EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of FOUR SEASONS PEORIA, LLC, licensee of full-power digital television station WAOE-DT, Channel 10 in Oswego, Illinois, in support of its Application for Construction Permit to operate with a Distributed Transmission System (DTS) comprised of two single-frequency network (SFN) nodes and a new DTS reference site. This proposal meets the requirements of the new DTS Rules recently adopted by the Commission.

DTS REFERENCE COORDINATE CHANGE REQUEST

As part of this Application, we request that the reference coordinates for the proposed WAOE-DT DTS facility be changed to 41-22-31.0 N, 88-38-59.6 W (NAD83).

The Commission has explained that "[g]enerally, a station would use its current reference point based on its [] facility [as set forth in the Post-Transition DTV Table of Allotments, §73.622(i)], or the Order granting it a new channel, as appropriate."[1] However, "upon the appropriate public interest showing, a station may request a change in its reference point, just as stations have done historically, providing certain criteria are met. Such changes in reference points are subject to a station showing that the resulting service area circle fully encompasses the station's authorized service area."

[1] See Digital Television Distributed Transmission System Technologies, Report and Order, 23 FCC Rcd 16731, 16748-49, para. 29 (2008) ("DTS R&O").

EXHIBIT A

Changing WAOE-DT's reference point serves the public interest because it will permit WAOE-TV to place a transmitter on the John Hancock Building, extending the station's service into Northeast Illinois while preserving service to all of WAOE-TV's existing viewers. The addition of a transmitter in downtown Chicago will make WAOE-TV's signal more accessible to over-the-air viewers in Oswego, Illinois, who as part of the Chicago market typically would direct their antennas northeast, toward Chicago, rather than southwest, where WAOE-TV's existing transmitter is located.[2]

Moreover, the resulting service area circle fully encompasses the station's authorized service area. In the DTS R&O, the Commission determined that "[a]s an alternative to the Table of Distances Approach for determining the hypothetically maximized service area, full-power stations may use the 'largest station' provision in section 73.622(f)(5) of the rules."[3] When the Commission revised its DTS Rules in 2021, it confirmed that "the largest station alternative, an alternative to the Table of Distances by which stations may seek to use DTS to match the geographic coverage of the largest station in their market, remains unchanged."[4]

In the Chicago DMA, the largest station, from a coverage area standpoint, is WLS-TV, Channel 22. That station has a maximization authorization with file number LMS-0000086908. The dipole-adjusted noise-limited F(50,50) service contour of authorized WLS-TV comprises 74,024 square kilometers. The resulting F(50,50) allowable service arc from the

[2] See In the Matter of Application of Connecticut Public Broadcasting, Inc. to Convert to DTS Operation, Memorandum Opinion and Order, 35 FCC Rcd. 8978 ¶ 14 (2020), aff'd PMCM TV, LLC v. FCC, No. 20-1334 (D.C. Cir. June 25, 2021).
[3] DTS R&O, 23 FCC Rcd at 16751-52, para. 35.
[4] Rules Governing the Use of Distributed Transmission System Technologies; Authorizing Permissive Use of the "Next Generation" Broadcast Television Standard, Report and Order, 36 FCC Rcd 1227 ¶ 16, n.64 (2021).

EXHIBIT A

proposed WAOE-DT DTS reference site extends 153.5 kilometers. In Exhibit B, we have plotted the new reference site, the 153.5-kilometer F(50,50) reference service arc and the 36 dBu F(50,50) service arc of presently licensed WAOE-DT (LMS-0000151562), which forms the first SFN node as described below. As shown in Exhibit B, the present service area of WAOE-DT lies completely within the allowable 153.5-kilometer service arc derived from the service area of WLS-TV, the largest station in the market. Therefore, the requested change in reference coordinates for the DTS facility meets the Commission's requirements in this regard.

We will now describe each SFN node separately and then treat the entire DTS facility as a whole.

OSWEGO NODE (WAOE-DT DTS-1 Reference Facility)

It is proposed to utilize the presently licensed WAOE-DT facility (LMS- 0000151562) as the reference facility for the DTS. It is important to note that, as a result, no "loss area" will be created by this proposal. No change in the present WAOE-DT transmitter site, effective radiated power, antenna pattern or antenna height is proposed herein. It is intended to continue to use the licensed Alive Telecom ATC-BCE04-VP1-10 directional elliptically-polarized antenna, which is mounted at the 404-meter level of an existing 418.6-meter tower. The effective radiated power for the facility is 24.0 kW in the horizontal plane.

It should be noted that the presently licensed WAOE-DT facility exceeds the power/height limits for a high-band VHF station located in Zone 1, as set forth in Section

EXHIBIT A

73.622(f)(7)(ii) of the Commission's Rules. However, since the area within the above licensed WAOE-DT F(50,90) service contour comprises 29,373 square kilometers, and it is smaller than that of the WLS-TV authorized service contour (41,867 square kilometers), it means that the WAOE-DT DTS-1 facility proposed herein continues to meet the requirements of Section 73.622(f)(5) of the Rules, which stipulates that the Commission's power/height limitations of Section 73.622(f)(7)(ii) can be exceeded as long as the coverage area of the proposed operation does not exceed that of the largest station in the same market.

Below are operating parameters for the Oswego SFN node on Channel 10:

Site coordinates: 41-16-54.6 N, 88-56-11.1 W (NAD83)
Site elevation: 192.6 meters AMSL
Overall tower height: 418.6 meters AMSL
FCC Antenna Structure Registration Number: 1028357
Antenna height above ground: 404 meters
Antenna height above mean sea level: 596.6 meters
Antenna height above average terrain: 212 meters
Antenna make/model: Alive Telecom ATC-BCE04H-VP1-10
FCC Antenna ID Number: 1008363
Antenna orientation: 220 degrees true
Line of symmetry: 40 and 220 degrees true
Electrical beam tilt: 0.5 degrees
Effective radiated power: 24.0 kW

Exhibit C is a map upon which the predicted service contours are plotted. As shown, the community of Oswego, Illinois, is completely encompassed by the proposed 43 dBu city-

EXHIBIT A

grade service contour. Azimuth and elevation pattern data for the existing antenna is provided in Exhibit D. A power density calculation appears as Exhibit E.

Since no change in the overall height or location of the existing WAOE-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 1028357 to this tower.

CHICAGO NODE (WAOE-DT DTS-2 Facility)

It is proposed to install a Dielectric THA-C2-2/4-1 directional panel antenna on the east tower atop the existing 459-meter John Hancock Center building in Chicago. The antenna radiation center will be 409 meters above street level. The proposed effective radiated power for the facility is 7.4 kW in the horizontal plane.

Below are operating parameters for the Chicago DTS node operation on Channel 10:

Site coordinates: 41-53-56.1 N, 87-37-23.2 W (NAD83)
Site elevation: 180.7 meters AMSL
Overall structure height: 459 meters AMSL
FCC Antenna Structure Registration Number: 1009012
Antenna height above ground: 409 meters
Antenna height above mean sea level: 589.7 meters
Antenna height above average terrain: 410.6 meters
Antenna make/model: Dielectric THA-C2-2/4-1
FCC Antenna ID Number: tbd
Antenna orientation: 0 degrees

EXHIBIT A

Line of symmetry: 235 degrees true
Electrical beam tilt: 0.5 degrees
Effective radiated power: 7.4 kW

Exhibit F is a map upon which we have plotted the predicted service contours of the Chicago DTS node. Elevation and azimuth pattern data for the proposed Dielectric antenna appear in Exhibit G. A detailed power density calculation is provided in Exhibit H.

Since no change in the overall height or location of the existing communications tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1009012 to this tower.

PROPOSAL MEETS THE REQUIREMENTS OF THE FCC'S DTS RULES

It is believed that the proposed WAOE-DT Channel 10 facility meets all of the requirements of Section 73.626(f) of the Commission's DTS Rules based on the following analysis.

Exhibit I is a map on which we have plotted the 36 dBu coverage contours of the two SFN nodes in the DTS facility. As shown, each node's contour overlaps the contour of the other facility in the system. In addition, in Exhibits C and F, we plotted the 43 dBu city-grade coverage contours resulting from the Oswego and Chicago DTS nodes. As shown in those exhibits, the community of Oswego lies within both of these contours.

EXHIBIT A

In Exhibit J, we have plotted the transmitter sites of the two DTS nodes in relation to an arc originating from the revised DTS reference site and defined by the coverage area of the largest station in the Chicago DMA, of which WAOE-DT is a part. As noted previously the largest station in this market is WLS-TV, Channel 22, and its authorization LMS-0000086908. Based upon its noise-limited dipole-adjusted F(50,90) service area, the resultant arc has a radius of 115.4 kilometers. As shown, both of the DTS nodes have transmitter sites located within the Largest Station in the Market arc.

The new DTS Rules recently adopted by the Commission state that the 36 dBu F(50,50) contour of a high-band VHF SFN node must be located within an F(50.50)-based arc originating from the DTS reference site. Again, we utilized the Largest Station in the Market exception to define the radius of this arc. WLS-TV has a noise-limited dipole adjusted F(50,50) contour that encompasses an area containing 74,024 square kilometers. This translates to an arc with a radius of 153.5 kilometers. We provide a map in Exhibit K that shows both WAOE-DT SFN nodes have 36 dBu F(50,50) service contours that are completely contained within the reference arc.

The newly adopted Rules also require that the 23.8 dBu F(50,10) contour of the DTS node be located within an interference F(50,10)-based arc from the reference site. Once again, we utilized WLS-TV, the largest station in the Chicago DMA to define the radius of this arc. WLS-TV has a 36 dBu F(50,10) interference contour that encompasses an area containing 196,589 square kilometers. This translates to an arc with a radius of 250.1 kilometers. We provide a map in Exhibit L that shows that the additional WAOE-DT Chicago SFN node has a 23.8 dBu F(50,10) interference contour that is completely contained within the reference arc.

