DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. FASI
MAYOR

SAM CALLEJO
DIRECTOR AND CHIEF ENGINEER

RECEIVED
'92 FEB 10 A9:58
OFC. OF ENVIRONMENTAL QUALITY CONTROL

IN REPLY REFER TO:
92-11-0025

February 5, 1992

Mr. Brian J. J. Choy, Director
Office of Environmental Quality Control
State of Hawaii
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Choy:

Subject: Negative Declaration for the Construction of Drainage and Wall Improvements in the Moanalua Earth Movement Area, TMK: 1-1-44, Honolulu, Oahu, Hawaii

The Department of Public Works has reviewed the environmental assessment for the Construction of Drainage and Wall Improvements in the Moanalua Earth Movement Area and has determined that the project will not have any significant negative impacts on the environment. Based on our determination, we are filing a Notice of Negative Declaration for this project.

Enclosed are four copies of the Notice of Negative Declaration.

Please contact Jolie Nishikawa at 523-4041 with any questions you may have in regard to this matter. Thank you.

Very truly yours,

SAM CALLEJO
Director and Chief Engineer

Encl.

1992-02-23-OA-FEA- Moanalua Earth Movement Area Drainage & Wall Improvements

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

# NOTICE OF NEGATIVE DECLARATION

# FOR THE

# CONSTRUCTION OF DRAINAGE AND WALL IMPROVEMENTS

# WITHIN THE MOANALUA EARTH MOVEMENT AREA

TAX MAP KEY: 1-1-44

This document is prepared pursuant to Chapter 343, HRS.

PROPOSING AGENCY: DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RESPONSIBLE OFFICIAL: C. Michael Street 2/5/92
for SAM CALLEJO MF Date
Director and Chief Engineer

Prepared by
DIVISION OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

*TABLE OF CONTENTS*


| | | Page |
|---|---|---|
| I. | Description of Proposed Action and Statement of Objective | 1 |
| II. | Description of Affective Environment | 1 |
| III. | Agencies Consulted in Making this Assessment | 2 |
| IV. | General Description of the Project's Technical, Economic, Social, and Environmental Characteristics | 2 |
| V. | Identification and Summary of Major Impacts and Proposed Mitigation Measures | 3 |
| VI. | Alternatives Considered | 5 |
| VII. | Determination | 5 |
| VIII. | Reasons for Supporting Determination | 5 |

Appendix A - Location Map

Appendix B - Site Map

Appendix C - Rainfall Data

Appendix D - Plans

Appendix E - Comments

## I. *DESCRIPTION OF PROPOSED ACTION AND STATEMENT OF OBJECTIVE*

The proposed project involves the construction of fifteen vertical drains within the road right-of-way fronting 1597, 1601, 1605, and 1609 Ala Lani Street and a tied-back retaining wall along the South property lines of 1601 and 1605 Ala Lani Street (see Appendix B - Site Map).

The objective of the project is to stabilize the crown and toe of the landslide.

## II. *DESCRIPTION OF THE AFFECTED ENVIRONMENT*

The project site is located within the northwesterly half of Moanalua Valley (see Appendix A - Location Map). It includes the roadway area fronting 1601, 1605, and 1609 Ala Lani Street and the City owned properties at 1601 and 1605 Ala Lani Street (TMK: 1-1-44: 019, 020).

The area is subject to earth movement which may affect the structural stability of municipal infrastructures.

The affected area is part of Census Tract (CD) 67.01. This census tract had a residential population of 6,894 in July 1990 in 3,400 residential units. Four lots are in the affected area.

Temperature and precipitation are recorded at Honolulu International Airport. The average temperature ranged from 72.6 degrees fahrenheit during the winter to 81 degrees fahrenheit during the summer. Average annual precipitation was 23 inches.

Some information on daily rainfall over a four-month period was collected by the project consultant. This data appears in Appendix C.

The major land uses of the immediate area are residential. Any relating construction improvements are consistent with the Primary Urban Center Development Plan Public Facilities Map.

The closest historic site is Pohaku Ka Luahine (80-10-93), part of the Samuel M. Damon Estate. It is listed in the Hawaii Register of Historic Places and is approximately 2000 feet northeast of the site.

Without special engineering measures, drainage of the landslide zone would be slow and inefficient.

The project proposes to construct fifteen (15) vertical drain wells approximately 62 feet in depth and 2 feet in diameter (see Appendix D) in the road right-of-way fronting 1597, 1601, 1605, and 1609 Ala Lani Street. The drains are intended to have two functions: 1) The interception of groundwater to prevent it from draining into the area of concern, and 2) the drainage of existing groundwater in the land mass of concern.

Preliminary analyses indicate that site conditions warrant stabilization of the toe of the slide.

In order to address this need, construction of a tied-back retaining wall which consists of drilled-in, grouted, H-beam soldier piles with two rows of post tensioned tieback anchors (see Appendix D) is being proposed. The wall would be approximately 20-25 feet in height and 114 feet in length.

The full height of the wall will be exposed only during construction.

The project has an estimated construction cost of $980,000. It is anticipated that construction will begin in the Spring of 1992 and will take approximately one year to complete. Capital Improvement Program funds for FY 92 will be utilized.

The project will not require the displacement or relocation of any people.

The project will be constructed on properties belonging to the City and County of Honolulu.

## V. *IDENTIFICATION AND SUMMARY OF MAJOR IMPACTS AND PROPOSED MITIGATION MEASURES*

The environmental impact of the proposed project will be limited to the construction phase and may include the following temporary, unavoidable, adverse environmental effects:

A. *Dust and Noise Emission:* The discharge of dust into the atmosphere may occur during the construction period. This is, however, only a short-term effect on the environment. Dust will be reduced and controlled through the application of water and/or

other appropriate methods. The specifications will contain provisions that require the Contractor to prevent dust nuisance at all times and have sufficient equipment and manpower at the job site to accomplish this.

Noise will be generated by construction equipment such as backhoes, trucks, and drilling equipment. The increase in noise level by construction equipment cannot be avoided but will be controlled and limited to normal working daylight hours. The Contractor will be required to obtain a Community Noise Permit pursuant to Chapter 43 of the State Public Health Regulations and shall comply with the provisions of Chapter 42, Vehicular Noise Control of Oahu. Individuals that may be adversely affected by the construction noises will be residents of the surrounding community. The sound level from equipment noise has been estimated for locations at various distances from the work area. The results may be summarized as follows:

| *Location* | | *Distance from Project* | *Sound Level* |
|---|---|---|---|
| (1) | Nearest residence | 50 feet | 85 dB |
| (2) | Nearest church | 5300 feet | 44 dB |
| (3) | Nearest school | 5000± feet | 45 dB |
| (4) | Nearest medical center | 2000 feet | 53 dB |
| (5) | Nearest playground | 2400 feet | 51 dB |
| (6) | Nearest library | 5000± feet | 45 dB |

B. *Archaeological Deposits.* Since the construction involves site excavation, the possibility that archaeological deposits may be impacted has been recognized. The specifications will require the Contractor to contact the Historic Sites Section of the Department of Land and Natural Resources in the event that such deposits are encountered.

