

ENGINEERING EXHIBIT

Application for Modification of Construction Permit

prepared for

Cornerstone Community Radio, Inc.

W270CK Tampa, FL

Facility ID 156440

Ch. 299 107.7 MHz 0.25 kW

Cornerstone Community Radio, Inc. (“*Cornerstone*”) is the permittee of the Construction Permit (“CP” BNPFT-20130819AFR) for unbuilt FM translator station W270CK, Channel 270, Fac ID 156440, Melbourne, FL. Pursuant to the procedures described in FCC 15-142 (FM translator filing window for AM licensees),¹ *Cornerstone* herein proposes to relocate W270CK to Tampa FL, change to Channel 299, and associate the facility with station WAMA(AM) (Class D, 1550 kHz, Fac ID 19055, Tampa FL). Accordingly, the proposal is a “250-mile window application²” and *Cornerstone* certifies that a rebroadcast agreement with WAMA has been established.

The proposed translator site is an existing tower structure associated with FCC Antenna Structure Registration (“ASR”) number 1030332. The proposed site is located 111.0 miles (178.6 km) from the authorized W270CK site and therefore complies with the filing window’s maximum relocation distance of 250 miles. The proposed transmitting antenna will be side-mounted on the tower structure and no change to the overall structure height will result from this proposal.

¹*Revitalization of the AM Radio Service*, First Report and Order, Further Notice of Proposed Rule Making, and Notice of Inquiry, FCC 15-142, released October 23, 2015.

²See Public Notices: *Media Bureau Initiates AM Revitalization Outreach Efforts; Modification Window Procedures and Requirements Announced*, DA 15-1215, released October 26, 2015; and *Media Bureau Announces Filing Dates And Procedures For AM Station Filing Window for FM Translator Modifications and Availability of FM Translator Technical Tools*, DA 15-1491, released December 23, 2015.

Fill-In Compliance

W270CK will be a fill-in translator for station WAMA(AM). The 60 dB μ contour of the proposed W270CK is encompassed by the lesser of the WAMA daytime 2 mV/m contour and a 25 mile radius from WAMA's transmitter site as depicted in Figure 1. As a fill-in translator, the proposed 0.25 kW ERP complies with §74.1235(a). Final signal delivery of the audio programming material to the translator will be accomplished via internet.

§74.1204 Interference Protection

Table 1 supplies a summary of the proposal's compliance with the interference protection requirements of §74.1204(a) and (g). The proposed facility complies with the prohibited contour overlap requirements of 74.1204(a) regarding all FM full power, low power, and translator stations except for one full power station, WXGL(FM) (Ch. 297C1, St. Petersburg, FL). The proposal complies with §74.1204(d) with respect to WXGL.

As described in FCC 02-244³ the "ratio" undesired-to-desired signal method of interference determination may be used by an FM translator applicant to demonstrate compliance with §74.1204(d). WXGL is on a second adjacent channel and is located 24.2 km distant from the proposed site. The WXGL signal level at the proposed translator site is 80.3 dB μ based on standard FCC F(50,50) propagation curves. The corresponding undesired interfering signal level is 120.3 dB μ .

At the proposed ERP of 250 Watts, the translator's worst-case (free space) 120.3 dB μ interfering signal extends 0.106 km (106 meters). Since the proposed antenna's height is 120 meters above ground level, the interfering signal will not reach ground level or any populated areas. An aerial view of the proposed translator site and vicinity is provided in Figure 2. The surrounding terrain is flat and there are no nearby tall buildings. Thus the proposal complies with §74.1204(d) with respect to WXGL.

³*Living Way Ministries, Inc.* Memorandum Opinion and Order, Released September 9, 2002, FCC 02-244, 17 FCC Rcd 17054-60.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

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 assuming the worst-case of 100 percent relative field at downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $1.2 \mu\text{W}/\text{cm}^2$, which is 0.6 percent of the general population/uncontrolled maximum permitted exposure limit. This is 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. When the antenna's elevation pattern is considered, the calculated RF exposure level will be even lower.

