

TECHNICAL EXHIBIT
AMENDMENT TO
APPLICATION FOR DTV CONSTRUCTION PERMIT
STATION KAIT-DT
JONESBORO, ARKANSAS
CH 9 18 KW 531 M

Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station KAIT-DT which is paired with NTSC (analog) channel 8 at Jonesboro, Arkansas. This application requests a construction permit (CP) for a digital television operation on channel 9 at Jonesboro. The Federal Communications Commission (FCC) assigned channel 9 as KAIT-DT's DTV allotment in the Memorandum, Opinion and Order (MO&O) concerning reconsideration of the 6th Report and Order in MM Docket No. 87-268. The FCC assigned an effective radiated power of 3.2 kilowatts with a directional antenna envelope and an antenna height above average terrain (HAAT) of 533 meters for the DTV allotment.

Proposed Facilities

Station KAIT-DT proposes to operate DTV channel 9 from its NTSC transmitter site. The proposed DTV transmission system will be combined with the NTSC transmitting antenna. It is proposed to operate with a Harris TAB-12H-M "batwing" type antenna with a maximum average effective radiated power of 18 kilowatts. The antenna height above average terrain for the channel 9 DTV

operation, and also the NTSC facility, will be 531 meters. The proposed KAIT-DT effective radiated power exceeds the Commission's allocated maximum effective radiated power. 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:

35° 53' 22" North Latitude
90° 56' 08" West Longitude

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

Figure 4 is the vertical plane radiation pattern for the proposed DTV antenna system.

Figure 3 is a map showing the DTV predicted coverage contour. The map provides the predicted F(50,90) noise limited contour. The extent of the contour has been calculated using the normal FCC prediction method. The Jonesboro city limits were derived from information contained in the 1990 U.S. Census of Population and Housing.

Allocation Considerations

The proposed KAIT-DT Channel 9 facility meets the requirements of Section 73.623 of the FCC Rules concerning predicted interference to other existing NTSC facilities and DTV allotments and assignments. 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.¹ 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 KAIT-DT facility are summarized herein at Figure 5. As indicated therein, the proposed facility will meet the 2%/10% criterion outlined in the FCC Rules and published guidelines with respect to all considered stations.²

Radiofrequency Electromagnetic Field Exposure

The proposed KAIT-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 KAIT-DT antenna is located 530 meters above ground level. The maximum

1 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 2 km was employed.

2 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 KAIT-DT. This properly reflects the net interference change for determining compliance with the FCC DTV2%/10% *de minimis* standard.

effective radiated power is 18 kilowatts. A "worst-case" relative field value of 1.0 is assumed for the antenna's downward radiation. The calculated power density at a point 2 meters above ground level is 0.002 mW/cm^2 . This is 1 percent of the Commission's recommended limit of 0.2 mW/cm^2 for channel 9 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 "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed KAIT-DT operation appears to be otherwise categorically excluded from environmental processing.

Charles Cooper

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
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March 29, 2000

