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

# ENGINEERING EXHIBIT

## Application for Construction Permit

prepared for

**Positive Alternative Radio, Inc.**
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m

*Positive Alternative Radio, Inc. ("PAR")* is the licensee of non-commercial educational FM radio station WJCN(FM) Ch. 211A, Nassawadox, VA (BLED-20050405ABX). WJCN is licensed to operate with 0.45 kW effective radiated power ("ERP") and an antenna height above average terrain ("HAAT") of 61 meters. A Construction Permit ("CP", BPED-20070711ABR) authorizes WJCN for an increase to Class B and specification of a new transmitter location with 50 kW ERP (directional) at 90 meters HAAT. The CP will expire on September 20, 2010. In advance of the CP's expiration, *PAR* will request that the CP be cancelled and will contemporaneously file the instant application which proposes Class B operation at an altogether different site.

As proposed herein, *PAR* seeks a minor modification of WJCN to utilize an existing tower structure located 21.3 km from the licensed WJCN site. It is proposed that WJCN will operate with a nondirectional ERP of 50 kW at 78 meters antenna HAAT.

The proposed WJCN antenna will be side-mounted on an existing antenna supporting structure having FCC Antenna Structure Registration number 1225371. No change in overall structure height is proposed.

The principal community of Nassawadox is encompassed by the proposed WJCN 60 dBμ coverage contour as depicted in the coverage contour map of Figure 1. A comparison of the licensed and proposed 60 dBμ contour locations is provided in Figure 2, showing that the proposal clearly complies with §73.3573(a) regarding a minor modification.

## Allocation Considerations

The following FM facilities are close enough to the proposed transmitter site to warrant study in regard to prohibited overlap under §73.509 of the Commission's Rules:

| Channel Status | Call Sign Service | City/State File Number | Fac. ID | Latitude Longitude | Power HAAT | Distance Bearing |
|---|---|---|---|---|---|---|
| 210A CP MOD | WHRX FM | GLOUCESTER COURTHOUS, VA BMPED-20100709AGK | 173971 | 37 24 36 76 32 52 | 0.45 90.1 | 83.17 246.43 |
| 210A CP MOD | NEW FM | TAPPAHANNOCK, VA BMPED-20100427AAI | 175739 | 37 52 27 76 43 37 | 3.2 65 | 93.43 281.49 |
| 211A LIC | WKYV FM | COLONIAL HEIGHTS, VA BLED-20100622ACV | 176832 | 37 15 02 77 18 23 | 0.56 86 | 152.18 250.77 |
| 211B LIC | WCSP-FM FM | WASHINGTON, DC BLED-19980127KA | 68950 | 38 57 44 77 01 36 | 36.0 173 | 181.68 320.36 |
| 212A LIC | WDIH FM | SALISBURY, MD BLED-19900717KC | 58655 | 38 24 28 75 36 16 | 0.38 55 | 77.60 5.25 |
| 212B1 CP | NEW FM | CALIFORNIA, MD BNPED-20071015ADL | 172483 | 38 10 04 76 22 40 | 8.9 61 | 79.12 310.11 |
| 212B LIC | WHRO-FM FM | NORFOLK, VA BLED-20030506AAW | 25940 | 36 48 31 76 30 13 | 7.3 350.3 | 123.71 216.02 |
| 212B APP | WHRO-FM FM | NORFOLK, VA BPED-20030507ABV | 25940 | 36 48 31 76 30 13 | 8.8 350.3 | 123.71 216.02 |
| 214B LIC | WZLV FM | CAPE CHARLES, VA BLED-20041101ACT | 85511 | 37 10 53 75 57 47 | 13.0 156 | 63.75 202.60 |
| 214B CP | WZLV FM | CAPE CHARLES, VA BPED-20091009AAJ | 85511 | 37 10 53 75 57 47 | 47.0 156 | 63.75 202.60 |

The attached Figures 3, 4, and 5 depict the pertinent protected and interfering contours of the stations listed and the proposed WJCN facility. Co-channel stations and first-adjacent channel stations protected and interfering contours are depicted in Figures 3 and 4, respectively. Figure 3A supplies a detailed map of the contours which are close but do not overlap with WCSP-FM (Ch. 211B Washington, DC). Figure 5 provides an allocation map regarding second and third adjacent stations.

The allocation study described above concludes that the WJCN proposal is in compliance with §73.509 regarding prohibited contour overlap. The contour locations were determined using the actual ERP and height above terrain along each radial for each facility, as specified in §73.509(c). For the facilities under study, the antenna elevation above mean sea level, geographic coordinates, and ERP (including directional antenna relative field values, where appropriate) were retrieved from the FCC's engineering database. The requisite contours were determined using USGS 3 second digitized terrain data along each radial of interest from each transmitter site and an implementation of the Commission's TVFMFS computer program which simulates the FM

propagation curves. The F(50,10) distances are used to calculate distance to interfering contours, however if the distance is less than 16 km the F(50,50) curves are used, as specified by §73.509(c)(2).

A spacing study as required by §73.507(c) regarding facilities differing in frequency by 10.6 or 10.8 MHz from the proposal is summarized in the following. The proposed facility meets the minimum distance separation requirements of §73.207 in all such instances.

| Channel Status | Call Sign Service | City/State File Number | Fac. ID | Latitude Longitude | Power HAAT | Distance Bearing | Required Clear |
|---|---|---|---|---|---|---|---|
| 265A | WAAI | HURLOCK, MD | 2417 | 38 37 28 | 1.3 | 102.86 | 15.00 |
| LIC | FM | BLH-19990902AAO | | 75 53 20 | 153 | 350.16 | 87.86 |
| 265B1 | WHTI | LAKESIDE, VA | 27439 | 37 37 17 | 15.0 | 148.96 | 17.00 |
| LIC | FM | BLH-20090910AAE | | 77 22 14 | 130 | 266.64 | 131.96 |

**TV Channel 6 Considerations**

Under §73.525(a)(1), an affected TV Channel 6 station must be considered with a proposed non-commercial educational facility on Channel 211 if the distance between the respective transmitter sites is 196 km or less. No authorized Channel 6 full power or Class A television station is located within 196 km of the proposed site. Low Power Television ("LPTV") or television translator stations within 196 km are W06CF (analog Ch. 6, Salisbury, MD, 82.6 km distant) and WDCN-LP (analog Ch. 6, Fairfax, VA, 182.6 km).

Figure 6 depicts the W06CF and WDCN-LP 62 dBµ F(50,50) service contours, which are not overlapped by the proposed WJCN 67.5 dBµ F(50,10) contour. Owing to their secondary status, protection to LPTV and translator stations on Channel 6 such as W06CF and WDCN-LP is not believed to be necessary. Nevertheless, there would not be an interference conflict in this case. Accordingly, the proposal complies with the television Channel 6 protection criteria of §73.525.

