DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4432 • FAX: (808) 527-6743
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MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

2006/ED-11(AM)

January 11, 2007

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
State of Hawaii
State Office Tower, Room 702
235 South Beretania Street
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Shoreline Setback Variance
Chapter 343, Hawaii Revised Statutes
Environmental Assessment (EA)/Determination
Finding of No Significant Impact

Landowner/Applicant:	Katsumi Tada
Agent:	Bow Engineering & Development, Inc.
Location:	497 and 487 Portlock Road – Hawaii Kai
Tax Map Key:	3-9-16: 35 and 36
Request:	Shoreline Setback Variance
Proposal:	Various alterations within the shoreline setback, including grading, and a silt retention basin and percolation pond.
Determination:	A Finding of No Significant Impact is Issued

Attached and incorporated by reference is the Final EA prepared by the applicant for the project. Based on the significance criteria outlined in Title 11, Chapter 200, Hawaii Administrative Rules, we have determined that preparation of an Environmental Impact Statement is not required.

We have enclosed a completed OEQC Bulletin Publication Form and four (4) copies of the Final EA. If you have any questions, please contact Ann Matsumura of our staff at 523-4077.

Very truly yours,

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:cs
Attachments

doc507293

2007-02-08-OA-FEA TADA RESIDENCE SHORELINE SETBACK VARIANCE

FEB - 8 2007

FINAL ENVIRONMENTAL ASSESSMENT

TADA SINGLE-FAMILY RESIDENCE PORTLOCK, O'AHU ISLAND, HAWAI'I

This environmental document has been prepared pursuant to
Chapter 343, Hawaii Revised Statutes
Chapter 23, Revised Ordinances of Honolulu

Prepared for:
Roy K. Yamamoto Architect, AIA, Inc.
1580 Makaloa Street, Suite 788
Honolulu, Hawaii 96814

Accepting Authority:
City and County of Honolulu
Department of Planning and Permitting

Prepared By:
Bow Engineering & Development, Inc.
1953 South Beretania Street, PH-A
Honolulu, Hawai'i 96826

December 2006

RECEIVED

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DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

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APPENDICES

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PREFACE

This Final Environmental Assessment (EA) has been processed as a Finding of No Significant Impact (FONSI) by the City and County of Honolulu, Department of Planning and Permitting. As a result, the preparation of an Environmental Impact Statement (EIS) is not required.

To facilitate the readers' ability to distinguish revisions made to the Draft EA, substantive changes and additions are underlined. Text that has been deleted is indicated by a ~~strikethrough.~~

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1 INTRODUCTION AND PROJECT DESCRIPTION

1.1 SUMMARY INFORMATION

Applicant/Fee Owner:	Katsumi Tada, Daisho Co. Ltd.
Approving Agency:	City and County of Honolulu Department of Planning and Permitting Land Use Permit Division
Agent:	Bow Engineering & Development, Inc. 1953 S. Beretania Street Honolulu, Hawai'i 96826 Contact: Darin Aihara Phone: 941-8853
Location:	Portlock, O'ahu island, Hawai'i
Tax Map Key:	3-9-016:036 & 3-9-016:035
Land Area:	1.48 acres
State Land Use Designation:	Urban
Community Plan:	East Honolulu Sustainable Communities Plan (1999)
Existing Zoning:	R-10 Residential
Special Designations:	SMA/Shoreline Setback Area
Agencies Consulted Prior to Issuance of the Draft EA:	Army Corps of Engineers National Marine Fisheries Service U.S. Fish and Wildlife Service State Dept. of Health, Clean Water Branch State Dept. of Land and Natural Resources (DLNR), Land Division State DLNR, State Historic Preservation Division State Office of Planning City and County of Honolulu, Dept. of Planning & Permitting Hawaii Kai Neighborhood Board Chairman
Anticipated Determination	Finding of No Significant Impact (FONSI)

1.2 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT

The evaluation of projects to determine their effects on the environment is required by the Hawai'i Revised Statutes (HRS), Chapter 343. An Environmental Assessment (EA) is a "written evaluation to determine whether an action may have a significant effect" (HRS §343-2). The agency with primary responsibility over the project (the proposing agency) is required to prepare an EA and makes a final determination according to significant impacts, or lack of significance. As stated in HRS §343-1:

> An environmental review process will integrate the review of environmental concerns with existing planning processes of the State and counties, and alert decision makers to significant environmental effects which may result from the implementation of certain actions. ...The process of reviewing environmental effects is desirable because environmental consciousness is enhanced, cooperation and coordination are encouraged, and public participation during the review process benefits all parties involved and society as a whole.

As described above, the basic purpose of an EA is to provide information to the public and decision makers on proposed actions. The EA must also disclose: potential significant adverse environmental impacts, the expected primary and secondary consequences, and the cumulative as well as the short and long-term effects of the action.

1.3 ENVIRONMENTAL SETTING

PROJECT LOCATION

The project site is located within the Portlock residential neighborhood in Hawai'i Kai, O'ahu island. Construction of the proposed project would occur on the parcels identified as Tax Map Key (TMK) 3-9-016:036 and 035 (see Figure 1).

SITE HISTORY AND EXISTING CONDITIONS

The existing project parcels consist of a vacant weeded lot with various trees (including monkeypod, kiawe, coconut palm, and plumeria) scattered over the extent of the parcel. The project site slopes from Portlock Road to a level area at the mid-portion of the site, and a steep slope to the seawall fronting Maunalua Bay. Minor concrete masonry unit (CMU) retaining walls from previous improvements occur over several sections of the site.

The project parcel has been historically developed with single-family residential uses. The Department of Planning and Permitting GIS records show a permitted dwelling constructed in 1939 (accessed in June 2005). The most recent single-family residences, one located on each parcel, were demolished in the early 1990s. The site has remained vacant since that time. Surrounding land uses include single-family residential properties to the north and south, Portlock Road to the east, and Maunalua Bay to the west. There is public access to the shoreline located along the northern boundary of the project site; even though this easement is privately owned, it is open to the public for shoreline access. There is also an existing drainage gulch that runs along the southern boundary of the site.

Existing Seawall

There is an existing concrete seawall fronting the proposed project site in good repair. Based on aerial photographs, the majority of the seawall was built prior to 1949, with the remainder completed in 1967 (City and County of Honolulu, E. Mabuni, personal communications, 2006). Because the seawall was constructed prior to the establishment of shoreline setback regulations established by the City and County of Honolulu on June 22, 1970, ~~in 1971~~, the seawall would be considered a legal, non-conforming structure.

1.4 DESCRIPTION OF THE PROPOSED ACTION

As proposed by the applicant, the Tada Single-Family Residence project would consist of construction of a single-family dwelling on one lot and another dwelling on the adjacent lot in addition to ancillary improvements within the parcel's 40-foot shoreline setback area including grading and landscape improvements (see Figure 2). Ancillary improvements to the single-family dwelling include the concrete driveway, property line walls, drainage system, slope improvements to shoreline setback area, and landscape improvements. The single-family dwelling would abut the 40-foot shoreline setback area.

Landscape improvements within the 40-foot shoreline setback would include grading to reshape the existing 2:1 slope to a 4:1 slope to reduce the potential for soil erosion and provide easier access to the shoreline from the proposed residence (see Figures 3 through 5). In addition, a silt sedimentation basin would be constructed to allow stormwater runoff from the site to settle out the silts before the stormwater enters Maunalua Bay by sheet flow over the seawall in the southwestern corner of the property. Landscape plantings in the shoreline setback area would include a combination of grass, ground cover, and low level shrubs (see Figure 6). There would be no direct access from the project site to the ocean, and the boat would need to be launched at an offsite boating facility. For a discussion of project consistency with the shoreline setback rules and Special Management Area Use Permit requirements, see Section 2.12, *Land Use Controls*.

DESIGN ELEMENTS OF THE PROPOSED SINGLE-FAMILY RESIDENCE

The proposed project would be in conformance with the requirements for single-family residences in the R-10 zoning designation for the City and County of Honolulu. The intent of the R-10 districts is to provide areas for large lot developments, and requires a minimum lot area of 10,000 square feet (ROH §21-3.70). The site has been previously developed with residential uses, and the proposed dwellings would be constructed in the areas most suited for the project. Several large monkey pod trees would be retained onsite, and additional landscaping would be used to create a positive aesthetic.

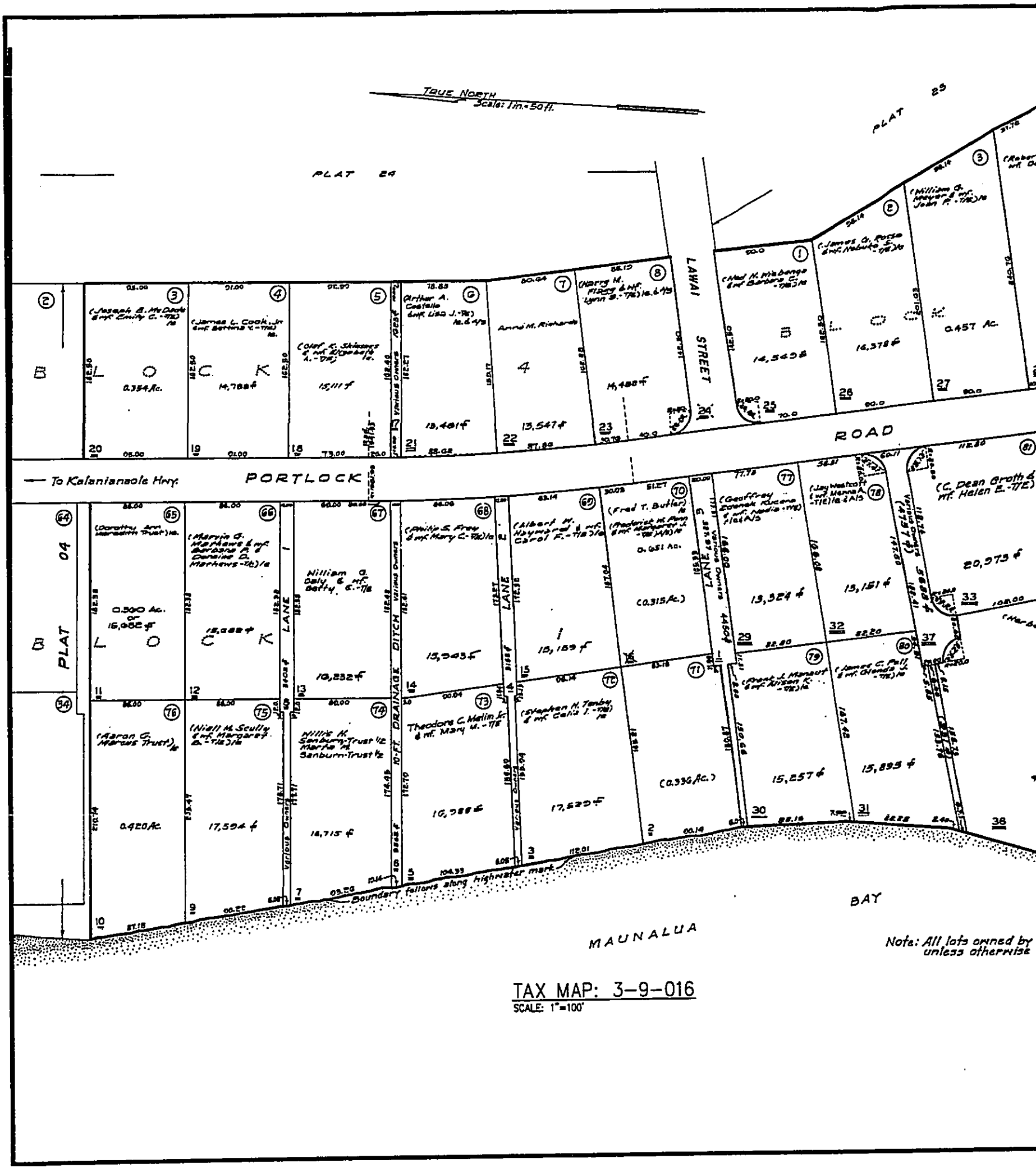
The proposed residence is designed encompassing 27,207 square feet, the additional dwelling would be 3,533 square feet, and the garage and boat house would be 996 square feet. Concrete pavement would be used for longevity for the driveway and pathways. Figure 9 and 10 in Section 2.8, *Aesthetics and Visual Resources* show elevation views of the proposed dwellings and garage. The orientation of the dwellings would allow some lighting, and the use of high efficiency outdoor lighting and directional fixtures would reduce energy use and light spillage. Indoor lighting would be on dimmers, and all appliances would be Energy Star rated. The water

from the proposed pool would be used for AC chillers, and the discharge water would be recirculated to warm the pool.

Slopes within the project site would be reduced to minimize erosion, and exposed soils would be replanted as soon as possible following construction. The site drainage system would be constructed to reduce the amount of stormwater runoff entering Maunalua Bay, with the use of positive site drainage and sedimentation basins.

1.5 PROJECT PHASING

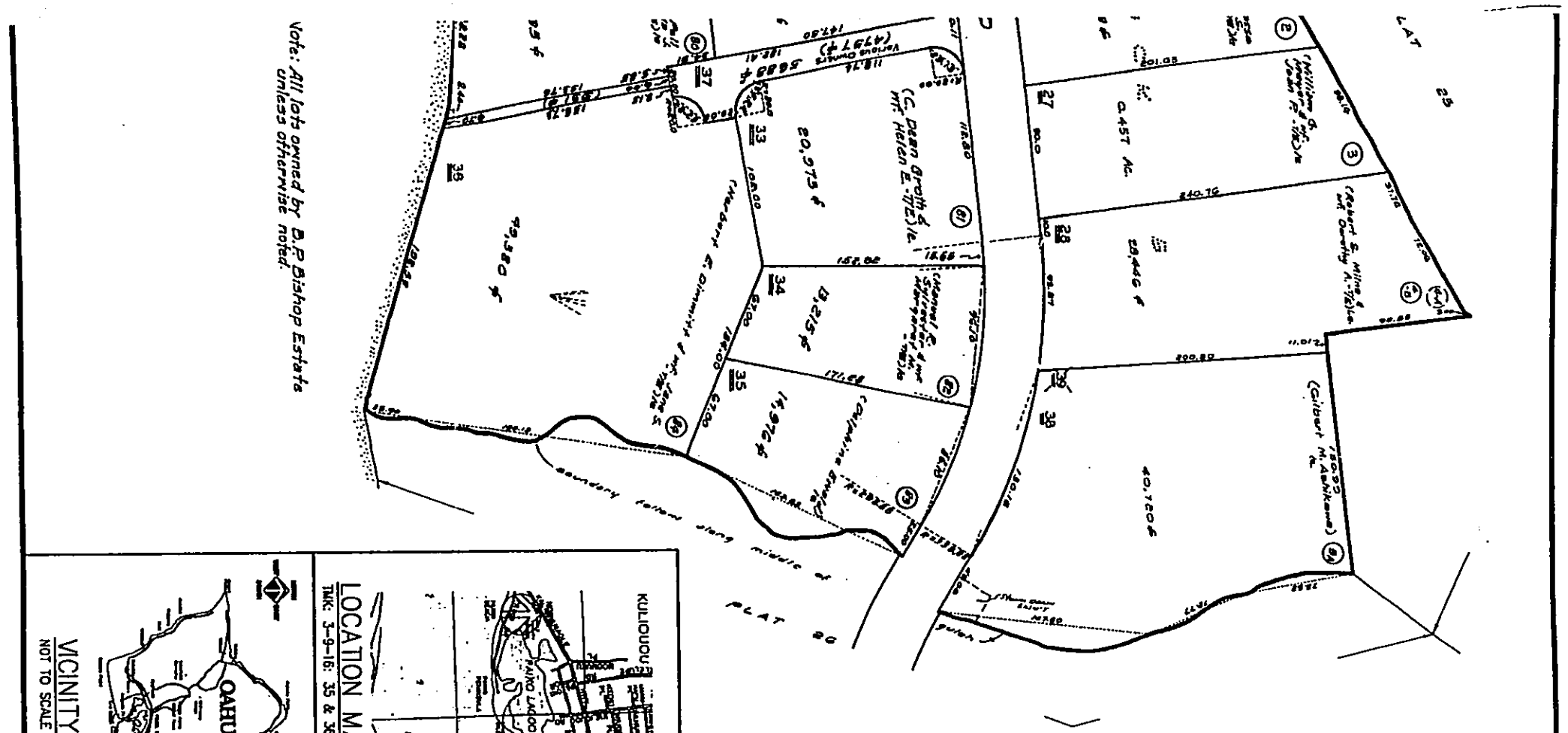
Construction of the single-family residence project is scheduled to begin in summer of 2007 ~~late 2006~~. The project would be constructed in a single phase over the duration of one year.



TAX MAP: 3-9-016

SCALE: 1"=100'

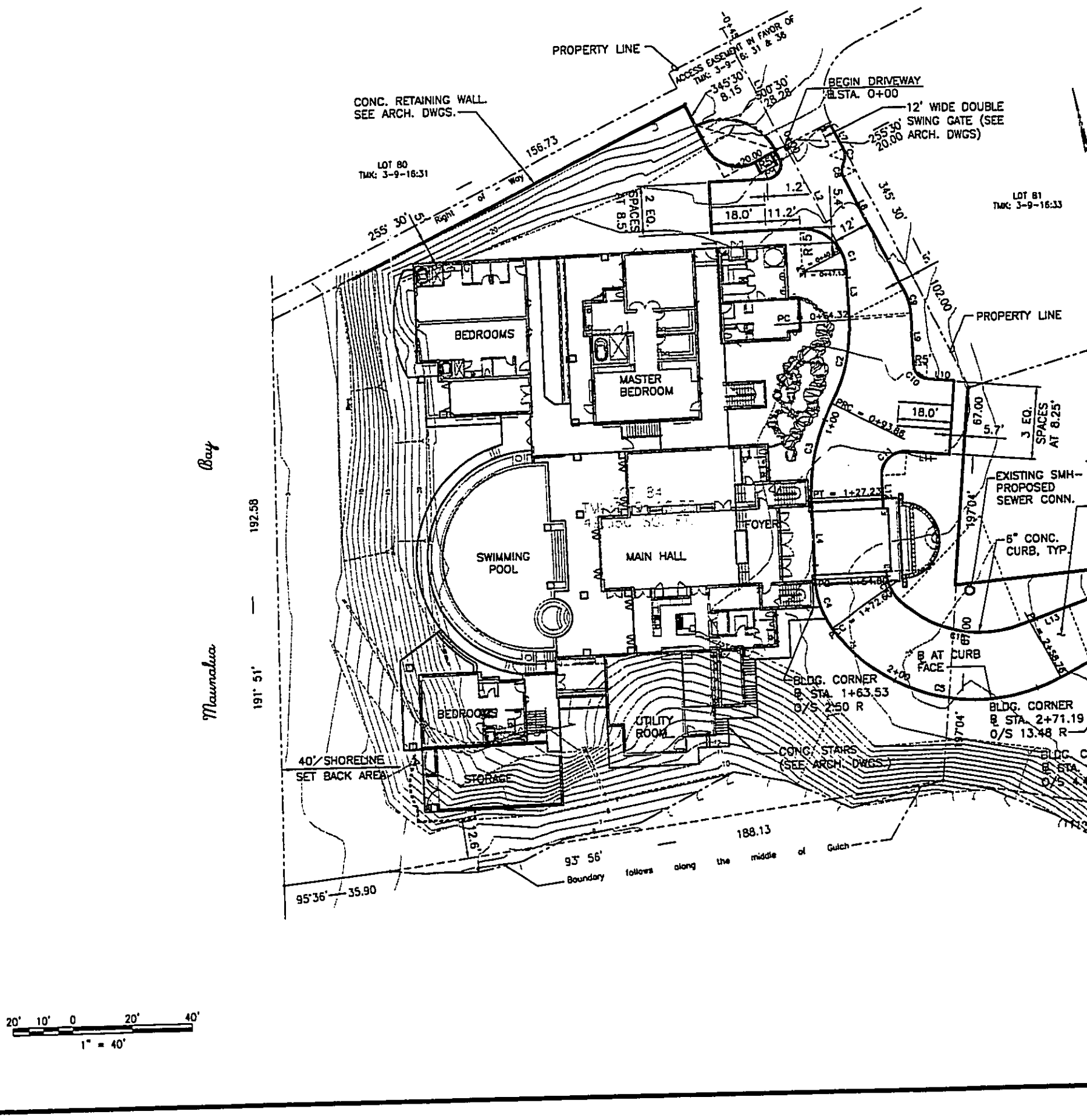
Note: All lots owned by [illegible] unless otherwise



SHT. F-1 OF SHTS.	WILLIAM H. Q. BOW LICENSED PROFESSIONAL ENGINEER NO. 4904-C HAWAII USA. THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.	Designed by: DA Checked by: WB Drawn by: DA Approved by: WB Date: - Scale: AS NOTED T.M.K. -	TADA RESIDENCE T.M.K. 3-9-16:35 & 36 Hawaii **TAX MAP, LOCATION, AND VICINITY MAPS**

Bow Engineering & Development, Inc.
CIVIL ENGINEERS PLANNERS
1953 S. BERETANIA ST., SUITE 911-A
HONOLULU, HI 96826
Telephone (808) 941-8833
Telecopier (808) 943-9799
Email: bbow@bowengineering.com

SYMBOL	DESCRIPTION	DATE


PROPERTY LINE
ACCESS EASEMENT IN FAVOR OF TMK: 3-9-16: 31 & 36
CONC. RETAINING WALL. SEE ARCH. DWGS.
156.73
LOT 80 TMK: 3-9-16:31
345° 30' 8.15
50° 30' 28.28
BEGIN DRIVEWAY @ STA. 0+00
12' WIDE DOUBLE SWING GATE (SEE ARCH. DWGS)
255° 30' 20.00
LOT 81 TMK: 3-9-16:33
255° 30' Right of Way
2 EQ. SPACES AT 8.5'
18.0'
11.2'
1.2
5.4'
12'
345° 30'
R15'
102.00
PROPERTY LINE
BEDROOMS
MASTER BEDROOM
PC 0+64.32
R5'
18.0'
67.00
5.7'
3 EQ. SPACES AT 8.25'
BRC = 0+93.88
1+00
EXISTING SMH-PROPOSED SEWER CONN.
6" CONC. CURB, TYP.
SWIMMING POOL
MAIN HALL
FOYER
PT = 1+27.23
L4
1+72.00
197.04'
BLDG. CORNER @ STA. 1+63.53 O/S 2.50 R
6" CURB AT FACE
2+00
BLDG. CORNER @ STA. 2+71.19 O/S 13.48 R
BEDROOMS
UTILITY ROOM
CONC. STAIRS (SEE ARCH. DWGS.)
40' SHORELINE SET BACK AREA
STORAGE
2.6'
188.13
93° 56'
Boundary follows along the middle of Gulch
95°36' 35.90
Bay
Maunalua
192.58
191° 51'
20' 10' 0 20' 40'
1" = 40'

SITE PLAN

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

Bow Engineering & Development, Inc.
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SYMBOL	DESCRIPTION	DATE

Designed by: DA
Checked by: WB
Drawn by: DA
Approved by: WB
Date: -
Scale: AS NOTED
T.M.K.: -

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND COMPLETION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

WILLIAM R. E BOW
LICENSED PROFESSIONAL ENGINEER
NO. 4904-C
HAWAII, USA

F-2
SHT. - OF - SHTS.

NOTE:
DEMOLISH AND REMOVE EXIST SIDEWALK AND DRIVEWAY APRON.

STD. C&C DRIVEWAY, SEE C&C STD. DET. R-29A (SEE DETAIL, THIS SHT)

4+50.69

SMOOTH RIDING TRANSITION

PORTLOCK ROAD (CITY)

END DRIVEWAY @ STA: 4+06±

4" CONC. SIDEWALK. SLOPE @ 5% MAX. CROSS SLOPE @ 1.5% MAX. (SEE C&C STD. DET. R-28)

MATCH EXIST

CONC. PARTITION WALL SEE ARCH. DWGS.

CMU WALL (BY OTHERS)

@ STA 3+86.10 O/S 13.00 R
16' WIDE DOUBLE SWING GATE (SEE ARCH. DWGS.)

CONC. PARTITION WALL SEE ARCH DWGS.

TRANSFORMER. SEE ELECTRICAL DWGS.

GARAGE & BOATHOUSE

DWELLING

BLDG. CORNER @ STA 2+71.19 O/S 13.48 R

BLDG. CORNER @ STA 2+97.76 O/S 4.42 R

6" CONC. PAVT. WITH 4" BASE COURSE, TYP.

6" CONC. CURB, TYP.

EXISTING SMH PROPOSED SEWER CONN.

SPACES @ 8.25' AT

LOT 81 TMK: 3-9-16:33

LOT 82 TMK: 3-9-16:34

PROPERTY LINE

TRUE NORTH

12' WIDE DOUBLE SWING GATE (SEE ARCH. DWGS)

DRIVEWAY

18.0'

102.00

67.00

5.7'

197.04

160.24

11704' 2.00

25.00

27.04'

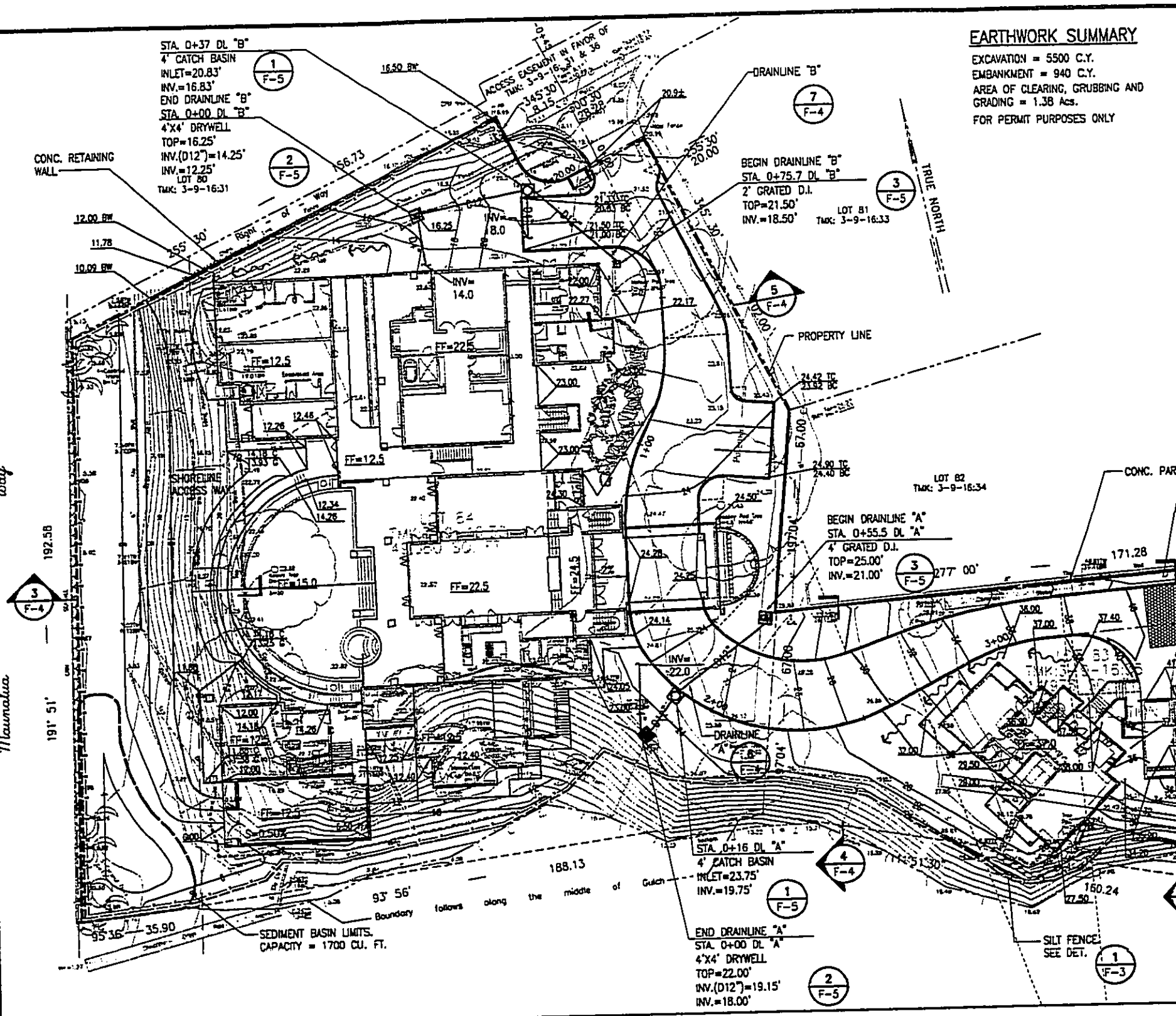
75.30

52.89'

TM: 3-9-16:35

EARTHWORK SUMMARY

EXCAVATION = 5500 C.Y.
EMBANKMENT = 940 C.Y.
AREA OF CLEARING, GRUBBING AND GRADING = 1.38 Acs.
FOR PERMIT PURPOSES ONLY

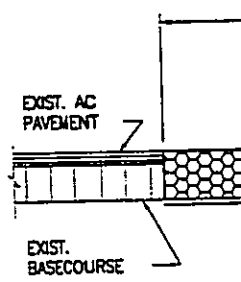


BEST MANAGEMENT PRACTICE NOTES:

1. FREQUENT WETTING OF THE GRADED AREAS BY WATER TRUCK OR HOSE.
2. NO WORK WILL BE PERFORMED ON DAYS WITH EXCESSIVE WIND (OVER 20 MPH)
3. STABILIZE CONSTRUCTION ENTRANCE TO PREVENT TRANSPORT OF MUD, DIRT, ROCKS, ETC. ONTO THE PAVED ROADWAY.
4. NO OFFSITE RUNOFF WILL BE PERMITTED TO ENTER PROPERTY.
5. SILT FENCE OR OTHER TEMPORARY MEASURES TO BE PROVIDED TO PROTECT ADJOINING PROPERTIES.