Figure 1

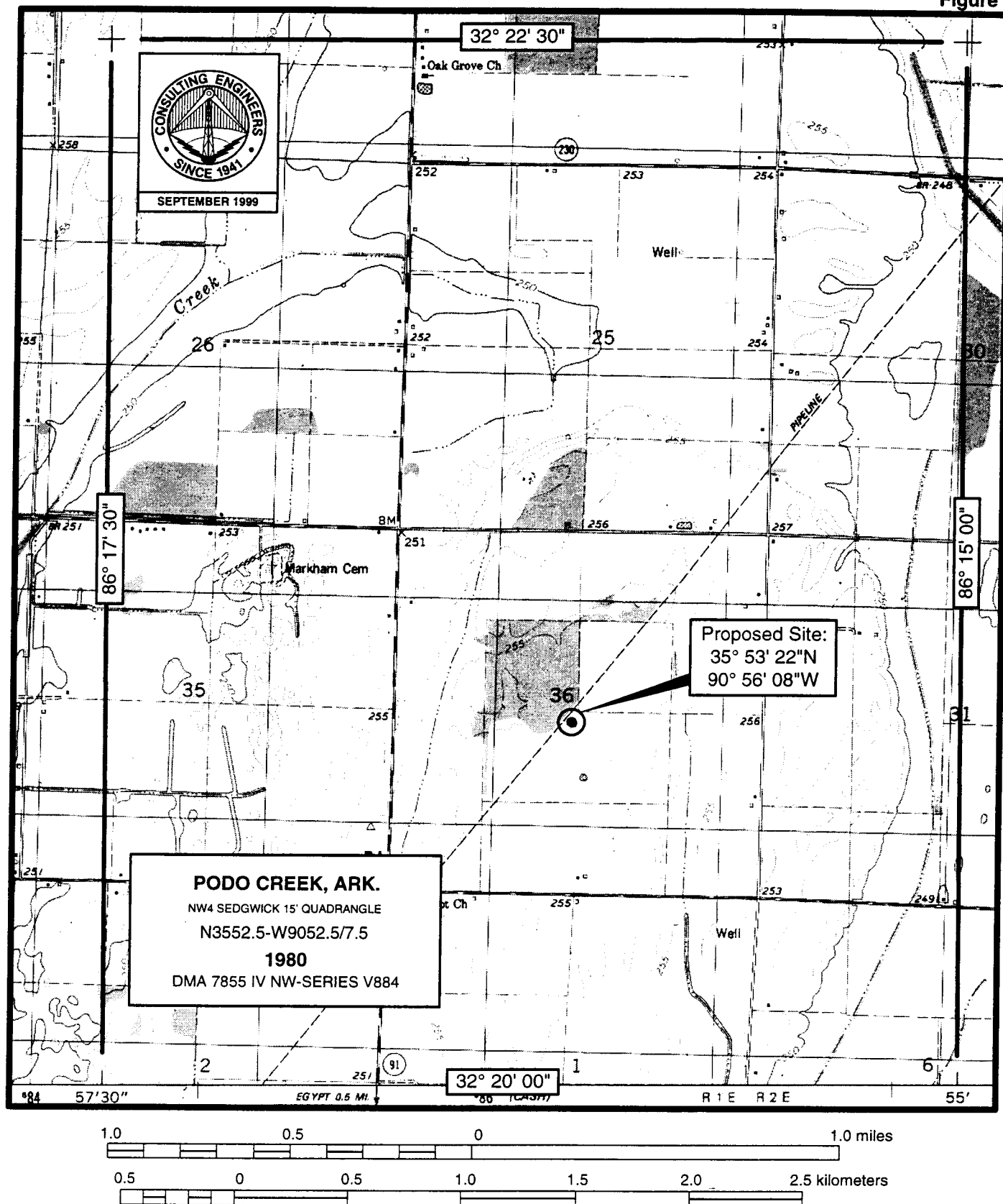
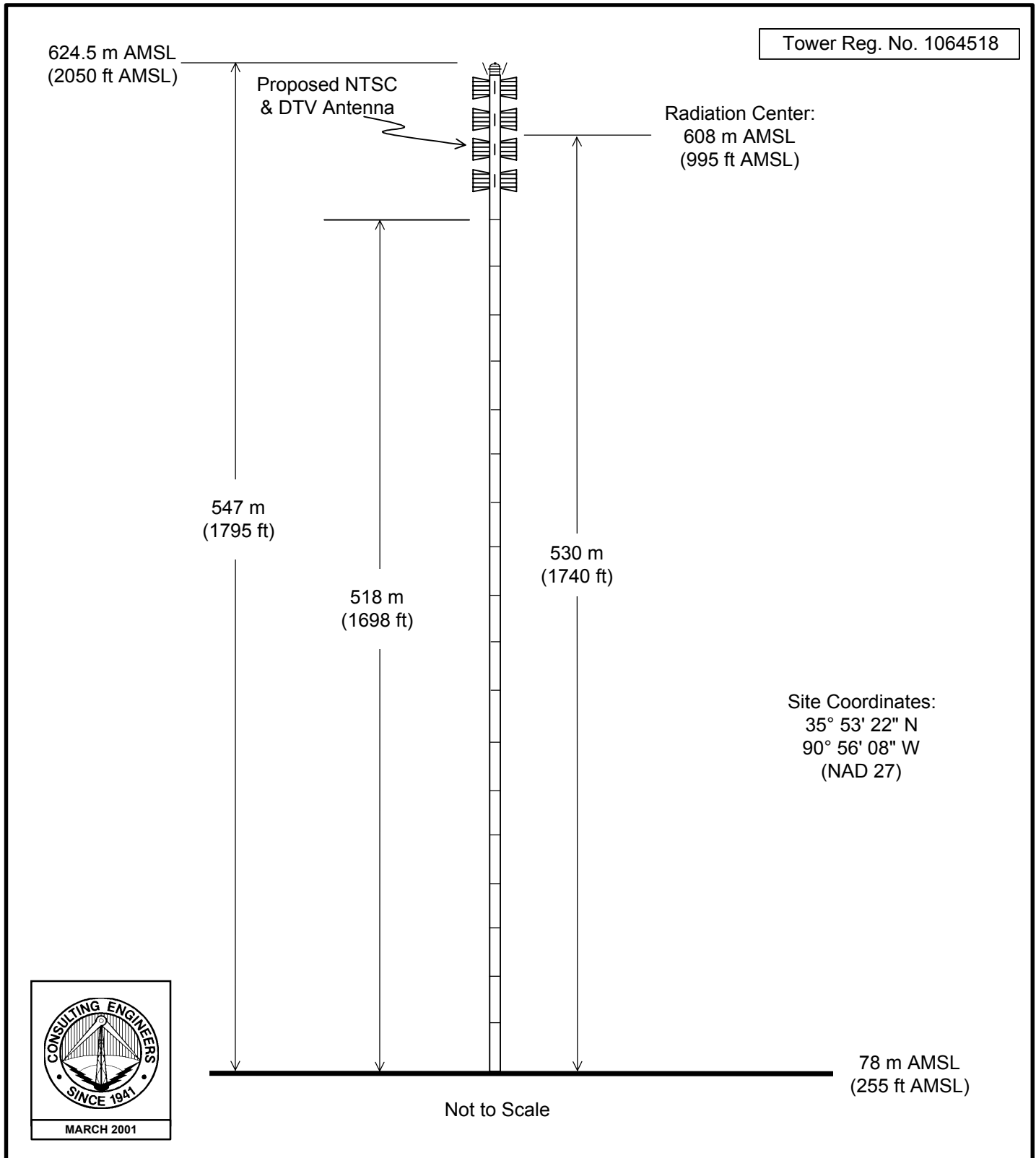


