

TECHNICAL EXHIBIT
APPLICATION FOR DTV CONSTRUCTION PERMIT
IN SUPPORT OF ITS POST-TRANSITION FACILITY
STATION WOAI-DT
SAN ANTONIO, TEXAS
CH 48 900 KW 457 M

Technical Narrative - "5 Mile Waiver Request"

This Technical Exhibit supports an application for digital television (DTV) station WOAI-DT for its final DTV at San Antonio, Texas. This application requests a construction permit (CP) for a digital television operation on channel 48 at San Antonio with a non-directional effective radiated power of 900 kilowatts.

As WOAI-DT will be operating on a new channel post-transition, WOAI-DT is requesting processing under the "5 mile waiver" procedure to allow recovery of its noise-limited contour up to the Grade B contour.

Proposed Facilities

Station WOAI-DT proposes to operate DTV channel 48 from its NTSC transmitter site. The antenna height above average terrain for the channel 48 DTV operation is 457 meters. The proposed WOAI-DT effective radiated power exceeds the Commission's *Appendix B* allocated maximum effective radiated power in some azimuthal directions.¹

¹ See Seventh Report And Order And Eighth Further Notice Of Proposed Rule Making in the Matter of Advanced Television Systems and their Impact Upon the Existing Television Broadcast Service, MB Docket 87-268, Released August 6, 2007; Adopted August 1, 2007.

Therefore, an allocation study was completed to ensure no prohibited interference would occur.

The proposed DTV transmitter site will be located at its NTSC transmitter site. Therefore, the proposed site location is:

29° 16' 11" North Latitude
98° 15' 55" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 2.

The Appendix contains the vertical plane radiation pattern for the proposed antenna system.

Figure 3 is a map showing the DTV predicted coverage contour and the associated analog Grade B coverage contour. The extent of the contour has been calculated using the normal FCC prediction method. The San Antonio city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

Population Served

The herein proposed WOAI-DT facility is predicted to serve 1,911,500 persons, post-transition based upon the 2000 Census. WOAI-DT's associated Appendix B facility is predicted to serve 1,894,000 persons. Therefore, the herein proposed WOAI-DT facility would serve more than 100% of WOAI-DT's Appendix B population.

Allocation Considerations

The proposed WOAI-DT Channel 48 facility meets the requirements of Section 73.623 of the FCC Rules concerning predicted interference to other Appendix B DTV allotments. Longley-Rice interference analyses were conducted pursuant to the requirements of the FCC Rules; OET Bulletin No. 69; and published FCC guidelines for preparation of such interference analyses. The Longley-Rice interference analyses were conducted using the software developed by du Treil, Lundin & Rackley, Inc. based on the FCC published software routines.² Stations selected for analysis were determined pursuant to the distance requirements outlined in the FCC DTV Processing Guidelines Public Notice. The results of the interference analyses for the proposed WOAI-DT facility are summarized herein at Figure 4. As indicated therein, the proposed facility will meet the 0.5% criterion outlined in the FCC

² The duTreil, 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 1 km was employed with 0.5 km terrain increment.

Rules and published guidelines with respect to all considered stations.³

Radiofrequency Electromagnetic Field Exposure

The proposed WOAI-DT facilities were evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level to workers and the general public. The radiation center for the proposed WOAI-DT antenna is located 459 meters above ground level. The maximum effective radiated power is 900 kilowatts. A "worst-case" relative field value of 0.25 is assumed for the antenna's downward radiation. The calculated power density at a point 2 meters above ground level is 0.01 mW/cm^2 . This is less than 5 percent of the Commission's recommended limit of 0.45 mW/cm^2 for channel 48 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site, an agreement will control access to the site. In the event that workers or other authorized personnel enter restricted areas or climb the tower, 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

³ Interference analysis results reflect the net change in interference to a given station considering the interference predicted to occur from all other stations (i.e. "masking") including the allotment facility for WOAI-DT. This properly reflects the net interference change for determining compliance with the FCC 0.5% *de minimis* standard.