**Other Allocation Matters**

Terrain data for the eight standard radials were obtained from standard USGS 3 arc-second digital terrain data. The 90° and 135° True radials extend over the Atlantic Ocean and were truncated at the water's edge pursuant to §73.313(d)(2), as the 34 dBµ coverage contour does not

encompass United States land area beyond the 16 km portion of these radials (see Figure 1). Considering the truncated radials, the proposed antenna's resulting HAAT is 78.3 meters.

The nearest FCC monitoring station is 189 km distant at Laurel, MD. This exceeds by a great margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). The site location is beyond the border areas that require international coordination.

One AM broadcast station is located within 3.2 km (2 miles) of the proposed site, according to information extracted from the Commission's engineering database. WESR (1330 kHz, Onley-Onancock, VA) is licensed to operate as nondirectional at a site 0.65 km distant. Detuning skirts have been previously installed on the existing tower structure to be employed by the proposed WJCN side-mounted antenna. *PAR* will adjust the detuning skirts and take other measures as necessary to mitigate any detrimental pattern disturbance affecting WESR that results from the proposed WJCN side-mount antenna installation.

**Human Exposure to Radiofrequency Electromagnetic Field**

The proposed operation was evaluated for human exposure to radiofrequency ("RF") electromagnetic field using the procedures outlined in the Commission's OET Bulletin Number 65. The proposed WJCN facility will employ a four element ERI model SHPX antenna or equivalent (EPA Type 3) with one wavelength element spacing. Based on OET-65 equation (10), considering 40 percent antenna relative field in downward elevations (manufacturer's pattern data in Figure 7 shows less than 40 percent relative field at angles 15 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 117.3 $\mu W/cm^2$, which is 58.6 percent of the general population/uncontrolled maximum permitted exposure limit ("MPE").

According to CDBS data, the only other authorized non-excluded emitters at or near this site are WESR-FM (Ch. 277B, Onley-Onancock, VA, 50 kW ERP) and WESR(AM) (1330 kHz, Onley-Onancock, VA, 5 kW), both 0.65 km distant. The WESR-FM facility's worst-case calculated signal

density at the proposed WJCN site is 4.0 percent of the general population/uncontrolled MPE limit. The contribution by WESR(AM) at the proposed WJCN site is considered to be insignificant due to the distance, power, and increased MPE limit at 1330 kHz.

Considering the simultaneous operation of WJCN and WESR-FM, the total calculated signal density two meters above ground level at the proposed WJCN site is 62.6 percent of the general population/uncontrolled MPE limit.

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.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. Any other necessary environmental review will be or has been provided by the tower structure owner or applicant.

Chesapeake RF Consultants, LLC
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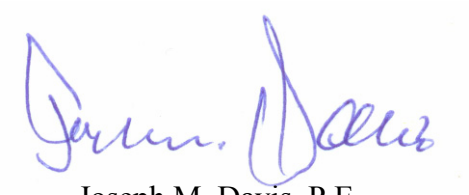
Digital Television and Radio

