

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Land Division/Planning Branch

File: KA-3094

Ref.:PB:TC

AUG 26 2002

MEMORANDUM

To: Genevieve Salmonson, Director
Office of Environmental Quality Control

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

Subject: Final Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) for the Verizon Wireless development of a Cell Site at, the United States Navy, Pacific Missile Range Facility-Barking Sands, TMK parcels [4] 1-2-02:13&26, Kekaha, Waimea, Kauai

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

We have enclosed four hard copies of the Final EA document. The applicant informs us that the project summary and OEQC Bulletin Publication Form have been e-mailed to you. Comments on the Draft EA were sought from relevant State and County agencies, and were included in the final EA.

Please contact Traver Carroll of our Planning Branch at 587-0439 if you have any questions on this matter.

Enclosures

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

cc: Mike Beason

02 AUG 26 08:46

RECEIVED

Summary &
Publication form
Same as DEA

86

SEP 8 2002

FILE COPY

2002-09-08 - ~~KA~~ - FEA -

(Verizon) Wireless

PMRF-(Barking Sands Cell Site)
Project Number HI0255

Conservation District Use Application

PROJECT LOCATION:

**United States Navy
Pacific Missile Range Facility (PMRF)- Barking Sands
Kekaha, Waimea, Kauai
TMK (4) 1-2-002: 013 and 26**

SUBMITTED TO:

**State of Hawaii Department of Land and Natural Resources
Kalanimoku Building Room 131
1151 Punchbowl Street
Honolulu, HI 96813**

PREPARED BY:

**Mike Beason for Verizon Wireless
c/o General Dynamics- Network Systems
3375 Koapaka Street, Suite 238-30
Honolulu, HI 96819**

August 2002

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Division of Forestry & Wildlife	
Historic Preservation Division	
Office of Environment Quality Control	
Department of Health	
County of Kauai Planning Department	

**State of Hawaii Department of Land and Natural Resources
Conservation District Use Application
Verizon Wireless PMRF- Barking Sands Cell Site (HI0255)
at the United States Navy Pacific Missile Range Facility- Barking Sands
Kekaha, Kauai; TMK (4) 1-2-002: 013 and 26**

Introduction

Verizon Wireless submits the following project description and Conservation District Use Application to develop a telecommunications facility at the United States Navy Pacific Missile Range Facility (PMRF)- Barking Sands on the island of Kauai. The primary objective of this facility is to provide Verizon Wireless mobile telephone service for personnel at the PMRF and provide coverage from the town of Kekaha to Polihale State Park.

Site Description

The Naval Facility is located on the west side of Kauai at Mana Point and covers an area of approximately 1,970 acres along the ocean. The property is surrounded by (sugar) cane fields to the east and Polihale State Park to the north. The town of Kekaha is located approximately five miles to the south. The land use for this facility is unique because it is designated by the State of Hawaii as a Limited subzone in the Conservation District.

The proposed project is located approximately 200 feet north from the main visitors gate. The project site is on a generally flat grassy area with several nearby buildings, two eighty foot (80') tall wood utility poles, a guyed lattice tower approximately 120' tall, a drainage swale to the east, landscape trees and fencing along the property line. Verizon Wireless choose this site to co-locate their facilities with the existing communications towers in this area.

Project Description

The proposed Verizon Wireless PMRF- Barking Sands Cell Site consist of constructing an addition on an existing structure, Building #352, for telecommunications equipment and replacing one of the wood utility poles that is not in use with a steel monopole. An antenna platform and whip antennas will be mounted at the top of the new monopole. Power and telephone service will be provided from the existing utility services on the base. Antenna cables will be run underground from the shelter to the monopole. Neither water or sewer services are required for this facility.

As shown on the plans, Verizon Wireless proposes to construct a twelve foot by fourteen foot by ten foot tall (12' x 14' x 10' tall) equipment shelter on the south side of Building #352. The equipment shelter is constructed of metal framing and siding and will be placed on a concrete slab foundation. The equipment shelter will have two air conditioning units and will be painted to match the existing building.

As described, an existing eighty foot (80') wood pole will be removed and replaced by an eighty foot (80') tall steel monopole. The new monopole will be located approximately ten feet (10') to the west to avoid damaging underground fiber optic cables during construction of the foundation. Three ten foot tall by three inch in diameter (10' x 3" dia.) omni or whip antennas and a small GPS antenna will be mounted on the antenna platform at the top of the pole for an overall height of ninety feet (90'). The antenna platform is triangular in shape and approximately twelve feet long on each side. We request to install three antennas initially and allowing a total of six future panel antennas to be permitted as part of this application.

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

CONSERVATION DISTRICT USE APPLICATION FORM

FOR DLNR USE ONLY

Reviewed by _____
Date _____
Accepted by _____
Date _____
Docket / Fine No. _____
180-Day Exp. _____
EIS Required _____
PH Required _____
Board Approval _____
Disapproval _____

SUMMARY PAGE

I. LANDOWNER

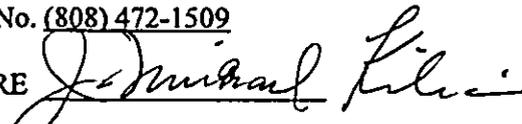
(If State land, to be filled
by State of Hawaii or
government entity with
management control over
parcel.)

Name United States Navy Pacific Division

Address Naval Facilities Engineering Command
Pearl Harbor, HI 96860-7300

Telephone No. (808) 472-1509

SIGNATURE



DATE

5-29-02

Note: The signature of an
authorized representative of
the United States of
America under this section
shall not be construed as an
approval or waiver of
sovereign immunity and
shall represent only the
consent of the Government
to the filing of the
application by the applicant
in its own name.

II. APPLICANT

Name Verizon Wireless

Address 3350 1061st Avenue Southeast
Bellevue, WA 98008

Telephone No. (425) 603-2931

Interest in Property Lease agreement with
United States Navy

*SIGNATURE see attached authorization

Date _____

*If for Corporation, Partnership,
Agency or Organization, must be
signed by an authorized officer.

AGENT

Name Mike Beason

Address c/o General Dynamics- NS
3375 Koapaka St., Suite F238-30
Honolulu, HI 96819

Telephone No. (808) 754-2644

Pacific NW Real Estate
Network Operations & Engineering



Verizon Wireless
3350 - 161st Ave. S.E, M/S 221
Bellevue, WA 98008

Phone 425 603-2700
Fax 425 603-2888

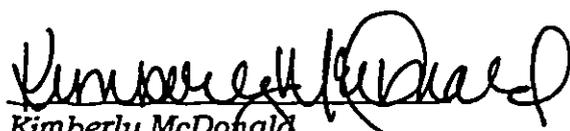
May 7, 2002

To Whom It May concern:

As the Manager of Northwest Real Estate for Verizon Wireless, I authorize General Dynamics to file for zoning, land use and building permits on behalf of Verizon Wireless in the Hawaii market.

If you have any questions regarding this authorization, please feel free to contact me at (425)603-2817. Thank you for your cooperation.

AUTHORIZATION SIGNATURE:


Kimberly McDonald
Northwest Real Estate Manager

5-6-02
Date

III. TYPE OF PERMIT

- (1) Departmental permit (see section 13-5-33);
- (2) Board permit (see section 13-5-34):
See below Summary of Proposed Identified Land Use
- (3) Emergency permit (see section 13-5-35)
- (4) Temporary permit (see section 13-5-36)
- (5) Nonconforming uses (see section 13-5-37)
- (6) Site plan approval (see section 13-5-38)
- (7) Management plan (see section 13-3-39)

IV. LAND PARCEL LOCATION

Island Kauai

County Kauai

District Kekaha, Waimea

Tax Map Key(s) (4) 1-2-002: 013 and 026

Area of Parcel 1925 and 46 acres, respectively
(Indicate in acres or sq. ft.)

Term (if lease) 5 years and 3- 5 year extensions

V. SUMMARY OF PROPOSED IDENTIFIED LAND USE: (Cite applicable section of Title 13-5, HAR. Attach additional sheet(s) as needed.)

Verizon Wireless proposes to construct a telecommunications facility at the United States Navy Pacific Missile Range Facility (PMRF)- Barking Sands property as previously described. The State of Hawaii classifies the naval facility as a Limited subzone in the Conservation District. Following Section 13-5-23(a), HAR, for Identified land use in the limited subzone, all identified land uses for the Protective subzone also apply to the Limited subzone. The proposed land use for the telecommunication facility is identified in Section 13-5-22, HAR, for the Protective subzone as communications systems under (P-6) Public Purpose Uses. As specified, this land use requires a Board Permit.

VI. ENVIRONMENTAL REQUIREMENTS

Pursuant to Chapter 343, Hawaii Revised Statutes, and in accordance with Title 11, Chapter 200, Environmental Impact Statement Rules for applicant actions, a Draft Environmental Assessment of the proposed use must be attached. The Draft Environmental Assessment Shall include, but not be limited to the following:

- (1) Identification of applicant or proposing agency;
- (2) Identification of approving agency, if applicable;
- (3) Identification of agencies consulted in making assessment;
- (4) General description of the action's technical, economic, social, and environmental characteristics;
- (5) Summary description of the affected environmental, including suitable and adequate location and site maps;
- (6) Identification and summary of major impacts and alternatives considered, if any;
- (7) Proposed mitigation measures, if any;
- (8) Determination;
- (9) Findings and reasons supporting determination; and
- (10) Agencies to be consulted in the preparation of the EIS, if applicable.

Following the end of a 30-day review period for the Draft Environmental Assessment, any comments received along with their responses must be incorporated into the Final Environmental Assessment. If appropriate, the text, figures, tables, maps, and other ancillary parts of the Environmental Assessment should be revised.

Refer to the Environmental Assessment by Clayton Group Services in Appendix 1.

VII. DESCRIPTION OF PARCEL

- A. Existing structures/use. (Attach description or map and one set of original photographs. Also, if applicable, include any previously obtained Federal, State and/or County Permit approvals.)

The proposed site is located approximately 200 feet to the north from the check-in gate and visitor office at the main gate to the Pacific Missile Range Facility. Adjacent to the main gate is a Verizon Hawaii telephone equipment building (central office) that is used for land line communications. The next structure to the north is a guyed tower which is approximately 120 feet tall and used for communications. Following this tower are two (2) eighty foot (80') tall wood utility type poles. One of the poles is used for telecommunications and the other is not being used; Verizon Wireless proposes to replace the abandoned pole with a steel monopole of the same height.

Approximately twenty feet to the west of the two wood poles is a one story structure, Building #348, used for meetings. The next two small buildings to the north are Building #352 and #356. These buildings are used for storage and utilities. Verizon Wireless proposes to construct an addition to Building #352 for their telecommunications equipment.

Refer to the attached Site Photographs and Construction Plans in Appendix 3 and Appendix 4, respectively.

- B. Existing utilities. (If available, indicate size and location on map. Include electricity, water, telephone, drainage and sewer.)

As shown on the Partial Site Plan in Appendix 4, the existing underground utilities lines were toned and located as part of the topographic survey to prevent damaging these facilities. The underground utilities are electrical and telephone lines. Overhead power and telephone lines (not shown) are approximately thirty feet to the east from the existing wood poles. A drainage swale is located approximately seventy feet to the east of the proposed site. Water, sewer and drainage pipes are not within the project area.

- C. Existing access. (Provide map showing roadways, trails, if any. Give street name. Indicate width, type of paving and ownership.)

As shown on the attached Site Map, the PMRF Barking Sands main gate is entered on Imiloa Road from Route 50, Kaunualii Highway. Prior notification, approval and access permit is required to enter the secured facility. From the visitor's office the site is accessed by turning right at the first street and turning right into the next parking area. Building #352 is on the right at the end of the parking lot.

- D. Flora and Fauna. (Describe and provide map showing locations and types of flora and fauna. Indicate if rare or endangered native plants and/or animals are present.)

As described in the Environmental Assessment, the project area is covered with grass. A row of dense shrubs and trees follows the property line to the east. No rare or endangered native plants or animals were identified on the property.

- E. Topography; if ocean area, give depths. (Submit contour maps for ocean areas and areas where slopes are 40% or more. Contour maps will also be required for uses involving tall structures, gravity flow and other special cases.)

The topography is generally flat with a slight slope from east to west toward the ocean. The surveyor calculated the elevation to be ten feet above mean sea level.

VII. DESCRIPTION OF PARCEL (continued)

F. If shoreline area, describe shoreline. (Indicate if shoreline is sandy, muddy, rocky, etc. Indicate cliffs, reefs, or other features such as access to shoreline.)

The proposed project is located approximately 1000' from Mana Point shoreline.

G. Existing covenants, easements, restrictions. (If State lands, indicate present encumbrances.)

The United States Navy Pacific Division confirmed that there are no covenants, easements, restriction or encumbrances in the project area.

H. Historic sites affected. (If applicable, attach map and descriptions.)

The State Historic Preservation Division did not identify any historic sites for the proposed project but, did request the development of an archaeological Monitoring Plan, see Appendix 1, to mitigate the impact of any possible subsurface features, Hawaiian burials or artifacts.

VIII. COMMENCEMENT DATE: October 2002

COMPLETION DATE: 30 - 45 days to complete construction

IX. CITE AND DESCRIBE IN DETAIL THE PROPOSED IDENTIFIED LAND USE: (Refer to Title 13-5, HAR. Attach additional sheets as needed.)

The proposed telecommunications facility provides service for Verizon Wireless mobile telephones. As discussed, communications systems are identified as Public Purpose Uses following Section 13-5-22 (P-6), HAR, for the Protective subzone.

X. AREA OF PROPOSED USE:

The proposed site includes 200 square feet for the equipment shelter, approximately 16 square feet for the monopole and sufficient area necessary for utilities, wires, cables, etc.

XI. NAME AND DISTANCE OF NEAREST TOWN OR LANDMARK: Kekaha; 5 miles

XII. LAND USE COMMISSION BOUNDARY INTERPRETATION:

If the area is within fifty feet of the boundary of the Conservation District, include a map showing the interpretation of the boundary by the State Land Use Commission.

The entire area of the United State Navy PMRF Barking Sands property is identified as a Conservation District. The site is estimated to be approximately fifty feet from the boundary of the PMRF Barking Sands.

XIII. **SUBZONE BOUNDARY DETERMINATION:** Prior to the department receiving for processing any application for a permit, if the applicant's proposed land use lies within fifty feet of a subzone boundary, the applicant shall first notify the department of the intended use and seek a determination of the precise boundary of the subzone with respect to the parcel in question. (Refer to Section 13-5-17, HAR.)

The entire area of the United State Navy PMRF Barking Sands facility is identified as a Limited subzone of the Conservation District. Refer to the attached portion of the State of Hawaii subzone map in Appendix 4.

XIV. **FEES:** Each application shall be accompanied by such filing fees as specified in Chapter 13-5, HAR. All fees shall be in the form of cash, certified or cashier's check, and payable to the State of Hawaii.

Attached is a check for the sum of \$100.00 in accordance with Section 13-5-34 (c)(1) for Board Permits.

XV. **PLANS:** All applications shall contain associated plans such as a location map, site plan, floor plan, elevations and landscaping plans drawn to scale. Additionally, all plans should include a north arrow and graphic scale.

Refer to the attached Construction Plans in Appendix 4.

A. **Area Plan:** Area plan should include but not be limited to relationship or proposed uses to existing and future uses in abutting parcels; identification of major existing facilities; names and addresses of adjacent property owners.

Included in Appendix 4 is the Tax Map Key showing the surrounding properties. The adjacent property to the east is designated an Agricultural District and is overgrown with shrubs and trees. Other agricultural properties further to the east have been used to grow sugar cane. The property to the north of PMRF is Polihale State Park; The park is used for camping and recreation and it is designated a Limited subzone of the Conservation District. All surrounding lands are owned by the State of Hawaii.

B. **Site Plan:** Site plan (maps) should include, but not be limited to, dimensions and shape of lot; metes and bounds, including easements and their uses; existing features, including vegetation, water area, roads and utilities. (For Site Plan Approvals, see Section 13-5-38, HAR.)

Refer to the metes and bounds descriptions and Real Estate Summary Map in Appendix 4.

C. **Construction Plan:** Construction plan should include, but not be limited to, existing and proposed changes in contours; all buildings and structures with indicated use and critical dimensions (including floor plans); open space and recreation areas; landscaping, including buffers; roadways, including widths; off street parking area; existing and proposed drainage; proposed utilities and other improvements; revegetation plans; drainage plans including erosion sedimentation controls; and grading, trenching, filling, dredging or soil disposal.

Refer to the Construction Plans by McPeak and Associates in Appendix 4. Proposed construction is not expect to change the existing contours.

XV. PLANS: (continued)

- D. Maintenance Plans: For all uses involving power transmission, fuel lines, drainage systems, unmanned communication facilities and roadways not maintained by a public agency, plans for maintenance shall be included.

The telecommunications facility provides cellular coverage 24 hours a day, 7 days a week. The cell site is monitored remotely and requires minimal servicing and inspections. An inspection of the unmanned facility is made monthly for preventative maintenance purposes. Service parking is provided by using the existing parking lot next to Building #352. In the event of a problem or emergency, the service crew is dispatched immediately.

- E. Management Plans: If required, refer to Section 13-5-39, HAR, and Exhibit 3, entitled "Management Plan Requirements, dated, September 6, 1994.

A Management Plan is not required for the proposed land use.

- F. Historic or Archaeological Site Plan: Where there exists historic or archaeological sites on the State or Federal Register, a plan must be submitted including a survey of the site(s); significant features; protection, salvage, or restoration plans.

Refer to the archaeological Monitoring Plan by Pacific Legacy, Inc. in Appendix 1.

XVI. DEMONSTRATE THAT THE PROPOSED USE IS CONSISTENT WITH THE FOLLOWING CRITERIA:

1. The proposed land use is consistent with the purpose of the Conservation District;

Following the purpose of the Conservation District to regulate land use as described in Section 13-5-1, Hawaii Administrative Rules (HAR), this Conservation District Use Application for a Board Permit provides the appropriate management of land use consistent with the Conservation District.

2. The proposed land use is consistent with the objectives of the subzone of the land on which the use will occur;

As previously described, the proposed telecommunications facility is an identified land use in the Protective subzone, Section 13-5-22 (P-6), for Public Purpose Uses as a "communications systems" which are land uses that apply to the subject Limited subzone and therefore meet the objectives of the subzone.

3. The proposed land use complies with provisions and guidelines contained in Chapter 205A, Hawaii Revised Statutes (HRS), entitled "Coastal Zone Management", where applicable;

Refer to the Coastal Zone Management approval in Appendix 2.

4. The proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region;

As discussed in the Environmental Assessment, the proposed land use has be found to have no significant impact to the existing natural resources within the surrounding area and therefore will not cause substantial adverse impact.

5. The proposed land use, including buildings, structures and facilities, shall be compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels;

The project is proposed at this site because of the existing land use, infrastructure and communication towers located in this area of the PMRF.

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

By replacing an existing tower and locating the cell site next to the other two towers at PMRF, the surrounding environment retains its inherent characteristics.

7. Subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District; and

The replacement of the existing monopole is proposed to maintain the existing density of the land use. The land is not proposed to be subdivided.

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

Following the license requirements by the Federal Communications Commission, Verizon Wireless PMRF Barking Sands cell site meets the safety standards established for telecommunication facilities to protect public health, safety and welfare.

Verizon Wireless submits that the proposed cell site will benefit the public health, safety and welfare by provide mobile communications for personal, business and emergency uses in this area.

Appendix 1

**Final Environmental Assessment
Archaeological Monitoring Plan**

970 North Kalaheo Avenue
Suite C-316
Kailua, Oahu, HI 96734
808.531.6708
Fax 808.537.4084



FINAL
Environmental Assessment Report
Of the
Proposed Verizon Wireless
PMRF Barking Sands Cell Site

Kekaha, Waimea, Kauai, Hawaii

Clayton Project No. 85-02116.01
August 15, 2002

Prepared for:
**STATE OF HAWAII / DEPARTMENT OF LAND
AND NATURAL RESOURCES (DLNR)**
Honolulu, Oahu, Hawaii

Prepared by:
CLAYTON GROUP SERVICES, INC.
970 North Kalaheo Avenue
Suite C-316
Kailua, Oahu, Hawaii
808-531-6708

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EXECUTIVE SUMMARY

Verizon Wireless retained Clayton Group Services, Inc. (Clayton) to conduct an Environmental Assessment (EA) in accordance with the State of Hawaii, Department of Land and Natural Resources (DLNR), Office of Conservation and Environmental Affairs' Conservation District Use Application (CDUA) requirements, for the Proposed Verizon Wireless Pacific Missile Range Facility (PMRF) Barking Sands cell site, located at the PMRF Barking Sands United States (U.S.) Naval Military Reservation, Mana, Kekaha, Kauai, Hawaii (the subject property).

The subject property, identified as the proposed Verizon Wireless PMRF Barking Sands cell site, is situated on two larger parcels of land (the "subject parcel") that are defined by the Kauai County Real Property Tax Assessment Division as Tax Map Key numbers (TMK): (4) 1-2-02: Parcels 13 and 26, which encompass a 1,970.36 acre portion of the PMRF under the jurisdiction of the United States of America.

The subject property comprises an area approximately 100-200 feet north of the PMRF Main Gate and Visitors Center. The approximate latitude and longitude of the subject property are 22.034 North and 159.783 West, respectively. The subject property is bordered to the north, west and south by various PMRF structures and to the east by dense vegetation lining a drainage canal, followed by vegetation and grass bordering the western edge of Kaunualii Highway.

The subject property includes an approximately 200 square-foot area adjoining the south side of PMRF Bldg. 352 for a telecommunications equipment shelter, and an approximately ten square-foot area located approximately 30 feet southeast of PMRF Bldg. 352 for a new steel or concrete monopole. This monopole will be erected in place of the southernmost of two existing 80-foot high wooden utility poles at the site.

The proposed action for the Verizon Wireless PMRF cell site will reportedly consist of three, 10-foot high omni-whip antennas and one global positioning system (GPS) antenna mounted at the top of the new 80-foot high steel or concrete monopole erected in place of the southern-most of two existing 80-foot high wooden utility poles at the site. The new monopole will be equipped with a ten-foot triangular support platform or crow's nest. The antennas will be mounted approximately 10 feet apart on the crow's nest railings, and the finished height of the antenna tips will be approximately 90 feet above ground level. An associated telecommunications equipment shelter will also be installed on a new concrete equipment pad adjoining the south side of PMRF Bldg. 352.

Construction activities that will disturb the ground surface in the vicinity of the proposed project site include: (1) excavating to approximately 20 feet below ground surface (bgs) to remove the existing 80-foot high wooden utility pole; (2) excavating to approximately 20 feet bgs to install a new 80-foot high concrete monopole and its associated foundation in the same location; (3) installing a new concrete equipment pad adjoining the south side of PMRF Bldg. 352 for installation of an associated telecommunications equipment shelter; (4) installing buried RF-antenna conduit at approximately 18-24 inches bgs from PMRF Bldg. 352 to the new antenna monopole; (5) installing buried telephone conduit



approximately 24-36 inches bgs from PMRF Bldg. 352 to existing Pullbox CHH-303; (6) installing buried ground-field conduit at approximately 24-36 inches bgs around PMRF Bldg. 352 and around the new antenna monopole; and (7) installing a 1.5-foot deep by 1.5-foot diameter drywell for condensate drainage from AC Units servicing the telecommunications equipment.

According to the State Land Use Commission, the zoning designation for the subject parcel is "Conservation."

The agencies contacted by Clayton to complete the EA include:

- DLNR Division of Forestry and Wildlife (DOFAW) Kauai Branch Office,
- U.S. Department of the Interior – U.S. Fish and Wildlife Service (USFWS),
- DLNR – State Historic Preservation Division (SHPD),
- Office of Hawaiian Affairs (OHA),
- Historic Hawaii Foundation (HHF),
- Native Hawaiian Group "Hui Malama", and
- U.S. Army Corps of Engineers (USACE) Honolulu District Office.

In addition, maps published from the following agencies were reviewed:

- Federal Emergency Management Agency (FEMA), and
- U.S. Geological Survey (USGS).

None of the inquiries made or documents reviewed during this EA indicated direct evidence of significant negative environmental conditions with respect to the proposed action at the subject property.

Therefore, it is anticipated that the DLNR Office of Conservation and Environmental Affairs will make a Finding of "No Significant Impact" (FONSI) determination for the proposed Verizon Wireless Pacific Missile Range Facility (PMRF) Barking Sands Cell Site project.

1.0 INTRODUCTION

Verizon Wireless retained Clayton Group Services, Inc. (Clayton) to conduct an Environmental Assessment (EA) in accordance with the State of Hawaii, Department of Land and Natural Resources (DLNR), Office of Conservation and Environmental Affairs' Conservation District Use Application (CDUA) requirements, for the Proposed Verizon Wireless Pacific Missile Range Facility (PMRF) Barking Sands Cell Site, located at the PMRF Barking Sands United States (U.S.) Naval Military Reservation, Kekaha, Waimea, Kauai, Hawaii (the "subject property").

The subject property, identified as the proposed Verizon Wireless PMRF Barking Sands Cell Site, is located on the Mana Plain on the west/southwest coast of the island of Kauai, Hawaii, at the U.S. Naval Pacific Missile Range Facility (PMRF) at Barking Sands, Kekaha, Waimea, Kauai, Hawaii (Figures 1 and 2).

The subject property, identified as the proposed Verizon Wireless PMRF Barking Sands cell site, is situated on portions of two larger parcels of land (the "subject parcel") that are defined by the Kauai County Real Property Tax Assessment Division as Tax Map Key numbers (TMK): (4) 1-2-02: Parcels 13 and 26, which comprise a 1,970.36 acre portion of the PMRF under the jurisdiction of the United States of America.

The subject property encompasses a vacant grassy area approximately 100-200 feet north of the PMRF Main Gate and Visitors Center. The approximate latitude and longitude of the subject property are 22.034 North and 159.783 West, respectively. The subject property is bordered to the north, west and south by various PMRF structures, and to the east by dense vegetation lining a drainage canal, followed by vegetation and grass bordering the western edge of Kaunualii Highway (Figure 2).

According to the State Land Use Commission, the zoning designation for the subject parcel is "Conservation and Limited Subzone."

2.0 PROPOSED ACTION

2.1 TECHNICAL CHARACTERISTICS

The proposed Verizon Wireless PMRF cell site will consist of three, 10-foot high omnidirectional antennas and one global positioning system (GPS) antenna mounted at the top of the new 80-foot high steel or concrete monopole erected in place of an existing 80-foot high wooden utility pole. The new monopole will be equipped with a ten-foot triangular support platform or crow's nest. The antennas will be mounted approximately 10 feet apart on the crow's nest railings, and the finished height of the antenna tips will be approximately 90 feet above ground level. An associated telecommunications equipment shelter will also be constructed on a new concrete equipment pad adjoining the south side of PMRF Bldg. 352.

Construction activities that will disturb the ground surface in the vicinity of the proposed project site include: (1) excavating to approximately 20 feet below ground surface (bgs) to remove the existing 80-foot high wooden utility pole; (2) excavating to approximately 20 feet bgs to install a new 80-foot high concrete monopole and its associated foundation in the same location; (3) installing a new concrete equipment pad adjoining the south side of PMRF Bldg. 352 for installation of an associated telecommunications equipment shelter; (4) installing buried RF-antenna conduit at approximately 18-24 inches bgs from PMRF Bldg. 352 to the new antenna monopole; (5) installing buried telephone conduit approximately 24-36 inches bgs from PMRF Bldg. 352 to existing Pullbox CHH-303; (6) installing buried ground-field conduit at approximately 24-36 inches bgs around PMRF Bldg. 352 and around the new antenna monopole; and (7) installing a 1.5-foot deep by 1.5-foot diameter drywell for condensate drainage from AC Units servicing the telecommunications equipment (See Figure 3 – Excavation Diagram).

2.2 SOCIO-ECONOMIC CHARACTERISTICS

The proposed PMRF cell site is anticipated to have no growth impact on regional population. The proposed project is to provide better telecommunication service for the surrounding area, therefore, benefiting the community at large. In addition, the proposed project will have positive economic impacts by providing construction employment and supporting construction-related services and suppliers.

2.3 ENVIRONMENTAL CHARACTERISTICS

The project site is located in a developed area. Clearing, grading, and excavation activities required for the proposed project is limited to the immediate vicinity of PMRF Bldg. 352 and the southern-most of two existing utility poles located approximately 30 southeast of PMRF Bldg. 352. No significant impact or alterations to the land is anticipated. Therefore, the proposed action is designed to maintain the given space by using existing facilities at the site.

The project is anticipated to proceed following a FONSI determination by the approving agency, DLNR Office of Conservation and Environmental Affairs, and will take approximately 30 days to complete. Verizon Wireless wholly provides funding for this project.

3.0 ALTERNATIVES TO PROPOSED ACTION

In determining a suitable location for construction of a telecommunications antenna site, several search criteria must be met. Various topographic features in the area must be evaluated, including but not limited to: elevation, terrain, and building obstruction. In addition, the antenna tower(s) can only be located in areas that are appropriately zoned by the local jurisdiction.

The purpose of the Verizon Wireless Cell Site is to relay signals to a receiving antenna (i.e., personal cell phones) located horizontally outward at some distance. Therefore, the site selection is based on its ability to meet this purpose.

PMRF Barking Sands was considered the primary location for the Verizon Wireless Cell Site based on the existing facilities available, as well as providing service for the base. In addition, the Cell Site location provides the best service for the surrounding area due to its location between Kekaha and Polihale State Park. Alternative sites in Kekaha and Polihale State Park do not meet land use objectives and would not provide adequate service coverage for other areas. An alternative site located in the cane fields did not have necessary utilities and would create a greater visual impact than using the existing facilities at PMRF Barking Sands.

4.0 AFFECTED ENVIRONMENT

The proposed Verizon Wireless PMRF Barking Sands Cell Site, located in the central northeastern edge of the subject parcel, encompasses a vacant grassy area situated approximately 100-200 feet north of the PMRF Main Gate and Visitors Center. The estimated latitude and longitude of the subject property are approximately 22.034 North and 159.783 West, respectively. The proposed cell site area is bordered to the north, west and south by various PMRF structures and to the east by dense vegetation lining a drainage canal, followed by approximately 100 yards of vegetation and grasses along the western edge of Kaumualii Highway (Figure 2).

The elevations at and around the subject property range from approximately 0 to 10 feet above mean sea level (msl). The general topography of the area is relatively flat and level, with a slight slope to the west toward the Pacific Ocean shoreline.

5.0 IMPACT ASSESSMENT

In accordance with the State of Hawaii DLNR, Office of Conservation and Environmental Affairs' CDUA requirements, an EA was conducted to assess potential environmental impacts from the cell site on the surrounding areas. A list of references and sources are listed in Appendix A. Various agency correspondences are included in Appendix B.

5.1 WILDERNESS AREA

Clayton contacted the United States Department of the Interior – United States Fish and Wildlife Service (USFWS) and the State of Hawaii Department of Land and Natural Resources (DLNR) - Department of Forestry and Wildlife (DOFAW) Kauai Branch Office, regarding the presence of officially designated wilderness areas on the subject property.

According to the DOFAW Kauai Branch Office, the site is not located within a designated wilderness area. The USFWS concurred that the site is not within or adjacent to a designated wilderness area.

Based on the inquiries and responses noted in this Section, the proposed action is not located in an officially designated wilderness area.

5.2 WILDLIFE PRESERVE

Clayton contacted the USFWS and DLNR - DOFAW Kauai Branch Office regarding the presence of officially designated wilderness preserves on the subject property.

According to the DOFAW Kauai Branch Office, the site is not located within a designated wildlife preserve. The USFWS concurred that the site is not within or adjacent to a designated wildlife preserve.

Based on the inquiries and responses noted in this Section, the proposed action is not located in an officially designated wildlife preserve.

5.3 LISTED OR PROPOSED THREATENED OR ENDANGERED SPECIES AND DESIGNATED OR PROPOSED CRITICAL HABITATS

Clayton contacted the USFWS and DNLR - DOFAW Kauai Branch Office regarding the presence of listed or proposed threatened or endangered species and designated or proposed critical habitats on the subject property.

According to the DOFAW Kauai Branch Office, the presence of listed or proposed threatened or endangered species and designated or proposed critical habitats on the subject property is not likely. Moreover, the USFWS stated that no federally listed endangered or threatened, or proposed species are known to inhabit the proposed project site.

However, USFWS did indicate that the dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*), a federally endangered species, and the Newell's shearwater (*Puffinus auricularis*), a federally listed threatened species, may occur in the vicinity of the proposed project site. Therefore, USFWS recommends that potential project-related impacts to this species be addressed. The USFWS further stated that the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) has been documented to occur in areas near the proposed project site; however, project-related impacts to this species are not anticipated.

According to the USFWS, "because aerial antennae will be constructed, the proposed project does have the potential to impact the dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*), a federally endangered species, and the Newell's shearwater (*Puffinus auricularis*), a federally listed threatened species, both of which may occur in the vicinity of the proposed project site. Anecdotal observations and experimental evidence have shown that artificial lighting can disorient seabirds when flying between inland nesting

areas and offshore feeding grounds. This disorientation is caused by excessively bright outdoor lighting and can result in seabird collisions with man-made structures such as light poles and wires. Injured seabirds that “fall-out” due to such collisions are highly vulnerable to predation by dogs, cats and mongoose. Therefore, the USFWS recommends that the Service’s interim guidelines to reduce fatal bird collisions with communication towers be implemented.”

Based on verbal communications with both the USFWS and DOFAW, impacts to federally listed or protected migratory seabirds can be avoided or minimized by (1) using a light colored paint (white, silver, light gray, etc.) to make the structures visible so that they can be seen by birds and avoided; and (2) by not lighting the antenna structures; or, (3) by lighting the structures in such a way that will not result in seabird fall-out.

The USFWS states that ...“If lighting must be used, then at a minimum, any light poles erected at the project site should be limited to a maximum height of 25 feet since lights higher than that are more likely to cause seabird fallout. As much as possible, all project lighting should be directed downward, shaded to prevent light from escaping horizontally, and of as low a wattage as possible. In addition, it would be helpful if the lighting is of muted colors instead of bright white.”

If the final project design includes these measures to avoid, minimize, or mitigate the impact of potential lighting issues, then the USFWS indicated it would concur with a determination that the construction and operation of the proposed aerial antennae would not likely adversely affect the dark-rumped petrel or other federally protected migratory seabirds.

Based on the inquiries and responses noted in this Section, the proposed action does not appear to affect listed or proposed threatened or endangered species and designated or proposed critical habitats.

5.4 HISTORIC PLACES

Clayton contacted the State of Hawaii Department of Land and Natural Resources (DLNR) - State Historic Preservation Division (SHPD), Office of Hawaiian Affairs (OHA), Historic Hawaii Foundation (HHF), and the Native Hawaiian Group “Hui Malama” on August 6, 2001, regarding districts, sites, buildings, structures or objects, significant in American/Hawaiian history, architecture, archeology, engineering or culture, that are listed, or are eligible for listing, in the National Register of Historic Places that may be located on the subject property.

OHA had no comment on the proposed project, but recommended that SHPD be contacted regarding historic places and other concerns. As of the date of this report, Clayton has not yet received responses from the HHF or Hui Malama, but these groups commonly do not respond to such inquiries.

According to SHPD, there are Native Hawaiian burials in the sandy areas of PMRF. Therefore, to cover the possibility that burials and/or historic sites might be found, SHPD believes that site identification and any needed mitigation can be handled through an archeological monitoring program, as defined below:

- *“A qualified archeologist shall be hired to conduct on-site initially (then on-call as needed) monitoring during the project. Prior to starting the monitoring work, an acceptable monitoring plan (scope of work) shall be submitted to the State Historic Preservation Division (SHPD) for review and approval. That monitoring plan will spell out a process for documenting sites that are found, for evaluating significance in consultation with the SHPD and for developing and executing mitigation work with the approval of the SHPD. It must be clear that if historic sites, including burials, are uncovered during the monitoring, construction must stop in the immediate vicinity and the archeologist shall be allowed sufficient time to evaluate the site and carry out mitigation, as needed. The plan must include provisions for an acceptable monitoring report, documenting all the findings, to be approved by our division. If you have any questions, please call Nancy McMahon 742-7033.”*

Based on the inquiries and responses noted in this Section, if the noted SHPD mitigation guidelines are adhered to, the proposed action will not affect cultural resources (Appendix C).

5.5 HAWAIIAN RELIGIOUS SITES

Clayton contacted the DLNR - SHPD, OHA, HHF, and Hui Malama regarding known Native Hawaiian religious sites on the subject property. OHA recommended that SHPD be contacted regarding this concern.

As of the date of this report, Clayton has not yet received responses from the HHF or Hui Malama, but these groups commonly do not respond to such inquiries.

According to SHPD, there are Native Hawaiian burials in the sandy areas of PMRF. Therefore, to cover the possibility that burials and/or historic sites might be found, SHPD believes that site identification and any needed mitigation can be handled through an archeological monitoring program, as previously stated (See Section 5.4).

5.6 FLOOD ZONE

Clayton reviewed available Federal Emergency Management Agency (FEMA) flood insurance rate maps (FIRM) for the subject property and adjoining properties.

According to FEMA/FIRM Map No. 150002-0100 C, (revised March 4, 1987) for Kauai County, Hawaii, the subject property lies within Flood Zone X, an area determined to be outside both the 500-year and 100-year flood plains.

No sensitive ecological areas were observed on the subject property/parcel. The USGS 7.5-minute topographic quadrangle map (Kehaka, Kauai, Hawaii, 1997), which includes

the subject and adjoining properties, does not depict water bodies, creeks or delineated wetlands located on the subject or adjoining properties.

Based on the inquiries and responses noted in this Section, the proposed action is not located in a flood plain.

5.7 SURFACE FEATURES

Clayton contacted Verizon Wireless Hawaii regarding the proposed action at the subject property and the potential for the proposed action to significantly change the surface features (*e.g.*, wetland fill, deforestation or water diversion). As indicated in Section 2.0, the proposed action is not expected to significantly disturb the ground surface at the site.

Clayton contacted the United States Army Corps of Engineers (USACE) Honolulu District Office, regarding wetland permitting for the subject property. According to Mr. George Young of the USACE Honolulu District Office, a Department of the Army (DA) permit is not required for the subject property.

Clayton reviewed the *USGS 7.5-Minute Series 1983-Kekaha, Kauai, Hawaii Quadrangle Topographic Map* depicting the subject property. According to this map, no water bodies were depicted on the subject property.

Based on the inquiries and responses noted in this Section, the proposed action does not appear to involve significant changes in surface features.

6.0 FINDINGS

We have prepared an EA for the subject property in conformance with the State of Hawaii DLNR, Office of Conservation and Environmental Affairs' CDUA requirements. The findings presented in this Section are based on Clayton's understanding of the subject property location and the proposed action at the subject property, as such action is described in Section 2.0. Should modifications to the location of the subject property or proposed action be made in the future, then additional inquiries may be prudent.

According to the Department of Health Rules (I 1-200-12), an applicant or agency must determine whether an action may have significant impact on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. In making the determination, the Rules establish "Significant Criteria" to be used as a basis for identifying whether significant environmental impact will occur. According to the Rules, an action shall be determined to have significant impact on the environment if it meets any one of the following criteria:

- (1) **Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;**

According to SHPD, "there are Native Hawaiian burials in the sandy areas of PMRF." Therefore, to cover the possibility that burials and/or historic sites might be found, SHPD believes that site identification and any needed mitigation can be handled through an archeological monitoring program, as defined below.

- *"A qualified archeologist shall be hired to conduct on-site initially (then on-call as needed) monitoring during the project. Prior to starting the monitoring work, an acceptable monitoring plan (scope of work) shall be submitted to the State Historic Preservation Division (SHPD) for review and approval. That monitoring plan will spell out a process for documenting sites that are found, for evaluating significance in consultation with the SHPD and for developing and executing mitigation work with the approval of the SHPD. It must be clear that if historic sites, including burials, are uncovered during the monitoring, construction must stop in the immediate vicinity and the archeologist shall be allowed sufficient time to evaluate the site and carry out mitigation, as needed. The plan must include provisions for an acceptable monitoring report, documenting all the findings, to be approved by our division. If you have any questions, please call Nancy McMahon 742-7033."*

Based on the inquiries and responses noted in Section 5.4, if the noted SHPD mitigation guidelines are adhered to, the proposed action will not affect cultural resources.

- (2) **Curtails the range of beneficial uses of the environment;**

The proposed project is located in a developed area and in the immediate vicinity of existing buildings and structures, therefore, it does not curtail the range of beneficial uses of the environment.

- (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 Policies established in Chapter 344, HRS, and the National Environmental Policy Act.

- (4) **Substantially affects the economic or social welfare of the community or state;**

The proposed project will benefit the community at large by providing better telecommunication service for the surrounding area.

(5) Substantially affects public health;

Impacts to public health may be affected by air, noise, and water quality impacts, however, these will be insignificant or not detectable.

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

The proposed project is anticipated to have no growth impact on the regional population. In addition, the project is located on the U.S. Naval Military Reservation and in an area of development. Therefore, it will have no effects on public facilities.

(7) Involves a substantial degradation of environmental quality;

The proposed project is located in a developed area. The project activities will be limited to the immediate area of an existing utility pole and existing buildings, therefore, the proposed project will not involve substantial degradation of environmental quality.

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

The proposed action is designed to maintain the given space by using existing facilities at the site, and benefit the community at large.

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

According to the USFWS, "because aerial antennae will be constructed, the proposed project does have the potential to impact the dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*), a federally endangered species, and the Newell's shearwater (*Puffinus auricularis*), a federally listed threatened species, both of which may occur in the vicinity of the proposed project site. Anecdotal observations and experimental evidence have shown that artificial lighting can disorient seabirds when flying between inland nesting areas and offshore feeding grounds. This disorientation is caused by excessively bright outdoor lighting and can result in seabird collisions with man-made structures such as light poles and wires. Injured seabirds that "fall-out" due to such collisions are highly vulnerable to predation by dogs, cats and mongoose. Therefore, the USFWS recommends that the Service's interim guidelines to reduce fatal bird collisions with communication towers be implemented."

Based on verbal communications with both the USFWS and DOFAW, impacts to federally listed or protected migratory seabirds can be avoided or minimized by (1) using a light colored paint (white, silver, light gray, etc.) to make the structures

visible so that they can be seen by birds and avoided; and (2) by not lighting the antenna structures; or, (3) by lighting the structures in such a way that will not result in seabird fall-out.

The USFWS states that ... "If lighting must be used, then at a minimum, any light poles erected at the project site should be limited to a maximum height of 25 feet since lights higher than that are more likely to cause seabird fallout. As much as possible, all project lighting should be directed downward, shaded to prevent light from escaping horizontally, and of as low a wattage as possible. In addition, it would be helpful if the lighting is of muted colors instead of bright white."

If the final project design includes these measures to avoid, minimize, or mitigate the impact of potential lighting issues, then the USFWS indicated it would concur with a determination that the construction and operation of the proposed aerial antennae would not likely adversely affect the dark-rumped petrel or other federally protected migratory seabirds.

Therefore, the construction and operation of the proposed aerial antennae would not likely adversely affect the dark-rumped petrel or other federally listed or protected migratory seabirds. (See Section 5.3).

(10) Detrimentially affects air or water quality or ambient noise levels;

The proposed project is not anticipated to detrimentally affect air or water quality or ambient noise levels of the area.

(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, freshwater, or coastal waters;

Based on the above criteria, there are no environmentally sensitive areas associated with the project. In addition, the immediate area of the proposed project has been previously disturbed by development.

(12) Substantially affects scenic vistas and view planes identified in county or state plans or studies;

Views of the area to be developed are generally not significant although they are visible. Existing buildings and other structures are in the immediate vicinity of the proposed project.

(13) Requires substantial energy consumption.

Construction of the proposed project will not require substantial energy consumption relative to other similar projects.



None of the inquiries made or documents reviewed during this EA indicated direct evidence of significant negative environmental conditions with respect to the proposed action at the subject property.

Therefore, it is anticipated that the DLNR Office of Conservation and Environmental Affairs will make a Finding of "No Significant Impact" (FONSI) determination for the proposed Verizon Wireless Pacific Missile Range Facility (PMRF) Barking Sands Cell Site project.