GRADING PLAN

SCALE: 1" = 40'



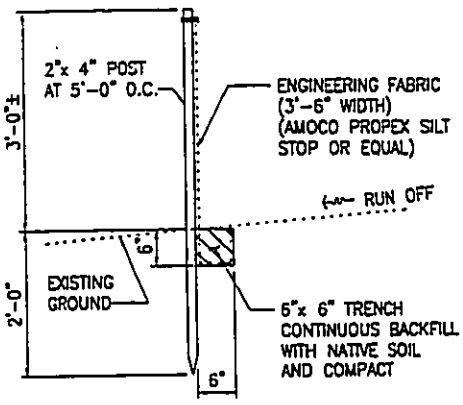
2 STABILIZ
NOT TO SCALE

EARTHWORK SUMMARY

EXCAVATION = 5500 C.Y.
EMBANKMENT = 940 C.Y.
AREA OF CLEARING, GRUBBING AND GRADING = 1.38 Acs.
FOR PERMIT PURPOSES ONLY

LEGEND

41.00	FINISH GRADE ELEVATION
41.00 TC	TOP OF CURB
41.00 BC	BOTTOM OF CURB
FF=25.00'	FINISH FLOOR ELEVATION
—~→	SWALE (FLOW DIRECTION)
—— 20 ——	FINISH GRADE CONTOUR
- - - - - -	LIMITS OF CLEARING AND GRUBBING
—+—+—+—	SILT FENCE
	DRAIN INLET (D.I.)
	CATCH BASIN
	DRYWELL
	ARROW – VIEWING DIRECTION TOP HALF OF CIRCLE – DETAIL # BOT. HALF OF CIRCLE – FIGURE WHERE DETAIL IS LOCATED



1 TYPICAL SILT FENCE DETAIL
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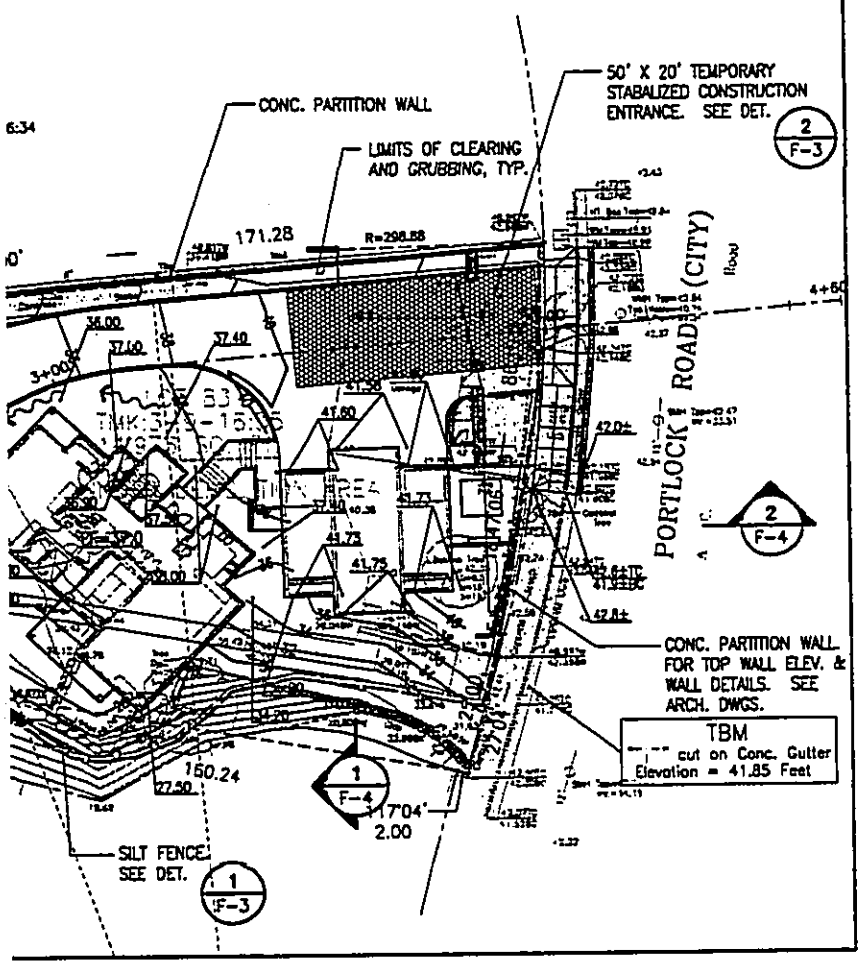

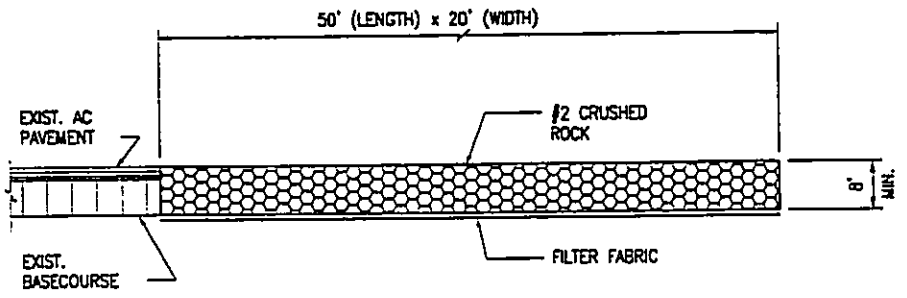

2 STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

GRAPHIC SCALE
20' 10' 0 20' 40'
1" = 40'

SYMBOL	DESCRIPTION	DATE

Bow Engineering & Development, Inc.
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Email: bowengineering.com

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

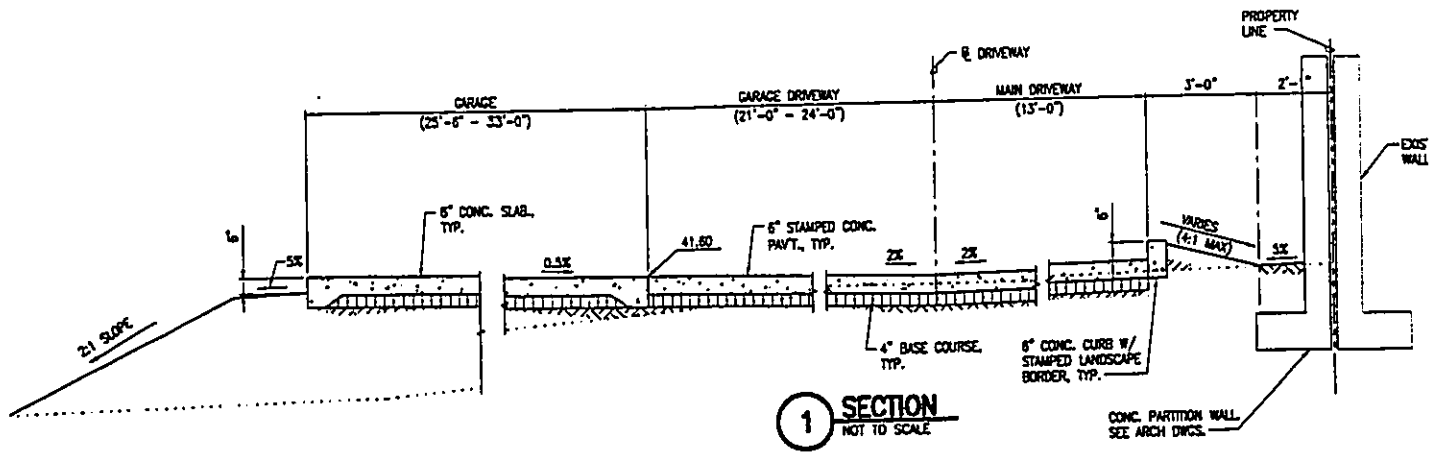
GRADING/DRAINAGE PLAN AND DETAILS

Designed by:	DA	Approved by:	WB
Checked by:	WB	Date:	-
Drawn by:	DA	Scale:	AS NOTED
		T.M.K.	-

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: [signature] Expires: 4/30/03
WILLIAM H. Q. BOW LICENSED PROFESSIONAL ENGINEER NO. 4901-C HAWAII USA

F-3

SHT. - OF - SHTS.



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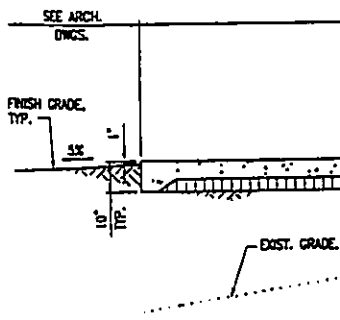

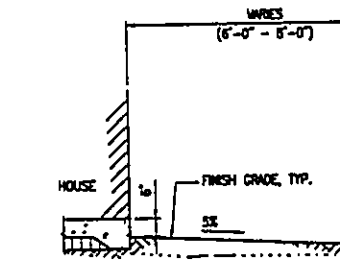

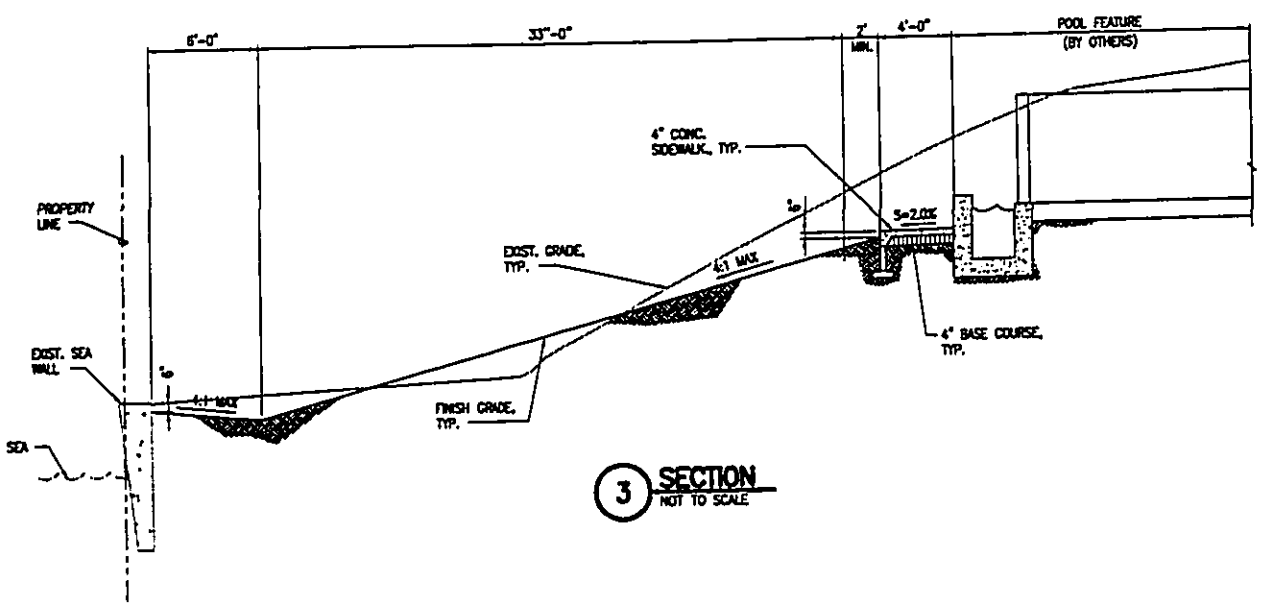

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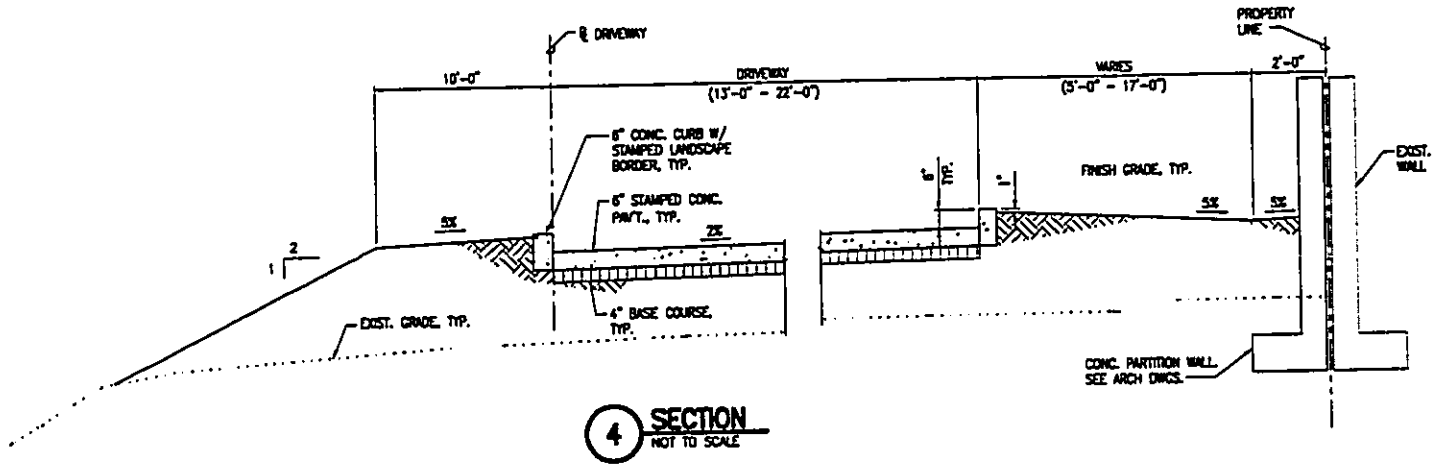

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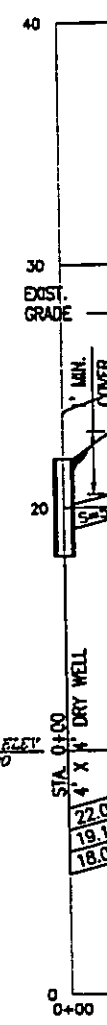
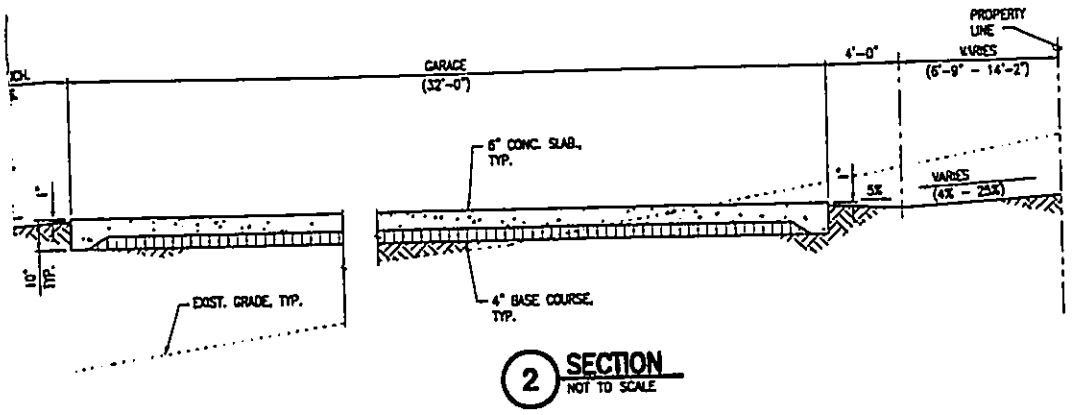


6 DRAI
SCALE:

SECTION LOCATIONS SHOWN ON FIGURE F-3



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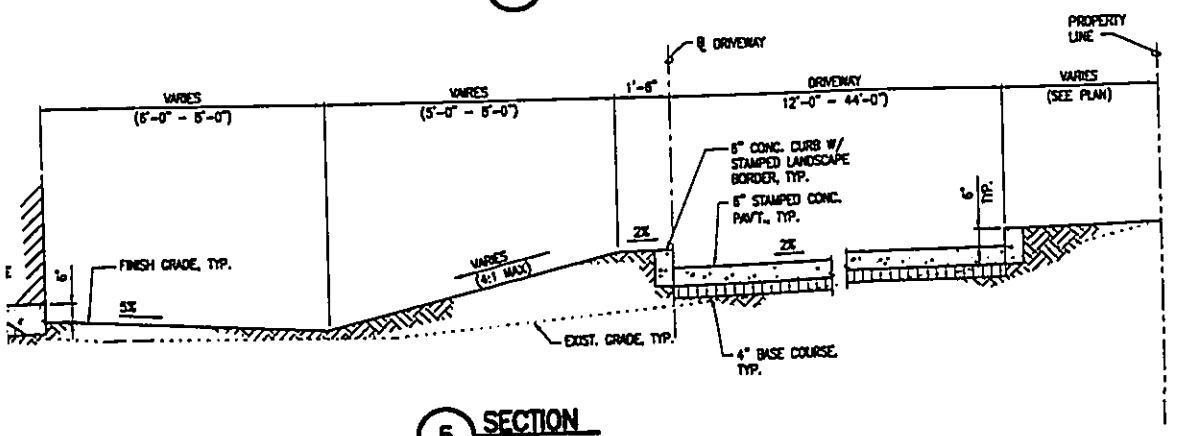

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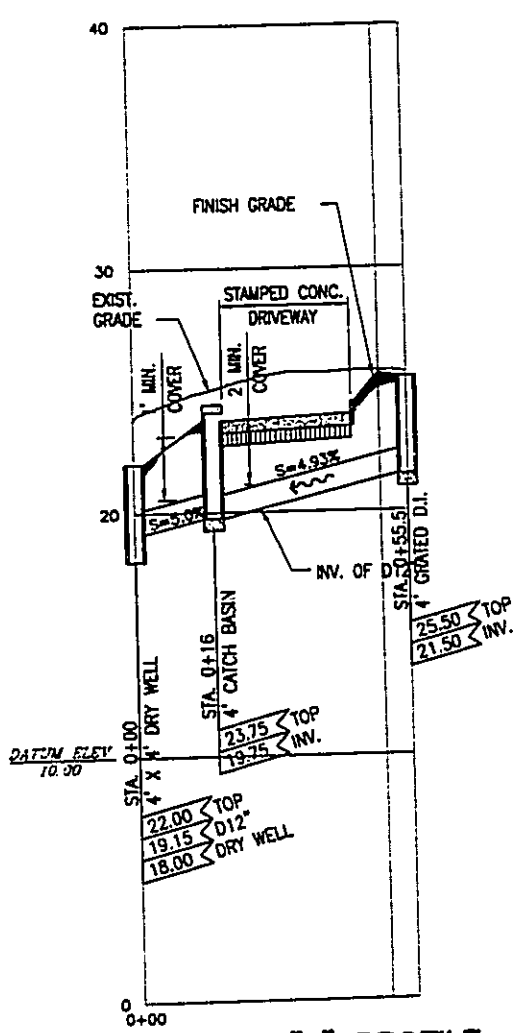
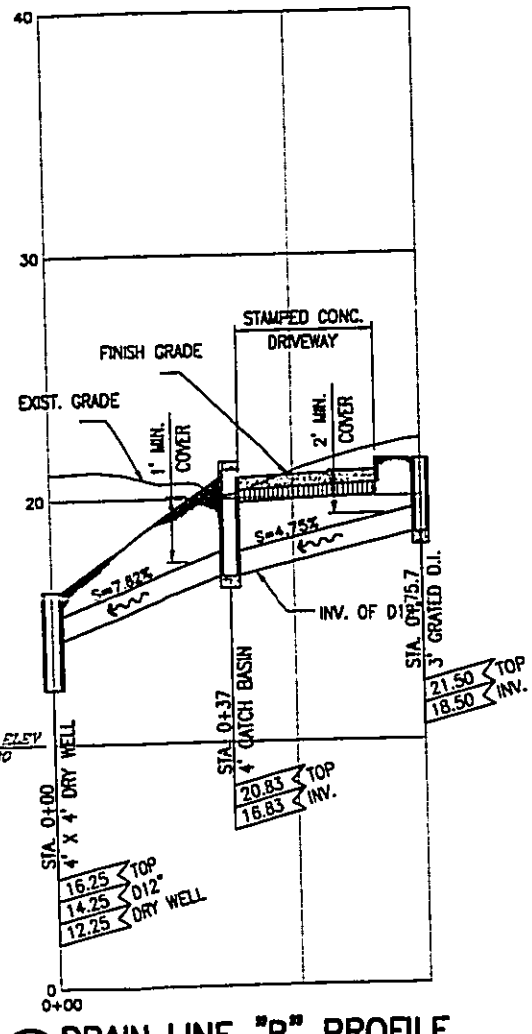


6 DRAINLINE "A" PROFILE
SCALE: HORIZ 1" = 40'
VERT 1" = 8'



7 DRAIN LINE "B" PROFILE
SCALE: HORIZ 1" = 40'
VERT 1" = 8'

SYMBOL	DESCRIPTION	DATE

Bow Engineering & Development, Inc.
CIVIL ENGINEERS PLANNERS
1833 S. BERETANIA ST., SUITE 714-A
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Telephone (808) 941-4533
Telefax (808) 941-3299
Email: bow@bowengineering.com

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

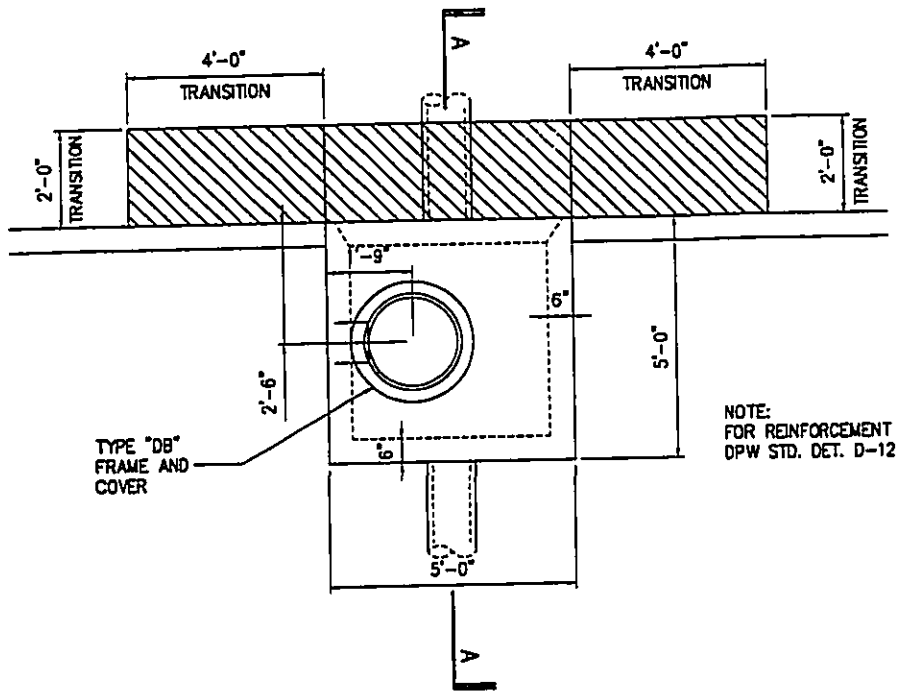
SECTIONS AND DRAINAGE PROFILES

Designed by: DA
Checked by: WB
Drawn by: DA
Approved by: WB
Date: .
Scale: AS NOTED
T.M.K. .

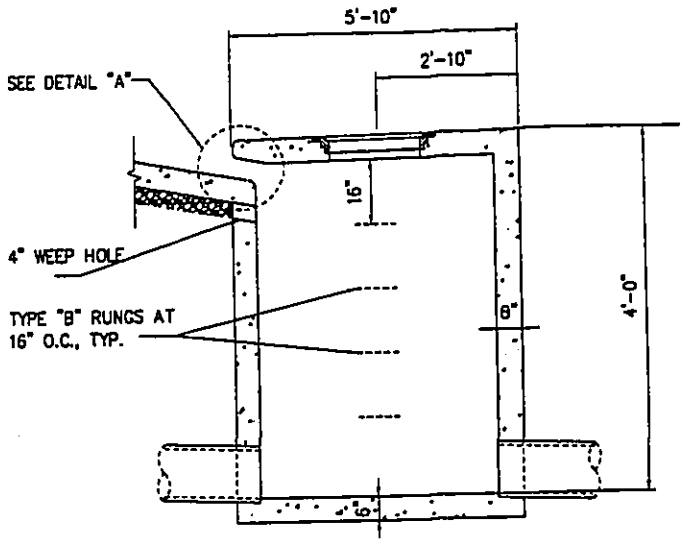
THE WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
WILLIAM H. BOW
LICENSED PROFESSIONAL ENGINEER
NO. 4804-C
HAWAII, U.S.A.

F-4

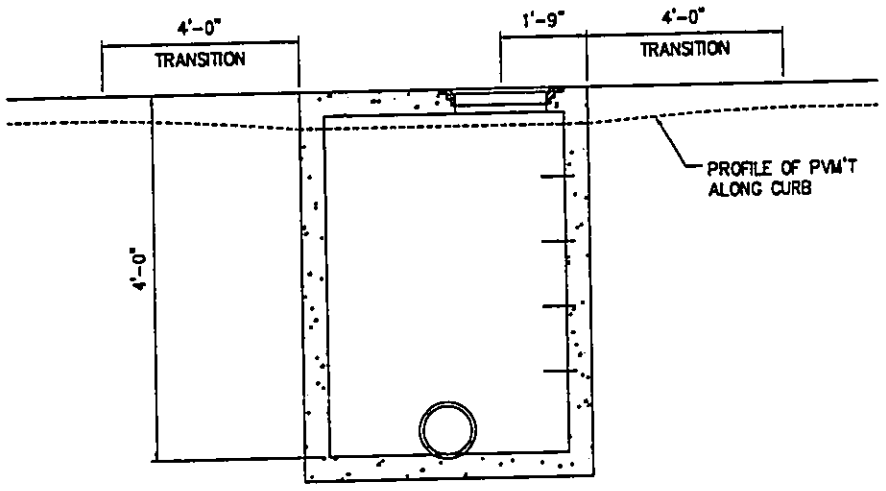
SHT. - OF - SHTS.



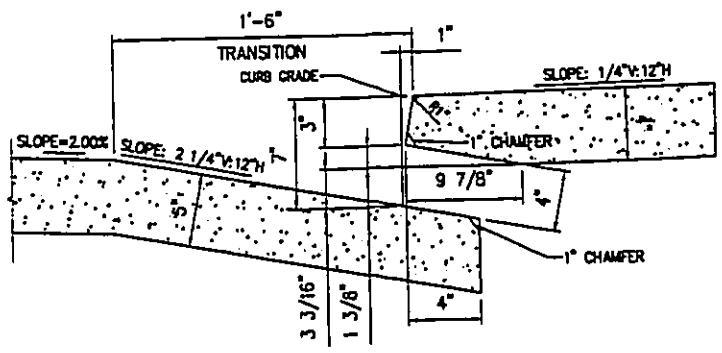
PLAN



SECTION A-A



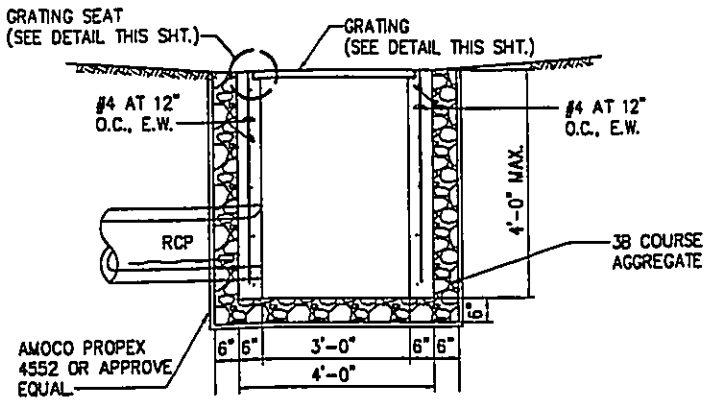
ELEVATION



DETAIL "A"

(1) 4' CATCH BASIN
NOT TO SCALE

DRAIN STRUCTURE LOCATIONS SHOWN ON FIGURE F-3



2 4'X4' DRYWELL
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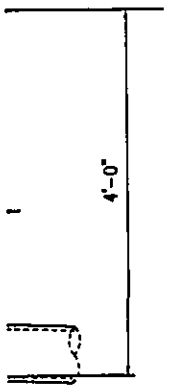
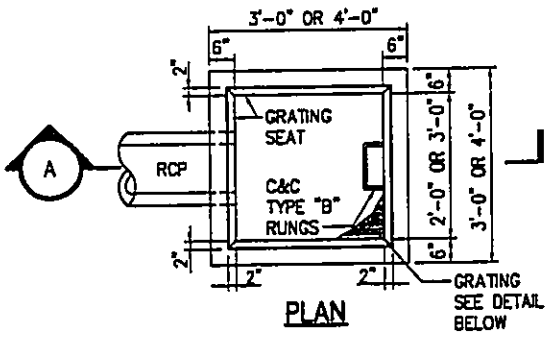
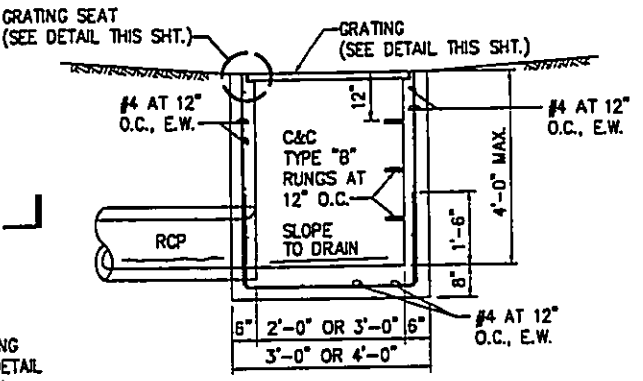


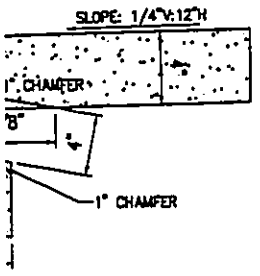


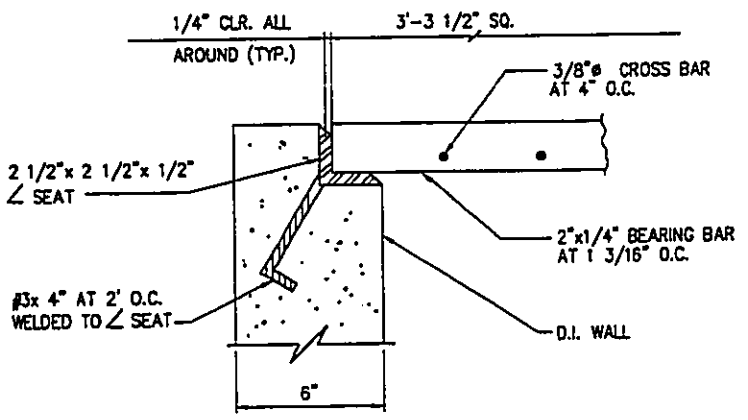
PLAN



3 3' & 4' GRATED DRAIN INLET DETAIL
NOT TO SCALE

A SECTION
NOT TO SCALE





GRATING AND SEAT DETAIL
NOT TO SCALE

NOTES

1. ALL WELDS 5/16".
2. ALL STEEL SHALL BE STRUCTURAL GRADE.
3. GRATES AND FRAME SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
4. PROVIDE 4 UNIVERSAL FASTENERS PER GRATING.
5. GRATING BAND BARS SHALL BE 1/4" THICKx1-1/2" DEPTH, AND WELDED FLUSH WITH TOP OF GRATING.
6. ADD TWO 3/8" ø BOTTOM CROSS BARS TO GRATING NEAR CENTER.

F-3

SYMBOL	DESCRIPTION	DATE

Bow Engineering & Development, Inc.
CIVIL ENGINEERS PLANNERS
1833 KAPIOLANI ST., SUITE PH-A HONOLULU, HI 96826
Telephone (808) 941-8833
Telecopier (808) 943-7299

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

DRAIN DETAILS

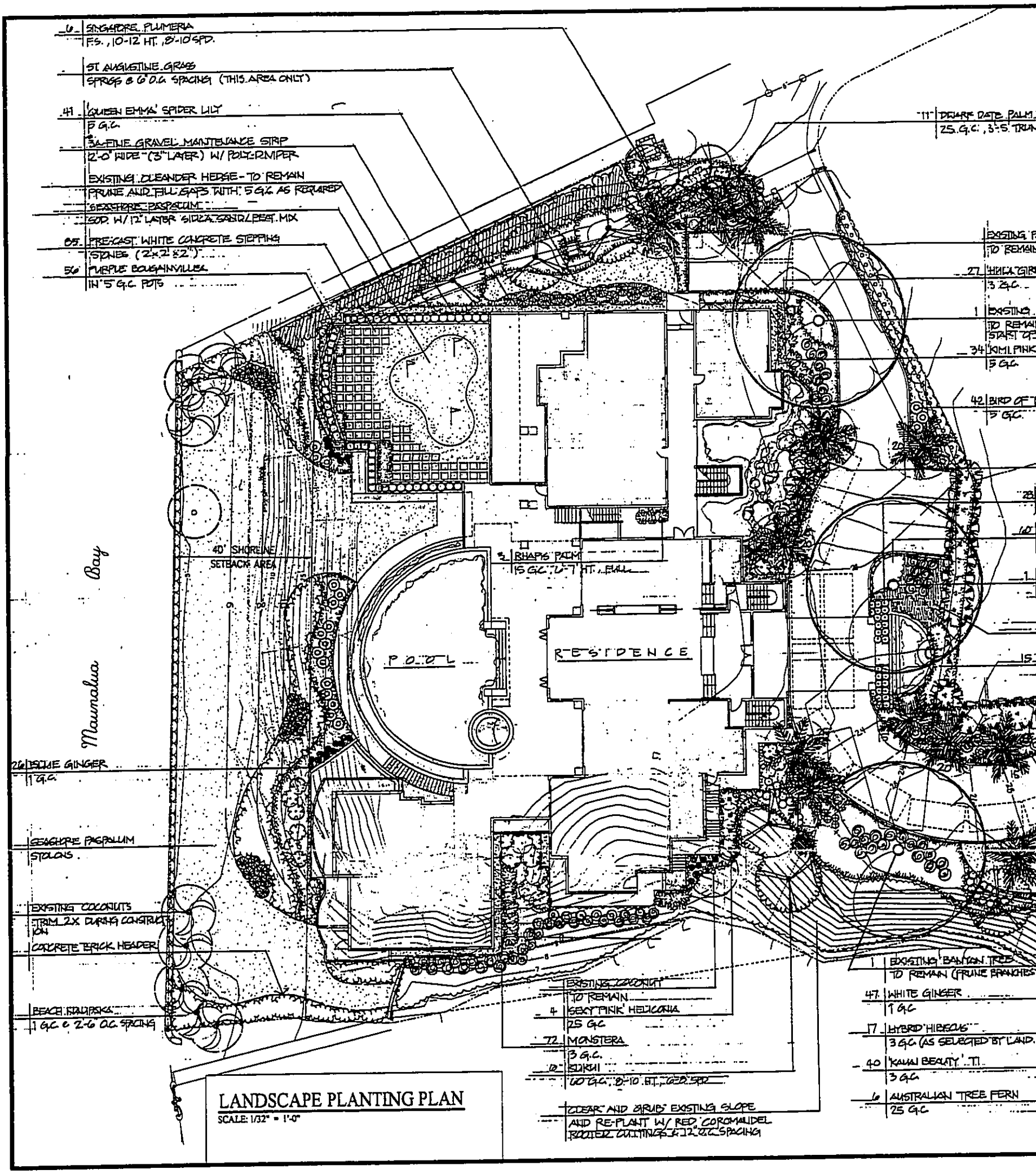
Designed by: DA
Checked by: WB
Drawn by: DA
Approved by: WB
Date:
Scale: AS NOTED
T.M.K.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY SUPERVISION.

WILLIAM H. Q. BOW
LICENSED PROFESSIONAL ENGINEER
NO. 4904-C
U.S.A.
HAWAII

F-5

SHT. - OF - SHTS.



LANDSCAPE PLANTING PLAN

SCALE: 1/32" = 1'-0"

LANDSCAPE PLANTING PLAN

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

IRVIN HIGASHI & ASSOCIATES, INC.
LANDSCAPE ARCHITECTS
1322 KAPIOLANI AVENUE
HONOLULU, HI 96814
Telephone (808) 942-9919
Telecopier (808) 735-0844

SYMBOL	DESCRIPTION	DATE

Designed by: IH
Checked by: IH
Drawn by: IH
Approved by:
Date
Scale: AS NOTED
TMK

F-6
SHT. - OF - SHTS.

PORTLOCK ROAD

1	EXISTING COCONUT TO REMAIN	
1	RELOCATED COCONUT	
31	ULTIMA TREE	25 g.c.
AREA		
1	6'-0" DIA. SPRING	
10	DRYLAND TARO	5 g.c.
28	DRACAENA	3 g.c.
	RAISED HERB/VEGETABLE GARDEN	
1	EXISTING WILI-WILI TO REMAIN (PRUNE BRANCHES)	
13	SHELL GINGER	5 g.c.

