Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

ENGINEERING EXHIBIT

Application for Modification of Digital Television Construction Permit

prepared for

Young Broadcasting of Albany, Inc.
WCDC-DT Adams, MA
Facility ID 74419
Ch. 36 27.5 kW 631 m

Young Broadcasting of Albany, Inc. ("Young") is the licensee of television station WCDC-TV, analog Channel 19, Adams, MA. *Young* is authorized by a Construction Permit ("CP", BMPCDT-20080313AAL) to operate the paired WCDC-DT digital Channel 36 facility at 16.2 kW effective radiated power ("ERP") and an antenna height above average terrain ("HAAT") of 631 meters.

WCDC-DT is currently operating under Special Temporary Authorization ("STA," BDSTA-20020923ACM as extended) at 16.2 kW ERP with facilities identical to those authorized in the CP. The current CP was recently modified, on April 18, 2008, and was intended to make permanent the 16.2 kW ERP operation currently authorized under STA. Subsequent to the modified CP grant, a review of the antenna/line system power gains and losses showed that an ERP of 27.5 kW could be achieved with the current transmitter and antenna configuration. *Young* seeks herein to modify the CP further, to specify operation of WCDC-DT with an increased ERP of 27.5 kW for the remainder of the transition.

Young also proposes herein to operate WCDC-DT at 27.5 kW in the post-transition period. Appendix B of the Seventh Report and Order in MB Docket 87-278 specifies WCDC-DT's post-transition allotment on Channel 36 with 48 kW ERP as authorized in a prior CP (BMPCDT-20041104AOB). *Young* requests that the Appendix B parameters for WCDC-DT be modified to indicate an ERP of 27.5 kW.

The WCDC-DT antenna system is a Dielectric model TLP-24B(C) and is side-mounted on the existing WCDC-TV antenna supporting structure, having FCC Antenna Structure Registration number 1035419. No change to the overall structure height and no antenna or tower work is required to carry out this proposal. The directional antenna's horizontal plane pattern is depicted in **Figure 1**. **Figures 2** and **2A** provide the theoretical vertical plane (elevation) pattern[1].

A map is supplied as **Figure 3,** which depicts the standard predicted coverage contours. This map includes the boundaries of Adams, WCDC-DT's principal community. As demonstrated thereon, the proposed facility complies with §73.625(a)(1), as the entire principal community will be encompassed by the 48 dBμ contour.

The map attached as **Figure 4** supplies a comparison of the 41 dBμ digital service contour corresponding to the proposed WCDC-DT facility (27.5 kW / 631 m) and the 1998 allotment (50 kW / 637 m from MM Docket 87-268, FCC 98-315, December 1998). No extension in contour location beyond that of the allotment will result, in compliance with the Commission's August 3, 2004 "freeze" concerning expansion in service area.[2] Further, the proposed coverage contour does not extend beyond that associated with the Appendix B parameters for post-transition operation (48 kW / 631 m).

As proposed herein, WCDC-DT will achieve an interference-free service population of 1,513,950 persons in the post-transition period (2000 census). This is an 87.8 percent match of the current Appendix B facility (population 1,724,895) and could be considered a loss in service to 210,945 persons. However, the proposal is a significant improvement when compared to the current CP (16.2 kW, as recently granted), which provided a 77.4 percent population match to Appendix B. Further, the proposal would achieve a 136.9 percent match of the 1,105,590 persons reached with interference-free service by the licensed analog facility and would thus exceed the current analog service population, as detailed in the following table. The current analog facility is subject to

[1] These patterns are supplied in terms of relative field. In recent years, FCC Staff have not required pattern data in dBk format however such patterns are available upon request.

[2] Public Notice *"Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes,"* DA 04-2446, released August 3, 2004.

considerable incoming interference (35.6 percent, affecting 610,362 persons) while the proposed post-transition 27.5 kW digital facility is much less affected by interference (189,204 persons, or 11.1 percent).

Population Match Summary

Population Summary (2000 Census) OET Bulletin 69 method	48 kW Ch. 36 Appendix B	Analog Lic Ch. 19	16.2 kW Ch. 36 Current CP	27.5 kW Ch. 36 Proposed
Within Noise Limited Contour	2,081,067	1,982,382	1,738,542	1,945,534
Not affected by terrain losses	1,868,367	1,715,952	1,507,229	1,703,154
Lost to all interference	143,472	610,362	171,669	189,204
Net Service	**1,724,895**	**1,105,590**	**1,335,560**	**1,513,950**
Match achieved by Proposal	**87.77%**	**136.94%**	**113.36%**	**100.00%**

Figure 5 provides an additional contour comparison of the proposed 27.5 kW operation and the 48 kW facility from Appendix B. WCDC-DT is a satellite of WTEN-DT (Ch. 26, Albany, NY, an ABC network affiliate), and most of the contour loss area is within the WTEN-DT service contour. The post-transition Appendix B service contours for WTEN-DT and other nearby ABC stations that overlap the loss area are also depicted in **Figure 5**. Of the 210,945 population loss from the Appendix B facility, 90,137 persons (42.7 percent) are within the WTEN-DT service contour.

