

# Dewberry Response to USGS Review of the Texas West Central Block 04 LiDAR Project

Produced for U.S. Geological Survey

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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 04 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 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 Classified LAS call and four DEM calls.

## PROJECT AREA

Data was formatted according to tiles with each tile covering an area of 1500m by 1500m. A total of 4398 tiles were produced for the project encompassing an area of approximately 3705 sq. miles.

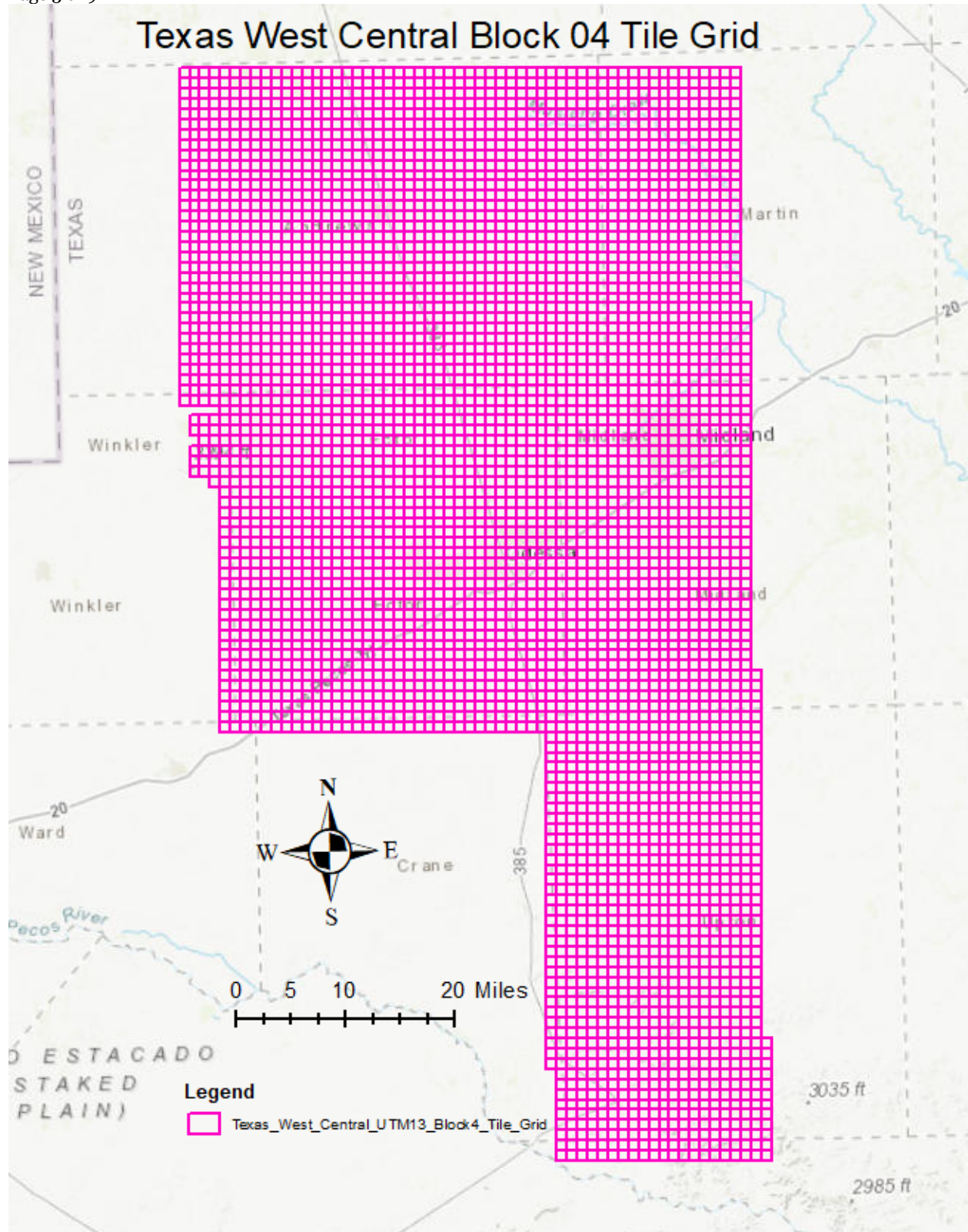


Figure 1- Project Map

## Edit Calls

### CLASSIFIED LAS

USGS identified the following issues in the Classified LAS which have been resolved with this redelivery:

- Global encoding is not set to 17 for 61 LAS tiles.

