

EXHIBIT NO. 100

ENGINEERING EXHIBIT
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT
DUHAMEL BROADCASTING ENTERPRISES
STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA

February 4, 2003

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DUHAMEL BROADCASTING ENTERPRISES
STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32 KW 475 M
FACILITY ID 17683

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Engineering Statement

The Engineering Exhibit, of which this statement is part, was prepared on behalf of Duhamel Broadcasting Enterprises, licensee of Stations KDUH-TV and KDUH-DT Scottsbluff, Nebraska. Station KDUH-DT holds a permit to construct a new digital television station to operate on Channel 7, File Number BPCDT-20010206ABB. The digital station was to collocate with analog station KDUH-TV; however, while the tower was being strengthened to accommodate the channel 7 digital antenna, it collapsed and was completely destroyed. For numerous reasons outlined in the pending application of KDUH-TV (File Number BPCT-20030124AGJ), a new transmitter location was selected for KDUH and a tower of lower height than currently licensed is proposed. At this new location, KDUH-DT will employ a top-mounted omni directional antenna with effective radiated power of 32 kilowatts.

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The FAA has been notified of the proposed tower construction and has assigned Aeronautical Study No. 2003-ACE-87-OE. The proposed tower will be registered upon receipt of the FAA's Determination of No Hazard to Air Navigation.

Proposed Transmitter Location

A transmitting location was selected approximately 4.3 kilometers east southeast of Angora, Nebraska. With the top-mounted DTV antenna, the proposed structure will be 450.5 meters above ground level (1752.3 meters AMSL). A sketch of the tower and antenna is shown on Figure 1.

The site elevation determined by survey is 1301.8 meters (4271 feet) AMSL and the geographic coordinates are (NAD27) 41-50-28 North Latitude, 103-47-27 West Longitude. Figure 5 is a portion of "Angora SE, NEBR." quadrangle map showing the tower location and vicinity.

There are no AM broadcast stations located within 10 kilometers of the proposed site. In addition to collocated channel 4 station KDUH-TV, there are FM and TV stations within 1 kilometer of the proposed site. These stations are sufficiently separated both by distance and frequency so that intermodulation problems are not

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anticipated. The applicant recognizes the responsibility to resolve any complaints of interference resulting from the operation of KDUH-DT.

Proposed Operation

A Dielectric type TW-9B-R, horizontally polarized antenna will be top mounted on the proposed tower. The omni directional antenna has a gain of 9 and employs 0.75 degree of electrical beam tilt. The effective radiated power will be 32 kilowatts. Figure 2 provides information concerning the vertical plane radiation pattern for the antenna.

Coverage Contours

The predicted 36 dBu F(50,90) noise-limited contours is shown on Figure 3. The contour encloses 42,070 square kilometers in which 103,145 persons reside, based on the 2000 census. Also shown on Figure 3 is the 43 dBu F(50,90) principal community contour, which completely encloses Scottsbluff.

Allocation Study

The attached Figure 4 is a distance separation study for use of DTV channel 7 at the proposed site. As

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will be noted, the proposal is short-spaced with cochannel station KEVN-TV Rapid City, SD by 26 kilometers. According to *OET Bulletin No. 69*, no interference will be created to KEVN-TV by the KDUH-DT proposal. The proposed DTV operation will not create interference with any other analog or digital stations, thereby complying with the FCC's allocation rules.

Environmental Considerations

The channel 7 proposal was evaluated for exposure of humans to radiofrequency radiation in accordance with OET Bulletin 65, *Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*, Edition 97-01.

The power density from the proposed KDUH-DT operation at the base of the proposed tower was determined to be 0.0001 milliwatts per centimeter squared, or 0.03 percent of the ANSI limit of 0.2 milliwatts per centimeter squared for an uncontrolled environment. This calculation was made, employing an effective radiated power of 32 kilowatts, antenna center of radiation 440.4 meters above ground level and a relative field value of 0.1. The relative field value selected is appropriate for the Dielectric antenna to be used. As the power density at the

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base of this multi-user tower is less than 5 percent of the ANSI standard, further consideration is not necessary.