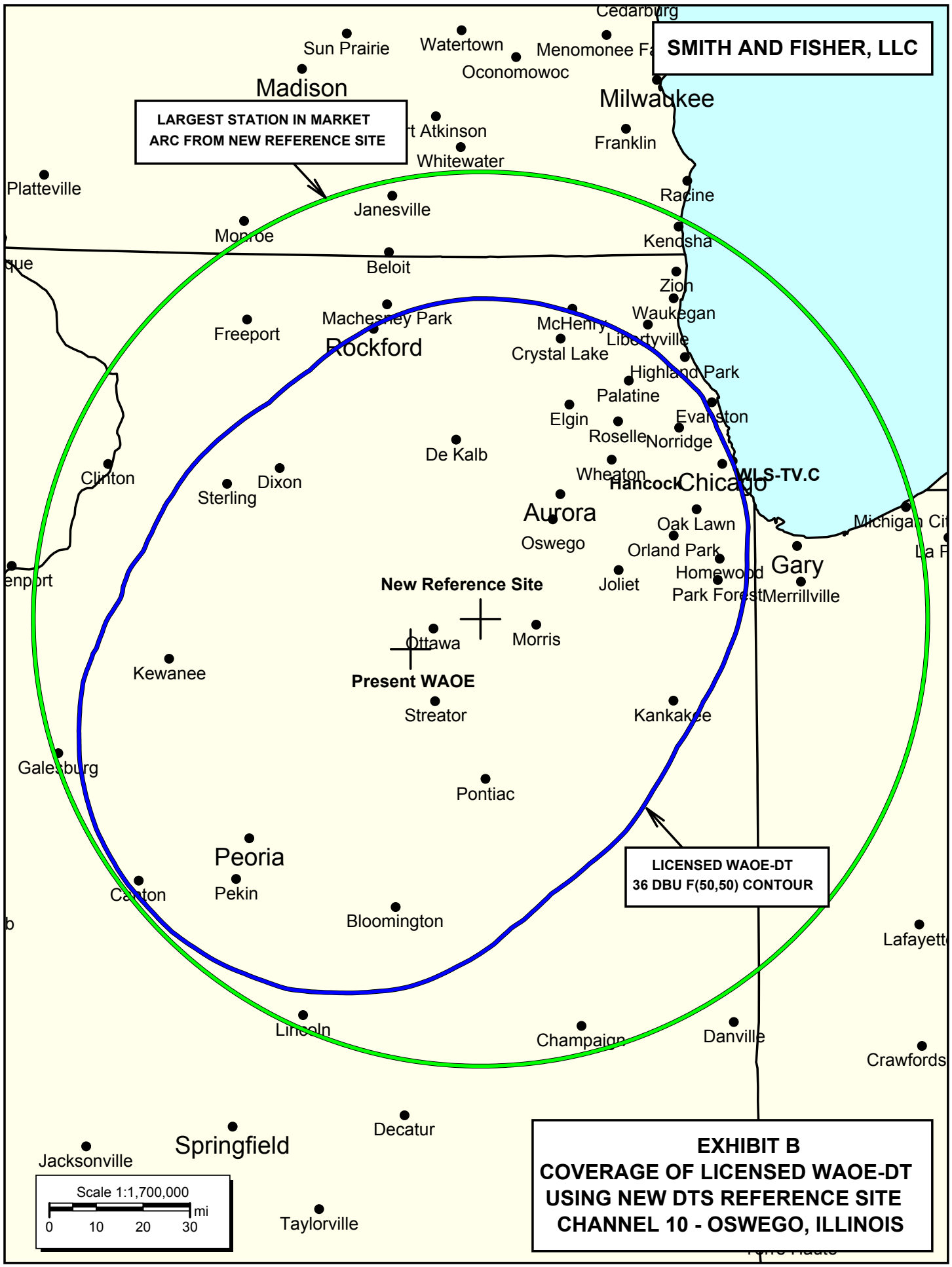
EXHIBIT A

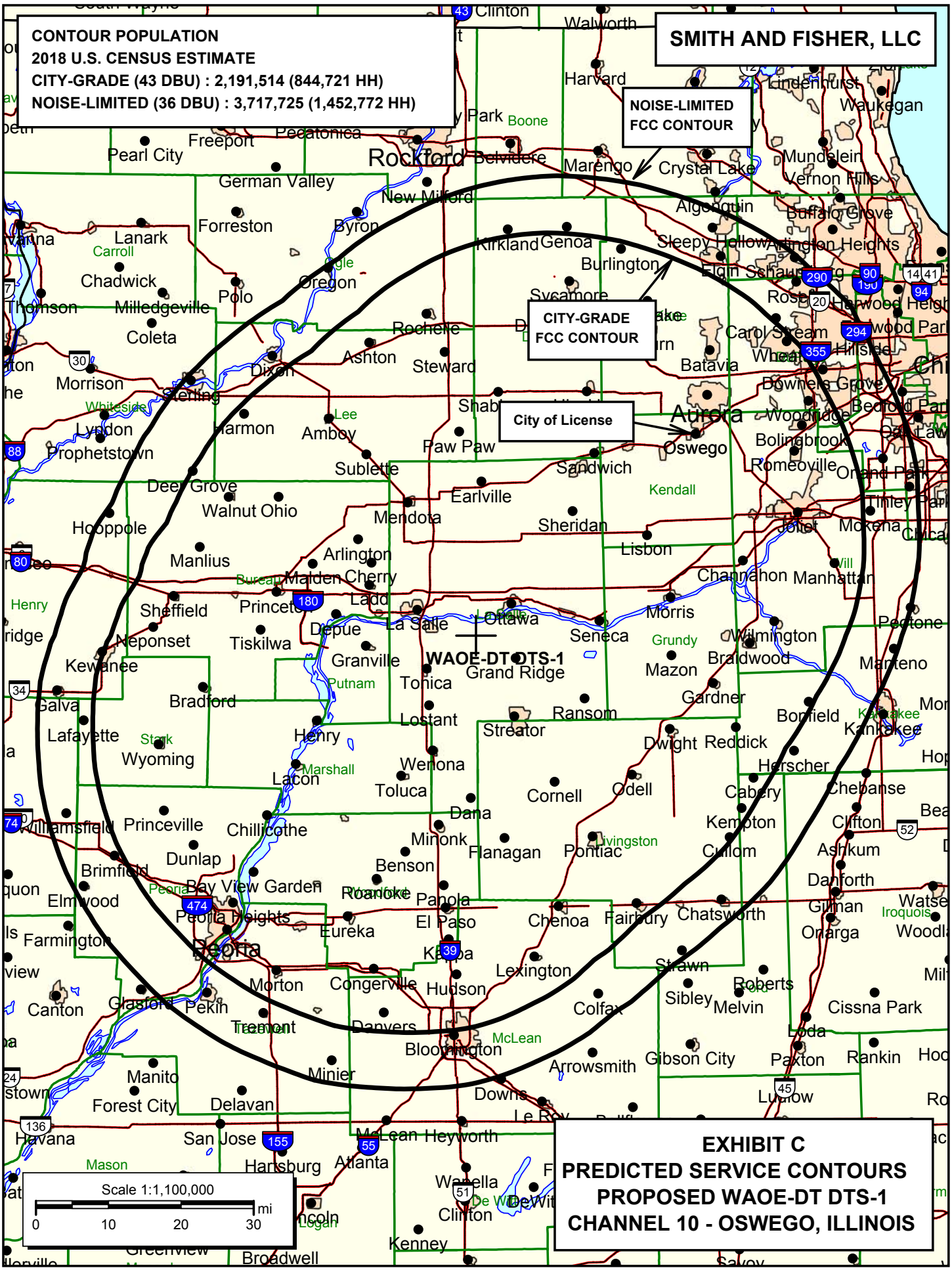
Finally, in Exhibit M, we provide the summary results from a TVStudy interference study, which was conducted using a cell size of 2.0 kilometers and increment spacing of 1.0 kilometer. It concludes that the proposed WAOE-DT DTS facility on Channel 10 meets the Commission's de minimis interference criteria to all co-channel and adjacent-channel full-power and Class A facilities. It is important to note that that study indicates that the proposed WAOE-DT DTS facility would receive interference to 0.93% of its service population from a pending proposal for WILL-TV, Channel 9 in Urbana, Illinois (BPEDT-20100406ABJ). That interference is accepted by WAOE-DT and can be ignored.

I declare under penalty of perjury that the foregoing statements and the attached exhibits are true and correct to the best of my knowledge and belief.

