

# ***GROUND CONTROL SURVEY REPORT***

**GPS SURVEY  
FOR LIDAR CONTROL**

**FOND DU LAC COUNTY, WI WROC LIDAR  
SURVEY**

**FOND DU LAC COUNTY,  
WISCONSIN**

*Services provided by:*

**AVRES**  

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**ASSOCIATES**

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## **ABSTRACT**

This report documents the GPS ground surveys conducted in support of FEMA accuracy testing of the lidar data collection for Fond du Lac County, Wisconsin, in 2011. Surveys were conducted at 5 sites utilizing the base stations established in the static network. These surveys established “ground truth” data at each site on different surface types, including bare earth, low grass, brush lands, low trees, forest, high grass, weeds, crops, and urban areas. Statistical comparisons were made between ground truth points collected from the ground survey and the elevation at the associated horizontal coordinates represented on the LiDAR-derived digital terrain model.

## **SAMPLE POINTS/TEST POINTS**

The ground survey test points were distributed and categorized into sites as shown in the Test Survey Locations map on the next page.

## **DATA ANALYSIS**

To qualify as an acceptable accuracy test, the lidar data must be compared with a dataset of higher accuracy – in this instance ground survey. To develop a comparable dataset of points from the lidar dataset, a utility from proprietary software was used.

The ground control survey results were imported into an ESRI Pointz shapefile with each point’s information as attributes. The utility then accessed the lidar and generated a triangulated irregular network (TIN), which is a continuous digital terrain surface, using the bare-earth lidar points and the compiled breaklines. The utility probed the TIN surface to determine its elevations at each of the survey point’s horizontal locations.

The elevation was then appended as a field to the Pointz shapefile; the attributes for each point were exported to a database; and then statistical analysis was performed. The results can be seen on the following pages.

## **OVERALL ACCURACY**

A comparison of ground survey versus lidar model values indicates a vertical root mean square error (RMSE<sub>z</sub>) of 0.343 feet. This is within the FEMA specified vertical accuracy tolerance of 0.6. This RMSE<sub>z</sub> equates to a tested 0.673 feet vertical accuracy at 95% confidence level

FEMA SURVEY LOCATIONS



## GROUND TRUTH ANALYSIS

Comparison of Lidar Points to Ground Truth Points Fond du Lac County Coordinate  
System WISCRS  
NAD 83 HARN / NAVD 88, survey feet

### Field definitions

Name – The designation given to the ground survey point to identify it with its coordinates and land cover type

X, Y, and Z – The coordinates that describe the point's horizontal and vertical location within the Fond du Lac County WISCRS Coordinate System. The X and Y values are shared between the ground control points and lidar comparison points. The Z field shows the elevation of the survey number. The lidar comparison point's elevation is implicit in the analysis' delta Z

Delta Z – The error, the difference between the elevation at a horizontal location as determined by ground survey and as determined by the lidar dataset

Delta Z Squared – The value of squaring Delta Z

Land Cover – The predominant land cover category at the location of the survey point

### Statistic definitions

Sum – The sum of the analysis' Delta Z Squared values

Average – The average of the analysis' Delta Z Squared values

RMSE – The root mean squared error, the square root of the average of the squared errors

Accuracyz – The product of multiplying the RMSE with 1.96, a conversion between the RMSE value and a value with a 95% confidence level

NAME	Y	X	Z	LAND COVER	DELTA_Z	DELTA_Z_SQ
50004	391752.2	716893.3	1035.48	TREE COVE	-0.554	0.306916
50005	391746.7	716893.7	1035.55	TREE COVE	-0.314	0.098596
50006	391743.1	716894	1035.49	TREE COVE	-0.314	0.098596
50007	391743.2	716889.4	1035.56	TREE COVE	-0.389	0.151321
50008	391747.3	716889.1	1035.54	TREE COVE	-0.364	0.132496
50009	391751.5	716889.7	1035.49	TREE COVE	-0.557	0.310249
50010	391751.9	716883.4	1035.6	TREE COVE	-0.498	0.248004
50011	391746.3	716884.4	1035.58	TREE COVE	-0.354	0.125316
50012	391742.5	716884.2	1035.69	TREE COVE	-0.264	0.069696
50013	391743.3	716879.4	1035.61	TREE COVE	-0.336	0.112896
50014	391746.7	716880.1	1035.55	TREE COVE	-0.255	0.065025
50015	391751.1	716881.6	1035.62	TREE COVE	-0.449	0.201601
50016	391751.9	716875.2	1035.52	TREE COVE	-0.562	0.315844
50017	391747.4	716875.1	1035.64	TREE COVE	-0.438	0.191844
50018	391742.7	716874.7	1035.63	TREE COVE	-0.487	0.237169
50019	391753.7	716867.9	1035.67	TREE COVE	-0.321	0.103041
50020	391748.6	716868.5	1035.68	TREE COVE	-0.183	0.033489
50021	391744.8	716868.4	1035.68	TREE COVE	-0.325	0.105625
50022	391744.8	716863.5	1035.72	TREE COVE	-0.323	0.104329
50023	391749.4	716863.6	1035.7	TREE COVE	-0.417	0.173889
50024	391754.3	716863.2	1035.65	TREE COVE	-0.386	0.148996
50025	391751.8	716855.4	1035.69	TREE COVE	-0.561	0.314721
50026	391746.4	716854.9	1035.8	TREE COVE	-0.357	0.127449
50027	391743.2	716856.5	1035.82	TREE COVE	-0.368	0.135424
50028	391875.2	716844.4	1038.45	TALL GRASSS	-0.356	0.126736
50029	391879.6	716844.3	1038.55	TALL GRASSS	-0.479	0.229441
50030	391884.6	716843.9	1038.63	TALL GRASSS	-0.398	0.158404
50031	391889.6	716843.5	1038.75	TALL GRASSS	-0.408	0.166464
50032	391894.9	716843.3	1038.67	TALL GRASSS	-0.546	0.298116
50033	391894.9	716848.9	1038.75	TALL GRASSS	-0.544	0.295936
50034	391889.4	716849.2	1038.8	TALL GRASSS	-0.759	0.576081
50035	391884.9	716849.7	1038.76	TALL GRASSS	-0.383	0.146689
50036	391880.2	716849.9	1038.75	TALL GRASSS	-0.424	0.179776
50037	391875.3	716850.8	1038.63	TALL GRASSS	-0.5	0.25
50038	391876.2	716855.6	1038.83	TALL GRASSS	-0.414	0.171396
50039	391881.9	716854	1038.76	TALL GRASSS	-0.431	0.185761
50040	391887.2	716854	1038.9	TALL GRASSS	-0.485	0.235225
50041	391893	716854.1	1038.97	TALL GRASSS	-0.523	0.273529
50042	391898	716854.2	1038.97	TALL GRASSS	-0.555	0.308025
50043	391897.7	716859.7	1039.09	TALL GRASSS	-0.425	0.180625
50044	391892	716859.7	1039.09	TALL GRASSS	-0.3	0.09
50045	391886.4	716859.4	1038.99	TALL GRASSS	-0.324	0.104976
50046	391881.7	716860.2	1038.92	TALL GRASSS	-0.524	0.274576
50047	391877.2	716860.6	1038.9	TALL GRASSS	-0.568	0.322624
50048	391877.8	716866.3	1039.03	TALL GRASSS	-0.384	0.147456
50049	391883.9	716864.9	1038.97	TALL GRASSS	-0.554	0.306916



50050	391889.2	716864.4	1039.15	TALL GRASSS	-0.332	0.110224
50051	391895.4	716864.7	1039.22	TALL GRASSS	-0.665	0.442225
50052	391901.2	716864	1039.16	TALL GRASSS	-0.43	0.1849
50053	392052.1	716833.7	1033.09	BRUSH/LOW	-0.631	0.398161
50054	392051.5	716829.6	1032.96	BRUSH/LOW	-0.715	0.511225
50055	392050.7	716826.2	1032.96	BRUSH/LOW	-0.536	0.287296
50056	392049.5	716823.6	1032.88	BRUSH/LOW	-0.811	0.657721
50057	392048.5	716820.7	1032.78	BRUSH/LOW	-0.682	0.465124
50058	392051.3	716820.5	1032.73	BRUSH/LOW	-0.75	0.5625
50059	392052.4	716822.8	1032.77	BRUSH/LOW	-0.887	0.786769
50060	392054.7	716825	1032.81	BRUSH/LOW	-0.921	0.848241
50061	392055.7	716827.6	1032.85	BRUSH/LOW	-0.836	0.698896
50062	392056.1	716831.2	1032.85	BRUSH/LOW	-0.812	0.659344
50063	392059	716830.4	1032.76	BRUSH/LOW	-0.719	0.516961
50064	392058.6	716827.6	1032.67	BRUSH/LOW	-0.793	0.628849
50065	392057.5	716825.1	1032.71	BRUSH/LOW	-0.802	0.643204
50066	392056.7	716822.4	1032.63	BRUSH/LOW	-0.798	0.636804
50067	392056.3	716819.7	1032.57	BRUSH/LOW	-0.609	0.370881
50068	392059.3	716819.7	1032.42	BRUSH/LOW	-0.796	0.633616
50069	392058.8	716821.9	1032.54	BRUSH/LOW	-0.596	0.355216
50070	392059.4	716823.9	1032.55	BRUSH/LOW	-0.554	0.306916
50071	392062.8	716824.1	1032.45	BRUSH/LOW	-0.625	0.390625
50072	392063	716821.9	1032.42	BRUSH/LOW	-0.771	0.594441
50073	392063.3	716819.2	1032.31	BRUSH/LOW	-0.838	0.702244
50074	392067.3	716820	1032.23	BRUSH/LOW	-0.767	0.588289
50075	392067	716822.9	1032.37	BRUSH/LOW	-0.722	0.521284
50076	392066.9	716825.9	1032.38	BRUSH/LOW	-0.615	0.378225
50077	392070.3	716822.2	1032.32	BRUSH/LOW	-0.661	0.436921
50078	392544.3	717100.6	1031.13	MOWED GRASS	-0.485	0.235225
50079	392539.9	717100.3	1031.04	MOWED GRASS	-0.537	0.288369
50080	392535	717099.4	1031.01	MOWED GRASS	-0.447	0.199809
50081	392529.1	717099	1030.98	MOWED GRASS	-0.438	0.191844
50082	392523	717098.3	1030.87	MOWED GRASS	-0.387	0.149769
50083	392523.5	717103.4	1030.98	MOWED GRASS	-0.477	0.227529
50084	392529	717103.3	1030.93	MOWED GRASS	-0.562	0.315844
50085	392534.8	717104	1031.11	MOWED GRASS	-0.385	0.148225
50086	392541	717104.3	1031.14	MOWED GRASS	-0.54	0.2916
50087	392547.2	717105.1	1031.23	MOWED GRASS	-0.467	0.218089
50088	392546.2	717110.4	1031.34	MOWED GRASS	-0.406	0.164836
50089	392539.8	717110.3	1031.24	MOWED GRASS	-0.429	0.184041
50090	392533.8	717110.4	1031.33	MOWED GRASS	-0.389	0.151321
50091	392527.6	717110	1031.2	MOWED GRASS	-0.368	0.135424
50092	392521.1	717109.5	1031.18	MOWED GRASS	-0.401	0.160801
50093	392520.1	717117.4	1031.27	MOWED GRASS	-0.508	0.258064
50094	392527.6	717118.2	1031.34	MOWED GRASS	-0.438	0.191844
50095	392534.3	717118.9	1031.53	MOWED GRASS	-0.422	0.178084
50096	392540.5	717120.1	1031.52	MOWED GRASS	-0.555	0.308025