Access to the transmitting facility will be restricted and appropriately marked with warning signs. In the event workers or other authorized personnel enter the restricted area around the base of the tower or climb the tower, appropriate measures will be taken to assure worker safety with respect to radiofrequency radiation exposure. Such measures will include reducing power or taking a station off the air.

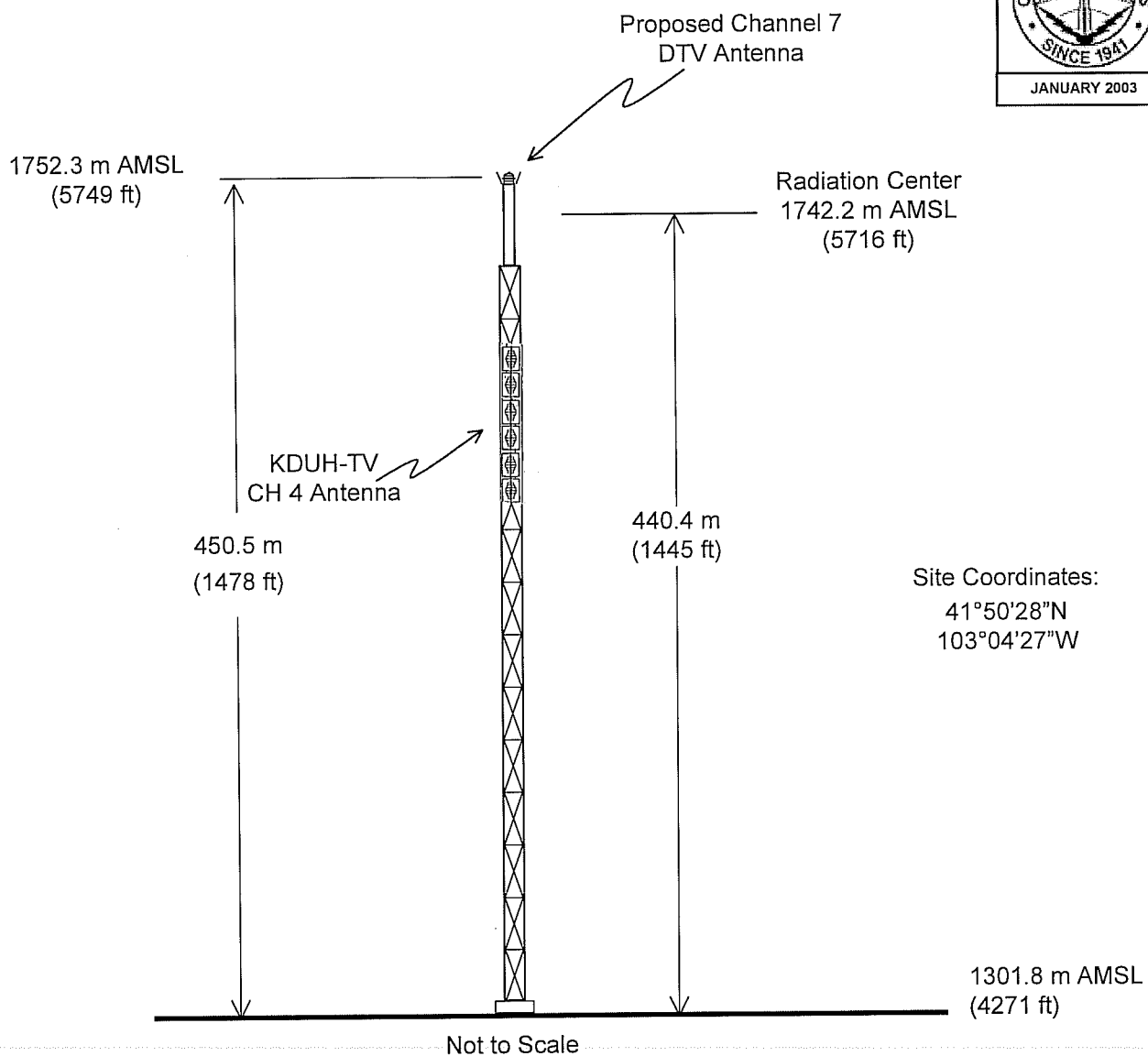
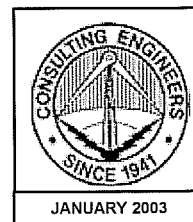
In all other respects, the proposed operation of KDUH-DT appears to be otherwise categorically excluded from environmental processing according to 47 CFR 1.1306.