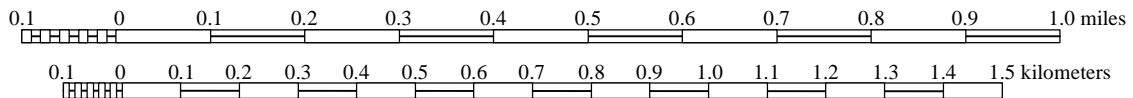
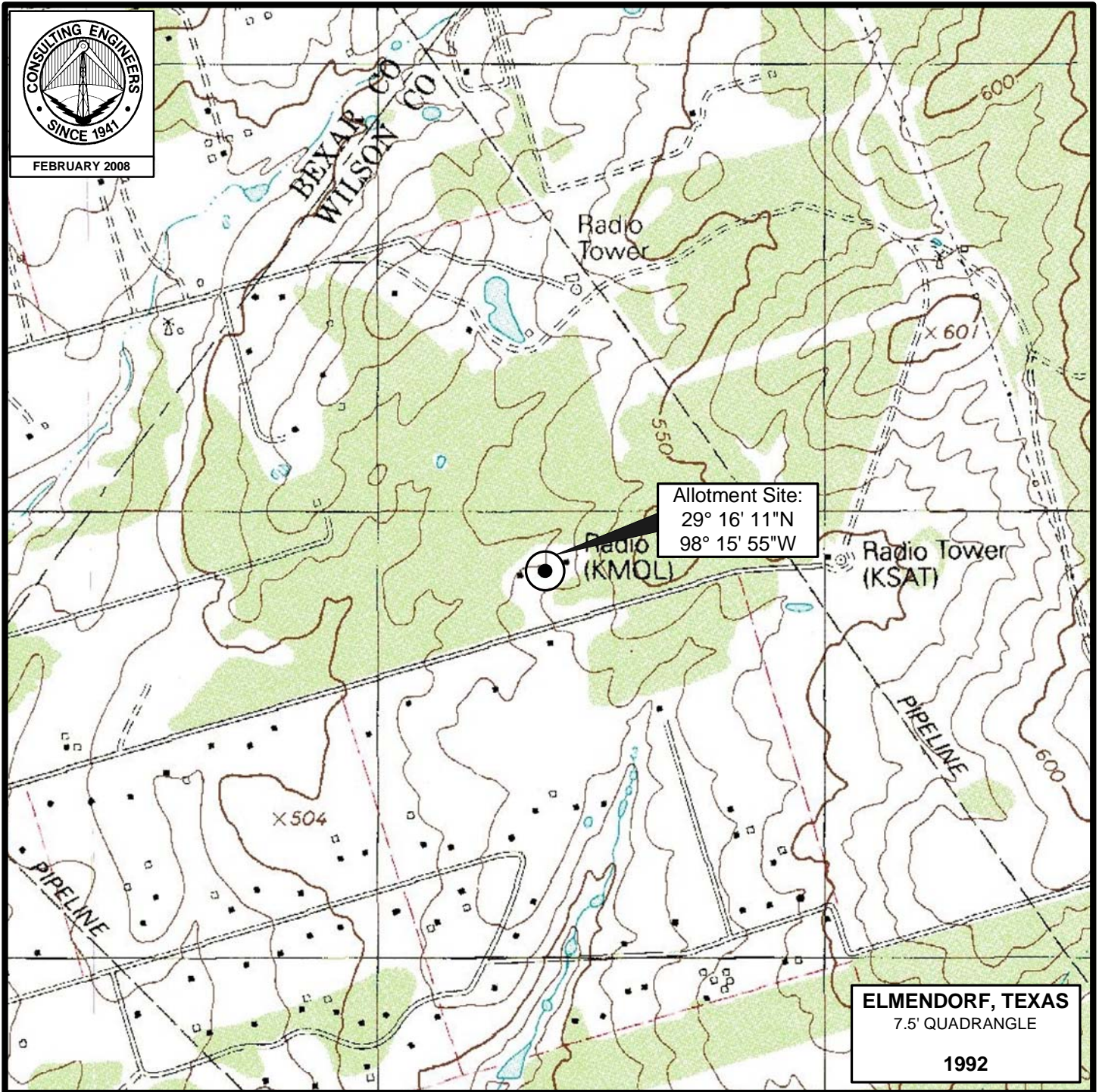
"accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed WOAI-DT operation appears to be otherwise categorically excluded from environmental processing.