50097	392546.3	717120.5	1031.62	MOWED GRASS	-0.535	0.286225
50098	392546.5	717127.1	1031.89	MOWED GRASS	-0.478	0.228484
50099	392540.8	717126.5	1031.83	MOWED GRASS	-0.442	0.195364
50100	392534.7	717126.2	1031.76	MOWED GRASS	-0.433	0.187489
50101	392528.8	717125.8	1031.61	MOWED GRASS	-0.444	0.197136
50102	392522.6	717125.9	1031.62	MOWED GRASS	-0.43	0.1849
50103	392559.5	717017.7	1032.15	ASPH	-0.478	0.228484
50104	392560.1	717013.3	1032.27	ASPH	-0.52	0.2704
50105	392560.2	717007.6	1032.24	ASPH	-0.451	0.203401
50106	392559.8	717002.5	1032.22	ASPH	-0.412	0.169744
50107	392551.6	717000.6	1032.14	ASPH	-0.235	0.055225
50108	392551	717005.4	1032.28	ASPH	-0.094	0.008836
50109	392551	717010	1032.37	ASPH	-0.244	0.059536
50110	392550.6	717013	1032.33	ASPH	-0.3	0.09
50111	392549.7	717020.1	1032.23	ASPH	-0.567	0.321489
50112	392543.3	717020.7	1032.29	ASPH	-0.31	0.0961
50113	392541.7	717014.1	1032.29	ASPH	-0.377	0.142129
50114	392542.5	717007.7	1032.32	ASPH	-0.269	0.072361
50115	392542.8	717002	1032.19	ASPH	-0.215	0.046225
50116	392533.2	717001	1032.22	ASPH	-0.373	0.139129
50117	392532.3	717006.5	1032.39	ASPH	-0.306	0.093636
50118	392531.7	717012.6	1032.42	ASPH	-0.408	0.166464
50119	392531.3	717019.2	1032.34	ASPH	-0.42	0.1764
50120	392522.8	717019.5	1032.32	ASPH	-0.599	0.358801
50121	392523.1	717011.1	1032.46	ASPH	-0.379	0.143641
50122	392523.6	717005.7	1032.33	ASPH	-0.473	0.223729
50123	392523.3	717000.7	1032.18	ASPH	-0.382	0.145924
50124	392515	717000.2	1032.29	ASPH	-0.473	0.223729
50125	392514.1	717006.6	1032.41	ASPH	-0.297	0.088209
50126	392511.7	717012.8	1032.5	ASPH	-0.387	0.149769
50127	392511.2	717018.3	1032.4	ASPH	-0.618	0.381924
50128	392502.6	717017.9	1032.37	ASPH	-0.486	0.236196
50129	392502.4	717013.6	1032.46	ASPH	-0.385	0.148225
50130	392502.6	717006.2	1032.44	ASPH	-0.424	0.179776
50131	392502.7	717000.1	1032.29	ASPH	-0.561	0.314721
50132	392692.3	716968.7	1030.23	GRASSV	-0.117	0.013689
50133	392697.3	716968.9	1030.47	GRASSV	-0.053	0.002809
50134	392701.3	716968.9	1030.63	GRASSV	-0.052	0.002704
50135	392701.3	716963.5	1030.41	GRASSV	-0.24	0.0576
50136	392697.2	716963.7	1030.31	GRASSV	0.054	0.002916
50137	392692.8	716964	1030.09	GRASSV	-0.118	0.013924
50138	392692.7	716957.7	1029.87	GRASSV	-0.189	0.035721
50139	392697.6	716957.6	1030.06	GRASSV	-0.052	0.002704
50140	392701.5	716957.5	1030.22	GRASSV	-0.241	0.058081
50141	392701.6	716952.2	1030.08	GRASSV	-0.225	0.050625
50142	392697.5	716952.4	1029.98	GRASSV	-0.06	0.0036
50143	392692.9	716952.6	1029.8	GRASSV	-0.059	0.003481

50144	392692.7	716946.9	1029.74	GRASSV	-0.146	0.021316
50145	392697.4	716946.6	1029.89	GRASSV	-0.137	0.018769
50146	392701.3	716946.9	1030.02	GRASSV	-0.136	0.018496
50147	392700.8	716940.1	1030	GRASSV	-0.033	0.001089
50148	392696.9	716940	1029.86	GRASSV	-0.055	0.003025
50149	392692.3	716940	1029.71	GRASSV	0.004	0.000016
50150	392692	716932.4	1029.69	GRASSV	-0.032	0.001024
50151	392696.9	716931.5	1029.83	GRASSV	-0.247	0.061009
50152	392700.5	716931.4	1029.98	GRASSV	0	0
50153	392700.3	716925.6	1029.94	GRASSV	-0.097	0.009409
50154	392696.1	716925.4	1029.82	GRASSV	-0.093	0.008649
50155	392692	716925.2	1029.68	GRASSV	-0.1	0.01
50162	417958.7	782434.2	904.77	TREE COVE	-0.251	0.063001
50163	417954.8	782434	904.79	TREE COVE	-0.509	0.259081
50164	417950.8	782433.8	904.66	TREE COVE	-0.696	0.484416
50165	417946.5	782433.5	904.66	TREE COVE	-0.497	0.247009
50166	417941.9	782431.6	903.89	TREE COVE	-0.374	0.139876
50167	417941.6	782426.8	903.9	TREE COVE	-0.392	0.153664
50168	417945.2	782426.9	904.2	TREE COVE	-0.39	0.1521
50169	417948.5	782427.4	904.62	TREE COVE	-0.476	0.226576
50170	417952.1	782427.6	904.53	TREE COVE	-0.568	0.322624
50171	417955.6	782427.8	904.63	TREE COVE	-0.281	0.078961
50172	417955.5	782423.8	904.69	TREE COVE	-0.27	0.0729
50173	417951.5	782423.9	904.41	TREE COVE	-0.665	0.442225
50174	417948.1	782424.5	904.59	TREE COVE	-0.475	0.225625
50175	417944.3	782425.2	904.06	TREE COVE	-0.522	0.272484
50176	417940.5	782425.4	903.76	TREE COVE	-0.407	0.165649
50177	417940.5	782419.8	903.93	TREE COVE	-0.118	0.013924
50178	417944.4	782420.2	904.2	TREE COVE	-0.43	0.1849
50179	417946.1	782419.7	904.51	TREE COVE	-0.307	0.094249
50180	417950.9	782420.2	904.34	TREE COVE	-0.604	0.364816
50181	417955.5	782420.2	904.62	TREE COVE	-0.309	0.095481
50182	417955.3	782415	904.6	TREE COVE	-0.259	0.067081
50183	417951.2	782415	904.45	TREE COVE	-0.539	0.290521
50184	417946.9	782415.5	904.54	TREE COVE	-0.374	0.139876
50185	417943.2	782415.7	904.25	TREE COVE	-0.477	0.227529
50186	417939.4	782416.2	903.72	TREE COVE	-0.471	0.221841
50187	418016	782445.7	904.93	MOWED GRASS	-0.413	0.170569
50188	418019.1	782445.3	904.85	MOWED GRASS	-0.43	0.1849
50189	418027	782446.1	904.89	MOWED GRASS	-0.4	0.16
50190	418033	782446.1	904.85	MOWED GRASS	-0.371	0.137641
50191	418039	782446.1	904.96	MOWED GRASS	-0.202	0.040804
50192	418038.5	782451.6	904.99	MOWED GRASS	-0.359	0.128881
50193	418032.3	782451.3	905	MOWED GRASS	-0.41	0.1681
50194	418026.6	782451	904.93	MOWED GRASS	-0.287	0.082369
50195	418021	782450.7	904.92	MOWED GRASS	-0.333	0.110889
50196	418015.8	782451	905.01	MOWED GRASS	-0.301	0.090601



