

King City, CA

AUCTION 109 LONG FORM APPLICATION

This technical report has been developed in support of an application for the King City, CA Auction 109 channel 275A allocation. A non-adjacent, same class move to channel 284A is proposed. §73.3573 permits same class, non-adjacent channel changes as minor as does the *Rural Radio Public Notice DA-07-1671* Example 4. Furthermore, Commission staff has confirmed that use of same class, non-adjacent minor changes applies in the context of an Auction 109 Long Form Application.

The following exhibits are provided for the form 301 application:

- E-1 284A Spacing Study
- E-2 284A Overlap Study
- E-3 284A Fully-Spaced Reference Spacing Study
- E-4 284A Fully-Spaced 70 dBu Contour
- E-5 284A Reference Topographic Map
- E-6 TOWAIR Determination
- E-7 70 dBu Contour Coverage Plot
- E-8 FMModel RF evaluation

Allocation Analysis:

A channel study is included as E-1 and shows the New 284A facility will be short-spaced to KSTT-FM 283B and KHTN(FM) 284B. As a result, §73.215 processing is elected with respect to these facilities. An overlap study (exhibit E-2) demonstrates clearance for the new 284A facility. A fully-spaced reference site is proposed at:

36-15-23.9 N and 121-15-07.2 W.

A channel study, 70 dBu plot and topographic map are provided as E-3, E-4 and E-5.

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Broadcast Engineering Consultants

The New 284A facility is proposed at an existing 24 meter tower at:

36-12-24.9 N 121-08-19.4 NAD 83.

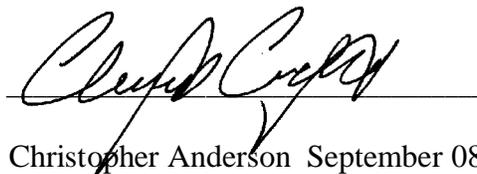
A TOWAIR determination (exhibit E-6) shows the tower does not require registration. The proposed 284A facility will use a Nicom BKG77 two bay, 0.85 wavelength-spaced, non-directional antenna mounted at 18.3 meters AGL, 109.7 meters AMSL and operate at 150 watts ERP. The facility will place a 70 dBu contour over 100% of the King City, CA population and 97% of the area (see E-7) complying with the 80% rule for applications.

RF Exposure Calculation:

The RF contribution was calculated using FMModel. The resulting RF is calculated to be $4.23 \mu\text{W}/\text{cm}^2$ at a distance of 7.6 meters from the base of the tower, (see E-8) which is below 5% of the $200 \mu\text{W}/\text{cm}^2$ maximum permissible for general public exposure, allowing its exclusion from consideration.

Conclusion:

It is concluded that the long form application for the NEW 284A facility complies with all Commission rules and policies.



Christopher Anderson September 08, 2021
andersce@bham.rr.com
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E-1 New 275A Mod. 284A Spacing Study

REFERENCE							DISPLAY DATES
36 12 24.90 N.			CLASS = A				DATA 09-01-21
121 08 19.40 W.			Current Spacings to 3rd Adj.				SEARCH 09-01-21
----- Channel 284 - 104.7 MHz -----							

Call	Channel	Location		Azi	Dist	FCC	Margin
KSTT-FM	LIC 283B	Atascadero	CA	155.1	103.46	112.5	-9.0
KHTN	LIC-Z 284B	Planada	CA	33.4	177.25	177.5	-0.25 (1)
KEXA	LIC 230B1	King City	CA	340.0	20.44	11.5	8.9
KHIP	LIC-N 282A	Gonzales	CA	326.5	61.56	30.5	31.1
KOCN	LIC 286A	Pacific Grove	CA	303.6	69.82	30.5	39.3
KCJZ	LIC 287A	Cambria	CA	174.8	76.04	30.5	45.5

 All separation margins include rounding.

(1) The New channel 284A facility will be designated 73.215(c).