## VI. *ALTERNATIVES CONSIDERED*

The following courses of action were considered: (1) No action, (2) superimposed buttress, and (3) the proposed project.

*Alternative 1.* If no action is taken, earth movement in the area will continue. Enlargement of the area of earth movement is also possible if no mitigative measures are taken.

*Alternative 2.* The construction of a buttress at the toe was considered as an alternative to the tied-back retaining wall. Implementation of this alternative would require the displacement of people due to removal of three additional houses along Ala Aolani (1618, 1614, and 1626). Upon further research, this option was rejected due to the possible destabilizing (counterproductive) geotechnical effects on such variables as pore pressure.

*Alternative 3.* The proposed project, addresses all related site factors: high intensity rainfall, presence of an elevated groundwater reservoir, steep slopes, high groundwater pore pressure, poor drainage at base, minimization of impact on surrounding residential area, and limited space. Completion of the project will mitigate further spread of and stabilize the area of earth movement.

## VII. *DETERMINATION*

After preparing an environmental assessment, we have determined that the proposed project will not have a significant impact on the environment; and an environmental impact statement will not be prepared.

## VIII. *REASONS FOR SUPPORTING THE DETERMINATION*

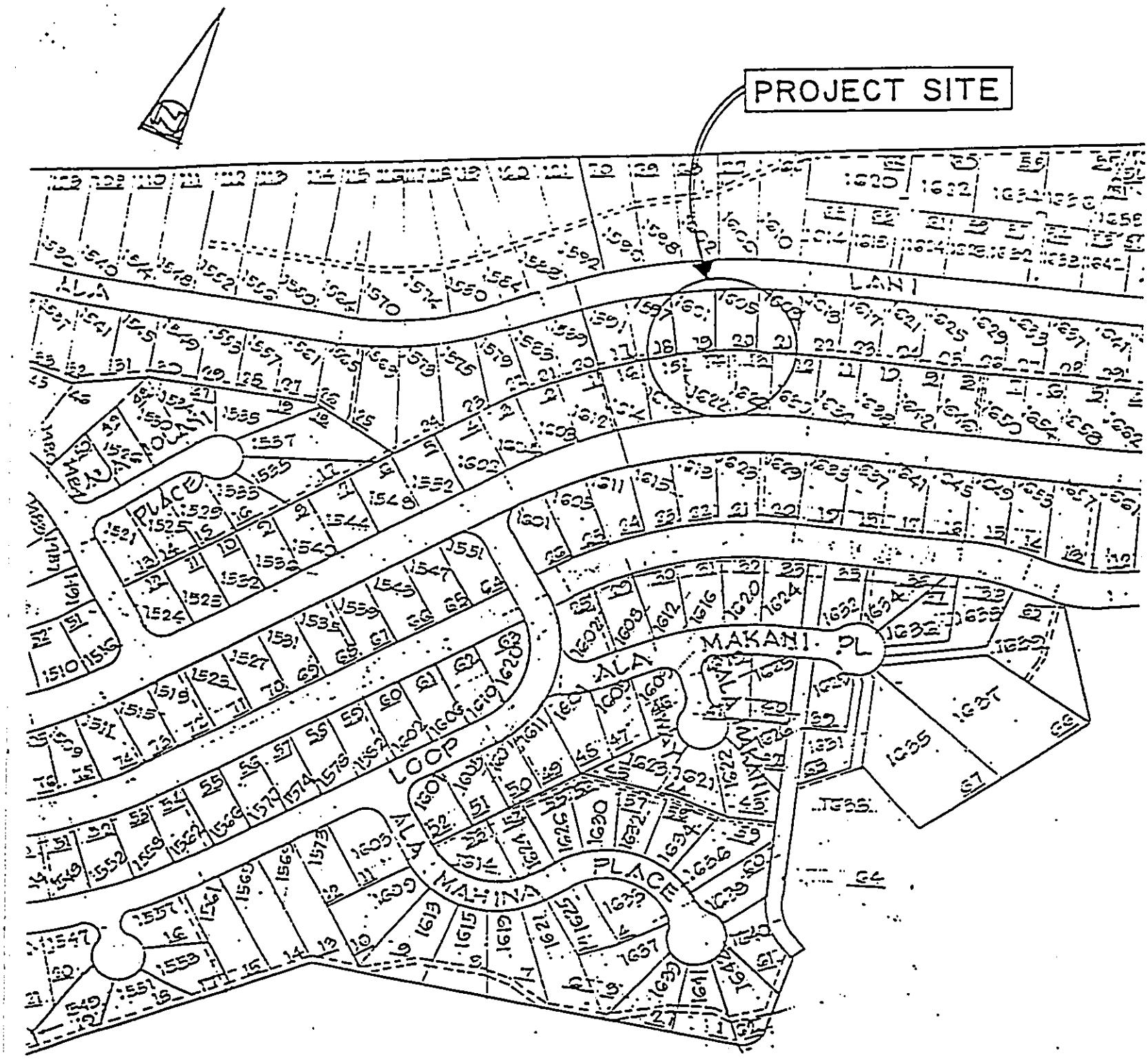
Based on the criteria, the policies, guidelines, and provisions of Chapters 342, 343, and 344, HRS, the reasons supporting the Negative Declaration determination are that the proposed project will not:

- Affect rare or endangered species of flora or fauna.
- Affect any natural or cultural resources.
- Affect undeveloped lands.

- Conflict with existing land use and development plans.
- Have significant long term effect on air quality, water quality, or ambient noise levels.
- Displace any residences or businesses.
- Be located in close proximity to any known natural, historic, or archaeological sites.

