

JOHN WAIHEE
GOVERNOR OF HAWAII



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

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DEPT. STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621

'91 JUL 18 10 52 AM
HONOLULU, HAWAII 96809

REF:OCEA:JN

OFC. OF ENVIRONMENTAL
QUALITY CONTROL

FILE NO.: TV-MA-7/11/91-10
DOC. NO.: 1122E

MEMORANDUM

TO: The Honorable Brian Choy, Director
Office of Environmental Quality Control

FROM: William W. Paty, Chairperson
Board of Land and Natural Resources

SUBJECT: Document for Publication in the OEQC Bulletin -
Environmental Assessment for Temporary Variance Use
Application MA 91-10 for a Television Translator,
Shelter, and Tower, Haleakala, Maui TMK: 2-2-07: 05

The above mentioned Chapter 343 Document was reviewed and a negative declaration was declared based upon the environmental assessment provided with the Temporary Variance.

Please feel free to call me or Edward Henry of our Office of Conservation and Environmental Affairs, at 548-7837, if you have any questions.

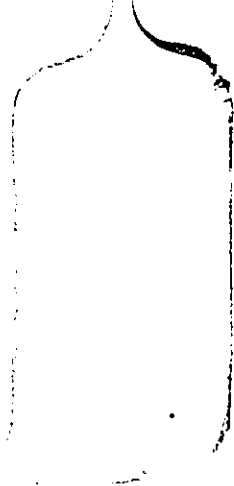

WILLIAM W. PATY

Attachments

1991-0808-MA-PEA KFUE-IV

i Antenn Tower, Makawau

Translator
~~From~~ Shultz



DOCUMENT CAPTURED AS RECEIVED

February 1983

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

FOR DLNR USE ONLY

Reviewed by _____
Date _____
Accepted by _____
Date _____
Docket/File No. _____
180-Day Exp. _____
EIS Required _____
PH Required _____
Board Approved _____
Disapproved _____
Well No. _____

DEPARTMENT MASTER APPLICATION FORM

FILE COPY

(Print or Type)

I. LANDOWNER/WATER SOURCE OWNER
(If State land, to be filled in by Government Agency in control of property)

Name State of Hawaii

Address _____

Telephone No. _____

SIGNATURE _____

Date _____

II. APPLICANT (Water Use, omit if applicant is landowner)
Name KFVE Joint Venture
dba KFVE Channel 5
315 Sand Island Road
Address Honolulu, HI 96819-2295
Copies To: Charles Bocken, Esq.
Damon, Key, Char, Bocken, Leong & Kupchak
1001 Bishop St., Ste. 1600
Honolulu, HI 96813

Telephone No. (808) 842-5555

Interest in Property Proposed Temporary
Variance For Test Site-State of Hawaii

(Indicate interest in property; submit written evidence of this interest)

*SIGNATURE *Bryan L. Holmes*
Bryan L. Holmes, Vice President
Date May 31, 1991

III. TYPE OF PERMIT(S) APPLYING FOR

(X) A. State Lands

(X) B. Conservation District Use

() C. Withdraw Water From A Ground Water Control Area

() D. Supply Water From A Ground Water Control Area

() E. Well Drilling/Modification

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

IV. WELL OR LAND PARCEL LOCATION REQUESTED

District Makawao

Island MauI

County MauI

Tax Map Key 2-2-07:05

Area of Parcel 8,886 Square Feet
(Indicate in acres or sq. ft.)
Term (if lease) 1 Year Variance

V. Environmental Requirements

Pursuant to Chapter 343, Hawaii Revised Statutes, and in accordance with Title 11; Chapter 200, Environmental Impact Statement Rules for applicant actions, an Environmental assessment of the proposed use must be attached. the 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 environment, 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.

VI. Summary of Proposed Use (what is proposed)

SEE ATTACHED NARRATIVE

INFORMATION REQUIRED FOR ALL USES

I. Description of Parcel

- A. Existing structures/Use. (Attach description or map).
- B. Existing utilities. (If available, indicate size and location on map. Include electricity, water, telephone, drainage, and sewerage).
- C. Existing access. (Provide map showing roadways, trails, if any. Give street name. Indicate width, type of paving and ownership).
- D. Vegetation. (Describe or provide map showing location and types of vegetation. Indicate if rare native plants are present).
- 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).
- 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).
- G. Existing covenants, easements, restrictions. (If State lands, indicate present encumbrances.).
- H. Historic sites affected. (If applicable, attach map and descriptions).

II. Description: Describe the activity proposed, its purpose and all operations to be conducted. (Use additional sheets as necessary).

III. Commencement Date: June 1, 1991 or upon DLNR Approval

Completion Date: One Year After Approval

IV. TYPE OF USE REQUESTED (Mark where appropriate) (Please refer to Title 15, Chapter 2)

1. Permitted Use (exception occasional use);
DLNR Title 13, Chapter 2, Section _____; Subzone _____.
2. Accessory Use (accessory to a permitted use):
DLNR Title 13, Chapter 2, Section _____; Subzone _____.
3. Occasional Use: Subzone _____.
4. Temporary Variance: Subzone G _____.
5. Conditional Use: Subzone _____.

Area of Proposed l 8,886 Square Feet
(Indicate in acres or sq. ft.,)

Name & Distance of Nearest Town or Landmark
Papaanui, Makawao, Hanualua, Maui (See Exhibit 1)

Boundary Interpretation (If the area is within 40 feet of the boundary of the Conservation District, include map showing interpretation of the boundary by the State Land Use Commission).

Conservation District Subzone G
County General Plan Designation Conservation

V. FILING FEE

1. Enclose \$50.00. All fees shall be in the form of cash, certified or cashier's check, and payable to the State of Hawaii.
2. If use is commercial, as defined, submit additional public hearing fee of \$50.00.

INFORMATION REQUIRED FOR CONDITIONAL USE ONLY

I. Plans: (All plans should include north arrow and graphic scale).

- A. Area Plan: Area plan should include but not be limited to relationship of proposed uses to existing and future uses in abutting parcels; identification of major existing facilities; names and addresses of adjacent property owners.
- 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 use; existing features, including vegetation, water area, roads, and utilities.
- C. Construction Plan: Construction plans 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; offstreet 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.
- 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.
- E. Management Plans: For any appropriate use of animal, plant, or mineral resources, management plans are required.
- 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.

II. Subzone Objective: Demonstrate that the intended use is consistent with the objective of the subject Conservation District Subzone (as stated in Title 13, Chapter 2).

DOCUMENT CAPTURED AS RECEIVED

DOCUMENT FOR PUBLICATION IN THE OEQC BULLETIN

Date: 5 / 30 / 91 Prepared by: KFVE Joint Venture

The document is a (check all that apply)

- Chapter 205A Document () Negative Declaration ()
- Chapter 343 Document () EIS Preparation Notice ()
- NEPA Document () Draft EIS ()
- Final EIS ()
- Acceptance Notice ()

Is the document a supplemental EIS? Yes () No ()

Title of Proposed Action or Project: Application for temporary variance to install a television translator shelter and tower at Papaanui, Makawao Hanualua Maui

Location: Island Maui District Makawao

Type of Action (check one): Applicant () Agency ()

Name of Proposing Applicant or Agency: KFVE Joint Venture
Name of Contact: Bryan L. Holmes
Address: 315 Sand Island Road
City: Honolulu State: Hawaii Zip Code: 96819-2295
Phone: (808) 842-5555

Name of Preparer or Consultant: Counsel: Damon, Key, Char, Bocken, Leong & Kupch
Name of Contact: Charles Bocken, Esq.
Address: 1001 Bishop St., Ste. 1600
City: Honolulu State: Hawaii Zip Code: 96813
Phone: (808) 531-8031

Accepting Authority: Department of Land and Natural Resources

Estimated Project Cost:		Document Preparation Cost:	
Federal Funds	\$ _____	Neg Dec/EA	\$ _____
State Funds	\$ _____	Draft EIS	\$ _____
County Funds	\$ _____	Sup Draft EIS	\$ _____
Private Funds	\$ _____	Sup Final EIS	\$ _____
TOTAL	\$ _____	TOTAL	\$ _____

- EA Trigger (check all that apply)
- () Use of State or County Lands or Funds
 - () Use of Conservation District Lands
 - () Use of Shoreline Setback Area
 - () Use of Historic Site or District
 - () Use of Lands in the Waikiki Special District
 - () Use Requiring an Amendment to a County General Plan

NOTE: For answers to any question on Page 10 or 11, please contact the Office of Environmental Quality Control at (808) 548-6915.

[OEQC Form 89-01 (1/89)
Page 1 of 2]



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

APPLICATION FOR TEMPORARY VARIANCE

Translator Shelter

and 40 Foot Antenna Tower
for KFVE-TV's Television Translator K26CX
Papaanui; Makawao, Hanuaula, Maui

TMK: 2-2-07:05

KFVE Application for
Temporary Variance

INTRODUCTION

This application to the DLNR is for a temporary variance for the proposed test site facility for a period of one year for a television translator to serve the Islands of Maui and Hawaii. The proposed site is located near the existing KOGG transmitter site on Mt. Haleakala. The DLNR is presently permitting use of a 7,239 square foot site to King Broadcasting Company. We have contacted King Broadcasting which does not object to our proposed use.

KFVE Application for
Temporary Variance

I. DESCRIPTION OF SITE

A. Existing Structures/Use:

The subject site covers a 8,886 square foot area, and is located at Papaanui, Makawao, County of Maui, Tax Map Key: 2-2-07:05. West of the proposed site are the KOGG-TV facilities constructed under the authority of State of Hawaii revocable Permit S-6611 (Attached as Exhibit 2), to King Broadcasting Company d\b\ a KHNL (TV) King has built a single one-story, 12' X 24' building for its KOGG Channel 15 television transmitter, together with a 75-foot guyed antenna pole. To the East of the proposed site, the Hawaii Interactive Television System (HITS) building and associated microwave tower is located. Our proposed translator is to be located between these two other communications sites.

B. Existing Utilities on the Site:

There are no conventional sewer or drainage facilities available. None will be required by Applicant. Electrical service is provided from overhead lines on poles. Those lines then connect to underground lines established to our equipment shelter. Telephone service is provided by underground lines.