Charles Cooper

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 32437
941.329.6000

February 5, 2008

Figure 1

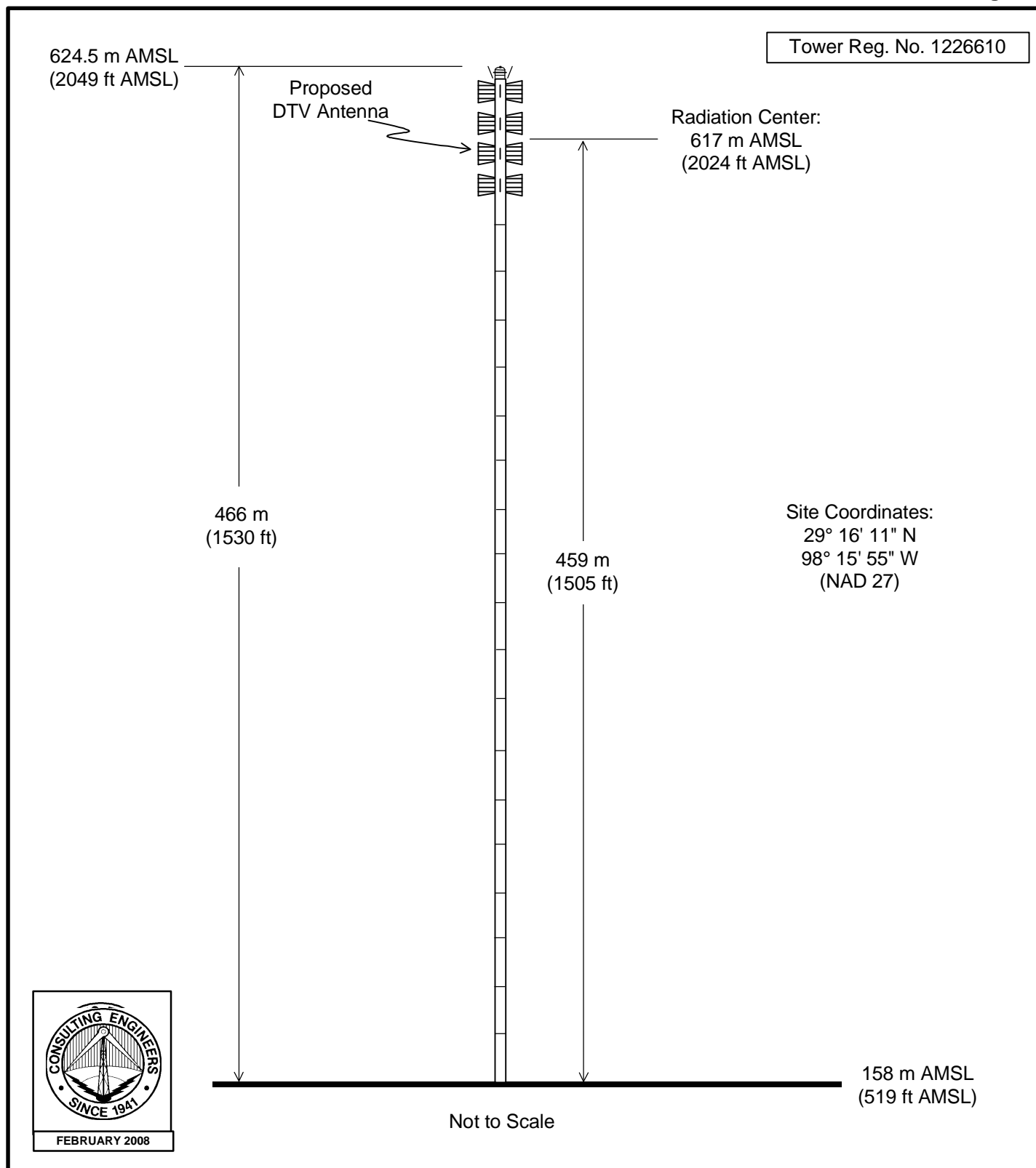


EXISTING TRANSMITTER SITE

DTV STATION WOAI-DT
SAN ANTONIO, TEXAS
CH 48 900 KW 457 M

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

Figure 2



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

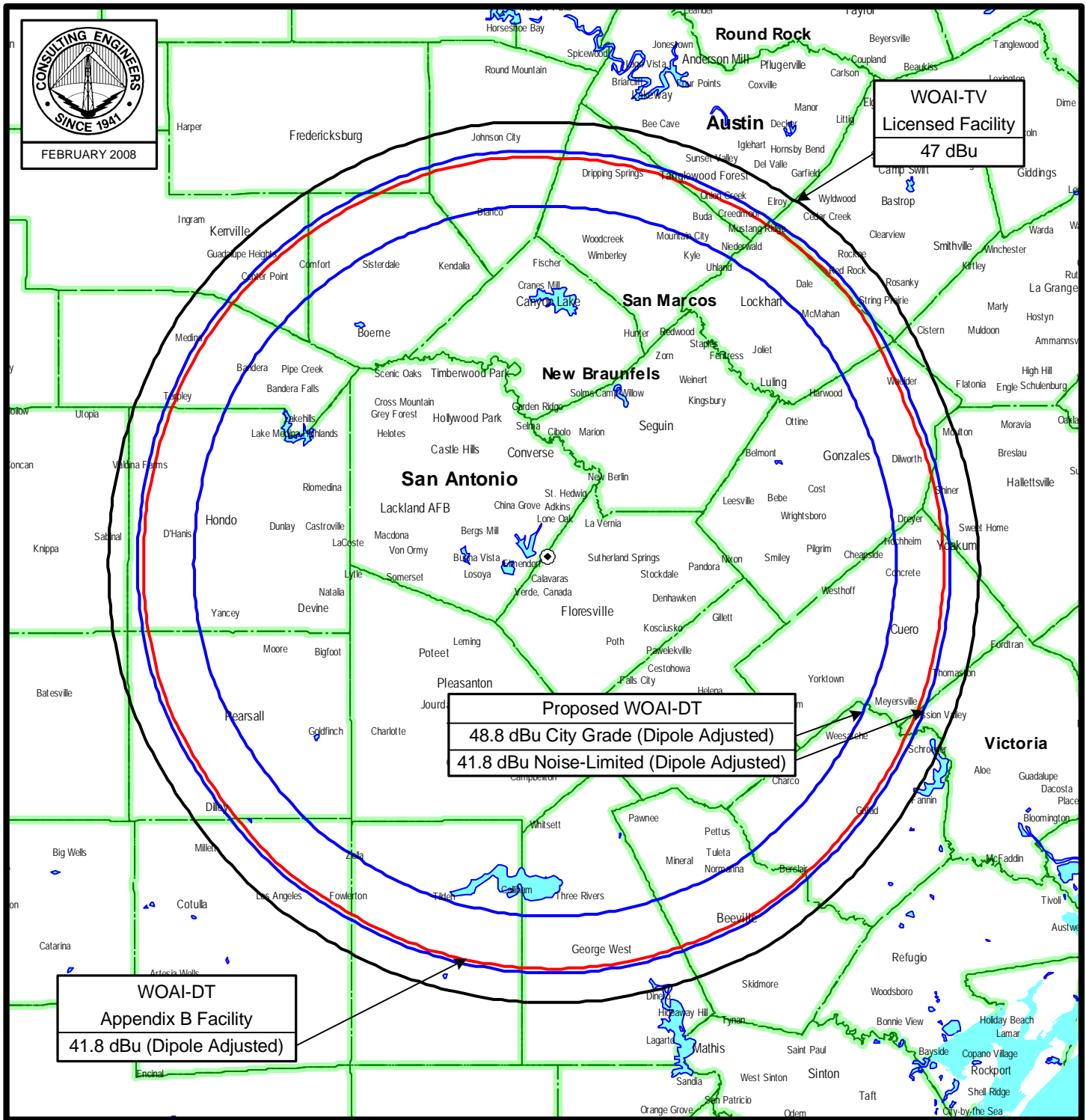
TELEVISION STATION WOAI-DT

SAN ANTONIO, TEXAS

CH 48 900 KW 457 M

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

Figure 3



PREDICTED COVERAGE CONTOURS

STATION WOAI-DT
SAN ANTONIO, TEXAS
CH 48 900 KW 457 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

TECHNICAL EXHIBIT
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STATION WOAI-DT
SAN ANTONIO, TEXAS
CH 48 900 KW 457 M

Census data selected 2000

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Post Transition Data Base Selected
/export/home/cdbb/tvdb.sff_G
TV INTERFERENCE and SPACING ANALYSIS PROGRAM

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Date: 01-31-2008 Time: 14:30:19

Record Selected for Analysis

WOAI	USERRECORD-01	SAN ANTONIO	TX US
Channel 48	ERP 900. kW	HAAT 458. m	RCAMSL 00617 m
Latitude 029-16-10		Longitude 0098-15-55	
Status APP	Zone 2	Border	
Last update	Cutoff date	Docket	
Comments			
Applicant			

Distance Increments for Longley-Rice Analysis 0.50 km

