



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF A REQUEST FOR  
STA TO OPERATE USING A TEMPORARY  
INTERIM FACILITY FOR TRANSITION PENDING  
COMPLETION OF ITS PERMANENT FACILITY  
WZTV - NASHVILLE, TENNESSEE  
DTV - CH. 20 - 47.4 kW - 320.2 m HAAT**

Prepared for: WZTV 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 WZTV LICENSEE, LLC, licensee of WZTV, channel 20, facility ID number 418, licensed to Nashville, Tennessee, to prepare this statement, and associated exhibits in support of a request for STA to operate using an interim antenna to facilitate the installation of its permanent authorized post transition facility. The instant STA will allow WZTV to commence operation on its post transition channel 20 using the proposed interim antenna. WZTV's permanent channel 20 facility will be completed as authorized by construction permit file number 0000028847. The proposed interim ERP is 47.4 kW and the interim HAAT is 320.2 meters.

## **DIRECTIONAL ANTENNA**

The applicant intends to install a Dielectric model TFU-16WB/VP-R C160 elliptically polarized directional transmitting antenna with its center of radiation located at a height above ground of 259.2 meters, and a height above average terrain of 320.2 meters. The antenna manufacturer's directional horizontal plane azimuth radiation pattern of both the horizontal and vertical signal components, and the vertical plane elevation radiation pattern, illustrating the antenna's radiation characteristics above and below the horizontal plane are all shown and tabulated in the antenna exhibits submitted herein.

## **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours 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 (39.36 dBu) contour, and the principal community (48 dBu) contour. The 48 dBu contour completely encompasses the principal community of license, Nashville, Tennessee.

**RADIO FREQUENCY IMPACT, SAFETY & STATEMENT OF COMPLIANCE**

The licensee of WZTV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WZTV antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

The proposed WZTV channel 20 post-transition STA facility will operate with a maximum ERP of 47.4 kW from an elliptically polarized directional transmitting antenna with a centerline height of 259.2 meters above ground level (AGL). Considering a conservative predicted vertical plane relative field factor of 0.300 the WZTV facility is predicted to produce a worst-case power density at two meters above ground level of  $2.165 \mu\text{W}/\text{cm}^2$ , which is 0.63% of the FCC guideline value of  $339.33 \mu\text{W}/\text{cm}^2$  for an "uncontrolled" environment, and 0.126% 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.

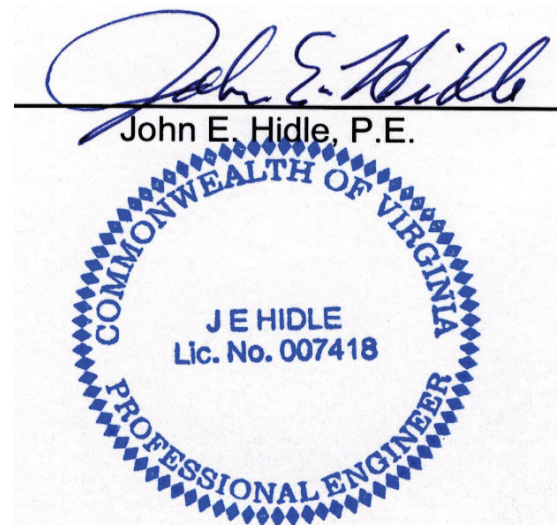
Further, the applicant will continue to cooperate and coordinate with other any other site users and reduce power or cease operation during times of service or maintenance of the transmission systems as necessary to avoid potentially harmful exposure to personnel. In light of the above, the proposed 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.**  
**WZTV - Nashville, Tennessee**  
**PAGE 4**

**SUMMARY**

It is submitted that the instant STA request will allow WZTV to commence its broadcast operation on its post-transition channel 20 using the proposed interim antenna and facility until its permanent facility, as authorized by construction permit file number 0000028847, is completed and ready for operation. It is submitted that the proposed STA, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement 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: October 11, 2019



