

ENGINEERING STATEMENT
APPLICATION FOR LICENSE
FCC FILE NO. BPDDT-20111107AJO
W40CV-D, JACKSONVILLE, ILLINOIS
CHANNEL 40 15 KW MAX ERP 469 METERS RC/AMSL
FACILITY ID 182815

DECEMBER 2011

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)


Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1420 N Street, N.W., Suite One, Washington, D.C. 20005;

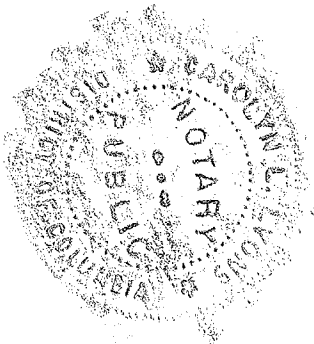
That his qualifications are a matter of record in the Federal Communications Commission;

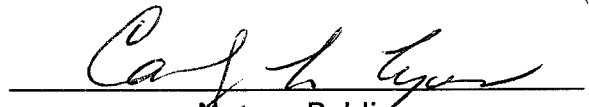
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.


Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 14th day of December, 2011.




Notary Public

My Commission Expires: 2/28/2013

Introduction

This engineering statement has been prepared on behalf of WAND(TV) Partnership, licensee of W40CV-D, Jacksonville, Illinois. This statement supports the request for license (FCC File No. BPDDT-20111107AJO) to serve with a DTV effective radiated power ("ERP") of 15 kW (max) at a radiation center above mean sea level ("RCAMSL") of 469 meters.

Transmitter Site

The existing tower is located approximately 1.1 km south of Franklin, Illinois. The geographic coordinates of the existing site follow below.

North Latitude: 39° 36' 9.02"

West Longitude: 90° 02' 47.0"

NAD-27

Elevation Data

Elevation of site above mean sea level	205.1 meters (672.9 feet)
Center of radiation of antenna above ground level	264 meters (866 feet)
Center of radiation of antenna above mean sea level	469 meters (1538.9 feet)
Overall height of the tower above ground with appurtenances	297.5 meters (976 feet)
Overall height of the tower above mean sea level with appurtenances	1649 meters (502.6 feet)

The Antenna Structure Registration Number ("ASRN") for the existing tower is 1221865.

Equipment Data

Transmitter:	Type-approved
Transmission Line:	Dielectric, rigid copper outer conductor, 3-1/8" air dielectric, 267.4 meters (877 feet) with 59.2% efficiency [0.26 dB loss/100 ft]
Antenna:	Dielectric, Model DL-12B with maximum gain of 13.09 dBd and 1° electrical beam tilt. Antenna pattern information is provided in Exhibit E-1
Transmission Mask:	Simple

Power Data

Transmitter:	1.24 kW	0.948 dBk
Transmission Line Efficiency/Loss:	59.2%	2.28 dB
Input Into Antenna:	0.736 kW	-1.329 dBk
Antenna Gain:	20.37	13.09 dB
ERP:	15 kW	11.76 dBk

As indicated above, the transmitter with typical power output of 1.24 kW will deliver 0.736 kW to the input of the antenna. The antenna, having a maximum power gain of 20.37 and an electrical beam tilt of 1 degree, will produce maximum ERP of 15 kW.

COHEN, DIPPELL AND EVERIST, P.C.

EXHIBIT E-1

ANTENNA MANUFACTURER DATA

W40CV, JACKSONVILLE, ILLINOIS



Exhibit No.

