

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of J.F. BROADCASTING, LLC, licensee of full-power commercial digital television station KWSD-DT, Channel 36 in Sioux Falls, South Dakota, in support of its Application for Construction Permit to specify an increase in effective radiated power to 1000 kW. No change in site location or antenna height above average terrain from that licensed is proposed herein.

It is proposed to utilize the licensed Dielectric directional, horizontally-polarized slotted cylinder antenna, which is mounted at the 246-meter level of an existing 256-meter tower. Exhibit B is a map upon which the predicted service contours are plotted. As shown, the community of Sioux Falls is completely encompassed by the proposed 48 dBu city-grade service contour.

Elevation and azimuth pattern data (from the KWSD-DT FCC license file) for the licensed Dielectric antenna are provided in Exhibit C. Exhibit D contains the summary results from a TVStudy interference study, which was conducted using a cell size of 2.0 kilometers and an increment spacing of 1.0 kilometer. It concludes that the proposed KWSD-DT facility meets the Commission's *de minimis* interference criteria to all co-channel and adjacent-channel post-repack full-power and Class A facilities. A power density calculation appears as Exhibit E.

Since no change in the overall height or location of the existing KWSD-DT tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the FCC issued Antenna Structure Registration Number 1206712 to this tower.

EXHIBIT A

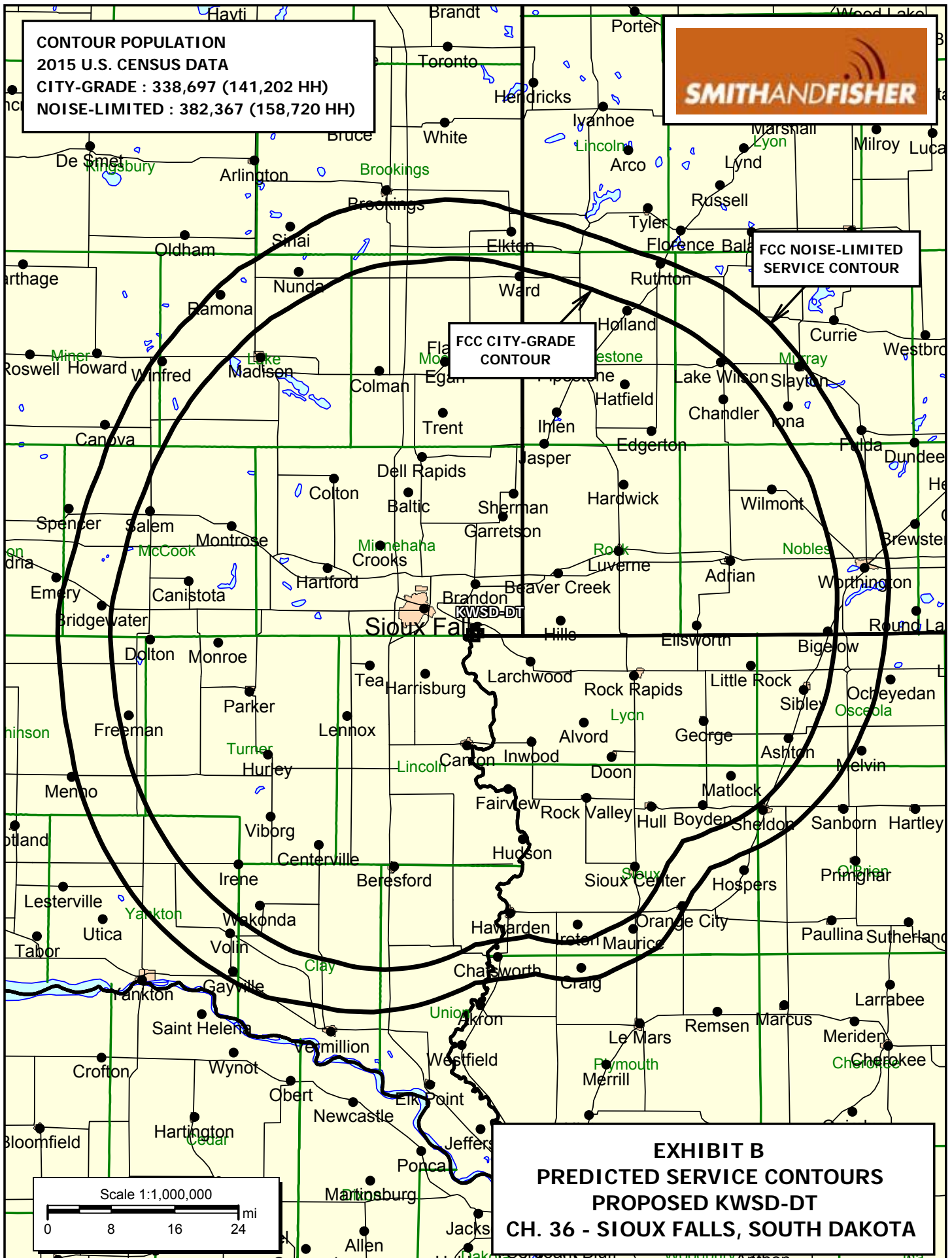
I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher". The signature is stylized with a large "K", a small "T", and a long horizontal stroke for the "F".

