

APPLICATION FOR CONSTRUCTION PERMIT

NEW FM TRANSLATOR STATION
PLEASANTON, TEXAS
BNPFT-20030314AIP
107.1 MHz / 0.250 kW ERP

WILDCATTER WIRELESS, INC.

APRIL, 2013

APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Wildcatter Wireless, Inc.** ("Wildcatter"), applicant for a new FM translator facility to serve Pleasanton, Texas, and are in support of their application for construction permit for that facility. This application is being submitted as a minor change to the original short-form proposal, including an LPFM grid preclusion study.

Technical information for this proposal is attached in two separate exhibits. This exhibit addresses all technical aspects of the proposed facility other than the LPFM grid study. Per the instructions in the recently released Public Notice from the Commission, the related LPFM grid preclusion study is attached as Exhibit 1.

The proposed facility would operate with an effective radiated power of 250 Watts at a center of radiation of 206.0 meters AMSL utilizing a non-directional antenna. The primary station for the proposed facility would be KJMA(FM) at Floresville, Texas.¹ The proposed translator would not function as a fill-in translator for that non-commercial educational station. Exhibit E-1 illustrates the predicted 60 dBu service contour of both KJMA(FM) and the proposed translator.

The transmitter site and facilities proposed under this application differ from those proposed in the original short-form engineering. Although the two proposals specify different site locations, the change to the short-form engineering would be minor in nature. Exhibit E-2 illustrates the predicted 60 dBu service contour for the short-form facility along with the 60 dBu service contour of

¹ The Facility ID for KJMA(FM) at Floresville, Texas is 72878.

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the facility proposed under this application. As indicated on this map, an area exists where the two contours overlap.

In addition to the proposed change to the transmitter site, Wildcatter also proposed a change in the channel of operation. The short-form engineering specifies operation on channel 243. This application specifies channel 296 as the channel of operation. This proposed channel is 53 channels above the short-form channel, which constitutes a minor change to the original short-form engineering. The change in the channel of operations is being proposed to address allocation and LPFM grid issues. The LPFM grid issues will be discussed with the preclusion study in the other engineering statement, which is attached to this application at Exhibit 1.

The proposed facility would comply with the contour overlap and interference provisions of Section 74.1204 of the Commission's Rules. Exhibit E-3 is a tabular based allocation study for the proposed facility. This study demonstrates that the proposed facility would meet all of the contour overlap requirements to all relevant facilities with the exception of KTXK at Terrell Hills, Texas, and KXTN-FM at San Antonio, Texas.² The allocation situation between the proposed translator and those two facilities will be subsequently addressed via an alternate interference study. The tabular allocation study in Exhibit E-3 is graphically depicted in Exhibit E-4.

Although there would be normally prohibited contour overlap between the proposed facility and both KTXK and KXTN-FM, the interference region predicted to be caused by the proposed facility would not impact any populated region served by either facility. Exhibit E-5 illustrates that

² The Facility ID for KTXK at Terrell Hills, Texas is 70357. The Facility ID of KXTN-FM at San Antonio, Texas is 67064.

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the predicted 88 dBu service contour of KTXK intersects the vicinity of the proposed translator transmitter site. For KXTN-FM, the signal level of that facility in the immediate vicinity of the proposed translator is 79 dBu.

Due to the proximity to the antenna of the area in which interference may occur, as well as the relatively high field strength required to cause interference to KTXK and KXTN-FM, it is more accurate to determine the interference area through calculations than through the application of the Commission's propagation curves. Since each facility would have a different field strength from the translator required to cause interference, the more restrictive level of the two will be assumed to be relevant for both. The full-power station with the lesser field strength will therefore be selected, which in this case is 79 dBu from KXTN-FM. Since both facilities are second adjacent to the proposed translator, interference is predicted to occur when the U/D ratio is 40 dBu or greater, which would be a translator field strength of 119 dBu.

The power density for the proposed facility at a field strength of 119 dBu is given by the following equation:

$$S = \frac{E^2}{Z_0} = \frac{(0.8913)^2}{377} = 0.002107$$

In this equation, S represents the calculated power density in Watts per square meter, E is the electric field intensity, which for 119 dBu is 0.8913 Volts per meter, and Z_0 is the characteristic impedance of free space of 377 ohms.

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The power density is also given by:

$$S = \frac{P}{4\pi R^2}$$

Where S is the same units, P is the power in Watts (250 Watts in this case), and R is the distance from the antenna. Rearranging the terms in the equation, it can be solved for the distance to the desired power density as follows:

$$R^2 = \frac{P}{4\pi S}$$

The results of these calculations for depression angles of 0 degrees to 90 degrees are tabulated in Exhibit E-6. The data in this exhibit is based on the use of a non-directional antenna. In addition to the tabular data in Exhibit E-7, several graphs are included in that exhibit, which graphically illustrate the interference situation for any given azimuth slice. As indicated on the form pages, a Shively Labs 6812B-1 antenna is proposed for use by the facility. The relative field values listed at the various depression angles are based on the published data for this antenna, and were obtained from the Shively Labs website.³

