



**STATEMENT OF JOHN E. HIDLE, P.E.
IN SUPPORT OF AN APPLICATION FOR
A CONSTRUCTION PERMIT FOR AN
AUXILIARY BROADCAST FACILITY FOR
WUCW - MINNEAPOLIS, MINNESOTA
DTV - CH. 22 - 65.78 kW - 308.4 m HAAT**

Prepared for: KLGT Licensee, LLC

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, No. 7418, and in New York State, No. 63418.

GENERAL

This office has been authorized by KLGT Licensee, LLC, licensee of WUCW, channel 22, licensed to Minneapolis, Minnesota, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for a construction permit for an auxiliary digital broadcast facility to supplement its licensed facility.

DIRECTIONAL ANTENNA

The applicant intends to install an existing Dielectric model TLP-8B-R horizontally polarized directional transmitting antenna with its center of radiation located at a height above ground of 280.4 meters, and a height above average terrain of 308.4 meters. The antenna's horizontal azimuth radiation pattern for and its vertical elevation pattern, showing

its radiation characteristics above and below the horizontal plane are shown and tabulated in the antenna exhibit.

PREDICTED COVERAGE CONTOURS

The predicted coverage contours for both the main licensed and proposed auxiliary facilities were calculated in accordance with the method described in Section 73.625(b) of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the NED Three Second US Terrain Database as permitted in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 1 shows the predicted Noise Limited (39.56 dBu) contours for both the licensed main facility and the proposed auxiliary facility and demonstrates that the auxiliary contour resides wholly within the licensed contour, as required by the Commission's Rules. The Principal Community (48 dBu) contour of the auxiliary facility completely encompasses Minneapolis, Minnesota.

BLANKETING AND INTERMODULATION INTERFERENCE

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 km of the WUCW site. The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

RADIO FREQUENCY IMPACT, SAFETY & STATEMENT OF COMPLIANCE

The licensee of WUCW is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WUCW antenna and will reduce power or cease operation, when necessary, to ensure protection to personnel.

As shown in Appendix A the proposed WUCW channel 22 auxiliary facility, as proposed herein, will operate with a maximum ERP of 65.78 kW from a horizontally polarized directional transmitting antenna with a centerline height of 280.4 meters above ground level (AGL). Considering the elevation pattern provided elsewhere in this submission, the vertical plane relative field factor is less than 0.250 at all depression angles greater than 7 degrees. The proposed WUCW channel 22 auxiliary facility is predicted to produce a worst-case power density at two meters above ground level, at 129.8 meters from the tower base, of $2.40 \mu\text{W}/\text{cm}^2$, which is 0.69% of the FCC guideline value of $347.33 \mu\text{W}/\text{cm}^2$ for an "uncontrolled" environment, and 0.138% of the FCC's guideline value for "controlled" environments. Therefore, pursuant to Section 1.1307(b)(3) of the FCC Rules, because the proposed facility would not exceed 5% of the uncontrolled and controlled exposure limits, the proposal's power density contribution is considered insignificant. Further, the Applicant will continue to cooperate/coordinate with other site users and reduce power and/or cease operation during times of service or maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel. In light of the above, the proposed facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

