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DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Draft Environmental Assessment

Liljestrand Residence

Proposed Single Family Residence
TMK: 2-5-17:006
Honolulu, Hawaii 96822

Prepared for:
Wendla Liljestrand – Trustee
Wendla L. Liljestrand Trust

Prepared by:
Tusher Architectural Group
Honolulu, Hawaii 96817

August, 2010

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General Information

- A. Project: Single Family Residence at Round Top Drive
- B. Owner/Applicant: Ms. Wendla L. Lijestrand
PO Box 61593
Honolulu, HI 96839
- C. Accepting Agency: State of Hawaii
Department of Land and Natural Resources
- D. Agent: Tusher Architectural Group
1021 Smith Street, Suite 400
Honolulu, Hawaii 96817
Terry Tusher, President
Phone: 808-526-2001
- E. Property Profile:
- | | |
|----------------------------|---|
| Location: | Tantalus, City and County of Honolulu, Oahu, Hawaii |
| TMK: | (1) 2-5-17: 006 |
| Proposed Action: | Construct a 3,496 sf Single Family Residence |
| Land Area, | |
| Two parcels | TMK:2 -5-17:006 & 018 totaling 24,215 SF |
| Construction Parcel | TMK: 2-5-17: 006 = 11,169 SF |
| Present Use: | Vacant |
| State Land Use District: | Conservation, Resource Subzone |
| Development Plan | |
| Land Use Designation: | Preservation |
| Zoning: | P-1 Restricted Preservation |
| Special Management Area: | No |
| Anticipated Determination: | Finding of No Significant Impact |

1. Introduction

1.1 Project Overview

The applicant, Ms. Wendla Liljestrand, owns two contiguous parcels in the Conservation District known as Tantalus. These two parcels (TMK 2-5-17:006 and TMK 2-5-17:018) contain 11,169 square feet and 13,064 square feet respectively. In 2006 she submitted a Conservation District Use Application (CDUA) for her proposed primary residence and received a Conservation District Use Permit (CDUP) OA-3271 on April 28, 2006. The approved CDUP granted a Lot Setback Variance in order to create a single family residence located on both parcels through a Joint Lot Development.

A standard condition of the CDUP approval is that the project must begin within one year and be completed within three years of approval. Circumstances precluded the applicant from complying with the time limitation and the CDUP expired.

The applicant is now submitting a new CDUA in order to proceed with the development. Since the original CDUP was granted, the applicant has obtained a detailed topographic map which indicated that some of the original design aspects of the approved project were no longer appropriate. The new CDUA reflects design changes to the single family residence which incorporate this new information.

The general conditions of the new design are very similar to the approved CDUP design. The new 2 bedroom/3 bath home design contains 3,492 square feet of interior space instead of the original 3,480 square feet. The proposed home is also located on the ridge of the property. However, the proposed home is now located entirely on only one parcel – parcel TMK: 2-5-17:006.

Driveway access continues to be from Round Top Drive up to the house. The new topographic information identified that the original driveway was too steep and that grading needed to be revised in order to provide reasonable vehicular access.

The design and construction of the proposed house will conform to the Conservation District's standard conditions for single family residences (with the exception of a request to deviate from the back yard setback standards) and with applicable State and County regulations. The project is entirely privately funded.

The proposed residence is located in an area where single family residences have been an established use for the last 100 years. Sheet DLNR-1 shows the Tax Map for the subject property and surrounding parcels.

Access to the property will be via Round Top Drive.

1.2 Purpose of the Environmental Assessment

This environmental assessment has been prepared pursuant to Hawaii Revised Statutes which states that an environmental assessment is required for actions that propose any use within any land classified as conservation district by the state land use commission under Chapter 205 HRS. A Conservation District Use Application has also been prepared and submitted to the Department of Land and Natural Resources along with this environmental assessment.

1.3 Previous Land Use Approvals

The Applicant has previously requested and obtained a CDUP for the property. This CDUP (OA-3271, April 28, 2006) was allowed to expire. No other prior land use approvals are known to have been requested or granted.

1.4 Update to the Approved Final Environmental Assessment

The Final Environmental Assessment document for the previously approved CDUP was prepared by Mary O'Leary of Land Planning Consultants LLC. The cultural and environmental setting information contained in the original Final Environmental Assessment remains unchanged from the original document. The unchanged portions from the original FEA are incorporated into this Draft Environmental Assessment. Land Planning Consultants LLC is referenced when their sections are incorporated.

1.5 Proposed Action Design Changes

The proposed changes to the Single Family Residence are not dramatic modifications from the approved plans.

Access to the house still climbs from Round Top Drive to the home on the ridge near the center of the two properties. In order to reduce the driveway slope to a more accessible profile, the highest point of the driveway has been lowered by thirty (30) vertical feet.

The proposed home is still two (2) stories with a total regulated square footage of 3,496 square feet instead of the approved 3,480 square feet.

1.6 Purpose and Need for the Project

The owner wishes to construct a primary single family residence on her property.

1.7 Alternatives to the Proposed Action

No other alternative actions are being proposed. The property is located in the Resource and Limited Subzones. The proposed house is located in the Resource Subzone where single family residences are an identified use.

1.8 No Action Alternative

Under the No Action Alternative the property would remain vacant. The Applicant would not accomplish the stated purpose which is to construct a primary single family residence.



View from ridge looking Makai



View from ridge looking Mauka

Figure #1

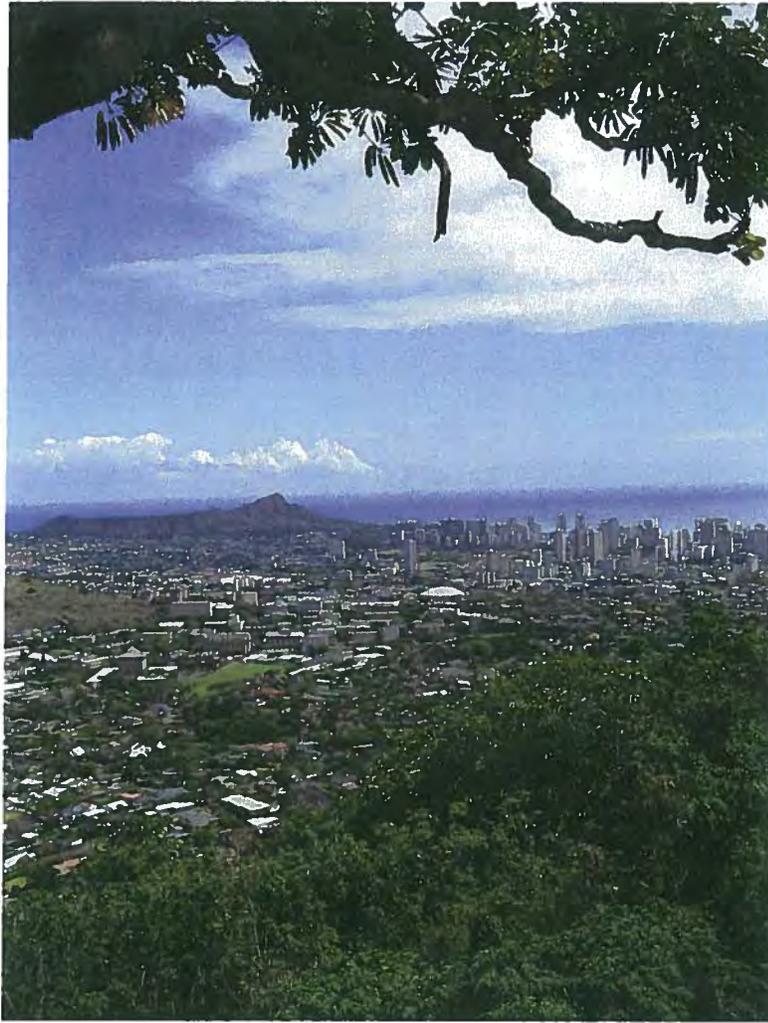


View from ridge looking toward Manoa Valley



View from ridge looking toward Round Top Drive

Figure #2



Makai View after pruning

Figure #3

2.0 Description of the Proposed Action

2.1 Existing Conditions

The property does not contain any structures. The property is heavily vegetated with shrubbery, tall grasses and a number of mature trees. Single family residences have been an established use for the last 100 years or so along the heavily wooded and scenic area of Round Top Drive and Tantalus Drive. According to the City and County of Honolulu, Department of Planning and Permitting's geographic information system, the property record lists a "1918 detached dwelling". According to the owner's family, the property at one time supposedly contained a small structure immediately adjacent to Round Top Drive that was used in the early 1900's, perhaps as a horse shed or a place to stop for horse-drawn carts/buggies.