KFVE Application for
Temporary Variance

C. Existing Access:

A 40-foot wide asphaltic concrete paved road from Haleakala Crater Road provides access to the site and to a Federal Aviation Administration ("FAA") facility to the southeast (see Exhibit 1).

D. Vegetation:

The site is void of vegetation.

E. Topography:

The terrain slopes down from the local peak at the observatories to the north and rises to the FAA facility to the southwest. The 8,886 square foot site has a relief of approximately 24 feet. A fairly level area has been selected for the site with an elevation difference of approximately 2 feet.

F. Shoreline Management Area: Not applicable.

G. Existing Covenants, Easements or Restrictions:

Only those set forth in Revocable Permit S-6611 for the immediately adjacent lot, referred to in Section I.A. above.

H. Historic Sites Affected: None.

KFVE Application for
Temporary Variance

II. DESCRIPTION OF PROPOSED USE.

We are proposing a translator, which comprises of a receiver to receive KFVE, Channel 5, Honolulu; nominal electronics to translate the signal from Channel 5 to Channel 26; and a transmitter to rebroadcast the signal on Channel 26 to Maui and Hawaii.

Applicant proposes to situate a temporary and readily moveable 12' X 18' foot or smaller shelter and a 40 foot self-supporting (free of any guy wires) tower for the antennas. There are provisions for an emergency generator to be added if necessary. (See Exhibits 5 and 6). Our transmitting antennas will be of parabolic design, one directed towards Wailuku, the other towards the Big Island. We also propose two microwave grid antennas should the Oahu-originating signal experience excessive over-water fades.

This comprises the television translator facilities of K26CX, licensed to serve the Town of Wailuku. This translator will rebroadcast the programs of KFVE-TV, Honolulu.

III. COMMENCEMENT DATE: JUNE 1, 1991 OR ON DLNR
APPROVAL.

IV. ESTIMATED COMPLETION DATE:
September 1, 1991, or three months after DLNR approval.

KFVE Application for
Temporary Variance

V. TYPE OF USE REQUESTED.

Conditional Use: Subzone G.

Area of Proposed Use: 8,886 square feet.

Name and Distance of Nearest Town or Landmark: Project
site is on Mt. Haleakala, Papaanui, Makawao, Hanuaula (see
Exhibit 1).

Boundary Interpretation: See Exhibit 5.

Conservation District: Subzone G.

County General Plan Designation: Conservation.

VI. ENVIRONMENTAL ASSESSMENT.

A. Applicant

Bryan Holmes,

KFVE-TV JOINT VENTURE

315 Sand Island Road, Honolulu, HI 96819-2295.

Copies to: Charles Bocken, Esq.

DAMON, KEY, BOCKEN, LEONG & KUPCHAK

16th Floor Pauahi Tower

1001 Bishop Street

Honolulu, HI 96813

B. Approving Agency:

State of Hawaii

BOARD OF LAND AND NATURAL RESOURCES

KFVE Application for
Temporary Variance

P. O. Box 621

Honolulu, HI 96809

C. Agencies and Organizations Consulted:

Department of Land and Natural Resources

State of Hawaii

Institute for Astronomy, U.H. Research Dept.

Rockwell Power Systems, Contractor For The U.S. Air Force
Frequency Coordinator Division, Federal Aviation Administra-
tion, U.S. Department of Energy, Federal Bureau of Investiga-
tion.

D. General Description of the Action's Technical,
Economic, Social and Environmental Characteristics:

General:

The proposed project consists of the operation and maintenance of a television broadcast translator. This facility is proposed to be located on State land, a site on Mt. Haleakala, County of Maui, at an area identified as Papanui, Makawao, Hanuaula.

King Broadcasting Company currently occupies the adjacent site to the West, under Revocable Permit S-6611 described in paragraph I.A. above, granted on December 1, 1988. The land

KFVE Application for
Temporary Variance

to the East is occupied by a State of Hawaii communications facility operated by the Hawaii Public Broadcasting Authority. This microwave relay facility is part of the Hawaii Interactive Television System (HITS). Our proposed shelter will be located between these two established communications sites as shown in Exhibits 5. KFVE Joint Venture holds a construction permit from the Federal Communications Commission ("FCC") to construct and conduct operation of the facility on Channel 26 with translator call sign of K26CX.

Telephone and electrical power and access to the site are in existence, and we will connect via underground construction. Our facilities will include a 40 foot tower, and associated antennas, a 12' x 18' foot (or smaller) equipment shelter, and possibly an emergency generator (if needed).

Adjacent Land Uses/Structures:

The area in the immediate vicinity of the proposed site is currently used for communication purposes. The KOGG-TV television transmitter facility and antenna pole are directly west, Hawaiian Telephone Company has a microwave relay facility, which consists of a concrete communications building and a related microwave antenna support structure surrounded by a protective fence.

KFVE Application for
Temporary Variance

Also nearby is a microwave facility operated by the State of Hawaii, Department of Budget and Finance, as part of the Hawaii Interactive Television System (HITS). It, too, consists of a concrete building, tower, and various antennas. Both facilities appear in the photo in Exhibit 4.

Zoning:

The site is designated Conservation Subzone G by the Land Use Commission of the State of Hawaii, and Conservation by the Maui County General Plan.

General VII

It is not anticipated that major changes in existing use or character of the land will occur in the foreseeable future.

Existing and Surrounding Uses:

The general area is occupied by various astronomical facilities operated by the University of Hawaii, Rockwell Power Systems for the US Air Force, U.S. Department of Energy, F.B.I. and the FAA. Microwave relay facilities belonging to Hawaiian Telephone Company, the State of Hawaii HITS facility, and King Broadcasting are immediately adjacent.

KFVE Application for
Temporary Variance

Utilities:

Electrical power and telephone utilities are on site. Telephone, and other telecommunications lines, are in the approximate locations shown in Exhibit 5. Water, sewer, and gas utilities are not available and are not required. The facility operates unattended and requires only an occasional visit for routine maintenance. Therefore, no sewage disposal is required. If electrical power service in the future is found to be unreliable, KFVE-TV requests authorization at this time to install an emergency electrical power generator to better carry out its public service to the people of Maui and the Big Island as a participating station of the Emergency Broadcast System.

Access:

The site can be reached by use of an existing 40 foot wide asphaltic-concrete paved road from Haleakala Crater Road passing directly by the proposed site.

Animal and Bird Life:

It had been reported that the site location may be in the proximity of the threatened and endangered dark-rumped petrel flight path. The National Park Service has determined that this facility is not adversely affecting active dark-rumped petrel burrows. In the unlikely event of

KFVE Application for
Temporary Variance

any bird strikes resulting from the proposed structure we will immediately notify the Division of Forestry and Wildlife office in Wailuku.

Historical or Archaeological Sites:

There are no known significant archaeological or geological values associated with the site.

Water Quality:

There will be no sewage discharge or any other pollutant released that would affect water quality.

Air Quality:

The facility's electronic components are air-cooled, with only negligible amounts of warm air being released. There are no discharges that would affect air quality.

Possible Interference:

Possible interference to the operation of the astronomical facilities of the University of Hawaii and the U.S. Air Force as a result of operation of the television translator, has been dealt with by designing the translator with parabolic (open grid dishes) antennas utilizing directional transmitter patterns. This design should eliminate the potential for any interference reaching these facilities.

KFVE Application for
Temporary Variance

Further, if interference should occur, we will act to reduce any interference to acceptable levels.

E. Summary Description of the Affected Environment:

The continued existence of this project will not result in any major significant long-term or short-term environmental impact. The principal impact of the proposed project will be the provision of quality television service to citizens located in a substantial portion of Maui, including the communities of Kahului, Wailuku and Kihei. The facility will permit the Hawaii residents of these areas to receive free over-the-air television service from KFVE-TV. These areas are not able to receive KFVE-TV's television signals due to the distance from KFVE-TV's transmitter on Mauna Kapu above Ewa Beach, Oahu, and the low elevation of these communities. KFVE-TV is Hawaii's newest television station, and the first full-power VHF station in Hawaii in three decades. KFVE-TV covers important public debates in "Island Issues", Hawaii talent in "Five Alive", and sports coverage of Hawaii's colleges and universities, of which many of the students are from Maui and the Big Island. These broadcasts are in the public interest, providing a free over-the-air alternative to the four major network stations.

KFVE Application for
Temporary Variance

F. Identification and Summary of Major Impacts and
Alternatives Considered:

As mentioned above, no major significant impacts are anticipated. Those that will occur are considered to be minor, and are discussed briefly.

1. Short-Term: No short-term environmental impacts are expected.

2. Long-Term: Long-term environmental effects, to the extent that they exist, are primarily aesthetic. The impact of the 40 foot antenna tower and our 12' X 18' foot (or smaller) equipment shelter is expected to be very limited because the facility is located in an area normally away from public view and visually-isolated from the visitor center in Haleakala National Park.

ALTERNATIVES

The following are alternatives considered to the proposed action:

1. Abandon or Defer the Project:

This alternative has not been seriously considered by the Applicant. Abandonment of the proposed project would result

KFVE Application for
Temporary Variance

in depriving residents of Maui and adjacent islands from receiving both Cable TV and off-air KFVE-TV television. This is contrary to the public service commitment placed upon the Applicant by the FCC.

2. Seek Alternative Locations:

KFVE-TV originally filed for the site occupied by KGMV, KMAU and KAHN-TV, but were told that site could be seen by the astronomical observatories. We approached the State about sharing the HITS site, but learned there was no space. We approached King Broadcasting about sharing their site, but their enclosure is full and it turned out to be difficult to place our tower on their lot without crowding them. Also we encountered difficulties with being in the intermittent stream, and too close to power lines for safety.

The present site is the alternative location. The adjacent site was authorized for King Broadcasting by the Board of Land and Natural Resources. There seems to be no other site available that equals those currently occupied for transmission of television signals.

G. Proposed Mitigation Measures:

As indicated previously, no major significant environmental impacts are anticipated as a result of this project. Howev-

KFVE Application for
Temporary Variance

er, the Applicant has initiated certain actions to further assure that there are no potential environmental effects.