All of the remaining loss area is beyond the Albany-Schenectady-Troy DMA (Nielsen) and nearly all is within the service contour of at least one other ABC affiliate station. The theoretical loss contour area that is not covered by WTEN-DT or any other ABC affiliate station contains a population of 2,468 persons, which is 1.2 percent of the 210,945 population loss from the Appendix B facility and 0.14 percent of the 1,724,895 WCDC-DT Appendix B population. All of the loss population is theoretical in nature since WCDC-DT presently operates at a lower power level of 16.2 kW pursuant to STA and authorized in the current CP. The proposal represents an increase in service beyond the current 16.2 kW CP.

The proposal meets the "checklist" criteria for application processing without an interference analysis for the transition period, as the proposed ERP/HAAT combination does not exceed the original 1998 allotment values (50 kW / 637 m).

Regarding impact to post-transition operations, since no extension in contour location beyond that of the 2007 Appendix B (Seventh R&O) allotment will result, interference analysis to other television facilities is not required.

The nearest FCC monitoring station is 337 km distant at Canandaigua, NY. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is also located outside the areas specified in §73.1030(a)(1) and §73.1030(b). Thus, notification of the instant proposal to the National Radio Astronomy Observatory at Green Bank, West Virginia, or the Table Mountain Radio Receiving Zone in Boulder County, Colorado is not required. There are no AM stations within 3.2 kilometers of the site, based on information contained within the Commission's database. The site location is within the Canadian coordination zone (264 km to the Canada border). Since the proposal does not exceed allotted values from the 1998 table or those of Appendix B, no further international coordination should be necessary.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed transmitting antenna is already side-mounted on an existing antenna support structure. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 20 percent antenna relative field in downward elevations (pattern data shows less than 20 percent relative field at angles 10 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 13.6 $\mu W/cm^2$, which is 3.4 percent of the general population/uncontrolled maximum permitted exposure limit. This is well below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

Certification

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.

Joseph M. Davis, P.E.
May 7, 2008

Chesapeake RF Consultants, LLC
11993 Kahns Road
Manassas, VA 20112
703-650-9600

List of Attachments

Figure 1	Antenna Horizontal Plane Pattern
Figure 2, 2A	Antenna Vertical Plane (Elevation) Pattern
Figure 3	Proposed Coverage Contours
Figure 4	Coverage Contour Comparison
Figure 5	Theoretical Loss Area - Post-Transition ABC Service
Form 301	Saved Version of Engineering Sections from FCC Form at Time of Upload

Exhibit No.

Dielectric

Date	**21 Feb 2008**		
Call Letters		Channel	**36**
Location	**Adams, MA**		
Customer			
Antenna Type	**TLP-24B (C)**		

Figure 1
Antenna Horizontal Plane Pattern

AZIMUTH PATTERN

Gain	**1.70 (2.30 dB)**	Frequency	**605 MHz**
Calculated / Measured	**Calculated**	Drawing #	**TLP-B**

