

March 6, 2019

Mr. Phil Boyd
Welch, Comer and Associates, Inc.
350 E. Kathleen Drive
Coeur d'Alene, Idaho 83814

**RE: ALLWEST Project No. 118-014T
Mass Grading Report
Atlas Waterfront Project – Phase 1, Phase 2, and Phase 3
3074 West Seltice Way
Coeur d'Alene, Idaho**

Mr. Boyd,

ALLWEST Testing & Engineering, Inc. has completed the authorized compaction testing of the structural fill placed within Atlas Waterfront Project – Phase 1, Phase 2, and Phase 3 at 3074 W Seltice Way in Coeur d'Alene, Idaho. The purpose of our services was to test the in situ dry density of the structural fill placed for conformance with project specifications. The attached report presents the results of the field testing and observation.

FIELD TESTING AND OBSERVATION

The construction consisted of filling portions of Phase 1, Phase 2, and Phase 3 of the project site, and earthwork correction of the existing native soil and uncontrolled fill. The project area was graded to a rough finish.

We observed the placement and performed density tests on the structural fill placed between April and November 2018. The material was imported from the Interstate 90 grading project in three phases. All tests and/or retests met or exceeded our recommended minimum compaction requirements of 95 percent of the maximum dry density determined in accordance with ASTM D1557 procedure. Attached are four maps showing the approximated density test locations included in Appendix A. Attached are a tabulation of the field density test results in Appendix B.

RESULTS AND OBSERVATIONS

Based on our observations and field testing, it is our opinion that the structural fill placed has been adequately compacted. It is also our opinion that the fill is suitable for support of the anticipated foundation loads as described in our Preliminary Geotechnical Evaluations for Phase 1 and 3 dated February 1, 2019, and Phase 2 dated February 8, 2019.

REPORT LIMITATIONS

This report has been prepared to assist the planning and design of the proposed Atlas Waterfront Project – Phase 1, Phase 2, and Phase 3 south of W. Seltice Way in Coeur d'Alene, Idaho. Reliance by any party other than the addressee is prohibited without the written authorization of ALLWEST. Our services consist of professional opinions and conclusions made in accordance with generally accepted geotechnical engineering principles and practices in the local area at the time this report was prepared. This acknowledgement is in lieu of all warranties, express or implied.

We appreciate the opportunity to work with you on this project. If you have any questions or need additional information, please do not hesitate to call us at (208) 762-4721.

Sincerely,
ALLWEST Testing & Engineering, Inc.

Prepared by:



Scott Marshall, P.G.
Engineering Geologist

Reviewed by:



James Thomasson, P.E.
Senior Geotechnical Engineer

Appendix A – Density Test Location Key Map, Density Test Location Maps (3)
Appendix B – Field Density Test Report for Soils
Appendix C – Laboratory Test Results

Appendix A

Density Test Location Key Map Density Test Location Maps (3)

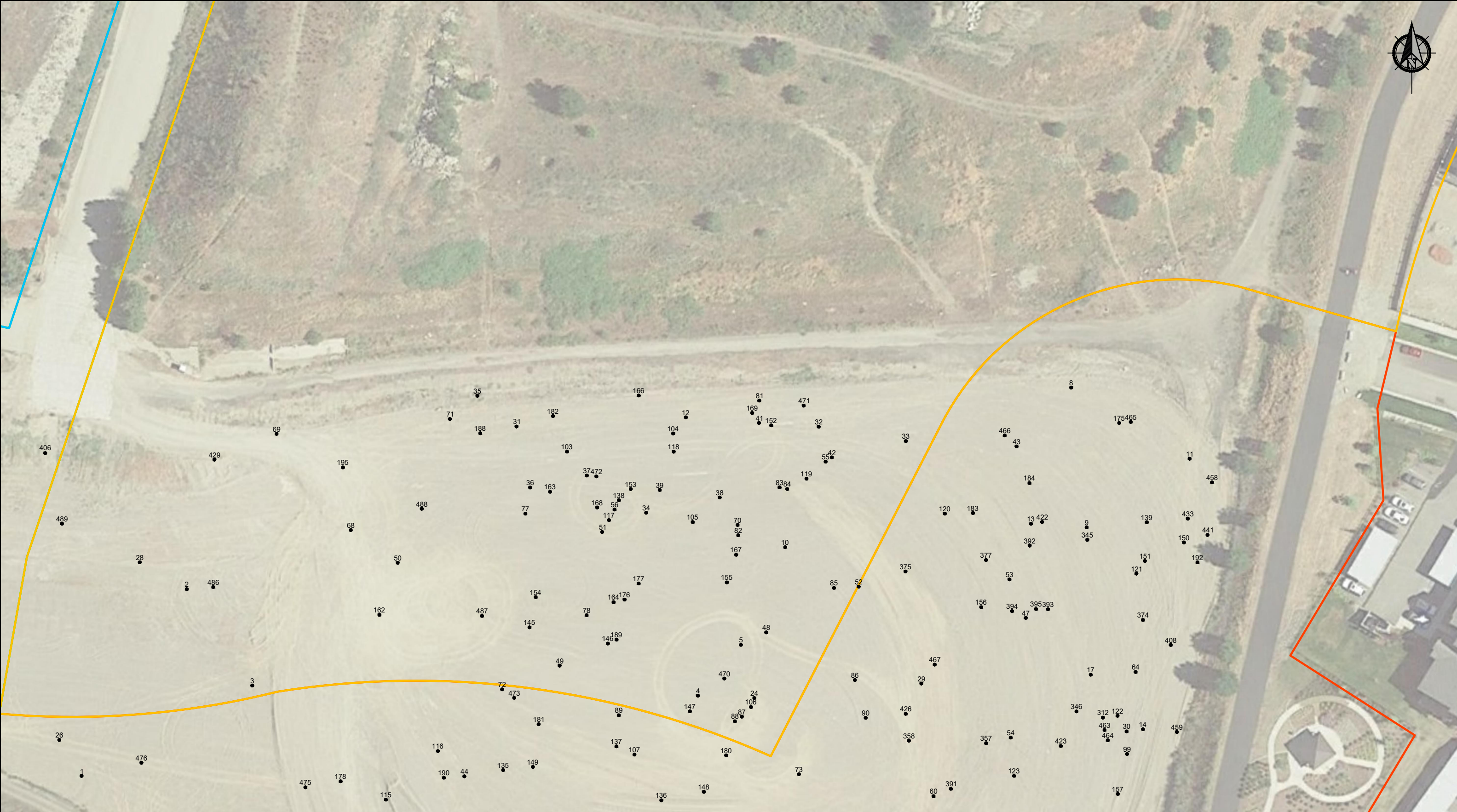




690 W Capstone Court
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FIGURE A1 - DENSITY TEST LOCATION KEY MAP

PROJECT:	118-014T Atlas Waterfront - Grading		
LOCATION:	3074 W Seltice Way, Coeur d'Alene, Idaho		
CLIENT NAME:	Welch Comer & Associates, Inc.		
DATE:	February 2019	SCALE:	1" = 30'



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FIGURE A3 - DENSITY TEST LOCATION MAP

PROJECT:	118-014T Atlas Waterfront - Grading		
LOCATION:	3074 W Seltice Way, Coeur d'Alene, Idaho		
CLIENT NAME:	Welch Comer & Associates, Inc.		
DATE:	February 2019	SCALE:	1" = 30'

Appendix B

Field Density Test Report for Soils



Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
1	Refer to Figure A2, A3, A4 for approximate test location.		2155'	1	4/13/18	3.5	121.7	98	95%	
2	Refer to Figure A2, A3, A4 for approximate test location.		2150'	1	4/13/18	3.8	120.2	97	95%	
3	Refer to Figure A2, A3, A4 for approximate test location.		2140'	1	4/13/18	4.2	121.3	98	95%	
4	Refer to Figure A2, A3, A4 for approximate test location.		2141'	1	4/13/18	4.1	119.1	96	95%	
5	Refer to Figure A2, A3, A4 for approximate test location.		2133'	1	4/13/18	3.3	122.3	99	95%	
6	Refer to Figure A2, A3, A4 for approximate test location.		2136'	1	4/13/18	4.1	120.5	97	95%	
7	Refer to Figure A2, A3, A4 for approximate test location.		2115'	1	4/13/18	5.1	118.5	95	95%	
8	Refer to Figure A2, A3, A4 for approximate test location.		2131'	1	4/13/18	4.9	120.2	97	95%	
9	Refer to Figure A2, A3, A4 for approximate test location.		2133'	2	4/13/18	6.3	132.7	95	95%	
10	Refer to Figure A2, A3, A4 for approximate test location.		2122'	2	4/13/18	8.0	133.8	96	95%	
11	Refer to Figure A2, A3, A4 for approximate test location.		2137'	2	4/13/18	5.0	132.2	95	95%	
12	Refer to Figure A2, A3, A4 for approximate test location.		2113'	2	4/13/18	6.7	132.1	95	95%	
13	Refer to Figure A2, A3, A4 for approximate test location.		2132'	2	4/13/18	5.4	136.2	98	95%	
14	Refer to Figure A2, A3, A4 for approximate test location.		2100'	2	4/13/18	7.5	132.2	95	95%	
15	Refer to Figure A2, A3, A4 for approximate test location.		1902'	2	4/14/18	5.1	132.3	95	95%	
16	Refer to Figure A2, A3, A4 for approximate test location.		2034'	2	4/14/18	8.3	135.2	97	95%	
17	Refer to Figure A2, A3, A4 for approximate test location.		2055'	2	4/14/18	8.7	133.3	95	95%	
18	Refer to Figure A2, A3, A4 for approximate test location.		2141'	1	4/14/18	4.8	119.8	97	95%	
19	Refer to Figure A2, A3, A4 for approximate test location.		2142'	1	4/14/18	3.7	120.2	97	95%	
20	Refer to Figure A2, A3, A4 for approximate test location.		2088'	2	4/14/18	9.3	135.5	97	95%	
21	Refer to Figure A2, A3, A4 for approximate test location.		2117'	1	4/14/18	4.1	120.2	97	95%	
22	Refer to Figure A2, A3, A4 for approximate test location.		2125'	1	4/14/18	4.6	119.0	96	95%	
23	Refer to Figure A2, A3, A4 for approximate test location.		2116'	1	4/14/18	3.3	121.1	98	95%	
24	Refer to Figure A2, A3, A4 for approximate test location.		2262'	1	4/16/18	5.5	119.3	96	95%	
25	Refer to Figure A2, A3, A4 for approximate test location.		2176'	1	4/16/18	3.7	120.6	97	95%	
26	Refer to Figure A2, A3, A4 for approximate test location.		2157'	1	4/16/18	4.1	118.0	95	95%	

Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
27	Refer to Figure A2, A3, A4 for approximate test location.		2164	1	4/16/18	3.6	121.0	98	95%	
28	Refer to Figure A2, A3, A4 for approximate test location.		2158	1	4/16/18	4.4	119.4	96	95%	
29	Refer to Figure A2, A3, A4 for approximate test location.		2158'	1	4/16/18	5.6	122.2	98	95%	
30	Refer to Figure A2, A3, A4 for approximate test location.		2150'	1	4/16/18	4.9	118.8	96	95%	
31	Refer to Figure A2, A3, A4 for approximate test location.		2215	2	4/30/18	6.1	132.2	95	95%	
32	Refer to Figure A2, A3, A4 for approximate test location.		2147	2	4/30/18	6.0	128.2	92	95%	
33	Refer to Figure A2, A3, A4 for approximate test location.		2148	2	4/30/18	7.7	133.4	96	95%	
34	Refer to Figure A2, A3, A4 for approximate test location.		2151	2	4/30/18	6.0	122.1	87	95%	
35	Refer to Figure A2, A3, A4 for approximate test location.		2174	2	4/30/18	6.2	124.4	89	95%	
36	Refer to Figure A2, A3, A4 for approximate test location.		2152	2	4/30/18	4.8	128.8	92	95%	
37	Refer to Figure A2, A3, A4 for approximate test location.		2153	2	4/30/18	6.3	136.0	97	95%	
	Re-test of test #32		2135	2	4/30/18	7.1	135.3	97	95%	32
	Re-test of test #34		2134	2	4/30/18	4.8	134.3	96	95%	34
	Re-test of test #35		2137	2	4/30/18	##	132.0	95	95%	35
38	Refer to Figure A2, A3, A4 for approximate test location.		2144	2	4/30/18	3.9	136.4	98	95%	
	Re-test of test #36		2137	2	4/30/18	4.3	134.8	97	95%	36
39	Refer to Figure A2, A3, A4 for approximate test location.		2135	3	5/1/18	5.7	131.0	98	95%	
40	Refer to Figure A2, A3, A4 for approximate test location.		2136	3	5/1/18	6.5	131.7	99	95%	
41	Refer to Figure A2, A3, A4 for approximate test location.		2135	4	5/1/18	9.2	119.3	95	95%	
42	Refer to Figure A2, A3, A4 for approximate test location.		2134	3	5/1/18	5.5	130.1	98	95%	
43	Refer to Figure A2, A3, A4 for approximate test location.		2137	4	5/1/18	6.2	119.8	95	95%	
44	Refer to Figure A2, A3, A4 for approximate test location.		2139	4	5/1/18	5.9	120.6	96	95%	
45	Refer to Figure A2, A3, A4 for approximate test location.		2138	4	5/1/18	8.5	119.9	95	95%	
46	Refer to Figure A2, A3, A4 for approximate test location.		2134	3	5/1/18	5.5	130.1	98	95%	
47	Refer to Figure A2, A3, A4 for approximate test location.		2147	3	5/1/18	4.3	130.8	98	95%	
48	Refer to Figure A2, A3, A4 for approximate test location.		2134	3	5/1/18	6.7	131.8	99	95%	

Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
49	Refer to Figure A2, A3, A4 for approximate test location.		2137	4	5/1/18	9.5	122.3	97	95%	
50	Refer to Figure A2, A3, A4 for approximate test location.		2142	4	5/1/18	7.7	120.0	95	95%	
51	Refer to Figure A2, A3, A4 for approximate test location.		2138	3	5/1/18	4.4	130.7	98	95%	
52	Refer to Figure A2, A3, A4 for approximate test location.		2139	3	5/1/18	5.0	129.9	98	95%	
53	Refer to Figure A2, A3, A4 for approximate test location.		2135	3	5/1/18	5.1	128.4	96	95%	
54	Refer to Figure A2, A3, A4 for approximate test location.		2138	4	5/1/18	8.8	120.4	95	95%	
55	Refer to Figure A2, A3, A4 for approximate test location.		2102'	3	5/2/18	4.7	126.3	95	95%	
56	Refer to Figure A2, A3, A4 for approximate test location.		2107'	3	5/2/18	5.5	129.2	97	95%	
57	Refer to Figure A2, A3, A4 for approximate test location.		2119'	3	5/2/18	4.3	125.9	95	95%	
58	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	5/2/18	5.9	128.8	97	95%	
59	Refer to Figure A2, A3, A4 for approximate test location.		2120'	4	5/2/18	4.5	120.6	96	95%	
60	Refer to Figure A2, A3, A4 for approximate test location.		2120'	4	5/2/18	5.5	119.8	95	95%	
61	Refer to Figure A2, A3, A4 for approximate test location.		2126'	4	5/2/18	6.1	121.3	96	95%	
62	Refer to Figure A2, A3, A4 for approximate test location.		2130'	4	5/2/18	3.9	124.0	98	95%	
63	Refer to Figure A2, A3, A4 for approximate test location.		2133'	1	5/2/18	4.8	118.3	95	95%	
64	Refer to Figure A2, A3, A4 for approximate test location.		2139'	1	5/2/18	5.0	118.1	95	95%	
65	Refer to Figure A2, A3, A4 for approximate test location.		2149'	1	5/2/18	6.4	120.3	97	95%	
66	Refer to Figure A2, A3, A4 for approximate test location.		2149'	4	5/2/18	5.1	122.7	97	95%	
67	Refer to Figure A2, A3, A4 for approximate test location.		2140'	4	5/2/18	4.3	120.9	96	95%	
68	Refer to Figure A2, A3, A4 for approximate test location.		2133'	4	5/2/18	4.1	121.3	96	95%	
69	Refer to Figure A2, A3, A4 for approximate test location.		2145'	4	5/2/18	6.8	123.6	98	95%	
70	Refer to Figure A2, A3, A4 for approximate test location.		2142	4	5/2/18	4.4	121.1	96	95%	
71	Refer to Figure A2, A3, A4 for approximate test location.		2140'	4	5/2/18	5.1	122.7	97	95%	
72	Refer to Figure A2, A3, A4 for approximate test location.		2133'	4	5/2/18	4.2	120.9	96	95%	
73	Refer to Figure A2, A3, A4 for approximate test location.		2145'	4	5/2/18	5.5	122.6	97	95%	
74	Refer to Figure A2, A3, A4 for approximate test location.		2142'	4	5/2/18	4.2	123.1	98	95%	

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
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3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
75	Refer to Figure A2, A3, A4 for approximate test location.		2149'	3	5/2/18	6.1	125.9	95	95%	
76	Refer to Figure A2, A3, A4 for approximate test location.		2148'	3	5/2/18	4.7	127.3	96	95%	
77	Refer to Figure A2, A3, A4 for approximate test location.		2148'	3	5/2/18	5.3	128.8	97	95%	
78	Refer to Figure A2, A3, A4 for approximate test location.		2149'	3	5/2/18	4.0	125.8	95	95%	
79	Refer to Figure A2, A3, A4 for approximate test location.		2139'	1	5/2/18	6.2	118.2	95	95%	
80	Refer to Figure A2, A3, A4 for approximate test location.		2130'	1	5/2/18	5.2	120.2	97	95%	
81	Refer to Figure A2, A3, A4 for approximate test location.		2136'	1	5/2/18	4.4	119.4	96	95%	
82	Refer to Figure A2, A3, A4 for approximate test location.		2155'	3	5/3/18	6.2	128.1	96	95%	
83	Refer to Figure A2, A3, A4 for approximate test location.		2170'	3	5/3/18	5.2	126.6	95	95%	
84	Refer to Figure A2, A3, A4 for approximate test location.		2170'	3	5/3/18	5.5	129.4	97	95%	
85	Refer to Figure A2, A3, A4 for approximate test location.		2166'	3	5/3/18	4.4	125.8	95	95%	
86	Refer to Figure A2, A3, A4 for approximate test location.		2167'	3	5/3/18	6.4	126.1	95	95%	
87	Refer to Figure A2, A3, A4 for approximate test location.		2167'	3	5/3/18	6.1	128.0	96	95%	
88	Refer to Figure A2, A3, A4 for approximate test location.		2165'	4	5/3/18	4.3	119.9	95	95%	
89	Refer to Figure A2, A3, A4 for approximate test location.		2153'	4	5/3/18	6.4	121.1	96	95%	
90	Refer to Figure A2, A3, A4 for approximate test location.		2151'	4	5/3/18	4.7	122.2	97	95%	
91	Refer to Figure A2, A3, A4 for approximate test location.		2157'	4	5/3/18	5.5	120.3	95	95%	
92	Refer to Figure A2, A3, A4 for approximate test location.		2156'	4	5/3/18	6.2	121.6	96	95%	
93	Refer to Figure A2, A3, A4 for approximate test location.		2155'	3	5/3/18	5.4	126.3	95	95%	
94	Refer to Figure A2, A3, A4 for approximate test location.		2154'	3	5/3/18	4.3	125.9	95	95%	
95	Refer to Figure A2, A3, A4 for approximate test location.		2155'	3	5/3/18	5.7	127.6	96	95%	
96	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	5/3/18	4.9	126.0	100	95%	
97	Refer to Figure A2, A3, A4 for approximate test location.		2151'	4	5/3/18	5.1	120.3	95	95%	
98	Refer to Figure A2, A3, A4 for approximate test location.		2151'	3	5/3/18	4.8	126.4	95	95%	
99	Refer to Figure A2, A3, A4 for approximate test location.		2153'	3	5/3/18	4.3	129.3	97	95%	
100	Refer to Figure A2, A3, A4 for approximate test location.		2147'	3	5/3/18	6.2	131.1	98	95%	

Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
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4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
101	Refer to Figure A2, A3, A4 for approximate test location.		2143'	3	5/3/18	5.0	128.4	96	95%	
102	Refer to Figure A2, A3, A4 for approximate test location.		2141'	4	5/3/18	4.8	126.4	100	95%	
103	Refer to Figure A2, A3, A4 for approximate test location.		2142'	4	5/3/18	5.3	120.2	95	95%	
104	Refer to Figure A2, A3, A4 for approximate test location.		2162'	4	5/3/18	4.6	121.8	97	95%	
105	Refer to Figure A2, A3, A4 for approximate test location.		2156'	4	5/3/18	5.5	123.0	97	95%	
106	Refer to Figure A2, A3, A4 for approximate test location.		2115'	4	5/4/18	4.6	125.8	100	95%	
107	Refer to Figure A2, A3, A4 for approximate test location.		2137'	4	5/4/18	4.9	122.4	97	95%	
108	Refer to Figure A2, A3, A4 for approximate test location.		2136'	4	5/4/18	5.3	120.3	95	95%	
109	Refer to Figure A2, A3, A4 for approximate test location.		2125'	4	5/4/18	6.8	119.9	95	95%	
110	Refer to Figure A2, A3, A4 for approximate test location.		2127'	4	5/4/18	5.5	122.3	97	95%	
111	Refer to Figure A2, A3, A4 for approximate test location.		2125'	4	5/4/18	6.2	121.0	96	95%	
112	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	5/4/18	5.0	126.1	95	95%	
113	Refer to Figure A2, A3, A4 for approximate test location.		2130'	3	5/4/18	4.8	127.6	96	95%	
114	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	5/4/18	6.4	126.0	95	95%	
115	Refer to Figure A2, A3, A4 for approximate test location.		2138'	4	5/4/18	4.8	121.1	96	95%	
116	Refer to Figure A2, A3, A4 for approximate test location.		2140'	4	5/4/18	4.6	120.8	96	95%	
117	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	5/4/18	6.1	119.5	95	95%	
118	Refer to Figure A2, A3, A4 for approximate test location.		2145'	4	5/4/18	4.1	120.3	95	95%	
119	Refer to Figure A2, A3, A4 for approximate test location.		2142'	3	5/4/18	5.4	127.7	96	95%	
120	Refer to Figure A2, A3, A4 for approximate test location.		2140'	3	5/4/18	5.4	127.0	95	95%	
121	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	5/4/18	4.4	125.8	95	95%	
122	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	5/4/18	5.3	127.5	96	95%	
123	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	5/4/18	4.4	125.8	95	95%	
124	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	5/4/18	6.0	128.3	96	95%	
125	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	5/4/18	4.8	125.8	95	95%	
126	Refer to Figure A2, A3, A4 for approximate test location.		2095'	3	5/5/18	6.9	127.3	96	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
127	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	5/5/18	7.2	125.9	95	95%	
128	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	5/5/18	5.9	128.3	96	95%	
129	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	5/5/18	6.3	126.1	95	95%	
130	Refer to Figure A2, A3, A4 for approximate test location.		2142'	3	5/5/18	7.2	125.8	95	95%	
131	Refer to Figure A2, A3, A4 for approximate test location.		2142'	4	5/5/18	7.5	122.6	97	95%	
132	Refer to Figure A2, A3, A4 for approximate test location.		2147'	4	5/5/18	9.4	119.6	95	95%	
133	Refer to Figure A2, A3, A4 for approximate test location.		2148'	4	5/5/18	7.8	120.5	95	95%	
134	Refer to Figure A2, A3, A4 for approximate test location.		2152'	4	5/5/18	6.7	120.9	96	95%	
135	Refer to Figure A2, A3, A4 for approximate test location.		2155'	4	5/5/18	5.0	120.0	95	95%	
136	Refer to Figure A2, A3, A4 for approximate test location.		2154'	3	5/5/18	7.6	126.1	95	95%	
137	Refer to Figure A2, A3, A4 for approximate test location.		2152'	3	5/5/18	7.9	128.6	97	95%	
138	Refer to Figure A2, A3, A4 for approximate test location.		2126'	3	5/5/18	5.6	126.3	95	95%	
139	Refer to Figure A2, A3, A4 for approximate test location.		2121'	3	5/5/18	7.8	128.8	97	95%	
140	Refer to Figure A2, A3, A4 for approximate test location.		2137'	3	5/6/18	5.5	127.5	96	95%	
141	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	5/6/18	4.5	129.2	97	95%	
142	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	5/6/18	5.9	125.9	95	95%	
143	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	5/6/18	6.2	130.1	98	95%	
144	Refer to Figure A2, A3, A4 for approximate test location.		2148'	3	5/6/18	5.5	126.4	95	95%	
145	Refer to Figure A2, A3, A4 for approximate test location.		2154'	3	5/6/18	4.9	126.7	95	95%	
146	Refer to Figure A2, A3, A4 for approximate test location.		2160'	3	5/6/18	7.2	131.1	98	95%	
147	Refer to Figure A2, A3, A4 for approximate test location.		2159'	4	5/6/18	6.5	119.9	95	95%	
148	Refer to Figure A2, A3, A4 for approximate test location.		2155'	4	5/6/18	8.1	121.1	96	95%	
149	Refer to Figure A2, A3, A4 for approximate test location.		2155'	4	5/6/18	6.4	122.2	97	95%	
150	Refer to Figure A2, A3, A4 for approximate test location.		2157'	3	5/6/18	5.5	120.6	91	95%	
151	Refer to Figure A2, A3, A4 for approximate test location.		2151'	3	5/6/18	4.4	123.2	93	95%	
	Re-test of test #150		2157'	3	5/6/18	6.5	127.5	96	95%	150

