TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
GEORGE S. FLINN, III
DULUTH, MINNESOTA

APRIL 18, 2006

CH 27 1750 KW (MAX-DA) 268 M

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Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of George S. Flinn, III (herein "Flinn"). Flinn was the winning bidder in Auction 64 for a new unbuilt NTSC facility on Channel 27 at Duluth, Minnesota. By this instant application, Flinn proposes operation with a maximum effective radiated power of 1750 kilowatts and an antenna height above average terrain of 268 meters. Furthermore, after discussions with FCC staff, it is understood that since application does not implicate the FCC's present DTV/TV Freeze.

The proposal would not be subject to environmental processing in accordance with Section 1.1306. The proposed Duluth facility will be located on a registered tower; therefore, a new Federal Aviation Administration (FAA) *Determination of No Aeronautical Hazard* is not required.

Proposed Transmitter Location

The proposed transmitting facility will consist of a directional Dielectric antenna mounted on a tower located at Duluth, Minnesota. The location is uniquely described by the following geographic coordinates [NAD-27], which were obtained from the Commission's engineering database:

46° 47′ 15″ North Latitude
92° 07′ 21″ West Longitude

A map showing the transmitter location is included herein as Figure 1. A sketch showing the proposed antenna and supporting structure is shown on Figure 2.

DTV & NTSC Frequency Allocation

Implementation of the proposed Duluth facility will have a *de minimus* impact on the Commission's DTV assignments and stations. Using the procedures outlined in OET Bulletin No. 69, an interference analysis was completed.[1] As shown in Figure 4, the interference to DTV stations and allotments is considered *de minimis*. Furthermore, the proposed facility is fully-spaced to all other NTSC stations and allotments.

It is noted that the herein facility is located 147 kilometers from the nearest point of the US/Canadian border. No short-spacings to any known Canadian allotment and/or facility are noted.

[1] OET Bulletin No. 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, July 2, 1997.

Transmitting Antenna

A Dielectric TFU-30DSC C170 antenna with a cardioid type directional pattern is proposed for this Duluth facility. The main lobe will be oriented at 0° true with 1.0° of electrical beam tilt. The horizontal and vertical plane relative field patterns and tabulations are provided within Appendix A.

Coverage Contours

The predicted coverage contour for the proposed operation was calculated in accordance with the provisions of Section 73.313. The average terrain elevations from 3 to 16 kilometers along eight radials evenly spaced at 45 degree intervals, and thirty-two additional radials for contour definition, were obtained from the National Geophysical Data Center's (NGDC) 30-second terrain database. The terrain elevations were then used in combination with the effective radiated power for determining the distances to coverage contours.

Figure 3 is a map showing the predicted coverage contours. As the map illustrates, the FCC predicted City Grade (80 dBu) coverage contour entirely encompasses the Duluth city limits.

Interference Considerations

Several full-service stations are located on and near the supporting structure as the herein proposed. However, no objectionable interference is predicted. Flinn does accept full responsibility for the elimination of any objectionable interference, if any occurs, to facilities in existence or authorized prior to grant of this application pursuant to Sections 73.685(d) and (g) of the Commission's Rules.

Radiofrequency Electromagnetic Field Exposure

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic fields at ground level in accordance with OST Bulletin No. 65, *Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*.[2] The proposed calculated power density at the base of the tower was calculated using the appropriate equation contained on page 30 in Supplement A, *Additional Information for Radio and Television Broadcast Stations*, of the Bulletin.

For the calculation, a downward relative field value of 0.15 was assumed for the transmitting antenna. As can be seen from the data contained within the Appendix, the relative field value for all depression angles greater than 15° does not exceed 0.15. Therefore, using a maximum visual effective radiated power of 1750 kilowatts, 22 percent aural power and a relative field value of 0.15, the predicted power density at ground level located 212 meters (695 feet) below the antenna radiation center is 0.017 mW/cm^2. This is

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

less than five-percent of the Commission's guideline in an uncontrolled environment for a television station.[3]

Pursuant to Section 1.1307(b) of the Commission's Rules, the power density contributions of co-located and nearby broadcast stations are not required to be calculated as the proposed power density contribution is less than five percent of the guideline value.