These include:

1. The antenna tower has been built low in height and is of dull grey color to blend with the landscape. The equipment shelter will be painted an earth-tone color in order to blend with the surroundings and to minimize any possible visual intrusion.
2. Site clearing will be limited to those areas essential for construction.
3. All State and County requirements relative to construction, including building, grading, grubbing, drainage and erosion control will be fully complied with.
4. The facility operates unattended. Maintenance visits by employees will be required only occasionally. All employees will be instructed to observe precautions consistent with the area's use. All regulations of the Department of Land and Natural Resources will be strictly observed.
5. There is some existing erosion on the west side of the lot which will be controlled by placing rocks to slow down

KFVE Application for
Temporary Variance

the water flow.

H. Determination:

The project is required in order to provide quality television to the citizens of the Island of Maui and the Big Island.

No major significant environmental impacts are anticipated as a result of the project.

Furthermore, the project will not:

1. Irrevocably commit to loss or destruction of any natural or cultural resource.
2. Curtail the range of beneficial uses of the environment.
3. Conflict with the long-term environmental goals of either the State of Hawaii or the County of Maui.
4. Adversely affect the economic or social welfare of the community.
5. Result in population changes in the community.

KFVE Application for
Temporary Variance

6. Result in a substantial degradation of environmental quality.
7. Have any cumulative effect, or constitute a commitment for larger actions.
8. Adversely affect any rare, threatened or endangered species of animal or plant life.
9. Result in degradation of air and water quality, or an increase in ambient noise levels.
10. Adversely affect an environmentally sensitive area.
11. Interfere with existing communications, radio and television facilities.
12. Interfere with existing astronomical facilities.

Astronomical Observatory Considerations:

The adjacent KOGG site was made available by DLNR near HITS and HawaiianTel to assure minimal impact upon the astronomical observatories.

KFVE Application for
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Tests were performed on behalf of the University Of Hawaii, and a report issued. The report is "Haleakala Engineering and Alternative Site Study, Final Report", by Communication Associates, Inc., Honolulu, August, 1989. We have attached Section 4.2, Table 2, of the report entitled, "Power Flux Density", as Exhibit 7.

The Report states that the International Astronomical Union standard for observatories is a maximum of 2 (two) microwatts per square meter.

Table 2 indicates that all the KOGG power measurements from all the observatory sites tested were below the 2 microwatt/square meter international standard except at Meese, where upon adding the visual and aural peak powers, the standard was slightly, though insignificantly, exceeded. The Report recognizes that the RMS (Root Mean Square) visual power of the average television programming is about .4 times the peak, such that "if the average level had been used, the total (visual + aural) would have been around 1.5 microwatts/square meter." or less than 2.0 microwatts per square meter.

The highest power level received from KOGG at any of the other four observatory locations was a mere 0.23 microwatts

KFVE Application for
Temporary Variance

per square meter, or 12% of the allowable standard. That site was Air Force #1.

It has been shown that KOGG does not cause interference at the Haleakala observatories for two basic reasons:

1. Terrain Shielding.

KOGG's site is at a lower elevation than the observatories, such that the ridge between KOGG and the observatories obstructs and blocks the line of sight of KOGG unless one is standing on the Meese roof, in which the top of the KOGG antenna can be seen.

2. Directional pattern.

The KOGG antenna emits only minimal energy in the direction of the observatories.

The same geographical features which prevent the KOGG signal from reaching the observatories are more pronounced in the KFVE proposed site, and thus more prone to preventing KFVE's signal from being received at those observatories.

The proposed KFVE translator will not cause interference at the Haleakala Observatories for the following reasons:

KFVE Application for
Temporary Variance

1. Terrain Shielding.

The KFVE translator antennas will be 40' high which is lower than the 75' KOGG antenna. Thus being shielded further by the terrain. Only the tip of the KOGG antenna can be seen, and only from the Meese observatory roof. Our parabolic antennas are some 35 feet lower in elevation than the top of the KOGG antenna. They are also tilted in a downward angle. Consequently there will be considerably more geographical shielding than the existing KOGG antenna has and our antenna should not be visible at all from the observatory.

2. Directional antennas.

The KFVE translator uses antennas mounted on two sides of the tower. They are parabolic reflectors -- the same shape used for satellite receiving dishes, flashlight reflectors, and automobile headlights. One dish points northwest; the others point approximately southeast. Thus very little energy is emitted northeast toward the observatories.

3. Lower Power.

A final noteworthy factor is the lower peak power of the KFVE translator. It is one-twelfth the KOGG transmitter power. Consequently with the greater terrain shielding, directional antennas, and lower power output, the KFVE translator should not affect the observatories. Our site

KFVE Application for
Temporary Variance

drawing, Exhibit 5 and 6, shows our tower and small shelter.

Noise:

The low existing ambient noise at the site consists mainly of air handling equipment used to cool electronic components in the television transmitter on the site, and is barely detectable. Our smaller air handling equipment should not raise the noise level significantly.

Analysis of Electromagnetic Radiation in the Environment:

In the last 15 to 20 years, the proliferation of radio frequency (RF) emitters in the environment has spurred extensive and ongoing research efforts to investigate the biological and public health effects of low-level non-ionizing electromagnetic radiation.

The FCC requires transmission facilities to comply with the standard promulgated by the American National Standards Institute (ANSI) in 1982 (ANSI C95.3); FCC Gen. Docket 79-144, 50 Fed. Reg. 11151, 38653 (1985).

The FCC rule requires an applicant for an FCC license or permit for a new or modified facility to certify that the facility will not cause NIER (non-ionizing electromagnetic radiation) levels on or off site to exceed ANSI standards.

KFVE Application for
Temporary Variance

At VHF television channels (Channels 2 through 13), an exposure limit of 1 mw/cm² has been set. For UHF Channel 26, the limit is set at $f/300 = 542/300 = 1.81$ mw/cm², where f is the operating frequency of Channel 26, 542 MHz.

Although not a federal agency, ANSI is a multi-disciplinary, national organization which developed several early western NIER research analyses and standards. ANSI develops standards intended to serve as voluntary guides to industry and consumers about products or processes marketed in the United States relating to safety. Because the FCC rule applies on-site as well as off-site, and cannot be waived by employees of transmission facilities, it will result in NIER levels off-site that are far less than the ANSI standard, because NIER levels caused by a given transmission facility are highest typically on the site of the user, and NIER dissipates rapidly with distance (inverse square rule).

The FCC has published a pamphlet entitled "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation", OST Bulletin No. 65, October, 1985. This document provides tables and figures that allow determination of "worst case" minimum distances that employees and the public must maintain from radio and TV transmitting antennas.

KFVE Application for
Temporary Variance

Calculations confirm the proposed action will produce only fractions of the ANSI standards for allowable radiation at ground level locations.

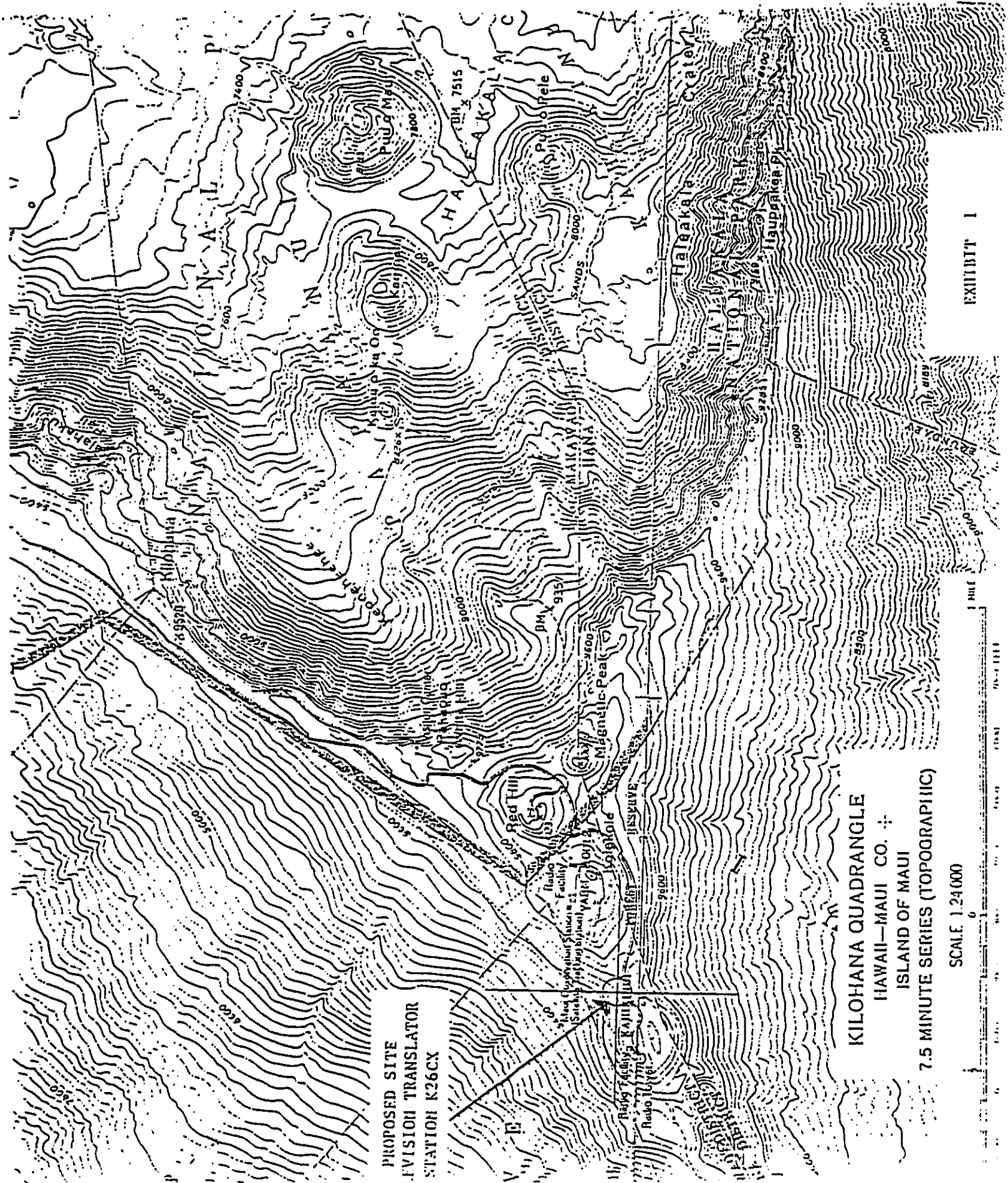
Directly under the KFVE translator antenna, the power is expected to be .004 milliwatts per square centimeter, or only about one four-hundredth of the ANSI limit.