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
	Re-test of test #151		2151'	3	5/6/18	5.3	125.9	95	95%	151
152	Refer to Figure A2, A3, A4 for approximate test location.		2118'	4	5/7/18	7.9	120.1	95	95%	
153	Refer to Figure A2, A3, A4 for approximate test location.		2135'	4	5/7/18	6.1	122.4	97	95%	
154	Refer to Figure A2, A3, A4 for approximate test location.		2138'	4	5/7/18	6.8	120.4	95	95%	
155	Refer to Figure A2, A3, A4 for approximate test location.		2141'	4	5/7/18	5.3	121.1	96	95%	
156	Refer to Figure A2, A3, A4 for approximate test location.		2139'	4	5/7/18	6.0	124.4	99	95%	
157	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	5/7/18	7.1	129.9	98	95%	
158	Refer to Figure A2, A3, A4 for approximate test location.		2128'	3	5/7/18	6.8	125.8	95	95%	
159	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	5/7/18	5.5	127.4	96	95%	
160	Refer to Figure A2, A3, A4 for approximate test location.		2126'	3	5/7/18	6.2	126.0	95	95%	
161	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	5/7/18	8.2	129.7	97	95%	
162	Refer to Figure A2, A3, A4 for approximate test location.		2146'	3	5/7/18	5.5	125.8	95	95%	
163	Refer to Figure A2, A3, A4 for approximate test location.		2146'	4	5/7/18	8.2	122.1	97	95%	
164	Refer to Figure A2, A3, A4 for approximate test location.		2144'	4	5/7/18	7.2	120.6	96	95%	
165	Refer to Figure A2, A3, A4 for approximate test location.		2139'	4	5/7/18	6.7	119.5	95	95%	
166	Refer to Figure A2, A3, A4 for approximate test location.		2157'	3	5/8/18	5.5	127.5	96	95%	
167	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	5/8/18	4.5	129.2	97	95%	
168	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	5/8/18	5.9	128.6	97	95%	
169	Refer to Figure A2, A3, A4 for approximate test location.		2134'	3	5/8/18	6.2	130.1	98	95%	
170	Refer to Figure A2, A3, A4 for approximate test location.		2148'	3	5/8/18	5.1	129.4	97	95%	
171	Refer to Figure A2, A3, A4 for approximate test location.		2154'	3	5/8/18	4.9	126.8	95	95%	
172	Refer to Figure A2, A3, A4 for approximate test location.		2099'	4	5/8/18	5.1	120.1	95	95%	
173	Refer to Figure A2, A3, A4 for approximate test location.		2106'	4	5/8/18	7.3	121.1	96	95%	
174	Refer to Figure A2, A3, A4 for approximate test location.		2106'	4	5/8/18	4.8	120.5	95	95%	
175	Refer to Figure A2, A3, A4 for approximate test location.		2141'	4	5/8/18	5.5	122.6	97	95%	
176	Refer to Figure A2, A3, A4 for approximate test location.		2141'	3	5/8/18	6.4	129.4	97	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
177	Refer to Figure A2, A3, A4 for approximate test location.		2153'	3	5/8/18	6.0	127.7	96	95%	
178	Refer to Figure A2, A3, A4 for approximate test location.		2155'	3	5/8/18	5.0	130.5	98	95%	
179	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	5/8/18	6.3	125.5	99	95%	
180	Refer to Figure A2, A3, A4 for approximate test location.		2149'	3	5/8/18	4.6	130.3	98	95%	
181	Refer to Figure A2, A3, A4 for approximate test location.		2150'	3	5/8/18	8.3	132.1	99	95%	
182	Refer to Figure A2, A3, A4 for approximate test location.		2166'	4	5/9/18	8.2	123.3	98	95%	
183	Refer to Figure A2, A3, A4 for approximate test location.		2162'	4	5/9/18	6.3	125.9	100	95%	
184	Refer to Figure A2, A3, A4 for approximate test location.		2149'	4	5/9/18	4.8	122.8	97	95%	
185	Refer to Figure A2, A3, A4 for approximate test location.		2145'	3	5/9/18	6.2	126.8	95	95%	
186	Refer to Figure A2, A3, A4 for approximate test location.		2154'	3	5/9/18	8.1	127.0	95	95%	
187	Refer to Figure A2, A3, A4 for approximate test location.		2170'	3	5/9/18	6.5	129.8	98	95%	
188	Refer to Figure A2, A3, A4 for approximate test location.		2162'	3	5/9/18	8.6	130.5	98	95%	
189	Refer to Figure A2, A3, A4 for approximate test location.		2162'	4	5/9/18	6.5	120.9	96	95%	
190	Refer to Figure A2, A3, A4 for approximate test location.		2159'	4	5/9/18	7.2	123.6	98	95%	
191	Refer to Figure A2, A3, A4 for approximate test location.		2161'	4	5/9/18	5.5	120.8	96	95%	
192	Refer to Figure A2, A3, A4 for approximate test location.		2149'	4	5/9/18	8.2	124.4	99	95%	
193	Refer to Figure A2, A3, A4 for approximate test location.		2148'	3	5/9/18	5.2	129.8	98	95%	
194	Refer to Figure A2, A3, A4 for approximate test location.		2163'	3	5/9/18	7.0	131.7	99	95%	
195	Refer to Figure A2, A3, A4 for approximate test location.		2170'	3	5/9/18	6.7	126.6	95	95%	
196	Refer to Figure A2, A3, A4 for approximate test location.		2133'	2	8/1/18	5.4	137.0	98	95%	
197	Refer to Figure A2, A3, A4 for approximate test location.		2133'	2	8/1/18	5.3	134.5	96	95%	
198	Refer to Figure A2, A3, A4 for approximate test location.		2128'	1	8/1/18	2.9	123.4	99	95%	
199	Refer to Figure A2, A3, A4 for approximate test location.		2129'	1	8/1/18	3.2	122.6	99	95%	
200	Refer to Figure A2, A3, A4 for approximate test location.		2130'	2	8/1/18	5.6	135.5	97	95%	
201	Refer to Figure A2, A3, A4 for approximate test location.		2131'	2	8/1/18	6.6	132.2	95	95%	
202	Refer to Figure A2, A3, A4 for approximate test location.		2134'	2	8/3/18	5.8	133.7	96	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
203	Refer to Figure A2, A3, A4 for approximate test location.		2138'	2	8/3/18	5.6	132.8	95	95%	
204	Refer to Figure A2, A3, A4 for approximate test location.		2135'	4	8/6/18	3.9	120.2	95	95%	
205	Refer to Figure A2, A3, A4 for approximate test location.		2122'	4	8/6/18	4.6	124.5	99	95%	
206	Refer to Figure A2, A3, A4 for approximate test location.		2123'	4	8/6/18	4.8	123.3	98	95%	
207	Refer to Figure A2, A3, A4 for approximate test location.		2112'	4	8/6/18	6.0	122.9	97	95%	
208	Refer to Figure A2, A3, A4 for approximate test location.		2119'	4	8/6/18	6.2	124.0	98	95%	
209	Refer to Figure A2, A3, A4 for approximate test location.		2115'	3	8/7/18	6.7	126.5	95	95%	
210	Refer to Figure A2, A3, A4 for approximate test location.		2113'	3	8/7/18	7.8	130.7	98	95%	
211	Refer to Figure A2, A3, A4 for approximate test location.		2126'	3	8/7/18	6.0	128.4	96	95%	
212	Refer to Figure A2, A3, A4 for approximate test location.		2128'	3	8/7/18	7.4	128.0	96	95%	
213	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	8/7/18	5.0	131.4	99	95%	
214	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	8/7/18	5.6	126.9	95	95%	
215	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	8/8/18	6.8	131.4	99	95%	
216	Refer to Figure A2, A3, A4 for approximate test location.		2137'	3	8/8/18	6.8	126.3	95	95%	
217	Refer to Figure A2, A3, A4 for approximate test location.		2134'	3	8/8/18	6.6	130.4	98	95%	
218	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/8/18	6.0	127.4	96	95%	
219	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	8/8/18	5.4	129.3	97	95%	
220	Refer to Figure A2, A3, A4 for approximate test location.		2139'	3	8/8/18	7.9	130.0	98	95%	
221	Refer to Figure A2, A3, A4 for approximate test location.		2122'	3	8/8/18	7.8	127.4	96	95%	
222	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/8/18	6.9	128.1	96	95%	
223	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/8/18	6.9	128.5	97	95%	
224	Refer to Figure A2, A3, A4 for approximate test location.		2117'	3	8/8/18	6.7	129.1	97	95%	
225	Refer to Figure A2, A3, A4 for approximate test location.		2138'	4	8/9/18	5.4	122.5	97	95%	
226	Refer to Figure A2, A3, A4 for approximate test location.		2138'	4	8/9/18	5.6	121.2	96	95%	
227	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	8/9/18	5.7	132.4	99	95%	
228	Refer to Figure A2, A3, A4 for approximate test location.		2137'	3	8/9/18	6.1	129.1	97	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
229	Refer to Figure A2, A3, A4 for approximate test location.		2126'	3	8/9/18	5.7	128.0	96	95%	
230	Refer to Figure A2, A3, A4 for approximate test location.		2123'	3	8/9/18	4.8	130.7	98	95%	
231	Refer to Figure A2, A3, A4 for approximate test location.		2128'	3	8/9/18	4.6	128.7	97	95%	
232	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	8/9/18	5.0	130.3	98	95%	
233	Refer to Figure A2, A3, A4 for approximate test location.		2137'	3	8/9/18	5.8	131.5	99	95%	
234	Refer to Figure A2, A3, A4 for approximate test location.		2132'	4	8/9/18	5.9	124.5	99	95%	
235	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	8/9/18	6.2	126.6	95	95%	
236	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/9/18	6.1	128.7	97	95%	
237	Refer to Figure A2, A3, A4 for approximate test location.		2124'	3	8/9/18	6.8	130.0	98	95%	
238	Refer to Figure A2, A3, A4 for approximate test location.		2128'	3	8/9/18	5.9	126.7	95	95%	
239	Refer to Figure A2, A3, A4 for approximate test location.		2129'	4	8/9/18	6.6	123.2	98	95%	
240	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/9/18	6.7	127.7	96	95%	
241	Refer to Figure A2, A3, A4 for approximate test location.		2115'	4	8/10/18	9.8	122.6	97	95%	
242	Refer to Figure A2, A3, A4 for approximate test location.		2118'	3	8/10/18	6.6	132.0	99	95%	
243	Refer to Figure A2, A3, A4 for approximate test location.		2128'	3	8/10/18	5.2	129.1	97	95%	
244	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	8/10/18	8.0	129.0	97	95%	
245	Refer to Figure A2, A3, A4 for approximate test location.		2130'	4	8/10/18	6.4	119.9	95	95%	
246	Refer to Figure A2, A3, A4 for approximate test location.		2139'	3	8/10/18	6.4	128.2	96	95%	
247	Refer to Figure A2, A3, A4 for approximate test location.		2141'	4	8/10/18	5.9	120.5	95	95%	
248	Refer to Figure A2, A3, A4 for approximate test location.		2136'	4	8/10/18	6.1	120.5	95	95%	
249	Refer to Figure A2, A3, A4 for approximate test location.		2134'	3	8/10/18	6.8	127.1	95	95%	
250	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/10/18	7.0	127.5	96	95%	
251	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/10/18	7.1	126.3	95	95%	
252	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/11/18	7.2	131.5	99	95%	
253	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/11/18	9.0	128.5	97	95%	
254	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	8/11/18	6.3	126.2	95	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
255	Refer to Figure A2, A3, A4 for approximate test location.		2119'	3	8/11/18	6.4	127.3	96	95%	
256	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	8/11/18	5.5	127.1	95	95%	
257	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	8/11/18	7.2	129.9	98	95%	
258	Refer to Figure A2, A3, A4 for approximate test location.		2130'	3	8/11/18	5.2	128.1	96	95%	
259	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/11/18	6.1	128.3	96	95%	
260	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/11/18	6.5	131.8	99	95%	
261	Refer to Figure A2, A3, A4 for approximate test location.		2134'	3	8/11/18	6.6	127.1	95	95%	
262	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/11/18	5.2	127.3	96	95%	
263	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/11/18	6.7	126.6	95	95%	
264	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/11/18	7.3	128.7	97	95%	
265	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/12/18	5.2	128.7	97	95%	
266	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/12/18	5.2	129.6	97	95%	
267	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/12/18	5.5	128.2	96	95%	
268	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/12/18	4.2	127.3	96	95%	
269	Refer to Figure A2, A3, A4 for approximate test location.		2120'	3	8/12/18	6.1	129.6	97	95%	
270	Refer to Figure A2, A3, A4 for approximate test location.		2120'	3	8/12/18	6.4	128.0	96	95%	
271	Refer to Figure A2, A3, A4 for approximate test location.		2129'	3	8/12/18	6.0	127.1	95	95%	
272	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/12/18	4.9	127.3	96	95%	
273	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/12/18	5.6	128.7	97	95%	
274	Refer to Figure A2, A3, A4 for approximate test location.		2131'	3	8/12/18	5.9	128.0	96	95%	
275	Refer to Figure A2, A3, A4 for approximate test location.		2130'	3	8/12/18	7.4	129.0	97	95%	
276	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/12/18	6.3	127.5	96	95%	
277	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/12/18	5.8	130.0	98	95%	
278	Refer to Figure A2, A3, A4 for approximate test location.		2134'	3	8/13/18	5.8	130.2	98	95%	
279	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/13/18	4.8	127.8	96	95%	
280	Refer to Figure A2, A3, A4 for approximate test location.		2134'	3	8/13/18	6.7	128.6	97	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
281	Refer to Figure A2, A3, A4 for approximate test location.		2121'	3	8/13/18	5.0	129.9	98	95%	
282	Refer to Figure A2, A3, A4 for approximate test location.		2122'	3	8/13/18	6.4	126.8	95	95%	
283	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/13/18	6.3	127.5	96	95%	
284	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/13/18	4.1	129.6	97	95%	
285	Refer to Figure A2, A3, A4 for approximate test location.		2135'	3	8/13/18	4.7	130.3	98	95%	
286	Refer to Figure A2, A3, A4 for approximate test location.		2136'	3	8/13/18	7.5	127.0	95	95%	
287	Refer to Figure A2, A3, A4 for approximate test location.		2133'	3	8/13/18	4.7	128.3	96	95%	
288	Refer to Figure A2, A3, A4 for approximate test location.		2132'	3	8/13/18	5.8	126.9	95	95%	
289	Refer to Figure A2, A3, A4 for approximate test location.		2134'	3	8/13/18	6.0	127.7	96	95%	
290	Refer to Figure A2, A3, A4 for approximate test location.		2134'	5	8/14/18	4.9	130.7	100	95%	
291	Refer to Figure A2, A3, A4 for approximate test location.		2136'	5	8/14/18	7.1	128.4	98	95%	
292	Refer to Figure A2, A3, A4 for approximate test location.		2135'	5	8/14/18	6.2	127.1	97	95%	
293	Refer to Figure A2, A3, A4 for approximate test location.		2135'	5	8/14/18	5.4	118.5	90	95%	
294	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	8/14/18	7.4	125.6	96	95%	
295	Refer to Figure A2, A3, A4 for approximate test location.		2136'	5	8/14/18	6.9	125.9	96	95%	
296	Refer to Figure A2, A3, A4 for approximate test location.		2128'	5	8/14/18	6.1	126.3	96	95%	
297	Refer to Figure A2, A3, A4 for approximate test location.		2133'	5	8/14/18	7.5	124.9	95	95%	
298	Refer to Figure A2, A3, A4 for approximate test location.		2134'	5	8/14/18	7.1	125.5	96	95%	
299	Refer to Figure A2, A3, A4 for approximate test location.		2131'	5	8/14/18	6.3	127.7	97	95%	
300	Refer to Figure A2, A3, A4 for approximate test location.		2138'	5	8/15/18	6.2	127.4	97	95%	
301	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	8/15/18	6.4	125.8	96	95%	
302	Refer to Figure A2, A3, A4 for approximate test location.		2138'	5	8/15/18	5.7	127.1	97	95%	
303	Refer to Figure A2, A3, A4 for approximate test location.		2128'	5	8/15/18	5.8	124.1	95	95%	
304	Refer to Figure A2, A3, A4 for approximate test location.		2129'	5	8/15/18	6.9	128.4	98	95%	
305	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/15/18	6.2	128.0	98	95%	
306	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/15/18	5.8	127.4	97	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
307	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/15/18	5.5	124.3	95	95%	
308	Refer to Figure A2, A3, A4 for approximate test location.		2138'	5	8/15/18	5.6	130.0	99	95%	
309	Refer to Figure A2, A3, A4 for approximate test location.		2134'	5	8/15/18	7.1	125.5	96	95%	
310	Refer to Figure A2, A3, A4 for approximate test location.		2134'	5	8/15/18	6.5	125.9	96	95%	
311	Refer to Figure A2, A3, A4 for approximate test location.		2132'	5	8/15/18	6.1	127.2	97	95%	
312	Refer to Figure A2, A3, A4 for approximate test location.		2130	5	8/15/18	6.9	125.7	96	95%	
313	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	8/16/18	5.8	129.5	99	95%	
314	Refer to Figure A2, A3, A4 for approximate test location.		2138'	5	8/16/18	6.3	125.3	96	95%	
315	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/16/18	6.2	130.1	99	95%	
316	Refer to Figure A2, A3, A4 for approximate test location.		2131'	5	8/16/18	5.5	125.5	96	95%	
317	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/16/18	5.9	124.9	95	95%	
318	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	8/16/18	6.7	125.6	96	95%	
319	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/16/18	6.0	124.4	95	95%	
320	Refer to Figure A2, A3, A4 for approximate test location.		2138'	5	8/16/18	6.5	124.3	95	95%	
321	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/17/18	5.8	125.3	96	95%	
322	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	8/17/18	5.7	124.5	95	95%	
323	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/17/18	6.1	126.3	96	95%	
324	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	8/17/18	5.3	125.7	96	95%	
325	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/17/18	5.8	127.5	97	95%	
326	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	8/18/18	5.0	130.1	99	95%	
327	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	8/18/18	5.6	125.4	96	95%	
328	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	8/18/18	4.9	129.1	99	95%	
329	Refer to Figure A2, A3, A4 for approximate test location.		2126'	5	8/18/18	4.0	126.5	97	95%	
330	Refer to Figure A2, A3, A4 for approximate test location.		2136'	5	8/18/18	5.6	125.2	96	95%	
331	Refer to Figure A2, A3, A4 for approximate test location.		2142'	5	8/18/18	5.5	127.3	97	95%	
332	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	8/18/18	5.1	124.7	95	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
333	Refer to Figure A2, A3, A4 for approximate test location.		2136'	5	8/18/18	4.6	124.9	95	95%	
334	Refer to Figure A2, A3, A4 for approximate test location.		2134'	5	8/18/18	4.3	126.5	97	95%	
335	Refer to Figure A2, A3, A4 for approximate test location.		2142'	4	8/19/18	8.2	122.8	97	95%	
336	Refer to Figure A2, A3, A4 for approximate test location.		2142'	4	8/19/18	6.8	124.1	98	95%	
337	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	8/19/18	6.7	127.2	97	95%	
338	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	8/19/18	6.6	125.3	96	95%	
339	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	8/19/18	7.6	126.1	96	95%	
340	Refer to Figure A2, A3, A4 for approximate test location.		2142'	5	8/19/18	6.1	125.0	95	95%	
341	Refer to Figure A2, A3, A4 for approximate test location.		2144'	4	8/19/18	8.0	120.8	96	95%	
342	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	8/19/18	7.3	127.0	97	95%	
343	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	8/19/18	7.9	122.4	97	95%	
344	Refer to Figure A2, A3, A4 for approximate test location.		2147'	4	8/19/18	7.7	121.0	96	95%	
345	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	8/19/18	7.5	127.3	97	95%	
346	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/19/18	6.2	125.8	96	95%	
347	Refer to Figure A2, A3, A4 for approximate test location.		2142'	4	8/20/18	9.0	120.9	96	95%	
348	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	8/20/18	9.1	124.6	99	95%	
349	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	8/20/18	6.4	121.4	96	95%	
350	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	8/20/18	6.8	120.9	96	95%	
351	Refer to Figure A2, A3, A4 for approximate test location.		2144'	4	8/20/18	6.9	124.1	98	95%	
352	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	8/20/18	7.5	122.3	97	95%	
353	Refer to Figure A2, A3, A4 for approximate test location.		2144'	4	8/20/18	7.0	124.0	98	95%	
354	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	8/20/18	7.6	123.1	98	95%	
355	Refer to Figure A2, A3, A4 for approximate test location.		2143'	4	8/20/18	8.6	122.4	97	95%	
356	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	8/20/18	9.6	130.2	99	95%	
357	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	8/20/18	##	127.4	97	95%	
358	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	8/20/18	6.8	128.4	98	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
359	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	8/21/18	6.9	126.8	97	95%	
360	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	8/21/18	5.8	124.9	95	95%	
361	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	8/21/18	7.5	128.8	98	95%	
362	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	8/21/18	7.8	125.5	96	95%	
363	Refer to Figure A2, A3, A4 for approximate test location.		2246'	5	8/21/18	5.9	129.7	99	95%	
364	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	8/21/18	6.3	129.1	99	95%	
365	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	8/21/18	7.0	127.8	98	95%	
366	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	8/21/18	6.2	126.6	97	95%	
367	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	8/21/18	8.3	125.3	96	95%	
368	Refer to Figure A2, A3, A4 for approximate test location.		2145	5	8/21/18	6.7	125.8	96	95%	
369	Refer to Figure A2, A3, A4 for approximate test location.		2129'	5	9/18/18	6.3	124.5	95	95%	
370	Refer to Figure A2, A3, A4 for approximate test location.		2132'	5	9/18/18	5.8	129.1	99	95%	
371	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	9/18/18	6.7	128.8	98	95%	
372	Refer to Figure A2, A3, A4 for approximate test location.		2132'	5	9/18/18	5.5	127.1	97	95%	
373	Refer to Figure A2, A3, A4 for approximate test location.		2132'	5	9/18/18	6.3	126.0	96	95%	
374	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	9/18/18	6.0	126.3	96	95%	
375	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/18/18	4.8	126.6	97	95%	
376	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	9/18/18	4.3	127.1	97	95%	
377	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	9/19/18	4.9	125.1	95	95%	
378	Refer to Figure A2, A3, A4 for approximate test location.		2142'	5	9/19/18	5.5	127.0	97	95%	
379	Refer to Figure A2, A3, A4 for approximate test location.		2134'	5	9/19/18	6.0	125.4	96	95%	
380	Refer to Figure A2, A3, A4 for approximate test location.		2134'	5	9/19/18	6.1	124.6	95	95%	
381	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	9/19/18	7.0	130.1	99	95%	
382	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	9/19/18	7.1	128.8	98	95%	
383	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	9/19/18	6.4	126.7	97	95%	
384	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/20/18	6.1	125.3	96	95%	