Access to the transmitting site is restricted and appropriately marked with warning signs. When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shutdown of power if necessary, shall be taken to ensure that the human exposure to radiofrequency electromagnetic fields will not exceed the FCC guidelines.

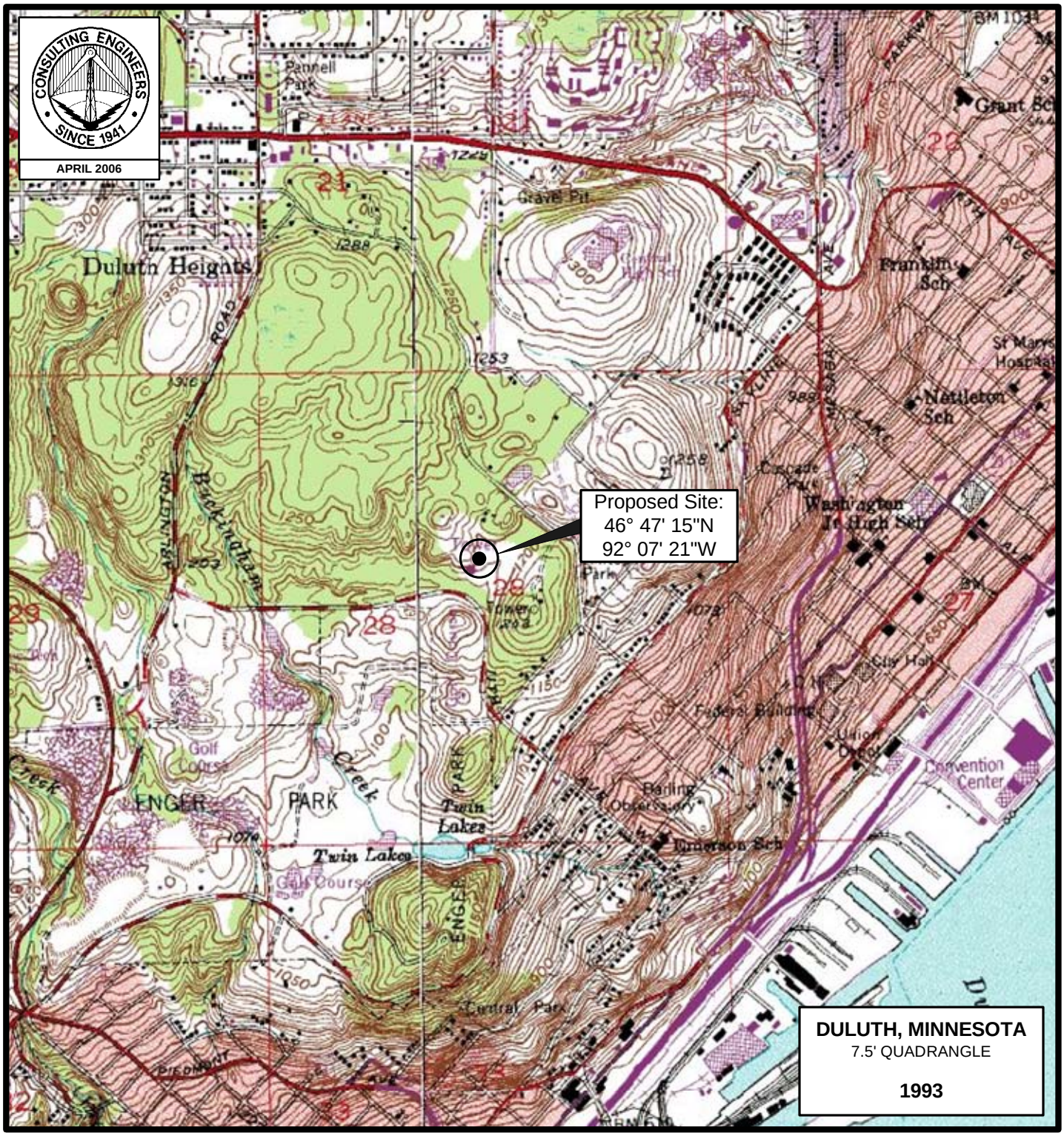
Charles A. Cooper

April 18, 2006

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
941.329.6000

[3] The FCC maximum guideline for an UHF broadcast television station on Channel 27 in an uncontrolled environment is 0.37 mW/cm^2.