The applicant's property consists of two lots (TMK: 2-5-17:006 & 18) and contains a total area of 24,215 sq ft:

▪ TMK: 2-5-17:006	11,169 sq ft
▪ TMK:2-5-17:018	<u>13,046 sq ft</u>
Total	24,215 sq ft

The property is bounded to the north and south by properties that contain single family residences. The rear of the property abuts the large lush valley which is land owned by Bishop Estate and designated as Forest Reserve. The property fronts Round Top Drive, an asphalt road owned and maintained by the City and County of Honolulu, which will provide primary access to the proposed house via a private driveway on the subject property.

2.2 The Proposed Single Family Residence

The Applicant owns the two parcels noted above. This application, however, is for a new structure to be located entirely on one parcel, the lot adjacent to Round Top Drive (TMK: 2-5-17:006). Sheet DLNR – 2, Topographic Survey, shows the topographic features of both parcels.

The property slopes up and away from Round Top Drive to a peak elevation of 1,400 feet above sea level. Due to the slope and the natural configuration of the property's topography, the proposed location for the main living level of the single family residence is at the most broad, flat, level portion of the subject property. However, the property's slope creates the need for a very steep driveway. To keep the driveway slope to a steep but manageable 32% grade, the driveway terminates at a parking court and garage which are located at a lower level (elevation 1380') below the peak.

DLNR rules (Hawaii Administrative Rules, Chapter 13-5, Exhibit 4) require that structures within the Conservation District are limited to 25' to the highest point of the roof. To create a reasonable balance between existing topography and building height, the peak adjacent to the main level of the home is to be lowered to elevation 1394.

To accommodate the cut generated by the construction, a series of terraces have been incorporated into the design. The combination of driveway and terrace grading is anticipated to create a balanced cut and fill condition on both parcels.

2.3 Setback Variance Request

The previously approved CDUP allowed a setback variance for the house to straddle the common property line between the two parcels. This new application has revised the location of the home so that it is situated entirely on one parcel (TMK 2-5-17:006) To accommodate the design, this application is requesting a continuation of this variance approval, but has limited the variance request to the rear yard setback normally imposed on parcel TMK:2-5-17:006. Specifically this application is requesting a rear yard wall setback of five (5) feet instead of the standard fifteen (15) feet outlined in Chapter 13-5, Exhibit 4, "Single Family Residential Standards".

2.4 Description of Significant Changes from the Approved CDUP:

The significant changes from the approved plan are:

- The approved CDUP approved a residence that straddled the common property line between the two parcels owned by the applicant. The proposed home is now located entirely on one parcel, the parcel adjacent to Round Top Drive- TMK: 2-5-17:006. Although the home is confined to this parcel, the property's topography has required an encroachment into the rear yard setback. However, since the adjoining property is also owned by the applicant, the setback encroachment does not impact other owners of other properties.
- The previous driveway to the residence climbed about seventy (70) vertical feet above Round Top Drive. The new application has reduced the rise to forty (40) feet. The garage and parking court are proposed to be cut into the hillside instead of sitting on the top of the ridge.
- In that the main living level of the home is located approximately 50 feet above Round Top Drive, vehicular access and visitor parking at the home was considered as an important design criteria. The previous driveway did not provide any area for guest parking. The proposed residence provides a parking court adjacent to the garage at the lower level of the home.

- The approved home was positioned with two stories above the top of the ridge which made the home very visible from the residences on the adjacent properties. The proposed home remains two story but nestles the lower level into the hillside so only the upper level of the residence is visible at the top of the ridge.
- To reduce the visibility of the home from adjacent residences the top floor of the home is located at elevation 1394'. The previous home had the top floor at approximately 1421'. To achieve this reduction, the grade at the top of the property is lowered by 2' - 8'.
- In order to integrate the home into the topography of the property the amount of cut, fill, and site retaining walls is increased.

2.5 Design Elements of the Proposed Single Family Residence

The proposed home has been reconfigured into a two story structure with the garage and the entire lower level cut into the existing grade. The upper level is at grade with the revised grade at the top of the property and is the primary living level of the home. The home is oriented in a generally east/west axis creating a southernly outlook toward Manoa Valley and a northernly view over Round Top Drive. The southern facing side of the upper level opens directly onto the lowered grade at the ridge of the property and provides for outdoor, at grade lanai to further integrate the home into the property. The east/west axis to the home also presents the long face of the home to maximize the southern exposure to allow for solar power and water heating panels to be incorporated into the structure. The goal is to provide enough solar electricity and hot water for the home to be self sufficient for power and water heating requirements.

The house's muted natural colors and the exterior materials have been chosen to ensure that the house fits within its natural surroundings and is minimally visible. The house's exterior siding is intended to be copper panels over the basic wood frame construction offset against stone and concrete walls. Exterior windows and doors are proposed to be bronze anodized aluminum. The roof is to be built-up sheet membrane with a minimal slope to comply with Conservation District building height requirements. Solar hot water and electricity panels will be sloped at a 3" per 12" angle and oriented to the south/southeast to maximize the efficiency of the panels.

Upper Level

The main living level is entered via a stairway directly from the Garage/Parking Court level below. The main (upper) level of the house contains:

- Master Bedroom suite incorporating bedroom, bath, and sitting areas,
- Laundry,

- Second Bedroom & Bath,
- Study/Office,
- Living/Dining room,
- Kitchen, and
- Exterior stairway to Lower Level

The main level contains an Interior Floor Area of 2,592 sq ft

Lower Level

The lower level contains:

- Garage,
- Artist Studio and Bath, and
- Library, and
- Exterior stairway to Upper Level

The lower level contains an Interior Floor Area of 900 sq ft

Building Summary

Lower Level		
Garage	579 sf	
Artist Studio	322 sf	900 sf
Stair	0 sf*	
Upper Level		
Master Bedroom Wing	560 sf	
Office	269 sf	
Kitchen/Living	1351 sf	
Lanai/Stair	412 sf	2,592 sf
Total		3,492 sf

* = Exterior area not counted as area per DLNR rules

The proposed home is illustrated in the attached drawings:

- Lower Level Plan DLNR-4
- Upper Level Plan DLNR -5
- Roof Plan DLNR -6
- Solar Panel Plan DLNR -7
- Site Section DLNR -8
- Exterior Elevations DLNR -9, and
- Exterior Elevations DLNR -10

2.6 Site Grading

The construction of the project will necessitate grading of the property in order to create the driveway, foundations, site terraces, and home structure. In order to enhance the integration of the home into the property and minimize the visual impact of the development from the neighbors, the home has been cut into the

hillside so that only a one story structure will be visible from the neighboring properties. This integration has created a grading condition that results in a overall cut condition of 1203 cubic yards for the project. This cut will be used to balance the fill required to create the driveway, parking court, and site terraces. The cut and fill required for the various site elements are outlined below:

	<u>Cut</u>	<u>Fill</u>
▪ Driveway -		420 cu yds
▪ Parking Court	-	212cu yds
▪ Upper & Lower Level	1203_cu yds	
Site Elements		
TMK: 2-5-17:006		159 cu yds
<u>TMK: 2-5-17:018</u>		<u>571cu yds</u>
	1203 cu yds	1203 cu yds

As previously noted, the ridge of the combined properties will be graded to a level area at elevation 1394'. Although no home construction is occurring on the Manoa Valley side parcel (TMK: 2-5-17:018), part of the graded ridge occurs on this lot. Consequently, some grading activity will occur on this adjacent parcel. It is anticipated that most of the cut from this property will be balanced with fill planned on the lot. It is expected that that all grading activity will result in a balanced cut/fill on the property.

2.7 Driveway and Parking Court

A private driveway will be constructed with access directly off Round Top Drive at the makai-ewa corner of the property. The driveway will climb approximately forty (40) feet vertically in a twelve (12') foot wide serpentine path. The layout and grading of the driveway is shown in drawing DLNR -3. Construction of the driveway will require a combination of cut and fill stabilized by retaining walls.

The configuration of the driveway was determined by a balance between possible cut, fill, retaining walls, driveway slope, and preservation of the natural terrain considerations. Although some trees will need to be removed during construction of the driveway, existing trees on either side of the driveway will remain, effectively screening most of the driveway from Round Top Drive and neighboring properties.

The driveway will be constructed of concrete and will terminate in large Parking Court adjacent to the garage. The Parking Court will be paved in large stone-shaped concrete pavers with grass/groundcover between the pavers and will serve as a vehicle maneuvering and guest parking area.