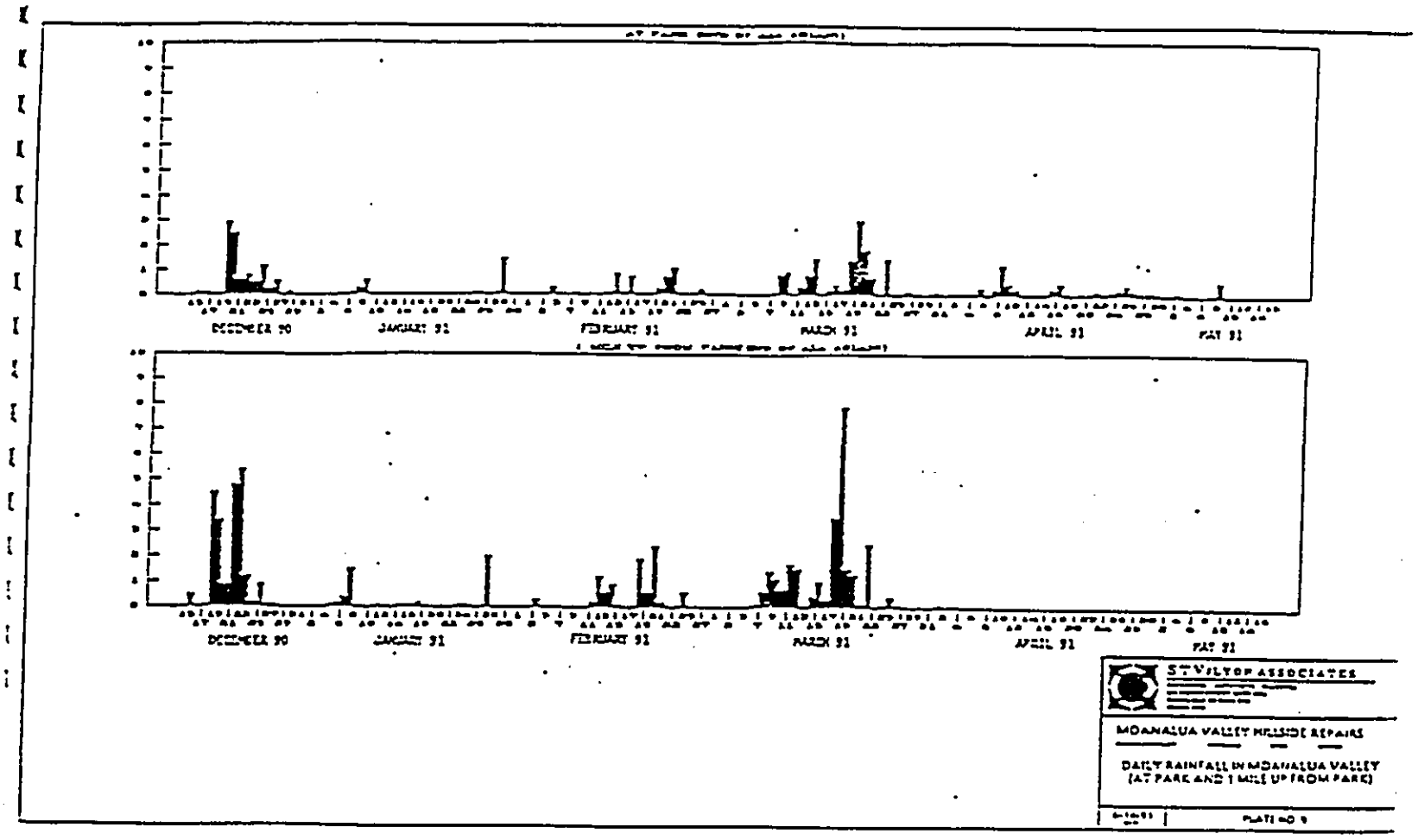
# APPENDIX A
# LOCATION MAP

SCALE IN FEET
1000 0 1000 2000 3000




# APPENDIX B
# SITE MAP

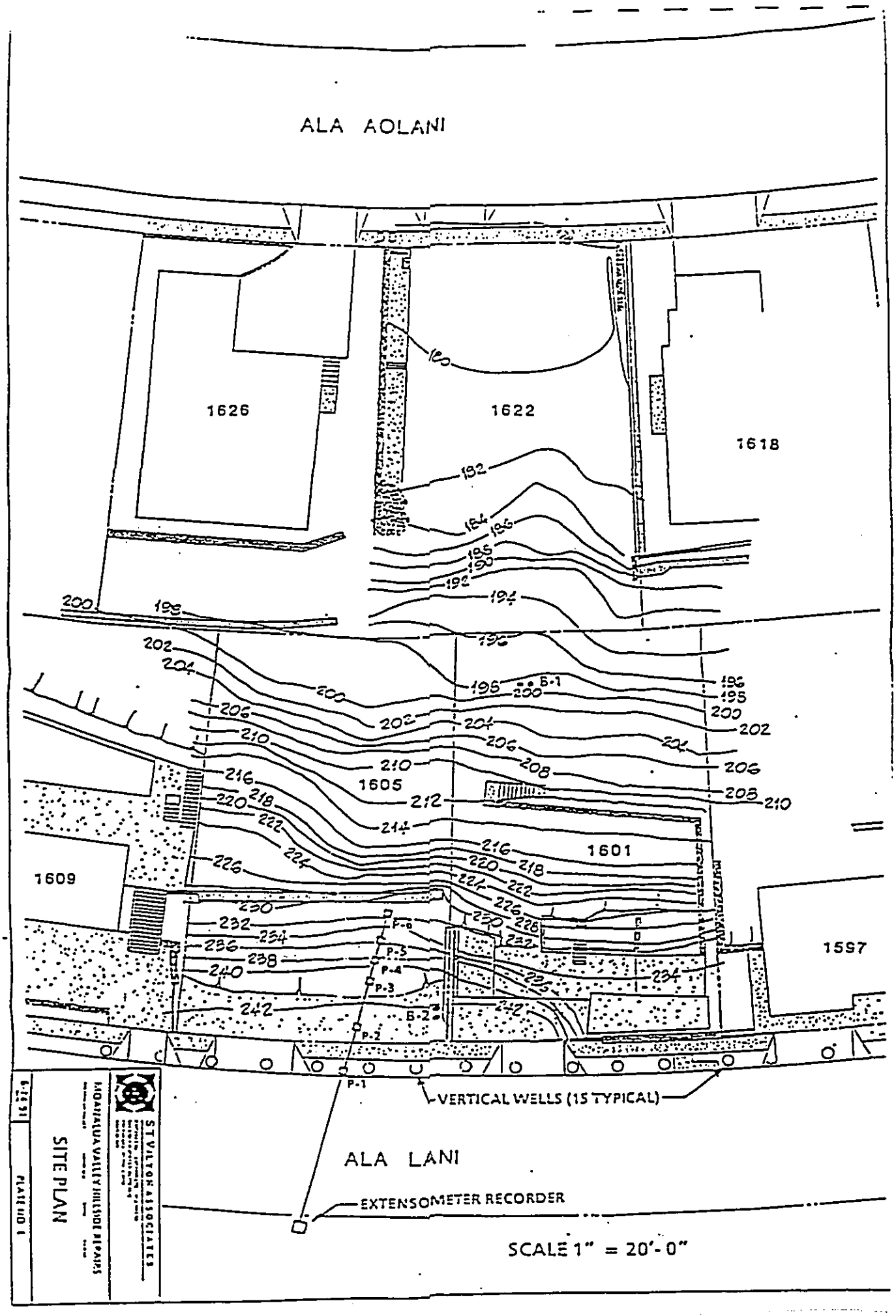
SCALE IN FEET
100 0 100 200 300

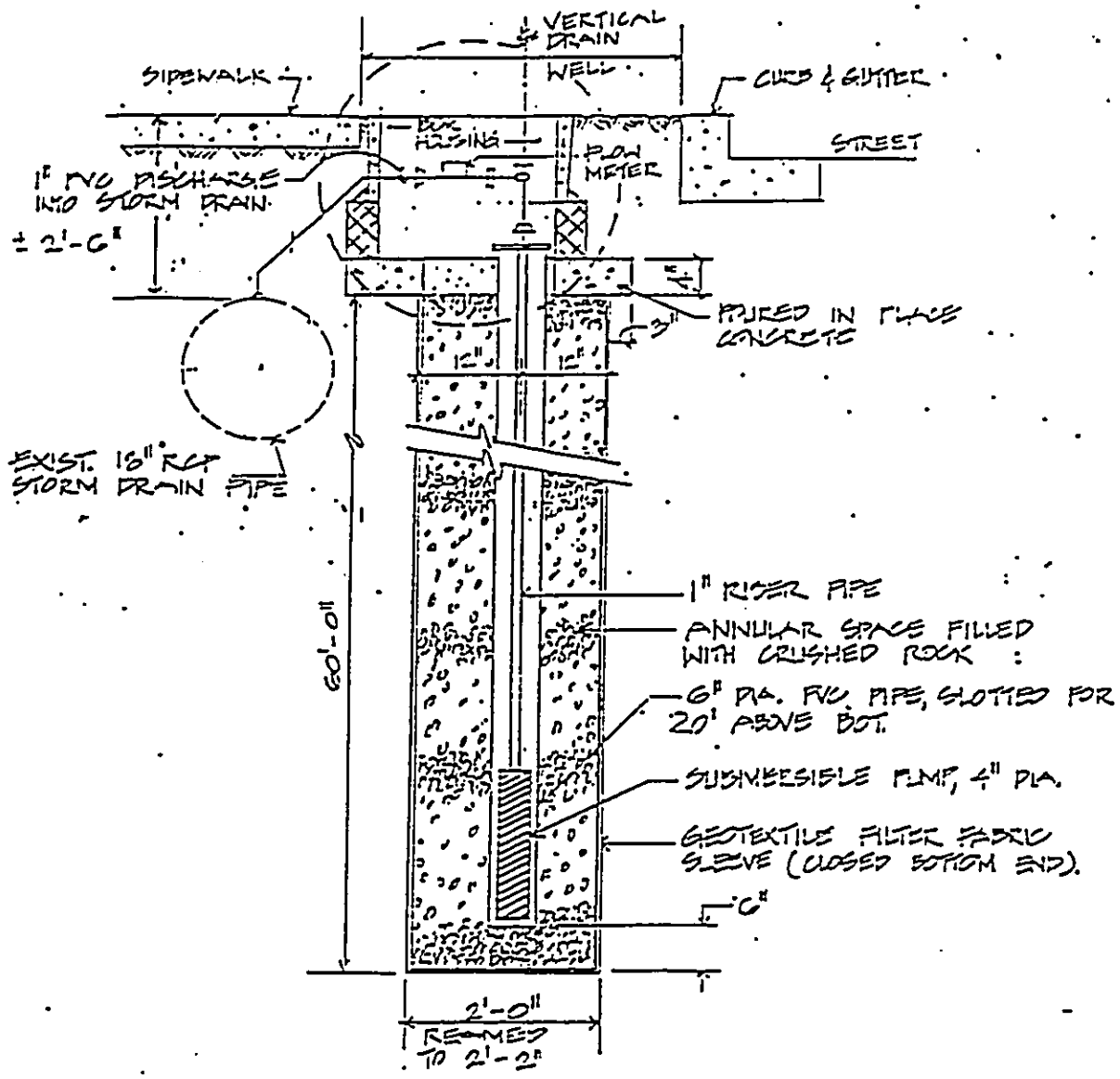

DECEMBER 90
JANUARY 91
FEBRUARY 91
MARCH 91
APRIL 91
MAY 91
DECEMBER 90
JANUARY 91
FEBRUARY 91
MARCH 91
APRIL 91
MAY 91
MOANALUA VALLEY HILLSIDE REPAIRS
DAILY RAINFALL IN MOANALUA VALLEY
(AT PARK AND 1 MILE UP FROM PARK)

# APPENDIX C

# APPENDIX D

# PLANS


ALA AOLANI
1626
1622
1618
1605
1601
1609
1597
VERTICAL WELLS (15 TYPICAL)
ALA LANI
EXTENSOMETER RECORDER
SCALE 1" = 20'-0"
SITE PLAN
ST VILTON ASSOCIATES




