

# Dewberry Response to USGS Review of the Texas West Central Project Block 12 LiDAR Project

Produced for U.S. Geological Survey

USGS Contract: G10PC00020

Task Order:140G0218F0072

Report Date: 08/09/2019

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## Executive Summary

The primary purpose of this project was to develop a consistent and accurate surface elevation dataset derived from high-accuracy Light Detection and Ranging (LiDAR) technology for the USGS Texas West Central Block 12 LiDAR Project Area.

The LiDAR data were processed to bare-earth digital terrain models (DTM). Detailed breaklines and bare-earth digital elevation Models (DEMs) were produced for the project area.

Deliverables for this project included raw point cloud data, classified point cloud data, bare earth hydro-flattened digital elevation models, intensity images, breaklines, control points, metadata, project report, and project extent shapefiles.

The USGS' review of these deliverables resulted in one divot call, one data void call, six calls for missing waterbodies, one call for a missing island, and a call for one manmade structure not removed.

## PROJECT AREA

Data was formatted according to tiles with each tile covering an area of 1500m by 1500m. A total of 3969 tiles were produced for the project encompassing an area of approximately 3277 sq. miles.

### Texas West Central Block 12

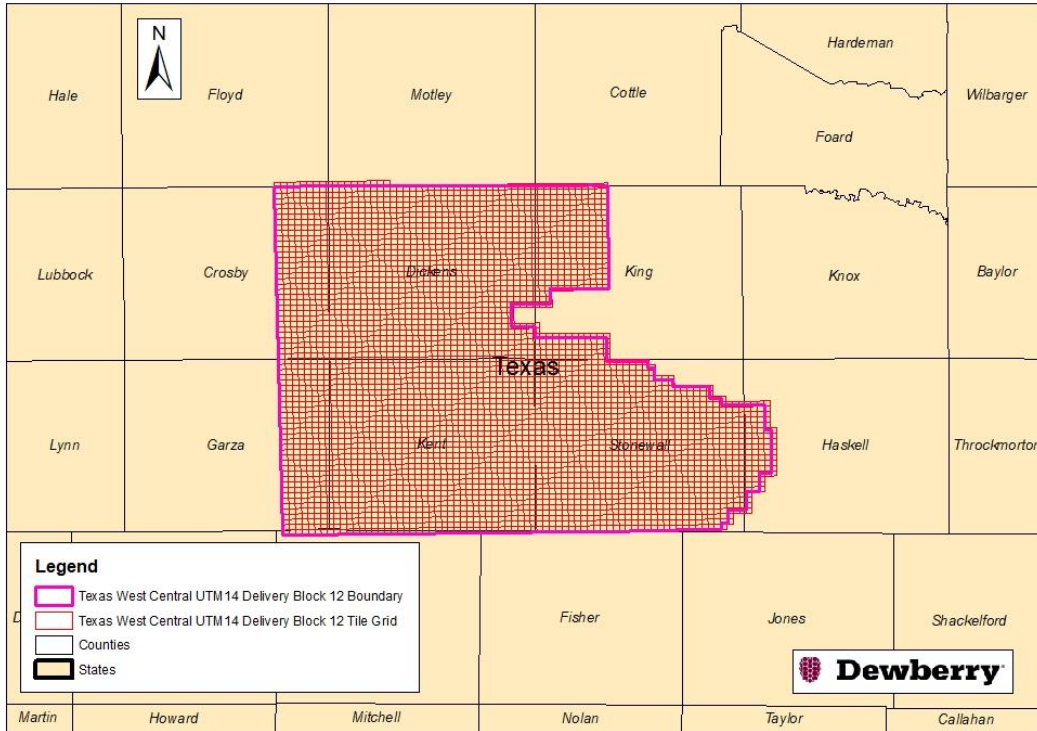


Figure 1 – Project map.