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201 Fletcher Avenue
Sarasota, Florida 34237-6019
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February 4, 2003

Figure 1



SKETCH OF PROPOSED TOWER

STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32 KW 475 M

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

Exhibit No.

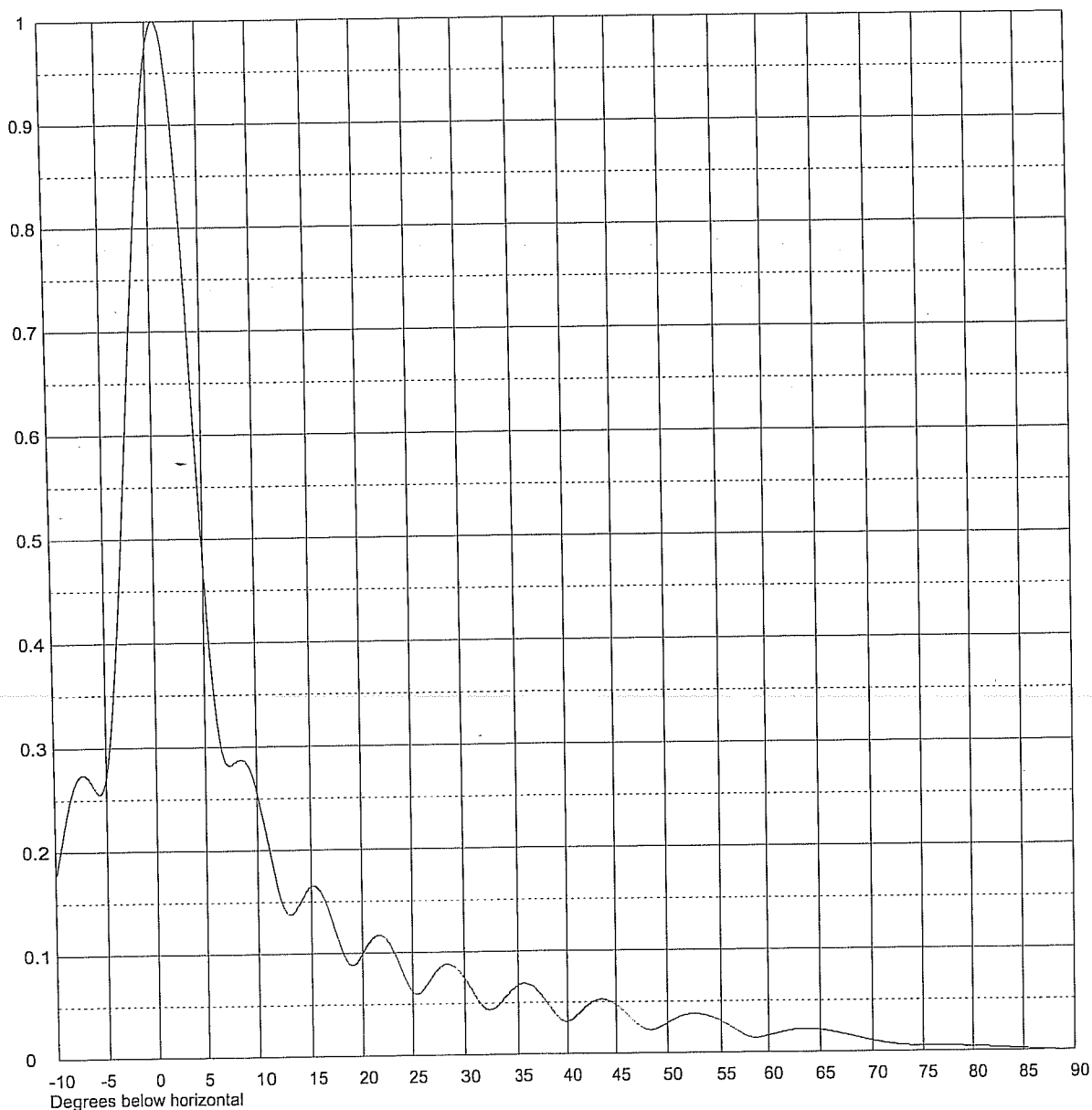
Dielectric

Date
Call Letters
Location
Customer
Antenna Type

Channel 7
KDUH SCOTTSBLUFF
TW-9B-R

ELEVATION PATTERN

RMS Gain at Main Lobe	9.0 (9.54 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	8.6 (9.34 dB)	Frequency	177.00 MHz
Calculated / Measured	Calculated	Drawing #	19W090075-90



Remarks:

Exhibit No.