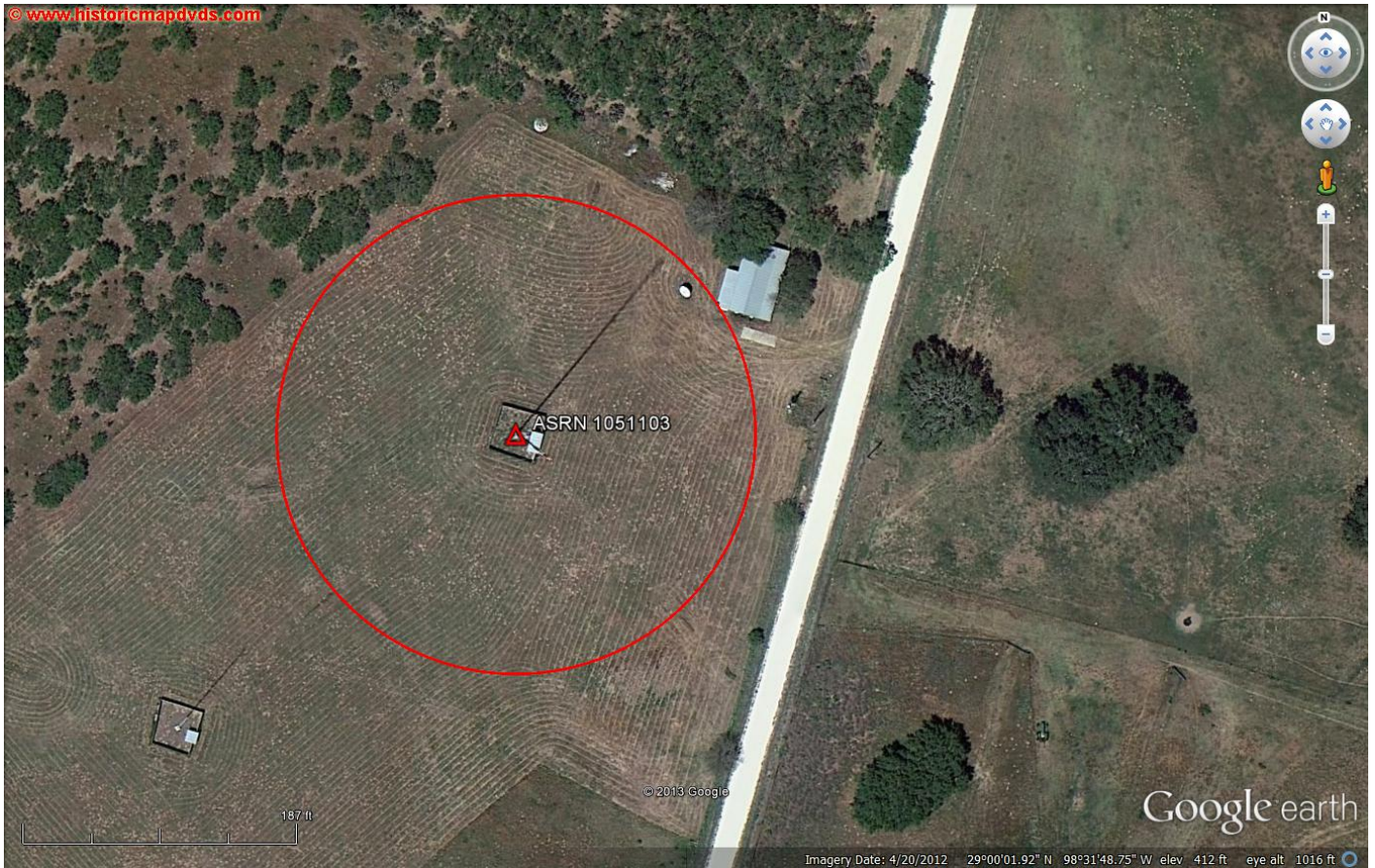
As Exhibit E-6 demonstrates, the predicted interference region does not reach ground level. The lowest elevation at which the predicted interference area may occur is at an elevation of 29.72 meters AGL. This elevation results from the depression angle of 46 degrees, and exists less than fifty meters from the base of the tower. The following satellite image indicates that this potential interference zone only intersects one structure.

³ The proposed antenna utilizes half-wave spacing between the individual bays. In addition, as previously discussed, the antenna is directional in the horizontal plane. Thus, the tabulations in Exhibit E-7 represent a worst-case scenario for the facility.

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This structure, which is illustrated in the following street-level image, is a single story building, that functions as the transmitter building for the directional AM array on which the proposed translator would be located. Due to the height of this building, approximately 12 feet AGL, zero population would be affected as the interference zone exists at approximately 29 meters or 95 feet AGL. Thus, the proposed translator facility would not create interference to any resident or realistic transient population in its vicinity.

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Finally it should be noted that the proposed facility would be located in southern Texas. Under the Commission's Rules, it is permissible to operate with an effective radiated power of no greater than 250 Watts provided the predicted 60 dBu service contour is located at a distance of 116.3 kilometers or greater from any point on the border with Mexico. The greatest radius of the predicted 60 dBu service contour is 13.2 kilometers over the azimuths of 112 through 121 degrees true. Thus, an illustration that the proposed transmitter site is at least 129.5 kilometers from the border with Mexico is sufficient to demonstrate compliance with this section of the Rules. Exhibit E-7 illustrates the proposed transmitter site relative to the border with Mexico, and demonstrates this required distance would be met.

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The facility specified in this application would not constitute a significant environmental impact, and is exempt from environmental processing. The translator would utilize an existing structure that is registered with the Commission. The addition of the translator antenna to this structure would not increase the existing environmental impact already present from the facility.

In addition, the proposed facility would not constitute a radiofrequency radiation hazard to persons at the site. As indicated on the form pages, the proposed facility would operate with a Shively Labs 6812B-1 model antenna. The Commission's *FM Model* software package predicts a maximum power density at ground level of $0.60 \mu\text{W}/\text{cm}^2$ at a distance of 80 meters from the base of the tower. This value is considerably less than the maximum value permissible under the applicable safety standards, and categorically excludes the facility.⁴ The licensee of the AM array at the site has installed appropriate fencing as illustrated in the photographs in this statement.

Wildcatter certifies that it will coordinate with all present and future users of the site to ensure that workers and other personnel are not exposed to levels of non-ionizing radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to, a reduction in transmitter power or cessation of operation.

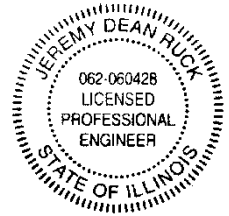
⁴ Predicted power density is 0.30 percent of the upper limit permissible under the uncontrolled environment condition.

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The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2013

Jeremy D. Ruck, PE
April 3, 2013

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632049.X

BNPFT20030314AIP
Latitude: 29-00-01 N
Longitude: 098-31-48 W
ERP: 0.25 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 206.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

KJMA

BLED20070905ACY
Latitude: 28-57-40 N
Longitude: 098-15-31 W
ERP: 100.00 kW
Channel: 209
Frequency: 89.7 MHz
AMSL Height: 284.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