## 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.



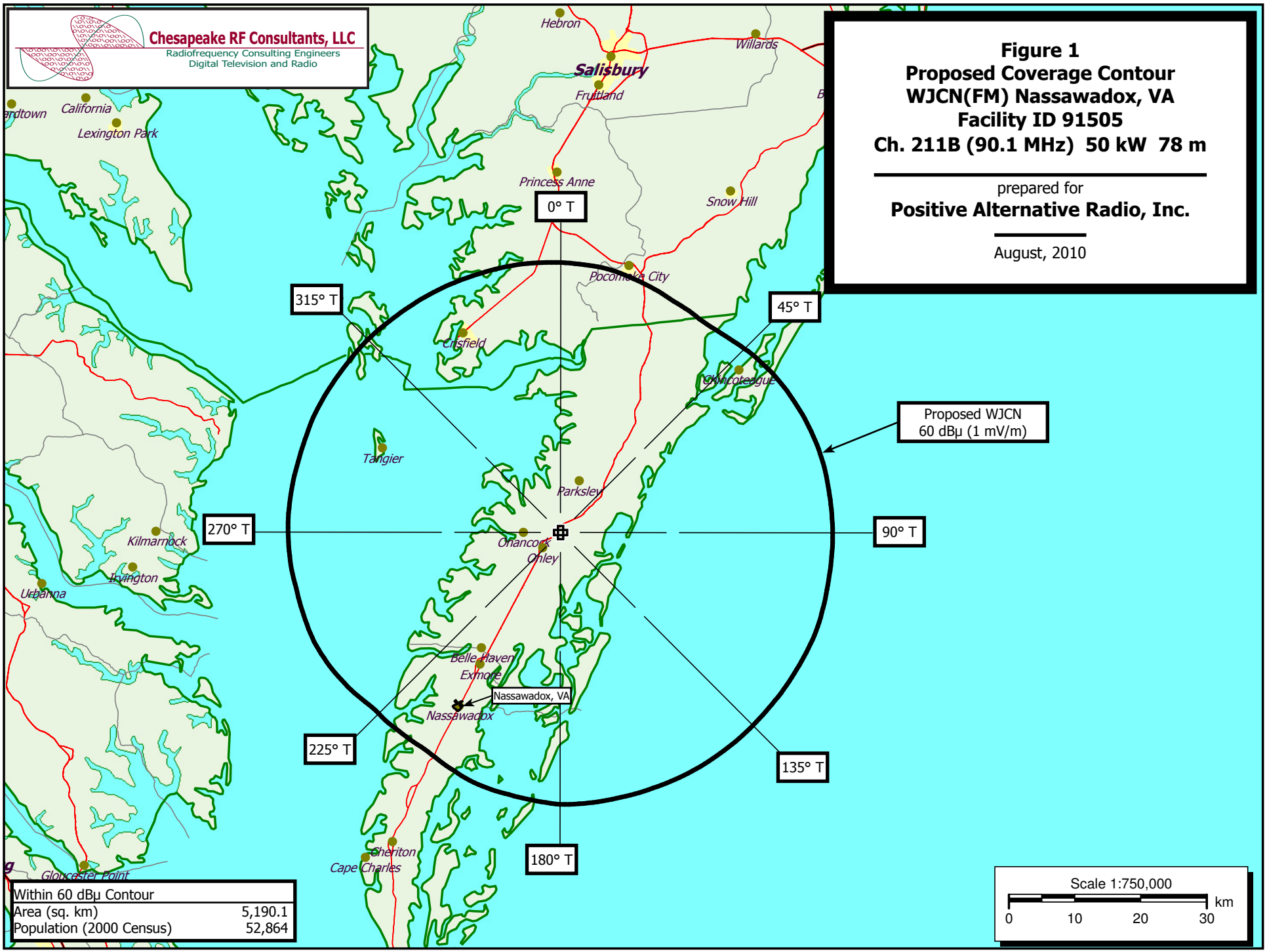
Joseph M. Davis, P.E.
August 17, 2010

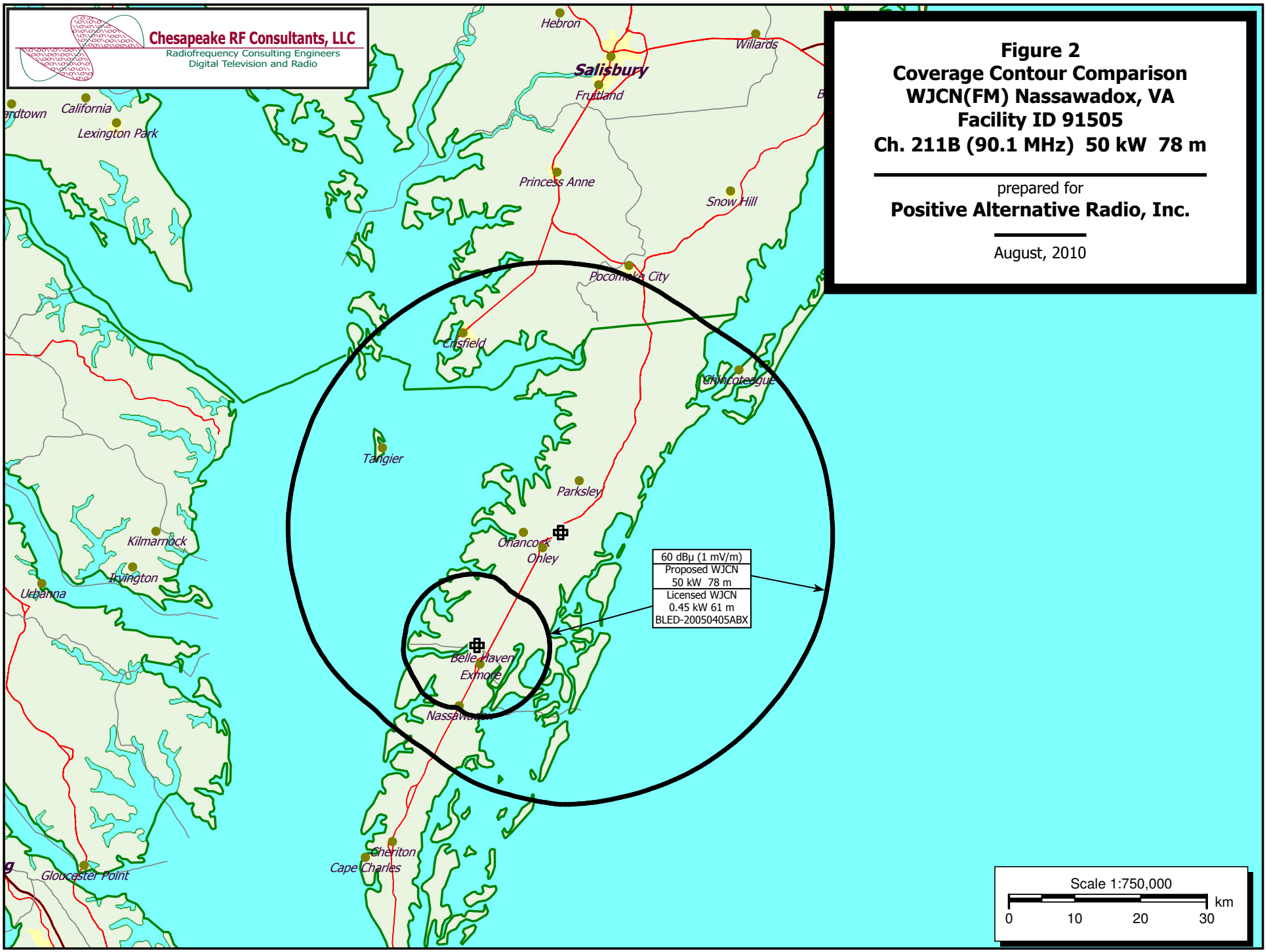
**Chesapeake RF Consultants, LLC**
PO Box 1088
Yorktown, VA 23692
703-650-9600

