

ENGINEERING STATEMENT
RE REQUEST TO MODIFY
APPLICATION FOR CONSTRUCTION PERMIT
ON BEHALF OF
VERMONT ETV, INC.
WVER-DT, RUTLAND, VERMONT
CHANNEL 9 15 KW ERP DA 385 METERS HAAT

OCTOBER 2004

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)

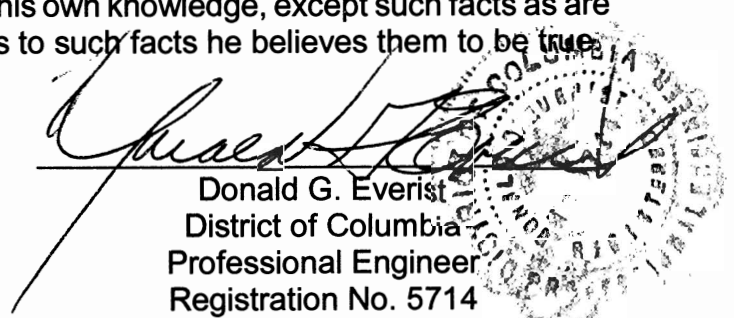
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

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 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

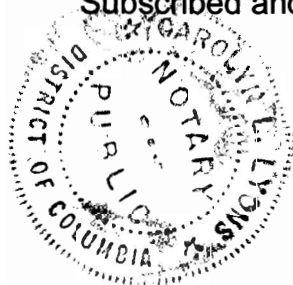
That his qualifications are a matter of record in the Federal Communications Commission;


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 20th day of October, 2004.




Notary Public

My Commission Expires: 2/28/2008

COHEN, DIPPELL AND EVERIST, P. C.

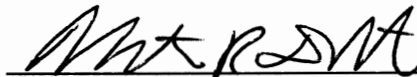
City of Washington)
) ss
District of Columbia)

Martin R. Doczkat being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the Pennsylvania State University, and is a staff engineer at Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

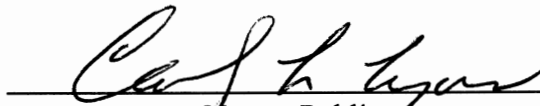
That the attached engineering report was prepared by him or under his supervision and direction and

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.



Martin R. Doczkat

Subscribed and sworn to before me this 20th day of October, 2004.



Notary Public

My Commission Expires: 2/28/2008



This engineering statement has been prepared on behalf of Vermont ETV, Inc., licensee of WVER(TV), Rutland, Vermont. The purpose of this engineering statement is to accompany its request to amend its outstanding application for a construction permit (FCC File No. BPEDT-20000501AFX). This report and the following exhibits supplement that required in the FCC Form 340, Section VII. This report is a response to the order that Vermont ETV, Inc. must submit a minor change application within 45 days of the effective date, as stated in MB Docket No. 02-66 (RM-10252).

WVER(TV) operates on NTSC television Channel 28 with a maximum visual effective radiated power ("ERP") of 275 kW at a height above average terrain ("HAAT") of 429 meters (1407 feet). WVER(TV) has been allocated DTV Channel 56 with facilities of 50 kW ERP at a HAAT of 429 meters (1407 feet) in the revised DTV Table of Allotments.¹ In MB Docket No. 02-66 (RM-10252) it is ordered by the FCC that the DTV Table of Allotments (Section 73.622(b) of the Rules) be amended so that the community of Rutland, Vermont, will be allotted channel *9 effective October 25, 2004. In the revised DTV Table of Allotments, WVER(TV) is authorized to construct DTV facilities of 15 kW directional ERP on Channel 9 at a HAAT of 411 meters. WVER(TV) proposes to construct DTV facilities of 15 kW directional horizontal ERP and 3.7 kW directional vertical ERP on channel 9 at a HAAT of 385 meters. The proposed HAAT is lower than that specified by the aforementioned Report & Order (MB Docket No. 02-66 (RM-102552)).

¹In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service", MM Docket No. 87-286, Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order (FCC 98-24), 2/12/98, DTV Table of Allotments, p. B-58.

There are no AM stations located within 3.22 km of the existing WVER(TV) tower site. There are two FM stations (WVRT(FM) and WEXP(FM)), one NTSC station (WVER(TV)), and one NTSC translator (W61CE) operating within 100 meters from the tower.

The TV antenna will be side-mounted on the existing tower having a total overall structure height above ground of 94.5 meters. The existing transmitter site is located at the summit of Grandpa's Knob. The tower registration number is 1210439.

Since there is no change in overall height, FAA airspace approval is not required.

The geographic coordinates of the site have been abstracted from the FAA Study No. 99-ANE-0415-OE (measured in NAD-83 and converted to NAD-27) and are as follows:

North Latitude: 43° 39' 31"

West Longitude: 73° 06' 25"

NAD-27

Equipment Data

Antenna: Dielectric, Type THV-6A9-VP-R C160 (or equivalent) antenna with 1.5° electrical beam tilt. The vertical plane pattern and other exhibits required by Section 73.625(c) are herein included in Exhibit E-2

Power Data

Transmitter power output:	2.2 kW	3.36 dBk
Transmission line loss: (225' of 50 ohm 1-5/8" Dielectric EIA Style Rigid TL)	85.2%	0.70 dB
Input power to antenna:	1.8 kW	2.67 dBk

Antenna gain:	8.1	9.10 dB	(horizontal)
	2.0	3.07 dB	(vertical)
Maximum Effective Radiated Power:	15.0 kW	11.76 dBk	(horizontal)
	3.7 kW	5.68 dBk	(vertical)

Elevation Data

(Existing Tower; No Change in Overall Height)

Overall height above ground of the existing antenna structure (including beacon)	94.5 meters
Center of radiation of Channel 9 antenna above ground	39.6 meters
Elevation of site above mean sea level	602.0 meters
Center of radiation of Channel 9 antenna above mean sea level	641.6 meters
Overall height above mean sea level of existing tower (including beacon)	696.5 meters
Antenna height above average terrain	385 meters

Note: Slight height differences may result due to conversion to metric.

Allocation

As reported in MB Docket No. 02-66 (RM-10252) Paragraph 3, Canadian concurrence has been obtained for the proposed operation. Furthermore, Paragraph 3 specifies that the authorized facility has been considered acceptable under the 2% *de minimis* criterion for modification requests. No other interference analysis should be necessary as the proposed facility will operate at a lower height and predicted coverage for the proposed

facility will not extend past the coverage authorized by MB Docket No. 02-66 (RM-10252) in any direction.

Other Licensed and Broadcast Facilities

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility. If required, the applicant will install filters or take other measures as necessary to resolve the problem.

FCC Rule, Section 1.1307

The proposed 15 kW horizontally polarized and 3.7 kW vertically polarized operation will utilize a Dielectric THV-6A9-VP-RC160 antenna (or the equivalent) with a center of radiation above ground of 39.6 meters. The proposed antenna will be side-mounted on an existing single guyed, uniform, cross-section, steel lattice tower. For the proposed DTV operation, the antenna manufacturer representative indicates that the elevation pattern for this antenna shows a maximum relative field of less than 0.2 towards the ground in the vicinity of the tower.

For NTSC Station WVER(TV) a relative field factor of 0.2 will be assumed. The licensed operation of WVER(TV) is 275 kW ERP at a center of radiation above ground of 86 meters.

WRVT(FM) operates with a license of 2.8 kW at a center of radiation above ground of 61 meters, and WEXP(FM) operates with a license of 350 watts at a center of radiation above ground of 53 meters. W61CE operates with 10 kW at 76 meters above ground.