Figure 2



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

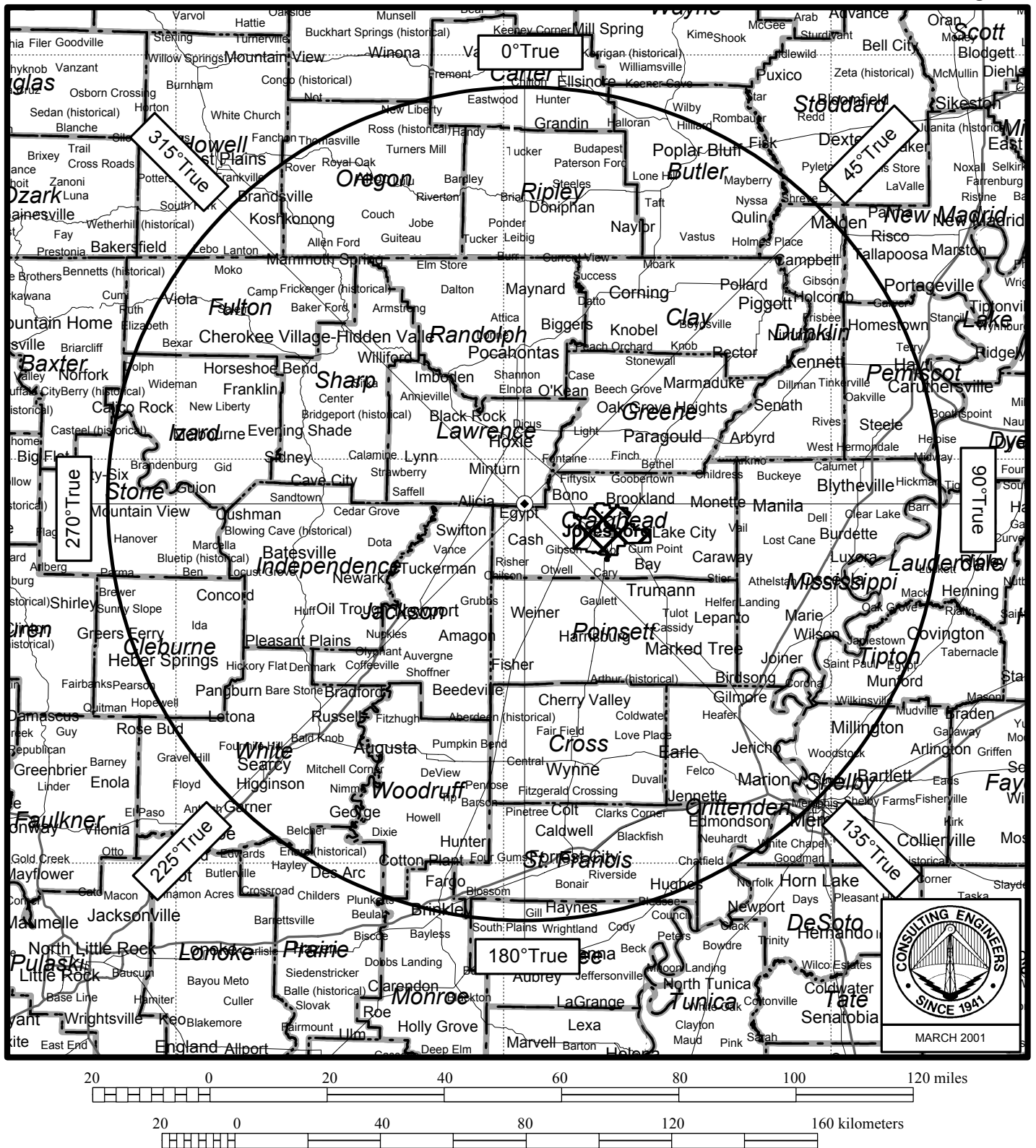
TELEVISION STATION KAIT-DT

JONESBORO, ARKANSAS

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