11	DWARF DATE PALM	25 g.c., 3'-5" TRUNK HT.
27	HIBISCUS 'PARK HEDGE' TO REMAIN	3 g.c.
1	EXISTING MONKEYPOD TREE TO REMAIN (PRUNE BRANCHES PRIOR TO START OF CONSTRUCTION). PROVIDE ROOT CONTROL BARRIER (24" DEEP)	
34	'KIWI PINK' CANNA	5 g.c.
42	BIRD OF PARADISE	5 g.c.
22	ASSORTED BROMELIADS	18" POTS (AS SELECTED BY LAND. ARCH.)
28	SPATHIPHYLLUM 'SANTA'	8" POT
40	IMPATIENS (DARK PINK, PURPLE, LT. PINK)	6" POT
1	EXISTING MONKEYPOD TREE TO REMAIN (PRUNE BRANCHES PRIOR TO START OF CONSTRUCTION). PROVIDE ROOT CONTROL BARRIER (24" DEEP)	
	BAHIA GRASS	SPRIGS @ 4' o.c. GROUND
15	GIANT RED & YELLOW CANNA HELICONIA	25 g.c.
1	EXISTING BANYAN TREE TO REMAIN (PRUNE BRANCHES	
	WHITE GINGER	g.c.
	HYBRID HIBISCUS	1 g.c. (AS SELECTED BY LAND. ARCH.)
	'KAUAI BEAUTY' TI	1 g.c.
	AUSTRALIAN TREE FERN	15 g.c.

2 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The intent of this chapter is to describe the existing physical and social environment which is affected by the proposed action. Potential impacts which may result from implementation of the proposed action and mitigation measures to minimize the adverse impacts are described below.

2.1 TOPOGRAPHY AND SOILS

The existing project parccis consist of a vacant weeded lot with various trees scattered over the extent of the parcel. The site is terraced with slopes ranging from 1 to 30 percent; elevations on the project site range from approximately 42 feet mean sea level (msl) at Portlock Road, to approximately 22 feet msl at the level mid-portion of the site, to approximately 5 feet msl at the seawall fronting Maunalua Bay.

According to the *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (Soil Conservation Service, 1973) the soils in the project area are classified as Koko silt loam, 2 to 6 percent slopes (KsB). For the Koko silt loam, permeability is moderate and runoff is slow with a slight water erosion hazard. This soil type is generally used for home sites, truck crops, and pasture.

IMPACTS AND MITIGATION MEASURES

Implementation of the proposed action would result in the clearing, grubbing, grading of approximately 1.38 acres, and would include 5,500 cubic yards of cut and 940 cubic yards of fill. Excavated soil would be used for fill where appropriate. Excess fill would be transported offsite at a certified location to be chosen by the contractor. A Soils Investigation report has been completed for the proposed project which details engineering requirements for the project (Shinsato Engineering, 2005).

There would be a short-term increase in soil erosion during construction since grading associated with construction of the proposed facilities would result in the exposure of bare soil to potential erosion. Though the project would result in large amounts of grading, this would not result in a significant impact due to soil erosion and offsite sediment transport with implementation of best management practices in accordance with City and County requirements.

All grading operations would be conducted in compliance with dust and erosion control requirements of the City and County of Honolulu. Engineering measures to control soil erosion and storm runoff would be implemented by the contractor during construction. Silt fences would be installed on the north, south, and west sides of the lot in order to prevent sediment from entering the gulch or the ocean. An erosion control plan and drainage plan shall be submitted prior to grading activities and shall specify best management practices in accordance with the City and County of Honolulu's "Rules Relating to Soil Erosion Standards and Guidelines" (April 1999). Prior to the initiation of construction, the City and County would review proposed grading and construction plans for consistency with City and County requirements and good engineering practice.

Following construction of the project, vegetative cover and paving over areas that were previously exposed dirt would reduce the potential for sediment from stormwater runoff from entering the bay. In addition, the proposed onsite silt sedimentation basin and catch basin drainage system, dry wells, and existing undisturbed areas would function to trap stormwater and sediment before entering the harbor. For a discussion of drainage on the project site, see Section 2.2, *Water Quality* below. No paving work would occur in the shoreline setback area.

2.2 WATER QUALITY

Coastal waters in the vicinity of Maunalua Bay were classified "A" in State Department of Health water quality regulations (Hawaii Department of Health, 1987). The objective of Class A waters is that their waters be protected for recreational purposes and aesthetic enjoyment. According to HAR §11-54-3(c), Class A waters "shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class." Stormwater discharges covered by a NPDES general permit that meet the requirements of basic water quality criteria set forth in HAR §11-54-4 are considered acceptable discharges.

An existing drainage gulch runs along the southern boundary of the site and directs runoff from approximately 34 acres into Maunalua Bay. The drainage gulch is classified by the Department of Health (DOH) as "Class 2, Inland Waters" for "Stream." The objective of Class 2 waters is to "protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation". The DOH requires that Class 2 waters "shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class" (HRS §11-54-3(b)(2). However, the drainage gulch does not support instream uses and is not considered to be a stream that would require a stream channel alteration permit (Commission of Water Resource Management consultation, letter dated December 11, 2006, Appendix B).

IMPACTS AND MITIGATION MEASURES

Construction activities disturbing one or more acres are regulated under the National Discharge Elimination System (NPDES) stormwater program and are required by the State to obtain a NPDES permit. Prior to the initiation of grading, the project applicant shall prepare and implement a stormwater pollution prevention plan and best management practices designed to reduce potential impacts to water quality during construction of the project. The best management practices shall identify the most effective erosion, sedimentation, and turbidity control measures to reduce the amount of soil and sediment accumulation in the coastal waters as a result of construction activities. The following mitigation measures may include, but not be limited to, the onsite use of the following best management practices:

- Maintain storage areas that keep construction materials, equipment, and maintenance supplies (e.g., fuels, lubricant, paints, solvents, and adhesives) out of the rain and/or protected from the wind to minimize contact of these materials with stormwater
- Avoid paving during wet weather.
- Employ soil stabilization practices designed to prevent the loss of disturbed soil through the use of vegetation and/or geotextiles.

Specific best management practices would be determined during design and construction phases. With implementation of NPDES permit requirements and best management practices, the construction of the project would not result in a violation of water quality standards. For a discussion of impacts due to soil erosion and offsite sediment transport, see Section 2.1, *Topography and Soils* above.

Implementation of the proposed Tada Single-family Residence would result in new impervious surface due to proposed buildings and walkways with approximately 28 percent lot coverage over the entire site. The project includes the construction of storm drainage improvements that would result in an overall decrease in offsite drainage in comparison with the drainage analysis from the previous residence located on the project site. According to engineering calculations, runoff from the area of the previous residence (see Area 2 of Figure 7 and 8) was approximately 1.4 cubic feet per second (cfs) during a 10-year storm event. Construction of the proposed single-family residence would reduce this amount to 1.2 cfs due to the increased time of concentration on account of the overall decrease in slope. The runoff from this area of the project site would be directed into a proposed silt sedimentation basin with a capacity of 1,700 cubic feet (which would retain 75 percent of the total runoff from this area) and drainage swale located within the 40-foot shoreline setback area, which would prevent stormwater runoff from entering Maunalua Bay directly over the seawall. This silt sedimentation basin would collect 0.9 cfs of stormwater. Therefore, construction of drainage improvements would result in an overall decrease of approximately 0.6 cfs of runoff entering the bay from this area of the project site than that of the previous single-family residence.

Additional runoff from the upper portion of the project (see Area 1 of Figure 7 and 8) would enter the existing drainage gulch along the southern boundary of the property, which collects stormwater from residences in the project area located east and mauka (mountainside) of the proposed project. According to calculations for the previous residence, approximately 0.7 cfs of stormwater was discharged from this area of the project during a 10-year storm event (see Figure 7). With implementation of the proposed project, approximately 1.3 cfs would be discharged. While the proposed project would result in approximately 0.6 cfs of additional stormwater being discharged from this area of the project site than that of the previous residence, this amount of increase would be negligible due to the existing flow of the drainage gulch during a 10-year storm event of approximately 89 cfs. Therefore, the runoff from the proposed site would only increase the flow of the gulch by 0.7 percent, and increase the height of headwater in the gulch from approximately 2.37 to 2.38 ~~2.94 to 2.95~~ feet. As required by the City and County, a drainage plan and report has been prepared for the proposed project in conformance with the City and County of Honolulu's "Rules Relating to Storm Drainage Standards" (January 2000). Therefore, adverse effects to water quality from stormwater flows would be minimized by project-specific mitigation features such as the onsite silt sedimentation basin, drainage swale, and dry wells.

The proposed single-family residence includes the construction of a swimming pool feature. Water from the pool during cleaning would be discharged into the sanitary sewer system. (As shown in Figure 2, the sanitary sewer system connection is located in the northwest corner of TMK 3-9-16:35, outside of the shoreline setback area.) Therefore, the operation and maintenance of the proposed pool would not result in any discharges into State waters, and no significant impact would result.

2.3 NATURAL HAZARDS

Portions of the project site are located in Flood Zone D ~~X~~ and Flood Zone A. As defined by the U.S. Federal Emergency Management Agency (FEMA), Flood Zone D ~~X~~ includes areas where there are possible but undetermined flood hazards ~~outside of the 500-year floodplain,~~ and Flood Zone A includes areas inundated by the 100-year flood with no base flood determination (Flood Insurance Rate Map (FIRM) Panel #15003C0395F, September 30, 2004). ~~November 20, 2000).~~ The Zone A designation of the parcel was determined from coastal flooding (storm surge and wave runup) generated by hurricanes. The approximate base flood elevation is estimated to be 11.5 feet above mean sea level. In addition, the project parcel is considered to be within the City and County of Honolulu's flood fringe district, or an area of the floodplain outside the floodway (see letter from Army Corps of Engineers, March 28, 2005 in Appendix A).

IMPACTS AND MITIGATION MEASURES

Construction of the proposed single-family residence would not result in increased flooding or hazards from flooding in surrounding areas. In addition, because proposed single-family residence would be constructed in accordance with City and County of Honolulu Building Code (Revised Ordinances of Honolulu [ROH] Chapter 16), there would be a less than significant impact. In addition, because the project parcel is considered to be within the City and County of Honolulu's flood fringe district, the project would comply with applicable provisions of ROH Chapter 21, Article 9, *Special District Regulations*.

The project site is located within the City and County of Honolulu's Tsunami Evacuation Zone. However, the Oahu Civil Defense does not require any mitigation measures for residential properties, as tsunami control design is only required for resorts and commercial projects.

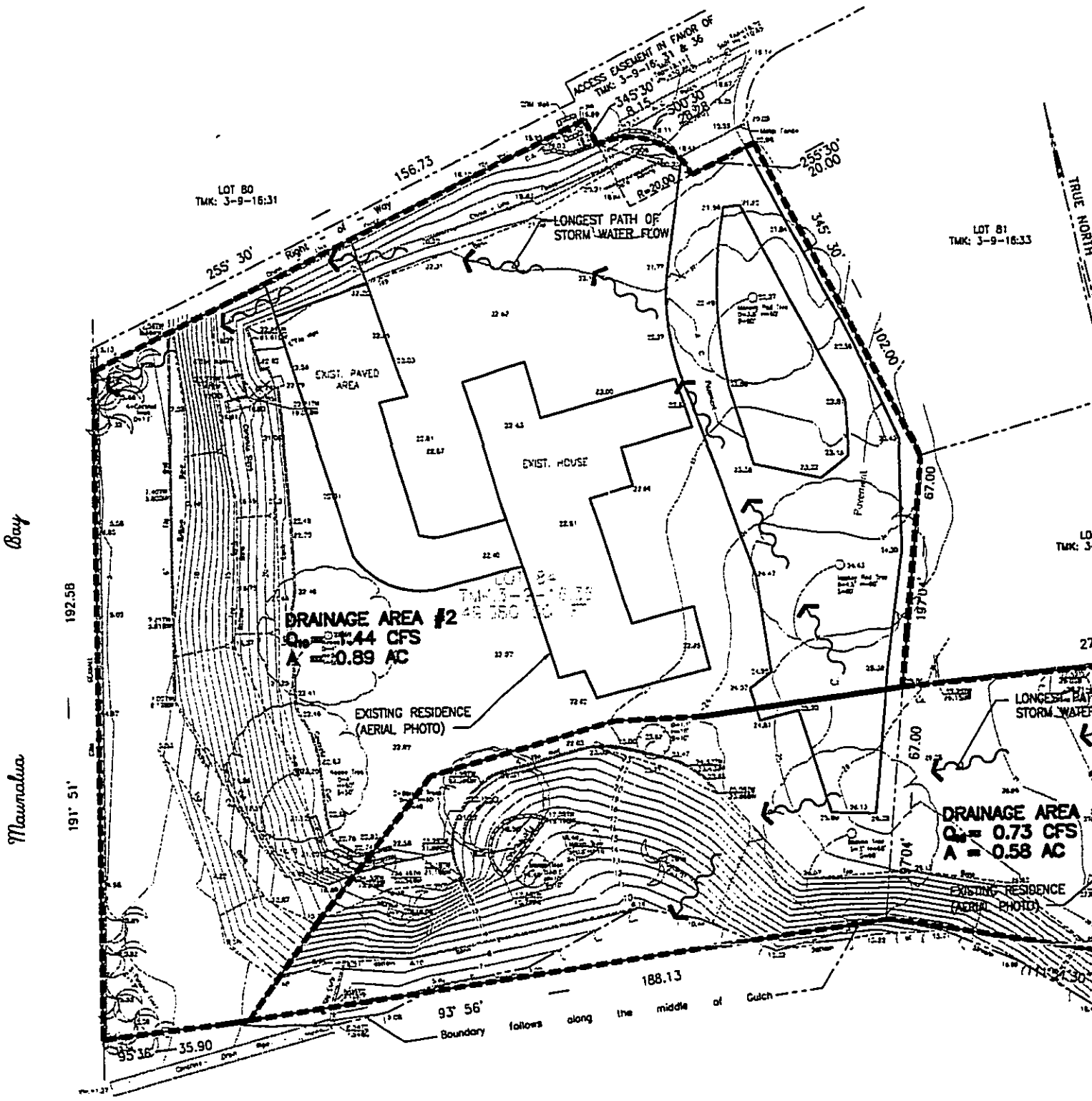
Prior to the initiation of construction, the City and County would review proposed grading and construction plans for consistency with City and County requirements and good engineering practice. Once plans were approved by the County, implementation of the approved plans would be monitored during periodic building inspections. No significant environmental effects would result, and no mitigation would be necessary.

2.4 VEGETATION AND FAUNA

The project parcels consist of a vacant weeded lot with various trees (including monkeypod, kiawe, coconut palm, and plumeria) scattered over the extent of the parcel. The project area is surrounded by developed single-family residential uses. No important natural communities are expected to occur within the project area.

IMPACTS AND MITIGATION MEASURES

Because of the disturbed nature of the project area and the lack of suitable habitat, no significant wildlife would be present, and no mitigation would be necessary.



DRAINAGE PLAN (EXISTING)

SCALE: 1" = 40'

TADA RESIDENCE
487 PORTLOCK ROAD

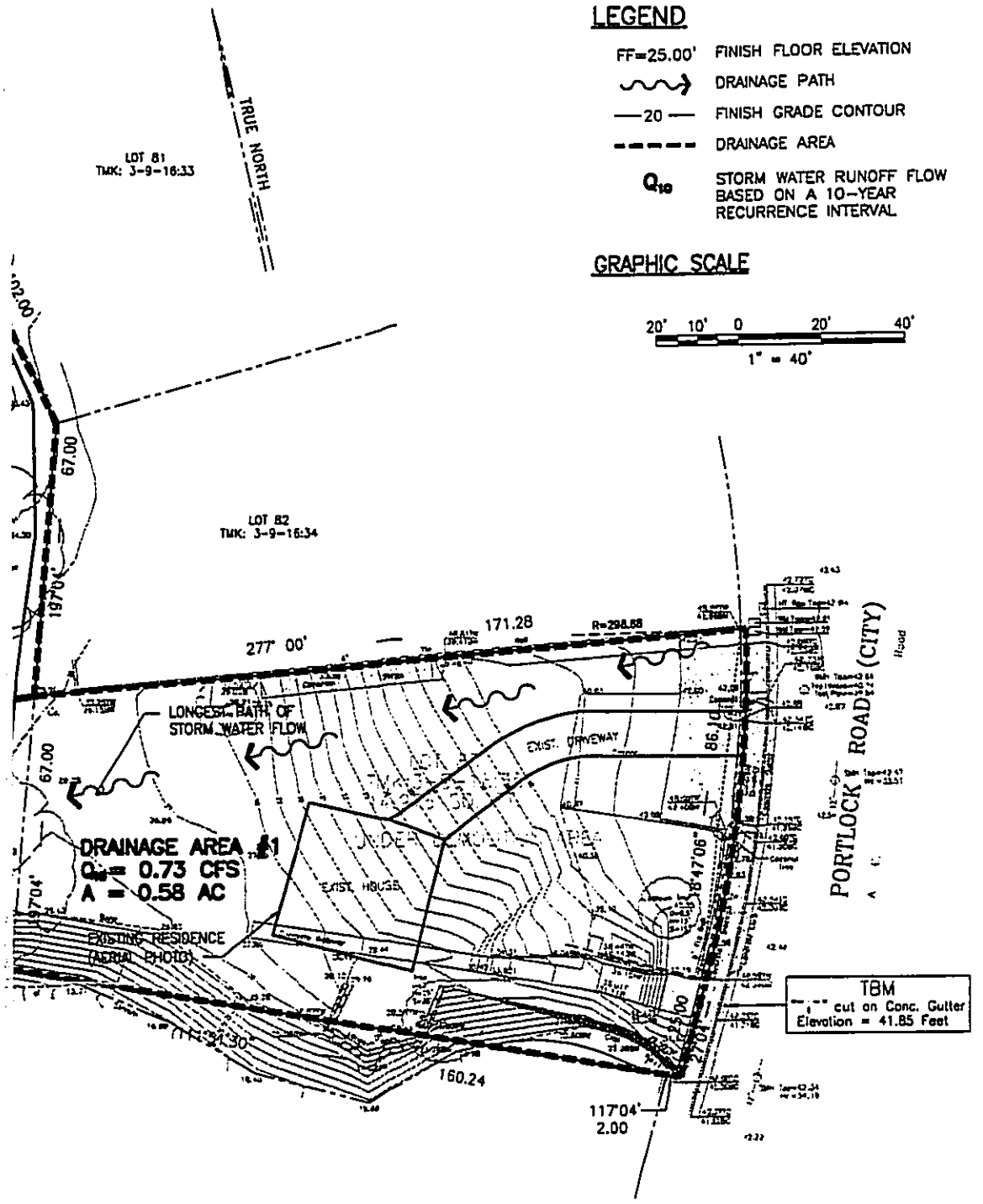
LEGEND

FF=25.00'	FINISH FLOOR ELEVATION
~~→	DRAINAGE PATH
—20—	FINISH GRADE CONTOUR
- - - -	DRAINAGE AREA
Q_{10}	STORM WATER RUNOFF FLOW BASED ON A 10-YEAR RECURRENCE INTERVAL

GRAPHIC SCALE

20' 10' 0 20' 40'

1" = 40'



XISTING)

SYMBOL	DESCRIPTION	DATE

Bow Engineering & Development, Inc.
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Email: bow@bowengineering.com

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

DRAINAGE MAP (EXISTING)

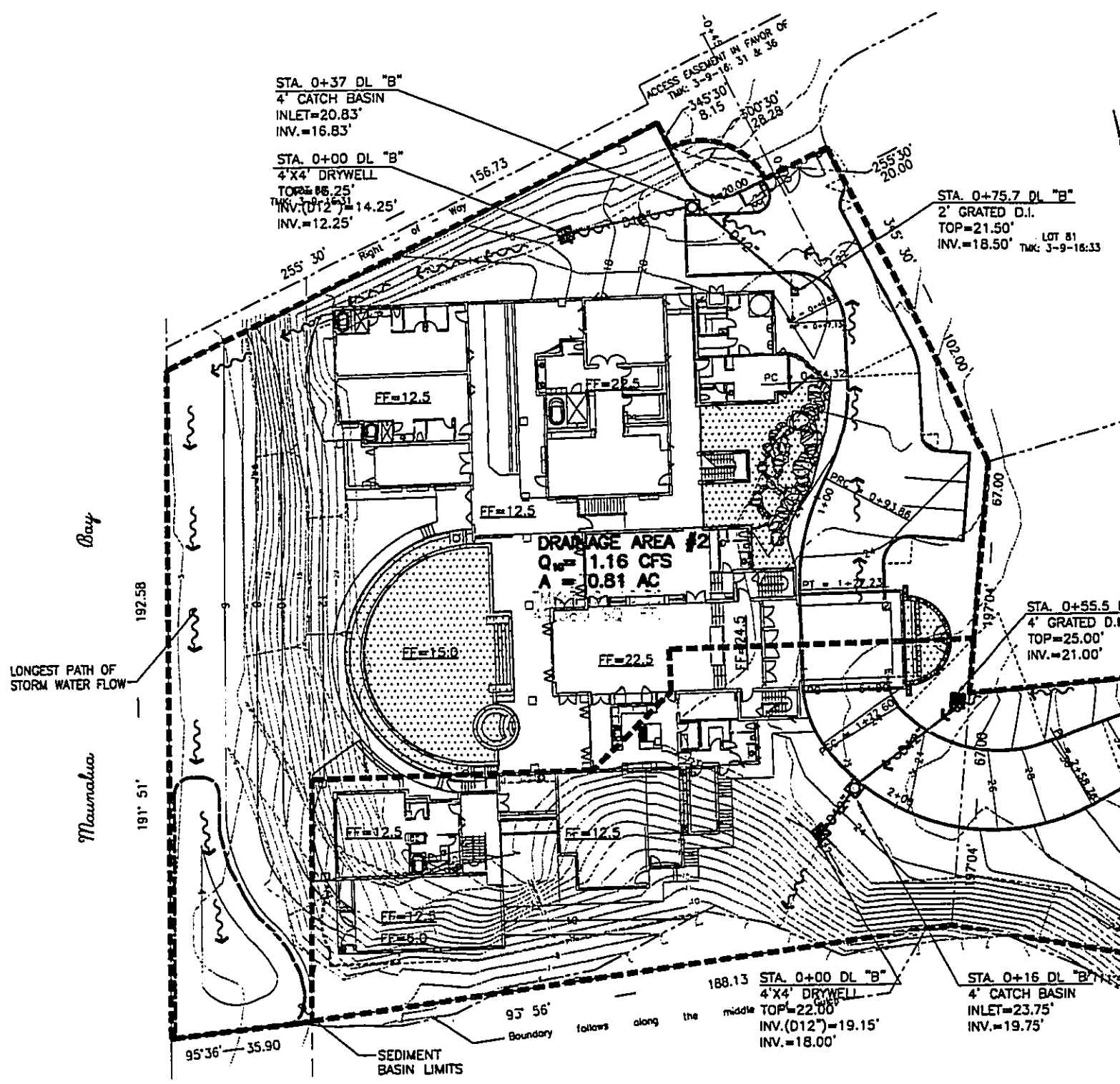
Designed by: DA
Checked by: WB
Drawn by: DA
Approved by: WB
Date: -
Scale: AS NOTED
T.M.K. -

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

WILLIAM H. Q. BOW
LICENSED PROFESSIONAL ENGINEER
NO. 4904-C
HAWAII

F-7

SHT. - OF - SHTS.



DRAINAGE PLAN (PROPOSED)

SCALE: 1" = 40'

TADA RESIDENCE
487 PORTLOCK ROAD

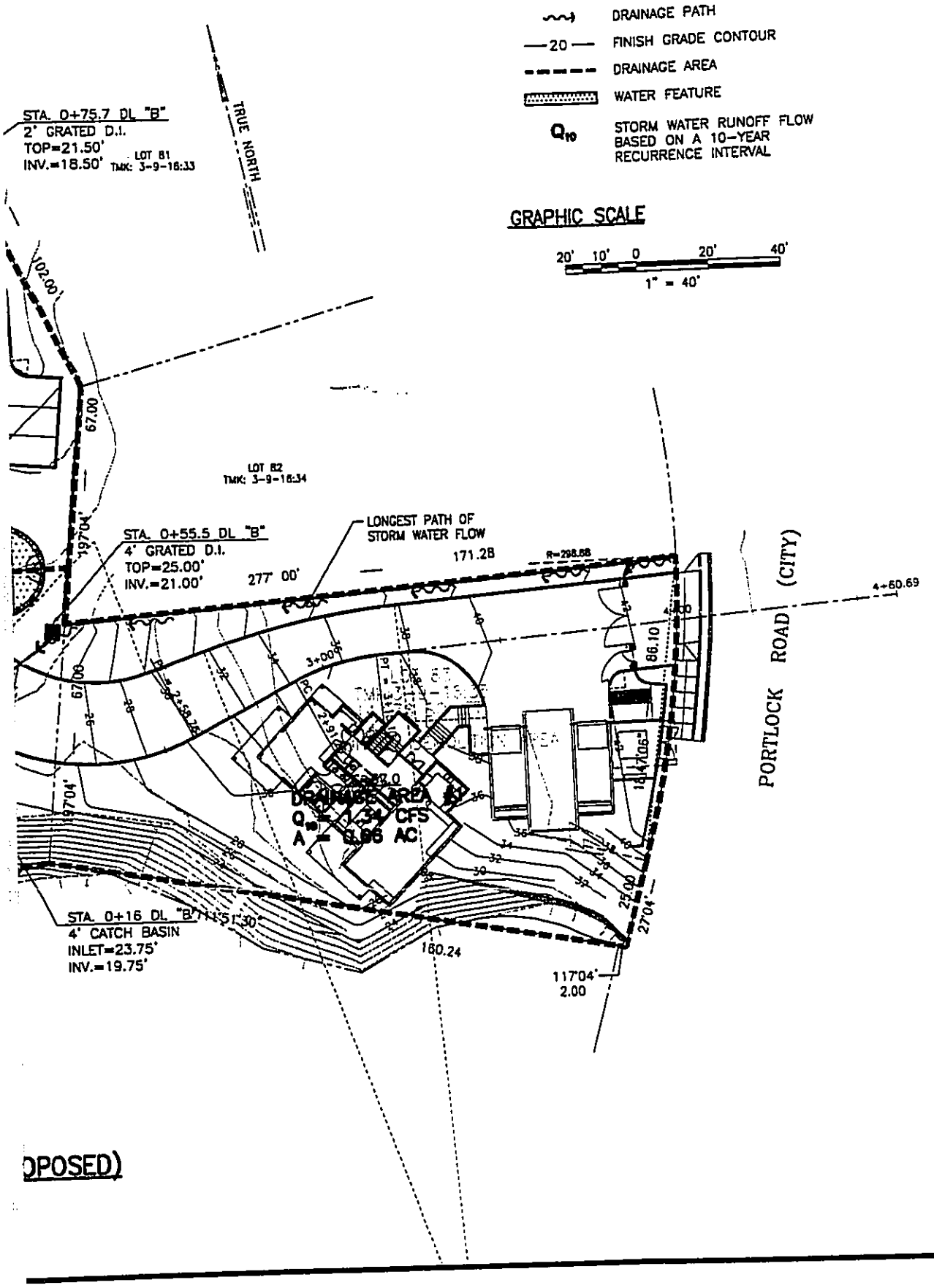
LEGEND

FF=25.00'	FINISH FLOOR ELEVATION
~~→	DRAINAGE PATH
—20—	FINISH GRADE CONTOUR
- - - -	DRAINAGE AREA
▭	WATER FEATURE
Q_{10}	STORM WATER RUNOFF FLOW BASED ON A 10-YEAR RECURRENCE INTERVAL

GRAPHIC SCALE

20' 10' 0 20' 40'

1" = 40'



OPOSED)

SYMBOL	DESCRIPTION	DATE

Bow Engineering & Development, Inc.
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TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

DRAINAGE MAP (PROPOSED)

Designed by: DA
Checked by: WB
Drawn by: DA
Approved by: WB
Date:
Scale: AS NOTED
T.M.K.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY PERSONAL

WILLIAM H. Q. BOW
LICENSED PROFESSIONAL ENGINEER
NO. 4904-C
HAWAII, USA

F-8

SHT. - OF - SHTS.

2.5 HISTORICAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

HISTORICAL PERSPECTIVE

Traditional Land Use History and Early History

The project area known as Maunalua – its name meaning "Two Mountains," referring to Kokohead and Koko Crater, the two prominent mountains at the east end of the bay – was associated with the volcano goddess Pele and her sister Hi'iaka through mythological accounts. Many of the landmarks and place names in Maunalua are based on the activities of these two sisters.

Traditional land use in the area included extensive cultivation, with plantations of taro, sweet potatoes, and sugar cane. The first Europeans landed and traded at Maunalua during the rule of Kahekili, in 1786, with the anchoring of English ships under the commands of Nathaniel Portlock and George Dixon at Maunalua Bay (Cultural Surveys Hawai'i, Inc, 2003).

Early missionary accounts report small but thriving agricultural communities that traded with the foreign sailing vessels, and fishing villages. As trade decreased, settlement in the region declined, and Maunalua became predominantly ranch land after the mid 1800s. Commercial fishing at Kuapa Fishpond and the offshore fishing grounds were also an important resource at this time. With construction of Kalaniana'ole Highway completed in 1932, access to fishing grounds, ranchlands, and infrastructure was improved (Cultural Surveys Hawai'i, Inc, 2003).

Following the general decline of ranching in the area due to pressures from Honolulu's urban expansion, in 1959 the Hawaii Kai Development Corporation received development rights of the Maunalua area as the planned community of Hawaii Kai.

CULTURAL, HISTORIC, AND ARCHAEOLOGICAL RESOURCES

In 1930, the first archaeological survey in Maunalua was conducted by McAllister, and 49 archaeological sites were described in the region. Several other studies have been completed in the areas of Queen's Beach, Sandy Beach, and Kuapa Pond. No complete archaeological inventory surveys have been completed for the project parcel.

Cultural practices that may occur in the vicinity of the proposed project site include fishing ocean recreation activities in Maunalua Bay. There is no known gathering of cultural materials at the project site. There is public access to the shoreline located along the northern boundary of the project site.

Formal consultation with the State Historic Preservation Division (SHPD) has been conducted regarding potential impacts to historic and cultural resources in the project area. The Historic Preservation Review responses are included in Appendix A and Appendix B.

IMPACTS AND MITIGATION MEASURES

According to the SHPD, historic sites have been previously found within the project vicinity, including habitation sites and human burials. Due to the close proximity of historic settlement sites and additional cultural resources to the proposed project area and lack of subsurface testing or data recovery, cultural deposits may be present in the proposed project area. Because the proposed project would not negatively impact access to the shoreline, there would be no impacts to cultural practices that may occur in the vicinity of the project site. As noted above, consultation with SHPD has been conducted and is included in Appendix A and Appendix B.

The following measures are included based on SHPD recommendations. It is emphasized that sensitivity to cultural concerns be employed when dealing with burial issues.

- An archaeologist inventory survey shall be conducted by a qualified archaeologist prior to any construction activities. A report documenting the archaeological work shall be submitted to the State Historic Preservation Division for review and approval. The report shall include: (1) Detail drawings of burials and deposits to scale; (2) All artifacts shall be sketched and photographed; (3) Analyses of all perishable and datable remains shall be conducted; (4) Stratigraphic profiles shall be drawn and made to scale; (5) All locations of historic sites shall be on an overall map of the project area; (6) Initial significance evaluations shall be included for each historic site found; and (7) Documentation of the nature and age of the historic sites shall be done. If significant historic sites are found then proposed mitigation or preservation plans can be submitted for review and approval.
- If significant historic sites are present (non-burial sites), then detailed mitigation plans shall be submitted to the State Historic Preservation Division for approval. The State Historic Preservation Division must verify in writing that the plan have been successfully executed prior to any land alteration.
- If burials are discovered during the archaeological survey, burial treatment determinations shall be requested from the Oahu Island Burial Council. A burial treatment plan shall be prepared following the procedures outlined in Chapter 6E-43 and the accompanying rules. Prior to any land alteration, the burial plan shall be implemented as specified.

2.6 AIR QUALITY

The Department of Health, Clean Air Branch, monitors the ambient air in the State of Hawai'i for various gaseous and particulate air pollutants. The U. S. Environmental Protection Agency (EPA) has set national ambient air quality standards (NAAQS) for six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter (PM_{10} and $PM_{2.5}$). Hawai'i has also established a state ambient air standard for hydrogen sulfide. The primary purpose of the statewide monitoring network is to measure ambient air concentrations of these pollutants and ensure that these air quality standards are met.

There are ten monitoring stations on the island of O'ahu; the closest monitoring station to the project area is located at the Waimanalo rural/agricultural station, while the closest urban monitoring station is located at the University Square station. In the year 2004, the State of

Hawai'i was in attainment for all federal ambient air quality standards. In general, air quality in Hawai'i continues to be "one of the best in the nation" with little potential to affect public health (Clean Air Branch, 2004).

IMPACTS AND MITIGATION MEASURES

Construction of the proposed single-family residence could result in temporary air quality effects, including exhaust emissions from construction vehicles and dust generated by short-term, construction related activities. Components of construction emissions include employee trips, exhaust emissions from grading equipment, and fugitive dust emissions. Grading of the project area could generate airborne dust particulates.

Dust control measures such as watering and sprinkling shall be implemented as needed to minimize wind-blown dust. To minimize construction-related exhaust emissions, project contractors shall ensure that all internal combustion engines are maintained in proper working order. In addition, the work shall be in conformance with the air pollution control standards contained in Hawaii Administrative Rules, Title 11, Chapters 59, "Ambient Air Quality Standards," and Chapter 60, "Air Pollution Control."

There would be no long-term air quality impacts associated with the proposed action.

2.7 NOISE

Surrounding noise levels in the vicinity of the project site are considered relatively low. Existing noise sources are from vehicular traffic. Surrounding noise sensitive uses include residences in the near vicinity.

IMPACTS AND MITIGATION MEASURES

Noise impacts from a project can be categorized as those resulting from construction and those from operational activities. Construction noise would have a short-term effect; operational noise would continue throughout the lifetime of the project. Implementation of the proposed single-family residence could temporarily increase noise levels during construction above maximum allowable limits that would impact nearby existing residences and businesses.

