FINAL COMPACTION REPORT

WAIPUALANI SUBDIVISION

LOTS 1 TO 67

KAHALUU, OAHU, HAWAII

W.O. 979-20 JULY 12, 1982

Prepared for:

RICHARD M. SATO & ASSOCIATES

GEOLABS-HAWAII

2006 KALIHI STREET

HONOLULU, HAWAII 96819

CW ASSOCIATES, INC. dba
GEOLABS-HAWAII
Geology Soils and Foundation Engineering
2006 Kalihi Street • Honolulu, Hawaii 96819 • (808) 841-5064

July 9, 1982
W.O. 979-20

Richard M. Sato & Associates
2065 S. King Street, Suite 306
Honolulu, Hawaii 96814

Attention: Mr. Daniel Miyasato

Subject: Final Compaction Report
Waipualani Subdivision
Lots 1 to 67
Kahaluu, Oahu, Hawaii

Gentlemen:

From July 8, 1981 to May 17, 1982, we have periodically inspected the earthwork and grading operations performed by Okada Trucking at the above referenced project. This report summarizes our inspection and compaction tests performed at the subject lots.

The grading operations consisted of cuts and fills generally less than 10 to 20 feet. The soils encountered at the cut pad finished grade generally consisted of brown and mottled reddish brown clayey silt which, according to our field observations and laboratory testing, could provide adequate support for the proposed single family residences.

However, during site grading, expansive clay soil was also noted near the finished grade level in cut Lots 4, 5 and 6. It was gray in color and appeared to be concentrated within a strip about 20 feet wide, southeast (mauka) of Road "A". Isolated pockets of the gray clay were also noted in some of the other cut lots and excavated fill material but they did not appear to be as extensive as Lots 4, 5 and 6. Additional expansive soil pockets may be located at the final grades during the time of individual lot regrading and residential construction, therefore, a soils engineer's service (inspection and consultation) would be required.

The existing soil has a high natural moisture content of about 55 to 65%. Laboratory swell tests indicate that the soils will generally exibit low swell potential at this moisture content. However, if allowed to dry, the soil could become highly expansive. A copy of the laboratory swell test results is attached for your reference.

It is our understanding that the lots will be sold "as is" and that the developer had decided to let the individual lot buyers handle the expansive clay either by over-excavation and replacement or special foundation design. It should be noted that the clay soil condition may still exist in the lots, therefore, each purchaser should be advised to hire their own soils engineer to check the design and construction of any planned development.

During the fill placement operations, periodic field density tests were done in accordance with the American Society for Testing Materials (ASTM) Test Designation D-1556 (Sand Cone Method). It is our opinion that the fill lots have been compacted adequately. A summary of the compaction test results are also attached.

During the grading period, the on-site soil was tested prior to being used in the fill. The maximum soil density and optimum moisture content was established in our laboratory in accordance with ASTM D-1557 test designation, and the results are as follows:

Type	Soil Description	Maximum Density (pcf)	Optimum Moisture (%)
On-Site Material #1	Brown Clayey Silt	86.0	34.5
#2	Brown Clayey Silt with weathered gravel	88.0	30.0
#3	Brown Clayey Silt with weathered gravel	89.0	33.0

RECOMMENDATIONS

House Foundations

To minimize the effects of slope creep and erosion, slabs should be set back away from the tops of slopes a minimum distance of 6 feet. Also, post footings located close to the tops of slopes should be embedded a sufficient depth to obtain a minimum horizontal set-back distance of 6 feet from the slope face. Post footings, 4 feet or more away from the tops of the slopes, should be placed a minimum of 12 inches below the level finish grade.

Slab-on-grade should be placed over a 4-inch layer of capillary-break cushion fill (#3 fine aggregate is recommended). The thickened edge around the slab-on-grade should extend downward a minimum of 12 inches below the adjacent ground surface.

The subgrade should be kept moist and protected from drying prior to concrete placement. Subgrade should be compacted to a minimum of 85% of its maximum dry density.

Site Grading

Subsequent to completion of lot grading, utility trenches within the lot pad should be properly backfilled and compacted under the observations of a soils engineer.

This office assumes no responsibility for any alterations made to slopes or pads on the subject lots subsequent to the issuance of this report without our knowledge and written approval.