50197	418015.5	782457.1	905.08	MOWED GRASS	-0.237	0.056169
50198	418019.1	782456.8	904.93	MOWED GRASS	-0.262	0.068644
50199	418025.8	782457.5	904.95	MOWED GRASS	-0.278	0.077284
50200	418032.5	782457.8	905.06	MOWED GRASS	-0.212	0.044944
50201	418038.1	782457.9	905.03	MOWED GRASS	-0.205	0.042025
50202	418037.6	782464	905.18	MOWED GRASS	-0.291	0.084681
50203	418031.8	782463.6	905.11	MOWED GRASS	-0.372	0.138384
50204	418026.4	782463.5	905.1	MOWED GRASS	-0.206	0.042436
50205	418020.2	782463.3	905.05	MOWED GRASS	-0.323	0.104329
50206	418014.9	782463.2	905.13	MOWED GRASS	-0.323	0.104329
50207	418015.3	782469.5	905.12	MOWED GRASS	-0.441	0.194481
50208	418021.2	782470.5	905.24	MOWED GRASS	-0.306	0.093636
50209	418026.2	782470.7	905.21	MOWED GRASS	-0.226	0.051076
50210	418032.4	782470.7	905.24	MOWED GRASS	-0.28	0.0784
50211	418038.3	782470.9	905.34	MOWED GRASS	-0.27	0.0729
50212	418166.4	782485.1	908.34	GRASSV	-0.18	0.0324
50213	418170.1	782485	908.37	GRASSV	-0.199	0.039601
50214	418174.3	782485.2	908.2	GRASSV	-0.258	0.066564
50215	418174.3	782490.7	908.46	GRASSV	-0.285	0.081225
50216	418171.6	782491.5	908.67	GRASSV	-0.216	0.046656
50217	418166.1	782490.9	908.56	GRASSV	-0.269	0.072361
50218	418166.7	782496.3	908.75	GRASSV	-0.123	0.015129
50219	418171.1	782496.2	908.82	GRASSV	-0.407	0.165649
50220	418175.3	782496.1	908.61	GRASSV	-0.407	0.165649
50221	418175	782501.6	908.83	GRASSV	-0.363	0.131769
50222	418170.6	782501.5	908.98	GRASSV	-0.236	0.055696
50223	418166.3	782501.5	908.91	GRASSV	-0.295	0.087025
50224	418166.8	782506.5	909.12	GRASSV	-0.081	0.006561
50225	418171.2	782506.4	909.16	GRASSV	-0.144	0.020736
50226	418175.6	782506.2	908.97	GRASSV	-0.311	0.096721
50227	418175.7	782512.1	909.22	GRASSV	-0.345	0.119025
50228	418171.1	782511.9	909.39	GRASSV	-0.128	0.016384
50229	418167.3	782511.9	909.29	GRASSV	-0.154	0.023716
50230	418167.6	782517.4	909.43	GRASSV	-0.192	0.036864
50231	418172.1	782517.2	909.49	GRASSV	-0.12	0.0144
50232	418176	782517.2	909.39	GRASSV	-0.259	0.067081
50233	418176.2	782523	909.53	GRASSV	-0.279	0.077841
50234	418171.4	782522.7	909.57	GRASSV	-0.216	0.046656
50235	418167.3	782522.8	909.48	GRASSV	-0.226	0.051076
50236	418167.6	782526.8	909.52	GRASSV	-0.147	0.021609
50237	418172.5	782526.9	909.62	GRASSV	-0.098	0.009604
50238	418176.3	782526.9	909.59	GRASSV	-0.192	0.036864
50239	418178.2	782578.7	910.34	ASPH	-0.162	0.026244
50240	418178.3	782584.1	910.53	ASPH	-0.081	0.006561
50241	418178.8	782588.7	910.59	ASPH	-0.192	0.036864
50242	418179.5	782592.9	910.5	ASPH	-0.166	0.027556
50243	418185.4	782591.9	910.53	ASPH	-0.088	0.007744

50244	418184.6	782586.1	910.65	ASPH	-0.111	0.012321
50245	418183.8	782581.4	910.52	ASPH	-0.171	0.029241
50246	418183.4	782576.8	910.34	ASPH	-0.128	0.016384
50247	418189.4	782576.2	910.43	ASPH	-0.116	0.013456
50248	418189.9	782581.5	910.62	ASPH	-0.323	0.104329
50249	418190.7	782585.3	910.69	ASPH	-0.13	0.0169
50250	418191.3	782590	910.62	ASPH	-0.243	0.059049
50251	418198.4	782588.6	910.68	ASPH	-0.197	0.038809
50252	418198.3	782582.9	910.76	ASPH	-0.239	0.057121
50253	418197.7	782578.6	910.64	ASPH	-0.153	0.023409
50254	418197.2	782574.1	910.51	ASPH	-0.219	0.047961
50255	418203.4	782573.3	910.58	ASPH	-0.347	0.120409
50256	418204	782578.7	910.76	ASPH	-0.082	0.006724
50257	418204.3	782583.2	910.79	ASPH	-0.222	0.049284
50258	418205.5	782587.7	910.74	ASPH	-0.077	0.005929
50259	418212.5	782585.6	910.83	ASPH	-0.2	0.04
50260	418211.3	782580	910.87	ASPH	-0.162	0.026244
50261	418210.4	782574.8	910.72	ASPH	-0.206	0.042436
50262	418209.8	782570.6	910.6	ASPH	-0.309	0.095481
50263	418237.6	782649.8	908.86	TALL GRASSS	-0.23	0.0529
50264	418232	782649.6	908.88	TALL GRASSS	-0.322	0.103684
50265	418227.8	782650.1	908.95	TALL GRASSS	-0.295	0.087025
50266	418223.7	782650.8	908.73	TALL GRASSS	-0.301	0.090601
50267	418218.9	782651.6	908.49	TALL GRASSS	-0.402	0.161604
50268	418219.4	782657.2	908.1	TALL GRASSS	-0.327	0.106929
50269	418224.5	782658	908.35	TALL GRASSS	-0.373	0.139129
50270	418229.3	782658.3	908.45	TALL GRASSS	-0.216	0.046656
50271	418233.8	782659.4	908.57	TALL GRASSS	-0.154	0.023716
50272	418238.9	782660.5	908.56	TALL GRASSS	-0.205	0.042025
50273	418237.9	782666.5	908.19	TALL GRASSS	-0.383	0.146689
50274	418232.7	782665.6	908.13	TALL GRASSS	-0.249	0.062001
50275	418228.4	782665	908.16	TALL GRASSS	-0.239	0.057121
50276	418223.9	782664.8	908.07	TALL GRASSS	-0.246	0.060516
50277	418219	782664.5	907.96	TALL GRASSS	-0.384	0.147456
50278	418218.4	782670.6	907.72	TALL GRASSS	-0.365	0.133225
50279	418223.3	782670.6	907.83	TALL GRASSS	-0.453	0.205209
50280	418228	782671.1	907.86	TALL GRASSS	-0.456	0.207936
50281	418233.5	782671.2	907.88	TALL GRASSS	-0.353	0.124609
50282	418239.5	782671.6	907.93	TALL GRASSS	-0.343	0.117649
50283	418238.9	782677.6	907.68	TALL GRASSS	-0.073	0.005329
50284	418233.3	782677	907.55	TALL GRASSS	-0.379	0.143641
50285	418228.8	782676.5	907.51	TALL GRASSS	-0.363	0.131769
50286	418224.4	782676	907.59	TALL GRASSS	-0.259	0.067081
50287	418220	782675.3	907.5	TALL GRASSS	-0.337	0.113569
50288	418331.5	782415.5	910.27	BRUSH/LOW	-0.528	0.278784
50289	418334.5	782415.8	910.26	BRUSH/LOW	-0.536	0.287296
50290	418338	782415.7	910.3	BRUSH/LOW	-0.505	0.255025

50291	418337.9	782412.3	910.23	BRUSH/LOW	-0.374	0.139876
50292	418335.1	782411.9	910.11	BRUSH/LOW	-0.532	0.283024
50293	418332.1	782411.3	910.21	BRUSH/LOW	-0.438	0.191844
50294	418332.3	782407.5	910.1	BRUSH/LOW	-0.385	0.148225
50295	418335	782407.8	910.02	BRUSH/LOW	-0.478	0.228484
50296	418337.9	782408.2	910.16	BRUSH/LOW	-0.312	0.097344
50297	418337.5	782403.8	909.97	BRUSH/LOW	-0.265	0.070225
50298	418334.7	782403.5	909.9	BRUSH/LOW	-0.361	0.130321
50299	418331.1	782404.1	909.93	BRUSH/LOW	-0.572	0.327184
50300	418330.7	782399.2	909.78	BRUSH/LOW	-0.292	0.085264
50301	418334.3	782399.4	909.76	BRUSH/LOW	-0.266	0.070756
50302	418338	782399.3	909.69	BRUSH/LOW	-0.213	0.045369
50303	418337.9	782396	909.53	BRUSH/LOW	-0.361	0.130321
50304	418334.7	782395.6	909.63	BRUSH/LOW	-0.454	0.206116
50305	418330.7	782395.1	909.51	BRUSH/LOW	-0.455	0.207025
50306	418330.7	782391	909.42	BRUSH/LOW	-0.341	0.116281
50307	418334.1	782391.5	909.43	BRUSH/LOW	-0.392	0.153664
50308	418337.5	782391.5	909.43	BRUSH/LOW	-0.305	0.093025
50309	418337.8	782387.4	909.21	BRUSH/LOW	-0.297	0.088209
50310	418333.5	782387.2	909.26	BRUSH/LOW	-0.413	0.170569
50311	418329.6	782387.1	909.19	BRUSH/LOW	-0.443	0.196249
50316	359753.9	770336	897.83	TREE COVE	-0.153	0.023409
50317	359749.5	770335.7	897.88	TREE COVE	-0.285	0.081225
50318	359745.5	770335.5	898.65	TREE COVE	-0.099	0.009801
50319	359742.9	770335.8	898.46	TREE COVE	-0.226	0.051076
50320	359740.7	770335.1	898.48	TREE COVE	-0.008	0.000064
50321	359740.5	770338.3	898.32	TREE COVE	0.212	0.044944
50322	359742.5	770339	898.33	TREE COVE	0.225	0.050625
50323	359744.6	770338	898.51	TREE COVE	0.102	0.010404
50324	359747.5	770338.6	898.12	TREE COVE	-0.304	0.092416
50325	359750.6	770337.4	897.79	TREE COVE	-0.331	0.109561
50326	359750.4	770340.1	897.75	TREE COVE	-0.341	0.116281
50327	359747.1	770340.5	898.12	TREE COVE	0.021	0.000441
50328	359744.2	770341.4	898.51	TREE COVE	0.487	0.237169
50329	359742.3	770342.4	898.45	TREE COVE	0.35	0.1225
50330	359739.6	770343.7	897.88	TREE COVE	-0.313	0.097969
50331	359739.8	770346.8	897.93	TREE COVE	-0.441	0.194481
50332	359741.3	770346.8	898.27	TREE COVE	-0.346	0.119716
50333	359743.7	770346.2	898.35	TREE COVE	-0.469	0.219961
50334	359746.6	770346.5	898.05	TREE COVE	-0.072	0.005184
50335	359750.7	770347.7	897.5	TREE COVE	-0.384	0.147456
50336	359750.6	770352.2	897.39	TREE COVE	-0.295	0.087025
50337	359746.5	770352.2	897.41	TREE COVE	-0.467	0.218089
50338	359744.5	770351.7	897.98	TREE COVE	-0.33	0.1089
50339	359741.4	770355.7	897.78	TREE COVE	-0.172	0.029584
50340	359739	770355	897.37	TREE COVE	-0.204	0.041616
50341	360020.3	770448.7	904.81	MOWED GRASS	-0.005	0.000025

