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GOVERNOR



GILBERT S. COLOMA-AGARAN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

LINNEL T. NISHIOKA
DEPUTY DIRECTOR FOR
THE COMMISSION ON WATER
RESOURCE MANAGEMENT

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

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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND
STATE PARKS

Ref.:PB:DH

File: OA-3113B

MEMORANDUM

DEC 20 2002

TO: Genevieve Salmonson, Director
Office of Environmental Quality Control

FROM: Dierdre S. Mamiya, Administrator
Land Division, Department of Land and Natural Resources

SUBJECT: Final Environmental Assessment (FEA)/Finding of No Significant Impact (FONSI) for
Holland Single Family Residence (SFR) in the Conservation District at TMK parcel [1]
2-5-15:24, Honolulu, Oahu

The Department of Land and Natural Resources has reviewed the comments received during the 30-day public comment period that began on July 23, 2002 for the subject project. We have determined that this project will not have significant environmental effects, and have therefore issued a FONSI. Please publish this notice in the January 8, 2003 OEQC Environmental Notice.

We have enclosed four copies of the Final EA for the project. The applicant informs us that the OEQC Bulletin Publication Form has been e-mailed to you. Comments on the draft EA were sought from relevant agencies and the public, and were included in the final EA.

Please contact Dawn Hegger of our Planning Branch at 587-0380 if you have any questions on this matter.

Enclosures

cc: Allen Ewell

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LAND DIVISION
STATE PARKS

REF:PB:DH

FILE NO.: OA-3113B

Acceptance Date: **December 17, 2002**
180-Day Exp. Date: **June 15, 2003**

Charles A. & Allison A. Holland
C/O Mr. Alan Ewell
180 Forest Ridge Way
Honolulu, HI 96822

DEC 20 2002

Dear Mr. Ewell:

NOTICE OF ACCEPTANCE AND ENVIRONMENTAL DETERMINATION
Conservation District Use Application (CDUA) File No. OA-3113
(BOARD Permit)

This acknowledges the receipt and acceptance for processing of your CDUA for the proposed Holland Single Family Residence: Site and Dwelling Improvements, TMK: (1) 2-5-015: 024, Honolulu, Oahu.

According to your information, the proposed project involves improvements on a vacant property located in the Resource Subzone of the State Conservation Land Use District. The project site has been owned by the applicants for 35 years and is adjacent to their original homestead, which they sold last year.

The subject parcel encompasses an area of 11,325 square feet. The proposed project consists of: a wood-framed, one-story structure with 2,064 square feet of living area with a 520 square foot concrete patio (for a total of 2,584 square feet of developed area); two 9,000 gallon concrete catchment water tanks (approximately 18,000 gallons); a wastewater treatment system consisting of a 1,000 gallon septic tank; and a 250 square foot leach field. Landscaped improvements consist of the removal of three existing trees, the relocation of some existing shrubs and some new landscaping. There are two garden trellises and a wooden fence on the property which were built in 1985. The fence will remain, however the trellises will be removed during the construction of the SFR.

The project site is at an elevation of 1,370 feet, and is located on Roundtop Drive, approximately five miles up from the City and County of Honolulu water pumping station at the end of Makiki Street. The neighborhood consists of approximately 110 single family residences on private land

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holdings within the Conservation District. The project site is bounded on the North, East, and West by other residential properties. The South side the property abuts the Honolulu Watershed Forest Reserve.

After reviewing the application, we find that:

1. The proposed use is an identified land use within the Resource Subzone of the Conservation District, according to Section 13-5-24, Hawaii Administrative Rules (HAR), R-8, SINGLE FAMILY RESIDENCE, D-1; please be advised, however, that this finding does not constitute approval of the proposal;
2. Pursuant to Section 13-5-40 (3), HAR, a public hearing will not be required; and
3. In conformance with Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Chapter 11-200, HAR, the Final Environmental Assessment (FEA) and finding of no significant impact (FONSI) to the environment have been submitted to the Office of Environmental Quality Control (OEQC) and will be noted in an upcoming edition of OEQC's Environmental Notice. The draft environmental assessment (DEA) for the project was submitted to OEQC, and was published in the July 23, 2002 Environmental Notice. The FEA will be submitted for publication in OEQC's January 8, 2003 Environmental Notice.

Pursuant to the provisions of Hawaii's Coastal Zone Management law (Chapter 205A, HRS) that pertain to the Special Management Area (SMA) requirements administered by the various counties, the City and County of Honolulu has made an official determination that the proposed development is outside the Special Management Area.

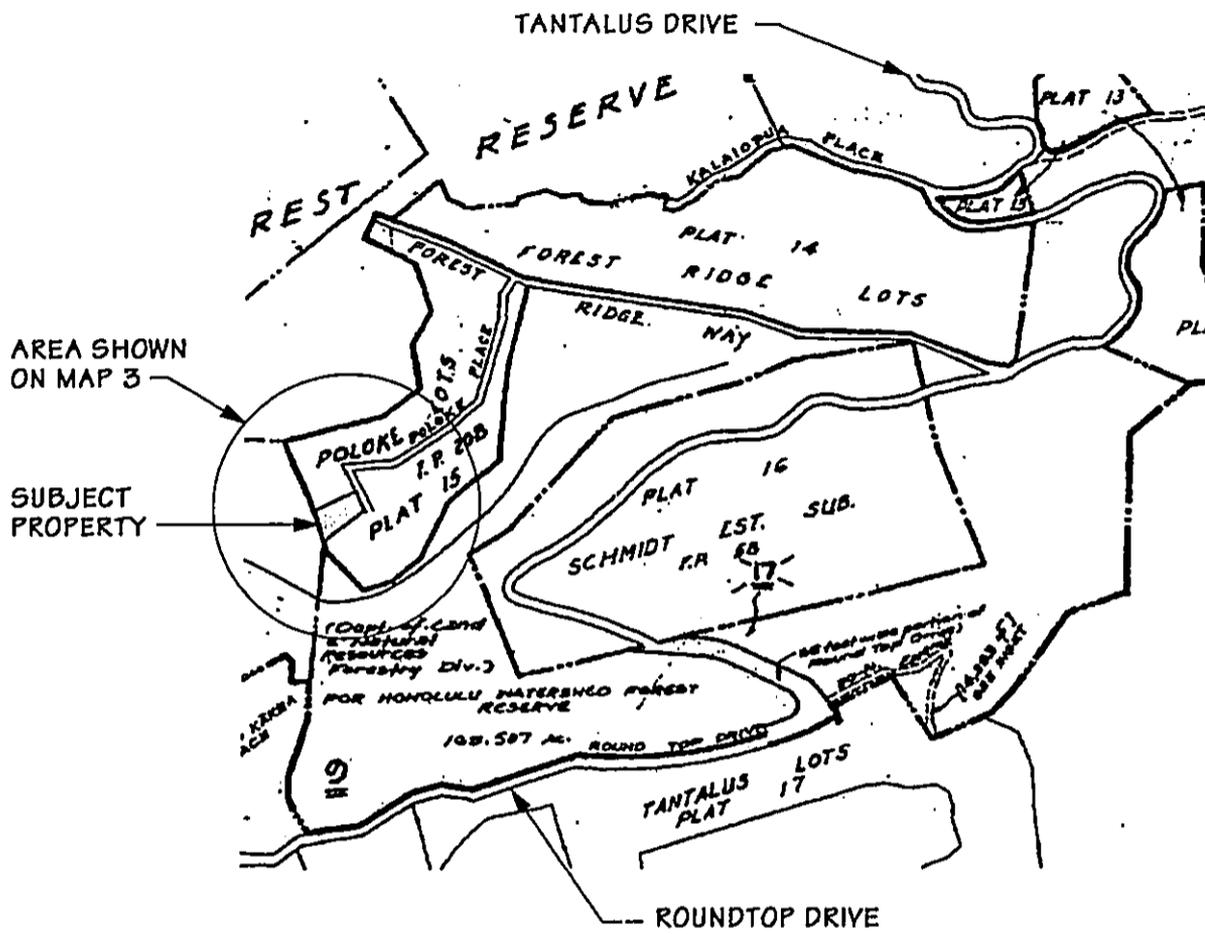
Your CDUA will be placed on the agenda of the Board of Land and natural Resources for their consideration after all reviews and evaluations of the proposal have been made. Should you have any questions, please contact Dawn Hegger of our Land Division's Planning Branch staff at 587-0380.

Aloha,


GILBERT S. COLOMA-AGARAN, Chairperson
Board of Land and Natural Resources

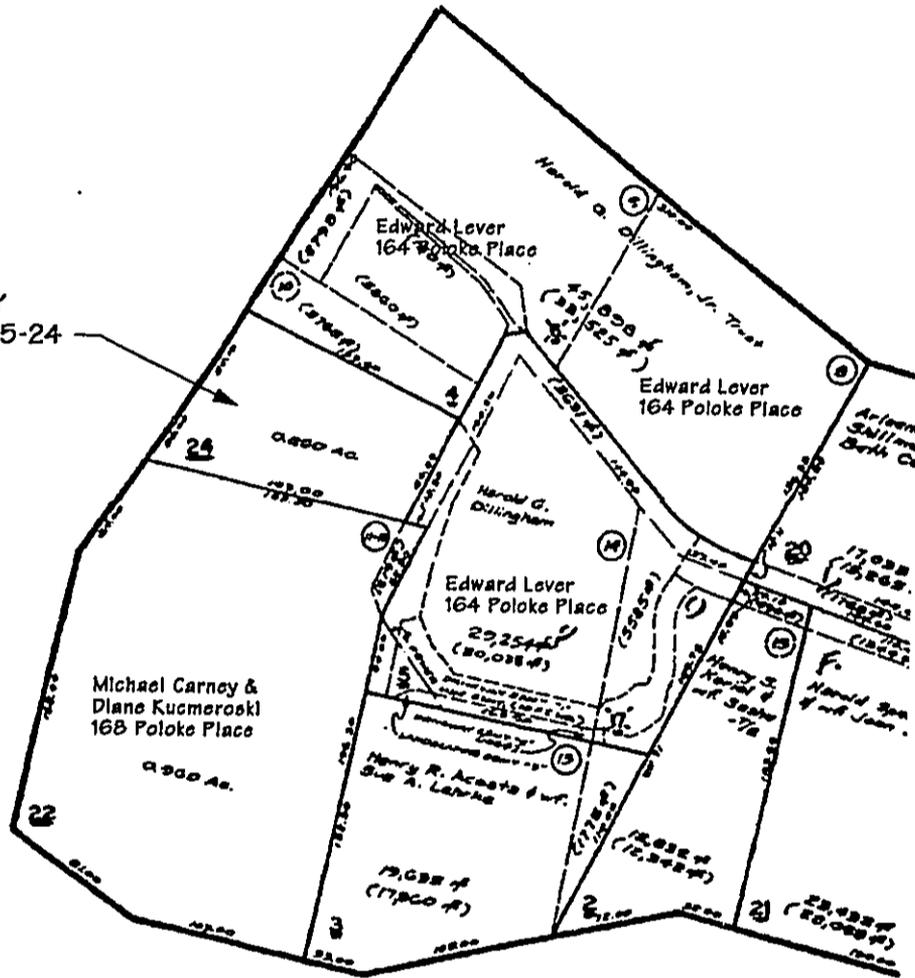
cc: Oahu Board Member
Oahu District Land Office
DOH/OHA/DAR/DOFAW/DOCARE/HPD
City and County of Honolulu,
Department of Planning & Permitting
Department of Facilities Maintenance

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MAP 2
RESIDENTIAL SUBDIVISIONS
ADJACENT TO HONOLULU
WATERSHED FOREST RESERVE

SUBJECT
PROPERTY
TMK 2-5-15-24



MAP 3
POLOKE PLACE LOTS

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

CONSERVATION DISTRICT USE APPLICATION

I. LANDOWNER

First Hawaiian Bank, Trust Division,
Trustee for the benefit of Charles A. and Allison A Holland
999 Bishop Street, Honolulu, Hawaii 96829
525-7000

AGENT

Linda Miyashiro, Trust Officer
999 Bishop Street
525-5727

Authorized Signature *Linda Miyashiro*
Date June 4, 2002 TRUST OFFICER

II. APPLICANT

First Hawaiian Bank, Trust Division,
Trustee for the benefit of Charles A. and Allison A Holland
999 Bishop Street, Honolulu, Hawaii 96829
525-5708

AGENT

Linda Miyashiro, Trust Officer
999 Bishop Street
525-5727

Authorized Signature *Linda Miyashiro*
Date June 4, 2002 TRUST OFFICER

III. TYPE OF PERMIT

State of Hawaii, Department of Land and Natural Resources
Board Permit

IV. LAND PARCEL LOCATION

Island; Oahu
County: Honolulu
District: Honolulu Watershed Forest Conservation,
Tantalus Resource Subzone
Area of Parcel: 11,325 sq. ft. (.26 acre)
Tax Map Key Number: 2-5-15-24
Lease Term: N/A

V. SUMMARY OF PROPOSED IDENTIFIED LAND USE

As allowed under Chapter 13-5-24, R-8, SFR of the Hawaii Administrative Rules, the proposed action involves the construction of a single family residence in the Resource Subzone of the Conservation District. The project site, which is vacant, has been owned by the applicants for 35 years and is adjacent to their original homestead which they sold last year. It encompasses an area of 11,325 square feet within TMK 2-5-15-24.

The proposed project consists of a wood-framed structure with 2064 square feet of living area on one level, a 520 square foot concrete patio for a total of 2584 square feet of developed area (see attached floor and site plans). The proposed structure is similar in size and scope to adjacent existing residences. It is substantially smaller than the 3500 square feet of development allowable under DLNR regulations as defined in Exhibit 4 of Chapter 13-5 of the Hawaii Administrative Rules.

Proposed improvements also include two 9000 gallon concrete catchment water tanks which are part of the foundation of the house and an individual wastewater treatment system consisting of a 1000 gallon septic tank and a 250 square foot leach field. Site work will also involve removal of three existing trees, relocation of some existing shrubs, and some new landscape

VI. ENVIRONMENTAL ASSESSMENT

Approvals Sought

1. Conservation Use Permit: Department of Land and Natural Resources, State of Hawaii
2. Individual Wastewater System Permit: Department of Health, State of Hawaii
3. Building Permit: City and County of Honolulu

Description of the Project Site and Surrounding Area

Location.

The project site is on the island of Oahu in the Honolulu Watershed Forest Reserve Subzone in the mountains above Honolulu. It is at an elevation of 1370 feet, approximately five miles up Roundtop Drive from the City and County of Honolulu water pumping station at the end of Makiki Street.

The neighborhood consists of approximately 110 single family residences on private landholdings within the Conservation District. Some of these homes date to the early 1900's. The project site is bounded on the North, East and West by other residential properties. On the south side the property abuts the Honolulu Watershed Forest Reserve Subzone. See maps 2 and 3 for more details.

Existing Structures

There are two garden trellises and a wooden fence on the property which were built by the current owners in 1985. The trellises will be removed during construction of the new house. The fence will remain. No evidence has been found of earlier construction, and no records exist of building permits for the property.

Access and Easements

Access is from the uphill side of the property where the owners have a permanent easement for an existing concrete and asphalt driveway. The driveway begins at the end of Poloke Place, a 14 foot wide asphalt public street, which connects to Roundtop Drive via Forest Ridge Way, a 14 foot wide asphalt public street. This driveway is on properties identified by TMK #2-5-15-17, #2-5-15-14, and #2-5-15-22. See attached maps 2 and 3 for more details. The first two properties are owned by Edward Lever, 164 Poloke Place. The third is owned by Michael Carney and Diane Kucmeroski, 168 Poloke Place.

Soil Characteristics

Surficial soils consist of a dusky reddish-brown, moist to stiff clayey silt extending from the ground surface to a depth of about 2.5 feet. Beneath that lies brown, moist, loose silty sand to the maximum depth explored, about 14.5 feet. For more detailed soils information, see attached Geotechnical Report dated April 30, 2002, prepared by Weidig Geoanalysts.

Existing Vegetation

The lot has been used as a developed landscape garden for over 50 years and does not reflect any remnants of a native or indigenous landscape cover that might have pre-existed its current developed use. The ewa property line is heavily planted in a naturalized grove of fishpole bamboo 10' wide and 90' long. This planting extends along the mauka property line 10' wide and 60' long. There is no understory planting beneath the bamboo grove. Two large kukui nut trees 30' height, 20' spread, 24" diameter trunk (*Aleurites molocanna*) are situated in the center of the site and fall within the footprint of the proposed residence. One large African tulip tree 40' height, 15' spread, 30" diameter trunk (*Spathodea campanulata*) also falls within the footprint of the proposed residence. One additional African tulip is located along the lower makai property line and will remain in place. One Kukui tree is located along the mauka driveway wall and will remain in place. See attached photos and existing plot plan for details of existing vegetation.

A collection of introduced fruit trees is located along the lower Koko Head property line and will not be affected by the proposed construction. The balance of the site is planted with Hilo grass and an assortment of introduced shrub species including spathiphyllum, impatiens, maiden hair fern, azalea, birds nest fern, spider lily, heliconia species, ginger varieties, agapanthus, banana, snow bush and bromeliads.

There are no rare endangered or otherwise protected species of plant materials located on the property. The mature kukui trees are the primary native plants encountered, and they are old enough to pose a threat to nearby buildings in windy conditions.

All existing materials removed during construction will be relocated to garden areas on the property and supplemented with additional materials to reinforce the existing mountain garden setting. All disturbed areas will be immediately replanted to ensure adequate erosion control practices are implemented.

List of Existing Plant Materials:

Trees

<u>Botanical Name</u>	<u>Common Name</u>
Aleurites molocanna	Kukui
Bambusa var.	Fishpole Bamboo
Citrus aurantium	Orange
Spathodea campanulata	African Tulip

Shrubs, Ground Covers, Epiphytes

<u>Botanical Name</u>	<u>Common Name</u>
Achmea var.	Bromeliad
Adiantum var.	Maiden Hair Fern
Agapanthus africanus	Blue African Lily
Asplenium nidus	Birds Nest Fern
Azalea simsii	Pink Azalea
Crinum asiaticum	Spider Lily
Dieffenbachia amoena	Dieffenbachia
Heliconia species	Heliconia

Impatiens species
Orchidaceae var.
Platynerium species

Common Impatiens
Dendrobium & Phalaenopsis
Staghorn Fern

Bird and Animal Life

Existing bird and animal life in the project vicinity include species common to the Tantalus District. Birds commonly seen include the common Mynah, several species of Dove, Cardinal, House Finch, and House Sparrow. Common mammals are cats, dogs, mice, rats, mongoose and a large and destructive population of feral pigs.

Site Area and Topography

The property encompasses an area of .26 acres (11,325 square feet) with a fairly uniform south facing slope of approximately 25%. It is trapezoidal in shape with the wider side of the parcel on the downhill side of the property. See attached site plans and elevations for detailed topographic information and boundary dimensions.

Historic and Traditional Uses of the Site.

The property was part of a larger parcel awarded to Keawehano by the crown in 1862. No evidence has been found on the property of traditional uses during that period or earlier. In 1901, the property was deeded to William Castle by the heirs of Keawehano in repayment of a debt. The following year, Castle surveyed the property and sold it, as part of a larger parcel, to Dr. W.L. Moore, in whose family it remained until 1921 when it was sold to Elsie Morgan.

In 1925, beginning with this lot, T. Edgar Robinson began buying up property in the Poloke area of Tantalus. By 1930 he owned several hundred acres. He chose to build a house on the adjacent property where the Hollands' previous residence stands. The date of original construction is not certain. The subject property was developed as extensive gardens for the homestead, but no evidence of building construction has been found. The garage on the adjacent property, to which the Hollands have deeded access, was built during this period.

