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

August 5, 1981
W.O. 761-20

George Sakoda Realty
c/o Park Engineering, Inc.
190 South King Street
Suite 2085
Honolulu, Hawaii 96813

Attention: Mr. George Yokota

Subject: Interim Compaction Report No.1
Kaluanui Residential Development
Lots 1, 3, 5, 8, 9, 11 to 26
Kaluanui, Oahu, Hawaii

Gentlemen:

From April 21, 1980 to March 20, 1981, we have inspected the earthwork and grading operations at the above referenced site on an intermittent basis. This interim report summarizes our inspection and compaction tests performed at the above referenced lots.

The grading operations at the above lots consisted of fill, generally less than about 6 feet.

Prior to filling, the site was proofrolled to locate soft or loose pockets. Any soft pockets encountered were overexcavated and backfilled with on-site sandy soil.

Prior to fill placement, the existing vegetation was removed and the existing ground scarified and recompacted. The fill was then placed in horizontal lifts and compacted to a minimum of 90% of its maximum dry density.

Sandy material was used in the lower portions of the fill. When this sandy material was no longer available, reddish brown silty clay, excavated from the adjacent agricultural subdivision, was used to fill the lots up to finished grade. Laboratory swell tests indicated that these soils have moderate swell potential and therefore, future house foundation, slab-on-grade and driveway would have to be designed for these expansive soils. It is our observation that the top 3 feet of the fill can be considered to be moderately expansive subgrade soil conditions.

8/7/81

During fill placement operations, periodic field density tests were done in accordance with the American Society for testing and Materials (ASTM) Test Designation D-1556 (Sand Cone Method).

During the grading period, various on-site soils were tested prior to being used in the field. The maximum dry densities and optimum moisture contents were established in our laboratory in accordance with ASTM Test Designation D-1557 (Modified Proctor) and the test results are as follows:

Soil Type	Maximum Dry Density	Optimum Moisture Content
Mottled Brown Clayey Silt with decomposed gravel	82.0	37.0%
Tan Sand with Coral Gravel	104.5	20.5%

Existing Cesspools

Two existing cesspools were indicated on the grading plans to be filled. However, these cesspools could not be located by the contractor during the proofrolling and site filling operations at the site.

RECOMMENDATIONS

Building Foundations

Moderately expansive soil was used for the upper portion of the lot fill, therefore, foundations for the future houses should be designed for these expansive soils.

Spread footing foundations should be embedded a minimum of 2 feet below the outside finished grade.

Concrete slab-on-grade, patio slab and driveways should be avoided over these soils unless they are properly designed by a soils engineer.

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 technician.

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.

We strongly suggest that all of the above referenced recommendations and restrictions be made available to all future lot and home purchasers of this subdivision, so that they will include the consultation of a qualified professional in the planning, design and construction of any improvements.

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 Bob Y.K. Wong
Bob Y.K. Wong, P.E.

BYKW:CSM:DL:jp

Enclosure: Summary of Density Tests -
Control of Compacted Fill

(1 copy submitted to George Sakoda Realty)
(1 copy submitted to Park Engineering, Inc.)

SUMMARY OF DENSITY TESTS
CONTROL OF COMPACTED FILL

W.O. NO. 761-20
PAGE 1 OF 2

OWNER George Sakoda
JOB Kaluanui Agricultural Subd.