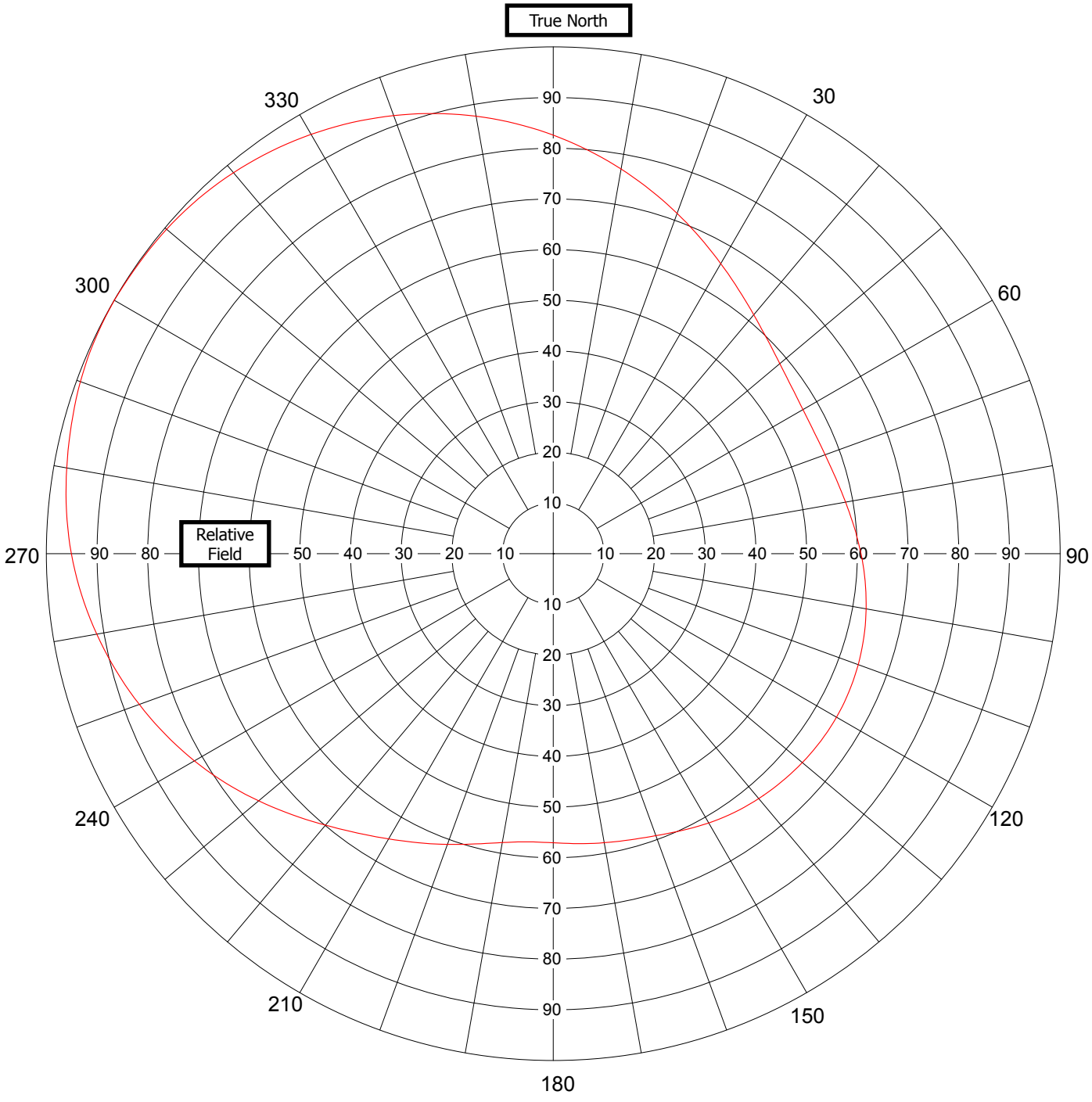


Exhibit No.

Dielectric

Date	**21 Feb 2008**		
Call Letters		Channel	**36**
Location	**Adams, MA**		
Customer			
Antenna Type	**TLP-24B (C)**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**23.0 (13.62 dB)**	Beam Tilt	**0.50 Degrees**
RMS Gain at Horizontal	**19.0 (12.79 dB)**	Frequency	**605.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**24L230050-90**