E-2 New 284A Overlap Study

REFERENCE CH# 284A - 104.7 MHz, Pwr= 0.15 kW, HAAT= 30.0 M, COR= 109.7 M DISPLAY DATES
 36 12 24.90 N. Average Protected F(50-50)= 6.24 km DATA 09-01-21
 121 08 19.40 W. 73.215 Omni-directional SEARCH 09-01-21

CH CITY	CALL	TYPE ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
230B1 King City	KEXA«	LIC_CN CA	340.0 160.0	20.44 BLH19871223KC	36 22 47.80 121 13 00.70	5.400 214	107.5 458	42.4 Inspiration Media Network,	11.5R	8.9M
282A Gonzales	KHIP«	LIC_NCN CA	326.5 146.3	61.56 BMLH19980709KB	36 40 05.80 121 31 12.70	2.600 155	3.0 435	39.1 Smg-Monterey, LLC	30.5R	31.1M
284B Plana da	KHTN	LIC_ZCN CA	33.4 214.1	177.34 BMLH20160707AAD	37 31 59.80 120 01 51.60	1.950 634	134.8 1334	72.2 Smg-Merced, LLC	36.3	75.1
283B Atascadero	KSTT-FM^	LIC_CN CA	155.1 335.3	103.59 BLH20021017AAU	35 21 39.90 120 39 24.60	50.000 150	58.6 488	46.2 Agm California, Inc.	38.7	44.9
286A Pacific Grove	KOCN«	LIC_CN CA	303.6 123.2	69.82 BLH19950801KD	36 33 08.80 121 47 20.80	1.800 183	1.6 416	11.7 Ihm Licenses, LLC	30.5R	39.3M
287A Cambria	KCJZ«	LIC_CN CA	174.8 354.8	76.04 BLH20140620AAD	35 31 27.90 121 03 42.70	6.000 52	1.6 280	15.8 Adelman Investments, LLC	30.5R	45.5M

Terrain database is FCC 30 meter, 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 1A, Co to 3rd adjacent.
 All separation margins (if shown) include rounding.
 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.
 < = Contour Overlap
 ^ = Power and antenna height 'Max classed' as per Sec 73.215 protection requirements

E-3 New 275A Mod. 284A Fully-Spaced Reference

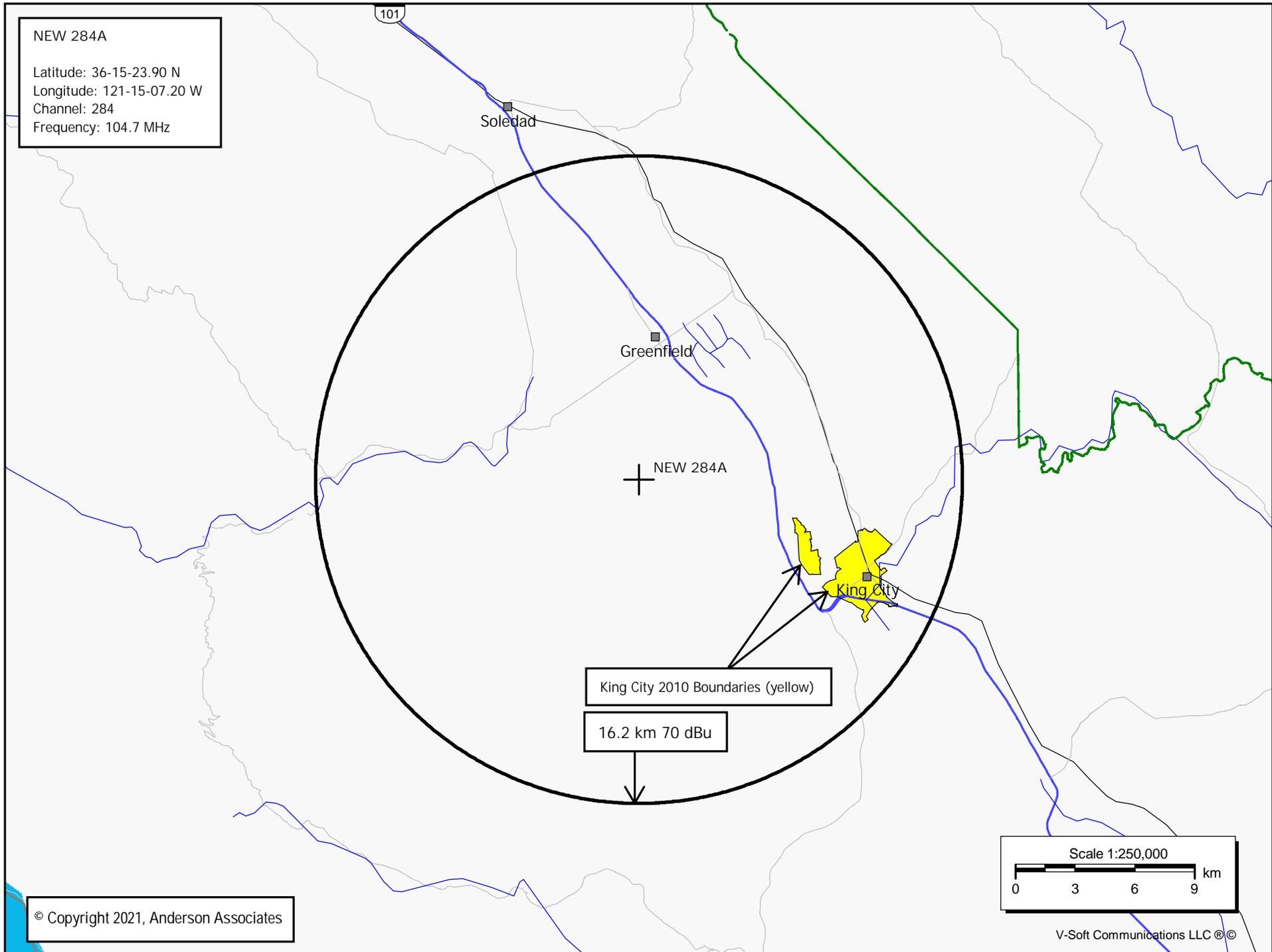
REFERENCE						DISPLAY DATES
36 15 23.90 N.			CLASS = A			DATA 09-01-21
121 15 07.20 W.			Current Spacings to 3rd Adj.			SEARCH 09-01-21
----- Channel 284 - 104.7 MHz -----						