NO SCALE

ST V/LYON ASSOCIATES

ENGINEERS ARCHITECTS PLANNERS

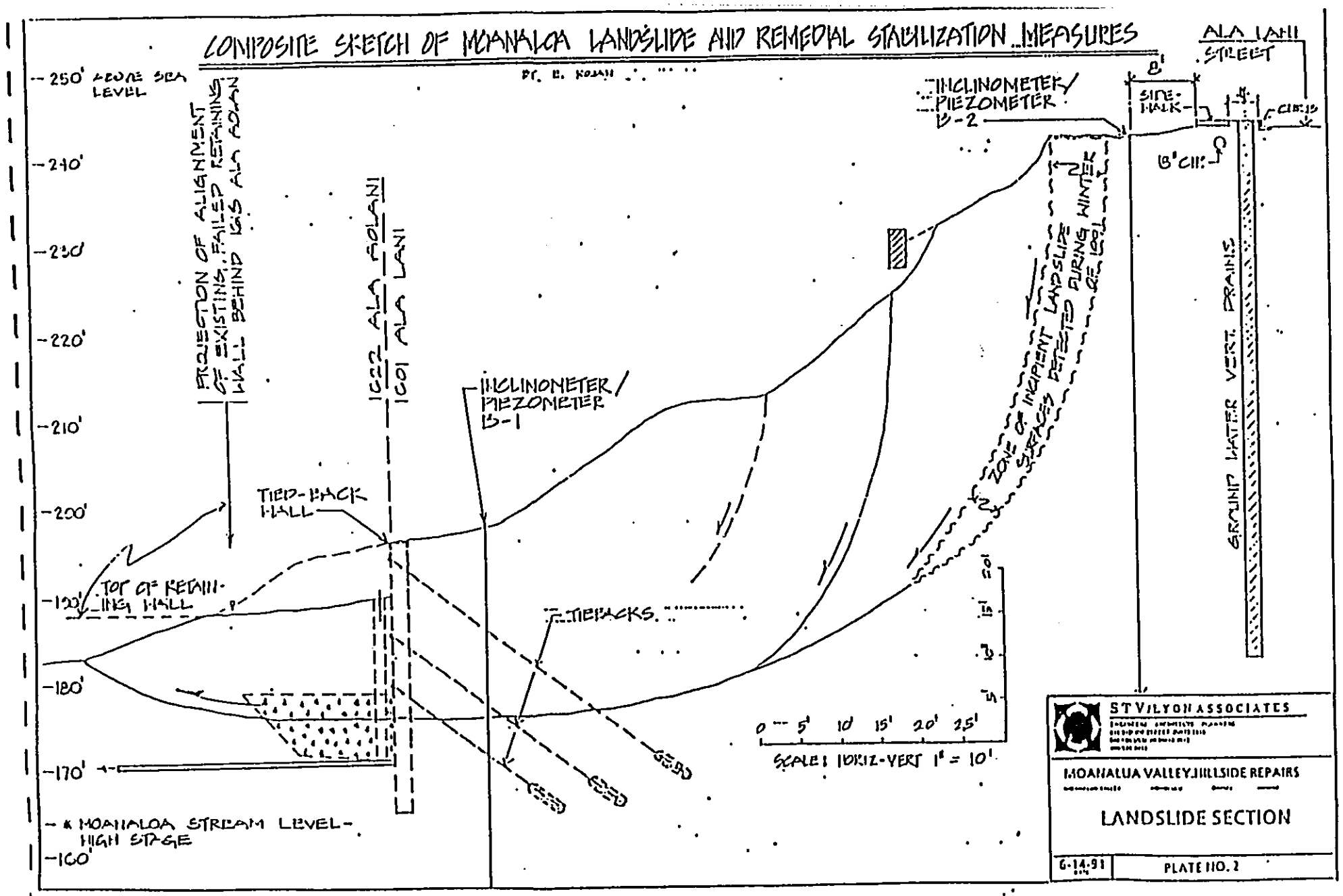
MOANALUA VALLEY HILLSIDE REPAIRS

MOANALUA VALLEY HONOLULU OAHU HAWAII

VERTICAL DRAIN WELL

6-14-91 DATE

PLATE NO. 4


COMPOSITE SKETCH OF MOANALOA LANDSLIDE AND REMEDIAL STABILIZATION MEASURES
250' ABOVE SEA LEVEL
240'
230'
220'
210'
200'
190'
180'
170'
160'
PROJECTION OF ALIGNMENT OF EXISTING, FAILED RETAINING WALL BEHIND 1615 ALA AOLANI
1622 ALA AOLANI
1601 ALA LANI
INCLINOMETER/ PIEZOMETER B-1
INCLINOMETER/ PIEZOMETER B-2
TIED-BACK WALL
TOP OF RETAINING WALL
TIEBACKS
ZONE OF INCIPIENT LANDSLIDE SURFACES DETECTED DURING WINTER OF 1991
ALA LANI STREET
8'
SIDE-WALK
CURB
8' CIR.
GROUND WATER VERT. DRAINS
* MOANALOA STREAM LEVEL-HIGH STAGE
0 5' 10' 15' 20' 25'
SCALE: HORIZ-VERT 1" = 10'
ST VILYON ASSOCIATES
MOANALUA VALLEY HILLSIDE REPAIRS
LANDSLIDE SECTION
6-14-91
PLATE NO. 2

# APPENDIX E

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED
DIV. OF ENGINEERING
APR 24 2 32 PM '91

FRANK F. FASI
MAYOR

SAM CALLEJO
DIRECTOR AND CHIEF ENGINEER

C. MICHAEL STREET
DEPUTY DIRECTOR

In reply refer to
ENV 91-92(616

April 24, 1991

MEMORANDUM

TO: FILES

FROM: ALEX HO
ENVIRONMENTAL ENGINEER

SUBJECT: WELL CONSTRUCTION AT MOANALUA SLIDE AREA

Per telephone conversation with Mr. Ed Sakoda, Geology-Hydrology Section, Water and Land Development Division, Department of Land and Natural Resources, State of Hawaii, on April 22, 1991, an Environmental Assessment is not required for well construction activity.

Alex Ho

ALEX HO
Environmental Engineer

cc: Deputy Director
Eng.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

RECEIVED
DIV. OF PUBLIC WORKS
DEC 19 8 13 AM '91

91-3105

FRANK F. FASI, Mayor
WALTER O. WATSON, JR., Chairman
MAURICE H. YAMASATO, Vice Chairman
JOHN W. ANDERSON, JR.
SAM CALLEJO
REX D. JOHNSON
MELISSA Y.J. LUM
KAZU HAYASHIDA
Manager and Chief Engineer

December 19, 1991

TO: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM DATED NOVEMBER 8, 1991 REGARDING THE ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF DRAINAGE AND WALL IMPROVEMENTS IN THE MOANALUA EARTH MOVEMENT AREA, TMK: 1-1-44

Thank you for the opportunity to review and comment on the proposed earth stabilization project. We have the following comments:

1. We have the no objections to the proposed project. The construction plans were approved by us on October 14, 1991.

2. The waterlines in the vicinity of the project should be inspected prior to project completion.

If you have any questions, please contact Bert Kuioka at 527-5235.

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DIV. OF ENGINEERING
DEC 24 3 35 PM '91

DEPARTMENT OF GENERAL PLANNING

CITY AND COUNTY OF HONOLULU

91-5016

RECEIVED
DIV. OF ENGINEERING
DEC 17 2 54 PM '91

650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED
DEPT OF PUBLIC WORKS
DEC 17 1 07 PM '91

FRANK F. FASI
MAYOR

BENJAMIN B. LEE
CHIEF PLANNING OFFICER

ROLAND D. LIBBY, JR.
DEPUTY CHIEF PLANNING OFFICER

TH 11/91-3522

December 16, 1991

MEMORANDUM

TO: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: BENJAMIN B. LEE, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF DRAINAGE AND WALL IMPROVEMENTS IN THE MOANALUA EARTH MOVEMENT AREA, MOANALUA, OAHU, HAWAII, TMK: 1-1-44: 14; 19 and 20

In response to your memorandum of November 8, 1991, we have reviewed the subject environmental assessment and concur with the project as recommended in Alternative 3.

The proposed project will improve subsurface conditions and protect the health, safety and property of residents in the area. We believe that a negative declaration would be appropriate for the proposed project.

Should you have any questions, please contact Tim Hata of our staff at 527-6070.