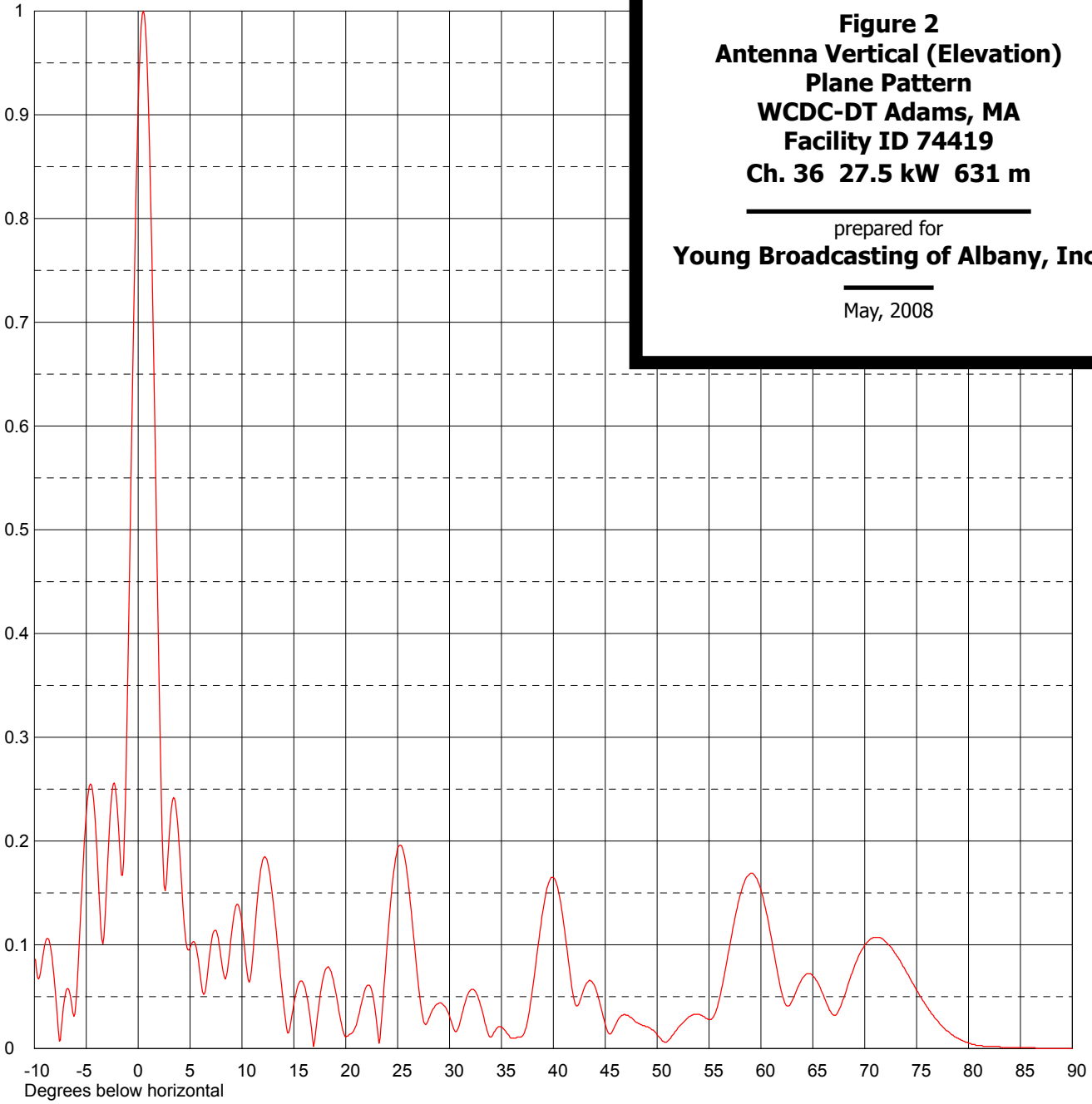


Figure 2
Antenna Vertical (Elevation)
Plane Pattern
WCDC-DT Adams, MA
Facility ID 74419
Ch. 36 27.5 kW 631 m

prepared for
Young Broadcasting of Albany, Inc.

May, 2008

Remarks:

Exhibit No.

Dielectric

Date	**21 Feb 2008**		
Call Letters		Channel	**36**
Location	**Adams, MA**		
Customer			
Antenna Type	**TLP-24B (C)**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**23.0 (13.62 dB)**	Beam Tilt	**0.50 Degrees**
RMS Gain at Horizontal	**19.0 (12.79 dB)**	Frequency	**605.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**24L230050**