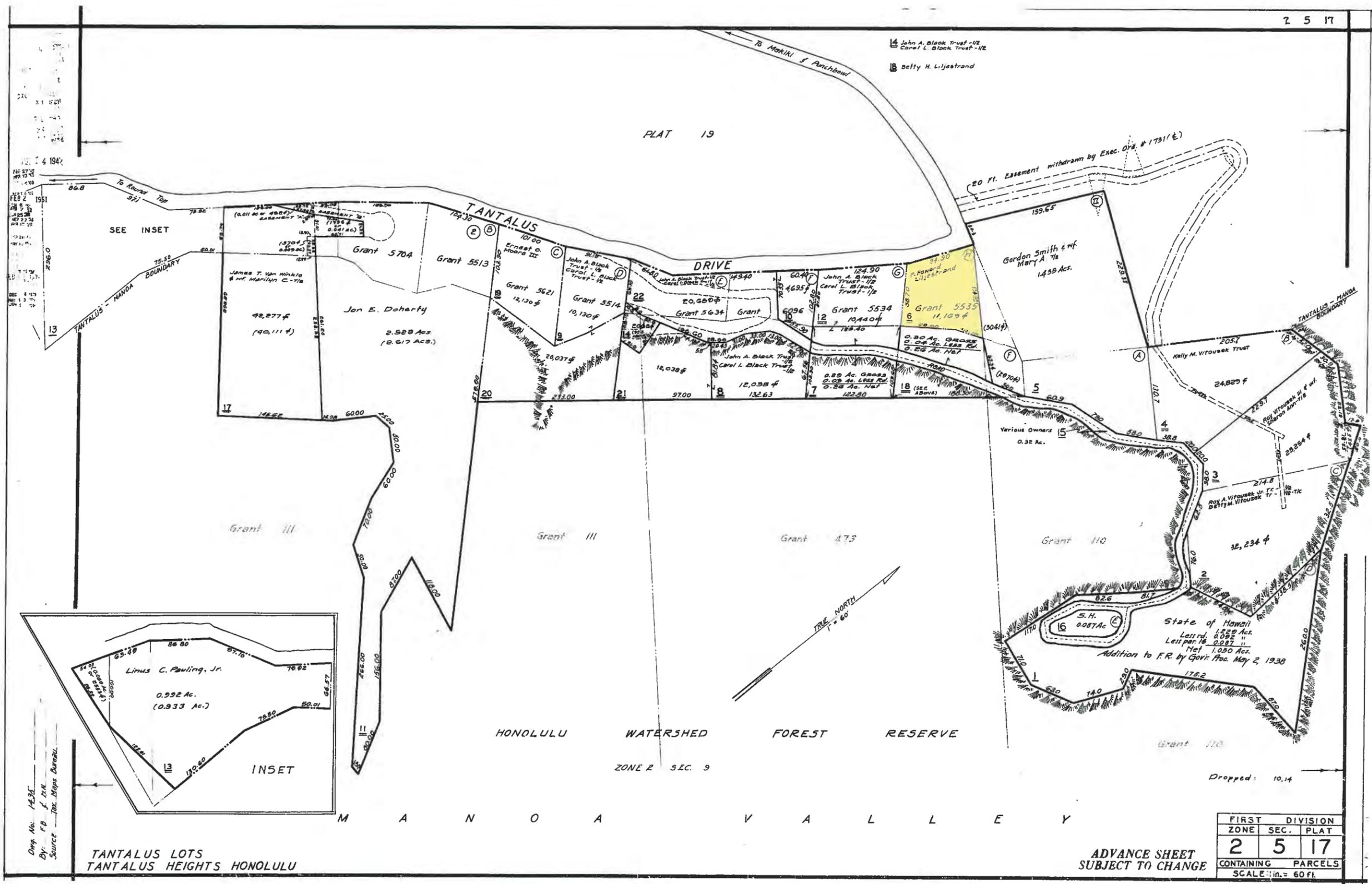
3999
Round Top
Residence

Sheet Title:
Tax Map
Parcel: 2-5-17:

Date:
July 28, 2010
Scale:
not to scale
Revisions:

This work was prepared by me or under my supervision. Construction of the project will be under my supervision.
Supervision of construction will be as defined by Chapter 10, § 10-10 in the Rules of Hawaii State Board of Professional Engineers, Architects, Land Surveyors and Landscape Architects.

Sheet Number:
DLNR - 1



2 5 17

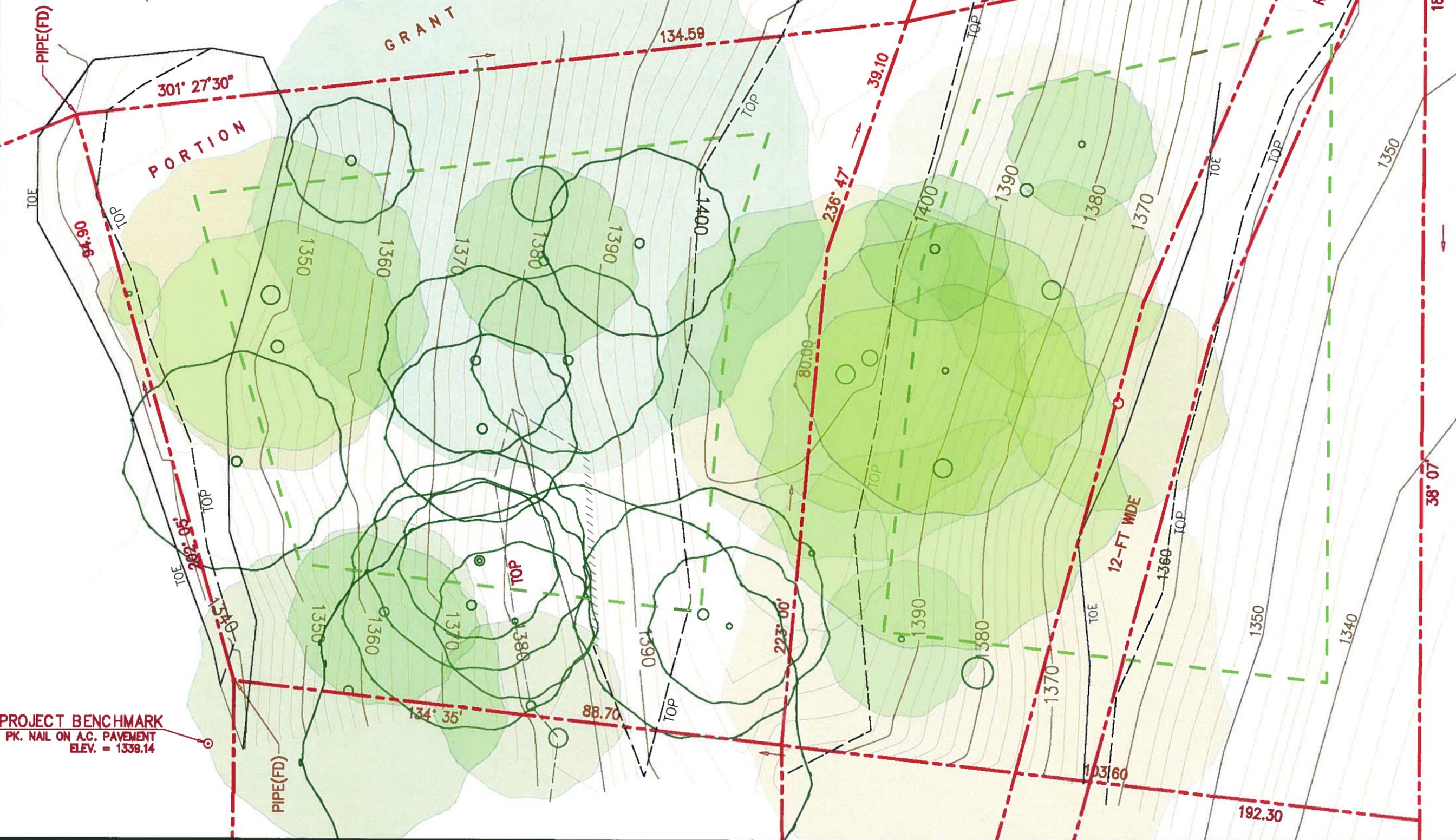
TANTALUS LOTS
TANTALUS HEIGHTS HONOLULU

Orig. No. 1435
By: R.B. J. H.N.
Source: Tax Maps Bureau

TRUE NORTH
SCALE 1" = 80 FT

TMK: 2-5-17-6
(LOT H)
11,169 Sq. Ft.

TMK: 2-5-17-18
LOT AREA 13,046 Sq. Ft.
(LESS ROADWAY) 2,122 Sq. Ft.
NET AREA 10,924 Sq. Ft.



PROJECT BENCHMARK
PK. NAIL ON A.C. PAVEMENT
ELEV. = 1339.14



3999
Round Top
Residence

Sheet Title:
Topographic
Survey

Date:
July 28, 2010
Scale:
1/8" = 1'0"
Revisions:

This work was prepared by me or under my supervision. Construction of this project will be under my supervision.
I am a duly licensed and qualified professional engineer and architect under the laws of the State of Oregon.
I am a duly licensed and qualified professional engineer and architect under the laws of the State of Oregon.