Figure 3



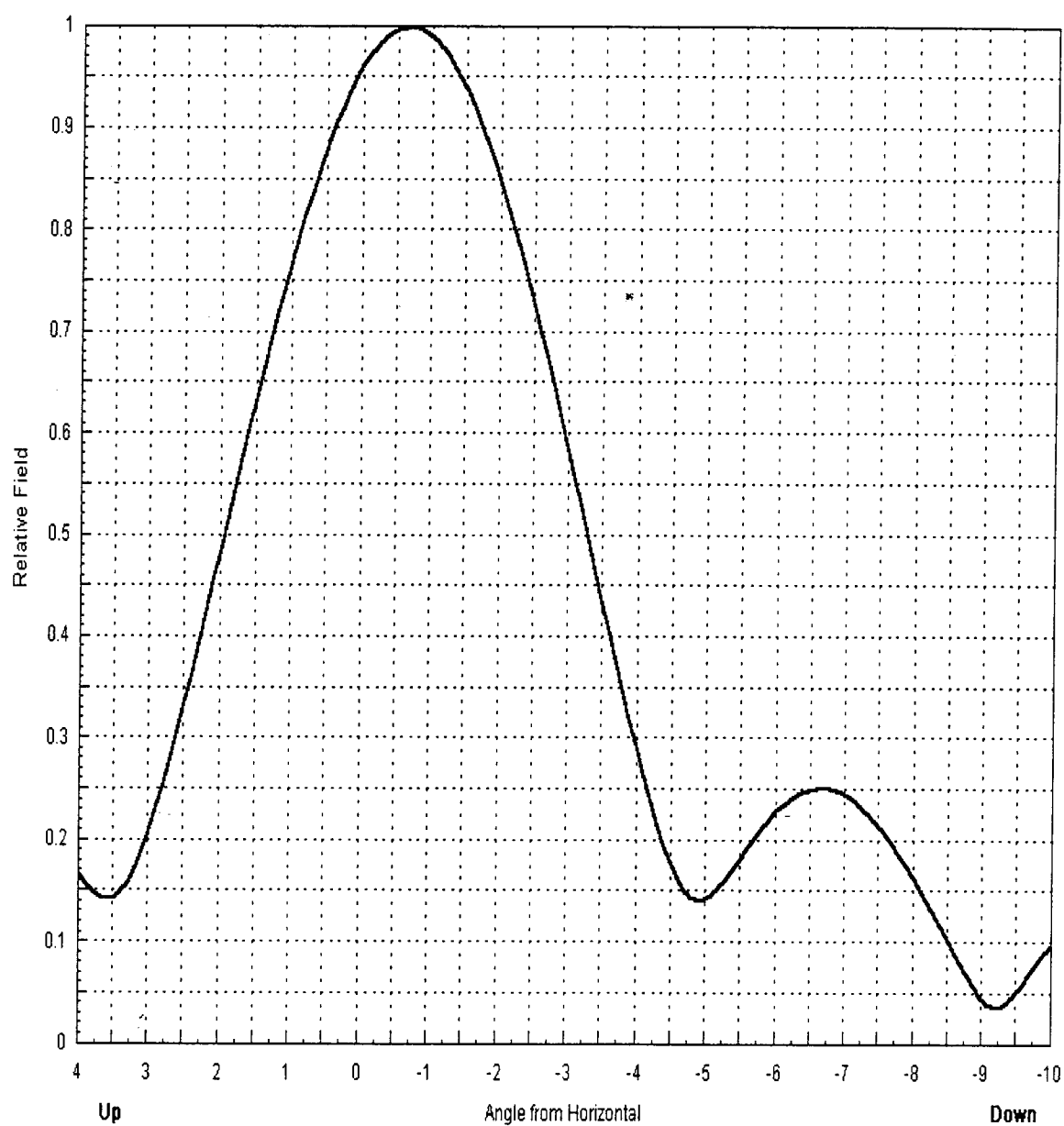
DTV NOISE-LIMITED COVERAGE CONTOUR

TELEVISION STATION KAIT-DT
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du Treil, Lundin & Rackley, Inc., Sarasota, Florida