50342	360024.9	770448.8	904.95	MOWED GRASS	0.022	0.000484
50343	360028.7	770449.1	905.03	MOWED GRASS	0.013	0.000169
50344	360032.7	770449.2	905.09	MOWED GRASS	-0.006	0.000036
50345	360037.1	770449.2	905.13	MOWED GRASS	-0.071	0.005041
50346	360037.8	770443.8	905.4	MOWED GRASS	-0.073	0.005329
50347	360033.3	770443.8	905.39	MOWED GRASS	0.108	0.011664
50348	360029.4	770443.5	905.28	MOWED GRASS	0.003	0.000009
50349	360024.9	770443.7	905.22	MOWED GRASS	0.037	0.001369
50350	360021.1	770443.5	905.16	MOWED GRASS	-0.055	0.003025
50351	360021.1	770438.7	905.58	MOWED GRASS	0.133	0.017689
50352	360026.1	770438.8	905.53	MOWED GRASS	0.043	0.001849
50353	360030.9	770439	905.56	MOWED GRASS	-0.065	0.004225
50354	360035.1	770438.6	905.67	MOWED GRASS	0.047	0.002209
50355	360039	770438	905.75	MOWED GRASS	-0.026	0.000676
50356	360040.4	770433.2	906.13	MOWED GRASS	0.011	0.000121
50357	360035	770432.3	906.05	MOWED GRASS	0.051	0.002601
50358	360031.3	770432	905.94	MOWED GRASS	0.012	0.000144
50359	360027.4	770432	905.78	MOWED GRASS	0.037	0.001369
50360	360023.6	770432	905.8	MOWED GRASS	0.023	0.000529
50361	360023.8	770426.7	906.04	MOWED GRASS	-0.012	0.000144
50362	360028.9	770426.6	906.02	MOWED GRASS	-0.024	0.000576
50363	360033.3	770426.7	906.26	MOWED GRASS	-0.025	0.000625
50364	360037.4	770426.9	906.4	MOWED GRASS	-0.026	0.000676
50365	360042.5	770426.8	906.65	MOWED GRASS	-0.002	0.000004
50366	360219.3	770506.9	906.63	ASPH	0.038	0.001444
50367	360219.8	770504.1	906.71	ASPH	0.125	0.015625
50368	360220.3	770500.3	906.83	ASPH	0.233	0.054289
50369	360220.4	770496.6	906.84	ASPH	0.229	0.052441
50370	360220.5	770492.7	906.82	ASPH	0.106	0.011236
50371	360215.8	770492.5	906.86	ASPH	0.085	0.007225
50372	360215.8	770496.4	906.9	ASPH	0.232	0.053824
50373	360215.7	770499.6	906.89	ASPH	0.258	0.066564
50374	360215.6	770502.8	906.8	ASPH	0.193	0.037249
50375	360215.5	770506.4	906.69	ASPH	0.111	0.012321
50376	360211.7	770506.5	906.72	ASPH	0.219	0.047961
50377	360211.7	770502.2	906.87	ASPH	0.246	0.060516
50378	360211.9	770498.3	906.93	ASPH	0.214	0.045796
50379	360211.9	770494.5	906.91	ASPH	0.21	0.0441
50380	360212	770490.8	906.88	ASPH	0.225	0.050625
50381	360207.7	770490.6	906.91	ASPH	0.216	0.046656
50382	360207.3	770494.8	906.94	ASPH	0.209	0.043681
50383	360206.7	770498.6	906.96	ASPH	0.109	0.011881
50384	360206.5	770502.2	906.9	ASPH	0.194	0.037636
50385	360206.4	770506.6	906.76	ASPH	0.254	0.064516
50386	360201.1	770507.3	906.8	ASPH	0.214	0.045796
50387	360201.4	770502.4	906.91	ASPH	0.238	0.056644
50388	360201.2	770498.4	906.98	ASPH	0.197	0.038809

50389	360201.5	770494.5	906.93	ASPH	0.113	0.012769
50390	360201.1	770490.5	906.91	ASPH	0.016	0.000256
50391	360211.1	770618.1	896.6	GRASSV	0.07	0.0049
50392	360210.9	770622.5	896.52	GRASSV	0.174	0.030276
50393	360210.2	770627	896.43	GRASSV	0.306	0.093636
50394	360209.4	770631.8	896.25	GRASSV	0.208	0.043264
50395	360208.4	770636.4	896.17	GRASSV	0.199	0.039601
50396	360203.6	770635.5	896.4	GRASSV	0.227	0.051529
50397	360203.3	770630.2	896.6	GRASSV	0.026	0.000676
50398	360203.9	770625	896.73	GRASSV	-0.082	0.006724
50399	360204.3	770620.7	896.83	GRASSV	0.115	0.013225
50400	360204.8	770616.4	896.9	GRASSV	0.238	0.056644
50401	360199.5	770616.2	897.12	GRASSV	0.158	0.024964
50402	360198.9	770621.2	897.01	GRASSV	0.206	0.042436
50403	360198.4	770625.8	896.94	GRASSV	0.116	0.013456
50404	360195.2	770629.2	896.97	GRASSV	0.387	0.149769
50405	360193.8	770635.2	896.85	GRASSV	0.145	0.021025
50406	360188.7	770635.5	897.09	GRASSV	0.283	0.080089
50407	360189	770630.5	897.19	GRASSV	0.276	0.076176
50408	360189.5	770626.4	897.24	GRASSV	0.163	0.026569
50409	360189.8	770621.9	897.32	GRASSV	0.17	0.0289
50410	360189.7	770617	897.36	GRASSV	0.092	0.008464
50411	360184.5	770616.7	897.51	GRASSV	0.177	0.031329
50412	360182.8	770621.8	897.51	GRASSV	0.133	0.017689
50413	360182.7	770626.3	897.45	GRASSV	-0.016	0.000256
50414	360182.3	770631.1	897.36	GRASSV	0.115	0.013225
50415	360182.3	770635.9	897.28	GRASSV	0.163	0.026569
50416	360056.5	770619.7	896.05	BRUSH/LOW	-0.152	0.023104
50417	360053.3	770620	895.98	BRUSH/LOW	-0.122	0.014884
50418	360051	770620.4	895.96	BRUSH/LOW	-0.069	0.004761
50419	360048.2	770620.2	895.74	BRUSH/LOW	-0.048	0.002304
50420	360044.7	770620	895.58	BRUSH/LOW	-0.131	0.017161
50421	360044.5	770623.8	895.29	BRUSH/LOW	-0.118	0.013924
50422	360046.8	770623.7	895.45	BRUSH/LOW	-0.015	0.000225
50423	360049.5	770624	895.63	BRUSH/LOW	-0.125	0.015625
50424	360053.2	770625	895.83	BRUSH/LOW	-0.035	0.001225
50425	360055.8	770624.2	895.71	BRUSH/LOW	-0.271	0.073441
50426	360055.1	770626.9	895.61	BRUSH/LOW	-0.119	0.014161
50427	360052.2	770627.2	895.58	BRUSH/LOW	-0.03	0.0009
50428	360049.3	770627.4	895.36	BRUSH/LOW	-0.152	0.023104
50429	360044.8	770627.7	895.17	BRUSH/LOW	-0.114	0.012996
50430	360041.6	770627.9	894.93	BRUSH/LOW	-0.239	0.057121
50431	360041.4	770632.5	894.59	BRUSH/LOW	-0.23	0.0529
50432	360045.7	770632.9	894.77	BRUSH/LOW	-0.314	0.098596
50433	360049.6	770633	895.11	BRUSH/LOW	-0.136	0.018496
50434	360053.5	770633.3	895.32	BRUSH/LOW	0.049	0.002401
50435	360057.4	770632.8	895.36	BRUSH/LOW	-0.131	0.017161

50436	360057.2	770637.5	895.21	BRUSH/LOW	-0.024	0.000576
50437	360053.4	770637.2	895.15	BRUSH/LOW	0.141	0.019881
50438	360049	770637.1	894.77	BRUSH/LOW	-0.124	0.015376
50439	360045	770637.2	894.58	BRUSH/LOW	-0.123	0.015129
50440	360040.6	770638.5	894.06	BRUSH/LOW	-0.271	0.073441
50441	359911.8	770589.5	892.2	TALL GRASSS	-0.373	0.139129
50442	359907.7	770589.4	892.11	TALL GRASSS	-0.306	0.093636
50443	359903.3	770589.9	892.03	TALL GRASSS	-0.21	0.0441
50444	359898.4	770589.7	891.83	TALL GRASSS	-0.266	0.070756
50445	359893.7	770590	891.77	TALL GRASSS	-0.187	0.034969
50446	359894.4	770584.3	891.94	TALL GRASSS	-0.562	0.315844
50447	359899.4	770584.2	892.17	TALL GRASSS	-0.314	0.098596
50448	359904.3	770584	892.33	TALL GRASSS	-0.247	0.061009
50449	359909.2	770584	892.43	TALL GRASSS	-0.272	0.073984
50450	359913.6	770584.2	892.58	TALL GRASSS	-0.212	0.044944
50451	359913.9	770579.4	892.69	TALL GRASSS	-0.24	0.0576
50452	359909.3	770578.4	892.61	TALL GRASSS	-0.282	0.079524
50453	359904.5	770578.4	892.48	TALL GRASSS	-0.348	0.121104
50454	359899.8	770579	892.37	TALL GRASSS	-0.284	0.080656
50455	359895	770579.4	892.29	TALL GRASSS	-0.347	0.120409
50456	359895.6	770574.3	892.51	TALL GRASSS	-0.125	0.015625
50457	359900.5	770574.2	892.6	TALL GRASSS	-0.091	0.008281
50458	359905.5	770574	892.82	TALL GRASSS	-0.042	0.001764
50459	359910.9	770574.1	892.84	TALL GRASSS	-0.225	0.050625
50460	359916.5	770573.9	893.17	TALL GRASSS	0.027	0.000729
50461	359917.4	770568.3	893.4	TALL GRASSS	-0.028	0.000784
50462	359911.9	770567.6	893.14	TALL GRASSS	-0.28	0.0784
50463	359906.2	770567.5	892.96	TALL GRASSS	-0.19	0.0361
50464	359900.9	770567.7	892.84	TALL GRASSS	-0.132	0.017424
50465	359895.7	770567.6	892.66	TALL GRASSS	-0.225	0.050625
50470	319459.7	858602.4	1032.88	MOWED GRASS	0.285	0.081225
50471	319460.1	858607.4	1032.92	MOWED GRASS	0.197	0.038809
50472	319460.4	858612.5	1033.07	MOWED GRASS	0.319	0.101761
50473	319460.7	858618	1033.15	MOWED GRASS	0.399	0.159201
50474	319460.5	858623.3	1033.14	MOWED GRASS	0.329	0.108241
50475	319455.2	858623.4	1032.87	MOWED GRASS	0.114	0.012996
50476	319455.6	858618.2	1032.89	MOWED GRASS	0.208	0.043264
50477	319455.5	858613.7	1032.84	MOWED GRASS	0.22	0.0484
50478	319455.8	858609.1	1032.84	MOWED GRASS	0.233	0.054289
50479	319455.5	858604.4	1032.8	MOWED GRASS	0.131	0.017161
50480	319450	858608.8	1032.71	MOWED GRASS	0.331	0.109561
50481	319450.1	858613.9	1032.72	MOWED GRASS	0.38	0.1444
50482	319449.8	858619.1	1032.72	MOWED GRASS	0.154	0.023716
50483	319449.4	858624.5	1032.8	MOWED GRASS	0.148	0.021904
50484	319443.9	858624.4	1032.8	MOWED GRASS	0.216	0.046656
50485	319444.2	858619.5	1032.69	MOWED GRASS	0.186	0.034596
50486	319444.4	858614.3	1032.67	MOWED GRASS	0.261	0.068121



