



Antenna Model:

THV-11A8/VP-R 04

Proposal Number: **C-70488-2**
Date: **5-Jul-17**
Customer: **Nexstar**
Location: **Goldsboro, NC**

Electrical Specifications

Polarization: **Elliptical**
Azimuth Pattern: **Omni**
Antenna Input: **6-1/8"** **75 Ohm** **EIA/DCA**
VSWR: **Channel** **1.08 : 1**
Bandwidth: **6 MHz**
Rated Input Power: **35 kW** **(15.44 dBk)** **Maximum Average Power**

Mechanical Specifications

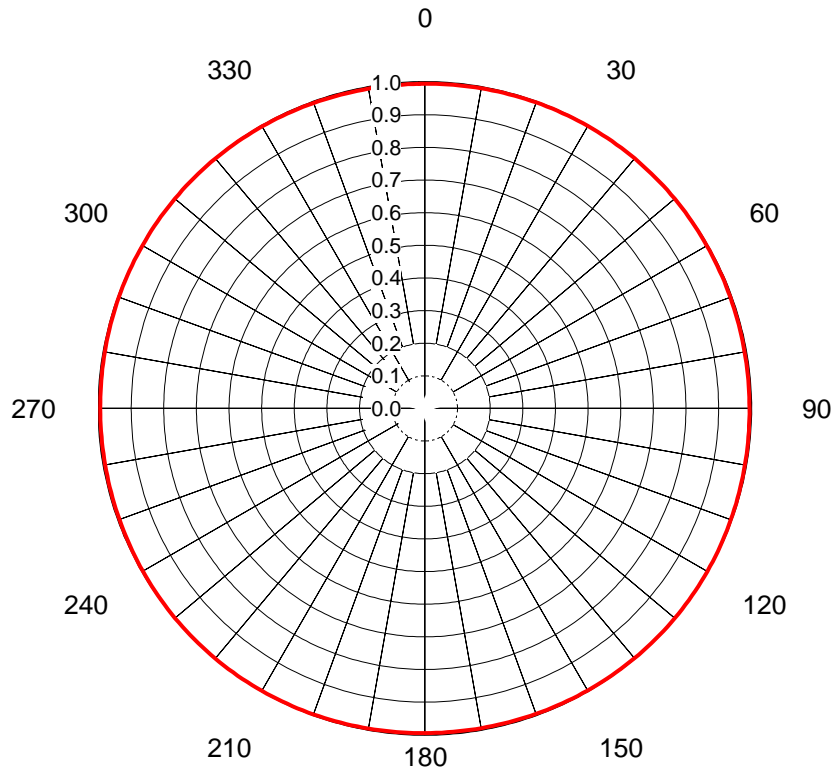
Mounting: **Top Mounted**
Environmental Protection: **Full Radome**
Height: **65.1 ft (19.8m)** less Lightning Protector **69.1 ft (21.1m)** with Lightning Protector
Weight: **14000 lb (6.4t)**
Effective Projected Area: **90.5 ft² (8.4m²)** **TIA-222-G** Basic Wind Speed: **90 m/h (144.8 km/h)**

Channel Specifications

Call	CH	Freq	Hpol ERP	Vpol ERP	TPO	RMS Main Lobe Hpol Gain	RMS Main Lobe Vpol Gain	RMS at Horizontal Hpol Gain	RMS at Horizontal Vpol Gain
WNCN	8	183 MHz	11.3 kW (10.53 dBk)	11.1 kW (10.44 dBk)	2.88 kW (4.60 dBk)	5.30 (7.25dB)	5.20 (7.16dB)	4.77 (6.78dB)	4.67 (6.69dB)

AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70488-2**
 Date **5-Jul-17**
 Call Letters **WNCN**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-11A8/VP-R 04**
 Gain **1.01 (0.02dB)**
 Calculated
 Circularity **+/- 1.0 dB**