Therefore, the radio frequency field ("RFF") study will consider the following stations:

Station

WVER(TV)	Channel 28
WVER-DT	Channel 9
WRVT(FM)	Channel 204
WEXP(FM)	Channel 268
W61CE (TX)	Channel 61

The RFF contribution of each station will be calculated using the following formula:

$$S = \frac{33.4(F^2) \text{ Total ERP}}{R^2}$$

where:

S = power density in $\mu\text{W}/\text{cm}^2$

F = relative field factor

Total ERP = ERP Horizontal Polarization + ERP Vertical Polarization

R = RCAGL - 2 meters

ERP = RMS ERP in watts for DTV Stations

ERP = $[0.4 \text{ ERP}_V + \text{ERP}_A]$ for NTSC Stations

ERP_V = peak visual ERP in watts

ERP_A = RMS aural ERP in watts

WVER(TV) NTSC Facility

Channel 28	Freq:	554-560 MHz range
	ERP =	275 kW
	Polarization =	Horizontal
	RCAGL -2 meters =	84 meters

WVER(TV) is using a Harris, Type TWS-30 antenna. The field factor is assumed to be less than 0.2 at any angle greater than 45 degrees below the horizon. A value of 0.2 will be used in the calculation.

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2}$$

Tot ERP = 275 kW (Horizontal Only)
R = 84 meters
F = 0.2 (field factor)

$$S = 52.1 \mu\text{W}/\text{cm}^2$$

WVER(TV) contributes $52.1 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for an uncontrolled environment is $f/1500$ for a station broadcasting in the 554-560 MHz range.

$$(557 \text{ MHz})/1500 = 371.3 \mu\text{W}/\text{cm}^2 \text{ is the RFF limit for WVER(TV).}$$

Therefore:

WVER(TV) NTSC facility contributes 14.0% RFF for an uncontrolled environment two meters above ground at the tower site.

WVER-DT DTV Facility

Channel 9	Freq:	186-192 MHz range
	ERP =	15.0 kW + 4.0 kW
	Polarization =	Horizontal + Vertical
	RCAGL -2 meters =	37.6 meters

WVER-DT proposes to utilize a Dielectric, Type THV-6A9-VP-R C160, antenna with 1.50° electrical beam tilt. The manufacturer's vertical plane pattern for this antenna is included as Exhibit E-2. Based on this plot, the field factor will be less than 0.2 at any angle greater than 20 degrees below the horizon. A value of 0.2 will be used in the calculation.

$$S = \frac{33.4 (F^2) \text{Tot ERP}}{R^2}$$

Tot ERP = 15000 watts Horizontal + 4000 watts Vertical
 $R = 37.6$ meters
 $F = 0.2$ (field factor)

$$S = 18.0 \mu\text{W}/\text{cm}^2$$

WVER-DT contributes $18.0 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for an uncontrolled environment is $200 \mu\text{W}/\text{cm}^2$ for a station broadcasting on 189 MHz.

Therefore:

WVER-DT facility contributes 9.0% RFF for an uncontrolled environment two meters above ground at the tower site.

WRVT(FM) FM Facility

Channel 204 Freq: 88.6-88.8 MHz range
 ERP = 2.8 kW Horizontal + 2.5 kW Vertical
 RCAGL -2 meters = 59 meters

WRVT(FM) is assumed to have a field factor less than 0.3 at any angle greater than 45 degrees below the horizon. A value of 0.3 will be used in the calculation.

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \begin{array}{l} \text{Tot ERP} = 2.8 \text{ kW Horizontal} + 2.5 \text{ kW Vertical} \\ R = 59 \text{ meters} \\ F = 0.3 \text{ (field factor)} \end{array}$$

$$S = 4.6 \mu\text{W}/\text{cm}^2$$

WRVT(FM) contributes $4.6 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.
 The limit for an uncontrolled environment is $200 \mu\text{W}/\text{cm}^2$ for a station broadcasting on 88.7 MHz.

Therefore:

WRVT(FM) FM facility contributes 2.3% RFF for an uncontrolled environment two meters above ground at the tower site.

WEXP(FM) FM Facility

Channel 268 Freq: 101.4-101.6 MHz range
 ERP = 350 watts
 Polarization = Horizontal + Vertical
 RCAGL -2 meters = 51 meters

WEXP(FM) is assumed to have a field factor less than 0.3 at any angle greater than 45 degrees below the horizon. A value of 0.3 will be used in the calculation.

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \begin{array}{l} \text{Tot ERP} = 350 \text{ watts (Horizontal} + \text{ Vertical)} \\ R = 51 \text{ meters} \\ F = 0.3 \text{ (field factor)} \end{array}$$

$$S = 0.8 \mu\text{W}/\text{cm}^2$$

WEXP(FM) contributes $0.8 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for an uncontrolled environment is $200 \mu\text{W}/\text{cm}^2$ for a station broadcasting on 101.5 MHz.

Therefore:

WEXP(FM) FM facility contributes 0.4% RFF for an uncontrolled environment two meters above ground at the tower site.

W61CE (TX) NTSC Translator Facility

Channel 61	Freq:	752-758 MHz range
	ERP =	10 kW
	Polarization =	Horizontal
	RCAGL -2 meters =	74 meters

W61CE (TX) is assumed to have a field factor less than 0.2 at any angle greater than 45 degrees below the horizon. A value of 0.2 will be used in the calculation.

$$S = \frac{33.4 (F^2) \text{Tot ERP}}{R^2}$$

Tot ERP = 10 kW (Horizontal Only)
R = 74 meters
F = 0.2 (field factor)

$$S = 2.4 \mu\text{W}/\text{cm}^2$$

W61CE (TX) contributes $2.4 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for an uncontrolled environment is $f/1500$ for a station broadcasting in the 752-758 MHz range.

$$(755 \text{ MHz})/1500 = 503.3 \mu\text{W}/\text{cm}^2 \text{ is the RFF limit for W61CE (TX).}$$

Therefore:

W61CE (TX) NTSC translator facility contributes 0.5% RFF for an uncontrolled environment two meters above ground at the tower site.

Total RFF at Site

The total RFF contribution for all transmitters can now be calculated:

$$\text{Total RFF} = 52.1 + 18.0 + 4.6 + 0.8 + 2.4 = 77.9 \mu\text{W}/\text{cm}^2$$

$$\text{Total RFF} = 14.0\% + 9.0\% + 2.3\% + 0.4\% + 0.5\% = 26.2\%$$

The total contribution of all stations, 2 meters above the ground at the base of the tower, will be approximately 26.2% of the current FCC guidelines for general population exposure.

Authorized personnel and rigging contractors will be alerted to the potential zone of high radiation on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