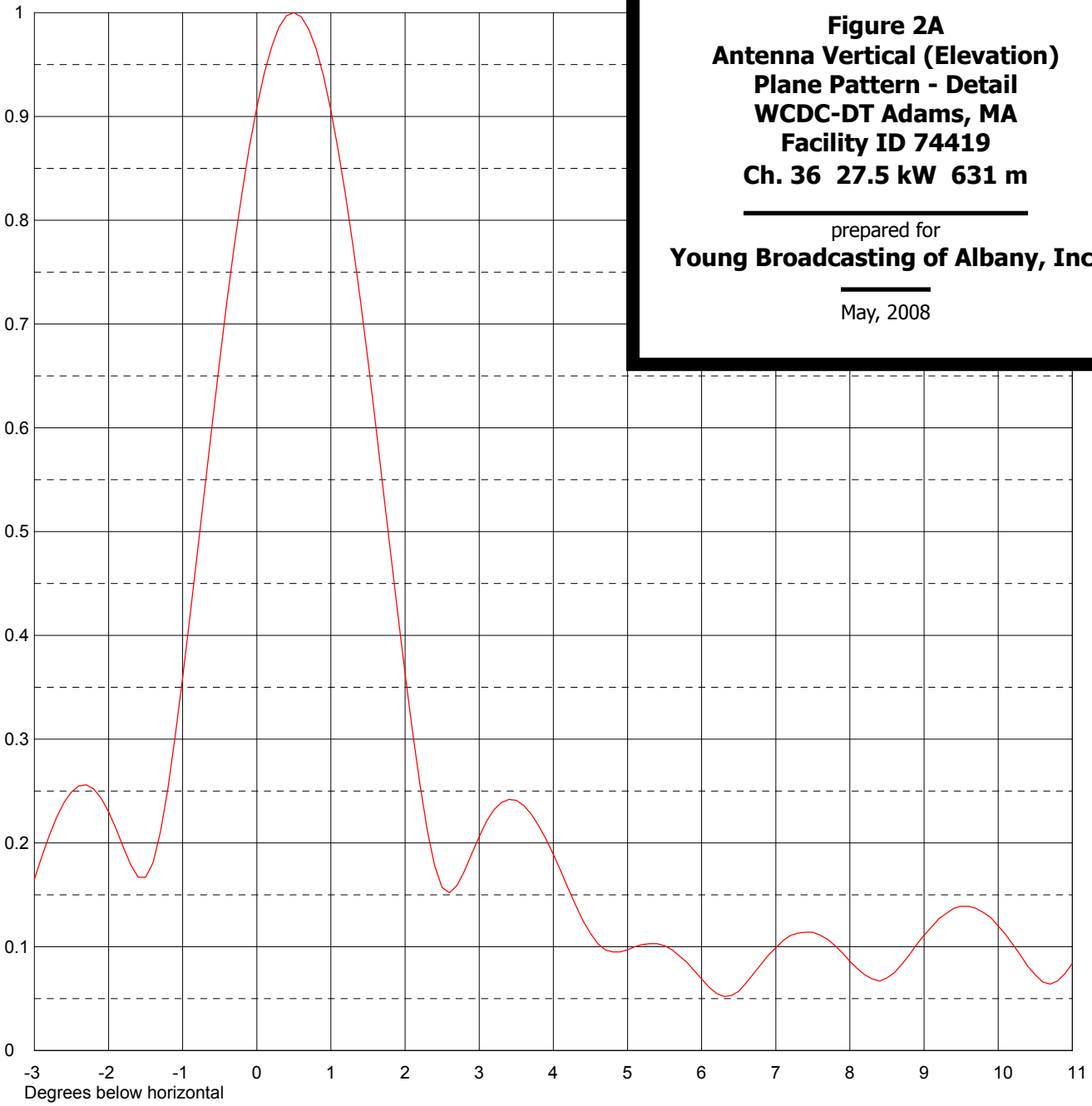
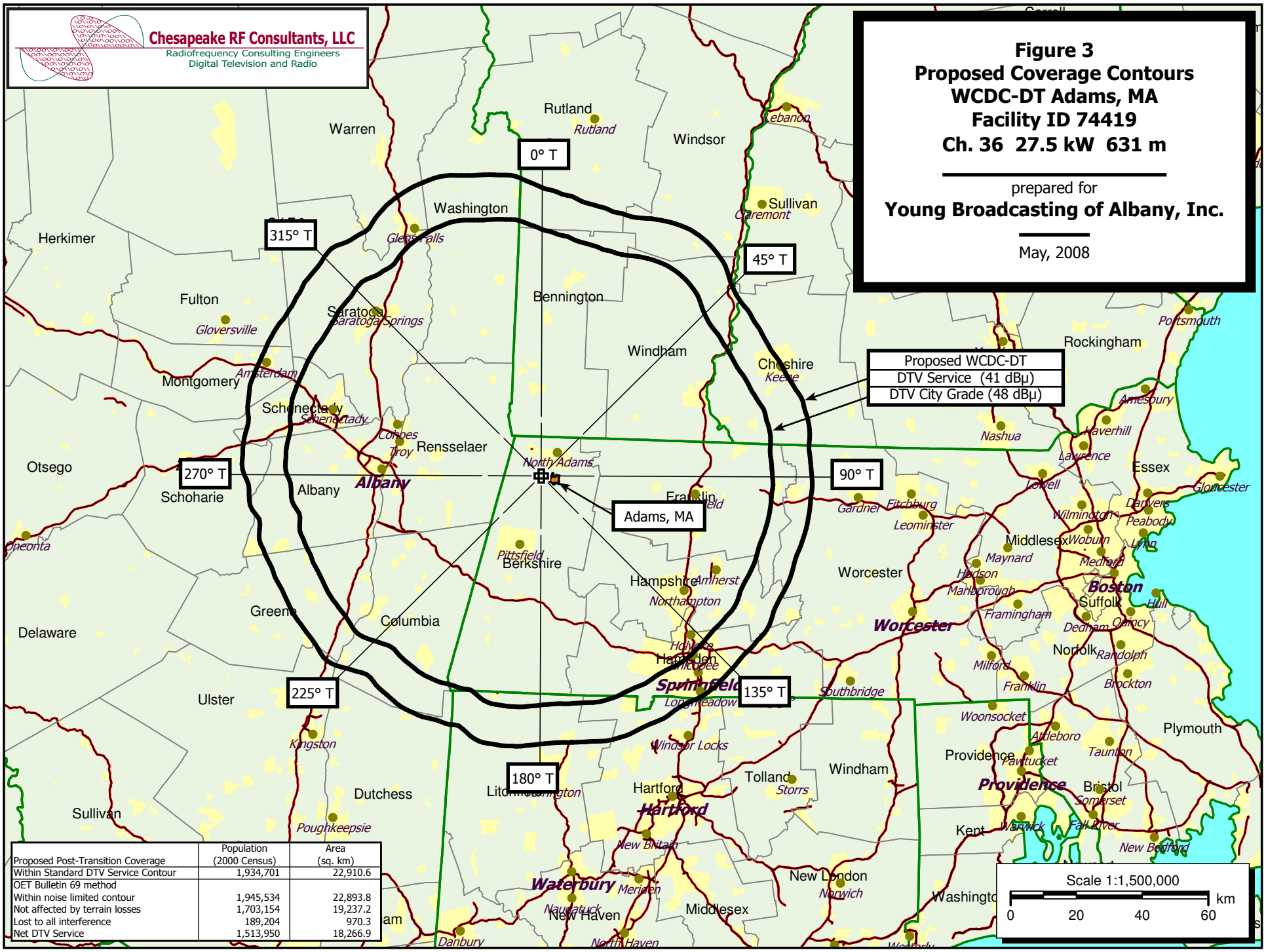


Figure 2A
Antenna Vertical (Elevation)
Plane Pattern - Detail
WCDC-DT Adams, MA
Facility ID 74419
Ch. 36 27.5 kW 631 m