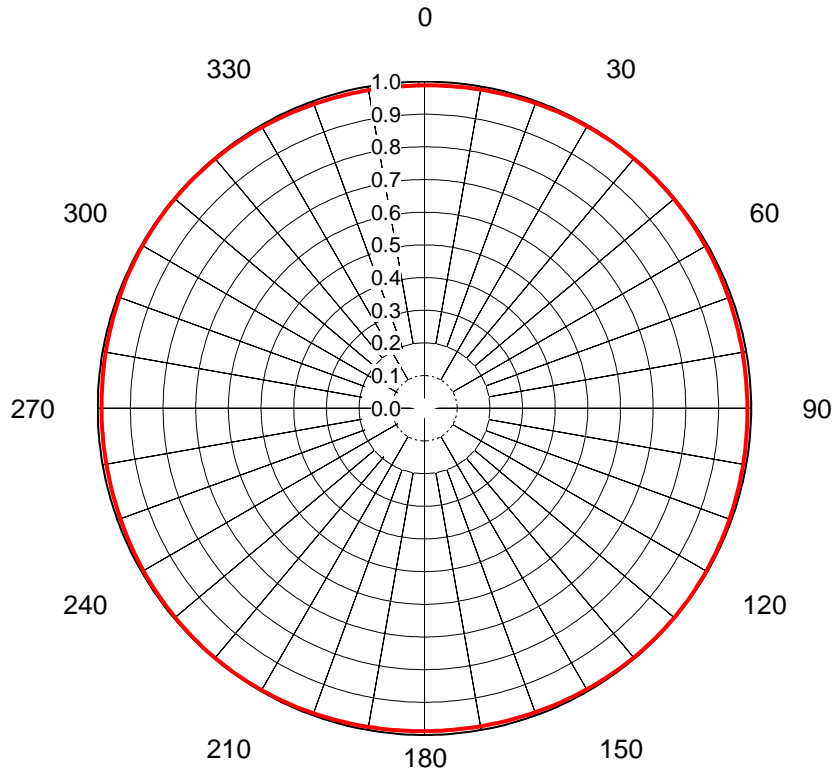


Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.995	36	1.000	72	0.996	108	0.998	144	0.999	180	0.995	216	1.000	252	0.996	288	0.998	324	0.999
1	0.995	37	1.000	73	0.996	109	0.998	145	0.999	181	0.995	217	1.000	253	0.996	289	0.998	325	0.999
2	0.995	38	1.000	74	0.996	110	0.998	146	0.999	182	0.995	218	1.000	254	0.996	290	0.998	326	0.999
3	0.995	39	1.000	75	0.995	111	0.998	147	0.998	183	0.995	219	1.000	255	0.995	291	0.998	327	0.998
4	0.995	40	1.000	76	0.995	112	0.998	148	0.998	184	0.995	220	1.000	256	0.995	292	0.998	328	0.998
5	0.995	41	1.000	77	0.995	113	0.998	149	0.998	185	0.995	221	1.000	257	0.995	293	0.998	329	0.998
6	0.996	42	1.000	78	0.995	114	0.999	150	0.998	186	0.996	222	1.000	258	0.995	294	0.999	330	0.998
7	0.996	43	1.000	79	0.995	115	0.999	151	0.998	187	0.996	223	1.000	259	0.995	295	0.999	331	0.998
8	0.996	44	1.000	80	0.995	116	0.999	152	0.998	188	0.996	224	1.000	260	0.995	296	0.999	332	0.998
9	0.996	45	1.000	81	0.995	117	0.999	153	0.997	189	0.996	225	1.000	261	0.995	297	0.999	333	0.997
10	0.996	46	1.000	82	0.995	118	0.999	154	0.997	190	0.996	226	1.000	262	0.995	298	0.999	334	0.997
11	0.996	47	1.000	83	0.995	119	0.999	155	0.997	191	0.996	227	1.000	263	0.995	299	0.999	335	0.997
12	0.996	48	1.000	84	0.995	120	0.999	156	0.997	192	0.996	228	1.000	264	0.995	300	0.999	336	0.997
13	0.997	49	1.000	85	0.995	121	0.999	157	0.997	193	0.997	229	1.000	265	0.995	301	1.000	337	0.997
14	0.997	50	0.999	86	0.995	122	1.000	158	0.996	194	0.997	230	0.999	266	0.995	302	1.000	338	0.996
15	0.997	51	0.999	87	0.995	123	1.000	159	0.996	195	0.997	231	0.999	267	0.995	303	1.000	339	0.996
16	0.997	52	0.999	88	0.995	124	1.000	160	0.996	196	0.997	232	0.999	268	0.995	304	1.000	340	0.996
17	0.997	53	0.999	89	0.995	125	1.000	161	0.996	197	0.997	233	0.999	269	0.995	305	1.000	341	0.996
18	0.998	54	0.999	90	0.995	126	1.000	162	0.996	198	0.998	234	0.999	270	0.995	306	1.000	342	0.996