This report prepared by:



Lori Liu
Senior Geologist
Environmental Services
Honolulu Regional Office

This report prepared by:



Douglas Oringer
Project Engineer
Environmental Services
Honolulu Regional Office

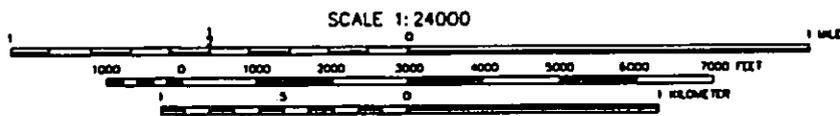
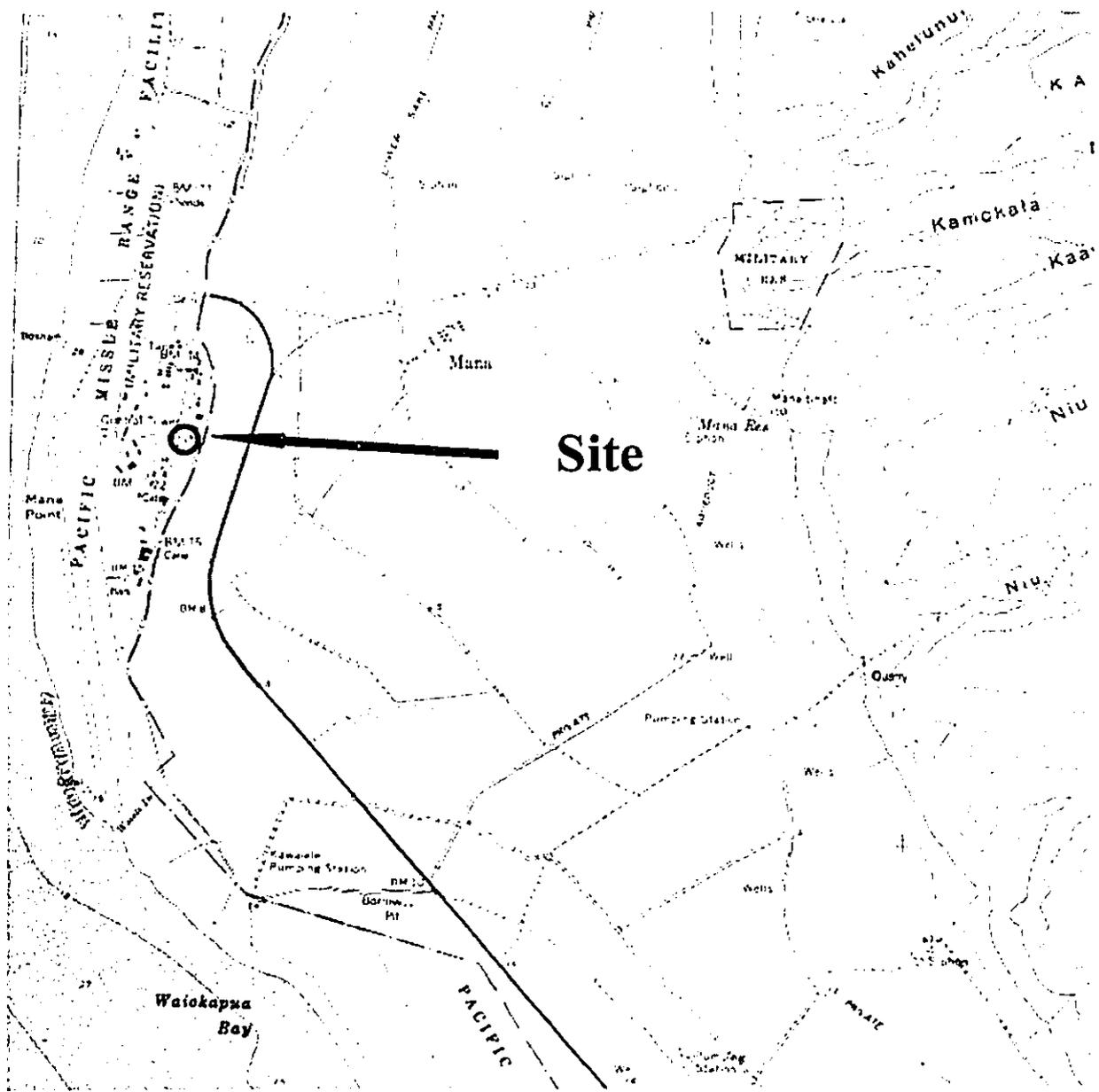
This report reviewed by:



Daniel P. Ford, R.G.
Vice President
Environmental Services
Honolulu Regional Office

August 15, 2002

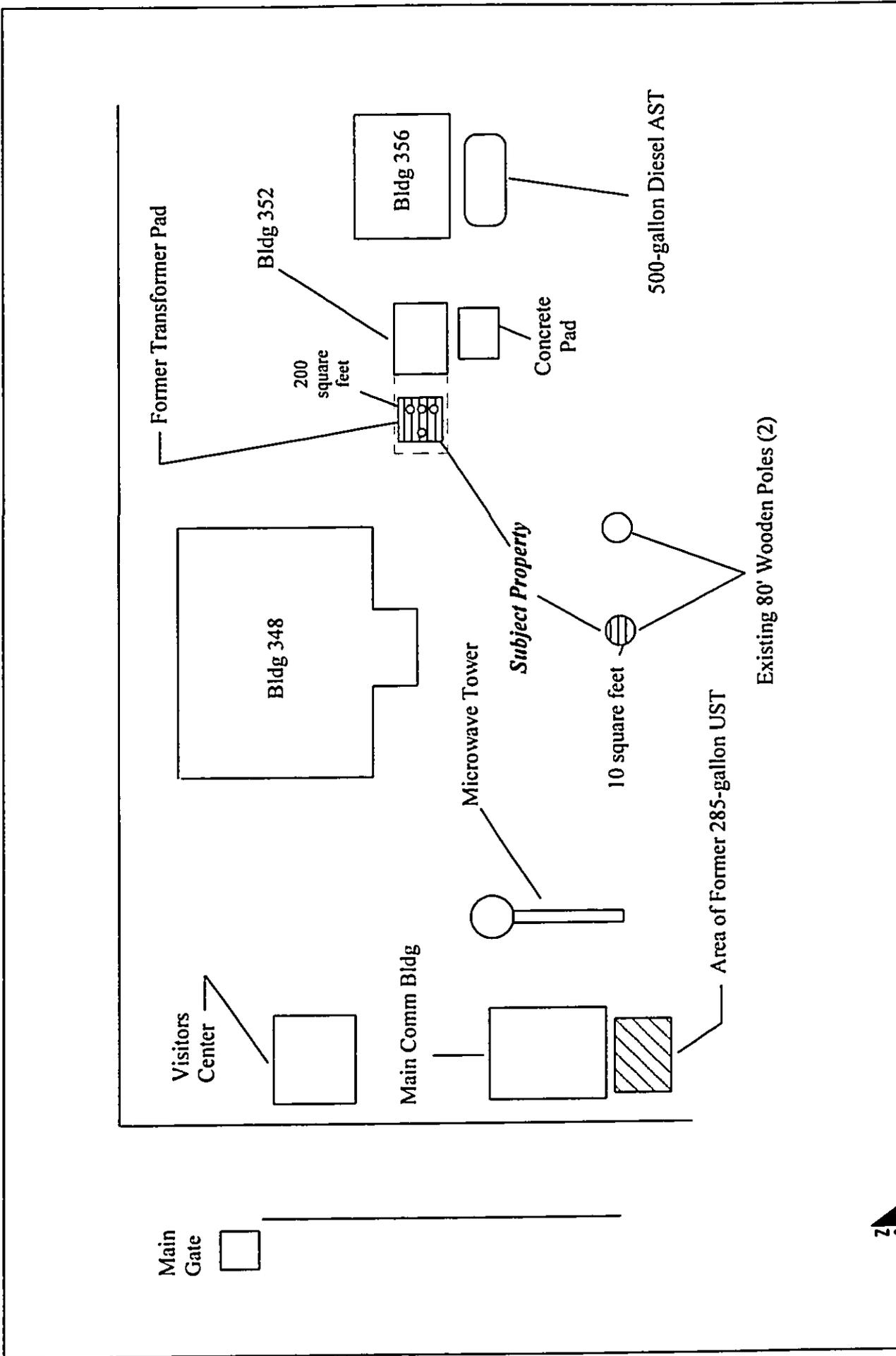
FIGURES



Portion of 7.5-minute Series (Topographic) Map
 United States Department of the Interior
 Geological Survey
 Kekaha Quadrangle Hawaii-Kauai Co.
 1983



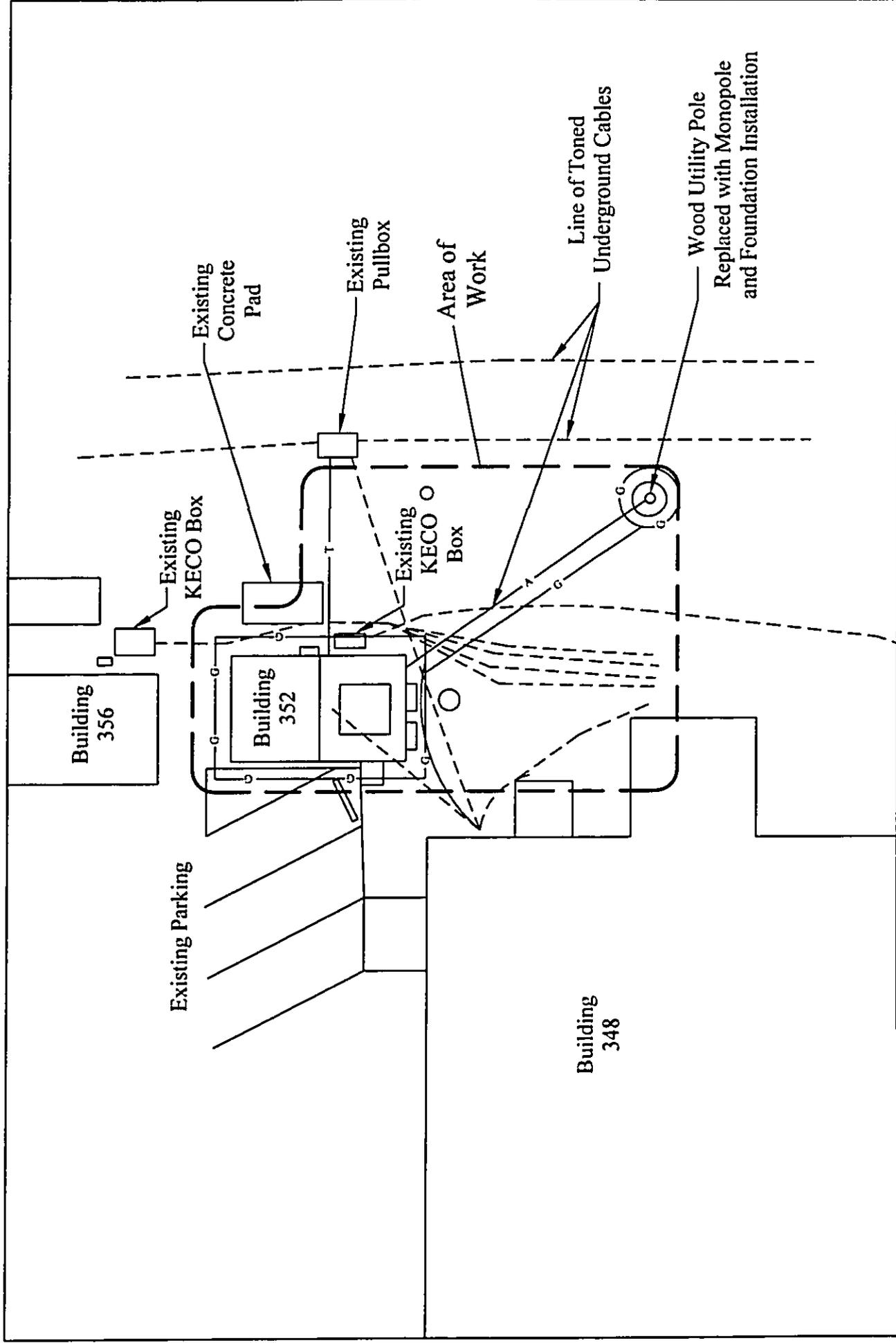
	Project No:	85-02116.00	Title:	SITE LOCATION MAP	FIGURE 1
	Date:	07/20/02	Location:	PACMISRANFAC Barking Sands Cell Site Mana, Waimea, Kauai, Hawaii	
	Revised By:	QJR	Client:	Verizon Wireless	
	Checked By:	DAO			



(Not to Scale)

Clayton GROUP SERVICES		Site Vicinity Map	
Project No:	85-02116.00	Location:	PMRFR Barking Sands Cell Site
Date:	07/23/02	Client:	Kekaha, Kauai, Hawaii
Prepared By:	QJR	Client:	Verizon Wireless
Checked By:	DPF		

FIGURE
2



Renovation and Excavation Diagram		FIGURE 3	
Project No.: 85-02116.00	Location: PMRFR Barking Sands Cell Site	Verizon Wireless	
Date: 07/23/02	Drawn By: QJR		
Checked By: DPF	Client: Verizon Wireless		

Clayton
GROUP SERVICES

(Not to Scale)

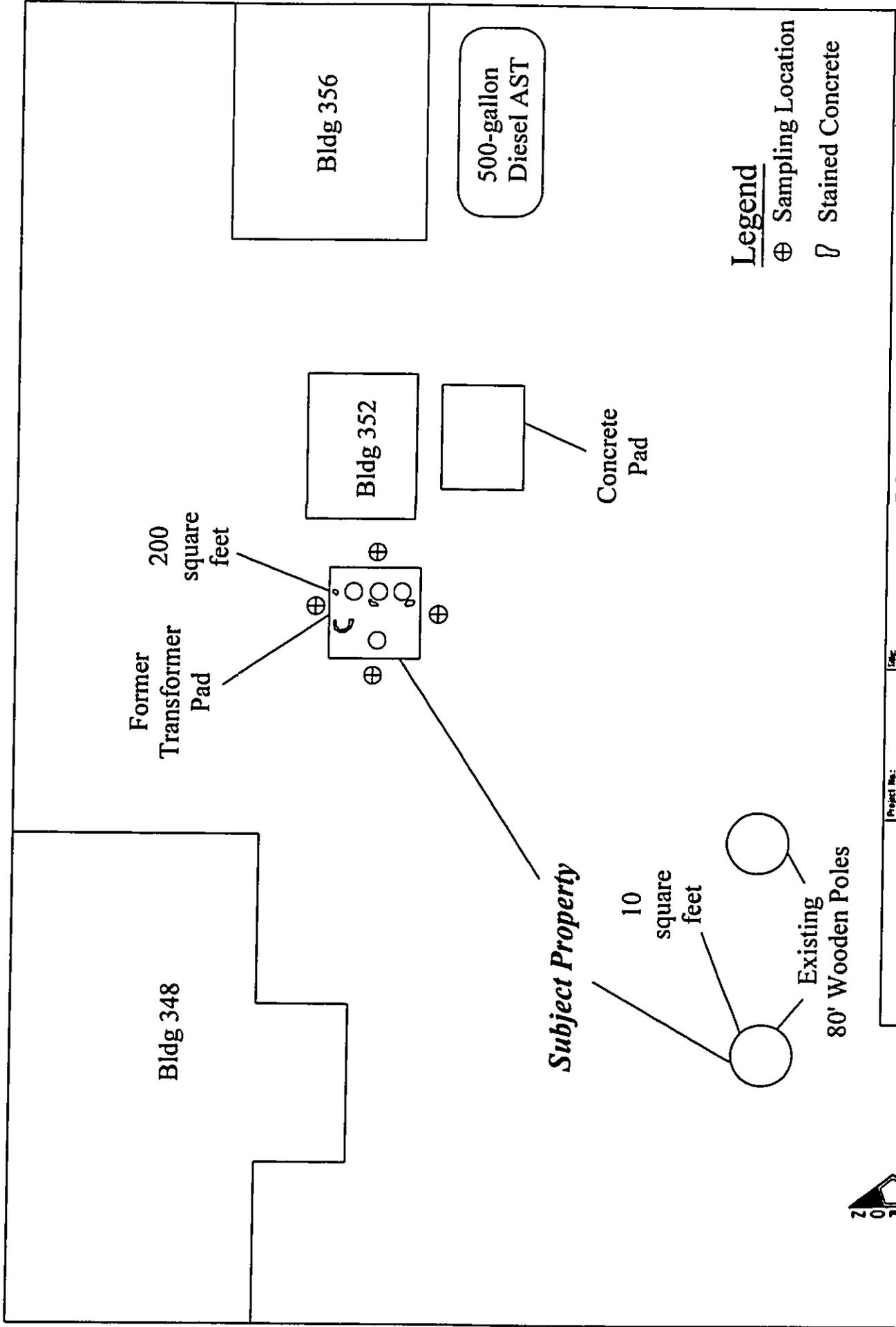


FIGURE 4

PCB Sampling Diagram	
PMRFR Barking Sands Cell Site Kekaha, Kauai, Hawaii	
Project No.: 85-02116.00	Date:
Date: 07/23/02	Location:
Prepared By: QJR	Client:
Checked By: DPP	Verizon Wireless



(Not to Scale)

APPENDIX A
LIST OF SOURCES/REFERENCES



CONTACTS:

Agency and division/source: FCC Wireless Telecommunications Bureau
Name/title of representative: Mr. Don Abata, Director / Mr. Frank Stillwell, Asst. Director
Location of Agency: Washington D.C.
Agency Telephone Number: General (888) 225-5322; (202) 418-1538; (202) 418-1892

Agency and division/source: U.S. Fish & Wildlife Service (USFWS)
Name/title of representative: Mr. Don Palawski, Manager
Location of agency: Honolulu, Oahu, Hawaii
Agency telephone number: (808) 541-3441

Agency and division/source: DLNR – Department of Forestry & Wildlife (DOFAW)
Name/title of representative: Mr. Edwin Petteys, Branch Manager
Location of agency: Lihue, Kauai, Hawaii
Agency telephone number: (808) 274-3433

Agency and division/source: The Nature Conservancy / Hawaii Natural Heritage Program
Name/title of representative: Mr. Roy Kam, Director
Location of agency: Honolulu, Oahu, Hawaii
Agency telephone number: (808) 537-4508

Agency and division/source: DLNR – State Historic Preservation Division (SHPD)
Name/title of representative: Ms. Nancy McMahon, Case Officer
Location of agency: Lihue, Kauai, Hawaii
Agency telephone number: (808) 742-7033

Agency and division/source: State of Hawaii – Office of Hawaiian Affairs (OHA)
Name/title of representative: Mr. Colin Kippen, Director / Mr. Mark Mararagan, Staff
Location of Agency: Honolulu, Oahu, Hawaii
Agency Telephone Number: (808) 594-1756

Agency and division/source: U.S. Army Corp of Engineers - Honolulu District
Name/title of representative: Mr. George Young, Director / Mr. Bill Lenan, Staff
Location of Agency: Honolulu, Oahu, Hawaii
Agency Telephone Number: (808) 438-1091; (808) 438-6986



Agency and division/source: Historic Hawaii Foundation (HHF)
Name/title of representative: Mr. David Scott, Director
Location of Agency: Honolulu, Oahu, Hawaii
Agency Telephone Number: (808) 523-2900

Agency and division/source: Hui Malama
Name/title of representative: Mr. Edward Halealoha Ayau / Esq.
Location of Agency: Kailua, Oahu, Hawaii
Agency Telephone Number: (808) 599-7721

Agency and division/source: Verizon Wireless
Name/title of representative: Mr. Tom Akimoto, Radio Engineer
Location of Agency: Honolulu, Oahu, Hawaii
Agency Telephone Number: (808) 544-8694

Agency and division/source: Verizon Wireless
Name/title of representative: Mr. Mark Bullard and Mr. Larry Terao
Location of Agency: Honolulu, Oahu, Hawaii
Agency Telephone Number: (808) 544-8694

Agency and division/source: County of Kauai Planning & Zoning Department
Name/title of representative: Staff
Location of Agency: Lihue, Kauai, Hawaii
Agency Telephone Number: (808) 241-6677

REFERENCES:

Name of publication: U.S.G.S. 7.5-Minute Series Kekaha, Kauai, Hawaii
Quadrangle
Author of publication: United States Geological Survey (USGS)
Date of publication: 1983

APPENDIX B

REGULATORY AGENCY CORRESPONDENCES



REPLY TO
ATTENTION OF

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

October 3, 2001

Regulatory Branch

Mr. Douglas Oringer
Clayton Group Services
970 No. Kalaheo Ave., Suite C-316
Kailua, Hawaii 96734

Dear Mr. Oringer:

This letter responds to your request for a jurisdictional determination for the telecommunications cell site at the Pacific Missile Range Facility, dated August 6, 2001. Based on the additional information you provided in the form of photographs, I have determined that a Department of the Army (DA) permit will not be required for this project.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-6986 or FAX 438-4060, and reference File No. 200100450.

Sincerely,


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



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard
Room 3-122, Box 50088
Honolulu, Hawai'i 96850

APR 15 2002

In Reply Refer to: CES

Douglas Oringer
Clayton Group Services
970 North Kalāheo Avenue
Kailua, Hawai'i 96734

Re: Proposed Telecommunications Antenna Cell Site at Pacific Missile Range Facility,
Barking Sands, Kekaha, Waimea, Kaua'i, Hawai'i

Dear Mr. Oringer:

The U.S. Fish and Wildlife Service (Service) has reviewed your request received on April 1, 2002 for information regarding the above referenced project. We understand that the lead Federal agency for the proposed project is the Federal Communications Commission (FCC). Clayton Group Services has been retained to conduct an FCC environmental assessment (EA) for the proposed project and has requested information on: 1) the presence of wilderness areas or preserves in the area; 2) threatened and endangered species or designated critical habitat; and 3) proposed threatened and endangered species or critical habitat. This letter has been prepared under the authority of and in accordance with provisions of the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.* 83 Stat. 852], as amended (NEPA); the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.* 83 Stat. 852], as amended (ESA); and other authorities mandating Service concerns for environmental values. Based on these authorities, the Service offers the following comments for your consideration.

The proposed cell site is located at Pacific Missile Range Facility (PMRF) (TMK: (4) 1-2-02: Parcel 13) Kekaha, Waimea, Kaua'i, Hawai'i. The cell site will consist of three panel antennas and one global positioning system antenna mounted on top of a new 80-foot high concrete monopole, that will replace an existing wooden monopole. The maximum finished height of the antennas will be approximately 90 feet above ground level. In addition, an associated equipment cabinet will be installed at ground level by an existing concrete equipment pad approximately 30 feet west, adjacent to the east side of PMRF Building 352.

Based on our review of the information contained in your project summary and in our files, including maps prepared by the Hawai'i Natural Heritage Program, the site does not lie immediately adjacent to any known wilderness area, wildlife refuge, critical habitat preserve, wetland, or coral reef. Also, no federally listed endangered or threatened, or proposed species are known to inhabit the proposed project site. However, the Hawaiian dark-rumped petrel

(Pterodroma phaeopygia sandwichensis), a federally listed endangered species, and the Newell's shearwater (*Puffinus auricularis*), a federally listed threatened species, may occur in the vicinity of the proposed project site, and we recommend potential project-related impacts to this species be addressed in your EA. Although the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) has been documented to occur in areas near the proposed project site, project-related impacts to this species are not anticipated.

Because aerial antennae may be constructed, the proposed project has the potential to impact the Hawaiian dark-rumped petrel, Newell's shearwater, and other non-listed federally protected, migratory seabirds as they transit through the area. Anecdotal observations and experimental evidence have shown that artificial lighting can disorient seabirds when flying between inland nesting areas and offshore feeding grounds. This disorientation is caused by excessively bright outdoor lighting and can result in seabird collisions with man-made structures such as light poles and wires. Injured seabirds that "fall out" due to such collisions are highly vulnerable to predation by dogs and cats. We recommend that you implement the Service's interim guidelines to reduce fatal bird collisions with communication towers (enclosed).

The Service believes that possible project-related impacts to seabirds can be avoided or minimized. At a minimum, we recommend that any light poles erected at the site be limited to a maximum height of 25 feet as lights of greater height are more likely to cause seabird fall-out. Whenever possible, all project lighting should be directed downward and be shaded to prevent light from escaping horizontally, and should be of as low wattage as possible. Please contact the Hawai'i Division of Forestry and Wildlife Office in Līhu'e if you need additional information (telephone: 808/ 272-3433).

In order to obtain information on the usefulness of Service guidelines in preventing bird strikes, and to identify any recurring problems with their implementation which may necessitate modifications, please advise us of the final location and specifications of the proposed tower, and which of the measures recommended for the protection of migratory birds were implemented. If any of the recommended measures can not be implemented, please explain why they were not feasible.

The Service recommends that you assess potential project-related impacts to the Hawaiian dark-rumped petrel and Newell's shearwater, and other protected migratory seabirds, as well as describe measures by which such impacts will be avoided or minimized. If the final project design includes the above measures to minimize lighting impacts to petrels, shearwaters, and other protected migratory bird species, the Service would concur with an FCC determination under section 7 of the ESA that the proposed antenna construction and operation are not likely to adversely affect federally listed species.

If you prepare a NEPA environmental assessment (EA), please forward us a copy so we may review it and provide you with this concurrence, contingent on final project design and FCC's stated determination. Should you conclude a valid FCC Categorical Exclusion under NEPA applies to this proposed project and thus eliminates the need for an EA, please let us know.

We encourage the early review of projects and appreciate the opportunity to provide comments on the proposed project. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Katie Swift by telephone at (808) 541-3441.

Sincerely,



for Paul Henson
Field Supervisor
Ecological Services

Enclosure

cc: FCC, Pacific District
DOFAW, Kaua'i
CZM, Honolulu

U.S. Fish and Wildlife Service Interim Guidelines For Recommendations On
Communications Tower Siting, Construction, Operation, and Decommissioning

1. Any company/applicant/licensee proposing to construct a new communications tower should be strongly encouraged to collocate the communications equipment on an existing communication tower or other structure (e.g., billboard, water tower, or building mount). Depending on tower load factors, from 6 to 10 providers may collocate on an existing tower.
2. If collocation is not feasible and a new tower or towers are to be constructed, communications service providers should be strongly encouraged to construct towers no more than 199 feet above ground level (AGL), using construction techniques which do not require guy wires (e.g., use a lattice structure, monopole, etc.). Such towers should be unlighted if Federal Aviation Administration regulations permit.
3. If constructing multiple towers, providers should consider the cumulative impacts of all of those towers to migratory birds and threatened and endangered species as well as the impacts of each individual tower.
4. If at all possible, new towers should be sited within existing "antenna farms" (clusters of towers). Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.
5. If taller (>199 feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.
6. Tower designs using guy wires for support that are proposed to be located in known raptor or waterbird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover sites, should have daytime visual markers on the wires to prevent collisions by these diurnally moving species. (For guidance on markers, see Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp, and Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp. Copies can be obtained via the Internet at <http://www.eei.org/resources/pubcat/enviro/>, or by calling 1-800/334-5453).
7. Towers and appendant facilities should be sited, designed and constructed so as to avoid or

minimize habitat loss within and adjacent to the tower "footprint". However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight.

8. If significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternate site should be recommended. If this is not an option, seasonal restrictions on construction may be advisable in order to avoid disturbance during periods of high bird activity.

9. In order to reduce the number of towers needed in the future, providers should be encouraged to design new towers structurally and electrically to accommodate the applicant/licensee's antennas and comparable antennas for at least two additional users (minimum of three users for each tower structure), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.

10. Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.

11. If a tower is constructed or proposed for construction, Service personnel or researchers from the Communication Tower Working Group should be allowed access to the site to evaluate bird use, conduct dead-bird searches, to place net catchments below the towers but above the ground, and to place radar, Global Positioning System, infrared, thermal imagery, and acoustical monitoring equipment as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.

12. Towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use.

Version: September 14, 2000



HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
KAUAI DISTRICT
3080 EIWA STREET, ROOM 308
LIHUE, KAUAI, HAWAII 96786-1875

March 13, 2002

IN REPLY REFER TO

Mr. Douglas Oringer
Clayton Group Services, Inc.
970 North Kalaheo Ave. Suite C 316
Kailua, HI 96734

RE: Telecommunications antenna cell site: Pacific Missile Range Facility (PMRF) Barking Sands Military Reservation TMK [4] 1-2- 02: Parcel 13

Dear Mr. Oringer:

This responds to your request dated 7 March 2002 requesting correction of the TMK on your original inquiry.

To our knowledge the proposed cell sites at Pacific Missile Range Facility, Barking Sands, is not located within an established wilderness areas or wildlife preserves. Critical habitat is a federal, U. S. Fish and Wildlife Service regulatory designation. Please contact them for determination of proposed or existing critical habitat boundaries.

You should be aware that the threatened Newell's Shearwater and the endangered Dark-rumped Petrel do transit these areas at night, and are prone to striking utility wires and perhaps tall utility towers while flying to and from their mountain nesting grounds and the sea. Your letter did not specify whether or not above-ground utility wires are necessary for the antenna tower, but such wires may impact these birds, especially if any man-made lighting is located nearby.

The Newell's shearwater population on Kauai has taken a significant downturn in recent years. There is increased concern that potential mortalities could occur as a result of collisions with such towers, especially towers with guy wires or utility wires and bright lights nearby.

The endangered Hawaiian Bat also may exist in these areas. To our knowledge they are not likely to be impacted by a tower structure.

Please contact this office, should you have additional questions concerning impacts to wildlife.

Sincerely,

A handwritten signature in black ink that reads "Thomas C. Telfer". The signature is written in a cursive style.

Thomas C. Telfer
Acting Kauai Branch Manager



HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

KAUAI DISTRICT
3060 EIWA STREET, ROOM 306
LIHUE, KAUAI, HAWAII 96766-1875

May 28, 2002

IN REPLY REFER TO

Mr. Douglas Oringer
Clayton Group Services, Inc.
970 North Kalaheo Ave., Suite C 316
Kailua, HI 96734

RE: Telecommunications antenna cell site: Pacific Missile Range Facility (PMRF) Barking Sands Military Reservation TMK [4] 1-2- 02: Parcels 13 and 26

Dear Mr. Oringer:

This responds to your phone request today in which you request correction of the TMK on your original inquiry.

To our knowledge the proposed cell site at Pacific Missile Range Facility, Barking Sands, is not located within an established wilderness areas or wildlife preserves. Critical habitat is a federal, U. S. Fish and Wildlife Service regulatory designation. Please contact them for determination of proposed or existing critical habitat boundaries.

You should be aware that the threatened Newell's Shearwater and the endangered Dark-rumped Petrel do transit these areas at night, and are prone to striking utility wires and perhaps tall utility towers while flying to and from their mountain nesting grounds and the sea. Your letter did not specify whether or not above-ground utility wires are necessary for the antenna tower, but such wires may impact these birds, especially if any man-made lighting is located nearby.

The Newell's shearwater population on Kauai has taken a significant downturn in recent years. There is increased concern that potential mortalities could occur as a result of collisions with such towers, especially towers with guy wires or utility wires and bright lights nearby.

The endangered Hawaiian Bat also may exist in these areas. To our knowledge they are not likely to be impacted by a tower structure.

Please contact this office should you have additional questions concerning impacts to wildlife.

Sincerely,

A handwritten signature in black ink, appearing to read "Edwin Q.P. Petteys".

Edwin Q.P. Petteys
Branch Manager

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

June 6, 2002

Mr. Douglas Oringer
Clayton Group Service
970 North Kalaleo Ave, Suite C-316
Kailua, Hawaii 96734

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

LOG NO: 29981 ✓
DOC NO: 0205NM26

Dear Mr. Oringer:

SUBJECT: National Historic Preservation Act Review, Section 106 Compliance
--FCC Telecommunications Antenna Cell Site at PMRF
TMK: 1-2-02: 13 and 26
Mana, Waimea, Kauai

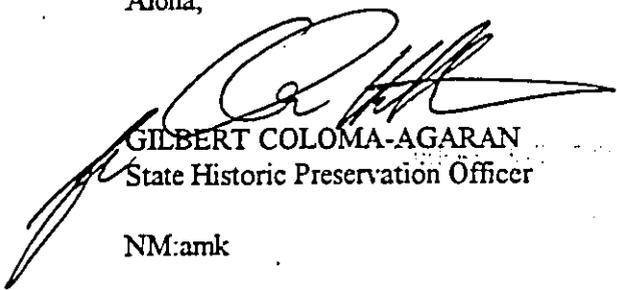
Thank you for submitting the plans for this cell tower site. Cultural deposits and human burials maybe present in the shoreline area on PMRF lands. We believe that mitigation can be achieved through an archaeological monitoring program. Prior to land alteration, an archaeological monitoring plan would need to be submitted to our office for review and approval.

If a worded condition is needed, we recommend the following wording to ensure significant historic sites are acceptably identified, documented and treated:

1) A qualified archaeologist shall be hired to conduct on-site initially (then on-call as needed) monitoring during the project. Prior to starting the monitoring work, an acceptable monitoring plan (scope of work) shall be submitted to the State Historic Preservation Division (SHPD) for review and approval. That monitoring plan will spell out a process for documenting sites that are found, for evaluating significance in consultation with the SHPD, and for developing and executing mitigation work (as needed) with the approval of the SHPD. It must be clear that if historic sites, including burials, are uncovered during the monitoring, construction must stop in the immediate vicinity and the archaeologist shall be allowed sufficient time to evaluate the site and carry out mitigation, as needed. The plan must include provisions for an acceptable monitoring report, documenting all the findings, to be approved by the SHPD.

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

Aloha,


GILBERT COLOMA-AGARAN
State Historic Preservation Officer

NM:amk

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKULIHEWA BUILDING, ROOM 565
601 KAMOKILA BOULEVARD
KAPOLEI, HAWAII 96707

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

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

March 11, 2002

Mr. Douglas Oringer
Clayton Group Service
970 North Kalaheo Ave, Suite C-316
Kailua, Hawaii 96734

LOG NO: 29365 ✓
DOC NO: 0203NM02

Dear Mr. Oringer:

**SUBJECT: National Historic Preservation Act Review, Section 106 Compliance
—FCC Telecommunications Antenna Cell Site at PMRF
TMK: 1-2-02: 13, Mana, Waimea, Kauai**

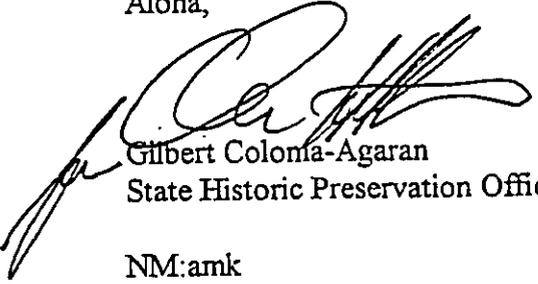
Thank you for submitting the plans for this cell tower site. Cultural deposits and human burials may be present in the shoreline area on PMRF lands. To cover this possibility, we believe that a monitoring program is the most feasible approach to identification and treatment of any historic sites that might be present. We recommend that an archaeological monitoring plan be submitted to our office for review and approval.

Therefore, we recommend that the following condition for a "no adverse effect" determination:

1) A qualified archaeologist shall be hired to conduct on-site initially (then on-call as needed) monitoring during the project. Prior to starting the monitoring work, an acceptable monitoring plan (scope of work) shall be submitted to the State Historic Preservation Division for review and approval. That monitoring plan will spell out a process for documenting sites that are found, for evaluating significance in consultation with our Division and for developing and executing mitigation work with the approval of our Division. It must be clear that if historic sites, including burials, are uncovered during the monitoring, construction must stop in the immediate vicinity and the archaeologist shall be allowed sufficient time to evaluate the site and carry out mitigation, as needed. The plan must include provisions for an acceptable monitoring report, documenting all the findings, to be approved by our Division.

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

Aloha,



Gilbert Colonia-Agaran
State Historic Preservation Officer

NM:amk



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

April 3, 2002

Mr. Douglas Oringer
Clayton Group Services - Honolulu Regional Office
970 North Kalāheo Ave., Suite C-136
Kailua, O'ahu, HI 96734

HRD01/79

Subject: Proposed Telecommunications Antenna Cell Sites on Kaua'i,
O'ahu, Maui, Lana'i, Moloka'i and the Big Island

Dear Mr. Oringer:

Thank you for the opportunity to comment on the above referenced projects. At this time, the Office of Hawaiian Affairs has no comments to the following proposed projects:

1. Pacific Missile Range Facility (PMRF) Barking Sands Cell Site; TMK: (4) 1-2-02: Parcel 13; Kekaha, Kauai, Hawaii.
2. Bishop Museum Cell Site; 1525 Bernice Street (Castle Building); Portion TMK: [1] 1-6-24: Parcel 1; Honolulu, O'ahu, Hawai'i.
3. Manele Bay Cell Site; Manele Bay Water Facility, Private Water Treatment Facility at the Manele Bay Resort; portion of TMK: [2] 4-9-17: Parcel 10; Lanai, Hawaii.
4. Maili - Pacific Aggregates Cell Site; 87-701 Paakea Road; portion of TMK [1] 8-7-10: Parcel 3; Waianae, Hawai'i.
5. Kaunakakai - Verizon, Co. Cell Site; Verizon Co. Lot; portion of TMK: [2] 5-3-1: Parcel 62; Kaunakakai, Moloka'i, Hawai'i.
6. Sprint Haiku Cell Site; Kuulei Street; portion of TMK: [2] 2-7-17: parcel 48; Haiku, Maui, Hawai'i.
7. Oceanview Estates - Kemp Property Cell Site; TMK: [3] 9-2-197: parcel 51, lot 5, Block 1 of Hawaiian Oceanview Ranchos, Unit III, located west side of Mamalahoa Highway, Oceanview, Hawaii.

Mr. Douglas Oringer
Clayton Group Services - Honolulu Regional Office
April 3, 2002
Page Two

8. Kualoa Ranch Cell Site – 49-560 Kamehameha Highway; portion of TMK: [1] 4-9-4; parcel 2, O'ahu, Hawai'i.
9. Four Season – Wailea Cell Site – 3700 Wailea Alanui Drive; portion of TMK: [2] 2-1-8; Parcel 61, Wailea, Maui, Hawai'i.
10. Outrigger Wailea Cell Site, 3700 Wailea Alanui Drive; portion of TMK: [2] 2-1-8; Parcel 61, Wailea, Maui, Hawai'i.
11. Hawai'i Commercial & Sugar Company Cell Site – 1 Hansen Road; portion of TMK: [2] 3-8-6; Parcel 1; Puunene Maui, Hawai'i.
12. Paauilo/Opihilala Cell Site – Old Mamalahoa Highway; portion of TMK: [3] 4-3-3; Parcel 31; Hamakua, Hawai'i.
13. Volcano Highway/Pa'ahana Road – portion of TMK: [3] 1-6-3; Parcel 105; Kurtistown, Hawai'i.

If you have any questions, please contact Mark A. Mararagan, policy analyst at 594-1756, or e-mail him at markm@oha.org.

Sincerely,


Jaina Keala
Acting HRD Director

cc: OHA Administrator
OHA Trustees
Kona CAC
Hilo CAC
Maui CAC
Kaua'i CAC
Moloka'i CAC
HRD File

APPENDIX C

ARCHEOLOGICAL MONITORING PLAN

ARCHAEOLOGICAL MONITORING PLAN
FOR THE PROPOSED
VERIZON WIRELESS TELECOMMUNICATIONS FACILITY
AT THE
PACIFIC MISSEL RANGE FACILITY
BARKING SANDS, KAUA'I
(TMK 1-2-02: 13 and 26)

Prepared by

Paul L. Cleghorn, Ph.D.

Pacific Legacy, Inc.
332 Uluniu Street
Kailua, Hawaii 96734
Phone (808) 263-4800

Prepared for

General Dynamics
94-413 Ukee Street
Waipahu, HI 96797

Submitted to

State Historic Preservation Division
Department of Land and Natural Resources
601 Kamokila Blvd., Suite 555
Kapolei, HI 96707

August 2002

INTRODUCTION

Pacific Legacy, under contract to General Dynamics, has prepared this archaeological monitoring plan for the proposed telecommunication facilities by Verizon Wireless at the Pacific Missile Range Facility (PMRF) at Barking Sands, Kaua'i (Figure 1). This project is to be conducted under license from the Federal Communications Commission (FCC). Because of the federal participation in this project (FCC licensing), the project should be considered an undertaking and subject to the National Historic Preservation Act of 1966 (NHPA), as amended, and the Native American Graves Protection and repatriation Act (NAGRPA). Verizon Wireless, as an agent of the FCC, has been conducting consultations pursuant to Section 106 of the NHPA.

This archaeological monitoring plan will contain the following eight specifications as outlined in the Hawaii Administrative Rules 13§13-279 Rules Governing Minimal Standards for Archaeological Monitoring Studies and Reports (Draft 5/31/01):

- The kinds of remains that are anticipated and where in the project area the remains are likely to be found.
- How the remains and deposits will be documented.
- How the expected types of remains will be treated.
- The archaeologist conducting the monitoring has the authority to halt construction in the immediate vicinity of the find in order to carry out the plan.
- A coordination meeting between the archaeologist and construction crew is scheduled, so that the construction team is aware of the plan.
- What laboratory work will be done on the remains collected.
- Schedule for report preparation.
- Details concerning the archiving of any collections that are made.

CONSTRUCTION ACTIVITIES REQUIRING MONITORING

Limited construction excavations will be undertaken as part of this project. These excavations will include:

- trenching for underground utility lines;
- foundation work for an equipment shed; and
- excavations for the antenna monopole.

Archaeological monitoring will be limited to these construction excavation activities. Other construction activities that have little potential of effecting cultural resources will not be archaeologically monitored.

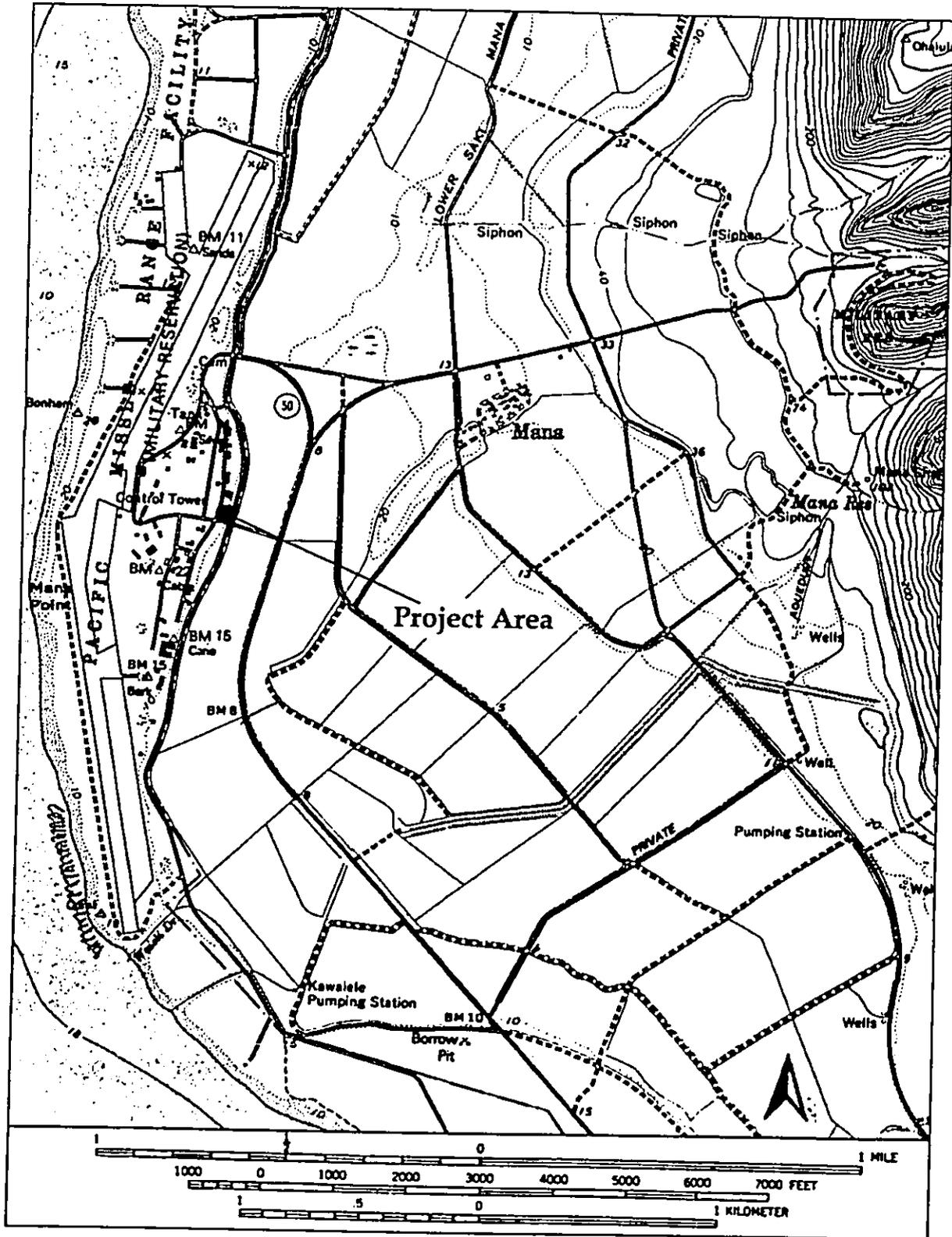


Figure 1. Location of Project Area.

Archaeological Monitoring Plan
 Verizon Wireless Telecommunication Facility
 Pacific Missile Range Facility, Kaua'i
 August 2002



ARCHAEOLOGICAL BACKGROUND

The first archaeological study within the area of Barking Sands area was conducted by T. Thrum in 1907. This was followed by a study conducted by W.C. Bennett in 1928-1929 (Bennett 1931). Bennett's study and the site information it produced, has provided a cornerstone for the projects that would follow. The information listed below focuses mainly within the area known as the Pacific Missile Range Facility (PMRF) at Barking Sands and its vicinity. The following is a brief description of the region and the site information that has been recorded.

In his study of Hawaiian *heiau*, Thrum (1907) noted one heiau located on a cove on the inland side of dunes near Barking Sands. This *heiau* was traditionally known as Elekuna Heiau. Thrum noted that no structure was found, the structure was simply a mound of sandstone outcropping with offerings placed at its base. Elekuna Heiau is also noted in Bennett's study.

The majority of known sites in the PMRF vicinity are attributed to W. C Bennett's 1928-1929 archaeological study, which combined nine months of field work with available collections, published literature, and of manuscript notes on file in the Bernice P. Bishop Museum (Bennett 1931). Bennett's findings included a group of sites (1 thru 6) located within PMRF in the Polihale region consisting of Polihale Heiau, house foundations and Kapahula Heiau. Other *heiau* noted within the region include: Elekuna Heiau (site 8); Kahelu Heiau (site 10) described as a small 2 m high structure located along the base of a ridge with remnants of house sites and agriculture structures nearby; Makahoe Heiau and village (site 11) on Niu ridge, Kaunalewa; Hooneenuu Heiau (site 12) located along Kaunalewa Ridge; two small heiau (site 14); Hauola Heiau in Hoes valley at the base of Hauola ridge. Sites 7 and 13 consist of dune burials and campsites between Polihale and Barking Sands and the burial caves of Kaunalewa ridge. Sites 9 and 15 include house sites and taro terraces (McGerty and Spear 1997).

In a 1978 Bishop museum reconnaissance survey (Sinoto 1978), five previously unrecorded sites were located within the region. Newly discovered sites included a cairn, small rockshelters, two small agricultural complexes, and a large cluster of terraces, enclosures, wall segments, and stone piles.

In an archaeological sub-surface inventory survey conducted on the PMRF (Gonzalez, Berryman, and Welch 1990), a U.S. Navy map showing a "major ancient burial ground" is noted. The boundaries of the large burial area extend from a point on the shoreline approximately 400 meters south of the mouth of Nohili ditch, to the Polihale State Park on the northeast. The inland edge of the dunes at Barking Sands demarcates the approximate eastern boundary of the burial ground, while the shoreline forms the western limit. Five other burial sites are also noted, with four of these sites having been verified by the PMRF Public Works Supervisor (C. Kagawa) and base security personnel (K. Del Aire). Also noted within the region directly north of Nohili ditch is an extensive archaeological site with a subsurface component. An 1874 Crown lands survey map (Gay 1874) which included the Kekaha region, indicates a settlement named Moelaoa in proximity to this location. Continual occupation was indicated by the existence of midden deposits and *imu* (ovens). Human remains have also been reported

for the area. Site (50-30-05-616), a historic Japanese cemetery within PMRF is also listed in the Gonzalez report.

In 1991 an archaeological subsurface testing project was conducted on PMRF (Kennedy 1991) in which 31 backhoe test trenches were dug. Kennedy notes the existence of the "major ancient burial ground", campsites and burials, all of which are listed above. No cultural layers or materials were discovered in any of the profiles, although modern artifacts were found in two of the trenches. No sign of human burials was found.