## DIVOT

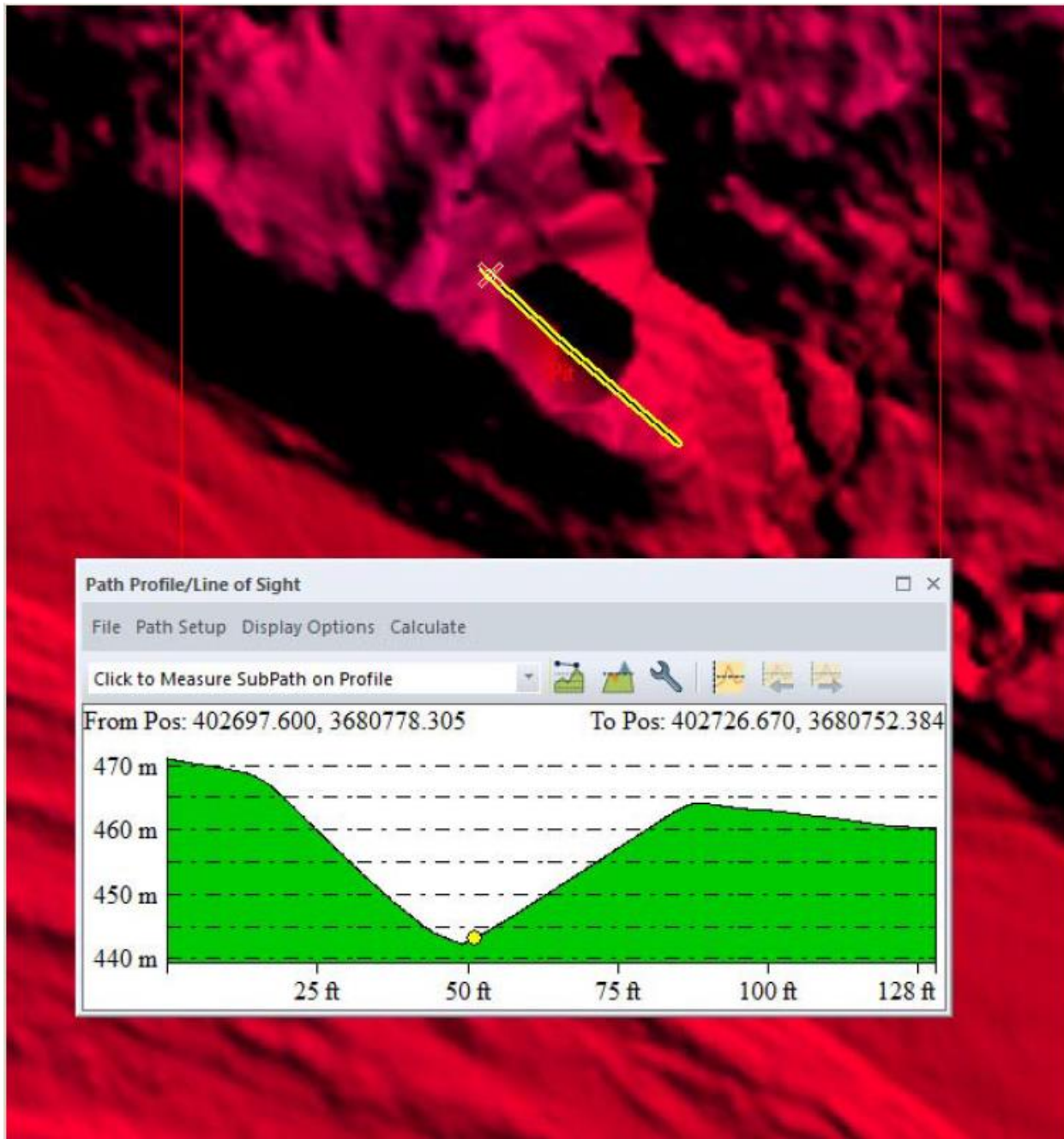


Figure 2 – Tile 14SMB020795 – USGS screenshot.

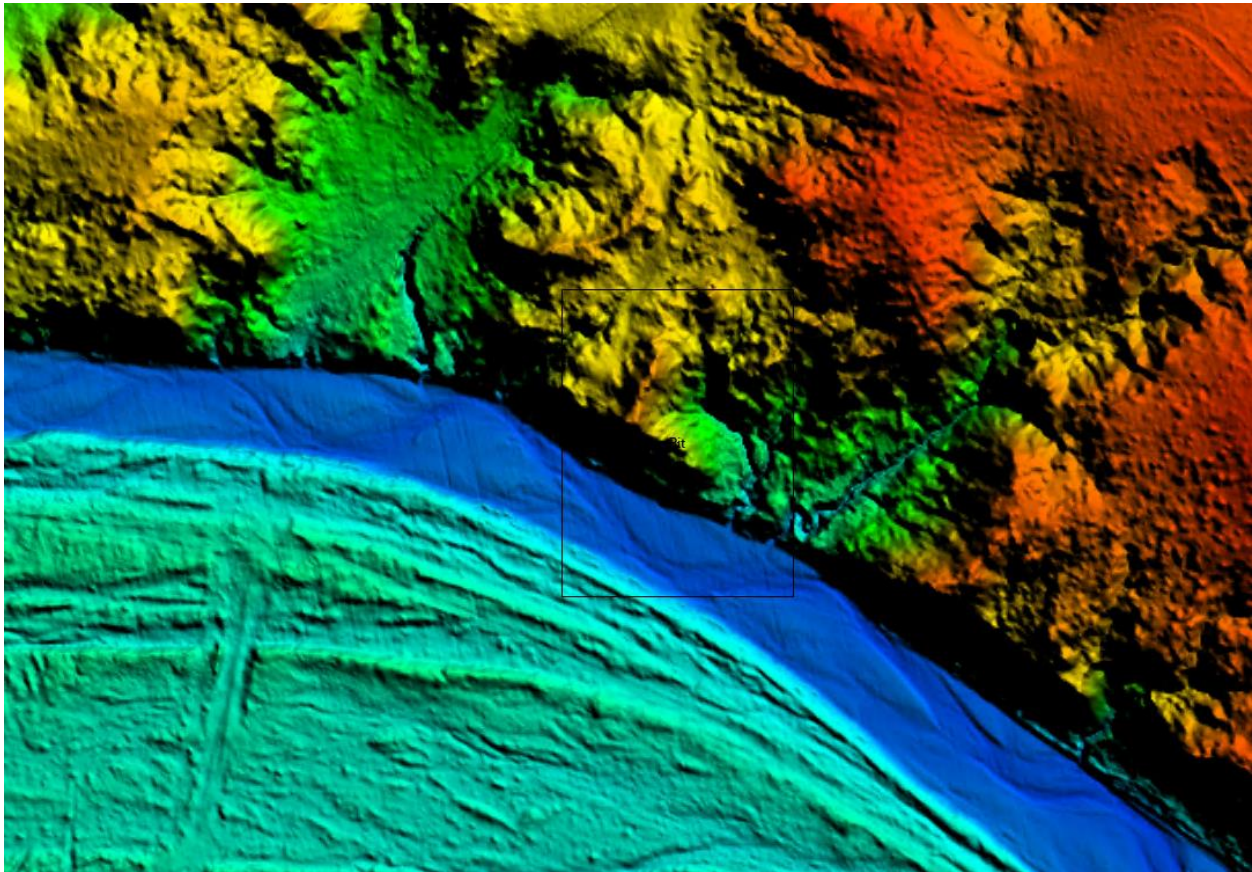


Figure 3 – Tile 14SMB020795 – Dewberry has removed the divots and added ground points back.

### **DATA VOID**

USGS made one data void call where data was missing in Tile 14SLB705510. Dewberry reviewed the tile and added ground where necessary.

