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KC ENGINEERING COMPANY
A SUBSIDIARY OF MATERIALS TESTING, INC.
www.mti-kcgeotech.com

Project No. VV3967
31 October 2019

Mr. Mark Bertolero
Kiewit Infrastructure West Co.
4650 Business Center Drive
Fairfield, CA 94534

Pinole Shores Commercial Project, Phase II
836 San Pablo Avenue Pinole, CA
**REPORT OF TESTING AND OBSERVATION DURING SUPER PAD
GRADING OPERATIONS**

Reference: Geotechnical Exploration Report
By *KC Engineering Company*, dated 10/04/16

Dear Mr. Bertolero:

At your request, **KC ENGINEERING COMPANY** has provided periodic observation and compaction testing services during the mass grading operations of the northern phase II super pad for the future commercial development at the subject site. The mass grading occurred at the undeveloped northern portion of the Pinole Shores commercial development as shown noted in the referenced geotechnical report. The recent earthwork and grading operations have been performed in general conformance with the referenced report.

The grading operations commenced with the stripping and removal of heavy vegetation and over-excavation of stockpiled materials and drainage berm. The pad was then over-excavated and scarified to the proper depth, moisture conditioned as necessary and compacted to a minimum relative compaction of 90%. Relative compaction is based on the maximum dry density as determined by the ASTM D 1557 Laboratory Test Procedure. Fill was then placed in thin lifts, moisture conditioned, and compacted to a minimum relative compaction of 92% until the desired grade was achieved.

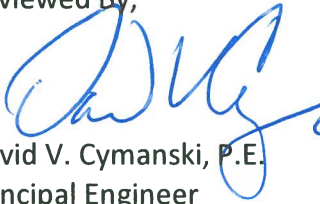
The compaction of soil and rock materials were determined by field observation and performance of in-place field moisture/density tests and laboratory compaction tests. Field density testing indicates the relative compaction achieved in areas tested. The attached Compaction Test Location Map shows the super pad areas that we referenced in our compaction

test data sheets. The laboratory maximum dry density and optimum moisture content for the soil type was determined by the ASTM D 1557 test method. Field density testing was performed using nuclear gauge methods in accordance with the ASTM D 6938 test method. The results of the field and laboratory tests performed have been summarized on the attached Tables.

We understand the pad will be lime treated in accordance with Reference #1 at a later date and will need testing and observation at that time.

Proper surface drainage must be constructed as designed by the project Civil Engineer/Architect and be maintained by the property owner at all times. Should you have any questions or require additional information, please contact our office at your convenience.


Reviewed By,



David V. Cymanski, P.E.
Principal Engineer

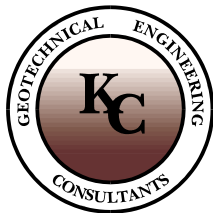


Respectfully Submitted,
KC ENGINEERING CO.



Jacob Evans
Staff Engineer

Copies: 1 email to Client



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Project No. VV3967
Pinole Shores Commercial Development
836 San Pablo Ave., Pinole, CA
COMPACTION TEST LOCATION MAP

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CLIENT: Kiewit Infrastructure West Co. CLIENT NO: VV3967
 PROJECT: Soils/ Sample Testing (WPCP) Water Pollution CONTROL Plant Upgrades REPORT NO: VV3967 _test
 Pinole Shores: Commercial Site
 836 San Pablo Avenue, Pinole, CA

TABLE I
LABORATORY TEST RESULTS

Curve #	Description	Maximum Dry Density p.c.f.	Optimum Moisture %
1	Light Brown Gravelly Clay	83.6	29.0
2	Brown Sandy Gravelly Clay w/Debris	105.4	23.6
3	Brown White Mottled Gravelly Clay	104.4	18.7
4	Brown Gravelly Clay	111.0	16.2