**WZTV-A**

DTVBL418

Latitude: 36-15-49.80 N

Longitude: 086-47-38.90 W

ERP: 47.40 kW

Channel: 20

Frequency: 509.0 MHz

AMSL Height: 502.4 m

Elevation: 243.2 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 0.75

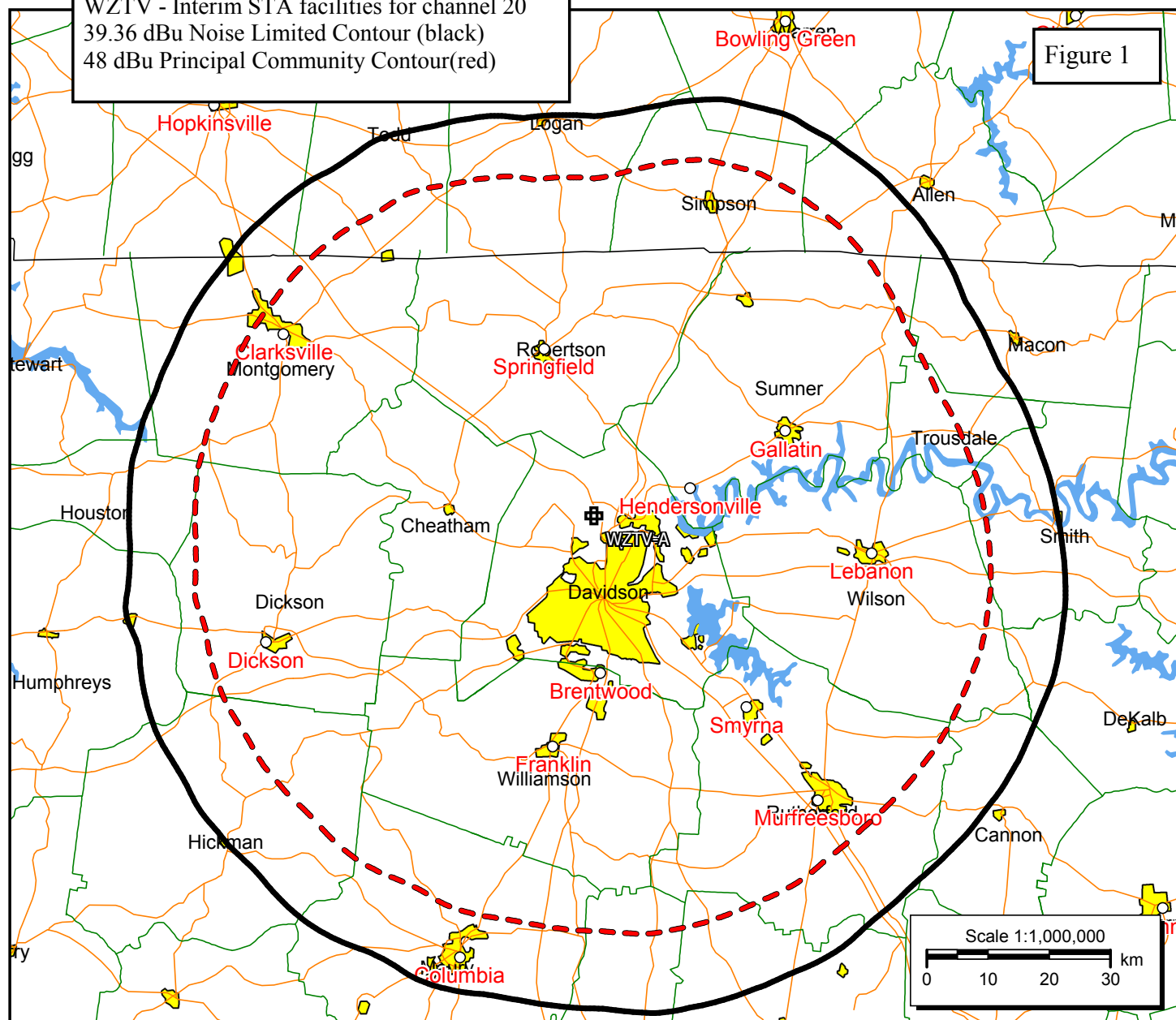
Prop Model: None

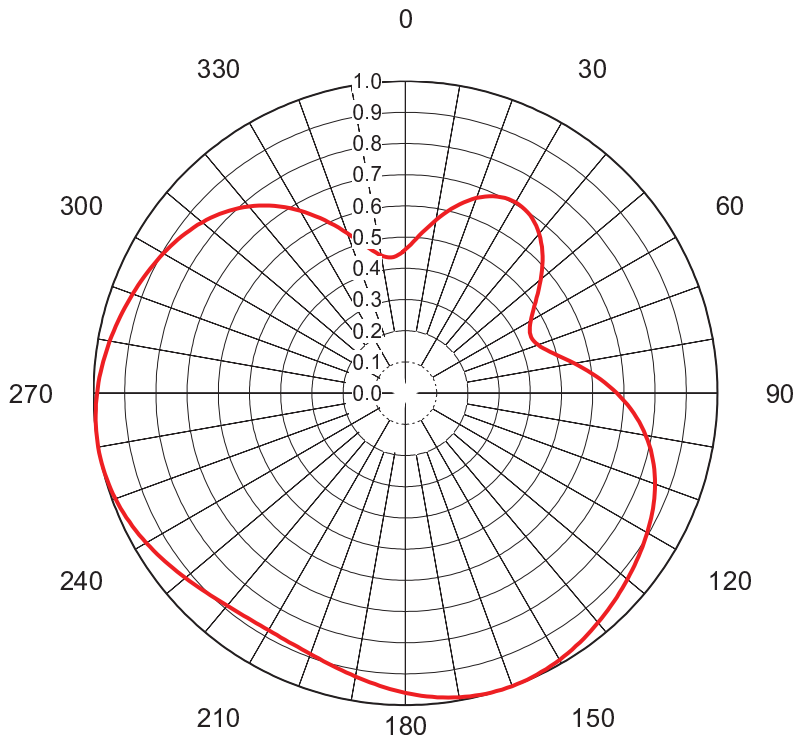
WZTV - Interim STA facilities for channel 20

