



**ENGINEERING STATEMENT**  
**OF**  
**JOHN F.X. BROWNE, P.E.**  
**IN SUPPORT OF AN APPLICATION FOR**  
**MINOR MODIFICATION OF A POST-TRANSITION CONSTRUCTION PERMIT**  
**WCPO-DT**  
**CINCINNATI, OH**

**Background**

Scripps Howard Broadcasting Company (Scripps) is the licensee of WCPO which has been authorized to operate its post-transition DTV facility on Channel 10 (BPCDT-20080306AAP) at Cincinnati, OH, with an ERP of 15.4 kW at an HAAT of 305m. The tower is located at the following coordinates:

(NAD27)  
39° 07' 30" N  
84° 29' 56" W

Scripps now wishes to "maximize" the post-transition facility ERP to 19 kW. All other facility parameters will remain the same.



### **Site**

The proposed facility is located within the Canadian border zone and coordination with the Canadian government is requested to the extent necessary in light of the FCC's ongoing negotiations with the Canadian administration.

### **Antenna System and Tower**

Scripps will use the digital antenna specified in its recently granted post-transition construction permit (March, 2008), a Dielectric THV-9A10/CP-R 3C120 (specifications attached hereto as Figure 1a - Figure 1f), for the proposed maximized facility. The antenna will be installed on a tower (ASR#1013618) after the existing analog antenna is removed. WCPO plans to use a stilt under the new digital antenna so that the radiation center of the new antenna can be placed at the authorized Appendix B height. The tower will have a new overall height of 523.5m AMSL (with appurtenances) which is 9.5m lower than the present overall tower height of 533m AMSL and the antenna will have a center of radiation of 514m AMSL (with a calculated HAAT of 305m). The FAA will be notified of the decrease in height of the overall structure and the ASR will be amended accordingly.

The proposed WCPO facility will incorporate circular polarization (equal horizontal and vertical ERP) of 19 kW.

### **Coverage**

The entire principal community of Cincinnati, OH is well within the predicted F(50,90) 43 dBu contour based on the proposed 19 kW ERP.



### **Interference**

Studies were conducted with the proposed parameters using software that emulates the software used by the FCC (OET-69 analysis). The results of the study indicate that there are no post-transition stations that would receive more than the 0.5% new interference.

### **Environmental/RFR**

The proposed construction does not require preparation of an Environmental Assessment as it does not involve any of the factors listed in Section 1.1306.

The additional ground level RFR contributed to the site by this proposal in public areas is calculated to be  $0.000381 \text{ mW/cm}^2$  which is less than 5% of the MPE for public exposure ( $0.20 \text{ mW/cm}^2$ ) at the proposed frequency and, therefore, the proposal is excluded from further consideration.

Scripps agrees to comply with the Commission's requirements regarding power adjustments or cessation of operation as may be necessary to ensure a compliant environment for worker access. Workers will be encouraged to wear personal RFR monitors when on the structure. The tower base is enclosed by a locked security fence and appropriate signage warning of RFR hazards is posted.

### **Certification**

I hereby certify that the foregoing report or statement was prepared by me but may include work performed by others under my supervision or direction. The statements of fact contained therein are believed to be true and correct based on personal knowledge, information and belief unless otherwise stated; with respect to facts not known of my own personal knowledge, I believe them to be true and correct based on their origin from sources

**B**

known to me to be generally reliable and accurate. I have prepared this document with due care and in accordance with applicable standards of professional practice.

A handwritten signature in cursive script, reading "John F. X. Browne". The signature is written in black ink and is positioned above a horizontal line.

John F. X. Browne, P.E.

