

B7903063

GR. 9034

April 8/1980

TA 710.3

H3

H64

No. 44



F.G.E., LTD.

Fewell Geotechnical Engineering, Ltd.
99-960A Iwaena Street, Aiea, Hawaii 96701 • (808) 488-1979

FOR REFERENCE

not to be taken from this room

SR-44

File 265-13
February 11, 1981

Gentry-Waipio, Ltd.
94-539 Puahi Street
Waipahu, Hawaii 96797

Attention: Mr. James C. White

Subject: FINAL GRADING REPORT
Major Roadways and Drainage System, Phase II
Gentry-Waipio Development
Waipio, Oahu, Hawaii

Gentlemen:

At your request, we have provided testing and inspection services for the site grading of the Major Roadways and Drainage System Project, Phase II of the subject development. The project essentially consists of the Waipio Uka Street Extension from Sta. 32+40 to Sta. 44+51 and the roadway designated as "PU-1".

Work started with a general clearing and stripping of the area to be graded. Soft spots encountered were compacted prior to the placement of engineered fill.

Actual grading operations then commenced using D-8 and D-9 bulldozers, dump trucks, and a DW-21 scraper to cut, haul, and spread the fill. Compaction of the fill was accomplished using sheepfoot rollers, a Buffalo Bomag vibratory wedgefoot compactor, smooth drum vibratory compactors and mechanical tampers. The majority of this fill was placed in conjunction with the mass grading operations of the adjacent site areas.

The fill was generated from on-site excavations along the roadways and the adjacent Penakii Cluster Development. The material consisted of low plasticity clayey silts (ML), and was compacted in uniform lifts of approximately 8 inches in thickness, generally within 4 percent of the optimum moisture content.

MUNICIPAL REFERENCE & RECORDS CENTER
City & County of Honolulu
City Hall Annex, 558 S. King Street
Honolulu, Hawaii 96813

File 265-13
February 11, 1981

Field density tests performed by our firm indicated that adequate compaction was being obtained. These tests, upon which acceptance is based, showed values in excess of 90 percent relative compaction as determined by Laboratory Compaction Test ASTM D1557. Additionally, these tests indicated values in excess of 95 percent relative compaction for the fill placed in the upper 24 inches of the embankments.

It should be noted that field density tests were also taken during the backfilling of selected utilities, particularly the drainlines, along the roadways. The results of these tests similarly indicated adequate compaction was being obtained. Inspection of the remaining utilities were essentially completed by their respective governmental agencies.

In summary, the earthwork for Roads "PU-1" and the Waipio Uka Street Extension, Sta. 32 40 to Sta. 44+51, has been completed in general accordance with the Grading Ordinances of the City and County of Honolulu and our Subsurface Investigation Report dated October 4, 1979.

A Site Plan, Figure 1, is included to reference the field density test locations. The results of the laboratory and field tests performed by our firm are summarized in Tables I and II and graphically exhibited in Figures 2 and 3.

Should you have any questions regarding this matter, please contact us at your convenience.

Respectfully submitted,

FEWELL GEOTECHNICAL ENGINEERING, LTD.

Alan Shimamoto
Alan J. Shimamoto, P.E.
Project Engineer

AJS/fse

Enclosures

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
1980								
1	4-14	S.L.-R-1 to R	FG -4.0	94	27	1A-1	93	
2	4-14	S.L.-R-1 to R	FG -3.5	93	24	1A-1	92	
3	4-14	S.L.-R-1 to R	FG -3.0	93	24	1A-1	92	
4	4-16	S.L.-R to R-1	FG -2.0	98	24	1A-1	97	
5	4-16	S.L.-R-1 to R-2	FG -6.8	99	26	1A-1	98	
6	4-16	S.L.-R-1 to R-2	FG -5.5	95	24	1A-1	94	
7	4-16	S.L.-R to R-1	FG -1.5	99	25	1A-1	98	
8	4-17	S.L.-R to R-1	FG -1.0	94	23	1A-1	93	
9	4-17	S.L.-R-1 to R-2	FG -4.0	95	24	1A-1	94	
10	4-17	S.L.-R-1 to R-2	FG -3.5	95	24	1A-1	94	
11	4-17	S.L.-R-2 to R-3	FG -10.0	97	27	1A-1	96	
12	4-18	S.L.-R-2 to R-3	FG -9.5	88	29	1A-1	87	Unacceptable
13	4-18	S.L.-R-1 to R-2	FG -3.0	99	25	1A-1	98	
14	4-18	S.L.-R-2 to R-3	FG -9.5	96	29	1A-1	95	Retest 12
15	4-18	S.L.-R-3 to R-4	FG -7.0	98	25	1A-1	97	
16	4-18	S.L.-R-2 to R-3	FG -9.0	98	24	1A-1	97	
17	4-21	S.L.-R-2 to R-3	FG -8.5	91	24	1A-1	90	
18	4-21	S.L.-R-4 to R-5	FG -6.0	93	25	1A-1	92	
19	4-21	S.L.-R-2 to R-3	FG -8.0	94	25	1A-1	93	
20	4-21	S.L.-R-3 to R-4	FG -6.0	94	24	1A-1	93	
21	4-21	S.L.-R-5 to R-6	FG -9.0	94	27	1A-1	93	
22	4-21	S.L.-R-4 to R-5	FG -5.0	94	26	1A-1	93	
23	4-21	S.L.-R-5 to R-6	FG -8.5	95	26	1A-1	94	
24	4-21	S.L.-R-2 to R-3	FG -7.0	94	24	1A-1	93	
25	4-21	S.L.-R-5 to R-6	FG -8.0	96	25	1A-1	95	

* Referenced to FG (Finish Grade) or
FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

TEST NO.	DATE	LOCATION	ELEVATION*	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	MATERIAL TYPE	PERCENT COMPACTION	REMARKS
1980								
26	4-26	Rd PU-1	FSG -2.5	100	26	1A-1	99	
27	4-26	Rd PU-1	FSG -3.0	93	26	1A-1	92	
28	4-26	Rd PU-1	FSG -1.5	95	27	1A-1	98	
29	4-26	Rd PU-1	FSG -2.0	99	27	1A-1	98	
30								
31	4-28	S.L. R-2 to R-3	FG -7.0	95	28	1A-1	94	
32	4-28	Rd PU-1 Sta 10+00	FSG -0.5	91	23	1A-1	90	Unacceptable
33	4-28	Rd PU-1 Sta 9+75	FSG -0.5	100	24	1A-1	99	Retest 32
34	4-29	S.L. R-2 to R-3	FG -6.0	100	24	1A-1	99	
35	4-29	S.L. R-2 to R-3	FG -5.0	100	25	1A-1	98	
36	4-29	S.L. R-2 to R-3	FG -4.5	98	23	1A-1	97	
37	4-29	S.L. R-2 to R-3	FG -3.5	98	27	1A-1	97	
38	4-30	S.L. R-2 to R-3	FG -3.5	95	26	1A-1	94	
39	5-13	D.L. CB A-12 to DMH A-11	FSG -6.0	96	25	1A-1	95	
40	5-13	D.L. CB A-12 to DMH A-11	FSG -5.5	84	22	1A-1	84	Unacceptable
41	5-13	S.L. R-1 to R-2	FG -1.5	95	25	1A-1	94	
42	5-14	D.L. CB A-12 to DMH A-11	FSG -5.5	91	22	1A-1	90	Retest 40
43	5-14	S.L. R-1 to R-2	FG -1.0	95	25	1A-1	94	
44	5-14	S.L. R-1 to R-2	FG -0.5	92	25	1A-1	91	
45	5-14	D.L. CB A-12 to DMH A-11	FSG -5.0	94	24	1A-1	93	
46	5-14	S.L. R-1 to R-2	FG -0.5	94	23	1A-1	93	
47	5-15	D.L. CB A-12 to DMH A-11	FSG -4.5	83	28	1A-1	82	Unacceptable

