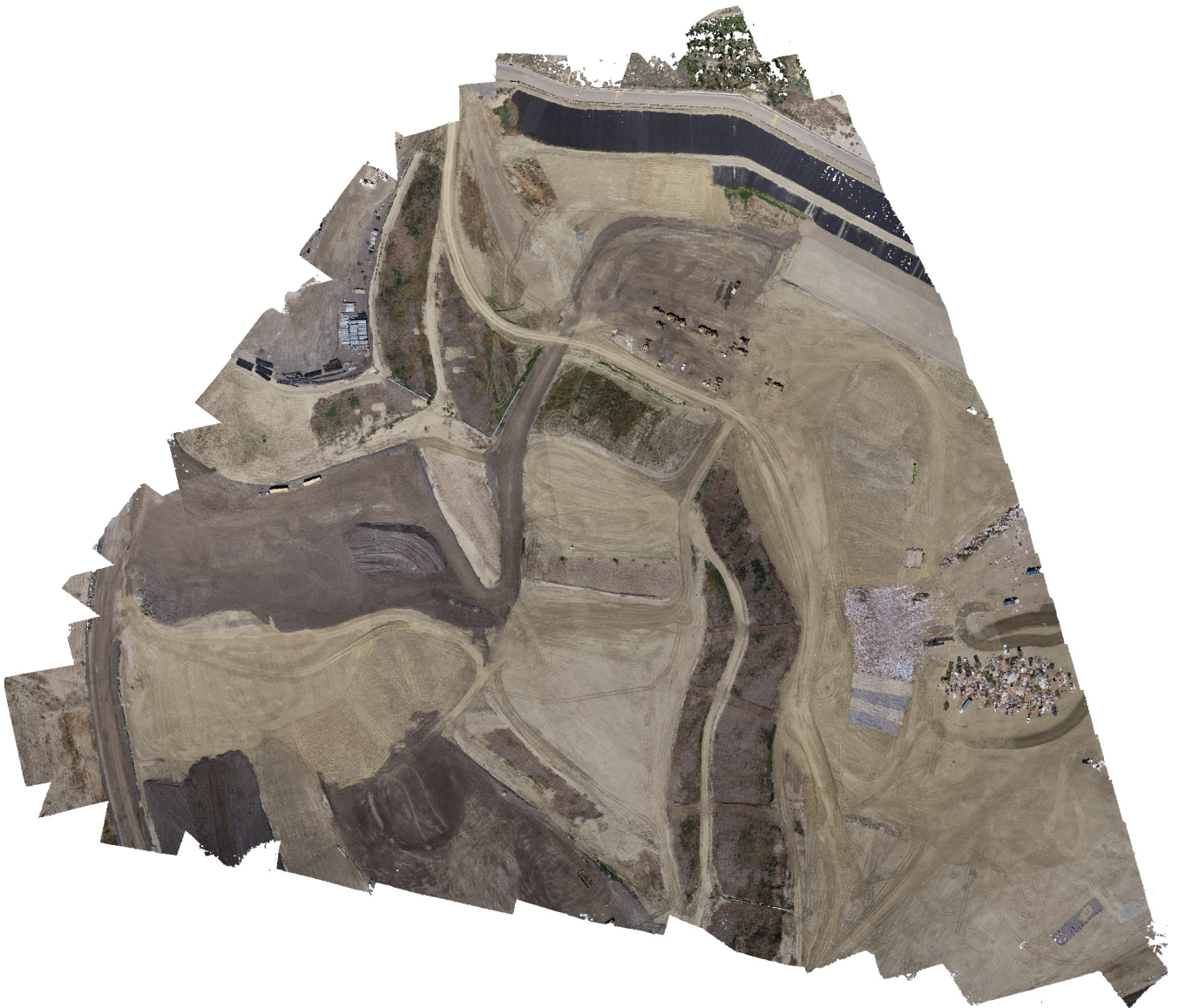


2022

Processing Report
14 March 2022



Survey Data

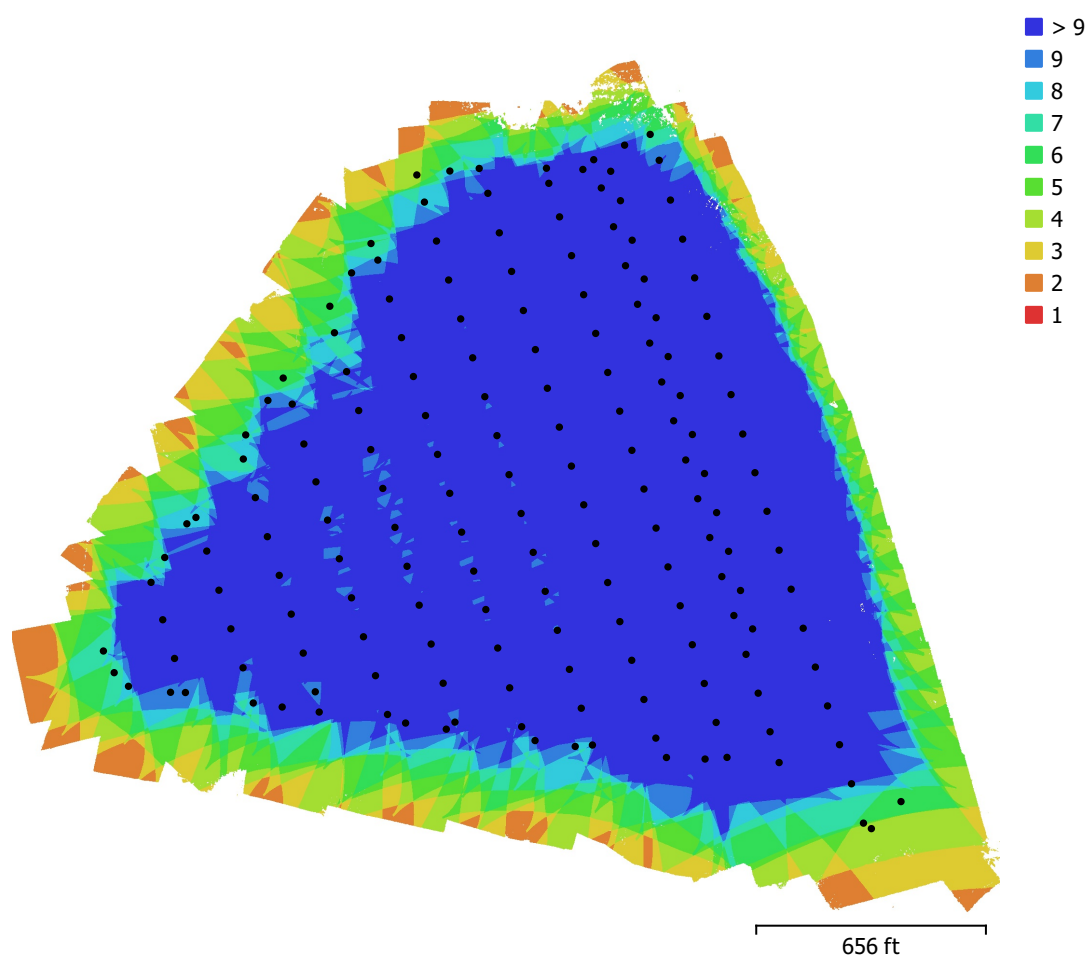


Fig. 1. Camera locations and image overlap.

Number of images:	173	Camera stations:	173
Flying altitude:	409 ft	Tie points:	108,599
Ground resolution:	0.1 ft/pix	Projections:	555,430
Coverage area:	4.63e+05 yd ²	Reprojection error:	1.51 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC6310R (8.8mm)	5472 x 3648	8.8 mm	2.41 x 2.41 μm	Yes

Table 1. Cameras.