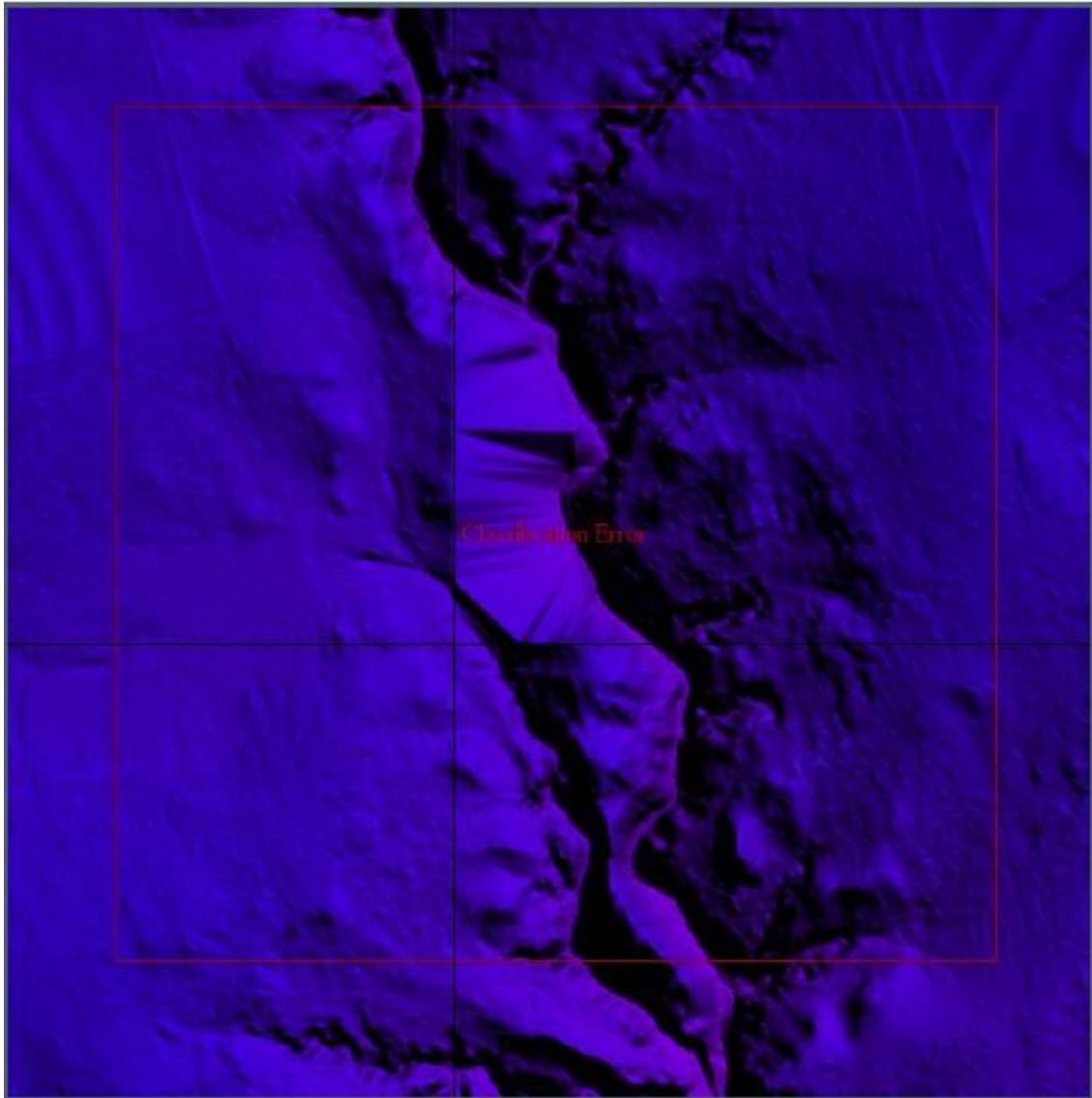


Figure 4 – Tile 14SLB705510 – USGS screenshot.