TEST NO.	DATE	TEST LOCATION	ELEV. (Feet below finish grade)	% COMP. REQ'D	MAX. DRY DENSITY P.C.F.	FILL MOISTURE %	TEST DRY DENSITY P.C.F.	% MAX. DRY DENSITY	REMARKS
9	6-20-80	LOT 1	4	90.0	104.5	15.0	101.4	97.0	PASS
34	3-6-81	1	F.G.	"	82.0	32.5	77.2	94.2	PASS
7	6-9-80	3	F.G.	"	104.5	15.0	100.3	95.9	PASS
11	6-20-80	5	4	"	104.5	20.0	99.3	95.1	PASS
36	3-6-81	5	F.G.	"	82.0	35.2	78.8	96.1	PASS
16	6-20-80	8	5	"	104.5	16.7	101.5	97.2	PASS
30	3-4-81	8	6	"	82.0	36.2	74.5	90.9	PASS
41	3-13-81	8	F.G.	"	82.0	31.2	75.9	92.5	PASS
15	6-20-80	9	5	"	104.5	20.0	101.6	97.2	PASS
42	3-13-81	9	F.G.	"	82.0	35.9	78.1	95.2	PASS
14	6-20-80	11	5	"	104.5	22.6	100.3	96.0	PASS
31	3-5-81	11	6	"	82.0	36.1	79.8	97.3	PASS
43	3-13-81	11	F.G.	"	82.0	33.8	79.2	96.6	PASS
38	3-13-81	12 & 13	5	"	82.0	35.2	76.9	93.8	PASS
49	3-19-81	12 & 13	F.G.	"	82.0	34.1	78.1	95.2	PASS
40	3-13-81	14	F.G.	"	82.0	32.1	76.7	93.5	PASS
44	3-19-81	15	F.G.	"	82.0	30.2	75.8	92.4	PASS
39	3-13-81	16	5	"	82.0	34.6	78.2	95.4	PASS
48	3-19-81	16	F.G.	"	82.0	32.1	76.2	92.9	PASS
47	3-19-81	17	F.G.	"	82.0	27.2	80.2	97.8	PASS
27	3-4-81	18	F.G.	"	82.0	35.4	80.3	97.9	PASS
45	3-11-81	19	F.G.	"	82.0	35.9	74.8	91.2	PASS
25	2-19-81	20	4	"	82.0	36.5	80.1	97.6	PASS

SUMMARY OF DENSITY TESTS
CONTROL OF COMPACTED FILL

W.O. NO. 761-20
PAGE 2 OF 2

OWNER George Sakoda
JOB Kaluanui Agricultural Subd.

TEST NO.	DATE	TEST LOCATION	ELEV. (Feet below finish grade)	% COMP. REQ'D	MAX. DRY DENSITY P.C.F.	FILL MOISTURE %	TEST DRY DENSITY P.C.F.	% MAX. DRY DENSITY	REMARKS
28	3-4-81	LOT 20	5	90.0	82.0	37.2	81.1	98.9	PASS
50	3-20-81	20	F.G.	"	"	32.5	80.1	97.7	PASS
33	3-5-81	21	5.5	"	"	35.2	76.8	93.7	PASS
45	3-19-81	21	6	"	"	29.4	76.4	93.2	PASS
51	3-20-81	21	F.G.	"	"	32.9	78.4	95.6	PASS
23	1-21-81	22	F.G.	"	"	37.6	79.5	97.0	PASS
24	1-21-81	23	F.G.	"	"	39.6	77.4	94.4	PASS
52	3-20-81	24	F.G.	"	"	31.0	76.8	93.7	PASS
26	2-19-81	25	5.5	"	"	35.2	79.2	96.5	PASS
4	3-19-81	25	6	"	"	29.9	78.1	95.2	PASS
53	3-20-81	25	F.G.	"	"	35.4	75.1	91.6	PASS
54	3-20-81	26	F.G.	"	"	33.1	75.8	92.4	PASS

180V 1645

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

PERMIT NO. 9509

To the Director and Chief Engineer
Department of Public Works
City and County of Honolulu

APPLICATION AND PERMIT FOR

GRADING SR-54

Application is hereby made to do grading work in conformity with Chapter 23, R. O. 1969, As Amended, as follows: 80107.005

TAX MAP KEY					ENG. SOILS REPORT	EST. QUANTITY	PERMIT FEE	FEE RECEIVED
ZONE	SEC.	PLAT	PAR.	LOT	DATE FILED:	EXCAV. CU.YD.	$	$
5	3	8&9				0		107.00
						FILL CU.YD. 13,108	$ 107.00	BY: DATE: 12/2/80