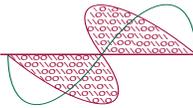
The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power 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.

List of Attachments

Figure 1	Coverage Contours – Primary and Translator Stations
Figure 2	Interference Protection to WXGL(FM) - Aerial View
Table 1	Channel Allocation Summary
Form 349	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E. March 21, 2016
207 Old Dominion Road Yorktown, VA 23692 703-650-9600

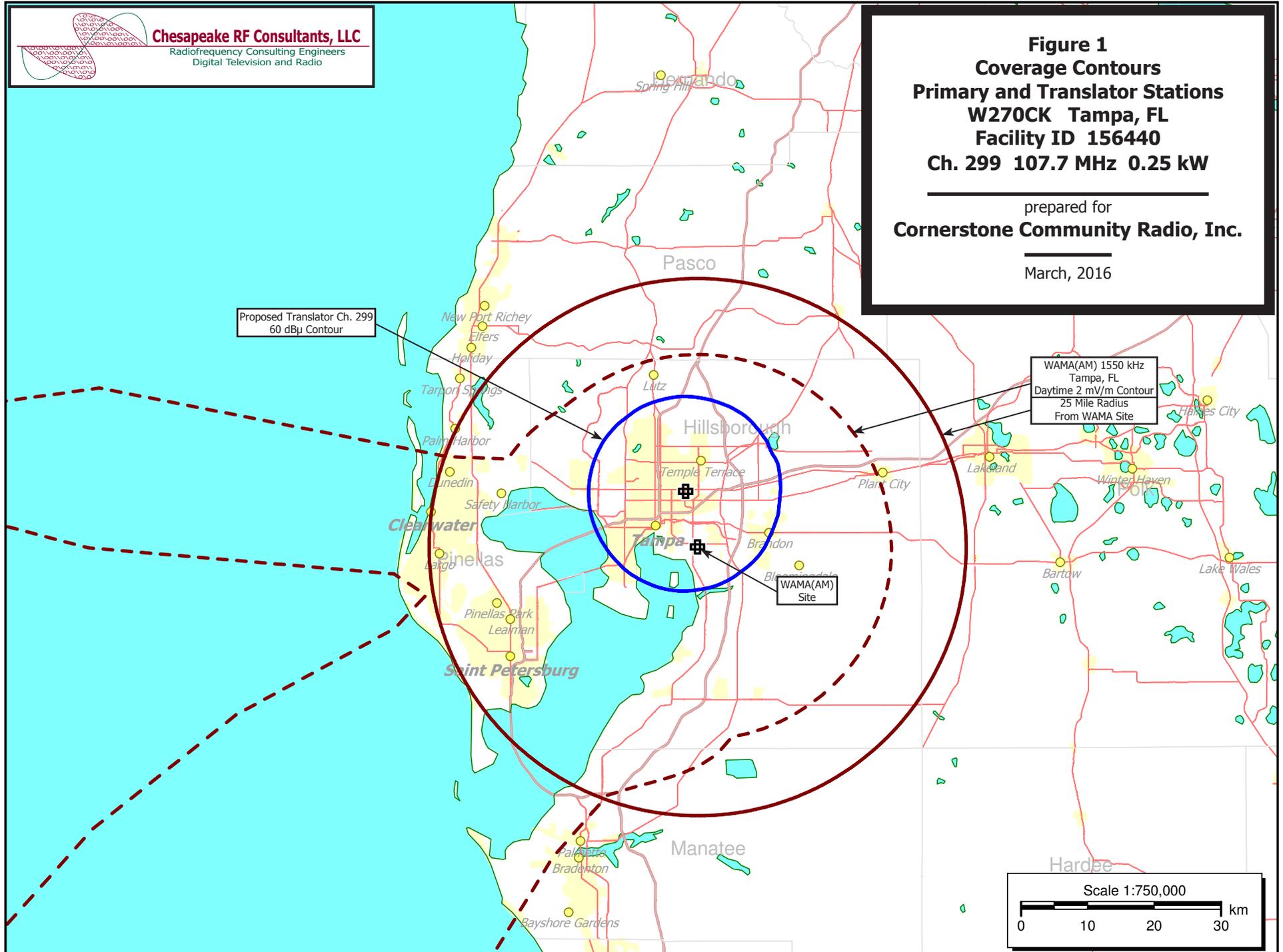


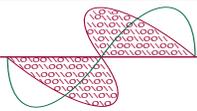
Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 1
Coverage Contours
Primary and Translator Stations
W270CK Tampa, FL
Facility ID 156440
Ch. 299 107.7 MHz 0.25 kW