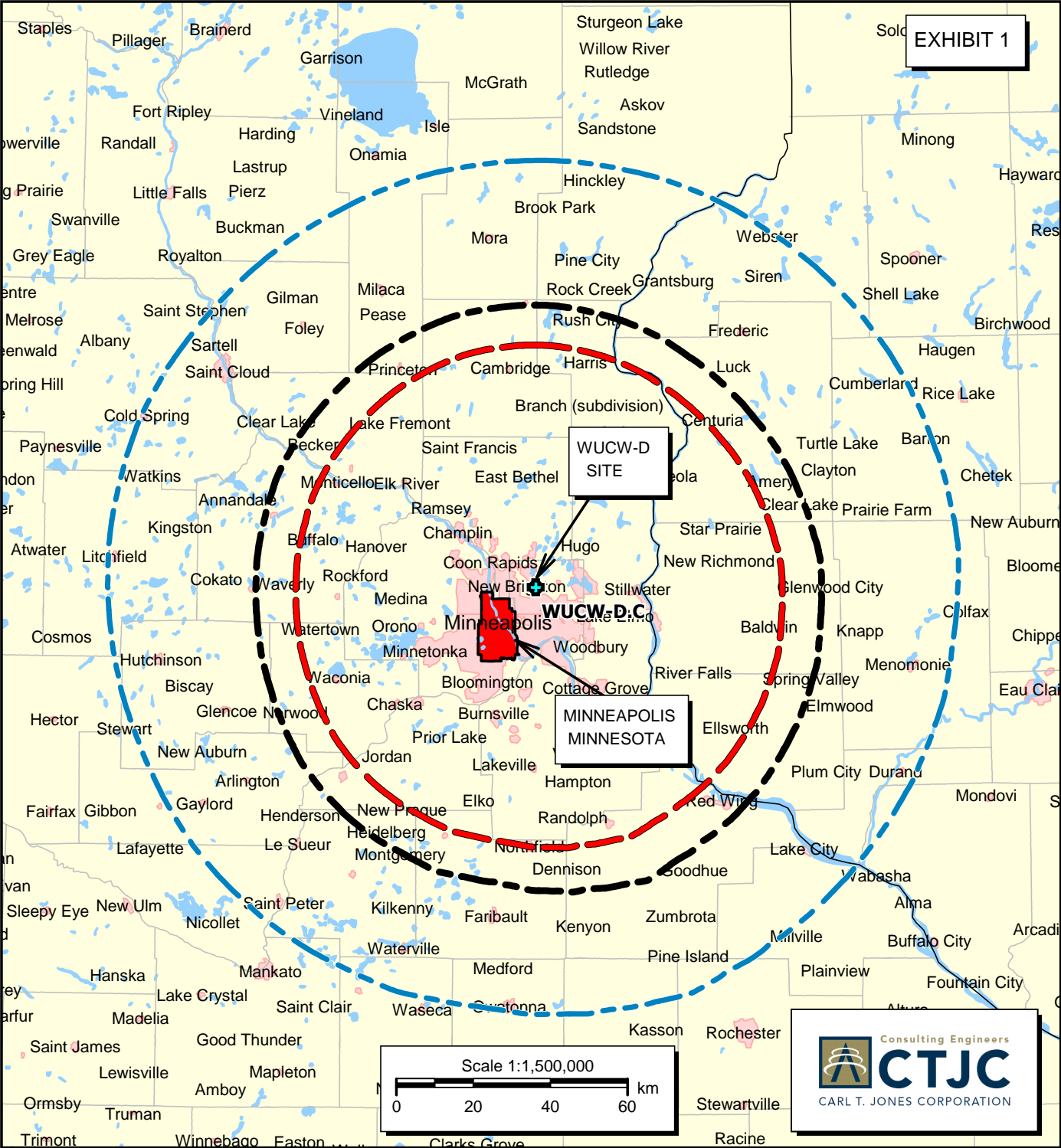
STATEMENT OF JOHN E. HIDLE, P.E.
WUCW - Minneapolis, Minnesota
PAGE 4

SUMMARY

It is submitted that the instant application for a construction permit to provide an auxiliary DTV facility for WUCW, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 2100, its technical sections, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: September 7, 2022





PREDICTED COVERAGE CONTOURS

WUCW-D AUXILIARY - MINNEAPOLIS, MINNESOTA
DTV Channel 22 - 65.78 kW ERP - 308.4 M HAAT
SEPTEMBER, 2022

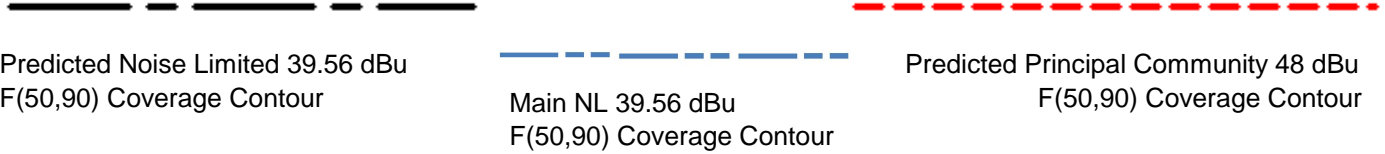




Exhibit No.