A Community Noise Permit for construction activities may be required by the Department of Health. Prior to construction, consultation with the state Department of Health shall occur to determine permitting requirements. Should the permit be required, allowable construction conditions shall be specified. All work on the Portlock Road right-of-way shall be confined to 8:30 a.m. to 3:30 p.m. Monday through Friday. Construction on the project site shall be confined to 7 a.m. to 6 p.m., Monday through Friday, and 9 a.m. to 6 p.m. on Saturday. No construction work shall occur on Sundays and holidays without prior notice. Should hoe ramming operations be required, these activities shall be restricted to the hours of 9 a.m. to 5:30 p.m., Monday through Saturday. Construction activities shall comply with HAR Chapter 11-46, "Community Noise Control."

There would be no increase in operational noise due to implementation of the proposed Tada Single-family Residence project.

2.8 AESTHETIC AND VISUAL RESOURCES

The project site is not designated as a location with a significant viewplane from a stationary point in the Sustainable Communities Plan (Figure 2-4 of the Plan). Elevations on the project site range from approximately 42 feet mean sea level (msl) at Portlock Road, to approximately 22 feet msl at the level mid-portion of the site, to approximately 5 feet msl at the seawall fronting Maunalua Bay. Views from motorists along Portlock Road are limited by vegetation and surrounding residences. Views from the project site include Maunalua Bay and beachfront properties along the shoreline.

The City and County's Coastal View Study (1987) states that visual resources in the Maunalua Bay viewshed along Kalaniana'ole Highway and in the Hawaii Kai area are abundant, and "both mauka and makai views are continuous and of high visual quality" (City and County, 1987).

IMPACTS AND MITIGATION MEASURES

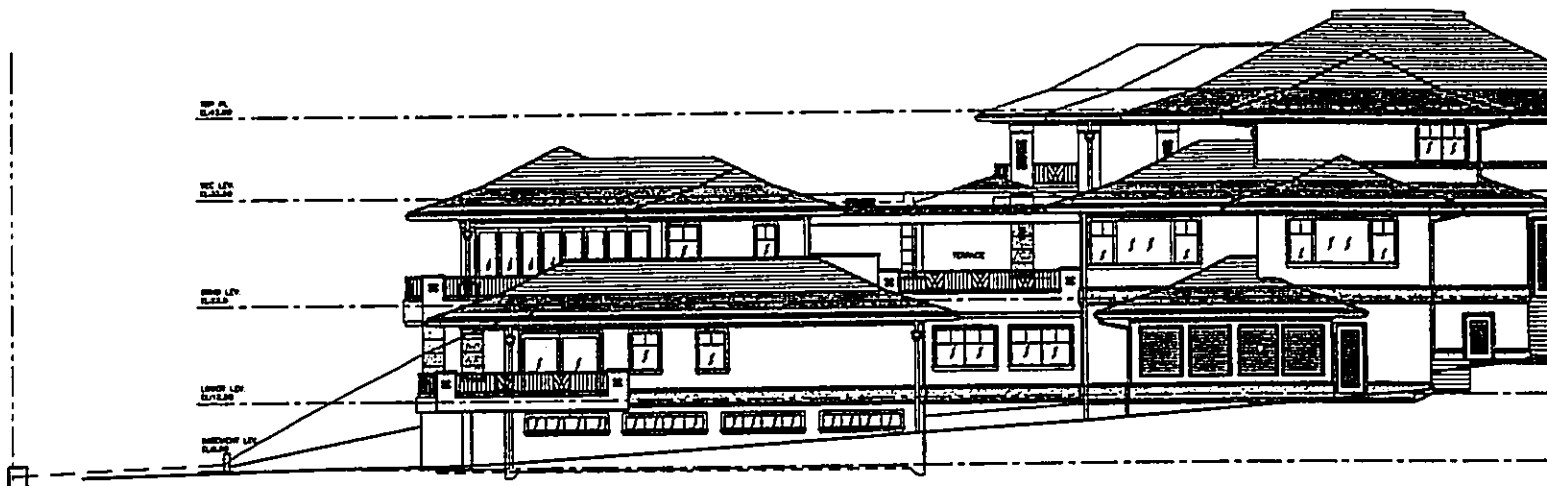
The proposed single-family residence would include construction of a single-family dwelling on one lot and another dwelling on the adjacent lot in addition to ancillary improvements; while these features would result in development on a currently vacant lot, the project site has been historically constructed in single-family residential uses, and they would be considered common and appropriate to the area by most viewers (see Figure 9 and Figure 10 for elevations of the proposed dwellings). Because views of Maunalua Bay along Portlock Road are limited by vegetation and surrounding residences, the proposed project would not diminish the Maunalua Bay viewshed as described in the City and County's Coastal View Study (1987). Since the proposed project would be consistent with the existing uses of the area, and no scenic vistas would be impaired, implementation of the project would not degrade the existing visual character of the site or surroundings.

2.9 SOCIAL CHARACTERISTICS

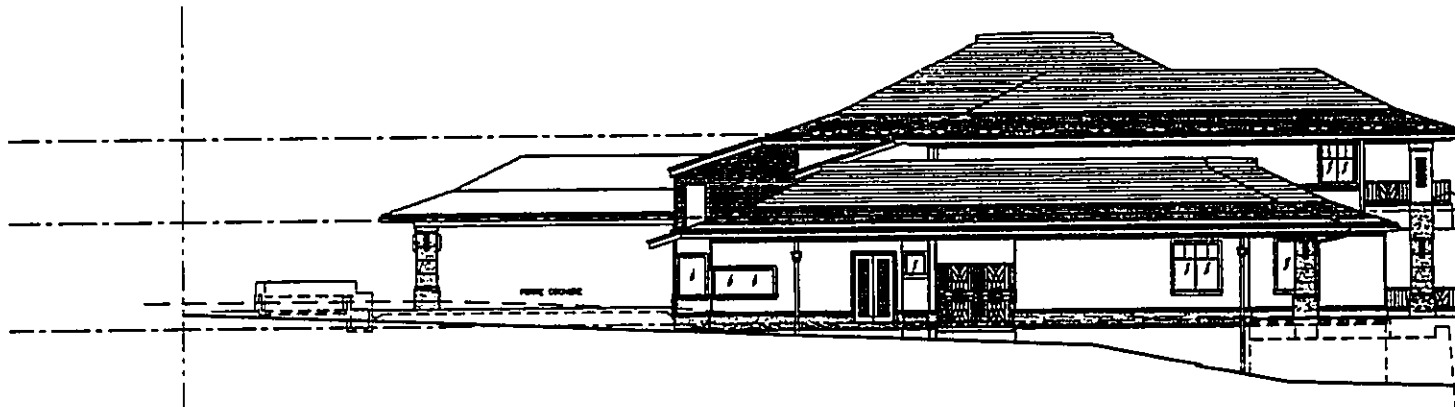
There are no existing housing units located on the project site. Surrounding land uses include single-family residential properties to the north and south, Portlock Road to the east, and Maunalua Bay to the west. There is public access to the shoreline located along the northern boundary of the project site, and an existing drainage gulch runs along the southern boundary of the site.

IMPACTS AND MITIGATION

Implementation of the proposed action would not displace any residents or businesses since construction would occur on a vacant parcel zoned for residential uses. While construction employment would be created during the project construction phase, needed employees could be expected to be provided by the local labor pool, without the importation of significant amounts of new labor.



MAIN HOUSE – LEFT SIDE ELEVATIO
SCALE: 1" = 20'



MAIN HOUSE – RIGHT SIDE ELEVATIO
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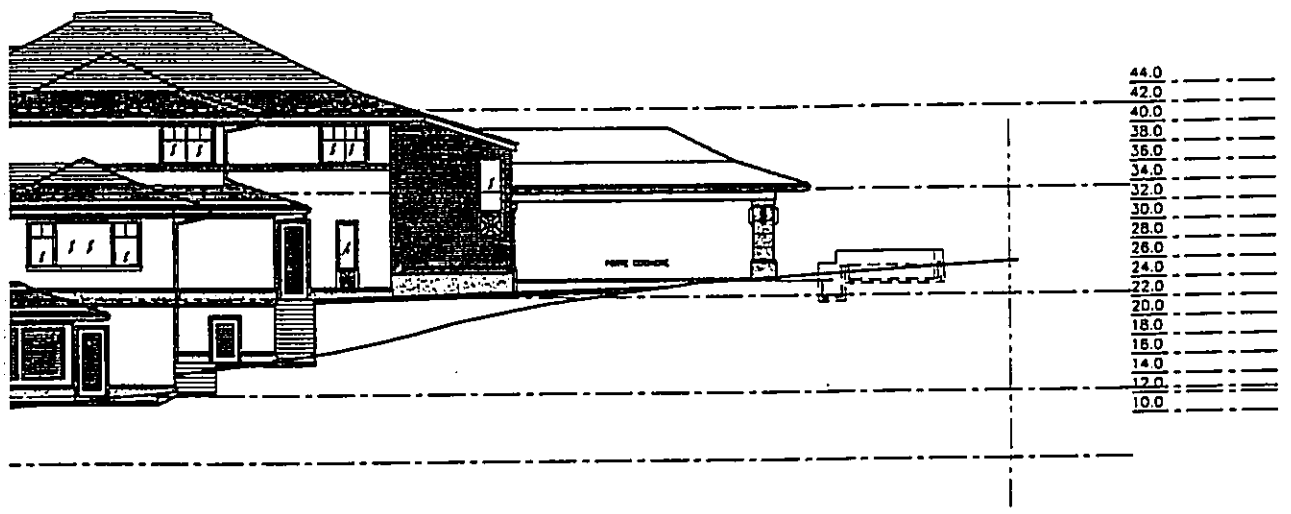
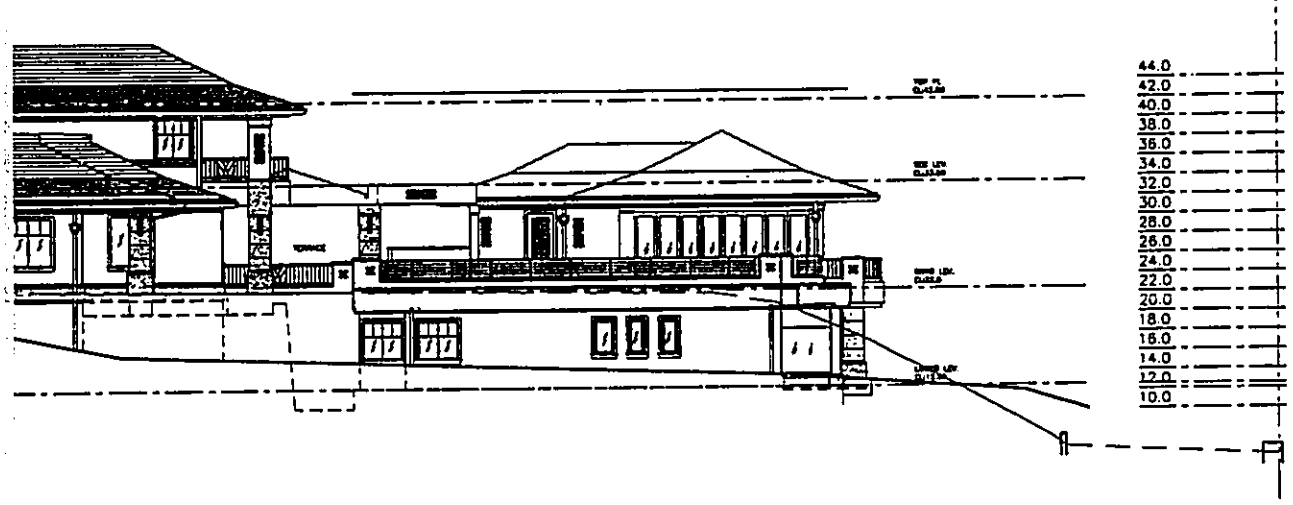


EFT SIDE ELEVATIONS



HT SIDE ELEVATIONS

SYMBOL	DESCRIPTION	DATE

ROY K. YAMAMOTO ARCHITECTS, AIA, INC.
ARCHITECTS
Telephone (808) 943-3444
Telecopier (808) 946-3443
1580 MAKALOA STREET, SUITE 1110
HONOLULU, HAWAII 96814

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

MAIN HOUSE ELEVATIONS

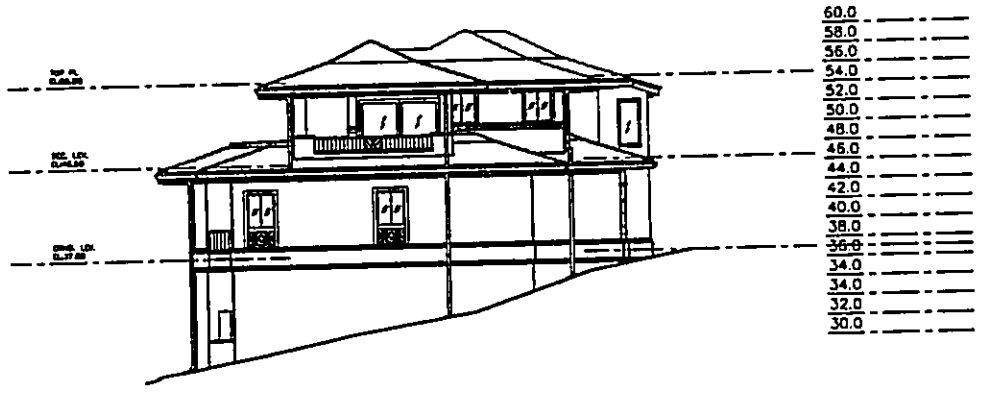
Designed by: TL
Checked by: TL
Drawn by: TL
Approved by: TL
Date: -
Scale: AS NOTED
T.M.K. -

F-9

SHT. - OF - SHTS.

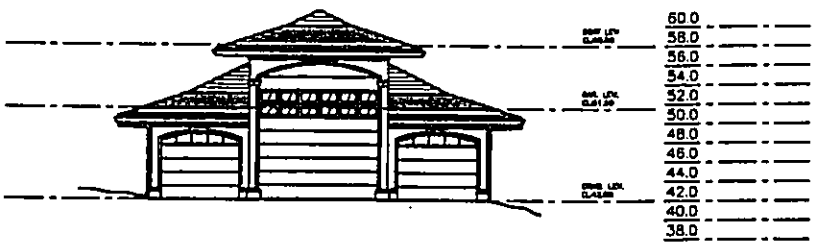
DWELLING – RIGHT SIDE ELEVATIONS

SCALE: 1" = 20'

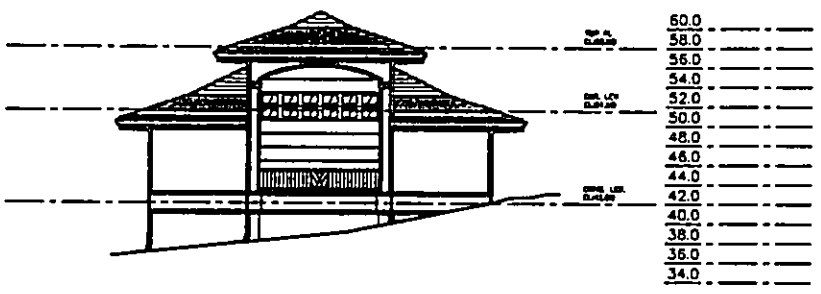


DWELLING – LEFT SIDE ELEVATIONS

SCALE: 1" = 20'



GARAGE – FRONT ELEVATIONS
SCALE: 1" = 20'



GARAGE – REAR ELEVATIONS
SCALE: 1" = 20'

SYMBOL	DESCRIPTION	DATE

ROY K. YAMAMOTO ARCHITECTS, AIA, INC.
ARCHITECTS
1288 MAKALOA STREET, SUITE 208
HONOLULU, HI 96814
Telephone (808) 942-3466
Telecopier (808) 942-3465

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

DWELLING AND GARAGE ELEVATIONS

Designed by:	TL
Checked by:	TL
Drawn by:	TL
Approved by:	TL
Date:	-
Scale:	AS NOTED
T.M.K.	-

F-10

SHT. - OF - SHTS.

2.10 UTILITIES AND PUBLIC SERVICES

The project site is within a fully developed urban area currently provided with all urban services. Public services and private utilities available within the project area include domestic water, wastewater treatment, storm water drainage, solid waste disposal, and police, fire, library, and park services, in addition to electric, telephone, and cable television services. All utility and service systems in the surrounding area are currently adequate.

IMPACTS AND MITIGATION

The proposed project includes extension of electric utilities to the single-family dwelling and additional dwelling. The extension of water services would occur from existing water meters located on Portlock Road from the Board of Water Supply system. The extension of sewer services would occur from an existing sewer easement belonging to the Hawaii American Water Company (HAWC). Water from the proposed pool feature would be discharged into the sanitary sewer system. The sanitary sewer system connection is located in the northwest corner of TMK 3-9-16:35, outside of the shoreline setback area.

The proposed improvements would not result in an increase in service demands from police and fire protection or other public services. Standard recommended measures from the Department of Health Solid and Hazardous Waste Branch to reduce adverse impacts due to solid waste include: (1) the recycling of green-waste during clear and grub activities; (2) maximizing the recycling of construction and demolition wastes; (3) the use of locally produced compost in the landscaping of the project; and (4) the provision of recycling facilities in the design of the project.

In conclusion, because the project does not envision an intensification of land use from that designated by the County, no major new utility systems are necessary to serve proposed uses on the site no significant adverse impacts to existing utilities and public services are expected, and no mitigation would be necessary.

2.11 TRAFFIC AND TRANSPORTATION

Current access to the project site is via an access easement along the northern boundary of the project site off of Portlock Road, and also from Portlock Road at the eastern boundary of the site. Portlock Road is a two-lane residential roadway with generally low volume local traffic.

IMPACTS AND MITIGATION

The proposed project could have short-term temporary impacts on circulation on Portlock Road due to increased construction traffic that may create temporary delays. However, because the entirety of construction would occur onsite, traffic disruption along Portlock Road would be minimal and would result in a less than significant impact. There would be no increase in long-term traffic due to implementation of the proposed single-family residence.

2.12 LAND USE CONTROLS

State and County policy, and land use and community plans and controls are established to address the long-term physical, social, economic, and environmental needs in Hawai'i. State and County land use controls for the Tada Single-Family Residence project are described below.

STATE

State of Hawai'i, Land Use Commission – State Land Use Districts

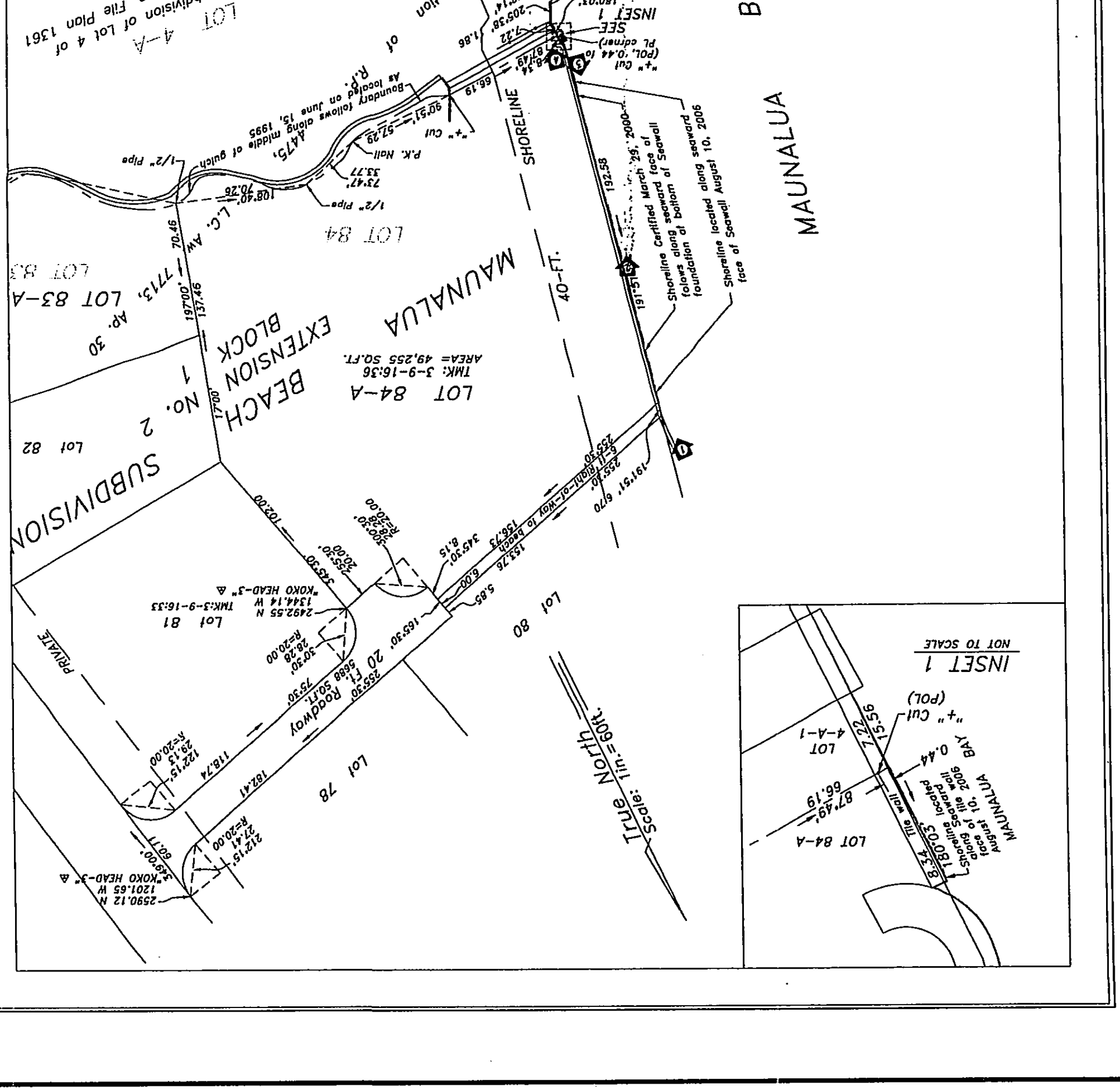
The HRS Chapter 205 establishes four major land use district in which all lands in the State are placed. These districts include: urban, rural, agricultural, and conservation. The project site is located within the Urban district. Land uses within the Urban District are regulated by the City and County of Honolulu. The proposed single-family residence is a permitted land use in the Urban District.

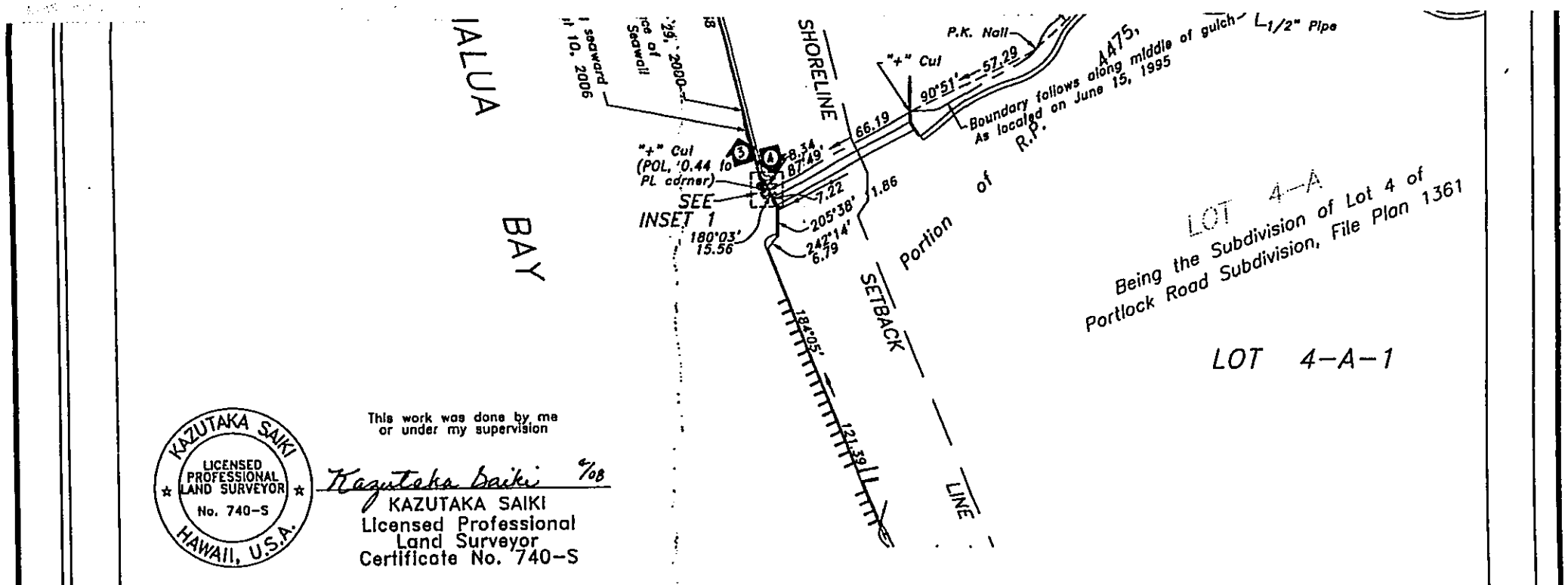
Coastal Waters in the vicinity of the project are located within the Conservation district. There is a small portion of the existing seawall that is slightly encroaching on State land. A certified shoreline map has been completed for the proposed project (see Figure 11). However, no project activities or improvements would occur at the existing seawall at the project site.

Coastal Zone Management Program (Special Management Areas)

In October 1972, the Congress passed the Coastal Zone Management Act for the purpose of establishing a national program for the management, beneficial use, protection, and development of land and water resources of the coastal areas of the United States. The Hawaii Coastal Zone Management (CZM) Program (HRS Chapter 205A) was promulgated in 1977 in response to the Federal Coastal Zone Management Act of 1972. The objectives and policies of the CZM are to provide recreational resources; protect historic, scenic, and coastal ecosystem resources; provide economic uses; reduce coastal hazards; and manage development in the coastal zone.

The CZM outlines controls and policies within an area along the shoreline called the Special Management Area (SMA). The objectives of the SMA were "the maintenance, restoration, and enhancement of the overall quality of the coastal zone environment, including, but not limited to, its amenities and aesthetic values, and to provide adequate public access to publicly owned or used beaches, recreation areas and national reserves." The purpose of the SMA Permit is to regulate any use, activity or operation that qualifies as a "development" and is administered at the County level. The entirety of the project site is located within the SMA boundary. However, the SMA regulations specifically exempt single-family homes and appurtenant structures from the requirement to obtain an SMA development permit (HRS §205A-22 and ROH §25-1.3(2)(N)).


MAUNALUA BEACH SUBDIVISION No. 2
EXTENSION
BLOCK 1
LOT 84-A
AREA= 49,255 SQ.FT.
TMK: 3-9-16:36
LOT 84
LOT 83-A
LOT 82
LOT 81
LOT 80
LOT 78
AP. 30
7713
SHORELINE
40-FT.
MAUNALUA
PRIVATE
Roadway
20 Ft.
5688 SQ.FT.
Boundary follows along middle of gulch
As located on June 15, 1995
R.P. 4475,
P.K. Nail
"+" Cut
1/2" Pipe
Shoreline Certified March 29, 2000
follows along seaward face of
foundation at bottom of Seawall
Shoreline located along seaward
face of Seawall August 10, 2006
"KOKO HEAD-3" A
TMK:3-9-16:33
2492.55 N
1344.14 W
"KOKO HEAD-3" A
2590.12 N
1201.65 W
Lot 84-A
Lot 4-A-1
BAY
MAUNALUA
INSET 1
NOT TO SCALE
True North
Scale: 1in.=60ft.



KAZUTAKA SAIKI
LICENSED PROFESSIONAL LAND SURVEYOR
No. 740-S
HAWAII, U.S.A.

This work was done by me
or under my supervision

Kazutaka Saiki 9/08
KAZUTAKA SAIKI
Licensed Professional
Land Surveyor
Certificate No. 740-S

The shoreline as delineated in red is
hereby certified as the shoreline as of

NOV 17 2006

Chairperson, Board of Land and Natural Resources

SHORELINE SURVEY
LOT 84 - A (Revised July 2000
Maunalua Beach Subdivision Extention No. block
AT MAUNALUA, HONOLULU, OAHU, HAWAII

Owner: Katsumi Tada

Address: 487-A Portlock Rd.

TMK: 1st Div. 3-9-16:36
Date Oct. 27, 2005
Revised Sept. 21, 2006

SAM O. HIROTA, INC.
864 S. BERETANIA STREET
HONOLULU, HAWAII 96813

15"x21"

Job No. 051190
F.B. No. 871:23
964:68
971:43

SHT. OF SHTS. F-11

Designed by: KS
Checked by: KS
Drawn by: KS
Approved by: KS
Date: -
Scale: AS NOTED
T.M.K. -

TADA RESIDENCE
T.M.K. 3-9-16:35 & 36
Hawaii

SHORELINE CERTIFICATION MAP

SAM O. HIROTA, INC.
ENGINEERS & LAND SURVEYORS
864 S. BERETANIA STREET
HONOLULU, HI 96813
Telephone (808) 537-9971
Telecopier (808) 524-6313

SYMBOL	DESCRIPTION	DATE

The following discussion evaluates the consistency of the proposed Tada Single-Family Residence with the applicable objectives and policies of Chapter 205A, HRS. The policies of Chapter 205A, HRS, the consistency of the proposed single-family residence with those policies, and the reasoning for the conclusion are set forth in the table below.

Policy compliance is often a matter of interpretation. The City and County of Honolulu Planning Commission is the ultimate arbiter of public policy for the project, and their judgment regarding the project and a specific policy may be different from that set forth in this report. Therefore, the following policy evaluation should be viewed as preliminary, with the ultimate decision to be made by the appropriate appointed and elected officials.

Consistency of the Proposed Tada Single-Family Residence with Objectives and Policies of Chapter 205A, HRS

Objective or Policy	Consistency	Discussion
Objective: (1) Recreational resources; (A) Provide coastal recreational opportunities accessible to the public. *Policy:* (B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by: (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;	Yes	As described in Section 1.3 above, there is public access to the shoreline located along the northern boundary of the project site; even though this easement is privately owned, it is open to the public for shoreline access.
(2) Historic resources; (A) Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture. Policy: (A) Identify and analyze significant archaeological resources; (B) Maximize information retention through preservation of remains and artifacts or salvage operations; and (C) Support state goals for protection, restoration, interpretation, and display of historic resources.	Yes	Due to the close proximity of historic settlement sites and additional cultural resources to the proposed project area and lack of subsurface testing or data recovery, cultural deposits may be present in the proposed project area. Consultation with SHPD has been conducted and is included in Appendix A and B of the Final EA. Mitigation measures to protect historic resources have been included in Section 2.5 above.
(3) Scenic and open space resources; (A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources. Policy: (A) Identify valued scenic resources in the coastal zone management area; (B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.	Yes	While construction of the single-family residence project would result in development on a currently vacant lot, the project site has been historically constructed in single-family residential uses, and they would be considered common and appropriate to the area by most viewers (see Section 2.8 above).

Objective or Policy	Consistency	Discussion
(4) Coastal ecosystems; (A) Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems. Policy: (E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.	Yes	The proposed project is required to obtain a NPDES permit to reduce potential impacts to water quality during construction of the project. Adverse effects to water quality from stormwater flows would be minimized by project design mitigation features such as the onsite silt sedimentation basin and dry wells (see Section 2.2 above).
(5) Economic uses; (A) Provide public or private facilities and improvements important to the State's economy in suitable locations.	Yes	The proposed project would result in the construction of a single-family dwelling in an area designated for residential uses.
(6) Coastal hazards; (A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution. Policy: (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards; (C) Ensure that developments comply with requirements of the Federal Flood Insurance Program;	Yes	The proposed project would be constructed to minimize the potential for erosion, subsidence, pollution, and damage from storm waves, flooding, or tsunami.
(7) Managing development; (A) Improve the development review process, communication, and public participation in the management of coastal resources and hazards.	Yes	Review of the proposed project has occurred during the public comment period for the EA. Additional review will occur during the shoreline variance permit process.
(8) Public participation; (A) Stimulate public awareness, education, and participation in coastal management. Policy: (A) Promote public involvement in coastal zone management processes.	Yes	See above.
(9) Beach protection; (A) Protect beaches for public use and recreation. Policy: (A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion; (B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities;	Yes	The proposed single-family dwelling would be located outside of the shoreline setback area. As described in this EA, a shoreline setback variance is being sought for activities in the shoreline setback area, including landscape improvements, grading and slope improvements to reduce the potential for soil erosion and provide easier access to the shoreline from the proposed residence, and a silt sedimentation basin to allow stormwater runoff from the site to settle out the silts before the stormwater enters Maunalua Bay.

Objective or Policy	Consistency	Discussion
(10) Marine resources; (A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability. Policy: (A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial.	Yes	As evaluated in this EA, adverse environmental impacts from implementation of the proposed project would be minimized through project design and mitigation measures contained in this document.

LAND USE PLANS AND POLICIES

City and County of Honolulu General Plan

The *City and County of Honolulu General Plan* (1990) is a long range, generalized planning policy document to guide development of the County. It serves as a basis for an implementation program to effectuate desired changes and improvements in the social, economic, and environmental atmosphere of the County. Topics addressed in the General Plan include goals and policies regarding population, land use, the environment, cultural resources, economic activity, housing and urban design, transportation, social infrastructure, and government.

The following discussion evaluates the consistency of the proposed Tada Single-Family Residence with the applicable objectives and policies of *City and County of Honolulu General Plan*. The policies of the *City and County of Honolulu General Plan*, the consistency of the proposed action with those policies, and the reasoning for the conclusion are set forth in the table below.