Date

04 Aug 2011

Call Letters

WAND

Channel 40

Location

Customer

Antenna Type

DL-12B

ELEVATION PATTERN

RMS Gain at Main Lobe

12.0 (10.79 dB)

Beam Tilt

1.00 Degrees

RMS Gain at Horizontal

10.1 (10.04 dB)

Frequency

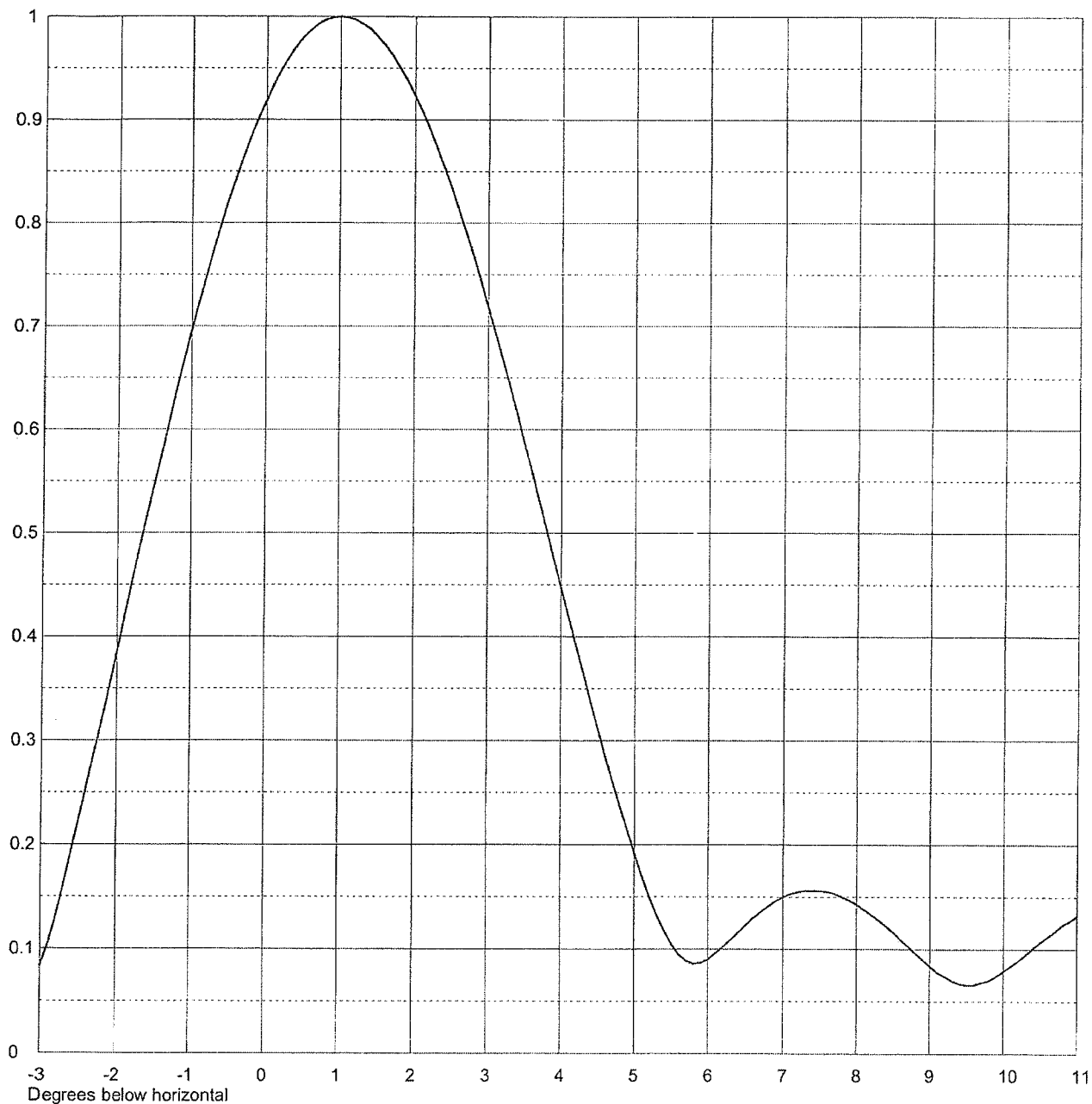
629.00 MHz

Calculated / Measured

Calculated

Drawing #

12L120100



Remarks:



Exhibit No.

