

ENGINEERING REPORT
RE APPLICATION FOR CONSTRUCTION PERMIT
FOR A NEW DTV STATION
WRIC-DT, PETERSBURG, VIRGINIA
CHANNEL 22 450 KW ERP 328 METERS HAAT

FEBRUARY 2002

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Introduction

This engineering report has been prepared on behalf of Young Broadcasting of Richmond, Inc. (Young), licensee of TV station WRIC-TV, Petersburg, Virginia in support of its application to modify its construction permit (BPCDT-19991022ABD) for a new digital television (DTV) station.

At present, WRIC-TV operates on analog TV Channel 8 (180-186 MHz) with 269 kW effective radiated power (ERP) and 320 meters antenna height above average terrain (HAAT). The current analog Channel 8 operation of WRIC-TV is with a non-directional TV antenna. Station WRIC-TV has been allotted Channel 22 (518-524 MHz) for its digital TV operation with 520.7 kW maximum ERP and 320 meters HAAT. WRIC-DT was granted a construction permit (BPCDT-19991022ABD) to operate on Channel 22 with 450 kW ERP and 329 meters HAAT using a directional TV antenna. It is now proposed to operate WRIC-DT on Channel 22 with maximum ERP of 450 kW at 328 meters HAAT using a non-directional TV antenna.

Antenna Site

It is proposed to top-mount the Channel 22 DTV antenna on a new guyed tower, to be constructed adjacent to the existing WRIC-TV licensed tower. The new tower will also support antennas for other TV stations.

The antenna site is located at 23 Sesame Street, Midlothian District, Chesterfield County, Virginia. The redetermined geographic coordinates (NAD-27) of the new tower based on the Antenna Structure Registration No. 1018227 are as follows.

North Latitude: 37° 30' 45"

West Longitude: 77° 36' 05"

The following data shows the pertinent information concerning the proposed DTV operation.

Antenna and Elevation Data

Antenna:	Dielectric	Model No. TUD-O5-14/70U-1-B
	Beam Tilt	0.5 degrees electrical
	Directivity	Non-Directional
Elevation of the site above mean sea level:		109.1 meters
Elevation of the top of supporting structure: above grounding including DTV antenna		312.7 meters
Elevation of the top of supporting structure: above mean sea level including DTV antenna		421.8 meters
Height of antenna radiation center: meters above ground		284.7 meters
Height of antenna radiation center: above mean sea level		393.8 meters
Height of antenna radiation center: above average terrain		328 meters

Analog TV and DTV Allocation Situation

The allotted maximum permissible ERP for WRIC-DT operation is 520.7 kW at 320 meters HAAT. Since the proposed WRIC-DT operation would be with a non-directional TV antenna with 450 kW ERP, an electromagnetic interference study has been conducted according

to OET Bulletin 69 to determine any potential impact on the existing analog and allotted DTV operations. The attached Table II shows the area and population that may receive interference from the proposed WRIC-DT operation. Table II indicates the potential interference population will not exceed the Commission's guidelines provided in its Public Notice dated August 10, 1998 (Additional Application Processing Guidelines for Digital Television (DTV)). Therefore, the proposed WRIC-DT operation would not have any adverse impact on the existing analog or proposed DTV allotments.

Topographic Data

The average elevation data of the eight cardinal radials from 3.2 to 16.1 kilometers is based on the NGDC 30-second terrain database.

Computed Principal Community Contour

According to Section 73.625 of the Commission's rules DTV stations operating on UHF TV Channels 14-69 are required to provide 41 dBu signal level over the principal community. In addition, under MM Docket No. 00-83, the Commission has mandated that UHF DTV stations provide 48 dBu signal level over its principal community by December 31, 2004.

The predicted 41 dBu and 48 dBu contours were computed according to Section 73.625(b) of the Commission's rules. The average elevation data for eight cardinal and other radials between 3.2 and 16.1 km is based on the 3-second computerized terrain database.

The distances along these radials to the predicted F(50,90) 48 and 41 dBu contours, the average elevations, and the effective antenna heights are included on the attached tabulation (Table I).

The attached map (Exhibits E-3) shows the computed F(50,90) 48 dBu and 41 dBu contours predicted according to Section 73.625(b) of the Commission's rules based on the DTV facilities of 450 kW maximum effective radiated power (ERP) and 328 meters antenna height above average terrain (HAAT). Exhibits E-3 indicates the proposed 48 dBu and 41 dBu contours would serve all of Petersburg, Virginia, the principal community of WRIC-DT.

