File 315-2
December 3, 1981

Gray, Hong and Associates, Inc.
116 South King Street, Room 508
Honolulu, Hawaii 96813

Attention: Mr. Daniel Hong

Subject: EARTHWORK MONITORING
Halekou Road Subdivision
Kaneohe, Oahu, Hawaii

Gentlemen:

We have provided testing and monitoring services for the mass grading for the roadway and lots of the Halekou Road Subdivision presently under construction. This letter summarizes our test results and comments.

During July 1 through October 2, 1981, we observed the earthwork operations for the above-captioned project during forty-three site visits. Our observations, comments and test results have been reported in the previously transmitted Daily Field Report No's 1 through 43.

Field density tests performed by our firm indicate that adequate compaction has been obtained. The field test results are summarized on the enclosed Table I. These tests, upon which acceptance is based, show values generally in excess of 90 percent relative compaction within the building pads and a minimum of 95 percent relative compaction in the roadway subgrade, select borrow and base course materials. The maximum density was established in accordance with ASTM Test Designation D1557.

Our field monitoring indicates that the earthwork has been performed in accordance with our Subsurface Investigation Report of August 27, 1980 and the Grading Ordinances.
of the City and County of Honolulu. This includes the removal of the unsuitable import material as recommended in our September 9, 1981 letter. The material was removed from the roadway and replaced with select borrow.

If you have any questions, please do not hesitate to contact us.

Respectfully submitted,

FEWELL GEOTECHNICAL ENGINEERING, LTD.

By Richard B. Fewell, P.E.

RBF/fse

Enclosure

Copy to:  GHS, Inc.
1305 South King Street
Honolulu, Hawaii 96814
Attn: Mr. George H. Sakoda
TABLE 1

Summary of Field Density Test Results

<table>
<thead>
<tr>
<th>Test No.</th>
<th>Date</th>
<th>Location</th>
<th>Elevation (feet)</th>
<th>Dry Density (p.c.f.)</th>
<th>Moisture Content (%)</th>
<th>Percent Compaction</th>
<th>Remarks</th>
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### TABLE I (cont)

**Summary of Field Density Test Results**

<table>
<thead>
<tr>
<th>Test No.</th>
<th>Date</th>
<th>Location</th>
<th>Elevation (feet)</th>
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<th>Moisture Content (%)</th>
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**NOTE:**
- FSG - Finish Subgrading
- FPG - Finish Pad Grade
- FG - Finish Grade

Test numbers 18 and 37 were deleted.
December 10, 1981

Mr. Michael Chun, Director
Department of Public Works
City & County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

SUBJECT: Halekou Road Subdivision

Dear Mr. Chun:

Attached herewith are 1) Grading Certification from Towill, Shigeoka & Associates, Inc. and 2) Final Soils Report from F.G.E., Ltd.

Based upon the above, we hereby state that to the best of our knowledge, the grading for the project has been completed substantially in accordance with the approved grading plan.

The As-Built Plans are being submitted under separate cover letter.

Very truly yours,

Gray, Hong & Associates, Inc.

Daniel S. C. Hong

DSCH:mp
Mr. Danny Hong
Gray, Hong & Associates, Inc.
116 South King Street, Room 508
Honolulu, Hawaii 96813

Dear Mr. Hong:

Subject: Halekou Road Subdivision
Halekou, Kaneohe, Koolaupoko, Oahu, Hawaii
Tax Map Key: 4-5-69: 29 and 31

We have completed final grade checks for Lots 1 to 16, incl., for the subject project and certify that all of the said Lots were graded according to the Grading Plan.

Sincerely yours,

TOWILL, SHIGEOKA & ASSOCIATES, INC.

Lester T. Shimabukuro
Vice President