In an archaeological survey and sub-surface testing conducted by B. Jones (1992), eighteen test trenches were dug within PMRF. These trenches revealed no evidence of cultural resources, human burials, or other archaeological properties. The report does note a total of 20 archaeological resources listed for the PMRF and vicinity in the U.S. Navy's archaeological files and the Hawaii Department of Land and Natural Resources Historic Preservation files, all of which have been cited above. The range of known sites in the Barking Sands region extends from the coast to the cliffs about 2-3 m to the east, with the majority of sites occurring either along the coast as burials or within the small cliff faces as *heiau*. Jones also references an undated map provided by the U.S. Navy in which the northern portion of the PMRF is sited as a major ancient burial ground (Advanced Sciences Inc. 1990).

In an archaeological inventory survey conducted in 1997 (McGerty and Spear 1997), five environmental zones within a section of nearby Kekaha, were described. These included: marshlands, marshlands at the base of mountains, coastal and sand dunes, cliff slopes and valleys, and upper mountain slopes. Religious features, such as those recorded by Bennett were located around the coastal and sand dune areas, with burials being dominant in the dune areas. Fishponds were located within the marshlands. Permanent habitation and dryland agriculture were located at the base of cliffs or in valleys, and the upper mountain slopes had been home to great forests before the introduction of cattle to the area in 1792. The study identified seven sites within the project area (50-30-05-652 thru 658), which consisted of rock mounds, rock-faced, soil-surfaced terraces, and two historic dirt roads.

ANTICIPATED REMAINS

Previous archaeological studies in the immediate area have provided a background for predicting the types of cultural remains that might be encountered during the Verizon Wireless telecommunications facility project. The PMRF and Barking Sands area have been subjected to extensive alterations from military use and thus there is a low likelihood of finding any surface archaeological features in the project area. However, it seems likely that subsurface archaeological resources may be present. These resources probably date to pre-Contact times (i.e., before the arrival of Captain James Cook in 1778) and may include living areas, artifacts, and human burials.

FIELD INVESTIGATIONS

PRE-CONSTRUCTION MEETING

Prior to the initiation of the construction project, the archaeological monitor will meet with the project construction manager and the construction crew to discuss the archaeological monitoring procedures. It will be explained to the construction crew that the archaeological monitor has the authority to halt construction activities in the immediate vicinity of the finding of cultural material (including human remains). The construction crew will also be notified that all encountered cultural material, including historic glass bottles, are the property of the land owner and may not be collected by anyone other than the archaeological monitor unless a written and signed permit has been issued by the land owner for any other collecting.

ARCHAEOLOGICAL MONITORING

An archaeological monitor will be present during all ground disturbing activities where there is a potential of encountering cultural materials. The activities that have been identified are:

- trenching for underground utility lines;
- foundation work for an equipment shed; and
- excavations for the antenna monopole.

All excavated soil material will be inspected as it is removed for the areas that have the potential of containing cultural material. Exposed sidewalls of the excavation areas will be likewise examined for the presence of intact cultural deposits, features, or artifacts. The purpose of archaeological monitoring is to ensure that any previously unrecorded cultural remains are properly recorded and treated. If any such resources are encountered, the following procedures will be followed:

Intact Cultural Deposits and Features

If intact cultural deposits or features are encountered during monitoring, their integrity and significance will be assessed in the field. If deemed potentially significant, consultation with SHPD staff members will be initiated to determine an appropriate mitigation strategy. At a minimum, the deposits or features will be fully described, mapped, and photographed. The stratigraphic context of the deposit or features will be determined, and any important associations with other natural or cultural strata will be noted. Where appropriate, samples for further analyses will be collected.

Artifacts

Potentially significant artifacts observed in the excavations will be collected for further analysis. The provenience of the find will be plotted on a project map of the area, and any observed associations with cultural or natural strata will be noted.

Human Skeletal Remains

If human remains are encountered during excavation, all work in the immediate vicinity will cease and the SHPD archaeological and burials program staff will be notified. Utmost care will be taken to ensure that any associated items or stratigraphic context are not further disturbed. Upon consultation with appropriate Native Hawaiian groups and/or organizations in accordance with Native American Graves Protection and Repatriation Act (NAGPRA), further work to verify the context may be allowed to be documented. All sediment from the vicinity of the human remains shall be screened through 1/8-inch wire mesh. Salient aspects of the burial feature may be accurately recorded in the field and graphically documented in a manner consistent with that recommended by consultations in compliance with NAGPRA.

Stratigraphy

All faces of excavation areas containing cultural materials will be profiled. Photographs of exposed faces will be taken. Stratigraphic descriptions shall be made in conformance with U.S. Soil Conservation Service and Munsell Color notation references.

TREATMENT OF RECOVERED REMAINS

All recovered non-human remains will be transported to Pacific Legacy's Office and Laboratory in Kailua on the island of O'ahu. The disposition of human remains will be determined through consultations in compliance with NAGPRA and consultations with the SHPD.

Laboratory processing will consist of cleaning, sorting, identifying, and documenting the materials collected. A project catalogue shall be generated and presented in the final report.

Artifacts collected will be identified and recorded by sketching, measuring, and photographing. Midden material recovered shall be identified minimally by major class and recorded on standard laboratory forms by weight. This material will be presented in table format in the final report. All recovered samples (soil, charcoal, etc.) will be initially processed and catalogued in Pacific Legacy's laboratory before being sent to specialist laboratories for detailed analyses.

CURATION

Suitable temporary curation facilities for archaeological samples collected during field investigations shall be provided in the Pacific Legacy Hawai'i laboratory and office. Final curation of recovered materials shall be determined at a later date after consultation with the SHPD.

REPORTING

Brief verbal progress reports on completion of field investigations, laboratory analyses, report preparation, and on the discovery of significant findings shall be provided to the SHPD. The following shall be submitted:

- Letter Report at the completion of fieldwork
- Draft Report
- Final Report

REFERENCES CITED

Advanced Sciences, Inc.

- 1990a Archaeological Survey and Testing Report for the United States Army, Strategic Defense Command's Proposed EDX Project, Pacific Missile Range Facility, Barking Sands, Kauai, Hawaii. Prepared by Advanced Sciences, Inc., Sand Diego, California and International Archaeological Research Institute, Inc., Honolulu, Hawaii, July 1990.

Bennett Wendell C.

- 1931 *Archaeology of Kauai*. B. P. Bishop Museum Bulletin 80. Honolulu.

Gay, J.

- 1874 Plan of Survey Including the Crown Lands, Waiawaawa, Makihana, Waimea, Kekaha, Milolii, Nuololo and Waiawa situated on the Island of Kauai. Approved 30th June, 1875, by Duncan McBryde, Commissioner of Boundaries, Island of Kauai, Tracing Map by M.S. Monsanat, Nov. 3, 1875. Map on file with the State of Hawaii, Department of Land and Natural Resources, State Survey Office, Honolulu.

Gonzalez, T., J. Berryman, and D. Welch.

- 1990 Archaeological Survey and Testing Report for the United States Army, Strategic Defense Command's Proposed EDX Project Pacific Missile Range Facility Barking Sands, Kauai, Hawaii. Report on file at the State Historic Preservation Office, Kapolei.

Jones, B.

- 1992 Archaeological Survey and Subsurface Testing for the Tactical Control Squadron Forward Air Control Post Project, Pacific Missile Range Facility, Barking Sands, Kauai, Hawaii. Report on file at the Hawaii State Historic Preservation Office, Kapolei.

Kennedy, J.

- 1991 Archaeological Subsurface Testing Results for the Proposed Family Housing Project Area Pacific Missile Range Facility, Barking Sands, Island of Kauai. Report on file at the State Historic Preservation Office, Kapolei.

McGerty, L. and R. Spear

- 1997 An Archaeological Inventory Survey of a Parcel of Land Near Kekaha in the Ahupua'a of Waimea, District of Kona, Island of Kauai. Report on file at the Hawaii State Historic Preservation Office, Kapolei.

Rosendahl, P.

- 1993 Archaeological Subsurface Inventory Survey IMA Target Facility Project Site Pacific Missile Range Facility Barking Sands, Kauai. Report on file at the Hawaii State Historic Preservation Office, Kapolei.

Sinoto, A.

1978 *Cultural Reconnaissance of Rock Borrow Areas Near Kekaha, Kauai, Hawaii*. Prepared for the U.S. Army Engineer District, Pacific Ocean. Honolulu, Hawaii.

Thrum, T.

1907 *The Hawaiian Annual: Heiau and Heiau Sites Throughout the Hawaiian Islands, Tales of the Temple*. Honolulu.

Appendix 2

**Supporting Documents:
Coastal Management Zone Approval
County of Kauai Special Management Area**



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

BENJAMIN J. CAYETANO
GOVERNOR
SEJI F. NAYA, Ph.D.
DIRECTOR
SHARON S. NARIMATSU
DEPUTY DIRECTOR
DAVID W. BLANE
DIRECTOR, OFFICE OF PLANNING

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-9402

March 12, 2002

Mr. Mike Beason
2943 Kalakaua Avenue, #1008
Honolulu, Hawaii 96815

Dear Mr. Beason:

**Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency
Review for Verizon Wireless Telecommunication Facility at the Pacific Missile
Range Facility Barking Sands, Kauai**

The request by Verizon Wireless for a real estate authorization from the Navy to install a telecommunications facility at the Pacific Missile Range Facility Barking Sands has been reviewed for consistency with Hawaii's CZM Program. The proposed telecommunications site will consist of a 12-foot by 14-foot by 10-foot tall equipment shelter and removal and replacement of an 80-foot wood pole with an 80-foot steel or concrete pole. The original proposal called for three panel antennas, 1-foot wide by 8-foot tall, to be mounted to the monopole. This was changed, per your March 5, 2002 letter, to three 10-foot tall by 3-inch diameter omni or whip antennas mounted to a 10-foot triangular support platform at the top of the monopole. We concur with your CZM consistency certification based on the following conditions.

1. The project shall comply with state conservation district use permit requirements pursuant to Hawaii Revised Statutes Chapter 183C - *Conservation District* and Hawaii Administrative Rules Chapter 13-5, which are administered by the Department of Land and Natural Resources and are federally-approved enforceable policies of the Hawaii CZM Program.
2. As proposed in the CZM consistency certification, an archaeologist will be present to monitor all excavations for burials and stop work if native Hawaiian burials are discovered. The State Historic Preservation Division shall be notified immediately if any burials are discovered. Hawaii Revised Statutes Chapter 6E - *Historic Preservation* is a federally-approved enforceable policy of the Hawaii CZM Program.

Mr. Mike Bensen
Page 2
March 12, 2002

3. To reduce the potential for adverse impacts to endangered and threatened seabirds, all lighting associated with the project should meet U.S. Fish and Wildlife Service requirements. State law prohibits the harassment or harm of endangered or threatened species. Applicable CZM enforceable policies are Hawaii Revised Statutes (HRS) §195D-2 - *Conservation of Aquatic Life, Wildlife, and Land Plants*, and Hawaii Administrative Rules (HAR) Chapter 13-124.

CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

David W. Blane

David W. Blane, AICP
Director
Office of Planning

c: U.S. Fish and Wildlife Service, Pacific Islands Ecoregion
Department of Land & Natural Resources,
Planning & Technical Services Branch
Historic Preservation Division
Planning Department, County of Kauai
Cheryl Connett, Pacific Division, Naval Facilities Engineering Command

MARYANNE W. KUSAKA
MAYOR



DEE M. CROWELL
PLANNING DIRECTOR
SHELLAH N. MIYAKE
DEPUTY PLANNING DIRECTOR

TELEPHONE (808) 241-6677
FAX (808) 241-6699

PLANNING DEPARTMENT

May 9, 2002

Mike Beason
2943 Kalakaua Ave #1008
Honolulu, Hawaii 96815

Subject: Special Management Area (SMA) Permit Determination
Verizon Cell Site
Pacific Missile Range Facility (PMRF) - Barking Sands
TMK: (4) 1-2-02:13, Kekaha Kauai

Dear Mr. Beason:

This letter is being sent to confirm that construction of a wireless communication facility consisting of an equipment shelter, and 80 foot steel monopole on the above identified property will not require a SMA Permit from our office. PMRF - Barking Sands is located within a Federal Exclusion Zone, and is not subject to County of Kauai SMA Permit requirements. Therefore, the proposed Verizon Cell Site does not require a SMA Permit from our.

Please be advised that there may be additional government agency requirements, and it will be the applicant's responsibility to resolve those requirements with the respective agencies. Feel welcome to contact George Kalisik of my staff at 241-6677 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Dee M. Crowell".

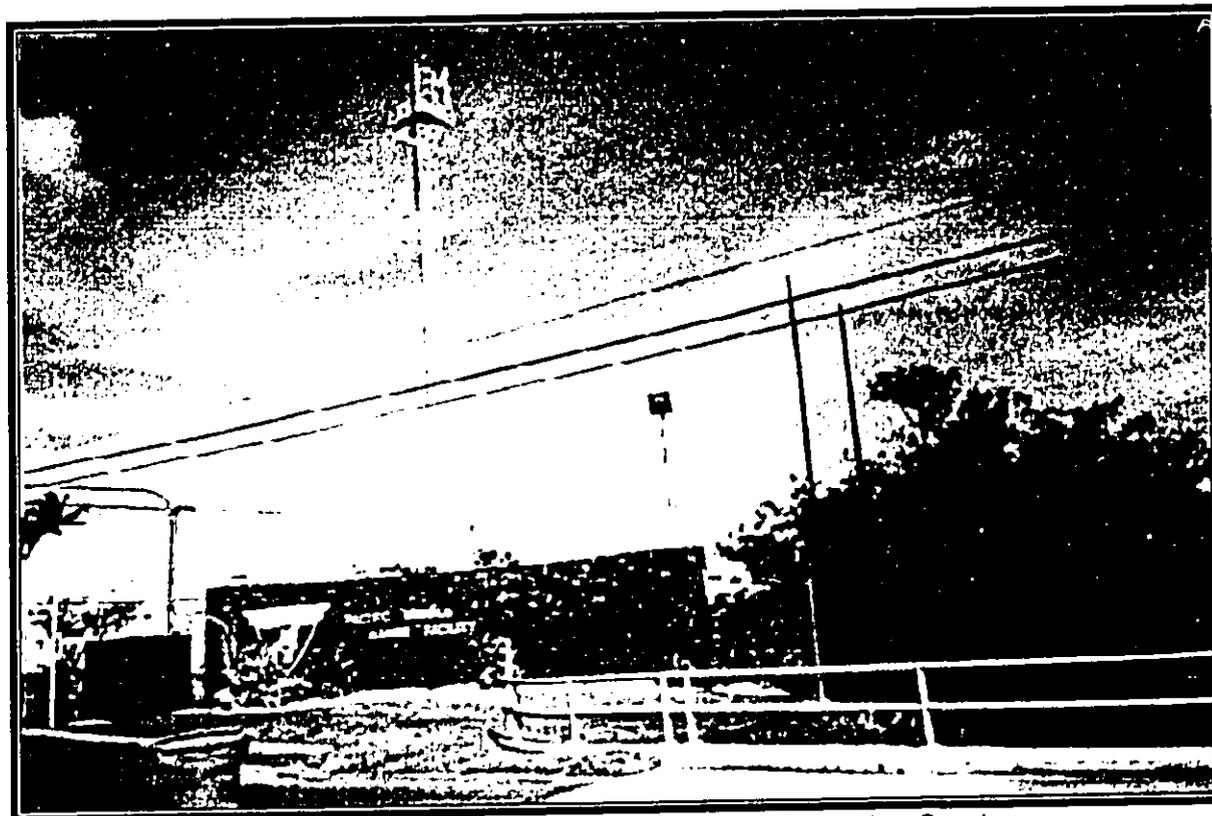
Dee M. Crowell
Planning Director

Appendix 3

Site Photographs



View of existing towers from Kaumualii Highway



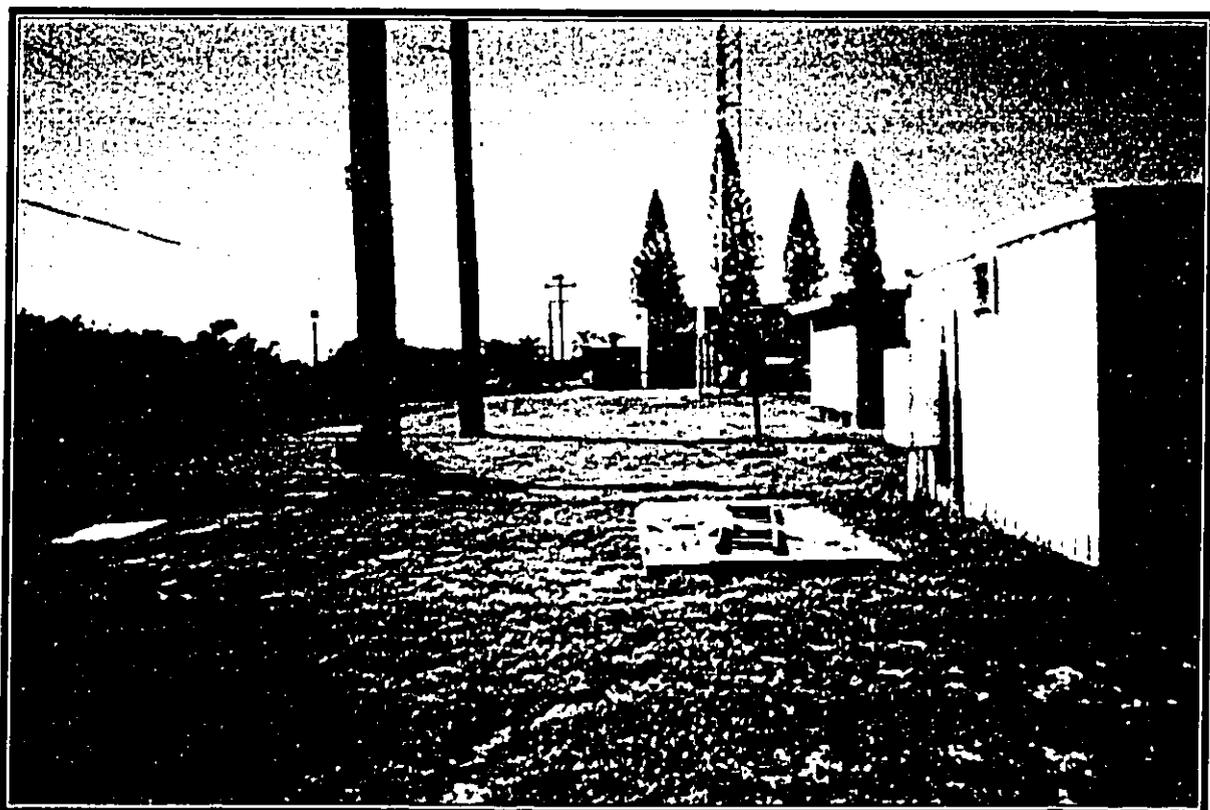
Existing towers from the entrance to PMRF Barking Sands

Verizon Wireless
PMRF Barking Sands Cell Site
Project No. HI0255

August 15, 2002



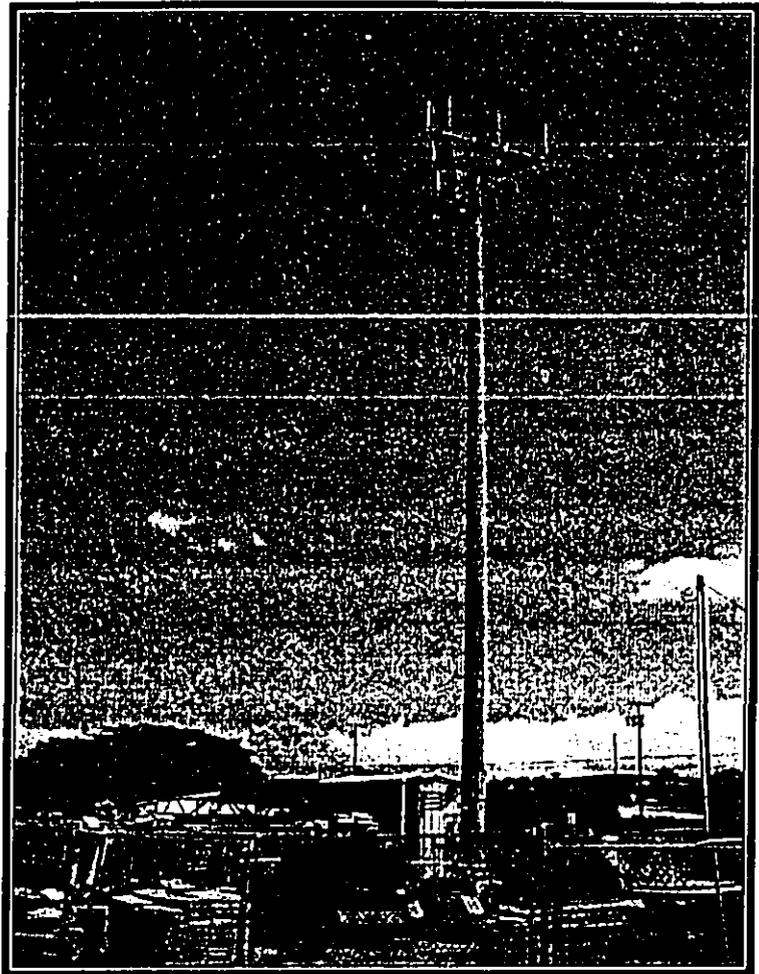
Proposed project area looking north



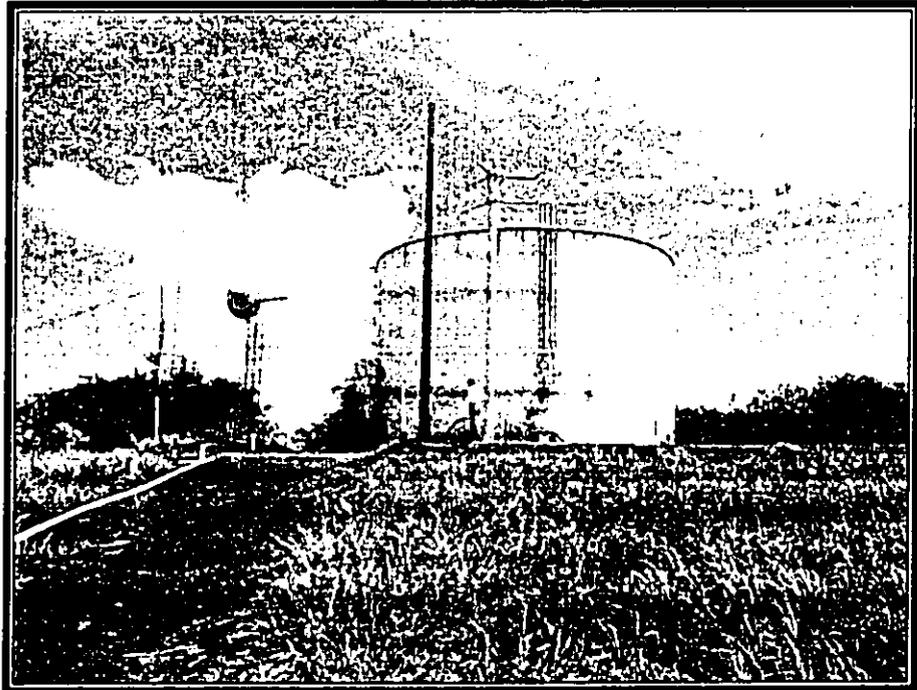
Proposed project area looking south, Building #352 on the right

Verizon Wireless
PMRF Barking Sands Cell Site
Project No. HI0255

August 15, 2002



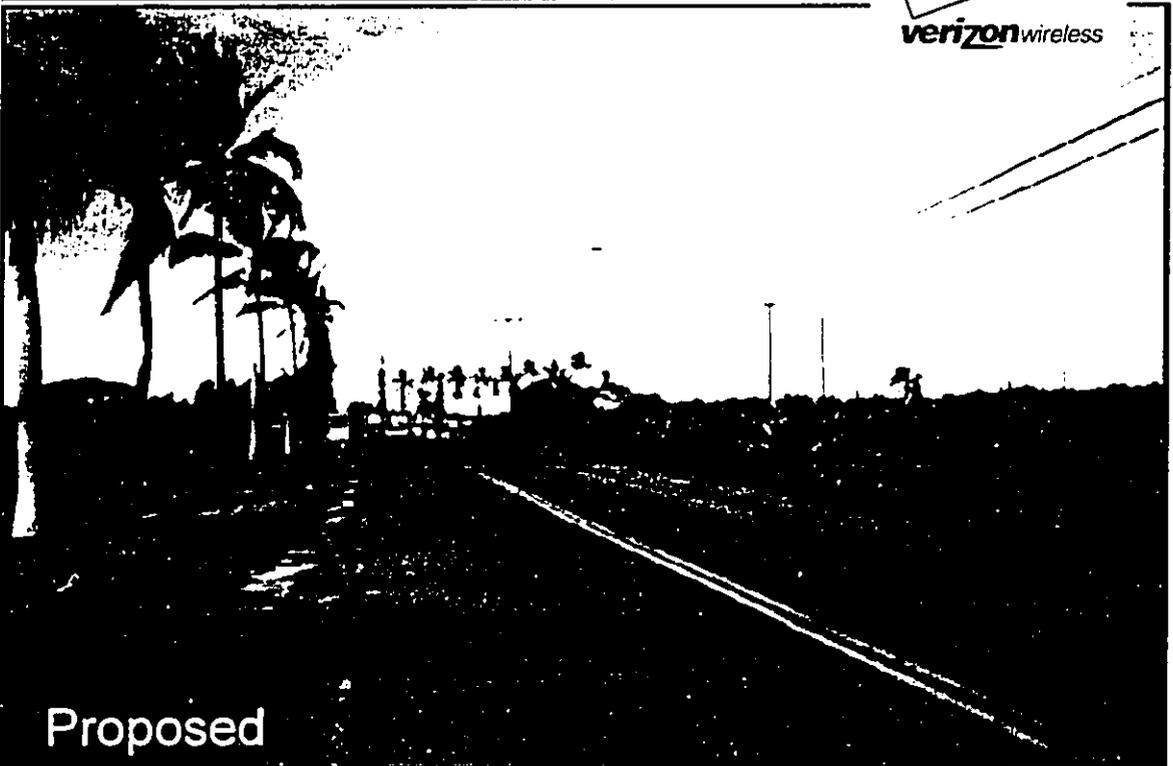
Example 80' steel monopole with antenna platform and panel antennas



Example monopole with three (3) - 10' omni antennas

PMRF Barking Sand Cell Site

Photosimulation of proposed equipment antenna



Appendix 4

Plans:

Area Plan- Vicinity Maps

Island Map/ Subzone Map

Tax Map Key

Site Plan- Property Description and Maps

Parcel 13: Executive Order 887

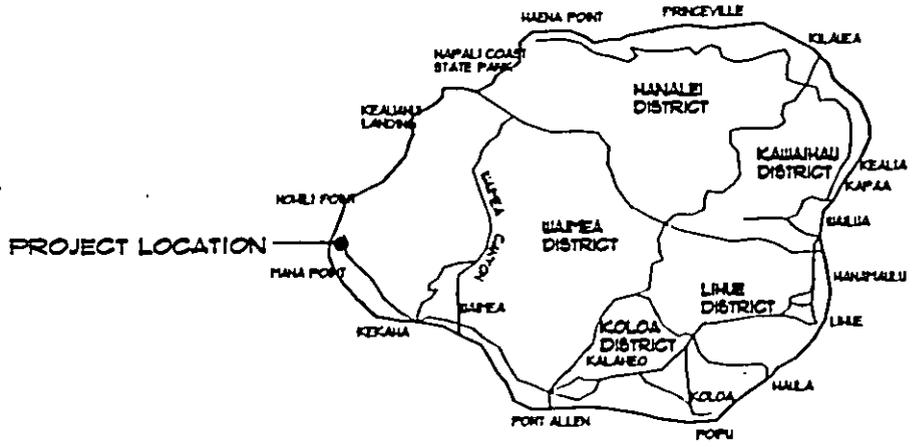
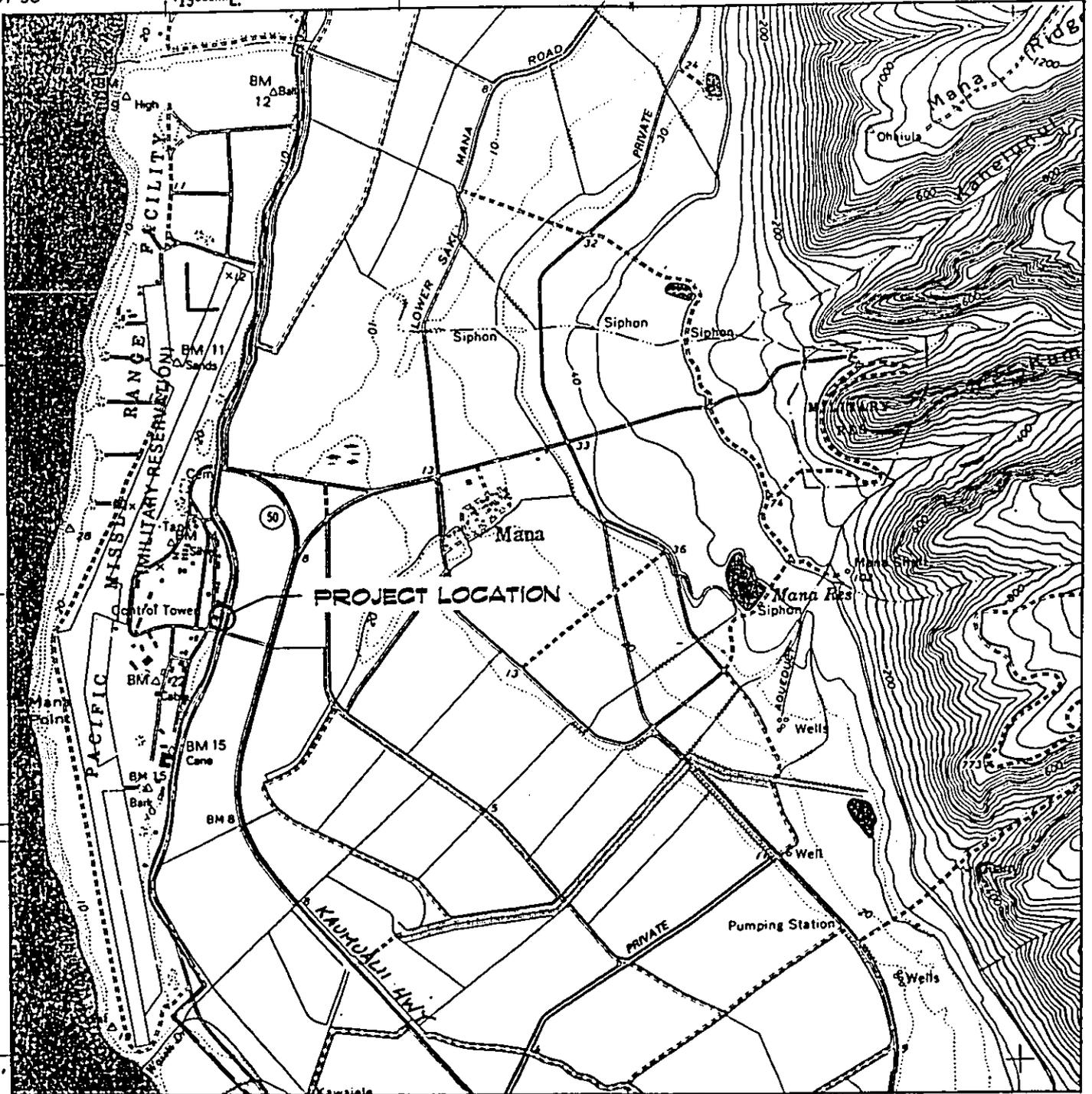
Parcel 26: Tract E-2

Construction Plans

159°47'30"
22°03'30"

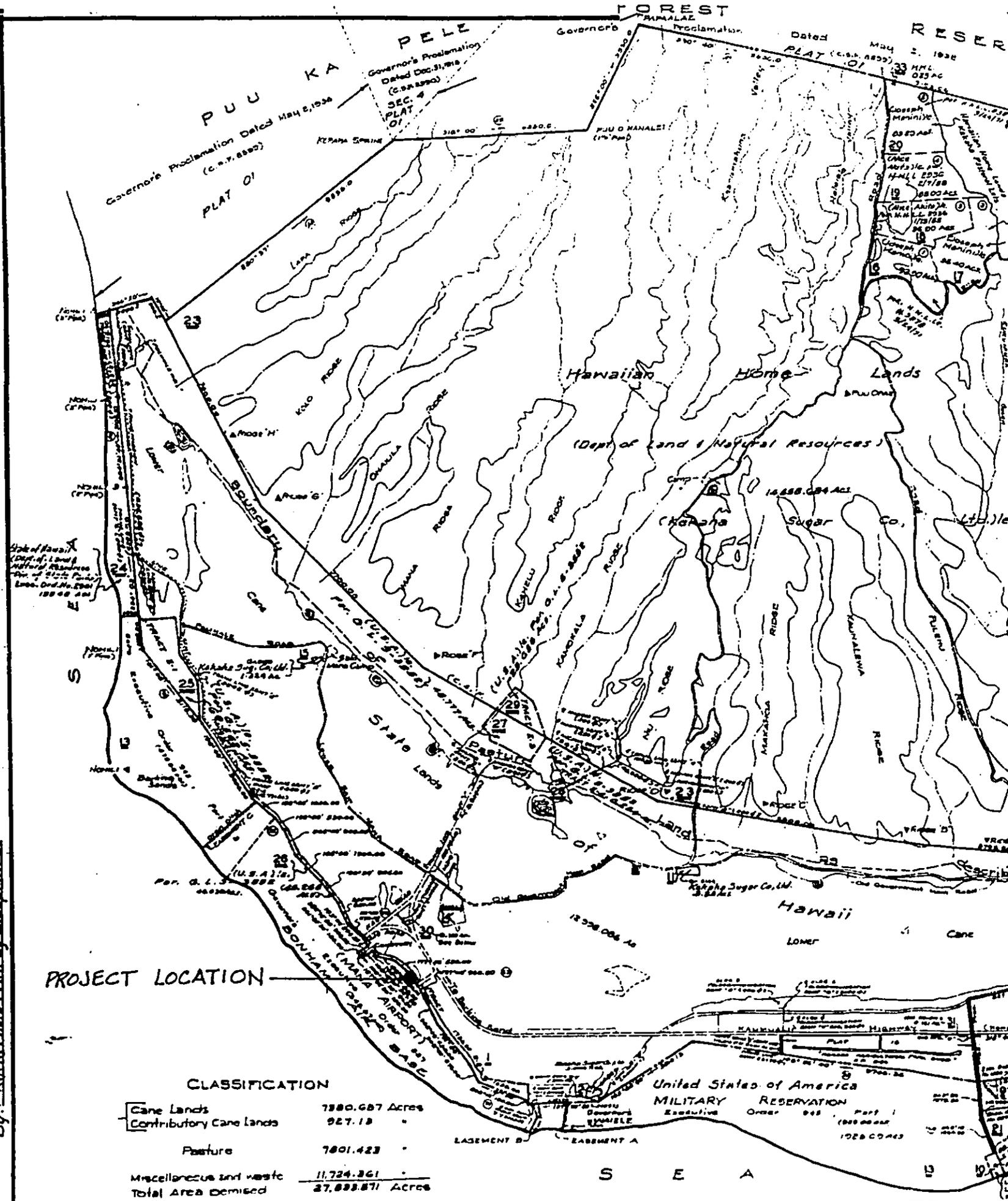
2439000m. N.

22°01'



NO SCALE
ISLAND OF KAUAI, HAWAII

DOCUMENT CAPTURED AS RECEIVED



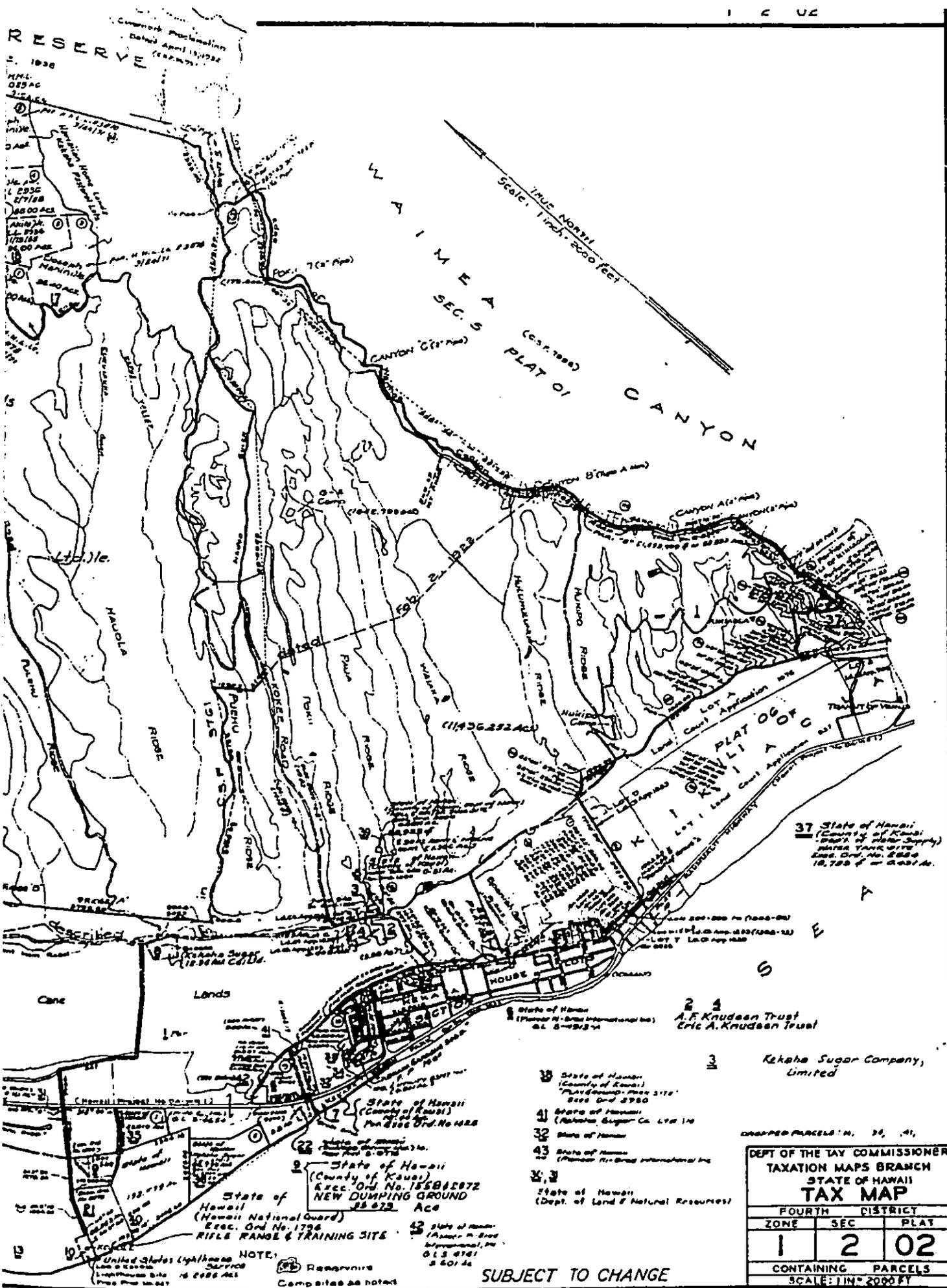
Orig. No. - PG 78 (Revised: Nov. 1944)
 Source: G.S.F. No. 1588 of T.M.C. data
 By: R.Y. Photo Plotted by Aluprint Co.

PROJECT LOCATION

CLASSIFICATION	
Cane Lands	7980.687 Acres
Contributory Cane Lands	927.18
Pasture	7801.423
Miscellaneous and waste	11,724.861
Total Area Demised	27,893.871 Acres

United States of America
MILITARY RESERVATION
 Executive Order 948 Part 1
 (1943) 1028 CODES

DOCUMENT CAPTURED AS RECEIVED



37 State of Hawaii
(County of Kauai)
PARTIAL TRACT MAP
Exec. Ord. No. 8584
18,788 sq. ft. ±

2 A.F. Knudsen Trust
Eric A. Knudsen Trust

3 Kekaha Sugar Company,
Limited

- 38 State of Hawaii
(County of Kauai)
"PLAYGROUND" AREA 3174
Exec. Ord. 2980
- 41 State of Hawaii
(Kekaha Sugar Co. LTM 14)
- 32 State of Hawaii
- 43 State of Hawaii
(Pioneer Fire-Brick International Inc)
- 31, 3 State of Hawaii
(Dept. of Land & Natural Resources)

State of Hawaii
(County of Kauai)
Exec. Ord. No. 155842872
NEW DUMPING GROUND
28,672 AC

State of Hawaii
(Hawaii National Guard)
Exec. Ord. No. 1794
RIFLE RANGE & TRAINING SITE

NOTE:
United States Light House Service
Lighthouse Site 16,686 AC
Pres. Procl. No. 227

Reservoirs
Composites as noted

SUBJECT TO CHANGE

DEPT OF THE TAX COMMISSIONER
TAXATION MAPS BRANCH
STATE OF HAWAII
TAX MAP

FOURTH DISTRICT

ZONE	SEC	PLAT
1	2	02

CONTAINING PARCELS
SCALE: 1" = 2000 FT

EXECUTIVE ORDER NO. 857

SETTING ASIDE LAND FOR THE UNITED STATES

BY THIS EXECUTIVE ORDER, I, THE UNDERSIGNED, ACTING GOVERNOR OF THE TERRITORY OF HAWAII, by virtue of the authority in me vested by Section 91 of the Hawaiian Organic Act, and every other authority me herewith enabling, do hereby order that the public property hereinafter described be, and the same is, hereby set aside for the uses and purposes of the United States, to-wit, for a site for the Mana Airport Military Reservation, Mana, Waimea, Kauai.

MANA, AIRPORT
MANA, WAIMEA, KAUAI

Being portion of the Government
(Crown) Land of Waimea

BEGINNING at a pipe at the northeast corner of this tract of land and about 120 feet west of a drainage canal (20 feet wide), the coordinates of said point of beginning referred to Government Survey Triangulation Station "MOHILI" being 4755.50 feet South and 1955.50 feet East, as shown on Government Survey Registered Map 2679, and running by azimuths measured clockwise from True South:

- | | | | |
|-----|------|---------|--|
| 1. | 12° | 00' | 530.00 feet along Government land; |
| 2. | 26° | 00' | 900.00 feet along same; |
| 3. | 6° | 00' | 1200.00 feet along; same to a pipe; |
| 4. | 10° | 34' | 955.60 feet along same; |
| 5. | 25° | 00' | 850.00 feet along same; |
| 6. | 1° | 00' | 670.00 feet along same; |
| 7. | 13° | 00' | 294.85 feet along same; |
| 8. | 106° | 18' 20" | 326.08 feet along same to a pipe; |
| 9. | 101° | 28' 30" | 120.50 feet along cemetery to a pipe; |
| 10. | 7° | 28' 30" | 185.20 feet along cemetery to a pipe; |
| 11. | 282° | 58' 30" | 91.20 feet along cemetery to a pipe; |
| 12. | 286° | 18' 20" | 337.39 feet along Government land to a pipe; |
| 13. | 13° | 00' | 235.96 feet along; same to a pipe; |

- | | | | |
|-----|------|-----|---|
| 14. | 333° | 00' | 660.00 feet along same to a pipe; |
| 15. | 357° | 00' | 550.00 feet along same to a pipe; |
| 16. | 17° | 00' | 950.00 feet along same to a pipe; |
| 17. | 22° | 40' | 1130.00 feet along same to a pipe; |
| 18. | 11° | 00' | 1730.00 feet along same to a pipe; |
| 19. | 22° | 00' | 670.00 feet along same to a pipe; |
| 20. | 341° | 00' | 1680.00 feet along same to a pipe; |
| 21. | 25° | 10' | 630.00 feet along same to a pipe; |
| 22. | 80° | 00' | 540.00 feet along same to the seashore at highwater mark, passing over a pipe at 480.00 feet; |

Thence along the seashore at highwater mark in a general northerly direction to the southwest corner of Mana Park (Executive Order 148), the direct azimuths and distances between points at seashore being:

- | | | | |
|-----|------|-----|--|
| 23. | 162° | 20' | 3300.00 feet; |
| 24. | 174° | 00' | 1800.00 feet; |
| 25. | 190° | 40' | 2947.40 feet; |
| 26. | 186° | 30' | 2461.10 feet; |
| 27. | 200° | 00' | 2000.00 feet; |
| 28. | 160° | 00' | 1000.00 feet to the southwest corner of Mana Park (Executive Order 148); thence |
| 29. | 266° | 42' | 1291.90 feet along Mana Park (Executive Order 148) to a pipe, passing over a pipe at 90.00 feet; |
| 30. | 266° | 42' | 1288.10 feet along Government land to the point of beginning. |

AREA 548.57 ACRES

The land herein described is set aside upon the understanding that access to the shore for the purpose of fishing will be denied only on the portion used for bombing and that only while same is actually in progress or about to commence.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the Territory of Hawaii to be affixed. Done at the Capitol at Honolulu this Twenty-Ninth day of June Nineteen Hundred and Forty.

By the Governor:

/s/ Chas. H. Hite

/s/ Chas. H. Hite

Approved as to form:

Secretary of Hawaii.

/s/ Edward H. Sylvan

AAD:CI

Deputy Attorney General.