In 1944, Robinson's widow, Iwalani, sold all the her holdings on Tantalus to Charles McWayne, who expanded and renovated the old homestead several times over the years. In 1966, McWayne's widow sold two lots to the Hollands, who demolished the original homestead to build on the larger of the two properties. During their tenure, no buildings have been constructed on the smaller lot, which is the subject property.

A search of University of Hawaii and Bishop Museum records uncovered no records of formal archeological or cultural surveys of the property.

Public Infrastructure

Access:

As described above, project parcel is at the end a private drive which is at the end of Poloke Place, a public street reached from Roundtop Drive by way of Forest Ridge Way. No additional paving will be required to provide access to the property. The owners also have permanent deeded access to a garage on the adjacent property, so no new driveway or garage will be required on the subject property.

Electricity and Telephone:

Electric utility service is available at the property line, so no extensive new electrical infrastructure will be required. Telephone service is in place and will only need to be extended 50 feet to the new house.

Water:

There is no municipal water system in the area, so a private water catchment system will be installed. Two concrete tanks will form part of the foundation system of the building to minimize their visual impact on the site and to reduce construction costs. Total capacity will be approximately 18,000 gallons. Rainfall in the area averages approximately 120 inches per year, which should be more than adequate to provide a reliable year-round supply of water for household needs.

Sewage Disposal:

There is no municipal sewerage system in the area, so an Individual Wastewater System will be provided consisting of a 1000 gallon septic tank and a leach field of approximately 250 square feet. See attached Department of Health permit documents for more information about the proposed system. A copy of the soils report for the site, which was used in designing the wastewater system, is also attached.

Solid Waste Disposal:

Solid waste is collected twice per week by the City and County of Honolulu.

Site drainage:

No municipal stormwater drainage system is installed on or adjacent to the project site. Storm water is disposed of by sheet flow or percolation, which, as described in the attached soils report, is excellent in the area and on this site.

PROJECT IMPACTS

Site Conditions

By balancing the cut and fill during construction, no soil material will be removed from the site and no new fill will be required. Overall, existing conditions will not be significantly altered by the construction of the proposed dwelling.

Plants and Animals

The project site contains no known habitat of rare, endangered, or threatened species of flora. Two Kukui trees and an African Tulip will be cut to make room for the structure. All three trees to be removed are mature and brittle enough to raise significant safety concerns even if they were not inside the footprint of the proposed structure. As described above, most existing

vegetation will be relocated on the site in order to reinforce privacy buffers and maintain the mountain garden atmosphere of the property.

There is no known habitat of rare, endangered, or threatened species of bird or animal on the project site.

Visual Resources

The proposed residential structure is well below the maximum size allowed under DLNR regulations for the area and will be sited to allow it to nestle into the terraced hillside to minimize its visual impact. The home, in fact, should only be visible from the Hollands' previous residence immediately to the east.

Traditional and Customary Rights

The proposed project site is not situated along any known access way or trail. In the 35 years the present owners have been gardening on the proposed site, they have discovered no evidence of previous habitation or traditional uses such as hunting, gathering or farming.

Infrastructure

Wastewater -The proposed residence will include an on-site individual wastewater disposal system consisting of a 1000 gallon septic tank and a 250 square foot leach field. As described in the attached Soils Report, percolation testing of the soils on the property showed ideal conditions for this type of wastewater treatment system.

Potable Water – All household water will be provide by a catchment system utilizing the roof of the new structure as the catchment area and two 9000 gallon concrete tanks built into the foundation system of the building to store the water captured.

Site Drainage – Because 90% of the impervious surfaces created by the project will be utilized to collect rainwater for household use, there will be minimum impact on stormwater drainage on the project site or in the immediate area.

Utilities – Electrical power is available at the property line, so the proposed structure will have no visual and minimum structural impact on existing electrical infrastructure in the area. Telephone service is currently installed at the existing garage on the adjacent property. The lines can easily be extended to the new residence.

RELATIONSHIP OF THE PROPOSED PROJECT TO APPLICABLE LAND USE REGULATIONS

1. *The proposed land use is consistent with the purpose of the conservation district.*

Hawaii Administrative Rules, Section 13-5-1 states that the purpose of the chapter is "to regulate land use in the conservation district for the purpose of conserving, protecting, and preserving the important natural resources of the state through appropriate management and use to promote their long-term sustainability, and the public health, and welfare."

As described in the Environmental Assessment, the proposed project has been designed to minimize adverse impacts on the area's natural resources. The proposed structure is well below the maximum allowable size and will be sited in such a way as to minimize its visual impact. Site grading will be accomplished without importing fill or removing material from the site. Existing healthy trees and shrubs will be maintained whenever possible in order to preserve the natural character of the area and provide a visual buffer. The design of the proposed building is straightforward, of modest scale, and reflects the rural nature of the area.

2. *The proposed project meets the objectives of the Resource Subzone.*

Section 13-5-13, Hawaii Administrative Rules states "that the objective of this subzone to develop, with proper management, areas to ensure sustained use of the natural resources of those areas." Section 13-5-24, Hawaii Administrative Rules identifies single family residences as an

allowed land use in the Resource Subzone. Within that context, the proposed project will have minimum impact of the continued use of natural resources in the area. No human or animal trails, hunting, gathering or other traditional uses will be impacted on, or near, the site, which is surrounded on three sides by existing single family homes. No endangered flora or fauna have been identified on the property. No new roads, driveways, water, sewer or electric lines, which could be detrimental to the natural resources of the area, will be required. Extensive new gardens, which will provide additional habitat for plants and animals, will be created.

The proposed project complies with Section 13-5, Exhibit 4, Hawaii Administrative Rules, which defines development standards for single family residences as follows:

Minimum Lot Size: 10,000 square feet

TMK 2-5-15-24 includes .26 acre or 11,325 sq. ft.

Minimum Setback:

For lots 10,000 square feet to one acre – 15 feet on all sides. As proposed, side yard setbacks are 15 feet, front and back setback setbacks are 35 feet

Maximum Developable Area:

For lots 10,000 square feet to one acre – 3500 square feet.

Proposed Development:

Living area:	2064 square feet.
Concrete patio	<u>520</u> square feet
 Total developed area	 2584 square feet

Maximum Height Limit:

25 feet allowed. The proposed structure meets the 25 foot height limitation as defined in Exhibit 4 of Chapter 13-5 of the Hawaii administrative Rules.

3. *The provisions and guidelines of Chapter 205A, Hawaii Revised Statutes, entitled "Coastal Zone Management" are not applicable to this property.*
4. *The proposed project will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.*

The proposed dwelling will be of modest size and will be maintained as a single family residence. It will be built in an area which was first developed as a residential subdivision almost 100 years ago, so no undisturbed native habitat will be disrupted. A water catchment system and an individual wastewater treatment system will create no new demands on existing utility infrastructure or require additional investment in public utility infrastructure. A solar water heating system will reduce electricity consumption by 40 to 50%. No new roads, driveways, sewer, water, or electric lines will be required. Storm water runoff will be reduced since 90% of the impervious surfaces created by the project will be used to collect water for domestic and irrigation use. New landscape plantings will incorporate species existing in the area, including trees, shrubs and ground cover.

5. *The proposed land use will be compatible with the locality and surrounding areas and appropriate to the physical conditions and capabilities of the specific parcel.*

The proposed dwelling, at 2064 square feet plus a 520 square foot concrete patio is substantially less than the allowable developed area of 3500 square feet. The house also falls within the height limits and setback requirements for the lot as outlined in Section 13-5, Exhibit 4. All grading required for construction of the house will be done without imported fill and without removing soil from the site. Existing trees, shrubs and ground

cover will be retained and enhanced to create a visual buffer from adjacent dwellings. Stormwater runoff will be reduced since 90% of the impervious surfaces created by the project will be used to collect water for domestic and irrigation use. The attached soils report indicates that site conditions are ideal for the proposed individual wastewater treatment system.

6. *The existing physical and environmental aspects of the land, such as natural beauty and open space characteristics, will be preserved or improved upon.*

While there is no denying that building a home on this property will reduce the amount of open space on this particular parcel, this is an allowable use on this size lot in the Resource Subzone, according to Section 13-5-24, Hawaii Administrative Rules. Every effort has been made in to minimize the visual impact of the structure and maintain the natural beauty of its forest garden setting. The proposed single family residence will be nestled into the hillside to create a low profile which will be visible only from the owners' previous home immediately to the East. It will be occupied by a family who have lived on the property for 35 years. In that time, they have shown a deep and abiding love for the land they occupy. This parcel includes extensive highland gardens of ferns, flowers, bamboo and trees which they have planted and maintained over the years. They insist that all existing plant materials within the footprint of the proposed structure be relocated on the property, and that all healthy trees outside of the building line be maintained. Additional garden areas will be created to further enhance the natural beauty of the setting and provide habitat for local birds and animals.

7. *Subdivision of land will not be utilized to increase the intensity of land use in the Conservation District*

The project property, TMK 2-5-15-24, was a separate tax lot when it was purchased by the Hollands 35 years ago. It includes 11,325 square feet, which according to Section 13-5-24, Hawaii Administrative Rules, exceeds the minimum developable residential lot size of 10,000 square feet in the Resource Subzone of the Conservation District.

8. *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

As documented in the Environmental Assessment, this project will comply with all pertinent government regulations relating to the environment and public health, safety and welfare. No new roads, driveways, sewer, water, or electric lines will be required. Existing police, fire, solid waste pickup, and emergency medical services which serve the area will experience minimal additional load. The individual wastewater system has been designed in accordance with State of Hawaii Department of Health regulations. Storm water runoff will be reduced since 90% of the impervious surfaces created by the project will be used to collect water for domestic and irrigation use. During construction, appropriate measures will be taken to insure that air quality is protected and erosion due to rainfall during the excavation phase is minimized.

AGENCIES CONSULTED IN E.A. PREPARATION

City and County of Honolulu

- Planning Department
- Department of Land Utilization

State of Hawaii

Department of Land and Natural Resources,

- Land Division, Planning Branch
- Division of Historical Preservation

to single family residences, exceeds the minimum developable lot size of 10,000 square feet in the Resource Subzone of the Conservation District.

8. *The proposed land use will not be materially detrimental to the public health, safety and welfare.*

As documented in the Environmental Assessment, this project will comply with all pertinent government regulations relating to the environment and public health, safety and welfare. No new roads, driveways, sewer, water, or electric lines will be required. Existing police, fire, solid waste pickup, and emergency medical services which serve the area will experience minimal additional load. The individual wastewater system has been designed in accordance with State of Hawaii Department of Health regulations. Storm water runoff will be reduced since 90% of the impervious surfaces created by the project will be used to collect water for domestic and irrigation use. During construction, appropriate measures will be taken to insure that air quality is protected and erosion due to rainfall during the excavation phase is minimized.

AGENCIES CONSULTED IN E.A. PREPARATION

City and County of Honolulu

- Planning Department
- Department of Land Utilization

State of Hawaii

Department of Land and Natural Resources,

- Division of Conservation and Environmental Affairs
- Division of Historical Preservation

CONTACT INFORMATION

Property Owners

Charles A. and Allison A. Holland
166 Poloke Place
Honolulu, Hawaii 96822
808-949-2290, 808-228-2034, 808-285-9498

6560 Long's Peak Road
Estes Park, CO 80517
970-586-3739

Agent

Alan Ewell
180 Forest Ridge way
Honolulu, Hawaii 96822
808-945-3853

**GEOTECHNICAL REPORT
HOLLAND RESIDENCE
166 POLOKE PLACE
ROUNDTOP, HONOLULU, HAWAII**

Project No: 02-0016.001

Date: April 30, 2002

Prepared for:

Charles and Allison Holland
168 Poloke Place
Honolulu, Hawai'i 96822

Prepared by:

Weidig Geoanalysts
1130 North Nimitz Highway, Suite B200
Honolulu, Hawai'i 96817

Authored by:

Paul C. Weidig

Paul C. Weidig
Licensed Professional Engineer No. 8,047-C



WEIDIG
Geoanalysts

INTRODUCTION

Purpose

A geotechnical investigation has been conducted for a new residence for the Holland family. The subject property is located at 166 Poloke Place in the Rountop-Tantalus district of Honolulu. The purposes of this study have been to gather information on the nature, distribution and characteristics of the subsurface earth materials and ground water conditions at the site, and to prepare specific recommendations for use in project design and construction.

Scope

The scope of this investigation is described in our proposal of March 26, 2002. On April 10, 2002, our field engineer conducted a reconnaissance of the property and mapped the location of three test borings which were advanced to a depth of about 14½ feet below existing ground surface at the perimeter of the proposed residence. Our engineer logged, classified and recovered relatively undisturbed samples of the earth materials drawn from selected vertical intervals in each boring. Ground water level observations were recorded during drilling and upon completion of the borings. The borings were backfilled with tamped soil following exploration. Also on April 10, 2002, our field engineer conducted a series of three percolation tests within a proposed septic tank and leach field area.

The samples recovered from the borings were transported to our office for laboratory testing and further classification. The laboratory testing program comprised determinations of natural moisture content, dry unit weight, plasticity, gradation and direct shear strength properties.

This report contains our findings regarding site soil, ground water and other geologic conditions; conclusions pertaining to expansive soils, bearing capacity, settlement, soil percolation capacity, slope stability and foundation conditions; and, recommendations for site preparation and grading, foundations, floor support, retaining walls, leach field design, drainage and erosion control.

In Appendix A, the location of the project site is shown in relationship to surrounding landmarks and cultural features on Plate No. A1, Vicinity Map. The approximate locations of the test borings and percolation tests are depicted in relationship to existing ground surface elevation contours and site features on Plate No. A2, Site Plan. Geotechnical descriptions and related data recorded during the field exploration phase of our study are displayed on Plates No. A3 through A5, Logs of Borings. A key to the soil symbols and identification criteria used on the log is presented on Plate No. A6, Unified Soil Classification System. The results of the field percolation tests are contained on Plates No. A7 through A9.

The results of the natural moisture content and dry unit weight tests are posted on the Logs of Borings, on which are also indicated the types of other laboratory tests conducted on corresponding samples. The remaining laboratory test data are contained in Appendix B. The results of the plasticity tests are portrayed on Plate No. B1, Atterberg Limits Test Data. The results of the gradation test are illustrated on Plate No. B2, Mechanical Sieve Analysis Test Data. A summary of the strength tests is presented on Plate No. B3, Direct Shear Test Data. References consulted during the course of this investigation are listed in Appendix C.

WEIDIG
Geoanalysts

Project Description

The proposed home will be a two-storey, detached, single-family dwelling of wood-frame construction. The mauka two-thirds of the upper-level floor system will be a concrete slab on grade, and the remainder will consist of suspended wood diaphragms spanning timber joists. The lower-level floor will be a concrete slab on grade. The two levels will be separated by a retaining wall. Additional improvements will include an on-site effluent disposal system composed of a septic tank and leach field, and a rainwater collection tank to provide domestic potable water. Grading will require cuts up to eight feet deep and fills up to five feet deep behind the interior retaining wall.

FINDINGS

Site Description

As shown on Plates No. A1 and A2, the subject property is a quadrilateral parcel encompassing approximately 11,326 square feet at the makai terminus of Poloke Place (State of Hawai'i, 1996). Ground surface over the site falls from about elevation 1,372 feet, near the mauka-'ewa property corner, to approximate elevation 1,322 feet near the center of the makai property line, resulting in an overall gradient approaching 38 percent.

Several mature trees up to five feet in diameter stand on the property, and are concentrated near its center. Thickets of bamboo skirt the mauka and 'ewa property boundaries. A wood deck supported upon concrete strip footings exists near the diamondhead property line, just outside of which is a two-storey wood frame residence and garage at 168 Poloke Place. A set of concrete stairs descends from the street level along the 'ewa side of the garage to a brick landing next to the deck, and a path beyond. A low concrete block masonry wall runs along the mauka property line. The lower half of the parcel contains a wood trellis adjoining a garden, wooden fences, a concrete wall surmounted by a wood fence, and a set of stairs leading downward from the garden.

Geologic Setting

The property lies on a fringing spur of the Ko'olau Range, a chain of extinct volcanoes built of a series of basaltic lava flows about 2.6 million years old. The lava flows are intersected by sheet dikes composed of dioritic intrusive rocks. In the vicinity of the subject site, the lava flows and intrusive rocks are overlain by ash and cinders deposited during eruptions of nearby Pu'u Kākea and Mount Tantalus, last active about 14,000 years ago (Stearns, 1935).

The soil profile beneath the property is indicated to consist of cinders, pumice and ash assigned to the Tantalus series. These soils are indicated to have a low shrink/swell potential and low corrosion

potentials with respect to uncoated steel and concrete. The erosion hazard is considered severe on slopes with a gradient exceeding five percent (Footc, *et al.*, 1972).

Earth Materials

The test borings revealed surficial soils consisting of a brown to dusky reddish-brown, moist, soft to stiff clayey silt (Unified Soil Classification: MH) extending from the ground surface to an average depth of about two and a half feet. Beneath the surficial soil horizon the borings penetrated deposits of reddish-brown, moist, loose silty sand (SM) to the maximum depth explored, about 14½ feet. These soils are composed of sharp, well-graded cinders with low dry unit weights and high moisture contents. They are identified as a part of the Tantalus series, described above. Further subsurface details are shown on Plates No. A3 through A6.

Ground Water

Each test boring was checked for the presence of ground water during drilling and at intervals following completion. No free ground water was observed at any location.

Soil Percolation

The soils underlying the proposed leach field location were found to have rapid percolation characteristics, as summarized on Plates No. A7 through A9. The average final percolation rate among each set of three test locations is 0.44 minute per inch.

CONCLUSIONS

Expansive Soils

The results of the plasticity tests, shown on Plate No. B1, demonstrate that the surficial soils have moderately high plasticity properties (plasticity index = 30) and moderately high water retention characteristics (liquid limit = 70 percent). The plasticity index is the maximum range of water contents which a soil can assume under natural conditions. It represents the difference between the liquid and plastic limits. The liquid limit is the maximum amount of water that a soil is capable of absorbing without becoming fluid. The plastic limit is the minimum amount of water a soil can hold without crumbling. Soils with high plasticity indices are expansive. Expansive soils swell or heave when they absorb moisture, and shrink or contract when they lose moisture. Because the surficial soils will be removed or

covered with new fill of low plasticity, its volume changes with variations in moisture content are not expected to affect the proposed improvements.

The results of the soil gradation test, appearing on Plate No. B2, indicate that the average composition of the cinder deposits is less than 1 percent gravel, about 84 percent sand, and slightly less than 16 percent silt. Because the soils are almost entirely granular, they are nonplastic.

Bearing Capacity

The results of this investigation indicate that the cinder deposits can sustain directly-applied loads of light to intermediate magnitude. Direct shear strength tests conducted on undisturbed samples of these soils indicate a residual internal friction angle of about 21° and as much as 345 pounds per square foot in cohesion, as portrayed on Plate No. B3. The internal friction angle is a measure of soil grittiness, while the cohesion component is a measure of soil stickiness.

Settlement

Foundation settlement magnitudes can be estimated by the modulus of vertical subgrade reaction, which is fixed for a particular range of loading conditions. Laboratory test data indicate that this modulus is on the order of 65 pounds per cubic inch for the zone of cinders. This value indicates that the cinders can be expected to compress about one inch under a uniform loading on the order of 9,500 pounds per square foot.