39.36 dBu Noise Limited Contour (black)

48 dBu Principal Community Contour (red)

Figure 1





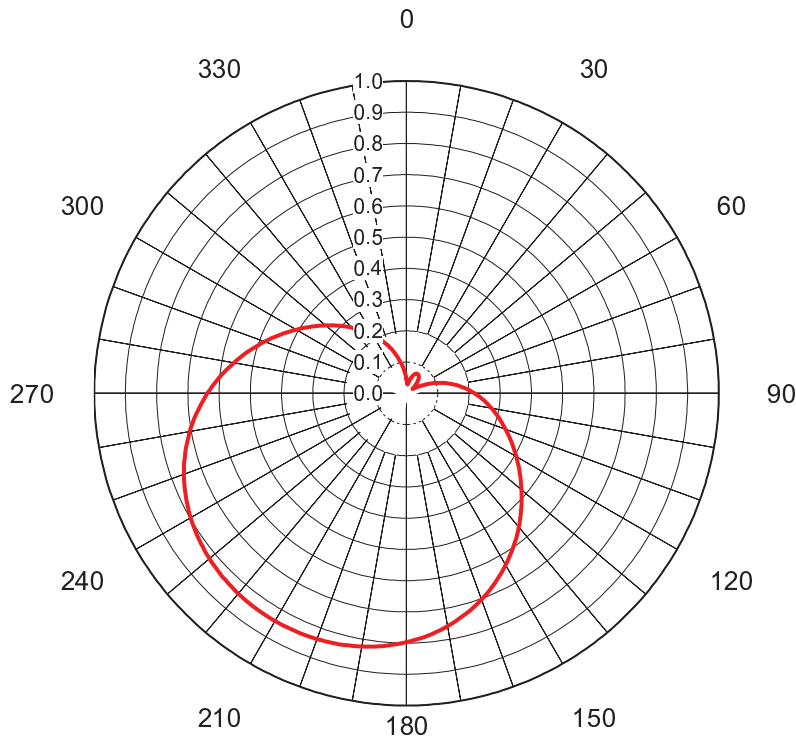
## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **Nashville - Interim**  
 Date **10-Oct-19**  
 Call Letters **WZTV**  
 Channel **20**  
 Frequency **509 MHz**  
 Antenna Type **TFU-16WB/VP-R C160**  
 Gain **1.5 (1.76dB)**  
 Calculated

