

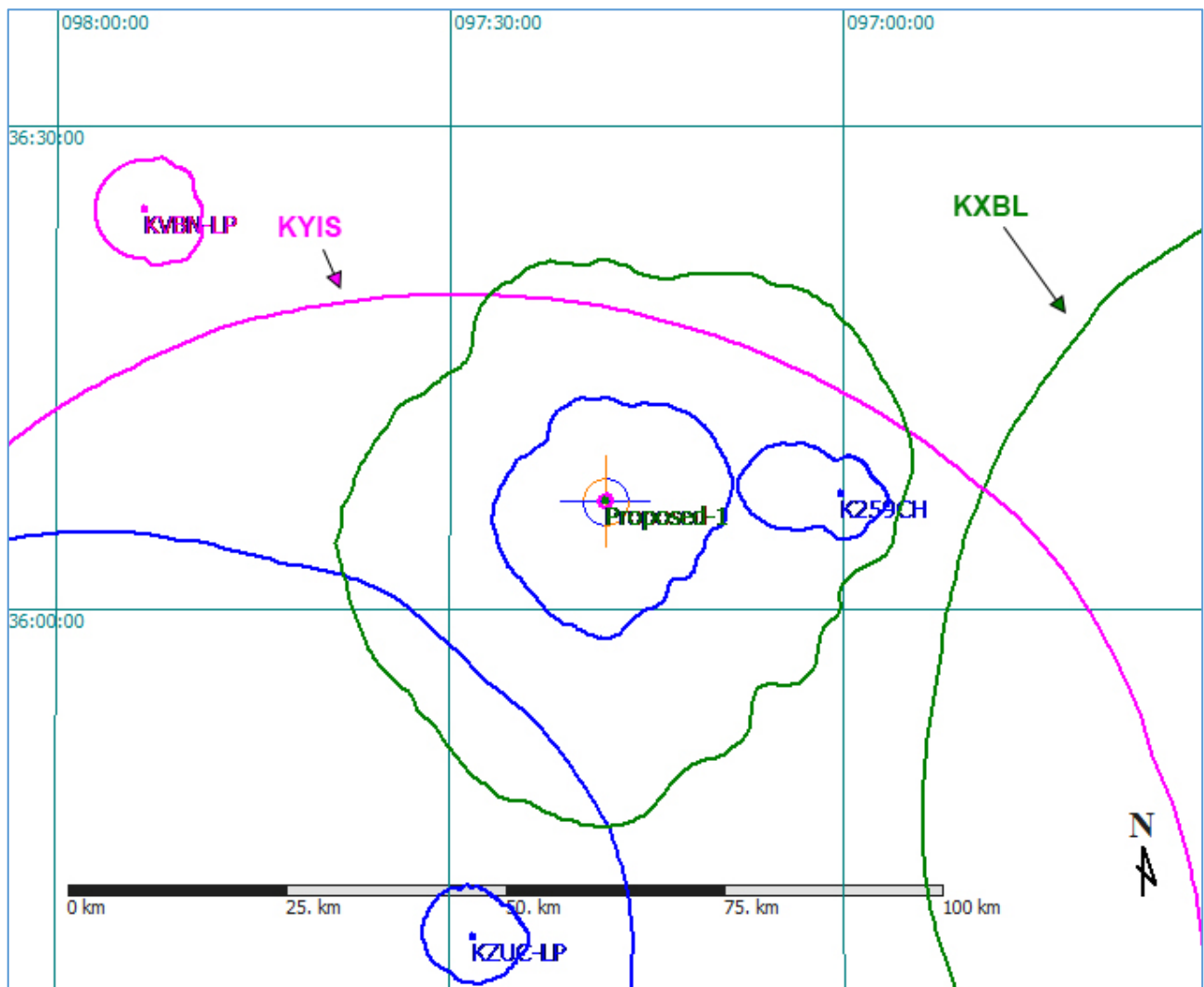
Exhibits
in support of a
Minor Modification
to
FM Translator
Construction Permit
BNPFT-20130827AFD

January 28, 2015

INTERFERENCE AND OVERLAP REQUIREMENTS PAWHUSKA, OK

The proposed facility will not create prohibited overlap to any other licensed facility or pending application other to second-adjacent KYIS (FID #8798). As more fully discussed below, processing pursuant to 47 C.F.R. § 74.1204(d) is appropriate here.

The study on the following page illustrates that the proposed facility will not create prohibited overlap to any other licensed facility or pending application other to second-adjacent KYIS.



The green contours represent co-channel interfering (40 dBu) to co-channel protected (60 dBu) contours. Blue contours represent first-adjacent channel interfering (54 dBu) to first-adjacent protected (60 dBu) contours. Magenta contours represent second and third-adjacent channel

interfering (100 dBu) to second and third-adjacent protected (60 dBu) contours. Red contours represent co-channel protected (60 dBu) to co-channel interfering (40 dBu) contours.

The aerial image below illustrates the area of predicted interference without accounting for the elevation pattern of the proposed antenna. No inhabited structures are within this area.



Futhermore, the facility proposed herein will utilize a four-bay Shively VersaTune antenna that employs full-wave spacing. The table on the following page depicts the predicted signal strength from the proposed translator both at ground level, and at receiving antenna locations up to 6 meters above ground level.

As can be determined by the columns colored green, at no location from ground level to 6 meters above the ground does the predicted signal of the proposed translator exceed that of KYIS by 40 dBu or more.

The Applicant respectfully submits that since a lack of population exists in the area of actual interference, the processing pursuant to 47 C.F.R § 74.1204(d) is appropriate for the instant application.

Proposed Antenna: Shively Labs Versa2une Four-bay Half-wave-spaced.

Proposed Power: 0.05 kW

Antenna Height AGL: 100 meters

Interference Contour: 108.6 dBu

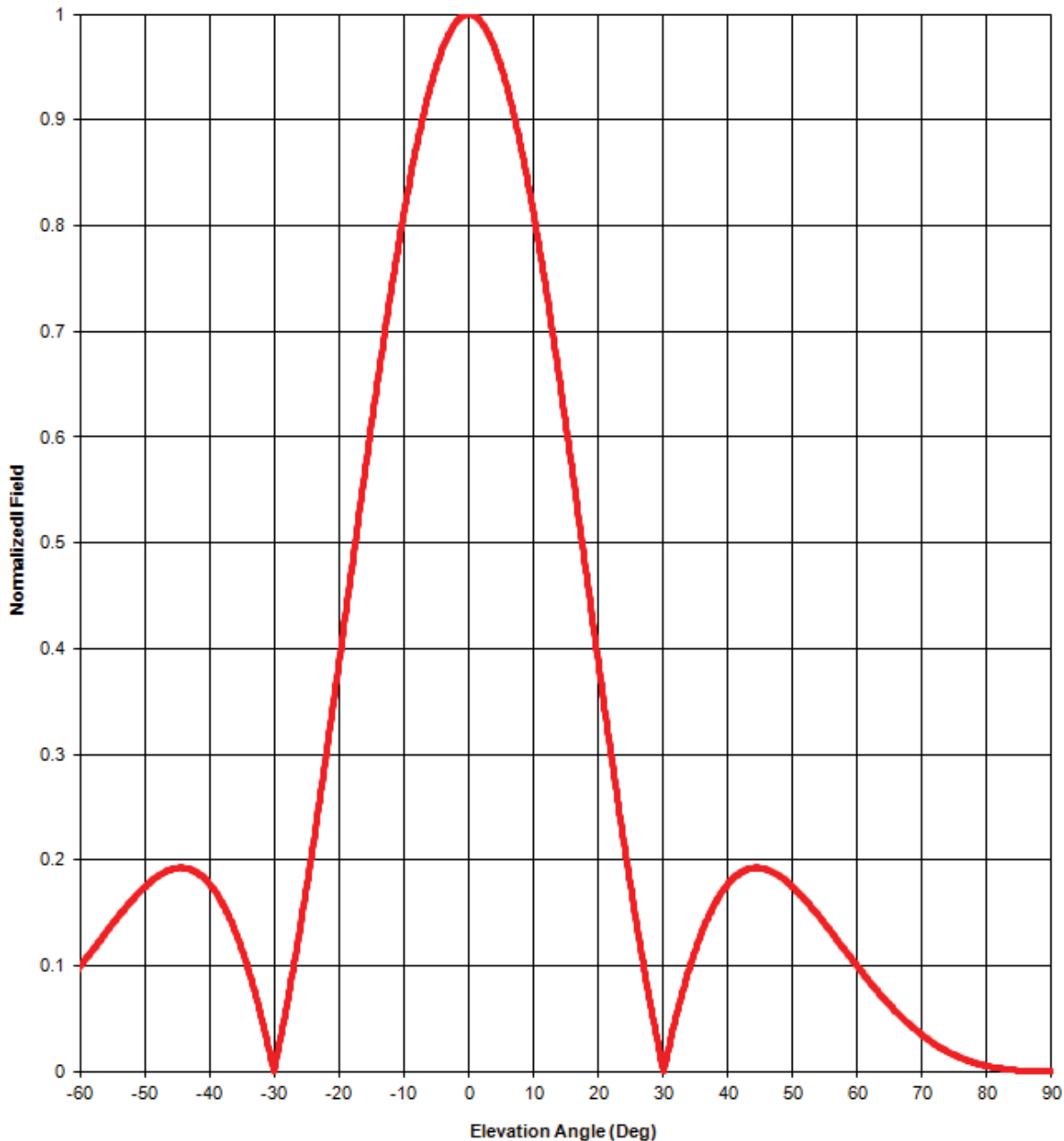
Artificial Rcv Antenna Height: 6 meters

Distance (Free Space) Equation: $= (10^{\frac{(106.92 - [\text{desired dBu}] + [\text{ERP in dBk}])}{20}}) * 1000$

