

**CORRECTIVE ACTION MANAGEMENT UNIT
(CAMU – CLOSURE I)
FINAL COVERSOIL SYSTEM
AS-BUILT & VOLUME REPORT
HENDERSON, NV**

Prepared for:



ENTACT Environmental Services, LLC

699 South Friendswood Dr.
Suite 101
Friendswood, TX. 77546
(281) 996-9892

Prepared by:



Absolute Boundary & Control Solutions

6440 Sky Point Drive
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April 20, 2010



4/20/10

Attn: Erik Gehringer, Project Manager
ENTACT Environmental Services, LLC
699 South Friendswood Drive
Friendswood, TX. 77546

Re: CAMU – Closure I – Final Coversoil System As-Built & Volume

Mr. Gehringer,

This report outlines the results of the Final Coversoil System As-Built Survey which was accomplished within the Closure I area of the Corrective Action Management Unit (CAMU) project.

The intent of said report is to provide information such as but not limited to, Data, Calculations, Drawings, Tables, Charts, Electronic Files and other required media to satisfy the Submittal Requirements as outlined in Section 01050 of the Project Technical Specifications, Dated May, 2008.

Absolute Boundary & Control Solutions (ABCS) is pleased you have chosen us to complete these services, and assures you that every attempt has been made to prepare same in a fashion meeting or exceeding the Project Specifications. If however after your review you determine that revisions, clarifications or other modifications are needed, please do not hesitate to bring them to our attention.

In closing, thank you again for the opportunity to serve ENTACT. If you have any questions, comments or concerns, please do not hesitate to contact me.

Sincerely,

Craig A. Givant, PLS
President

(702) 953-7452
(702) 839-9750 fax

CERTIFICATION PAGE

CAMU – CLOSURE I AREA
FINAL COVERSOIL SYSTEM
AS-BUILT & VOLUME REPORT
HENDERSON, NV

I, Craig A. Givant, a Professional Land Surveyor registered in the State of Nevada, certify (as defined by Nevada Revised Statutes 625.403) that:

1. This report and any Land Surveying Practices (N.R.S. 625.040) on which it is based were performed directly by me or under my responsible charge (N.R.S. 625.080) in accordance with the Standards and Practices Governing Land Surveyors in the State of Nevada as defined by any applicable sections of the Nevada Revised Statutes (N.R.S.) or the Nevada Administrative Code (N.A.C.).
2. By affixing my official seal and signature below I am confirming that I am a Registered Land Surveyor in the State of Nevada and thereby satisfy the requirements of Section 01050, Part 1.03, Subpart A or the Project Technical Specifications.

Craig A. Givant, PLS
PLS 14348



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FIELD NOTES

Closure I – Final Coversoil System As-Built

The surface shown on the attached drawing as "Surface 2" represents the Final Coversoil System As-Built conditions within the Closure I area of the CAMU pursuant to the respective Final Coversoil Design verification. This surface was generated from the following new survey data collected by Absolute Boundary & Control Solutions (ABCS).

New Survey Data

1. 2010-03-19 (Finished Grade Verification) - CAG
2. 2010-4-5 (Final Cover As-Built Toes)-MV
3. 2010-4-19 (Closure I Remaining ASB Shots@FG)-MC

All New Survey Data necessary to determine the location and elevation of the above referenced Surface was collected electronically by Absolute Boundary & Control Solutions (ABCS).

Pertinent parameters required to be input into the software and which were obtained by means of human interaction, were verified as correct by performing field checks. These field checks and their resultant accuracies can be viewed within the Electronic Field Notes (Raw Data). The above referenced Raw Data files were used while acquiring the As-Built information. These files have not been printed for inclusion in this report however a Portable Document File (PDF) of each raw data printout is included electronically on the attached Compact Disk (CD). It should be noted that the contents of these Raw Data files may not pertain solely to the report herein presented and may include additional data from other "tasks" performed on the same day or outdated data which was reacquired at a later date. In all cases the coordinate listing appearing herein was used to generate the reported surface(s).

Phase I, II, IIIA, IIIB & IV – Final Interim Closure Interim Cover As-Built

The surface shown on the attached drawing as "Surface 1" represents the Final Interim Closure Interim Cover Surface within Phases I, II, IIIA, IIIB & IV. This surface was compiled and/or supplemented as follows:

Prior Reports

1. Surface shown on the Final Interim Closure Interim Cover As-built report prepared by ABCS under Task No: 2010.02.15.01-E.

The above referenced Surface was raised (+.0625') to account for the thickness of the Geosynthetic Materials and then further supplemented with the following:

Prior Reports

2. Surface shown as Surface 1 on the previously provided Waste Placement Survey report prepared by ABCS under Task No: 2010.03.05.01.

The above referenced surface represents the final Phase I, II, IIIA, IIIB, IV & V Basin Sub-grade surface which was also raised (+.0625') to account for the placement of Geosynthetic Materials. Data from this surface was added to Item 1 above in order to extend the surface and thereby insure that the volume of Final Coversoil that was placed was accurately calculated along the edges of the placement area(s) which fell outside the Final Interim Closure Interim Cover Surface (item 1).

New Survey Data

NONE

SURVEY DATA

As required by the project specification Absolute Boundary & Control Solutions (ABCS) utilized field survey methods which resulted in precisions equal to or better than the following:

Horizontal Coordinates: $\pm 1.0'$ (One Foot)

Vertical Coordinates: $\pm 0.10'$ (One Tenth of a Foot)