19	0.998	55	0.999	91	0.995	127	1.000	163	0.996	199	0.998	235	0.999	271	0.995	307	1.000	343	0.996
20	0.998	56	0.999	92	0.995	128	1.000	164	0.996	200	0.998	236	0.999	272	0.995	308	1.000	344	0.996
21	0.998	57	0.998	93	0.995	129	1.000	165	0.995	201	0.998	237	0.998	273	0.995	309	1.000	345	0.995
22	0.998	58	0.998	94	0.995	130	1.000	166	0.995	202	0.998	238	0.998	274	0.995	310	1.000	346	0.995
23	0.998	59	0.998	95	0.995	131	1.000	167	0.995	203	0.998	239	0.998	275	0.995	311	1.000	347	0.995
24	0.999	60	0.998	96	0.996	132	1.000	168	0.995	204	0.999	240	0.998	276	0.996	312	1.000	348	0.995
25	0.999	61	0.998	97	0.996	133	1.000	169	0.995	205	0.999	241	0.998	277	0.996	313	1.000	349	0.995
26	0.999	62	0.998	98	0.996	134	1.000	170	0.995	206	0.999	242	0.998	278	0.996	314	1.000	350	0.995
27	0.999	63	0.997	99	0.996	135	1.000	171	0.995	207	0.999	243	0.997	279	0.996	315	1.000	351	0.995
28	0.999	64	0.997	100	0.996	136	1.000	172	0.995	208	0.999	244	0.997	280	0.996	316	1.000	352	0.995
29	0.999	65	0.997	101	0.996	137	1.000	173	0.995	209	0.999	245	0.997	281	0.996	317	1.000	353	0.995
30	0.999	66	0.997	102	0.996	138	1.000	174	0.995	210	0.999	246	0.997	282	0.996	318	1.000	354	0.995
31	1.000	67	0.997	103	0.997	139	0.999	175	0.995	211	1.000	247	0.997	283	0.997	319	1.000	355	0.995
32	1.000	68	0.996	104	0.997	140	0.999	176	0.995	212	1.000	248	0.996	284	0.997	320	0.999	356	0.995
33	1.000	69	0.996	105	0.997	141	0.999	177	0.995	213	1.000	249	0.996	285	0.997	321	0.999	357	0.995
34	1.000	70	0.996	106	0.997	142	0.999	178	0.995	214	1.000	250	0.996	286	0.997	322	0.999	358	0.995
35	1.000	71	0.996	107	0.997	143	0.999	179	0.995	215	1.000	251	0.996	287	0.997	323	0.999	359	0.995

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AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70488-2**
 Date **5-Jul-17**
 Call Letters **WNCN**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-11A8/VP-R 04**
 Gain **1.01 (0.04dB)**
 Calculated
 Circularity **+/- 1.0 dB**