Pattern Number **WB-C160-20 Hpol**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.460	36	0.691	72	0.465	108	0.840	144	0.972	180	0.961	216	0.882	252	0.993	288	0.937	324	0.743
1	0.468	37	0.686	73	0.473	109	0.846	145	0.975	181	0.957	217	0.883	253	0.995	289	0.934	325	0.732
2	0.477	38	0.680	74	0.482	110	0.851	146	0.978	182	0.953	218	0.885	254	0.996	290	0.930	326	0.722
3	0.486	39	0.674	75	0.491	111	0.856	147	0.980	183	0.950	219	0.887	255	0.998	291	0.927	327	0.710
4	0.496	40	0.666	76	0.502	112	0.861	148	0.983	184	0.946	220	0.890	256	0.999	292	0.924	328	0.699
5	0.506	41	0.658	77	0.513	113	0.866	149	0.985	185	0.942	221	0.892	257	0.999	293	0.920	329	0.687
6	0.517	42	0.650	78	0.525	114	0.871	150	0.987	186	0.938	222	0.895	258	1.000	294	0.917	330	0.675
7	0.529	43	0.641	79	0.537	115	0.875	151	0.989	187	0.934	223	0.897	259	1.000	295	0.914	331	0.663
8	0.540	44	0.631	80	0.549	116	0.879	152	0.991	188	0.930	224	0.900	260	1.000	296	0.910	332	0.650
9	0.552	45	0.621	81	0.562	117	0.883	153	0.993	189	0.926	225	0.904	261	1.000	297	0.907	333	0.637
10	0.564	46	0.610	82	0.575	118	0.887	154	0.994	190	0.922	226	0.907	262	0.999	298	0.903	334	0.624
11	0.575	47	0.600	83	0.588	119	0.891	155	0.996	191	0.919	227	0.910	263	0.999	299	0.900	335	0.611
12	0.587	48	0.588	84	0.601	120	0.895	156	0.997	192	0.915	228	0.914	264	0.998	300	0.896	336	0.598
13	0.598	49	0.577	85	0.614	121	0.898	157	0.998	193	0.911	229	0.917	265	0.997	301	0.892	337	0.585
14	0.609	50	0.566	86	0.627	122	0.902	158	0.999	194	0.908	230	0.921	266	0.996	302	0.888	338	0.572
15	0.620	51	0.554	87	0.640	123	0.905	159	0.999	195	0.905	231	0.925	267	0.994	303	0.884	339	0.559
16	0.630	52	0.542	88	0.652	124	0.908	160	0.999	196	0.901	232	0.929	268	0.992	304	0.880	340	0.546
17	0.640	53	0.531	89	0.665	125	0.912	161	0.999	197	0.898	233	0.933	269	0.991	305	0.876	341	0.533
18	0.649	54	0.520	90	0.677	126	0.915	162	0.999	198	0.896	234	0.937	270	0.989	306	0.871	342	0.521
19	0.657	55	0.509	91	0.689	127	0.918	163	0.999	199	0.893	235	0.941	271	0.987	307	0.867	343	0.509
20	0.665	56	0.499	92	0.701	128	0.922	164	0.998	200	0.890	236	0.944	272	0.984	308	0.862	344	0.498
21	0.673	57	0.489	93	0.712	129	0.925	165	0.998	201	0.888	237	0.948	273	0.982	309	0.857	345	0.488
22	0.680	58	0.479	94	0.723	130	0.928	166	0.996	202	0.886	238	0.952	274	0.979	310	0.851	346	0.478
23	0.686	59	0.471	95	0.734	131	0.931	167	0.995	203	0.884	239	0.956	275	0.977	311	0.846	347	0.469
24	0.691	60	0.463	96	0.745	132	0.935	168	0.994	204	0.882	240	0.960	276	0.974	312	0.840	348	0.461
25	0.695	61	0.457	97	0.754	133	0.938	169	0.992	205	0.881	241	0.963	277	0.971	313	0.834	349	0.454
26	0.699	62	0.451	98	0.764	134	0.941	170	0.990	206	0.880	242	0.967	278	0.968	314	0.827	350	0.448
27	0.702	63	0.447	99	0.773	135	0.944	171	0.988	207	0.879	243	0.970	279	0.965	315	0.820	351	0.444
28	0.704	64	0.444	100	0.782	136	0.948	172	0.985	208	0.878	244	0.973	280	0.962	316	0.813	352	0.440
29	0.705	65	0.442	101	0.791	137	0.951	173	0.983	209	0.878	245	0.977	281	0.959	317	0.806	353	0.438
30	0.706	66	0.441	102	0.799	138	0.954	174	0.980	210	0.878	246	0.980	282	0.956	318	0.798	354	0.438
31	0.706	67	0.442	103	0.806	139	0.957	175	0.977	211	0.878	247	0.982	283	0.953	319	0.790	355	0.438
32	0.704	68	0.444	104	0.814	140	0.960	176	0.974	212	0.878	248	0.985	284	0.950	320	0.781	356	0.440
33	0.702	69	0.447	105	0.821	141	0.963	177	0.971	213	0.879	249	0.987	285	0.947	321	0.772	357	0.443
34	0.699	70	0.452	106	0.828	142	0.966	178	0.968	214	0.879	250	0.990	286	0.943	322	0.763	358	0.448
35	0.696	71	0.458	107	0.834	143	0.969	179	0.964	215	0.881	251	0.992	287	0.940	323	0.753	359	0.454