Figure 1



PROPOSED TRANSMITTER SITE

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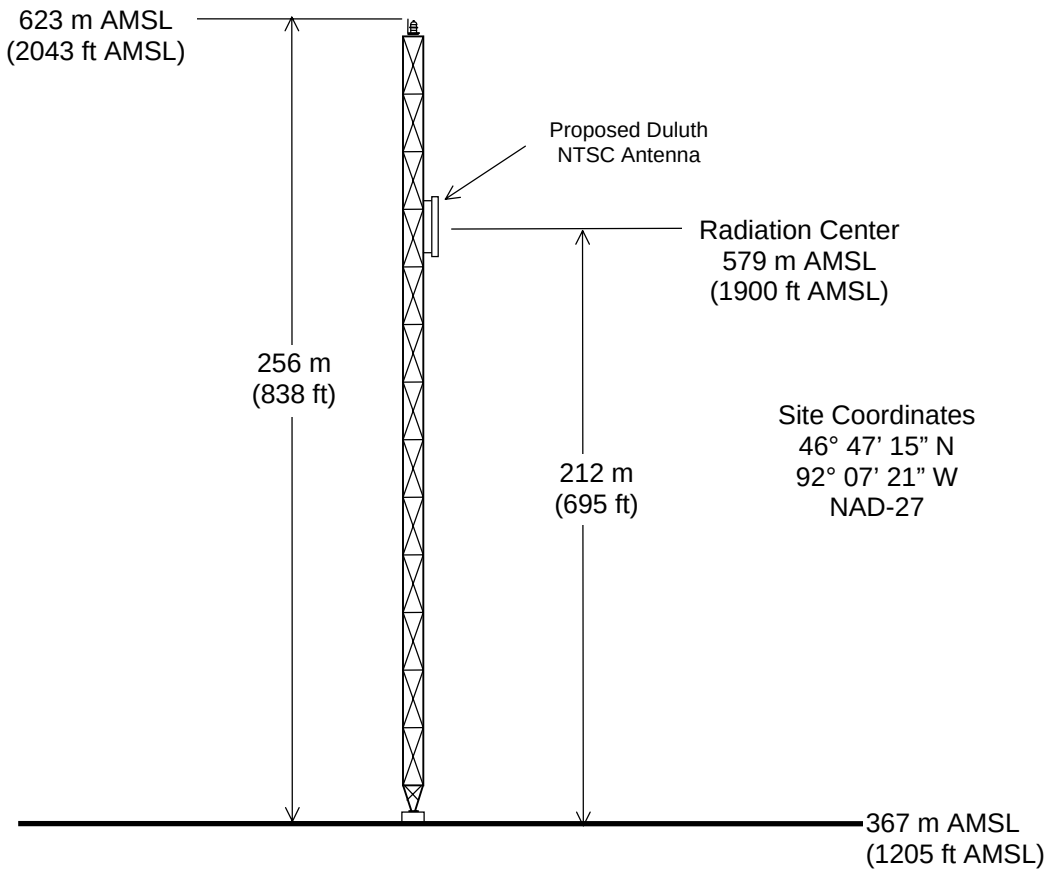
du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2