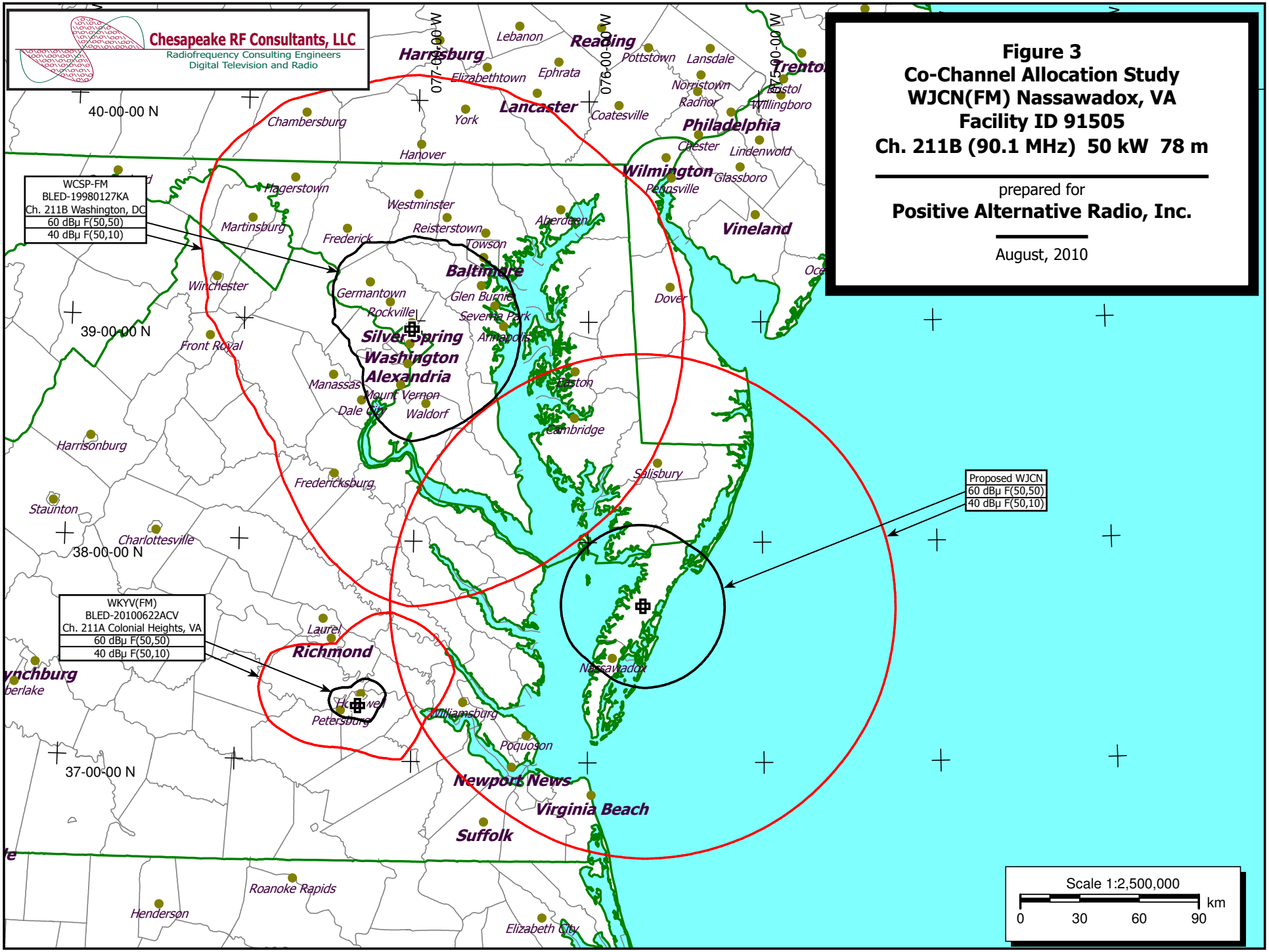
*List of Attachments*

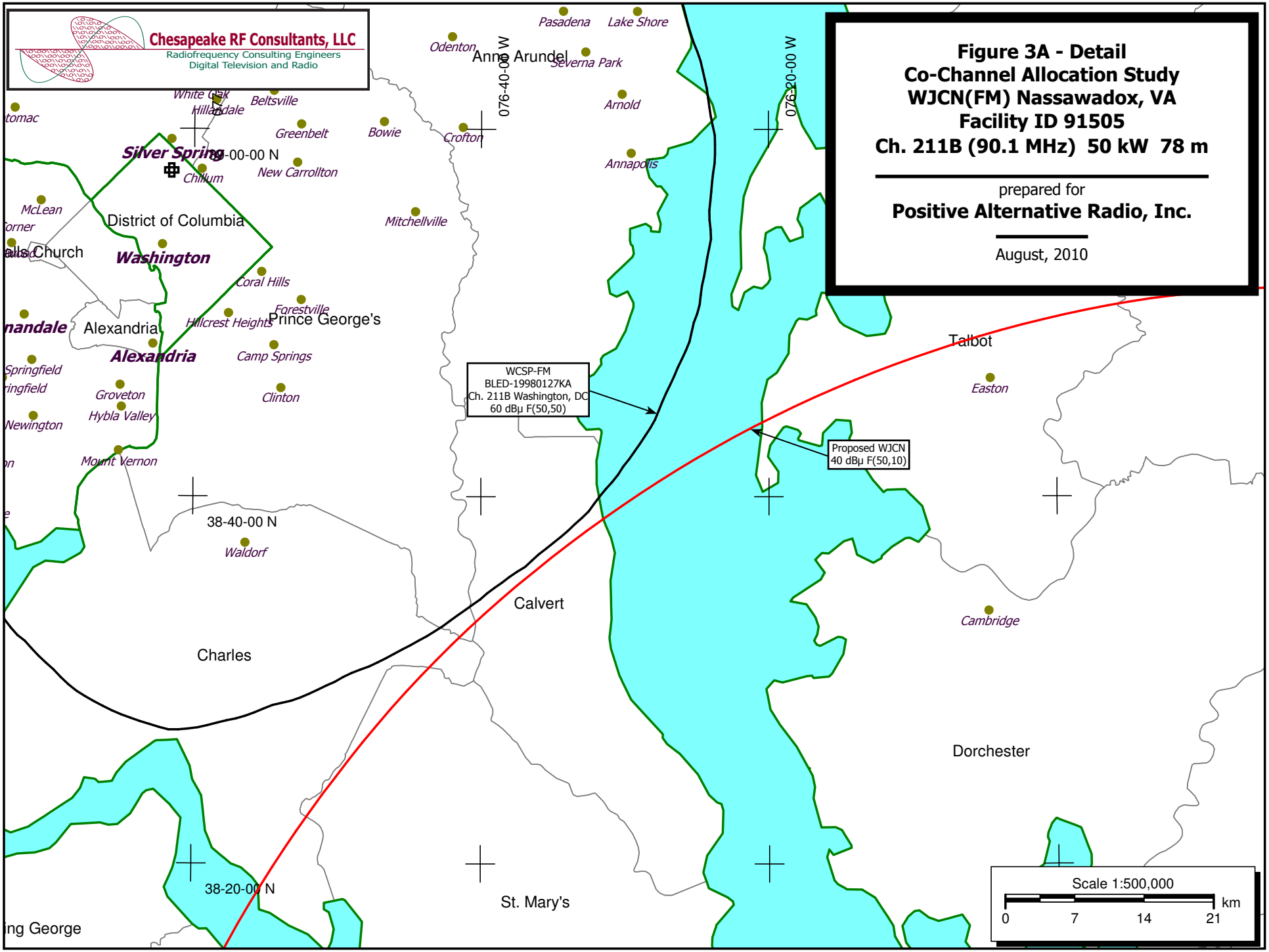
| | |
|---|---|
| Figure 1 | Proposed Coverage Contour |
| Figure 2 | Coverage Contour Comparison |
| Figure 3, 3A | Co-Channel Allocation Study |
| Figure 4 | First-Adjacent Channel Allocation Study |
| Figure 5 | Second and Third-Adjacent Channel Allocation Study |
| Figure 6 | TV Channel 6 Allocation Study |
| Figure 7 | Antenna Elevation Pattern |
| Form 340 | Saved Version of Engineering Sections from FCC Form at Time of Upload |

*This material was entered August 17, 2010 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 1
Proposed Coverage Contour
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m
prepared for
Positive Alternative Radio, Inc.
August, 2010
Hebron
Willards
Salisbury
Fruitland
California
Lexington Park
Princess Anne
0° T
Snow Hill
Pocomoke City
315° T
45° T
Crisfield
Chincoteague
Proposed WJCN
60 dBµ (1 mV/m)
Tangier
Parksley
270° T
90° T
Kilmarnock
Onancock
Onley
Irvington
Urbanna
Belle Haven
Exmore
Nassawadox, VA
Nassawadox
225° T
135° T
Sheriton
Cape Charles
180° T
Gloucester Point
Within 60 dBµ Contour
Area (sq. km) 5,190.1
Population (2000 Census) 52,864
Scale 1:750,000
0 10 20 30 km


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 2
Coverage Contour Comparison
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m
prepared for
Positive Alternative Radio, Inc.
August, 2010
Hebron
Willards
Salisbury
Fruitland
California
Lexington Park
Princess Anne
Snow Hill
Pocomoke City
Crisfield
Chincoteague
Tangier
Parksley
Kilmarnock
Onancock
Onley
Irvington
Urbanna
Belle Haven
Exmore
Nassawadox
Sheriton
Cape Charles
Gloucester Point
60 dBµ (1 mV/m)
Proposed WJCN
50 kW 78 m
Licensed WJCN
0.45 kW 61 m
BLED-20050405ABX
Scale 1:750,000
0
10
20
30
km