Date **05 Aug 2011**
 Call Letters **WAND** Channel **40**
 Location
 Customer
 Antenna Type **DL-12B**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TLP-B**

NOTE: MAJOR LOBE AT AZIMUTH N 320° E

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.899	90	0.661	135	0.577	180	0.645	225	0.584	270	0.650	315	0.893
1	1.000	46	0.895	91	0.656	136	0.578	181	0.645	226	0.583	271	0.654	316	0.897
2	0.999	47	0.890	92	0.651	137	0.580	182	0.645	227	0.582	272	0.659	317	0.902
3	0.999	48	0.886	93	0.646	138	0.582	183	0.645	228	0.581	273	0.663	318	0.906
4	0.999	49	0.881	94	0.641	139	0.584	184	0.645	229	0.580	274	0.668	319	0.910
5	0.998	50	0.876	95	0.637	140	0.586	185	0.644	230	0.579	275	0.673	320	0.914
6	0.998	51	0.872	96	0.632	141	0.588	186	0.644	231	0.578	276	0.678	321	0.919
7	0.998	52	0.867	97	0.628	142	0.590	187	0.643	232	0.577	277	0.683	322	0.923
8	0.997	53	0.862	98	0.624	143	0.592	188	0.643	233	0.576	278	0.688	323	0.927
9	0.996	54	0.857	99	0.619	144	0.594	189	0.642	234	0.575	279	0.694	324	0.930
10	0.996	55	0.852	100	0.615	145	0.596	190	0.641	235	0.574	280	0.699	325	0.934
11	0.995	56	0.847	101	0.612	146	0.598	191	0.640	236	0.573	281	0.705	326	0.938
12	0.994	57	0.842	102	0.608	147	0.600	192	0.640	237	0.572	282	0.711	327	0.941
13	0.993	58	0.836	103	0.604	148	0.603	193	0.639	238	0.572	283	0.716	328	0.944
14	0.992	59	0.831	104	0.601	149	0.605	194	0.638	239	0.571	284	0.722	329	0.948
15	0.990	60	0.826	105	0.597	150	0.607	195	0.637	240	0.570	285	0.728	330	0.951
16	0.989	61	0.820	106	0.594	151	0.609	196	0.636	241	0.570	286	0.734	331	0.954
17	0.987	62	0.815	107	0.591	152	0.611	197	0.634	242	0.570	287	0.740	332	0.956
18	0.985	63	0.810	108	0.589	153	0.614	198	0.633	243	0.570	288	0.747	333	0.959
19	0.983	64	0.804	109	0.586	154	0.616	199	0.632	244	0.570	289	0.753	334	0.962
20	0.981	65	0.799	110	0.583	155	0.618	200	0.631	245	0.571	290	0.759	335	0.964