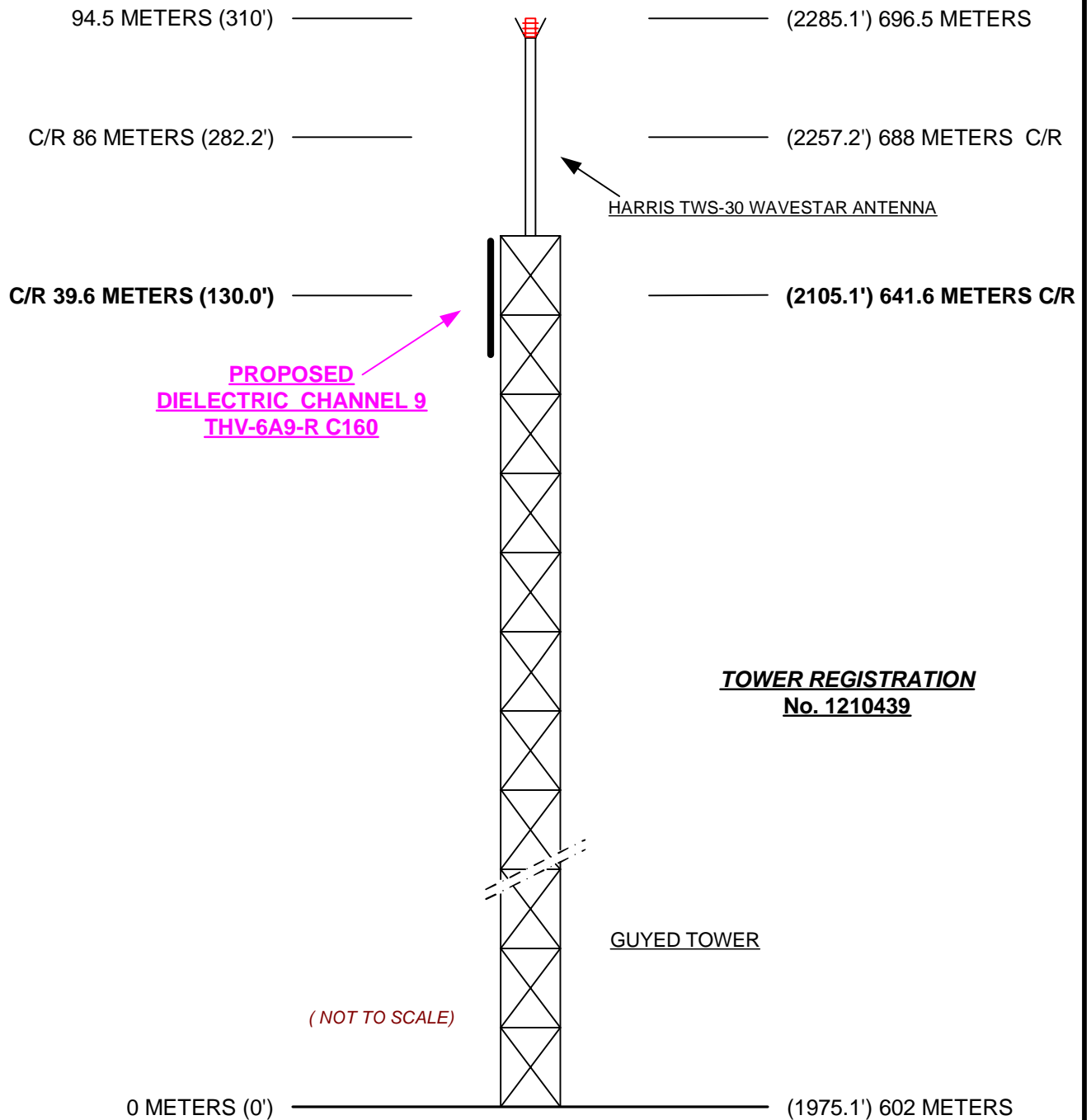
An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations since the licensee indicates:

- (a)(1) The existing tower is not located in an officially designated wilderness area.
- (a)(2) The existing tower is not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The existing tower is not located near any known Indian religious sites.
- (a)(6) The existing tower is not located in a flood plain.

- (a)(7) The installation of the DTV facilities on an existing guyed tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin 65, Edition 97-01 and Supplement A. Authorized personnel will be alerted to areas of the antennas where potential radiation levels are in excess of the FCC guidelines. A security fence with a locked gate precludes access to the tower site.

ABOVE GROUND

ABOVE MEAN SEA LEVEL



TOWER REGISTRATION
No. 1210439

(NOT TO SCALE)

GUYED TOWER

EXHIBIT E-1
VERTICAL SKETCH
FOR THE PROPOSED OPERATION OF
WVER-DT, RUTLAND, VERMONT
CHANNEL 9 15 kW ERP DA 385 METERS HAAT
OCTOBER 2004

COHEN, DIPPELL and EVERIST, P.C. Consulting Engineers Washington, D.C.

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

WVER-DT, RUTLAND, VERMONT

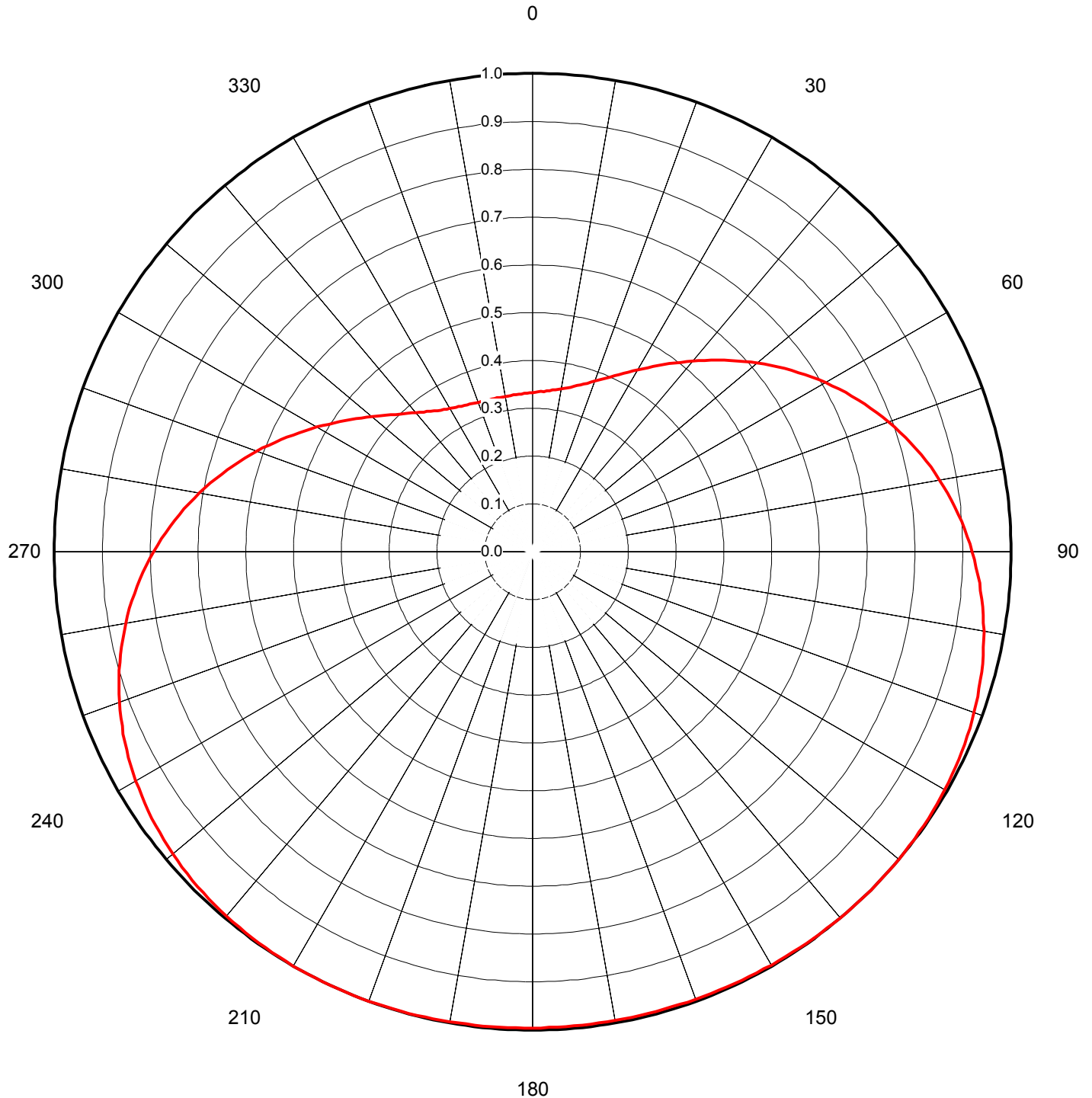


Proposal Number	DCA-10705	Revision:	1
Date	20-Oct-04		
Call Letters	WVER-DT	Channel	9
Location	Rutland, VT		
Customer			
Antenna Type	THV-6A9/VP-R C160 SM		

