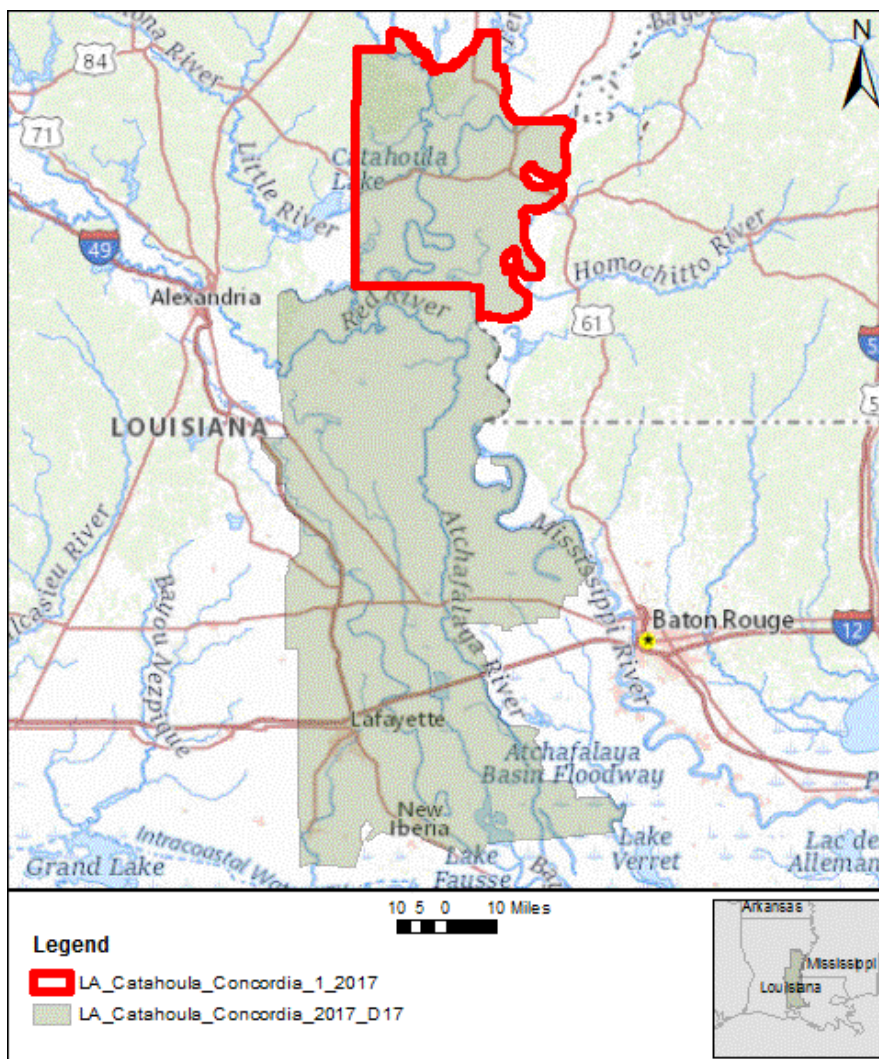# LIDAR Quality Report

from the National Geospatial Technical Operations Center

in Support of the 3D Elevation Program

LA_Catahoula_Concordia_1_2017

2021-01-12

The USGS - National Geospatial Technical Operations Center (NGTOC), Data Operations Branch is responsible for conducting reviews of all enhanced, high-quality resolution elevation data and derived products delivered by a data supplier before it is approved for inclusion in the 3D Elevation Program (3DEP) data holdings. The USGS - NGTOC recognizes the complexity of high quality resolution elevation data collection and processing performed by the data suppliers and has developed this Quality Control (QC) procedure. The goal of this process is to assure elevation data are of sufficient quality for database population and scientific analysis. Concerns regarding the assessment of these data should be directed to the Chief of Data Operations Branch, 1400 Independence Road, Rolla, Missouri 65401.

> Based on this review, the delivered data **DOES NOT MEET** 3D Elevation Program requirements.

Project Information

WP Name: LA_Catahoula_Concordia_2017_D17	**Work Package ID:** 74200
WU Name: LA_Catahoula_Concordia_1_2017	**Work Unit ID:** 74197
Horizontal SRS: NAD83(2011) / UTM zone 15N	**Vertical SRS:** NAVD88 height
Mechanism: GPSC	**Lidar Base Spec:** 1.2
USGS Project POC: N/A	**POC Email:** N/A
Vertical Accuracy: Review is expected to meet but awaiting final vertical accuracy assessment.	

Product	Accepted	Delivered	Summary of Errors
Classified Pointcloud	No	Yes	- Point Misclassification (Ground): An island is classified as water in the lidar point cloud. - Point Properties (Intensity): 82 las files have suspect suspect intensity values. - Processing (Other): 2 LPC tiles are missing from the work unit.
DEM	No	Yes	- Breakline Enforcement: 10 areas in the DEM are missing breakline enforcement. - DEM Data Void: A data void is present in the DEM. - DEM Properties (NoData Value): Tile "15RXR2332" has a suspect NoData value.
Hydroflattened Polygon Breaklines	No	Yes	- Geometry Error (Overextended): A waterbody has overextended breaklines present. - Missing Feature (Waterbody): 5 waterbodys present in the DEM are missing breaklines.
Hydroflattened Polygon Breaklines	No	Yes	- Geometry Error (Misplaced Breaklines): 4 areas in the DEM have geometry errors most likely due to breaklines beening misplaced in the DEM. - Missing Feature (River/Stream Segment): 3 river segments present in the DEM are missing breaklines.
Classified LPC XML	Yes	Yes	None

Product	Accepted	Delivered	Summary of Errors
Breakline/Hydro XML	Yes	Yes	None
Breakline/Hydro XML	Yes	Yes	None
Checkpoints XML	Yes	Yes	None
Control Points XML	Yes	Yes	None
Intensity Imagery XML	Yes	Yes	None
Tile Index XML	Yes	Yes	None
DEM XML	Yes	Yes	None
Contractor Project Report	Yes	Yes	None
Contractor Accuracy Report	Yes	Yes	None
Contractor Collection Report	Yes	Yes	None
Contractor Processing Report	Yes	Yes	None
Contractor Survey Report	Yes	Yes	None
NVA Checkpoints	Yes	Yes	None
VVA Checkpoints	Yes	Yes	None
Tile Index	Yes	Yes	None
Control Points	Yes	Yes	None
Swath Polygon	Yes	Yes	None
Intensity Imagery	Yes	Yes	None
Swath Separation Images	Yes	Yes	None

Classified Lidar Point Cloud
Based on this review, the USGS-NGTOC **DOES NOT ACCEPT** the Classified Lidar Point Cloud.