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File NO. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
<u>1980</u>								
48	5-15	D.L. CB A-12 to DMH A-11	FSG -4.5	85	26	1A-1	84	Retest 47 Unacceptable
49	5-15	S.L. R-1 to R-2	FG	99	26	1A-1	98	
50	5-15	D.L. CB A-12 to DMH A-11	FSG -4.5	95	25	1A-1	94	Retest 47,48
51	5-15	D.L. CB A-12 to DMH A-11	FSG -4.0	89	32	1A-1	88	Unacceptable
52	5-16	D.L. CB A-12 to DMH A-11	FSG -4.0	93	28	1A-1	93	Retest 51
53	5-19	D.L. from CB A-12 to DMH A-11	FSG -4.0	94	25	1A-1	93	
54	5-19	D.L. from CB A-12 to DMH A-11	FSG -3.5	93	23	1A-1	92	
55	5-19	D.L. from CB A-12 to DMH A-11	FSG -3.0	92	27	1A-1	90	
56	5-20	D.L. CB ME-11 to CB PU-1F	E.G.-6.0	93	25	1A-1	92	
57	5-20	D.L. CB ME-11 to CB PU-1F	E.G.-5.5	98	25	1A-1	97	
58	5-20	D.L. CB ME-11 to CB PU-1F	E.G.-5.0	98	26	1A-1	97	
59	5-20	D.L. CB ME-11 to CB PU-1F	E.G.-4.5	98	26	1A-1	97	
60	5-21	D.L. CB ME-11 to CB PU-1F	E.G.-4.0	100	26	1A-1	99	
61	5-21	D.L. CB ME-11 to CB PU-1F	E.G.-3.5	97	24	1A-1	96	

*Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
1980								
62	5-21	D.L. CB ME-11 to CB PU-1F	E.G. -3.0	99	25	1A-1	98	
63	5-21	D.L. CB A-12 to DMH A-11	FSG -2.0	100	24	1A-1	99	
64	5-21	D.L. CB A-12 to DMH A-11	FSG -1.5	100	25	1A-1	99	
65								
66	5-21	D.L. CB A-12 to DMH A-11	FSG -1.0	100	24	1A-1	99	
67	5-21	D.L. CB A-12 to DMH A-11	FSG -0.5	101	25	1A-1	100	
68	5-21	D.L. CB A-12 to DMH A-11	FSG	97	26	1A-1	96	
69	5-21	S.L. R-2 to R-3	FG -6.0	95	25	1A-1	94	
70	5-21	S.L. R-2 to R-3	FG -5.0	96	25	1A-1	95	
71	5-21	S.L. R-2 to R-3	FG -4.0	93	26	11B-1	95	
72	5-21	S.L. R-2 to R-3	FG -3.0	99	25	1A-1	98	
73	5-21	S.L. R-2 to R-3	FG -2.0	101	26	1A-1	100	
74	5-21	S.L. R-2 to R-3	FG -1.0	101	26	1A-1	100	
75	5-21	S.L. R-2 to R-3	FG -0.5	100	26	1A-1	99	
76	5-22	D.L. CB ME-11 to CB PU-1F	E.G. -2.0	99	24	1A-1	98	
77	5-22	D.L. CB ME-11 to CB PU-1F	E.G. -1.5	100	26	1A-1	99	
78	5-22	D.L. CB ME-11 to CB PU-1F	E.G. -0.5	101	25	1A-1	100	
79	5-27	D.L. CB PU-1E to CB PU-1F	FSG -2.5	101	24	1A-1	100	

*Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
1980								
80	5-27	D.L. CB PU-1D to CB PU-1E	FSG -1.0	97	26	1A-1	99	
81	5-27	D.L. PU-1C to PU-1D	FSG -1.0	95	26	11B-1	97	
82	5-27	D.L. PU-1C to PU-1D	FSG -0.5	93	29	11B-1	96	
83	5-27	D.L. CB PU-1E to CB PU-1E1	FSG -0.5	94	29	11B-1	96	
84	5-27	D.L. CB PU-1E to CB PU-1F	FSG -1.5	98	23	1A-1	97	
85	5-27	D.L. CB PU-1E to CB PU-1F	FSG -1.0	99	25	1A-1	98	
86	5-28	S.L. R-3 to R-4	FG -6.5	96	24	1A-1	95	
87	5-28	D.L. DMH A-11 to Existing D.L.	FSG -3.5	98	25	1A-1	97	
88	5-28	S.L. R-3 to R-4	FG -6.0	96	27	1A-1	95	
89	5-28	36" D.L. DMH A-11 to Existing D.L.	FSG -3.0	93	28	1A-1	92	
90	5-28	S.L. R-3 to R-4	FSG -5.0	96	25	1A-1	95	
91	5-28	S.L. R-3 to R-4	FSG -4.5	92	27	1A-1	91	
92	5-28	S.L. R-3 to R-4	FSG -4.0	95	27	11B-1	97	
93	5-28	S.L. R-3 to R-4	FSG -3.5	100	26	1A-1	99	
94	5-28	S.L. R-3 to R-4	FSG -3.0	99	25	1A-1	98	
95	5-28	S.L. R-3 to R-4	FSG -2.5	99	26	1A-1	98	
96	5-28	S.L. R-3 to R-4	FSG -2.0	99	27	1A-1	98	
97	5-28	S.L. R-3 to R-4	FSG -1.5	98	26	1A-1	97	
98	5-29	D.L.-CB PU-1F to CB PU-1E	FSG	98	33	1A-1	97	

* Referenced to FG (Finish Grade) or
FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

TEST NO.	DATE	LOCATION	ELEVATION *	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	MATERIAL TYPE	PERCENT COMPACTION	REMARKS
1980								
99	5-29	D.L.-CB PU-1E to CB PU-1E1	FSG	98	31	1A-1	97	
100	5-29	D.L. CB PU-1E to CB PU-1D	FSG	98	28	1A-1	97	
101	5-29	D.L. CB PU-1D to PU-1C	FSG	98	28	1A-1	97	
102	5-29	D.L. CB PU-1C to PU-1B	FSG	96	30	1A-1	95	
103	5-29	Rd PU-1 Sta 10+	FSG	96	30	1A-1	95	
104	5-29	Rd PU-1 Sta 6+	FSG	95	32	11B-1	97	
105	5-29	Rd PU-1 Sta 2+	FSG	92	31	11B-1	94	Accepted with addit'l comp.
106	5-30	D.L. DMH A-11 to Existing D.L.	FSG -2.5	77	35	1A-1	76	Unacceptable
107	5-30	CB PU-1E	FSG -3.0	101	26	1A-1	100	
108	5-30	CB PU-1E1	FSG -2.5	101	27	1A-1	100	
109	5-30	CB PU-1E	FSG -2.5	98	28	1A-1	97	
110	5-30	CB PU-1E1	FSG -2.0	98	28	1A-1	98	
111	5-30	CB PU-1E	FSG -2.0	99	27	1A-1	98	
112	5-30	CB PU-1E1	FSG -1.5	99	28	1A-1	98	
113	5-30	CB PU-1E	FSG -1.0	99	28	1A-1	98	
114	6-03	SMH R-4	TMH -9.0	86	30	1A-1	85	Unacceptable
115	6-03	S.L. R-3 to R-4	FG -1.0	93	29	11B-1	95	
116	6-03	SMH R-5	TMH -7.0	94	30	11B-1	96	
117	6-03	D.L. CB PU-2A to CB A-16	FSG -3.0	95	30	11B-1	97	
118	6-03	S.L. R-3 to R-4	FSG -0.5	96	29	1A-1	95	

