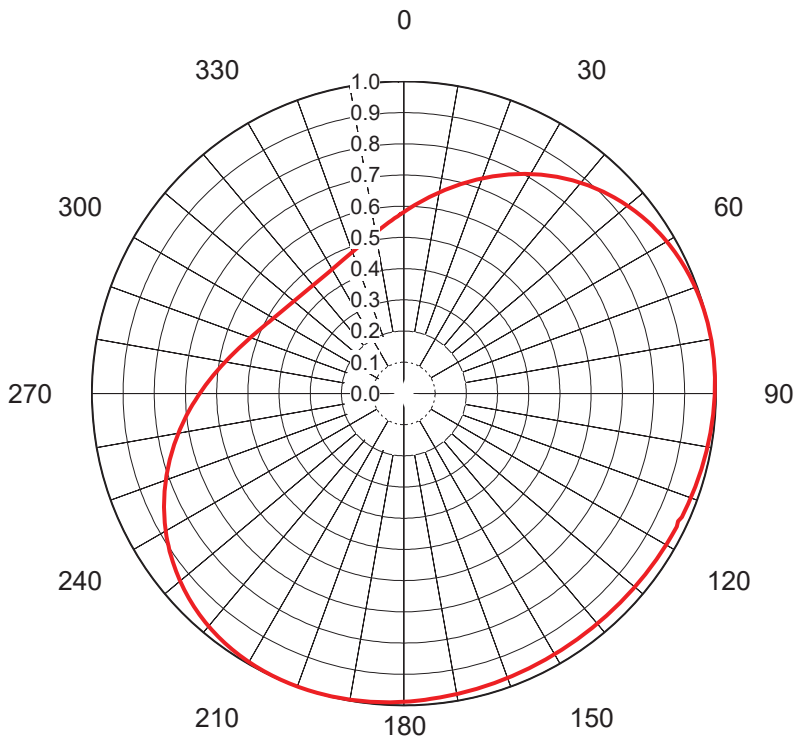


AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70257-1**
 Date **31-Oct-17**
 Call Letters **WNTV**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-9A8/VP-R C160 SP**
 Gain **1.42 (1.54dB)**
 Calculated

