

Campground Thornhill

Processing Report

22 July 2023



Survey Data

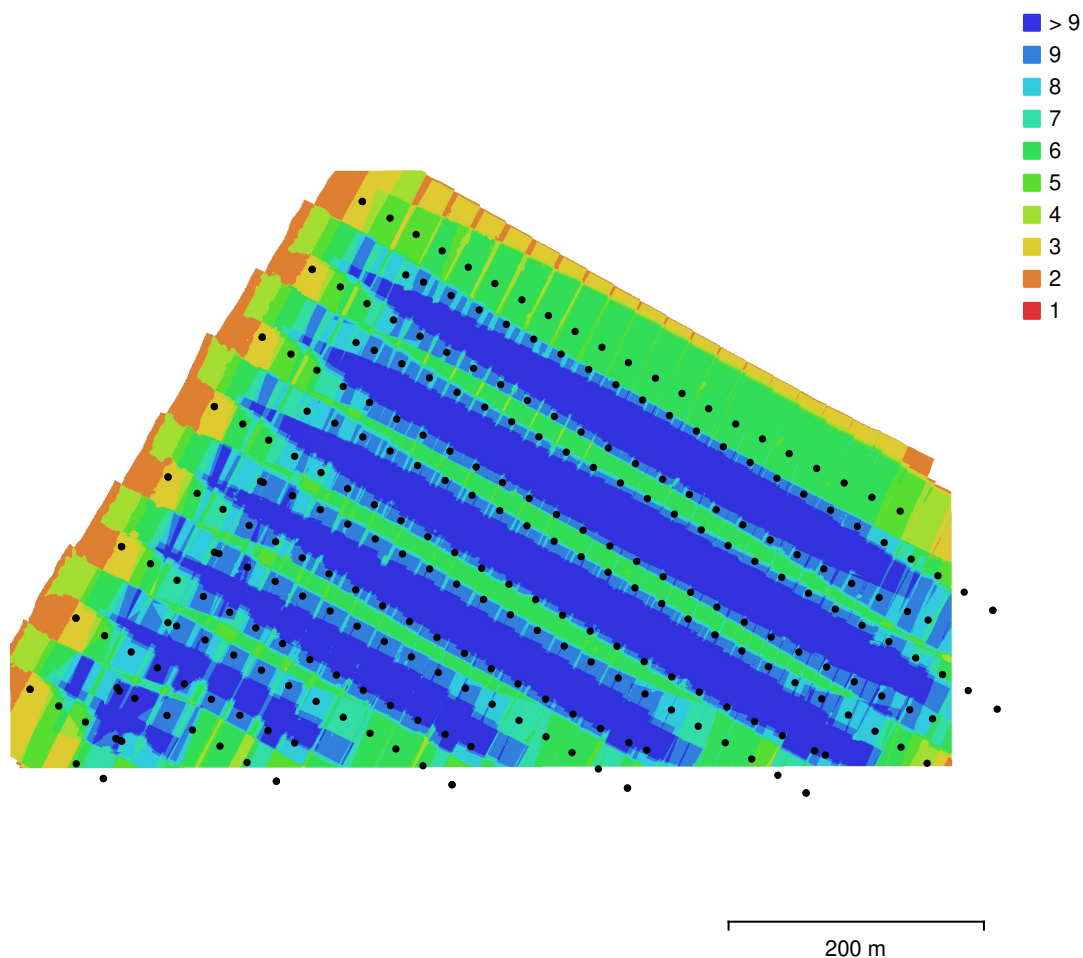


Fig. 1. Camera locations and image overlap.

Number of images:	290	Camera stations:	290
Flying altitude:	74.4 m	Tie points:	421,412
Ground resolution:	2.66 cm/pix	Projections:	1,541,037
Coverage area:	0.248 km ²	Reprojection error:	1.31 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
FC7303 (4.49mm)	4000 x 2668	4.49 mm	1.68 x 1.68 μ m	No

Table 1. Cameras.