Facility does not meet maximum height/power limits
Channel 48 ERP = 900.00 HAAT = 458.

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	900.000	446.4	109.2
45.0	900.000	445.0	109.1
90.0	900.000	440.5	108.7
135.0	900.000	468.4	111.1
180.0	900.000	480.6	112.1
225.0	900.000	467.1	111.0
270.0	900.000	459.8	110.4
315.0	900.000	457.1	110.1

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

WOAI 48 SAN ANTONIO TX USERRECORD01

and station

SHORT TO: WOAI-TV 48 SAN ANTONIO TX BDTV 00000299
29-16-10 98-15-55

Figure 4

Req. separation 223.7 Actual separation 0.0 Short 223.7 km

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is within the Mexican coordination distance
Distance to border = 215.5km

Proposed station is OK toward AM broadcast stations

***** Start of Interference Analysis

Channel	Call	Proposed Station City/State	ARN
48	WOAI	SAN ANTONIO TX	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
48	KTMD	GALVESTON TX	268.8	LIC	BLCDT	-20040325AEO
48	KSTR-TV	IRVING TX	384.6	LIC	BLCDT	-20020909AAM
49	KNVA	AUSTIN TX	125.7	CP	BPCDT	-19991025ADB

%%%

Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
48	KTMD	GALVESTON TX	BLCDT	-20040325AEO

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
47	KNWS-TV	KATY TX	0.0	CP	BFRCT	-20050307ACD
48	KSTR-TV	IRVING TX	358.0	LIC	BLCDT	-20020909AAM
48	WOAI	SAN ANTONIO TX	268.8	APP	USERRECORD-01	