June 11, 2008

**DIRECTIONAL ANTENNA DATA**  
**WCPO-DT**  
**dBk Table**

Actual Bearing	Pattern Azimuth	Relative Field	ERP (dBk)	CONTOURS(km)	
				43 dBu	36 dBu
N000E	0.00	0.910	11.97	83.7	96.0
	10.00	0.924	12.10		
	20.00	0.938	12.23		
	30.00	0.947	12.31		
	40.00	0.946	12.31		
N045E	45.00	0.941	12.26	83.2	95.5
	50.00	0.933	12.19		
	60.00	0.911	11.98		
	70.00	0.888	11.76		
	80.00	0.871	11.59		
N090E	90.00	0.866	11.54	85.1	97.6
	100.00	0.875	11.63		
	110.00	0.896	11.83		
	120.00	0.924	12.10		
	130.00	0.953	12.37		
N135E	135.00	0.967	12.50	86.8	99.4
	140.00	0.978	12.59		
	150.00	0.995	12.74		
	160.00	1.000	12.79		
	170.00	0.991	12.71		
N180E	180.00	0.971	12.53	86.3	98.8
	190.00	0.944	12.29		
	200.00	0.914	12.01		
	210.00	0.887	11.75		
	220.00	0.869	11.57		
N225E	225.00	0.865	11.53	82.7	94.9
	230.00	0.865	11.53		
	240.00	0.875	11.63		
	250.00	0.896	11.83		
	260.00	0.921	12.07		
N270E	270.00	0.942	12.27	83.4	95.7
	280.00	0.953	12.37		
	290.00	0.951	12.35		
	300.00	0.940	12.25		
	310.00	0.924	12.10		
N315E	315.00	0.916	12.03	82.5	94.9
	320.00	0.910	11.97		
	330.00	0.900	11.87		
	340.00	0.896	11.83		
	350.00	0.900	11.87		

Maximum: N160E      12.79 dBk

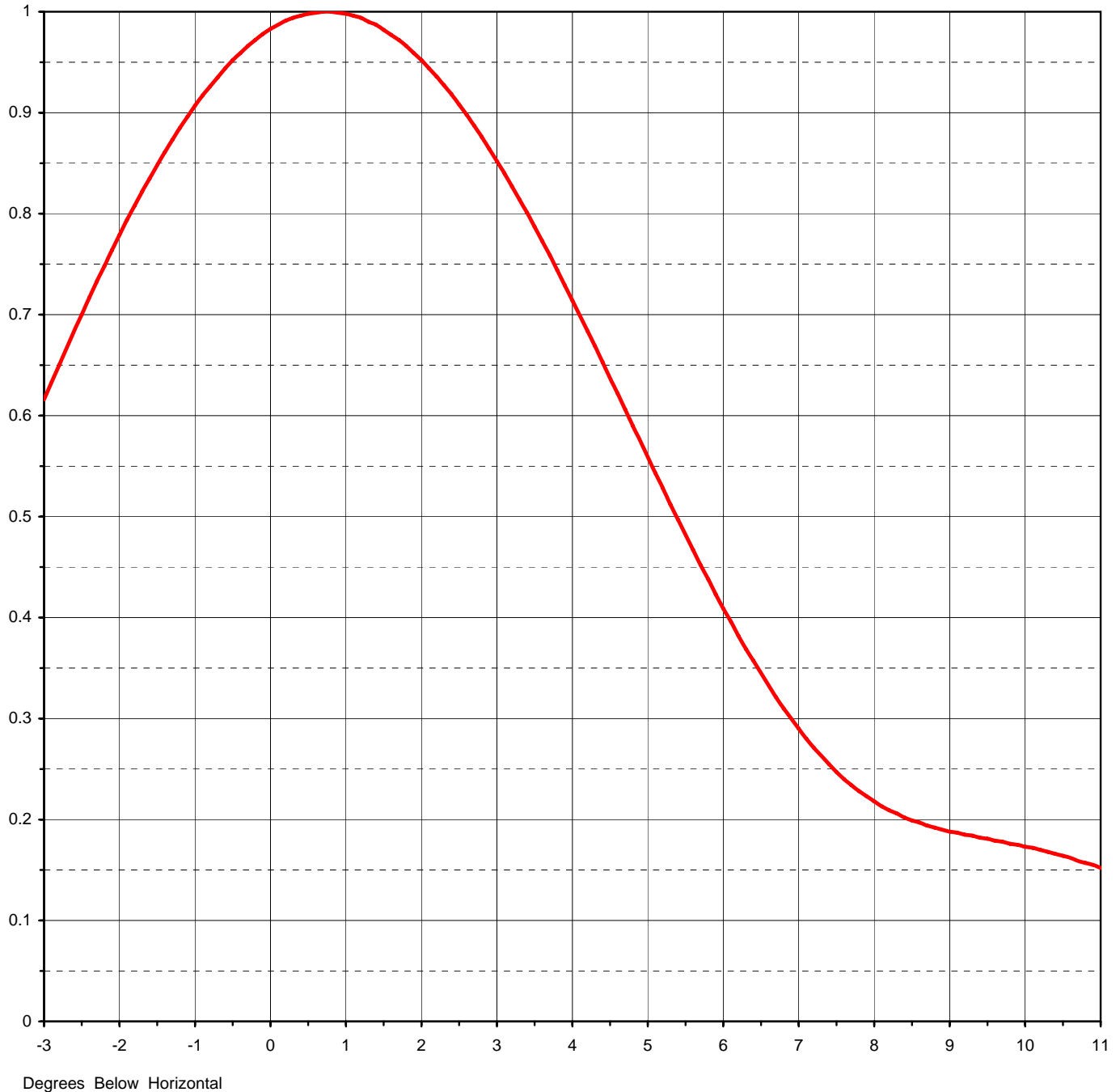
Minima: N225E      11.53 dBk  
N230E      11.53 dBk