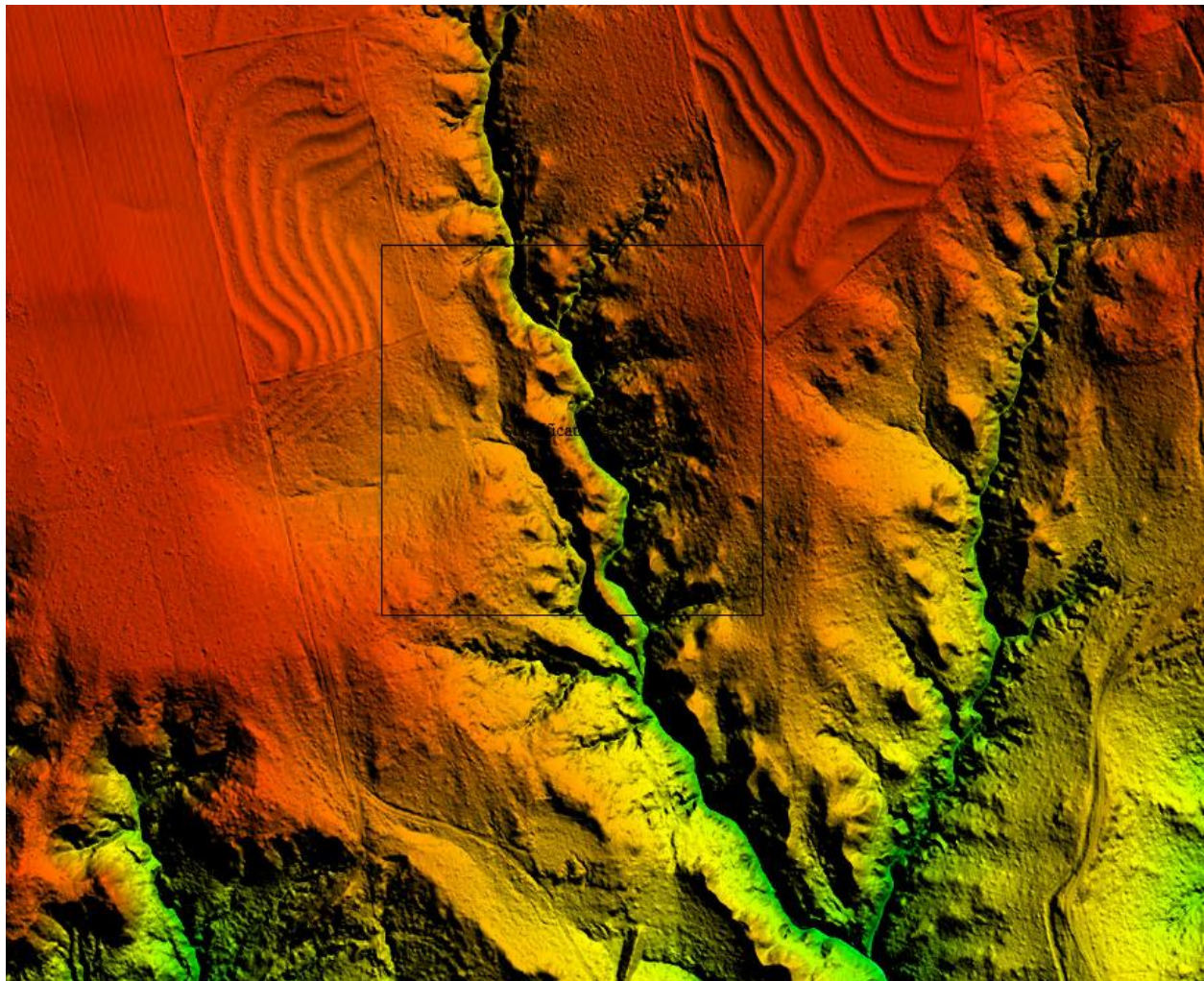


Figure 5 – Tile 14SLB705510 – Screenshot showing points have been added back to ground and the DEM has been recreated.

### **MISSING BREAKLINES**

USGS identified seven areas where breaklines needed to be added and hydro flattened in the DEMs, including 6 waterbody features and one island feature. Dewberry added 5 of the waterbody features along with the island feature and hydro flattened the DEMs; however, one waterbody feature was not added as the feature was determined to be dry at the time of collection.