Consistency of the Proposed Tada Single-Family Residence Project with Objectives and Policies of the City and County of Honolulu General Plan		
Objective or Policy	**Consistency**	**Discussion**
III. Natural Environment		
Objective A: To protect and preserve the natural environment. Policy 1: Protect Oahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.	Yes	Construction of the proposed project and improvements within the shoreline setback area would not result in adverse impacts to the natural environment. Construction related water quality impacts would be avoided with mitigation and best management practices included in Section 2.2, *Water Quality*.
Policy 5: Require sufficient setbacks of improvements in unstable shoreline areas to avoid the future need for protective structures.	n/a	The shoreline at the project site has already been hardened with a seawall protection.
Policy 9: Protect mature trees on public and private lands and encourage their integration into new developments.	Yes	Most of the existing trees on the project site and shoreline setback area would be integrated into the landscape planting plan (see Figure 6).

City and County of Honolulu Land Use Ordinance

The land use ordinance (LUO) of the City and County of Honolulu, or zoning ordinance, regulates land use on O'ahu to encourage "orderly development in accordance with adopted land use policies," such as the O'ahu General Plan and East Honolulu Sustainable Communities Plan (ROH §21-1.20). The proposed project site is located in an area with a Residential zoning designation (R-10). The purpose of the residential district is to allow for a range of residential densities. The intent of the R-10 districts is to provide areas for large lot developments, and requires a minimum lot area of 10,000 square feet (ROH §21-3.70). Because the project is being constructed on two separate parcels, the project would be constructed using a Joint Development Agreement. The Joint Development Agreement would allow construction of the driveway without a City recognized access easement for the makai parcel (TMK: (1) 3-9-016:036). There are no environmental or other constraints precluding development at this site.

East Honolulu Sustainable Communities Plan

The *East Honolulu Sustainable Communities Plan* (1999) is one of eight community-oriented plans for the City and County of Honolulu intended to help guide public policy, investment, and decision-making through the year 2020. The *East Honolulu Sustainable Communities Plan* responds to the specific conditions and community values of its region. The vision statement and supporting provisions of the plan are oriented toward maintaining and enhancing the region's ability to sustain its unique character and lifestyle. This includes a target of very little growth over its planning period, and policies that focus on limiting the potential for expansion of housing and commercial uses, while maintaining the development characteristics of its residential neighborhoods. The *East Honolulu Sustainable Communities Plan* states that growth in East Honolulu should occur by infilling existing built-up areas rather than spreading development onto steep slopes, higher elevations, undeveloped mountain ridges and valley walls, or deeper recesses of the valleys.

As stated in the *East Honolulu Sustainable Communities Plan*, the shoreline provides residents and visitors with significant active and passive recreational value. Therefore, as provided by the Community Plan, "public access, both mauka-makai and lateral, should be maintained and improved to the extent possible." The Community Plan also states that chronic erosion or accretion appears to be occurring in the Portlock area, and additional minimum setbacks for structures have been recommended to protect the remaining sandy beaches. The proposed Tada Single-Family Residence project would be consistent with these guidelines, since the project represents development of a single-family residence in a residentially zoned area, and the project would not impact the existing public access easement located along the northern boundary of the project site. Further, the proposed residence would be located outside of the shoreline setback area, and because the project site and adjacent properties have hardened shorelines, the proposed improvements in the shoreline setback area are not anticipated to adversely impact erosion patterns in the area.

The proposed project site is located within the Urban Community Boundary with a Residential and Low-Density Apartment land use designation, as shown on the *East Honolulu Sustainable Communities Plan* Urban Land Use Map (April 1999). The proposed single-family residence would be consistent with this designation.

Shoreline Setback Ordinance, Chapter 23 Revised Ordinances of Honolulu (ROH)

The proposed action requires compliance with the Shoreline Setback Ordinance of the City and County of Honolulu (ROH Chapter 23). The Shoreline Setback area is the area between the shoreline and the shoreline setback line established by the County. Structures or portions of a structure are not permitted in the shoreline setback area without a variance, and conditions must be imposed to maintain safe lateral access to and along the shoreline or adequately compensate for its loss; to minimize risk of adverse impacts on beach processes, to minimize risk of structures failing and becoming loose rocks or rubble on public property; and to minimize adverse impacts on public views to, from, and along the shoreline. The purpose of the ordinance is "to protect and preserve the natural shoreline, especially sandy beaches; to protect and preserve public pedestrian access laterally along the shoreline and to the sea; and to protect and preserve open space along the shoreline" (ROH §23-1.2).

The Ordinance sets forth those structures and activities prohibited within the shoreline area, with exceptions including "Minor structures and activities ... which do not affect beach processes or artificially fix the shoreline and do not interfere with public access, public views or open space along the shoreline..." (ROH §23-1.5(b)(1)). While the proposed landscape plantings and installation of irrigation lines would qualify as "minor structures and activities," a shoreline setback variance would be required for the proposed grading and drainage work within the shoreline setback area. There is a small portion of a concrete retaining wall that would be located on the northern property boundary (see Figure 2) that extends into the shoreline setback area. Because the concrete retaining wall totals 14 square feet inside the existing 485 square-foot shoreline setback area, the wall would constitute less than 20 square feet and less than 10 percent of the shoreline setback area, and would qualify for a Minor Shoreline Structure Permit.

The City and County of Honolulu requires that new subdivisions must accommodate a 60-foot shoreline setback [ROH §23-1.7(a)(1)]; however, the project parcel has not been recently subdivided. In addition, the shoreline at the project site is characterized by an existing concrete seawall. Because the shoreline is "characterized by a fixed" shoreline, and because the parcel has not been recently subdivided, a 60-foot shoreline setback would not be required.

In accordance with ROH §23-1.8(b)(3)(A), the proposed activities within the shoreline setback area are necessary to provide "reasonable use of the land" and minimize runoff from the property to Maunalua Bay. The project meets the three standards of hardship in the following manner:

(i) *The applicant would be deprived of reasonable use of the land if required to comply fully with the shoreline setback ordinance and the shoreline setback rules;*

Without these improvements, the project applicant would be denied the free use of their yard and access to the shoreline from their property. The proposed grading plan would reduce the steep grade located in the shoreline setback area from the existing 2:1 slope to a 4:1 slope; this reduction of grade would provide access to the shoreline from the proposed residence and would reduce the potential for soil erosion due to slope failure and degradation of water quality. Further, a silt sedimentation basin would be constructed in the southwestern portion of the shoreline setback area to slow the velocity of the stormwater runoff, allowing fines and other pollutants to filter

out before entering the ocean. ~~retain runoff from the slope and prevent it from flowing over the seawall into the ocean~~. The proposed project would maintain and improve pedestrian access to and along the shoreline. Landscaping such as Seashore Paspalum and Queen Emma Spider Lily would be used to replace the existing California grass and bougainvillea along the shoreline, which is more low-lying vegetation and would provide easier access to and along the shoreline. Also, there are no structures or earthen mounds included in the proposal that would impede access.

(ii) The applicant's proposal is due to unique circumstances and does not draw into question the reasonableness of this chapter and the shoreline setback rules;

As described above, there is a steep slope located in the shoreline setback area from mauka to the seawall fronting Maunalua Bay. This slope extends across the extent of the project site and impedes safe access to the shoreline.

(iii) The proposal is the practicable alternative which best conforms to the purpose of this chapter and the shoreline setback rules.

As described in Chapter 4 of this document, an alternative location of the silt sedimentation basin was considered for the project to minimize impacts in the shoreline setback area. However, alternate locations were unable to handle stormwater runoff from the entirety of the project site, and the proposed location of the silt sedimentation basin would most effectively catch the most runoff. There are no other alternatives for grading work required to reduce the slope in the shoreline setback area to allow safe access to the shoreline. Therefore, the proposed project improvements in the shoreline setback area would be the most practicable alternative, and would uphold as best as possible the purpose of the shoreline setback rules as described in the beginning of this section: "to protect and preserve the natural shoreline, especially sandy beaches; to protect and preserve public pedestrian access laterally along the shoreline and to the sea; and to protect and preserve open space along the shoreline" (ROH §23-1.2).

3 REQUIRED PERMITS AND APPROVALS

A listing and brief description of the regulatory permits and approvals necessary to implement the proposed Tada Single-Family Residence project (in addition to certification of the EA and issuance of a FONSI) is provided below. State agencies other than the City and County are required to use the City and County environmental document when considering the environmental effects of the proposed improvement project.

- Shoreline Certification.
- Shoreline Setback Variance.
- Grading permit.
- Minor Shoreline Structure Permit.
- Trenching permit for work within the right-of-way.
- Building permit.
- Prior to construction activities that disturb one or more acres of total land area, a general National Pollutant Discharge Elimination System (NPDES) permit application shall be required.

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4 ALTERNATIVES TO THE PROPOSED ACTION

This chapter considers alternatives to the proposed action, including the No Action Alternative.

4.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, construction of the proposed residence and ancillary improvements in the shoreline setback area would not occur. Uses permitted under the R-10 zoning designation without discretionary approval by the City and County of Honolulu would include a single-family residence, not including activities in the shoreline setback area. Thus, residential uses permitted by City and County of Honolulu zoning designations could be constructed under the No Project Alternative. However, this alternative is undesirable because it does not provide adequate shoreline access and does not make the best use of the applicant's property. In addition, water quality in the direct vicinity of the project would be impaired from onsite erosion and siltation.

4.2 DRAINAGE ALTERNATIVE

~~This alternative would locate the proposed silt retention basin and percolation pond at an alternate location of the project site.~~ An alternative that would locate the proposed silt sedimentation basin outside of the shoreline setback area was considered but ultimately rejected due to its inability to adequately handle stormwater from the project site. The proposed project location of the silt sedimentation basin represents the ideal location to catch the most runoff on the project site before entering the bay. If the silt sedimentation basin were located further mauka (east) on the site, stormwater flowing over the makai portion of the property would enter the bay without first allowing silts to settle out in a sedimentation basin. Therefore, while the amount of grading in the shoreline setback area would be reduced under this alternative, water quality in the direct vicinity of the project could be impaired during storm events due to additional runoff entering Maunalua Bay without first entering the sedimentation basin.

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As set forth in HAR, Title 11, Department of Health, Chapter 200, §11-200-12, in considering the significance of potential environmental effects, an agency must "consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action." The proposed action is not expected to have a significant effect on the environment. The recommended preliminary determination for the Tada Single-Family Residence is a Finding of No Significant Impact (FONSI). The findings supporting this determination are discussed below.

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.

The proposed single-family residence project would be constructed on a currently vacant lot designated for single-family uses and historically used for these purposes. No important natural communities occur within the project area. While there is the potential for discovery of burial sites or other historic or cultural remains during construction, regulatory requirements and mitigation measures contained in Chapter 2 would reduce the adverse effects of these potential impacts. No natural or cultural resources were identified at the proposed project site.

(2) Curtails the range of beneficial uses of the environment.

The proposed improvements would not curtail the range of beneficial uses at the project site; the area is designated for residential uses, and has been historically used for residential purposes since 1939 (GIS records access June 2005). The project includes landscaping and project design that would improve the overall visual character of the residential area. The proposed improvements would not curtail the public's use and access to coastal resources.

(3) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders.

The proposed project is consistent with the environmental goals, policies, and guidelines established in HRS Chapter 344. The following guidelines from the "Parks, Recreation, and Open Space" and "Community life and housing" sections of the State Environmental Policy (HRS Chapter 344) apply to the proposed single-family residence project:

(4) Parks, recreation, and open space.

(A) Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses.

(8) Community life and housing.

(D) Foster safe, sanitary, and decent homes.

(4) Substantially affects the economic or social welfare of the community or state.

The proposed action would have a short-term positive effect on the economic welfare of the island resulting from hiring construction workers and purchasing materials.

(5) Substantially affects public health.

Construction activities may temporarily increase fugitive dust and noise levels in the project vicinity. However, these impacts would cease upon completion of construction. No long term negative impact on public health is anticipated with implementation of the proposed action.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities.

The proposed action is not expected to generate population change on a magnitude that would create secondary demands and impacts on public facilities and services, as the project site has been in single-family residential uses since 1939.

(7) Involves a substantial degradation of environmental quality;

There would be no long-term impacts associated with the proposed action. Construction activities may temporarily increase dust, noise, and traffic inconvenience in the project vicinity. However, these impacts would cease upon completion of construction. The project includes an increase in impervious surfaces, which would increase stormwater runoff; however, project design includes the construction of storm drainage improvements that would redirect a large portion of the drainage from emptying into the bay. Most of the stormwater would be directed to onsite silt sedimentation basin and drainage system, and would eventually percolate through the soil. Mitigation measures included in Chapter 2 would minimize potential construction-related impacts.

(8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.

The proposed action is limited to construction of a single-family residence and ancillary uses on an appropriately zoned lot. There would be no cumulatively considerable effects with implementation of the proposed action, nor would it involve a commitment for larger action.

(9) Substantially affects a rare, threatened, or endangered species, or its habitat.

No known important natural communities occur within the project area. There are no known rare, threatened, or endangered species, or evidence of its habitat, in the project area.

(10) Detrimentally affects air or water quality or ambient noise levels.

Construction activities would have a short-term effect on air quality, water quality, and ambient noise levels. Mitigation included in Chapter 2 would minimize these potential impacts. No additional long-term impacts would occur.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

Portions of the project site are located in Flood Zone D ~~X~~ and Flood Zone A. The Zone A designation of the parcel was determined from coastal flooding (storm surge and wave runup) generated by hurricanes. The project site is located within the City and County of Honolulu's Tsunami Evacuation Zone. However, the Oahu Civil Defense does not require any mitigation measures for residential properties, as tsunami control design is only required for resorts and commercial projects. ~~The project site is not located in an environmentally sensitive area and therefore would not suffer damage or affect sensitive areas.~~

(12) Substantially affects scenic vistas and viewplanes identified in county or state plans or studies.

The proposed single-family residence would be consistent with the existing uses of the area, and implementation of the project would not degrade the existing visual character of the site or surroundings. The proposed improvements would not obstruct views from any recognized view corridor or scenic roadway.

(13) Requires substantial energy consumption.

There would be energy consumption associated with construction of the proposed single-family residence project. Additionally, energy will be used in the operation of the residence (e.g. for indoor lights, electrical appliances, and pool upkeep). The amount of energy that would be consumed with project implementation is not considered substantial.

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6 INDIVIDUALS, COMMUNITY GROUPS, AND AGENCIES CONSULTED

6.1 CONSULTATION

Preliminary consultation with agencies, organizations, and individuals were conducted during preparation of the Draft EA. Agencies, organizations, and individuals followed by an asterisk (*) provided written comments, as included in Appendix A:

Army Corps of Engineers*
National Marine Fisheries Service
U.S. Fish and Wildlife Service
U.S. Department of the Army, Civil Works Technical Branch*
State Dept. of Health, Clean Water Branch*
State Dept. of Land and Natural Resources (DLNR), Land Division*
State DLNR, State Historic Preservation Division*
State Office of Planning
City and County of Honolulu, Dept. of Planning & Permitting
Hawaii Kai Neighborhood Board, Chair

6.2 ENVIRONMENTAL ASSESSMENT PREPARATION

This Final Environmental Assessment (EA) was prepared for Roy K. Yamamoto Architect, AIA, Inc. by Bow Engineering & Development, Inc. The following consultants were involved in the preparation of this document:

Raadha M. B. Jacobstein	Project Manager, Bow Engineering & Development, Inc.
William H. Q. Bow, P.E.	President, Bow Engineering & Development, Inc.
Darin Aihara	Project Engineer, Bow Engineering & Development, Inc.

REFERENCES

Cultural Surveys Hawai'i, Inc, 2003. Archaeological Inventory Survey for the Proposed Sandwich Isles Fiber Optic Cable Landing Within Sandy Beach Park, Ahupua'a of Maunalua, Island of O'ahu. Borthwick, Yorck, Tulchin, & Hammatt, August 2003.

Haun & Associates, 2002. Archaeological Inventory Survey, Kalanianaole Highway Improvements at Makapu'u Point. October 2002.

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Hawai'i, State of. Department of Health, Title 11, Department of Health Administrative Rules, Chapter 200. Environmental Impact Statement Rules. August 1996.

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Hawai'i, State of. Department of Health, Clean Air Branch. 2004 Annual Summary Hawaii Air Quality Data.

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Honolulu, City and County of. Department of Land Utilization, 1987. Coastal View Study.

Honolulu, City and County of. Department of Planning and Permitting, 1999. East Honolulu Sustainable Communities Plan. April 1999.

Mabuni, Earl, 2006. City and County of Honolulu, Department of Planning and Permitting, Code Compliance Branch. Personal communications with Darin Aihara, Bow Engineering, regarding the existing seawall. April 27, 2006.

U.S. Department of Agriculture, Natural Resources Conservation Service (formerly Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. August 1972. http://www.ctahr.hawaii.edu/soilsurvey/soils.htm

APPENDIX A

CORRESPONDENCE

APPENDIX A

The following includes project pre-assessment consultation from the following agencies. All issues raised by pre-assessment consultation are addressed in the body of the Draft and Final EA.

U.S. Department of the Army, Civil Works Technical Branch (Added amended Firm Map, dated Sept. 30, 2004)	March 28, 2005
DLNR, Land Division	July 20, 2005
State Department of Health	July 28, 2005
U.S. Department of the Army, Regulatory Branch	August 19, 2005
DLNR, State Historic Preservation Division	September 7, 2005

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF: CEPOH-EC-T

March 28, 2005

Civil Works Technical Branch

Mr. William Bow
Bow Engineering and Development
1953 South Beretania Street, PH-A
Honolulu, Hawaii 96826

Dear Mr. Bow:

As requested on March 25, 2005, I am enclosing flood hazard information for property located at 487 Portlock Road, Honolulu, Hawaii (TMKs 3-9-16: 35 & 36). A copy of the Flood Plain Management Services Checklist is also provided for your information.

According to the Flood Insurance Rate Map (FIRM), Panel #15003C0395E dated November 20, 2000, the parcel lies in the following zones:

Zone X (unshaded). Areas outside of the 500-year floodplain.

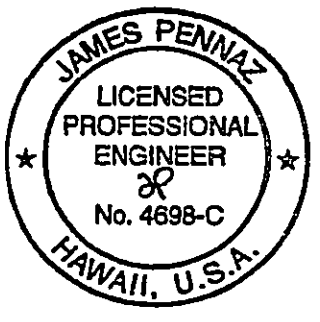
Zone A (Areas inundated by the 100-year flood; base flood elevations and flood hazard factors not determined). The base flood elevation determination is provided below.

The Zone A designation of the project parcel was determined from coastal flooding (storm surge and wave runup) generated by hurricanes. The Federal Emergency Management Agency used the results from the U.S. Army Corps of Engineers' 1985 report titled "Hurricane Vulnerability Study for Honolulu, Hawaii and Vicinity, Volume 2, Determination of Coastal Inundation Limits for Southern Oahu from Barbers Point to Koko Head," to designate coastal Zone A areas shown on the current FIRM. The subject parcel lies between profiles #2 and #3 where the approximate base flood elevation is estimated to be 11.5 feet above mean sea level datum.

In addition, this property is considered to be within the City and County of Honolulu's flood fringe district. Building requirements should conform to standards defined in the City and County of Honolulu's Land Use Ordinance, which is available for review at the Department of Planning and Permitting (telephone: 523-4247).

We have enclosed site specific information required for filling out Section B (Flood Insurance Rate Map Information) of the Elevation Certificate (FEMA Form 81-31 January 2003).

This letter acknowledges receipt of your $105.00 payment for the information provided. Should you have any questions, please call Ms. Jessie Dobinchick of my staff at 438-8876 or Mr. Michael Wong at 438-8866.



Sincerely,

James Pennaz, P.E.
Chief, Civil Works
Technical Branch

Enclosures

(Customer to fill out #1-4; 6a & 6b; 8)

FLOOD PLAIN MANAGEMENT SERVICES CHECKLIST

1. Customer's Name: WILLIAM H. O. BOW
2. Agency or Firm: BOW ENGINEERING & DEVELOPMENT, INC.
3. Mailing Address: 1953 S. BERETANIA STREET, PH-A
   HONOLULU, HI 96826
4. Phone Number: 941-8853 Fax Number: 945-9299

DESCRIPTION OF WORK

5. Reproduction Services (non-site specific):

   ☐ Provide photocopies of readily available data (i.e., Flood Insurance Rate Maps [FIRMs], Flood Plain Regulations, Pamphlets, or other requested information as indicated below).

   ☐ Other: _____

6. Site Specific Flood Hazard Analysis:

   a. **Site Address:** 487 PORTLOCK ROAD
      HONOLULU, HI 96825

   b. **Tax Map Key** (TMK): 3-9-16:35 & 36

   c. **Following Services to be provided to customer:**

   ☑ Locate site using TMK maps

   ☑ Reduce/enlarge TMK map to FIRM scale

   ☑ Locate site on appropriate FIRM and provide a copy

   ☑ Describe flood zone designations

   ☑ Provide approximate flood elevations in undetermined Zone A coastal areas

RCVD 28 MAR 05

7. By my signature, I reaffirm my request and agree to provide the attached payment in the amount of $ 105.00 for the services checked in the above listing. Please make check payable to: **FAO-USAED, HONOLULU** and provide to:

U.S. Army Corps of Engineers, Honolulu District
ATTN: Ms. Jessie Dobinchick/CEPOH-EC-T
Building 223
Fort Shafter, HI 96858-5440

8. x _____ 7/25/05
Signature of Requester Date

FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

O.M.B. No. 3067-0077
Expires December 31, 2005

Important: Read the instructions on pages 1 - 7.

SECTION A - PROPERTY OWNER INFORMATION

BUILDING OWNER'S NAME	For Insurance Company Use:
	Policy Number
BUILDING STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. No.) OR P.O. ROUTE AND BOX NO.	Company NAIC Number
CITY STATE ZIP CODE	

PROPERTY DESCRIPTION (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)

BUILDING USE (e.g., Residential, Non-residential, Addition, Accessory, etc. Use a Comments area, if necessary.)

LATITUDE/LONGITUDE (OPTIONAL) (##° - ##' - ##.##" or ##.#####°) HORIZONTAL DATUM: ☐ NAD 1927 ☐ NAD 1983 SOURCE: ☐ GPS (Type): ☐ USGS Quad Map ☐ Other

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP COMMUNITY NAME & COMMUNITY NUMBER	B2. COUNTY NAME	B3. STATE
150001	C&C of Honolulu	Hawaii

B4. MAP AND PANEL NUMBER	B5. SUFFIX	B6. FIRM INDEX DATE	B7. FIRM PANEL EFFECTIVE/REVISED DATE	B8. FLOOD ZONE(S)	B9. BASE FLOOD ELEVATION(S) (Zone AO, use depth of flooding)
15003C0395	E	20 Nov 2000	20 Nov 2000	A, X (uns)	A = 11.5 feet msl

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in B9.
☐ FIS Profile ☒ FIRM ☐ Community Determined ☐ Other (Describe):

B11. Indicate the elevation datum used for the BFE in B9: ☒ NGVD 1929 ☐ NAVD 1988 ☐ Other (Describe):

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date:

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Building Diagram Number _____ (Select the building diagram most similar to the building for which this certificate is being completed - see pages 6 and 7. If no diagram accurately represents the building, provide a sketch or photograph.)

C3. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO
Complete Items C3.a-i below according to the building diagram specified in Item C2. State the datum used. If the datum is different from the datum used for the BFE in Section B, convert the datum to that used for the BFE. Show field measurements and datum conversion calculation. Use the space provided or the Comments area of Section D or Section G, as appropriate, to document the datum conversion.
Datum _____ Conversion/Comments _____
Elevation reference mark used _____ Does the elevation reference mark used appear on the FIRM? ☐ Yes ☐ No

- a) Top of bottom floor (including basement or enclosure) _____.___ ft.(m)
- b) Top of next higher floor _____.___ ft.(m)
- c) Bottom of lowest horizontal structural member (V zones only) _____.___ ft.(m)
- d) Attached garage (top of slab) _____.___ ft.(m)
- e) Lowest elevation of machinery and/or equipment servicing the building (Describe in a Comments area.) _____.___ ft.(m)
- f) Lowest adjacent (finished) grade (LAG) _____.___ ft.(m)
- g) Highest adjacent (finished) grade (HAG) _____.___ ft.(m)
- h) No. of permanent openings (flood vents) within 1 ft. above adjacent grade _____
- i) Total area of all permanent openings (flood vents) in C3.h _____ sq. in. (sq. cm)

License Number, Embossed Seal, Signature, and Date

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information.
I certify that the information in Sections A, B, and C on this certificate represents my best efforts to interpret the data available.
I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

CERTIFIER'S NAME LICENSE NUMBER

TITLE COMPANY NAME

ADDRESS CITY STATE ZIP CODE

SIGNATURE DATE TELEPHONE

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

CITY AND COUNTY OF HONOLULU, HAWAII

PANEL 395 OF 395
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
HONOLULU, CITY AND COUNTY OF	150001	0395	E

MAP NUMBER
15003C0395 E

EFFECTIVE DATE:
NOVEMBER 20, 2000

Federal Emergency Management Agency

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction ; no base flood elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flooc Hazard Areas.

Floodplain Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones

513 — Base Flood Elevation Line. Elevation in Feet. See Map Index for Elevation Datum.

D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × — Elevation Reference Mark

• M2 — River Mile

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for more detailed data on BFE's, and for any information on floodway delineations, prior to use of this map for property purchase or construction purposes.

Areas of Special Flood Hazard (100-year flood) include Zones A, AE, A1-A30, AH, AO, A99, V, VE and V1-V30.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Refer to Floodway Data Table where floodway width is shown at 1/20 inch.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Corporate limits shown are current as of the date of this map. The user should contact appropriate community officials to determine if corporate limits have changed subsequent to the issuance of this map.

This map may incorporate approximate boundaries of Coastal Barrier Resource System Units and /or Otherwise Protected Areas established under the Coastal Barrier Improvement Act of 1990 (PL 101-591).

For community map revision history prior to countywide mapping, see Section 6.0 of the Flood Insurance Study Report.

For adjoining map panels and base map source see separately printed Map Index.

MAP REPOSITORY

Refer to Repository Listing on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP:

NOVEMBER 20, 2000

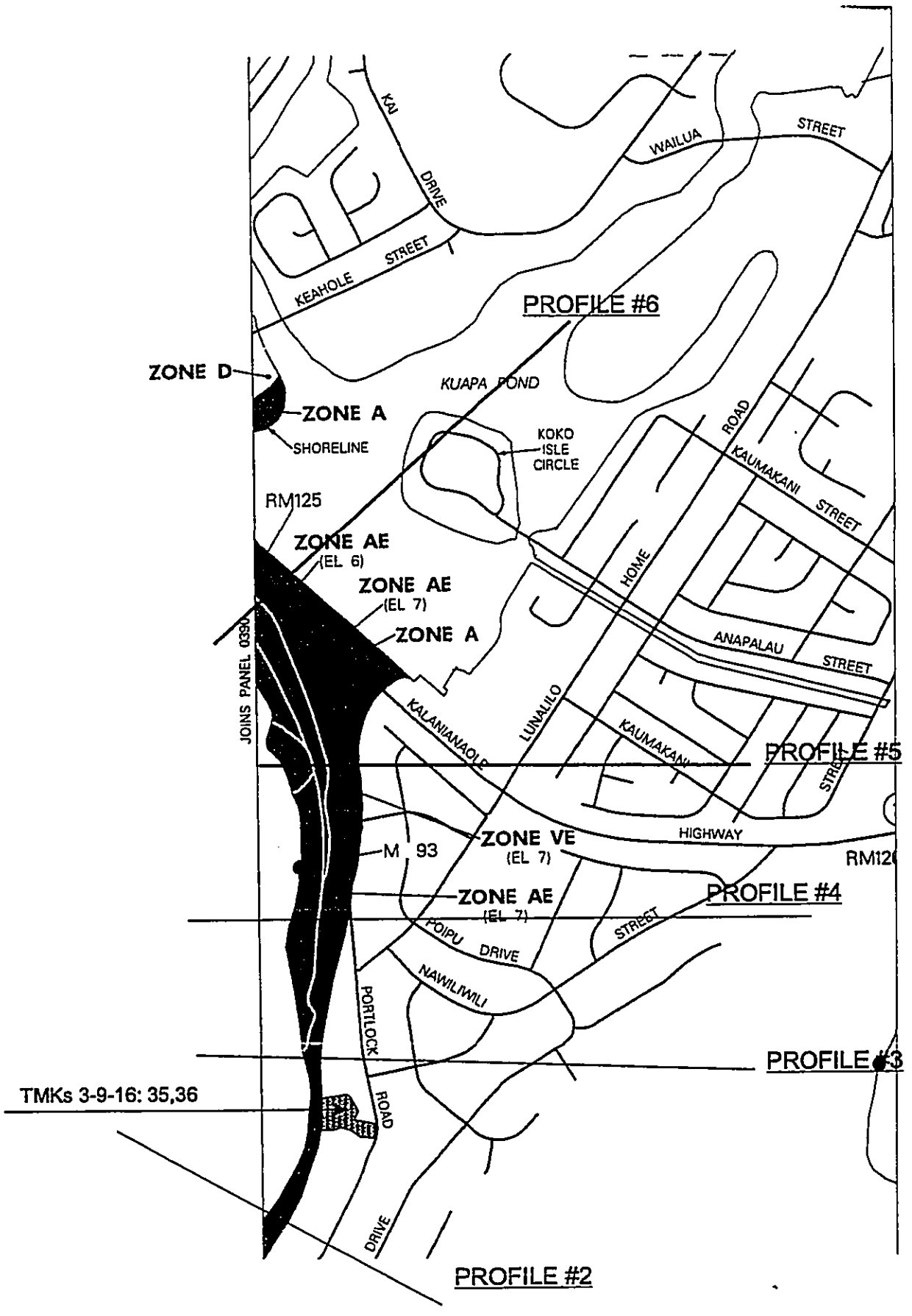
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE DATE shown on this map to determine when actuarial rates apply to structures in zones where elevations or depths have been established.