Camera Calibration

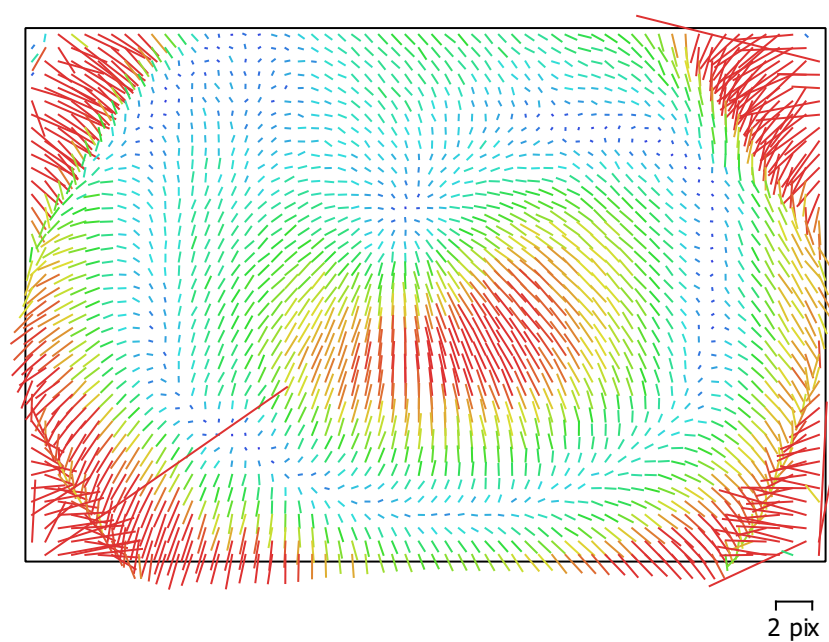


Fig. 2. Image residuals for FC6310R (8.8mm).

FC6310R (8.8mm)

173 images, precalibrated

Type	Resolution	Focal Length	Pixel Size
Frame	5472 x 3648	8.8 mm	2.41 x 2.41 μm
F:	3706.23		
Cx:	9.71	B1:	0
Cy:	-16.9	B2:	0
K1:	-0.278223	P1:	-0.000216091
K2:	0.125319	P2:	0.00141265
K3:	-0.0435659	P3:	0
K4:	0	P4:	0