- | | | |
|----|----------|--|
| 3. | 314° 03' | 1,194.24 feet along remainder of Government land of Waimea; |
| 4. | 44° 03' | 1,506.89 feet along remainder of Government land of Waimea; |
| 5. | 11° 05' | 742.14 feet along remainder of Government land of Waimea; |
| 6. | 44° 03' | 1,458.00 feet along remainder of Government land of Waimea to the point of beginning and containing an area of 69.562 acres. |

TRACT E-2

ADDITION TO BONHAM AIR BASE (FORMERLY MANA AIRPORT)

Beginning at a point on the Westerly boundary of this piece of land on the Easterly boundary of Bonham Air Base, being also the Northeast corner of the land described in Governor's Executive Order No. 887, dated June 29, 1940, and the Southeast corner of the land described in Part 2 in Governor's Executive Order No. 945, dated June 10, 1941, the coordinates of said point of beginning referred to Government Survey Triangulation Station "NOHILI" being 4,755.50 feet South and 1,955.50 feet East and running by azimuths measured clockwise from true South:

- | | | |
|----|----------|--|
| 1. | 182° 40' | 982.62 feet along the Easterly boundary of Bonham Air Base (Governor's Executive Order No. 945, Part 2); |
| 2. | 272° 40' | 138.14 feet along remainder of Government land of Waimea; |
| 3. | 11° 06' | 176.75 feet along remainder of Government land of Waimea; |
| 4. | 2° 46' | 304.55 feet along remainder of Government land of Waimea; |
| 5. | 357° 49' | 317.01 feet along remainder of Government land of Waimea; |
| 6. | 9° 05' | 255.65 feet along remainder of Government land of Waimea; |

7.	15° 19'	274.30 feet along remainder of Government land of Waimea;
8.	11° 49'	267.80 feet along remainder of Government land of Waimea;
9.	25° 48'	180.60 feet along remainder of Government land of Waimea;
10.	29° 05'	326.22 feet along remainder of Government land of Waimea;
11.	21° 43'	276.90 feet along remainder of Government land of Waimea;
12.	11° 28'	460.00 feet along remainder of Government land of Waimea;
13.	3° 02'	270.92 feet along remainder of Government land of Waimea;
14.	6° 44' 30"	661.62 feet along remainder of Government land of Waimea;
15.	18° 03'	244.98 feet along remainder of Government land of Waimea;
16.	11° 26'	156.12 feet along remainder of Government land of Waimea;
17.	3° 02'	299.35 feet along remainder of Government land of Waimea;
18.	14° 10' 30"	140.75 feet along remainder of Government land of Waimea;
19.	28° 23'	252.04 feet along remainder of Government land of Waimea;
20.	23° 01'	540.31 feet along remainder of Government land of Waimea;
21.	13° 32'	173.20 feet along remainder of Government land of Waimea;
22.	0° 23'	351.61 feet along remainder of Government land of Waimea;

23.	5° 24'	302.35 feet along remainder of Government land of Waimea;
24.	16° 07' 30"	411.61 feet along remainder of Government land of Waimea;
25.	354° 14' 30"	153.27 feet along remainder of Government land of Waimea;
26.	320° 35'	151.80 feet along remainder of Government land of Waimea;
27.	329° 50'	160.58 feet along remainder of Government land of Waimea;
28.	344° 15'	335.36 feet along remainder of Government land of Waimea;
29.	357° 09' 30"	518.90 feet along remainder of Government land of Waimea;
30.	8° 37'	184.64 feet along remainder of Government land of Waimea;
31.	19° 00' 30"	265.05 feet along remainder of Government land of Waimea;
32.	15° 50' 30"	604.48 feet along remainder of Government land of Waimea;
33.	23° 04'	1,090.37 feet along remainder of Government land of Waimea;
34.	12° 21'	676.47 feet along remainder of Government land of Waimea;
35.	7° 25' 30"	423.32 feet along remainder of Government land of Waimea;
36.	8° 48' 30"	203.04 feet along remainder of Government land of Waimea;
37.	12° 36'	232.73 feet along remainder of Government land of Waimea;
38.	17° 59'	193.71 feet along remainder of Government land of Waimea;

- | | | | |
|-----|--------------|---------------|--|
| 39. | 21° 11' 30" | 426.37 feet | along remainder of Government land of Waimea; |
| 40. | 2° 29' | 158.62 feet | along remainder of Government land of Waimea; |
| 41. | 344° 12' | 143.83 feet | along remainder of Government land of Waimea; |
| 42. | 329° 11' | 1,451.33 feet | along remainder of Government land of Waimea; |
| 43. | 46° 20' | 587.33 feet | along remainder of Government land of Waimea; |
| 44. | 25° 10' | 30.64 feet | along remainder of Government land of Waimea, to the Easterly boundary of Bonham Air Base (Governor's Executive Order No. 945, Part 1); |
| 45. | 137° 30' 20" | 70.14 feet | along the Easterly side of Bonham Air Base, to a point at the North corner of Governor's Executive Order No. 945, Part 1 and the Southeasterly boundary of Governor's Executive Order No. 887; |
| 46. | 205° 10' | 156.00 feet | along Bonham Air Base (Governor's Executive Order No. 887); |
| 47. | 161° 00' | 1,680.00 feet | along Bonham Air Base (Governor's Executive Order No. 887); |
| 48. | 202° 00' | 670.00 feet | along Bonham Air Base (Governor's Executive Order No. 887); |
| 49. | 191° 00' | 1,730.00 feet | along Bonham Air Base (Governor's Executive Order No. 887); |
| 50. | 202° 40' | 1,130.00 feet | along Bonham Air Base (Governor's Executive Order No. 887); |

51. 197° 00' 950.00 feet along Bonham Air Base (Governor's Executive Order No. 887);
52. 177° 00' 550.00 feet along Bonham Air Base (Governor's Executive Order no. 887);
53. 153° 00' 660.00 feet along Bonham Air Base (Governor's Executive Order No. 887);
54. 193° 00' 215.96 feet along Bonham Air Base (Governor's Executive Order No. 877);
55. 106° 18' 20" 337.39 feet along Bonham Air Base (Governor's Executive Order No. 877);
56. 196° 26' 30" 188.85 feet along Cemetery Lot along remainder of Government land of Waimea;
57. 286° 18' 20" 326.08 feet along Bonham Air Base (Governor's Executive Order No. 887);
58. 193° 00' 294.85 feet along Bonham Air Base (Governor's Executive Order No. 887);
59. 181° 00' 670.00 feet along Bonham Air Base (Governor's Executive Order No. 887);
60. 205° 00' 850.00 feet along Bonham Air Base (Governor's Executive Order No. 887);
61. 190° 34' 956.60 feet along Bonham Air Base (Governor's Executive Order No. 887);
62. 186° 00' 1,200.00 feet along Bonham Air Base (Governor's Executive Order No. 887);

63. 206° 00' 900.00 feet along Bonham Air Base (Governor's Executive Order No. 887);
64. 192° 00' 530.00 feet along Bonham Air Base (Governor's Executive Order No. 945, Part 2), to the point of beginning and containing an AREA OF 45.268 ACRES.

RESERVING, HOWEVER, to the Grantor, its permittees, lessees and assigns, a right of access to and from the following described parcel of land:

Beginning at the southeasterly corner of this parcel of land, said initial point being also the end of "Course 55" of Tract E-2 described hereinabove, marked by an iron pipe and running by azimuths measured clockwise from True South:-

1. 102° 58' 30" 91.20 feet along Bonham Air Base (Governor's Executive Order No. 887);
2. 187° 28' 30" 186.20 feet along Bonham Air Base (Governor's Executive Order No. 887);
3. 281° 28' 30" 120.50 feet along Bonham Air Base (Governor's Executive Order No. 887);
4. 16° 26' 30" 188.85 feet along "Course 56" of Parcel E-2 hereinabove described to the point of beginning and containing 0.454 ACRE more or less.

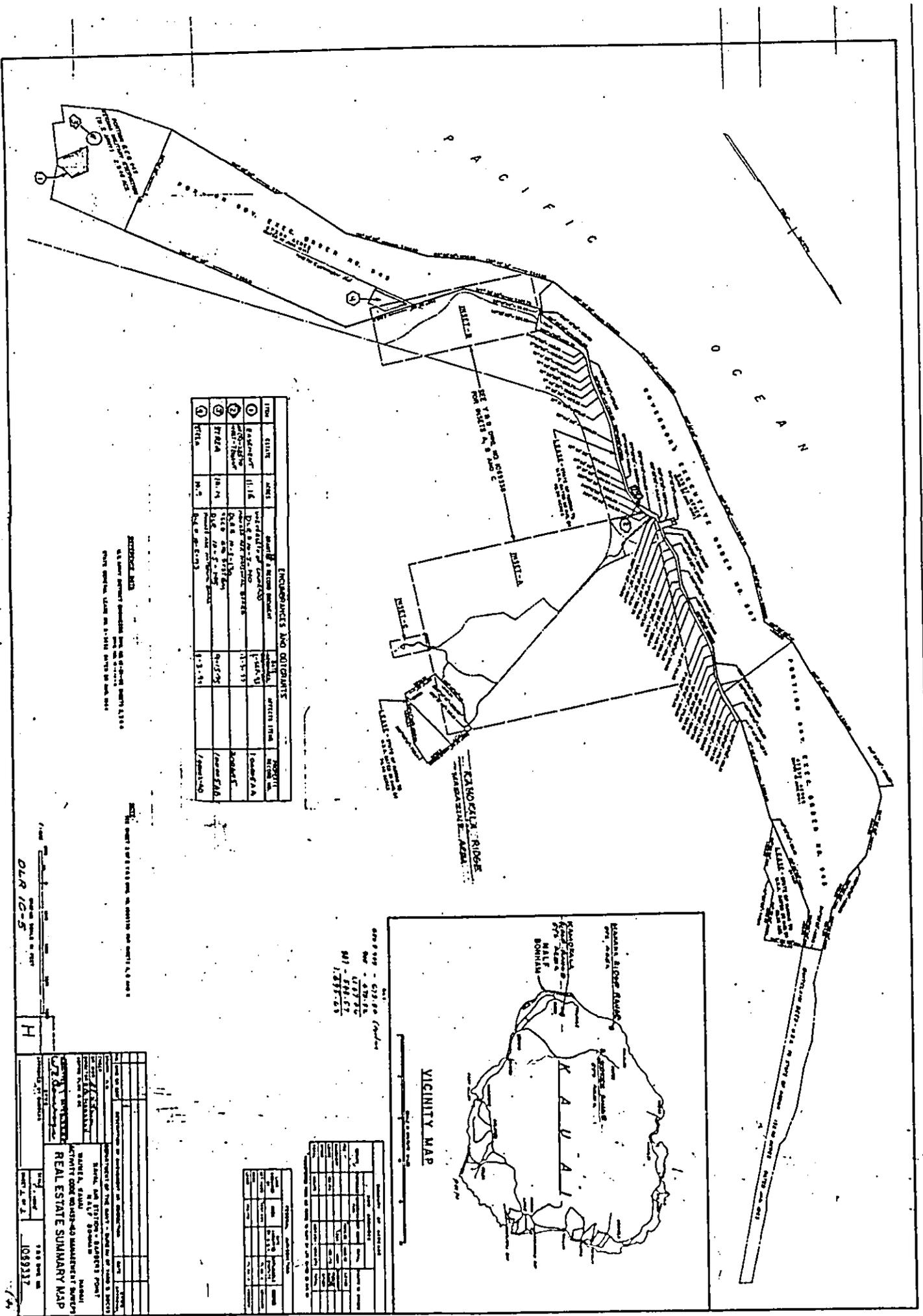
TRACT E-3

BONHAM AIR BASE (FORMERLY MANA AIRPORT) STORAGE AREA

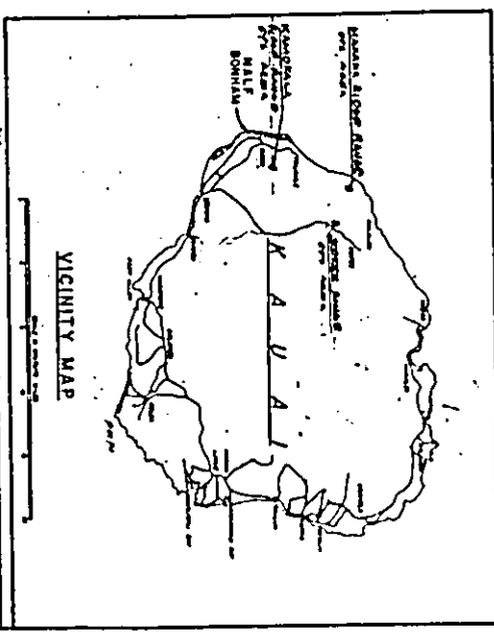
Being a tract of land having an aggregate area of 74.463 acres and comprised of Parcels 1 and 2 described as follows:

PARCEL 1

Beginning at the Northwest corner of this piece of land being also the Northeast corner of Parcel 2 hereinafter described, said initial point being on the divisional line between the lands of the State of Hawaii and Hawaiian Home Land, the coordinates of said point of beginning referred to Government Survey Triangulation Station "NOHILI" being 8,009.49 feet South and 9,806.81



ITEM	DATE	DESCRIPTION	AREA	REMARKS
1	11.16	RECORDING OF DEED	1.15	10000.00
2	12.14	RECORDING OF DEED	1.15	10000.00
3	12.14	RECORDING OF DEED	1.15	10000.00



RECORDING INFO
 ALL DEEDS MUST BE RECORDED WITH THE CLERK OF SUPERIOR COURT, MILWAUKEE, WISCONSIN.
 THIS MAP IS SUBJECT TO ALL RECORDS ON FILE WITH THE CLERK OF SUPERIOR COURT, MILWAUKEE, WISCONSIN.

DLR 10-5

NO.	DESCRIPTION	DATE	AMOUNT
1
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NO.	DESCRIPTION	DATE	AMOUNT
1
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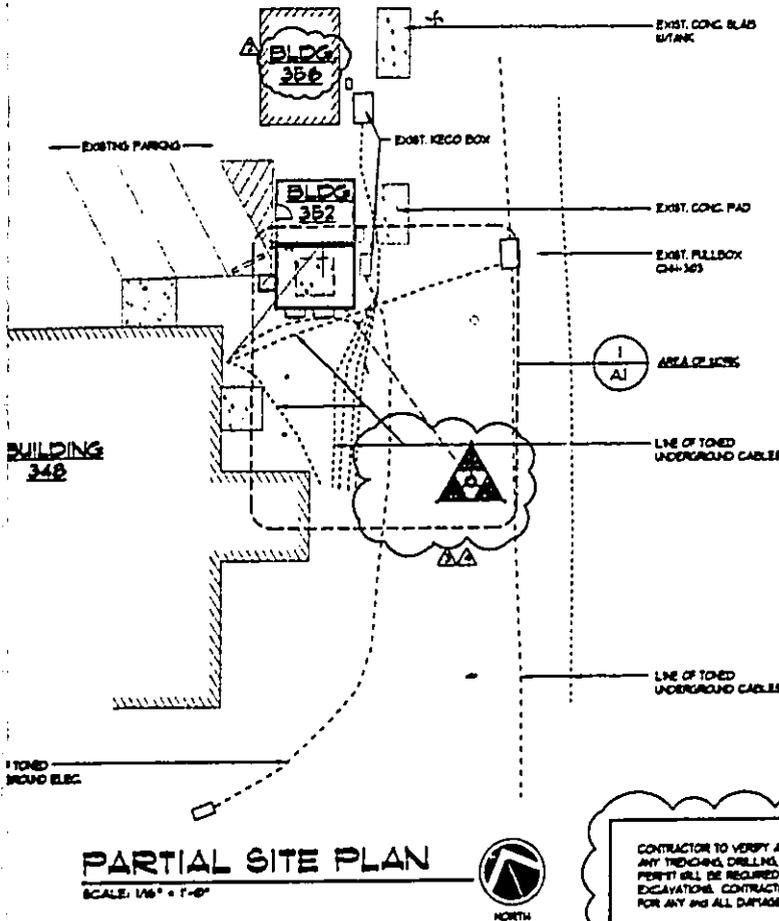
1089337

Verizon wireless

TELECOMMUNICATION FACILITY - KEKAHA

PMRF BARKING SANDS, TMK: (4) 1-2-002-013

PROJECT NO: HI0255-0100



MONITORING PLAN NOTES

1. CONTRACTOR TO REFER TO MONITORING PLAN.
2. CONTRACTOR TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE ARCHAEOLOGIST PRIOR TO COMMENCING WORK.
3. IF HISTORIC SITES, INCLUDING BURIALS, ARE UNCOVERED DURING THE MONITORING, CONSTRUCTION MUST STOP IN THE IMMEDIATE VICINITY AND THE ARCHAEOLOGIST SHALL BE ALLOWED SUFFICIENT TIME TO EVALUATE THE SITE AND CARRY OUT MITIGATION AS NEEDED.

LIMITS OF NEW WORK

SCOPE OF WORK:
 NEW VERIZON WIRELESS EQUIPMENT SHELTER.
 NEW PANEL ANTENNAS (UGPS ANTENNA MOUNTED AT NEW 80'-0" H HTTL MONOPOLE (TO REPLACE EXISTING WOOD POLE))

- NOTE:
1. ACCESS TO NEW EQUIPMENT IS RESTRICTED BY A LOCKED DOOR.
 2. FIRE SAFETY DURING CONSTRUCTION ALTERATION OR DEMOLITION SHALL COMPLY WITH ARTICLE 81 OF THE 1986 UNIFORM FIRE CODE.

CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES PRIOR TO ANY TRENCHING, DRILLING, EXCAVATING, ETC. AN EXCAVATION PERMIT WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY EXCAVATIONS. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING UTILITIES.

PARTIAL SITE PLAN

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



McPeak + Associates, Inc.
 FIVE WATERBURY PLAZA
 HONOLULU, HAWAII 96813
 TEL: 808.534.3448

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 TELECOMMUNICATION FACILITY
 PMRF BARKING SANDS CELL SITE, (TMK: (4) 1-2-002-013)

TITLE SHEET, PARTIAL SITE PLAN

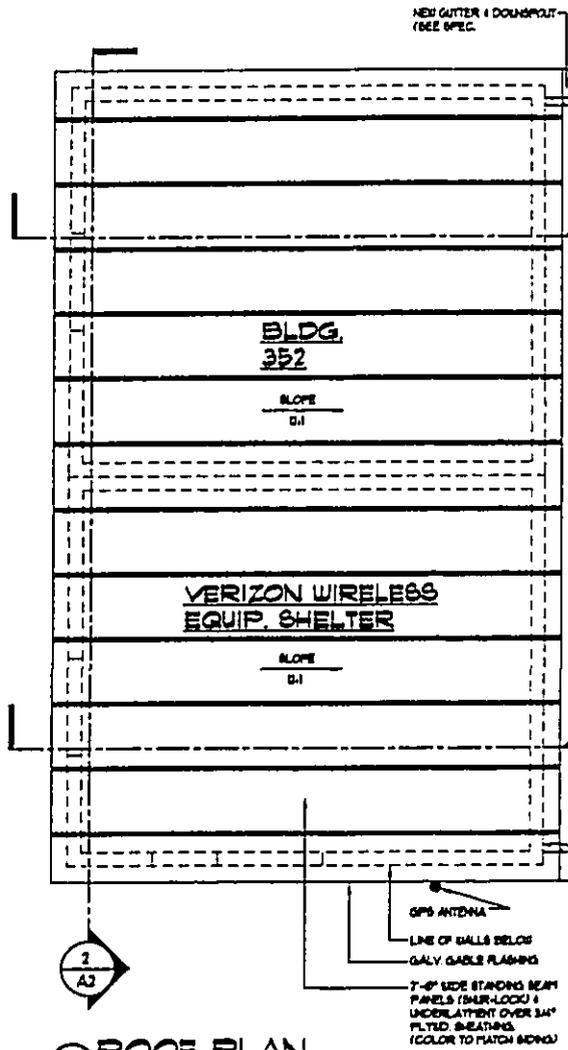


This work was prepared by a Licensed Professional Engineer in the State of Hawaii. It is the responsibility of the Engineer to ensure that the work complies with the applicable laws and regulations of the State of Hawaii.

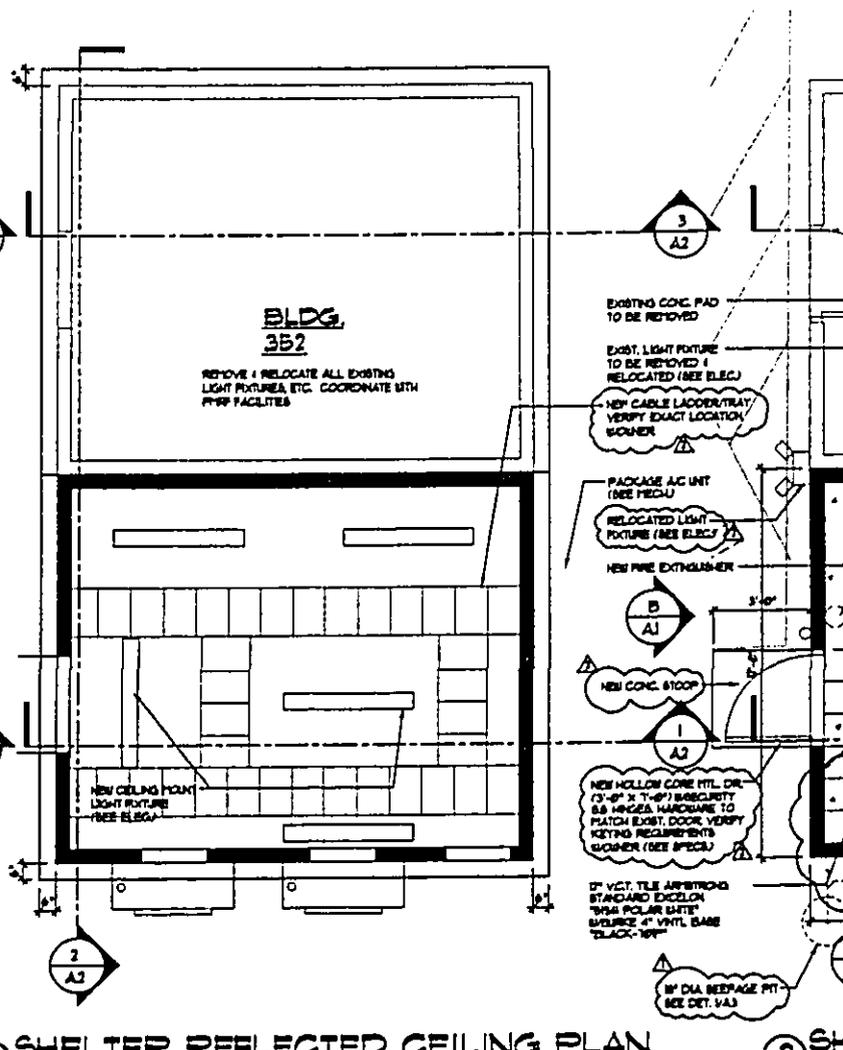
OBJECT DATA	PROJECT CONSULTANTS	SHEET INDEX
VERIZON WIRELESS 1940P STREET, SUITE 1500 LULU, HAWAII 96803 VERIZON WIRELESS BARKING SANDS TELECOMMUNICATION FACILITY BARKING SANDS HA, KAUAI, HI 1-002-013 5-0100	<p>GEOTECHNICAL ENGINEER SHINSATO ENGINEERING, INC. 96-747 KUAHAO PL. PEARL CITY, HAWAII 96122 (PH) 467-1855</p> <p>STRUCTURAL ENGINEER JAMES B. WALFISH CONSULTING STRUCTURAL ENGINEER 1104 MIKAHALA WAY HONOLULU, HAWAII 96816 (PH) 737-0141</p> <p>MECHANICAL ENGINEER DSA ENGINEERING, INC. 1714 KALAUOKA LANE, SUITE 202 HONOLULU, HAWAII 96814 (PH) 943-4855</p> <p>ELECTRICAL ENGINEER ITANO & ASSOCIATES, INC. 537 YOUNG STREET, SUITE 201 HONOLULU, HI 96816 (PH) 955-0067</p> <p>SURVEYOR CONTROL POINT SURVEYING 1043 HONG HO LANE HONOLULU, HI 96814 (PH) 537-6070</p>	<p>ARCHITECTURAL DRAWINGS</p> <p>T1 TITLE SHEET, PARTIAL SITE PLAN A1 SITE PLAN, SHELTER FLOOR PLAN, ELEVATIONS, DETAILS A2 DETAILS A3 SPECIFICATIONS A4 NAVY SPECIFICATIONS</p> <p>STRUCTURAL DRAWINGS</p> <p>S1 GENERAL NOTES, SPECIFICATIONS, STRUCTURAL PLANS, SECTIONS, DETAILS S2 DETAILS</p> <p>MECHANICAL DRAWINGS</p> <p>M1 MECHANICAL SPECIFICATIONS, GENERAL NOTES, MECH. FLOOR PLAN, WIRING DIAGRAM</p> <p>ELECTRICAL DRAWINGS</p> <p>E1 ELECTRICAL SYMBOLS, SPECIFICATIONS, ELEC. EXIST./DEMO. PLAN, DEMO. NOTES E2 ELECTRICAL SITE PLAN, SINGLE-LINE DIAGRAM, SERVICE EQUIP. ELEVATION, DUCT SECTIONS E3 LIGHTING PLAN, POWER & SIGNAL PLAN, LUMINAIRE SCHEDULE, PANEL SCHEDULE E4 GROUNDING PLAN, GROUNDING NOTES E5 GROUNDING SCHEMATIC DIAGRAM, GROUNDING DETAILS, MONOPOLE ELECTRICAL DETAILS</p>

Issue
7/31/01
9/17/01
10/19/01

Job No:
 Drawn by:
 Date:
 Drawing No:
 11



4 ROOF PLAN
SCALE: 3/8"=1'-0"

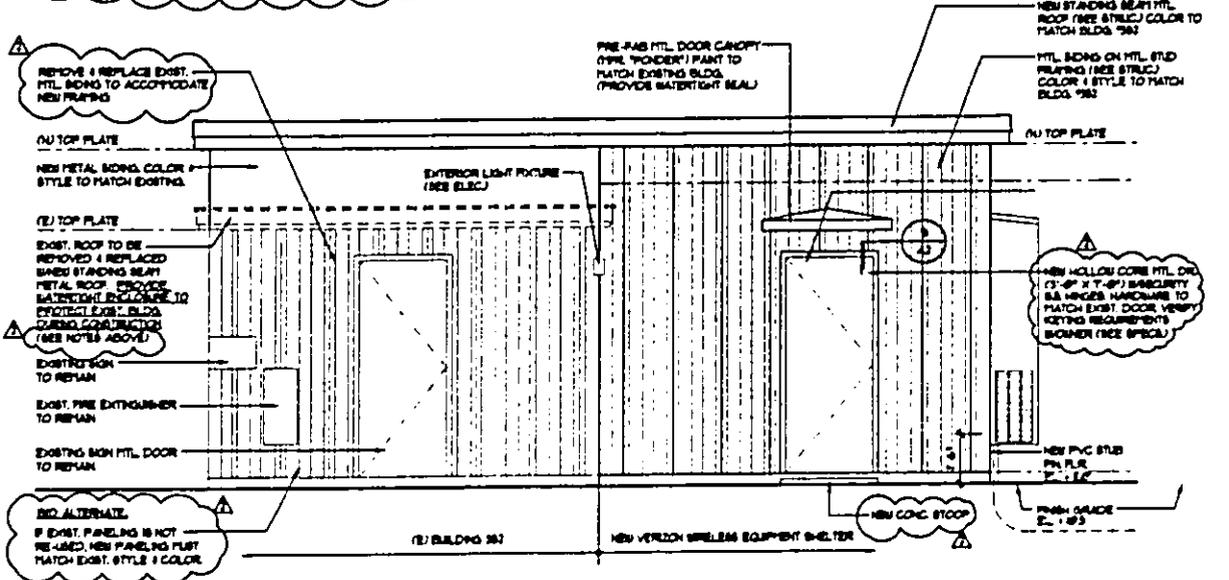


3 SHELTER REFLECTED CEILING PLAN
SCALE: 3/8"=1'-0"

PROTECTION OF EXISTING ELECTRICAL APPARATUS

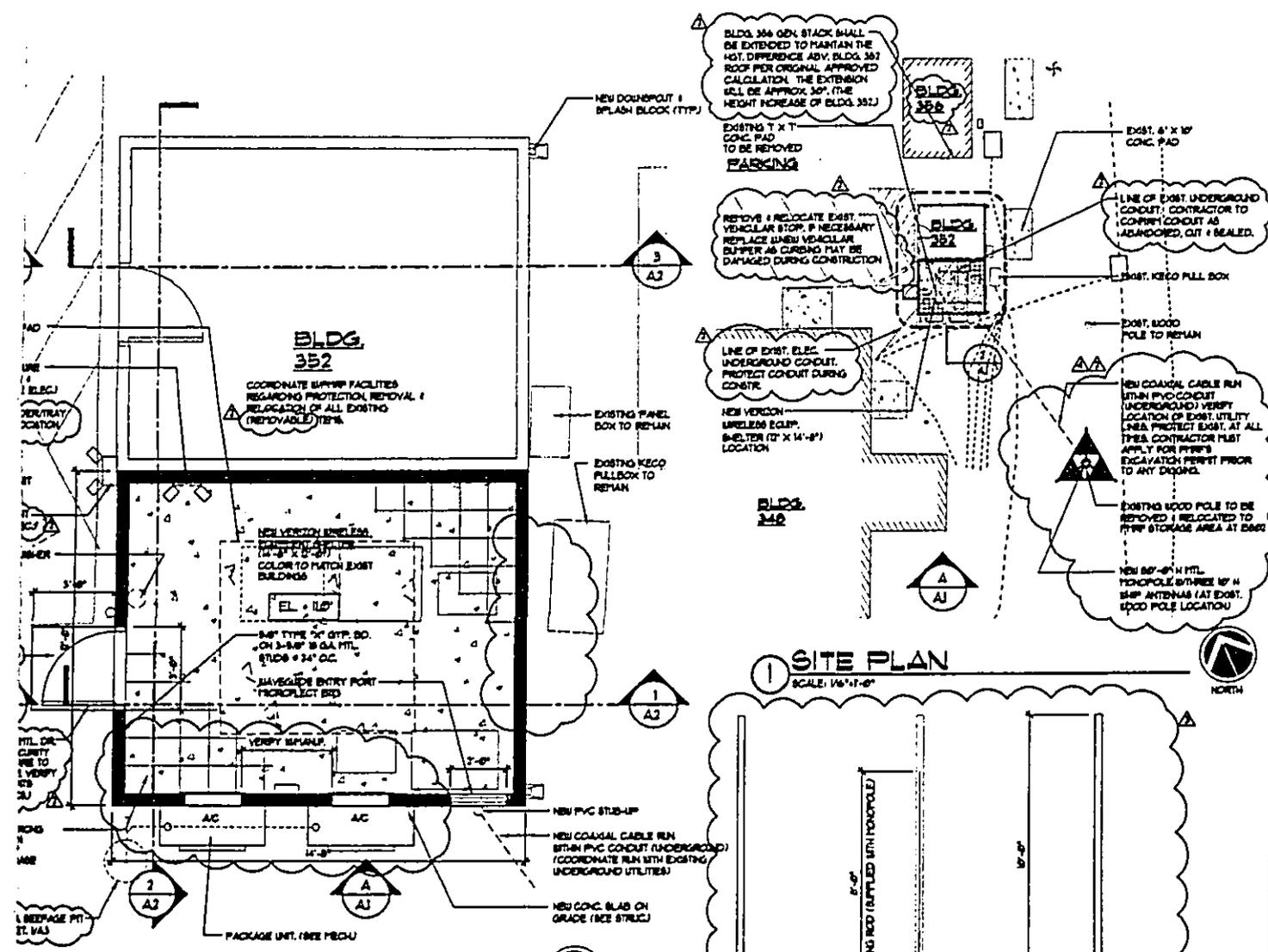
1. ENCASE EXISTING ELEC. APPARATUS WITH EXTERIOR GYP. BRD. AND MTL. STUD ENCLOSURE THROUGHOUT DURATION OF NEW CONSTRUCTION.
2. PROVIDE REMOVABLE PANELS AT GYP. BRD. ENCLOSURE TO ALLOW ACCESS TO APPARATUS AS REQUIRED.
3. COVER GYP. BRD. ENCLOSURE WITH PROTECTIVE PLASTIC COVERING DURING INCLEMENT WEATHER. APPARATUS SHALL BE PROTECTED FROM THE ELEMENTS AT ALL TIMES.

CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES PRIOR TO ANY TRENCHING, DRILLING, EXCAVATING, ETC. AN EXCAVATION PERMIT WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY EXCAVATIONS. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING UTILITIES.



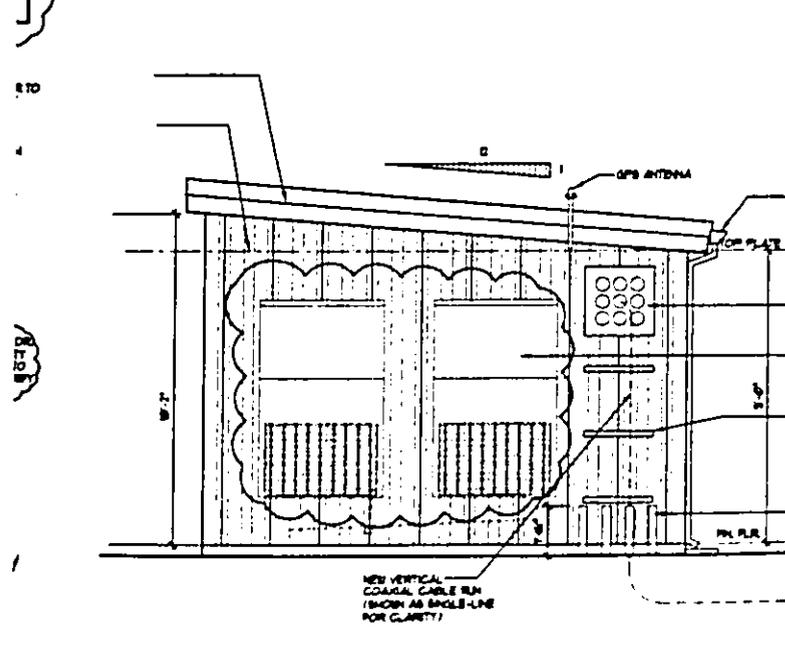
5 SHELTER ELEVATION
SCALE: 3/8"=1'-0"

NOTE:
1. U. PL.
2. F.
3. E.



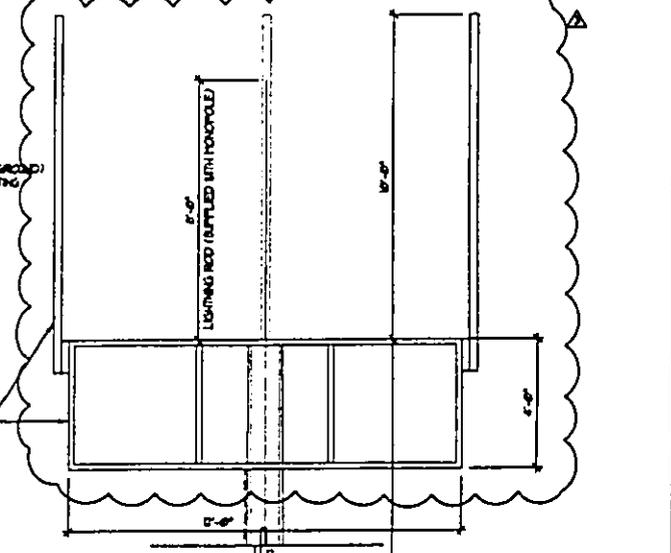
2 SHELTER PLAN
SCALE: 3/8"=1'-0"

- NOTE:**
 CONTRACTOR TO PROVIDE THE FOLLOWING ACCESSORIES:
 1) FLOOR BROOM (DUST PAN (WALL MOUNTED))
 2) FIRST-AID KIT
 3) EYE WASH KIT



3 SHELTER ELEVATION
SCALE: 3/8"=1'-0"

1 SITE PLAN
SCALE: 1/8"=1'-0"



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 TELECOMMUNICATION FACILITY
 PAPER BARROW SANDS CELL SITE, (TRAC #) 1-2-002-013

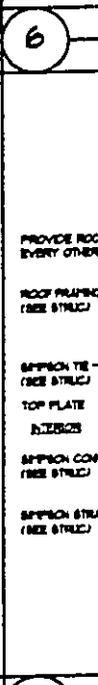
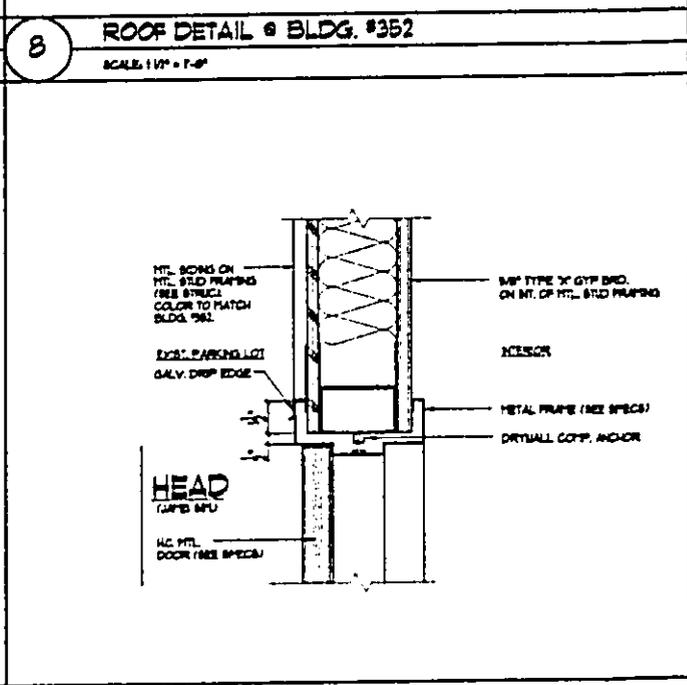
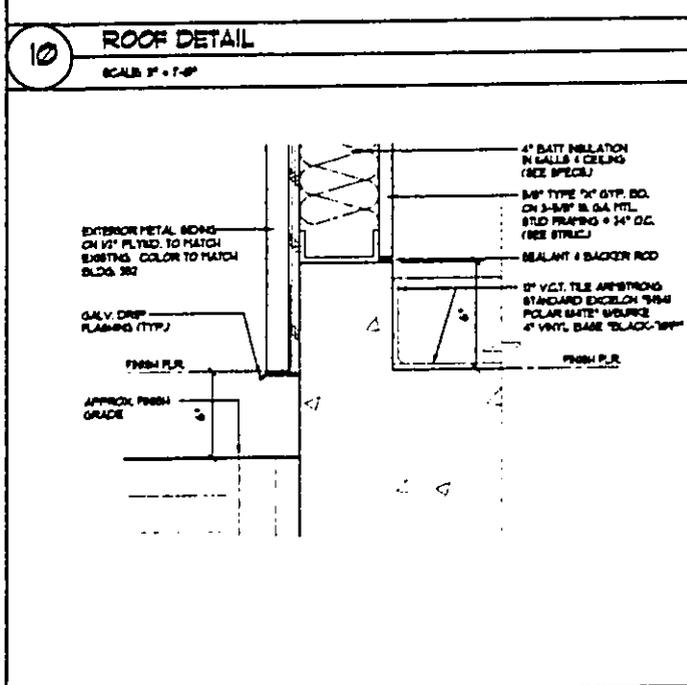
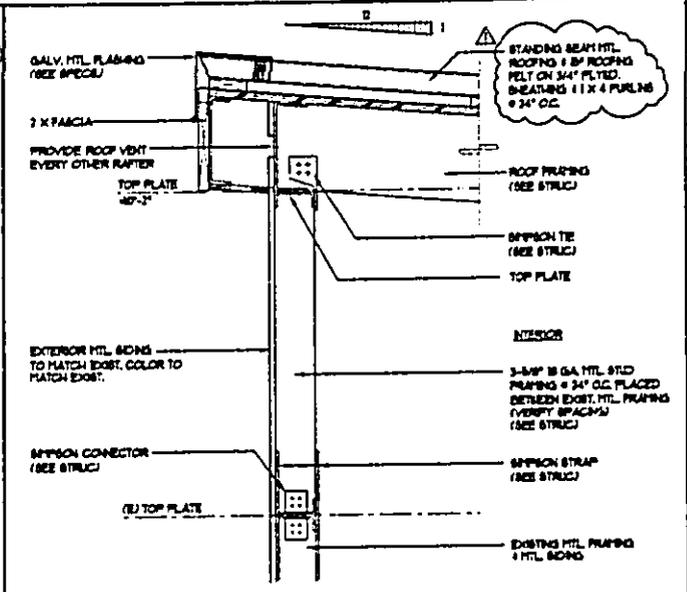
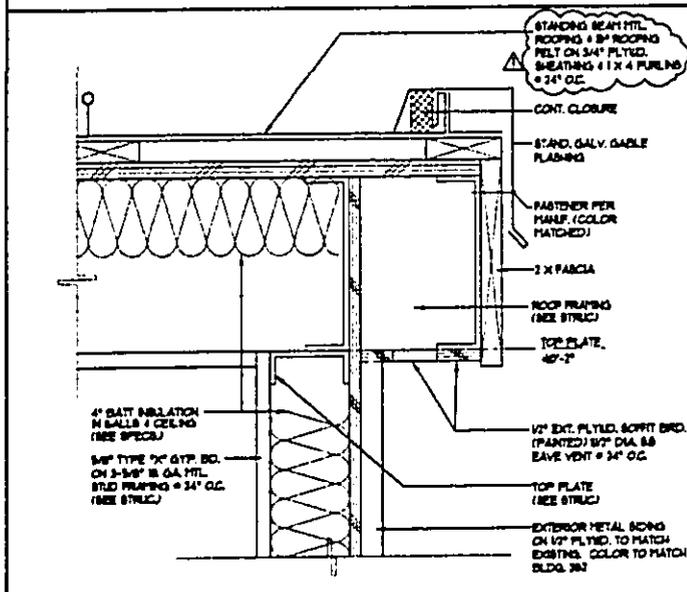
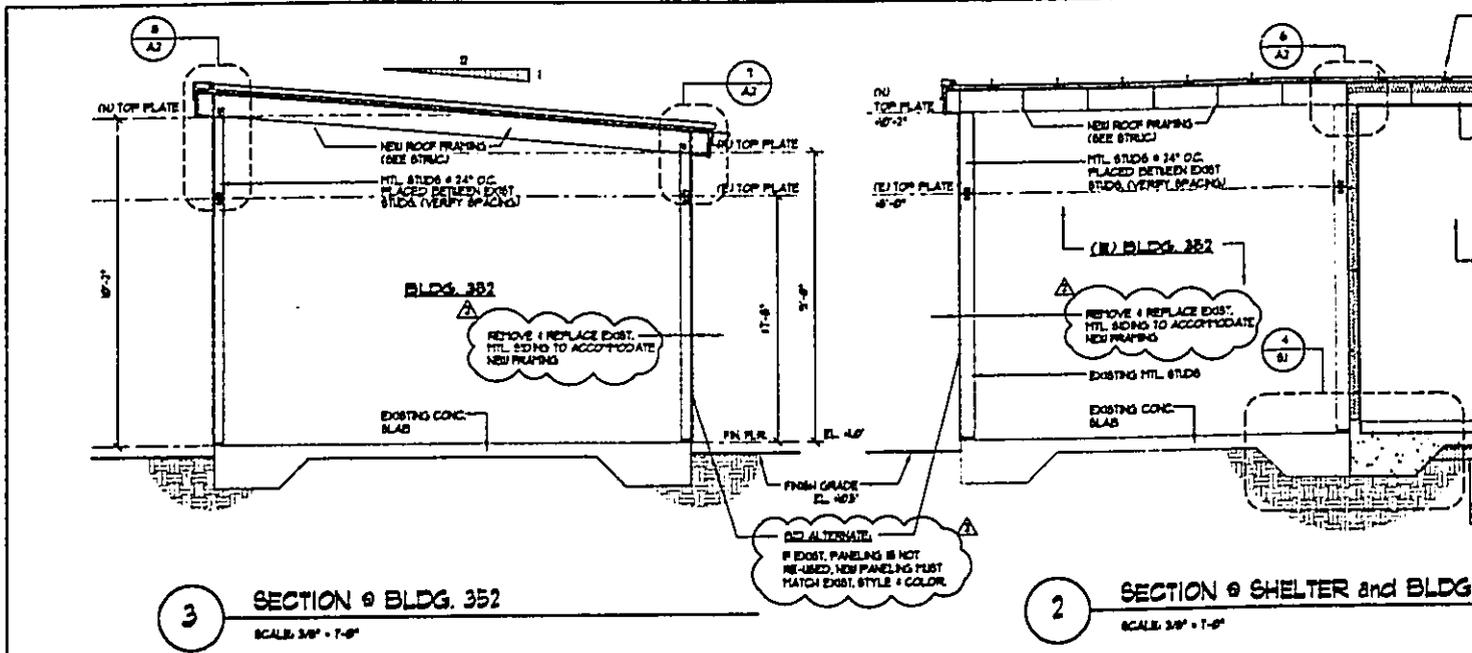
SITE PLAN, SHELTER FLOOR PLAN

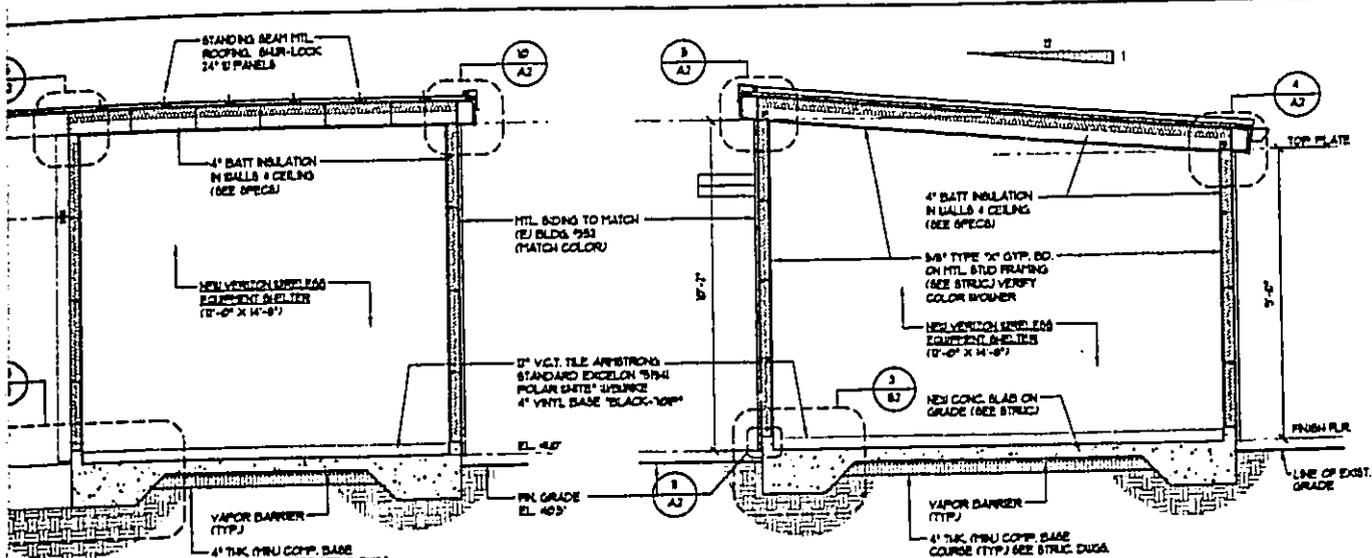
JAMES T. WELLS
 LICENSED PROFESSIONAL ARCHITECT
 No. 6184
 HAWAII, U.S.A.