To determine if flood insurance is available, contact an insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE IN FEET

1000 0 1000


KAI
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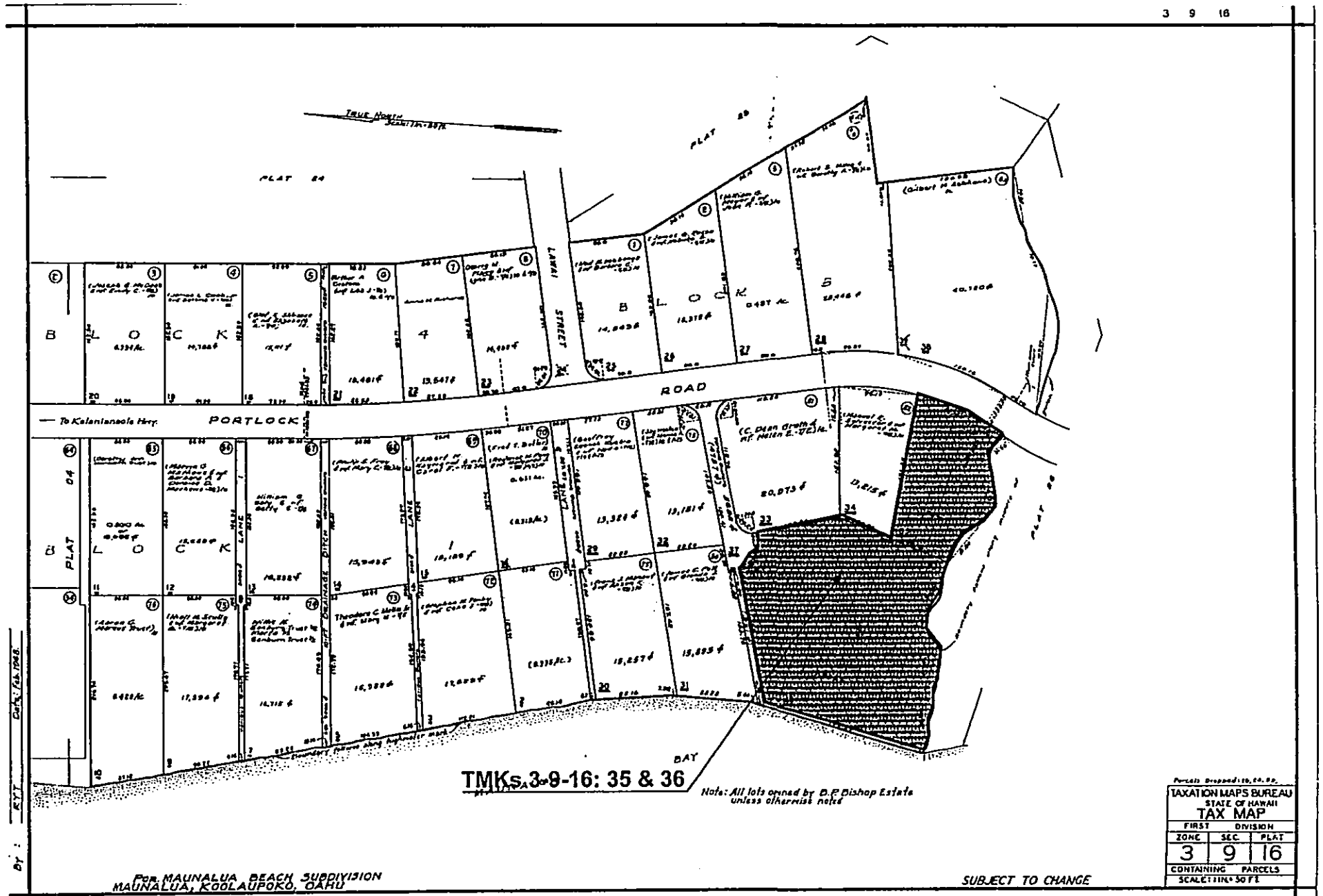
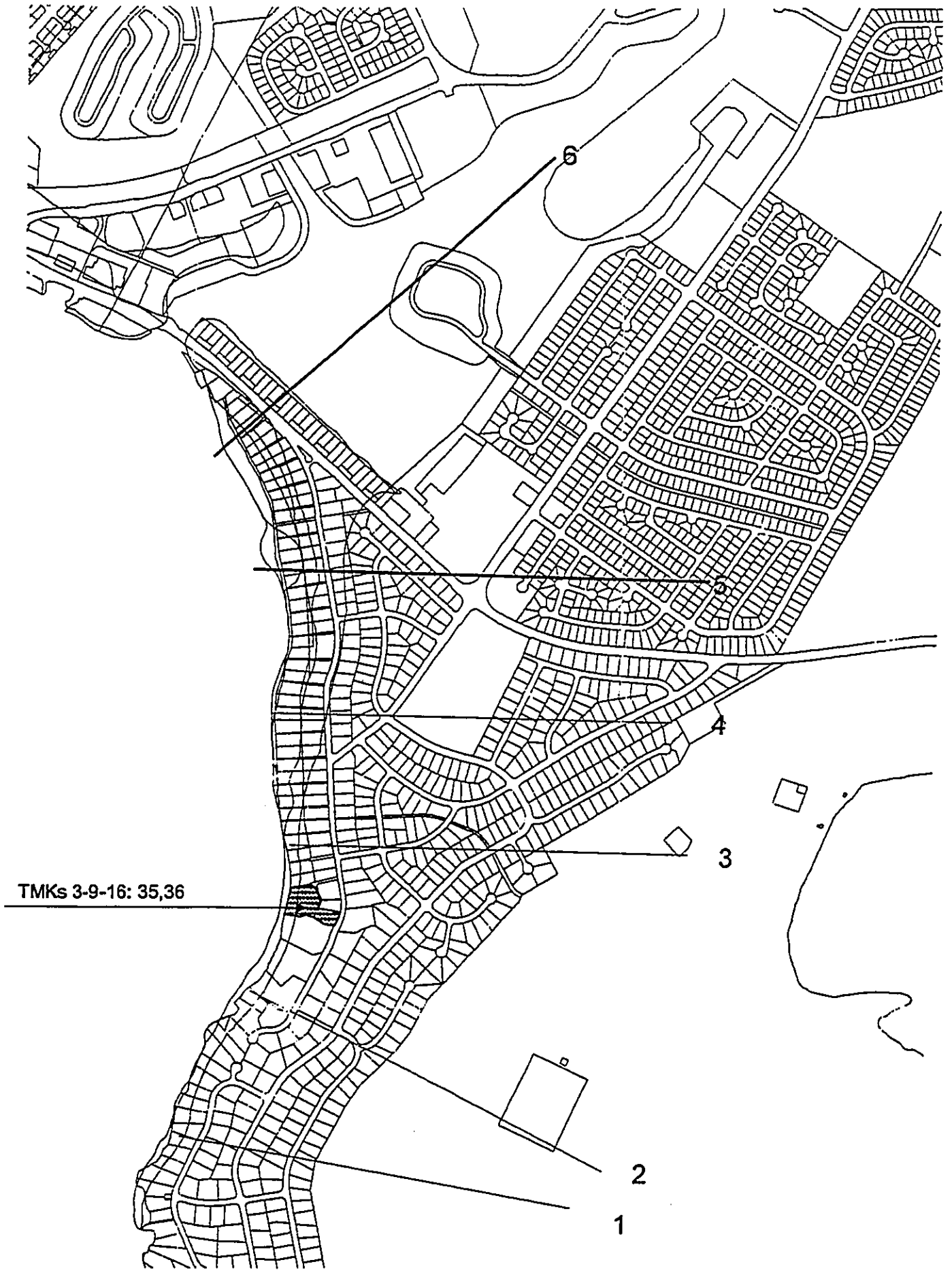
KOKO
ISLE
CIRCLE
ROAD
KAUMAKANI
STREET
RM125
ZONE AE
(EL 6)
ZONE AE
(EL 7)
HOME
ZONE A
ANAPALAU
STREET
JOINS PANEL 0390
KALANIANAOLE
LUNALILO
KAUMAKANI
PROFILE #5
HIGHWAY
M 93
ZONE VE
(EL 7)
RM12
ZONE AE
(EL 7)
PROFILE #4
POIPU
DRIVE
NAWILIWILI
PORTLOCK
PROFILE #3
TMKs 3-9-16: 35,36
ROAD
DRIVE
PROFILE #2

3 9 16


PLAT 84
PLAT 85
LANAI STREET
ROAD
PORTLOCK
To Kalaniana'ole Hwy.
BLOCK
PLAT 84
LANE
DITCH
BAY
TMKs: 3-9-16: 35 & 36
Note: All lots owned by B.P. Bishop Estate unless otherwise noted
Por. MAUNALUA BEACH SUBDIVISION
MAUNALUA, KOOLAUPOKO, OAHU
SUBJECT TO CHANGE
Parcels Dropped: 10, 29, 30,
TAXATION MAPS BUREAU
STATE OF HAWAII
TAX MAP
FIRST DIVISION
ZONE 3 | SEC 9 | PLAT 16
CONTAINING PARCELS
SCALE: 1 IN. = 50 FT.
By: KYT Date: Feb. 1948.


6
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4
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TMKs 3-9-16: 35,36
2
1

HURRICANE VULNERABILITY STUDY
FOR HONOLULU, HAWAII, AND VICINITY

VOLUME 2
DETERMINATION OF COASTAL INUNDATION LIMITS FOR SOUTHERN OAHU FROM BARBERS POINT TO KOKO HEAD

PREPARED FOR THE
STATE OF HAWAII
DEPARTMENT OF DEFENSE

May 1985

US ARMY CORPS
OF ENGINEERS
Pacific Ocean Division

Table 6-4

SUMMARY OF RUN-UP AND FLOOD LIMITS

RUN-UP/INUNDATION LIMITS
(Dimensions - feet)

SCENARIO #3: (SW Model)

Profile	Distance	*Elevation (MLLW)	Profile	Distance	*Elevation (MLLW)
1	66	15.0	37	256	8.6
2	70	15.0	38	242	8.5
3	75	10.3	39	212	8.6
4	397	7.4	40	5400	8.6
5	520	7.2	41	4700	7.5
6	1650	6.6	42	4700	7.4
7	708	7.1	43	5100	7.4
8	1200	6.0	44	4200	7.7
9	727	6.9	45	5400	7.9
10	2400	7.0	46	5000	8.2
11	721	8.3	47	3000	7.5
12	313	6.8	48	1000	5.3
13	300	7.1	49	25	15.0
14	67	9.3	50	17	14.7
15	980	7.1	51	500	7.5
16	400	9.0	52	800	8.6
17	203	8.1	53	2500	6.7
18	153	7.8	54	800	6.3
19	137	9.1	55	16	10.6
20	1755	8.0	56	19	12.8
21	1380	7.8	57	28	18.8
22	1300	7.2	57a	2200	5.8
23	149	7.7	57b	2350	5.3
24	58	10.2	58	180	6.0
25	43	10.8	59	3000	10.7
26	29	11.2	60	800	5.0
27	40	14.9	61	1200	6.5
28	110	9.0	62	1350	6.2
29	64	10.2	63	54	10.6
30	66	11.8	64	88	10.6
31	66	11.5	65	900	7.6
32	57	11.1	66	710	7.3
33	167	8.6	67	53	9.2
34	266	8.2	68	84	9.6
35	237	8.1	69	144	11.6
36	200	9.5	70	50	10.8
			71	82	9.1

*Subtract 0.8 to obtain MSL

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0395F

FIRM
FLOOD INSURANCE RATE MAP
CITY AND COUNTY OF HONOLULU, HAWAII

PANEL 395 OF 395

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HONOLULU, CITY AND COUNTY OF	150001	0395	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
15003C0395F

MAP REVISED
SEPTEMBER 30, 2004

Federal Emergency Management Agency

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the National Geodetic Vertical Datum of 1929

A — A	Cross section line
23 - - - - - 23	Transect line
97°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4276000 M	1000–meter Universal Transverse Mercator grid tick values, zone 4
600000 FT	5000–foot grid tick values: Hawaii State Plane coordinate system, zone 3 (FIPSZONE 5103), Transverse Mercator projection
DX5510 X	Bench mark (see explanation in Notes to Users section of this FIRM panel)
●M 2	Coastal Mile marker

MAP REPOSITORY

Refer to listing of Map Repositories on Map Index

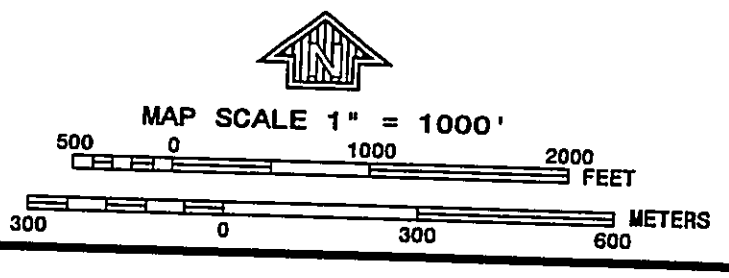
EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
November 20, 2000

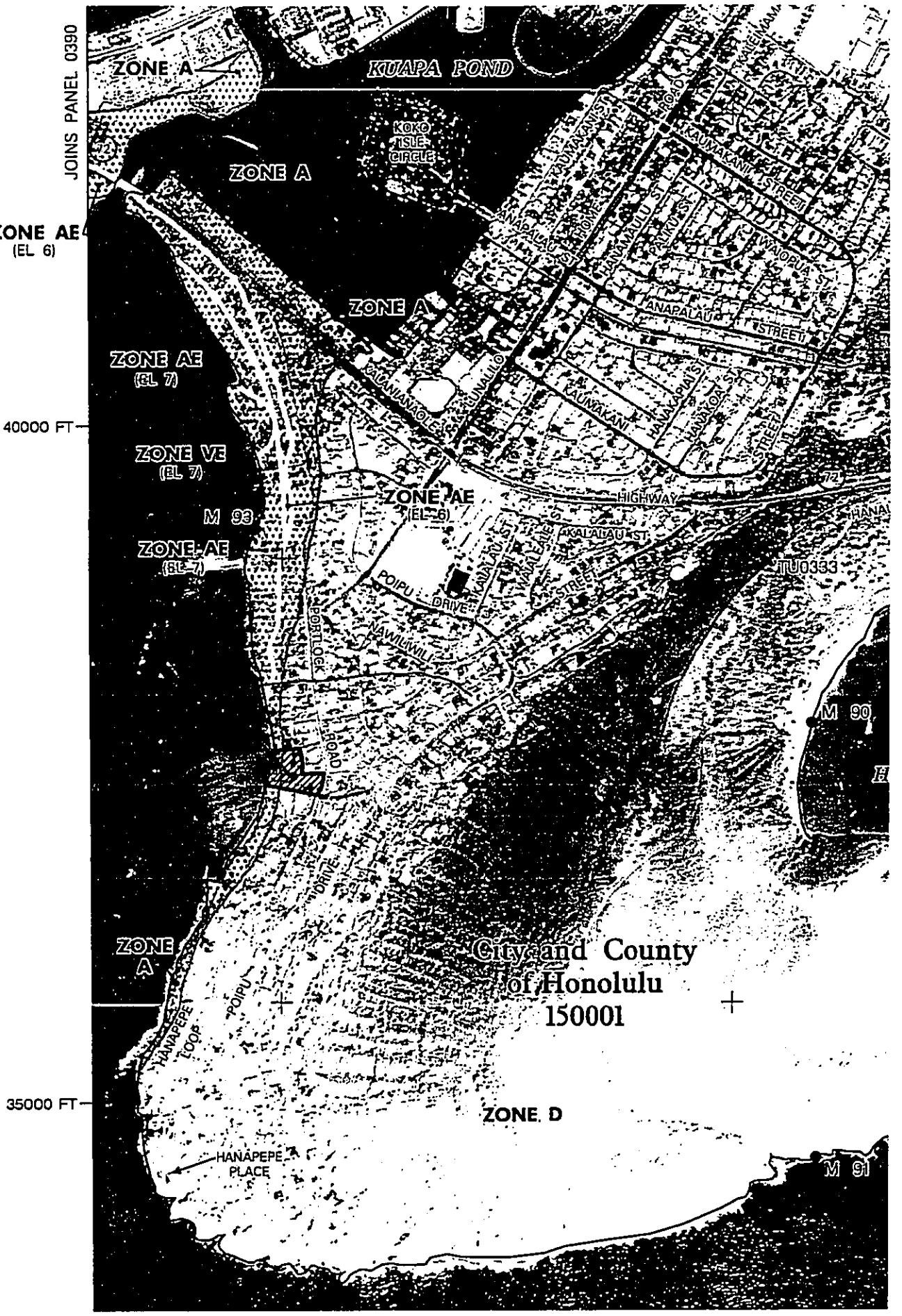
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

September 30, 2004 – to change Special Flood Hazard Areas, to update map format, to reflect revised shoreline and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1–800–638–6620.





LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 20, 2005

TADAHAWAIIKAI.RCM

LD-NAV

Bow Engineering & Development, Inc.
Raadha M. B. Jacobstein
46-304 Nahewai Street
Kaneohe, Hawaii 96744

Dear Ms. Jacobstein:

SUBJECT: Pre-Assessment Consultation for the Proposed Tada Single-Family Residence
Hawaii Kai, Island of Oahu, Hawaii – TMK: (1) 3-9-016: 036 and 035

Thank you for the opportunity to review and comment on the subject matter.

Based on the grading plan map exhibit provided by you, it appears that there is a small portion of a seawall situated southwest of the subject property encroaching on State land. You will need to resolve this encroachment with the Department of Land and Natural Resources. Please contact the Office of Conservation and Coastal Lands at 1151 Punchbowl Street, Honolulu, Hawaii 96813 (808-587-0377).

Should you have any questions, please contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0384.

Very truly yours,

HARRY M. YADA
Acting Administrator

C: ODLO
OCCL

05-02
Tada

LINDA LINGLE
GOVERNOR OF HAWAII

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

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / CWB

07077EC.05

July 28, 2005

Mr. Raadha M. B. Jacobstein
Bow Engineering & Development
1953 South Beretania Street, PH-A
Honolulu, Hawaii 96826

Dear Mr. Jacobstein:

Subject: Water Pollution Control Requirements
Proposed Tada Single-Family Resident (SFR)
487 and 497 Portlock Road - Honolulu, Island of Oahu
TMK: 3-9-016:036 and 035

Thank you for the opportunity to review and comment on the "draft project description and figures" provided for the proposed Tada SFR. Public records indicate that Mr. Katsumi Tada is the registered land owner for both parcels.

As specified in your letter, "[T]he existing project parcel consists of a vacant weeded lot with various trees (including monkeypod, kiawe, coconut palm, and plumeria) scattered over the extent of the parcel. Elevations on the project site range from approximately 42 feet mean sea level (msl) at Portlock Road, to approximately 22 feet msl at the level mid-portion of the site, to approximately 5 feet msl at the seawall fronting Maunalua Bay. Minor concrete curb retaining walls from previous improvements occur over several sections of the site. An existing drainage easement runs along the southern boundary of the site. The project parcel has historically been developed with single-family residential uses. The Department of Planning and Permitting GIS records show a permitted dwelling constructed in 1939. Surrounding land uses include single-family residential properties to the north and south, Portlock Road to the east, and Maualua Bay to the west.

As proposed by the applicant, the Tada SFR project would consist of construction of a single-family dwelling and caretaker house in addition to ancillary improvements within the parcel's 40-foot shoreline setback area including grading and landscape improvements (see Figure 2). The single-family dwelling would abut the 40-foot shoreline setback area. Landscape improvements within the 40-foot shoreline setback would include grading to reshape the existing 2:1 slope to a 4:1 slope to reduce the potential for soil erosion and provide easier access to the shoreline from the proposed residence (see grading plan and shoreline setback

figures). In addition, a silt retention basin and percolation pond would be constructed to retain runoff from the slope and prevent it from flowing over the seawall into the ocean. Landscape planting in the shoreline setback area would include a combination of grass, ground cover, and low level shrubs."

The following are our general comments based on the limited information submitted. We reserve the right to provide additional comments when additional information becomes available:

1. Please provide the Clean Water Branch (CWB) with a copy of the Environmental Assessment that is currently being prepared for the Shoreline Setback Variance application for further review and comment.

2. The Army Corps of Engineers (COE) should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA)), Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations, Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

   a. A silt retention basin and percolation pond would be constructed to retain runoff from the slope and prevent it from flowing over the seawall into the ocean.

      Please provide detailed information, including the typical section and the designed retention capacity (such as 2-year, 24-hour rainfall event, etc.), of this silt retention basin and percolation pond. Please also clarify whether any additional improvements are needed to the existing seawall or if any new section(s) is needed? Placement of any fill material or dredged spoils below the high tide line of waters of U.S. seaward of the existing seawall may require permit form the Honolulu Engineer District (HED) of the COE.

   b. An existing drainage easement runs along the southern boundary of the site.

      Immediate south (503 Portlock Road, at TMK: (1) 3-9-026:005) to the project site, the CWB has verified that an unnamed gulch (drainage easement) is State waters that drains storm water from the upland drainage basin through the culvert under the Portlock Road to the ocean. Discharge of any pollutant into this unnamed gulch may require permits to be issued from the applicable Federal, State and County agencies, including a permit from the HED/COE.

3. Dry wells are proposed. There is no calculation to demonstrate the adequacy of the design capacity, such as 2-year, 24-hour storm events, etc.

4. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES):

   a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

   b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

      i. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.** [HAR, Chapter 11-55, Appendix C]

      ii. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]

      iii. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]

      iv. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]

   The public records indicate that TMK: (1) 3-9-016:035, 497 Portlock Road) has a dimension of 16,202 square-foot (ft^2); and TMK: (1) 3-9-016, 487 Portlock Road) has a dimension of 1.13 acres. Based on the information contained in drawing No. SMA-1, the area to be disturbed could exceed one (1) acre. We recommend that you contact the CWB at (808) 586-4309 for the NPDES permit requirements.

5. You and your client must ensure that the operation and maintenance of the proposed swimming pool will not result in any discharges into State waters without first obtained an NPDES permit issued by the Department of Health (DOH).

Based on the information contained in drawing No. SMA-2, a pool feature is proposed. There is no information provided for the proposed pool feature. Neither the drainage system nor the operation and maintenance procedures for the proposed swimming pool were discussed in your letter. It is you and your client's responsibility to ensure that there will be no pollutant discharges into State water as the result of the construction, operation, and maintenance of the proposed swimming pool without a valid NPDES permit.

6. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD.

7. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

8. Site-specific Best Management Practices measures shall be designed, implemented, operated, and maintained during the entire construction period in a manner to properly isolate and confine the construction activity(ies) and to contain and prevent any potential pollutant(s) discharges from adversely impacting the State waters.

Please be informed that Hawaii Revised Statutes, Subsection 342D-50(a) requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this chapter, or a permit or variance issued by the director."

Should you have any questions, please contact Mr. Edward Chen of the Engineering Section, CWB, at 586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

EC:np

c: Regulatory Branch, HED, COE
CZM Program, Office of Planning, DBEDT
CWRM, DLNR
Department of Planning and Permitting, City and County of Honolulu

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

August 19, 2005

Regulatory Branch

Raadah M. B. Jacobstein
Bow Engineering & Development, Inc.
46-304 Nahewai Street
Kaneohe, Hawaii 96744

Subject: Determination of Corps jurisdiction for the proposed Tada Single-Family Residence, Portlock, Oahu, Hawaii (TMK: 3-9-16:036 and 035). **File #POH-2005-406**

Dear Ms. Jacobstein:

In response to your letter dated July 18, 2005 this office has reviewed materials submitted for the above-referenced proposal pursuant to Section 10 of the Rivers and Harbors Act (RHA) of 1899 and Section 404 of the Clean Water Act (CWA). A site inspection was conducted by my staff on August 17, 2005 to identify any waters of the U.S. that may fall under Corps jurisdiction.

Based on the materials you submitted and the site inspection, the proposed work will not require a Department of the Army (DA) permit. No wetlands subject to Corps jurisdiction were observed on site. The unnamed gulch that forms the southern border of the property did not exhibit an Ordinary High Water Mark (OHWM); therefore, any discharge of dredged or fill material into this area would not be subject regulation under Section 404 of the CWA. Additionally, all work proposed is landward of the existing seawall and will not be subject to regulation under Section 10 of the RHA.

Please be advised that any proposed maintenance to the seawall or proposed new structures water ward of the seawall (i.e., dock, mooring, etc.) may be regulated. Please contact the Corps for a determination if any such work is proposed in the future.

If you have any questions, please contact Ms. Connie Ramsey by phone at 438-2039, by facsimile at 438-4060, or by electronic mail at Connie.L.Ramsey@usace.army.mil . Thank you for your cooperation with our regulatory program.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

Copy furnished:
Katsumi Tada, c/o Daisho Co. Ltd., 2-Chome-4-1-Shiba Koen, Minato-ku, Tokyo, Japan

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 555
KAPOLEI, HAWAII 96707

September 7, 2005

Ms. Raadha M. B. Jacobstein
Bow Engineering and Development Inc.
46-304 Nahewai Street
Kaneohe, Hawaii 96744

LOG NO: 2005.1940
DOC NO: 0509NM04

Dear Ms. Raadha:

SUBJECT: ***Chapter 6E-42 - Historic Preservation Review – Proposed Tada Single Family Residence Project within the Portlock Residential Neighborhood in Hawaii Kai Honolulu, Oahu***
TMK: 3-9-016: 36 and 35

Thank you for the opportunity to comment on this application we received on July 20, 2005. No complete archaeological inventory surveys have been done on this entire parcel. We understand that a dwelling once was on the property in 1939. Historic sites have been found nearby, i.e. cultural deposits (habitation sites) and human burials. Given the above, we recommend the following conditions be attached to any approved permit, to ensure significant historic sites have been properly identified and treated:

1) An archaeologist inventory survey shall be conducted by a qualified archaeologist prior to any construction activities. A report documenting the archaeological work shall be submitted to the State Historic Preservation Division for review and approval. The report shall include: 1) Detail drawings of burials and deposits to scale; 2) All artifacts shall be sketched and photographed; 3) Analyses of all perishable and datable remains shall be conducted; 4) Stratigraphic profiles shall be drawn and made to scale; 5) All locations of historic sites shall be on an overall map of the project area; 6) Initial significance evaluations shall be included for each historic site found; and 7) Documentation on the nature and age of the historic sites shall be done. If significant historic sites are found then proposed mitigation or preservation plans can be submitted for review and approval.

2) If significant historic sites are present (non-burial sites), then detailed mitigation plans (scopes of work) must be submitted to the State Historic Preservation Division for approval. The State Historic Preservation Division must verify in writing that the plan(s) have been successfully executed prior to any land alteration.

3) If burials are discovered during the survey, burial treatment determinations must be handled by the Oahu Island Burial Council. A burial treatment plan shall be prepared for burials, following the procedures outlined in Chapter 6E-43 and that section's accompanying rules. This plan must be executed successfully, prior to any land alteration.

If you have any questions, please call Nancy McMahon 742-7033.

Aloha,

MELANIE CHINEN, Administrator
State Historic Preservation Division

NM:jen

APPENDIX B

DRAFT ENVIRONMENTAL ASSESSMENT

COMMENT LETTERS

APPENDIX B

The following correspondence includes comments on the Draft EA from the following agencies:

State of Hawaii, DLNR, Historic Preservation Division	June 26, 2006
State of Hawaii, Office of Environmental Quality Control (OEQC)	July 19, 2006
City and County of Honolulu, Department of Planning and Permitting	July 19, 2006
U.S. Army Corps of Engineers, email correspondence	July 26, 2006
State of Hawaii, Department of Health, Clean Water Branch	July 28, 2006

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
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AQUATIC RESOURCES
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CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

June 26, 2006

LOG NO: 2006.2105
DOC NO: 0606AJ25
Archaeology

Mr. Henry Eng
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

Dear Mr. Eng:

SUBJECT: **Chapter 6E-8 Historic Preservation Review [City & County/DPP]–**
Shoreline Set Back Variance
Draft Environmental Assessment, Tada Single Residence
Maunalua Ahupua'a, Honolulu [Kona] District, Island of O'ahu
TMK: (1) 3-9-016:035 & 036

Thank you for the opportunity to review the aforementioned draft Environmental Assessment (DEA), which we received on June 9, 2006. The applicant (Mr. Tada) is seeking approval of a shoreline setback variance that would allow the construction of a single family residence and caretaker house on the subject parcel.

In a letter (LOG NO: 2005.1940; DOC NO: 0609NM04) dated September 9, 2005 to Ms. Raadha M.B. Jacobster of Bow Engineering and Development we recommended that several conditions be attached to any approved permit to ensure that historically significant sites are properly identified and treated. Our recommended mitigation measures are stated in the DEA.

Therefore, as long as the mitigation measures listed in the DEA are followed, we believe that the current undertaking will have "no adverse effect" on historically significant resources.

Please contact Mr. Adam Johnson at (808) 692-8015 if you have any questions about this letter.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

AJ:cmm

Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
Honolulu, Hawaii 96826

Telephone (808) 941-8853
Fax: (808) 945-9299

December 15, 2006

Melanie A. Chinen
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaii 96707

Subject: Comments on the Draft Environmental Assessment (EA)/Shoreline Setback Variance
Tada Single-Family Residence Project, Portlock, O'ahu
TMK: (1) 3-9-016:035 & 036

Dear Melanie Chinen,

Thank you for your letter dated June 26, 2006 regarding your review of the Draft EA for the Tada Single-Family Residence project. We acknowledge your statement that your initial comments and recommended conditions included in your letter dated September 9, 2005 are still valid (see Appendix A of the Draft and Final EA). As noted in your June 26, 2006 letter, your recommended mitigation measures were included in the Draft EA (see Section 2.5, *Historical, Archaeological and Cultural Resources* of the Draft and Final EA).

Your letter and this response will be included in the Final EA upon its completion. Should you have any questions, do not hesitate to contact Mr. Darin Aihara at 941-8853.

Sincerely,

William H.Q. Bow
President

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

July 19, 2006

Henry Eng
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Attn: Ann Matsumura

Dear Mr. Eng:

Subject: Draft Environmental Assessment (EA), **Tada Residence Shoreline Setback Variance, Portlock**

We have the following comments to offer:

Beach protection: How does this project comply with state and county policies on beach protection?

New construction:

What is the total square footage of all the new structures? Why is boathouse to be located near the road and not near the shoreline? In the final EA list all the "ancillary improvements" in addition to the new residence and caretakers residence.

Please consider applying sustainable building techniques presented in the "Guidelines for Sustainable Building Design in Hawaii." In the final EA include a description of any of the techniques you will implement. Contact our office for a paper copy of the guidelines or go to our website at *http://www.state.hi.us/health/oeqc/guidance/sustainable.htm.*

Mitigation: What measures do you plan to mitigate the damages from wave runup?

Visual impacts: Will the new residence be a 2-story structure? In the final EA include drawings of the proposed buildings and any proposed landscaping that show the final appearance of the project.

Cultural impacts assessment:

Act 50 was passed by the legislature in April 2000. This mandates an assessment of impacts to current cultural practices by the proposed project. Section 2.5 of the draft EA includes a brief mention of cultural practices but draws no conclusion regarding project impacts to such practices. Please include this in the final EA.

For assistance in the preparation refer to our *Guidelines for Assessing Cultural Impacts,* which you may find at *http://www.state.hi.us/health/oeqc/guidance/cultural.htm.* You will also find the text of Act 50 linked to this section of our homepage.

Permits: Add "building permit" to your list in section 3 and indicate when you will apply for one.

Correspondence: In the final EA enclose clear copies of the DLNR letter signed by Harry Yada and the Sept. 2005 letter from the State Historic Preservation Division of DLNR.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

c: Darin Aihara, Bow Engineering

Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
Honolulu, Hawaii 96826

Telephone (808) 941-8853
Fax: (808) 945-9299

December 15, 2006

Genevieve Salmonson
State of Hawai'i
Office of Environmental Quality Control
235 South Beretania Street
Honolulu, Hawai'i 96809

Subject: Comments on the Draft Environmental Assessment (EA)/Shoreline Setback Variance
Tada Single-Family Residence project, Portlock, O'ahu
TMK: (1) 3-9-016:035 & 036

Dear Genevieve Salmonson,

Thank you for your letter dated July 19, 2006 regarding your review of the Draft EA for the Tada Single-Family Residence project. We offer the following response to your comments:

Beach protection:

- The project applicant is in the process of obtaining a shoreline setback variance from the City and County of Honolulu. This process ensures that development within the shoreline setback areas comply with City and County shoreline regulations.
- A Special Management Area Use Permit will be required for construction of the silt sedimentation basin. Project design will need to comply with regulations for work within special management areas. A consistency evaluation of the proposed project with the objectives and policies of Chapter 205A, HRS, has been included in the Final EA.
- There is an existing concrete seawall that was constructed in the 1940s. In February 2000, the shoreline was defined along the base of the wall. The wall structure serves as a retaining wall supporting the finish grade on its eastern and mauka side. There is a baffle, or lip, at the top of the wall that prevents the waves from running up onto the project site and eroding the soil. A new shoreline certification has been completed for the project and is included as Figure 11 of the Final EA.

New Construction:

- The new construction would include the main house, consisting of 27,207 square feet, the additional dwelling (previously labeled the caretakers residence), consisting of 3,533 square feet, and the garage and boat house, consisting of 996 square feet.

The boathouse would be used by the owner to park his trailered boat. There would be no direct access from the project site to the ocean, and the boat would need to be launched at an offsite boating facility.

Ancillary improvements to the single-family dwelling include the concrete driveway, property line walls, drainage system, slope improvements to shoreline setback area, and landscape improvements.

- Sustainable building techniques used in design of the project have been included in the Final EA in Section 1.4, *Description of the Proposed Action.*

Mitigation:

- The Oahu Civil Defense does not require any tsunami design to be incorporated into residential properties. There is an existing seawall as described in Section 1.3, page 4 of the Draft EA, which diffuses the forces of the waves along the shoreline and minimizes wave runup. Also, the minimum finish floor elevation (FFE) of the main house would be constructed at FFE of 12.5 feet, which is above the base flood elevation (BFE) 11.5 feet as stated in the Department of the Army letter dated March 28, 2005 (see Appendix A). Because of project design and the reasons stated above, no mitigation for damage from wave runup would be required.

Visual Impacts:

- The proposed single-family residence is a 2-story dwelling. Additional figures are included in the Final EA (Figures 9 and 10) which shows the elevation views for the main house, additional dwelling, and garage and boathouse. The proposed project landscaping is included on Figure 6 of the Draft and Final EA.

Cultural Impacts Assessment:

- Because the proposed project would not negatively impact access to the shoreline, there would be no impacts to cultural practices that may occur in the vicinity of the project site.

Permits:

- A "Building Permit" was added to the list of required permits and approvals in Chapter 3 of the Final EA. The project applicant will apply for a building permit prior to construction of the project. Construction of the single-family residence project is scheduled to begin in summer of 2007; following approval of necessary permits.

Correspondence:

- The Final EA includes clean copies of the DLNR letter and the State Historic Preservation Division letter as requested.

Your letter and this response will be included in the Final EA upon its completion. Should you have any questions, do not hesitate to contact Mr. Darin Aihara at 941-8853.

Sincerely,

William H.Q. Bow
President

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. INTERNET: www.honoluludpp.org • INTERNET: www.honolulu.gov

MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

2006/ED-11(AM)

July 19, 2006

Mr. Darin Aihara
Bow Engineering & Development, Inc.
1953 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Aihara:

Re: Chapter 343, Hawaii Revised Statutes (HRS)
Draft Environmental Assessment (EA)
Project Name: Tada Shoreline Setback Variance
File No.: 2006/ED-11
Location: 497 and 487 Portlock Road - Hawaii Kai
Tax Map Keys: 3-9-16: 35 and 36

In accordance with the procedural provisions of Chapter 343, HRS, all comment letters received during the 30-day comment period, which began with the initial publication of a notice of availability of the DEA in The Environmental Notice on June 23, 2006, require a response addressed directly to the commenter. The Final EA must include all comment letters and responses to the letters, as well as appropriately revised text. Herewith, for your information and appropriate action are comments from the Department of Land and Natural Resources' State Historic Preservation and the State Office of Environmental Quality Control regarding the subject Draft EA.

In addition, enclosed herein are the Department of Planning and Permitting's comments on the Draft EA

Department of Planning and Permitting:

1. Section 1.3, Environmental Setting - Project Location, page 2: The Final EA should include a map that shows the proposed project's parcel boundaries (i.e., a TMK Map).

2. Section 1.3, Environmental Setting - Site History and Existing Conditions, page 2: The Draft EA states that there is public access to the shoreline located along the northern boundary of the project site. The site plan (Sheet No. F-2) shows an access easement to the north of the project site in favor of the applicant's lot and neighboring lot (parcel 31). The Final EA should confirm that this pedestrian easement is open to the public since it is owned by various landowners.

3. Section 1.3, Environmental Setting - Existing Seawall, page 4: The Final EA should reflect that the Shoreline Setback Regulation was enacted on June 22,1970.

4. Section 1.4, Description of the Proposed Action, page 4 and Section 2.12, Land Use Controls - Shoreline Setback Ordinance, Chapter 23, Revised Ordinances of Honolulu, page 32: Clarify whether the zoning lots identified as Parcels 35 and 36 are the result of a recent subdivision action. As you may be aware, new subdivisions must accommodate a 60-foot shoreline setback, except for areas which are not within the coastal high hazard district and where the shoreline is characterized by a fixed, rocky shoreline [Section 23-1.7(a)(1), Revised Ordinances of Honolulu].