If new foundations are designed in accordance with the recommendations of this report, we expect a maximum total foundation settlement of ½ inch, and a maximum differential settlement ¼ inch between any two adjacent foundations. All settlements would be expected to occur almost immediately upon load application.

Slope Stability

A series of limit equilibrium slope stability analyses was conducted for the existing slope. These analyses were based on the results of laboratory tests, stratigraphic relationships implied by the test boring encounters and topographic information. The analyses are predicated upon Bishop's Method, in which the potential failure surfaces are rotational and arcuate; therefore, these surfaces are called "slip circles." A safety factor, defined as the ratio of driving forces to resisting forces, is computed for each trial slip circle. Driving forces include soil weight, earthquake effects and hydrostatic pressures due to ground water. Resisting forces, acting along the potential slip circles, primarily consist of the strength properties of the soils. If the sum of the resisting forces is greater than the sum of the driving forces, a safety factor

greater than unity results. Conversely, a safety factor less than unity is computed when the sum of the driving forces is greater than that of the resisting forces. Ratios greater than unity represent relative states of stability, while those less than unity represent relative states of instability.

Through the assistance of appropriate computer programs, we completed numerous analytical trials to search for the minimum possible safety factor, given prevailing subsurface conditions and slope geometry. The results of those trials indicate a minimum safety factor of about 8.5. This value indicates that the slope is grossly stable and can be expected to remain if it is not significantly steepened without retention.

Foundation Conditions

Our study indicates that the new home can be supported upon conventional, reinforced concrete foundations based at a relatively shallow depth, in undisturbed cinders. Our investigation also indicates that the proposed concrete slab-on-grade floors can be supported upon undisturbed or recompacted cinders, new fill that is processed, placed and compacted as recommended below, or a combination of those materials.

RECOMMENDATIONS

Site Preparation

Clearing and Grubbing - All surface vegetation, unwanted trees and associated root systems over half an inch in diameter, existing concrete footings and wood structures should be removed from the proposed construction areas. The resulting debris should be hauled off site and disposed of in accordance with applicable City and County ordinances. Where they extend below planned finished grade, excavations and depressions resulting from site clearing and grubbing operations should be dug out to expose firm soil, and backfilled with approved, engineered fill in accordance with the following recommendations.

Temporary Excavations - Excavations required for subsurface parts of the construction will encounter cinders which are sensitive to erosion, vibration and other external forces. Temporary excavation slopes should not be attempted at an inclination steeper than 140 percent (1.4 vertical to 1.0 horizontal). The grading contractor must bear the responsibility for insuring the stability of all temporary excavation slopes. If shoring is required, the responsibility for its design and installation also should be borne by the grading contractor.

Subgrade Preparation - Following excavation, the soils exposed at building pad subgrade level, including cut areas as well as areas designated to receive engineered fill, should be scarified to a depth of six inches, brought to at least the optimum moisture content, and compacted to not less than 90 percent relative compaction, in accordance with ASTM Designation D 1557-91.

Fill Material - Prior to use, all soils intended for use as fill or backfill should be approved by the project geotechnical engineer. On-site soils may be reused as such fill, if they are processed to remove rubble, rubbish, vegetation, rock fragments or irreducible hard lumps exceeding four inches in largest dimension, and other unsuitable or perishable substances. All imported soils, if required, should have a plasticity index not exceeding 15, when tested in accordance with ASTM Designation D 4318-84, and at least 20 percent of the particles should pass the No 200 sieve, when tested in accordance with ASTM Designation D 422-90.

Fill Placement and Compaction - All fill and backfill material should be placed in horizontal lifts not exceeding eight inches in loose thickness. Each lift should be brought to at least the optimum moisture content and compacted to not less than 90 percent relative compaction, per ASTM Designation D 1557-91. All earthwork operations should be observed and the soils tested by the project geotechnical engineer or his representative. The further recommendations of this report are contingent upon adherence to this and the previous recommendations.

Foundations

The proposed home and incorporated retaining wall should be supported upon isolated, reinforced concrete footings in undisturbed soil that is inspected and approved by the project geotechnical engineer. Perimeter foundations should be based at a minimum depth of 20 inches below lowest adjacent building pad grade. Interior foundations should be based at a minimum depth of 14 inches below finished floor slab elevation. All foundations should have a minimum width of 16 inches. Foundation excavations should be formed to prevent raveling of the cinders in which they will bear. After the forms are stripped, the excavation remnants should be backfilled as described above.

Foundations so established should be designed for maximum allowable soil bearing values of 1,400 pounds per square foot for dead load, 2,100 pounds per square foot for dead plus permanently-applied live ("real") load, or 2,800 pounds per square foot for total load, including the effect of either seismic or wind forces. Half the weight of structural steel and concrete extending below grade should be added to the net loads at ground line to account for the difference in weight between foundations and soil.

Resistance to horizontal foundation displacement will be provided by passive earth pressures and friction. Passive pressures should be assumed equal to those exerted by a fluid weighing 190 pounds per cubic foot exerted against any appropriate vertical foundation face. Frictional resistance acting along the contact between any horizontal foundation base and the supporting soils should be calculated at 0.30 times the net applied "real" load. If passive pressures and friction are combined, the larger component should be reduced by half.

Resistance to foundation uplift will be provided by the weight of foundation concrete; soil resistance developed along shear planes extending from the outer foundation edges and upward at 65° from the

horizontal; and, the weight of soil overlying the pullout envelope enclosed by the foundation edges, shear planes and finished grade. The weight of foundation concrete may be assumed at 120 pounds per cubic foot, and the weight of soil within the pullout envelope may be assumed at 70 pounds per cubic foot. The resistance acting along the shear planes defining the pullout envelope may be assumed at 110 pounds per square foot.

Retaining Walls

Earth Pressures - Walls that are capable of deflecting at least 0.1 percent of their height at top-of-wall grade should be designed to resist active lateral earth pressures equivalent to those exerted by a fluid weighing 42 pounds per cubic foot where wall backslope is level, or 54 pounds per cubic foot where the wall backslope is inclined up to 50 percent (2.0 horizontal to 1.0 vertical). Unyielding walls incapable of such deflection should be designed to resist at-rest lateral earth pressures equivalent to those exerted by a fluid weighing 58 pounds per cubic foot where wall backslope is level, or 65 pounds per cubic foot where the wall backslope is inclined up to 50 percent (2.0 horizontal to 1.0 vertical). These parameters do not include additional external influences, such as surcharge pressures exerted by contiguous floor or foundation loads.

Wall Drainage - In addition to standard waterproofing, all walls should be fully drained and backfilled in accordance with the following recommendations.

Exterior retaining walls may be drained by means of weep holes, while interior retaining walls should be drained by means of an aggregate or a prefabricated drainage system. If weep holes are chosen for the exterior walls, they should be at least four inches in diameter and spaced no farther apart than four feet on centers in a single row not more than eight inches above the lower exterior grade. Approximately one cubic foot of drain rock, as described below, should be wrapped in a geotextile envelope and affixed to the rear opening of each weep hole.

An aggregate drainage system should consist of a perforated collector pipe (holes down) surrounded and overlain by "3B fine" drain rock, conforming to ASTM C33-90, No.67 gradation. The collector pipe should be at least four inches in diameter, and should conform to PVC Schedule 40 requirements. The spring line should be positioned along, and no more than eight inches above, the heel of the wall, should be centered within the blanket of drain rock, which should be at least 12 inches wide, should extend to within eight inches of the ground surface, and should be capped with compacted native soil. The collector pipe should be sloped to drain by gravity to an appropriate discharge point. The extension beyond the limits of the trench should be solid and its end screened over. To prevent fine soil particles from impregnating the drain rock section, a geotextile barrier, such as Mirafi® 140N, should be installed between the drain rock section and any exposed soil surfaces. Alternatively, a prefabricated drainage system, such as Miradrain® could also be used, pending our review and approval.

Backfill - Wall backfill should consist of clean, native or imported soils conforming to the quality and standards described previously. Backfill material should be placed in a zone defined by the rear surface of the wall or aggregate drain (whichever applies), the top elevation of the wall footing, a plane sloping upward at an inclination no steeper than 140 percent (1.4 vertical to 1.0 horizontal) and finished grade behind the wall. Wall backfill should be placed in level lifts not exceeding eight inches in loose thickness, brought to at least the optimum moisture content, and compacted to not less than 90 percent relative density, as stipulated by ASTM Designation D 1557-91.

Concrete Slabs

Interior Slabs - Concrete slab-on-grade living area and garage floors should be at least five inches thick and each should be underlain by a capillary break consisting of a blanket of crushed rock at least four inches thick. This material should be "3B fine" drain rock, conforming to ASTM C33-90, No.67 gradation. If enhanced protection against termite invasion is desired, a four-inch thick blanket of basaltic termite barrier sand could be installed instead of the capillary break. In either case, an impervious membrane at least six mils thick should be installed above the capillary break zone. A course of damp, clean sand about two inches thick over the membrane is suggested to assist in protecting the membrane from punctures during construction, and to promote curing of the overlying slab concrete.

Floor slabs should be reinforced with minimum No. 3 deformed steel bars set on 18-inch centers in each direction. All reinforcing should be positioned at slab middepth.

Exterior Flatwork - Construction joints consisting of ruled notches spaced on maximum five-foot centers are recommended for new walkway slabs and on maximum ten-foot centers for the lānai slabs. These slabs should be at least five inches thick and should be reinforced with at least No. 3 bars spaced on 18-inch centers in each direction. All reinforcing should be positioned at slab middepth.

Effluent Disposal System

The proposed absorption field should be located at least 20 lateral feet away from the residence and at least five lateral feet away from any property line. The proposed septic tank should be located at least five lateral feet away from the residence and at least ten lateral feet away from any property line.

Based on an average percolation capacity of 0.44 minute per inch, and service for an ultimate residential configuration of three bedrooms, the recommended absorption area is computed at 210 square feet. This can be satisfied by excavating three trenches, each 24 inches wide and 35 feet in length. The minimum lateral distance between the longitudinal centerlines of the trenches should be seven feet.

The effluent disposal pipe should consist of 12-inch lengths of agricultural drain tile, two- to three-foot lengths of vitrified clay sewer pipe, or perforated nonmetallic pipe, all at least four inches in diameter and placed as level as possible. Each drain pipe should be surrounded by crusher run gravel ranging from two and a half inches to one half inch in diameter. This material should extend from at least four inches above the top of the pipe to at least eight inches below the bottom of the pipe. If tile is used, the upper half of the joint openings should be covered. The top of the gravel zone should be covered with geotextile fabric such as Mirafi® 140N or equivalent to protect the gravel from soil impregnation by the overlying earth backfill. The absorption trenches should be capped with the excavated soils, placed and compacted to the same density as the adjacent undisturbed soils. The minimum liquid capacity of the septic tank should be 900 gallons.

Surface Drainage

Because the native soils are sensitive to erosion, discharge from the building roof lines as well as runoff from the exterior flatwork areas must be directed away from the foundation lines. The new roof systems should be provided with flashing, gutters and downspouts to collect and divert runoff through a closed piping system and away from any foundations or slab edges. No surface or roof drains should be connected to any subdrains. All surface and subsurface drainage systems must be maintained and inspected on a regular basis.

Erosion Control

Runoff onto areas where soils remain exposed should be dispersed to avoid points of concentrated flow and subsequent erosion. Landscaping should be established as quickly as possible over all areas where native soils are exposed to reduce exposure to wind and runoff erosion. Establishment of rapidly-spreading ground covers or other plant species with root systems that will expand quickly is recommended as soon as construction scheduling will permit.

Supplemental Services

Weidig Geoanalysts should be retained to review the construction plans and specifications to determine whether the recommendations contained in this report are adequately reflected in those documents. The results of our review would be described in writing. Weidig Geoanalysts also should be retained to inspect the foundation excavations as well as to test and observe any earthwork construction.



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

LAND DIVISION
P.O. BOX 521
HONOLULU, HAWAII 96809

AGRICULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

Ref.:PB:SL

JUN 18 2001

Mr. James Thompson
Walter P. Thompson, Inc.
Surveying & Mapping
720 Iwilei Road, Suite 425
P.O. Box 3351
Honolulu, Hawaii 96801

Dear Mr. Thompson:

Subject: Confirmation That TMK: 2-5-15:24 is a Separate Lot of Record -
Tantalus, Oahu

Thank you for your may 3, 2001 inquiry regarding the subject parcel. We have reviewed the information you submitted and have determined that Tax Map Key 2-5-15:24 is a separate lot of record.

Thank you for your cooperation in this matter. Please feel free to call Sam Lemmo of the Land Division, Planning Branch at 587-0381, should you have any questions on this matter.

Aloha,

Harry Yada, Administrator
Land Division

Cc: Chairman's Office

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



BROCK G. ANDERSON, Ph.D., M.P.H.
XIAOYI ZHANG, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD / WB

June 5, 2002

Mr. Roland Ejercito
P.O. Box 2681
Honolulu, Hawaii 96803

Dear Mr. Ejercito:

Subject: Individual Wastewater System (IWS) Plans for
Charles Holland
Project Site: 166 Poloke Place, Honolulu, Oahu
TMK: (1) 2-5-15: 24
IWS File No. 3606

IWS plans consisting of a septic tank and soil absorption bed to serve a new three bedroom dwelling located at the above site have been reviewed by the Wastewater Branch for conformance to applicable provisions of Hawaii Administrative Rules, Title 11, Chapter 62, entitled "Wastewater Systems." The IWS plan conforms to applicable provisions of Chapter 11-62.

THIS PROJECT IS DESIGNATED FOR A JOINT INSPECTION. PLEASE CONTACT MR. JOHNNY ONG OF THE WASTEWATER BRANCH AT LEAST FIVE (5) DAYS BEFORE YOU PERFORM THE IWS FINAL INSPECTION SUCH THAT HE CAN BE PRESENT AND ACCOMPANY YOU OR YOUR STAFF DURING THE INSPECTION. FAILURE TO DO SO WILL RESULT IN ANY OR ALL OF THE FOLLOWING: (1) DELAY IN AUTHORIZING USE OF THE SYSTEM; (2) REQUIRING THE OWNER/CONTRACTOR TO RE-OPEN/EXPOSE ESSENTIAL PORTIONS OF THE IWS; (3) REQUIRING OWNER/CONTRACTOR TO PROVIDE VERIFICATION OF MATERIALS USED AND INFORMATION ON CONTRACTOR INSTALLING THE SYSTEM.

The Department of Health will sign an applicable county building permit application provided that all information submitted as part of the IWS plan and county building permit application are consistent with each other and meet applicable provisions of Chapter 11-62 at the time of permit signature.

As the professional engineer responsible for the design of the above wastewater plan, it is your responsibility to inform the owner/lessee of the property that a) the IWS plans must be attached to each set of permit construction plans, b) the IWS must be installed by a licensed contractor, c) inspected by the engineer, and d) authorized in writing by the Department before use.

Mr. Roland Ejercito
June 5, 2002
Page 2

Should you have any questions, please feel free to contact the Wastewater Branch at telephone no. 586-4294.

Sincerely,

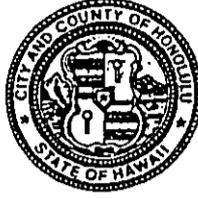

DENNIS TULANG, P.E.
Chief, Wastewater Branch

JO:jc

Attachment

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 527-6743 • INTERNET: www.co.honolulu.hi.us



JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

2002/ELOG-2228 (eym)

August 8, 2002

Mr. Alan Ewell
Integrated Architecture
180 Forest Ridge Way
Honolulu, Hawaii 96822

Dear Mr. Ewell:

Special Management Area Review
Charles and Allison Holland
Tax Map Key : 2-5-15:24
Type of Project: New Single-Family Dwelling

The proposed project on the above-referenced tax map key has been reviewed. We find that it:

- Is not within the Special Management Area.
- Is within the Special Management Area, but is not defined as "development" and is therefore, exempt (Section 25-1.3[2][], Chapter 25, Revised Ordinances of Honolulu).

Should you have any questions, please contact Eileen Mark at 527-5374.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Eileen Mark".

for RANDALL K. FUJIKI, AIA
Director of Planning
and Permitting

RKF:fm

posse doc no. 6680

STATE OF HAWAII
Department of Land and Natural Resources
Land Division

REF:PB:TC

FILE NO.: OA-3096

Acceptance Date: June 25, 2002
180-Day Exp. Date: December 30, 2002

AUG 29 2002

Charles A. & Allison A. Holland
c/o Mr. Alan Ewell
180 Forest Ridge Way
Honolulu, HI 96822

Dear Mr. Ewell:

SUBJECT: Request for Response to Comments Conservation District Use Application
(CDUA) File No. OA-3096

Enclosed please find the comments we have received from participating agencies. Could you please respond to the substantive comments and/or identify where in the application or EA they are addressed. Please include copies of the substantive comments with your responses in the final EA.

Should you have any questions, please contact Traver Carroll of our Land Division's Planning Branch staff at 587-0439.

Aloha,



Dierdre S. Mamiya, Administrator
Land Division

Attachments

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
OFFICE OF ENVIRONMENT QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

August 22, 2002

Ms. Linda Miyashiro
First Hawaiian Bank, Trust Division
999 Bishop Street
Honolulu, Hawai'i 96829

Mr. Allen Ewell
180 Forest Ridge Way
Honolulu, Hawai'i 96822

Mr. Traver Carroll
State of Hawai'i Department of Land and Natural Resources
Land Division
1151 Punchbowl Street
Honolulu, Hawai'i 96813

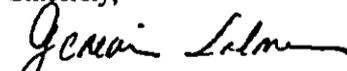
Dear Ms. Miyashiro and Messrs. Ewell & Carroll:

The Office of Environmental Quality Control (OEQC) has reviewed the draft environmental assessment for the Holland Residence, Tax Map Key 2-5-15, parcel 24, in the judicial district of Honolulu, and offers the following comments for your consideration and response:

1. **CONSULTATION:** The OEQC believes that the neighbors as well as the neighborhood board should be consulted pursuant to Section 11-200-9(a)(1), Hawai'i Administrative Rules as the latter has jurisdiction and may provide expertise, and the former may be affected by the proposed action.
2. **HISTORY:** Please elaborate further on the history of the parcel especially with respect to structures on or adjacent to the parcel. Was (were) there a house (houses) on (or nearby to) this property? If so, when?
3. **SUSTAINABLE BUILDING DESIGN:** The Office requests that you visit our website at <http://www.state.hi.us/health/oeqc/index.html> and read the guidance documents concerning sustainable building design for possible incorporation into the project.
4. **USE OF RECYCLED GLASS IN CONSTRUCTION PROJECTS.** To promote the use of recycled materials in-state, section 103D-407, Hawai'i Revised Statutes recommends that State/county agencies purchase materials with minimum recycled glass content. We ask that you consider this in the design of your station.
5. **NATIVE, INDIGENOUS AND POLYNESIAN INTRODUCED PLANTS FOR USE IN PUBLIC LANDSCAPING:** We ask that you consider the use of xerophagic native, indigenous and polynesian introduced plants in your landscaping.

If there are any questions, please call Leslie Segundo, Environmental Health Specialist, at (808) 586-4185. Thank you for the opportunity to comment.

Sincerely,


GENEVIEVE SALMONSON
Director



INTEGRATED ARCHITECTURE DESIGN / BUILD / ENERGY ANALYSIS

180 Forest Ridge Way, Honolulu, Hawaii 96822 (808) 945-3853 Fax (808) 944-8177 ewell@hawaii.rr.com

05 October 2002

Genevieve Salmonson, Director
State of Hawaii Office of Environmental Quality Control
235 South Beretania Street
Honolulu, Hawaii 96813

Dear Ms. Solmonson:

Thank you for your review, dated 8/22/02, of the draft environmental assessment for the Holland residence (TMK 2-5-15:24). Your comments were pertinent and addressed important issues. Hopefully, our response to your comments will improve the energy and resource efficiency of the project and facilitate better relations with the Hollands' immediate neighbors and the Tantalus community as a whole.