Located at KALUANUI RESIDENTIAL DEVELOPMENT

Lot Area _____ Sq. Ft. 3.3 Acres

Fill Material BROWN SOIL

Description of Soil

Existing Ground _____

☑ Temporary Erosion Control

Procedures on File

☑ Bond on file w/ 8932

☑ Dept. of Public Works to Inspect

☐ Bldg. Dept. to Inspect

Estimated Starting Date DEC. 3 19 80 Estimated Completion Date FEB 14 19 81

Remarks/Purpose of Work: TO ~~GRADE SITE FOR S/D~~

(SUPERSEDES G.P. 8932 - NO WORK DONE)

Owner GEORGE SAKODA REALTY Address 1305 S. KING ST. RM A Phone 538 1948

Engineer PARK ENGINEERING, INC (George Yakota) Address 190 S. KING ST. 2085 Phone 531 1676

Contractor HIGHWAY CONSTRUCTION CO Address 720 UMI ST. Phone 841 5511

Date of Application DEC 2 19 80 Permittee X R S Park (HIGHWAY CONSTRUCTION CO.)

LETTER OF AUTHORIZATION W/ 8932

Application Reviewed By _____ Date 12/2/80 19 _____
SERVICE ENGINEER

To the Applicant:

Permission is hereby given to do the above work according to the conditions hereon and according to the approved plans and specifications pertaining thereto, subject to compliance with Chapter 23, R. O. 1969, As Amended.

Remarks: _____

Date ~~DEC~~ DEC 2 1980

Issued By: _____
FOR DIRECTOR AND CHIEF ENGINEER, DEPT. OF PUBLIC WORKS

Contractor shall notify this office **two working days** before commencing any work and arrange for necessary inspectional services.

THIS PERMIT WILL EXPIRE UNLESS WORK IS STARTED WITHIN 90 DAYS FROM DATE OF ISSUE; OR IF WORK IS SUSPENDED OR ABANDONED FOR 60 DAYS OR MORE AFTER WORK IS BEGUN; OR ONE YEAR FROM DATE OF ISSUE

I hereby certify that all work as requested above has been completed in conformity with Chapter 23, R. O. 1969, As Amended and in accordance with the approved plans and specifications.

PERMIT CLOSED

Date 7/9 1981 Permittee R S Park

Date 7/9 1981 OK NB Approved By: John C. J. Lee 8/11/81

Final Soils Report Date Filed _____ 19 _____

park engineering, inc.

Suite 2085, Pacific Trade Center ☐ 190[illegible] St., Honolulu, Hawaii 96813 ☐ Telephone (808) 531-1676

July 15, 1981

Dr. Michael Chun
Director and Chief Engineer
Department of Public Works
City & County of Honolulu
Honolulu, Hawaii 96813

Attention: Construction Branch

Dear Dr. Chun:

Subject: Kaluanui Residential Development
at Kaluanui, Koolauloa, Oahu, Hawaii
Tax Map Key: 5-3-08 and 5-3-09

This is to certify that grading within the subject subdivision have been completed.

Grading of Lots 1, 3, 5, 8, 9 and 11 to 26 inclusive substantially comforms to elevation as shown on plan dated August 23, 1979.

Sincerely yours,

Park Engineering, Inc.

ROBERT S. TORIGOE
REGISTERED LAND SURVEYOR
No. 1361
HAWAII, U. S. A.

Registered Professional Surveyor
Certificate Number 1361-S

RST:ao

cc: Highway Construction
Geolabs-Hawaii, Inc.

park engineering, inc.

Suite 2085, Pacific Trade Center ☐ 190 S. King Street, Honolulu, Hawaii 96813 ☐ Telephone (808) 531-1676

August 10, 1981

Mr. Hung Joong Young
Chief
Division of Engineering
Department of Public Works
City and County of Honolulu
Honolulu, Hawaii 96813

Attention: Mr. John Lee

Dear Mr. Young:

Subject: Kaluanui Residential Development

As requested, I am attaching a copy of Geolabs-Hawaii's Interim Compaction Report No. 1 for Lots 1, 3, 5, 8, 9, 11 to 26 for the subject project.

Sincerely yours,

PARK ENGINEERING, INC.

George Yokota
Associate

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Enclosure