TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
DTV STATION KWHH-DT
HILO, HAWAII
CH 23 14.9 KW (MAX-DA) 33 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of LeSEA Broadcasting Corporation in support of an application for modification of construction permit for DTV station KWHH-DT on channel 23 at Hilo, Hawaii. Station KWHH-DT is currently authorized (BPCDT-19991020AAJ) to operate on channel 23 with a maximum directional effective radiated power (ERP) of 35 kilowatts and an antenna radiation center height above average terrain (HAAT) of 33 meters. It is proposed to modify the authorized facility by decreasing the maximum directional ERP to 14.9 kilowatts. No other changes are proposed.

Compliance with the current DTV Freeze

As shown on Figure 3 the proposed 41 dBu noise-limited contour is wholly encompassed by the authorized 41 dBu contour. Therefore the proposed facility complies with the current FCC *Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes*.

Proposed Operation

It is proposed to operate on DTV channel 23 from the currently authorized site coordinates, N 19°43'00" W 155°08'13" (NAD27). It is also proposed to operate with a Dielectric TLP-8D horizontally polarized directional antenna, a maximum ERP of 14.9 kW and an HAAT of 33 meters.

Notification to the FAA is not necessary, as there is no proposed change in the overall height of the existing structure. The antenna structure registration number (ASRN) for the tower is 1029536. Figure 1 provides a sketch of the proposed antenna and supporting structure.

Response to Paragraph 10 - Antenna Data

Figure 2 provides horizontal and vertical plane radiation pattern data for the Dielectric TLP-8D directional antenna.

Response to Paragraph 12 – City Coverage

Figure 3 is a map showing the FCC predicted DTV coverage contours. The map provides the FCC predicted 41 dBu f(50,90) noise-limited contour and 48 dBu f(50,90) city grade contour. The extent of the contours has been calculated using the normal FCC prediction method and a 3 second digitized terrain database. The Hilo city limits were derived from information contained in the 2000 U.S. Census for Hawaii. As shown, the 48 dBu contour encompasses the entire city limits of Hilo.

NTSC/DTV/Class A Allocation Considerations

Figure 4 is a DTV channel 23 separation study toward other NTSC and DTV allotments based on a 50 kilometer "buffer". Although the separation requirements are only applicable to new DTV allotments, they can be used as an indication of which stations have the potential of receiving interference from the proposed channel 23 DTV operation.

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin, which demonstrates that the proposal complies with the interference protection provisions of Section 73.623(c)(2).[1] Interference calculations for the proposed operation are summarized below with respect to all authorized NTSC, DTV, and Class A facilities.

[1] The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. A Sun based processor computer system was employed.

Station	Facility	Ch.	City	State	FCC Service Population	Proposed Interference Population	% of Baseline
KHBC-DT	PLN	22	HILO	HI	--	--	None
KFVE-DT	PLN	23	HONOLULU	HI	--	--	None
KFVE-DT	CP	24	WAILUKU	HI	--	--	None
KGMV-DT	CP	24	WAILUKU	HI	--	--	None
KGMV-DT	PLN	24	WAILUKU	HI	--	--	None

As shown above, the proposal on channel 23 complies with the FCC's interference standards towards all authorized NTSC, DTV and Class A stations.

Objectionable Interference

There are no authorized AM stations within 5 kilometers (3 miles) of the proposed transmitter site. Figure 5 provides a tabulation of those full service FM and TV stations within 16 kilometers of the proposed site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed DTV operation.

The proposed transmitter site is 4147 kilometers from the Canadian border and is 4009 kilometers from the US/Mexican border area. The closest FCC monitoring is at Waipahu, Hawaii, approximately 351 kilometers to the northwest. The proposed DTV site is outside the National Radio Quiet Zone (VA/WVA), the closest point being 7,339 kilometers to the northeast. The closest point of the Table Mountain Radio Quiet Zone (CO) is 5,232 kilometers to the northeast. The closest radio astronomy site operating on TV channel 37 is at Mauna Kea, Hawaii located approximately 35 kilometers to the west. These separations are sufficient to not be a concern for coordination purposes.

Response to Paragraph 13 - Environmental Protection Act

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency

Electromagnetic Fields[2]. The power density at the base of the tower was calculated using the appropriate procedures contained in the Bulletin.