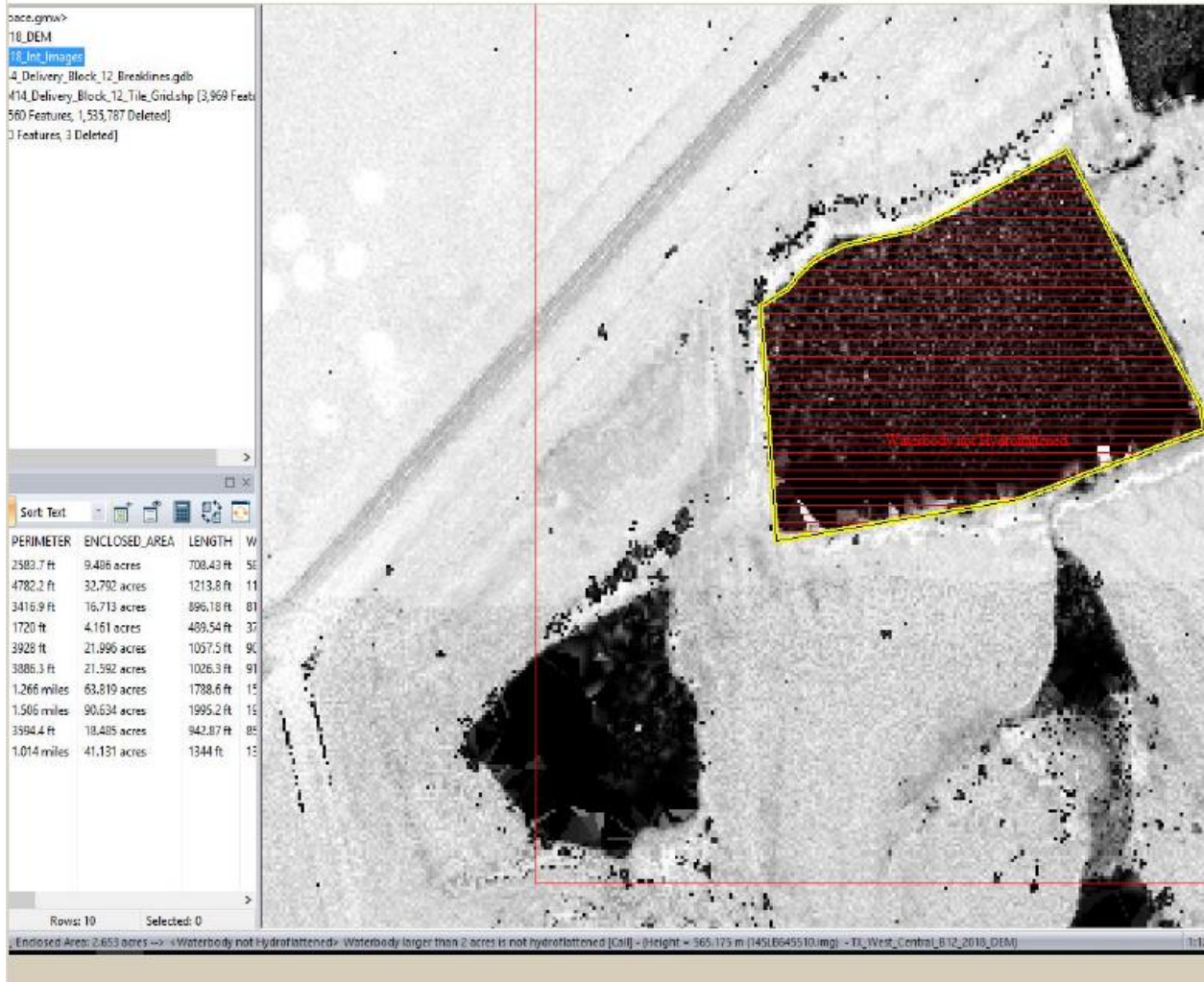
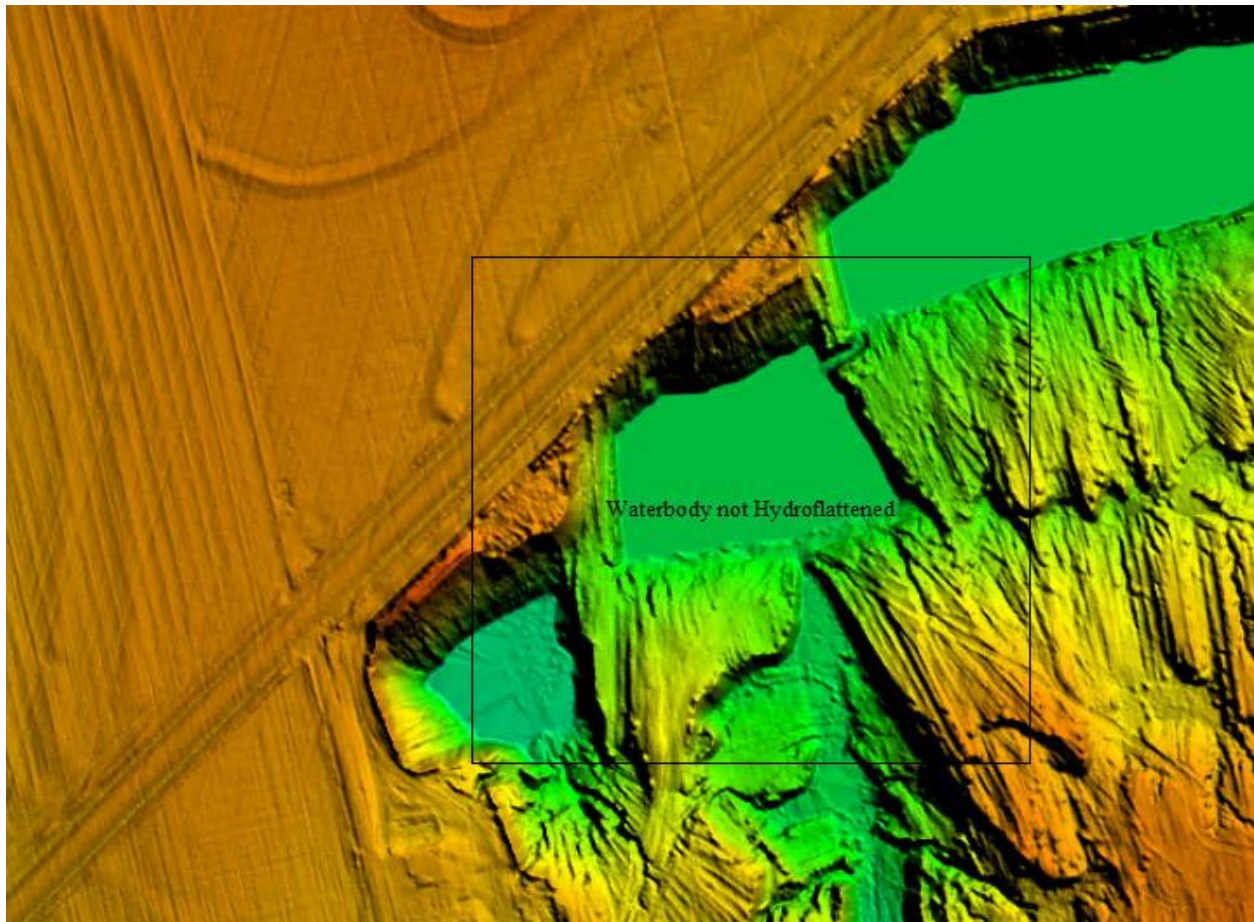


Figure 6 - Tile 14SLB645510 – USGS screenshot.