   Describe the structures proposed within the shoreline setback for which a Shoreline Setback Variance is being sought. We note on the site plan (Sheet F-2) that the concrete retaining wall proposed along the northern property boundary is extending into the shoreline setback area. The concrete brick header proposed within the shoreline setback may qualify for a Minor Shoreline Structure Permit provided it can be shown that the headers are not greater than 20 square feet and when combined with all other structures within the shoreline setback, shall comprise no more than ten percent of the area between the shoreline and shoreline setback line.

5. Section 1.4, Description of the Proposed Action, page 4 and Section 2.12, Land Use Controls - Coastal Zone Management Program (Special Management Area), page 28: As the lots are currently vacant, the proposal (i.e., silt retention basin and drainage swale) cannot be considered accessory to a single-family dwelling use and will require approval of a Special Management Area Use Permit, provided that building permit applications are filed for the single-family dwelling in conjunction with the Shoreline Setback Variance request.

6. Section 2.1, Topography and Soils, page 16: Clarify whether any paving work is proposed within the shoreline setback area.

7. Section 2.2, Water Quality, page 17 and 2.10 Utilities and Public Services, page 27: Clarify the location of the sanitary sewer system relative to the shoreline setback line.

8. Section 2.3, Natural Hazards, page 17: It appears that a portion of Parcel 36 is within the tsunami evacuation zone. This should be confirmed with the Oahu Civil Defense Agency and stated in the Final EA. Impacts and mitigative measures, if necessary, should also be discussed in the Final EA.

   The Draft EA states that portions of the project site are located in Flood Zone X and Flood Zone A according to the Flood Insurance Rate Map (FIRM) dated November 20, 2000 (based on the Army Corps of Engineers' letter dated March 28, 2005). Please be informed that the FIRM, revised on September 30, 2004, shows that Parcel 36 is within both Zones A and D, and that Parcel 35 is entirely within Zone D. Please revise the Final EA accordingly.

9. Section 2.8, Aesthetic and Visual Resources, page 26: Please expand your discussion to include impacts on scenic vistas as noted in the City and County's Coastal View Study.

10. Section 2.12, Land Use Controls - East Honolulu Sustainable Communities Plan, page 31: The Final EA should state that the proposed project site is consistent with the East Honolulu SCP Urban Land Use Map (April 1999). On the Land Use Map, the project site is located within a Residential and Low-Density Apartment area and is within the Urban Community Boundary.

11. Section 2.12, Land Use Controls - City and County of Honolulu Land Use Ordinance, page 31: Is there an access easement over the two (2) adjoining lots (Parcels 35 and 36) recognized by the City to accommodate the new driveway? Please note that the accessory Caretaker's dwelling is not a permitted principal use on an R-10 zoned lot. Any references to "caretaker's home" or "caretaker's dwelling" should be deleted and replaced with "dwelling."

12. Section 2.12, Land Use Controls - Shoreline Setback Ordinance, Chapter 23, Revised Ordinances of Honolulu, pages 32 and 33: Please expand your justification and address the "Criteria for granting a variance," pursuant to Section 23-1.8, Revised Ordinances of Honolulu. Discuss how the three standards of hardship are met by the proposal (i.e., what is the feasibility of locating the silt retention basin and drainage swale outside of the shoreline setback).

13. Section 3, Required Permits and Approvals, page 35: Please note in the Final EA that the project will also require a Trenching Permit for work within the right-of-way.

Should you have any questions, please contact Ann Matsumura of our staff at 523-4077.

Very truly yours,

FOR Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:cs
Encl.

doc464176

Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
Honolulu, Hawaii 96826

Telephone (808) 941-8853
Fax: (808) 945-9299

December 15, 2006

Henry Eng
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

Subject: Comments on the Draft Environmental Assessment (EA)/Shoreline Setback Variance
Tada Single-Family Residence project, Portlock, O'ahu
TMK: (1) 3-9-016:035 & 036

Dear Henry Eng,

Thank you for your letter dated July 19, 2006 regarding your review of the Draft EA for the Tada Single-Family Residence project. We offer the following responses to your comments:

1. Figure 1 has been revised to include the TMK map of the project site.

2. The public access located along the northern boundary of the project site has been reserved as an access easement open to individuals of the public as described in the "Declaration of Protective Provisions" for the project site.

3. The Final EA has been modified to reflect your correction regarding enactment of the Shoreline Setback Regulation.

4. The project parcel has not been recently subdivided. In addition, the shoreline is characterized by an existing concrete seawall. As noted in your comment, because the shoreline is "characterized by a fixed" shoreline [Section 23-1.7(a)(1), Revised Ordinances of Honolulu], and because the parcel has not been recently subdivided, a 60-foot shoreline setback would not be required.

   The structures proposed within the shoreline setback area are described in the second paragraph of Draft EA Section 1.4, *Descriptions of the Proposed Action*, in addition to the second paragraph under Section 2.12, *Land Use Controls - Shoreline Setbacks Ordinance, Chapter 23, Revised Ordinances of Honolulu*, including: landscape improvements and associated irrigation lines, and a silt sedimentation basin.

   The concrete retaining wall totals 14 square feet inside the existing 485 square-foot shoreline setback area. The concrete retaining wall meets *Minor Shoreline Structure Permit* requirements of the wall being less than 20 square feet and less than 10 percent of the shoreline setback area.

5. Following discussions with Department of Planning and Permitting staff, because the purpose of the project is construction of a single-family residence, it has been determined that the proposed project would be exempt from the Special Management Area (SMA)

Use Permit requirements under Section 25-1.3(2)(N) of the Revised Ordinances of Honolulu (ROH). Therefore, an SMA permit would not be required.

6. The Final EA has been revised to indicate that no paving work is proposed within the shoreline setback area.

7. The sanitary sewer system connection is located in the northwest corner of TMK 3-9-16:35, outside of the shoreline setback area (see Figure 2 of the Draft and Final EA).

8. The project site is located within the City and County of Honolulu's Tsunami Evacuation Zone. However, the Oahu Civil Defense does not require any mitigation measures for residential properties, as tsunami control design is only required for resorts and commercial projects.

   The Final EA reflects the change in Flood Zone designation based on the updated FIRM map.

9. Section 2.8, *Aesthetic and Visual Resources* of the Final EA has been modified to include a discussion of the City and County's Coastal View Study (1987).

10. The Final EA has been revised to reflect the project's consistency with land use designations contained in the *East Honolulu Sustainable Communities Plan.*

11. There is no access easement over the two adjoining project parcels. The two properties are owned by the same person and the project will be constructed using a Joint Development Agreement.

    The Final EA has been revised to replace all references to the "caretaker's home" or "caretaker's dwelling" with "dwelling".

12. The Final EA has been revised to include an expanded discussion of how the three standards of hardship are met by the proposed project.

13. The Final EA has been revised to include a Trenching Permit for work within the right-of-way.

Your letter and this response will be included in the Final EA upon its completion. Should you have any questions, do not hesitate to contact Mr. Darin Aihara at 941-8853.

Sincerely,

William H.Q. Bow
President

Matsumura, Ann S.

From: Ramsey, Connie L POH [Connie.L.Ramsey@poh01.usace.army.mil]
Sent: Wednesday, July 26, 2006 9:16 AM
To: Matsumura, Ann S.
Subject: Shoreline Setback Variance for Tada Residence

Ms. Matsumura:
I apologize that the Corps was not able to get a response to you prior to the July 21st comment deadline; however, I would like to note that the Corps letter dated August 19, 2005 included in the draft EA remains applicable to the project.

If you have any further questions, please don't hesitate to contact me.
Thank you,

Connie Ramsey, Ecologist
U.S. Army Corps of Engineers
Honolulu District
CEPOH-EC-R
Bldg. 230
Ft. Shafter, HI 96858
808.438.2039 (phone)
808.438.4060 (fax)

Post-it® Fax Note 7671	Date 7/26/06	# of pages ▶
To Darin A.	From Ann	
Co./Dept.	Co. OPP	
Phone #	Phone # 523.4077	
Fax # 945-9299	Fax #	

7/26/2006

Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
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Telephone (808) 941-8853
Fax: (808) 945-9299

December 15, 2006

Connie Ramsey
U.S. Army Corps of Engineers
Honolulu District
Building 230
Fort Shafter, HI 96858

Subject: Comments on the Draft Environmental Assessment (EA)/Shoreline Setback Variance
Tada Single-Family Residence project, Portlock, O'ahu
TMK: (1) 3-9-016:035 & 036

Dear Connie Ramsey,

Thank you for your email correspondence dated July 26, 2006 regarding your review of the Draft EA for the Tada Single-Family Residence project. We acknowledge your statement that your initial comments included in your letter dated August 19, 2005 are still valid (see Appendix A of the Draft and Final EA).

Your letter and this response will be included in the Final EA upon its completion. Should you have any questions, do not hesitate to contact Mr. Darin Aihara at 941-8853.

Sincerely,

William H.Q. Bow
President

LINDA LINGLE
GOVERNOR OF HAWAII

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

IYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
EMD / CWB

11062CEC.06

November 24, 2006

Mr. Darin N. Aihara
Bow Engineering & Development, Inc.
1953 South Beretania Street, PH-A
Honolulu, Hawaii 96826

Dear Mr. Aihara:

Subject: Comments on Draft Environmental Assessment (DEA)
Proposed Tada Single-Family Resident (SFR)
487 and 497 Portlock Road, Honolulu, Island of Oahu
TMK: 3-9-016:036 and 035/Army File No. POH-2005-406
File No. HI R10C359

Thank you for the opportunity to review and comment on the DEA provided for the proposed Tada SFR.

The following are our comments based on the information contained in the DEA:

1. Subsection 2.2 - Water Quality

   According to Drainage Plan Nos. F-7 (Existing) and F-8 (Proposed), storm water runoff from drainage area #1 will enter an unnamed gulch. This unnamed gulch is classified by the Department of Health (Department) as "Class 2, Inland Waters" for "Stream." The requirements for this class of the State waters shall also be discussed.

   As requested in our previous letter of July 28, 2005 (No. 07077CEC.05), please provide the typical section of the silt retention basin (also the percolation pond?) and explain how and where the storm water would enter Maunalua Bay from the basin. Attached are photographs of the proposed basin site on file with the Clean Water Branch (CWB).

2. Please contact the Commission on Water Resources Management (CWRM) of the Department of Land and Natural Resources (DLNR) before initiating grading work that will affect the bank and bed of the drainage gulch. Grading beyond the centerline of the gulch channel was also noticed in drawing No. F-3 titled "Grading/Drainage Plan and Details."

3. Subsection 4.2 - Drainage Alternative

   Please clarify what you mean by "[T]his alternative would locate the proposed silt retention basin and percolation pond at an alternate location of the project site. While the amount of grading in the shoreline set back area would be reduced under this alternative, water quality in the direct vicinity of the project would be impaired during storm events due to additional runoff entering Maunalua Bay."

   Please describe details of this proposed alternative; identify where this "alternate site" is located? Describe why and how the water quality would be impaired by this alternative? Clarify what would cause the runoff quantity increased under this alternative.

4. Any discharges related to project construction or operation activities, with or without a Section 401 Water Quality Certification or National Pollutant Discharge Elimination System permit coverage, shall comply with the applicable State Water Quality Standards as specified in Hawaii Administrative Rules, Chapter 11-54.

   You and Mr. Tada must adhere to the conditions and the Site-Specific Best Management Practices (BMPs) measures accepted by the Department under the Notice of General Permit Coverage (NGPC File No. HI R10C359 issued on December 2, 2005) to ensure that the BMPs measures are designed, implemented, operated, and maintained during the entire construction period in a manner to properly isolate and confine the construction activity(ies) and to contain and prevent any potential pollutant(s) discharges from adversely impacting the State waters, including the unnamed gulch and Maunalua Bay.

Please be informed that Hawaii Revised Statutes, Subsection 342D-50(a), requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this chapter, or a permit or variance issued by the director."

Please include File No. **HI R10C359** and the following certification in all future correspondence with the Department for the subject project:

> **"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of**

my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Should you have any questions, please contact Mr. Edward Chen of the Engineering Section, CWB, at 586-4309.

Sincerely,

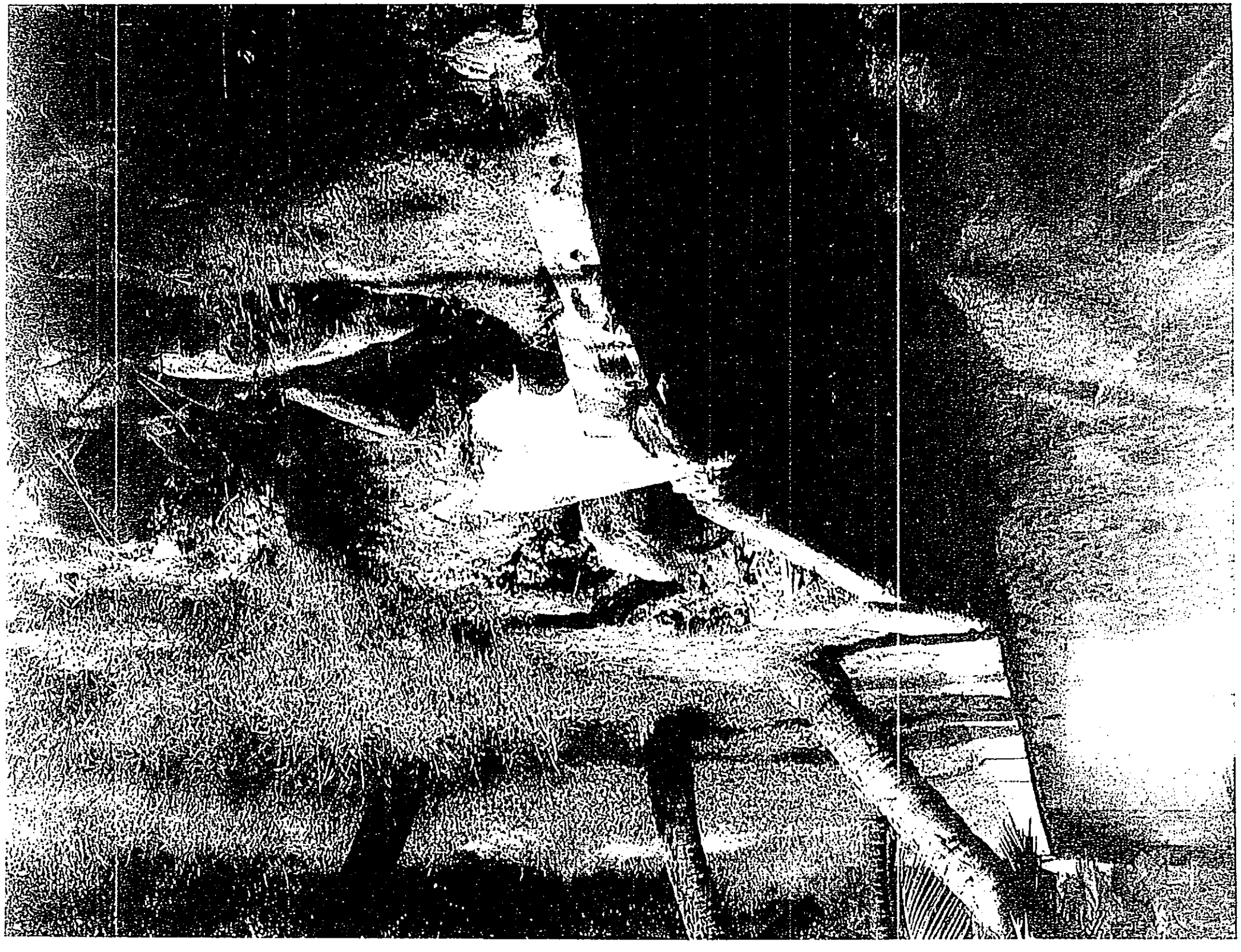
Joanna Kato

for DENIS R. LAU, P.E., CHIEF
Clean Water Branch

EC:np

Enclosures: Two (2) photos

c: Regulatory Branch, HED, COE (w/o encls.)
CZM Program, Office of Planning, DBEDT (w/o encls.)
CWRM, DLNR (w/encls.)
Department of Planning and Permitting, City and County of Honolulu (w/encls.)



Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
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Telephone (808) 941-8853
Fax: (808) 945-9299

December 15, 2006

Edward Chen
Clean Water Branch
Environmental Management Division
State Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Comments on the Draft Environmental Assessment (EA)/Shoreline Setback Variance
Tada Single-Family Residence project, Portlock, O'ahu
TMK: (1) 3-9-016:035 & 036
DOH File No.: HI R10C359

Dear Edward Chen,

Thank you for your letter dated November 24, 2006 regarding your review of the Draft EA for the Tada Single-Family Residence project. We offer the following responses to your comments:

1. The requirements for "Class 2, Inland Waters" for "Stream" as pertaining to the unnamed gulch have been included in the Final EA in Section 2.2, *Water Quality* as suggested in your comment letter.

   The proposed silt sedimentation basin section cuts are included in the drainage report, as sent to your Department with the Draft EA and as attached to the Final EA as Appendix C. The purpose of the silt sedimentation basin is simply to slow the flow of storm water to allow the silt and suspended fines to settle out before the storm water enters Maunalua Bay by sheet-flow over the seawall in the southwestern corner of the property. Technically, the basin is not a percolation pond (this terminology has been modified in the Final EA), although sandy soils allow for quick infiltration of surface water.

2. The grading plan has been revised to ensure that no grading activities cross the centerline of the channel (see Final EA Figure 3). The Commission on Water Resources Management (CWRM) has been contacted, and they will not be requiring any permitting from their office for the proposed project (see attached letter).

3. The description of the drainage alternative has been clarified in the Final EA. An alternative that would locate the proposed silt sedimentation basin outside of the shoreline setback area was considered but ultimately rejected due to its inability to adequately handle storm water from the project site. The proposed project location of the silt sedimentation basin represents the ideal location to catch the most runoff on the project site before entering the bay. If the silt sedimentation basin were located further

mauka (east) on the site, storm water flowing over the makai portion of the property would enter the bay without first allowing silts to settle out. Therefore, while the amount of grading in the shoreline setback area would be reduced under this alternative, water quality in the direct vicinity of the project could be impaired during storm events due to additional runoff entering Maunalua Bay without any form of best management practices being applied to treat the storm water.

4. As described in Section 2.2, *Water Quality* of the Draft and Final EA, the project shall implement best management practices designed to reduce potential impacts to water quality during construction of the project. These Best Management Practices are stated on the construction plans for use by the contractor, and the general notes also state that the contractor shall comply with water quality and community noise levels stated in Chapter 11, Section 54 of the Hawaii Administrative Rules.

Your letter and this response will be included in the Final EA upon its completion. Should you have any questions, do not hesitate to contact Mr. Darin Aihara at 941-8853.

Sincerely,

William H. Q. Bow
President

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
Honolulu, Hawaii 96826

Telephone (808) 941-8853
Fax: (808) 945-9299

December 4, 2006

File: 05-04

Mr. Ed Sakoda
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813

RE: Tada Residence – TMK: 3-9-16: 35 & 36
Commission on Water Resource Management (CWRM) Review

Dear Mr. Sakoda:

This letter is to inquire if the above mentioned project will require any permitting for grading within the limits of the unnamed gulch that runs along the southern property line of the project site (see attached grading plan C-3). The gulch is classified, by the State Dept. of Health (DOH), as a "Class 2, Inland Waters" under the "stream" category (see attached letter from the DOH).

The DOH requested that we contact you to verify if CWRM review and approval is required. Attached for your reference is sheet F-3 (half-size sheet), Grading Plan, that will be included in the final environmental assessment for the project. The grading plans have been revised to ensure no grading work crosses the centerline of the channel.

We would like to incorporate your response into the projects Final Environmental Assessment for the project, which is scheduled for re-submittal on Friday, December 15, 2006.

Please call me if you have any questions.

Thank you,

Darin Aihara
Design Engineer

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

December 11, 2006

Mr. Darin Aihara
Design Engineer
Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
Honolulu, HI 96826

Dear Mr. Aihara:

Request for Determination
Tada Residence, 487 and 497 Portlock Road, Honolulu, Oahu
TMK: (1) 3-9-016:035 and 036

Reference is made to your letter, dated December 4, 2006, regarding a request for determination concerning the Tada Residence.

The Commission on Water Resource Management (Commission), Stream Protection and Management Branch, has the responsibility to protect stream channels from alteration whenever practicable to provide for fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses in the State of Hawaii under the authorization of the State Water Code (Code), Chapter 174C, Hawaii Revised Statutes, and Chapter 13-169, Hawaii Administrative Rules (Protection of Instream Uses of Water).

Pursuant to the Code, §174C-71(3) (A), the Commission "shall require persons to obtain a permit from the Commission prior to undertaking a stream channel alteration." The term "stream channel" is defined in the Code, §174C-3, as a "watercourse with a definite bed and banks which periodically or continuously contains flowing water."

Specifically for this project, the unnamed gulch that runs along the southern property line of the project site does not support instream uses and is not considered to be a stream that would require a stream channel alteration permit from the Commission.

Please be advised that the project may require other agency approvals regarding wetlands, water quality, grading, stockpiling, and floodways. This letter should not be used for other regulatory jurisdictions or used to imply compliance with other federal, state, or county rules.

If you have any questions, please contact Ed Sakoda at 587-0234.

Sincerely,

DEAN A. NAKANO
Acting Deputy Director

APPENDIX C

DRAINAGE REPORT

Bow Engineering & Development, Inc.
1953 S. Beretania Street, PH-A
Honolulu, Hawaii 96826

Telephone (808) 941-8853
Fax: (808) 945-9299

November 3, 2006

2-year 24-hour Storm Drainage Analysis for
Tada Residence
487 Portlock Road , Honolulu, Oahu, Hawaii
TMK: 3-9-16: 35 & 36
Area = 64,223 sq. ft. (1.47 acres)

Project Location & Description:

The property is located at 487 Portlock Road, Honolulu, Hawaii. The existing site is terraced with slopes ranging from 1% to 30% and is covered with grass and trees. The south side of the lot contains half of a large drainage gulch which directs runoff from approximately 34 acres into Maunalua Bay.

The proposed work will include a main residence, a caretaker's house, driveway, and drainage improvements. The purpose of this report is to determine if the proposed improvements will create adverse effects to the surrounding environment during a 2yr. 24hr storm event. The Rational method will be used to determine the flows. The storm runoff rate, Q = cfs, is based on a 2 year 24 hour recurrence interval. The rainfall intensity (i) was found in the Storm Water Runoff System Manual 2001 from the Department of Public Works, County of Kauai (Plate 5).

OFFSITE RUNOFF:

Q = CIA, where

C = runoff coefficient = 0.60 (residential area, Table 2)

i = rainfall intensity = 4.0 in/hr (2-yr/24hr., Plate 5)

$K = \frac{L}{\sqrt{S}}$ (L = 2500 ft. @ S = 24.4%) = 5061

T_c = = 10.0 min. (Plate 5)

Correction Factor = 2.30 (Plate 4)

I = i (CF) = (4.0 in./hr.)(2.30) = = 9.2 in./hr.

A = 33.86 acres

Q = (0.60) (9.2 in/hr) (33.86 ac) = **186.91 cfs**

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ONSITE RUNOFF:

Existing Runoff:

Drainage Area #1:

Q = CIA, where

C = runoff coefficient = 0.30 (average grass) = 22,611 sq. ft.
0.90 (paved, impervious) = 2,790 sq. ft.

$$\text{Where, C (weighted)} = \frac{22.611\,(0.30) + 2.790\,(0.90)}{25{,}401} = 0.37$$

i = rainfall intensity = 4.0 in/hr (2-yr/24hr., Plate 5)

T_c = (220 ft. @ 8.4% Slope, Avg. Grass) = 13.0 min.
T_c = (50 ft. @ 35% Slope, Avg. Grass) = 5.0 min.
18.0 min.

Correction Factor = 1.80 (Plate 4)

I = i (CF) = (4.0 in./hr.)(1.80) = = 7.2 in./hr.

A = 0.58 acres

$Q_{1(Ex)}$ = (0.37) (7.2 in/hr) (0.58 ac) = **1.55 cfs**

Drainage Area #2:

Q = CIA, where

C = runoff coefficient = 0.30 (average grass) = 28,456 sq. ft.
0.90 (paved, impervious) = 10,453 sq. ft.

$$\text{Where, C (weighted)} = \frac{28.456\,(0.30) + 10.453\,(0.90)}{38.909} = 0.46$$

i = rainfall intensity = 4.0 in/hr (2-yr/24hr.. Plate 5)

T_c = (135 ft. @ 2.5% Slope, paved) = 3.5 min.
T_c = (165 ft. @ 10.3% Slope, Avg. Grass) = 11.3 min.
18.5 min.

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Correction Factor = 1.85 (Plate 4)

I = i (CF) = (4.0 in./hr.)(1.85) = = 7.4 in./hr.

A = 0.89 acres

$Q_{2(Ex)}$ = (0.46) (7.4 in/hr) (0.89 ac) = **3.03 cfs**

Q_{Total} = 1.55 + 3.03 = 4.58 cfs

Proposed Runoff:

Drainage Area #1:

Q = CIA, where

C = runoff coefficient = 0.30 (average grass) = 13,987 sq. ft.
0.90 (paved, impervious) = 14,760 sq. ft.
0.00 (water feature) = 138 sq. ft.

$$\text{Where, C (weighted)} = \frac{13{,}987\ (0.30) + 14{,}760\ (0.90) + 138(0.0)}{28{,}885} = 0.61$$

i = rainfall intensity = 4.0 in/hr (2-yr/24hr., Plate 5)

T_c = (175 ft. @ 10.0% Slope, Avg. Grass) = 11.4 min.
T_c = (65 ft. @ 5.5% Slope, Avg. Grass) = 8.9 min.
20.3 min.

Correction Factor = 1.75 (Plate 4)

I = i (CF) = (4.0 in./hr.)(1.75) = = 7.0 in./hr.

A = 0.66 acres

$Q_{1(Prop)}$ = (0.61) (7.0 in/hr) (0.66 ac) = **2.82 cfs**

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Drainage Area #2:

Q = CIA, where

C = runoff coefficient = 0.30 (average grass) = 15,213 sq. ft.
0.90 (paved, impervious) = 16,138 sq. ft.
0.00 (water feature) = 3,987 sq. ft.

$$\text{Where, C (weighted)} = \frac{15{,}213\ (0.30) + 16{,}138\ (0.90) + 3{,}987(0.0)}{35{,}338} = 0.54$$

i = rainfall intensity = 4.0 in/hr (2-yr/24hr., Plate 5)

T_c = (145 ft. @ 2.3% Slope, paved) = 4.0 min.
T_c = (150 ft. @ 9.0% Slope, Avg. Grass) = 11.0 min.
T_c = (170 ft. @ 0.9% Slope, Avg. Grass) = 18.0 min.
33.0 min.

Correction Factor = 1.40 (Plate 4)

I = i (CF) = (4.0 in./hr.)(1.40) = 5.6 in./hr.

A = 0.81 acres

$Q_{2(Prop)}$ = (0.54) (5.6 in/hr) (0.81 ac) = **2.45 cfs**

Q_{Total} = 2.82 + 2.45 = 5.27 cfs

Q_{Net} = 5.27 cfs – 4.58 cfs = 0.69 cfs

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Drainage Improvements:

The proposed drainage improvements will consist of two (2) drain lines, one in Area #1 and one in Area #2, and a sediment basin located at the southwest corner of the lot.

The purpose of the proposed drain lines are not for storm water retention. The proposed lines are designed to convey storm water runoff across and from the driveway. The drywells at the end of the lines will serve as velocity breakers for the storm water that enters the drain lines. This will allow any silts and suspended fines to settle within the drywell before the storm water enters Maunalua Bay.

The purpose of the proposed sediment basin is to reduce the amount of storm water entering Maunalua Bay and to allow any silts and suspended fines to settle before discharging the site. The proposed sediment basin has a capacity to hold 1,700 cubic feet of runoff. The total runoff volume of Area #2 (see proposed drainage map) was based on the following calculations. The calculations are based on a one hour storm.

$Q_{2(Exist)} = 3.03$ cfs

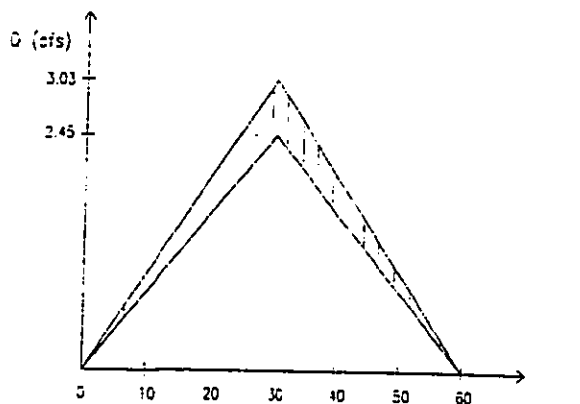
$Q_{2(Prop)} = 2.45$ cfs

$$V_{Exist} = \frac{(3.03 \text{ cfs})(3600 \text{ s})}{2} = 5{,}454 \text{ ft}^3$$

$$V_{Prop.} = \frac{(2.45 \text{ cfs})(3600 \text{ s})}{2} = 4{,}410 \text{ ft}^3$$

$V_{Net} = 4{,}410 \text{ ft}^3 - 5{,}454 \text{ ft}^3 = \mathbf{-1044 \text{ ft}^3}$

$V_{Sediment\ basin} = \mathbf{1{,}700 \text{ ft}^3 > -1044 \text{ ft}^3}$



Due to the increased time of concentration created by the proposed construction, the total runoff of Area #2 was decreased by 0.58 cfs. The proposed sediment basin will be able to retain 35% of the total runoff created by this area. Also, all of the runoff will be redirected through a swale so that no runoff will enter Maunalua Bay directly over the wall.

The 1.27 cfs increase in runoff from Area #1 is negligible because it enters the large gulch on the south side of the property which currently accepts 186.91 cfs of runoff from above lots. The runoff from the proposed site will only increase the flow of the channel 0.7%. Furthermore, the height of headwater in the channel during a 2-year, 24-hour storm will only increase from 3.22 ft. to 3.23 ft (see channel analysis).

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DRAINAGE SUMMARY						
AREA #	A_{PROP} (ac)	A_{EX} (ac)	Q_{PROP} (cfs)	Q_{EX} (cfs)	Sediment Basin (cfs)	Q_{NET} (cfs)
1	0.66	0.58	2.82	1.55	0	1.27
2	0.81	0.89	2.45	3.03	0.94	-1.52
TOTAL	**1.47**	**1.47**	**5.27**	**4.58**	**0.94**	**-0.25**

* $Q_{NET} = Q_{PROP} - Q_{EX}$ - Retention Basin

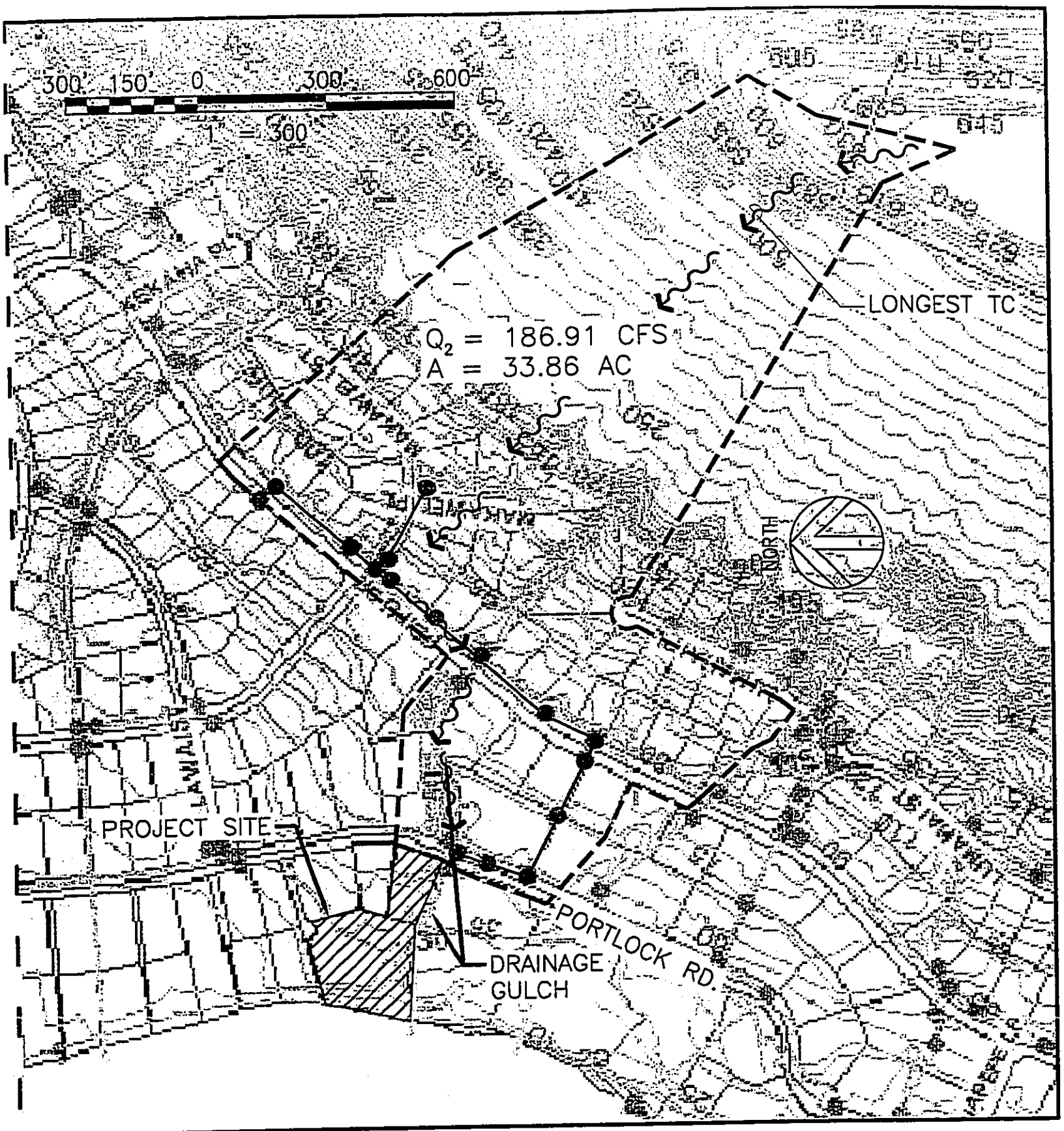
Conclusion:

In conclusion, the proposed construction of the property will not adversely affect the surrounding environment. The runoff that used to flow directly into Maunala Bay will be diverted into a sediment basin by a grass swale adjacent to the sea wall. The addition of the sediment basin will reduce the overall runoff by 0.25 cfs. The proposed drain lines and the sediment basin will also allow for silt and suspended fines to settle out of the storm water before the storm water enters Maunalua Bay.