Field Strength (dBu) Equation $= 106.92 - (20 * (\text{LOG10}[\text{DistMeters}/1000])) + [\text{ERP in dBk}]$

Depression				Distance				
Angle	Antenna			from Ant.	Distance	Field Streng	Distance	Field Strength
Below	Relative	ERP	ERP	to Interf	rom Ant. to	in dBu @	from Ant.	in dBu @
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	to Ground Level	Ground Level
0°	0.998	0.050	-13.03	183.91 m	infinite		infinite	
-5°	0.963	0.046	-13.34	177.46 m	1078.53 m	92.93 dBu	1147.37 m	92.39 dBu
-10°	0.858	0.037	-14.34	158.11 m	541.32 m	97.91 dBu	575.88 m	97.37 dBu
-15°	0.703	0.025	-16.07	129.55 m	363.19 m	99.65 dBu	386.37 m	99.11 dBu
-20°	0.519	0.013	-18.71	95.64 m	274.84 m	99.43 dBu	292.38 m	98.89 dBu
-25°	0.331	0.005	-22.61	61.00 m	222.42 m	97.36 dBu	236.62 m	96.83 dBu
-30°	0.162	0.001	-28.82	29.85 m	188.00 m	92.62 dBu	200.00 m	92.08 dBu
-35°	0.026	0.000	-44.71	4.79 m	163.88 m	77.92 dBu	174.34 m	77.38 dBu
-40°	0.071	0.000	-35.99	13.08 m	146.24 m	87.63 dBu	155.57 m	87.10 dBu
-45°	0.130	0.001	-30.73	23.96 m	132.94 m	93.72 dBu	141.42 m	93.18 dBu
-50°	0.155	0.001	-29.20	28.56 m	122.71 m	95.94 dBu	130.54 m	95.40 dBu
-55°	0.155	0.001	-29.20	28.56 m	114.75 m	96.52 dBu	122.08 m	95.98 dBu
-60°	0.140	0.001	-30.09	25.80 m	108.54 m	96.12 dBu	115.47 m	95.58 dBu
-65°	0.116	0.001	-31.72	21.38 m	103.72 m	94.88 dBu	110.34 m	94.34 dBu
-70°	0.090	0.000	-33.93	16.59 m	100.03 m	92.99 dBu	106.42 m	92.45 dBu
-75°	0.065	0.000	-36.75	11.98 m	97.32 m	90.40 dBu	103.53 m	89.87 dBu
-80°	0.041	0.000	-40.75	7.56 m	95.45 m	86.57 dBu	101.54 m	86.03 dBu
-85°	0.021	0.000	-46.57	3.87 m	94.36 m	80.86 dBu	100.38 m	80.32 dBu
-90°	0.001	0.000	-73.01	0.18 m	94.00 m	54.45 dBu	100.00 m	53.91 dBu

Elevation pattern



Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, & 68xx except 6832, 4-bay half-wave-spaced

Test frequency: 98.1 MHz

Gain (maximum):

	Power	dB
6014, 6015, 68xx:	1.32	1.19 dB
6510, 6513, 6600:	2.64	4.19 dB

Document No. 68xx-4-bay hw (130628)

A Division of Howell Laboratories, Inc., P. O. Box 389, Bridgton, Maine 04009 USA

(207) 647-3327

1-888-SHIVELY

Fax: (207)647-8273

An Employee-Owned Company

www.shively.com

sales@shively.com

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Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field
1	0.998	19	0.433	37	0.147	55	0.140	73	0.022
2	0.992	20	0.388	38	0.159	56	0.132	74	0.019
3	0.982	21	0.343	39	0.169	57	0.123	75	0.016
4	0.968	22	0.299	40	0.177	58	0.115	76	0.013
5	0.950	23	0.257	41	0.184	59	0.107	77	0.011
6	0.929	24	0.215	42	0.188	60	0.099	78	0.008
7	0.905	25	0.175	43	0.191	61	0.092	79	0.007
8	0.877	26	0.137	44	0.193	62	0.084	80	0.005
9	0.846	27	0.100	45	0.192	63	0.077	81	0.004
10	0.812	28	0.066	46	0.191	64	0.070	82	0.003
11	0.776	29	0.033	47	0.188	65	0.063	83	0.002
12	0.738	30	0.003	48	0.185	66	0.056	84	0.001
13	0.697	31	0.026	49	0.180	67	0.050	85	0.001
14	0.655	32	0.052	50	0.175	68	0.045	86	0.001
15	0.612	33	0.075	51	0.169	69	0.039	87	0.000
16	0.568	34	0.096	52	0.162	70	0.034	88	0.000
17	0.523	35	0.115	53	0.155	71	0.030	89	0.000
18	0.478	36	0.132	54	0.147	72	0.026	90	0.000

Elevation Pattern Tabulation

Antenna models: 6014, 6015, 6020, 6510, 6513, 6600, & 68xx except 6832, 4-bay full-wave-spaced.

Relative Field at 0° Depression = 1.000