Not to Scale

FCC ASR NUMBER
1031880

PROPOSED ANTENNA AND SUPPORTING STRUCTURE

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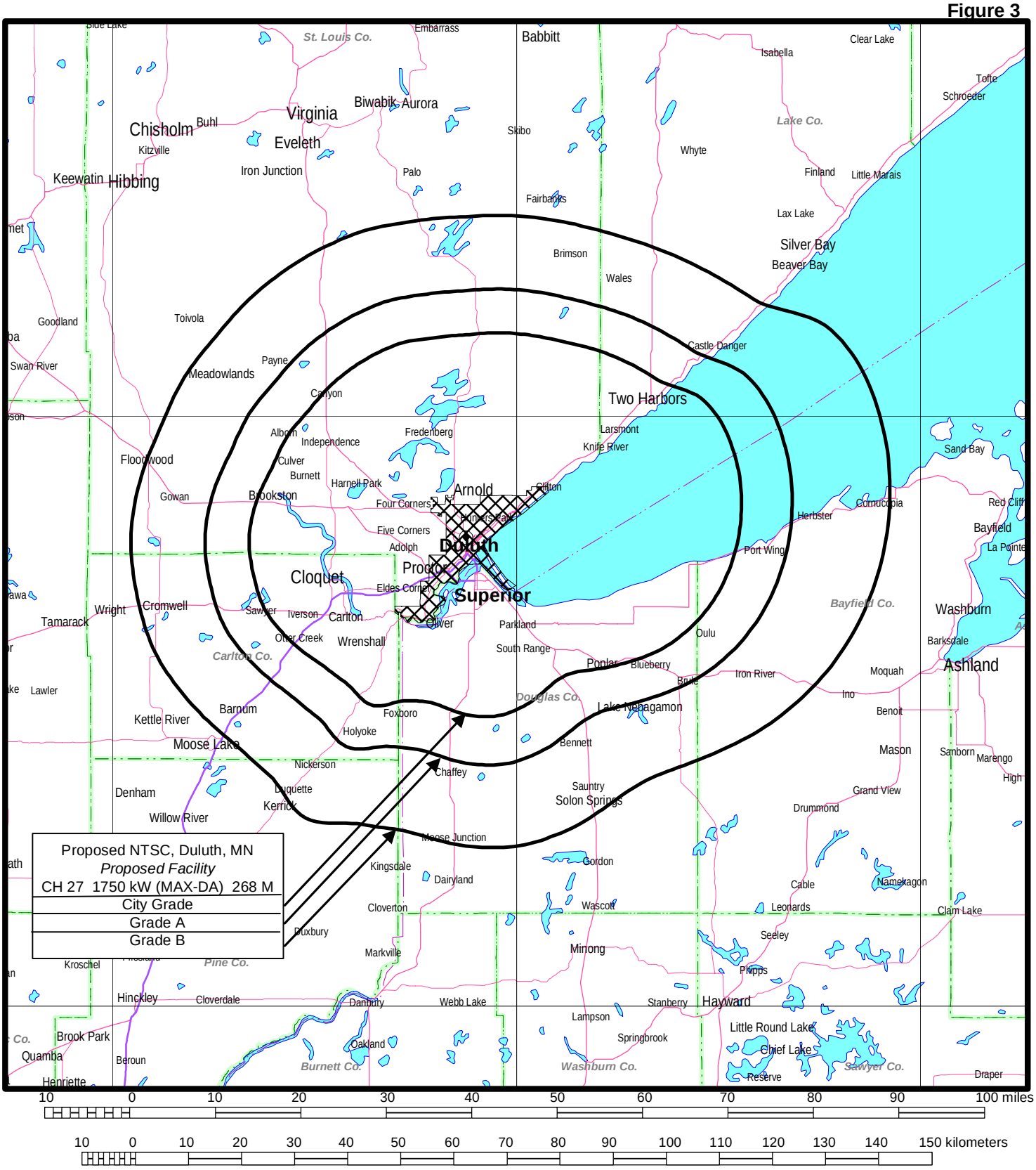
Figure 3



FCC PREDICTED COVERAGE CONTOURS

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Summary of DTV Allocation Analysis

Facility	Channel	NTSC or DTV?	Baseline Service Population (1990)	Permissible IX(%)	Net New IX Caused by Proposed (1990)	Percent of Baseline (%)
KMSP-DT Minneapolis, MN *DTV Allotment*	26	DTV	*No Interference Predicted.*			
KRWF-DT Redwood Falls, MN *BMPCDT-20010518AAO*	27	DTV	*No Interference Predicted.*			
KRWF-DT Redwood Falls, MN *DTV Allotment*	27	DTV	*No Interference Predicted.*			
WACY-DT Appleton, WI *BPRM-20020208AN*	27	DTV	*No Interference Predicted.*			
WACY-DT Appleton, WI *BMPCDT-20050428AAZ*	27	DTV	*No Interference Predicted.*			
WHWC-DT Menomonie, WI *BLEDT-20040824AAF*	27	DTV	344,000	0.5%	1,469	0.43%
WHWC-DT Menomonie, WI *DTV Allotment*	27	DTV	344,000	0.5%	150	0.04%
KAWB-DT Brainerd, MN *DTV Allotment*	28	DTV	*No Interference Predicted.*			