1. Coordinate Printout of the reduced (measured) coordinates from the Field Collection Efforts.

Point No.	Northing	Easting	Elevation	Description
1000	16913.99	13427.05	1771.07	20544-20541-LINE DUE TO ANCHOR WALL
1001	16914.99	13424.70	1769.79	20545-20540-LINE DUE TO ANCHOR WALL
520000	16822.53	14142.86	1820.18	20000
520001	16828.81	14185.07	1820.34	20001
520002	16835.72	14234.69	1820.47	20002
520003	16840.84	14272.31	1820.54	20003
520004	16845.47	14309.15	1820.56	20004
520005	16873.66	14314.49	1820.39	20005
520006	16894.37	14318.72	1820.56	20006
520007	16900.24	14305.67	1820.55	20007
520008	16916.66	14281.34	1820.31	20008
520009	16959.15	14238.83	1819.92	20009
520010	16992.68	14207.52	1819.12	20010
520011	17021.23	14182.87	1817.96	20011
520012	16991.91	14175.28	1818.35	20012
520013	16948.71	14167.02	1818.65	20013
520014	16883.23	14154.52	1819.12	20014
520015	16792.92	14317.25	1802.79	20015
520016	16808.17	14345.81	1803.30	20016
520017	16831.80	14357.31	1804.00	20017
520018	16846.89	14358.11	1804.48	20018
520019	16864.91	14360.31	1804.94	20019
520020	16884.06	14366.09	1804.41	20020
520021	16898.43	14368.29	1803.95	20021
520022	16915.68	14365.42	1803.47	20022
520023	16931.43	14356.22	1803.08	20023
520024	16943.76	14340.02	1802.67	20024
520025	16798.48	14333.74	1802.99	20025

Point No.	Northing	Easting	Elevation	Description
520026	16907.84	14174.07	1818.94	20026
520027	16886.88	14222.64	1819.48	20027
520028	16863.32	14276.72	1819.98	20028
520029	16855.13	14311.18	1820.34	20029
520030	16865.28	14408.33	1804.92	20030
520031	16865.68	14472.98	1804.91	20031
520032	16866.12	14527.58	1804.94	20032
520033	16866.16	14576.54	1805.00	20033
520034	16866.61	14629.19	1805.04	20034
520035	16866.85	14689.73	1805.06	20035
520036	16928.47	14376.36	1803.06	20036
520037	16926.57	14385.61	1803.11	20037
520038	16922.67	14440.16	1803.31	20038
520039	16918.73	14490.46	1803.41	20039
520040	16915.69	14532.52	1803.48	20040
520041	16912.18	14574.77	1803.54	20041
520042	16899.89	14612.58	1803.98	20042
520043	16887.65	14648.98	1804.31	20043
520044	16875.48	14684.86	1804.75	20044
520045	16873.51	14690.45	1804.77	20045
520046	16855.46	14690.40	1804.59	20046
520047	16853.17	14690.84	1804.60	20047
520048	16852.42	14688.96	1804.59	20048
520049	16842.12	14632.78	1804.19	20049
520050	16833.26	14581.20	1803.92	20050
520051	16824.48	14531.70	1803.70	20051
520052	16816.64	14478.88	1803.45	20052
520053	16806.99	14415.53	1803.23	20053
520054	16800.05	14368.09	1803.04	20054
520055	16820.44	14694.21	1793.69	20055
520056	16830.10	14712.81	1793.98	20056
520057	16842.53	14719.61	1794.40	20057
520058	16855.12	14720.65	1794.67	20058
520059	16864.22	14719.81	1795.02	20059
520060	16874.16	14720.61	1794.66	20060
520062	16897.09	14712.48	1794.06	20062
520063	16903.48	14704.65	1793.77	20063
520064	16907.72	14694.44	1793.66	20064
520065	16887.31	14718.77	1794.29	20065
520066	16906.19	14715.04	1793.69	20066

Point No.	Northing	Easting	Elevation	Description
520067	16904.22	14749.15	1793.90	20067
520068	16902.03	14792.29	1794.02	20068
520069	16900.88	14822.22	1794.20	20069
520070	16899.64	14854.44	1794.27	20070
520071	16876.72	14853.44	1794.99	20071
520072	16858.38	14852.75	1794.43	20072
520073	16846.36	14834.97	1794.10	20073
520074	16840.60	14803.77	1793.98	20074
520075	16834.49	14772.78	1793.89	20075
520076	16827.88	14736.41	1793.80	20076
520077	16868.39	14764.80	1795.04	20077
520078	16871.18	14794.94	1795.04	20078
520079	16874.53	14828.45	1794.97	20079
520543	16856.56	13565.87	1820.99	20543
520548	16810.69	13550.72	1821.98	20548
520549	16739.83	13526.92	1823.20	20549
520566	16745.59	13572.11	1822.77	20566
520571	16752.02	13626.02	1822.29	20571
520572	16760.00	13684.09	1822.04	20572
520577	16770.12	13746.68	1822.32	20577
520578	16779.62	13806.00	1822.56	20578
520583	16788.06	13859.90	1822.71	20583
520584	16794.75	13912.49	1822.27	20584
520589	16801.74	13982.28	1821.00	20589
520590	16804.77	14024.21	1819.63	20590
520595	16812.62	14080.71	1819.99	20595
520621	16843.60	14104.30	1819.51	20621
520622	16826.69	14027.02	1819.08	20622
520623	16853.73	14027.08	1818.33	20623
520640	16861.23	13967.19	1819.80	20640
520641	16817.93	13913.21	1821.99	20641
520664	16824.54	13862.06	1822.25	20664
520665	16830.96	13812.78	1821.78	20665
520685	16798.38	13672.04	1821.04	20685
520712	16756.06	13658.94	1821.91	20712
3020119	16695.23	14159.93	1777.64	20119
3020121	16701.32	14202.13	1777.79	20121
3020123	16708.51	14251.71	1777.87	20123
3020125	16714.00	14289.36	1778.02	20125
3020127	16719.52	14326.95	1778.21	20127