Environmental Statement

Since the proposed DTV antenna will be installed on a new tower adjacent to the existing WRIC-TV tower, it is believed the environmental concerns listed in Section 1.1307(a) of the Commission's rules are not pertinent; therefore, those issues have not been addressed.

An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields as set forth in the OET Bulletin No. 65 dated August 1997. For a maximum effective radiated power of 450 kW and a radiation center of 284.7 meters above ground level, the proposed DTV operation would have a maximum of 7.5 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$) RF field at 2 meters above the base of tower, conservatively assuming an antenna field factor of 0.2 in the downward direction. The Commission's guidelines for Channel 22 TV operation are $1,727 \mu\text{W}/\text{cm}^2$ for the occupational/controlled and $345 \mu\text{W}/\text{cm}^2$ for the general population/uncontrolled environment. The RF field contributed by WRIC-DT on the ground would be less than 2.2% of the Commission's guidelines for Channel 22.

Therefore, members of the public and personnel working around the proposed WRIC-DT facility would not be exposed to RF fields exceeding the Commission's guidelines due to Channel 22 DTV operation. With respect to work performed on the tower, station WRIC-TV, in coordination with other stations, will establish procedure to ensure that workers are not exposed to RF fields above the Commission's guidelines, by reducing or turning off the power, as appropriate.

For the reasons stated above, it is believed this proposal complies with Section 1.1307(a) and (b) of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from the environmental processing.

TABLE I
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
WRIC-DT, PETERSBURG, VIRGINIA
FEBRUARY 2002

<u>Radial Bearing</u> N °E, T	<u>Average*</u> <u>Elevation</u> <u>of Radial</u> <u>3.2 to 16.1 km</u> meters	<u>Height of R/C</u> <u>Above Average</u> <u>Elevation of Radial</u> <u>3.2 to 16.1 km</u> meters	<u>Depression</u> <u>Angle</u>	<u>Distance to</u> <u>F(50,90) Contour</u>	
				<u>48 dBu</u> km	<u>41 dBu</u> km
0	62.7	331.1	0.504	80.8	93.2
45	65.4	328.4	0.502	80.6	93.0
90	50.0	343.8	0.514	82.1	94.5
135	59.5	334.3	0.506	81.2	93.6
180	63.3	330.5	0.504	80.8	93.2
225	70.5	323.3	0.498	80.0	92.4
270	90.9	302.9	0.482	77.9	90.0
315	67.0	326.8	0.501	80.4	92.8
151	63.6	330.2	0.503	80.7	93.2

Channel 22 (518-524 MHz)
Center of Radiation 393.8 meters AMSL
Antenna Height Above Average Terrain 328 meters
Effective Radiated Power 450 kW (26.53 dBk)

(NAD-27)

North Latitude: 37° 30' 45"
West Longitude: 77° 36' 05"

*NGDC 30-second terrain data base.

TABLE II
summary_file.txt
TV INTERFERENCE and SPACING SUMMARY

Date: 12-06-2001 Time: 17:42:14

WRIC-TV OTHER -SKK316 PETERSBURG VA US
Channel 22 ERP 450 kW HAAT 0 m RCAMSL 00393 m

Facility meets maximum height/power limits

No Spacing violations or contour overlap to Class A stations

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Analysis of Interference to Affected Station 1

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
15	WHROTV	HAMPTON-NORFOLK VA	DTVPLN	-NPLN1547

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
15	WHRO-TV	HAMPTON-NORFOLK VA	BLET	-19980608KE

Proposal causes no interference

##

Analysis of Interference to Affected Station 2

Analysis of current record

TABLE II

Channel	Call	summary_file.txt City/State	Application Ref. No.
19	860410KP	CHARLOTTESVILLE VA	BPCT -19860410KP

Total scenarios = 16

Scenario 1	% New Interference	0.00	OK
Scenario 2	% New Interference	0.00	OK
Scenario 3	% New Interference	0.00	OK
Scenario 4	% New Interference	0.00	OK
Scenario 5	% New Interference	0.00	OK
Scenario 6	% New Interference	0.00	OK
Scenario 7	% New Interference	0.00	OK
Scenario 8	% New Interference	0.00	OK
Scenario 9	% New Interference	0.00	OK
Scenario 10	% New Interference	0.00	OK
Scenario 11	% New Interference	0.00	OK
Scenario 12	% New Interference	0.00	OK
Scenario 13	% New Interference	0.00	OK
Scenario 14	% New Interference	0.00	OK
Scenario 15	% New Interference	0.00	OK
Scenario 16	% New Interference	0.00	OK