Sheet Number:
DLNR - 2



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Architectural, Planning, Engineering & Surveying
1000 SW 10th Street, Suite 100
Hillsboro, Oregon 97122
Phone: 503-536-2281
Fax: 503-536-2282
tusher@tusherarch.com

TRUE NORTH
SCALE 1" = 8' FT

TMK:2-5-17-6
(LOT H)
11,169 Sq. Ft.

TMK:2-5-17-18
LOT AREA 13,046 Sq. Ft.
(LESS ROADWAY) 2,122 Sq. Ft.
NET AREA 10,924 Sq. Ft.

5535 TO W. WOOD

GRANT

PORTION

Lower Level Pad
el = 1380'

Upper Level Pad
el = 1394'

ROADWAY 1360

12-FT WIDE

PROJECT BENCHMARK
PK. NAIL ON A.C. PAVEMENT
ELEV. = 1338.14



3999
Round Top
Residence

Sheet Title:
Grading
Plan

Date:
July 28, 2010

Scale:
1/8" = 1'0"

Revisions:

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Sheet Number:
DLNR - 3

Tusher Architectural Group

ARCHITECTURE • INTERIORS • LANDSCAPE ARCHITECTURE

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Phone: 281-550-2805
Fax: 281-550-2805
www.tusherarchitect.com



3999
Round Top
Residence

Sheet Title:
Lower
Level
Floor Plan

Date:
Sept 22, 2010
Scale:
1/8" = 1'0"
Revisions:

This work was prepared by me or under my supervision. Construction of this project will be under my supervision.
I am a duly Licensed Professional Engineer, Architect, Landscape Architect and Landscape Architect.

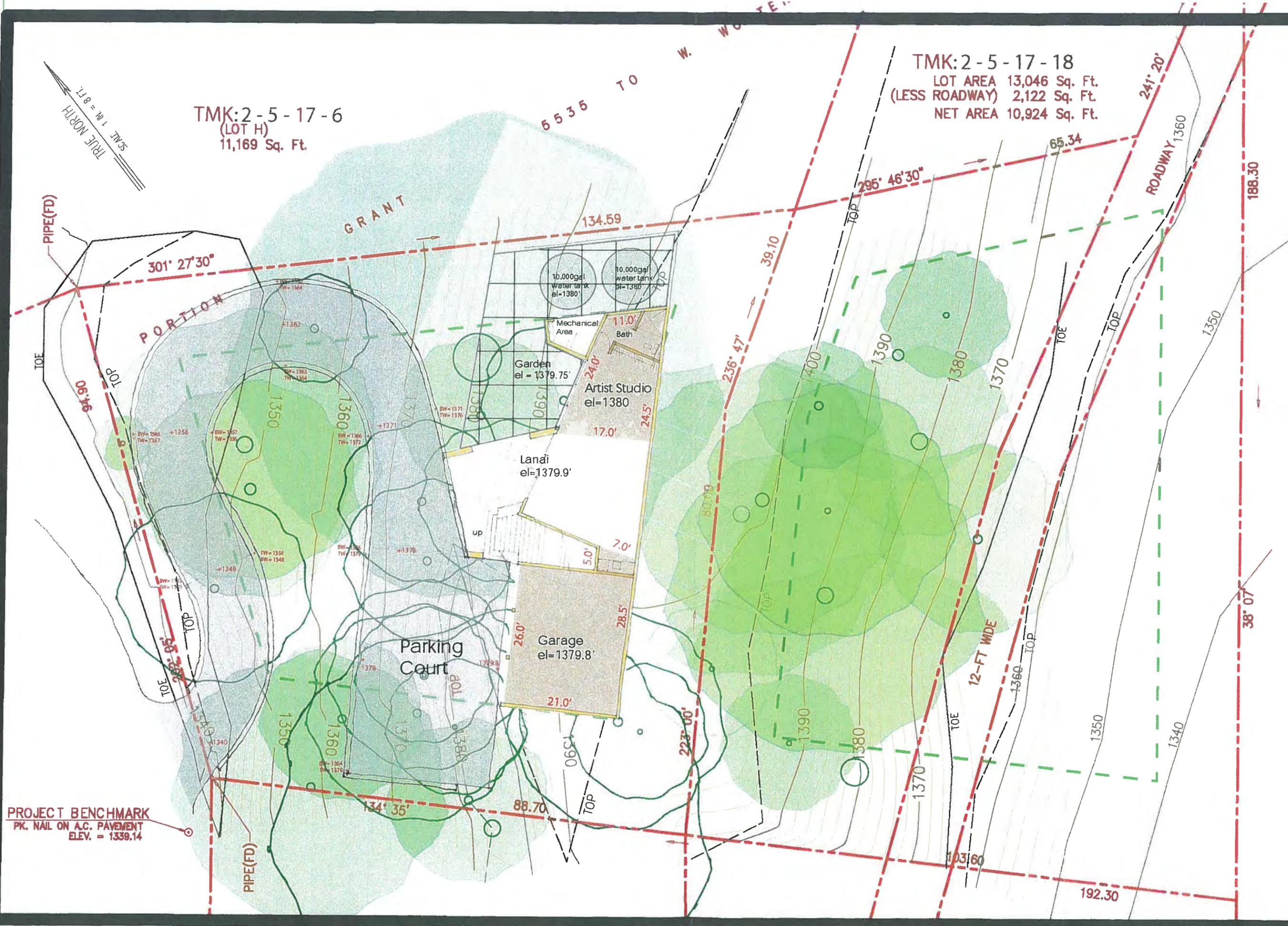
Sheet Number:
DLNR - 4

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 Honolulu, Hawaii 96813
 Phone: (808) 535-1111
 Fax: (808) 535-1112
 Website: www.tusher.com

TMK: 2-5-17-18
 LOT AREA 13,046 Sq. Ft.
 (LESS ROADWAY) 2,122 Sq. Ft.
 NET AREA 10,924 Sq. Ft.

TMK: 2-5-17-6
 (LOT H)
 11,169 Sq. Ft.

SCALE 1" = 8' 11"
 TRUE NORTH



PROJECT BENCHMARK
 PK. NAIL ON A.C. PAVEMENT
 ELEV. = 1339.14



3999
Round Top
Residence

Sheet Title:
Upper
Level
Floor Plan

Date:
Sept 22, 2010
Scale:
1/8" = 1'0"
Revisions:

This work was prepared by me or under my supervision. Construction of this project will be under my supervision.
I am a duly licensed professional architect in the State of Florida. I am not responsible for any errors or omissions in this drawing or any other drawings or specifications prepared by me or under my supervision.

