

Exhibits for FCC 309 Application

Exhibit 1: Outline of Programing Plans and Policies

Applicant programming will be religious in nature including music, dramatizations, current events, and religious teachings. Applicant reserves right to limit programming which is deemed incompatible with religious values.

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Exhibit 2: Methods of Determining Power

Applicant proposes to install a broadcast industry standard inline Bird Watt meter with the appropriate power determining slugs. This will be part of the coaxial transmission line running from the transmitter to the rhombic antenna tuning house and will be used to determine output power.

To verify the accuracy of above system, two methods will be periodically employed. An oscilloscope and 50 ohm dummy load and 30db attenuator will be installed in said line section to sample the unmodulated carrier displayed on the oscilloscope.

Method 1: The readings from the oscilloscope will be converted to root-mean-square value which is the peak radio frequency voltage in the following equation used to calculate power

$$\text{EQ-1} \quad (E^2)/R = \text{Radio Frequency Power}$$

Example:

Oscilloscope reading: 1500 volts rms

R=50 ohms dummy load

$$(1500^2)/50 = 45000 \text{ watts unmodulated carrier}$$

Method 2: To verify accuracy the Indirect Method will be periodically used which is as follows:

$$\text{EQ-2} \quad \text{Plate voltage} \times \text{Plate Current} \times \text{Efficiency of RF Amplifier Stage} = \text{Radio Frequency Power}$$

Example:

Plate voltage= 16000 volts

Plate Current= 8 Amps

RF Amplifier Stage in applicant's transmitter is a Class D RF Amplifier and has output efficiency of 80%

$$16000 \times 8 \times 80\% = 102400 \text{ watts}$$

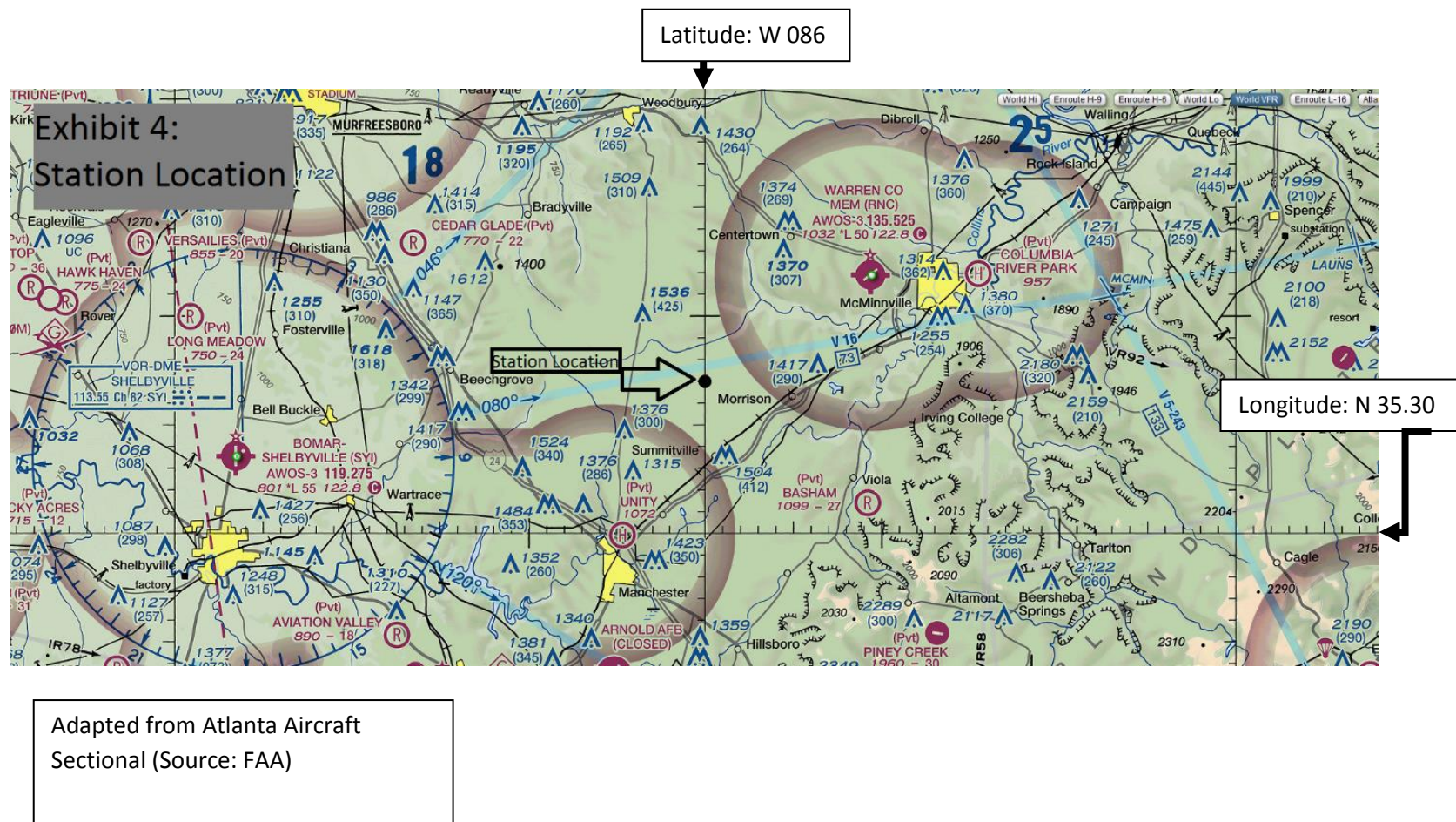
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Exhibit 3: Determining and Maintaining Power Output of the Transmitter to Value Specified

The transmitter has a directional coupler installed in the RF output network. The directional coupler outputs a direct current voltage proportional to the RF power. The sampled DC voltage is fed back into the transmitter's automatic level control which maintains the sampled DC voltage, keeping the carrier power steady. This transmitter is also equipped with an overpower/underpower relay which shuts down the transmitter if any parameters are exceeded. In this event, an auditory warning is given to the radio operator. See Exhibit 2: Methods of Determining Power for further details.

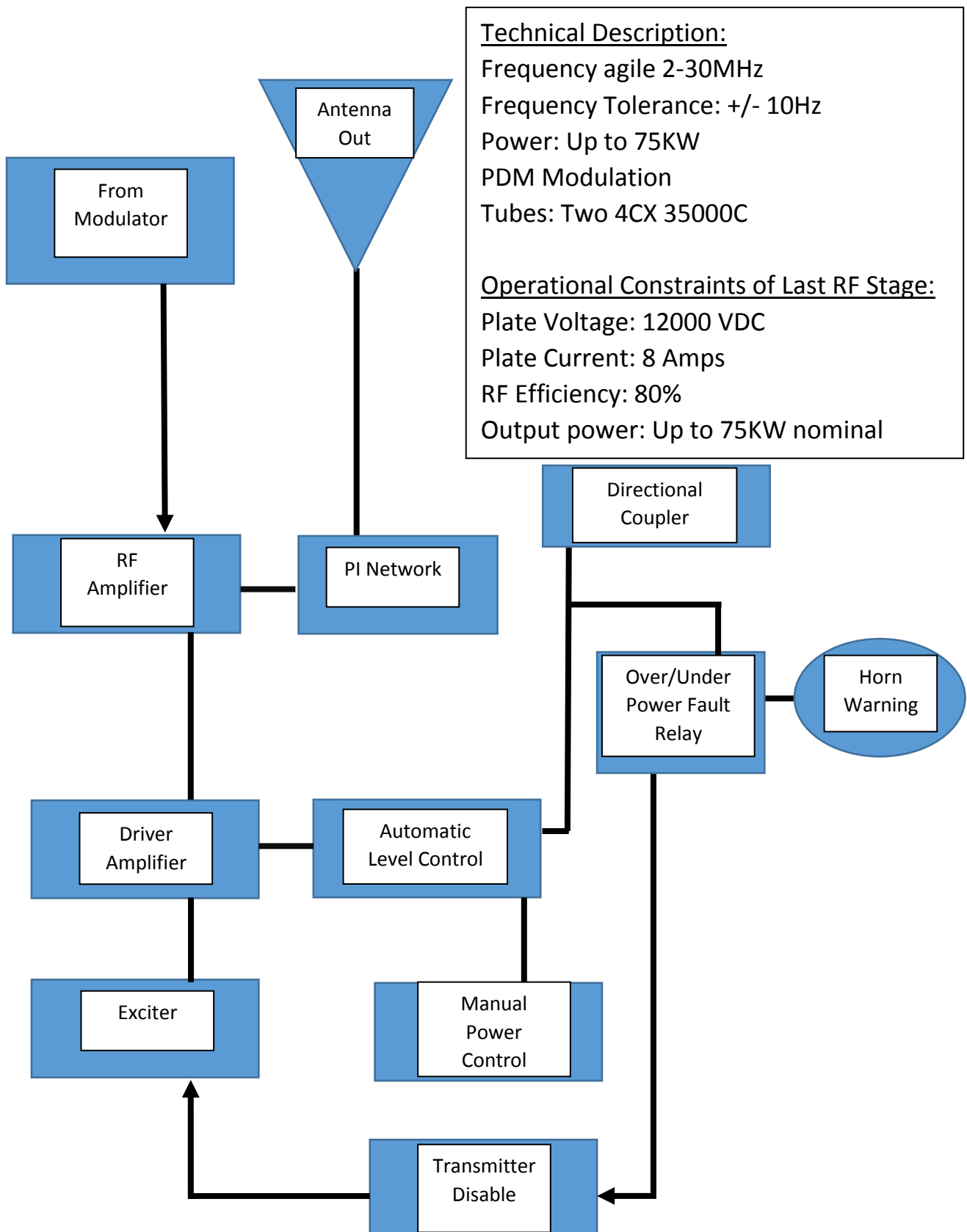
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Exhibit 4:



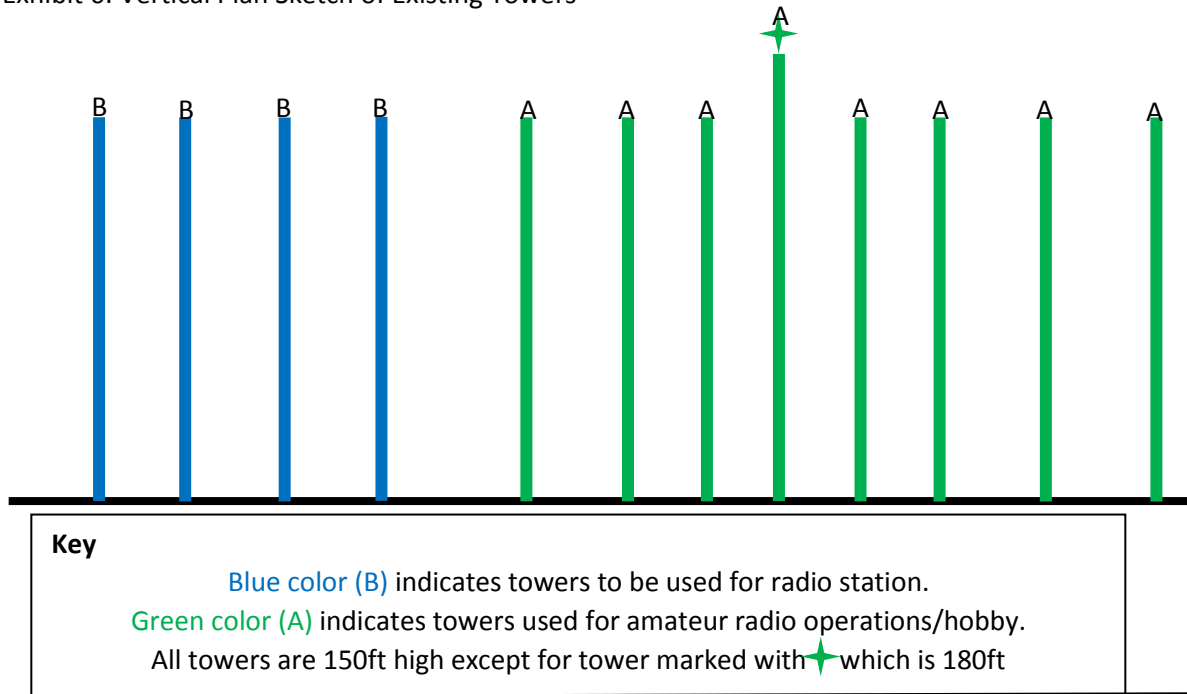
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Exhibit 5: Transmitter Block Diagram, Technical Description, Operational Constraints of Last RF Stage

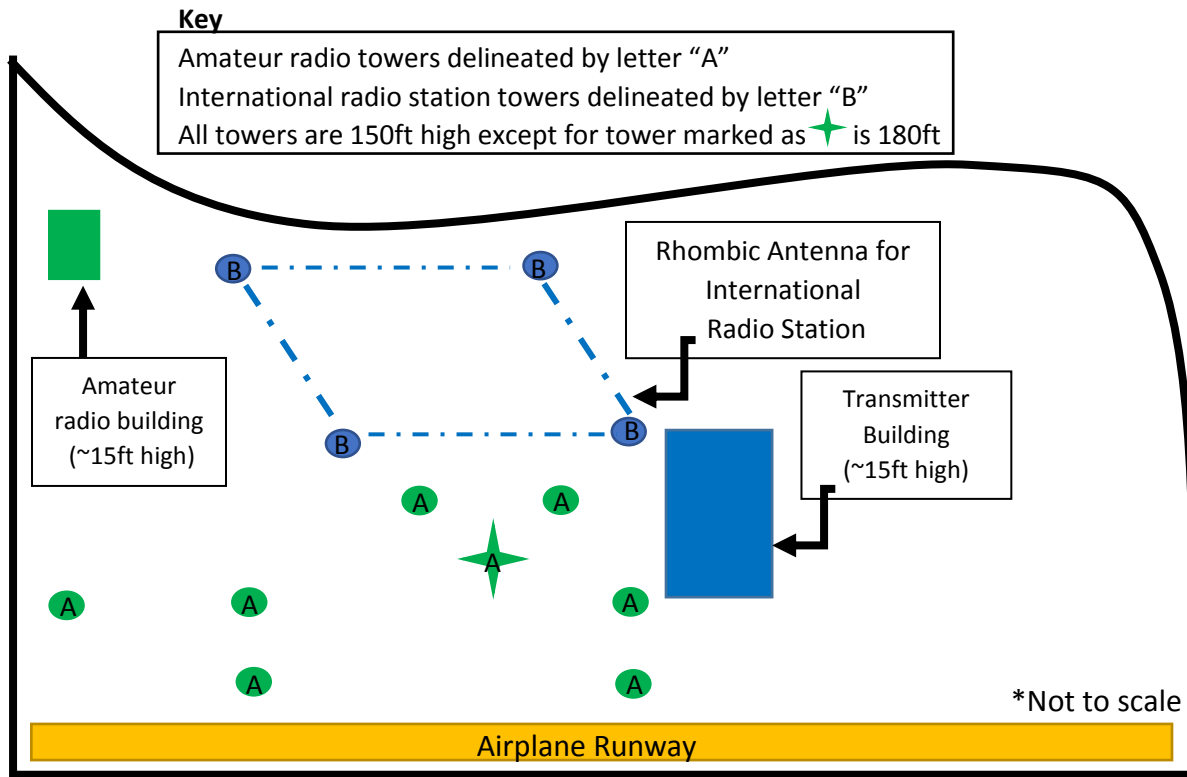


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Exhibit 6: Vertical Plan Sketch of Existing Towers



Supplemental Bird's Eye View of Antenna Layout as well as Amateur Radio Towers



The FAA is aware of all radio towers at facility and warns pilots of multiple towers in all quads (see Exhibit 10: FAA Form 5010-2). The airstrip is not listed on official FAA navigation charts. The airstrip is for private use and has no terminals for receiving passengers or cargo. Public use is prohibited.

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Exhibit 7: Directional Antenna Engineering Data

Applicant purposes to use a directional antenna (also known as rhombic antenna). This antenna is recognized for international broadcast service use by the International Telecommunications Union (ITU). The ITU reference code is 900-924. It is worth noting that applicant has reviewed the licenses of the following international broadcast stations (WWCR, WRMI, and WINB) and noted they are using this form of antenna. The rhombic antenna is well-known in the international broadcast community since approximately 1935. It consists of four 150ft radio towers spaced at approximately 400ft apart in a symmetrical, rhomboid shape. The antenna is fed by open wire feeders of approximately 600 ohms impedance. The antenna is tuned and matched to 50 ohms impedance of a tuned balun located in a small shed behind the transmitter building. This antenna has been in place for 21 years and has been used in various RF activities such as amateur radio operations under the call sign of WA4SZE. The Federal Aviation Administration (FAA) was notified of its existence via FAA form 7460-1 approximately 21 years ago. The FAA deemed it was not an aviation hazard and did not need to be illuminated or marked. The characteristics of this antenna have been well defined and are as follows:

Gain: 10-14Db depending upon frequency used

Beam width (-3Db power points): 20°

Elevation: 8-20° depending upon frequency used

Height of radiating elements above ground level: 140 feet +/- wire sag

Major lobe azimuth: 340°

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Exhibit 8: Environmental Statement

The international broadcast station will be located on rural, agricultural land that had been tilled and in agricultural use prior to land being purchased twenty-one years ago.

- The facility is not in a designated wilderness area or wildlife preserve.
- To the applicant's knowledge, there are no threatened or endangered species or designated crucial habitats on or around the property.
- There are no historical buildings, districts, sites, objects or structures significant to American history, architecture, archeology, engineering, or culture on the property or in the surrounding area.
- To the knowledge of the applicant, the land has no religious tribal significance.
- The property is not located in the floodplains.
- The land is zoned non-restricted agricultural use. There has been no significant soil movement. There will be no filling of any water areas or wetlands.
- The land had already been sufficiently cleared for farming for at least fifty years, so there will be no deforestation.

Regarding the existing towers and structures, the impact to the surrounding area has been low. The property owner has been an avid amateur radio enthusiast (call sign WA4SZE) for over forty years. He has erected these towers for amateur radio and other RF endeavors. The towers have been in place for over twenty years and there have been no complaints or concerns raised by local government officials. The towers do not require illumination or marking by the FAA. There are no high intensity lights. Applicant has recently completed an Antenna Structure Registration (ASR) search through the Federal Communications Commission (FCC) website; applicant noted that towers do not need to be registered per FCC. In the future, the land can be easily restored to agricultural use by digging up the tower bases and guy anchors, then backfilling these areas with local soil. Should the commission wish to view the property and surrounding area, it can be found on Google Earth at N35° 37' 25" W 086° 00' 53"

Applicant has made an initial study of surrounding terrain to estimate radiofrequency exposure limits to the general public. Based on the fact that this facility is located on a 50 acre parcel, the antenna is 140ft above ground level, the towers only serve as supports and will not be energized with radiofrequency, and based on the fact that the beam width of the antenna is 20° wide, initial operation and actual measurements of RF radio frequency exposure at time of program test authority should pose no danger to the general public.

The applicant intends on providing the commission with RF radio frequency exposure measurements taken at the perimeter of the applicant's actual property lines. A report of the measurements will be submitted to the commission during program test authority and subsequent licensing.

The chief operator, David L. Frantz, has forty years of radiofrequency experience and holds a commercial radio operators license issued by the FCC. He is fully aware of the dangers posed by radiofrequency emissions, magnetic fields, and high voltage DC electrical circuits. He is a licensed electrician. He will be mostly working in the main transmitter building which is a steel building and will act as a Faraday cage. This will minimize radiofrequency exposure. Any future employees or visitors will be advised of any possible dangers.

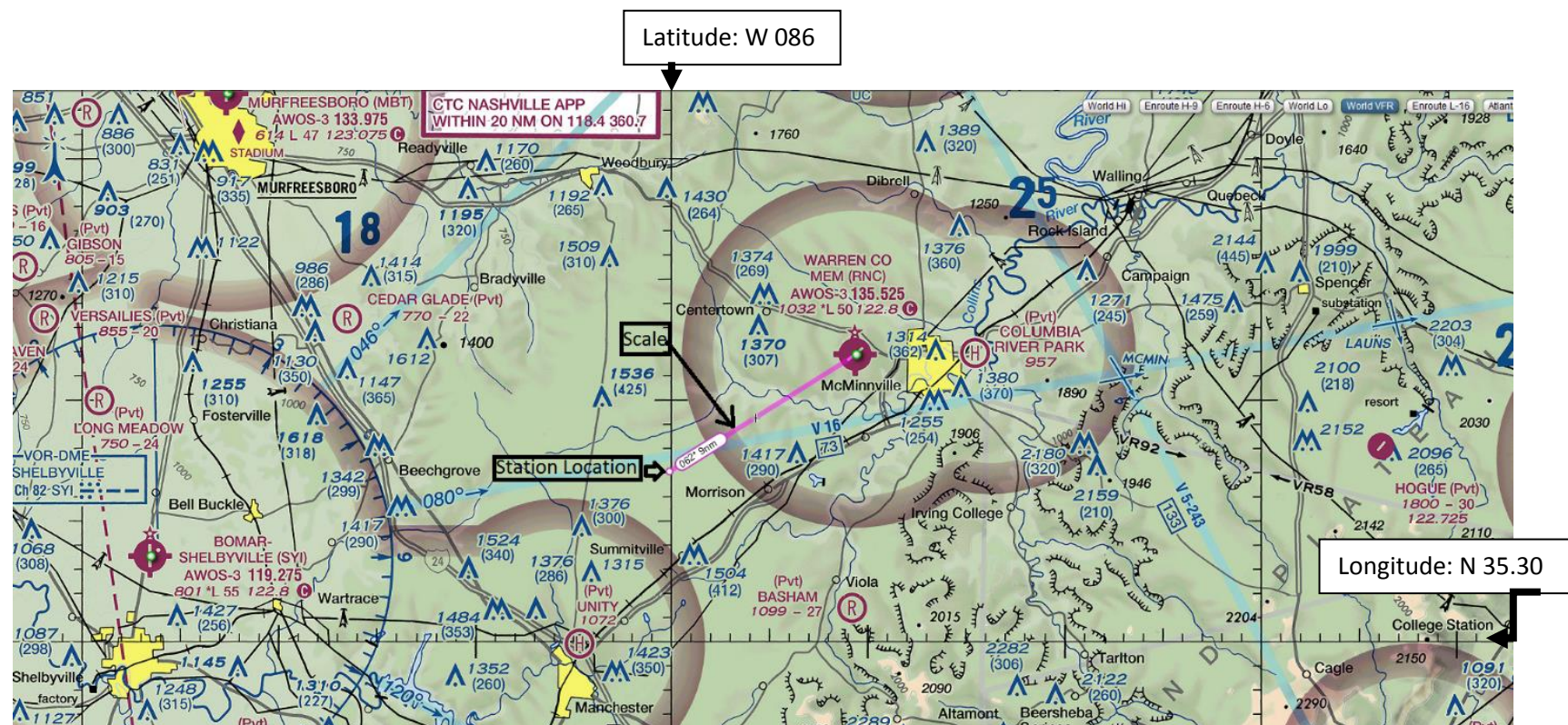
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Exhibit 9: FAA Form 5010-2

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		AIRPORT MASTER RECORD		PRINT DATE: 01/20/2021 AFD EFF 12/31/2020 FORM APPROVED OMB 2120-0015	
> 1 ASSOC CITY: MORRISON		4 STATE: TN	LOC ID: 43TN	FAA SITE NR: 23108.9'A	
> 2 AIRPORT NAME: ROSEANNE		6 REGION/ADO: ASO/MEM	5 COUNTY: COFFEE, TN		
> 3 CBD TO AIRPORT (NM): 8 N			7 SECT AERO CHT: ATLANTA		
GENERAL			SERVICES	BASED AIRCRAFT	
10 OWNERSHIP: PRIVATE			> 70 FUEL:	90 SINGLE ENG: 2	
> 11 OWNER: AIRLINE TRANSPORT COMMUNICATIONS			> 71 AIRFRAME RPRS:	91 MULTI ENG: 1	
> 12 ADDRESS: 6755 SHADY GROVE ROAD			> 72 PWR PLANT RPRS:	92 JET: 0	
MORRISON, TN 37357			> 73 BOTTLE OXYGEN:	93 HELICOPTERS: 1	
> 13 PHONE NR: 931-728-6087			> 74 BULK OXYGEN:	TOTAL: 4	
> 14 MANAGER: DAVID FRANTZ			75 TSNT STORAGE:	94 GLIDERS: 0	
> 15 ADDRESS: 6755 SHADY GROVE ROAD			76 OTHER SERVICES:	95 MILITARY: 0	
MORRISON, TN 37357				96 ULTRA-LIGHT: 0	
> 16 PHONE NR: 931-728-6087					
> 17 ATTENDANCE SCHEDULE:					
MONTHS	DAYS	HOURS			
IREG					
18 AIRPORT USE: PRIVATE			FACILITIES	OPERATIONS	
19 ARPT LAT: 35-37-SN ESTIMATED			> 80 ARPT BCN:	100 AIR CARRIER: 0	
20 ARPT LONG: 86-0-9W			> 81 ARPT LGT SKED:	102 AIR TAXI: 0	
21 ARPT ELEV: 1050.0 ESTIMATED			BCN LGT SKED:	103 G A LOCAL: 0	
22 ACREAGE: 0			> 82 UNICOM:	104 G A ITRNRT: 0	
> 23 RIGHT TRAFFIC: NO			> 83 WIND INDICATOR: YES	105 MILITARY: 0	
> 24 NON-COMM LANDING:			84 SEGMENTED CIRCLE:	TOTAL: 0	
25 NPIAS/FED AGREEMENTS:			85 CONTROL TWR: NO	OPERATIONS FOR 12	
> 26 FAR 139 INDEX: /			86 FSS: NASHVILLE	MONTHS ENDING /	
			87 FSS ON ARPT:		
			88 FSS PHONE NR:		
			89 TOLL FREE NR: 1-800-WX-BRIEF		
RUNWAY DATA					
> 30 RUNWAY IDENT:		10/28			
> 31 LENGTH:		1,350			
> 32 WIDTH:		20			
> 33 SURF TYPE-COND:		-			
> 34 SURF TREATMENT:					
35 GROSS WT: S					
36 (IN THSDS) D					
37 2D					
38 2D/2DS					
> 39 PCN:		AW			
LIGHTING/APCH AIDS					
> 40 EDGE INTENSITY:					
> 42 RWY MARK TYPE-COND:		-/-			
> 43 VGS:		/			
44 THR CROSSING HGT:		/			
45 VISUAL GLIDE ANGLE:		/			
> 46 CNTRLN-TDZ:		-/-			
> 47 RVR-RVV:		-/-			
> 48 REL:		/			
> 49 APCH LIGHTS:		/			
OBSTRUCTION DATA					
50 FAR 77 CATEGORY:		A(V)/A(V)			
> 51 DISPLACED THR:		/			
> 52 CTLG OBSTN:		/			
> 53 OBSTN MARKED LGTD:		/			
> 54 HGT ABOVE RWY END:		/			
> 55 DIST FROM RWY END:		0/0			
> 56 CNTRLN OFFSET:		/			
57 OBSTN CLNC SLOPE:		/			
58 CLOSE-IN OBSTN:		N/N			
DECLARED DISTANCES					
> 60 TAKE OFF RUN AVBL (TORA):		/			
> 61 TAKE OFF DIST AVBL (TODA):		/			
> 62 ACFT STOP DIST AVBL (ASDA):		/			
> 63 LNDG DIST AVBL (LDA):		/			
> ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >					
> 110 REMARKS:					
A 011 INC					
A 110-001 MULT TWRS ALL QUAD; 180 FT TWR 200 FT N OF RY.					
A 110-002 OWNER DOES NOT DESIRE CHARTING.					
A 110-003 FOR CD CTC MEMPHIS ARTCC AT 901-368-8453.					
111 INSPECTOR: (N) 112 LAST INSP: 113 LAST INFO REQ: 11/19/2007					

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Exhibit 10



Modified from Atlanta Aircraft Sectional (Source: FAA)

As antenna structure is close to a private air strip, please see Exhibit 6 "Supplemental Bird's Eye View of Antenna Layout as well as Amateur Radio Towers"