##

Analysis of Interference to Affected Station 3

Analysis of current record

Channel	Call	City/State	Application Ref. No.
19	W31BG	YORKTOWN VA	BPTTL -20010601AGA

TABLE II
summary_file.txt

Proposed station is beyond the site to
nearest cell evaluation distance

##

Analysis of Interference to Affected Station 4

DTV Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
21	WBOC-DT	SALISBURY MD	DTVPLN	-DTVP0418

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
16	WBOCTV	SALISBURY MD	DTVPLN	-NPLN0750

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	WBOC-TV	SALISBURY MD	BMPCDT	-20000501ADX

Proposal causes no interference

##

Analysis of Interference to Affected Station 5

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	WBOC-DT	SALISBURY MD	DTVPLN	-DTVP0418

Proposed station is beyond the site to
nearest cell evaluation distance

TABLE II

summary_file.txt

##

Analysis of Interference to Affected Station 6

DTV Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
21	WVPY-DT	FRONT ROYAL VA	DTVPLN	-DTVP0437

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
42	WVPY	FRONT ROYAL VA	DTVPLN	-NPLN1587

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	WVPY	FRONT ROYAL VA	BPEDT	-20000418AAM

Proposal causes no interference

##

Analysis of Interference to Affected Station 7

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	WVPY-DT	FRONT ROYAL VA	DTVPLN	-DTVP0437

Proposed station is beyond the site to
nearest cell evaluation distance

##

Analysis of Interference to Affected Station 8

TABLE II
summary_file.txt

NTSC Baseline Analysis

Channel	Call	City/State	Application Ref. No.
21	WJPR	LYNCHBURG VA	DTVPLN -NPLN1644

Analysis of current record

Channel	Call	City/State	Application Ref. No.
21	WJPR	LYNCHBURG VA	BLCT -19930513KE

Total scenarios = 448

Scenario	1	% New Interference	0.00	OK
Scenario	2	% New Interference	0.00	OK
Scenario	3	% New Interference	0.00	OK
Scenario	4	% New Interference	0.00	OK
Scenario	5	% New Interference	0.00	OK
Scenario	6	% New Interference	0.00	OK
Scenario	7	% New Interference	0.00	OK
Scenario	8	% New Interference	0.00	OK
Scenario	9	% New Interference	0.00	OK
Scenario	10	% New Interference	0.00	OK
Scenario	11	% New Interference	0.00	OK
Scenario	12	% New Interference	0.00	OK
Scenario	13	% New Interference	0.00	OK
Scenario	14	% New Interference	0.00	OK
Scenario	15	% New Interference	0.00	OK
Scenario	16	% New Interference	0.00	OK
Scenario	17	% New Interference	0.00	OK

TABLE II
summary_file.txt

Analysis of Interference to Affected Station 9

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
21	NEW	VIRGINIA BEACH VA	DTNPLN	-NPLN1645

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960723KW	VIRGINIA BEACH VA	BPCT	-19960723KW

Proposal causes no interference

##

Analysis of Interference to Affected Station 10

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960404LP	VIRGINIA BEACH VA	BPCT	-19960404LP

Proposal causes no interference

##

Analysis of Interference to Affected Station 11

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960724LE	VIRGINIA BEACH VA	BPCT	-19960724LE

Total scenarios = 4

Scenario 1 % New Interference 0.00 CK

TABLE II

summary_file.txt

Scenario 2 % New Interference 0.00 OK

Scenario 3 % New Interference 0.00 OK

Scenario 4 % New Interference 0.00 OK

##

Analysis of Interference to Affected Station 12

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960724LL	VIRGINIA BEACH VA	BPCT	-19960724LL

Proposal causes no interference

##

Analysis of Interference to Affected Station 13

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960919KO	VIRGINIA BEACH VA	BPCT	-19960919KO

Proposal causes no interference

##

Analysis of Interference to Affected Station 14

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960111LA	VIRGINIA BEACH VA	BPCT	-19960111LA

Proposal causes no interference

TABLE II

summary_file.txt

##

Analysis of Interference to Affected Station 15

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960614KI	VIRGINIA BEACH VA	BPC7	-19960614KI