Point No.	Northing	Easting	Elevation	Description
3020129	16726.84	14377.98	1778.38	20129
3020133	16742.95	14488.73	1778.80	20133
3020135	16751.03	14543.58	1779.09	20135
3020137	16758.41	14593.35	1778.86	20137
3020139	16766.15	14645.00	1778.69	20139
3020141	16774.59	14701.74	1778.33	20141
3020143	16781.14	14744.46	1778.06	20143
3020145	16786.86	14781.20	1777.91	20145
3020147	16791.86	14812.35	1777.70	20147
3020149	16798.30	14853.37	1777.28	20149
3020151	16824.61	14901.52	1776.33	20151
3020153	16867.53	14912.26	1775.64	20153
3020157	16923.26	14912.40	1774.65	20157
3020159	16959.16	14890.66	1774.19	20159
3020161	16960.79	14855.97	1773.89	20161
3020163	16962.37	14824.21	1773.71	20163
3020165	16963.70	14794.15	1773.47	20165
3020167	16965.80	14751.68	1773.30	20167
3020169	16967.80	14718.11	1773.19	20169
3020171	16968.46	14706.19	1773.09	20171
3020173	16977.92	14676.34	1772.94	20173
3020175	16989.30	14640.05	1772.70	20175
3020177	17004.67	14591.61	1772.51	20177
3020179	17009.12	14538.61	1772.35	20179
3020181	17012.37	14497.40	1772.10	20181
3020183	17016.34	14446.39	1771.98	20183
3020185	17020.18	14397.86	1771.83	20185
3020187	17030.33	14373.86	1771.75	20187
3020189	17062.46	14341.22	1771.49	20189
3020191	17095.07	14308.37	1771.38	20191
3020193	17121.53	14282.06	1771.18	20193
3020195	16947.92	14898.71	1774.33	20195
3020197	16903.10	14913.59	1775.04	20197
3020199	16889.94	14913.46	1775.20	20199
3020201	16850.98	14910.41	1775.91	20201
3020203	16838.57	14907.93	1776.11	20203
3020205	16818.23	14896.51	1776.41	20205
3020207	16805.55	14875.54	1776.85	20207
3020210	16800.72	14862.49	1777.22	20210
3020540	16966.59	13443.54	1769.35	20540

Point No.	Northing	Easting	Elevation	Description
3020541	16965.34	13445.97	1770.54	20541
3020542	16915.29	13584.88	1819.72	20542
3020546	16863.25	13405.68	1770.26	20546
3020547	16862.04	13408.08	1771.53	20547
3020550	16790.43	13381.87	1772.24	20550
3020551	16791.32	13379.28	1770.90	20551
3020558	16623.85	13429.51	1773.90	20558
3020559	16621.48	13427.98	1772.71	20559
3020560	16601.60	13463.05	1773.07	20560
3020561	16604.26	13464.12	1774.32	20561
3020562	16594.98	13500.53	1774.60	20562
3020563	16592.35	13500.22	1773.46	20563
3020564	16592.74	13538.41	1773.83	20564
3020565	16595.38	13538.14	1774.97	20565
3020567	16604.61	13594.75	1775.21	20567
3020570	16613.26	13648.45	1775.51	20570
3020573	16622.67	13706.41	1775.75	20573
3020576	16632.70	13769.59	1776.04	20576
3020579	16642.10	13828.22	1776.32	20579
3020582	16650.86	13882.39	1776.52	20582
3020585	16659.14	13934.33	1776.71	20585
3020588	16670.50	14003.45	1776.88	20588
3020591	16678.52	14054.81	1777.06	20591
3020594	16686.19	14101.35	1777.31	20594
3021907	16601.96	13595.19	1774.36	21907
3021908	16610.73	13648.88	1774.48	21908
3021909	16620.00	13706.91	1774.83	21909
3021910	16629.95	13769.48	1775.00	21910
3021911	16639.65	13828.61	1775.18	21911
3021912	16648.29	13882.73	1775.40	21912
3021913	16656.65	13935.02	1775.70	21913
3021914	16667.71	14003.84	1776.01	21914
3021915	16676.08	14055.23	1776.12	21915
3021916	16683.50	14101.56	1776.39	21916
3021917	16692.56	14160.36	1776.56	21917
3021918	16698.71	14202.88	1776.66	21918
3021919	16705.97	14252.30	1776.93	21919
3021920	16711.45	14289.85	1777.09	21920
3021921	16716.87	14327.54	1777.28	21921
3021922	16724.43	14378.83	1777.55	21922

Point No.	Northing	Easting	Elevation	Description
3021923	16731.26	14426.63	1777.86	21923
3021924	16740.46	14489.39	1778.18	21924
3021925	16748.53	14544.50	1778.45	21925
3021926	16755.92	14594.20	1778.20	21926
3021927	16763.63	14645.87	1777.88	21927
3021928	16772.06	14702.40	1777.46	21928
3021929	16778.61	14744.90	1777.18	21929
3021930	16784.44	14781.71	1776.91	21930
3021931	16789.38	14813.05	1776.69	21931
3021932	16795.66	14854.21	1776.33	21932
3021933	16798.16	14863.38	1776.28	21933
3021934	16802.85	14876.75	1776.02	21934
3021935	16816.29	14898.37	1775.44	21935
3021936	16822.86	14903.82	1775.36	21936
3021937	16837.55	14910.48	1775.17	21937
3021938	16850.50	14913.08	1774.87	21938
3021939	16867.01	14914.97	1774.63	21939
3021940	16890.00	14916.09	1774.19	21940
3021941	16903.22	14916.21	1773.92	21941
3021942	16924.03	14915.07	1773.66	21942
3021943	16949.39	14900.86	1773.41	21943
3021944	16961.78	14892.20	1773.05	21944
3021945	16963.40	14855.98	1772.85	21945
3021946	16964.96	14824.15	1772.67	21946
3021947	16966.20	14794.17	1772.43	21947
3021948	16968.27	14752.86	1772.26	21948
3021949	16968.50	14752.04	1772.15	21949
3021950	16970.39	14718.15	1772.12	21950
3021951	16970.99	14706.55	1772.02	21951
3021952	16980.43	14677.03	1771.95	21952
3021953	16991.86	14641.01	1771.75	21953
3021954	17007.20	14592.16	1771.51	21954
3021955	17011.87	14538.55	1771.35	21955
3021956	17015.01	14497.74	1771.22	21956
3021957	17018.96	14446.80	1771.04	21957
3021958	17022.84	14398.54	1770.79	21958
3021959	17032.51	14375.45	1770.73	21959
3021960	17064.18	14343.24	1770.54	21960
3021961	17096.89	14310.24	1770.30	21961
3021962	17123.30	14283.98	1770.25	21962