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## AZIMUTH PATTERN Vertical Polarization

Proposal No. **Nashville - Interim**  
 Date **###**  
 Call Letters **WZTV**  
 Channel **20**  
 Frequency **###**  
 Antenna Type **TFU-16WB/VP-R C160**  
 Gain **2.64 (4.21dB)**  
 Calculated

Pattern Number **WB-C160-20 Vpol**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.043	36	0.067	72	0.108	108	0.325	144	0.590	180	0.797	216	0.841	252	0.749	288	0.499	324	0.251
1	0.039	37	0.066	73	0.114	109	0.332	145	0.598	181	0.800	217	0.840	253	0.744	289	0.491	325	0.245
2	0.036	38	0.064	74	0.120	110	0.338	146	0.606	182	0.804	218	0.839	254	0.739	290	0.483	326	0.239
3	0.033	39	0.062	75	0.127	111	0.345	147	0.613	183	0.806	219	0.839	255	0.733	291	0.475	327	0.233
4	0.030	40	0.060	76	0.133	112	0.351	148	0.621	184	0.809	220	0.838	256	0.728	292	0.468	328	0.228
5	0.029	41	0.058	77	0.139	113	0.358	149	0.628	185	0.812	221	0.837	257	0.722	293	0.460	329	0.222
6	0.028	42	0.055	78	0.145	114	0.364	150	0.635	186	0.814	222	0.836	258	0.717	294	0.452	330	0.216
7	0.029	43	0.053	79	0.151	115	0.371	151	0.643	187	0.817	223	0.835	259	0.711	295	0.445	331	0.210
8	0.030	44	0.050	80	0.157	116	0.378	152	0.650	188	0.819	224	0.833	260	0.705	296	0.437	332	0.204
9	0.031	45	0.047	81	0.163	117	0.385	153	0.657	189	0.821	225	0.832	261	0.698	297	0.430	333	0.198
10	0.034	46	0.044	82	0.170	118	0.392	154	0.664	190	0.823	226	0.831	262	0.692	298	0.422	334	0.192
11	0.036	47	0.041	83	0.176	119	0.399	155	0.670	191	0.825	227	0.829	263	0.686	299	0.415	335	0.186
12	0.039	48	0.037	84	0.182	120	0.406	156	0.677	192	0.827	228	0.827	264	0.679	300	0.408	336	0.180
13	0.042	49	0.034	85	0.188	121	0.413	157	0.684	193	0.829	229	0.826	265	0.672	301	0.400	337	0.175
14	0.045	50	0.031	86	0.194	122	0.420	158	0.690	194	0.830	230	0.824	266	0.666	302	0.393	338	0.169
15	0.048	51	0.029	87	0.200	123	0.428	159	0.697	195	0.832	231	0.822	267	0.659	303	0.386	339	0.163
16	0.050	52	0.026	88	0.206	124	0.435	160	0.703	196	0.833	232	0.820	268	0.652	304	0.379	340	0.157
17	0.053	53	0.025	89	0.212	125	0.443	161	0.709	197	0.835	233	0.817	269	0.645	305	0.372	341	0.151
18	0.056	54	0.024	90	0.218	126	0.450	162	0.715	198	0.836	234	0.815	270	0.637	306	0.365	342	0.145
19	0.058	55	0.024	91	0.223	127	0.458	163	0.721	199	0.837	235	0.812	271	0.630	307	0.358	343	0.139
20	0.060	56	0.026	92	0.229	128	0.465	164	0.726	200	0.838	236	0.810	272	0.623	308	0.351	344	0.133
21	0.062	57	0.028	93	0.235	129	0.473	165	0.732	201	0.839	237	0.807	273	0.615	309	0.345	345	0.127
22	0.064	58	0.032	94	0.241	130	0.481	166	0.737	202	0.839	238	0.804	274	0.608	310	0.338	346	0.121
23	0.066	59	0.035	95	0.247	131	0.489	167	0.742	203	0.840	239	0.801	275	0.600	311	0.332	347	0.115
24	0.067	60	0.040	96	0.253	132	0.496	168	0.748	204	0.841	240	0.798	276	0.593	312	0.325	348	0.109
25	0.069	61	0.045	97	0.259	133	0.504	169	0.753	205	0.841	241	0.795	277	0.585	313	0.319	349	0.103
26	0.070	62	0.050	98	0.265	134	0.512	170	0.757	206	0.842	242	0.791	278	0.577	314	0.312	350	0.097
27	0.071	63	0.055	99	0.271	135	0.520	171	0.762	207	0.842	243	0.788	279	0.570	315	0.306	351	0.091
28	0.071	64	0.061	100	0.277	136	0.528	172	0.766	208	0.842	244	0.784	280	0.562	316	0.300	352	0.085
29	0.071	65	0.066	101	0.282	137	0.536	173	0.771	209	0.842	245	0.780	281	0.554	317	0.293	353	0.080
30	0.072	66	0.072	102	0.288	138	0.544	174	0.775	210	0.842	246	0.776	282	0.546	318	0.287	354	0.074
31	0.071	67	0.078	103	0.295	139	0.551	175	0.779	211	0.842	247	0.772	283	0.538	319	0.281	355	0.068
32	0.071	68	0.084	104	0.301	140	0.559	176	0.783	212	0.842	248	0.768	284	0.530	320	0.275	356	0.063
33	0.071	69	0.090	105	0.307	141	0.567	177	0.787	213	0.842	249	0.763	285	0.522	321	0.269	357	0.058
34	0.070	70	0.096	106	0.313	142	0.575	178	0.790	214	0.842	250	0.759	286	0.515	322	0.263	358	0.053
35	0.069	71	0.102	107	0.319	143	0.583	179	0.794	215	0.841	251	0.754	287	0.507	323	0.257	359	0.048