Please allow me to address your comments in the order they were presented:

1. CONSULTATION: At your suggestion I made a presentation regarding the project to the Tantalus Community Association (TCA) Board meeting on September 16th, 2002. My presentation was well received, and I have attached a copy of a letter to that effect from Jim Shon, the President of the TCA.

There are only two neighbors adjacent to the Hollands' proposed new home (see map 3). Dr. Michael Carney and his wife, Diane Kucmeroski purchased the Hollands' previous home at 168 Poloke Place last year. They were aware at the time of sale that the Hollands planned to build on the subject lot which they retained. They agreed to an easement for the Hollands to have permanent use of an existing garage on their property. They have been kept informed of the progress of the project throughout the design and permitting process.

The other adjacent properties are owned by Edward Lever, who purchased the former Dillingham estate at 164 Poloke Place about a year and a half ago. At the time of sale he was aware that the Hollands existing home was on the market, and that they were considering building anew home on the lot adjacent to his property. The Hollands and I have met with Mr. Lever on numerous occasions regarding access, privacy and siting of the new home.

Both neighbors have been very supportive throughout the design and permitting process and both have had significant input, especially in site planning. The Hollands look forward to many years of cordial relations with their new neighbors.

2. HISTORY: At your request I have added additional information to the Environmental Assessment section entitled "Historic and Traditional Uses of the Site". That information is summarized briefly below.

The Hollands' property, TMK 2-5-15:24, was part of a larger parcel awarded to Keawehano by the crown in 1862. No evidence has been found on the property of traditional uses during that period or earlier. In 1901, the property was deeded to William Castle by the heirs of Keawehano in repayment of a debt. The following year, Castle surveyed the property and sold it, as part of a larger parcel, to Dr. W.L. Moore, in whose family it remained until 1921 when it was sold to Elsie Morgan.

In 1925, beginning with this lot, T. Edgar Robinson began buying up property in the Poloke area of Tantalus. By 1930 he owned several hundred acres. He chose to build a house on the adjacent property where the Hollands' previous residence stands. The date of original construction is not certain. The subject property (TMK 2-5-15:24) was developed as extensive gardens for the homestead, but no evidence of building construction has been found. The garage on the adjacent property, to which the Hollands have deeded access, was built during this period.

In 1944, Robinson's widow, Iwalani, sold all the her holdings on Tantalus to Charles McWayne, who expanded and renovated the old homestead several times over the years. In 1966, McWayne's widow sold two lots to the Hollands, who demolished the original homestead to build on the site. During their tenure, no buildings have been constructed an on the subject property.

3. SUSTAINABLE BUILDING DESIGN: Sustainable building design has been a central issue throughout the planning process for the Hollands' new residence. In doing background research for the project, I have visited your website on several occasions and found it to be well organized and useful. Rather than listing all the specific design strategies, material choices and construction techniques we propose to use, I have attached a completed a Hawaii Built-Green "Home Builder Certification Checklist". As you can see, the Total Points for the Project significantly exceed the number required for the highest rating in the program.

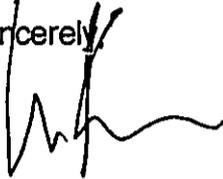
4. USE OF RECYCLED GLASS: We are excited to be able to use recycled stained glass from the original homestead on the adjacent property in the front door sidelight and the skylight in the powder room.

5. USE OF NATIVE, INDIGENOUS AND POLYNESIAN-INTRODUCED PLANTS: As described in the Environmental Assessment, the property has been used as developed landscape garden for over 50 years. A few native or indigenous or Polynesian-introduced plants are included(see list of existing plant materials). All the plants chosen for the garden, however, reflect the Hollands' abiding love for the Tantalus landscape. They require no irrigation due to the generous rainfall in the area, provide excellent habitat for wildlife and, in the case of Polynesian-introduced species such as bananas, taro and sweet potatoes, provide a very local and nutritious food source.

During construction, all plant materials removed from the house site will be temporarily replanted in a safe location to await final landscaping. Every tree that can be saved will be saved. No soil materials will be imported or exported. Runoff will carefully controlled during excavation, and original site contours will be maintained as much as possible.

Thanks again for your insightful comments on our project. I hope I have adequately addressed your concerns here. We share your commitment to protect Hawaii's fragile environment and, more specifically, the unique area that is the Tantalus Conservation District. We hope that this project can be a model of environmental responsibility and encourage others to consider more carefully the consequences of their actions. Please call me at 524-2244 if you need any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alan Ewell', with a stylized, flowing script.

Alan Ewell



TANTALUS COMMUNITY ASSOCIATION

September 26, 2002

Alan Ewell
180 Forest Ridge Way
Honolulu, HI 96822

RE: Presentation to TCA Board of Directors on Plans for 166 Poloke Place.

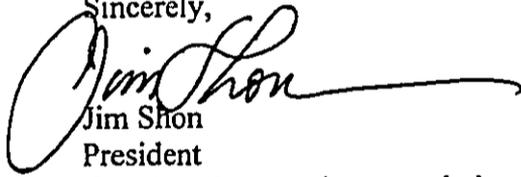
Alan
Dear Mr. Ewell,

On September 16, 2002, the Tantalus Community Association Board of Directors met and received your presentation of architectural plans for a new house to be constructed at 166 Poloke Place, owned by Mr. and Mrs. Holland.

The TCA BOD appreciates your thorough presentation and explanation of the plans for this site. As you know, TCA is the only community-based organization representing the interests of residents in the Tantalus Community. We are the major point of contact with key government agencies, such as the Department of Land and Natural Resources, which manages the watershed and writes rules and regulations for construction and permits. We feel it is appropriate for the TCA to be well informed of construction plans and the application of government regulations to this area.

Thank you for your informative presentation, and the recognition that TCA is an important point of contact and feedback for projects affecting Tantalus.

Sincerely,


Jim Shon

President
Tantalus Community Association



HOME BUILDER Self-Certification Checklist

Please complete the checklist to qualify for a HAWAII BUILTGREEN Star Rating™...Mahalo!

Requirements to Qualify at 1-Star Level

- Program Orientation (one time only)
- (All ★'d items)
- Earn minimum of points:
 - For NV homes, 35 pts.
 - For A/C homes, 45 pts. (Also see ★'d requirements under "A/C homes only" sections.)

Requirements to Qualify at 2-Star Level (minimum 120 points NV; 130 points A/C)

- Meet 1-Star requirements
- Earn 85 additional points; at least 5 points to come from each section.

Requirements to Qualify at 3-Star Level (minimum 215 points NV; 225 points A/C)

- Meet 2-Star requirements plus 95 additional points.
- Attend a workshop on green building topic within past 12 months (e.g. Green Building Conference or construction waste management seminar)

Note: NV = Naturally Ventilated; A/C = Air Conditioned

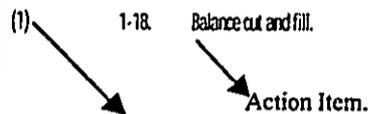
A/C homes require more energy to operate and add cost to the consumer's energy bill. Hawaii BUILTGREEN™ strongly encourages well-designed naturally ventilated energy-efficient homes. The program recognizes, however, special circumstances where A/C may be warranted such as areas where microclimates require greater heat or humidity control, when occupants have special needs, or existing conditions include environmental noise, dust, and pollution. To create equivalency between NV and A/C homes, there are some requirements that apply to A/C homes only. These are the ★'d items in the A/C-only sections. In addition, because there are additional items that are applicable only to A/C homes there are more points available to those homes; hence the higher thresholds for A/C homes.

Quick References:

- (HABIT) Guide to Resource Efficient Building in Hawaii (copies available at BIA)
- Contractor's Waste Management Guide: Best Management Practices and Tools for Job Site Recycling and Waste Reduction in Hawaii (copies available at BIA)
- Field Guide for Comfortable Homes in Hawaii: Energy Efficient & Economical Housing (draft available in July; for information contact Dean Masai, 587-3804)
- For information about Energy Star® Mortgage Program and other financial incentives call HECO 947-6937, HELCO 969-0127, Kauai Electric (246-8280), or MECO 1-888-632-6786.
- For information on Model Energy Code see <http://www.hawaii.gov/dbedt/ert/mec>.

Also see attached List of Resources.

Key to using Checklist:



Point value of Action Item (a star ★ means it is required to qualify for the program).

1. Circle points for individual Action Items you include in your project.
2. Add up points from circled Action Items.
3. Subtotal points for each section.
4. Add subtotals for your final rating.

Section 1: Protecting Your Site's Features & Functions

- DESIGN CHOICES**
- ✓(1) 1-1. Plastic, low toxic wood preservatives (no CCA), or naturally rot-resistant wood for landscaping.
 - ✓(3) 1-2. Natural water drainage maintained.
 - (3) 1-3. Surface water managed with detention ponds, grassy swales, or dry wells.
 - ✓(3) 1-4. Water management system allows groundwater to recharge.
 - ✓(5) 1-5. Minimum impervious surfaces on the site (no more than 15% of site excluding house and garage.) (See porous pavers in energy section.)
 - (10) 1-6. Pre-development conditions achieved for water cycle at completion.
 - (10) 1-7. Minimum impervious surfaces on the site (no more than 15% of site excluding house and garage.) (See porous pavers in energy section.)

- JOB SITE OPERATIONS**
- ✓(★) 1-8. No soil exposed during job (protected with mulch).
 - ✓(★) 1-9. No fill in sensitive areas.
 - ✓(★) 1-10. Sensitive areas flagged and protected during construction.
 - ✓(★) 1-11. Post cleanup procedures for spills.
 - ✓(★) 1-12. Hazardous wastes separated and properly disposed of.
 - ✓(★) 1-13. Sediment traps installed for construction.
 - ✓(★) 1-14. No adverse impacts on adjoining properties or critical areas during construction.
 - ✓(★) 1-15. Water quality monitoring during construction.
 - ✓(★) 1-16. Concrete trucks and pumps washed in designated areas (not in planned pervious areas).
 - (1) 1-17. Slopes stabilized with mulch.
 - ✓(1) 1-18. Balance cut and fill.
 - ✓(1) 1-19. Topsoil stockpiled and protected with mulch during excavation for post-construction use.
 - ✓(2) 1-20. No significant change to topography.
 - ✓(2) 1-21. Least-toxic form releases used.
 - ✓(2) 1-22. Amend disturbed soil to min. depth of 4" to restore soil functions.
 - (3) 1-23. Amend disturbed soil to min. depth of 8" to restore soil functions.
 - ✓(3) 1-24. Native vegetation saved and reused or donated.

- OUTDOOR WATER CONSERVATION**
- ✓(1) 1-25. Mulch used in landscaping to minimize evaporation.
 - ✓(2) 1-26. Rainwater recovery from roof for irrigation.
 - ✓(3) 1-27. Drought-resistant, native plants (site appropriate) for 50% of landscaped area.
 - ✓(3) 1-28. Irrigation system has water-saving features, such as drip irrigation, electronic timer, valves with manual flow control, and rain shut-off device.

- Bonus Points (Applicable for Custom Homes)**
- ✓(5) 1-29. Set aside 20% of site to be left undisturbed.
 - ✓(5) 1-30. Limit grading to 20 ft. outside building footprint.

35 Subtotal for Section 1

Section 2: Energy Performance & Comfort

- DESIGN CHOICES**
- Site**
- (1) 2-1. Space and arrange (stagger) buildings so all structures have good air flow.
 - (1) 2-2. Porous paving materials reduce thermal mass, heat gain, and glare.
 - (2) 2-3. Longer sides of home oriented north and south to reduce heat build-up.
 - ✓(2) 2-4. Existing or new landscape elements (trees) shade building and paved areas.
 - ✓(2) 2-5. Built elements (e.g. trellises, carports) shade paved areas.
 - ✓(2) 2-6. Orient buildings to maximize cooling potential or prevailing winds.
 - (2) 2-7. Use landscaping elements to improve air flow around structure.
 - ✓(3) 2-8. Generous areas of planting and ground cover (less hardscape) reduce site temp.
- Shell**
- ✓(1) 2-9. Light colored roofing.
 - ✓(2) 2-10. Light colored exterior wall surfaces.
 - ✓(2) 2-11. Attic or roof cavity vented with continuous ridge and eaves vents.
 - (2) 2-12. Attic or roof cavity vented with gable end vents.
 - (2) 2-13. Sill vents, floor vents, and venting skylights, allow hot air to escape the building by thermal convection.
 - ✓(5) 2-14. Shading on at least 50% of east and west wall surfaces.
 - ✓(5) 2-15. Radiant barriers and/or insulation in walls exposed to the sun.
 - ✓(5) 2-16. Radiant barriers and/or insulation in ceilings and attic spaces.
- Openings**
- ✓(1) 2-17. Orient to minimize heat build-up through openings.
 - (2) 2-18. Inlet openings (air comes in) slightly larger than outlet openings (air goes out) to enhance air flow.
 - ✓(2) 2-19. Windows located at body level.
 - ✓(2) 2-20. Generous screened openings protected from rain.
 - ✓(2) 2-21. High performance glazing on windows exposed to the sun (SHGC = .65 or less; U-value = .45 or less; VLT of .7 or more; designed to keep heat out.)
 - ✓(2) 2-22. For spaces with openings on adjacent walls, windows far apart and at diagonal.
 - ✓(2) 2-23. For spaces with openings on same wall, casement or wing walls appropriately spaced.
 - ✓(2) 2-24. Operable openings equal to at least 12% of floor area.
 - ✓(2) 2-25. At least two operable windows to the outside in each space.
 - (2) 2-26. Diffuse glare from skylights through baffles, splaying, or use of translucent glazing.
 - ✓(3) 2-27. Skylights with SHGC of 0.5 or less.
 - (3) 2-28. Operable skylights or skylights with built-in vents (on leeward side of skylight).
 - ✓(3) 2-29. Casement or jalousie windows for best air flow.

- (3) 2-30. No more than 25% of total glass area is located on east and west walls combined.
- (3) 2-31. Exterior horizontal shading for north and south windows (sufficient to protect completely from direct sun.)
- (3) 2-32. Exterior vertical shading for east and west windows (sufficient to protect completely from direct sun.)
- (3) 2-33. For sidelighting, light shelves used.
- (3) 2-34. For toplighting, roof monitors or clerestories used. (No skylights.)

Interior Layout and Finishes

- (1) 2-35. For spaces with openings on opposite walls, rooms oriented 45 degrees from wind direction.
- (2) 2-36. Design floor plans to provide effective cross ventilation and air flow at body level.
- (2) 2-37. Layout designed so activities with highest illumination needs are daylight.
- (2) 2-38. Floor plan allows deep daylight penetration.
- (3) 2-39. Use light colored interior finishes to enhance daylight (but avoid glare).

MECHANICAL VENTING & COOLING

- (1) 2-40. Timers installed on bathroom fans.
- (2) 2-41. Wired for ceiling fans in all bedrooms and family room.
- (2) 2-42. Solar powered attic vent.
- (3) 2-43. Whole house fan.
- (3) 2-44. Ceiling fans in all bedrooms and family room.
- (10) 2-45. No air conditioning.

Air Conditioning (A/C) Homes Only

- (★) 2-46. House meets Hawaii Model Energy Code standards for A/C buildings. (See Quick References for further details.)
- (★) 2-47. A/C system sized for efficient operation (not oversized).
- (★) 2-48. Programmable thermostats provided.
- (2) 2-49. Provide alternate means to balance air flow (e.g. undercut doors, return air ducts)
- (2) 2-50. Ducts unions and joints sealed with low-toxic mastic and fibrous tape.
- (3) 2-51. Ducts in conditioned space OR insulated to R-11.
- (3) 2-52. Install for easy maintenance and repair.
- (3) 2-53. Minimum SEER 12 A/C system.
- (5) 2-54. Duct Blaster Test conducted.
- (5) 2-55. House is Energy Star compliant (Hawaii MEC for A/C, PLUS options defined by EPA; see Quick References for further details.)

WATER HEATING

- Distribution**
- (1) 2-56. Electric water heater upgrade w/min .93 EF (energy factor)
 - (1) 2-57. Water heater timer.
 - (1) 2-58. Gas water heater upgrade w/min .60 EF
 - (1) 2-59. Heat trap installed or 1-inch pipe insulation on at least first 8' of outlet pipe from water heater. (Required (★) for A/C homes as part of meeting MEC)
 - (1) 2-60. Solar heater or heat pump for swimming pool heaters. (Required (★) for A/C homes as part of meeting MEC)
 - (1) 2-61. Water heater within 20' pipe length of bathroom fixtures
 - (2) 2-62. Heat pump water heater w/min. 1.9 EF
 - (2) 2-63. Hot water lines insulated to min. R-3 throughout entire house.
 - (2) 2-64. South roof area designed for future solar collector (min. 80 sq. ft within 30° of south)

- (3) 2-65. Rough-in for future solar water heating system.
- (10) 2-66. Solar water heater

Indoor water conservation

- (3) 2-67. Low flow shower heads & sinks (2.5 gpm)
- (3) 2-68. Low flow bath faucets (2.0 gpm)
- (2) 2-69. Front-loading, horizontal axis, or equal clotheswasher.
- (5) 2-70. Rainwater collection for potable use (with filtration as required)

*Double points if rainwater collection is not required.

ELECTRIC LIGHTING

- (1) 2-71. Reflectors in can fixtures to maximize available light.
- (1) 2-72. Dimmers for spaces where low-level lighting appropriate.
- (2) 2-73. Light tubes to reduce need for electric lighting.
- (3) 2-74. Compact fluorescent lamps (CFLs) in three high-use locations (including kitchen and entry light).
- (3) 2-75. Fluorescent lamps (T-8 or T-5) in service areas of the home. (Bulbs with CRI > than 80 and CCT of 3000K)
- (3) 2-76. Electronic ballasts for all fluorescents installed.
- (3) 2-77. CFLs substituted for incandescent down lights.

APPLIANCES

- (2) 2-78. Provide a microwave oven to reduce reliance on range.
- (2) 2-79. Energy Star range
- (2) 2-80. Energy Star clothes dryer
- (2) 2-81. Energy Star clotheswasher
- (2) 2-82. Energy Star dishwasher
- (5) 2-83. Energy Star refrigerator

Bonus Points for Custom Homes

- (10) 2-84. Photovoltaic or other renewable source for electricity (> 10% of electric load).

115 Subtotal for Section 2

Section 3: Health and Indoor Air Quality

DESIGN

See Section 2: Energy and Comfort. It contains several Action Items that enhance airflow and cross ventilation naturally.

FLOORS

- (1) 3-1. If using carpet, specify with CRI IAQ label
- (2) 3-2. Sealer on ceramic tile grout seams to control mold growth.
- (2) 3-3. Water-based finishes on wood floors
- (2) 3-4. If using carpet, install by tacking (no glue).
- (2) 3-5. Plywood and composites of exterior grade or formaldehyde-free.
- (2) 3-6. Low toxicity, low solvent mastics, sealants, and adhesives used for flooring.
- (2) 3-7. Formaldehyde-free subfloor and underlayment material
- (3) 3-8. Install low-pile or less allergen-attracting carpet and pad (w/ CRI IAQ label).
- (3) 3-9. Natural linoleum with low-toxic adhesive or backing.
- (5) 3-10. Hardwood or tile floors in 50% of living area.
- (5) 3-11. Limit use of carpet to one-third of home-square footage.
- (10) 3-12. No carpet.