Point No.	Northing	Easting	Elevation	Description
3021972	16596.28	13543.17	1775.08	21972
3021973	16593.56	13543.38	1773.85	21973
3021976	16598.45	13482.11	1774.57	21976
3021977	16612.23	13447.00	1774.15	21977
3021978	16634.54	13416.83	1773.76	21978
3021979	16663.97	13393.39	1773.35	21979
3021980	16680.69	13384.64	1773.17	21980
3021981	16698.28	13378.20	1773.01	21981
3021982	16716.74	13374.00	1772.83	21982
3021983	16735.45	13372.30	1772.65	21983
3021984	16754.15	13373.14	1772.56	21984
3021985	16772.87	13376.18	1772.32	21985
3021986	16593.97	13519.35	1774.94	21986
3021999	16648.48	13404.02	1773.54	21999
3022000	16773.42	13373.52	1771.04	22000
3022001	16754.58	13370.29	1771.15	22001
3022002	16735.33	13369.68	1771.45	22002
3022003	16716.24	13371.36	1771.62	22003
3022004	16697.58	13375.53	1771.81	22004
3022005	16679.46	13382.13	1771.99	22005
3022006	16662.45	13391.00	1772.17	22006
3022007	16646.85	13402.05	1772.35	22007
3022008	16632.58	13415.00	1772.46	22008
3022009	16609.75	13445.77	1772.83	22009
3022010	16595.75	13481.27	1773.27	22010
3022011	16591.34	13519.45	1773.63	22011

CAMU (Closure I) - Final Coversoil System As-Built vs. Design Comparison

Design Point Number	As-Built Point Number	Design Northing	Design Easting	Design Elevation	As-built Elevation	Delta Northing	Delta Easting	Delta Elevation	Notes
20000	520000	16822.09	14142.91	1820.27	1820.18	-0.44	0.04	0.09	As-Built
20001	520001	16828.08	14185.06	1820.40	1820.34	-0.72	0.00	0.06	As-Built
20002	520002	16835.09	14234.73	1820.52	1820.47	-0.63	0.05	0.05	As-Built
20003	520003	16840.38	14272.29	1820.62	1820.54	-0.46	-0.02	0.08	As-Built
20004	520004	16845.31	14309.38	1820.62	1820.56	-0.15	0.23	0.06	As-Built
20005	520005	16873.65	14314.80	1820.46	1820.39	-0.02	0.31	0.08	As-Built
20006	520006	16894.24	14318.74	1820.61	1820.56	-0.12	0.03	0.05	As-Built
20007	520007	16900.04	14305.52	1820.49	1820.55	-0.20	-0.15	-0.06	As-Built
20008	520008	16916.85	14281.38	1820.31	1820.31	0.19	0.03	0.00	As-Built
20009	520009	16959.23	14238.90	1819.95	1819.92	0.08	0.06	0.03	As-Built
20010	520010	16992.75	14207.74	1819.18	1819.12	0.07	0.22	0.06	As-Built
20011	520011	17021.21	14183.12	1817.99	1817.96	-0.02	0.25	0.03	As-Built
20012	520012	16991.92	14175.37	1818.38	1818.35	0.01	0.09	0.03	As-Built
20013	520013	16948.42	14167.01	1818.68	1818.65	-0.29	-0.01	0.03	As-Built
20014	520014	16883.29	14154.49	1819.21	1819.12	0.06	-0.04	0.09	As-Built
20015	520015	16792.54	14317.15	1802.83	1802.79	-0.38	-0.11	0.04	As-Built
20016	520016	16808.30	14345.71	1803.30	1803.30	0.13	-0.10	0.00	As-Built
20017	520017	16831.75	14357.26	1804.00	1804.00	-0.04	-0.04	0.00	As-Built
20018	520018	16846.93	14358.20	1804.46	1804.48	0.05	0.09	-0.03	As-Built
20019	520019	16865.00	14360.37	1805.00	1804.94	0.10	0.06	0.06	As-Built
20020	520020	16884.04	14366.09	1804.43	1804.41	-0.02	0.00	0.02	As-Built
20021	520021	16898.40	14368.36	1804.00	1803.95	-0.03	0.07	0.05	As-Built

CAMU (Closure I) - Final Coversoil System As-Built vs. Design Comparison

Design Point Number	As-Built Point Number	Design Northing	Design Easting	Design Elevation	As-built Elevation	Delta Northing	Delta Easting	Delta Elevation	Notes
20022	520022	16915.68	14365.43	1803.48	1803.47	0.00	0.02	0.01	As-Built
20023	520023	16931.34	14356.25	1803.01	1803.08	-0.08	0.03	-0.07	As-Built
20024	520024	16943.84	14339.92	1802.63	1802.67	0.08	-0.10	-0.03	As-Built
20025	520025	16798.56	14333.86	1803.01	1802.99	0.08	0.12	0.02	As-Built
20026	520026	16907.91	14174.16	1819.00	1818.94	0.07	0.09	0.06	As-Built
20027	520027	16886.85	14222.60	1819.47	1819.48	-0.02	-0.04	-0.01	As-Built
20028	520028	16863.31	14276.77	1820.00	1819.98	-0.01	0.05	0.02	As-Built
20029	520029	16855.34	14311.30	1820.33	1820.34	0.21	0.13	-0.01	As-Built
20030	520030	16865.28	14408.31	1805.00	1804.92	0.00	-0.01	0.08	As-Built
20031	520031	16865.65	14473.07	1805.00	1804.91	-0.03	0.09	0.09	As-Built
20032	520032	16865.96	14527.53	1805.00	1804.94	-0.15	-0.05	0.06	As-Built
20033	520033	16866.25	14576.61	1805.00	1805.00	0.09	0.06	0.00	As-Built
20034	520034	16866.55	14629.22	1805.00	1805.04	-0.06	0.03	-0.04	As-Built
20035	520035	16866.90	14689.86	1805.00	1805.06	0.05	0.13	-0.06	As-Built
20036	520036	16928.49	14376.35	1803.10	1803.06	0.02	-0.01	0.03	As-Built
20037	520037	16926.71	14385.53	1803.15	1803.11	0.15	-0.08	0.05	As-Built
20038	520038	16922.52	14440.11	1803.29	1803.31	-0.15	-0.05	-0.02	As-Built
20039	520039	16918.75	14490.42	1803.41	1803.41	0.01	-0.04	0.01	As-Built
20040	520040	16915.61	14532.54	1803.51	1803.48	-0.07	0.02	0.03	As-Built
20041	520041	16912.45	14574.72	1803.61	1803.54	0.27	-0.05	0.07	As-Built
20042	520042	16899.79	14612.58	1804.00	1803.98	-0.10	-0.01	0.02	As-Built
20043	520043	16887.64	14648.88	1804.37	1804.31	-0.01	-0.11	0.06	As-Built
20044	520044	16875.58	14684.90	1804.74	1804.75	0.10	0.04	-0.02	As-Built