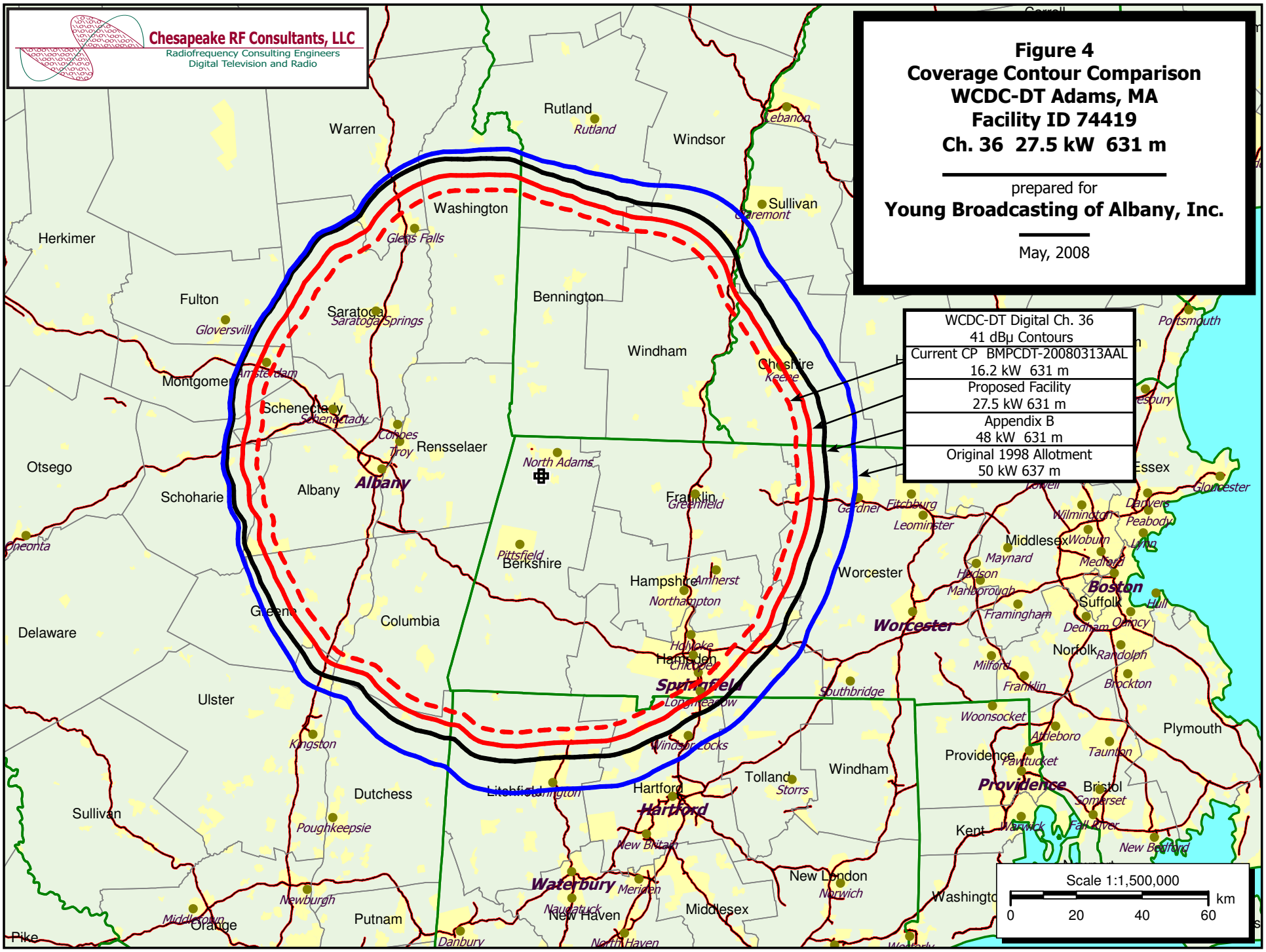
prepared for
Young Broadcasting of Albany, Inc.