Camera Calibration

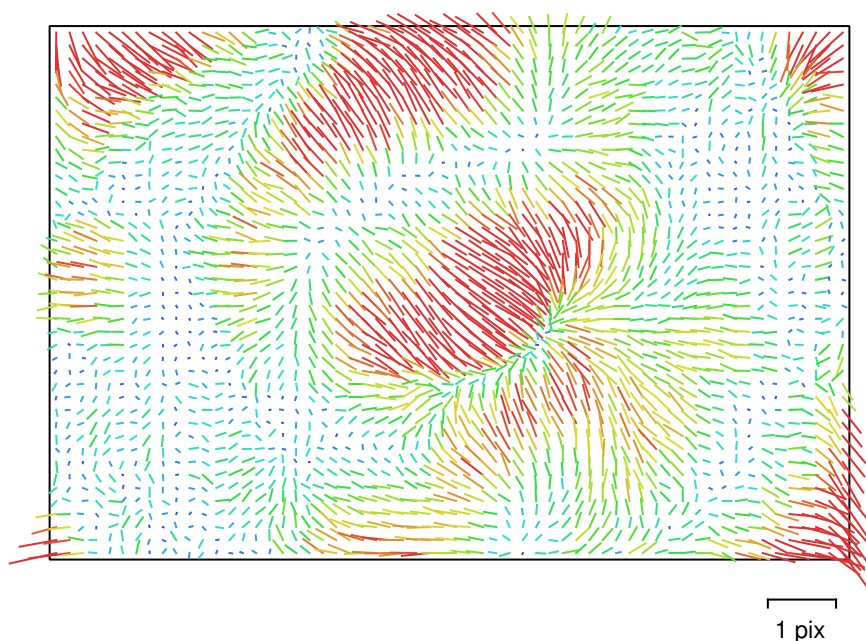


Fig. 2. Image residuals for FC7303 (4.49mm).

FC7303 (4.49mm)

290 images

Type	Resolution	Focal Length	Pixel Size
Frame	4000 x 2668	4.49 mm	1.68 x 1.68 μm

	Value	Error	Cx	Cy	K1	K2	K3	P1	P2
F	2667.08								
Cx	-54.4042	0.12	1.00	0.06	0.00	0.13	-0.16	0.26	0.04
Cy	10.6566	0.11		1.00	0.06	0.00	0.00	0.05	0.31
K1	-0.0180881	7.1e-05			1.00	-0.48	0.42	0.43	0.26
K2	0.0949873	0.00013				1.00	-0.98	0.12	0.05
K3	-0.0813582	0.00012					1.00	-0.16	-0.06
P1	-0.000861037	3.8e-06						1.00	0.19
P2	-0.000149334	2.4e-06							1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