CAMU (Closure I) - Final Coversoil System As-Built vs. Design Comparison

Design Point Number	As-Built Point Number	Design Northing	Design Easting	Design Elevation	As-built Elevation	Delta Northing	Delta Easting	Delta Elevation	Notes
20045	520045	16873.60	14690.32	1804.80	1804.77	0.09	-0.13	0.03	As-Built
20046	520046	16855.36	14690.81	1804.65	1804.59	-0.10	0.41	0.06	As-Built
20047	520047	16853.15	14690.79	1804.59	1804.60	-0.02	-0.06	-0.02	As-Built
20048	520048	16852.29	14688.79	1804.56	1804.59	-0.13	-0.17	-0.02	As-Built
20049	520049	16842.06	14632.53	1804.26	1804.19	-0.06	-0.24	0.07	As-Built
20050	520050	16832.94	14581.15	1804.00	1803.92	-0.32	-0.04	0.08	As-Built
20051	520051	16824.53	14531.58	1803.76	1803.70	0.05	-0.12	0.06	As-Built
20052	520052	16816.34	14478.79	1803.52	1803.45	-0.31	-0.09	0.07	As-Built
20053	520053	16806.91	14415.60	1803.25	1803.23	-0.08	0.07	0.02	As-Built
20054	520054	16799.98	14368.17	1803.05	1803.04	-0.07	0.08	0.01	As-Built
20055	520055	16820.23	14694.25	1793.76	1793.69	-0.20	0.04	0.07	As-Built
20056	520056	16830.16	14712.76	1794.00	1793.98	0.06	-0.05	0.02	As-Built
20057	520057	16842.54	14719.67	1794.35	1794.40	0.00	0.06	-0.05	As-Built
20058	520058	16855.12	14720.61	1794.72	1794.67	0.00	-0.05	0.05	As-Built
20059	520059	16864.29	14719.85	1795.00	1795.02	0.07	0.04	-0.02	As-Built
20060	520060	16874.21	14720.61	1794.71	1794.66	0.05	0.01	0.04	As-Built
20062	520062	16897.09	14712.53	1794.00	1794.06	0.00	0.04	-0.06	As-Built
20063	520063	16903.42	14704.69	1793.79	1793.77	-0.06	0.04	0.02	As-Built
20064	520064	16907.47	14694.50	1793.64	1793.66	-0.26	0.06	-0.02	As-Built
20065	520065	16887.24	14718.72	1794.31	1794.29	-0.07	-0.06	0.03	As-Built
20066	520066	16905.95	14715.18	1793.74	1793.69	-0.24	0.15	0.05	As-Built
20067	520067	16904.11	14749.11	1793.89	1793.90	-0.12	-0.04	-0.01	As-Built
20068	520068	16902.07	14792.37	1794.07	1794.02	0.04	0.08	0.06	As-Built

CAMU (Closure I) - Final Coversoil System As-Built vs. Design Comparison

Design Point Number	As-Built Point Number	Design Northing	Design Easting	Design Elevation	As-built Elevation	Delta Northing	Delta Easting	Delta Elevation	Notes
20069	520069	16900.84	14822.36	1794.19	1794.20	-0.05	0.14	-0.01	As-Built
20070	520070	16899.58	14854.59	1794.32	1794.27	-0.06	0.15	0.05	As-Built
20071	520071	16876.68	14853.15	1795.00	1794.99	-0.04	-0.29	0.01	As-Built
20072	520072	16858.19	14852.79	1794.45	1794.43	-0.19	0.03	0.02	As-Built
20073	520073	16846.23	14835.15	1794.14	1794.10	-0.13	0.18	0.04	As-Built
20074	520074	16840.37	14803.90	1794.05	1793.98	-0.23	0.13	0.07	As-Built
20075	520075	16834.51	14772.65	1793.96	1793.89	0.02	-0.13	0.07	As-Built
20076	520076	16827.70	14736.31	1793.86	1793.80	-0.19	-0.10	0.07	As-Built
20077	520077	16868.48	14764.87	1795.00	1795.04	0.09	0.08	-0.04	As-Built
20078	520078	16871.29	14795.03	1795.00	1795.04	0.10	0.08	-0.04	As-Built
20079	520079	16874.40	14828.46	1795.00	1794.97	-0.13	0.01	0.03	As-Built
20542	3020542	16915.36	13584.91	1819.65	1819.72	0.08	0.03	-0.07	As-Built
20543	520543	16856.69	13565.58	1821.00	1820.99	0.13	-0.28	0.01	As-Built
20548	520548	16810.68	13550.50	1822.00	1821.98	-0.01	-0.22	0.02	As-Built
20549	520549	16739.93	13526.79	1823.24	1823.20	0.10	-0.13	0.05	As-Built
20566	520566	16745.32	13571.89	1822.81	1822.77	-0.26	-0.22	0.04	As-Built
20571	520571	16751.93	13626.09	1822.34	1822.29	-0.08	0.07	0.04	As-Built
20572	520572	16759.88	13684.19	1822.11	1822.04	-0.13	0.10	0.06	As-Built
20577	520577	16769.96	13746.76	1822.37	1822.32	-0.16	0.08	0.05	As-Built
20578	520578	16779.41	13805.83	1822.59	1822.56	-0.21	-0.17	0.02	As-Built
20583	520583	16787.63	13859.86	1822.78	1822.71	-0.44	-0.04	0.06	As-Built
20584	520584	16794.54	13912.47	1822.35	1822.27	-0.20	-0.02	0.08	As-Built
20589	520589	16801.18	13981.99	1821.03	1821.00	-0.56	-0.28	0.04	As-Built

