

**Goldman Engineering Management  
Auburn, CA**

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Technical Exhibit

Application for Minor Modification of Construction Permit

BMPH-20161102ABU

NEW, Presidio, TX 237C3 to 237A

## TECHNICAL EXHIBIT

This application is filed on behalf of Marfa Public Radio (Marfa), Marfa, while desiring to provide first service to the Presidio, Texas area, due to financial constraints is unable to build a C3 facility and would like to apply for a Class A facility in that community.

The proposed facility will cover 100% of Presidio in the 70dBu contour and will serve what is now “white area” containing approximately 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 (NAD27): 29-33-55 N, 104-20-59 W. Compliant with 73.207 with respect to all Domestic and Mexican allotments<sup>1</sup>

Proposed operating coordinates (NAD27): 29-33-55 N, 104-20-59 W, 40m AGL, -3m HAAT, 1kW ERP

### 237A proposed Allotment and Operating, Presidio, TX- 73.207 Analysis

ComStudy 2.2 search of channel 237 (95.3 MHz Class A) at 29-33-55.0 N, 104-20-59.0 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
NEW	PRESIDIO	TX 237 C3	0.16	142.00	340.8	-141.8 Existing Alloc
	DELICIAS	CH 237 B	187.72	178.00	215.6	9.7
	VENTANAS	CH 240 B	87.16	69.00	333.2	18.2

### Proposed operation on 237A

As shown above, the operation of 237A from the proposed tower will be fully fully compliant with 73.207. The proposed facility will also be fully spaced to the vacant Mexican allotment 237B in Delicias, CH, MX. 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 -3m (FCC HAAT Calculator, 360 radials, “1km Globe Terrain Data”). The proposed ERP is 1kW which meets minimum requirements for a class A station.

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

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.

#### Community of License Coverage

As shown in Exhibit A, 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 monopole 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 B.

#### Radiofrequency Radiation

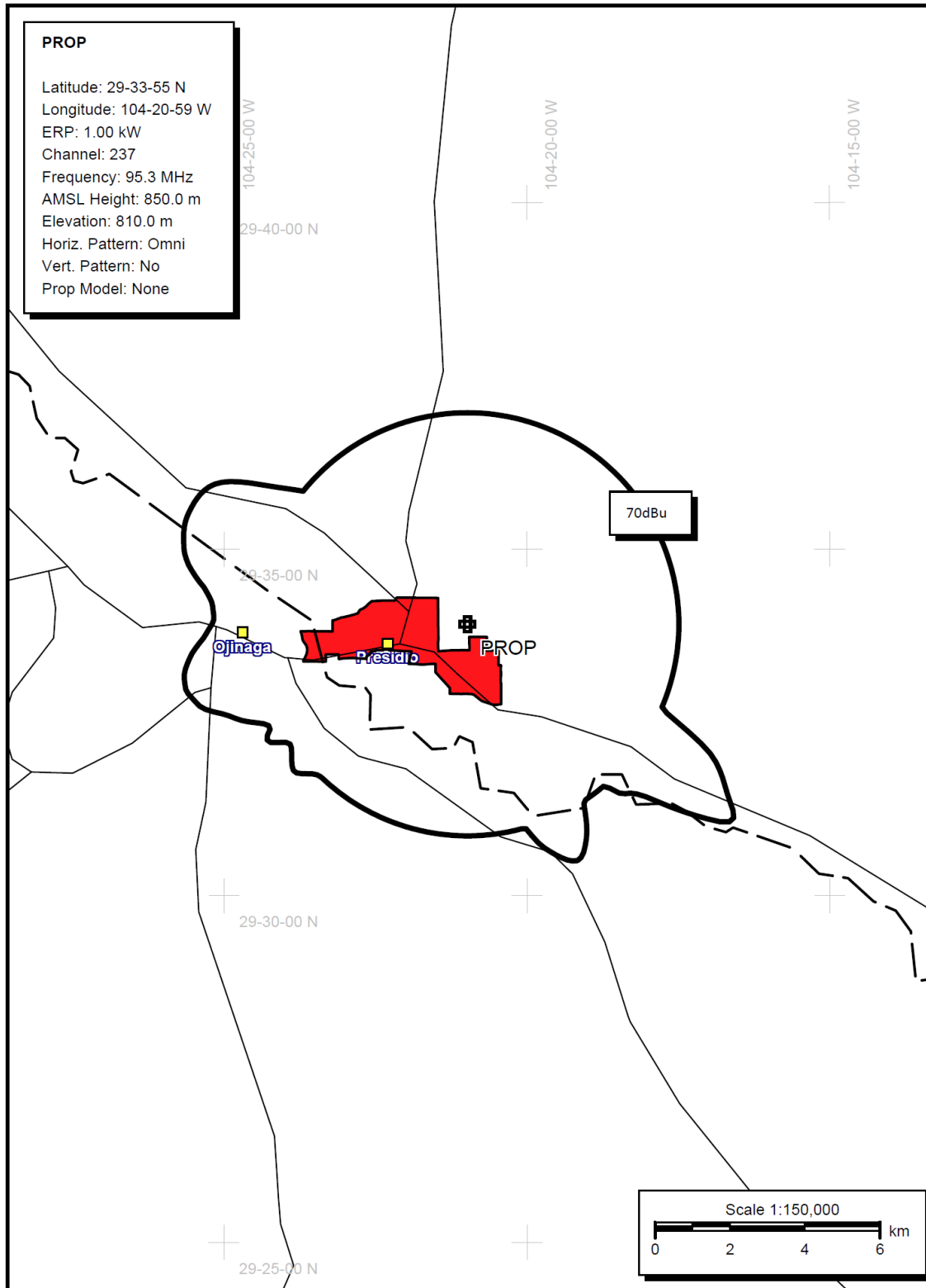
The proposed 3-bay, half-wave spaced antenna will operate at 40m AGL at 1kW ERP. Based upon those specifications and analyzed with the FCC's "FM Model for Windows", for a worst-case ring-stub operating at 1kW H+V, the maximum power density at 2mAGL will be  $3.1 \mu\text{W}/\text{cm}^2$  or 1.6% of the maximum allowable  $200\mu\text{W}/\text{cm}^2$ . The output from FM Model for windows is attached as Exhibit C.

