

TECHNICAL EXHIBIT
MINOR MODIFICATION OF CONSTRUCTION PERMIT
STATION KASA-DT (FACILITY ID 32311)
SANTA FE, NEW MEXICO

MARCH 17, 2003

CH 27 255 KW 1278 M

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Technical Narrative

This Technical Exhibit was prepared on behalf of digital television station KASA-DT at Santa Fe, New Mexico, in support of an application for minor modification of construction permit. Station KASA-DT is authorized to operate on channel 27 with a non-directional antenna effective radiated power (ERP) of 390 kW and an antenna height above average terrain (HAAT) of 1278 meters (BMPCDT-20020329AAD).

Proposed Facilities

This minor modification application proposes only to reduce the non-directional ERP. There will be no change in antenna, antenna HAAT, transmitter site, channel or city of license (Santa Fe). The transmitter site coordinates remain 35-12-50 N, 106-27-01 W (NAD 27). The FCC antenna structure registration number is 1225205. The proposed facilities (255 kW, 1278 m) are less than that currently authorized for KASA-DT and therefore comply with Section 73.622(f)(5) of the FCC rules concerning maximum allowable ERP and antenna height for DTV stations.

There are no AM broadcast stations located within 3.2 kilometers of the proposed transmitter site. The proposed antenna will be located in an antenna farm where various other FM and TV broadcast stations operate. No adverse impact is expected to any

other surrounding station; however, the applicant recognizes its responsibility to correct problems that may result from its proposed operation.

The transmitter site is beyond the coordination zones with Canada (400 km) and Mexico (275 km). The closest FCC monitoring station is at Douglas, Arizona, more than 500 kilometers to the southwest. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 500 kilometers to the north. The closest radio astronomy site operating on TV channel 37 is at Los Alamos, New Mexico, approximately 65 kilometers to the north. These separations are sufficient to not be a concern for coordination purposes.

Allocation Considerations

Interference calculations have been made using the procedures outlined in the FCC’s OET-69 bulletin, using a 2 kilometer grid spacing. Below is the list of stations considered in the OET-69 analysis.

Stations Potentially Affected by Proposed KASA-DT							
Chan	Call	City/State	Bear (°T)	Dist (km)	Status	App. Ref. No.	
19	KWBQ	SANTA FE NM	312	33.3	LIC	BLCT-19990317KG	
19	KWBQ	SANTA FE NM	158	0.1	CP	BPCT-20010322ABL	
23	KNAT-TV	ALBUQUERQUE NM	348	0.1	LIC	BLCT-19830401KG	
26	KOB-DT	ALBUQUERQUE NM	158	0.3	CP	BPCDT-19991027ACB	
26	KOB-DT	ALBUQUERQUE NM	158	0.3	PLN	DTVPLN-DTVP0607	
26	KOB-DT	ALBUQUERQUE NM	158	0.3	STA	BDSTA-20020211ABN	
27	KRPV	ROSWELL NM	139	264.3	LIC	BLCT-19860915KG	
30	KYNM-CA	ALBUQUERQUE NM	158	0.2	CP	BPTTA-20020110AAL	

From the above list of stations considered, the table below shows the calculated interference caused to each station. Only stations that are predicted to receive interference from the proposed KASA-DT operation are shown in the interference table.

Study Station	Baseline	Net Population Change/Interference
26 KOB-DT ALBUQUERQUE NM (CP)	779,478	-1,602 (0.2%) <i>Less Interference</i>
26 KOB-DT ALBUQUERQUE NM (PLN)	779,478	214 (0.0%) <i>New Interference</i>

The proposed KASA-DT operation does not cause excessive (greater than 2%, up to 10% total) calculated interference to any analog or DTV assignment. The proposed KASA-DT operation does not cause calculated interference to any other analog or DTV station. Therefore, it is believed the proposal complies with the FCC's "de minimis" interference policy.