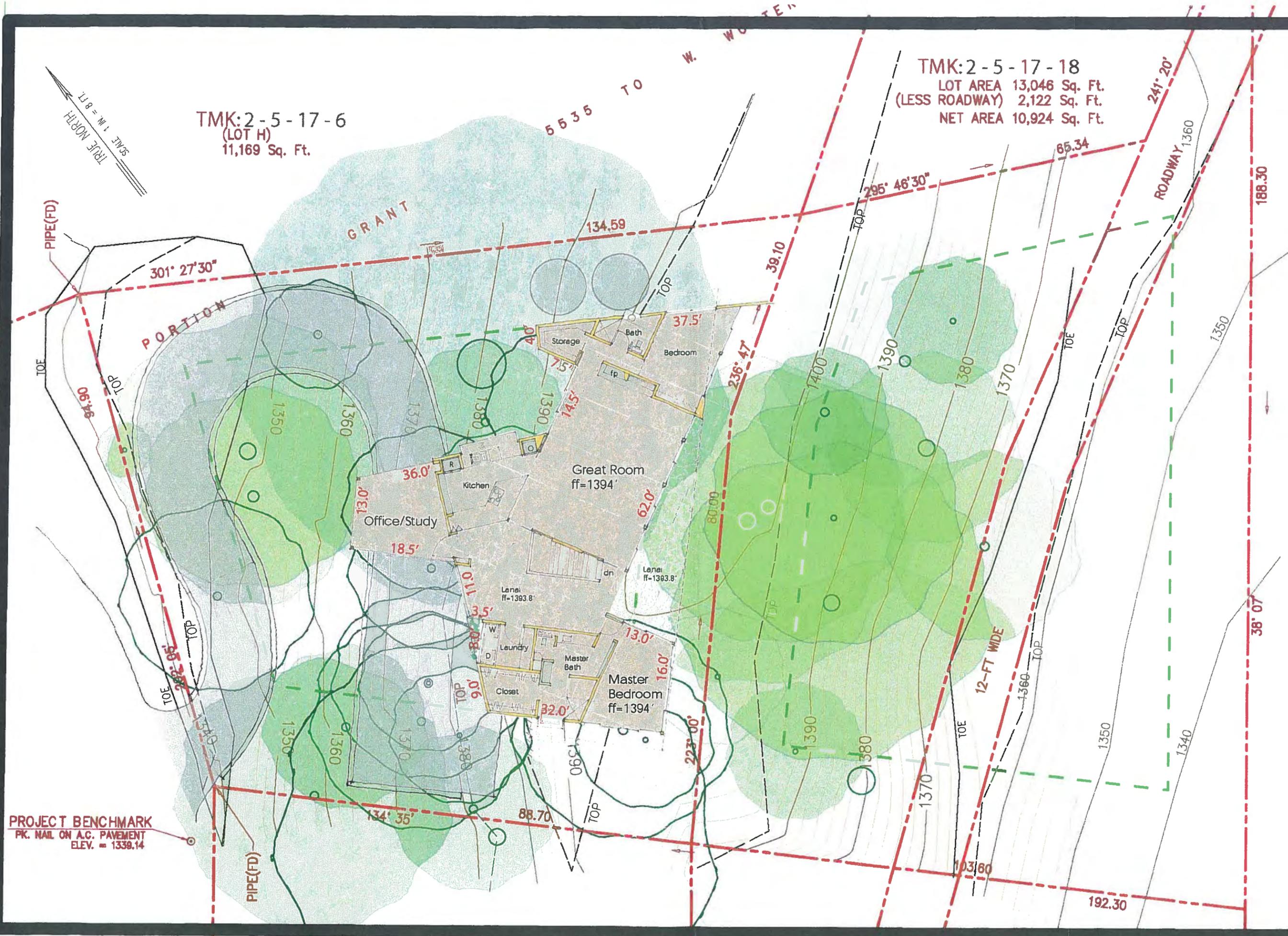
Sheet Number:
DLNR - 5

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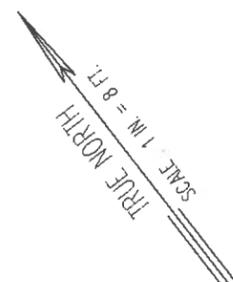
TMK: 2-5-17-18
LOT AREA 13,046 Sq. Ft.
(LESS ROADWAY) 2,122 Sq. Ft.
NET AREA 10,924 Sq. Ft.

TMK: 2-5-17-6
(LOT H)
11,169 Sq. Ft.

SCALE 1/8" = 1'0"
TRUE NORTH



PROJECT BENCHMARK
PK. NAIL ON A.C. PAVEMENT
ELEV. = 1338.14



TMK:2-5-17-6
(LOT H)
11,169 Sq. Ft.

TMK:2-5-17-18
LOT AREA 13,046 Sq. Ft.
(LESS ROADWAY) 2,122 Sq. Ft.
NET AREA 10,924 Sq. Ft.

6535 TO W. WOODLEY

241' 20'
ROADWAY 1360

GRANT
PORTION

PIPE(FD)

301° 27'30"

134.59

295° 46'30"

65.34

188.30

94.90

el = 1404'

+ fire place chimney
el = 1415'

el = 1404.5'

el = 1404'

el = 1404.5'

el = 1405.5'

el = 1404'

80.00

1390

1380

1370

12-FT WIDE

1360

1350

1340

38' 07"

134° 35'

88.70

223° 00'

103.60

192.30

PROJECT BENCHMARK
PK. NAIL ON A.C. PAVEMENT
ELEV. = 1339.14

PIPE(FD)



3999
Round Top
Residence

Sheet Title:
Roof
Plan

Date:
July 28, 2010
Scale:
1/8" = 1'0"

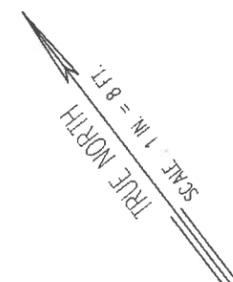
Revisions:

This work was prepared by me or under my supervision. Construction of this project will be under my supervision.
Supervision or construction will be as directed by Chapter 92 (92-42) in the State of Texas.
I am a Registered Professional Engineer in the State of Texas.
I am a Registered Professional Land Surveyor in the State of Texas.

Sheet Number:
DLNR - 6

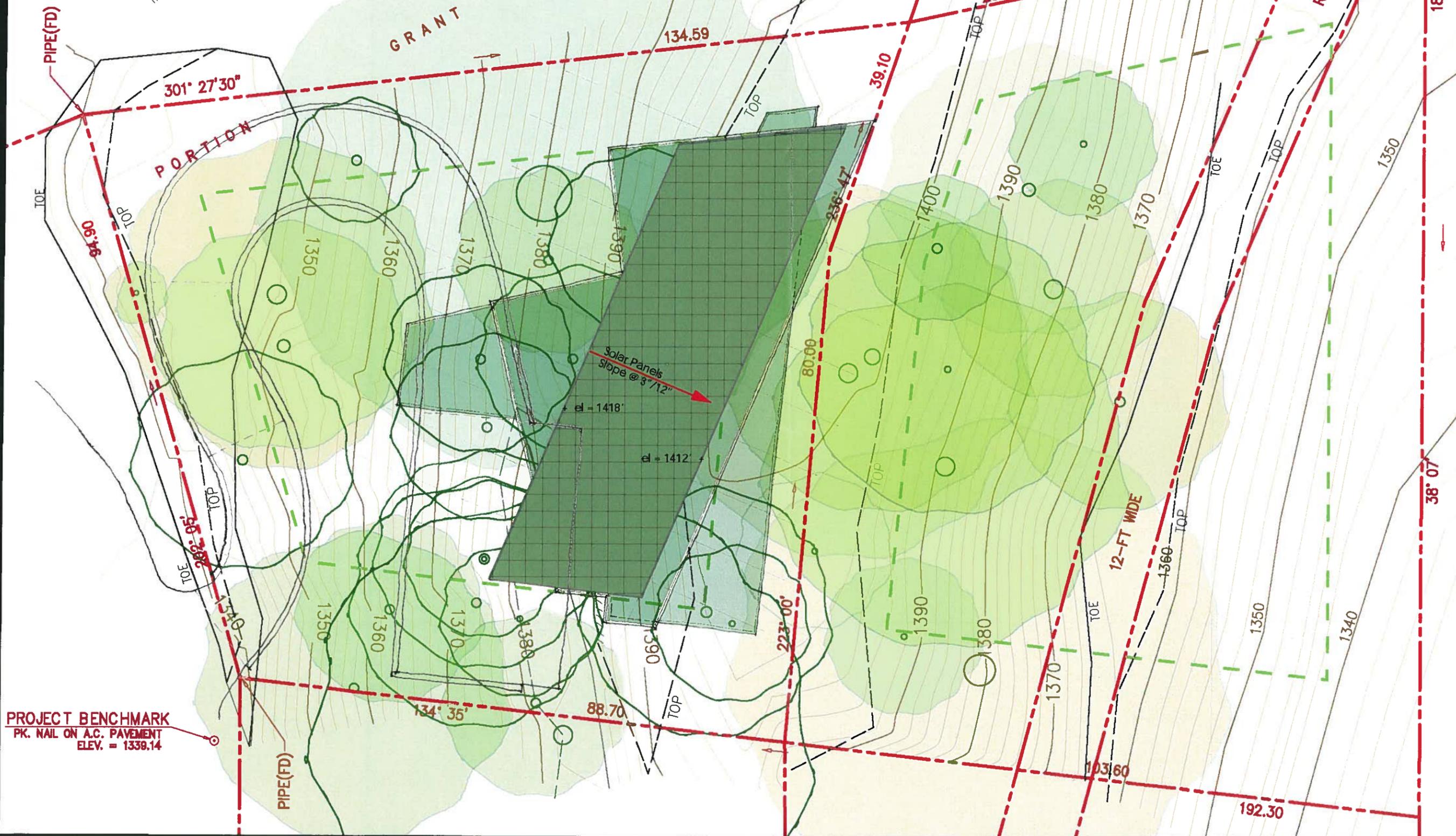


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www.tusherarchitectural.com



TMK:2-5-17-6
(LOT H)
11,169 Sq. Ft.

TMK:2-5-17-18
LOT AREA 13,046 Sq. Ft.
(LESS ROADWAY) 2,122 Sq. Ft.
NET AREA 10,924 Sq. Ft.



PROJECT BENCHMARK
PK. NAIL ON A.C. PAVEMENT
ELEV. = 1338.14



3999
Round Top
Residence

Sheet Title:
Solar Panel
Plan

Date:
July 28, 2010
Scale:
1/8" = 1'0"
Revisions:

This work was prepared by me or under my supervision. Construction of this project will be under my supervision.