BENJAMIN B. LEE
Chief Planning Officer

BBL:lh

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
HONOLULU MUNICIPAL BUILDING
650 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED
DEPT OF PUBLIC WORKS
DEC 3 8 07 AM '91
TO

FRANK F. FASI
MAYOR

JOSEPH M. MAGALDI, JR.
DIRECTOR

AMAR SAPPAL
DEPUTY DIRECTOR

PL91.1.393
TE-5907
91-11-0297

December 3, 1991

MEMORANDUM

TO: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: JOSEPH M. MAGALDI, JR., DIRECTOR

SUBJECT: MOANALUA VALLEY EARTH MOVEMENT AREA
ENVIRONMENTAL ASSESSMENT FOR CONSTRUCTION
TAX MAP KEY: 1-1-44

RECEIVED
DIV. OF ENGINEERING
DEC 3 9 22 AM '91

This is in response to your memorandum dated November 8, 1991 requesting our review and comments on the above subject.

We have no objections or comments to offer at this time.

Should you have any questions, please contact Wayne Nakamoto of my staff at local 4190.

for Dennis Z. Thomas
JOSEPH M. MAGALDI, JR.

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET
HONOLULU, HAWAII 96813 • (808) 523-4432

91-5161

RECEIVED
DIV. OF ENGINEERING
DEC 30 3 07 PM '91

DEC 2 01 PM '91

FRANK F. FASI
MAYOR

DONALD A. CLEGG
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

LU11/91-8928(JT)
91-11-0297

December 27, 1991

MEMORANDUM

TO: SAM CALLEJO, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: DONALD A. CLEGG, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF DRAINAGE AND WALL IMPROVEMENTS IN THE MOANALUA EARTH MOVEMENT AREA

We have reviewed the Environmental Assessment for the above mentioned project and have no comments to offer at this time.

Thank you for the opportunity to comment on this project.

DONALD A. CLEGG
Director of Land Utilization

DAC:cct

a:moanalua.jht

WPP 91-595

December 13, 1991

MEMORANDUM

TO: MR. MARVIN T. FUKAGAWA, CHIEF
DIVISION OF ENGINEERING

FROM: GEORGE M. UYEMA, CHIEF
DIVISION OF WASTEWATER MANAGEMENT

SUBJECT: ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF DRAINAGE AND WALL IMPROVEMENTS IN THE MOANALUA EARTH MOVEMENT AREA - TMK: 1-1-44 (91-11-0297)

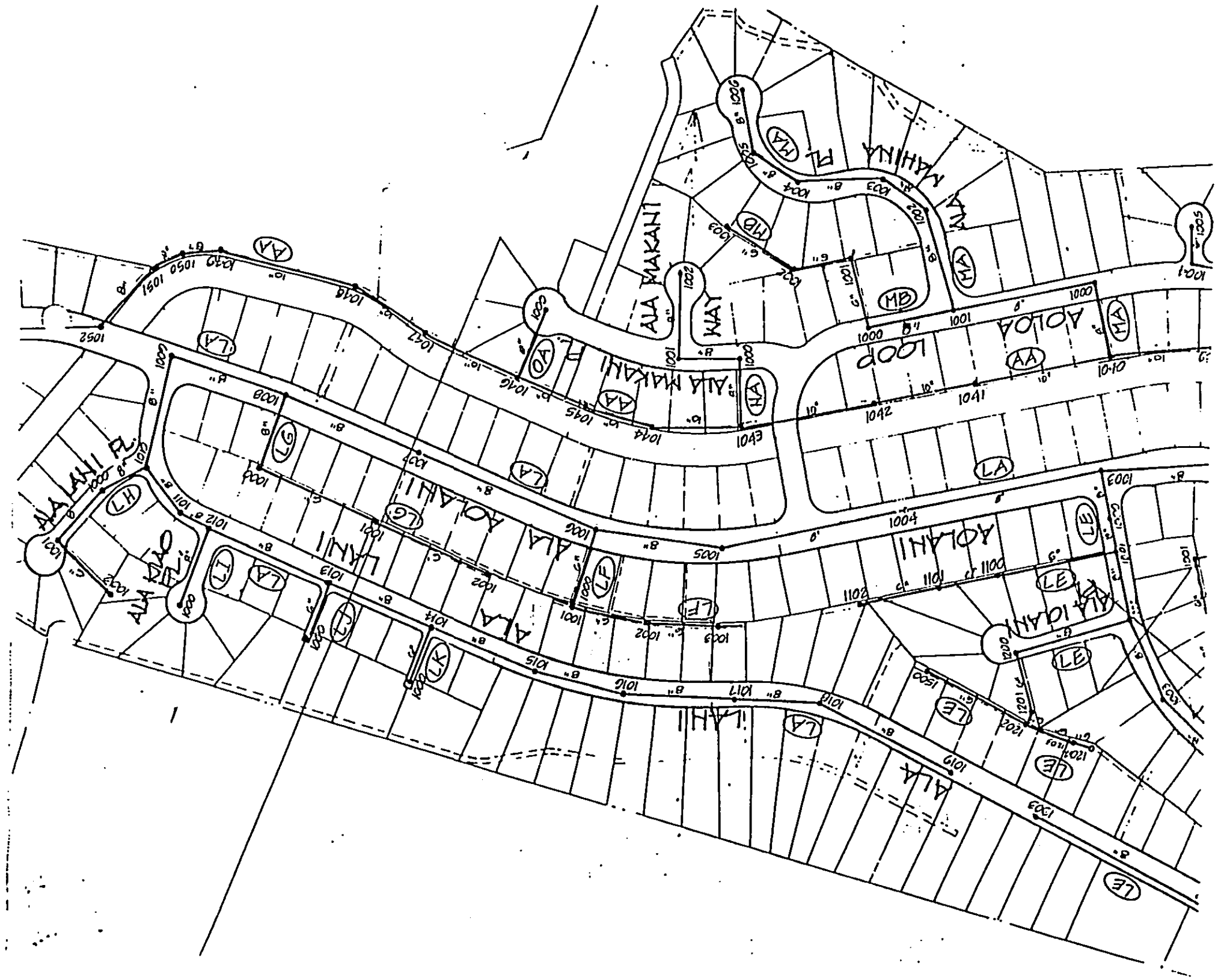
Please be informed that there are existing municipal sewer manholes and 6 and 8-inch sewer lines in the roadways and sewer easements within the subject earth movement area (see attached map). Construction plans for the drainage and wall improvements must be submitted to the Division of Wastewater Management for review and approval.

If there are any questions, please call Lynn Kurashima of the Planning Section at extension 4671.