1

Date
Call Letters
Location
Customer
Antenna Type

02 Sep 2022
WUCW-Aux
Minneapolis
TLP-8B

Channel **22**

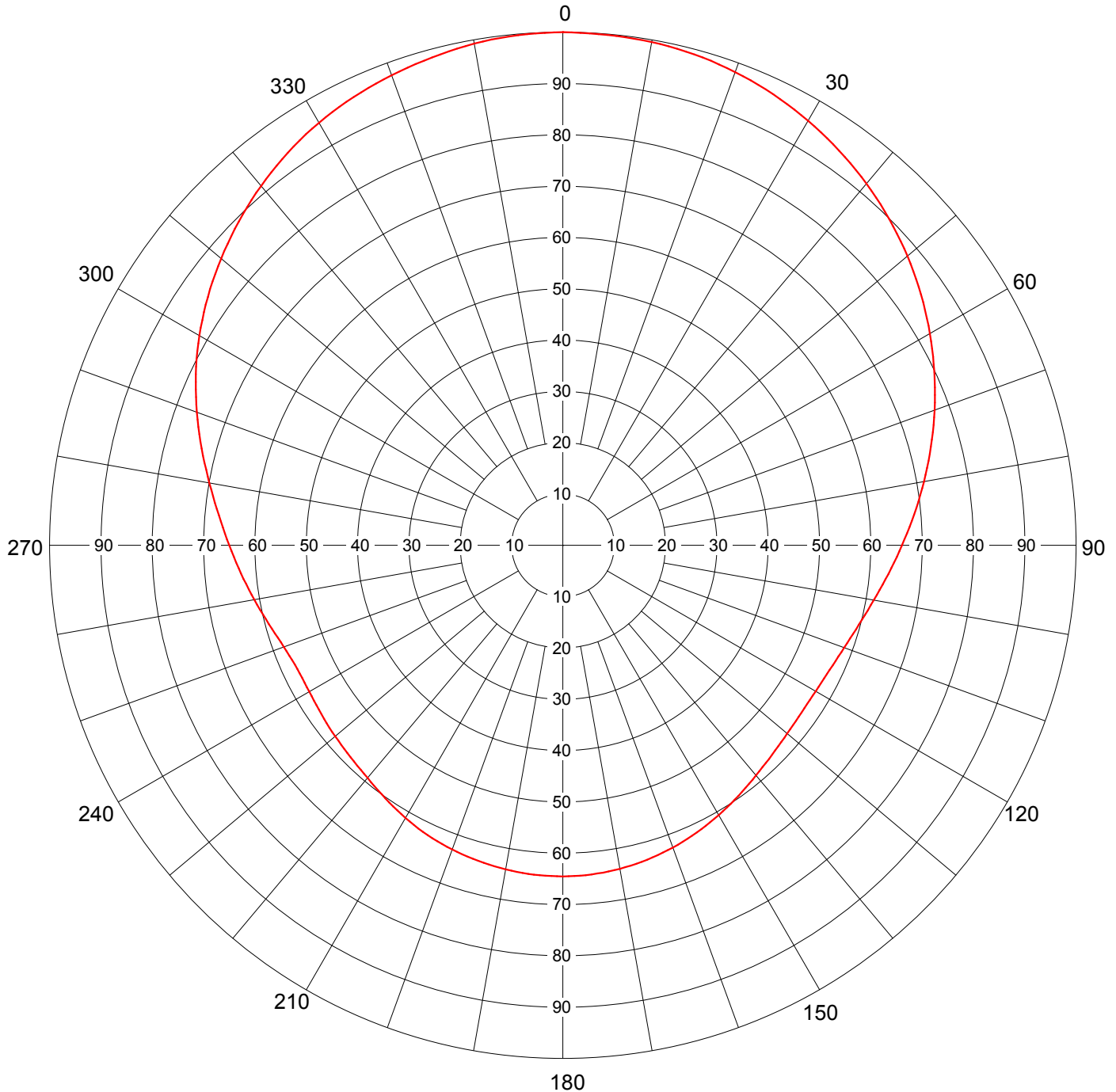
AZIMUTH PATTERN

Gain
Calculated / Measured

1.70 (2.30 dB)
Calculated

Frequency
Drawing #

521 MHz
TLP-B



Remarks:



Date

02 Sep 2022

Call Letters

WUCW-AUX

Channel

22

Location

Minneapolis

Customer

Antenna Type

TLP-8B

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #

TLP-B

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.899	90	0.661	135	0.577	180	0.645	225	0.584	270	0.650	315	0.893
1	1.000	46	0.895	91	0.656	136	0.578	181	0.645	226	0.583	271	0.654	316	0.897
2	0.999	47	0.890	92	0.651	137	0.580	182	0.645	227	0.582	272	0.659	317	0.902
3	0.999	48	0.886	93	0.646	138	0.582	183	0.645	228	0.581	273	0.663	318	0.906
4	0.999	49	0.881	94	0.641	139	0.584	184	0.645	229	0.580	274	0.668	319	0.910
5	0.998	50	0.876	95	0.637	140	0.586	185	0.644	230	0.579	275	0.673	320	0.914
6	0.998	51	0.872	96	0.632	141	0.588	186	0.644	231	0.578	276	0.678	321	0.919
7	0.998	52	0.867	97	0.628	142	0.590	187	0.643	232	0.577	277	0.683	322	0.923
8	0.997	53	0.862	98	0.624	143	0.592	188	0.643	233	0.576	278	0.688	323	0.927
9	0.996	54	0.857	99	0.619	144	0.594	189	0.642	234	0.575	279	0.694	324	0.930
10	0.996	55	0.852	100	0.615	145	0.596	190	0.641	235	0.574	280	0.699	325	0.934
11	0.995	56	0.847	101	0.612	146	0.598	191	0.640	236	0.573	281	0.705	326	0.938
12	0.994	57	0.842	102	0.608	147	0.600	192	0.640	237	0.572	282	0.711	327	0.941
13	0.993	58	0.836	103	0.604	148	0.603	193	0.639	238	0.572	283	0.716	328	0.944
14	0.992	59	0.831	104	0.601	149	0.605	194	0.638	239	0.571	284	0.722	329	0.948
15	0.990	60	0.826	105	0.597	150	0.607	195	0.637	240	0.570	285	0.728	330	0.951
16	0.989	61	0.820	106	0.594	151	0.609	196	0.636	241	0.570	286	0.734	331	0.954
17	0.987	62	0.815	107	0.591	152	0.611	197	0.634	242	0.570	287	0.740	332	0.956
18	0.985	63	0.810	108	0.589	153	0.614	198	0.633	243	0.570	288	0.747	333	0.959
19	0.983	64	0.804	109	0.586	154	0.616	199	0.632	244	0.570	289	0.753	334	0.962
20	0.981	65	0.799	110	0.583	155	0.618	200	0.631	245	0.571	290	0.759	335	0.964
21	0.979	66	0.793	111	0.581	156	0.619	201	0.629	246	0.572	291	0.765	336	0.966
22	0.977	67	0.787	112	0.579	157	0.621	202	0.628	247	0.573	292	0.771	337	0.968
23	0.975	68	0.782	113	0.577	158	0.623	203	0.626	248	0.575	293	0.777	338	0.971
24	0.972	69	0.776	114	0.575	159	0.625	204	0.625	249	0.577	294	0.783	339	0.973
25	0.970	70	0.771	115	0.574	160	0.627	205	0.623	250	0.579	295	0.789	340	0.975
26	0.967	71	0.765	116	0.573	161	0.628	206	0.621	251	0.581	296	0.795	341	0.977
27	0.964	72	0.759	117	0.571	162	0.630	207	0.619	252	0.584	297	0.801	342	0.979
28	0.961	73	0.754	118	0.570	163	0.632	208	0.618	253	0.587	298	0.806	343	0.980
29	0.958	74	0.748	119	0.569	164	0.633	209	0.616	254	0.590	299	0.812	344	0.982
30	0.955	75	0.742	120	0.569	165	0.634	210	0.613	255	0.593	300	0.817	345	0.984
31	0.952	76	0.737	121	0.568	166	0.636	211	0.611	256	0.596	301	0.823	346	0.986
32	0.949	77	0.731	122	0.568	167	0.637	212	0.609	257	0.600	302	0.828	347	0.988
33	0.946	78	0.726	123	0.568	168	0.638	213	0.607	258	0.603	303	0.834	348	0.990
34	0.942	79	0.720	124	0.568	169	0.639	214	0.605	259	0.607	304	0.839	349	0.991
35	0.939	80	0.714	125	0.568	170	0.640	215	0.602	260	0.610	305	0.844	350	0.993
36	0.935	81	0.709	126	0.568	171	0.641	216	0.600	261	0.614	306	0.849	351	0.994
37	0.932	82	0.703	127	0.569	172	0.642	217	0.598	262	0.618	307	0.854	352	0.995
38	0.928	83	0.698	128	0.569	173	0.643	218	0.596	263	0.622	308	0.859	353	0.996
39	0.924	84	0.692	129	0.570	174	0.643	219	0.594	264	0.625	309	0.864	354	0.997
40	0.920	85	0.687	130	0.571	175	0.644	220	0.592	265	0.629	310	0.869	355	0.998
41	0.916	86	0.682	131	0.572	176	0.644	221	0.590	266	0.633	311	0.874	356	0.999
42	0.912	87	0.676	132	0.573	177	0.645	222	0.589	267	0.637	312	0.879	357	0.999
43	0.908	88	0.671	133	0.574	178	0.645	223	0.587	268	0.641	313	0.883	358	0.999
44	0.904	89	0.666	134	0.575	179	0.645	224	0.586	269	0.646	314	0.888	359	1.000

Remarks:



Date

02 Sep 2022

Call Letters

WUCW-AUX

Channel

22

Location

Minneapolis

Customer

Antenna Type

TLP-8B

ELEVATION PATTERN

RMS Gain at Main Lobe

8.0 (9.03 dB)

Beam Tilt

1.00 Degrees

RMS Gain at Horizontal

7.5 (8.75 dB)

Frequency

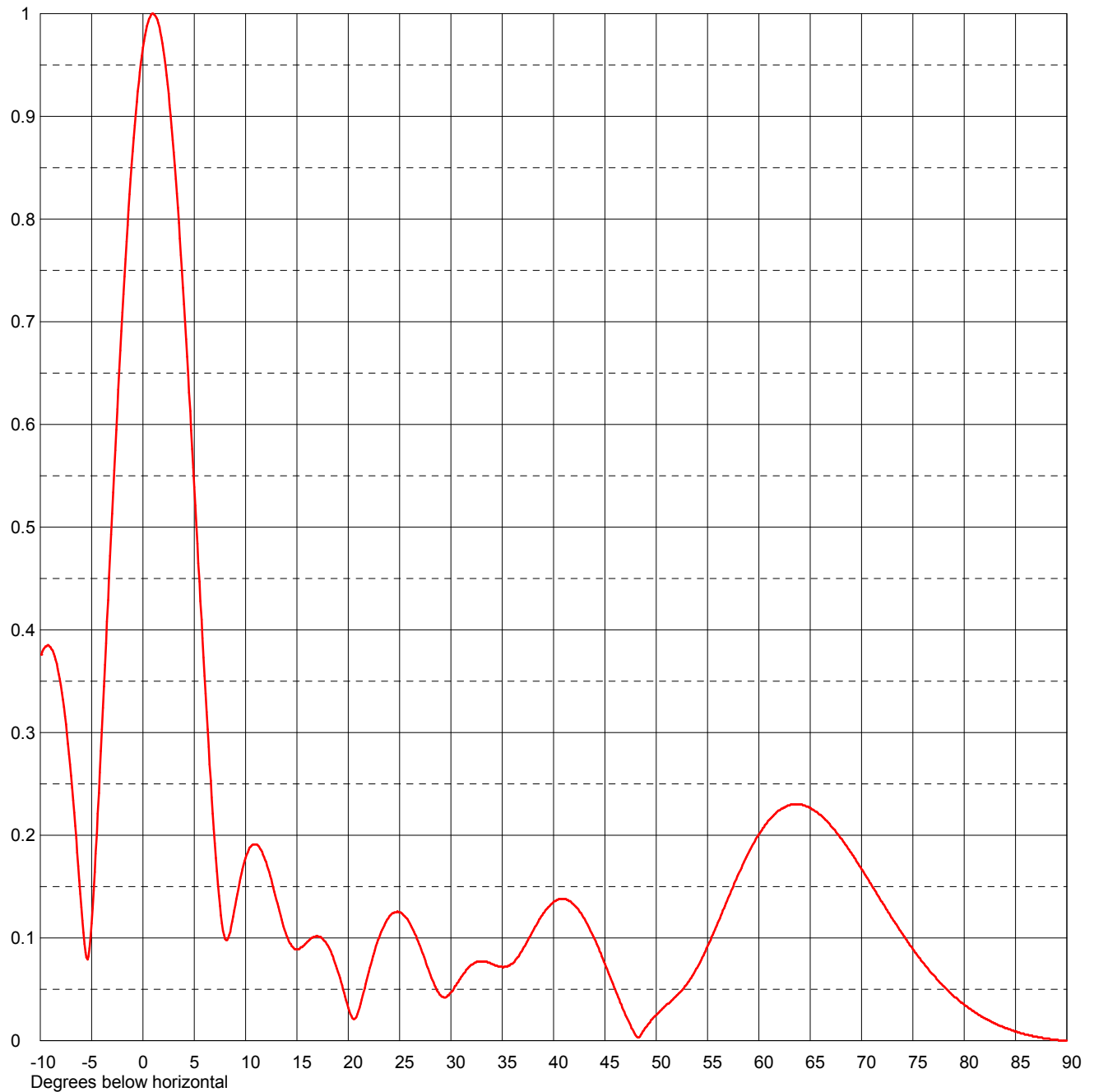
521.00 MHz

Calculated / Measured

Calculated

Drawing #

08L080100-90



Remarks:



Date

02 Sep 2022

Call Letters

WUCW-AUX

Channel

22

Location

Minneapolis

Customer

Antenna Type

TLP-8B

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #

08L080100-90

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.374	2.4	0.931	10.6	0.190	30.5	0.054	51.0	0.035	71.5	0.143
-9.5	0.384	2.6	0.911	10.8	0.191	31.0	0.062	51.5	0.039	72.0	0.135
-9.0	0.383	2.8	0.889	11.0	0.191	31.5	0.069	52.0	0.044	72.5	0.127
-8.5	0.371	3.0	0.865	11.5	0.186	32.0	0.074	52.5	0.049	73.0	0.119
-8.0	0.346	3.2	0.839	12.0	0.174	32.5	0.077	53.0	0.055	73.5	0.111
-7.5	0.308	3.4	0.811	12.5	0.157	33.0	0.077	53.5	0.063	74.0	0.104
-7.0	0.258	3.6	0.781	13.0	0.137	33.5	0.077	54.0	0.071	74.5	0.096
-6.5	0.197	3.8	0.750	13.5	0.118	34.0	0.075	54.5	0.081	75.0	0.089
-6.0	0.130	4.0	0.717	14.0	0.102	34.5	0.073	55.0	0.092	75.5	0.082
-5.5	0.081	4.2	0.683	14.5	0.092	35.0	0.072	55.5	0.103	76.0	0.076
-5.0	0.114	4.4	0.648	15.0	0.089	35.5	0.072	56.0	0.115	76.5	0.070
-4.5	0.201	4.6	0.613	15.5	0.091	36.0	0.075	56.5	0.127	77.0	0.064
-4.0	0.303	4.8	0.576	16.0	0.096	36.5	0.081	57.0	0.139	77.5	0.058
-3.5	0.408	5.0	0.539	16.5	0.100	37.0	0.089	57.5	0.150	78.0	0.053
-3.0	0.513	5.2	0.502	17.0	0.102	37.5	0.098	58.0	0.162	78.5	0.048
-2.8	0.555	5.4	0.465	17.5	0.099	38.0	0.107	58.5	0.173	79.0	0.043