KEVIN T. FISHER

September 1, 2021


SMITH AND FISHER, LLC
LARGEST STATION IN MARKET
ARC FROM NEW REFERENCE SITE
LICENSED WAOE-DT
36 DBU F(50,50) CONTOUR
New Reference Site
Present WAOE
WLS-TV.C
Madison
Milwaukee
Chicago
Rockford
Aurora
Gary
Peoria
Springfield
Sun Prairie
Watertown
Oconomowoc
Cedarburg
Franklin
Racine
Kenosha
Janesville
Beloit
Whitewater
Platteville
Monroe
Freeport
Machesney Park
McHenry
Crystal Lake
Waukegan
Libertyville
Highland Park
Palatine
Elgin
Roselle
Evanston
Norridge
Wheaton
Hancock
De Kalb
Clinton
Dixon
Sterling
Oak Lawn
Oswego
Orland Park
Homewood
Park Forest
Joliet
Merrillville
Michigan Ci
La F
Ottawa
Morris
Kewanee
Streator
Kankakee
Galesburg
Pontiac
Pekin
Bloomington
Lafayett
Lincoln
Champaign
Danville
Crawfords
Decatur
Jacksonville
Taylorville
Scale 1:1,700,000
mi
0 10 20 30
EXHIBIT B
COVERAGE OF LICENSED WAOE-DT
USING NEW DTS REFERENCE SITE
CHANNEL 10 - OSWEGO, ILLINOIS

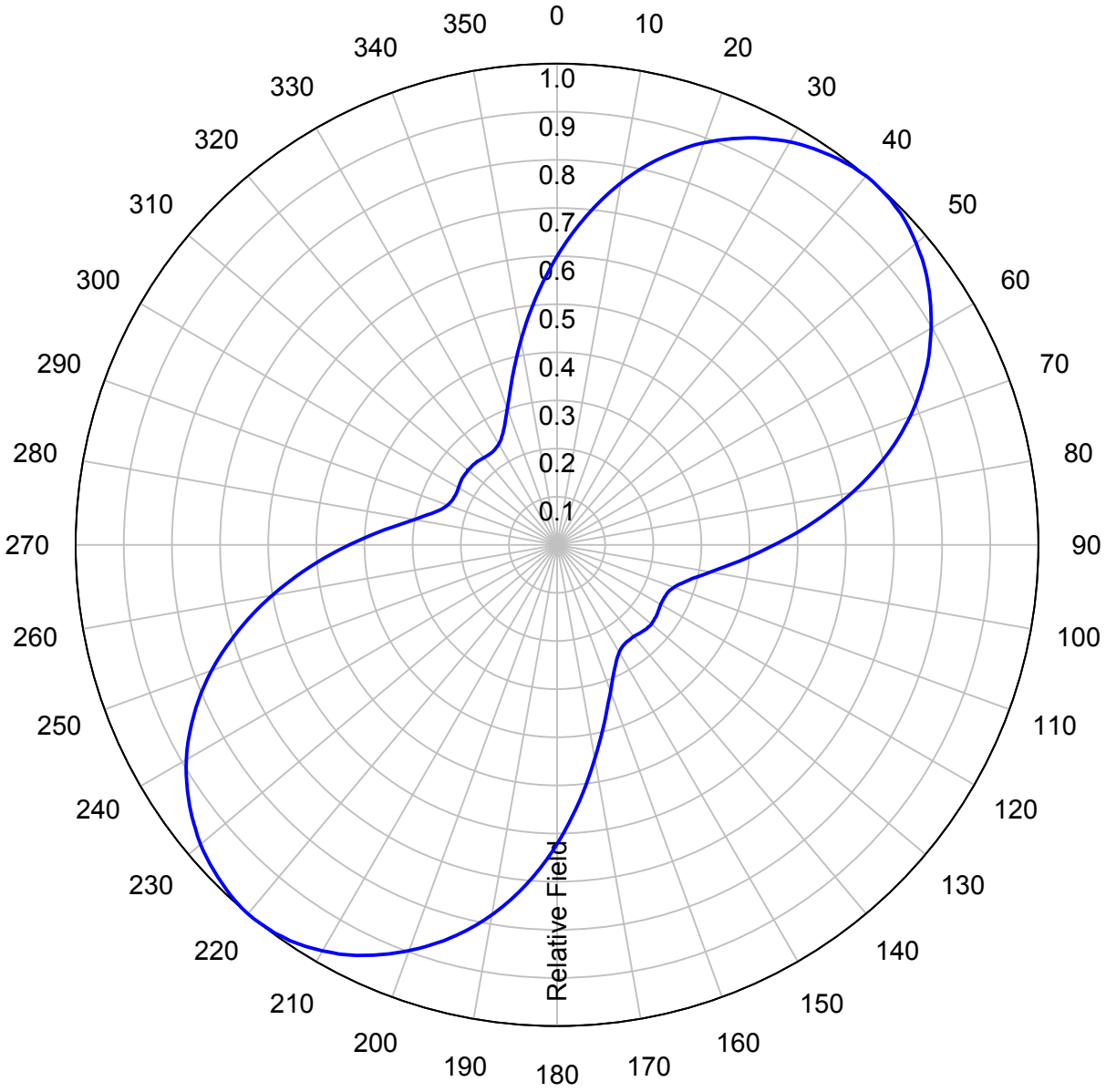

CONTOUR POPULATION
2018 U.S. CENSUS ESTIMATE
CITY-GRADE (43 DBU) : 2,191,514 (844,721 HH)
NOISE-LIMITED (36 DBU) : 3,717,725 (1,452,772 HH)
SMITH AND FISHER, LLC
NOISE-LIMITED FCC CONTOUR
CITY-GRADE FCC CONTOUR
City of License
WAOE-DT DTS-1
Rockford
Aurora
Oswego
Peoria
Bloomington
Scale 1:1,100,000
0 10 20 30 mi
EXHIBIT C
PREDICTED SERVICE CONTOURS
PROPOSED WAOE-DT DTS-1
CHANNEL 10 - OSWEGO, ILLINOIS

AZIMUTH PATTERN

Type:	**H-Pattern**	
	Numeric	**dBd**
Directivity:	**2.46**	**3.91**
Peak(s) at:		

Channel:
Location:
Polarization: **Circular**

Note: Pattern shape and directivity may vary with channel and mouting configuration.



Preliminary, subject to final design and review.

TABULATED DATA FOR AZIMUTH PATTERN

Type: H-Pattern
Polarization: Circular

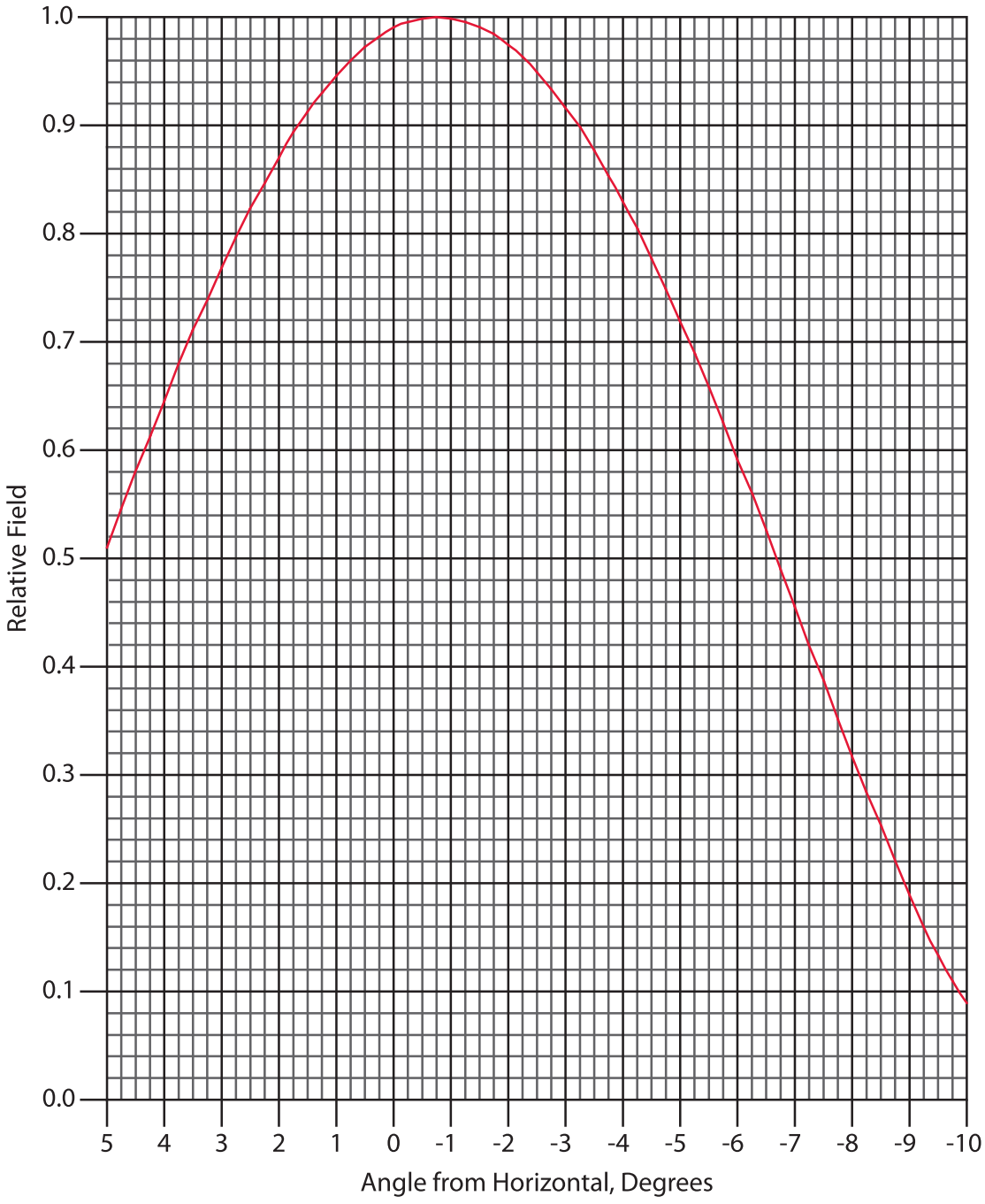
ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.600	-4.44	92	0.421	-7.51	184	0.689	-3.24	276	0.346	-9.22
2	0.635	-3.94	94	0.394	-8.09	186	0.722	-2.83	278	0.322	-9.84
4	0.668	-3.50	96	0.368	-8.68	188	0.752	-2.48	280	0.302	-10.40
6	0.701	-3.09	98	0.344	-9.27	190	0.781	-2.15	282	0.284	-10.93
8	0.733	-2.70	100	0.324	-9.79	192	0.807	-1.86	284	0.269	-11.40
10	0.764	-2.34	102	0.306	-10.29	194	0.832	-1.60	286	0.257	-11.80
12	0.793	-2.01	104	0.289	-10.78	196	0.856	-1.35	288	0.248	-12.11
14	0.820	-1.72	106	0.277	-11.15	198	0.877	-1.14	290	0.242	-12.32
16	0.844	-1.47	108	0.266	-11.50	200	0.897	-0.94	292	0.238	-12.47
18	0.868	-1.23	110	0.258	-11.77	202	0.916	-0.76	294	0.236	-12.54
20	0.889	-1.02	112	0.252	-11.97	204	0.933	-0.60	296	0.235	-12.58
22	0.908	-0.84	114	0.249	-12.08	206	0.949	-0.45	298	0.235	-12.58
24	0.925	-0.68	116	0.248	-12.11	208	0.963	-0.33	300	0.237	-12.51
26	0.941	-0.53	118	0.248	-12.11	210	0.974	-0.23	302	0.238	-12.47
28	0.954	-0.41	120	0.248	-12.11	212	0.984	-0.14	304	0.240	-12.40
30	0.967	-0.29	122	0.250	-12.04	214	0.992	-0.07	306	0.241	-12.36
32	0.977	-0.20	124	0.252	-11.97	216	0.997	-0.03	308	0.241	-12.36
34	0.985	-0.13	126	0.254	-11.90	218	0.999	-0.01	310	0.242	-12.32
36	0.992	-0.07	128	0.255	-11.87	220	1.000	0.00	312	0.241	-12.36
38	0.997	-0.03	130	0.256	-11.84	222	0.997	-0.03	314	0.241	-12.36
40	1.000	0.00	132	0.255	-11.87	224	0.992	-0.07	316	0.240	-12.40
42	0.999	-0.01	134	0.254	-11.90	226	0.985	-0.13	318	0.238	-12.47
44	0.997	-0.03	136	0.252	-11.97	228	0.977	-0.20	320	0.237	-12.51
46	0.992	-0.07	138	0.250	-12.04	230	0.967	-0.29	322	0.235	-12.58
48	0.984	-0.14	140	0.248	-12.11	232	0.954	-0.41	324	0.235	-12.58
50	0.974	-0.23	142	0.248	-12.11	234	0.941	-0.53	326	0.236	-12.54
52	0.963	-0.33	144	0.248	-12.11	236	0.925	-0.68	328	0.238	-12.47
54	0.949	-0.45	146	0.249	-12.08	238	0.908	-0.84	330	0.242	-12.32
56	0.933	-0.60	148	0.252	-11.97	240	0.889	-1.02	332	0.248	-12.11
58	0.916	-0.76	150	0.258	-11.77	242	0.868	-1.23	334	0.257	-11.80
60	0.897	-0.94	152	0.266	-11.50	244	0.844	-1.47	336	0.269	-11.40
62	0.877	-1.14	154	0.277	-11.15	246	0.820	-1.72	338	0.284	-10.93
64	0.856	-1.35	156	0.289	-10.78	248	0.793	-2.01	340	0.302	-10.40
66	0.832	-1.60	158	0.306	-10.29	250	0.764	-2.34	342	0.322	-9.84
68	0.807	-1.86	160	0.324	-9.79	252	0.733	-2.70	344	0.346	-9.22
70	0.781	-2.15	162	0.344	-9.27	254	0.701	-3.09	346	0.373	-8.57
72	0.752	-2.48	164	0.368	-8.68	256	0.668	-3.50	348	0.401	-7.94
74	0.722	-2.83	166	0.394	-8.09	258	0.635	-3.94	350	0.432	-7.29
76	0.689	-3.24	168	0.421	-7.51	260	0.600	-4.44	352	0.464	-6.67
78	0.656	-3.66	170	0.451	-6.92	262	0.565	-4.96	354	0.497	-6.07
80	0.622	-4.12	172	0.483	-6.32	264	0.531	-5.50	356	0.531	-5.50
82	0.586	-4.64	174	0.517	-5.73	266	0.497	-6.07	358	0.565	-4.96
84	0.551	-5.18	176	0.551	-5.18	268	0.464	-6.67	360	0.600	-4.44
86	0.517	-5.73	178	0.586	-4.64	270	0.432	-7.29			
88	0.483	-6.32	180	0.622	-4.12	272	0.401	-7.94			
90	0.451	-6.92	182	0.656	-3.66	274	0.373	-8.57			