KEVIN T. FISHER

November 26, 2017

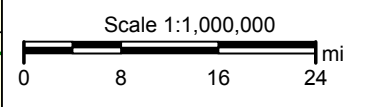
CONTOUR POPULATION
2015 U.S. CENSUS DATA
CITY-GRADE : 338,697 (141,202 HH)
NOISE-LIMITED : 382,367 (158,720 HH)



FCC NOISE-LIMITED SERVICE CONTOUR

FCC CITY-GRADE CONTOUR

EXHIBIT B
PREDICTED SERVICE CONTOURS
PROPOSED KWSD-DT
CH. 36 - SIOUX FALLS, SOUTH DAKOTA



Horizontal Plane Relative Field Pattern

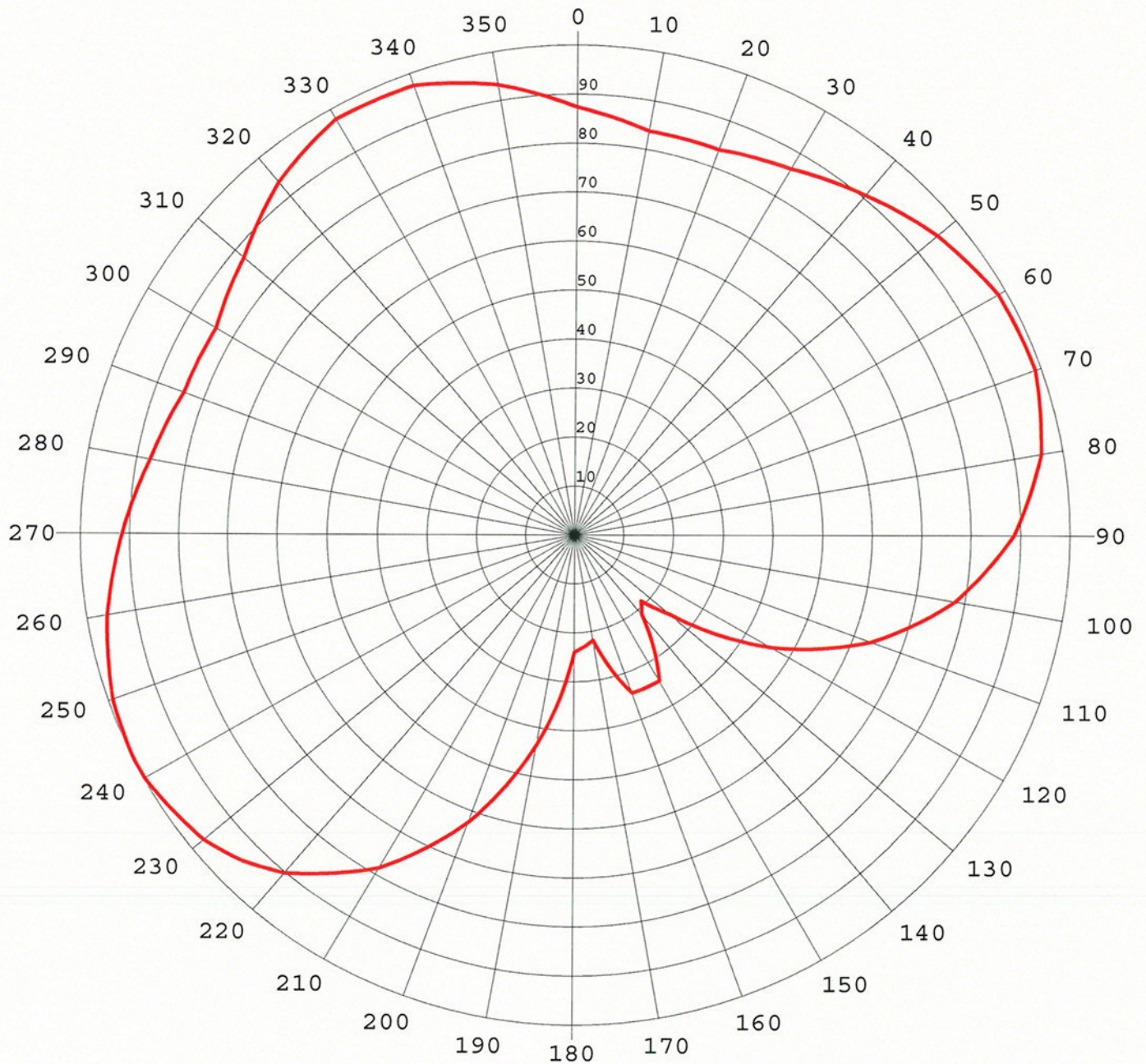


EXHIBIT #A1
MINOR CHANGE APPLICATION
J.F. BROADCASTING, LLC
KWSD-DT TELEVISION STATION
CH 36 - 400.0 KW (DA)
SIOUX FALLS, SOUTH DAKOTA
February 2010