Proposal Number	<b>C-01659</b>		
Date	<b>18-Jul-07</b>		
Call Letters	<b>WCPO-DT</b>	Channel	<b>10</b>
Location	<b>Cincinnati, OH</b>		
Customer			
Antenna Type	<b>THV-9A10/CP-R 3C120</b>		

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>9.00</b>	<b>( 9.54 dB )</b>	Beam Tilt	<b>0.75 deg</b>
RMS Gain at Horizontal	<b>8.70</b>	<b>( 9.40 dB )</b>	Frequency	<b>195.00 MHz</b>
Calculated / Measured	<b>Calculated</b>		Drawing #	<b>09V090075</b>



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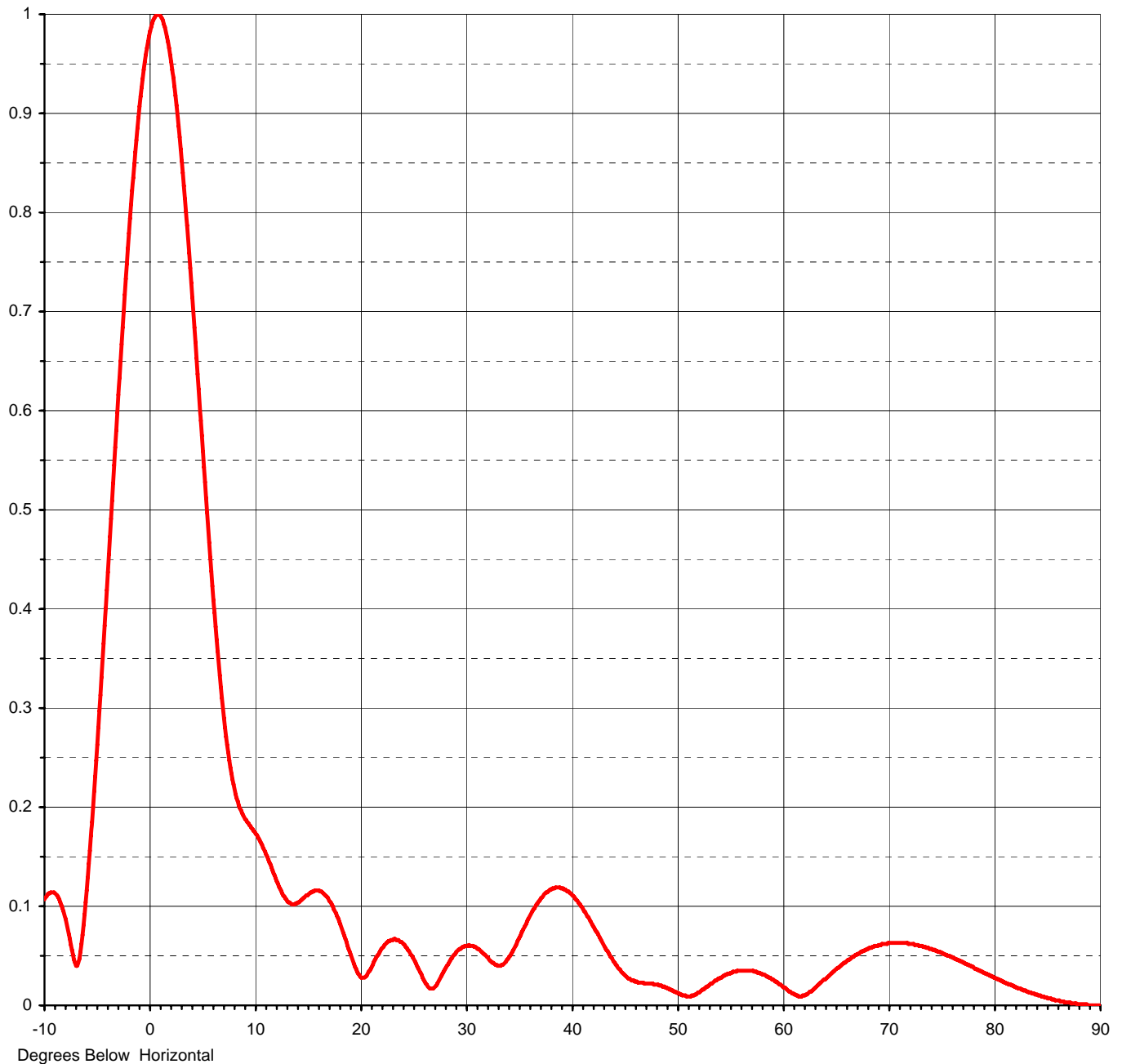
Figure 1a