APPENDIX A

MANUFACTURER PROVIDED DIRECTIONAL ANTENNA PATTERN DATA

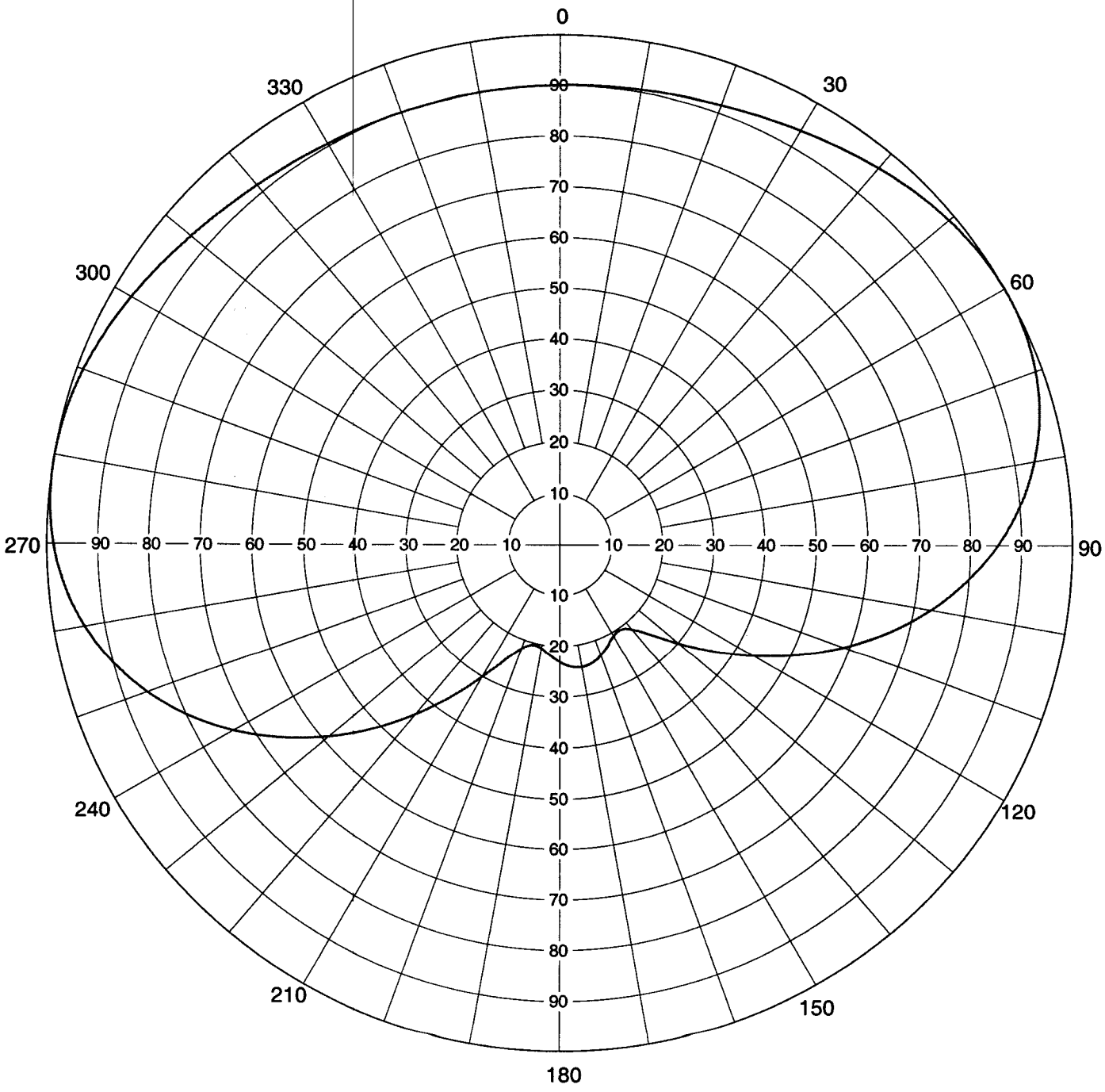
Exhibit No.