Issue:
 7/31/01
 9/11/01
 10/15/01

Revisions:
 1) SHELTER FLOOR PLAN
 2) SHELTER FLOOR PLAN
 3) SHELTER FLOOR PLAN
 4) SHELTER FLOOR PLAN

Job No:
 Drawn by: BTS
 Date:
 Drawing No:
 A.1





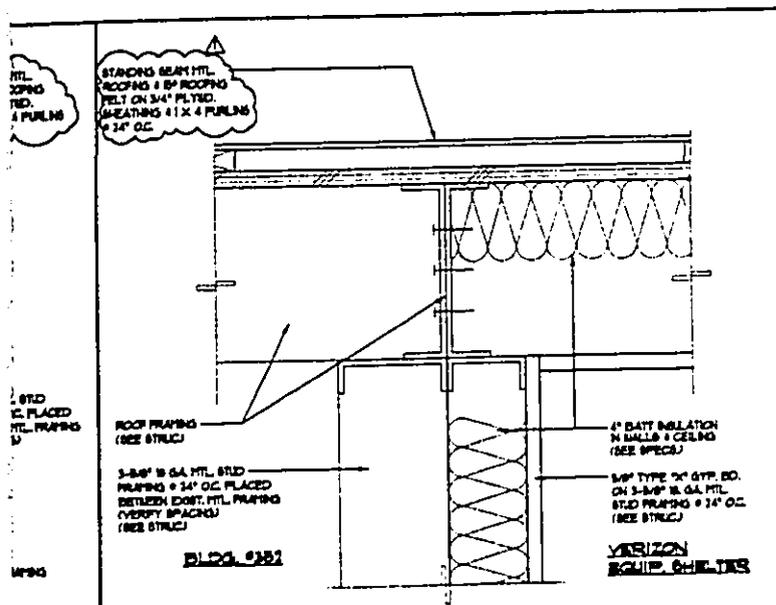
ALTER and BLDG. #352

SECTION 9 SHELTER

SCALE 3/8" = 1'-0"

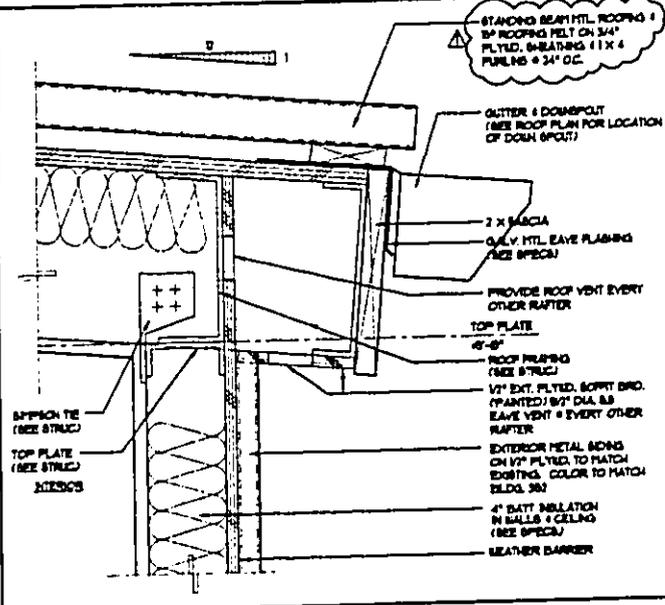
McPeak + Associates, Inc.

515 WATERBURY PLAZA
MOOREVILLE, NORTH CAROLINA 28688
TEL: 704/454-4448



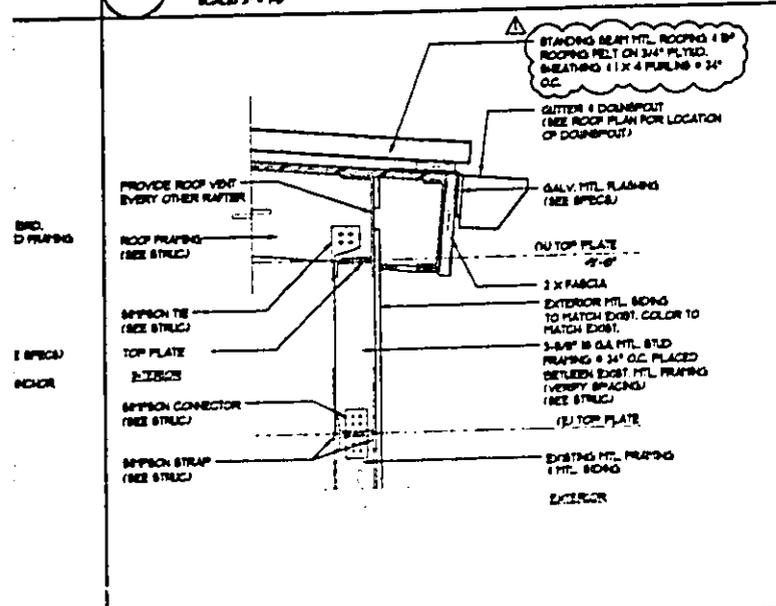
6 ROOF DETAIL

SCALE 3/8" = 1'-0"



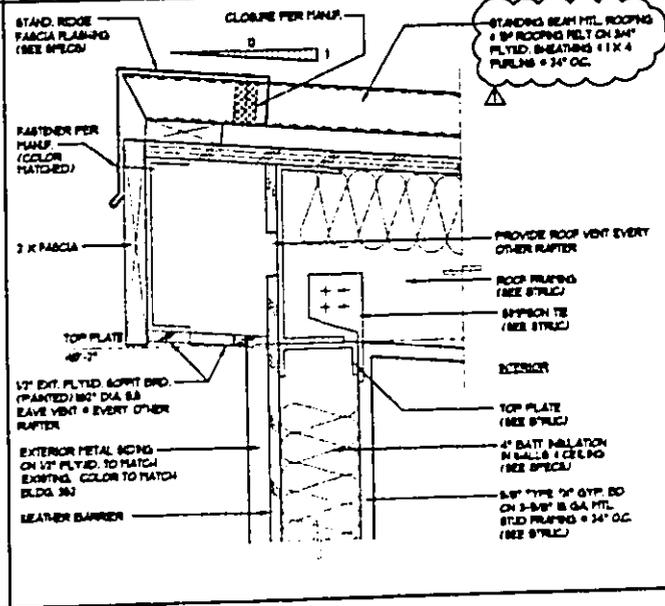
4 EAVE DETAIL

SCALE 3/8" = 1'-0"



7 ROOF DETAIL @ BLDG. #352

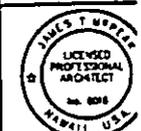
SCALE 1/2" = 1'-0"



5 EAVE DETAIL

SCALE 3/8" = 1'-0"

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TELECOMMUNICATION FACILITY
PART BARRING SANDS CELL SITE, (TAMC) (41) 12-002-013
SECTIONS, DETAILS



This work was prepared in accordance with the provisions of the Hawaii Professional Engineers Act, Chapter 461, Hawaii Revised Statutes, and the Rules and Regulations of the Board of Professional Engineers of the State of Hawaii.

Issue:
7/31/01
5/17/01
10/15/01

Revisions:
1. 11/15/01 - (PACD)
2. 11/15/01 - (PACD)

Job No:
Drawn by: DTB

Date:
Drawing No:

2. TALL IN ACCORDANCE WITH INSULATION MANUFACTURERS'... TYPICAL SPACES WITHOUT GAPS OR VOIDS, TIGHT TO FIT SPACES. FIT TIGHT IN SPACES AND TIGHT TO FIT SPACES.

99 - PREFORMED METAL ROOFING & SIDING

1. FINISH METAL ROOFING & SIDING UNITS SHALL BE SHOP FINISHED AS SPECIFIED HEREIN AND SHALL CONFORM TO IRON AND STEEL INSTITUTE "LIGHT GAUGE COIL-FORMED GALV" AND REQUIREMENTS OF THE STEEL DECK INSTITUTE.

2. DRAWINGS AND CATALOG CUTS, SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SECTION TO BE FURNISHED, LAYOUT OF SHEETS, AND MATERIAL SAMPLES. SUBMIT SAMPLES OF METAL ROOFING/SIDING OR CHIPS FOR SELECTION BY THE ENGINEER.

3. HANDLING: EXERCISE CARE & PRECAUTION SHALL BE TAKEN IN REAR THAT THE MATERIAL WILL NOT BE DAMAGED OR DEFORMED BY SHIPPING OR AT THE SITE. DAMAGED OR DEFORMED MATERIAL SHALL BE REJECTED.

4. VENT (IF ROOF ONLY) BY ROOFING FELT, VAPOR

5. END FLASHING: SHALL MATCH EXISTING OR BE PRE-FINISHED, 20 GA. 18-INCH (BY CUSTOM METAL ROOFING) OR 24 INCH ALUMINUM ALLOY COATED STEEL (ENCALUPE) 1/2 TO 3/4 INCH THICK. ROOF SHALL BE SINGLE LENGTH UNLESS NOTED ON DRAWINGS. FOR EACH PLANE OF ROOF AND SHALL BE ACCORDING TO "SPECIFICATIONS FOR GENERAL BUILDING" FOR DELIVERY OF ZINC COATED (GALVANIZED) IRON OR STEEL AND CUT LENGTHS COATED BY THE HOT DIP ZINC.

6. RIDGE CAP: CORRUGATED POINTED RIDGE CAP, PRE-FINISHED, GALVANIZED STEEL. FOR INSTALLATION WITH CORRUGATED METAL SHALL BE WITH 1/2" SIDE LAPS MINIMUM OR AS SHOWN ON DRAWINGS.

7. END FLASHING: STANDARD MANUFACTURED POLYURETHANE, 1/2" THICK, CORRUGATED TO FIT ROOFING TYPE.

8. VENT STRIP SHALL BE COR-A-VENT 400 AS MANUFACTURED BY, INC.

9. SHEET TO METAL PURLIN - FASTENERS SHALL BE 1/2 X 2 1/2 IN STEEL SELF DRILL SCREWS WITH NEOPRENE WASHERS.

10. ALL FASTENERS IN ACCORDANCE WITH MANUFACTURERS' DATA. DRILL ALL HOLES FOR FASTENERS ACCURATELY, NO SPIN REQUIRED. REPLACE ALL FASTENERS NOT INSTALLED CORRECTLY.

11. UNRECORDED WORK SHALL BE PERFORMED IN ACCORDANCE WITH MANUFACTURERS' PRACTICE BY SKILLED WORKERS. UNLESS OTHERWISE SPECIFIED, AVOID FASTENERS NEAR OTHER ROOF, AND ESPECIALLY AVOID HAVING NO PARTICLES COME IN CONTACT WITH OTHER ROOFING. NO FASTENERS WITH ELECTRICAL CONDUCTOR OR PROTRUDING HEADS SHALL BE PERMITTED. USE MECHANICAL FASTENERS.

12. PING SHEETS WITH 2 1/2" CORRUGATION SIDE LAPS, 1/2" FINISH END LAPS ON 1 ON 2 SLOPE AND 2 ON 2 SLOPE, STARTING FROM 2008 ARE "LEADERS" OF PREVAILING WINDS.

13. EACH PURLIN THROUGH THE CREST OF EACH THIRD CORRUGATION AND CORRELATION OF EACH INSET. FOR INTERIOR PURLIN OR STRIP AT CENTER AND SIDE LAPS.

14. WIRE AT OPEN ENDS OF ALL ROBS AND WARE INDICATED ON THE DRAWINGS.

15. ITS ONLY AFTER ALL SIDE AND END LAPS HAVE BEEN BLENDED WITH CONDITIONER AND FINISHED.

16. CAPS AND PLAINS AND CALLS OR SOLDER CONNECTIONS AS ON A WEATHERPROOF METAL ROOFING SYSTEM.

17. LOCATIONS: ROOFING: DO NOT PERMIT STOPS, SALSUNG WITH SALSUNG SHEETING AND TRUCKING DIRECTLY ON APPLIED ROOFING. DAMAGED ROOFING SHALL BE REPLACED.

18. PRE-FINISHED METAL ROOFING WITH MATCHING FLASHING AND FINISH.

19. CONTACT WITH DISSEMBLING MATERIAL: CONTACT WITH IT WILL BE IN CONTACT WITH WOOD OR OTHER ADJACENT TO SETTING. SEAL JOINTS WITH SEALING COMPOUND AND 1/2" OF HEAVY-BODIED BUTYRUBIC PAINT.

20. IN THE PROCESS OF THE WORK, THE PREMISES SHALL BE KEPT FREE OF ALL DEBRIS AND WASTE MATERIALS RESULTING FROM THIS SECTION. ALL SUCH DEBRIS AND WASTE SHALL BE REMOVED FROM THE SITE. CLEAN REMOVE FROM DRILLING IMMEDIATELY. WASTE SHALL BE REMOVED FROM THE ROOF SURFACE.

99 - FLASHING AND SHEET METAL

1. WORK: THE EXTENT OF FLASHING AND SHEET METAL WORK IS INDICATED ON DRAWINGS AND INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

2. FLASHING: STOPPED FLASHING, COUNTER FLASHING, THROUGH-BALL BE FLASHING, UP FLASHING, RIDGE FLASHING, RIDGE FLASHING, WIND CRACKS, GUTTERS AND DOWNSPOUTS.

3. GAPS AT DOORS AND SPOONS UNLESS OTHERWISE NOTED IN DOOR DETAILS.

4. COORDINATE WORK OF THIS SECTION WITH ADJOINING WORK FOR JOBS OF EACH INSTALLATION.

5. SHEET METAL, EXCEPT WHERE INDICATED OTHERWISE

6. WFE MATERIAL: AS FLASHING SHEET METAL, OR OTHER SHEET METAL, AS RECOMMENDED BY SHEET MANUFACTURER. MATCH CORNER HEADS WITH MATERIAL BEING FASTENED.

7. SEALANT: SINGLE COMPONENT, COMPLYING WITH RED SPEC OR 99-7-99043.

8. #16 X 32, 18-18 THREADED BOLDER WITH ROBIN FLUX.

- 2. FABRICATION
A) FABRICATE SHEET METAL WITH FLAT-LOCK BEAMS; SOLDER WITH TYPE SOLDER AND FLUX RECOMMENDED BY MANUFACTURER.
B) COAT BACK-SIDE OF FABRICATED SHEET METAL WITH 3-MIL. SULFUR-FREE ZINC POLYMER COATING, RED WHEEL FINISH. UNLESS OTHERWISE SPECIFIED, METALS FROM CORROSION SUBSTRATES INCLUDING WOOD OR OTHER ABSORBENT MATERIALS OR PROVIDE OTHER PERMANENT PROTECTION.
C) PROVIDE FOR THERMAL EXPANSION OF RUNNING SHEET METAL WORK BY OVERLAPS OR EXPANSION JOINTS IN FABRICATED WORK WHERE REQUIRED FOR ULTIMATE CONSTRUCTION. PROVIDE HOOKED FLANGES FILLED WITH POLYURETHANE PLASTIC FOR 1 INCH EXPANSION OF FLANGES. EXPANSION JOINTS AT INTERVALS OF NOT MORE THAN 40 FEET. CONCEAL EXPANSION PROVISIONS WHERE POSSIBLE.

PART 3 - EXECUTION

1. INSTALLATION AND WORKMANSHIP

- A) SURFACE TO WHICH SHEET METAL IS TO BE APPLIED SHALL BE EVEN, SMOOTH, SOUND, THOROUGHLY CLEAN AND DRY, AND FREE FROM DEFECTS THAT MIGHT AFFECT THE APPLICATION. REPORT ANY UNSATISFACTORY SURFACES TO THE ARCHITECT. IN THE ABSENCE OF SUCH A REPORT, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE FINISHED PRODUCT.
B) ALL ACCESSORIES OR OTHER ITEMS ESSENTIAL FOR THE COMPLETION OF THE SHEET METAL INSTALLATION, THOUGH NOT SPECIFICALLY INDICATED ON THE DRAWINGS OR SPECIFIED, SHALL BE PROVIDED. ALL SUCH ITEMS UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR SPECIFIED, SHALL BE OF THE SAME KIND OF MATERIALS AS THE ITEM TO BE APPLIED. NAILS, SCREWS AND BOLTS SHALL BE OF THE TYPE BEST SUITED FOR THE PURPOSE INTENDED AND SHALL BE OF A COMPOSITION THAT IS COMPATIBLE WITH THE METAL TO WHICH IT WILL CONTACT.

C) EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS OR SPECIFIED, THE WORKMANSHIP OF SHEET METAL WORK, METHOD OF FORMING JOINTS, ANCHORS, CREATING PROVISIONS FOR EXPANSION ETC., SHALL CONFORM TO THE STANDARDS DETAILS AND RECOMMENDATIONS OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION'S "ARCHITECTURAL SHEET METAL MANUAL" AND SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.

D) ALL SHEET METAL WORK SHALL BE WATER-TIGHT AND TIGHT TO THE PURPOSE INTENDED FOR THE ITEMS INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN.

E) CLEATING CLEATS FOR SHEET METAL WORK SHALL BE PROVIDED WHERE REQUIRED, SPACED APPROXIMATELY 12 INCHES ON CENTER, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. CLEATS SHALL BE NOT LESS THAN 2 INCHES WIDE BY 3 INCHES LONG OF THE SAME MATERIAL AND WEIGHT AS THE METAL BEING INSTALLED. CLEATS FOR SOLDERED JOINTS SHALL BE PRE-TIMED.

2. PROTECTION: PROTECT ALL SHEET METAL WORK UNTIL FINAL ACCEPTANCE OF THE BUILDING.

3. CLEAN-UP: AT COMPLETION OF THE WORK, CLEAN-UP AND REMOVE ALL DEBRIS AND DEBRIS FROM THE PREMISES WHICH RESULTED FROM THIS WORK.

DIVISION 8 - DOORS AND WINDOWS

SECTION 08100 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1. PROVIDE ONE-HOUR HOLLOW METAL DOOR AND FRAME WHERE INDICATED ON THE DRAWINGS.

PART 2 - PRODUCTS

1. DOORS AND FRAMES: METAL FRAMES -- 1 1/2 GAUGE (EXTERIOR); PUSH DOOR IS GAUGE 1/8 (300 O.D. 1/2, GALVANIZED).

2. FINISH: BAKED ENAMEL OF COLOR SELECTED. COAT INSIDE OF FRAME PROFILE WITH EPOXY COATING TO A THICKNESS OF 1/8 INCH. COATING MAY BE SHOP OR FIELD APPLIED.

PART 3 - EXECUTION

1. INSTALLATION: INSTALL FRAMES IN ACCORDANCE WITH 504-189. PLUMB ALONG AND BRIDGE SQUARELY. USE PERMANENT ANCHORS AND SET AND/OR BOTTOMS OF FRAMES WITH EXPANSION BOLTS OR POLYURETHANE FASTENERS. BUILD IN OF COURSE SHALL ANCHORS TO ADJOINING CONSTRUCTION. BACKFILL FRAMES WITH MORTAR FOR FIRE RATED DOORS. COAT INSIDE OF FRAMES WITH CORROSION INHIBITING BUTYRUBIC MATERIAL. FOR FRAMES IN EXTERIOR WALLS, ASSURE THAT STOPS ARE FILLED WITH RIGID INSULATION BEFORE GREAT IS PLACED. INSTALL DOORS IN ACCORDANCE WITH D.M. FIRE DOORS AND FRAMES. INSTALL FIRE DOORS AND FRAMES, INCLUDING HARDWARE, IN ACCORDANCE WITH NFPA 88.

SECTION 08100 - FINISH HARDWARE

PART 1 - GENERAL

1. FURNISH AND INSTALL ALL HARDWARE COMPLETE AS INDICATED.

2. SUBSTITUTES: SUBMIT FOR APPROVAL A LISTING OF EACH ITEM OF FINISH HARDWARE AND A MANUFACTURER'S CATALOG CUT FOR EACH DIFFERENT ITEM OF HARDWARE.

PART 2 - PRODUCTS

1. PROPRIETARY PRODUCTS: REFERENCES TO SPECIFIC PROPRIETARY PRODUCTS ARE USED TO ESTABLISH MINIMUM STANDARDS OF UTILITY AND QUALITY.

2. ACCEPTABLE MANUFACTURERS: MOONEY, BARGENT, QUALITY, PENKO, NEA, SOLANGE, BEST, TRIZZO, KWAME VOOT. VERIFY FINISH WITH OWNER.

PART 3 - EXECUTION

1. HARDWARE SET: 3 EACH 5/8" BUTT HINGES; 1 SET LOCKET -- LEVER LATCH; 1 EACH 1/2" LEVER; 1 EACH DEAD BOLT (KEYED TO MATCH LOCKSET); 1 EACH 5/8" LOCK GUARD; 1 EACH CLOSER (VERIFY IF REQ'D BY OWNER); 1 EACH DRIP STRIP; 1 SET WEATHER STOPPING IN ALL EDGES; 1 EA ALUMINUM THRESHOLD; 1 EACH CONTIGUOUS DOOR BOTTOM. VERIFY SETTING REQUIREMENTS WITH OWNER. ALL HARDWARE SHALL BE RATED FOR CORROSIVE GRADE EXTERIOR USE.

DIVISION 8 - FINISHES

SECTION 08200 - GYPSUM WALLBOARD

PART 1 - GENERAL

1. WORK INCLUDED: COMPLETE ALL GYPSUM WALL BOARD INSTALLATION WORK AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

- A) GYPSUM WALLBOARD OVER WOOD METAL FRAMING AND PARTING
B) SOUND INSULATION BATT, WHERE INDICATED
C) GYPSUM EXTERIOR WEATHERING TO BEHAVE AS A SUBSTRATE FOR THE EXTERIOR INSULATION AND FINISH SYSTEM

PART 2 - PRODUCTS

1. GYPSUM WALLBOARD: SHALL COMPLY WITH THE "STANDARD SPECIFICATIONS FOR GYPSUM WALLBOARD" WITH DESIGNATION C36 LATEST EDITION. PROVIDE THE FOLLOWING TYPE:

- 1) REGULAR TYPE, 5/8" THICK WITH RECEIVED EDGES TYPE X
2) MOISTURE RESISTANT, PLASTER BASEBOARD 5/8" THICK TYPE "Y" AT SET AREAS
3) DENS-GLOSS GOLD BUILDING WEATHERING 5/8" THICK AS MANUFACTURED BY GEORGIA PACIFIC

2. STUDS: STUDS SHALL BE METAL AS INDICATED ON THE DRAWINGS. METAL STUDS SHALL BE ROLL FORMED 25 GAUGE STEEL (WON CHANNEL SHAPE WITH 3/8" AS INDICATED ON THE DRAWINGS).

- C) WALLBOARD FASTENERS: MANUFACTURERS STANDARD CORROSION-RESISTANT DOUBLE HEAD SELF-DRILLING SELF-TAPPING DRILLING LAGS, EXCEPT AT BUILDING WEATHERING (SUPPLY 14-10 THREADED 10 X 1 1/2")
D) REINFORCED TAPE AND CELENT: MATERIALS FOR TREATING JOINTS AND NAIL HEADS SHALL BE AS MANUFACTURED OR RECOMMENDED BY THE MANUFACTURER OF THE WALLBOARD USED.
E) WALLBOARD ACCESSORIES:
1) ALL ACCESSORIES, TO THE GREATEST EXTENT POSSIBLE SHALL BE HIGH IMPACT, RIGID PVC. ASTM D 1584, SIMILAR TO PLASTIC COMPONENTS, INC. SAREE PVC ACCESSORIES ARE NOT AVAILABLE, PROVIDE ACCESSORIES OF ZINC-COATED STEEL.
2) JOINT TREATMENT MATERIALS: ASTM C 478 TYPE RECOMMENDED BY MANUFACTURER FOR THE APPLICATION INDICATED, EXCEPT AS OTHERWISE NOTED.
3) ACoustical SEALANT: LATEX, ACRYLIC, OR ACRYLIC-LATEX TYPE; PERMANENTLY ELASTIC AND PAINTABLE.
4) USE ACoustical SEALANT, OR APPROVED EQUAL.

PART 3 - EXECUTION

1. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURERS PRINTED INSTRUCTIONS AND AS SPECIFIED AND/OR INDICATED ON THE DRAWINGS.

2. INSTALL OPTIMUM BOARD ON EACH SIDE OF METAL STUDS, 1/2" O.C. OR AS INDICATED ON THE DRAWINGS. WITH FLOOR AND CEILING RUNNERS DESIGNED TO HOLD AND ALIGN STUDS. FASTEN OPTIMUM BOARD TO STUDS WITH SCREWS SPACED AS PER MANUFACTURERS PRINTED INSTRUCTIONS.

3. ARRANGE JOINTS ON OPPOSITE SIDES OF PARTITION TO OCCUR ON DIFFERENT STUDS. TREAT ALL JOINTS, SCREW HEADS AND OTHER DEPRESSIONS IN THE SURFACE OF THE WALLBOARD PER MANUFACTURERS INSTRUCTIONS, WITH A TAPED JOINT SYSTEM.

4. TREAT ALL INTERNAL ANGLES FORMED BY THE INTERSECTION OF THE WALLBOARD OR OTHER SURFACES WITH A TAPED JOINT SYSTEM. TREAT ALL VERTICAL AND HORIZONTAL EXTERIOR CORNERS WITH PVC CORNER BEAD REINFORCEMENT APPLIED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

5. THE FINAL FINISH SHALL BE SMOOTH.

SECTION 09100 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1. QUALITY ASSURANCE: SELECT AN INSTALLER WHO IS COMPETENT IN THE INSTALLATION OF ARTISTRONG RESILIENT TILE FLOORING.

2. PRODUCT HANDLING: STORE MATERIALS IN A CLEAN, DRY, ENCLOSED SPACE OR THE GROUND, AND PROTECTED FROM THE WEATHER AND EXTREME FLUCTUATIONS OF HEAT AND COLD. INSTALL FLOORING AND ACCESSORIES AFTER THE OTHER FINISHING OPERATIONS INCLUDING PAINTING HAVE BEEN COMPLETED. DO NOT INSTALL FLOORING OVER CONCRETE SLABS UNTIL THEY ARE SUFFICIENTLY DRY TO ACHIEVE A BOND WITH THE ADHESIVE, IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDED DOWD AND MOISTURE TESTS.

PART 2 - PRODUCTS

1. RESILIENT TILE FLOORING MATERIALS: PROVIDE IMPERIAL TEXTURE STANDARD EXCELLEN TILE FLOORING MANUFACTURED BY ARTISTRONG WORLD INDUSTRIES, INC. IN 3/4" POLAR WHITE, 2 IN X 2 IN. VINYL COMPOSITION TILE SHALL CONFORM TO THE REQUIREMENTS OF ASTM F 1069, CLASS 3 - THROUGH PATTERN.

2. ADHESIVES: FOR TILE INSTALLATION SYSTEMS PROVIDE ARTISTRONG RESILIENT TILE ADHESIVE UNDER THE TILE. IT SHALL BE AN ADHESIVE AT WALL BASE AS RECOMMENDED BY FLOORING MANUFACTURER.

3. ACCESSORIES: FOR PATCHING, SPOONING, AND LEVELING POLYURETHANE UNDERLAYMENT, PROVIDE ARTISTRONG 8-83 FAST-SETTING CELENT BASED UNDERLAYMENT. PROVIDE METAL EDGE STRIPS OF BOTH SLOPE ON THE CHANGES AND OF REQUIRED THICKNESS TO PROTECT EXPOSED EDGES OF THE FLOORING.

PART 3 - EXECUTION

1. SURFACE PREPARATION - CLEANING: ALL SURFACES ARE TO BE FREE OF LOOSE MATERIAL, DIRT, GREASE, OIL, LOOSE PAINT AND OTHER FOREIGN MATTER WHICH COULD PREVENT PROPER ADHESION. REPORT CONDITIONS CONTRARY TO CONTRACT REQUIREMENTS THAT WOULD PREVENT A PROPER INSTALLATION. DO NOT PROCEED WITH THE INSTALLATION UNTIL SATISFACTORY CONDITIONS HAVE BEEN CORRECTED. FAILURE TO CALL ATTENTION TO DEFECTS OR IMPERFECTIONS WILL BE CONSIDERED AS ACCEPTANCE AND APPROVAL OF THE SUBFLOOR.

2. APPLICATION: INSTALL FLOORING IN STRICT ACCORDANCE WITH THE LATEST EDITION OF "ARTISTRONG GUARANTEED INSTALLATION SYSTEM, F-1064".

SECTION 09200 - PAINTING

PART 1 - GENERAL

1. SCOPE OF WORK: THE WORK TO BE DONE BY THE PAINTING CONTRACTOR SHALL INCLUDE THE FURNISHING OF ALL MATERIALS, LABOR, TOOLS AND EQUIPMENT REQUIRED TO COMPLETE THE PAINTING AS SPECIFIED. SURFACES CONCEALED BY PORTABLE OBJECTS AND BY SURFACE MOUNTED ARTICLES READY DETACHABLE BY REMOVAL OF FASTENERS AND BOLTS ARE INCLUDED IN THE SCOPE OF WORK. SURFACES CONCEALED BY PANEL BOARDS, MACHINERY AND FIXED EQUIPMENT ARE NOT INCLUDED. DO NOT PAINT OVER SURFACES IN CONCEALED SPACES UNLESS SPECIFICALLY STATED. DO NOT PAINT COVER REFINED LABELS OF EQUIPMENT IDENTIFICATION, PERFORMANCE RATING, NAME OF NONPOLLUTING PLANTS.

2. WORKMANSHIP: ALL MATERIALS SHALL BE APPLIED FREE FROM RUNS, SAGS, WRINKLES, STREAKS, SPINDERS AND BRUSH MARKS. ALL MATERIALS SHALL BE APPLIED UNIFORMELY. IF ANY REDUCTION OF THE COATING'S VISCOSITY IS NECESSARY, IT SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURERS LABEL DIRECTIONS. BEFORE PAINTING COMMENCES, ALL OTHER CRUITS SHALL HAVE COMPLETED THEIR WORK AND SHALL HAVE REMOVED ALL DIRT AND DEBRIS RESULTING THEREFROM.

PART 2 - PRODUCTS

1. MATERIALS: SPECIFICATIONS ARE BASED ON COATINGS AS MANUFACTURED BY BENJAMIN MOORE PAINTS EXCEPT AS OTHERWISE SPECIFIED. REQUEST FOR CHANGES OR VARIATIONS MUST BE MADE BY THE PAINTING CONTRACTOR IN WRITING. COLORS SHALL BE THOSE APPROVED BY THE ARCHITECT. ALL PRIMERS AND UNDERCOATS ARE TO BE TINTED TO THE APPROPRIATE SHADE OF THE SELECTED FINISH COAT. (AS APPLICABLE)

PART 3 - EXECUTION

1. SURFACE PREPARATION - CLEANING: ALL SURFACES ARE TO BE FREE OF LOOSE PORTANT, DIRT, GREASE, OIL, LOOSE PAINT AND OTHER FOREIGN MATTER WHICH COULD PREVENT PROPER ADHESION. CALLINGS AND SEALANT COMPOUNDS SHALL BE ALLOWED TO CURE FOR TIMES STATED IN MANUFACTURERS LITERATURE PRIOR TO BEING COATED.

2. SURFACE REPAIRS: REPAIR ALL CRACKS, HOLES, CREVICES AND BREAKS ON SUBSTRATE PRIOR TO APPLYING COATINGS.

3. APPLICATION: APPLY COATINGS STRICTLY PER MANUFACTURERS PRINTED APPLICATION INSTRUCTIONS.

4. SCHEDULE OF FINISHES:

- A) CONCRETE AND MASONRY SURFACES: SEE SECTION 09000
B) GALVANIZED METALS: 1 COAT HIGH SOLIDS POLYURETHANE EPOXY, 2 COATS 1/4" 1/8 ALPHATIC ACRYLIC URETHANE GLOSS
C) WOOD: 1 COAT PRIMER, 2 COATS 1/4" 1/8 GLOSS ENAMEL
D) PANEL INTERIORS: VERIFY PAINT TYPE AND SHEEN WITH ANTENNA MANUFACTURER/COWNER
E) GYPSUM BOARD: 1 COAT SUPER SPEC UNDERCOATER PRIMER SEALER (25:1) 2 COATS "HOCORRAFT SUPER SPEC LATEX 1/4" 1/8 GLOSS ENAMEL
F) CABLING AND PVC CONDUIT: 1 COAT PRIMER, 2 COATS 1/4" 1/8 GLOSS ENAMEL

- DIVISION 10 - SPECIALTIES (NOT USED)
DIVISION 11 - EQUIPMENT (NOT USED)
DIVISION 12 - FURNISHINGS (NOT USED)
DIVISION 13 - SPECIAL CONSTRUCTION (NOT USED)
DIVISION 14 - CONVERTING SYSTEMS (NOT USED)
DIVISION 15 - MECHANICAL (SEE MECHANICAL)
DIVISION 16 - ELECTRICAL (SEE ELECTRICAL)

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ARCHITECT'S SEAL
LICENSED PROFESSIONAL ARCHITECT
STATE OF NEW YORK
No. 2008
I hereby certify that the work was prepared by me or under my direct supervision and that I am a duly licensed professional architect in the State of New York.

Issue: 7/31/01, 9/11/01, 10/15/01
Revisions:
1. 10/15/01 - P/ACD/CN
2. 10/15/01 - P/ACD/CN
3. 10/15/01 - P/ACD/CN
Job No:
Drawn by: BJS
Date:
Drawing No:
A3

CONTRACTOR QUALITY CONTROL SYSTEM

1. Deliver the following to the Contracting Officer or the Contracting Officer's designated representative:
 Combined Contractor Production Report/Contractor Quality Control Report (original copy) by 1000 hours the next working day after each day that work is performed.

2. Provide a QC Manager at the work site to execute the Contractor Quality Control System. In addition to implementing and managing the QC System, the QC Manager may perform duties of a project superintendent. The QC Manager shall have a minimum of 3 years experience as a foreman, superintendent, inspector, QC Manager, project manager, or construction manager on similar size and type construction contracts which included the major trades that are part of the Contract. The individual must be familiar with the requirements of the US Army Corps of Engineers Health and Safety Requirements Manual, E1-348-1-1, and have experience in the areas of hazard identification and safety compliance.

3. The Contractor's QC System shall include the Three Phases of Control. The QC Manager shall perform the three phases of control to ensure that work complies with Contract requirements. The Three Phases of Control shall adequately cover both on-site and off-site work and shall include the following for each definable feature of the work. A definable feature of the work is a task which is separate and distinct from other tasks and requires separate control requirements.

a. **PREPARATORY PHASE.** Notify the Contracting Officer at least 2 working days in advance of each preparatory phase. Conduct the preparatory phase with the superintendent, and the foreman responsible for the definable feature. Include the Contracting Officer's designated representative in the preparatory phase. Document the results of the preparatory phase actions in the daily Contractor Quality Control Report. Perform the following prior to beginning work on each definable feature of the work:

1. Review applicable sections of the contract documents (e.g. plans and specifications and modifications, and amendments).
2. Verify that appropriate shop drawings, material submittals, equipment submittals have been submitted and approved. Verify receipt of approved factory test results, when required.
3. Review test plans and required testing and ensure provisions have been made to provide required testing.
4. Examine the work area to ensure that the required preliminary work has been completed.
5. Ensure the required materials, equipment, and sample work to ensure that they are on hand and conform to the approved shop drawings, and submitted data.
6. Review the safety plan and appropriate activity hazard analysis to ensure that applicable safety requirements are met, and that required Material Safety Data Sheets (MSDS) are submitted and at the job site.

b. **INITIAL PHASE.** Notify the Contracting Officer at least 2 working days in advance of each initial phase. When construction crews are ready to start work on a definable feature of work, conduct the initial phase with the superintendent, foreman responsible for that definable feature of work, and the Contracting Officer's representative. Observe the initial segment of the definable feature of work to ensure that the work complies with contract requirements. Document the results of the initial phase in the daily Contractor Quality Control Report. Repeat the initial phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met. Perform the following for each definable feature of work:

1. Establish the quality of workmanship required.
2. Resolve conflicts.
3. Review the Safety Plan and appropriate activity hazard analysis to ensure that the applicable safety requirements are being met.
4. Ensure required testing is performed.

c. **FOLLOW-UP PHASE.** Perform the following for on-going work daily, or more frequently as necessary until the completion of each definable feature of work and document in the daily Contractor Quality Control Report.

1. Ensure the work is in compliance with contract requirements.
2. Maintain the quality of workmanship required.
3. Ensure the testing is performed by the approved laboratory.
4. Ensure the result tests are being corrected.

4. **SUBMITTALS.** The QC Manager shall be responsible for reviewing and certifying that all submittals are in compliance with the contract requirements. When the approving authority for submittals is the QC Manager, the QC Manager will use the following approval statement when distributing submittals to the Contracting Officer:

"I hereby certify that the (material) (equipment) (article) shown and marked in the submittal and proposed to be incorporated in the contract is in compliance with the contract drawings and specifications, can be installed in the allocated spaces, and is approved for use.

Certified by Submittal Reviewer _____ Signature _____ Date _____

Approval by QC Manager _____ Signature _____ Date _____

5. **RECORD DRAWINGS.** The Contractor shall submit at the jobsite two sets of full-size prints of the contract drawings, accurately marked in red with adequate dimensions, to show all variations between the construction actually provided and that indicated or specified in the contract documents, including buried or concealed construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the contract drawings. Existing utility lines and features revealed during the course of the construction shall also be accurately located and dimensioned. Variations in the water utility systems shall be clearly defined and dimensioned and coordinated with exterior utility connections at the building five-foot line where applicable. Existing topographic features, such as ditches, shall be shown on the contract drawings, and also be accurately located and recorded. Where a cross-section or cutaway is permitted herein, or where variations in scope or character of work from that of the original contract are authorized, the drawings shall be marked to define the construction actually provided. The reproductions of such drawings and notes, legends, and details as necessary to clearly portray the as-built construction. These drawings shall be available for review by the Contracting Officer at all times. Upon completion of the work, both sets of marked up prints shall be certified as correct, signed by the Contractor, and delivered to the Contracting Officer for his approval before acceptance.

SAFETY AND ACCIDENT PREVENTION PLAN

1. The Contractor shall provide and maintain work that will:

- a. safeguard the public and government personnel, supplies, and equipment exposed to Contractor activities.
- b. Avoid interruption of Government operations or completion dates.

2. The Contractor shall comply with applicable laws and regulations:

- a. Manual on Uniform Traffic Control Requirements by the Federal Highway Administration.
- b. Standards issued by the Secretary of Labor, and 29 CFR Part 1926.
- c. Latest version of the U. S. Army Corps of Engineers Requirements Manual E1-348-1-1.
- d. Additional measures the Contracting Officer may require for the purposes herein.

3. Whenever the Contracting Officer becomes aware of these requirements or any condition which poses a hazard to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with or without initiation of corrective action. The Contractor or the Contractor's representative shall give written notice of the non-compliance and that after receiving the notice, the Contractor shall take the necessary corrective action. If the Contractor fails or refuses to provide satisfactory corrective action has been taken, the Contracting Officer may issue an order suspending any or all work until the Contractor achieves the contract performance schedule on any stop work order.

4. Before commencing any work, the Contractor shall:

- a. Submit a written plan implementing all the requirements of the contract and the applicable laws and regulations. The plan shall be acceptable and approved by the Contracting Officer prior to start of any on-site work.
- b. Meet with representatives of the Contracting Officer to develop a mutual understanding relative to the plan and program.

SCHEDULING

1. Prior to the start of any work, the Contractor shall submit a written Scheduling Plan to the Contracting Officer for approval. A contractor shall not commence work until the Contracting Officer has approved the Scheduling Plan. The Contractor shall submit a written Scheduling Plan to the Contracting Officer for approval. The Scheduling Plan shall include a list of all activities, including sequencing, materials and equipment, critical path method (CPM) to schedule and CPM. The schedule shall have a minimum of 20 activities for all the definable features of the work, periodically, but no longer than at least once a week shall be submitted to the Contracting Officer.

DOCUMENT CAPTURED AS RECEIVED

AND ACCIDENT PREVENTION

shall provide and maintain work environments and procedures

public and government personnel, property, materials, past, exposed to Contractor operations and activities, of Government operations and delays in project

shall comply with applicable requirements of:

State Traffic Control Requirements for Streets and Highway Bridge Administration.

of by the Secretary of Labor, in particular, 29 CFR Part 1926 350.

of the U. S. Army Corps of Engineers Safety and Health at 29 CFR 1911.

unless the Contracting Officer determines to be reasonably purposes herein.

Contracting Officer becomes aware of any noncompliance with or any condition which poses a serious or imminent danger to the public or Government personnel, the Contracting Officer shall immediately suspend the Contracting Officer's representative at the work site, and if deemed necessary, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contractor shall be held liable for any and all costs of corrective action. The Contractor shall not be held liable for any adjustments of the contract price or extension of the date on any stop work order issued.

using any work, the Contractor shall:

in place implementing all the safety requirements noted above, as an analysis of the significant hazards to life, limb, and in correct work performance and a plan for controlling these shall be acceptable and approved by the Contracting Officer at any time.

representatives of the Contracting Officer to discuss and understanding relative to accomplishment of the overall safety

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of any work, the Contractor shall prepare and submit to the or for approval a construction schedule showing the order in which the work is to be performed, and the dates on which the various activities and equipment. The Contractor shall use the schedule to coordinate and control construction activities. The Contractor shall have a minimum of 30 activities and shall include construction activities of the work. The schedule shall be updated if longer than at least once a month. Updated copies of the schedule to the Contracting Officer.

ENVIRONMENTAL • NATURAL RESOURCES PROTECTION

6A. GENERAL

6A1 TECHNICAL REQUIREMENTS

A. ENVIRONMENTAL PROTECTION PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREPARATION AND SUBMISSION OF AN ENVIRONMENTAL PROTECTION PLAN. THE PLAN SHALL INCLUDE ALL ITEMS AFFECTING THE ENVIRONMENT AND PROTECTION OF NATURAL RESOURCES BOTH DURING AND AFTER THE CONSTRUCTION OF THE PROJECT. ITEMS TO BE CONSIDERED, BUT NOT LIMITED TO, ARE CONTROL AND DISPOSAL OF CONTAMINANTS, RUBBISH, SEDIMENT, DEBRIS, CHEMICAL WASTE, DEBRIS, AND GARBAGE. IN ADDITION, THE PLAN SHALL CONSIDER OILY SUBSTANCES AND THEIR DISPOSAL, SOIL EROSION, AND PROTECTION OF NATURAL AND CULTURAL RESOURCES.

THE CONTRACTOR ALSO SHALL MEET WITH THE CONTRACTING OFFICER OR HIS REPRESENTATIVE TO DISCUSS THE PROPOSED ENVIRONMENTAL PROTECTION PLAN AND DEVELOP MUTUAL UNDERSTANDING RELATIVE TO DETAILS OF ENVIRONMENTAL PROTECTION, INCLUDING REQUIRED REPORTS AND MEASURES TO BE TAKEN SHOULD THE CONTRACTOR FAIL TO PROVIDE ADEQUATE AND TIMELY PROTECTION. THIS PLAN SHALL BE IN DETAIL, AND EACH OF THE APPLICABLE ENVIRONMENTAL REQUIREMENTS DERIVED HEREIN SHALL BE TREATED AND SHALL INCLUDE ANY SUPPLEMENTAL DRAWINGS NECESSARY FOR IMPLEMENTATION THEREOF. WITHIN 14 CALENDAR DAYS AFTER THE MEETING, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL HIS PROPOSED ENVIRONMENTAL PROTECTION PLAN.

B. GENERAL REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ENVIRONMENTAL PROTECTION DURING THE LIFE OF THE CONTRACT AS DEFINED HEREIN. THE CONTRACTOR SHALL DEVELOP ENVIRONMENTAL PROTECTIVE MEASURES TO CONTROL POLLUTION THAT DEVELOPS DURING NORMAL CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PROVIDE ENVIRONMENTAL PROTECTIVE MEASURES TO CORRECT CONDITIONS THAT DEVELOP DURING CONSTRUCTION OF PERMANENT OR TEMPORARY ENVIRONMENTAL FEATURES ASSOCIATED WITH THIS PROJECT. COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS AND PERMITS RELATING TO THE ENVIRONMENT, INCLUDING BUT NOT LIMITED TO WATER, AIR, SOIL, AND LAND POLLUTION. NO WORK SHALL BEGIN WITHOUT AN APPROVED ENVIRONMENTAL PROTECTION PLAN. PROVIDE PROPOSED MITIGATION MEASURES TO BE USED DURING DECONTAMINATION AND CONSTRUCTION ACTIVITIES TO PREVENT STORM WATER RELEASED FROM THE PROJECT.

6A2 DEFINITION OF CONTAMINANTS

1. SEDIMENT, SOIL AND OTHER DEBRIS THAT HAVE BEEN ERODED AND TRANSPORTED BY WATER.
2. SOLID WASTE, RUBBISH, DEBRIS, GARBAGE, AND OTHER DISCARDED SOLID MATERIALS RESULTING FROM INDUSTRIAL, COMMERCIAL, AND HOME CONSUMPTION ACTIVITIES.
3. RUBBISH - A VARIETY OF COMBUSTIBLE AND NON-COMBUSTIBLE WASTES SUCH AS PAPER, BOXES, GLASS AND CROCKERY, METAL AND LUMBER, SCRAP, AND TIN CANS.
4. DEBRIS - INCLUDES BOTH COMBUSTIBLE AND NON-COMBUSTIBLE WASTES SUCH AS NAILS, WASTE MATERIALS THAT RESULT FROM CONSTRUCTION OR MAINTENANCE AND REPAIR WORK.
5. CHEMICAL WASTE - INCLUDES PETROLEUM PRODUCTS, DIFERIOUS MATERIALS, BATTERIES, ACIDS, ALKALIS, HERBICIDES, PESTICIDES, ORGANIC CHEMICALS, AND INORGANIC WASTES.
6. SANITARY WASTE - (A) WASTE, THAT IS CONSIDERED AS DOMESTIC SANITARY WASTE, (B) GARBAGE, REFUSE AND SCRAPS RESULTING FROM PREPARATION, COOKING, DISHWASHING, AND CONSUMPTION OF FOOD.

6A3 LANDSCAPE FEATURES: TREES, PLANTS, SHRUBS, AND GROUND COVER

6A4 PROTECTION OF NATURAL RESOURCES

A. GENERAL. IT IS INTENDED THAT THE NATURAL RESOURCES TO THE EXTENT PRACTICAL WITHIN THE PROJECT BOUNDARIES AND OUTSIDE THE LIMITS OF PERMANENT WORK PERFORMED UNDER THIS CONTRACT BE PRESERVED IN THEIR EXISTING CONDITION. SHOULD ANY SUCH RESOURCES BE DAMAGED OR DESTROYED, THE CONTRACTOR SHALL RESTORE TO AN EQUIVALENT OR IMPROVED CONDITION UPON COMPLETION OF THE WORK. CONFORM CONSTRUCTION ACTIVITIES TO AREAS DEFINED BY THE WORK SCHEDULE, PLANS AND SPECIFICATIONS.

