February 16, 1983

DWA-Holman/Atkins Joint Venture
C/O Group 70, Inc.
924 Bethel Street
Honolulu, Hawaii 96813

Attention: Mr. William Atkins

Gentlemen:

Letter for Record
Geotechnical Consultation During Construction
Waipahu Warehouse Project
TMK: 9-4-48:9
Waipahu, Oahu, Hawaii

Upon the request of Mr. Val Peroff of Alahao, Inc. during a telephone conversation on February 7, 1983, this letter is written in regards to the completion of the grading work for the Waipahu Warehouse project in Waipahu, Oahu, Hawaii. We believe that the grading work was completed during the week of May 28, 1982. The surcharging and placement of the base course section for the pavement were performed in general accordance with the earthwork specifications and our recommendations for the project. Observation of the fill placement was performed by others. Evaluation of the surcharging was presented in our letter dated January 8, 1982, Attachment 1.

The approximate location of each field density test performed on the base course layer is shown on the Site Plan, Attachment 2. The test results are presented on the Summary of Field Density Tests, Attachment 3.
Should you have any questions regarding the contents of this letter, please contact us.

Yours very truly,

DAMES & MOORE

S.K. Djou
Partner

SKD:GY/ds33111(152A)
(Five Copies Submitted)

Attachments: 1 - Dames & Moore Letter Dated 1/08/82
2 - Site Plan
3 - Summary of Field Density Tests

cc: Group 70, Inc.
    Attn: Mr. Roy Nihei
Alahao, Inc.
    Attn: Mr. Val Peroff
January 8, 1982

DWA - Holman/Atkins Joint Venture
c/o Group 70 Inc.
924 Bethel Street
Honolulu, Hawaii 96813

Attention: Mr. William Atkins

Gentlemen:

Consultation Regarding Surcharge
Warehouse II
Waipahu Warehouse Project
TMK 9-4-48:09
Waipahu, Oahu, Hawaii

This letter presents our evaluation of the surcharging at Warehouse II, the smaller warehouse, at your Waipahu Warehouse Project, TMK 9-4-48:09, Waipahu, Oahu, Hawaii.

Most of the smaller warehouse area has been surcharged since early October 1981. The surcharge consisted of earth fill to elevations varying from +13.5 to +17.5 feet. All elevations refer to the City and County benchmark located at Leokane Street and Leoleo Street which is assumed to be at the Elevation +13.79 feet. It is our further understanding that the original ground contours prepared by Austin Tsutsumi and Associates were also based on this benchmark elevation.

The area of surcharge is shown on the Plot Plan, Attachment 1. Settlement gauges have been installed at locations shown on Attachment 1. Readings have been taken regularly since October, and these readings are plotted on Attachments 2.1 through 2.4. Judging from the pattern of settlement readings, we believe that the settlements have slowed down considerably. To date, the amount of settlement achieved from surcharging is at least on the order of 1-1/2 inches.

With the revised finish floor elevation at +11 feet, the planned small warehouse is estimated to induce 5 to 6 inches of total settlement without surcharge. It can be seen that the surcharge program to date has already induced 1-1/2 to 2 inches of settlements. We estimate that another 1 inch of settlement will occur during the construction, and the net remaining settlements for the smaller warehouse could be 2 to 3 inches after the construction.
Holman/Atkins Joint Venture  
January 8, 1982  
Page Two

Our previous report was addressed to a finish floor at Elevation +10 feet and estimated a remaining settlement of about 2 inches after the construction. Because of the heavier fill weight caused by raising the floor slab to Elevation +11, the settlement, and consequently the risk, would be somewhat larger than the original scheme, even though the surcharge to date has improved the site such that the settlement after the building construction would be compatible with the original building scheme.

We believe that continued surcharging will improve the site conditions in a year, however, it is felt that the effective benefit of the surcharge has been substantially realized.

If you have any questions regarding this letter please contact us.

Yours very truly,

DAMES & MOORE

[Signature]

Shengkai Cheng
Senior Engineer

SKC:jlh12457-002(2617A)  
(Three copies submitted)

Attachments: 1 - Plot Plan  
2.1 - Settlement Plots  
2.2 - Settlement Plots  
2.3 - Settlement Plots  
2.4 - Settlement Plots
STATEMENT FLOTS

Dames & Moore

ATTACHMENT 2.1
SETTLEMENT PLOTS

Dames & Moore
ATTACHMENT 2:4
**SUMMARY OF FIELD DENSITY TESTS**

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<th>% COMP.</th>
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* T.O.B. - Top of Base Course
March 7, 1983

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

Re: Waipahu Warehouse at
94-095 Leokane Street
TMK 0-4-48: 09
Your letter dated 9/10/82 201-22-0530

Gentlemen:

We refer to your letter of September 10, 1982 to Grace Brothers, Ltd. Box 78, Honolulu, Hawaii and grading permit application and permit #9937 dated August 26, 1981.

We hereby verify that the work has been completed in conformity to Chapter N, paragraph 2 of the regulations, and the approved plans and specifications and the engineers soil report for the above mentioned project.

Sincerely,

[Signature]

Valentine Peroff, Jr.,
President