Calculated Elevation Pattern



Harris Pattern No.: 9264E01K
Model: TAB-12HM

TABULATED ELEVATION PATTERN

DATE: 09/21/1999

TIME: 4:13 PM

Pattern No.: 9264E02K

PLOT FILENAME = C:\ANTENNA\DATA\9264E02K.PLT

ELEVATION	REL. FIELD	Rel. dB	ELEVATION	REL. FIELD	Rel. dB
-----	-----	-----	-----	-----	-----
-90.0	0.019	-34.346	0.0	0.945	-0.489
-80.0	0.029	-30.758	3.3	0.150	-16.467
-77.2	0.032	-29.930	5.0	0.255	-11.877
-71.7	0.019	-34.619	7.5	0.036	-28.918
-70.0	0.030	-30.459	9.5	0.154	-16.227
-61.0	0.194	-14.260	10.0	0.143	-16.906
-60.0	0.189	-14.456	11.7	0.006	-43.812
-53.6	0.040	-27.866	14.1	0.144	-16.851
-51.0	0.059	-24.554	17.0	0.037	-28.738
-50.0	0.054	-25.408	18.4	0.054	-25.399
-47.2	0.015	-36.202	20.0	0.020	-33.996
-44.8	0.032	-29.831	20.4	0.009	-40.728
-42.1	0.014	-37.157	22.6	0.056	-25.096
-40.0	0.027	-31.380	24.8	0.007	-43.386
-39.6	0.027	-31.220	27.2	0.065	-23.791
-39.1	0.027	-31.277	29.4	0.015	-36.198
-34.6	0.100	-20.036	30.0	0.031	-30.289
-31.2	0.015	-36.245	32.7	0.103	-19.745
-30.0	0.048	-26.362	36.9	0.029	-30.858
-28.9	0.062	-24.155	37.6	0.029	-30.614
-26.5	0.007	-43.428	40.0	0.015	-36.591
-24.3	0.053	-25.512	42.6	0.036	-28.938
-22.1	0.010	-40.342	45.0	0.017	-35.476
-20.1	0.051	-25.804	48.6	0.066	-23.643
-20.0	0.051	-25.822	50.0	0.055	-25.251
-18.8	0.038	-28.397	51.1	0.044	-27.083
-15.7	0.146	-16.740	57.8	0.220	-13.136
-13.3	0.005	-45.771	60.0	0.193	-14.274
-11.0	0.154	-16.242	67.3	0.022	-32.967
-10.0	0.112	-19.049	70.0	0.036	-28.836
-9.1	0.035	-29.021	71.7	0.040	-28.067
-6.6	0.253	-11.923	80.0	0.010	-39.658
-4.9	0.149	-16.522	84.0	0.002	-53.043
-0.8	1.000	0.000	89.8	0.005	-45.321
			90.0	0.005	-45.333

Figure 5

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Summary of Allocation Analysis

Facility	Channel	NTSC or DTV?	Baseline Service Population (1990)	Permissible IX (%)	Net New IX Caused by Proposed (1990)	Percent of Baseline (%)
WTVA (TV) Tupelo, MS BLCT-1234	9	NTSC	683,128	2.0	11,993	1.78
KETC (TV) St. Louis, MO BLET-318	9	NTSC	2,708,809	2.0	2,026	0.08
KETG (TV) Arkadelphia, AR BLET-413	9	NTSC	382,884	2.0	7,342	1.91
KAFT-TV Fayetteville, AR Rule Making	9	DTV	724,449	2.0	4,517	0.63
WNIN (TV) Evansville, IN BLET-258	9	NTSC	721,017	2.0	0.0	0.00
WLBT-TV Jackson, MS DTV Rule Making	9	DTV	No Interference Predicted			
WKNO (TV) Memphis, TN BLET-257	10	NTSC	1,368,698	2.0	707	0.05

Note: Two-square kilometer resolution is employed for the OET-69 allocation analysis.