Camera Locations

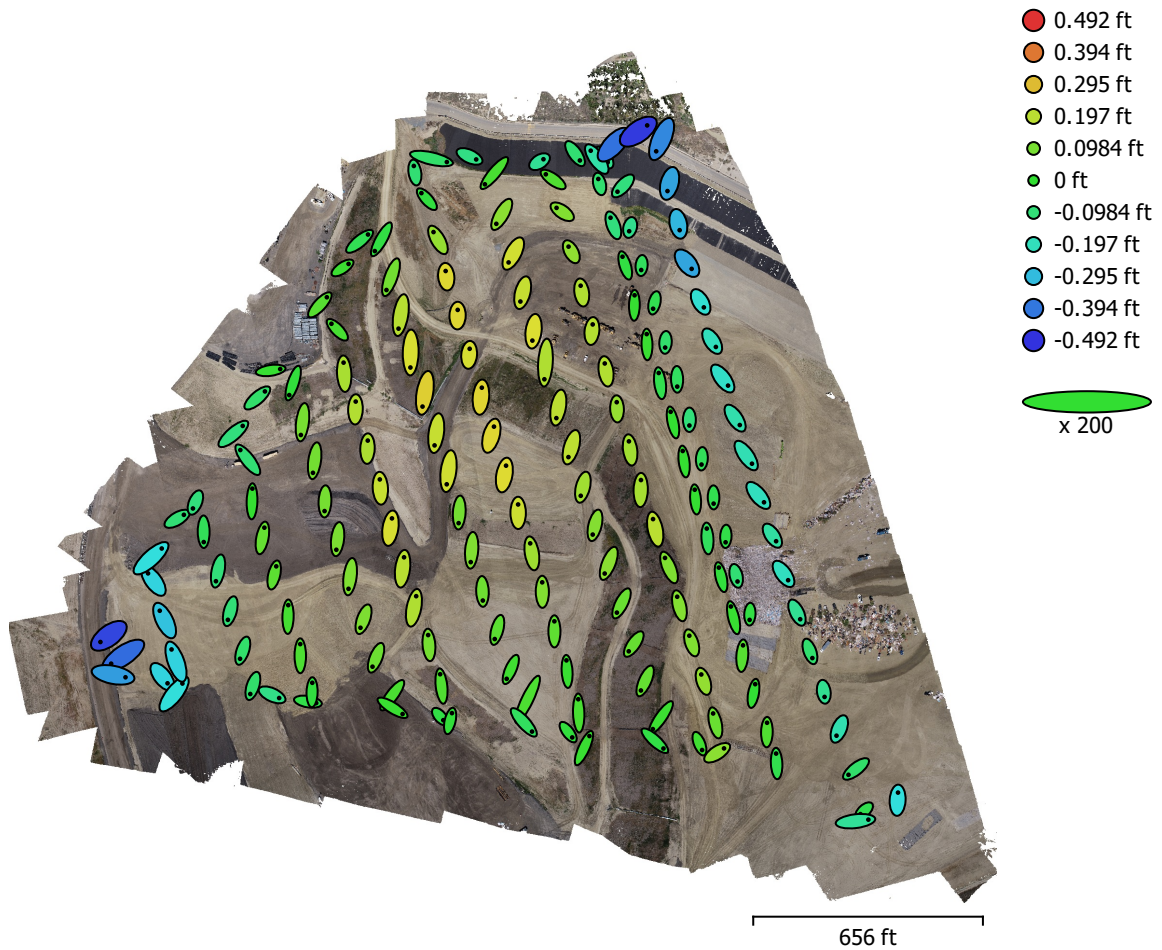


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

X error (ft)	Y error (ft)	Z error (ft)	XY error (ft)	Total error (ft)
0.130319	0.251681	0.158753	0.283419	0.324852

Table 2. Average camera location error.

X - Longitude, Y - Latitude, Z - Altitude.