Call	Channel	Location		Azi	Dist	FCC	Margin
KSTT-FM	LIC 283B	Atascadero	CA	151.5	112.99	112.5	0.49
KHTN	LIC-Z 284B	Planada	CA	37.0	178.65	177.5	1.2
KEXA	LIC 230B1	King City	CA	12.9	14.04	11.5	2.5
KHIP	LIC-N 282A	Gonzales	CA	332.4	51.61	30.5	21.1
KOCN	LIC 286A	Pacific Grove	CA	304.5	58.29	30.5	27.8

 All separation margins include rounding.

E-4 NEW 284A Reference Point Circular 16.2 km 70 dBu

NEW 284A
Latitude: 36-15-23.90 N
Longitude: 121-15-07.20 W
Channel: 284
Frequency: 104.7 MHz



-121°15.5'

-121°15'

E-5 New 284A Fully-Spaced Reference Topographic Map

36°15.5'

36°15.5'

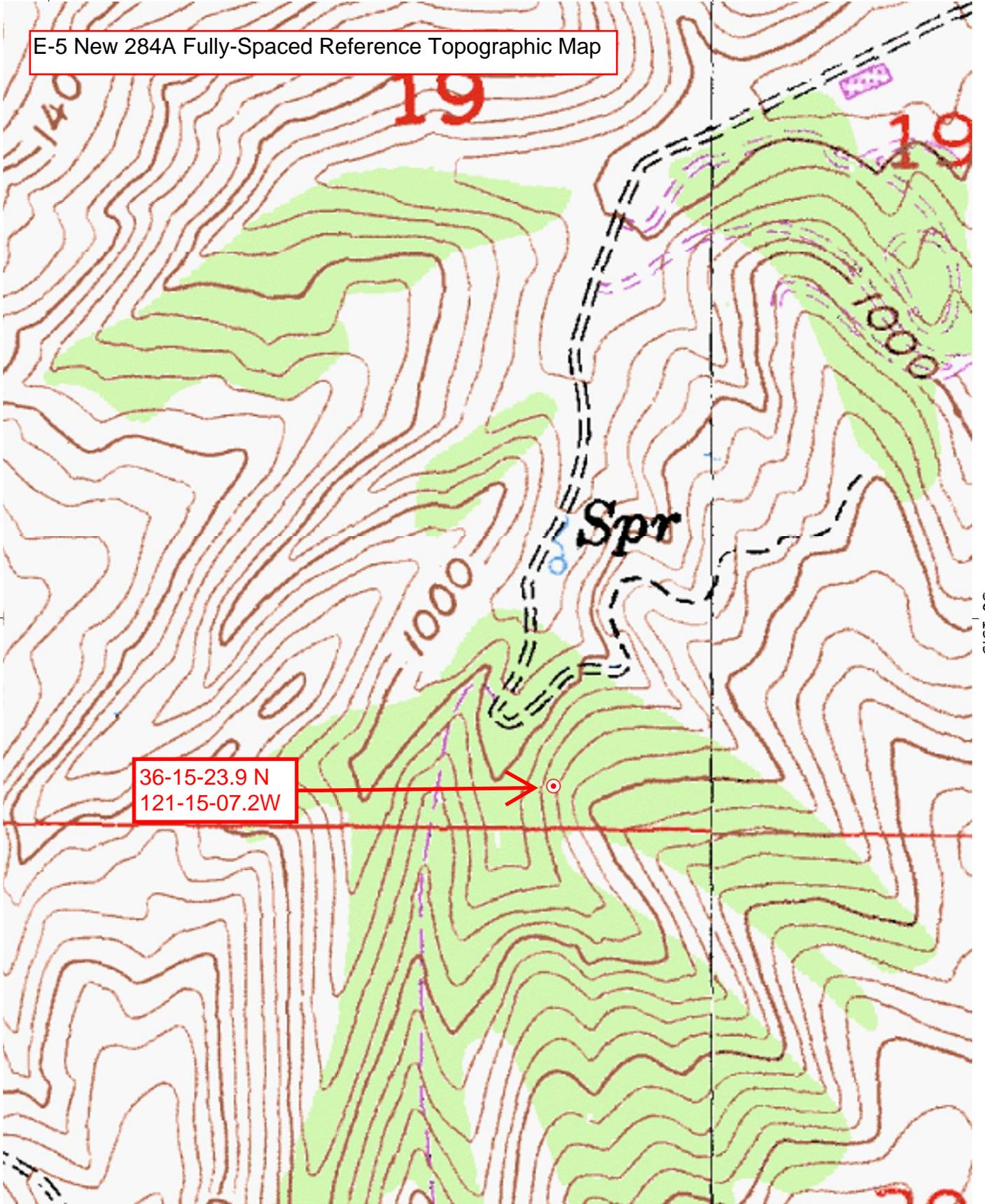
36-15-23.9 N
121-15-07.2 W



-121°15.5'

-121°15'

Mercator Projection
NAD27 Conus
USNG Zone 10SFF