13RGR680250	13SGR650790	13RGQ830950	13RGR500430
13RGR515205	13RGR695250	13RGR710100	13RGR530250
13RGR530265	13RGR530355	13RGR710385	13RGR710400
13SGR680505	13RGR545205	13RGR545280	13RGQ755785
13RGQ755800	13SGR785445	13SGR050580	13SGR680700
13SGR785475	13RGQ755875	13RGQ575665	13RGR560085
13RGR380190	13RGR740175	13RGR740310	13SGR575880
13RGR755055	13RGR755070	13RGR755295	13SGR695700
13RGQ770830	13SGR065655	13RGR590025	13RGR755430
13SGR500445	13SGR710445	13RGR770295	13RGR605070
13RGQ785710	13RGR440295	13RGR605415	13SGR530460
13RGQ800710	13RGR635280	13RGQ800935	13RGR830010
13SGR320910	13SGR635835	13RGR665115	13SGR635850
13SGR635865	13SGR140535	13SGR650460	13SGR650475
13SGR425850	13SGR650595	13RGR680145	13SGR755490
13SGR755505			

Figure 2 – The list above is the 61 LAS tiles identified by USGA in need of the Global encoding to be set to 17. Dewberry changed the code to 17.

### DEM REVIEW

USGS made one call for a pit identified where a building was removed. Dewberry determined that the low areas were court yards and represented the ground. Therefore some cleanup was introduced but the low areas (pits) were left in as ground.

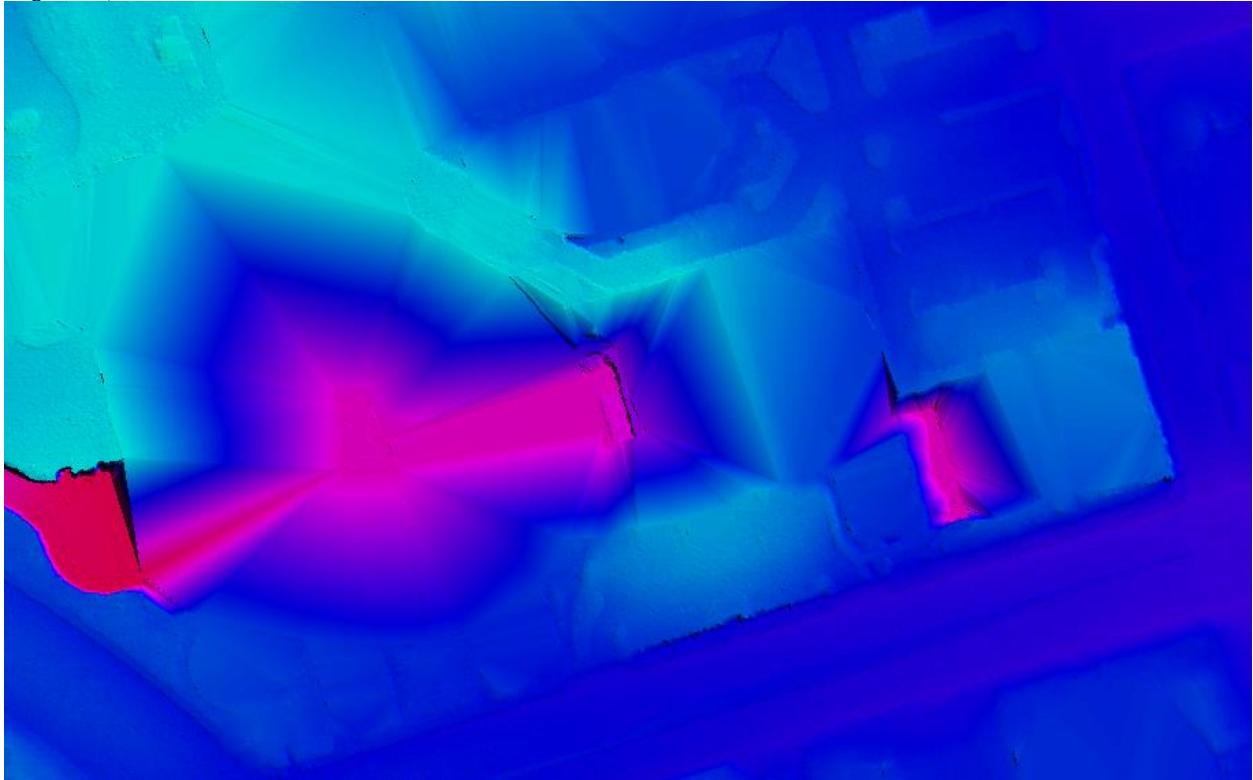


Figure 3-Tiles 13RGR740430 AND 13RGR725430. After minor corrections were done. The low area (pit) was left in as ground.