Deliverable	Error Type	Subtype	Quantity	Examples
Classified Pointcloud	Point Mis-classification	Ground	1	Figure 1
Error Comment(s): An island is classified as water in the lidar point cloud				
Classified Pointcloud	Point Properties	Intensity	1	Figure 2
Error Comment(s): 82 las files have suspect intensity values				
Classified Pointcloud	Processing	Other	1	
Error Comment(s): 2 lpc tiles are missing from the work unit. "15RXQ3959", "15RXQ4476"				

Digital Elevation Model (DEM)
Based on this review, the USGS-NGTOC **DOES NOT ACCEPT** the Digital Elevation Model (DEM).

Deliverable	Error Type	Subtype	Quantity	Examples
DEM	Breakline Enforcement	None	10	Figure 3 Figure 4 Figure 5 Figure 6 Figure 7 Figure 8 Figure 9 Figure 10
Error Comment(s): 1. Large segment of coastline has breakline enforcement issues 2. Large segment of coastline is missing breakline enforcement 3. A pit is present in a waterbody in the DEM 4. A segment of waterbody is missing breakline enforcement 5. A segment of river is partially missing breakline enforcement 6. A waterbody is missing breakline enforcement 7. A segment of river has an enforcement error due to breaklines 8. A segment of river is missing breakline enforcement likely due to misplaced breaklines 9. A segment of river is missing breakline enforcement likely due to misplaced breaklines 10. A segment of waterbody is missing breakline enforcement likely due to misplaced breaklines				
DEM	DEM Properties	NoData Value	1	Figure 11
Error Comment(s): Tile "15RXR2332" has a NoData value of -3.40282E+38				
DEM	Suspect Values	DEM Void	1	Figure 12
Error Comment(s): A data void is present in the DEM				

Breaklines
Based on this review, the USGS-NGTOC **DOES NOT ACCEPT** the Breaklines.

Deliverable	Error Type	Subtype	Quantity	Examples

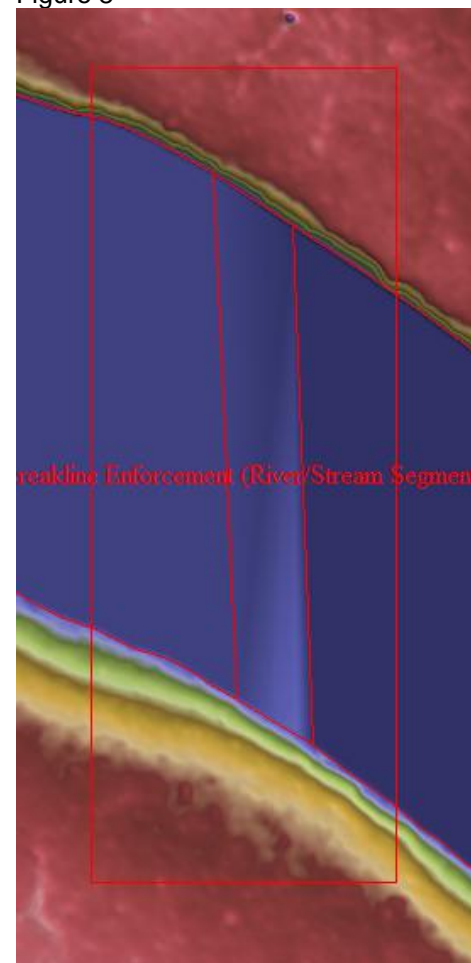| Hydroflattened Polygon Breaklines	Geometry Error	Overextended	1	Figure 13
Error Comment(s): A waterbody's breaklines over-extend water and reach land				
Hydroflattened Polygon Breaklines	Missing Feature	Waterbody	5	Figure 14 Figure 15 Figure 16
Error Comment(s): 1. A waterbody is present and missing breaklines 2. A waterbody is present in the DEM and missing breaklines 3. A waterbody present in the DEM is missing breaklines 4. A waterbody present in the DEM is missing breaklines 5. A waterbody is missing breaklines				
Hydroflattened Polygon Breaklines	Geometry Error	River/Stream Segment	2	Figure 17 Figure 18
Error Comment(s): 1. A segment of river has a geometry error likely due to misplaced breaklines 2. A segment of river has a geometry error likely due to a bridge removal.				
Hydroflattened Polygon Breaklines	Geometry Error	None	2	Figure 19 Figure 20
Error Comment(s): 1. Breaklines have been misplaced and causing a breakline enforcement issue in the river 2. Breaklines have been misplaced and causing a breakline enforcement error				
Hydroflattened Polygon Breaklines	Missing Feature	River/Stream	3	Figure 21 Figure 22
Error Comment(s): 1. A river/stream is missing breaklines 2. A river/stream is missing breaklines 3. A segment of river/stream is missing breaklines				

Metadata
Based on this review, the USGS-NGTOC **ACCEPTS** the Metadata.

Shapefiles and/or Reports
Based on this review, the USGS-NGTOC **ACCEPTS** the Shapefiles and/or Reports.

Other Deliverables
Based on this review, the USGS-NGTOC **ACCEPTS** the Other Deliverables.