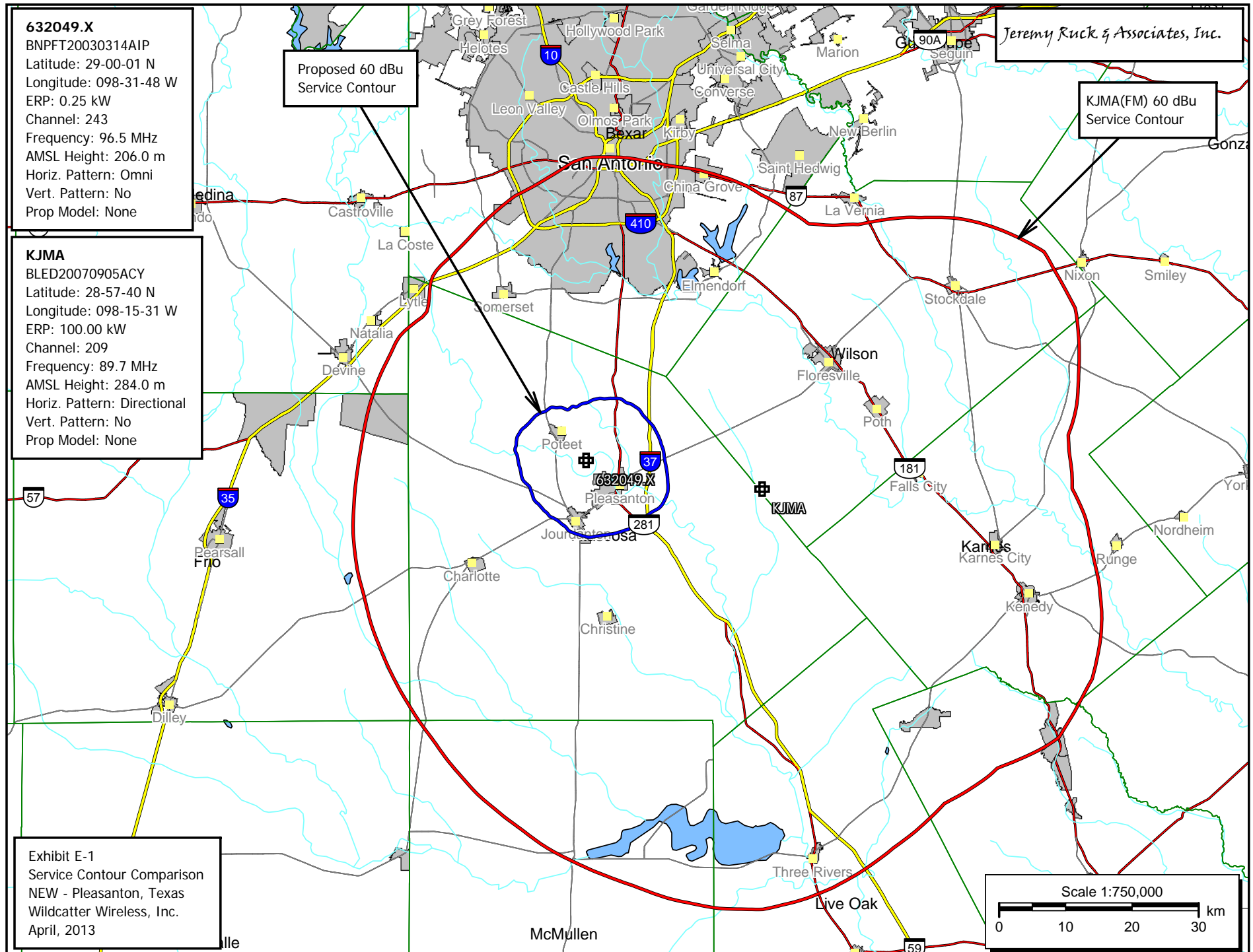
Exhibit E-1

Service Contour Comparison
NEW - Pleasanton, Texas
Wildcatter Wireless, Inc.
April, 2013

Proposed 60 dBu
Service Contour

Jeremy Ruck & Associates, Inc.

KJMA(FM) 60 dBu
Service Contour



632049.X

BNPFT20030314AIP
Latitude: 29-00-01 N
Longitude: 098-31-48 W
ERP: 0.25 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 206.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

632049.A

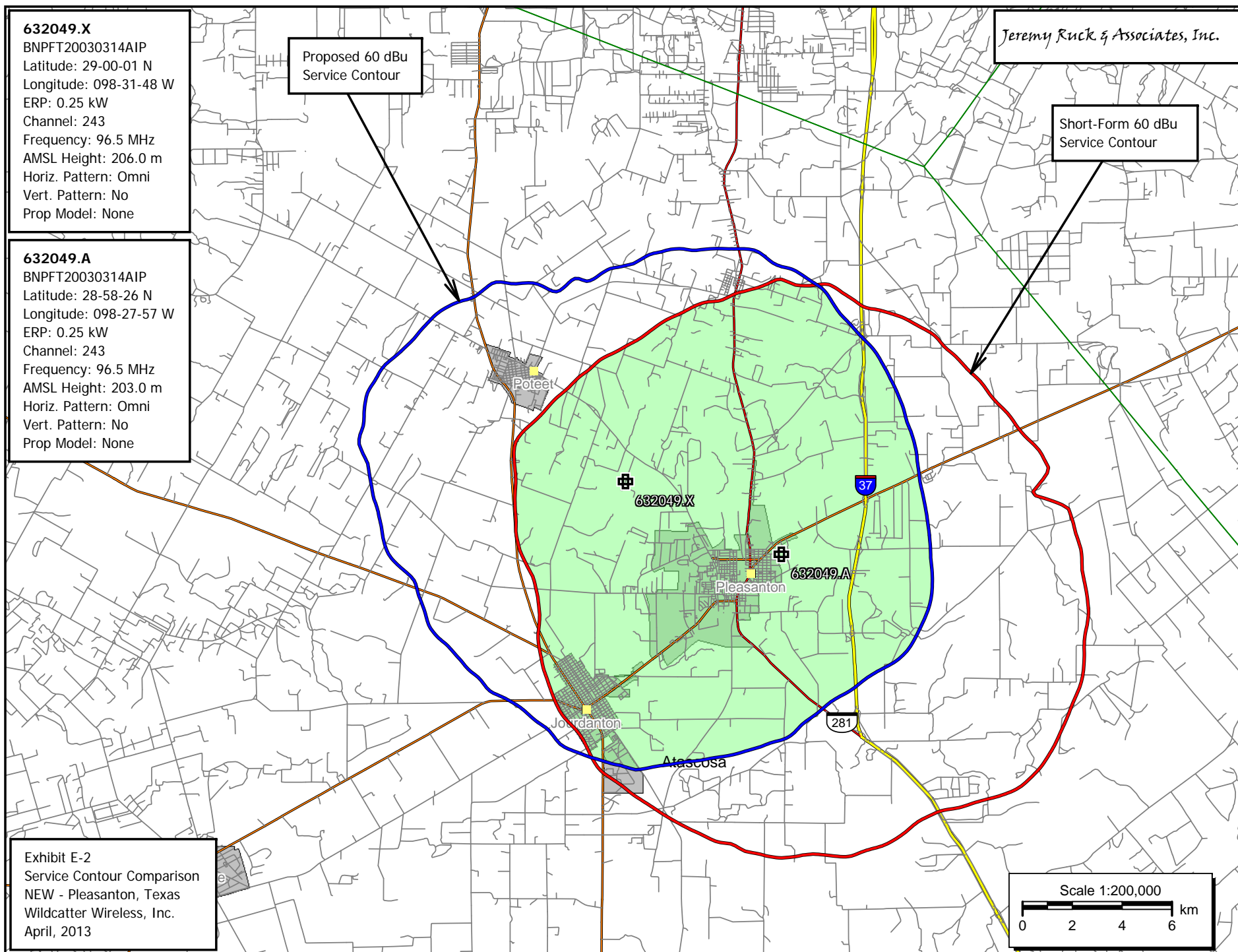
BNPFT20030314AIP
Latitude: 28-58-26 N
Longitude: 098-27-57 W
ERP: 0.25 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 203.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