Should you have any questions concerning the above contents, please feel free to contact us.

Respectfully submitted,

C.W. ASSOCIATES INC.
dba GEOLABS-HAWAII

By Clayton S. Mimura
Clayton S. Mimura, P.E.

BYKW:CSM:cw

Enclosure: Summary of Density Tests (5)
Summary of One-Inch Ring Swell Tests (1)
Site Plan (1)

SUMMARY OF DENSITY TESTS CONTROL OF COMPACTED FILL				W.O. NO. 979-20 PAGE 1 OF 5		OWNER OKADA TRUCKING CO. JOB WAIPUALANI SUBDIVISION			
TEST NO.	DATE	TEST LOCATION	ELEV. FT.	% COMP. REQ'D	MAX. DRY DENSITY P.C.F.	FILL MOISTURE %	TEST DRY DENSITY P.C.F.	% MAX. DRY DENSITY	REMARKS
1	7-15-81	Lot 48	153	85	86	39.0	74.6	86.7	Pass
2	"	" 52	153	"	"	41.9	73.8	85.8	"
3	"	" 49	153	"	"	38.1	74.8	87.0	"
4	7-20-81	" 51	159	"	"	34.0	77.6	90.0	"
5	"	" 47	152	"	"	37.0	72.2	84.5	"
6	"	" 49	151	"	"	41.0	81.5	94.7	"
7	7-22-81	" 50	158.7	"	"	28.2	80.6	90.0	"
8	7-23-81	" 47	158.5	"	"	30.1	80.3	93.4	"
9	7-24-81	" 53	155.0	"	"	29.2	80.4	93.5	"
10	"	" 54	157.0	"	"	28.5	82.2	95.6	"
11	7-29-81	" 54	156.5	"	"	26.1	77.2	89.8	"
12	"	" 51	155.5	"	"	30.2	74.4	86.5	"
13	7-31-81	" 54	159	"	"	28.0	84.2	98.0	"
14	"	" 49	154	"	"	31.0	74.5	87.0	"
15	"	" 50	162	"	"	40.0	98.2	100+	"
16	"	" 46	153.5	"	"	30.0	74.2	86.0	"
17	"	" 50	162	"	"	40.0	75.3	87.5	"
18	8-10-81	" 51	156	"	88	27.0	80.4	91.3	Pass
19	"	" 53	157	"	"	29.8	78.5	89.1	"
20	8-14-81	" 46	154	"	"	42.85	68.6	78.0	Fail; see #24
21	"	" 54	157	"	"	25.0	82.1	93.0	Pass
22	"	" 52	157	"	"	27.0	80.9	91.9	"
23	"	" 48	155	"	"	25.0	78.8	89.5	"

SUMMARY OF DENSITY TESTS CONTROL OF COMPACTED FILL	W.O. NO. 979-20 PAGE 2 OF 5	OWNER OKADA TRUCKING CO. JOB WAIPUALANI SUBDIVISION

TEST NO.	DATE	TEST LOCATION	ELEV. FT.	% COMP. REQ'D	MAX. DRY DENSITY P.C.F.	FILL MOISTURE %	TEST DRY DENSITY P.C.F.	% MAX. DRY DENSITY	REMARKS
24	8-14-81	Lot 46	154	85	88	29.0	83.9	95.3	Pass; Retest #20
25	8-18-81	" 47	157	"	"	31.1	78.2	92.1	"
26	"	" 52	159	"	"	26.7	74.0	84.0	Fail; see #27
27	8-21-81	" 52	159	"	"	34.7	78.2	88.8	Pass; Retest #26
28	"	" 52	159	"	"	31.1	81.3	92.3	Pass
29	8-24-81	" 66	158	"	"	44.0	76.0	86.0	"
30	8-26-81	" 50	159	"	"	44.8	72.8	82.7	Fail; see #35
31	"	" 66	159	"	"	35.8	75.1	85.3	Pass
32	"	" 65	159	"	"	36.6	75.0	85.2	"
33	8-27-81	" 49	157	"	"	43.0	78.9	89.6	"
34	8-28-81	" 47	158	"	"	48.0	77.9	88.0	"
35	"	" 50	159	"	"	40.0	74.9	85.0	Pass; Retest #30
36	8-31-81	" 65	160	"	"	43.0	53.0	61.0	Fail; see #37
37	"	" 65	160	"	"	47.56	77.8	88.0	Pass; Retest #36
38	"	" 63	160	"	"	49.6	77.3	87.8	Pass
39	9-1-81	" 48	159	"	"	38.5	75.2	85.4	"
40	"	" 46	159	"	"	41.4	79.13	89.9	"
41	9-3-81	" 51	161	"	"	37.5	80.0	90.1	"
42	"	" 53	161	"	"	31.8	85.9	97.6	"
43	9-4-81	" 66	164.5	"	"	49.7	71.6	81.4	Fail; see #45
44	"	" 64	161.75	"	"	45.4	70.8	80.4	Fail; see #46
45	9-8-81	" 66	164	"	"	30.04	78.9	88.9	Pass; Retest #43
46	"	" 64	161	"	"	33.9	79.9	90.7	Pass; Retest #44