 CALTOPO



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 - 2835.0 Meters (9301.06 Feet)away & below slope by 25.0 Meters (82.0199 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	36-13-57.00N	121-07-37.00W	MESA DEL REY	MONTEREY KING CITY, CA	112.7	1365.2

Your Specifications

NAD83 Coordinates

Latitude	36-12-24.9 north
Longitude	121-08-19.4 west

Measurements (Meters)

Overall Structure Height (AGL)	24
Support Structure Height (AGL)	0
Site Elevation (AMSL)	91.4

Structure Type

GTOWER - Guyed Structure Used for Communication Purposes

Tower Construction Notifications

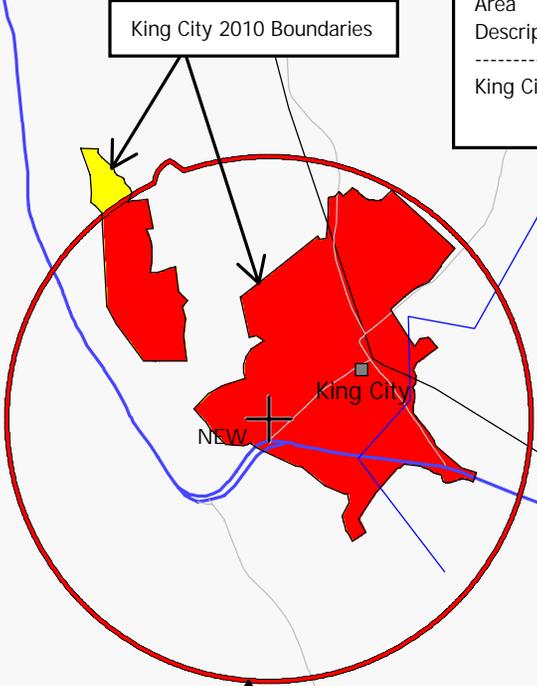
Notify Tribes and Historic Preservation Officers of your plans to build a tower.