AZIMUTH PATTERN

Gain	1.60	(2.04 dB)
Calculated / Measured	Calculated	

Frequency	189.00 MHz
Drawing #	THV-C160-1890





Proposal Number **DCA-10705** Revision: **1**
 Date **20-Oct-04**
 Call Letters **WVER-DT** Channel **9**
 Location **Rutland, VT**
 Customer
 Antenna Type **THV-6A9/VP-R C160 SM**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **THV-C160-1890**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.332	45	0.566	90	0.919	135	1.000	180	0.996	225	0.990	270	0.792	315	0.406
1	0.333	46	0.576	91	0.923	136	1.000	181	0.996	226	0.988	271	0.784	316	0.400
2	0.334	47	0.585	92	0.928	137	1.000	182	0.996	227	0.987	272	0.776	317	0.395
3	0.335	48	0.595	93	0.932	138	1.000	183	0.996	228	0.985	273	0.768	318	0.389
4	0.336	49	0.604	94	0.936	139	1.000	184	0.996	229	0.984	274	0.760	319	0.384
5	0.337	50	0.613	95	0.940	140	1.000	185	0.996	230	0.982	275	0.751	320	0.379
6	0.338	51	0.623	96	0.944	141	0.999	186	0.997	231	0.980	276	0.742	321	0.375
7	0.340	52	0.632	97	0.948	142	0.999	187	0.997	232	0.978	277	0.734	322	0.370
8	0.342	53	0.642	98	0.951	143	0.999	188	0.997	233	0.976	278	0.725	323	0.367
9	0.344	54	0.651	99	0.954	144	0.999	189	0.997	234	0.974	279	0.716	324	0.363
10	0.346	55	0.661	100	0.958	145	0.999	190	0.998	235	0.971	280	0.707	325	0.359
11	0.348	56	0.670	101	0.961	146	0.998	191	0.998	236	0.969	281	0.698	326	0.356
12	0.350	57	0.679	102	0.964	147	0.998	192	0.998	237	0.966	282	0.689	327	0.353
13	0.353	58	0.689	103	0.966	148	0.998	193	0.998	238	0.964	283	0.679	328	0.350
14	0.356	59	0.698	104	0.969	149	0.998	194	0.998	239	0.961	284	0.670	329	0.348
15	0.359	60	0.707	105	0.971	150	0.998	195	0.999	240	0.958	285	0.661	330	0.346
16	0.363	61	0.716	106	0.974	151	0.997	196	0.999	241	0.954	286	0.651	331	0.344
17	0.367	62	0.725	107	0.976	152	0.997	197	0.999	242	0.951	287	0.642	332	0.342
18	0.370	63	0.734	108	0.978	153	0.997	198	0.999	243	0.948	288	0.632	333	0.340
19	0.375	64	0.742	109	0.980	154	0.997	199	0.999	244	0.944	289	0.623	334	0.338
20	0.379	65	0.751	110	0.982	155	0.996	200	1.000	245	0.940	290	0.613	335	0.337
21	0.384	66	0.760	111	0.984	156	0.996	201	1.000	246	0.936	291	0.604	336	0.336
22	0.389	67	0.768	112	0.985	157	0.996	202	1.000	247	0.932	292	0.595	337	0.335
23	0.395	68	0.776	113	0.987	158	0.996	203	1.000	248	0.928	293	0.585	338	0.334
24	0.400	69	0.784	114	0.988	159	0.996	204	1.000	249	0.923	294	0.576	339	0.333
25	0.406	70	0.792	115	0.990	160	0.996	205	1.000	250	0.919	295	0.566	340	0.332
26	0.412	71	0.800	116	0.991	161	0.995	206	1.000	251	0.914	296	0.557	341	0.332
27	0.418	72	0.808	117	0.992	162	0.995	207	1.000	252	0.909	297	0.548	342	0.331
28	0.425	73	0.815	118	0.993	163	0.995	208	1.000	253	0.904	298	0.539	343	0.331
29	0.432	74	0.823	119	0.994	164	0.995	209	1.000	254	0.899	299	0.530	344	0.331
30	0.439	75	0.830	120	0.995	165	0.995	210	1.000	255	0.893	300	0.520	345	0.330
31	0.446	76	0.837	121	0.996	166	0.995	211	0.999	256	0.888	301	0.512	346	0.330
32	0.454	77	0.844	122	0.996	167	0.995	212	0.999	257	0.882	302	0.503	347	0.330
33	0.462	78	0.851	123	0.997	168	0.995	213	0.999	258	0.876	303	0.494	348	0.330
34	0.469	79	0.857	124	0.998	169	0.995	214	0.998	259	0.870	304	0.486	349	0.330
35	0.478	80	0.864	125	0.998	170	0.995	215	0.998	260	0.864	305	0.478	350	0.330
36	0.486	81	0.870	126	0.998	171	0.995	216	0.998	261	0.857	306	0.469	351	0.330
37	0.494	82	0.876	127	0.999	172	0.995	217	0.997	262	0.851	307	0.462	352	0.330
38	0.503	83	0.882	128	0.999	173	0.995	218	0.996	263	0.844	308	0.454	353	0.330
39	0.512	84	0.888	129	0.999	174	0.995	219	0.996	264	0.837	309	0.446	354	0.330
40	0.520	85	0.893	130	1.000	175	0.995	220	0.995	265	0.830	310	0.439	355	0.330
41	0.530	86	0.899	131	1.000	176	0.995	221	0.994	266	0.823	311	0.432	356	0.331
42	0.539	87	0.904	132	1.000	177	0.995	222	0.993	267	0.815	312	0.425	357	0.331
43	0.548	88	0.909	133	1.000	178	0.995	223	0.992	268	0.808	313	0.418	358	0.331
44	0.557	89	0.914	134	1.000	179	0.995	224	0.991	269	0.800	314	0.412	359	0.332



Proposal Number

Date

Call Letters

Location

Customer

Antenna Type

21 Oct 2004

WVER-DT

Rutland, VT

Revision

Channel

9

AZIMUTH PATTERN

Gain

Calculated / Measured

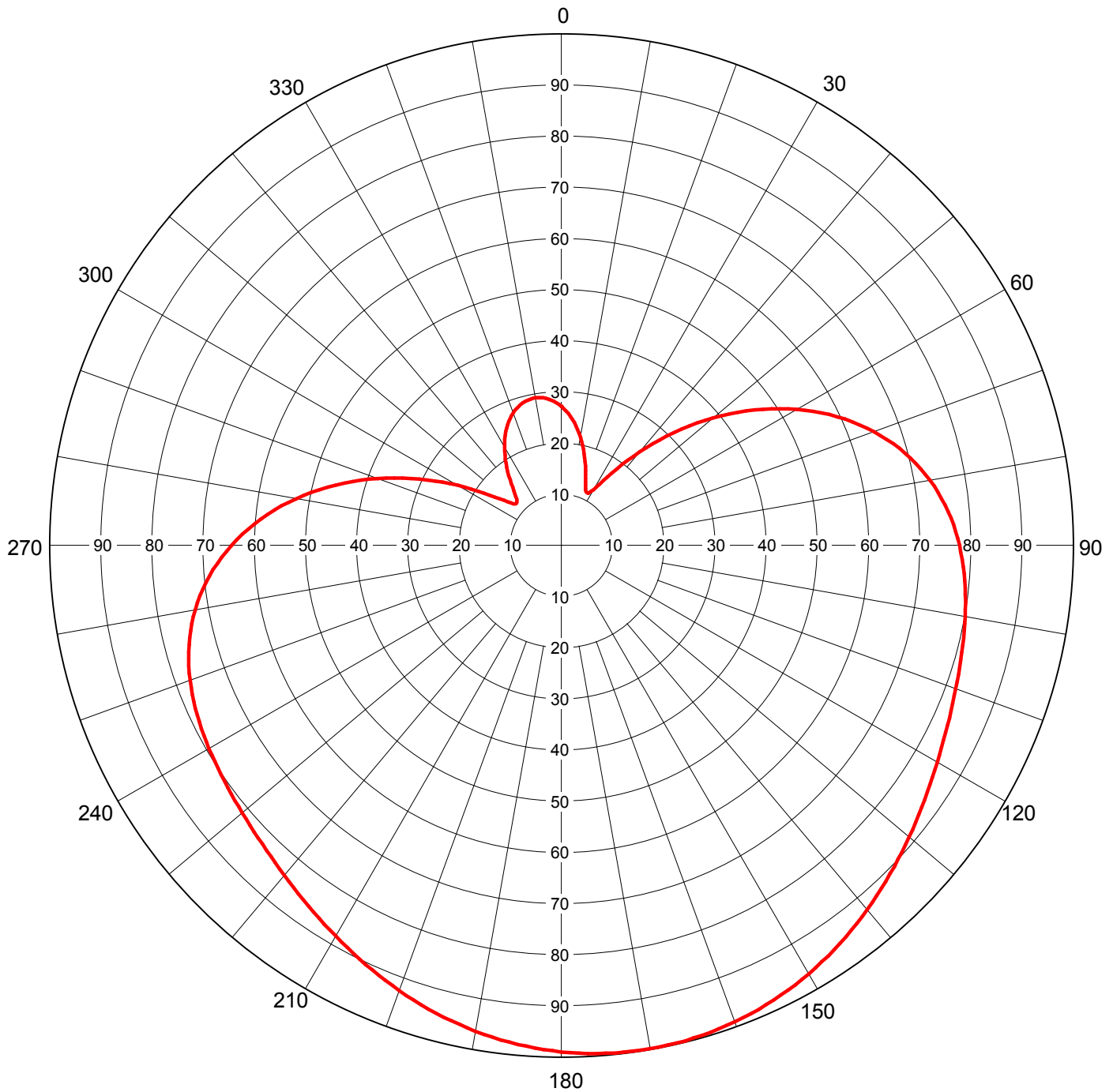
0.00 (0.00 dB)