Preliminary, subject to final design and review.

Elevation Pattern

EXHIBIT D

Type:	ATW6V3	
Directivity	*Numeric*	*dBd*
Main Lobe:	6.00	(7.78)
Horizontal:	5.88	(7.69)
Beam Tilt	-0.75 °	
Polarization:	Horizontal	
Frequency:		
Location:		



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CustomerSupport@eriinc.com
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Tabulated Data for Elevation Pattern

Type: ATW6V3

-5 to 10 degrees in 0.25 degree increments
10 to 90 degrees in 0.50 degree increments

Angle	Field	dB
5.00	0.510	-5.85
4.75	0.545	-5.27
4.50	0.579	-4.75
4.25	0.613	-4.25
4.00	0.646	-3.80
3.75	0.679	-3.36
3.50	0.710	-2.97
3.25	0.740	-2.62
3.00	0.769	-2.28
2.75	0.797	-1.97
2.50	0.823	-1.69
2.25	0.848	-1.43
2.00	0.871	-1.20
1.75	0.893	-0.98
1.50	0.912	-0.80
1.25	0.930	-0.63
1.00	0.946	-0.48
0.75	0.960	-0.35
0.50	0.972	-0.25
0.25	0.982	-0.16
0.00	0.990	-0.09
-0.25	0.995	-0.04
-0.50	0.999	-0.01
-0.75	1.000	0.00
-1.00	0.999	-0.01
-1.25	0.996	-0.03
-1.50	0.991	-0.08
-1.75	0.984	-0.14
-2.00	0.974	-0.23
-2.25	0.963	-0.33
-2.50	0.949	-0.45
-2.75	0.934	-0.59
-3.00	0.917	-0.75
-3.25	0.898	-0.93
-3.50	0.877	-1.14
-3.75	0.854	-1.37
-4.00	0.830	-1.62
-4.25	0.804	-1.89
-4.50	0.777	-2.19
-4.75	0.749	-2.51
-5.00	0.720	-2.85
-5.25	0.689	-3.24
-5.50	0.658	-3.64
-5.75	0.625	-4.08
-6.00	0.592	-4.55

Angle	Field	dB
-6.25	0.559	-5.05
-6.50	0.525	-5.60
-6.75	0.490	-6.20
-7.00	0.456	-6.82
-7.25	0.421	-7.51
-7.50	0.387	-8.25
-7.75	0.352	-9.07
-8.00	0.318	-9.95
-8.25	0.285	-10.90
-8.50	0.252	-11.97
-8.75	0.220	-13.15
-9.00	0.190	-14.42
-9.25	0.160	-15.92
-9.50	0.133	-17.52
-9.75	0.109	-19.25
-10.00	0.089	-21.01
-10.50	0.071	-22.97
-11.00	0.087	-21.21
-11.50	0.118	-18.56
-12.00	0.151	-16.42
-12.50	0.180	-14.89
-13.00	0.204	-13.81
-13.50	0.223	-13.03
-14.00	0.236	-12.54
-14.50	0.243	-12.29
-15.00	0.244	-12.25
-15.50	0.241	-12.36
-16.00	0.232	-12.69
-16.50	0.219	-13.19
-17.00	0.202	-13.89
-17.50	0.182	-14.80
-18.00	0.160	-15.92
-18.50	0.135	-17.39
-19.00	0.110	-19.17
-19.50	0.084	-21.51
-20.00	0.060	-24.44
-20.50	0.040	-27.96
-21.00	0.033	-29.63
-21.50	0.043	-27.33
-22.00	0.061	-24.29
-22.50	0.079	-22.05
-23.00	0.096	-20.35
-23.50	0.110	-19.17
-24.00	0.122	-18.27
-24.50	0.131	-17.65

Angle	Field	dB
-25.00	0.137	-17.27
-25.50	0.140	-17.08
-26.00	0.139	-17.14
-26.50	0.136	-17.33
-27.00	0.130	-17.72
-27.50	0.121	-18.34
-28.00	0.110	-19.17
-28.50	0.097	-20.26
-29.00	0.082	-21.72
-29.50	0.066	-23.61
-30.00	0.049	-26.20
-30.50	0.032	-29.90
-31.00	0.014	-37.08
-31.50	0.005	-46.02
-32.00	0.022	-33.15
-32.50	0.039	-28.18
-33.00	0.055	-25.19
-33.50	0.069	-23.22
-34.00	0.083	-21.62
-34.50	0.094	-20.54
-35.00	0.104	-19.66
-35.50	0.112	-19.02
-36.00	0.118	-18.56
-36.50	0.121	-18.34
-37.00	0.123	-18.20
-37.50	0.123	-18.20
-38.00	0.120	-18.42
-38.50	0.116	-18.71
-39.00	0.110	-19.17
-39.50	0.102	-19.83
-40.00	0.093	-20.63
-40.50	0.083	-21.62
-41.00	0.072	-22.85
-41.50	0.061	-24.29
-42.00	0.050	-26.02
-42.50	0.041	-27.74
-43.00	0.035	-29.12
-43.50	0.036	-28.87
-44.00	0.043	-27.33
-44.50	0.053	-25.51
-45.00	0.065	-23.74
-45.50	0.078	-22.16
-46.00	0.090	-20.92
-46.50	0.103	-19.74
-47.00	0.114	-18.86