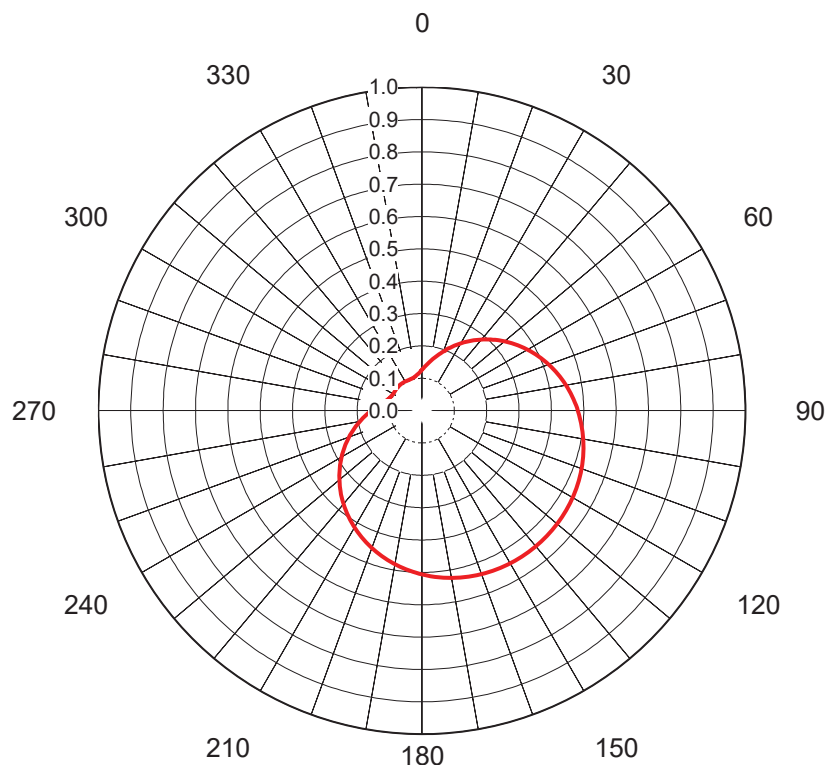


Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.582	36	0.855	72	0.996	108	0.980	144	0.964	180	0.988	216	0.984	252	0.797	288	0.534
1	0.588	37	0.862	73	0.997	109	0.979	145	0.964	181	0.989	217	0.981	253	0.789	289	0.528
2	0.595	38	0.869	74	0.998	110	0.978	146	0.964	182	0.990	218	0.979	254	0.782	290	0.523
3	0.602	39	0.875	75	0.998	111	0.978	147	0.965	183	0.991	219	0.976	255	0.774	291	0.518
4	0.609	40	0.881	76	0.999	112	0.977	148	0.965	184	0.992	220	0.973	256	0.766	292	0.514
5	0.617	41	0.888	77	0.999	113	0.976	149	0.965	185	0.993	221	0.970	257	0.758	293	0.509
6	0.624	42	0.894	78	1.000	114	0.975	150	0.966	186	0.993	222	0.967	258	0.750	294	0.505
7	0.631	43	0.900	79	1.000	115	0.970	151	0.966	187	0.994	223	0.964	259	0.742	295	0.501
8	0.639	44	0.905	80	1.000	116	0.973	152	0.966	188	0.995	224	0.961	260	0.734	296	0.497
9	0.647	45	0.911	81	1.000	117	0.973	153	0.967	189	0.996	225	0.957	261	0.726	297	0.493
10	0.654	46	0.916	82	1.000	118	0.972	154	0.967	190	0.996	226	0.953	262	0.718	298	0.489
11	0.662	47	0.921	83	1.000	119	0.971	155	0.968	191	0.997	227	0.949	263	0.710	299	0.486
12	0.670	48	0.927	84	0.999	120	0.971	156	0.968	192	0.998	228	0.945	264	0.702	300	0.483
13	0.678	49	0.931	85	0.999	121	0.970	157	0.969	193	0.998	229	0.941	265	0.694	301	0.480
14	0.686	50	0.936	86	0.999	122	0.969	158	0.969	194	0.999	230	0.936	266	0.686	302	0.477
15	0.694	51	0.941	87	0.998	123	0.969	159	0.970	195	0.999	231	0.931	267	0.678	303	0.474
16	0.702	52	0.945	88	0.998	124	0.968	160	0.971	196	0.999	232	0.927	268	0.670	304	0.472
17	0.710	53	0.949	89	0.997	125	0.968	161	0.971	197	1.000	233	0.921	269	0.662	305	0.469
18	0.718	54	0.953	90	0.996	126	0.967	162	0.972	198	1.000	234	0.916	270	0.654	306	0.467
19	0.726	55	0.957	91	0.996	127	0.967	163	0.973	199	1.000	235	0.911	271	0.647	307	0.465
20	0.734	56	0.961	92	0.995	128	0.966	164	0.973	200	1.000	236	0.905	272	0.639	308	0.463
21	0.742	57	0.964	93	0.994	129	0.966	165	0.974	201	1.000	237	0.900	273	0.631	309	0.462
22	0.750	58	0.967	94	0.993	130	0.966	166	0.975	202	1.000	238	0.894	274	0.624	310	0.460
23	0.758	59	0.970	95	0.993	131	0.965	167	0.976	203	0.999	239	0.888	275	0.617	311	0.459
24	0.766	60	0.973	96	0.992	132	0.965	168	0.977	204	0.999	240	0.881	276	0.609	312	0.457
25	0.774	61	0.976	97	0.991	133	0.965	169	0.978	205	0.998	241	0.875	277	0.602	313	0.456
26	0.782	62	0.979	98	0.990	134	0.964	170	0.978	206	0.998	242	0.869	278	0.595	314	0.455
27	0.789	63	0.981	99	0.989	135	0.964	171	0.979	207	0.997	243	0.862	279	0.588	315	0.455
28	0.797	64	0.984	100	0.988	136	0.964	172	0.980	208	0.996	244	0.855	280	0.582	316	0.454
29	0.805	65	0.986	101	0.987	137	0.964	173	0.981	209	0.995	245	0.848	281	0.575	317	0.453
30	0.812	66	0.988	102	0.986	138	0.964	174	0.982	210	0.994	246	0.841	282	0.569	318	0.453
31	0.820	67	0.989	103	0.985	139	0.964	175	0.983	211	0.992	247	0.834	283	0.563	319	0.453
32	0.827	68	0.991	104	0.984	140	0.964	176	0.984	212	0.991	248	0.827	284	0.556	320	0.453
33	0.834	69	0.992	105	0.983	141	0.964	177	0.985	213	0.989	249	0.820	285	0.550	321	0.453
34	0.841	70	0.994	106	0.982	142	0.964	178	0.986	214	0.988	250	0.812	286	0.545	322	0.453
35	0.848	71	0.995	107	0.981	143	0.964	179	0.987	215	0.986	251	0.805	287	0.539	323	0.453