KWSD TV station - Sioux Falls, South Dakota

Dielectric

Proposal Number

Date

29-Jul-99

Call Letters

Channel

36

Location

Sioux Fall, SD

Customer

Antenna Type

TFU-31JTT-R CT3

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: CT3

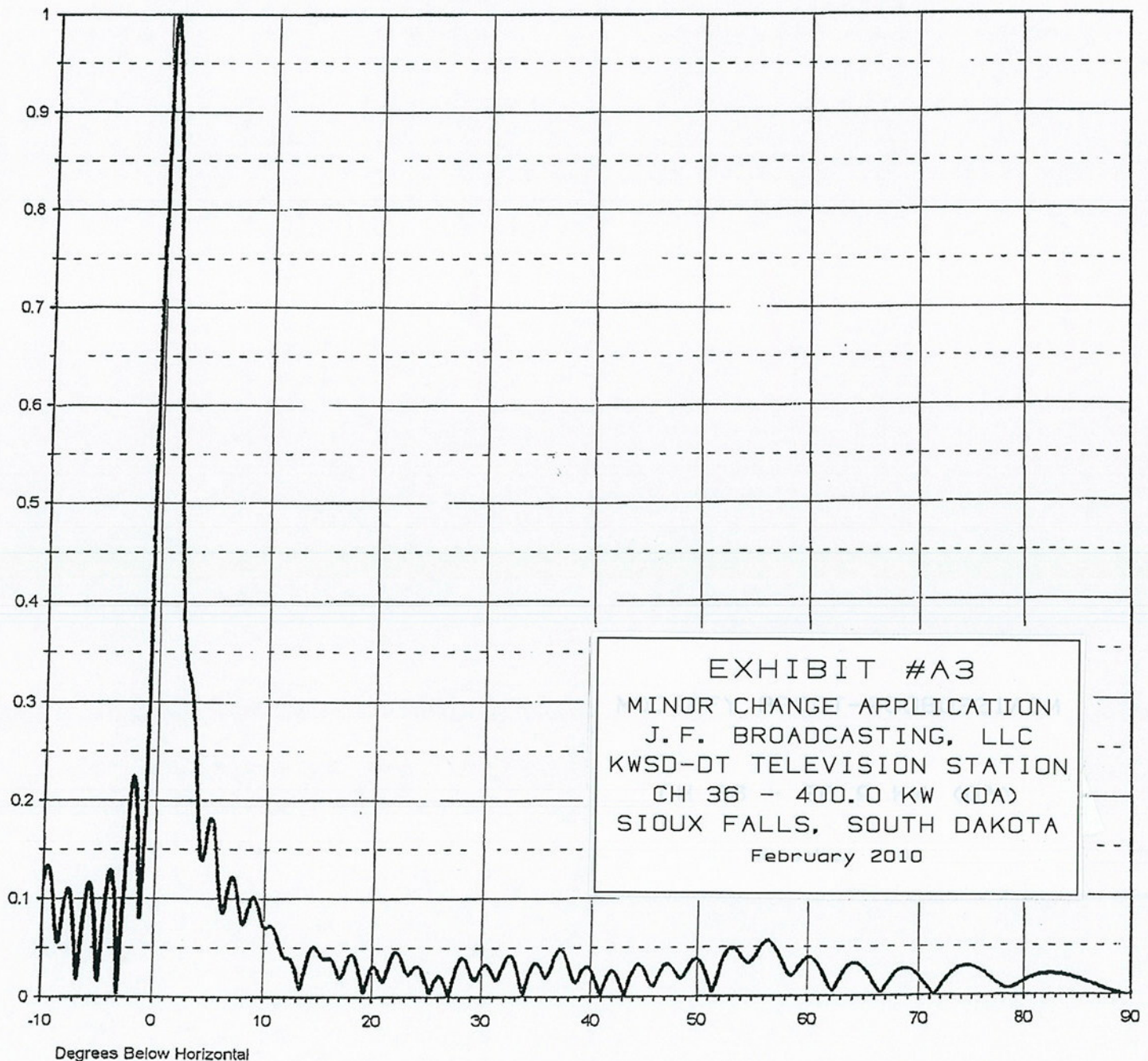
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.873	45	0.929	90	0.885	135	0.190	180	0.239	225	0.942	270	0.916	315	0.907
1	0.868	46	0.934	91	0.876	136	0.187	181	0.256	226	0.949	271	0.912	316	0.913
2	0.863	47	0.938	92	0.867	137	0.189	182	0.273	227	0.955	272	0.907	317	0.919
3	0.859	48	0.942	93	0.857	138	0.193	183	0.292	228	0.961	273	0.903	318	0.925
4	0.854	49	0.947	94	0.847	139	0.201	184	0.312	229	0.966	274	0.898	319	0.931
5	0.850	50	0.951	95	0.837	140	0.211	185	0.332	230	0.971	275	0.894	320	0.937
6	0.847	51	0.955	96	0.828	141	0.223	186	0.353	231	0.975	276	0.889	321	0.943
7	0.844	52	0.959	97	0.815	142	0.237	187	0.373	232	0.980	277	0.885	322	0.948
8	0.841	53	0.963	98	0.803	143	0.251	188	0.394	233	0.983	278	0.881	323	0.953
9	0.839	54	0.966	99	0.791	144	0.266	189	0.414	234	0.987	279	0.877	324	0.958
10	0.837	55	0.970	100	0.779	145	0.281	190	0.434	235	0.990	280	0.873	325	0.962
11	0.836	56	0.973	101	0.766	146	0.295	191	0.454	236	0.992	281	0.869	326	0.966