Appendix B - Field Density Test Report for Soils

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Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
385	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/20/18	5.8	124.9	95	95%	
386	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/20/18	5.0	127.1	97	95%	
387	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/20/18	6.3	130.1	99	95%	
388	Refer to Figure A2, A3, A4 for approximate test location.		2142'	5	9/20/18	6.2	129.8	99	95%	
389	Refer to Figure A2, A3, A4 for approximate test location.		2142'	5	9/20/18	5.8	128.0	98	95%	
390	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	9/20/18	5.8	126.3	96	95%	
391	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	9/20/18	5.3	124.9	95	95%	
392	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	9/20/18	7.1	127.1	97	95%	
393	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	9/21/18	5.8	125.6	96	95%	
394	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	9/21/18	5.3	126.0	96	95%	
395	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	9/21/18	5.2	124.5	95	95%	
396	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/21/18	5.8	130.5	100	95%	
397	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/21/18	5.9	128.3	98	95%	
398	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/21/18	6.0	127.0	97	95%	
399	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/21/18	6.9	125.3	96	95%	
400	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/21/18	6.2	126.1	96	95%	
401	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/21/18	5.2	127.7	97	95%	
402	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/22/18	6.0	125.8	96	95%	
403	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/22/18	6.2	131.0	100	95%	
404	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/22/18	5.9	129.0	98	95%	
405	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/22/18	5.8	127.5	97	95%	
406	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/22/18	7.1	125.0	95	95%	
407	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/22/18	6.3	125.6	96	95%	
408	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/22/18	7.0	127.1	97	95%	
409	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/22/18	6.5	130.9	100	95%	
410	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	9/22/18	5.8	128.1	98	95%	

Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
411	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	9/22/18	5.5	126.0	96	95%	
412	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/23/18	6.0	126.6	97	95%	
413	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/23/18	6.5	125.6	96	95%	
414	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/23/18	6.1	124.9	95	95%	
415	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/23/18	6.9	126.7	97	95%	
416	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/23/18	7.2	129.0	98	95%	
417	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/23/18	7.0	130.1	99	95%	
418	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/23/18	7.0	130.1	99	95%	
419	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/23/18	7.1	124.8	95	95%	
420	Refer to Figure A2, A3, A4 for approximate test location.		2142'	5	9/23/18	6.7	125.5	96	95%	
421	Refer to Figure A2, A3, A4 for approximate test location.		2142'	5	9/23/18	6.5	128.6	98	95%	
422	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/24/18	6.0	125.6	96	95%	
423	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/24/18	6.3	127.0	97	95%	
424	Refer to Figure A2, A3, A4 for approximate test location.		2138'	5	9/24/18	5.9	124.8	95	95%	
425	Refer to Figure A2, A3, A4 for approximate test location.		2138'	5	9/24/18	5.8	129.4	99	95%	
426	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/24/18	6.4	127.4	97	95%	
427	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/25/18	6.0	124.9	95	95%	
428	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/25/18	6.3	125.3	96	95%	
429	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/25/18	6.8	127.5	97	95%	
430	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/25/18	5.8	126.0	96	95%	
431	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/25/18	7.0	129.0	98	95%	
432	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/25/18	6.1	124.5	95	95%	
433	Refer to Figure A2, A3, A4 for approximate test location.		2139'	5	9/25/18	5.7	125.6	96	95%	
434	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	9/25/18	6.3	127.4	97	95%	
435	Refer to Figure A2, A3, A4 for approximate test location.		2141'	5	9/25/18	##	127.8	98	95%	
436	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	9/26/18	6.8	125.4	96	95%	

Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
437	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	9/26/18	7.9	126.2	96	95%	
438	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	9/26/18	6.2	128.6	98	95%	
439	Refer to Figure A2, A3, A4 for approximate test location.		2126'	5	9/26/18	6.0	126.5	97	95%	
440	Refer to Figure A2, A3, A4 for approximate test location.		2135'	5	9/26/18	6.3	128.9	98	95%	
441	Refer to Figure A2, A3, A4 for approximate test location.		2140'	5	9/26/18	6.5	127.2	97	95%	
442	Refer to Figure A2, A3, A4 for approximate test location.		2140	5	9/27/18	6.5	129.0	98	95%	
443	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/27/18	6.8	125.3	96	95%	
444	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/27/18	6.5	126.4	96	95%	
445	Refer to Figure A2, A3, A4 for approximate test location.		2143'	5	9/27/18	6.4	126.5	97	95%	
446	Refer to Figure A2, A3, A4 for approximate test location.		2144'	5	9/27/18	6.3	127.1	97	95%	
447	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	9/28/18	6.0	125.0	95	95%	
448	Refer to Figure A2, A3, A4 for approximate test location.		2137'	5	9/28/18	6.7	124.9	95	95%	
449	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/28/18	7.1	128.1	98	95%	
450	Refer to Figure A2, A3, A4 for approximate test location.		2145'	5	9/28/18	5.3	126.2	96	95%	
451	Refer to Figure A2, A3, A4 for approximate test location.		2146'	5	9/28/18	6.1	125.3	96	95%	
452	Refer to Figure A2, A3, A4 for approximate test location.		2147'	5	9/29/18	5.2	129.0	98	95%	
453	Refer to Figure A2, A3, A4 for approximate test location.		2147'	5	9/29/18	6.0	128.1	98	95%	
454	Refer to Figure A2, A3, A4 for approximate test location.		2147'	5	9/29/18	6.5	130.1	99	95%	
455	Refer to Figure A2, A3, A4 for approximate test location.		2147'	5	9/29/18	7.0	127.0	97	95%	
456	Refer to Figure A2, A3, A4 for approximate test location.		2147'	5	9/29/18	6.8	126.6	97	95%	
457	Refer to Figure A2, A3, A4 for approximate test location.		2147'	5	9/29/18	7.2	125.9	96	95%	
458	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.5	120.7	92	95%	
459	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	8.1	120.4	92	95%	
460	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	7.0	124.1	95	95%	
461	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	7.0	119.5	91	95%	
462	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.5	123.8	95	95%	

Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
463	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	7.1	115.4	88	95%	
464	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	7.5	123.9	95	95%	
465	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.4	125.5	96	95%	
466	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	8.2	126.0	96	95%	
467	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	5.5	124.0	95	95%	
468	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	8.6	117.7	90	95%	
469	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.8	127.9	98	95%	
470	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.3	119.2	91	95%	
471	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	5.4	126.9	97	95%	
472	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	5.1	125.0	95	95%	
473	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.6	123.8	95	95%	
474	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.4	124.9	95	95%	
475	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.2	125.3	96	95%	
476	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	5.5	125.9	96	95%	
477	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.1	123.9	95	95%	
478	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.2	126.9	97	95%	
479	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	5.9	129.4	99	95%	
480	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.3	125.1	95	95%	
481	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	9.8	119.4	91	95%	
482	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.8	125.5	96	95%	
483	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.2	124.6	95	95%	
484	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	4.9	126.5	97	95%	
485	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	8.4	124.0	95	95%	
486	Refer to Figure A2, A3, A4 for approximate test location.			1	11/7/18	4.5	127.0	102	95%	
487	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.4	128.9	98	95%	
488	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.1	127.9	98	95%	

Appendix B - Field Density Test Report for Soils

ASTM 6938

Project Name: Atlas Waterfront Project						Project No.: 118-014T				
Proctor Number		Soil Description		Optimum Moisture (%)		Maximum Density (pcf)		Standard/Modified		
1	S118-0107	Gray sandy gravel		4.5		124.1		Modified		
2	S118-0115	Brown gravel with silty sand		7.0		139.6		Modified		
3	S118-0150	Clay sand gravel		8.8		133.1		Modified		
4	S118-0148	Silty sand clay		9.6		126.2		Modified		
5	S118-0735	Light brown sand with gravel		8.0		131.0		Modified		
Test Number	Test Location		Approx. Elevation	Proctor Number	Date	% Moisture	Dry Density	% Compaction	Required Compaction	Re-Test of Test No.
489	Refer to Figure A2, A3, A4 for approximate test location.			1	11/7/18	3.2	122.2	98	95%	
490	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	8.0	129.5	99	95%	
491	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.8	130.3	99	95%	
492	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	5.1	122.2	93	95%	
493	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	6.2	128.2	98	95%	
494	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	8.5	116.7	89	95%	
495	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	9.3	123.9	95	95%	
496	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	8.2	124.3	95	95%	
497	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	7.8	122.3	93	95%	
498	Refer to Figure A2, A3, A4 for approximate test location.			5	11/7/18	7.7	123.8	95	95%	
	Re-test of test #497			5	11/20/18	5.9	123.9	95	95%	497
	Re-test of test #492			5	11/20/18	6.7	124.5	95	95%	492
	Re-test of test #494			5	11/20/18	5.4	126.5	97	95%	494
	Re-test of test #481			5	11/20/18	7.6	126.1	96	95%	481
	Re-test of test #470			5	11/20/18	4.6	125.4	96	95%	470
	Re-test of test #468			5	11/20/18	5.3	126.3	96	95%	468
	Re-test of test #463			5	11/20/18	6.1	123.8	95	95%	463
	Re-test of test #461			5	11/20/18	4.9	127.5	97	95%	461
	Re-test of test #459			5	11/20/18	5.3	125.7	96	95%	459
	Re-test of test #458			5	11/20/2018	6	124.4	95	95%	458

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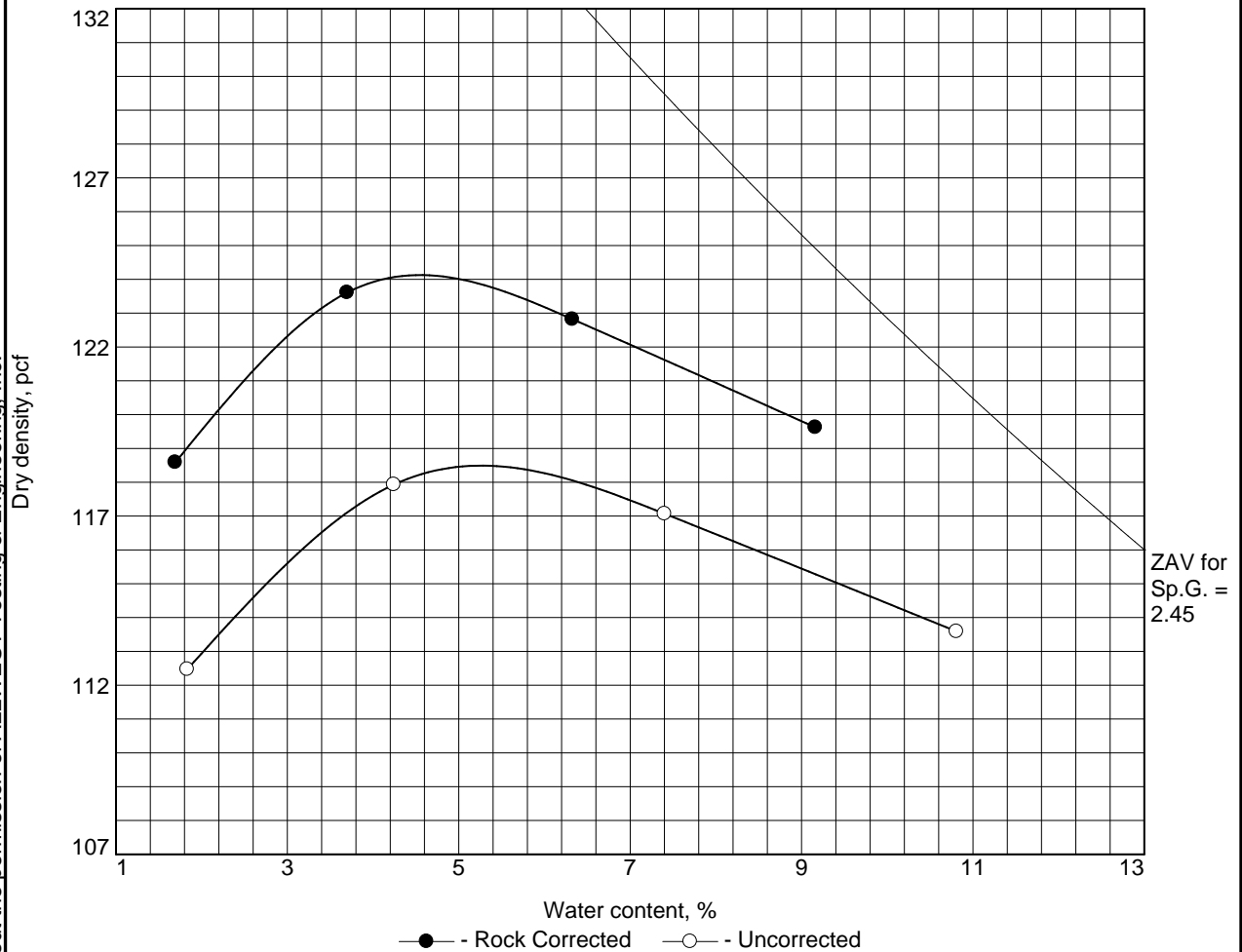
Appendix C

