



Antenna Model:

TLP-16B-BB

Proposal Number: **C-71267**
Date: **28-Jan-19**
Customer: **Nexstar**
Location: **Grand Rapids, MI**

Electrical Specifications

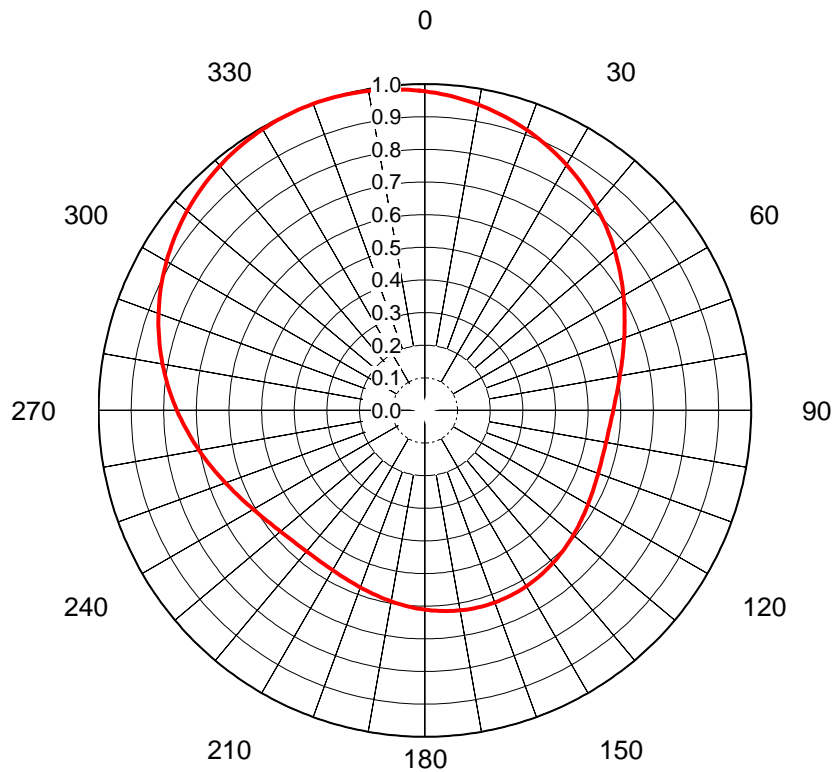
Polarization: **Horizontal**
Azimuth Pattern: **Omni**
Antenna Input: **3-1/8"** **50 Ohm** **EIA/DCA**
VSWR: **Channel** **1.20 : 1** **Band** **1.20 : 1**
Bandwidth: **48 MHz**
Rated Input Power: **7.5 kW** **(8.75 dBk)** **Maximum combined average power**

Mechanical Specifications

Mounting: **Side Mounted**
Environmental Protection: **Slot Cover**
Height: **29.2 ft (8.9m)**
Weight: **250 lb (0.1t)**
Effective Projected Area: **36.3 ft² (3.4m²)** **TIA-222-G** **Basic Wind Speed: 90 m/h (144.8 km/h)**

Channel Specifications

	Call	CH	Freq	Hpol ERP	TPO	RMS Main Lobe Hpol Gain	RMS at Horizontal Hpol Gain
1	WOLP	35	599 MHz	14.4 kW (11.58 dBk)	1.57 kW (1.97 dBk)	15.88 (12.01dB)	0.30 -(5.26dB)
2	WOLP	41	635 MHz	15.0 kW (11.76 dBk)	1.90 kW (2.79 dBk)	13.96 (11.45dB)	0.34 -(4.63dB)



AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71267**
 Date **28-Jan-19**
 Call Letters **WOLP**
 Channel **35**
 Frequency **599 MHz**
 Antenna Type **TLP-16B-BB**
 Gain **1.79 (2.52dB)**
 Calculated
 Circularity **+/- 3.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.978	36	0.838	72	0.641	108	0.564	144	0.616	180	0.611	216	0.563	252	0.660	288	0.859	324	0.986
1	0.976	37	0.833	73	0.636	109	0.565	145	0.617	181	0.609	217	0.563	253	0.665	289	0.864	325	0.988
2	0.974	38	0.827	74	0.631	110	0.565	146	0.618	182	0.608	218	0.563	254	0.670	290	0.869	326	0.989
3	0.971	39	0.822	75	0.627	111	0.566	147	0.619	183	0.606	219	0.563	255	0.676	291	0.874	327	0.991
4	0.969	40	0.816	76	0.623	112	0.567	148	0.620	184	0.604	220	0.564	256	0.681	292	0.878	328	0.992
5	0.966	41	0.811	77	0.619	113	0.568	149	0.621	185	0.603	221	0.565	257	0.686	293	0.883	329	0.993
6	0.963	42	0.805	78	0.615	114	0.569	150	0.622	186	0.601	222	0.565	258	0.692	294	0.888	330	0.994
7	0.960	43	0.800	79	0.611	115	0.570	151	0.623	187	0.599	223	0.566	259	0.697	295	0.892	331	0.996
8	0.957	44	0.794	80	0.607	116	0.571	152	0.624	188	0.598	224	0.567	260	0.703	296	0.897	332	0.996
9	0.954	45	0.788	81	0.603	117	0.573	153	0.624	189	0.596	225	0.569	261	0.708	297	0.901	333	0.997
10	0.951	46	0.783	82	0.600	118	0.574	154	0.625	190	0.594	226	0.570	262	0.714	298	0.906	334	0.998
11	0.948	47	0.777	83	0.596	119	0.576	155	0.625	191	0.592	227	0.572	263	0.720	299	0.910	335	0.999
12	0.945	48	0.771	84	0.593	120	0.577	156	0.626	192	0.591	228	0.573	264	0.725	300	0.914	336	0.999
13	0.941	49	0.766	85	0.590	121	0.579	157	0.626	193	0.589	229	0.575	265	0.731	301	0.918	337	0.999
14	0.938	50	0.760	86	0.587	122	0.580	158	0.626	194	0.587	230	0.577	266	0.737	302	0.922	338	1.000
15	0.934	51	0.754	87	0.585	123	0.582	159	0.626	195	0.585	231	0.580	267	0.742	303	0.926	339	1.000
16	0.930	52	0.748	88	0.582	124	0.584	160	0.626	196	0.584	232	0.582	268	0.748	304	0.930	340	1.000
17	0.926	53	0.743	89	0.580	125	0.585	161	0.626	197	0.582	233	0.585	269	0.754	305	0.934	341	1.000
18	0.922	54	0.737	90	0.577	126	0.587	162	0.626	198	0.580	234	0.587	270	0.760	306	0.937	342	1.000
19	0.918	55	0.731	91	0.575	127	0.589	163	0.626	199	0.579	235	0.590	271	0.765	307	0.941	343	1.000
20	0.914	56	0.725	92	0.573	128	0.591	164	0.626	200	0.577	236	0.593	272	0.771	308	0.944	344	0.999
21	0.910	57	0.720	93	0.572	129	0.592	165	0.625	201	0.576	237	0.596	273	0.777	309	0.948	345	0.999
22	0.906	58	0.714	94	0.570	130	0.594	166	0.625	202	0.574	238	0.600	274	0.783	310	0.951	346	0.998
23	0.901	59	0.708	95	0.569	131	0.596	167	0.624	203	0.573	239	0.603	275	0.788	311	0.954	347	0.997
24	0.897	60	0.703	96	0.567	132	0.598	168	0.624	204	0.572	240	0.607	276	0.794	312	0.957	348	0.996
25	0.893	61	0.697	97	0.566	133	0.599	169	0.623	205	0.570	241	0.611	277	0.800	313	0.960	349	0.996
26	0.888	62	0.692	98	0.565	134	0.601	170	0.622	206	0.569	242	0.614	278	0.805	314	0.963	350	0.995
27	0.883	63	0.686	99	0.565	135	0.603	171	0.621	207	0.568	243	0.619	279	0.811	315	0.966	351	0.993
28	0.878	64	0.681	100	0.564	136	0.604	172	0.620	208	0.567	244	0.623	280	0.816	316	0.968	352	0.992
29	0.874	65	0.676	101	0.563	137	0.606	173	0.619	209	0.566	245	0.627	281	0.822	317	0.971	353	0.991
30	0.869	66	0.670	102	0.563	138	0.608	174	0.618	210	0.565	246	0.631	282	0.827	318	0.973	354	0.989
31	0.864	67	0.665	103	0.563	139	0.609	175	0.617	211	0.565	247	0.636	283	0.833	319	0.976	355	0.988
32	0.859	68	0.660	104	0.563	140	0.611	176	0.616	212	0.564	248	0.641	284	0.838	320	0.978	356	0.986
33	0.854	69	0.655	105	0.563	141	0.612	177	0.615	213	0.563	249	0.645	285	0.843	321	0.980	357	0.984
34	0.848	70	0.650	106	0.563	142	0.613	178	0.613	214	0.563	250	0.650	286	0.848	322	0.982	358	0.982
35	0.843	71	0.645	107	0.563	143	0.615	179	0.612	215	0.563	251	0.655	287	0.854	323	0.984	359	0.980