Dielectric

Date **21 Apr 2006**
Call Letters
Location
Customer
Antenna Type **TFU-30DSC C170**
Channel **27**

AZIMUTH PATTERN

Gain **1.70 (2.30 dB)**
Calculated / Measured **Calculated**
Frequency **551 MHz**
Drawing # **TFU-C170**



Remarks:

Exhibit No.

Dielectric

Date **21 Apr 2006**
Call Letters Channel **27**
Location
Customer
Antenna Type **TFU-30DSC C170**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-C170**

Angle	Field	ERP (kW)	ERP (dBk)
0	0.900	1271.7	31.04
10	0.905	1285.9	31.09
20	0.917	1320.2	31.21
30	0.936	1375.5	31.38
40	0.963	1456.0	31.63
50	0.988	1532.5	31.85
60	1.000	1570.0	31.96
70	0.987	1529.4	31.85
80	0.940	1387.3	31.42
90	0.854	1145.0	30.59
100	0.733	843.5	29.26
110	0.588	542.8	27.35
120	0.437	299.8	24.77
130	0.302	143.2	21.56
140	0.218	74.6	18.73
150	0.207	67.3	18.28
160	0.232	84.5	19.27
170	0.245	94.2	19.74
180	0.232	84.5	19.27
190	0.207	67.3	18.28
200	0.218	74.6	18.73
210	0.302	143.2	21.56
220	0.437	299.8	24.77
230	0.588	542.8	27.35
240	0.733	843.5	29.26
250	0.854	1145.0	30.59
260	0.940	1387.3	31.42
270	0.987	1529.4	31.85
280	1.000	1570.0	31.96
290	0.988	1532.5	31.85
300	0.963	1456.0	31.63
310	0.936	1375.5	31.38
320	0.917	1320.2	31.21
330	0.905	1285.9	31.09
340	0.900	1271.7	31.04
350	0.899	1268.9	31.03

Maxima

Angle	Field	ERP (kW)	ERP (dBk)
61	1.000	1570.0	31.96
170	0.245	94.2	19.74
279	1.000	1570.0	31.96

Minima

Angle	Field	ERP (kW)	ERP (dBk)
146	0.204	65.3	18.15
194	0.204	65.3	18.15
350	0.899	1268.9	31.03

Remarks:

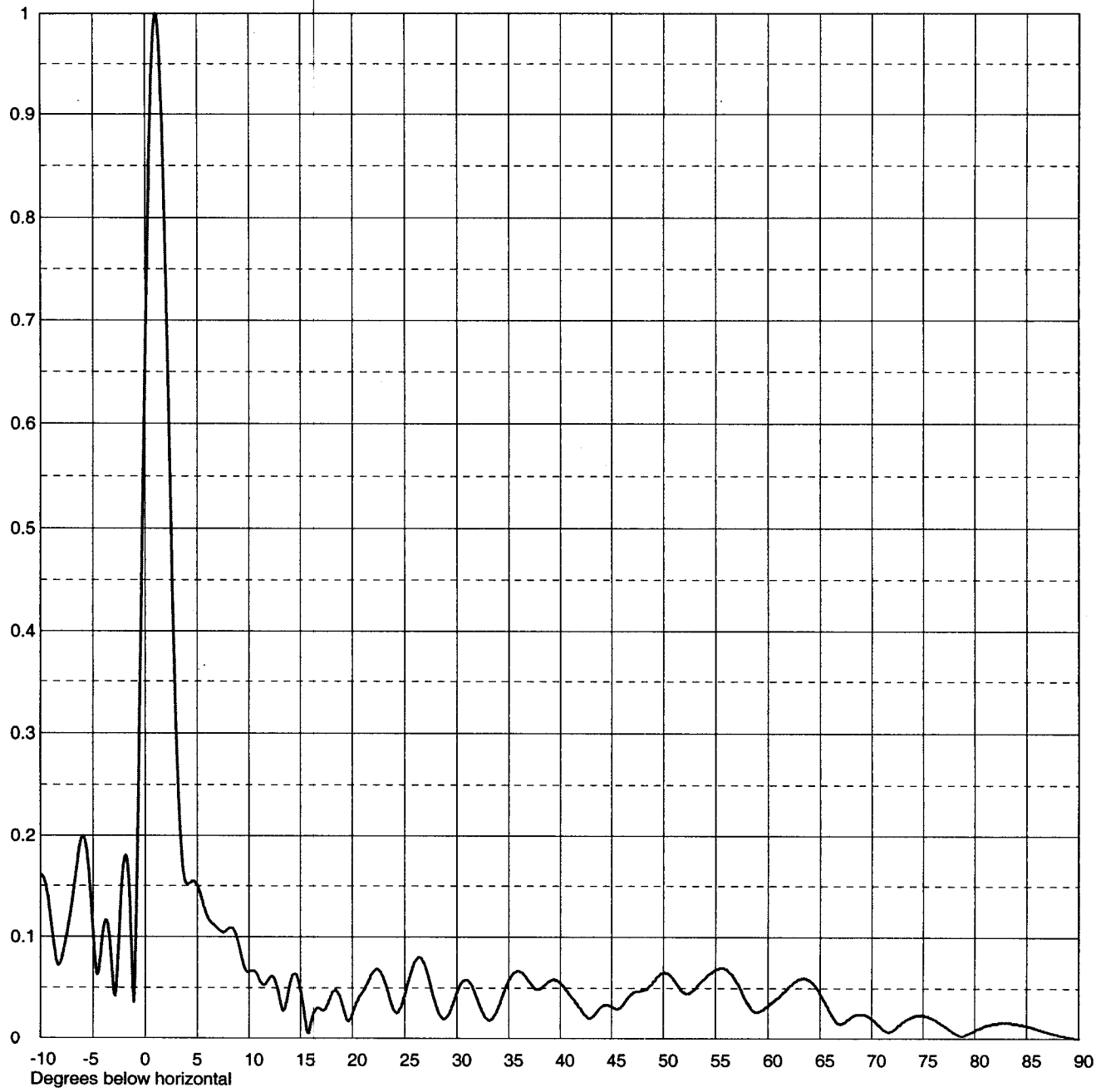
Exhibit No.

Dielectric

Date **21 Apr 2006**
Call Letters
Location
Customer
Antenna Type **TFU-30DSC C170**
Channel **27**

ELEVATION PATTERN

RMS Gain at Main Lobe	**25.5 (14.07 dB)**	Beam Tilt	**1.00 Degrees**
RMS Gain at Horizontal	**11.3 (10.53 dB)**	Frequency	**551.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**30Q255100-90**



Remarks:

Exhibit No.

