

Technical Exhibit  
Application for Minor Amendment of Application  
BNPH-20151013AGG  
NEW, 292C1, Presidio, TX to 237C3

## TECHNICAL EXHIBIT

This application is filed on behalf of Marfa Public Radio (Marfa), Marfa is the winning bidder and applicant for Channel 292C1 at Presidio, TX, Marfa's pending "long-form" application (BNPH-20151013AGG) is in conflict with a Mexican allotment. Marfa is proposing a non-contiguous channel substitution of channel 237C3 and relocation of the proposed allotment into the community of Presidio, TX. There will be no change in the allotted community of Presidio, TX. The reason for the proposed change is due to the unavailability of a suitable existing tower or location where a suitable tower could be constructed for 292C1, or any allotment on 292, even with class A facilities, which could satisfy community coverage requirements to Presidio.

Although the class reduction from C1 to C3 is being requested, as shown in the attached exhibits, 237C3 will cover 100% of Presidio in the 70dBu contour and will serve what is now "white area" containing over 5,000 persons. There are no U.S. Radio stations serving the Presidio area. This facility will provide the first fulltime aural (reception) service.

Proposed allotment:

Reference Coordinates: 29-34-00 N, 104-21-01.4 W Contour Restricted to 237B (vacant allotment) at Delicias, CH Mexico<sup>1</sup>. Compliant with 73.207 with respect to all Domestic allotments<sup>2</sup>

Proposed operating coordinates: 29-34-00 N, 104-21-01.4 W, 40m AGL, -4m HAAT, 15kW ERP

### 237C3 proposed Allotment and Operating, Presidio, TX

ComStudy 2.2 search of channel 237 (95.3 MHz Class C3) at 29-34-00.0 N, 104-24-01.4 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
VACANT	DELICIAS	CH 237 B	185.02	211.00	214.3	-26.0 See Exh A
VACANT	VENTANAS	CH 240 B	84.91	77.00	336.0	7.9
VACANT	BALDERAS	CH 236 B	196.44	145.00	325.2	51.4
VACANT	SAN VICENTE	CI 235 B	143.61	77.00	108.5	66.6
VACANT	SAN VICENTE	CI 239 B	143.61	77.00	108.5	66.6

<sup>1</sup> Mexican allotments are not considered in determination of fully spaced reference coordinates for allotments in the United States.

<sup>2</sup> 73.207(b)(1)

### Proposed operation on 237C3

As shown above, the operation of 237C3 from the proposed tower will be fully fully compliant with 73.207. There are no US allotments requiring protection at this location. The proposed facility will fully protect the vacant Mexican allotment 237B in Delicias, CH, MX as shown in Exhibit A. The station will operate with a center of radiation of 40m AGL. The AMSL ground elevation of the proposed Presidio site is 810m. The HAAT is calculated as -4m. The proposed ERP is 15kW which more than meets minimum requirements for a class C3 station.

The proposed facility is located immediately adjacent to the Mexican border and is over 500km from the closest FCC monitoring station and radio astronomy quiet zones.

### 73.203 Compliance

The proposed channel substitution and re-allotment of 292C1 to 237C3 at Presidio, TX. is compliant with 73.203(b).

### Community of License Coverage

As shown in Exhibit B, The Community of Presidio, TX will be fully contained within the 70dBu FCC service contour.

### Environmental Considerations

The applicant is proposing to operate on an existing 140ft tower without making any substantive modifications to it, the proposed facility is excluded from further NEPA, NHPA, FAA, or ASR environmental review.

A Towair evaluation was run for the existing tower and it was found to pass that determination. A copy of the Towair determination is attached as Exhibit C

### Radiofrequency Radiation

The proposed 6-bay, half-wave spaced antenna will operate at 40m AGL at 15kW ERP. Based upon those specifications, and analyzed with the FCC's "FM Model for Windows", for the proposed antenna operating at 15kW H+V, the maximum power density at 2mAGL will be 7.8  $\mu\text{W}/\text{cm}^2$  or 3.9% of the maximum allowable 200 $\mu\text{W}/\text{cm}^2$ . The output from FM Model for windows is attached as Exhibit D.

There are no other non-excluded sources of RF on the tower. Based upon the preceding data It is believed the impact of the proposed operation should not be considered to be a factor at ground level as defined under §1.1307(b)(3).

The applicant will comply with rules requiring reduction of power or ceasing operation when personnel are on the tower.

EXHIBIT A- Contour Protection to 237B, Delicias, CH Per 1992 Mexican Treaty

**October 2016**

**NEW (FM) Channel 237C3**

**Presidio, Texas**

**Allocation Study**

The proposed operation meets the domestic co-channel and adjacent channel spacing requirements for Class C3 stations as prescribed in §73.207 of the Commission's Rules to all domestic stations and allotments.

The proposed allotment site is short-spaced to a Mexican allotment on Channel 237B at Delicias, CH. An allocation study has been conducted in order to demonstrate equivalent protection to the Mexican allotment. Attached is an engineering study, conducted pursuant to the radial interpolation method set forth in the US-Mexico FM Agreement, which demonstrates that full protection is provided to the Mexican allotment.

**Goldman Engineering Management  
Auburn, CA**

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**NEW Channel 237C3 Presidio, TX. Proposed Transmitting  
Facility Contour Protection to Mexican Allotment Delicias, 237B**

PROPOSED FACILITY

COMMUNITY : **PRESIDIO, TX**  
CHANNEL : 237  
CALL : NEW  
CLASS : C3  
INTERNATIONAL : B1  
COORDINATES : 29-34-00 N 104-24-01.4 W  
RADIATING CENTER : 850 METERS AMSL (FOR -4M HAAT)  
AZIMUTH TO PROTECTED FACILITY: 214.5 DEGREES  
STANDARD RADIALS : 180.0 HAAT= 9.4 M  
: 225.0 HAAT= 22.9 M

INTERPOLATED RADIAL : 214.5 HAAT= **17.1 M**

RESTRICTED POWER : 15 KW AT 17.1 M ON 214.5 DEG RADIAL  
INTERFERING CONTOUR : 34 DBU (50,10)  
DISTANCE TO INTERFERING CONTOUR: 114 KM

PROTECTED ALLOCATION AT DELICIAS, CHIHUAHUA, MEXICO

COMMUNITY : **Delicias, Chihuahua**  
CHANNEL : 237  
CALL : VACANT CHANNEL  
CLASS : B  
COORDINATES : 28-11-10 N 105-28-00 W  
MAXIMUM FACILITY : 50 KW AT 150 M  
RELATIONSHIP : COCHANNEL  
PROTECTED CONTOUR : 54 DBU (50,50)  
DISTANCE TO PROTECTED CONTOUR : 65.0 KM  
(MAXIMUM PROTECTION FOR CLASS)

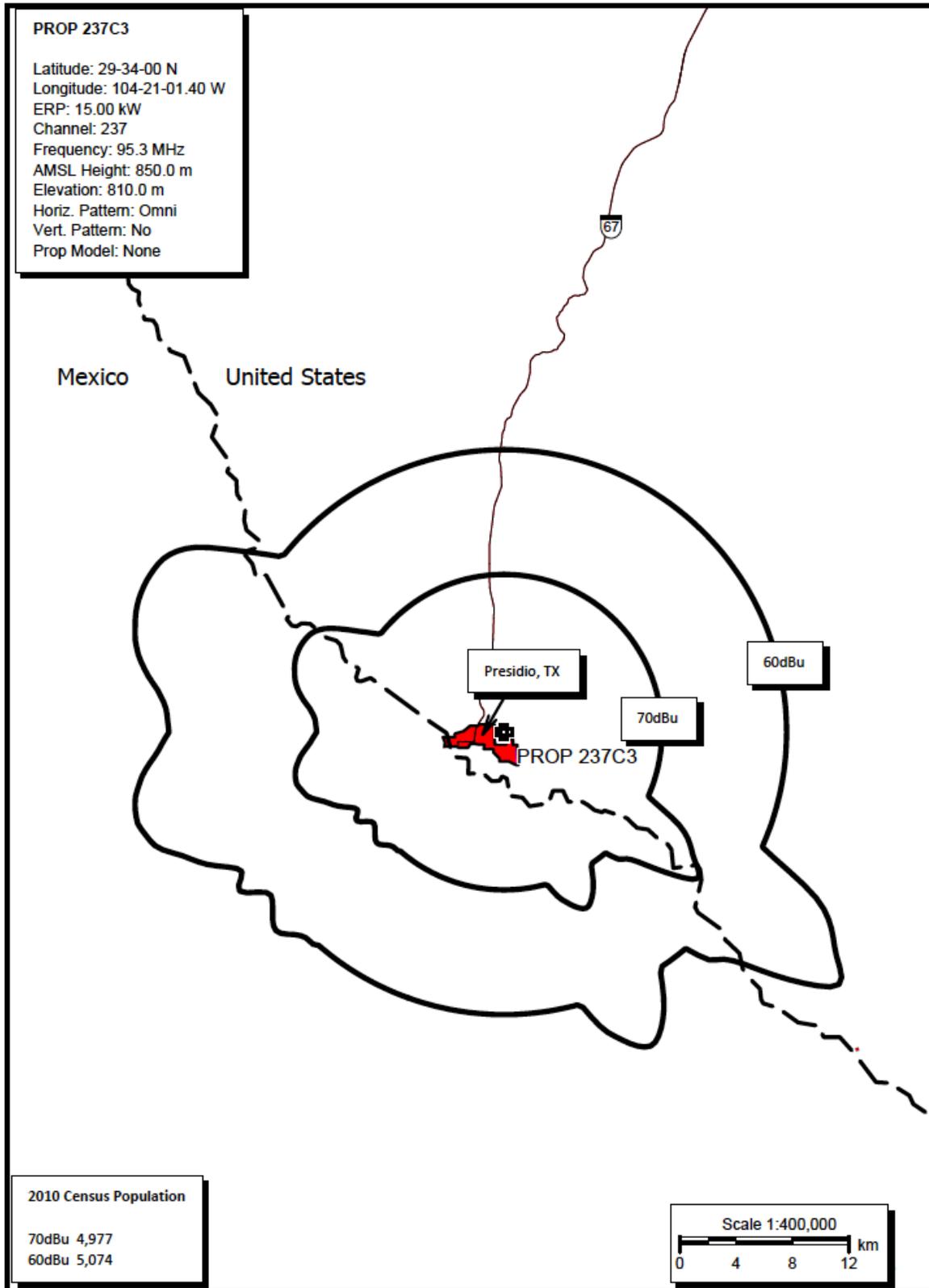
SUMMARY

DISTANCE TO PROTECTED CONTOUR (DELICIAS) : 65.0 KM  
DISTANCE TO RESTRICTED CONTOUR (PRESIDIO):114.0 KM  
TOTAL DISTANCE RESTRICTED PLUS PROTECTED :179.0 KM  
ACTUAL SPACING :185.0 KM

**NO OVERLAP OF PROTECTED AND INTERFERING CONTOURS**

EXHIBIT B- Community Coverage

Proposed Presidio, 237C3 (95.3)MHz, 15kW @ 40m AGL



## EXHIBIT C- TOWAIR DETERMINATION

### TOWAIR Determination Results

A routine check of the coordinates, heights, and structure type you provided indicates that this structure does not require registration.

#### \*\*\* NOTICE \*\*\*

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

#### DETERMINATION Results

**PASS SLOPE(100:1): NO FAA REQ-RWY MORE THAN 10499 MTRS & 6732.72 MTRS (6.73270 KM) AWAY**

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	29-37-37.00N	104-21-40.00W	PRESIDIO LELY INTL	PRESIDIO, PRESIDIO, TX	881.6	1585.0

#### Your Specifications

##### NAD83 Coordinates

Latitude	29-34-00.7 north
Longitude	104-21-03.0 west

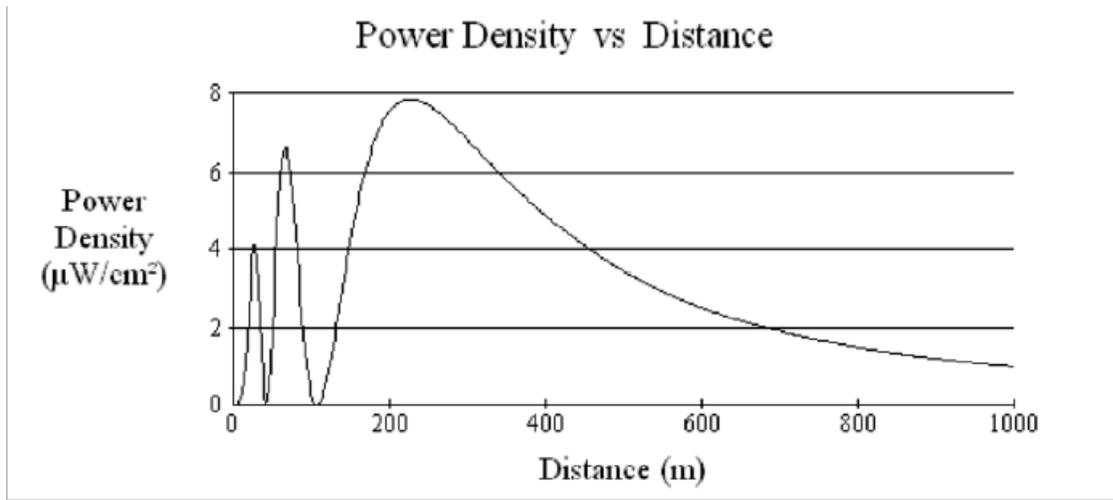
##### Measurements (Meters)

Overall Structure Height (AGL)	42.7
Support Structure Height (AGL)	0.3
Site Elevation (AMSL)	810

##### Structure Type

MTOWER - Monopole

EXHIBIT D- Power Density, Proposed antenna



Office of Engineering and Technology

Distance (m):	<input type="text" value="1000"/>	Antenna Type:	<input (epa)"="" rototiller"="" type="text" value="ERI or JAMPRO JBCEP "/>
Horizontal ERP (W):	<input type="text" value="15000"/>	Number of Elements:	<input type="text" value="6"/>
Vertical ERP (W):	<input type="text" value="15000"/>	Element Spacing:	<input type="text" value=".5"/>
Antenna Height (m):	<input type="text" value="40"/>		