Classified Lidar Point Cloud

Error Type: Point Mis-classification, Error Subtype: Ground

Figure 1

Point Misclassification (Ground)
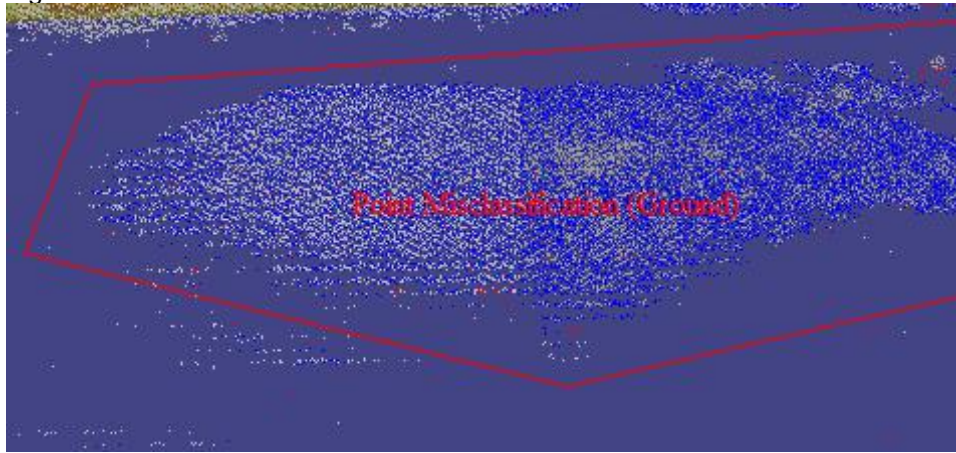
Figure 2

Intensity Min	Intensity Max	Point Density
444	17198	20.38373
444	15213	22.76756
444	17552	11.78424
444	15477	27.61246
444	20182	34.70577
444	17752	19.89795
444	22154	22.67863
444	2769	0.00361
444	13191	23.22432
444	21970	51.55987
444	1981	0.00110

Digital Elevation Model (DEM)