With respect to Class A TV station protection, the proposal has been evaluated according to the requirements of Section 73.613 of the FCC Rules. The analysis reveals predicted overlap caused to station KYNM-CA on channel 30 at Albuquerque (BPTTA-20020110AAL). The proposed KASA-DT ERP reduction, with no change in transmitter site, antenna or antenna height will reduce the impact to KYNM-CA. Furthermore, OET-69 studies indicate that no interference is predicted to be caused to KYNM-CA by the proposed KASA-DT operation. No other Class A stations are potentially affected.

Environmental Considerations

The proposed KASA-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 55 meters above ground level. The proposed non-directional ERP is 255 kW. The applicant has indicated that a fence restricts site access to the general public within a minimum distance of 80 feet (24.4 meters) from the tower base. This distance corresponds to a downward vertical angle from the antenna center of radiation of 65 degrees. For locations outside of this restricted access area, the "worst-case" calculated power density will occur at a downward angle of 32 degrees from the antenna (see Figure 2B). This location corresponds to a point 2 meters above ground level and 85 meters (278 feet) from the tower base. A relative field of 0.094 was assumed at this angle and distance from the antenna (hypotenuse: 100 meters). The "worst-case" calculated power density outside the restricted fence access will be 0.0075 mW/cm². **This is only 2% of the FCC's recommended limit of 0.37 mW/cm² for channel 27 for an "uncontrolled" environment.**

Access to the transmitting site is restricted and appropriately marked with warning signs. As this will be a multi-user site, an agreement will control site access. 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 "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed KASA-DT operation appears to be otherwise categorically excluded from environmental processing.



Jonathan N. Edwards

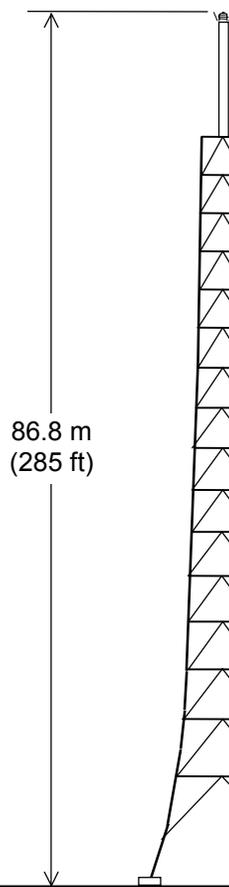
du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
(941) 329-6000

March 17, 2003

Antenna Reg. No. 1225205



3321.3 m AMSL
(10897 ft AMSL)



Proposed Dielectric
TUC-O5-8/40U-B Antenna

Radiation Center
3289.5 m AMSL
(10792 ft AMSL)

86.8 m
(285 ft)

55.0 m
(180 ft)

NAD 27
Site Coordinates:
35° 12' 50" N
106° 27' 01" W

3234.5 m AMSL
(10612 ft AMSL)