21	0.979	66	0.793	111	0.581	156	0.619	201	0.629	246	0.572	291	0.765	336	0.966
22	0.977	67	0.787	112	0.579	157	0.621	202	0.628	247	0.573	292	0.771	337	0.968
23	0.975	68	0.782	113	0.577	158	0.623	203	0.626	248	0.575	293	0.777	338	0.971
24	0.972	69	0.776	114	0.575	159	0.625	204	0.625	249	0.577	294	0.783	339	0.973
25	0.970	70	0.771	115	0.574	160	0.627	205	0.623	250	0.579	295	0.789	340	0.975
26	0.967	71	0.765	116	0.573	161	0.628	206	0.621	251	0.581	296	0.795	341	0.977
27	0.964	72	0.759	117	0.571	162	0.630	207	0.619	252	0.584	297	0.801	342	0.979
28	0.961	73	0.754	118	0.570	163	0.632	208	0.618	253	0.587	298	0.806	343	0.980
29	0.958	74	0.748	119	0.569	164	0.633	209	0.616	254	0.590	299	0.812	344	0.982
30	0.955	75	0.742	120	0.569	165	0.634	210	0.613	255	0.593	300	0.817	345	0.984
31	0.952	76	0.737	121	0.568	166	0.636	211	0.611	256	0.596	301	0.823	346	0.986
32	0.949	77	0.731	122	0.568	167	0.637	212	0.609	257	0.600	302	0.828	347	0.988
33	0.946	78	0.726	123	0.568	168	0.638	213	0.607	258	0.603	303	0.834	348	0.990
34	0.942	79	0.720	124	0.568	169	0.639	214	0.605	259	0.607	304	0.839	349	0.991
35	0.939	80	0.714	125	0.568	170	0.640	215	0.602	260	0.610	305	0.844	350	0.993
36	0.935	81	0.709	126	0.568	171	0.641	216	0.600	261	0.614	306	0.849	351	0.994
37	0.932	82	0.703	127	0.569	172	0.642	217	0.598	262	0.618	307	0.854	352	0.995
38	0.928	83	0.698	128	0.569	173	0.643	218	0.596	263	0.622	308	0.859	353	0.996
39	0.924	84	0.692	129	0.570	174	0.643	219	0.594	264	0.625	309	0.864	354	0.997
40	0.920	85	0.687	130	0.571	175	0.644	220	0.592	265	0.629	310	0.869	355	0.998
41	0.916	86	0.682	131	0.572	176	0.644	221	0.590	266	0.633	311	0.874	356	0.999
42	0.912	87	0.676	132	0.573	177	0.645	222	0.589	267	0.637	312	0.879	357	0.999
43	0.908	88	0.671	133	0.574	178	0.645	223	0.587	268	0.641	313	0.883	358	0.999
44	0.904	89	0.666	134	0.575	179	0.645	224	0.586	269	0.646	314	0.888	359	1.000