The radiation center for the proposed DTV antenna is located 46 meters above ground level. The maximum DTV ERP is 14.9 kW. A conservative vertical plane relative field value of 0.25 (for angles below 60 degrees downward) is assumed for the antenna's downward radiation (see Sheet 4 of Figure 2). The calculated power density at a point 2 meters above ground level is 0.0161 mW/cm^2. This is 4.6% of the FCC's recommended limit of 0.35 mW/cm^2 for DTV channel 23 for an "uncontrolled" environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the FCC'S RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with RFR warning signs. Furthermore, in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure.

Finally, it is noted that this technical exhibit only addresses the potential for radio frequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already has been provided to the FCC by the tower owner as part of the tower registration process.

[2] OET Bulletin 65, Second Edition 97-01, August, 1997.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

Jerome J. Manarchuck

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Sarasota, California 34237
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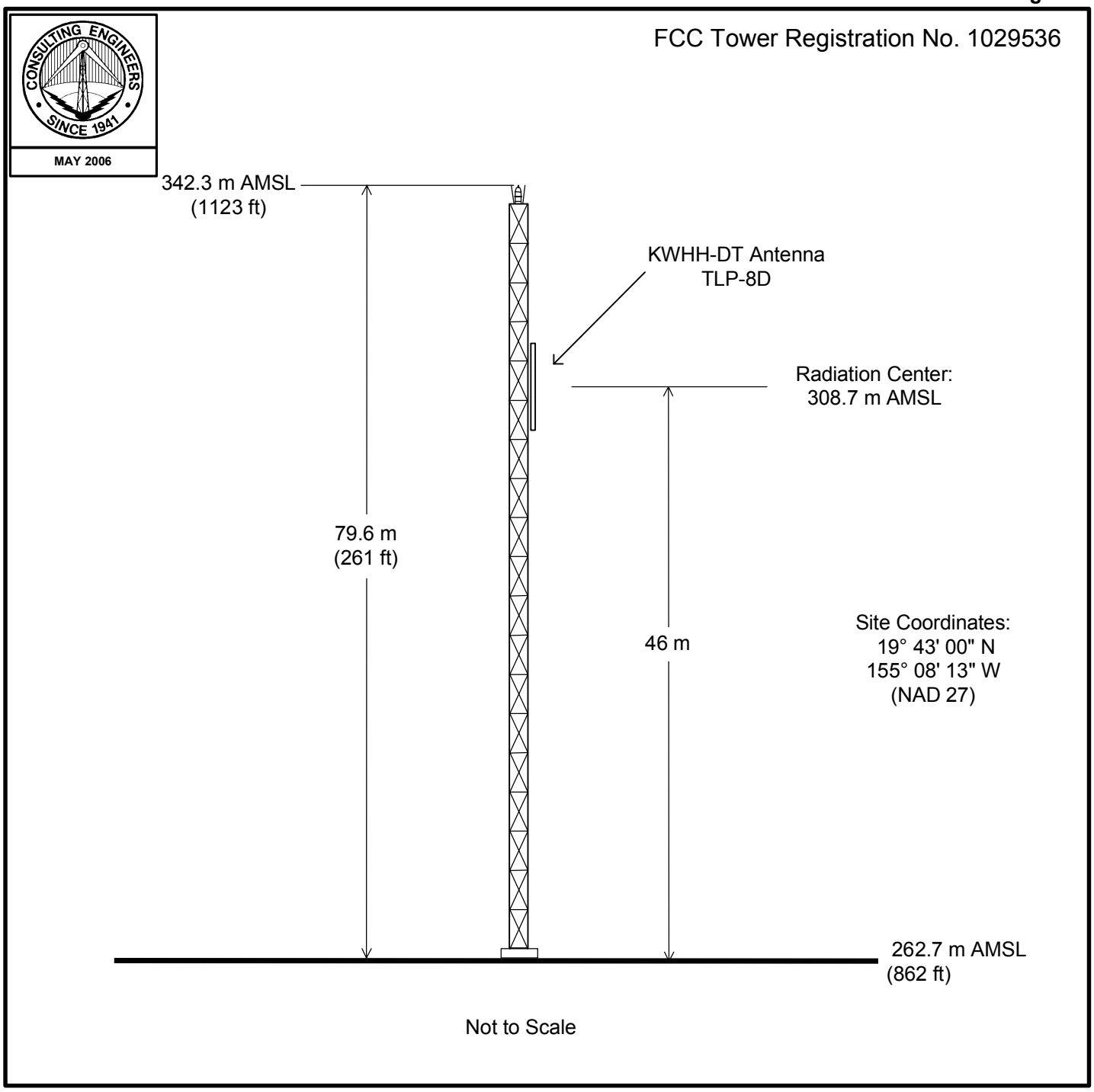
May 12, 2006