Separation of construction work or delivery of materials shall be in accordance with the provisions of the Professional Engineers Act and the Professional Engineers Act.

Sheet Number:
DLNR - 7



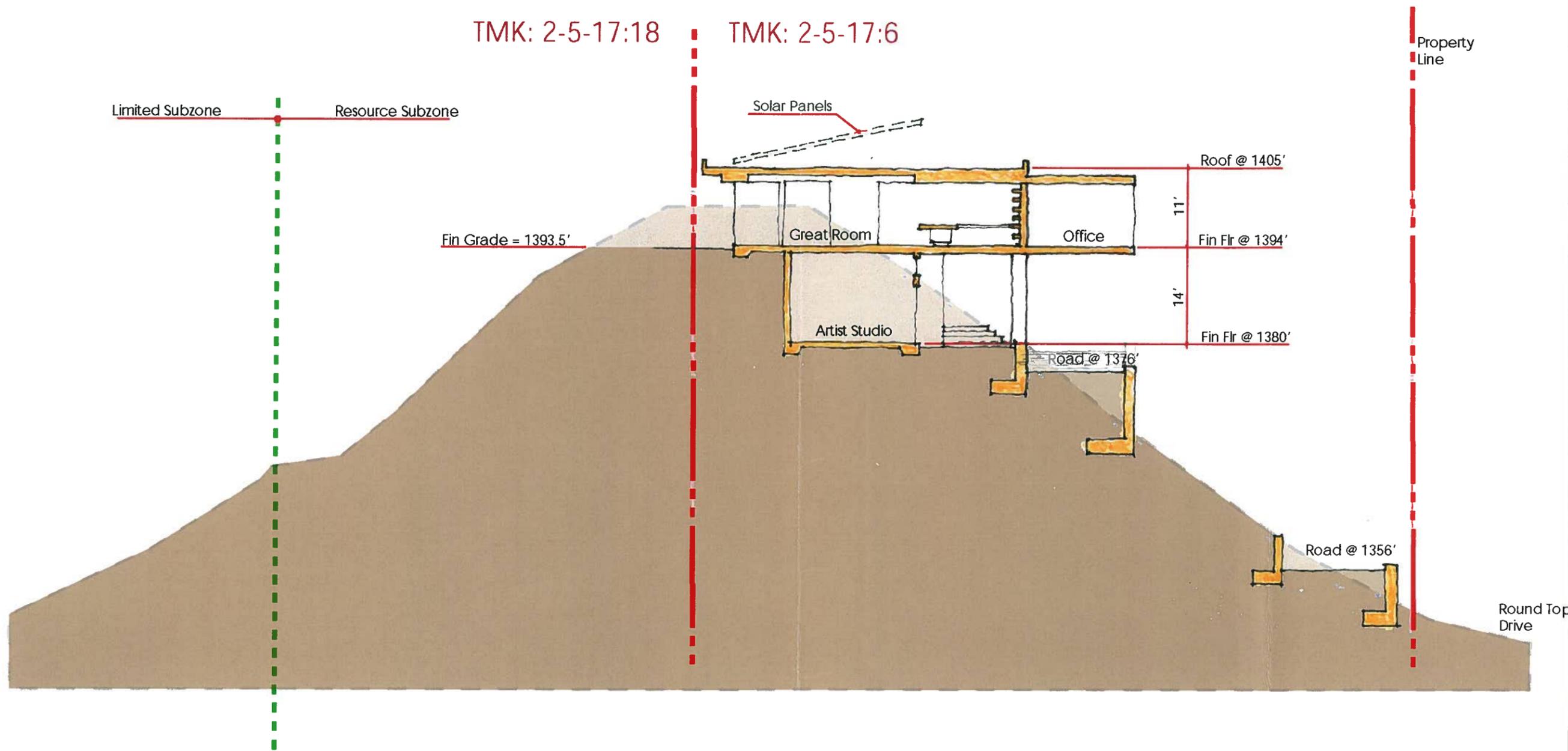
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Architects, Engineers, Planners
1000 South Street, Suite 400
Tussock, Texas 75787
Phone: 800-556-9001
Fax: 800-556-9805
tusherarchitecturalgroup.com



3999
Round Top
Residence

Sheet Title:
Site Section

Date:
July 28, 2010
Scale:
1/8" = 1'0"
Revisions:



This work was prepared by me or under my supervision. Construction of this project will be under my supervision.

Supervision of construction will be as defined by Chapter 402G-140.2(4) of the State of Hawaii Rules and Regulations of the Board of Registrars of Professional Engineers, Architects, Land Surveyors and Landscape Architects.

Sheet Number:
DLNR - 8



3999
Round Top
Residence

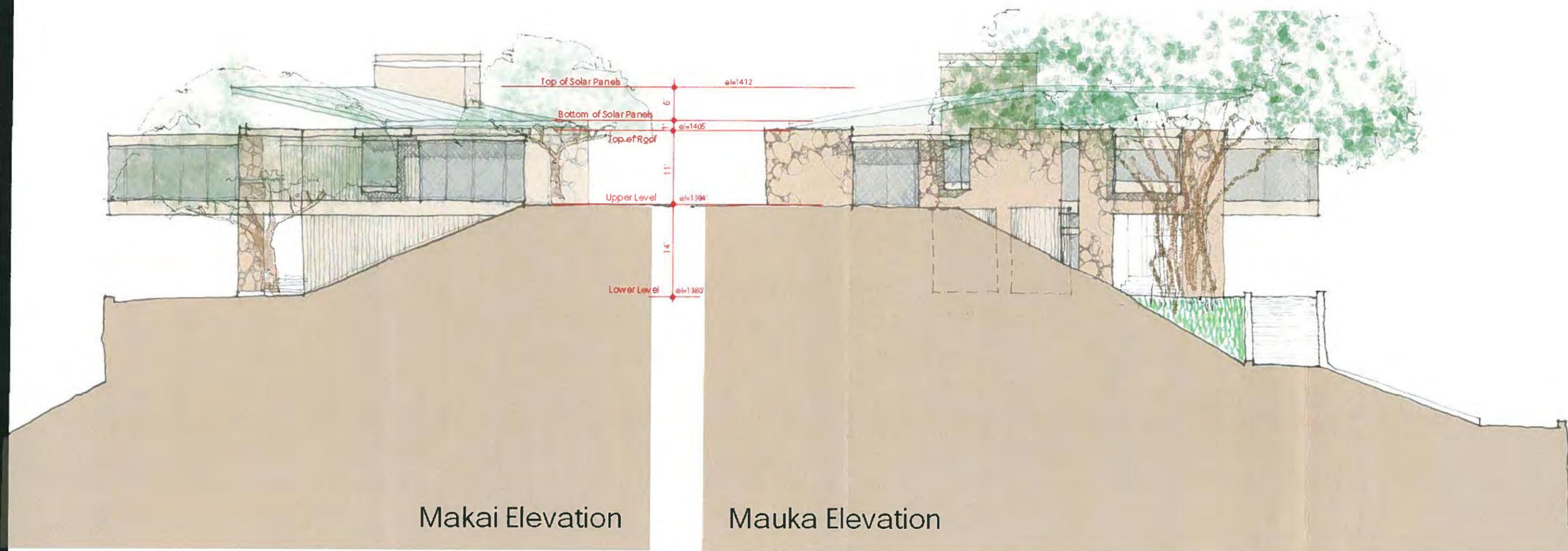
Sheet Title:

Mauka &
Makai
Elevations

Date:
July 28, 2010

Scale:
1/8" = 1'-0"

Revisions:



Makai Elevation

Mauka Elevation

This work was prepared by me or under my supervision. Construction of this project shall be under my supervision.

I, the architect, certify that I am a duly licensed architect in the State of Hawaii and that I am duly licensed in the State of Hawaii.

Sheet Number:

DLNR - 9



Tusher
Architectural
Group

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3. Environmental Setting: Potential Impacts, and Mitigation Measures

3.1 Topography

Drawing DLNR -2 is a topographic map of the subject property. The surface elevations of the subject property rise from Round Top Drive at about 1,340 feet to a peak of 1,410 feet where there is a large broad, relatively flat area. The property then slopes down again to approximately 1,330 feet along the Forest Reserve/valley-side of the property. The proposed house site, at elevation 1,394 feet, is about 60 feet above the street elevation and is set back about 40-60 feet from Round Top Drive.

Potential Impacts and Mitigation Measures

In order to construct the project it is necessary to do grading and earthwork to access the building site. It is expected that the project will be built in phases with driveway grading and retaining walls being the initial activity. After the driveway retaining walls have been constructed, grading will begin to fill for the driveway base course and concrete drive surface. Completing the driveway and parking court will provide site access and construction staging areas. It is anticipated that all grading and site work will be completed before construction of the residence will begin. This will allow the earthwork to be completed early in the construction so soil compaction, re-vegetation, and erosion controls can be established early in the building process and monitored throughout the balance of the work. Although grading is required, the design goal is to place the house and improvements within the existing environment and follow the existing topography as much as possible. This will minimize site disturbance and allow the existing surrounding vegetation to remain.