The beam to the northwest is of low peak power, and the ground falls away much faster than the minus 5.7 degree down tilt. The southeast beam has higher power, and because of the sharp focusing of the parabolic antennas used with the KFVE translator, the energy level under the beam to the southeast reached a peak at ground level some 220 feet southeast of the antenna. That peak level is only 0.2 milliwatts per square centimeter (0.2 mw/cm²), or about one-ninth of the ANSI limit of 1.81 milliwatts per square centimeter at Channel 26.

KFVE Application for
Temporary Variance

LIST OF EXHIBITS

- 1) Topographic map of proposed site.
- 2) Copy of Permit S-6611
- 3) Proposed site - Eastern View
- 4) Proposed site - Northern View
- 5) Plot - Plan View
- 6A) Plot - Profile View - West Elevation
- 6B) Plot - Profile View - North Elevation
- 7) Copy - Communication Associates, Inc. Engineering
Study
- 8) Tax Map Key 2-2-07:05
- 9) Copy - Letter of understanding, King
Broadcasting
- 10) KFVE-TV Transmission System drawing
- 11) Copy - Federal Communication Commission
Construction Permit K26CX



PROPOSED SITE
TELEVISION TRANSLATOR
STATION K26CX

KILOHANA QUADRANGLE
HAWAII—MAUI CO. :
ISLAND OF MAUI
7.5 MINUTE SERIES (TOPOGRAPHIC)

SCALE 1:24,000

1 MILE

EXHIBIT I

3. Upon execution of this Permit, deposit with the Board of Land and Natural Resources, hereinafter called the "Board", the sum of \$ 24.00 as security for the faithful performance of all of the terms and conditions herein. The whole or portion of said deposit will be returned to the Permittee upon termination of this Permit, but only after all of the terms and conditions of this Permit have been observed and performed to the satisfaction of the representatives of the Department of Land and Natural Resources.
4. At the Permittee's own cost and expense, keep the government-owned improvements located on the Premises insured against loss by fire and other hazards, casualties and contingencies, for the full insurable value of such improvements. Said policies are to be in favor of the Board and are to be filed and deposited with said Board. In the event of loss, damage or destruction of such improvements, the Board shall retain from the proceeds of the policies such amounts deemed by it to be necessary to cover the loss, damage or destruction of or to the government-owned improvements and the balance of such proceeds, if any, shall be delivered to the Permittee.
5. Give the Board twenty-five (25) days' notice in writing before vacating the Premises.
6. If a holdover lessee or licensee, pay all real property taxes, which shall be assessed against the Premises from the date of this Permit. In addition, a Permittee, not a holdover lessee or licensee, who has occupied the Premises for commercial purposes for a continued period of one year or more, shall pay the real property taxes assessed against said premises after the first year of the Permit as provided in Section 246-36(1)(d), Hawaii Revised Statutes.
7. Observe and comply with all laws, ordinances, rules and regulations of the federal, state, municipal or county governments affecting the Premises or improvements.
8. Repair and maintain all buildings or other improvements now or hereafter on the Premises.
9. Obtain the prior written consent of the Board before making any major improvements.
10. Keep the Premises and improvements in a clean, sanitary and orderly condition.
11. Pay when due, all payments for water and other utilities, and whatever charges for the collection of garbage that may be levied.
12. Not make, permit or suffer, any waste, strip, spoil, nuisance or unlawful, improper or offensive use of the Premises.
13. At all times with respect to the Premises use due care for public safety and agrees to defend, hold

harmless and indemnify the State of Hawaii from and against all claims or demands for damage, including claims for property damage, personal injury or death, arising on or about the Premises, or by any fire or explosion thereon, or growing out of, or caused by any failure on the part of the Permittee to maintain the Premises in accordance with the terms and conditions of this Permit excluding, however, the use of the Premises by such persons specifically authorized by the Board for hunting or other uses.

14. Procure, at its own cost and expense, and maintain during the entire period of this Permit, a policy or policies of comprehensive public liability insurance, in an amount acceptable to the Chairman or his designated representative, insuring the State of Hawaii and the Permittee against all claims for personal injury, death and property damage excepting those claimants which have been specifically authorized to use the Premises for hunting or other uses; that said policy or policies shall cover the entire Premises, including all buildings, improvements and grounds and all roadways or sidewalks on or adjacent to the Premises in the control or use of the Permittee. The Permittee shall furnish the State with a certificate showing such policy to be initially in force and shall furnish a like certificate upon each renewal of such policy, each such certificate to contain or be accompanied by an assurance of the insurer to notify the State of any intention to cancel any such policy sixty (60) days prior to actual cancellation. The procuring of this policy shall not release or relieve the Permittee of its responsibility under this Permit as set forth herein or limit the amount of its liability under this Permit.

3. Additional Conditions:

1. The Board may revoke this Permit for any reason whatsoever, upon written notice to the Permittee at least thirty (30) days prior to such revocation; provided, however, that in the event payment of rental is delinquent for a period of ten (10) days or more, this Permit may be revoked upon written notice to the Permittee at least five (5) business days prior to such revocation.
2. If the Permittee does not vacate the Premises upon the revocation of the Permit by the Board, the Permittee shall pay to the State liquidated damages at the daily rate of \$1.00 for each day, or portion thereof, the Permittee remains on the Premises over said date of revocation by said Board. Such payment is to be in addition to any other rights or remedies the Board may be entitled to pursue for breach of contract, or for illegal occupancy, including the right to evict the Permittee without court action, and the cost thereof to be paid by the Permittee.
3. Should the Permittee fail to vacate the Premises upon the revocation of the Permit, the Board, its agents and/or representatives may enter upon the Premises and remove and dispose of, at Permittee's costs and expenses, all vehicles, equipment, materials, and/or any personal property remaining on the Premises, and the Permittee agrees to pay for all such costs and expenses of removal and disposition.

4. The Board may at any time increase or decrease the monthly rental by written notice thereof at least thirty (30) days prior to the date of change of rent.
5. Any major improvements, including but not limited to buildings and fences, erected on or moved onto the Premises by the Permittee shall remain the property of the Permittee and the Permittee shall have the right, prior to the termination of this Permit, or within such additional period as the Board in its discretion may allow, to remove such improvements from the Premises; provided, however, that in the event the Permittee shall fail so to remove such improvements within thirty (30) days, after written notice to remove, the Board may elect to retain said improvements or shall remove the same and charge the cost of removal and storage if any to the Permittee.
6. The Board reserves the right to itself, its agents and/or representatives to enter or cross any portion of the premises at any time in the performance of its duties.
7. This Permit or any rights hereunder shall not be sold, assigned, conveyed, leased, mortgaged or otherwise transferred or disposed of.
8. It is understood that the Permittee has inspected the Premises and knows the condition thereof and fully assumes all risks incident to its use.
9. The acceptance of rent by the Permitter shall not be deemed a waiver of any breach by the Permittee of any term, covenant or condition of this Permit nor of the Permitter's right to declare and enforce a forfeiture for any such breach, and the failure of the Permitter to insist upon strict performance of any term, covenant or condition, or to exercise any option herein conferred, in any one or more instances, shall not be construed as a waiver or relinquishment of any term, covenant, condition or option.
10. Should this Permit on a month-to-month basis extend for a period beyond one year from the date of issuance, any renewal of this Permit beyond such one year from the date of issuance shall be only upon approval of the Board of such extension.
11. The use and enjoyment of the Premises shall not be in support of any policy which discriminates against anyone based upon race, creed, color, national origin or a physical handicap.
12. Any and all disputes and/or questions arising under this Permit shall be referred to the Chairman of the Board and his determination of such disputes or questions shall be final and binding on the parties.

*See Addendum attached (page 6)

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Unless the text indicates otherwise, the use of any gender shall include all genders and, if the Permittee includes more than one person, the singular shall signify the plural and this Permit shall bind said persons, and each of them jointly and severally.

DATE: March 17, 1989

STATE OF ARIZONA
BY [Signature]
Chairperson and Member
Board of Land and
Natural Resources

Approved by the Board
at its meeting held on
September 9, 1988
(Item F-1-d)

BY [Signature]
Member, Board of Land
and Natural Resources

~~PERMITTEE~~
KING BROADCASTING COMPANY
dba KHNL-TV
BY [Signature]
Its Vice-President and Chief Engineer,
Broadcast

APPROVED AS TO FORM:

[Signature]
Deputy Attorney General
Date: 2-9-89

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ADDENDUM TO REVOCABLE PERMIT NO. S-6611

ADDITIONAL TERM AND/OR CONDITION UNDER WHICH THIS PERMIT IS GRANTED IS AS FOLLOWS:

The Permittee shall consult with the Division of Forestry and Wildlife on:

- a. Final configuration of the parcel; and
- b. Exact location of the tower and guidelines to minimize and/or eliminate impacts on the dark-rumped petrel nesting areas.

-6-

EXHIBIT 2

PAGE 6 OF 10

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STATE OF HAWAII)
COUNTY OF _____)

SS.

On this _____ day of _____, 198____,
before me appeared _____ and
_____, to me personally known,
who, being by me duly sworn, did say that they are the
_____ and _____,
respectively, of _____, and that
the seal affixed to the foregoing instrument is the corporate
seal of said corporation, and that said instrument was signed and
sealed in behalf of said corporation by authority of its Board of
Directors, and the said _____ and
_____ acknowledge said
instrument to be the free act and deed of said corporation.

Notary Public, State of Hawaii
My commission expires:

STATE OF HAWAII)
CITY AND COUNTY OF HONOLULU)

SS.

On this 21st day of February, 1989, before me
appeared KENNETH P. HERMANSON, to me personally known, who, being
by me duly sworn, did say that he is the Vice President and Chief
Engineer, Broadcasting, of KING BROADCASTING COMPANY, and that
the corporate seal is not available and that said instrument was
signed in behalf of said corporation by authority of its Board of
Directors, and said officer acknowledges said instrument to be
the free act and deed of said corporation.

Kenneth P. Hermanson

Notary Public, State of Hawaii
My commission expires: 12-28-92

DOCUMENT CAPTURED AS RECEIVED

PROPOSED ANTENNA SITE
KING BROADCASTING CO.

ALL that certain piece or parcel of land being a portion of the Government Land of Papaanui.