prepared for
Cornerstone Community Radio, Inc.

March, 2016



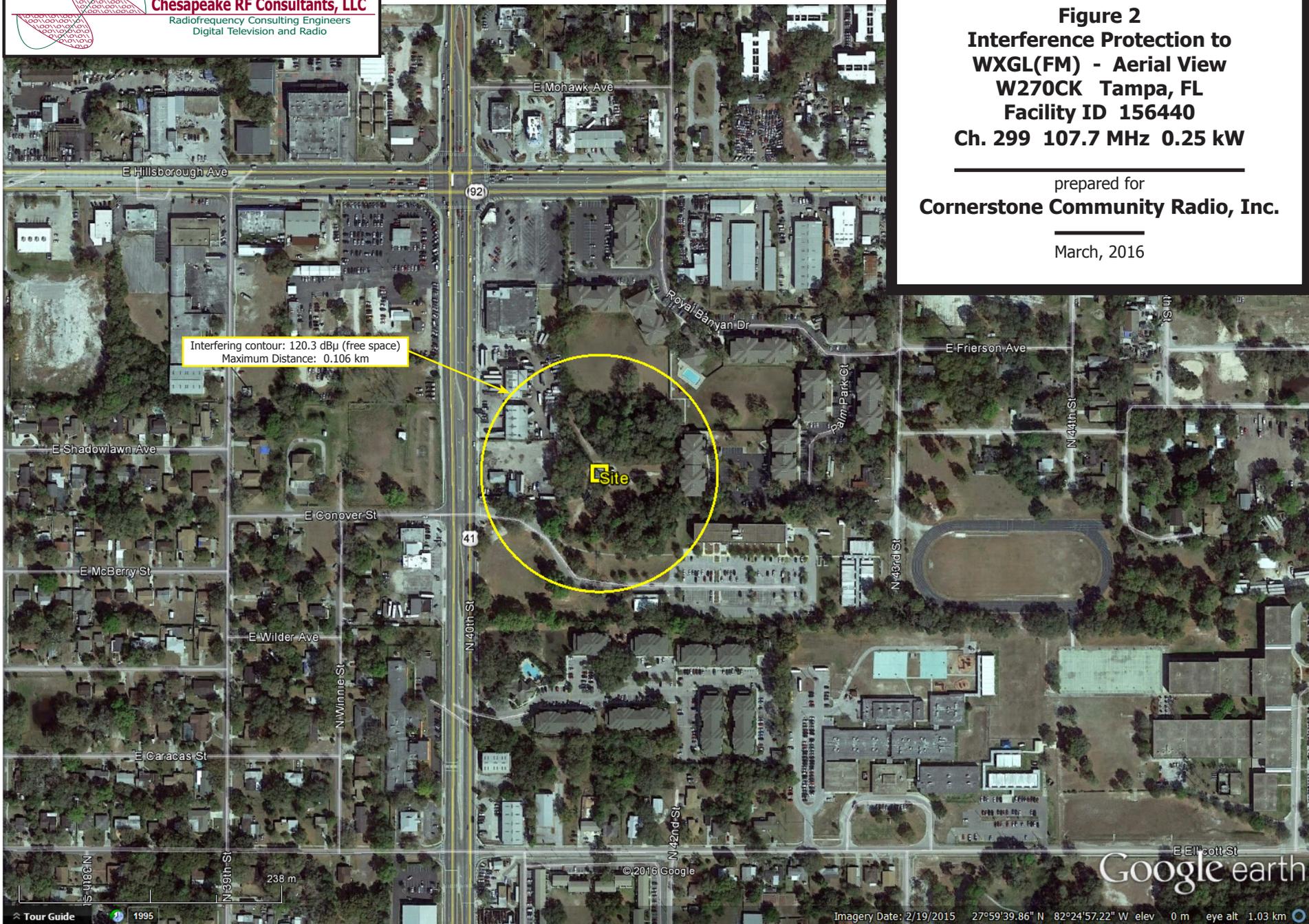


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 2
Interference Protection to
WXGL(FM) - Aerial View
W270CK Tampa, FL
Facility ID 156440
Ch. 299 107.7 MHz 0.25 kW

prepared for
Cornerstone Community Radio, Inc.

March, 2016



Interfering contour: 120.3 dBμ (free space)
Maximum Distance: 0.106 km

Site

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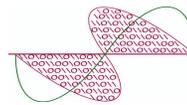
Google earth

Tour Guide 1995

Imagery Date: 2/19/2015 27°59'39.86" N 82°24'57.22" W elev 0 m eye alt 1.03 km

Table 1

Channel Allocation Study Summary
Cornerstone Community Radio, Inc.
 W270CK Tampa, FL



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

CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
299C Mount Dora	WMGF	LIC	C FL	45.8 226.3	148.45 BLH20081201AGU	28 55 10.1 81 19 07.4	100.000 484	189.9 494	86.1 Clear Channel Broadcasting	-55.8*<	14.0
297C1 St. Petersburg	WXGL	LIC	CN FL	282.3 102.2	24.16 BLH20000606ACQ	28 02 22.0 82 39 12.0	100.000 182	7.8 186	61.9 Cox Radio, Inc.	1.9	-38.9*<
300C2 Coral Cove	WSRZ-FM	LIC	CX FL	183.1 3.1	93.80 BLH20040518AAS	27 09 03.0 82 27 51.0	47.000 155	77.6 157	52.0 Citicasters Licenses, Inc.	1.2	19.3