Remarks:

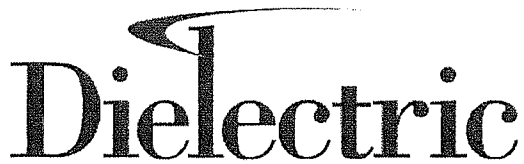


Exhibit No.

Date **05 Aug 2011**
 Call Letters **WAND** Channel **40**
 Location
 Customer
 Antenna Type **DL-12B**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **12L120100-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.076	2.4	0.854	10.6	0.112	30.5	0.037	51.0	0.086	71.5	0.088
-9.5	0.089	2.6	0.812	10.8	0.123	31.0	0.051	51.5	0.083	72.0	0.084
-9.0	0.117	2.8	0.767	11.0	0.132	31.5	0.061	52.0	0.078	72.5	0.080
-8.5	0.163	3.0	0.718	11.5	0.147	32.0	0.066	52.5	0.072	73.0	0.076
-8.0	0.221	3.2	0.667	12.0	0.149	32.5	0.065	53.0	0.064	73.5	0.072
-7.5	0.282	3.4	0.614	12.5	0.139	33.0	0.059	53.5	0.055	74.0	0.067
-7.0	0.339	3.6	0.559	13.0	0.120	33.5	0.049	54.0	0.045	74.5	0.063
-6.5	0.384	3.8	0.503	13.5	0.094	34.0	0.038	54.5	0.036	75.0	0.058
-6.0	0.409	4.0	0.447	14.0	0.071	34.5	0.031	55.0	0.026	75.5	0.054
-5.5	0.409	4.2	0.392	14.5	0.061	35.0	0.034	55.5	0.018	76.0	0.049
-5.0	0.379	4.4	0.338	15.0	0.070	35.5	0.046	56.0	0.010	76.5	0.045
-4.5	0.317	4.6	0.286	15.5	0.087	36.0	0.060	56.5	0.005	77.0	0.041
-4.0	0.227	4.8	0.237	16.0	0.101	36.5	0.073	57.0	0.006	77.5	0.037
-3.5	0.116	5.0	0.192	16.5	0.107	37.0	0.082	57.5	0.010	78.0	0.034
-3.0	0.084	5.2	0.151	17.0	0.104	37.5	0.088	58.0	0.013	78.5	0.030
-2.8	0.132	5.4	0.118	17.5	0.092	38.0	0.089	58.5	0.015	79.0	0.027
-2.6	0.191	5.6	0.095	18.0	0.074	38.5	0.085	59.0	0.016	79.5	0.024
-2.4	0.254	5.8	0.086	18.5	0.054	39.0	0.078	59.5	0.017	80.0	0.021
-2.2	0.319	6.0	0.090	19.0	0.041	39.5	0.067	60.0	0.018	80.5	0.018
-2.0	0.385	6.2	0.102	19.5	0.045	40.0	0.053	60.5	0.021	81.0	0.016
-1.8	0.451	6.4	0.116	20.0	0.062	40.5	0.038	61.0	0.025	81.5	0.014
-1.6	0.515	6.6	0.130	20.5	0.077	41.0	0.023	61.5	0.030	82.0	0.012
-1.4	0.578	6.8	0.141	21.0	0.087	41.5	0.007	62.0	0.036	82.5	0.010
-1.2	0.639	7.0	0.150	21.5	0.089	42.0	0.008	62.5	0.043	83.0	0.009
-1.0	0.696	7.2	0.155	22.0	0.083	42.5	0.020	63.0	0.050	83.5	0.007
-0.8	0.750	7.4	0.156	22.5	0.069	43.0	0.030	63.5	0.057	84.0	0.006
-0.6	0.800	7.6	0.155	23.0	0.049	43.5	0.037	64.0	0.064	84.5	0.005
-0.4	0.845	7.8	0.150	23.5	0.024	44.0	0.041	64.5	0.071	85.0	0.004
-0.2	0.885	8.0	0.143	24.0	0.008	44.5	0.043	65.0	0.077	85.5	0.003
0.0	0.919	8.2	0.133	24.5	0.032	45.0	0.043	65.5	0.082	86.0	0.002
0.2	0.948	8.4	0.122	25.0	0.056	45.5	0.043	66.0	0.087	86.5	0.002
0.4	0.971	8.6	0.109	25.5	0.076	46.0	0.043	66.5	0.091	87.0	0.001
0.6	0.987	8.8	0.096	26.0	0.090	46.5	0.045	67.0	0.094	87.5	0.001
0.8	0.997	9.0	0.084	26.5	0.097	47.0	0.050	67.5	0.097	88.0	0.001
1.0	1.000	9.2	0.074	27.0	0.096	47.5	0.056	68.0	0.098	88.5	0.000
1.2	0.997	9.4	0.067	27.5	0.089	48.0	0.063	68.5	0.099	89.0	0.000
1.4	0.988	9.6	0.066	28.0	0.075	48.5	0.071	69.0	0.099	89.5	0.000
1.6	0.972	9.8	0.070	28.5	0.057	49.0	0.077	69.5	0.098	90.0	0.000
1.8	0.950	10.0	0.079	29.0	0.037	49.5	0.082	70.0	0.096		
2.0	0.923	10.2	0.089	29.5	0.020	50.0	0.086	70.5	0.094		
2.2	0.891	10.4	0.101	30.0	0.022	50.5	0.087	71.0	0.091		

Remarks:



Date
Call Letters
Location
Customer
Antenna Type

04 Aug 2011

WAND

Channel 40

DL-12B

Exhibit No.