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 3
Co-Channel Allocation Study
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m
prepared for
Positive Alternative Radio, Inc.
August, 2010
WCSP-FM
BLED-19980127KA
Ch. 211B Washington, DC
60 dBµ F(50,50)
40 dBµ F(50,10)
WKYV(FM)
BLED-20100622ACV
Ch. 211A Colonial Heights, VA
60 dBµ F(50,50)
40 dBµ F(50,10)
Proposed WJCN
60 dBµ F(50,50)
40 dBµ F(50,10)
Scale 1:2,500,000
km
0
30
60
90
40-00-00 N
39-00-00 N
38-00-00 N
37-00-00 N
077-00-00 W
076-00-00 W
075-00-00 W
Harrisburg
Lebanon
Reading
Pottstown
Lansdale
Trenton
Elizabethtown
Ephrata
Lancaster
Coatesville
Norristown
Radnor
Bristol
Willingboro
Philadelphia
Chambersburg
York
Hanover
Chester
Lindenwold
Wilmington
Glassboro
Pennsville
Hagerstown
Westminster
Martinsburg
Frederick
Reisterstown
Towson
Aberdeen
Vineland
Baltimore
Glen Burnie
Severna Park
Annapolis
Winchester
Germantown
Rockville
Dover
Silver Spring
Washington
Alexandria
Easton
Front Royal
Manassas
Mount Vernon
Dale City
Waldorf
Cambridge
Harrisonburg
Salisbury
Fredericksburg
Staunton
Charlottesville
Laurel
Richmond
Nassawadox
Petersburg
Williamsburg
Poquoson
Newport News
Virginia Beach
Suffolk
Roanoke Rapids
Henderson
Elizabeth City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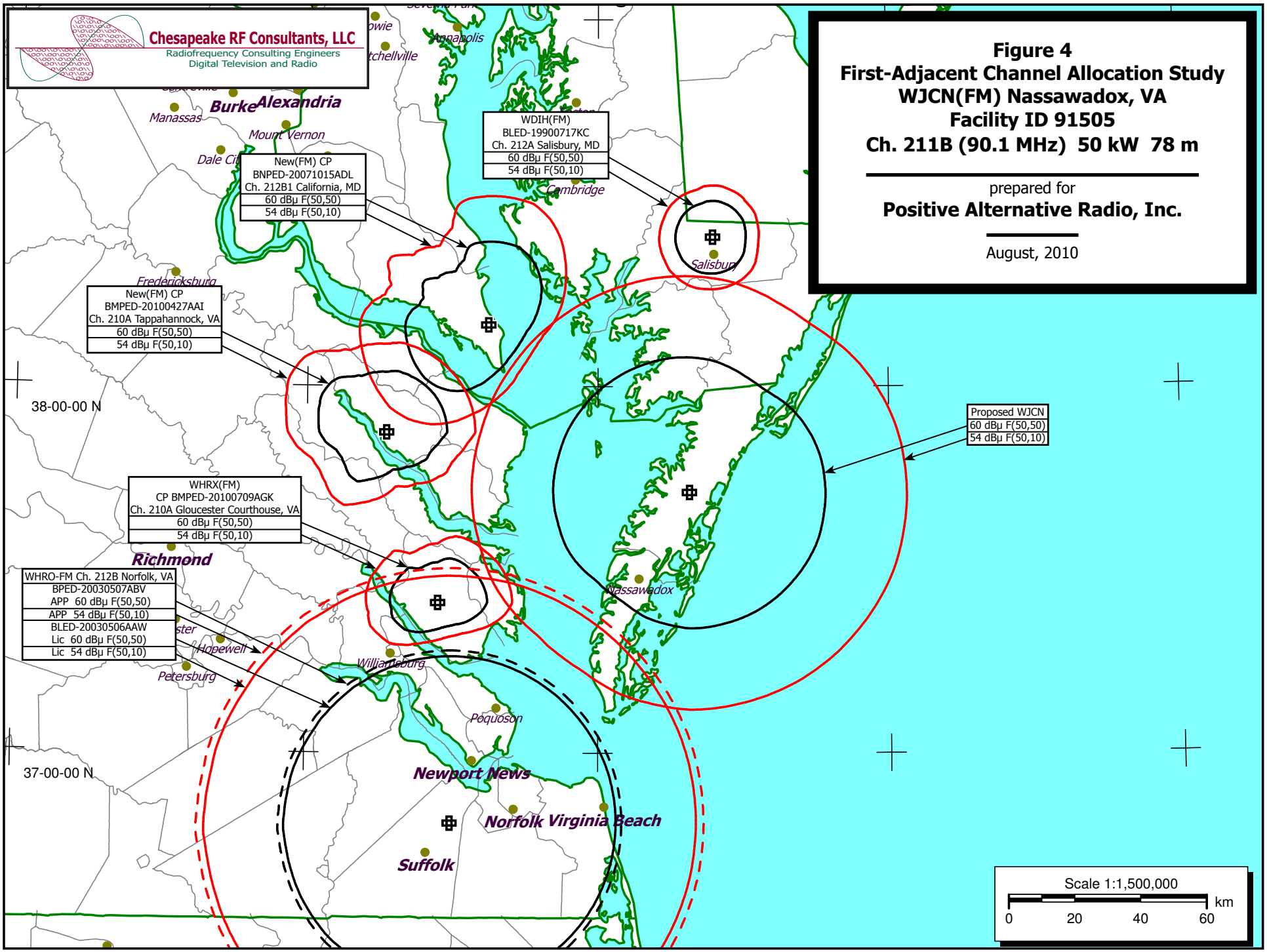
Digital Television and Radio
Figure 3A - Detail
Co-Channel Allocation Study
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m
prepared for
Positive Alternative Radio, Inc.
August, 2010
WCSP-FM
BLED-19980127KA
Ch. 211B Washington, DC
60 dBµ F(50,50)
Proposed WJCN
40 dBµ F(50,10)
076-40-00 W
076-20-00 W
38-40-00 N
38-20-00 N
Anne Arundel
District of Columbia
Prince George's
Calvert
Charles
St. Mary's
Talbot
Dorchester
Silver Spring
Washington
Alexandria
Pasadena
Lake Shore
Odenton
Severna Park
Arnold
Annapolis
Crofton
Bowie
Greenbelt
Beltsville
White Oak
Hillandale
Chillum
New Carrollton
Mitchellville
Coral Hills
Forestville
Hillcrest Heights
Camp Springs
Clinton
Groveton
Hybla Valley
Mount Vernon
Waldorf
Easton
Cambridge
Scale 1:500,000
km
0
7
14
21