Angle	Field	dB
-47.50	0.124	-18.13
-48.00	0.134	-17.46
-48.50	0.142	-16.95
-49.00	0.149	-16.54
-49.50	0.155	-16.19
-50.00	0.160	-15.92
-50.50	0.163	-15.76
-51.00	0.165	-15.65
-51.50	0.165	-15.65
-52.00	0.165	-15.65
-52.50	0.163	-15.76
-53.00	0.160	-15.92
-53.50	0.156	-16.14
-54.00	0.150	-16.48
-54.50	0.144	-16.83
-55.00	0.137	-17.27
-55.50	0.130	-17.72
-56.00	0.121	-18.34
-56.50	0.112	-19.02
-57.00	0.103	-19.74
-57.50	0.094	-20.54
-58.00	0.085	-21.41
-58.50	0.076	-22.38
-59.00	0.068	-23.35
-59.50	0.061	-24.29
-60.00	0.055	-25.19
-60.50	0.052	-25.68
-61.00	0.051	-25.85
-61.50	0.053	-25.51
-62.00	0.058	-24.73
-62.50	0.063	-24.01
-63.00	0.070	-23.10
-63.50	0.077	-22.27
-64.00	0.085	-21.41
-64.50	0.093	-20.63
-65.00	0.100	-20.00
-65.50	0.107	-19.41
-66.00	0.114	-18.86
-66.50	0.121	-18.34
-67.00	0.127	-17.92
-67.50	0.132	-17.59
-68.00	0.137	-17.27
-68.50	0.142	-16.95
-69.00	0.146	-16.71
-69.50	0.149	-16.54

Angle	Field	dB
-70.00	0.152	-16.36
-70.50	0.154	-16.25
-71.00	0.156	-16.14
-71.50	0.157	-16.08
-72.00	0.158	-16.03
-72.50	0.159	-15.97
-73.00	0.158	-16.03
-73.50	0.158	-16.03
-74.00	0.157	-16.08
-74.50	0.155	-16.19
-75.00	0.153	-16.31
-75.50	0.151	-16.42
-76.00	0.149	-16.54
-76.50	0.146	-16.71
-77.00	0.142	-16.95
-77.50	0.139	-17.14
-78.00	0.135	-17.39
-78.50	0.131	-17.65
-79.00	0.127	-17.92
-79.50	0.122	-18.27
-80.00	0.118	-18.56
-80.50	0.113	-18.94
-81.00	0.108	-19.33
-81.50	0.102	-19.83
-82.00	0.097	-20.26
-82.50	0.092	-20.72
-83.00	0.086	-21.31
-83.50	0.080	-21.94
-84.00	0.074	-22.62
-84.50	0.068	-23.35
-85.00	0.062	-24.15
-85.50	0.056	-25.04
-86.00	0.050	-26.02
-86.50	0.044	-27.13
-87.00	0.038	-28.40
-87.50	0.032	-29.90
-88.00	0.025	-32.04
-88.50	0.019	-34.42
-89.00	0.013	-37.72
-89.50	0.006	-44.44
-90.00	0.000	---

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USA

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+1 812 925-4030 (fax)
877 ERI-LINE (toll-free)

Sales@eriinc.com
CustomerSupport@eriinc.com
www.eriinc.com

EXHIBIT E

POWER DENSITY CALCULATION

PROPOSED WAOE-DT DTS-1
CHANNEL 10 – OSWEGO, ILLINOIS

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Oswego facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 24.0 kW (H,V), an antenna radiation center 402.6 meters above ground, and the specific elevation pattern of the proposed ERI antenna, maximum power density two meters above ground of 0.00024 mW/cm^2 is calculated to occur 126 meters northeast and southwest of the base of the tower. Since this is only 0.1 percent of the 0.2 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the High VHF Television Band, 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.

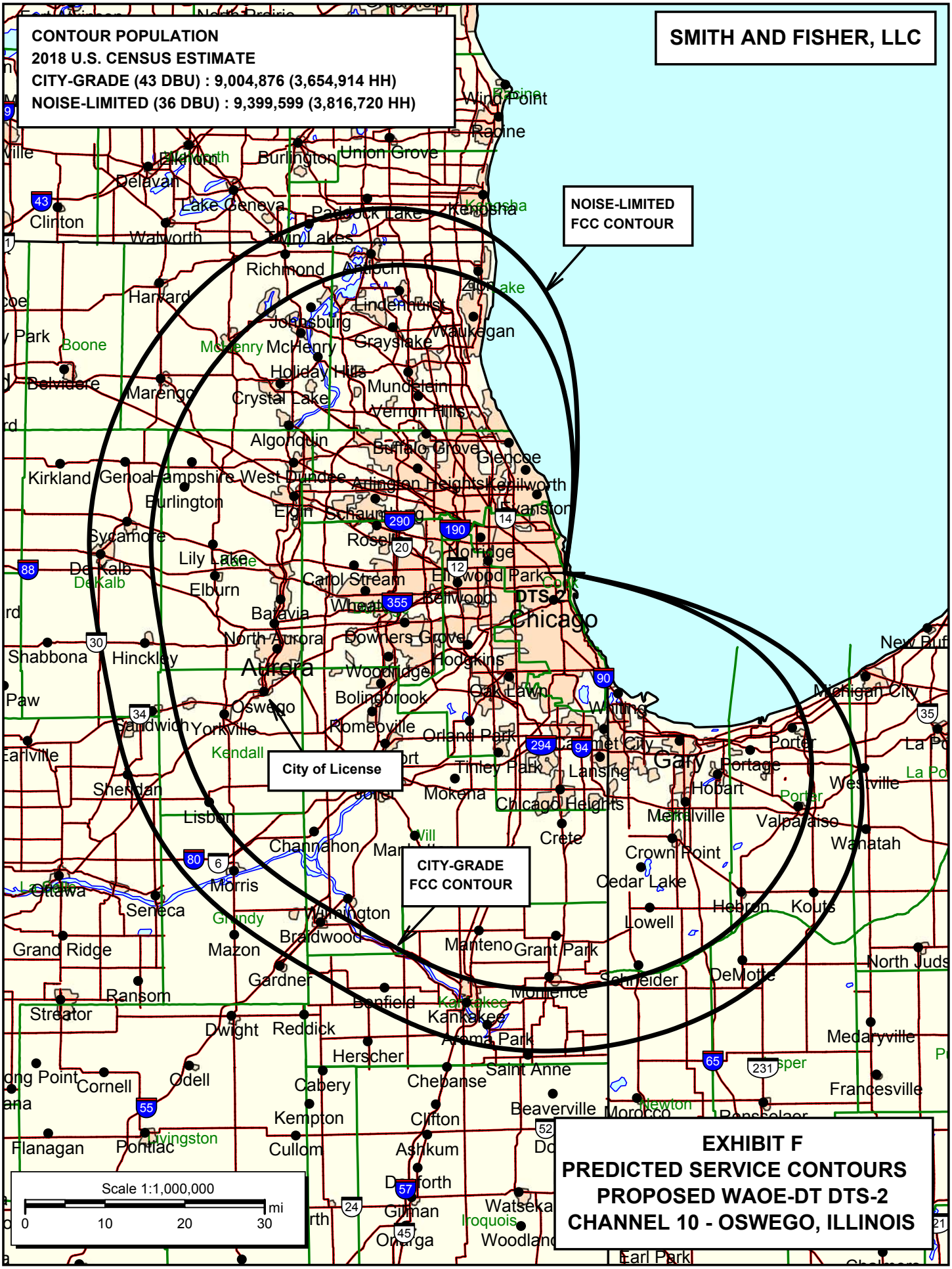
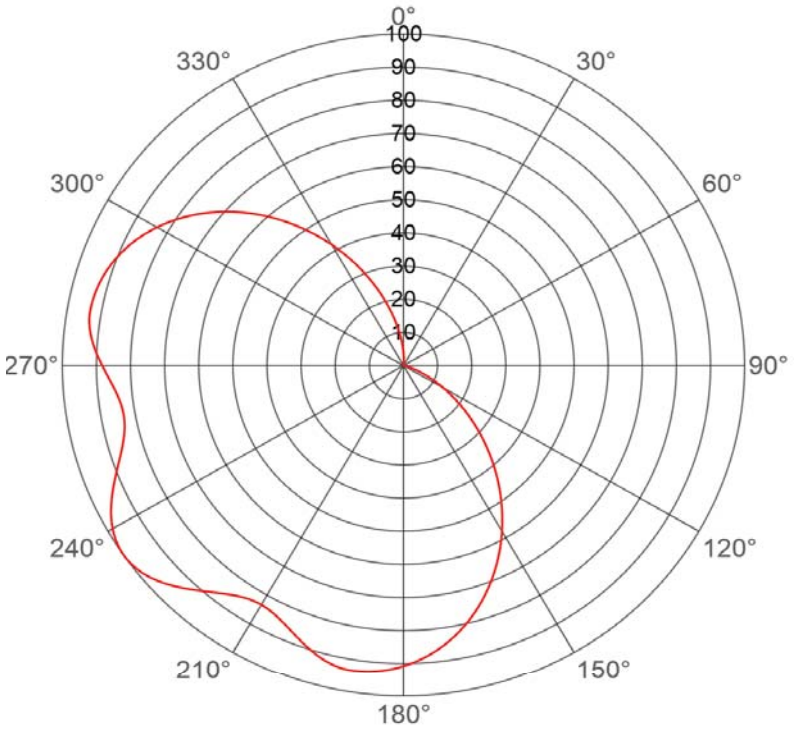

CONTOUR POPULATION
2018 U.S. CENSUS ESTIMATE
CITY-GRADE (43 DBU) : 9,004,876 (3,654,914 HH)
NOISE-LIMITED (36 DBU) : 9,399,599 (3,816,720 HH)
SMITH AND FISHER, LLC
NOISE-LIMITED FCC CONTOUR
CITY-GRADE FCC CONTOUR
City of License
DTS-2
Chicago
Aurora
Scale 1:1,000,000
0 10 20 30 mi
EXHIBIT F
PREDICTED SERVICE CONTOURS
PROPOSED WAOE-DT DTS-2
CHANNEL 10 - OSWEGO, ILLINOIS

