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JAMES L. ADAMS, JR.
FM BROADCAST STATION WTYS-FM
MARIANNA, FL
FACILITY ID: 29697

MINOR CHANGE APPLICATION

JUNE 2019

ENGINEERING EXHIBIT
IN SUPPORT OF

APPLICATION FOR AUTHORITY TO
CONSTRUCT OR MAKE CHANGES IN AN
FM BROADCAST STATION FCC FORM 301-FM

ENGINEERING EXHIBIT

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NARRATIVE STATEMENT

The engineering exhibit, of which this narrative is part, was prepared on behalf of JAMES L. ADAMS, JR., in support of an application to modify the license facilities of WTYS-FM (BLH-20050304ACB), Marianna, Florida.

The licensee seeks to make minor changes to the antenna site location (corrects geographical coordinates) and the center of radiation height of the antenna system, as well as maximize its Class A effective radiated power (ERP) to 6-KW (H&V) corresponding to its adjusted height above average terrain (HAAT) of 86 meters.

**EXPEDITED PROCESSING IS REQUESTED TO RESTORE SERVICE AS A
RESULT OF DAMAGE CAUSED BY HURRICANE “MICHAEL”**

The changes sought are classified as “minor” by the Commission’s application processing rules. In support of the requested changes, the following figures, exhibits or tables are provided:

Figure 1 – Supporting Structure FAA Notification of Reduced Height:

The existing structure’s overall height is being reduced as a result of structural damage to the tower sustained during Hurricane Michael (October 2018). As a result of the reduction in the available tower height, the applicant proposes to side-mount its antenna at a lower elevation on the tower. The FAA has been notified of the reduction in tower height (FAA 2019-ASO-18859-OE) and the slight correction

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of the geographical coordinates. The FCC Tower registration is ASR 1031211 which will be modified once the FAA record has been updated.

The minor correction of the supporting structure geographical coordinates are documented in the table below:

FAA NOTICE	CURRENT FAA / ASR	CORRECTED FAA / ASR	CHANGE IN SECONDS
NAD83 DATUM	30-45-48.00N 85-13-52.00W	30-45-48.55N 85-13-51.54W	+0.55N -0.46W
NAD27 DATUM	30-45-47.30N 85-13-52.26W	30-45-47.85N 85-13-51.80W	

Figure 2 – Vertical Sketch of Tower and Antenna:

A vertical sketch of antenna supporting structure with the antenna mounting elevation and other antenna details is provided as Figure 2.

Nondirectional (Omni) Antennas Details:

The antenna is a circular polarized, JAMPRO JMPC-8 an eight-bay/element 1-wavelength spacing between bay antenna. The effective radiated power is 6.0 kW using H & V polarization.

Figure 3 – Predicted Service Contour:

The predicted service contours from the FM facility was calculated in accordance with the provisions of 47 CFR 73.313. The average terrain elevations from 3 to 16 kilometers from the proposal were obtained from the NGDC 30-second computer database. The standard eight radials evenly spaced at 45-degree intervals were used for determining the distance to the 60 dBu F(50,50) service contour. 70 dBu F(50,50) service or greater is predicted over 100% of the community of license, Marianna, Florida.

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Marianna, FL

The antenna Height Above Average Terrain was verified using the FCC on-line data tool in which the results are presented below:

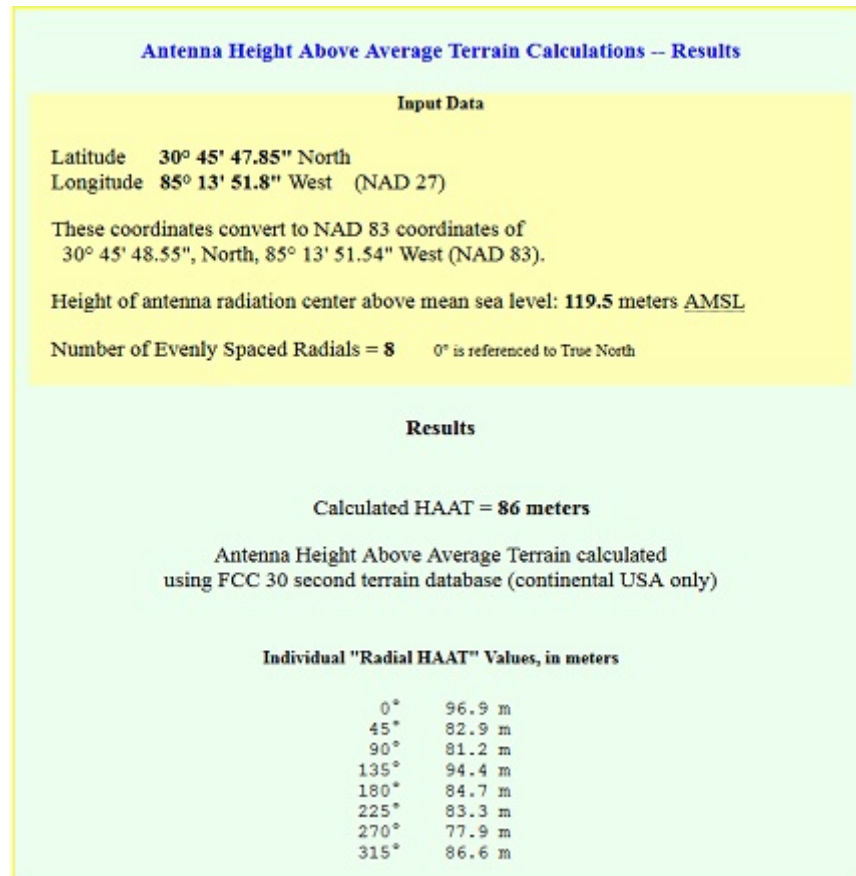


Figure 4 – FM Channel Study:

The proposed operation fully protects all other stations of concern as detailed in the contour overlap study in Figure 4. The facility has not created any short-spacing to any existing facility or pending application and remains a fully spaced facility. ¹

¹ The spacing between WTYS-FM and WIBZ, Abbeville, Alabama remains the same. WIBZ (BMLED-20100412ABG) operates under the provisions of 73.215 with regards to its spacing and operation towards WTYS-FM. This proposal does not change the existing spacing to WIBZ, therefore, the provisions of 73.215 do not apply to WTYS-FM. WTYS-FM remains a fully-spaced and protected facility.

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Environmental Considerations:

The applicant believes its proposal will not significantly affect the environment for the following reasons:

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high-intensity white lights. Furthermore, the operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission.

The results of the FCC's FM Model computer program output indicate that the power density from this proposal using a JAMPRO JMPC-8, 8-Bay, 1.0 Spacing between elements² is predicted to be 4.92 $\mu\text{W}/\text{cm}^2$ or less. The computed power density is 0.49% of the Commission's guidelines for a controlled area and 2.46% for an uncontrolled area. This level is well below the Commission's guidelines for maximum exposure levels to electromagnetic fields.

As this is a multiple use site, the contributions of all RF emitters (licensed and proposed) at the site have been considered and are detailed in the table below:

² The FCC/OET classifies this antenna as an EPA "Type 2" model antenna when used with the "FCC FM Model" software program to predict power density levels. See Public Notice DA 16-340, Released March 31, 2016, Appendix B – Cross-Reference of Commercial FM Broadcast Antennas with EPA Element Type.

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 Marianna, FL

MULTIPLE USE SITE - CALCULATIONS					
ANTENNA AM 1340 KHZ	INPUT POWER KW	RADIATOR WAVELENGTH 1340 KHz	OET BULLETIN 65 MINIMUM DISTANCE METERS	ACTUAL FENCE DISTANCE METERS	PASS / FAIL
WTYS (AM)	< 1.0	169.21 deg = 0.470 λ	2.0	> 2.5 meters	PASS

FM	SERVICE	MHZ	MAX ERP	POWER DENSITY at 2 m AGL	% MPE WORKER	% OF MPE PUBLIC	PASS / FAIL
WTYS-FM	FM	94.1	6.00 KW (H&V)	4.92	0.492	2.460	PASS
W282CM	FX	104.3	0.25 KW (H&V)	1.80	0.180	0.900	PASS
SITE TOTAL				6.72	0.672	3.360	PASS

The applicant will fully-cooperate and coordinate with all site users as required by the Commission's rules. The site is in compliance with the Commission's standards and guidelines.