TABLE II
SUMMARY OF FIELD TEST RESULTS

Test #	Date 2016	Test Location	D.F.G. or Elev.	Moisture Content %	Dry Density p.c.f.	Relative Comp. %	Req'd Comp. %	Curve #
1	10/04	Central Area, Southeast Corner	Bottom	11.0	87.0	100	90	1
2	10/04	Central Area, Northeast Corner	Bottom	27.3	83.2	99	90	1
3	10/04	Central Area, South Side, Center	Bottom	24.6	78.5	94	90	1
4	10/04	Central Area, North Side, Center	Bottom	17.6	78.6	94	90	1
5	10/04	Central Area, Southwest Corner	Bottom	27.3	73.4	88* RT #7	90	1
6	10/04	Central Area, Northwest Corner	Bottom	23.8	81.1	97	90	1
7	10/04	Retest of #5 (Central Area, Southwest Corner)	Bottom	28.4	76.2	91	90	1
8	10/05	Central Area, Northeast Corner	+2'	22.0	98.1	94	92	3
9	10/05	Central Area, Southeast Corner	+2'	21.8	96.2	92	92	3
10	10/05	Central Area, South Side	+2'	25.0	97.2	93	92	3
11	10/05	Central Area, North Side	+2'	24.8	95.6	92	92	3

Test #	Date 2016	Test Location	D.F.G. or Elev.	Moisture Content %	Dry Density p.c.f.	Relative Comp. %	Req'd Comp. %	Curve #
12	10/05	Central Area, Northwest Corner	+2'	27.0	96.1	92	92	3
13	10/05	Central Area, Southwest Corner	+2'	23.2	96.8	93	92	3
14	10/06	Central Area, Northeast Corner	+3'	22.4	95.9	92	92	3
15	10/06	Central Area, Southeast Corner	+3'	22.0	96.0	92	92	3
16	10/06	Central Area, South Side	+3'	22.5	97.7	94	92	3
17	10/06	Central Area, North Side	+3'	22.0	96.9	93	92	3
18	10/06	Central Area, Northwest Corner	+3'	21.7	95.9	92	92	3
19	10/06	Central Area, South West Corner	+3'	21.9	97.5	93	92	3
20	10/07	Central Area, Southeast Corner	+4'	22.1	96.2	92	92	3
21	10/07	Central Area, Northeast Corner	+4'	21.9	96.5	92	92	3
22	10/07	Central Area, North Side	+4'	23.0	96.6	93	92	3
23	10/07	Central Area, South Side	+4'	21.8	97.0	93	92	3
24	10/07	Central Area, Southwest Corner	+4'	22.0	96.7	93	92	3
25	10/07	Central Area, Northwest Corner	+4'	21.8	97.8	94	92	3
26	10/10	Central Area, East End	+6'	23.0	97.1	93	92	3
27	10/10	Central Area, East Central	+6'	25.1	98.7	95	92	3
28	10/10	Central Area, West Central	+6'	22.1	94.0	92	92	3
29	10/10	Central Area, West End	+6'	21.9	95.6	92	92	3
30	10/13	Central Area, N. Side, West End	+6'	22.0	97.1	93	92	3
31	10/13	Central Area, North Side, Central	+6'	23.2	96.8	93	92	3
32	10/13	Central Area, N. Side, East End	+6'	22.5	97.0	93	92	3
33	10/13	Central Area, S. Side, East End	+6'	21.9	97.1	93	92	3
34	10/13	Central Area, South Side, Center	+6'	22.3	97.7	94	92	3
35	10/13	Central Area, S. Side, West End	+6'	24.7	97.2	93	92	3
		2017						
36	06/20	North Area, Northeast Corner	+8'	20.6	100.2	96	92	3
37	06/20	North Area, Center/ North	+8'	20.3	100.7	96	92	3
38	06/20	North Area, Northwest Corner	+8'	20.0	100.3	96	92	3
39	06/20	North Area, East Side	+8'	21.3	99.7	95	92	3
40	06/20	North Area, West Side	+8'	20.1	99.1	95	92	3
41	06/20	North Area, South Side	+8'	20.5	99.5	95	92	3
42	06/20	Central Area, East Section	+8'	20.1	98.7	95	92	3
43	06/20	Central Area, Center/ East	+8'	21.3	98.5	94	92	3
44	06/20	Central Area, Center/ West	+8'	20.7	99.3	95	92	3
45	06/20	Central Area, South End	+8'	21.7	100.5	96	92	3
46	06/20	South Section, South End	+8'	22.3	98.7	95	92	3
47	06/20	South Section, North End	+8'	22.7	99.1	95	92	3
48	06/20	South Section, Center	+8'	21.5	98.5	94	92	3
49	06/21	Central Area, East End	+10'	19.8	101.5	97	92	3
50	06/21	Central Area, Center/ East	+10'	20.1	99.7	95	92	3
51	06/21	Central Area, Center/ West End	+10'	19.7	99.5	95	92	3
52	06/21	Central Area, West End	+10'	19.9	99.3	95	92	3
53	06/22	South Area, West Section	+10'	23.6	98.6	94	92	3
54	06/22	South Area, Center/ South	+10'	33.7	78.2	94	92	1