Proposal causes no interference

##

Analysis of Interference to Affected Station 16

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	961001XY	VIRGINIA BEACH VA	BPC7	-19961001XY

Proposal causes no interference

##

Analysis of Interference to Affected Station 17

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960718KR	VIRGINIA BEACH VA	BPC7	-19960718KR

Proposal causes no interference

##

Analysis of Interference to Affected Station 18

TABLE II
summary_file.txt

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960925KE	VIRGINIA BEACH VA	BPCT	-19960925KE

Proposal causes no interference

##

Analysis of Interference to Affected Station 19

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	961001XL	VIRGINIA BEACH VA	BPCT	-19961001XL

Total scenarios = 4

Scenario 1 % New Interference	0.00	OK
Scenario 2 % New Interference	0.00	OK
Scenario 3 % New Interference	0.00	OK
Scenario 4 % New Interference	0.00	OK

##

Analysis of Interference to Affected Station 20

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960724LM	VIRGINIA BEACH VA	BPCT	-19960724LM

Proposal causes no interference

##

TABLE II

summary_file.txt

Analysis of Interference to Affected Station 21

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
21	960724LD	VIRGINIA BEACH VA	BFCT	-19960724LD

Proposal causes no interference

##

Analysis of Interference to Affected Station 22

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
22	WMPT	ANNAPOLIS MD	DIVPLN	-NPLN0642

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WMPT	ANNAPOLIS MD	BLET	-381

Total scenarios = 16

Scenario 1	% New Interference	0.00	CK
Scenario 2	% New Interference	0.00	CK
Scenario 3	% New Interference	0.00	CK
Scenario 4	% New Interference	0.00	CK
Scenario 5	% New Interference	0.00	CK
Scenario 6	% New Interference	0.00	CK
Scenario 7	% New Interference	0.00	CK
Scenario 8	% New Interference	0.00	CK
Scenario 9	% New Interference	0.00	CK

TABLE II

summary_file.txt

Scenario 10	% New Interference	0.00	OK
Scenario 11	% New Interference	0.00	OK
Scenario 12	% New Interference	0.00	OK
Scenario 13	% New Interference	0.00	OK
Scenario 14	% New Interference	0.00	OK
Scenario 15	% New Interference	0.00	OK
Scenario 16	% New Interference	0.00	OK

##

Analysis of Interference to Affected Station 23

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WMPT	ANNAPOLIS MD	BPET	-20000503ABO

Total scenarios = 8

Scenario 1	% New Interference	0.00	OK
Scenario 2	% New Interference	0.00	OK
Scenario 3	% New Interference	0.00	OK
Scenario 4	% New Interference	0.00	OK
Scenario 5	% New Interference	0.00	OK
Scenario 6	% New Interference	0.00	OK
Scenario 7	% New Interference	0.00	OK
Scenario 8	% New Interference	0.00	OK

##

TABLE II

summary_file.txt

Analysis of Interference to Affected Station 24

DTV Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
22	WCNC-DT	CHARLOTTE NC	LTVPLN	-D1VP0464

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
36	WCNCTV	CHARLOTTE NC	DTVPLN	-NPLN0985

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WCNC-TV	CHARLOTTE NC	B1201	-19991102ABQ

Total scenarios = 4

Scenario 1	% New Interference	0.00	OK
Scenario 2	% New Interference	0.00	OK
Scenario 3	% New Interference	0.00	OK
Scenario 4	% New Interference	0.00	OK

##

Analysis of Interference to Affected Station 25

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WCNC-TV	CHARLOTTE NC	BPCDI	-19991005ABC

Total scenarios = 4

Scenario 1	% New Interference	0.00	OK
Scenario 2	% New Interference	0.00	OK

TABLE II

summary_file.txt

Scenario 3 % New Interference 0.00 OK

Scenario 4 % New Interference 0.00 OK

##

Analysis of Interference to Affected Station 26

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WCNC-DT	CHARLOTTE NC	DTVPLN	-DTV0464

Total scenarios = 4

Scenario 1 % New Interference 0.00 OK

Scenario 2 % New Interference 0.00 OK

Scenario 3 % New Interference 0.00 OK

Scenario 4 % New Interference 0.00 OK

##

Analysis of Interference to Affected Station 27

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
22	WLFL	RALEIGH NC	DTVPLN	-NPLN0970

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WLFL	RALEIGH NC	BLCT	-19861113KR