WILLIAM H. Q. BOW
LICENSED PROFESSIONAL ENGINEER
NO. 4804-C
HAWAII USA

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

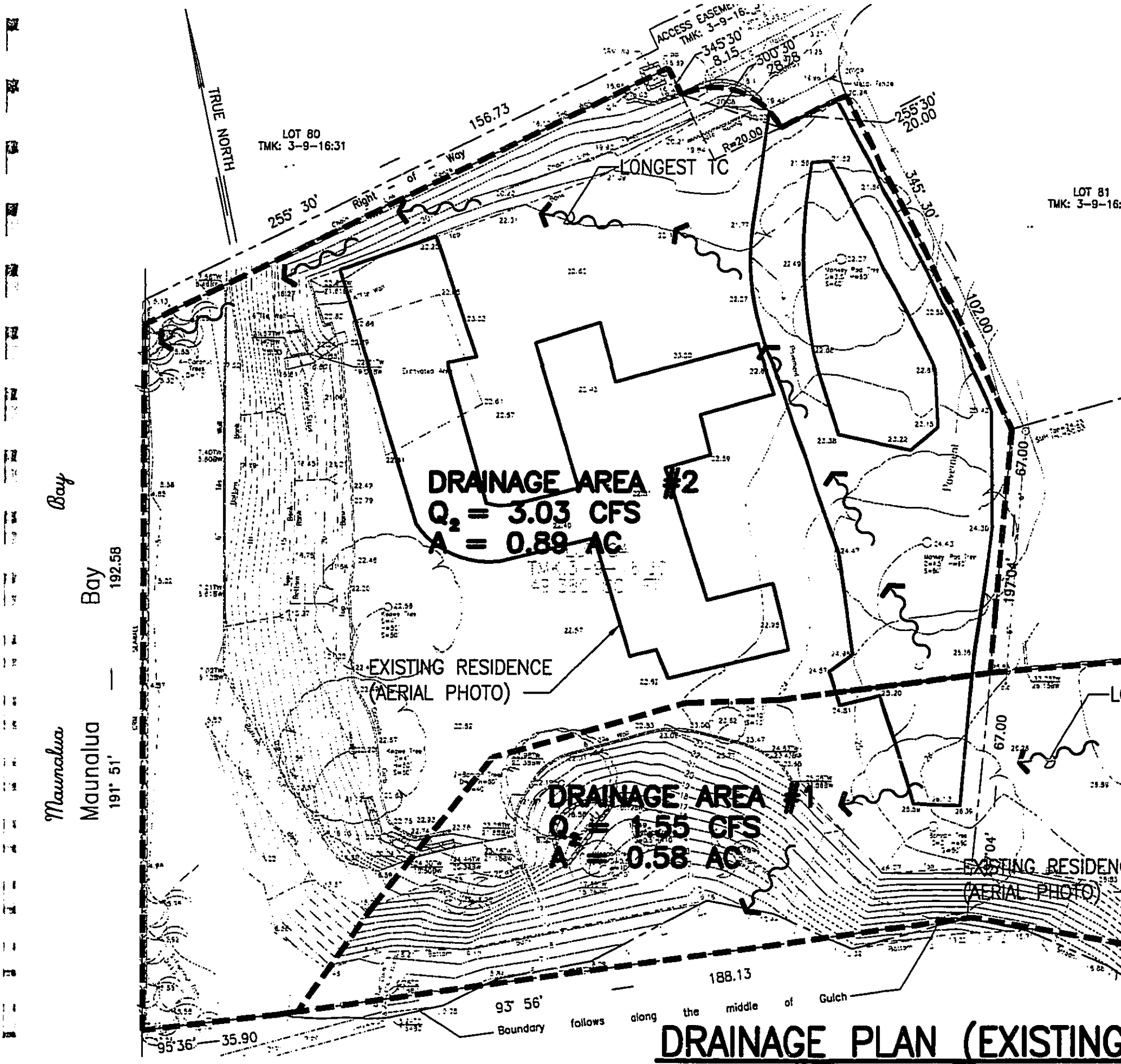
Expiration Date: 04/30/08



TADA RESIDENCE
OFFSITE DRAINAGE ANALYSIS
(2 YEAR, 24 HOUR STORM)

LEGEND

- DRAINAGE BASIN
- DRAINLINE
- DRAINAGE PATH
- CATCH BASIN



DRAINAGE PLAN (EXISTING

SCALE: 1" = 30'

TADA RESIDENCE
487 PORTLOCK ROAD
(2 YEAR, 24 HOUR STORM)

LEGEND

FF=25.00' FINISH FLOOR ELEVATION

DRAINAGE PATH

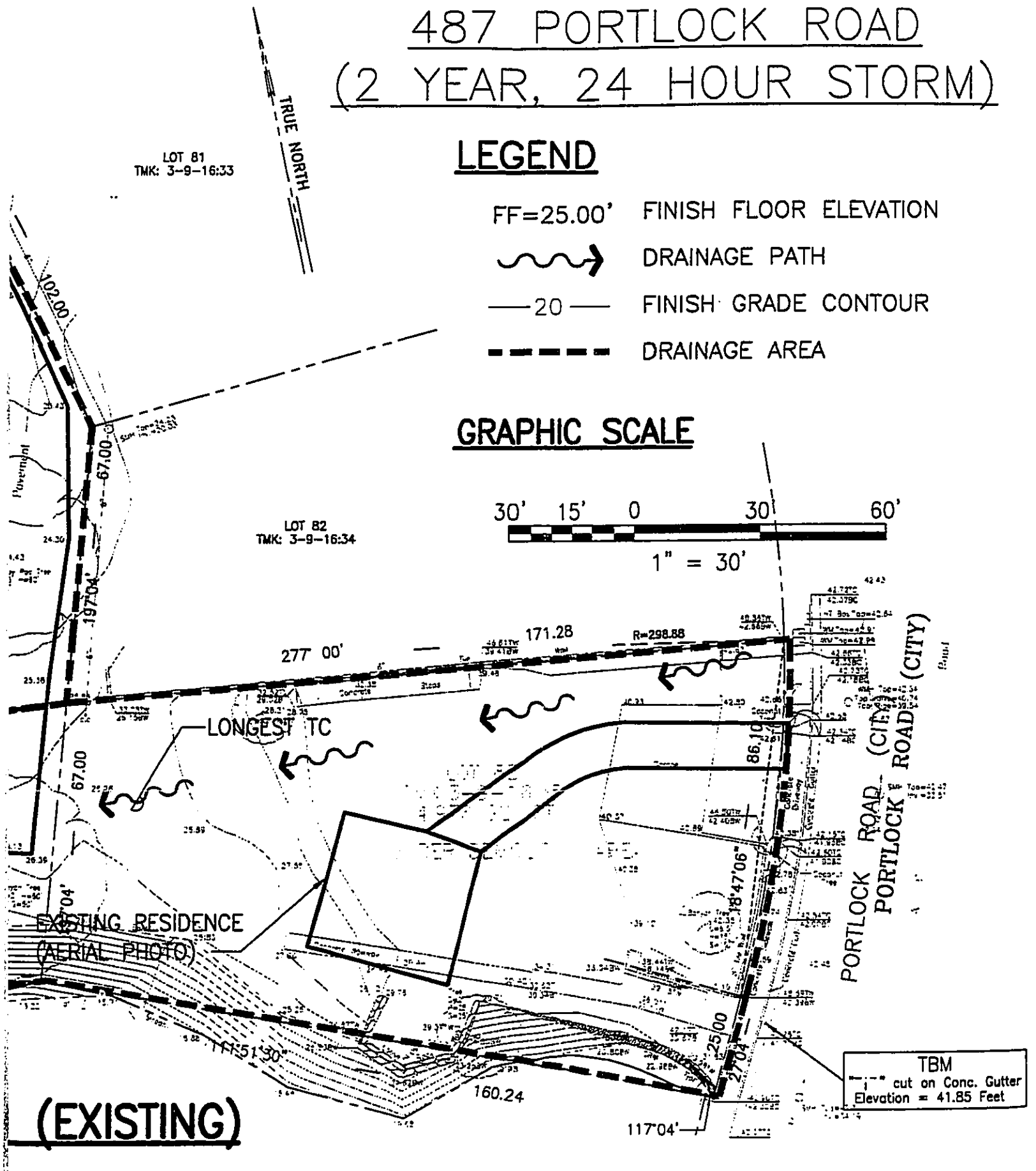
—20— FINISH GRADE CONTOUR

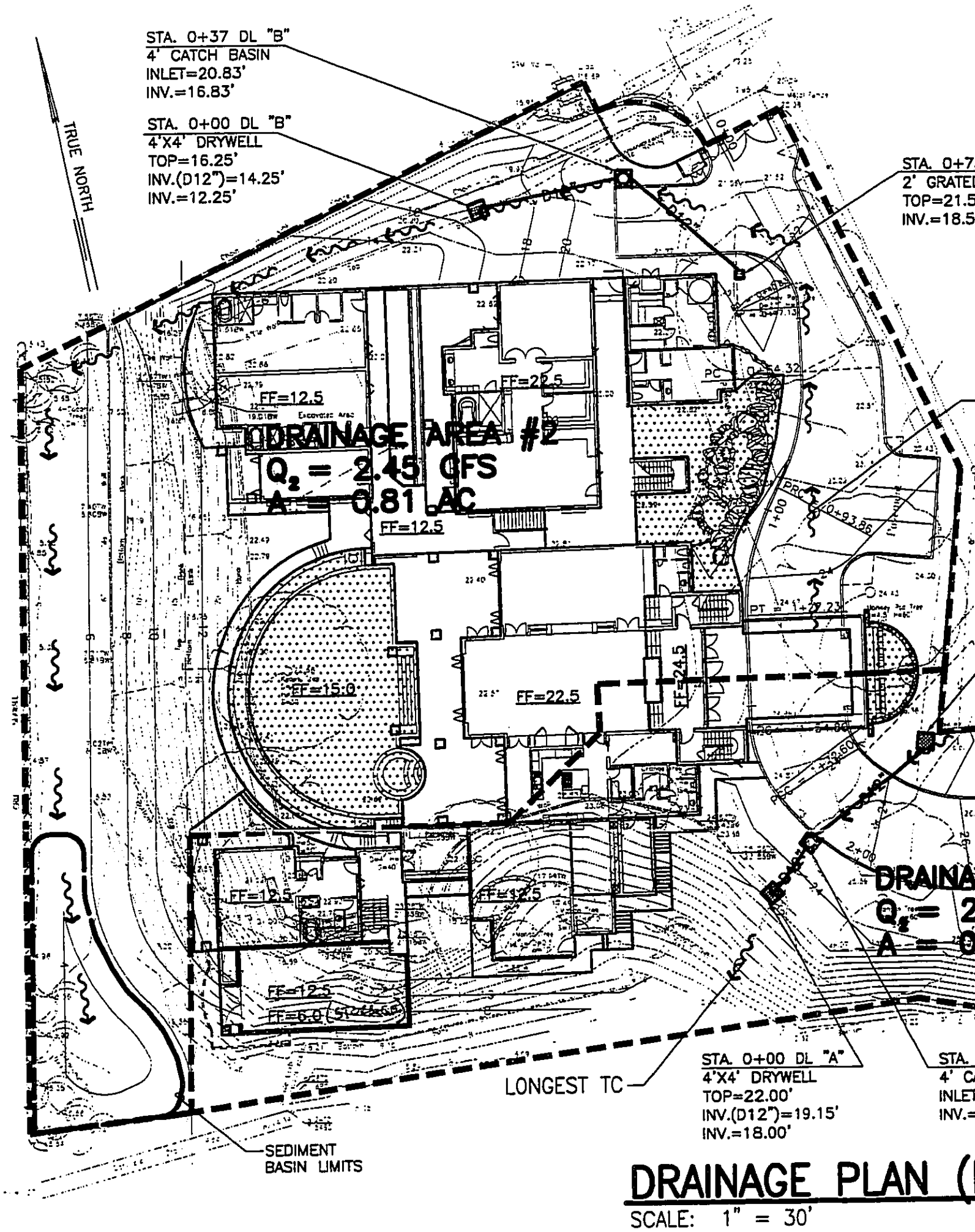
DRAINAGE AREA

GRAPHIC SCALE

30' 15' 0 30' 60'

1" = 30'





DRAINAGE PLAN

SCALE: 1" = 30'

TADA RESIDENCE
487 PORTLOCK ROAD
(2 YEAR, 24 HOUR STORM)

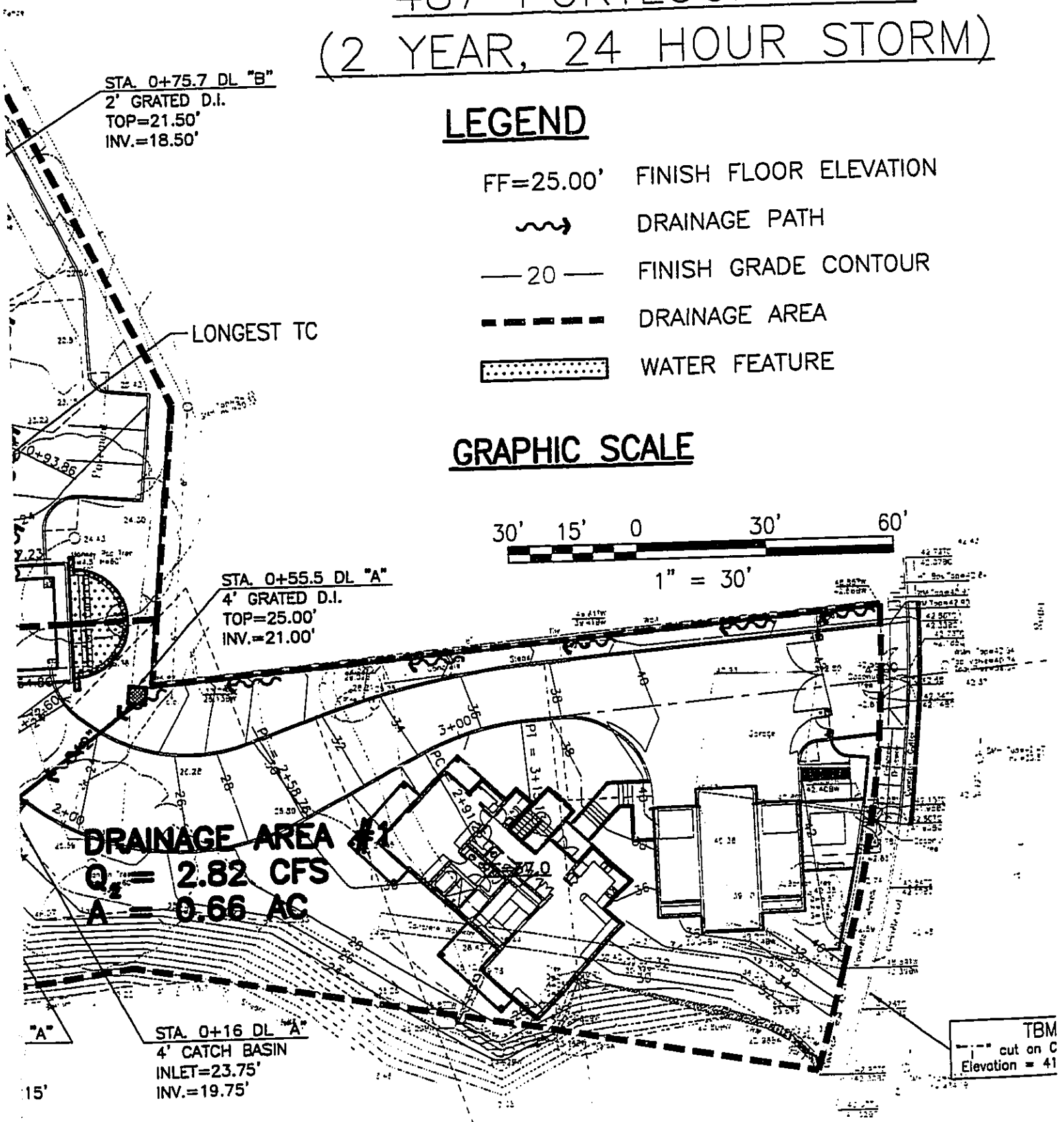
LEGEND

FF=25.00'	FINISH FLOOR ELEVATION
~~→	DRAINAGE PATH
—20—	FINISH GRADE CONTOUR
- - - -	DRAINAGE AREA
▭	WATER FEATURE

GRAPHIC SCALE

30' 15' 0 30' 60'

1" = 30'



PLAN (PROPOSED)

Worksheet for Existing Channel Conditions

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05300	ft/ft
Discharge	188.50	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	22.00
0+08	17.00
0+09	17.00
0+18	22.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 22.00)	(0+18, 22.00)	0.050

Results

Normal Depth		3.22	ft
Elevation Range	17.00 to 22.00 ft		
Flow Area		20.84	ft²
Wetted Perimeter		13.70	ft
Top Width		11.95	ft
Normal Depth		3.22	ft
Critical Depth		3.49	ft
Critical Slope		0.03547	ft/ft
Velocity		9.05	ft/s
Velocity Head		1.27	ft
Specific Energy		4.49	ft
Froude Number		1.21	
Flow Type	Supercritical		

Worksheet for Existing Channel Conditions

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.22	ft
Critical Depth	3.49	ft
Channel Slope	0.05300	ft/ft
Critical Slope	0.03547	ft/ft

Cross Section for Existing Channel Conditions

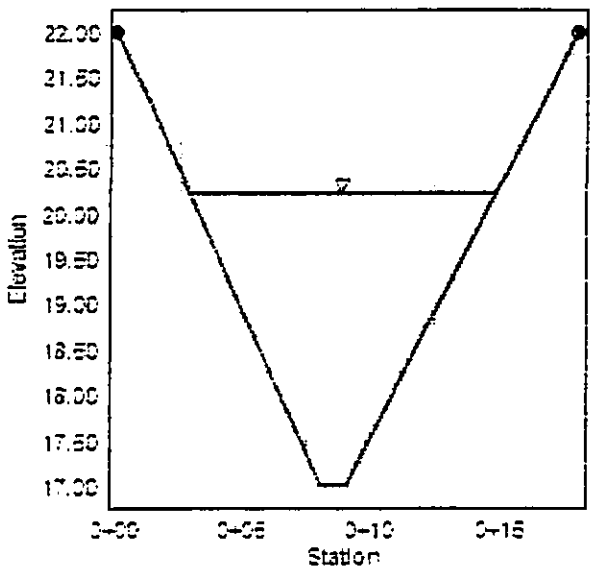
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05300	ft/ft
Normal Depth	3.22	ft
Discharge	188.50	ft³/s

Cross Section Image



Worksheet for Proposed Channel Conditions

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Channel Slope	0.05300	ft/ft
Discharge	189.73	ft³/s

Section Definitions

Station (ft)	Elevation (ft)
0+00	22.00
0+08	17.00
0+09	17.00
0+18	22.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 22.00)	(0+18, 22.00)	0.050

Results

Normal Depth		3.23	ft
Elevation Range	17.00 to 22.00 ft		
Flow Area		20.94	ft²
Wetted Perimeter		13.74	ft
Top Width		11.97	ft
Normal Depth		3.23	ft
Critical Depth		3.50	ft
Critical Slope		0.03544	ft/ft
Velocity		9.06	ft/s
Velocity Head		1.28	ft
Specific Energy		4.50	ft
Froude Number		1.21	
Flow Type	Supercritical		

Worksheet for Proposed Channel Conditions

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.23	ft
Critical Depth	3.50	ft
Channel Slope	0.05300	ft/ft
Critical Slope	0.03544	ft/ft

Cross Section for Proposed Channel Conditions

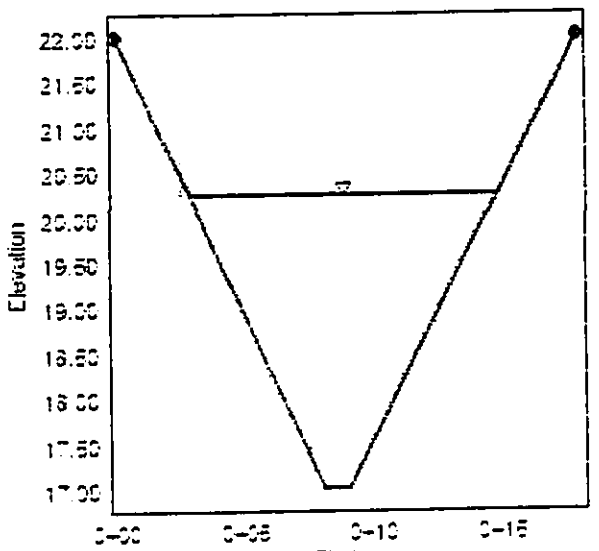
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

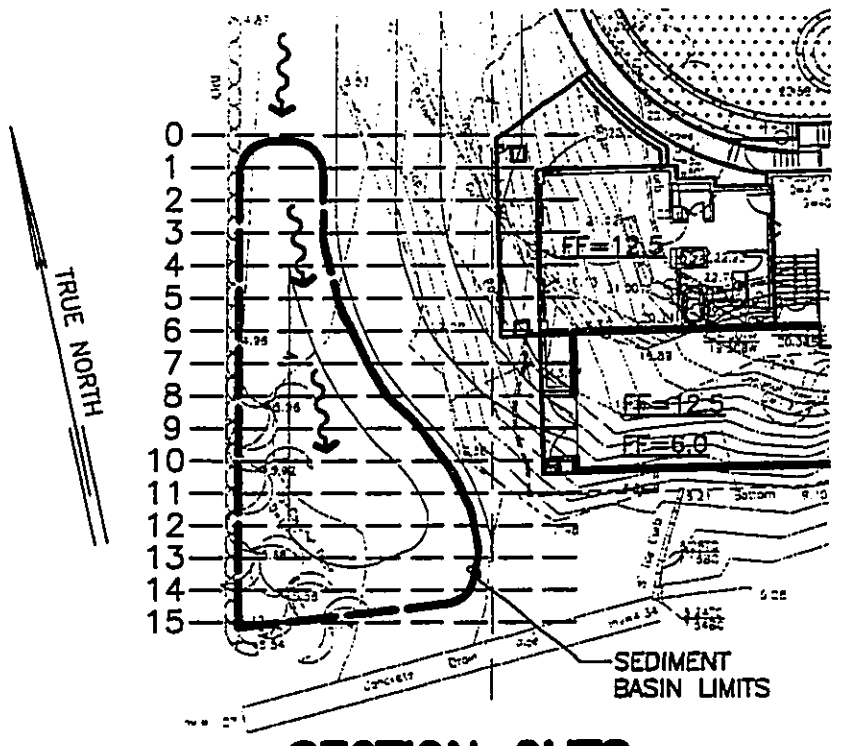
Channel Slope	0.05300	ft/ft
Normal Depth	3.23	ft
Discharge	189.73	ft³/s

Cross Section Image

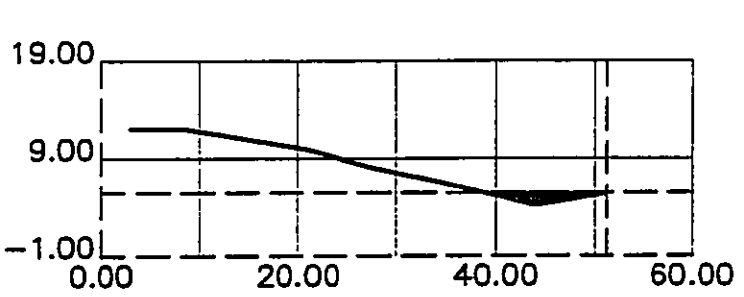


Tada Residence Sedimentation Basin Volume Calculations

SECT #	STATION	AREA (SF)	VOLUME (CF)	VOLUME (CY)
0	0	8.98	0	0.0
1	5	9.35	45.825	1.7
2	10	9.78	47.825	1.8
3	15	11.24	52.55	1.9
4	20	13.79	62.575	2.3
5	25	13.79	68.95	2.6
6	30	16.42	75.525	2.8
7	35	19.97	90.975	3.4
8	40	25.12	112.725	4.2
9	45	30.5	139.05	5.2
10	50	37.08	168.95	6.3
11	55	41.81	197.225	7.3
12	60	42.14	209.875	7.8
13	65	42.14	210.7	7.8
14	70	20.36	156.25	5.8
15	75	4.45	62.025	2.3
			1701.025	63.0



SECTION CUTS
SCALE: 1" = 30'



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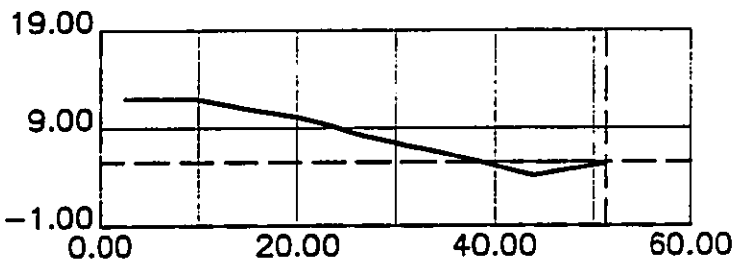

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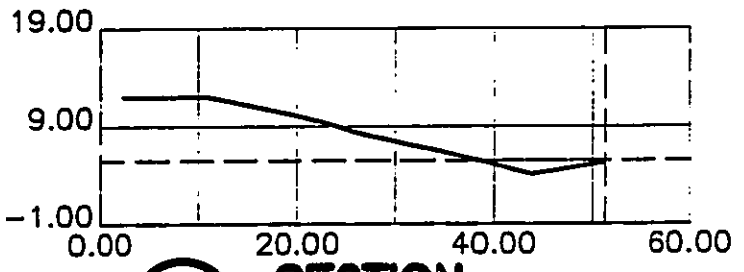

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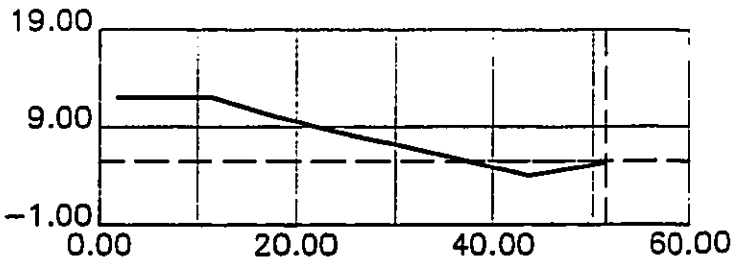

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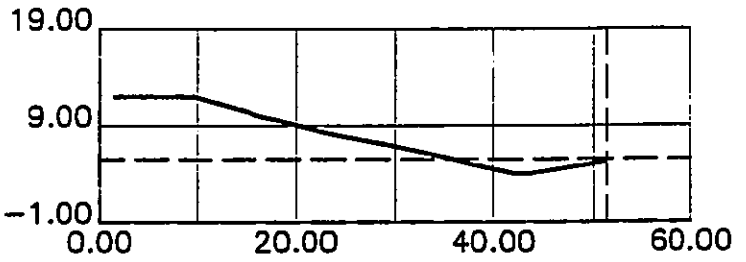

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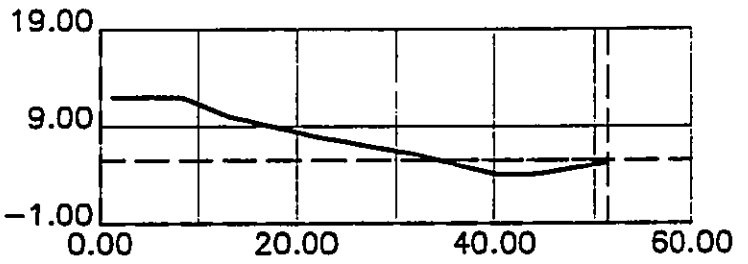

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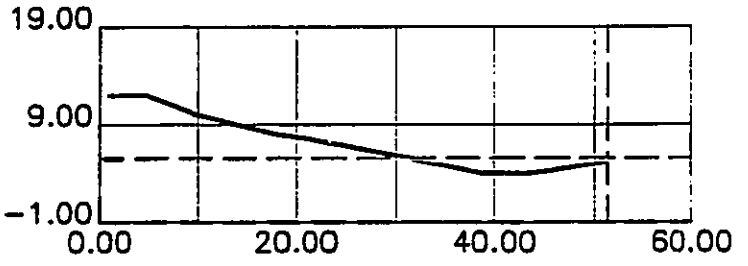

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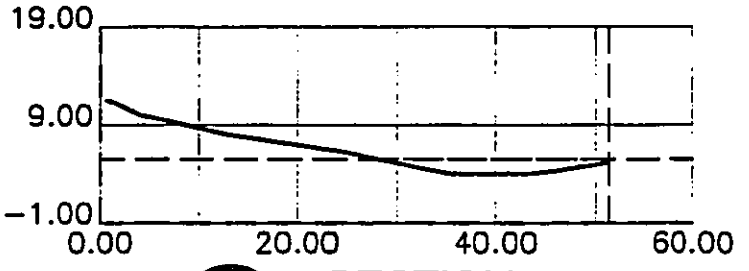

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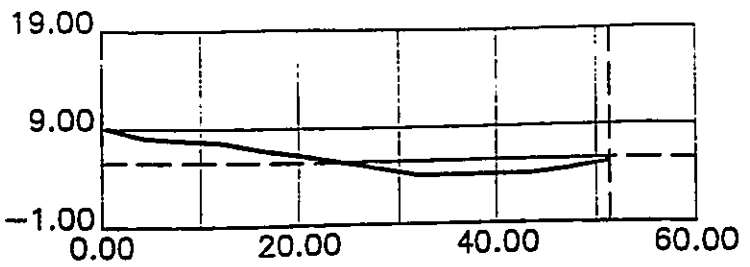

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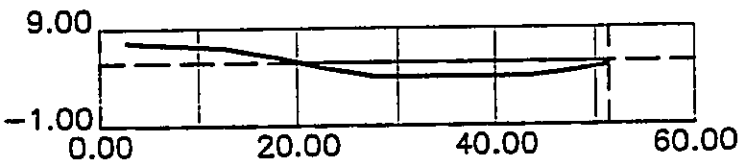

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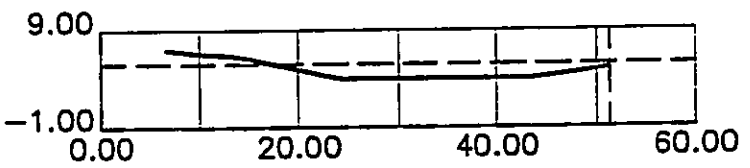

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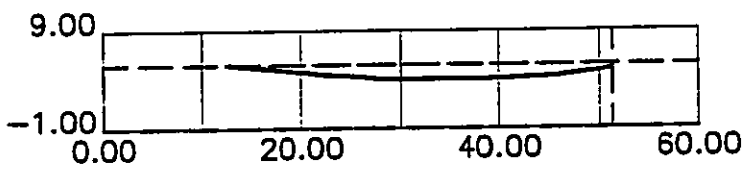

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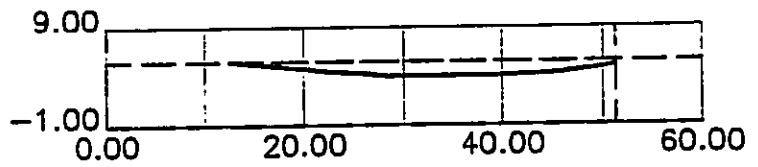

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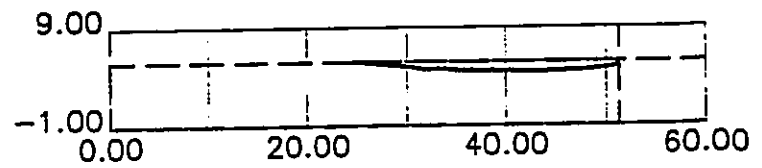

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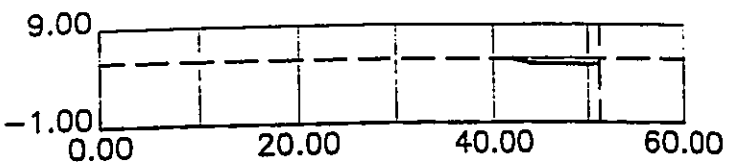
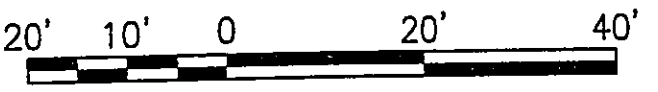


15 SECTION
1" = 20'

TADA RESIDENCE
487 PORTLOCK RD.
SEDIMENT BASIN



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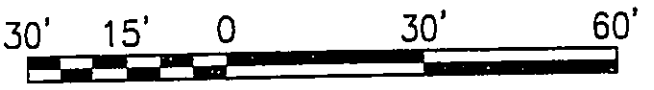

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