Laboratory Test Results



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Moisture Density Curve



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

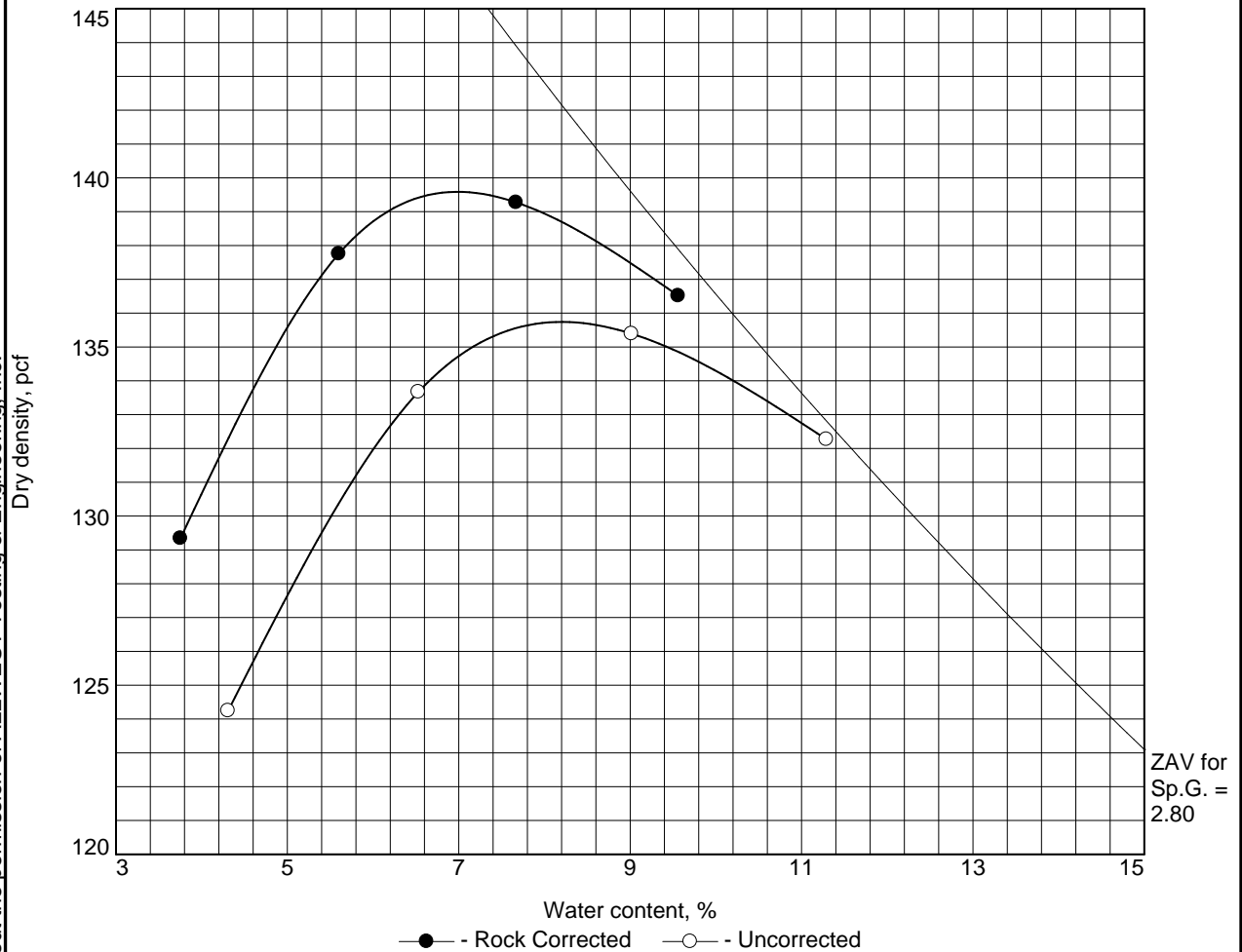
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
				2.6			16.8	
ROCK CORRECTED TEST RESULTS			UNCORRECTED		MATERIAL DESCRIPTION			
Maximum dry density = 124.1 pcf			118.5 pcf		Gray Sandy Gravel			
Optimum moisture = 4.5 %			5.3 %					
Project No. 118-014T Client: Welch Comer & Associates, Inc. Project: Atlas Waterfront - I-90 Fill Placement Date: 4/11/18					Remarks: Sample Date: 4/11/18 Sampled By: G.Gray			
Location: PT 191 Sample Number: S118-0107								
ALLWEST TESTING & ENGINEERING								
Hayden, ID					Figure 1			

Figure 1

Tested By: Noah White Checked By: Chris McKissen

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Moisture Density Curve



Test specification: ASTM D 1557-12 Method C Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
2133				2.6			16.8	

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 139.6 pcf		135.7 pcf	
Optimum moisture = 7.0 %		8.2 %	

Project No. 118-014T Client: Welch Comer & Associates, Inc.	Remarks: Sampled By: G.Gray Sample Date: 4/13/18
Project: Atlas Waterfront - I-90 Fill Placement Date: 4/13/18	
Location: PT 220 Sample Number: S118-0115	

ALLWEST TESTING & ENGINEERING
Hayden, ID

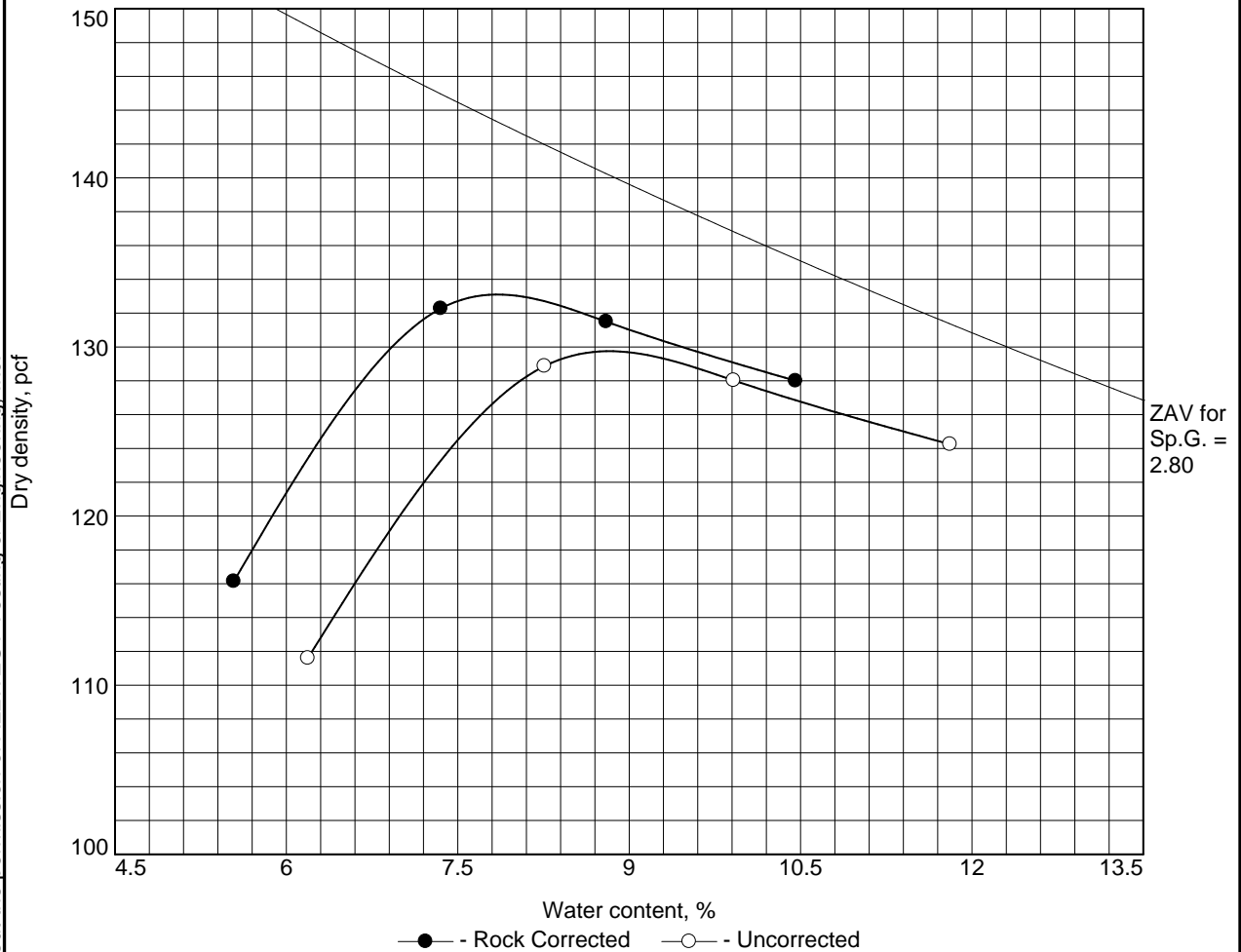
Figure 2

Tested By: Joshua Tritto

Checked By: Chris McKissen

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Moisture Density Curve



Test specification: ASTM D 1557-12 Method B Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
-2.0'				2.6			12.5	