Situate at Papaanui, Makawao, Honuaula, Maui, Hawaii.

Beginning at a pipe at the southeast corner of this parcel of land and on the northerly side of a Non-Exclusive Access Road the coordinates of said point of beginning referred to Government Survey Triangulation Station "KOLZKOLE" being 539.95 feet South and 1877.20 feet West and thence running by azimuths measured clockwise from true South:

1. 81° 46' 69.88 feet along a non-exclusive access road, along the remainder of the Government Land of Papaanui to a pipe;

Thence along a non-exclusive access road along the remainder of the Government Land of Papaanui on a curve to the left with a radius of 255.00 feet, the chord azimuth and distance being

2. 79° 35' 05" 17.13 feet to a pipe;

3. 171° 46' 110.00 feet along the remainder of the Government Land of Papaanui to a pipe;

222 QUEEN STREET

WALTER P. THOMPSON, INC.
ENGINEERS AND SURVEYORS

HONOLULU, HAWAII

EXHIBIT 2

PAGE 8 OF 10

DOCUMENT CAPTURED AS RECEIVED

4. 292° 48'

101.53 feet along the remainder of the Government Land of Papanui to a pipe;

5. 351° 46'

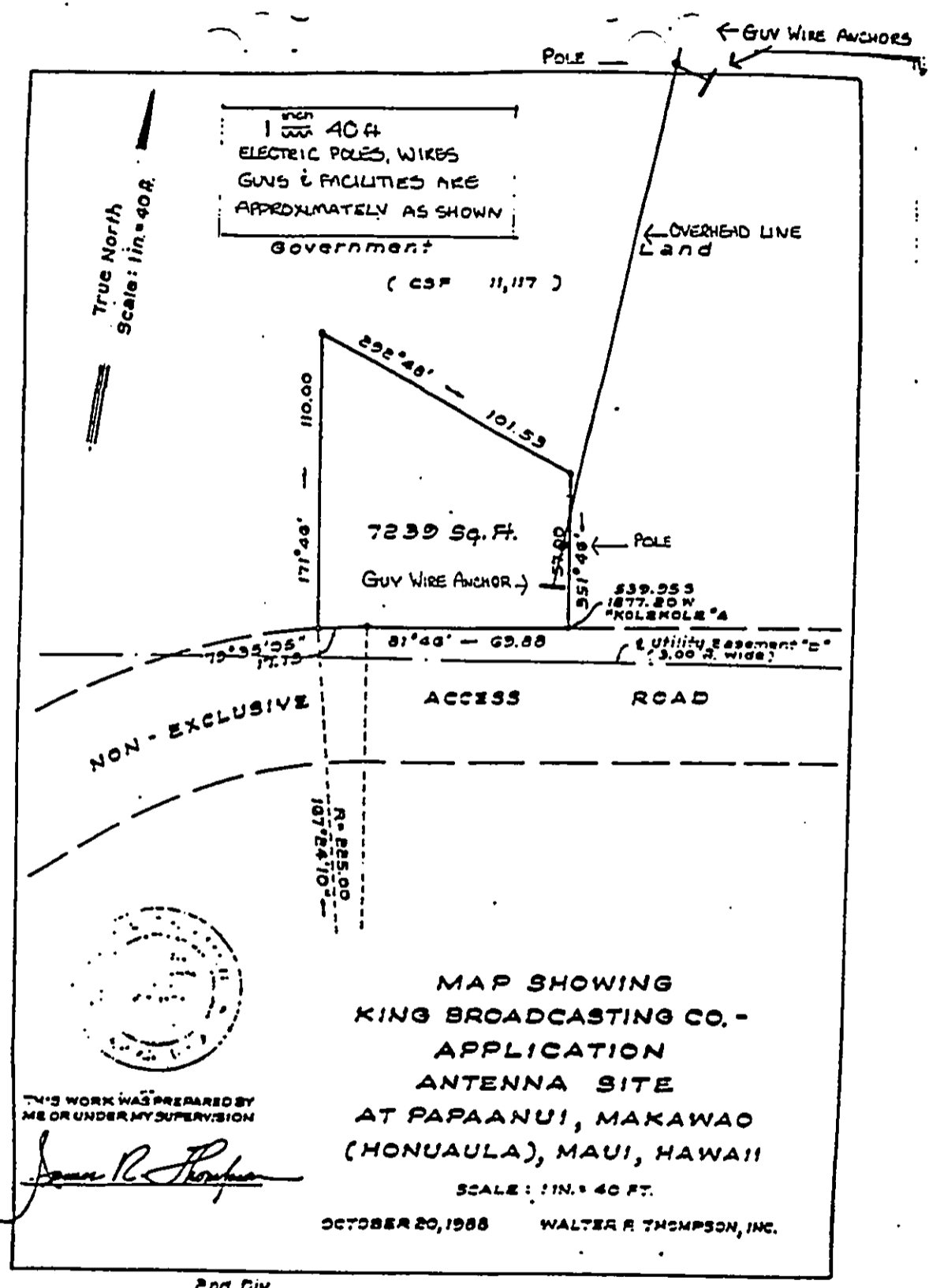
57.00 feet along the remainder of the Government Land of Papanui to the point of beginning and containing an area of 7,239 square feet.

WALTER P. THOMPSON, INC.