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
1980								
119	6-03	D.L. CB PU-2A to CB A-16	FSG -2.5	93	28	11B-1	95	
120	6-03	S.L. R-3 to R-4	FG	96	29	1A-1	95	
121	6-03	S.L. R-4 to R-5	FG	93	29	11B-1	95	
122	6-03	D.L. CB PU-2A to CB A-16	FSG -2.0	93	28	1A-1	92	
123	6-03	S.L. R-4 to R-5	FG -2.5	92	31	11B-1	94	
124	6-03	S.L. R-4 to R-5	FG -2.0	92	30	11B-1	94	
125	6-04	SMH R-3	FG -1.0	89	25	11B-1	91	
126	6-04	SMH R-4	FG -8.5	95	26	1A-1	94	Retest 114
127	6-04	D.L. DMH A-11 to Existing D.L.	FSG -3.0	96	27	1A-1	95	
128	6-04	SMH R-3	FG -9.5	91	30	11B-1	93	
129	6-04	D.L. DMH A-11 to Existing D.L.	FSG -2.5	93	29	11B-1	95	Retest 106
130	6-04	D.L. CB PU-3A to DMH A-17	FSG -3.0	98	26	1A-1	97	
131	6-04	D.L. CB PU-1A to CB A-15	FSG -1.0	74	28	1A-1	73	Unacceptable
132	6-04	SMH R-3	FG -7.5	88	30	11B-1	90	
133	6-05	D.L. DMH A-11 to Existing D.L.	FSG -1.5	100	28	1A-1	99	
134	6-05	SMH R-3	FSG -7.0	90	26	11B-1	92	
135	6-05	CB PU-1F	FG -8.0	99	26	1A-1	98	
136	6-05	CB PU-1D	FSG -1.5	99	27	1A-1	98	
137	6-05	SMH R-3	FSG -6.5	90	25	11B-1	92	
138	6-05	CB PU-1B	FSG -2.5	92	25	11B-1	94	
139	6-05	D.L. CB PU-1A to CB A-15	FSG -1.0	99	26	1A-1	98	Retest 131

*Referenced to FG (Finish Grade) or
FSG (Finish Subgrade)

File No. 265-13

Waipio-Gentry Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
1980								
140	6-05	SMH R-5	TMH -5.0	87	28	11B-1	89	Accepted with add'l tamping
141	6-05	S.L. R-5 to R-6	FSG -1.5	85	31	1A-1	84	Unacceptable
142	6-05	S.L. R-6 to R-7	FG -1.0	91	27	11B-1	93	
143	6-05	S.L. R-5 to R-6	FSG -1.5	96	27	1A-1	95	Retest 141
144	6-06	SMH R-5	FSG -4.0	85	30	11B-1	87	Unacceptable
145	6-06	SMH R-3	FG -3.5	91	26	1A-1	91	
146	6-06	SMH R-3	FSG -3.5	90	27	11B-1	92	
147	6-06	SMH R-5	FSG -3.0	90	28	11B-1	92	
148	6-06	SMH R-4	FG -4.0	90	27	11B-1	93	
149	6-06	CB PU-1F	FSG -6.0	99	26	1A-1	98	
150	6-06	SMH R-4	FG -6.5	92	26	1A-1	91	
151	6-06	SMH R-5	FG -4.0	86	29	11B-1	88	Retest 144 Accept with Add'l Tamping
152	6-06	CB PU-1F	FSG -4.5	99	26	1A-1	98	
153	6-06	SMH R-4	FG -5.5	92	26	1A-1	91	
154	6-09	SMH R-3	FSG -2.5	98	25	1A-1	97	
155	6-09	SMH R-4	FG -4.0	94	26	1A-1	93	
156	6-09	D.L. CB PU-2A to CB A-16	FSG -1.0	97	27	1A-1	96	
157	6-09	SMH R-5	FG -3.5	94	26	1A-1	93	
158	6-09	S.L. R-5 to R-6	FG	98	28	1A-1	97	
159	6-09	SMH R-3	FSG -1.5	99	25	1A-1	93	
160	6-09	CB PU-1B	FSG -2.0	96	25	1A-1	96	
161	6-09	CB PU-1C	FSG -2.5	97	25	1A-1	93	
162	6-09	CB A-12	FSG -8.0	94	25	1A-1	97	
163	6-09	SMH R-4	FG -3.0	92	27	1A-1	98	

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13

Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

TEST NO.	DATE	LOCATION	ELEVATION*	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	MATERIAL TYPE	PERCENT COMPACTION	REMARKS
1980								
164	6-09	SMH R-5	FG -2.0	94	25	11B-1	95	
165	6-09	CB A-12	FSG -6.5	96	26	1A-1	96	
166	6-10	SMH R-4	FG -1.5	96	26	11B-1	99	
167	6-10	CB A-12	FSG -5.5	98	27	1A-1	97	
168	6-10	CB PU-1B	FSG -1.0	96	26	1A-1	95	
169	6-10	CB PU-1F	FSG -3.5	99	26	1A-1	98	
170	6-10	CB A-12	FSG -4.5	94	30	11B-1	96	
171	6-10	SMH R-5	FG -1.0	92	30	11B-1	95	
172	6-10	SMH R-6	FSG -8.5	100	26	1A-1	99	
173	6-10	CB A-12	FSG -3.5	97	28	1A-1	96	
174	6-10	D.L. CB PU-2A to DMH A-16	FSG	96	25	1A-1	95	
175	6-10	SMH R-6	FSG -7.5	90	31	11B-1	92	
176	6-10	SMH R-6	FSG -6.5	88	25	11B-1	90	
177	6-12	SMH R-6	FSG -5.0	98	25	1A-1	97	
178	6-12	CB A-12	FSG -2.5	96	24	1A-1	95	
179	6-12	SMH R-5	FG	93	22	1A-1	92	
180	6-12	SMH R-4	FG	93	22	1A-1	92	
181	6-12	CB PU-1F	FSG -3.0	95	22	1A-1	94	
182	6-12	SMH R-6	FSG -4.0	96	25	1A-1	95	
183	6-12	CB A-12	FSG -0.5	100	25	1A-1	99	
184	6-12	CB PU-1F	FSG -2.0	99	25	1A-1	98	
185	6-12	SMH R-6	FSG -2.5	97	24	1A-1	96	
186	6-12	D.L. CB PU-1A to DMH A-15	FSG -2.5	85	18	1A-1	84	Unacceptable
187	6-12	SMH R-6	FSG -1.5	99	26	1A-1	98	

