

## **ENGINEERING EXHIBIT**

### **Application for Post-Transition Digital Television Station Construction Permit**

prepared for

#### **Hearst-Argyle Stations, Inc.**

KMAU-DT Wailuku, HI

Facility ID 64551

Ch. 12 9 kW 747 m

*Hearst-Argyle Stations, Inc.* (“*Hearst-Argyle*”) is the licensee of television station KMAU(TV), analog Channel 12, Wailuku, HI. *Hearst-Argyle* herein proposes construction of the KMAU-DT post-transition digital facility on Channel 12. This channel was established in Appendix B of the Seventh Report and Order in MB Docket 87-278.

The instant proposal specifies an effective radiated power (“ERP”) of 9 kW at 747 meters antenna height above average terrain (“HAAT”), with a directional antenna. The site location is 12.4 km away from the licensed analog Channel 12 site and 10.2 km from the site specified in Appendix B. The Appendix B site is based on the unbuilt digital Channel 29 KMAU-DT Construction Permit facility (BPCDT-19970808KF). KMAU is a satellite station of KITV(TV) (Facility ID 64548, Honolulu, HI) and is not required to build out its transitional digital facility.

The proposed coverage extends beyond that of the Appendix B parameters of 3.94 kW ERP and 1664 meters HAAT in some azimuths, but in some directions it falls short of the licensed KMAU analog Channel 12 Grade B contour. Due to the difference in site location and nearby terrain features, it is not possible to provide an exact match of the analog Grade B contour or that of Appendix B.

As more fully described in its DTV Transition Status Report (BDTRCT-20080219ANV), *Hearst-Argyle* is seeking to locate the KMAU-DT post-transition facility to a new site location at Ulupalakua Ranch. All other full-power television stations located near the analog KMAU site are also planning to locate their digital facilities at Ulupalakua Ranch and utilize a shared tower

location, due to the imminent loss of their current analog site locations. A separate Application for Construction Permit is pending to relocate the analog KMAU Channel 12 facility to this site (BPCT-20070416ADB), using the same antenna as that proposed herein for the post-transition KMAU-DT operation.

The antenna tower structure's height is 61 meters overall height above ground level. Due to the height of the structure and the lack of nearby landing areas (none known within 8 km), notification to the FAA and commensurate FCC Antenna Structure Registration are not required.

The proposed KMAU-DT operation will employ an antenna in common with the post-transition KAI-DT (Channel 7) and KMEB-DT (Channel 10), both Wailuku, HI. The proposed panel-type transmitting antenna, Dielectric model THA-P2SP-4H/8H-1-B, is directional in the horizontal plane. Four levels (bays) of panels will be used, each level consisting of two panels. Electrical beamtilt of 1.7 degrees will be employed. The directional antenna's horizontal plane pattern is depicted in **Figure 1**, showing the major lobes at 150 and 300 degrees True. **Figure 2** provides the theoretical vertical plane (elevation) pattern<sup>1</sup>.

Pursuant to §73.625(b)(3), the calculated average terrain elevation and associated antenna height above average terrain ("HAAT") have been adjusted due to the proximity of the site to the Pacific Ocean. The 180, 225, and 270 degree radials have been truncated to include only the part of the radial extending from 3.2 kilometers to the outermost portion of land area covered by the radial.

A map is supplied as **Figure 3**, which depicts the standard predicted coverage contours. This map includes the boundaries of Wailuku, KMAU-DT's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1), as the entire principal community will be encompassed by the 43 dB $\mu$  contour.

---

<sup>1</sup> These patterns are supplied in terms of relative field. In recent years, FCC Staff have not required pattern data in dBk format however such patterns are available upon request.

The proposed KMAU-DT facility’s predicted service population provides a 112.4 percent match of the Appendix B facility, as detailed in the following table.

**Post-Transition Population Summary**

Population Summary (2000 Census) OET Bulletin 69 method	Appendix B	Proposed
Within Noise Limited Contour	164,017	174,517
Not affected by terrain losses	139,496	156,859
Lost to all interference	0	0
Net DTV Service	<b>139,496</b>	<b>156,859</b>
Match of Appendix B	---	<b>112.45%</b>

**Freeze Waiver Request**

A waiver of the Commission’s August 3, 2004 “freeze” concerning expansion in service area<sup>2</sup> is requested. The proposal complies with the criteria for a freeze waiver request outlined in the Report and Order in the Third Periodic Review.<sup>3</sup> KMAU-DT will use its analog channel for post-transition operation and will employ a new antenna.