Figure 4-Tiles 13RGR740430 and 13RGR725430. The image on top is the Midland Memorial Hospital in Midland, Texas. The image on the bottom is a closer view of the hospital and a better view of the courtyards where trees can be identified.

### **BRIDGE REMOVAL**

USGS identified three bridges as being left in the ground model. Dewberry has reclassified two of the bridges to Class 17 Bridge Class and added bridge saddle breaklines to remove the saddles. One call was determined to be a culvert and no action was taken.

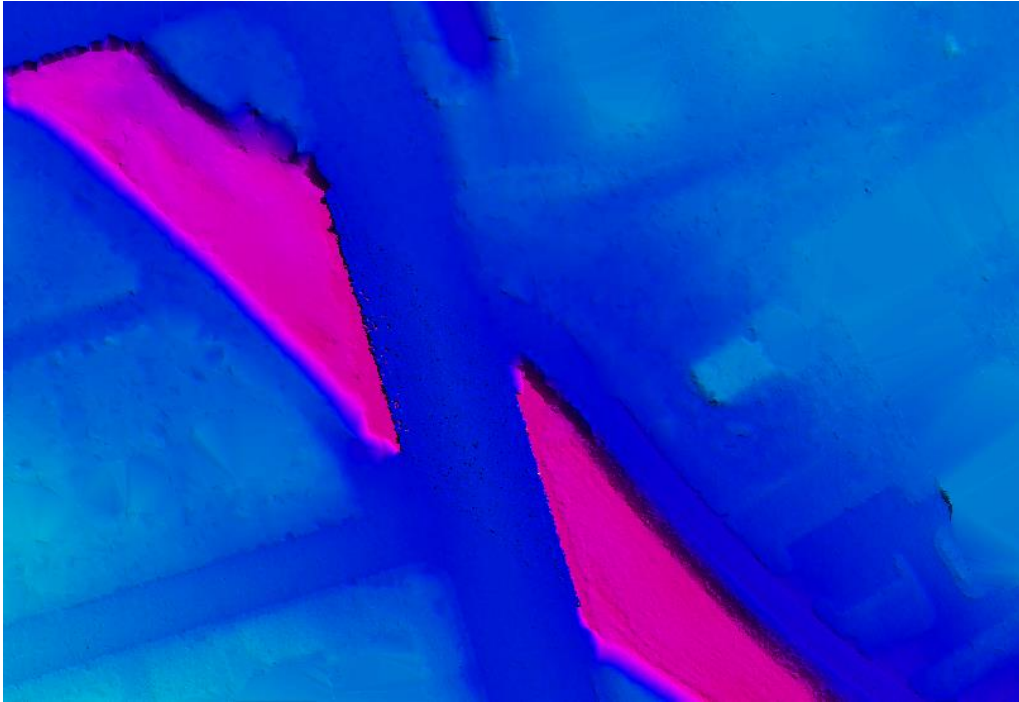


Figure 5 – Tile 13SGR755475, before bridge removal.