Summary:

The WTYS-FM, Marianna, Florida, Facility ID: 29697 will operate with a maximum effective radiated power (ERP) of 6.0 kilowatts (H & V) on FM Channel 231A, Marianna, Florida, utilizing an 8-bay (element) fully spaced NONDIRECTIONAL antenna system.

The proposed operation is fully in compliance with all areas of the Commission's rules and applicable international agreements.

June 10, 2019

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Timothy Z. Sawyer, Consulting Engineer

Existing Communications Tower - Reduction in Overall Height, and Minor correction in geographical coordinates.

Case Status

ASN: 2019-ASO-18859-OE
Status: Accepted

Public Comments: None

Date Accepted: 06/10/2019

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Alteration

Duration: Permanent

if Temporary : Months: Days:

Work Schedule - Start: 06/01/2019

Work Schedule - End: 06/15/2019

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Details

Latitude: 30° 45' 48.55" N

Longitude: 85° 13' 51.54" W

Horizontal Datum: NAD83

Site Elevation (SE): 89 (nearest foot) **PASSED**

Structure Height (AGL): 348 (nearest foot)

Current Height (AGL): 421 (nearest foot)

** For notice of alteration or existing provide the current
AGL height of the existing structure.*

Include details in the Description of Proposal

Structure Summary

Structure Type: Antenna Tower

Structure Name: WTYS AM-FM TOWER

FDC NOTAM:

NOTAM Number:

FCC Number: 1031211
[FCC ASR Registration](#)

Prior ASN: 2019-ASO-17094-OE

Proposed Frequency Bands

Select any combination of the applicable frequencies/powers identified in the Colo Void Clause Coalition, Antenna System Co-Location, Voluntary Best Practices, effective 21 Nov 2007, to be evaluated by the FAA with your filing. If not within one of the frequency bands listed below, manually input your proposed frequency(ies) and power using the Add Specific Frequency link.

[Add Specific Frequency](#)

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
Low Freq	High Freq	Freq Unit	ERP	ERP Unit
94.1	94.1	MHz	6	kW
104.3	104.3	MHz	0.25	kW
1340	1340	kHz	1	kW

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**FAA NOTICE OF ALTERATION
FCC TOWER REGISTRATION ASR: 1031211**

WTYS (AM), WTYS-FM, W282CM (FX)
MARIANNA, FLORIDA

**FIGURE
1**

FALL CHURCH, VIRGINIA 22043-2555

SIZE

A

CAGE NO

N/A

DWG NO

20190610WTYS.W282CM.F1

REV

6/10/2019

(c) 2019, ALL RIGHTS RESERVED

SCALE

N/A

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SHEET

**CORRECTED
TOWER COORDINATES**

NAD 27
30-45-47.85 N. LAT
85-13-51.80 W. LON

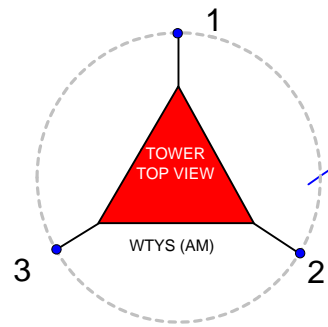
NAD 83
30-45-48.55 N. LAT
85-13-51.54 W. LON

USGS TOPOGRAPHIC MAP
SITE ELEVATION
89' (27.1 m)

GUY WIRES WITH INSULATORS
FOR AM STATION, NON-
RADIATING GUY WIRE
MATERIAL TO BE USED IN FM
ANTENNA APERTURES

UNIFORM CROSS-SECTION,
GUYED, STEEL RADIO TOWER

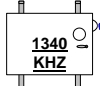
TOWER BASE GROUND



FOLDED UNIPOLE SKIRT
3-DROP WIRES EXTENDED
30" TO 36" FROM EACH LEG

FOLDED UNIPOLE
USED FOR AM
STATION

PREDICTED
FOLDED UNIPOLE
SKIRT
 $Z_o \sim 50 - j 1040 \text{ ohms}$



WTYS-FM 94.1 MHz
8-BAYS 1.0 SPACING

W282CM 104.3 MHz
1-BAY

Reserved for 2-WAY ANTENNAS
Approx. 210' - 245' AGL

ESTIMATED
STUB / SHUNT
~ 170'