Total scenarios = 1

Result key: 1
Scenario 1 Affected station 1
Before Analysis

Results for: 48A TX GALVESTON BLCDT 20040325AEO LIC
HAAT 597.0 m, ATV ERP 1000.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	4838457	39988.3
not affected by terrain losses	4838060	39903.9
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to ATV IX only	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

After Analysis

Results for: 48A TX GALVESTON BLCDT 20040325AEO LIC
HAAT 597.0 m, ATV ERP 1000.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	4838457	39988.3

Figure 4

```

not affected by terrain losses  4838060      39903.9
lost to NTSC IX                0            0.0
lost to additional IX by ATV    1323        122.7
lost to ATV IX only            1323        122.7
lost to all IX                 1323        122.7

Potential Interfering Stations Included in above Scenario      1

48A TX SAN ANTONIO          USERRECORD01          APP
Percent new IX =          0.0273%
Worst case new IX          0.0273% Scenario      1

#####

Analysis of Interference to Affected Station      2

Analysis of current record
Channel      Call      City/State      Application Ref. No.
48      KSTR-TV      IRVING TX      BLCDT      -20020909AAM

Stations Potentially Affecting This Station

Chan      Call      City/State      Dist(km) Status Application Ref. No.
48      KTMD      GALVESTON TX      358.0 LIC      BLCDT      -20040325AEO
48      WOAI      SAN ANTONIO TX      384.6 APP      USERRECORD-01
Proposal causes no interference

#####

Analysis of Interference to Affected Station      3

Analysis of current record
Channel      Call      City/State      Application Ref. No.
49      KNVA      AUSTIN TX      BPCDT      -19991025ADB

Stations Potentially Affecting This Station

Chan      Call      City/State      Dist(km) Status Application Ref. No.
50      KBTX-TV      BRYAN TX      171.4 CP MOD      BMPCDT      -20020604AAT
48      WOAI      SAN ANTONIO TX      125.7 APP      USERRECORD-01

Total scenarios =      1

Result key:      2
Scenario      1 Affected station      3
Before Analysis

Results for: 49A TX AUSTIN      BPCDT      19991025ADB CP
HAAT 396.0 m, ATV ERP 500.0 kW
POPULATION      AREA (sq km)
within Noise Limited Contour      1674067      27671.8