12	0.835	57	0.976	102	0.753	147	0.309	192	0.474	237	0.994	282	0.865	327	0.970
13	0.834	58	0.979	103	0.740	148	0.322	193	0.493	238	0.996	283	0.862	328	0.973
14	0.833	59	0.981	104	0.726	149	0.333	194	0.513	239	0.998	284	0.858	329	0.976
15	0.833	60	0.983	105	0.712	150	0.343	195	0.532	240	0.999	285	0.855	330	0.978
16	0.833	61	0.985	106	0.697	151	0.352	196	0.551	241	0.999	286	0.852	331	0.981
17	0.834	62	0.987	107	0.683	152	0.360	197	0.569	242	1.000	287	0.850	332	0.983
18	0.835	63	0.988	108	0.667	153	0.365	198	0.588	243	1.000	288	0.847	333	0.985
19	0.836	64	0.989	109	0.652	154	0.368	199	0.606	244	1.000	289	0.845	334	0.987
20	0.837	65	0.990	110	0.636	155	0.370	200	0.624	245	0.999	290	0.843	335	0.990
21	0.839	66	0.990	111	0.620	156	0.369	201	0.642	246	0.998	291	0.841	336	0.987
22	0.840	67	0.990	112	0.603	157	0.365	202	0.659	247	0.997	292	0.840	337	0.983
23	0.843	68	0.989	113	0.586	158	0.360	203	0.676	248	0.996	293	0.838	338	0.981
24	0.845	69	0.988	114	0.569	159	0.352	204	0.693	249	0.994	294	0.838	339	0.978
25	0.847	70	0.987	115	0.551	160	0.343	205	0.709	250	0.992	295	0.837	340	0.975
26	0.850	71	0.986	116	0.533	161	0.332	206	0.725	251	0.990	296	0.837	341	0.972
27	0.853	72	0.984	117	0.515	162	0.321	207	0.740	252	0.987	297	0.837	342	0.968
28	0.856	73	0.981	118	0.496	163	0.308	208	0.756	253	0.985	298	0.838	343	0.965