Figure 1



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

DTV STATION KWHH-DT

HILO, HAWAII

CH 23 14.9 KW (MAX-DA) 33 M

du Treil, Lundin & Rackley, Inc., Sarasota, Florida

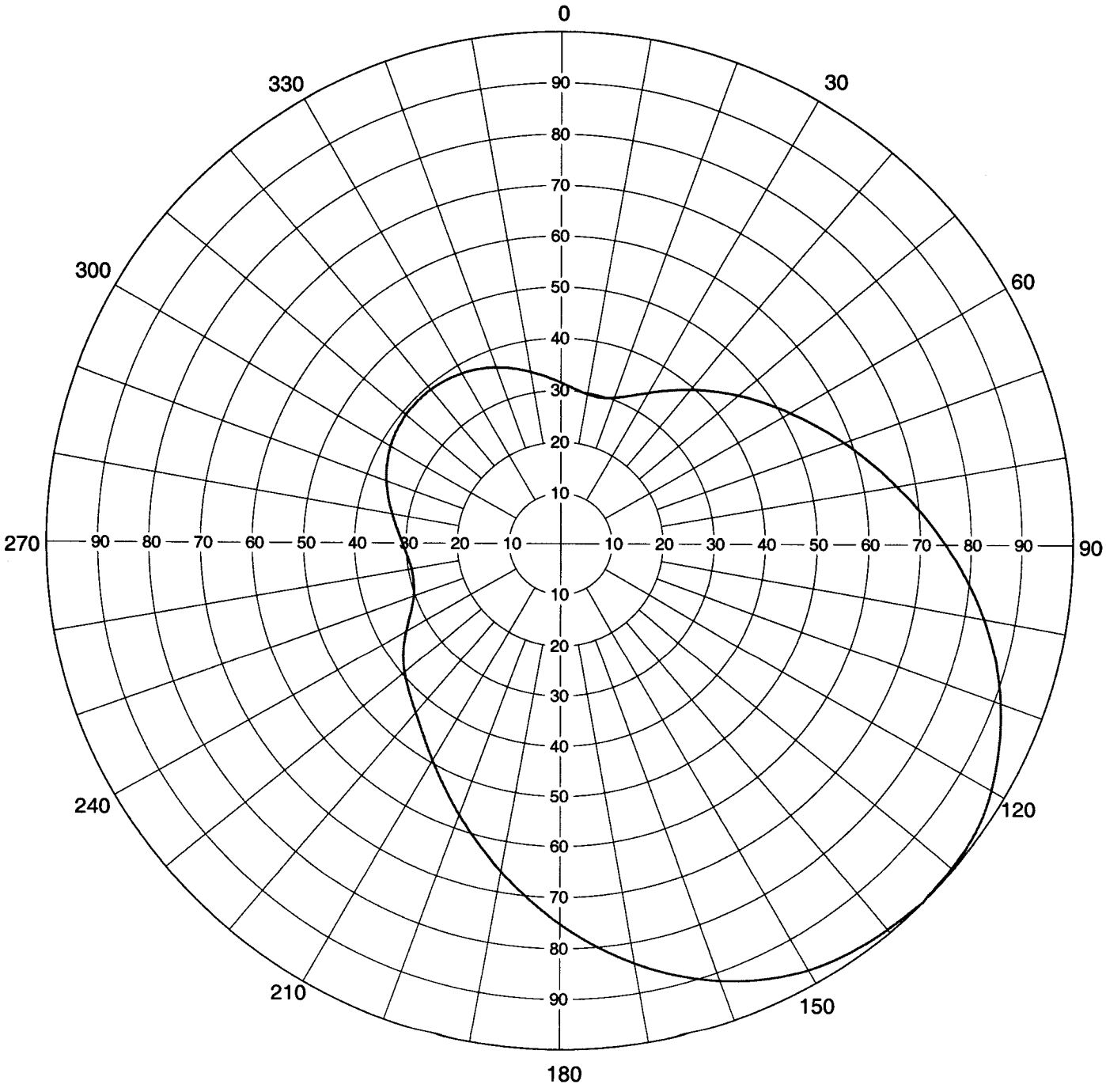
Exhibit No.
Fig. 2 - Sheet 1

Dielectric

Date	**11 May 2006**		
Call Letters	**KWHH-DT**	Channel	**23**
Location	**HILO, HI**		
Customer			
Antenna Type	**TLP-8D**		