Not to Scale

ANTENNA AND SUPPORTING STRUCTURE

STATION KASA-DT

SANTA FE, NEW MEXICO

CH 27 255 KW 1278 M

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



Proposal Number **DCA-9056**

Figure **2A**

Call Letters

Channel **27**

Location

Albuquerque, NM

Customer

Antenna Type

TUC-O5-8/40U-B

ELEVATION PATTERN

RMS Gain at Main Lobe **15.20 (11.82 dB)**

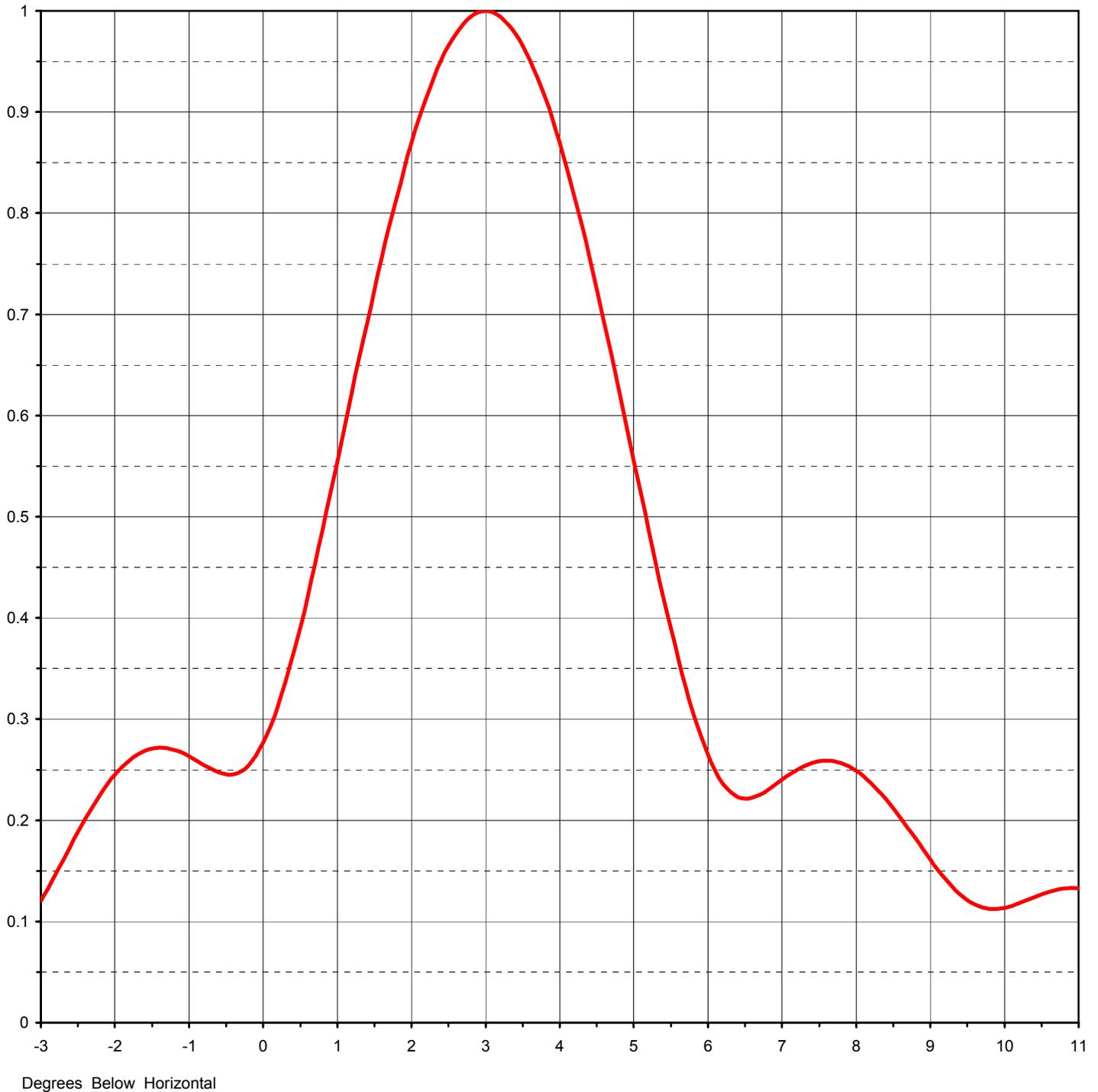
Beam Tilt **3.00 deg**