Error Type: Breakline Enforcement, Error Subtype: None

Figure 3

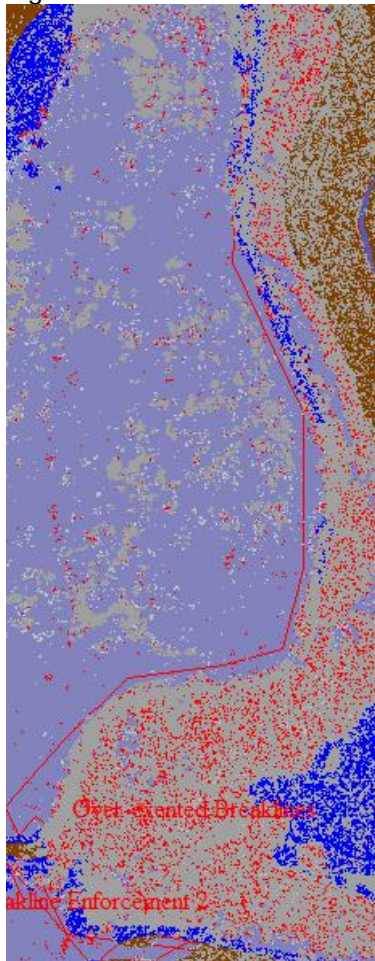
Figure 4

Figure 5
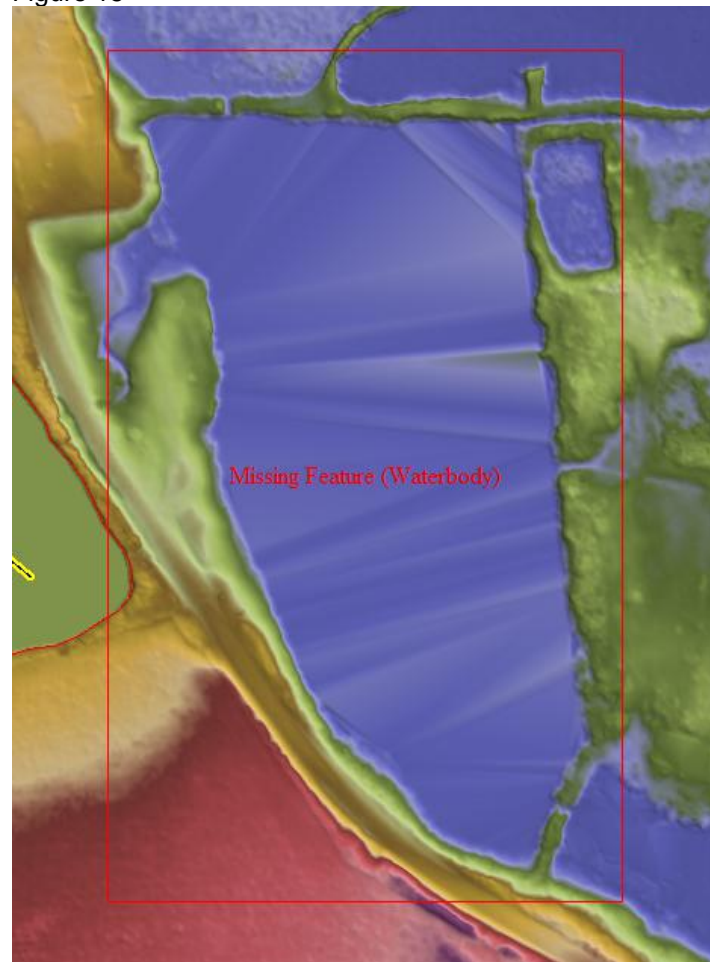

Figure 6