Ground Control Points

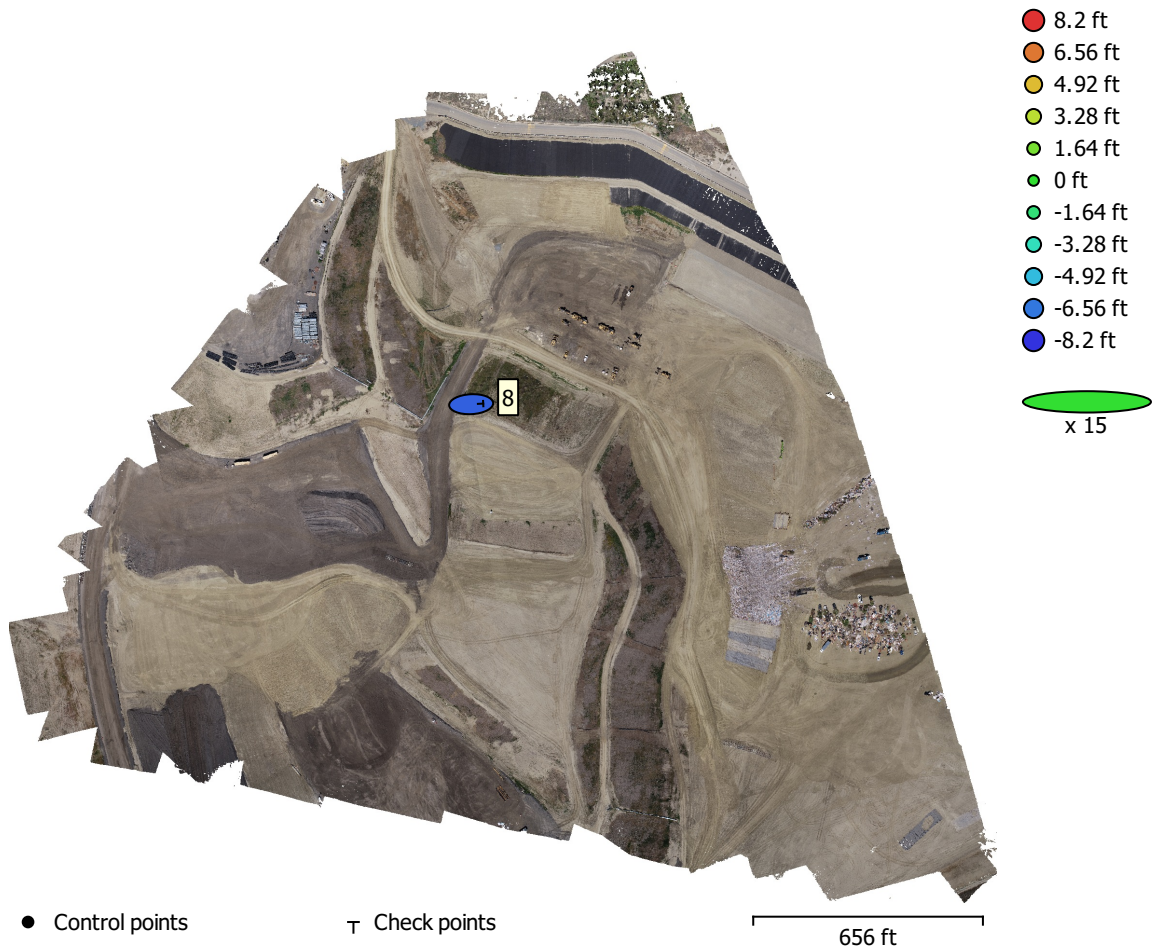


Fig. 4. GCP locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated GCP locations are marked with a dot or crossing.

Count	X error (ft)	Y error (ft)	Z error (ft)	XY error (ft)	Total (ft)
1	4.59243	0.234573	7.11975	4.59842	8.47563

Table 3. Check points RMSE.

X - Longitude, Y - Latitude, Z - Altitude.

Label	X error (ft)	Y error (ft)	Z error (ft)	Total (ft)	Image (pix)
8	4.59243	0.234573	-7.11975	8.47563	0.897 (8)
Total	4.59243	0.234573	7.11975	8.47563	0.897