B. TEMPORARY CONSTRUCTION. OBTERATE ALL SIGNS OF TEMPORARY CONSTRUCTION FACILITIES SUCH AS WALL, ROADS, WORK AREAS, STRUCTURES, FOUNDATIONS OF TEMPORARY STRUCTURES, STOCKPILES OF EXCESS OR WASTE MATERIALS, OR ANY VESTIGES OF CONSTRUCTION AS DIRECTED BY THE CONTRACTING OFFICER. TEMPORARY ROADS, STAGING AND OFFICE FACILITIES, PARKING AREAS, AND ANY OTHER AREAS THAT HAVE BECOME COMPACTED OR SHAPED SHALL BE LEVELLED AS DIRECTED BY THE CONTRACTING OFFICER.

C. LAND RESOURCES. EXCEPT IN AREAS TO BE CLEARED, DO NOT REMOVE, CUT, DAMAGE, INJURE, OR DESTROY TREES OR SHRUBS WITHOUT THE CONTRACTING OFFICER'S PERMISSION. DO NOT FASTEN OR ATTACH ROPES, CABLES OR CHAINS TO EXISTING NEARBY TREES FOR ANCHORAGE UNLESS AUTHORIZED BY THE CONTRACTING OFFICER. WHERE SUCH USE OF ATTACHED ROPES, CABLES, OR CHAINS IS AUTHORIZED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY RESULTANT DAMAGE.

1. PROTECTION. PROTECT EXISTING TREES WHICH ARE TO REMAIN AND WHICH MAY BE INJURED, BRUISED, DEFORMED, OR OTHERWISE DAMAGED BY CONSTRUCTION OPERATIONS. REMOVE DISPLACED ROOTS FROM UNCLEARED AREAS. BY APPROVED EXCAVATION, REMOVE TREES WITH 30 PERCENT OR MORE OF THEIR ROOT SYSTEMS DESTROYED.

2. REPLACEMENT. REMOVE TREES AND OTHER LANDSCAPE FEATURES ACQUIRED OR DAMAGED BY EQUIPMENT OPERATIONS, AND REPLACE WITH EQUIVALENT, UNDAUNAGED TREES AND LANDSCAPE FEATURES. OBTAIN CONTRACTING OFFICER'S APPROVAL BEFORE REPLACEMENT.

D. WATER RESOURCES. CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING AND COMPLYING WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS CONCERNING THE DISCHARGE (DIRECTLY, INDIRECTLY, OR POLLUTANTS TO THE UNDERGROUND AND SURFACE WATERS).

E. OILY SUBSTANCES. PREVENT OILY OR OTHER HAZARDOUS SUBSTANCES FROM ENTERING THE GROUND, DRAINAGE AREAS OR LOCAL BODIES OF WATER IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. SURROUND TEMPORARY FUEL OIL OR PETROLEUM STORAGE TANKS WITH A TEMPORARY LEAKY BERM OF SUFFICIENT SIZE AND STRENGTH TO CONTAIN THE CONTENTS OF THE TANKS IN THE EVENT OF LEAKAGE OR SPILLAGE.

F. CULTURAL RESOURCES. CONFORM TO THE ACTIVITY REQUIREMENTS FOR PRESERVATION OF CULTURAL RESOURCES. IF ARCHAEOLOGICAL DEPOSITS OR SKELETAL REMAINS ARE ENCOUNTERED CONSTRUCTION WORK SHALL STOP IN THE IMMEDIATE AREA OF DISCOVERY UNTIL DIRECTED BY THE CONTRACTING OFFICER TO REPAIR WORK. WORK CAN PROCEED ELSEWHERE DURING THIS TIME.

6A5 EROSION CONTROL AND SEDIMENT MEASURES

A. REDUCTION OF EXPOSURE OF UNPROTECTED ERODIBLE SOILS. IMMEDIATELY PUSH THE EARTHWORK BROUGHT TO FINAL GRADE, AS INDICATED OR SPECIFIED. IMMEDIATELY PROTECT SOLE SLOPES AND BACK SLOPES UPON COMPLETION OF SOLE GRADING. PLAN AND CONDUCT EARTHWORK TO MINIMIZE THE DURATION OF EXPOSURE OF UNPROTECTED SOILS.

B. TEMPORARY PROTECTION OF ERODIBLE SOILS. USE THE FOLLOWING METHODS TO PREVENT EROSION AND CONTROL SEDIMENTATION.

1. MECHANICAL RETARDATION AND CONTROL OF RUNOFF. MECHANICALLY RETARD AND CONTROL THE RATE OF RUNOFF FROM THE CONSTRUCTION SITE. THIS INCLUDES CONSTRUCTION OF DIVERSION CHANNELS, BERMS, AND BARRIERS TO RETARD AND DIVERT RUNOFF TO PROTECTED DRAINAGE COURSES.

2. SEDIMENT BASINS. TRAP SEDIMENT RESULTING FROM THE CONSTRUCTION WORK IN TEMPORARY OR PERMANENT SEDIMENT BASINS. DESIGN (SIZE) THE BASINS TO ACCOMMODATE THE RUNOFF OF A LOCAL TEN YEAR STORM AND KEEP DRY AND REMOVE THE ACCUMULATED SEDIMENT. AFTER EACH STORM, USE A PAVED WEIR OR VERTICAL OVERFLOW PIPE FOR OVERFLOW. REMOVE COLLECTED SEDIMENT FROM PROJECT AREA. THE DESIGN AND LOCATION OF THE SEDIMENT BASINS WILL BE APPROVED BY THE CONTRACTING OFFICER PRIOR TO CONSTRUCTION.

3. BORROW. BORROW PITS ARE PROHIBITED AT THE PROJECT SITE. CRUSHED ROCK OR FILL SHALL NOT BE AVAILABLE FROM GOVERNMENT RESOURCES.

4. SLOPE PROTECTION. PROVIDE PROTECTION FOR SLOPES IN A TIMELY MANNER TO PREVENT EROSION BY APPROVED METHODS AS MAY BE NECESSARY FOR EFFECTIVE EROSION CONTROL.

6A6 CONTROL AND DISPOSAL OF SOLID WASTE AND CHEMICAL AND SANITARY WASTES

A. GENERAL. BURNING OF ANY DEBRIS OR TRASH IS PROHIBITED. PICK UP SOLID WASTES AND PLACE IN COVERED CONTAINERS WHICH ARE REGULARLY EMPLOYED. DO NOT BURN OR COOK FOOD ON THE PROJECT SITE. PREVENT CONTAMINATION OF THE SITE AND ANY OTHER AREA BY HANDLING AND DISPOSING OF WASTES. ON COMPLETION, LEAVE THE AREAS CLEAN. DISPOSE OF RUBBISH AND DEBRIS IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED.

B. REMOVAL FROM PROJECT SITE. REMOVE RUBBISH, DEBRIS, AND GARBAGE FROM THE PROJECT SITE AND DISPOSE OF IT IN COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS. PROVIDE APPROVED SANITARY WASTE RECEPTACLES FOR THE COLLECTION OF GARBAGE GENERATED UNDER THIS CONTRACT AND PICK UP DAILY FOR DISPOSAL. GARBAGE GENERATED UNDER THE CONTRACT SHALL BE DEFINED AS ANY GARBAGE RESULTING FROM CONTRACTOR PERSONNEL, GOVERNMENT PERSONNEL, VISITORS AND VENDORS TO THE WORK SITE INCLUDING GARBAGE DISCARDED ON OR ADJACENT TO THE WORK SITE RESULTING FROM WORK BEING PERFORMED UNDER THE CONTRACT.

C. SEWAGE, COOL, AND PEST CONTROL. PROVIDE ADEQUATE SANITARY CONVENIENCES OF A TYPE APPROVED FOR THE USE OF PERSONS EMPLOYED ON THE WORK, PROPERLY LOCATED FROM PUBLIC OBSERVATION AND MAINTAINED IN SUCH A MANNER AS REQUIRED AND APPROVED BY THE CONTRACTING OFFICER. MAINTAIN THESE CONVENIENCES AT ALL TIMES WITHOUT NEGLIGENCE. UPON COMPLETION OF THE WORK, REMOVE THE CONVENIENCES FROM THE PREMISES CLEAN AND FREE FROM NUISANCE. DISPOSE OF SEWAGE THROUGH CONNECTION TO A MUNICIPAL OR STATION SANITARY MESSAGE SYSTEM. WHERE SUCH SYSTEMS ARE NOT AVAILABLE, USE CHEMICAL TOILETS OR EQUIVALENTLY EFFECTIVE UNITS, AND PERIODICALLY EMPTY WASTES TO A MUNICIPAL OR STATION SANITARY MESSAGE SYSTEM OR REMOVE WASTES TO A COMMERCIAL FACILITY. PROVISIONS SHALL BE INCLUDED FOR MARKING OR ELIMINATION OF ORDERS AND PEST CONTROL.

D. CHEMICAL WASTES. CHEMICAL WASTE SHALL BE STORED IN CORROSION RESISTANT CONTAINERS, REMOVED FROM THE PROJECT SITE, AND DISPOSED OF NOT LESS FREQUENTLY THAN MONTHLY UNLESS DIRECTED OTHERWISE. DISPOSAL OF CHEMICAL WASTE SHALL BE IN ACCORDANCE WITH STANDARD ESTABLISHED PRACTICES. FUELING AND LUBRICATING OF EQUIPMENT AND MOTOR VEHICLES SHALL BE CONDUCTED IN A MANNER THAT AVOIDS THE RELEASE OF POLLUTANTS AGAINST SPILLS AND EVAPORATION. LUBRICANTS SHALL BE DISPOSED OF IN ACCORDANCE WITH APPROVED PROCEDURES MEETING ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. FOR OIL AND HAZARDOUS MATERIAL SPILLS WHICH MAY BE LARGE ENOUGH TO VIOLATE FEDERAL, STATE, AND APPLICABLE LOCAL REGULATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATELY CLEANING UP ANY OIL AND CHEMICAL SPILLS RESULTING FROM HIS OPERATIONS. ANY COSTS INCURRED IN CLEANING UP ANY SUCH SPILLS SHALL BE AT THE CONTRACTOR'S EXPENSE.

6A7 DUST CONTROL. DUST AND SOIL. KEEP DUST DOWN AT ALL TIMES, INCLUDING NON-WORKING HOURS. WINDING, AND HOLDING. SPRINKLE OR TREAT, WITH DUST SUPPLEMENTS, THE SOIL, AT THE SITE, MAIL, ROADS AND OTHER AREAS DISTURBED BY OPERATIONS. DIRT FINDER BROOMING IS PROHIBITED. INSTEAD, USE VACUUMING, NET MOPPING, OR NET FINDER BROOMING. AIR BLOWING SHALL BE PROHIBITED ONLY FOR CLEANING NONPATELLATE DEBRIS SUCH AS STEEL REINFORCING BARS EXCEPT AS OTHERWISE SPECIFIED. ONLY NET CUTTING SHALL BE PERMITTED FOR CUTTING CONCRETE BLOCKS, CONCRETE, AND STEPHENS CONCRETE. DO NOT UNNECESSARILY BRUISE BAGS OF CEMENT, CONCRETE PORTLAND, OR PLASTER.

6A8 NOISE

A. STANDARDS. THE CONTRACTOR SHALL COMPLY WITH THE APPLICABLE NOISE STANDARDS OF 40 DB AT THE PROPERTY LINE OF NOISE EMANATING FROM THE CONSTRUCTION SITE. MAKE THE MAXIMUM USE OF "LOW-NOISE" EQUIPMENT PRODUCTS AS CERTIFIED BY THE ENVIRONMENTAL PROTECTION AGENCY.

B. EMPLOYEES. NO BLASTING OR USE OF EMPLOYEES WILL BE PERMITTED.

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THE WASHINGTON PLAZA
HONOLULU HAWAII 96801
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verizon wireless
TELECOMMUNICATION FACILITY
PAPER BARRING SANDS CELL SITE (TRAC #1-2-000-013)
NAVY SPECIFICATIONS

JOHN T. WATSON
LICENSED PROFESSIONAL ARCHITECT
NO. 5786
HAWAII, U.S.A.
I have not been employed by the State of Hawaii for the past 12 months and I am not registered in any other state.

Issue	7/3/01
	9/17/01
	10/15/01
Revisions	
1	STUDY - (PACCDN)
2	REVISED - (PACCDN)
3	
4	
Job No.	
Drawn by	DTS
Date	
Drawing No.	

DOCUMENT CAPTURED AS RECEIVED

GENERAL NOTES, SECT. 0120

IN EVENT OF CONFLICT BETWEEN GENERAL NOTES AND SPECIFICATIONS, SPECIFICATIONS WILL GOVERN.

- A. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE SITE AND SHALL NOTIFY ARCHITECT OF DISCREPANCIES BETWEEN THE ACTUAL CONDITIONS AND INFORMATION SHOWN ON DRAWINGS BEFORE PROCEEDING WITH WORK. ALL DISCREPANCIES OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE CONTRACT DRAWINGS AND/OR THE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
- B. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND/OR DETAILS, NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
- C. CONCRETE, PIPES, ETC. EMBEDDED IN CONCRETE SLABS SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR SIXTHS ON CENTER AND SHALL BE POSITIONED IN THE MIDDLE THIRD OF THE SLAB.
- D. MODIFICATIONS TO DRAWINGS: THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS MUST SUBMIT IN WRITING ANY REQUESTS FOR MODIFICATION TO THE PLANS. SHOP DRAWINGS THAT ARE SUBMITTED TO THE DESIGN PROFESSIONAL DO NOT CONSTITUTE A WRITTEN REQUEST. CHANGES TO THE PLANS BECOME THE RESPONSIBILITY OF THE PERSON INITIATING THE CHANGE.
- E. THE CONTRACTOR MUST SUBMIT ALTERNATE PRICING TO THAT SHOWN (IF REVISED) SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. THE CONTRACTOR MUST SUBMIT SHOP DRAWINGS OR CONSTRUCTION SKETCHES TO DOCUMENT THESE MODIFICATIONS.
- F. THE CONTRACTOR SHALL NOTIFY THE ROICC INSPECTOR OF THE STARTING TIME OF EACH CONCRETE POUR AT LEAST 24 HOURS IN ADVANCE.
- G. DESIGN REQUIREMENTS AND CRITERIA
 - A. CODES: ASCE 7-16
 - B. WIND: 165 MPH (3 SEC.) EXPOSURE D
 - C. SEISMIC: ZONE 4

SPECIAL INSPECTION

- A. SPECIAL INSPECTION PROVISIONS OF SECTIONS 05 OF THE UBC GOVERN PORTIONS OF THE STRUCTURAL WORK HEREIN.
- B. THE FOLLOWING STRUCTURAL WORK FOR THIS PROJECT REQUIRES SPECIAL INSPECTION:
 1. WIND RESISTANCE SYSTEM
 2. CONCRETE REINFORCEMENT
- C. CONTRACTOR SHALL NOTIFY AND PROVIDE ACCESS FOR THE ROICC INSPECTOR.
- D. SPECIAL INSPECTION DOES NOT INTEND TO RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND TO PROVIDE FOR SAFETY ON THE JOBSITE.

FOUNDATIONS, BACKFILL AND SLAB CUSHION

- A. FILL AND BACKFILL MATERIAL SHALL CONSIST OF GRAVEL, SITE SELECTED MATERIAL APPROVED BY A SOILS ENGINEER, OR APPROVED EQUAL.
- B. A 6" LAYER OF 3/4" MINUS GRAVEL SHALL BE PLACED UNDER ALL SLABS ON GRADE.
- C. REFER TO DETAIL 46-3 FOR FOUNDATION PREPARATION DETAIL.

CONCRETE, SECTION 3100

- A. MINIMUM CONCRETE STRENGTHS: ACI 318-08, CHAPTER 8, USE METHOD
 1. Poured in place concrete at 28 days:
 - A) FRESH REINFORCED SLABS ON GRADE, FOOTINGS AND THE SLABS: 3500 PSI
 - B) WALL AND FLOOR SLAB, CONCRETE FILL: 3000 PSI
 2. 7" TOP SIZE AGGREGATE SHALL BE USED IN SLABS AND FOUNDATIONS.
- B. REINFORCEMENT
 1. ALL REINFORCING BARS SHALL BE DEFORMED HIGH STRENGTH STEEL, CONFORMING TO ASTM A-618-84A GRADE 60, EXCEPT TIEBARS AND STIRRUPS WHICH MAY BE GRADE 40.
 2. REINFORCEMENT SHALL BE PLACED IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE MANUAL OF STANDARD PRACTICE.
 3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185-88 GALVANIZED.
- C. CONCRETE PROTECTION FOR REINFORCEMENT:
 1. FOOTINGS AND SLAB ON GRADE: 3"
 2. FORMED CONCRETE EXPOSED TO WEATHER OR GROUND: 2"
 3. WEATHER PROTECTED SLABS: 3/4"
- D. SPLICES IN REINFORCEMENT:
 1. LAPTED SPLICES SHALL BE STAGGERED WHERE POSSIBLE.
 2. UNLESS SHOWN OTHERWISE, MINIMUM LAP DISTANCES SHALL BE 36 BAR DIAMETERS.
 3. UNLESS SHOWN OTHERWISE ON PLANS, SPLICES SHALL BE ALLOWED ONLY AT LOCATIONS INDICATED BELOW:
 - A) FOOTINGS, GRADE BEAMS, AND STRUCTURAL SLAB ON GRADE, TOP AND BOTTOM BARS AT MID-SPAN.
- E. SLUFF AND CYLINDER TESTS
 1. PROVIDE 1 SET OF 3 CYLINDERS PER 25 CUBIC YARDS OR LESS.
 2. 1" DIA. X 11" SLUFF.

STRUCTURAL STEEL, SECTION 0520

- A. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODES AND SPECIFICATIONS.
- B. BOLTED SHAPES AND PLATES: ASTM A-36-04A, $F_y = 36,000$ PSI; ASTM A-572-02, GRADE 50, $F_y = 48,000$ PSI.
- C. UNLESS NOTED OTHERWISE, ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" POLISHED BARS WITH BOLTS WITH A MINIMUM OF 3 BOLTS PER CONNECTION.
- D. BOLTS SET IN CONCRETE OR FASTENERS SET TO STEEL SHALL BE GALVANIZED AND CONFORM TO ASTM A-307-02.
- E. WELDS AND ELECTRODES SHALL BE IN ACCORDANCE WITH THE AISC WELDED CONNECTIONS MANUAL AND AISC 368-10. THE WELDED CONNECTIONS MANUAL SHALL BE USED FOR ALL WELDED CONNECTIONS.
- F. STEEL ROOF DECKING SHALL BE 1/4" GAGE NON-CORRUGATED TYPE AND WITH A FINISH OF 17 IN. DIA. AND A FINISH OF 213 IN. DIA. COMPOSITE STEEL FLOOR DECKING SHALL BE ATTACHED TO SUPPORTING MEMBERS AND AT JOINTS LAP JOINTS FOR PARTIAL PENETRATION WELD CONNECTIONS TO PROVIDE A MINIMUM ALLOWABLE DIAPHRAGM SHEAR OF 300 POUNDS PER LINEAR FOOT.

- G. COMPOSITE STEEL FLOOR DECKING SHALL BE 1/4" GAGE NON-CORRUGATED TYPE AND WITH A FINISH OF 17 IN. DIA. AND A FINISH OF 213 IN. DIA. COMPOSITE STEEL FLOOR DECKING SHALL BE ATTACHED TO SUPPORTING MEMBERS AND AT JOINTS LAP JOINTS FOR PARTIAL PENETRATION WELD CONNECTIONS TO PROVIDE A MINIMUM ALLOWABLE DIAPHRAGM SHEAR OF 300 POUNDS PER LINEAR FOOT.
- H. THE STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS FOR ALL STEEL FOR ARCHITECTS REVIEW PRIOR TO FABRICATION. FABRICATE FROM REVEALED DRAWINGS ONLY.

COLD-FORMED STEEL

- A. COLD-FORMED STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (LATEST EDITION).
- B. ALL COLD-FORMED STEEL SHALL CONFORM WITH THE ASTM A-955 MEMBERS OF 1/4" AND 1/8" GAUGE AND SHALL BE GRADE D, $F_y = 36$ KSI. MEMBERS OF 3/8" AND 3/16" GAUGE SHALL BE GRADE A, $F_y = 33$ KSI.
- C. SHAPES OF MEMBERS SHALL CONFORM TO THE METAL STUD MANUFACTURERS ASSOCIATION AND EC80 REPORT.
- D. THE STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS FOR ALL STEEL FOR ARCHITECTS REVIEW PRIOR TO FABRICATION. FABRICATE FROM REVEALED DRAWINGS ONLY.
- E. SCREWS SHALL BE SELF-DRILLING SCREWS, TRADE BY BUILDUP.
- F. STUDS SHALL BE PRE-PUNCHED FOR UTILITY LINES, NO OTHER HOLES ARE ALLOWED UNLESS APPROVED BY THE ENGINEER.
- G. ALL CONNECTORS SHALL BE FABRICATED BY SHIPSON STRONG TIE.
- H. POLDER ACTIVATED FASTENERS SHALL BE IN CONFORMITY WITH FEDERAL SPECIFICATIONS M-F-328.

EPOXY ANCHORING SYSTEMS

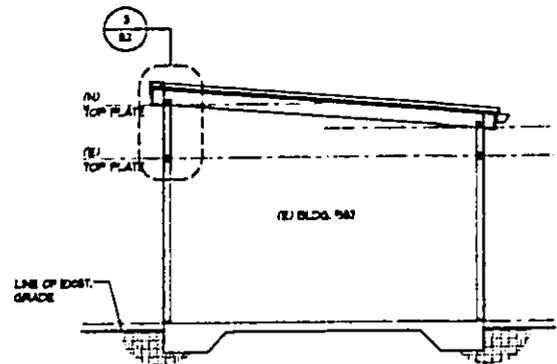
- A. SHALL BE SHIPSON EPOXY TIE ADHESIVE PRODUCTS OR EQUIVALENT.

METAL DECK

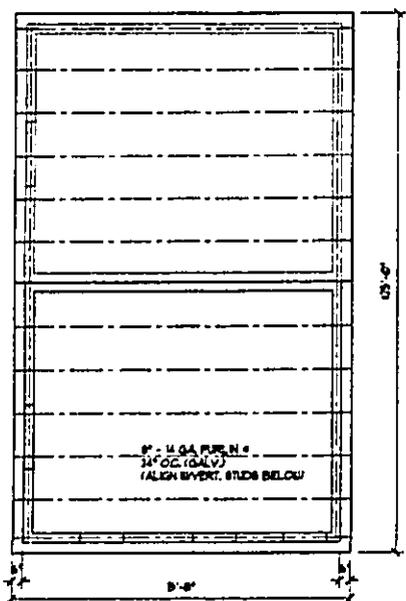
- A. METAL DECK SHALL BE DESIGNED FOR A BASIC ALLOWABLE STRESS OF 30,000 PSI. SECTION PROPERTIES SHALL CONFORM TO THE SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS OF AISI.
 - B. FLOOR DECK SHALL BE 3/8" GAGE COMPOSITE METAL DECK WITH 4 INCHES MINIMUM LIGHTWEIGHT CONCRETE FILL AND 6-8" DEEPS. WITH THE FOLLOWING FINISH SECTION PROPERTIES:

B _f	= 345 IN ⁴ FT
I _x	= 845 IN ⁴ FT
S _x	= 323 IN ³ FT
J _x	= 323 IN ⁴ FT
P	= FOR POSITIVE BENDING
N	= FOR NEGATIVE BENDING

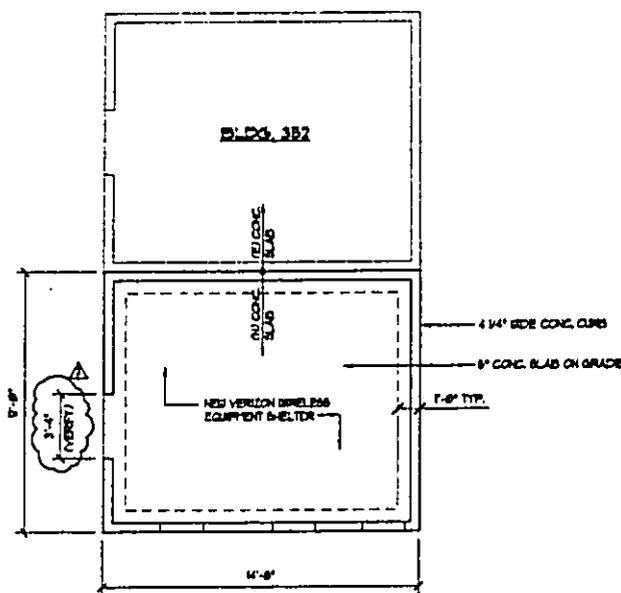
 DECK SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS.
- C. DIAPHRAGM ACTION SHALL BE PROVIDED FOR IN ALL AREAS WITH BEELDING (OR MECHANICAL FASTENERS) PATTERN IN ACCORDANCE WITH SPECIFIED MANUFACTURER'S RECOMMENDATIONS (DOCUMENTED BY U.S.G.S. RESEARCH REPORTS) TO PROVIDE 1000 PLF BEAR CAPACITY.
- D. ANCHOR DECK UNITS TO RESIST A NET UPLIFT OF 800LF.
- E. METAL DECKING SHALL BE CONTINUOUS OVER A MINIMUM OF 3 SPANS.



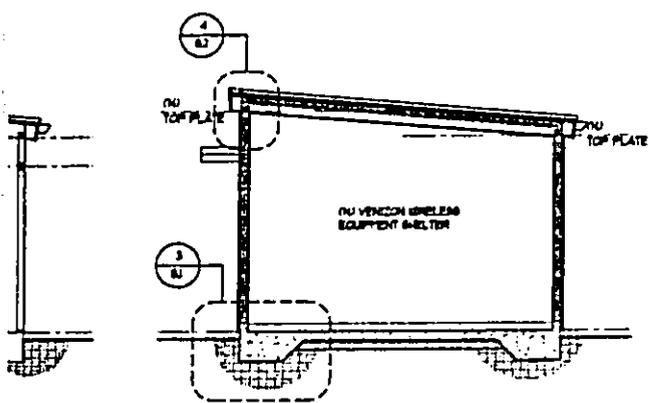
SECTION 3 BLDG. #352
SCALE: 1/4" = 1'-0"



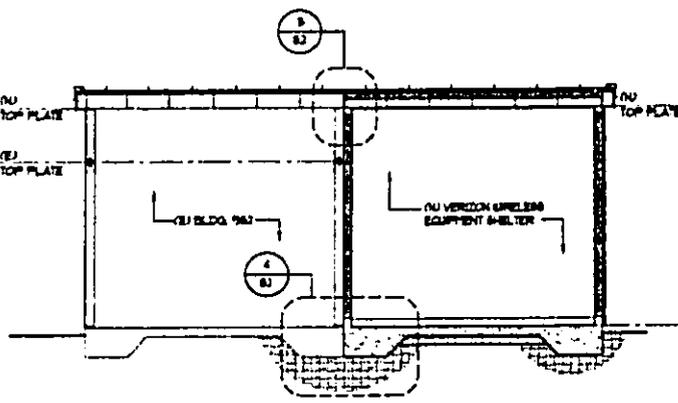
2 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



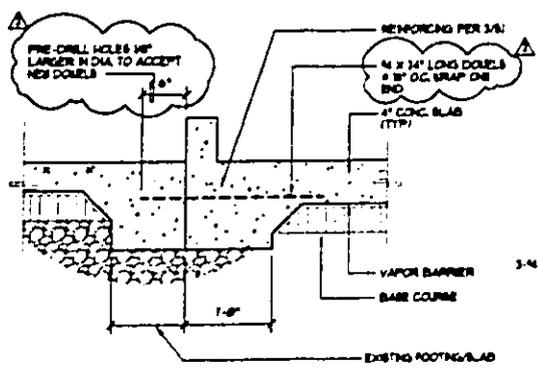
1 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



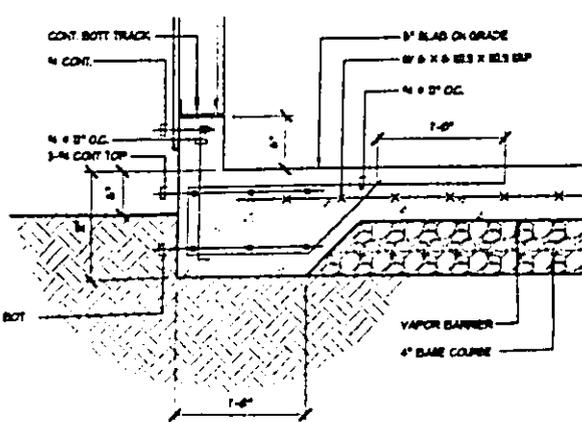
#352 SECTION B EQUIP. SHELTER
SCALE: 1/4" = 1'-0"



A SECTION
SCALE: 1/4" = 1'-0"



4 FOOTING DETAIL
SCALE: 1" = 1'-0"



3 FOOTING DETAIL
SCALE: 1" = 1'-0"

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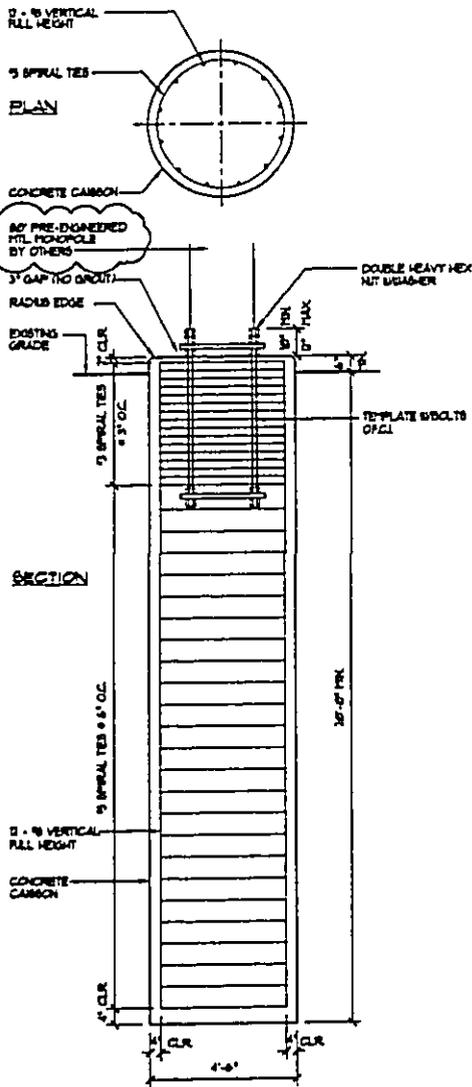
verizon wireless
TELECOMMUNICATION FACILITY
PAPF BARROSO SANCOS CELL SITE (TRAC: 011-2-002-013)
STRUCTURAL SHEET

JAMES B. VALENTI
LICENSED PROFESSIONAL ENGINEER
No. 3873-E
NEW YORK STATE
EXPIRES 12/31/2011

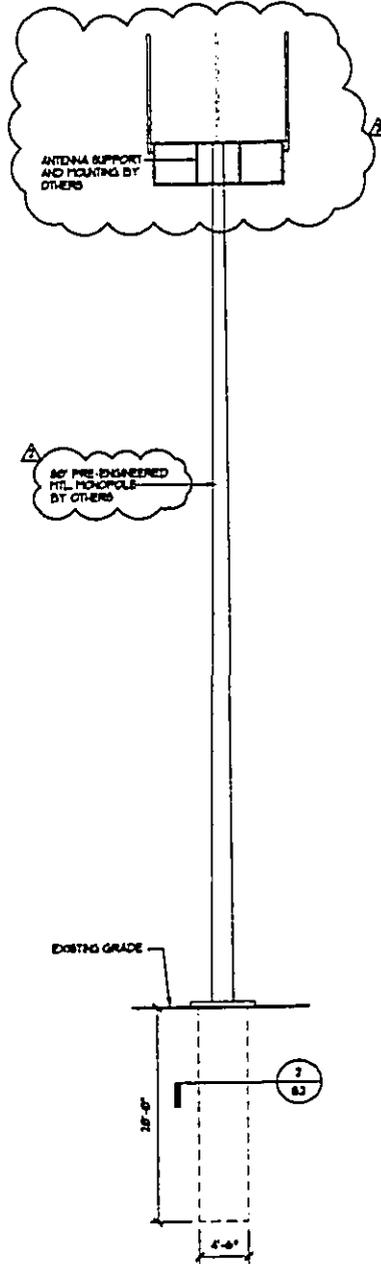
Issue:	7/31/01
	9/17/01
	10/15/01
Revisions:	
▲	BT/LSH-TRACOR
▲	BT/LSH-TRACOR
Job No:	
Drawn by:	DTS
Date:	
Drawing No:	S.1

GENERAL NOTES

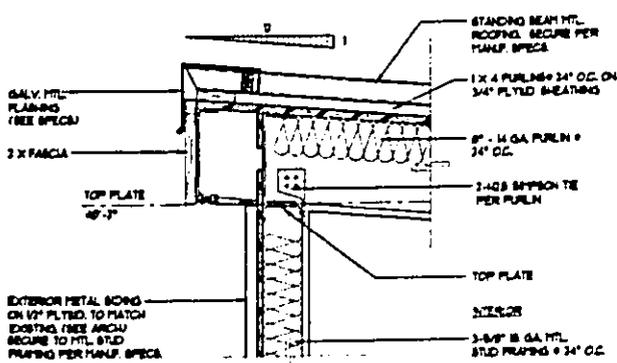
- LOADS SHALL BE IN ACCORDANCE WITH ASCE-705 AND 105 (SEE EXPOSURE D).
 - CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI (28 DAYS). CONCRETE SHALL BE AIR ENTRAINED (84892).
 - CONCRETE SHALL HAVE A MAXIMUM WATER-CEMENT RATIO OF 0.45. ALL REINFORCING SHALL BE IN ACCORDANCE WITH THE BUILDING CODE PERmits FOR REINFORCED CONCRETE AGAINST STANDARD PRACTICES FOR THE CONSTRUCTION OF DRILLED PIERS' LATEST EDITION.
 - STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 (EXCEPT THAT CASSON TIES MAY BE ASTM A588) AND ALL REINFORCING DETAILS SHALL CONFORM TO MANUAL AND PRACTICE FOR DETAILING REINFORCED CONCRETE AGAINST LATEST EDITION, UNLESS DETAILED OTHERWISE ON THIS SHEET. THE MONOPOLE MANUFACTURER'S SHOP DRAWING OR THE PORT.
 - BOLT QUANTITY, SIZE, LENGTH, AND BOLT CIRCLE SHALL BE MANUFACTURER'S SHOP DRAWING.
 - ADDITIONAL SPECIFICATIONS SEE SHEET S1.
- SOIL NOTES**
- DESIGN IS BASED ON THE SOILS REPORT BY SHAW-WALKER AND REPORT NO. 05-004, DATED JULY 6, 2001 AND ANY OTHERS. THE SOILS REPORT SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.
 - CONTRACTOR SHALL REVIEW THE SOILS REPORT AND COMPLY WITH REQUIREMENTS STATED THEREIN.
 - IN EVENT THAT THE SOILS CONDITION ARE ENCOUNTERED THAT DIFFER FROM ANTICIPATED, CONTACT OWNER IMMEDIATELY.
 - CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF BRACING, SHEATHING, AND SHORING REQUIRED TO SAFELY RETAIN EXCAVATION.
 - BEARING VALUE, SEE SOILS REPORT.
 - FOUNDATIONS FOR FOUNDATIONS SHALL BE APPROVED BY THE SOILS ENGINEER PRIOR TO PLACING REINFORCING AND CONCRETE. THE CONTRACTOR SHALL NOTIFY THE SOILS ENGINEER WHEN THE EXCAVATION IS READY FOR INSPECTION. THE SOILS ENGINEER SHALL VERIFY COMPLIANCE TO THE OWNER AND STRUCTURAL ENGINEER.



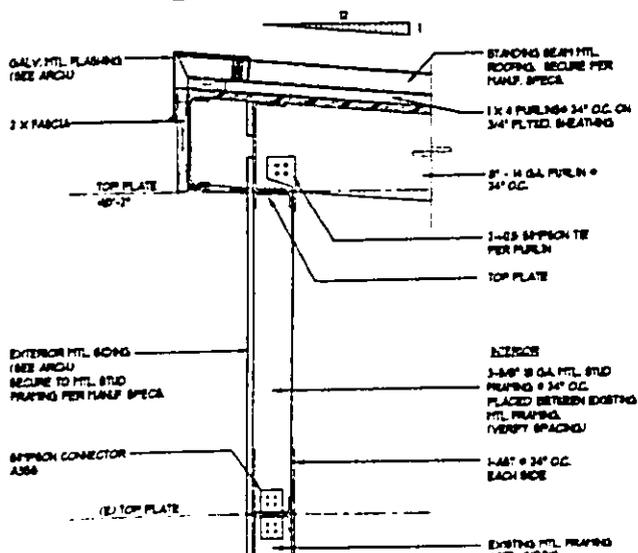
2 CAISSON DETAIL
SCALE: 3/4" = 1'-0"



1 MONOPOLE ELEVATION
SCALE: 1/8" = 1'-0"



4 ROOF DETAIL
SCALE: 1/2" = 1'-0"



3 ROOF DETAIL @ BLDG. #352
SCALE: 1/2" = 1'-0"

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Verizon Wireless
TELECOMMUNICATION FACILITY
PART BAYING SANDS CELL SITE, (TMC# 41-1-003-019)
STRUCTURAL SHEET

JAMES B. WALKER
LICENSED PROFESSIONAL ENGINEER
NO. 3873-VT
VERMONT, U.S.A.

I have seal for prepared & approved for printing. My seal is not to be used for any other purpose.

James B. Walker

My commission expires on 12/31/2008. My registration expires on 12/31/2008. My registration expires on 12/31/2008.

Issue	1/3/01
	9/17/01
	10/15/01
Revisions	
	1. 8/17/01 - (MPCO)
	2. 8/17/01 - (MPCO)
	3. 8/17/01 - (MPCO)
Job No.	
Drawn by	BTS
Date	
Drawing No.	62

AIR CONDITIONING SPECIFICATIONS

1. ACCESS

PROVIDE LABOR, EQUIPMENT AND MATERIALS FOR INSTALLING A COMPLETE, TESTED & ADJUSTED VENTILATING AND AIR CONDITIONING SYSTEMS. PROVIDE AIR-DEVICES, DUCTWORK, PIPING, CONTROLS, AND CONTROL WIRING.

2. CODES & MATERIALS

THIS INSTALLATION SHALL COMPLY WITH LOCAL AND NATIONAL CODES INCLUDING THE UNIFORM BUILDING CODE, ELECTRICAL AND FIRE CODES NFPA 96A AND 96B, THE STANDARDS OF THE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS. ALL MATERIALS SHALL BE NEW, UNUSED AND THE BEST GENERAL QUALITY AVAILABLE.

3. PRODUCTS

SUBMIT FOR APPROVAL MANUFACTURER'S DETAILED DATA OF THE PRODUCTS AND MATERIALS INTENDED TO BE USED.

A. EQUIPMENT SHALL BE AS SPECIFIED HEREIN OR AS SCHEDULED ON THE DRAWINGS OR APPROVED EQUAL BY THE ENGINEER.

B. LOW VELOCITY DUCTWORK

- 1) STANDARDS: COMPLY WITH MOST STRINGENT REQUIREMENTS AND RECOMMENDATIONS OF THE CURRENT EDITIONS OF SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION) LOW PRESSURE DUCT CONSTRUCTION STANDARDS FOR FABRICATION, CONSTRUCTION AND SEALANT OF DUCT, FITTINGS AND ACCESSORIES. LOW VELOCITY/PRESSURE DUCTWORK DEFINED AS 2" IN. STATIC VELOCITY/PRESSURE DUCTWORK DEFINED AS 2" IN. STATIC PRESSURE MAXIMUM AND 2500 FPM VELOCITY MAXIMUM.

2) CONSTRUCTION: CAMBIA, DUCTWORK, AND FITTINGS CONFIGURATION AS INDICATED ON DRAWINGS. INDICATED DIMENSIONS ARE NET INSIDE.

3) APPLICATION

- a) AIR CONDITIONING SUPPLY AND RETURN SHALL BE GALVANIZED STEEL, WITH ASIS GAUGES AND CONSTRUCTION CONFORMING TO SMACNA.
- b) VENTILATION SHALL BE GALVANIZED STEEL, WITH ASIS GAUGES AND CONSTRUCTION CONFORMING TO SMACNA.
- c) DUCT LINES SHALL BE PROVIDED FOR ALL SUPPLY AND RETURN DUCTS. INTERNAL ACOUSTICAL INSULATION SHALL BE 1" THICK EQUAL TO SCHALLER "SACOBUSTIC" AND OF A THICKNESS AND OF DENSITY TO PROVIDE A VALUE OF R=6.2.

C. AIR & SHEET METAL SPECIALTIES: AIR SPECIALTIES SHALL BE ALL EXTRUDED ALUMINUM CONSTRUCTION EXCEPT WHERE STEEL IS SPECIFIED.

- 1) SUPPLY REGISTERS: DOUBLE DEFLECTION ADJUSTABLE WITH ALUMINUM OPPOSED BLADE DAMPERS. FRONT BARS SHALL BE VERTICAL.
- 2) RETURN REGISTERS: SINGLE ROW, POSED EAR FACED, 45° ANGLE WITH ALUMINUM OPPOSED BLADE DAMPERS.
- 3) FLEXIBLE CONNECTOR REQUIREMENTS: WEATHER-PROOF, AIR TIGHT, HEAT RESISTANT, NEOPRENE-COATED FABRIC, 30 GAUGE, VENTILATED, ELBOW.
- 4) AIR FILTERS: AIR FILTERS SHALL BE MEDIUM EFFICIENCY, THROUGHPUT TYPE WITH A MINIMUM OF 30% AIR-PASS 10-20.

D. CONDENSATE DRAIN PIPING SHALL BE PVC SCHEDULE 40 OR DRY COPPER FOR THE A.C. UNITS WITH EXTRA DEEP TRAP AND CLEAN OUT AS INDICATED.

E. INSULATION

- 1) CONDENSATE DRAIN LINES SHALL BE INSULATED WITH 6" IN. THICK ELASTOMERIC THERMAL INSULATION. APPLY TWO COATS OF VINYL LACQUER PRIMER OR EQUIVALENT ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS FOR UNCELLULAR INSULATION LOCATED OUTSIDE.

F. CORROSION PROTECTION MATERIALS FOR AIR CONDITIONING UNITS

- 1) PRIMER SYSTEM FOR ALL SURFACES (EXCEPT FOR FINISHED SURFACES) SHALL BE TWO COATS OF AMERICOAT 93 COPOLYMER PEARL GRAY, APPLIED AT 1-1/2 MIL DFT PER COAT OVER APPROPRIATE PRIMER.
- 2) FINISHED SURFACES: AMERICOAT 93 VINYL COPOLYMER PEARL GRAY SHALL PROPERLY MODIFIED AND APPLIED BY THE APPROVED APPLICATOR NOT TO EXCEED 3 MILS DFT.
- 3) APPROPRIATE PRIMERS:
 - a) GALVANIZED ONE COAT OF AMERICOAT 78 (POLYANIDE EPOXY PRIMER) AT 2.8 MILS DFT.
 - b) FACTORY PRIMED AND/OR FINISHED ONE COAT OF AMERICOAT 98 (UNIVERSAL PRIMER) AT 3 MILS DFT.
 - c) ALUMINUM ONE COAT OF AMERICOAT 79 (POLYANIDE EPOXY PRIMER) AT 2.8 MILS.

G. CONTROLS AND CONTROL WIRING

- 1) PROVIDE STANDARD ITEMS RECOMMENDED BY THE EQUIPMENT MANUFACTURERS AND/OR AS SHOWN ON THE CONTROL DIAGRAM.
- 2) CONTROL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE CONTROL DIAGRAMS AND THE MANUFACTURER'S STANDARD DIAGRAM.

4. INSTALLATION

ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND THE INDUSTRY STANDARDS AS REFERENCED WITHIN THESE SPECIFICATIONS.

5. TESTING AND BALANCING

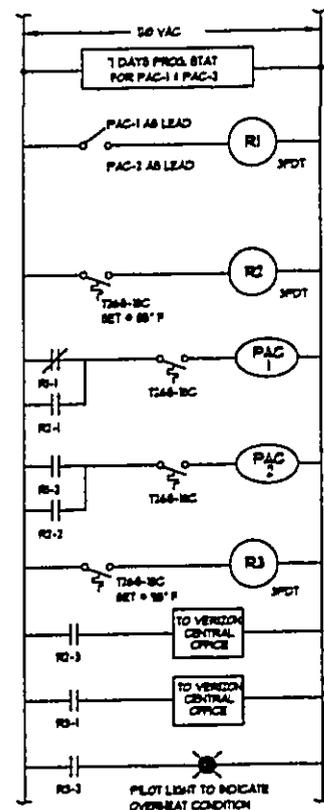
A. OPERATE AND TEST SYSTEM: (BAC) OWNER STANDARD OPERATING PROCEDURES AND HOW TO SHUT OFF IN AN EMERGENCY. BALANCE AIR DISTRIBUTION SYSTEM. SUBMIT FOUR COPIES OF START-UP AND AIR BALANCE REPORTS.

6. OPERATING AND MAINTENANCE INSTRUCTIONS

SHALL BE SUBMITTED PRIOR TO FINAL ACCEPTANCE CONSISTING OF FOUR BOUND COPIES OF VENTILATION UNITS CLEARLY MARKED AS TO TYPE, MODEL, AND MECHANICAL AND ELECTRICAL CHARACTERISTICS. WIRING AND CONTROL DIAGRAMS SHALL BE INCLUDED IN THE O&M INSTRUCTIONS.

7. GUARANTEE

ALL WORK IN THIS SECTION SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBstantial USE AS A WHOLE. SHOULD ANY EQUIPMENT OR MATERIAL FAIL WITHIN THIS TIME, REPLACE OR REPAIR AT NO COST TO THE OWNER, IF SUCH IS THE RESULT OF FAULTY MATERIAL AND/OR WORKMANSHIP. CORRECTION OF VIBRATION OR UNCLE NOISE IS INCLUDED.