CABINETRY AND TRIM

- (1) 3-13. Seal on ceramic tile grout seams to control mold growth.
- (2) 3-14. Water-based finishes on woodwork.
- (3) 3-15. Low-toxicity, low solvent mastics, sealants, and adhesives used for cabinetry, trim, and countertops.
- (3) 3-16. Cabinets and trim made with formaldehyde-free board and low-VOC finish.

INTERIOR WALLS

- (1) 3-17. Sealer on ceramic tile grout seams to control mold growth.
- (1) 3-18. Formaldehyde-free fiberglass insulation (available with BIBs or spec'd. Not standard batts).
- (3) 3-19. Low-VOC/low-toxic interior paints and finishes for large surface areas (VOCs no more than 50 g/l)
- (5) 3-20. Low toxicity, low solvent mastics, sealants and adhesives used for wallcoverings.

- MECHANICAL AND OTHER CONTROLS**
- (1) 3-21. Clothes dryer vented to outdoors.
 - (1) 3-22. Exhaust fans in home office areas.
 - (3) 3-23. Polyethylene piping for supply plumbing.
 - (3) 3-24. Crawl and attic spaces ventilated to prevent moisture accumulation.
 - (3) 3-25. Quiet fans (1.5 sones or less) in baths and kitchens to encourage use. (Include 60-minute timer).
 - (3) 3-26. Moisture barriers sealed prior to installation of flooring.
 - (3) 3-27. No electronic filters.

AIR-CONDITIONED (A/C) HOMES ONLY

- (3) 3-28. Use construction filters and replace just prior to move-in.
- (3) 3-29. Seal at doors, windows and all penetrations against moisture and air leaks.
- (5) 3-30. A/C systems provide fresh air at 935 or 15 CFM per person (whichever is higher).

JOB SITE OPERATIONS

- 3-31. Use "green" cleaners for final cleanup.
- 3-32. Protect building materials from moisture damage.
- 3-33. Vacuum stud bays before drywalling.
- 3-34. Vacuum floors before final flooring installation.
- 3-35. Ventilate after each new finish is applied.

Bonus Points (Applicable for Custom Homes)

- (3) 3-36. No pollen-bearing shrubs and trees (e.g. mock orange, pikake, plumeria, and mango) or allergenic grasses (e.g. rye) planted next to operable windows.

50 Subtotal for Section 3

Section 4: Durability and Materials Conservation

DESIGN CHOICES

- 4-1. Standard dimensions used to reduce waste.
- 4-2. Install materials with longer life cycles.
- 4-3. Stacked floor plans.
- 4-4. Install locally produced materials.

TERMITE DETAILS

- 4-5. All wood used has approved chemical treatment.
- 4-6. All cuts and drill holes in CCA-treated wood field-treated.
- 4-7. All plantings at least 24 inches from the building perimeter.
- 4-8. All roots thoroughly removed when vegetation cleared.
- 4-9. Regular inspection for termites during construction (post schedule).
- 4-10. Easy access provided for termite inspection by homeowner.
- 4-11. Materials impervious or resistant to termites (concrete, masonry, steel, and plastic lumber).
- 4-12. Poured concrete in place of wood or CMU for building foundations.
- 4-13. All slab penetrations sealed with epoxy or non-shrink grout.
- 4-14. Galvanized termite pans separate foundations from wood structures.
- 4-15. Termite colony elimination system (Sentricon or equiv.)

- (3) 4-16. 4-inch basalt termite barrier (BTB) around footings and beneath slabs (protect during construction).
- (3) 4-17. Non chemical termite control system (Termimesh or equivalent).
- (3) 4-18. Copper termite pans separate foundations from wood structures.

FRAMING 24"

- (1) 4-19. Intermediate Framing System (16" O.C. studs with 2-stud corners, ladder partitions, let-in headers)
- (1) 4-20. Engineered wood products for beams or headers
- (1) 4-21. Engineered wood products for floor or roof systems.
- (1) 4-22. Dimensional lumber from sustainably managed sources (FSC certified or equal).
- (1) 4-23. Recycled content fascia, soffits, or trim.
- (2) 4-24. Two-stud corners.
- (2) 4-25. Recycled content sheathing
- (3) 4-26. Galvanized steel framing for wall systems (assembled with high quality connectors)
- (3) 4-27. Galvanized steel framing for floor systems (assembled with high quality connectors)
- (3) 4-28. Galvanized steel framing for roof systems (assembled with high quality connectors)
- (3) 4-29. No framing lumber treated with toxic compounds such as CCA and ACZA.
- (3) 4-30. Advanced Framing System when permitted (24" O.C. studs, 2-stud corners, ladder partitions, let-in headers, etc.

FOUNDATION

- (3) 4-31. Non-asphalt based damp proofing for foundation and basement walls.
- (3) 4-32. Concrete with fly ash concrete.
- (3) 4-33. Recycled aggregate containing crushed concrete, brick, concrete block, asphalt, or glass cullet for base or fill.

SUB-FLOOR

- (2) 4-34. Recycled content underlayment.

WINDOWS AND DOORS

- (1) 4-35. No Juan doors.
- (1) 4-36. Wood flooring from sustainably managed sources (FSC certified or equiv.)
- (2) 4-37. Flashing to seal above doors, windows, and other openings.
- (3) 4-38. Frames are wood/composite with recycled content.
- (3) 4-39. Interior doors reclaimed.

INSULATION

- (2) 4-40. Insulation with recycled content. Examples include cellulose, fiberglass, expanded polystyrene (EPS), and mineral wool.
- (2) 4-41. Environmentally-friendly foam insulation (formaldehyde-free, CFC free, HCFC free).

INTERIOR WALLS

- (1) 4-42. Drywall with recycled content gypsum.

FINISH FLOOR

- (1) 4-43. Wood flooring from sustainably managed sources (FSC certified or equiv.).
- (1) 4-44. If vinyl flooring (discouraged), product with post-industrial recycled content.

- (1) 4-45. Recycled content carpet pad.
- (2) 4-46. Recycled content or renewed carpet.
- (3) 4-47. Reclaimed wood.
- (3) 4-48. Cork or bamboo flooring.
- (1) 4-49. Laminated or veneered wood floor.
- (3) 4-50. Concrete or indigenous stone flooring.
- (3) 4-51. Recycled content ceramic tile.
- (1) 4-52. Resilient flooring with no chlorine used during manufacturing.

CABINETS AND TRIM

- (3) 4-53. Cabinets made with medium density fiberboard or wheatboard.
- (2) 4-54. Finger-jointed or engineered wood trim (including MDF).
- (3) 4-55. Countertops with recycled content.
- (3) 4-56. Concrete or indigenous stone countertops.
- (3) 4-57. Cabinets constructed from reused materials.
- (3) 4-58. All hardwood trim or casework from certified sustainably managed sources (FSC or equiv.).

ROOF

- (1) 4-59. Flash all roof-to-wall intersections.
- (1) 4-60. Recycled content roofing material.
- (2) 4-61. 30-year roofing material.
- (3) 4-62. 40-year roofing material.

EXTERIOR FINISH

- (1) 4-63. Resource-efficient siding such as metal, vinyl, cement fiberboard, and stucco.
- (1) 4-64. Resource-efficient roofing such as metal panels or composite shingles with recycled content.
- (1) 4-65. Use 50-year siding product.
- (1) 4-66. Reworked paint.
- (2) 4-67. Exterior coatings and paints have recycled content.
- (2) 4-68. Materials are factory finished.

OUTDOOR FEATURES

- (1) 4-69. Pressure treated engineered lumber (non-CCA) for outdoor structures, decking, and landscaping features
- (1) 4-70. Compost or mulch in landscaping.
- (1) 4-71. Crushed/ground gypsum board as a soil amendment.
- (2) 4-72. Reclaimed or salvaged material for landscaping walls.
- (2) 4-73. Recycled content materials used for fences, benches, decking, docks, retaining walls, picnic tables, and landscape borders.
- (5) 4-74. Outdoor living area equals at least 25% of total floor area.

JOB SITE OPERATIONS*

- (1) 4-75. Posted job-site waste management plan (including reduce, reuse, recycle goals/actions)
- (1) 4-76. Waste management education conducted on site for field personnel
- (1) 4-77. Detailed take-off provided as cut list to framer
- (1) 4-78. Recycling areas or containers well-signed.
- (1) 4-79. Central cutting area or cut packs.
- (1) 4-80. Subcontractors required to participate in waste reduction efforts.
- (1) 4-81. Suppliers offering reusable, recyclable or U-turn packaging used.
- (1) 4-82. Building materials reused.
- (1) 4-83. Dimensional lumber reused.
- (1) 4-84. Recyclable supplies, e.g. construction fences, tarps, etc. used.

- (7) 4-85. Excess materials donated to a non-profit organization (e.g. ReStore, Habitat for Humanity).
- (0) 4-86. Wood scraps sold or given away.
- (0) 4-87. Reusable items sold or donated.
- (0) 4-88. Reusable forms used.
- (0) 4-89. Recycle cardboard.
- (0) 4-90. Recycle metal scraps.
- (0) 4-91. Recycle clean wood (untreated scrap (e.g. for composting).
- (0) 4-92. Recycle packaging.
- (0) 4-93. Recycle drywall.
- (0) 4-94. Recycle concrete/asphalt rubble, rock, and brick.
- (0) 4-95. Least toxic materials selected to reduce disposal requirements (e.g. paints, termite treatments).

*For custom homes, triple points for each item in this category, due to increased difficulty.

- Bonus Points**
- (5) 4-96. Track and prominently post waste reduction results on site (similar to safety record signs).
 - (5) 4-97. Home no larger than 1,800 square ft.
 - (10) 4-98. Home no larger than 1,400 square ft.
 - (10) 4-99. Wood from sustainably managed sources (FSC certified or equiv.) for more than 50% of wood used in home.

48 Subtotal for Section 4

Section 5: Environmentally-Friendly Home Operations

- (*) 5-1. Owners provided with information on operating and maintaining their "green" home for optimum performance. If A/C, must minimally include instructions about efficient O&M for A/C system and operation of programmable thermostats.
- (*) 5-2. Owners provided with information about maintaining their outdoor landscaping using "green" techniques. (Minimally to include a list of native and drought resistant plants.)
- (2) 5-3. Provide a list of Energy Star appliances for those not installed.
- (2) 5-4. Provide a laundry line. (If indoors, e.g. garage, provide adequate ventilation.)
- (2) 5-5. Recycling center with two or more bins included in or near kitchen (can be outdoors).
- (2) 5-6. Build a lockable storage closet for hazardous cleaning & maintenance products, separate from occupied space
- (3) 5-7. Furnish three compact fluorescent light bulbs to owners (encouraged if installing screw-in compacts)

5 Subtotal for Section 5

<u>253</u> Total Points for Project
Program Level Obtained:
<input type="checkbox"/> 1-Star ★ <input type="checkbox"/> 2-Star ★★ <input checked="" type="checkbox"/> 3-Star ★★★
By my signature, I certify that I have performed all Action Items checked above:
<u>ALAN EWEN</u>
(Home Builder Signature and Date)

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



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

In reply, please refer to:
File:

02-180/epo

August 5, 2002

Ms. Dierdre S. Mamiya, Administrator
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Mamiya:

Subject: Conservation District Use Application (CDUA) and
Draft Environmental Assessment (DEA)
Holland Residence, Roundtop Drive, Honolulu, Oahu
File No. OA-3096; Tax Map Key: 2-5-015: 024

Thank you for the opportunity to review and comment on the subject proposal. The CDUA/DEA was routed to the various branches of the Environmental Health Administration. We have the following comments.

Wastewater Branch (WWB)

As there is no existing City sewer service system in the vicinity, use of an individual wastewater system is being proposed. We have on record a wastewater plan, Septic Tank file No. 3606, which was approved as on June 3, 2002. Therefore, the WWB has no objection to the proposed project.

All wastewater plans must conform to applicable provisions of the Department of Health's Administrative Rules, Chapter 11-62, "Wastewater Systems." We reserve the right to review the detailed wastewater plans for conformance to applicable rules.

If you have any questions, please contact the Wastewater Branch at (808) 586-4294.

Noise, Radiation and Indoor Air Quality (NRFAQ) Branch

All project activities shall comply with the Administrative Rules of the Department of Health, Chapter 11-46, on "Community Noise Control."

Ms. Dierdre S. Mamiya, Administrator
August 5, 2002
Page 2

If you have any questions, please contact the NRIAQ at (808) 586-4701.

Sincerely,



GARY GILL
Deputy Director
Environmental Health Administration

c: WWB
NRIAQ

H. J. CAYETANO
GOVERNOR OF HAWAII



BRUCE S. ANDERSON, Ph.D., M.P.H.
KAPUNIAHUA WAIKANE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH

P.O. BOX 3378
HONOLULU, HAWAII 96801

Department of Health, Wastewater Branch
919 Ala Moana Blvd. Room 309
Honolulu, Hawaii 96814-4920
Phone (808) 586-4294 Fax (808) 586-4300

In reply, please refer to:
EMD / WB

A septic tank file has been found and the following information is provided. In general, the Department of Health has reviewed and approved of the plans based on the information submitted as verification that a treatment individual wastewater system (IWS) such as a septic tank was constructed and authorized to be used for wastewater disposal from a building/dwelling.

Tax Map Key number (1) 2-5-15:24
Septic Tank File # 3606
Applicant Name Charles Holland

Submit Plan Date JUNE 3, 2002
Plan Approval Date JUNE 3, 2002
Inspection Date _____
System Approved for Use Date _____

System Quality precast septic tank
Disposal Via bed
of Bedrooms 3

as of July 17, 2002

For further information, you may call our neighbor island engineers:

[] Mr. Joe Tateyama of the Wastewater Branch at the Kauai District Health Office at telephone 241-3323

[] Mr. Roland Tejano of the Wastewater Branch at the Maui District Health Office at telephone 984-8232.

BENJAMIN J. CAYETANO
GOVERNOR



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

OCT 23 2002

GILBERT S. COLOMA-AGARAN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

ERIC T. HIRANO
DEPUTY DIRECTOR

LINNEL T. NISHIOKA
DEPUTY DIRECTOR FOR
THE COMMISSION ON WATER
RESOURCE MANAGEMENT

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND
STATE PARKS

REF:PB:TC

Acceptance Date: June 25, 2002
180-Day Exp. Date: December 30, 2002

FILE NO.: OA-3096

Mr. Alan Ewell
180 Forest Ridge Way
Honolulu, HI 96822

Dear Mr. Ewell:

Subject: Conservation District Use Application (CDUA) OA-3096 for the Holland
Residence at, TMK (1) 2-5-015: 024, Honolulu, Oahu.

Upon acceptance of your application, staff discussed with you the necessity of incorporating the Conservation District height limitation in your plans, which were to be submitted with the final Environmental Assessment. We realize the City & County of Honolulu, Department of Planning & Permitting uses a natural grade oriented height regime. Unfortunately, the State does not. At your request, staff notifies you in writing of the need to adhere to Chapter 13-5, Hawaii Administrative Rules, Exhibit 4, Single-Family Residential Standards:

Maximum Height Limit

The maximum height of the building shall not exceed twenty-five feet measured from the highest point of the roof structure (excluding any allowed chimney, antenna, vents, or similar protrusions) down to the lower of the existing or finished grade at the lowest corner of the building.

Exceptions: Tsunami or flood-prone areas may allow consideration for additional height limits to satisfy flood insurance ordinances when so determined by the board.

Chapter 13-5 doesn't provide for any other variance regarding the maximum height limit.

We are enclosing a copy of Chapter 13-5 for your use and convenience. Should you have any questions, please call Traver Carroll of the Planning Branch, at 587-0439.

Aloha



Dierdre S. Mamiya, Administrator
Land Division

Attachment:

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division

DIVISION OF AQUATIC RESOURCES	
DIRECTOR	Suspense Date:
COM FISHERIES	Draft Reply <input type="checkbox"/>
AQ REC/ENV	Reply Direct <input type="checkbox"/>
AQ RECHN	Comments <input type="checkbox"/>
STATE SVCS	Information <input type="checkbox"/>
PLANNING	Comp Act & File <input type="checkbox"/>
STATISTICS	Return to:
REGISTRATION	Copies to:
PLANNING	Remarks:
STATE SVCS	02-562

Ref.:PB:TC

File Number: OA-3096
Acceptance Date: June 25, 2002
Expiration Date: December 30, 2002
SUSPENSE DATE: 21 Days from
stamped date
JUL 9 2002 7/30

MEMORANDUM

TO: Division of Aquatic Resources, Division of Conservation and Resource Enforcement, Division of Forestry and Wildlife, Historic Preservation Division, and Oahu District Land Agent

FROM: Dierdre S. Mamiya, Administrator
Land Division

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application (CDUA)
[Board Permit]

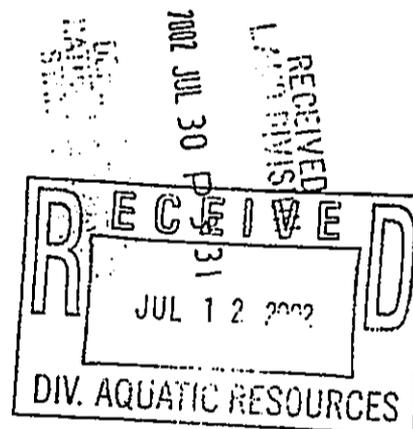
APPLICANT: Charles A. & Allison A. Holland

FILE NO.: OA-3096

REQUEST: Holland Residence

LOCATION: Roundtop Drive, Honolulu, Oahu

PUBLIC HEARING: YES NO



Attached please find a copy of the subject CDUA and Draft Environmental Assessment. We would appreciate your review and comment on this CDUA by the suspense date noted above.

Should you require additional information, please call Traver Carroll of our Planning Branch at 587-0439. If no response is received by the suspense date, we will assume there are no comments.