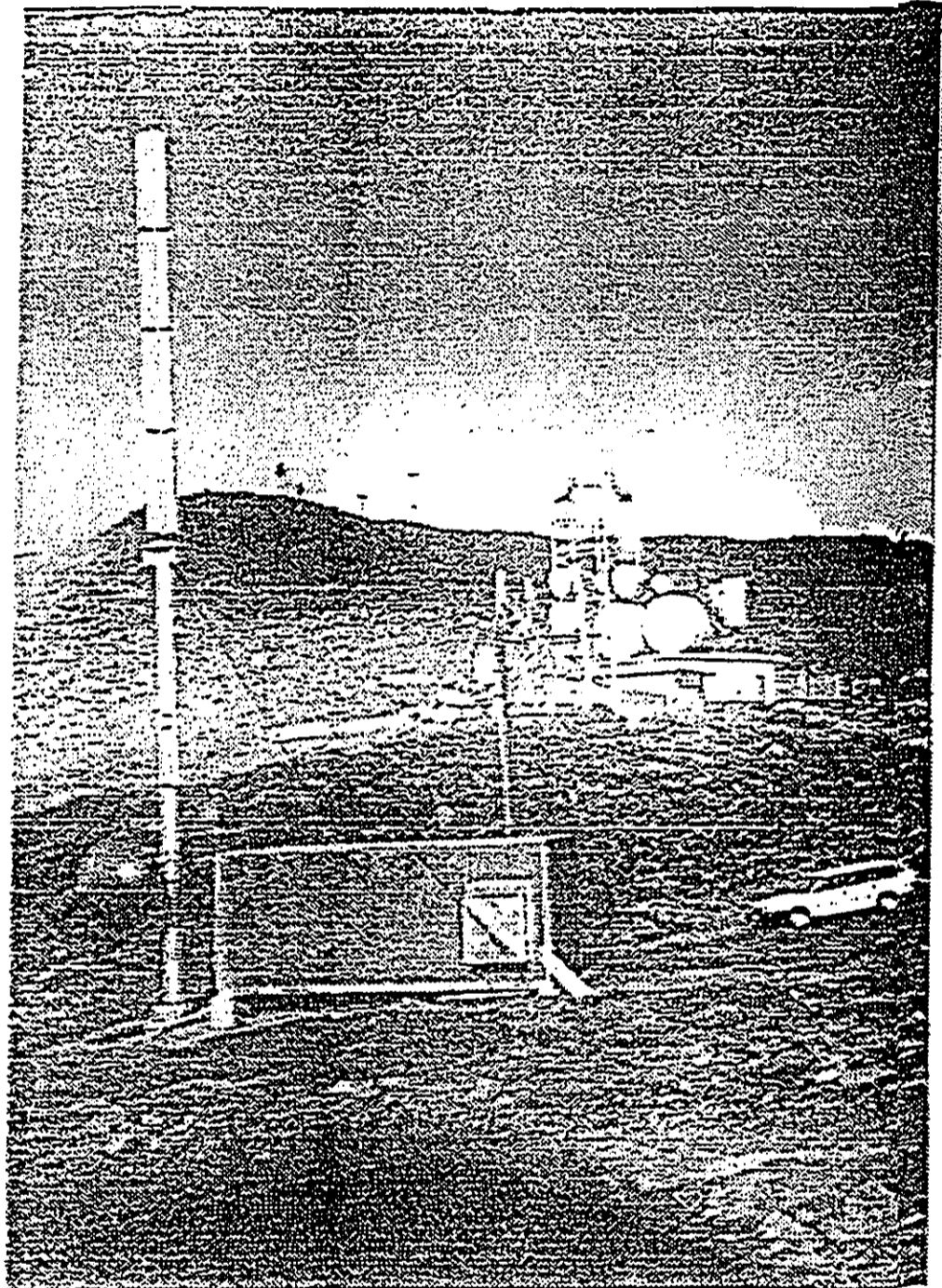
Honolulu, Hawaii
October 21, 1988

By *James R. Thompson*
Registered Professional
Land Surveyor 3627-S

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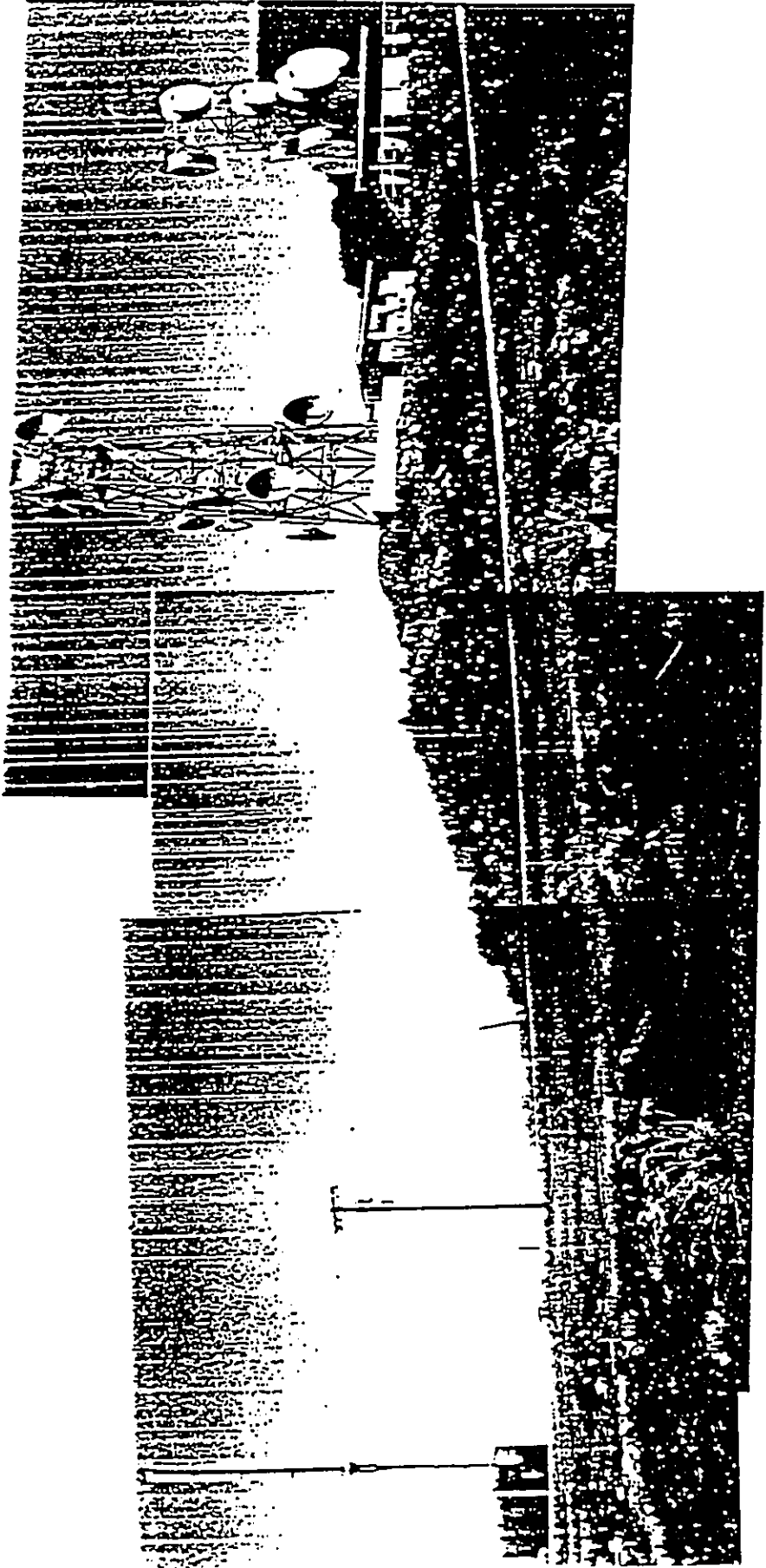


2nd. Div.
Tax Map Key: 2-2-67



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EXHIBIT 4



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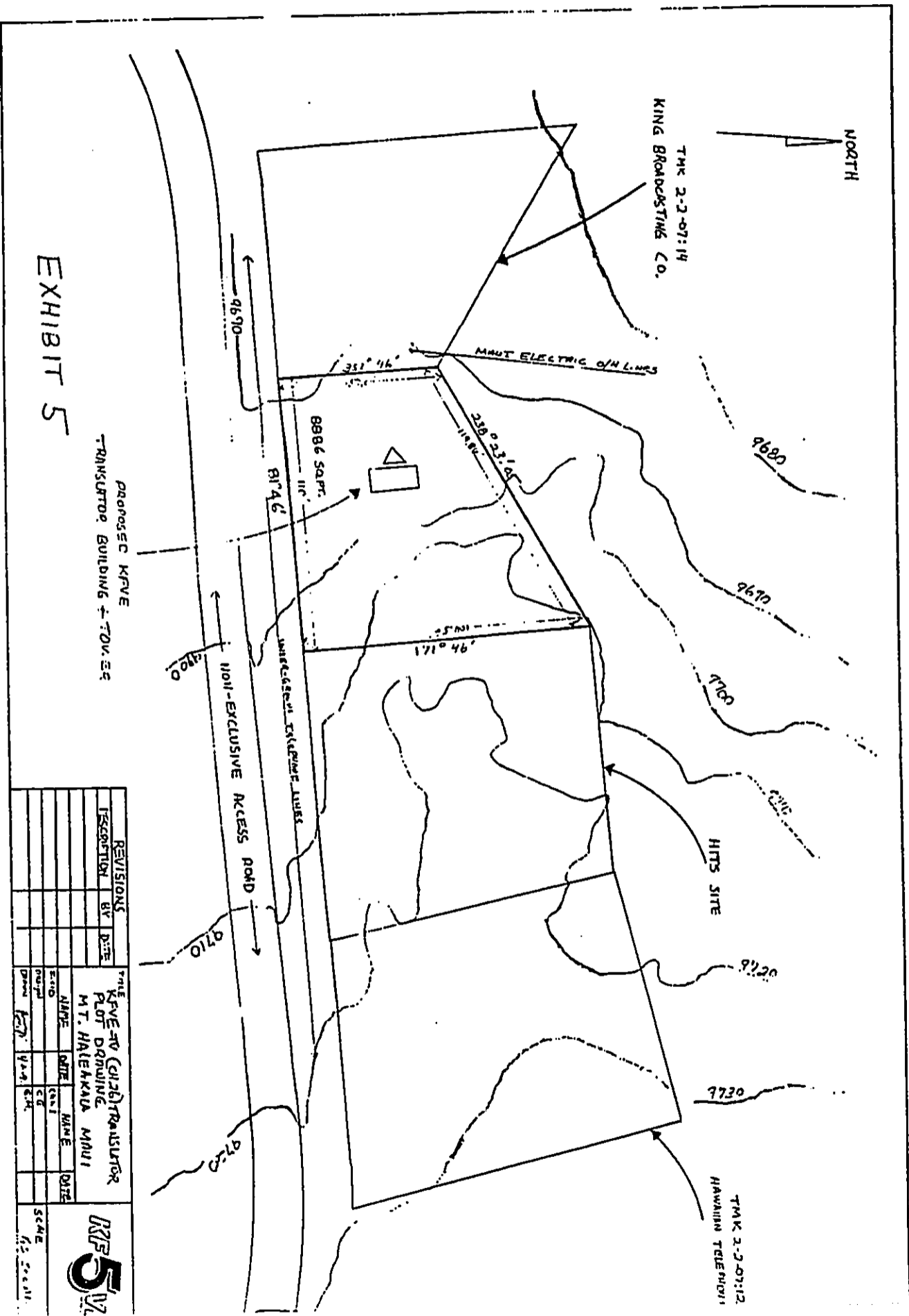


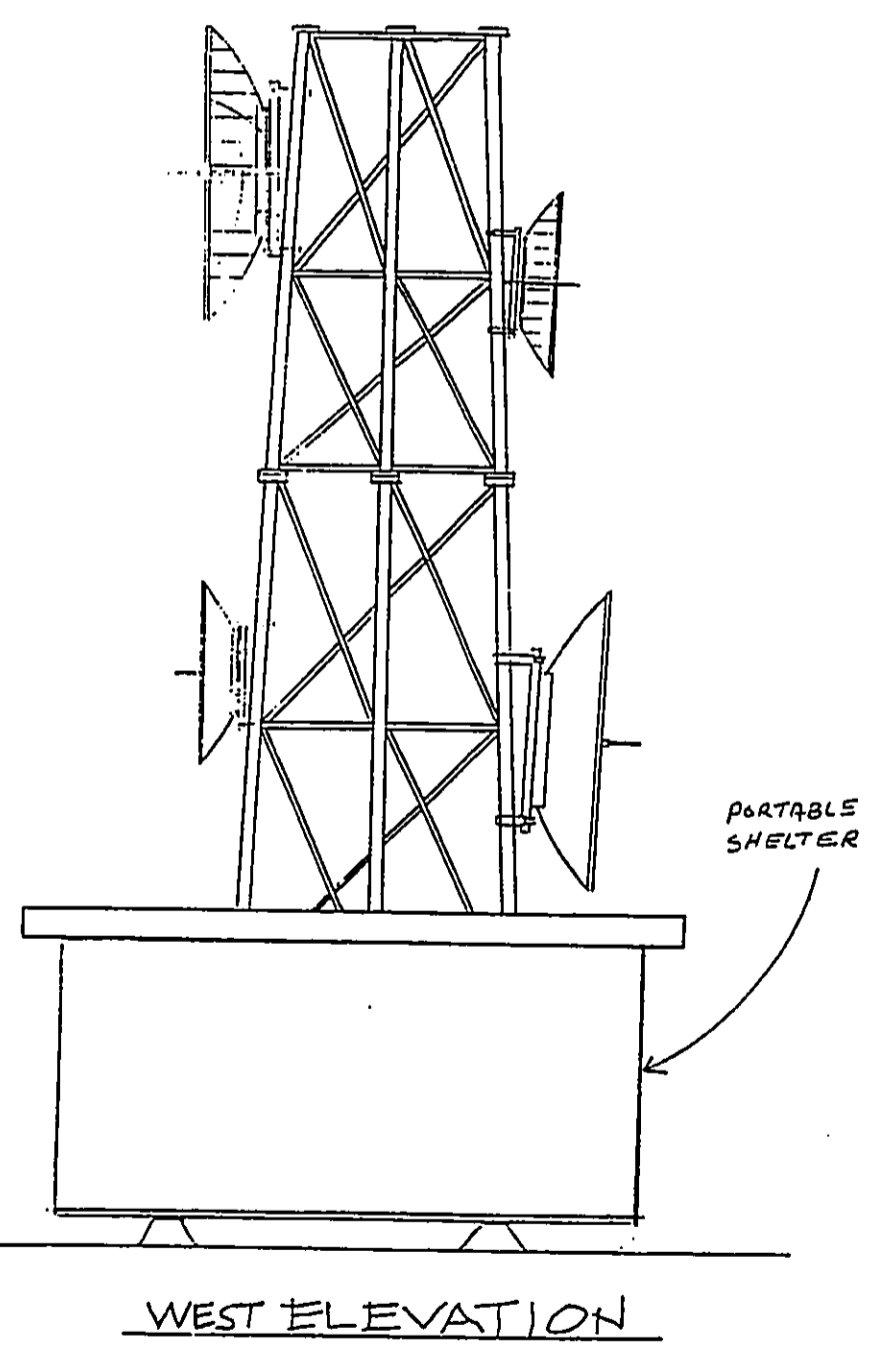
EXHIBIT 5

REVISION	BY	DATE	DATE	NAME	DATE	NAME	DATE

KVE-TV (CH) TRANSMITTER
 PLOT DRAWING
 MT. HALEAKALA MAUI

SCALE
 1" = 50'