SUMMARY OF DENSITY TESTS CONTROL OF COMPACTED FILL			W.O. NO. 979-20 PAGE 3 OF 5			OWNER OKADA TRUCKING CO. JOB WAIPUALANI SUBDIVISION			
TEST NO.	DATE	TEST LOCATION	ELEV. FT.	% COMP. REQ'D	MAX. DRY DENSITY P.C.F.	FILL MOISTURE %	TEST DRY DENSITY P.C.F.	% MAX. DRY DENSITY	REMARKS
47	9-8-81	Lot 46	161	85	88	37.5	75.1	85.3	Pass
48	"	" 47	161	"	"	41.0	76.6	87.0	"
49	9-9-81	" 50	162	"	"	55.4	69.0	79.0	Fail; see #50
50	9-10-81	" 50	162	"	"	29.6	81.2	92.3	Pass; Retest #49
51	9-11-81	" 54	165	"	"	49.5	79.9	90.8	Pass
52	"	" 48	162	"	"	60.0	72.0	81.8	Fail; see #53
53	9-14-81	" 48	162	"	"	43.9	79.5	90.4	Pass; Retest #52
54	"	" 46	161	"	"	43.7	76.4	86.8	Pass
55	9-15-81	" 66	165	"	"	43.34	75.3	85.7	"
56	"	" 64	165	"	"	44.25	69.3	78.7	Fail;see #57
57	"	" 64	165	"	"	41.5	77.1	87.0	Pass; Retest #56
58	"	Road "A" Station 100+00	165	"	"	36.7	74.4	84.6	Fail; see #59
59	9-16-81	"	165	"	"	35.3	94.0	90.0	Pass; Retest #58
60	"	Lot 12	116	"	"	39.34	85.1	96.0	Pass
61	"	" 9	115	"	"	41.6	82.9	94.2	"
62	9-17-81	" 52	167	"	"	56.19	64.0	72.7	Fail; see #78
63	"	" 1	170	"	"	43.42	75.5	85.8	Pass
64	"	" 3	170	"	"	44.0	76.2	86.6	"
65	"	" 13	117	"	"	49.56	82.8	94.1	"
66	9-21-81	" 66	167	"	"	54.35	61.0	69.0	Fail; see #68
67	"	" 66	167	"	"	50.0	64.0	73.0	" "
68	9-22-81	" 66	167	"	"	47.4	73.8	84.0	Pass w/ Add. Rolling
69	"	" 53	163	"	"	37.8	84.5	96.0	Pass