50487	319444.5	858609.7	1032.58	MOWED GRASS	0.214	0.045796
50488	319444.6	858605.2	1032.52	MOWED GRASS	0.2	0.04
50489	319439.4	858604.8	1032.4	MOWED GRASS	0.233	0.054289
50490	319439	858610.8	1032.42	MOWED GRASS	0.246	0.060516
50491	319438.9	858616	1032.46	MOWED GRASS	0.274	0.075076
50492	319439.1	858621	1032.56	MOWED GRASS	0.052	0.002704
50493	319438.7	858626.2	1032.62	MOWED GRASS	0.265	0.070225
50494	319463.1	858718.5	1034.35	GRASSV	0.457	0.208849
50495	319463.3	858723.1	1034.42	GRASSV	0.459	0.210681
50496	319463.5	858727.7	1034.48	GRASSV	0.418	0.174724
50497	319463.9	858732.8	1034.58	GRASSV	0.233	0.054289
50498	319463.7	858737.5	1034.65	GRASSV	0.502	0.252004
50499	319458.5	858737.8	1034.5	GRASSV	0.34	0.1156
50500	319458	858733.2	1034.43	GRASSV	0.36	0.1296
50501	319457.5	858728.7	1034.36	GRASSV	0.378	0.142884
50502	319456.8	858723.9	1034.24	GRASSV	0.357	0.127449
50503	319456	858718.2	1034.14	GRASSV	0.332	0.110224
50504	319450.8	858717.8	1033.88	GRASSV	0.289	0.083521
50505	319450.8	858723.7	1033.98	GRASSV	0.286	0.081796
50506	319450.9	858728.6	1034.08	GRASSV	0.363	0.131769
50507	319451.2	858733.6	1034.15	GRASSV	0.249	0.062001
50508	319451	858738.7	1034.22	GRASSV	0.161	0.025921
50509	319445.7	858738.8	1034.01	GRASSV	0.104	0.010816
50510	319445.7	858733.6	1033.96	GRASSV	0.398	0.158404
50511	319445.3	858728.8	1033.82	GRASSV	0.194	0.037636
50512	319444.9	858724.1	1033.75	GRASSV	0.408	0.166464
50513	319444.6	858719.2	1033.67	GRASSV	0.302	0.091204
50514	319438.8	858719.6	1033.53	GRASSV	0.223	0.049729
50515	319438.2	858725.4	1033.61	GRASSV	0.388	0.150544
50516	319438.1	858730.7	1033.68	GRASSV	0.296	0.087616
50517	319438.3	858736.2	1033.71	GRASSV	0.16	0.0256
50518	319437.9	858740.9	1033.8	GRASSV	0.248	0.061504
50519	319317.3	858562.1	1034.85	ASPH	0.361	0.130321
50520	319317.4	858558.3	1034.87	ASPH	0.227	0.051529
50521	319318	858554.4	1034.9	ASPH	0.324	0.104976
50522	319318.2	858550.5	1034.97	ASPH	0.29	0.0841
50523	319318.4	858546.2	1035.06	ASPH	0.395	0.156025
50524	319313.5	858545.2	1034.99	ASPH	0.368	0.135424
50525	319313	858549.3	1034.9	ASPH	0.482	0.232324
50526	319312.7	858553.6	1034.85	ASPH	0.163	0.026569
50527	319312.4	858557.7	1034.79	ASPH	0.374	0.139876
50528	319312.1	858561.7	1034.81	ASPH	0.322	0.103684
50529	319307.1	858561.6	1034.78	ASPH	0.338	0.114244
50530	319307.7	858557.2	1034.76	ASPH	0.392	0.153664
50531	319307.5	858552.6	1034.74	ASPH	0.165	0.027225
50532	319307.8	858548.9	1034.84	ASPH	0.227	0.051529
50533	319307.6	858544.7	1034.93	ASPH	0.308	0.094864

50534	319302.3	858544.7	1034.83	ASPH	0.314	0.098596
50535	319302.2	858549.5	1034.76	ASPH	0.208	0.043264
50536	319301.9	858553.4	1034.68	ASPH	0.317	0.100489
50537	319301.4	858557.7	1034.67	ASPH	0.277	0.076729
50538	319301.2	858562	1034.71	ASPH	0.264	0.069696
50539	319296.2	858562.4	1034.57	ASPH	0.283	0.080089
50540	319296.3	858558	1034.55	ASPH	0.266	0.070756
50541	319296.2	858553.5	1034.59	ASPH	0.4	0.16
50542	319296.3	858549.1	1034.67	ASPH	0.411	0.168921
50543	319296.3	858544.7	1034.75	ASPH	0.27	0.0729
50544	319491.8	858448.4	1032.26	TALL GRASSS	0.171	0.029241
50545	319487.2	858448.5	1032.34	TALL GRASSS	0.295	0.087025
50546	319481.7	858449	1032.41	TALL GRASSS	0.181	0.032761
50547	319476.3	858449.4	1032.63	TALL GRASSS	0.365	0.133225
50548	319471.1	858449.2	1032.41	TALL GRASSS	0.125	0.015625
50549	319471.9	858444	1032.39	TALL GRASSS	0.279	0.077841
50550	319477.3	858444.2	1032.47	TALL GRASSS	0.134	0.017956
50551	319482.2	858445.6	1032.33	TALL GRASSS	0.245	0.060025
50552	319486.7	858446.5	1032.25	TALL GRASSS	0.231	0.053361
50553	319491.9	858447.8	1032.28	TALL GRASSS	0.201	0.040401
50554	319493.3	858442	1032.19	TALL GRASSS	0.162	0.026244
50555	319487	858441.6	1032.15	TALL GRASSS	0.107	0.011449
50556	319481.8	858441.7	1032.26	TALL GRASSS	0.14	0.0196
50557	319476.5	858442.7	1032.42	TALL GRASSS	0.201	0.040401
50558	319471	858443.9	1032.33	TALL GRASSS	0.22	0.0484
50559	319471.1	858437.8	1032.2	TALL GRASSS	0.172	0.029584
50560	319476.7	858438.1	1032.43	TALL GRASSS	0.29	0.0841
50561	319482.3	858438.5	1032.29	TALL GRASSS	0.187	0.034969
50562	319487.7	858438.7	1032.17	TALL GRASSS	0.177	0.031329
50563	319493.7	858439.8	1032.22	TALL GRASSS	0.193	0.037249
50564	319495.5	858433.7	1032.18	TALL GRASSS	0.091	0.008281
50565	319489.1	858433.8	1032.09	TALL GRASSS	-0.015	0.000225
50566	319484.6	858432.9	1032.11	TALL GRASSS	0.174	0.030276
50567	319479	858431.9	1032.26	TALL GRASSS	0.191	0.036481
50568	319473.6	858431	1032.17	TALL GRASSS	0.14	0.0196
50569	319390.3	858483.9	1032.4	TREE COVE	-0.065	0.004225
50570	319387.6	858483.5	1032.22	TREE COVE	-0.18	0.0324
50571	319383.3	858484.5	1032.28	TREE COVE	-0.162	0.026244
50572	319379.6	858484.7	1032.5	TREE COVE	-0.118	0.013924
50573	319376.2	858485	1032.58	TREE COVE	-0.022	0.000484
50574	319376.6	858483	1032.41	TREE COVE	-0.24	0.0576
50575	319379.8	858483.4	1032.35	TREE COVE	-0.267	0.071289
50576	319383.4	858484	1032.3	TREE COVE	-0.139	0.019321
50577	319386.9	858483.9	1032.23	TREE COVE	-0.184	0.033856
50578	319389.4	858483.9	1032.39	TREE COVE	-0.055	0.003025
50579	319389.4	858481.1	1032.23	TREE COVE	-0.178	0.031684
50580	319386.8	858480.8	1032.18	TREE COVE	-0.172	0.029584

50581	319384	858480.2	1032.23	TREE COVE	-0.105	0.011025
50582	319381.1	858480.4	1032.33	TREE COVE	-0.158	0.024964
50583	319377.9	858480.3	1032.36	TREE COVE	-0.309	0.095481
50584	319377.8	858477.7	1032.39	TREE COVE	-0.083	0.006889
50585	319381.1	858477.6	1032.16	TREE COVE	-0.111	0.012321
50586	319383.3	858477.5	1032.2	TREE COVE	0.072	0.005184
50587	319385.9	858478	1032.22	TREE COVE	0.001	0.000001
50588	319387.3	858477.3	1032.08	TREE COVE	-0.233	0.054289
50589	319388.5	858474.6	1032.17	TREE COVE	-0.155	0.024025
50590	319384.6	858474.9	1032.14	TREE COVE	0.008	0.000064
50591	319380.7	858475.1	1032.23	TREE COVE	0.002	0.000004
50592	319377.7	858475	1032.39	TREE COVE	0.109	0.011881
50593	319375.4	858474.8	1032.4	TREE COVE	0.025	0.000625
50594	319377	858471	1032.42	TREE COVE	-0.231	0.053361
50595	319379.6	858470.1	1032.4	TREE COVE	-0.261	0.068121
50596	319382.2	858470.1	1032.3	TREE COVE	-0.173	0.029929
50597	319385.6	858470	1032.15	TREE COVE	-0.172	0.029584
50598	319389.8	858470.2	1032.14	TREE COVE	-0.077	0.005929
50599	319395.4	858227.1	1031.79	BRUSH/LOW	-0.32	0.1024
50600	319393	858226.1	1031.81	BRUSH/LOW	-0.504	0.254016
50601	319391.8	858225.4	1031.84	BRUSH/LOW	-0.496	0.246016
50602	319389.2	858223.9	1031.77	BRUSH/LOW	-0.605	0.366025
50603	319387.7	858222.3	1031.88	BRUSH/LOW	-0.621	0.385641
50604	319388.8	858221	1031.84	BRUSH/LOW	-0.654	0.427716
50605	319390.6	858222.5	1031.78	BRUSH/LOW	-0.538	0.289444
50606	319392.5	858223.8	1031.79	BRUSH/LOW	-0.467	0.218089
50607	319394	858225.3	1031.79	BRUSH/LOW	-0.447	0.199809
50608	319395.8	858227.2	1031.78	BRUSH/LOW	-0.279	0.077841
50609	319396.6	858224.8	1031.78	BRUSH/LOW	-0.119	0.014161
50610	319393.9	858223.9	1031.85	BRUSH/LOW	-0.355	0.126025
50611	319392.3	858222.4	1031.83	BRUSH/LOW	-0.392	0.153664
50612	319389.8	858221.2	1031.79	BRUSH/LOW	-0.629	0.395641
50613	319387.9	858220.8	1031.97	BRUSH/LOW	-0.595	0.354025
50614	319389	858218.7	1031.91	BRUSH/LOW	-0.819	0.670761
50615	319391.6	858218.6	1031.87	BRUSH/LOW	-0.819	0.670761
50616	319394.1	858218.8	1031.91	BRUSH/LOW	-0.729	0.531441
50617	319396.7	858219.2	1032.02	BRUSH/LOW	-0.33	0.1089
50618	319399.3	858218.9	1032.01	BRUSH/LOW	-0.376	0.141376
50619	319400.1	858216	1032.13	BRUSH/LOW	-0.195	0.038025
50620	319397	858214.7	1032.03	BRUSH/LOW	-0.207	0.042849
50621	319394	858214.1	1032.06	BRUSH/LOW	0.024	0.000576
50622	319391.3	858212.8	1032.06	BRUSH/LOW	-0.309	0.095481
50623	319388.1	858211.1	1032.21	BRUSH/LOW	-0.525	0.275625
50628	365215.2	882732.7	1078.27	MOWED GRASS	-0.054	0.002916
50629	365219.4	882734.4	1078.73	MOWED GRASS	-0.12	0.0144
50630	365224.3	882735.5	1079.28	MOWED GRASS	-0.009	0.000081
50631	365229.8	882736.7	1079.84	MOWED GRASS	-0.039	0.001521