The map attached as **Figure 4** supplies a comparison of the 36 dBμ digital service contour corresponding to the proposed KMAU-DT facility and the Appendix B parameters. As shown thereon, the amount of contour extension does not exceed five miles at any azimuth over land. Contour extensions in excess of five miles occur over water (the Pacific Ocean), however extensions over water have previously not been considered to be a violation of the freeze.<sup>4</sup>

Absent the waiver, the KMAU-DT ERP would have to be reduced to 3.8 kW to avoid a contour extension. At this power level, the resulting DTV service contour would not cover 6,597 persons within a land area of 645 sq. km that are presently within the KMAU analog Grade B contour. Of the potential loss area, 3,587 persons (143.7 sq. km) are on the “Big” Island of Hawaii and 3,010 persons (501.3 sq. km) are on Maui. The potential loss area is depicted in **Figure 4A**.

<sup>2</sup>Public Notice “Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes,” DA 04-2446, released August 3, 2004.

<sup>3</sup>Third Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television, MB Docket No. 07-91, FCC 07-228, released December 31, 2007.

<sup>4</sup> For example, see BMPEDT-20041025ADD, concerning KHET-DT Honolulu, HI.

A detailed interference study per OET Bulletin 69<sup>5</sup> shows that the proposal complies with the 0.5 percent limit of new interference caused to other stations' Appendix B facilities, as summarized below. Protection requirements towards authorized Class A stations are also satisfied.

**Post-Transition Interference Analysis Summary**

Ch	Call Sign	State/City Facility ID	Power (kW) HAAT (m)	Dist (km) Bear (°T)	Appendix B Baseline Population (2000 Census)	New Interference From Proposal Population	Percent
11	KHAW-DT	HI HILO 4146	3.35 33	169.9 127.1	---	no interference caused	---
11	KHET-DT	HI HONOLULU 26431	3.2 637	198.6 294.8	862,056	87	0.01%
13	KHVO-DT	HI HILO 64544	3.73 1	169.9 127.1	---	no interference caused	---

**Other Allocation Considerations**

The nearest FCC monitoring station is 188 km distant at Waipahu, HI. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is also located outside the areas specified in §73.1030(a)(1) and §73.1030(b). Thus, notification of the instant proposal to the National Radio Astronomy Observatory at Green Bank, West Virginia, or the Table Mountain Radio Receiving Zone in Boulder County, Colorado is not required. There are no authorized AM stations within 3.2 kilometers of the site, based on information contained within the Commission's database. The site location is beyond the border zones that would require international coordination.

---

<sup>5</sup>FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. A standard cell size of 2 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

KMAU-DT will be a tenant on the new tower structure, along with several other television stations. Various FM radio stations<sup>6</sup> are authorized to transmit from a location 0.12 km from the proposed KMAU-DT site.

The site developer has commissioned a review of the various environmental subjects outlined in Section 1.1307(a)(1-8). The instant application will be amended when that review is complete to provide any additional material that may be necessary. Pending submission of that amendment, a response of “no” has been supplied in response to Item 2 of the associated FCC Form 301 Section III-D checklist.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission’s OET Bulletin Number 65. Based on OET-65 equation (10), and considering the antenna’s relative field in downward elevations (**Figure 2**), the calculated power density attributable to the proposed KMAU-DT facility at locations near the transmitter site at a height of two meters above ground level is depicted in the attached **Figure 5**. This plot assumes the ground elevation surrounding the site is flat, when in fact the terrain elevations decrease in the directions of the antenna maximum energy which serves to result in lower RF levels at ground level. The directional antenna pattern suppresses energy along azimuths towards the rising terrain, to the northeast.

**Figure 5** indicates that the highest RF electromagnetic field level attributable to the proposed KMAU-DT facility is  $2.9 \mu\text{W}/\text{cm}^2$ , which is 1.4 percent of the uncontrolled / general public maximum permissible exposure limit at any location two meters above the assumed flat earth ground level. This occurs at a distance of 62 meters horizontally away from the base of the tower structure. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple

---

<sup>6</sup>KKUA(FM) (Facility ID 26437, Wailuku, HI), KLHI-FM (Fac ID 166083, Kahului, HI), KPOA(FM) (Fac ID 35490, Lahaina, HI), KJMD(FM) (Fac ID 49958, Pukalani, HI), KJKS(FM) (Fac ID 9674, Kahului, HI), KLHI-FM, Fac ID 36242, Lahaina, HI), KONI(FM) (Fac ID 17023, Lanai City, HI), KUHI(FM) (Fac ID 164100, Haiku, HI), KLZY(FM) (Fac ID 164113, Paia, HI), and a new CP (Fac ID 170964, Wailea-Makena, HI) are all authorized at a location within 0.12 km of the proposed KMAU site.

emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

For completeness, *Hearst-Argyle* will participate in a RF electromagnetic field exposure safety program, along with other broadcasters and FCC licensees that will utilize the new tower structure. Following construction of the proposed facility, RF exposure measurements will be conducted to evaluate the level of RF exposure resulting from the KMAU-DT. As necessary, based on these results and considering all emitters, appropriate exposure abatement procedures will be established and followed, in order to comply with the Commission's exposure limits. Such abatement procedures may involve the restriction of access to certain areas and/or facility modifications to reduce RF levels. The applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

### **Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.  
April 21, 2008

**Chesapeake RF Consultants, LLC**  
11993 Kahns Road  
Manassas, VA 20112  
703-650-9600

### List of Attachments

- |           |   |
|-----------|---|
| Figure 1  | Antenna Horizontal Plane Pattern                                      |
| Figure 2  | Antenna Vertical Plane (Elevation) Pattern                            |
| Figure 3  | Proposed Coverage Contours  |
| Figure 4  | Coverage Contour Comparison   |
| Figure 4A | Potential Loss Area Without Waiver                                    |
| Figure 5  | Calculated RF Electromagnetic Field                                   |
| Form 301  | Saved Version of Engineering Sections from FCC Form at Time of Upload |

*This material was entered April 21, 2008 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*



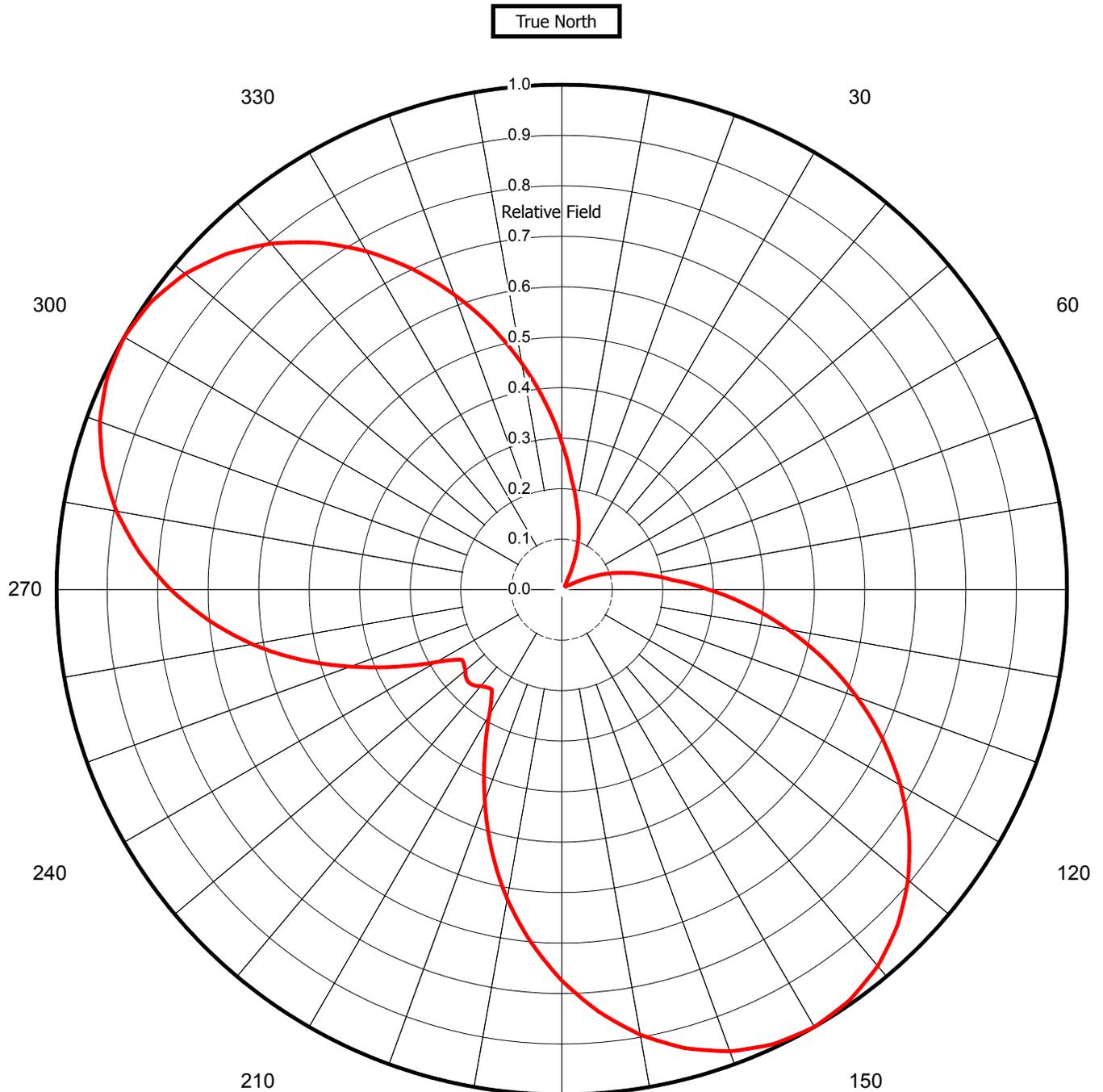
Proposal Number **C-00447**  
Date **28-Jun-06**  
Call Letters **KMAU** Channel  
Location **Haleakala, Maui, HI**  
Customer **Maui LLC**  
Antenna Type **THA-P2SP-4H/8H-1-B**