not affected by terrain losses      1656281      27029.3
lost to NTSC IX      0      0.0
lost to additional IX by ATV      132      44.0
lost to ATV IX only      132      44.0
lost to all IX      132      44.0

Potential Interfering Stations Included in above Scenario      1

50A TX BRYAN      BMPCDT      20020604AAT CP

After Analysis

Results for: 49A TX AUSTIN      BPCDT      19991025ADB CP
HAAT 396.0 m, ATV ERP 500.0 kW
POPULATION      AREA (sq km)
within Noise Limited Contour      1674067      27671.8
not affected by terrain losses      1656281      27029.3
lost to NTSC IX      0      0.0
lost to additional IX by ATV      62803      842.7
lost to ATV IX only      62803      842.7
lost to all IX      62803      842.7

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Figure 4

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Potential Interfering Stations Included in above Scenario      1

50A TX BRYAN                      BMPCDT    20020604AAT  CP
48A TX SAN ANTONIO                USERRECORD01      APP

The following station failed the de minimis interference criteria.
48D TX SAN ANTONIO                USERRECORD01
ERP  900.00 kW HAAT   458.0 m RCAMSL   617.0 m
Antenna      none

Due to interference to the following station and scenario:      1
49D TX AUSTIN                     BPCDT      19991025ADB
ERP  500.00 kW HAAT   396.0 m RCAMSL   613.0 m
Antenna CDB 00000000028952

Percent Service lost without proposal:    0.0 to BPCDT      19991025ADB
Percent Service lost with proposal:       3.8 to BPCDT      19991025ADB

Worst case new IX      3.7841% Scenario      1

<NOTE, THE WOAI ALLOTMENT CAUSES 3.4420% WITH SAME INPUT PARAMETERS.  THEREFORE, THIS
INCREASE IS LESS THAN 0.5%>

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Analysis of Interference to Affected Station      4

Analysis of current record
Channel      Call      City/State      Application Ref. No.
  48      WOAI      SAN ANTONIO TX      USERRECORD-01

Stations Potentially Affecting This Station

Chan  Call      City/State      Dist(km) Status Application Ref. No.
  48  KTMD      GALVESTON TX      268.8  LIC    BLCDT      -20040325AEO
  48  KSTR-TV   IRVING TX      384.6  LIC    BLCDT      -20020909AAM
  49  KNVA      AUSTIN TX      125.7  CP     BPCDT      -19991025ADB