Attachment

No Objections
FONS1

[Signature]

7/29/02

PHONE (808) 594-1888

FAX (808) 594-1865



RECEIVED
DIVISION
2002 JUL 31 A 11:53

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

July 29, 2002

Ms. Dierdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, HI 96809

(HRD #02-671)

Subject: Conservation District Use Application (CDUA)
For Holland Residence – Round Top Drive
TMK: (1) 2-5-015:024
Honolulu, Hawaii

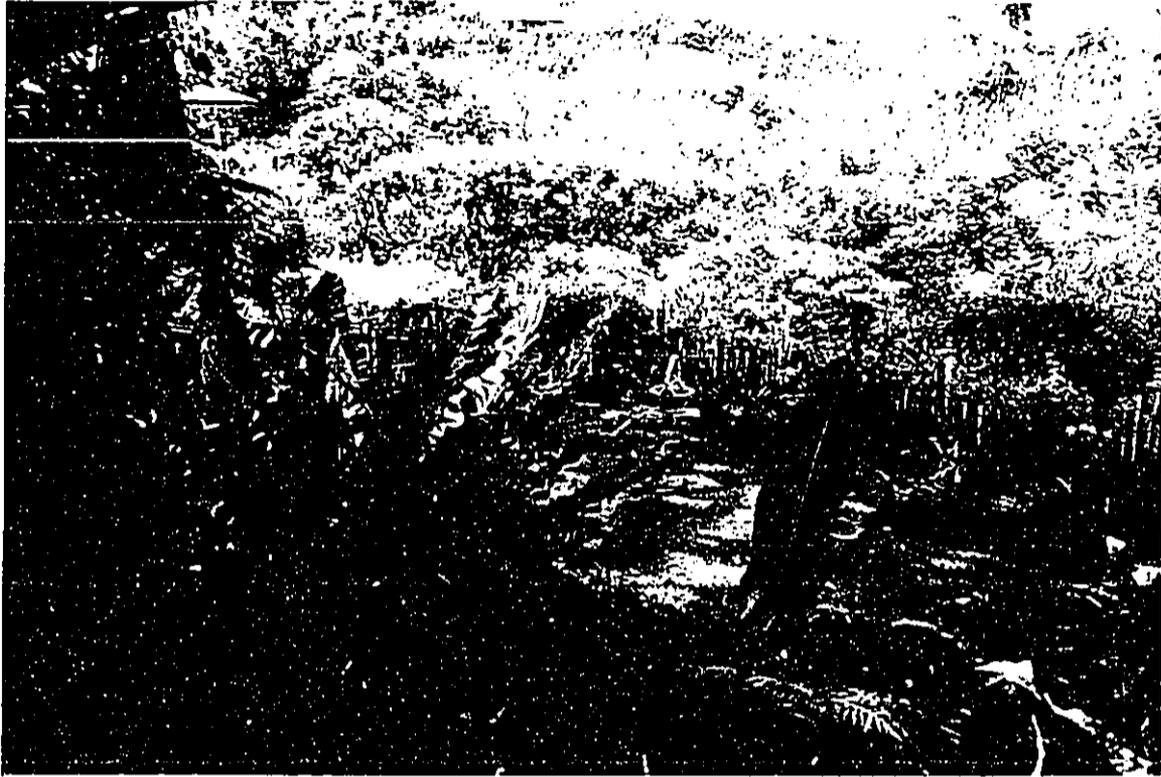
Dear Ms. Mamiya:

Thank you for the opportunity to comment on the above referenced project. At this time, the Office of Hawaiian Affairs has no comments to the proposed project. If you have any questions, please contact Mark A. Mararagan, policy analyst at 594-1945, or e-mail him at markm@oha.org.

Sincerely,

Jaina Keala
Acting Hawaiian Rights Division Director

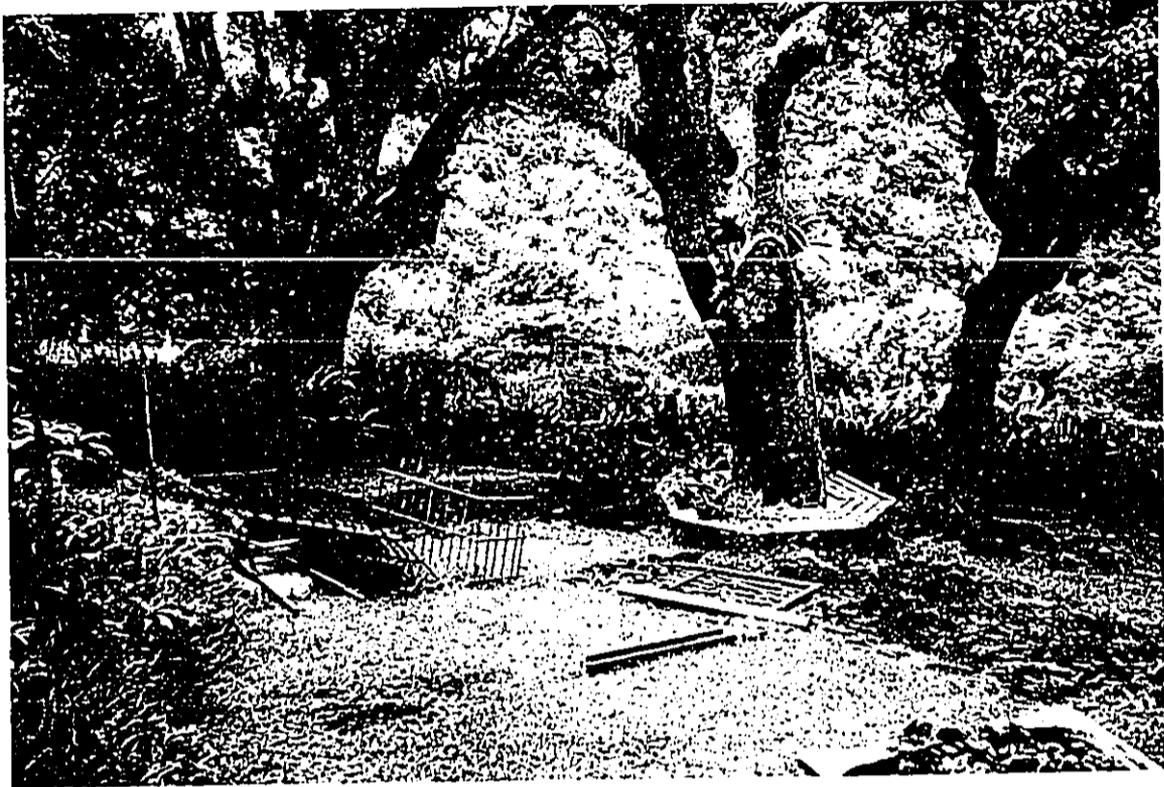
cc: Clyde W. Namu'o, OHA Administrator
OHA Board of Trustees
HRD File