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AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70257-1**
 Date **31-Oct-17**
 Call Letters **WNTV**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-9A8/VP-R C160 SP**
 Gain **2.26 (3.54dB)**
 Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.126	36	0.268	72	0.424	108	0.521	144	0.547	180	0.506	216	0.393	252	0.231	288	0.111
1	0.129	37	0.273	73	0.428	109	0.523	145	0.547	181	0.504	217	0.389	253	0.226	289	0.110
2	0.131	38	0.278	74	0.432	110	0.525	146	0.547	182	0.502	218	0.385	254	0.222	290	0.109
3	0.134	39	0.282	75	0.435	111	0.526	147	0.546	183	0.500	219	0.381	255	0.217	291	0.108
4	0.137	40	0.287	76	0.439	112	0.528	148	0.546	184	0.497	220	0.377	256	0.213	292	0.107
5	0.140	41	0.292	77	0.442	113	0.529	149	0.546	185	0.495	221	0.373	257	0.208	293	0.106
6	0.143	42	0.296	78	0.446	114	0.531	150	0.545	186	0.492	222	0.368	258	0.204	294	0.106
7	0.146	43	0.301	79	0.449	115	0.532	151	0.545	187	0.490	223	0.364	259	0.200	295	0.105
8	0.149	44	0.306	80	0.452	116	0.533	152	0.544	188	0.487	224	0.360	260	0.195	296	0.104
9	0.153	45	0.310	81	0.455	117	0.534	153	0.543	189	0.485	225	0.355	261	0.191	297	0.104
10	0.156	46	0.315	82	0.459	118	0.535	154	0.543	190	0.482	226	0.351	262	0.187	298	0.104
11	0.160	47	0.320	83	0.462	119	0.537	155	0.542	191	0.479	227	0.347	263	0.183	299	0.103
12	0.163	48	0.324	84	0.465	120	0.538	156	0.541	192	0.477	228	0.342	264	0.179	300	0.103
13	0.167	49	0.329	85	0.468	121	0.539	157	0.540	193	0.474	229	0.338	265	0.175	301	0.103
14	0.171	50	0.333	86	0.471	122	0.540	158	0.540	194	0.471	230	0.333	266	0.171	302	0.103
15	0.175	51	0.338	87	0.474	123	0.540	159	0.539	195	0.468	231	0.329	267	0.167	303	0.103
16	0.179	52	0.342	88	0.477	124	0.541	160	0.538	196	0.465	232	0.324	268	0.163	304	0.103
17	0.183	53	0.347	89	0.479	125	0.542	161	0.537	197	0.462	233	0.320	269	0.160	305	0.103
18	0.187	54	0.351	90	0.482	126	0.543	162	0.535	198	0.459	234	0.315	270	0.156	306	0.103
19	0.191	55	0.355	91	0.485	127	0.543	163	0.534	199	0.455	235	0.310	271	0.153	307	0.103
20	0.195	56	0.360	92	0.487	128	0.544	164	0.533	200	0.452	236	0.306	272	0.149	308	0.103
21	0.197	57	0.364	93	0.490	129	0.545	165	0.532	201	0.449	237	0.301	273	0.146	309	0.104
22	0.204	58	0.368	94	0.492	130	0.545	166	0.531	202	0.446	238	0.296	274	0.143	310	0.104
23	0.208	59	0.373	95	0.495	131	0.546	167	0.529	203	0.442	239	0.292	275	0.140	311	0.104
24	0.213	60	0.377	96	0.497	132	0.546	168	0.528	204	0.439	240	0.287	276	0.137	312	0.104
25	0.217	61	0.381	97	0.500	133	0.546	169	0.526	205	0.435	241	0.282	277	0.134	313	0.104
26	0.222	62	0.385	98	0.502	134	0.547	170	0.525	206	0.432	242	0.278	278	0.131	314	0.104
27	0.226	63	0.389	99	0.504	135	0.547	171	0.523	207	0.428	243	0.273	279	0.129	315	0.104
28	0.231	64	0.393	100	0.506	136	0.547	172	0.521	208	0.424	244	0.268	280	0.126	316	0.104
29	0.236	65	0.397	101	0.508	137	0.547	173	0.520	209	0.421	245	0.264	281	0.124	317	0.104
30	0.240	66	0.401	102	0.510	138	0.548	174	0.518	210	0.417	246	0.259	282	0.122	318	0.105
31	0.245	67	0.405	103	0.512	139	0.548	175	0.516	211	0.413	247	0.254	283	0.120	319	0.105
32	0.250	68	0.409	104	0.514	140	0.548	176	0.514	212	0.409	248	0.250	284	0.118	320	0.105
33	0.254	69	0.413	105	0.516	141	0.548	177	0.512	213	0.405	249	0.245	285	0.116	321	0.105
34	0.259	70	0.417	106	0.518	142	0.548	178	0.510	214	0.401	250	0.240	286	0.114	322	0.105
35	0.264	71	0.421	107	0.520	143	0.547	179	0.508	215	0.397	251	0.236	287	0.113	323	0.104