Date
Call Letters
Location
Customer
Antenna Type **TW-9B**

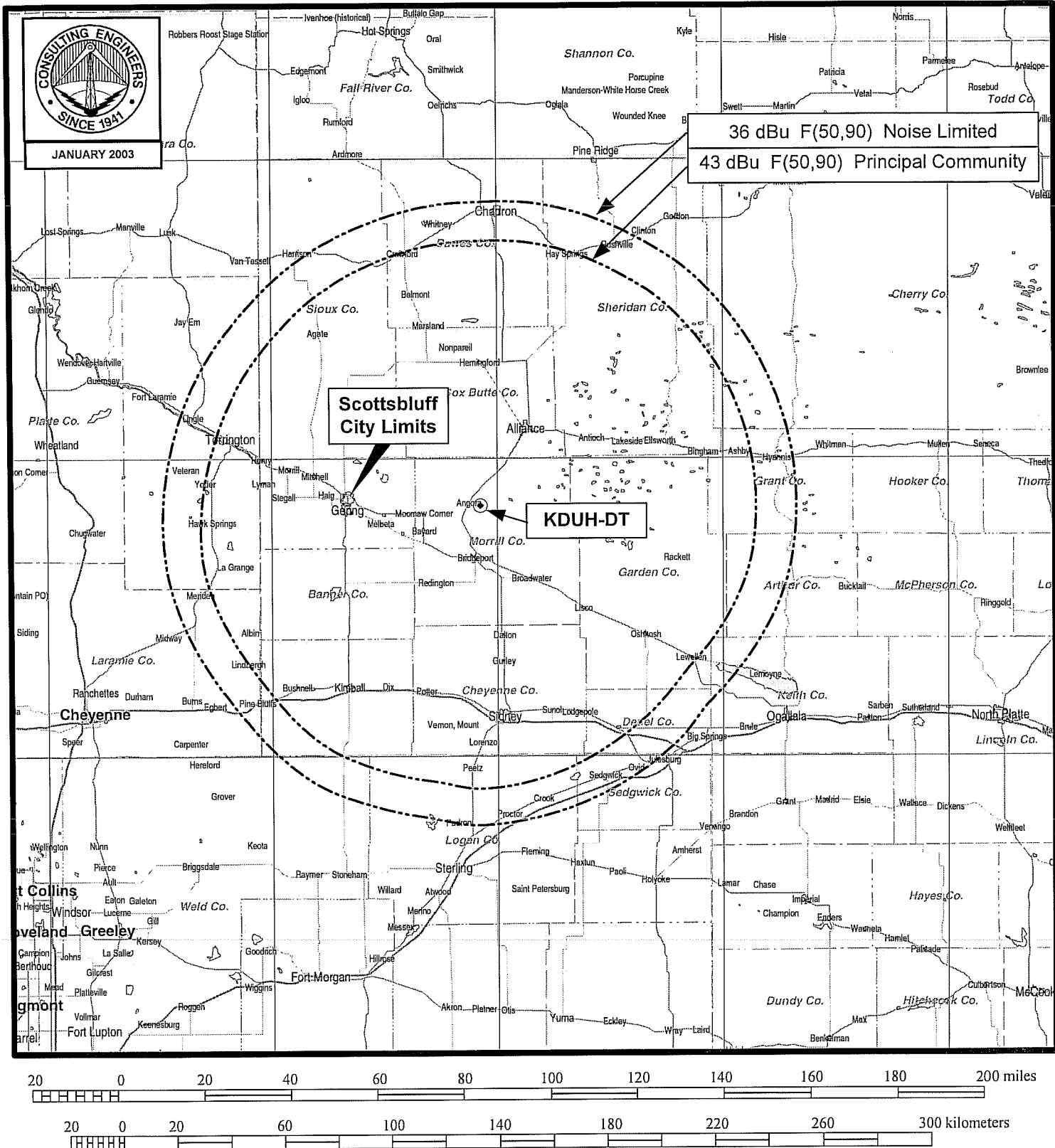
Channel 7

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **19W09007-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.173	2.4	0.900	10.6	0.227	30.5	0.066	51.0	0.034	71.5	0.008
-9.5	0.200	2.6	0.875	10.8	0.216	31.0	0.057	51.5	0.036	72.0	0.007
-9.0	0.226	2.8	0.847	11.0	0.205	31.5	0.050	52.0	0.037	72.5	0.006
-8.5	0.249	3.0	0.818	11.5	0.178	32.0	0.044	52.5	0.038	73.0	0.006
-8.0	0.265	3.2	0.787	12.0	0.155	32.5	0.044	53.0	0.038	73.5	0.006
-7.5	0.273	3.4	0.754	12.5	0.141	33.0	0.047	53.5	0.037	74.0	0.005
-7.0	0.273	3.6	0.721	13.0	0.138	33.5	0.052	54.0	0.035	74.5	0.005
-6.5	0.267	3.8	0.686	13.5	0.143	34.0	0.058	54.5	0.033	75.0	0.005
-6.0	0.258	4.0	0.651	14.0	0.152	34.5	0.063	55.0	0.031	75.5	0.005
-5.5	0.256	4.2	0.615	14.5	0.160	35.0	0.067	55.5	0.028	76.0	0.005
-5.0	0.270	4.4	0.580	15.0	0.165	35.5	0.069	56.0	0.025	76.5	0.005
-4.5	0.308	4.6	0.545	15.5	0.164	36.0	0.068	56.5	0.022	77.0	0.005
-4.0	0.369	4.8	0.510	16.0	0.158	36.5	0.066	57.0	0.019	77.5	0.005
-3.5	0.448	5.0	0.477	16.5	0.147	37.0	0.061	57.5	0.017	78.0	0.005
-3.0	0.536	5.2	0.445	17.0	0.133	37.5	0.055	58.0	0.015	78.5	0.005
-2.8	0.573	5.4	0.416	17.5	0.117	38.0	0.049	58.5	0.014	79.0	0.005
-2.6	0.610	5.6	0.388	18.0	0.102	38.5	0.042	59.0	0.014	79.5	0.004
-2.4	0.647	5.8	0.364	18.5	0.092	39.0	0.036	59.5	0.015	80.0	0.004
-2.2	0.684	6.0	0.343	19.0	0.088	39.5	0.032	60.0	0.016	80.5	0.004