-2.6	0.595	5.6	0.428	18.0	0.093	38.5	0.116	59.0	0.183	79.5	0.039
-2.4	0.634	5.8	0.392	18.5	0.082	39.0	0.124	59.5	0.192	80.0	0.035
-2.2	0.672	6.0	0.355	19.0	0.067	39.5	0.130	60.0	0.201	80.5	0.031
-2.0	0.709	6.2	0.320	19.5	0.050	40.0	0.135	60.5	0.208	81.0	0.028
-1.8	0.744	6.4	0.286	20.0	0.032	40.5	0.138	61.0	0.215	81.5	0.025
-1.6	0.778	6.6	0.253	20.5	0.021	41.0	0.138	61.5	0.220	82.0	0.022
-1.4	0.809	6.8	0.221	21.0	0.029	41.5	0.136	62.0	0.224	82.5	0.019
-1.2	0.839	7.0	0.192	21.5	0.047	42.0	0.132	62.5	0.227	83.0	0.017
-1.0	0.866	7.2	0.165	22.0	0.067	42.5	0.126	63.0	0.229	83.5	0.014
-0.8	0.891	7.4	0.141	22.5	0.085	43.0	0.119	63.5	0.230	84.0	0.012
-0.6	0.914	7.6	0.122	23.0	0.100	43.5	0.109	64.0	0.230	84.5	0.011
-0.4	0.934	7.8	0.107	23.5	0.112	44.0	0.099	64.5	0.229	85.0	0.009
-0.2	0.952	8.0	0.099	24.0	0.121	44.5	0.087	65.0	0.227	85.5	0.007
0.0	0.967	8.2	0.098	24.5	0.125	45.0	0.075	65.5	0.223	86.0	0.006
0.2	0.979	8.4	0.103	25.0	0.125	45.5	0.062	66.0	0.220	86.5	0.005
0.4	0.988	8.6	0.111	25.5	0.121	46.0	0.050	66.5	0.215	87.0	0.004
0.6	0.995	8.8	0.121	26.0	0.114	46.5	0.037	67.0	0.209	87.5	0.003
0.8	0.999	9.0	0.132	26.5	0.104	47.0	0.025	67.5	0.203	88.0	0.002
1.0	1.000	9.2	0.143	27.0	0.092	47.5	0.015	68.0	0.197	88.5	0.001
1.2	0.998	9.4	0.154	27.5	0.078	48.0	0.005	68.5	0.190	89.0	0.001
1.4	0.994	9.6	0.163	28.0	0.064	48.5	0.006	69.0	0.183	89.5	0.000
1.6	0.987	9.8	0.171	28.5	0.052	49.0	0.013	69.5	0.175	90.0	0.000
1.8	0.977	10.0	0.178	29.0	0.044	49.5	0.020	70.0	0.167		
2.0	0.964	10.2	0.183	29.5	0.042	50.0	0.025	70.5	0.159		
2.2	0.949	10.4	0.188	30.0	0.047	50.5	0.030	71.0	0.151		