Calculated

Frequency

Drawing #

189 MHz



Remarks:



Proposal Number

Date

Call Letters

Location

Customer

Antenna Type

21 Oct 2004

WVER-DT

Rutland, VT

Revision

Channel **9**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **X**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.271	45	0.311	90	0.778	135	0.909	180	0.990	225	0.826	270	0.644	315	0.122
1	0.267	46	0.326	91	0.781	136	0.913	181	0.988	226	0.823	271	0.634	316	0.126
2	0.263	47	0.342	92	0.784	137	0.917	182	0.986	227	0.821	272	0.623	317	0.130
3	0.258	48	0.357	93	0.786	138	0.921	183	0.984	228	0.818	273	0.612	318	0.135
4	0.253	49	0.372	94	0.789	139	0.926	184	0.982	229	0.816	274	0.601	319	0.141
5	0.247	50	0.387	95	0.791	140	0.930	185	0.979	230	0.814	275	0.589	320	0.148
6	0.241	51	0.402	96	0.793	141	0.934	186	0.977	231	0.811	276	0.577	321	0.155
7	0.235	52	0.417	97	0.796	142	0.938	187	0.974	232	0.809	277	0.565	322	0.162
8	0.229	53	0.432	98	0.798	143	0.942	188	0.971	233	0.807	278	0.552	323	0.170
9	0.222	54	0.447	99	0.799	144	0.946	189	0.968	234	0.805	279	0.539	324	0.178
10	0.215	55	0.461	100	0.801	145	0.950	190	0.965	235	0.804	280	0.526	325	0.185
11	0.208	56	0.476	101	0.803	146	0.953	191	0.961	236	0.802	281	0.512	326	0.193
12	0.200	57	0.490	102	0.805	147	0.957	192	0.958	237	0.800	282	0.498	327	0.200
13	0.193	58	0.504	103	0.807	148	0.960	193	0.954	238	0.798	283	0.484	328	0.208
14	0.185	59	0.518	104	0.808	149	0.964	194	0.950	239	0.797	284	0.470	329	0.215
15	0.177	60	0.531	105	0.810	150	0.967	195	0.947	240	0.795	285	0.456	330	0.222
16	0.169	61	0.544	106	0.812	151	0.970	196	0.943	241	0.793	286	0.441	331	0.229
17	0.161	62	0.557	107	0.814	152	0.973	197	0.939	242	0.791	287	0.427	332	0.235
18	0.154	63	0.570	108	0.816	153	0.976	198	0.934	243	0.789	288	0.412	333	0.241
19	0.146	64	0.583	109	0.818	154	0.978	199	0.930	244	0.787	289	0.397	334	0.247
20	0.139	65	0.595	110	0.820	155	0.981	200	0.926	245	0.785	290	0.382	335	0.253
21	0.133	66	0.606	111	0.822	156	0.983	201	0.922	246	0.783	291	0.367	336	0.258
22	0.127	67	0.618	112	0.825	157	0.986	202	0.917	247	0.780	292	0.352	337	0.263
23	0.122	68	0.629	113	0.827	158	0.988	203	0.913	248	0.778	293	0.336	338	0.267
24	0.118	69	0.639	114	0.830	159	0.989	204	0.909	249	0.775	294	0.321	339	0.271
25	0.115	70	0.650	115	0.833	160	0.991	205	0.904	250	0.772	295	0.306	340	0.275
26	0.114	71	0.660	116	0.835	161	0.993	206	0.900	251	0.769	296	0.292	341	0.279
27	0.114	72	0.669	117	0.838	162	0.994	207	0.895	252	0.765	297	0.277	342	0.282
28	0.117	73	0.678	118	0.842	163	0.995	208	0.891	253	0.761	298	0.262	343	0.284
29	0.121	74	0.687	119	0.845	164	0.997	209	0.886	254	0.757	299	0.248	344	0.287
30	0.126	75	0.695	120	0.848	165	0.997	210	0.882	255	0.753	300	0.234	345	0.289
31	0.133	76	0.703	121	0.852	166	0.998	211	0.878	256	0.748	301	0.221	346	0.290
32	0.141	77	0.711	122	0.855	167	0.999	212	0.873	257	0.743	302	0.207	347	0.291
33	0.151	78	0.718	123	0.859	168	0.999	213	0.869	258	0.738	303	0.195	348	0.292
34	0.161	79	0.725	124	0.863	169	0.999	214	0.865	259	0.732	304	0.183	349	0.293
35	0.173	80	0.731	125	0.867	170	1.000	215	0.861	260	0.726	305	0.171	350	0.293
36	0.185	81	0.738	126	0.871	171	0.999	216	0.857	261	0.720	306	0.160	351	0.292
37	0.197	82	0.743	127	0.875	172	0.999	217	0.853	262	0.713	307	0.151	352	0.291
38	0.210	83	0.749	128	0.879	173	0.998	218	0.849	263	0.706	308	0.142	353	0.290
39	0.224	84	0.754	129	0.883	174	0.998	219	0.845	264	0.698	309	0.135	354	0.289
40	0.238	85	0.758	130	0.887	175	0.997	220	0.842	265	0.690	310	0.129	355	0.287
41	0.252	86	0.763	131	0.891	176	0.996	221	0.838	266	0.682	311	0.124	356	0.284
42	0.267	87	0.767	132	0.896	177	0.995	222	0.835	267	0.673	312	0.121	357	0.282
43	0.281	88	0.771	133	0.900	178	0.993	223	0.832	268	0.664	313	0.120	358	0.279
44	0.296	89	0.774	134	0.904	179	0.992	224	0.829	269	0.654	314	0.121	359	0.275

Remarks:

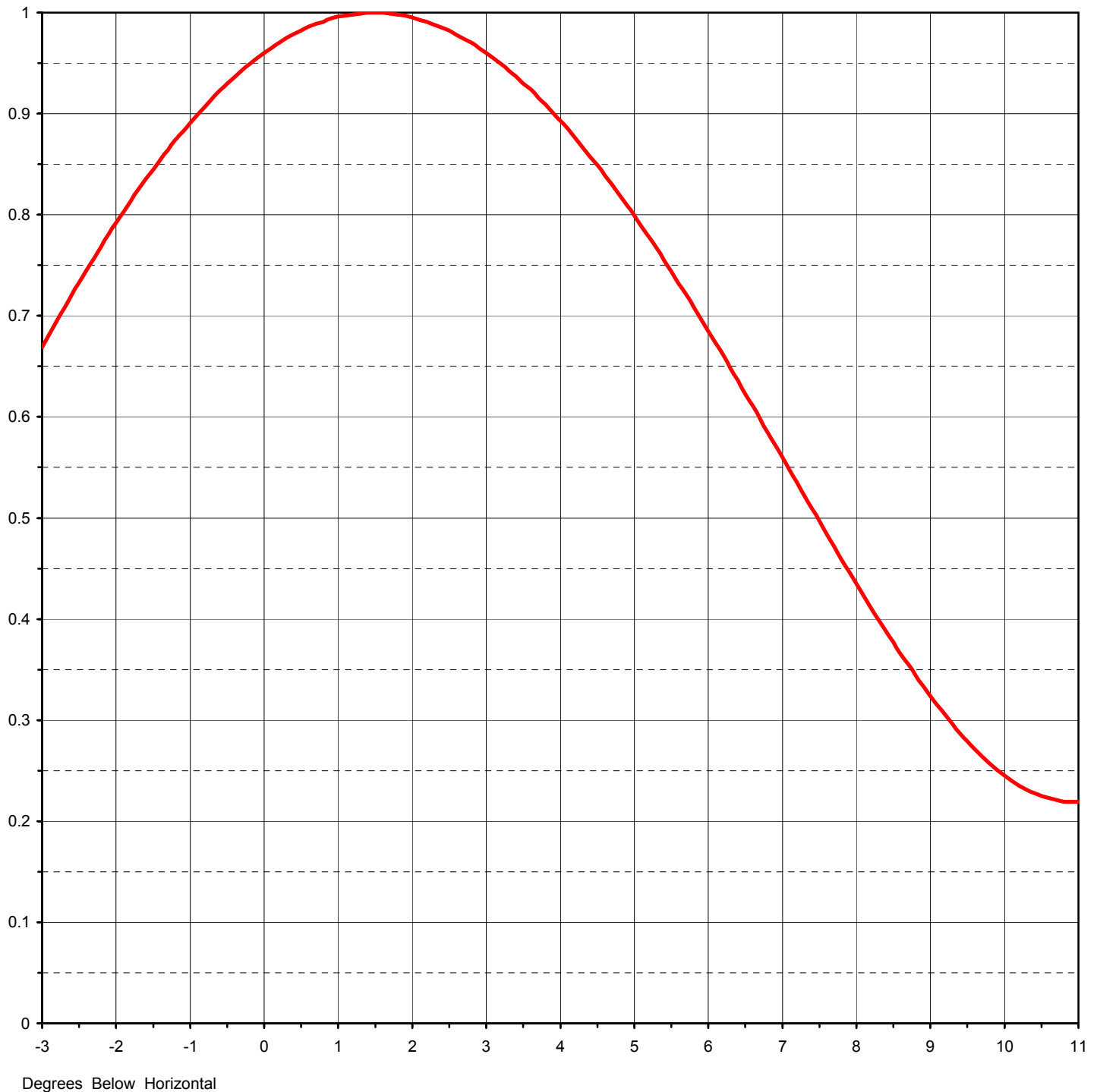


Proposal Number	DCA-10705	Revision:	1
Date	20-Oct-04		
Call Letters	WVER-DT	Channel	9
Location	Rutland, VT		
Customer			
Antenna Type	THV-6A9/VP-R C160 SM		

ELEVATION PATTERN

RMS Gain at Main Lobe	6.00	(7.78 dB)
RMS Gain at Horizontal	5.50	(7.40 dB)
Calculated / Measured	Calculated	

Beam Tilt	1.50 deg
Frequency	189.00 MHz
Drawing #	06V060150



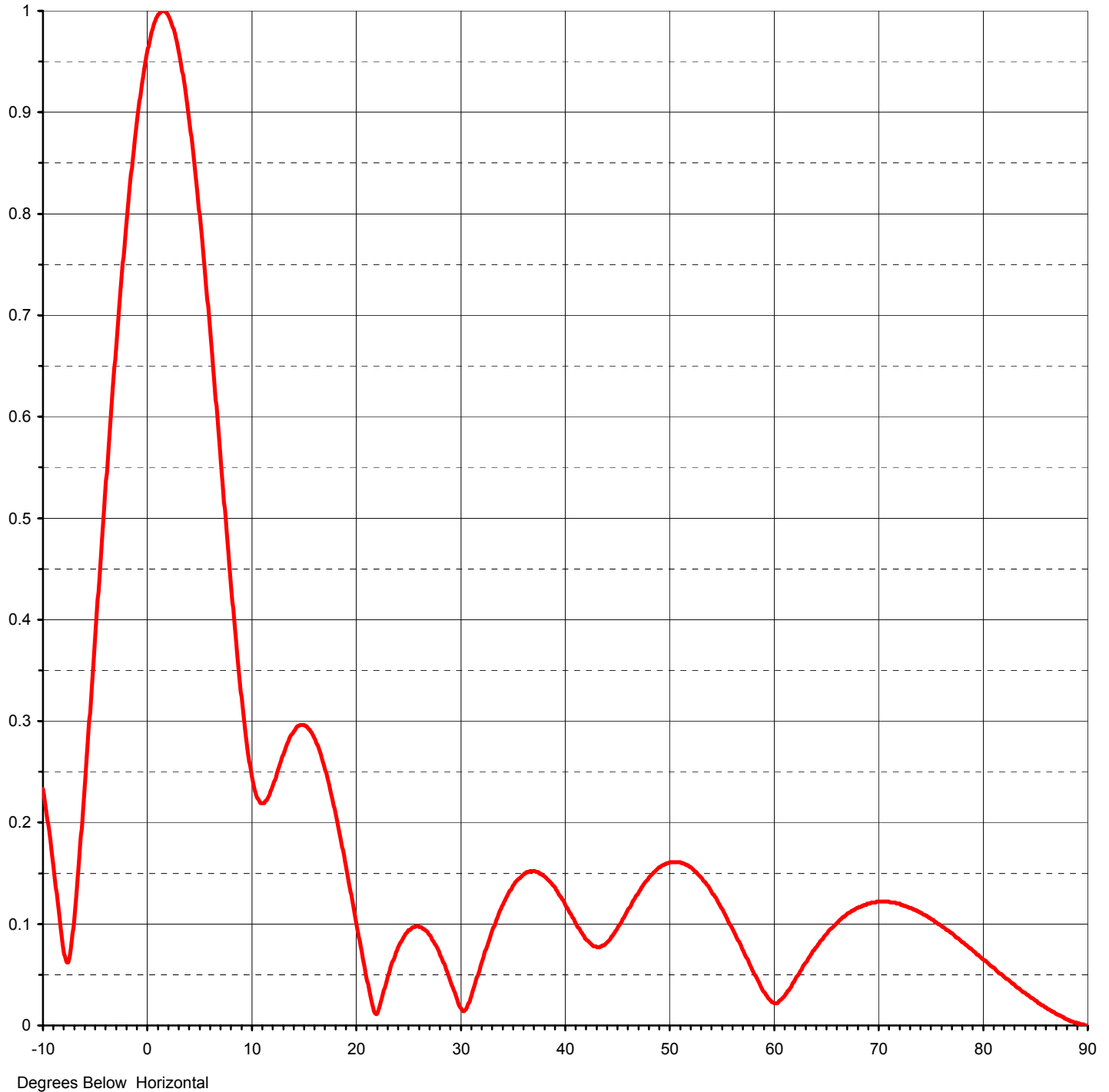


Proposal Number	DCA-10705	Revision:	1
Date	20-Oct-04		
Call Letters	WVER-DT	Channel	9
Location	Rutland, VT		
Customer			
Antenna Type	THV-6A9/VP-R C160 SM		

ELEVATION PATTERN

RMS Gain at Main Lobe	6.00	(7.78 dB)
RMS Gain at Horizontal	5.50	(7.40 dB)
Calculated / Measured	Calculated	