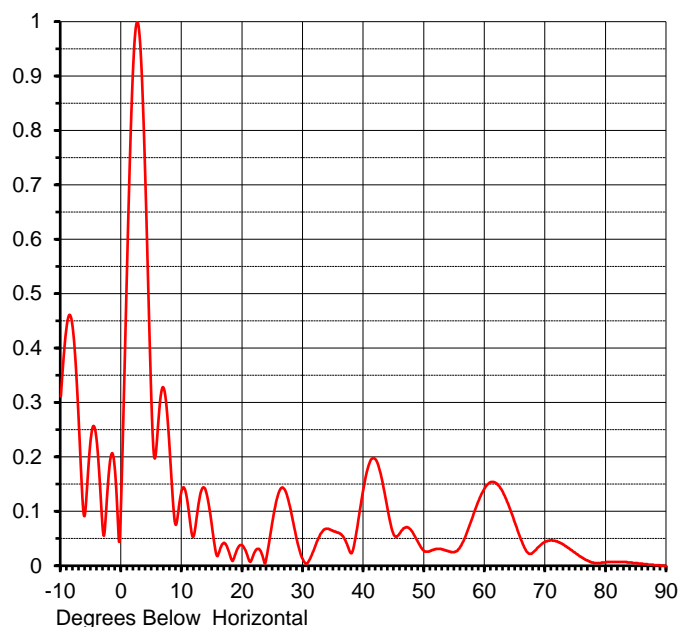
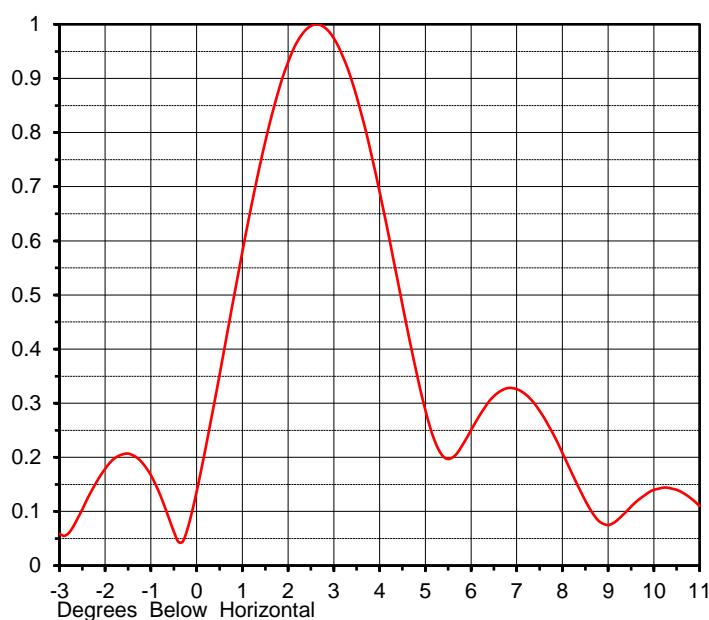
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ELEVATION PATTERN

Proposal No. **C-71267**
 Date **28-Jan-19**
 Call Letters **WOLP**
 Channel **35**
 Frequency **599 MHz**
 Antenna Type **TLP-16B-BB**

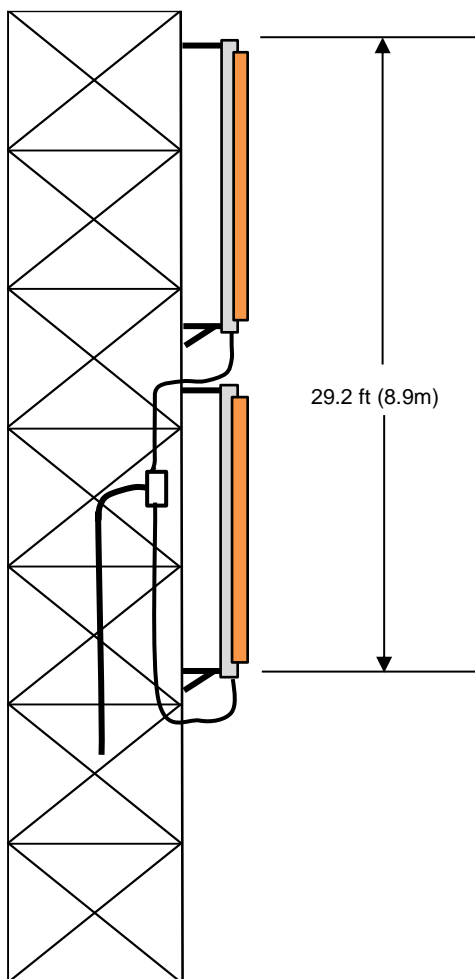
RMS Directivity at Main Lobe **15.9 (12.01 dB)**
 RMS Directivity at Horizontal **0.3 -(5.23 dB)**
Calculated