SUMMARY OF DENSITY TESTS CONTROL OF COMPACTED FILL			W.O. NO. 979-20 PAGE 4 OF 5			OWNER OKADA TRUCKING CO. JOB WAIPUALANI SUBDIVISION			
TEST NO.	DATE	TEST LOCATION	ELEV. FT.	% COMP. REQ'D	MAX. DRY DENSITY P.C.F.	FILL MOISTURE %	TEST DRY DENSITY P.C.F.	% MAX. DRY DENSITY	REMARKS
70	9-22-81	Lot 2	171	85	88	52.2	68.3	77.6	Fail; see #71
71	"	" 2	171	"	"	41.3	77.8	88.4	Pass
72	9-23-81	Lot 12 & 13	117	"	"	33.9	63.8	72.5	Fail; see #75
73	"	" 14	117.1	"	"	46.8	62.5	71.0	" "
74	9-24-81	" 15	117.1	"	"	40.2	65.3	74.2	Fail; see #76
75	"	" 12 & 13	117	"	"	42.4	70.4	80.0	Fail; see #79
76	"	" 15	117.1	"	"	39.5	74.7	84.9	Pass w/Add. Rolling
77	"	" 9	116	"	"	33.0	75.3	85.6	Pass
78	9-25-81	" 52	167	"	"	46.4	78.1	88.8	Pass; Retest #62
79	9-29-81	" 10	121	"	"	38.7	76.5	87.0	Pass; Retest #72, 75
80	"	" 13	121	"	"	40.0	58.0	66.0	Fail; see #82
81	9-30-81	" 65	170	"	"	50.4	67.8	77.0	" "
82	"	" 13	121	"	"	51.3	75.6	85.9	Pass; Retest #80
83	10-1-81	" 65	170	"	"	35.4	77.0	87.6	Pass
84	"	" 13 & 14	123	"	"	57.9	69.3	78.8	Fail; see #87
85	10-6-81	" 9	125	"	"	62.1	59.5	67.6	Fail; see #86
86	10-7-81	" 9	125	"	"	47.8	76.6	87.0	Pass; Retest #85
87	"	" 13 & 14	123	"	"	45.8	75.4	85.7	Pass; Retest #84
88	10-8-81	" 10	126	"	"	43.7	79.4	90.	Pass
89	"	" 14	126	"	"	46.9	78.3	89.	"
90	10-15-81	" 9	129.4	"	"	40.6	79.4	89.7	"
91	"	" 9	129.0	"	"	45.2	80.3	90.7	"
92	10-20-81	" 9	130.0	"	"	32.1	72.0	81.9	Fail; see #93

SUMMARY OF DENSITY TESTS CONTROL OF COMPACTED FILL	W.O. NO. 979-20	OWNER OKADA TRUCKING CO.
	PAGE 5 OF 5	JOB WAIPUALANI SUBDIVISION

TEST NO.	DATE	TEST LOCATION	ELEV. FT.	% COMP. REQ'D	MAX. DRY DENSITY P.C.F.	FILL MOISTURE %	TEST DRY DENSITY P.C.F.	% MAX. DRY DENSITY	REMARKS
93	10-20-81	Lot 9	130*	85	88	35.9	84.2	95.7	Pass; Retest #92
94	12-8-81	" 13	119.5	"	"	42.9	66.0	75	Fail; see #97
95	12-9-81	" 10	123.4	"	89	31.3	78.2	87.9	Pass
96	"	" 12	129.0	"	"	44.9	67.1	75.4	Fail; see #102
97	"	" 13	119.5	"	"	45.3	63.4	71.2	Fail; see #100
98	12-15-81	" 10	122.5	"	"	47.8	62.6	70.3	Fail; see #100
99	"	" 10	122.5	"	"	53.6	62.1	69.8	" "
100	12-16-81	" 10	122.5	"	"	42.1	75.3	84.6	Pass w/ Add. Rolling
101	12-17-81	" 11	126.0	"	"	35.1	75.1	84.4	" "
102	3-8-82	" 12	129.0	"	"	33.1	77.7	87.3	Pass; Retest #96
103	4-12-82	" 12	131.0	"	"	32.0	78.5	88.2	Pass
104	"	" 17	139.0	"	"	31.4	77.5	87.1	"
105	4-27-82	" 11	F.G.	"	"	33.4	78.2	87.9	"
106	4-30-82	" 12	"	"	"	34.1	79.5	89.4	"
107	"	" 14	"	"	"	32.1	80.3	90.3	"
108	"	" 15	"	"	"	33.1	78.7	88.4	"
109	"	" 13	"	"	"	31.4	81.8	91.9	"