Beam Tilt	1.50 deg
Frequency	189.00 MHz
Drawing #	06V060150-90





Proposal Number **DCA-10705** Revision: **1**
 Date **20-Oct-04**
 Call Letters **WVER-DT** Channel **9**
 Location **Rutland, VT**
 Customer
 Antenna Type **THV-6A9/VP-R C160 SM**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **06V060150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.233	2.4	0.985	10.6	0.225	30.5	0.015	51.0	0.161	71.5	0.121
-9.5	0.198	2.6	0.978	10.8	0.221	31.0	0.026	51.5	0.159	72.0	0.120
-9.0	0.158	2.8	0.970	11.0	0.219	31.5	0.042	52.0	0.156	72.5	0.118
-8.5	0.114	3.0	0.960	11.5	0.222	32.0	0.059	52.5	0.152	73.0	0.116
-8.0	0.073	3.2	0.949	12.0	0.233	32.5	0.075	53.0	0.147	73.5	0.114
-7.5	0.065	3.4	0.937	12.5	0.249	33.0	0.090	53.5	0.141	74.0	0.111
-7.0	0.106	3.6	0.924	13.0	0.264	33.5	0.104	54.0	0.134	74.5	0.108
-6.5	0.167	3.8	0.909	13.5	0.278	34.0	0.116	54.5	0.126	75.0	0.105
-6.0	0.236	4.0	0.893	14.0	0.288	34.5	0.127	55.0	0.117	75.5	0.102
-5.5	0.308	4.2	0.876	14.5	0.295	35.0	0.136	55.5	0.107	76.0	0.098
-5.0	0.382	4.4	0.858	15.0	0.296	35.5	0.143	56.0	0.097	76.5	0.094
-4.5	0.456	4.6	0.839	15.5	0.293	36.0	0.148	56.5	0.087	77.0	0.091
-4.0	0.530	4.8	0.820	16.0	0.285	36.5	0.151	57.0	0.076	77.5	0.087
-3.5	0.601	5.0	0.799	16.5	0.273	37.0	0.152	57.5	0.066	78.0	0.082
-3.0	0.669	5.2	0.778	17.0	0.257	37.5	0.151	58.0	0.055	78.5	0.078
-2.8	0.695	5.4	0.755	17.5	0.237	38.0	0.148	58.5	0.045	79.0	0.074
-2.6	0.721	5.6	0.732	18.0	0.214	38.5	0.143	59.0	0.035	79.5	0.070
-2.4	0.745	5.8	0.709	18.5	0.189	39.0	0.137	59.5	0.027	80.0	0.065
-2.2	0.769	6.0	0.685	19.0	0.162	39.5	0.129	60.0	0.023	80.5	0.061
-2.0	0.792	6.2	0.661	19.5	0.135	40.0	0.121	60.5	0.023	81.0	0.057
-1.8	0.814	6.4	0.636	20.0	0.106	40.5	0.112	61.0	0.028	81.5	0.052
-1.6	0.835	6.6	0.611	20.5	0.078	41.0	0.103	61.5	0.035	82.0	0.048
-1.4	0.855	6.8	0.585	21.0	0.051	41.5	0.094	62.0	0.043	82.5	0.044
-1.2	0.874	7.0	0.560	21.5	0.026	42.0	0.086	62.5	0.052	83.0	0.040
-1.0	0.891	7.2	0.535	22.0	0.011	42.5	0.081	63.0	0.060	83.5	0.036
-0.8	0.907	7.4	0.509	22.5	0.025	43.0	0.078	63.5	0.068	84.0	0.032
-0.6	0.923	7.6	0.484	23.0	0.044	43.5	0.078	64.0	0.076	84.5	0.028
-0.4	0.936	7.8	0.459	23.5	0.061	44.0	0.081	64.5	0.084	85.0	0.024
-0.2	0.949	8.0	0.435	24.0	0.074	44.5	0.087	65.0	0.090	85.5	0.021
0.0	0.960	8.2	0.411	24.5	0.085	45.0	0.094	65.5	0.096	86.0	0.018
0.2	0.970	8.4	0.388	25.0	0.092	45.5	0.103	66.0	0.101	86.5	0.014
0.4	0.979	8.6	0.365	25.5	0.097	46.0	0.112	66.5	0.106	87.0	0.011
0.6	0.986	8.8	0.344	26.0	0.098	46.5	0.121	67.0	0.110	87.5	0.009
0.8	0.991	9.0	0.324	26.5	0.095	47.0	0.129	67.5	0.113	88.0	0.006
1.0	0.996	9.2	0.305	27.0	0.090	47.5	0.137	68.0	0.116	88.5	0.004
1.2	0.998	9.4	0.287	27.5	0.083	48.0	0.144	68.5	0.118	89.0	0.002
1.4	1.000	9.6	0.271	28.0	0.073	48.5	0.150	69.0	0.120	89.5	0.001
1.6	1.000	9.8	0.264	28.5	0.061	49.0	0.155	69.5	0.121	90.0	0.000
1.8	0.998	10.0	0.251	29.0	0.047	49.5	0.158	70.0	0.122		
2.0	0.995	10.2	0.240	29.5	0.033	50.0	0.160	70.5	0.122		
2.2	0.991	10.4	0.231	30.0	0.019	50.5	0.161	71.0	0.122		



Proposal Number
Date
Call Letters
Location
Customer
Antenna Type

DCA-10705
20-Oct-04
WVER-DT
Rutland, VT
THV-6A9/VP-R C160 SM

Revision: **1**
Channel **9**

SYSTEM SUMMARY

Antenna:

Type:	THV-6A9/VP-R C160 SM	ERP:	15 kW	(11.76 dBk)	4 kW	(5.68 dBk)
Channel:	9	Peak Gain*:	8.1	(9.10 dB)	2.0	(3.07 dB)
Location:	Rutland, VT	Input Power:	1.8 kW	(2.67 dBk)		

Transmission Line:

Type:	EIA	Attenuation:	0.70 dB
Size:	1-5/8 in	Efficiency:	85.2%
Impedance:	50 ohm		
Length:	225 ft		68.6 m

Transmitter:

Power Required: **2.2 kW** (3.36 dBk)

* Gain is with respect to half wave dipole.

TABLE I
COMPUTED COVERAGE DATA
FOR PROPOSED DTV OPERATION OF
WVER-DT, RUTLAND, VERMONT
CHANNEL 9 15 KW ERP 385 METERS HAAT
OCTOBER 2004

<u>Radial</u>	<u>Average*</u>	<u>Effective</u>	<u>Depression</u>		<u>Distance to Contour</u>	
<u>N ° E, T</u>	<u>Elevation</u>	<u>Height</u>	<u>Angle</u>	<u>ERP</u>	<u>43 dBu</u>	<u>36 dBu</u>
	meters	meters	degrees	kW	km	km
0	313.7	327.9	0.502	1.65	68.0	80.6
10	177.8	463.8	0.597	1.80	77.7	90.3
20	181.0	460.6	0.595	2.15	79.0	91.4
30	230.3	411.3	0.562	2.89	78.1	90.6
40	267.2	374.4	0.536	4.06	78.4	90.9
50	251.3	390.3	0.547	5.64	81.9	94.5
60	280.6	361.0	0.526	7.50	82.2	94.7
70	284.2	357.4	0.524	9.41	83.6	96.1
80	326.8	314.8	0.491	11.20	81.9	94.2
90	274.2	367.4	0.531	12.67	86.6	99.2
100	272.0	369.6	0.533	13.77	87.5	100.0
110	245.1	396.5	0.552	14.46	89.7	102.4
120	200.2	441.4	0.582	14.85	92.6	106.0
130	188.0	453.6	0.590	15.00	93.4	107.1
140	214.8	426.8	0.572	15.00	91.8	104.9
150	256.7	384.9	0.543	14.94	89.2	101.8
160	362.9	278.7	0.462	14.88	82.0	94.4
170	386.2	255.4	0.443	14.85	80.9	93.5
180	457.9	183.7	0.375	14.88	76.1	88.0
190	368.3	273.3	0.458	14.94	81.8	94.2
200	262.6	379.0	0.539	15.00	88.8	101.4
210	260.3	381.3	0.541	15.00	88.9	101.6
220	195.9	445.7	0.585	14.85	92.8	106.3
230	159.9	481.7	0.608	14.46	95.0	109.0
240	147.2	494.4	0.616	13.77	95.5	109.4
250	169.5	472.1	0.602	12.67	93.3	107.1
260	178.4	463.2	0.596	11.20	91.8	105.2
270	183.2	458.4	0.593	9.41	90.2	103.2
280	181.5	460.1	0.594	7.50	88.7	101.3