Proposal Number	<b>C-01659</b>		
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Customer			
Antenna Type	<b>THV-9A10/CP-R 3C120</b>		

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>9.00 ( 9.54 dB )</b>	Beam Tilt	<b>0.75 deg</b>
RMS Gain at Horizontal	<b>8.70 ( 9.40 dB )</b>	Frequency	<b>195.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>09V090075-90</b>



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Figure 1b



Proposal Number **C-01659**  
 Date **18-Jul-07**  
 Call Letters **WCPO-DT** Channel **10**  
 Location **Cincinnati, OH**  
 Customer  
 Antenna Type **THV-9A10/CP-R 3C120**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **09V090075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.107	2.4	0.918	10.6	0.164	30.5	0.060	51.0	0.009	71.5	0.063
-9.5	0.113	2.6	0.898	10.8	0.159	31.0	0.058	51.5	0.010	72.0	0.062
-9.0	0.113	2.8	0.876	11.0	0.155	31.5	0.054	52.0	0.013	72.5	0.061
-8.5	0.104	3.0	0.852	11.5	0.142	32.0	0.049	52.5	0.016	73.0	0.060
-8.0	0.087	3.2	0.827	12.0	0.128	32.5	0.043	53.0	0.020	73.5	0.058
-7.5	0.061	3.4	0.801	12.5	0.116	33.0	0.040	53.5	0.024	74.0	0.057
-7.0	0.040	3.6	0.773	13.0	0.107	33.5	0.041	54.0	0.027	74.5	0.055
-6.5	0.062	3.8	0.744	13.5	0.102	34.0	0.047	54.5	0.030	75.0	0.053
-6.0	0.116	4.0	0.714	14.0	0.103	34.5	0.056	55.0	0.032	75.5	0.050
-5.5	0.185	4.2	0.684	14.5	0.107	35.0	0.067	55.5	0.034	76.0	0.048
-5.0	0.263	4.4	0.653	15.0	0.111	35.5	0.078	56.0	0.035	76.5	0.046
-4.5	0.348	4.6	0.622	15.5	0.115	36.0	0.089	56.5	0.035	77.0	0.043
-4.0	0.437	4.8	0.590	16.0	0.116	36.5	0.098	57.0	0.035	77.5	0.041
-3.5	0.527	5.0	0.559	16.5	0.113	37.0	0.106	57.5	0.034	78.0	0.038
-3.0	0.616	5.2	0.528	17.0	0.107	37.5	0.113	58.0	0.032	78.5	0.035
-2.8	0.650	5.4	0.497	17.5	0.097	38.0	0.117	58.5	0.029	79.0	0.033
-2.6	0.684	5.6	0.467	18.0	0.085	38.5	0.119	59.0	0.026	79.5	0.030
-2.4	0.717	5.8	0.438	18.5	0.070	39.0	0.118	59.5	0.023	80.0	0.028
-2.2	0.748	6.0	0.409	19.0	0.054	39.5	0.116	60.0	0.019	80.5	0.025
-2.0	0.779	6.2	0.382	19.5	0.039	40.0	0.112	60.5	0.015	81.0	0.023
-1.8	0.808	6.4	0.357	20.0	0.029	40.5	0.106	61.0	0.012	81.5	0.021
-1.6	0.835	6.6	0.333	20.5	0.029	41.0	0.099	61.5	0.009	82.0	0.018
-1.4	0.861	6.8	0.310	21.0	0.037	41.5	0.090	62.0	0.010	82.5	0.016
-1.2	0.885	7.0	0.290	21.5	0.048	42.0	0.081	62.5	0.013	83.0	0.014
-1.0	0.907	7.2	0.271	22.0	0.057	42.5	0.072	63.0	0.017	83.5	0.012
-0.8	0.926	7.4	0.255	22.5	0.063	43.0	0.062	63.5	0.022	84.0	0.011
-0.6	0.944	7.6	0.240	23.0	0.066	43.5	0.053	64.0	0.026	84.5	0.009
-0.4	0.959	7.8	0.228	23.5	0.066	44.0	0.044	64.5	0.032	85.0	0.007
-0.2	0.972	8.0	0.218	24.0	0.063	44.5	0.037	65.0	0.037	85.5	0.006
0.0	0.983	8.2	0.209	24.5	0.056	45.0	0.031	65.5	0.041	86.0	0.005
0.2	0.991	8.4	0.202	25.0	0.048	45.5	0.027	66.0	0.045	86.5	0.004
0.4	0.996	8.6	0.197	25.5	0.037	46.0	0.024	66.5	0.049	87.0	0.003
0.6	0.999	8.8	0.192	26.0	0.026	46.5	0.023	67.0	0.052	87.5	0.002
0.8	1.000	9.0	0.188	26.5	0.018	47.0	0.022	67.5	0.055	88.0	0.001
1.0	0.998	9.2	0.185	27.0	0.018	47.5	0.022	68.0	0.057	88.5	0.001
1.2	0.994	9.4	0.182	27.5	0.026	48.0	0.021	68.5	0.059	89.0	0.000
1.4	0.987	9.6	0.179	28.0	0.036	48.5	0.020	69.0	0.061	89.5	0.000
1.6	0.977	9.8	0.178	28.5	0.045	49.0	0.018	69.5	0.062	90.0	0.000
1.8	0.966	10.0	0.175	29.0	0.052	49.5	0.015	70.0	0.063		
2.0	0.952	10.2	0.172	29.5	0.057	50.0	0.013	70.5	0.063		
2.2	0.936	10.4	0.168	30.0	0.060	50.5	0.010	71.0	0.063		