CAMU (Closure I) - Final Coversoil System As-Built vs. Design Comparison

Design Point Number	As-Built Point Number	Design Northing	Design Easting	Design Elevation	As-built Elevation	Delta Northing	Delta Easting	Delta Elevation	Notes
20590	520590	16804.27	14024.32	1819.72	1819.63	-0.50	0.11	0.09	As-Built
20595	520595	16812.58	14080.30	1820.08	1819.99	-0.04	-0.42	0.08	As-Built
20621	520621	16843.56	14104.18	1819.49	1819.51	-0.04	-0.12	-0.02	As-Built
20622	520622	16826.71	14027.10	1819.00	1819.08	0.01	0.07	-0.08	As-Built
20623	520623	16853.57	14027.10	1818.23	1818.33	-0.16	0.01	-0.09	As-Built
20640	520640	16861.35	13967.14	1819.72	1819.80	0.12	-0.05	-0.08	As-Built
20641	520641	16817.94	13913.08	1821.98	1821.99	0.02	-0.13	-0.02	As-Built
20664	520664	16824.55	13862.20	1822.23	1822.25	0.01	0.14	-0.01	As-Built
20665	520665	16830.95	13812.88	1821.81	1821.78	-0.02	0.11	0.03	As-Built
20685	520685	16798.23	13672.10	1821.00	1821.04	-0.15	0.07	-0.04	As-Built
20712	520712	16756.29	13659.08	1821.98	1821.91	0.23	0.14	0.07	As-Built

DRAWINGS

The following Measurement Drawings, Topographic Survey Drawings and/or Cross-Section Drawings are attached.

1. **CAMU – Closure I Final Coversoil System As-Built, dated 4/20/2010.**

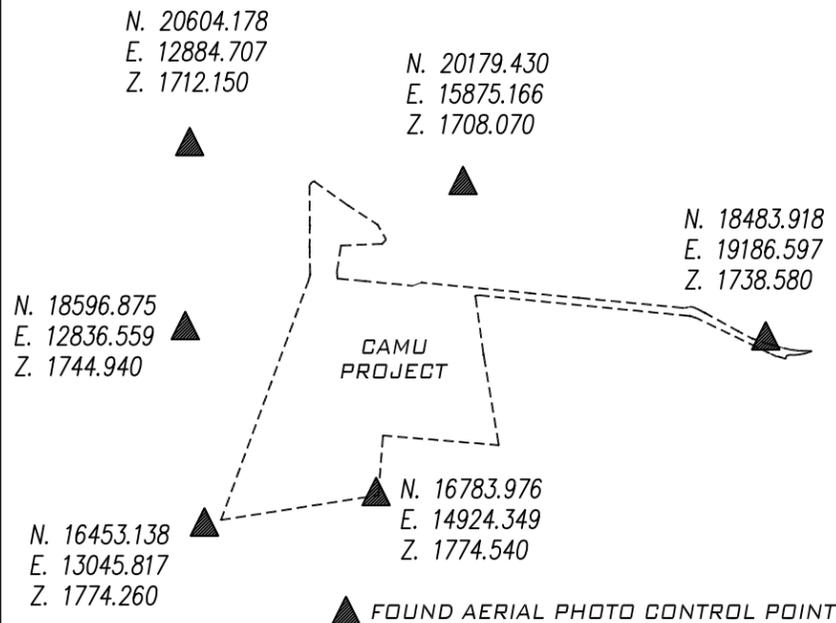
This drawing depicts the Final Coversoil System As-Built Conditions within the Closure I Area of the CAMU. It also contains information regarding the control network utilized and other pertinent survey data. Due to the scale at which this drawing was prepared, the intended correlation representation may not be entirely clear. In ALL cases the Survey Data herein provided takes precedence over any graphical representation(s).

2. **CAMU – Closure I Final Coversoil System Volume, dated 4/20/2010.**

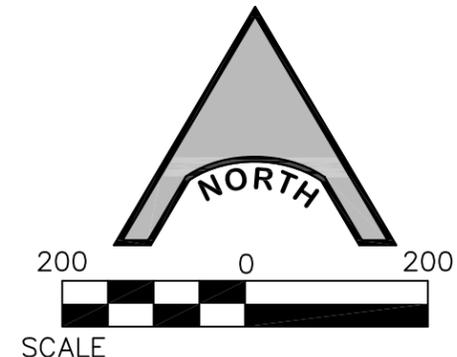
This drawing depicts the Final Coversoil System As-Built Conditions within the Closure I Area of the CAMU and a clipped portion of the Final Interim Closure Interim Cover Conditions within Phases I, II, IIIA, IIIB & IV (as modified – See Page 6 of this report). Also depicted is a volumetric comparison between these two (2) surfaces.

PROJECT CONTROL

1" = 2000'



CLOSURE I FINAL COVERSOIL SYSTEM AS-BUILT



BENCHMARK

CLARK COUNTY BENCHMARK (6C22 2E4), BEING A RIVET AND SQUARE ALUMINUM PLATE IN A CONCRETE CENTERLINE ISLAND, 4' WEST OF THE NOSE IN THE MIDDLE OF SUNSET ROAD, WEST SIDE OF THE INTERSECTION OF BOULDER HIGHWAY AND SUNSET ROAD.

PUBLISHED ELEVATION - 505.816 METERS = 1659.50 FEET
NAVD 1988 DATUM - PUBLISHED (2003)