GEORGE M. UYEMA
Chief

Attachment

bcc: Wayne Nakamura


ALA MAKANI PL
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ALA KOLAHI
ALA KOLAHI
ALA KOLAH

91-5145

WAIHEE
GOVERNOR OF HAWAII

RECEIVED
DIV. OF ENGINEERING
DEC 31 9 37 AM '91

RECEIVED
DIV OF PUBLIC WORKS
DEC 30 8 55 AM '91

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
P. O. BOX 621
HONOLULU, HAWAII 96809

WILLIAM W. PATTY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

MANABU TAGOMORI
Dan T. Kochi

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
CONSERVATION AND ENVIRONMENTAL AFFAIRS
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

REF:OCEA:SKK

FILE NO.: 92-296
DOC. NO.: 2313E

DEC 23 1991

Ex DIR/DEP 12/30
Eng

The Honorable Sam Callejo
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Callejo:

Subject: Environmental Assessment for the Construction of Drainage and Wall Improvements in the Moanalua Earth Movement Area - TMK: 1-1-44

Thank you for giving our Department the opportunity to comment on this matter. We have reviewed the submitted Environmental Assessment (EA) and have the following comments.

Brief Description:

The project site is within the urban area of upper Moanalua Valley adjacent to Moanalua Stream, where earth movement is believed to have been caused by water infiltration into the subsurface soil in combination with slow drainage of the slide zone due to low soil permeability. Special engineering is required to stabilize the landslide zone. Fifteen vertical drain wells 62 feet in depth and 2 feet in diameter will be constructed to intercept and drain groundwater. A retaining wall approximately 25 feet in height and 114 feet in length will be constructed.

DIVISION OF AQUATIC RESOURCES COMMENTS:

Moanalua Stream has significant aquatic biological resources which should be protected during the construction phase. Measures should be taken to avoid sediment runoff into the stream both during construction and afterwards as a result of erosion. The stream bed should not be used for disposal of construction debris and other wastes, including excavated soil. No long term impacts from the project are anticipated.

HISTORIC PRESERVATION DIVISION COMMENTS:

This project proposes to drill 15 drainage wells and construct a tied-back retaining wall at the back of two residential lots in an established residential subdivision. The steep slope and the developed nature of the project location make it unlikely that there are extant historic sites. Therefore, we believe that this project will have "no effect" on historic sites.

There remains the possibility that historic sites, including human burial remains, will be discovered in the course of routine construction activities. Should this be the case, all work in the vicinity must stop and this office contacted at 587-0047.

Thank you for your cooperation in this matter. Please feel free to call me or Sam Lemmo at our Office of Conservation and Environmental Affairs, at 587-0377, should you have any questions.

Very truly yours,

WILLIAM W. PATY

JOHN WAIHEE
GOVERNOR OF HAWAII

RECEIVED
DIV. OF ENGINEERING
JAN 14 3 53 PM '92

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

92-0150

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:

January 3, 1992

91-460/epo

Mr. Sam Callejo
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King street
Honolulu, Hawaii 96813

Dear Mr. Callejo:

Subject: Environmental Assessment for the Construction of Vertical Drains and Tied-Back Retaining Wall Within the Moanalua Earth Movement Area
TMK: 1-4-44

We have reviewed the subject document and have the following comments to offer:

Clean Water

The discharge of the water pumped from the 15 vertical drains should be addressed with respect to potential impacts to the water quality and aquatic ecosystem of the receiving waters.

If you have any questions on this matter, please contact Mr. Mark Tomomitsu, at 586-4309.

Underground Injection Control (UIC)

1. The project site is above the UIC line.

2. The vertical drains (VD) are not intended to serve as injection wells; therefore, a UIC permit is not required to authorize the operation of the VD. However, if roadway drainage into the VD occurs, the VD will have to be authorized through a UIC permit.

3. Subsurface information has not been included in the environmental assessment; i.e., exploratory boring logs that are representative of the soil and rock formations at the location of the VD, and groundwater elevations. Our following remarks are, therefore, qualified by this lack of information.

a. Based on the submitted detail of the typical VD, we question the viability of this design to hold water in order for the submersible pump to pump the infiltrate to the surface.

b. We question whether or not other subsurface drainage alternatives have been explored to mitigate uphill infiltrate from entering the landslide area. It seems that the use of fifteen (as shown on the plan) VD with submersible pumps and associated equipment is highly energy and maintenance intensive over a time period which has not been specified and at an operational cost which has not been projected.

If you have any questions about these remarks, please contact Mr. Chauncey Hew of the Safe drinking Water Branch at 586-4258.

Soil Erosion

Effective soil erosion and dust control measures shall be implemented by the contractor during all phases of the construction.

Very truly yours.

JOHN C. LEWIN, M.D.
Director of Health

92-11-0017

January 27, 1992

John C. Lewin, M.D.
Director of Health
Department of Health
State of Hawaii
P. O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Lewin:

Subject: Environmental Assessment for the Earth Movement in the Ala Lani - Ala Aolani Area in Moanalua Valley

This is in response to your letter of January 3, 1992, regarding the subject environmental assessment.

2. *The vertical drains are not intended to serve as injection wells; therefore, a underground injection control (UIC) permit is not required to authorize the operation of the vertical drains. However, if roadway drainage into the vertical drains occurs, the vertical drains will have to be authorized through a UIC permit.*

   The vertical drain outlets have been designed such that surface or storm drain water will not be allowed to enter the vertical drain.

3a. *Based on the submittal detail of the typical vertical drain, we question the viability of this design to hold water in order for the submersible pump to pump the infiltrate to the surface.*

   The vertical drains are to be installed in colluvium for most of the depths involved with perhaps several penetrating into the underlying bedrock basalt. The colluvium is composed of pebbles, cobbles, and boulders in a silty clay

matrix. Some strata are more permeable and act as aquifers but the crushed rock in the vertical drain is more permeable by several orders of magnitude and will collect subsurface ground water which is expected to be deflected from its existing drainage path into the drain. The volume of flow is not expected to be high, but the important result will be a reorientation of the subsurface ground water seepage flow toward the drains and interception of most of the water now entering the upper portion of the landslide.

3b. *We question whether or not other subsurface drainage alternatives have been explored to mitigate uphill infiltrate from entering the landslide area. It seems that the use of fifteen vertical drains with submersible pumps and associated equipment is highly energy and maintenance intensive over a time period which has not been specified and at an operational cost which has not been projected.*

Several other subsurface alternatives were explored. For the depths involved, the vertical drains are the most effective and economical. While it is realized that power costs (expected to be low because of infrequent operation of the pumps) and maintenance costs will be involved for a protracted period of time, virtually all types of landslide remediation require some maintenance.

Very truly yours,

SAM CALLEJO
Director and Chief Engineer

HK:pto

cc: STV/Lyon Associates
bcc: Assistant Chief
Deputy Director

United States Department of the Interior

GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

TAKE PRIDE IN AMERICA

December 31, 1991

Mr. Sam Callejo
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Callejo

Subject: Environmental Assessment for the Construction of Drainage and Wall Improvements in the Moanalua Earth Movement Area

The staff of the U.S. Geological Survey, Water Resources Division, has reviewed the subject environmental assessment and has no comments to make at this time.