Exhibit E-2
Service Contour Comparison
NEW - Pleasanton, Texas
Wildcatter Wireless, Inc.
April, 2013

Proposed 60 dBu
Service Contour

Jeremy Ruck & Associates, Inc.

Short-Form 60 dBu
Service Contour



Jeremy Ruck & Associates, Inc.
Consulting Engineers - Canton, Illinois

Exhibit E-3 - Tabular Allocation Study

NEW - Pleasanton, Texas

REFERENCE CH# 296D - 107.1 MHz, Pwr= 0.25 kW, HAAT= 68.4 M, COR= 206 M
29 00 01.0 N.
98 31 50.0 W. Average Protected F(50-50)= 10.78 km
Omni-directional

DISPLAY DATES
DATA 04-03-13
SEARCH 04-03-13

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*
294C0	KTKX	LIC_CN	4.6	20.51	29 11 03.0	100.000	10.4	73.9	0.6	-54.5*
Terrell Hills		TX	184.6	BLH19850508KY	98 30 49.0	310	486	Cox Radio, Inc.		
298C0	KXTN-FM	LIC_C_	40.2	39.98	29 16 29.0	98.000	12.3	84.7	16.7	-45.8*
San Antonio		TX	220.3	BLH20060612AAY	98 15 52.0	453	611	Tichenor License Corporati		
296C3	KHAV	CP_CX	302.5	95.93	29 27 41.0	14.000	113.9	44.5	-28.6*	15.8
Sabinal		TX	122.1	BNPH20070501AHB	99 21 59.0	135	488	Jose Antonio Aguilar		
243D	632049	APP_V_	115.0	6.94	28 58 26.0	0.250	39.4	11.5	9.5R	-2.6M
Pleasanton		TX	295.0	BNPFT20030314AIP	98 27 57.0	77	203	Wildcatter Wireless, Inc.		
296C2	KLZT	LIC_CX	36.2	154.94	30 07 18.0	49.000	135.8	50.5	8.2	67.6
Bastrop		TX	216.7	BMLH20080527ABP	97 34 45.0	152	304	Emmis Austin Radio Broadca		
296A	KRXB	LIC NCX	129.1	94.45	28 27 45.0	1.500	63.0	19.2	18.4	32.1
Beeville		TX	309.5	BLH20100615ACW	97 46 50.0	103	185	Shaffer Communications Gro		

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= West Zone, 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 protected contour.
Reference station has protected zone issue:

BNPFT20030314AIP
Latitude: 29-00-01 N
Longitude: 098-31-48 W
ERP: 0.25 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 206.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None





-  60 dBu F(50,50) Service Contour
-  40 dBu F(50,10) Interference Contour
-  54 dBu F(50,10) Interference Contour
-  100 dBu F(50,10) Interference Contour

Exhibit E-4
Contour Based Allocation Study
NEW - Pleasanton, Texas
Wildcatter Wireless, Inc.
April, 2013

Scale 1:1,250,000

632049.X

BNPFT20030314AIP
Latitude: 29-00-01 N
Longitude: 098-31-48 W
ERP: 0.25 kW
Channel: 243
Frequency: 96.5 MHz
AMSL Height: 206.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

KTKX

BLH19850508KY
Latitude: 29-11-03 N
Longitude: 098-30-49 W
ERP: 100.00 kW
Channel: 294
Frequency: 106.7 MHz
AMSL Height: 486.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

KXTN-FM

BLH20060612AAY
Latitude: 29-16-29 N
Longitude: 098-15-52 W
ERP: 98.00 kW
Channel: 298
Frequency: 107.5 MHz
AMSL Height: 611.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

Exhibit E-5
Interference Study
NEW - Pleasanton, Texas
Wildcatter Wireless, Inc.
March, 2013

Jeremy Ruck & Associates, Inc.

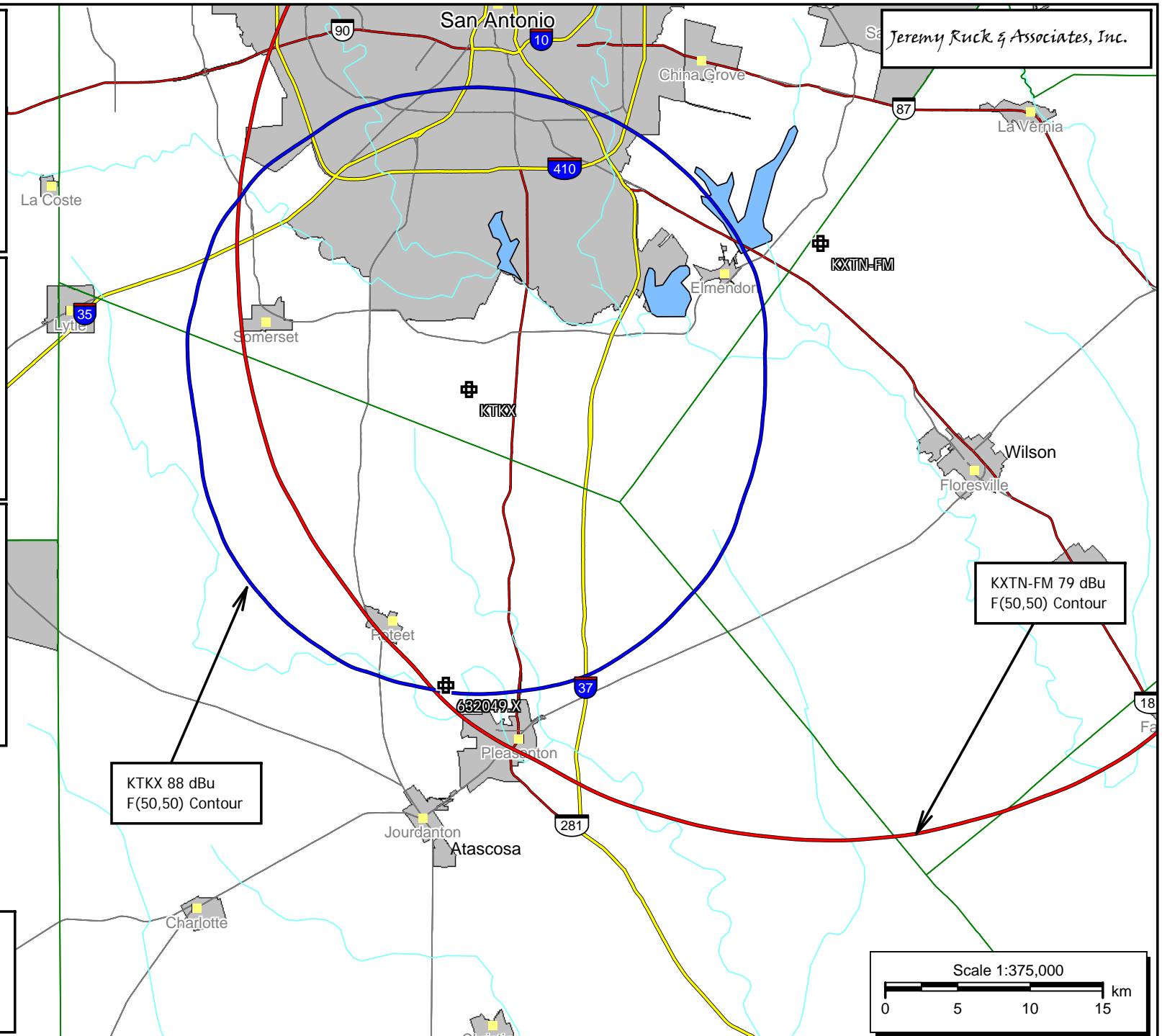
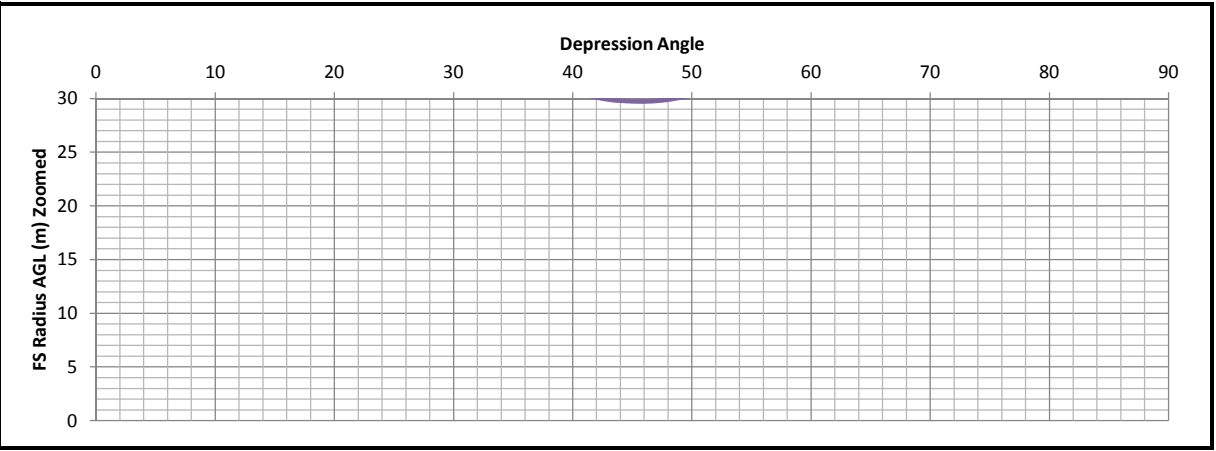
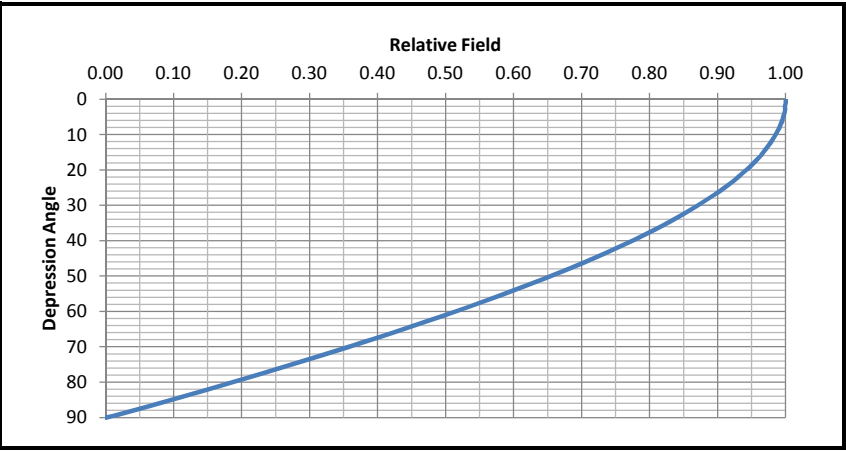


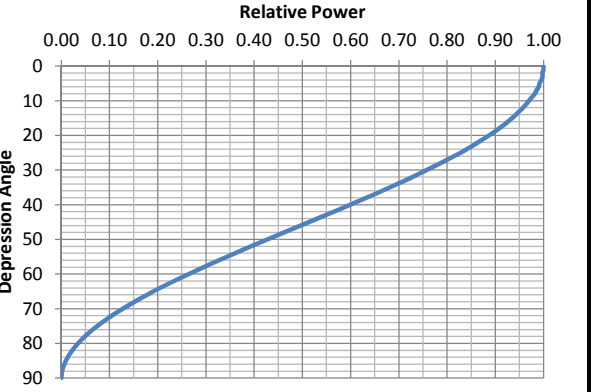
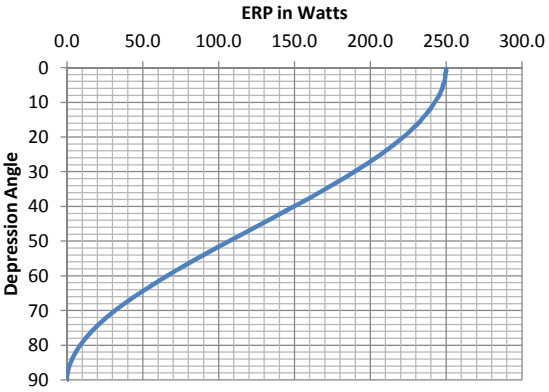
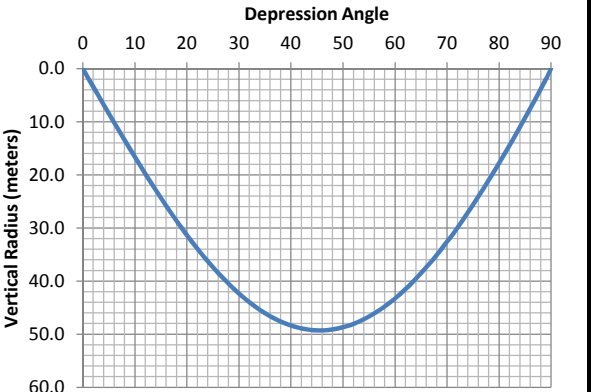
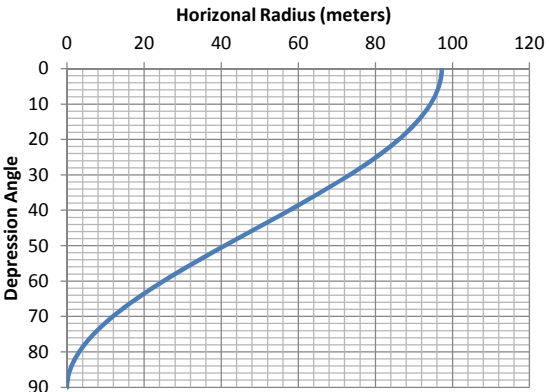
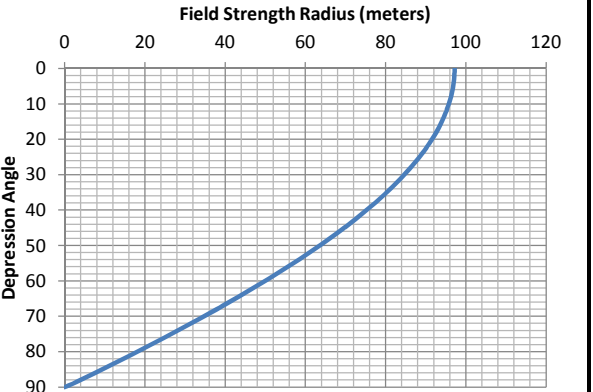
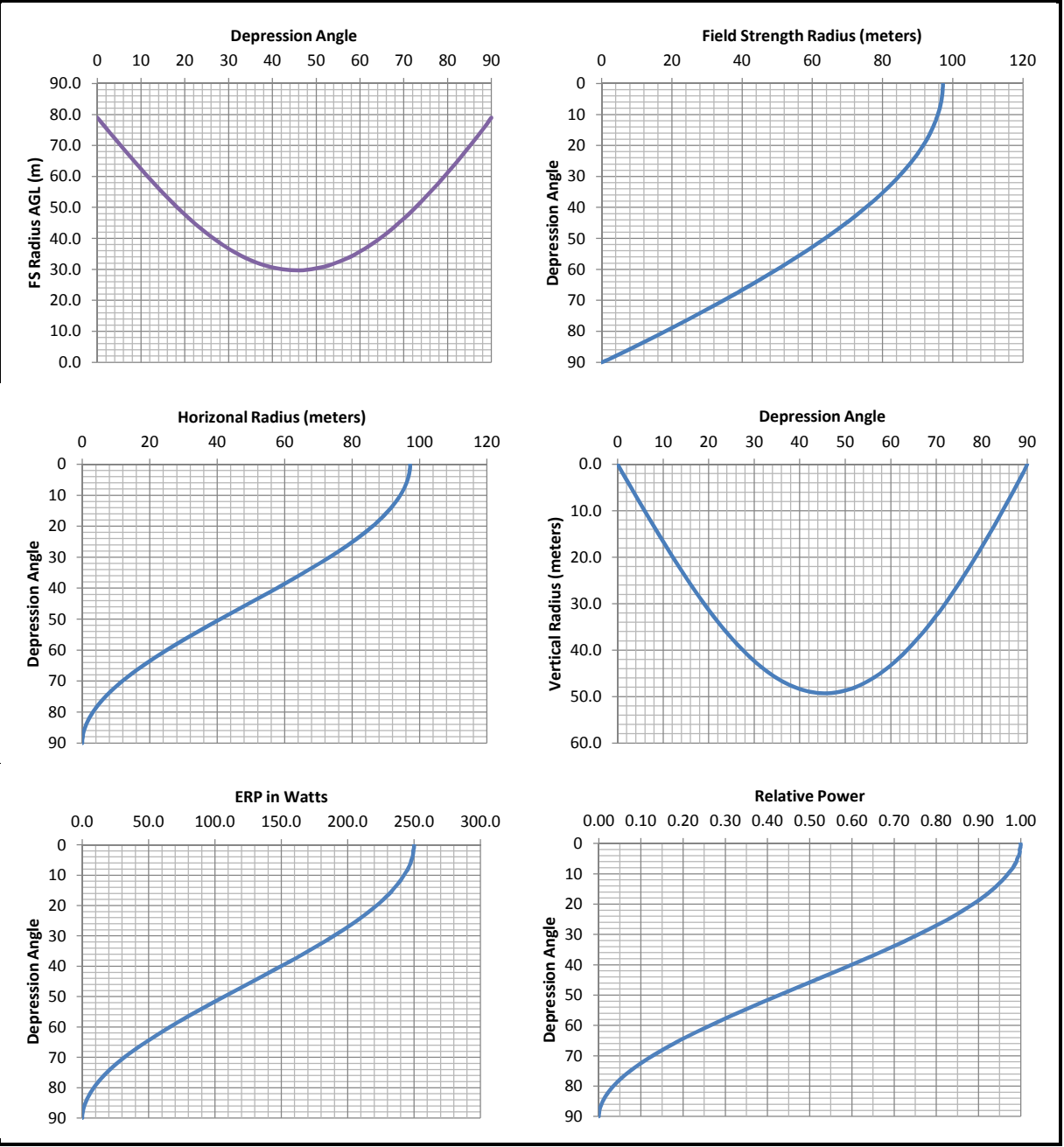
Exhibit E-6
Translator Proximity Interference Analysis
NEW - Pleasanton, Texas