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13

Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
<u>1980</u>								
188	6-12	D.L. CB PU-1A to DMH A-15	FSG -2.5	95	24	1A-1	94	Retest 186
189	6-13	SMH R-6	FSG -0.5	98	25	1A-1	97	
190	6-13	D.L. CB PU-1A to DMH A-15	FSG -1.5	98	23	1A-1	97	
191	6-13	CB PU-1F	FSG -0.5	91	20	1A-1	90	Unacceptable
192	6-13	DMH A-11	FSG -6.0	100	26	1A-1	99	
193	6-13	CB PU-1A	FSG -5.5	98	27	1A-1	97	
194	6-13	CB A-12	FSG	96	25	1A-1	95	
195	6-13	SMH R-2	TMH -8.0	97	27	1A-1	96	
196	6-13	CB PU-1A	FSG -4.0	98	26	1A-1	97	
197	6-13	D.L. CB PU-1A to DMH A-15	FSG -0.5	97	28	1A-1	96	
198	6-13	SMH R-2	TMH -7.0	96	24	1A-1	95	
199	6-13	CB PU-1A	FSG -2.5	101	26	1A-1	100	
200	6-13	SMH R-1	TMH -7.0	95	22	1A-1	94	
201	6-13	DMH A-11	FSG -5.0	102	26	1A-1	100	
202	6-13	D.L. CB PU-3A to DMH A-17	FSG -2.5	99	25	1A-1	97	
203	6-13	SMH R-6	FSG	97	25	1A-1	96	
204	6-17	SMH R-2	TMH -6.0	81	35	1A-1	81	Unacceptable
205	6-17	DMH A-11	FSG -4.5	82	37	1A-1	81	Unacceptable
206	6-19	SMH R-2	TMH -6.0	93	26	1A-1	92	Retest 204
207	6-19	SMH R-1	TMH -6.0	93	27	1A-1	92	
208	6-19	D.L. CB PU-3A to DMH A-17	FSG -1.5	79	34	1A-1	79	Unacceptable
209	6-19	SMH R-1	TMH -5.5	78	28	11B-1	78	Unacceptable
210	6-19	SMH R-2	TMH -5.5	93	24	1A-1	92	

*Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOSITURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
1980								
211	6-19	SMH R-1	TMH -5.5	91	26	11B-1	93	
212	6-19	CB PU-2A	E.G. -6.0	94	25	1A-1	93	
213	6-19	CB PU-2B	E.G. -5.5	94	23	1A-1	93	
214	6-19	DMH ME-11	FG -9.0	96	25	1A-1	93	
215	6-19	SMH R-1	TMH -5.0	97	26	1A-1	95	
216	6-19	D.L. CB PU-2A to CB PU-2B	ESG -4.0	97	25	1A-1	95	
217	6-20	DMH ME-11	FG -8.0	97	25	1A-1	96	
218	6-20	CB PU-1F	FSG -0.5	99	25	1A-1	98	
219	6-20	DMH ME-11	FG -7.0	94	26	1A-1	93	
220	6-23	DMH ME-11	FG -6.0	95	27	1A-1	94	
221	6-23	DMH ME-11	FG -5.0	97	24	1A-1	96	
222	6-23	DMH A-11	FSG -5.0	96	27	1A-1	95	
223	6-23	DMH ME-11	FG -4.0	96	26	1A-1	95	
224	6-23	DMH A-11	FSG -4.0	99	25	1A-1	98	
225	6-23	DMH A-11	FSG -3.0	95	26	1A-1	94	
226	6-23	DMH A-11	FSG -2.0	97	24	1A-1	96	
227	6-24	DMH ME-11	FG -5.0	93	25	1A-1	92	
228	6-24	DMH A-11	FSG -1.0	98	26	1A-1	97	
229	6-24	W.L. - Lateral to Church Site	FSG -1.0	97	28	1A-1	96	
230	6-24	DMH ME-11	FG -3.5	92	24	1A-1	91	
231	6-24	CB PU-2B	FSG -2.5	99	26	1A-1	98	
232	6-24	W.L. - Lateral to Church Site	FSG	98	26	1A-1	97	

* Referenced to FG (Finish Grade) or
FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

TEST NO.	DATE	LOCATION	ELEVATION*	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	MATERIAL TYPE	PERCENT COMPACTION	REMARKS
1980								
233	6-25	DMH ME-11	FG -3.0	95	24	1A-1	94	
234	6-25	DMH A-11	FSG	96	25	1A-1	95	
235	6-25	CB PU-2A	FSG -2.0	98	25	1A-1	97	
236	6-25	SMH R-2	TMH -5.0	93	22	1A-1	92	
237	6-25	DMH ME-11	FG -2.5	92	22	1A-1	91	
238	6-25	CB PU-2A	FSG -1.0	99	26	1A-1	98	
239	6-25	SMH R-2	TMH -4.0	96	25	1A-1	95	
240	6-25	D.L. CB PU-2A to CB PU-2B	FSG	98	25	1A-1	97	
241	6-26	SMH R-2	TMH -3.5	93	23	1A-1	92	
242	6-26	CB PU-3B	FSG -4.5	95	24	1A-1	94	
243	6-26	SMH R-2	TMH -2.5	93	23	1A-1	92	
244	6-26	CB PU-3A	FSG -3.5	95	24	1A-1	94	
245	6-26	D.L. CB PU-3A to DMH A-17	FSG -1.5	98	24	1A-1	97	Retest 208
246	6-26	D.L. CB PU-3A to CB PU-3B	FSG -2.0	98	25	1A-1	97	
247	6-26	CB PU-3A	FSG -1.5	100	26	1A-1	99	
248	6-27	D.L. CB PU-3A to DMH A-17	FSG -0.5	99	26	1A-1	98	
249	6-27	SMH R-2	TMH -1.5	95	25	1A-1	94	
250	6-27	CB PU-3B	FSG -0.5	98	25	1A-1	97	
251	6-27	D.L. CB PU-3A to DMH A-17	FSG	94	26	1A-1	93	
252	6-27	D.L. CB PU-3A to DMH A-17	FSG	99	25	1A-1	98	

* Referenced to FG (Finish Grade) or
FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
1980								
253	6-27	SMH R-2	TMH -2.0	97	26	1A-1	96	
254	6-27	CB PU-3A	FG	98	26	1A-1	97	
255	6-27	SMH R-2	TMH -0.5	98	25	1A-1	97	
256	6-27	SMH R-1	TMH -3.5	99	25	1A-1	98	
257	6-27	SMH R-1	TMH -2.5	97	25	1A-1	96	
258	7-01	SMH R-8	TMH -5.0	97	29	1A-1	96	
259	7-01	SMH R-7	TMH -7.0	95	31	11B-1	97	
260	7-01	SMH R-7	TMH -6.0	94	29	11B-1	96	
261	7-01	SMH R-8	TMH -4.5	95	26	1A-1	94	
262	7-01	SMH R-7	TMH -5.5	92	30	11B-1	94	
263	7-07	CB PU-1F	FG -1.0	96	26	1A-1	95	Retest 191
264	7-07	CB PU-1F	FG	94	25	1A-1	93	
265	7-07	SMH R-7	TMH -4.0	94	24	1A-1	93	
266	7-07	SMH R-8	TMH -3.5	95	27	1A-1	94	
267	7-07	SMH R-7	TMH -3.0	99	26	1A-1	97	
268	7-07	SMH R-8	TMH -3.5	96	27	1A-1	95	
269	7-07	SMH R-7	TMH -2.0	96	26	1A-1	95	
270	7-07	SMH R-8	TMH -2.0	99	25	1A-1	98	
271	7-07	SMH R-7	TMH -1.0	99	26	1A-1	98	
272	7-07	SMH R-8	TMH -1.0	100	24	1A-1	99	
273	7-07	SMH R-7	TMH -0.5	95	26	1A-1	94	
274	7-08	DMH ME-11	FG -2.0	97	25	1A-1	96	
275	7-08	G.L. - PU-1	FSG	80	26	11B-1	82	Unacceptable
276	7-08	G.L. - PU-1	FSG	91	25	1A-1	90	Unacceptable
277	7-08	G.L. - PU-1	FSG	86	15	1A-1	85	Unacceptable

