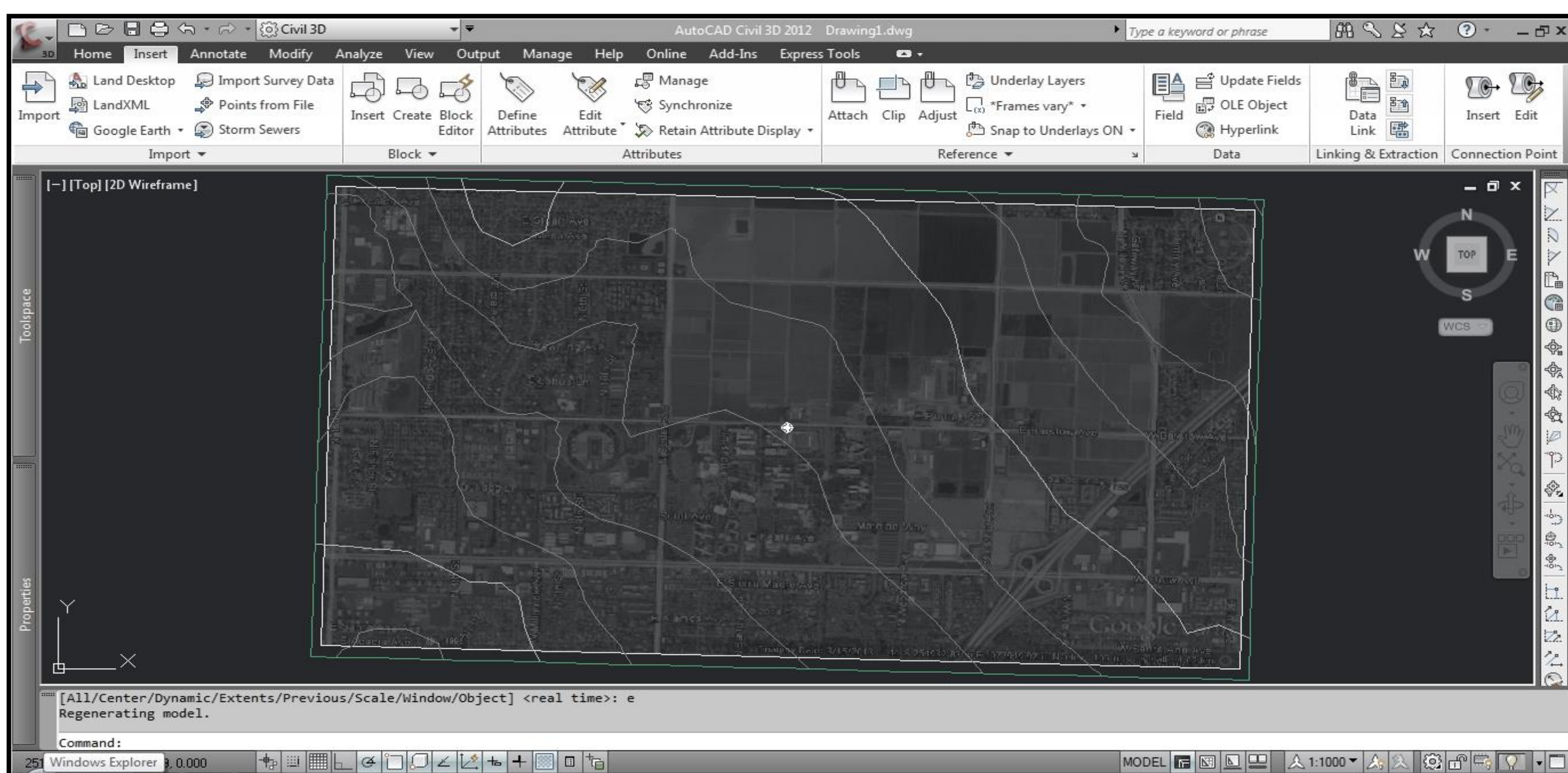
Geomatics Engineering

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### Abstract

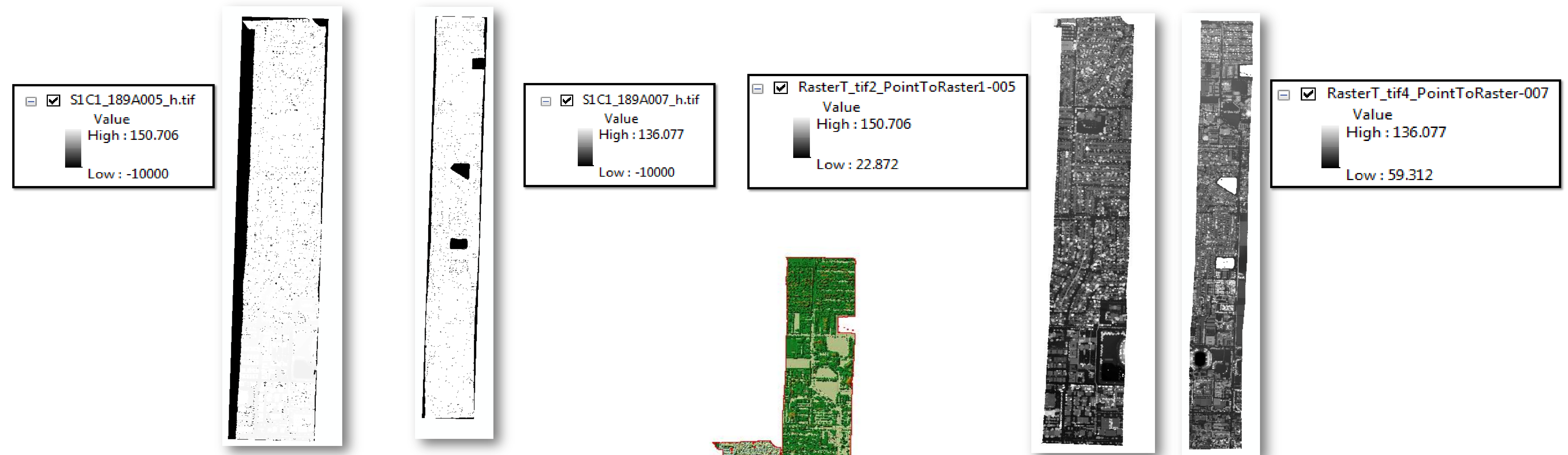
The purpose of this project is to determine the quality of the three-dimensional surface generated in 2012 Civil 3D. This surface originates from Google Earth Imagery, which is then used to create a surface model. In order to evaluate the quality of the surface, a comparative analysis needed to be conducted. To complete this task, data specific to Fresno State was evaluated. The data sets consisted of GeoTiffs created from Lidar, point data from survey monuments, and a surface generated in 2012 Civil 3D. By using this data, the quality of the Google surface could be evaluated.