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Figure 4
First-Adjacent Channel Allocation Study
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m
prepared for
Positive Alternative Radio, Inc.
August, 2010
WDIH(FM)
BLED-19900717KC
Ch. 212A Salisbury, MD
60 dBµ F(50,50)
54 dBµ F(50,10)
New(FM) CP
BNPED-20071015ADL
Ch. 212B1 California, MD
60 dBµ F(50,50)
54 dBµ F(50,10)
New(FM) CP
BMPED-20100427AAI
Ch. 210A Tappahannock, VA
60 dBµ F(50,50)
54 dBµ F(50,10)
WHRX(FM)
CP BMPED-20100709AGK
Ch. 210A Gloucester Courthouse, VA
60 dBµ F(50,50)
54 dBµ F(50,10)
WHRO-FM Ch. 212B Norfolk, VA
BPED-20030507ABV
APP 60 dBµ F(50,50)
APP 54 dBµ F(50,10)
BLED-20030506AAW
Lic 60 dBµ F(50,50)
Lic 54 dBµ F(50,10)
Proposed WJCN
60 dBµ F(50,50)
54 dBµ F(50,10)
Annapolis
Burke
Alexandria
Manassas
Mount Vernon
Cambridge
Salisbury
Fredericksburg
Richmond
Nassawadox
Hopewell
Petersburg
Williamsburg
Poquoson
Newport News
Norfolk Virginia Beach
Suffolk
38-00-00 N
37-00-00 N
Scale 1:1,500,000
km
0
20
40
60

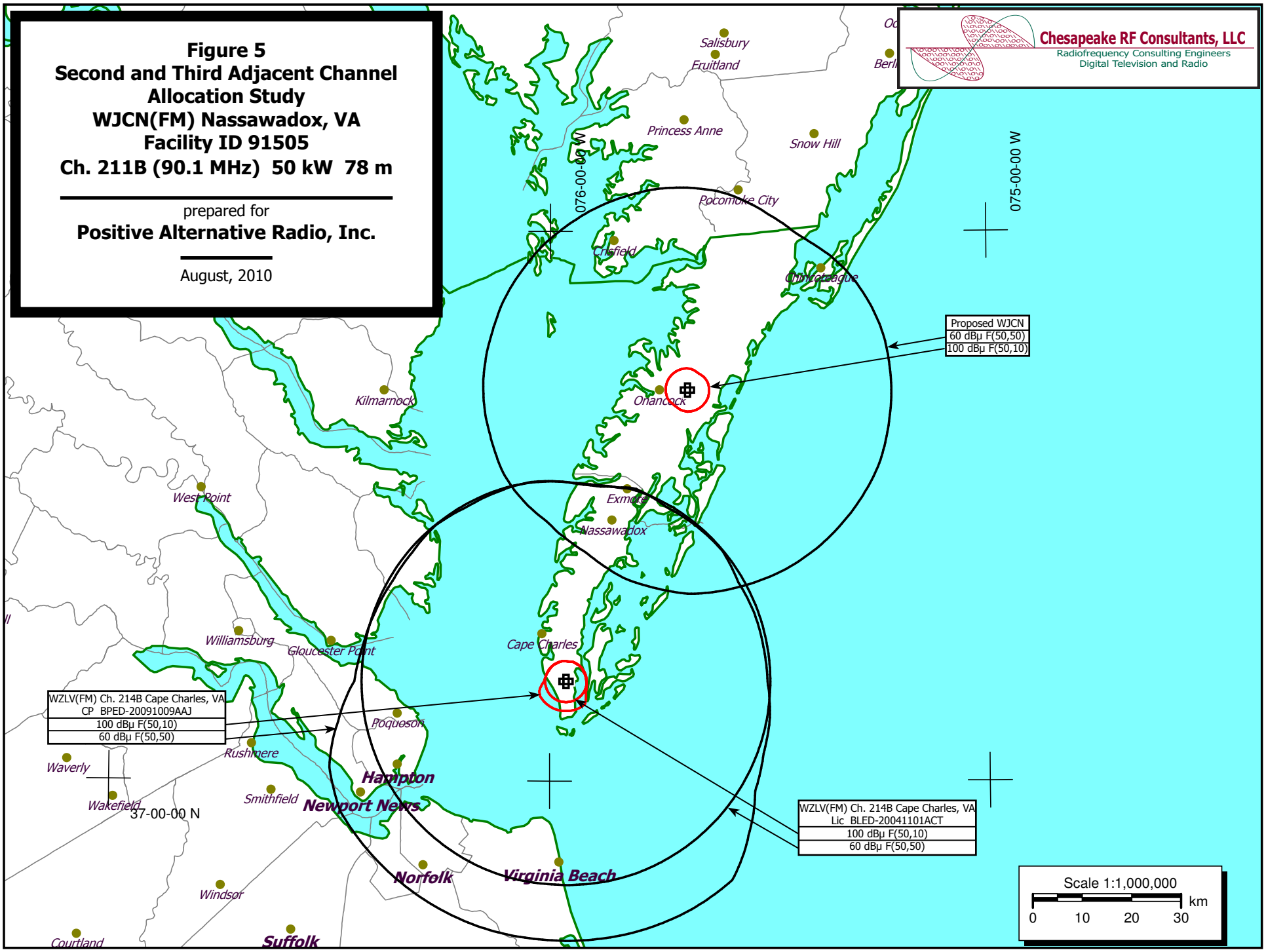
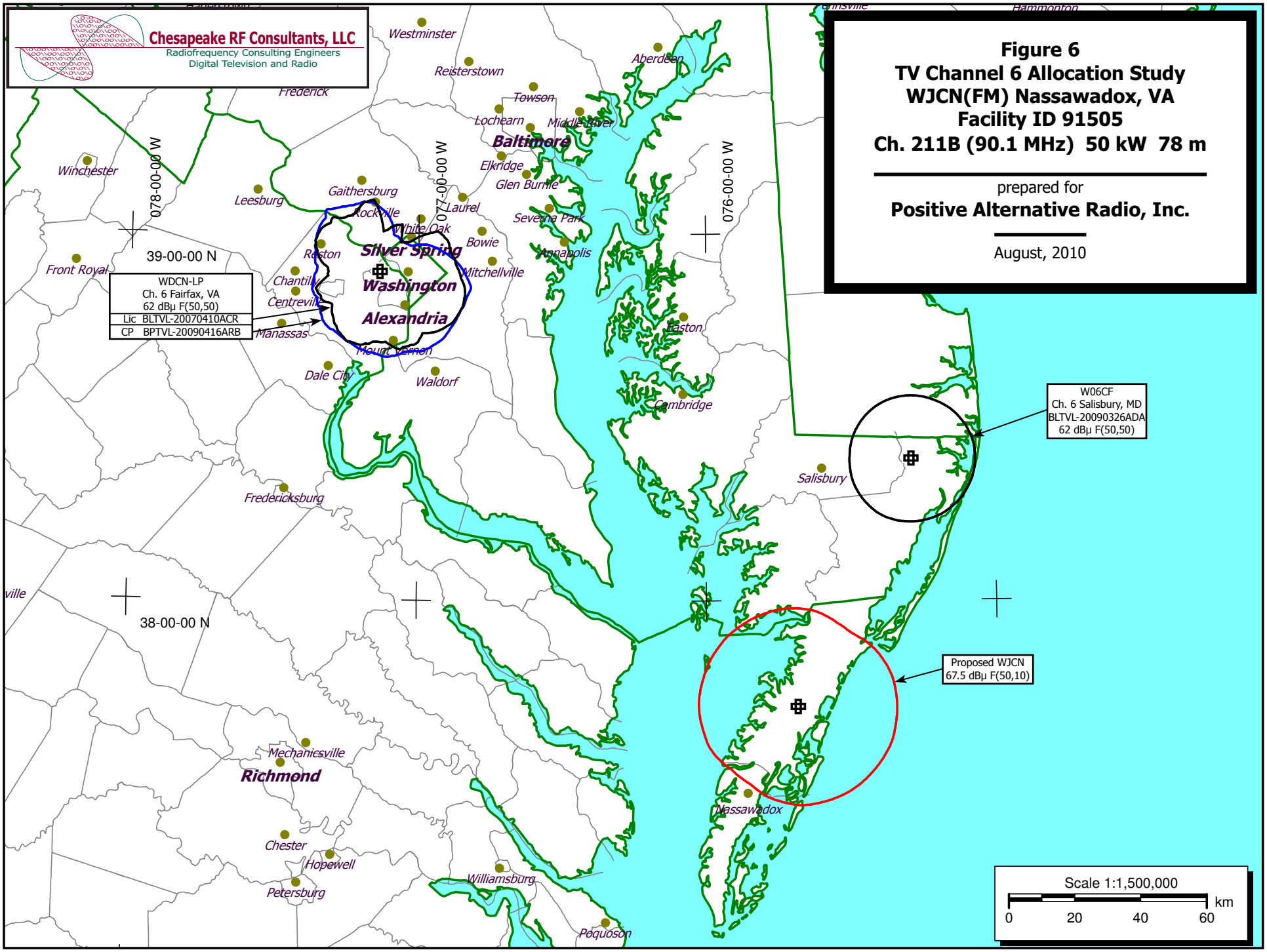