Total scenarios = 96

Scenario 1 % New Interference 0.00 OK

TABLE II
summary_file.txt

Analysis of Interference to Affected Station 28

DTV Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
22	WNJS-DT	CAMDEN NJ	DTVPLN	-DTVP0468

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
23	WNJS	CAMDEN NJ	DTVPLN	-NPLN1062

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WNJS	CAMDEN NJ	BPEDT	-20000425AA1

Proposal causes no interference

##

Analysis of Interference to Affected Station 29

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WNJS-DT	CAMDEN NJ	DTVPLN	-DTVP0468

Proposal causes no interference

##

Analysis of Interference to Affected Station 30

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
22	WPTTV	PITTSBURGH PA	DTVPLN	-NPLN1357

TABLE II
summary_file.txt

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
22	WCWB	PITTSBURGH PA	BLCT	-20000724ABO

Proposal causes no interference

##

Analysis of Interference to Affected Station 31

DTV Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
23	WUNK-DT	GREENVILLE NC	DTVPLN	-DTVP0500

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
25	WUNKTV	GREENVILLE NC	DTVPLN	-NPLN0974

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
23	WUNK-TV	GREENVILLE NC	BPEDT	-20000207AAP

##

Analysis of Interference to Affected Station 32

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
23	WUNK-DT	GREENVILLE NC	DTVPLN	-DTVP0500

TABLE II

summary_file.txt

Proposed station is beyond the site to
nearest cell evaluation distance

##

Analysis of Interference to Affected Station 33

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
23	WITD-LP	CHESAPEAKE VA	BFTTL	-19980601UG

Proposed station is beyond the site to
nearest cell evaluation distance

##

Analysis of Interference to Affected Station 34

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
23	WCVETV	RICHMOND VA	DTVPLN	-NPLN1650

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
23	WCVE-TV	RICHMOND VA	BLET	-19940816KE

Total scenarios = 2

Scenario 1 % New Interference 0.00 OK

Scenario 2 % New Interference 0.00 OK

##

Analysis of Interference to Affected Station 35

TABLE II
summary_file.txt

NTSC Baseline Analysis

Channel	Call	City/State	Application	Ref. No.
29	WVIRTV	CHARLOTTESVILLE VA	DTVPLN	-NPLN1574

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
29	WVIR-TV	CHARLOTTESVILLE VA	BLCT	-19930210KE

Total scenarios = 320

Scenario 1 % New Interference	0.00	OK
Scenario 2 % New Interference	0.00	OK
Scenario 3 % New Interference	0.00	OK
Scenario 4 % New Interference	0.00	OK
Scenario 5 % New Interference	0.00	OK
Scenario 6 % New Interference	0.00	OK
Scenario 7 % New Interference	0.00	OK
Scenario 8 % New Interference	0.00	OK
Scenario 9 % New Interference	0.00	OK
Scenario 10 % New Interference	0.00	OK
Scenario 11 % New Interference	0.00	OK
Scenario 12 % New Interference	0.00	OK
Scenario 13 % New Interference	0.00	OK
Scenario 14 % New Interference	0.00	OK
Scenario 15 % New Interference	0.00	OK
Scenario 16 % New Interference	0.00	OK
Scenario 17 % New Interference	0.00	OK