**Figure 7 - Tile 14SLB645510 – Screenshot showing waterbody has been added and the DEM had been hydro flattened.**

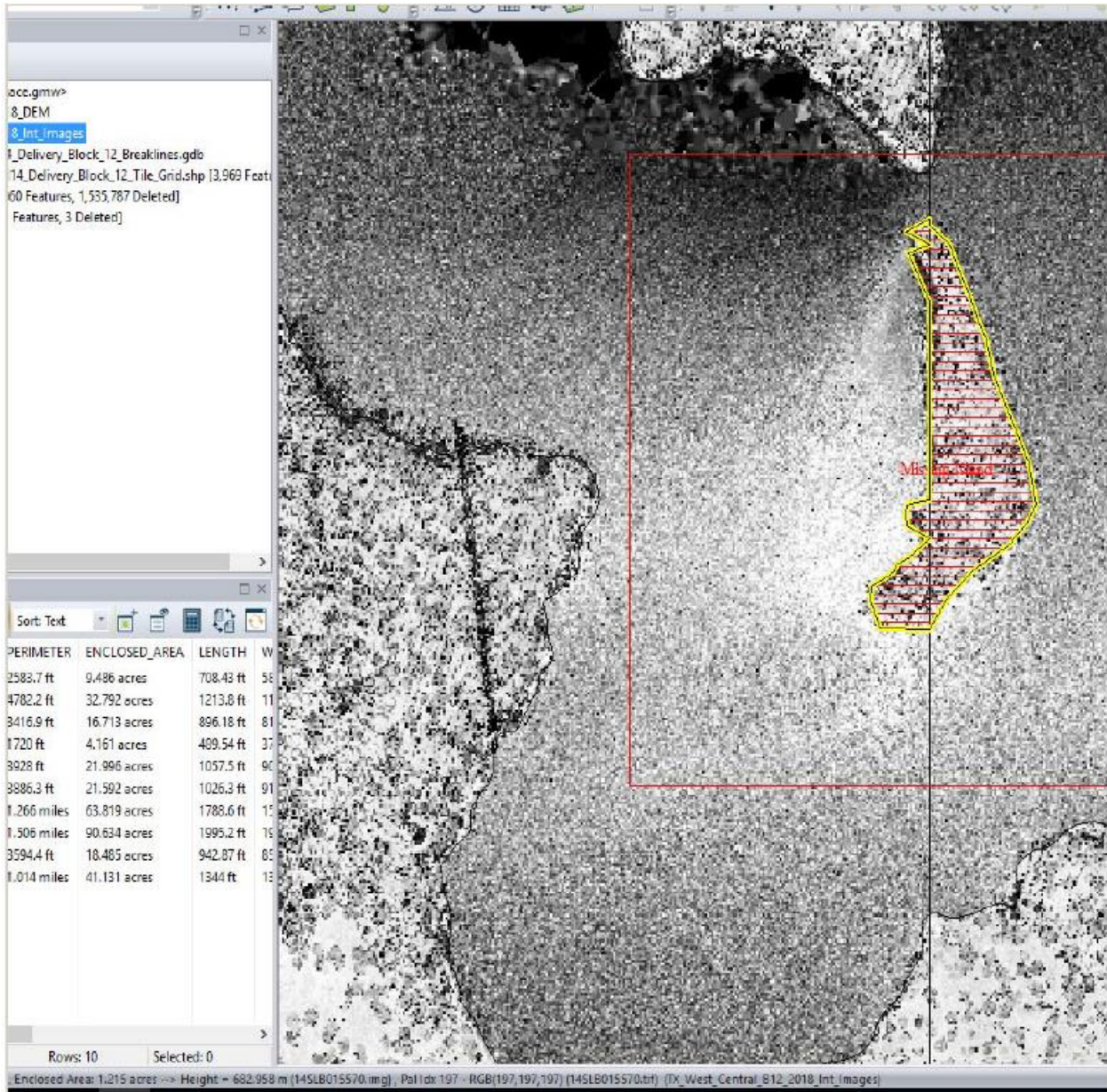
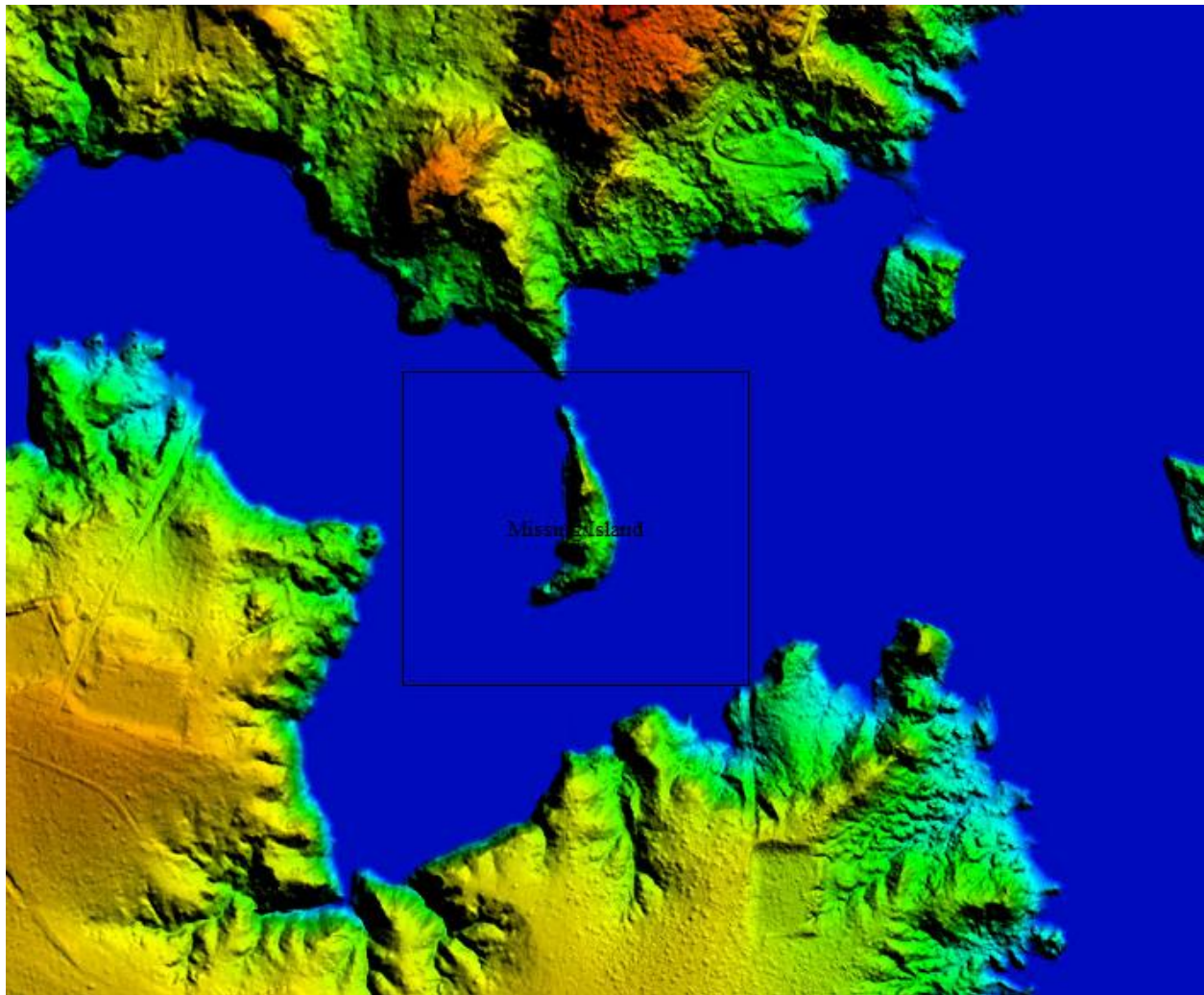