Table 4. Check points.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

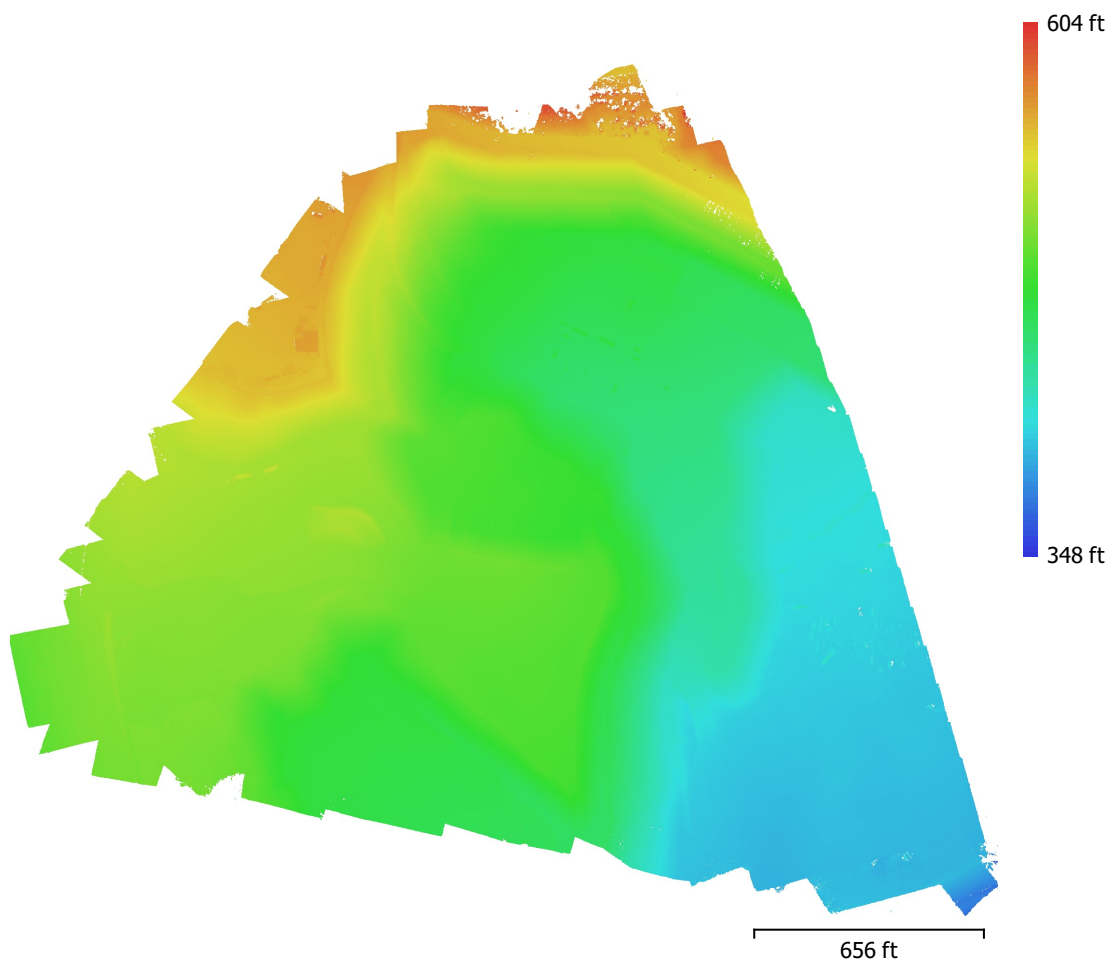


Fig. 5. Reconstructed digital elevation model.

Resolution: unknown
Point density: unknown

Processing Parameters

General

Cameras	173
Aligned cameras	173
Markers	3
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	108,599 of 132,535
RMS reprojection error	0.514188 (1.5092 pix)
Max reprojection error	1.55936 (30.8001 pix)
Mean key point size	3.13665 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	5.68186

Alignment parameters

Accuracy	High
Generic preselection	Yes
Reference preselection	Source
Key point limit	40,000
Key point limit per Mpx	1,000
Tie point limit	4,000
Exclude stationary tie points	Yes
Guided image matching	No
Adaptive camera model fitting	No
Matching time	1 minutes 41 seconds
Matching memory usage	1.46 GB
Alignment time	27 seconds
Alignment memory usage	146.32 MB
Date created	2022:03:14 17:10:27
Software version	1.7.5.13229
File size	14.38 MB

Depth Maps

Count	173
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Max neighbors	40
Processing time	6 minutes 29 seconds
Memory usage	2.43 GB
Date created	2022:03:14 17:18:50
Software version	1.7.5.13229
File size	332.60 MB

Dense Point Cloud

Points	27,140,974
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Mild
Max neighbors	40
Processing time	6 minutes 29 seconds

Memory usage	2.43 GB
Dense cloud generation parameters	
Processing time	5 minutes 2 seconds
Memory usage	7.31 GB
Date created	2022:03:14 17:23:53
Software version	1.7.5.13229
File size	393.85 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.5 build 13229
OS	Windows 64 bit
RAM	127.88 GB
CPU	AMD Ryzen Threadripper 2990WX 32-Core Processor
GPU(s)	Quadro RTX 5000