

# T Z SAWYER TECHNICAL CONSULTANTS

2130 HUTCHISON GROVE COURT, SUITE 100  
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## DIGITAL LPTV FACILITY MINOR CHANGE APPLICATION

W17EI

FCC FACILITY ID: 185274

JACKSON, TN

OCTOBER 2022

### ENGINEERING NARRATIVE

#### Minor Change Application:

W17EI, seeks to modify its existing CONSTRUCTION permit (LMS: 0000179410) to specific a new tower site and antenna system parameters. The proposed antenna is a SCALA SCA-1469B, a directional horizontally polarized yagi antenna. A full-service filter mask is to be employed. The facility requested is not contingent upon a grant or channel move of any other known facility at the time of filing. Maximum Effective Radiated Power (ERP) is 1.56 kilowatts (main lobe directional antenna).

#### Modification Compliance:

Pursuant to 47 CFR §74.787(b) the instant application is considered a “minor” change because;

- There is no change in transmitting antenna location such that the protected service contour resulting from the change does not overlap some portion of the protected service contour of the authorized facilities of the existing station LICENSE as illustrated in Figure 1, Present & Proposed Service Contours.
- There is no change in transmitting antenna location greater than 30 miles (48km) from the reference coordinates of the existing station LICENSE antenna location, as noted below:

CALCULATED DISTANCE BETWEEN EXISTING LICENSE AND PROPOSED SITES

SITE	LAT (NAD83)	LON (NAD83)	(KM)	(MI)
CURRENT/EXISTING	35-39-40.67 N	088-51-24.96 W	1.97	1.23
PROPOSED CP MOD	35-38-58.28 N	088-50-26.29 W		

#### FCC Tower Registration (ASR) - FAA Notification:

The proposed mounting structure is a 13.7 meter in overall height (AGL). This is an existing communications tower (primarily used for amateur radio) and does not require an FCC ASR number or FAA notification. No changes in the supporting structure is required that would require notification to the FAA or a FCC ASR number . The antenna is side mounted on this permanent structure at 7.6 meters above ground level.

An exhibit has been prepared in which the proposed site has been marked on a large scale topographic map and includes an overhead view using the satellite imagery from Google Earth. A photograph is also provided showing the existing structure as well as the “Ham Shack” in which the transmitting equipment will be installed.

Antenna Elevations:

The center of radiation of the proposed antenna is 7.6 meters AGL, 143.2 meters AMSL. The ground elevation at the site is 135.6 meters.

ALL ELEVATIONS IN METERS	
GROUND ELEVATION	135.6
TOWER OVERALL HEIGHT AGL	13.7
ANTENNA HEIGHT AGL	7.6
ANTENNA RCAMSL	143.2

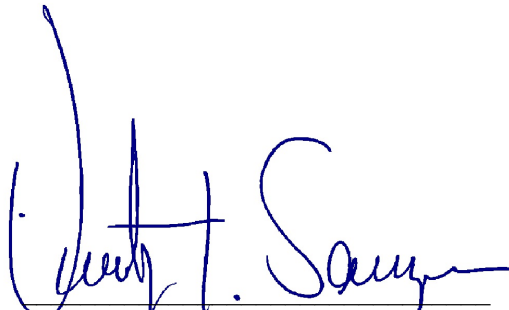
FCC TVStudy Results:

The results of a interference study of the proposal using the FCC TVStudy program (Version 2.2.5), shows that no prohibitive interference will occur from the proposal. A copy of the summary report has been included in this application. The applicant accepts any incoming interference that is predicted to exist to the proposed facility by any authorized or pending, primary or secondary TV station at the time this application is submitted.

Environmental Evaluation Statement:

The environmental evaluation statement concerning this proposal has been included in this application and can be found as a separate file upload within the application. A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in the environmental evaluation statement.

October 8, 2022



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**W17EI CP MOD RED CONTOUR**

FCC LMS File: 0000179410  
FCC Facility ID: 185274  
NAD 83 Latitude: 35-38-58.28 N  
NAD 83 Longitude: 088-50-26.29 W  
ERP: 1.56 kW  
Channel: 17  
Frequency: 491.0 MHz  
Ant. RCAMSL Height: 143.2 m  
Horiz. Pattern: Directional

**W17EI- LIC BLACK CONTOUR**

FCC LMS File: 0000164056  
FCC Facility ID: 185274  
NAD 83 Latitude: 35-39-40.67 N  
NAD 83 Longitude: 088-51-24.96 W  
ERP: 2.50 kW  
Channel: 17  
Frequency: 491.0 MHz  
Ant. RCAMSL Height: 139.5 m  
Horiz. Pattern: Directional

**PRESENT AND PROPOSED LPTV SERVICE CONTOUR**

UHF CHANNEL 17 - FCC 51.0 DBU F(50,90)

LICENSED CONTOUR - BLACK  
PROPOSED CP MOD CONTOUR - RED

FIGURE 1

FCC 30-MILE MINOR CHANGE  
RADIUS FROM LICENSED SITE

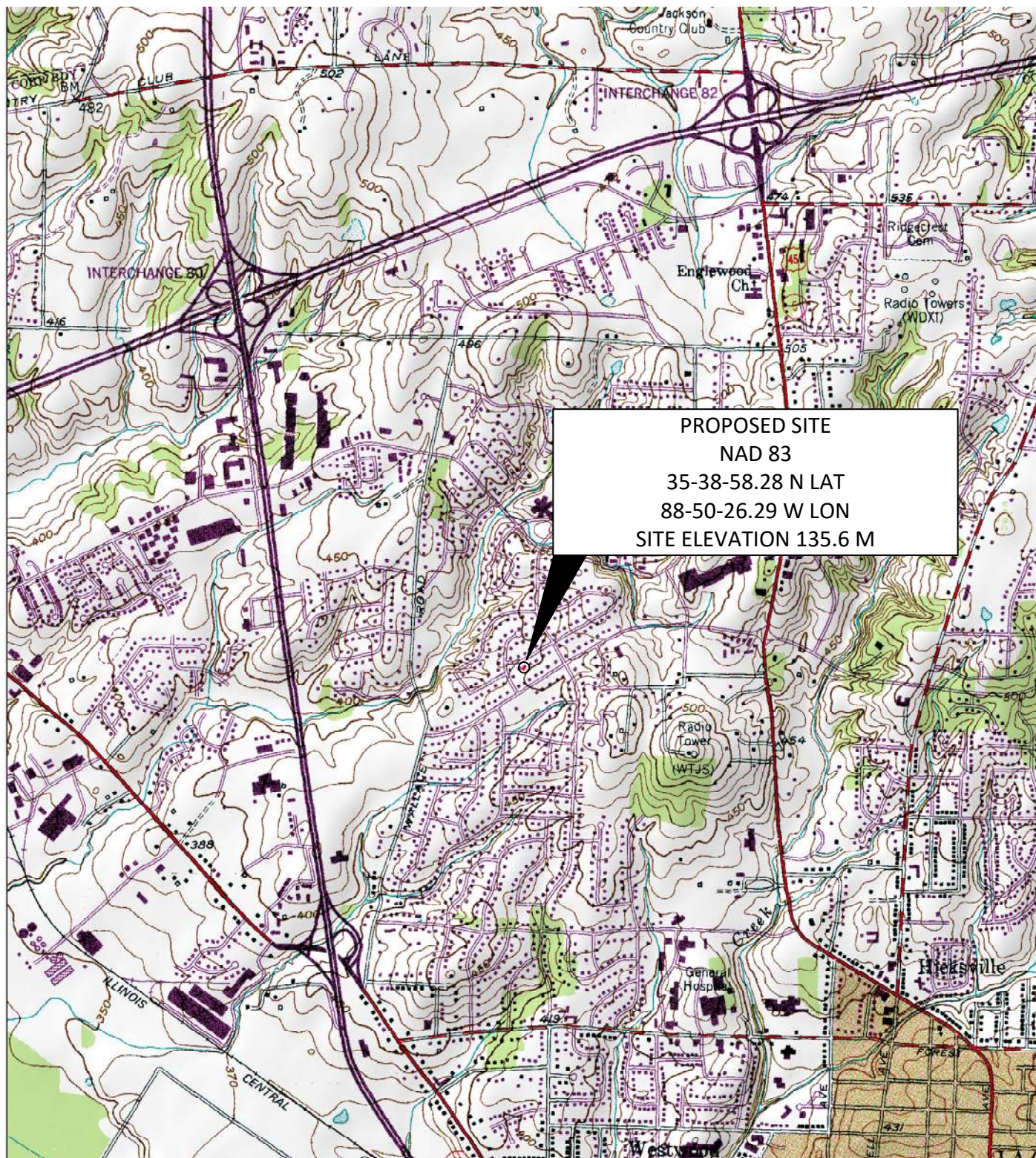
Map created on: 10/7/2022  
NED 3 Second US Terrain

Scale 1:500,000

0 10 20 30 km

TZSTC  
2022  
OCTOBER





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## TOPOGRAPHIC SITE MAP

W17EI  
JACKSON, TN

**FIGURE  
2**

FALL CHURCH, VIRGINIA 22043-2555

SIZE  
A

CAGE NO  
N/A

DWG NO  
20221007W17EI.2A

REV  
NONE

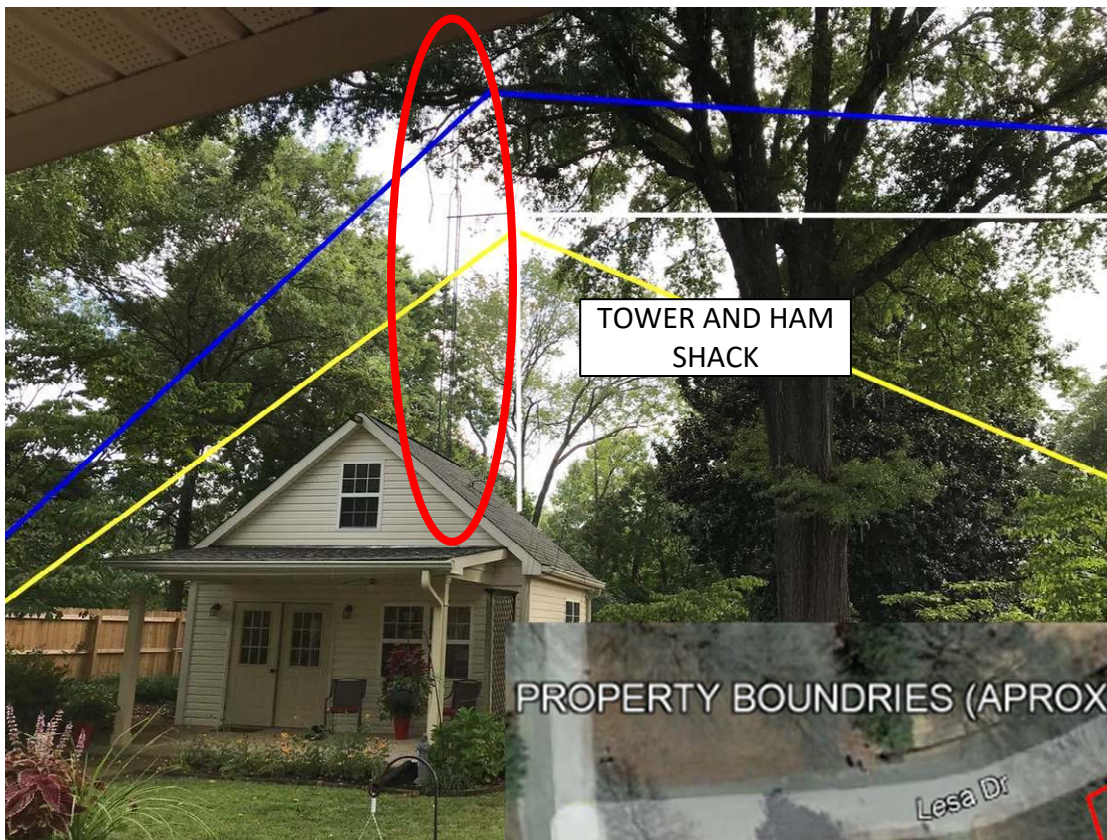
(c) 2022, ALL RIGHTS RESERVED

SCALE  
N/A

OCTOBER 2022

SHEET





#### DETERMINATION Results

PASS SLOPE(100:1)NO FAA REQ - 5059.0 Meters (16597.5 Feet)away & below slope by 214.0 Meters (702.090 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	35-41-40.00N	085-51-1.00W	WARREN COUNTY MEML	WARREN MC MINNVILLE, TN	312.9	1524.0

#### Your Specifications

##### NAD83 Coordinates

Latitude	35-38-58.3 north
Longitude	085-50-26.3 west

##### Measurements (Meters)

Overall Structure Height (AGL)	13.7
Support Structure Height (AGL)	13.7
Site Elevation (AMSL)	135.6

##### Structure Type

LTOWER - Lattice Tower

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## PHOTOGRAPHS OF EXISTING TOWER SITE AND TOWER AIR SLOPE RESULTS

W17EI  
JACKSON, TN

FIGURE  
2

FALL CHURCH, VIRGINIA 22043-2555

SIZE  
A

CAGE NO  
N/A

DWG NO  
20221007W17EI.2B

REV  
NONE

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SCALE  
N/A

OCTOBER 2022

SHEET

# FCC TVSTUDY SUMMARY REPORT - FIGURE 3

Study build station data: LMS TV 2022-10-06

Proposal: W17EI-D D17 LD APP JACKSON, TN

File number: W17EI HAM SHACK

Facility ID: 185274

Station data: User record

Record ID: 645

Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KJNB-LD	D16	LD	LIC	JONESBORO, AR	BLANK0000166827	194.8 km
No	WLOV-TV	D16	DT	LIC	WEST POINT, MS	BLCDT20070405ABC	207.4
No	WNBj-LD	D16	LD	LIC	JACKSON, TN	BLDTL20141216ABU	6.4
No	WWWN-LD	D16	LD	LIC	MEMPHIS, TN	BLANK0000156897	101.1
No	WHTN	D16	DT	LIC	MURFREESBORO, TN	BLANK0000100650	222.3
No	WUOA-LD	D17	LD	LIC	BIRMINGHAM, AL	BLANK0000011374	304.2
No	WAAY-TV	D17	DT	LIC	HUNTSVILLE, AL	BLANK0000163425	232.9
No	WJMY-CD	D17	DC	LIC	TUSCALOOSA, AL	BLANK0000086812	297.7
No	K17LV-D	D17	LD	LIC	PARAGOULD, AR	BLANK0000179143	185.8
No	WKMU	D17	DT	LIC	MURRAY, KY	BLANK0000087481	119.1
No	WKOH	D17	DT	LIC	OWENSBORO, KY	BLANK0000087401	279.4
No	WKSO-TV	D17	DT	LIC	SOMERSET, KY	BLANK0000087465	396.8
No	KDTL-LD	D17	LD	CP	ST LOUIS, MO	BLANK0000199682	345.3
No	WXVT-LD	D17	LD	LIC	CLEVELAND, MS	BLANK0000025210	279.4
No	WEPH	D17	DT	LIC	TUPELO, MS	BLANK0000062855	207.4
No	WRTN-LD	D17	LD	LIC	ALEXANDRIA, TN	BLANK0000191369	196.4
No	WZDX	D18	DT	LIC	HUNTSVILLE, AL	BLANK0000108705	232.9
No	KVTJ-DT	D18	DT	LIC	JONESBORO, AR	BLANK0000064048	152.0
No	WKYU-TV	D18	DT	LIC	BOWLING GREEN, KY	BLEDT20040803AAG	266.6
No	WQWQ-LD	D18-	LD	LIC	PADUCAH, KY	BLANK0000201472	172.4
No	W18EW-D	D18	LD	CP	JACKSON, TN	BLANK0000179485	64.4
No	W18EW-D	D18	LD	LIC	JACKSON, TN	BLANK0000159471	54.5
No	DWJFB-LP	D18z	LD	APP	LEBANON, TN	BLANK0000005264	196.4
No	DDDWQTV-LPN24+		TX	APP	MURRAY, KY	BLTTL20010425AAF	110.0

No non-directional AM stations found within 0.8 km

Directional AM stations within 3.2 km:

WTJF 1390 L DAN D JACKSON, TN BL19810504AE

WTJF 1390 L DAN N JACKSON, TN BL19781031AC

Record parameters as studied:

Channel: D17

Mask: Full Service

Latitude: 35 38 58.28 N (NAD83)

Longitude: 88 50 26.29 W

Height AMSL: 146.5 m (Adjusted based on actual ground elevation calculation)

HAAT: 0.0 m

Peak ERP: 1.56 kW

Antenna: SCA-SCA-1469B (ID 1009165) 0.0 deg

Elev Pattn: Generic

49.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.000 kW	22.7 m	2.2 km
45.0	0.000	7.7	2.2
90.0	0.000	0.7	2.2
135.0	0.000	29.3	2.2
180.0	0.000	18.6	2.2
225.0	0.802	18.5	17.9
270.0	1.03	43.6	22.6
315.0	0.000	16.1	2.2

Database HAAT does not agree with computed HAAT

Database HAAT: 0 m Computed HAAT: 20 m

Distance to Canadian border: 852.4 km

Distance to Mexican border: 1322.3 km

Conditions at FCC monitoring station: Powder Springs GA  
Bearing: 116.7 degrees Distance: 425.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 294.0 degrees Distance: 1518.0 km

No land mobile station failures found

Proposal is not within the Offshore Radio Service protected area

Study cell size: 1.00 km  
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%  
Maximum new IX to LPTV: 2.00%

---- Below is IX received by proposal W17EI HAM SHACK ----

Proposal receives 29.19% interference from scenario 1  
No IX check failures found.

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W17EI  
LPTV CHANNEL 17 OPERATION  
FACILITY ID: 185274  
JACKSON, TN  
OCTOBER 2022

## ENVIRONMENTAL EVALUATION STATEMENT

A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in this environmental evaluation statement. Any changes in equipment, or construction, if necessary will not trigger any event with regards to Section 106 of the National Historical Preservation Act (NHPA).

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, 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 current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

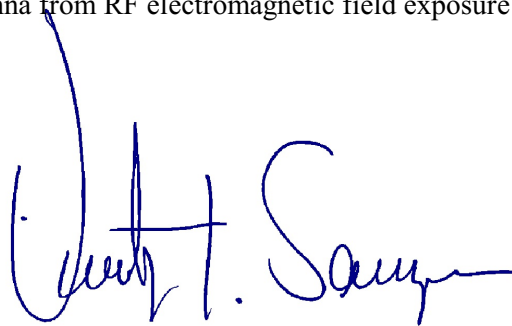
CALCULATED POWER DENSITY AT 2 METERS AGL (0.3 ANTENNA RELATIVE FIELD VALUE) ERP MAX (H+V)

CR AGL 7.6 M ERP MAX 1.56 KW	MPE ( $\mu\text{W}/\text{CM}^2$ )	CALCULATED VALUE ( $\mu\text{W}/\text{CM}^2$ )	% OF MPE	PASS/FAIL
CONTROLLED AREA	1636.7	180.29	11.02%	PASS
PUBLIC AREA	327.3		55.08%	PASS

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 are posted at the site. The applicant will coordinate exposure procedures with any co-located facilities 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.

October 8, 2022

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