* FINISH GRADE

GEOLABS-HAWAII

SUMMARY OF ONE-INCH RING SWELL TESTS

WAIPUALANI SUBDIVISION

Location	Depth (Feet)	Soil Description	Dry Density (pcf)	Initial Moisture Content (%)	Air Dried Moisture Content (%)	Final Moisture Content (%)	Ring Swell (%)
Lot 5	Surface	Gray Clay (remolded)	64.8	55.6	15.7 (7-day)	64.5	21.4
"	Surface	" "	62.9	55.6	41.6 (1 day)	58.8	3.3
"	Surface	" "	64.4	55.6	37.4 (2 day)	56.3	5.8
Lot 6	Surface	Gray Clay (natural)	59.5	67.5	(no air dry)	71.4	1.2
"	Surface	" "	64.2	67.5	46.0 (1 day)	59.3	3.7
"	Surface	" "	63.6	67.5	37.0	56.8	3.9
"	Surface	Mottled Gray and Brown (natural)	59.2	64.1	(no air dry)	67.2	0.2
"	Surface	" "	59.3	64.1	55.2 (1 day)	66.1	2.2
"	Surface	" "	57.5	64.1	48.0 (2-day)	66.5	3.5
"	Surface	Gray Clay (remolded)	71.3	44.7	(no air dry)	60.2	10.2
"	Surface	" "	69.3	36.2	(no air dry)	64.2	17.0

W.O. 979-20 JANUARY 1982

GP 9836

RICHARD M. SATO & ASSOCIATES, INC. • 2065 S. KING ST. RM. 303 • HONOLULU, HAWAII 96826 • PHONE 955-4441

July 13, 1982

Construction Section
Division of Engineering
Department of Public Works
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Mr. John Lee

Subject: Waipualani Subdivision
Kahaluu, Oahu, Hawaii
TMK: 4-7-32: 17

Based upon on-site inspection on June 25, 1982, we certify that the Grading Work was done in accordance with the approved grading plans.

Should you have any questions, please do not hesitate to call.

Very truly yours,

RICHARD M. SATO & ASSOCIATES, INC.

Daniel S. Miyasato

DSM/cf

cc: Okada Trucking Co., Ltd.
Ken Uyeda

RICHARD M. SATO & ASSOCIATES, INC. • 2065 S. KING ST. RM. 303 • HONOLULU, HAWAII 96826 • PHONE 955-4441

July 13, 1982

Construction Section
Department of Public Works
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Mr. John Lee

Subject: Waipualani Subdivision
Kahaluu, Oahu, Hawaii
TMK: 4-7-32:17

Transmitted herewith in accordance with the Grading Ordinance, is one set of Final Compaction Report prepared by Geolabs-Hawaii, dated July 12, 1982.

This concludes the grading requirements for the subject project. We trust that this meets with your approval.

Should you have any questions, please do not hesitate to call.

Very truly yours,

RICHARD M. SATO & ASSOCIATES, INC.

