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## **MULLANEY ENGINEERING, INC.**

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### **ENGINEERING STATEMENT IN SUPPORT OF SPECIAL TEMPORARY AUTHORITY (STA) REQUEST**

**HOUSTON CHRISTIAN BROADCASTERS, INC.**

**RADIO STATION KBLC (FM)**

**CH 218A - 91.5 MHZ**

**FCC Facility ID: 90113**

**FREDERICKSBURG, TEXAS**

### **Engineering Narrative**

This engineering statement supports a request by NCE FM Radio Station KBLC, Fredericksburg, Texas to operate from a temporary location with a non-directional antenna system and a power of 200 watts (0.200 kW). This STA requests operation using vertical polarization only. The technical details of the STA proposal (facility parameters) are as follows; all elevations are rounded to the nearest meter:

Channel:	218A (91.5 MHZ)
NAD27 Latitude:	30-14-59.3 N
NAD27 Longitude:	98-51-02.7 W
Maximum ERP:	0.200 kW - Omni
Polarization:	Vertical Only
RCAMSL:	506 meters
Antenna AGL:	8 meters
Site Elevation:	498 meters
Supporting Structure:	9 meters (28 ft / 8.53 m)
HAAT:	<30 meters
Antenna Type:	Norwalk NWE34 (discone)

KBLC, Fredericksburg, Texas seeks this special temporary authority in order to resume broadcasting to its community and the surrounding area. This authority is requested for an initial period of 180-days to allow resumption of broadcasting while KBLC continues to seek/search for a permanent site.

Supporting Structure:

The supporting structure is a combination of an existing pole attached to the side of a commercial warehouse building. The structure and pole passes the FCC/FAA tower to airport slope. Due to its low overall height (28 feet/8.53) above ground no FCC antenna registration or FAA notice is require.

DETERMINATION Results	
Structure does not require registration. The structure meets the 6.10-meter (20-foot) Rule criteria.	
Your Specifications	
NAD83 Coordinates	
Latitude	30-15-00.0 north
Longitude	098-51-03.8 west
Measurements (Meters)	
Overall Structure Height (AGL)	8.5
Support Structure Height (AGL)	4.6
Site Elevation (AMSL)	498.3
Structure Type	
BPIPE - Building with Pipe	

Proposed Service Contour , Site Details and Channel Study:

Figure 1 demonstrates that the proposed STA facility will not extend the service contour beyond that currently authorized (the license permit) toward any station of concern.

Figure 2 is a large scale topographic map upon which the site has been clearly marked. Figure 3 is a vertical sketch of the proposed antenna supporting structure (the building/pole)

Figure 4 is an FM channel study / contour overlap study that shows that this proposal is clear of any prohibitive contour overlap with the exception of 2<sup>nd</sup> adjacent channel KIVM, Channel 216A, Fredericksburg, Texas.

KIVM is located 13.96 kilometers distant from this proposal. The signal level at the STA site from KIVM is predicted to be 63.5 dBu, the interference contour from this proposal is the 103.5 dBu contour.

KBLC realizes the very special nature of its STA request and that this request is temporary. KBLC will reduce power or cease operation if any interference complaints are received as a result of its operation.

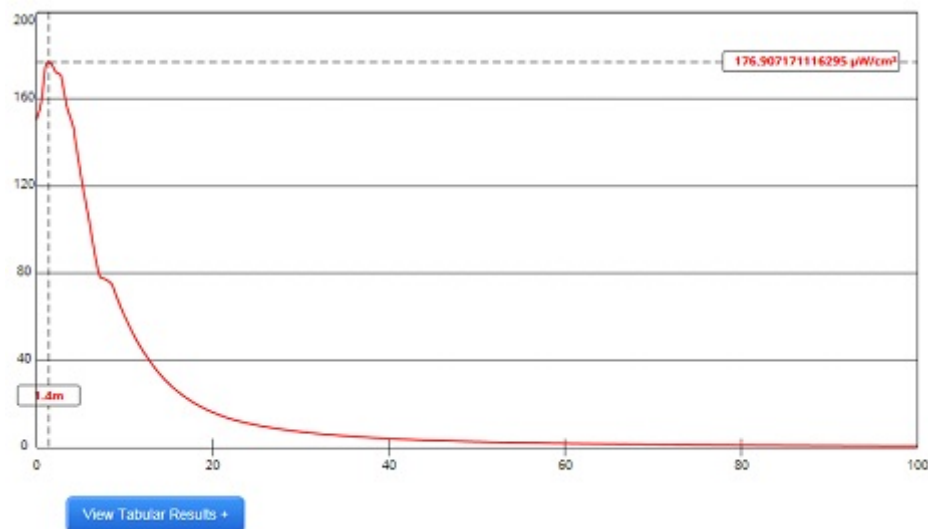
Due to the retaliative low power being proposed (200 watts) and the second adjacent channel relationship; and the location of its proposed STA facility in a commercial warehouse area; interference to KIVM is not expected to be an issue.

Safety & Other Considerations:

The proposal was evaluated using the antenna parameters outlined herein, using the on-line FCC FM Model software program, and a Type 1 EPA (other) antenna. The maximum power density is predicted to be 0.1769 mW/cm<sup>2</sup> occurring within a horizontal distance of 1.4 meters from the antenna.

As the predicted worst-case EPA type 1 antenna value is well below the worker limit of 1.0 mW/cm<sup>2</sup> and is 12 percent below the 0.2 mW/cm<sup>2</sup> for the general public, this proposal is in compliance with the Commission's rules. Suitable warning sign(s) will be placed on the supporting structure. The public has no access to the roof top.

FCC FM MODEL OUTPUT - EPA TYPE 1 ANTENNA



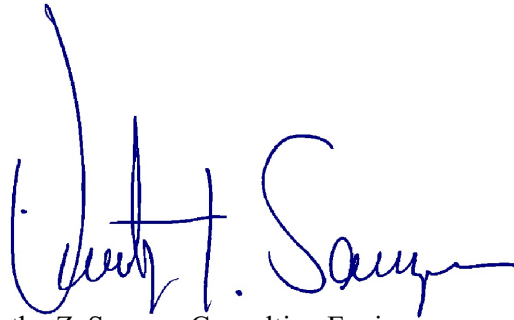
Channel Selection	Channel 218 (81.5 MHz)		
Antenna Type	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	8	Distance (m)	100
ERP-H (W)	0	ERP-V (W)	200
Num of Elements	1	Element Spacing (h)	1
Num of Points	500	Apply	

Public Interest:

KBLC is a noncommercial educational FM station and seeks this STA in order to resume service to its community of license and the surrounding area. As an NCE licensee, the public is served by the educational programming the station provides.

KBLC (FM) STA Request  
CH 218A - Fredericksburg, Texas  
July 2018  
Page 4

July 18, 2018

A handwritten signature in blue ink, appearing to read "Timothy Z. Sawyer". The signature is fluid and cursive, with a large initial "T" and "S".

Timothy Z. Sawyer, Consulting Engineer

Mullaney Engineering, Inc.

Tel: (703) 848-2130

Attachments: Figure 1: Licensed and Proposed STA Service Contour Map  
Figure 2: Site Map  
Figure 3: Vertical sketch of Supporting Structure  
Figure 4: FM Channel/Contour Study

**KBLC - LIC**

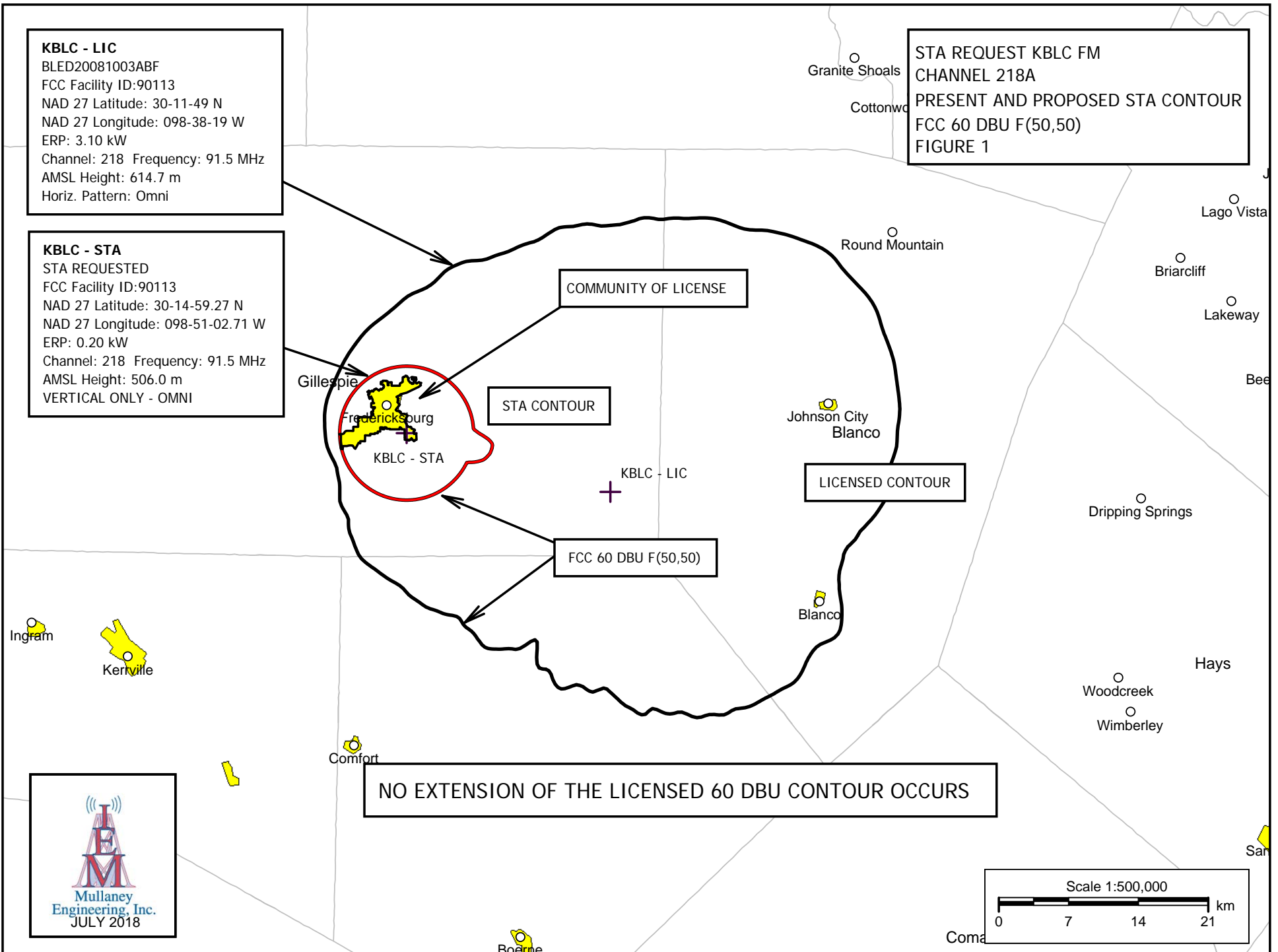
BLED20081003ABF  
FCC Facility ID:90113  
NAD 27 Latitude: 30-11-49 N  
NAD 27 Longitude: 098-38-19 W  
ERP: 3.10 kW  
Channel: 218 Frequency: 91.5 MHz  
AMSL Height: 614.7 m  
Horiz. Pattern: Omni

**KBLC - STA**

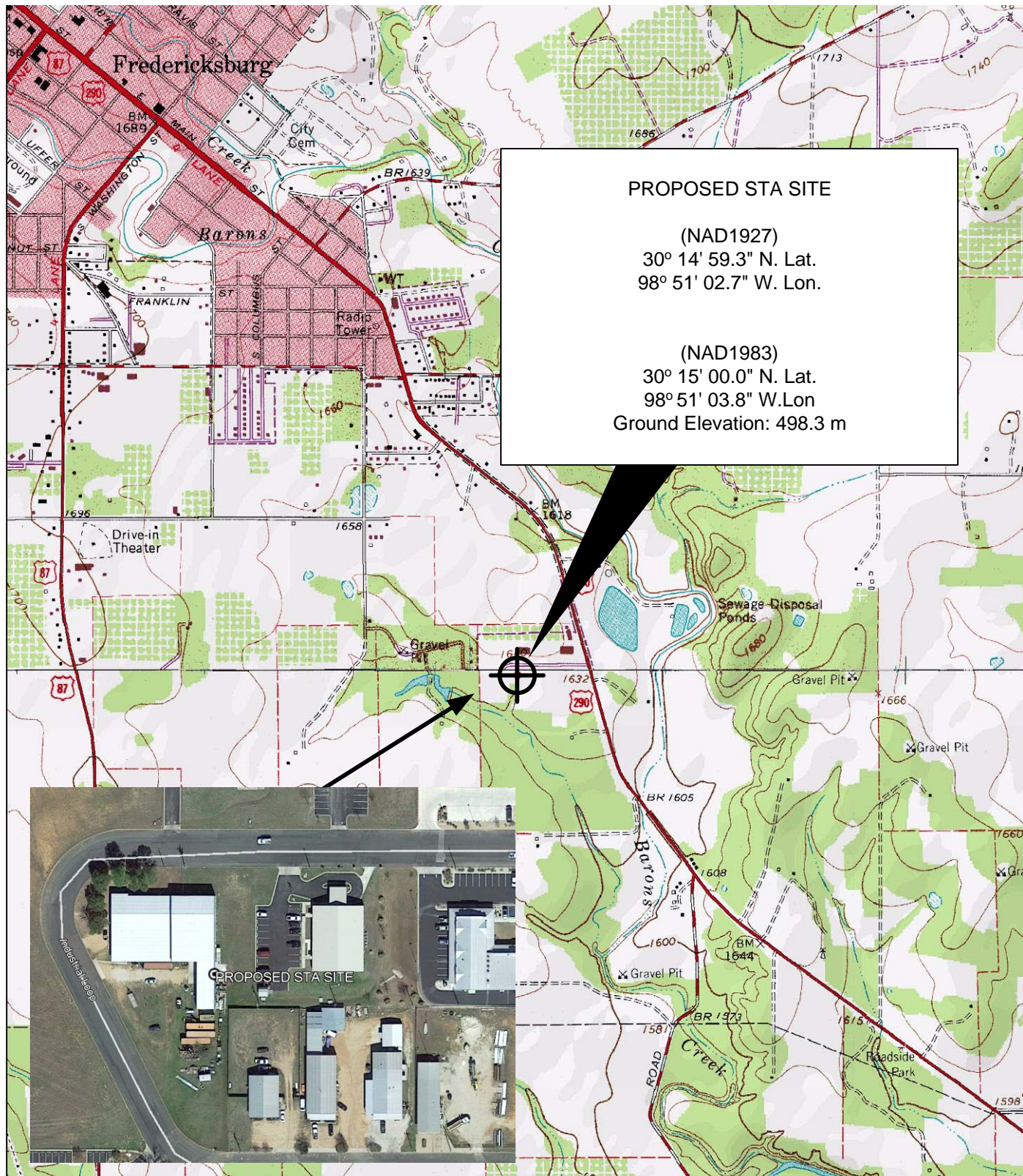
STA REQUESTED  
FCC Facility ID:90113  
NAD 27 Latitude: 30-14-59.27 N  
NAD 27 Longitude: 098-51-02.71 W  
ERP: 0.20 kW  
Channel: 218 Frequency: 91.5 MHz  
AMSL Height: 506.0 m  
VERTICAL ONLY - OMNI

STA REQUEST KBLC FM  
CHANNEL 218A

PRESENT AND PROPOSED STA CONTOUR  
FCC 60 DBU F(50,50)  
FIGURE 1







## KBLC (FM) STA SITE MAP

**KBLC (FM) STA  
FREDERICKSBURG, TEXAS**

**FIGURE  
2**

**MONROVIA, MARYLAND U.S.A**

SIZE  
A

FSCM NO  
N/A

DWG NO  
20180718KBLC.F2

REV  
NONE

**(c) 2018, ALL RIGHTS RESERVED**

SCALE  
N/A

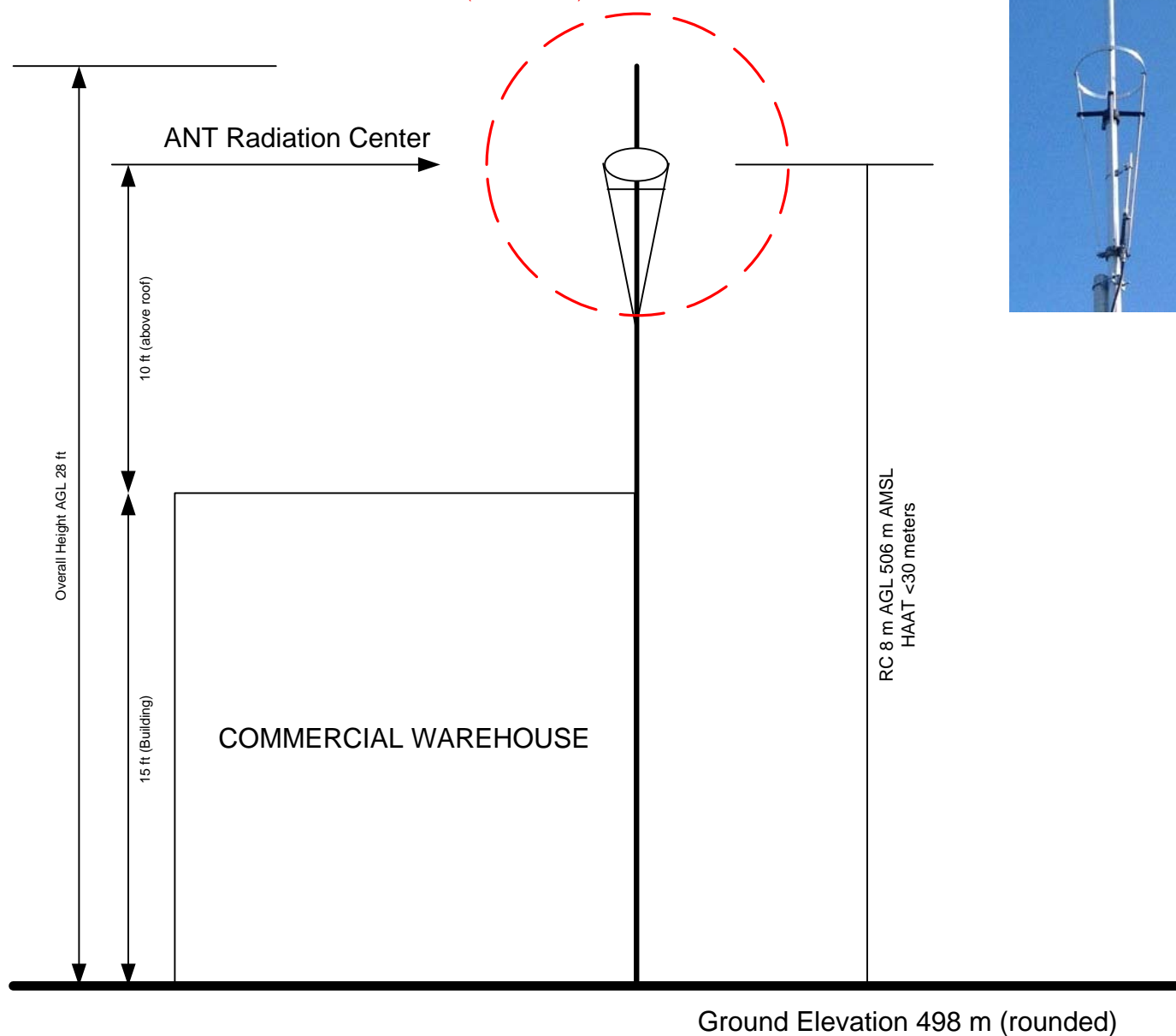
JULY 2018

SHEET

NORWALK NE34  
DOMINATOR  
(DISCONE ANTENNA)



RF "PUBLIC" SAFETY RADIUS 1.4 meters  
EPA TYPE 1 ANTENNA  
VERTICAL ONLY 200 WATTS ERP  
(see narrative)



# **KBLC (FM) STA REQUEST VERTICAL SKETCH OF SUPPORTING STRUCTURE**

KBLC (FM) STA  
FREDERICKSBURG, TEXAS

**FIGURE  
3**

MONROVIA, MARYLAND U.S.A

SIZE  
A

FSCM NO  
N/A

DWG NO  
20180718KBLCSTA.F3

REV  
NONE

(c) 2018, ALL RIGHTS RESERVED

SCALE  
N/A

JULY 2018

SHEET

KBLC FM CH218A STA  
Houston Christian Broadcasters, Inc.

REFERENCE                      CH# 218A - 91.5 MHz, Pwr= 0.2 kW, HAAT= -27.8 M, COR= 506 M                      DISPLAY DATES  
30 14 59.3 N.                      Average Protected F(50-50)= 6.7 km  
98 51 02.7 W.                      Omni-directional

CH CITY	CALL	TYPE STATE	ANT	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
218A Fredericksburg	KBLC!	LIC TX	CX	106.0 286.1	21.24 BLED20081003ABF	30 11 49.0 98 38 19.0	3.100 120	615	---Reference---		
216A Fredericksburg	KIVM	LIC TX	DCX	335.3 155.3	13.96 BLED20120217ABU	30 21 51.0 98 54 42.0	1.000 151	1.0 734	17.3 La Promesa Foundation	6.3	-4.3*
218C Ciudad Acuna	AL8899«	VAC CI		243.4 62.4	225.46	29 19 33.0 100 55 51.0	100.000 600	197.7 906	92.0	210.0R	15.5M
219C2 San Antonio	KRTU-FM	LIC TX	DCX	171.3 351.4	81.42 BLED20170410AAS	29 31 25.0 98 43 25.0	30.000 194	55.7 509	36.1 Trinity University	19.0	35.7
272D Kerrville	K272FJ«!	LIC TX	C	224.0 43.9	29.52 BLFT20170110AAS	30 03 30.2 99 03 50.0	0.092	0.0 649	0.0 Houston Christian Broadcas	10.0R	19.5M
216A Kerrville	KHKV	LIC TX	CN	228.7 48.6	34.67 BLED19980416KA	30 02 37.0 99 07 17.0	0.300 63	1.2 615	7.4 Houston Christian Broadcas	26.8	26.3

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Terrain database is 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= - Zone 2, Co to 3rd adjacent.  
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.  
Reference station has protected zone issue: Mexico

Distance to Mexico border = 216.4 km.  
Facility is okay with respect to AM station towers.  
Closest AM Facility is KNAF, FREDERICKSBURG, TX, L, ND1 at 323.1° at a distance of 5.1 km

\* 2nd Adjacent Channel Protection. Proposal is for an STA operation and will cease or reduce power as needed to eliminate any interference to KIVM as required. Predicted KIVM signal at STA proposal is 63.5 dBu. The 103.5 dBu predicted interference contour is contained within an industrial commercial warehouse area in which no actual interference is likely to occur with modern fixed and mobile receivers.