E-7 NEW 284A 70 dBu

NEW
 Latitude: 36-12-24.90 N
 Longitude: 121-08-19.40 W
 ERP: 0.15 kW
 Channel: 284
 Frequency: 104.7 MHz
 AMSL Height: 109.74 m
 Elevation: 91.44 m
 Horiz. Pattern: Omni

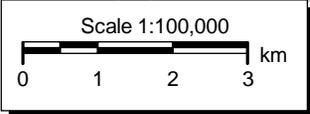
Overlap Area Type: NEW (284): 70.00 dBu - King City, CA
 Population Database: 2010 US Census
 Total Population: 12,693
 Overlap Area: 10.02 sq. km (Area determined using 0.015 km cells)

Area Description	Total Population	Total Area [sq. km]	Percent Population	Percent Area
King City, CA-70 dBu	12,693	10.33	100.0 %	97.0 %



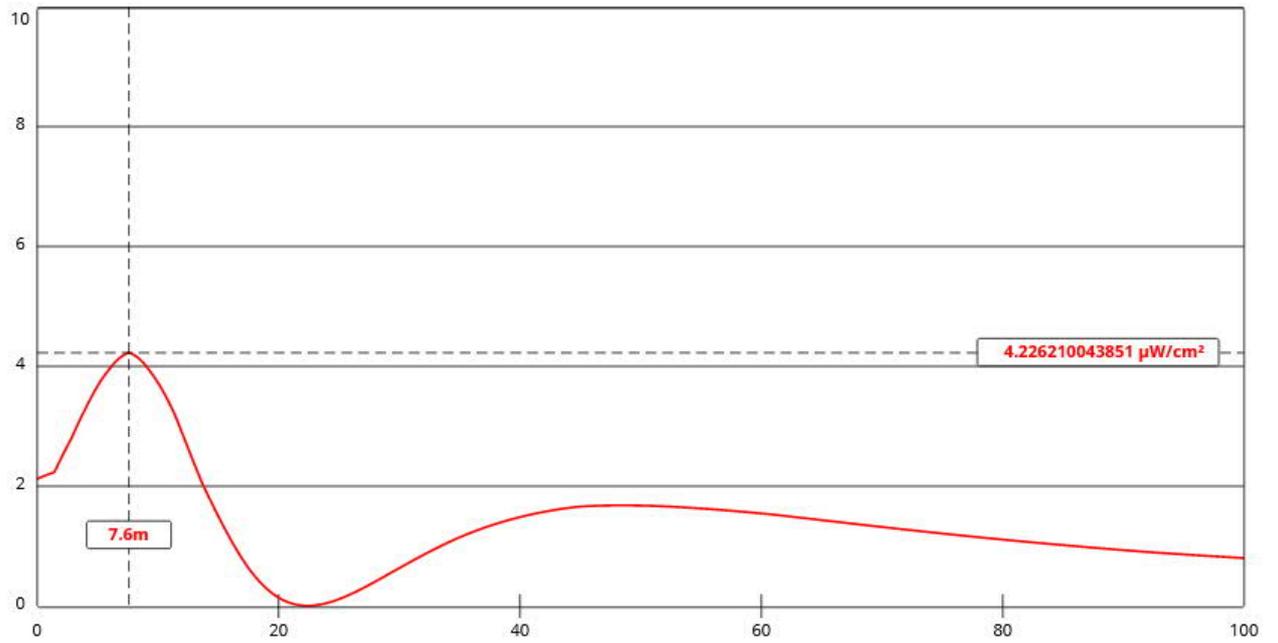
King City 2010 Boundaries

70 dBu Encompasses
 100% of the King City 2010 population
 and 97% of the area complying
 with the 80% rule.



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Exhibit E-8 FMModel Output



Channel Selection	Channel 284 (104.7 MHz) ▾		
Antenna Type +	EPA Type 2: Opposed V Dipole ▾		
Height (m)	18.3	Distance (m)	100
ERP-H (W)	150	ERP-V (W)	150
Num of Elements	2	Element Spacing (λ)	0.85
Num of Points	500		