Daniel S. Miyasato

DSM/ct

Enclosure

cc: Okada Trucking Co., Ltd.
Ken Uyeda

1

DEPARTMENT OF PUBLIC WORKS
WORK IDENTIFICATION & ASSIGNMENT

YEAR DEPT/DIV
1981K0929

REQUEST DATE	RECEIVED DATE	DUE DATE	COMPLETION DATE	
06/29/81	06/30/81	06/29/82	06/29/81	230002

PROJECT NAME/LOCATION/SUBJECT

*WO-230002,*GP-9836

WAIPUALANI S/D

AHUIMANU RD

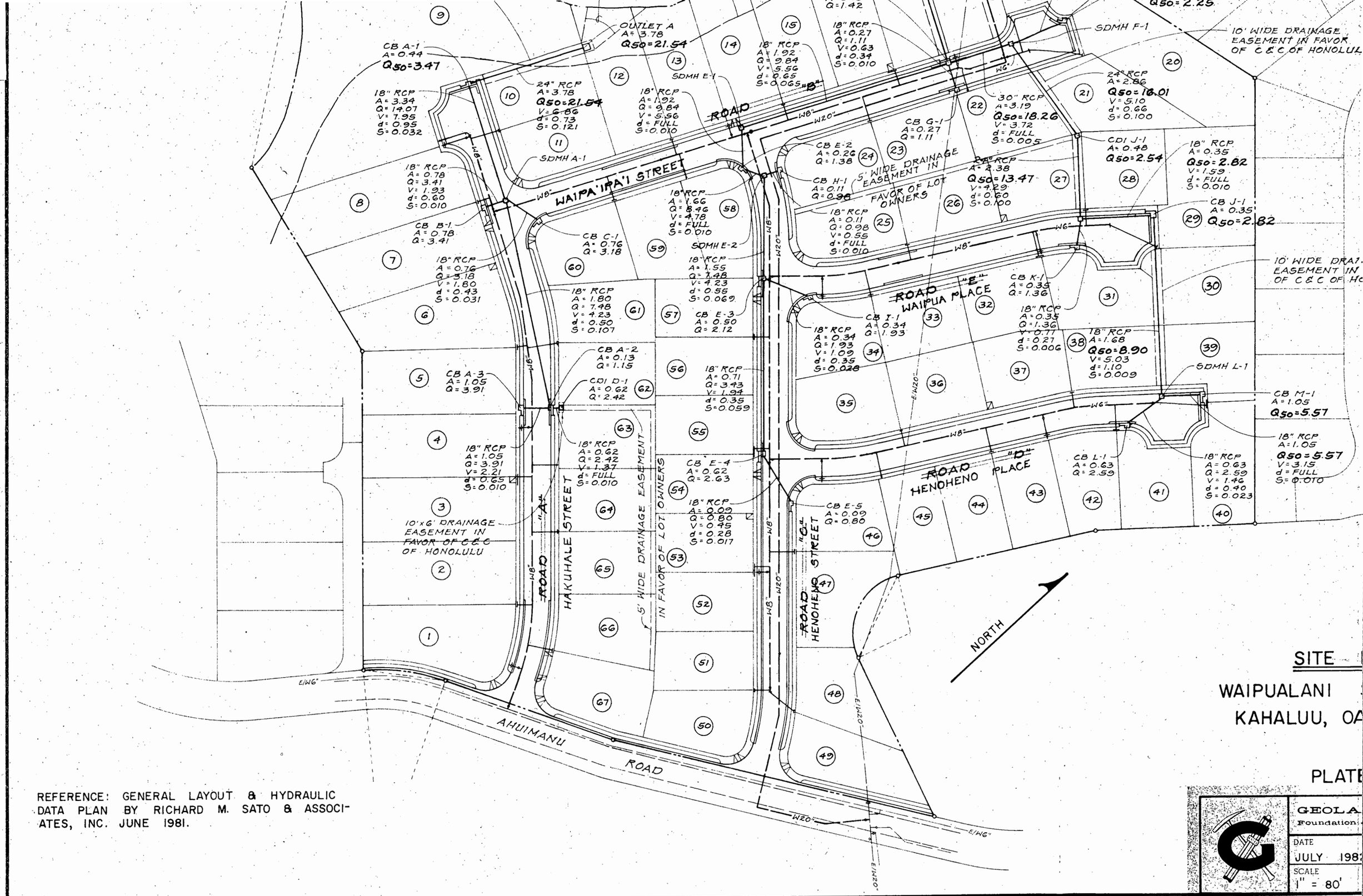
ORIGINATOR - NAME/ADDR

TOKUSHIGE

	SCH FOR	ACTION	SCH FOR	ACTION
	21	25		

	INITIAL	DATE		INITIAL	DATE		INITIAL	DATE
R BY	SECRETARY		PREPARED BY	ASST DIV CHF		ISSUED BY	DIV CHIEF	
CED BY	DIV. CHIEF		REVIEWED BY	BR CHIEF	6/29/81	INSPECTED BY	ST CHIEF	

REMARKS:



REFERENCE: GENERAL LAYOUT & HYDRAULIC DATA PLAN BY RICHARD M. SATO & ASSOCIATES, INC. JUNE 1981.

SITE

WAIPUALANI

KAHALUU, OA

PLATE

GEOLA
Foundation

DATE
JULY 198

SCALE
1" = 80'