**Figure 1**  
**Antenna Horizontal**  
**Plane Pattern**

### AZIMUTH PATTERN

Gain **2.50 (3.98 dB)**  
Calculated / Measured **Calculated**

Frequency **207.00 MHz**  
Drawing # **THA-P2SP-2070**

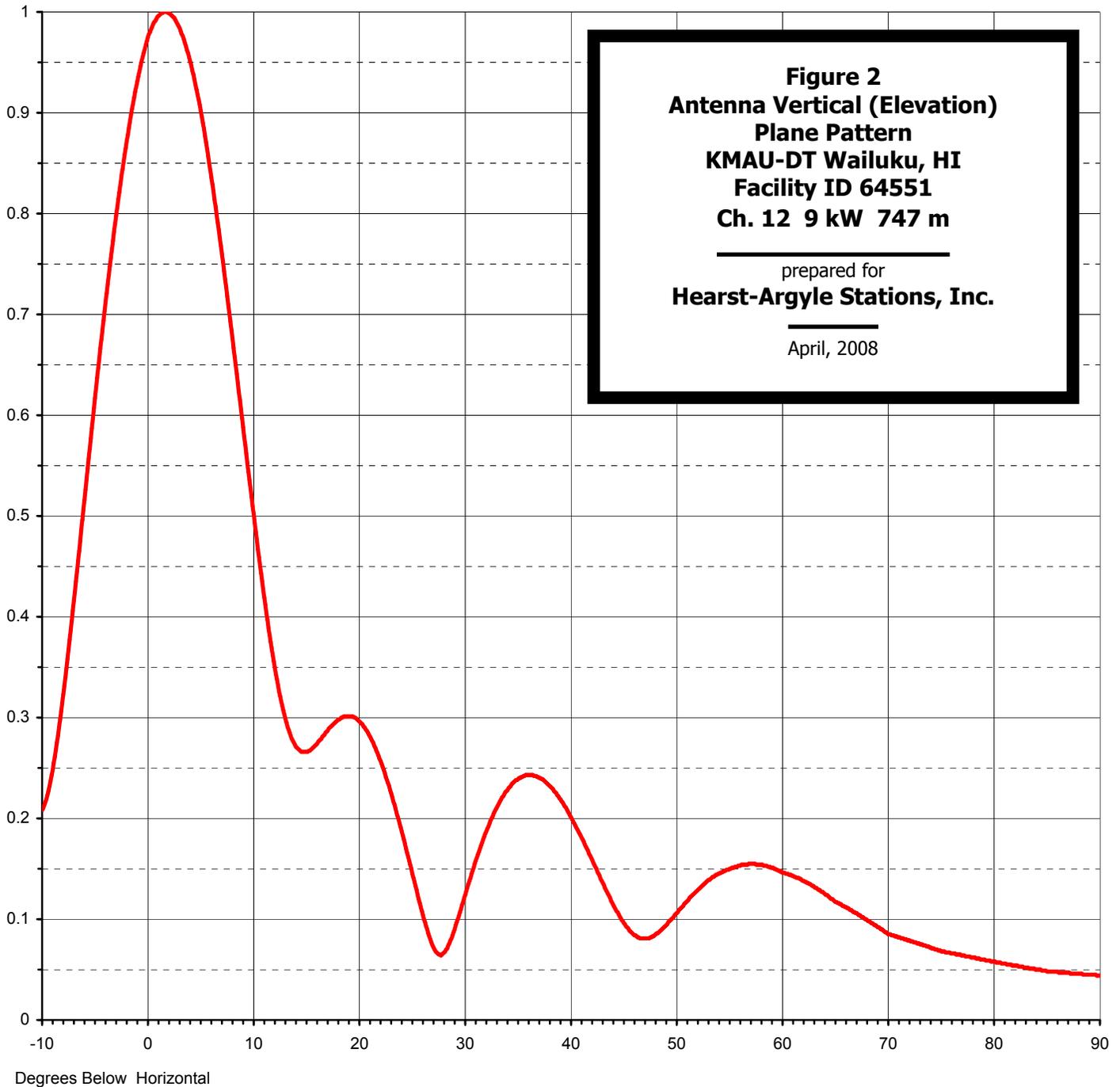


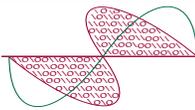


Proposal Number **C-00447**  
Date **28-Jun-06**  
Call Letters **KMAU** Channel **12**  
Location **Haleakala, Maui, HI**  
Customer **Maui LLC**  
Antenna Type **THA-P2SP-4H/8H-1-B**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>4.10 ( 6.13 dB )</b>	Beam Tilt	<b>1.70 deg</b>
RMS Gain at Horizontal	<b>3.90 ( 5.91 dB )</b>	Frequency	<b>207.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>04H041170-90</b>