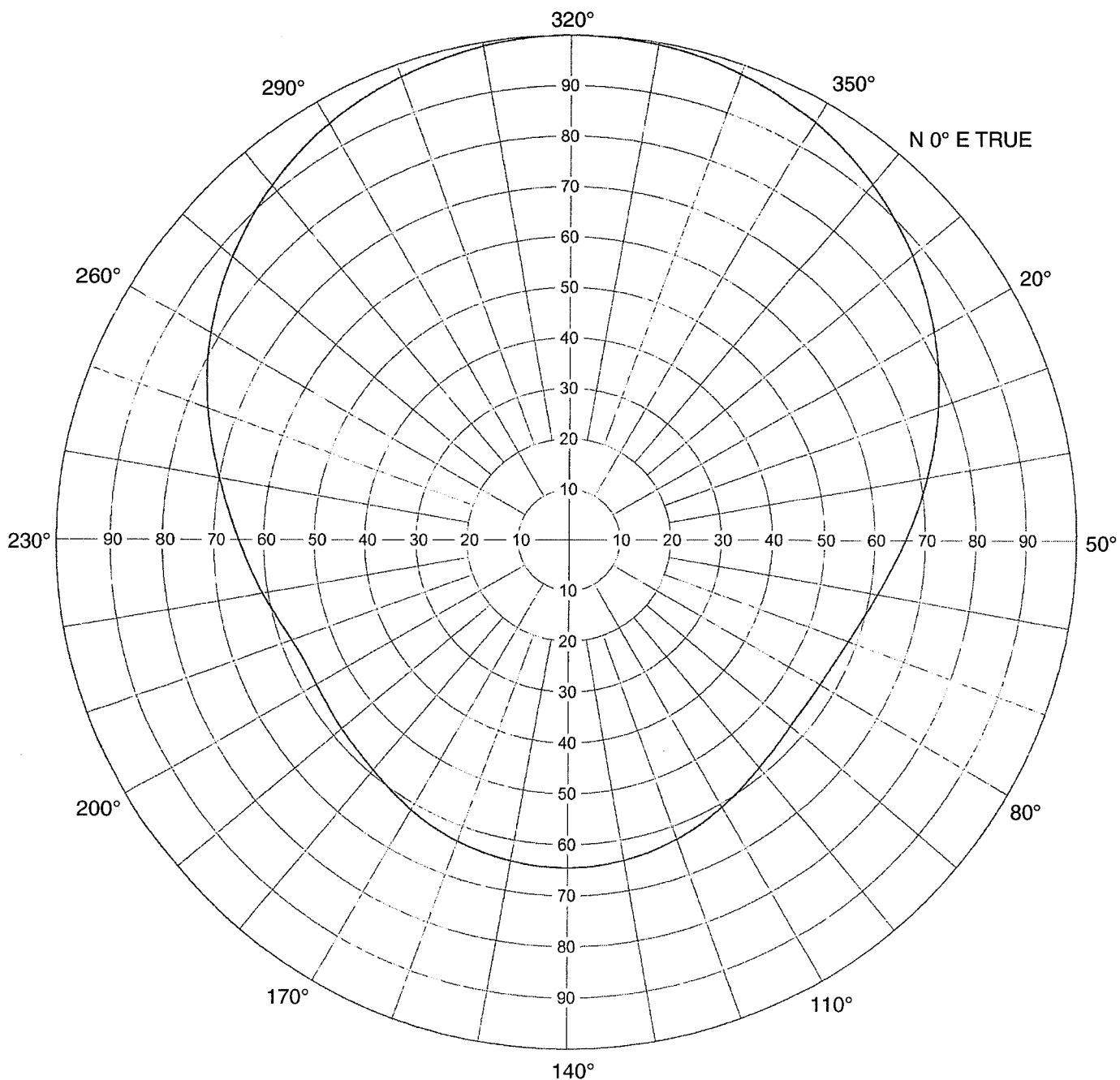
AZIMUTH PATTERN

Gain
Calculated / Measured

1.70 (2.30 dB)
Calculated

Frequency
Drawing #

629 MHz
TLP-B



Remarks:

TECHNICAL SPECIFICATIONS

TECH BOX

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

6.	Constructed Facility. The facility was constructed as authorized in the underlying construction permit.	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Explanation in Exhibit No.
----	--	--	--------------------------------

See Explanation
in Exhibit No.

7. Special Operating Conditions. The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit.	<input type="checkbox"/> Yes <input type="checkbox"/> No	See Explanation in Exhibit No.
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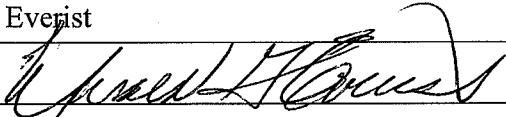
See Explanation
in Exhibit No.

Exhibit No.
9

PREPARER'S CERTIFICATION ON PAGE 4 MUST BE COMPLETED AND SIGNED.

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name Donald G. Everist		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date December 14, 2011	
Mailing Address Cohen, Dippell and Everist, P.C., 1420 N Street, NW, Suite One			
City Washington		State or Country (if foreign address) DC	ZIP Code 20005
Telephone Number (include area code) (202) 898-0111		E-Mail Address (if available) cde@attglobal.net	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001),
AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)),
AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).