Antenna No:	1	Center of Radiation:	79.0 m AGL
Manufacturer:	Shively	Effective Radiated Power:	250 Watts
Model:	6812-1	FS Contour:	119 dBu
Number of Bays:	1	E Field Strength:	0.89125 V/m
Bay Spacing:	Lambda	Z0 (Ohms):	377 Ohms
		Power Density:	0.002106971 W/m^2



Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
0	1.0000	1.0000	250.00	97.17	97.17	0.00	79.00
1	1.0000	1.0000	250.00	97.17	97.16	1.70	77.30
2	0.9990	0.9980	249.50	97.07	97.01	3.39	75.61
3	0.9990	0.9980	249.50	97.07	96.94	5.08	73.92
4	0.9980	0.9960	249.00	96.98	96.74	6.76	72.24
5	0.9960	0.9920	248.00	96.78	96.41	8.44	70.56
6	0.9950	0.9900	247.51	96.68	96.16	10.11	68.89
7	0.9930	0.9860	246.51	96.49	95.77	11.76	67.24
8	0.9910	0.9821	245.52	96.30	95.36	13.40	65.60
9	0.9880	0.9761	244.04	96.00	94.82	15.02	63.98
10	0.9850	0.9702	242.56	95.71	94.26	16.62	62.38
11	0.9820	0.9643	241.08	95.42	93.67	18.21	60.79
12	0.9790	0.9584	239.61	95.13	93.05	19.78	59.22
13	0.9750	0.9506	237.66	94.74	92.31	21.31	57.69
14	0.9710	0.9428	235.71	94.35	91.55	22.83	56.17
15	0.9670	0.9351	233.77	93.96	90.76	24.32	54.68
16	0.9630	0.9274	231.84	93.58	89.95	25.79	53.21
17	0.9580	0.9178	229.44	93.09	89.02	27.22	51.78
18	0.9530	0.9082	227.05	92.60	88.07	28.62	50.38
19	0.9480	0.8987	224.68	92.12	87.10	29.99	49.01
20	0.9420	0.8874	221.84	91.53	86.01	31.31	47.69
21	0.9360	0.8761	219.02	90.95	84.91	32.59	46.41
22	0.9300	0.8649	216.23	90.37	83.79	33.85	45.15
23	0.9240	0.8538	213.44	89.79	82.65	35.08	43.92
24	0.9170	0.8409	210.22	89.11	81.40	36.24	42.76
25	0.9100	0.8281	207.03	88.43	80.14	37.37	41.63
26	0.9030	0.8154	203.85	87.75	78.86	38.46	40.54
27	0.8950	0.8010	200.26	86.97	77.49	39.48	39.52
28	0.8870	0.7868	196.69	86.19	76.10	40.46	38.54
29	0.8790	0.7726	193.16	85.41	74.70	41.41	37.59
30	0.8710	0.7586	189.66	84.64	73.30	42.32	36.68
31	0.8620	0.7430	185.76	83.76	71.80	43.14	35.86
32	0.8540	0.7293	182.33	82.98	70.37	43.97	35.03
33	0.8450	0.7140	178.51	82.11	68.86	44.72	34.28
34	0.8350	0.6972	174.31	81.14	67.27	45.37	33.63
35	0.8260	0.6823	170.57	80.26	65.75	46.04	32.96
36	0.8160	0.6659	166.46	79.29	64.15	46.61	32.39
37	0.8060	0.6496	162.41	78.32	62.55	47.13	31.87
38	0.7960	0.6336	158.40	77.35	60.95	47.62	31.38
39	0.7850	0.6162	154.06	76.28	59.28	48.00	31.00
40	0.7740	0.5991	149.77	75.21	57.61	48.34	30.66
41	0.7630	0.5822	145.54	74.14	55.96	48.64	30.36
42	0.7520	0.5655	141.38	73.07	54.30	48.90	30.10
43	0.7410	0.5491	137.27	72.00	52.66	49.11	29.89
44	0.7290	0.5314	132.86	70.84	50.96	49.21	29.79
45	0.7170	0.5141	128.52	69.67	49.27	49.27	29.73