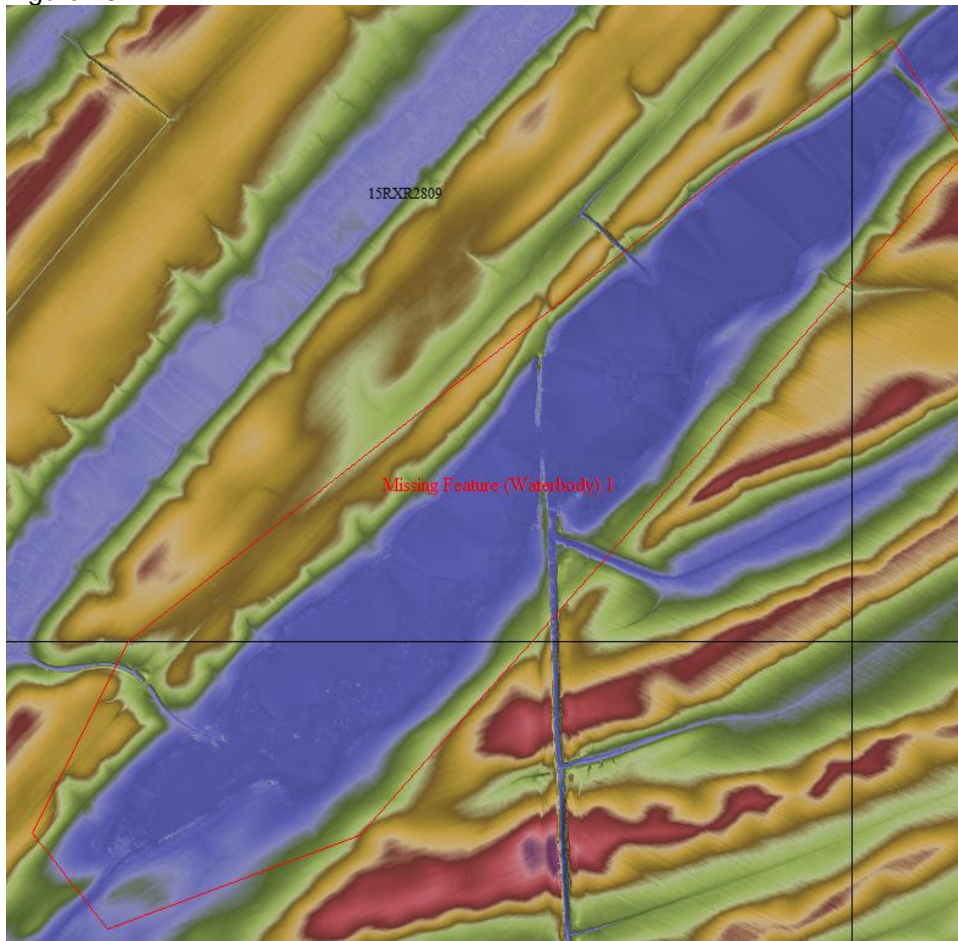
Figure 8

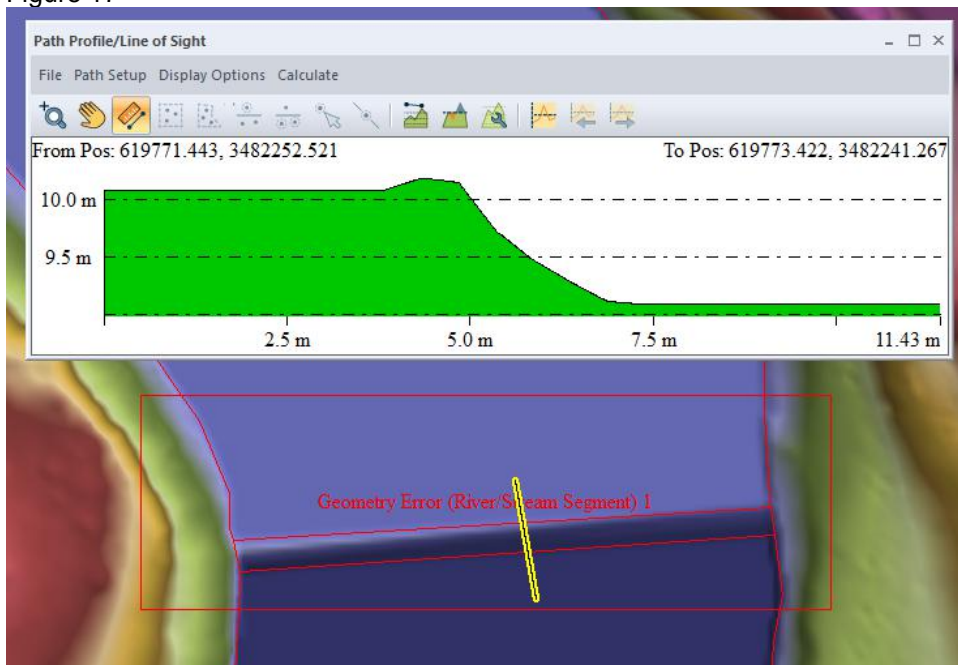

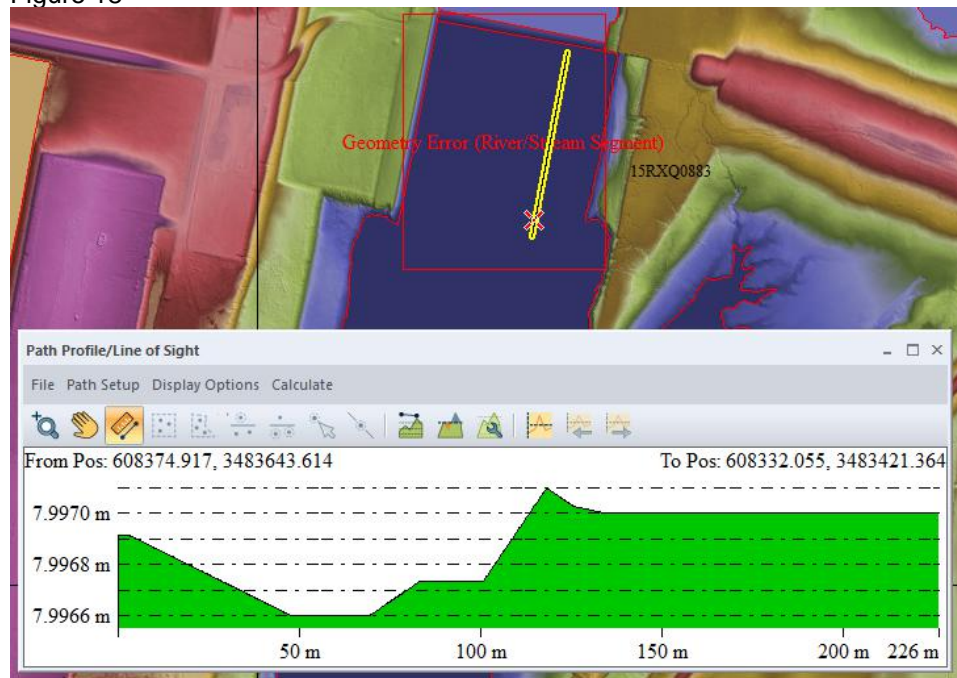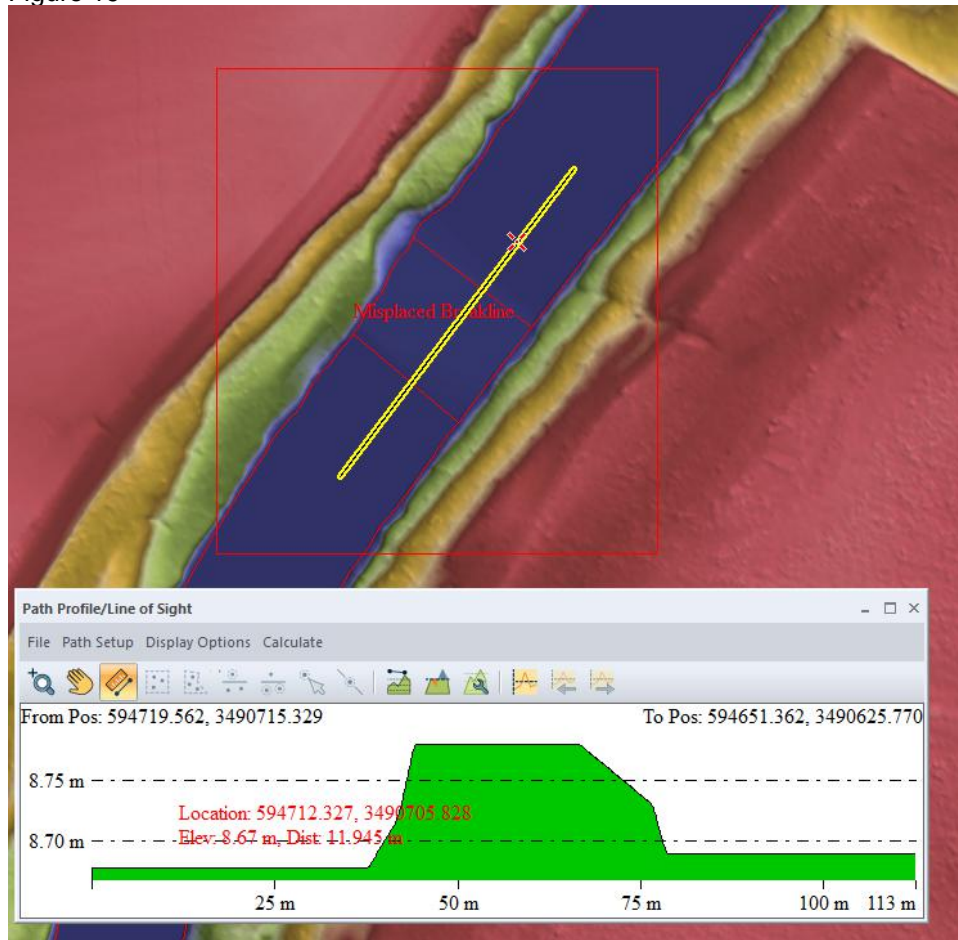Figure 7