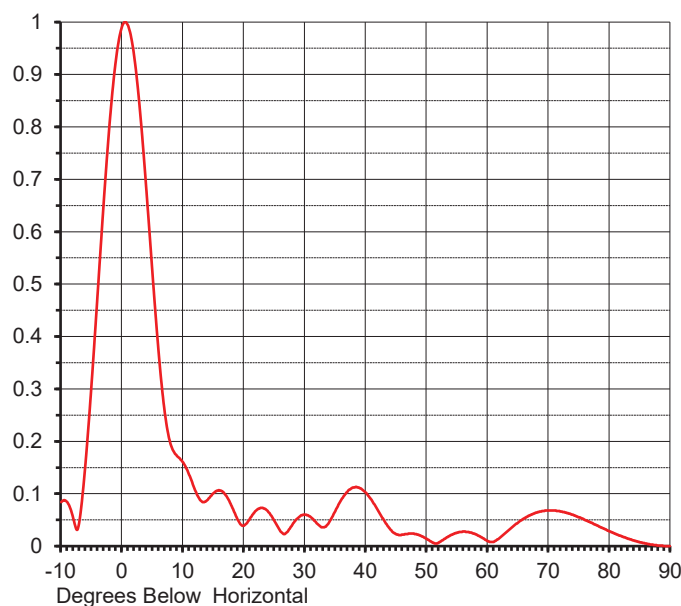
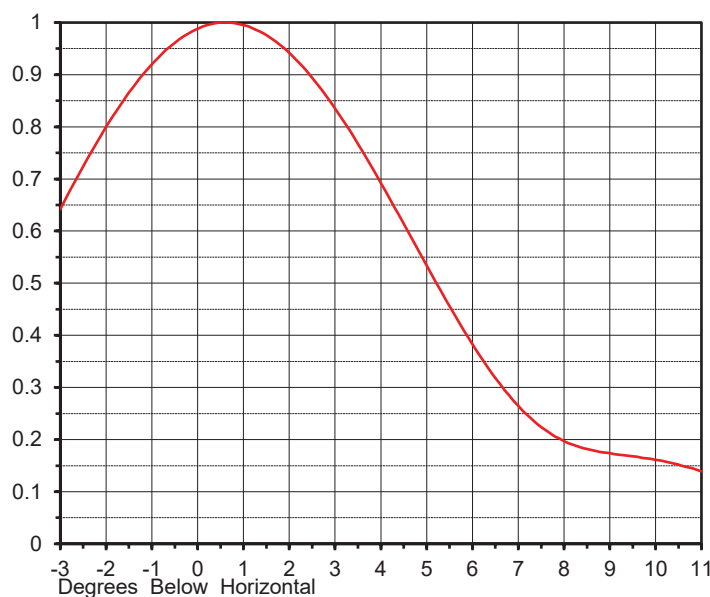
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ELEVATION PATTERN

Proposal No. **C-70257-1**
 Date **31-Oct-17**
 Call Letters **WNTV**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-9A8/VP-R C160 SP**

RMS Directivity at Main Lobe **9.0 (9.54 dB)**
 RMS Directivity at Horizontal **8.8 (9.44 dB)**
Calculated