EXHIBIT G



Horizontal Polarization
AZIMUTH PATTERN

Exhibit No.	
Date	**19 Jul 2021**
Call Letters	
Channel	**10**
Antenna Type	**THA-C2-2/4-1**
Location	
Customer	
Gain	**2.7 (4.31 dB)**
	Calculated
Drawing #	**THA-C2**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.040	36	0.000	72	0.000	108	0.027	144	0.484	180	0.908	216	0.855	252	0.872	288	0.917	324	0.516
1	0.033	37	0.000	73	0.000	109	0.033	145	0.500	181	0.912	217	0.863	253	0.863	289	0.912	325	0.500
2	0.027	38	0.000	74	0.000	110	0.040	146	0.516	182	0.917	218	0.872	254	0.855	290	0.908	326	0.484
3	0.021	39	0.000	75	0.000	111	0.047	147	0.531	183	0.921	219	0.881	255	0.849	291	0.902	327	0.469
4	0.016	40	0.000	76	0.000	112	0.055	148	0.547	184	0.924	220	0.891	256	0.843	292	0.897	328	0.453
5	0.011	41	0.000	77	0.000	113	0.064	149	0.562	185	0.927	221	0.901	257	0.839	293	0.890	329	0.437
6	0.008	42	0.000	78	0.000	114	0.072	150	0.578	186	0.929	222	0.912	258	0.836	294	0.884	330	0.421
7	0.005	43	0.000	79	0.000	115	0.082	151	0.593	187	0.931	223	0.922	259	0.834	295	0.877	331	0.405
8	0.002	44	0.000	80	0.000	116	0.092	152	0.608	188	0.932	224	0.933	260	0.833	296	0.869	332	0.390
9	0.001	45	0.000	81	0.000	117	0.102	153	0.623	189	0.933	225	0.943	261	0.834	297	0.861	333	0.374
10	0.000	46	0.000	82	0.000	118	0.113	154	0.637	190	0.933	226	0.953	262	0.836	298	0.852	334	0.359
11	0.000	47	0.000	83	0.000	119	0.124	155	0.652	191	0.932	227	0.962	263	0.839	299	0.844	335	0.343
12	0.000	48	0.000	84	0.000	120	0.135	156	0.666	192	0.930	228	0.970	264	0.844	300	0.834	336	0.328
13	0.000	49	0.000	85	0.000	121	0.147	157	0.680	193	0.927	229	0.978	265	0.849	301	0.825	337	0.313
14	0.000	50	0.000	86	0.000	122	0.159	158	0.693	194	0.922	230	0.984	266	0.855	302	0.814	338	0.297
15	0.000	51	0.000	87	0.000	123	0.172	159	0.707	195	0.917	231	0.990	267	0.861	303	0.804	339	0.283
16	0.000	52	0.000	88	0.000	124	0.185	160	0.720	196	0.911	232	0.994	268	0.868	304	0.793	340	0.268
17	0.000	53	0.000	89	0.000	125	0.198	161	0.733	197	0.905	233	0.997	269	0.876	305	0.782	341	0.254
18	0.000	54	0.000	90	0.000	126	0.211	162	0.746	198	0.898	234	0.999	270	0.883	306	0.770	342	0.239
19	0.000	55	0.000	91	0.000	127	0.225	163	0.758	199	0.891	235	1.000	271	0.891	307	0.758	343	0.225
20	0.000	56	0.000	92	0.000	128	0.239	164	0.770	200	0.883	236	0.999	272	0.898	308	0.746	344	0.211
21	0.000	57	0.000	93	0.000	129	0.254	165	0.782	201	0.876	237	0.997	273	0.905	309	0.733	345	0.198
22	0.000	58	0.000	94	0.000	130	0.268	166	0.793	202	0.868	238	0.994	274	0.911	310	0.720	346	0.185
23	0.000	59	0.000	95	0.000	131	0.283	167	0.804	203	0.861	239	0.990	275	0.917	311	0.707	347	0.172
24	0.000	60	0.000	96	0.000	132	0.297	168	0.814	204	0.855	240	0.984	276	0.922	312	0.693	348	0.159
25	0.000	61	0.000	97	0.000	133	0.313	169	0.825	205	0.849	241	0.978	277	0.927	313	0.680	349	0.147
26	0.000	62	0.000	98	0.000	134	0.328	170	0.834	206	0.844	242	0.970	278	0.930	314	0.666	350	0.135
27	0.000	63	0.000	99	0.000	135	0.343	171	0.844	207	0.839	243	0.962	279	0.932	315	0.652	351	0.124
28	0.000	64	0.000	100	0.000	136	0.359	172	0.852	208	0.836	244	0.953	280	0.933	316	0.637	352	0.113
29	0.000	65	0.000	101	0.001	137	0.374	173	0.861	209	0.834	245	0.943	281	0.933	317	0.623	353	0.102
30	0.000	66	0.000	102	0.002	138	0.390	174	0.869	210	0.833	246	0.933	282	0.932	318	0.608	354	0.092
31	0.000	67	0.000	103	0.005	139	0.405	175	0.877	211	0.834	247	0.922	283	0.931	319	0.593	355	0.082
32	0.000	68	0.000	104	0.008	140	0.421	176	0.884	212	0.836	248	0.912	284	0.929	320	0.578	356	0.072
33	0.000	69	0.000	105	0.011	141	0.437	177	0.890	213	0.839	249	0.901	285	0.927	321	0.562	357	0.064
34	0.000	70	0.000	106	0.016	142	0.453	178	0.897	214	0.843	250	0.891	286	0.924	322	0.547	358	0.055
35	0.000	71	0.000	107	0.021	143	0.469	179	0.902	215	0.849	251	0.881	287	0.921	323	0.531	359	0.047

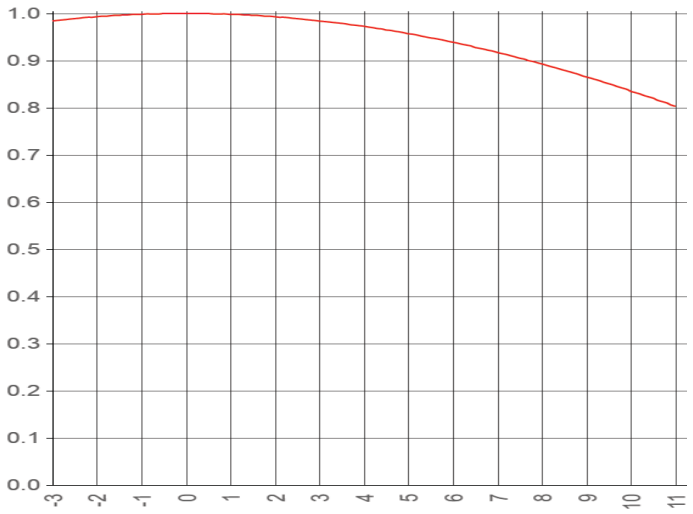
ELEVATION PATTERN

Exhibit No.	
Date	**19 Jul 2021**
Call Letters	
Channel	**10**
Antenna Type	**THA-C2-2/4-1**
Location	
Customer	

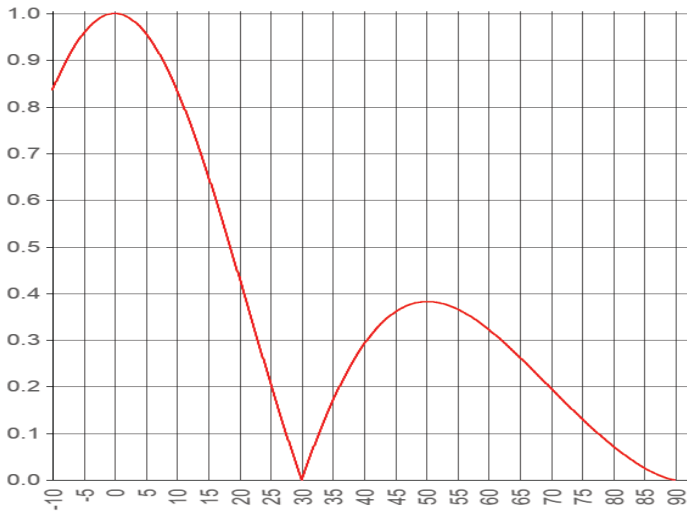
EXHIBIT G

Future fill is available!

RMS Gain at Main Lobe	**2.1 (3.22 dB)**	Beam Tilt	**0 Degrees**
RMS Gain at Horizontal	**2.1 (3.22 dB)**	Drawing #	**02H021000**
	Calculated		



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.835	10	0.835	30	0.000	50	0.382	70	0.196
-9	0.865	11	0.803	31	0.037	51	0.382	71	0.183
-8	0.893	12	0.768	32	0.073	52	0.380	72	0.170
-7	0.917	13	0.731	33	0.107	53	0.377	73	0.157
-6	0.939	14	0.693	34	0.140	54	0.372	74	0.144
-5	0.957	15	0.652	35	0.170	55	0.366	75	0.131
-4	0.973	16	0.611	36	0.198	56	0.359	76	0.118
-3	0.984	17	0.568	37	0.224	57	0.351	77	0.106
-2	0.993	18	0.524	38	0.249	58	0.343	78	0.095
-1	0.998	19	0.479	39	0.271	59	0.333	79	0.083
0	1.000	20	0.434	40	0.291	60	0.323	80	0.072
1	0.998	21	0.388	41	0.309	61	0.312	81	0.062
2	0.993	22	0.343	42	0.325	62	0.300	82	0.052
3	0.984	23	0.297	43	0.338	63	0.288	83	0.043
4	0.973	24	0.252	44	0.350	64	0.276	84	0.034
5	0.957	25	0.208	45	0.360	65	0.263	85	0.026
6	0.939	26	0.164	46	0.368	66	0.250	86	0.018
7	0.917	27	0.121	47	0.374	67	0.237	87	0.012
8	0.893	28	0.079	48	0.379	68	0.223	88	0.007
9	0.865	29	0.039	49	0.381	69	0.210	89	0.002