50632	365234.4	882737.8	1080.23	MOWED GRASS	-0.015	0.000225
50633	365235	882733.2	1080	MOWED GRASS	-0.146	0.021316
50634	365230.2	882732.3	1079.59	MOWED GRASS	-0.088	0.007744
50635	365226.1	882731.3	1079.11	MOWED GRASS	-0.036	0.001296
50636	365221.7	882730.7	1078.68	MOWED GRASS	-0.165	0.027225
50637	365217.2	882729.7	1078.22	MOWED GRASS	-0.214	0.045796
50638	365218.2	882725.1	1078.06	MOWED GRASS	-0.132	0.017424
50639	365223.6	882726.2	1078.55	MOWED GRASS	-0.323	0.104329
50640	365228.5	882727.6	1079.13	MOWED GRASS	-0.053	0.002809
50641	365233.4	882729.1	1079.65	MOWED GRASS	-0.008	0.000064
50642	365237.9	882730.4	1080.08	MOWED GRASS	-0.105	0.011025
50643	365239.8	882726.1	1079.87	MOWED GRASS	-0.165	0.027225
50644	365235.1	882725.1	1079.52	MOWED GRASS	-0.098	0.009604
50645	365230.7	882724.1	1079.07	MOWED GRASS	-0.182	0.033124
50646	365226.3	882723.1	1078.65	MOWED GRASS	-0.295	0.087025
50647	365222.2	882722.4	1078.26	MOWED GRASS	-0.189	0.035721
50648	365223.4	882717	1078.05	MOWED GRASS	-0.2	0.04
50649	365228.7	882718.5	1078.75	MOWED GRASS	-0.084	0.007056
50650	365233.2	882719.6	1079.07	MOWED GRASS	-0.021	0.000441
50651	365238.2	882721.1	1079.59	MOWED GRASS	-0.096	0.009216
50652	365242.4	882722.2	1079.95	MOWED GRASS	-0.269	0.072361
50653	365259.3	882711.2	1081.47	TREE COVE	-0.033	0.001089
50654	365263.8	882711.1	1081.86	TREE COVE	0.05	0.0025
50655	365268.3	882711.4	1082.36	TREE COVE	0.224	0.050176
50656	365272.3	882711.8	1082.69	TREE COVE	0.269	0.072361
50657	365276.4	882712.1	1083.05	TREE COVE	0.333	0.110889
50658	365276.9	882707.6	1082.78	TREE COVE	0.197	0.038809
50659	365272.1	882706.5	1082.29	TREE COVE	0.076	0.005776
50660	365267.6	882705.7	1082	TREE COVE	0.131	0.017161
50661	365263.4	882705	1081.61	TREE COVE	0.052	0.002704
50662	365259.4	882704.3	1081.29	TREE COVE	0.034	0.001156
50663	365260.8	882700.1	1081.14	TREE COVE	-0.055	0.003025
50664	365265	882701.5	1081.79	TREE COVE	0.248	0.061504
50665	365269.9	882701.9	1082	TREE COVE	0.106	0.011236
50666	365274.7	882703.1	1082.41	TREE COVE	0.074	0.005476
50667	365278.9	882703.6	1082.72	TREE COVE	-0.026	0.000676
50668	365279.2	882698.7	1082.68	TREE COVE	0.061	0.003721
50669	365275.3	882697.6	1082.3	TREE COVE	-0.063	0.003969
50670	365271.4	882696.9	1082	TREE COVE	0.028	0.000784
50671	365267.4	882696	1081.6	TREE COVE	0.08	0.0064
50672	365263.6	882695.2	1081.21	TREE COVE	0	0
50673	365264.8	882690.3	1081.1	TREE COVE	-0.113	0.012769
50674	365269.6	882692.2	1081.72	TREE COVE	-0.068	0.004624
50675	365274.4	882693.1	1082.12	TREE COVE	-0.061	0.003721
50676	365280.3	882694.1	1082.53	TREE COVE	-0.004	0.000016
50677	365286.5	882693.9	1082.78	TREE COVE	-0.063	0.003969
50678	365202	882652.6	1072.11	GRASSV	-0.09	0.0081

50679	365203.7	882648.4	1072.09	GRASSV	-0.054	0.002916
50680	365204.9	882644.3	1072.14	GRASSV	0.004	0.000016
50681	365206.3	882639.4	1072.11	GRASSV	-0.152	0.023104
50682	365201.6	882637.4	1071.58	GRASSV	-0.051	0.002601
50683	365199.7	882642.5	1071.63	GRASSV	0.007	0.000049
50684	365198.5	882646.5	1071.59	GRASSV	-0.028	0.000784
50685	365196.9	882651	1071.63	GRASSV	-0.09	0.0081
50686	365191.9	882649.3	1071.12	GRASSV	-0.099	0.009801
50687	365193.9	882644.7	1071.13	GRASSV	-0.057	0.003249
50688	365195	882640	1071.1	GRASSV	-0.044	0.001936
50689	365195.8	882635.4	1070.96	GRASSV	-0.091	0.008281
50690	365190.5	882634	1070.45	GRASSV	-0.096	0.009216
50691	365189.2	882639.2	1070.59	GRASSV	-0.035	0.001225
50692	365187.9	882643.5	1070.63	GRASSV	-0.018	0.000324
50693	365186.6	882647.7	1070.64	GRASSV	-0.205	0.042025
50694	365181.7	882645.9	1070.22	GRASSV	-0.089	0.007921
50695	365183.6	882641.3	1070.2	GRASSV	-0.135	0.018225
50696	365184.6	882637.1	1070.16	GRASSV	-0.053	0.002809
50697	365185.7	882632.8	1070.03	GRASSV	0.03	0.0009
50698	365179.9	882631.6	1069.6	GRASSV	-0.157	0.024649
50699	365179.1	882636.5	1069.75	GRASSV	-0.039	0.001521
50700	365177.9	882640.8	1069.81	GRASSV	0.016	0.000256
50701	365176.9	882644.9	1069.87	GRASSV	-0.115	0.013225
50702	365171.5	882643.2	1069.47	GRASSV	-0.095	0.009025
50703	365173	882638.2	1069.4	GRASSV	-0.034	0.001156
50704	365173.9	882634	1069.34	GRASSV	-0.007	0.000049
50705	365174.4	882630.1	1069.18	GRASSV	0.053	0.002809
50706	365218.8	882524.2	1067.17	TALL GRASSS	-0.149	0.022201
50707	365220.5	882519.6	1066.91	TALL GRASSS	-0.244	0.059536
50708	365221.9	882515.3	1066.78	TALL GRASSS	-0.083	0.006889
50709	365223.4	882511	1066.62	TALL GRASSS	-0.159	0.025281
50710	365224.8	882506.8	1066.48	TALL GRASSS	-0.14	0.0196
50711	365229.7	882509	1066.91	TALL GRASSS	-0.099	0.009801
50712	365227.8	882514.2	1067.02	TALL GRASSS	-0.27	0.0729
50713	365226.1	882518.6	1067.22	TALL GRASSS	-0.117	0.013689
50714	365224.2	882523.6	1067.42	TALL GRASSS	-0.124	0.015376
50715	365222.9	882528.6	1067.6	TALL GRASSS	-0.109	0.011881
50716	365227.9	882530.3	1068.13	TALL GRASSS	-0.095	0.009025
50717	365229.9	882524.7	1067.93	TALL GRASSS	-0.084	0.007056
50718	365232	882519.7	1067.87	TALL GRASSS	-0.071	0.005041
50719	365233.9	882514.9	1067.59	TALL GRASSS	-0.038	0.001444
50720	365235.3	882509.9	1067.4	TALL GRASSS	-0.209	0.043681
50721	365241.1	882512.1	1067.95	TALL GRASSS	-0.137	0.018769
50722	365238.6	882517.6	1068.11	TALL GRASSS	-0.155	0.024025
50723	365237.5	882522.3	1068.38	TALL GRASSS	-0.177	0.031329
50724	365236.3	882527.1	1068.48	TALL GRASSS	-0.287	0.082369
50725	365234.7	882531.9	1068.76	TALL GRASSS	0.185	0.034225