LOOKING SOUTHEAST FROM HOUSE SITE



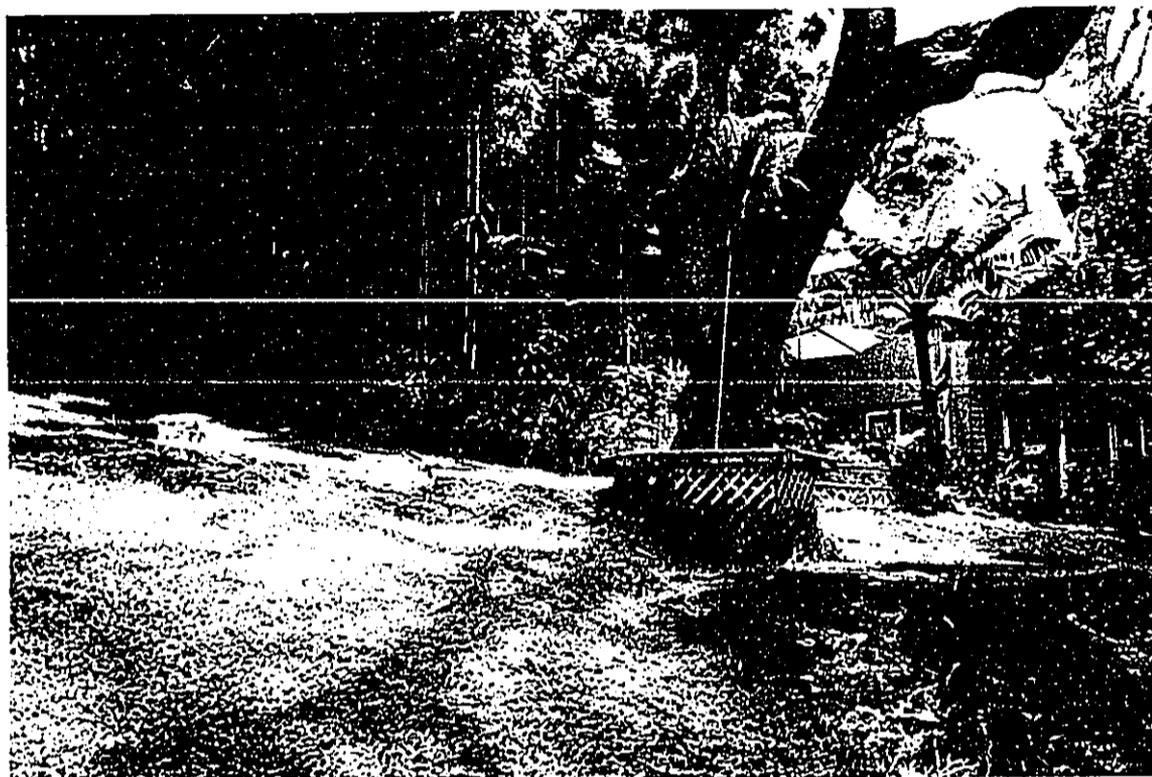
LOOKING EAST TO PREVIOUS RESIDENCE



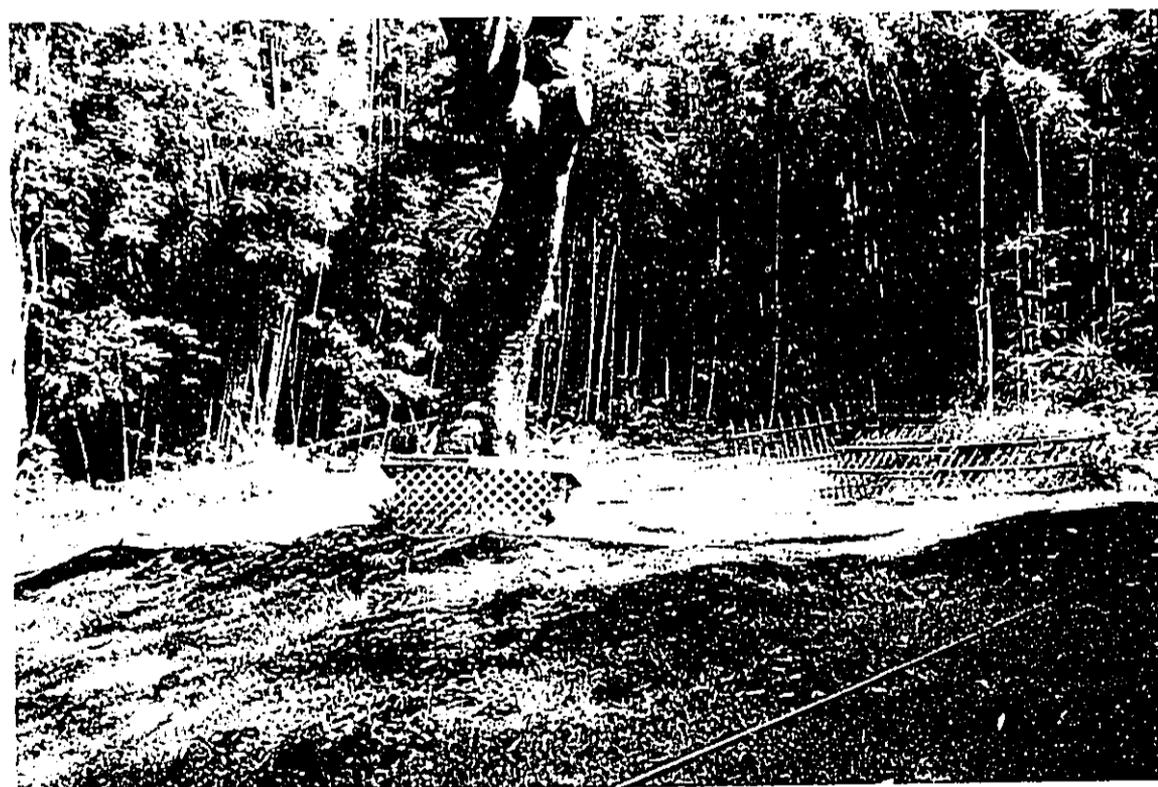
LOOKING SOUTHEAST FROM UPPER LOT



LOOKING SOUTHWEST FROM UPPER LOT

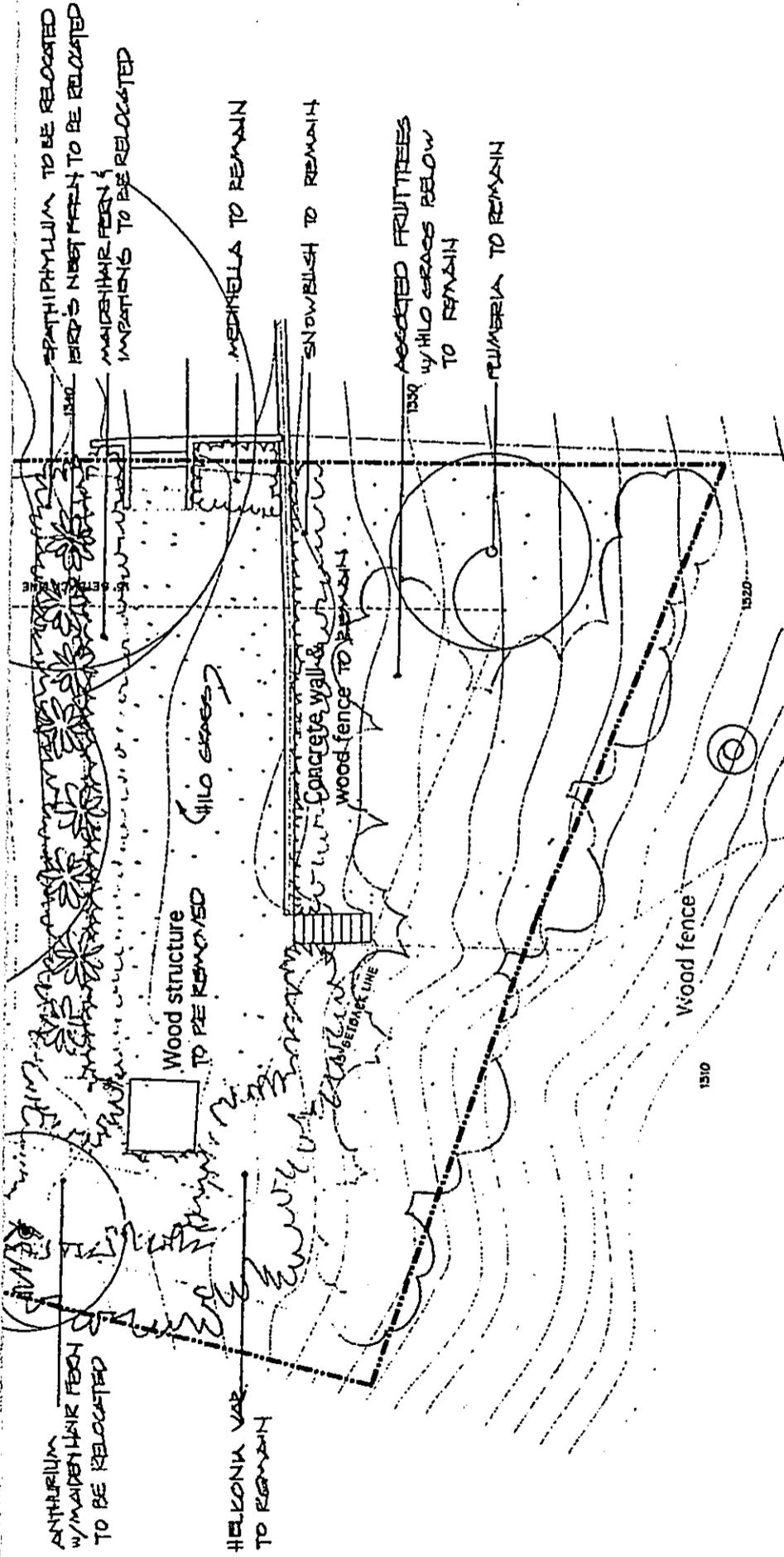


LOOKING NORTHEAST FROM LOWER LOT



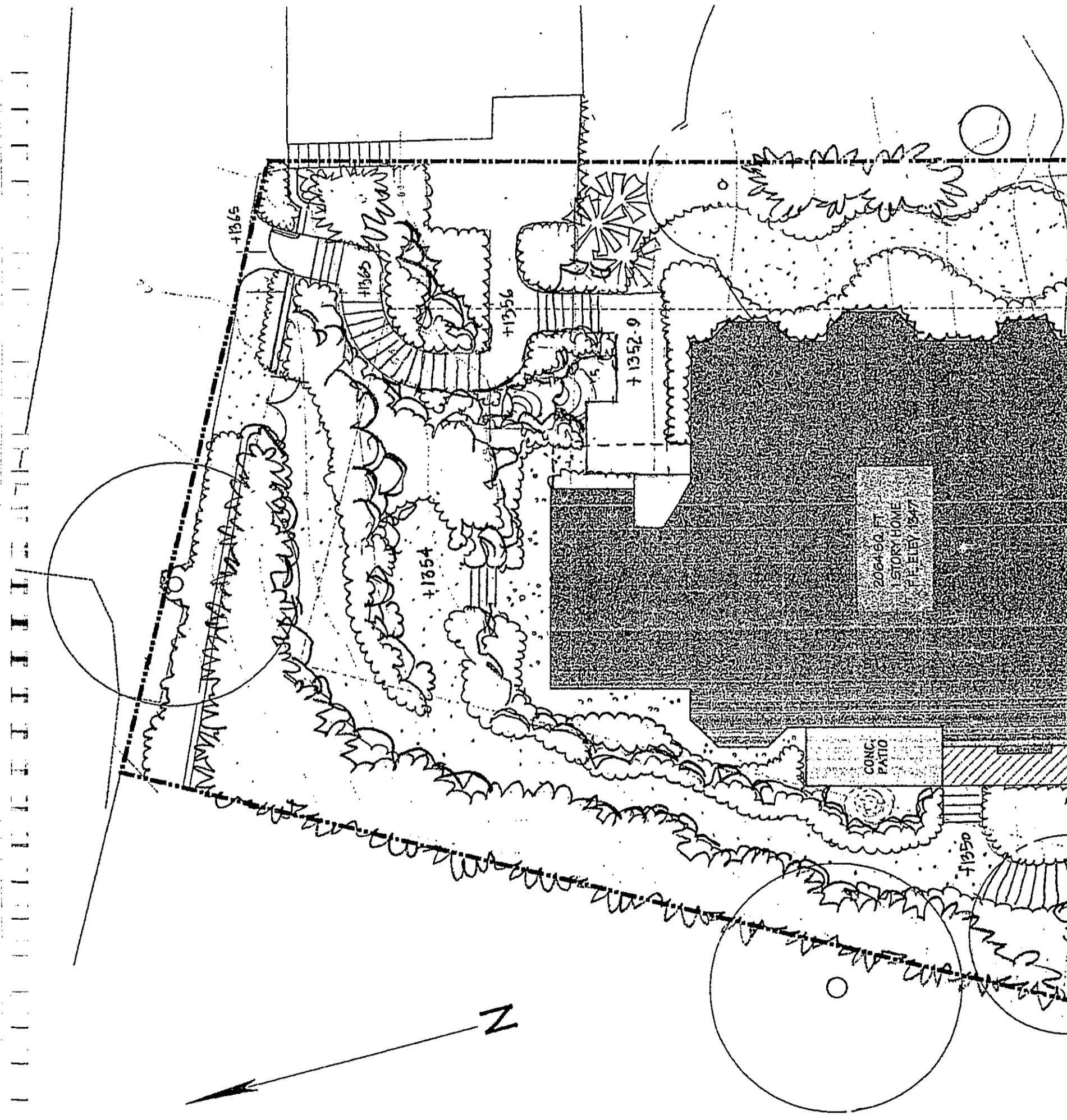
LOOKING NORTHWEST FROM LOWER LOT

DOCUMENT CAPTURED AS RECEIVED

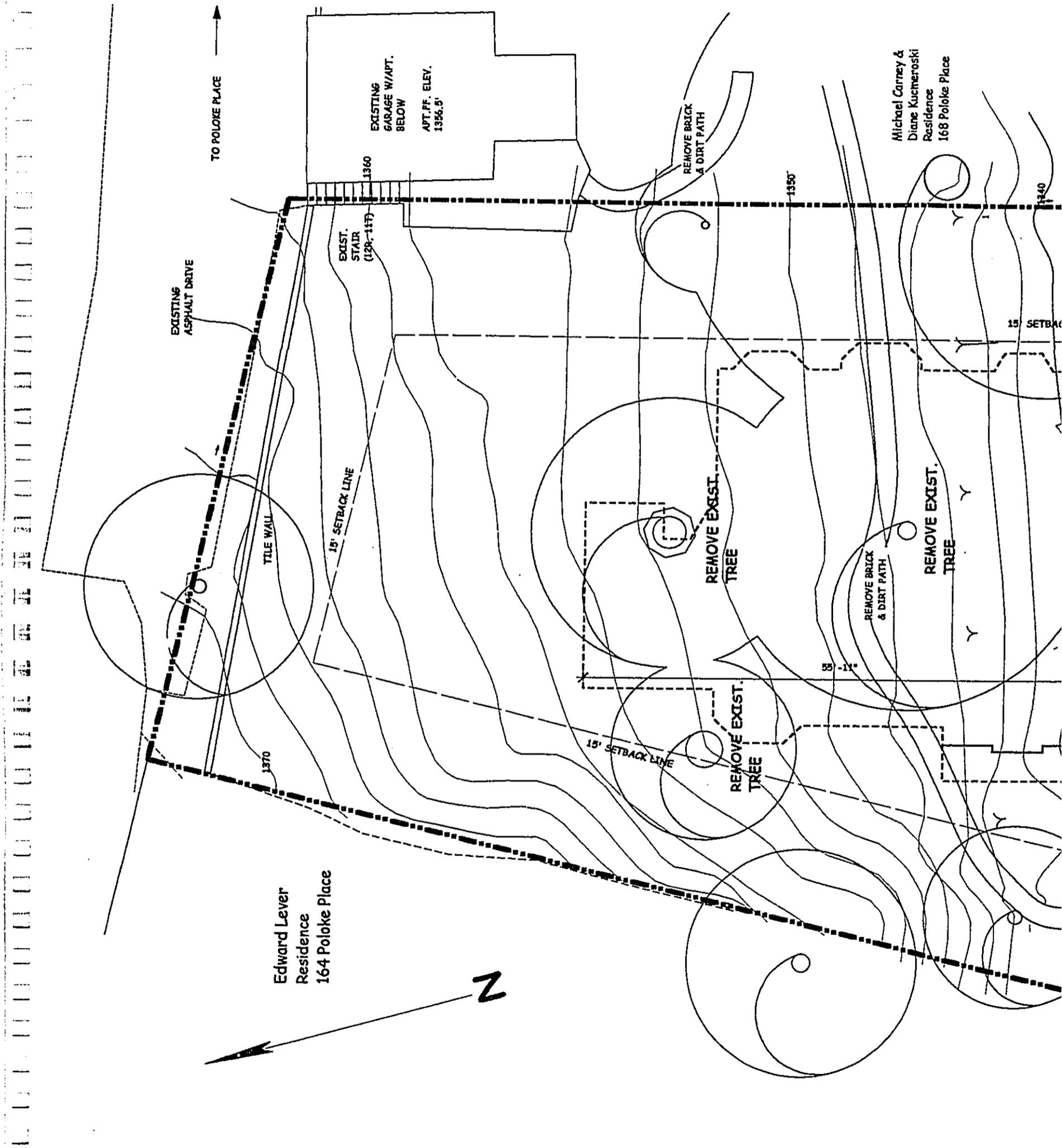


LANDSCAPE EXISTING CONDITIONS
NOT TO SCALE

DOCUMENT CAPTURED AS RECEIVED



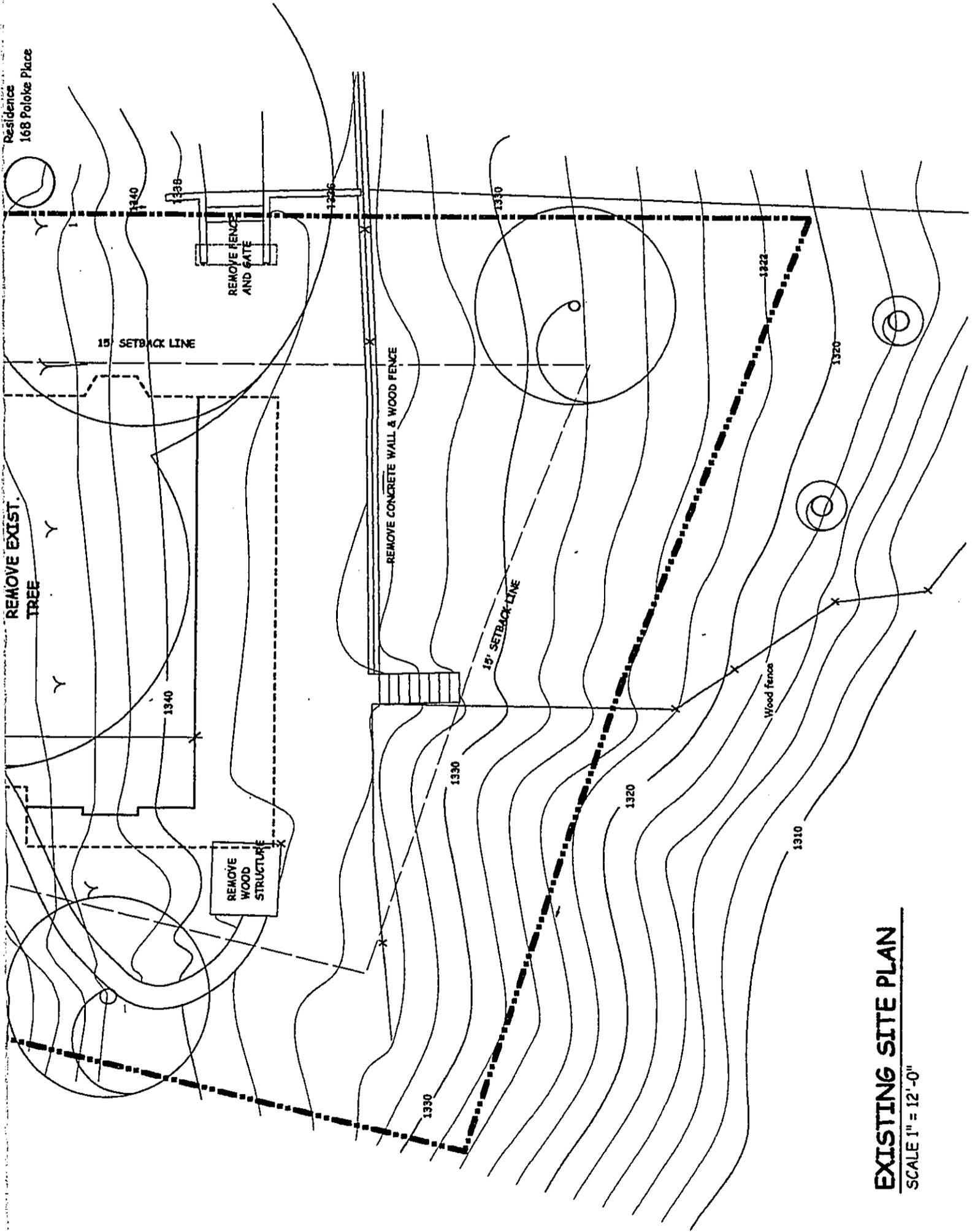
DOCUMENT CAPTURED AS RECEIVED



Edward Lever
Residence
164 Poloke Place

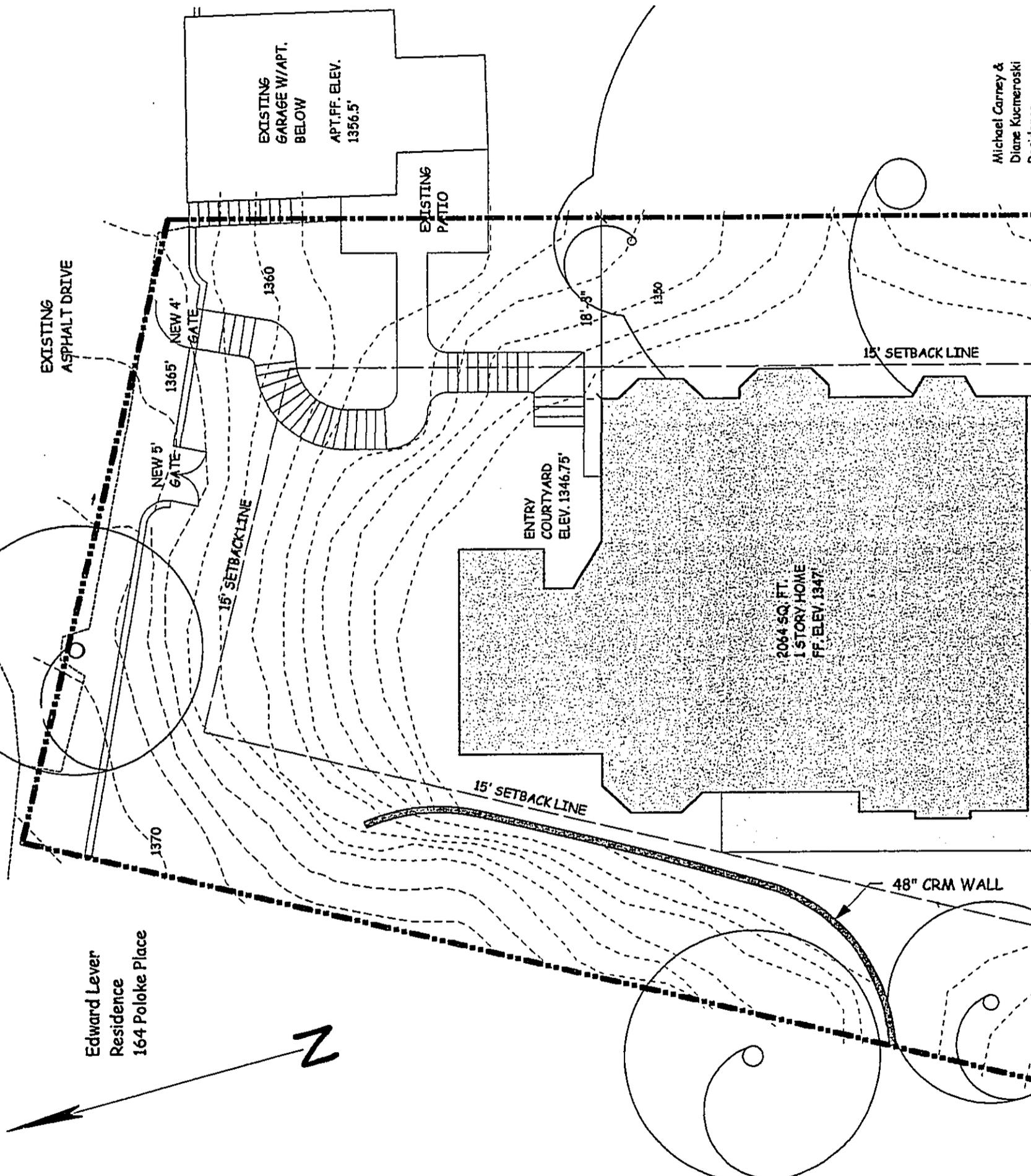
Michael Carney &
Diane Kucmeroski
Residence
168 Poloke Place

Residence
168 Poloke Place



EXISTING SITE PLAN
SCALE 1" = 12'-0"

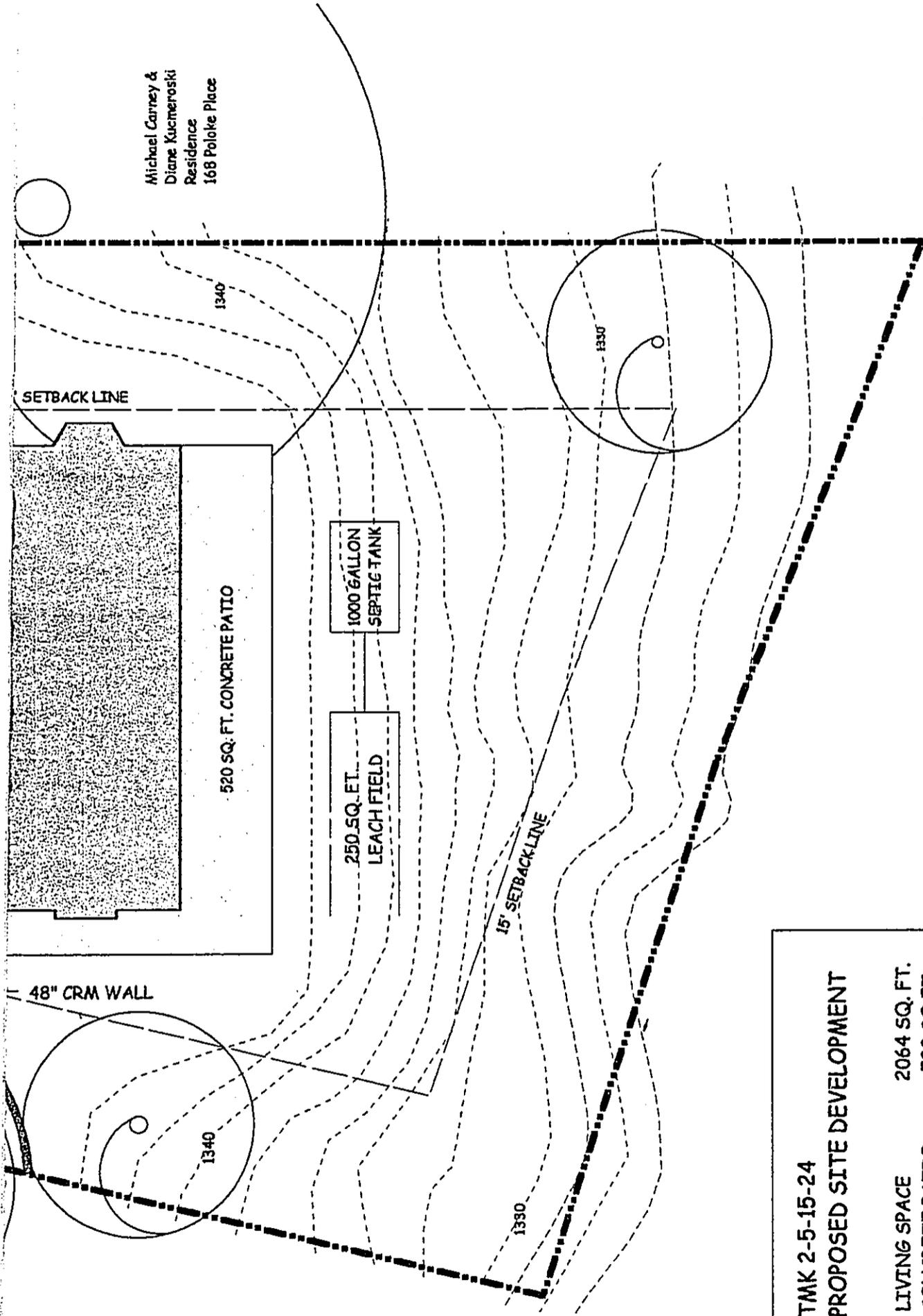
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Edward Lever
Residence
164 Poloke Place

Michael Carney &
Diane Kucmeroski
Residence

Michael Carney &
 Diane Kucmerowski
 Residence
 168 Pololke Place

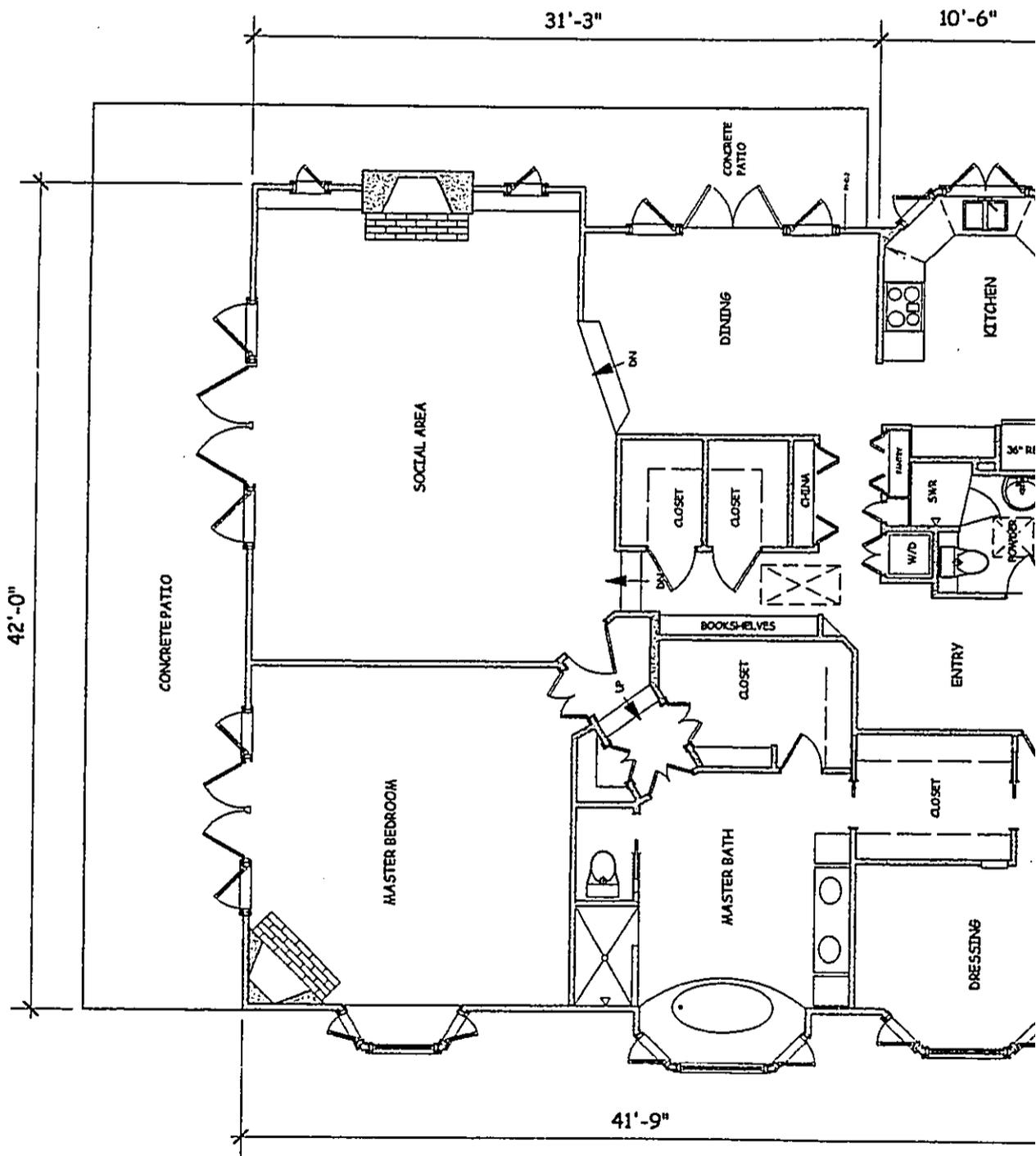


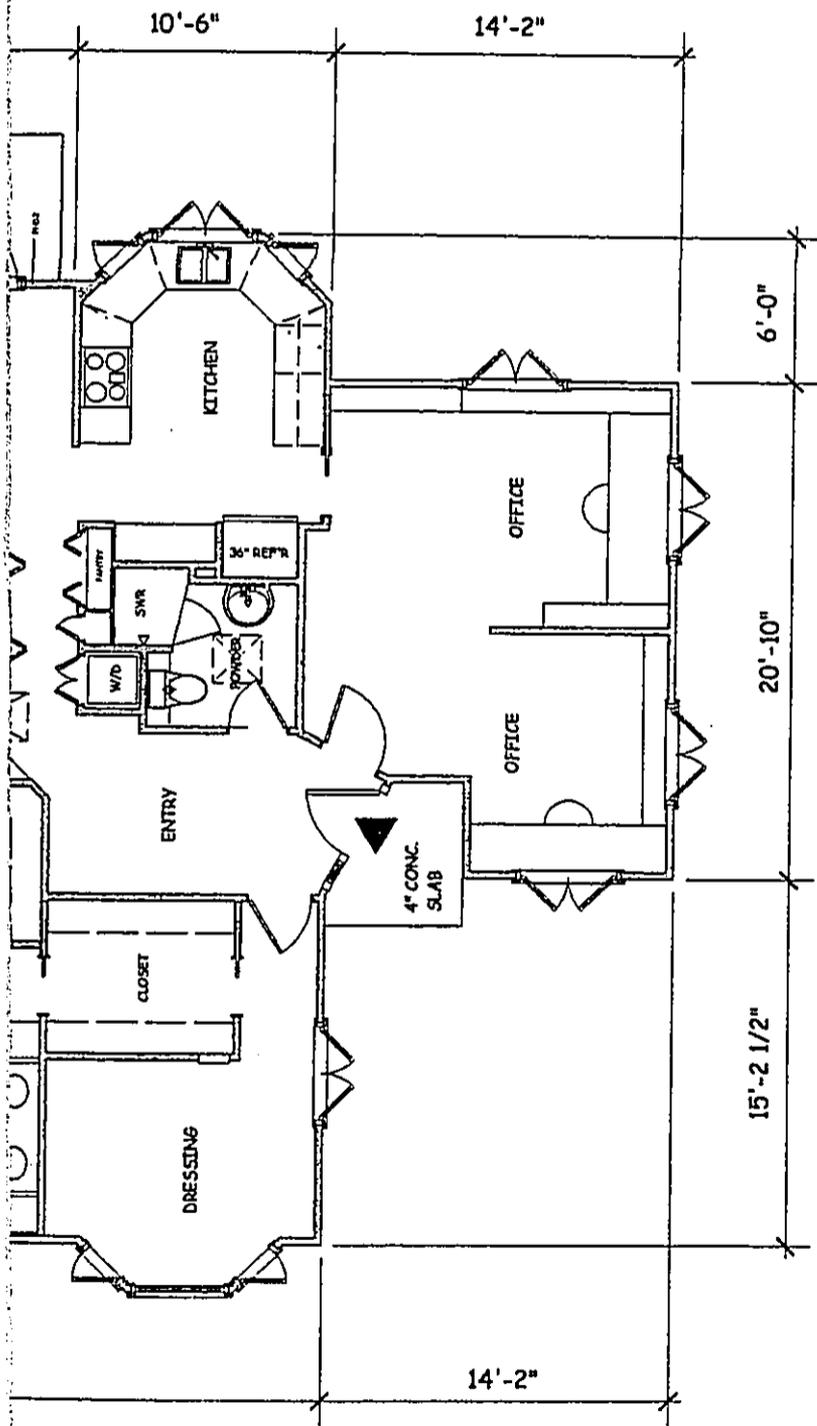
PROPOSED SITE PLAN

SCALE 1" = 12'-0"

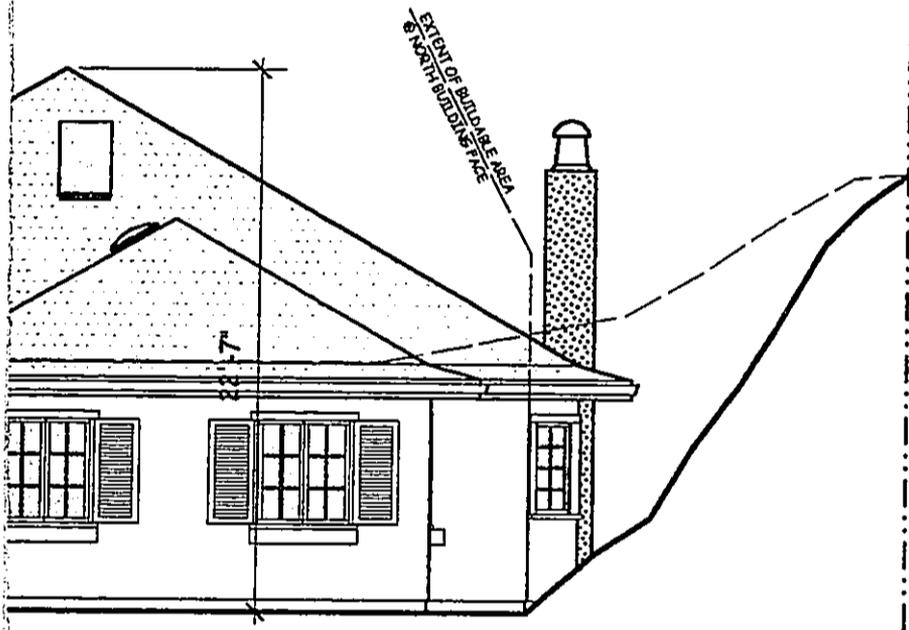
TMK 2-5-15-24		
PROPOSED SITE DEVELOPMENT		
LIVING SPACE	2064 SQ. FT.	
CONCRETE PATIO	520 SQ. FT.	
TOTAL PROPOSED DEVELOPMENT		2584 SQ. FT.

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 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



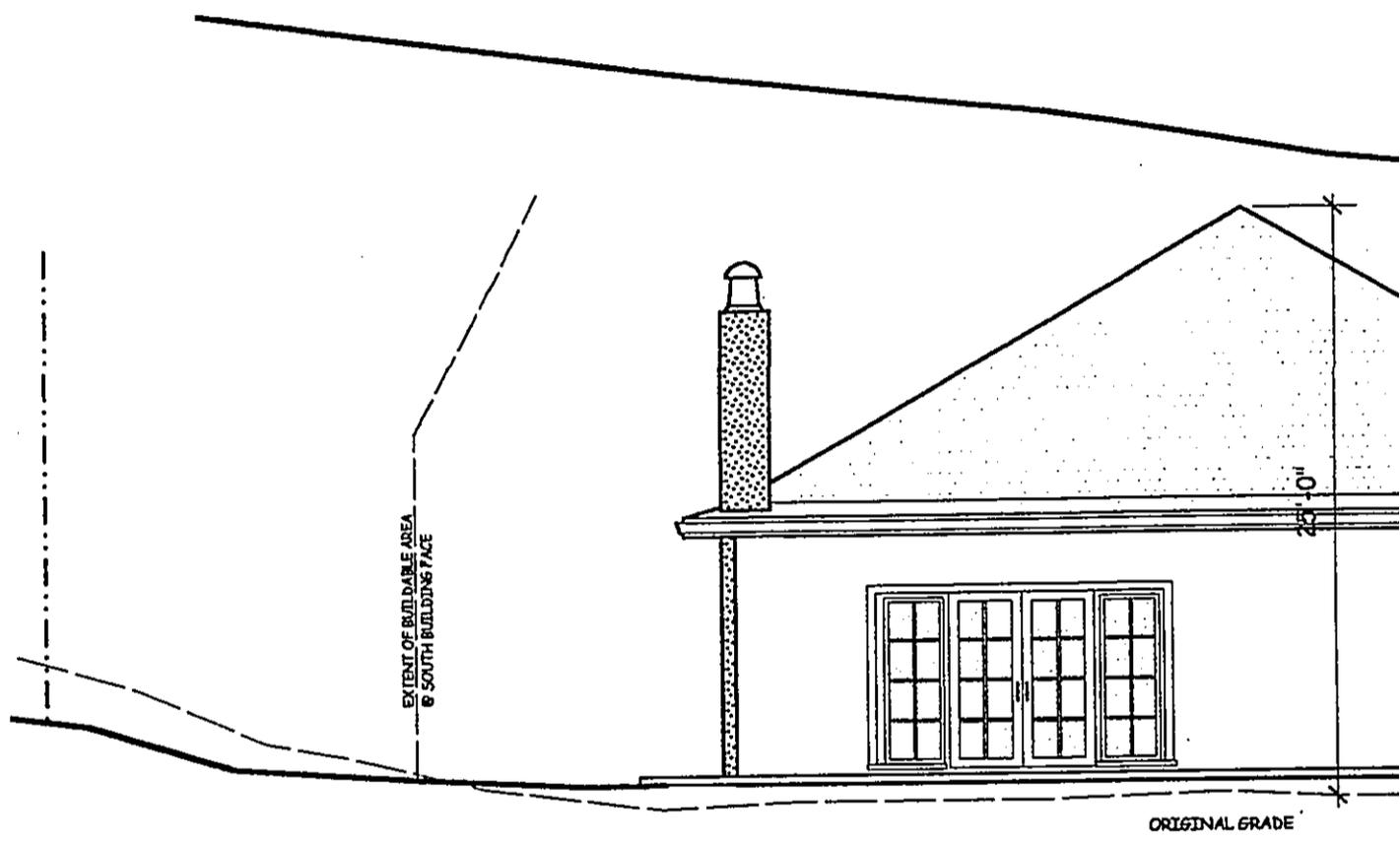


FLOOR PLAN
 SCALE 1/8" = 1'-0"

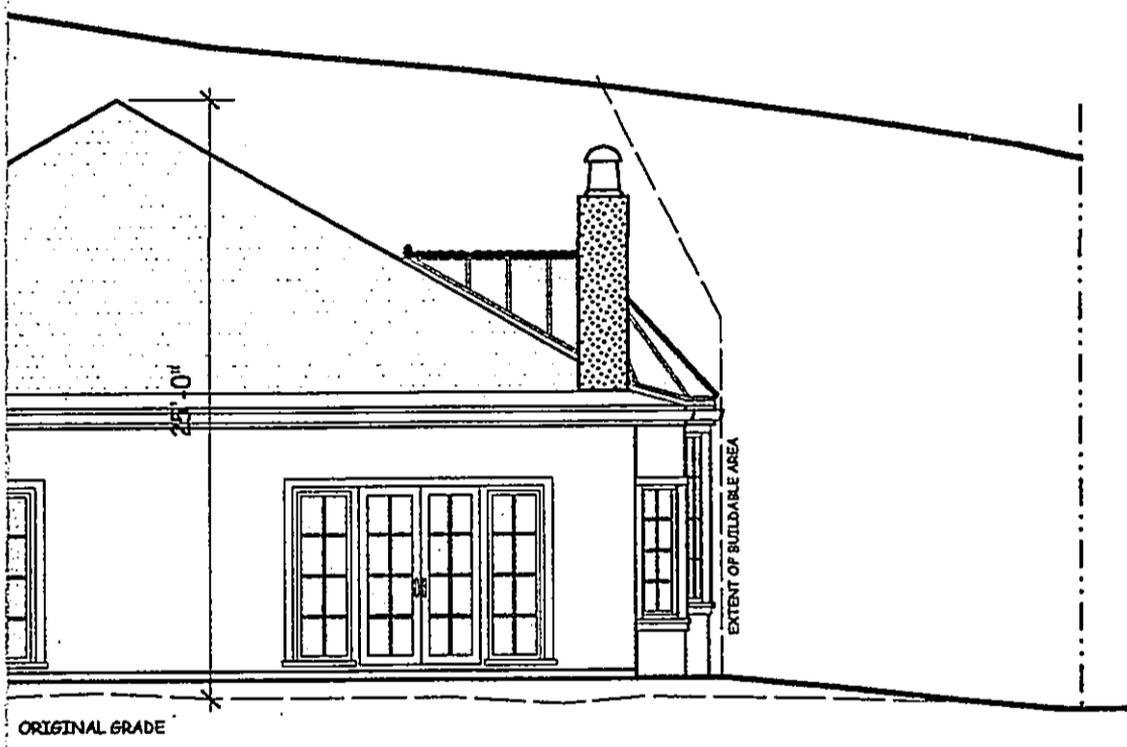


ELEVATION
1'-0"

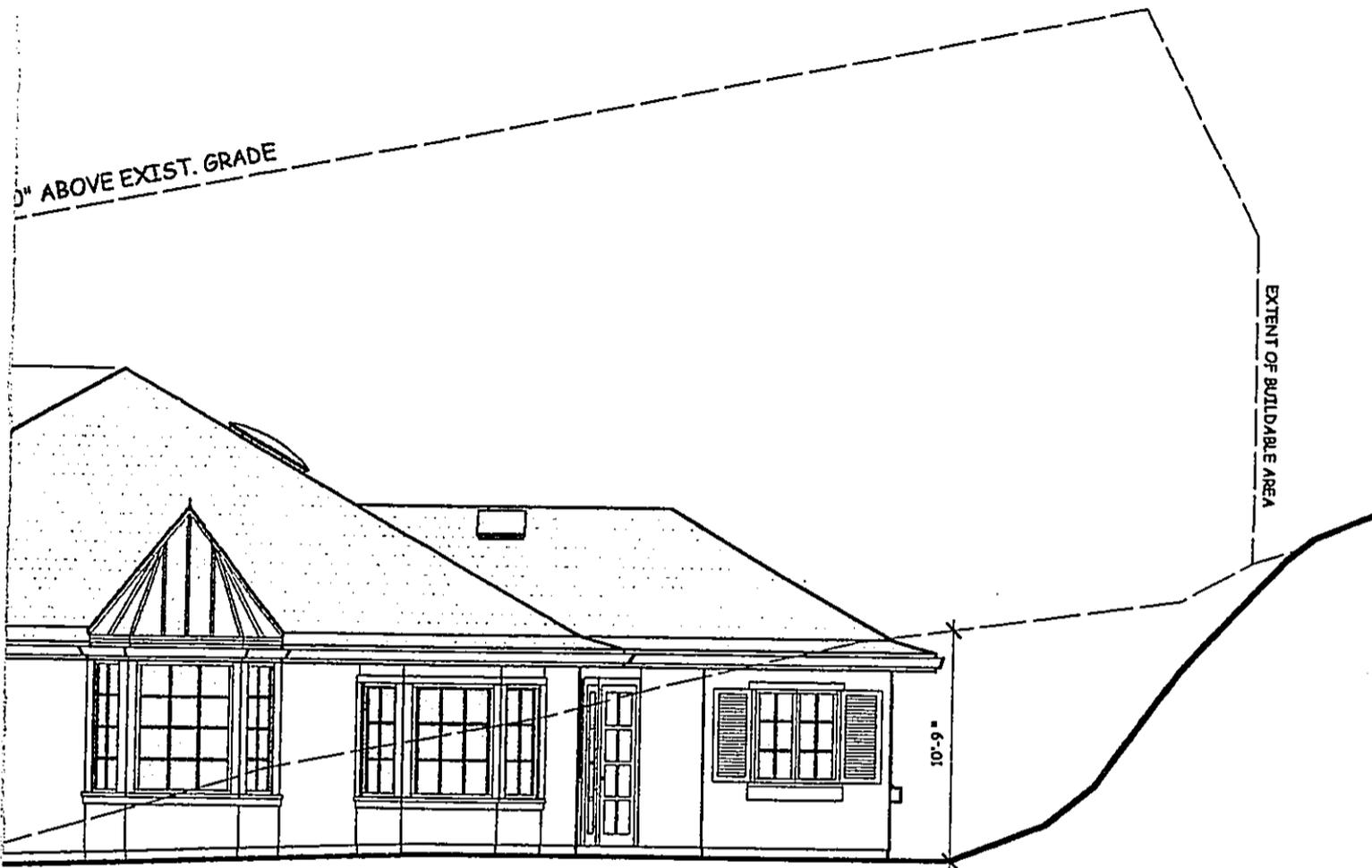
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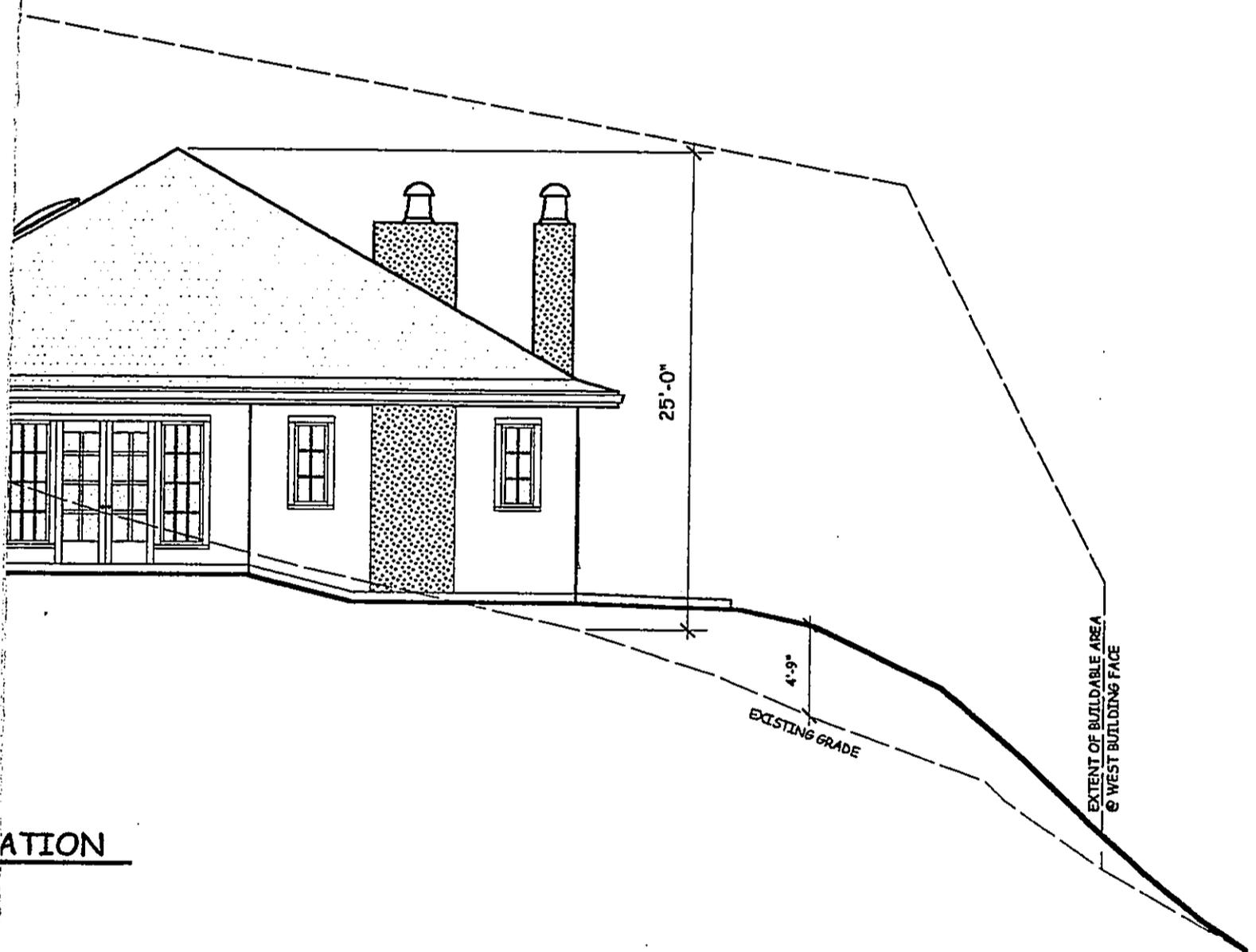
SOUTH ELEVATION
SCALE 1/8" = 1'-0"



TH ELEVATION
1/8" = 1'-0"



EAST ELEVATION
SCALE 1/8" = 1'-0"



ATION