Figure 9

Figure 10

Error Type: DEM Properties, Error Subtype: NoData Value

Figure 11

Error Type: Suspect Values, Error Subtype: DEM Void
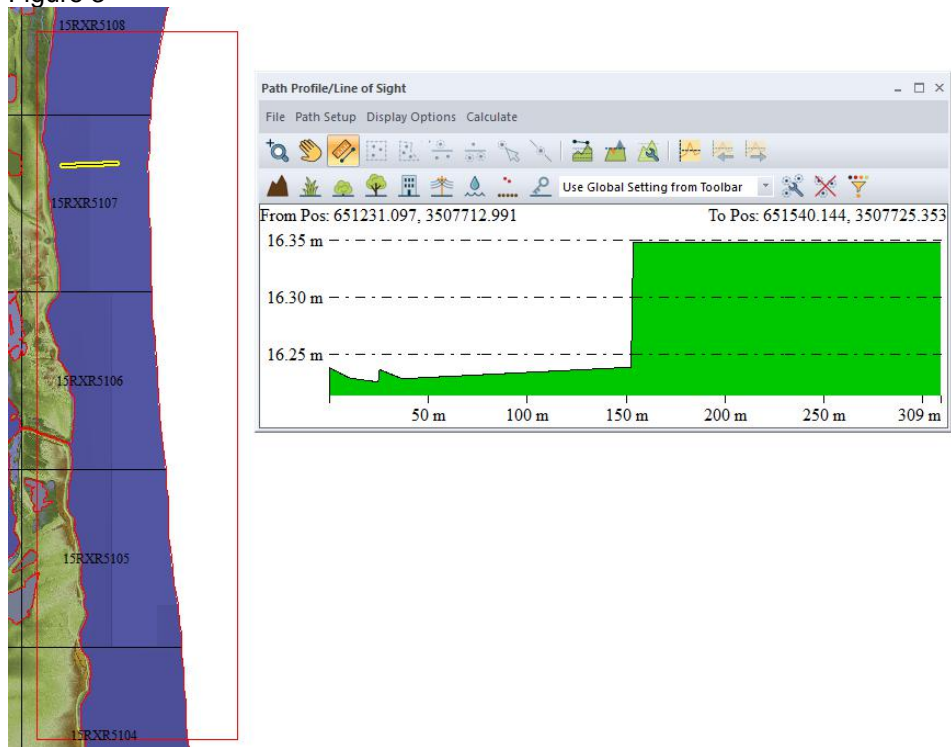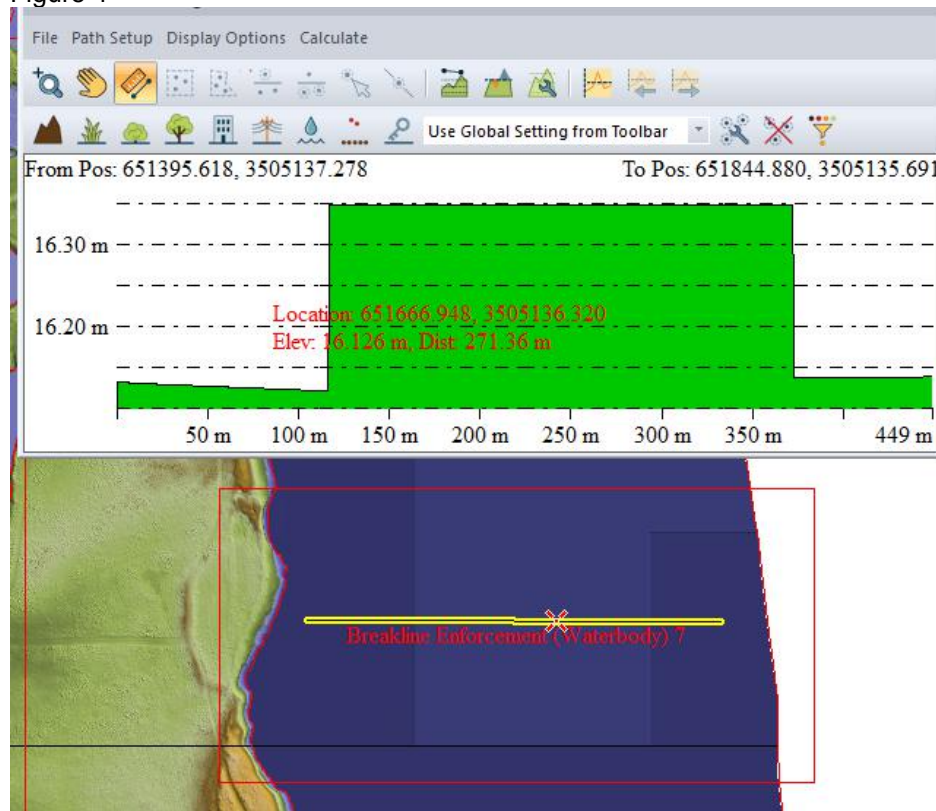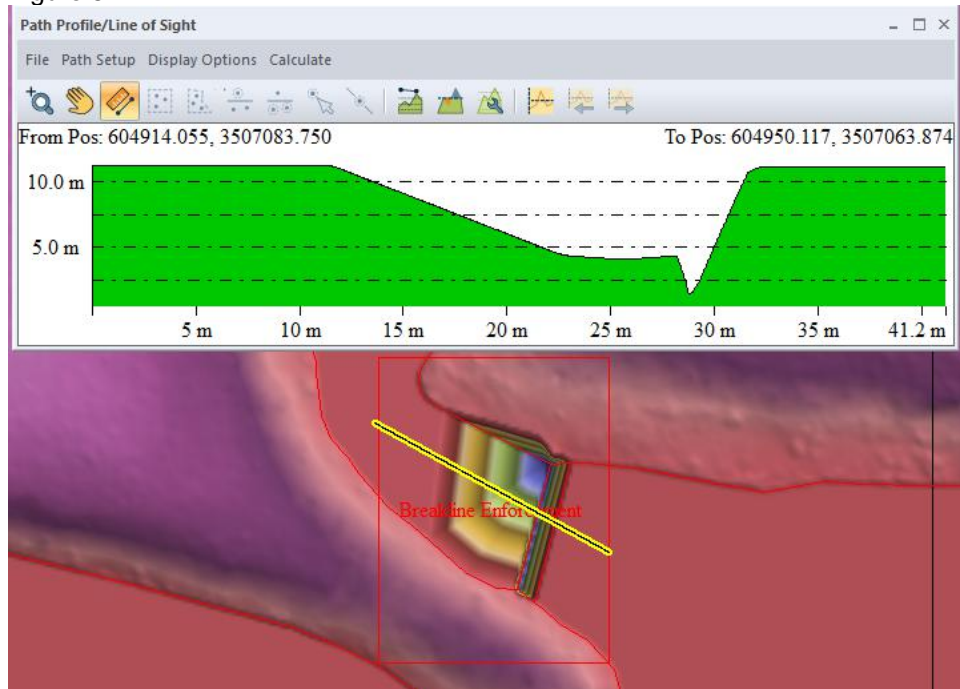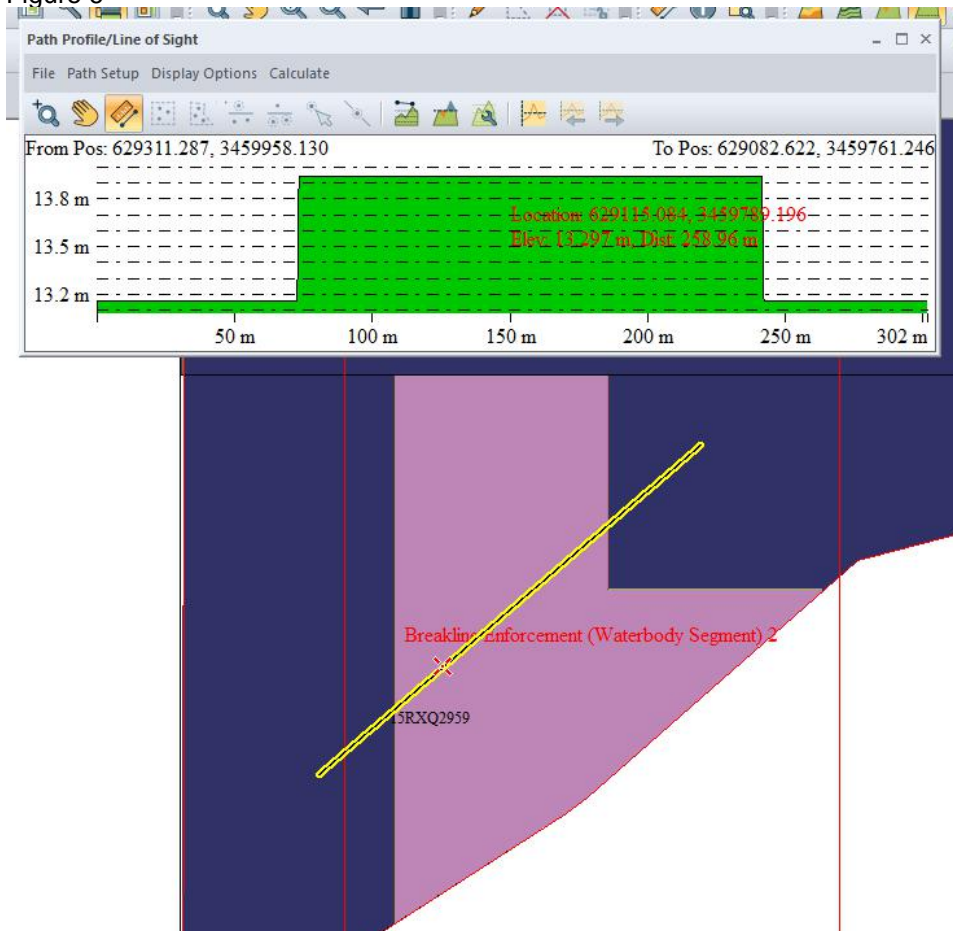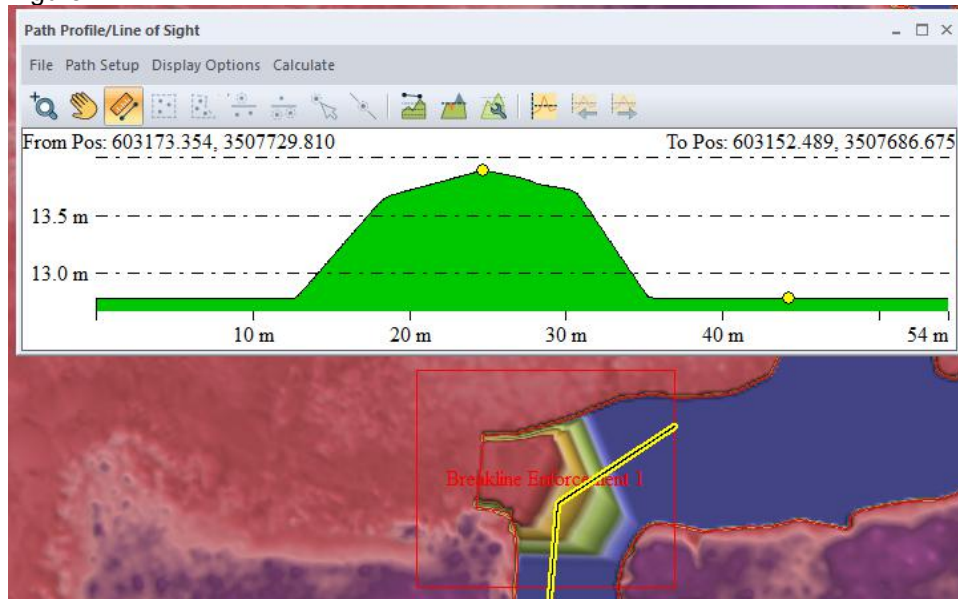