### Google Earth Surface



The images above depict the process to create a Google Earth surface in 2012 Civil 3D. The first figure shows the view in Google Earth. It had to be oriented with in plan view, in order to properly represent the area when creating a surface. The second image shows the surface created in 2012 Civil 3D.

### GeoTiff to Triangulated Irregular Network (TIN)



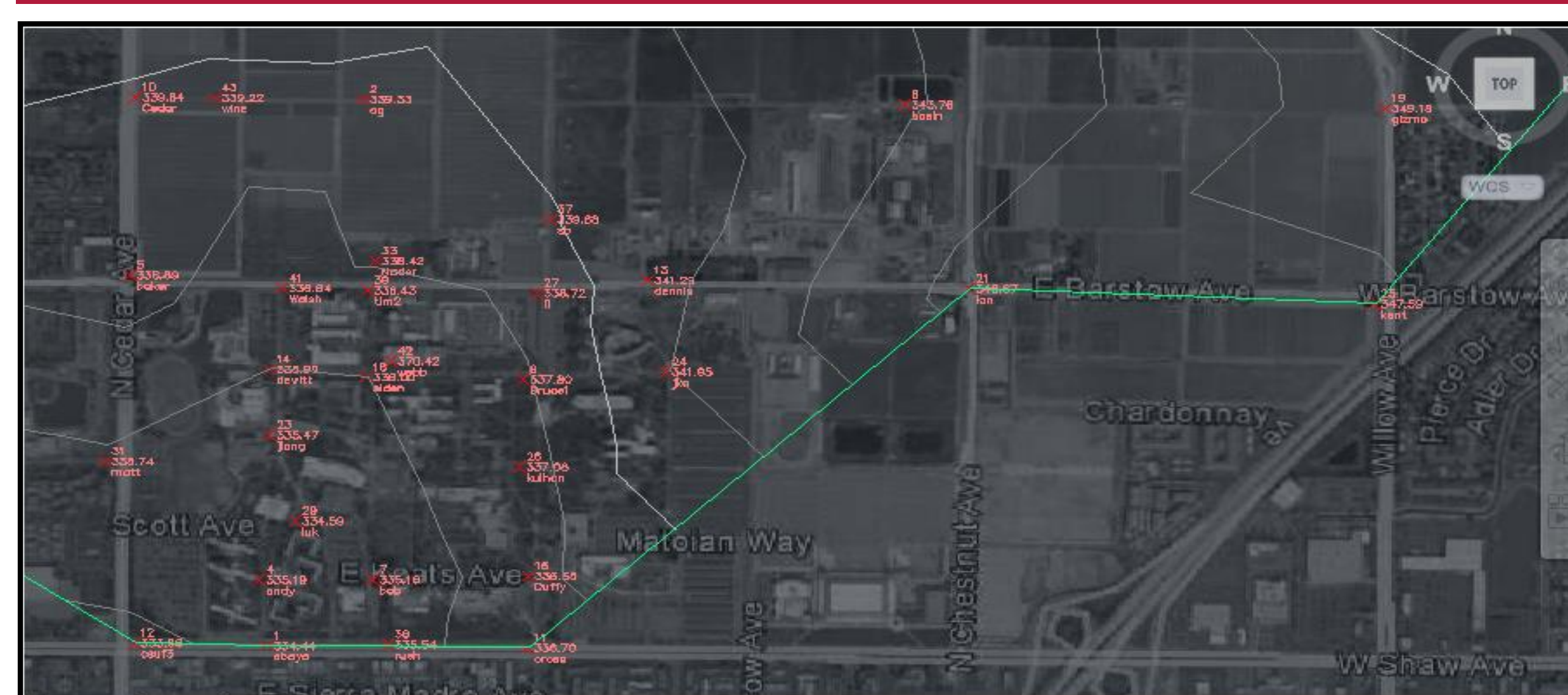
The images above represent the GeoTiff data being used for the analysis. The areas with black represent the "NULL" values, which were set to be -10000. In order to properly compare the data, these values had to be removed.

In the figure above, the points were edited in order to remove the "NULL" values. The "Raster to Point" command converted the points back to raster. By creating a raster, it allowed for the data to be converted into a TIN.



The figure above depicts the TIN surface created in ArcGIS. This data does not include "Null" values, allowing for a quality analysis to be done.

### Fresno State Survey Points



Shown on the left, is a surface created using survey point data. As seen, the points cover a majority of the Fresno State Campus, which provides extra data to compare with the Google Earth surface.