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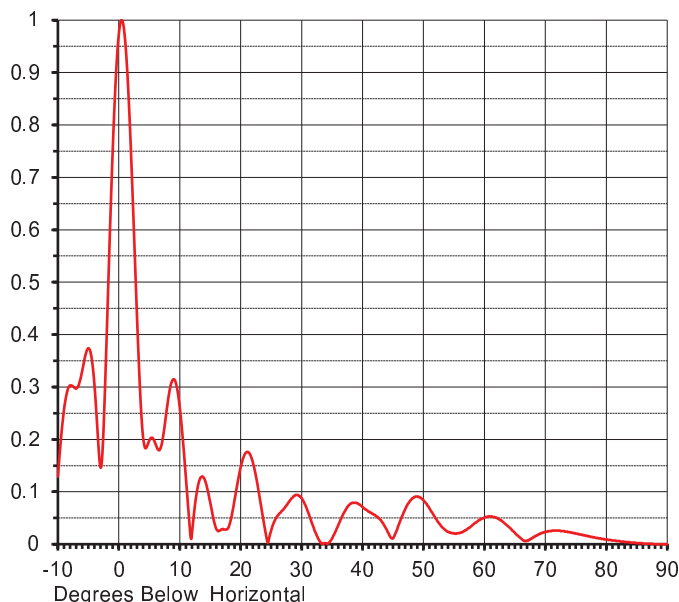
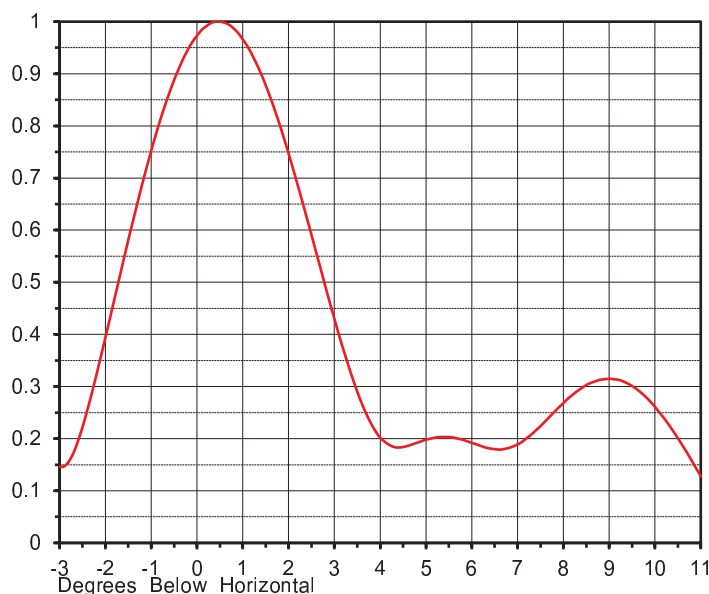