TABLE I
COMPUTED COVERAGE DATA
FOR PROPOSED OPERATION OF
WVER-DT, RUTLAND, VERMONT
CHANNEL 9 15 KW ERP 385 METERS HAAT
OCTOBER 2004
 (continued)

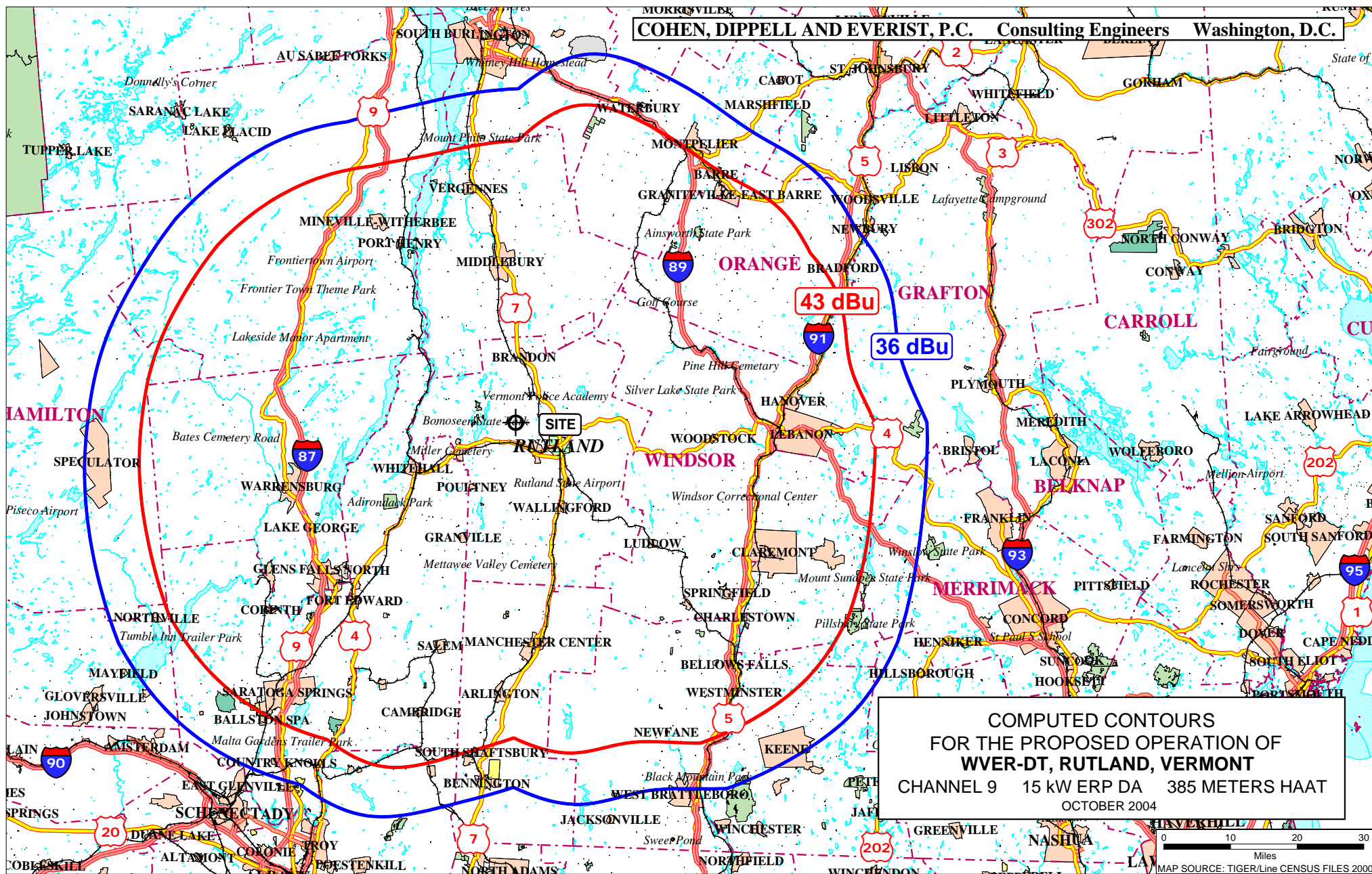
<u>Radial</u> N ° E, T	<u>Average*</u> <u>Elevation</u>	<u>Effective</u> <u>Height</u>	<u>Depression</u> <u>Angle</u>	<u>ERP</u> kW	<u>Distance to Contour</u>	
	meters	meters	degrees		<u>43 dBu</u> km	<u>36 dBu</u> km
290	187.9	453.7	0.590	5.64	86.2	98.4
300	183.7	457.9	0.593	4.06	84.0	96.0
310	196.2	445.4	0.585	2.89	80.4	92.6
320	224.3	417.3	0.566	2.15	76.2	88.8
330	283.5	358.1	0.524	1.80	71.1	83.3
340	312.2	329.4	0.503	1.65	68.2	80.7
350	318.3	323.3	0.498	1.63	67.6	80.2

*Based on data from FCC 3-second data base

DTV Channel 9 (186-192 MHz)
 Average Elevation 3.2 to 16.1 km 256.6 meters AMSL
 Center of Radiation 641.6 meters AMSL
 Antenna Height Above Average Terrain 385 meters
 Effective Radiated Power 15 kW (11.76 dBk) Max.

North Latitude: 43° 39' 31"
 West Longitude: 73° 06' 25"

NAD-27



SECTION VII- DTV Engineering

Complete Questions 1-5 of the Certification Checklist and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Certification Checklist: A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

- (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
- (b) It will operate from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
- (c) It will operate with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No

2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. ☐ Yes ☐ No

Applicant must **submit the Exhibit** called for in Item 13.

3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. ☐ Yes ☐ No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. ☐ Yes ☐ No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. ☐ Yes ☐ No

SECTION VII - DTV Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel Number: DTV _____ Analog TV, if any _____
2. Zone: ☐ I ☐ II ☐ III
3. Antenna Location Coordinates: (NAD 27)
- _____ ° _____ ' _____ " ☐ N ☐ S Latitude
_____ ° _____ ' _____ " ☐ E ☐ W Longitude
4. Antenna Structure Registration Number: _____
- ☐ Not applicable ☐ FAA Notification Filed with FAA
5. Antenna Location Site Elevation Above Mean Sea Level: _____ meters
6. Overall Tower Height Above Ground Level: _____ meters
7. Height of Radiation Center Above Ground Level: _____ meters
8. Height of Radiation Center Above Average Terrain: _____ meters
9. Maximum Effective Radiated Power (average power): _____ kW
10. Antenna Specifications:
- a.

Manufacturer	Model
--------------	-------
- b. Electrical Beam Tilt: _____ degrees ☐ Not Applicable
- c. Mechanical Beam Tilt: _____ degrees toward azimuth _____ degrees True ☐ Not Applicable
- Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). Exhibit No.
- d. Polarization: ☐ Horizontal ☐ Circular ☐ Elliptical

TECH BOX

e. Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional)

Rotation: _____ ° ☐ No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.

11. Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") ☐ Yes ☐ No

If "No," attach as an Exhibit justification therefor, including a summary of any related previously granted waivers.

Exhibit No.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefor. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No.

- a. If **Certification Checklist** Item 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

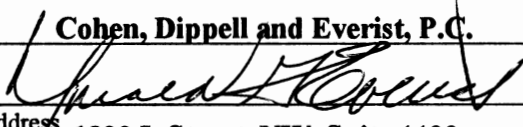
By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.

Section VII -- Preparer's Certification

I certify that I have prepared Section VII (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)
	Cohen, Dippell and Everist, P.C.		Consulting Engineer
Signature			Date October 20, 2004
Mailing Address	1300 L Street, NW Suite 1100		
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).