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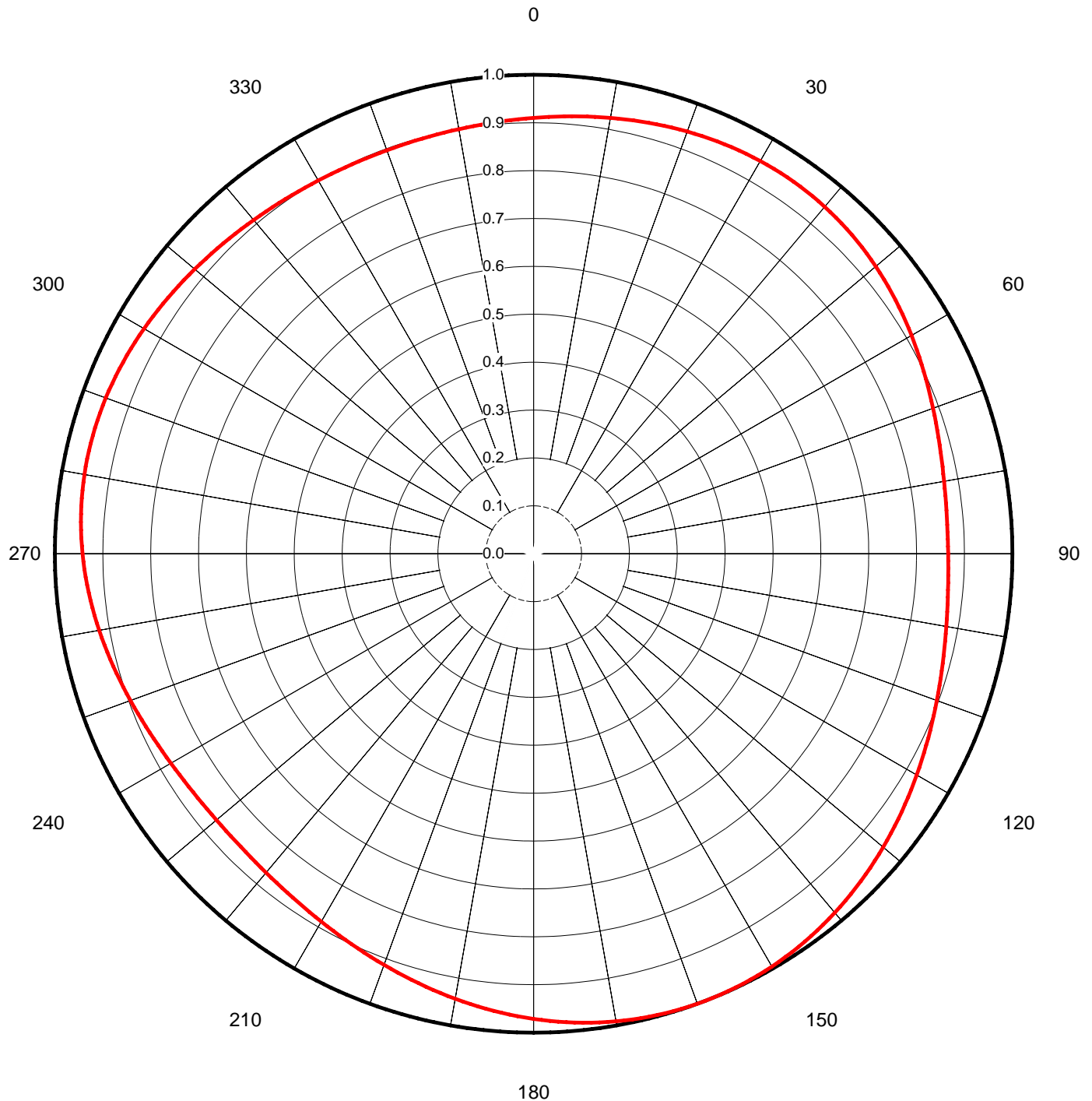