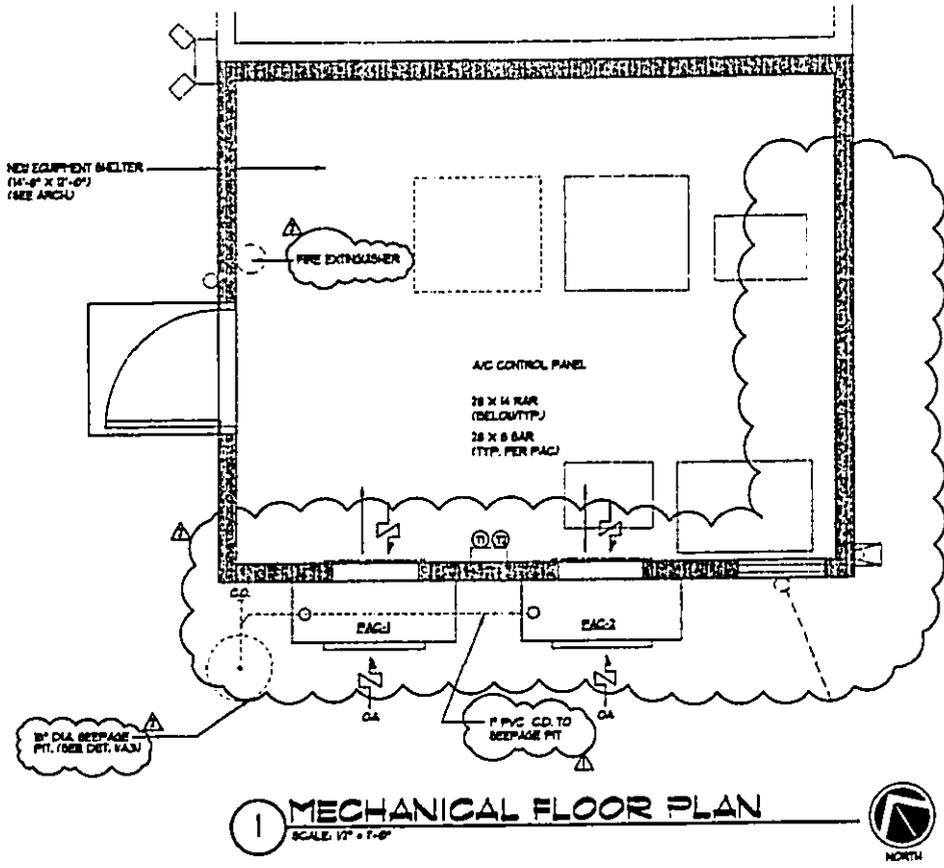


1 DAY STAT
JOHNSON CONTROLS
T248-BC or APPROVED EQUAL

SEQUENCE OF OPERATION

CONTROL SYSTEM FOR THE TWO PACKAGED AIR CONDITIONERS AS FOLLOWS:

- 1) PROGRAM TO OPERATE PAC-1 AND PAC-2 SELECTED HOURS/DAYS
- 2) A MANUAL "LEAD/LAG" SELECTOR SWITCH WILL DETERMINE WHICH UNIT WILL BE THE LEAD SYSTEM AND WHICH UNIT WILL BE THE LAG SYSTEM. THE TWO PACKAGED UNITS SHALL OPERATE IN THE TEMPERATURE RANGE OF 66°F TO 72°F. THE SELECTOR SWITCH WILL BE MOUNTED ON THE PANEL FACE.
- 3) IF ROOM TEMPERATURE RISES TO 80°F, SIGNIFYING MALFUNCTION OF THE LEAD UNIT, THE LAG UNIT SHALL ACTIVATE AND OPERATE NORMALLY. THE TURNING ON OF THE LAG UNIT SHALL ACTIVATE AN ALARM TO INDICATE MALFUNCTION OF THE LEAD UNIT.
- 4) IF ROOM TEMPERATURE CONTINUES TO RISE ABOVE 80°F, SIGNIFYING MALFUNCTION OF BOTH UNITS, A SEPARATE HIGH TEMPERATURE ALARM SHALL ACTIVATE AND TROUBLE LIGHT SIGNAL.
- 5) ALL ALARMS SHALL BE TELEMETTERED TO VERIZON WIRELESS CENTRAL OFFICE.



STAT
IN CONTROLS
-USE IF APPROVED EQUAL

NEW EQUIPMENT INCLUSTER
(14'-0" X 2'-0")
(SEE ARCH)

BY DIA. SEEPAGE
PIT. (SEE DET. PLAN)

A/C CONTROL PANEL
28 X 14 BAR
(BELOW/ITP)
28 X 8 BAR
(ITP. PER PAC)

MECHANICAL FLOOR PLAN

SCALE: 1/2" = 1'-0"



GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
2. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY MAJOR DEVIATIONS FROM THE PROJECT PLANS DUE TO UNFORESEEN OR VARYING FIELD CONDITIONS INCLUDING BUT NOT LIMITED TO DIFFERENCES, ELEVATIONS AND CLEARANCES.
3. ALL UTILITIES AND APPURTENANCES SHOWN ON THE PLANS SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION, AND IF DAMAGED, SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR.

PACKAGE A/C UNIT SCHEDULE

ITEM	PAC-1	PAC-2
INDOOR FAN		
CFM (RATED)	1200	1200
ESP (IN. WG)	0.20	0.20
RPM	1075	1075
HP/AMPS	1/4 / 1.8	1/4 / 1.8
VOLTAGE/PHASE	208 / 1	208 / 1
REFRIGERANT	R-22	R-22
TC (BTUH)	35,600	35,600
EC (BTUH)	71,200	71,200
NO. FILTER SIZE (IN)	16 X 30 X 2	16 X 30 X 2
OPERATING WT. (LBS)	300	300
SEER	10.0	10.0
ROU/BFMS PER IN. (MIN)	3/4	3/4
EDB/LEB (F)	75/66	75/66
LDB/LEB (F)	84.5/83.1	84.5/83.1
OUTDOOR FAN CFM	3000	3000
HP/RPM	1/4 / 1075	1/4 / 1075
NO./LA (EA)	17 LB	17 LB
AHS TEMP (F)	50	50
TYPE	HERMETIC	HERMETIC
VOLTAGE/PHASE	208 / 1	208 / 1
NO.	1	1
RLA	0.3	0.3
LRA	0.9	0.9
MAKE (OR APPROVED EQ)	MARVAIR	MARVAIR
MODEL	AP75BACA	AP75BACA

PROVIDE FACTORY MOUNTING BRACKETS TO ATTACH TO EXTERIOR WALL AS SHOWN. PROVIDE ADDITIONAL WALL REINFORCEMENT AS REQUIRED TO SUPPORT UNITS.

COUNTY OF KALIA
CHAPTER 2, BUILDING CODE
KALIA COUNTY CODE PART 48, ARTICLE 6 - ENERGY CONSERVATION

I CERTIFY THAT THE DESIGN IS IN COMPLIANCE WITH THE BUILDING ENERGY EFFICIENCY STANDARDS.

Victor L. Russell 10-15-01
Signature Date

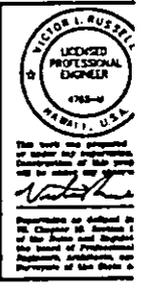
VICTOR L. RUSSELL
Name

PRESIDENT
Title

4765-M
License No.

M'Peak + Associates, Inc.
FIVE WATERBURY PLAZA
KNOXVILLE, TENNESSEE 37912
TEL: 615-596-3344

verizon wireless
TELECOMMUNICATION FACILITY
PACIFIC BARRING SANDS CELL SITE (TRAC # 01-2-002-013)
MECH. SPECIFICATIONS GENERAL NOTES



Issues:

7/31/01
9/17/01
10/15/01

Revisions:

1. BY: VLR (PACD)

2. BY: VLR (PACD)

3. BY: VLR (PACD)

4. BY: VLR (PACD)

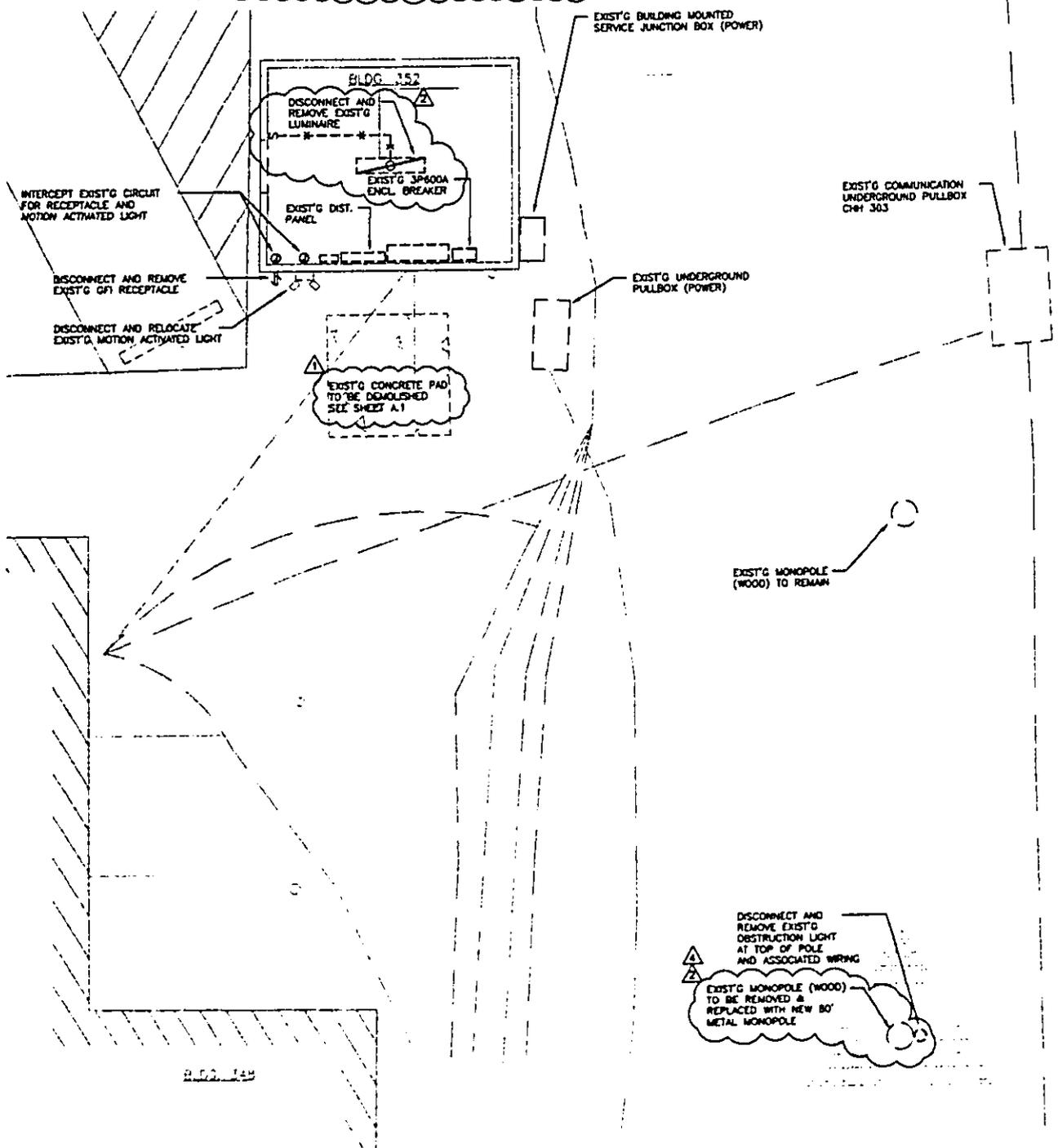
Job No. _____
Drawn By: _____
Date: _____
Drawing No. _____

M.I.

DEMOLITION NOTES

1. DISCONNECT AND REMOVE ALL , OUTLETS, LUMINAIRES AND ASSOCIATED WIRING UNLESS NOTED.
2. EXISTING UTILITIES AND EQUIPMENT SHOWN ON THESE DRAWINGS HAVE BEEN OBTAINED FROM A LIMITED AMOUNT OF FIELD INVESTIGATION AND AVAILABLE SOURCES AT THE TIME THESE DOCUMENTS WERE PREPARED. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION IS NOT GUARANTEED. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO THE START OF WORK AND SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED TO COMPLETE THE INTENT OF THIS PROJECT.
3. BEFORE ANY WIRING IS CUT, CONTRACTOR SHALL VERIFY USAGE OF WIRING TO BE CUT TO ASSURE THAT REQUIRED SERVICES ARE NOT DISCONTINUED. ANY REQUIRED SERVICES DISCONNECTED BY THE CONTRACTOR SHALL BE RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO VERIZON WIRELESS OR THE PACIFIC MISSILE RANGE FACILITY.
4. REMOVE ALL EXISTING LUMINAIRES, OUTLETS AND WIRING NOT TO REMAIN IN SERVICE.
5. ABANDON CONCEALED RACEWAYS NO LONGER REQUIRED. REMOVE ALL CONDUCTORS IN RACEWAYS TO BE ABANDONED.
6. PHASE ALL WORK TO ASSURE CONTINUITY OF ALL ELECTRICAL SERVICES, INCLUDING MECHANICAL CONTROLS, COMMUNICATIONS AND SECURITY SYSTEMS TO PARTS OF THE FACILITY TO REMAIN IN SERVICE.
7. REMOVE ALL DEVICES AND EQUIPMENT INDICATED TO BE REMOVED OR NO LONGER REQUIRED. PLUG ALL HOLES IN ENCLOSURES, BOXES AND CABINETS TO REMAIN.
8. ANY OUTAGES OF ELECTRICAL SERVICES TO ANY PART OF THE FACILITY OR THE BUILDING SHALL BE REQUESTED IN WRITING AT LEAST 15 WORKING DAYS PRIOR TO THE DATE OF THE DESIRED OUTAGE. WRITTEN REQUEST TO THE PM/E ELECTRICAL ENGINEER AND PUBLIC WORKS OFFICE THROUGH THE ROCC CONSTRUCTION REPRESENTATIVE SHALL INCLUDE THE FOLLOWING INFORMATION: SERVICE(S) TO BE INTERRUPTED, DATE, TIME, DURATION OF THE OUTAGE AND THE REASON FOR THE DESIRED OUTAGE.

OUTAGES WILL BE GRANTED AT THE SOLE CONVENIENCE OF THE PM/E ELECTRICAL ENGINEER AND PUBLIC WORKS OFFICE THROUGH THE ROCC CONSTRUCTION REPRESENTATIVE.



A ELECTRICAL EXISTING/DEMOLITION PLAN
SCALE 1/4" = 1'-0"

PART 1 - GENERAL

- 1.01 GENERAL CONDITIONS
- 1.02 SCOPE: FURNISH MEAN FURNISHING
 - A. IN GENERAL
 1. DEMOLITION
 2. PROVIDE
 3. PROVIDE
- B. WIRING AND CONTRACT
- C. COORDINATION
- D. FURNISHING
- 1.03 RELATED WORK
 - A. TELEPHONE
 - B. TELEPHONE
- 1.04 QUALITY ASSURANCE
 - A. COMPLY WITH
 - B. OBTAIN APPROVAL
 - C. SPECIFIC APPROXIMATE MAKE INFORMATION
 - D. PRIOR TO ALL CHANGES THE PROJECT
 - E. INSTALLATION CONTRACT MATERIALS COMPLETELY ADDITIONAL

- 1.05 SUBMITTALS
 - A. SUBMIT PRIOR TO
 - B. PROJECT CONCEAL DRAWINGS TO THE PROJECT

PART 2 - PRODUCTS

- 2.01 MATERIALS: MATERIALS LABORATORIES
 - A. GALVANIZED
 - B. ELECTRICAL
 - C. PLASTIC
 - D. WIRING: SMALLER INDICATED NEC TYPE
 - E. METERING RATINGS
 - D. OBSTRUCTION
 1. DOUBLE NO. 50
 2. LIGHTING CONTR. AND S LIGHTS
 3. TOWER AND T
 - F. HARDWARE NECESSARY AND STEEL SHALL BE

PART 3 - EXECUTION

- 3.01 CONSTRUCTION
 - A. COMPLY WITH
 - B. CONSTRUCTION HANDBOOK APPLICATION
 - C. RACEWAY
 1. GRC NOT
 2. PVC
 3. PROVIDE
 4. PROVIDE
 5. INST.
 - D. CONDUIT
 1. CONDUIT
 2. FORM
 3. SPLICE
 - E. GROUNDING
 1. GROUND FOR
 2. METAL RECD
 3. GROUND PART
 - F. FINISHING DAMAGED TO REPAIR

G. TESTING ALL TESTS THE APPROVED

ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

- 1.01 **GENERAL CONDITIONS:** DRAWINGS AND GENERAL PROVISIONS OF CONTRACT APPLY TO WORK OF THIS SECTION.
- 1.02 **SCOPE:** FURNISH ALL MATERIALS REQUIRED TO COMPLETE ALL ELECTRICAL WORK. "PROVIDE" SHALL MEAN "FURNISH AND INSTALL" WHEN USED HEREIN.
 - A. IN GENERAL, THE FOLLOWING WORK IS INCLUDED:
 - 1. DEMOLITION WORK AS INDICATED OR REQUIRED.
 - 2. PROVIDE POWER AND TELEPHONE WIRING SYSTEMS INCLUDING METERING (PMRF) EQUIPMENT AND WIRING.
 - 3. PROVIDE GROUNDING SYSTEM FOR TELEPHONE EQUIPMENT PER VERIZON WIRELESS REQUIREMENTS.
 - B. WIRING AND CONNECTING OF ALL ELECTRICAL EQUIPMENT SUPPLIED FOR INSTALLATION AND USE IN THIS CONTRACT NOT SPECIFICALLY LISTED AS "WORK BY OTHERS".
 - C. COORDINATE AND ARRANGE ELECTRIC SERVICE CONNECTION WITH FACILITIES ENGINEER.
 - D. FURNISHING OF "CONTRACTOR SUBMITTALS" AND "PROJECT RECORD DRAWINGS".
- 1.03 **RELATED WORK SPECIFIED IN OTHER SECTIONS:**
 - A. TELEPHONE CABLING AS FURNISHED BY VERIZON HAWAII.
 - B. TELEPHONE EQUIPMENT FURNISHED BY VERIZON WIRELESS.
- 1.04 **QUALITY ASSURANCE:**
 - A. COMPLY WITH THE REQUIREMENTS OF (PMRF) THE COUNTY, STATE, KECCO, VERIZON HAWAII AND VERIZON WIRELESS.
 - B. OBTAIN AND PAY FOR ALL FEES, PERMITS, LICENSES, ASSESSMENTS AND INSPECTIONS REQUIRED FOR THIS WORK.
 - C. SPECIFICATIONS ARE ACCOMPANIED BY ARCHITECTURAL PLANS AND DIAGRAMMATIC ELECTRICAL PLANS SHOWING APPROXIMATE LOCATIONS OF LUMINAIRES, OUTLETS AND OTHER ELECTRICAL EQUIPMENT. LOCATIONS ARE APPROXIMATE AND BEFORE INSTALLATION, CONTRACTOR SHALL STUDY ADJACENT CONSTRUCTION DETAILS AND MAKE INSTALLATION IN THE MOST LOGICAL MANNER.
 - D. PRIOR TO THE START OF ROUGH-IN WORK, VERIFY ALL DIMENSIONS AND SIZES OF EQUIPMENT AT THE JOB SITE. CIRCUITS AND RACEWAY ROUTE ARE DIAGRAMMATIC AND MAY BE ALTERED IN ANY LOGICAL MANNER. HOWEVER, ALL CHANGES FROM THE CONTRACT DOCUMENTS SHALL BE APPROVED BY THE ARCHITECT AND INDICATED ON THE PROJECT RECORD DRAWINGS.
 - E. INSTALLATION SHALL BE COMPLETE IN EVERY DETAIL AND READY FOR USE. ANY ITEM SUPPLIED BY THE CONTRACTOR DEVELOPING DEFECTS WITHIN ONE (1) YEAR AFTER FINAL ACCEPTANCE SHALL BE REPLACED BY MATERIALS, APPARATUS OR PARTS, INCLUDING INSTALLATION LABOR TO MAKE SUCH DEFECTIVE PORTION OF COMPLETE SYSTEM CONFORM TO THE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS, WITHOUT ADDITIONAL COST TO VERIZON WIRELESS OR THE PACIFIC MISSILE RANGE FACILITY.
- 1.05 **SUBMITTALS:**
 - A. SUBMIT FOR REVIEW SIX (6) COPIES OF SHOP DRAWINGS OR CATALOG CUTS OF THE FOLLOWING EQUIPMENT PRIOR TO ORDERING OF EQUIPMENT: METERING EQUIPMENT, ELECTRICAL APPARATUS.
 - B. "PROJECT RECORD DRAWINGS" SHALL INDICATE ALL CHANGES FROM THE CONTRACT DRAWINGS OF ALL CONCEALED WIRING. RECORD THIS INFORMATION ALONG WITH ANY REQUIRED CHANGES FROM THE CONTRACT DRAWINGS ON REPRODUCIBLE SHEETS OR VELLUM. SUBMIT PROJECT RECORD DRAWINGS FOR REVIEW PRIOR TO THE FINAL SITE VISIT BY ARCHITECT.

PART 2 - PRODUCTS

- 2.01 **MATERIALS:** MATERIALS AND EQUIPMENT SHALL BE NEW AND THOSE ITEMS LISTED BY UNDERWRITER'S LABORATORIES SHALL BEAR "UL" LABEL OF APPROVAL.
 - A. GALVANIZED RIGID CONDUIT (GRC): HOT DIPPED GALVANIZED, WITH THREADED FITTINGS, 1/2" MINIMUM.
 - B. ELECTRICAL METALLIC TUBING: HOT DIPPED GALVANIZED, WITH COMPRESSION FITTINGS, 1/2" MINIMUM.
 - C. PLASTIC CONDUIT: PVC, SCHEDULE 40.
 - D. WIRES: CONDUCTORS SHALL BE COPPER, 600 VOLTS, NO. 12 AWG, MINIMUM. CONDUCTORS NO. 10 AND SMALLER SHALL BE SOLID. CONDUCTORS NO. 8 AND LARGER SHALL BE STRANDED, UNLESS SPECIFIED OR INDICATED OTHERWISE, OR REQUIRED TO BE OTHERWISE BY NFPA 70. ALL POWER AND LIGHTING WIRES SHALL BE NEC TYPE THW OR THWN.
 - E. METERING EQUIPMENT: SELF-CONTAINED, COMBINATION TYPE WITH CHECK METER AND MAIN CIRCUIT BREAKER. RATINGS AS INDICATED ON THE DRAWINGS.
 - D. OBSTRUCTION LIGHT EQUIPMENT:
 - 1. DOUBLE LIGHT (FAA L-810). 1" BOTTOM HUB. TWO 110 WATT LAMPS. SEPCO AVIATION LIGHTING, INC. NO. 50021 (TYPE EDL) WITH NO. 10047-1577 LAMPS (2). PROVIDE SIX (6) SPARE LAMPS.
 - 2. LIGHTING CONTROLLER (FAA SPEC A-1): AUTOMATIC LIGHTING CONTROL PER FAA AND FCC CONSTRUCTION LIGHTING REQUIREMENTS, INCLUDING ALARM CIRCUITS FOR LAMP BURNOUTS AND SYSTEM FAILURES. CONTROLS SHALL INCLUDE PEC WITH AUTOMATIC DELAY AND NORMALLY CLOSED LOAD RELAY CONTACTS AND SHALL ASSURE "LIGHTS ON" IF ANY COMPONENT FAILS. OUTDOOR ENCLOSURE. SEPCO AVIATION LIGHTING, INC. MODEL NO. 51591 (TYPE TLCA).
 - 3. TOWER JUNCTION BOX: 4" DIAMETER X 2" DEEP. CAST ALUMINUM HOUSING WITH GASKETED COVER AND THREE CIRCUIT TERMINAL BLOCK. SEPCO AVIATION LIGHTING, INC. MODEL NO. MLS209-H.
 - F. HARDWARE, SUPPORTS, BACKING, ETC.: PROVIDE ALL HARDWARE, SUPPORTS, BACKING AND OTHER ACCESSORIES NECESSARY TO INSTALL ELECTRICAL EQUIPMENT. WOOD MATERIALS SHALL BE TERMIITE CHEMICAL TREATED, IRON AND STEEL MATERIALS SHALL BE GALVANIZED OR CORROSION PROTECTION AND NONFERROUS MATERIALS SHALL BE BRASS OR BRONZE.

PART 3 - EXECUTION

- 3.01 **CONSTRUCTION METHODS:**
 - A. COMPLY WITH ALL LOCAL ORDINANCES AND REGULATIONS OF THE COUNTY, FACILITIES MANAGEMENT, VERIZON HAWAII AND VERIZON WIRELESS. IN ADDITION, WORKMANSHIP SHALL BE SUBJECT TO ARCHITECT'S REVIEW.
 - B. CONSTRUCTION SHALL CONFORM TO CONSTRUCTION PRACTICES AS RECOMMENDED BY AMERICAN ELECTRICIANS HANDBOOK BY CROFT (LATEST EDITION), NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE AND APPLICABLE INSTRUCTIONS OF MANUFACTURERS OF EQUIPMENT AND MATERIAL SUPPLIED FOR PROJECT.
 - C. RACEWAYS:
 - 1. GRC SHALL BE USED IN DAMP AND WET LOCATIONS AND WHERE SUBJECT TO PHYSICAL DAMAGE. ENT IN DRY AREAS NOT SUBJECT TO PHYSICAL DAMAGE.
 - 2. PVC MAY BE USED ONLY WHERE INDICATED AND NOT SUBJECT TO PHYSICAL DAMAGE.
 - 3. PROVIDE PULL WIRE IN ALL EMPTY RACEWAYS.
 - 4. PROVIDE FIRE BARRIER CAULK OR PUTTY AROUND ALL RACEWAY PENETRATIONS THROUGH WALLS AND FLOORS. CAULK AND PUTTY SHALL BE UL CLASSIFIED FOR FIRE BARRIER USE.
 - 5. INSTALL GROUND CONDUCTOR PER NATIONAL ELECTRICAL CODE.
 - D. CONDUCTORS:
 - 1. CONDUCTOR FILL IN RACEWAYS SHALL CONFORM TO NEC CHAPTER 9, TABLE 3A.
 - 2. FORM WIRES NEATLY IN ENCLOSURES AND BOXES.
 - 3. SPLICES: SPLICES IN CURRENT CARRYING CONDUCTORS ARE NOT ALLOWED.
 - E. GROUNDING:
 - 1. GROUNDING REQUIREMENT SHALL CONFORM TO VERIZON WIRELESS PRACTICE FOR PRIMARY GROUNDING SYSTEM FOR CELLULAR RADIO STATIONS.
 - 2. METALLIC ENCLOSURES, RACEWAYS, AND ELECTRICAL EQUIPMENT SHALL BE GROUNDED ACCORDING TO THE REQUIREMENTS PER NATIONAL ELECTRICAL CODE, ARTICLE 250.
 - 3. GROUND CONNECTION TO EQUIPMENT, RACEWAYS, MOTORS, GROUNDING TYPE RECEPTACLES AND OTHER METALLIC PARTS DIRECTLY EXPOSED TO UNGROUNDED CONDUCTORS BY CONTINUOUS NO. 14, MINIMUM GREEN COPPER CONDUCTOR.
 - F. FINISHING: PATCH, REPAIR AND RESTORE ALL STRUCTURAL AND ARCHITECTURAL ELEMENTS CUT, DRILLED OR DAMAGED FOR THE INSTALLATION OF ELECTRICAL SYSTEM. PATCHING, REPAIRING AND RESTORING SHALL BE SUBJECT TO REVIEW AND ACCEPTANCE BY THE ARCHITECT.
 - G. TESTING: TEST ALL WIRING AND CIRCUITS TO INSURE PROPER OPERATION ACCORDING TO THE FUNCTIONS SPECIFIED. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE PMRF ELECTRICAL ENGINEER OR REPRESENTATIVE AND THE ARCHITECT.

END OF SECTION

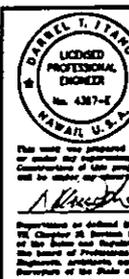
SYMBOLS

- CEILING LIGHT, FLUORESCENT
- WALL LIGHT, TYPE AS SCHEDULED
- S SWITCH, 1P20A, +42" UNLESS NOTED
- ⊙ JUNCTION BOX, 4" SQUARE, MINIMUM
- ⊠ JUNCTION BOX, LARGE, SIZE AS NOTED
- ⊕ DUPLEX CONVENIENCE OUTLET, NEMA 5-15R, +18" UNLESS NOTED
- ⊖ DUPLEX CONVENIENCE OUTLET, NEMA 5-15R, GFI TYPE, +18" UNLESS NOTED
- PANELBOARD, NEW
- Ⓢ EQUIPMENT CONNECTION
- Ⓜ MOTOR CONNECTION
- Ⓜ MOTOR CONTROLLER
- DISCONNECT SWITCH, FUSED OR NON-FUSED AS NOTED
- WP WEATHERPROOF
- WIRING IN RACEWAY CONCEALED IN WALL OR CEILING
- - - WIRING IN EXPOSED RACEWAY
- ~ WIRING IN FLEXIBLE METAL RACEWAY
- C - GROUND CONDUCTOR

VERIFY EXISTENCE AND CONTINUITY OF SERVICE GROUND TO THE PROJECT AREA. CARRY GREEN GROUND WIRE THROUGHOUT NEW WORK AND GROUND EQUIPMENT PER THE NEC.

McPeak+Associates, Inc
 FIVE WATERFRONT PLAZA
 HONOLULU, HAWAII 96813
 TEL. 808.534.3448

verizonwireless
 TELECOMMUNICATION FACILITY
 PMRF-BARRING BANDS CELL SITE; (PMRF: 4) 12-002-013
 ELECTRICAL SYMBOLS, ELECTRICAL SPECIFICATIONS
 ELECTRICAL EXISTING/DEMOLITION PLAN, DEMOLITION NOTES



Issue: 7/31/2001

Revisions:	9/17/01 (PAC)
	10/15/01 (PM)
	8/14/02 (GD)
Job No.	
Drawn by	JT
Date:	
Drawng No.	

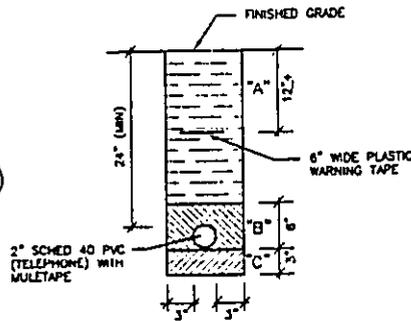
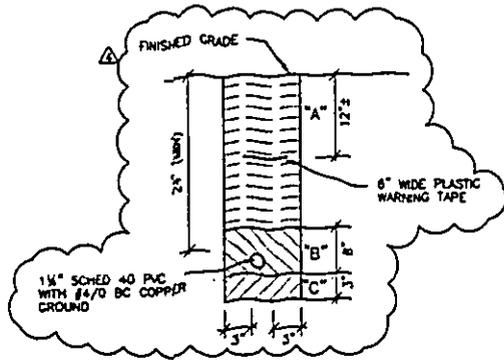
III
 FLOOR AREA FOR RENOVATED SPACE LESS THAN 1000 SQUARE FEET. PROJECT IS EXEMPT FROM ARTICLE 9 (LIGHTING) OF BUILDING ENERGY EFFICIENCY STANDARDS PER PARAGRAPH 9.2(c)

COUNTY OF KAUAI
 CHAPTER 12, KAUAI COUNTY BUILDING CODE
 BUILDING ENERGY EFFICIENCY STANDARDS
 KAUAI COUNTY CODE 1987 AS AMENDED

I CERTIFY THAT THE DESIGN IS IN CONFORMANCE WITH THE BUILDING EFFICIENCY STANDARDS PERTAINING TO:
 SECTION 12.8-9 ELECTRICAL POWER
 SECTION 12.8-10 LIGHTING

Daniel T. Iking 6/14/02
 Signature Date

Daniel T. Iking
 Name (Print)
 President
 Title
 4387-E
 License No.



BACKFILL NOTES

TYPE "A"

BEACH SAND, EARTH OR EARTH AND GRAVEL. THE MAXIMUM ROCK SIZE SHALL BE 1" AND THE MIXTURE SHALL CONTAIN NO MORE THAN 50 PERCENT BY VOLUME OF ROCK PARTICLES.

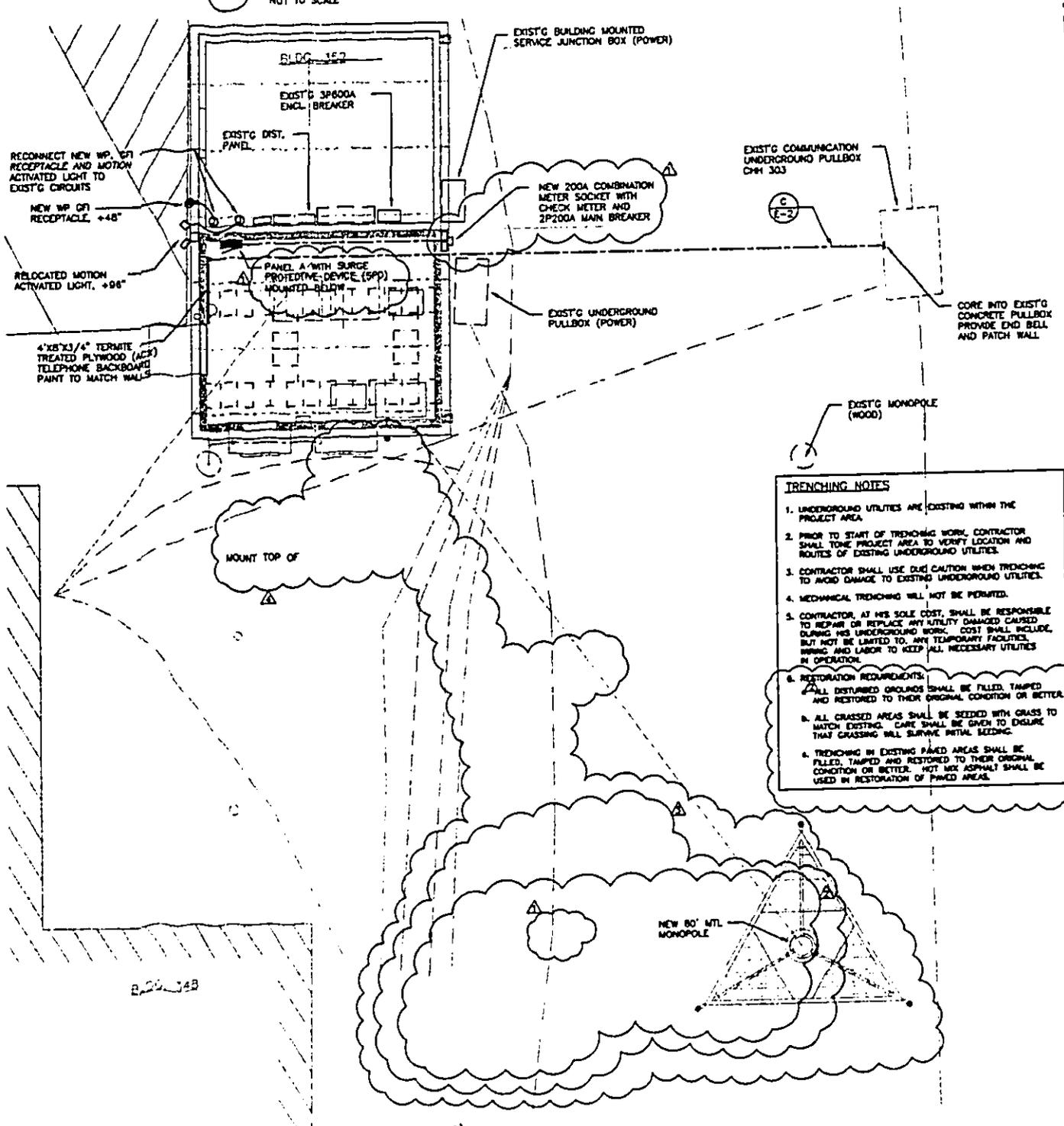
TYPE "B"

BEACH SAND, EARTH OR EARTH AND GRAVEL IF EARTH AND GRAVEL MIXTURE MUST PASS A 1/2" MESH SCREEN AND CONTAIN NO MORE THAN 20 PERCENT BY VOLUME OF ROCK PARTICLES.

TYPE "C"

IF THE NORMAL MATERIAL IN THE BOTTOM OF THE TRENCH IS NOT TYPE "B" AN ADDITIONAL 3" SHALL BE EXCAVATED AND TYPE "B" BACKFILL SHALL BE PROVIDED.

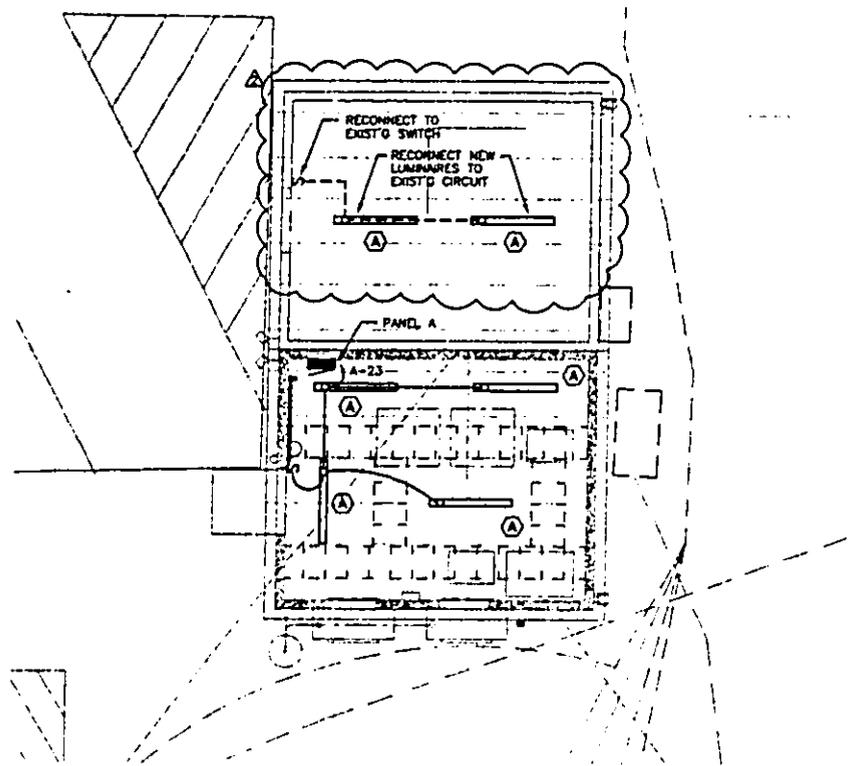
DUCT SECTION
NOT TO SCALE



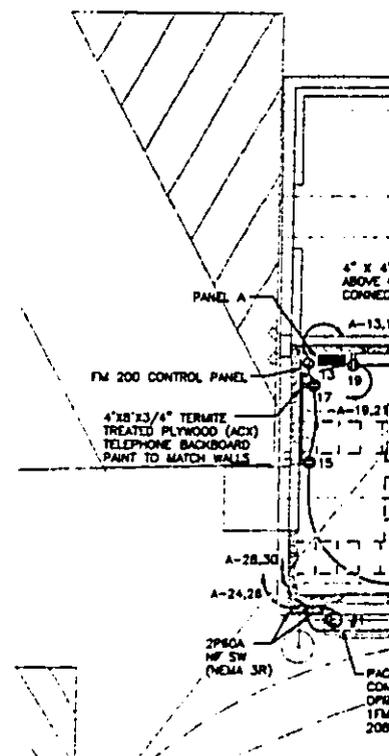
- TRENCHING NOTES**
1. UNDERGROUND UTILITIES ARE EXISTING WITHIN THE PROJECT AREA.
 2. PRIOR TO START OF TRENCHING WORK, CONTRACTOR SHALL TONE PROJECT AREA TO VERIFY LOCATION AND ROUTES OF EXISTING UNDERGROUND UTILITIES.
 3. CONTRACTOR SHALL USE DUE CAUTION WHEN TRENCHING TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES.
 4. MECHANICAL TRENCHING WILL NOT BE PERMITTED.
 5. CONTRACTOR, AT HIS SOLE COST, SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ANY UTILITY DAMAGED CAUSED DURING HIS UNDERGROUND WORK. COST SHALL INCLUDE WIRING AND LABOR TO KEEP ALL NECESSARY UTILITIES IN OPERATION.
 6. RESTORATION REQUIREMENTS:
 - a. ALL DISTURBED GRASS AREAS SHALL BE FILLED, TAMPED AND RESTORED TO THEIR ORIGINAL CONDITION OR BETTER.
 - b. ALL GRASS AREAS SHALL BE SEEDING WITH GRASS TO MATCH EXISTING. CARE SHALL BE GIVEN TO ENSURE THAT GRASSING WILL SURVIVE INITIAL SEEDING.
 - c. TRENCHING IN EXISTING PAVED AREAS SHALL BE FILLED, TAMPED AND RESTORED TO THEIR ORIGINAL CONDITION OR BETTER. HOT MIX ASPHALT SHALL BE USED IN RESTORATION OF PAVED AREAS.

A ELECTRICAL SITE PLAN
SCALE: 1/4" = 1'-0"

LUMINAIRE S		
TYPE	LAMP	DESC
A	2 - 32W T-B: SPX41 (EPA TOLP TESTED)	FLUORESCENT, SURFACE TWO LAMPS (DICTRON) ACRYLIC LENS, ELECTR



A LIGHTING PLAN
SCALE: 1/4" = 1'-0"



B POWER PLAN
SCALE: 1/4" = 1'-0"

LUMINAIRE SCHEDULE	
DESCRIPTION	MANUFACTURER
FLUORESCENT, SURFACE MOUNT 6" X 6" X 48". TWO LAMPS (OCTRON). WRAPAROUND WHITE OPAL ACRYLIC LENS. ELECTRONIC BALLAST. 120 VOLTS.	METALLUX BC-232-120V-EB81

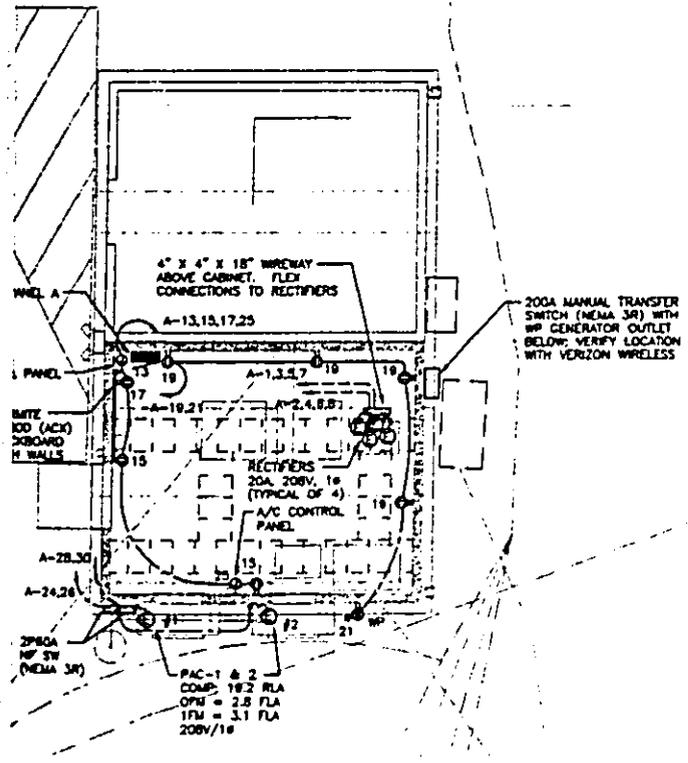
PANEL A		120 / 240 VOLTS 1 PHASE 3 WIRE								
TYPE LOADCENTER WITH DOOR		10 KAIC. MIN. BREAKERS								
		<input checked="" type="checkbox"/> GROUND KIT	<input type="checkbox"/> FLUSH MOUNTING							
		<input checked="" type="checkbox"/> SURFACE								
200A BUS 200A MAIN LUGS ONLY		NOTES:								
DIT	LOAD	BKR	WIRE SIZE	A	B	C	WIRE SIZE	BKR	LOAD	DIT
1	RECTIFIER	2 P 30A	10	1.5			10	2 P 30A	RECTIFIER	2
3			10	1.5			10	2 P 30A		4
5			10	1.5			10	2 P 30A		6
7	RECTIFIER	2 P 30A	10	1.5			10	2 P 30A	RECTIFIER	8
9								2 P 30A		10
11	SPARE	2 P 30A						2 P 30A	SPARE	12
13	FM 200	20A	12					20A	SPARE	14
15	OUTLETS	20A	12	0.1				20A	SPARE	16
17	OUTLET - TEL	20A	12	0.7				1 P	P F B	18
19	OUTLETS	20A	12					1 P	P F B	20
21	OUTLET - EXTERIOR	20A	12	0.7				1 P	P F B	22
23	LIGHTS	20A	12					2 P 40A	ACCU - 1	24
25	MECH CONTROL	20A	12	0.1				10		26
27	SURGE PROTECTION	2 P 50A	8	2.6				2 P 40A	ACCU - 2	28
28			8	2.6				10		30
TOTAL KVA/PHASE				13.0					CONN LOAD	25.9
									DEM FAC	0.8
									DEM LOAD	23.3

McPeak + Associates, Inc
 FIVE WATERFRONT PLAZA
 HONOLULU, HAWAII 96813
 TEL: 808.521.3446

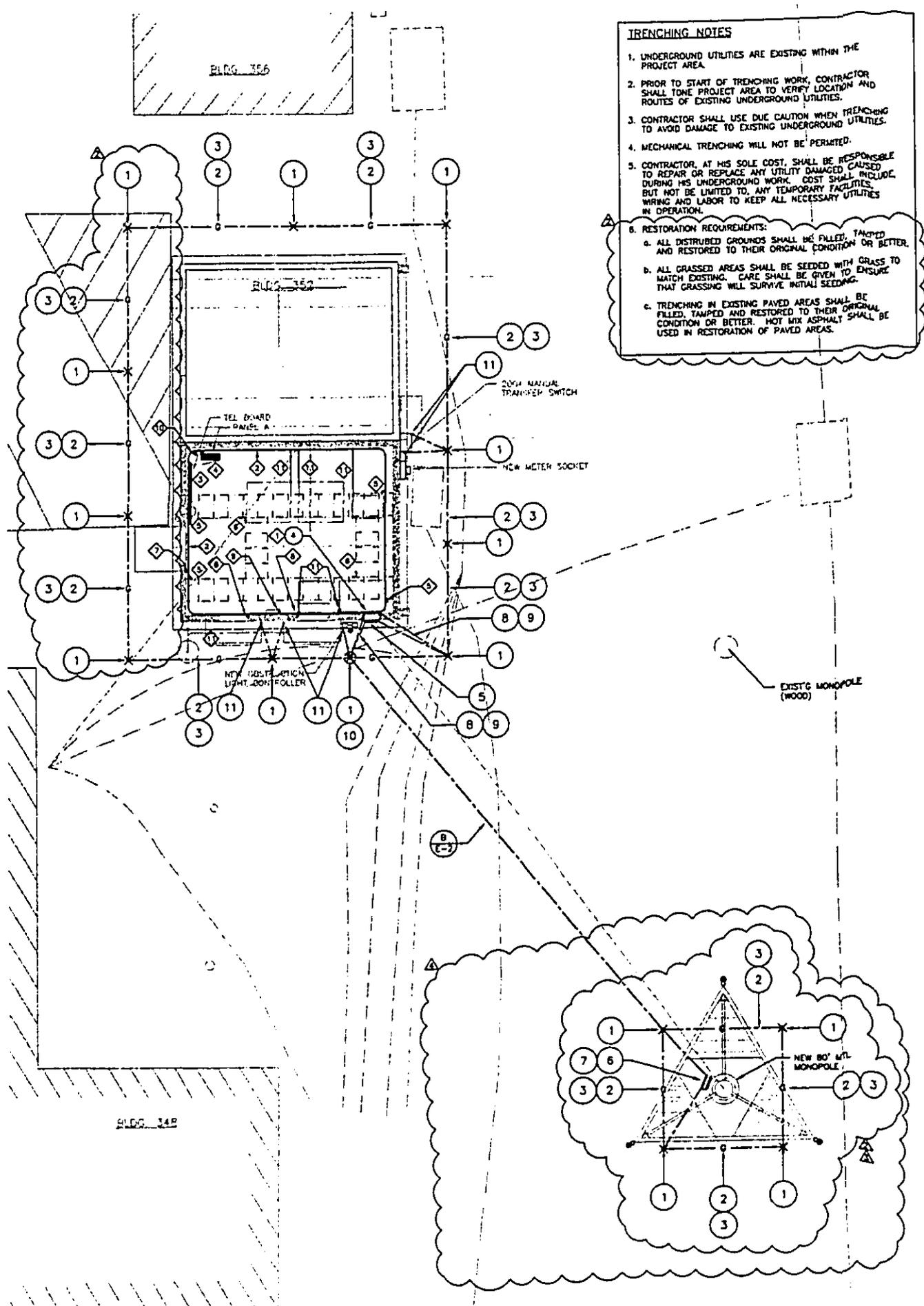
verizonwireless
 TELECOMMUNICATION FACILITY
 PAPER BARRING SANDS CELL SITE, (TAK: (1) 1-2-002-013)
 LIGHTING PLAN, POWER & SIGNAL PLAN
 LUMINAIRE SCHEDULE, PANEL SCHEDULE



Issue:	7/31/2001
Revisions:	10/15/01 (PMB) 6/14/02 (GD)
Job No:	
Drawn by:	JT
Date:	
Drawing No:	III.3
Sheet:	of 5



POWER & SIGNAL PLAN
 SCALE: 1/4" = 1'-0"



- TRENCHING NOTES**
1. UNDERGROUND UTILITIES ARE EXISTING WITHIN THE PROJECT AREA.
 2. PRIOR TO START OF TRENCHING WORK, CONTRACTOR SHALL TONE PROJECT AREA TO VERIFY LOCATION AND ROUTES OF EXISTING UNDERGROUND UTILITIES.
 3. CONTRACTOR SHALL USE DUE CAUTION WHEN TRENCHING TO AVOID DAMAGE TO EXISTING UNDERGROUND UTILITIES.
 4. MECHANICAL TRENCHING WILL NOT BE PERMITTED.
 5. CONTRACTOR, AT HIS SOLE COST, SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ANY UTILITY DAMAGED CAUSED DURING HIS UNDERGROUND WORK. COST SHALL INCLUDE, BUT NOT BE LIMITED TO, ANY TEMPORARY FACILITIES, WIRING AND LABOR TO KEEP ALL NECESSARY UTILITIES IN OPERATION.
 6. RESTORATION REQUIREMENTS:
 - a. ALL DISTRIBUTED GROUNDS SHALL BE FILLED, TAMPED AND RESTORED TO THEIR ORIGINAL CONDITION OR BETTER.
 - b. ALL GRASSED AREAS SHALL BE SEEDED WITH GRASS TO MATCH EXISTING. CARE SHALL BE GIVEN TO ENSURE THAT GRASSING WILL SURVIVE INITIAL SEEDING.
 - c. TRENCHING IN EXISTING PAVED AREAS SHALL BE FILLED, TAMPED AND RESTORED TO THEIR ORIGINAL CONDITION OR BETTER. HOT MIX ASPHALT SHALL BE USED IN RESTORATION OF PAVED AREAS.