* Referenced to FG (Finish Grade) or
FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
<u>1980</u>								
278	7-08	E.L. PU-1	FSG	98	23	1A-1	97	
279	7-09	G.L. PU-1	FSG	97	24	1A-1	95	Retest 275
280	7-09	G.L. PU-1	FSG	97	24	1A-1	96	
281	7-09	G.L. PU-1	FSG	96	22	1A-1	95	
282	7-09	G.L. PU-1	FSG	96	23	1A-1	96	
283	7-09	E.L. PU-1	FSG	96	24	1A-1	97	
284	7-09	G.L. PU-1	FSG	97	24	1A-1	98	
285	7-10	G.L. PU-1	FSG	97	23	1A-1	96	
286	7-10	G.L. PU-1	FSG	98	23	1A-1	97	
287	7-10	E.L. PU-1	FSG	98	24	1A-1	97	
288	7-10	E.L. PU-1	FSG	97	23	1A-1	97	
289	7-10	G.L. PU-1	FSG	99	26	1A-1	99	
290	7-10	G.L. PU-1	FSG	98	25	1A-1	98	
291	7-11	G.L. PU-1	FSG	96	22	1A-1	95	Retest 277
292	7-11	G.L. PU-1	FSG	99	26	1A-1	98	Retest 276
293	7-17	E.L. PU-1	FG	92	23	1A-1	91	
294	7-17	E.L. PU-1	FG	93	23	1A-1	93	
295	7-17	E.L. PU-1	FG	95	23	1A-1	94	
296	7-17	E.L. PU-1	FG	91	23	1A-1	90	
297	7-17	E.L. PU-1	FG	93	23	1A-1	92	
298	7-29	D.L. HW A-13 to CB A-14	FSG -7.0	86	30	1A-1	86	+Unacceptable
299	7-29	D.L. HW A-13 to CB A-14	FSG -7.0	90	28	1A-1	90	+Unacceptable
300	7-29	D.L. HW A-13 to CB A-14	FSG -7.0	87	28	1A-1	87	+Unacceptable

+The entire lift of this material was subsequently removed.

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13

Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

TEST NO.	DATE	LOCATION	ELEVATION*	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	MATERIAL TYPE	PERCENT COMPACTION	REMARKS
1980								
301	7-31	D.L. HW A-13 to CB A-14	FSG -8.5	63	24	1A-1	62	+Unacceptable
302	8-04	D.L. CB A-14 to DMH A-15	E.G. -9.0	93	23	1A-1	92	
303	8-05	D.L. CB A-14 to DMH A-15	E.G. -8.0	99	24	1A-1	98	
304	8-06	D.L. CB A-14 to DMH A-15	E.G. -8.0	94	23	1A-1	93	
305	8-06	D.L. CB A-14 to DMH A-15	E.G. -7.0	93	23	1A-1	92	
306	8-07	D.L. DMH A-15 to CB A-16	E.G. -7.8	90	25	1A-1	89	Accepted with Add'l Comp.
307	8-07	D.L. CB A-14 to DMH A-15	E.G. -7.3	86	20	1A-1	85	Unacceptable
308	8-07	D.L. CB A-14 to DMH A-15	E.G. -7.3	84	20	1A-1	82	Unacceptable
309	8-07	D.L. CB A-14 to DMH A-15	E.G. -10.0	93	24	1A-1	92	
310	8-07	D.L. CB A-14 to DMH A-15	E.G. -7.3	93	24	1A-1	92	Retest 307 & 308
311	8-07	D.L. DMH A-15 to CB A-16	E.G. -7.0	95	24	1A-1	94	
312	8-07	D.L. CB A-14 to DMH A-15	E.G. -5.0	93	23	1A-1	92	
313	8-11	D.L. DMH A-15 to CB A-16	FSG -5.5	92	22	1A-1	91	

*The entire lift of this material was subsequently removed.

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File NO. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
	1980							
314	8-11	D.L. HW A-13 to CB A-14	FSG -7.5	81	23	1A-1	81	Unacceptable
315	8-11	D.L. CB A-14 to DMH A-15	FSG -4.0	82	24	1A-1	81	Unacceptable
316	8-11	D.L. DMH A-15 to CB A-16	FSG -4.5	93	21	1A-1	92	
317	8-11	D.L. CB A-14 to DMH A-15	FSG -4.0	88	24	1A-1	87	Retest 315
318	8-11	D.L. DMH A-15 to CB A-16	FSG -4.0	90	26	1A-1	89	Unacceptable Accepted with Add'l Comp.
319	8-11	D.L. CB A-14 to DMH A-15	FSG -4.0	93	28	1A-1	92	Retest 317
320	8-12	D.L. DMH A-15 to CB A-16	FSG -8.0	89	21	1A-1	88	Accepted with Add'l Comp.
321	8-13	D.L. DMH A-15 to CB A-16	FSG -7.5	87	23	1A-1	86	Unacceptable
322	8-13	D.L. CB A-14 to DMH A-15	FSG -7.0	76	25	1A-1	75	Unacceptable
323	8-13	D.L. DMH A-15 to CB A-16	FSG -7.5	90	22	1A-1	89	Retest 321 Accepted with Add'l Comp.
324	8-13	D.L. CB A-14 to DMH A-15	FSG -3.0	91	21	1A-1	90	
325	8-13	D.L. CB A-14 to DMH A-15	FSG -5.0	82	23	1A-1	81	Retest 322 Unacceptable
326	8-14	D.L. DMH A-15 to CB A-16	FSG -6.5	88	31	1A-1	87	Unacceptable

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
<u>1980</u>								
327	8-14	D.L. DMH A-15 to CB A-16	FSG -6.5	93	28	1A-1	92	Retest 326
328	8-14	D.L. HW A-13 to CB A-14	FSG -7.5	92	29	1A-1	91	Retest 314
329	8-14	D.L. HW A-13 to CB A-14	FSG -7.0	98	24	1A-1	97	
330	8-15	D.L. HW A-13 to CB A-14	FSG -6.5	92	23	1A-1	91	
331	8-15	D.L. DMH A-17 to End of D.L.	FSG -10.5	84	24	1A-1	83	Unacceptable
332	8-15	D.L. DMH A-17 to End of D.L.	FSG -10.5	94	23	1A-1	93	Retest 331
333	8-15	D.L. HW A-13 to CB A-14	FSG -6.0	85	22	1A-1	84	Unacceptable
334	8-18	D.L. HW A-13 to CB A-14	FSG -6.0	89	23	1A-1	88	Accepted with Add'l Comp.
335	8-18	D.L. HW A-13 to CB A-14	FSG -5.5	96	23	1A-1	95	Retest 333
336	8-18	D.L. DMH A-17 to End of D.L.	FSG -10.0	86	25	1A-1	85	Unacceptable
337	8-18	D.L. DMH A-17 to End of D.L.	FSG -10.5	92	27	1A-1	91	
338	8-18	D.L. DMH A-17 to End of D.L.	FSG -10.0	96	24	1A-1	95	Retest 336
339	8-19	D.L. HW A-13 to CB A-14	FSG -5.0	93	25	1A-1	92	