Beam Tilt **2.60 deg**
 Pattern Number **16B149260**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.311	10.0	0.140	30.0	0.011	50.0	0.027	70.0	0.044
-9.0	0.443	11.0	0.110	31.0	0.010	51.0	0.027	71.0	0.047
-8.0	0.434	12.0	0.057	32.0	0.036	52.0	0.031	72.0	0.044
-7.0	0.255	13.0	0.130	33.0	0.060	53.0	0.030	73.0	0.039
-6.0	0.096	14.0	0.135	34.0	0.068	54.0	0.027	74.0	0.031
-5.0	0.238	15.0	0.068	35.0	0.064	55.0	0.025	75.0	0.023
-4.0	0.221	16.0	0.021	36.0	0.060	56.0	0.036	76.0	0.015
-3.0	0.059	17.0	0.042	37.0	0.046	57.0	0.060	77.0	0.009
-2.0	0.179	18.0	0.017	38.0	0.023	58.0	0.090	78.0	0.005
-1.0	0.167	19.0	0.027	39.0	0.075	59.0	0.120	79.0	0.005
0.0	0.137	20.0	0.037	40.0	0.144	60.0	0.143	80.0	0.006
1.0	0.580	21.0	0.012	41.0	0.190	61.0	0.154	81.0	0.007
2.0	0.930	22.0	0.025	42.0	0.195	62.0	0.151	82.0	0.007
3.0	0.974	23.0	0.027	43.0	0.159	63.0	0.135	83.0	0.007
4.0	0.691	24.0	0.018	44.0	0.101	64.0	0.109	84.0	0.006
5.0	0.288	25.0	0.085	45.0	0.056	65.0	0.078	85.0	0.005
6.0	0.250	26.0	0.135	46.0	0.060	66.0	0.047	86.0	0.004
7.0	0.326	27.0	0.139	47.0	0.071	67.0	0.025	87.0	0.002
8.0	0.208	28.0	0.100	48.0	0.063	68.0	0.025	88.0	0.001
9.0	0.075	29.0	0.046	49.0	0.043	69.0	0.036	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS

Proposal No. **C-71267**
 Date **28-Jan-19**
 Call Letters **WOLP**
 Channel **35**
 Frequency **599 MHz**
 Antenna Type **TLP-16B-BB**

Preliminary Specifications

Side Mounted

With ice TIA-222-G

Height AGL(z) 498 ft (151.8 m)
 Basic Wind Speed 90 m/h (144.8 km/h)

Structure Class II
 Exposure Category C
 Topography Category 1

Design Ice 0.5 in $t_{iz} = 1.31$ in
 Wind Speed w/Ice 40 m/h (64.4 km/h)

Mechanical Specifications

		without ice	with ice
Height	H2	29.2 ft (8.9m)	
Height of Center of Radiation	H3	14.6 ft (4.5m)	
Effective Projected Area	(EPA) _A	36.3 ft ² (3.4m ²)	60.7 ft ² (5.6m ²)
Weight	W	250 lb (0.1t)	950 lb (0.4t)

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Prepared by: JBC

Date: 28-Jan-19

ME:

EE:

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Summary

Proposal No.	C-71267
Date	28-Jan-19
Call Letters	WOLP
Channel	35
Frequency	599 MHz
Antenna Type	TLP-16B-BB

Antenna

		Hpol
ERP:	14.4 kW	(11.58 dBk)
RMS Gain*	15.88	(12.01 dB)

Antenna Input Power	0.907 kW	-(0.42 dBk)
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Transmission Line

Type:	Flexline Air	Attenuation:	(2.23 dB)
Size:	3"	Efficiency:	59.8%
Impedance:	50 Ohm		
Length:	550 ft	167.6 m	

30 ft of 1-5/8" Ohms Rigid

Attenuation	(0.16 dB)
Efficiency	96.4%

Transmitter Output

1.57 kW	(1.97 dBk)
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Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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