Remarks:

WUCW**Channel 22 - Minneapolis, Minnesota****ERP = 65780.00 WATTS****APPENDIX A****Maximum ERP 65.78 kW**

Polarization ----- 2 Circular
 Antenna Height Above Ground -- 280.4 meters 919.9 feet
 FCC Uncontrolled RFR Limit ---- 347.33 $\mu\text{W}/\text{cm}^2$

Maximum Computed Power Density 2.400 $\mu\text{W}/\text{cm}^2$
 0.69% of limit

Angle Below Horizontal (degrees)	<Point X> Horiz Distance from tower to 2 m AGL (meters)	Slant Distance from antenna to Point X (meters)	Vertical Pattern (REL. FIELD)	WUCW ERP (kW)	WUCW Calculated Power Density $\mu\text{W}/\text{cm}^2$	Percent Limit	Limit Exceeded?
0			1.000	65.7800			
5	3182.1	3194.3	0.539	19.1105	0.125	0.04%	No
10	1578.9	1603.2	0.178	2.0842	0.054	0.02%	No
15	1039.0	1075.7	0.089	0.5210	0.030	0.01%	No
20	764.9	814.0	0.032	0.0674	0.007	0.00%	No
25	597.0	658.8	0.125	1.0278	0.158	0.05%	No
30	482.2	556.8	0.047	0.1453	0.031	0.01%	No
35	397.6	485.4	0.072	0.3410	0.097	0.03%	No
40	331.8	433.1	0.135	1.1988	0.427	0.12%	No
45	278.4	393.7	0.075	0.3700	0.159	0.05%	No
50	233.6	363.4	0.025	0.0411	0.021	0.01%	No
55	194.9	339.9	0.092	0.5568	0.322	0.09%	No
60	160.7	321.5	0.201	2.6576	1.718	0.49%	No
65	129.8	307.2	0.227	3.3896	2.400	0.69%	No
70	101.3	296.3	0.167	1.8345	1.396	0.40%	No
75	74.6	288.2	0.089	0.5210	0.419	0.12%	No
80	49.1	282.7	0.035	0.0806	0.067	0.02%	No
85	24.4	279.5	0.009	0.0053	0.005	0.00%	No
90	0.0	278.4	0.000	0.0000	0.000	0.00%	No