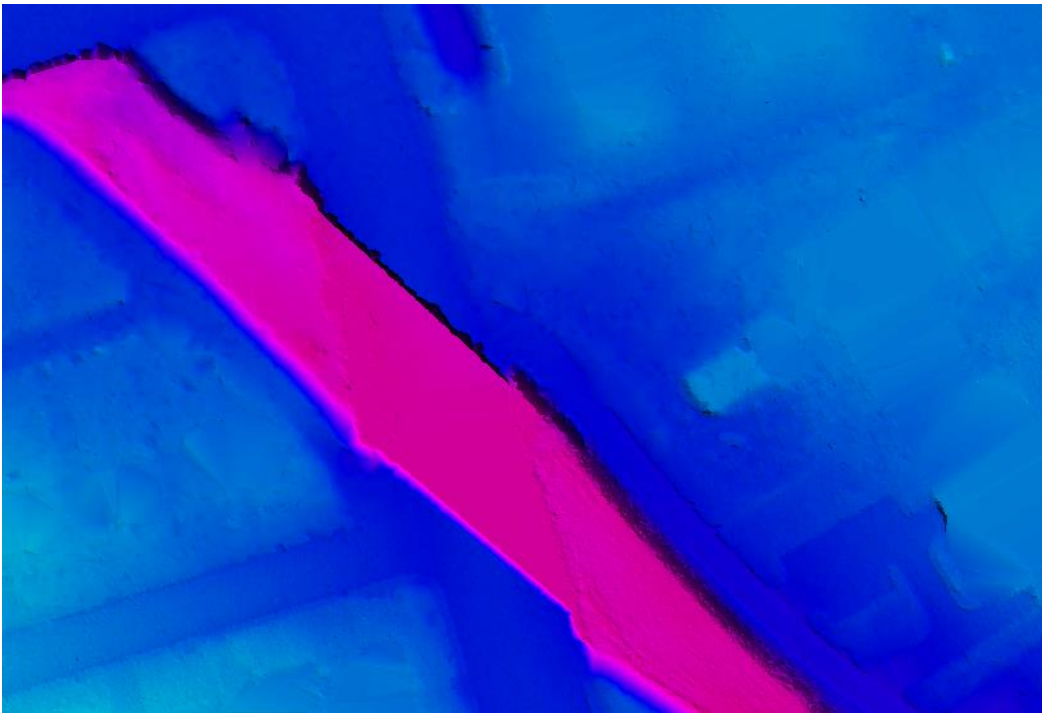
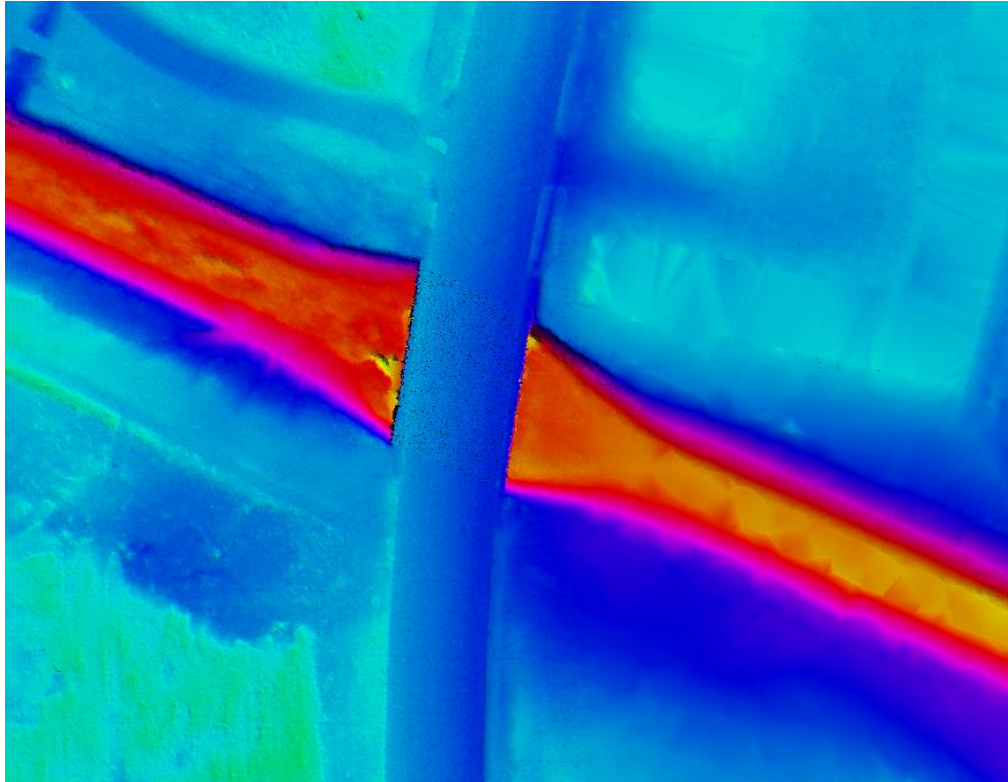
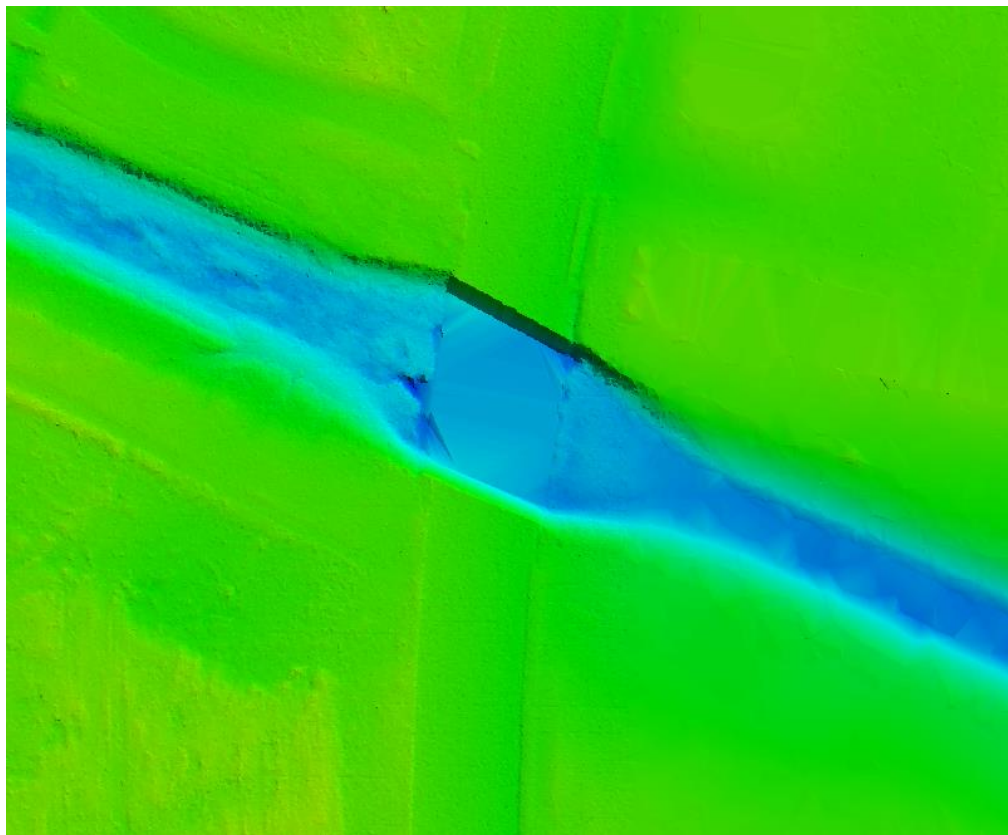