EXHIBIT 6A



REVISIONS		DATE	BY

PROJECT	DATE	SCALE
MTS HALEAKALA, MAUI	11-7-5	1/4" = 1'
DESIGNED BY	DRW	CHKD

TITLE: KFE-TV (radio) TRANSMITTER BUILDING
 MTS HALEAKALA, MAUI
 KFE 5 V13

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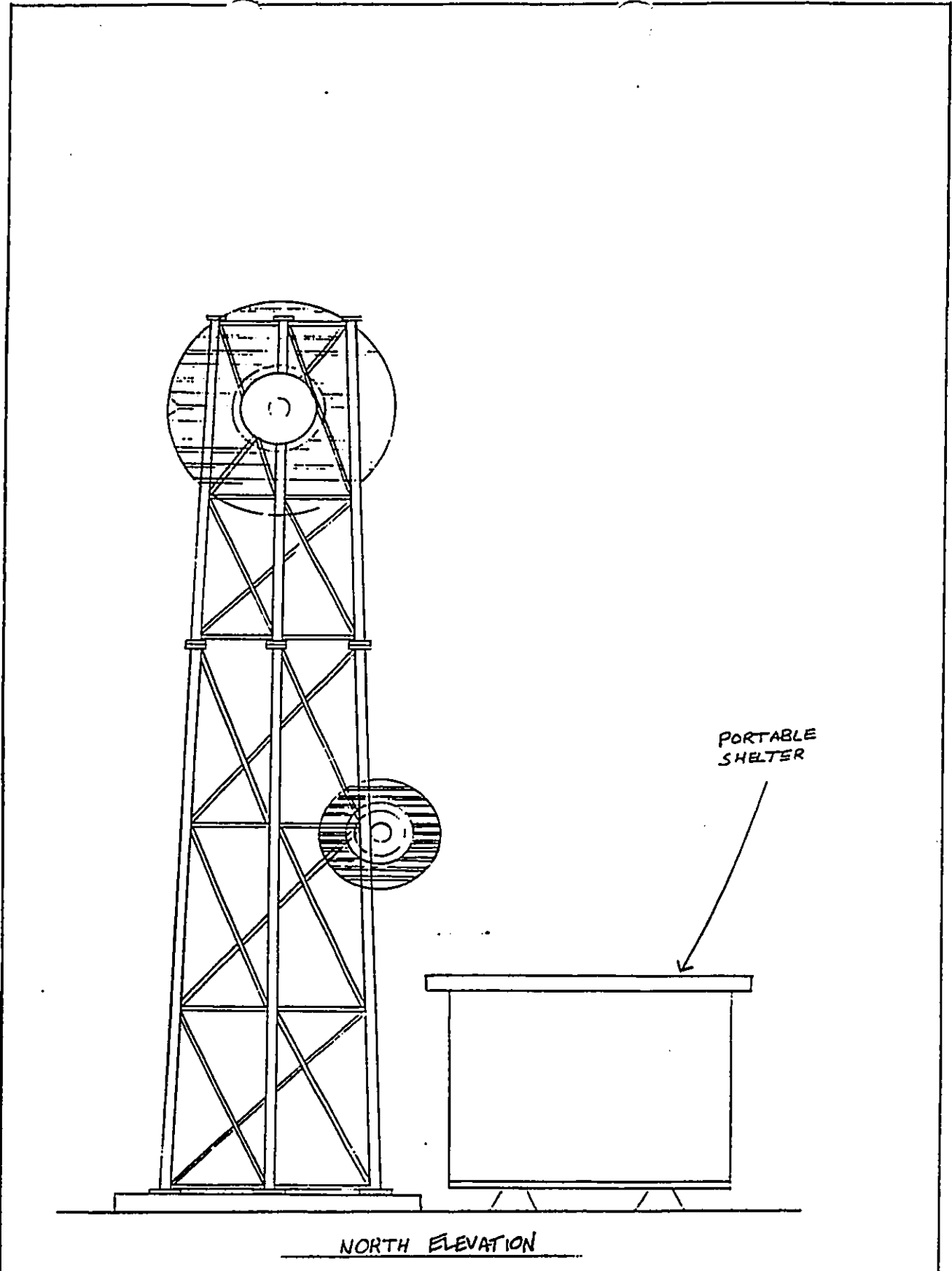


EXHIBIT 6B

REVISIONS			TITLE			
DESCRIPTION	BY	DATE	KAVE-TV (CH. 26) TRANSLATOR BUILDING MT. HALEAKALA MAUI			
			NAME	DATE	NAME	DATE
			DRG'D		CHK'D	DATE
			DESIGN		CLIENT	Y.P.M.
			DRAWN	4.94	BY	

KF5VE

SCALE
1/4" = 1'

Haleakala Engineering And
Alternative Sites Study

Final Report

Tasks 1-2

Presented to:

Institute for Astronomy
University of Hawaii

Prepared by:

Communication Associates, Inc.
2753 South King, Suite 206
Honolulu, Hawaii 96826
Contact: Sam Hall, 524-5928

Submitted: August, 1989

EXHIBIT 7

page 1 of 2

4.2 POWER FLUX DENSITY

While field strength is a useful measure of the effect a signal will have on an instrument with a narrow-band frequency response, power density is a better indicator of interference potential for wide-band instruments. Table 2 displays the calculated power flux density as measured on August 9 & 10, 1989. The International Astronomical Union has recommended a power flux density limit of 2×10^{-4} meter⁻² for optical and infrared equipment. As can be seen from the data, the summit of Haleakala has levels of radiofrequency power flux density far above this standard.

Table 2
POWER FLUX DENSITY
in $\mu\text{watts}/\text{meter}^2$

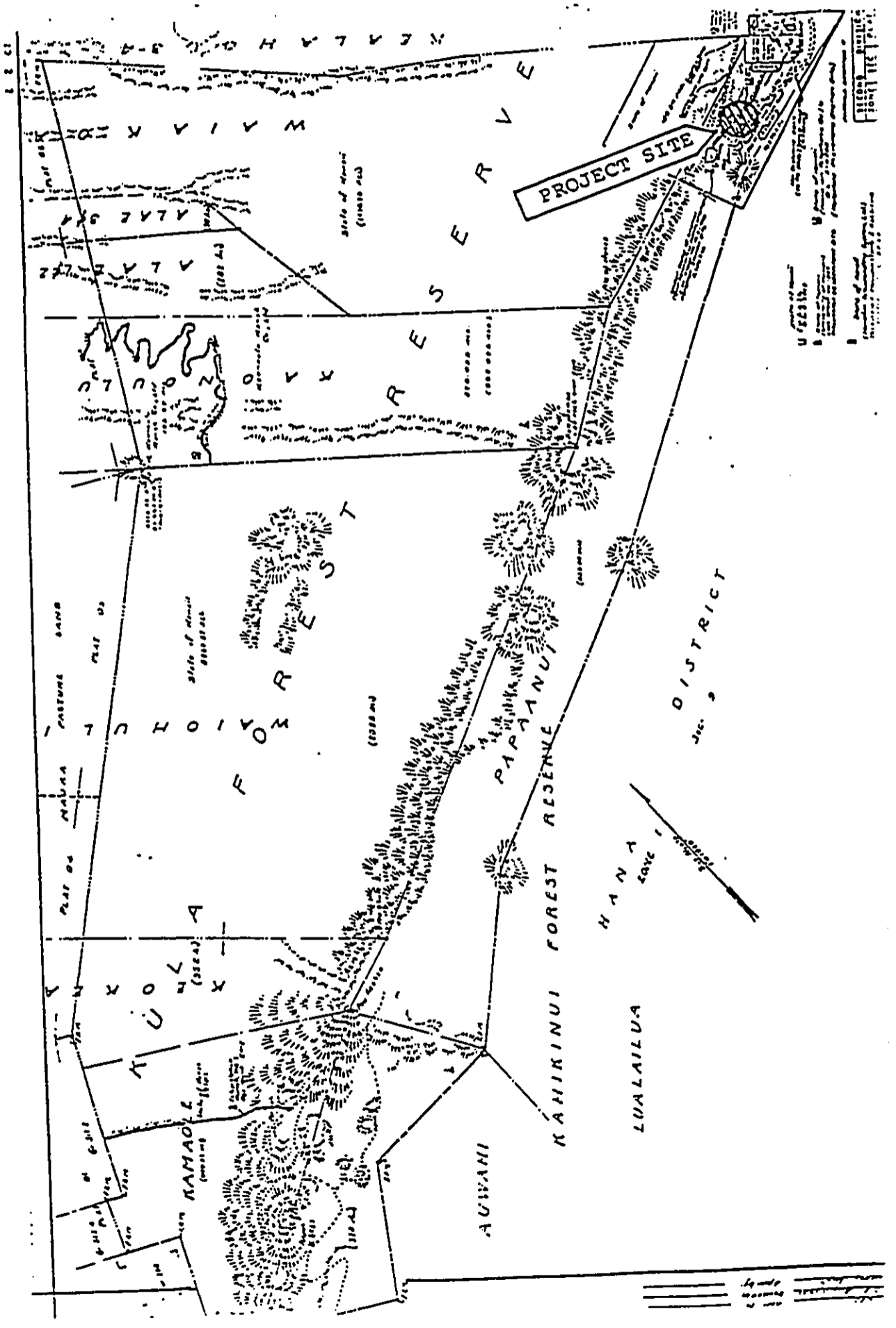
Source ID	Frequency (MHz)	AF#1 (road)	Gamma Ray (parking)	AF#2 (parking)	Messe (roof)	Air Glow (roof)	Average
KGMV visual	62	8.3	11.1	382.0	27.3	708.0	1537.3
KGMV aural	66	4.4	4.4	1241.0	22.1	2476.0	750.0
KGMV total	-	13.2	15.5	2123.0	49.9	9434.0	2537.1
KNXA (horiz)	90	8.9	1.3	301.0	44.3	450.0	261.0
KNXA (vert)	90	40.0	1.3	1131.0	30.0	4503.0	1151.0
KNXA total	-	48.9	3.6	1932	124.3	4953.0	1512.5
UNKNOWN	165	2.3	2.8	15.7	7.1	140.0	33.7
KAI visual	176	50.7	2.3	12514.0	639.0	11366.0	4934.0
KAI aural	180	14.0	1.4	7142.0	179.0	3573.0	2132.0
KAI total	-	64.7	3.7	19756.0	813.0	14941.0	7126.7
KVEB visual	193	19.9	9.96	Not Broadcasting		1762.0	504.0
KVEB aural	198	1.2	0.5	when measured		731.0	244.0
KVEB total	-	21.1	10.5			2493	848.2
KMAU visual	206	1.48	0.28	654.0	8.4	46.4	142.0
KMAU aural	210	1.3	0.3	706.0	3.5	8.9	144.0
KMAU total	-	2.8	0.58	1360.0	11.9	55.3	286.2
KCGG visual	476	0.1	>0.001	0.015	1.44	0.007	0.3
KCGG aural	480	0.13	>0.001	>0.001	1.3	0.013	0.3
KCGG total	-	0.23	>0.001	0.016	3.24	0.025	0.7
TOTALS		154	37	25137	1015	32086	11636