OF HONOLULU

BUILDING SETBACK LINE

10' WIDE DRAINAGE EASEMENT IN FAVOR OF C & C OF HONOLULU

CB A-1
A = 0.44
Q50 = 3.47

18" RCP
A = 3.34
Q = 14.07
V = 7.95
d = 0.95
S = 0.032

24" RCP
A = 3.78
Q50 = 21.54
V = 6.86
d = 0.73
S = 0.121

OUTLET A
A = 3.78
Q50 = 21.54

18" RCP
A = 1.92
Q = 9.84
V = 5.56
d = FULL
S = 0.010

SDMH E-1

18" RCP
A = 1.92
Q = 9.84
V = 5.56
d = 0.65
S = 0.065

CB E-1
A = 0.16
Q = 1.42

18" RCP
A = 0.27
Q = 1.11
V = 0.63
d = 0.34
S = 0.010

30" RCP
A = 5.54
Q50 = 34.17
V = 6.96
d = 0.93
S = 0.079

18" RCP
A = 0.33
Q50 = 2.25
V = 1.27
d = FULL
S = 0.010

CB F-1
A = 0.33
Q50 = 2.25

SDMH F-1

10' WIDE DRAINAG... EASEMENT IN FAV... OF C & C OF HONO...

24" RCP
A = 2.86
Q50 = 16.01
V = 5.10
d = 0.66
S = 0.100

30" RCP
A = 3.19
Q50 = 18.26
V = 3.72
d = FULL
S = 0.005

CB G-1
A = 0.27
Q = 1.11

CDI J-1
A = 0.48
Q50 = 2.54

18" RCP
A = 0.35
Q50 = 2.82
V = 1.59
d = FULL
S = 0.010

CB J-1
A = 0.35
Q50 = 2.82

CB E-2
A = 0.26
Q = 1.38

CB H-1
A = 0.11
Q = 0.96

5' WIDE DRAINAGE EASEMENT IN FAVOR OF LOT OWNERS

24" RCP
A = 2.38
Q50 = 13.47
V = 4.29
d = 0.60
S = 0.100

18" RCP
A = 0.11
Q = 0.98
V = 0.55
d = FULL
S = 0.010

WAIPA'IPA'I STREET

18" RCP
A = 0.78
Q = 3.41
V = 1.93
d = 0.60
S = 0.010

CB B-1
A = 0.78
Q = 3.41

18" RCP
A = 0.76
Q = 3.18
V = 1.80
d = 0.43
S = 0.031

CB C-1
A = 0.76
Q = 3.18

18" RCP
A = 1.66
Q = 8.46
V = 4.78
d = FULL
S = 0.010

SDMH E-2

18" RCP
A = 1.55
Q = 7.48
V = 4.23
d = 0.55
S = 0.069

18" RCP
A = 1.80
Q = 7.48
V = 4.23
d = 0.50
S = 0.107

CB E-3
A = 0.50
Q = 2.12

ROAD "E" WAIPUA PLACE

CB K-1
A = 0.35
Q = 1.36

CB I-1
A = 0.34
Q = 1.93

18" RCP
A = 0.34
Q = 1.93
V = 1.09
d = 0.35
S = 0.028

18" RCP
A = 0.35
Q = 1.36
V = 0.77
d = 0.27
S = 0.006

18" RCP
A = 1.68
Q50 = 8.90
V = 5.03
d = 1.10
S = 0.009

SDMH L-1

CB M-1
A = 1.05
Q50 = 5.57

18" RCP
A = 1.05
Q50 = 5.5...
V = 3.15
d = FULL
S = 0.010

CB A-2
A = 0.13
Q = 1.15

CDI D-1
A = 0.62
Q = 2.42

CB A-3
A = 1.05
Q = 3.91

18" RCP
A = 1.05
Q = 3.91
V = 2.21
d = 0.65
S = 0.010

18" RCP
A = 0.62
Q = 2.42
V = 1.37
d = FULL
S = 0.010

10'x6' DRAINAGE EASEMENT IN FAVOR OF C & C OF HONOLULU

"A" STREET

5' DRAINAGE EASEMENT

FAVOR OF LOT OWNERS

18" RCP
A = 0.71
Q = 3.43
V = 1.94
d = 0.35
S = 0.059

CB E-4
A = 0.62
Q = 2.63

18" RCP
A = 0.09
Q = 0.80
V = 0.45
d = 0.28
S = 0.017

CB E-5
A = 0.09
Q = 0.80

ROAD "D" HENOHENO PLACE

CB L-1
A = 0.63
Q = 2.59

18" RCP
A = 0.63
Q = 2.59
V = 1.46
d = 0.40
S = 0.023

"C" STREET

W8" W20" W6"

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64