3.2 Soils

(Prepared by Land Planning Consultants LLC)

Soils at the property are classified as Tantalus silty clay loam (TAF) which are well-drained soils that occur on uplands. These soils developed in volcanic ash and material weathered from cinders. They are moderately sloping to very steep with elevations ranging from 100 to 2,200 feet. These soils are used for home-sites, water supply, and recreation. Natural vegetation consists of ferns, Formosa koa, koa haole, kukui, and eucalyptus. (USDA, 1972)

Potential Impacts and Mitigation Measures

The proposed project is designed to minimize soil disturbance and is not anticipated to significantly impact the existing soil conditions at the site. The structural design of the house and the wastewater system takes into consideration the soil conditions. Best Management Practices will be followed during construction. No further mitigation is warranted.

3.3 Drainage

(Prepared by Land Planning Consultants LLC)

While there are no streams within or near the project site, the Tantalus area receives over 100 inches of rain per year. The proposed residence will utilize a water-catchment system for its domestic water. The roof area will be used to capture and divert rainwater into the water-catchment system's two 10,000 gallon tanks. Storm water will flow towards the Forest Reserve or towards Round Top Drive. However, over 85% of the property will remain in open space which contains the existing vegetation and plantings that already absorb and slow sheet flows.

Potential Impacts and Mitigation Measures

The rainwater from non-permeable surfaces will be diverted into the 20,000 gallon water catchment system or into grassy and vegetated areas which are designed to encourage absorption and minimize sheet runoff. No significant impacts to drainage are anticipated. No additional mitigation is warranted.

3.4 Air Quality

(Prepared by Land Planning Consultants LLC)

The Tantalus area has excellent air quality due to the fairly consistent trade winds and rain showers. The elevation of the proposed residence (1,394 feet) places the house in an area that has low traffic impacts and is absent of other sources of pollution.

Potential Impacts and Mitigation Measures

Potential impacts to air quality will be short-term and related to the construction of the residence. Emissions and some dust may be generated by construction vehicles. Control measures such as regular watering of the site and use of sprinklers will help control dust and minimize wind-blown emissions. Work will be performed in conformance with the air pollution control standards contained in the Hawaii Administrative Rules, Title 11, Chapter 59, "Ambient Air Quality Standards" and Chapter 60, "Air Pollution Control". No significant long term air quality impacts are

anticipated due to inhabiting the proposed residence. No long-term mitigation is warranted.

3.5 Water Quality

(Prepared by Land Planning Consultants LLC)

There are no streams or surface water sources on the property. Rainwater will be diverted and stored in the 20,000 gallon catchment system which will be used for all domestic water needs. The appropriate water treatment will be provided to ensure potable water quality.

Potential Impacts and Mitigation Measures

Potential runoff from construction activities will be controlled especially since the property abuts the Forest Reserve. Construction activities will be performed in conformance with the applicable State and County provisions regarding construction, water quality and water pollution control. No long-term mitigation is warranted

3.6 Noise

(Prepared by Land Planning Consultants LLC)

The Tantalus area is a residential community spread throughout a heavily wooded area. Therefore, noise levels are very low due to the open space and distance between residences. Round Top Drive and Tantalus Drive are not heavily traveled streets and vehicles travel at relatively low speeds because the streets are narrow and winding.

Potential Impacts and Mitigation Measures

Short-term construction related noise impacts will occur. Short-term noise from construction machinery and vehicles may impact the two adjacent properties with residences. Construction activities will be limited to daylight working hours and will comply with Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control". No significant long term noise impacts are anticipated with the occupation of the residence and the additional vehicular traffic is not expected to cause an increase in the overall noise levels. No long-term mitigation is warranted

3.7 Flora and Fauna

(Prepared by Land Planning Consultants LLC)

There are no known rare, threatened, or endangered plant or animal species or significant habitats on the subject property.

Existing Fauna

No mammals were observed during site visits to the property. In September 2004, the Department of Land and Natural Resources, Division of Forestry and Wildlife was consulted regarding native and introduced bird species that may be found in the general vicinity of the Tantalus area. According to a DLNR biologist, native birds that may be found in the area include Apapane (*Himatione sanguinea*), Amakihi (*Hemignathus virens*), and, more rarely Pueo (*Asio flammeus*) (State listed). In addition, the Oahu Creeper (*Paroreomyza montana*), Elepaio (*Chasiempis sanvichensis ibidis*) and liwi (*Vestiaria coccininea*) were likely once common but are now no longer present. Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) and Newell's Shearwaters (Threatened) may fly over the area, but no reports exist due to the cryptic habits of

these species. Several species of seabirds may also fly over the site such as Tropic birds and White terns. Introduced passerine birds include House Finch, Nutmeg Mannikin, Red-billed Leiothrix, Hwamei, Japanese White-eye, Common Myna, Common waxbill, and Northern Cardinal. The introduced Barn Owl is likely common in the area as well. Rats, mice, and feral cats may reside in some areas of the project site or the general area. No rare, threatened or endangered species are known to exist.

Existing Flora

The property is lushly covered with tall grass, mature trees (including koa), and shrubs. Common plants found in the Tantalus areas such as ginger, ti leaf and staghorn fern are also located on the property. As much as reasonable possible, the existing trees, shrubs and ground cover will be retained, while new plantings will be chosen and placed to blend in with the existing "wild-growth" feeling of the site; "formal" landscaping is not consistent the overall design. Seven trees are proposed to be removed in order to construct the house and driveway as indicated on drawing DLNR – 3. Trimming of branches on other trees is anticipated.

Potential Impacts and Mitigation Measures

Since the property does not contain any known threatened or endangered species of flora or fauna, no adverse impacts are anticipated. No mitigation is warranted.

3.8 Visual Resources

(Prepared by Land Planning Consultants LLC)

The street frontage of the subject property is only visible from Round Top Drive. The proposed residence will be set back 40-60 feet from the street and will be 50 feet higher in elevation than the street level. Therefore, it is anticipated that the house will not be visible from Round Top Drive. The existing dense vegetation and trees will significantly screen the house from view. The attached photographs show the proposed project site and dense vegetation. Other Tantalus residences in the vicinity will retain their views; the proposed house will not impact those views. The ridge opposite the subject property is not accessible to the public so public views are not impacted.

The property does not affect views of adjacent properties and there are no houses on the opposite side of Round Top Drive. The deeds for the applicant's two parcels have "view easements" which relate to maintaining scenic views of the valley from the applicant's property looking across TMK: 2-5-17: 012 and 007, but with a reciprocal view easement from the adjacent property (parcels 012 and 007) looking across the applicant's property. The applicant's deeds also describe mutual setback easements "burdening and benefiting" the adjacent property to the northwest, TMK: 2-5-17: 012 and 007, and the applicant's property, which prohibits the construction of any residence within 20 feet of the boundary line between the two lots, and to plant and maintain a vegetation barrier to restrict the view of or between the residences on either parcel. The applicant's proposed house conforms to these shared property restrictions and there is significant mature vegetation on and between the two properties. The construction of the proposed residence will meet the conditions of the applicant's deed view easements.

Potential Impacts and Mitigation Measures

The development of the residence will have a roof area of 3,380 sf leaving over 70% of the lot as open space. The proposed residence will be screened from view due to the combination of the rise in topography away from Round Top Drive, the distance the house will be set back away from Round Top Drive, and the existing dense vegetation on the property.

The residence is setback from all side yard property lines 15 feet or more as shown on the attached drawing. The applicant is requesting a deviation from the back yard 15 foot setback standard in order to construct the house close to the adjoining property also owned by the Applicant.

Location of Setback	Standard Condition	Li1 Jestrاند Residence
Round Top	15 feet	40-60 feet
Manoa Valley	15 feet	5 feet from Lot 18, 100' feet from Manoa Valley
Mauka	15 feet	15 feet
Makal	15 feet	20 feet

Muted natural colors (greens and grays) and natural materials have been chosen for the exterior of the house to ensure that the house blends in with its natural surroundings and is minimally visible.

No significant visual impacts are anticipated due to the construction of the house. No further mitigation is warranted.

3.9 Historic Archaeological and Cultural Resources

(Prepared by Land Planning Consultants LLC)

The subject property is vacant; there are no structures. According to the City and County of Honolulu, Department of Planning and Permitting's geographic information system, the property record lists a "1918 detached dwelling". According to the owner's family, the property supposedly contained a small structure adjacent to Round Top Drive that was used in the early 1900's perhaps as a horse shed or a place to stop for horse-drawn carts/buggies. The structure basically deteriorated to the point of collapsing. There is no readily visible evidence at the subject property where that structure may have been located.