Test #	Date 2017	Test Location	D.F.G. or Elev.	Moisture Content %	Dry Density p.c.f.	Relative Comp. %	Req'd Comp. %	Curve #
55	06/22	South Area, Center/ North	+10'	22.6	99.4	95	92	3
56	06/22	South Area, Southeast Corner	+10'	35.0	77.8	93	92	1
57	06/22	South Area, Northeast Corner	+10'	22.5	98.7	95	92	3
58	06/22	Central Area, Northwest Corner	+11'	22.3	101.7	97	92	3
59	06/22	Central Area, Center/ West	+11'	20.9	98.5	94	92	3
60	06/22	Central Area, Southwest Corner	+11'	20.7	100.1	96	92	3
61	06/22	Central Area, Center	+11'	21.1	99.9	96	92	3
62	06/22	Central Area, Center/ East	+11'	20.8	99.3	95	92	3
63	06/22	Central Area, East Side	+11'	20.1	97.1	93	92	3
64	06/23	Southern Area, Northeast Corner	RFG	12.4	109.9	99	92	4
65	06/23	Southern Area, Southeast Corner	RFG	13.5	111.1	100	92	4
66	06/23	Southern Area, Center/ Southeast	RFG	13.8	113.3	100	92	4
67	06/23	Southern Area, Center/ Northeast	RFG	13.7	111.9	100	92	4
68	06/23	Central Area, Northeast Corner	+12'	13.5	113.4	100	92	3
69	06/23	Central Area, Southeast Corner	+12'	20.9	97.1	93	92	3
70	06/23	Central Area, Center/ East	+12'	21.5	97.5	93	92	3
71	06/23	Central Area, Center	+12'	21.3	98.7	95	92	3
		2019						
72	10/24	Central Area, East End	FG	18.0	102.0	92	92	4
73	10/24	Central Area, Center	FG	17.8	103.8	94	92	4
74	10/24	Central Area, West End	FG	17.7	103.6	93	92	4
75	10/24	Southern Area, West End	FG	17.2	105.8	95	92	4
76	10/24	Southern Area, Center	FG	29.6	79.6	95	92	1
77	10/24	Southern Area, East End	FG	18.8	98.6	94	92	3
78	10/24	Northern Area, East End	FG	18.7	98.0	94	92	3
79	10/24	Northern Area, Center	FG	17.0	107.5	97	92	4
80	10/24	Northern Area, West End	FG	16.2	106.1	96	92	4
81	10/24	Northern Area, West End	-2'	18.8	106.4	96	92	4
82	10/24	Northern Area, Center	-2'	19.4	106.7	96	92	4
83	10/24	Northern Area, East End	-2'	19.3	104.6	94	92	4
84	10/24	Northern Area, East End	-4'	19.0	102.4	92	92	4
85	10/24	Northern Area, Center	-4'	20.4	103.1	93	92	4
86	10/24	Northern Area, West End	-4'	20.1	105.5	95	92	4
87	10/24	Central Area, West End	-1'	18.0	102.3	92	92	4
88	10/24	Central Area, Center	-1'	18.2	103.4	93	92	4
89	10/24	Central Area, East End	-1'	18.9	102.7	93	92	4

(Required Compaction Obtained from: KC Engineering)

Notes:

- 1) Density tests performed in accordance with ASTM D6938.
- 2) Maximum Density/Optimum Moisture determined in accordance with ASTM D1557.

* = Failing Test FG = Finish Grade RT = Retest
D.F.G. = Depth from Grade RFG = Rough Sub-Grade SG = Sub-Grade