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

TEST NO.	DATE	LOCATION	ELEVATION*	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	MATERIAL TYPE	PERCENT COMPACTION	REMARKS
1980								
340	8-19	D.L. CB A-14 to DMH A-15	FSG -5.0	84	20	1A-1	83	Retest 325 Unacceptable
341	8-19	D.L. HW A-13 to CB A-14	FSG -4.5	97	26	1A-1	96	
342	8-19	D.L. DMH A-17 to End D.L.	FSG -9.0	95	23	1A-1	94	
343	8-19	D.L. DMH A-17 to End D.L.	FSG -9.5	83	23	1A-1	82	Unacceptable
344	8-20	CB A-14	FG -6.0	79	28	1A-1	78	Unacceptable
345	8-20	D.L. HW A-13 to CB A-14	FSG -4.0	88	19	1A-1	87	Unacceptable
346	8-20	D.L. DMH A-17 to End D.L.	FSG -9.5	93	23	1A-1	92	Retest 343
347	8-20	D.L. CB A-14 to DMH A-15	FSG -5.0	89	26	1A-1	88	Retest 340 Unacceptable
348	8-20	CB A-14	FG -6.0	98	27	1A-1	97	Retest 344
349	8-20	D.L. HW A-13 to CB A-14	FSG -3.5	95	28	1A-1	94	Retest 345
350	8-20	D.L. CB A-14 to DMH A-15	FSG -5.0	89	16	1A-1	89	Retest 347 Unacceptable
351	8-21	D.L. DMH A-17 to End D.L.	FSG -8.0	93	29	1A-1	92	
352	8-21	D.L. DMH A-17 to End D.L.	FSG -8.5	85	22	1A-1	84	Unacceptable
353	8-21	D.L. HW A-13 to CB A-14	FSG -3.0	100	26	1A-1	99	

*Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
	1980							
354	8-21	D.L. DMH A-17 to End D.L.	FSG -8.5	90	26	1A-1	89	Retest 352 Accept with Add'l Comp.
355	8-21	CB A-14	FG -2.5	98	23	1A-1	97	
356	8-21	D.L. HW A-13 to CB A-14	FSG -6.5	85	25	1A-1	85	Unacceptable
357	8-22	D.L. HW A-13 to CB A-14	FSG -6.5	91	24	1A-1	90	Retest 356
358	8-22	D.L. HW A-17 to End D.L.	FSG -7.0	85	25	1A-1	84	Unacceptable
359	8-22	D.L. DMH A-17 to End D.L.	FSG -6.5	97	23	1A-1	96	
360	8-22	D.L. DMH A-17 to End D.L.	FSG -7.0	91	23	1A-1	90	Retest 358
361	8-22	D.L. HW A-13 to CB A-14	FSG -6.0	94	25	1A-1	93	
362	8-25	D.L. HW A-13 to CB A-14	FSG -5.5	89	24	1A-1	88	Unacceptable
363	8-25	D.L. DMH A-17 to End D.L.	FSG -6.5	96	24	1A-1	96	
364	8-25	D.L. HW A-13 to CB A-14	FSG -5.5	91	26	1A-1	91	Retest 362
365	8-25	D.L. DMH A-17 to End D.L.	FSG -6.0	94	26	1A-1	94	
366	8-25	D.L. DMH A-17 to End D.L.	FSG -6.0	92	25	1A-1	92	

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
<u>1980</u>								
367	8-25	D.L. HW A-13 to CB A-14	FSG -5.0	97	28	1A-1	97	
368	8-25	D.L. DMH A-17 to End D.L.	FSG -5.5	94	24	1A-1	94	
369	8-26	D.L. DMH A-17 to End D.L.	FSG -5.5	98	24	1A-1	97	
370	8-26	D.L. CB A-16 to DMH A-17	FSG -10.0	87	16	1A-1	87	Unacceptable
371	8-26	D.L. HW A-13 to CB A-14	FSG -4.0	91	23	1A-1	90	
372	8-26	D.L. CB A-16 to DMH A-17	FSG -10.0	94	16	1A-1	93	Retest 370 Unacceptable
373	8-26	D.L. DMH A-17 to End D.L.	FSG -4.0	79	29	1A-1	78	Unacceptable
374	8-27	D.L. DMH A-17 to End D.L.	FSG -3.5	91	29	1A-1	90	Retest 373
375	8-27	CB A-14	FG -3.5	94	27	1A-1	93	
376	8-27	D.L. HW A-13 to CB A-14	FSG -3.5	95	28	1A-1	94	
377	8-27	D.L. CB A-16 to DMH A-17	FSG -10.0	94	22	1A-1	93	Retest 372
378	8-27	D.L. DMH A-15 to CB A-16	FSG -5.5	82	27	1A-1	81	Unacceptable
379	8-27	D.L. DMH A-17 to End D.L.	FSG -2.0	89	26	1A-1	88	Unacceptable

* Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Major Roadways & Drainage System
Gentry-Waipio Development - Phase II
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

TEST D.	DATE	LOCATION	ELEVATION*	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	MATERIAL TYPE	PERCENT COMPACTION	REMARKS
	1980							
80	8-27	D.L. DMH A-15 to CB A-16	FSG -5.5	82	26	1A-1	81	Retest 378 Unacceptable
81	8-28	D.L. DMH A-17 to End D.L.	FSG -2.0	87	28	1A-1	86	Retest 379 Unacceptable
82	8-28	D.L. DMH A-15 to CB A-16	FSG -5.5	82	28	1A-1	81	Retest 380 Unacceptable
83	8-28	D.L. CB A-14 to DMH A-15	FSG -7.5	79	27	11B-1	81	Unacceptable
84	8-28	D.L. DMH A-17 to End D.L.	FSG -2.5	88	25	1A-1	87	Retest 381 Accept with Add'l Comp.
85	8-28	D.L. CB A-14 to DMH A-15	FSG -7.5	78	26	11B-1	80	Retest 383 Unacceptable
86	8-28	D.L. DMH A-15 to CB A-16	FSG -5.5	86	26	1A-1	88	Accepted with Add'l Comp.
7	8-29	D.L. HW A-13 to CB A-14	FSG -2.0	95	24	1A-1	94	
8	8-29	D.L. CB A-14 to DMH A-15	FSG -7.5	86	25	1A-1	85	Retest 385 Unacceptable
9	8-29	D.L. DMH A-15 to CB A-16	FSG -5.0	84	27	1A-1	83	Unacceptable
	8-29	D.L. CB A-14 to DMH A-15	FSG -7.0	91	24	1A-1	91	Retest 388
	8-29	D.L. HW A-13 to CB A-14	FSG -1.5	86	24	1A-1	86	Unacceptable
	8-29	D.L. CB A-16 to DMH A-17	FSG -9.0	96	23	1A-1	96	

referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
	1980							
393	8-29	D.L. DMH A-17 to End D.L.	FSG -1.5	98	23	1A-1	97	
394	9-08	D.L. CB A-16 to DMH A-17	FSG -8.5	91	27	1A-1	90	
395	9-08	D.L. CB A-16 to DMH A-17	FSG -8.5	91	25	1A-1	90	
396	9-09	D.L. CB A-16 to DMH A-17	FSG -7.5	91	27	1A-1	90	
397	9-09	D.L. CB A-16 to DMH A-17	FSG -7.0	92	26	1A-1	91	
398	9-10	D.L. CB A-16 to DMH A-17	FSG -6.0	92	26	1A-1	91	
399	9-12	D.L. CB A-14 to DMH A-15	FSG -4.0	94	26	1A-1	94	
400	9-15	D.L. CB A-16 to DMH A-17	FSG -5.0	91	28	1A-1	90	
401	9-15	D.L. CB A-14 to DMH A-15	FSG -3.0	94	26	1A-1	94	
402	9-16	D.L. CB A-16 to DMH A-17	FSG -4.0	93	26	1A-1	92	
403	9-16	D.L. CB A-14 to DMH A-15	FSG -2.5	93	26	1A-1	92	
404	9-16	D.L. CB A-16 to DMH A-17	FSG -3.0	95	24	1A-1	94	
405	9-16	D.L. DMH A-15 to CB A-16	FSG -4.0	92	24	1A-1	91	Retest 389

*Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System,
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
<u>1980</u>								
406	9-17	D.L. DMH A-15 to CB A-16	FSG -3.0	91	28	1A-1	90	
407	9-17	D.L. CB A-16 to DMH A-17	FSG -2.5	93	28	1A-1	92	
408	9-17	D.L. DMH A-17 to End D.L.	FSG -1.5	97	27	1A-1	97	
409	9-19	DMH A-15	FSG -3.0	92	28	1A-1	92	
410	9-19	CB A-16	FSG -3.5	91	26	1A-1	91	
411	9-22	DMH A-15	FSG -1.0	95	25	1A-1	94	
412	9-22	CB A-16	FSG -1.0	95	26	1A-1	94	
413	9-22	CB A-14	FG -1.5	94	25	1A-1	93	Retest 391
414	9-23	D.L. CB A-16 to DMH A-17	FSG -7.0	92	26	1A-1	91	
415	9-24	D.L. DMH A-17 to End D.L.	FSG -1.0	100	25	1A-1	99	
416	9-25	CB A-14	FSG	96	26	1A-1	95	
417	9-25	D.L. CB A-16 to DMH A-17	FSG -4.5	90	26	1A-1	90	
418	9-26	D.L. CB A-16 to DMH A-17	FSG -2.5	92	27	1A-1	91	
419	9-29	D.L. CB A-16 to DMH A-17	FSG -2.5	97	26	1A-1	96	
420	9-30	D.L. CB A-16 to DMH A-17	FSG -1.5	97	26	1A-1	96	

*Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

File No. 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

TABLE I
SUMMARY OF FIELD DENSITY TEST RESULTS

<u>TEST NO.</u>	<u>DATE</u>	<u>LOCATION</u>	<u>ELEVATION*</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>MATERIAL TYPE</u>	<u>PERCENT COMPACTION</u>	<u>REMARKS</u>
<u>1980</u>								
421	10-1	D.L. CB A-16 to DMH A-17	FSG -0.5	99	26	1A-1	98	
422	10-2	G.L. Waipio Uka St. Sta. 42+10	FSG	97	26	1A-1	96	
423	10-2	D.L. CB A-16 DMH A-17	FSG	97	27	1A-1	96	
424	12-10	D.L. Sta 34 + 05	FG -4.0	95	26	1A-1	94	
425	12-10	D.L. Sta 34 + 10	FG -3.0	96	27	1A-1	95	
426	12-10	D.L. Sta 34 + 08	FG -6.0	95	26	1A-1	94	
427	12-11	D.L. Sta 34 + 05	FG -5.0	93	24	1A-1	92	
428	12-11	D.L. Sta 34 + 12	FG -4.0	95	25	1A-1	94	
429	12-12	D.L. Sta 34 + 04	FG -3.0	99	29	1A-1	98	
430	12-12	D.L. Sta 34 + 15	FG -2.0	100	25	1A-1	99	
431	12-12	D.L. Sta 34 + 08	FG -2.0	99	24	1A-1	98	
432	12-12	D.L. Sta 34 + 05	FG -1.0	86	32	11B-1	88	Acceptable after add'l compaction
433	12-12	D.L. Sta 34 + 12	FG -1.0	83	29	11B-1	84	Unacceptable
434	12-12	D.L. Sta 34 + 04	FG -1.0	95	29	11B-1	97	Retest 433
<u>1981</u>								
435	2-17	D.L.	FG	100	25	1A-1	99	

*Referenced to FG (Finish Grade) or FSG (Finish Subgrade)