29	0.860	74	0.979	119	0.477	164	0.295	209	0.770	254	0.982	299	0.839	344	0.961
30	0.863	75	0.976	120	0.458	165	0.281	210	0.785	255	0.979	300	0.840	345	0.957
31	0.867	76	0.972	121	0.438	166	0.267	211	0.799	256	0.975	301	0.842	346	0.952
32	0.871	77	0.968	122	0.418	167	0.254	212	0.812	257	0.972	302	0.844	347	0.948
33	0.875	78	0.964	123	0.398	168	0.241	213	0.825	258	0.968	303	0.847	348	0.943
34	0.879	79	0.960	124	0.377	169	0.229	214	0.837	259	0.964	304	0.850	349	0.937
35	0.883	80	0.955	125	0.356	170	0.218	215	0.849	260	0.960	305	0.853	350	0.932
36	0.888	81	0.949	126	0.335	171	0.208	216	0.861	261	0.956	306	0.857	351	0.926
37	0.892	82	0.944	127	0.313	172	0.201	217	0.872	262	0.952	307	0.862	352	0.920
38	0.897	83	0.938	128	0.292	173	0.196	218	0.882	263	0.948	308	0.866	353	0.914
39	0.901	84	0.931	129	0.271	174	0.193	219	0.892	264	0.944	309	0.872	354	0.908
40	0.906	85	0.924	130	0.252	175	0.193	220	0.902	265	0.939	310	0.877	355	0.902
41	0.910	86	0.917	131	0.234	176	0.197	221	0.911	266	0.935	311	0.883	356	0.896
42	0.915	87	0.910	132	0.219	177	0.203	222	0.919	267	0.930	312	0.888	357	0.890
43	0.920	88	0.902	133	0.206	178	0.213	223	0.927	268	0.926	313	0.895	358	0.884
44	0.924	89	0.894	134	0.196	179	0.225	224	0.935	269	0.921	314	0.901	359	0.879