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.988	36	0.997	72	0.990	108	0.993	144	0.995	180	0.988	216	0.997	252	0.990	288	0.993
1	0.989	37	0.997	73	0.990	109	0.993	145	0.995	181	0.989	217	0.997	253	0.990	289	0.993
2	0.989	38	0.997	74	0.989	110	0.993	146	0.995	182	0.989	218	0.997	254	0.989	290	0.993
3	0.989	39	0.997	75	0.989	111	0.994	147	0.994	183	0.989	219	0.997	255	0.989	291	0.994
4	0.989	40	0.997	76	0.989	112	0.994	148	0.994	184	0.989	220	0.997	256	0.989	292	0.994
5	0.989	41	0.997	77	0.989	113	0.994	149	0.994	185	0.989	221	0.997	257	0.989	293	0.994
6	0.989	42	0.997	78	0.989	114	0.995	150	0.993	186	0.989	222	0.997	258	0.989	294	0.995
7	0.990	43	0.997	79	0.989	115	0.995	151	0.993	187	0.990	223	0.997	259	0.989	295	0.995
8	0.990	44	0.997	80	0.988	116	0.995	152	0.993	188	0.990	224	0.997	260	0.988	296	0.995
9	0.990	45	0.997	81	0.988	117	0.996	153	0.992	189	0.990	225	0.997	261	0.988	297	0.996
10	0.990	46	0.997	82	0.988	118	0.996	154	0.992	190	0.990	226	0.997	262	0.988	298	0.996
11	0.991	47	0.997	83	0.988	119	0.996	155	0.992	191	0.991	227	0.997	263	0.988	299	0.996
12	0.991	48	0.997	84	0.988	120	0.996	156	0.992	192	0.991	228	0.997	264	0.988	300	0.996
13	0.991	49	0.997	85	0.988	121	0.997	157	0.991	193	0.991	229	0.997	265	0.988	301	0.997
14	0.992	50	0.996	86	0.988	122	0.997	158	0.991	194	0.992	230	0.996	266	0.988	302	0.997
15	0.992	51	0.996	87	0.988	123	0.997	159	0.991	195	0.992	231	0.996	267	0.988	303	0.997
16	0.992	52	0.996	88	0.988	124	0.997	160	0.990	196	0.992	232	0.996	268	0.988	304	0.997
17	0.992	53	0.996	89	0.988	125	0.997	161	0.990	197	0.992	233	0.996	269	0.988	305	0.997
18	0.993	54	0.995	90	0.988	126	0.997	162	0.990	198	0.993	234	0.995	270	0.988	306	0.997
19	0.993	55	0.995	91	0.989	127	0.997	163	0.990	199	0.993	235	0.995	271	0.989	307	0.997
20	0.993	56	0.995	92	0.989	128	0.997	164	0.989	200	0.993	236	0.995	272	0.989	308	0.997
21	0.994	57	0.994	93	0.989	129	0.997	165	0.989	201	0.994	237	0.994	273	0.989	309	0.997
22	0.994	58	0.994	94	0.989	130	0.997	166	0.989	202	0.994	238	0.994	274	0.989	310	0.997
23	0.994	59	0.994	95	0.989	131	0.997	167	0.989	203	0.994	239	0.994	275	0.989	311	0.997
24	0.995	60	0.993	96	0.989	132	0.997	168	0.989	204	0.995	240	0.993	276	0.989	312	0.997
25	0.995	61	0.993	97	0.990	133	0.997	169	0.989	205	0.995	241	0.993	277	0.990	313	0.997
26	0.995	62	0.993	98	0.990	134	0.997	170	0.988	206	0.995	242	0.993	278	0.990	314	0.997
27	0.996	63	0.992	99	0.990	135	0.997	171	0.988	207	0.996	243	0.992	279	0.990	315	0.997
28	0.996	64	0.992	100	0.990	136	0.997	172	0.988	208	0.996	244	0.992	280	0.990	316	0.997
29	0.996	65	0.992	101	0.991	137	0.997	173	0.988	209	0.996	245	0.992	281	0.991	317	0.997
30	0.996	66	0.992	102	0.991	138	0.997	174	0.988	210	0.996	246	0.992	282	0.991	318	0.997
31	0.997	67	0.991	103	0.991	139	0.997	175	0.988	211	0.997	247	0.991	283	0.991	319	0.997
32	0.997	68	0.991	104	0.992	140	0.996	176	0.988	212	0.997	248	0.991	284	0.992	320	0.996
33	0.997	69	0.991	105	0.992	141	0.996	177	0.988	213	0.997	249	0.991	285	0.992	321	0.996
34	0.997	70	0.990	106	0.992	142	0.996	178	0.988	214	0.997	250	0.990	286	0.992	322	0.996
35	0.997	71	0.990	107	0.992	143	0.996	179	0.988	215	0.997	251	0.990	287	0.992	323	0.996