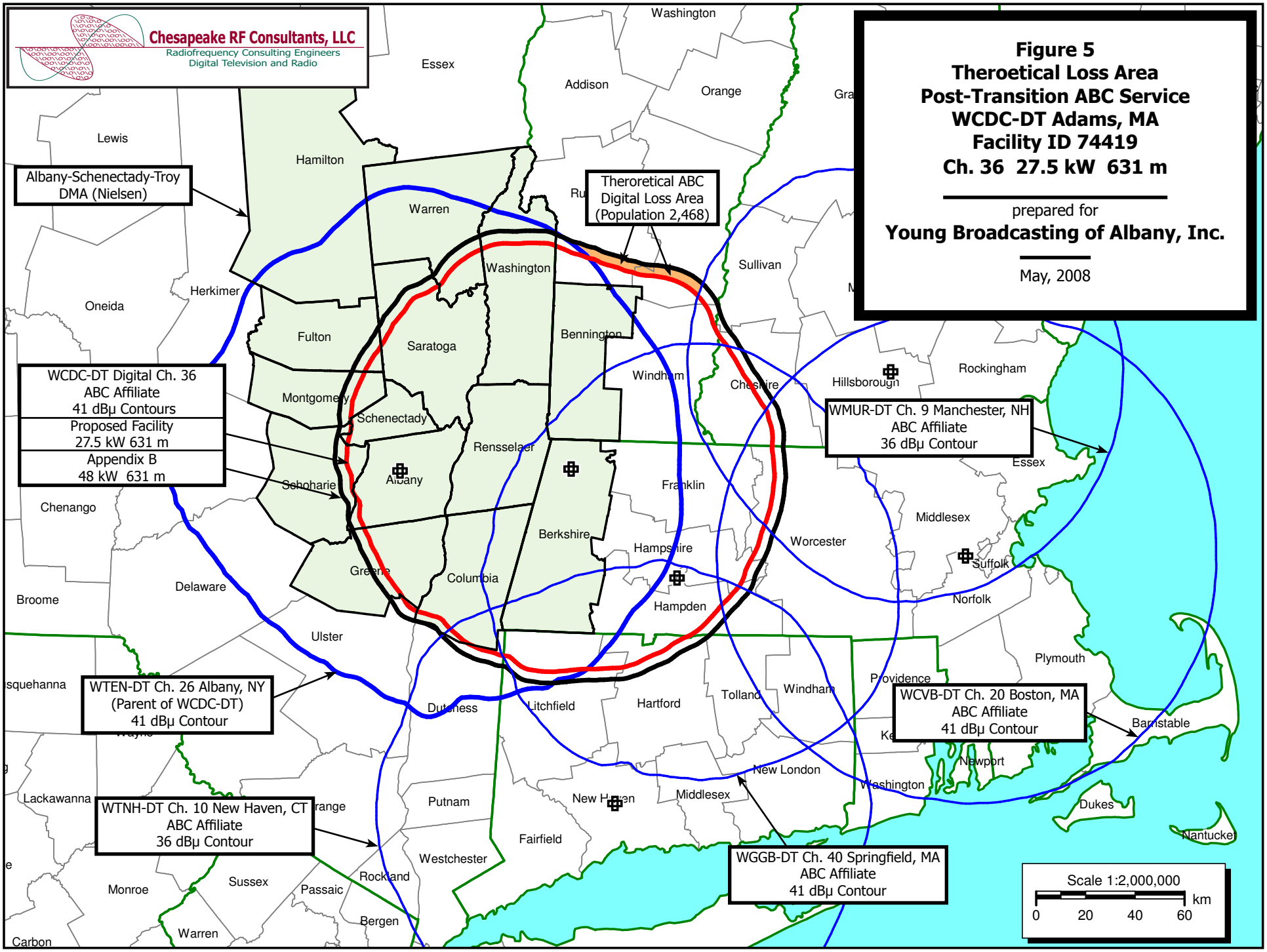
May, 2008

Remarks:



Proposed Post-Transition Coverage	Population (2000 Census)	Area (sq. km)
Within Standard DTV Service Contour	1,934,701	22,910.6
OET Bulletin 69 method		
Within noise limited contour	1,945,534	22,893.8
Not affected by terrain losses	1,703,154	19,237.2
Lost to all interference	189,204	970.3
Net DTV Service	1,513,950	18,266.9


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 4
Coverage Contour Comparison
WCDC-DT Adams, MA
Facility ID 74419
Ch. 36 27.5 kW 631 m
prepared for
Young Broadcasting of Albany, Inc.
May, 2008
WCDC-DT Digital Ch. 36
41 dBµ Contours
Current CP BMPCDT-20080313AAL
16.2 kW 631 m
Proposed Facility
27.5 kW 631 m
Appendix B
48 kW 631 m
Original 1998 Allotment
50 kW 637 m
Scale 1:1,500,000
0 20 40 60 km
Albany
Schenectady
Troy
Saratoga Springs
Glens Falls
North Adams
Pittsfield
Greenfield
Amherst
Northampton
Holyoke
Springfield
Chicopee
Longmeadow
Windsor Locks
Hartford
New Britain
Waterbury
Meriden
New Haven
Danbury
Torrington
Litchfield
Poughkeepsie
Newburgh
Middletown
Kingston
Worcester
Fitchburg
Leominster
Gardner
Southbridge
Framingham
Marlborough
Hudson
Maynard
Woburn
Medford
Boston
Lynn
Peabody
Salem
Gloucester
Beverly
Lowell
Wilmington
Middlesex
Suffolk
Norfolk
Plymouth
Brockton
Randolph
Quincy
Dedham
Milford
Franklin
Woonsocket
Attleboro
Taunton
Providence
Pawtucket
Bristol
Somerset
Fall River
New Bedford
Warwick
Kent
Washington
Newport
Portsmouth
Essex
Middlesex
Windham
Tolland
Storrs
New London
Norwich
Litchfield
Fairfield
Putnam
Orange
Dutchess
Ulster
Sullivan
Delaware
Columbia
Greene
Albany
Schoharie
Otsego
Montgomery
Fulton
Herkimer
Hampshire
Berkshire
Franklin
Bennington
Windham
Cheshire
Washington
Rutland
Windsor
Warren
Sullivan
Lebanon
Claremont
Keene
Rensselaer
Saratoga
Oneonta
Gloversville
Amsterdam
Cohoes
Pike