Dielectric

Date	29-Jul-99	
Call Letters	KAUN	Channel 36
Location	Sioux Falls, SD	
Customer		
Antenna Type	TFU-31JTT-R CT3	

ELEVATION PATTERN

RMS Gain at Main Lobe	29.0 (14.62 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	25.7 (14.10 dB)	Frequency	605.00 MHz
Calculated / Measured	Calculated	Drawing #	31N290075-90

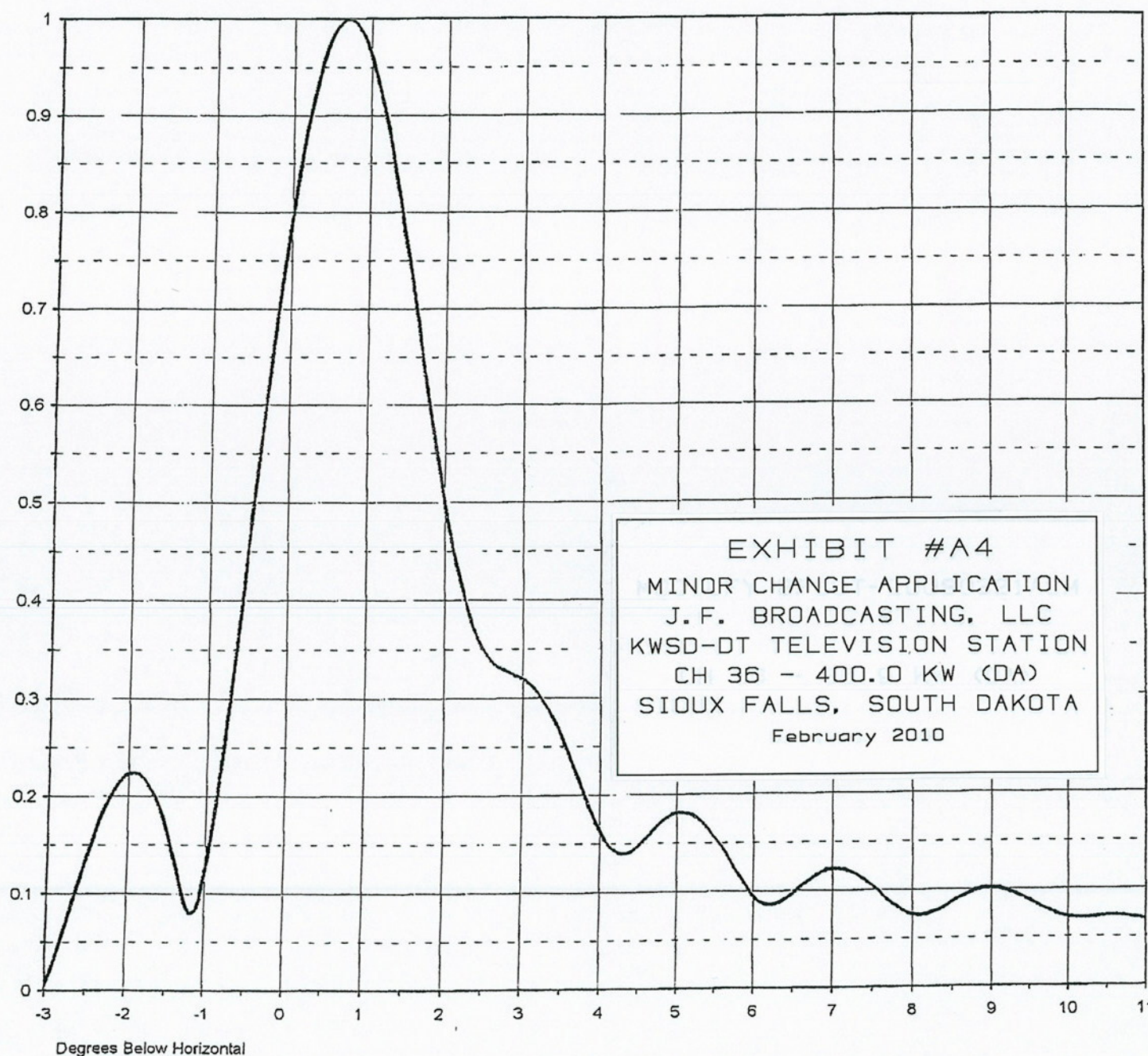


Dielectric

Date	29-Jul-99	
Call Letters	KAUN	Channel 36
Location	Sioux Falls, SD	
Customer		
Antenna Type	TFU-31JTT-R CT3	