Total scenarios =      1

Result key:      3
Scenario      1 Affected station      4
Before Analysis

Results for: 48A TX SAN ANTONIO      USERRECORD01      APP
HAAT  458.0 m, ATV ERP  900.0 kW

      POPULATION      AREA (sq km)
within Noise Limited Contour      1952086      36884.7
not affected by terrain losses      1942760      36259.4
lost to NTSC IX      0      0.0
lost to additional IX by ATV      29776      670.6
lost to ATV IX only      29776      670.6
lost to all IX      29776      670.6

Potential Interfering Stations Included in above Scenario      1

48A TX GALVESTON      BLCDT      20040325AEO  LIC
49A TX AUSTIN          BPCDT      19991025ADB  CP

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FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

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APPENDIX

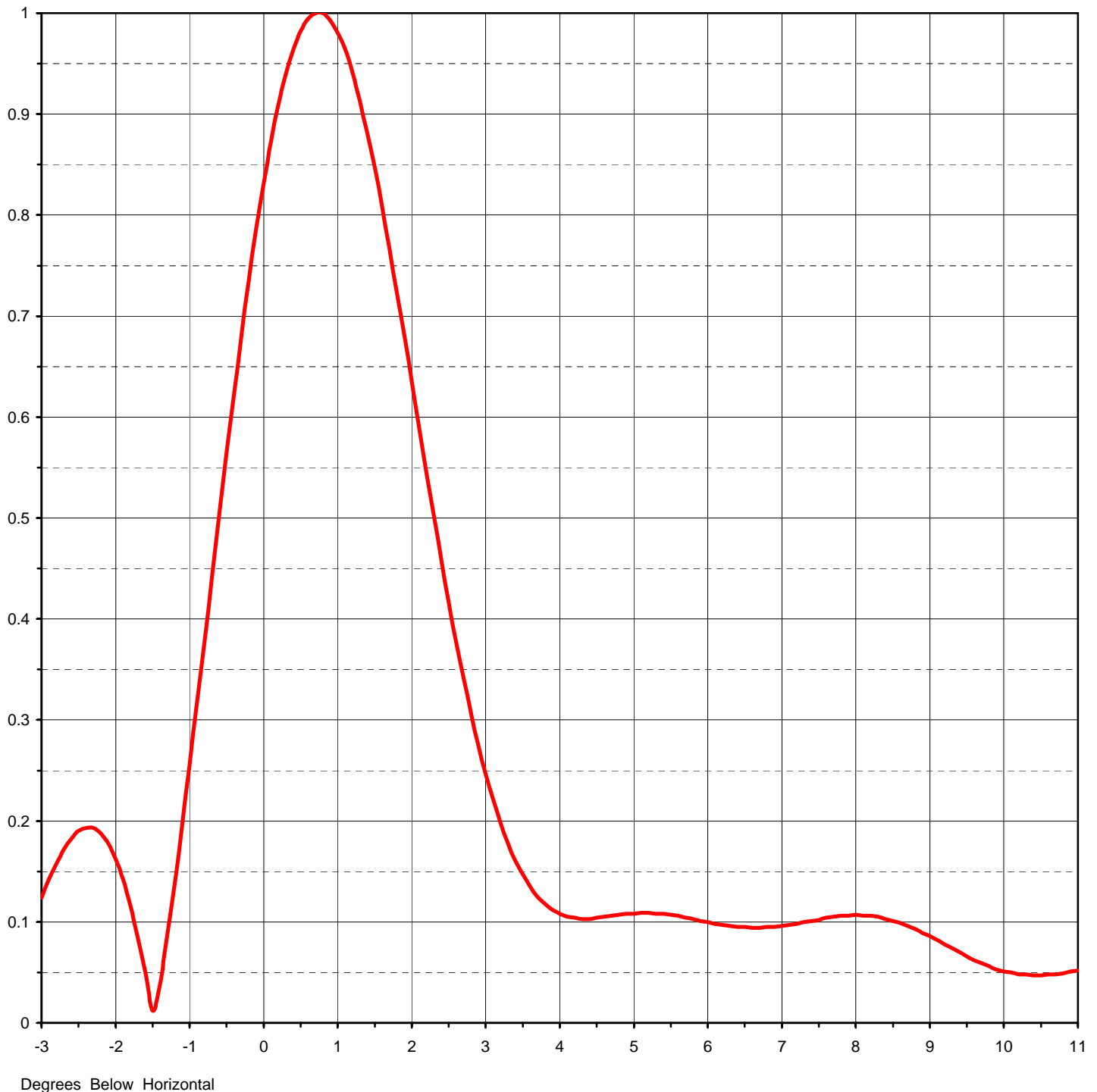
TRANSMITTING ANTENNA
VERTICAL PLANE PATTERN



Proposal Number	C-00674		
Date	26-Sep-06		
Call Letters	WOAI-DT	Channel	48
Location	San Antonio, TX		
Customer			
Antenna Type	TFU-30GTH-R O4		

ELEVATION PATTERN

RMS Gain at Main Lobe	27.00 (14.31 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	18.70 (12.72 dB)	Frequency	677.00 MHz
Calculated / Measured	Calculated	Drawing #	30G270075

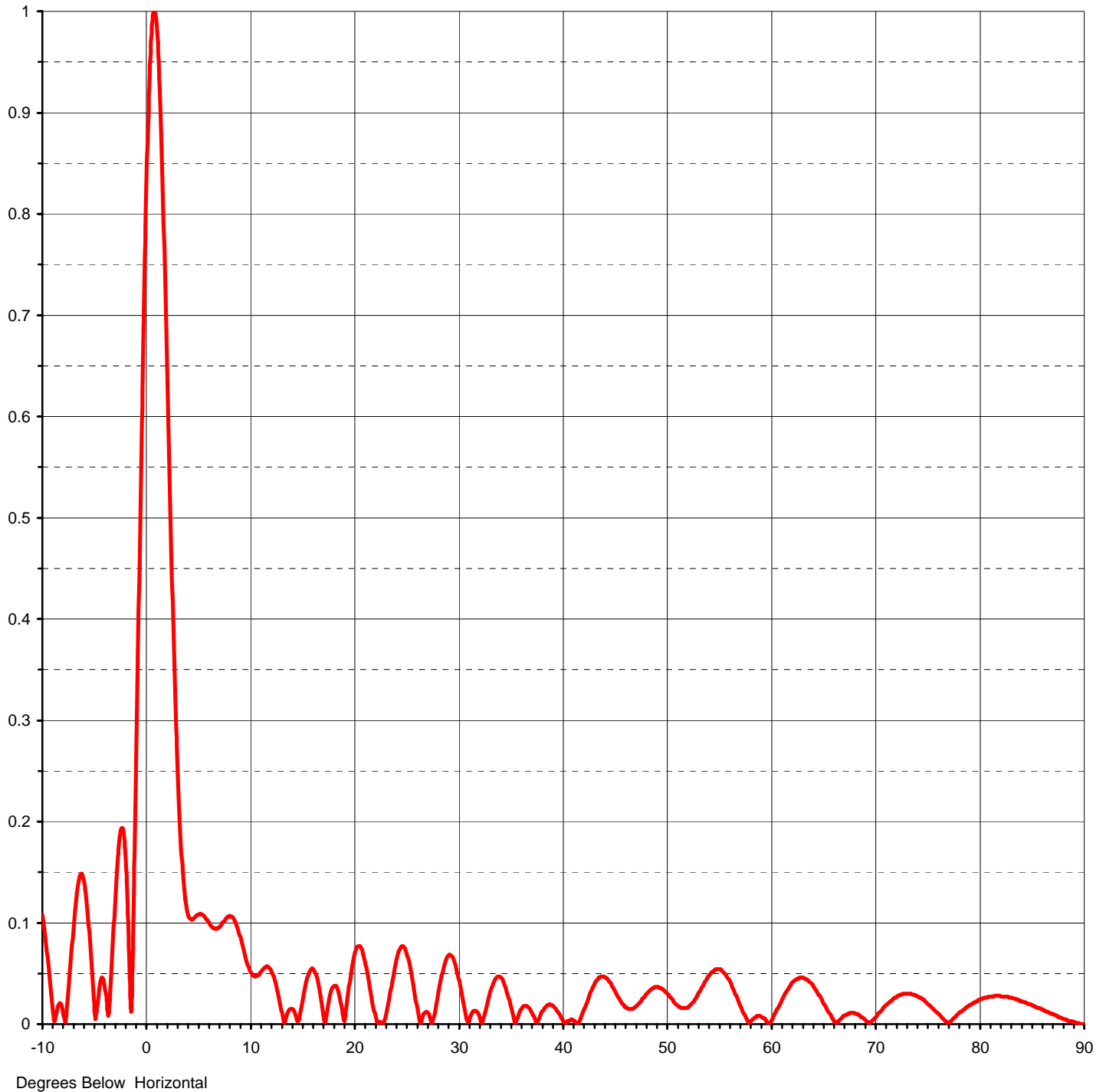




Proposal Number	C-00674	
Date	26-Sep-06	
Call Letters	WOAI-DT	Channel 48
Location	San Antonio, TX	
Customer		
Antenna Type	TFU-30GTH-R O4	

ELEVATION PATTERN

RMS Gain at Main Lobe	27.00 (14.31 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	18.70 (12.72 dB)	Frequency	677.00 MHz
Calculated / Measured	Calculated	Drawing #	30G270075-90





Proposal Number **C-00674**

Date **26-Sep-06**

Call Letters **WOAI-DT** Channel **48**

Location **San Antonio, TX**

Customer

Antenna Type **TFU-30GTH-R 04**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **30G270075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.108	2.4	0.458	10.6	0.047	30.5	0.022	51.0	0.019	71.5	0.023
-9.5	0.066	2.6	0.378	10.8	0.048	31.0	0.002	51.5	0.016	72.0	0.027
-9.0	0.015	2.8	0.307	11.0	0.051	31.5	0.013	52.0	0.016	72.5	0.029
-8.5	0.018	3.0	0.247	11.5	0.056	32.0	0.009	52.5	0.021	73.0	0.030
-8.0	0.012	3.2	0.198	12.0	0.054	32.5	0.008	53.0	0.029	73.5	0.029