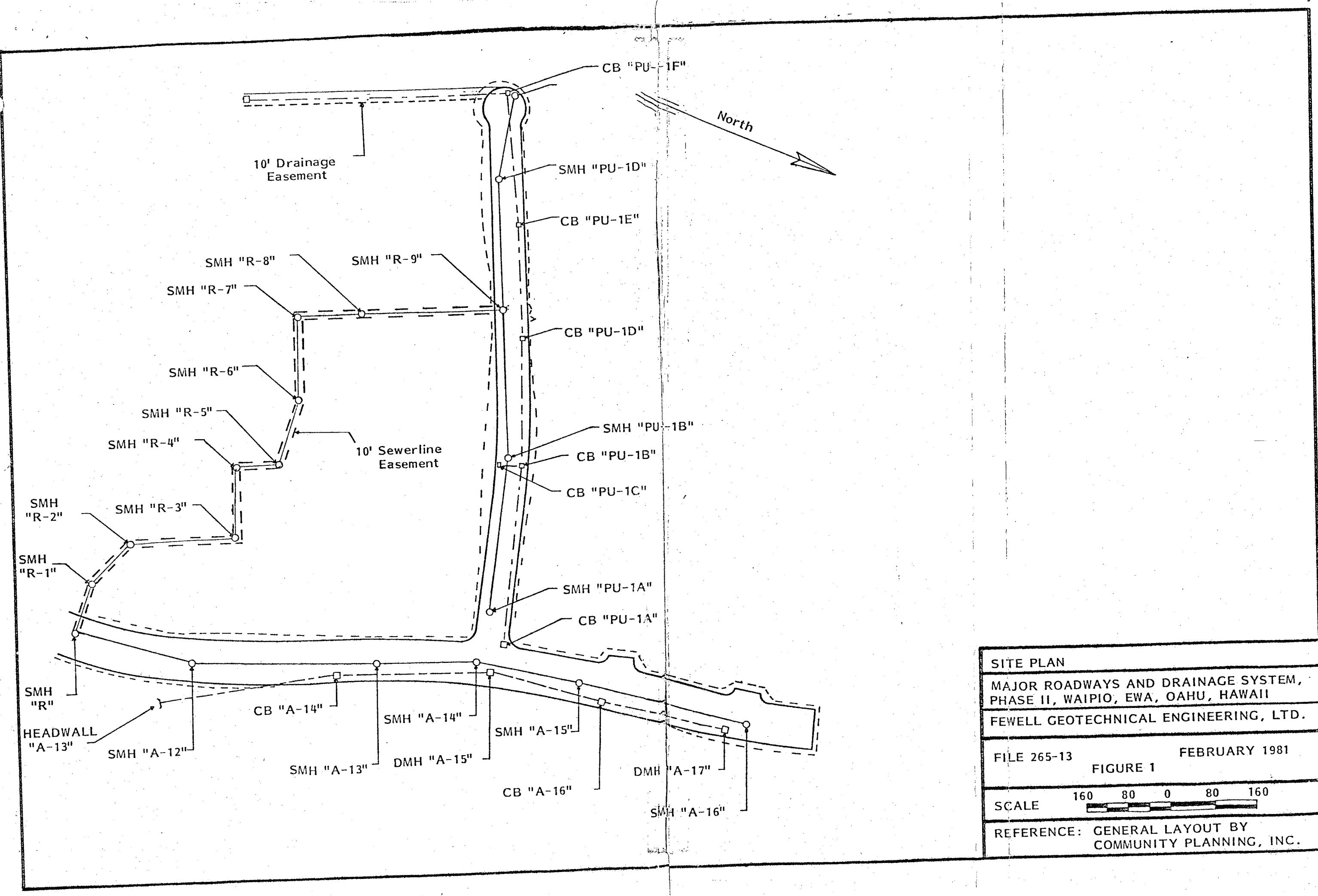
File No. 265-13

Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii

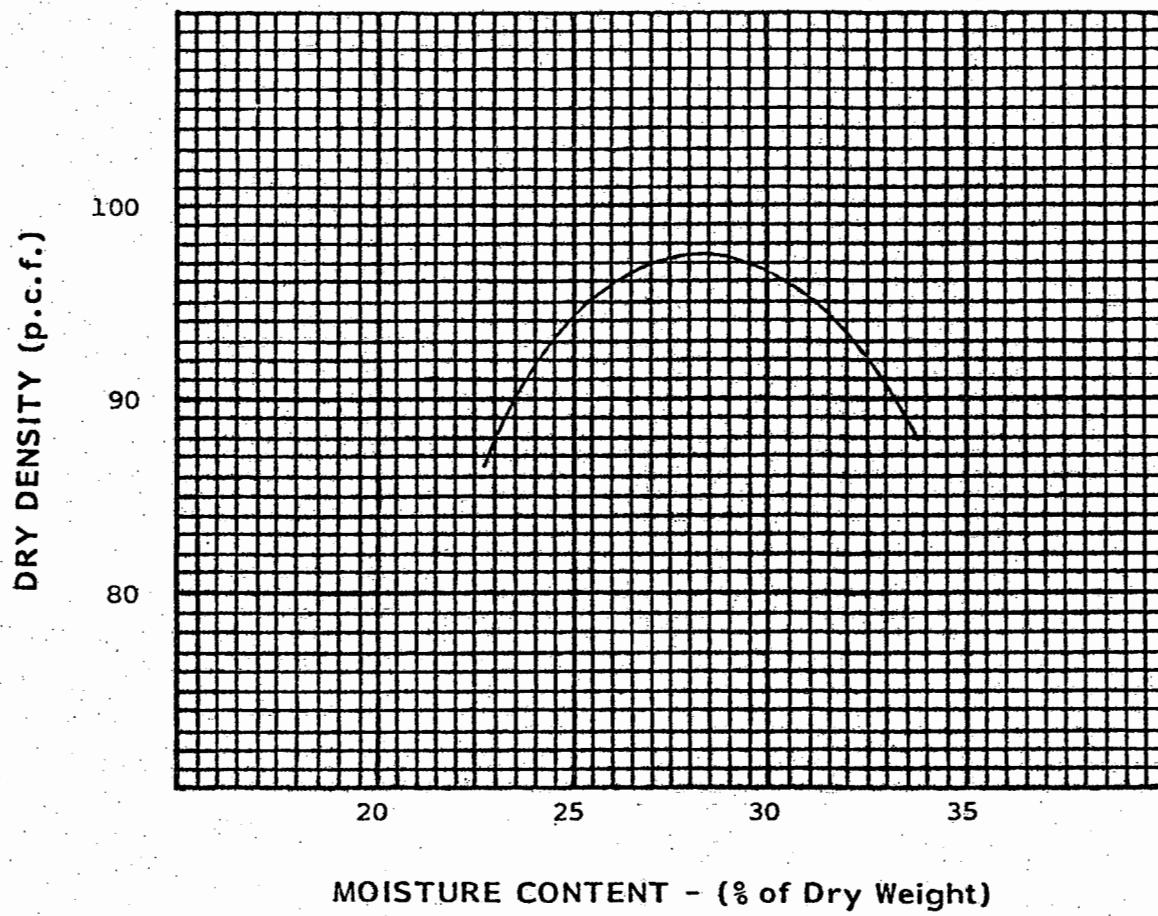
TABLE II
Summary of Laboratory Test Results

<u>Sample No.</u>	<u>Description</u>	<u>Maximum Dry Density</u>	<u>Optimum Moisture Contents (%)</u>
1A-1	Reddish brown Clayey SILT	102.7	24.8
1B-2	Dark brown SILT	97.7	28.3

File 265-13
Gentry-Waipio Development - Phase II
Major Roadways & Drainage System
Waipio, Oahu, Hawaii



LABORATORY COMPACTION CURVE



Sample: BAG 11B-1

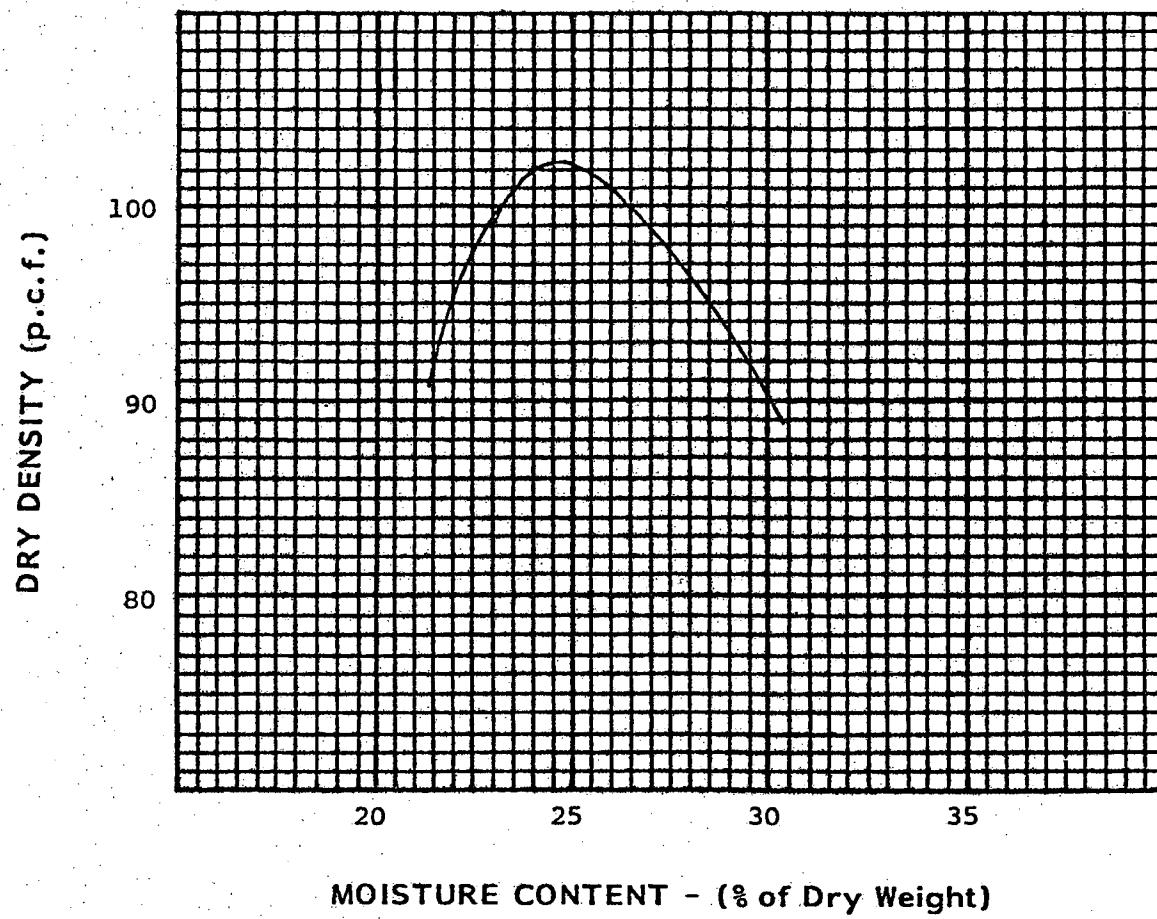
Description: Dark brown SILT

Laboratory Test Procedure: ASTM D-1557 - Method A

Maximum Dry Density: 97.7 pcf

Optimum Moisture Content: 28.3%

LABORATORY COMPACTION CURVE



Sample: 1A-1

Description: Red Clayey SILT

Laboratory Test Procedure: ASTM D 1557 - Method A

Maximum Dry Density: 102.7 pcf

Optimum Moisture Content: 24.8%