ELEVATION PATTERN

RMS Gain at Main Lobe	29.0 (14.62 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	25.7 (14.10 dB)	Frequency	605.00 MHz
Calculated / Measured	Calculated	Drawing #	31N290075



Dielectric

Date **29-Jul-99**
 Call Letters **KAUN** Channel **36**
 Location **Sioux Falls, SD**
 Customer
 Antenna Type **TFU-31JTT-R CT3**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **31N290075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.112	2.4	0.367	10.6	0.072	30.5	0.033	51.0	0.022	71.5	0.001
-9.5	0.133	2.6	0.339	10.8	0.072	31.0	0.026	51.5	0.006	72.0	0.009
-9.0	0.103	2.8	0.328	11.0	0.070	31.5	0.018	52.0	0.020	72.5	0.016
-8.5	0.056	3.0	0.320	11.5	0.055	32.0	0.030	52.5	0.037	73.0	0.022
-8.0	0.088	3.2	0.305	12.0	0.041	32.5	0.041	53.0	0.047	73.5	0.026
-7.5	0.110	3.4	0.279	12.5	0.039	33.0	0.038	53.5	0.049	74.0	0.029
-7.0	0.070	3.6	0.243	13.0	0.029	33.5	0.020	54.0	0.044	74.5	0.030
-6.5	0.026	3.8	0.202	13.5	0.009	34.0	0.006	54.5	0.036	75.0	0.030
-6.0	0.097	4.0	0.164	14.0	0.032	34.5	0.026	55.0	0.035	75.5	0.028
-5.5	0.113	4.2	0.142	14.5	0.049	35.0	0.034	55.5	0.042	76.0	0.025
-5.0	0.055	4.4	0.141	15.0	0.048	35.5	0.029	56.0	0.051	76.5	0.021
-4.5	0.050	4.6	0.155	15.5	0.040	36.0	0.020	56.5	0.056	77.0	0.017
-4.0	0.122	4.8	0.172	16.0	0.039	36.5	0.031	57.0	0.053	77.5	0.012
-3.5	0.110	5.0	0.181	16.5	0.036	37.0	0.045	57.5	0.044	78.0	0.009
-3.0	0.004	5.2	0.179	17.0	0.023	37.5	0.047	58.0	0.032	78.5	0.007
-2.8	0.054	5.4	0.166	17.5	0.025	38.0	0.036	58.5	0.022	79.0	0.008
-2.6	0.112	5.6	0.145	18.0	0.041	38.5	0.019	59.0	0.024	79.5	0.011
-2.4	0.164	5.8	0.119	18.5	0.040	39.0	0.019	59.5	0.032	80.0	0.014
-2.2	0.203	6.0	0.096	19.0	0.021	39.5	0.029	60.0	0.038	80.5	0.017
-2.0	0.223	6.2	0.086	19.5	0.008	40.0	0.030	60.5	0.039	81.0	0.019
-1.8	0.219	6.4	0.091	20.0	0.028	40.5	0.019	61.0	0.034	81.5	0.020
-1.6	0.189	6.6	0.104	20.5	0.029	41.0	0.003	61.5	0.024	82.0	0.021
-1.4	0.135	6.8	0.116	21.0	0.017	41.5	0.017	62.0	0.012	82.5	0.022
-1.2	0.081	7.0	0.122	21.5	0.025	42.0	0.026	62.5	0.007	83.0	0.021
-1.0	0.122	7.2	0.120	22.0	0.042	42.5	0.024	63.0	0.017	83.5	0.021
-0.8	0.239	7.4	0.111	22.5	0.045	43.0	0.012	63.5	0.027	84.0	0.020
-0.6	0.378	7.6	0.098	23.0	0.033	43.5	0.006	64.0	0.032	84.5	0.018
-0.4	0.522	7.8	0.084	23.5	0.023	44.0	0.023	64.5	0.033	85.0	0.017
-0.2	0.661	8.0	0.075	24.0	0.030	44.5	0.032	65.0	0.029	85.5	0.015
0.0	0.785	8.2	0.075	24.5	0.030	45.0	0.031	65.5	0.022	86.0	0.013
0.2	0.886	8.4	0.082	25.0	0.016	45.5	0.021	66.0	0.012	86.5	0.011
0.4	0.957	8.6	0.092	25.5	0.007	46.0	0.011	66.5	0.004	87.0	0.009
0.6	0.994	8.8	0.099	26.0	0.020	46.5	0.020	67.0	0.010	87.5	0.007
0.8	0.997	9.0	0.101	26.5	0.020	47.0	0.030	67.5	0.018	88.0	0.005
1.0	0.965	9.2	0.099	27.0	0.005	47.5	0.033	68.0	0.024	88.5	0.003
1.2	0.902	9.4	0.093	27.5	0.018	48.0	0.027	68.5	0.027	89.0	0.002
1.4	0.815	9.6	0.084	28.0	0.035	48.5	0.019	69.0	0.028	89.5	0.001
1.6	0.713	9.8	0.080	28.5	0.039	49.0	0.023	69.5	0.026	90.0	0.000
1.8	0.605	10.0	0.073	29.0	0.028	49.5	0.033	70.0	0.021		
2.0	0.504	10.2	0.070	29.5	0.018	50.0	0.038	70.5	0.014		
2.2	0.422	10.4	0.070	30.0	0.027	50.5	0.035	71.0	0.007		