BASIS OF BEARINGS

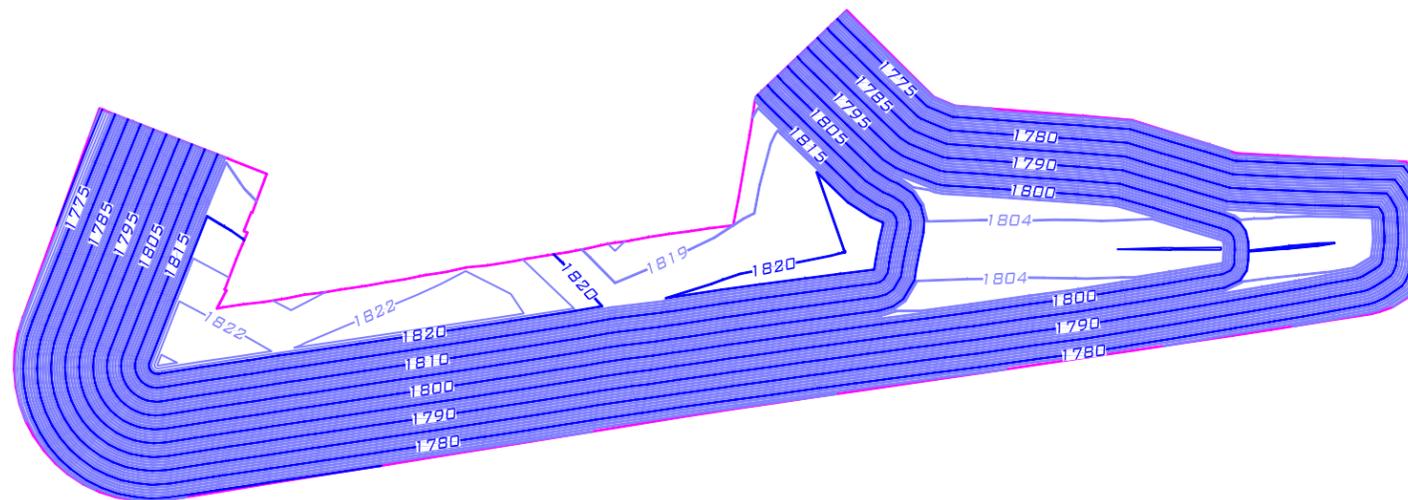
SOUTH 85°36'52" WEST, BEING THE BEARING BETWEEN CLARK COUNTY GIS CONTROL POINTS "CC-GIS 848" AND "CC-GIS W51", AS SHOWN ON THE MAP IN FILE 88 OF SURVEYS, PAGE 53, OFFICIAL RECORDS, CLARK COUNTY, NEVADA.

COORDINATE SYSTEM

THE COORDINATE SYSTEM AND ASSOCIATED BEARING ROTATION INFORMATION WAS ESTABLISHED AND PROVIDED BY PBS&J.

LINE LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- SURFACE LIMITS



SURFACE DETAILS

THE SURFACE DEPICTED AS SURFACE HEREON WAS GENERATED BASED UPON AS-BUILT DATA COLLECTED BY ABSOLUTE BOUNDARY & CONTROL SOLUTIONS PURSUANT TO FINAL COVERSOIL VERIFICATION. DEPICTED IS A SPECIFIC PORTION OF THE TOP DECK AS WELL AS THOSE AREAS WHERE THE GRAVEL MULCH HAD BEEN PLACED ON THE SIDE SLOPES AS OF 4/19/2010. THIS AREA IS ALSO KNOWN AS "CLOSURE I" AND IS IDENTICAL TO SURFACE 2 AS SHOWN ON SHEET 2 OF THIS REPORT.

NO.	REVISION	DATE
△		
△		
△		
△		

CORRECTIVE ACTION MANAGEMENT UNIT - (CAMU)

**FINAL COVERSOIL SYSTEM
CLOSURE I - AS-BUILT & VOLUME**

FIELD SURVEY DATE: VARIOUS THRU 4/19/2010
FIELD CREW: C.G., M.C., M.V.