50726	365239.9	882534.3	1069.19	TALL GRASSS	-0.227	0.051529
50727	365242.6	882528.9	1069.17	TALL GRASSS	-0.216	0.046656
50728	365244.2	882524.5	1069.01	TALL GRASSS	-0.183	0.033489
50729	365246.2	882519.3	1068.79	TALL GRASSS	-0.153	0.023409
50730	365248.3	882514.3	1068.61	TALL GRASSS	-0.062	0.003844
50731	365112.1	882698.8	1068.27	ASPH	0.087	0.007569
50732	365108.4	882697.8	1068.29	ASPH	0.082	0.006724
50733	365104.7	882697.1	1068.27	ASPH	0.172	0.029584
50734	365101.7	882696.2	1068.2	ASPH	0.2	0.04
50735	365100.3	882701.4	1068.29	ASPH	0.028	0.000784
50736	365104.2	882702.7	1068.4	ASPH	0.017	0.000289
50737	365108.4	882704.2	1068.36	ASPH	0.214	0.045796
50738	365107.3	882711.3	1068.49	ASPH	0.044	0.001936
50739	365102.5	882710.1	1068.52	ASPH	0.1	0.01
50740	365098.1	882708.9	1068.43	ASPH	0.184	0.033856
50741	365096.6	882714.7	1068.53	ASPH	0.031	0.000961
50742	365102.2	882716.7	1068.63	ASPH	0.053	0.002809
50743	365106.3	882717.6	1068.58	ASPH	0.007	0.000049
50744	365104.9	882723.2	1068.7	ASPH	0.151	0.022801
50745	365099.5	882721.8	1068.74	ASPH	0.062	0.003844
50746	365095.2	882720.5	1068.64	ASPH	-0.074	0.005476
50747	365093.8	882725.8	1068.72	ASPH	0.136	0.018496
50748	365099	882727	1068.83	ASPH	0.18	0.0324
50749	365103.4	882728.2	1068.8	ASPH	0.207	0.042849
50750	365102.5	882734	1068.94	ASPH	0.282	0.079524
50751	365097.4	882732.6	1068.95	ASPH	0.166	0.027556
50752	365092.9	882731.3	1068.84	ASPH	0.056	0.003136
50753	365091.8	882737.1	1068.98	ASPH	-0.025	0.000625
50754	365096.9	882738.4	1069.09	ASPH	0.205	0.042025
50755	365101.3	882739.4	1069.09	ASPH	0.144	0.020736
50756	365100	882745.2	1069.28	ASPH	0.135	0.018225
50757	365094.7	882743.8	1069.24	ASPH	0.018	0.000324
50758	365090.2	882742.9	1069.1	ASPH	-0.086	0.007396
50759	364948.1	882447.1	1046.95	BRUSH/LOW	-0.315	0.099225
50760	364945.4	882450.5	1046.85	BRUSH/LOW	-0.255	0.065025
50761	364942.4	882453.5	1046.74	BRUSH/LOW	-0.396	0.156816
50762	364939	882449	1046.73	BRUSH/LOW	-0.124	0.015376
50763	364941.5	882447.2	1046.61	BRUSH/LOW	-0.098	0.009604
50764	364945.6	882443.7	1046.69	BRUSH/LOW	-0.19	0.0361
50765	364943.6	882439.6	1046.74	BRUSH/LOW	-0.215	0.046225
50766	364940.2	882441.5	1046.66	BRUSH/LOW	-0.134	0.017956
50767	364937.4	882443.2	1046.67	BRUSH/LOW	-0.05	0.0025
50768	364935.7	882440.9	1046.59	BRUSH/LOW	-0.083	0.006889
50769	364938.3	882439	1046.54	BRUSH/LOW	-0.302	0.091204
50770	364941.4	882435.8	1046.71	BRUSH/LOW	-0.198	0.039204
50771	364939.8	882431	1046.58	BRUSH/LOW	-0.228	0.051984
50772	364936.2	882432.5	1046.31	BRUSH/LOW	-0.537	0.288369



50773	364933.2	882434.2	1046.16	BRUSH/LOW	-0.745	0.555025
50774	364932	882430	1046.14	BRUSH/LOW	-0.644	0.414736
50775	364934	882428.5	1046.12	BRUSH/LOW	-0.567	0.321489
50776	364939.3	882426.6	1046.43	BRUSH/LOW	-0.311	0.096721
50777	364937.4	882421.1	1046.38	BRUSH/LOW	-0.279	0.077841
50778	364933.4	882423.7	1046.15	BRUSH/LOW	-0.234	0.054756
50779	364930.8	882425.6	1046.05	BRUSH/LOW	-0.41	0.1681
50780	364928.8	882423.2	1045.93	BRUSH/LOW	-0.528	0.278784
50781	364931.8	882420.4	1046.28	BRUSH/LOW	-0.32	0.1024
50782	364935.4	882418.2	1046.29	BRUSH/LOW	-0.543	0.294849
50783	364931.7	882417	1046.17	BRUSH/LOW	-0.768	0.589824
50784	364928.9	882418.5	1046.08	BRUSH/LOW	-0.429	0.184041
50785	364925.5	882421.7	1045.97	BRUSH/LOW	-0.268	0.071824
50788	427436.9	874747.7	903.74	TALL GRASSS	-0.941	0.885481
50789	427433.3	874748	903.85	TALL GRASSS	-0.62	0.3844
50790	427430	874747.6	903.82	TALL GRASSS	-0.473	0.223729
50791	427426.7	874747.5	903.79	TALL GRASSS	-0.365	0.133225
50792	427423.2	874747.3	903.57	TALL GRASSS	-0.591	0.349281
50793	427423.1	874743	903.68	TALL GRASSS	-0.413	0.170569
50794	427427.4	874743.2	903.64	TALL GRASSS	-0.671	0.450241
50795	427431.3	874743.5	903.81	TALL GRASSS	-0.561	0.314721
50796	427435.6	874743.4	904.02	TALL GRASSS	-0.511	0.261121
50797	427440.1	874743.5	903.82	TALL GRASSS	-0.801	0.641601
50798	427440.3	874739.4	903.8	TALL GRASSS	-0.625	0.390625
50799	427436.2	874738.9	903.72	TALL GRASSS	-0.689	0.474721
50800	427432.2	874738.3	903.71	TALL GRASSS	-0.609	0.370881
50801	427428.5	874738.8	903.89	TALL GRASSS	-0.633	0.400689
50802	427425	874738.9	903.59	TALL GRASSS	-1.052	1.106704
50803	427425.1	874735.1	903.67	TALL GRASSS	-0.632	0.399424
50804	427429.1	874735.4	903.39	TALL GRASSS	-0.694	0.481636
50805	427433.1	874735.8	903.73	TALL GRASSS	-0.569	0.323761
50806	427437.1	874736.2	903.71	TALL GRASSS	-0.746	0.556516
50807	427440.7	874736.5	903.84	TALL GRASSS	-0.749	0.561001
50808	427441.1	874732.8	903.91	TALL GRASSS	-0.635	0.403225
50809	427437.4	874732.6	903.75	TALL GRASSS	-0.815	0.664225
50810	427433.9	874732.5	903.51	TALL GRASSS	-0.991	0.982081
50811	427430.4	874732.4	903.5	TALL GRASSS	-0.721	0.519841
50812	427427.2	874732.3	903.59	TALL GRASSS	-0.562	0.315844
50813	427418	874692.8	903.23	BRUSH/LOW	-0.647	0.418609
50814	427415.5	874692.3	903.05	BRUSH/LOW	-0.876	0.767376
50815	427413.5	874692	903.26	BRUSH/LOW	-0.63	0.3969
50816	427411	874691.8	903.41	BRUSH/LOW	-0.431	0.185761
50817	427408.8	874691.4	903.32	BRUSH/LOW	-0.443	0.196249
50818	427409.5	874688.9	903.44	BRUSH/LOW	-0.422	0.178084
50819	427411.9	874689	903.04	BRUSH/LOW	-0.901	0.811801
50820	427414.2	874689.7	903.22	BRUSH/LOW	-0.749	0.561001
50821	427416.7	874690.3	903.22	BRUSH/LOW	-0.772	0.595984

50822	427420.1	874690.8	903.04	BRUSH/LOW	-0.892	0.795664
50823	427419.9	874688.4	903.31	BRUSH/LOW	-0.662	0.438244
50824	427417.1	874688.4	903.36	BRUSH/LOW	-0.84	0.7056
50825	427414.8	874688.5	903.4	BRUSH/LOW	-0.71	0.5041
50826	427413.2	874688.7	903.23	BRUSH/LOW	-0.793	0.628849
50827	427410.8	874688.3	903.04	BRUSH/LOW	-0.913	0.833569
50828	427411.6	874685.5	903.15	BRUSH/LOW	-0.929	0.863041
50829	427414.6	874685.9	903.39	BRUSH/LOW	-0.853	0.727609
50830	427416.9	874686.1	903.23	BRUSH/LOW	-1.085	1.177225
50831	427418.3	874686.8	903.32	BRUSH/LOW	-0.858	0.736164
50832	427421.7	874687	903.09	BRUSH/LOW	-0.808	0.652864
50833	427421.6	874684.2	903.16	BRUSH/LOW	-0.786	0.617796
50834	427418.8	874683.7	903.21	BRUSH/LOW	-0.962	0.925444
50835	427415.9	874683.6	903.41	BRUSH/LOW	-0.885	0.783225
50836	427413	874682.9	903.44	BRUSH/LOW	-0.68	0.4624
50837	427410.2	874683.6	903.48	BRUSH/LOW	-0.444	0.197136
50838	427502.1	874836.1	913.54	ASPH	0.096	0.009216
50839	427499	874835.9	913.62	ASPH	0.008	0.000064
50840	427495.1	874835.4	913.71	ASPH	0.033	0.001089
50841	427491.7	874834.9	913.77	ASPH	0.075	0.005625
50842	427488.5	874834.6	913.71	ASPH	-0.149	0.022201
50843	427487.7	874839.1	913.91	ASPH	-0.521	0.271441
50844	427492.5	874839.7	913.98	ASPH	-0.464	0.215296
50845	427496.3	874839.9	913.9	ASPH	-0.091	0.008281
50846	427499.5	874840.6	913.84	ASPH	-0.019	0.000361
50847	427502.9	874841.1	913.75	ASPH	-0.107	0.011449
50848	427502.7	874845.5	913.94	ASPH	-0.079	0.006241
50849	427497.9	874845.4	914.13	ASPH	-0.159	0.025281
50850	427493.8	874845.4	914.21	ASPH	-0.173	0.029929
50851	427490.2	874845.5	914.29	ASPH	-0.213	0.045369
50852	427488.5	874845.3	914.23	ASPH	-0.347	0.120409
50853	427488.2	874849.3	914.4	ASPH	-0.51	0.2601
50854	427491.7	874850.5	914.52	ASPH	-0.322	0.103684
50855	427495.6	874850.8	914.46	ASPH	-0.356	0.126736
50856	427498.7	874851.2	914.39	ASPH	-0.307	0.094249
50857	427502.3	874851.6	914.28	ASPH	-0.128	0.016384
50858	427502.3	874856.8	914.52	ASPH	-0.114	0.012996
50859	427497.8	874856.8	914.67	ASPH	-0.226	0.051076
50860	427493.3	874857.1	914.81	ASPH	-0.145	0.021025
50861	427490.1	874857.3	914.85	ASPH	-0.148	0.021904
50862	427486.7	874857.7	914.78	ASPH	-0.222	0.049284
50865	417100.9	881585.2	941.32	CONC	0.183	0.033489
50866	417101.2	881589.3	941.36	CONC	0.15	0.0225
50867	417101.3	881593.1	941.39	CONC	0.162	0.026244
50868	417101.6	881597.2	941.42	CONC	0.009	0.000081
50869	417101.7	881601.2	941.46	CONC	0.034	0.001156
50870	417097.4	881600.8	941.46	CONC	0.118	0.013924