-7.5	0.033	3.4	0.161	12.5	0.040	33.0	0.028	53.5	0.038	74.0	0.027
-7.0	0.096	3.6	0.135	13.0	0.016	33.5	0.043	54.0	0.047	74.5	0.024
-6.5	0.141	3.8	0.118	13.5	0.007	34.0	0.047	54.5	0.052	75.0	0.020
-6.0	0.141	4.0	0.108	14.0	0.015	34.5	0.038	55.0	0.054	75.5	0.015
-5.5	0.091	4.2	0.104	14.5	0.006	35.0	0.020	55.5	0.051	76.0	0.010
-5.0	0.017	4.4	0.103	15.0	0.019	35.5	0.001	56.0	0.044	76.5	0.005
-4.5	0.038	4.6	0.105	15.5	0.044	36.0	0.014	56.5	0.033	77.0	0.001
-4.0	0.037	4.8	0.107	16.0	0.055	36.5	0.018	57.0	0.020	77.5	0.006
-3.5	0.029	5.0	0.108	16.5	0.044	37.0	0.013	57.5	0.009	78.0	0.011
-3.0	0.124	5.2	0.109	17.0	0.015	37.5	0.002	58.0	0.001	78.5	0.015
-2.8	0.158	5.4	0.108	17.5	0.017	38.0	0.011	58.5	0.007	79.0	0.019
-2.6	0.182	5.6	0.106	18.0	0.037	38.5	0.018	59.0	0.008	79.5	0.022
-2.4	0.193	5.8	0.103	18.5	0.033	39.0	0.019	59.5	0.005	80.0	0.024
-2.2	0.188	6.0	0.100	19.0	0.005	39.5	0.013	60.0	0.002	80.5	0.026
-2.0	0.162	6.2	0.097	19.5	0.034	40.0	0.005	60.5	0.012	81.0	0.027
-1.8	0.116	6.4	0.095	20.0	0.066	40.5	0.003	61.0	0.022	81.5	0.028
-1.6	0.050	6.6	0.094	20.5	0.077	41.0	0.004	61.5	0.032	82.0	0.027
-1.4	0.038	6.8	0.095	21.0	0.065	41.5	0.001	62.0	0.040	82.5	0.027
-1.2	0.140	7.0	0.096	21.5	0.038	42.0	0.012	62.5	0.044	83.0	0.026
-1.0	0.255	7.2	0.098	22.0	0.011	42.5	0.025	63.0	0.046	83.5	0.024
-0.8	0.378	7.4	0.101	22.5	0.002	43.0	0.038	63.5	0.044	84.0	0.023
-0.6	0.503	7.6	0.104	23.0	0.006	43.5	0.046	64.0	0.039	84.5	0.021
-0.4	0.624	7.8	0.106	23.5	0.031	44.0	0.047	64.5	0.029	85.0	0.019
-0.2	0.735	8.0	0.107	24.0	0.059	44.5	0.042	65.0	0.020	85.5	0.016
0.0	0.832	8.2	0.106	24.5	0.076	45.0	0.034	65.5	0.011	86.0	0.014
0.2	0.909	8.4	0.103	25.0	0.072	45.5	0.024	66.0	0.003	86.5	0.012
0.4	0.964	8.6	0.099	25.5	0.051	46.0	0.017	66.5	0.004	87.0	0.010
0.6	0.994	8.8	0.093	26.0	0.020	46.5	0.015	67.0	0.008	87.5	0.007
0.8	1.000	9.0	0.086	26.5	0.004	47.0	0.017	67.5	0.011	88.0	0.005
1.0	0.981	9.2	0.078	27.0	0.012	47.5	0.022	68.0	0.010	88.5	0.003
1.2	0.941	9.4	0.070	27.5	0.001	48.0	0.029	68.5	0.008	89.0	0.002
1.4	0.882	9.6	0.062	28.0	0.024	48.5	0.034	69.0	0.004	89.5	0.001
1.6	0.808	9.8	0.059	28.5	0.051	49.0	0.037	69.5	0.002	90.0	0.000
1.8	0.724	10.0	0.053	29.0	0.067	49.5	0.035	70.0	0.007		
2.0	0.635	10.2	0.050	29.5	0.066	50.0	0.031	70.5	0.013		
2.2	0.545	10.4	0.048	30.0	0.048	50.5	0.025	71.0	0.019		