-2.0	0.719	6.2	0.324	19.5	0.091	40.0	0.031	60.5	0.017	81.0	0.004
-1.8	0.754	6.4	0.310	20.0	0.099	40.5	0.033	61.0	0.019	81.5	0.004
-1.6	0.787	6.6	0.298	20.5	0.107	41.0	0.038	61.5	0.020	82.0	0.003
-1.4	0.819	6.8	0.291	21.0	0.114	41.5	0.042	62.0	0.021	82.5	0.003
-1.2	0.848	7.0	0.285	21.5	0.117	42.0	0.046	62.5	0.022	83.0	0.003
-1.0	0.876	7.2	0.283	22.0	0.116	42.5	0.050	63.0	0.022	83.5	0.003
-0.8	0.901	7.4	0.282	22.5	0.111	43.0	0.052	63.5	0.022	84.0	0.002
-0.6	0.924	7.6	0.282	23.0	0.103	43.5	0.053	64.0	0.022	84.5	0.002
-0.4	0.944	7.8	0.284	23.5	0.093	44.0	0.052	64.5	0.022	85.0	0.002
-0.2	0.961	8.0	0.285	24.0	0.081	44.5	0.050	65.0	0.021	85.5	0.002
0.0	0.975	8.2	0.287	24.5	0.070	45.0	0.047	65.5	0.021	86.0	0.001
0.2	0.986	8.4	0.287	25.0	0.062	45.5	0.043	66.0	0.020	86.5	0.001
0.4	0.994	8.6	0.287	25.5	0.060	46.0	0.039	66.5	0.019	87.0	0.001
0.6	0.999	8.8	0.287	26.0	0.063	46.5	0.034	67.0	0.018	87.5	0.001
0.8	1.000	9.0	0.284	26.5	0.069	47.0	0.029	67.5	0.017	88.0	0.000
1.0	0.998	9.2	0.281	27.0	0.077	47.5	0.025	68.0	0.015	88.5	0.000
1.2	0.993	9.4	0.277	27.5	0.083	48.0	0.023	68.5	0.014	89.0	0.000
1.4	0.985	9.6	0.271	28.0	0.087	48.5	0.022	69.0	0.013	89.5	0.000
1.6	0.974	9.8	0.264	28.5	0.088	49.0	0.024	69.5	0.012	90.0	0.000
1.8	0.959	10.0	0.256	29.0	0.086	49.5	0.026	70.0	0.011		
2.0	0.942	10.2	0.247	29.5	0.082	50.0	0.029	70.5	0.010		
2.2	0.922	10.4	0.237	30.0	0.075	50.5	0.032	71.0	0.009		