AZIMUTH PATTERN

Gain	**2.90 (4.62 dB)**	Frequency	**527 MHz**
Calculated / Measured	**Calculated**	Drawing #	**TLP-D**



Remarks:

Exhibit No.
Fig. 2 - Sheet 2

Dielectric

Date **11 May 2006**
Call Letters **KWHH-DT** Channel **23**
Location **HILO, HI**
Customer
Antenna Type **TLP-8D**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TLP-D**

Angle	Field	ERP (kW)	ERP (dBk)
0	0.315	1.5	1.70
10	0.297	1.3	1.19
20	0.304	1.4	1.39
30	0.341	1.7	2.39
40	0.394	2.3	3.64
50	0.452	3.0	4.83
60	0.516	4.0	5.98
70	0.586	5.1	7.09
80	0.664	6.6	8.18
90	0.750	8.4	9.23
100	0.838	10.5	10.20
110	0.914	12.4	10.95
120	0.971	14.0	11.48
130	0.996	14.8	11.70
140	0.992	14.7	11.66
150	0.970	14.0	11.47
160	0.918	12.6	10.99
170	0.841	10.5	10.23
180	0.752	8.4	9.26
190	0.660	6.5	8.12
200	0.572	4.9	6.88
210	0.495	3.7	5.62
220	0.436	2.8	4.52
230	0.395	2.3	3.66
240	0.345	1.8	2.49
250	0.303	1.4	1.36
260	0.294	1.3	1.10
270	0.307	1.4	1.47
280	0.332	1.6	2.15
290	0.360	1.9	2.86
300	0.381	2.2	3.35
310	0.392	2.3	3.60
320	0.392	2.3	3.60
330	0.383	2.2	3.40
340	0.365	2.0	2.98
350	0.341	1.7	2.39

Maxima

Angle	Field	ERP (kW)	ERP (dBk)
0	0.315	1.5	1.70
135	1.000	14.9	11.73
315	0.393	2.3	3.62

Minima

Angle	Field	ERP (kW)	ERP (dBk)
13	0.296	1.3	1.16
258	0.293	1.3	1.07

Remarks:

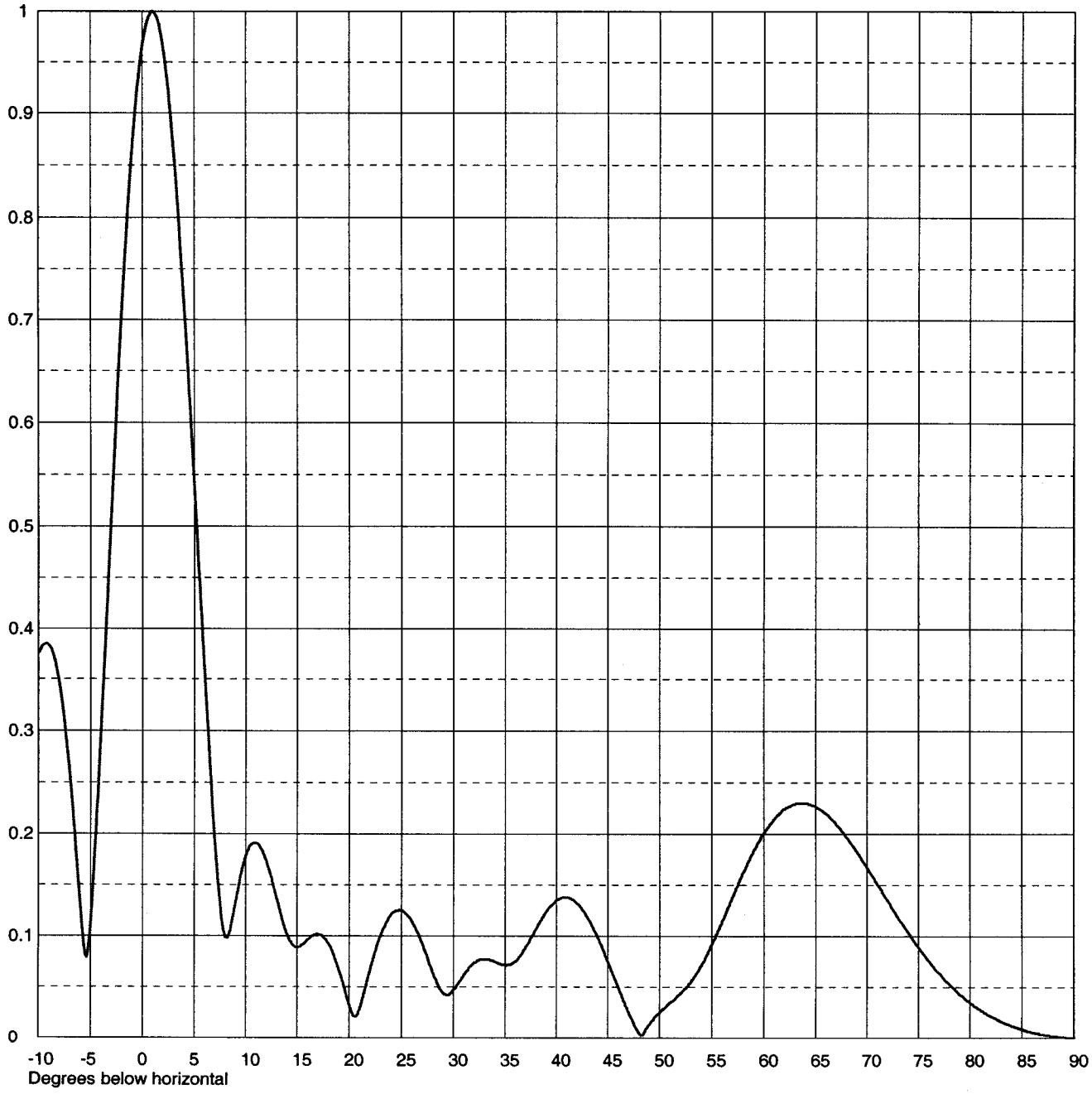
Exhibit No.
Fig. 2 - Sheet 3

Dielectric

Date	**28 Apr 2006**		
Call Letters	**KWHH-DT**	Channel	**23**
Location	**HILO, HI**		
Customer			
Antenna Type	**TLP-8D**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**8.0 (9.03 dB)**	Beam Tilt	**1.00 Degrees**
RMS Gain at Horizontal	**7.5 (8.75 dB)**	Frequency	**527.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**08L080100-90**



Remarks:

Exhibit No.
Fig. 2 - Sheet 4

Dielectric

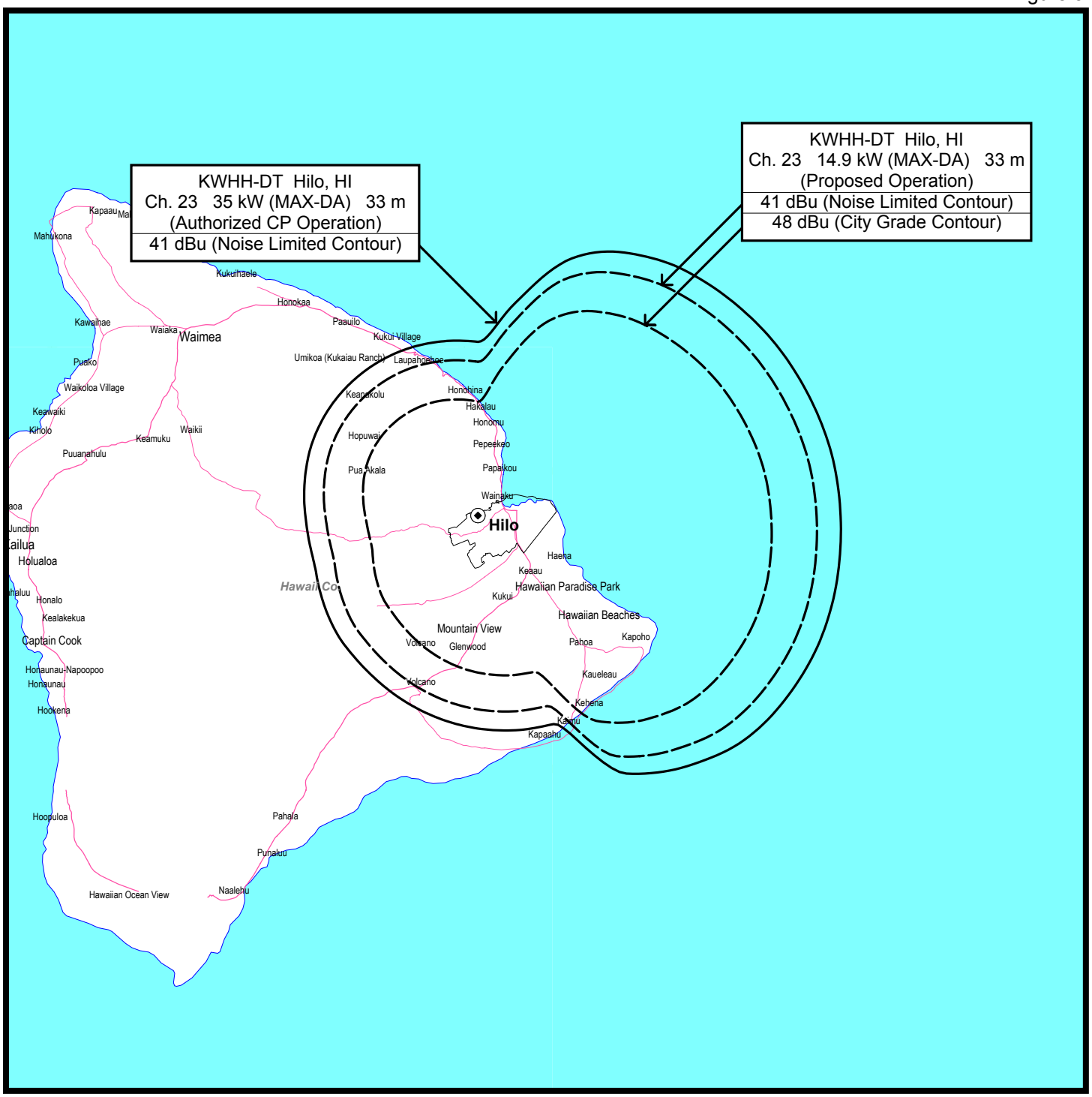
Date **28 Apr 2006**
Call Letters **KWHH-DT** Channel **23**
Location **HILO, HI**
Customer
Antenna Type **TLP-8D**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **08L080100-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.374	2.4	0.931	10.6	0.190	30.5	0.054	51.0	0.035	71.5	0.143
-9.5	0.384	2.6	0.911	10.8	0.191	31.0	0.062	51.5	0.039	72.0	0.135
-9.0	0.383	2.8	0.889	11.0	0.191	31.5	0.069	52.0	0.044	72.5	0.127
-8.5	0.371	3.0	0.865	11.5	0.186	32.0	0.074	52.5	0.049	73.0	0.119
-8.0	0.346	3.2	0.839	12.0	0.174	32.5	0.077	53.0	0.055	73.5	0.111
-7.5	0.308	3.4	0.811	12.5	0.157	33.0	0.077	53.5	0.063	74.0	0.104
-7.0	0.258	3.6	0.781	13.0	0.137	33.5	0.077	54.0	0.071	74.5	0.096
-6.5	0.197	3.8	0.750	13.5	0.118	34.0	0.075	54.5	0.081	75.0	0.089
-6.0	0.130	4.0	0.717	14.0	0.102	34.5	0.073	55.0	0.092	75.5	0.082
-5.5	0.081	4.2	0.683	14.5	0.092	35.0	0.072	55.5	0.103	76.0	0.076
-5.0	0.114	4.4	0.648	15.0	0.089	35.5	0.072	56.0	0.115	76.5	0.070
-4.5	0.201	4.6	0.613	15.5	0.091	36.0	0.075	56.5	0.127	77.0	0.064
-4.0	0.303	4.8	0.576	16.0	0.096	36.5	0.081	57.0	0.139	77.5	0.058
-3.5	0.408	5.0	0.539	16.5	0.100	37.0	0.089	57.5	0.150	78.0	0.053
-3.0	0.513	5.2	0.502	17.0	0.102	37.5	0.098	58.0	0.162	78.5	0.048
-2.8	0.555	5.4	0.465	17.5	0.099	38.0	0.107	58.5	0.173	79.0	0.043
-2.6	0.595	5.6	0.428	18.0	0.093	38.5	0.116	59.0	0.183	79.5	0.039
-2.4	0.634	5.8	0.392	18.5	0.082	39.0	0.124	59.5	0.192	80.0	0.035