300L1 Tarpon Springs	NEW	CP	FL	305.2 125.0	30.87 BNPL20131114ACP	28 09 11.0 82 40 13.0	0.024 60	67	County Of Pinellas	8.8	3.7
300D Lakeland	W300CL	CP	C FL	75.8 256.1	50.88 BNPFT20130823ABC	28 06 16.0 81 54 35.0	0.055 53	8.8 92	6.2 Central Florida Educationa	27.6	22.9
300L1 Spring Hill	WPHC-LP	LIC	FL	337.8 157.7	53.02 BLL20150709AAT	28 26 05.4 82 37 03.3	0.100 28	36	Nature Coast Community Rad	30.7	25.8
246C2 Holiday	WSUN-FM	LIC	NC FL	301.1 121.0	40.73 BLH19980608KG	28 10 56.0 82 46 06.0	11.500 224	0.0 226	0.0 Cox Radio, Inc.	14.5R	26.2M
298D Auburndale	W298BO	CP	C FL	80.9 261.2	58.69 BNPFT20130823ABD	28 04 31.0 81 49 19.0	0.038 61	8.8 100	6.1 Central Florida Educationa	35.6	30.9
296D Lakeland	W296CS	LIC	DC FL	96.3 276.6	49.46 BLFT20150817AAB	27 56 36.0 81 54 44.0	0.250	0.3 171	8.3 Hall Communications, Inc.	34.9	40.1
300D Lake Wales	W300CY	CP	DC FL	88.5 268.9	79.86 BMPFT20160127AEY	28 00 33.9 81 35 57.7	0.100	12.0 159	8.5 Radio Training Network, In	53.7	49.8
300L1 Chassahowitzka	WEKJ-LP	LIC	FL	349.3 169.2	81.20 BLL20121130BCW	28 42 39.0 82 34 05.0	0.047 43	52	Christian Radio Network, I	58.8	53.8
298D Avon Park	W298BU	LIC	DC FL	117.8 298.2	102.46 BLFT20150731AAA	27 33 37.0 81 29 36.0	0.215	20.1 145	13.4 wfht Llc	68.0	67.4
300L1 Avon Park	WWMA-LP	LIC	FL	114.7 295.1	96.44 BLL20050728AKM	27 37 40.0 81 31 24.0	0.100 20	54	Highlands County Chapter 0	74.1	69.2