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 133.1 pcf		129.8 pcf	
Optimum moisture = 7.8 %		8.8 %	

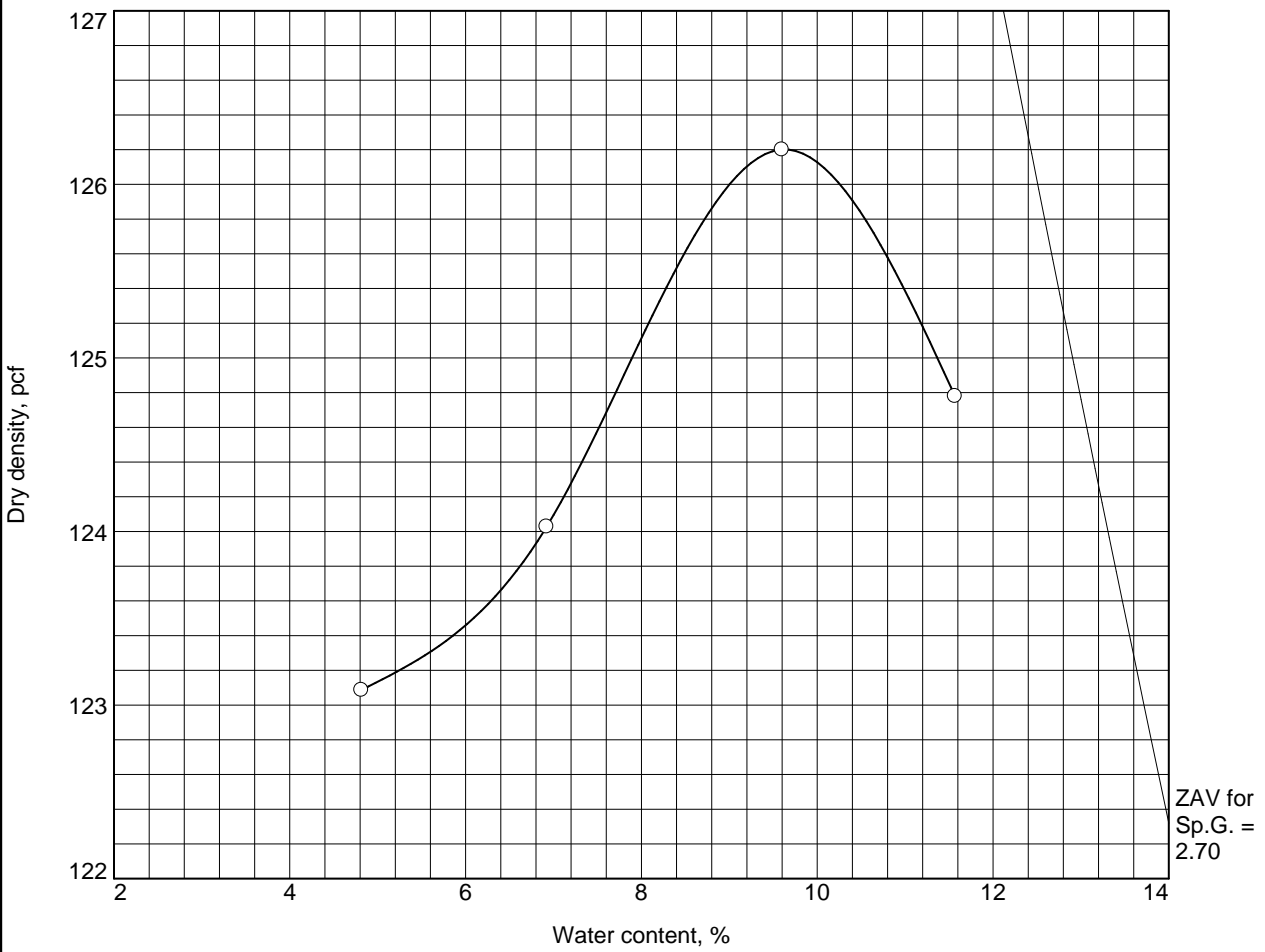
Project No. 118-014T Client: Welch Comer & Associates, Inc. Project: Atlas Waterfront - I-90 Fill Placement Date: 4/27/18 Location: I-90 73+90 Sample Number: S118-0150	Remarks: Sampled By: G. Gray Sample Date: 4/26/18
ALLWEST TESTING & ENGINEERING Hayden, ID	

Figure 3

Tested By: Chad Petersen **Checked By:** Noah White

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Moisture Density Curve



Test specification: ASTM D 1557-12 Method B Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
-2.5'				2.6				

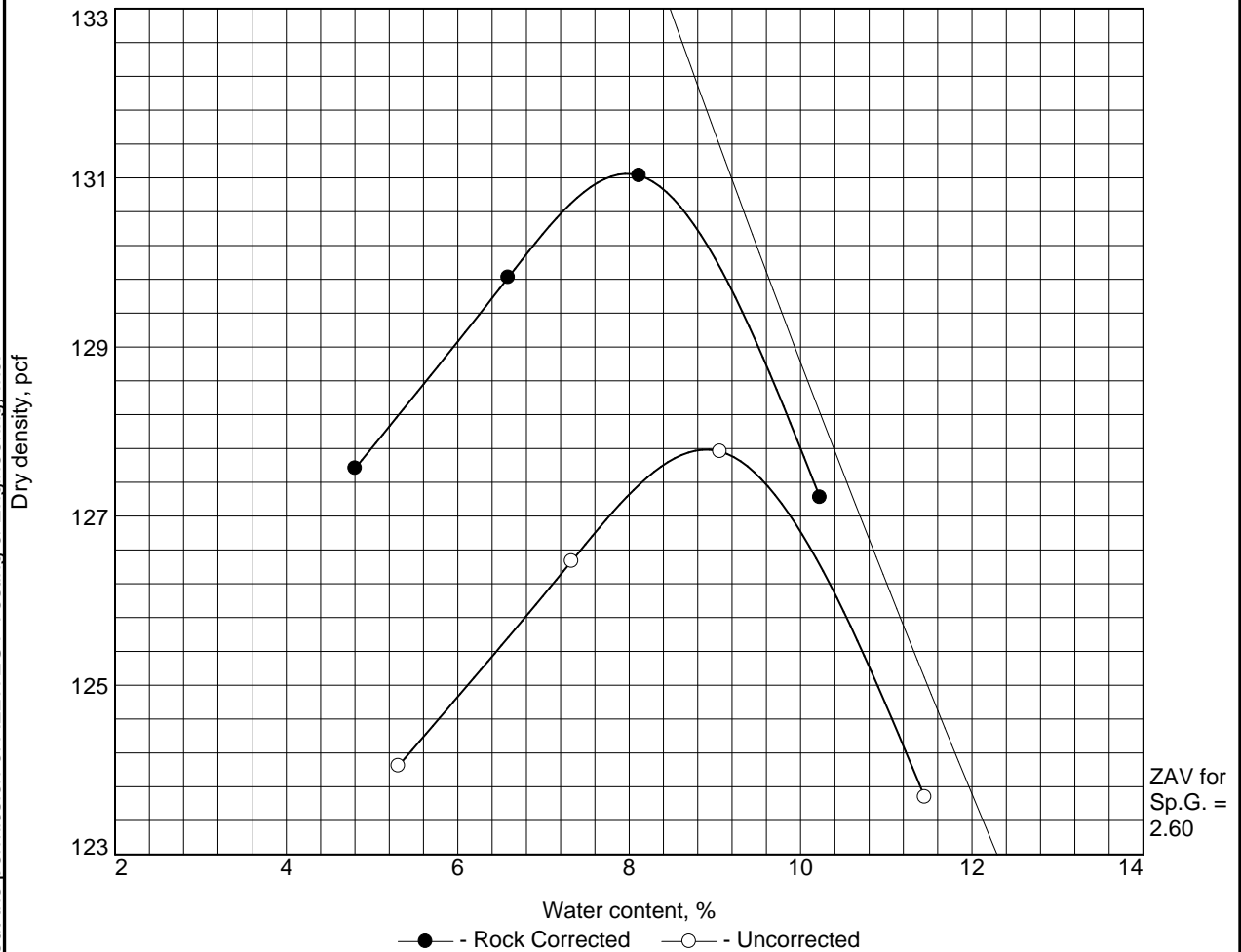
TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 126.2 pcf Optimum moisture = 9.6 %	Silty Sandy Gravel

Project No. 118-014T Client: Welch Comer & Associates, Inc. Project: Atlas Waterfront - I-90 Fill Placement Date: 4/27/18 Location: I-90 45+00 Sample Number: S118-0148	Remarks: Sampled By: G.Gray Sample Date: 4/26/18
ALLWEST TESTING & ENGINEERING Hayden, ID	

Tested By: Chad Petersen Checked By: Noah White

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Moisture Density Curve



Test specification: ASTM D 1557-12 Method B Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% >	% <
	USCS	AASHTO					3/8 in.	No.200
							11.7	
ROCK CORRECTED TEST RESULTS			UNCORRECTED		MATERIAL DESCRIPTION			
Maximum dry density = 131.0 pcf			127.8 pcf		Light brown sand with gravel			
Optimum moisture = 8.0 %			8.9 %		I-90 import			
Project No. 118-014T Client: Welch Comer & Associates, Inc.					Remarks: Sampled by: Adam Hessenkemper Sample date: 8/11/18			
Project: Atlas Waterfront - I-90 Fill Placement								
Date: 8/13/18								
Loc.: Windrow 150' east of western terminus, north side								
ALLWEST TESTING & ENGINEERING								
Hayden, ID								
					Figure 5			

Tested By: Dominic Stephens **Checked By:** Chris McKissen