ABOVE MEAN SEA LEVEL

ABOVE GROUND

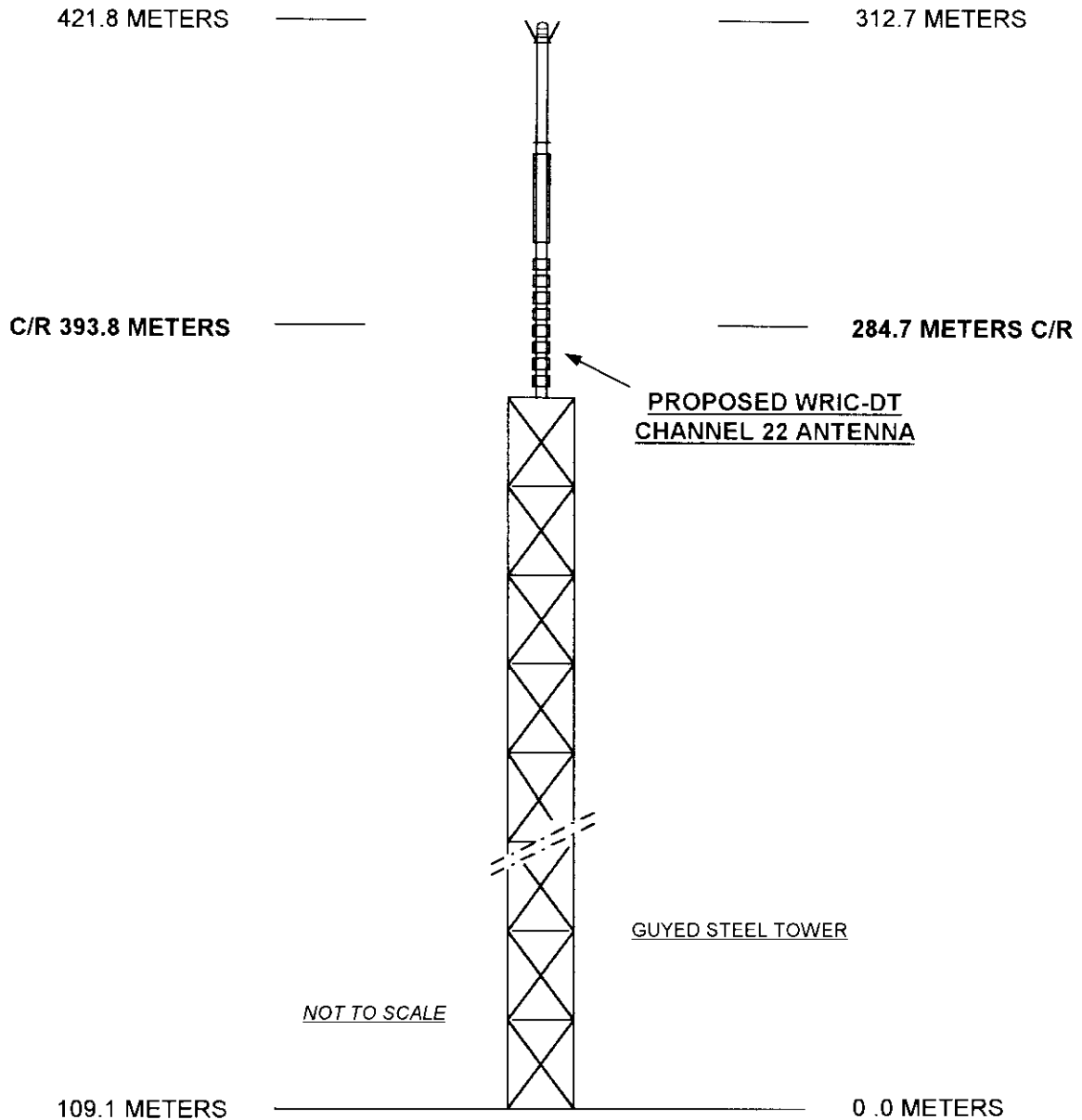


EXHIBIT E - 1
VERTICAL SKETCH
OF ANTENNA SUPPORTING STRUCTURE FOR
WRIC-DT, PETERSBURG, VIRGINIA
FEBRUARY 2002

Proposal Number **DCA-9505**Date **31-Jul-01**Call Letters **WRIC-DT**Channel **22**Location **Richmond, VA**Customer **Spectrasite**Antenna Type **TUD-O5-14/70H-1-B****TABULATION OF ELEVATION PATTERN**Elevation Pattern Drawing #: **14U266050-521B-90**