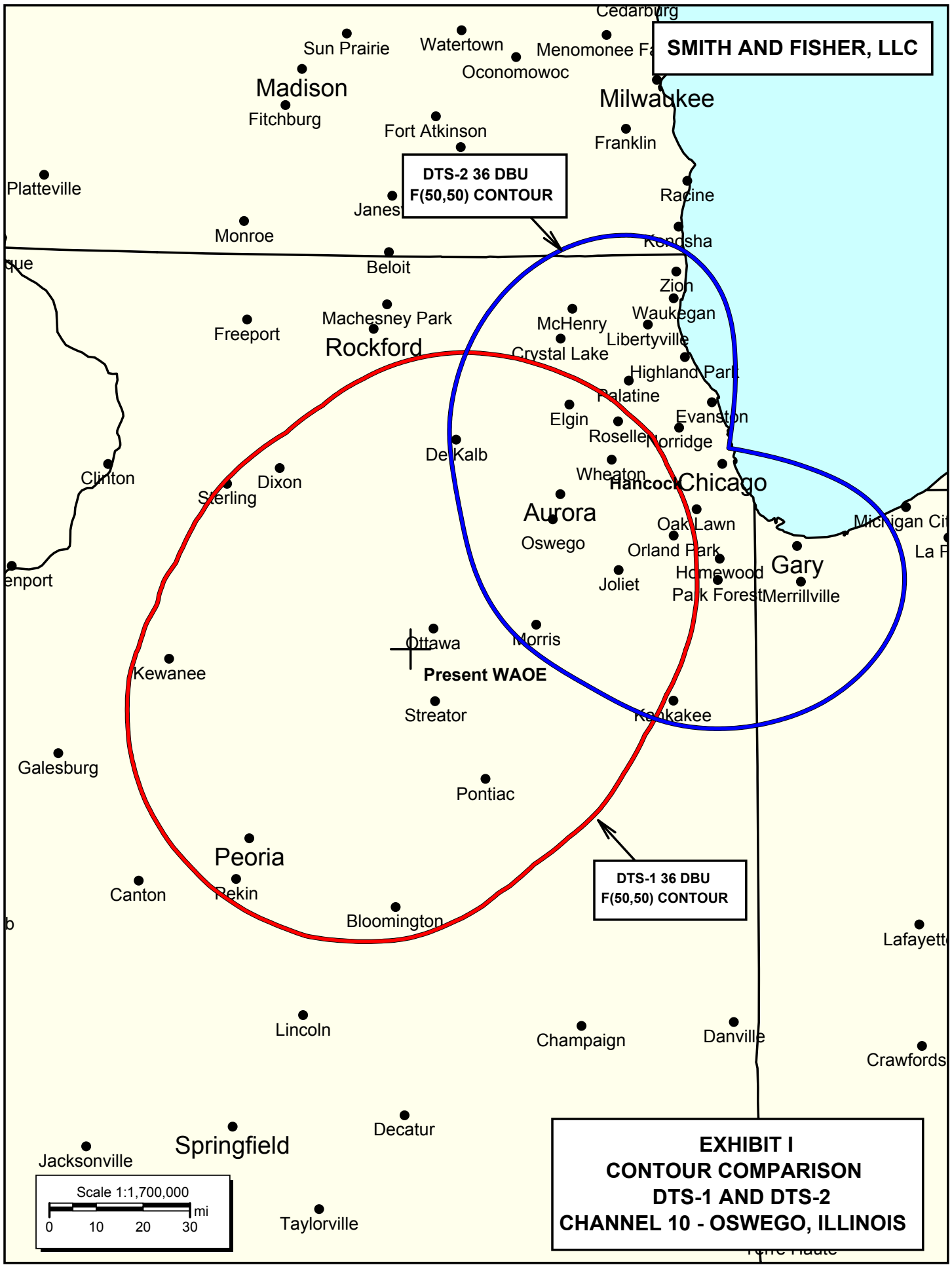
EXHIBIT H

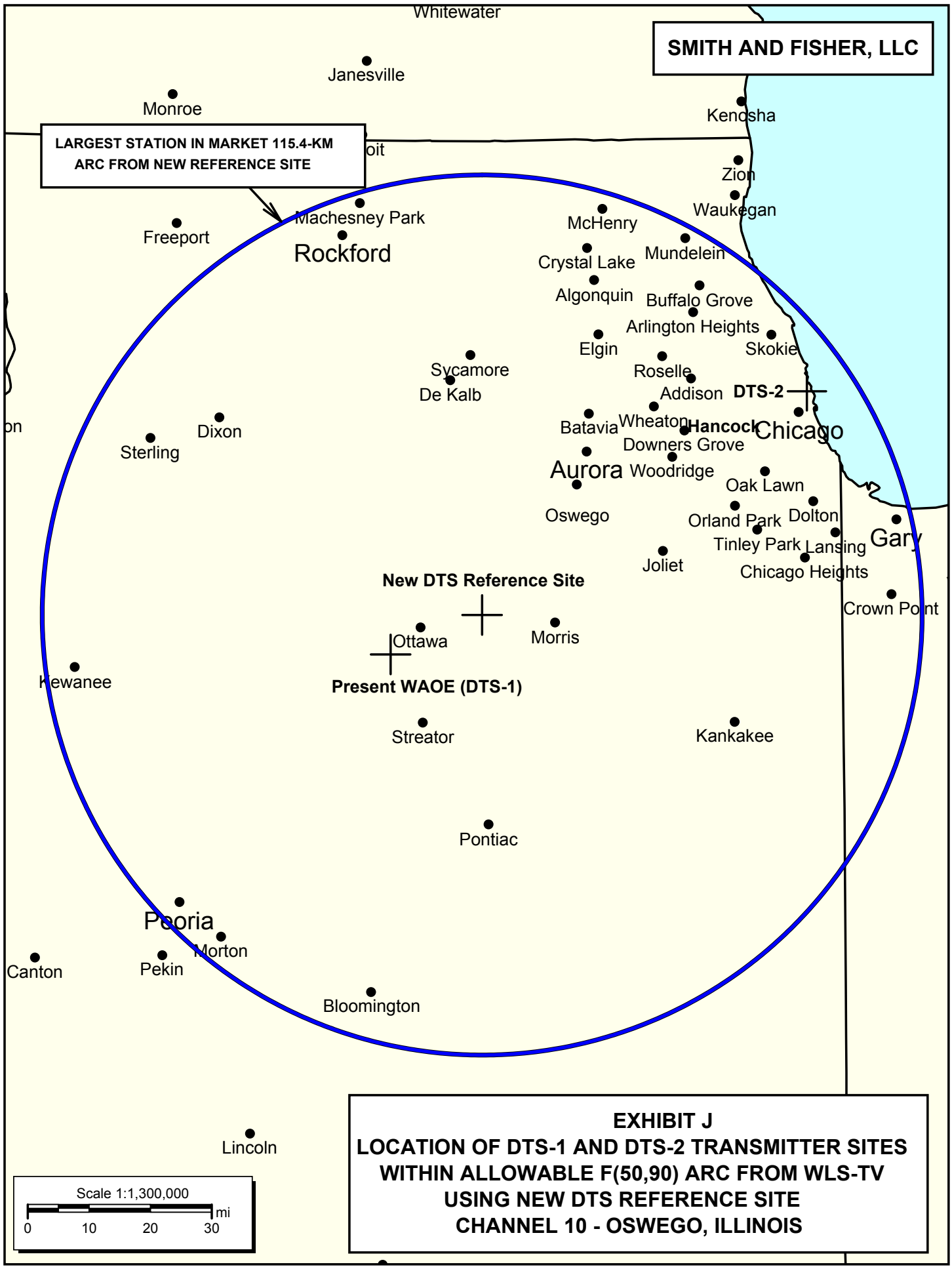
POWER DENSITY CALCULATION

PROPOSED WAOE-DT DTS-2
CHANNEL 10 – OSWEGO, ILLINOIS

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Oswego facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 7.4 kW (H), an antenna radiation center 409 meters above ground, and the specific elevation pattern of the proposed Dielectric antenna, maximum power density two meters above ground of 0.00013 mW/cm^2 is calculated to occur 330 meters southwest of the base of the building. Since this is less than 0.1 percent of the 0.2 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the High VHF Television Band, 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 participate in the John Hancock Center RF safety protocols and 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.


SMITH AND FISHER, LLC
DTS-2 36 DBU
F(50,50) CONTOUR
DTS-1 36 DBU
F(50,50) CONTOUR
Present WAOE
Cedarburg
Sun Prairie
Watertown
Menomonee Fa
Oconomowoc
Madison
Fitchburg
Fort Atkinson
Milwaukee
Franklin
Platteville
Janes
Racine
Monroe
Kenosha
Beloit
Zion
Waukegan
Machesney Park
McHenry
Freeport
Rockford
Libertyville
Crystal Lake
Highland Park
Palatine
Elgin
Evanston
Roselle
Norridge
DeKalb
Clinton
Dixon
Wheaton
Hancock
Chicago
Sterling
Aurora
Oak Lawn
Oswego
Orland Park
Gary
Homewood
Joliet
Park Forest
Merrillville
Ottawa
Morris
Kewanee
Streator
Galesburg
Pontiac
Peoria
Canton
Pekin
Bloomington
Lincoln
Champaign
Danville
Decatur
Springfield
Jacksonville
Taylorville
Scale 1:1,700,000
mi
0 10 20 30
EXHIBIT I
CONTOUR COMPARISON
DTS-1 AND DTS-2
CHANNEL 10 - OSWEGO, ILLINOIS