A GROUNDING PLAN
 SCALE: 1/4" = 1'-0"

1/8"
 BLUE
 LINE
 LETTER
 S TO
 ME
 E

EXTERIOR GROUNDING NOTES

- 1 5/8" DIAMETER X 10' LONG SOLID COPPER GROUND ROD, APPROXIMATELY 24" FROM EQUIPMENT PERIMETER. TOP OF GROUND ROD SHALL BE AT 18" BELOW FINISHED GRADE. SPRINT PCS MAY DIRECT THE CONTRACTOR TO PROVIDE ADDITIONAL GROUNDING TO ACHIEVE 3 OHMS RESISTANCE. TEST GROUNDING SYSTEM AND CERTIFY RESULTS.
- 2 GROUND RING SHALL BE BURIED 24" BELOW FINISHED GRADE AND APPROXIMATELY 24" FROM BUILDING PERIMETER. THE RING SHALL BE CONSTRUCTED OF #2 TINNED, SOLID COPPER. NO BEND SHALL HAVE CURVE OF LESS THAN TWO FEET RADIUS. BOND ALL GROUND CONNECTIONS BY THERMOWELDED PROCESS.
- 3 ALL CONDUCTORS TO GROUND RING SHALL BE CONSTRUCTED OF #2 TINNED SOLID COPPER CONDUCTOR BURIED AT 24" BELOW FINISHED GRADE.
- 4 MASTER GROUND BAR. CONNECT EACH END TO GROUND RING WITH #2 TINNED SOLID COPPER CONDUCTOR.
- 5 (2) 1" PVC, STUB AT GROUND BAR WITH #2 TINNED SOLID COPPER GROUND CONDUCTOR. CONNECT GROUND BAR TO GROUND RING WITH #2 TINNED, SOLID COPPER CONDUCTOR. VERIFY LOCATION AND MOUNTING WITH SPRINT PCS.
- 6 EXTERIOR GROUND BAR. MOUNT ON ANTENNA POLE, +24" ABOVE GRADE. (2) 1" PVC, STUB AT GROUND BAR WITH #2 TINNED SOLID COPPER GROUND CONDUCTOR. CONNECT GROUND BAR TO GROUND RING WITH #2 TINNED, SOLID COPPER CONDUCTOR. VERIFY LOCATION AND MOUNTING WITH SPRINT PCS.
- 7 EXTERIOR GROUND BAR. MOUNT AT TOP OF ANTENNA POLE. CONNECT EACH END OF GROUND BARS (AT TOP AND BOTTOM GROUND BAR) TOGETHER WITH #4/0 GREEN INSULATED COPPER GROUND CONDUCTOR (ROUTE INSIDE MONOPOLE).
- 8 CONNECT EXTERIOR GROUND BAR TO GROUND RING WITH #2 TINNED, SOLID COPPER CONDUCTOR. VERIFY REQUIREMENTS WITH NEXTEL COMMUNICATIONS.
- 9 CONNECT MASTER GROUND BAR TO GROUND RING WITH #2 TINNED, SOLID COPPER CONDUCTOR. ROUTE GROUND CONDUCTOR THROUGH 1" PVC SLEEVES AT CORNER OF BUILDING. VERIFY REQUIREMENTS WITH NEXTEL COMMUNICATIONS.
- 10 GROUND ACCESS (INSPECTION) BOX. SEE DETAIL ON SHEET E-5
- 11 1" PVC, STUB AT BASE OF EQUIPMENT ENCLOSURES (MANUAL TRANSFER SWITCH, METER SOCKET, A/C ENCLOSURE, ETC.) WITH #2 TINNED SOLID COPPER GROUND CONDUCTOR. CONNECT TO GROUND RING WITH #2 TINNED, SOLID COPPER CONDUCTOR. PROVIDE DOUBLE LUG GROUND CONNECTOR.

INTERIOR GROUNDING NOTES

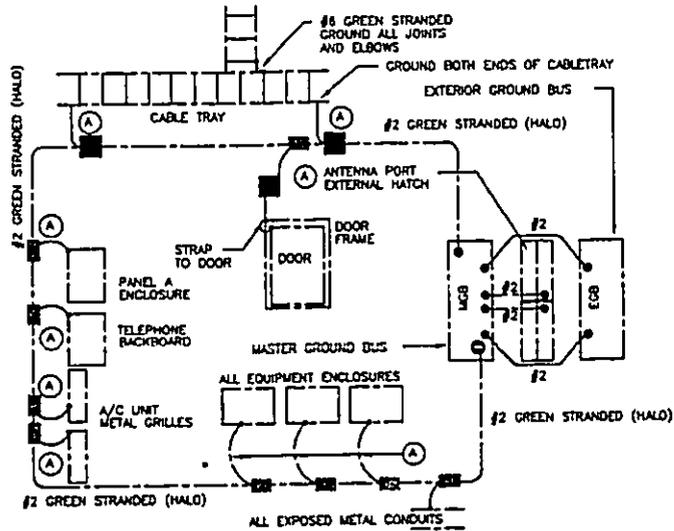
- 1 MASTER GROUND BAR.
- 2 HALO GROUND RING. #2 GREEN, STRANDED COPPER.
- 3 TELEPHONE BACKBOARD. PROVIDE #8 GREEN, STRANDED COPPER GROUND AT BACKBOARD.
- 4 PANEL A. PROVIDE #8 GREEN, STRANDED COPPER GROUND. DOUBLE LUG TO ENCLOSURE.
- 5 GROUND CABLE TRAY AT BOTH ENDS WITH #8 GREEN, STRANDED COPPER GROUND.
- 6 GROUND ALL CABLE TRAY JOINTS AND ELBOWS WITH #8 GREEN, STRANDED COPPER GROUND.
- 7 GROUND DOOR FRAME AND DOOR WITH #8 GREEN, STRANDED COPPER GROUND. PROVIDE DOUBLE LUG CONNECTORS.
- 8 GROUND AIR CONDITIONING METAL GRILLE WITH #8 GREEN, STRANDED COPPER GROUND. PROVIDE DOUBLE LUG CONNECTORS.
- 9 GROUND AIR CONDITIONING CONTROL PANEL WITH #8 GREEN, STRANDED COPPER GROUND. PROVIDE DOUBLE LUG CONNECTORS.
- 10 GROUND FM 200 CONTROL PANEL, TANK AND EXPOSED PIPING WITH #8 GREEN, STRANDED COPPER GROUND.
- 11 GROUND ALL EQUIPMENT RACKS AND ENCLOSURES WITH #8 GREEN, STRANDED COPPER GROUND. PROVIDE DOUBLE LUG CONNECTORS.

McPeak+Associates, Inc
 FIVE WALTERFRANK PLAZA
 1000 W. 10TH AVENUE
 DENVER, CO 80202
 TEL: 303.533.3444
 ARCHITECTURE • INTERIORS

verizonwireless
 TELECOMMUNICATION FACILITY
 PAPER-BARRING SANDS CELL SITE, (FMAC #) 1-2-002-013
 GROUNDING PLAN
 GROUNDING NOTE

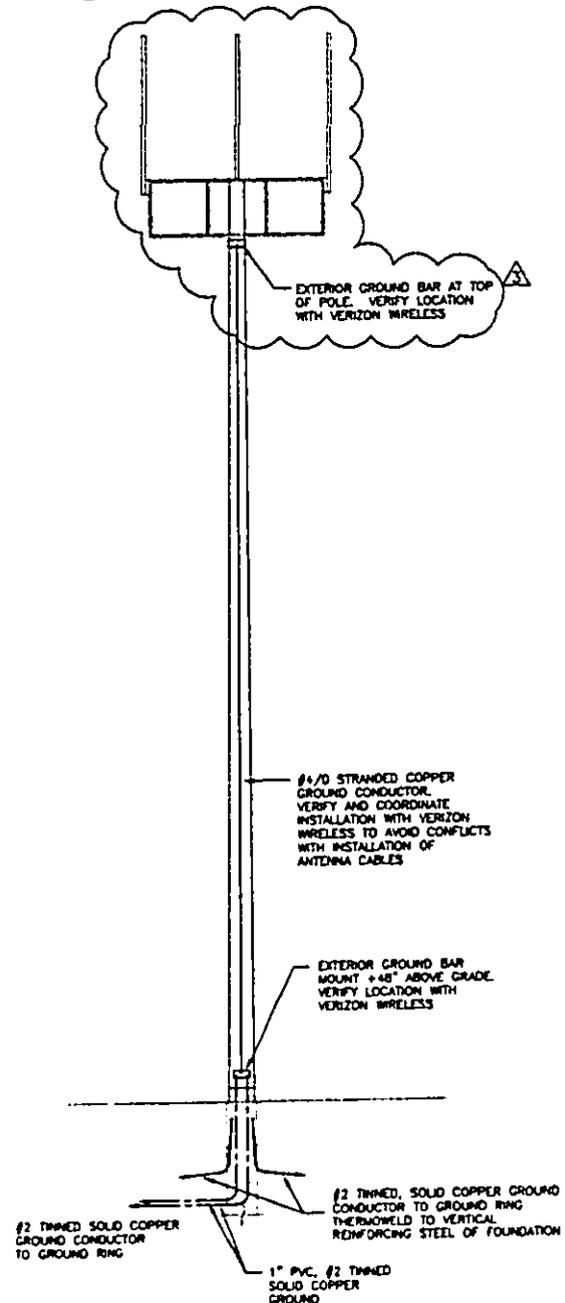
DEREK T. ITANO
 LICENSED PROFESSIONAL ENGINEER
 No. 4387-E
 HAWAII, U.S.A.
 This work was prepared by me or under my direct supervision and I am a duly licensed professional engineer in the State of Hawaii. I am not providing this work to anyone other than the person or organization named on this drawing.

Issue: 7/31/2001
 Revisions:
 10/13/01 (PMB)
 3/12/02 --G
 8/14/02 (GD)
 Job No.
 Drawn by: JI
 Date:
 Drawing No.
 4
 of 5

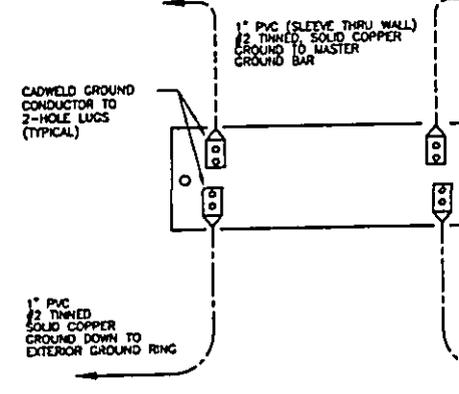


- -1 - EACH C TAP COMPRESSION LUGS
- -1 CONNECTOR WITH DOUBLE LUG ARRANGEMENT
- - THERMOWELDED LOCATIONS
- Ⓐ - #6 GREEN

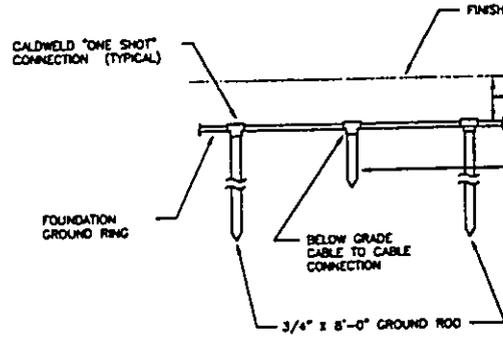
B INTERIOR GROUNDING SCHEMATIC
NOT TO SCALE



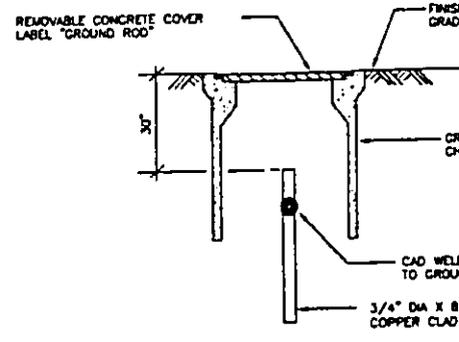
A MONOPOLE GROUNDING DETAIL
NOT TO SCALE



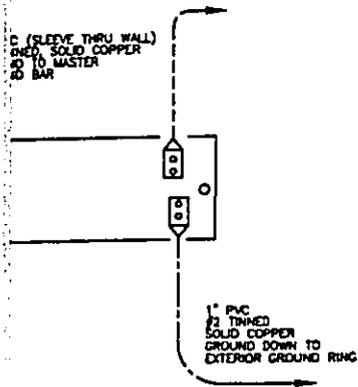
E EXTERIOR GROUND BUS
NOT TO SCALE



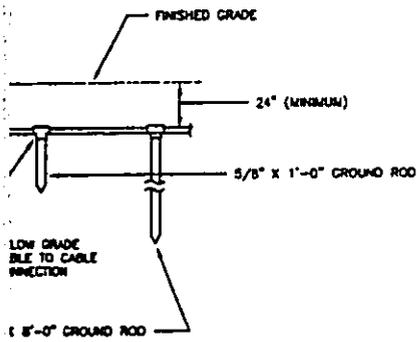
D GROUND RING DETAIL
NOT TO SCALE



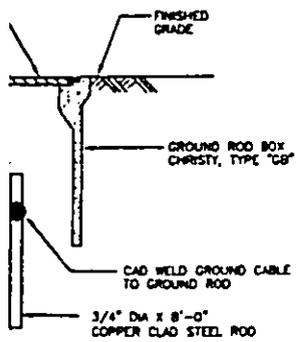
C GROUND PORT INSPECTION
NOT TO SCALE



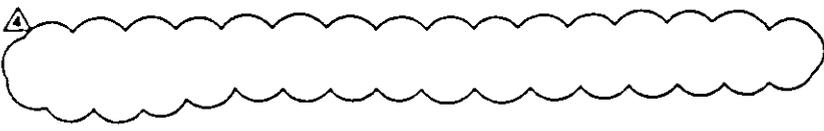
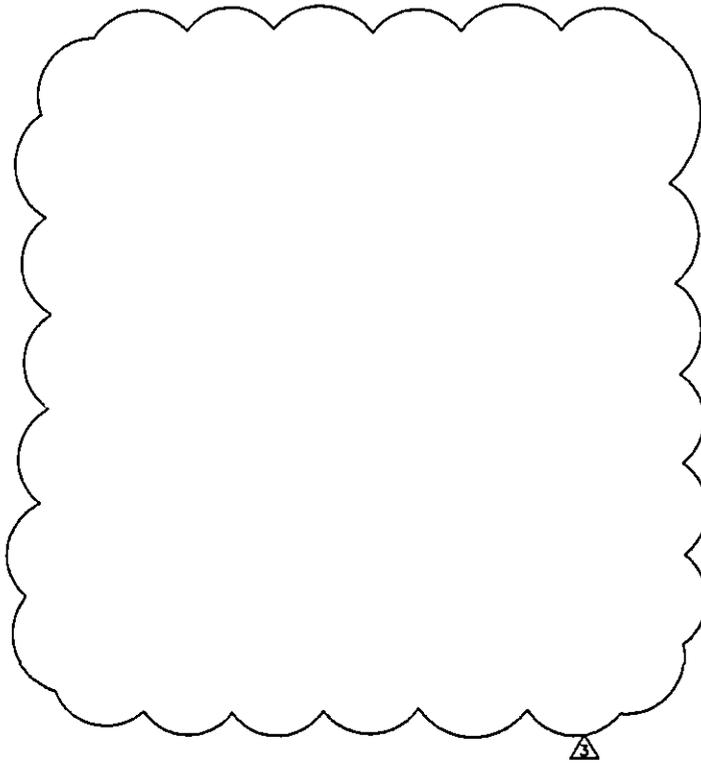
GROUND BUS DETAIL



RING DETAIL



T INSPECTION DETAIL



McPeak+Associates, Inc
 FIVE WATERFRONT PLAZA
 TEL: 608.258.1811
 TEL: 608.258.3344

verizonwireless
 TELECOMMUNICATION FACILITY
 PMRF BARRING SANDS CELL SITE, (TARC #) 1-2-002-015)
 GROUNDING SCHEMATIC DIAGRAM, GROUNDING DETAILS
 MONROE ELECTRICAL DETAILS

DARREL T. LITAG
 LICENSED
 PROFESSIONAL
 ENGINEER
 No. 4373-C
 HAWAII, U.S.A.

[Signature]

Issue:	7/31/2001
Revisions:	
	312/02 --GD
	6/14/02 (GD)
Drawn by	JT
Date	
Drawing No.	
	MU
	41

Appendix 5

Agencies Recommendations and Corresponding Responses:

State of Hawaii:

Division of Forestry & Wildlife

Historic Preservation Division

Office of Environment Quality Control

Department of Health

County of Kauai Planning Department

Division of Forestry & Wildlife

1151 Punchbowl Street, Rm. 325 • Honolulu, HI 96813 • (808) 587-0166 • Fax: (808) 587-0160

June 4, 2002

MEMORANDUM

TO: Traver Carroll, Planner
Land Division

THRU: Dierdre S. Mamiya, Administrator
Land Division

FROM: Michael G. Buck, Administrator
Division of Forestry and Wildlife

SUBJECT: Request for Comments - CDUA KA-3094, Cell Site at Pacific Missile Range Facility, Barking Sands, Kekaha, Kauai, Hawaii by Verizon Wireless.

We have reviewed this CDUA application KA-3094 and have no objections to this project located in "Limited" subzone of the State Conservation District. We stand on Mr. Thomas C. Telfer, Acting Kauai Forestry and Wildlife Branch Manager's letter to Mr. Douglas Oringer on March 13, 2002 indicating that the threatened Newell's Shearwater and the endangered Dark-rumped Petrel do transit these areas at night and they are prone to striking utility wires and tall utility towers while flying to and from their mountain nesting grounds to the ocean (see attachment). Please call Mr. Thomas Kaiakapu, Acting Kauai Wildlife Program Manager at (808) 271-3766, if you have questions. Thank you for the opportunity to comment on this application.

Attachment

C: Kauai DOFAW Branch
Thomas Kaiakapu, Kauai Wildlife Biologist

RECEIVED
LAND DIVISION
JUN 8 2002
10:42 AM
STATE OF HAWAII





HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

KAUAI DISTRICT
3080 EIWA STREET, ROOM 308
LIHUE, KAUAI, HAWAII 96766-1875

March 13, 2002

IN REPLY REFER TO

Mr. Douglas Oringer
Clayton Group Services, Inc.
970 North Kalaheo Ave. Suite C 316
Kailua, HI 96734

RE: Telecommunications antenna cell site: Pacific Missile Range Facility (PMRF) Barking Sands Military Reservation TMK [4] 1-2- 02: Parcel 13

Dear Mr. Oringer:

This responds to your request dated 7 March 2002 requesting correction of the TMK on your original inquiry.

To our knowledge the proposed cell sites at Pacific Missile Range Facility, Barking Sands, is not located within an established wilderness areas or wildlife preserves. Critical habitat is a federal, U. S. Fish and Wildlife Service regulatory designation. Please contact them for determination of proposed or existing critical habitat boundaries.

You should be aware that the threatened Newell's Shearwater and the endangered Dark-rumped Petrel do transit these areas at night, and are prone to striking utility wires and perhaps tall utility towers while flying to and from their mountain nesting grounds and the sea. Your letter did not specify whether or not above-ground utility wires are necessary for the antenna tower, but such wires may impact these birds, especially if any man-made lighting is located nearby.

The Newell's shearwater population on Kauai has taken a significant downturn in recent years. There is increased concern that potential mortalities could occur as a result of collisions with such towers, especially towers with guy wires or utility wires and bright lights nearby.

The endangered Hawaiian Bat also may exist in these areas. To our knowledge they are not likely to be impacted by a tower structure.

Please contact this office, should you have additional questions concerning impacts to wildlife.

Sincerely,

A handwritten signature in cursive script that reads "Thomas C. Telfer".

Thomas C. Telfer
Acting Kauai Branch Manager

August 15, 2002

Mike Beason
c/o General Dynamics
3375 Koapaka Street, Suite F238-30
Honolulu, HI 96819

Michael Buck, Administrator
State of Hawaii
Division of Forestry and Wildlife
1151 Punchbowl Street, Room 325
Kapolei, HI 96813

RE: Conservation District Use Application (CDUA) for
Verizon Wireless PMRF Barking Sands Cell Site (HI0255)
at the United State Navy Pacific Missile Range Facility- Barking Sand
located on a portion of TMK (4) 1-2-002: 013 and 26 in Kekaha, Waimea, Kauai

Dear Mr. Buck,

To elaborate on the proposed design for the above-mentioned project, the structural element for the proposed antennas is a free-standing steel monopole. In addition to not using guy wires, the utilities and antenna cables for the facility will be installed underground.

Also, the proposed monopole will not have lighting and will be install with the standard galvanized finish which is light gray in color. The removal of the lighting and using the inherent light gray surface is proposed to minimize possible collisions with the structure.

On behalf of Verizon Wireless, thank you for providing comments on this project.

Sincerely,



Mike Beason

cc: Lori Lagerstedt, Verizon Wireless
Thomas Telfer, Kauai District DFW

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTIES
ERIC T. HIRANO
LINNEL NISHIOKA

STATE OF HAWAII
2002 JUN 28 3:18
DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

June 28, 2002

MEMORANDUM

TO: Diedre S. Mamiya, Administrator
Land Division

FROM: Don Hibbard, Administrator
State Historic Preservation Division 

SUBJECT: Historic Preservation Review --CDUA Verizon Wireless
KA-3094 FCC Telecommunications Antenna Cell Site at PMRF
TMK: 1-2-02: 13 and 26, Mana, Waimea, Kauai

LOG NO: 30110 ✓
DOC NO: 0206NM05

Thank you for submitting the plans for this cell tower site. Cultural deposits and human burials may be present in the shoreline area on PMRF lands. We believe that mitigation can be achieved through an archaeological monitoring program. Attached to this application is an archaeological monitoring plan for parcel 13 (Cleghorn, Pacific Legacy, Inc., 2002). It should also include monitoring for parcel 26 if new subsurface construction is planned. The monitoring plan is acceptable.

Therefore, we recommend that the following condition to ensure that any historic sites that might be identified are acceptably documented and treated:

1) A qualified archaeologist shall be hired to conduct on-site initially (then on-call as needed) monitoring during the project. An acceptable monitoring plan (scope of work) has been submitted to the State Historic Preservation Division and approved. It must be clear that if historic sites, including burials, are uncovered during the monitoring, construction must stop in the immediate vicinity and the archaeologist shall be allowed sufficient time to evaluate the site and carry out mitigation, as needed.

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

NM:amk

August 15, 2002

Mike Beason
c/o General Dynamics
3375 Koapaka Street, Suite F238-30
Honolulu, HI 96819

Don Hibbard, Administrator
Attn: Nancy McMahon
State of Hawaii Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard
Kapolei, HI 96707

RE: Conservation District Use Application (CDUA) for
Verizon Wireless PMRF Barking Sands Cell Site (HI0255)
at the United State Navy Pacific Missile Range Facility- Barking Sand
located on a portion of TMK (4) 1-2-002: 013 and 26 in Kekaha, Waimea, Kauai

Dear Nancy,

As you are aware, Verizon Wireless has prepared an Archaeological Monitoring Plan for the above-mentioned project and will have a qualified archaeologist monitoring the excavation of this site. The proposed project will clearly identify the importance of this monitoring as recommended by the Memorandum from Don Hibbard, dated June 28, 2002.

As stated in the Archaeological Monitoring Plan, a pre-construction meeting will be arranged with the archaeologist and the contractor. It will be explained to the construction crew that the archaeologist has the authority to halt construction activities in the immediate vicinity of any cultural material(s) found. Reference to the Monitoring Plan and 'stop work' authority will be noted on the construction plans.

On behalf of Verizon Wireless, we are confident that these measures will provide the archaeologist the opportunity to evaluate and carry out mitigation, as needed.

Sincerely,



Mike Beason

cc: Lori Lagerstedt, Verizon Wireless

BENJAMIN J. CAYETANO
GOVERNOR



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENT QUALITY CONTROL

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

52 JUL 11 10:39

DEPARTMENT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

July 10, 2002

RECEIVED
2002 JUL 11 P 2:01
Mr. Gilbert Coloma-Agaran, Chair
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Coloma-Agaran:

Subject: Draft Environmental Assessment for the Verizon Wireless – PMRF Barking Sands Cell Site, Kauai

Thank you for the opportunity to review the subject document. We have the following comments.

1. Verizon is planning to add a 620-watt red strobe light to the top of the monopole. USFWS has not studied the impact of red strobe lights on potentially affected birds. Please consult with USFWS for direction on mitigating any impacts to potentially affected birds.
2. Please study the impact of this project on cultural resources.
3. Please illustrate the visual impacts of the proposed structure from public places such as roads and lookouts. Photos of existing conditions taken from public viewpoints are helpful in evaluating visual impacts. Provide renderings of future structures superimposed on photos of existing views.
4. Please study the cumulative electromagnetic field impact of all the equipment on the project site.
5. Please list all the approvals and permits that are required for this project.
6. Please provide your findings and reasons for supporting the finding of no significant impact. Please see the enclosed example.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Genevieve Salmonson
Director

August 15, 2002

Mike Beason
c/o General Dynamics
3375 Koapaka Street, Suite F238-30
Honolulu, HI 96819

Genevieve Salmonson, Director
Attn: Jeyan Thirugnanam
State of Hawaii Office of Environment Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

RE: Conservation District Use Application (CDUA) for the
Verizon Wireless PMRF Barking Sands Cell Site (HI0255)
at the United State Navy Pacific Missile Range Facility- Barking Sand
located on a portion of TMK (4) 1-2-002: 013 and 26 in Kekaha, Waimea, Kauai

Dear Jeyan,

The following items respond to your comments dated July 10, 2002, and are listed with corresponding numbers:

1. As shown on the revised plans, the proposed monopole at the telecommunications facility will not have any lighting to mitigate the possible impact to birds.
2. The environmental consultant, Clayton Group Services, contacted agencies and interest groups to study the impact of this project on environmental and cultural resources. As noted in the Environmental Assessment, the only cultural resource identified by any of the agencies and interest groups was the possibility of archaeological finds, including burials. This possibility was identified by the State of Hawaii Department of Land and Natural Resources Historic Preservation Division. As required, a Archaeological Monitoring Plan has been approved and a qualified archaeologist will monitor the excavations during construction.
3. As requested, a photo rendering of the proposed facility as viewed from the highway is included in the Conservation District Use Application.
4. Verizon Wireless is licensed by the Federal Communications Commission to provide communication services which must and do meet strict safety requirements established by this commission. Following these requirements, the facility is designed to provide a safe source of transmission and reception for wireless communications.

5. Following the project review and approval by the United States Navy, Verizon Wireless was requested by the Navy to meet the Coastal Zone Management Federal Consistency Certification and the State of Hawaii Conservation District Use Application(CDUA). A Special Management Area determination was issued by the County of Kauai Planning Department to meet the CDUA application requirements.
6. Following the example provided by the OEQC, the Final Environmental Assessment provides the findings and reasons for supporting the finding of no significant impact.

On behalf of Verizon Wireless, thank you for participating in the planning process for this project.

Sincerely,



Mike Beason

cc: Lori Lagerstedt, Verizon Wireless

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



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

In reply, please refer to:
File: 02-147/cpo

July 18, 2002

Ms. Dierdre S. Mamiya, Administrator
Land Division
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96813

Dear Ms. Mamiya:

Subject: Conservation District Use Application (CDUA) and
Draft Environmental Assessment (DEA)
Proposed Development of the Cell Site
US Navy Pacific Missile Range Facility - Barking Sands
Kekaha, Waimea, Kauai
File No. KA-3094

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

Clean Air Branch (CAB)

The Clean Air Branch has concerns on construction activities where potential dust problems may arise. There is a significant potential for fugitive dust to be generated during the various phases of the project, including clearing and removal of debris, grubbing, grading, and excavation. Implementation of adequate dust control measures during all phases of development and construction activities is warranted.

Construction activities must comply with provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to:

- a. Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;

Ms. Dierdre S. Mamiya, Administrator
July 18, 2002
Page 2

- b. Providing an adequate water source at the site prior to start up of construction activities;
- c. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d. Controlling of dust from shoulders and access roads; and
- e. Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities.

If you have any questions regarding these issues on fugitive dust, please contact the Clean Air Branch at (808) 586-4200.

Sincerely,



GARY GILL
Deputy Director
Environmental Health Administration

c: CAB

August 15, 2002

Mike Beason
c/o General Dynamics
3375 Koapaka Street, Suite F238-30
Honolulu, HI 96819

Gary Gill, Deputy Director
State of Hawaii Department of Health
P.O. Box 3378
Honolulu, HI 96801

RE: Conservation District Use Application (CDUA) for
Verizon Wireless PMRF Barking Sands Cell Site (HI0225)
At the United States Navy Pacific Missile Range Facility- Barking Sands
Located on a portion of TMK (4) 1-2-002: 013 and 026 in Kekaha, Waimea, Kauai

Dear Mr. Gill,

The intention of the proposed construction is to meet the "rules and regulations of all applicable state and/or local codes, laws, amendments, ordinances and statutes" as noted in the Architectural Specifications under Division 1- General Requirements, Section 0100- General Provisions. To provide adequate measures to control dust during construction, the recommendations of the Clean Air Branch have been included in this section of the specifications.

On behalf of Verizon Wireless, thank you for providing comments for the proposed project.

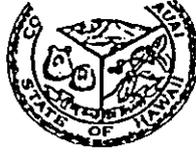
Sincerely,



Mike Beason

cc: Lori Lagerstedt, Verizon Wireless

MARYANNE W. KUSAKA
MAYOR



PLANNING DEPARTMENT

RECEIVED
DEE M. CROWELL
PLANNING DIRECTOR
SHEILAH N. MIYAKE
DEPUTY PLANNING DIRECTOR
2002 JUL -8 P 3:20
TELEPHONE (808) 241-6677
FAX (808) 241-6699

June 28, 2002

Dierdre S. Mamiya, Administrator
State of Hawaii
Department of Land and Natural Resources, Land Division
1151 Punchbowl Street Rm. 220
Honolulu, HI 96813

ATTN: Traver Carroll, Planning Branch

SUBJECT: Conservation District Use Application KA-3094 for Verizon Cell Site at PMRF
Barking Sands, Kekaha, Kaua'i
TMK 1-2-002: 13 and 26

Thank you for the opportunity to review and comment on the subject Application and Draft Environmental Assessment. The proposed telecommunications installation would replace an existing unused 80' tall wood utility pole with an 80' tall steel monopole. Three to nine 10' long 3-inch diameter whip antennas and a small GPS antenna would be mounted on a triangular antenna platform at the top of the monopole, for an overall height of 90'. A 168 s.f. air-conditioned addition to an existing utility building would house the electronics for the facility. Interconnecting wires would be run underground, and power and telephone service would be provided from existing utility service on the base.

We request consideration of the following comments in developing conditions for this permit:

1. As noted in the Executive Summary and Section 1.0 of the Draft Environmental Assessment, the property is located within the State Conservation Land Use District. However, pursuant to Chapter 205-5(a) of the Hawai'i Revised Statutes, please note that there is no County Zoning designation for the parcel, as the County has no zoning powers within the Conservation District.
2. As stated in our Special Management Area (SMA) Permit Determination dated May 9, 2002, the proposed site is within a Federal Exclusion Zone, and is not subject to County of Kaua'i SMA Permit requirements. We concur with the recommended conditions of the DLNR Historic Preservation Division for Section 106 Compliance with the National

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AN EQUAL OPPORTUNITY EMPLOYER

Dierdre S. Mamiya
Administrator, Land Division
June 28, 2002
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Historic Preservation Act (letter dated March 11, 2002), and of the DBEDT Office of Planning for Federal Consistency with the Hawai'i Coastal Zone Management Program (letter dated March 12, 2002).

3. We suggest that the monopole, antennas and antenna support structure be painted a light to medium blue-grey color that will blend into the sky background, to minimize visual effects of the structure's height.
4. We suggest that the monopole be structurally engineered so that collocation of a second carrier, with a similar antenna arrangement, can be accommodated for minimum wind speeds of 80 mph, and up to 100 mph if feasible.
5. We suggest that the applicant consult with the Kaua'i Police Department to address any potential interference with police communications transmission or reception. Any such interference shall be resolved to the Kaua'i Police Department's satisfaction at the applicant's cost.
6. We request to be informed of any transfer of the lease or permit, collocation of additional carriers, or termination of the use.
7. In the particular case, should the use be terminated, we recommend reuse of the facility for other carriers. However, should the facility not be reused within two years, we recommend removal of the appurtenant structures.

Should you have any questions regarding our concerns, please contact planner Barbara Pendragon at 241-6677.



DEE M. CROWELL
Planning Director

August 15, 2002

Mike Beason
c/o General Dynamics
3375 Koapaka Street, Suite F238-30
Honolulu, HI 96819

Barbara Pendragon
County of Kauai Planning Department
4444 Rice Street, Suite 473
Lihue, Kauai, HI 96766

RE: Conservation District Use Application (CDUA) for
Verizon Wireless PMRF Barking Sands Cell Site (HI0255)
at the United State Navy Pacific Missile Range Facility- Barking Sand
located on a portion of TMK (4) 1-2-002: 013 and 26 in Kekaha, Waimea, Kauai

Dear Barbara,

On behalf of Verizon Wireless, thank you for actively participating in the planning for the above-mentioned project. We appreciate your comments and submit the following response to your correspondence dated June 28, 2002:

1. The Environmental Assessment has been revised to note that there is no County Zoning designation for the parcel.
2. The conditions of the State DLNR Historic Preservation Division, letter dated March 11, 2002, and the CZM consistency certificate, letter dated March 12, 2002, are accomplished by application of the CDUA per use permit requirements of the state conservation district, the observation of all excavations by a qualified archaeologist as outlined in the Archaeological Monitoring Plan and the exclusion of tower lighting to meet U.S. Fish and Wildlife Service requirements.
3. The current plan for the monopole is to leave the galvanized steel pole bare with its inherent light gray color. However, the monopole can be painted any color to blend with the surroundings.
4. As suggested, the monopole is designed for the collocation of a second carrier with wind speed of 100 miles per hour.
5. Verizon Wireless will coordinate with the local emergency service agency to avoid potential interference with the communications facilities.

6. Verizon Wireless requests that other carriers collocating on this monopole remain the responsible party to notify and acquire necessary licenses and permits. Verizon Wireless is responsible to notify the United States Navy of any transfer of lease.
7. The current lease requires the site to be restored within 30 days of termination.

As noted, the proposed project should meet your recommendations. Please contact me at (808) 754-2644 if you have any questions.

Sincerely,



Mike Beason

cc: Lori Lagerstedt, Verizon Wireless

END

CERTIFICATION

**I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF
FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.**

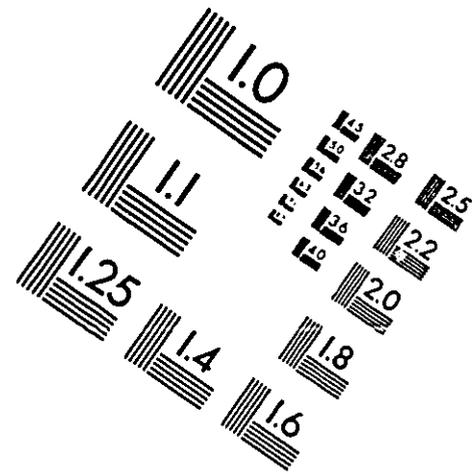
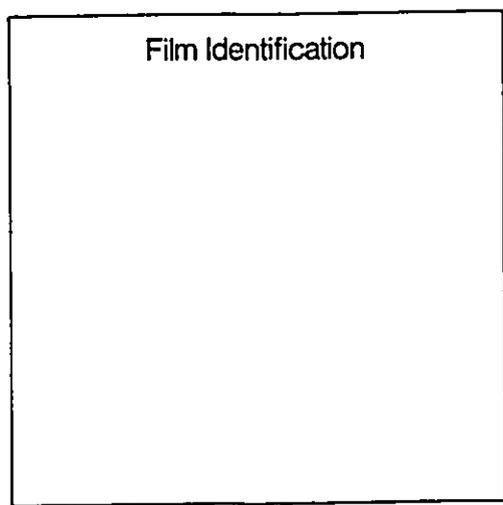
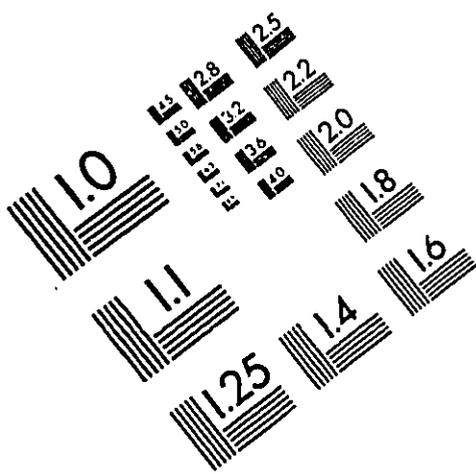
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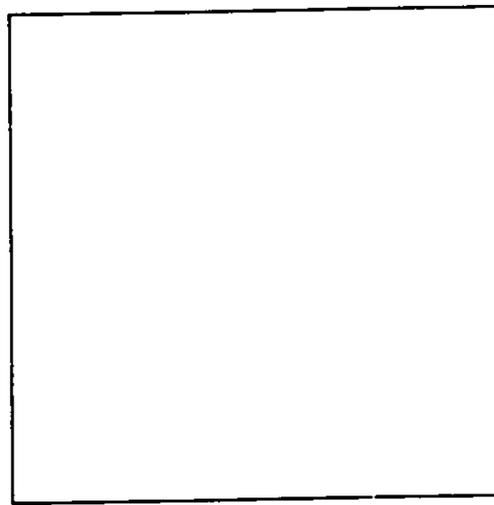
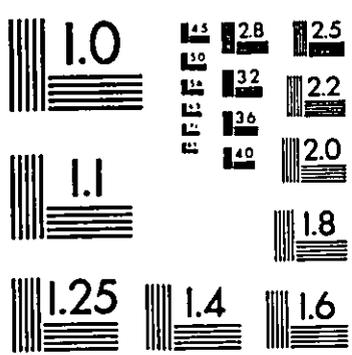
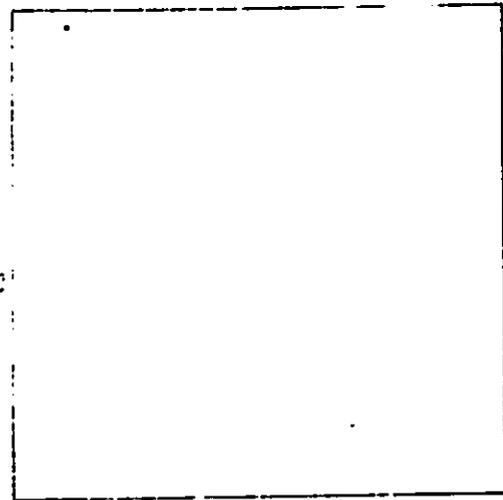
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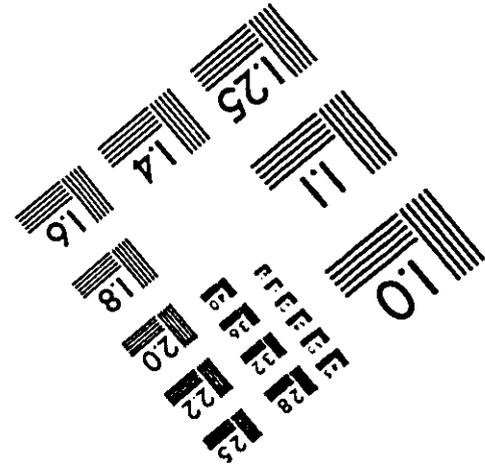
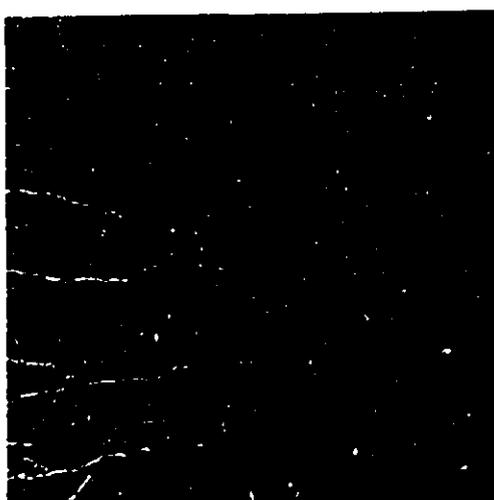
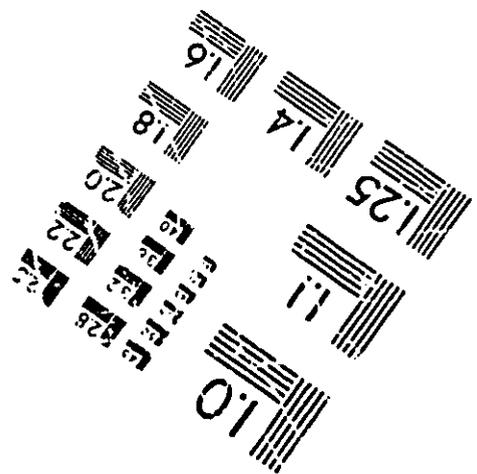
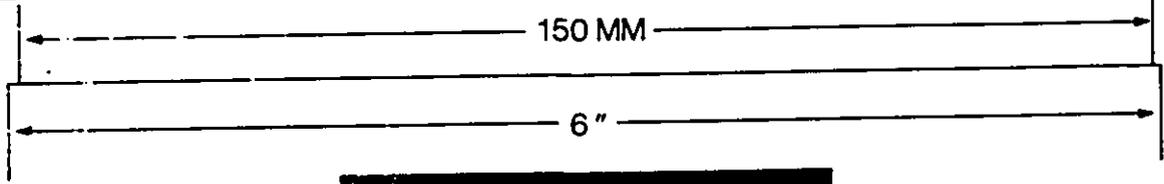


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