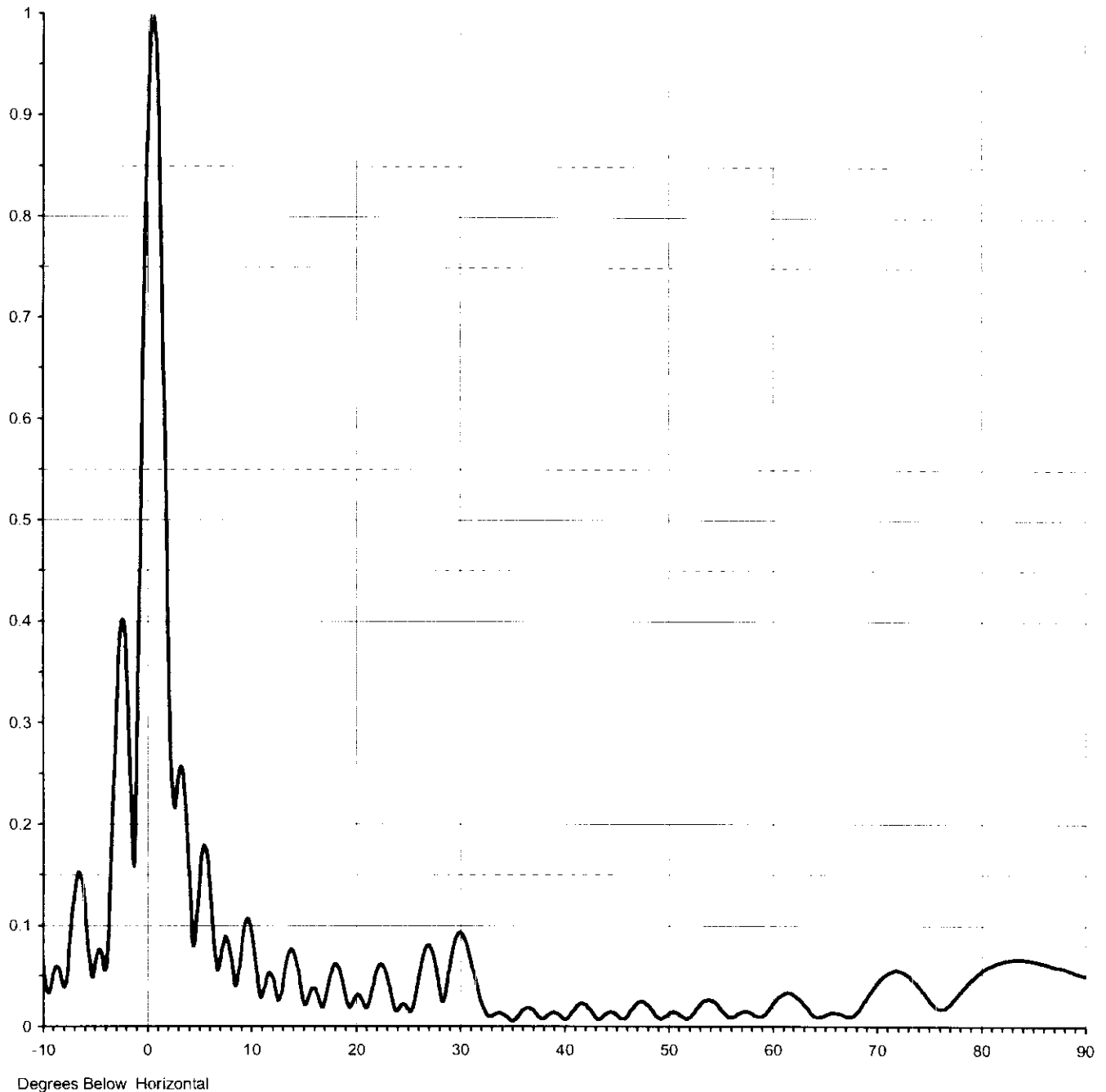
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.060	2.4	0.232	10.6	0.051	30.5	0.087	51.0	0.013	71.5	0.055
-9.5	0.033	2.6	0.216	10.8	0.036	31.0	0.068	51.5	0.009	72.0	0.055
-9.0	0.053	2.8	0.230	11.0	0.029	31.5	0.048	52.0	0.008	72.5	0.053
-8.5	0.057	3.0	0.249	11.5	0.048	32.0	0.028	52.5	0.014	73.0	0.050
-8.0	0.039	3.2	0.257	12.0	0.051	32.5	0.014	53.0	0.021	73.5	0.045
-7.5	0.077	3.4	0.251	12.5	0.030	33.0	0.011	53.5	0.025	74.0	0.039
-7.0	0.133	3.6	0.228	13.0	0.038	33.5	0.013	54.0	0.027	74.5	0.033
-6.5	0.152	3.8	0.192	13.5	0.068	34.0	0.013	54.5	0.024	75.0	0.026
-6.0	0.118	4.0	0.148	14.0	0.076	34.5	0.011	55.0	0.019	75.5	0.021
-5.5	0.058	4.2	0.105	14.5	0.057	35.0	0.006	55.5	0.013	76.0	0.018
-5.0	0.062	4.4	0.080	15.0	0.027	35.5	0.009	56.0	0.009	76.5	0.019
-4.5	0.075	4.6	0.089	15.5	0.028	36.0	0.015	56.5	0.011	77.0	0.023
-4.0	0.058	4.8	0.119	16.0	0.038	36.5	0.019	57.0	0.014	77.5	0.028
-3.5	0.162	5.0	0.149	16.5	0.028	37.0	0.017	57.5	0.015	78.0	0.034
-3.0	0.310	5.2	0.169	17.0	0.022	37.5	0.011	58.0	0.014	78.5	0.040
-2.8	0.357	5.4	0.179	17.5	0.045	38.0	0.008	58.5	0.011	79.0	0.046
-2.6	0.389	5.6	0.176	18.0	0.061	38.5	0.012	59.0	0.010	79.5	0.051
-2.4	0.402	5.8	0.161	18.5	0.056	39.0	0.014	59.5	0.014	80.0	0.055
-2.2	0.392	6.0	0.138	19.0	0.034	39.5	0.013	60.0	0.021	80.5	0.058
-2.0	0.358	6.2	0.110	19.5	0.019	40.0	0.008	60.5	0.027	81.0	0.061
-1.8	0.302	6.4	0.081	20.0	0.029	40.5	0.010	61.0	0.032	81.5	0.063
-1.6	0.230	6.6	0.060	20.5	0.030	41.0	0.017	61.5	0.033	82.0	0.064
-1.4	0.167	6.8	0.056	21.0	0.019	41.5	0.022	62.0	0.032	82.5	0.065
-1.2	0.176	7.0	0.067	21.5	0.031	42.0	0.022	62.5	0.028	83.0	0.066
-1.0	0.270	7.2	0.080	22.0	0.053	42.5	0.018	63.0	0.023	83.5	0.066