SMITH AND FISHER, LLC
LARGEST STATION IN MARKET 115.4-KM ARC FROM NEW REFERENCE SITE
Whitewater
Janesville
Monroe
Kenosha
Zion
Waukegan
Machesney Park
Rockford
Freeport
McHenry
Mundelein
Crystal Lake
Algonquin
Buffalo Grove
Arlington Heights
Elgin
Skokie
Sycamore
De Kalb
Roselle
Addison
DTS-2
Batavia
Wheaton
Hancock
Chicago
Downers Grove
Dixon
Sterling
Aurora
Woodridge
Oak Lawn
Oswego
Orland Park
Dolton
Tinley Park
Lansing
Gary
Joliet
Chicago Heights
New DTS Reference Site
Crown Point
Ottawa
Morris
Present WAOE (DTS-1)
Streator
Kankakee
Pontiac
Peoria
Morton
Canton
Pekin
Bloomington
Lincoln
Scale 1:1,300,000
mi
0
10
20
30
EXHIBIT J
LOCATION OF DTS-1 AND DTS-2 TRANSMITTER SITES
WITHIN ALLOWABLE F(50,90) ARC FROM WLS-TV
USING NEW DTS REFERENCE SITE
CHANNEL 10 - OSWEGO, ILLINOIS

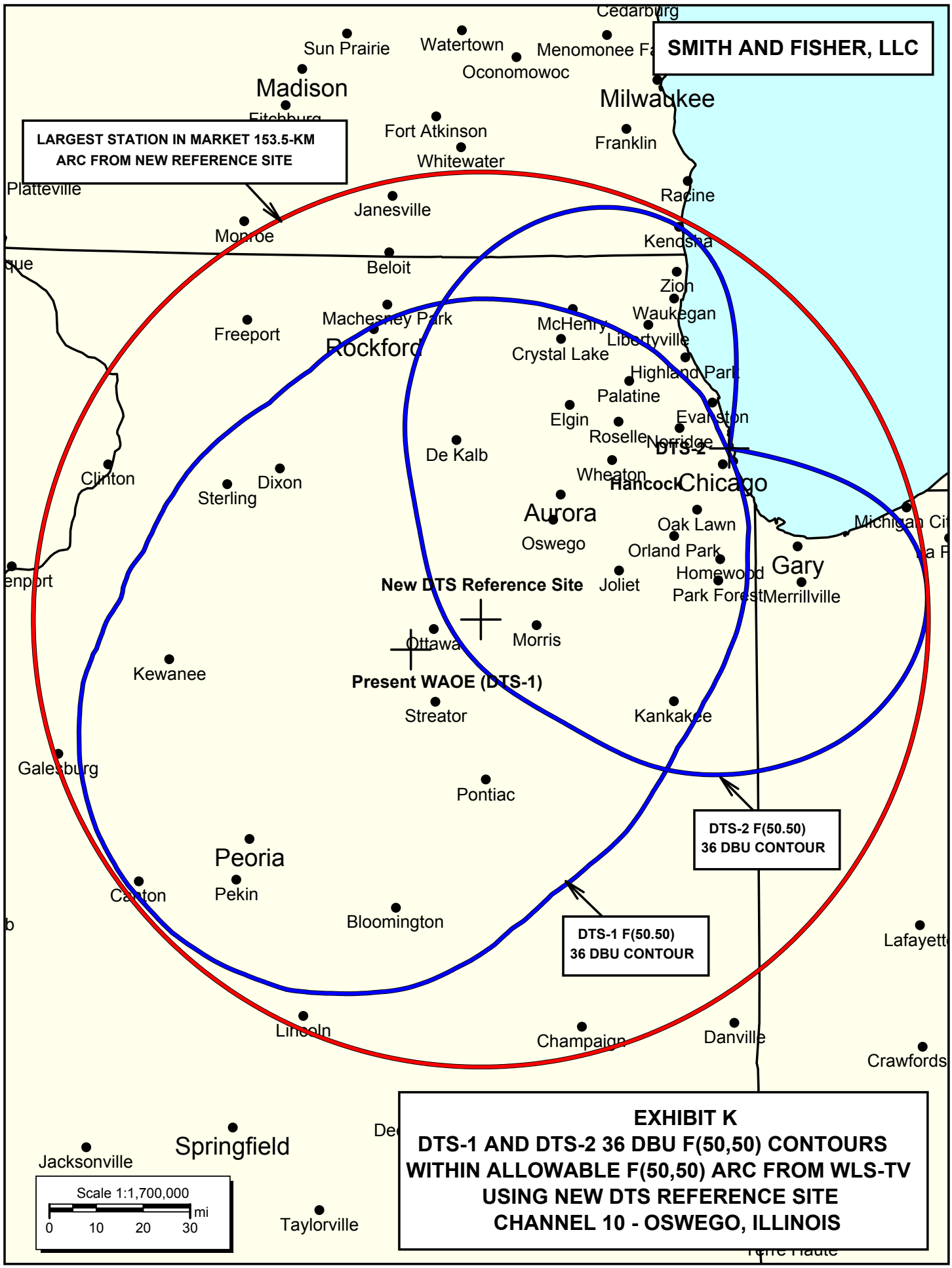


EXHIBIT K
DTS-1 AND DTS-2 36 DBU F(50,50) CONTOURS WITHIN ALLOWABLE F(50,50) ARC FROM WLS-TV USING NEW DTS REFERENCE SITE
CHANNEL 10 - OSWEGO, ILLINOIS

EXHIBIT L
DTS-2 23.8 DBU F(50,10) CONTOUR
WITHIN ALLOWABLE F(50,10) ARC FROM WLS-TV
USING NEW DTS REFERENCE SITE
CHANNEL 10 - OSWEGO, ILLINOIS

EXHIBIT M

TVSTUDY INTERFERENCE ANALYSIS RESULTS
PROPOSED WAOE-DT DTS FACILITY
CHANNEL 10 – OSWEGO, ILLINOIS

Study created: 2021.07.27 11:43:44

Study build station data: LMS TV 2021-07-26

Proposal: WAOE D10 DD LIC OSWEGO, IL
File number: BLANK0000151562
Facility ID: 52280
Station data: User record
Record ID: 1103
Country: U.S.
Zone: I
Ref. lat.: 41 22 31.00 N
Ref. long.: 88 38 59.60 W
DTS sites: 2

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	WILL-TV	D9	DT	APP	URBANA, IL	BPEDT20100406ABJ	148.5 km
Yes	WILL-TV	D9	DT	LIC	URBANA, IL	BLEDT20050920AEE	148.5
No	WISH-TV	D9	DT	LIC	INDIANAPOLIS, IN	BLANK0000055426	264.1
Yes	WGEM-TV	D10	DT	LIC	QUINCY, IL	BLANK0000105998	276.0
Yes	WTHI-TV	D10	DT	LIC	TERRE HAUTE, IN	BLCDT20090622ACG	260.1
Yes	WILX-TV	D10	DT	LIC	ONONDAGA, MI	BLCDT20120404ACG	357.5
No	KTTC	D10	DT	LIC	ROCHESTER, MN	BLCDT20101102ACA	394.2
No	KTTC	D10	DT	CP	ROCHESTER, MN	BLANK0000035728	394.2
No	WCIX	D11	DT	LIC	SPRINGFIELD, IL	BLANK0000113046	190.6
No	WCIX	D11	DT	CP	SPRINGFIELD, IL	BLANK0000127610	190.6
No	WLFI-TV	D11	DT	LIC	LAFAYETTE, IN	BLCDT20040520AIX	203.3
No	WISC-TV	D11	DT	LIC	MADISON, WI	BLANK0000126605	200.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied, DTS site # 1:
Channel: D10
Latitude: 41 53 56.10 N (NAD83)
Longitude: 87 37 23.20 W
Height AMSL: 589.7 m
HAAT: 410.6 m
Peak ERP: 7.40 kW
Antenna: Hancock Antenna Pattern 0.0 deg
Elec Tilt: 1.00

36.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.012 kW	414.3 m	48.4 km
45.0	0.000	414.6	2.3
90.0	0.000	414.2	2.3
135.0	0.871	414.6	81.6
180.0	6.10	408.1	96.2
225.0	6.58	408.0	96.8
270.0	5.77	403.6	95.5
315.0	3.15	407.3	91.0

Record parameters as studied, DTS site # 2:
Channel: D10
Latitude: 41 16 54.60 N (NAD83)
Longitude: 88 56 11.10 W
Height AMSL: 596.6 m
HAAT: 212.0 m
Peak ERP: 24.0 kW
Antenna: ALIVE TELECOM-ATC-BCE04H-VP1-10 (ID 1008363) 220.0 deg
Elec Tilt: 0.50

36.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	8.64 kW	415.3 m	99.4 km
45.0	23.4	442.6	110.3
90.0	4.88	406.6	94.3
135.0	1.52	396.9	84.8
180.0	9.29	401.6	99.1
225.0	23.2	394.4	106.2
270.0	4.48	401.7	93.4
315.0	1.38	423.6	85.7

Database HAAT does not agree with computed HAAT
Database HAAT: 212 m Computed HAAT: 410 m

ERP exceeds maximum
ERP: 24.0 kW ERP maximum: 11.2 kW

**DTS proposal has coverage outside reference facility and distance limit

Distance to Canadian border: 370.0 km

Distance to Mexican border: 1701.7 km

Conditions at FCC monitoring station: Allegan MI
DTS site # 1 Bearing: 59.6 degrees Distance: 158.1 km
DTS site # 2 Bearing: 58.2 degrees Distance: 287.0 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
DTS site # 1 Bearing: 268.4 degrees Distance: 1486.0 km
DTS site # 2 Bearing: 270.1 degrees Distance: 1375.9 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%

---- Below is IX received by proposal BLANK0000151562 ----

**MX with BPEDT20100406ABJ APP scenario 1, 0.93% interference received
Proposal receives 0.93% interference from scenario 2
**MX with BPEDT20100406ABJ APP scenario 3, 0.93% interference received
Proposal receives 0.93% interference from scenario 4