-2.2	0.672	6.0	0.355	19.0	0.067	39.5	0.130	60.0	0.201	80.5	0.031
-2.0	0.709	6.2	0.320	19.5	0.050	40.0	0.135	60.5	0.208	81.0	0.028
-1.8	0.744	6.4	0.286	20.0	0.032	40.5	0.138	61.0	0.215	81.5	0.025
-1.6	0.778	6.6	0.253	20.5	0.021	41.0	0.138	61.5	0.220	82.0	0.022
-1.4	0.809	6.8	0.221	21.0	0.029	41.5	0.136	62.0	0.224	82.5	0.019
-1.2	0.839	7.0	0.192	21.5	0.047	42.0	0.132	62.5	0.227	83.0	0.017
-1.0	0.866	7.2	0.165	22.0	0.067	42.5	0.126	63.0	0.229	83.5	0.014
-0.8	0.891	7.4	0.141	22.5	0.085	43.0	0.119	63.5	0.230	84.0	0.012
-0.6	0.914	7.6	0.122	23.0	0.100	43.5	0.109	64.0	0.230	84.5	0.011
-0.4	0.934	7.8	0.107	23.5	0.112	44.0	0.099	64.5	0.229	85.0	0.009
-0.2	0.952	8.0	0.099	24.0	0.121	44.5	0.087	65.0	0.227	85.5	0.007
0.0	0.967	8.2	0.098	24.5	0.125	45.0	0.075	65.5	0.223	86.0	0.006
0.2	0.979	8.4	0.103	25.0	0.125	45.5	0.062	66.0	0.220	86.5	0.005
0.4	0.988	8.6	0.111	25.5	0.121	46.0	0.050	66.5	0.215	87.0	0.004
0.6	0.995	8.8	0.121	26.0	0.114	46.5	0.037	67.0	0.209	87.5	0.003
0.8	0.999	9.0	0.132	26.5	0.104	47.0	0.025	67.5	0.203	88.0	0.002
1.0	1.000	9.2	0.143	27.0	0.092	47.5	0.015	68.0	0.197	88.5	0.001
1.2	0.998	9.4	0.154	27.5	0.078	48.0	0.005	68.5	0.190	89.0	0.001
1.4	0.994	9.6	0.163	28.0	0.064	48.5	0.006	69.0	0.183	89.5	0.000
1.6	0.987	9.8	0.171	28.5	0.052	49.0	0.013	69.5	0.175	90.0	0.000
1.8	0.977	10.0	0.178	29.0	0.044	49.5	0.020	70.0	0.167		
2.0	0.964	10.2	0.183	29.5	0.042	50.0	0.025	70.5	0.159		
2.2	0.949	10.4	0.188	30.0	0.047	50.5	0.030	71.0	0.151		