-0.8	0.400	7.4	0.088	22.5	0.062	43.0	0.010	63.5	0.016	84.0	0.066
-0.6	0.538	7.6	0.088	23.0	0.052	43.5	0.008	64.0	0.011	84.5	0.065
-0.4	0.670	7.8	0.082	23.5	0.029	44.0	0.012	64.5	0.009	85.0	0.064
-0.2	0.788	8.0	0.068	24.0	0.016	44.5	0.015	65.0	0.012	85.5	0.063
0.0	0.884	8.2	0.052	24.5	0.022	45.0	0.013	65.5	0.014	86.0	0.062
0.2	0.954	8.4	0.041	25.0	0.019	45.5	0.008	66.0	0.014	86.5	0.061
0.4	0.993	8.6	0.044	25.5	0.018	46.0	0.009	66.5	0.013	87.0	0.059
0.6	0.999	8.8	0.060	26.0	0.043	46.5	0.016	67.0	0.010	87.5	0.058
0.8	0.974	9.0	0.078	26.5	0.069	47.0	0.023	67.5	0.010	88.0	0.057
1.0	0.918	9.2	0.093	27.0	0.080	47.5	0.025	68.0	0.014	88.5	0.055
1.2	0.836	9.4	0.103	27.5	0.070	48.0	0.022	68.5	0.021	89.0	0.053
1.4	0.733	9.6	0.106	28.0	0.042	48.5	0.016	69.0	0.028	89.5	0.052
1.6	0.618	9.8	0.105	28.5	0.026	49.0	0.010	69.5	0.036	90.0	0.050
1.8	0.499	10.0	0.099	29.0	0.055	49.5	0.008	70.0	0.043		
2.0	0.386	10.2	0.086	29.5	0.083	50.0	0.012	70.5	0.048		
2.2	0.291	10.4	0.070	30.0	0.093	50.5	0.014	71.0	0.052		



Proposal Number	DCA-9505	
Date	31-Jul-01	
Call Letters	WRIC-DT	Channel 22
Location	Richmond, VA	
Customer	Spectrasite	
Antenna Type	TUD-O5-14/70H-1-B	

ELEVATION PATTERN

RMS Gain at Main Lobe	26.60 (14.25 dB)	Beam Tilt	0.50 deg
RMS Gain at Horizontal	20.80 (13.18 dB)	Frequency	521.00 MHz
Calculated / Measured	Calculated	Drawing #	14U26 6050-521B-90





Proposal Number	DCA-9505		
Date	31-Jul-01		
Call Letters	WRIC-DT	Channel	22
Location	Richmond, VA		
Customer	Spectrasite		
Antenna Type	TUD-05-14/70H-1-B		

ELEVATION PATTERN

RMS Gain at Main Lobe	26.60 (14.25 dB)	Beam Tilt	0.50 deg
RMS Gain at Horizontal	20.80 (13.18 dB)	Frequency	521.00 MHz
Calculated / Measured	Calculated	Drawing #	14U266050-521B