Terrain database is FCC NGDC 30 Sec, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference Zone= East Zone, Co to 3rd adjacent.
 All separation margins (if shown) include rounding.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
 < = Station meets FCC minimum distance spacing for its class.
 < = Contour Overlap

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 3/21/2016	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 207 OLD DOMINION ROAD			
City YORKTOWN		State or Country (if foreign address) VA	Zip Code 23692 -
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).

Section III-A - 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: 299											
2. Primary Station:											
Facility ID Number			Call Sign			City			State		
19055			WAMA			TAMPA			FL		
3. Delivery Method (Select One): <input type="radio"/> Off-air <input type="radio"/> Microwave <input type="radio"/> Satellite <input type="radio"/> Via <input checked="" type="radio"/> Other											
4. Antenna Location Coordinates: (NAD 27)											
Latitude:											
Degrees 27 Minutes 59 Seconds 36 <input checked="" type="radio"/> North <input type="radio"/> South											
Longitude:											
Degrees 82 Minutes 24 Seconds 46 <input checked="" type="radio"/> West <input type="radio"/> East											
5. Antenna Structure Registration Number: 1030332 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA											
6. Antenna Location Site Elevation Above Mean Sea Level:									15 meters		
7. Overall Tower Height Above Ground Level:									127 meters		
8. Height of Radiation Center Above Ground Level:									120 meters(H) 120 meters(V)		
9. Effective Radiated Power:									0.25 kW(H) 0.25 kW(V)		
10. Transmitting Antenna:											
Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under CDBS Public Access (http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.											
<input checked="" type="radio"/> Nondirectional <input type="radio"/> Directional Off-the Shelf <input type="radio"/> Directional composite											
Manufacturer SWR Model FMEC-1											
Rotation:degrees <input type="checkbox"/> 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](#)

11. For FM Boosters and Fill-in translators only.											
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	<p>a. FM Fill-in translators. Applicant certifies that the FM translator's (a) coverage contour does not extend beyond the protected contour of the commercial FM primary station to be rebroadcast, or (b) entire 60 dBu contour is contained within the lesser of: (i) the 2 mV/m daytime contour of the AM primary station to be rebroadcast, or (ii) a 25-mile radius centered at the AM primary station's transmitter site.</p> <p>b. FM Boosters. Applicant certifies that the FM Booster station's service contour is entirely within the primary station's protected coverage contour.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A</p> <p>See Explanation in [Exhibit 10]</p> <p><input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A</p> <p>See Explanation in [Exhibit 11]</p>
12.	<p>Interference. The proposed facility complies with all of the following applicable rule sections. Check all that apply:</p> <p>Overlap Requirements. <input checked="" type="checkbox"/> a) 47 C.F.R. Section 74.1204 Exhibit Required.</p> <p>Television Channel 6 Protection. <input type="checkbox"/> b) 47 C.F.R. Section 74.1205 with respect to station(s) Exhibit Required.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 12]</p> <p>[Exhibit 13]</p> <p>[Exhibit 14]</p>
13.	<p>Unattended operation. Applicant certifies that unattended operation is not proposed, or if this application proposes unattended operation, the applicant certifies that it will comply with the requirements of 47 C.F.R. Section 74.1234.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 15]</p>
14.	<p>Multiple Translators. Applicant certifies that it does not have any interest in an application or an authorization for an FM translator station that serves substantially the same area and rebroadcasts the same signal as the proposed FM translator station.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 16]</p>
15.	<p>Environmental Protection Act. Applicant certifies that 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 Appendix A, an Exhibit is required.</p> <p>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.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 17]</p>
<p>PREPARER'S CERTIFICATION ON PAGE 4 MUST BE COMPLETED AND SIGNED.</p>		