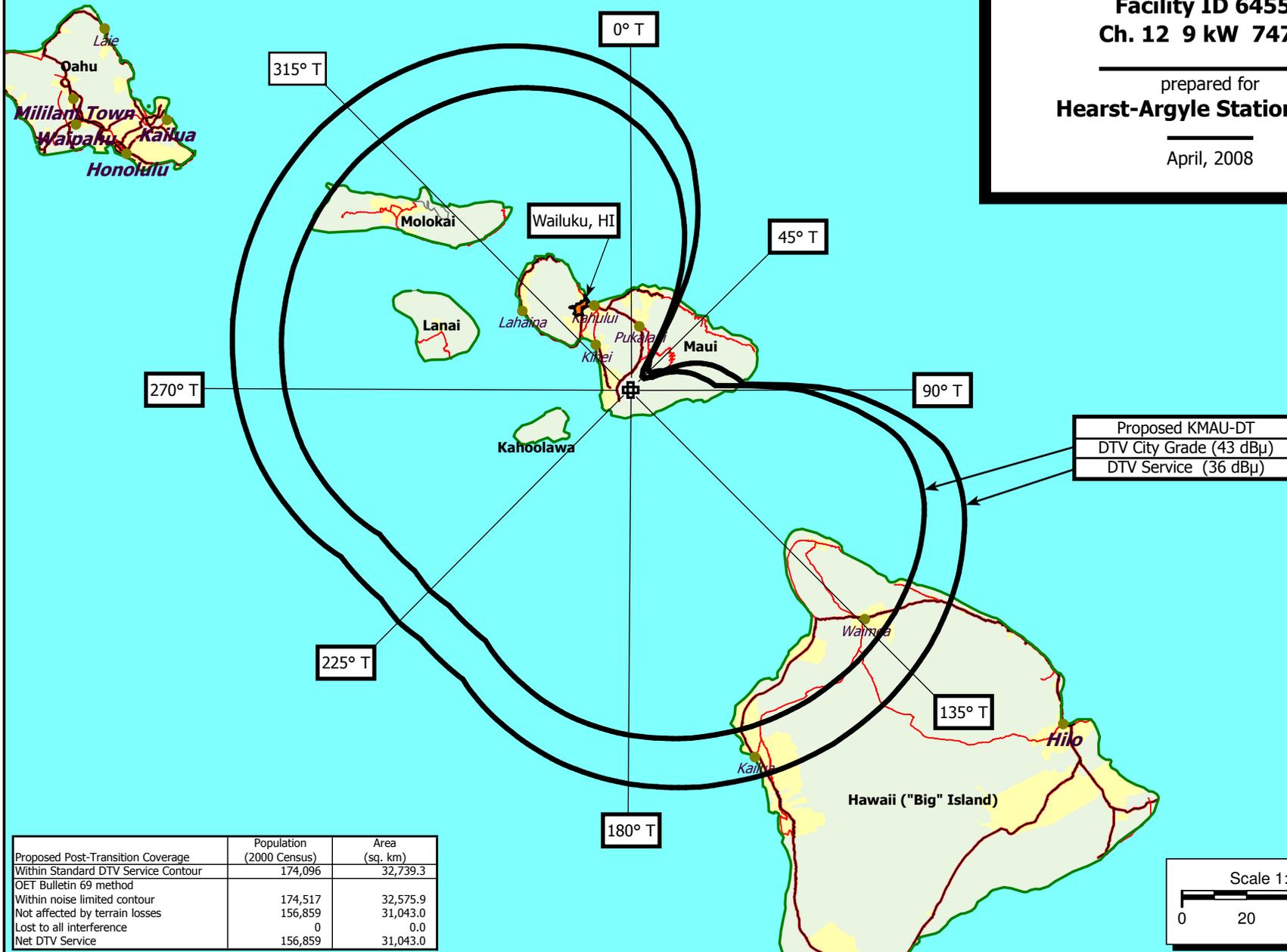


**Chesapeake RF Consultants, LLC**  
 Radiofrequency Consulting Engineers  
 Digital Television and Radio

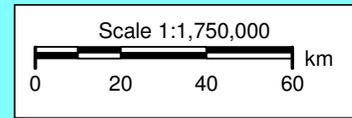
**Figure 3**  
**Proposed Coverage Contours**  
**KMAU-DT Wailuku, HI**  
**Facility ID 64551**  
**Ch. 12 9 kW 747 m**

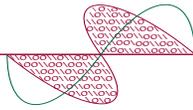
prepared for  
**Hearst-Argyle Stations, Inc.**

April, 2008



Proposed Post-Transition Coverage	Population (2000 Census)	Area (sq. km)
Within Standard DTV Service Contour	174,096	32,739.3
OET Bulletin 69 method		
Within noise limited contour	174,517	32,575.9
Not affected by terrain losses	156,859	31,043.0
Lost to all interference	0	0.0
Net DTV Service	156,859	31,043.0



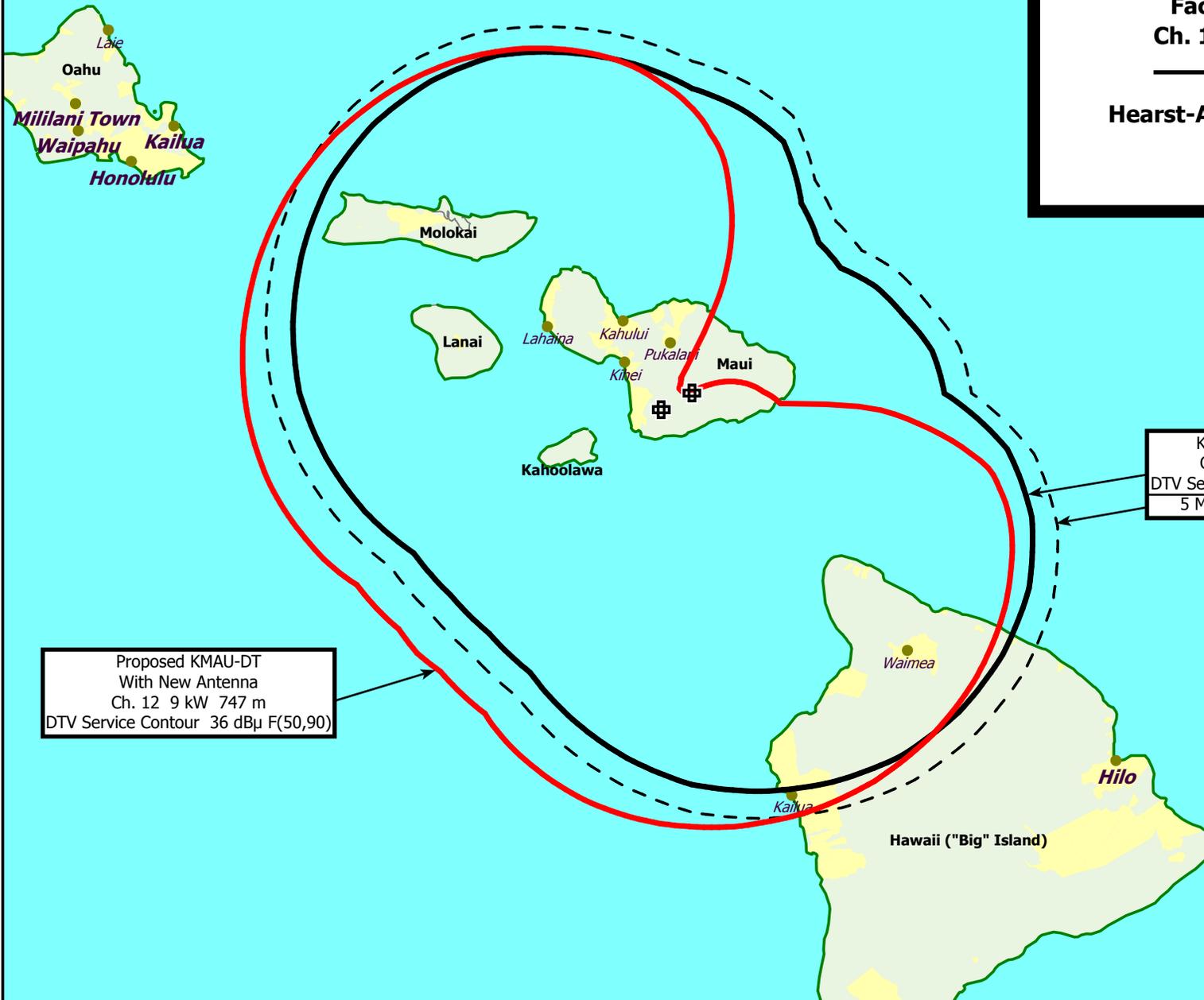


**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 4**  
**Coverage Contour Comparison**  
**KMAU-DT Wailuku, HI**  
**Facility ID 64551**  
**Ch. 12 9 kW 747 m**