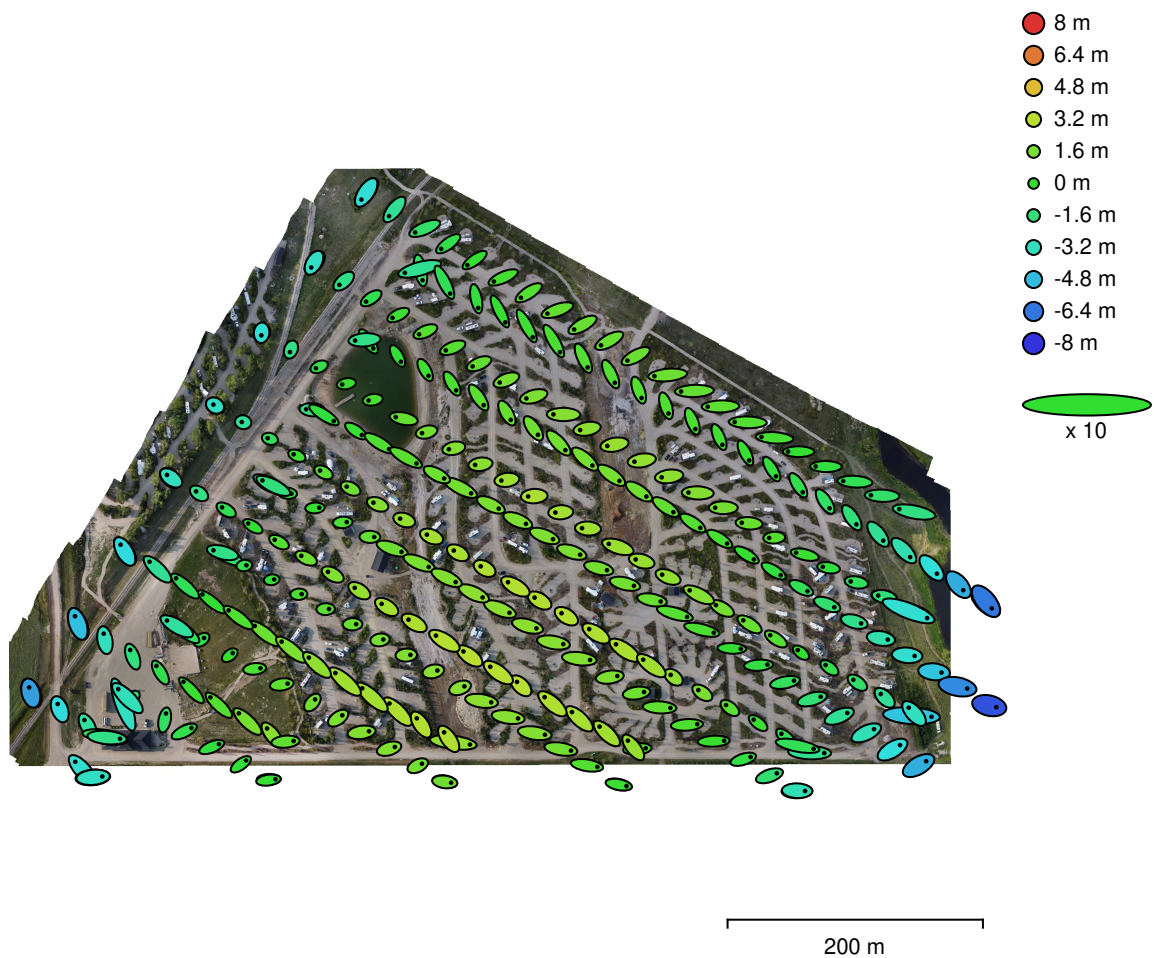


Fig. 3. Camera locations and error estimates.

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 (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
1.1663	0.719848	2.16056	1.37056	2.5586

Table 3. Average camera location error.

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

Digital Elevation Model

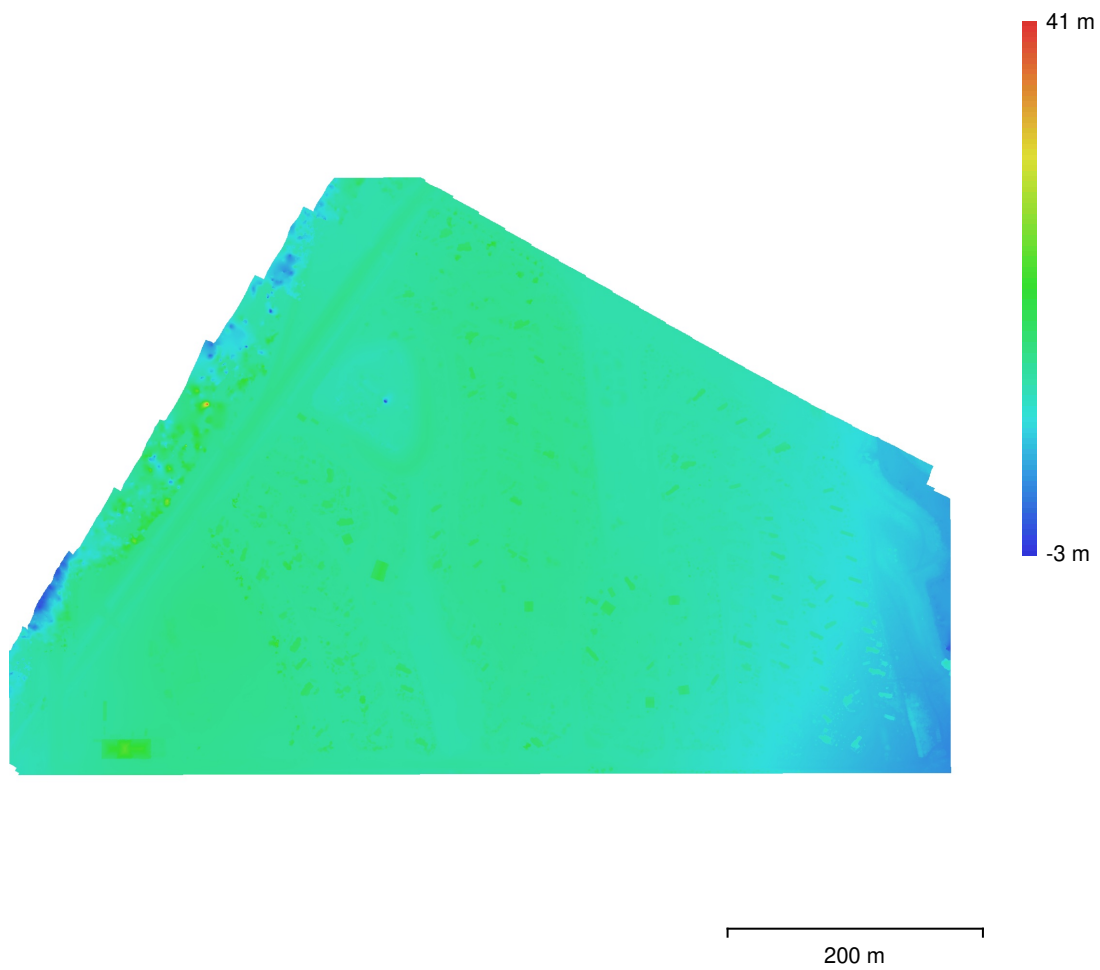


Fig. 4. Reconstructed digital elevation model.

Resolution: 10.7 cm/pix
Point density: 88.2 points/m²