PROJECT # 2008.06.23.01



ABSOLUTE BOUNDARY & CONTROL SOLUTIONS

6440 SKY POINT DRIVE
SUITE 140 - PMB 321
LAS VEGAS, NV. 89131
(702) 953-7452
(702) 987-5943 FAX
WWW.AB-CS.COM

Date: April 20, 2010
Drawn: C. Givant
Checked: C. Givant
Task: 2010.03.19.01-E

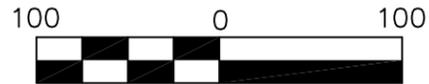
Sheet No. 1 of 2

CLOSURE I FINAL COVER SOIL SYSTEM VOLUME

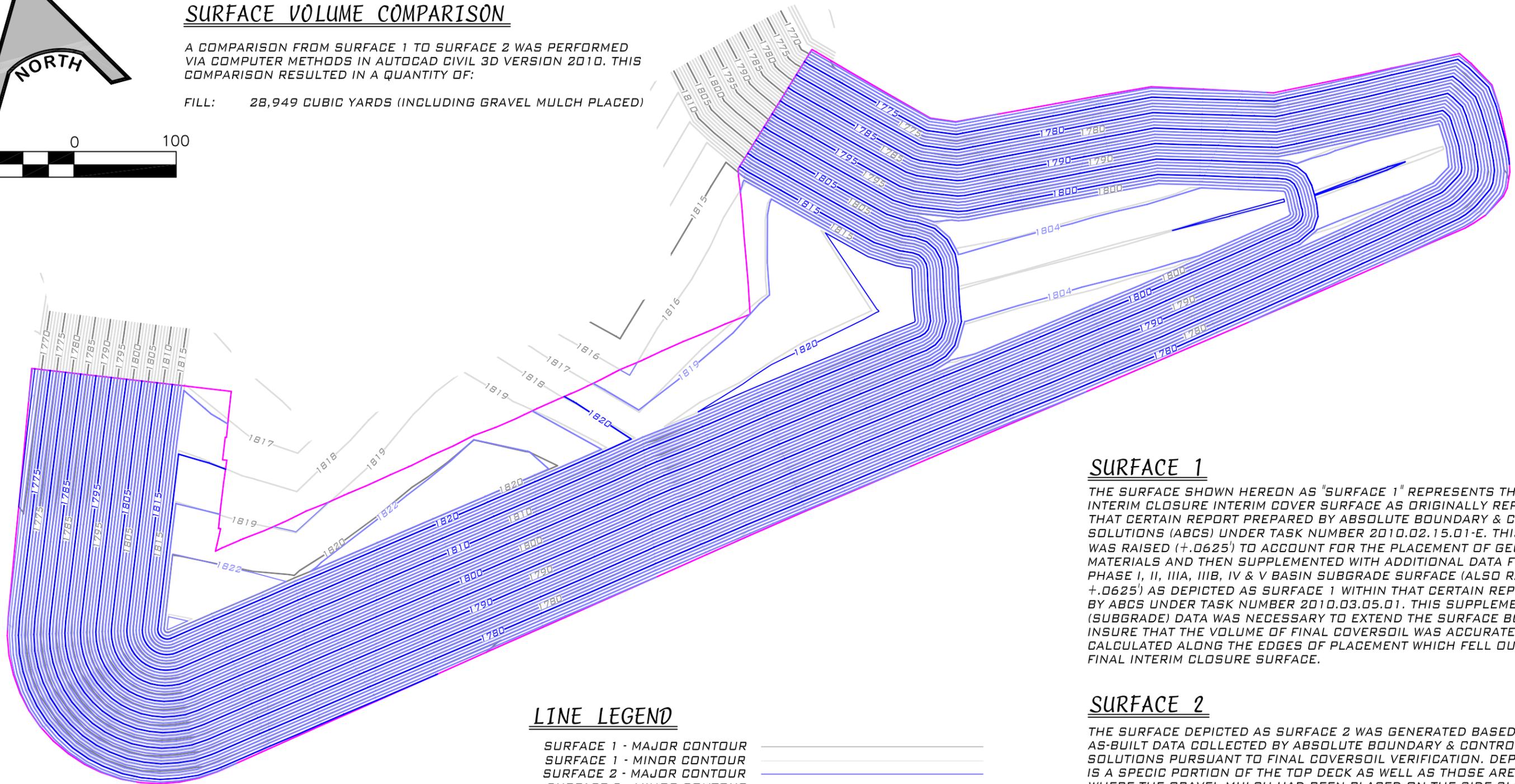
SURFACE VOLUME COMPARISON

A COMPARISON FROM SURFACE 1 TO SURFACE 2 WAS PERFORMED VIA COMPUTER METHODS IN AUTOCAD CIVIL 3D VERSION 2010. THIS COMPARISON RESULTED IN A QUANTITY OF:

FILL: 28,949 CUBIC YARDS (INCLUDING GRAVEL MULCH PLACED)



SCALE



SURFACE 1

THE SURFACE SHOWN HEREON AS "SURFACE 1" REPRESENTS THE FINAL INTERIM CLOSURE INTERIM COVER SURFACE AS ORIGINALLY REPORTED IN THAT CERTAIN REPORT PREPARED BY ABSOLUTE BOUNDARY & CONTROL SOLUTIONS (ABCS) UNDER TASK NUMBER 2010.02.15.01-E. THIS SURFACE WAS RAISED (+.0625') TO ACCOUNT FOR THE PLACEMENT OF GEOTEXTILIC MATERIALS AND THEN SUPPLEMENTED WITH ADDITIONAL DATA FROM THE PHASE I, II, IIIA, IIIB, IV & V BASIN SUBGRADE SURFACE (ALSO RAISED +.0625') AS DEPICTED AS SURFACE 1 WITHIN THAT CERTAIN REPORT PREPARED BY ABCS UNDER TASK NUMBER 2010.03.05.01. THIS SUPPLEMENTAL (SUBGRADE) DATA WAS NECESSARY TO EXTEND THE SURFACE BOUNDARY AND INSURE THAT THE VOLUME OF FINAL COVERSOIL WAS ACCURATELY CALCULATED ALONG THE EDGES OF PLACEMENT WHICH FELL OUTSIDE THE FINAL INTERIM CLOSURE SURFACE.

SURFACE 2

THE SURFACE DEPICTED AS SURFACE 2 WAS GENERATED BASED UPON AS-BUILT DATA COLLECTED BY ABSOLUTE BOUNDARY & CONTROL SOLUTIONS PURSUANT TO FINAL COVERSOIL VERIFICATION. DEPICTED IS A SPECIFIC PORTION OF THE TOP DECK AS WELL AS THOSE AREAS WHERE THE GRAVEL MULCH HAD BEEN PLACED ON THE SIDE SLOPES AS OF 4/19/2010. THIS AREA IS ALSO KNOWN AS "CLOSURE I" AND IS IDENTICAL TO THE SURFACE SHOWN ON SHEET 1 OF THIS REPORT.

LINE LEGEND

- SURFACE 1 - MAJOR CONTOUR
- SURFACE 1 - MINOR CONTOUR
- SURFACE 2 - MAJOR CONTOUR
- SURFACE 2 - MINOR CONTOUR
- SURFACE 2 LIMITS

NO.	REVISION	DATE
△		
△		
△		
△		

CORRECTIVE ACTION MANAGEMENT UNIT - (CAMU)

*FINAL COVERSOIL SYSTEM
CLOSURE I - AS-BUILT & VOLUME*

FIELD SURVEY DATE: VARIOUS THRU 4/19/2010
FIELD CREW: C.G., M.C., M.V.

PROJECT # 2008.06.23.01

ABSOLUTE BOUNDARY & CONTROL SOLUTIONS
6440 SKY POINT DRIVE
SUITE 140 - PMB 321
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(702) 953-7452
(702) 987-5943 FAX
WWW.AB-CS.COM

Date:	April 20, 2010
Drawn:	C. Givant
Checked:	C. Givant
Task:	2010.03.19.01-E
Sheet No.	2 of 2

ELECTRONIC FILES

The Compact Disk (CD) included in the pocket at the end of this report contains the following Directories and Files:

PDF Files (.pdf)

The following files are adobe Portable Document Files which can be viewed using a readily available free version of Adobe Acrobat Reader.

1. (Report) – Closure I - Final Coversoil System ASB & Volume
2. (Field Notes) - 2010-03-19 (Finished Grade Verification)
3. (Field Notes) - 2010-4-5 (Final Cover As-Built Toes)
4. (Field Notes) - 2010-4-19 (Closure I Remaining ASB Shots@FG)

CAD Files (.dwg)

The following files are AutoCAD Drawing files created in Civil 3D 2009. Filenames proceeded by “2007” have been exported or “saved down” to a version 2007 drawing file.

1. 2010-04-19 (Closure I - FG ASB & Volume) - 2007
2. 2010-04-19 (Closure I - FG ASB & Volume)

Coordinate Files (.csv)

The following files are Comma Separated Value Files in the following format:

Point Name, Northing, Easting, Elevation, Description

1. Closure I As-Built Locations

Raw Data Files (.dc)

The following files are Trimble Data Collector (.DC) files that contain the Raw Field Data.

1. 2010-03-19 (Finished Grade Verification) – CAG
2. 2010-4-5 (Final Cover As-Built Toes)-MV
3. 2010-4-19 (Closure I Remaining ASB Shots@FG)-MC