Remarks:



PREDICTED COVERAGE CONTOURS

STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32 KW 475 M

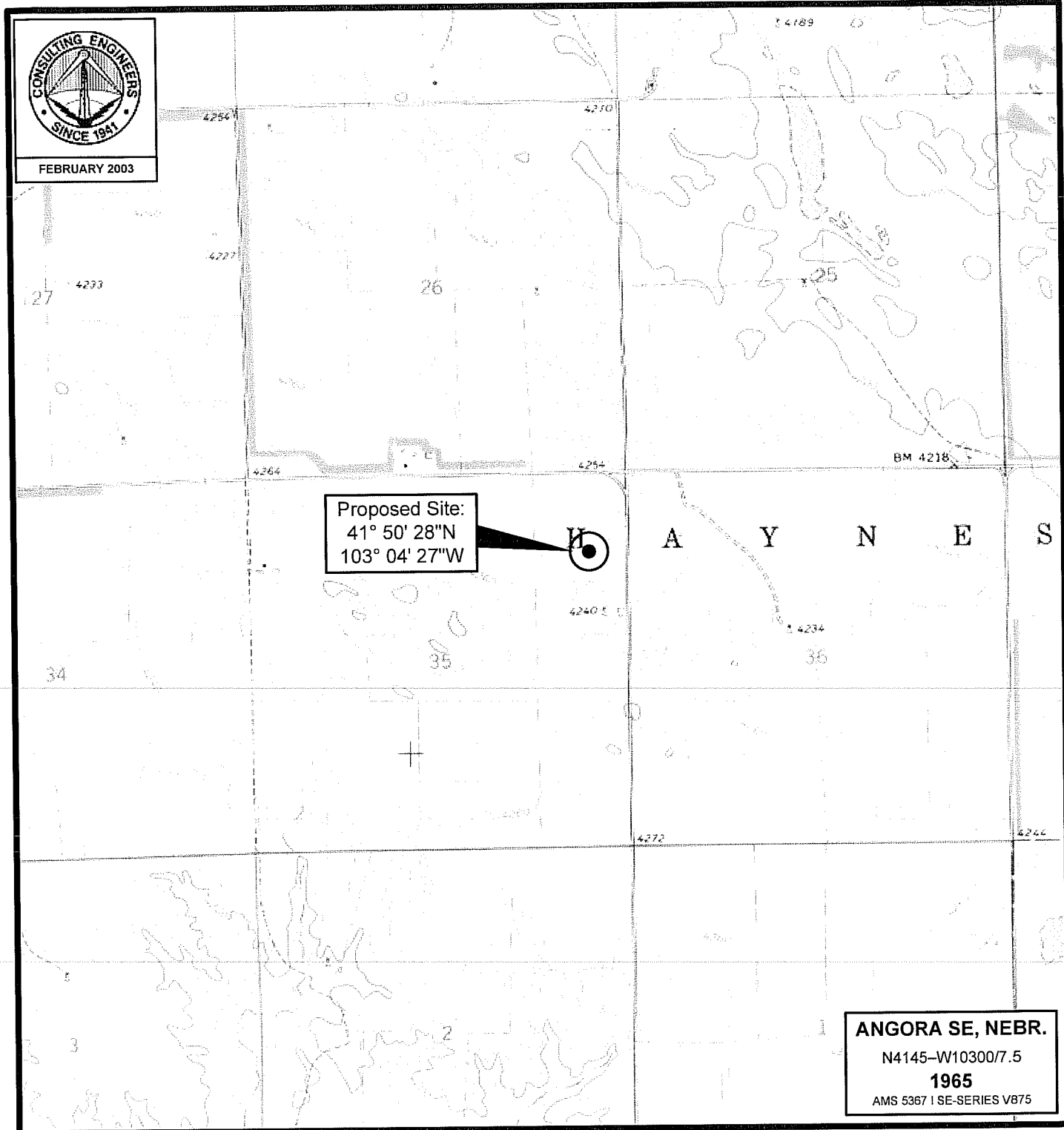
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Separation Study
(41-50-28 103-04-37)