RMS Gain at Horizontal **1.20 (0.79 dB)**

Frequency **551.00 MHz**

Calculated / Measured **Calculated**

Drawing # **08U152300**





Proposal Number **DCA-9056**

Figure 2B

Call Letters

Channel **27**

Location

Albuquerque, NM

Customer

Antenna Type

TUC-O5-8/40U-B

ELEVATION PATTERN

RMS Gain at Main Lobe **15.20 (11.82 dB)**

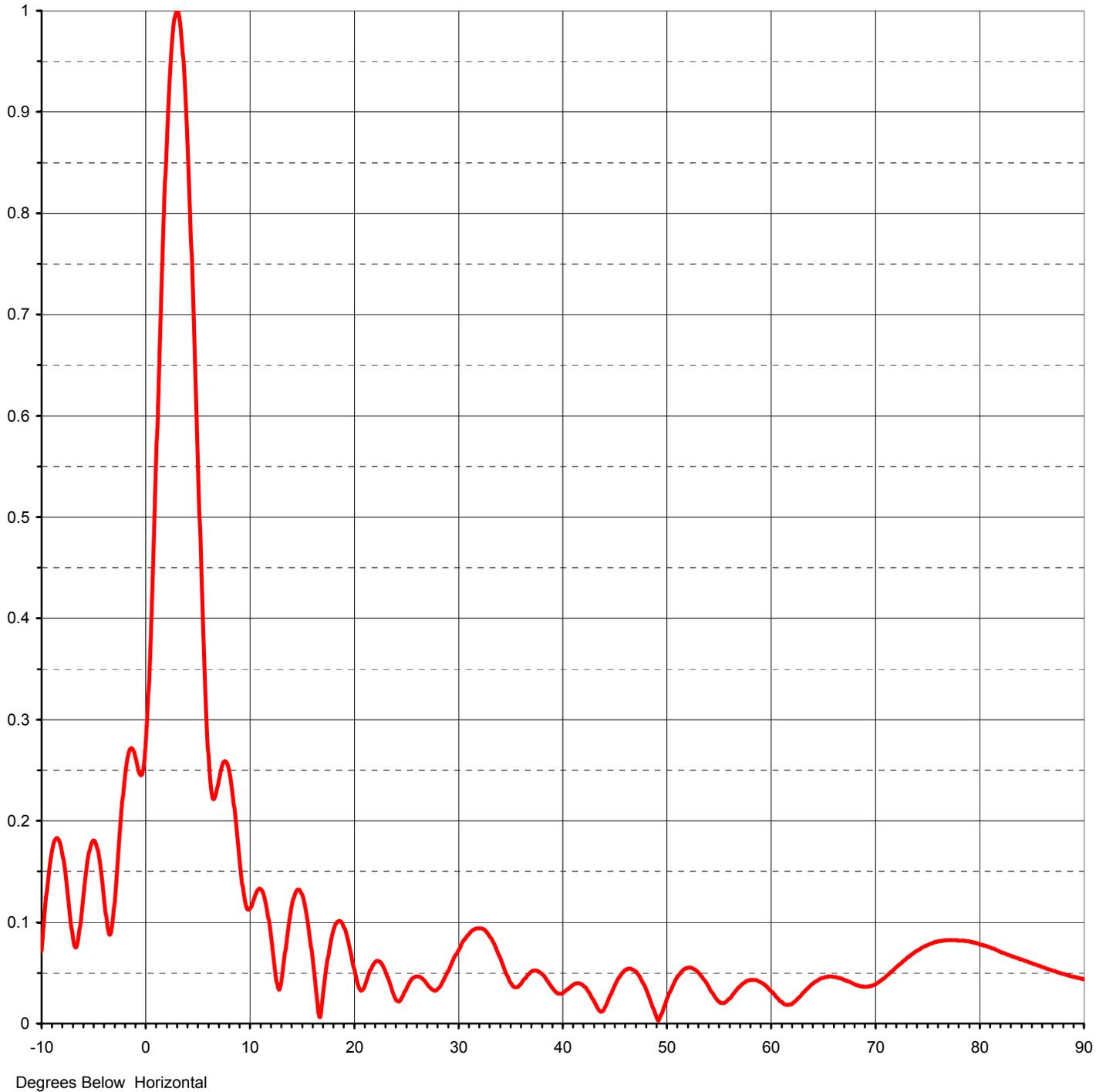
Beam Tilt **3.00 deg**

RMS Gain at Horizontal **1.20 (0.79 dB)**