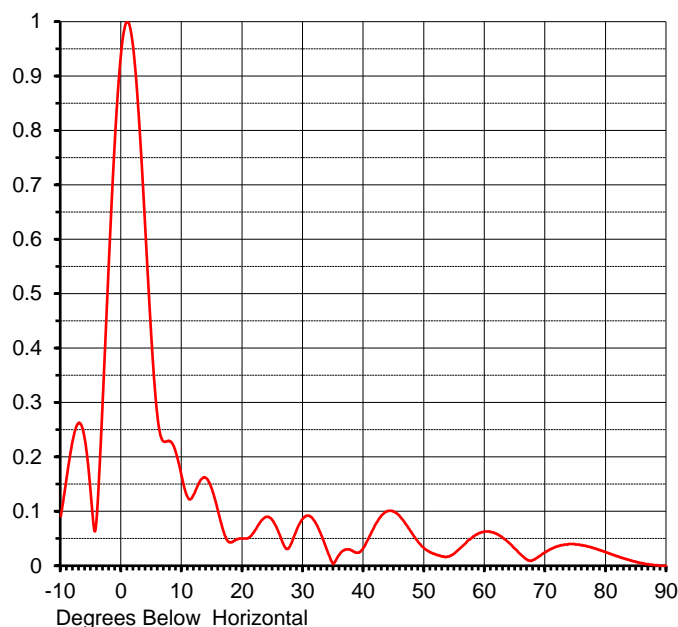
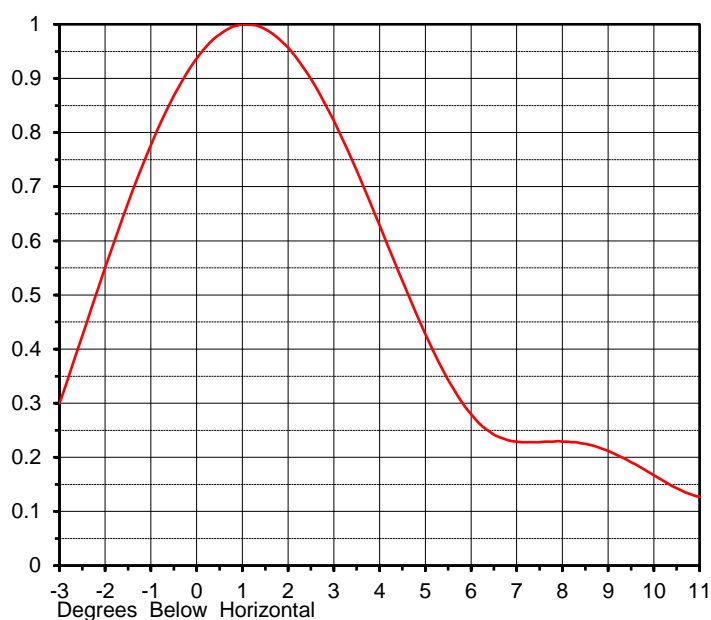
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ELEVATION PATTERN

Proposal No. **C-70488-2**
 Date **5-Jul-17**
 Call Letters **WNCN**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-11A8/VP-R 04**

RMS Directivity at Main Lobe **10.5 (10.21 dB)**
 RMS Directivity at Horizontal **9.4 (9.73 dB)**
Calculated