Dielectric

Date **21 Apr 2006**
Call Letters Channel **27**
Location
Customer
Antenna Type **TFU-30DSC C170**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **30Q255100-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.161	2.4	0.541	10.6	0.066	30.5	0.056	51.0	0.058	71.5	0.008
-9.5	0.151	2.6	0.449	10.8	0.063	31.0	0.058	51.5	0.051	72.0	0.009
-9.0	0.115	2.8	0.366	11.0	0.058	31.5	0.051	52.0	0.046	72.5	0.013
-8.5	0.077	3.0	0.294	11.5	0.053	32.0	0.038	52.5	0.045	73.0	0.017
-8.0	0.078	3.2	0.237	12.0	0.060	32.5	0.026	53.0	0.049	73.5	0.020
-7.5	0.103	3.4	0.196	12.5	0.058	33.0	0.019	53.5	0.055	74.0	0.023
-7.0	0.135	3.6	0.170	13.0	0.038	33.5	0.022	54.0	0.060	74.5	0.024
-6.5	0.175	3.8	0.156	13.5	0.031	34.0	0.032	54.5	0.065	75.0	0.024
-6.0	0.200	4.0	0.152	14.0	0.055	34.5	0.045	55.0	0.068	75.5	0.023
-5.5	0.176	4.2	0.152	14.5	0.064	35.0	0.058	55.5	0.070	76.0	0.020
-5.0	0.106	4.4	0.154	15.0	0.048	35.5	0.065	56.0	0.069	76.5	0.017
-4.5	0.065	4.6	0.155	15.5	0.017	36.0	0.067	56.5	0.064	77.0	0.014
-4.0	0.109	4.8	0.154	16.0	0.016	36.5	0.063	57.0	0.056	77.5	0.010
-3.5	0.106	5.0	0.151	16.5	0.030	37.0	0.056	57.5	0.046	78.0	0.007
-3.0	0.044	5.2	0.145	17.0	0.029	37.5	0.050	58.0	0.036	78.5	0.004
-2.8	0.051	5.4	0.139	17.5	0.032	38.0	0.049	58.5	0.029	79.0	0.004
-2.6	0.087	5.6	0.131	18.0	0.044	38.5	0.053	59.0	0.027	79.5	0.006
-2.4	0.127	5.8	0.125	18.5	0.047	39.0	0.057	59.5	0.029	80.0	0.009
-2.2	0.160	6.0	0.120	19.0	0.035	39.5	0.058	60.0	0.033	80.5	0.011
-2.0	0.178	6.2	0.116	19.5	0.019	40.0	0.055	60.5	0.037	81.0	0.014
-1.8	0.179	6.4	0.114	20.0	0.025	40.5	0.049	61.0	0.041	81.5	0.015
-1.6	0.158	6.6	0.112	20.5	0.038	41.0	0.043	61.5	0.046	82.0	0.016
-1.4	0.114	6.8	0.110	21.0	0.046	41.5	0.036	62.0	0.051	82.5	0.017
-1.2	0.053	7.0	0.108	21.5	0.056	42.0	0.030	62.5	0.056	83.0	0.017
-1.0	0.062	7.2	0.106	22.0	0.066	42.5	0.023	63.0	0.059	83.5	0.017
-0.8	0.163	7.4	0.105	22.5	0.068	43.0	0.021	63.5	0.060	84.0	0.016
-0.6	0.284	7.6	0.105	23.0	0.059	43.5	0.026	64.0	0.058	84.5	0.015
-0.4	0.413	7.8	0.106	23.5	0.042	44.0	0.032	64.5	0.053	85.0	0.014
-0.2	0.543	8.0	0.108	24.0	0.028	44.5	0.034	65.0	0.045	85.5	0.012
0.0	0.667	8.2	0.109	24.5	0.029	45.0	0.032	65.5	0.036	86.0	0.011
0.2	0.778	8.4	0.109	25.0	0.043	45.5	0.030	66.0	0.026	86.5	0.009
0.4	0.871	8.6	0.106	25.5	0.062	46.0	0.033	66.5	0.018	87.0	0.007
0.6	0.940	8.8	0.100	26.0	0.076	46.5	0.040	67.0	0.015	87.5	0.006
0.8	0.984	9.0	0.092	26.5	0.080	47.0	0.045	67.5	0.018	88.0	0.004
1.0	1.000	9.2	0.083	27.0	0.070	47.5	0.047	68.0	0.022	88.5	0.003
1.2	0.989	9.4	0.075	27.5	0.051	48.0	0.048	68.5	0.025	89.0	0.002
1.4	0.952	9.6	0.069	28.0	0.033	48.5	0.050	69.0	0.025	89.5	0.001
1.6	0.894	9.8	0.066	28.5	0.022	49.0	0.056	69.5	0.024	90.0	0.000
1.8	0.818	10.0	0.066	29.0	0.022	49.5	0.062	70.0	0.020		
2.0	0.731	10.2	0.067	29.5	0.032	50.0	0.065	70.5	0.016		
2.2	0.636	10.4	0.067	30.0	0.046	50.5	0.064	71.0	0.011		

Remarks: