

Technical Report Supporting a New LPFM Construction Permit Application

Pursuant to 47 C.F.R. Section 73

*for
Tullahoma, TN
CH252L1 (98.3 MHz)
(Facility ID: 788170)*

*as filed by
Third Angel Media Group*

*This Application is being filed in response to
PUBLIC NOTICE(s): DA 23-531 & DA 23-984;
“Media Bureau Announces Revised Dates for
LPFM New Station Application Filing Window Open
from December 6, 2023 to December 13, 2023”*

December 2023

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Explanation of Technical Report

1

EXPLANATION OF PROPOSAL: This LMS Schedule 318 filing for a New LPFM Construction Permit Application and accompanying Technical Report supports a request for a new Low Power (LPFM) station pursuant to, and in response to, **PUBLIC NOTICE(s): DA 23-531 & DA 23-984**; *“Media Bureau Announces Revised Dates for LPFM New Station Application Filing Window Open from December 6, 2023 to December 13, 2023”*. This FCC Schedule 318-LPFM filing requests a new facility for CH252L1(98.3 MHz) – Tullahoma, TN with 0.100 kW ERP (Circular Polarization) utilizing a non-directional antenna. An operating height of 339.1 meters AMSL (30.0 m HAAT) is requested in conjunction with use of the FCC 30 Second terrain database.

FACILITY COMPLIANCE SHOWINGS: A map of the proposed 60 dB μ service contour has been included in **Exhibit 1**. This exhibit demonstrates LPFM grade service of 1.0 mV/m, or 60 dB μ F(50:50), to the proposed community of license. A Longley-Rice coverage map of the proposed operation has been plotted in **Exhibit 2**. The applicant acknowledges this map has been provided for illustrative purposes only.

The facility will be located on a new 21.3 meter (70 ft) tower which does not require Antenna Structure Registration. In support of this filing, a copy of USGS Topographic Aerial Photomapping of the existing tower site has been included in **Exhibit 3**. A depiction of the tower and antenna configuration has been included in **Exhibit 4**. *The applicant certifies it has reasonable assurance in good faith that the above structure will be available to the applicant for the applicant’s intended purpose. As this reasonable assurance is not based on the applicant’s ownership of the structure, the applicant certifies that it has obtained such reasonable assurance by contacting the owner or person possessing control of the site or structure. The name of the person contacted, the person’s telephone number, and status of the contact as the tower owner, agent, or authorized representative is as follows:*

Name:	Brian P. Milano
Contact Telephone Number:	1(207)877-4726
Contact Status:	Authorized Representative

The applicant would like to note use of the FCC 30 Second terrain database for the HAAT showing contained herein. A copy of the proposed HAAT calculation has been included in **Exhibit 5**. Pursuant to the procedures as detailed in 47 C.F.R. Section 73.313(d), an HAAT value of 30.0 meters is returned utilizing the FCC 30 Second terrain database. As confirmed by the automated power calculator within the Schedule 318 itself, this calculated HAAT value results in an operational power of 100 watts ERP.

ALLOCATION COMPLIANCE SHOWINGS: The proposed LPFM Station remains in compliance with 47 C.F.R. Section 73.807 toward all allocation spacings. General allocation details are found in **Exhibit 6**.

Regarding protection of international concerns, the facility is and will remain more than 320 km from the common border between the United States and Canada or Mexico. As a result, no further international showings are believed required.

INTERFERENCE TO TRANSLATOR OR BOOSTER INPUT SIGNAL SHOWINGS: The applicant certifies there are four (4) FM Translator or FM Booster facilities operating within a worst case 10 km radius from this proposed CH252L1 LPFM location. However, full compliance with 47 C.F.R. Section 73.827(a-c) has been demonstrated as no ± 3 channel relationship exists (Channel(s) 249 - 255) between the proposed CH252L1 LPFM broadcast channel and any off-air reception for the Translator/Booster to Primary operations as noted below.

Call	City	ST	File Number	FacID	Dist(km)	Primary / Feed
W210BO.L	TULLAHOMA	TN	BLFT-20001229AAU	89005	1.55 km	WYFQ-FM (CH228C3) via Satellite
W286BG.L	TULLAHOMA	TN	BLFT-20101118ABJ	140655	3.63 km	WHMT(AM)(740 kHz) via Off-Air
W294CV.L	TULLAHOMA	TN	BLFT-20180716ABI	200687	1.99 km	WMSR(AM)(1320 kHz) via Microwave
W294CV.C	TULLAHOMA	TN	0000135020	200687	2.18 km	WMSR(AM)(1320 kHz) via Internet

ENVIRONMENTAL COMPLIANCE SHOWINGS: The proposed facility complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments as set forth under §1.1310 and/or §1.1307(b)(3) of the Commission's rules and the RF radiation protection guidelines as set forth in OET Bulletin No. 65 (Edition 97-01), and the accompanying Supplement A, (Edition 97-01). Compliance has been demonstrated in the attached **RF Appendix 1** of this filing. The facility is, or will be, properly marked with signs. Entry is, or will be, restricted by means of fencing with locked doors or gates. In addition, coordination with other users of the site will be secured to reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

Regarding compliance with the NEPA, the Nationwide Programmatic Agreement ('NPA') and Section 106 of the NHPA, the applicant will retain a consultant to prepare the necessary studies and to conduct the required NPA consultations with the State Historical Preservation Office and interested Indian Tribes identified through the Commission's Tower Construction Notification System. No construction will commence until the NPA process has been successfully completed.

CERTIFICATION OF TECHNICAL CONSULTANT: *I declare, under penalty of perjury, that the contents of this report are true and accurate to the best of my knowledge and belief. I further certify I have over twenty-four years of experience as a broadcast technical consultant before the Federal Communications Commission ("the FCC"); and am familiar with the Code of Federal Regulations Title 47 ("the Rules") as pertaining to this report and its contents herein. The underlying data utilized in this report was taken directly from FCC databases or indirectly through third party software vendors securing data directly from FCC databases. This firm cannot be held liable for errors or omissions resulting from the underlying data. The information contained herein is believed accurate to the date reported below.*



Justin W. Asher
Technical Consultant
December 10, 2023

Normandy

Exhibit 1
Service Contour Study:
Present vs Proposed Operations

Proposed 60 dBμ F(50:50) Contour

(NEW)CH252L1.P
Tullahoma, TN
Facility ID: 788170
Proposed Operation
Channel: 252L1 (98.3 MHz)
Latitude: 35-22-04.10 N
Longitude: 086-13-35.60 W
AMSL Height: 339.1 m
ERP: 0.10 kW
Pattern: Omni

60 dBμ F(50:50) Contour
Total Population: 22,788
Total Area: 121.0 sq. km

(NEW)CH252L1.P

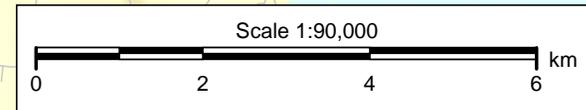


Tullahoma

FCC 30 SEC Terrain Database
US Census 2020 PL Database
NED 1983 Coordinate Datum

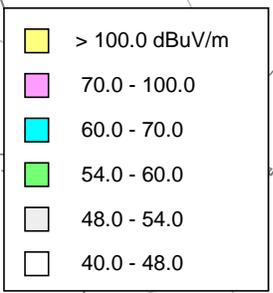


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Non-FCC-sanctioned coverage map
for illustrative purposes only

Exhibit 2 Service Contour Study: Proposed Longley-Rice Method

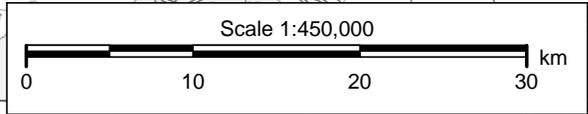


(NEW)CH252L1.P
 Tullahoma, TN
 Facility ID: 788170
 Proposed Operation
 Channel: 252L1 (98.3 MHz)
 Latitude: 35-22-04.10 N
 Longitude: 086-13-35.60 W
 AMSL Height: 339.1 m
 ERP: 0.10 kW
 Pattern: Omni
 Prop Model: Longley-Rice
 Climate: Cont temperate
 Conductivity: 0.0050
 Dielec Const: 15.0
 Refractivity: 311.0
 Receiver Ht AG: 9.1 m
 Receiver Gain: 0 dB
 Time Variability: 50.0%
 Sit. Variability: 50.0%
 ITM Mode: Broadcast

60 dBµ F(50:50) Contour
Total Population: 27,494

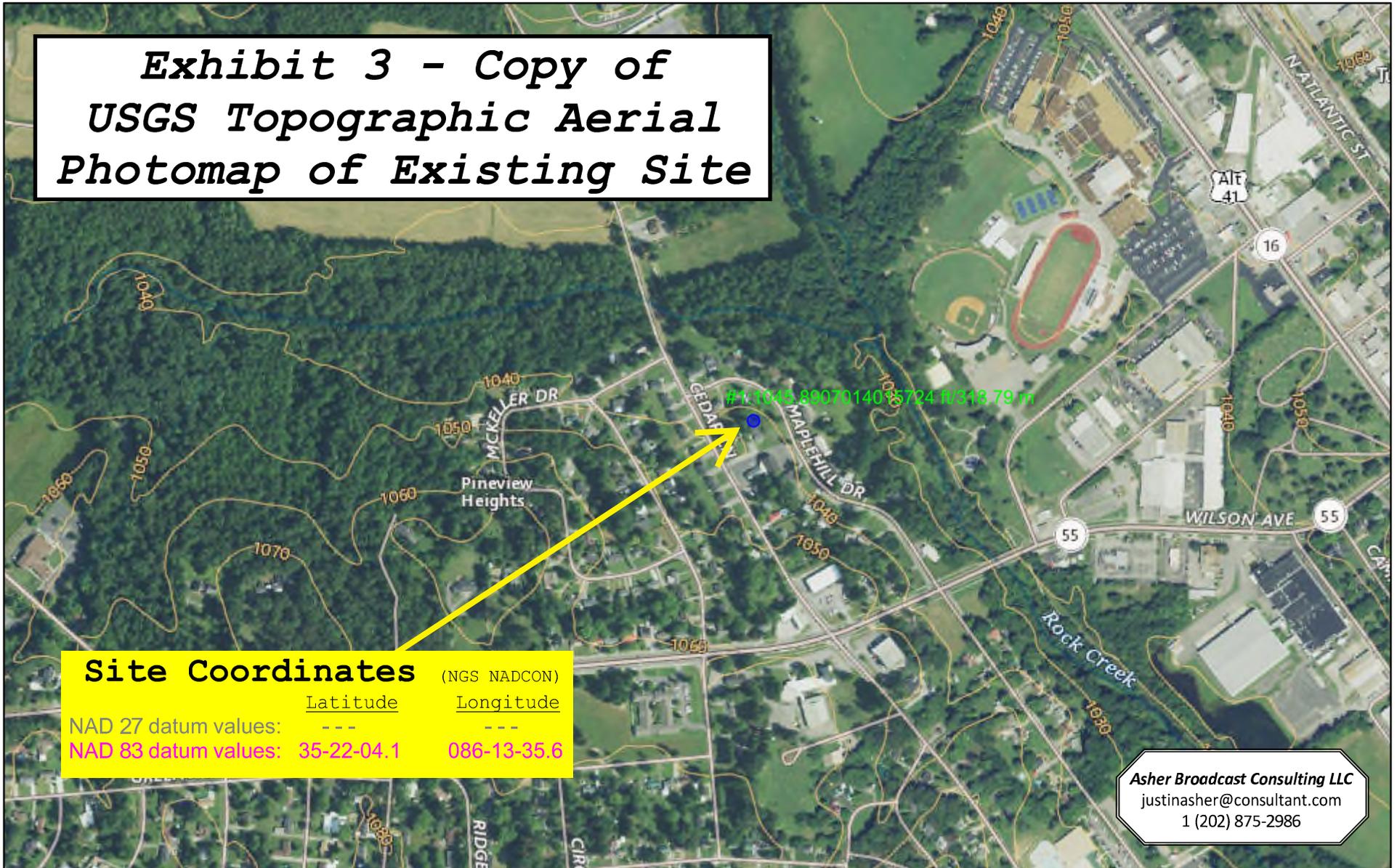
FCC 30 SEC Terrain Database
US Census 2020 PL Database
NAD 1983 Coordinate Datum

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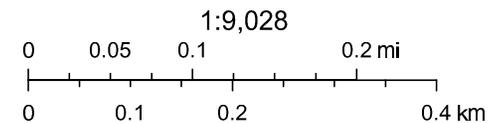


The National Map Advanced Viewer

Exhibit 3 - Copy of USGS Topographic Aerial Photomap of Existing Site



10/19/2023, 10:40:28 AM



USGS The National Map: Orthoimagery and US Topo. Data refreshed August, 2023.

Exhibit 5

HAAT and Miscellaneous Coordinate Information

HAAT Calculation (NAD 1983):

N. Lat. = 352204.1 W. Lng. = 861335.6
 HAAT and Distance to Contour,
 FCC, FM 2-10 Mi, 51 pts Method - FCC 30 SEC

Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5
000	308.3	30.8	0.1000	-10.00	1.000	5.70
045	309.0	30.1	0.1000	-10.00	1.000	5.65
090	322.4	16.7	0.1000	-10.00	1.000	5.64
135	302.0	37.1	0.1000	-10.00	1.000	6.21
180	301.0	38.1	0.1000	-10.00	1.000	6.29
225	323.9	15.2	0.1000	-10.00	1.000	5.64
270	317.0	22.1	0.1000	-10.00	1.000	5.64
315	289.3	49.8	0.1000	-10.00	1.000	7.23

Ave El= 309.12 M HAAT= 29.98 M AMSL= 339.1 M

NAD 1983 to NAD 1927 Conversion:

Various Coordinate Conversion Calculations (NAD 1983):

Position Type	Lat Lon
Degrees Lat Long	35.3678056°, -086.2265556°
Degrees Minutes	35°22.06833', -086°13.59333'
Degrees Minutes Seconds	35°22'04.1000", -086°13'35.6000"
UTM	16S 570261mE 3914107mN
UTM centimeter	16S 570261.52mE 3914107.05mN
MGRS	16SEE7026114107
Grid North	0.4°
GARS	188LL24
Maidenhead	EM65VI28TG55
GEOREF	GJDF46402206
Plus Code	867M9Q9F+49
Plus Code Extended	867M9Q9F+49G65GJ
what3words	worse.forgetful.dramatically

Exhibit 6

Tabulation of Proposed Allocation Spacings

REFERENCE		DISPLAY DATES
35 22 04.10 N.	CLASS = L1	DATA 12-08-23
86 13 35.60 W.	Current Spacings to 2nd Adj.	SEARCH 12-08-23
----- Channel 252 - 98.3 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
Lat.	Lng.	Ant	Power	HAAT		
WSIX-FM	LIC 250C0	Nashville	TN 324.4	93.08	83.5	9.6
36 02 50.2	86 49 48.0	CN	100.000 kW	349 M		
Ihm Licenses, LLC BMLH20050826ABB						
W254DW	LIC-D 254D	Shelbyville	TN 327.3	33.40	20.5	12.9
35 37 14.4	86 25 35.0	DCN	0.250 kW 0 M			
Hopkins Farms Broadcasting BLFT20190911ACR						
W253CX	LIC 253D	Fayetteville	TN 230.4	41.79	27.5	14.3
35 07 39.3	86 34 49.0	CN	0.250 kW 0 M			
Elk River Media LLC 0000163372						
WKEA-FM	LIC-Z 252C3	Scottsboro	AL 163.3	96.64	77.5	19.1
34 32 00.3	85 55 19.9	ZCN	11.000 kW	150 M		
Southern Torch, Inc. BLH20070306ABV						
WLND	LIC-N 251A	Signal Mountain	TN 111.4	84.52	55.5	29.0
35 05 16.3	85 21 46.9	NCN	1.000 kW	242 M		
Audacy License, LLC BLH20080304ABR						
WKSX	LIC-N 253C2	Cookeville	TN 38.3	110.05	79.5	30.6
36 08 34.2	85 28 01.9	NCN	50.000 kW	150 M		
Cookeville Communications, BLH19910206KA						
WKSX	STA 253C2	Cookeville	TN 38.3	110.05	79.5	30.6
36 08 34.2	85 28 01.9	CN	50.000 kW	150 M		
Cookeville Communications, 0000210610						
W251AC	LIC 251D	Capshaw	AL 210.8	73.59	27.5	46.1
34 47 53.3	86 38 24.0	CN	0.180 kW 0 M			
Southern Stone Communicati BLFT20160311AAE						
WLXA	CP -N 252C3	Florence	AL 249.2	124.30	77.5	46.8
34 57 55.6	87 30 00.0	NCN	22.500 kW	107 M		
Radio7media, LLC BPH20161012AAD						
WLXA	APP-N 252C3	Florence	AL 249.2	124.30	77.5	46.8
34 57 55.6	87 30 00.0	NCN	22.500 kW	107 M		
Radio7media, LLC 0000228599						
WLXA	LIC-N 252C3	Loretto	TN 249.2	124.31	77.5	46.8
34 57 55.3	87 30 00.1	NCN	17.500 kW	119 M		
Radio7media, LLC BLH20160616ABX						
W252CM	LIC 252D	Nashville	TN 323.1	93.05	38.5	54.6
36 02 08.0	86 50 55.0	CN	0.250 kW 0 M			
Educational Media Foundati BLFT20140818ADX						
W252DU	LIC 252D	Lebanon	TN 357.8	93.15	38.5	54.7
36 12 24.2	86 16 02.0	CN	0.100 kW 0 M			
Bay-Pointe Broadcasting, I 0000129648						
W254DB	LIC-D 254D	Chattanooga	TN 107.9	85.45	20.5	65.0
35 07 45.2	85 20 01.7	DCN	0.099 kW 0 M			
Jackson Telecasters, Inc. BLFT20181210AAR						

All separation margins include rounding