Figure 8 – Tiles 14SLB015570 and 14SLB030570 – USGS screenshot.



**Figure 9 – Tiles 14SLB015570 and 14SLB030570 – Screenshot showing island feature has been added back to ground surface and the DEM has been corrected.**

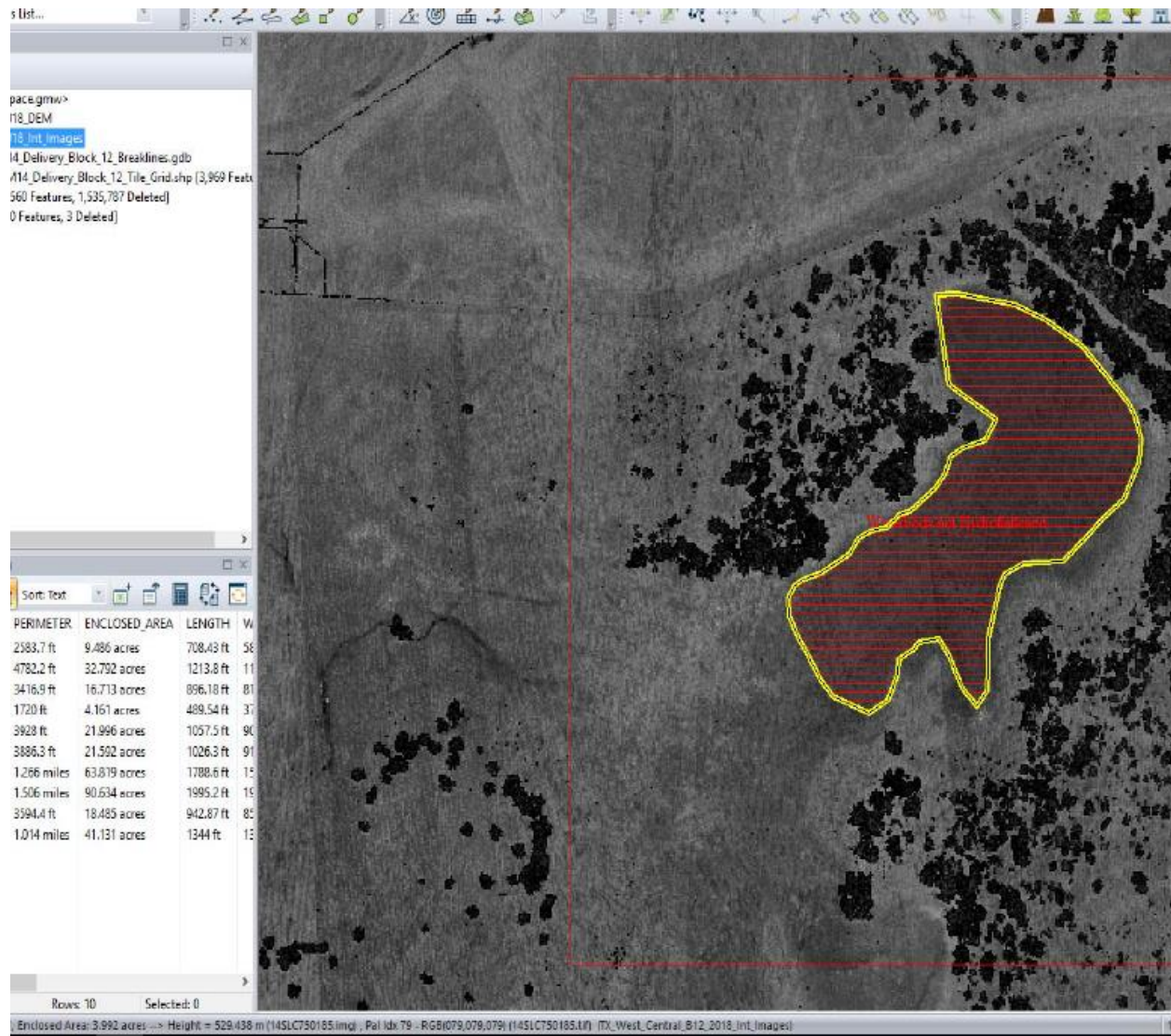


Figure 10 – Tile 14SLC750185 – USGS screenshot.



Figure 11 - Tile 14SLC750185 – Screenshot of intensity imagery shows waterbody is dry at the time of collection.

### **DEM REVIEW**

USGS made one call to remove a manmade structure. Dewberry reviewed the tile and removed the structure.