## ELEVATION PATTERN

Proposal No. **Nashville - Interim**  
 Date **10-Oct-19**  
 Call Letters **WZTV**  
 Channel **20**  
 Frequency **509 MHz**  
 Antenna Type **TFU-16WB/VP-R C160**

RMS Directivity at Main Lobe **14.2 ( 11.52 dB )**  
 RMS Directivity at Horizontal **13.4 ( 11.27 dB )**  
**Calculated**

Beam Tilt **0.55 deg**  
 Pattern Number **16W142055-20**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.129	10.0	0.261	30.0	0.088	50.0	0.084	70.0	0.023
-9.0	0.256	11.0	0.128	31.0	0.063	51.0	0.068	71.0	0.025
-8.0	0.303	12.0	0.020	32.0	0.031	52.0	0.049	72.0	0.026
-7.0	0.297	13.0	0.112	33.0	0.005	53.0	0.033	73.0	0.025
-6.0	0.331	14.0	0.126	34.0	0.002	54.0	0.024	74.0	0.023
-5.0	0.374	15.0	0.080	35.0	0.011	55.0	0.021	75.0	0.020
-4.0	0.304	16.0	0.029	36.0	0.036	56.0	0.022	76.0	0.018
-3.0	0.146	17.0	0.029	37.0	0.061	57.0	0.027	77.0	0.015
-2.0	0.394	18.0	0.032	38.0	0.077	58.0	0.036	78.0	0.013
-1.0	0.752	19.0	0.085	39.0	0.079	59.0	0.045	79.0	0.011
0.0	0.973	20.0	0.147	40.0	0.071	60.0	0.051	80.0	0.009
1.0	0.966	21.0	0.176	41.0	0.062	61.0	0.053	81.0	0.007
2.0	0.747	22.0	0.156	42.0	0.056	62.0	0.050	82.0	0.006
3.0	0.430	23.0	0.097	43.0	0.046	63.0	0.043	83.0	0.004
4.0	0.202	24.0	0.028	44.0	0.027	64.0	0.033	84.0	0.003
5.0	0.198	25.0	0.026	45.0	0.011	65.0	0.022	85.0	0.002
6.0	0.192	26.0	0.053	46.0	0.039	66.0	0.011	86.0	0.001
7.0	0.189	27.0	0.066	47.0	0.067	67.0	0.007	87.0	0.001
8.0	0.268	28.0	0.082	48.0	0.085	68.0	0.013	88.0	0.000
9.0	0.315	29.0	0.094	49.0	0.091	69.0	0.019	89.0	0.000
								90.0	0.000

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## **RADIO FREQUENCY IMPACT, SAFETY & STATEMENT OF COMPLIANCE**

The licensee of WZTV is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WZTV antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

The proposed WZTV channel 20 post-transition STA facility will operate with a maximum ERP of 47.4 kW from an elliptically polarized directional transmitting antenna with a centerline height of 259.2 meters above ground level (AGL). Considering a conservative predicted vertical plane relative field factor of 0.300 the WZTV facility is predicted to produce a worst-case power density at two meters above ground level of  $2.165 \mu\text{W}/\text{cm}^2$ , which is 0.63% of the FCC guideline value of  $339.33 \mu\text{W}/\text{cm}^2$  for an “uncontrolled” environment, and 0.126% 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 and coordinate with other any other site users and reduce power 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.