SHUNT TAP TO TOWER ~170' (51.82 m) AGL

348' (106.1 m) AGL with BEACON

345' (105.2 m) Tower Steel

WTYS-FM
119.5 m RCAMSL 92.4 m (303') AGL
86.0 m HAAT (FCC 8-Radials Average)

W282CM
103.9 m RCAMSL
76.8 m (252') AGL
70.9 m HAAT
(FCC 12-Radials Average)

W282CM FMX Center of Radiation

WTYS-FM Center of Radiation

Without obstruction light 345' (105.2 m)
Grounded Base 1340 Kilohertz AM Radiator Electrical Degrees 169.21

With obstruction light 348' (106.1 m) AGL
437' (133.2 m) AMSL

Site Elevation ~ 89' (~ 27.1 m)

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VERTICAL SKETCH OF SUPPORTING STRUCTURE

WTYS (AM) WTYS-FM W282CM
MARIANNA, FL

**FIGURE
2**

FALL CHURCH, VIRGINIA 22043-2555

SIZE
A

CAGE NO
N/A

DWG NO

20190610WTYS.F2.REVISED

REV
6/10/19

(c) 2019, ALL RIGHTS RESERVED

SCALE 1"=50' Vertical Only

JUNE 2019

SHEET

WTYS-FM

THIS APPLICATION

FCC FacID: 29697

NAD 27 Latitude: 30-45-47.85 N

NAD 27 Longitude: 085-13-51.80 W

ERP: 6.00 kW

Channel: 231 Frequency: 94.1 MHz

Antenna RCMSL Height: 119.5 m

Site Elevation: 27.1 m

Horiz. Pattern: Omni

MARIANNA FL
CITY OF LICENSE
100% SERVICE

WTYS-FM - CHANNEL 231A - 94.1 MHZ

PREDICTED SERVICE CONTOURS

FCC 70 DBU F(50,50)

FCC 60 DBY F(50,50)

CITY OF LICENSE - MARIANNA, FL

FIGURE 3

FCC 60 DBU F(50,50)

FCC 70 DBU F(50,50)

60 DBU FCC CONTOUR - 2010 CENSUS

Total Population: 41,072

Total Area: 2,192.9 sq. km

Scale 1:333,333

0 5 10 15 km



JUNE

FIGURE 4 - FM CHANNEL SPACING STUDY

WTYS-FM MINOR CHANGE APPLICATION

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REFERENCE

30 45 47.8 N.

CLASS = A

85 13 51.8 W.

Current Spacings to 3rd Adj.

----- Channel 231 - 94.1 MHz -----

Call	Channel	Location		Azi	Dist	FCC	Margin
WIZB	LIC-Z 232C3	Abbeville	AL	355.8	75.07	89.0	-13.9 *
WAKU	LIC 231A	Crawfordville	FL	130.4	117.39	115.0	2.4
WMEZ	LIC-N 231C0	Pensacola	FL	266.3	228.30	215.0	13.3
WMTM-FM	LIC 230C1	Moultrie	GA	69.6	146.74	133.0	13.7
WTKP	CP -Z 229C2	Port St. Joe	FL	195.1	71.27	55.0	16.3
WFLF-FM	LIC 233C0	Parker	FL	181.5	104.69	86.0	18.7
W230CY	LIC 230D	Dothan	AL	344.5	55.84	36.0	19.8
WTKP	LIC-N 228C2	Port St. Joe	FL	181.5	104.69	55.0	49.7

Protected zones report for WTYS-FM on channel 231A

Closest AM Facility is WTYS, MARIANNA, FL - Co-owned and located facility.

Facility is okay with respect to FCC monitoring stations.

Facility is okay toward West Virginia Quiet Zone.

Facility is okay toward Table Mountain.

* WIZB operates as a 73.215 facility to WTYS.