The applicant's agent has spoken with the State Historic Preservation Division staff regarding the SHDP's website, which contains a list of State of Hawaii and National Historic Places. The website states that the subject property TMK: 2-5-17: 06 and 018 was the location of the "James A. Wilder Residence", which was nominated to the National Register of Historic Places in 1988. However, the National Register Form also states that the "Wilder Residence's" address is 3935 Round Top Drive, which is actually TMK: 2-5-17: 011. The Wilder Residence did not exist on the property that is the subject of this Conservation District Use Application.

The State Historic Preservation Division's staff is aware of the discrepancy on the website and the National Register Form itself, which also cites the incorrect TMK. Additionally, the date of the Wilder Residence as 1909 on the National Register Form is consistent with the City's GIS website information for TMK: 2-5-17: 011, which states there is a 1909 house on the property. Also, it would not appear feasible that a house the size and shape of the Wilder Residence, as described on the National Register Form, could have been built on the applicant's subject property given the steep slope and limited area for construction. There is no obvious physical evidence on the applicant's property that a house existed on the broad level area

at the 1,4 10 foot elevation, which is the only feasible area within the property to build a large two-story house as described as the Wilder Residence on the Form.

The vicinity of the project site is not known for traditional cultural practices and there are no known archaeological/cultural resources on the project site. In the unlikely event that archaeological features are uncovered, all work will stop and the owner/applicant will be responsible to initiate immediate archaeological consultation.

Potential Impacts and Mitigation Measures

No impacts to historic or cultural resources or practices are anticipated to result from the proposed project. In the unlikely event that archaeological features are uncovered, all work will stop and immediate archaeological consultation will be sought with the Department of Land and Natural Resources, State Historic Preservation Division in accordance with applicable regulations.

3.10 Recreational Resources

(Prepared by Land Planning Consultants LLC)

The proposed residence does not impact public hiking trails in the Tantalus area. Trails in the general vicinity of the project site include the Puu Ohia Trail, Crater Rim Trail, Manoa Cliff Trail, and the Puu Ohia-Pauoa Flats Trail.

Potential Impacts and Mitigation Measures

It is not anticipated that the proposed residence will be visible from these public trails. The house will be screened by the existing trees and vegetation that are along the rear of the property, which faces towards the valley. Therefore, no impacts on public recreational resources are anticipated and no mitigation measures are proposed.

3.11 Traffic and Roadways

(Prepared by Land Planning Consultants LLC)

Primary access to the subject property is Round Top Drive, which is approximately 2 miles beyond the Puu Ualakaa State Wayside Park. Round Top Drive, a two-lane asphalt road with no shoulder area, is owned and maintained by the City and County of Honolulu. The proposed residence will have a 12 foot wide private driveway that intersects with Round Top Drive to access the residence.

Potential Impacts and Mitigation Measures

The proposed single family residence is not expected to create a significant impact to the roadway or traffic volumes. Round Top Drive and Tantalus Drive currently

experience low traffic volumes and vehicular speeds are relatively low due to the winding nature of the roadways. Some short-term impacts will result from construction vehicles entering and leaving the site during construction of the proposed residence. Round Top Drive will remain open at all times and traffic delays are anticipated to be minor.

3.12 Wastewater

(Prepared by Land Planning Consultants LLC)

The Tantalus area is not serviced by the City and County of Honolulu wastewater system. All residences are on individual wastewater systems. The proposed residence will have a septic tank with leach field system. The wastewater system will meet the State Department of Health requirements and the applicable and required permits will be applied for from the State DOH.

Potential Impacts and Mitigation Measures

The proposed individual wastewater treatment system will conform to Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems" and the applicable and required permits will be applied for from the State DOH. The proposed treatment system is not expected to result in any adverse impacts.

3.13 Potable Water

(Prepared by Land Planning Consultants LLC)

The subject property is not serviced by the City and County of Honolulu's Board of Water Supply. Typically, residences in the Tantalus area have water-catchment systems. The proposed single family residence's roofed areas will be used to divert and catch rainfall for the residence's domestic water supply. Runoff from non-permeable surfaces will be directed into two 10,000 gallon tanks (20,000 gallons total).

Potential Impacts and Mitigation Measures

No *adverse impacts* are anticipated to result from the proposed water-catchment storage system due to the fact there is no municipal water service in this area. No mitigation is required.

3.14 Best Management Practices

Best Management Practices (BMP) will be in place during construction. BMPs will be initiated to (1) stabilize the soil, (2) prevent erosion and (3) divert runoff from impervious surfaces into infiltration systems. Areas that are disturbed will be re-

vegetated with native plants and other vegetation to control soil erosion and siltation run-off. Steep slope areas that are disturbed will be covered with geotextile fabric and re-vegetated.

The area of soil and vegetation disturbance will be limited to that required for necessary construction and landscaping purposes. Tree, brush, and rock removal will be limited to that reasonably necessary for the construction of a home.

Surface runoff will be diverted along the down gradient of paving into vegetated areas or dry wells.

The goal is to preserve the existing natural landforms as much as possible. Where these existing landforms must be altered as part of the construction process, the altered areas will be recreated in a manner that replicates the original conditions.

Natural drainage courses will be preserved and existing vegetation (ground cover, shrubs, trees) left undisturbed except where the structures are located and where construction access is necessary.

Dust will be controlled on the construction site and construction materials will be covered or sufficient irrigation will be provided to eliminate any fugitive dust.

Potential Impacts and Mitigation Measures

No adverse impacts are anticipated. Best Management Practices will be employed to control erosion, run-off, dust from the site. Erosion control methods to be implemented by the contractor before, during and after construction will include, but are not limited to, the following Best Management Practices:

- Perform excavation at the construction site in phases to limit the number of cubic yards of soil being moved at any one time.
- Construct perimeter walls first to retain runoff.
- Install silt fences at the boundary of all disturbed areas and areas used for stockpiling and staging.
- Install the geotextile dust barrier fabric and silt fence fabric prior to start of construction and maintain in position until completion of construction activities.
- Install erosion control measures prior to start of the construction phase and maintain until construction is complete.
- Cover and stake burlap or textile fabric on slopes greater than 2:1 (vertical: horizontal) Prevent any grading operation that causes rocks, soil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural watercourses.

- Make adequate provisions to prevent drainage flows from damaging the cut face of an excavated area or the sloped surface of a fill area, and prevent sediment-laden runoff from leaving the site.
- Sod or plant all slopes and exposed areas as soon as possible.
- Plant disturbed areas where work has been interrupted or delayed with temporary or permanent ground cover.
- Inform the City of the location of any off-site disposal site for the project in the application for a grading permit.

3.15 Solid Waste

(Prepared by Land Planning Consultants LLC)

The Tantalus area is serviced by the City and County of Honolulu's solid waste collection system.

Potential Impacts and Mitigation Measures

No adverse impacts are anticipated to result from one additional single family residence. No mitigation measures are proposed.

3.16 Police, Emergency and Fire Protection Services

(Prepared by Land Planning Consultants LLC)

The Tantalus area is serviced by the Honolulu Police Department's District #1 Patrol. The City Fire Department's Station #3 Makiki Station located at 1202 Wilder Avenue provides fire protection services. (personal communications)

Potential Impacts and Mitigation Measures

During the building permit process, the applicant will develop a fire protection plan that will be approved by the appropriate agencies prior to issuing the building permit. The proposed design is intended to have a sprinkler system that will use water from the 20,000 gallon storage tanks. The system will be designed to meet the Fire Department's standards for fire fighting.

3.17 Electrical and Communication Services

(Prepared by Land Planning Consultants LLC)

Hawaiian Electric Company provides electrical power to the Tantalus neighborhoods via overhead lines. Telephone service is provided by Hawaiian Telcom. Cable television service is provided by Oceanic Cable. The proposed single family residence will connect to these overhead services where they follow Round Top Drive. The residence will also incorporate solar power and water heating panels. It is anticipated that these systems will provide most, if not all, of

the home's power and heating requirements, however the applicant will be discussing a net metering agreement with Hawaiian Electric Company.

Potential Impacts and Mitigation Measures

The proposed single family residence will not create any adverse impacts by connecting with the existing electrical and communication facilities.

4. Permits Required

(Prepared by Land Planning Consultants LLC)

The proposed construction of a single family residence in the Conservation District, Resource Subzone requires the applicant to obtain approval for a Conservation District Use Permit from the State of Hawaii, Board of Land and Natural Resources. If the CDUP is approved, the applicant will need to apply to the City and County of Honolulu for the necessary building permits and to the State Department of Health for permits related to the proposed wastewater and potable water systems.