This table was produced from the field strength data by the equation: $P = \frac{e^2}{120\pi}$ for AM or FM modulated sources. For the tv visual transmitters - the equation becomes: $P = (0.4) \frac{e^2}{120\pi}$ to convert peak power to RMS, assuming normal video programming.

where: P = Power flux density in $\mu\text{watts}/\text{meter}^2$
 e = Field strength in mV/m
 120π is the impedance of free space (377 Ω)

Note that the level used for KCGG at Messe was the highest level found. If the average level had been used, the total (visual + aural) would have been around $1.5 \mu\text{watts}/\text{meter}^2$.

EXHIBIT 8



DOCUMENT CAPTURED AS RECEIVED

*file: Hawaii
Travel*



King Broadcasting Company

333 Dexter Avenue North
P.O. Box 24525
Seattle, Washington 98124
206, 448-3733

October 10, 1990

Kenneth P. Hermanson
Vice President & Chief Engineer
Broadcasting

Mr. Lee M. Holmes, President
KFVE
315 Sand Island Road
Honolulu, Hawaii 96819

Re: Haleakala

Dear Mr. Holmes:

I have your October 6th letter relating to your proposed translator facility at our KCGG (TV) site on Haleakala.

The revised location you specify should solve most of the runoff concern. I do suggest that some form of diversion be designed into the foundations to deflect overflow.

To respond to your questions:

1. If you locate to our site, you sublease from us but only with the express permission of the state of Hawaii.
2. The cost of the sublease will depend on additional fees set by the state which we would pass on with overhead and administration costs.

You should consider formally applying to the Hawaii State Board of Land and Natural Resources as they, of course, have jurisdiction.

Feel free to contact me should you have any further questions or comment related to this matter.

Sincerely,

Kenneth P. Hermanson
Kenneth P. Hermanson

KPH:bu
cc: Eric Bremner
Doug Armstrong
Keith Aotaki

EXHIBIT 9

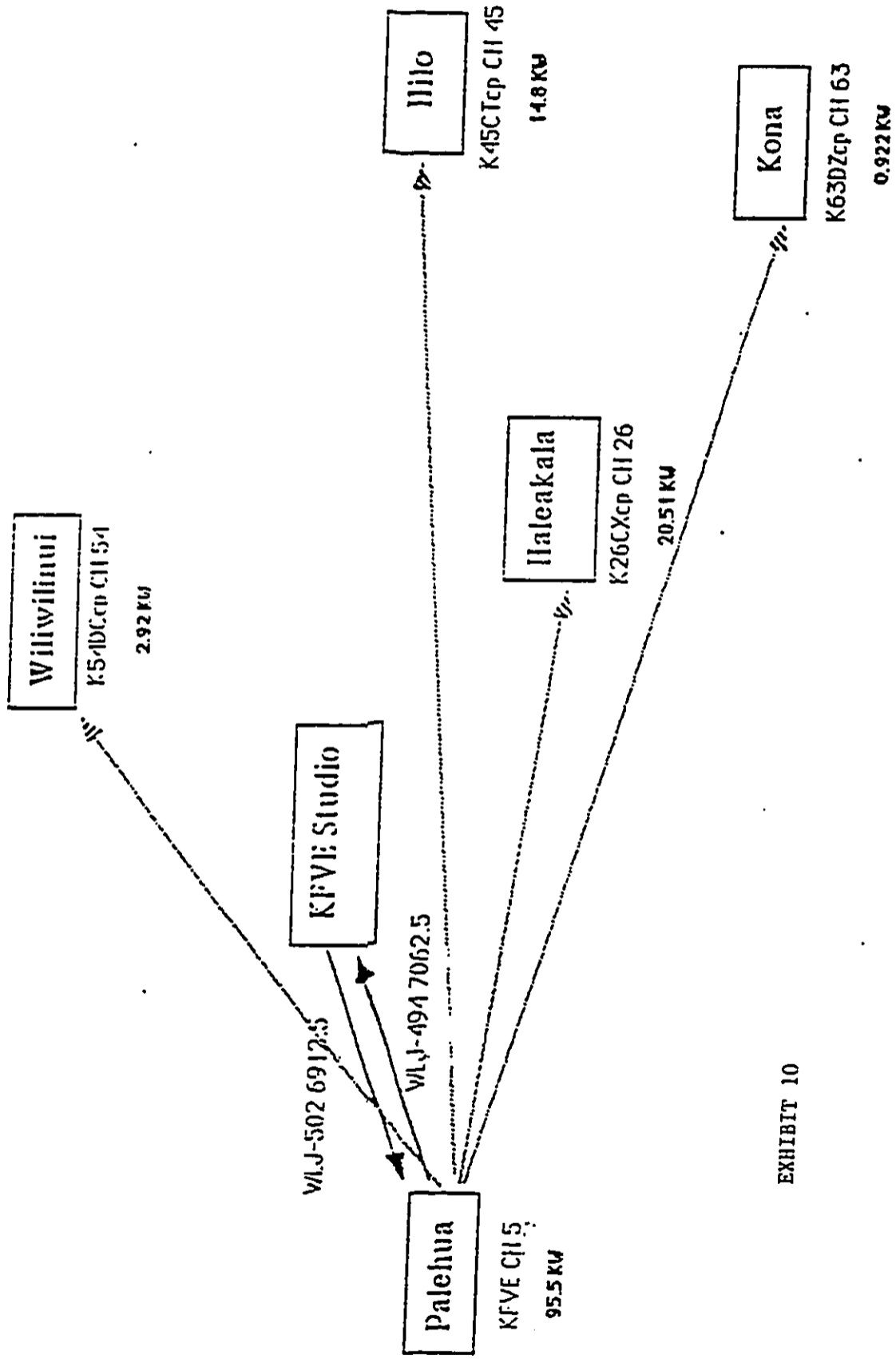


EXHIBIT 10

DOCUMENT CAPTURED AS RECEIVED

United States of America

FEDERAL COMMUNICATIONS COMMISSION



LOW POWER TELEVISION / TELEVISION TRANSLATOR
BROADCAST STATION CONSTRUCTION PERMIT

Official Mailing Address:

KA'IKENA LANI TV CORPORATION
315 SAND ISLAND ROAD
HONOLULU, HI 96819

Authorizing Official:

Keith A. Larson
Chief, LPTV Branch
Video Services Division
Mass Media Bureau

Grant Date: NOV 30 1999

Call sign: K26CX

This permit expires 3:00 am.
local time 18 months after
grant date specified above

Permit File No.: BFTT-880624J5

Subject to the provisions of the Communications Act of 1934, as amended, subsequent acts and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions set forth in this permit, the permittee is hereby authorized to construct the radio transmitting apparatus herein described. Installation and adjustment of equipment not specifically set forth herein shall be in accordance with representations contained in the permittee's application for construction permit except for such modifications as are presently permitted, without application, by the Commission's Rules.

This permit shall be automatically forfeited if the station is not ready for operation within the time specified (date of expiration) or within such further time as the Commission may allow, unless completion of the station is prevented by causes not under the control of the permittee. See Sections 73.3536, 73.3539 and 73.3534 of the Commission's Rules.

Equipment and program tests shall be conducted only pursuant to Sections 74.13 and 74.14 of the Commission's Rules.

Name of permittee:

KA'IKENA LANI TV CORPORATION

Station Location:

HI-WAILULU

Frequency (MHz): 542.0 - 548.0

Offset: Minus

Channel: 26

Hours of Operation: Unlimited

Call sign: K25CX

Permit No.: BPTT-880624

Transmitter location (address or description):

SUMMIT OF MT. HALEAKALA, WAILUKU

Transmitter: Type accepted. See Section 74.750 of the Commission's Rules

Antenna type: (directional or non-directional): Directional

Desc: ECGNER 315UT(SPECIAL) MOUNTED AT THE 23 METER LEVEL RC/AGL.

Major lobe directions (degrees true): 142.0 310.0

Antenna coordinates: North Latitude: 20 42 40.0
West Longitude: 156 15 29.0

Transmitter output power (Visual) : 1.0 kW

Maximum effective radiated power (Visual) : 20.5 kW

Height of radiation center above ground : 23.0 Meters

Height of radiation center above mean sea level : 3052.0 Meters

Overall height of antenna structure above ground (including obstruction
lighting, if any) : 27.0 meters

Obstruction marking and lighting specifications for antenna
structure:

It is to be expressly understood that the issuance of these specifications
is in no way to be considered as precluding additional or modified marking
or lighting as may hereafter be required under the provisions of Section
303(q) of the Communications Act of 1934, as amended.

None Required

Special operating conditions or restrictions:

1. The authorization of a license to operate this station is conditioned upon the use of a transmitter that has been type accepted or meets Commission type acceptance requirements at a visual carrier frequency tolerance of plus/minus 1 kHz. In the event the transmitter has not been type accepted at this tolerance, the permittee shall, in the license application, provide full engineering data that demonstrates compliance with Section 74.750 (c) (3) (iii) of the Commission's Rules.