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 5
Theroetical Loss Area
Post-Transition ABC Service
WCDC-DT Adams, MA
Facility ID 74419
Ch. 36 27.5 kW 631 m
prepared for
Young Broadcasting of Albany, Inc.
May, 2008
Albany-Schenectady-Troy DMA (Nielsen)
Theroretical ABC Digital Loss Area (Population 2,468)
WCDC-DT Digital Ch. 36
ABC Affiliate
41 dBµ Contours
Proposed Facility
27.5 kW 631 m
Appendix B
48 kW 631 m
WMUR-DT Ch. 9 Manchester, NH
ABC Affiliate
36 dBµ Contour
WTEN-DT Ch. 26 Albany, NY
(Parent of WCDC-DT)
41 dBµ Contour
WCVB-DT Ch. 20 Boston, MA
ABC Affiliate
41 dBµ Contour
WTNH-DT Ch. 10 New Haven, CT
ABC Affiliate
36 dBµ Contour
WGGB-DT Ch. 40 Springfield, MA
ABC Affiliate
41 dBµ Contour
Scale 1:2,000,000
km
0 20 40 60
Albany
Schenectady
Rensselaer
Saratoga
Washington
Warren
Hamilton
Essex
Addison
Orange
Lewis
Herkimer
Oneida
Fulton
Montgomery
Schoharie
Chenango
Delaware
Broome
Ulster
Greene
Columbia
Berkshire
Bennington
Windham
Franklin
Hampshire
Hampden
Worcester
Middlesex
Suffolk
Norfolk
Plymouth
Barnstable
Dukes
Nantucket
Rockingham
Hillsborough
Sullivan
Cheshire
Litchfield
Hartford
Tolland
Windham
Providence
New London
Middlesex
New Haven
Fairfield
Putnam
Westchester
Rockland
Bergen
Passaic
Sussex
Monroe
Lackawanna
Carbon
Warren

SECTION III-D - DTV Engineering

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

Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to change pre-transition facilities. 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.

Post-Transition Expedited Processing. An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

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 a pre-transition facility 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 a pre-transition facility 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
	(d)	It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B").	(•) Yes ( ) No ( ) N/A
	(e)	It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B.	( ) Yes (•) No ( ) N/A
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. Applicant must **submit the Exhibit** called for in Item 13.		(•) Yes ( ) No
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 registration 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 III-D - 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 36 Analog TV, if any 19	
2.	Zone: (•) I ( ) II ( ) III	
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 42 Minutes 38 Seconds 14 (•) North ( ) South Longitude: Degrees 73 Minutes 10 Seconds 8 (•) West ( ) East	
4.	Antenna Structure Registration Number: 1035419 ☐ Not Applicable ☐ Notification filed with FAA	
5.	Antenna Location Site Elevation Above Mean Sea Level:	1048 meters
6.	Overall Tower Height Above Ground Level:	76 meters
7.	Height of Radiation Center Above Ground Level:	54 meters
8.	Height of Radiation Center Above Average Terrain :	631 meters

9. Maximum Effective Radiated Power (average power): 27.5 kW

10. Antenna Specifications:

a. Manufacturer DIE Model TLP-24B(C)

b. Electrical Beam Tilt:
0.5 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 42]

d. Polorization:
◉ Horizontal ○ Circular ○ Elliptical

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

[For a composite directional (not off-the-shelf) antenna, press the following button to fill in the relative field values subform.]
[Relative Field Values]

10e. Directional Antenna Relative Field Values

[Fill in this subform for a composite directional (not off-the-shelf) antenna, only.]

e. Directional Antenna Relative Field Values:

Rotation (Degrees): 0 ☑ No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	0.826	10	0.771	20	0.714	30	0.661	40	0.615	50	0.583
60	0.569	70	0.571	80	0.586	90	0.607	100	0.627	110	0.64
120	0.645	130	0.641	140	0.631	150	0.613	160	0.592	170	0.579
180	0.57	190	0.579	200	0.61	210	0.65	220	0.699	230	0.759
240	0.817	250	0.869	260	0.914	270	0.951	280	0.975	290	0.993
300	1	310	0.996	320	0.981	330	0.955	340	0.92	350	0.876
Additional Azimuths											

Relative Field Polar Plot

If a directional antenna is proposed, the requirements of 47 C.F.R. Sections 73.625(c) must be satisfied. **Exhibit required.** [Exhibit 43]

11. Does the proposed facility satisfy the pre-transition 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.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616? ◉ Yes ○ No

[Exhibit 44]

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

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** item 3 is answered "No.") [Exhibit 45]

13. **Environmental Protection Act. Submit in an Exhibit** the following: [Exhibit 46]

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.

PREPARERS CERTIFICATION ON SECTION III 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 JOSEPH M. DAVIS, P.E.	Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature	Date 5/7/2008	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 11993 KAHNS ROAD		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20112 -
Telephone Number (include area code) 7036509600	E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

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).

Any specified rotation has already been applied to the plotted pattern.
Field strength values shown on a rotated pattern may differ from the listed values because intermediate azimuths are interpolated between entered azimuths.