We apologize for the delay in forwarding our reply.

Sincerely,

William Meyer

William Meyer
District Chief

Moanalua Valley Community Ass'n. Inc.

91-4885

RECEIVED DEPT OF PUBLIC WORKS DEC 6 PM '91 TO

RECEIVED DIV. OF ENGINEERING DEC 9 3 46 PM '91

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Jefs discuss ← Engr 12/9

1535 Ala Aolani Street
Honolulu. HI 96819
December 2. 1991

Mr. Sam Callejo
Director and Chief Engineer
Dept. of Public Works
650 South King Street
Honolulu. HI 96813

Dear Mr. Callejo:

Subject: Construction of vertical drains and tied-back retaining wall within the Moanalua Earth Movement Area

Thank you for the opportunity to review the planned construction project in Moanalua Valley. We welcome your efforts to stabilize the soil movement occurring within the planned project limits. However. we do have some concerns and request that they be discussed with us prior to letting the project out to bid.

The following is a list of our concerns:

1. Request a soil consultant be retained to review and issue an independent study of the proposed project.

2. Will there be any shoring and monitoring of the adjacent properties to ensure that no damage is caused by the construction of the tie back wall and the installation of the vertical drains? For what length of time is the monitoring of the soil movement to be?

3. What safety precautions for the adjacent homes are planned in the event a slide occurs during construction?

4. Recommend utility companies be asked to survey their lines in the project and adjacent area for underground leaks before and after construction work.

5. Due to limited street parking. prohibit the contractor from parking any heavy equipment on the street.

6. The noise level from contruction work is anticipated to be about 85dB. We request that weekend and holiday work be prohibited.

7. Request that the contractor be required to mail out flyers about the upcoming work to all nearby residents. A person to contact in case of complaints should be listed on the flyer.

8. Request that at least one member of the Community Association Board be allowed to participate in the final inspection of the contractor's work.

We will be available to meet and discuss these concerns with you. preferably at our next community association board meeting. Please call me at 839-1465 for information on time and site of our next meeting.

Sincerely,

Karen Scharfenstein
President, MVCA

cc: Councilmember Donna Mercado Kim

91-11-0327

January 7, 1992

Ms. Karen Scharfenstein
*Moanalua Valley Community Association*
1535 Ala Aolani
Honolulu, Hawaii 96819

Dear Ms. Scharfenstein:

Subject: Earth Movement in Ala Lani-Ala Aolani in Moanalua Valley

This is in response to the questions in your letter of December 2, 1991:

1. *Request a soil consultant be retained to review and issue an independent study of the proposed project.*

   We believe that the private consultant retained by the City has the required expertise to properly design the remediation work.

2. *Will there be any shoring and monitoring of the adjacent properties to ensure that no damage is caused by the construction of the tie back wall and the installation of the vertical drains?*

   Yes.

   *For what length of time is the monitoring of the soil movement to be?*

   We expect the monitoring to extend until completion of construction work.

3. *What safety precautions for the adjacent homes are planned in the event a slide occurs during construction?*

   We are confident that the project is being designed to protect the residents in the area during construction.

4. *Recommend utility companies be asked to survey their lines in the project and adjacent area for underground leaks before and after construction work.*

   Lines have been checked for leaks. Upon completion of construction, additional checks will be made.

5. *Due to limited street parking, prohibit the contractor from parking any heavy equipment on the street.*

   It will be necessary for the Contractor to park equipment on the streets.

6. *The noise level from construction work is anticipated to be about 85 db. We request that weekend and holiday work be prohibited.*

   Construction is expected to occur during the normal week day work hours. We do not expect work to be done during the weekend and holidays. In the event this is necessary, proper procedures will be followed.

7. *Request that the Contractor be required to mail out flyers about the upcoming work to all nearby residents. A person to contact in case of complaints should be listed on the flyer.*

   The specifications for the contract require the Contractor to notify abutting property owners prior to construction. A contact person from our Division of Engineering Construction Branch will be listed on the notice.

8. *Request that at least one member of the Community Association Board be allowed to participate in the final inspection of the Contractor's work.*

   The Division of Engineering, Construction Branch, is the City agency responsible for the inspection of the project. Please provide us the name of a representative from your organization.

Very truly yours,

SAM CALLEJO
Director and Chief Engineer

HK:pto

cc: Councilmember Donna Mercado Kim
bcc: Construction Branch

91-4951

# CITY COUNCIL

CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII 96813 / TELEPHONE 523-4000

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DONNA MERCADO KIM
COUNCILMEMBER
(808) 523-4978

G3 DIR/DEP 12/12/91
Engr 12/13

December 10, 1991

Mr. Sam Callejo
Director and Chief Engineer
Department of Public Works
650 S. King Street, 11th Floor
Honolulu, Hawaii 96813

RECEIVED
DIV. OF ENGINEERING
DEC 13 2 09 PM

Dear Mr. Callejo:

Thank you for the Environmental Assessment for the Construction of Drainage and Wall Improvements in the Moanalua Earth Movement Area. After reviewing the options available, as stated in the Assessment, I am confident that your department will utilize the most effective engineering mitigation measures for the Moanalua landslide area.

In regard to the dust and noise emission, will the residents be notified in advance about the commencement of the project and the anticipated dust and noise emission levels? According to the Assessment, the project is projected to be completed in about a year. Is that the same length of time that the high dust and noise emission expected to continue?

I hope that you will be able to satisfactorily answer the concerns and requests made by the Moanalua Valley Community Association. Thank you for your consideration to the above matters and I look forward to your response.

Sincerely,

DONNA MERCADO KIM
Councilmember
Council District VII

91-11-0328

December 19, 1991

The Honorable Donna Mercado Kim
*Councilmember*
City Council
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Councilmember Kim:

Subject: Your Comments Regarding the Construction of Drainage and Wall Improvements in the Moanalua Earth Movement Area

Your timely response is greatly appreciated. The environmental assessment, which reviews the anticipated noise levels, has been reviewed by the Moanalua Valley Community Association. As mentioned in the environmental assessment, the Contractor will be required to prevent dust nuisance at all times.

The specifications for the contract require that the Contractor notify abutting property owners prior to construction.

The estimates of the noise levels that appear in the environmental assessment are based on the usage of the loudest piece of equipment to be employed on the project. Therefore, we do not anticipate the noise level to be sustained throughout the construction period.

Very truly yours,

SAM CALLEJO
Director and Chief Engineer

JN:RN:HK:pto

Attach.

cc: Managing Director
bcc: Program Coordinator