Proposal Number	<b>C-01659</b>		
Date	<b>18-Jul-07</b>		
Call Letters	<b>WCPO-DT</b>	Channel	<b>10</b>
Location	<b>Cincinnati, OH</b>		
Customer			
Antenna Type	<b>THV-9A10/CP-R 3C120</b>		

## AZIMUTH PATTERN

Gain	<b>1.20</b>	<b>( 0.79 dB)</b>
Calculated / Measured	<b>Calculated</b>	

Frequency	<b>195.00 MHz</b>
Drawing #	<b>THV-3C120-HP</b>





Proposal Number **C-01659**  
Date **18-Jul-07**  
Call Letters **WCPO-DT** Channel **10**  
Location **Cincinnati, OH**  
Customer  
Antenna Type **THV-9A10/CP-R 3C120**

## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **THV-3C120-HP**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.910	45	0.941	90	0.866	135	0.967	180	0.971	225	0.865	270	0.942	315	0.916
1	0.911	46	0.939	91	0.866	136	0.969	181	0.969	226	0.865	271	0.944	316	0.915
2	0.913	47	0.938	92	0.867	137	0.972	182	0.966	227	0.865	272	0.945	317	0.914
3	0.914	48	0.936	93	0.867	138	0.974	183	0.964	228	0.865	273	0.947	318	0.912
4	0.915	49	0.935	94	0.868	139	0.976	184	0.961	229	0.865	274	0.948	319	0.911
5	0.917	50	0.933	95	0.869	140	0.978	185	0.958	230	0.865	275	0.949	320	0.910
6	0.918	51	0.931	96	0.870	141	0.981	186	0.955	231	0.865	276	0.950	321	0.908
7	0.920	52	0.929	97	0.871	142	0.983	187	0.952	232	0.866	277	0.951	322	0.907
8	0.921	53	0.927	98	0.872	143	0.985	188	0.949	233	0.866	278	0.952	323	0.906
9	0.922	54	0.925	99	0.874	144	0.986	189	0.947	234	0.867	279	0.952	324	0.905
10	0.924	55	0.923	100	0.875	145	0.988	190	0.944	235	0.868	280	0.953	325	0.904
11	0.925	56	0.921	101	0.877	146	0.990	191	0.941	236	0.869	281	0.953	326	0.903
12	0.927	57	0.918	102	0.879	147	0.991	192	0.938	237	0.870	282	0.953	327	0.902
13	0.928	58	0.916	103	0.881	148	0.993	193	0.935	238	0.872	283	0.953	328	0.901
14	0.930	59	0.914	104	0.883	149	0.994	194	0.932	239	0.873	284	0.953	329	0.900
15	0.931	60	0.911	105	0.885	150	0.995	195	0.928	240	0.875	285	0.953	330	0.900
16	0.933	61	0.909	106	0.887	151	0.996	196	0.925	241	0.877	286	0.953	331	0.899
17	0.934	62	0.907	107	0.889	152	0.997	197	0.922	242	0.878	287	0.953	332	0.898
18	0.935	63	0.904	108	0.891	153	0.998	198	0.919	243	0.880	288	0.952	333	0.898
19	0.937	64	0.902	109	0.894	154	0.999	199	0.916	244	0.882	289	0.952	334	0.898
20	0.938	65	0.899	110	0.896	155	0.999	200	0.914	245	0.885	290	0.951	335	0.897