Depression Angle	Relative Field	Relative Power	ERP Watts	Radii in meters			
				Field Strength	Horizontal	Vertical	AGL
45	0.7170	0.5141	128.52	69.67	49.27	49.27	29.73
46	0.7050	0.4970	124.26	68.51	47.59	49.28	29.72
47	0.6930	0.4802	120.06	67.34	45.93	49.25	29.75
48	0.6800	0.4624	115.60	66.08	44.21	49.10	29.90
49	0.6670	0.4449	111.22	64.81	42.52	48.91	30.09
50	0.6540	0.4277	106.93	63.55	40.85	48.68	30.32
51	0.6410	0.4109	102.72	62.29	39.20	48.41	30.59
52	0.6280	0.3944	98.60	61.02	37.57	48.09	30.91
53	0.6140	0.3770	94.25	59.66	35.91	47.65	31.35
54	0.6000	0.3600	90.00	58.30	34.27	47.17	31.83
55	0.5860	0.3434	85.85	56.94	32.66	46.64	32.36
56	0.5720	0.3272	81.80	55.58	31.08	46.08	32.92
57	0.5580	0.3114	77.84	54.22	29.53	45.47	33.53
58	0.5440	0.2959	73.98	52.86	28.01	44.83	34.17
59	0.5290	0.2798	69.96	51.40	26.47	44.06	34.94
60	0.5140	0.2642	66.05	49.95	24.97	43.25	35.75
61	0.4990	0.2490	62.25	48.49	23.51	42.41	36.59
62	0.4840	0.2343	58.56	47.03	22.08	41.53	37.47
63	0.4690	0.2200	54.99	45.57	20.69	40.61	38.39
64	0.4530	0.2052	51.30	44.02	19.30	39.56	39.44
65	0.4370	0.1910	47.74	42.46	17.95	38.49	40.51
66	0.4220	0.1781	44.52	41.01	16.68	37.46	41.54
67	0.4060	0.1648	41.21	39.45	15.41	36.32	42.68
68	0.3900	0.1521	38.03	37.90	14.20	35.14	43.86
69	0.3730	0.1391	34.78	36.24	12.99	33.84	45.16
70	0.3570	0.1274	31.86	34.69	11.86	32.60	46.40
71	0.3410	0.1163	29.07	33.14	10.79	31.33	47.67
72	0.3240	0.1050	26.24	31.48	9.73	29.94	49.06
73	0.3070	0.0942	23.56	29.83	8.72	28.53	50.47
74	0.2900	0.0841	21.03	28.18	7.77	27.09	51.91
75	0.2730	0.0745	18.63	26.53	6.87	25.62	53.38
76	0.2560	0.0655	16.38	24.88	6.02	24.14	54.86
77	0.2390	0.0571	14.28	23.22	5.22	22.63	56.37
78	0.2210	0.0488	12.21	21.47	4.46	21.01	57.99
79	0.2040	0.0416	10.40	19.82	3.78	19.46	59.54
80	0.1860	0.0346	8.65	18.07	3.14	17.80	61.20
81	0.1680	0.0282	7.06	16.32	2.55	16.12	62.88
82	0.1510	0.0228	5.70	14.67	2.04	14.53	64.47
83	0.1330	0.0177	4.42	12.92	1.58	12.83	66.17
84	0.1140	0.0130	3.25	11.08	1.16	11.02	67.98
85	0.0960	0.0092	2.30	9.33	0.81	9.29	69.71
86	0.0780	0.0061	1.52	7.58	0.53	7.56	71.44
87	0.0590	0.0035	0.87	5.73	0.30	5.73	73.27
88	0.0400	0.0016	0.40	3.89	0.14	3.88	75.12
89	0.0210	0.0004	0.11	2.04	0.04	2.04	76.96
90	0.0000	0.0000	0.00	0.00	0.00	0.00	79.00



632049.X

BNPFT20030314AIP

Latitude: 29-00-01 N

Longitude: 098-31-48 W

ERP: 0.25 kW

Channel: 243

Frequency: 96.5 MHz

AMSL Height: 206.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

Jeremy Ruck & Associates, Inc.

129.5 km Site Radius

Proposed Translator Site

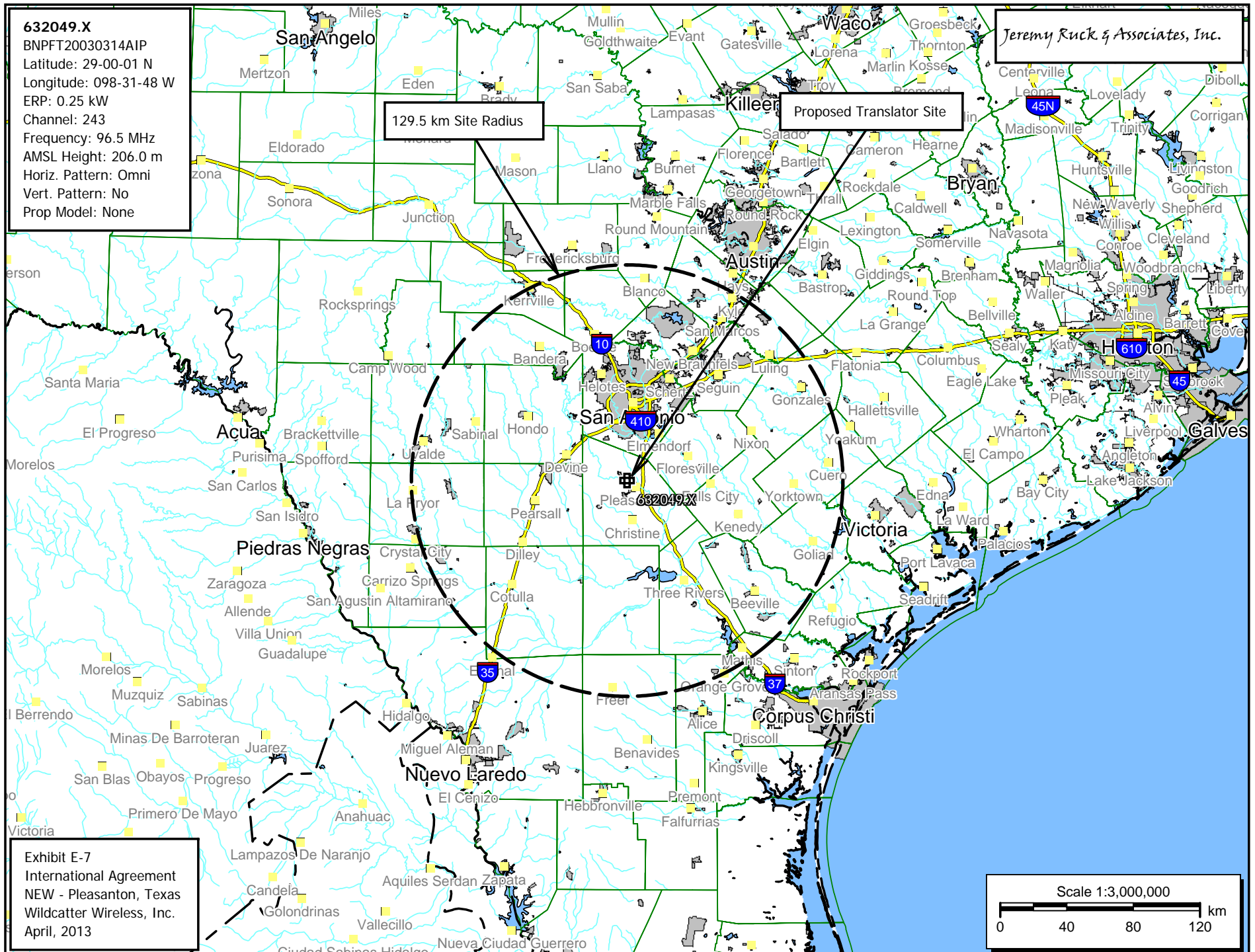


Exhibit E-7

International Agreement

NEW - Pleasanton, Texas

Wildcatter Wireless, Inc.

April, 2013