Exhibit D

TVSTUDY INTERFERENCE SUMMARY
PROPOSED KWSD-DT
CH. 36 - SIOUX FALLS, SOUTH DAKOTA

Study created: 2017.11.26 21:49:51

Study build station data: LMS TV 2017-11-22 (3)

Proposal: KWSD D36 DT LIC SIOUX FALLS, SD
File number: BLCDT20100201AFD
Facility ID: 29121
Station data: User record
Record ID: 127
Country: U.S.
Zone: II

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	
KAAL	D36	DT	LIC	AUSTIN, MN	BLCDT20091110AAF	326.1
Distance km						

No non-directional AM stations found within 0.8 km

Directional AM stations within 3.2 km:
NEW 690 A DA2 D BRANDON, SD BNP20040130AOX
NEW 690 A DA2 N BRANDON, SD BNP20040130AOX
KSOO 1000 L DA2 D SIOUX FALLS, SD BL20030127AEI
KSOO 1000 L DA2 N SIOUX FALLS, SD BL20030127AEI

Record parameters as studied:

Channel: D36
Latitude: 43 30 19.00 N (NAD83)
Longitude: 96 34 20.00 W
Height AMSL: 658.0 m
HAAT: 229.7 m
Peak ERP: 1000 kW
Antenna: DIE-TFU-31JTT-RCT3 (ID 97392) 0.0 deg
Elev Pattn: Generic
Elec Tilt: 0.75

40.9 dBu contour:

Exhibit D

Azimuth	ERP	HAAT	Distance
0.0 deg	762 kW	247.7 m	86.4 km
45.0	863	231.8	85.7
90.0	783	207.1	82.6
135.0	36.1	226.7	67.6
180.0	57.1	243.9	71.1
225.0	887	234.6	86.2
270.0	839	218.1	84.0
315.0	823	226.6	84.7

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 596.7 km

Distance to Mexican border: 1565.2 km

Conditions at FCC monitoring station: Grand Island NE
Bearing: 208.7 degrees Distance: 325.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 245.5 degrees Distance: 807.2 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

No IX check failures found.

POWER DENSITY CALCULATION

PROPOSED KWSD-DT
CHANNEL 36 – SIOUX FALLS, SOUTH DAKOTA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Sioux Falls facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1000 kW, an antenna radiation center 245.9 meters above ground, and the specific elevation pattern of the licensed Dielectric antenna, maximum power density two meters above ground of 0.0014 mW/cm^2 is calculated to occur 158 meters northwest of the base of the tower. Since this is only 0.4 percent of the 0.40 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 36 (602-608 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.