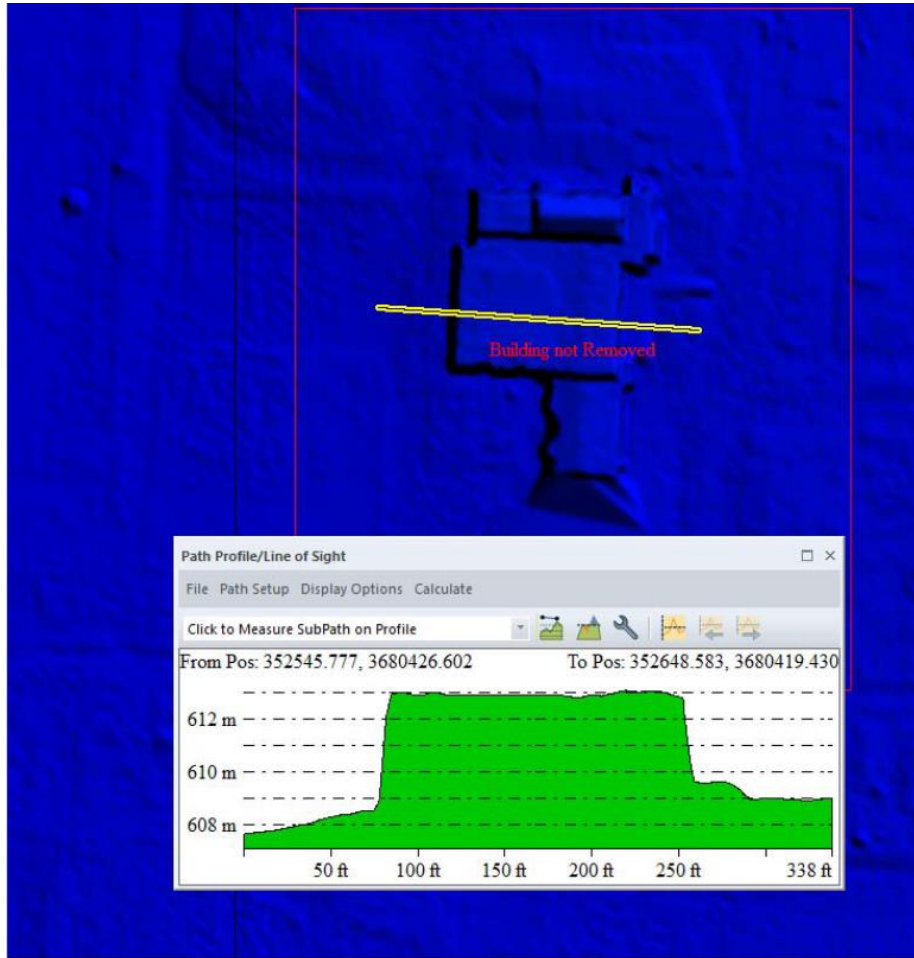


Figure 12 – Tile 14SLB525795 – USGS screenshot.

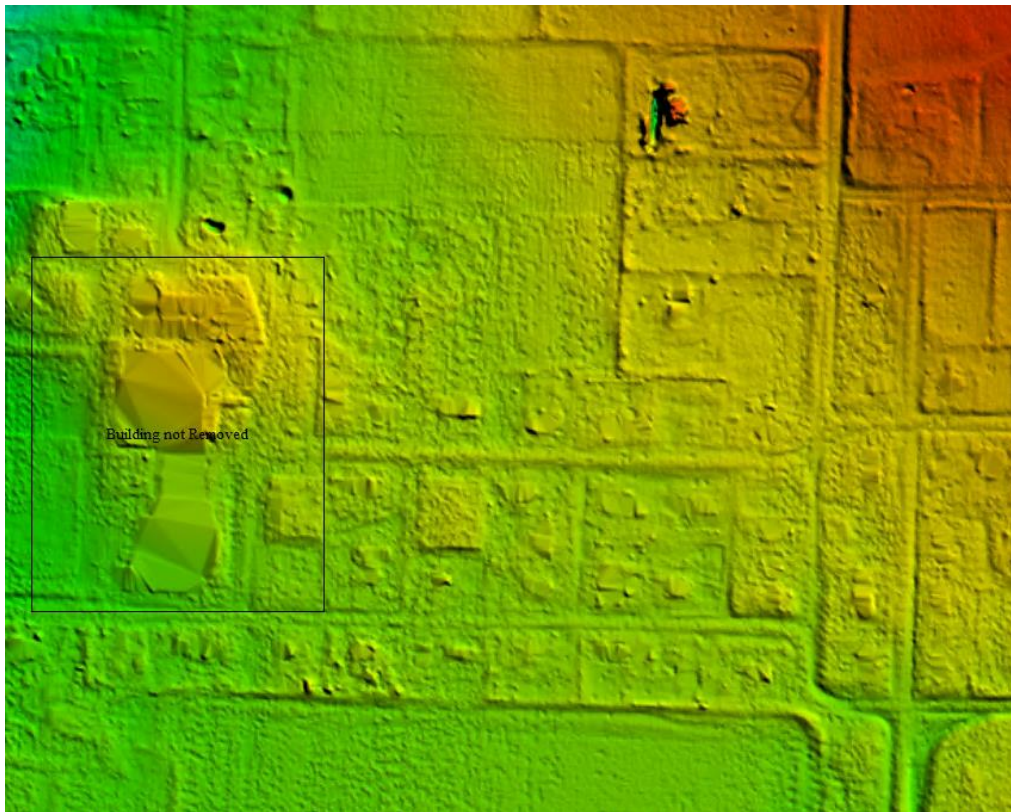


Figure 13 – Tile 14SLB525795 – Screenshot showing building has been removed from ground surface and the DEM was recreated.

## Summary of Edit Calls

- There was one divot call.
  - The divot had been removed and points have been added back to the ground surface.
- There was one data void calls.
  - The void has been removed and points added back to the ground surface.
- There were seven calls for missing breaklines, six waterbodies and one island.
  - Five of the waterbodies, and the island have been added and the DEMs were hydro flattened and recreated. One waterbody was not added due to being dry at the time of collection.
- There was one call to remove a building structure from the ground surface.
  - The building has been removed from the ground surface and the DEM was recreated.