50871	417098	881594.8	941.41	CONC	0.045	0.002025
50872	417097.1	881591.2	941.37	CONC	0.102	0.010404
50873	417097.2	881586.9	941.35	CONC	0.101	0.010201
50874	417097	881582.1	941.31	CONC	0.075	0.005625
50875	417092.5	881582.1	941.35	CONC	0.04	0.0016
50876	417092.1	881587.2	941.37	CONC	0.105	0.011025
50877	417092	881592.2	941.4	CONC	0.171	0.029241
50878	417092.2	881596.6	941.42	CONC	0.182	0.033124
50879	417092.2	881600.8	941.47	CONC	0.056	0.003136
50880	417087.9	881600.7	941.48	CONC	0.053	0.002809
50881	417087.6	881596	941.45	CONC	0.08	0.0064
50882	417087.7	881591.7	941.44	CONC	0.173	0.029929
50883	417087.6	881587.2	941.4	CONC	0.127	0.016129
50884	417087.6	881582.9	941.39	CONC	0.208	0.043264
50885	417083.1	881583.1	941.41	CONC	0.03	0.0009
50886	417083	881587.9	941.43	CONC	0.134	0.017956
50887	417082.9	881592.1	941.46	CONC	0.051	0.002601
50888	417082.7	881596.2	941.47	CONC	0.012	0.000144
50889	417082.4	881600.6	941.5	CONC	0.102	0.010404
50890	416979	881592.8	942.36	MOWED GRASS	0.025	0.000625
50891	416984	881592.8	942.5	MOWED GRASS	-0.008	0.000064
50892	416988.6	881592.4	942.59	MOWED GRASS	0.025	0.000625
50893	416992.6	881592.1	942.66	MOWED GRASS	0.16	0.0256
50894	416996.7	881591.6	942.62	MOWED GRASS	0.001	0.000001
50895	416996.8	881596.8	942.78	MOWED GRASS	0.155	0.024025
50896	416991.6	881596.6	942.68	MOWED GRASS	0.123	0.015129
50897	416987.5	881597.1	942.62	MOWED GRASS	0.096	0.009216
50898	416983.3	881597.2	942.46	MOWED GRASS	0.014	0.000196
50899	416979.3	881597.3	942.4	MOWED GRASS	0.056	0.003136
50900	416979.1	881601.6	942.46	MOWED GRASS	0.072	0.005184
50901	416984	881602.3	942.64	MOWED GRASS	0.13	0.0169
50902	416988.2	881602.4	942.68	MOWED GRASS	0.134	0.017956
50903	416992.5	881602.2	942.74	MOWED GRASS	0.194	0.037636
50904	416997.6	881602.5	942.8	MOWED GRASS	0.129	0.016641
50905	416997.1	881607.8	942.84	MOWED GRASS	0.117	0.013689
50906	416992.6	881607.8	942.84	MOWED GRASS	0.107	0.011449
50907	416988.4	881607.8	942.76	MOWED GRASS	0.055	0.003025
50908	416983.8	881607.7	942.66	MOWED GRASS	0.068	0.004624
50909	416979.6	881607.8	942.51	MOWED GRASS	0.071	0.005041
50910	416979.7	881612.5	942.59	MOWED GRASS	0.021	0.000441
50911	416985.2	881612.7	942.75	MOWED GRASS	0.042	0.001764
50912	416989.6	881613	942.87	MOWED GRASS	0.058	0.003364
50913	416993.9	881613	942.86	MOWED GRASS	-0.03	0.0009
50914	416998.3	881613.2	942.86	MOWED GRASS	-0.009	0.000081
50915	416996.8	881482	940.99	TREE COVE	0.055	0.003025
50916	416992.4	881482.3	941.12	TREE COVE	0.251	0.063001
50917	416988.1	881482.5	941.12	TREE COVE	0.041	0.001681

50918	416983.8	881483.2	941.27	TREE COVE	0.004	0.000016
50919	416979.6	881483.8	941.54	TREE COVE	0.096	0.009216
50920	416979.6	881480.3	941.46	TREE COVE	-0.014	0.000196
50921	416984.4	881480	941.32	TREE COVE	0.061	0.003721
50922	416988.8	881480.3	941.15	TREE COVE	0.105	0.011025
50923	416993	881479.9	941.1	TREE COVE	0.194	0.037636
50924	416997.6	881479.7	941.07	TREE COVE	0.026	0.000676
50925	416997.8	881476	941.07	TREE COVE	0.144	0.020736
50926	416993	881476.5	941.16	TREE COVE	0.129	0.016641
50927	416989.5	881476.5	941.37	TREE COVE	0.352	0.123904
50928	416986.1	881477	941.45	TREE COVE	0.269	0.072361
50929	416982.4	881477.4	941.28	TREE COVE	-0.08	0.0064
50930	416983	881473.7	941.26	TREE COVE	-0.074	0.005476
50931	416985.6	881474	941.24	TREE COVE	0.032	0.001024
50932	416988.8	881473.6	941.47	TREE COVE	0.417	0.173889
50933	416993.1	881473.5	941.07	TREE COVE	-0.027	0.000729
50934	416997.4	881473.2	940.86	TREE COVE	0.041	0.001681
50935	416997.4	881470.5	940.82	TREE COVE	0.099	0.009801
50936	416993.3	881469.6	940.91	TREE COVE	0.011	0.000121
50937	416989.7	881469.2	941.15	TREE COVE	0.048	0.002304
50938	416985.5	881469.1	941.18	TREE COVE	-0.036	0.001296
50939	416980.8	881468.4	941.26	TREE COVE	0.075	0.005625

**FIELD NOTES**

Project FEMA ground survey notes

Contains point number and descriptions

Includes Control and Check Points left out of statistical analysis

## LIDAR Ground Truthing DD 5/23/11

## Area 1

- shot 50,000 is CK shot on NGS mon B105 ✓
- set CP# 50,001 - 60d nail
- set CP# 50,002 - PK nail
- 50,003 is CK shot on NGS mon Ripon GPS ✓

T	H1	B5	SH
50,001	5.36	50,002	5.50
- shots 50,004 - 50,027 are Tree Cover			
- shots 50,028 - 50,052 are Tall Grass / Weeds			
- shots 50,053 - 50,077 are Brush / Low Trees			
- shots 50,078 - 50,102 are Mowed Grass			
- shots 50,103 - 50,132 are Asphalt			
- shots 50,133 - 50,155 are Gravel			

- shot 50,156 is CK shot on NGS mon B105 ✓
- shot 50,157 is vertical CK shot on NGS mon 3J50 = ±0.13'

ASPH  
 GRAV or CONC  
 MOWED GRASS  
 BRUSH / LOW TREES  
 TALL GRASS / WEEDS  
 TREE COVER



DD 5/23/11

Area 2

- shot 50,158 is CK shot on NGS man 3W90 ✓
- shot 50,159 is vertical CK shot on NGS man 3W89 ✓
- set CP# 50,160 - 60 d mil
- set CP# 50,161 - PK mil

T	H1	BS	SH
50,161	5.60	50,160	5.50

- shots 50,162 - 50,186 are Tree Cover
- shots 50,187 - 50,211 are Mowed Grass
- shots 50,212 - 50,238 are Gravel
- shots 50,239 - 50,262 are Asphalt
- shots 50,263 - 50,287 are Tall Grass / Weeds
- shots 50,288 - 50,311 are Brush / Low Trees
- shot 50,312 is CK shot on NGS man 3W90 ✓

DD 5/24/11

Area 3

- shot 50,313 is CK shot on NGS man Waupun E GPS
- set CP# 50,314 - 60d nail
- set CP# 50,315 - PK nail

T	H1	BS	SH
50,314	5.16	50,315	5.50

- shots 50,316 - 50,340 are Tree Cover
- shots 50,341 - 50,365 are Mowed Grass
- shots 50,366 - 50,390 are Asphalt
- shots 50,391 - 50,415 are Gravel
- shots 50,416 - 50,440 are Brush / Low Trees
- shots 50,441 - 50,465 are Tall Grass / Weeds
- shot 50,466 is CK shot on NGS man Waupun E GPS

DD 5/24/11

Area 4

- shot 50,467 is CK shot on Campbell'sport GPS AZ MK
- set CP # 50,468 - 60 d nail
- set CP # 50,469 - PK Nail

T	H1	B5	SH
50,468	5.49	50,469	5.50

- shots 50,470 - 50,493 are Mowed Grass
- shots 50,494 - 50,518 are Gravel
- shots 50,519 - 50,543 are Asphalt
- shots 50,544 - 50,568 are Tall Grass / Weeds
- shots 50,569 - 50,598 are Tree Cover
- shots 50,599 - 50,623 are Brush / Low Trees
- shot 50,624 is CK shot on Campbell'sport GPS AZ MK

DD 5/24/11

Area 5

- shot 50,625 is CK shot on Forest S GPS
- set CP# 50,626 - 60d nail
- set CP# 50,627 - PK Nail

T	H1	B5	SH
50,626	5.17	50,627	5.50

- shots 50,628 - 50,652 are Mowed Grass
- shots 50,653 - 50,677 are Tree Cover
- shots 50,678 - 50,705 are Gravel
- shots 50,706 - 50,730 are Tall Grass / Weeds
- shots 50,731 - 50,758 are Asphalt
- shots 50,759 - 50,785 are Brush / Low Trees
- shot 50,786 is CK shot on Forest S GPS



DD 5/27/11

Area 6

- shot 50,787 is CK shot on Marshfield N GPS
- shots 50,788 - 50,812 are Tall Grass/Weeds
- shots 50,813 - 50,837 are Brush/Low Trees
- shots 50,838 - 50,862 are Asphalt

- set CP# 50,863 - 60d nail
- set CP# 50,864 - PK nail

A	H1	B5	SH
50,863	5.32	50,864	5.50

- shots 50,865 - 50,889 are Concrete
- shots 50,890 - 50,914 are Mowed Grass
- shots 50,915 - 50,939 are Tree Cover
- shot 50,940 is CK shot on Marshfield N GPS