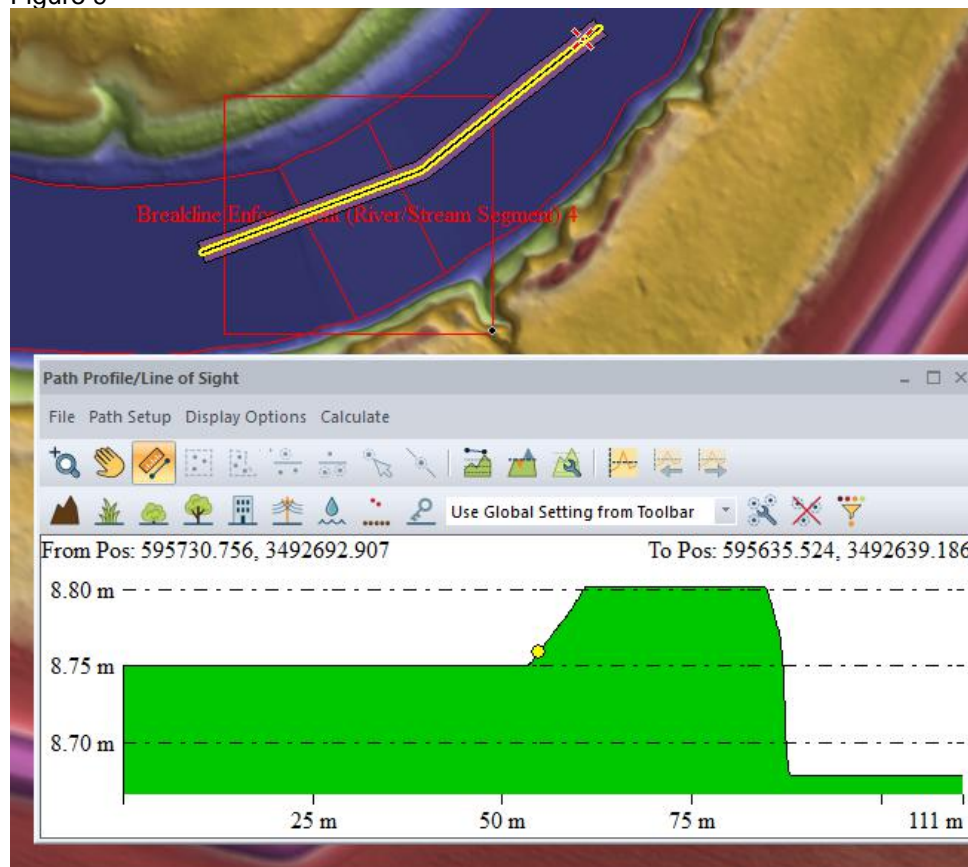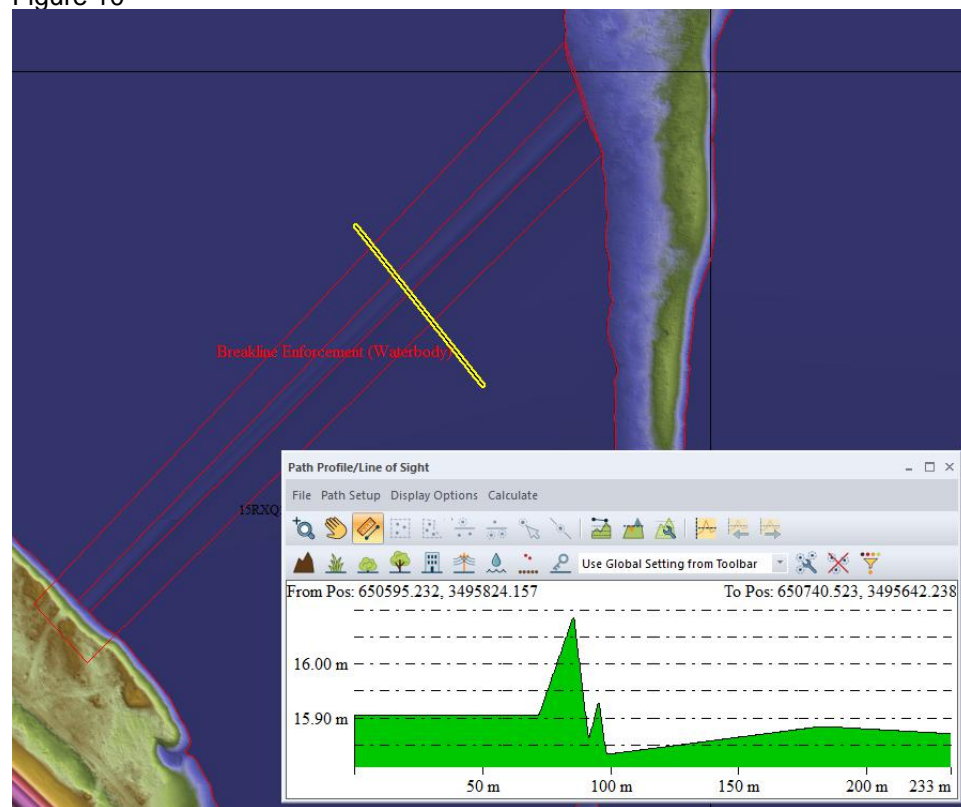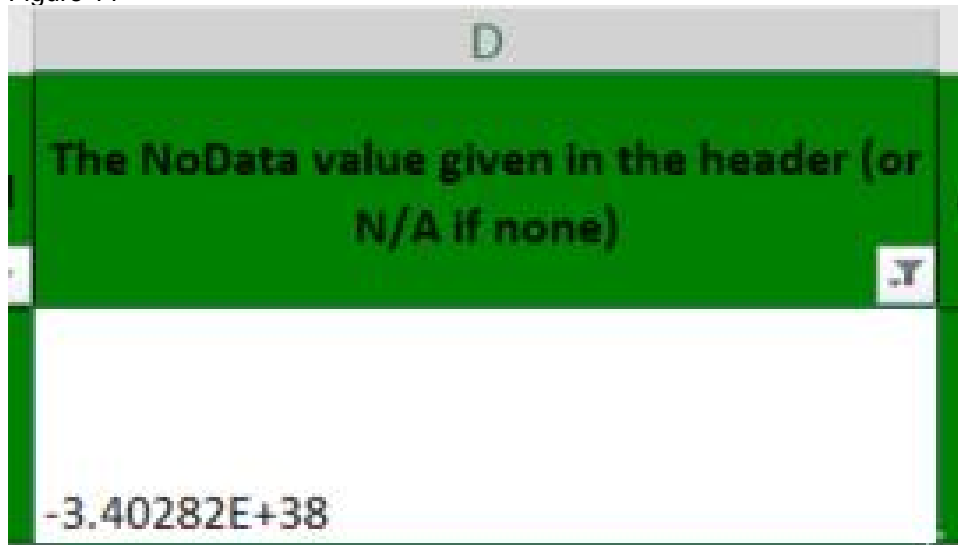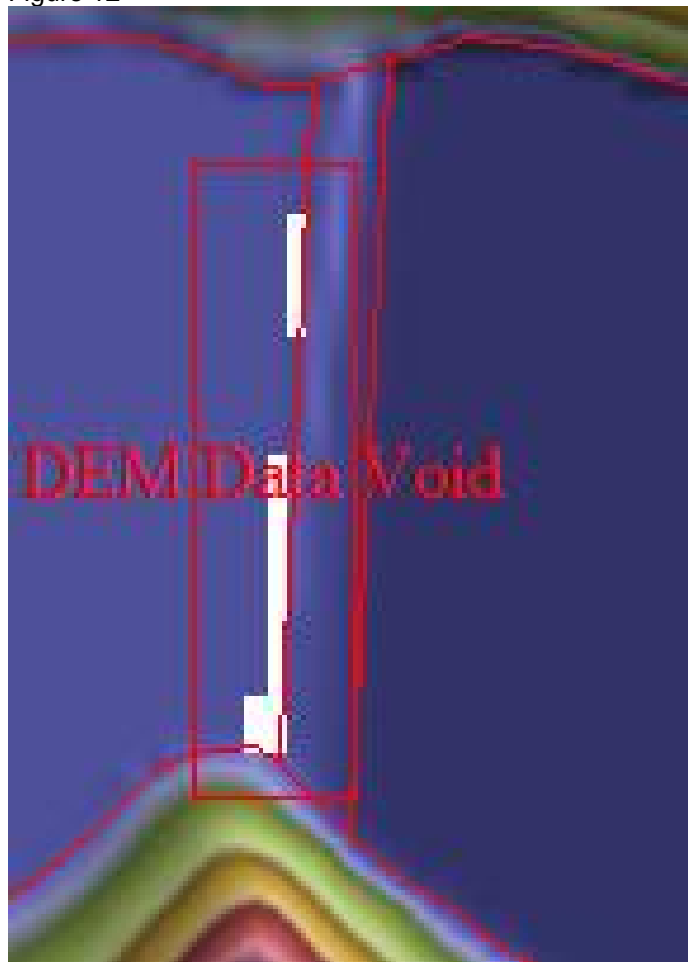
Figure 12

Breaklines

Error Type: Geometry Error, Error Subtype: Overextended

Figure 13

Error Type: Missing Feature, Error Subtype: Waterbody

Figure 14

Missing Feature (Waterbody) 3

Figure 15

Missing Feature (Waterbody)

Figure 16

Error Type: Geometry Error, Error Subtype: River/Stream Segment

Figure 17

Figure 18

Error Type: Geometry Error, Error Subtype: None

Figure 19

Figure 20

Error Type: Missing Feature, Error Subtype: River/Stream

Figure 21

Figure 22