Beam Tilt **0.50 deg**
 Pattern Number **9V900050**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.084	10.0	0.160	30.0	0.060	50.0	0.014	70.0	0.068
-9.0	0.084	11.0	0.136	31.0	0.055	51.0	0.007	71.0	0.068
-8.0	0.052	12.0	0.106	32.0	0.043	52.0	0.007	72.0	0.066
-7.0	0.048	13.0	0.086	33.0	0.036	53.0	0.014	73.0	0.063
-6.0	0.159	14.0	0.088	34.0	0.046	54.0	0.021	74.0	0.060
-5.0	0.312	15.0	0.101	35.0	0.067	55.0	0.026	75.0	0.055
-4.0	0.485	16.0	0.106	36.0	0.089	56.0	0.028	76.0	0.050
-3.0	0.659	17.0	0.097	37.0	0.104	57.0	0.026	77.0	0.045
-2.0	0.814	18.0	0.076	38.0	0.112	58.0	0.023	78.0	0.039
-1.0	0.929	19.0	0.050	39.0	0.111	59.0	0.017	79.0	0.034
0.0	0.992	20.0	0.039	40.0	0.102	60.0	0.010	80.0	0.028
1.0	0.993	21.0	0.053	41.0	0.087	61.0	0.008	81.0	0.023
2.0	0.933	22.0	0.068	42.0	0.068	62.0	0.016	82.0	0.019
3.0	0.822	23.0	0.073	43.0	0.049	63.0	0.026	83.0	0.014
4.0	0.677	24.0	0.065	44.0	0.032	64.0	0.036	84.0	0.011
5.0	0.518	25.0	0.048	45.0	0.023	65.0	0.045	85.0	0.007
6.0	0.369	26.0	0.028	46.0	0.022	66.0	0.053	86.0	0.005
7.0	0.255	27.0	0.026	47.0	0.024	67.0	0.059	87.0	0.003
8.0	0.193	28.0	0.042	48.0	0.023	68.0	0.064	88.0	0.001
9.0	0.172	29.0	0.055	49.0	0.020	69.0	0.067	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS

Proposal No. **C-70257-1**
 Date **31-Oct-17**
 Call Letters **WNTV**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-9A8/VP-R C160 SP**

Preliminary Specifications

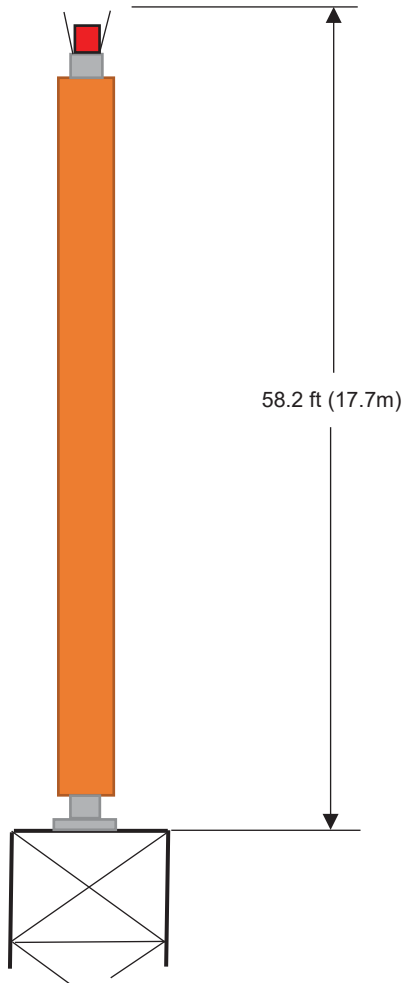
Top Mounted

With ice TIA-222-G

Height AGL(z) 1239 ft (377.6 m)
 Basic Wind Speed 90 m/h (144.8 km/h)

Structure Class III
 Exposure Category C
 Topography Category 3
 Height of Crest 1000 ft (304.8 m)

Design Ice 0.75 in $t_{iz} = 2.49$ in
 Wind Speed w/Ice 30 m/h (48.3 km/h)



Mechanical Specifications

		without ice	with ice
Height with Lightning Protector	H4	58.2 ft (17.7m)	
Height less Lightning Protector	H2	54.2 ft (16.5m)	
Height of Center of Radiation	H3	27.1 ft (8.3m)	
Effective Projected Area	(EPA) _S	66.2 ft² (6.2m²)	168.4 ft² (15.6m²)
Moment Arm	D1	28.6 ft (8.7m)	29.8 ft (9.1m)

Weight W 11700 lb (5.3t) 17200 lb (7.8t)

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

Prepared by: DLS Date: 15-Mar-17 ME: EE:
 Rev. No.1 by: CAB Date: 31-Oct-17

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