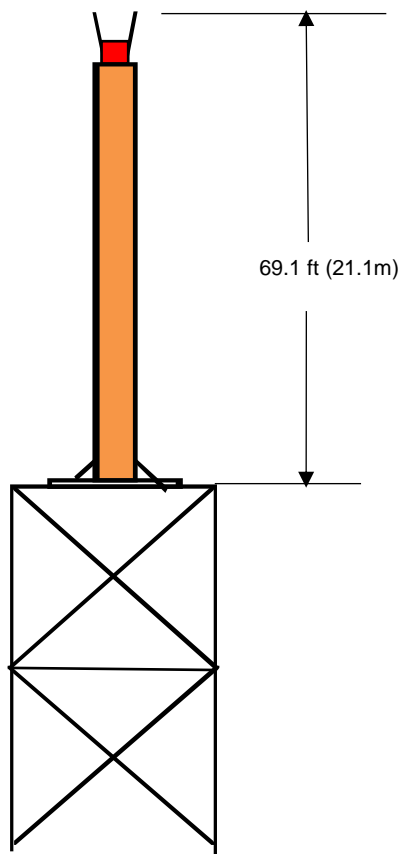
Beam Tilt **1.00 deg**
 Pattern Number **11V105100**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.091	10.0	0.162	30.0	0.087	50.0	0.032	70.0	0.025
-9.0	0.165	11.0	0.125	31.0	0.092	51.0	0.025	71.0	0.031
-8.0	0.232	12.0	0.132	32.0	0.080	52.0	0.020	72.0	0.036
-7.0	0.263	13.0	0.156	33.0	0.056	53.0	0.017	73.0	0.038
-6.0	0.230	14.0	0.161	34.0	0.027	54.0	0.017	74.0	0.040
-5.0	0.125	15.0	0.139	35.0	0.003	55.0	0.023	75.0	0.039
-4.0	0.101	16.0	0.098	36.0	0.021	56.0	0.033	76.0	0.038
-3.0	0.324	17.0	0.058	37.0	0.030	57.0	0.044	77.0	0.035
-2.0	0.575	18.0	0.043	38.0	0.028	58.0	0.053	78.0	0.032
-1.0	0.797	19.0	0.048	39.0	0.024	59.0	0.060	79.0	0.029
0.0	0.948	20.0	0.050	40.0	0.034	60.0	0.063	80.0	0.025
1.0	1.000	21.0	0.051	41.0	0.055	61.0	0.062	81.0	0.021
2.0	0.947	22.0	0.064	42.0	0.077	62.0	0.058	82.0	0.017
3.0	0.804	23.0	0.081	43.0	0.093	63.0	0.051	83.0	0.013
4.0	0.608	24.0	0.090	44.0	0.101	64.0	0.042	84.0	0.010
5.0	0.410	25.0	0.083	45.0	0.099	65.0	0.031	85.0	0.007
6.0	0.270	26.0	0.060	46.0	0.090	66.0	0.020	86.0	0.005
7.0	0.228	27.0	0.034	47.0	0.076	67.0	0.011	87.0	0.003
8.0	0.229	28.0	0.040	48.0	0.059	68.0	0.011	88.0	0.001
9.0	0.208	29.0	0.068	49.0	0.044	69.0	0.018	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS



Proposal No. **C-70488-2**
 Date **5-Jul-17**
 Call Letters **WNCN**
 Channel **8**
 Frequency **183 MHz**
 Antenna Type **THV-11A8/VP-R 04**

Preliminary Specifications

Top Mounted

With ice TIA-222-G

Height AGL(z) 2000 ft (609.6 m)
 Basic Wind Speed 90 m/h (144.8 km/h)

Structure Class II
 Exposure Category C
 Topography Category 1

Design Ice 0.75 in $t_{iz} = 2.10$ in
 Wind Speed w/Ice 40 m/h (64.4 km/h)

Mechanical Specifications

		without ice	with ice
Height with Lightning Protector	H4	69.1 ft (21.1m)	
Height less Lightning Protector	H2	65.1 ft (19.8m)	
Height of Center of Radiation	H3	32.5 ft (9.9m)	
Effective Projected Area	(EPA) _S	90.5 ft ² (8.4m ²)	223.7 ft ² (20.8m ²)
Moment Arm	D1	33.8 ft (10.3m)	34.8 ft (10.6m)
Weight	W	14000 lb (6.4t)	19800 lb (9t)

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

Prepared by: KLP
 Rev. No.2 by: JBC

Date: 30-Mar-17
 Date: 5-Jul-17

ME: EE:

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Summary

Proposal No.	C-70488-2
Date	5-Jul-17
Call Letters	WNCN
Channel	8
Frequency	183 MHz
Antenna Type	THV-11A8/VP-R 04

Antenna

	Hpol		Vpol	
ERP:	11.3 kW	(10.53 dBk)	11.1 kW	(10.44 dBk)
RMS Gain*	5.30	(7.25 dB)	5.20	(7.16 dB)

Antenna Input Power	2.13 kW	(3.28 dBk)
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Transmission Line

Type:	Rigid	Attenuation:	(1.31 dB)
Size:	6-1/8"	Efficiency:	73.9%
Impedance:	75 Ohm		
Length:	2090 ft	637.0 m	

Transmitter Output

2.88 kW	(4.60 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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