Frequency **551.00 MHz**

Calculated / Measured **Calculated**

Drawing # **08U152300-90**





Proposal Number **DCA-9056**

Figure **2C**

Call Letters

Channel **27**

Location

Albuquerque, NM

Customer

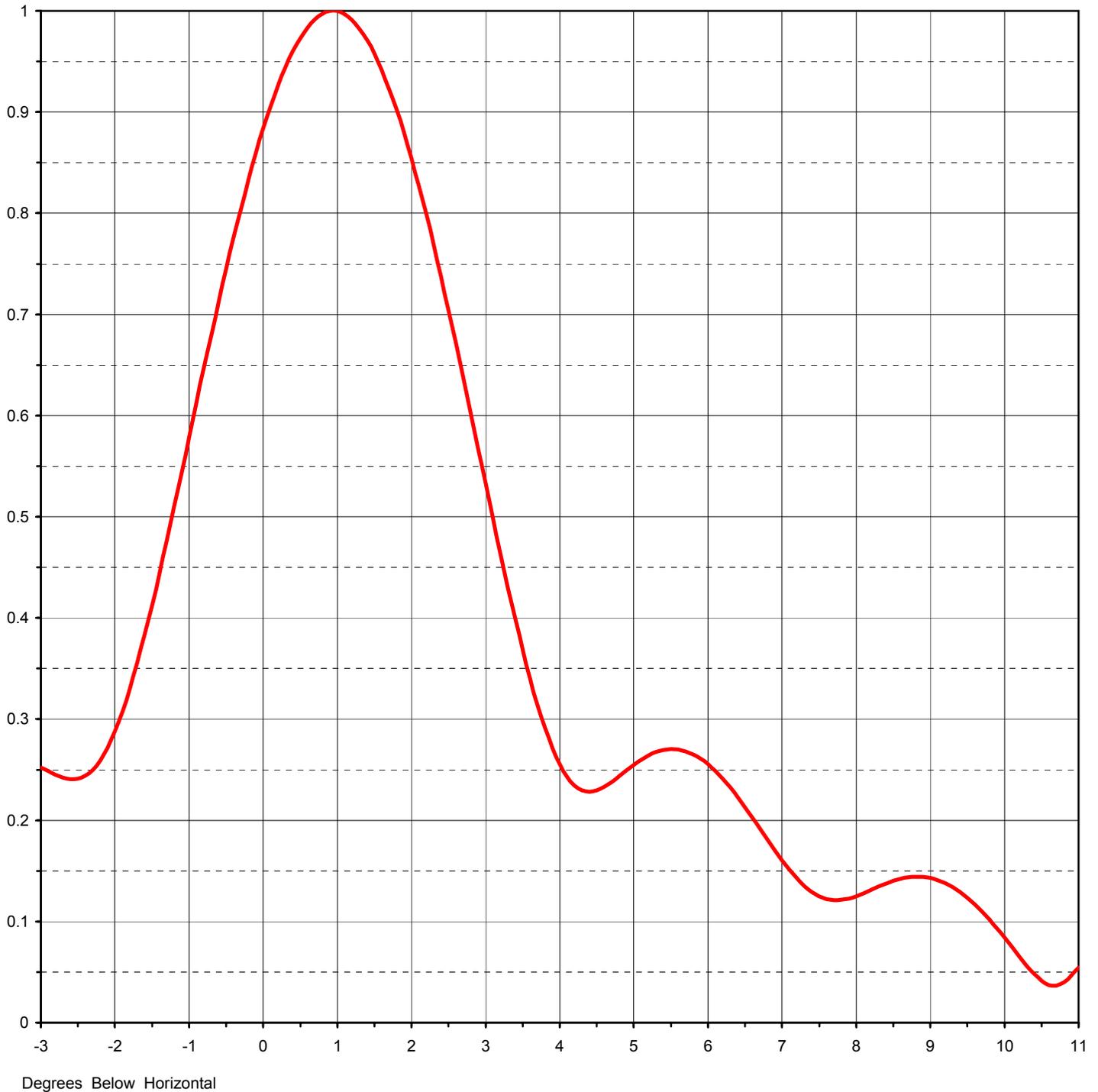
Antenna Type

TUC-O5-8/40U-B

ELEVATION PATTERN

RMS Gain at Main Lobe **15.60 (11.93 dB)**
RMS Gain at Horizontal **12.20 (10.86 dB)**
Calculated / Measured **Calculated**