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- Community Coverage

### Community Coverage 237A, Presidio, TX



## EXHIBIT B- 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 & 6883.90 MTRS (6.88389 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	29-33-56.0 north
Longitude	104-21-01.0 west

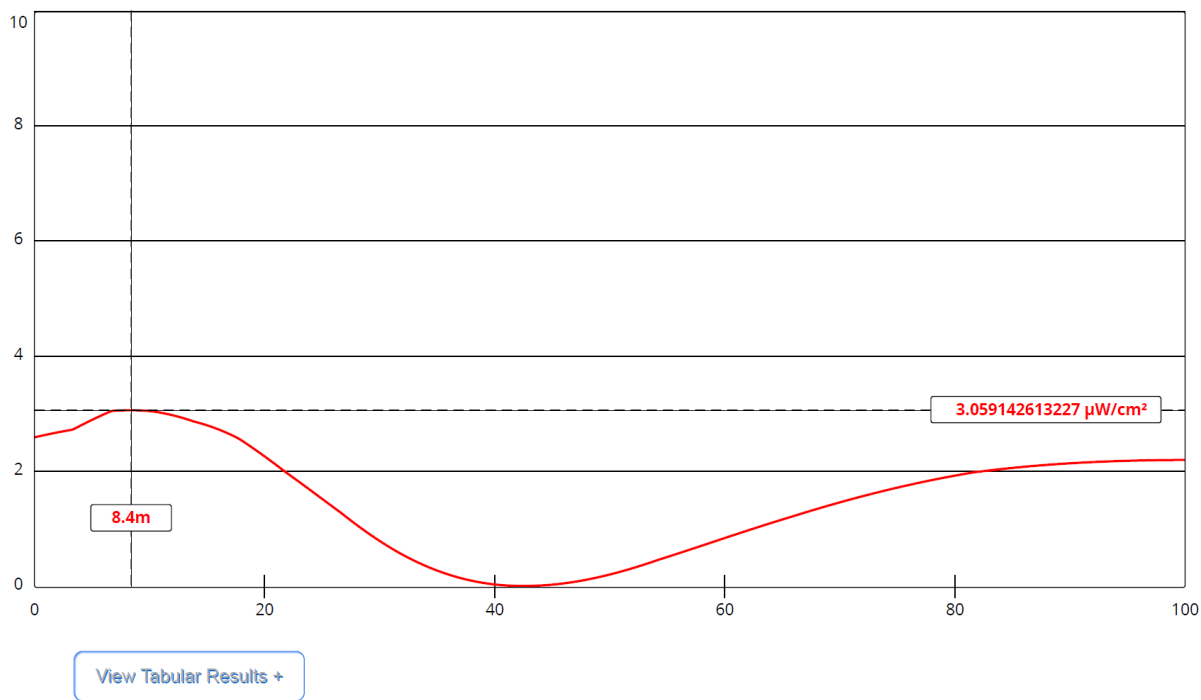
##### Measurements (Meters)

Overall Structure Height (AGL)	43
Support Structure Height (AGL)	0
Site Elevation (AMSL)	810

##### Structure Type

MTOWER - Monopole

EXHIBIT C- Power Density, Proposed antenna



Channel Selection	Channel 237 (95.3 MHz) ▾		
<a href="#">Antenna Type +</a>	EPA Type 1: Ring-and-Stub or "Other" ▾		
Height (m)	<input type="text" value="40"/>	Distance (m)	<input type="text" value="100"/>
ERP-H (W)	<input type="text" value="1000"/>	ERP-V (W)	<input type="text" value="1000"/>
Num of Elements	<input type="text" value="3"/>	Element Spacing (λ)	<input type="text" value="0.5"/>
Num of Points	<input type="text" value="500"/>	<a href="#">Apply</a>	