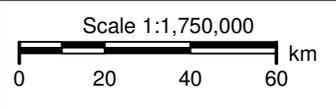
prepared for  
**Hearst-Argyle Stations, Inc.**

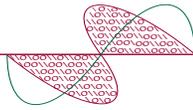
April, 2008



Proposed KMAU-DT  
With New Antenna  
Ch. 12 9 kW 747 m  
DTV Service Contour 36 dB $\mu$  F(50,90)

KMAU-DT FCC Appendix B  
Ch. 12 3.94 kW 1664 m  
DTV Service Contour 36 dB $\mu$  F(50,90)  
5 Mile Contour Extension Limit





**Chesapeake RF Consultants, LLC**

Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 4A**  
**Potential Loss Area Without Waiver**  
**KMAU-DT Wailuku, HI**  
**Facility ID 64551**  
**Ch. 12 9 kW 747 m**

prepared for  
**Hearst-Argyle Stations, Inc.**

April, 2008

Lake  
Oahu  
Mililani Town  
Waipahu  
Kailua  
Honolulu

Molokai

Lanai

Lahaina

Kahului

Pukalani

Kihei

Maui

Kaʻanaloa

Waimea

Hilo

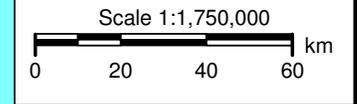
Kailua

Hawaii ("Big" Island)

Potential Loss Within Analog Grade B  
Without Waiver of Freeze  
Population: 6,597  
Land Area: 645.0 sq. km

Licensed KMAU-TV Analog Ch. 12  
Grade B Contour 56 dBμ F(50,50)

KMAU-DT at 3.8 kW 747 m  
Maximum ERP Without Freeze Waiver  
DTV Service Contour 36 dBμ F(50,90)





**Figure 5**  
**Calculated RF Electromagnetic Field**  
**KMAU-DT Wailuku, HI**  
**Facility ID 64551**  
**Ch. 12 9 kW 747 m**  

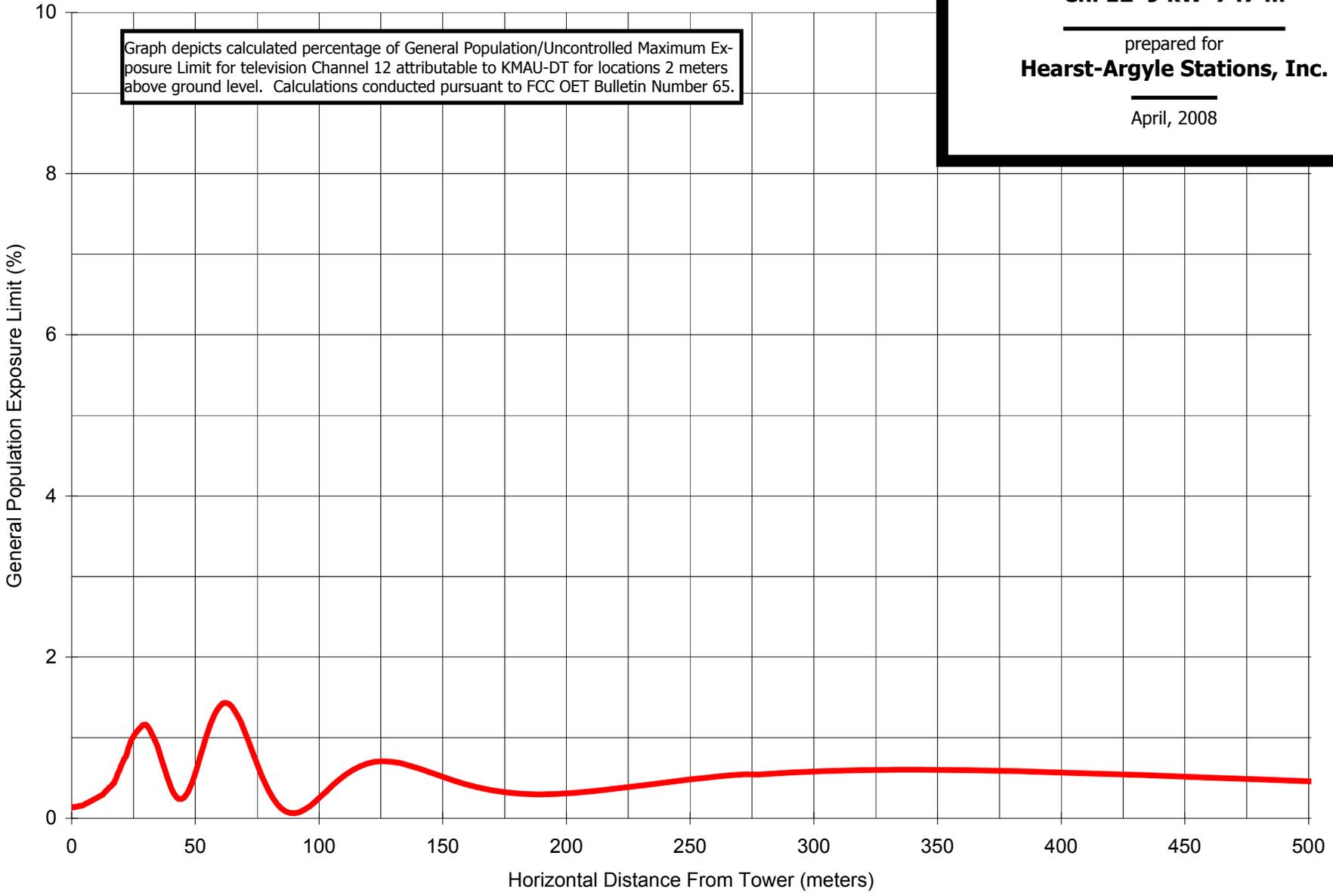
---

**prepared for**  
**Hearst-Argyle Stations, Inc.**  

---

**April, 2008**

Graph depicts calculated percentage of General Population/Uncontrolled Maximum Exposure Limit for television Channel 12 attributable to KMAU-DT for locations 2 meters above ground level. Calculations conducted pursuant to FCC OET Bulletin Number 65.



**SECTION III-D - DTV Engineering**

**Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.**

**Pre-Transition Certification Checklist:** An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

**Post-Transition Expedited Processing.** An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:	
(a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622.	<input checked="" type="radio"/> Yes <input type="radio"/> No
(b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input checked="" type="radio"/> No
(c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622.	<input type="radio"/> Yes <input type="radio"/> No
(d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
(e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. Applicant must <b>submit the Exhibit</b> called for in Item 13.	<input type="radio"/> Yes <input checked="" type="radio"/> No
3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community.	<input checked="" type="radio"/> Yes <input type="radio"/> No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.	<input checked="" type="radio"/> Yes <input type="radio"/> No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	<input checked="" type="radio"/> Yes <input type="radio"/> No

**SECTION III-D - DTV Engineering**

**TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

1. Channel Number: DTV 12 Analog TV, if any 12	
2. Zone: <input type="radio"/> I <input checked="" type="radio"/> II <input type="radio"/> III	
3. Antenna Location Coordinates: (NAD 27) Latitude: Degrees 20 Minutes 39 Seconds 37 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 156 Minutes 21 Seconds 46 <input checked="" type="radio"/> West <input type="radio"/> East	
4. Antenna Structure Registration Number: <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA	
5. Antenna Location Site Elevation Above Mean Sea Level:	1361 meters
6. Overall Tower Height Above Ground Level:	61 meters
7. Height of Radiation Center Above Ground Level:	49 meters
8. Height of Radiation Center Above Average Terrain :	747 meters

9. Maximum Effective Radiated Power (average power): 9 kW

10. Antenna Specifications:

a. Manufacturer DIE Model THA-P2SP-4H/8H-1-B

b. Electrical Beam Tilt:  
1.7 degrees  Not Applicable

c. Mechanical Beam Tilt:  
degrees toward azimuth  
degrees True  Not Applicable  
Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). [Exhibit 42]

d. Polarization:  
 Horizontal  Circular  Elliptical

e. Directional Antenna Relative Field Values:  Not applicable (Nondirectional)

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]  
[Relative Field Values]

**10e. Directional Antenna Relative Field Values**

[Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]

e. Directional Antenna Relative Field Values:

Rotation (Degrees):  No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	0.291	10	0.17	20	0.09	30	0.02	40	0.01	50	0.01
60	0.02	70	0.09	80	0.17	90	0.291	100	0.455	110	0.622
120	0.774	130	0.895	140	0.973	150	1	160	0.973	170	0.895
180	0.774	190	0.622	200	0.445	210	0.287	220	0.249	230	0.249
240	0.287	250	0.445	260	0.622	270	0.774	280	0.895	290	0.973
300	1	310	0.973	320	0.895	330	0.774	340	0.622	350	0.455
Additional Azimuths		225	0.26								

[Relative Field Polar Plot](#)

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 43]

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616?  Yes  No [Exhibit 44]

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 45]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 46]  
If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.  
  
By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.  
  
If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R Section 1.1311.

**PREPARERS CERTIFICATION ON SECTION III MUST BE COMPLETED AND SIGNED.**

**SECTION III - PREPARER'S CERTIFICATION**

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.	Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature	Date 4/21/2008	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 11993 KAHNS ROAD		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20112 -
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

---

Any specified rotation has already been applied to the plotted pattern.  
Field strength values shown on a rotated pattern may differ from the listed values because intermediate azimuths are interpolated between entered azimuths.

