

## APPENDIX M — VISAT ACCURACY ANALYSES

This appendix provides the spreadsheet used for the accuracy assessment of VISAT photogrammetric van data in Pinellas County, FL. Because only 20% of the homes had "target points" that could be seen on VISAT stereo images, Sanborn first provided EC data for 27 houses in one community that could be surveyed in stereo. Then, Dewberry hired a survey firm in Pinellas County to use GPS and conventional survey procedures to generate traditional ECs for those same 27 houses. The VISAT-derived elevations were tested to have vertical accuracy of approximately 1.5 ft at the 95% confidence level. The checkpoint surveys indicated top of bottom floor elevations were accurate to 1.54 ft at the 95% confidence level; LAG elevations were accurate to 1.34 ft at the 95% confidence level; and HAG elevations were accurate to 1.59 ft at the 95% confidence level. However, each of these houses had a concrete pad in the back yard for the air conditioner that was not seen from the street and/or could not have been mapped in stereo.

For visible features, their surveyed accuracies were acceptable; however, the inability to see (in stereo) the majority of the target points to be surveyed presents a major challenge for this technology.

Communities that already have photogrammetric van imagery will need to assess on a community-by-community basis whether their existing imagery will add value to their elevation records. For example, if all houses in the community are slab on grade, the community need not worry about not being able to see the existence of walk out basements visible only from the back yard. Also, foliage could be less dense, or their photogrammetric van stereo imagery could have been taken with a better stereo camera configuration so that a high percentage of target points to be surveyed can be seen in stereo. If such conditions are satisfactory, then photogrammetric van technology does yield elevation accuracies suitable for populating the elevation registry.

## APPENDIX M — VISAT PHOTOGRAMMETRIC VAN ACCURACY

Evaluation of VISAT Photogrammetric Van Elevations, compared with Field Surveyed Elevations

Pinellas County, Tarpon Springs, FL									LFE (ft)			Gar (ft)	LAG (ft)			HAG (ft)			A/C (ft)
Address	Latitude			Longitude			Survey	VISAT	$\hat{u}$	Survey	Survey	VISAT	$\hat{u}$	Survey	VISAT	$\hat{u}$	Survey		
614 Heatherwood Court	N	28	8	18.04	W	82	41	23.51	20.88	21.06	0.18	20.29	20.32	20.96	0.64	20.51	21.69	1.18	20.27
573 Centerwood Drive	N	28	8	21.23	W	82	41	15.46	22.00	22.28	0.28	21.36	21.30	21.55	0.25	21.52	22.38	0.86	21.55
721 Centerwood Drive	N	28	8	11.08	W	82	41	17.25	20.81	20.60	-0.21	20.06	20.05	18.90	-1.15	20.07	19.62	-0.45	20.37
778 Centerwood Drive	N	28	8	8.30	W	82	41	11.88	21.26	19.85	-1.41	20.59	20.41	19.13	-1.28	20.75	19.32	-1.43	20.94
818 Centerwood Drive	N	28	8	5.20	W	82	41	9.23	21.49	20.01	-1.48	20.74	20.36	19.26	-1.10	20.79	19.82	-0.97	21.03
917 Centerwood Drive	N	28	7	58.91	W	82	41	11.79	21.37	19.82	-1.55	20.88	20.55	19.26	-1.29	20.60	19.59	-1.01	20.78
3212 Centerwood Drive	N	28	8	30.60	W	82	41	24.92	22.85	23.00	0.15	22.34	22.13	22.44	0.31	22.38	22.77	0.39	22.33
853 Crestridge Circle	N	28	8	2.42	W	82	41	26.81	17.53	15.91	-1.62	16.97	16.77	15.19	-1.58	17.04	15.42	-1.62	17.29
882 Crestridge Circle	N	28	7	59.37	W	82	41	25.25	17.48	16.11	-1.37	17.11	16.65	15.81	-0.84	16.87	16.54	-0.33	17.23
820 Crestridge Drive	N	28	8	4.64	W	82	41	27.01	19.01	18.14	-0.87	18.49	18.45	17.42	-1.03	18.58	18.08	-0.50	18.44
337 Hedgerow Lane	N	28	8	37.16	W	82	41	0.99	21.65	20.83	-0.82	21.21	21.13	20.47	-0.66	21.22	20.77	-0.45	21.07
579 Hollow Tree Place	N	28	8	21.81	W	82	41	23.00	21.23	20.93	-0.30	20.79	20.54	20.73	0.19	20.78	21.39	0.61	20.47
361 Waterford Circle E	N	28	8	37.38	W	82	41	11.25	23.12	23.75	0.63	22.50	22.23	22.51	0.28	22.35	23.82	1.47	22.33
370 Waterford Circle E	N	28	8	35.47	W	82	41	9.89	22.02	22.18	0.16	21.41	20.88	21.36	0.48	21.50	23.23	1.73	21.33
409 Waterford Circle E	N	28	8	33.52	W	82	41	6.42	22.12	22.18	0.06	21.61	21.49	20.96	-0.53	21.51	22.11	0.60	21.49
489 Waterford Circle E	N	28	8	27.43	W	82	41	1.52	21.74	22.93	1.19	21.21	20.91	21.88	0.97	20.97	22.15	1.18	21.01
565 Waterford Circle E	N	28	8	20.91	W	82	41	25.98	21.50	21.98	0.48	21.02	20.92	21.49	0.57	21.11	21.85	0.74	21.22
590 Waterford Circle E	N	28	8	19.39	W	82	41	23.48	21.53	22.41	0.88	20.95	20.83	20.80	-0.03	21.03	21.10	0.07	19.85
599 Waterford Circle E	N	28	8	20.10	W	82	41	20.67	20.96	21.46	0.50	20.49	20.26	20.47	0.21	20.58	20.96	0.38	20.47
604 Waterford Circle E	N	28	8	18.12	W	82	41	7.42	21.95	20.93	-1.02	21.35	21.32	20.05	-1.27	21.46	21.00	-0.46	21.47
620 Waterford Circle E	N	28	8	18.20	W	82	41	14.12	21.75	20.44	-1.31	21.14	20.84	19.49	-1.35	21.16	20.18	-0.98	20.84
412 Waterford Circle W	N	28	8	32.84	W	82	41	28.84	22.83	22.70	-0.13	22.39	21.89	22.08	0.19	22.13	22.64	0.51	22.18
452 Waterford Circle W	N	28	8	29.54	W	82	41	28.77	22.54	22.21	-0.33	22.06	21.68	21.92	0.24	21.89	22.34	0.45	21.83
444 Waterford Circle W	N	28	8	30.15	W	82	41	28.88	22.81	22.87	0.06	22.37	22.15	22.51	0.36	22.18	23.06	0.88	22.17
537 Waterford Circle W	N	28	8	22.27	W	82	41	27.32	21.30	21.62	0.32	20.79	21.03	21.26	0.23	21.23	21.72	0.49	20.93
									1.54			Not	1.34			1.59			Not
									LFE 95th percentile			Compared	LAG 95th percentile			HAG 95th Percentile			Compared

Latitudes and longitudes agreed within a few hundredths of an arc second -- excellent