21	0.939	66	0.897	111	0.899	156	1.000	201	0.911	246	0.887	291	0.950	336	0.897
22	0.940	67	0.895	112	0.901	157	1.000	202	0.908	247	0.889	292	0.949	337	0.897
23	0.941	68	0.892	113	0.904	158	1.000	203	0.905	248	0.891	293	0.948	338	0.897
24	0.942	69	0.890	114	0.907	159	1.000	204	0.902	249	0.894	294	0.947	339	0.896
25	0.943	70	0.888	115	0.910	160	1.000	205	0.899	250	0.896	295	0.946	340	0.896
26	0.944	71	0.886	116	0.912	161	1.000	206	0.897	251	0.899	296	0.945	341	0.896
27	0.945	72	0.884	117	0.915	162	0.999	207	0.894	252	0.901	297	0.944	342	0.897
28	0.946	73	0.882	118	0.918	163	0.999	208	0.892	253	0.904	298	0.942	343	0.897
29	0.946	74	0.880	119	0.921	164	0.998	209	0.889	254	0.906	299	0.941	344	0.897
30	0.947	75	0.878	120	0.924	165	0.997	210	0.887	255	0.909	300	0.940	345	0.897
31	0.947	76	0.876	121	0.927	166	0.996	211	0.885	256	0.911	301	0.938	346	0.898
32	0.947	77	0.875	122	0.930	167	0.995	212	0.883	257	0.914	302	0.937	347	0.898
33	0.948	78	0.873	123	0.933	168	0.994	213	0.881	258	0.917	303	0.935	348	0.899
34	0.948	79	0.872	124	0.936	169	0.993	214	0.879	259	0.919	304	0.934	349	0.899
35	0.948	80	0.871	125	0.939	170	0.991	215	0.877	260	0.921	305	0.932	350	0.900
36	0.947	81	0.869	126	0.942	171	0.990	216	0.875	261	0.924	306	0.931	351	0.901
37	0.947	82	0.868	127	0.945	172	0.988	217	0.873	262	0.926	307	0.929	352	0.902
38	0.947	83	0.868	128	0.947	173	0.986	218	0.872	263	0.929	308	0.927	353	0.902
39	0.946	84	0.867	129	0.950	174	0.985	219	0.871	264	0.931	309	0.926	354	0.903
40	0.946	85	0.866	130	0.953	175	0.983	220	0.869	265	0.933	310	0.924	355	0.904
41	0.945	86	0.866	131	0.956	176	0.980	221	0.868	266	0.935	311	0.923	356	0.905
42	0.944	87	0.866	132	0.959	177	0.978	222	0.867	267	0.937	312	0.921	357	0.906
43	0.943	88	0.866	133	0.961	178	0.976	223	0.866	268	0.939	313	0.919	358	0.908
44	0.942	89	0.866	134	0.964	179	0.974	224	0.866	269	0.941	314	0.918	359	0.909

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Call Letters	<b>WCPO-DT</b>	Channel	<b>10</b>
Location	<b>Cincinnati, OH</b>		
Customer			
Antenna Type	<b>THV-9A10/CP-R 3C120</b>		

### AZIMUTH PATTERN/VERTICAL POLARIZATION

Gain	<b>2.10</b>	<b>( 3.22 dB)</b>
Calculated / Measured		<b>Calculated</b>

Frequency	<b>195.00 MHz</b>
Drawing #	<b>THV-3C210 VP</b>