Call Id	City St	File Status	Num	Channel Zone	ERP HAAT	DA Id	Latitude Longitude	Bear	Dist. (km)	Req. min max
KDUH-T 17683	SCOTTSBLUFF NE CP	BPCDT C	20010206AB	7 () II	32.400 592	D 38434	42-10-21 103-13-57	340.8	39.0 234.60	273.6 273.6 Short
KDUHTV 123210	SCOTTSBLUFF NE GRA	BPRM C	20000417AA	7 () II	32.400 592	D 32467	42-10-21 103-13-57	340.8	39.0 234.60	273.6 273.6 Short
KEVN-T 34347	RAPID CITY SD LIC	BLCT C	2543	7 (+) II	263.000 204	N	44-04-00 103-15-01	356.8	247.6 25.96	273.6 273.6 Short
KMGH-T 40875	DENVER CO APP	BPCT C	20020801AB	7 (Z) II	316.000 358	D 44313	39-43-51 105-13-54	218.4	296.6 23.05	273.6 273.6 Clear
KMGH-T 40875	DENVER CO LIC	BLCT C	19970805KM	7 (Z) II	316.000 310	N 28314	39-43-46 105-14-12	218.5	297.0 23.42	273.6 273.6 Clear
KMNE-T 47981	BASSETT NE LIC	BLET C	19871103KG	7 (-) II	316.000 453	N	42-20-05 099-29-01	78.3	302.3 28.72	273.6 273.6 Clear
921210 10032	LARAMIE WY APP	BPET C	19921210KE	8 (+) II	0.591 322	D 34556	41-18-36 105-27-17	254.2	206.9 81.90	11.0 125.0 Clear
KZSD-T 61062	MARTIN SD LIC	BLET C	19901120KE	8 (-) II	275.000 265	N	43-26-06 101-33-14	34.6	216.7 91.69	11.0 125.0 Clear
921210 10032	LARAMIE WY		C	8 (+) II		N	41-18-47 105-35-26	255.2	217.7 92.68	11.0 125.0 Clear

Figure 5



PROPOSED TRANSMITTER LOCATION

STATION KDUH-DT
SCOTTSBLUFF, NEBRASKA
CH 7 32 KW 475 M