Remarks:



FCC PREDICTED COVERAGE CONTOURS

DTV STATION KWHH-DT
HILO, HAWAII
CH 23 14.9 KW (MAX-DA) 33 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 4

CDBS TV/DTV SEPARATION STUDY

Job Title: Separation Buffer: 50 km
Channel: 23 Coordinates: 19-43-00 155-08-13
Class: Zone: II
Type: DT

Call Id	City St	Status	File Num	Channel Zone	ERP HAAT	DA	Id	Latitude Longitude	Bear	Dist. (km)	Req. min	max
DKHBCT	HILO			22( )	50.000	D		19-43-51	77.4	7.2	24.0	110.0
	HI	DTV		II	33			155-04-11		16.78	Clear	
KHBC-TV	HILO		BLCDT	22( )	8.000	D		19-43-51	77.4	7.2	24.0	110.0
34846	HI	LIC C	20021030AB	II	-170	44792		155-04-11		16.78	Clear	
KWHH	HILO		BPCDT	23( )	35.000	D		19-43-00	101.0	0.0		
37103	HI	CP C	19991020AA	II	33	28420		155-08-13				
DKWHH	HILO			23( )	50.000	D		19-43-51	77.4	7.2		
	HI	DTV		II	33			155-04-11				

du Treil, Lundin, and Rackley

Coordinates: 19-43-00 155-08-13 Frequency Range: 200-300 Range: 16

Date: 5/11/2006 ***FM Stations within 16 kms***

Rec Type	Fac Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)fF	RCAMSL (m)	Bear	Dist. (km)
C	81518	KCIF	LIC	212	FM	A	HILO	HI	N	19-43-36	155-05-29	0.850			76.9	4.9
C	48679	KWXX-F	LIC	234	FM	C1	HILO	HI	N	19-47-02	155-05-25	51.000	-231.0	123.0	33.2	8.9
C	69054	KNWB	LIC	246	FM	C2	HILO	HI	N	19-47-02	155-05-25	38.000	-251.0	96.0	33.2	8.9
C	164281	KTBH-FM	CP	271	FM	C2	KURTISTOWN	HI	N	19-41-48	155-03-05	50.000	-63.0	83.0	103.9	9.2
C	81518	KCIF	CP	212	FM	A	HILO	HI	N	19-38-14	155-03-19	5.000	0.0		135.9	12.3
C	70379	KHWI	LIC	224	FM	C3	HILO	HI	N	19-50-19	155-06-43	9.000	-78.0	280.0	10.9	13.8
C	51240	KPVS	LIC	240	FM	C2	HILO	HI	N	19-50-19	155-06-43	39.000	-78.0	280.0	10.9	13.8
C	52468	KKBG	LIC	250	FM	C1	HILO	HI	N	19-50-19	155-06-43	51.000	-19.7	255.0	10.9	13.8
C	5254	KAPA	LIC	262	FM	C2	HILO	HI	N	19-50-19	155-06-43	35.000	-78.0	280.0	10.9	13.8
C	26449	KANO	LIC	216	FM	C2	HILO	HI	N	19-35-18	155-07-25	26.000	46.0	539.0	174.4	14.3
C	26449	KANO	APP	216	FM	C2	HILO	HI	N	19-35-18	155-07-25	30.000	0.0	536.0	174.4	14.3

du Treil, Lundin, and Rackley

Coordinates: 19-43-00 155-08-13 Channel Range: 2-69 Range: 16

TV Stations Within 16 kms

Rec Type	Facility Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bearing	Dist. (km)
C	37103	KWHH	CP	23	DT		HILO	HI	D	19-43-00	155-08-13	35.000	33	309	0	0
C	36914	KGMD-T	CP	8	DT		HILO	HI	N	19-43-00	155-08-13	3.200	-89	339	0	0
C	36914	KGMD-T	APP	9	TV		HILO	HI	D	19-43-00	155-08-13	10.000	-92	336	0	0
C	4146	KHAW-T	APP	11	TV		HILO	HI	D	19-43-00	155-08-13	10.000	-92	336	0	0
C	36914	KGMD-T	LIC	9	TV		HILO	HI	N	19-43-00	155-08-13	10.000	-89	339	0	0
C	34846	KHBC-TV	LIC	22	DT		HILO	HI	D	19-43-51	155-04-11	8.000	-170	46	77.36	7.22
C	34846	KHBC-TV	LIC	2	TV		HILO	HI	D	19-43-51	155-04-11	2.290	-176	42	77.36	7.22
C	37103	KWHH	LIC	14	TV		HILO	HI	D	19-43-51	155-04-11	13.200	-170	46	77.36	7.22
C	4146	KHAW-T	CP	21	DT		HILO	HI	N	19-43-57	155-04-04	50.000	-186	46	76.32	7.46
C	64544	KHVO	CP	18	DT		HILO	HI	N	19-43-57	155-04-04	50.000	-187	44	76.32	7.46
C	64544	KHVO	LIC	18	DT		HILO	HI	D	19-43-57	155-04-04	5.400	-187	44	76.32	7.46
C	4146	KHAW-T	LIC	11	TV		HILO	HI	D	19-43-57	155-04-04	30.900	-180	51	76.32	7.46
C	64544	KHVO	LIC	13	TV		HILO	HI	D	19-43-57	155-04-04	30.900	-180	51	76.32	7.46