Beam Tilt **1.00 deg**
Frequency **551.00 MHz**
Drawing # **08U156100**





Proposal Number **DCA-9056**

Figure **2D**

Call Letters

Channel **27**

Location

Albuquerque, NM

Customer

Antenna Type

TUC-O5-8/40U-B

ELEVATION PATTERN

RMS Gain at Main Lobe **15.60 (11.93 dB)**

Beam Tilt **1.00 deg**

RMS Gain at Horizontal **12.20 (10.86 dB)**

Frequency **551.00 MHz**

Calculated / Measured **Calculated**

Drawing # **08U156100-90**

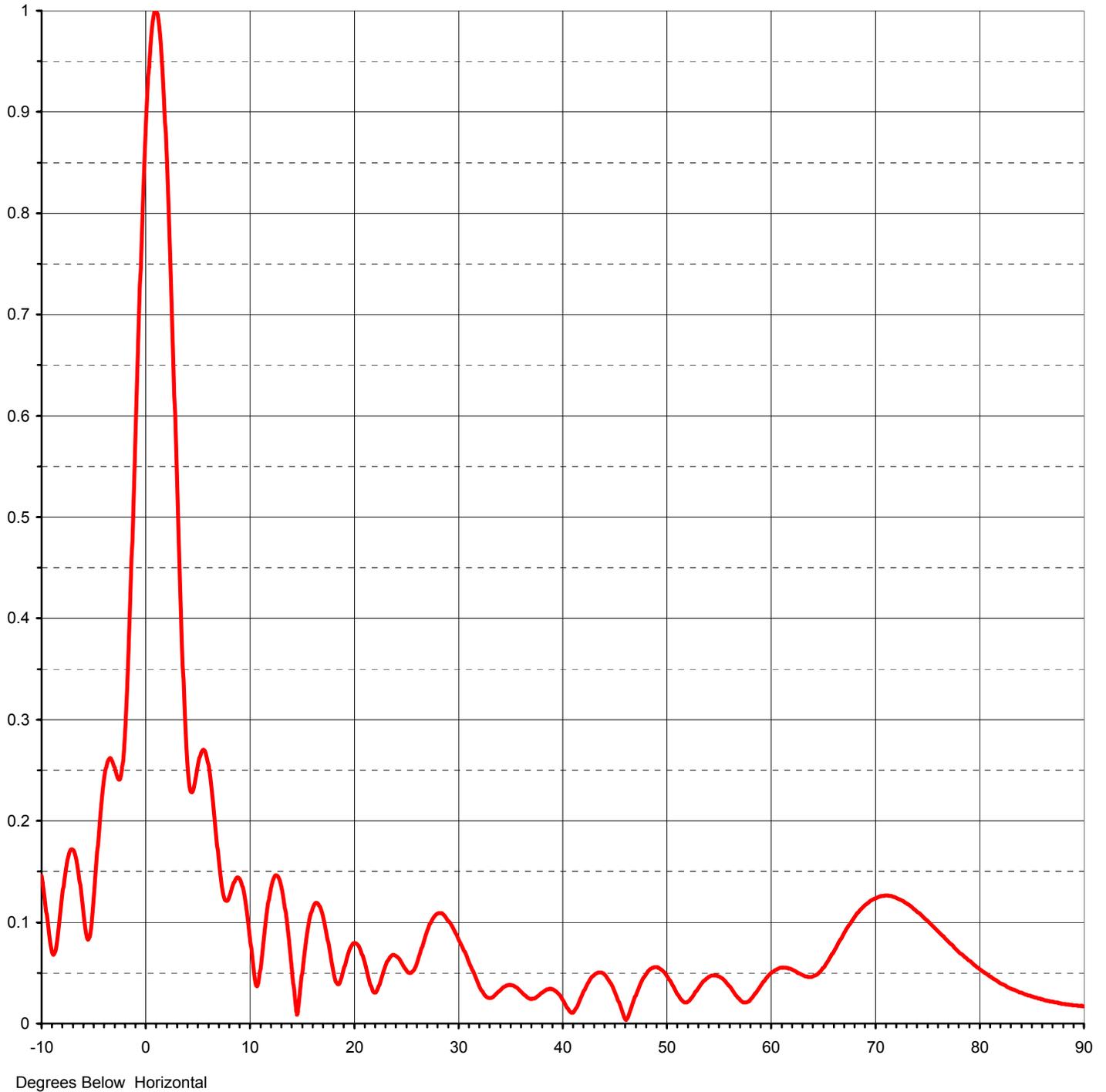
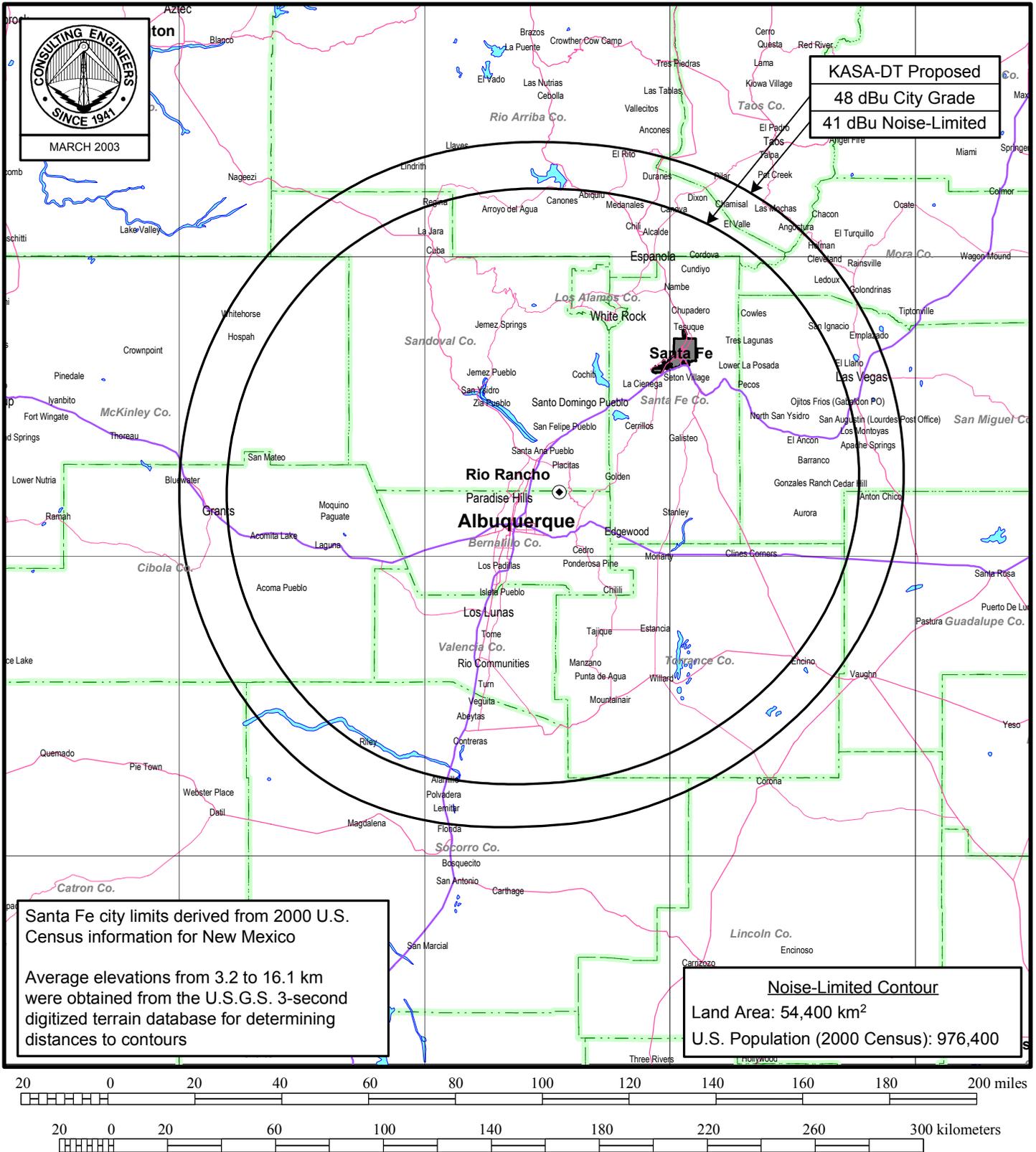


Figure 3



PREDICTED F(50,90) COVERAGE CONTOURS

STATION KASA-DT

SANTA FE, NEW MEXICO

CH 27 255 KW 1278 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida