

Comprehensive Engineering Statement

prepared for

Aleluya Broadcasting Network

K227BD Bellaire, TX

Facility ID 144030

Channel 245D 0.18 kW

Aleluya Broadcasting Network (“*Aleluya*”), licensee of FM Translator K227BD, currently licensed to Freeport, TX (60.8 miles distant) seeks to relocate this FM Translator and change channel for use with KMIC(AM), in compliance with the recent “250-Mile Window Waiver” under the AM Revitalization Program. The instant application seeks a minor change in the licensed facility to specify a change in site, frequency, and effective radiated power (“ERP”). Specifically, *Aleluya* seeks to relocate the proposed translator to Channel 245D at 0.18 kW to the tower with ASR Number 1059622 located at 29° 33’ 44.4” N 95° 30’ 35.1” W (NAD 27). The proposed antenna is a Scala CL-FM vertically-polarized directional antenna mounted at 250 meters AGL.

The location of the 60 dB μ coverage contour of the proposed translator is shown in the map provided as **Figure 1**. As also shown in **Figure 1**, the proposed translator coverage contour is completely within the 2 mV/m KMIC(AM) coverage contour and the 25 mile radius from KMIC(AM), thus complying with §74.1201(j).

A study of nearby FM facilities on co-channel, adjacent-channel, and intermediate frequencies was conducted to identify which stations require further study to demonstrate compliance under §74.1204. **Figures 2 and 3** detail the protected contours of the first-adjacent station KTHT(FM).

Pertinent data for determining the distances to the contour included the antenna elevation above mean sea level, geographic coordinates, effective radiated power, and, where appropriate, directional antenna patterns were retrieved from the FCC’s CDBS database system. The contour locations were determined using digitized 3 arc-second U.S.G.S. terrain data along radials spaced every degree from the transmitter site and an implementation of the Commission’s TVFMFS computer program which simulates the FM propagation curves.

Protection of second-adjacent station KHMx(FM) is achieved pursuant to §74.1204(d) by demonstrating that the proposed translator’s interfering contour does not reach populated areas. The KHMx(FM) contour-method field strength is at least 122.82 dB μ at the proposed

Comprehensive Engineering Statement

(Page 2 of 4)

translator site. Thus, based on the -40 dB desired-to-undesired ratio specified in §74.1204(a)(3), the appropriate second-adjacent interfering signal level at this location is 162.82 dB μ . Using the distance from the proposed antenna and the proposed antenna vertical plane (elevation) pattern, predicted field strengths were calculated and plotted in **Figure 4**. As shown, a maximum field strength of 106.99 dB μ is predicted at the ground level at any distance from the base of the translator location. Thus, considering the antenna height and elevation pattern, the proposed translator signal does not reach the level of 162.82 dB μ that would be considered interference to surrounding population.

The proposed site is located more than 400 km from the Mexican border and more than 1700 km from the Canadian border, beyond the coordination distances with either country. The nearest FCC monitoring station is 330 km distant at Kingsville, TX. This distance exceeds the threshold minimum distance specified in §73.1030 that would suggest consideration of the monitoring station.

It is therefore believed that the proposed facility satisfies all of the pertinent Commission Rules and Policies now in effect regarding allocation matters.

Environmental Considerations

The proposed facility will operate with a vertically-polarized ERP of 0.18 kW with a Scala CL-FM directional antenna mounted on an existing tower. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. Because no change in structure height is proposed, no change in current structure marking and lighting requirements is anticipated. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

Human Exposure to Radiofrequency Radiation

The proposed operation was evaluated for human exposure to radiofrequency energy using the FCC's FM Model software. Under present Commission policy, a facility may be

Comprehensive Engineering Statement

(Page 3 of 4)

presumed to comply with the limits specified in §1.1310 if it satisfies the exposure calculated by FM Model. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

The general population/uncontrolled maximum permitted exposure (“MPE”) limit specified in §1.1310 for the entire FM broadcast band is $200 \mu\text{W}/\text{cm}^2$. For the purpose of this study, “public access” will be considered at the base of the tower at a location two-meters above ground.

Using the FCC’s FM Model program and a worst-case EPA Type 1 antenna it was determined that the proposed facility would contribute a worst-case RF power density of $0.1 \mu\text{W}/\text{cm}^2$ at two meters above ground level near the antenna support structure, or 0.05 percent of the general population/uncontrolled limit.

§1.1307(b)(3) states that facilities at locations with multiple emitters are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent of the pertinent MPE limit. Since the instant situation meets the five percent exclusion test at all ground level areas, the impact of any other facilities near this site may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor at ground level as defined under §1.1307(b).

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy will not be caused by the proposal at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower access will continue to be restricted and controlled through the use of a locked fence. According to information provided by the applicant, appropriate RF exposure warning signs are posted.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will be

Comprehensive Engineering Statement

(Page 4 of 4)

employed protecting maintenance workers from excessive exposure when work must be performed on the tower in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines would otherwise be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. The applicant will coordinate exposure procedures with all pertinent stations. Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under §1.1306 of the Rules, hence preparation of an Environmental Assessment is not required.

Conclusion

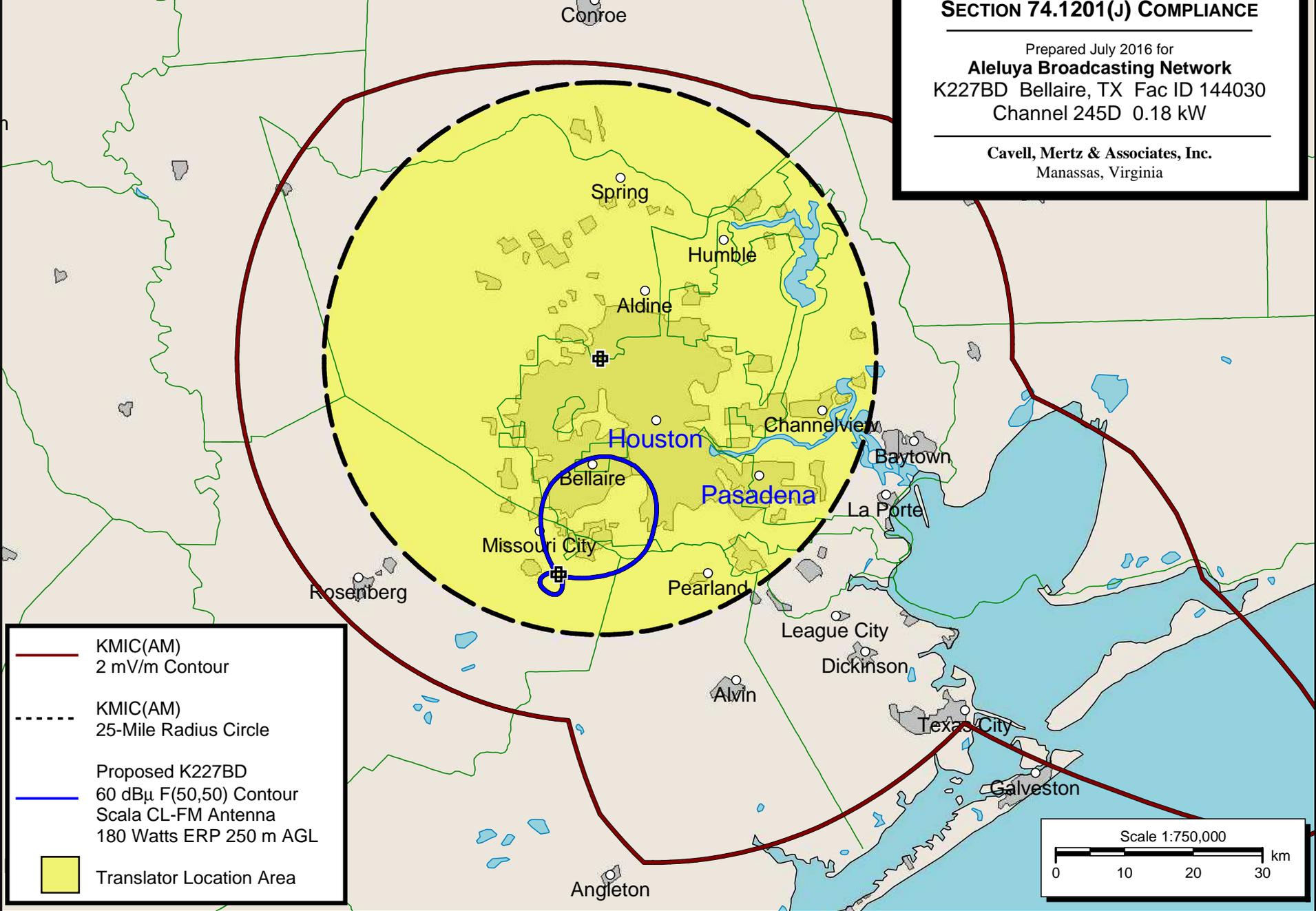
It is therefore believed that the proposed facility satisfies all of the pertinent Commission Rules and Policies now in effect.



EXHIBIT 13 - FIGURE 1
PROPOSED FM TRANSLATOR
SECTION 74.1201(J) COMPLIANCE

Prepared July 2016 for
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K227BD Bellaire, TX Fac ID 144030
Channel 245D 0.18 kW

Cavell, Mertz & Associates, Inc.
Manassas, Virginia



-  KMIC(AM)
2 mV/m Contour
-  KMIC(AM)
25-Mile Radius Circle
-  Proposed K227BD
60 dB μ F(50,50) Contour
Scala CL-FM Antenna
180 Watts ERP 250 m AGL
-  Translator Location Area

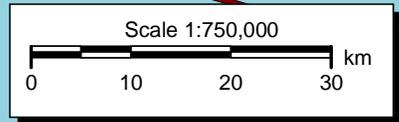


EXHIBIT 13 - FIGURE 2
PROTECTED AND INTERFERING CONTOURS
1ST ADJACENT CHANNEL FACILITIES

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KTHT-FM As Licensed
BLH-20001031AAA
60 dB μ F(50,50) Protected Contour

K227BD As Proposed
54 dB μ F(50,10) Interfering Contour
60 dB μ F(50,50) Protected Contour

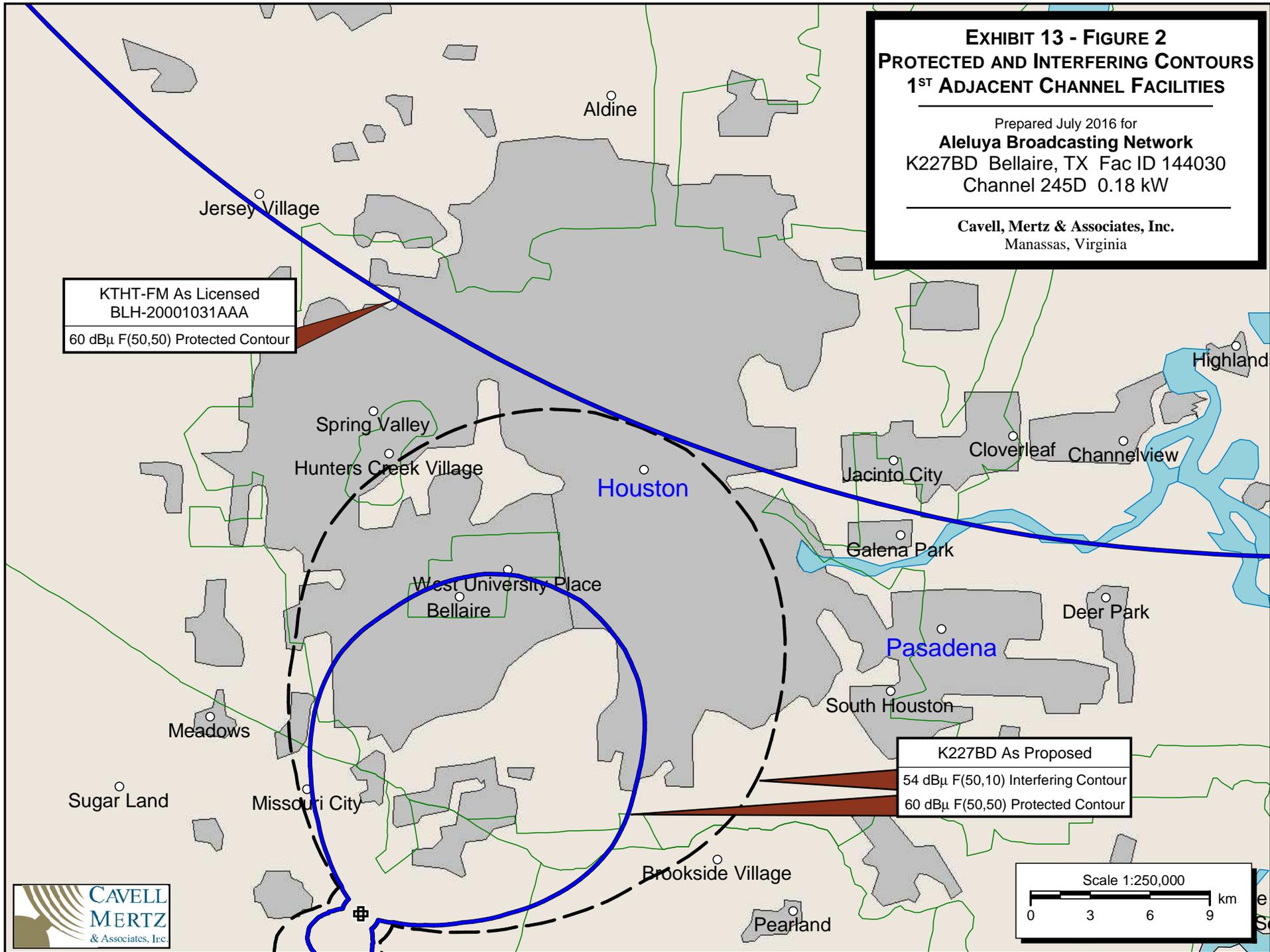
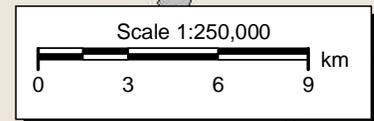


EXHIBIT 13 - FIGURE 3
PROTECTED AND INTERFERING CONTOURS
1ST ADJACENT FACILITIES (EXPANDED)

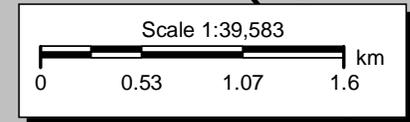
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K227BD As Proposed
54 dB μ F(50,10) Interfering Contour

KTHT-FM As Licensed
BLH-20001031AAA
60 dB μ F(50,50) Protected Contour

Houston



**EXHIBIT 13 - FIGURE 4
PREDICTED GROUND LEVEL
FIELD STRENGTHS**

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