Figure 6- Tile 13SGR755475, the bridge has been removed from the Lidar and DEM.



**Figure 7- Tile 13SGR740475, before bridge removal.**



**Figure 8- Tile 13SGR740475, The bridge has been removed from the Lidar and DEM.**



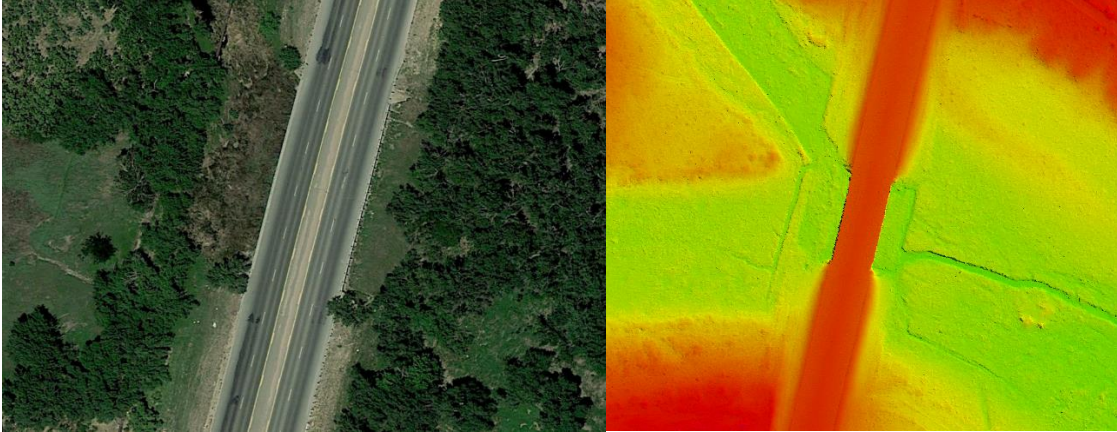


Figure 9- Tile 13RGR500235, the feature was determined to be a culvert and no action was taken by Dewberry.

## Summary of Edit Calls

- There was one call to set the Global encoding to 17 for 61 LAS tiles.
  - Dewberry set the Global encoding to 17 for 61 LAS tiles.
- There was one call for a pit found where a building was removed.
  - Dewberry made some minor corrections but the pit (court yard) was not removed from ground.
- There was three bridge removal call.
  - Two bridge calls have been reclassified to Class 17 Bridge Decks and the DEM was recreated.
  - One bridge call there was no action taken because the feature was determined to be a culvert.