Figure 5
Second and Third Adjacent Channel
Allocation Study
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m
prepared for
Positive Alternative Radio, Inc.
August, 2010
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio
Proposed WJCN
60 dBµ F(50,50)
100 dBµ F(50,10)
WZLV(FM) Ch. 214B Cape Charles, VA
CP BPED-20091009AAJ
100 dBµ F(50,10)
60 dBµ F(50,50)
WZLV(FM) Ch. 214B Cape Charles, VA
Lic BLED-20041101ACT
100 dBµ F(50,10)
60 dBµ F(50,50)
Scale 1:1,000,000
km
0 10 20 30
076-00-00 W
075-00-00 W
37-00-00 N
Salisbury
Fruitland
Princess Anne
Snow Hill
Pocomoke City
Crisfield
Chincoteague
Onancock
Kilmarnock
West Point
Exmore
Nassawadox
Williamsburg
Gloucester Point
Cape Charles
Poquoson
Rushmere
Waverly
Wakefield
Smithfield
Hampton
Newport News
Norfolk
Virginia Beach
Windsor
Courtland
Suffolk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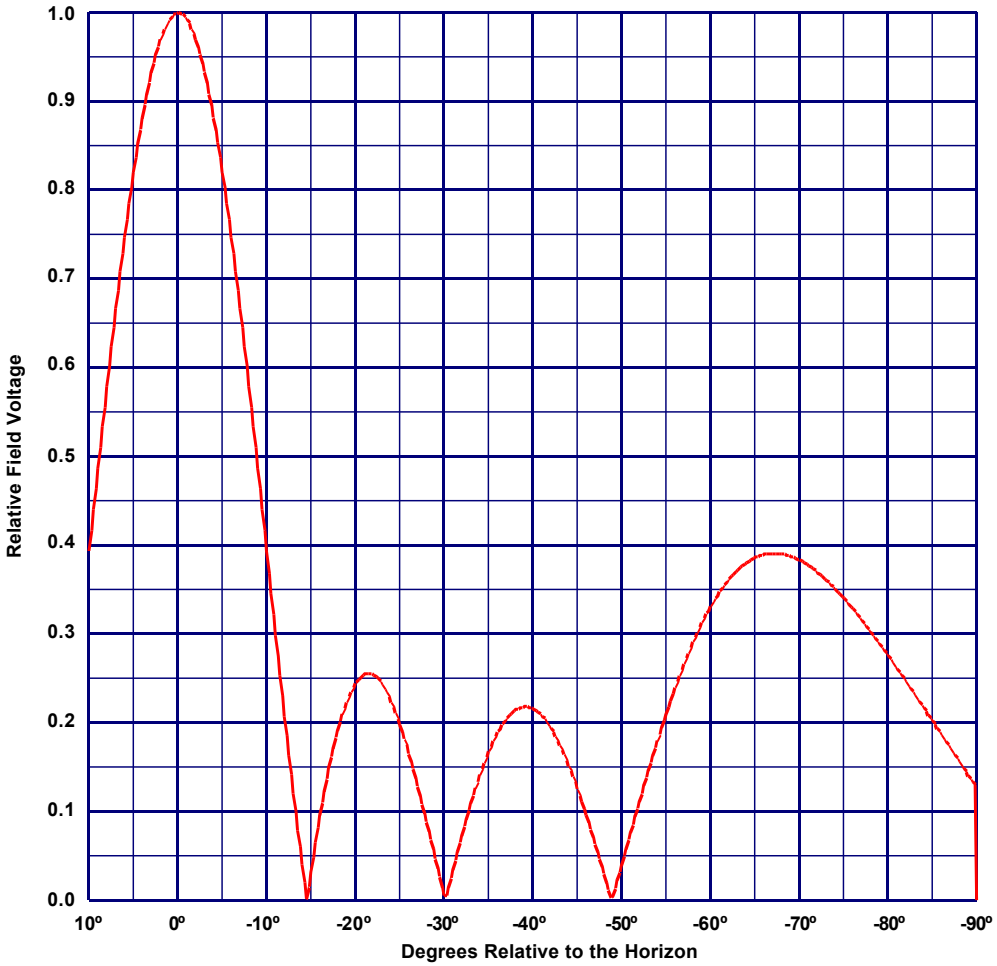
Digital Television and Radio
Figure 6
TV Channel 6 Allocation Study
WJCN(FM) Nassawadox, VA
Facility ID 91505
Ch. 211B (90.1 MHz) 50 kW 78 m
prepared for
Positive Alternative Radio, Inc.
August, 2010
WDCN-LP
Ch. 6 Fairfax, VA
62 dBµ F(50,50)
Lic BLTVL-20070410ACR
CP BPTVL-20090416ARB
W06CF
Ch. 6 Salisbury, MD
BLTVL-20090326ADA
62 dBµ F(50,50)
Proposed WJCN
67.5 dBµ F(50,10)
39-00-00 N
38-00-00 N
078-00-00 W
077-00-00 W
076-00-00 W
Scale 1:1,500,000
0 20 40 60 km
Westminster
Reisterstown
Frederick
Towson
Lochearn
Middle River
Baltimore
Aberdeen
Elkridge
Glen Burnie
Winchester
Leesburg
Gaithersburg
Rockville
Laurel
Severna Park
White Oak
Bowie
Annapolis
Reston
Silver Spring
Washington
Alexandria
Mitchellville
Front Royal
Chantilly
Centreville
Manassas
Mount Vernon
Dale City
Waldorf
Easton
Cambridge
Salisbury
Fredericksburg
Mechanicsville
Richmond
Chester
Hopewell
Petersburg
Williamsburg
Nassawadox
Poquoson

# ERI® Vertical Plane Relative Field Pattern

## ERI TYPE SHP, SHPX, MP, MPX, LP OR LPX ELEMENTS

*A 4 level, 1 wave-length spaced non directional antenna*

*with 0° beam tilt, 0% null fill and a H/V maximum power ratio of 1.000*




| Vertical Polarization Gain: | Horizontal Polarization Gain: |
|---|---|
| Maximum: 2.133 (3.290 dB)<br>Horizontal Plane: 2.133 (3.290 dB) | Maximum: 2.133 (3.290 dB)<br>Horizontal Plane: 2.133 (3.290 dB) |


*Electronics Research, Inc.* 7777 Gardner Rd. Chandler, IN 47601 Phone: (812) 925-6000 Fax: (812) 925-4030 http://www.eriinc.com/



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


**Figure 7**
**Antenna Elevation Pattern**
**WJCN(FM) Nassawadox, VA**
**Facility ID 91505**
**Ch. 211B (90.1 MHz) 50 kW 78 m**

prepared for
**Positive Alternative Radio, Inc.**

August, 2010

**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 | Relationship to Applicant (e.g., Consulting Engineer) |
|---|---|
| JOSEPH M. DAVIS, P.E. | CONSULTING ENGINEER |
| Signature | Date |
| | 8/17/2010 |

| Mailing Address | | |
|---|---|---|
| CHESAPEAKE RF CONSULTANTS LLC<br>PO BOX 1088 | | |
| City | State or Country (if foreign address) | Zip Code |
| YORKTOWN | VA | 23692- |
| Telephone Number (include area code) | E-Mail Address (if available) | |
| 7036509600 | 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).

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**Section VII - FM 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: 211

2. Class (select one):
   ○ D ○ A ○ B1 ◉ B ○ C3 ○ C2 ○ C1 ○ C0 ○ C

3. Antenna Location Coordinates: (NAD 27)
   Latitude:
   Degrees 37 Minutes 42 Seconds 42 ◉ North ○ South

   Longitude:
   Degrees 75 Minutes 41 Seconds 10 ◉ West ○ East

4. Proposed Assignment Coordinates: (NAD 27) - RESERVED CHANNELS ABOVE 220 ONLY ☑ Not Applicable
   Latitude:
   Degrees Minutes Seconds ○ North ○ South

   Longitude:
   Degrees Minutes Seconds ○ West ○ East

5. Antenna Structure Registration Number: 1225371
   ☐ Not Applicable ☐ Notification filed with FAA

6. Overall Tower Height Above Ground Level: 145 meters

7. Height of Radiation Center Above Mean Sea Level: 82.6 meters(H) 82.6 meters(V)

8. Height of Radiation Center Above Ground Level: 69.5 meters(H) 69.5 meters(V)

9. Height of Radiation Center Above Average Terrain: 78.3 meters(H) 78.3 meters(V)

10. Effective Radiated Power: 50 kW(H) 50 kW(V)

11. Maximum Effective Radiated Power: (Beam-Tilt Antenna ONLY) ☑ Not Applicable kW(H) kW(V)

12. Directional Antenna Relative Field Values: ☑ Not applicable (Nondirectional)
    Rotation (Degrees): ☐ No Rotation

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

Relative Field Polar Plot

**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.**

**which a "No" response is provided.**

**CERTIFICATION**

**AUXILIARY ANTENNA APPLICANTS ARE NOT REQUIRED TO RESPOND TO ITEMS 13-17. PROCEED TO ITEM 18.**

13. **Main Studio Location.** The proposed main studio location complies with 47 C.F.R. Section 73.1125. — (•) Yes ( ) No — See Explanation in [Exhibit 13]

14. **Community Coverage.** The proposed facility complies with 47 C.F.R. Section 73.315. (Channels 221 and above) or 47 C.F.R. Section 73.515 (Channels 220 and below). — (•) Yes ( ) No — See Explanation in [Exhibit 14]

15. **Interference.** The proposed facility complies with all of the following applicable rule sections. Check all that apply: — (•) Yes ( ) No — See Explanation in [Exhibit 15]

| | |
|---|---|
| **Contour Overlap Requirements.** a. [x] 47 C.F.R. Section 73.509 **Exhibit Required.** | [Exhibit 16] |
| **Spacing Requirements.** b. [x] 47 C.F.R. Section 73.207 with respect to station(s) | |
| **Grandfathered Short-Spaced.** c. [ ] 47 C.F.R. Section 73.213(a) with respect to station(s) **Exhibit Required.** | [Exhibit 17] |
| **Contour Protection.** d. [ ] 47 C.F.R. Section 73.215(a) with respect to station(s) **Exhibit Required.** | [Exhibit 18] |
| **Television Channel 6 Protection.** e. [x] 47 C.F.R. Section 73.525 with respect to station(s) **Exhibit Required.** | [Exhibit 19] |

16. **Reserved Channels Above 220.**
a. **Availability of Channels.** The proposed facility complies with the assignment requirements of 47 C.F.R. Section 73.203. — ( ) Yes ( ) No — See Explanation in [Exhibit 20]

17. **International Borders.** The proposed antenna location is not within 320 kilometers of the common border between the United States and Canada or Mexico. — (•) Yes ( ) No
If "No," specify the country and provide an exhibit of compliance with all provisions of the relevant International Agreement. — ( ) Canada ( ) Mexico — [Exhibit 21]

18. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Worksheet #7, an **Exhibit is required.** — (•) Yes ( ) No — See Explanation in [Exhibit 22]

By checking "Yes" above, 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.

19. **Community of License Change - Section 307(b).** If the application is being submitted to change the facility's community of license, then the applicant certifies that it has attached an exhibit containing information demonstrating that the proposed community of license change comports with the fair distribution of service policies underlying Section 307(b) of the Communications Act of 1934, as amended (47 U.S.C. Section 307(b)). — ( ) Yes ( ) No (•) N/A — [Exhibit 23]

**An exhibit is required** unless this question is not applicable.